A66 NTP Scheme 3A

Factual Ground Investigation Report

Report No: 765633-1

Issue No: 02

Employer:	National Highways
Delivery Integration Partner (DIP):	Keltbray
Investigation Supervisor:	Jacobs
Ground Investigation Contractor:	Structural Soils Limited

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CONTENTS

1 EXECUTIVE SUMMARY 1

2 INTRODUCTION 4

2.1 Scope and Objective of the Report

2.2 Description of Project

2.3 Preliminary Geotechnical Category

2.4 Other Relevant Information

3 SITE DESCRIPTION 8

3.1 Location and Topography

3.2 Geology

3.1 History of Site and Surrounding Area

4 FIELDWORK 16

4.1 Scope of Works

4.2 Non-Intrusive Surveys

4.3 Intrusive Exploratory Holes

4.4 In-Situ Testing

4.5 Monitoring Wells, Geotechnical Instruments and Backfill

4.6 Fieldwork and Post Fieldwork Monitoring

5 LABORATORY TESTING 28

5.1 Geotechnical Laboratory Testing

5.2 Contamination Laboratory Testing

6 REFERENCES 32

APPENDIX A - PLANS AND DRAWINGS I

(A01) Scheme Master Site Location Map

(A02) Scheme 03A Site Location Map

(A03) Exploratory Hole Location Plan

(A04) Ground Levels and Coordinates at Exploratory Hole Locations

APPENDIX B - EXPLORATORY HOLE RECORDS II

(B01) Key to Exploratory Hole Logs

(B02) Borehole Logs

(B03) Trial Pit Logs

(B04) Window Sample Logs

(B05) Driller's Borehole Logs

APPENDIX C - FIELD TESTING III

(C01) Standard Penetration Test (SPT) Summary Sheet

(C02) SPT N value versus Depth Plots

(C03) Light Weight Deflectometer (LWD) Test Results

APPENDIX D - GEOHYDRAULIC TESTING IV
(D01) Borehole Permeability Test Results
APPENDIX E - FIELD INSTRUMENTATION RECORDS V
(E01) Standpipe Summary Table
APPENDIX F - MONITORING RECORDS VI
(F01) Manual Groundwater Monitoring Results – Standpipes
(F02) Water Level Data Logger Monitoring Results
APPENDIX G - GEOTECHNICAL LABORATORY TEST RESULTS .. VII
(G01) Laboratory Test Verification Sheet
(G02) Laboratory Test Results
APPENDIX H – GEOENVIRONMENTAL LABORATORY TEST RESULTS VIII
(H01) Geoenvironmental Laboratory Test Results – Soil
APPENDIX I - CALIBRATION CERTIFICATES IX
(I01) Standard Penetration Test Calibration Certificates
(I02) Water Level Data Logger Calibration Certificates
APPENDIX J - NON AGS DIGITAL DATA X
(J01) Groundwater Monitoring Results (.xlsx format)
(J02) Geoenvironmental Test Results - Soil (.xlsx crosstab format)
(J03) Rotary Core and Window Sample Photographs
(J04) Trial Pit Photographs
(J05) Inspection Pit Photographs
(J06) Diver Data Logger Data (.wsl, .csv and .xlsx format)

1 EXECUTIVE SUMMARY

1.1 Structural Soils Limited (SSL) were employed by National Highways (the Employer) to carry out a ground investigation. The Employer's Delivery Integration Partner (DIP) was Keltbray Group Limited and the Investigation Supervisor was KJP, a partnership between Keltbray Group Limited and Jacobs U.K. Limited.

1.2 National Highways are improving the A66 Northern Transpennine road between the M6 at Penrith and A1(M) at Scotch Corner by upgrading single carriageway sections of road to dual carriageway standard and making improvements to the junctions along the route.

1.3 A Phase 2 ground investigation to obtain additional information to enable detailed design of the scheme was completed, along with a separate overlapping investigation to obtain information for the design of a diversion of a United Utilities sewer. The Phase 2 investigation was split into separate schemes numbered Scheme S01, S02, S03A, S03B, S04, S05, S06, S07, S08 and S09.

1.4 This report details the ground investigation completed for Scheme 3A. ('3A' is the formal naming format specified for the project title for this scheme but it is referred to as Scheme 03A in the remainder of this report for consistency with the majority of the other schemes).

1.5 The sitework, laboratory testing and fieldwork period of site monitoring are detailed in this report, for exploratory holes which were completed between 2 March and 5 June 2023.

1.6 Geotechnical laboratory testing was scheduled by the Investigation Supervisor between 21 March and 16 June 2023 (excluding later alternative tests instructed in response to test restrictions reported by the laboratory).

1.7 A long term groundwater monitoring programme is underway. This report contains the results of water monitoring completed up to 9 July 2023. The monitoring programme consists of the reading of water levels in standpipes both manually and used data loggers.

1.8 The works were undertaken in accordance with the National Highways ground investigation framework specification, supplemented by the scheme-specific specification HE615323-JAC-HGT-03A_AL_SCHEM-SP-GI-000001 revision P02 dated 27/01/2023.

1.9 The works completed consisted of geophysical, geological, geotechnical and geoenvironmental investigations, including an intrusive investigation, and laboratory testing and groundwater monitoring.

1.10 A full description of the site is given in Section 3.1 of this report. The Scheme 03A site comprises a roughly 2.5 km section of the A66 eastbound and westbound, its verges and adjoining land lying to the south-east of the town of Penrith in Cumbria and between about 1.3 km and 3.8 km east of the junction of the A66 and the M6 motorway.

1.11 The eastern end of Scheme 03A is approximately 500 m east of Whinfell Park at approximate British National Grid Reference 356550, 528880 beyond which is the Scheme 03B site. The western end commences from the west of the B6262 junction with the A66, approximately 400 m east of Brougham Castle Bridge at the approximate British National Grid Reference is 354060, 529080, with the Scheme S02 site being west of this.

1.12 The ground elevation at the ground investigation locations varies between around 109 m AOD and 129 m AOD, with, in very general terms, ground levels falling gently to the north and west along the section. The River Eamont lies to the north close to but outside of the scheme boundary and crosses beneath the A66 beyond the western end of the section. Two streams run from the south, cross beneath the A66, and into the river to the north, one of these crossings being at Lightwater Culvert.

1.13 Scheme 03A is bounded mainly by fields and farmland, and as such encompasses local rural properties, roads, tracks both to the north and south. Notable features along or in the vicinity of the section include *Brougham Castle, Brougham Castle Bridge* and *Brovavvm Roman Fort* (all a short distance beyond the western end of the section), a Scheduled Ancient Monument, the *Countess Pillar* close to the south side of the A66. Whinfell Forest, a Centre Parcs holiday resort site is located on land to the south of the A66, around 2.8 km east of the B6262 junction and 100 m east of this a Spring in land to the north of the A66, about 200 m from the road.

1.14 The geological setting of the site is detailed in Section 3.2. In brief, the geological mapping shows the site to be directly underlain by superficial glacial deposits mapped as Diamicton, with Glaciofluvial Deposits mapped as outcropping at only one location north-east of Lightwater Culvert. The glacial deposits are overlain by recent Alluvium around two streams running between the River Eamont to the north of the A66, beneath the A66 and into the land to the south, and possibly also at the extreme western end of the site near the river. Bedrock of the Penrith Sandstone Formation underlies the glacial soils. The Diamicton may be variably interspersed with the Glaciofluvial.

1.15 The scope of intrusive and non-intrusive works completed is detailed in Section 4.

1.16 An underground utility survey was undertaken at all intrusive exploratory hole locations in accordance with Category B of PAS:128:2022.

1.17 Intrusive works including boreholes, trial pits, windowless sampling and in-situ testing were undertaken. The exploratory hole locations are shown on the plans included in Appendix A, and the exploratory hole records are included in Appendix B respectively.

1.18 Records of field (in situ) and geohydraulic (permeability) tests completed are included in Appendices C and D respectively.

1.19 Details of field instrumentation installed such as standpipes, and monitoring records for that apparatus are included in Appendices E and F respectively.

1.20 Geotechnical and geoenvironmental testing of samples of soil and rock was undertaken; the results are included in Appendices G and H respectively.

1.21 Calibration certificates for the SPT hammers used for in-situ testing in the boreholes, and for the automated data loggers installed in standpipe are included in Appendix I.

1.22 The corresponding AGS data has been supplied separately. Non AGS digital data is included in Appendix J.

2 INTRODUCTION

2.1 Scope and Objective of the Report

A ground investigation was carried out by Structural Soils Limited (SSL) on the instructions of National Highways (the Employer), Keltbray Group Limited (the Employer's Delivery Integration Partner, DIP) and KJP (the Investigation Supervisor, a partnership between Keltbray Group Limited and Jacobs U.K. Limited).

National Highways are improving the A66 Northern Transpennine road between the M6 at Penrith and A1(M) at Scotch Corner by upgrading single carriageway sections of road to dual carriageway standard and making improvements to the junctions along the route.

A Phase 2 ground investigation to obtain additional information to enable detailed design of the scheme was completed, along with a separate overlapping investigation to obtain information for the design of a diversion of a United Utilities sewer.

The work has included geophysical, geological, geotechnical and geoenvironmental investigations including an intrusive investigation, laboratory testing and the preparation of this report which contains factual information only, comprising:

- A description of the site and the works carried out;
- Exploratory hole logs, in-situ and laboratory testing results;
- Groundwater monitoring results obtained during the fieldwork programme; a 12 month post fieldwork monitoring programme is planned;
- A presentation of all appropriate information including geological features and relevant data.

The ground investigation was carried out in accordance with the National Highways ground investigation framework specification, by the scheme-specific specification HE615323-JAC-HGT-03A_AL_SCHEM-SP-GI-000001 revision P02 dated 27/01/2023., both of which are based upon the UK Specification for Ground Investigation Second Edition (2012).

It was carried out in general accordance with the recommendations of BS 5930:2015+A1:2020 *Code of practice for ground investigations,* which maintains compliance with BS EN 1997-1 and 1997-2 and their related standards. Whilst every attempt is made to record full details of the strata encountered in the exploratory holes, techniques of hole formation and sampling will inevitably lead to disturbance, mixing or loss of material in some soils and rocks.

All information given in this report is based on the ground conditions encountered during the site work, and on the results of laboratory and field tests performed during the investigation. However, there may be conditions at the site that have not been taken into account, such as unpredictable soil strata, contaminant concentrations and water conditions between or below exploratory holes. It should be noted that groundwater levels, gas concentrations and gas flows usually vary due to seasonal, atmospheric and/or other effects and may at times differ to those measured during the investigation.

This report was prepared by Structural Soils Limited for the use of National Highways in response to particular instructions. Any other parties using the information contained in this report do so at their own risk and any duty of care to those parties is excluded.

A description of the site and the extent of the areas covered by Scheme 03A are given in Section 3.1 of this report, and a summary of the geological mapping in Section 3.2.

The scope of ground investigation works is detailed in Section 4 of this report, Fieldwork and Section 5, Laboratory Testing. Ground investigation records, plans and survey reports are appended. References to appended data quote the appendix in which it is contained, e.g. Appendix A.

2.2 Description of Project

National Highways are improving the A66 Northern Transpennine road between the M6 at Penrith and A1(M) at Scotch Corner.

The project will involve upgrading single carriageway sections of road to dual carriageway standard and making improvements to the junctions along the route.

Phase 1 ground investigations have been completed previously along or alongside sections of the road. The investigation detailed in this report forms part of a Phase 2 ground investigation the primary objective of which is to obtain sufficient additional information to inform detailed design of the scheme and fill in data gaps that exist due to site access restrictions during Phase 1.

The Phase 2 ground investigation was divided into a number of separate schemes managed by different DIP and Investigation Supervisors, with work on each scheme being carried out concurrently or sequentially and separate reports being produced by SSL for each scheme or grouping of schemes.

In addition, ground investigation was also required in the vicinity of the Kemplay Bank roundabout to support the design of the diversion of a United Utilities sewer.

Information on the different schemes is tabulated below. The sequencing of the schemes runs from Scheme 01 at the western end of the route to Scheme 09 at the eastern end. The relative position and extent of each scheme is shown on the Scheme Master Site Location Map in Appendix A.

The investigation locations for the United Utilities sewer overlapped some of those required for Scheme S02 and for logistical reasons the two investigations were carried out concurrently.

This report details the work carried out for Scheme 03A.

TABLE 1: SUMMARY OF PHASE 2 GROUND INVESTIGATION SCHEMES

Scheme	DIP	IS	Package	Name of Contract	SSL Report Number
UU Sewer	Not applicable	United Utilities	Not applicable	A66 Northern Trans-Pennine Project: Ground Investigation	765591-1

TABLE 1: SUMMARY OF PHASE 2 GROUND INVESTIGATION SCHEMES					
Scheme	**DIP**	**IS**	**Package**	**Name of Contract**	**SSL Report Number**
				– United Utilities Sewer Diversion	
S01	Kier	Kier Design Services	B21	A66 Northern Trans Pennine Scheme 1: M6 J40	765631-1
S02		Tony Gee		A66 Northern Trans Pennine Scheme 2: Kemplay Bank Roundabout (KBR)	765632-1
S03A	Keltbray	Jacobs	A10	A66 NTP Scheme 3A	765633-1
S03B	Balfour Beatty	Atkins	B19	A66 Northern Trans Pennine Schemes S03b and S0405	765634-1
S04					
S05					
S06	Kier	RPS	B21	A66 Northern Trans Pennine Scheme 6: Warcop	765636-1
S07	Costain	Jacobs	B20	A66 NTP Schemes 7, 8 and 9	765637
S08					
S09					

The scheme ground investigation technical specification describes the Scheme 03A project as follows:

Scheme 3A of the proposed alignment will closely follow the existing A66, with a new adjacent eastbound carriageway to the north. A new Brougham Accommodation overbridge, and Whinfell Park Accommodation underpass are proposed. Between the major structures there are two retaining walls proposed, one to protect the Countess Pillar to the south of the existing A66 and the other to protect an electricity pylon and a nearby proposed pipeline slab to the north of the existing A66. Along the route, there are two culverts, and four detention basins proposed with surrounding local roads, carparks, tracks, footpaths, and ditches. There are associated earthworks with all proposed works.

2.3 Preliminary Geotechnical Category

BS EN 1997-1 defines three different Geotechnical Categories that structures may fall into, which should normally be quoted in Ground Investigation Reports (GIR). For the package of works discussed in this report, the Investigation Supervisor has not specified

a Preliminary Geotechnical Category or Categories for the development in the ground investigation specification.

2.4 Other Relevant Information

2.4.1 Enterprises Undertaking the Works

The ground investigation was carried out by SSL using mainly directly employed staff. SSL are part of RSK Group Limited ('RSK'). The following RSK companies and third party subcontractors were employed by SSL to undertake elements of the works:

TABLE 2: SUBCONTRACTORS EMPLOYED BY SSL TO UNDERTAKE ELEMENTS OF THE GROUND INVESTIGATION	
Subcontractor Name	**Element of Work Undertaken**
RSK Group Companies	
ADAS	Ecological services including surveys of area requiring trackway and/or de-vegetation
Centara Limited	Surface geophysics (Utility PAS:128 level B, survey)
Central Alliance	Surface geophysics (Utility PAS:128 level B, survey)
Envirolab Limited	Chemical and geoenvironmental laboratory testing
Headland Archaeology	Archaeological watching brief
JB Drilling Limited	Additional drilling rig(s) to supplement SSL rigs
RSK SafeGround	Surface geophysics (Utility PAS:128 level B, survey)
RSK Habitat Management	Vegetation clearance
Streetwise	Traffic management
External Subcontractors	
AG Plant Hire Ltd	Plant and operators for machine excavated trial pits and general site logistics
Clay Drilling Limited	Additional drilling rig(s) to supplement SSL rigs
Derwentside Environmental Testing Services Limited (DETS)	Geotechnical laboratory chemical testing including organic matter content
Diamond Drilling Limited	Surface geophysics (Utility PAS:128 level B, survey)
Grassform Group	Trackway
Sunbelt	Trackway

Through the course of the works a number of self-employed or agency procured logging engineers, site supervisors, plant and general operatives were also employed.

All other elements of the ground investigation, including the primary supervision and direction of the works, the majority of the drilling, field and laboratory testing, and all geotechnical field monitoring works were undertaken by personnel directly employed by SSL.

3 SITE DESCRIPTION

3.1 Location and Topography

The Scheme 03A site comprises a roughly 2.5 km section of the A66 eastbound and westbound, its verges and adjoining land lying to the south-east of the town of Penrith in Cumbria. The junction of the M6 motorway and the A66 lies to the south of Penrith and Scheme 03A covers the section of the A66 that is about 1.3 km to 3.8 km east of this junction, the A66 being on a roughly east-west alignment.

The Scheme 03A site is of irregular shape, centred along the existing A66 and spanning up to about 400 m north and/or south it. The British National Grid Reference of the approximate centre of the site is 355000, 528960 (see Scheme 03A Site Location Map in Appendix A). The ground elevation at the ground investigation locations varies between around 109 m AOD and 129 m AOD, with, in very general terms, ground levels falling gently to the north and west along the section.

Scheme 03A commences from the west of the B6262 junction with the A66, approximately 100 m east of Brougham Castle Bridge. The approximate British National Grid Reference for the western end of the Scheme is 354060, 529080. Here Brougham Castle and Brovavum Roman Fort lie to the south of the A66, outside of the Scheme 03A boundary, and the A66 is bridged over the River Eamont. South of the A66 the river turns west, passing beneath Brougham Castle Bridge.

West of the existing A66, and crossing it, the course of a historic Roman Road runs from the village of Carleton to the north-west on a east-south-east alignment, crossing the A66 to meet the River Eamont near Brougham Castle Bridge (i.e. still beyond the Scheme 03A boundary).

Moving eastwards along the existing A66 alignment (and now within the Scheme 03A boundary), the Scheme 03A section is bounded mainly by fields and farmland, and as such encompasses local rural properties, roads, tracks both to the north and south. Notable features along the section include:

- *Roman Camp* (site of) mapped on north side of road at the A66 / B6262 junction; here the A66 is constructed in a cutting.
- East of the cutting and to the south of the A66 is a Schedule Ancient Monument, the *Countess Pillar*.
- Around 500 m east of the A66 / B6262 junction the Light Water runs from the south passing beneath the A66 at Lightwater Culvert and into River Eamont to the north.
- 500 m further east of this a second stream, ditch or channel runs north, from ponds to the south, beneath the A66 into the River Eamont,
- *Whinfell Forest*, a Centre Parcs holiday resort site on land to the south of the A66, around 2.8 km east of the B6262 junction.
- Around 100 m further east of this, a *Spring* is shown in land to the north of the A66, about 200 m north of the road close to a meander of the River Eamont.

The eastern end of Scheme 03A is approximately 500 m east of Whinfell Park. The approximate British National Grid Reference for the eastern end of the Scheme is 356550, 528880.

In the wider area the town of Penrith lies about 2 km to the north-west of the western end of the route. The River Eamont follows a meandering but generally east-north-east to west-south-west alignment, lying entirely north of the A66 along Scheme 03A, then crossing to the south of the A66 at Brougham Castle Bridge and continuing to the south of Penrith.

With regard to the wider A66 NTP scheme, the Scheme 03A site is bounded to the west by an existing dualled section of the A66 beyond which is the Scheme S02 site. It is directly bounded by the Scheme 03B site to the east.

3.2 Geology

Information on the geology of the site was obtained from the following sources published by the British Geological Survey (BGS):

- BGS map *Penrith – Drift* (sheet 24, scale 1:50,00, published 1974)
- BGS map *Penrith* – Solid (sheet 24, scale 1:50,000, published 1974)
- BGS map *Appleby – Solid and Drift* (sheet 30, scale 1:50,000 published 2004).
- BGS map *Appleby – Solid* (sheet 30, scale 1:50,000 published 2004).
- The BGS GeoIndex (onshore) digital geology map, which utilises the most up to date names for geological units. (https://www.bgs.ac.uk/map-viewers/geoindex-onshore/)
- The BGS Lexicon of Named Rock Units, which provides typical descriptions for most geological units (https://webapps.bgs.ac.uk/lexicon/).

The site is shown to be underlain by the following descending sequence of strata. Descriptions in italics are taken from the BGS Rock Lexicon:

TABLE 3: SUMMARY OF EXPECTED SITE GEOLOGY	
Geological Unit Name	**Description**
ANTHROPOGENIC GROUND	
Artificial Ground shown?	None mapped, but likely to be present around existing infrastructure
SUPERFICIAL DEPOSITS	
Alluvium	Mapped at three discrete locations: 1) at extreme western end of Scheme 03A around the River Eamont (may not encroach onto the site). 2) around 500 m east of the junction with the B6262 following the course of Light Water from the south passing beneath the A66 at

TABLE 3: SUMMARY OF EXPECTED SITE GEOLOGY	
Geological Unit Name	**Description**
	Lightwater Culvert and into River Eamont to the north. 3) around 200 m west of Whinfell Park following the course of a stream, ditch or channel that runs north, from ponds to the south, beneath the A66 into the River Eamont. *Normally soft to firm consolidated, compressible silty clay, but can contain layers of silt, sand, peat and basal gravel. A stronger, desiccated surface zone may be present.*
Alluvial Fan Deposits - Gravel	Mapped only around the River Eamont where a stream runs north into it, west of Whinfell Park. May possibly encroach onto the northern extent of the Scheme 03A site here. *Alluvial fan deposits are low, outspread, relatively flat to gently sloping masses of loose rock material, shaped like a fan or segment of a cone. They are deposited by streams at the mouths of tributary valleys onto a plain or broad valley. Synonym: alluvial cone.*
Glaciofluvial Deposits, Devensian – Sand and Gravel	Mapped as outcropping only directly to the north-east of Lightwater Culvert but may be present beneath the wider Alluvium Deposits here and/or interspersed with Diamicton elsewhere. *Sand and Gravel; Glaciofluvial deposits were deposited by meltwater streams. Includes mostly coarse-grained sediments (i.e. sand and gravel) with some finer-grained layers (i.e. clay and silt). Sand and gravel, locally with lenses of silt, clay or organic material.*
Till, Devensian - Diamicton	*Till is unsorted and unstratified drift, generally overconsolidated, deposited directly by and underneath a glacier without subsequent reworking by water from the glacier. It consists of a heterogenous mixture of clay, sand, gravel, and boulders varying widely in size and shape (diamicton).*
SOLID GEOLOGY	
Penrith Sandstone Formation	*Coarse-grained cross-bedded aeolian sandstone.*

TABLE 3: SUMMARY OF EXPECTED SITE GEOLOGY	
Geological Unit Name	**Description**
Stainmore Formation – Mudstone, Siltstone and Sandstone	*Cyclical repetition of sandstones, siltstones, mudstones, thin limestones and some coals.*

Note: Information obtained from BGS digital records © NERC.

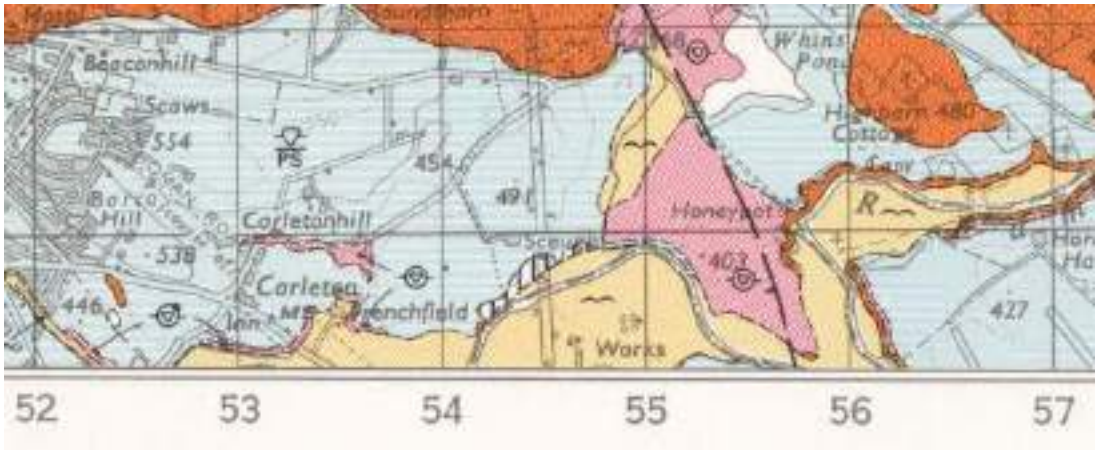
The BGS online maps portal provides access to scans of almost all maps produced by the BGS since 1932. Extracts of the most recent available scanned maps for the site are included in Plates 1 and 2 over the following pages. These use the nomenclature and mapped geological unit boundaries in use at the time of publication, whereas the BGS online digital map utilises the most up to date information.

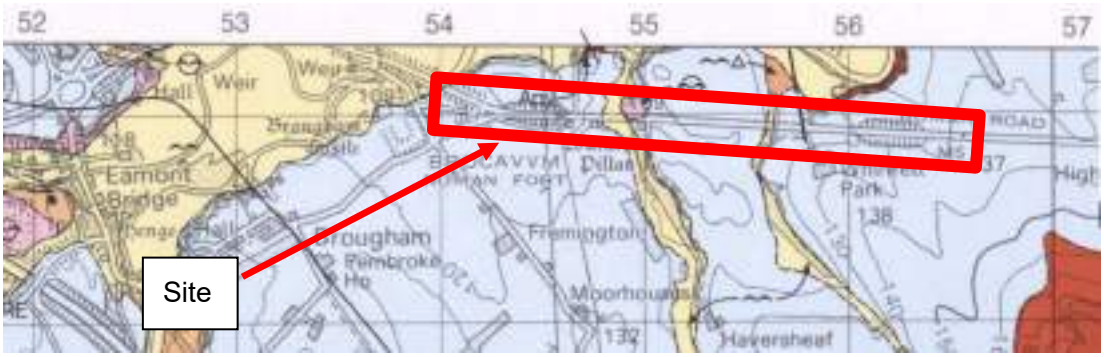
The BGS digital map shows the primary superficial deposits at the site to be glacial deposits of Diamicton which are mapped as outcropping on most of the Scheme 03A site, with the Glaciofluvial Deposits outcropping at only one location north-east of Lightwater Culvert. These two units might occur in variable sequences beneath the site.

The glacial deposits are overlain by recent Alluvium around two streams running between the land to the south, beneath the A66 and into the River Eamont to the north. Alluvial Fan Deposits are mapped where one of these meets the River Eamont, however this is close to or possibly beyond the northernmost limits of the Scheme 03A site. Alluvium is also mapped around the River Eamont where is passes beneath the A66 to the west of the Scheme 03A site, and these may encroach onto the westernmost parts of the site.

The maps show the bedrock below the superficial deposits beneath to be the Penrith Sandstone Formation. The older Stainmore Formation, on which the Penrith Sandstone rests unconformably is mapped as subcropping directly beneath the superficial deposits around 1 km west of the western end of the Scheme 03A site. One geological fault is mapped within the site limits, orientated north-north-west by south-south-east with the downthrow to the west, running northwards beneath the A66 from near Whinfell Park.

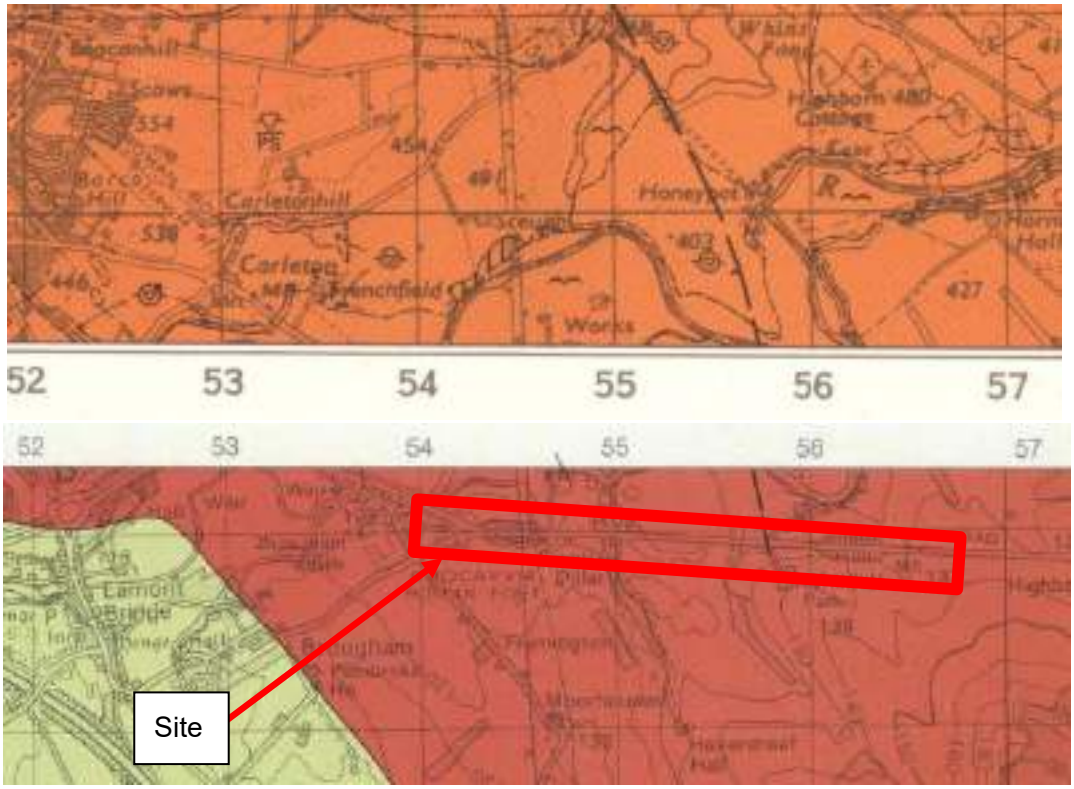
PLATE 1 – Extracts of BGS map Sheet 24 Penrith (Drift) 1:50,000 1974 (top and bottom left), and Sheet 30 Appleby (Solid and Drift) 1:50,000 2004 (middle and bottom right)

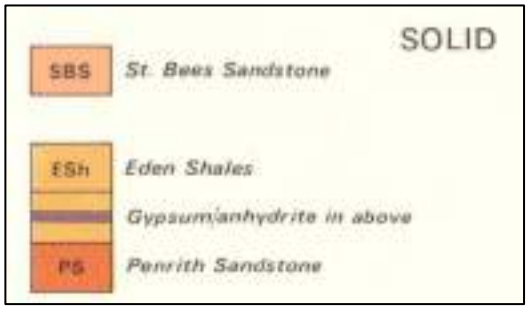




Note: Above images contain British Geological Survey materials ©NERC [2023].

PLATE 2 – Extracts of BGS map Sheet 24 Penrith (Solid) 1:50,000 1974 (top and bottom left), and Sheet 30 Appleby (Solid) 1:50,000 2004 (middle and bottom right)





Note: Above images contain British Geological Survey materials ©NERC [2023].

Within the accompanying AGS data the following Geology Codes (GEOL_GEOL), BGS Lexicon codes (GEOL_BGS) and abbreviation descriptions have been used.

TABLE 4: AGS GEOLOGY CODES			
GEOL_GEOL	**Full Description (ABBR_DESC)**	**GEOL_BGS**	**Full Description (ABBR_DESC)**
TS	Topsoil	SOIL	Soil
PEAT	Peat	PEAT	Peat
ALV	Alluvium	ALV	Alluvium
MGC	Made Ground - Cohesive	FILLU*	Made Ground
MGTR	Made Ground - Reworked Till	FILLU*	Made Ground
MGG	Made Ground - Granular	FILLU*	Made Ground
MGP	Made Ground - Pavement	FILLU*	Made Ground
GFD	Glaciofluvial Deposits	GFDUD	Glaciofluvial deposits, Devensian
GTC	Glacial Till - Cohesive	TILLD	Till,Devensian
GTL	Glacial Till - Laminated (Cohesive)	TILLD	Till,Devensian
GTG	Glacial Till - Granular	TILLD	Till,Devensian
WPS	Weathered Penrith Sandstone	PS	Penrith Sandstone Formation
PS	Penrith Sandstone	PS	Penrith Sandstone Formation
* Note: GEOL_BGS abbreviation codes marked with an asterisk do not appear on the BGS Lexicon of Named Rock Units and are custom codes instructed to be used on this project.			

The term ‘Cohesive’, where quoted above, applies to fine soils for which the primary soil fraction is described as either clay or silt based on field observations of behaviour. The term ‘Granular’, where quoted above applies to coarse or very coarse soils for which the primary soil fraction is either sand, gravel, cobbles or boulders. This is consistent with the engineering classification of soils as defined in BS EN ISO 14688-1 and -2 but differs from the way in which these terms are used in UK earthworks practice where *cohesive fill* has a fines content of >15% and *granular fill* a fines content of 15% or less. Further commentary on the determination of primary soil fraction is given in Section 4.3.5 of this report.

No Second Geology Code (GEOL_GEO2) or Geological formation (GEOL_FORM) schemes have been specified for this project and these headings are therefore not populated within the AGS data. Where no material was recovered from the borehole and no drillers' description is available, no GEOL_GEOL code has been assigned.

3.1 History of Site and Surrounding Area

A desk study to identify historical usage of the site did not form part of the scope of works completed by SSL, and the history of the site is not known.

4 FIELDWORK

4.1 Scope of Works

The intrusive ground investigation works detailed in this report were completed by SSL between 2 March and 5 June 2023. Non-intrusive geophysical utility mapping was also carried out (see Section 4.2, below).

The scope of works and positions were selected by the Investigation Supervisor. The exploratory hole and field (in situ) test locations are shown on the Exploratory Hole Location Plan presented in Appendix A.

The results of groundwater monitoring undertaken both during the fieldwork are included in this report. A 12 month programme of post fieldwork monitoring is underway, the results of which will be supplied separately as that work proceeds. This report contains records of groundwater monitoring completed up to 9 July 2023.

Intrusive works including boreholes, trial pits, windowless sampling and field (in-situ) testing were undertaken at locations shown on the Exploratory Hole Location Plans in Appendix A. The hole naming abbreviations and the number of intrusive holes and field tests included in this report are quoted in Tables 5, 6 and 7 below.

TABLE 5: EXPLANATION OF BOREHOLE ABBREVIATIONS	
Abbreviation	**Explanation**
BH	Denotes a borehole drilled, or originally planned to be drilled using cable percussion and/or rotary drilling techniques.
GS	Denotes a borehole drilled, or originally planned to be drilled using rotary wireline coring techniques and Geobor-S coring equipment.
HDP	Hand dug trial pit
TP	Machine excavated trial pit.
WS	A dynamic percussive windowless sample borehole.
Suffix A, B	A suffix added to the name of an intrusive exploratory hole to indicate an additional hole completed adjacent to another position where a position needed to be relocated or repeated.

Temporary trackway was installed to provide access to exploratory hole locations where necessary to provide safe access or for other reasons such as to protect the ground surface. Vegetation clearance was undertaken at some locations to clear access or working areas. Ecological site inspections were completed prior to vegetation clearance or the installation of trackway. Specialist archaeologists also maintained a watching brief during drilling or excavation at locations specified by them as requiring one.

The exploratory holes completed are listed in the following table:

TABLE 6: SCOPE OF INTRUSIVE WORKS			
Quantity	**Exploratory Hole Type**	**Maximum depth (m)**	**Hole / Test Numbers**
32	Cable Percussion Boreholes (8 of which were extended by rotary drilling)*.	15.00 (15.80)*	**BH-PTS** 100, 101, 102, 102A, 104, 106, 107, 107A, 107B, 108, 111, 112, 114-118, 118A, 118B, 119, 120, 120A, 121, 121A, 122, 123, 124, 126, 126A, 127, 128, 128A, 129 Boreholes extended by rotary drilling*: 107B, 114, 116, 117, 118B, 123, 126, 129
5	Rotary wireline cored borehole (GS)	20.50	**GS-PTS** 102, 105, 107, 108A, 109
6	Hand dug trial pit (HDP)	1.20	**HDP** 001-006
26	Machine excavated trial pit.	4.10	**TP-PTS** 205-215, 217, 220, 221, 233-LC, 224, 225, 226, 228-236
20	Dynamic percussive windowless sample borehole.	6.00	**WS-PTS** 101, 105, 107, 107A, 107B, 108, 110, 113, 114, 116, 116A, 117, 117A, 119, 120, 127, 127A, 129, 130 Also BH-PTS113

A full summary of the intrusive exploratory holes, including their nomenclature is given in the Summary Table of Ground Levels and Exploratory Hole Coordinates in Appendix A.

The exploratory hole logs are presented in Appendix B. These provide information including the equipment and methods used, samples taken, tests carried out, water observations and descriptions of the strata encountered. Explanation of the terms and abbreviations used on the logs is given in the Key to Exploratory Hole Records in Appendix B, together with other explanatory information.

Features of the drilling which are of particular note are summarised below:

- Cable percussion borehole BH-PTS102 halted at 1.60 m depth due to casing pushing or being deflected by cobbles. The hole was re-drilled alongside as BH-PTS102A.
- The inspection pit for BH-PTS104 was halted at 0.80 m on cobbles of crystalline igneous rock which had appeared to have been intentionally laid and which might be indicative of a former Roman road or courtyard. Due to the restrictions of the archaeological permit for this hole, no alternative borehole was completed here as a result.
- BH-PTS107 was terminated at 2.45 m depth following completion of a SPT test after a drain was struck at 2.00 m. An alternative, BH-PTS107A, was attempted alongside but the inspection pit was terminated on an obstruction at 0.70 m depth. A second alternative BH-PTS107B was successfully completed nearby.
- In BH-PTS107B clay pipe fragments were logged as being recovered in samples between 1.40 m and 3.20 m depth. It is unclear whether these were in-situ in reworked ground or had been mixed in from above, therefore this unit has been classified as Possible MADE GROUND on the borehole log.
- Cable percussion borehole BH-PTS118 was terminated on an unidentified obstruction at 1.56 m depth. A replacement was drilled to 6.30 m depth alongside as BH-PTS118A, meeting refusal on cobbles and boulders. A second replacement BH-PTS118B was drilled nearby, successfully reached sandstone bedrock at 7.20 m depth, and was then extended by rotary coring.
- Cable percussion borehole BH-PTS120 was terminated on an unidentified obstruction at 2.00 m depth that caused the borehole casing to deflect from the vertical. A replacement borehole BH-PTS120A was completed successfully alongside.
- Cable percussion borehole BH-PTS121 was terminated on an unidentified obstruction at 2.30 m depth, probably a cobble or boulder. A replacement borehole BH-PTS121A was completed successfully alongside.
- The inspection pit for BH-PTS126 was initially halted at 0.40 m depth after detection of a possible electrical power signature using a cable avoidance tool. The same signal was detected in a second inspection pit nearby (BH-PTS126A). After further surveying using ground penetrating radar it was concluded that no cable was present, the original pit was extended to 1.20 m depth and the subsequent borehole completed successfully.
- Cable percussion borehole BH-PTS128 was terminated on a probable boulder at 1.50 m depth. A replacement borehole BH-PTS128A was completed successfully alongside.
- The inspection pit for borehole GS-PT108 was terminated at 1.10 m depth following detection of a possible buried utility beneath using a cable avoidance tool in radio mode. The borehole was relocated nearby as GS-PT108A.
- Window sample borehole WS-PTS107 was terminated on an unidentified obstruction at 2.30 m depth, probably a cobble or boulder. A replacement borehole WS-PTS107A was completed alongside reaching 4.38m depth.

- Window sample boreholes WS-PTS107B, WS-PTS116A, WS-PTS117A and WS-PTS127A were drilled adjacent to the original locations to obtain duplicate samples for geoarchaeological assessment due to the original boreholes not having been inspected in error.

The field tests completed are listed in the following table. The test methods used are detailed on the test result sheets included in Appendix C, unless otherwise noted:

TABLE 7:SCOPE OF FIELD (IN-SITU) TESTING		
Quantity	**In-situ Test**	**Remarks**
282	Standard Penetration Tests (SPT).	Carried out in boreholes; test results included on exploratory hole logs presented in Appendix B. Calibration certificates for apparatus used included in Appendix I.
7	Hand Vane (HV).	Test results included on exploratory hole logs presented in Appendix B.
24	Light Weight Deflectometer (LWD) tests.	Test results included in Appendix C.
2	Variable Head Permeability Test in borehole.	Tests carried out in: BH-PTS102A (2 tests)
9	Variable Head Permeability Test in borehole standpipe.	Tests carried out in: BH-PTS112 (3 tests) BH-PTS115 (3 tests) BH-PTS120A (3 tests)

4.2 Non-Intrusive Surveys

4.2.1 Land Based (Non-Intrusive) Geophysical Mapping

An underground utility survey was undertaken at all intrusive exploratory hole locations in accordance with Category B of PAS:128:2022 *Underground utility detection, verification and location – Specification.*

A desk top review of utility information, liaison with utility providers and site reconnaissance was completed. At each intrusive investigation location an underground utility survey was undertaken in accordance with Category B of PAS:128:2022 *Underground utility detection, verification and location – Specification*

The utility survey was completed using electromagnetic (cable avoidance tool and signal generator) and ground penetrating radar (GPR) techniques. At borehole and field test

location a minimum area of 25 m^2 centred at the location was surveyed, and at trial pit locations a minimum area of 49 m^2.

A separate, single report containing the PAS 128 survey results for all of the Phase 2 ground investigation packages listed in Table 1 of this report is to be issued; no PAS 128 survey results are therefore contained in this report.

4.3 Intrusive Exploratory Holes

4.3.1 General

The scope of intrusive investigation, sampling and in-situ testing details were specified by the Investigation Supervisor. The positions were selected by the Investigation Supervisor, set out by SSL in conjunction with Keltbray and adjusted where necessary to take account of buried or overhead services, or other restrictions such as unstable ground or hedgerows. Inspection pits were hand dug at all intrusive exploratory locations.

The Investigation Supervisor classified all parts of the site as either Green or Yellow with respect to potential contaminative land issues in accordance with the British Drilling Association *Guidance for Safe Intrusive Activities on Contaminated or Potentially Contaminated Land* (2008).

A survey of the as-built intrusive investigation locations was undertaken using specialist Global Positioning System (GPS) equipment, which generally comprised either Geomax Zenith 16/40 GNSS or Leica SmartRover apparatus.

The coordinates of each intrusive investigation location were measured relative to British National Grid, and the level relative to Ordnance Datum. These are shown on the exploratory hole logs, which have been printed with a reduced level column, and on the field test results. This information is also tabulated in the Summary Table of Ground Levels and Co-ordinates at Exploratory Hole Locations in Appendix A.

Details of the method of intrusive hole formation including hole diameters or sizes, drilling flush used, sampling and testing, groundwater observations and backfill or instrument installation details are given on the exploratory hole logs.

The driller's field borehole logs are included in Appendix B. Trial pit, window sample, sonic or core sample photographs, as appropriate, are included with logs and digital versions of the photographs in JPEG format are included in Appendix J. No photographs are available for trial pits TP-PTS215, TP-PTS221, TP-PTS224, TP-PTS226 and TP-PTS231 due to a fault or error with the digital device(s) which the photographs were captured on.

Photographs of the inspection pits completed at the borehole and window sample locations are included in Appendix J in digital JPEG format only within a separate subfolder for each location.. Pre-commencement and post completion photographs and/or of the excavated spoil from the pits are also included where available. No inspection pit photographs are available for a small number of locations and for these a digital text file noting this has been placed in the relevant subfolder.

4.3.2 Geotechnical Sampling

Geotechnical samples were taken from the exploratory holes in accordance with BS EN ISO 22475-1:2021. The samples taken are shown on the exploratory hole logs. The different sample types are detailed on the Key to Exploratory Hole Logs in Appendix B.

Where possible a minimum 20 kg of soil was taken for bulk soil samples (B), which were taken in two bags each not exceeding 15 kg. It was not always possible to collect 20 kg of soil, for example where the sample was taken over the depth range of a SPT test, where a new soil boundary was reached during sampling, or where there was insufficient material recovery from the borehole. Similarly, where possible a minimum 30 kg of soil was taken for large bulk samples (LB), which were typically taken in 3 or more bags each not exceeding 15 kg.

4.3.3 Geoenvironmental Sampling

Soil samples for geoenvironmental testing were taken from exploratory holes where specified by the Investigation Supervisor, and where unexpected contamination or potential contamination was encountered. These geoenvironmental soil samples (ES) were numbered in each hole using the sample numbers 101 upwards ('100 series ES samples').

The samples were placed in appropriate contamination sample containers that were supplied by the laboratory. Containers for volatiles testing of soil samples were filled to capacity. All samples were then kept in cool boxes with ice packs and were transported to the laboratories under Chain of Custody documentation, as promptly as possible to maintain sample integrity.

4.3.4 Samples Hazard Assessment for the Protection of Geotechnical Laboratory Personnel

The risk posed by each soil, rock and water sample to geotechnical laboratory personnel by actual or potential contaminants such as asbestos was assessed. Geotechnical laboratory personnel are at particular risk from contaminants in samples as many geotechnical tests require the drying and crushing or compacting of samples in relatively confined spaces.

Each sample was assigned a 'hazard code' of either Low (L), Medium (M), High (H) or Super High (SH) which dictated the hazard control measures subsequently applied to the geotechnical testing of each sample. The assessment was based on the nature of the sample, e.g. made ground or natural ground, the current and, where known, historical uses of the site. The general definitions of each hazard code and the control measures applied are summarised below:

TABLE 8: SAMPLE HAZARDS CODES		
Hazard Code	**Sample Description**	**Laboratory Action**
L = (LOW)	**Natural ground:**	Proceed with scheduled tests.
	1. No Asbestos Containing Material (ACM) observed (and not expected as ground is unworked/natural).	
	2. No other significant contamination known or suspected.	
M = (MEDIUM)	**Made ground or possible made ground**	Proceed with scheduled tests with caution
	(including reworked natural ground or samples containing man made material).	
	1. No ACM observed.	
	2. ACM not expected to be present based on site usage/history.	
	3. No other significant contamination known or suspected.	
H = HIGH	**Any ground**	Where a sample has been identified as High Risk (H) due to potential presence of asbestos, testing will be completed by a specialist subcontract laboratory at additional cost.
	1. Man made material observed in samples **and** ACM **may** be present based on site usage/history.	
	2. Recycled crushed aggregate materials (please provide copy of asbestos screen/other test results as required by WRAP/site permits)	Where a sample has been classed as High (H) risk for other reasons, the laboratory MAY request further information. A risk assessment will be undertaken. Testing will be either be completed by SSL, or at a specialist subcontract laboratory (at additional cost) where safe to do so, otherwise the test will be cancelled.
	3. Demolition rubble, or soil containing demolition rubble.	
	4. Significant contamination or other hazards suspected but not proven	
SH = (SUPER HIGH)	**Any ground**	Where a sample has been identified as Super High (SH) risk due to presence of asbestos, testing will be completed by a specialist subcontract laboratory at additional cost.
	1. ACM or other contamination observed or known to be present in sample.	
	2. Samples from landfill; unlicensed, licensed for ACM, or pre-1974.	Where a sample has been classed as Super High (SH) risk for other reasons, the laboratory MAY request further information. A risk assessment will be undertaken. Testing will be completed at a specialist subcontract laboratory (at additional cost) where safe to do so, otherwise the test will be cancelled.
	3. Natural ground where other significant contamination known to be present:	

The hazard codes are not presented on the Exploratory Hole Logs but are included in the accompanying AGS data.

Envirolab, the geoenvironmental testing laboratory used operates their own internal risk management systems.

4.3.5 Soil and Rock Core Logging

The exploratory holes were logged by ground engineers in accordance with BS 5930:2015+A1:2020 (which incorporates the requirements of BS EN ISO 14688-1:2018, 14688-2:2018 and 14689:2018).

Detailed descriptions, together with relevant comments, are given in the logs included in Appendix B (B02). Secondary constituents (in soil descriptions) are listed in accordance with BS 5930:2015+A1:2020, in increasing proportion where both secondary fractions are coarse, and coarse then fine where there is one of each type.

Field soil and rock descriptions were compared against laboratory test results and amended where appropriate, for example using grading, plasticity or strength related test results. Where particle size distribution (PSD) analysis results show cobble size fractions to be present in finer soils this has been taken into account when assessing the relative proportions of the primary and secondary soil fractions. (For example, in a soil where the PSD result shows 32% fines, 24% sand, 24% gravel and 20% cobbles by mass, when the cobble fraction is set aside in the descriptive process the relative proportions of the finer fractions become 40%, 30% and 30%).

As per the requirements of BS EN ISO 14688-1:2018 and BS 5930:2015+A1:2020 the observed engineering behaviour of the soil has been used to determine whether it is described as a fine soil (primary fraction clay or silt), coarse soil (primary fraction sand or gravel) or very coarse soil (primary fraction cobbles or boulders). In the UK the boundary between fine soil and coarse soil behaviour typically occurs at around a fines content of 35%, i.e. fine soil behaviour is typically observed at 35% fines content or greater and coarse behaviour at <35% fines. However the 35% value is not a fixed boundary and glacial deposits in particular may behave as a fine soil at significantly less than 35% fines content.

When adjusting soil descriptions using particle size analysis test results the original logged field behaviour and other laboratory test results such as plasticity test results have been taken into consideration. Consequently some soils which showed <35% fines are described as fine soils based on the observed field behaviour.

Detailed discontinuity logging was undertaken on the core samples obtained using rotary coring methods in rock. For each discontinuity its type, depth, dip relative to the core axis, roughness aperture and details of any infilling, alteration or other relevant details were recorded. For drilling induced fractures depths were recorded but no further description made.

For joints the Joint Roughness Coefficient (JRC) was recorded by comparison to the ten standard profiles published in Barton and Choubey (see References). The discontinuity descriptions are presented in tabular form and are appended to the relevant borehole logs.

4.4 In-Situ Testing

4.4.1 Standard Penetration Tests (SPT)

Standard Penetration Tests (SPT) were carried out in most boreholes. The tests were carried out in accordance with BS EN ISO 22476-3:2005+A1:2011 using hammers which had been calibrated for efficiency. The calibration certificates are included in Appendix I.

Seating drives have been recorded in increments of 75 mm in accordance with recommended UK practice. Test drives were generally terminated at 50 blows where 300 mm penetration was not achieved

The SPT N-values are reported on the exploratory hole logs, on which the calibration number of the hammers used is recorded. The full results are presented in tabular format on the Summary of Standard Penetration Tests record provided in Appendix C, together with a graphical plot of SPT N-value versus depth for each location which forms part of the test report required by BS EN ISO 22476-3:2005+A1:2011.

4.4.2 Hand Vane Tests

Hand vane tests were carried out in hand dug inspection pits and in trial pits on excavated material as sets of three tests. The peak shear strength was recorded in all cases, and also the remoulded shear strength in most cases. The test results are reported on the relevant logs.

All hand vane tests were completed using Geonor H60 vane tester apparatus which reports a direct measurement of undrained shear strength based on the mathematical relationship between the applied torque and the cross-sectional area of the soil surface sheared in the test (as opposed to the *alternate* type also in use in the UK whereby the reported measurement is based upon an empirical relationship derived from laboratory triaxial tests on remoulded samples of clay).

4.4.3 Light Weight Deflectometer (LWD) tests

The LWD tests were completed using equipment conforming to ASTM 2583 and CD 225, in accordance with the Road and Transportation Association (FGSV), Working Group Earthworks and Foundations, Technical testing regulations for soil and rock in road construction TP BF Stb Part B 8.3 *Dynamic Plate Load Testing with the Light Drop-Weight Tester* (2012, translation 2018).

The test results are presented in tabular format in Appendix C, on which the dynamic modulus of deformation (E_{vd}) and corresponding static in-situ subgrade surface modulus E_{V2}) together with the approximate California Bearing Ratio (CBR) are reported.

The LWD tests were undertaken beneath the topsoil, where present, and at depth of 0.50 m.

The test results are presented in Appendix C.

4.4.4 Geohydraulic Testing

4.4.4.1 Variable Head Permeability Tests: Boreholes and Standpipes

Variable head permeability testing was completed in borehole BH-PTS102A during drilling and in the standpipes installed in boreholes BH-PTS112, BH-PTS115 and BH-PTS120A, all in accordance with BS EN ISO 22282-2:2012.

A calculation of permeability does not form part of the test report detailed in this standard, however permeability values have been calculated using either the Velocity Graph or Hvorslev methods detailed in the informative Annex B of the standard, where possible. The test results are presented in Appendix D.

No calculation of permeability has been made where the conditions did not meet the requirements of BS EN ISO 22282-2:2012, for example where the standing water level within a standpipe was within the test section (22282-2 requires that either the test section be fully saturated or that it be fully dry and pre-saturated prior to testing).

4.5 Monitoring Wells, Geotechnical Instruments and Backfill

On completion single 50 mm (internal) diameter standpipes were installed in 20 boreholes.

Water level data loggers, commonly known as 'divers' were then installed in 14 standpipes on completion of the fieldworks. One barometric data logger was also installed within the headworks of Borehole BH-PTS120A.

The data loggers were set to take readings at 15 minute intervals, and the devices used were In-Situ Inc. Rugged TROLL 100 water level data loggers and a BaroTROLL barometric data logger. The calibration certificates for the water level data loggers are included in Appendix I.

Monitoring of these instruments was undertaken as part of the post fieldwork Long Term Monitoring (see Section 4.6.5 of this report). Details such as the locations at which the data loggers were installed and the period for which data was obtained are tabulated in Appendix F.

The design of all monitoring instruments was specified by the Investigation Supervisor. All standpipes were fitted with protective covers set flush with, or upstanding above ground level as instructed and marked with either a protective fence or single marker post. The standpipe details are shown on the relevant exploratory hole logs in Appendix B, and in the Standpipe Summary Table in Appendix E.

On completion the remaining boreholes were backfilled with bentonite-cement grout or bentonite cement pellets as shown on the logs.

The trial pits were backfilled with arisings, compacted in layers by the excavator bucket. Inspection pits for boreholes were backfilled with arisings compacted in layers with hand tools.

4.5.1 Standpipe Development

13 standpipes were developed during the fieldwork by pumping until either 3 well volumes had been removed or the well ran dry. Water quality parameters (pH, conductivity and temperature, and sometimes also dissolved oxygen and redox potential) were measured at nominal 3 minute intervals during development. 5 standpipes could not be developed as they were dry or the standing water level was too low. 2 standpipes BH-PTS106 and BH-PTS108 were not developed in error.

The measurements and observations made during standpipe development are reported with the field groundwater monitoring results in Appendix F.

4.6 Fieldwork and Post Fieldwork Monitoring

4.6.1 General

For descriptive purposes the Fieldwork period concluded on 5 June 2023 with the completion of the final intrusive exploratory hole, and monitoring works completed after this date are generally referred to as Post Fieldwork Monitoring.

A 12 month post fieldwork monitoring programme of groundwater monitoring instruments is planned. This report contains the results of monitoring completed up to and including 23 August 2023.

4.6.2 Manual Water Level Measurements

Groundwater levels in the standpipes, and the standpipes base depths were generally recorded shortly after completion of the installation, then three more times at nominal weekly intervals during the fieldwork and, for those standpipes installed later, into the post fieldwork monitoring period. and then at monthly intervals during the fieldwork. However the number and frequency of visits varied due to factors such as programme restrictions. Measurements were made manually using a dipmeter on each monitoring visit.

The measurements are presented in tabular format in the In-Situ Water Monitoring Results in Appendix F.

The standpipe monitoring rounds completed for which the results are included in this report are designated as monitoring round numbers 1 to 19; an additional monitoring visit was also made to 2 locations between rounds 18 and 19 and this visit has been classed as round 18.1.

4.6.3 Groundwater Sampling

No groundwater sampling has been requested or undertaken at this time.

4.6.4 Water Level Data Loggers

The water level data loggers were downloaded on each post fieldwork monitoring visit.

The recorded data was barometrically corrected to adjust the data for atmospheric pressure fluctuations using data from the barometric data logger, ‘step corrected’ using the corresponding manual water level measurements, and adjusted for any instances where a data logger was removed from the standpipe and not reinserted to the exact same depth. As noted on the results, occasional ‘blips’ occur in the data occur where a data logger took a scheduled measurement whilst it had been removed from a standpipe for download or water sampling.

Notes are included on the plots of data logger measured water level to explain features of the data where appropriate, such as if/where the manually measured water level deviated from the water level indicated by the data logger by more than 100 mm.

The groundwater levels and corresponding barometric pressures are presented graphically in Appendix F. The non-AGS digital data obtained from the water level and barometric data loggers is included in Appendix J as follows:

- the raw field (uncorrected water level and barometric data logger) data is provided in .wsl and .csv format
- the barometrically corrected field water level data logger data is provided in .csv format
- the full processed (barometrically and step corrected) numerical results for the data loggers, which include groundwater temperature are included in .xlsx format.

The .wsl format files are compatible with the In-Situ Inc. Win-Situ 5 and BaroMerge software. Water level data logger measurements are not included within the accompanying AGS data at this time (due to the volume of data produced by instruments over a one year monitoring period such data sets are not commonly transmitted using the AGS data format).

5 LABORATORY TESTING

Samples for potential geotechnical testing were returned to one of the Company's UKAS accredited laboratories, and those for potential contamination testing were sent to a sister company in the RSK Group, Envirolab Limited, a MCERTS and UKAS accredited chemical testing laboratory.

5.1 Geotechnical Laboratory Testing

Geotechnical laboratory testing was generally carried out in accordance with the relevant parts of:

- BS EN ISO 17892:2014-2022 Parts 1-12, *Geotechnical investigation and testing – Laboratory testing of soil*,
- BS 1377:2016-2022 Parts 1-3, *Methods of test for soils for civil engineering purposes* (for test methods not covered in BS EN ISO 17892),
- BS 1377:1990 Parts 1-8, *Methods of test for soils for civil engineering purposes* (for tests carried out to older legacy methods),
- International Society for Rock Mechanics and Rock Engineering (ISRM) *Suggested Methods for Rock Characterization, Testing and Monitoring*, 1974-2006, 2007-2014 and 2015+
- BRE Special Digest 1:2005 (SD1) *Concrete in aggressive ground. Assessing the aggressive chemical environment*. Third edition.

Table 9 on the following pages summarises the number of each type of geotechnical laboratory test completed and included in this report.

The test results are reported in tabular and/or graphical form and included as Appendix G of this report. Where non-standard procedures have been undertaken, this is recorded on the report sheet.

The Investigation Supervisor completed a separate laboratory test schedule for each location, and for boreholes that were extended into rock by rotary coring, a second test schedule for the rock elements.

TABLE 9: SUMMARY OF GEOTECHNICAL LABORATORY TESTING			
Number of tests completed	**Test Reference Number**	**Test**	**Notes**
Classification Tests			
184	K1.1	Water content	150 tests completed as part of Item K1.2 (see below) and are reported with the results for that item; 34 standalone tests completed and reported in the Summary of Water Content Tests.
150	K1.2	Liquid limit, plastic limit and plasticity index.	
261	K1.9	Particle size distribution by wet sieving	
178	K1.11	Sedimentation by pipette	
Chemical and Electrochemical			
20	K2.1	Organic matter content*	Tests completed by DETS
25	K2.2	Mass loss on ignition*	Tests completed by DETS
14	K2.8	Water soluble chloride content*	11 tests completed by DETS, 3 by Envirolab
1	K2/9	Acid soluble sulphate content*	1 test completed by DETS.
17	K1.13	Soil electrical resistivity	Tested completed by SSL
12	K1.14	Redox potential*	Tests completed by Envirolab
* Test results reported together with the Groundwater/groundwater aggressivity results.			
Compaction Related			
122	K3.1	Dry density/moisture content relationship using 2.5 kg rammer	35 tests completed in CBR mould
15	K3.2	Dry density/moisture content relationship using 4.5 kg rammer	8 tests completed in CBR mould
16	K3.7	Moisture Condition Value/moisture content relationship	
15	K3.9	California Bearing Ratio on recompacted disturbed sample	
1	K03.10	California Bearing Ratio on recompacted disturbed sample plus soaking	
Compressibility, permeability, durability			
4	K4.1	One-dimensional consolidation properties, test period 5 days	
Consolidation and permeability in hydraulic cell			
No tests of this type scheduled.			

TABLE 9: SUMMARY OF GEOTECHNICAL LABORATORY TESTING			
Number of tests completed	**Test Reference Number**	**Test**	**Notes**
Shear strength (total stress)			
34	K6.4	Shear strength of a set of three 60 mm x 60 mm square specimens by direct shear, test duration not exceeding 1 day per specimen	
15	K6.6	Shear strength of a single 300 mm x 300 mm square specimens by direct shear, test duration not exceeding 1 day	3 specimens from each of 5 samples tested.
Shear Strength (effective stress)			
4	K7.2	Consolidated undrained triaxial compression test with measurement of pore pressure using 100mm specimens, single or multi-stage	
2	K8.1	Natural water content of rock sample	
4	K8.14	Uniaxial compressive strength	
6	K8.15	Deformability in uniaxial compression	
78	K8.22	Measurement of point load strength index of irregular rock specimen	66 specimens tested; 2 determinations completed on 12 specimens
Ground/groundwater aggressivity			
3	K9.1	Suite A (Greenfield site – pyrite absent Schedule 1.19.6)	2 tests completed by DETS, 1 by Envirolab.
77	K9.2	Suite B (Greenfield site – pyrite present Schedule 1.19.6)	51 tests completed by DETS, 26 by Envirolab.
Miscellaneous Testing			
1	Not provided	Thermal resistivity of soil	

5.2 Contamination Laboratory Testing

The number of tests completed are summarised below. The results are reported in tabular graphical form, include details of the test method, and are included as Appendix H of this report. The test results are presented 'per batch', as received by the laboratory.

TABLE 10: SUMMARY OF CONTAMINATION LABORATORY TESTING			
Number of tests	**Test Reference Number**	**Description**	**Notes**
71	L1.1	Suite E (Soil samples Schedule S1.20.3) as modified in Schedule 4 of the Specification including TPH CWG, Phenol (monohydric) and asbestos quantification where asbestos is identified Other Suite E determinands are Arsenic, Boron, Cadmium, Chromium (total) Copper, Lead, Mercury, Nickel, Zinc, pH, Water soluble sulphate (as SO_4), Organic matter, Speciated polyaromatic hydrocarbons (USEPA 16), Cyanide (total)).	
6	L1.2.5	Volatile organic compounds (VOC).	
5	L1.2.6	Semi volatile organic compounds (SVOC).	
1	Not provided	Total petroleum hydrocarbons (TPH) with ID.	
13	Not provided	Leachate preparation BS EN 12457-1 (2:1)	
13	Not provided	Leachable metals. Arsenic, Boron, Cadmium, Chromium (total) Copper, Lead, Mercury, Nickel, Zinc,	
13	Not provided	Phenol (Monohydric) leachable	
13	Not provided	Cyanide (total) leachable	

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6.20 Barton, N. and Choubey, V. (1977) *The Shear Strength of Rock and Rock Joints in Theory and Practice*. Rock Mechanics, 10, 1-54.

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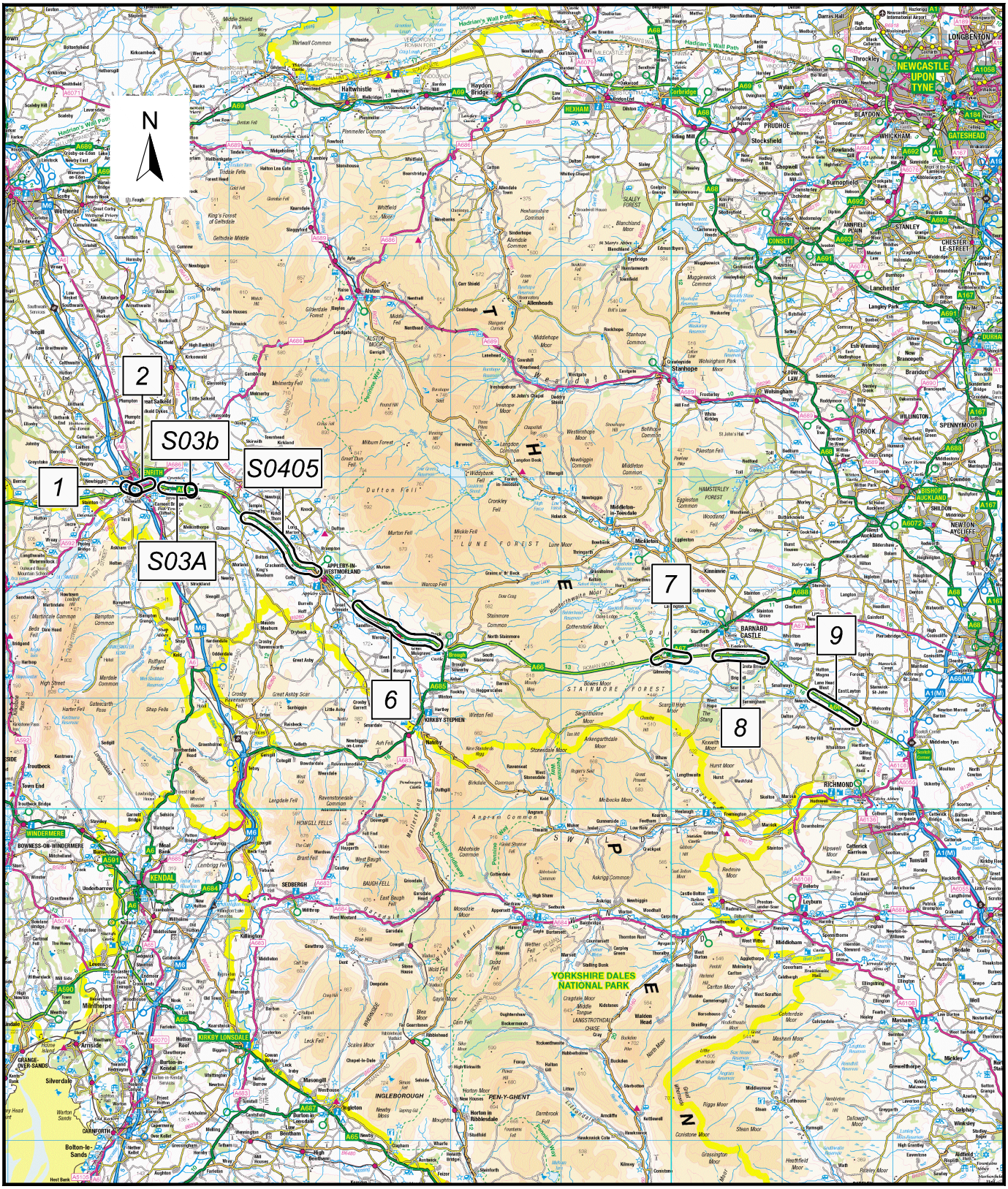
APPENDIX A -
PLANS AND DRAWINGS

(A01) Scheme Master Site Location Map

(A02) Scheme 03A Site Location Map

(A03) Exploratory Hole Location Plan

(A04) Ground Levels and Coordinates at Exploratory Hole Locations



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DIMENSION	SCALE	DRAWING STATUS
m	1:500,000	-

CLIENT: NATIONAL HIGHWAYS

PROJECT: A66 NORTHERN TRANS PENNINE SCHEME

TITLE: SITE LOCATION MAP

JOB NO	GRID REF MAP CENTRE	SCALE BAR	ORIGIN SIZE	FIGURE
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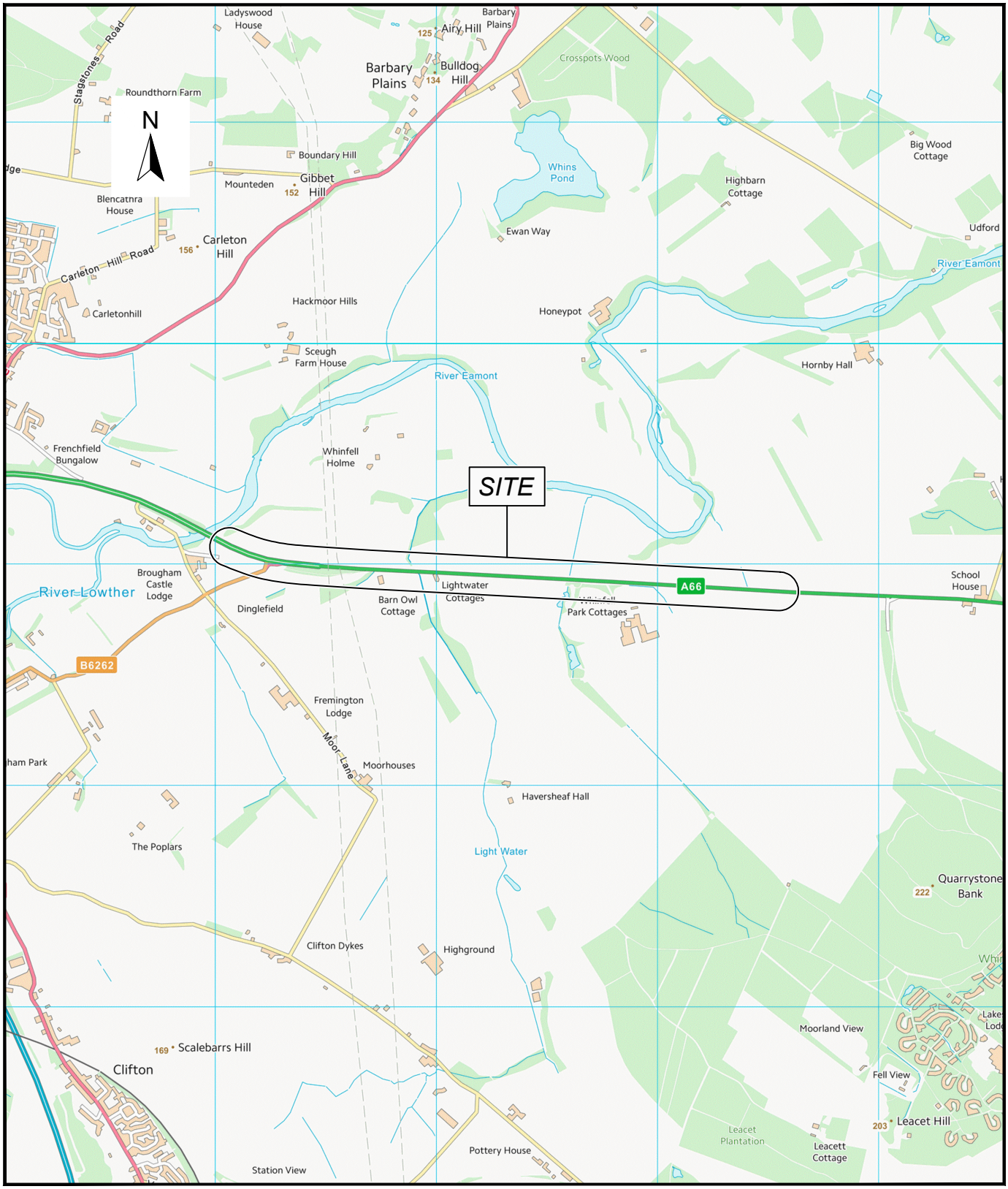

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m	1:25,000	-

CLIENT

NATIONAL HIGHWAYS

PROJECT

A66 NORTHERN TRANS PENNINE SCHEME S03A

TITLE

SITE LOCATION MAP

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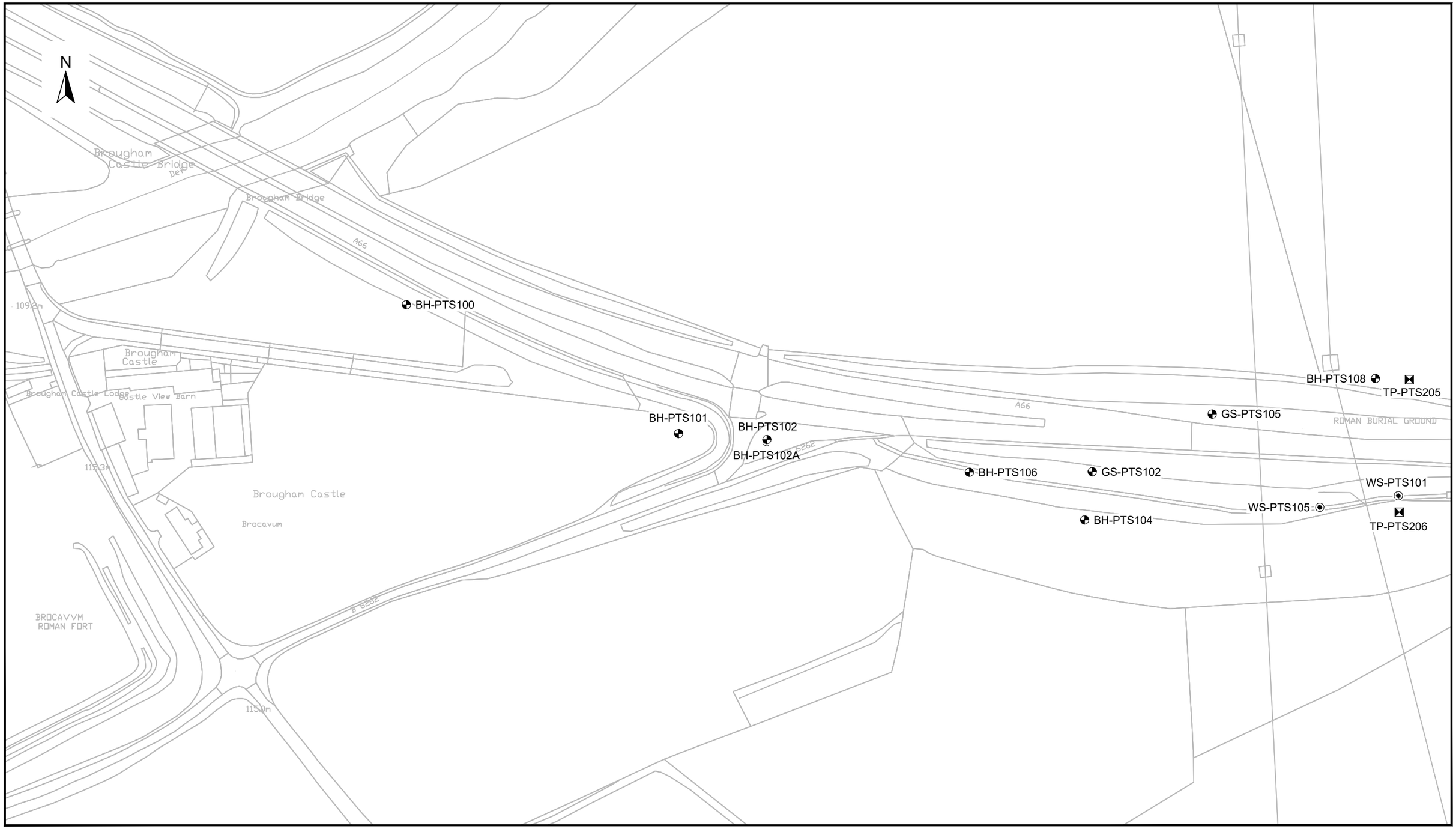

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m	1:2,000	A3

CLIENT: NATIONAL HIGHWAYS

PROJECT: A66 NTP SCHEME 3A

TITLE: EXPLORATORY HOLE LOCATION PLAN

JOB NO	SCALE BAR	FIGURE
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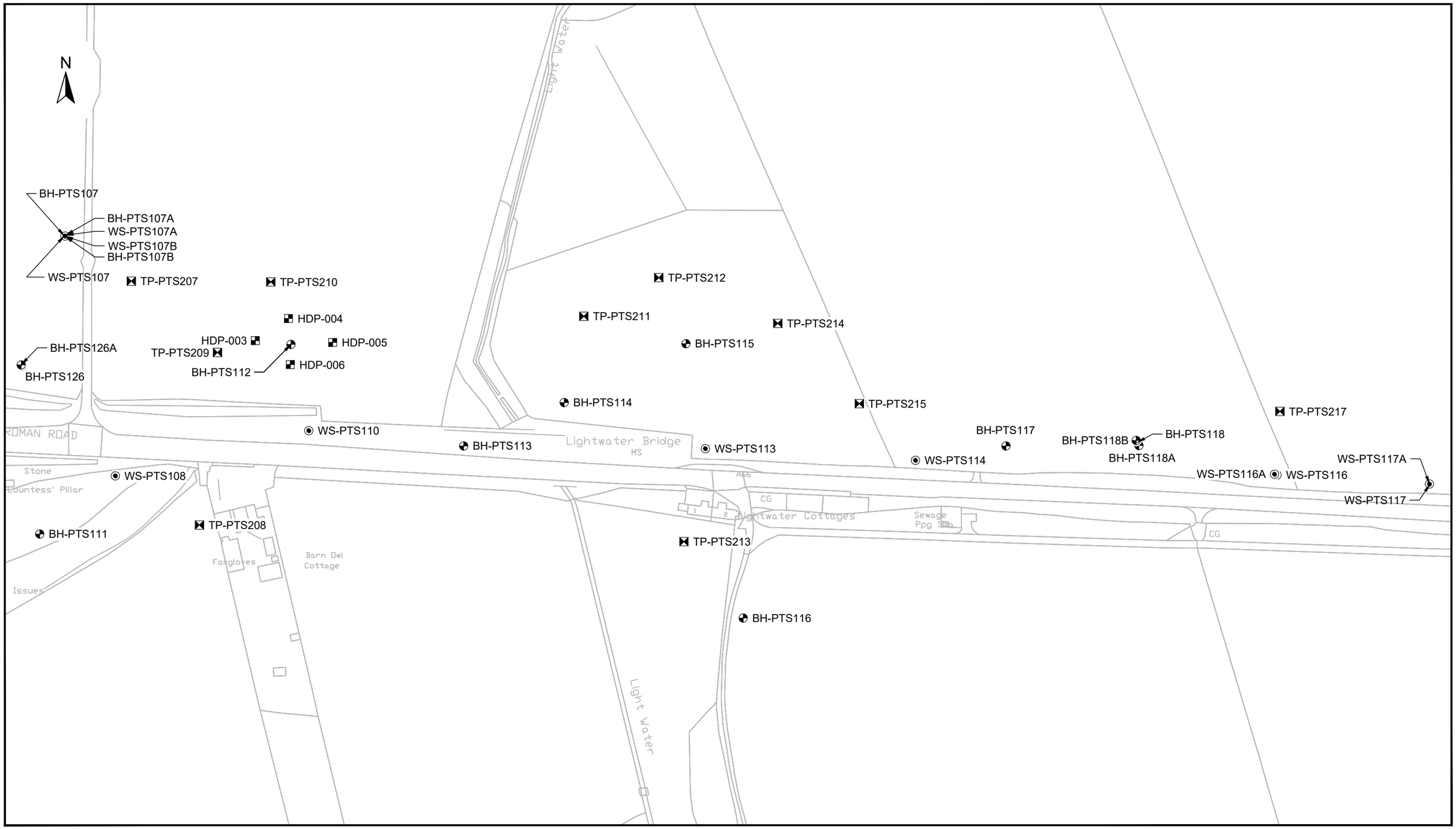
LEGEND

- BOREHOLE
- HAND DUG TRIAL PIT
- TRIAL PIT
- WINDOW SAMPLE



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m	1:2,000	A3

CLIENT: NATIONAL HIGHWAYS

PROJECT: A66 NTP SCHEME 3A

TITLE: EXPLORATORY HOLE LOCATION PLAN

JOB NO	SCALE BAR	FIGURE
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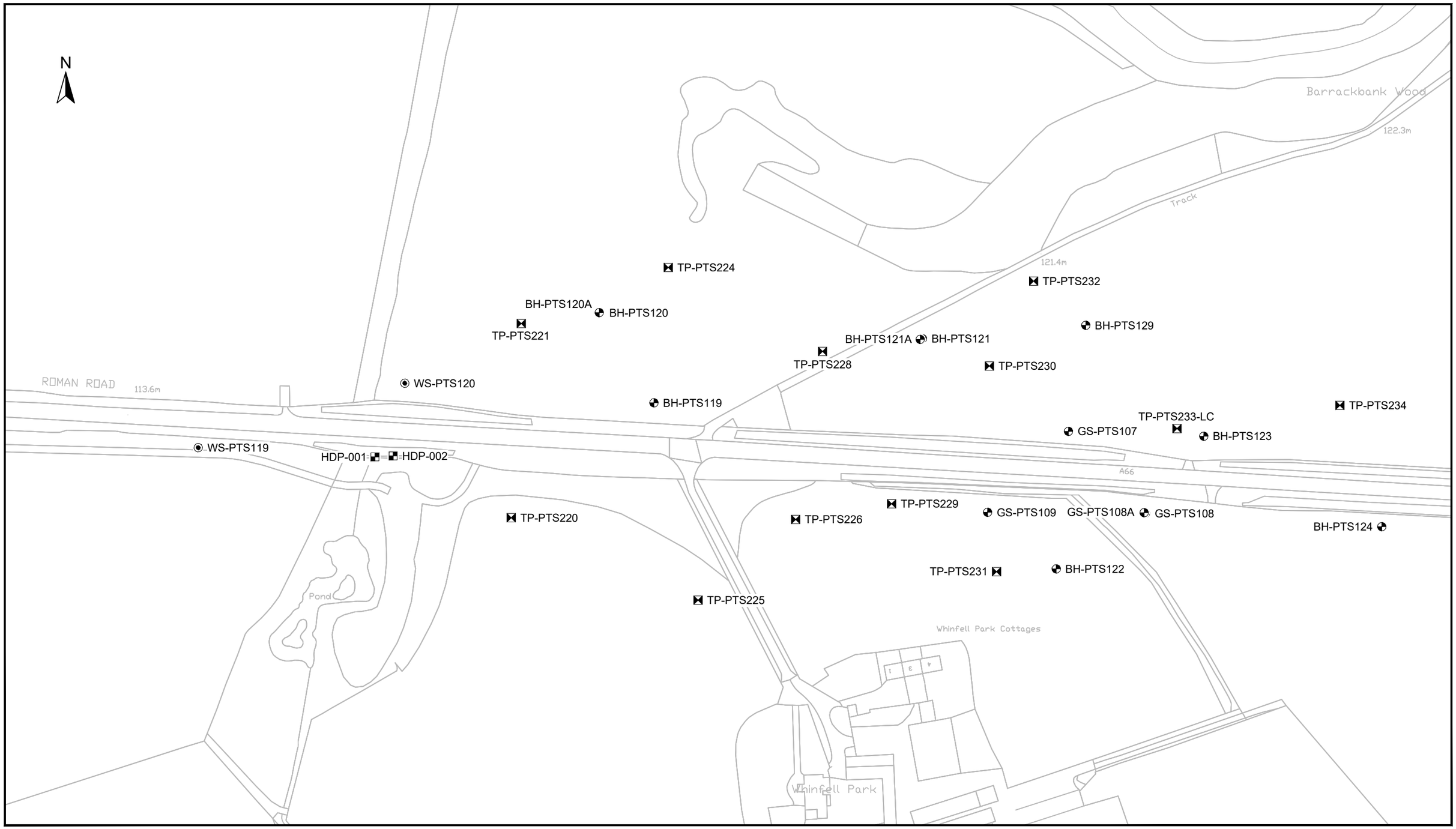
LEGEND

- BOREHOLE
- HAND DUG TRIAL PIT
- TRIAL PIT
- WINDOW SAMPLE



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PROJECT: A66 NTP SCHEME 3A

TITLE: EXPLORATORY HOLE LOCATION PLAN

JOB NO	SCALE BAR	FIGURE
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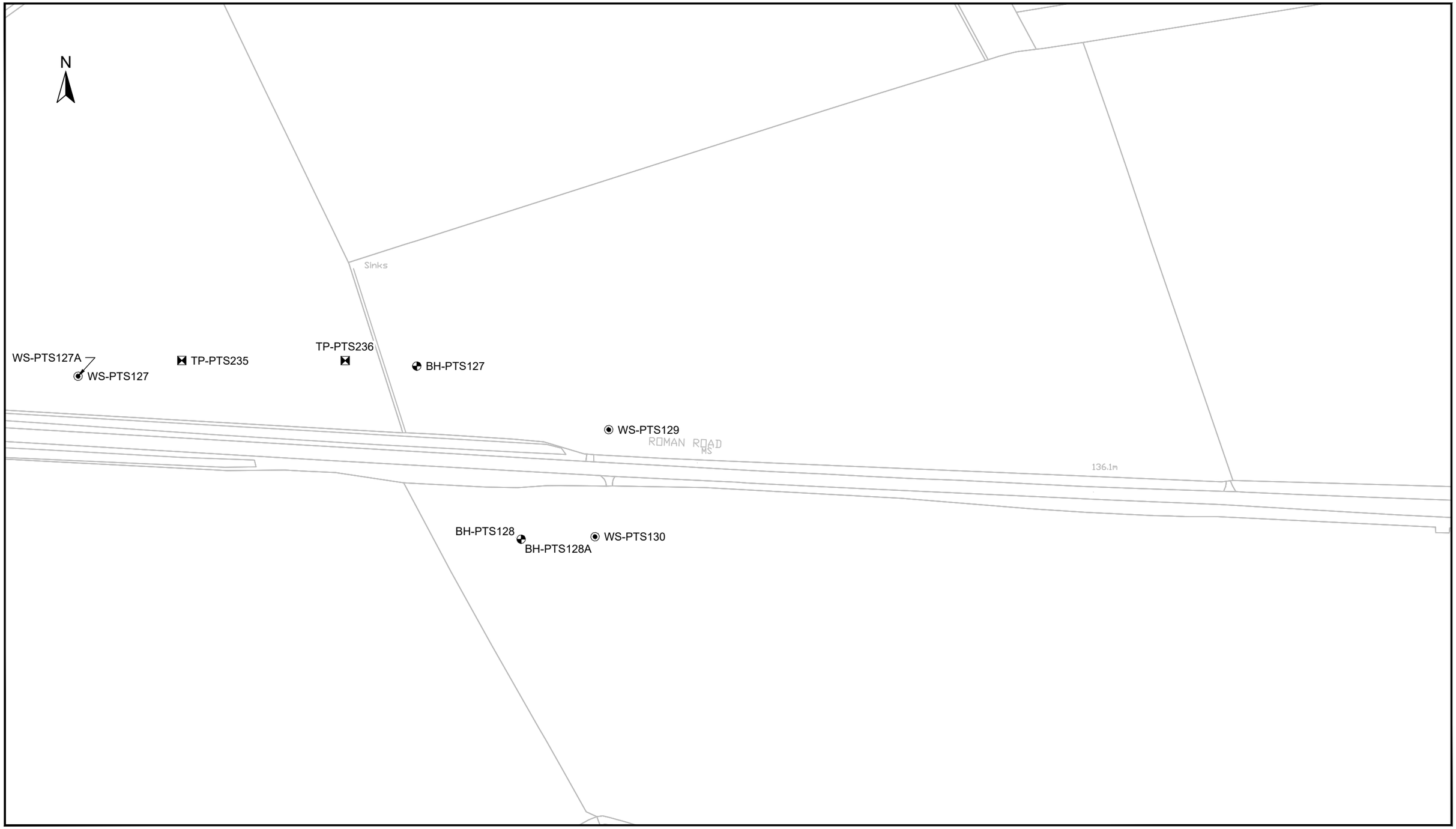
LEGEND

- BOREHOLE
- HAND DUG TRIAL PIT
- TRIAL PIT
- WINDOW SAMPLE



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DIMENSION	SCALE	ORIGIN SIZE
m	1:2,000	A3

CLIENT: NATIONAL HIGHWAYS

PROJECT: A66 NTP SCHEME 3A

TITLE: EXPLORATORY HOLE LOCATION PLAN

JOB NO	SCALE BAR	FIGURE
765633	0 20 40 60 80 100m	2.4

LEGEND

- BOREHOLE
- HAND DUG TRIAL PIT
- TRIAL PIT
- WINDOW SAMPLE

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SUMMARY TABLE OF GROUND LEVELS AND CO-ORDINATES AT EXPLORATORY HOLE LOCATIONS

Contract:	Client:	Contract Ref:
A66 NTP Scheme S03A	**National Highways**	**765633**

Exploratory Position ID	Grid Co-Ordinates		Ground Level (m AOD)	Hole Type Codes
	Eastings (m)	Northings (m)		
BH-PTS100	**354048.0**	**529061.6**	**115.42**	CP
BH-PTS101	**354195.9**	**528991.7**	**113.31**	CP
BH-PTS102	**354243.7**	**528987.5**	**117.58**	CP
BH-PTS102A	**354243.9**	**528988.4**	**117.62**	CP
BH-PTS104	**354416.5**	**528944.8**	**116.47**	CP
BH-PTS106	**354353.9**	**528970.7**	**117.90**	CP
BH-PTS107	**354648.2**	**529092.9**	**115.79**	CP
BH-PTS107A	**354648.9**	**529093.2**	**115.69**	CP
BH-PTS107B	**354648.5**	**529092.8**	**115.71**	CP+RC
BH-PTS108	**354574.5**	**529021.5**	**119.35**	CP
BH-PTS111	**354634.9**	**528931.0**	**113.24**	CP
BH-PTS112	**354771.3**	**529033.9**	**109.25**	CP
BH-PTS113	**354865.2**	**528978.8**	**109.22**	WS
BH-PTS114	**354919.8**	**529002.4**	**109.19**	CP+RC
BH-PTS115	**354985.9**	**529034.3**	**110.36**	CP
BH-PTS116	**355017.1**	**528885.3**	**111.54**	CP+RC
BH-PTS117	**355159.8**	**528978.8**	**112.63**	CP+RC
BH-PTS118	**355231.1**	**528980.7**	**114.12**	CP
BH-PTS118A	**355232.0**	**528979.0**	**114.22**	CP
BH-PTS118B	**355230.5**	**528981.8**	**114.51**	CP+RC
BH-PTS119	**355754.6**	**528945.4**	**114.05**	CP
BH-PTS120	**355725.4**	**528994.2**	**112.03**	CP
BH-PTS120A	**355724.9**	**528994.4**	**112.12**	CP
BH-PTS121	**355900.4**	**528980.2**	**115.18**	CP
BH-PTS121A	**355899.2**	**528979.8**	**115.12**	CP
BH-PTS122	**355973.2**	**528855.2**	**120.63**	CP
BH-PTS123	**356053.3**	**528927.2**	**124.30**	CP+RC
BH-PTS124	**356150.0**	**528878.1**	**129.02**	CP
BH-PTS126	**354625.2**	**529022.1**	**115.23**	CP+RC
BH-PTS126A	**354624.8**	**529022.8**	**115.42**	IP
BH-PTS127	**356411.8**	**528933.6**	**124.33**	CP
BH-PTS128	**356468.0**	**528840.0**	**128.35**	CP

Notes:

Hole type codes:
CP = Cable percussion, DS = Dynamic sampling, IP = Inspection pit, RC = Rotary Cored, TP = Trial pit, WS = Window sampling

AGS

STRUCTURAL SOILS

SUMMARY TABLE OF GROUND LEVELS AND CO-ORDINATES AT EXPLORATORY HOLE LOCATIONS

Contract:	Client:	Contract Ref:
A66 NTP Scheme S03A	**National Highways**	**765633**

Exploratory Position ID	Grid Co-Ordinates		Ground Level (m AOD)	Hole Type Codes
	Eastings (m)	Northings (m)		
BH-PTS128A	**356468.5**	**528839.6**	**128.33**	CP
BH-PTS129	**355989.2**	**528987.5**	**122.04**	CP+RC
GS-PTS102	**354420.6**	**528971.0**	**120.67**	DS+RC
GS-PTS105	**354485.8**	**529002.3**	**116.08**	DS+RC
GS-PTS107	**355979.8**	**528929.9**	**118.79**	DS+RC
GS-PTS108	**356021.7**	**528885.4**	**120.92**	TP
GS-PTS108A	**356020.9**	**528885.7**	**120.77**	DS+RC
GS-PTS109	**355935.9**	**528885.9**	**119.02**	DS+RC
HDP-001	**355602.9**	**528916.1**	**110.42**	TP
HDP-002	**355612.9**	**528916.0**	**111.21**	TP
HDP-003	**354752.0**	**529036.0**	**108.90**	TP
HDP-004	**354770.0**	**529048.0**	**108.69**	TP
HDP-005	**354794.0**	**529035.0**	**108.62**	TP
HDP-006	**354771.0**	**529023.0**	**108.01**	TP
TP-PTS205	**354592.9**	**529021.0**	**117.87**	TP
TP-PTS206	**354587.4**	**528949.0**	**119.11**	TP
TP-PTS207	**354684.6**	**529068.3**	**110.27**	TP
TP-PTS208	**354721.6**	**528935.8**	**110.25**	TP
TP-PTS209	**354731.4**	**529029.5**	**109.95**	TP
TP-PTS210	**354760.4**	**529067.9**	**108.92**	TP
TP-PTS211	**354930.5**	**529049.2**	**110.57**	TP
TP-PTS212	**354971.2**	**529070.2**	**109.52**	TP
TP-PTS213	**354984.8**	**528926.8**	**108.77**	TP
TP-PTS214	**355035.8**	**529045.3**	**107.41**	TP
TP-PTS215	**355080.1**	**529001.7**	**109.06**	TP
TP-PTS217	**355308.6**	**528997.5**	**114.27**	TP
TP-PTS220	**355677.0**	**528882.9**	**115.26**	TP
TP-PTS221	**355682.5**	**528988.4**	**111.78**	TP
TP-PTS224	**355762.4**	**529018.9**	**111.25**	TP
TP-PTS225	**355778.5**	**528838.2**	**119.90**	TP
TP-PTS226	**355831.6**	**528882.0**	**117.66**	TP
TP-PTS228	**355846.2**	**528973.3**	**113.86**	TP

Notes:

Hole type codes:
CP = Cable percussion, DS = Dynamic sampling, IP = Inspection pit, RC = Rotary Cored, TP = Trial pit, WS = Window sampling

AGS

STRUCTURAL SOILS

SUMMARY TABLE OF GROUND LEVELS AND CO-ORDINATES AT EXPLORATORY HOLE LOCATIONS

Contract:	Client:	Contract Ref:
A66 NTP Scheme S03A	**National Highways**	**765633**

Exploratory Position ID	Grid Co-Ordinates		Ground Level (m AOD)	Hole Type Codes
	Eastings (m)	Northings (m)		
TP-PTS229	**355883.7**	**528890.5**	**117.97**	TP
TP-PTS230	**355936.8**	**528965.3**	**116.72**	TP
TP-PTS231	**355940.7**	**528853.6**	**120.39**	TP
TP-PTS232	**355960.8**	**529011.5**	**120.89**	TP
TP-PTS233-LC	**356038.8**	**528931.4**	**123.13**	TP
TP-PTS234	**356127.2**	**528944.0**	**127.64**	TP
TP-PTS235	**356284.1**	**528936.6**	**127.17**	TP
TP-PTS236	**356372.9**	**528936.5**	**123.80**	TP
WS-PTS101	**354586.9**	**528957.9**	**118.54**	WS
WS-PTS105	**354544.2**	**528951.6**	**120.01**	WS
WS-PTS107	**354648.2**	**529092.9**	**115.79**	WS
WS-PTS107A	**354648.9**	**529093.2**	**115.69**	WS
WS-PTS107B	**354648.5**	**529092.8**	**115.71**	WS
WS-PTS108	**354675.9**	**528962.5**	**111.63**	WS
WS-PTS110	**354781.0**	**528987.1**	**111.17**	WS
WS-PTS113	**354996.5**	**528977.3**	**109.68**	WS
WS-PTS114	**355110.6**	**528971.0**	**109.23**	WS
WS-PTS116	**355307.1**	**528963.0**	**112.84**	WS
WS-PTS116A	**355305.7**	**528963.4**	**112.86**	WS
WS-PTS117	**355390.1**	**528957.9**	**111.98**	WS
WS-PTS117A	**355389.9**	**528958.1**	**111.99**	WS
WS-PTS119	**355507.0**	**528921.0**	**115.13**	WS
WS-PTS120	**355619.2**	**528956.0**	**109.92**	WS
WS-PTS127	**356228.0**	**528928.0**	**128.60**	WS
WS-PTS127A	**356227.8**	**528928.0**	**128.53**	WS
WS-PTS129	**356516.0**	**528899.0**	**130.24**	WS
WS-PTS130	**356508.6**	**528840.9**	**130.53**	WS

Notes:

Hole type codes:
CP = Cable percussion, DS = Dynamic sampling, IP = Inspection pit, RC = Rotary Cored, TP = Trial pit, WS = Window sampling

APPENDIX B - EXPLORATORY HOLE RECORDS

(B01) Key to Exploratory Hole Logs

(B02) Borehole Logs

(B03) Trial Pit Logs

(B04) Window Sample Logs

(B05) Driller's Borehole Logs

KEY TO EXPLORATORY HOLE LOGS - SUMMARY OF ABBREVIATIONS

SAMPLING

Sample type codes:

AMAL	=	Amalgamated sample.
B	=	Bulk disturbed sample.
C	=	Core sample.
D	=	Small disturbed sample.
DSPT	=	Small disturbed sample originating from SPT test.
ES	=	Soil sample for environmental testing.
EW	=	Water sample for environmental testing.
LB	=	Large bulk disturbed sample.
U	=	Undisturbed driven tube sample - Number of blows indicated. % recovery reported.
UT	=	Undisturbed thin wall sample.
W	=	Water sample.

Undisturbed sample detail codes:

$U_{(100)}$	=	100mm diameter undisturbed sample.
$U_{(UT100)}$	=	Undisturbed sample UT100.

IN-SITU TESTING

$SPT_{(c)}$	=	Standard Penetration Test using a solid 60 degree cone.
SPT	=	Standard Penetration Test using split spoon sampler. ($_{(NR)}$ indicates 'No Sample Recovery').
	=	* denotes extrapolated N value. NP denotes 'No Penetration'.
V	=	Field Vane Test. Peak value (c_u) & Residual value (c_r), given as shear strength in kPa.
PID	=	Photo Ionisation Detector Results, in ppm.

ROTARY DRILLING INFORMATION

W	=	Water flush returns (%)
TCR	=	Total core recovery (%)
SCR	=	Solid core recovery (%)
RQD	=	Rock quality designations (%)
If	=	Fracture spacing (mm). Where variable the minimum - mode - maximum spacing may be quoted.

In fracture column (i) denotes discontinuity is infilled (refer to Fracture Table for details).
'NI' denotes non-intact core. 'NA' denotes not applicable.

- All lengths used to determine rock core mechanical properties taken along the centre line of the core.
- Obvious induced fractures have been ignored.
- The assessment of solid core is based on lengths that show a full diameter and not necessarily a full circumference.

Where used Rotary flushing medium abbreviations:

W	=	Water
AZCL	=	Assessed zone of core loss.

ADDITIONAL NOTES

1. All soil and rock descriptions and legends in general accordance with BS EN ISO 14688-1:2018, 14688-2:2018, 14689:2018, and BS5930:2015+A1:2020.
2. Material types divided by a broken line (- - -) indicates an unclear boundary.
3. Fracture spacings (If) quoted in the Description of Strata for specific strata or specific fracture sets are also quoted in mm, e.g. (25/80/230) referring to (Min/Avg/Max).
4. The data on any sheet within the report showing the AGS icon is available in the AGS format.

STRUCTURAL SOILS

Contract Reference: **765633**

KEY TO EXPLORATORY POSITION LOGS - SUMMARY OF GRAPHIC SYMBOLS

MATERIAL GRAPHIC LEGENDS

	BOULDERS		Clayey GRAVEL with COBBLES		Clayey gravelly SAND		Gravelly clayey SAND
	Clayey gravelly SAND with COBBLES		Gravelly clayey SAND with COBBLES		Gravelly clayey SAND with COBBLES and BOULDERS		Clayey SAND
	Clayey SAND with COBBLES		Sandy clayey GRAVEL		Sandy clayey GRAVEL with COBBLES		Sandy clayey GRAVEL with COBBLES and BOULDERS
	GRAVEL		GRAVEL with BOULDERS		GRAVEL with COBBLES		Gravelly CLAY
	Gravelly silty CLAY		Gravelly CLAY with COBBLES		Gravelly SAND		Gravelly SAND with COBBLES
	Gravelly SAND with COBBLES and BOULDERS		MADE GROUND		PEAT		Possible MADE GROUND
	SAND		SAND with BOULDERS		SAND with COBBLES and BOULDERS		SAND & GRAVEL
	Sandstone		Sandy silty CLAY		Silty sandy CLAY		Sandy CLAY with COBBLES
	Sandy silty CLAY with COBBLES		Sandy GRAVEL		Sandy GRAVEL with COBBLES		Sandy GRAVEL with COBBLES and BOULDERS
	Gravelly sandy CLAY		Sandy gravelly CLAY		Sandy gravelly silty CLAY		Silty sandy gravelly CLAY
	Gravelly sandy CLAY with COBBLES		Sandy gravelly CLAY with COBBLES		Gravelly sandy CLAY with COBBLES and BOULDERS		Sandy gravelly CLAY with COBBLES and BOULDERS
	Sandy gravelly clayey SILT		Sandy gravelly SILT		Sandy gravelly SILT with COBBLES		Sandy SILT
	Topsoil		Silty GRAVEL with COBBLES		Gravelly silty SAND		Silty gravelly SAND
	Gravelly silty SAND with COBBLES		Silty gravelly SAND with COBBLES		Gravelly silty SAND with COBBLES and BOULDERS		Silty SAND
	Silty sandy GRAVEL		Silty sandy GRAVEL with COBBLES	AZCL	Zone of core loss	PR / AZCL	Partial recovery/assumed zone of core loss

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KEY TO FRACTURE CODES

DISCONTINUITY TYPE CODES

BF	=	Bedding fracture
IdF	=	Induced fracture
J	=	Joint
PF	=	Possible Fault
PFR	=	Possible Fracture

DISCONTINUITY APERTURE CODES

Partly open	=	Partly open (0.25mm - 0.5mm)
Tight	=	Tight (0.1mm - 0.25mm)
Very tight	=	Very tight (<0.1mm)

DISCONTINUITY ROUGHNESS CODES

P-R	=	Planar - rough
P-SM	=	Planar - smooth
S-R	=	Stepped - rough
U-R	=	Undulating - rough

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STRUCTURAL SOILS

Contract Reference: **765633**

KEY TO EXPLORATORY POSITION LOGS - SUMMARY OF GRAPHIC SYMBOLS

WATER COLUMN SYMBOLS

First water strike, second water strike etc.

Standing water level following first strike, standing water level following second strike etc.

Seepage.

Standing water level recorded at documented date.

INSTRUMENTATION SYMBOLS

BACKFILL GRAPHICS

Asphalt

Backfill

Bentonite cement grout

Bentonite cement pellets

Bentonite seal

Concrete

Gravel filter

Flush cover

Upstanding cover

PIPE GRAPHICS

Plain pipe

Slotted pipe

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS100**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**03.03.23** End: **07.03.23**	**115.42**	**E:354048.0 N:529061.6**	**1** of **2**

Depth (m)	Samples & Testing No	Type	Results	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
						MADE GROUND: Grass over dark brown slightly silty fine to medium SAND with roots and rootlets. (MADE GROUND GRANULAR)			
0.20	1	D				0.10-0.30m : becoming gravelly. Gravel is subangular to subrounded fine to coarse of quartz.	115.12	0.30	
0.30-0.30	101	ES				Dark brown very gravelly very silty fine to coarse SAND with low cobble content. Gravel is subangular to subrounded fine to coarse of quartz. Cobbles are subrounded. (GLACIAL TILL - GRANULAR)		(0.90)	
0.30-0.60	4	B							
0.40	3	D							
0.50-0.50	102	ES							
0.70	6	D							
0.70-1.20	7	B							
1.00-1.00	103	ES							
1.20-1.65	9	SPT	N=11			Medium dense dark brown very sandy clayey subrounded fine to coarse GRAVEL of quartzite. Sand is fine to coarse. (GLACIAL TILL - GRANULAR)	114.22	1.20	
1.20-1.65	10	DSPT							
1.20-1.70	11	B							
1.50-1.50	104	ES						(0.80)	
1.80	13	D							
2.00-2.45	14	SPT	N=15			Medium dense orange brown mottled grey sandy subangular to subrounded fine to coarse GRAVEL of mixed lithologies including sandstone and quartzite with medium cobble content. Sand is fine to coarse. (GLACIAL TILL - GRANULAR)	113.42	2.00	
2.00-2.45	15	DSPT							
2.00-2.50	16	B						(0.90)	
2.80	17	D							
2.90	18	D				Stiff reddish brown slightly gravelly sandy silty CLAY with low cobble content. Sand is fine to medium. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone and quartzite. Cobbles are subrounded of sandstone. (GLACIAL TILL - COHESIVE)	112.52	2.90	
3.00-3.29	19	SPT	2,3/4,46 for 71mm						
3.00-3.45	20	DSPT					112.22	3.20	
3.00-3.20	21	B				Greyish brown BOULDER (55 minutes chiselling to progress through it). (GLACIAL TILL - GRANULAR)	112.02	3.40	
3.50	22	D							
3.50-4.00	23	B				Dense greyish brown sandy subangular to subrounded fine to coarse GRAVEL of mixed lithologies including sandstone, limestone and quartzite with high cobble content, low boulder content and frequent clay bands. Sand is fine to coarse. Cobbles are subrounded of mixed lithologies. (GLACIAL TILL - GRANULAR)		(0.60)	
4.00-4.23	24	SPT(c)	19,6/31,19 for 39mm				111.42	4.00	
4.00-4.50	25	B				Very dense grey sandy slightly clayey angular to well rounded fine to coarse GRAVEL of limestone and quartzite with high cobble content and a low boulder content. Sand is fine to coarse. Cobbles are subangular to subrounded of limestone. (GLACIAL TILL - GRANULAR) 4.00-4.50m : slightly sandy.			
4.80	26	D							
5.00-5.14	27	SPT(c)	22,4/50 for 37mm						
5.00-5.50	28	B							
5.00-5.45	28	DSPT						(2.80)	
5.80	29	D							
6.00-6.12	30	SPT(c)	25/50 for 54mm						
6.00-6.50	31	B							
6.00-6.45	31	DSPT							
6.80	32	D				Recovered as (very dense) reddish orange mottled yellowish brown sandy slightly silty angular to subangular fine to coarse GRAVEL of extremely weak sandstone. Sand is fine to coarse. (WEATHERED PENRITH SANDSTONE) 7.00-7.50m : particle size analysis test shows mostly sand size material, large particles possibly separated by testing process.	108.62	6.80	
6.80-6.86	33	SPT	25/50 for 27mm						
7.00-7.50	34	B							
7.80	35	D							
8.00-8.05	36	SPT	25/50 for 19mm					(2.35)	
8.00	36.2	DSPT							
8.00-8.50	37	B							
8.80	38	D							

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
03/03/23	14:00	4.50	4.50	250	3.70
06/03/23	08:30	4.50	4.50	250	Dry
06/03/23	17:00	9.15	7.50	250	4.64
07/03/23	09:15	9.15	7.50	250	8.24

Chiselling / Slow Progress

From	To	Duration (hh:mm)
3.20	3.40	00:55
6.30	6.50	00:30
6.80	7.20	00:35
8.70	9.00	01:00

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Borehole drilled using cable percussion drilling to 9.15m depth (250mm casing and tools).
3. Possible groundwater strike encountered at 6.80m depth.
4. Water added to aid drilling between 1.20-6.80m (3400 litres).
5. Borehole backfilled with bentonite cement pellets upon

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000**	**Jamie Carr**	**DNartey**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS100

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	03.03.23 End: 07.03.23	115.42	E:354048.0 N:529061.6	2 of 2

Depth (m)	Samples & Testing No	Type	Results	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
9.00-9.04	39	SPT	25/50 for 20mm				106.27	9.15	
						Borehole terminated at 9.15m depth.			

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

completion.
6. SPT hammer JB01-2023 (E_r = 61.00%) used.

All dimensions in metres | Scale: 1:50

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	Dando 2000	Jamie Carr	DNartey	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS101**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**02.03.23** End: **08.03.23**	**113.31**	**E:354195.9 N:528991.7**	**1** of **2**

Depth (m)	Samples & Testing No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.10	1	D				MADE GROUND: Grass over dark brown silty fine to coarse SAND with roots and rootlets. (MADE GROUND GRANULAR)	113.21	0.10	
0.30	101	ES				Dark brown gravelly silty fine to medium SAND. Gravel is subangular to subrounded fine to coarse of quartz. (GLACIAL TILL - GRANULAR)	112.91	0.40	
0.30	3	D							
0.40-0.50	4	B							
0.50	102	ES				Dark brown very gravelly very silty fine to medium SAND. Gravel is subangular to subrounded fine to coarse of quartz. Occasional cobbles noted. (GLACIAL TILL - GRANULAR)		(0.80)	
0.50	5	D							
0.90-1.00	9	B							
1.00	103	ES							
1.00	8	D							
1.20-1.65	10	SPT	N=11			Firm dark brown mottled yellowish brown slightly gravelly sandy silty CLAY. Sand is fine to medium. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone and quartz. Occasional cobbles noted. (GLACIAL TILL - COHESIVE)	112.11	1.20	
1.20-1.65	10	DSPT							
1.20-1.65	12	$UT_{(UT100)}$	40 blows 100% recovery				111.81	1.50	
1.20-1.50	14	B			1	Firm yellowish brown mottled dark brown slightly gravelly sandy CLAY. Sand is fine to medium. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone and quartz. (GLACIAL TILL - COHESIVE)		(0.50)	
1.50	104	ES							
1.50	13	D							
1.50	15	D					111.31	2.00	
1.50-1.80	17	B				Loose brown very sandy very silty angular to subrounded fine to coarse GRAVEL of mixed lithologies with medium cobble content. Sand is fine to coarse. (GLACIAL TILL - GRANULAR)		(0.50)	
1.80	18	D			1				
2.00-2.45	19	$UT_{(UT100)}$	23 blows 95% recovery				110.81	2.50	
2.00-2.45	20	SPT	N=10			Firm light grey gravelly slightly sandy to sandy SILT. Sand is fine. Gravel is angular to subrounded fine to coarse of mixed lithologies. (GLACIAL TILL - COHESIVE)			
2.00-2.45	21	DSPT							
2.00-2.50	22	B							
2.40-2.50	105	EW							
2.80	24	D							
3.00-3.45	25	SPT	N=12					(1.30)	
3.00-3.45	26	DSPT							
3.00-3.50	27	B							
3.80-4.00	28	B				Medium dense light grey very sandy silty very angular to well rounded fine to coarse GRAVEL of mixed lithologies with medium cobble content. Sand is fine to medium. (GLACIAL TILL - GRANULAR) 4.00m : becoming grey.	109.51	3.80	
4.00-4.45	29	SPT	N=26						
4.00-4.45	30	DSPT							
4.00-4.50	31	B							
4.80	32	D							
5.00-5.45	33	SPT	N=50			5.00m : very dense.			
5.00-5.45	34	DSPT							
5.00-5.50	35	B						(3.80)	
5.80	36	D							
6.00-6.38	37	SPT	13,12/15,17,18 for 76mm						
6.00-6.38	38	DSPT							
6.00-6.50	39	B							
6.80	40	D							
7.00-7.27	41	SPT	12,13/30,20 for 45mm						
7.00-7.27	42	DSPT							
7.00-7.50	43	B							
7.60	44	D				Borehole terminated at 7.60m depth.	105.71	7.60	

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
03/03/23	12:00	2.50	2.80	200	Dry
06/03/23	08:30	2.50	2.50	200	2.40
06/03/23	14:40	6.30	6.00	200	4.00
07/03/23	08:00	6.00	6.00	200	4.25
07/03/23	17:00	7.60	7.50	200	3.00

Chiselling / Slow Progress

From	To	Duration (hh:mm)
3.80	4.30	01:00
4.30	4.70	01:00
4.70	5.20	01:00
5.20	5.70	01:00
5.70	6.00	01:00
6.00	7.50	05:30
7.50	7.60	00:30

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Borehole drilled using cable percussion drilling to 7.60m depth using 250mm diameter casing and tools.
3. Groundwater strike encountered at 2.45m depth, rising to 1.90m depth after 20 minutes.
4. Water added to aid drilling between 2.50-7.60m (5000 litres).
5. 50mm diameter gas/groundwater monitoring well

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000 Mark2**	**Will Nevins**	**DNartey**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS101

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	02.03.23 End: 08.03.23	113.31	E:354195.9 N:528991.7	2 of 2

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

complete with upstanding protective cover installed to 4.50m depth on completion. Water depth 3.00m before installation. Response zone 2.00m to 5.00m depth.

6. SPT hammer JB05-2023 (E_r = 60.00%) used.

All dimensions in metres | Scale: 1:50

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	Dando 2000 Mark2	Will Nevins	DNartey	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS102**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**13.04.23** End: **13.04.23**	**117.58**	**E:354243.7 N:528987.5**	**1** of **1**

Depth (m)	Samples & Testing No	Type	Results	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.10	1	D				MADE GROUND: Grass over brown slightly gravelly slightly sandy SILT with frequent roots (<3mm). Gravel is angular to rounded medium to coarse of granite and dark grey fine crystalline porphyritic igneous rock. Sand is fine to medium. (TOPSOIL) (MADE GROUND COHESIVE)	117.23	0.35	
0.10-0.20	2	B							
0.30	101	ES							
0.40	3	D							
0.40-0.60	4	B							
0.50	102	ES				MADE GROUND: Dark brown sandy clayey subangular to rounded fine to coarse GRAVEL of dark grey fine crystalline rock. Sand is fine to coarse. (MADE GROUND GRANULAR)	116.88	0.70	
0.80	5	D							
0.80-1.00	6	B							
1.00	103	ES				MADE GROUND: Reddish brown slightly gravelly very clayey fine to coarse SAND. Gravel is subrounded fine to medium of red sandstone. (MADE GROUND GRANULAR) 1.10m : large cobble of granite. 1.25m : large elongate boulder of granite crossing pit, used chisel to break.		(0.90)	
1.20-1.60	7	B							
						Borehole terminated at 1.60m depth due to drilling tools pushing/being deflected by cobble.	115.98	1.60	

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
13/04/23	13:15	1.60	None	250	Dry

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth. Borehole was located on an embankment.
2. No visual or olfactory evidence of contamination.
3. No groundwater encountered.
4. Borehole terminated at 1.60m depth due to drilling tools pushing/being deflected by cobble. Borehole relocated to BH-PTS102A
5. Termination of borehole confirmed verbally by Investigation Supervisor. Borehole backfilled with bentonite cement pellets.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000**	**Brad Speirs**	**RBarker**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS102A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**14.04.23** End: **19.04.23**	**117.62**	**E:354243.9 N:528988.4**	**1** of **3**

Depth (m)	Samples & Testing No	Type	Results	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
						Grass over brown slightly gravelly slightly sandy SILT with frequent rootlets (<3mm). Gravel is angular to rounded medium to coarse of granite and dolerite. Sand is fine to medium. (TOPSOIL)	117.27	0.35	
						MADE GROUND: Dark brown sandy clayey subangular to rounded fine to coarse GRAVEL of basalt. Sand is fine to coarse. (MADE GROUND GRANULAR)	116.92	0.70	
						MADE GROUND: Reddish brown very gravelly clayey fine to coarse SAND with medium cobble content. Gravel is subrounded fine to coarse of red sandstone. (MADE GROUND GRANULAR)		(0.90)	
1.20-1.65	1	SPT	N=15						
1.20-1.65	2	DSPT							
1.20-1.60	3	B							
						MADE GROUND: Firm dark brown slightly gravelly sandy silty CLAY. Gravel is subangular to subrounded medium to coarse of sandstone. Sand is fine to coarse. (MADE GROUND COHESIVE) 1.70-2.00m : Medium cobble content. Cobbles are subangular to subrounded sandstone.	116.02	1.60	
1.70	4	D							
1.70-2.00	5	B							
2.00-2.45	6	$SPT_{(NR)}$	N=17						
2.00	101	ES							
2.00-2.50	7	B						(2.00)	
2.80	8	D							
3.00-3.45	9	$UT_{(UT100)}$	67 blows 100% recovery						
3.50	10	D							
						Stiff dark greenish brown slightly gravelly slightly sandy silty CLAY with occasional rootlets (<1mm). Gravel is subangular to rounded fine to coarse of basalt and sandstone. Sand is fine to coarse. (GLACIAL TILL - COHESIVE)	114.02	3.60	
3.70	11	D							
3.70-4.00	12	B							
4.00-4.45	13	SPT	N=20						
4.00	102	ES							
4.00-4.45	14	DSPT							
4.00-4.50	15	B						(1.70)	
4.80	16	D							
5.00	103	ES							
5.00-5.45	17	$U_{(100)}$	58 blows 90% recovery						
						Dense dark grey, reddish brown and yellowish brown very sandy slightly silty angular to rounded fine to coarse GRAVEL of dolerite, quartzite and micro-granite. Sand is fine to coarse. (GLACIAL TILL - GRANULAR)	112.32	5.30	
5.40	18	D							
5.40-6.00	19	B							
6.00-6.45	20	SPT(c)	N=34						
6.00	104	ES						(1.70)	
6.00-6.50	21	B							
6.80	22	D							
7.00-7.45	23	SPT(c)	N=28						
7.00-7.50	24	B							
						Very stiff dark brown slightly gravelly sandy CLAY with medium cobble content. Gravel is angular to subrounded fine to coarse of sandstone. Sand is fine to coarse. (GLACIAL TILL - COHESIVE)	110.62	7.00	
								(0.80)	
						Very dense dark grey and reddish brown sandy angular to rounded fine to coarse GRAVEL of basalt, sandstone and quartzite with medium cobble content. Sand is fine to coarse. (GLACIAL TILL - GRANULAR) 7.80m : subrounded cobble of light grey igneous rock (200mm).	109.82	7.80	
7.90	25	D							
8.00-8.33	26	SPT(c)	7,9/18,16,16 for 30mm						
8.00-8.50	27	D							

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
14/04/23	14:00	1.20	None	250	Dry
17/04/23	10:15	1.20	None	250	Dry
17/04/23	16:30	5.00	4.50	250	0.00
18/04/23	09:00	5.00	4.50	250	0.49
18/04/23	16:30	9.00	9.00	250	5.97
19/04/23	09:00	9.00	9.00	250	6.04
19/04/23	10:50	10.40	10.00	250	6.70

Chiselling / Slow Progress

From	To	Duration (hh:mm)
7.80	7.90	00:30

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth. Borehole was located on an embankment.
2. Borehole drilled as replacement for BH-PTS102 which was obstructed by cobbles. Samples from ground level to 1.20m were taken from inspection pit for BH-PTS102 and none were taken at this location.
3. Borehole drilled using cable percussion drilling to 10.41m depth using 250mm diameter tools and casing.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000**	**Brad Speirs**	**RBarker**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS102A

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	14.04.23 End: 19.04.23	117.62	E:354243.9 N:528988.4	2 of 3

Depth (m)	Samples & Testing No	Type	Results	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
9.00-9.40	29	SPT(c)	8,8/19,11,17,3 for 24mm			9.00-10.41m : slightly sandy GRAVEL with high cobble content.		(2.61)	
9.00-9.45	29	C							
9.00-9.50	30	B							
9.80	31	D							
10.00-10.41	32	SPT(c)	9,7/9,10,14,17 for 39mm						
						Borehole terminated at 10.41m depth.	107.20	10.41	

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

4. No groundwater encountered during cable percussion drilling.
5. Falling head tests conducted from 4.00-5.00m depth, and 5.00-6.00m depth.
6. Water added to aid drilling between 1.20-1.60m (300 litres), 5.00-10.00m (2000 litres), and for permeability testing.
7. Borehole terminated at 10.41m with verbal confirmation by Investigation Supervisor and backfilled

All dimensions in metres | Scale: 1:50

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	Dando 2000	Brad Speirs	RBarker	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS102A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**14.04.23** End: **19.04.23**	**117.62**	**E:354243.9 N:528988.4**	**3** of **3**

Depth (m)	Samples & Testing No	Type	Results	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

with bentonite cement pellets.
8. SPT hammer JB01-2023 (E_r = 61.00%) used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000**	**Brad Speirs**	**RBarker**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS104**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**17.05.23** End: **19.05.23**	**116.47**	**E:354416.5 N:528944.8**	**1** of **1**

Depth (m)	Samples & Testing No	Type	Results	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.30	1	D				Grass over dark brown slightly gravelly slightly silty fine to coarse SAND with frequent rootlets (2mm). Gravel is angular to subrounded fine to coarse dark grey fine crystalline igneous rock. (TOPSOIL)	116.37	0.10	
0.30	101	ES				POSSIBLE MADE GROUND: Brown very gravelly silty fine to coarse SAND. Gravel is angular to rounded fine to coarse of basalt. (MADE GROUND GRANULAR)		(0.70)	
0.30	201	D							
0.40-0.60	2	B							
0.50	102	ES				0.55m : high cobble content. Cobbles are subangular of fine crystalline igneous rock up to 210mm in diameter. Distribution of these suggests purposefully placement such as for a Roman road or courtyard.	115.67	0.80	
0.50	202	D							
0.50	3	D				Inspection pit terminated at 0.80m depth.			

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)
19/05/23		0.80	None	600	Dry			

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 0.80m depth.
2. No groundwater encountered during excavation of inspection pit for planned cable percussion borehole.
3. No water added to aid excavation.
4. Inspection pit for planned borehole terminated at 0.80m depth due to possible Roman road being discovered.
5. Inspection pit terminated at 0.80m with verbal confirmation given by Investigation Supervisor. Pit backfilled with bentonite.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000**	**Will Nevins**	**RBarker**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS106**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**04.05.23** End: **11.05.23**	**117.90**	**E:354353.9 N:528970.7**	**1** of **2**

Depth (m)	Samples & Testing No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.05	1	D				MADE GROUND: ASPHALT. (MADE GROUND - PAVEMENT)	117.80	0.10	
0.05	301	D							
0.10-0.30	2	B				MADE GROUND: Grey slightly sandy fine to coarse slightly silty subangular to subrounded fine to coarse GRAVEL of sandstone, granite, quartz, concrete and bricks. (MADE GROUND GRANULAR)	117.60	0.30	
0.20	101	ES							
0.30-1.20	4	B							
0.50	102	ES							
0.50	3	D				Reddish light brown to brown very gravelly silty fine to coarse SAND with low cobble content. Gravel is subangular to subrounded fine to coarse of sandstone, quartz and granite. Cobbles are subangular to subrounded of sandstone, granite and quartz (<120mm). (GLACIAL TILL - GRANULAR)		(1.20)	
0.50	302	D							
1.00	303	D							
1.00	5	D							
1.10	103	ES				1.20-1.50m : loose.			
1.20-1.65	6	SPT	N=10						
1.20-1.65	7	DSPT							
1.50-2.00	8	B				Firm to stiff reddish brown slightly gravelly sandy CLAY with medium cobble content. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of sandstone, granite and quartz. Cobbles are subangular to subrounded of sandstone and granite (<150mm). (GLACIAL TILL - COHESIVE)	116.40	1.50	
2.00	9	D							
2.00-2.45	10	SPT	N=4						
2.00-2.45	11	DSPT							
2.50-3.00	12	B							
3.00	13	D							
3.00-3.39	14	SPT	18,7/25,28,30,17 for 40mm						
3.00-3.39	15	DSPT							
3.50-4.00	16	B				3.50-4.00m : decrease in fines content, behaviour borderline between slightly gravelly sandy CLAY and very clayey very gravelly SAND.		(4.40)	
4.00	17	D							
4.00-4.45	18	SPT	N=52						
4.00-4.45	19	DSPT							
4.50-5.00	20	B							
5.00	21	D							
5.00-5.18	22	SPT	15,10/100 for 50mm						
5.00-5.18	23	DSPT							
						Borehole terminated at 5.90m depth.	112.00	5.90	

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
03/05/23	17:00	1.20	None	N/R	-
04/05/23	08:00	1.20	None	N/R	Dry
04/05/23	17:00	5.00	5.00	200	1.00
05/05/23	08:00	5.00	5.00	200	-
05/05/23	11:00	5.50	5.00	200	-
09/05/23	11:45	5.50	5.50	200	-
09/05/23	16:45	5.90	5.50	200	-
11/05/23	09:06	5.90	5.90	200	5.00

Chiselling / Slow Progress

From	To	Duration (hh:mm)
3.00	4.00	01:00
4.00	5.00	01:00
5.00	5.50	02:00
5.50	5.90	04:00

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Borehole drilled using cable percussion drilling to 5.90m depth using 200mm diameter tools and casing.
3. No groundwater encountered during cable percussion drilling.
4. No water added to aid drilling.
5. 50mm diameter gas/groundwater monitoring well complete with upstanding protective cover installed to

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000 Mark 1**	**Karl Wordsworth**	**MTurkowski**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS106

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	04.05.23 End: 11.05.23	117.90	E:354353.9 N:528970.7	2 of 2

Depth (m)	Samples & Testing			Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
	No	Type	Results						

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

4.00m depth on completion.
6. SPT hammer AR2670-2023 (E_r = 64.00%) used.

All dimensions in metres | Scale: 1:50

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	Dando 2000 Mark 1	Karl Wordsworth	MTurkowski	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS107

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	23.05.23 End: 25.05.23	115.79	E:354648.2 N:529092.9	1 of 2

Depth (m)	Samples & Testing No	Type	Results	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.00-0.10	1	D				MADE GROUND: Dark brown slightly gravelly slightly clayey fine to coarse SAND with rootlets and low cobble content. Gravel is subangular to subrounded fine to coarse of sandstone, granite and quartz. Cobbles are subangular to subrounded of sandstone and granite (<120 mm). Roots are down to 480 mm with maximum size of 6 mm.		(0.50)	
0.00-0.50	2	B				(MADE GROUND GRANULAR)	115.29	0.50	
0.10	1	D				MADE GROUND: Reddish brown very sandy clayey subangular to subrounded fine to coarse GRAVEL of sandstone, granite and quartz with low cobble content. Sand is fine to coarse. Cobbles are subangular to subrounded of sandstone, granite (<110mm). (MADE GROUND GRANULAR)			
0.10	201	D							
0.20	101	ES							
0.50-1.20	4	B							
0.60	102	ES							
0.60	202	D							
0.60	3	D							
1.10	103	ES							
1.10	203	D							
1.10	5	D							
1.20-1.65	6	SPT	N=10					(1.95)	
1.20-1.65	7	DSPT							
1.50-2.00	8	B							
2.00	9	D				2.00m : drainage pipe hit.			
2.00-2.45	10	SPT	N=20						
2.00-2.45	11	DSPT							
2.00	204	D							
						Borehole terminated at 2.45m depth due to strike of drainage pipe at 2.00m.	113.34	2.45	

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
23/05/23	17:00	1.50	1.50	250	Dry
24/05/23	08:00	1.50	1.50	250	Dry
24/05/23	17:00	2.45	1.50	250	Dry

Chiselling / Slow Progress

From	To	Duration (hh:mm)

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Hand vanes not possible due to gravel content and friable nature of cohesive soils.
3. Borehole drilled using cable percussion drilling to 2.45m depth using 250mm diameter tools and casing.
4. No groundwater encountered during cable percussion drilling.
5. Water added to aid drilling from 1.50-2.00m (25 litres).
6. Borehole terminated at 2.45m due to strike of drainage pipe at 2.00m with verbal confirmation given by Investigation Supervisor. Borehole backfilled with bentonite cement pellets.

All dimensions in metres | Scale: 1:50

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	Dando 2000 Mark 1	Karl Wordsworth	MTurkowski	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS107

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	23.05.23 End: 25.05.23	115.79	E:354648.2 N:529092.9	2 of 2

Depth (m)	Samples & Testing: No	Type	Results	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

7. SPT hammer AR2670-2023 (E_r = 64.00%) used.

All dimensions in metres | Scale: 1:50

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	Dando 2000 Mark 1	Karl Wordsworth	MTurkowski	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS107A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**26.05.23** End: **26.05.23**	**115.69**	**E:354648.9 N:529093.2**	**1** of **1**

Depth (m)	Samples & Testing No	Type	Results	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.00-0.40	1	B				MADE GROUND: Dark brown slightly gravelly slightly clayey fine to coarse SAND with rootlets and low cobble content. Gravel is subangular to subrounded fine to coarse of sandstone, granite and quartz. Cobbles are subangular to subrounded of sandstone and granite (<120mm). (MADE GROUND GRANULAR)		(0.50)	
0.20	2	D							
0.40-0.70	3	B					115.19	0.50	
0.50	4	D				MADE GROUND: Firm reddish brown slightly sandy gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of sandstone, granite and quartz. Cobbles are subangular to subrounded of sandstone and granite (<100mm). (MADE GROUND COHESIVE)	114.99	0.70	
						Inspection pit terminated at 0.70m on obstruction.			

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
26/05/23	09:34	0.70	None	400	-

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 0.60m depth.
2. No groundwater encountered during excavation of inspection pit for planned cable percussion drilling.
3. Inspection pit terminated at 0.70m depth on obstruction with verbal confirmation by Investigation Supervisor and backfilled with arisings.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000 Mark 1**	**Karl Wordsworth**	**MTurkowski**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS107B**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**26.05.23** End: **05.06.23**	**115.71**	**E:354648.5 N:529092.8**	**1** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.00-0.40	1	B							MADE GROUND: Dark brown slightly gravelly slightly clayey fine to coarse SAND with rootlets and low cobble content. Gravel is subangular to subrounded fine to coarse of sandstone, granite, quartz, brick and concrete. Cobbles are subangular to subrounded of sandstone and granite (<120mm). (MADE GROUND GRANULAR)		(0.50)	
0.05	101	ES										
0.20	2	D										
0.20	201	D										
0.30	102	ES										
0.50	202	D							Possible MADE GROUND: Reddish brown sandy silty subangular to subrounded fine to coarse GRAVEL of sandstone, granite and quartz with low cobble content. Sand is fine to coarse. Cobbles are subangular to subrounded of sandstone and granite (<100mm). Classed as Possible MADE GROUND due to recovery of pipe fragments in samples from next stratum. (MADE GROUND GRANULAR)	115.21	0.50	
0.50-1.20	3	B										
0.50	4	D										
											(0.90)	
1.00	203	D										
1.00	5	D										
1.20-1.65	6	SPT	N=9									
1.20-1.65	7	DSPT										
1.30	103	ES										
1.50-2.00	8	B							Possible MADE GROUND: Very stiff reddish brown slightly gravelly sandy CLAY with low cobble and low boulder content. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of sandstone, granite, quartz and clay pipe fragments. Cobbles are subangular to subrounded of sandstone and granite (<120mm). Boulders are subangular of quartz and granite (<220mm). Recovery of clay pipe fragments indicates that ground may have been reworked, however fragments could possible have been mixed or collapsed in from above. (MADE GROUND COHESIVE)	114.31	1.40	
2.00	9	D										
2.00-2.38	10	SPT	15,10/25,35,25,15 for 25mm									
2.00-2.45	11	DSPT										
2.00	204	D									(1.80)	
2.30	104	ES										
2.50-3.00	12	B										
3.00	13	D										
3.00-3.29	14	SPT	18,7/36,36,28 for 50mm									
3.00-3.45	15	DSPT										
3.00	205	D		38 - -		90% return W (Brown)			AZCL	112.51	3.20	
3.20-4.00 (0:18)											(0.40)	AZCL
									Firm reddish brown slightly sandy slightly gravelly CLAY with medium cobble content. Sand is fine. Gravel is subangular to rounded fine to coarse of dolerite and sandstone. Cobbles are subrounded of dolerite (50mm x 100mm x 140mm). (GLACIAL TILL - COHESIVE)	112.11	3.60	
4.00-4.75 (0:25)				67 - -		90% return W (Brown)			4.00-4.25m : AZCL			AZCL

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
26/05/23	12:00	1.30	None	N/R	-
30/05/23	11:30	1.30	None	250	Dry
30/05/23	17:00	3.20	3.00	250	-
01/06/23	13:30	3.20	3.20	200	Dry
01/06/23	17:00	5.50	5.50	146	
02/06/23	08:00	5.50	5.50	146	1.60
02/06/23	17:00	15.25	15.25	146	1.50
05/06/23	08:08	15.25	15.25	146	6.20

Chiselling / Slow Progress		
From	To	Duration (hh:mm)
3.00	3.10	01:00

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Drilling commenced using cable percussion drilling to 3.20m depth. Rotary UW casing lowered to base of hole, cable percussion casing withdrawn, then borehole extended to 15.25m depth by rotary coring techniques using 146mm diameter Geobor S core barrel, PCD bit and water flush.
3. No groundwater strikes observed during rotary drilling,

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 Mark 1 + Comacchio GEO 601**	**Karl Wordsworth + Sam Carter**	**CJobe + MTurkowski**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS107B**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**26.05.23** End: **05.06.23**	**115.71**	**E:354648.5 N:529092.8**	**2** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
				67 - -		90% return W (Brown)					(2.05)	
4.75-5.50 (0:23)									4.75-5.00m : AZCL			AZCL
				67 - -		90% return W (Brown)						
5.28-5.50	16	C										
5.50-6.25 (0:05)												
				20 - -		95% return W (Brown)			AZCL	110.06	5.65 (0.60)	AZCL
6.25-7.00 (0:08)									AZCL	109.46	6.25 (0.45)	AZCL
				40 - -		95% return W (Brown)			Grey GRAVEL with low cobble content. Gravel is subangular to rounded coarse of dolerite and sandstone. Cobbles are subangular of dolerite (60mm x 70mm x 110mm). (GLACIAL TILL - GRANULAR)	109.01	6.70 (0.30)	
7.00-7.75 (0:15)									AZCL	108.71	7.00 (0.45)	AZCL
				40 - -		95% return W (Brown)			Grey subangular to rounded medium to coarse GRAVEL of dolerite and sandstone. (GLACIAL TILL - GRANULAR)	108.26	7.45 (0.30)	
7.75-8.50 (0:19)									AZCL	107.96	7.75 (0.45)	AZCL
				40 - -		95% return W (Brown)			Grey GRAVEL with low cobble content. Gravel is subangular to rounded medium and coarse of dolerite and sandstone. Cobbles are subangular of dolerite (70mm x 100mm x 110mm). (GLACIAL TILL - GRANULAR)	107.51	8.20 (0.86)	
8.50-9.25 (0:24)				67 25 13		95% return W (Brown)						

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

however any strike may have been obscured by drilling flush.

4. Time taken to complete rotary core runs reported in Depth column, in brackets, in format (hh:mm).
5. Borehole backfilled with bentonite cement pellets on completion, inspection pit backfilled with arisings.
6. Relative positions of reported assessed zones of core loss (AZCL) reported on log were reassessed after completion of core sample photography and therefore

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 Mark 1 + Comacchio GEO 601**	**Karl Wordsworth + Sam Carter**	**CJobe + MTurkowski**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS107B**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**26.05.23** End: **05.06.23**	**115.71**	**E:354648.5 N:529092.8**	**3** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
				67 25 13		95% return W (Brown)			Very weak to weak thinly laminated to very thinly bedded reddish brown partially weathered fine to medium grained micaceous SANDSTONE. Discontinuities: Bedding fractures (5-15°) very closely to medium spaced planar rough smooth clay infill <0.5mm. (PENRITH SANDSTONE FORMATION) 9.25-9.40m : AZCL 9.40-9.51m : Non intact recovered as sandy subangular fine to coarse gravel sized sandstone.	106.65	9.06	
9.25-10.00 (0:17)												AZCL
				80 65 53	NI 170 450	95% return W (Brown)					(1.12)	
9.81-9.91	17	C										
10.00-11.50 (0:13)												
									Weak reddish brown partially weathered fine to medium grained micaceous SANDSTONE. Discontinuities: Bedding fractures (10-20°) widely spaced planar rough light brown and black staining. One joint fracture 70° clean undulating rough. (PENRITH SANDSTONE FORMATION)	105.53	10.18	
10.59-10.90	18	C		100 100 100		95% return W (Brown)						
11.50-13.00 (0:14)												
11.50-11.74	19	C			NI 1000 1910							
				100 100 100		95% return W (Brown)						
12.63-12.74	20	C									(5.07)	
13.00-13.75 (0:08)												
				100 100 100		95% return W (Brown)						

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

differ slightly from those indicated on appended photographs.
7. SPT hammer AR2670-2023 (E_r = 64.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 Mark 1 + Comacchio GEO 601**	**Karl Wordsworth + Sam Carter**	**CJobe + MTurkowski**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS107B**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**26.05.23** End: **05.06.23**	**115.71**	**E:354648.5 N:529092.8**	**4** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
				100 100 100		95% return W (Brown)						
13.75-15.25 (0:16) 13.84-14.21	21	C										
				100 97 97	NI 1000 1910	85% return W (Red/brown)			14.56-14.61m : Non intact recovered as subangular to subrounded fine to coarse gravel sized sandstone.			
14.86-15.25	22	C										
									Borehole terminated at 15.25m depth.	100.46	15.25	

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 Mark 1 + Comacchio GEO 601**	**Karl Wordsworth + Sam Carter**	**CJobe + MTurkowski**	AML

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS107B

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	26.05.23 End: 05.06.23	115.71	E:354648.5 N:529092.8	5 of 8

3.20-4.75m (Note: relative positions of AZCL reassessed after photography, log shows correct depths).

4.75-6.25m (Note: relative positions of AZCL reassessed after photography, log shows correct depths).

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	Dando 2000 Mark 1 + Comacchio GEO 601	Karl Wordsworth + Sam Carter	CJobe + MTurkowski	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		**National Highways**		**BH-PTS107B**
Contract Ref:	Start: **26.05.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **05.06.23**	**115.71**	**E:354648.5 N:529092.8**	**6** of **8**

6.25-7.75m (Note: relative positions of AZCL reassessed after photography, log shows correct depths).

7.75-9.25m (Note: relative positions of AZCL reassessed after photography, log shows correct depths).

Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Dando 2000 Mark 1 + Comacchio GEO 601	Drilled By:	Karl Wordsworth + Sam Carter	Logged By:	CJobe + MTurkowski	Checked By:	AML

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS107B

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	26.05.23 End: 05.06.23	115.71	E:354648.5 N:529092.8	7 of 8

9.25-11.50m

11.50-13.75m

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	Dando 2000 Mark 1 + Comacchio GEO 601	Karl Wordsworth + Sam Carter	CJobe + MTurkowski	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log BOREHOLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		**National Highways**		**BH-PTS107B**
Contract Ref:	Start: **26.05.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **05.06.23**	**115.71**	**E:354648.5 N:529092.8**	**8** of **8**

13.75-15.25m

Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Dando 2000 Mark 1 + Comacchio GEO 601	Drilled By:	Karl Wordsworth + Sam Carter	Logged By:	CJobe + MTurkowski	Checked By:	AML

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SUMMARY OF DISCONTINUITIES - BH-PTS107B

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
1	9.15-9.17	BF	15	P-SM	Partly open	-	Clay	3	
-	9.53	IdF	0	-	-	-	-	-	
2	9.60	BF	5	P-R	Tight	-	Clay	3	
-	9.62	IdF	0	-	-	-	-	-	
3	9.65	BF	5	P-R	Tight	-	Clay	3	
-	9.77	IdF	0	-	-	-	-	-	
4	9.81	BF	5	P-R	Partly open	-	Clay	3	
-	10.20	IdF	0	-	-	-	-	-	
-	10.59	IdF	0	-	-	-	-	-	
5	10.90-10.93	BF	20	P-R	-	-	-	3	Light brown staining
-	11.14	IdF	0	-	-	-	-	-	
-	11.74	IdF	0	-	-	-	-	-	
6	11.91-11.94	BF	20	P-R	-	-	-	3	Black staining
-	11.97	IdF	0	-	-	-	-	-	
-	12.03	IdF	0	-	-	-	-	-	
-	12.44	IdF	0	-	-	-	-	-	

Key:
Type codes: BF = Bedding fracture, IdF = Induced fracture, J = Joint.
Small-scale roughness codes: P-R = Planar - rough, P-SM = Planar - smooth, U-R = Undulating - rough.
Aperture description codes: Partly open = Partly open (0.25mm - 0.5mm), Tight = Tight (0.1mm - 0.25mm).

SUMMARY OF DISCONTINUITIES - BH-PTS107B

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
7	12.58-12.63	J	70	U-R	-	-	-	7	Clean
-	12.63	IdF	0	-	-	-	-	-	
-	12.74	IdF	0	-	-	-	-	-	
-	12.84	IdF	0	-	-	-	-	-	
-	13.10	IdF	0	-	-	-	-	-	
-	13.19	IdF	0	-	-	-	-	-	
-	13.34	IdF	0	-	-	-	-	-	
-	13.55	IdF	0	-	-	-	-	-	
-	13.78	IdF	0	-	-	-	-	-	
8	13.84-13.86	BF	10	P-R	-	-	-	3	Light brown staining
-	14.21	IdF	0	-	-	-	-	-	
-	14.35	IdF	0	-	-	-	-	-	
-	14.42	IdF	0	-	-	-	-	-	
-	14.51	IdF	0	-	-	-	-	-	
-	14.56	IdF	0	-	-	-	-	-	
-	14.61	IdF	0	-	-	-	-	-	

Key:
Type codes: BF = Bedding fracture, IdF = Induced fracture, J = Joint.
Small-scale roughness codes: P-R = Planar - rough, P-SM = Planar - smooth, U-R = Undulating - rough.
Aperture description codes: Partly open = Partly open (0.25mm - 0.5mm), Tight = Tight (0.1mm - 0.25mm).

SUMMARY OF DISCONTINUITIES - BH-PTS107B

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
-	14.74	IdF	0	-	-	-	-	-	

Key:
Type codes: BF = Bedding fracture, IdF = Induced fracture, J = Joint.
Small-scale roughness codes: P-R = Planar - rough, P-SM = Planar - smooth, U-R = Undulating - rough.
Aperture description codes: Partly open = Partly open (0.25mm - 0.5mm), Tight = Tight (0.1mm - 0.25mm).

STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS108**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**19.04.23** End: **27.04.23**	**119.35**	**E:354574.5 N:529021.5**	**1** of **3**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.00-0.80	2	B				Grass over dark brown slightly gravelly slightly silty fine to coarse SAND with rootlets and low cobble content. Gravel is subangular to subrounded fine to coarse of mixed lithologies of sandstone, granite and quartz. Cobbles are subrounded of sandstone and granite (<125mm). Roots extend to 0.70m depth (diameter <12mm). (TOPSOIL)		(0.80)	
0.05	1	D							
0.20	101	ES							
0.50	102	ES							
0.80-1.20	4	B				Loose yellowish brown gravelly silty fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of mixed lithologies of sandstone, granite and quartz. (GLACIAL TILL - GRANULAR)	118.55	0.80 (0.80)	
1.00	103	ES							
1.00	3	D							
1.20-1.65	5	SPT	N=9						
1.20-1.65	6	DSPT							
1.20-1.50	7	B							
1.50	104	ES				Medium dense yellowish orange slightly silty fine to coarse SAND and subangular to subrounded fine to coarse GRAVEL of mixed lithologies of sandstone granite and quartz with low cobble content. Cobbles are subangular to subrounded of granite (<150mm). (GLACIAL TILL - GRANULAR) 2.00-3.00m : medium cobble content. Cobbles are angular to rounded of mixed lithologies (<100mm x 80mm x 80mm).	117.75	1.60 (1.60)	
1.80	8	D							
2.00-2.45	9	SPT	N=22						
2.00-2.45	10	DSPT							
2.00-2.50	11	B							
2.80	12	D							
3.00-3.45	13	SPT	N=21						
3.00-3.45	14	DSPT							
3.00-3.50	15	B				Stiff to very stiff reddish orange slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of sandstone, granite and quartz. (GLACIAL TILL - COHESIVE)	116.15	3.20 (0.80)	
3.80	16	D							
4.00-4.39	17	SPT	2,5/14,14,14,8 for 15mm			Very dense reddish orange clayey fine to coarse SAND and subangular to subrounded fine to coarse GRAVEL of sandstone, granite and quartz. (GLACIAL TILL - GRANULAR)	115.35	4.00 (3.20)	
4.00-4.39	18	DSPT							
4.00-4.50	19	B							
4.80	20	D							
5.00-5.45	21	SPT	N=50						
5.00-5.45	22	DSPT							
5.00-5.50	23	B				5.50m : subrounded boulder of granite (280 mm).			
5.80	24	D							
6.00-6.41	25	SPT	2,5/7,13,20,10 for 35mm			6.00-7.20m : very sandy clayey GRAVEL.			
6.00-6.41	26	DSPT							
6.00-6.50	27	B							
6.00-6.25	30	DSPT							
6.80	28	D							
7.00-7.26	29	SPT	6,19/25,25 for 35mm						
7.00-7.26	30	DSPT				Dense to very dense brown slightly clayey fine to coarse SAND and subangular to subrounded fine to coarse GRAVEL of sandstone granite and quartz. (GLACIAL TILL - GRANULAR)	112.15	7.20	
7.00	31	B							
						Stiff to very stiff reddish slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of sandstone granite and quartz. (GLACIAL TILL - COHESIVE)	111.85	7.50 (0.50)	
7.80	32	D							
8.00-8.45	33	$SPT_{(NR)}$	N=50			Stiff brownish grey slightly sandy slightly gravelly clayey SILT. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of sandstone, granite and quartz. (GLACIAL TILL - COHESIVE) 8.00-8.10m : dark red fine to coarse sand.	111.35	8.00	
8.00-8.45	34	DSPT							
8.00-8.50	35	B							
8.80	36	D							

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
19/04/23	17:00	2.00	2.00	300	1.50
20/04/23	08:30	2.00	2.00	300	1.80
20/04/23	17:00	6.00	6.00	250	5.50
21/04/23	08:00	6.00	6.00	250	5.70
21/04/23	13:00	7.50	7.50	250	6.40
24/04/23	08:00	7.50	7.50	200	7.00
24/04/23	16:30	10.50	10.50	200	6.00
25/04/23	08:30	10.50	10.50	200	8.00

Chiselling / Slow Progress

From	To	Duration (hh:mm)
5.00	5.50	01:00
7.50	7.50	00:30
12.20	12.40	00:30
13.50	13.80	01:00
13.80	14.50	01:15

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Hand vanes not possible due to gravel content and friable nature of cohesive soils.
3. Borehole drilled using cable percussion drilling to 2.00m depth using 300mm diameter tools and casing, reducing to 250mm diameter to 7.50m depth and to 200mm diameter to 14.85m depth.
4. No groundwater encountered during cable percussion

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000 Mark 2**	**Will Nevins**	**MTurkowski**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS108**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**19.04.23** End: **27.04.23**	**119.35**	**E:354574.5 N:529021.5**	**2** of **3**

Depth (m)	Samples & Testing No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
9.00-9.40	37	$U_{(100)}$	150 blows 97% recovery					(2.20)	
9.50	38	D				9.50-10.20m : slighty sandy slightly gravelly silty CLAY.			
10.00-10.28	39	SPT	5,9/16,34 for 56mm				109.15	10.20	
10.00-10.28	40	DSPT				Very dense grey slightly sandy subangular to subrounded fine to coarse GRAVEL of sandstone, granite and quartz with medium to high cobble content. (GLACIAL TILL - GRANULAR)			
10.00-10.20	41	B							
10.20-10.50	42	B							
10.80	43	D							
11.00-11.45	44	SPT	N=47						
11.00-11.45	45	DSPT							
11.00-11.50	46	B							
11.80	47	D							
12.00-12.45	48	SPT	N=50			12.00m : sand content and cobble content increasing.			
12.00-12.45	49	DSPT							
12.00-12.50	50	B						(4.65)	
12.80	51	D							
13.00-13.45	52	SPT	N=50						
13.00-13.45	53	DSPT							
13.00-13.50	54	B							
13.50-13.95	55	B							
13.50	56	D							
14.50-14.85	57	SPT(c)	10,10/15,19,16 for 50mm						
						Borehole terminated at 14.85m depth.	104.50	14.85	

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
25/04/23	15:30	13.50	13.50	200	10.00
26/04/23	08:40	13.80	13.80	200	11.40
26/04/23	09:40	14.85	14.50	200	11.00

Chiselling / Slow Progress

From	To	Duration (hh:mm)

General Remarks

drilling.
5. Water added to aid cable percussion drilling between 1.20-2.00m (330 litres), 2.00-6.00m (1000 litres), 6.00-7.50m (500 litres), 7.50-10.50m (1000 litres), 10.80-13.50m (3000 litres), 13.50-13.80m (100 litres) and 13.80-14.50m (500 litres).
6. 50mm diameter gas/groundwater monitoring well complete with upstanding protective cover installed to 5.50m depth on completion. Response zone 1.00m to

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000 Mark 2**	**Will Nevins**	**MTurkowski**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS108

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	19.04.23 End: 27.04.23	119.35	E:354574.5 N:529021.5	3 of 3

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

6.00m depth.
7. SPT hammer JB05-2023 (E_r = 60.00%) used.

All dimensions in metres | Scale: 1:50

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	Dando 2000 Mark 2	Will Nevins	MTurkowski	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS111**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**23.05.23** End: **24.05.23**	**113.24**	**E:354634.9 N:528931.0**	**1** of **2**

Depth (m)	Samples & Testing No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.10	1	D				Grass over TOPSOIL (Driller's Description). (TOPSOIL) 0.00-0.10m : frequent rootlets.	113.19	0.05	
0.10	201	D							
0.30	101	ES							
0.40-0.60	2	B				Dark reddish brown very gravelly silty fine to coarse SAND with frequent rootlets (1mm). Gravel is angular to subrounded fine to coarse dark grey fine crystalline igneous rock and red sandstone. (GLACIAL TILL - GRANULAR)		(1.25)	
0.50	102	ES							
0.50	202	D							
0.50	3	D							
0.90-1.10	4	B				Frequent rootlets to a depth of 0.10m.			
1.00	103	ES							
1.00	203	D							
1.00	5	D							
1.30-1.75	6	SPT	N=16			Weathered dark reddish brown SANDSTONE recovered as very gravelly slightly silty fine to coarse SAND with low cobble content. Gravel is angular medium to coarse tabular reddish brown sandstone. Cobbles are angular tabular sandstone. (WEATHERED PENRITH SANDSTONE)	111.94	1.30	
1.50	104	ES							
1.80	9	D							
2.00-2.27	10	SPT	5,6/15,35 for 40mm						
2.00-2.27	11	DSPT							
2.00-2.50	12	B						(2.85)	
2.80	13	D							
3.00-3.33	14	SPT	4,11/20,20,10 for 25mm						
3.00-3.33	15	DSPT							
3.00-3.50	16	B							
3.80	17	D							
4.00-4.11	18	SPT	25/50 for 35mm						
4.00-4.11	19	DSPT				Borehole terminated at 4.15m depth.	109.09	4.15	

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)
23/05/23	17:00	4.00	4.00	200	-	3.40	4.00	01:00
24/05/23	08:00	4.15	4.00	200	3.20	3.50	4.00	01:00

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Borehole drilled using cable percussion drilling to 4.15m depth using 200mm diameter tools and casing.
3. No groundwater encountered during cable percussion drilling.
4. Water added to aid drilling from 1.30-4.00m (1000 litres).
5. 50mm diameter gas/groundwater monitoring well complete with upstanding protective cover installed to 3.50m depth on completion. Water depth 3.20m before installation. Response zone 1.00m to 3.70m depth.
6. Borehole completed to 4.15m depth due to meeting desired

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000**	**Will Nevins**	**RBarker**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS111

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	23.05.23 End: 24.05.23	113.24	E:354634.9 N:528931.0	2 of 2

Depth (m)	Samples & Testing			Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
	No	Type	Results						

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

chiselling time.
7. SPT hammer JB05-2023 (E_r = 60.00%) used.

All dimensions in metres | Scale: 1:50

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	Dando 2000	Will Nevins	RBarker	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS112**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**15.04.23** End: **18.04.23**	**109.25**	**E:354771.3 N:529033.9**	**1** of **1**

Depth (m)	Samples & Testing No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.05	1	D				Grass over brown slightly gravelly slightly sandy SILT with frequent rootlets (<2mm). Gravel is subrounded fine to coarse of basalt and sandstone. Sand is fine to coarse. (TOPSOIL)		(0.60)	
0.20-0.40	2	B							
0.30	101	ES							
0.30	3	D							
0.50	102	ES							
0.65-0.80	4	B				Recovered as black very gravelly clayey fine to coarse SAND. Gravel is subangular fine to coarse of friable asphalt. (MADE GROUND GRANULAR) 0.80-0.90m : intact ASPHALT (Driller's description). 1.00m : becoming light grey.	108.65	0.60	
0.70	102	ES							
0.70	5	D						(0.70)	
0.90-1.20	7	B							
1.00	103	ES							
1.00	6	D							
1.20-1.65	8	SPT(c)	N=8			Soft light creamish brown mottled reddish brown slightly gravelly sandy CLAY. Gravel is rounded fine to coarse of basalt. Sand is fine to coarse (GLACIAL TILL - COHESIVE)	107.95	1.30	
1.20-1.70	9	B							
1.50	104	ES							
1.80	10	D							
2.00-2.45	11	$UT_{(UT100)}$	50 blows 100% recovery					(2.10)	
2.50-2.80	12	B							
2.90	13	D							
3.00-3.45	14	SPT	N=32						
3.00-3.45	15	DSPT							
3.00-3.45	16	B							
3.80	17	D				Weathered reddish brown SANDSTONE recovered as reddish brown very gravelly slightly clayey fine to coarse SAND. Gravel is angular to subrounded and tabular medium to coarse of sandstone. (WEATHERED PENRITH SANDSTONE)	105.85	3.40	
4.00-4.30	18	SPT	9,16/41,9 for 70mm						
4.00-4.30	19	DSPT							
4.00-4.50	20	B							
4.80	21	D							
5.00-5.19	22	SPT	10,15/50 for 35mm			5.00-5.50m : recovered as gravelly slightly clayey SAND.		(3.70)	
5.00-5.19	23	DSPT							
5.00-5.50	24	B							
5.80	25	D							
6.00-6.20	26	SPT	19,6/50 for 50mm						
6.00-6.20	27	DSPT							
6.00-6.50	28	B							
6.80	29	D							
7.00-7.10	30	SPT	25/50 for 20mm			Borehole terminated at 7.10m depth.	102.15	7.10	
7.00-7.10	31	DSPT							

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
15/04/23	17:00	3.00	3.00	300	Dry
17/04/23	08:00	3.00	3.00	300	2.80
17/04/23	16:00	7.00	3.00	300	2.60
18/04/23	08:30	7.10	3.00	300	2.00

Chiselling / Slow Progress

From	To	Duration (hh:mm)
6.80	7.00	00:30

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Borehole drilled using cable percussion drilling to 7.10m depth using 300mm diameter tools and casing.
3. No groundwater encountered during cable percussion drilling.
4. Water added to aid drilling from 3.00-7.00m (1000 litres).
5. 50mm diameter gas/groundwater monitoring well complete with upstanding protective cover installed to 2.70m depth on completion. Water depth 2.00m before installation. Response zone 1.50m to 3.00m depth.
6. SPT hammer JB05-2023 (E_r = 60.00%) used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000**	**Will Nevins**	**RBarker**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS113**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**27.04.23** End: **12.05.23**	**109.22**	**E:354865.2 N:528978.8**	**1** of **2**

Depth (m)	Samples & Testing No	Type	Results	Window Run Information	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.00-0.30	1	B					MADE GROUND: Grass overlying soft brown gravelly slightly sandy CLAY with low cobble content. Sand is fine to coarse. Gravel is subrounded to subangular fine to coarse of sandstone, various igneous lithologies and broken up brick <60mm. Cobbles are subangular of various igneous lithologies. (MADE GROUND COHESIVE)	108.92	(0.30) 0.30	
0.20	101	ES								
0.20	2	D								
0.40-0.70	3	B					MADE GROUND: Orangish brown very sandy clayey subrounded to subangular fine to coarse GRAVEL of various lithologies including sandstone, igneous rock. Sand is fine to coarse. (MADE GROUND GRANULAR)	108.42	(0.50) 0.80	
0.50	102	ES								
0.50	4	D								
0.80-1.10	5	B					MADE GROUND: Reddish brown very gravelly very clayey fine to coarse SAND with medium cobble content. Gravel is subrounded to subangular fine to coarse of various igneous lithologies. Cobbles are subrounded to subangular of various igneous lithologies. (MADE GROUND GRANULAR)	108.02	(0.40) 1.20	
1.00	103	ES								
1.00	6	D								
1.20-1.70	7	D		Window run 45mm dia (50% rec)			Very dense reddish and light brown gravelly fine and medium SAND. Gravel is subangular to subrounded fine and medium of limestone and dolerite. (GLACIAL TILL - GRANULAR)			
1.20-1.53	304	SPT(c)	25/18,15,11,6 for 30mm							
1.70-2.00	8	D					Firm reddish brown slightly sandy slightly gravelly calcareous CLAY. Sand is fine and medium. Gravel is subangular to rounded fine to coarse of various lithologies including siltstone dolerite and limestone. (GLACIAL TILL - COHESIVE)	107.52	(0.50) 1.70	
2.00-2.45	301	DSPT		Window run 45mm dia (62% rec)			Interbedded medium dense reddish brown gravelly fine and medium SAND and firm reddish brown slightly sandy slightly gravelly CLAY. Gravel is subangular to rounded fine to coarse of various lithologies including limestone dolerite and siltstone. (GLACIAL TILL - GRANULAR)	107.22	(0.30) 2.00	
2.00-2.45	305	SPT	N=14							
2.35-3.40	9	D								
3.00-3.45	302	DSPT		Window run 45mm dia (68% rec)			Medium dense light and dark brown slightly clayey slightly gravelly fine and medium SAND. Gravel is subangular to rounded fine to coarse of various lithologies including limestone dolerite and siltstone. (GLACIAL TILL - GRANULAR)	105.82	(1.40) 3.40	
3.00-3.45	306	SPT	N=21							
3.40-4.00	10	D					3.90m : organic odour. 3.95-4.00m : dark brown slightly sandy amorphous PEAT.		(1.05) 4.45	
4.00-4.45	303	DSPT								
4.00-4.45	307	SPT	N=19							
							Window sample hole terminated at 4.45m depth.	104.77		

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
03/05/23	14:26	4.45	None	45	Dry

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Hand vanes not possible due to gravel content and friable nature of cohesive soils.
3. No groundwater encountered.
4. Originally planned as a cable percussion borehole, but traffic management was not able to provide a sufficient safe working area. Window sample borehole completed instead.
5. Window sample terminated at 4.45m with verbal confirmation by Investigation Supervisor and backfilled with bentonite cement pellets.
6. SPT hammer DART384-2022 (E_r = 67.00%) used.

All dimensions in metres | Scale: **1:28**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Window sampling	**Archway Dart 176**	**Michael O'Shea**	**IJordan**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		**National Highways**		**BH-PTS113**
Contract Ref:	Start: **27.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **12.05.23**	**109.22**	**E:354865.2 N:528978.8**	**2** of **2**

Window Sample runs 1.20-2.00m, 2.00-3.00m, 3.00-4.00m

Method Used:	Inspection pit + Window sampling	Plant Used:	Archway Dart 176	Drilled By:	Michael O'Shea	Logged By:	IJordan	Checked By:	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS114**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**04.04.23** End: **12.04.23**	**109.19**	**E:354919.8 N:529002.4**	**1** of **5**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.10	1	D							Grass over dark brown very gravelly silty fine to coarse SAND with frequent rootlets (<2mm). Gravel is subangular to rounded fine to coarse dark grey igneous rock. (TOPSOIL)	108.89	0.30	
0.10-0.30	2	B							Medium dense reddish brown very gravelly clayey fine to coarse SAND with medium cobble content. Cobbles are rounded <110mm in diameter of dark grey igneous rock. Gravel is subangular to rounded fine to coarse tabular grey sandstone and dolerite. (GLACIAL TILL - GRANULAR)		(1.50)	
0.10	201	D										
0.30	101	ES										
0.40	202	D										
0.40	3	D										
0.40-0.80	4	B										
0.50	102	ES										
1.00	103	ES										
1.00-1.20	5	B										
1.20-1.65	6	SPT	N=21									
1.20-1.65	7	DSPT										
1.20-1.70	8	B										
1.50	103	ES										
1.90	9	D							Weathered red sandstone recovered as medium dense gravelly slightly silty fine to coarse SAND. Gravel is angular to subrounded fine to coarse of sandstone. (WEATHERED PENRITH SANDSTONE)	107.39	1.80	
2.00-2.45	10	SPT	N=26									
2.00-2.45	11	DSPT										
2.00-2.50	12	B										
2.80	13	D									(2.20)	
3.00-3.45	14	SPT	N=28									
3.00-3.45	15	DSPT										
3.00-3.50	16	B										
3.80	17	D										
4.00-4.36	18	SPT	5,7/14,20,16 for 55mm						Weathered red sandstone recovered as very dense very gravelly slightly silty fine to coarse SAND. Gravel is angular to subrounded fine to coarse of sandstone. (WEATHERED PENRITH SANDSTONE)	105.19	4.00	
4.00-4.36	19	DSPT										
4.00-4.50	20	B										
4.80	21	D										
5.00-5.19	22	SPT	22,3/44,6 for 21mm									
5.00-5.19	23	DSPT										
5.00-5.50	24	B										
5.80	25	D									(3.70)	
6.00-6.24	26	SPT	19,6/30,17,3 for 2mm									
6.00-6.24	27	DSPT						1				
6.00-6.50	28	B										
6.50	29	W										
6.80	30	D										
7.00-7.09	31	SPT	25/50 for 49mm						7.00-7.50m : recovered as very gravelly silty SAND.			
7.00-7.50	32	B										
7.70-8.30 (0:03)				25 25 25		100% return W (Brown)			Assessed zone of core loss.SANDSTONE (Driller's description). (PENRITH SANDSTONE FORMATION)	101.49	7.70	AZCL
8.21-8.30	33	C							Weak thinly laminated to thinly bedded reddish brown fine and medium grained micaceous SANDSTONE. Partially weathered. Bedding fractures are 5-20° closely to widely spaced locally medium spaced planar rough occasional black staining. (PENRITH SANDSTONE FORMATION) 8.35-8.61m : cross-cutting 45° and 60° joints planar rough clean.	101.04	8.15	
8.30-9.05 (0:06)												
8.30-8.47	300	SPT	4,21/50 for 40mm	100 100 60	120 300 800	100% return W (Brown)						
8.30-8.47	301	DSPT										
8.61-8.77	34	C										

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
04/04/23	16:45	4.50	4.50	250	2.10
05/04/23	08:15	4.50	4.50	250	1.90
05/04/23	11:20	7.70	7.50	200	2.42
12/04/23	09:00	7.70	7.50	200	1.40
12/04/23	16:30	15.80	15.80	146	2.25
13/04/23	08:30	15.80	15.80	146	2.20

Chiselling / Slow Progress		
From	To	Duration (hh:mm)
7.50	7.70	00:30

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Inspection pit remained dry and stable.
3. No visual or olfactory evidence of contamination.
4. Water added to aid cable percussion drilling from ground level to 4.50m (600 litres) and 4.50-7.70m (500 litres).
5. Possible water strike at 6.50m (unclear, masked by water added to aid drilling).

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Comacchio Geo 602**	**Brad Speirs + Sam Carter**	**EMenkiti + RBarker**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS114**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**04.04.23** End: **12.04.23**	**109.19**	**E:354919.8 N:529002.4**	**2** of **5**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
9.05-9.80 (0:03)				100 100 100		100% return W (Brown)			8.90-8.96m : 45° joint planar rough clean. 9.01-9.38m : 70° joint undulating rough open infilled <1mm of reddish brown clay.			
9.55-9.80	35	C										
9.80-11.30 (0:05)												
10.17-10.34	36	C		100 100 94	120 300 800	100% return W (Brown)			10.08-10.15m : 2 no. parallel extremely closely spaced 20° thin laminae with black (manganese) and yellowish brown staining.		(4.57)	
10.93-11.21	37	C										
11.30-12.80 (0:04)												
11.47-11.68	38	C		100 100 90		100% return W (Brown)						
12.35-12.47	39	C							12.29-12.35m : recovered non -intact due to drilling induced disturbance. Recovered as angular to subrounded fine to coarse gravel. 12.44-12.46m : very thin bed of light grey reduction.			
										96.47	12.72	
12.80-14.30 (0:04)									Moderately weak thinly laminated to medium bedded reddish brown fine to coarse grained micaceous SANDSTONE with very closely to closely spaced thin laminae to very thin beds of black and orangish brown stained sandstone. Partially weathered. Bedding fractures are 5-15° medium to widely spaced planar rough with loss of wall strength and black staining. (PENRITH SANDSTONE FORMATION)			
13.32-13.60	40	C		100 100 100		100% return W (Brown)			13.21-13.24m : very thin bed of light grey reduction. 13.86-14.14m : 75° joint undulating rough clean.			
14.30-15.80 (0:05)					260 340 810						(3.08)	
14.48-14.72	41	C		87 87 87		100% return W (Brown)			14.98-15.04m : 50° joint undulating rough clean.			
15.13-15.31	42	C							15.60-15.80m : assessed zone of core loss.			AZCL
									Borehole terminated at 15.80m depth.	93.39	15.80	

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

6. Borehole drilled using cable percussion techniques to 7.70m depth then extended using rotary coring techniques to 15.00m depth.
7. Cable percussion section drilled at 250mm to 5.00m depth, then 200mm diameter to 7.70m depth. Rotary UW casing lowered to base of hole and cable percussion casing then withdrawn.
8. Borehole then extended by rotary coring carried out using 146mm diameter Geobor S core barrel, PCD bit

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Comacchio Geo 602**	**Brad Speirs + Sam Carter**	**EMenkiti + RBarker**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS114

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	04.04.23 End: 12.04.23	109.19	E:354919.8 N:529002.4	3 of 5

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

and water flush.

9. Time taken to complete rotary core runs reported in Depth column, in brackets, in format (hh:mm).
10. 50mm diameter gas/groundwater monitoring well complete with upstanding protective cover installed to 4.00m depth on completion. Response zone 1.50m to 4.00m depth. Water depth 2.20m before installation
11. SPT hammers AR1240-2022 (E_r = 67.48%) , JB01-2023 (E_r = 61.00%) used.

All dimensions in metres | Scale: 1:50

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	Dando 2000 + Comacchio Geo 602	Brad Speirs + Sam Carter	EMenkiti + RBarker	AML

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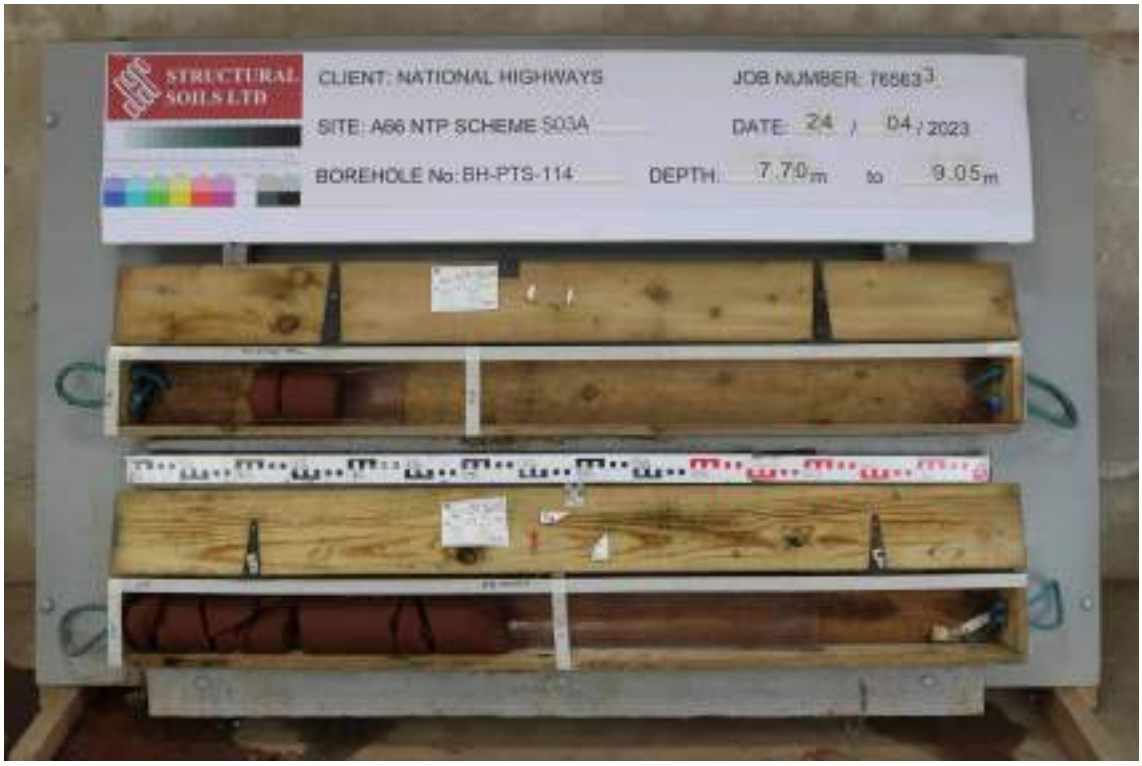
STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		**National Highways**		**BH-PTS114**
Contract Ref:	Start: **04.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **12.04.23**	**109.19**	**E:354919.8 N:529002.4**	**4** of **5**

BH-PTS-114 Boxes 1 & 2 7.70m - 9.05m



BH-PTS-114 Boxes 3 & 4 9.05m - 11.30m

Method Used:	**Inspection pit + Cable Percussion + Rotary Cored**	Plant Used:	**Dando 2000 + Comacchio Geo 602**	Drilled By:	**Brad Speirs + Sam Carter**	Logged By:	**EMenkiti + RBarker**	Checked By:	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		**National Highways**		**BH-PTS114**
Contract Ref:	Start: **04.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **12.04.23**	**109.19**	**E:354919.8 N:529002.4**	**5** of **5**

BH-PTS-114 Boxes 5 & 6 11.30m - 14.30m

BH-PTS-114 Boxes 7 & 8 14.30m - 15.80m

Method Used:	**Inspection pit + Cable Percussion + Rotary Cored**	Plant Used:	**Dando 2000 + Comacchio Geo 602**	Drilled By:	**Brad Speirs + Sam Carter**	Logged By:	**EMenkiti + RBarker**	Checked By:	AML

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SUMMARY OF DISCONTINUITIES - BH-PTS114

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
1	7.70-8.15	-	-	-	-	-	-	-	AZCL.
-	8.15-8.15	IdF	0	-	-	-	-	-	
-	8.21-8.21	IdF	0	-	-	-	-	-	
-	8.30-8.30	IdF	0	-	-	-	-	-	
2	8.35-8.35	BF	10	P-R	-	-	-	6	Black staining.
3	8.35-8.41	J	45	P-R	-	-	-	8	Clean.
4	8.35-8.61	J	60	P-R	-	-	-	8	Clean.
-	8.44-8.44	IdF	0	-	-	-	-	-	
5	8.61-8.61	PFR	5	P-R	-	-	-	6	Clean.
-	8.77-8.77	IdF	0	-	-	-	-	-	
6	8.81-8.84	PFR	20	P-R	-	-	-	6	Clean.
7	8.90-8.96	J	45	P-R	-	-	-	-	Clean.
-	8.96-8.96	IdF	0	U-R	-	-	-	-	
8	9.01-9.38	J	70	U-R	-	-	Clay infill less than 1mm.	10	
-	9.24-9.24	IdF	0	-	-	-	-	-	
9	9.38-9.38	BF	10	P-R	-	-	-	6	Black staining.

Key:
Type codes: BF = Bedding fracture, IdF = Induced fracture, J = Joint, PF = Possible Fault, PFR = Possible Fracture.
Small-scale roughness codes: P-R = Planar - rough, U-R = Undulating - rough.

SUMMARY OF DISCONTINUITIES - BH-PTS114

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
10	9.46-9.47	-	10	-	-	-	-	-	
11	9.55-9.57	-	15	-	-	-	-	-	
12	9.80-9.80	-	10	-	-	-	-	-	
13	9.82-9.82	-	10	-	-	-	-	-	
14	9.91-9.91	BF	10	P-R	-	-	-	6	Black staining.
15	10.08-10.08	BF	10	P-R	-	-	-	6	Black staining.
16	10.17-10.17	-	10	-	-	-	-	-	
17	10.34-10.35	-	10	-	-	-	-	-	
18	10.41-10.41	BF	15	P-R	-	-	-	6	Black staining.
19	10.53-10.53	-	10	-	-	-	-	-	
20	10.60-10.60	-	15	-	-	-	-	-	
21	10.75-10.75	-	5	-	-	-	-	-	
22	10.93-10.93	-	5	-	-	-	-	-	
23	11.21-11.21	BF	20	P-R	-	-	-	6	Black staining.
24	11.30-11.30	-	15	-	-	-	-	-	
25	11.33-11.33	BF	10	P-R	-	-	-	6	Black staining.

Key:
Type codes: BF = Bedding fracture, IdF = Induced fracture, J = Joint, PF = Possible Fault, PFR = Possible Fracture.
Small-scale roughness codes: P-R = Planar - rough, U-R = Undulating - rough.

SUMMARY OF DISCONTINUITIES - BH-PTS114

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
26	11.46-11.46	BF	10	P-R	-	-	-	6	Black staining.
27	11.68-11.70	BF	20	P-R	-	-	-	6	Black staining.
28	11.73-11.73	BF	10	P-R	-	-	-	6	Black staining.
29	11.78-11.78	-	5	-	-	-	-	-	
30	11.97-11.97	BF	10	P-R	-	-	-	6	Black staining.
31	12.07-12.07	-	10	-	-	-	-	-	
32	12.17-12.17	-	15	-	-	-	-	-	
33	12.29-12.29	-	15	-	-	-	-	-	
34	12.29-12.35	-	-	-	-	-	-	-	
35	12.46-12.48	BF	20	P-R	-	-	-	6	Black staining.
36	12.58-12.58	-	15	-	-	-	-	-	
37	12.66-12.66	-	10	-	-	-	-	-	
38	12.72-12.72	BF	10	P-R	-	-	-	6	Black staining.
39	12.80-12.80	-	5	-	-	-	-	-	
40	12.94-12.94	-	5	-	-	-	-	-	
41	13.00-13.00	-	5	-	-	-	-	-	

Key:
Type codes: BF = Bedding fracture, IdF = Induced fracture, J = Joint, PF = Possible Fault, PFR = Possible Fracture.
Small-scale roughness codes: P-R = Planar - rough, U-R = Undulating - rough.

SUMMARY OF DISCONTINUITIES - BH-PTS114

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
42	13.02-13.05	-	10	-	-	-	-	-	
43	13.05-13.05	BF	10	P-R	-	-	-	6	Black staining.
44	13.08-13.08	-	10	-	-	-	-	-	
45	13.15-13.15	-	15	-	-	-	-	-	
46	13.22-13.22	-	30	-	-	-	-	-	
47	13.32-13.32	-	15	-	-	-	-	-	
48	13.60-13.60	BF	15	P-R	-	-	-	6	Black staining.
49	13.74-13.74	-	15	-	-	-	-	-	
50	13.86-13.86	BF	5	P-R	-	-	-	6	Black staining.
51	13.86-14.14	J	75	U-R	-	-	-	12	Clean.
52	14.14-14.14	BF	15	P-R	-	-	-	6	Black staining.
53	14.30-14.30	-	10	-	-	-	-	-	
54	14.48-14.48	-	10	-	-	-	-	-	
55	14.72-14.72	BF	10	P-R	-	-	-	6	Black staining.
56	14.98-14.98	J	10	-	-	-	-	-	
57	14.98-15.04	-	50	U-R	-	-	-	10	Clean.

Key:
Type codes: BF = Bedding fracture, IdF = Induced fracture, J = Joint, PF = Possible Fault, PFR = Possible Fracture.
Small-scale roughness codes: P-R = Planar - rough, U-R = Undulating - rough.

SUMMARY OF DISCONTINUITIES - BH-PTS114

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
58	15.09-15.09	-	10	-	-	-	-	-	
59	15.13-15.13	-	5	-	-	-	-	-	
60	15.33-15.33	BF	5	-	-	-	-	6	Black staining.
61	15.35-15.35	-	5	-	-	-	-	-	
62	15.44-15.44	-	5	-	-	-	-	-	
63	15.60-15.60	PF	5	-	-	-	Clay until less than 2mm.	6	
64	15.60-15.80	-	-	-	-	-	-	-	AZCL.

Key:
Type codes: BF = Bedding fracture, IdF = Induced fracture, J = Joint, PF = Possible Fault, PFR = Possible Fracture.
Small-scale roughness codes: P-R = Planar - rough, U-R = Undulating - rough.

STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS115**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**30.03.23** End: **04.04.23**	**110.36**	**E:354985.9 N:529034.3**	**1** of **2**

Depth (m)	Samples & Testing No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.10	1	D				Grass over dark brown very gravelly silty SAND with high cobble content and roots and rootlets. Sand is fine to medium. Gravel is subangular to subrounded fine to coarse comprising mixed lithologies including limestone/quartzite. Cobbles are subrounded of limestone (<100mm). (TOPSOIL)	110.16	0.20	
0.10-0.20	2	B							
0.10	201	D							
0.30-0.30	101	ES						(0.70)	
0.30	202	D				Dark brown very sandy silty subangular to subrounded fine to coarse GRAVEL of limestone and quartzite with high cobble and medium boulder content. Sand is fine to medium. Cobbles and boulders are subrounded of limestone (<240mm). (GLACIAL TILL - GRANULAR)	109.46	0.90	
0.30	3	D							
0.30-0.60	4	B							
0.50-0.50	102	ES							
1.00-1.00	103	ES				Reddish brown very gravelly very silty SAND with high cobble content. Sand is fine to medium. Gravel is subangular to subrounded fine to coarse of limestone and quartzite. Cobbles are subrounded of mixed lithologies (<120mm). (GLACIAL TILL - GRANULAR)	109.16	1.20	
1.00	203	D							
1.00	5	D							
1.00-1.20	6	B							
1.20-1.65	7	SPT	N=30						
1.20-1.65	8	DSPT						(0.80)	
1.20-1.70	9	B				Dense grey slightly sandy subangular to subrounded fine to coarse GRAVEL of mixed lithologies including limestone/quartz with high cobble content. Sand is coarse. Cobbles are subrounded of mixed lithologies (<130mm). (GLACIOFLUVIAL DEPOSITS)	108.36	2.00	
1.50-1.50	104	ES							
1.80	10	D							
1.80	204	D							
2.00-2.24	11	SPT	3,7/37,13 for 10mm			Reddish brown weathered SANDSTONE containing beds of material weathered in-situ to gravel. Recovered as (very dense) angular to subrounded fine to coarse GRAVEL of predominantly sandstone and occasionally limestone and quartzite. (WEATHERED PENRITH SANDSTONE) 2.01-2.50m : laboratory particle size analysis test shows recovered material to be gravelly slightly silty SAND. Gravel size fragments possibly broken down to sand size components by testing process.			
2.00-2.24	12	DSPT							
2.00-2.50	13	B							
2.80	14	D							
3.00-3.11	15	SPT	20,5/50 for 31mm						
3.00-3.11	16	DSPT							
3.00-3.50	17	B							
3.80	18	D							
4.00-4.08	19	SPT	25/50 for 44mm			4.00-4.50m : laboratory particle size analysis test shows recovered material to be very gravelly slightly silty SAND. Gravel size fragments possibly broken down to sand size components by testing process.			
4.00-4.08	20	DSPT							
4.00-4.50	21	B							
4.80	22	D							
5.00-5.22	23	SPT	5,10/50 for 67mm						
5.00-5.21	24	DSPT							
5.00-5.50	25	B							
5.80	26	D							
6.00-6.10	27	SPT	25/50 for 56mm					(8.10)	
6.00-6.10	28	DSPT							
6.00-6.50	29	B							
6.80	30	D							
7.00-7.10	31	SPT	25/50 for 33mm						
7.00-7.10	32	DSPT							
7.00-7.50	33	B							
7.80	34	D							
8.00-8.08	35	SPT	25/50 for 28mm						
8.00-8.08	36	DSPT							
8.00-8.50	37	B							
8.80	38	D							

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
30/03/23	17:00	3.80	3.80	250	2.49
31/03/23	09:15	3.80	3.80	250	1.53
31/03/23	14:00	6.00	6.00	200	3.33
03/04/23	13:15	6.00	6.00	200	3.08
03/04/23	16:30	9.00	7.00	200	7.98
04/04/23	08:40	9.00	7.50	200	3.22
04/04/23	10:00	10.10	7.50	200	3.30

Chiselling / Slow Progress

From	To	Duration (hh:mm)
1.20	1.40	01:00

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Borehole drilled using cable percussion drilling to 3.00m depth using 250mm diameter tools and casing, reducing to 200mm tools and casing to 10.45m depth. .
3. No groundwater encountered during cable percussion drilling.
4. Water added to aid drilling from ground level to 3.80m (1800 litres), 3.80-6.00m (300 litres), 6.00-9.00m (300

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000**	**Brad Speirs**	**DNartay**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS115

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	30.03.23	110.36	E:354985.9 N:529034.3	2 of 2
	End: 04.04.23			

Depth (m)	Samples & Testing No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
9.00-9.10	39	SPT	25/50 for 41mm						
9.00-9.10	40	DSPT							
9.00-9.50	41	B							
9.80	42	D							
10.00-10.09	43	SPT	25/50 for 28mm						
10.00-10.09	44	DSPT				Borehole terminated at 10.10m depth.	100.26	10.10	

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

litres) and 9.00-10.00m (500 litres).
5. 50mm diameter gas/groundwater monitoring well complete with upstanding protective cover installed to 6.50m depth on completion. Water depth 3.30m before installation. Response zone 1.00m to 6.50m depth.
6. Geoenvironmental sample 601 ES taken from separate inspection pit excavated alongside on 03/06/2023 to obtain fresh sample for laboratory testing.
7. SPT hammer JB01-2023 (E_r = 61.00%) used.

All dimensions in metres | Scale: 1:50

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	Dando 2000	Brad Speirs	DNartay	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS116**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**14.03.23** End: **17.03.23**	**111.54**	**E:355017.1 N:528885.3**	**1** of **5**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.00-0.30	2	B							Grass over dark brown gravelly silty SAND with roots and rootlets. Sand is fine to medium. Gravel is subangular to subrounded fine to coarse of quartz. (TOPSOIL)		(0.40)	
0.10	1	D										
0.30-0.30	101	ES										
0.40-0.60	4	B							Dark reddish brown very sandy silty subangular to subrounded fine to coarse GRAVEL of quartz and quartzite with medium cobble content. Sand is fine to medium. Cobbles are subangular to subrounded <110mm. (GLACIAL TILL - GRANULAR)	111.14	0.40	
0.50-0.50	102	ES										
0.50	3	D										
0.60	5	D								110.94	0.60	
0.60-1.00	7	B							Dark reddish brown very gravelly silty fine to coarse SAND. Gravel is subangular to subrounded fine to coarse quartz and quartzite. (GLACIAL TILL - GRANULAR)		(0.40)	
0.70	6	D										
1.00-1.00	103	ES							Firm dark reddish brown sandy gravelly silty CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse quartz and quartzite. (GLACIAL TILL - COHESIVE)	110.54	1.00	
1.20	8	D										
1.20-1.65	9	$UT_{(UT100)}$	30 blows 95% recovery									
1.20		V	c_u=74/130/100									
1.50-1.50	104	ES									(1.00)	
1.70	10	D										
1.80	11	D										
2.00-2.45	12	SPT	N=12						Medium dense dark reddish brown very sandy silty subangular to subrounded fine to coarse GRAVEL of quartzite with medium cobble content. Sand is fine to medium. Cobbles are subangular to subrounded of quartzite. (GLACIAL TILL - GRANULAR)	109.54	2.00	
2.00-2.45	13	DSPT										
2.00-2.50	14	B										
2.50-3.00	16	B							2.50-3.00m : gravel of limestone, quartz and sandstone present with medium cobble content and pockets of clay.		(1.00)	
2.60	15	D										
3.00-3.32	17	SPT	8,15/22,20,8 for 17mm						Very dense grey sandy slightly silty GRAVEL. Sand is fine to coarse. Gravel is angular to well rounded fine to coarse of mixed lithologies comprising quartz, sandstone and limestone. (GLACIOFLUVIAL DEPOSITS)	108.54	3.00	
3.00-3.32	18	DSPT										
3.00-3.50	19	B										
3.80	20	D										
4.00-4.24	21	SPT(c)	10,15/26,24 for 29mm									
4.00-4.50	22	B										

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
14/03/23	16:20	7.00	7.00	250	3.22
15/03/23	12:00	7.00	7.00	250	2.20
16/03/23	13:00	6.50	6.00	175	2.30
16/03/23	17:00	9.00	9.00	146	-
17/03/23	09:00	9.00	9.00	146	-
17/03/23	09:30	10.00	10.00	146	1.00

Chiselling / Slow Progress

From	To	Duration (hh:mm)
6.60	6.80	00:30
6.80	7.00	00:40

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Drilling commenced with cable percussion drilling to 7.00m at 250mm diameter. Rotary UW casing lowered to based of hole and 250mm diameter casing withdrawn before hole extended by rotary coring using Geobor S core barrel and water flush.
3. Water added to aid drilling between 2.00-7.00m (1500 litres).

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Beretta T44**	**Brad Speirs + Lindon Paisley**	**DNartay + RStan**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS116**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**14.03.23** End: **17.03.23**	**111.54**	**E:355017.1 N:528885.3**	**2** of **5**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
											(3.00)	
4.80	23	D										
5.00-5.24	24	SPT(c)	19,6/41,9 for 37mm									
5.00-5.50	25	B										
5.80	26	D										
6.00-6.27	27	SPT	3,5/8,42 for 40mm						Extremely weak reddish brown destructured SANDSTONE recovered as SAND and GRAVEL. Sand is fine to coarse. Gravel is angular sandstone. (Possible boulder based on description of underlying stratum?) (WEATHERED PENRITH SANDSTONE)	105.54	6.00	
6.00-6.27	28	DSPT										
6.00-6.50	29	B										
6.50-7.00 (0:02)				0 0 0		100% return W					(1.00)	
6.80	30	D										
7.00-7.50 (0:02)									Very dense reddish brown slightly sandy subangular and subrounded fine to coarse GRAVEL of sandstone. Sand is fine to coarse. (WEATHERED PENRITH SANDSTONE) 7.00m : SPT test completed at bottom of cable percussion borehole. Second test later completed at same depth (reported as 7.01m depth on this log) during rotary drilling after cleaning out collapse material. Based on test blow counts second test was likely completed in ground already disturbed by drilling. 7.40-7.50m : assessed zone of core loss.	104.54	7.00	
7.00-7.10	31	SPT	25/50 for 40mm	60 0 0		100% return W						
7.00-7.78	33	B										
7.01-7.46	28	SPT	N=24								(0.78)	AZCL
7.50-8.00 (0:02)				80 4 0		100% return W						
									Extremely weak locally very weak reddish brown thinly and thickly laminated non-carbonate distinctly weathered fine to coarse grained SANDSTONE. (PENRITH SANDSTONE FORMATION)	103.76	7.78	
										103.64	7.90	
8.00-8.50 (0:02)				0 0 0		100% return W			No recovery. (Probably SANDSTONE based on Driller's log descriptions). (PENRITH SANDSTONE FORMATION)			AZCL
8.50-9.00 (0:02)												
8.50-8.95	29	SPT	2,3/3,5,20,22 for 70mm	0 0 0		100% return W					(2.10)	

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

4. No groundwater encountered during cable percussion drilling. Any possible water strikes during rotary drilling may have been masked by water drilling flush.
5. SPT test completed at bottom of cable percussion borehole. Second test later completed at same depth (reported as 7.01m depth on this log) during rotary drilling after cleaning out collapse material (collapsed back to 6.50m). Based on test blow counts second test was likely completed in ground already disturbed by

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Beretta T44**	**Brad Speirs + Lindon Paisley**	**DNartay + RStan**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS116**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**14.03.23** End: **17.03.23**	**111.54**	**E:355017.1 N:528885.3**	**3** of **5**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
9.00-9.50 (0:05) 9.00-9.10	31	SPT	25/50 for 25mm	0 0 0		90% return W (Red)						AZCL
9.50-10.00 (0:05) 9.50-9.64	36	SPT(c)	7,18/50 for 25mm	0 0 0		90% return W (Red)						
									Borehole terminated at 10.00m.	101.54	10.00	

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

drilling.
6. Time taken to complete rotary core runs reported in Depth column, in brackets, in format (hh:mm).
7. On completion borehole backfilled with bentonite.
8. SPT hammers CD9.2.03-2023 (E_r = 63.00%) , JB01-2023 (E_r = 61.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Beretta T44**	**Brad Speirs + Lindon Paisley**	**DNartay + RStan**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS116

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	14.03.23 End: 17.03.23	111.54	E:355017.1 N:528885.3	4 of 5

6.50-7.50m

7.50-8.50m

Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Dando 2000 + Beretta T44	Drilled By:	Brad Speirs + Lindon Paisley	Logged By:	DNartay + RStan	Checked By:	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log BOREHOLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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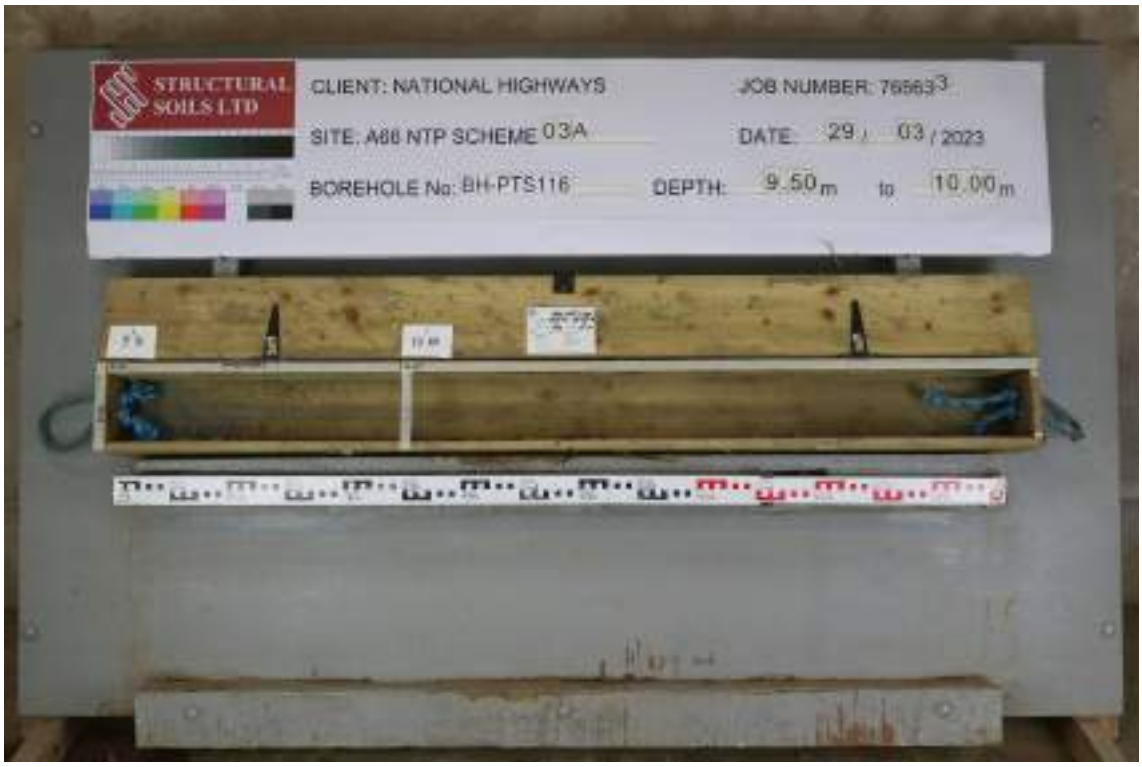
STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		**National Highways**		**BH-PTS116**
Contract Ref:	Start: **14.03.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **17.03.23**	**111.54**	**E:355017.1 N:528885.3**	**5** of **5**

8.50-9.50m



9.50-10.00m

Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Dando 2000 + Beretta T44	Drilled By:	Brad Speirs + Lindon Paisley	Logged By:	DNartay + RStan	Checked By:	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS117

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	06.04.23 End: 14.04.23	112.63	E:355159.8 N:528978.8	1 of 4

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.10	1	D							Grass over dark brown slightly gravelly sandy SILT with frequent rootlets (<1mm). Sand is fine to medium. Gravel is subangular to rounded fine to medium dark grey fine crystalline igneous rock. (TOPSOIL)		(0.30)	
0.10-0.20	2	B										
0.10	201	D										
0.30	101	ES							Reddish brown very sandy clayey subangular to rounded fine to coarse GRAVEL of dark grey igneous rock with high cobble and low boulder content. Sand is fine to coarse. Cobbles are rounded <180mm in diameter of white and dark grey coarse crystalline igneous rock. Boulders are rounded <230mm in diameter of coarse crystalline igneous rock. (GLACIAL TILL - GRANULAR)	112.33	0.30	
0.30	202	D										
0.30	3	D										
0.30-0.50	4	B										
0.50	102	ES										
0.60	203	D										
0.60	5	D										
0.60-1.00	6	B									(0.90)	
1.00	103	ES										
1.20-1.65	7	SPT	N=35						Dense light grey sandy angular to rounded fine to coarse GRAVEL of igneous rock and sandstone with medium to high cobble content. Sand is medium to coarse. Cobbles are angular to rounded <130mm in diameter of grey sandstone and grey fine crystalline igneous rock. (GLACIOFLUVIAL DEPOSITS)	111.43	1.20	
1.20-1.65	8	DSPT										
1.20-1.70	9	B										
1.50	104	ES										
1.80	10	D										
1.80	204	D										
2.00-2.45	11	SPT(c)	N=35						2.00-2.50m : very sandy.			
2.00-2.50	12	B										
2.80	13	D										
2.80	205	D										
3.00-3.38	14	SPT(c)	7,10/9,15,21,5 for 5mm						3.00m : Becoming very dense.			
3.00-3.50	15	B									(4.75)	
3.80	16	D										
3.80	206	D										
4.00-4.45	17	SPT(c)	N=44									
4.00-4.50	18	B										

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
06/04/23	14:00	3.20	3.20	250	0.62
11/04/23	08:45	3.20	3.20	250	1.04
11/04/23	15:45	7.20	7.00	250	3.21
12/04/23	10:30	7.20	7.00	250	3.47
14/04/23	09:00	7.20	7.20	175	4.40
14/04/23	10:30	10.20	7.20	175	3.50

Chiselling / Slow Progress

From	To	Duration (hh:mm)
7.00	7.10	00:30

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Borehole commenced by cable percussion drilling at 250mm diameter to 7.20m depth. Rotary UW casing lowered to base of hole and cable percussion casing withdrawn. Borehole then extended by rotary coring carried out using 146mm diameter Geobor S core barrel, PCD bit and water flush.
3. Water added to aid drilling between 1.20-3.20m (750

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	Dando 2000 + Comacchio Geo 602	Jamie Carr + Sam Carter	EMenkiti + RBarker	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS117**

Contract Ref:	Start: **06.04.23** End: **14.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633		**112.63**	**E:355159.8 N:528978.8**	**2** of **4**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
4.80	19	D										
4.80	207	D										
5.00-5.45	20	SPT(c)	N=41									
5.00-5.50	21	B										
5.80	208	D										
5.80	22	D										
6.00-6.14	23	SPT	25/50 for 68mm						Red residual weathered SANDSTONE recovered as reddish brown gravelly slightly clayey fine to coarse SAND. (WEATHERED PENRITH SANDSTONE)	106.68	5.95	
6.00-6.14	24	DSPT										
6.00-6.50	25	B									(1.25)	
6.80	26	D										
7.00-7.05	27	SPT	25/50 for 22mm									
7.00-7.05	28	DSPT										
7.20-7.95 (0:02)				87 87 87		100% return W (Brown)			Weak thinly laminated to thinly bedded reddish brown partially weathered fine to medium grained micaceous SANDSTONE. Bedding fractures (15°) medium spaced clean planar rough. (PENRITH SANDSTONE FORMATION) 7.20-7.30m : AZCL	105.43	7.20	AZCL
7.38-7.48	33	C										
7.95-8.70 (0:05)				100 100 100	290 1730 2020	100% return W (Brown)					(1.93)	
8.56-8.70	34	C										
8.70-10.20 (0:04)				97 97 91		100% return W (Brown)						

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

litres) and 3.20-7.20m (1200 litres).

4. No groundwater strikes observed during cable percussion or rotary drilling, however any strike may have been obscured by water added to aid drilling, and drilling flush.
5. Time taken to complete rotary core runs reported in Depth column, in brackets, in format (hh:mm).
6. Borehole backfilled with bentonite cement pellets, inspection pit backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Comacchio Geo 602**	**Jamie Carr + Sam Carter**	**EMenkiti + RBarker**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS117**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**06.04.23** End: **14.04.23**	**112.63**	**E:355159.8 N:528978.8**	**3** of **4**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
9.13-9.22	35	C		97 97 91	290 1730 2020 90 200 460	100% return W (Brown)			Weak thinly laminated to thinly bedded reddish brown partially weathered fine to coarse grained micaceous SANDSTONE with very closely to medium spaced thin laminae to very thin black staining. Bedding fractures are 5-10° closely to medium spaced planar rough open black staining. (PENRITH SANDSTONE FORMATION)	103.50	9.13 (1.07)	
9.76-9.88	36	C										
									Borehole terminated at 10.20m depth.	102.43	10.20	

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

7. SPT hammer JB01-2023 (E_r = 61.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Comacchio Geo 602**	**Jamie Carr + Sam Carter**	**EMenkiti + RBarker**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		**National Highways**		**BH-PTS117**
Contract Ref:	Start: **06.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **14.04.23**	**112.63**	**E:355159.8 N:528978.8**	**4** of **4**

GS-PTS117 Boxes 1 & 2 7.20m - 8.70m

GS-PTS117 Boxes 3 8.70m - 10.20m

Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Dando 2000 + Comacchio Geo 602	Drilled By:	Jamie Carr + Sam Carter	Logged By:	EMenkiti + RBarker	Checked By:	AML

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SUMMARY OF DISCONTINUITIES - BH-PTS117

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
1	8.93-8.93	BF	15	P-R	-	-	-	6	Clean
2	9.22-9.22	BF	10	P-R	-	-	-	6	Black staining
3	9.22-9.26	J	45	P-R	-	-	-	10	Clean
4	9.42-9.42	BF	10	P-R	-	-	-	6	Black staining
5	9.88-9.88	BF	5	P-R	-	-	-	6	Black staining
6	9.97-9.97	BF	5	P-R	-	-	-	6	Black staining
7	10.05-10.05	BF	5	P-R	-	-	-	6	Black staining

Key:
Type codes: BF = Bedding fracture, J = Joint.
Small-scale roughness codes: P-R = Planar - rough.

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Compiled By		Date	Contract Ref:
	ALUMBER	30.08.23	765633
Contract: A66 NTP Scheme S03A			Page: 1 of 1

STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS118**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**03.04.23** End: **03.04.23**	**114.12**	**E:355231.1 N:528980.7**	**1** of **2**

Depth (m)	Samples & Testing No	Type	Results	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.10	1	D				Grass over dark brown slightly gravelly sandy SILT with frequent rootlets (<1mm). Sand is fine to medium. Gravel is subangular to rounded fine to medium dark grey fine crystalline igneous rock. (TOPSOIL)			
0.10	201	D							
0.40-0.60	2	B				Reddish brown very gravelly clayey SAND with medium cobble content. Gravel is subangular to rounded fine to coarse dark grey igneous rock. Sand is fine to coarse. Cobbles are rounded of white and dark grey coarse crystalline igneous rock with equal parts felsic and mafic minerals <150mm. (GLACIAL TILL - GRANULAR)	113.72	0.40	
0.50	101	ES							
0.50	202	D							
0.50	3	D							
0.90-1.10	4	B						(1.16)	
1.00	102	ES							
1.00	203	D							
1.00	5	D							
1.20-1.56	6	SPT	6,8/15,20,15 for 55mm						
						Borehole terminated at 1.56m depth on obstruction.	112.57	1.56	

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)
03/04/23	15:00	1.20	1.20	300	Dry	1.20	1.20	00:30

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Borehole drilled using cable percussion drilling to 1.56m depth using 300mm diameter tools and casing.
3. No groundwater encountered during cable percussion drilling.
4. Water added to aid drilling from 1.20m (500 litres).
5. Borehole terminated at 1.56m after no progress and hole collapse, with verbal confirmation by Investigation

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000 Mark 1**	**Will Nevins**	**RBarker**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS118**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**03.04.23** End: **03.04.23**	**114.12**	**E:355231.1 N:528980.7**	**2** of **2**

Depth (m)	Samples & Testing No	Type	Results	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

Supervisor and backfilled with bentonite cement pellets.

6. SPT hammer JB05-2023 (E_r = 60.00%) used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000 Mark 1**	**Will Nevins**	**RBarker**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS118A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**04.04.23** End: **05.04.23**	**114.22**	**E:355232.0 N:528979.0**	**1** of **2**

Depth (m)	Samples & Testing No	Type	Results	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.10	1	D				Grass over dark brown slightly gravelly sandy SILT with frequent rootlets (<1mm). Sand is fine to medium. Gravel is subangular to rounded fine to medium dark grey fine crystalline igneous rock. (TOPSOIL)			
0.10	201	D							
0.40-0.60	2	B				Reddish brown very sandy slightly clayey subangular to rounded fine to coarse GRAVEL of dolerite with medium cobble and low boulder content. Sand is fine to coarse. Cobbles are rounded of diorite <180mm. Boulders are rounded of dolerite <230mm. (GLACIAL TILL - GRANULAR)	113.82	0.40	
0.50	101	ES						(0.80)	
0.50	202	D							
0.50	3	D							
0.90-1.10	4	B							
1.00	102	ES							
1.00	203	D							
1.00	5	D				Very dense light grey very sandy slightly silty angular to rounded fine to coarse GRAVEL of light grey volcaniclastic rock and sandstone with medium cobble content. Sand is medium to coarse. (GLACIOFLUVIAL DEPOSITS)	113.02	1.20	
1.20-1.53	7	SPT	10,15/15,20,15 for 30mm						
1.20-1.53	8	DSPT							
1.20-1.50	9	B							
1.50	103	ES							
1.80	10	D							
1.80	204	D							
2.00-2.42	11	SPT	3,8/11,14,15,10 for 45mm			2.00-2.50m : cobbles absent in sample 13B.			
2.00-2.42	12	DSPT							
2.00-2.50	13	B							
2.80	14	D							
2.80	205	D							
3.00-3.36	15	SPT(c)	3,6/15,20,15 for 60mm						
3.00-3.50	16	B							
								(5.10)	
3.80	17	D							
4.00-4.37	18	SPT(c)	4,8/20,20,10 for 70mm						
4.00-4.50	19	B							
4.80	20	D							
4.80	207	D							
5.00-5.38	21	SPT(c)	6,11/14,16,20 for 75mm						
5.00-5.50	22	B							
5.80	208	D							
5.80	23	D							
6.00-6.25	24	SPT	10,15/30,20 for 20mm						
6.00-6.25	25	DSPT							
6.00-6.20	26	B				Borehole terminated at 6.30m depth.	107.92	6.30	

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
04/04/23	17:00	4.50	4.50	300	4.00
05/04/23	08:00	4.50	4.50	300	3.80
05/04/23	14:00	6.20	6.20	300	4.80

Chiselling / Slow Progress

From	To	Duration (hh:mm)
1.50	1.70	01:00

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Borehole drilled using cable percussion drilling to 6.30m depth using 300mm diameter tools and casing.
3. Water added to aid drilling from 1.20-4.50m (3000 litres) and 4.50-6.00m (4000 litres).
4. No groundwater encountered during cable percussion drilling.
5. Borehole terminated at 6.30m with verbal confirmation

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000 Mark 2**	**Will Nevins**	**RBarker**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS118A

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	04.04.23 End: 05.04.23	114.22	E:355232.0 N:528979.0	2 of 2

Depth (m)	Samples & Testing No	Type	Results	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

by Investigation Supervisor and backfilled with bentonite cement pellets.
6. SPT hammer JB05-2023 (E_r = 60.00%) used.

All dimensions in metres | Scale: 1:50

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	Dando 2000 Mark 2	Will Nevins	RBarker	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS118B**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**06.04.23** End: **18.04.23**	**114.51**	**E:355230.5 N:528981.8**	**1** of **5**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
									Grass over dark brown slightly gravelly slightly clayey fine to coarse SAND with frequent rootlets. Gravel is subangular to subrounded fine to coarse of sandstone, granite and quartz. (TOPSOIL)		(0.30)	
									Yellowish brown gravelly clayey fine to coarse SAND with medium cobble content. Gravel is subangular to subrounded fine to coarse of sandstone, granite and quartz. Cobbles are subangular to subrounded of quartz and granite with maximum size of 130 mm across. (GLACIAL TILL - GRANULAR)	114.21	0.30 (0.90)	
1.20-1.46	1	SPT(c)	7,14/25,25 for 35mm						Very dense light grey sandy angular to rounded fine to coarse GRAVEL of volcaniclastic rock and sandstone. Sand is medium to coarse. (GLACIOFLUVIAL DEPOSITS)	113.31	1.20	
2.00-2.34	2	SPT(c)	4,9/11,24,15 for 35mm									
3.00-3.45	3	SPT	N=29						3.00m : medium dense.			
4.00-4.45	4	SPT	N=38						4.00m : dense.		(6.00)	

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
06/04/23	14:00	2.00	2.00	300	1.80
11/04/23	08:00	2.00	2.00	300	1.30
11/04/23	16:00	6.20	6.20	250	3.00
12/04/23	08:00	6.50	6.00	250	2.50
12/04/23	17:00	7.50	7.20	250	5.00
13/04/23	08:00	7.50	7.50	250	3.00
17/04/23	14:00	7.50	7.50	175	4.50
17/04/23	17:00	9.30	7.50	175	1.80

Chiselling / Slow Progress

From	To	Duration (hh:mm)
6.80	6.90	00:30
6.90	7.00	00:30
7.00	8.00	00:30

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Borehole drilled using cable percussion drilling to 7.50m depth then extended to 10.30m depth using rotary drilling techniques carried out using 146mm diameter Geobor S core barrel, PCD bit and water flush.
3. Water added to aid cable percussion drilling between 1.20-2.00m (500 litres), 2.00-6.20m (4000 litres) and

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Comacchio Geo 602**	**Will Nevins + Sam Carter**	**MTurkowski + RStan**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS118B**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**06.04.23** End: **18.04.23**	**114.51**	**E:355230.5 N:528981.8**	**2** of **5**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
5.00-5.28	5	SPT	9,12/20,30 for 50mm						5.00m : very dense.			
6.00-6.24	6	SPT	10,15/30,20 for 15mm									
6.80	107	D										
6.80	7	D										
7.00-7.19	8	SPT(c)	10,15/50 for 40mm									
7.00-7.20	9	B										
7.20-7.50	10	B							Residual weathered red SANDSTONE recovered as (very dense) reddish brown very gravelly slightly silty fine to coarse SAND. (WEATHERED PENRITH SANDSTONE)	107.31	7.20 (0.30)	
7.50-8.25 (0:02)				0 0 0	NI NI NI	100% return W (Brown)			No recovery.	107.01	7.50	AZCL
8.25-8.80 (0:06)				0 0 0		100% return W (Brown)					(1.80)	
8.80-9.30 (0:05)				0 0 0		100% return W (Brown)						
8.80-9.02	8	SPT	3,12/50									

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
18/04/23	09:10	9.30	7.50	146	4.40
18/04/23	17:00	10.30	7.50	146	-

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

6.20-7.50m (4000 litres).

4. No groundwater strikes observed during rotary drilling, however any strike may have been obscured by drilling flush.
5. Time taken to complete rotary core runs reported in Depth column, in brackets, in format (hh:mm).
6. 50mm diameter gas/groundwater monitoring well complete with upstanding protective cover installed to 3.50m depth on completion. Response zone 1.40m to

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Comacchio Geo 602**	**Will Nevins + Sam Carter**	**MTurkowski + RStan**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS118B**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**06.04.23** End: **18.04.23**	**114.51**	**E:355230.5 N:528981.8**	**3** of **5**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
8.80-9.02	301	DSPT	for 70mm	0 0 0	NI NI NI	100% return W (Brown)						AZCL
9.30-9.80 (0:04) 9.61-9.71	11	C		100 64 0	NI 60 80	100% return W (Brown)			Extremely weak thinly laminated partially weathered fine to coarse grained SANDSTONE. Discontinuities generally possible bedding fractures, 7-9°, closely spaced planar rough with no infill. (PENRITH SANDSTONE FORMATION) 9.30-9.38m : recovered non-intact as subangular to subrounded medium to coarse gravel.	105.21	9.30 (0.50)	
9.80-10.30 (0:03)				0 0 0	NI NI NI	100% return W (Brown)			No recovery.	104.71	9.80 (0.50)	AZCL
									Borehole terminated at 10.30m depth.	104.21	10.30	

Boring Progress and Water Observations: Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	Chiselling / Slow Progress: From	To	Duration (hh:mm)

General Remarks

4.00m depth.
7. SPT hammers AR1240-2022 (E_r = 67.48%) , JB05-2023 (E_r = 60.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Comacchio Geo 602**	**Will Nevins + Sam Carter**	**MTurkowski + RStan**	AML

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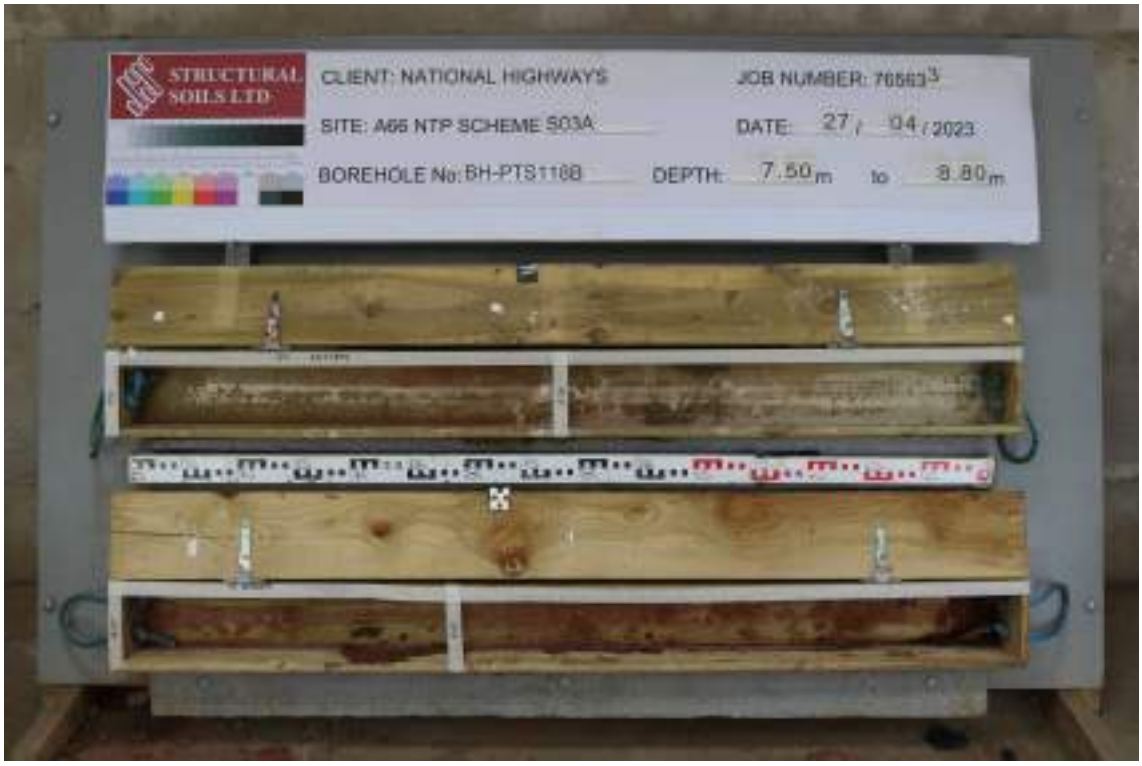
STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		**National Highways**		**BH-PTS118B**
Contract Ref:	Start: **06.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **18.04.23**	**114.51**	**E:355230.5 N:528981.8**	**4** of **5**

GS-PTS118B Boxes 1 & 2 7.50m - 8.80m



GS-PTS118B Boxes 3 & 4 8.80m - 9.80m

Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Dando 2000 + Comacchio Geo 602	Drilled By:	Will Nevins + Sam Carter	Logged By:	MTurkowski + RStan	Checked By:	AML

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BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		**National Highways**		**BH-PTS118B**
Contract Ref:	Start: **06.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **18.04.23**	**114.51**	**E:355230.5 N:528981.8**	**5** of **5**

GS-PTS118B Boxes 5 & 6 9.80m - 10.30m

Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Dando 2000 + Comacchio Geo 602	Drilled By:	Will Nevins + Sam Carter	Logged By:	MTurkowski + RStan	Checked By:	AML

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SUMMARY OF DISCONTINUITIES - BH-PTS118B

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
1	9.45-9.47	PFR	8	P-R	-	-	-	2	Clean - possibly drilling induced.
2	9.52-9.53	PFR	9	P-R	-	-	-	2	Clean - possibly drilling induced.
3	9.60-9.62	PFR	7	P-R	-	-	-	2	Clean - possibly drilling induced.
4	9.68-9.70	PFR	8	P-R	-	-	-	2	Clean - possibly drilling induced.
5	9.72-9.75	PFR	7	P-R	-	-	-	2	Clean - possibly drilling induced.
6	9.78-9.80	PFR	7	P-R	-	-	-	2	Clean - possibly drilling induced.

Key:
Type codes: PFR = Possible Fracture.
Small-scale roughness codes: P-R = Planar - rough.

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Bristol
BS3 4AG

Compiled By		Date	Contract Ref:
	ALUMBER	30.08.23	765633
Contract: A66 NTP Scheme S03A			Page: 1 of 1

STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS119**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**17.03.23** End: **20.03.23**	**114.05**	**E:355754.6 N:528945.4**	**1** of **2**

Depth (m)	Samples & Testing No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.10	1	D				Grass over dark brown silty fine to medium SAND with roots and rootlets. (TOPSOIL)	113.85	0.20	
0.10-0.10	101	ES							
0.20-0.60	3	B				Reddish brown gravelly clayey fine to medium SAND. Gravel is angular fine to coarse of sandstone. (GLACIAL TILL - GRANULAR)		(0.70)	
0.30	2	D							
0.50-0.50	102	ES							
0.90-1.20	5	B				Reddish brown gravelly clayey fine to medium SAND with low cobble content. Gravel subangular to subrounded fine to coarse of limestone. Cobbles are subangular of limestone <150mm. (GLACIAL TILL - GRANULAR)	113.15	0.90	
1.00-1.00	103	ES							
1.00	4	D					112.85	1.20	
1.20-1.65	6	SPT	N=13			Medium dense reddish brown locally very gravelly slightly silty fine to medium SAND with pockets of clay. Gravel is angular fine of limestone. (GLACIAL TILL - GRANULAR)		(0.80)	
1.20-1.65	7	DSPT							
1.20-1.70	8	B							
1.80	9	D							
2.00-2.45	10	SPT	N=49			Dense greyish brown sandy slightly clayey subangular to subrounded fine to coarse GRAVEL of mixed lithologies including limestone and quartzite with high cobble content. Sand is medium to coarse. Cobbles are subangular to subrounded of mixed lithologies <165mm. (GLACIOFLUVIAL DEPOSITS)	112.05	2.00	
2.00-2.45	11	DSPT							
2.00-2.50	12	B							
2.80	13	D						(1.50)	
3.00-3.41	14	SPT(c)	7,11/13,15,17,5 for 34mm			3.00-3.50m : very dense.			
3.00-3.50	15	B							
3.50-4.00	17	B				Weathered reddish brown SANDSTONE recovered as (very dense) very sandy slightly clayey angular fine to coarse GRAVEL of sandstone. Sand is fine to medium. (WEATHERED PENRITH SANDSTONE)	110.55	3.50	
3.60	16	D							
4.00-4.25	18	SPT	18,7/33,17 for 57mm						
4.00-4.28	19	DSPT							
4.00-4.50	20	B							
4.80	21	D							
5.00-5.14	22	SPT	25/41,9 for 13mm						
5.00-5.14	23	DSPT							
5.00-5.50	24	B							
5.80	25	D							
6.00-6.09	26	SPT	25/50 for 24mm						
6.00-6.09	27	DSPT							
6.00-7.00	28	B							
7.00-7.09	29	SPT	25/50 for 31mm					(6.95)	
7.00-7.09	30	DSPT							
7.00-8.00	31	B							
8.00-8.13	32	SPT	25/50 for 58mm			8.00-9.00m : laboratory PSD shows gravelly clayey fine to coarse SAND. Gravel size fraction fine to medium. Weathered sandstone possibly disaggregated during PSD test.			
8.00-8.13	33	DSPT							
8.00-9.00	34	B							

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
17/03/23	14:30	5.50	5.50	200	3.30
20/03/23	08:50	5.50	5.50	200	2.27
20/03/23	12:50	10.00	6.00	200	3.30

Chiselling / Slow Progress

From	To	Duration (hh:mm)
3.30	3.45	00:30

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Borehole drilled using cable percussion drilling to 10.00m depth using 200mm tools and casing and completed with standard penetration test.
3. No groundwater encountered during cable percussion drilling.
4. Water added to aid drilling between 1.20-5.50m (500 litres) and 5.50-10.00m (500 litres).

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 3000 Mark 2**	**Brad Speirs**	**DNartay**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS119

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	17.03.23 End: 20.03.23	114.05	E:355754.6 N:528945.4	2 of 2

Depth (m)	Samples & Testing No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
9.00-9.09	35	SPT	25/50 for 43mm						
9.00-9.09	36	DSPT							
9.00-10.00	37	B							
10.00-10.10	38	SPT	25/50 for 58mm						
10.00-10.10	39	DSPT							
						Borehole terminated at 10.45m depth.	103.60	10.45	

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

5. 50mm diameter gas/groundwater monitoring well complete with upstanding protective cover installed to 3.00m depth on completion. Water depth 3.30m before installation. Response zone 1.00m to 3.50m depth.
6. SPT hammer JB01-2023 (E_r = 61.00%) used.

All dimensions in metres | Scale: 1:50

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	Dando 3000 Mark 2	Brad Speirs	DNartay	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS120**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**21.03.23** End: **21.03.23**	**112.03**	**E:355725.4 N:528994.2**	**1** of **2**

Depth (m)	Samples & Testing No	Type	Results	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.00-0.40	2	B				MADE GROUND: Grass over dark brown slightly gravelly silty fine to medium SAND with roots and rootlets. Gravel is subangular to subrounded fine to coarse quartz. (MADE GROUND GRANULAR)	111.63	0.40	
0.20	1	D				Reddish brown very gravelly clayey fine to medium SAND with medium cobble content. Gravel is subangular to subrounded fine to coarse of quartz/quartzite. Cobbles are subrounded of sandstone <100mm. (GLACIAL TILL - GRANULAR)		(0.80)	
0.20	201	D							
0.30-0.30	101	ES							
0.50-0.50	102	ES							
0.50	202	D							
0.50	3	D							
0.50-1.00	4	B							
1.00-1.00	103	ES					110.83	1.20	
1.20-1.65	5	SPT	N=14			Medium dense reddish brown mottled grey slightly silty very sandy subangular to subrounded fine to coarse GRAVEL of limestone with medium cobble content. Cobbles are subangular of limestone <150mm. (GLACIOFLUVIAL DEPOSITS)			
1.20-1.65	6	DSPT							
1.20-1.70	7	B						(0.80)	
1.80	8	D				1.90m : obstructions encountered.	110.03	2.00	

Borehole terminated at 2.00m depth on obstruction.

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
21/03/23	16:45	1.90	1.90	200	0.50

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Unable to take hand vane readings due to coarse fraction in clay.
3. Borehole drilled using cable percussion drilling to 2.00m depth using 200mm tools and casing.
4. No groundwater encountered during cable percussion drilling.
5. No water added to aid drilling.
6. Obstruction encountered at 2.00m depth, casing shifted off vertical.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 3000**	**Brad Speirs**	**DNartay**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS120

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	21.03.23	112.03	E:355725.4 N:528994.2	2 of 2
	End: 21.03.23			

Depth (m)	Samples & Testing			Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
	No	Type	Results						

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

7. Borehole terminated with verbal confirmation from Investigation Supervisor and backfilled with bentonite cement pellets.
8. SPT hammer JB01-2023 (E_r = 61.00%) used.

All dimensions in metres | Scale: 1:50

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	Dando 3000	Brad Speirs	DNartay	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS120A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**22.03.23** End: **23.03.23**	**112.12**	**E:355724.9 N:528994.4**	**1** of **2**

Depth (m)	Samples & Testing No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
						Grass over dark brown slightly gravelly silty fine to medium SAND with roots and rootlets. Gravel is subangular to subrounded fine to coarse of quartz (TOPSOIL)	111.72	0.40	
						Reddish brown very gravelly fine to medium SAND with low cobble content. Gravel is subangular to subrounded fine to coarse of quartz/quartzite. Cobbles are subangular of quartzite (<100mm). (GLACIAL TILL - GRANULAR)		(0.80)	
						Dense reddish brown mottled grey very sandy subangular to subrounded fine to coarse GRAVEL of limestone with high cobble content. Sand is fine to coarse. . Cobbles are subangular to subrounded of limestone (<150mm). (GLACIOFLUVIAL DEPOSITS)	110.92	1.20 (1.10)	
2.00-2.11	1	SPT(c)	25/50 for 44mm			Reddish brown weathered SANDSTONE containing beds of material weathered in-situ to gravel. Recovered as (very dense) reddish brown sandy fine to coarse GRAVEL of angular sandstone and well rounded limestone. Sand is fine to medium. (WEATHERED PENRITH SANDSTONE) 2.40-3.00m : laboratory PSD shows very gravelly slightly clayey fine to coarse SAND. Gravel size fraction fine to coarse. Weathered sandstone possibly disaggregated during PSD test.	109.82	2.30 (3.15)	
2.00-2.30	2	B							
2.40	3	D							
2.40-3.00	4	B							
3.00-3.45	5	SPT	N=40						
3.00-3.45	6	DSPT							
3.00-3.50	7	B							
3.80	8	D							
4.00-4.20	9	SPT	7,18/50 for 70mm						
4.00-4.20	10	DSPT							
4.00-4.50	11	B							
4.80	12	D							
5.00-5.12	13	SPT	25/50 for 48mm						
5.00-5.12	14	DSPT							
5.00-5.30	15	B							
5.30-5.38	16	SPT	25/50 for 32mm			Borehole terminated at 5.45m depth.	106.67	5.45	
5.30-5.38	17	DSPT							

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
22/03/23	08:30	1.90	1.90	250	0.40
22/03/23	16:00	5.30	5.30	250	1.39

Chiselling / Slow Progress

From	To	Duration (hh:mm)
1.90	2.30	01:00
3.40	4.30	00:30
5.00	5.30	01:00

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Borehole drilled using cable percussion drilling to 5.38m depth using 250mm tools and casing.
3. Samples and testing taken from 2.00m depth to continue from BH-PTS120.
4. No groundwater encountered during cable percussion drilling.
5. Water added to aid drilling between 1.90-5.30m (1000

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 3000 Mark 2**	**Brad Speirs**	**DNartay**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS120A

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	22.03.23 End: 23.03.23	112.12	E:355724.9 N:528994.4	2 of 2

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

litres).
6. 50mm diameter gas/groundwater monitoring well complete with upstanding protective cover installed to 4.50m depth on completion. Water depth 1.39m before installation. Response zone 1.50m to 5.00m depth.
7. SPT hammer JB01-2023 (E_r = 61.00%) used.

All dimensions in metres | Scale: 1:50

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	Dando 3000 Mark 2	Brad Speirs	DNartay	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS121**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**21.03.23** End: **22.03.23**	**115.18**	**E:355900.4 N:528980.2**	**1** of **2**

Depth (m)	Samples & Testing No	Type	Results	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.00-0.30	2	B				MADE GROUND: Grass over dark brown fine to medium SAND with roots and rootlets. (MADE GROUND GRANULAR)	114.98	0.20	
0.10	1	D							
0.10	201	D							
0.30-0.30	101	ES				Dark brown gravelly very silty fine to medium SAND with high cobble content. Gravel is subangular to subrounded fine to coarse of quartz and limestone. Cobbles are subangular of limestone <170mm. (GLACIAL TILL - GRANULAR)		(0.80)	
0.30	202	D							
0.30	3	D							
0.50-0.50	102	ES							
0.50-0.80	4	B							
0.80	203	D							
0.80	5	D					114.18	1.00	
1.00-1.00	103	ES				Dense dark brown very sandy clayey subangular to subrounded fine to coarse (predominantly coarse) GRAVEL of quartz and limestone with high cobble content. Sand is fine to coarse. Cobbles are subangular of limestone <170mm. (GLACIAL TILL - GRANULAR)		(0.50)	
1.00	204	D							
1.00-1.20	6	B							
1.00	7	D							
1.20-1.65	8	DSPT					113.68	1.50	
1.20-1.65	9	SPT	N=39			Very dense grey very sandy slightly silty subangular to subrounded fine to coarse GRAVEL of limestone. Sand is fine to coarse. (GLACIOFLUVIAL DEPOSITS)			
1.20-1.50	10	B							
1.50	104	ES						(0.80)	
1.80	11	D							
1.80	205	D							
2.00-2.00	12	$SPT_{(NR)}$	NP						
						2.25-2.30m : obstruction encountered.	112.88	2.30	
						Borehole terminated at 2.30m depth on obstruction.			

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
21/03/23	17:00	1.50	None	250	Dry
22/03/23	11:30	2.30	2.30	300	2.00

Chiselling / Slow Progress

From	To	Duration (hh:mm)
1.20	1.50	00:30
1.50	1.80	00:30
1.80	2.00	00:30
2.00	2.30	01:00

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Unable to take hand vane readings due to coarse fraction in clay.
3. Borehole drilled using cable percussion drilling to 2.30m depth using 300mm tools and casing.
4. No groundwater encountered during cable percussion drilling.
5. Water added to aid drilling between 1.50-2.30m (1000 litres).
6. Obstruction encountered at 2.30m depth.
7. Borehole terminated with verbal confirmation from Investigation

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 3000**	**Will Nevins**	**DNartay**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS121

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	21.03.23	115.18	E:355900.4 N:528980.2	2 of 2
	End: 22.03.23			

Depth (m)	Samples & Testing			Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
	No	Type	Results						

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

Supervisor and backfilled with bentonite cement pellets.
8. SPT hammer JB05-2023 (E_r = 60.00%) used.

All dimensions in metres | Scale: 1:50

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	Dando 3000	Will Nevins	DNartay	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS121A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**22.03.23** End: **23.03.23**	**115.12**	**E:355899.2 N:528979.8**	**1** of **2**

Depth (m)	Samples & Testing No	Type	Results	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
						Grass over dark brown fine to medium SAND with roots and rootlets. (TOPSOIL)	114.92	0.20	
						Dark brown gravelly fine to medium SAND with high cobble content. Gravel is subangular to subrounded fine to coarse of mixed lithologies including quartz/limestone. Cobbles are subangular to subrounded of limestone <170mm. (GLACIAL TILL - GRANULAR)		(1.00)	
1.20-1.65	1	SPT	N=43			Firm dark brown slightly gravelly sandy CLAY with high cobble content. Sand is fine to medium. Gravel is subangular to subrounded fine to coarse of mixed lithologies including quartz/limestone. Cobbles are subangular to subrounded of limestone <180mm. (GLACIAL TILL - COHESIVE)	113.92	1.20	
						Very dense grey sandy subangular to subrounded fine to coarse GRAVEL of limestone with high cobble content. Sand is fine to coarse, predominantly coarse. (GLACIOFLUVIAL DEPOSITS)	113.62	1.50	
2.00-2.50	2	B						(1.80)	
2.80	201	D							
2.80	3	D							
3.00-3.35	4	SPT	7,11/13,17,20 for 50mm						
3.00-3.35	5	DSPT							
3.30-3.50	7	B				Reddish brown SANDSTONE containing beds of material weathered in-situ to gravel. Recovered as reddish brown sandy angular to well rounded fine to coarse GRAVEL of mixed lithologies including limestone and weathered sandstone. Sand is fine. (WEATHERED PENRITH SANDSTONE)	111.82	3.30	
						Reddish brown weathered SANDSTONE recovered as (very dense) sandy angular fine to coarse GRAVEL of sandstone. Sand is fine to medium. (WEATHERED PENRITH SANDSTONE)	111.62	3.50	
3.80	202	D							
3.80	6	D							
4.00-4.12	9	SPT	25/50 for 40mm						
4.00-4.50	9	B							
4.10-4.22	8	DSPT							
4.80	10	D							
5.00-5.13	11	SPT	25/50 for 50mm						
5.00-5.13	12	DSPT							
5.00-5.50	13	B							
5.80	14	D							
6.00-6.12	15	SPT	25/50 for 40mm						
6.00-6.12	16	DSPT							
6.00-6.50	17	B							
								(6.63)	
6.80	18	D							
7.00-7.15	19	SPT	25/50 for 70mm						
7.00-7.15	20	DSPT							
7.00-7.50	21	B							
7.80	22	D							
8.00-8.14	22	SPT	25/50 for 60mm						
8.00-8.50	24	B							
8.80	25	D							

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
22/03/23	17:00	1.70	1.70	300	1.50
23/03/23	17:00	6.00	5.00	300	4.50
24/03/23	08:00	6.00	5.00	300	5.50
24/03/23	12:30	10.10	5.00	300	9.50

Chiselling / Slow Progress

From	To	Duration (hh:mm)
2.30	2.50	00:30

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Borehole drilled using cable percussion drilling to 10.13m depth using 300mm tools and casing.
3. No groundwater encountered during cable percussion drilling.
4. Water added to aid drilling between 1.20-1.70m (150 litres), 1.50-6.00m (3000 litres) and 6.00-10.00m (500 litres).

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000 Mark 1**	**Will Nevins**	**DNartay**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS121A

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	22.03.23 End: 23.03.23	115.12	E:355899.2 N:528979.8	2 of 2

Depth (m)	Samples & Testing No	Type	Results	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
9.00-9.13	26	SPT	25/50 for 50mm						
9.00-9.50	27	B							
9.80	28	D							
10.00-10.13	28	SPT	25/50 for 50mm						
						Borehole terminated at 10.13m depth.	105.00	10.13	

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

5. Borehole terminated at 10.13m depth and with verbal confirmation from Investigation Supervisor backfilled with bentonite cement pellets.
6. SPT hammer JB05-2023 (E_r = 60.00%) used.

All dimensions in metres | Scale: 1:50

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	Dando 2000 Mark 1	Will Nevins	DNartay	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS122**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**07.03.23** End: **08.03.23**	**120.63**	**E:355973.2 N:528855.2**	**1** of **2**

Depth (m)	Samples & Testing No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.00-0.10	1	D				MADE GROUND: Grass over dark brown slightly gravelly silty fine to medium SAND with a low cobble content and roots and rootlets. Gravel is subangular to subrounded fine to coarse of quartzite. Cobbles are subrounded of quartzite. (MADE GROUND GRANULAR)			
0.00-0.30	2	B							
0.30-0.30	101	ES					120.28	0.35	
0.35-0.65	4	B				Reddish brown slightly gravelly fine to medium SAND. Gravel is subangular to subrounded fine to coarse of quartz/quartzite. (GLACIAL TILL - GRANULAR)			
0.40	3	D							
0.50-0.50	102	ES					119.98	0.65	
0.65	5	D							
0.65-1.00	7	B							
0.65		V	c_u=45/60/110			Firm reddish brown slightly gravelly sandy silty CLAY. Sand is fine to medium. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone, limestone, quartz and quartzite. (GLACIAL TILL - COHESIVE)			
0.70	6	D							
1.00-1.00	103	ES							
1.20	8	D							
1.20-1.65	9	SPT	N=26						
1.20-1.65	10	DSPT							
1.20-1.70	11	B							
1.20		V	c_u=130/70/90						
1.50-1.50	104	ES							
1.80	12	D							
2.00-2.45	13	SPT(NR)	N=23			2.00-3.90m : increasing gravel content, behaviour borderline between fine soil and very gravelly very clayey SAND.			
2.00-2.50	14	B						(3.25)	
					1				
2.80	15	D							
3.00-3.45	16	UT(UT100)	93 blows 45% recovery						
3.50	17	D							
3.90-4.02	18	SPT	25/50 for 56mm		1	Very dense reddish brown subangular to subrounded fine to coarse GRAVEL of sandstone. (WEATHERED PENRITH SANDSTONE)	116.73	3.90	
3.90-4.02	19	DSPT							
3.90-4.20	20	B				Reddish brown SANDSTONE recovered as (very dense) reddish brown gravelly clayey fine to medium SAND. Gravel is very angular fine to coarse of extremely weak sandstone. (WEATHERED PENRITH SANDSTONE)	116.43	4.20	
4.00-4.04	21	SPT(c)	25/50 for 17mm						
4.20-4.70	22	B							
4.20	37	W							
4.80	23	D							
5.00-5.29	24	SPT	10,15/25,25 for 72mm						
5.00-5.29	25	DSPT							
5.00-5.50	26	B							
5.80	27	D							
6.00-6.18	28	SPT	19,6/50 for 60mm						
6.00-6.18	29	DSPT						(4.25)	
6.00-6.50	30	B							
6.80	31	D							
7.00-7.08	32	SPT	25/50 for 39mm			7.00-7.50m : laboratory PSD shows slightly gravelly slightly clayey fine to coarse SAND. Gravel size fraction fine to medium. Weathered sandstone possibly disaggregated during PSD test.			
7.00-7.45	33	DSPT							
7.00-7.50	34	B							
7.80	35	D							
8.00-8.06	36	SPT(NR)	25/50 for 27mm						
						Borehole terminated at 8.45m depth due to no progress.	112.18	8.45	

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
07/03/23	17:00	3.50	3.00	250	Dry
08/03/23	08:30	3.50	3.00	250	2.61
08/03/23	16:30	7.45	6.00	200	2.77

Chiselling / Slow Progress

From	To	Duration (hh:mm)
3.90	4.20	01:00

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Borehole drilled using cable percussion drilling to 8.45m depth using 250mm tools and casing to 6.00m depth and reducing to 200mm tools from 6.00m to 8.45m depth.
3. Groundwater strike encountered at 4.20m depth, rising to 2.84m depth after 20 minutes.
4. Water added to aid drilling between 3.50-8.00m (1200

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000**	**Brad Speirs**	**DNartey**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS122

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	07.03.23 End: 08.03.23	120.63	E:355973.2 N:528855.2	2 of 2

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

litres).
5. 50mm diameter gas/groundwater monitoring well complete with upstanding protective cover installed to 3.00m depth on completion. Water depth 2.77m before installation. Response zone 1.00m to 3.50m depth.
6. Geoenvironmental sample 601 ES taken from separate inspection pit excavated alongside on 14/06/2023 to obtain fresh sample for laboratory testing.
7. SPT hammer JB01-2023 (E_r = 61.00%) used.

All dimensions in metres | Scale: 1:50

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	Dando 2000	Brad Speirs	DNartey	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS123**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**27.03.23** End: **28.04.23**	**124.30**	**E:356053.3 N:528927.2**	**1** of **6**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.10	1	D							Dark brown slightly gravelly silty SAND with low cobble content. Sand fine to medium. Gravel is subangular to subrounded fine to coarse quartz/quartzite. Cobbles are subangular (<160mm) (GLACIAL TILL - GRANULAR)			
0.10-0.20	2	B									(0.40)	
0.10	201	D										
0.30-0.30	101	ES										
0.30	202	D								123.90	0.40	
0.30	3	D							Medium dense reddish brown gravelly clayey SAND with high cobble content. Sand is fine to medium. Gravel is subangular to subrounded fine to coarse of mixed lithologies including quartz, sandstone and limestone. Cobbles subrounded of mixed lithologies <180mm. (GLACIAL TILL - GRANULAR)			
0.30-0.60	4	B										
0.50-0.50	102	ES										
0.80-1.20	5	B										
1.00-1.00	103	ES										
1.20-1.65	6	SPT	N=13									
1.20-1.65	7	DSPT										
1.20-1.70	8	B										
1.50-1.50	104	ES										
1.80	203	D										
1.80	9	D									(3.10)	
2.00-2.20	10	SPT(c)	18,7/50 for 57mm						2.00-3.50m : becomes very gravelly.			
2.00-2.50	11	B										
2.80	12	D										
3.00-3.45	13	SPT	N=32						3.00-3.50m : becomes very clayey.			
3.00-3.45	14	DSPT										
3.00-3.50	15	B										
									Firm reddish brown gravelly sandy CLAY. Sand is fine to medium. Gravel is subangular to subrounded fine to coarse of limestone. Locally varies to very gravelly very clayey SAND. (GLACIAL TILL - COHESIVE)	120.80	3.50	
3.80	16	D										
3.80	205	D										
4.00-4.45	17	$UT_{(UT100)}$	111 blows 75% recovery									

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
27/03/23	16:00	1.20	1.20	200	0.00
28/03/23	08:45	1.20	1.20	200	0.40
28/03/23	16:50	9.00	9.00	200	7.20
29/03/23	08:45	9.00	9.00	200	7.17
29/03/23	16:00	13.50	13.50	146	-
30/03/23	08:50	13.50	13.50	146	8.00

Chiselling / Slow Progress

From	To	Duration (hh:mm)
2.00	2.10	00:30
7.50	9.00	02:00

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Water added to aid cable percussion drilling between 1.20-9.00m (1000 litres).
3. Borehole drilled using cable percussion drilling to 9.40m depth then extended to 15.00m depth by rotary coring using 146mm diameter Geobor S core barrel, PCD bit and water flush.
4. Water seepage at 1.20m depth. No groundwater

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 Mark2 + Beretta T44**	**Brad Speirs + Lindon Paisley**	**DNartay + RStan**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS123**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**27.03.23** End: **28.04.23**	**124.30**	**E:356053.3 N:528927.2**	**2** of **6**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
4.50-5.00	19	B										
4.60-4.87	18	B									(2.50)	
5.00-5.45	20	SPT	N=41									
5.00-5.45	21	DSPT										
5.00-5.50	22	B										
5.80	206	D										
5.80	23	D										
6.00-6.41	24	SPT	4,5/10,17,13,10 for 39mm						Brown very gravelly clayey SAND with medium cobble content. Sand is fine to coarse. (GLACIAL TILL - GRANULAR)	118.30	6.00	
6.00-6.41	25	DSPT										
6.00-6.50	26	B										
6.80	207	D									(1.50)	
6.80	27	D										
7.00-7.45	28	$UT_{(UT100)}$	150 blows 100% recovery									
7.50	29	D							Greyish brown sandy slightly clayey GRAVEL with low to medium cobble content. Gravel is subangular to subrounded fine to coarse of limestone. Cobbles are subrounded of limestone <120mm. (GLACIAL TILL - GRANULAR)	116.80	7.50	
7.60-8.00	31	B										
7.70	208	D									(0.50)	
7.70	30	D										
8.00-8.20	32	SPT	25/33,17 for 50mm						Extremely weak reddish brown destructured weathered SANDSTONE. Recovered as fine to medium sand and sandstone lithorelicts. (WEATHERED PENRITH SANDSTONE)	116.30	8.00	
8.00-8.20	33	DSPT										
8.00-8.50	34	B										
											(1.40)	
8.80	35	D										

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

strikes observed during rotary drilling, however any strike may have been obscured by drilling flush.
5. Time taken to complete rotary core runs reported in Depth column, in brackets, in format (hh:mm).
6. 50mm diameter gas/groundwater monitoring well complete with upstanding protective cover installed to 6.50m depth on completion. Response zone 7.00m to 1.50m depth.
7. Geoenvironmental sample 601 ES taken from separate

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 Mark2 + Beretta T44**	**Brad Speirs + Lindon Paisley**	**DNartay + RStan**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS123**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**27.03.23** End: **28.04.23**	**124.30**	**E:356053.3 N:528927.2**	**3** of **6**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
9.40-10.00									Extremely weak reddish brown non carbonate thinly laminated destructured to distinctly weathered fine to medium grained SANDSTONE. Recovered as non-intact reddish brown fine to medium sand with angular medium to coarse gravel of sandstone. (PENRITH SANDSTONE FORMATION) 9.40-9.50m : AZCL	114.90	9.40	AZCL
9.70-9.80	36	D		83 0 0	NI NI NI	100% return W (Red)					(1.00)	
10.00-10.50				80 60 0		100% return W (Red)						
10.50-11.00				0 0 0	NI NI NI	80% return W (Red)			AZCL. Probably red SANDSTONE (Driller's description). (PENRITH SANDSTONE FORMATION)	113.90	10.40	AZCL
11.00-11.50 11.00-11.45	1	SPT	N=34	0 0 0		80% return W (Red)					(1.10)	
11.50-12.00 11.50-11.95	2	SPT	N=34	60 22 0	NI 10 40	80% return W (Red)			Very weak locally extremely weak reddish brown non carbonate thinly laminated (~10°) partially weathered fine to medium grained SANDSTONE. Occasional grey discoloration. Fracture are: 1) Bedding fractures (0-10°) closely to medium spaced, planar- rough, clean. 2) Joint fractures (60-85°) planar rough clean. (PENRITH SANDSTONE FORMATION) 11.58-11.76m : recovered non-intact as reddish brown fine to medium sand with angular to subangular medium and coarse gravel. 11.80-12.00m : AZCL	112.80	11.50	AZCL
12.00-12.50 12.10-12.19	37	C		100 90 80		80% return W (Red)						
12.50-13.50				95 95 71	NI 65 550	80% return W (Red)			12.69-12.73m : recovered non-intact as reddish brown fine to medium sand with angular to subangular medium to coarse gravel. 12.78-12.79m : recovered non-intact as reddish brown fine to medium sand with angular to subangular medium and coarse gravel.			
13.14-13.28	38	C									(3.50)	

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

inspection pit excavated alongside on 03/06/2023 to obtain fresh sample for laboratory testing.
8. SPT hammers CD9.2.03-2023 (E_r = 63.00%) , JB01-2023 (E_r = 61.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 Mark2 + Beretta T44**	**Brad Speirs + Lindon Paisley**	**DNartay + RStan**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS123**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**27.03.23** End: **28.04.23**	**124.30**	**E:356053.3 N:528927.2**	**4** of **6**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
13.50-15.00				100 95 83	NI 65 550	80% return W (Red)			13.96-14.01m : recovered non-intact as reddish brown fine to medium sand with angular to subangular medium to coarse gravel.			
14.64-14.74	39	C										
									Borehole terminated at 15.00m depth.	109.30	15.00	

Boring Progress and Water Observations: Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	Chiselling / Slow Progress: From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 Mark2 + Beretta T44**	**Brad Speirs + Lindon Paisley**	**DNartay + RStan**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		**National Highways**		**BH-PTS123**
Contract Ref:	Start: **27.03.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **28.04.23**	**124.30**	**E:356053.3 N:528927.2**	**5** of **6**

9.40-10.50m

10.50-11.50m

Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Dando 2000 Mark2 + Beretta T44	Drilled By:	Brad Speirs + Lindon Paisley	Logged By:	DNartay + RStan	Checked By:	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		**National Highways**		**BH-PTS123**
Contract Ref:	Start: **27.03.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **28.04.23**	**124.30**	**E:356053.3 N:528927.2**	**6** of **6**

11.50-12.50m

12.00-15.00m

Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Dando 2000 Mark2 + Beretta T44	Drilled By:	Brad Speirs + Lindon Paisley	Logged By:	DNartay + RStan	Checked By:	AML

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SUMMARY OF DISCONTINUITIES - BH-PTS123

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
1	10.13-10.27	J	67	P-R	-	-	-	-	Clean
2	10.27-10.40	J	70	P-R	-	-	-	-	Clean
3	12.10-12.11	PFR	5	-	-	-	-	-	Clean
4	12.54-12.55	PFR	5	P-R	-	-	-	2	Clean
5	12.89-12.99	J	60	P-R	-	-	-	6	Clean.
6	13.27-13.28	PFR	6	P-R	-	-	-	4	Clean.
7	13.30-13.30	PFR	5	P-R	-	-	-	4	Clean -
8	13.30-13.39	J	80	P-R	-	-	-	4	Clean.
9	13.34-13.35	PFR	3	P-R	-	-	-	2	Clean - possibly drilling induced.
10	13.39-13.40	PFR	3	P-R	-	-	-	4	Clean - possibly drilling induced.
11	13.41-13.72	PFR	6	P-R	-	-	-	2	
12	13.44-13.45	PFR	4	P-R	-	-	-	2	Clean - possibly drilling induced.
13	13.53-13.54	PFR	4	P-R	-	-	-	2	Clean - possibly drilling induced.
14	13.62-13.63	PFR	5	P-R	-	-	-	2	Clean - possibly drilling induced.
15	13.77-13.78	PFR	4	P-R	-	-	-	2	Clean - possibly drilling induced.
16	13.84-13.85	PFR	5	P-R	-	-	-	2	Clean - possibly drilling induced.

Key:
Type codes: BF = Bedding fracture, J = Joint, PFR = Possible Fracture.
Small-scale roughness codes: P-R = Planar - rough, U-R = Undulating - rough.

SUMMARY OF DISCONTINUITIES - BH-PTS123

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
17	13.90-13.94	J	17	P-R	-	-	-	4	Clean - possibly drilling induced.
18	14.07-14.08	PFR	3	P-R	-	-	-	2	Clean - possibly drilling induced.
19	14.13-14.27	J	64	P-R	-	-	-	4	Clean - possibly drilling induced.
20	14.27-14.28	BF	7	U-R	-	-	-	10	Clean - possibly drilling induced.
21	14.44-14.45	PFR	6	P-R	-	-	-	2	Clean - possibly drilling induced.
22	14.53-14.54	PFR	6	P-R	-	-	-	2	Clean - possibly drilling induced.
23	14.57-14.58	PFR	5	P-R	-	-	-	2	Clean - possibly drilling induced.
24	14.64-14.65	PFR	5	P-R	-	-	-	2	Clean - possibly drilling induced.
25	14.74-14.75	PFR	5	P-R	-	-	-	2	Clean - possibly drilling induced.
26	14.80-14.81	PFR	4	P-R	-	-	-	2	Clean - possibly drilling induced.
27	14.86-14.87	PFR	5	P-R	-	-	-	2	Clean - possibly drilling induced.
28	14.93-14.94	PFR	4	P-R	-	-	-	4	Clean - possibly drilling induced.
29	14.97-14.98	PFR	4	P-R	-	-	-	4	Clean - possibly drilling induced.

Key:
Type codes: BF = Bedding fracture, J = Joint, PFR = Possible Fracture.
Small-scale roughness codes: P-R = Planar - rough, U-R = Undulating - rough.

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date	Contract Ref:
	ALUMBER	30.08.23	765633
Contract: A66 NTP Scheme S03A			Page: 2 of 2

STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS124**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**08.03.23** End: **13.03.23**	**129.02**	**E:356150.0 N:528878.1**	**1** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.00-0.30	2	B				Grass over dark brown gravelly silty fine to medium SAND with low cobble content. Gravel is subangular to subrounded fine to coarse of limestone/quartzite. Cobbles are subangular to subrounded of limestone. (TOPSOIL)			
0.05	1	D							
0.30-0.30	101	ES				Medium dense reddish brown gravelly clayey fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone and limestone. (GLACIAL TILL - GRANULAR)	128.62	0.40	
0.30-0.50	4	B							
0.50-0.50	105	ES							
0.50	3	D							
0.70-1.00	5	B							
1.00-1.00	103	ES							
1.20-1.65	6	SPT	N=16			1.20-1.70m : slightly gravelly clayey SAND with medium cobble content.			
1.20-1.65	7	DSPT							
1.20-1.70	8	B							
1.50-1.50	104	ES						(2.40)	
1.80	9	D							
2.00-2.45	10	SPT	N=27			2.00m : becomes gravelly clayey SAND.			
2.00-2.45	11	DSPT							
2.00-2.50	12	B							
2.80	13	D				Dense reddish brown very gravelly clayey fine to medium SAND. Gravel is angular fine to coarse of sandstone. (GLACIAL TILL - GRANULAR)	126.22	2.80	
2.80-3.00	14	B					126.02	3.00	
3.00-3.45	15	SPT	N=31			Dense reddish brown very gravelly clayey fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone, limestone and quartzite. (GLACIAL TILL - GRANULAR)			
3.00-3.45	16	DSPT							
3.00-3.50	17	B							
3.80	18	D							
4.00-4.45	19	SPT	N=38						
4.00-4.45	20	DSPT							
4.00-4.50	21	B							
4.80	22	D						(3.80)	
5.00-5.45	23	DSPT							
5.00-5.45	24	SPT	N=47						
5.00-5.50	25	B							
5.80	26	D							
6.00-6.37	27	DSPT							
6.00-6.37	28	SPT	5,5/15,15,20 for 65mm						
6.00-6.50	29	B							
6.80	30	D				Stiff dark reddish brown slightly gravelly sandy silty CLAY. Sand is fine to medium. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone, limestone and quartz. (GLACIAL TILL - COHESIVE)	122.22	6.80	
7.00-7.45	31	SPT	N=22						
7.00-7.45	32	DSPT							
7.00-7.50	33	B							
7.80	34	D							
8.00-8.35	35	SPT	4,5/15,15,20 for 45mm						
8.00-8.35	36	DSPT							
8.00-8.50	37	B							
8.80	38	D							

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
08/03/23	17:00	1.70	None	300	Dry
09/03/23	08:30	1.70	1.70	300	Dry
09/03/23	17:00	8.00	6.00	300	Dry
10/03/23	08:00	8.00	6.00	300	Dry
10/03/23	17:00	11.00	6.00	300	Dry
13/03/23	10:00	12.00	6.00	300	Dry

Chiselling / Slow Progress

From	To	Duration (hh:mm)
6.50	6.80	01:00

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Borehole drilled using cable percussion drilling to 12.32m depth using 300mm tools and casing.
3. No groundwater encountered during cable percussion drilling.
4. Water added to aid drilling between 1.70-6.00m (1000 litres).
5. 50mm diameter gas/groundwater monitoring well

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000 Mark 2**	**Will Nevins**	**DNartay**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS124

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	08.03.23 End: 13.03.23	129.02	E:356150.0 N:528878.1	2 of 2

Depth (m)	Samples & Testing No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
9.00-9.31	39	SPT	10,15/20,20,10 for 10mm						
9.00-9.31	40	DSPT							
9.00-9.50	41	B						(5.20)	
9.80	42	D							
10.00-10.45	43	SPT	N=48						
10.00-10.45	44	DSPT							
10.00-10.50	45	B							
10.80	46	D							
11.00-11.32	47	SPT	5,8/17,20,13 for 20mm						
11.00-11.32	48	DSPT							
11.00-11.50	49	B							
11.80	50	D							
12.00-12.20	51	DSPT				Weathered reddish brown SANDSTONE recovered as (dense) reddish brown sandy angular fine to coarse GRAVEL of sandstone. Sand is fine to medium. (WEATHERED PENRITH SANDSTONE)	117.02	12.00	
12.00-12.22	52	SPT	11,14/50 for 70mm				116.70	12.32	

Borehole terminated at 12.32m depth.

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

complete with upstanding protective cover installed to 3.50m depth on completion. Borehole dry before installation. Response zone 0.50m to 4.00m depth.

6. Geoenvironmental sample 601 ES taken from separate inspection pit excavated alongside on 03/06/2023 to obtain fresh sample for laboratory testing.
7. SPT hammer JB05-2023 (E_r = 60.00%) used.

All dimensions in metres | Scale: 1:50

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	Dando 2000 Mark 2	Will Nevins	DNartay	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS126**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**19.04.23** End: **26.04.23**	**115.23**	**E:354625.2 N:529022.1**	**1** of **6**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.10	1	D							Grass over dark brown slightly gravelly slightly sandy SILT with frequent rootlets (1mm). Gravel is subangular to rounded fine to coarse of basalt. (TOPSOIL) 0.10m : geotextile cylindrical wrap, no cable or pipe within.		(0.35)	
0.10-0.30	2	B										
0.10	201	D										
0.30	101	ES								114.88	0.35	
0.40	202	D							MADE GROUND: Light pinkish brown gravelly clayey fine to medium SAND. Gravel is angular fine to coarse (Driller described this as a sub-base material). (MADE GROUND GRANULAR)		(0.35)	
0.40	3	D										
0.40-0.60	4	B										
0.50	102	ES								114.53	0.70	
0.80	203	D							Brown very sandy clayey subangular to rounded fine to coarse GRAVEL of granite, quartzite, limestone and igneous rock. Sand is fine to coarse. (GLACIAL TILL - GRANULAR)		(0.50)	
0.80	5	D										
0.80-1.20	6	B										
1.00	103	ES										
1.20-1.65	7	SPT	N=13						Firm dark brown slightly gravelly slightly sandy CLAY with low cobble content. Gravel is subangular to rounded fine to coarse of granite, quartzite, limestone and igneous rock. Sand is fine to coarse. Cobbles are subrounded <140mm in diameter of granite and basalt. (GLACIAL TILL - COHESIVE)	114.03	1.20	
1.20-1.65	8	DSPT										
1.20-1.70	9	B									(0.80)	
1.80	10	D										
1.80	204	D										
2.00	104	ES							Dark brown gravelly silty fine to coarse SAND with large pockets of firm dark brown slightly gravelly sandy clay. Gravel is subangular to rounded fine to coarse of basalt. (GLACIAL TILL - GRANULAR)	113.23	2.00	
2.00-2.45	11	U	76 blows 0% recovery									
2.00-2.50	12	B									(1.00)	
2.80	13	D										
2.80	205	D										
3.00-3.45	14	SPT	N=42						Reddish brown destructured weathered red SANDSTONE,recovered as (dense) gravelly silty fine to coarse SAND. Gravel is angular tabular medium to coarse sandstone lithorelicts. (WEATHERED PENRITH SANDSTONE)	112.23	3.00	
3.00-3.45	15	DSPT										
3.00-3.50	16	B										
3.80	17	D										
4.00-4.43	18	SPT	N=46									
4.00-4.43	19	DSPT										
4.00-4.50	20	B										

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
20/04/23	16:45	6.10	6.00	200	2.99
25/04/23	07:00	6.10	6.00	200	3.00
25/04/23	11:30	15.10	15.10	146	-

Chiselling / Slow Progress

From	To	Duration (hh:mm)
6.00	6.00	00:30

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Inspection pit terminated temporarily at 0.40m depth due to strong power signal reading upon reaching suspected service fill. Upon a second GPR scan of the area and confirmation that it was safe, pit and drilling was commenced.
3. Hand vanes not possible due to gravel and cobble content.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Comacchio MC300**	**Brad Speirs + William Whitelaw**	**RBarker + RStan**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS126**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**19.04.23** End: **26.04.23**	**115.23**	**E:354625.2 N:529022.1**	**2** of **6**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
											(3.10)	
4.80	21	D										
5.00-5.36	22	SPT	7,13/24,16,10 for 59mm									
5.00-5.36	23	DSPT										
5.00-5.50	24	B										
5.50	25	D										
6.00-6.01	26	SPT	NP									
6.00-6.01	27	DSPT								109.13	6.10	
6.10-7.60 (0:15)									Extremely weak to very weak reddish brown local thinly laminated partially weathered locally distinctly weathered fine to coarse grained SANDSTONE. Frequent extremely weak and recovered as reddish brown gravelly fine to coarse SAND. Gravel is angular tabular medium to coarse. Discontinuities: 1) Possible bedding fractures: (2-6°) closely spaced planar rough with occasional infill. 2) joint fractures: (74 - 84°) predominantly planar and undulating, rough, brown clay infill (up to 1 mm). (WEATHERED PENRITH SANDSTONE) 6.10-6.32m : Recovered non-intact as reddish brown gravelly fine to coarse SAND. Gravel is angular tabular medium to coarse sandstone. 6.64-6.81m : Recovered non-intact as reddish brown gravelly fine to coarse SAND. Gravel is angular tabular medium to coarse sandstone.			
6.50-6.64	28	C		100 29 26	NI 50 220	100% return PM (Brown)						
6.97-7.20	29	C							6.93-7.60m : Recovered non-intact as reddish brown gravelly fine to coarse SAND. Gravel is angular tabular medium to coarse sandstone.			
7.60-9.10 (0:10)									7.68-7.74m : Recovered non-intact as reddish brown gravelly fine to coarse SAND. Gravel is angular tabular medium to coarse sandstone.		(3.11)	
				100 96 65	NI 90 450	100% return PM (Brown)						

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

4. Borehole drilled using cable percussion drilling to 6.10m depth using 200mm diameter tools and casing. Rotary SWF casing lowered to based of hole and cable percussion casing withdrawn. Borehole then extended to 15.10m depth using rotary drilling technique 146mm diameter using Geobor S core barrel, PCD bit and polymer-mud flush.
5. Water added to aid cable percussion drilling between 1.20-6.00m (2200 litres).

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Comacchio MC300**	**Brad Speirs + William Whitelaw**	**RBarker + RStan**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS126**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**19.04.23** End: **26.04.23**	**115.23**	**E:354625.2 N:529022.1**	**3** of **6**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
9.10-10.60 (0:15)												
									Very weak to weak reddish brown thinly and thickly laminated partially weathered fine to coarse SANDSTONE. Discontinuities: possible bedding fractures 6-22° closely to medium spaced planar rough. (PENRITH SANDSTONE FORMATION)	106.02	9.21	
9.50-9.94	30	C		100 98 77	NI 90 450	100% return PM (Brown)					(1.19)	
									Very weak to moderately weak reddish brown thinly laminated non partially weathered fine to coarse SANDSTONE. Occasional vertical fracture planar and undulating rough with rare black stains on discontinuity surfaces. Discontinuities : 1) Bedding fractures widely spaced, undulating-rough. 2) Joint fracture (80-86°) medium to widely spaced undulating, rough, occasional to frequent black stains and occasional grey discoloration (up to 3mm). (PENRITH SANDSTONE FORMATION)	104.83	10.40	
10.60-12.10 (0:10) 10.60-10.92	31	C		100 100 91		100% return PM (Brown)					(1.97)	
12.10-13.60 (0:10)					70 150 210							
									Very weak to weak reddish brown thinly laminated with frequent cross laminations partially weathered fine to coarse SANDSTONE. Occasional black stains on discontinuity surfaces. Discontinuities: 1) Joint fractures (80-87°) medium spaced undulating, rough, occasional black stains and local iron infiltrations as discoloration. (PENRITH SANDSTONE FORMATION)	102.86	12.37	
				100 94 76		100% return PM (Brown)			12.80-12.86m : Abundant black stains cross laminate sandstone.		(1.39)	
									13.35-13.70m : Frequent black stains.			

Boring Progress and Water Observations: Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

Chiselling / Slow Progress: From	To	Duration (hh:mm)

General Remarks

6. No groundwater strikes observed during rotary drilling, however any strike may have been obscured by drilling flush.
7. Time taken to complete rotary core runs reported in Depth column, in brackets, in format (hh:mm).
8. 50mm diameter gas/groundwater monitoring well complete with upstanding protective cover installed to 6.00m depth on completion (Driller's log reports 5.50m however pipe base depth later measures as ~ 6.1m to

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Comacchio MC300**	**Brad Speirs + William Whitelaw**	**RBarker + RStan**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS126**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**19.04.23** End: **26.04.23**	**115.23**	**E:354625.2 N:529022.1**	**4** of **6**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
13.60-15.10 (0:10)					70 150 210							
									Weak reddish brown thinly laminated partially weathered to unweathered fine to coarse grained SANDSTONE. Discontinuities: Joint fracture (15°) undulating rough. (PENRITH SANDSTONE FORMATION)	101.47	13.76	
				100 93 89	100 1250	100% return PM (Brown)					(1.34)	
14.56-14.82	32	C										
									Borehole terminated at 15.10m depth.	100.13	15.10	

Boring Progress and Water Observations: Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	Chiselling / Slow Progress: From	To	Duration (hh:mm)

General Remarks

5.8m below ground level during monitoring visits). Borehole dry before installation. Response zone 3.00m to 6.00m depth.

9. SPT hammer JB01-2023 (E_r = 61.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Comacchio MC300**	**Brad Speirs + William Whitelaw**	**RBarker + RStan**	AML

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS126

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	19.04.23 End: 26.04.23	115.23	E:354625.2 N:529022.1	5 of 6

6.10-9.10m

9.10-12.10m (photo caption start depth mislabelled).

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	Dando 2000 + Comacchio MC300	Brad Speirs + William Whitelaw	RBarker + RStan	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS126

Contract Ref:	Start: 19.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 26.04.23	115.23	E:354625.2 N:529022.1	6 of 6

12.10-15.10m

Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Dando 2000 + Comacchio MC300	Drilled By:	Brad Speirs + William Whitelaw	Logged By:	RBarker + RStan	Checked By:	AML

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SUMMARY OF DISCONTINUITIES - BH-PTS126

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
1	6.32-6.49	J	74	P-R	-	-	Brown clay less than 1mm.	2	
2	6.49-6.64	J	84	U-R	-	-	Local brown clay less than 1mm rest clean.	8	
3	6.81-6.92	J	79	P-R	-	-	Brown clay less than 1mm.	4	
-	7.66-7.70	IdF	0	P-R	-	-	-	2	Clean.
-	7.81-7.82	IdF	0	P-R	-	-	-	2	Clean.
4	8.28-8.33	J	79	P-R	-	-	Brown clay less than 1mm.	4	
5	8.31-8.32	BF	4	P-R	-	-	Brown clay less than 2mm; yellowish brown sandstone less than 25mm.	6	
-	8.39-8.40	IdF	0	P-R	-	-	-	2	Clean.
-	8.55-8.56	IdF	0	P-R	-	-	-	2	Clean.
-	8.68-8.69	IdF	0	P-R	-	-	-	2	Clean.
-	8.78-8.79	IdF	0	P-R	-	-	-	2	Clean.
-	8.83-8.84	IdF	0	P-R	-	-	-	2	Clean.
-	8.96-8.97	IdF	0	P-R	-	-	-	2	Clean.
-	9.04-9.05	IdF	0	P-R	-	-	-	2	Clean.
-	9.13-9.14	IdF	0	P-R	-	-	-	2	Clean.
6	9.13-9.19	J	84	P-R	-	-	-	2	Rare black specks.

Key:
Type codes: BF = Bedding fracture, IdF = Induced fracture, J = Joint, PFR = Possible Fracture.
Small-scale roughness codes: P-R = Planar - rough, U-R = Undulating - rough.

SUMMARY OF DISCONTINUITIES - BH-PTS126

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
-	9.18-9.19	IdF	0	P-R	-	-	-	2	Clean.
7	9.20-9.21	PFR	6	P-R	-	-	-	2	Clean.
8	9.48-9.51	PFR	22	P-R	-	-	-	3	Clean.
-	9.93-9.95	IdF	0	P-R	-	-	-	4	Clean.
9	10.36-10.38	J	18	U-R	-	-	Brown clay less than 2mm.	10	
-	10.45-10.47	IdF	0	P-R	-	-	-	2	Clean.
10	10.51-10.53	PFR	8	U-R	-	-	-	10	Clean.
-	10.57-10.59	IdF	0	P-R	-	-	-	2	Clean.
-	10.92-10.93	IdF	0	P-R	-	-	-	2	Clean.
-	11.13-11.14	IdF	0	P-R	-	-	-	4	Clean.
-	11.21-11.25	IdF	0	P-R	-	-	-	2	Clean.
-	11.31-11.32	IdF	0	P-R	-	-	-	2	Clean.
11	11.32-11.38	J	82	U-R	-	-	-	10	Clean.
-	11.38-11.39	IdF	0	P-R	-	-	-	2	Clean.
-	11.54-11.55	IdF	0	P-R	-	-	-	2	Clean.
12	11.62-12.10	J	80	U-R	-	-	-	10	Black surface with local discoloration (penetrating up to 3mm).

Key:
Type codes: BF = Bedding fracture, IdF = Induced fracture, J = Joint, PFR = Possible Fracture.
Small-scale roughness codes: P-R = Planar - rough, U-R = Undulating - rough.

SUMMARY OF DISCONTINUITIES - BH-PTS126

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
13	11.69-11.70	BF	4	P-R	-	-	-	6	Occasional black specks (30%).
14	12.10-12.37	J	86	U-R	-	-	-	8	Occasional black specks.
-	12.18-12.19	IdF	0	P-R	-	-	-	2	Clean.
-	12.27-12.28	IdF	0	P-R	-	-	-	4	Clean.
15	12.32-13.56	J	80	U-R	-	-	-	12	Occasional black specks, local iron mineralisation.
16	12.43-12.78	J	87	U-R	-	-	-	12	Occasional black specks.
-	12.57-12.61	IdF	0	P-R	-	-	-	2	Clean.
-	12.75-12.78	IdF	0	P-R	-	-	-	2	Clean.
17	12.78-13.32	J	81	U-R	-	-	-	12	Occasional black specks.
-	13.24-13.25	IdF	0	P-R	-	-	-	6	Clean.
-	13.70-13.74	IdF	0	P-R	-	-	-	2	Clean.
-	13.88-13.93	IdF	0	U-R	-	-	-	8	Clean.
-	14.11-14.13	IdF	0	P-R	-	-	-	6	Fine to coarse sand recovered.
-	14.40-14.41	IdF	0	U-R	-	-	-	8	Fine to coarse sand recovered.
-	14.78-14.83	IdF	0	P-R	-	-	-	4	Clean.
-	15.02-15.04	IdF	0	P-R	-	-	-	2	Clean.

Key:
Type codes: BF = Bedding fracture, IdF = Induced fracture, J = Joint, PFR = Possible Fracture.
Small-scale roughness codes: P-R = Planar - rough, U-R = Undulating - rough.

STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS126A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**19.04.23** End: **19.04.23**	**115.42**	**E:354624.8 N:529022.8**	**1** of **1**

Depth (m)	Samples & Testing: No	Type	Results	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
						MADE GROUND: Dark brown slightly gravelly slightly sandy SILT with frequent rootlets (1mm). Gravel is subangular to rounded fine to coarse of fine crystalline igneous rock. (MADE GROUND COHESIVE)	115.07	0.35	
						MADE GROUND: Light pinkish brown gravelly clayey fine to medium SAND. Gravel is angular fine to coarse (Driller described this as a sub-base material). (MADE GROUND GRANULAR)	115.02	0.40	
						Inspection pit terminated at 0.40m depth.			

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
19/04/23		0.40	None	400	Dry

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 0.40m depth.
2. No groundwater encountered.
3. No visual or olfactory evidence of contamination.
4. Inspection pit terminated at 0.40m depth due to strong power signal reading upon reaching suspected service fill.
5. Location re-scanned by GPR and all clear. Borehole drilled in original location of BH-PTS126.
6. Pit terminated at 0.40m with verbal confirmation by Investigation Supervisor and backfilled with arisings.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit	**Hand tools**	**Brad Speirs**	**RBarker**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS127**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**23.03.23** End: **27.03.23**	**124.33**	**E:356411.8 N:528933.6**	**1** of **2**

Depth (m)	Samples & Testing No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.10	1	D				Grass over dark brown silty fine to medium SAND with roots and rootlets. (TOPSOIL)			
0.10-0.40	2	B							
0.20	601	ES				Medium dense reddish brown gravelly clayey fine SAND with medium cobble content. Gravel is subangular to subrounded fine to coarse of limestone. Cobbles are subangular of limestone <140mm. (GLACIAL TILL - GRANULAR)	123.93	0.40	
0.30	101	ES							
0.50	102	ES							
0.50	3	D							
0.50-1.00	4	B							
1.00	103	ES							
1.00-1.20	5	B						(1.60)	
1.20-1.65	6	SPT	N=25						
1.20-1.65	7	DSPT							
1.20-1.20	8	EW							
1.80	10	D							
2.00-2.45	11	SPT	N=17			Medium dense reddish brown slightly gravelly clayey fine SAND. Gravel is subangular to subrounded fine to coarse of limestone. (GLACIAL TILL - GRANULAR)	122.33	2.00	
2.00-2.50	12	B							
								(1.00)	
2.80	13	D							
3.00-3.45	14	SPT	N=34			Dense reddish brown gravelly very clayey fine SAND. Gravel is subangular to subrounded fine to coarse of limestone. (GLACIAL TILL - GRANULAR)	121.33	3.00	
3.00-3.45	15	DSPT							
3.00-3.45	16	B							
3.50	17	D				Firm reddish brown slightly gravelly sandy CLAY with sand bands and low cobble content. Sand is fine to coarse Gravel is subangular to subrounded fine to coarse of limestone. Cobbles are subangular of limestone (<75mm). (GLACIAL TILL - COHESIVE)	120.88	3.45	
3.50-4.00	18	B							
4.00-4.45	19	$UT_{(UT100)}$	108 blows 85% recovery						
4.50	20	D						(2.35)	
4.50-5.00	21	B							
5.00-5.43	22	SPT	12,11/10,11,20,9 for 59mm						
5.00-5.43	23	DSPT							
5.00-5.50	24	B							
5.90	25	D				Reddish brown weathered SANDSTONE recovered as (very dense) reddish brown very sandy clayey angular fine to coarse GRAVEL of weathered sandstone. Sand is fine to medium. (WEATHERED PENRITH SANDSTONE) 6.00-6.50m : laboratory PSD shows slightly gravelly clayey fine to coarse SAND. Gravel size fraction fine to medium. Weathered sandstone possibly disaggregated during PSD test.	118.53	5.80	
6.00-6.19	26	SPT	3,22/50 for 52mm						
6.00-6.19	27	DSPT							
6.00-6.50	28	B							
7.00-7.14	30	SPT	25/50 for 68mm						
7.00-7.14	31	DSPT							
7.00-7.50	32	B							
7.80	33	D						(4.29)	
8.00-8.12	34	SPT	25/50 for 45mm						
8.00-8.12	35	DSPT							
8.00-8.50	36	B							
8.80	37	D							

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
23/03/23	16:50	1.20	None	N/R	
24/03/23	09:00	1.20	None	N/R	0.70
24/03/23	14:30	7.50	6.00	200	6.20
27/03/23	08:45	7.50	7.50	200	5.33
27/03/23	11:00	10.00	7.50	200	4.84

Chiselling / Slow Progress

From	To	Duration (hh:mm)

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Borehole drilled using cable percussion drilling to 10.09m depth using 200mm tools and casing.
3. Groundwater seepage at 1.00m in inspection pit.
4. Water added to aid drilling between 1.20-7.00m (650 litres) and 7.50-10.00m (500 litres).
5. 50mm diameter gas/groundwater monitoring well complete with upstanding protective cover installed to

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 3000 Mark 2**	**Brad Speirs**	**DNartay**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS127

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	23.03.23 End: 27.03.23	124.33	E:356411.8 N:528933.6	2 of 2

Depth (m)	Samples & Testing No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
9.00-9.10	38	$SPT_{(NR)}$	25/50 for 34mm						
9.00-9.50	39	B							
9.80	40	D							
10.00-10.09	41	$SPT_{(NR)}$	25/50 for 37mm						
						Borehole terminated at 10.09m depth.	114.25	10.09	

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

5.00m depth on completion. Water depth 4.84m before installation. Response zone 1.00m to 5.50m depth.

6. Geoenvironmental sample 601 ES taken from separate inspection pit excavated alongside on 03/06/2023 to obtain fresh sample for laboratory testing.
7. SPT hammer JB01-2023 (E_r = 61.00%) used.

All dimensions in metres | Scale: 1:50

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	Dando 3000 Mark 2	Brad Speirs	DNartay	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS128**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**15.03.23** End: **16.03.23**	**128.35**	**E:356468.0 N:528840.0**	**1** of **2**

Depth (m)	Samples & Testing No	Type	Results	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.10	1	D				Grass over reddish brown gravelly silty fine to medium SAND with roots and rootlets. Gravel is subrounded to well rounded fine to coarse of limestone. (TOPSOIL)			
0.30-0.30	101	ES					127.95	0.40	
0.30-0.50	3	B				Reddish brown gravelly silty fine to medium SAND with pockets of clay. Size of pockets not recorded by field engineer. (GLACIAL TILL - GRANULAR)			
0.40	2	D							
0.50-0.50	102	ES							
0.50	4	D							
0.50-0.70	5	B						(1.00)	
1.00-1.00	103	ES							
1.00	6	D							
1.00-1.20	7	B							
1.20-1.50	8	SPT	2,3/4,46 for 75mm				126.95	1.40	
1.20-1.40	10	B				Borehole terminated at 1.40m depth - refusal on probable boulder (no recovery).			
1.20-1.40	9	DSPT							

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
15/03/23	17:00	1.20	None	250	Dry
16/03/23	08:00	1.20	None	250	Dry
16/03/23	05:00	1.40	None	250	Dry

Chiselling / Slow Progress

From	To	Duration (hh:mm)
1.40	1.40	01:00

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Borehole drilled using cable percussion drilling to 1.40m depth using 250mm diameter tools and casing.
3. No groundwater encountered during cable percussion drilling.
4. No water added to aid drilling.
5. Borehole terminated on obstruction (probable boulder) at 1.50m depth with verbal confirmation from

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000 Mark 2**	**Will Nevins**	**DNartay**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS128**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**15.03.23** End: **16.03.23**	**128.35**	**E:356468.0 N:528840.0**	**2** of **2**

Depth (m)	Samples & Testing No	Type	Results	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

Investigation Supervisor. Borehole backfilled with bentonite cement pellets.
6. SPT hammer JB05-2023 (E_r = 60.00%) used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000 Mark 2**	**Will Nevins**	**DNartay**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS128A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**16.03.23** End: **21.03.23**	**128.33**	**E:356468.5 N:528839.6**	**1** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
						Grass over reddish brown slightly gravelly silty fine to medium SAND with roots and rootlets. Gravel subrounded to well rounded fine to coarse of limestone. (TOPSOIL)	127.93	0.40	
						Reddish brown fine to medium SAND with pockets of clay. (GLACIAL TILL - GRANULAR)	127.13	(0.80) 1.20	
1.20-1.65	1	SPT	N=14			Medium dense reddish brown gravelly fine to coarse SAND with high cobble content and pockets of clay. Gravel is subangular to angular fine to coarse of mixed lithologies including sandstone and limestone. Lithology of cobbles not recorded. (GLACIAL TILL - GRANULAR)	126.68	1.65	
1.20-1.65	2	DSPT							
1.20-1.65	3	B							
1.50-1.50	104	ES							
1.80	4	D				Dense reddish brown SAND and GRAVEL with medium boulder content. Sand is fine to coarse. Gravel is subrounded fine to coarse of limestone. Boulders are of limestone <215mm. (GLACIAL TILL - GRANULAR)	126.53	1.80	
2.00-2.45	5	SPT	N=18			Firm reddish brown slightly gravelly sandy silty CLAY with high cobble content. Sand is fine to medium. Gravel is subangular to subrounded of mixed lithologies including sandstone and limestone. (GLACIAL TILL - COHESIVE) 2.00-2.50m : varies to very gravelly very clayey SAND with high cobble content.			
2.00-2.45	6	DSPT							
2.00-2.50	7	B							
2.80	8	D						(2.20)	
3.00-3.45	9	SPT	N=3						
3.00-3.45	10	DSPT							
3.00-3.50	11	B							
3.80	12	D							
4.00-4.45	13	SPT	N=18			Medium dense reddish brown gravelly silty fine to medium SAND with pockets of clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone and limestone. (GLACIAL TILL - GRANULAR)	124.33	4.00	
4.00-4.45	14	DSPT							
4.00-4.50	15	B						(1.00)	
4.80	16	D							
5.00-5.28	17	SPT	3,10/15,35 for 55mm			Very dense reddish brown slightly gravelly silty fine to medium SAND with pockets of clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone and limestone. (GLACIAL TILL - GRANULAR)	123.33	5.00	
5.00-5.40	18	DSPT							
5.00-5.50	19	B						(1.00)	
5.80	20	D							
6.00-6.38	21	SPT	5,12/10,15,20 for 75mm			Reddish brown weathered SANDSTONE recovered as (very dense) sandy clayey angular fine to coarse GRAVEL of sandstone. Sand is fine to medium. (WEATHERED PENRITH SANDSTONE)	122.33	6.00	
6.00-6.38	22	DSPT							
6.00-6.50	23	B							
6.80	24	D							
7.00-7.12	25	SPT	25/50 for 40mm					(2.35)	
7.00-7.12	26	DSPT							
7.00-7.50	27	B							
7.80	28	D							
8.00-8.15	29	SPT	25/50 for 70mm						
8.00-8.15	30	DSPT							
8.00-8.30	31	B							
8.30-8.35	33	DSPT				Borehole terminated at 8.35m depth.	119.98	8.35	

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
16/03/23	17:00	3.00	3.00	300	-
17/03/23	08:00	3.00	3.00	300	-
17/03/23	14:30	6.00	4.50	300	5.50
20/03/23	08:00	6.00	4.50	300	Dry
20/03/23	16:00	8.30	8.30	300	5.50
21/03/23	08:30	8.30	8.30	300	5.00

Chiselling / Slow Progress

From	To	Duration (hh:mm)
1.65	1.80	01:00
7.90	8.30	01:00

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Borehole drilled using cable percussion drilling to 8.30m depth using 300mm tools and casing.
3. No groundwater encountered during cable percussion drilling.
4. Water added to aid drilling between ground level and 3.00m (150 litres), 3.00-6.00m (75 litres) and 6.00-8.30m (1000 litres).

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000 Mark 2**	**Will Nevins**	**DNartay**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS128A

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	16.03.23 End: 21.03.23	128.33	E:356468.5 N:528839.6	2 of 2

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

5. 50mm diameter gas/groundwater monitoring well complete with upstanding protective cover installed to 5.00m depth on completion. Water depth 5.00m before installation. Response zone 1.50m to 5.50m depth.
6. SPT hammer JB05-2023 (E_r = 60.00%) used.

All dimensions in metres | Scale: 1:50

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	Dando 2000 Mark 2	Will Nevins	DNartay	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS129**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**30.03.23** End: **04.04.23**	**122.04**	**E:355989.2 N:528987.5**	**1** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.05	1	D							Grass over very dark brown slightly gravelly sandy SILT with frequent rootlets. Sand is fine to medium. Gravel is angular to subrounded fine to medium of dark grey mudstone and quartzite. (TOPSOIL)	121.94	0.10	
0.05	201	D										
0.30-0.50	2	B							Reddish brown gravelly clayey fine to coarse SAND. Gravel is angular to subrounded fine to coarse of light grey porphyritic volcaniclastic igneous rocks. (GLACIAL TILL - GRANULAR)		(0.40)	
0.40	101	ES						1				
0.40	202	D								121.54	0.50	
0.40	3	D							Loose reddish brown gravelly very clayey fine to coarse SAND. Gravel is angular to subrounded fine to coarse of light grey porphyritic volcaniclastic igneous rocks. (GLACIAL TILL - GRANULAR)			
0.68	104	EW										
0.90-1.10	4	B										
1.00	102	ES										
1.00	203	D										
1.00	5	D										
1.20-1.65	6	SPT	N=4								(1.50)	
1.20-1.65	7	DSPT										
1.20-1.70	8	B										
1.50	103	ES										
1.80	9	D										
2.00-2.45	10	SPT	N=11						Medium dense reddish brown very sandy clayey angular to subrounded fine to coarse GRAVEL of light grey porphyritic volcaniclastic igneous rocks with high cobble content. Sand is fine to coarse. Cobbles of light grey porphyritic volcaniclastic igneous rocks. (GLACIAL TILL - GRANULAR)	120.04	2.00	
2.00-2.45	11	DSPT										
2.00-2.50	12	B										
2.80	13	D										
3.00-3.45	14	SPT	N=22								(2.00)	
3.00-3.45	15	DSPT										
3.00-3.50	16	B										
3.80	17	D										
4.00-4.50 (0:02)				0 - -		100% return W (Red)			No recovery in rotary core. Laboratory description of SPT sample from 4.00-4.30m is brown slightly gravelly sandy silty CLAY. Probably Glacial Deposits. (GLACIAL TILL - COHESIVE)	118.04	4.00	
4.00-4.30	18	SPT	4,11/22,28 for 75mm								(0.50)	
4.00-4.30	19	DSPT										

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
30/03/23	17:00	4.00	4.00	200	3.50
03/04/23	15:00	6.00	4.00	150	0.50
04/04/23	09:00	6.00	6.00	150	0.50
04/04/23	14:30	15.00	15.00	146	6.00
05/04/23	09:00	15.00	15.00	146	6.50

Chiselling / Slow Progress

From	To	Duration (hh:mm)
3.70	4.00	00:30
4.00	4.10	01:00

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Water seepage at 0.68m depth.
3. Borehole drilled using cable percussion techniques at 200mm diameter to 4.10m depth. Geobor S casing string lowered to base of hole and cable percussion casing withdrawn. Borehole then extended by rotary coring using 146mm diameter Geobor S core barrel, PCD bit and water flush.
4. Slow progress (recorded on this record as chiselling) between 3.70-4.00m due to soil/sand being sucked back into casing by

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Beretta T44**	**Will Nevins + Lindon Paisley**	**RBarker + RStan**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS129**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**30.03.23** End: **04.04.23**	**122.04**	**E:355989.2 N:528987.5**	**2** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
4.50-5.00 (0:02)									Very dense reddish brown very gravelly very silty fine to coarse SAND with low cobble content. Gravel is angular and subangular fine to coarse limestone and igneous rock. Cobbles are angular of limestone and igneous rock. (GLACIAL TILL - GRANULAR)	117.54	4.50	
4.50-4.60	20	D										
4.50-4.92	301	SPT	3,5/11,15,20,15 for 45mm	100 - -		100% return W (Red)						
4.60-5.00	21	B										
5.00-6.00 (0:05)											(1.25)	
5.00-5.75	23	B										
5.30-5.40	22	D		75 - -		100% return W (Red)						
									AZCL. Driller's description is sandy gravelly CLAY with boulders. (GLACIAL TILL - COHESIVE)	116.29	5.75	AZCL
6.00-6.50 (0:02)				80 40 0		90% return W (Red)			Extremely weak reddish brown thinly laminated to thinly bedded distinctly weathered fine to coarse grained SANDSTONE. Fractures: 1) Bedding fractures 0-10° closely spaced planar rough clean. 2) Joint fractures 65-75° planar rough clean. (PENRITH SANDSTONE FORMATION)	116.04	6.00	
									6.30-6.50m : AZCL			AZCL
6.50-7.00 (0:02)									6.50-6.53m : Recovered non-intact as reddish brown fine to coarse sand with angular medium gravel.		(1.11)	
6.64-6.69	24	C		80 34 0		90% return W (Red)			6.71-6.90m : Recovered non-intact as reddish brown fine to coarse sand.			
					NI 30 80				6.90-7.00m : AZCL			AZCL
7.00-7.50 (0:02)									7.00-7.07m : Recovered non-intact as reddish brown fine to coarse sand.			
				100 68 0		90% return W (Red)			Extremely weak locally very weak thinly laminated to thinly bedded reddish brown partially weathered locally distinctly weathered fine to medium grained SANDSTONE. Fractures: 1) Bedding fractures (0-10°) closely spaced, planar rough, occasional to abundant black stains. 2) Joint fractures (65-75°) planar rough abundant black stains. (PENRITH SANDSTONE FORMATION)	114.93	7.11	
7.39-7.45	25	C							7.45-7.50m : AZCL			AZCL
7.50-9.00 (0:05)									7.50-7.56m : Recovered non-intact as reddish brown fine to coarse sand.		(0.99)	
8.13-8.25	26	C		97 96 39	NI 150 830	90% return W (Red)			Extremely weak to very weak thinly laminated to thinly bedded reddish brown partially weathered fine to medium grained SANDSTONE. Fractures: 1) Bedding fractures (0-10°) closely to medium spaced, planar rough, clean. 2) Joint fractures (31°, 70-80°) medium spaced planar rough clean. (PENRITH SANDSTONE FORMATION)	113.94	8.10	

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

drilling tools, slow progress due to time spent emptying out.
5. Water added to aid drilling between 1.20-4.10m (500 litres).
6. No groundwater strikes observed during rotary drilling, however any strike may have been obscured by drilling flush.
7. Time taken to complete rotary core runs reported in Depth column, in brackets, in format (hh:mm).
8. 50mm diameter gas/groundwater monitoring well complete with upstanding protective cover installed to 3.50m depth on completion. Response zone 1.00m to 4.00m depth.
9. Geoenvironmental sample 601 ES taken from separate

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Beretta T44**	**Will Nevins + Lindon Paisley**	**RBarker + RStan**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS129**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**30.03.23** End: **04.04.23**	**122.04**	**E:355989.2 N:528987.5**	**3** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
9.00-10.50 (0:05)												
9.12-9.24	27	C										
				100 100 100		90% return W (Red)						
10.06-10.21	28	C									(4.30)	
10.50-12.00 (0:05)												
10.61-10.76	29	C										
				100 99 97	NI 150 830	90% return W (Red)						
									11.89-11.91m : Recovered non-intact as reddish brown fine to coarse sand.			
12.00-13.50 (0:05)												
									Very week reddish brown thinly laminated to thinly bedded partially weathered fine and medium grained SANDSTONE. Fracture: 1) Bedding fractures (0-10°) closely to medium spaced, planar- rough, clean. 2) Joint fractures (~14°) planar rough clean. (PENRITH SANDSTONE FORMATION)	109.64	12.40	
				97 97 63		90% return W (Red)						
12.84-13.03	30	C										
					50 110 350							

Boring Progress and Water Observations: Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

Chiselling / Slow Progress: From	To	Duration (hh:mm)

General Remarks

inspection pit excavated alongside on 03/06/2023 to obtain fresh sample for laboratory testing.
10. SPT hammers CD9.2.03-2023 (E_r = 63.00%) , JB05-2023 (E_r = 60.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Beretta T44**	**Will Nevins + Lindon Paisley**	**RBarker + RStan**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**BH-PTS129**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**30.03.23** End: **04.04.23**	**122.04**	**E:355989.2 N:528987.5**	**4** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
13.50-15.00 (0:05)				100 100 90	50 110 350	90% return W (Red)					(2.60)	
14.43-14.63	31	C										
									Borehole terminated at 15.00m depth.	107.04	15.00	

Boring Progress and Water Observations: Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	Chiselling / Slow Progress: From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Beretta T44**	**Will Nevins + Lindon Paisley**	**RBarker + RStan**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		National Highways		BH-PTS129
Contract Ref:	Start: 30.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 04.04.23	122.04	E:355989.2 N:528987.5	5 of 7

4.00-5.00m

5.00-6.50m

Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Dando 2000 + Beretta T44	Drilled By:	Will Nevins + Lindon Paisley	Logged By:	RBarker + RStan	Checked By:	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	BH-PTS129

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	30.03.23 End: 04.04.23	122.04	E:355989.2 N:528987.5	6 of 7

6.50-7.50m

7.50m-10.50m

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	Dando 2000 + Beretta T44	Will Nevins + Lindon Paisley	RBarker + RStan	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log BOREHOLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		National Highways		BH-PTS129
Contract Ref:	Start: 30.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 04.04.23	122.04	E:355989.2 N:528987.5	7 of 7

10.50-13.50m

13.50-15.00m

Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Dando 2000 + Beretta T44	Drilled By:	Will Nevins + Lindon Paisley	Logged By:	RBarker + RStan	Checked By:	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log BOREHOLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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SUMMARY OF DISCONTINUITIES - BH-PTS129

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
1	7.07-7.14	J	65	P-R	-	-	-	2	Clean.
2	7.07-7.17	J	73	P-R	-	-	-	4	Clean.
3	7.16-7.17	BF	2	P-R	-	-	-	2	Rare black colouration.
4	7.17-7.22	J	39	P-R	-	-	-	4	Abundant black staining.
5	7.18-7.19	BF	3	P-R	-	-	Dark grey sand less than 2mm.	4	Occasional black specks.
6	7.18-7.22	J	24	P-R	-	-	-	4	Abundant black staining.
7	7.20-7.29	J	40	P-R	-	-	-	4	Abundant black staining.
8	7.29-7.31	J	71	P-R	-	-	-	4	Abundant black staining.
9	7.36-7.37	BF	2	P-R	-	-	-	2	Abundant black staining.
10	8.87-8.88	BF	3	P-R	-	-	-	2	Clean - possibly drilling induced.
11	8.93-8.99	BF	3	P-R	-	-	-	2	Clean.
12	8.95-8.96	BF	3	P-R	-	-	-	2	Clean.
13	9.11-9.12	BF	1	P-R	-	-	-	4	Clean.
14	9.62-9.63	BF	3	P-R	-	-	-	2	Clean.
15	10.10-10.22	BF	3	P-R	-	-	-	2	Clean.
16	10.34-10.35	BF	3	P-R	-	-	-	2	Clean.

Key:
Type codes: BF = Bedding fracture, J = Joint.
Small-scale roughness codes: P-R = Planar - rough, U-R = Undulating - rough.

SUMMARY OF DISCONTINUITIES - BH-PTS129

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
17	10.34-10.50	J	78	P-R	-	-	-	4	Clean.
18	10.41-10.42	BF	3	P-R	-	-	Fine to coarse sand.	2	Clean.
19	10.65-10.70	BF	9	U-R	-	-	-	8	Clean.
20	11.18-11.24	J	30	U-R	-	-	-	8	Clean.
21	11.44-11.57	J	82	P-R	-	-	-	4	Clean.
22	11.72-11.73	BF	3	P-R	-	-	-	4	Clean.
23	11.88-11.89	BF	3	P-R	-	-	-	2	Clean.
24	12.16-12.17	BF	6	P-R	-	-	-	4	Clean.
25	12.26-12.27	BF	3	P-R	-	-	-	2	Clean.
26	13.11-13.12	BF	4	P-R	-	-	-	2	Clean.
27	13.16-13.17	BF	3	P-R	-	-	-	2	Clean.
28	13.35-13.36	BF	3	P-R	-	-	-	2	Clean.
29	13.47-13.48	BF	2	P-R	-	-	-	2	Clean.
30	13.56-13.57	BF	2	P-R	-	-	-	4	Clean.
31	13.70-13.71	BF	4	P-R	-	-	-	2	Clean.
32	13.93-13.95	BF	4	U-R	-	-	-	8	Clean.

Key:
Type codes: BF = Bedding fracture, J = Joint.
Small-scale roughness codes: P-R = Planar - rough, U-R = Undulating - rough.

SUMMARY OF DISCONTINUITIES - BH-PTS129

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
33	14.08-14.09	BF	2	P-R	-	-	-	2	Clean.
34	14.43-14.43	BF	2	P-R	-	-	-	2	Clean.
35	14.64-14.65	BF	3	U-R	-	-	-	2	Clean.
36	14.70-14.75	J	14	U-R	-	-	-	8	Clean.
37	14.80-14.81	BF	3	P-R	-	-	-	4	Clean.

Key:
Type codes: BF = Bedding fracture, J = Joint.
Small-scale roughness codes: P-R = Planar - rough, U-R = Undulating - rough.

STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**GS-PTS102**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**24.04.23** End: **02.05.23**	**120.67**	**E:354420.6 N:528971.0**	**1** of **6**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.00-0.50	2	B							MADE GROUND: Dark brown very gravelly very silty SAND with rootlets and low cobble and low boulder content. Gravel is subangular to subrounded fine to coarse of sandstone, granite, quartz, bricks and concrete. Cobbles are subangular to subrounded of sandstone , granite and quartz. Boulders are subrounded of granite. Fabric material noted at 1.0 m. No odour noted. (MADE GROUND GRANULAR)			
0.20	101	ES										
0.50	1	D							0.50-1.20m : high cobble content.			
0.50-1.20	4	B									(1.20)	
1.00	102	ES										
1.00	3	D										
1.20-1.45	4	B							Reddish brown and grey very gravelly silty fine to medium SAND. Gravel is subangular to subrounded fine to medium of sandstone. (GLACIAL TILL - GRANULAR)	119.47	1.20	
1.20-1.65	301	SPT	N=14									
1.20-1.65	302	DSPT										
1.45-2.00	5	B		Window run 131mm dia (100% rec)					Firm reddish brown locally grey slightly gravelly sandy CLAY. Sand is fine to medium. Gravel is subangular to subrounded fine to coarse of sandstone, mudstone and dolerite. (GLACIAL TILL - COHESIVE)	119.22	1.45	
1.60-1.70	6	D										
2.00-2.60	7	B										
2.00-2.45	303	SPT	N=11									
2.00-2.45	304	DSPT									(1.55)	
2.60-3.00	8	C		Window run 131mm dia (100% rec)								
3.00-3.45	305	$UT_{(UT100)}$	27 blows 100% recovery						Dense reddish brown locally grey very gravelly very clayey fine to coarse SAND with a low cobble content. Gravel is subangular to rounded fine to coarse of sandstone, mudstone and dolerite. Cobbles are subrounded of dolerite. (GLACIAL TILL - GRANULAR)	117.67	3.00	
3.00-3.40	9	B										
3.40-3.80	10	B		Window run 131mm dia (100% rec)								
3.60-3.70	11	D										
3.80-4.00	12	B									(1.70)	
4.00-4.60	13	B							4.00-4.70m : slight reduction in fines content.			
4.00-4.45	306	SPT	N=31									
4.00-4.45	307	DSPT		Window run 131mm dia (100% rec)								

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
25/04/23	08:00	1.20	0.00	N/R	Dry
25/04/23	17:30	3.00	0.00	N/R	Dry
26/04/23	09:00	3.00	None	131	Dry
26/04/23	17:00	7.55	7.55	146	0.20
27/04/23	08:00	7.55	7.55	146	0.60
27/04/23	17:00	12.05	12.05	146	1.80
28/04/23	08:30	12.05	12.05	146	7.70
28/04/23	13:00	12.05	12.05	146	3.30

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Drilling commenced with dynamic sampling to 4.70m depth, then extended by with rotary coring using 146mm diameter Geobor S core barrel, PCD bit and water flush.
3. No groundwater strikes observed during rotary drilling, however any strike may have been obscured by drilling flush.
4. Time taken to complete rotary core runs reported in Depth column, in brackets, in format (hh:mm).
5. 50mm diameter gas/groundwater monitoring well complete with upstanding protective cover installed to 4.00m m depth on completion. Response zone 1.00m to 4.50m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	**Comacchio GEO 602**	**Sam Carter**	**MTurkowski**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	GS-PTS102

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	24.04.23 End: 02.05.23	120.67	E:354420.6 N:528971.0	2 of 6

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instrumentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
4.60-4.70	14	D		Window run 131mm dia (100% rec)								
4.70-5.30 (0:22) 4.70-5.30 4.70-5.15 4.70-5.15	15 308 309	B SPT DSPT	N=42	83		100% return W (Brown)			Recovered disturbed as (dense) grey mottled reddish brown clayey sandy subangular to subrounded fine to coarse GRAVEL of dolerite, sandstone and mudstone with high cobble content of subrounded dolerite. (GLACIAL TILL - GRANULAR) 4.70m : Field Engineer reports recovered sample disturbed (most fines washed out).	115.97	4.70 (0.60)	
5.30-6.80 (0:33) 5.30-5.85	16	B		37		100% return W (Brown)			Recovered disturbed (most of the fines and finer gravel washed out) as grey and reddish brown very sandy clayey to very clayey subangular to subrounded fine to coarse GRAVEL of various lithologies including dolerite, sandstone and mudstone with medium to high cobble content of subrounded dolerite, sandstone and mudstone. (GLACIAL TILL - GRANULAR) 5.30-6.80m : Partial recovery: 37%	115.37	5.30	
6.80-7.55 (0:21) 6.80-7.25	17	B		60		100% return W (Brown)			7.25-7.55m : AZCL			AZCL
7.55-8.30 (0:20) 7.55-7.95	18	B		53		100% return W (Brown)			7.95-8.30m : AZCL			AZCL
8.30-9.05 (0:38) 8.65-8.75	19	D		27		100% return W (Brown)			8.30-9.05m : Partial recovery: 27%. recovered 2 no. subrounded cobbles of igneous rock.		(7.25)	

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
02/05/23	08:30	12.05	12.05	146	9.10

General Remarks

Water depth 9.10m before installation.
6. SPT hammer AR1240-2022 (E_r = 67.48%) used.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	Comacchio GEO 602	Sam Carter	MTurkowski	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	GS-PTS102

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	24.04.23 End: 02.05.23	120.67	E:354420.6 N:528971.0	3 of 6

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
9.05-9.80 (0:17)									9.05-9.80m : Partial recovery: 27%. recovered 2 no. subrounded cobbles of dolerite.			
9.40-9.60	20	B		27 - -		100% return W (Brown)						
9.80-10.55 (0:22)									9.80m : very dense. 9.80-10.55m : Partial recovery: 40%, recovered as gravel and cobbles.			
9.80-10.07	310	SPT	25/12,26,12 for 50mm									
9.80-10.07	311	DSPT										
10.10-10.40	21	B		40 - -		100% return W (Brown)						
10.55-11.30 (0:10)									10.55-11.30m : Partial recovery: 31%. recovered as subrounded gravel and cobbles only.			
10.90-11.12	22	B		31 - -		100% return W (Brown)						
11.30-12.55 (0:30)									11.30-12.55m : Minimal recovery: 24%. recovered as subrounded gravel and cobbles.			
11.90-12.20	23	B		24 - -		20% return W (Brown)						
									Borehole terminated at 12.55m depth.	108.12	12.55	

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	Comacchio GEO 602	Sam Carter	MTurkowski	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		**National Highways**		**GS-PTS102**
Contract Ref:	Start: **24.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **02.05.23**	**120.67**	**E:354420.6 N:528971.0**	**4** of **6**

3.00m - 4.70m

4.70m - 6.80m

Method Used:	Inspection pit + Dynamic sampling + Rotary Cored	Plant Used:	Comacchio GEO 602	Drilled By:	Sam Carter	Logged By:	MTurkowski	Checked By:	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		National Highways		GS-PTS102
Contract Ref:	Start: 24.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 02.05.23	120.67	E:354420.6 N:528971.0	5 of 6

6.80m - 8.30m

8.30m - 9.80m

Method Used:	Inspection pit + Dynamic sampling + Rotary Cored	Plant Used:	Comacchio GEO 602	Drilled By:	Sam Carter	Logged By:	MTurkowski	Checked By:	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		**National Highways**		**GS-PTS102**
Contract Ref:	Start: **24.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **02.05.23**	**120.67**	**E:354420.6 N:528971.0**	**6** of **6**

9.80m - 11.30m

11.30m - 12.55m

Method Used:	Inspection pit + Dynamic sampling + Rotary Cored	Plant Used:	Comacchio GEO 602	Drilled By:	Sam Carter	Logged By:	MTurkowski	Checked By:	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**GS-PTS105**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**03.05.23** End: **10.05.23**	**116.08**	**E:354485.8 N:529002.3**	**1** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.00-0.30	2	B							Grass over dark brown slightly gravelly clayey SAND with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded of sandstone, granite, flint and quartz. Cobbles are subangular to subrounded of sandstone and granite. (TOPSOIL)	115.78	(0.30)	
0.05	101	ES										
0.20	1	D							MADE GROUND: Firm brown grey slightly sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to coarse, subangular to subrounded of sandstone, quartz, granite, bricks and clay pipe fragments. (MADE GROUND COHESIVE)	115.58	0.30	
0.20	201	D										
0.30	102	ES										
0.30-0.50	4	B										
0.40	202	D										
0.40	3	D										
0.50-1.20	6	B							Brown very gravelly very silty fine to coarse SAND with high cobble content. Gravel is fine to coarse, subangular to subrounded of sandstone, granite and quartz. Cobbles are subangular to subrounded of sandstone, granite and quartz <125 mm. (GLACIAL TILL - GRANULAR)		0.50	
1.00	203	D									(0.70)	
1.00	5	D										
1.20	103	ES		Window run 131mm dia (100% rec)					Dense brown very gravelly silty fine to coarse SAND. Gravel is angular to subrounded fine to coarse of sandstone, dolerite and limestone. (GLACIAL TILL - GRANULAR)	114.88	1.20	
1.20-2.00	8	B										
1.20-1.65	300	SPT	N=39									
1.20-1.65	301	DSPT										
1.70-1.80	7	D									(0.80)	
2.00-2.90 (0:21)				27 - -		100% return W (Brown)			Partial recovery (27%), recovered as greyish subrounded fine to coarse GRAVEL with low cobble content. Cobbles are subrounded of dolerite <100mm x 100mm x 180mm. (GLACIAL TILL - GRANULAR)	114.08	2.00	
2.00-2.90	9	B										
2.00-2.25	302	SPT	7,9/20,30 for 25mm									
2.00-2.25	303	DSPT									(0.90)	PR/ AZCL
2.90-3.65 (0:16)				33 - -		100% return W (Brown)			Partial recovery (33%), recovered as subrounded fine to coarse GRAVEL with low cobble content. Cobbles is subrounded of dolerite <80mm x 90mm x 140mm. (GLACIAL TILL - GRANULAR)	113.18	2.90	
2.90-3.65	10	B									(0.75)	PR/ AZCL
3.65-4.40 (0:11)				50 - -		100% return W (Brown)			Partial recovery (50%), recovered as brown slightly sandy clayey subrounded fine to coarse GRAVEL with low cobble content. Cobbles are subrounded dolerite <80mm x 90mm x 100mm. (GLACIAL TILL - GRANULAR)	112.43	3.65	
3.65-4.40	12	B										
3.80-3.90	11	D									(0.75)	
4.40-5.15									*Description on next sheet*	111.68	4.40	

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
04/05/23	17:00	2.00	1.80	131	0.10
05/05/23	08:50	2.00	1.80	131	0.00
05/05/23	12:30	5.15	5.15	146	0.30
09/05/23	09:20	5.15	5.15	146	0.60
09/05/23	17:00	7.40	7.40	146	0.30
10/05/23	08:30	7.40	7.40	146	1.00
10/05/23	17:00	10.40	10.40	146	1.80
11/05/23	08:15	10.40	10.40	146	7.00

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Drilling commenced with dynamic sampling to 2.00m depth and extended with rotary coring technique using 146mm diameter Geobor S core barrel, PCD bit and water flush.
3. No groundwater strikes observed during rotary drilling, however any strike may have been obscured by drilling flush.
4. Time taken to complete rotary core runs reported in Depth column, in brackets, in format (hh:mm).
5. 50mm diameter gas/groundwater monitoring well complete with upstanding protective cover installed to 9.50m depth on completion. Response zone 1.00m to 10.00m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Dynamic sampling + Rotary Cored	**Comacchio Geo 602**	**Sam Carter**	**RStan + MTurkowski**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**GS-PTS105**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**03.05.23** End: **10.05.23**	**116.08**	**E:354485.8 N:529002.3**	**2** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
(0:09) 4.40-4.86	13	B							Very stiff brown slightly sandy slightly gravelly silty CLAY. Sand is fine to medium. Gravel is subrounded to rounded fine to coarse of sandstone. (GLACIAL TILL - COHESIVE)		(0.46)	
4.70-4.80	14	D		100 - -		100% return W (Brown)						
4.86-5.15	15	B							Very stiff brown slightly sandy gravelly CLAY with low cobble content. Gravel is subangular to subrounded fine to coarse of dolerite. Cobbles are subrounded dolerite <60mm x 80mm x 110mm. (GLACIAL TILL - COHESIVE)	111.22	4.86	
5.00-5.10	16	D								110.98	5.10	
5.15-5.90 (0:09) 5.15-5.90	17	B							Stiff brown mottled reddish brown slightly sandy slightly gravelly silty CLAY with localised pockets of reddish brown clayey silt. Sand is fine. Gravel is subrounded fine and medium dolerite. (GLACIAL TILL - COHESIVE)			
5.50-5.60	18	D		100 - -		100% return W (Brown)					(1.10)	
5.90-7.20 (0:42) 5.90-6.50	19	B										
6.20-6.30	21	D							Stiff brown slightly sandy gravelly CLAY with low cobble content. Sand is fine and medium. Gravel is subrounded fine to medium of dolerite. Cobbles are subrounded dolerite. (GLACIAL TILL - COHESIVE)	109.88	6.20 (0.30)	
				46 - -		W (Brown)			AZCL. Driller's description is CLAY. (GLACIAL TILL - COHESIVE)	109.58	6.50 (0.70)	AZCL
7.20-7.40 (0:13)				0 - -		W (Brown)			AZCL. Driller's description is GRAVEL. (GLACIAL TILL - GRANULAR)	108.88	7.20	AZCL
7.40-8.15 (0:21) 7.40-8.15	22	B		40 - -		90% return W (Brown)			Partial recovery (40%), recovered as subrounded fine to coarse GRAVEL with low cobble content. Cobbles are subrounded dolerite. (GLACIAL TILL - GRANULAR)	108.68	7.40 (0.75)	PR/ AZCL
8.15-8.90 (0:31) 8.15-8.90	23	B		40 - -		90% return W (Brown)			Partial recovery (40%), recovered as subrounded COBBLES of dolerite. (GLACIAL TILL - GRANULAR)	107.93	8.15 (0.75)	PR/ AZCL
8.90-9.65									*Description on next sheet*	107.18	8.90	PR/ AZCL

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

6. SPT hammer AR1240-2022 (E_r = 67.48%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Dynamic sampling + Rotary Cored	**Comacchio Geo 602**	**Sam Carter**	**RStan + MTurkowski**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**GS-PTS105**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**03.05.23** End: **10.05.23**	**116.08**	**E:354485.8 N:529002.3**	**3** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
(0:20) 8.90-9.65	24	B		40 - -		90% return W (Brown)			Partial recovery (40%), recovered as subrounded coarse GRAVEL of dolerite with low cobble content. Cobbles are subrounded dolerite. (GLACIAL TILL - GRANULAR)		(0.75)	PR/ AZCL
9.65-10.40 (1:00) 9.65-10.40	25	B		40 - -		90% return W (Brown)			Partial recovery (40%), recovered as subrounded fine to coarse GRAVEL of dolerite with low cobble content. Cobbles are subrounded dolerite. (GLACIAL TILL - GRANULAR)	106.43	9.65 (0.75)	PR/ AZCL
10.40-11.15 (0:06) 10.40-10.70	26	B							Recovery as subrounded fine to coarse GRAVEL with low cobble content. Cobbles are subrounded dolerite. (GLACIAL TILL - GRANULAR)	105.68	10.40 (0.50)	
10.70-10.86	20	C		71 31 23		100% return W (Brown)			10.70-10.90m : AZCL			AZCL
11.15-11.90 (0:07)				88 88 88	1290 1290 1290	100% return W (Brown)			Very weak thinly laminated partially weathered fine to medium grained locally coarse grained SANDSTONE. (PENRITH SANDSTONE FORMATION)	105.18	10.90 (1.11)	
11.60-11.77	27	C										
11.90-13.40 (0:11)									Very weak locally extremely weak reddish brown thinly laminated locally thickly laminated fine to medium grained SANDSTONE. (PENRITH SANDSTONE FORMATION) 12.07-12.17m : Non- intact recovered as fine to coarse gravel of sandstone.	104.07	12.01	
12.17-12.35	28	C		100 89 89	2140 2140 2140	100% return W (Brown)					(2.14)	
13.40-14.90												

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Dynamic sampling + Rotary Cored	**Comacchio Geo 602**	**Sam Carter**	**RStan + MTurkowski**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	GS-PTS105

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	03.05.23 End: 10.05.23	116.08	E:354485.8 N:529002.3	4 of 8

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
(0:12)												
13.61-13.77	29	C			2140 2140 2140							
				100 89 89		100% return W (Brown)			Extremely weak to very weak reddish brown thinly laminated partially weathered fine to coarse grained SANDSTONE. Local very closely to closed spaced black stained laminae. Fractures (20-45°) undulating planar rough, black and yellowish brown stained. (PENRITH SANDSTONE FORMATION) 14.46-14.53m : Black and yellowish brown lamination.	101.93	14.15	
14.25-14.41	30	C			NI 220 430						(0.75)	
									14.84-14.85m : Non-intact recovered as sand and gravel.	101.18	14.90	
									Borehole terminated at 14.90m depth.			

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Dynamic sampling + Rotary Cored	Comacchio Geo 602	Sam Carter	RStan + MTurkowski	AML

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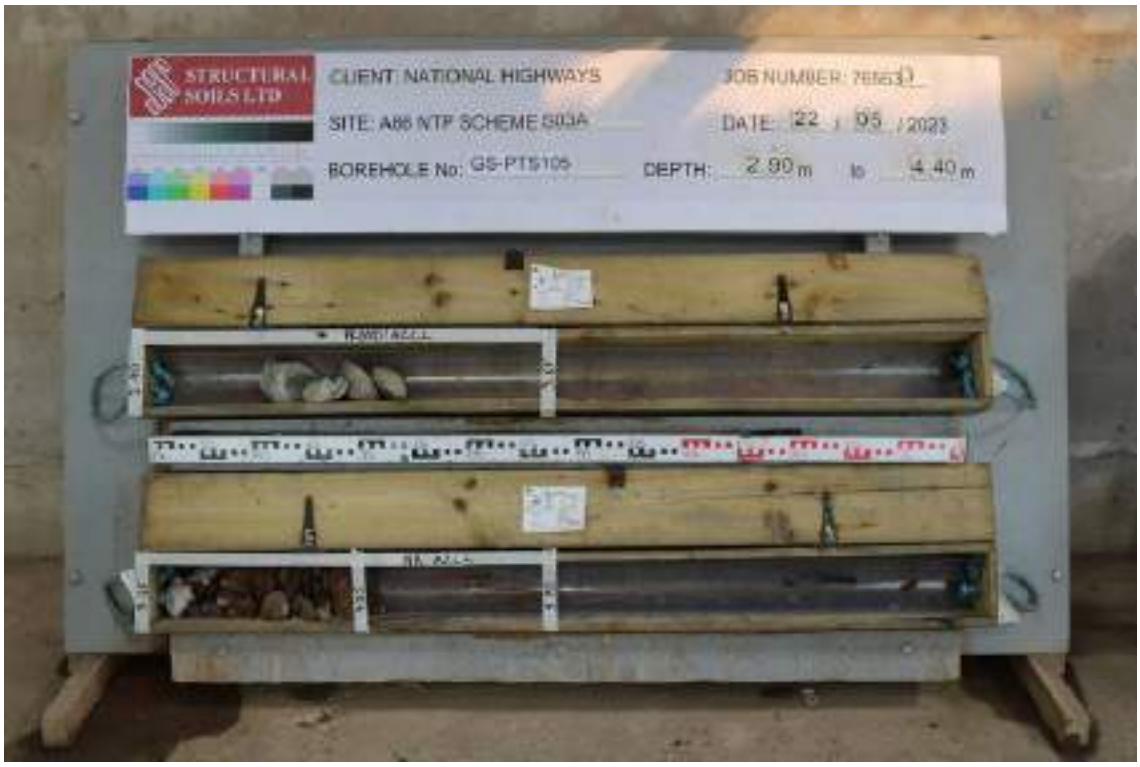
STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	GS-PTS105

Contract Ref:	Start:	End:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	03.05.23	10.05.23	116.08	E:354485.8 N:529002.3	5 of 8

1.20m - 2.90m



2.90m - 4.40m

Method Used:	Dynamic sampling + Rotary Cored	Plant Used:	Comacchio Geo 602	Drilled By:	Sam Carter	Logged By:	RStan + MTurkowski	Checked By:	AML

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		National Highways		GS-PTS105
Contract Ref:	Start: 03.05.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 10.05.23	116.08	E:354485.8 N:529002.3	6 of 8

4.40m - 5.90m

5.90m - 8.15m

Method Used:	Dynamic sampling + Rotary Cored	Plant Used:	Comacchio Geo 602	Drilled By:	Sam Carter	Logged By:	RStan + MTurkowski	Checked By:	AML

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	GS-PTS105

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	03.05.23 End: 10.05.23	116.08	E:354485.8 N:529002.3	7 of 8

8.15m - 9.65m

9.65m - 11.15m

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Dynamic sampling + Rotary Cored	Comacchio Geo 602	Sam Carter	RStan + MTurkowski	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		National Highways		GS-PTS105
Contract Ref:	Start: 03.05.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 10.05.23	116.08	E:354485.8 N:529002.3	8 of 8

11.15m - 13.40m

13.40m - 14.90m

Method Used:	Dynamic sampling + Rotary Cored	Plant Used:	Comacchio Geo 602	Drilled By:	Sam Carter	Logged By:	RStan + MTurkowski	Checked By:	AML

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SUMMARY OF DISCONTINUITIES - GS-PTS105

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
-	10.86-10.87	IdF	0	-	-	-	-	-	
-	10.91-10.92	IdF	0	-	-	-	-	-	
-	11.29-11.30	IdF	0	-	-	-	-	-	
-	11.33-11.34	IdF	0	-	-	-	-	-	
-	11.35-11.36	IdF	0	-	-	-	-	-	
-	11.45-11.46	IdF	0	-	-	-	-	-	
-	11.52-11.53	IdF	0	-	-	-	-	-	
-	11.53-11.54	IdF	0	-	-	-	-	-	
-	11.60-11.61	IdF	0	-	-	-	-	-	
-	11.77-11.78	IdF	0	-	-	-	-	-	
-	11.82-11.83	IdF	0	-	-	-	-	-	
-	11.83-11.84	IdF	0	-	-	-	-	-	
-	11.92-11.93	IdF	0	-	-	-	-	-	
-	12.00-12.01	IdF	0	-	-	-	-	-	
-	12.15-12.17	IdF	0	-	-	-	-	-	
-	12.32-12.35	IdF	0	-	-	-	-	-	

Key:
Type codes: IdF = Induced fracture, J = Joint.
Small-scale roughness codes: P-R = Planar - rough, U-R = Undulating - rough.
Aperture description codes: Very tight = Very tight (<0.1mm).

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date	Contract Ref:
	ALUMBER	30.08.23	765633
Contract: A66 NTP Scheme S03A			Page: 1 of 2

SUMMARY OF DISCONTINUITIES - GS-PTS105

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
-	12.74-12.77	IdF	0	-	-	-	-	-	
-	12.84-12.88	IdF	0	-	-	-	-	-	
-	12.89-12.92	IdF	0	-	-	-	-	-	
-	13.14-13.18	IdF	0	-	-	-	-	-	
-	13.26-13.29	IdF	0	-	-	-	-	-	
-	13.54-13.57	IdF	0	-	-	-	-	-	
-	13.60-13.63	IdF	0	-	-	-	-	-	
-	13.75-13.79	IdF	0	-	-	-	-	-	
-	13.83-13.87	IdF	0	-	-	-	-	-	
-	14.01-14.04	IdF	0	-	-	-	-	-	
1	14.20-14.23	J	20	P-R	Very tight	-	-	-	Occasional black staining.
-	14.20-14.26	IdF	0	-	-	-	-	-	
-	14.39-14.43	IdF	0	-	-	-	-	-	
2	14.45-14.54	J	42	U-R	-	-	Partially with yellowish brown sand.	14	
3	14.47-14.51	J	31	U-R	-	-	Partially with yellowish brown sand.	8	Rare black staining.

Key:
Type codes: IdF = Induced fracture, J = Joint.
Small-scale roughness codes: P-R = Planar - rough, U-R = Undulating - rough.
Aperture description codes: Very tight = Very tight (<0.1mm).

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date	Contract Ref:
	ALUMBER	30.08.23	765633
Contract: A66 NTP Scheme S03A			Page: 2 of 2

STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**GS-PTS107**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**20.03.23** End: **22.03.23**	**118.79**	**E:355979.8 N:528929.9**	**1** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.05	1	D							Grass over brown slightly gravelly silty fine to medium SAND with occasional rootlets (2mm). Gravel is subangular to rounded fine to medium sandstone and grey igneous rock. (TOPSOIL)	118.64	0.15	
0.05	201	D										
0.20-0.40	2	B							Dark red gravelly clayey fine to coarse SAND with low cobble content and rare rootlets (2mm). Gravel is subangular to subrounded fine to coarse of fine crystalline black igneous rock and sandstone. Cobbles are subangular <190mm of igneous rock. (GLACIAL TILL - GRANULAR)		(1.05)	
0.30	101	ES										
0.30	202	D										
0.30	3	D										
0.40-0.60	4	B										
0.50	102	ES										
0.50	203	D										
0.50	5	D										
0.90-1.10	6	B										
1.00	103	ES										
1.00	204	D										
1.00	7	D										
1.20-1.70	8	B		Window run 101mm dia (75% rec)					Loose reddish brown slightly gravelly clayey SAND with low cobble content. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone, quartzite and dolerite. Cobbles are subrounded <80mm x 80mm x 70mm of dolerite. (GLACIAL TILL - GRANULAR)	117.59	1.20	
1.20-1.65	301	SPT	N=10									
1.70-1.80	9	D						1	1.70-1.80m : slightly gravelly sandy CLAY. 1.80-2.00m : AZCL.		(1.30)	AZCL
2.00-2.45	302	SPT	N=16	Window run 101mm dia (100% rec)								
2.50-2.90	10	B							Firm reddish brown slightly gravelly sandy silty CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of coal, sandstone, quartzite and dolerite. (GLACIAL TILL - COHESIVE)	116.29	2.50	
2.90-3.00	11	D									(0.40)	
3.00-3.30	12	B		Window run 101mm dia - (100% rec)					Very dense reddish brown slightly gravelly clayey SAND. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone. (GLACIAL TILL - GRANULAR)	115.89	2.90	
3.00-3.30	303	SPT	10,13/17,33 for 75mm								(0.40)	
3.30-3.70	13	B		Window run 101mm dia (57% rec)		90% return W (Red)			Firm reddish brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone, quartzite, basalt and dolerite. (GLACIAL TILL - COHESIVE) 3.50-3.70m : Coarse gravel of basalt and dolerite.	115.49	3.30	
											(0.40)	
									AZCL. Driller's description is GRAVEL. (GLACIAL TILL - GRANULAR)	115.09	3.70	
											(0.40)	AZCL
4.00-4.19	304	SPT	10,15/50 for 50mm	Window run 101mm dia (60% rec)		90% return W (Red)			Extremely weak reddish brown residual weathered fine to coarse grained SANDSTONE. Recovered as slightly gravelly silty fine to coarse sand. (WEATHERED PENRITH SANDSTONE)	114.69	4.10	
4.10-4.20	14	D										

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
21/03/23	17:30	12.00	11.00	146	2.50
22/03/23	09:30	12.00	11.00	146	6.00

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Drilling commenced with dynamic sampling to 5.50m depth and extended by rotary coring using 146mm diameter Geobor S core barrel, PCD bit and water flush.
3. Water strike at 1.95m rising to 1.90m after 20 minutes.
4. Time taken to complete rotary core runs reported in Depth column, in brackets, in format (hh:mm).
5. Borehole backfilled with bentonite cement pellets, inspection pit backfilled with arisings.
6. SPT hammer CD9.2.03-2023 (E_r = 63.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	**Beretta T44**	**Lindon Paisley**	**EMenkiti + RBarker + EMenkiti**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**GS-PTS107**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**20.03.23** End: **22.03.23**	**118.79**	**E:355979.8 N:528929.9**	**2** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
4.50-4.80	15	B		Window run 101mm dia (60% rec)		90% return W (Red)			4.50-4.80m : laboratory PSD shows silty fine to coarse SAND. Weathered sandstone possibly disaggregated during PSD test.			
									4.80-5.00m : AZCL		(1.40)	AZCL
5.00-5.40	16	B		Window run 101mm dia (80% rec)		80% return W (Red)			5.40-5.50m : AZCL			AZCL
5.50-6.00 (0:02)				80 0 0	NI NI NI	70% return W (Red)			Extremely weak reddish brown destructured fine to coarse grained SANDSTONE. Recovered as sandy gravel with occasional black staining and speckles on gravel surfaces. (WEATHERED PENRITH SANDSTONE)	113.29	5.50 (0.50)	
5.80-5.90	17	D							5.90-6.00m : AZCL			AZCL
6.00-6.50 (0:02)									Very weak thinly laminated to thinly bedded reddish brown partially weathered fine to medium grained micaceous SANDSTONE. Discontinuities: 1) Bedding fractures: 0-10° very closely to medium spaced planar rough with occasional black staining and black speckles. (PENRITH SANDSTONE FORMATION)	112.79	6.00	
6.15-6.27	18	C		100 100 90		70% return W (Red)						
6.50-7.50 (0:02)												
6.63-6.78	19	C										
6.97-7.11	20	C		85 71 65		60% return W (Red)						
									7.22-7.35m : Non-intact recovered as angular to subrounded fine to coarse sandy gravel. 7.35-7.50m : AZCL			AZCL
7.50-8.00 (0:02) 7.56-7.64	21	C		100 100 70	NI 180 400	60% return W (Red)					(3.00)	
8.00-9.00 (0:05) 8.08-8.28	22	C		100 100 81		60% return W (Red)						
8.62-8.73	23	C										

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	**Beretta T44**	**Lindon Paisley**	**EMenkiti + RBarker + EMenkiti**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**GS-PTS107**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**20.03.23** End: **22.03.23**	**118.79**	**E:355979.8 N:528929.9**	**3** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
9.00-10.50 (0:05)				100 100 94		60% return W (Red)			Very weak to weak thinly laminated to medium bedded reddish brown partially weathered fine to medium grained micaceous SANDSTONE with occasional 45-75° healed joints. Bedding fractures are 0-10° closely to widely spaced locally medium spaced planar rough with occasional black staining and black speckles of manganese mineralisation. (PENRITH SANDSTONE FORMATION)	109.79	9.00	
9.98-10.19	24	C										
10.19-10.35	25	C										
10.50-12.00 (0:05)				90 90 88	20 180 430	60% return W (Red)						
11.20-11.38	26	C										
11.64-11.75	27	C							11.85-12.00m : AZCL			AZCL
12.00-13.50 (0:05)				100 100 100		80% return W (Red)			12.69-12.82m : 55° joint planar rough black speckles open with reddish brown clay infill <1mm.			
12.10-12.22	28	C										
12.96-13.10	29	C										

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	**Beretta T44**	**Lindon Paisley**	**EMenkiti + RBarker + EMenkiti**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**GS-PTS107**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**20.03.23** End: **22.03.23**	**118.79**	**E:355979.8 N:528929.9**	**4** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
13.50-15.00 (0:05)					20 180 430							
13.87-14.04	30	C										
14.14-14.33	31	C		100 100 87		80% return W (Red)					(10.50)	
15.00-16.50 (0:05)												
15.26-15.40	32	C		93 91 85	80 470 1290	80% return W (Red)			15.87-16.02m : 2 no. 45 to 55° healed joints with no visible offset. Healed with 3mm light grey silty sand. 16.02-16.08m : Non-intact recovered as angular to subrounded fine to coarse gravel and sand. 16.40-16.50m : AZCL			AZCL
16.50-18.00 (0:05)												
16.66-16.77	33	C		100 100 100		80% return W (Red)			17.25-17.27m : Non-intact recovered as fine to coarse gravel.			
17.80-17.93	34	C										

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	**Beretta T44**	**Lindon Paisley**	**EMenkiti + RBarker + EMenkiti**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**GS-PTS107**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**20.03.23** End: **22.03.23**	**118.79**	**E:355979.8 N:528929.9**	**5** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
18.00-19.50 (0:05)												
18.15-18.33	35	C										
				80 80 80	80 470 1290	80% return W (Red)						
18.85-18.96	36	C										
									19.20-19.50m : AZCL			AZCL
									Borehole terminated at 19.50m depth.	99.29	19.50	

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	**Beretta T44**	**Lindon Paisley**	**EMenkiti + RBarker + EMenkiti**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		**National Highways**		**GS-PTS107**
Contract Ref:	Start: **20.03.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **22.03.23**	**118.79**	**E:355979.8 N:528929.9**	**6** of **10**

1.20m to 3.00m

3.00m to 4.00m

Method Used:	Inspection pit + Dynamic sampling + Rotary Cored	Plant Used:	Beretta T44	Drilled By:	Lindon Paisley	Logged By:	EMenkiti + RBarker + EMenkiti	Checked By:	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		National Highways		GS-PTS107
Contract Ref:	Start: 20.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 22.03.23	118.79	E:355979.8 N:528929.9	7 of 10

4.00m to 5.00m

5.00m to 6.00m

Method Used:	Inspection pit + Dynamic sampling + Rotary Cored	Plant Used:	Beretta T44	Drilled By:	Lindon Paisley	Logged By:	EMenkiti + RBarker + EMenkiti	Checked By:	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		National Highways		GS-PTS107
Contract Ref:	Start: 20.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 22.03.23	118.79	E:355979.8 N:528929.9	8 of 10

6.00m to 7.50m

7.50m to 9.00m

Method Used:	Inspection pit + Dynamic sampling + Rotary Cored	Plant Used:	Beretta T44	Drilled By:	Lindon Paisley	Logged By:	EMenkiti + RBarker + EMenkiti	Checked By:	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		**National Highways**		**GS-PTS107**
Contract Ref:	Start: **20.03.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **22.03.23**	**118.79**	**E:355979.8 N:528929.9**	**9** of **10**

9.00m to 12.00m

12.00m to 15.00m

Method Used:	Inspection pit + Dynamic sampling + Rotary Cored	Plant Used:	Beretta T44	Drilled By:	Lindon Paisley	Logged By:	EMenkiti + RBarker + EMenkiti	Checked By:	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		National Highways		GS-PTS107
Contract Ref:	Start: 20.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 22.03.23	118.79	E:355979.8 N:528929.9	10 of 10

15.00m to 18.00m

18.00m to 19.50m

Method Used:	Inspection pit + Dynamic sampling + Rotary Cored	Plant Used:	Beretta T44	Drilled By:	Lindon Paisley	Logged By:	EMenkiti + RBarker + EMenkiti	Checked By:	AML

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SUMMARY OF DISCONTINUITIES - GS-PTS107

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
1	6.39-6.39	BF	0	U-R	-	-	-	2	Black staining.
2	6.56-6.56	BF	0	P-R	-	-	-	4	Black staining.
3	6.63-6.63	BF	0	P-R	-	-	-	4	Black speckles.
4	6.97-6.97	BF	0	P-R	-	-	Sand <2mm.	4	Black speckles.
5	7.11-7.11	BF	5	P-R	-	-	Sand <2mm.	4	
6	7.56-7.56	-	0	P-R	-	-	-	4	Clean.
7	7.73-7.79	J	35	P-R	-	-	Sand <2mm.	6	Black speckles.
8	8.00-8.59	J	75	P-R	-	-	Cemented light grey fine grained sandstone.	-	
9	8.59-8.64	J	35	P-R	-	-	Sand <2mm.	6	Black speckles.
10	8.90-8.90	-	10	P-R	-	-	-	4	Clean.
11	8.92-8.92	-	0	P-R	-	-	-	4	Clean.
12	8.95-8.95	-	15	P-R	-	-	-	10	Clean.
13	9.12-9.12	-	0	P-R	-	-	-	4	Clean.
14	9.22-9.22	-	5	P-R	-	-	-	4	Clean.
15	9.43-9.50	J	40	P-R	-	-	-	8	Black Speckles
16	9.65-9.69	BF	15	P-R	-	-	-	7	Black Speckles

Key:
Type codes: BF = Bedding fracture, J = Joint.
Small-scale roughness codes: P-R = Planar - rough, U-R = Undulating - rough.

SUMMARY OF DISCONTINUITIES - GS-PTS107

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
17	9.81-9.86	BF	20	P-R	-	-	-	8	Black Speckles
18	10.65-10.65	BF	10	P-R	-	-	-	5	Clean.
19	10.76-10.76	BF	5	P-R	-	-	-	6	Black Speckles
20	11.08-11.08	-	10	P-R	-	-	-	5	Clean.
21	11.19-11.20	-	15	P-R	-	-	-	8	Core Spin
22	11.49-11.49	BF	0	P-R	-	-	-	6	Black Speckles
23	11.64-11.64	-	5	P-R	-	-	-	3	Clean.
24	11.75-11.75	BF	0	P-R	-	-	-	6	Black Speckles
25	12.10-12.10	BF	2	P-R	-	-	-	2	Clean.
26	12.22-12.22	BF	0	P-R	-	-	-	6	Black Speckles
27	12.47-12.47	BF	0	P-R	-	-	-	6	Black Speckles
28	12.69-12.82	J	55	P-R	-	-	-	8	Black Speckles
29	12.82-12.82	BF	0	P-R	-	-	-	6	Black Speckles
30	13.11-13.11	-	0	P-R	-	-	-	2	Clean.
31	13.44-13.44	-	0	P-R	-	-	-	2	Clean.
32	13.62-13.62	BF	0	P-R	-	-	-	6	Black Speckles

Key:
Type codes: BF = Bedding fracture, J = Joint.
Small-scale roughness codes: P-R = Planar - rough, U-R = Undulating - rough.

SUMMARY OF DISCONTINUITIES - GS-PTS107

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
33	13.67-13.67	-	0	P-R	-	-	-	2	Clean.
34	13.72-13.76	-	40	U-R	-	-	-	12	Clean.
35	14.52-14.52	-	0	P-R	-	-	-	3	Clean.
36	14.61-14.61	-	0	P-R	-	-	-	4	Clean.
37	14.72-14.72	BF	0	P-R	-	-	-	9	Clean.
38	14.84-14.85	BF	5	P-R	-	-	-	3	Clean.
39	14.95-14.95	-	0	P-R	-	-	-	3	Clean.
40	15.26-15.26	-	0	P-R	-	-	-	2	Clean.
41	15.52-15.52	BF	0	P-R	-	-	-	2	Clean.
42	15.66-15.66	BF	0	P-R	-	-	-	6	Black staining
43	15.81-15.81	BF	0	P-R	-	-	-	6	Black staining
44	15.92-15.92	BF	0	P-R	-	-	-	2	Clean.
45	16.02-16.02	BF	0	P-R	-	-	-	2	Clean.
46	16.15-16.15	BF	0	P-R	-	-	-	2	Clean.
47	16.66-16.66	BF	0	P-R	-	-	-	2	Clean.
48	16.77-16.77	BF	0	P-R	-	-	-	2	Black staining

Key:
Type codes: BF = Bedding fracture, J = Joint.
Small-scale roughness codes: P-R = Planar - rough, U-R = Undulating - rough.

SUMMARY OF DISCONTINUITIES - GS-PTS107

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
49	16.94-16.94	BF	0	P-R	-	-	-	2	Clean.
50	17.10-17.10	BF	0	P-R	-	-	-	2	Clean.
51	17.36-17.36	BF	0	P-R	-	-	-	2	Clean.
52	17.55-17.55	BF	0	P-R	-	-	-	2	Clean.
53	18.07-18.07	BF	0	P-R	-	-	-	2	Clean.
54	18.36-18.36	BF	0	P-R	-	-	-	6	Black staining
55	18.45-18.45	BF	0	P-R	-	-	-	3	Clean.
56	18.51-18.51	BF	0	P-R	-	-	-	3	Black staining
57	18.85-18.85	BF	5	P-R	-	-	-	3	Clean.
58	19.05-19.07	BF	15	P-R	-	-	-	5	Clean.
59	19.10-19.10	BF	19	U-R	-	-	-	8	Clean.

Key:
Type codes: BF = Bedding fracture, J = Joint.
Small-scale roughness codes: P-R = Planar - rough, U-R = Undulating - rough.

STRUCTURAL SOILS

FINAL

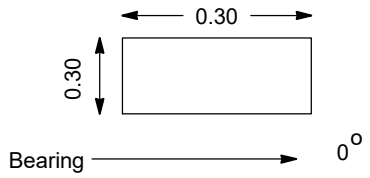
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	GS-PTS108

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	07.03.23	120.92	E:356021.7 N:528885.4	1 of 3
	End: 07.03.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.05	1	D				Dark brown gravelly fine to coarse silty SAND with frequent rootlets. Gravel is angular to subrounded fine to course of sandstone. (TOPSOIL)	120.87	0.05	
0.20-0.40	2	B				Dark reddish brown gravelly clayey fine to coarse SAND with low cobble content and occasional rootlets. Gravel is angular to rounded medium to course of sandstone. Cobbles are subangular to rounded of sandstone <130mm. (GLACIAL TILL - GRANULAR)		(1.05)	
0.30	101	ES							
0.30	3	D							
0.40-0.60	4	B							
0.50	102	ES							
0.50	5	D							
0.90-1.10	6	B							
1.00	103	ES					119.82	1.10	
1.00	7	D				Inspection pit terminated at 1.10m depth on very hard cobble or concrete covering a possible service giving strong radio signal.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. Inspection pit refused at 1.10m depth.
3. No groundwater encountered.
4. No visual or olfactory evidence of contamination.
5. Inspection pit backfilled with arisings in reverse order upon completion.
6. Pit terminated at 1.10m depth upon finding possible service giving strong radio signal with CAT.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	RBarker	AML

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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		**National Highways**		**GS-PTS108**
Contract Ref:	Start: **07.03.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **07.03.23**	**120.92**	**E:356021.7 N:528885.4**	**2** of **3**

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**RBarker**	AML

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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		GS-PTS108
Contract Ref:	Start: 07.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 07.03.23	120.92	E:356021.7 N:528885.4	3 of 3

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	RBarker	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**GS-PTS108A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**08.03.23** End: **13.03.23**	**120.77**	**E:356020.9 N:528885.7**	**1** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.05	1	D							Dark brown gravelly fine to coarse silty SAND with frequent rootlets. Gravel is angular to subrounded fine to coarse of sandstone. (TOPSOIL)	120.70	0.07	
0.20-0.40	2	B							Dark reddish brown gravelly clayey SAND with low cobble content and occasional rootlets. Gravel is angular to rounded medium to coarse of sandstone. Cobbles are subangular to rounded sandstone <100mm . (GLACIAL TILL - GRANULAR)		(0.83)	
0.30	101	ES										
0.30	3	D										
0.40-0.60	4	B										
0.50	102	ES										
0.50	5	D										
0.90	6	B							Dark reddish very gravelly very clayey fine to coarse SAND with low cobble content. Gravel is fine to coarse subangular to subrounded of sandstone. Cobbles are angular to rounded sandstone <110mm. (GLACIAL TILL - GRANULAR)	119.87	0.90	
1.00	103	ES									(0.30)	
1.00	7	D										
1.20-1.65	1	SPT	N=11	Window run 101mm dia (100% rec)					Firm to stiff reddish brown mottled light brown and dark greyish brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse of mixed lithologies including mudstone, sandstone and quartzite. (GLACIAL TILL - COHESIVE) 1.20-1.65m : recovered disturbed due to SPT.	119.57	1.20	
1.20	8	DSPT										
1.20-2.00	8	B										
1.70-1.80	9	D										
2.00-2.45	2	SPT	N=13	Window run 101mm dia (90% rec)					2.00m : becoming stiff. 2.00-2.45m : recovered disturbed due to SPT as firm.		(1.80)	
2.00-2.90	10	B										
2.00	9	DSPT										
2.50-2.60	11	D							2.90-3.00m : AZCL			AZCL
3.00-3.45	3	SPT	N=19	Window run 101mm dia (100% rec)					Stiff reddish brown mottled light brown and dark greyish brown slightly gravelly sandy CLAY with low cobble content. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse of mixed lithologies including sandy siltstone, sandstone, limestone and vein quartz. Cobbles are subangular very weak reddish brown rudaceous fine to coarse-grained sandstone. (GLACIAL TILL - COHESIVE) 3.00-3.45m : recovered disturbed due to SPT as very soft to firm.	117.77	3.00	
3.00	10	DSPT										
3.00-3.96	15	B										
3.50-3.60	16	D									(1.80)	
4.00-4.45	4	SPT	N=35	Window run 101mm dia (100% rec)					3.96-4.00m : fragmented cobble of very weak reddish brown slightly arenaceous fine to coarse-grained sandstone predominately of angular to well rounded quartz. Clasts are angular to rounded fine to medium of vein quartz and sandstone. 4.00-4.24m : recovered disturbed due to SPT as very soft to stiff.			
4.00	11	DSPT										
4.00-4.70	17	B										
4.30-4.40	18	D										

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
08/03/23	18:00	4.70	None	N/R	-
09/03/23	08:00	4.70	None	N/R	-
09/03/23	18:00	15.50	15.50	146	-
10/03/23	08:00	15.50	15.50	146	-
10/03/23	18:00	17.00	17.00	146	-
13/03/23	08:00	17.00	17.00	146	-
13/03/23	18:00	20.50	20.50	146	-

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Unable to undertake hand vane in the inspection pit due to gravel and cobbles.
3. Drilling commenced with dynamic sampling between 1.20m-4.70m and extended by rotary coring using 146mm diameter Geobor S core barrel, PCD bit and water flush from 4.70m-20.50m depth.
4. Time taken to complete rotary core runs reported in Depth column, in brackets, in format (hh:mm).
5. No groundwater strike.
6. Borehole backfilled with bentonite cement pellets, inspection pit backfilled with arisings.
7. SPT hammer CD9.2.03-2023 (E_r = 63.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	**Beretta T44**	**Lindon Paisley**	**RBarker + WMannion**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**GS-PTS108A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**08.03.23** End: **13.03.23**	**120.77**	**E:356020.9 N:528885.7**	**2** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
				Window run 101mm dia (100% rec)								
4.70-5.50 (0:02)									4.70-4.80m : recovered disturbed due to switch from dynamic sampling to rotary coring as very soft.	115.97	4.80	
4.70-4.94	5	SPT	21,4/25,25 for 71mm						Very dense greyish brown slightly sandy slightly silty GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is subangular to rounded medium to coarse of mixed lithologies including limestone. Cobbles are rounded of extremely strong light grey, grey and dark grey speckled igneous lithic fragments. (GLACIAL TILL - GRANULAR)		(0.40)	
4.70-4.94	12	DSPT										
4.70-4.80	19	D										
4.80-5.20	20	B		63 - -		100% return W (Red)				115.57	5.20	
5.50-6.00 (0:02)				0 - -		100% return W (Red)			AZCL. Driller's description is GRAVEL. (GLACIAL TILL - GRANULAR)		(0.80)	AZCL
6.00-6.50 (0:02)									Reddish brown slightly sandy slightly silty GRAVEL. Gravel is subangular medium to coarse of mixed lithologies including calcareous sandstone. Sand is fine to coarse. (GLACIAL TILL - GRANULAR)	114.77	6.00	
6.00-6.31	6	SPT	3,2/18,40,10 for 5mm	100 23 23		90% return W (Red)			Extremely weak to very weak thinly and thickly laminated reddish brown fine to coarse grained SANDSTONE, predominately of quartz with rare mica. Locally spotted white with reduction spots. 'Biscuiting' of core along bedding. Fractures generally subhorizontal to 10°, very closely to closely spaced locally extremely closely spaced, undulating planar rough with no infill. (PENRITH SANDSTONE FORMATION)	114.54	6.23	
6.50-7.00 (0:02)				100 46 46		90% return W (Red)			6.24-6.29m : recovered non-intact as sandy angular fine to coarse gravel.			
									6.90-7.00m : recovered non-intact as sandy angular fine to coarse gravel.			
7.00-8.50 (0:02)				73 52 52	NI 40 150	80% return W (Red)			7.23-7.26m : very thin bed of soft sandy SILT.			
									8.05-8.10m : recovered non-intact as sandy angular fine to coarse gravel. 8.10-8.50m : AZCL.			AZCL
8.50-9.50 (0:02)				90 72 72	NI 20 200	80% return W (Red)			8.50-8.58m : recovered non-intact as sandy angular fine to coarse gravel.			
									8.76-8.79m : recovered non-intact as sandy angular fine to coarse gravel.			

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	**Beretta T44**	**Lindon Paisley**	**RBarker + WMannion**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**GS-PTS108A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**08.03.23** End: **13.03.23**	**120.77**	**E:356020.9 N:528885.7**	**3** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
9.26-9.32	21	C		90 72 72		80% return W (Red)						
									9.40-9.50m : AZCL.			AZCL
9.50-11.00 (0:02)									9.50-9.55m : recovered non-intact as gravelly medium to coarse sand.			
10.08-10.18	22	C		97 74 73		70% return W (Red)					(7.72)	
					NI 20 200				10.66-10.68m : thick laminae/very thin bed of brown silty fine to medium SAND.			
									10.80-10.82m : thick laminae/very thin bed of brown very silty fine to coarse SAND.			
									10.95-11.00m : AZCL.			AZCL
11.00-12.50 (0:02)									11.00-11.05m : recovered non-intact as angular fine to coarse gravel.			
11.79-11.88	23	C		90 70 70		60% return W (Red)						
									12.18-12.24m : recovered non-intact as sandy angular fine to coarse gravel.			
					NI NI NI				12.35-12.50m : AZCL.			AZCL
12.50-14.00 (0:02)					NI 20 150				12.50-12.55m : recovered non-intact as sandy angular fine to coarse gravel.			
				100 87 83	50 70 300	50% return W (Red)						
13.44-13.56	24	C										

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	**Beretta T44**	**Lindon Paisley**	**RBarker + WMannion**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**GS-PTS108A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**08.03.23** End: **13.03.23**	**120.77**	**E:356020.9 N:528885.7**	**4** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
				100 87 83	50 70 300	50% return W (Red)						
14.00-15.50 (0:02)				0 0 0		50% return W (Red)			AZCL Driller's description is red SANDSTONE (Driller's log records 100% recovery for 14.00-15.50m but core run lost due to equipment snagging and being removed from hole prior to continuing at 15.50m). (PENRITH SANDSTONE FORMATION)	106.82	13.95 (2.30)	AZCL
15.50-17.00 (0:05)				50 19 7	NI NI NI	50% return W (Red)			Extremely weak to very weak thinly and thickly laminated reddish brown fine to coarse grained SANDSTONE, predominately of quartz with rare mica. Locally spotted white with reduction spots. 'Biscuiting' of core along bedding. Fractures generally subhorizontal to 10°, very closely to closely spaced locally extremely closely spaced, undulating planar rough with no infill. (PENRITH SANDSTONE FORMATION) 16.25-16.30m : recovered non-intact as sandy angular medium to coarse gravel. 16.25-17.00m : thinly and thickly laminated to very thinly bedded (where intact). 16.43-16.60m : recovered non-intact as gravelly medium to coarse sand. Gravel fraction includes limestone (possibly not in situ, which invalidates discontinuities recorded at 16.30m and 16.35m). 16.66-16.72m : recovered non-intact as sandy angular coarse gravel. 16.85-16.89m : recovered non-intact as sandy angular coarse gravel. 17.00-17.06m : recovered non-intact as slightly gravelly sandy clayey silt.	104.52	16.25	
16.78-16.85	25	C										
17.00-18.00 (0:02)												
17.39-17.47	26	C		90 62 62	30 70 180	80% return W (Red)			17.90-18.00m : AZCL.			AZCL

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	**Beretta T44**	**Lindon Paisley**	**RBarker + WMannion**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**GS-PTS108A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**08.03.23** End: **13.03.23**	**120.77**	**E:356020.9 N:528885.7**	**5** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
18.00-19.00 (0:02)				100 82 82	30 70 180	80% return W (Red)			18.00-18.05m : recovered non-intact as slightly sandy angular coarse gravel. 18.34-18.38m : recovered non-intact as sandy angular fine to coarse gravel. 18.68-18.72m : recovered non-intact as angular medium to coarse gravel.		(4.25)	
18.86-19.00	27	C										
19.00-20.50 (0:05)				100 60 60	5 50 150	80% return W (Red)			19.00-19.05m : recovered non-intact as sandy angular fine to coarse gravel. 19.50-19.52m : recovered non-intact as sandy angular fine to coarse gravel.			
20.31-20.50	28	C										
									Borehole terminated at 20.50m.	100.27	20.50	

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	**Beretta T44**	**Lindon Paisley**	**RBarker + WMannion**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	GS-PTS108A

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	08.03.23 End: 13.03.23	120.77	E:356020.9 N:528885.7	6 of 10

1.20m to 3.00m

3.00m to 4.70m

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	Beretta T44	Lindon Paisley	RBarker + WMannion	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		National Highways		GS-PTS108A
Contract Ref:	Start: 08.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 13.03.23	120.77	E:356020.9 N:528885.7	7 of 10

4.70m to 6.00m

6.00m to 7.00m

Method Used:	Inspection pit + Dynamic sampling + Rotary Cored	Plant Used:	Beretta T44	Drilled By:	Lindon Paisley	Logged By:	RBarker + WMannion	Checked By:	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		**National Highways**		**GS-PTS108A**
Contract Ref:	Start: **08.03.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **13.03.23**	**120.77**	**E:356020.9 N:528885.7**	**8** of **10**

7.00m to 9.50m

9.50m to 12.50m

Method Used:	**Inspection pit + Dynamic sampling + Rotary Cored**	Plant Used:	**Beretta T44**	Drilled By:	**Lindon Paisley**	Logged By:	**RBarker + WMannion**	Checked By:	AML

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	GS-PTS108A

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	08.03.23 End: 13.03.23	120.77	E:356020.9 N:528885.7	9 of 10

12.50m to 15.50m

15.50m to 18.00m

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	Beretta T44	Lindon Paisley	RBarker + WMannion	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log BOREHOLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		**National Highways**		**GS-PTS108A**
Contract Ref:	Start: **08.03.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **13.03.23**	**120.77**	**E:356020.9 N:528885.7**	**10** of **10**

18.00m to 20.50m

Method Used:	Inspection pit + Dynamic sampling + Rotary Cored	Plant Used:	Beretta T44	Drilled By:	Lindon Paisley	Logged By:	RBarker + WMannion	Checked By:	AML

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SUMMARY OF DISCONTINUITIES - GS-PTS108A

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
1	6.29-6.33	J	81	U-R	-	-	-	7	Clean.
2	6.33-6.42	J	76	P-R	-	-	-	5	Clean.
3	6.42-6.45	J	80	P-R	-	-	-	5	Clean.
4	6.53-6.58	J	88	U-R	-	-	-	9	Clean.
5	6.72-6.81	J	76	U-R	-	-	-	11	Clean.
6	6.75-6.81	J	82	U-R	-	-	-	9	Clean.
7	7.17-7.18	BF	5	P-R	-	-	Brown clay (3mm thick)	3	
8	7.27-7.34	J	72	U-R	-	-	-	9	Clean.
9	7.34-7.38	J	71	U-R	-	-	-	11	Clean.
10	7.34-7.42	J	82	U-R	-	-	-	9	Clean.
11	7.37-7.38	BF	5	P-R	-	-	Brown sandy silt (2mm thick)	3	
12	7.42-7.46	J	70	U-R	-	-	-	11	Clean.
13	7.55-7.56	J	81	U-R	-	-	-	11	Clean.
14	7.65-7.66	BF	5	P-R	-	-	Brown sandy silt (1mm thick)	3	
15	7.77-7.78	J	85	U-R	-	-	-	9	Clean.
16	8.61-8.68	J	76	U-R	-	-	-	9	Clean.

Key:
Type codes: BF = Bedding fracture, J = Joint.
Small-scale roughness codes: P-R = Planar - rough, S-R = Stepped - rough, U-R = Undulating - rough.

SUMMARY OF DISCONTINUITIES - GS-PTS108A

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
17	8.84-8.86	J	85	S-R	-	-	-	13	Clean.
18	9.92-9.93	BF	6	P-R	-	-	Light brown silty sand (2mm thick).	3	
19	9.94-9.95	J	10	P-R	-	-	Brown clay (1mm thick).	3	
20	9.96-9.99	J	21	P-R	-	-	Brown clay (1mm thick)	3	
21	10.39-10.43	J	88	U-R	-	-	-	9	Clean.
22	10.55-10.58	J	79	U-R	-	-	-	11	Clean.
23	10.73-10.87	J	83	U-R	-	-	-	9	Clean.
24	11.33-11.35	J	81	U-R	-	-	-	9	Clean.
25	11.70-11.78	J	36	U-R	-	-	-	13	Clean.
26	12.15-12.18	J	86	P-R	-	-	-	7	Clean.
27	12.57-12.68	J	72	U-R	-	-	-	9	Healed, Clean.
28	12.68-12.83	J	85	U-R	-	-	-	9	Healed, Clean.
29	12.95-12.99	J	30	U-R	-	-	-	9	Clean.
30	13.03-13.08	J	80	U-R	-	-	-	7	Clean.
31	13.84-13.85	J	81	U-R	-	-	-	9	Clean.
32	13.93-13.95	J	78	U-R	-	-	-	11	Clean.

Key:
Type codes: BF = Bedding fracture, J = Joint.
Small-scale roughness codes: P-R = Planar - rough, S-R = Stepped - rough, U-R = Undulating - rough.

SUMMARY OF DISCONTINUITIES - GS-PTS108A

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
33	16.30-16.35	J	55	P-R	-	-	-	5	Clean.
34	16.35-16.39	J	45	P-R	-	-	-	5	Clean.
35	16.61-16.65	J	78	U-R	-	-	-	9	Clean.
36	17.29-17.32	J	80	U-R	-	-	-	11	Clean.
37	17.52-17.54	J	90	P-R	-	-	-	5	Clean.
38	17.83-17.85	J	76	U-R	-	-	-	11	Clean.
39	18.38-18.86	J	85	U-R	-	-	-	11	Healed, Clean.
40	19.21-19.50	J	88	S-R	-	-	-	17	Clean.
41	19.22-19.38	J	89	S-R	-	-	-	17	Clean.
42	19.38-19.43	J	88	U-R	-	-	-	13	Clean.
43	19.74-19.79	J	68	U-R	-	-	-	9	Clean.
44	19.90-20.10	J	88	U-R	-	-	-	9	Clean.
45	19.94-20.00	J	88	U-R	-	-	-	9	Clean.
46	20.00-20.05	J	84	U-R	-	-	-	9	Clean.
47	20.05-20.28	J	84	U-R	-	-	-	11	Clean.
48	20.17-20.23	J	71	U-R	-	-	-	9	Clean.

Key:
Type codes: BF = Bedding fracture, J = Joint.
Small-scale roughness codes: P-R = Planar - rough, S-R = Stepped - rough, U-R = Undulating - rough.

STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**GS-PTS109**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**14.03.23** End: **15.03.23**	**119.02**	**E:355935.9 N:528885.9**	**1** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
0.05	1	D							Grass over dark brown sandy clayey SILT with frequent rootlets. Sand is fine to coarse. (TOPSOIL)	118.87	0.15	
0.30 0.30-0.45 0.30	101 2 3	ES B D							Dark brown gravelly very clayey fine to coarse SAND with occasional rootlets. Gravel is subangular to subrounded of sandstone. (GLACIAL TILL - GRANULAR)	118.57	(0.30) 0.45	
0.50 0.50-0.70 0.50	102 4 5	ES B D							Orangish brown gravelly very silty fine to coarse SAND with low cobble content. Gravel is angular to subrounded of sandstone and dolerite. Cobbles are subrounded <110mm of sandstone. (GLACIAL TILL - GRANULAR)	117.62	(0.95) 1.40	
1.00 1.00-1.15 1.00	103 6 7	ES B D										
1.20-1.65 1.20-2.00	1 8	SPT B	N=20	Window run 101mm dia (75% rec)					Recovered disturbed as very soft to firm reddish brown mottled black slightly gravelly sandy silty CLAY. Sand is fine to coarse predominantly of quartz. Gravel is angular to rounded fine to coarse of mixed lithologies (including sandstone, limestone and igneous lithic fragments). (GLACIAL TILL - COHESIVE)	117.02	(0.60) 2.00	
1.70-1.80	9	D										
2.00-2.45 2.00-2.50	2 10	SPT B	N=9	Window run 101mm dia (100% rec)					Loose reddish brown mottled black gravelly very clayey fine to coarse SAND predominantly of quartz. Gravel is angular to rounded fine to coarse of mixed lithologies (including sandstone, limestone and igneous lithic fragments). (GLACIAL TILL - GRANULAR)	116.32	(0.70) 2.70	
2.50-2.70	11	D										
2.70-3.00	12	B							Reddish brown gravelly silty fine to coarse SAND predominantly of quartz. Gravel is subrounded to rounded fine to coarse of mixed lithologies including arenaceous siltstone, sandstone and igneous lithic fragments and bands of firm clayey silt. (GLACIAL TILL - GRANULAR) 2.85-2.90m : very thin interbed of thinly and thickly laminated firm reddish brown sandy clayey SILT and reddish fine to coarse SAND predominantly of quartz.	116.02	(0.30) 3.00	
3.00-4.00 (0:02) 3.00-3.38	3	SPT	4,9/11,13,22,4 for 5mm	30 - -		80% return W (Red)			Partial recovery (30%). Recovered as slightly sandy slightly silty angular to subangular medium to coarse GRAVEL of mixed lithologies including sandstone and igneous lithic fragments and angular to subrounded COBBLES of brown sandstone and grey igneous lithic fragments. (GLACIAL TILL - GRANULAR)			

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
14/03/23	18:00	5.50	5.50	146	-
15/03/23	08:00	5.50	5.50	146	-
15/03/23	18:00	10.00	10.00	146	-

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Drilling commenced with dynamic sampling between 1.20m-3.00m, followed by rotary drilling using Geobor S core barrel with water flush from 3.00m-10.00m depth.
3. No groundwater strikes observed during rotary drilling, however any strike may have been obscured by drilling flush.
4. Time taken to complete rotary core runs reported in Depth column, in brackets, in format (hh:mm).
5. 50mm diameter gas/groundwater monitoring well complete with upstanding protective cover installed to 4.50m m depth on completion. Response zone 4.50-9.00m depth.
6. SPT hammer CD9.2.03-2023 (E_r = 63.00%) used.

All dimensions in metres | Scale: **1:19**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	**Beretta T44**	**Lindon Paisley**	**RBarker + WMannion + WMannion**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	**National Highways**	**GS-PTS109**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**14.03.23** End: **15.03.23**	**119.02**	**E:355935.9 N:528885.9**	**2** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
				30 - -		80% return W (Red)					(1.00)	
4.00-4.50 (0:02)				40 0 0		80% return W (Red)			Partial recovery (40%). Recovered as very weak thinly and thickly laminated reddish brown destructured fine to coarse grained SANDSTONE predominately of quartz. Recovered non-intact as sandy angular medium to coarse gravel. (WEATHERED PENRITH SANDSTONE)	115.02	4.00	
4.50-5.00 (0:02)				30 0 0		80% return W (Red)					(1.00)	
5.00-5.50 (0:02)				0 0 0		80% return W (Red)			AZCL. Driller's description is red SANDSTONE. (WEATHERED PENRITH SANDSTONE)	114.02	5.00	
5.50-6.00 (0:02) 5.50-5.70	4	SPT	5,20/50 for 66mm	40 19 0		80% return W (Red)					(0.90)	AZCL
6.00-6.50 (0:02) 6.13-6.24	13	C		76 74 58		80% return W (Red)			Very weak thinly and thickly laminated (dipping ~5°) reddish brown fine to coarse-grained SANDSTONE predominately of quartz. Joints are 5-6°, 18-22°, 46°, 63-75° and 80°, closely spaced undulating planar smooth rough, clean or infilled with brown silty clay (<1mm-5mm thick). (PENRITH SANDSTONE FORMATION) 5.91-6.00m : 'biscuiting' of core into discs no thicker than 28mm.	113.12	5.90	
6.50-7.00 (0:02)				100 81 69		80% return W (Red)						

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:19**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	**Beretta T44**	**Lindon Paisley**	**RBarker + WMannion + WMannion**	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
A66 NTP Scheme S03A	National Highways	GS-PTS109

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	14.03.23 End: 15.03.23	119.02	E:355935.9 N:528885.9	3 of 7

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Flush Returns & Details	Backfill & Instru-mentation	Water	Description of Strata	Reduced Level	Depth (m) (Thickness)	Legend
7.00-7.50 (0:02)												
7.23-7.37	14	C		100 97 90		80% return W (Red)					(2.60)	
7.50-8.50 (0:02)									7.49m : white reduction spot (5mm diameter).			
7.76-7.86	15	C		90 74 74		80% return W (Red)						
									8.35-8.50m : AZCL.			AZCL
8.50-9.00 (0:02)									Very weak generally thinly and thickly laminated (dipping ~5°) locally thinly and thickly cross-laminated reddish brown streaked black fine to coarse-grained SANDSTONE predominately of quartz. Joints are widely spaced, the two joints recorded are 80-81°, undulating smooth with no infill. (PENRITH SANDSTONE FORMATION) 8.51-9.00m : possible normal fault. 81°, smooth rough, healed, black streaks offset by 5mm.	110.52	8.50	
8.81-8.91	16	C		100 90 90		80% return W (Red)						
9.00-10.00 (0:02)									9.00-9.05m : recovered non-intact as slightly sandy angular medium to coarse gravel.		(1.25)	
9.57-10.00	17	C		75 58 58		80% return W (Red)			9.42-9.48m : recovered non-intact as slightly sandy angular medium to coarse gravel.			
									AZCL. Driller's description is red SANDSTONE. (PENRITH SANDSTONE FORMATION)	109.27	9.75 (0.25)	AZCL
									Borehole terminated at 10.00m depth.	109.02	10.00	

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: 1:19

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	Beretta T44	Lindon Paisley	RBarker + WMannion + WMannion	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		**National Highways**		**GS-PTS109**
Contract Ref:	Start: **14.03.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **15.03.23**	**119.02**	**E:355935.9 N:528885.9**	**4** of **7**

GS-PTS109 1.20-3.00m

GS-PTS109 3.00-4.50m

Method Used:	Inspection pit + Dynamic sampling + Rotary Cored	Plant Used:	Beretta T44	Drilled By:	Lindon Paisley	Logged By:	RBarker + WMannion + WMannion	Checked By:	AML

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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		**National Highways**		**GS-PTS109**
Contract Ref:	Start: **14.03.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **15.03.23**	**119.02**	**E:355935.9 N:528885.9**	**5** of **7**

GS-PTS109 4.50-5.50m

GS-PTS109 5.50-6.50m

Method Used:	Inspection pit + Dynamic sampling + Rotary Cored	Plant Used:	Beretta T44	Drilled By:	Lindon Paisley	Logged By:	RBarker + WMannion + WMannion	Checked By:	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log BOREHOLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		**National Highways**		**GS-PTS109**
Contract Ref:	Start: **14.03.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **15.03.23**	**119.02**	**E:355935.9 N:528885.9**	**6** of **7**

GS-PTS109 6.50-7.50m

GS-PTS109 7.50-9.00m

Method Used:	Inspection pit + Dynamic sampling + Rotary Cored	Plant Used:	Beretta T44	Drilled By:	Lindon Paisley	Logged By:	RBarker + WMannion + WMannion	Checked By:	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log BOREHOLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

BOREHOLE LOG

Contract:		Client:		Borehole:
A66 NTP Scheme S03A		**National Highways**		**GS-PTS109**
Contract Ref:	Start: **14.03.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **15.03.23**	**119.02**	**E:355935.9 N:528885.9**	**7** of **7**

GS-PTS109 9.00-10.00m

Method Used:	Inspection pit + Dynamic sampling + Rotary Cored	Plant Used:	Beretta T44	Drilled By:	Lindon Paisley	Logged By:	RBarker + WMannion + WMannion	Checked By:	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log BOREHOLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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SUMMARY OF DISCONTINUITIES - GS-PTS109

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
1	6.08-6.10	J	18	U-R	-	-	-	13	Clean.
2	6.78-6.81	J	22	U-R	-	-	Brown silty clay (<1mm thick).	9	
3	6.85	BF	5	P-R	-	-	Brown silty clay (2mm thick)	3	
4	6.85-6.88	J	75	U-R	-	-	-	9	Clean.
5	6.87-6.88	BF	6	U-R	-	-	Brown silty clay (2mm thick)	9	
6	7.06-7.07	BF	6	P-R	-	-	Brown silty clay (5mm thick)	3	
7	7.16-7.18	J	70	U-R	-	-	-	13	Clean.
8	7.71-7.72	BF	5	P-R	-	-	Brown silty clay (4mm thick)	1	
9	7.89-7.90	BF	6	P-R	-	-	Stained black	1	
10	7.99-8.02	J	65	S-R	-	-	-	15	Clean.
11	8.12-8.16	J	67	U-R	-	-	Brown silty clay (<1mm thick)	9	
12	8.12-8.18	J	72	U-R	-	-	-	9	Clean.
13	8.19-8.26	J	63	P-R	-	-	-	5	Clean.
14	8.27-8.30	J	46	U-R	-	-	-	13	Clean.
15	8.27-8.35	J	80	U-R	-	-	-	9	Healed, clean, black streaks offset by 5mm.
16	8.50-9.00	PF	81	S-R	-	-	-	17	Healed.

Key:
Type codes: BF = Bedding fracture, J = Joint, PF = Possible Fault.
Small-scale roughness codes: P-R = Planar - rough, S-R = Stepped - rough, U-R = Undulating - rough.

SUMMARY OF DISCONTINUITIES - GS-PTS109

Fracture Number	Depth (m)	Fracture Type	Dip (deg)	Small and Intermediate Scale Roughness	Aperture Description	Discontinuity Spacing	Infill Material Description	Joint Roughness Coefficient (JRC)	Remarks
17	9.57-9.69	J	80	U-R	-	-	-	9	

Key:
Type codes: BF = Bedding fracture, J = Joint, PF = Possible Fault.
Small-scale roughness codes: P-R = Planar - rough, S-R = Stepped - rough, U-R = Undulating - rough.

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By	Date	Contract Ref:
	ALUMBER	30.08.23	765633
	Contract: A66 NTP Scheme S03A		Page: 2 of 2

STRUCTURAL SOILS

FINAL

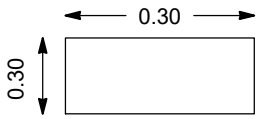
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	HDP-001

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	06.04.23	110.42	E:355602.9 N:528916.1	1 of 3
	End: 06.04.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.20	1	D				Grass over dark brown gravelly silty fine to medium SAND with low cobble content. Gravel is angular to subrounded fine to coarse of quartzite and limestone. Cobbles are subangular to rounded of quartzite, limestone and sandstone (<150mm x 140mm x 100mm). (TOPSOIL)	110.12	(0.30) 0.30	
0.20	101	ES							
0.50-0.70	102	ES				MADE GROUND: Orangish brown very gravelly silty fine to medium SAND with medium cobble content. Gravel is angular to rounded fine to coarse of mudstone, limestone, and quartzite. Cobbles are angular to rounded of mudstone, limestone, quartzite, and sandstone (<180mm x 180mm x 150mm) . (MADE GROUND GRANULAR)		(0.90)	
0.50-0.70	2	B							
0.50-0.70	3	D							
1.00-1.20	103	ES							
1.00-1.20	4	B							
1.00-1.20	5	D					109.22	1.20	
						Hand dug trial pit terminated at 1.20m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed. Trial pit was located on an embankment.
2. No groundwater encountered.
3. No evidence of contamination noted.
4. Trial pit remained stable during excavation.
5. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
6. Trial pit terminated at 1.20m with verbal confirmation by Investigation Supervisor and backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	FPrice	AML

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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		**National Highways**		**HDP-001**
Contract Ref:	Start: **06.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **06.04.23**	**110.42**	**E:355602.9 N:528916.1**	**2** of **3**

Pit 0.00m - 1.20m

Downhole

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**FPrice**	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		**National Highways**		**HDP-001**
Contract Ref:	Start: **06.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **06.04.23**	**110.42**	**E:355602.9 N:528916.1**	**3** of **3**

Spoil

Pre-Condition

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**FPrice**	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

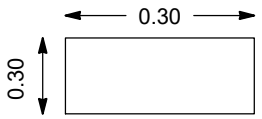
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	HDP-002

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	06.04.23	111.21	E:355612.9 N:528916.0	1 of 3
	End: 06.04.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.20	1	D				MADE GROUND: Grass over dark brown gravelly silty fine to medium SAND with low cobble content and frequent rootlets. Gravel is subangular to rounded fine to medium of mudstone, limestone, quartzite and sandstone. Cobbles are subangular to rounded of limestone, quartzite and sandstone (<120mm x 100mm x 90mm). (MADE GROUND GRANULAR)	110.91	(0.30) 0.30	
0.20	101	ES							
0.50-0.70	102	ES				MADE GROUND: Brown very gravelly silty fine to medium SAND with medium cobble content and occasional black organic material. Gravel is angular to rounded fine to coarse of mudstone, limestone, quartzite, sandstone. Cobbles are angular to rounded of mudstone, limestone, quartzite, sandstone and bitumen (<200mm x 200mm x 150mm). (MADE GROUND GRANULAR)		(0.90)	
0.50-0.70	2	B							
0.50-0.70	3	D							
1.00-1.20	103	ES							
1.00-1.20	4	B							
1.00-1.20	5	D					110.01	1.20	
						Hand dug trial pit terminated at 1.20m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. No groundwater encountered.
3. No evidence of contamination noted.
4. Trial pit remained stable during excavation.
5. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
6. Trial pit terminated at 1.20m with verbal confirmation by Investigation Supervisor and backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	FPrice	

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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		HDP-002
Contract Ref:	Start: 06.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 06.04.23	111.21	E:355612.9 N:528916.0	2 of 3

Pit 0.00m-1.20m

Downhole

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	FPrice	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		**National Highways**		**HDP-002**
Contract Ref:	Start: **06.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **06.04.23**	**111.21**	**E:355612.9 N:528916.0**	**3** of **3**

Pre-Condition

Spoil

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**FPrice**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

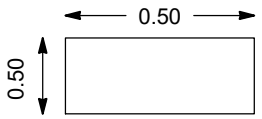
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	HDP-003

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	26.04.23	108.90	E:354752.0 N:529036.0	1 of 4
	End: 26.04.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.10-0.30	1	B				Grass over brown slightly gravelly silty fine to coarse SAND. Gravel is angular to subangular fine to coarse of quartzite, andesite and granite. (TOPSOIL)	108.60	(0.30) 0.30	
0.10-0.10	101	ES							
0.10	2	D							
0.10	201	D							
0.50-0.50	102	ES				Brown very sandy silty subangular to subrounded fine to coarse GRAVEL of mudstone, quartzite, andesite and sandstone with high cobble and low boulder content. Cobbles (<140mm x110mm x 60mm) and boulders (<250mm x 250mm x 200mm) are subangular of granite. (GLACIAL TILL - GRANULAR)	108.20	(0.40) 0.70	
0.50	202	D							
0.50-0.70	3	B							
0.50	4	D							
1.00-1.00	103	ES				Orangish brown very sandy clayey subangular to subrounded fine to coarse GRAVEL of sandstone, quartzite, andesite and granite. Sand is fine to coarse. (GLACIAL TILL - GRANULAR)	107.70	(0.50) 1.20	
1.00	203	D							
1.00-1.20	5	B							
1.00	6	D							
						Hand dug trial pit terminated at 1.20m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. No groundwater encountered.
3. No evidence of contamination noted.
4. Trial pit remained stable during excavation.
5. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
6. Trial pit terminated at 1.20m with verbal confirmation by Investigation Supervisor and backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	MCapitani	

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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		HDP-003
Contract Ref:	Start: 26.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 26.04.23	108.90	E:354752.0 N:529036.0	2 of 4

Pit

Pre-condition

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		HDP-003
Contract Ref:	Start: 26.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 26.04.23	108.90	E:354752.0 N:529036.0	3 of 4

Spoil 1

Spoil 2

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		HDP-003
Contract Ref:	Start: 26.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 26.04.23	108.90	E:354752.0 N:529036.0	4 of 4

Spoil 3

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

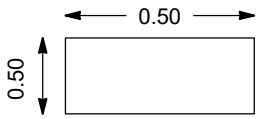
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	HDP-004

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	26.04.23	108.69	E:354770.0 N:529048.0	1 of 3
	End: 26.04.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.10-0.30	1	B				Grass over brown slightly gravelly clayey fine to coarse SAND. Gravel is angular to subangular fine to coarse of quartzite, andesite and granite. (TOPSOIL)	108.39	(0.30) 0.30	
0.10-0.10	101	ES							
0.10	2	D							
0.10	201	D							
0.50-0.50	102	ES				Brown gravelly very silty fine to coarse SAND with low cobble content. Gravel is subangular to subrounded fine to coarse of mudstone, quartzite, andesite and sandstone. Cobbles are subangular of granite (<110mm x 100mm x 50mm). (GLACIAL TILL - GRANULAR) 0.70-1.20m : becoming light brown and very gravelly with occasional pockets (<50mm x 40mm x 30mm) of soft light brown sandy clay. Sand is fine.		(0.90)	
0.50	202	D							
0.50-1.00	3	B							
0.50	4	D							
1.00	203	D							
1.00	5	D					107.49	1.20	
						Hand dug trial pit terminated at 1.20m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. No groundwater encountered.
3. No evidence of contamination noted.
4. Trial pit remained stable during excavation.
5. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
6. Trial pit terminated at 1.20m with verbal confirmation by Investigation Supervisor and backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	MCapitani	

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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		HDP-004
Contract Ref:	Start: 26.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 26.04.23	108.69	E:354770.0 N:529048.0	2 of 3

Pit

Post-condition

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:40 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		HDP-004
Contract Ref:	Start: 26.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 26.04.23	108.69	E:354770.0 N:529048.0	3 of 3

Pre-condition

Spoil

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

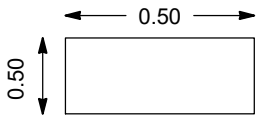
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	HDP-005

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	26.04.23	108.62	E:354794.0 N:529035.0	1 of 3
	End: 26.04.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.10-0.30	1	B				Grass over brown slightly gravelly clayey fine to coarse SAND. Gravel is angular to subangular fine to coarse of quartzite, andesite and granite. (TOPSOIL)	108.32	(0.30) 0.30	
0.10-0.10	101	ES							
0.10	2	D							
0.10	201	D							
0.50-0.50	102	ES				Orangish brown very sandy slightly silty fine to coarse GRAVEL with low cobble content. Gravel is subangular to subrounded fine to coarse of quartzite, andesite and sandstone. Cobbles are subangular of granite (<90mm x 80mm x 60mm). (GLACIAL TILL - GRANULAR)	107.42	(0.90) 1.20	
0.50	202	D							
0.50-1.00	3	B							
0.50	4	D							
1.00	203	D							
1.00	5	D							
						Hand dug trial pit terminated at 1.20m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. No groundwater encountered.
3. No evidence of contamination noted.
4. Trial pit remained stable during excavation.
5. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
6. Trial pit terminated at 1.20m with verbal confirmation by Investigation Supervisor and backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		HDP-005
Contract Ref:	Start: 26.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 26.04.23	108.62	E:354794.0 N:529035.0	2 of 3

Pit

Pre-condition

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		HDP-005
Contract Ref:	Start: 26.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 26.04.23	108.62	E:354794.0 N:529035.0	3 of 3

Spoil

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

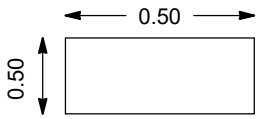
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	HDP-006

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	26.04.23	108.01	E:354771.0 N:529023.0	1 of 3
	End: 26.04.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.10-0.30	1	B				Grass over brown slightly gravelly silty fine to coarse SAND. Gravel is angular to subangular fine to coarse of quartzite, andesite and granite. (TOPSOIL)	107.71	(0.30) 0.30	
0.10-0.10	101	ES							
0.10	2	D							
0.10	201	D							
0.50-0.50	102	ES				Orangish brown very gravelly silty fine to coarse SAND with occasional staining of black organic material.. Gravel is subangular to subrounded fine to coarse of quartzite, andesite and sandstone. (GLACIAL TILL - GRANULAR)		(0.90)	
0.50	202	D							
0.50-1.00	3	B							
0.50	4	D				0.80-1.20m : becoming light brown and very gravelly. Gravel is subangular to subrounded fine to coarse of quartzite, sandstone, andesite and granite.			
1.00	203	D				1.00-1.20m : with low cobble content. Cobbles are subangular of granite (<190mm x 90mm x 90mm).	106.81	1.20	
1.00	5	D							
						Hand dug trial pit terminated at 1.20m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. No groundwater encountered.
3. No evidence of contamination noted.
4. Trial pit remained stable during excavation.
5. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
6. Trial pit terminated at 1.20m with verbal confirmation by Investigation Supervisor and backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		HDP-006
Contract Ref:	Start: 26.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 26.04.23	108.01	E:354771.0 N:529023.0	2 of 3

Pre-condition

Pit

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		HDP-006
Contract Ref:	Start: 26.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 26.04.23	108.01	E:354771.0 N:529023.0	3 of 3

Spoil

Post-condition

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:40 | AML1 |

STRUCTURAL SOILS

FINAL

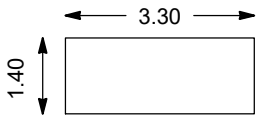
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	**National Highways**	**TP-PTS205**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**13.04.23** End: **13.04.23**	**117.87**	**E:354592.9 N:529021.0**	**1** of **5**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.10-0.30 0.10-0.10 0.10	1 101 2	B ES D				Grass over dark brown slightly gravelly slightly silty fine to coarse SAND. Gravel is angular to subrounded fine to coarse of sandstone, quartzite and granite. (TOPSOIL)	117.57	(0.30) 0.30	
0.50-0.50 0.50-0.80 0.50-0.80 0.50 0.50	102 3 4 401 5	ES B LB B D				Orangish brown becoming brown very gravelly silty fine to coarse SAND with low cobble content. Gravel is angular to subrounded fine to coarse of sandstone and flint. Cobbles are predominantly subrounded of sandstone (<200mm x 150mm x 80mm). (GLACIAL TILL - GRANULAR)	116.67	(0.90) 1.20	
1.50-1.50 1.50-1.80 1.50-1.80 1.50	103 6 7 8	ES B LB D				Soft to firm brown slightly gravelly sandy locally very sandy CLAY with medium cobble content. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and granite. Cobbles are subangular to subrounded of sandstone (<250mm x 180mm x 100mm). (GLACIAL TILL - COHESIVE) 2.00m : running sand. 2.00-2.20m : becoming firm and very sandy.	115.37	(1.30) 2.50	
2.50 2.50-2.80	10 9	D B				Brown very gravelly very silty fine to coarse SAND. Gravel is angular to subrounded fine to coarse of sandstone and granite. (GLACIAL TILL - GRANULAR) 2.50-3.00m : pit becoming unstable. Collapse at 3.00m.	114.87	(0.50) 3.00	
3.00	11	D				Trial pit terminated at 3.00m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. Hand vanes not possible due to gravel content and friable nature of cohesive soils.
3. No groundwater encountered.
4. No evidence of contamination noted.
5. Trial pit unstable from 2.50m depth.
6. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
7. Trial pit terminated at 3.00m due to instability. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**JJimoh**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS205
Contract Ref:	Start: 13.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 13.04.23	117.87	E:354592.9 N:529021.0	2 of 5

Pre-condition

Face A

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	JJimoh	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS205
Contract Ref:	Start: 13.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 13.04.23	117.87	E:354592.9 N:529021.0	3 of 5

Face B

Face C

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	JJimoh	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS205
Contract Ref:	Start: 13.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 13.04.23	117.87	E:354592.9 N:529021.0	4 of 5

Face D

Spoil

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	JJimoh	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:40 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS205
Contract Ref:	Start: 13.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 13.04.23	117.87	E:354592.9 N:529021.0	5 of 5

Collapse

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	JJimoh	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:40 | AML1 |

STRUCTURAL SOILS

FINAL

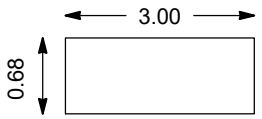
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS206

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	19.05.23	119.11	E:354587.4 N:528949.0	1 of 4
	End: 19.05.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.00-0.30	1	B				Grass over dark brown slightly gravelly fine to coarse SAND with occasional rootlets and roots up to 5mm. Gravel is angular to subrounded fine to coarse of sandstone, quartzite and granite. (TOPSOIL)	118.71	(0.40) 0.40	
0.20-0.20	101	ES							
0.20	2	D							
0.50-0.50	102	ES				Reddish brown very gravelly silty fine to coarse SAND with low cobble content. Gravel is angular to subrounded fine to coarse of sandstone, basalt and granite. Cobbles are subrounded of sandstone and granite. (GLACIOFLUVIAL DEPOSITS)			
0.50-0.80	3	B							
0.50-0.80	4	LB							
0.50	401	B							
0.50	5	D							
1.50-1.50	103	ES				1.50m : minor collapse of north wall.	116.91	(1.80) 2.20	
1.50-1.80	6	B							
1.50	7	D							
2.50	10	D				Reddish brown very gravelly silty fine to coarse SAND with medium cobble content and frequent pockets of soft reddish brown sandy clay. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone basalt and granite. Cobbles are subrounded of sandstone and granite. (GLACIAL TILL - GRANULAR) 2.50m : with low boulder content of subrounded granite.	116.11	(0.80) 3.00	
2.50-2.80	8	B							
2.50	9	LB							
3.00	11	D				Trial pit terminated at 3.00m depth on refusal.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. Hand vanes not possible due to gravel content and friable nature of cohesive soils.
3. No groundwater encountered.
4. No evidence of contamination noted.
5. Trial pit locally unstable.
6. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
7. Trial pit terminated at 3.00m due to refusal. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	JJimoh	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS206
Contract Ref:	Start: 19.05.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 19.05.23	119.11	E:354587.4 N:528949.0	2 of 4

Pre-condition

Face B

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	JJimoh	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:40 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS206

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	19.05.23	119.11	E:354587.4 N:528949.0	3 of 4
	End: 19.05.23			

Face A

Spoil

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	JJimoh	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS206
Contract Ref:	Start: 19.05.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 19.05.23	119.11	E:354587.4 N:528949.0	4 of 4

Post-condition

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	JJimoh	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:41 | AML1 |

STRUCTURAL SOILS

FINAL

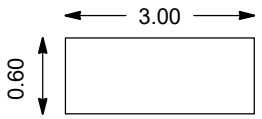
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS207

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	30.03.23	110.27	E:354684.6 N:529068.3	1 of 4
	End: 30.03.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.10-0.30	1	B				Grass over brown slightly gravelly clayey fine to coarse SAND with occasional rootlets. Gravel is subangular to subrounded fine to coarse of granite and sandstone. (TOPSOIL)	109.97	(0.30) 0.30	
0.10-0.10	101	ES							
0.10	2	D							
0.50-0.50	102	ES				Orangish brown very sandy silty subangular to subrounded fine to coarse (predominantly coarse) GRAVEL of granite and sandstone with low cobble content. Cobbles are subangular to subrounded granite and sandstone (<110mm x 100mm x 50mm). (GLACIAL TILL - GRANULAR) 0.70-2.10m : partial collapse of east facing sidewall.		(1.80)	
0.50-0.80	3	B							
0.50-0.80	4	LB							
0.50	401	B							
0.50	5	D							
1.50-1.50	103	ES		≈		1.40-1.70m : band of black gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse sandstone. No odour. 1.60-1.70m : groundwater seepage encountered with an oily sheen. No odour.			
1.50-1.80	6	B							
1.50	7	D							
				≈		2.00-2.10m : running sand encountered.	108.17	2.10	
						Trial pit terminated at 2.10m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. Groundwater encountered at 1.70m and 2.00m with an oily sheen.
3. Band of black material (see strata detail) with no odour and no indication of made ground constituents.
4. Running sand encountered and collapse of east facing sidewall at 0.70m.
5. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
6. Trial pit terminated at 2.10m due to instability. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.
7. Geoenvironmental sample 601 ES taken from separate inspection pit excavated alongside on 03/06/2023 to obtain fresh sample for laboratory testing.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS207
Contract Ref:	Start: 30.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 30.03.23	110.27	E:354684.6 N:529068.3	2 of 4

Pre-condtion

Face N

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS207
Contract Ref:	Start: 30.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 30.03.23	110.27	E:354684.6 N:529068.3	3 of 4

Face E

Face S

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS207
Contract Ref:	Start: 30.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 30.03.23	110.27	E:354684.6 N:529068.3	4 of 4

Face W

Spoil

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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FINAL

STRUCTURAL SOILS

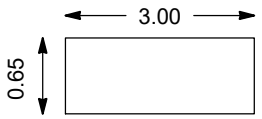
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS208

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	17.04.23	110.25	E:354721.6 N:528935.8	1 of 4
	End: 17.04.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.10-0.30	1	B				Grass over dark brown gravelly fine to coarse SAND with frequent rootlets and roots (<3mm). Gravel is angular to subrounded fine to coarse of sandstone, granite and quartzite. (TOPSOIL)		(0.30)	
0.10-0.10	101	ES							
0.10	2	D					109.95	0.30	
0.50-0.50	102	ES				Orange brown sandy slightly clayey subangular to subrounded fine to coarse GRAVEL of sandstone and granite. Sand is medium to coarse. (GLACIAL TILL - GRANULAR)			
0.50-0.80	3	B							
0.50-0.80	4	LB							
0.50	401	B							
0.50	5	D							
				1				(1.40)	
1.50-1.50	103	ES							
1.50-1.70	6	B							
1.50	7	D					108.55	1.70	
						Trial pit terminated at 1.70m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. Groundwater struck at 1.20m depth, rapid inflow rising to 1.18m depth.
3. No evidence of contamination noted.
4. Trial pit unstable at 1.70m depth.
5. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
6. Trial pit terminated at 1.70m due to instability. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	JJimoh	AML

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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS208
Contract Ref:	Start: 17.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 17.04.23	110.25	E:354721.6 N:528935.8	2 of 4

Pre-condition

Face A

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	JJimoh	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS208
Contract Ref:	Start: 17.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 17.04.23	110.25	E:354721.6 N:528935.8	3 of 4

Face B

Face C

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	JJimoh	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS208
Contract Ref:	Start: 17.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 17.04.23	110.25	E:354721.6 N:528935.8	4 of 4

Face D

Post-condition

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	JJimoh	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

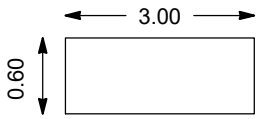
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS209

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	29.03.23	109.95	E:354731.4 N:529029.5	1 of 5
	End: 29.03.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.10-0.30	1	B				Grass over brown gravelly clayey fine to coarse SAND with occasional rootlets. Gravel is subangular to subrounded fine to coarse of sandstone and granite. (TOPSOIL)	109.65	(0.30) 0.30	
0.10-0.10	101	ES							
0.10	2	D							
0.50-0.50	102	ES				Brown mottled orangish brown very sandy clayey subangular to subrounded fine to coarse GRAVEL of granite and sandstone with medium cobble content and low boulder content. Sand is fine to coarse. Cobbles are subangular sandstone (<130mm x 110mm x 70mm). Boulders are subangular sandstone (<200mm x 150mm x 100mm). (GLACIAL TILL - GRANULAR)	109.15	(0.50) 0.80	
0.50-0.80	3	B							
0.50-0.80	4	LB							
0.50	401	B							
0.50	5	D							
1.00-1.50	6	B				Soft becoming firm friable reddish brown mottled orangish brown slightly gravelly sandy silty CLAY. Gravel is subangular to subrounded fine to coarse of granite and sandstone. Sand is fine to coarse. (GLACIAL TILL - COHESIVE)			
1.00-1.50	7	LB							
1.00	8	D							
1.50-1.50	103	ES							
1.80		V	c_u=60/54/52	1 1		1.90-1.90m : groundwater seepage and running sand encountered.		(2.20)	
1.80		V	c_r=30/28/24						
2.00	10	D							
2.00-2.50	9	B							
2.70-3.00	11	B							
2.70	12	D					106.95	3.00	
						Trial pit terminated at 3.00m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. Hand vane used: GEONOR 703016-202.
3. Groundwater seepage and running sand encountered at 1.90m.
4. No evidence of contamination noted.
5. Complete collapse of west facing sidewall at 3.00m depth.
6. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
7. Trial pit terminated at 3.00m due to instability. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.
8. Geoenvironmental sample 601 ES taken from separate inspection pit excavated alongside on 03/06/2023 to

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

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STRUCTURAL SOILS

FINAL

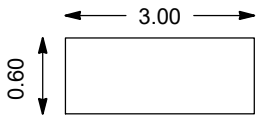
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS209

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	29.03.23	109.95	E:354731.4 N:529029.5	2 of 5
	End: 29.03.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						

Plan (Not to Scale)



General Remarks

obtain fresh sample for laboratory testing.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS209
Contract Ref:	Start: 29.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 29.03.23	109.95	E:354731.4 N:529029.5	3 of 5

Face A

Face B

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS209
Contract Ref:	Start: 29.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 29.03.23	109.95	E:354731.4 N:529029.5	4 of 5

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS209
Contract Ref:	Start: 29.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 29.03.23	109.95	E:354731.4 N:529029.5	5 of 5

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

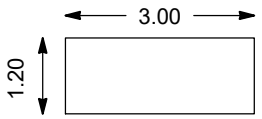
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS210

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	29.03.23	108.92	E:354760.4 N:529067.9	1 of 5
	End: 29.03.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.10-0.30	1	B				Grass over brown gravelly clayey fine to coarse SAND with occasional rootlets. Gravel is subangular to subrounded fine to coarse of granite and sandstone. (TOPSOIL)	108.62	(0.30) 0.30	
0.10	2	D							
0.50-0.80	3	B				Greyish brown very sandy clayey subangular to subrounded fine to coarse GRAVEL of granite and sandstone with medium cobble content. Sand is fine to coarse. Cobbles are subangular of sandstone (<180mm x 170mm x 100mm). (GLACIAL TILL - GRANULAR) 0.60-0.80m : band of orangish brown gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of sandstone. 0.60-1.20m : large boulder (<600mm x 600mm x 400mm) of subrounded sandstone encountered. Trial pit extended laterally towards east.	108.12	(0.50) 0.80	
0.50-0.80	4	LB							
0.50	401	B							
0.50	5	D							
0.50	601	ES							
1.00-1.50	6	B					107.42	(0.70) 1.50	
1.00-1.50	7	LB							
1.50	8	D		≈		Light greyish brown mottled reddish brown very gravelly clayey fine to coarse SAND with medium cobble content and medium boulder content. Gravel is subangular to subrounded fine to coarse of granite and sandstone. Cobbles are subrounded granite and sandstone (<190mm x 120mm x 110mm). Boulders are subrounded granite and sandstone (<400mm x 350mm x 300mm). (GLACIAL TILL - GRANULAR) 1.40-1.50m : running sand and groundwater seepage encountered.			
						Trial pit terminated at 1.50m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. Groundwater and running sand encountered at 1.40m.
3. No evidence of contamination noted.
4. Pit extended laterally towards east due to large boulder encountered at 0.60m (see strata detail).
5. Running sand encountered at 1.50m depth.
6. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
7. Trial pit terminated at 1.50m due to instability. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.
8. Geoenvironmental sample 601 ES taken from separate inspection pit excavated alongside on 03/06/2023 to

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

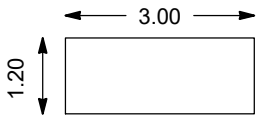
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS210

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	29.03.23	108.92	E:354760.4 N:529067.9	2 of 5
	End: 29.03.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						

Plan (Not to Scale)



General Remarks

obtain fresh sample for laboratory testing.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:41 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS210
Contract Ref:	Start: 29.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 29.03.23	108.92	E:354760.4 N:529067.9	3 of 5

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS210
Contract Ref:	Start: 29.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 29.03.23	108.92	E:354760.4 N:529067.9	4 of 5

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:42 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS210
Contract Ref:	Start: 29.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 29.03.23	108.92	E:354760.4 N:529067.9	5 of 5

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:42 | AML1 |

STRUCTURAL SOILS

FINAL

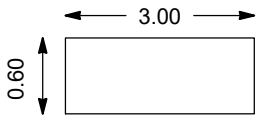
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS211

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	04.04.23	110.57	E:354930.5 N:529049.2	1 of 4
	End: 04.04.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.10-0.30	1	B				Grass over dark brown gravelly fine to coarse SAND with low cobble content. Gravel is subangular to subrounded fine to coarse granite and quartzite. Cobbles are subangular of granite (<110mm x 100mm x 40mm). (TOPSOIL)	110.27	(0.30) 0.30	
0.10-0.10	101	ES							
0.10	2	D							
0.50-0.50	102	ES				Orangish brown very sandy silty subangular to subrounded fine to coarse GRAVEL of granite and quartzite with medium cobble content. Sand is fine to coarse. Cobbles are subrounded of granite and quartzite (<190mm x 130mm x 80mm). (GLACIAL TILL - GRANULAR) 0.60-1.70m : becoming light brown.		(1.40)	
0.50-0.80	3	B							
0.50-0.80	4	LB							
0.50	5	D							
1.50	103	ES				1.40-1.70m : boulder of subrounded granite (<500mm x 500mm x 150mm).	108.87	1.70	
1.50-1.70	6	B							
1.50-1.70	7	LB							
1.50	8	D				Trial pit terminated at 1.70m depth.			
1.70	9	D							

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. No groundwater encountered.
3. No evidence of contamination noted.
4. Significant collapse of northern sidewall at 1.70m depth.
5. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
6. Trial pit terminated at 1.70m due to instability. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:42 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS211
Contract Ref:	Start: 04.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 04.04.23	110.57	E:354930.5 N:529049.2	2 of 4

Face N

Face S

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:42 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS211
Contract Ref:	Start: 04.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 04.04.23	110.57	E:354930.5 N:529049.2	3 of 4

Face E

Face W

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:42 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS211
Contract Ref:	Start: 04.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 04.04.23	110.57	E:354930.5 N:529049.2	4 of 4

Post-Condition

Spoil

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:42 | AML1 |

STRUCTURAL SOILS

FINAL

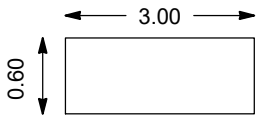
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS212

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	30.03.23 End: 30.03.23	109.52	E:354971.2 N:529070.2	1 of 5

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.10-0.30	1	B				Grass over dark brown gravelly silty fine to coarse SAND with occasional rootlets. Gravel is subangular to subrounded fine to coarse of granite and quartzite. (TOPSOIL)	109.22	(0.30) 0.30	
0.10-0.10	101	ES							
0.10	2	D							
0.50-0.50	102	ES				Orangish brown very sandy clayey subangular to subrounded fine to coarse GRAVEL of granite, quartzite and sandstone with medium cobble content. Sand is fine to coarse. Cobbles are subangular to subrounded of granite, quartzite and sandstone (<170mm x 120mm x 110mm). (GLACIAL TILL - GRANULAR)		(1.50)	
0.50-0.80	3	B							
0.50-0.80	4	LB							
0.50	5	D							
1.50-1.50	103	ES							
1.50-1.80	6	B							
1.50	7	D					107.72	1.80	
						Trial pit terminated at 1.80m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. No groundwater encountered.
3. No evidence of contamination noted.
4. Significant collapse of west facing sidewall from 1.80m back to 0.50m depth.
5. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
6. Trial pit terminated at 1.80m due to instability. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.
7. Geoenvironmental sample 601 ES taken from separate inspection pit excavated alongside on 03/06/2023 to obtain fresh sample for laboratory testing.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS212
Contract Ref:	Start: 30.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 30.03.23	109.52	E:354971.2 N:529070.2	2 of 5

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:42 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		**National Highways**		**TP-PTS212**
Contract Ref:	Start: **30.03.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **30.03.23**	**109.52**	**E:354971.2 N:529070.2**	**3** of **5**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**MCapitani**	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:42 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS212
Contract Ref:	Start: 30.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 30.03.23	109.52	E:354971.2 N:529070.2	4 of 5

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:42 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS212
Contract Ref:	Start: 30.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 30.03.23	109.52	E:354971.2 N:529070.2	5 of 5

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

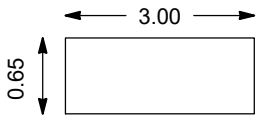
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS213

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	14.04.23	108.77	E:354984.8 N:528926.8	1 of 5
	End: 14.04.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.10-0.30	1	B				Grass over dark brown gravelly slightly silty fine to coarse SAND with frequent rootlets and roots (<3mm). Gravel is angular to subrounded fine to coarse of sandstone, quartzite and granite. (TOPSOIL)	108.42	(0.35) 0.35	
0.10-0.10	101	ES							
0.10	2	D							
0.50-0.50	102	ES				Orangish brown locally reddish brown very gravelly very silty fine to coarse SAND with low cobble content. Gravel is angular to subrounded fine to coarse of sandstone and granite. Cobbles are predominantly subangular to subrounded granite (<187mm x 165mm x 120mm). (GLACIAL TILL - GRANULAR)		(1.45)	
0.50-0.80	3	B							
0.50-0.80	4	LB							
0.50	5	D							
						1.20-1.80m : becoming reddish brown and very gravelly.			
1.50-1.50	103	ES		≈		1.60m : groundwater seepage.			
1.50-1.80	6	B							
1.50	7	D					106.97	1.80	
1.80	8	D				Trial pit terminated at 1.80m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. Groundwater seepage at 1.60m depth.
3. No evidence of contamination noted.
4. Trial pit unstable at 1.80m depth, terminated due to side wall collapse.
5. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings).
6. Trial pit terminated at 1.80m due to instability. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	JJimoh	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS213
Contract Ref:	Start: 14.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 14.04.23	108.77	E:354984.8 N:528926.8	2 of 5

Pre-condtion

Face A

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	JJimoh	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS213

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	14.04.23 End: 14.04.23	108.77	E:354984.8 N:528926.8	3 of 5

Face B

Face C

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	JJimoh	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:42 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS213
Contract Ref:	Start: 14.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 14.04.23	108.77	E:354984.8 N:528926.8	4 of 5

Face D

Spoil

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	JJimoh	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:42 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS213
Contract Ref:	Start: 14.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 14.04.23	108.77	E:354984.8 N:528926.8	5 of 5

Post-conditon

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	JJimoh	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

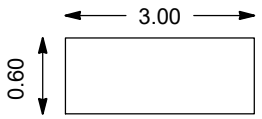
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS214

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	31.03.23	107.41	E:355035.8 N:529045.3	1 of 6
	End: 31.03.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.10-0.30	1	B				Dark brown slightly gravelly clayey fine to coarse SAND with occasional rootlets. Gravel is angular to subrounded fine to coarse quartzite, sandstone and granite. (TOPSOIL)	107.11	(0.30) 0.30	
0.10	101	ES							
0.10	2	D							
						Firm dark brown mottled greenish brown pseudo-fibrous PEAT. Moderate organic odour. (PEAT)	106.91	0.50	
0.50	102	ES				Light orangish brown gravelly very silty fine to coarse SAND. Gravel is subangular fine to coarse quartzite and sandstone. (GLACIAL TILL - GRANULAR)		(1.60)	
0.50-0.70	3	B							
0.50-0.70	4	LB							
0.50	401	B							
0.50	5	D							
1.50	103	ES							
1.50-1.80	6	B							
1.50-1.80	7	LB							
1.50	8	D					105.31	2.10	
2.10	9	D				Trial pit terminated at 2.10m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. Groundwater seepages encountered at 1.50m rising to 1.48m after 20 minutes and 2.00m rising to 1.96m after 20 minutes.
3. No evidence of contamination noted.
4. Complete collapse of east and west facing sidewall at 2.10m back to 0.30m depth.
5. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
6. Trial pit terminated at 2.10m due to instability. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.
7. Geoenvironmental sample 601 ES taken from separate inspection pit excavated alongside on 03/06/2023 to

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:42 | AML1 |

STRUCTURAL SOILS

FINAL

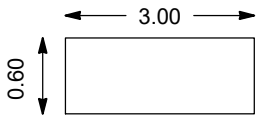
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS214

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	31.03.23	107.41	E:355035.8 N:529045.3	2 of 6
	End: 31.03.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						

Plan (Not to Scale)



General Remarks

obtain fresh sample for laboratory testing.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:42 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS214
Contract Ref:	Start: 31.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 31.03.23	107.41	E:355035.8 N:529045.3	3 of 6

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:42 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		**National Highways**		**TP-PTS214**
Contract Ref:	Start: **31.03.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **31.03.23**	**107.41**	**E:355035.8 N:529045.3**	**4** of **6**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**MCapitani**	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS214
Contract Ref:	Start: 31.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 31.03.23	107.41	E:355035.8 N:529045.3	5 of 6

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS214
Contract Ref:	Start: 31.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 31.03.23	107.41	E:355035.8 N:529045.3	6 of 6

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

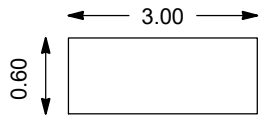
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS215

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	03.04.23	109.06	E:355080.1 N:529001.7	1 of 1
	End: 03.04.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.10-0.30	1	B				Grass over dark brown slightly gravelly fine to coarse SAND with occasional rootlets (<2mm). Gravel is angular to subangular fine to coarse sandstone, quartzite and granite. (TOPSOIL)		(0.30)	
0.10-0.10	101	ES							
0.10	2	D					108.76	0.30	
0.50-0.50	102	ES				Orangish brown locally reddish and greyish brown very gravelly silty fine to coarse SAND with low cobble content. Gravel is angular to subangular and subrounded fine to coarse sandstone and granite. Cobbles are predominantly subrounded of granite. (GLACIAL TILL - GRANULAR)			
0.50-0.80	3	B							
0.50-0.80	4	LB							
0.50	5	D							
						1.20-1.30m : with rare to occasional pockets of reddish brown slightly clayey fine to coarse sand.		(1.70)	
1.50-1.50	103	ES							
1.50-1.80	6	B							
1.50	7	D							
				≈			107.06	2.00	
2.00	8	D				2.00m : groundwater seepage. Trial pit terminated at 2.00m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. Groundwater seepage at 2.00m depth.
3. No evidence of contamination noted.
4. Trial pit unstable and collapse at 2.00m depth.
5. No trial pit photographs available; digital photographs on tablet PC lost due to fault or error.
6. Trial pit terminated at 2.00m due to instability. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	JJimoh	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

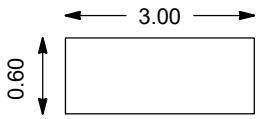
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS217

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	03.04.23	114.27	E:355308.6 N:528997.5	1 of 5
	End: 03.04.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.10-0.30	1	B				Grass over dark brown gravelly silty fine SAND with low cobble content . Gravel is subangular to subrounded fine to coarse quartzite and granite. Cobbles are subrounded of granite and quartzite (<140mm x 90mm x 40mm). (TOPSOIL)	113.97	(0.30) 0.30	
0.10-0.10	101	ES							
0.10	2	D							
0.50-0.50	102	ES				Orangish brown very sandy silty subangular to subrounded fine to coarse GRAVEL of granite and quartzite with medium cobble and low boulder content. Sand is fine to coarse. Cobbles are subrounded of granite and quartzite (<130mm x 130mm x 60mm). Boulders are subrounded of granite and quartzite (<250mm x 180mm x 120mm). (GLACIAL TILL - GRANULAR) 0.90-3.50m : high cobble content. 1.10-3.50m : becoming light brown 1.50-1.80m : slightly silty		(3.20)	
0.50-0.80	3	B							
0.50-0.80	4	LB							
0.50	401	B							
0.50	5	D							
1.50-1.50	103	ES							
1.50-1.80	6	B							
1.50-1.80	7	LB							
1.50	8	D							
2.50-2.80	10	LB							
2.50	11	D							
2.50-2.80	9	B					110.77	3.50	
3.50	12	D				Trial pit terminated at 3.50m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. No groundwater encountered.
3. No evidence of contamination noted.
4. Trial pit remained stable during excavation.
5. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
6. Trial pit terminated at 3.50m. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS217
Contract Ref:	Start: 03.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 03.04.23	114.27	E:355308.6 N:528997.5	2 of 5

Face A

Face B

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	

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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS217
Contract Ref:	Start: 03.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 03.04.23	114.27	E:355308.6 N:528997.5	3 of 5

Face C

Face D

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS217
Contract Ref:	Start: 03.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 03.04.23	114.27	E:355308.6 N:528997.5	4 of 5

Spoil

Pre-Condition

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:43 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS217
Contract Ref:	Start: 03.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 03.04.23	114.27	E:355308.6 N:528997.5	5 of 5

Post-Condition

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

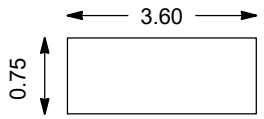
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS220

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	08.03.23 End: 08.03.23	115.26	E:355677.0 N:528882.9	1 of 4

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.00-0.20	1	B				Grass over dark brown slightly gravelly fine to coarse SAND with occasional rootlets (<20mm). Gravel is subrounded fine to medium of mixed lithologies including sandstone, granite and quartz. (TOPSOIL)	115.06	0.20	
0.00-0.20	3	LB							
0.10	101	ES							
0.10	2	D							
0.20-1.40	5	B							
0.50	102	ES				Interbedded light orangish brown and yellowish brown gravelly silty fine to coarse SAND. Gravel is subrounded fine to medium of mixed lithologies including sandstone, granite and quartz. (GLACIAL TILL - GRANULAR)		(1.30)	
0.50	401	B							
1.20	4	D					113.76	1.50	
1.50	103	ES				Reddish brown gravelly silty fine to coarse SAND with a medium cobble content. Gravel is subrounded fine to coarse of mixed lithologies including sandstone, granite and quartz. Cobbles are subangular to subrounded of mixed lithologies including sandstone, granite and quartz (<200mm diameter). (GLACIAL TILL - GRANULAR)		(2.20)	
1.50-2.20	7	B							
2.20-3.70	10	B							
2.20	6	D							
2.20-3.70	9	LB							
3.20	8	D		1			111.56	3.70	
				1		3.70m : Groundwater struck at 3.70m depth, rising to 3.50m depth after 20 minutes. Trial pit terminated at 3.70m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. Groundwater struck at 3.70m depth, rising to 3.50m depth after 20 minutes.
3. No evidence of contamination noted.
4. Trial pit remained stable during excavation.
5. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
6. Trial pit terminated at 3.70m. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	CGriffin	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS220
Contract Ref:	Start: 08.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 08.03.23	115.26	E:355677.0 N:528882.9	2 of 4

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	CGriffin	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS220
Contract Ref:	Start: 08.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 08.03.23	115.26	E:355677.0 N:528882.9	3 of 4

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	CGriffin	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS220

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	08.03.23 End: 08.03.23	115.26	E:355677.0 N:528882.9	4 of 4

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	CGriffin	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

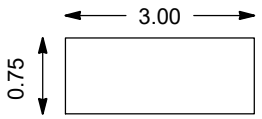
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS221

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	15.03.23	111.78	E:355682.5 N:528988.4	1 of 1
	End: 15.03.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.00-0.30	1	LB				Dark brown gravelly silty fine to coarse SAND. Gravel is subrounded fine to coarse of mixed lithologies including sandstone, granite and quartz. (TOPSOIL)	111.48	(0.30) 0.30	
0.20	101	ES							
0.20-0.30	2	B				Orangish brown silty fine to coarse SAND. (GLACIAL TILL - GRANULAR)	110.58	(0.90) 1.20	
0.20	3	D							
0.30-1.20	4	LB							
0.50	102	ES							
1.10-1.20	5	B				Greyish brown very gravelly clayey fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone, granite and quartz. (GLACIAL TILL - GRANULAR)	109.68	(0.90) 2.10	
1.10	6	D							
2.00-2.10	7	B		≈		2.00m : groundwater seepage.			
2.00	8	D				Trial pit terminated at 2.10m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. Groundwater seepage at 2.00m depth.
3. No evidence of contamination noted.
4. Trial pit collapsed back at 2.10m depth. Large bulk sampling not possible due to collapse.
5. No trial pit photographs available; digital photographs on tablet PC lost due to fault or error.
6. Trial pit terminated at 2.10m due to instability. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	CGriffin	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:43 | AML1 |

STRUCTURAL SOILS

FINAL

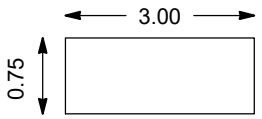
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS224

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	15.03.23 End: 15.03.23	111.25	E:355762.4 N:529018.9	1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.00-0.40	1	LB				Dark brown very gravelly silty fine to coarse SAND. Gravel is subrounded fine to coarse of mixed lithologies including sandstone, granite and quartz. (TOPSOIL)	110.85	(0.40) 0.40	
0.20	101	ES							
0.20-0.30	2	B							
0.20	3	D							
0.40-2.00	4	LB				Orangish brown very gravelly silty fine to coarse SAND with medium cobble and boulder content. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone, granite and quartz. Cobbles subangular to subrounded of mixed lithologies including sandstone, granite and quartz. Boulders subangular to subrounded of mixed lithologies including sandstone and granite (< 200mm x 170mm x 140mm). (GLACIAL TILL - GRANULAR)	109.25	(1.60) 2.00	
0.50	102	ES							
0.50	401	B							
1.20-1.30	5	B				1.20-1.30m : gravelly.			
1.20	6	D							
1.50	103	ES							
						Trial pit terminated at 2.00m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. No groundwater encountered.
3. No evidence of contamination noted.
4. Trial pit collapsed back at 2.00m depth.
5. No trial pit photographs available; digital photographs on tablet PC lost due to fault or error.
6. Trial pit terminated at 2.00m due to instability. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	CGriffin	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

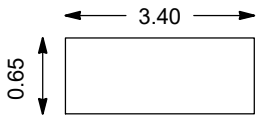
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS225

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	09.03.23	119.90	E:355778.5 N:528838.2	1 of 4
	End: 09.03.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.00-0.40	2	B				Grass over dark brown slightly gravelly fine to coarse SAND with low cobble content. Gravel is subrounded fine to medium of mixed lithologies including sandstone, granite and quartz. Cobbles are subangular of mixed lithologies including sandstone, granite and quartz (<100mm diameter). (GLACIAL TILL - GRANULAR)	119.50	(0.40) 0.40	
0.00-0.40	3	LB							
0.20	1	D							
0.20	101	ES							
0.40-1.40	5	B				Light brown gravelly clayey fine to coarse SAND with low cobble content. Gravel is subrounded to subangular fine to medium of mixed lithologies including sandstone, granite and quartz. Cobbles subrounded of mixed lithologies including sandstone, granite and quartz (<100mm diameter). (GLACIAL TILL - GRANULAR)	118.50	(1.00) 1.40	
0.40-1.40	6	LB							
0.50	102	ES							
0.50	4	D							
0.50	401	B							
1.40-2.20	8	B				Reddish brown gravelly very clayey fine to coarse SAND with low cobble content. Gravel is subrounded to subangular fine to medium of mixed lithologies including sandstone, granite and quartz. Cobbles are rounded of mixed lithologies including sandstone, granite and quartz (<60mm diameter). (GLACIAL TILL - GRANULAR)	117.70	(0.80) 2.20	
1.40-2.20	9	LB							
1.50	103	ES							
1.50	7	D							
2.20-3.30	11	B				Reddish brown very gravelly fine to coarse SAND. Gravel is subrounded fine to coarse of mixed lithologies including sandstone, granite and quartz. (GLACIAL TILL - GRANULAR)	116.60	(1.10) 3.30	
2.20-3.30	12	LB							
2.20		V	c_u=44/20/24						
2.20		V	c_r=26/0/4						
2.50	10	D							
3.30	13	D				Greyish brown very gravelly very clayey fine to coarse SAND with low cobble content and occasional organic material. Gravel is subrounded fine to coarse of mixed lithologies including sandstone, granite and quartz. Cobbles subrounded of mixed lithologies including sandstone, granite and quartz (<100mm diameter). (GLACIAL TILL - GRANULAR)	116.50	3.40	
3.30-3.40	14	B							
3.30-3.40	15	LB							
						Trial pit terminated at 3.40m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. No groundwater encountered.
3. No evidence of contamination noted.
4. Side wall collapse at 3.40m depth.
5. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
6. Trial pit terminated at 3.40m due to instability. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	CGriffin	

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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS225
Contract Ref:	Start: 09.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 09.03.23	119.90	E:355778.5 N:528838.2	2 of 4

Face A

Face B

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	CGriffin	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS225
Contract Ref:	Start: 09.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 09.03.23	119.90	E:355778.5 N:528838.2	3 of 4

Face C

Face D

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	CGriffin	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS225
Contract Ref:	Start: 09.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 09.03.23	119.90	E:355778.5 N:528838.2	4 of 4

Spoil

Post Condition

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	CGriffin	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

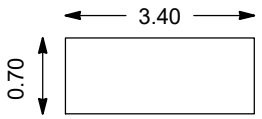
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS226

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	14.03.23 End: 14.03.23	117.66	E:355831.6 N:528882.0	1 of 2

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.00-0.30	1	LB				Dark brown gravelly clayey fine to coarse SAND with medium cobble content. Gravel is subrounded fine to coarse of mixed lithologies including sandstone, granite and quartz. Cobbles subrounded of mixed lithologies including sandstone, granite and quartz (<75mm diameter). (TOPSOIL)	117.46	0.20	
0.20	101	ES				Soft brown slightly gravelly sandy silty CLAY with low cobble content. Sand is fine to coarse. Gravel is subangular fine to coarse of mixed lithologies including sandstone, granite and quartz. Cobbles subrounded of mixed lithologies including sandstone, granite and quartz (<100mm diameter). (GLACIAL TILL - COHESIVE) 0.20-0.30m : slightly sandy.			
0.20-0.30	2	B							
0.20	3	D							
0.30-2.50	4	LB							
0.50	102	ES							
0.50	401	B							
1.00		V	c_u=44/38/28						
1.00		V	c_r=8/2/0						
1.20-1.30	5	B							
1.20	6	D						(2.30)	
1.50	103	ES							
2.20-2.30	7	B							
2.20	8	D							
2.50-4.00	9	LB				Reddish brown very gravelly clayey fine to coarse SAND. Gravel is subrounded fine to medium of mixed lithologies including sandstone, granite and quartz. (GLACIAL TILL - GRANULAR)	115.16	2.50	
3.20-3.30	10	B						(1.50)	
3.20	11	D							
4.00-4.10	12	B				Grey very gravelly silty fine to coarse SAND with a high cobble content. Gravel is subrounded fine to medium of mixed lithologies including sandstone, granite and quartz. Cobbles are rounded of mixed lithologies including sandstone, granite and quartz (<200mm diameter). (GLACIAL TILL - GRANULAR)	113.66	4.00	
							113.56	4.10	

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. No groundwater encountered.
3. No evidence of contamination noted.
4. Trial pit remained stable during excavation.
5. No trial pit photographs available; digital photographs on tablet PC lost due to fault or error.
6. Trial pit terminated at 4.10m. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	CGriffin	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

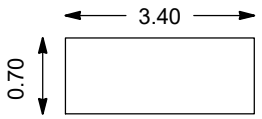
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS226

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	14.03.23	117.66	E:355831.6 N:528882.0	2 of 2
	End: 14.03.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
						Trial pit terminated at 4.10m depth.			

Plan (Not to Scale)



General Remarks

All dimensions in metres

Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	CGriffin	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

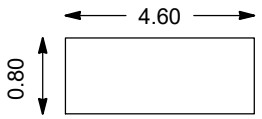
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS228

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	16.03.23 End: 16.03.23	113.86	E:355846.2 N:528973.3	1 of 4

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.00-0.20 0.00-0.20	1 2	LB B				Grass overlying brown very gravelly silty fine to coarse SAND with occasional rootlets. Gravel is subangular fine to coarse of sandstone. (TOPSOIL)	113.66	0.20	
0.20 0.20 0.50 0.50 0.80-1.10 0.80-1.10 1.00	101 3 102 401 4 5 6	ES D ES B LB B D				Orangish brown gravelly slightly clayey fine to coarse SAND with medium cobble content. Gravel is subangular fine to coarse of sandstone. Cobbles are subrounded to rounded mixed lithologies of sandstone and granite (<190mm diameter). (GLACIAL TILL - GRANULAR)	112.66	(1.00) 1.20	
1.50 1.90-2.10 1.90-2.10 2.10	103 7 8 9	ES LB B D				Light orangish brown slightly gravelly clayey fine to coarse SAND. Gravel is subangular fine to coarse of sandstone. (GLACIAL TILL - GRANULAR) 1.20-2.00m : sand is very uniform.	110.86	(1.80) 3.00	
3.00-3.10 3.00-3.10 3.10	10 11 12	LB B D		≈		Reddish orange slightly gravelly silty fine to coarse SAND. Gravel is tabular angular fine to coarse of extremely weak weathered sandstone. (GLACIAL TILL - GRANULAR) 3.09m : groundwater seepage from south side at the base of pit. Trial pit refused at 3.10m depth.	110.76	3.10	

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. Groundwater seepage encountered at 3.10m depth.
3. No evidence of contamination noted.
4. Trial pit remained stable during excavation.
5. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
6. Trial pit terminated at 3.10m depth due to refusal. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	IJordan	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS228
Contract Ref:	Start: 16.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 16.03.23	113.86	E:355846.2 N:528973.3	2 of 4

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	IJordan	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS228
Contract Ref:	Start: 16.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 16.03.23	113.86	E:355846.2 N:528973.3	3 of 4

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	IJordan	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:44 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS228
Contract Ref:	Start: 16.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 16.03.23	113.86	E:355846.2 N:528973.3	4 of 4

Face C

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	IJordan	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

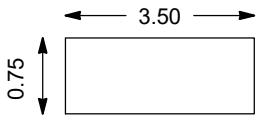
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS229

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	13.03.23 End: 13.03.23	117.97	E:355883.7 N:528890.5	1 of 5

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.00-0.30	3	LB				Dark brown gravelly clayey fine to coarse SAND with occasional rootlets. Gravel is subrounded fine to medium of mixed lithologies including sandstone, granite and quartz (TOPSOIL)	117.67	(0.30) 0.30	
0.20	1	D				Firm reddish brown slightly gravelly sandy CLAY with medium cobble content. Sand is fine to coarse. Gravel is subrounded to subangular fine to coarse of mixed lithologies including sandstone, granite and quartz. Cobbles subrounded of mixed lithologies including sandstone, granite and quartz (<80mm). (GLACIAL TILL - COHESIVE)			
0.20	101	ES							
0.20-0.30	2	B							
0.30-2.90	6	LB							
0.50	102	ES							
0.50	401	B							
1.00		V	c_u=76/44/72						
1.00		V	c_r=16/4/16						
1.20	4	D						(1.90)	
1.20-1.30	5	B							
1.50	103	ES					115.77	2.20	
2.20	7	D				Reddish brown slightly gravelly very clayey fine to coarse SAND with medium cobble content. Gravel is subrounded to subangular fine to coarse of mixed lithologies including sandstone, granite and quartz. Cobbles subrounded of mixed lithologies including sandstone, granite and quartz (<80mm). (GLACIAL TILL - GRANULAR)			
2.20-2.30	8	B						(0.70)	
							115.07	2.90	
2.90-3.50	11	LB				Reddish brown gravelly silty fine to coarse SAND with high cobble and boulder content. Gravel is subrounded to subangular fine to coarse of mixed lithologies including sandstone, granite and quartz. Cobbles are subrounded to subangular of mixed lithologies including sandstone, granite and quartz. Boulders are subrounded to subangular of mixed lithologies including sandstone and granite (<400mm diameter). (GLACIAL TILL - GRANULAR)			
3.20-3.30	10	B						(0.60)	
3.20	9	D					114.47	3.50	
						Trial pit terminated at 3.50m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. No groundwater encountered.
3. No evidence of contamination noted.
4. Trial pit remained stable during excavation.
5. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
6. Trial pit terminated at 3.50m. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	CGriffin	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:44 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS229
Contract Ref:	Start: 13.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 13.03.23	117.97	E:355883.7 N:528890.5	2 of 5

Face A

Face B

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	CGriffin	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:44 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS229
Contract Ref:	Start: 13.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 13.03.23	117.97	E:355883.7 N:528890.5	3 of 5

Face C

Face D

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	CGriffin	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:44 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS229
Contract Ref:	Start: 13.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 13.03.23	117.97	E:355883.7 N:528890.5	4 of 5

Base

Spoil

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	CGriffin	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:44 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS229
Contract Ref:	Start: 13.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 13.03.23	117.97	E:355883.7 N:528890.5	5 of 5

Pre-Condition

Post-Condition

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	CGriffin	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:44 | AML1 |

STRUCTURAL SOILS

FINAL

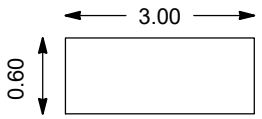
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS230

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	28.03.23 End: 28.03.23	116.72	E:355936.8 N:528965.3	1 of 4

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.10-0.30	1	B				Soft friable brown slightly gravelly sandy CLAY with occasional rootlets. Sand is fine to coarse. Gravel is subangular coarse of sandstone. (TOPSOIL)	116.42	(0.30) 0.30	
0.10-0.10	101	ES							
0.10	2	D							
0.50-0.50	102	ES				Orangish brown slightly gravelly clayey fine to coarse SAND. Gravel is angular to subrounded fine to coarse of sandstone. (GLACIAL TILL - GRANULAR) 0.75-1.40m : low cobble content. Cobbles are angular granite (<90mm x80mm x 50mm). 1.00-1.40m : clayey. Partial collapse of south facing sidewall.	115.32	(1.10) 1.40	
0.50-0.80	3	LB							
0.50-0.80	4	B							
0.50	5	D							
1.50-1.50	103	ES				Reddish brown gravelly clayey fine to coarse SAND with medium cobble content. Gravel is subangular to subrounded fine to coarse of granite and sandstone. Cobbles are angular to subrounded of granite and sandstone (<100mm x 90mm x 60mm). (GLACIAL TILL - GRANULAR)	114.52	(0.80) 2.20	
1.50-1.80	6	LB							
1.50-1.80	7	B							
1.50	8	D							
2.20-2.50	9	B				Reddish brown very sandy clayey subangular to subrounded fine to coarse GRAVEL of granite and sandstone. Sand is fine to coarse. (GLACIAL TILL - GRANULAR)	114.22	(0.30) 2.50	
2.50	10	D				Trial pit terminated at 2.50m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2014 Survey Type B completed.
2. No groundwater encountered.
3. No evidence of contamination noted.
4. Complete collapse of north facing sidewall at 2.50m depth back to ground level.
5. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
6. Trial pit terminated at 2.50m due to instability. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS230
Contract Ref:	Start: 28.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 28.03.23	116.72	E:355936.8 N:528965.3	2 of 4

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS230
Contract Ref:	Start: 28.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 28.03.23	116.72	E:355936.8 N:528965.3	3 of 4

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:45 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS230
Contract Ref:	Start: 28.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 28.03.23	116.72	E:355936.8 N:528965.3	4 of 4

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

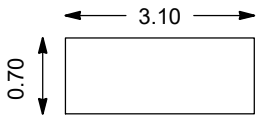
Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS231

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	14.03.23 End: 14.03.23	120.39	E:355940.7 N:528853.6	1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.00-0.30	1	LB				Dark brown slightly gravelly very clayey fine to coarse SAND with occasional rootlets. Gravel is subrounded fine to medium of mixed lithologies including sandstone, granite and quartz (TOPSOIL)	120.09	(0.30) 0.30	
0.20	101	ES							
0.20-0.30	2	B				Reddish brown slightly gravelly very clayey fine to coarse SAND with low cobble content. Sand is fine to coarse. Gravel is subrounded fine to coarse of mixed lithologies including sandstone, granite and quartz. Cobbles subrounded of mixed lithologies including sandstone, granite and quartz (<150mm diameter). (GLACIAL TILL - GRANULAR)			
0.20	3	D							
0.30-2.90	4	LB							
0.50	102	ES							
1.20	2	D							
1.20-1.30	5	B							
1.50	103	ES						(2.60)	
2.20-2.30	7	B							
2.20	8	D							
2.90-3.20	9	LB				Brownish grey gravelly very clayey fine to coarse SAND with low cobble content. Gravel is rounded fine to coarse of mixed lithologies including sandstone, granite and quartz. Cobbles are rounded of mixed lithologies including sandstone, granite and quartz (<40mm diameter). (GLACIAL TILL - GRANULAR)	117.49	2.90	
3.10-3.20	10	B					117.19	(0.30) 3.20	
3.20	11	D							

Trial pit terminated at 3.20m depth.

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. No groundwater encountered.
3. No evidence of contamination noted.
4. Trial pit remained stable during excavation.
5. No trial pit photographs available; digital photographs on tablet PC lost due to fault or error.
6. Trial pit terminated at 3.20m due to refusal. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	CGriffin	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

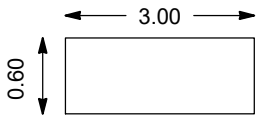
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS232

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	28.03.23 End: 28.03.23	120.89	E:355960.8 N:529011.5	1 of 5

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.10-0.25 0.10-0.10 0.10	1 101 2	B ES D				Crops over brown slightly gravelly clayey fine to coarse SAND with frequent rootlets. Gravel is subangular to subrounded fine to coarse of sandstone. (TOPSOIL)	120.64	0.25	
0.50-0.50 0.50-0.80 0.50-0.80 0.50	102 3 4 5	ES B LB D				Orangish brown gravelly very clayey SAND with medium cobble and low boulder content. Gravel is subangular to subrounded fine to coarse of sandstone. Sand is fine to coarse. Cobbles are subangular to subrounded of sandstone (<150m x 100mm x 60mm). Boulders are subrounded of sandstone (<250mm x 230mm x 130mm). (GLACIAL TILL - GRANULAR) 0.50-1.00m : reddish brown.			
1.50-1.50 1.50-1.80 1.50	103 6 7	ES B D		≈		1.50-1.50m : groundwater seepage.		(2.75)	
2.50-2.80 2.50	8 9	B D				2.70-3.00m : cobbles are angular to subrounded of granite and sandstone (<140mm x 130mm x 100mm).	117.89	3.00	
						Trial pit terminated at 3.00m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. Hand vanes not possible due to gravel content and friable nature of cohesive soils.
3. Groundwater seepage at 1.50m depth.
4. No evidence of contamination noted.
5. Significant collapse of west facing sidewall at 3.00m depth.
6. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
7. Trial pit terminated at 3.00m due to instability. Verbal verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	

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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		**National Highways**		**TP-PTS232**
Contract Ref:	Start: **28.03.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **28.03.23**	**120.89**	**E:355960.8 N:529011.5**	**2** of **5**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**MCapitani**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS232
Contract Ref:	Start: 28.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 28.03.23	120.89	E:355960.8 N:529011.5	3 of 5

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS232
Contract Ref:	Start: 28.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 28.03.23	120.89	E:355960.8 N:529011.5	4 of 5

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:45 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS232
Contract Ref:	Start: 28.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 28.03.23	120.89	E:355960.8 N:529011.5	5 of 5

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 22:45 | AML1 |

STRUCTURAL SOILS

FINAL

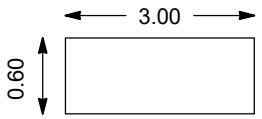
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	**National Highways**	**TP-PTS233-LC**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**27.03.23** End: **27.03.23**	**123.13**	**E:356038.8 N:528931.4**	**1** of **4**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.10-0.30	1	B				Crops overlying dark brown slightly gravelly fine to coarse SAND. Gravel is angular to subrounded fine to coarse of sandstone. (TOPSOIL)	122.83	(0.30) 0.30	
0.10	101	ES							
0.10	2	D							
0.50	102	ES				Orangish brown gravelly clayey fine to coarse SAND with low cobble content. Gravel is angular to subrounded fine to coarse sandstone. Cobbles are subrounded of sandstone (<80mm x 80mm x 60mm). (GLACIAL TILL - GRANULAR)			
0.50-0.80	3	LB							
0.50-0.80	4	LB							
0.50	401	B							
0.50	5	D				0.80-0.82m : boulder of subrounded sandstone (<350mm x 300mm x 120mm) 0.90-3.00m : reddish brown. Occasional lenses (<300mm x 150mm) of soft reddish brown very sandy clay. Sand is fine to coarse.		(3.20)	
1.50-1.80	6	B							
1.50	7	D							
2.50-2.80	8	B		≈		2.50-3.50m : medium boulder content of subrounded sandstone (<300mm x 300mm x 150mm). 2.70m : groundwater seepage. 3.00-3.50m : gravelly with frequent lenses (<300mm x 300mm x 150mm) of stiff brown mottled dark brown gravelly slightly sandy clay.			
2.50	9	D							
3.20-3.50	10	B					119.63	3.50	
3.50	11	D				Trial pit terminated at 3.50m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. Groundwater seepage at 2.70m depth.
3. No evidence of contamination noted.
4. Trial pit remained stable during excavation.
5. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
6. Trial pit terminated at 3.50m. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.
7. Geoenvironmental sample 601 ES taken from separate inspection pit excavated alongside on 03/06/2023 to obtain fresh sample for laboratory testing.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**MCapitani**	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 31/08/23 - 08:42 | AML1 |

STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS233-LC
Contract Ref:	Start: 27.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 27.03.23	123.13	E:356038.8 N:528931.4	2 of 4

Face A

Face B

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS233-LC
Contract Ref:	Start: 27.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 27.03.23	123.13	E:356038.8 N:528931.4	3 of 4

Face C

Face D

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS233-LC
Contract Ref:	Start: 27.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 27.03.23	123.13	E:356038.8 N:528931.4	4 of 4

Postcon

Spoil

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MCapitani	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

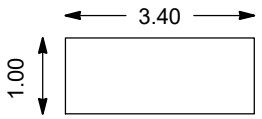
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS234

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	24.03.23	127.64	E:356127.2 N:528944.0	1 of 4
	End: 24.03.23			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.00-0.30	1	LB				Crops over brown gravelly clayey fine to coarse SAND with rootlets. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone, quartz, granite and flint. (TOPSOIL)		(0.30)	
0.20	101	ES					127.34	0.30	
0.20-0.30	2	B				Reddish brown gravelly clayey fine to coarse SAND with low cobble and boulder content. Gravel is subangular to subrounded fine to coarse of mixed lithologies of sandstone, granite and quartz. Cobbles and boulders are subangular to subrounded granite. (GLACIAL TILL - GRANULAR)			
0.30	3	D							
0.30-2.20	4	LB							
0.30-1.30	5	B							
0.50	102	ES							
1.00	6	D						(1.90)	
1.30-2.20	7	B				1.30-2.20m : very clayey			
1.50	103	ES							
							125.44	2.20	
2.20	8	D				Trial pit terminated at 2.20m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. No groundwater encountered.
3. No evidence of contamination noted.
4. Collapse of sidewall at 2.20m depth.
5. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
6. Trial pit terminated at 2.20m due to instability. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MTurkowski	

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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS234
Contract Ref:	Start: 24.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 24.03.23	127.64	E:356127.2 N:528944.0	2 of 4

Pre-condtition

Face A

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MTurkowski	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS234
Contract Ref:	Start: 24.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 24.03.23	127.64	E:356127.2 N:528944.0	3 of 4

Face B

Face C

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MTurkowski	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS234
Contract Ref:	Start: 24.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 24.03.23	127.64	E:356127.2 N:528944.0	4 of 4

Post-condition

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MTurkowski	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 31/08/23 - 08:43 | AML1 |

STRUCTURAL SOILS

FINAL

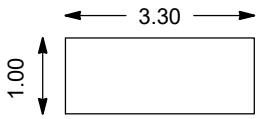
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	**National Highways**	**TP-PTS235**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**23.03.23** End: **23.03.23**	**127.17**	**E:356284.1 N:528936.6**	**1** of **5**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.00-0.30	1	LB				Crops over brown gravelly clayey fine to coarse SAND with low cobble content and occasional rootlets. Gravel is subrounded to subangular fine to coarse of mixed lithologies including sandstone, flints and granite. Cobbles are subrounded to subangular of mixed lithologies including sandstone, flints and granite. (TOPSOIL)		(0.30)	
0.20	101	ES					126.87	0.30	
0.20-0.30	2	B				Reddish brown gravelly clayey fine to coarse SAND with low cobble and boulder content. Gravel is subrounded to subangular fine to coarse of mixed lithologies including sandstone, granite and quartz. Cobbles and boulders are subangular to subrounded granite (<250mm diameter). (GLACIAL TILL - GRANULAR) 0.90-1.40m : medium cobble content.			
0.30	3	D							
0.30-2.40	4	LB							
0.40-0.50	5	B							
0.50	102	ES							
0.50	401	B							
0.80	6	D							
0.90-1.40	7	B							
1.30	8	D						(2.10)	
1.40-2.40	9	B							
1.50	103	ES							
2.30	11	D					124.77	2.40	
2.40-2.60	10	LB				Light reddish brown gravelly clayey fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone, quartz and granite. (GLACIAL TILL - GRANULAR)			
2.40-2.60	12	LB					124.57	2.60	
2.60	13	D				Trial pit terminated at 2.60m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. No groundwater encountered.
3. No evidence of contamination noted.
4. Trial pit collapsed at 2.60m depth.
5. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
6. Trial pit terminated at 2.60m due to instability. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.
7. Geoenvironmental sample 601 ES taken from separate inspection pit excavated alongside on 03/06/2023 to obtain fresh sample for laboratory testing.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**MTurkowski**	AML

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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS235
Contract Ref:	Start: 23.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 23.03.23	127.17	E:356284.1 N:528936.6	2 of 5

Face A

Face B

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MTurkowski	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS235
Contract Ref:	Start: 23.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 23.03.23	127.17	E:356284.1 N:528936.6	3 of 5

Face C

Face D

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MTurkowski	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS235
Contract Ref:	Start: 23.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 23.03.23	127.17	E:356284.1 N:528936.6	4 of 5

Pre-condition

Spoil

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MTurkowski	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS235
Contract Ref:	Start: 23.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 23.03.23	127.17	E:356284.1 N:528936.6	5 of 5

Post-condition

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MTurkowski	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

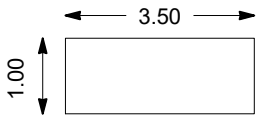
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
A66 NTP Scheme S03A	National Highways	TP-PTS236

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	22.03.23 End: 22.03.23	123.80	E:356372.9 N:528936.5	1 of 5

Samples and In-situ Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results						
0.00-0.30	1	LB				Crops over brown slightly gravelly slightly clayey fine to coarse SAND with occasional rootlets. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone, flint, granite and quartz. (TOPSOIL)	123.50	(0.30) 0.30	
0.10-0.20	2	B							
0.20	101	ES							
0.30	3	D				Reddish brown gravelly clayey fine to coarse SAND with medium cobble content and low boulder content. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone, granite and quartz. Cobbles are subangular to subrounded of sandstone and quartz (<120mm diameter). Boulders are subrounded of granite (<550mm diameter). (GLACIAL TILL - GRANULAR)	123.20	(0.30) 0.60	
0.30-0.60	4	LB							
0.40-0.60	5	B							
0.50	102	ES							
0.50	401	B							
0.50	6	D							
0.60-1.20	7	LB							
0.80-1.10	8	B							
1.00	9	D				Reddish brown slightly gravelly clayey fine to coarse SAND with high cobble content. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone, quartz and granite. Cobbles are subangular to subrounded of sandstone and granite (<150mm diameter). (GLACIAL TILL - GRANULAR)	122.60	(0.60) 1.20	
1.20-3.50	10	LB							
1.20-2.20	11	B							
1.50	103	ES				Reddish brown gravelly very clayey fine to coarse SAND with low cobble content. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone, granite, mudstone and quartz. Cobbles are subangular to subrounded of sandstone and granite (<150mm diameter). (GLACIAL TILL - GRANULAR)			
2.00	12	D							
2.20-3.20	13	B							
3.00	14	D						(2.30)	
3.20-3.50	15	B							
3.50	16	D					120.30	3.50	
						Trial pit terminated at 3.50m depth.			

Plan (Not to Scale)



General Remarks

1. PAS 128:2022 Survey Type B completed.
2. Unable to take hand vane readings due to coarse fraction in clay.
3. No groundwater encountered.
4. No evidence of contamination noted.
5. Trial pit remained stable during excavation.
6. Trial pit photographed prior to backfilling (north face, south face, east face, west face, base, arisings)
7. Trial pit terminated at 3.50m. Verbal confirmation by Investigation Supervisor and backfilled with arisings compacted in layers by excavator bucket on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MTurkowski	

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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS236
Contract Ref:	Start: 22.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 22.03.23	123.80	E:356372.9 N:528936.5	2 of 5

Face A

Face B

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MTurkowski	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS236
Contract Ref:	Start: 22.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 22.03.23	123.80	E:356372.9 N:528936.5	3 of 5

Face C

Face D

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MTurkowski	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS236
Contract Ref:	Start: 22.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 22.03.23	123.80	E:356372.9 N:528936.5	4 of 5

Pre-Condition

Spoil

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MTurkowski	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

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TRIAL PIT LOG

Contract:		Client:		Trial Pit:
A66 NTP Scheme S03A		National Highways		TP-PTS236
Contract Ref:	Start: 22.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 22.03.23	123.80	E:356372.9 N:528936.5	5 of 5

Rocks in Spoil

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	13 Ton Tracked Excavator	MTurkowski	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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FINAL

STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS101**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**12.05.23** End: **12.05.23**	**118.54**	**E:354586.9 N:528957.9**	**1** of **2**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
							MADE GROUND: Compacted hard standing comprising grey slightly sandy subangular to subrounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (MADE GROUND GRANULAR)	118.44	0.10	
	0.20	101	ES						(0.45)	
	0.40-0.55	1	D				Dark brown very sandy silty subangular to subrounded fine to coarse GRAVEL of mixed lithologies including quartzite, siltstone and sandstone with occasional roots and rootlets. Sand is fine to coarse. (TOPSOIL)	117.99	0.55	
	0.40-0.55	2	B							
	0.50	102	ES							
	0.55-0.80	3	D					117.74	0.80	
	0.55-0.80	4	B							
	1.00-1.20	5	D				Brown subangular to subrounded COBBLES of siltstone with much very sandy silty subangular to subrounded fine to coarse gravel of mixed lithologies including quartzite, siltstone and sandstone. Sand is fine to coarse. (GLACIAL TILL - GRANULAR)		(0.40)	
	1.00-1.20	6	B					117.34	1.20	
1.20 - 2.00 (98mm dia) 100% rec	1.20	103	ES				Reddish brown very gravelly very clayey fine to coarse SAND. Gravel is subangular to subrounded fine to medium of mixed lithologies including quartzite, siltstone and sandstone. (GLACIAL TILL - GRANULAR)		(0.80)	
	1.20-1.65	301	DSPT							
	1.20-1.70	7	D							
	1.20-1.65	304	SPT	N=13						
	1.30-2.00	8	B							
							Medium dense reddish brown gravelly very clayey fine to coarse SAND. Gravel is subangular to rounded fine to coarse of various lithologies including quartzite, siltstone and sandstone. (GLACIAL TILL - GRANULAR)	116.54	2.00	
2.00 - 3.00 (85mm dia) 100% rec	2.00-2.45	302	DSPT							
	2.00-2.10	9	D							
	2.00-2.45	305	SPT	N=33						
	2.10-2.67	10	B							
							Dense reddish brown gravelly very clayey fine to coarse SAND. Gravel is subangular fine to coarse of sandstone. (GLACIAL TILL - GRANULAR)		(0.67)	
								115.87	2.67	
	2.67-3.00	11	B				Dense reddish brown gravelly very clayey fine to coarse SAND. Gravel is subangular to rounded fine to coarse of mixed lithologies including quartzite, siltstone and sandstone. (GLACIAL TILL - GRANULAR)		(0.53)	
	3.00-3.20	303	DSPT							
	3.00-3.20	306	SPT	8,11/50 for 50mm				115.34	3.20	
							Window sample hole terminated at 3.20m depth.			

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
11/05/23	15:48	3.20	-	85	Dry

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Hand vanes not possible due to gravel content and friable nature of cohesive soils.
3. No groundwater encountered.
4. No evidence of contamination noted.
5. Borehole terminated at 3.20m with verbal confirmation by Investigation Supervisor and backfilled with bentonite cement pellets.
6. SPT hammer DART384-2022 (E_r = 67.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**CJobe**	

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A66 NTP Scheme S03A		**National Highways**		**WS-PTS101**
Contract Ref:	Start: **12.05.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **12.05.23**	**118.54**	**E:354586.9 N:528957.9**	**2** of **2**

1.20m - 3.00m

Method Used:	Inspection pit + Tracked window sampling	Plant Used:	Archway Competitor	Drilled By:	Ben Pine	Logged By:	CJobe	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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FINAL

STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS105**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**04.05.23** End: **04.05.23**	**120.01**	**E:354544.2 N:528951.6**	**1** of **2**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
	0.00-0.30	1	B				MADE GROUND: Dark grey ASPHALT recovered as dark grey and black subangular fine to coarse GRAVEL of asphalt and concrete up to 60mm. (MADE GROUND - PAVEMENT)	119.66	(0.35) 0.35	
	0.20	101	ES							
	0.20	2	D							
	0.40-0.70	3	B				MADE GROUND: Dark orangish brown very sandy clayey subrounded to subangular fine to coarse GRAVEL of mixed lithologies including sandstone and concrete with a low cobble content. Sand is fine coarse. Cobbles are subangular of mixed lithologies including sandstone and concrete. (MADE GROUND GRANULAR)	118.81	(0.85) 1.20	
	0.50	102	ES							
	0.50	4	D							
	0.80-1.10	5	B							
	1.00	103	ES							
	1.00	6	D							
1.20 - 2.00 (85mm dia) 100% rec	1.20-1.65	301	DSPT				Medium dense reddish brown very gravelly clayey fine to coarse SAND. Gravel is subangular to rounded fine to coarse of mixed lithologies including siltstone, dolerite and quartzite. (GLACIAL TILL - GRANULAR)	118.29	(0.52) 1.72	
	1.20-1.30	7	D							
	1.20-1.65	305	SPT	N=16						
	1.30-1.72	8	B							
	1.72-2.00	9	B				Reddish brown very gravelly clayey fine to medium SAND. Gravel is subangular to rounded fine to coarse of mixed lithologies including sandstone, dolerite and quartzite. (GLACIAL TILL - GRANULAR)	118.01	(0.28) 2.00	
2.00 - 3.00 (75mm dia) 100% rec	2.00-2.10	10	D				Medium dense reddish brown very gravelly very silty fine to coarse SAND. Gravel is subangular to rounded fine to coarse of mixed lithologies including sandstone, dolerite and quartzite. (GLACIAL TILL - GRANULAR)		(2.40)	
	2.00-2.45	302	DSPT							
	2.00-2.45	306	SPT	N=14						
	2.10-4.00	11	B							
3.00 - 4.00 (65mm dia) 90% rec	3.00-3.45	307	SPT	N=29			3.00m : no recovery from SPT test.			
	4.00-4.40	304	DSPT				4.00m : becomes very dense.	115.61	4.40	
	4.00-4.40	308	SPT	8,17/15,12,12,11 for 35mm						
							Window sample hole terminated at 4.40m depth.			

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
04/05/23	17:00	4.40	-	65	Dry

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Hand vanes not possible due to gravel content and friable nature of cohesive soils.
3. No groundwater encountered.
4. No evidence of contamination noted.
5. Borehole terminated at 4.40m with verbal confirmation by Investigation Supervisor and backfilled with bentonite cement pellets.
6. SPT hammer DART384-2022 (E_r = 67.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Michael O'Shea**	**IJordan + CJobe**	

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A66 NTP Scheme S03A		National Highways		WS-PTS105
Contract Ref:	Start: 04.05.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 04.05.23	120.01	E:354544.2 N:528951.6	2 of 2

1.20m - 4.00m

Method Used:	Inspection pit + Tracked window sampling	Plant Used:	Archway Competitor	Drilled By:	Michael O'Shea	Logged By:	IJordan + CJobe	Checked By:	

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FINAL

STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS107**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**05.04.23** End: **05.04.23**	**115.79**	**E:354648.2 N:529092.9**	**1** of **2**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
							Grass over dark brown gravelly silty fine to coarse SAND with frequent rootlets. Gravel is subangular to subrounded fine to coarse of dolerite and quartzite. (TOPSOIL)	115.59	0.20	
	0.20	1	D							
	0.20	101	ES							
	0.20	201	D							
	0.50-0.70	102	ES				Brown very gravelly silty fine to coarse SAND with a low cobble content. Gravel is subangular to subrounded fine to coarse of dolerite and quartzite. Cobbles are subangular to subrounded dolerite and quartzite. (GLACIAL TILL - GRANULAR)	114.79	(0.80) 1.00	
	0.50-0.70	2	B							
	0.50-0.70	202	D							
	0.50-0.70	3	D							
	1.00-1.20	103	ES				Medium dense brownish orange very gravelly silty fine to coarse SAND. Gravel is subangular to rounded fine to coarse of dolerite and quartzite. (GLACIAL TILL - GRANULAR)	114.24	(0.55) 1.55	
	1.00-1.20	203	D							
	1.00-1.20	4	B							
	1.00-1.20	5	D							
	1.20-1.65	1	SPT	N=15						
	1.20-1.55	6	B							
1.20 - 2.00 (98mm dia) 85% rec	1.55-1.90	7	B				Dark brown gravelly silty fine to coarse SAND. Gravel is angular to subrounded fine to medium of dolerite, schist, quartzite and sandstone. (GLACIAL TILL - GRANULAR)	113.89	(0.35) 1.90	
	1.90-2.00	8	D				Very dense orange slightly gravelly silty fine to coarse SAND. Gravel is angular to subrounded fine to medium of schist, quartzite and basalt. (GLACIAL TILL - GRANULAR)	113.61	(0.28) 2.18	
	2.00-2.18	2	SPT	25/45,5 for 25mm						

Window sample hole terminated at 2.18m depth.

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
05/04/23	14:15	2.15	-	98	Dry

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Unable to take hand vane readings due to coarse fraction in cohesive soil.
3. No groundwater encountered.
4. No evidence of contamination noted.
5. Borehole terminated at 2.15m with verbal confirmation by Investigation Supervisor and backfilled with bentonite cement pellets.
6. SPT hammer DART176-2022 (E_r = 65.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**FPrice**	

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A66 NTP Scheme S03A		**National Highways**		**WS-PTS107**
Contract Ref:	Start: **05.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **05.04.23**	**115.79**	**E:354648.2 N:529092.9**	**2** of **2**

Core 1.20m - 2.15m

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Ben Pine**	Logged By:	**FPrice**	Checked By:

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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FINAL

STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS107A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**05.04.23** End: **05.04.23**	**115.69**	**E:354648.9 N:529093.2**	**1** of **2**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
							Dark brown gravelly silty fine to medium SAND with frequent rootlets. Gravel is subangular to rounded fine to coarse of fine grained igneous rock, sandstone and schist. (TOPSOIL)	115.49	0.20	
	0.20	1	D				Brown very gravelly clayey fine to coarse SAND with high cobble content. Gravel is subangular to rounded fine to coarse of dolerite, sandstone and schist. Cobbles are subangular to rounded of dolerite and quartzite (<150mm x 120mm x 100mm). (GLACIAL TILL - GRANULAR)	114.69	(0.80) 1.00	
	0.20	101	ES							
	0.20	201	ES							
	0.50-0.70	102	ES							
	0.50-0.70	2	B							
	0.50-0.70	202	D							
	0.50-0.70	3	D							
	1.00-1.20	103	ES				Medium dense greyish brown very gravelly clayey fine to coarse SAND with medium cobble content. Gravel is subangular to rounded fine to coarse of dolerite, sandstone and schist. Cobbles are subangular to rounded of dolerite and quartzite (<150mm x 120mm x 100mm). (GLACIAL TILL - GRANULAR) 1.40-1.60m : 1.40-1.60m: light yellowish brown sandy angular to rounded fine to medium gravel of sandstone, fine grained igneous rock and quartzite. Sand is fine to coarse. 1.82-1.85m : 1.20-1.85m: black fine to coarse sand.	113.49	(1.20) 2.20	
	1.00-1.20	203	D							
	1.00-1.20	4	B							
	1.00-1.20	5	D							
	1.20-1.65	1	SPT	N=11						
	1.20-1.80	6	B							
1.20 - 2.00 (98mm dia) 80% rec										
	1.80-2.00	7	D							
	2.00-2.45	2	SPT	N=14						
	2.20-2.80	8	B				Medium dense red gravelly silty fine to coarse SAND. Gravel is subangular to rounded fine to medium of basalt and quartzite. (GLACIAL TILL - GRANULAR)	112.69	(0.80) 3.00	
2.00 - 3.00 (85mm dia) 90% rec										
	2.80-3.00	9	D							
	3.00-3.45	3	SPT	N=35			Dense red gravelly silty fine to coarse SAND. Gravel is subangular to rounded fine to medium of basalt and quartzite. (GLACIAL TILL - GRANULAR)	111.32	(1.38) 4.38	
	3.00-4.00	10	B							
3.00 - 4.00 (75mm dia) 90% rec										
	4.00-4.38	4	SPT	9,14/21,24,5 for 75mm						
							Window sample hole terminated at 4.38m depth.			

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
05/04/23	17:00	4.30	-	75	Dry

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Unable to take hand vane readings due to coarse fraction in cohesive soil.
3. No groundwater encountered.
4. No evidence of contamination noted.
5. Borehole terminated at 4.38m with verbal confirmation by Investigation Supervisor and backfilled with bentonite cement pellets.
6. SPT hammer DART176-2022 (E_r = 65.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**FPrice**	

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FINAL

STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A66 NTP Scheme S03A		**National Highways**		**WS-PTS107A**
Contract Ref:	Start: **05.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **05.04.23**	**115.69**	**E:354648.9 N:529093.2**	**2** of **2**

Core 1.20 - 4.30m

Method Used:	Inspection pit + Tracked window sampling	Plant Used:	Archway Competitor	Drilled By:	Ben Pine	Logged By:	FPrice	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS107B**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**26.04.23** End: **26.04.23**	**115.71**	**E:354648.5 N:529092.8**	**1** of **2**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
	0.00-0.20	1	B				Grass over brown slightly gravelly sandy SILT. Sand is fine to medium. Gravel is subangular to rounded fine to medium of mixed lithologies including sandstone dolerite and quartzite. (TOPSOIL)	115.51	0.20	
	0.00-0.20	2	D							
	0.60-0.80	3	B				Brown locally dark brown gravelly fine to coarse SAND. Gravel is subangular to rounded fine to coarse of mixed lithologies including sandstone dolerite and quartzite. (GLACIAL TILL - GRANULAR)			
	0.60-0.80	4	D							
	1.00-1.20	5	B						(1.90)	
	1.00-1.20	6	D							
1.20 - 2.00 (98mm dia) 85% rec	1.20-1.65	1	SPT	N=14						
	1.20	301	DSPT							
	1.20-1.30	7	D							
	1.30-2.10	8	B							
	2.00-2.45	2	SPT	N=13				113.61	2.10	
	2.00	302	DSPT				Medium dense reddish brown slightly gravelly fine to coarse SAND. Gravel is subangular to rounded fine to coarse of mixed lithologies including sandstone dolerite and quartzite. (GLACIAL TILL - GRANULAR)			
	2.10-2.20	9	D							
2.00 - 3.00 (85mm dia) 90% rec	2.20-3.00	10	B						(0.90)	
	3.00-3.45	3	SPT	N=40				112.71	3.00	
	3.00-3.80	11	B				Dense reddish brown slightly gravelly fine and medium SAND. Gravel is subangular to rounded fine to coarse of mixed lithologies including sandstone dolerite and quartzite. (GLACIAL TILL - GRANULAR)			
	3.00	303	DSPT							
3.00 - 4.00 (75mm dia) 80% rec									(1.27)	
							3.80-4.00m : assessed zone of core loss.			
	4.00-4.27	4	SPT	8,11/25,25 for 45mm			4.00-4.27m : very dense.			
	4.00	304	DSPT					111.44	4.27	
							Window sample hole terminated at 4.27m depth.			

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
26/04/23	17:35	4.25	-	75	Dry

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Unable to take hand vane readings due to coarse fraction in cohesive soil.
3. No groundwater encountered.
4. No evidence of contamination noted.
5. Borehole terminated at 4.27m with verbal confirmation by Investigation Supervisor and backfilled with bentonite cement pellets.
6. Duplicate window sample borehole to obtain samples for geoarchaeological assessment.
7. SPT hammer DART176-2022 (E_r = 65.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**CJobe**	

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A66 NTP Scheme S03A		National Highways		WS-PTS107B
Contract Ref:	Start: 26.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 26.04.23	115.71	E:354648.5 N:529092.8	2 of 2

Core 1.20m - 4.00m

Method Used:	Inspection pit + Tracked window sampling	Plant Used:	Archway Competitor	Drilled By:	Ben Pine	Logged By:	CJobe	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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FINAL

STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS108**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**16.05.23** End: **16.05.23**	**111.63**	**E:354675.9 N:528962.5**	**1** of **2**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
							Dark brown slightly sandy SILT with frequent rootlets (<2mm). Sand is fine to medium. (TOPSOIL)	111.23	(0.40) 0.40	
	0.30	1	D							
	0.30	101	ES							
	0.30	201	D							
	0.40-0.60	2	B				Dark reddish brown very gravelly clayey fine to coarse SAND. Gravel is angular to rounded fine to coarse dolerite and sandstone. (GLACIAL TILL - GRANULAR)	110.43	(0.80) 1.20	
	0.50	102	ES							
	0.50	202	D							
	0.50	3	D							
	0.90-1.00	4	B							
	1.00	103	D							
	1.00	203	D							
	1.00	5	D							
1.20 - 2.00 (98mm dia) 90% rec	1.20-1.30	7	D				Medium dense light and dark brown very gravelly slightly clayey fine to coarse SAND. Gravel is subangular to rounded fine to coarse of mixed lithologies including dolerite sandstone and quartzite. (GLACIAL TILL - GRANULAR)	109.63	(0.80) 2.00	
	1.20-1.65	301	SPT	N=10						
	1.20-1.65	302	DSPT							
	1.30-2.00	8	B							
2.00 - 3.00 (85mm dia) 80% rec	2.00-2.10	9	D				Medium dense reddish brown gravelly silty fine to coarse SAND. Gravel is subangular to rounded fine to coarse of various lithologies including sandstone quartzite and dolerite. (GLACIAL TILL - GRANULAR)		(2.00)	
	2.00-2.45	303	SPT	N=19						
	2.00-2.45	304	DSPT							
	2.10-4.00	10	B							
3.00 - 4.00 (75mm dia) 90% rec	3.00-3.45	305	SPT	N=24						
	3.00-3.45	306	DSPT							
	3.75-4.00	307	SPT	11,13/36,14 for 25mm			3.75m : SPT test at 3.75m possibly completed on collapse material. Prededing window sample drill run recorded as being from 3.00-4.00m depth. Either base depth of drill run is incorrect and was 3.75m, or SPT test was completed on collapse material.	107.63	4.00	
	3.75-4.00	308	DSPT							
							Window sample hole terminated at 4.00m depth.			

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
16/05/23	12:06	4.00	-	75	-

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Hand vanes not possible due to gravel content and friable nature of cohesive soils.
3. No groundwater encountered.
4. No evidence of contamination noted.
5. Borehole terminated at 4.00m with verbal confirmation by Investigation Supervisor and backfilled with bentonite cement pellets.
6. SPT hammer DART176-2022 (E_r = 65.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**RBarker**	

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A66 NTP Scheme S03A		National Highways		WS-PTS108
Contract Ref:	Start: 16.05.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 16.05.23	111.63	E:354675.9 N:528962.5	2 of 2

Core 1.20m - 4.00m

Method Used:	Inspection pit + Tracked window sampling	Plant Used:	Archway Competitor	Drilled By:	Ben Pine	Logged By:	RBarker	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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FINAL

STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS110**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**12.05.23** End: **12.05.23**	**111.17**	**E:354781.0 N:528987.1**	**1** of **3**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
	0.10 0.10 0.10	1 101 201	D ES D				MADE GROUND: Grass over dark brown slightly sandy slightly gravelly SILT with frequent rootlets (<2mm) rare black plastic bag and black plastic fragments. Gravel is subrounded fine to coarse of asphalt, sandstone and dark grey fine crystalline igneous. (MADE GROUND COHESIVE)	110.82	(0.35) 0.35	
	0.40-0.60 0.50 0.50 0.50 0.90-1.10 1.00 1.00 1.00	2 102 202 3 4 103 203 5	B ES D D B ES D D				Dark reddish brown very gravelly very clayey fine to coarse SAND with high cobble content. Gravel is angular to rounded fine to coarse of dolerite. Cobbles are subrounded of dolerite (<190mm diameter). (GLACIAL TILL - GRANULAR)	109.97	(0.85) 1.20	
1.20 - 2.00 (85mm dia) 100% rec	1.20-1.65 1.20-1.30 1.20-1.65 1.30-3.00	1 3 301 4	SPT D DSPT B	N=29			Medium dense reddish brown very gravelly very clayey fine to coarse SAND. Gravel is subangular to rounded fine to coarse of mixed lithologies including sandstone quartzite and dolerite. (GLACIAL TILL - GRANULAR)			
2.00 - 3.00 (75mm dia) 100% rec	2.00-2.45 2.00-2.45	2 302	SPT DSPT	N=21				108.17	(1.80) 3.00	
3.00 - 4.00 (65mm dia) 70% rec	3.00-3.45 3.00-3.45 3.30-4.00	3 303 5	SPT DSPT B	N=22	≈		Medium dense reddish brown gravelly clayey fine to coarse SAND. Gravel is subangular to rounded fine to coarse of dolerite and sandstone. (GLACIAL TILL - GRANULAR) 3.00-3.30m : assessed zone of core loss.	107.17	(1.00) 4.00	
4.00 - 5.00 (65mm dia) 80% rec	4.00-4.45 4.00-5.00	4 6	SPT B	N=17			Very stiff reddish brown slightly gravelly sandy silty CLAY. Sand is fine. Gravel is subangular to rounded fine to coarse of mixed lithologies including sandstone quartzite and dolerite. (GLACIAL TILL - COHESIVE) 4.00m : groundwater seepage.		(1.00)	

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
12/05/23	11:49	6.00	-	55	-

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Hand vanes not possible due to gravel content and friable nature of cohesive soils.
3. Groundwater seepage at 4.00m depth.
4. No evidence of contamination noted.
5. Hole collapse at 6.00m, SPT not taken due to it giving false reading of collapsed material.
6. Borehole terminated at 6.00m with verbal confirmation by Investigation Supervisor and backfilled with bentonite cement pellets.
7. SPT hammer DART176-2022 (E_r = 65.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**RBarker**	

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FINAL

STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS110**

Contract Ref:	Start: **12.05.23** End: **12.05.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633		**111.17**	**E:354781.0 N:528987.1**	**2** of **3**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
4.00 - 5.00 (65mm dia) 80% rec								106.17	5.00	
5.00 - 6.00 (55mm dia) 100% rec	5.00-5.45 5.00-5.45 5.00-6.00	5 304 7	SPT DSPT B	N=39			Very dense reddish brown very gravelly silty fine to coarse SAND. Gravel is subangular to rounded fine to coarse of dolerite and sandstone. (GLACIAL TILL - GRANULAR)	105.17	(1.00) 6.00	
							Window sample hole terminated at 6.00m depth.			

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**RBarker**	

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A66 NTP Scheme S03A		**National Highways**		**WS-PTS110**
Contract Ref: **765633**	Start: **12.05.23** End: **12.05.23**	Ground Level (m AOD): **111.17**	National Grid Co-ordinate: **E:354781.0 N:528987.1**	Sheet: **3** of **3**

Core 1.20m - 5.00m

Core 5.00 - 4.00m

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**RBarker**	

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FINAL

STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS113**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**05.04.23** End: **05.04.23**	**109.68**	**E:354996.5 N:528977.3**	**1** of **2**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
	0.20	1	D				Grass over dark brown gravelly fine to coarse SAND with low cobble content and frequent rootlets. Gravel is angular to subrounded fine to coarse of dolerite, sandstone and quartzite. Cobbles are angular to subrounded of dolerite, sandstone and quartzite (<100mm x 80mm x 70mm). (TOPSOIL)	109.38	(0.30) 0.30	
	0.20	101	ES							
	0.20	201	D							
	0.30-0.50	102	ES							
	0.30-0.50	2	B					109.13	0.55	
	0.30-0.50	202	D							
	0.30-0.50	3	D				Dark brown slightly gravelly silty fine to medium SAND with low cobble content. Gravel is subangular to subrounded fine to coarse of basalt and quartzite. Cobbles are subangular to rounded of basalt and quartzite (<80mm x 60mm x 60mm). (GLACIAL TILL - GRANULAR)		(0.95)	
	1.00-1.20	103	ES							
	1.00-1.20	203	D							
	1.00-1.20	4	D							
	1.00-1.20	5	B							
	1.20-1.65	1	SPT	N=11			Brownish orange gravelly silty fine to medium SAND with medium cobble content. Gravel is angular to subrounded fine to coarse of dolerite, sandstone and quartzite. Cobbles are angular to subrounded of dolerite, sandstone and quartzite (<150mm x 120mm x 70mm). (GLACIAL TILL - GRANULAR)	108.18	1.50	
	1.20-1.90	6	B							
1.20 - 2.00 (98mm dia) 85% rec										
	1.90-2.00	7	D				Medium dense orangish brown mottled red and dark brown very gravelly silty fine to coarse SAND. Gravel is subangular to rounded fine to medium of sandstone, quartzite, basalt and schist. (GLACIAL TILL - GRANULAR)			
	2.00-2.45	2	SPT	N=16						
	2.00-2.80	8	B							
2.00 - 3.00 (85mm dia) 90% rec									(2.00)	
	2.80-3.00	9	D							
	3.00-3.45	3	SPT	N=18						
	3.00-3.50	10	D							
3.00 - 3.80 (75mm dia) 90% rec								106.18	3.50	
	3.50-4.00	11	B				Very dense red silty fine to coarse SAND. (WEATHERED PENRITH SANDSTONE)			
	3.80-4.18	4	SPT	10,11/16,21,13 for 75mm					(0.68)	
								105.50	4.18	
							Window sample hole terminated at 4.18m depth.			

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
05/04/23	11:50	4.15	-	75	Dry

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Unable to take hand vane readings due to coarse fraction in cohesive soil.
3. No groundwater encountered.
4. No evidence of contamination noted.
5. Borehole terminated at 4.18m with verbal confirmation by Investigation Supervisor and backfilled with bentonite cement pellets.
6. SPT hammer DART176-2022 (E_r = 65.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**FPrice**	

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FINAL

STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A66 NTP Scheme S03A		**National Highways**		**WS-PTS113**
Contract Ref:	Start: **05.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **05.04.23**	**109.68**	**E:354996.5 N:528977.3**	**2** of **2**

Core 1.20 - 4.15m

Method Used:	Inspection pit + Tracked window sampling	Plant Used:	Archway Competitor	Drilled By:	Ben Pine	Logged By:	FPrice	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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FINAL

STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS114**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**03.04.23** End: **03.04.23**	**109.23**	**E:355110.6 N:528971.0**	**1** of **3**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
	0.10	1	D				Grass over dark brown gravelly silty fine to medium SAND with rootlets and roots. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone, limestone and quartzite. (TOPSOIL)	109.03	0.20	
	0.10-0.10	101	ES							
	0.10-0.20	2	B					108.73	(0.30) 0.50	
	0.50-0.50	102	ES				Dark brown gravelly silty fine to medium SAND with low cobble content. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone, limestone and quartzite. Cobbles are subangular of mixed lithologies including sandstone, limestone and quartzite (<100mm diameter). (GLACIAL TILL - GRANULAR)			
	0.50	3	D							
	0.50-0.75	4	B							
	1.00-1.00	103	ES						(1.10)	
	1.00	5	D							
	1.00-1.20	6	B							
1.20 - 2.00 (98mm dia) 90% rec	1.20-1.65	7	SPT	N=16			Light greyish brown very gravelly clayey fine to coarse SAND with medium cobble content. Gravel is subangular to subrounded fine to coarse, gravel and cobbles of mixed lithologies including sandstone, limestone and quartzite. (GLACIAL TILL - GRANULAR)			
	1.20-1.65	8	DSPT					107.63	1.60	
2.00 - 3.00 (85mm dia) 85% rec	2.00-2.45	10	SPT	N=11			Medium dense reddish brown gravelly fine to medium SAND. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone and limestone. (GLACIAL TILL - GRANULAR) 1.90-2.00m : localised dark brown sand pockets.		(1.20)	
								106.43	2.80	
3.00 - 4.00 (75mm dia) 90% rec	3.00-3.38	12	SPT	4,10/15,18,18 for 75mm			Dense reddish brown very sandy very clayey subangular to subrounded fine to coarse GRAVEL of mixed lithologies including sandstone, limestone and quartz. Sand is fine to coarse. (GLACIAL TILL - GRANULAR)		(1.00)	
	3.00-3.45	13	DSPT					105.43	3.80	
	4.00-4.45	15	SPT	N=41			Firm reddish brown slightly gravelly CLAY with sand bands. Sand is fine to medium. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone and limestone. (GLACIAL TILL - COHESIVE)		(0.65)	
	4.00-4.45	16	DSPT					104.78	4.45	
							Window sample hole terminated at 4.45m depth.			

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
03/04/23	11:00	4.45	-	75	Dry

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Unable to take hand vane readings due to coarse fraction in cohesive soil.
3. No groundwater encountered.
4. No evidence of contamination noted.
5. Borehole terminated at 4.45m on collapse with verbal confirmation by Investigation Supervisor and backfilled with bentonite cement pellets.
6. SPT hammer DART176-2022 (E_r = 65.00%) used.

All dimensions in metres | Scale: **1:28**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Dart 176**	**Ben Pine**	**DNartay**	AML

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A66 NTP Scheme S03A		**National Highways**		**WS-PTS114**
Contract Ref:	Start: **03.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **03.04.23**	**109.23**	**E:355110.6 N:528971.0**	**2** of **3**

Core 1.20m - 2.00m

Core 2.00m - 3.00m

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Dart 176**	**Ben Pine**	**DNartay**	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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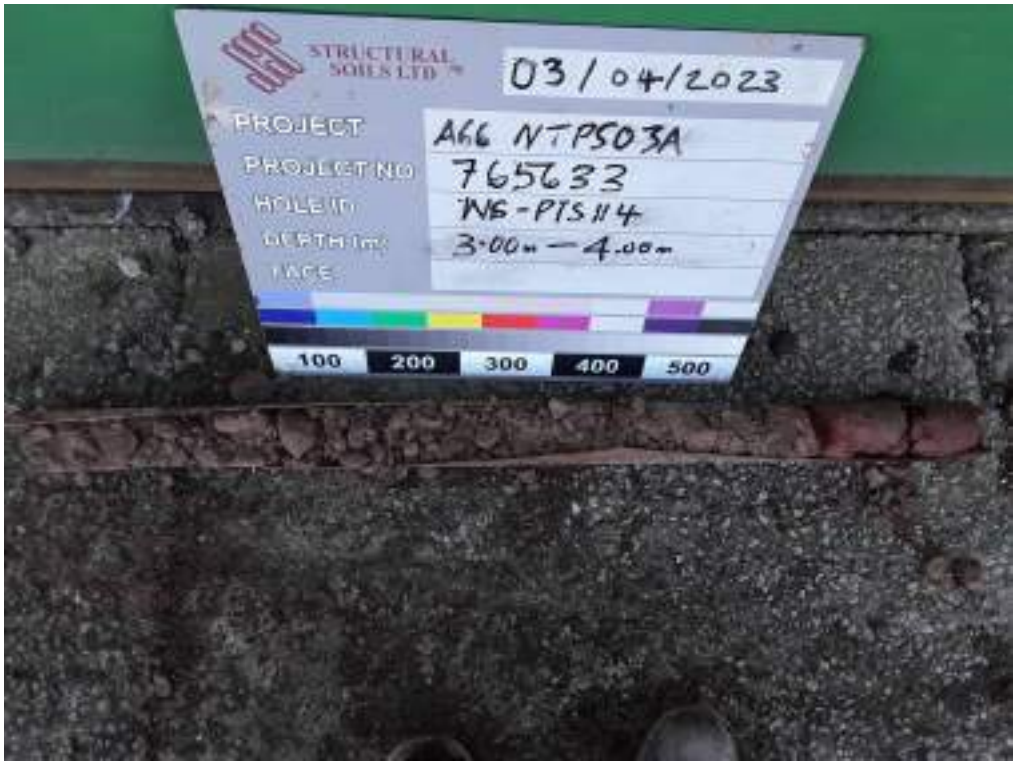
STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A66 NTP Scheme S03A		**National Highways**		**WS-PTS114**
Contract Ref:	Start: **03.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **03.04.23**	**109.23**	**E:355110.6 N:528971.0**	**3** of **3**

Core 3.00m - 4.00m



Method Used:	Inspection pit + Tracked window sampling	Plant Used:	Archway Dart 176	Drilled By:	Ben Pine	Logged By:	DNartay	Checked By:	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS116**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**03.04.23** End: **03.04.23**	**112.84**	**E:355307.1 N:528963.0**	**1** of **2**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
	0.10	1	D				Grass over dark brown gravelly silty fine to medium SAND with low cobble content and roots and rootlets. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone, limestone and quartzite. Cobbles are subrounded of mixed lithologies (<110mm). (TOPSOIL)	112.64	0.20	
	0.10-0.10	101	ES							
	0.10-0.20	2	B						(0.55)	
	0.50-0.50	102	ES							
	0.50	3	D							
	0.50-0.75	4	B				Reddish brown COBBLES with some boulders and much very gravelly silty fine to medium SAND. Gravel is subangular to subrounded fine to coarse of mixed lithologies including limestone and quartzite. Cobbles and boulders are subangular of mixed lithologies including limestone and quartzite (<205mm diameter). (GLACIAL TILL - GRANULAR)	112.09	0.75	
	1.00-1.00	103	ES							
	1.00	5	D							
	1.00-1.20	6	B						(0.95)	
	1.20-1.65	1	SPT	N=17						
	1.20-1.65	8	DSPT							
1.20 - 1.70 (98mm dia) 80% rec	1.20-1.70	9	C	20% recovery			Reddish brown sandy clayey subangular to subrounded fine to coarse SAND with medium cobble content. Gravel is subangular to subrounded fine to coarse of mixed lithologies including limestone and quartzite. Cobbles and boulders are subangular of mixed lithologies including limestone and quartzite (<205mm diameter). (GLACIAL TILL - GRANULAR)	111.14	1.70	
	1.70-1.78	2	SPT	NP						
	1.80-2.10	3	SPT	14,10/24,26 for 75mm					(0.40)	
	1.80-2.10	11	DSPT							
							Dense greyish brown coarse SAND and subangular to subrounded fine to coarse GRAVEL of limestone. (GLACIAL TILL - GRANULAR) 1.70m : in SPT test 25 seating blows achieved 75mm penetration. The Driller decided to re-set and reposition equipment and carry out fresh test at 1.80m. No test drive blows were therefore completed at 1.70m hence no test penetration (NP) is reported).	110.74	2.10	
							Window sample hole terminated at 2.10m depth.			

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
03/04/23	13:30	2.10	-	98	Dry

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Unable to take hand vane readings due to coarse fraction in cohesive soil.
3. No groundwater encountered.
4. No evidence of contamination noted.
5. Borehole terminated at 2.10m with verbal confirmation by Investigation Supervisor and backfilled with bentonite cement pellets.
6. SPT hammer DART176-2022 (E_r = 65.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Dart 176**	**Ben Pine**	**DNartay**	AML

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A66 NTP Scheme S03A		**National Highways**		**WS-PTS116**
Contract Ref:	Start: **03.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: **03.04.23**	**112.84**	**E:355307.1 N:528963.0**	**2** of **2**

Core 1.20m - 1.70m

Method Used:	Inspection pit + Tracked window sampling	Plant Used:	Archway Dart 176	Drilled By:	Ben Pine	Logged By:	DNartay	Checked By:	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS116A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**03.05.23** End: **03.05.23**	**112.86**	**E:355305.7 N:528963.4**	**1** of **2**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
	0.00-0.30	1	B				Grass overlying brown slightly gravelly clayey fine to coarse SAND with frequent rootlets and roots (<3mm). Gravel is subrounded to subangular fine to coarse of sandstone (<40mm diameter). (TOPSOIL)	112.51	(0.35) 0.35	
	0.20	2	D							
	0.20	201	D							
	0.40-0.60	3	B				Reddish brown slightly gravelly very clayey fine to coarse SAND with low cobble content. Gravel is subangular and subrounded fine to coarse of sandstone. Cobbles are subangular of sandstone. (GLACIAL TILL - GRANULAR)	112.16	(0.35) 0.70	
	0.50	202	D							
	0.50	4	D							
	0.90-1.10	5	B				Soft brown slightly gravelly sandy CLAY with low cobble content. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of mixed lithologies including dolerite siltstone and quartzite. Cobbles are subangular mixed lithologies including dolerite siltstone and quartzite. (GLACIAL TILL - COHESIVE) 0.90-1.20m : increase in cobble content.	111.66	(0.50) 1.20	
	1.00	203	D							
	1.00	6	D							
	1.20-1.30	7	D							
	1.20-1.65	300	SPT	N=17						
	1.20-1.65	301	DSPT							
	1.30-1.70	8	B					111.16	(0.50) 1.70	
1.20 - 2.00 (85mm dia) 85% rec	1.70-2.00	9	B				Firm to stiff reddish brown slightly sandy slightly gravelly CLAY. Sand is fine and medium. Gravel is subangular to rounded fine to coarse of mixed lithologies including dolerite siltstone and quartzite. (GLACIAL TILL - COHESIVE)		(0.68)	
	2.00-2.38	302	SPT(c)	10,15/19,13,12,6 for 40mm			Brown gravelly fine to coarse SAND. Gravel is subangular to rounded fine to coarse of mixed lithologies including dolerite siltstone and quartzite. (GLACIAL TILL - GRANULAR) 2.00-2.38m : very dense.	110.48	2.38	
							Window sample hole terminated at 2.38m depth.			

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
03/05/23	09:11	2.38	-	85	Dry

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Hand vanes not possible due to gravel content and friable nature of cohesive soils.
3. No groundwater encountered.
4. No evidence of contamination noted.
5. Borehole terminated at 2.38m with verbal confirmation by Investigation Supervisor and backfilled with bentonite cement pellets.
6. Duplicate window sample borehole to obtain samples for geoarchaeological assessment.
7. SPT hammer DART384-2022 (E_r = 67.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Michael O'Shea**	**IJordan**	

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A66 NTP Scheme S03A		National Highways		WS-PTS116A
Contract Ref:	Start: 03.05.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 03.05.23	112.86	E:355305.7 N:528963.4	2 of 2

Core 1.20m - 2.00m

Method Used:	Inspection pit + Tracked window sampling	Plant Used:	Archway Competitor	Drilled By:	Michael O'Shea	Logged By:	IJordan	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS117**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**04.04.23** End: **05.04.23**	**111.98**	**E:355390.1 N:528957.9**	**1** of **1**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
							Dark brown sandy SILT with frequent rootlets. Sand is fine to coarse. (TOPSOIL)	111.73	0.25	
	0.20	1	D				Dark brown gravelly silty fine to coarse SAND with medium cobble content. Gravel is subangular to rounded fine to coarse of dolerite and quartzite. Cobbles are subangular to rounded of dolerite and quartzite (<200mm x 200mm x 100mm). (GLACIAL TILL - GRANULAR)	111.48	0.50	
	0.20	101	ES							
	0.20	201	D							
	0.50	102	ES							
	0.50-0.70	2	B							
	0.50	202	D							
	0.50-0.70	3	D							
	1.00-1.20	4	B				Orangish brown very gravelly silty fine to coarse SAND with high cobble content. Gravel is subangular to rounded fine to coarse of dolerite and quartzite. Cobbles are subangular to rounded of dolerite and quartzite (<200mm x 200mm x 100mm). (GLACIAL TILL - GRANULAR) 1.20m : very dense.		(0.93)	
	1.00-1.20	5	D							
	1.20-1.43	1	SPT	12,12/50 for 75mm						
	1.20	103	ES					110.56	1.43	
	1.20	203	D							
							Window sample hole terminated at 1.43m depth.			

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
05/04/23	10:45	1.40	-	500	Dry

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Unable to take hand vane readings due to coarse fraction in cohesive soil.
3. No groundwater encountered.
4. No evidence of contamination noted.
5. Borehole terminated at 1.43m with verbal confirmation by Investigation Supervisor and backfilled with bentonite cement pellets.
6. SPT hammer DART176-2022 (E_r = 65.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**FPrice**	

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FINAL

STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS117A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**05.04.23** End: **05.04.23**	**111.99**	**E:355389.9 N:528958.1**	**1** of **2**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
							Dark brown sandy SILT with frequent rootlets. Sand is fine to coarse. (TOPSOIL)	111.74	0.25	
	0.20	1	D				Dark brown silty gravelly fine to coarse SAND with medium cobble content. Gravel is subangular to rounded fine to coarse of dolerite and quartzite. Cobbles are subangular to rounded of dolerite and quartzite (<200mm x 200mm x 100mm). (GLACIAL TILL - GRANULAR)	111.39	(0.35) 0.60	
	0.20	101	ES							
	0.20	201	D							
	0.60	102	ES							
	0.60-0.80	2	D							
	0.60	202	D							
	0.60-0.80	3	B							
	1.00-1.20	4	D				Dense orangish red gravelly silty fine to coarse SAND with medium cobble content. Gravel is subangular to rounded fine to coarse of dolerite and quartzite. Cobbles are subangular to rounded of dolerite and quartzite (<200mm x 200mm x 100mm). (GLACIAL TILL - GRANULAR)		(1.20)	
	1.00-1.20	5	B							
	1.20-1.65	1	SPT	N=48						
	1.20	103	ES							
	1.20	203	D							
1.20 - 2.00 (55mm dia) 90% rec	1.50-1.80	6	D					110.19	1.80	
	1.80-2.00	7	D				Dense brown sandy clayey angular to subrounded fine to coarse GRAVEL of dolerite, sandstone and quartzite. Sand is fine to coarse. (GLACIAL TILL - GRANULAR)		(1.20)	
	2.00-2.45	2	SPT	N=42						
2.00 - 3.00 (55mm dia) 80% rec	2.60-3.00	8	D					108.99	3.00	
	3.00-3.45	3	SPT	N=32			Dense red gravelly fine to coarse SAND. Gravel is angular to subrounded fine to coarse of dolerite and quartzite. (GLACIAL TILL - GRANULAR)		(1.23)	
3.00 - 4.00 (55mm dia) 85% rec										
	4.00-4.23	4	SPT	10,14/50 for 75mm			4.00m : very dense.			
	4.00-4.20	9	D					107.76	4.23	
							Window sample hole terminated at 4.23m depth.			

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
04/04/23	14:35	4.23	-	55	Dry

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Unable to take hand vane readings due to coarse fraction in cohesive soil.
3. No groundwater encountered.
4. No evidence of contamination noted.
5. Borehole terminated at 4.23m with verbal confirmation by Investigation Supervisor and backfilled with bentonite cement pellets.
6. Duplicate window sample borehole to obtain samples for geoarchaeological assessment.
7. SPT hammer DART176-2022 (E_r = 65.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**FPrice**	

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FINAL

STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A66 NTP Scheme S03A		National Highways		WS-PTS117A
Contract Ref:	Start: 05.04.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 05.04.23	111.99	E:355389.9 N:528958.1	2 of 2

Core 1.20m - 4.20m

Method Used:	Inspection pit + Tracked window sampling	Plant Used:	Archway Competitor	Drilled By:	Ben Pine	Logged By:	FPrice	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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FINAL

STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS119**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**28.04.23** End: **28.04.23**	**115.13**	**E:355507.0 N:528921.0**	**1** of **2**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
	0.00-0.20	2	B				Grass overlying brown slightly gravelly clayey fine to coarse SAND with frequent roots and rootlets. Gravel is subangular to subrounded fine to coarse of sandstone. (TOPSOIL)	114.78	(0.35) 0.35	
	0.20	1	D							
	0.20	101	ES							
	0.20	201	D							
	0.50-0.90	4	B				Medium dense brown very gravelly slightly clayey fine to coarse SAND with medium cobble content. Gravel is fine to coarse subangular to rounded fine to coarse of mixed lithologies including dolerite sandstone and quartzite. Cobbles are subrounded of low sphericity of sandstone. (GLACIAL TILL - GRANULAR)	113.93	(0.85) 1.20	
	0.60	102	ES							
	0.60	202	D							
	0.60	3	D							
	1.00	103	ES							
	1.00	203	D							
	1.00	5	D							
1.20 - 2.00 (85mm dia) 80% rec	1.00-1.20	6	B				Medium dense brown very sandy silty subangular to rounded fine to coarse GRAVEL of mixed lithologies including dolerite sandstone and quartzite. Sand is fine to coarse. (GLACIAL TILL - GRANULAR)	112.23	(1.70) 2.90	
	1.20-1.30	7	D							
	1.20-1.65	300	SPT	N=25						
	1.20-1.60	301	DSPT							
	1.30-2.90	8	B							
2.00 - 2.90 (75mm dia) 60% rec	2.00-2.45	302	DSPT				2.30m : hole collapse.			
	2.00-2.45	303	SPT	N=28						
							Window sample hole terminated at 2.90m depth.			

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
28/04/23	11:08	2.90	-	75	Dry

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Unable to take hand vane readings due to coarse fraction in cohesive soil.
3. No groundwater encountered.
4. No evidence of contamination noted.
5. Borehole terminated at 2.90m with verbal confirmation by Investigation Supervisor and backfilled with bentonite cement pellets.
6. SPT hammer DART384-2022 (E_r = 67.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Michael O'Shea**	**IJordan**	

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	National Highways	WS-PTS119

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	28.04.23 End: 28.04.23	115.13	E:355507.0 N:528921.0	2 of 2

Core 1.20m - 2.90m

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	Archway Competitor	Michael O'Shea	IJordan	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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FINAL

STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS120**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**27.03.23** End: **27.03.23**	**109.92**	**E:355619.2 N:528956.0**	**1** of **2**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
	0.00-0.30	2	B				Grass over brown slightly gravelly slightly clayey fine to coarse SAND with rootlets. Gravel is subangular to subrounded fine to coarse of mixed lithologies inc sandstone, granite, quartz and flints. (TOPSOIL)	109.62	(0.30) 0.30	
	0.20	1	D							
	0.20	101	ES							
	0.20	201	D							
	0.30-1.20	4	B				Soft to firm brown slightly gravelly sandy clayey SILT. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone, granite and quartz. (ALLUVIUM)	108.72	(0.90) 1.20	
	1.00	102	ES							
	1.00	202	D							
	1.00	3	D							
1.20 - 2.00 (98mm dia) 80% rec	1.20-1.65	1	SPT	N=4			Loose brown slightly gravelly very clayey fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone, granite and quartz. (GLACIAL TILL - GRANULAR)	107.92	(0.80) 2.00	
	1.20-1.65	2	DSPT							
	1.20-1.65	302	DSPT							
	1.20-2.00	5	B							
	1.50	103	ES							
	1.80	6	D							
	2.00-2.38	3	SPT	0,1/0,3,50 for 75mm			Very dense brown slightly gravelly slightly clayey to clayey fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of mixed lithologies inc sandstone, granite and quartz. (GLACIAL TILL - GRANULAR)	107.54	(0.38) 2.38	
	2.00-2.35	304	DSPT							
	2.00-2.30	4	DSPT							

Window sample hole terminated at 2.38m depth.

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
28/03/23	13:00	2.30	-	98	Dry

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Unable to take hand vane readings due to coarse fraction in cohesive soil.
3. Groundwater seepage at 1.20m depth.
4. No evidence of contamination noted.
5. Borehole terminated at 2.38m with verbal confirmation by Investigation Supervisor and backfilled with bentonite cement pellets.
6. Geoenvironmental sample 601 ES taken from separate inspection pit excavated alongside on 03/06/2023 to obtain fresh sample for laboratory testing.
7. SPT hammer DART176-2022 (E_r = 65.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**MTurkowski**	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A66 NTP Scheme S03A		National Highways		WS-PTS120
Contract Ref:	Start: 27.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 27.03.23	109.92	E:355619.2 N:528956.0	2 of 2

Core 1.20m - 2.00m

Method Used:	Inspection pit + Tracked window sampling	Plant Used:	Archway Competitor	Drilled By:	Ben Pine	Logged By:	MTurkowski	Checked By:	AML

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS127**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**21.03.23** End: **21.03.23**	**128.60**	**E:356228.0 N:528928.0**	**1** of **3**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
	0.00-0.20	1	D				Soft to firm dark brown slightly gravelly sandy SILT. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of mixed lithologies including dolerite, quartzite, siltstone and sandstone.. (TOPSOIL)		(0.30)	
	0.00-0.20	201	D							
	0.20	101	ES					128.30	0.30	
	0.50	102	ES				Reddish brown mottled orange gravelly clayey fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of mixed lithologies including dolerite, quartzite, siltstone and sandstone. (GLACIAL TILL - GRANULAR)		(0.70)	
	0.50	2	D							
	0.50	202	D							
	0.50-0.50	3	B					127.60	1.00	
	1.00	203	D				0.70-1.00m : no orange mottling and with low cobble content. Cobbles are subangular to subrounded of mixed lithologies including dolerite, quartzite, siltstone and sandstone.			
	1.00	4	D							
	1.00-1.00	5	B							
	1.20-1.80	6	B							
1.20 - 2.00 (101mm dia) 90% rec	1.20-1.65	301	SPT	N=10			Medium dense reddish brown gravelly very clayey fine to coarse SAND. Gravel is angular to rounded fine to coarse of dolerite, quartzite, siltstone and sandstone. (GLACIAL TILL - GRANULAR)			
	1.80-2.00	7	D							
	2.00-2.80	8	B							
2.00 - 3.00 (89mm dia) 90% rec	2.00-2.45	302	SPT	N=14					(2.50)	
	2.80-3.00	9	D							
3.00 - 4.00 (79mm dia) 90% rec	3.00-3.45	303	SPT	N=9				125.10	3.50	
	3.50-4.50	10	B				Dense light orangish red slightly gravelly clayey fine to coarse SAND. Gravel is subangular to subrounded fine to medium of siltstone and sandstone. (GLACIAL TILL - GRANULAR)			
	3.80-4.00	11	D							
4.00 - 5.00 (69mm dia) 90% rec	4.00-4.45	304	SPT	N=47					(1.00)	
								124.10	4.50	

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
21/03/23	11:00	5.40	-	69	Dry

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Unable to take hand vane readings due to coarse fraction in cohesive soil.
3. No groundwater encountered.
4. No evidence of contamination noted.
5. Borehole terminated at 5.40m with verbal confirmation by Investigation Supervisor and backfilled with bentonite cement pellets.
6. SPT hammer DART176-2022 (E_r = 65.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**BDrayson**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS127**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**21.03.23** End: **21.03.23**	**128.60**	**E:356228.0 N:528928.0**	**2** of **3**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
4.00 - 5.00 (69mm dia) 90% rec	4.80-5.00	12	D				Very dense dark red slightly gravelly slightly silty fine to medium SAND. Gravel is subangular to subrounded fine to medium of siltstone and sandstone. (GLACIAL TILL - GRANULAR)		(0.90)	
	5.00-5.38	305	SPT	9,12/17,20,13 for 75mm				123.20	5.40	
							Window sample hole terminated at 5.40m depth.			

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**BDrayson**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A66 NTP Scheme S03A		National Highways		WS-PTS127
Contract Ref:	Start: 21.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 21.03.23	128.60	E:356228.0 N:528928.0	3 of 3

Core 1.20m - 5.00m

Method Used:	Inspection pit + Tracked window sampling	Plant Used:	Archway Competitor	Drilled By:	Ben Pine	Logged By:	BDrayson	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS127A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**11.05.23** End: **11.05.23**	**128.53**	**E:356227.8 N:528928.0**	**1** of **3**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
	0.00-0.20 0.00-0.20 0.20 0.40-0.60 0.40-0.60 0.50 1.00-1.20 1.00-1.20	1 2 101 3 4 102 5 6	D B ES D B ES D B				Dark reddish brown slightly gravelly slightly silty fine to coarse SAND with occasional rootlets. Gravel is subangular to subrounded fine to medium of sandstone. (TOPSOIL) Reddish brown slightly gravelly slightly clayey fine to coarse SAND. Gravel is subangular to subrounded fine to medium of sandstone. (GLACIAL TILL - GRANULAR)	128.23 127.33	(0.30) 0.30 (0.90) 1.20	
1.20 - 2.00 (98mm dia) 88% rec	1.20 1.20-1.65 1.20-1.30 1.20-1.65 1.30-3.00	103 301 7 306 8	ES DSPT D SPT B	N=19			Medium dense reddish brown gravelly fine to medium SAND with low cobble content. Gravel is subangular fine to coarse of mixed lithologies including quartzite, sandstone and diorite. Cobbles are subangular of sandstone (60mm x 90mm x 120mm). (GLACIAL TILL - GRANULAR) 1.90-2.00m : assessed zone of core loss.	126.53	(0.80) 2.00	
2.00 - 3.00 (85mm dia) 88% rec	2.00-2.45 2.00-2.45	302 307	DSPT SPT	N=9			Loose reddish brown gravelly fine to medium SAND. Gravel is subangular fine to coarse of mixed lithologies including quartzite, sandstone and diorite. (GLACIAL TILL - GRANULAR) 2.70-2.80m : thin bed of sandy clay. 2.80-3.00m : assessed zone of core loss.	125.53	(1.00) 3.00	
3.00 - 4.00 (75mm dia) 100% rec	3.00-3.45 3.00-5.00 3.00-3.45	303 9 308	DSPT B SPT	N=14			Medium dense reddish brown gravelly fine to medium SAND. Gravel is subangular fine to coarse of mixed lithologies including quartzite, sandstone and diorite. (GLACIAL TILL - GRANULAR)	124.53	(1.00) 4.00	
4.00 - 5.00 (65mm dia) 100% rec	4.00-4.45 4.00-4.45	304 309	DSPT SPT	N=44			Dense reddish brown gravelly fine to medium SAND. Gravel is subangular fine to coarse of mixed lithologies including quartzite, sandstone and diorite. (GLACIAL TILL - GRANULAR)			

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
11/05/23	12:35	5.32	-	65	Dry

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Hand vanes not possible due to gravel content and friable nature of cohesive soils.
3. No groundwater encountered.
4. No evidence of contamination noted.
5. Borehole terminated at 5.32m with verbal confirmation by Investigation Supervisor and backfilled with bentonite cement pellets.
6. Duplicate window sample borehole to obtain samples for geoarchaeological assessment.
7. SPT hammer DART384-2022 (E_r = 67.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**CJobe**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	National Highways	WS-PTS127A

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	11.05.23 End: 11.05.23	128.53	E:356227.8 N:528928.0	2 of 3

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
4.00 - 5.00 (65mm dia) 100% rec									(1.32)	
	5.00-5.32 5.00-5.32	305 310	DSPT SPT	10,13/18,20,12 for 15mm			5.00m : very dense.	123.21	5.32	
							Window sample hole terminated at 5.32m depth.			

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	Archway Competitor	Ben Pine	CJobe	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A66 NTP Scheme S03A		National Highways		WS-PTS127A
Contract Ref:	Start: 11.05.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 11.05.23	128.53	E:356227.8 N:528928.0	3 of 3

Core 1.20m - 5.00m

Method Used:	Inspection pit + Tracked window sampling	Plant Used:	Archway Competitor	Drilled By:	Ben Pine	Logged By:	CJobe	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS129**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**21.03.23** End: **21.03.23**	**130.24**	**E:356516.0 N:528899.0**	**1** of **2**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
	0.00-0.20	1	D				Soft to firm dark brown slightly gravelly sandy SILT. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of mixed lithologies including siltstone and sandstone (TOPSOIL)	130.04	0.20	
	0.20	101	ES				Reddish brown mottled orange gravelly very clayey fine to coarse SAND with low cobble content. Gravel is subangular to subrounded fine to coarse of mixed lithologies including siltstone and sandstone. Cobbles are subangular to subrounded of mixed lithologies including siltstone and sandstone. (GLACIAL TILL - GRANULAR)	129.04	(1.00) 1.20	
	0.50	102	ES							
	0.50-0.50	2	B							
	0.50	3	D							
	1.00-1.00	4	B							
	1.00	5	D							
1.20 - 2.00 (101mm dia) 90% rec	1.20-1.65	1	SPT	N=3			Very loose reddish brown gravelly very clayey fine to coarse SAND. Gravel is angular to subrounded fine to coarse of siltstone and sandstone. (GLACIAL TILL - GRANULAR)	128.24	(0.80) 2.00	
	1.20-1.65	1	DSPT							
	1.20-1.80	6	B							
	1.80-2.00	7	D							
2.00 - 2.80 (89mm dia) 90% rec	2.00-2.45	2	SPT	N=33			Dense reddish brown gravelly very clayey fine to coarse SAND. Gravel is angular to subrounded fine to coarse of siltstone and sandstone. (GLACIAL TILL - GRANULAR)	127.06	(1.18) 3.18	
	2.00-2.45	2	DSPT							
	2.00-2.60	8	B							
	2.60-2.80	9	D				2.60-2.80m : occasional pockets of soft dark brown organic material (<30mm x 30mm x 30mm). 2.80m : very dense.			
	2.80-3.18	3	SPT	7,9/12,10,20,8 for 0mm						
							Window sample hole terminated at 3.18m depth.			

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
21/03/23	15:00	3.18	-	89	Dry

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Unable to take hand vane readings due to coarse fraction in cohesive soil.
3. No groundwater encountered.
4. No evidence of contamination noted.
5. Borehole terminated at 3.18m with verbal confirmation by Investigation Supervisor and backfilled with bentonite cement pellets.
6. SPT hammer DART176-2022 (E_r = 65.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**BDrayson + FPrice**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A66 NTP Scheme S03A		National Highways		WS-PTS129
Contract Ref:	Start: 21.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 21.03.23	130.24	E:356516.0 N:528899.0	2 of 2

Core 1.20m - 2.80m

Method Used:	Inspection pit + Tracked window sampling	Plant Used:	Archway Competitor	Drilled By:	Ben Pine	Logged By:	BDrayson + FPrice	Checked By:	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS130**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**23.03.23** End: **23.03.23**	**130.53**	**E:356508.6 N:528840.9**	**1** of **3**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
							Dark brown slightly gravelly very silty fine to coarse SAND. Gravel is subangular to subrounded fine to coarse sandstone. (TOPSOIL)	130.23	(0.30) 0.30	
	0.20	1	D							
	0.20	101	ES							
							Reddish brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium sandstone. (GLACIAL TILL - COHESIVE)		(1.00)	
	0.50	102	ES							
	0.50	2	D							
	0.50-0.50	3	B							
	1.00	4	D				1.00m : low cobble content. Cobbles are subangular to subrounded of mixed lithologies, predominantly sandstone.	129.23	1.30	
	1.00-1.00	5	B							
1.20 - 2.00 (98mm dia) 95% rec	1.20-1.65	1	SPT	N=13						
	1.20	103	ES							
	1.20-1.65	301	DSPT							
	1.20-1.80	6	B							
							Medium dense reddish brown gravelly very clayey fine to coarse SAND. Gravel is angular to subrounded fine to coarse of sandstone and dolerite. (GLACIAL TILL - GRANULAR)		(0.80)	
	1.80-2.00	7	D							
	2.00-2.45	3	SPT	N=9				128.43	2.10	
	2.00-2.45	302	DSPT							
	2.00-2.90	8	B							
2.00 - 3.00 (85mm dia) 95% rec							Loose reddish brown slightly gravelly very clayey fine to medium SAND. Gravel is angular to subrounded fine to coarse of dolerite. (GLACIAL TILL - GRANULAR)			
	2.90-3.00	9	D							
	3.00-3.45	5	SPT	N=22			3.00m : becoming medium dense			
	3.00-3.80	10	B							
	3.00-3.45	303	DSPT							
3.00 - 4.00 (75mm dia) 95% rec							3.50-3.52m : very weak pinkish red fine to medium grained sandstone.		(3.20)	
	3.80-4.00	11	D							
	4.00-4.45	7	SPT	N=38			4.00m : becoming dense			
	4.00-4.80	12	B							
	4.00-4.45	304	DSPT							
4.00 - 5.00 (65mm dia) 100% rec										

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
23/03/23	15:00	5.30	-	65	Dry

General Remarks

1. PAS 128:2022 Survey Type B completed and inspection pit hand dug to 1.20m depth.
2. Unable to take hand vane readings due to coarse fraction in cohesive soil.
3. No groundwater encountered.
4. No evidence of contamination noted.
5. Borehole terminated at 5.30m with verbal confirmation by Investigation Supervisor and backfilled with bentonite cement pellets.
6. Geoenvironmental sample 601 ES taken from separate inspection pit excavated alongside on 03/06/2023 to obtain fresh sample for laboratory testing.
7. SPT hammer DART176-2022 (E_r = 65.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**FPrice**	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 31/08/23 - 08:46 | AML1 |

FINAL

STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A66 NTP Scheme S03A	**National Highways**	**WS-PTS130**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	**23.03.23** End: **23.03.23**	**130.53**	**E:356508.6 N:528840.9**	**2** of **3**

Progress: Window Run	Samples / Tests: Depth	No	Type	Results	Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
4.00 - 5.00 (65mm dia) 100% rec	4.80-5.00	13	D							
	5.00-5.30	9	SPT	9,15/18,32 for 75mm			5.00m : becoming very dense			
	5.00-5.30	305	DSPT					125.23	5.30	
							Window sample hole terminated at 5.30m depth.			

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**FPrice**	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 31/08/23 - 08:46 | AML1 |

STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A66 NTP Scheme S03A		National Highways		WS-PTS130
Contract Ref:	Start: 23.03.23	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765633	End: 23.03.23	130.53	E:356508.6 N:528840.9	3 of 3

Core 1.20m - 5.00m

Method Used:	Inspection pit + Tracked window sampling	Plant Used:	Archway Competitor	Drilled By:	Ben Pine	Logged By:	FPrice	Checked By:	AML

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 31/08/23 - 08:46 | AML1 |

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHPTS100	Rig Type	Dando 2000		
		Rig ID	Rig 1		
Contract Number	765633	Location	A66 NTP303A	Rig Move	From / To / Sheet
Company Name	JB Site	Driller	Brad Sparks	Assistant(s)	Jamie Carr
Engineer					
Date	Tuesday	Day	28.7.23	Start Time	Finish Time
Hammer ID	JB01				

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests: Number	Type	From (m)	To (m)	Rec (mm)	U Blow

Standard Penetration Tests: Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record: From (m)	To (m)	Diameter (mm)	Type

Casing Record: Diameter (mm)	Base (m)

Record of Chiselling: Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added: Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays: Time From	Time To	Description
08:00	09:15	Mob rig to site
09:15	9:45	Site induction
09:45	10:00	waiting on BH Position

Client Signature	Company
	Date
Borehole Completed	Yes / No

Notes/Remarks: Sample type: Bulk, Disturbed, DISPT=disturbed from SPT test, Undisturbed, UT=UT100, Winwater, SPT test types: Split spoon, Cone, Cone Type: Unspecified, Pellach, Template: SSL-003(A4)R2-UTG-CABLE-V21-OCT-2015

Email: info@structuralsoils.co.uk
Web: www.ssltd.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHP75100			Rig Type	Dando 2000
				Rig ID	Rig 1
Contract Number	765633	Location	A66 NTP503A	Rig Move	From / To / Sheet
Company Name	JB Site	Driller	Brad Spairs	Assistant(s)	Jamie Carr
				Engineer	
Date	1.3.23	Day	Wednesday	Start Time	
		Finish Time		Hammer ID	SB01

Depth From (m)	Depth To (m)	Driller's Description of Strata	Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Standard Penetration Tests: Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type	Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	To (m)	Hours (h)	Time From (hh:mm)	To (hh:mm)	Water Added Depth From (m)	To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	To	Description
05:00	17:00	waiting on BH Position

Client Signature	Company
	Date
Borehole Completed	Yes / No

Notes/Remarks: Sample type Break, Undisturbed, DBPT-disturbed from SPT test, Undisturbed, UT-UT100, Wheeler, SPT test types: Shaft spoon, Cnoone, Cover Type: Unstanding, Fritum.
Template:SSL - DRILLERS-LOG-CABLE-V01-OCT-2015
Email: ssl@soils.co.uk
Web: www.soils.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHPTS100	Rig Type	Dando 2000		
		Rig ID	Rig 1		
Contract Number	765633	Location	A66 NTPS03A	Rig Move	From / To / Sheet
Company Name	JB Site	Driller	Brad Speers	Assistant(s)	Jamie Corr
				Engineer	
Date	7.3.23	Day	Thursday	Start Time	08:00
Finish Time	17:00	Hammer ID	JB01		

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests: Number	Type	From (m)	To (m)	Rec (mm)	U Blow

Standard Penetration Tests: Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling: Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added: Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays: Time From	Time To	Description
08:00	11:35	waiting on BH position
11:35	15:50	move rig, trailer and bowser to BH (wait for geologist) (wait for BH to be moved and confirmed) set up rig
15:50	17:00	waiting on permit and drilling instructions

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: ssl@ssl.co.uk
Web: www.ssl.co.uk

Notes/Remarks: Sample type B Tube, D disturbed, DPT measured from SPT test, U undisturbed, UTW/TUBE, W water. SPT test types: S-split spoon, C-core, Cone Type: U-upstanding, P-push
Template: SSL-DRILLERS-LOG-CABLE-V01-OCT-2013

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH PTS 100	Rig Type	Dando 2000
		Rig ID	/
Contract Number	765633	Location	A66 NTPS03A
Company Name	JB	Driller	Jamie Carlo Brad Stevens
Assistant(s)		Rig Move	From / To PTS 100 Sheet /
Engineer	Daniel		
Date	3-2-23	Day	Friday
Start Time	0800	Finish Time	14:20
Hammer ID	JB-1		

Depth From (m)	Depth To (m)	Driller's Description of Strata
GL	0.30	Grass over Gravelly Top Soil
0.30	0.60	Brown Slightly Sandy Silty Top Soil + Cobbles
0.60	1.20	Brown Silty Sand + Cobbles
1.20	2.00	Sand + Gravel
2.00	2.90	Light Brown Orange, Gravelly Sand with Large Cobbles
2.90	3.20	Reddish Brown, Gravelly Clay
3.20	3.40	Cobble / Boulder
3.40	4.00	Reddish Brown Sandy Gravel, with Clay Pockets
4.00	4.50	Sandy Gravel, with very Large Cobbles.

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow
1	D	0.20			
2	ES	0.30	x3		
3	D	0.40			
4	B	0.70	0.60		
5	ES	0.50	x3		
6	D	0.70			
7	B	0.70	1.20		
8	ES	1.00	x3		
9	S	1.20	1.65		/
10	DS	1.20	1.65		
11	B	1.20	1.70	X2	
12	ES	1.50	x3		
13	D	1.80			
14	S	2.00	2.45		/
15	DS	2.00	2.45		

Standard Penetration Tests

Number	Type	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
9	S	1.20	/	1	1	1	2	2	6	11
14	S	2.00	1.50	2	2	3	3	4	5	15

Standing Water Levels

	Morning	Evening
Time	/	14:00
BH Depth (m)	/	4.50
Casing Depth (m)	/	4.50
Water Level (m)	/	3.70

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
GL	1.20	250	Pit Gear
1.20	3.20	250	Shell
3.20	3.40	250	Chisel
3.40	4.50	250	Shell

Casing Record

Diameter (mm)	Base (m)
250	4.50

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
3.20	3.40	0.55	11:30	12:25

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
1.20	4.50	900

Water Strikes

Time			
Strike Depth (m)	Added	Water	All
Casing Depth (m)		Way	
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)
/	/	/	/

Backfill Materials	From (m)	To (m)
/	/	/

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
0800	840	Morning Drilling Gn To BH - Gn Key For Gate
840	940	Da inspection Pit - Do up Samples.
		Bag Spoil as we Go Through BH.
1140	1420	Take Bowser To Compound and Refill.

Client Signature

Company

Date

Borehole Completed Yes / No

Email: ask@soils.co.uk Web: www.soils.co.uk
Notes/Remarks: Sample type: B=bulk, D=disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: S=split spoon, C=cone, Cover Type: U=upstanding, F=flush.
Template SSL - DRILLERS LOG CABLE V01 OCT 2018

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH PTS 100	Rig Type	Pneu 2000
		Rig ID	1
Contract Number	765633	Location	A66 NTP 503A
Rig Move	From / To	Sheet	2
Company Name	JB	Driller	James Cooke Robert Shaw
Assistant(s)	Bruno Soares	Engineer	Pauc
Date	3-3-23	Day	Friday
Start Time	0800	Finish Time	1430
Hammer ID	JD 01		

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
16	B	2.00	2.50	x2										
17	D	2.50												
18	D	2.90												
19	S	3.00	3.45			3.00	2.30	2	3	4	4/6	3/4		50
20	DS	3.00	3.45											
21	B	3.00	3.30											
22	D	3.50												
23	B	3.50	4.00	x2										
24	CPT	4.00	4.45			4.00	3.35	19	6/44	31	12/39			50
25	B	4.00	4.50	x2										

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Email: info@ssl.co.uk
Web: www.ssl.co.uk

Notes/Remarks: Sample type Bag=B, Disturbed, DS; PT=started from SPT test, U=undisturbed, UT=UT100, W=water. SPT test types: B=split spoon, C=core, Cover Type: U=standing, F=flush.
Template SSL_DTS_LIVE-LOG-SAB_B-V01-OCT-2019

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH PTS100	Rig Type	Pando 7000
		Rig ID	Rig 1
Contract Number	765633	Location	A66 NTPS03A
Rig Move	From / To / Sheet 1		
Company Name	J.B. Sire	Driller	Brad Spears
Assistant(s)	Jamie Cort	Engineer	D. Morley
Date	6.3.23	Day	Monday
Start Time		Finish Time	
Hammer ID	J801		

Depth From (m)	Depth To (m)	Driller's Description of Strata
4.50	6.80	Sandy gravel (large cobbles)
6.80	9.00	weathered sandstone

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
26	D	4.80												
27	C	5.00	5.45			5.00	3.39	22	4/29	5/37				
28	B	5.00	5.50	X2										
29	D	5.80												
30	C	6.00	6.45			6.00	3.30	5/63	5/54					
31	B	6.00	6.50	X2										
32	D	6.80												
33	S	6.80	7.25			6.80	3.74	5/30	5/27					NR
34	B	7.00	7.50											
35	D	7.80												
36	S	8.00	8.45			7.50	4.41	5/28	5/19					
37	B	8.00	8.50											
38	D	8.80												
39	S	9.00	9.45			7.50	4.48	5/22	5/10					NR

Standard Penetration Tests

Standing Water Levels

	Morning	Evening
Time	08:30	17:00
BH Depth (m)	4.50	9.00
Casing Depth (m)	4.50	7.50
Water Level (m)	BH Dry	4.64

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
1.20	7.00	/	Shell
7.00	9.00	1 chisel	/ Shell

Casing Record

Diameter (mm)	Base (m)
250	7.50

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
6.30	6.50		11:15	11:45
6.80	7.20		13:35	14:10
8.70	9.00		15:30	16:30

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
4.50	6.80	2500

Water Strikes

Time	Potential water strike, 6.80 (rock head)
Strike Depth (m)	
Casing Depth (m)	
5 mins	
10 mins	
15 mins	
20 mins	
Depth Sealed (m)	

Backfill and Installation Details

Water Depth Before (m)	/	Water Depth After (m)	/	Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)
/	/	/	/

Backfill Materials	From (m)	To (m)
/	/	/

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
08:00	08:30	Collect bowser from compound, get to BH
10:00	10:45	go to compound to collect another bowser
1hr		Bag spoil

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: info@ssltd.co.uk; Web: www.ssltd.co.uk

Notes/Remarks: Sample type Bridge, Disturbed, DSPT=disturbed from SPT test, Undisturbed, UT100, Weather, SPT test types: Seated soon, Crocos, Cover Type: Unguaranteed, Failure, Terminated etc.; DRILLERS LOG CABLE V01 OCT 2013

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHPTS100	Rig Type	Dando 2000		
		Rig ID	Rig 1		
Contract Number	765633	Location	A66 NTP5034	Rig Move	From / To / Sheet 1
Company Name	JB. Sitre	Driller	Brad Spears	Assistant(s)	Jamie Cole	Engineer	D. Norney
Date 7.3.23	Day Tuesday	Start Time		Finish Time		Hammer ID	J801

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata	Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time	09:15	
BH Depth (m)	7.00	
Casing Depth (m)	7.50	
Water Level (m)	8.24	

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)	8.24	Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)

Backfill Materials	From (m)	To (m)
Bentonite	GL	7.00

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
08:00	09:00	morning briefing, get to BH, wait on decision from client to backfill
09:00	10:15	pull casing, backfill hole, drop and load rig and trailer
10:15	13:15	move rig, trailer and bowser to next BH, set up

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Email: info@ssltd.co.uk Web: www.ssltd.co.uk

Notes/Remarks: Sample type Details, Undisturbed, DCP Tests started from BPT test, Undisturbed, UT+UT100, Windsor, BPT test types: Bright spoon, Chisel, Cover Type: Unspecified, Fixture, Terminated BH - Refusal UT100 - SAMPLE FAIL OCT 2020

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID						Rig Type	DANDO 2000 MK11
						Rig ID	5
Contract Number	765633	Location	A66 NTP 303A			Rig Move	From / To / Sheet
Company Name	JBSite	Driller	WILL NEVINS	Assistant(s)	STEPHEN Sharman	Engineer	
Date TUE	Day 28-8-23	Start Time	8.00	Finish Time	5.00	Hammer ID	5

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata	Samples and Tests: Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth: Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record: From (m)	To (m)	Diameter (mm)	Type

Casing Record: Diameter (mm)	Base (m)

Record of Chiselling: Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added: Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays: Time From	Time To	Description
8.00	2pm	MOB RIG
2pm	3pm	INDUCTION
3pm	5pm	STANDING ON BH.

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: info@ssltd.co.uk. Web: www.ssltd.co.uk.
Notes/Remarks, Sample type B=bulk, D=disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: S=split spoon, C=cone, Cone Type: U=upstanding, T=flush.
Issue date 8/93 - PRH LHS LOG PAPER A3V1.0CP2-2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	/	Rig Type	DANDO 2000 MK II		
		Rig ID	5		
Contract Number	765633	Location	A66 NTP 503A	Rig Move	From / To / Sheet
Company Name	JB Site	Driller	Will NEVINS	Assistant(s)	STEPHEN Sharman
				Engineer	
Date 1-3-23	Day WEDS	Start Time	8:00	Finish Time 5:00	Hammer ID 5

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow

Standard Penetration Tests: Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description
8:00	2PM	MOB TRAILER
2PM	5PM	STANDING ON BH

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: ask@ssltd.co.uk, Web: www.ssltd.co.uk

Notes/Remarks: Sample types B=bulk, D=disturbed, (SPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: Snapshot=spoon, C=core, Core Type: U=upstanding, F=flush.
Tranquillity SSL_CRILLDOS-LOG-CABLE V01 OCT 2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	PTS 101					Rig Type	DANDO MKII 2000
						Rig ID	5
Contract Number	765633	Location	A66 NTP 503A			Rig Move	From 11:30 To 11:30 Sheet
Company Name	JBSite	Driller	WILL NEVINS	Assistant(s)	STEPHEN SHARMAN	Engineer	DANIEL
Date 23.23	Day THU	Start Time	8:00	Finish Time	5:30	Hammer ID	5

Depth From (m)	Depth To (m)	Driller's Description of Strata
GL	0.10	GRASS over TOP Soil
0.10	0.40	loose dark brown gravelly sand
0.40	1.00	loose dark brown gravelly silt

Samples and Tests						Standard Penetration Tests								
Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
1	D	0.10												
2	ES	0.30												
3	D	0.30												
4	B	0.40	0.50											
5	D	0.50												
6	ES	0.50												
7	ES	1m												
8	D	1m												
9	B	0.40	1m											

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / P
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description
8:00	8:30	TOOLBOX TALK
8:30	11:30	STANDING ON ACCESS TO BH
11:30	1PM	MOB RIG BOWSER TRAILER HERRAS
1PM	2PM	Set up compound + Rig
2PM	3PM	SIGN Permit
3PM	4PM	Waiting on Arcaeologist
4PM	5:30	DIG PIT / SUMPIES.

Client Signature | Company | Date

Borehole Completed ~~Yes~~ / No

Notes/Remarks: Sample type Bulk, Disturbed, DSPT=Disturbed from SPT test, U=Undisturbed, U71-U7100, Winwater SPT test types: Small spoon, Cross, Cover Type: Unsplanding, Fixture.
Template SSL-DRILLERS-LOG-CABLE-F01-OCT-2015

Email: info@ssls.co.uk
Web: www.ssls.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHPTS101					Rig Type	DANDO 2000 MK11
						Rig ID	RIG 5
Contract Number	765633	Location	AGG NTP 303A			Rig Move	From / To / Sheet
Company Name	JB Site	Driller	WILL NEVINS	Assistant(s)	STEPHEN SHARMAN	Engineer	DANIEL
Date 3.3.23	Day FRI	Start Time	08:00	Finish Time	12:00	Hammer ID	5

Depth From (m)	Depth To (m)	Driller's Description of Strata
1.20	1.50	SOFT BROWN MOTTLED GRAVELLY CLAY
1.50	2.50	SOFT MOTTLED SILTY CLAY + large cobbles

Samples and Tests						Metres Depth		Standard Penetration Tests						
Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Casing	Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
10	S	1.20	1.65					3	4	4	3	2	2	
11	SD	1.20	1.65											
12	U	1.20	1.65	100%	40									
13	D	1.50												
14	B	1.20	1.50											
15	D	1.50												
16	CS	1.50												
17	B	1.50	1.80											
18	D	1.80												
19	U	2m	2.45	95%	23									
20	S	2m	2.45					2	2	2	2	3	3	
21	SD	2m	2.45											
22	B	2m	2.50											

Standing Water Levels	Morning	Evening
Time	12:00	
BH Depth (m)	2.50	
Casing Depth (m)	2.50	
Water Level (m)	BH DRY	

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type
1.20	2m	200	CUTTER
2m	2.50	200	Shell

Casing Record Diameter (mm)	Base (m)
200	2.50

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time	11:00	11:20	
Strike Depth (m)	2.65		
Casing Depth (m)	2m		
5 mins	1.98		
10 mins	1.95		
15 mins	1.92		
20 mins	1.90		
Depth Sealed (m)	2m		

Client Signature	Company
	Date
Borehole Completed	Yes / No

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description

Email: info@ssltd.co.uk
Web: www.ssltd.co.uk

Notes/Remarks: Sample type/Grab, D=Disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: Bright spoon, Cocone, Cover Type: Unyielding, F=Rich
Template: SSL_CABLE PERCUSSION LOG CABLE LOG 2018

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	PTS 101			Rig Type	5
				Rig ID	
Contract Number	765633	Location	A66 NTP S03A	Rig Move	From / To / Sheet
Company Name	JBSite	Driller	Will Nevins	Assistant(s)	Stephen Sharman
Engineer	DANIEL				
Date	6.3.23	Day	Mon	Start Time	8.30
Finish Time	5.00	Hammer ID	5		

Depth From (m)	Depth To (m)	Driller's Description of Strata
2.50	380	Firm Grey Silty Sand Medium Cobbles
380	6M	Dence Grey Sand + gravels - large cobbles
38	SD	6M - 6.30

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow
23	WS	250	240		
24	D	280			
25	S	3m	345		
26	DS	3m	345		
27	B	3m	350		
28	B	380	4m		
29	S	4m	445		
30	DS	4m	445		
31	B	4m	450		
32	D	480			
33	S	5m	545		
34	SD	5m	545		
35	B	5m	550		
36	DS	580			
37	S	6m	6.30		

Standard Penetration Tests

Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
		1	2	2	3	3	4	
		2	4	5	6	7	8	
		8	14	13	14	13	10	
		13	12	15	17	18	=	70mm

Standing Water Levels

	Morning	Evening
Time	8.30	2.40
BH Depth (m)	250	
Casing Depth (m)	250	
Water Level (m)	2.40	4M

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
250	6M	190	Shell

Casing Record

Diameter (mm)	Base (m)
200	6M

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
250	6M	2X Bowsers

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
380	4.30	1 HR Slow Progress
4.30	4.70	1 HR Slow progress
4.70	5.20	1 HR Slow progress
5.20	570	1 HR Slow progress
570	6m	1 HR Slow progress
		1 HR BAGGING 10" SPOIL.

Client Signature

Company

Date

Borehole Completed Yes / ~~No~~

Notes/Remarks: Sample type B=bulk, D=disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: S=split spoon, C=cone, Cover Type: U=upstanding, F=flush.
Template SSL - DRILLERS LOG-CABLE-V01-OCT-2019
Email: ssl@soils.co.uk
Web: www.soils.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHPTS 161	Rig Type	DANDO 2000 MK11		
		Rig ID	5		
Contract Number	765633	Location	A66 NTP503A	Rig Move	From / To / Sheet
Company Name	JBSite	Driller	WILL NEVINS	Assistant(s)	STEPHEN SHARMAN
				Engineer	DANIEL
Date 7.3.23	Day TUE	Start Time 8.00	Finish Time 5.00	Hammer ID	5

Depth From (m)	Depth To (m)	Driller's Description of Strata
3.80	7.60	VERRY DENCE grey sand With large cobbles

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
B9	B	6m	6.50											
L0	D	6.80												
L1	S	7m	7.25					12	13	30	20	=	45mm	
L2	DS	7m	7.25											
L3	B	7m	7.50											
L4	D	7.60												

Standard Penetration Tests

Standing Water Levels	Morning	Evening
Time	8.00	
BH Depth (m)	6m	
Casing Depth (m)	6m	
Water Level (m)	4.25	3m

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type
6m	7.60	250	Shell

Casing Record Diameter (mm)	Base (m)
6m	7.50

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
7.50	7.60	½	30 mins	

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)
6m	7.60	3x Bucket

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description
½	½	FILL BUCKET x3
8	9	TOOL BOX TALK
15.30	16.30	INSTALL INSTRUCTIONS
9.00	12.30	Slow progress 1meter 3½ HRS
1PM	3.30	0.60 2½ HRS

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: info@ssltd.co.uk
Web: www.ssltd.co.uk

Notes/Remarks: Sample type:B=bulk, D=disturbed, DSPT=disturbed from SPT test, Undisturbed, UT=UT100, Winwater, SPT test types: S=split spoon, C=cone, Cover Type: U=unstanding, F=fluid.
Template:SSL_DRILLING LOG-CABLE_V01 OCT 2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	~~BH-PTS101~~ BH-PTS101	Rig Type	DANDO 2000 MK II
		Rig ID	5
Contract Number	765633	Location	A66 NTPS03A
Rig Move	From BH-PTS 101 To BH-PTS 12H	Sheet	1
Company Name	JB Site	Driller	Will Nevins
Assistant(s)	Stephen Sharman	Engineer	DANIEL
Date	8-3-23	Day	Wed
Start Time	8:00	Finish Time	5:00
Hammer ID	5		

Depth From (m)	Depth To (m)	Driller's Description of Strata	Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standard Penetration Tests

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	To (m)	Hours (h)	Time From (hh:mm)	To (hh:mm)

Water Added Depth From (m)	To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)	3M	Water Depth After (m)	4.50	Cover Type	U / ~~S~~

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)
~~Slotted~~			
PLAIN			
2½	Slotted Pipe 65mm	4½	2M
2½	Plain Pipe 65mm	2M	½ Above

Backfill Materials	From (m)	To (m)
Pellets	7.60	5M
GRAVEL	5M	4½

Client Signature	Company	
	Date	

Borehole Completed Yes / No

Record of Hourly Rated Work / Standing / Delays

Time From	To	Description
8:00	8:30	TOOL BOX TALK
8:30	9:00	Collect INSTALL GEAR
9:00	11:15	INSTALLING BOREHOLE
11:15	14:30	RIG MOVE TO BH-PTS124

Notes/Remarks: Sample type: B=bulk, O=disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: S=split spoon, C=core, Cover Type: U=upstanding, F=flush
Template: SEL-DRILLERS-LOG-CABLE-V01-OCT-2015
Email: ssl@soils.co.uk
Web: www.soils.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS102	Rig Type	Ocado 2000
		Rig ID	Rig 1
		Rig Move	From / To / Sheet 1
Contract Number	765633	Location	A66 NTP503A
Company Name	JG.S Ltd	Driller	Brad Spears
		Assistant(s)	Jamie Carr
		Engineer	
Date 13.4.23	Day Thursday	Start Time 08:00	Finish Time 17:00
		Hammer ID	J801

Depth From (m)	Depth To (m)	Driller's Description of Strata
GL	0.35	Slight gravelly topsoil
0.35	0.70	Slight gravelly, Sandy Clay firm
0.70	1.60	reddish gravelly Sand, Clay pockets
~~[illegible]~~	~~[illegible]~~	
13:30	15:30	waiting on trencher to move rig
15:30	16:00	move rig with trencher, set up
16:00	17:00	waiting on engineer as was supervising elsewhere

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow
1	D	0.10			
2	B	0.10	0.70		
3	D	0.40			
4	B	0.40	0.60		
5	D	0.80			
6	B	0.80	1.00		
7	B	1.20	1.60		
101	ES	0.30			
102	ES	0.50			
103	ES	1.00			

Standard Penetration Tests

Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N

Standing Water Levels

	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
1.20	1.60	18"	Shell/Chisel

Casing Record

Diameter (mm)	Base (m)

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added

Depth From (m)	Depth To (m)	Volume (lm)

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / P

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials

	From (m)	To (m)
Bacto	GL	1.60

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
08:00	08:40	Morning briefing, collect trainee, get to BH
08:40	09:25	waiting on engineer to dig pit
09:30	11:50	dig pit, try get boulder out
12:40	13:15	take CPT to try break up boulder,
		Chisel with Shell
17:15	17:20	wait on decision, drop rig

Client Signature	Company
	Date
Borehole Completed	Yes / No

Notes/Remarks: Sample Types/Sub-Sub, D=Disturbed, DSPT=disturbed from SPT test, Undisturbed, UT=UT100, Wheeler, SPT test types: Single spoon, C=cone, Cover Type: U=padding, F=bum.
Test/Rig Site - GRILLING (D)-CABLE (D)-DCP (D)-2015

Email: info@structs.co.uk
Web: www.sslg.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH - PTS 102 A	Rig Type	Atlas Zero		
		Rig ID	/		
Contract Number	765633	Location	A66 NTP/DJA	Rig Move	From / To / Sheet /
Company Name	JB	Driller	James Crane	Assistant(s)	Ryan Jones	Engineer	Ryan
Date	14 4 23	Day	Friday	Start Time	0800	Finish Time	1400	Hammer ID	JB01

Depth From (m)	Depth To (m)	Driller's Description of Strata
GL	0.20	Sandy Gravelly Topsoil
0.20	1.20	Sandy Gravelly Silty Clay Fill

Samples and Tests: Number	Type	From (m)	To (m)	Rec (mm)	U Blow
			No Drive		

Standard Penetration Tests: Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time	/	1400
BH Depth (m)	/	1.20
Casing Depth (m)	/	—
Water Level (m)	/	None

Drilling Tool Record: From (m)	To (m)	Diameter (mm)	Type
GL	1.20	200	Pq Spin

Casing Record: Diameter (mm)	Base (m)
/	/

Record of Chiselling: Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
/	/	/	/	/

Water Added: Depth From (m)	Depth To (m)	Volume (ltrs)
/	/	/

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)	Dry	1.20	
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
/	/			/	/

Backfill Materials	From (m)	To (m)
	/	/

Record of Hourly Rated Work / Standing / Delays: Time From	Time To	Description
800	855	Moving Plant On To BH
855	910	Wait on Engineer To Do Pq
910	1030	Do impression Pq To 1.20
1030	1230	Stuck in Pq – Stop work – wait for Pressure
1230	1400	BH Backfill with Pea Gravel To Surface and cable Marker

Client Signature	Company
	Date
Borehole Completed	Yes / (No)

Email: info@ssl.co.uk
Web: www.ssl.co.uk

Notes/Remarks: Sample type Details, Disturbed, DS/Disturbed from SPT test, Undisturbed, UT=UT100, Wheeler, SPT test types Straight space, Chisel, Cover Type Unplanking, Finish Template 019, CABLE PERCUSSION CABLE E-001-001-2019

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS102A					Rig Type	Dando 2000
						Rig ID	Rig 7
Contract Number	765633	Location	A66 NT PS039			Rig Move	From / To / Sheet 1
Company Name	JB. Site	Driller	Brad Sparks	Assistant(s)	Jamie Cox	Engineer	
Date 17.4.23	Day Monday	Start Time	08:00	Finish Time	16:30	Hammer ID	3201

Depth From (m)	Depth To (m)	Driller's Description of Strata
1.20	1.60	reddish sandy gravel
1.60	3.60	grey gravelly clay
3.60	5.00	grey, brown, slight sandy, soft clay
		016 4.80
		ES101 2.00
		ES102 4.00
		ES103 5.00

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
1	S	1.20	1.65			1.20	Dry	4	6	4	3	5	3	
2	DS	1.20	1.65											
3	B	1.20	1.60											
4	D	1.70												
5	B	1.70	2.00											
6	S	2.00	2.45			2.00	Dry	3	4	3	3	4	7	NR
7	B	2.00	2.50											
8	D	2.50												
9	U	3.00	3.45	100%	67	3.00	Dry							
10	D	3.50												
11	D	3.70												
12	B	3.70	4.00											
13	S	4.00	4.45			4.00	Dry	3	4	10	5	3	2"	
14	DS	4.00	4.45											
15	B	4.00	4.50											

Standing Water Levels

	Morning	Evening
Time		16:30
BH Depth (m)		5.00
Casing Depth (m)		4.50
Water Level (m)		C-L

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
1.20	3.60	100	Shell
3.60	5.00	100	Shell

Casing Record

Diameter (mm)	Base (m)
250	4.50

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
1.20	1.60	300

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
08:00	08:55	Morning briefing, collect trailer get to BH
08:55	10:10	Wait on gas, BH cleared
10:15	11:20	Drill hammer broke, go get new one
		Runs from compound, fit drill hammer
14:50	15:15	Wait on decision
15:15	16:30	Forming hand test

Client Signature	Company		
	Date		
Borehole Completed	Yes / No		

Email: info@ssl.co.uk Web: www.ssl.co.uk

Notes/Remarks: Sample type B=bulk, D=disturbed, DS=disturbed from SPT test, U=undisturbed, U1=U100, W=water. SPT test types: S=split spoon, C=core. Cover Type: U=standing, F=flush. Tension=SSL, DCS=CIRIS (00-CAR-E-P01-00-T-2013)

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH - PTS102A	Rig Type	Dando 2000		
		Rig ID	Rig 1		
Contract Number	765633	Location	AGENTPS03A	Rig Move	From / To / Sheet 1
Company Name	JB. Steel	Driller	Brad Spencer	Assistant(s)	Jamie Cook
				Engineer	
Date 18.4.23	Day Tuesday	Start Time 08:00	Finish Time 17:00	Hammer ID	5801

Depth From (m)	Depth To (m)	Driller's Description of Strata
5.00	5.30	grey brown, slight sandy soft clay
5.30	7.00	sand and gravel (clay pockets)
7.00	7.80	brown, slight sandy, gravelly clay
7.80	9.00	sand and gravel

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
17	U	5.00	5.45	90%	58	5.00	0.49							
18	D	5.60												
19	B	5.40	6.00											
20	C	6.00	6.45			6.00	4.34	4	10	12	8	8	6	
21	B	6.00	6.50	NR										
22	D	6.80												
23	C	7.00	7.45			7.00	5.79	4	6	6	7	8	7	
24	B	7.00	7.50											
25	D	7.80												
26	C	8.00	8.45			8.00	5.09	7	9	15	16	16/30		
27	B	8.00	8.50	NR										
28	D	8.80												
104	ES	6.00												

Standing Water Levels

	Morning	Evening
Time	09:00	16:30
BH Depth (m)	5.00	9.00
Casing Depth (m)	4.50	9.00
Water Level (m)	0.49	5.47

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
5.00	9.00	100	Sandy

Casing Record

Diameter (mm)	Base (m)
250	9.00

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
7.30	7.96	1/2	13:00	13:30

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
5.00	9.00	1500

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)	/	Water Depth After (m)	/	Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
08:00	08:30	Morning briefing, get to BH
9:45	11:00	Having lunch rest
15:10	16:30	Stop due to water running towards drain, work on Sat bags
16:30	17:00	Pack tools away, take transport back to compound

Client Signature	Company	
	Date	
Borehole Completed	Yes / (No)	

Email: info@scls.co.uk
Web: www.scls.co.uk

Name/Remarks, Sample type/Batch, Conducted, DEPTH=derived from SPT test, Unavailable, UT=UT100, W=water, SPT test types: Split spoon, Cross, Cone Type: Unspecified, Fixed.
Template SCL - DRILLING LOG CABLE V01.00(F) 2018

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS102A					Rig Type	Dando Terrier
						Rig ID	Rig 4
Contract Number	765633	Location	A66 WTP303A			Rig Move	From / To / Sheet 1
Company Name	JB Site	Driller	Brad Sparks	Assistant(s)	Jamie Cook	Engineer	
Date 19.4.23	Day Wednesday	Start Time	09:00	Finish Time	17:00	Hammer ID	3801

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata	Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
9.00	10.00	Sand and gravel	29	C	9.00	9.45			9.00	5.70	8	8	19	11	17	3/29	
			30	B	9.00	9.50	XE										
			31	D	9.90												
			32	C	10.00	10.45			10.00	6.72	9	7	9	10	14	19/39	

Standing Water Levels	Morning	Evening
Time	09:00	10:50
BH Depth (m)	9.00	10.00
Casing Depth (m)	9.00	10.00
Water Level (m)	6.09	6.70

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type
9.00	10.00	10"	Slug

Casing Record Diameter (mm)	Base (m)
/	/

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
/	/	/	/	/

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)
9.00	10.00	500

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)	/	/	
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)	/	Water Depth After (m)	/	Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)
/	/	/	/

Backfill Materials	From (m)	To (m)
Bentonite	10.00	GL

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
09:00	09:50	Morning briefing, get to BH
09:50	10:15	get trailer into position, get tools out
10:15	10:30	wait on decision
10:30	11:50	Pull casing, backfill BH, drop and load rig
11:50	12:15	Move rig, trailer and bowser to next BH, set up

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Email: data@ssl.co.uk Web: www.ssl.co.uk
Rotary/Rotarka Sample type Brequip, Drilling tool, DGPT-restarted from DPT test, U-undisturbed, UT-U100, W-water, SPT test types: B-split spoon, C-cone, Cover Type: U-unplastered, Fr-flush
Template SSL_DRILLING-LOG-SAMPLE-27-OCT-2023

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHPTS 104	Rig Type	DANDO 2000		
Contract Number	765633	Rig ID	2000 66aa		
Location	A66NTPS03A	Rig Move	From 9.00	To 5.00	Sheet 1
Company Name	JBSite	Driller	WILL NEVINS	Assistant(s)	Stephen Sharman
Engineer	RONIN				
Date	17.5.23	Day	WEDS	Start Time	8.00
Finish Time	5.00	Hammer ID			

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests: Number	Type	From (m)	To (m)	Rec (mm)	U Blow

Standard Penetration Tests: Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling: Depth From (m)	To (m)	Hours (h)	Time From (hh:mm)	To (hh:mm)

Water Added: Depth From (m)	To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays: Time From	To	Description
8.00	8.30	Brief
8.30	10.00	SETTING TRACK WAY FOR BH PTS ~~104~~ 107
10.00	11.00	MOB RIG TO BH 104 instead of 107 FROM M6 SIDROAD
11.00	3.00	MOVE BH STANDING ON TRACKWAY
3.00	4.00	MOB TRAILER BOUSTER RIG TO FIRE
4.00	5.00	TRACKWAY + COMPOUND SET UP.

Client Signature

Company

Date

Borehole Completed Yes / No

Email: info@ssltd.co.uk Web: www.ssltd.co.uk

Notes/Remarks: Samples (ppb, Schub, Crosbulbed, D&P Tube) collected from SPT test. U=undisturbed, UT=UT100, W=water. SPT test types: S=split spoon, C=core. Cover Type: U=standing, F=flush. Template 006 - DRILLING LOG - SHEET A - V1 - OCT 2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHPTS 104	Rig Type	DANDO 2000		
		Rig ID	R000 6699		
Contract Number	765633	Location	Penrith	Rig Move	From — To — Sheet 1
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sharman
Date 18-5-23	Day THU	Start Time	8:00	Finish Time	5:00
Hammer ID	5	Engineer	Ronin		

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standard Penetration Tests

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (litre)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description
8:00	8:30	Morning Brief
8:30	1pm	Standing on Track Way
1pm	3:30	BH Decision as we cant make
—		ANY RUTS ON GRASS.
3:30	4:00	Bog Boards + Sleepers
4:00	5:00	Set up Rig + compound.

Client Signature	Company
	Date
Borehole Completed	Yes / No

Notes/Remarks: Sample type B=bulk, D=disturbed, CBP=trends/rec from SPT test, U=undisturbed, UT=UT100, W=water. SPT test types: S=split spoon; Drivers. Cover Type: U=standing, F=flush.

Email: info@soils.co.uk
Web: www.soils.co.uk

Template 335 - DR1 (HBR) 002-GBLE-X01-0501-2013

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS-104					Rig Type	DANDO 2000
						Rig ID	2000 6699
Contract Number	765633	Location	A66NTPS03A			Rig Move	From / To / Sheet 1
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sherman	Engineer	RONIN
Date 19-5-23	Day Fri	Start Time	8:00	Finish Time	4:00	Hammer ID	5

Depth From (m)	Depth To (m)	Driller's Description of Strata
GL	0.05	GRASS OVER TOP SOIL
0.05	0.60	loose brown sand large cobbles
0.70		POSSIBLE ROMAN SETTLEMENT.

Samples and Tests: Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Standard Penetration Tests: Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record: From (m)	To (m)	Diameter (mm)	Type

Casing Record: Diameter (mm)	Base (m)

Record of Chiselling: Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added: Depth From (m)	Depth To (m)	Volume (lits)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)
BENTONITE				0.0	0.70

Record of Hourly Rated Work / Standing / Delays: Time From	Time To	Description
8:00	8:30	MORNING BRIEF
8:30	9:00	Waiting for permits
9:00	11:30	Dig pit with archaologist
11:30	4:00	Unable to carry on work due to Archaologist finding Roman road?

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Notes/Remarks: Sample type/Brinds, Overstriped, DSPT=disturbance from SPT test, Unsuitabe/wet, VT=VT100, Wheather: SPT test bypass: Stopped sooon, Groove: Cover Type: Unsatisfactory, Fill soil.
Template SSL: DB/UMB-SOC-CABLE-V01-OCT-2015

Email: ssl@ssltd.co.uk
Web: www.ssltd.co.uk

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS106

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
02/05/2023	11:00	0.0	0.0	Inspection pit	SSL-SN03645

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
AR2670-2023	Karl Wordsworth	Jamie Norman		Maciej Turkowski

Description of Strata

Confirm no stratum description data	[X]

Samples and SPTs

Confirm no samples data	[X]

Standing Water Levels

Confirm no water level observations made	[X]

Drilling Tool Record

Confirm no drilling tool data	[X]

Casing Record

Confirm no casing record data	[X]

Chiselling

Confirm no chiselling data	[X]

Water Added

Confirm no water added	[X]

Water Strikes

Confirm no water strikes	[X]

Backfill, Pipes and Covers

Confirm no pipes installed	[X]
Confirm no backfill	[X]

Standing Time

Standing Time Grid

2 records

From	*To*	*Standing Time Summary*

11:00	13:00	Category: Standing - Other Duration: 02:00 Description: Discussing options for PTS113
13:00	17:00	Category: Standing - Other Duration: 04:00 Description: Waiting for rotary rig to move so I don't block them in when I set up on PTS106

General Remarks

Confirm no preset or general remarks	[X]

Photos

Confirm no photos required/taken	[X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	0.0	Karl Wordsworth	

RSK Completion confirmation

Client Completion confirmation

No data

No client completion confirmation possible	[X]
Review all data	[X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS106

Location Coordinates / Position

Elevation units toggle Not specified

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
03/05/2023	08:00	0.0	1.2	Inspection pit	SSL-SN03645

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
AR2670-2023	Karl Wordsworth	Jamie Norman		Maciej Turkowski

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Drilling Tool Record

Confirm no drilling tool data [X]

Casing Record

Confirm no casing record data [X]

Chiselling

Confirm no chiselling data [X]

Water Added

Confirm no water added [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no pipes installed [X]

Confirm no backfill [X]

Standing Time

Standing Time Grid

8 records

From	*To*	*Standing Time Summary*
		Category: Dayworks - Other

08:00	08:20	Duration: 00:20 Description: Morning brief
08:20	10:00	Category: Standing - Other Duration: 01:40 Description: Waiting for rotary rig and equipment Tobe moved so I don't block it in
10:00	10:30	Category: Dayworks - Moving Drilling Position Duration: 00:30 Description: Picking rig up from BH-004-153 and move to PTS106
10:30	12:30	Category: Standing - Other Duration: 02:00 Description: Waiting for rotary rig and equipment to be picked up by tractor trailer As I would block equipment if I set up on PTS106
12:30	13:15	Category: Dayworks - Setting Up Rig Duration: 00:45 Description: Setting rig up on position
13:15	14:45	Category: Dayworks - Other Duration: 01:30 Description: Looking for the hydraulic breaker
15:00	15:20	Category: Dayworks - Other Duration: 00:20 Description: Getting petrol for breaker as it had no fuel
15:20	16:25	Category: Dayworks - Digging Inspection Pit (include if breaker was used) Duration: 01:05 Description: Digging inspection pit used breaker for first 0.3

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	1.2	Karl Wordsworth	

RSK Completion confirmation

Client Completion confirmation

No data

No client completion confirmation possible [X]

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS106

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
04/05/2023	08:00	1.2	5.0	Inspection pit	SSL-SN03645

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
AR2670-2023	Karl Wordsworth	Jamie Norman		Maciej Turkowski

Description of Strata

Stratums Grid

4 records

From (m)	*To (m)*	*Description*	*Stratum Classifications*	*Stratum Thickness (m)*
0	0.2	Asphalt	Boundary: Solid	0.2
0.2	0.4	Greyish gravely made ground	Boundary: Solid	0.2
0.4	4	Reddish sandy natural rock	Boundary: Solid	3.6
4	5	Hard red rock possibly big cobble	Boundary: Solid	1.0

Confirm no stratum description data [X]

Samples and SPTs

Samples and SPTs

23 records

From	*To*	*Ref*	*Type.*	*Test Details*	*Containers*	*Hazards*	*Description / Remarks*
0.05		1	D				
0.1	0.3	2	B				

0.3	1.2	4	B				
0.5		3	D				
1		5	D				
1.2	1.65	6	S	N-Value=10 Seating:2,2 = 4/150mm Test:2,2,3,3 = 10/300mm No Casing. Water=Dry			
1.2	1.65	7	DSPT				
1.5	2	8	B				
2		9	D				
2	2.45	10	S	N-Value=4 Seating:1,0 = 1/150mm Test:1,0,1,2 = 4/300mm Casing=2.0m Water=Dry			
2	2.45	11	DSPT				
2.5	3	12	B				
3		13	D				
3	3.45	14	S	N-Value=100 Seating:18,7/50mm = 25/125mm Test:25,28,30,17/40mm = 100/265mm Casing=3.0m Water=1m Hard rock testing (up to 100 blows allowed.)			

3	3.45	15	DSPT				
3.5	4	16	B				
4		17	D				
4	4.45	18	S	N-Value=52 Seating:7,8 = 15/150mm Test:12,12,13,15 = 52/300mm Casing=4.0m Water=3.5m Hard rock testing (up to 100 blows allowed.)			
4	4.45	19	DSPT				
4.5	5	20	B				
5		21	D				
5	5.45	22	S	N-Value=100 Seating:15,10/50mm = 25/125mm Test:100/50mm = 100/50mm Casing=5.0m Water=1m Hard rock testing (up to 100 blows allowed.)			
5	5.45	23	DSPT				

Standing Water Levels

Confirm no water level observations made [X]

Drilling Tool Record

Confirm no drilling tool data [X]

Casing Record

Casing Record Grid

1 record

DateTime	*Base depth (m)*	*Internal diameter (mm)*	*Casing Record Remarks*
04/05/2023, 17:00	5.00	200	

Chiselling

Chiselling Grid

2 records

From (m)	*To (m)*	*Hours (h)*	*Chiselling Summary*
3	4	1	Start time: 13:00 End time: 14:00 Tool: Shell Remarks: Used casing to chisel through rock layer
4	5	1	Start time: 15:15 End time: 16:15 Tool: Shell Remarks: Also tried using casing to chisel with no success

Water Added

Confirm no water added [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no pipes installed [X]

Confirm no backfill [X]

Standing Time

Standing Time Grid

6 records

From	*To*	*Standing Time Summary*
08:00	08:20	Category: Dayworks - Other Duration: 00:20 Description: Morning brief
08:20	08:55	Category: Dayworks - Other Duration: 00:35 Description: Collecting water bowser and taking it to drilling location
08:55	09:15	Category: Standing - Pre Start Checks (LOLER / PUWER / POWRA / RAMS) Duration: 00:20 Description: Doing daily checks on rig
13:00	14:00	Category: Dayworks - Other Duration: 01:00 Description: Chiseling through rock layer with shell and casing
15:15	16:15	Category: Dayworks - Other Duration: 01:00 Description: Chiseling on rockat 5m instructed by Jacobs
16:15	17:00	Category: Dayworks - Other Duration: 00:45 Description: Making drill area neat and locking up compound

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	5.0	Karl Wordsworth	

RSK Completion confirmation

Client Completion confirmation

No data

No client completion confirmation possible [X]

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS106

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
05/05/2023	08:00	5.0	5.5	Inspection pit	

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
AR2670-2023	Karl Wordsworth	Jamie Norman		Maciej Turkowski

Description of Strata

Stratums Grid

1 record

From (m)	*To (m)*	*Description*	*Stratum Classifications*	*Stratum Thickness (m)*
5	5.5	Greenish Hard rock possibly a big cobble	Boundary: Solid	0.5

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Confirm no water level observations made [X]

Drilling Tool Record

Confirm no drilling tool data [X]

Casing Record

Casing Record Grid

1 record

DateTime	*Base depth (m)*	*Internal diameter (mm)*	*Casing Record Remarks*
05/05/2023, 11:00	5.50	200	

Chiselling

Chiselling Grid

1 record

From (m)	*To (m)*	*Hours (h)*	*Chiselling Summary*
5	5.5	2	Start time: 09:00 End time: 11:00

			Tool: California chisel

Water Added

Confirm no water added	[X]

Water Strikes

Confirm no water strikes	[X]

Backfill, Pipes and Covers

Confirm no pipes installed	[X]
Confirm no backfill	[X]

Standing Time

Confirm no standing time	[X]

General Remarks

Confirm no preset or general remarks	[X]

Photos

Confirm no photos required/taken	[X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
11:00	5.5	Karl Wordsworth	

RSK Completion confirmation

Client Completion confirmation

No data

No client completion confirmation possible	[X]
Review all data	[X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete?	( ) No	(X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS106

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
09/05/2023	11:45	5.5	5.9	Inspection pit	SSL-SN03645

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
AR2670-2023	Karl Wordsworth	Jamie Norman		Maciej Turkowski

Description of Strata

Stratums Grid

1 record

From (m)	*To (m)*	*Description*	*Stratum Classifications*	*Stratum Thickness (m)*
5.5	5.9	Very hard greenish grey rock	Boundary: Solid	0.4

Samples and SPTs

Standing Water Levels

Confirm no water level observations made [ ]

Drilling Tool Record

Confirm no drilling tool data [ ]

Casing Record

Confirm no casing record data [ ]

Chiselling

Chiselling Grid

1 record

From (m)	*To (m)*	*Hours (h)*	*Chiselling Summary*
5.5	5.9	4	Start time: 12:45 End time: 16:45 Tool: California chisel

Confirm no chiselling data [X]

Water Added

Confirm no water added [ ]

Water Strikes

Backfill, Pipes and Covers

Standing Time

Standing Time Grid

2 records

From	To	Standing Time Summary
11:45	12:05	Category: Dayworks - Other Duration: 00:20 Description: Checking in at main site compound
12:25	12:45	Category: Dayworks - Other Duration: 00:20 Description: Re-eying cable

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	Base depth	RSK Completion Confirmation	Client Confirmation
16:45	5.9	Karl Wordsworth	

RSK Completion confirmation

Client Completion confirmation

No data

No client completion confirmation possible	[X]
Review all data	[X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete?	( ) No	(X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS106

Location Coordinates / Position

Elevation units toggle Not specified

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
11/05/2023	08:00	5.9	5.9	Inspection pit	SSL-SN03645

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
AR2670-2023	Karl Wordsworth	Jamie Norman		Maciej Turkowski

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Standing Water Levels

1 record

DateTime	*Standing Water Levels Summary*
11/05/2023, 09:06	Borehole depth = 5.9m. Casing depth = 5.9m. Water depth = 5.0m. Borehole diameter = 200mm.

Drilling Tool Record

Confirm no drilling tool data [X]

Casing Record

Confirm no casing record data [X]

Chiselling

Confirm no chiselling data [X]

Water Added

Confirm no water added [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Pipes setup data

1 record

Ref	Desc	Install Summary (1)	RZ Summary	Install Summary (2)	Install Summary (3)
1	Shallow	Type: Groundwater monitoring point Desc: Shallow	RZ Top: 2.5m. RZ Base: 4.5m.	Date: 11 May 2023. Diameter: 50mm. Material: UPVC. Length: 4.0m.	Gas tap: Yes. Cover: FLUSH COVER. Installer: Karl Wordsworth. Geowrap: Yes.

Pipe construction

2 records

Pipe ref	Top (m)	Base (m)	Pipe type	Pipe Summary	Length (m)
1	0	3	PLAIN	Type: PLAIN Diameter: 50mm	3.0
1	3	4	SLOTTED	Type: SLOTTED Diameter: 50mm	1.0

Backfill Grid

4 records

Section top depth (m)	Section base depth (m)	Section fill	Date	By	Section length (m)
0	0.5	CONCRETE	11/05/2023	Karl Wordsworth karl.wordsworth@soils.co.uk	0.5
0.5	2.5	BENTONITE SEAL	11/05/2023	Karl Wordsworth karl.wordsworth@soils.co.uk	2.0
2.5	4.5	GRAVEL FILTER	11/05/2023	Karl Wordsworth karl.wordsworth@soils.co.uk	2.0
4.5	5.9	BENTONITE SEAL	11/05/2023	Karl Wordsworth karl.wordsworth@soils.co.uk	1.4

Standing Time

Standing Time Grid

5 records

From	*To*	*Standing Time Summary*
09:00	10:35	Category: Dayworks - Other Duration: 01:35 Description: Pulling casing and installing hole
10:35	11:30	Category: Standing - Other Duration: 00:55 Description: Waiting for stillage of casing and spoil sacks to be moved by forklift
11:45	15:00	Category: Standing - Breakdown Equipment (SSL) Duration: 03:15 Description: Drilling rope failed LOLA try to source new one
15:00	16:30	Category: Dayworks - Other Duration: 01:30 Description: Taking old drilling cable off and putting new one on
16:30	17:30	Category: Dayworks - Other Duration: 01:00 Description: Collapsing rig and loading and strapping rig to move

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:30	5.9	Karl Wordsworth	

RSK Completion confirmation

Client Completion confirmation

No data

No client completion confirmation possible	[X]
Review all data	[X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete?	( ) No	(X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS107

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
23/05/2023	13:00	0.0	1.65	Inspection pit	SSL-SN03645

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
AR2670-2023	Karl Wordsworth	Jamie Norman		Maciej Turkowski

Description of Strata

Stratums Grid

2 records

From (m)	*To (m)*	*Description*	*Stratum Classifications*	*Stratum Thickness (m)*
0	0.5	Topsoil	Boundary: Solid	0.5
0.5	1.65	Sandy gravely clay	Boundary: Solid	1.15

Samples and SPTs

Samples and SPTs

7 records

From	*To*	*Ref*	*Type.*	*Test Details*	*Containers*	*Hazards*	*Description / Remarks*
0	0.10	1	D				
0	0.5	2	B				
0.5	1.2	4	B				
0.6		3	D				
1.1		5	D				
1.2	1.65	6	S	N-Value=10 Seating:1,2 = 3/150mm Test:1,2,3,4 = 10/300mm No Casing. Water=Dry			

1.2	1.65	7	DSPT				

Standing Water Levels

Confirm no water level observations made [X]

Drilling Tool Record

Confirm no drilling tool data [X]

Casing Record

Confirm no casing record data [X]

Chiselling

Confirm no chiselling data [X]

Water Added

Confirm no water added [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no pipes installed [X]

Confirm no backfill [X]

Standing Time

Standing Time Grid

4 records

From	*To*	*Standing Time Summary*
13:00	13:20	Category: Dayworks - Other Duration: 00:20 Description: Filling out paperwork and starting log for BH-PTS-107

13:20	13:51	Category: Dayworks - Setting Up Rig Duration: 00:31 Description: Setting rig up and trying to get straight on slanted matting
13:51	15:20	Category: Dayworks - Digging Inspection Pit (include if breaker was used) Duration: 01:29 Description: Digging pit through hard ground
15:31	16:50	Category: Standing - Incorrect or Missing Kit Duration: 01:19 Description: Waiting for casing and tools to be delivered to borehole by labourers

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	1.65	Karl Wordsworth	

RSK Completion confirmation

Client Completion confirmation

No data

No client completion confirmation

possible	[X]
Review all data	[X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete?	( ) No	(X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS107

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
24/05/2023	08:00	1.5	2.0	Inspection pit	SSL-SN03645

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
AR2670-2023	Karl Wordsworth	Jamie Norman		Maciej Turkowski

Description of Strata

Stratums Grid

1 record

From (m)	*To (m)*	*Description*	*Stratum Classifications*	*Stratum Thickness (m)*
1.2	2	Sandy gravely clay	Boundary: Solid	0.8

Samples and SPTs

Samples and SPTs

4 records

From	*To*	*Ref*	*Type.*	*Test Details*	*Containers*	*Hazards*	*Description / Remarks*
1.5	2	8	B				
2		9	D				
2	2.45	10	S	N-Value=20 Seating:2,3 = 5/150mm Test:4,4,6,6 = 20/300mm Casing=1.5m Water=Dry			
2	2.45	11	DSPT				

Standing Water Levels

Confirm no water level observations made [X]

Drilling Tool Record

Confirm no drilling tool data [X]

Casing Record

Casing Record Grid

1 record

DateTime	*Base depth (m)*	*Internal diameter (mm)*	*Casing Record Remarks*
24/05/2023, 17:00	2.00	250	

Chiselling

Confirm no chiselling data [X]

Water Added

Water Added Grid

1 record

From (m)	*To (m)*	*Volume (lrs)*	*Water Added Remarks*
1.50	2.00	25	

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no pipes installed [X]

Confirm no backfill [X]

Standing Time

Standing Time Grid

4 records

From	*To*	*Standing Time Summary*
08:00	08:30	Category: Dayworks - Other Duration: 00:30 Description: Morning brief

08:30	08:45	Category: Standing - Pre Start Checks (LOLER / PUWER / POWRA / RAMS) Duration: 00:15 Description: Filling out morning paperwork
10:20	12:30	Category: Waiting for Instruction (SSL) Duration: 02:10 Description: Waiting on gpr as found plastic pipe in a sample
12:30	17:00	Category: Waiting for Instruction (Client) Duration: 04:30 Description: Waiting for highways england to come out

General Remarks

Confirm no preset or general remarks [X]

Photos

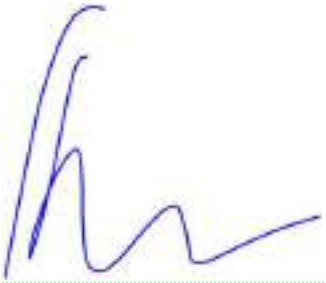
Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	2.0	Karl Wordsworth	

RSK Completion confirmation



Client Completion confirmation

No data

No client completion confirmation possible	[X]
Review all data	[X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete?	( ) No	(X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS107

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
25/05/2023	08:00	2.0	0.0	Inspection pit	SSL-SN03645

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
AR2670-2023	Karl Wordsworth	Jamie Norman		Maciej Turkowski

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Confirm no water level observations made [X]

Drilling Tool Record

Confirm no drilling tool data [X]

Casing Record

Confirm no casing record data [X]

Chiselling

Confirm no chiselling data [X]

Water Added

Confirm no water added [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no backfill [X]

Standing Time

Standing Time Grid

10 records

From	*To*	*Standing Time Summary*
		Category: Dayworks - Other

08:00	08:25	Duration: 00:25 Description: Morning brief
08:25	08:45	Category: Standing - Pre Start Checks (LOLER / PUWER / POWRA / RAMS) Duration: 00:20 Description: Doing paperwork for the day
08:45	09:40	Category: Waiting for Instruction (Client) Duration: 00:55 Description: Waiting for highways people to make a decision
09:40	10:30	Category: Dayworks - Other Duration: 00:50 Description: Getting pipe to keep hole open
10:30	11:40	Category: Dayworks - Other Duration: 01:10 Description: Pulling casing and putting pipe in to keep hole open and collapsing rig and moving it out of the way so new hole can be cleared
11:40	12:11	Category: Standing - Other Duration: 00:31 Description: Waiting for trackway
12:11	12:25	Category: Standing - Other Duration: 00:14 Description: Trackway removing panels for gpr crew
12:25	12:58	Category: Standing - Other Duration: 00:33 Description: Waiting on GPR scan
12:58	16:00	Category: Standing - Other Duration: 03:02 Description: Waiting on permitt and trackmatting to be put back down again
16:21	16:50	Category: Dayworks - Other Duration: 00:29 Description: Re-doing fencing around rig

General Remarks

Confirm no preset or general remarks	[X]

Photos

Confirm no photos required/taken	[X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	0.0	Karl Wordsworth	

RSK Completion confirmation

Client Completion confirmation

No data

No client completion confirmation possible	[X]
Review all data	[X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS107A

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
26/05/2023	08:00	0.0	0.7	Inspection pit	SSL-SN03645

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
	Karl Wordsworth	Jamie Norman		Maciej Turkowski

Description of Strata

Stratums Grid

3 records

From (m)	*To (m)*	*Description*	*Stratum Classifications*	*Stratum Thickness (m)*
0	0.4	Topsoil	Boundary: Solid	0.4
0.4	0.7	Sandy silty clay	Boundary: Solid	0.3
0.7	0.7	Boulder	Boundary: Solid	0.0

Samples and SPTs

Samples and SPTs

4 records

From	*To*	*Ref*	*Type.*	*Containers*	*Hazards*	*Description / Remarks*
0	0.4	1	B			
0.2		2	D			
0.4	0.7	3	B			
0.5		4	D			

Standing Water Levels

Confirm no water level observations made [X]

Drilling Tool Record

Confirm no drilling tool data [X]

Casing Record

Confirm no casing record data [X]

Chiselling

Confirm no chiselling data [X]

Water Added

Confirm no water added [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no pipes installed [X]

Backfill Grid

1 record

Section top depth (m)	*Section base depth (m)*	*Section fill*	*Date*	*By*	*Section length (m)*
0	0.7	ARISINGS	26/05/2023	Karl Wordsworth karl.wordsworth@soils.co.uk	0.7

Standing Time

Standing Time Grid

1 record

From	*To*	*Standing Time Summary*
09:00	09:34	Category: Dayworks - Other Duration: 00:34

		Description: Collapsing rig and moving to BH-PTS107B

General Remarks

General remarks

1 record

Note #	*General remark (free entry)*
1	Boulder covers wholepit can't break it

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
09:34	0.7	Karl Wordsworth	

RSK Completion confirmation

Client Completion confirmation

No data

No client completion confirmation possible [X]

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS107B

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
26/05/2023	08:00	0.0	1.3	Inspection pit	SSL-SN03645

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
AR2670-2023	Karl Wordsworth	Jamie Norman		Maciej Turkowski

Description of Strata

Stratums Grid

2 records

From (m)	*To (m)*	*Description*	*Stratum Classifications*	*Stratum Thickness (m)*
0	0.5	Topsoil	Boundary: Solid	0.5
0.5	1.3	Suspected Reworked material with cobbles	Boundary: Solid	0.8

Samples and SPTs

Samples and SPTs

7 records

From	*To*	*Ref*	*Type.*	*Test Details*	*Containers*	*Hazards*	*Description / Remarks*
0	0.4	1	B				
0.2		2	D				
0.5	1.2	3	B				
0.5		4	D				
1		5	D				
1.2	1.65	6	S	N-Value=9 Seating:1,2 = 3/150mm Test:2,2,2,3 = 9/300mm No Casing. Water=Dry			

1.2	1.65	7	DSPT				

Standing Water Levels

Confirm no water level observations made [X]

Drilling Tool Record

Confirm no drilling tool data [X]

Casing Record

Confirm no casing record data [X]

Chiselling

Confirm no chiselling data [X]

Water Added

Confirm no water added [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no pipes installed [X]

Confirm no backfill [X]

Standing Time

Standing Time Grid

4 records

From	*To*	*Standing Time Summary*
08:00	08:20	Category: Dayworks - Other Duration: 00:20 Description: Morning brief

08:30	10:00	Category: Dayworks - Digging Inspection Pit (include if breaker was used) Duration: 01:30 Description: Digging pit but had to relocate hole 1 m forward as obstruction was hit at 0.7
10:00	11:00	Category: Dayworks - Digging Inspection Pit (include if breaker was used) Duration: 01:00 Description: Digging inspection pit
11:30	12:00	Category: Dayworks - Other Duration: 00:30 Description: Tidying compound up for the weekend

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
12:00	1.3	Karl Wordsworth	

RSK Completion confirmation

Client Completion confirmation

No data

No client completion confirmation possible [X]

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS107B

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
30/05/2023	11:00	1.3	3.2	Inspection pit	SSL-SN03645

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
AR2670-2023	Karl Wordsworth	Jamie Norman		Maciej Turkowski

Description of Strata

Stratums Grid

2 records

From (m)	*To (m)*	*Description*	*Stratum Classifications*	*Stratum Thickness (m)*
1.3	2	Brown gravely clay	Boundary: Solid	0.7
2	3.2	Reddish sandy clay	Boundary: Solid	1.2

Samples and SPTs

Samples and SPTs

8 records

From	*To*	*Ref*	*Type.*	*Test Details*	*Containers*	*Hazards*	*Description / Remarks*
1.5	2	8	B				
2		9	D				
2	2.45	10	S	N-Value=100 Seating:15,10/50mm = 25/125mm Test:25,35,25,15/25mm = 100/250mm Casing=1.5m Water=Dry Hard rock testing (up to 100 blows allowed.) Remarks: Refusal			
2	2.45	11	DSPT				

2.5	3	12	B				
3		13	D				
3	3.45	14	S	N-Value=100 Seating:18,7/15mm = 25/90mm Test:36,36,28/50mm = 100/200mm Casing=3.0m Water=Dry Hard rock testing (up to 100 blows allowed.) Remarks: Refusal			
3	3.45	15	DSPT				

Standing Water Levels

Standing Water Levels

1 record

DateTime	*Standing Water Levels Summary*
30/05/2023, 11:30	Borehole depth = 1.3m. Casing depth = 0.0m. Water = Dry. Borehole diameter = 250mm.

Confirm no water level observations made [ ]

Drilling Tool Record

Confirm no drilling tool data [X]

Casing Record

Casing Record Grid

1 record

DateTime	*Base depth (m)*	*Internal diameter (mm)*	*Casing Record Remarks*

30/05/2023, 17:00	3.00	250	

Chiselling

Chiselling Grid

1 record

From (m)	*To (m)*	*Hours (h)*	*Chiselling Summary*
3	3.1	1	Start time: 15:30 End time: 16:30 Tool: Star chisel

Water Added

Confirm no water added [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no pipes installed [X]

Confirm no backfill [X]

Standing Time

Standing Time Grid

3 records

From	*To*	*Standing Time Summary*
11:00	11:25	Category: Standing - Pre Start Checks (LOLER / PUWER / POWRA / RAMS) Duration: 00:25 Description: Doing daily checks and paperwork
15:00	15:30	Category: Dayworks - Other Duration: 00:30 Description: Trying to untangle rope from drum caused by having a rope that holds tension

		caused by how the rope is made
15:30	16:30	Category: Dayworks - Other Duration: 01:00 Description: Chiseling

General Remarks

General remarks

2 records

Note #	*General remark (free entry)*
1	Taking regular breaks to stop heat exhaustion and heat stroke
2	Chiseling and went 0.2 in 1hr

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	3.2	Karl Wordsworth	

RSK Completion confirmation

Client Completion confirmation

No data

No client completion confirmation

possible	[X]
Review all data	[X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete?	( ) No	(X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	Name	Client
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS107B

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	Start time	Start depth	End depth	Initial technique	Equipment / Rig
31/05/2023	07:30	3.2	3.2	Inspection pit	SSL-SN2227

Log Breakdown Grid 2

HammerID	Lead driller	Assistant 1	Assistant 2	Supervising Engineer
	Sam Carter	Kieran Long		Dan Bennett

Coring Data

Confirm no coring data [X]

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Confirm no water level observations made [X]

Drilling Tool Record

Confirm no drilling tool data [X]

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no backfill [X]

Standing Time

Standing Time Grid

3 records

From	*To*	*Standing Time Summary*
08:00	11:00	Category: Dayworks - Other Duration: 03:00 Description: Travel to the east side and travel back to the west.
		Category: Dayworks - Other

11:00	14:00	Duration: 03:00 Description: Waiting for cable crew to move off position.
14:00	17:00	Category: Dayworks - Moving Drilling Position Duration: 03:00 Description: Moving rig to position and setting up.

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
12:00	3.2	Sam Carter	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS107B

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
31/05/2023	08:00	3.2	3.2	Inspection pit	SSL-SN03645

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
AR2670-2023	Karl Wordsworth	Jamie Norman		Maciej Turkowski

Description of Strata

Confirm no stratum description data	[X]

Samples and SPTs

Confirm no samples data	[X]

Standing Water Levels

Confirm no water level observations made	[X]

Drilling Tool Record

Confirm no drilling tool data	[X]

Casing Record

Confirm no casing record data	[X]

Chiselling

Confirm no chiselling data	[X]

Water Added

Confirm no water added	[X]

Water Strikes

Confirm no water strikes	[X]

Backfill, Pipes and Covers

Confirm no pipes installed	[X]
Confirm no backfill	[X]

Standing Time

Standing Time Grid

5 records

From	*To*	*Standing Time Summary*

08:00	08:20	Category: Dayworks - Other Duration: 00:20 Description: Morning brief
08:40	10:40	Category: Standing - Other Duration: 02:00 Description: Waiting for UW casing to be delivered by labour crew
10:40	11:20	Category: Dayworks - Other Duration: 00:40 Description: Collecting casing as labour crew wasn't available
11:20	12:30	Category: Dayworks - Other Duration: 01:10 Description: Putting UW casing in hole and removing 10 inch casing and collapsing rig and loading it
12:30	13:30	Category: Standing - Other Duration: 01:00 Description: Waiting for engineer to show us where next hole is

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
12:30	3.2	Karl Wordsworth	

RSK Completion confirmation

Client Completion confirmation

No data

No client completion confirmation possible	[X]
Review all data	[X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete?	( ) No	(X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS107B

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
01/06/2023	07:30	3.2	5.5	Inspection pit	SSL-SN2227

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
	Sam Carter	Kieran Long		Dan Bennett

Coring Data

Coring Data Grid

3 records

Top (m)	*Base (m)*	*Drilling Info*	*Run time (min)*	*Flush*	*Notes*
3.2	4	RC (Soil) Barrel: Geo-bor S Rec: 50%	18	Water 90% (max return) Brown	Description: Gravel Box: 1 Liner used: Yes
4	4.75	RC (Soil) Barrel: Geo-bor S Rec: 66.66666666666666667%	25	Water 90% (max return) Brown	Description: Gravel Box: 2 Liner used: Yes
4.75	5.5	RC (Soil) Barrel: Geo-bor S Rec: 73.33333333333333333%	23	Water 90% (max return) Brown	Description: Gravel Box: 3 Liner used: Yes

Description of Strata

Stratums Grid

1 record

Top (m)	*Base (m)*	*Description*	*Stratum Classifications*	*Stratum Thickness (m)*
3.2	5.5	Gravel	Boundary: Solid	2.3

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Standing Water Levels

2 records

DateTime	*Standing Water Levels Summary*
01/06/2023, 13:30	Borehole depth = 3.2m. Casing depth = 3.2m. Water = Dry. Borehole diameter = 200mm.
01/06/2023, 17:00	Borehole depth = 5.5m. Casing depth = 3.2m. Water depth = 1.5m. Borehole diameter = 146mm.

Drilling Tool Record

Drilling Tool Record Grid

1 record

DateTime	*From (m)*	*To (m)*	*Hole dia (mm)*	*Tool dia (mm)*	*Tool Type*	*Drill Tool Remarks*
01/06/2023, 17:00	3.20	5.50	146	109.5	PDC	

Casing Record

Casing Record Grid

1 record

DateTime	*Base depth (m)*	*Internal diameter (mm)*	*Casing Record Remarks*
01/06/2023, 17:00	3.20	197	

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no backfill [X]

Standing Time

Standing Time Grid

2 records

From	*To*	*Standing Time Summary*
08:00	13:00	Category: Dayworks - Moving Drilling Position Duration: 05:00 Description: Getting casing, pumps and ibcs to position.
15:45	16:45	Category: Dayworks - Fetching Water Duration: 01:00 Description: Waiting for water and filling the tanks, mixing polymer

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	5.5	Sam Carter	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS107B

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
02/06/2023	07:30	5.5	15.25	Inspection pit	SSL-SN2227

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
	Sam Carter	Kieran Long		Dan Bennett

Coring Data

Coring Data Grid

10 records

Top (m)	*Base (m)*	*Drilling Info*	*Run time (min)*	*Flush*	*Notes*
5.5	6.25	RC (Soil) Barrel: Geo-bor S Rec: 26.66666666666666667%	5	Water 95% (max return) Brown	Description: Gravel Box: 4 Liner used: Yes Notes: Couldn't do the SPT required at the base of the run as the hole collapsed.
6.25	7	RC (Soil) Barrel: Geo-bor S Rec: 40%	8	Water 95% (max return) Brown	Description: Gravel Box: 5 Liner used: Yes
7	7.75	RC (Soil) Barrel: Geo-bor S Rec: 40%	15	Water 95% (max return) Brown	Description: Gravel Box: 6 Liner used: Yes
7.75	8.5	RC (Soil) Barrel: Geo-bor S Rec: 40%	19	Water 95% (max return) Brown	Description: Gravel Box: 7 Liner used: Yes
8.5	9.25	RC (Rock) Barrel: Geo-bor S Rec: 60%	24	Water 95% (max return) Brown	Description: Gravel onto sandstone at 8.90. Box: 8 Liner used: Yes

9.25	10	RC (Rock) Barrel: Geo-bor S Rec: 100%	17	Water 95% (max return) Brown	Description: Sandstone Box: 9 Liner used: Yes
10	11.5	RC (Rock) Barrel: Geo-bor S Rec: 100%	13	Water 95% (max return) Brown	Description: Sandstone Box: 10 Liner used: Yes
11.5	13	RC (Rock) Barrel: Geo-bor S Rec: 63.33333333333333333%	14	Water 95% (max return) Brown	Description: Sandstone Box: 11 Liner used: Yes
13	13.75	RC (Rock) Barrel: Geo-bor S Rec: 200%	8	Water 95% (max return) Brown	Description: Sandstone Box: 12 Liner used: Yes
13.75	15.25	RC (Rock) Barrel: Geo-bor S Rec: 100%	16	Water 85% (max return) Red/brown	Box: 13 Liner used: Yes

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Standing Water Levels

2 records

DateTime	Standing Water Levels Summary
02/06/2023, 08:00	Borehole depth = 5.5m. Water depth = 1.6m.
02/06/2023, 17:00	Borehole depth = 15.25m. Water depth = 1.8m.

Drilling Tool Record

Confirm no drilling tool data [X]

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no pipes installed [X]

Confirm no backfill [X]

Standing Time

Standing Time Grid

1 record

From	To	Standing Time Summary
14:45	17:00	Category: Time Incurred due to Client Instruction (i.e. further chiselling, drill deeper than target depth etc) Duration: 02:15 Description: Waiting on client instructions

General Remarks

Confirm no preset or general remarks [X]

Photos

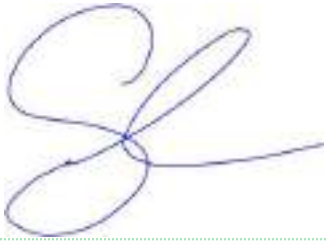
Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	15.25	Sam Carter	

RSK Completion confirmation



Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS107B

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
05/06/2023	08:04	15.0	15.0	Inspection pit	SSL-SN2227

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
	Andrew Ward	Barry Evans	Jack Cawthorne	Lauren McEnnis

Coring Data

Confirm no coring data [X]

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Standing Water Levels

1 record

DateTime	Standing Water Levels Summary
05/06/2023, 08:08	Borehole depth = 15.0m. Casing depth = 3.0m. Water depth = 6.2m. Borehole diameter = 147mm.

Drilling Tool Record

Confirm no drilling tool data [X]

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no pipes installed [X]

Backfill Grid

1 record

Section top	Section base				

depth (m)	depth (m)	Section fill	Date	By	Section length (m)
0.20	15.00	BENTONITE SEAL	05/06/2023	Andrew Ward andrew.ward@soils.co.uk	14.8

Standing Time

Standing Time Grid

2 records

From	To	Standing Time Summary
08:06	12:06	Category: Dayworks - Other Duration: 04:00 Description: Back fill borehole,drop rig,tidy all compound ready to move
12:07	16:07	Category: Dayworks - Other Duration: 04:00 Description: Load drilling rig onto trailer to move to warcop

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	Base depth	RSK Completion Confirmation	Client Confirmation
17:08	15.0	Andrew Ward	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS-108	Rig Type	DANDO 2000 MKII		
Contract Number	765633	Location	AGGNTPS03A	Rig ID	2000 66444
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sharman
Date	19-4-23	Day	Weds	Start Time	8:00
Finish Time	5:00	Hammer ID	5	Rig Move	From 10:00 To 1PM Shed
Engineer	RONIN/MAGIC				

Email: admin@ssls.co.uk, Web: www.ssls.co.uk

Depth From (m)	Depth To (m)	Driller's Description of Strata
GL	0.05	GRASS over TOPSOIL
0.05	0.80	Loose Brown sand + gravel
0.80	1.60	loose red sand occasional gravel clayey
1.60	2m	Dence Red sand gravels + large cobbles.

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow
1	D	0.05			
101	ES	0.20			
2	D20	0.80	B		
102	ES	0.50			
3	D	1m			
103	ES	1m			
4	B	0.80	1.20		
5	S	1.20	1.65		
6	DS	1.20	1.65		
7	B	1.20	1.50		
104	ES	~~1.64~~	1.5		
8	D	1.80			
9	S	2m	2.45		
10	DS	2m	2.45		

Standard Penetration Tests

Samples and Tests Number	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
5	/	/	2	2	2	2	2	3	
6	/	/							
9	2m	1.80	7	5	6	5	6	5	
10	/	/							

Standing Water Levels

	Morning	Evening
Time		5:00
BH Depth (m)		2m
Casing Depth (m)		2m
Water Level (m)		1.5

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
1.20	2m	280	Shell

Casing Record

Diameter (mm)	Base (m)
300	2m

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added

Depth From (m)	Depth To (m)	Volume (litre)
1.20	2m	3 Bowser

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8:00	8:30	MORNING Brief
8:30	9:30	TIDY UP + Move TRACK DUMPER.
10:00	1PM	MOD RIG TRAILER + BOWSER
1PM	2PM	Setup
2PM	3PM	DIG PIT
4:00	5:00	LET CASING STRAIGHT.

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Water/Remarks: Sample type Bulkets, Disturbed, DSPT=disturbed low SPT test, Undisturbed, UT=UT100, Winwater, SPT test types: Single spoon, Choose, Cover Type: Unguarded/Vg, F=flush
Template:SSL_DRILLER&LOG-CABLE-V01-OCT-2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS-108			Rig Type	DANDO 2000 MK II
				Rig ID	2000 MK II
Contract Number	765633	Location	A66NTPS03A	Rig Move	From / To / Sheet
Company Name	JBSite	Driller	Will Nevins	Assistant(s)	Stephen Sharman
Date 20-4-23	Day THU	Start Time	8:00	Finish Time	5:00
Hammer ID	5			Engineer	

Depth From (m)	Depth To (m)	Driller's Description of Strata
1.60	3.20	Dence red sands + gravels / cobbles
3.20	6m	Stiff red v sandy boulder clay with occasional large cobbles.
		26 05 6.6.44

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow
11	B	2m	2.50		
12	D	2.80			
13	S	3m	3.45		
14	DS	3m	3.45		
15	B	3m	3.50		
16	D	3.80			
17	S	4m	4.41		
18	DS	4m	4.41		
19	B	4m	4.50		
20	D	4.80			
21	S	5m	5.45		
22	DS	5m	5.45		
23	B	5m	5.50		
24	D	5.80			
25	S	6m	6.44		

Standard Penetration Tests

Number	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
13	3	3	2	2	8	3	4	6	
14	—	—							
17	3.20	Dry	2	5	14	14	14	8	15mm
18	—	—							
21	4.70	4.50	6	6	10	12	13	15	
25	6m	5.50	2	5	7	13	20	10	35mm

Standing Water Levels

	Morning	Evening
Time	8.30	5.00
BH Depth (m)	2m	6m
Casing Depth (m)	2m	6m
Water Level (m)	1.80	5.50

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
2m	6m	200	Shell

Casing Record

Diameter (mm)	Base (m)
220	6m

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
5m	5.50	1	2.30	3.30

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
2m	6m	1 Barrel

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / P

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8.00	8.30	Morning Brief

Client Signature	Company
	Date
Borehole Completed	Yes / No

Notes/Remarks: Sample type B=bulk, D=disturbed, DS=PT disturbed from SPT test, U=undisturbed, UT4/UT100, W=water. SPT test types: Single/Double, Cone, Cover Type: Unpatterning, Flush.
Template:BGL - DRILLER-01-CAB-R-01-0021-2013

Email: ask@soils.co.uk, Web: www.soils.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS-108					Rig Type	DANDO 2000 MK II
						Rig ID	2000 6699
Contract Number	765633	Location	A66NTPS03A			Rig Move	From / To / Sheet
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sharman	Engineer	MAGIC
Date 21-4-23	Day Fri	Start Time	8:00	Finish Time	1pm	Hammer ID	5

Depth From (m)	Depth To (m)	Driller's Description of Strata
6m	7.50	STIFF Brown Sands + GRAVELS Slightly clayey large boulders

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
27	B	6m	6.50											
28	D	6.80												
29	S	7m	7.25			7m	7m	6	19	25	25			35mm
30	DS	7m	7.25											
31	B	7m	7.50											

Standard Penetration Tests

Standing Water Levels	Morning	Evening
Time	8:00	1pm
BH Depth (m)	6m	7.50
Casing Depth (m)	6m	7.50
Water Level (m)	5.70	6.40

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type
6m	7.50	200	Shell

Casing Record Diameter (mm)	Base (m)
220	7.50

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)
6m	7.50	½ Bucket

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description
8:00	8:30	Morning Brief
8:30	11:00	To Drill 1 meter
11:00	11:30	To Drill ½ meter
11:30	11:45	To Drill 10cm
12:30	3:00	Standing ON BH INSTRUCTIONS

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Email: info@structural-soils.co.uk Web: www.ssltd.co.uk
Notes/Remarks, Sample type/depth, Groundwater, DCP/Pressuremeter from DPT test, Undisturbed, UT-UT100, Winwater, SPT test types: Sugar spoon, Cutcore, Cover Type: Unguaranteed, Pitbush
Template:SSL-DRILLERS-LOG-CABLE-V01-OCT-2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH PTS 108	Rig Type	DANDO 2000 MKII		
Contract Number	765633	Location	A66 NTPS03A	Rig ID	2000 66CLA
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sharman
Date	26-4-23	Day	Mon	Start Time	8.00
Finish Time	4.30	Hammer ID	5	Rig Move	From / To / Shift
Engineer	MASIC				

Depth From (m)	Depth To (m)	Driller's Description of Strata
7.20	7.50	Dence brown sands + GRAVELS slightly clayey
7.50	8m	Stiff brown boulder clay slightly sandy cobbly
8m	10.20	Stiff grey silt
10.20	10.80	Dence grey sand + gravels large cobbles

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
32	D	7.80												
33	S	8m	8.45			8m	7m	7	10	12	12	12	14	N/R
34	DS	8m	8.45			—	—							
35	B	8m	8.50											
36	D	8.50												
37	UT	9m	9.40		150		9.87							
38	D	9.50												
39	S	10m	10.25			9m	8.40	5	9	16	34			50mm
40	DS	10m	10.25											
41	B	10m	10.25											
42	B	10.70	10.50											

Standing Water Levels

	Morning	Evening
Time	8.00	4.30
BH Depth (m)	~~7.80~~ 7.20	10.50
Casing Depth (m)	7.20	10.50
Water Level (m)	7m	6m

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
7.50	7.50	220	Shell
7.50	10.50	200	Shell

Casing Record

Diameter (mm)	Base (m)
220	7.20
200	10.50

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
7.50	7.50	3.00	5.30	9.00

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
7.50	10.50	1 Bowser

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	W / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
9.00	8.30	MORNING BRIEF
8.30	9.00	Chiselling
9.30	10.30	Reduce 8" 7.50

Client Signature	Company
	Date
Borehole Completed	Yes / ~~No~~

Email: admin@ssltd.co.uk Web: www.ssltd.co.uk

Notes/Remarks: Sample types Groups, Disturbed, D&P/Undisturbed liner SPT test, Undisturbed, U/T-U/T168, Winsedar, SPT test types, 3 split spoon, C-core, Cover Type, U-open/ring, F-flush. Template:SSL-DIBLEDS_LOG-CABLE-V01-OCT-2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH PTS 108			Rig Type	Dando 2000
				Rig ID	
Contract Number	765633	Location	A66 NTP S040	Rig Move	From / To / Sheet
Company Name	PB Drilling	Driller	N Topping	Assistant(s)	S Sherman	Engineer	
Date / Day		Start Time		Finish Time		Hammer ID	

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata
13.50	13.80	Grey coarse to med dense gravels with large cobbles

Samples and Tests: Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth: Casing	Water	Seating Drive: 75mm	75mm	Main Test Drive: 75mm	75mm	75mm	75mm	N

Standing Water Levels

	Morning	Evening
Time		16:15
BH Depth (m)		13.80
Casing Depth (m)		13.80
Water Level (m)		8.60

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
13.50	13.80	200mm	Shell

Casing Record

Diameter (mm)	Base (m)

Record of ~~Chiselling~~ Slow progress

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
13.50	13.80	5min	15:45	16:15

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
13.50	13.80	100L

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
15:05	15:15	freeing casing
16:15	16:30	clean up

Client Signature	Company
	Date: 25/4/23

Borehole Completed: Yes / No

Email: data@ssoils.co.uk
Web: www.ssoils.co.uk

Notes/Remarks: Sample type Bulgarb, Delay codes: DBPT=borehole dried from SPT test, Unsatisfactory Test=failed SPT - DRILLERS LOG-CABLE-V01-OCT-2013

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS-108					Rig Type	DANDO 2000 MK11
						Rig ID	2000 6644
Contract Number	765633	Location	A66NTPS03A			Rig Move	From / To / Sheet
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sharman	Engineer	DAVE
Date 25-4-23	Day TUE	Start Time	8:00	Finish Time	3:30	Hammer ID	5

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata
10.50	13.50	Dense grey sands + gravels with large limestone cobbles/boulders.

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
43	D	10.80												
44	S	11m	11.45			11m	10.80	10	10	13	10	10	14	
45	DS	11m	11.45			—	—							
46	B	11m	11.50											
47	D	11.80												
48	S	12m	12.44			12m	10.40	10	15	12	12	12	14	
44	DS	12m	12.44			—	—							
50	B	12m	12.50											
51	D	12.80					4.80							
52	S	13m	13.45			13m	~~13.45~~	9	16	17	8	13	12	
53	DS	13m	13.45			—	—							
54	B	13m	13.50											

Standing Water Levels

	Morning	Evening
Time	8:30	3:30
BH Depth (m)	10.50	13.50
Casing Depth (m)	10.50	13.50
Water Level (m)	8m	10m

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
10.50	13.50	200	Shell

Casing Record

Diameter (mm)	Base (m)
200	13.50

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
12.20	12.40	2	10:30	11:00

Water Added

Depth From (m)	Depth To (m)	Volume (litre)
10.30	13.50	3x Bags

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8:00	8:30	MORNING BRIEF

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: ask@ssl.co.uk Web: www.ssl.co.uk
Notes/Remarks: Samples from Brindle. Document: DGPT=disturbed bags SPT test (N=calculated), U/THUTHS, Winsder, SPT test types: S=split spoon, C=core. Cover Type: U=pushing, F=flush. Template:SSL_DGN/LFR/01/00-CABLE-J/01-OCT-2013

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH PTS 108	Rig Type	Shady 2000		
		Rig ID	2000/7764		
Contract Number	765633	Location	A66 NTP 5040	Rig Move	From / To / Sheet
Company Name	PB Drilling	Driller	N Tappay	Assistant(s)	S Sherman
				Engineer	
Date	26/4/13	Day	Wed	Start Time	0800
Finish Time	1645	Hammer ID	5		

Depth From (m)	Depth To (m)	Driller's Description of Strata
13.80	14.50	Grey Coarse to med mixed dense gravels with large mixed cobbles

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow
55	B	13.50	13.95		
56	D	13.50			
57	CPT	14.50	14.95		

Standard Penetration Tests: Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
14.50	11.40	10	10	15	19	16/50		

Standing Water Levels

	Morning	Evening
Time	0840	
BH Depth (m)	13.80	
Casing Depth (m)	13.80	
Water Level (m)	11.40	

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
13.80	14.50	200	Shell
0.00	0.720	250	

Casing Record

Diameter (mm)	Base (m)
250	7.20
200	14.50

Record of Chiselling Slow progress

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
13.80	14.50	11.5	0840	0940

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
13.80	14.50	500

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)	11.50	Water Depth After (m)	/	Cover Type	U / P

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
0800	0840	morning Brief / Getting to BH
0940	1040	Waiting for install details (gravels)
1040	1510	Waiting for install Cover (pipe/Bato/gravel)
1510	1615	pull casing to 5.50m / Bento Back fill
1615	1640	take Samples to Sample Shed.

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Notes/Remarks: Sample type: Bulk/B, Disturbed/D, DBPT=disturbed from SPT test, Undisturbed/U, UT=UT100, Winwater, SPT test types: Split spoon, Cone, Cover Type: Unsplinting, Flush.
Template: SSL_DRILLERS LOG-CABLE V02 OCT 2013
Email: drill@ssl.co.uk
Web: www.ssl.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHDTS 111	Rig Type	DANDO 2000 MKII		
Contract Number	765633	Location	A66 NTDS03A	Rig ID	2000 6699
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sharman
Date	22-5-23	Day	MON	Start Time	8:00
Finish Time	4:00	Hammer ID	5	Rig Move	From 8:30 To 3:00 Sheet 1
Engineer					

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests: Number	Type	From (m)	To (m)	Rec (mm)	U Blow

Standard Penetration Tests: Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record: From (m)	To (m)	Diameter (mm)	Type

Casing Record: Diameter (mm)	Base (m)

Record of Chiselling: Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added: Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays: Time From	Time To	Description
8:00	8:30	Morning Brief.
8:30	2:00	Standing on archeologist.
2:00	3:00	Move rig + trailer setup.
3:00	4:00	Standing on ecologist.
4:00	4:30	Sign permits.

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: ask@ssl.co.uk Web: www.ssl.co.uk

Notes/Remarks: Sample type/Block Designation, DSPT related from SPT test, Undisturbed, UT4/UT100, Wingate, SPT test types: Split spoon, Chisel, Cover Type: Unpatching, Finish Template: SSL_DBS_LEGEND_LOG_CABLE_v01-OCT-2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-DTS-111	Rig Type	DANDO 2000 MK II		
Contract Number	765633	Location	A66NTPS03A	Rig ID	2000 6699
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sharman
Date	23-5-23	Day	TUE	Start Time	8:00
Finish Time	5:00	Rig Move	From — To —	Sheet	1/2
Engineer	RONIN	Hammer ID	5		

Depth / Driller's Description of Strata

From (m)	To (m)	Description
GL	0.05	GRASS over TOPSOIL
0.05	1.10	loose brown Sand Slightly gravelly
1.10	2m	loose Red Sand.

Samples and Tests / Standard Penetration Tests

Number	Type	From (m)	To (m)	Ref (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
1	D	0.10												
201	D	0.10												
101	ES	0.30												
2	B	0.40	0.60											
3	D	0.50												
202	D	0.50												
102	ES	0.50												
4	B	0.90	1.10											
5	D	1.00												
203	D	1.00												
103	ES	1.00												
6	S	1.30	1.75			—	—	2	3	3	3	4	6	
7	DS	1.30	1.75			—	—							
104	ES	1.50												
8	B	1.30	1.80											

Standing Water Levels

	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
1.30	1.80	200	Shell

Casing Record

Diameter (mm)	Base (m)
220	2m

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added

Depth From (m)	Depth To (m)	Volume (litre)
0.30	2m	1/3

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8:00	9:00	MORNING Brief
9:00	10:00	Dig Pit
10:00	10:45	filling bowser.

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Email: sales@ssltd.co.uk
Web: www.ssltd.co.uk

Notes/Remarks: Sample type B=bulk, D=disturbed, ES=disturbed from SPT test, U=undisturbed, UT4/100, Winnier SPT test types: Seated seven, Crowns, Cover Type: Unpatterding, F=flush
Template 001 - DOCUMENT CONTROL 2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH PTS 111	Rig Type	DANDO 2000 MK II		
Contract Number	765633	Location	A66NTPS03A	Rig ID	2000 6699
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sharman
Date	23-5-23	Day	TUE	Start Time	8:00
Finish Time	5:00	Hammer ID	5	Rig Move	From — To — Sheet 2/2
Engineer	RONIN				

Depth

From (m)	To (m)	Driller's Description of Strata
2m	4m	Weathered Red Sandstone

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow
9	D	1.80			
10	S	2m	2.30		
11	DS	2m	2.30		
12	B	2m	250		
13	D	280			
14	S	3m	3.30		
15	DS	3m	3.30		
16	B	3m	3.50		
17	D	380			
18	S	4m	4.15		
19	DS	4m	4.15		

Standard Penetration Tests

Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
2m	1.40	5	6	15	35	=	40mm	
—	—							
3m	3m	4	11	20	20	10	=	25mm
—	—							
4m	2m	25	50	=	35mm			
—	—							

Standing Water Levels

	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
1.30	4m	200	Shell

Casing Record

Diameter (mm)	Base (m)
220	4m

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
3.40	3.80	1	2pm	3pm
3.80	4m	1	3pm	4pm

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
1.30	4m	1 bowser

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
1pm	2pm	Slow progress
4pm	4.30	Tidy up BAG SPOIL ETC
4.30	5:00	fill bowser ready for NEXT DAY

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: info@sslltd.co.uk Web: www.ssltd.co.uk
Notes/Remarks: Sample Type Brouts, Disturbed, Log/ Highlighted from SPT test, Undisturbed, U75/U100, Winwater, SPT test types: Sheplit spoon, Chcone. Cover Type: Unspecified, F-Flush.
Template 0004 - DRILLERS LOG CABLE - 01/10/2017 - 2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS-111	Rig Type	DANDO 2000		
Contract Number	765633	Location	A66 N TPS03A	Rig ID	2000 0699
Company Name	JBSite	Driller	Will Nevins	Assistant(s)	Stephen Sharman
Date	24-5-23	Day	WEDS	Start Time	8:00
Finish Time	5:00	Hammer ID	5	Rig Move	From 11:30 To 12:00 Sheet 4
Engineer	RONIN				

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests: Number	Type	From (m)	To (m)	Rec (mm)	U Blow

Standard Penetration Tests: Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time	8:00	
Bit Depth (m)	4m	
Casing Depth (m)	4m	
Water Level (m)	3.20	

Drilling Tool Record: From (m)	To (m)	Diameter (mm)	Type

Casing Record: Diameter (mm)	Base (m)

Record of Chiselling: Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added: Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
1m	65mm Plain			GL	1m
2x	65mm Slotted			1m	3.5m
Backfill Materials				From (m)	To (m)
Pellets				4m	3.70
Gravel				3.70	1m
Pellets				1m	0.30

Record of Hourly Rated Work / Standing / Delays: Time From	Time To	Description
8:00	9:00	Morning Brief
9:00	9:30	Collect Install
10:30	11:00	Mob Trailer + Rig Plusco Brief for Scheme 6.
1pm	2pm	Mob Rig to Appleby

Client Signature	Company	Date

Borehole Completed: Yes / No

Notes/Remarks: Sample type Bulk, Disturbed, GSPT result/s filled from SPT test, Undisturbed, U71-U(T100), Weather: SPT test type: Rapid sinker, Casing Cover Type: Unpacking, Flush, Tension/Blow: SOIL LOG-CABLE-V01-003-2015

Email: info@structsoils.co.uk Web: www.structsoils.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS-112	Rig Type	DANDO 2000 MK II		
		Rig ID	2000 66019		
Contract Number	765633	Location	A66 NTRS 03A	Rig Move	From 1pm To 3pm Sheet 1/2
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sherman
				Engineer	Ronin
Date 13-4-23	Day THU	Start Time	8:00	Finish Time	5:00
		Hammer ID	5		

Depth From (m)	Depth To (m)	Driller's Description of Strata
GL	0.05	GRASS OVER TOP SOIL
0.05	0.60	loose Brown Sand occasional gravel
0.60	0.80	loose Brown Sand + cobbles TURNING Black.
0.80		BLACK TARMAC.

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow
1	D	0.05			
101	ES	0.30			
2	B	0.20	0.40		
3	D	0.30			
4	B	0.65	0.80		
102	ES	0.50			
5	D	0.70			

Standard Penetration Tests

Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N

Standing Water Levels

	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type

Casing Record

Diameter (mm)	Base (m)

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials

	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
3:00	4:00	Swap Water bowser
4:00	5:00	PiT

Client Signature	Company
	Date
Borehole Completed	Yes / ~~No~~

Email: sslg@sslg.co.uk Web: www.ssltd.co.uk

Notes/Remarks: Sample types: B=bulk, D=disturbed, DSPT=disturbed from SPT test, Undisturbed, U74/U100, Wheeler SPT test types: S=split spoon, C=core. Cover Type: Unguarding, F=flush.

Template:39_CABLE LOG CABLE 2015 DEC 2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS-112	Rig Type	DANDO 2000 MKII		
Contract Number	705633	Location	A66 NTPS03A	Rig ID	2000 6649
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sharman
Date	15-4-23	Day	FRI	Start Time	8.00
Finish Time	2.00	Hammer ID	5	Rig Move	From / To / Sheet
Engineer	Ronin				

Driller's Description of Strata

Depth From (m)	Depth To (m)	Driller's Description of Strata
0.80	0.90	TARMAC
0.90	1.20	Dence brown sand & gravels
1.20	2.50	Soft/firm sandy gravely clay
2.50	3m	loose sand & gravels slightly clayey.

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow
103	ES	1m			
6	D	1m			
7	B	0.90	1.20		
8	C	1.20	1.65		
9	B	1.20	1.70		
104	ES	1.5			
10	D	1.80			
11	UT	2m	2.45		50
12	B	2.50	2.80		
13	D	2.90			

Standard Penetration Tests

Metres Depth: Casing	Metres Depth: Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
/	/	2	2	2	2	2	2	

Standing Water Levels

	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
1.20	3m	280	CUTTER

Casing Record

Diameter (mm)	Base (m)
300	3m

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8.00	8.30	MORNING BRIEF
8.30	9.00	MOB TRAILER
9.00	9.45	CONTINUE PIT
9.45	10.00	COLLECT BOWSER
10.30	11.00	Standing ON PIT Being Scanned.

Client Signature	Company
	Date
Borehole Completed	Yes / No

Notes/Remarks: Sample types: B=bulk, D=disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=U1100, W=water, SPT test types: B=split spoon, C=cone. Cover Type: U=upstanding, F=flush.
Timestamp: 2023-04-15 09:12:49 GMT+0100

Email: info@ssltd.co.uk
Web: www.ssltd.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS-112					Rig Type	DANDO 2000 MKII
						Rig ID	R000 66 ALL
Contract Number	765633	Location	A66 NTP503A			Rig Move	From / To / Sheet
Company Name	JBSite	Driller	Will Nevins	Assistant(s)	Stephen Sherman	Engineer	RoNiN
Date 17-4-23	Day MON	Start Time	8.00	Finish Time	4.30	Hammer ID	5

Depth From (m)	Depth To (m)	Driller's Description of Strata
2.50	3.40	Dence grey Sandst gravels slightly Clayey
3.40	7m	Dence Red Weathered Sandstone
		24 D 680
		30 S 7m – 7.10 25/50 20mm
		31 DS 7m – 7.10 — —

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
14	S	3m	3.45			3m	2.80	3	5	7	8	8	9	
15	DS	3m	3.45			—	—							
16	B	3m	350											
17	D	380												
18	S	4m	4.10			4m	2.60	9	16	41	9	=	70mm	
19	DS	4m	4.10			—	—							
20	B	4m	450											
21	D	480												
22	S	5m	5.30			5m	4.5	10	15	50	=		35mm	
23	DS	5m	5.30			—	—							
24	B	5m	550											
25	D	580												
26	S	6m	6.15			6m	6m	14	6	50	=		30mm	
27	DS	6m	6.15			—	—							
28	B	6m	650											

Standing Water Levels

	Morning	Evening
Time	8.00	~~8.00~~
BH Depth (m)	3m	3m
Casing Depth (m)	3m	3m
Water Level (m)	2.80	2.60

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
3m	7m	280	Shell

Casing Record

Diameter (mm)	Base (m)
300	7m

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
6.80	7m	½	1.30	2.00

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
3m	7m	1x Bowser

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)

Backfill Materials

	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
2.00	2.30	BH Decision
2.30	3.30	Collect INSTALL GEAR.
3.30	4.30	Pull 10m OUT READY TO INSTALL

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: admin@ssltd.co.uk; Web: www.ssltd.co.uk.

Notes/Remarks: Sample type B=bulk, D=disturbed, DS=PT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: S=split spoon, C=cone, Cover Type: U=standing, F=flush. Template 8/01 - DRILLERS LOG CABLE 4/01-OCT-2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHPTS 112	Rig Type	DANDO2000 MKII		
Contract Number	765633	Rig ID	2000 6644		
Location	A66 NTPS03A	Rig Move	From	To	Sheet
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sherman
Engineer	Lauren				
Date	18-4-23	Day	TUE	Start Time	8:00
Finish Time	5:00	Hammer ID	5		

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests: Number	Type	From (m)	To (m)	Rec (mm)	U Blow

Standard Penetration Tests: Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time	8:30	
BH Depth (m)	3m	
Casing Depth (m)	3m	
Water Level (m)	2m	

Drilling Tool Record: From (m)	To (m)	Diameter (mm)	Type

Casing Record: Diameter (mm)	Base (m)
300	3m

Record of Chiselling: Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added: Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)	2m	Water Depth After (m)	GL	Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)
	65m SLOTTED	1.50	2.70
	PLAIN	1m↑	1.50

Backfill Materials	From (m)	To (m)
10x Pellets	5m	3m
4x GRAVEL	3m	1.50
15x Pellets	1.50	GL

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8:00	8:30	Morning Brief
8:30	9:40	INSTALL BH-PTS112
9:40	10:30	Brief ON NEXT BH (BH-M6540-101)
11:00	5:00	TRYED TO GET RIG ON NEXT BH - on roundabout M6540 - Rig got stuck due to ground conditions.

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: ass@structure.co.uk. Web: www.soils.co.uk.

Survey Remarks: Sample type Brown, Disturbed, DSPT=disturbed from SPT test, Undisturbed, U75/U100, W=water, SPT test types: B=split spoon, C=cone, Cover Type: U=upstanding, F=flush
Template: SSL_BHS_LEHS_LOG-CAB_E-V01-OCT-2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS 113	Rig Type	Dando 2000		
		Rig ID	Rig 1		
Contract Number	765633	Location	A66N TP503A	Rig Move	From / To / Sheet 1
Company Name	JG. S Ltd	Driller	Brian Sprott	Assistant(s)	Jamie Clark
Engineer					
Date	24.6.23	Day	Morning	Start Time	08:00
Finish Time	16:30	Hammer ID			

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata	Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description
08:00	08:30	Morning briefing, get to BH
08:30	13:00	Wait on trackway being moved,
		Move rig, trailer and bowser to
		near BH
13:00	16:30	Wait on barras fencing and under
		barriers, move everything back to old
		compound

Client Signature	Company
	Date
Borehole Completed	Yes / No

Notes/Remarks: Sample type Britishs, Disturbed, DS(P)=disturbed from SPT test, Undisturbed, UT=UT100, Wessoter, SPT test types: Snapit space, Crocone, Cover Type: Unexplanding, Fitlash.
Template:SSL-DB1LEBS-LOG-CABLE-J/01-OCT-2015

Email: ssl@ssl.co.uk
Web: www.ssl.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS113	Rig Type	Dando 2000		
		Rig ID	Rig 1		
Contract Number	765633	Location	A66N TPS63A	Rig Move	From / To / Sheet 1
Company Name	JB Sim	Driller	Brad Sparks	Assistant(s)	Brad Sparks	Engineer
Date 25.4.23	Day Tuesday	Start Time 08:00	Finish Time 17:00	Hammer ID	0801

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests: Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth: Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record: From (m)	To (m)	Diameter (mm)	Type

Casing Record: Diameter (mm)	Base (m)

Record of Chiselling: Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added: Depth From (m)	Depth To (m)	Volume (litre)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays: Time From	Time To	Description
08:00	08:40	Morning briefing, get to BH
08:40	09:20	Move rig, trucks and bowser to next BH
09:20	11:20	Set up on correct TP
11:20	16:00	No correct TP, move rig and bowser to next BH, unload casing off trailer onto flatbed, take to BH, set up

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: ade@ssl.co.uk, Web: www.ssl.co.uk
Notes/Remarks: Sample type: B=bulk, D=disturbed, DS=PT=disturbed from SPT test, Undisturbed, UT=UT100, Winwater, SPT test types: Scupdl spoon, Cone, Cone Type: Unspecified, Fullsh.
Template SSL- DRILLERS LOG-CABLE-V01 OCT 2016

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS113	Rig Type	Dando 2000		
		Rig ID	Rig 1		
Contract Number	765633	Location	A66NTP503A	Rig Move	From / To / Sheet 1
Company Name	JB Site	Driller	Brad Sprys	Assistant(s)	Jamie Cooper
Engineer					
Date	27.4.23	Day	Thursday	Start Time	08:00
Finish Time	17:00	Hammer ID	3501		

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata	Samples and Tests: Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth: Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record: From (m)	To (m)	Diameter (mm)	Type

Casing Record: Diameter (mm)	Base (m)

Record of Chiselling: Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added: Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / P

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
08:00	08:40	Morning briefing, get to BH-PTS113
08:40	09:30	Move rig, casing and bowser to next BH
09:30	12:45	Wait on TM and locate barriers
12:45	16:10	Move to different BH (BH-03B-106) as TM was not safe and correct, set up rig at BH-03B-106

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: sales@ssl.co.uk. Web: www.ssl.co.uk.

Notes/Remarks: Sample type Details, Disturbed, DSPT=disturbed from SPT test, Undisturbed, UT=UT100, Winwater, SPT test types: Seg=Segment, C=core, Cover Type: U=unbarrelling, P=flush. Transmissible, CPR/JRP/J-003-C-SSL-F-271-OCT-2019.

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	Name	Client
765631	A66 NTP Scheme S01	National Highways

Exploratory Position

Window sample ID
BH-PTS113

Location Coordinates / Position

GPS Location

Elevation units toggle Not specified

Proposed Tablet GPS Location

Log Breakdown

Log Breakdown Grid

Date	Start time	Start depth	End depth	Initial technique	Equipment / Rig
03/05/2023	12:14	0.0	4.45	Inspection pit	SSL-SN384

Log Breakdown Grid 2

HammerID	Lead driller	Assistant 1	Assistant 2	Supervising Engineer
	Michael O'Shea	Benjamin Chard		Iain Jordan

Description of Strata

Stratums Grid

3 records

From (m)	To (m)	Description	Stratum Classifications	Stratum Thickness (m)
0	0.3	Brown gravelly CLAY	Boundary: Solid	0.3
0.3	0.7	Brown gravelly SAND	Boundary: Solid	0.4
0.7	1.2	Brown gravelly CLAY with cobbles	Boundary: Solid	0.5

Samples and SPTs

Samples and SPTs

4 records

From	To	Ref	Type.	Test Details	Hazards
1.2	1.27	304	C	N-Value=50 Seating:25/70mm,0/0mm = 25/70mm Test:18,15,11,6/30mm = 50/255mm No Casing. Water=Dry Remarks: Obstruction/cobble identified proceded with smallest barrel	

2	2.45	305	S	N-Value=14 Seating:3,5 = 8/150mm Test:4,4,3,3 = 14/300mm No Casing. Water=Dry Remarks: Brown gravelly CLAY	
3	3.45	306	S	N-Value=21 Seating:8,6 = 14/150mm Test:3,4,5,9 = 21/300mm No Casing. Water=Dry Remarks: Brown gravelly CLAY	
4	4.45	307	S	N-Value=19 Seating:8,3 = 11/150mm Test:3,3,4,9 = 19/300mm No Casing. Water=Dry Remarks: Brown gravelly CLAY	

Windowless Sampling Run Data

Window sample run data grid

3 records

From (m)	*To (m)*	*Run#*	*Barrel ID (mm)*	*Rec (%)*	*Duration (mins)*	*Drillers description*
1.2	2	1	45	50	03:00	Reddish brown gravelly CLAY
2.0	3.0	2	45	50	03:00	Reddish brown gravelly CLAY
3.0	4.0	3	45	50	06:00	Reddish brown gravelly CLAY

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no pipes installed [X]

Backfill Grid

1 record

Section top depth (m)	*Section base depth (m)*	*Section fill*	*Date*	*By*	*Section length (m)*
0	4.45	BACKFILL	03/05/2023	Benjamin Chard bchard@soils.co.uk	4.45

Standing Time

Confirm no standing time [X]

General Remarks

General remarks

1 record

Note #	*General remark (free entry)*
1	Obstruction identified as cobble proceeded with smallest barrel till difficult to remove.

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
14:26	4.45	Michael O'Shea	

RSK Completion confirmation

No client completion confirmation possible	[X]
Review all data	[X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete?	( ) No	(X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS114					Rig Type	Dando 2000
						Rig ID	Rig 1
Contract Number	765633	Location	A66NTP503.4			Rig Move	From / To / Sheet 2
Company Name	J8. Sue	Driller	Brad Spetts	Assistant(s)	Jamie Cuff	Engineer	
Date 4.4.23	Day Tuesday	Start Time	08:00	Finish Time	17:00	Hammer ID	3801

Depth From (m)	Depth To (m)	Driller's Description of Strata
GL	0.30	Slight Sandy gravelly topsoil
0.30	1.80	reddish, gravelly Sand
1.80	4.50	weathered Sandstone

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow
1	D	0.10			
C01	D	0.10			
2	B	0.10	0.30		
3	D	0.40			
C02	D	0.40			
4	B	0.40	0.80		
5	B	1.00	1.20		
6	S	1.20	1.65		
7	DS	1.20	1.65		
8	B	1.20	1.70		
9	D	1.90			
10	S	2.00	2.45		
11	DS	2.00	2.45		
12	B	2.00	2.50		
13	D	2.90			

Standard Penetration Tests: Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
1.20	GL	7	5	9	5	4	3	
2.00	0.65	4	4	6	4	8	8	

Standing Water Levels	Morning	Evening
Time		16:45
BH Depth (m)		4.50
Casing Depth (m)		4.50
Water Level (m)		2.10

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type
GL			
1.20	4.50	10"	SLAM

Casing Record Diameter (mm)	Base (m)
250	4.50

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (litre)
GL	4.50	600

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description
13:00	13:40	dig pit

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: info@ssoils.co.uk
Web: www.ssoils.co.uk

Notes/Remarks: Sample type Bulk, Undisturbed, DISTURBED=disturbed from SPT test, Undisturbed, UT=UT100, Winnex. SPT test types: S=split spoon, C=core. Cover Type: U=standing, F=flush.
Template SSL-DTS-LAND-LOG-GAB-2-20T-OCT-2018

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS114	Rig Type	Dando 2000		
		Rig ID	Rig 1		
Contract Number	765633	Location	A66 NTPS03A	Rig Move From / To	Sheet 3
Company Name	JB. Site	Driller	Brad Spears	Assistant(s)	Jamie Carr
Engineer					
Date 4.4.23	Day Tuesday	Start Time 08:00	Finish Time 17:00	Hammer ID	JB 01

Email: info@ssl.co.uk
Web: www.ssl.co.uk

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
14	B	3.00	3.45			3.00	1.12	5	8	7	7	6	8	
15	DS	3.00	3.45											
16	B	3.00	3.50											
17	D	3.50												
18	S	4.00	4.45			4.00	1.86	5	7	14	20	16/55		
19	DS	4.00	4.45											
20	B	4.00	4.50											
101	ES	0.30												
102	ES	0.50												
103	ES	1.50												

Standard Penetration Tests

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description

Client Signature	Company
	Date
Borehole Completed	Yes / No

Notes/Remarks: Sample type/e-bulk, D=disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, Wavepkr, SPT test types: Scuppit sieve, Cutcore, Cover Type: Unsightening, Refusal.
Template SSL-DRILLERSLOG-CABLE-V01-OCT-2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS114	Rig Type	Dando 2000		
		Rig ID	Rig 1		
Contract Number	765633	Location	A66NTPS034	Rig Move	From / To / Sheet 1
Company Name	SB. Stan	Driller	Brad Speers	Assistant(s)	Jamie Conor
				Engineer	
Date 5.4.23	Day Wednesday	Start Time 08:00	Finish Time 17:00	Hammer ID	J501

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata
4.50	7.70	weathered Sandstone

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
T1	D	4.50												
T2	S	5.00	5.45			5.00	1.67	22	3/12	44	6/21			
T3	DS	5.00	5.45											
T4	B	5.00	5.50											
T5	D	5.50												
T6	S	6.00	6.45			6.00	0.42	19	6/11	30	17	3/2		
T7	DS	6.00	6.45											
T8	B	6.00	6.50											
T9	WS	6.50												
T10	D	6.50												
T11	S	7.00	7.45			7.00	2.67	23/56	50/49					NR
T12	B	7.00	7.50											

Standing Water Levels

	Morning	Evening
Time	08:15	11:20
BH Depth (m)	4.50	7.70
Casing Depth (m)	4.50	7.50
Water Level (m)	1.90	2.42

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
4.50	5.00	10"	Shell
5.00	7.70	8"	Shell

Casing Record

Diameter (mm)	Base (m)

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
7.50	7.70	1/2	10:45	11:15

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
4.50	7.70	500

Water Strikes

Time			
Strike Depth (m)	6.50		
Casing Depth (m)	6.00		
5 mins	Rotary heads		
10 mins	Strike		
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
08:00	08:15	Morning briefing, get to BH
08:20	09:20	reduce to 8", pull out 10"
11:45	13:40	wait on rotary casing
13:40	14:00	unload rotary casing
14:00	16:45	install rotary casing, pull 8", drop and
		load rig, move to next BH, set up

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Notes/Remarks: Sample type B=bulk, D=disturbed, DPT=debarked from SPT test, U=undisturbed, UT=UT100, W=water. SPT test types: B=split spoon, C=core. Cover Type: U=upstanding, F=flush.
Template SSL-DRILLRIG-LOG-04B E-FD-OCT-2013
Email: info@structural.co.uk
Web: www.ssl.co.uk

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	Name	Client
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS114

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	Start time	Start depth	End depth	Initial technique	Equipment / Rig
11/04/2023	05:45	7.7	7.7	Inspection pit	SSL-SN2240

Log Breakdown Grid 2

HammerID	Lead driller	Assistant 1	Assistant 2	Supervising Engineer
	Sam Carter	Simon Pearson		Ronan Barker

Coring Data

Confirm no coring data [X]

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Confirm no water level observations made [X]

Drilling Tool Record

Confirm no drilling tool data [X]

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no backfill [X]

Standing Time

Standing Time Grid

2 records

From	*To*	*Standing Time Summary*
08:30	11:00	Category: Dayworks - Other Duration: 02:30 Description: Get rig and equipment to BH.
		Category: Dayworks - Other

11:00	16:30	Duration: 05:30 Description: Set up rig and gear, had to wait for confirmation on overhead cables.

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
16:30	7.7	Sam Carter	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS114

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
12/04/2023	07:30	7.7	15.8	Inspection pit	SSL-SN2240

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
AR1240-2022	Sam Carter	Simon Pearson		Ronan Barker

Coring Data

Coring Data Grid

7 records

Top (m)	Base (m)	Drilling Info	Run time (min)	Flush	Notes
7.7	8.3	RC (Rock) Barrel: Geo-bor S Rec: 33.33333333333333333%	3	Water 100% (max return) Brown	Description: Sandstone Box: 1 Liner used: Yes
8.3	9.05	RC (Rock) Barrel: Geo-bor S Rec: 100%	6	Water 100% (max return) Brown	Description: Sandstone Box: 2 Liner used: Yes
9.05	9.8	RC (Rock) Barrel: Geo-bor S Rec: 100%	3	Water 100% (max return) Brown	Description: Sandstone Box: 3 Liner used: Yes
9.8	11.3	RC (Rock) Barrel: Geo-bor S Rec: 100%	5	Water 100% (max return) Brown	Description: Sandstone Box: 4 Liner used: Yes
11.3	12.8	RC (Rock) Barrel: Geo-bor S Rec: 100%	4	Water 100% (max return) Brown	Description: Sandstone Box: 5 Liner used: Yes
12.8	14.3	RC (Rock) Barrel: Geo-bor S	4	Water 100% (max return)	Description: Sandstone Box: 6 Liner used: Yes

		Rec: 100%		Brown	
14.3	15.8	RC (Rock) Barrel: Geo-bor S Rec: 90%	5	Water 100% (max return) Brown	Description: Sandstone Box: 7 Liner used: Yes

Description of Strata

Stratums Grid

1 record

Top (m)	*Base (m)*	*Description*	*Stratum Classifications*	*Stratum Thickness (m)*
7.7	15.8	Sandstone	Boundary: Solid	8.1

Samples and SPTs

Samples

2 records

Top	*Base*	*Ref*	*Type.*	*Test Details*	*Containers*	*Hazards*	*Description / Remarks*
8.3	8.47	300	S	N-Value=50 Seating:4,21/55mm = 25/130mm Test:50/40mm = 50/40mm Casing=7.5m Water=1.5m			
8.3	8.47	301	DSPT		Tubs = 1		

Standing Water Levels

Standing Water Levels

2 records

DateTime	Standing Water Levels Summary
12/04/2023, 09:00	Borehole depth = 7.7m. Casing depth = 7.5m. Water depth = 1.4m.
12/04/2023, 16:30	Borehole depth = 15.8m. Casing depth = 7.7m. Water depth = 2.25m. Borehole diameter = 146mm.

Drilling Tool Record

Drilling Tool Record Grid

1 record

DateTime	From (m)	To (m)	Hole dia (mm)	Tool dia (mm)	Tool Type	Drill Tool Remarks
12/04/2023, 17:00	7.70	15.80	146	109.5	PDC	

Casing Record

Casing Record Grid

1 record

DateTime	Base depth (m)	Internal diameter (mm)	Casing Record Remarks
12/04/2023, 17:00	7.50	178	

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no backfill [X]

Standing Time

Standing Time Grid

4 records

From	To	Standing Time Summary
08:00	09:00	Category: Dayworks - Other Duration: 01:00 Description: Take van for MOT.
09:00	10:30	Category: Dayworks - Other Duration: 01:30 Description: Set rig up 2 times due to casing not been straight.
12:00	13:00	Category: Dayworks - Other Duration: 01:00 Description: Get new geo-s barrel due to cracks on the old one.
15:00	16:30	Category: Dayworks - Other Duration: 01:30 Description: Get install details, get install gear to the rig and pull geo-s casing.

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	Base depth	RSK Completion Confirmation	Client Confirmation
17:00	15.8	Sam Carter	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS114

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
13/04/2023	07:30	15.8	15.8	Inspection pit	SSL-SN2240

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
	Sam Carter	Simon Pearson		Ronan Barker

Coring Data

Confirm no coring data [X]

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Standing Water Levels

1 record

DateTime	Standing Water Levels Summary
13/04/2023, 08:30	Borehole depth = 15.8m. Casing depth = 7.5m. Water depth = 2.2m. Borehole diameter = 146mm.

Drilling Tool Record

Confirm no drilling tool data [X]

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Pipes setup data

1 record

Ref	Desc	Install Summary (1)	RZ Summary	Install Summary (2)	Install Summary (3)
					Gas tap: Yes.

1	NA	Type: Gas monitoring point Desc: NA	RZ Top: 1.5m. RZ Base: 4.0m. Water before: 2.2m. Water after: 2.0m.	Date: 13 Apr 2023. Diameter: 50mm. Material: HDPE. Length: 4.0m.	Cover: UPSTANDING COVER. Installer: Sam Carter. Geowrap: Yes.

Pipe construction

2 records

Pipe ref	*Top (m)*	*Base (m)*	*Pipe type*	*Pipe Summary*	*Length (m)*
1	0	1.5	PLAIN	Type: PLAIN Diameter: 50mm	1.5
1	1.5	4	SLOTTED	Type: SLOTTED Diameter: 50mm	2.5

Backfill Grid

4 records

Section top depth (m)	*Section base depth (m)*	*Section fill*	*Date*	*By*	*Section length (m)*
0	0.2	CONCRETE	13/04/2023	*No users*	0.2
0.2	1.5	BENTONITE SEAL	13/04/2023	Simon Pearson simon.pearson@soils.co.uk	1.3
1.5	4	GRAVEL FILTER	13/04/2023	Sam Carter sam.carter@soils.co.uk	2.5
4	15.8	BENTONITE SEAL	13/04/2023	Simon Pearson simon.pearson@soils.co.uk	11.8

Standing Time

Standing Time Grid

2 records

From	*To*	*Standing Time Summary*

08:30	12:00	Category: Dayworks - Other Duration: 03:30 Description: Install BH-PTS114, pull UW casing, drop rig and tidy up.
12:30	16:30	Category: Dayworks - Other Duration: 04:00 Description: Move to BH-PTS117, SET UP RIG AND EQUIPMENT READY TO DRILL, HAD TO SET UP RIG 4 TIMES DUE TO THE SLOPE AND CASING NOT BEEN STRAIGHT.

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	15.8	Sam Carter	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS115	Rig Type	Dando 2000		
		Rig ID	Rig 1		
Contract Number	765633	Location	A66-NTP503A	Rig Move	From / To / Sheet 1
Company Name	JB Sive	Driller	Brad Spears	Assistant(s)	Jamie Carr
				Engineer	D. Norbury
Date	30.3.23	Day	Thursday	Start Time	08:00
Finish Time	17:00	Hammer ID	JB 01		

Email: admin@structsoils.co.uk
Web: www.structsoils.co.uk

Depth From (m)	Depth To (m)	Driller's Description of Strata
GL	0.20	Slight sandy gravelly topsoil
0.20	0.90	Sandy gravel (cobbles)
0.90	2.00	reddish silty sand and gravel (cobbles)
2.00	3.80	weathered sandstone

Samples and Tests						Standard Penetration Tests								
Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
1	D	0.10												
201	D	0.10												
2	B	0.10	0.20											
3	D	0.30												
202	D	0.30												
4	B	0.30	0.60											
5	D	1.00												
203	D	1.00												
6	B	1.00	1.20											
7	S	1.20	1.65			1.20	0.30	3	5	8	8	8	6	
8	DS	1.20	1.65											
9	B	1.20	1.70	NR										
10	D	1.80												
204	D	1.80												
11	S	2.00	2.45			2.00	0.53	3	7	37	13/10			

Standing Water Levels	Morning	Evening
Time		17:00
BH Depth (m)		3.80
Casing Depth (m)		3.86
Water Level (m)		2.49

Drilling Tool Record	From (m)	To (m)	Diameter (mm)	Type
	1.20	3.80	100	SLem

Casing Record	Diameter (mm)	Base (m)
	250	3.86

Record of Chiselling	Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
	1.20	1.40	1	13:30	14:30

Water Added	Depth From (m)	Depth To (m)	Volume (ltrs)
	GL	3.80	1500

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays	Time From	Time To	Description
	08:00	08:50	Morning briefing, get to BH
	08:50	11:10	move rig, trailer and bowser to next BH
			set up
	11:15	12:15	Dig pit
	12:50	13:15	try get casing straight, replace shoe
	13:15	13:30	wait on water

Client Signature	Company
	Date
Borehole Completed	Yes / No

Notes/Remarks: Sampler type Bucket, Disturbed, D&PT disturbed from SPT test, Undisturbed, UT=UT100, Winwater, SPT test types: Split spoon, Chisel, Cover Type: Unplatewing, Fitted.
Transfer: BH_DATA_EXCEL-LOG-CABLE-PERCUSSION-2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-P75113	Rig Type	Dando 2000		
		Rig ID	Rig 1		
Contract Number	765623	Location	A66NTP503-A	Rig Move	From / To / Sheet 2
Company Name	JB, Site	Driller	Brad Spa[illegible]	Assistant(s)	Jamie Cooper
Engineer	D. Newbery				
Date	30.3.23	Day	Thursday	Start Time	08:00
Finish Time	17:00	Hammer ID	JB01		

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
12	DS	2.00	2.45											
13	B	2.45	2.50											
14	D	2.80												
15	S	3.00	3.45			3.00	1.63	20	5/7	50/31				
16	DS	3.00	3.45											
17	B	3.00	3.50											
18	D	3.80												
101	ES	0.30												
102	ES	0.50												
103	ES	1.00												
104	ES	1.50												

Standard Penetration Tests

Standing Water Levels

	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type

Casing Record

Diameter (mm)	Base (m)

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description

Client Signature	Company
	Date

Borehole Completed: Yes / No

Email: sal@ssoils.co.uk
Web: www.ssoils.co.uk

Notes/Remarks: Sample type:B=bulk, D=disturbed, DSPT=disturbed liner SPT test, Ulw=Undisturbed, UT=UT100, Wrapsle, SPT test types: S=split spoon, C=core; Cover Type: U=upstanding, P=flush.
Template SSL_DHLEBSLOG.CABLE.A01.OCT.2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH- PTS 115	Rig Type			
		Rig ID	/		
Contract Number	765637	Location	A46 NTP103A	Rig Move	From / To / Sheet /
Company Name	JB	Driller	B Shaw	Assistant(s)	Jamie Carr
Engineer					
Date	31 3 23	Day	Friday	Start Time	0800
Finish Time	4pm	Hammer ID			

Depth From (m)	Depth To (m)	Driller's Description of Strata
3.80	6m	Weathered Sandstone

Samples and Tests / Standard Penetration Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Casing	Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
19	S	4m	4.45			4m	2.22	25/30	50/44					50
20	DS	4m	4.45											
21	D	4m	4.50											
22	D	4.50												
23	S	6m	5.45			5m	2.23	5	10	50/67				50
24	DS	5m	5.45											
25	D	5m	5.50											
26	D	5.50												

Standing Water Levels

	Morning	Evening
Time	915	4pm
BH Depth (m)	3.80	6m
Casing Depth (m)	3.00	6m
Water Level (m)	1.53	2.23

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
3.80	6m	200	Shell

Casing Record

Diameter (mm)	Base (m)
200	3m
200	6m

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
/	/	/	/	/

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
3.80	6.00	300

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)	/	/	/
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
/	/			/	/

Backfill Materials	From (m)	To (m)
/	/	/

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8am	915	Moving Blocking Down BH Sideways to BH Currently ... Stone To Fill Pit in
915	1155	Wait For Stone To Be Delivered
1155	1215	Fill Pit in with Stone.
1215	1230	Remove To 8 mm Cong
4pm		Time Collecting To Company.

Client Signature	Company
	Date
Borehole Completed	Yes / No (circled: No)

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS115					Rig Type	Dando Terrier
						Rig ID	Rig 1
Contract Number	765633	Location	A66NTP503A			Rig Move	From / To / Sheet 1
Company Name	JB. Sim	Driller	Brad Spears	Assistant(s)	Jamie Carr	Engineer	
Date 3.4.23	Day Monday	Start Time	08:00	Finish Time	16:30	Hammer ID	J801

Email: info@structuralsoils.co.uk, Web: www.soils.co.uk

Depth From (m)	Depth To (m)	Driller's Description of Strata
6.00	9.00	Weathered Sandstone

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
27	S	6.00	6.45			6.00	2.10	25/44	50/56					
28	DS	6.00	6.45											
29	B	6.00	6.50											
30	D	6.50												
31	S	7.00	7.45			7.00	1.52	25/62	50/39					
32	DS	7.00	7.45											
33	B	7.00	7.50											
34	D	7.50												
35	S	8.00	8.45			7.00	2.08	25/67	50/69					
36	DS	8.00	8.45											
37	B	8.00	8.50											
38	D	8.50												

Standard Penetration Tests

Standing Water Levels	Morning	Evening
Time	13:15	16:30
BH Depth (m)	6.90	9.00
Casing Depth (m)	6.00	7.00
Water Level (m)	3.05	2.98

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type
6.00	9.00	8"	Shell

Casing Record Diameter (mm)	Base (m)
200	7.00

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)
6.00	9.00	500

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
08:00	08:20	Morning briefing
08:20	13:15	van broken down, waiting on other van coming down, swap over vans, goes to BH
13:15		Commence drilling

Client Signature	Company
	Date
Borehole Completed	Yes / No

Notes/Remarks: Sample type Bristolls, Disturbed, DS/DT=disturbed from SPT test, Undisturbed, UT=UT100, Winwater: SPT test types: Snapoff spoon, Crocrete, Cover Type: Unauthorised, Fetlock, Template:SSL_DRILLERS LOG CABLE 3/01-OCT-2012

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS115					Rig Type	Dando 2000
						Rig ID	Rig 1
Contract Number	765633	Location	A66NTP503A			Rig Move	From / To / Sheet 1
Company Name	JB. Site	Driller	Brad Spencer	Assistant(s)	Jamie Cox	Engineer	
Date 4.4.23	Day Tuesday	Start Time	08:00	Finish Time	17:00	Hammer ID	JB01

Depth From (m)	Depth To (m)	Driller's Description of Strata
9.00	10.00	weathered Sandstone

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
39	S	9.00	9.45			7.50	3.64	23/54	50/41					
40	DS	9.00	9.45											
41	B	9.00	9.50											
42	D	9.50												
43	S	10.00	10.45			7.50	3.32	23/63	50/65					
44	DS	10.00	10.45											

Standard Penetration Tests

Standing Water Levels	Morning	Evening
Time	08:40	10:00
BH Depth (m)	9.00	10.00
Casing Depth (m)	7.50	7.50
Water Level (m)	3.22	5.30

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type
9.00	10.00	5"	SCAM

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)
9.00	10.00	500

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)	3.30	Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
1	Plain 50mm			GL	1.50
1	Slotted 50mm			1.50	6.50
Backfill Materials				From (m)	To (m)
Concrete				GL	0.50
bentonite				0.50	1.00
Gravel				1.00	6.50
bentonite				6.50	10.00

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description
08:00	08:35	Morning briefing, get to BH
09:30	09:55	wait on install gas
10:00	12:00	Install pipe, run casing, drop and load rig, move rig, trailer and bowser to next BH, Concrete cover, tidy up, set up rig

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Email: info@soils.co.uk
Web: www.soils.co.uk

Notes/Remarks: Samples type Bulk/U4, Undisturbed, D/S/PT=disturbed from SPT test, Undisturbed, U75=U75100, Winwater, SPT test types, S=split spoon, C=cone, Cover Type, U=protecting, F=flush.
Template SSL_DRILLERS LOG CABLE v101-OCT-2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	/	Rig Type	Dando 2000		
		Rig ID	/		
Contract Number	36563	Location	A66	Rig Move	From / To / Sheet /
Company Name	JB	Driller	Jamie Cox	Assistant(s)	Danny Jones
Engineer	Andrew N				
Date	10.3.23	Day	Friday	Start Time	8:00
Finish Time	16:20	Hammer ID	D-01		

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests: Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth: Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standard Penetration Tests

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record: From (m)	To (m)	Diameter (mm)	Type

Casing Record: Diameter (mm)	Base (m)

Record of Chiselling: Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added: Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays: Time From	Time To	Description
8:00	16:20	Standing on site DH Rotary - Spoil & Turnaround
		(8:00-12 Help other Rig - Fix issue Core 2 DH
		12-16:20 - Fix on Rotary Rig To Help over)

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: info@ssltd.co.uk Web: www.ssltd.co.uk

Notes/Remarks: Samples (cycle-bulk, Undisturbed, DSPT=disturbed from SPT test, Undisturbed, UT=UT100, Winwater, SPT type/pen. Depth apon, Crowne, Cover Type: Unsplinting, Fixture.
Template SSL - CABLE-LOG-CABLE-V01-OCT-2019

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH - PTS116	Rig Type	Dando 2000		
		Rig ID	Rig 4		
Contract Number	765633	Location	A66NTPS03A	Rig Move	From / To / Sheet
Company Name	JB. Siche	Driller	Brad Speers	Assistant(s)	Janine Carr
				Engineer	D. Norkey
Date	13.3.23	Day	Monday	Start Time / Finish Time	
				Hammer ID	J001

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standard Penetration Tests

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description
08:00	13:30	waiting on trackway (assisting railway)
13:30	15:30	Move rig, trailer and bowser to next BH
15:30	16:00	Set up

Client Signature	Company
	Date
Borehole Completed	Yes / No

Notes/Remarks: Sample type:B=bulk, D=disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: S=split spoon, C=cone, Cone Type: U=piezoliding, P=plunt.
Template SSL_DRILLERS LOG CABLE V01 OCT 2015

Email: info@soils.co.uk
Web: www.soils.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH- P75116	Rig Type	Dando 2000		
		Rig ID	Rig 7		
Contract Number	765633	Location	A66NTPS034	Rig Move	From / To / Sheet 1
Company Name	JB. Site	Driller	Brad Spears	Assistant(s)	will Nevins / Steven Sherman
				Engineer	D. Norkey
Date 14.3.23	Day Tuesday	Start Time 08:00	Finish Time 16:30	Hammer ID	

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata
GL	0.40	Grass over gravelly sandy topsoil
0.40	0.60	brown, gravelly sand (cobbles)
0.60	2.00	brown, very sandy, very silty gravelly clay
2.00	2.50	brown, slight gravelly, silty sand
2.50	3.00	brown sand and gravel (clay pockets)
3.00	5.00	dense sand and gravel (cobbles
5.00	6.00	reddish gravelly sand
6.00	7.00	weathered sandstone

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
1	D	0.10												
2	B	GL	0.30											
101	ES	0.30												
3	D	0.50												
4	B	0.40	0.60											
102	ES	0.50												
5	D	0.60												
6	D	0.70												
7	B	0.60	1.00											
103	ES	1.00												
8	D	1.20												
9	U	1.20	1.65	95%	30	1.20	/							
10	D	1.70												
11	D	1.80												
12	S	2.00	2.45			2.00	/	1	1	2	4	3	3	

Standing Water Levels

	Morning	Evening
Time	/	16:20
BH Depth (m)	/	7.00
Casing Depth (m)	/	7.00
Water Level (m)		3.22

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
1.20	2.00	10"	Shubbar
2.00	7.00	10"	Shell /
6.00	7.00	10" Shell /	Ch:30]

Casing Record

Diameter (mm)	Base (m)
250	7.00

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
6.80	6.80	30m	14:30	15:00
6.80	7.00	40m	15:10	15:50

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
2.00	7.00	1500

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)	/	/	/
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)	/	Water Depth After (m)	/	Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)
/	/	/	/

Backfill Materials	From (m)	To (m)
/	/	/

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
08:00	08:45	Morning briefing, get to BH
08:45	10:00	Dig pit

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Email: info@ssltd.co.uk, Web: www.ssltd.co.uk

Notes/Remarks: Sample type Bridge, Disturbed, DSPT=disturbed from SPT test, Undisturbed, UT=UT100, Winkler, SPT test types: Split spoon, Cross, Core Type: Unspecified, Pickaxe, Test#88-SSL-DEL-WKS-GEN-REP-GEO-0001

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS116			Rig Type	Dando 2000
				Rig ID	Rig 7
Contract Number	765633	Location	A66NTP303A	Rig Move	From / To / Sheet 2
Company Name	JB. [illegible]	Driller	Brad Speirs	Assistant(s)	Will Nevins / Steven Sherman
Engineer	D. Norkey				
Date	14.3.23	Day	Tuesday	Start Time	08:00
Finish Time	16:30	Hammer ID	JD01		

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow
13	DS	2.00	2.45		
14	B	2.00	2.50		
15	D	2.60			
16	B	2.60	3.00		
17	S	3.00	3.45		
18	DS	3.00	3.45		
19	B	3.00	3.50	x2	
20	D	3.80			
21	C	4.00	4.45		
22	B	4.00	4.50	x2	
23	D	4.80			
24	C	5.00	5.45		
25	B	5.00	5.50	x2	
26	D	5.80			
27	S	6.00	6.45		

Standard Penetration Tests

Number	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
13									
14									
15									
16									
17	3.00	2.45	8	15	22	20	5/17		
18									
19									
20									
21	4.00	2.50	10	15/62	26	24/29			
22									
23									
24	5.00	3.94	19	6/55	41	9/37			
25									
26									
27	6.00	2.37	3	5	8	42/40			

Standing Water Levels

	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type

Casing Record

Diameter (mm)	Base (m)

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)

Backfill Materials

	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description

Client Signature	Company
	Date
Borehole Completed	Yes / No

Notes/Remarks: Sample type/B=bulk, D=disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: S=split spoon, C=cone, Cover Type: U=upstanding, F=flush.
Template:SSL - DRILLERS LOG CABLE V01-OCT-2015

Email: ask@soils.co.uk
Web: www.soils.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS116	Rig Type	Dando 2000
		Rig ID	Rig 1
Contract Number	765633	Location	A66NTPS03A
Rig Move	From	To	Sheet 3
Company Name	JB. Site	Driller	Brad Spiers
Assistant(s)	Will Newton/Steven Sharman	Engineer	D. Norbey
Date	14.3.23	Day	Tuesday
Start Time	08:00	Finish Time	16:30
Hammer ID	JB01		

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
28	DS	6.00	6.45											
29	B	6.00	6.50											
30	D	6.80												
31	S	7.00	7.45			7.00	2.94	25/63	50/40					
32	DS	7.00	7.45											
104	ES	1.50												

Standard Penetration Tests

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	To (m)	Hours (h)	Time From (hh:mm)	To (hh:mm)

Water Added Depth From (m)	To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	To	Description

Client Signature	Company
	Date
Borehole Completed	Yes / No

Notes/Remarks: Sample type B=bulk, D=disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: S=split spoon, C=cone, Cover Type: U=upstanding, F=flush.
Template SSL - DRILLERS LOG-CABLE-V01-OCT-2018

Email: sales@soils.co.uk
Web: www.soils.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS 116					Rig Type	DANDO 2000 MK II
						Rig ID	5
Contract Number	765633	Location	A66NTPS03A			Rig Move	From / To / Sheet 1
Company Name	JBSite	Driller	WILL NEVINS	Assistant(s)	STEPHEN SHARMAN	Engineer	DANIEL
Date 14-3-23	Day TUE	Start Time	8:00	Finish Time	5:00	Hammer ID	5

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata	Samples and Tests: Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth: Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record: From (m)	To (m)	Diameter (mm)	Type

Casing Record: Diameter (mm)	Base (m)

Record of Chiselling: Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added: Depth From (m)	Depth To (m)	Volume (lits)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays: Time From	Time To	Description
8	8:30	TOOLBOX TALK
9:00	5:00	ASSIST RIG 1 IN DRILLING BH PTS116 due to driller been off sick

Client Signature	Company
	Date
Borehole Completed	Yes / No

Notes/Remarks: Sample type:B=bulk, D=disturbed, DSPT=Disturbed from SPT test, U=undisturbed, UT=UT100, W=water. SPT test types: S=split spoon, C=core. Cover Type: U=outstanding, F=flush. Terminate SSL, DRILLERS LOG CABLE A101-OCT-2015

Email: ssl@ssls.co.uk
Web: www.ssls.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH- PTS116					Rig Type	Rambo 2000
						Rig ID	1
Contract Number	765633	Location	A66 NT PS03A			Rig Move	From BH-PTS116 To BH-PTS119 Sheet 1
Company Name	JB	Driller	Jamie Carr	Assistant(s)	W Mann / S Jennings	Engineer	Daniel
Date 15.3.23	Day Tuesday	Start Time	0800	Finish Time	1700	Hammer ID	JB-01

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time	12.00	
BH Depth (m)	7.00	
Casing Depth (m)	7.00	
Water Level (m)	2.20	

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)
Installation Plastic Casing				GL	6.50

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description
8.00	9.00	Morning Briefing - Brief for the crew known Get to BH
9.00	11.00	Move Rig Tracks Behind, on with JB's Rig Set up Rig on Position (Other Rig) (Mann Fence)
11.00	12.00	Set Up In Lower of Casing + UW Hole)
12.00	1.30	Installation UW To 6.50 - Pull 10 mm.
14.00	16.00	Move Rig Tracks Behind To next BH - Set up Rig
16.00	17.00	Dig Pit on other Rig (Wires Rig)

Client Signature	Company
	Date

Borehole Completed (Yes) / No

Notes/Remarks: Sample type: B=B.A. Disturbed, DS/PT=Disturbed from SPT test, U=undisturbed, UT=U100, W=water, SPT test types: B=split spoon, C=core. Cover Type: U=standing, F=flush. Template SSL_DSL/FR/100-CAB_E-V01-OCT-2015

Email: info@structural-soils.co.uk Web: www.structural-soils.co.uk

CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID	BH PTS 116	**Rig Type**	Barreta T44		
		Rig ID			
Contract No	765633	**Location**	A66	**Hammer ID**	
Client Name	RSK	**Driller**	lindon paisley	**Assistant**	Sean wakenshaw
Engineer	Ronan B	**Rig Move**	**From**	**To**	**Sheet** 1
Day	Thursday	**Date**	16/03/2023	**Start Time**	08:00
Finish Time	17:00				

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Standard Penetration Tests: Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
G'bor	6.5	7	2		100%	Water		R1				n/r										
								33	SPT	7				7	1	2	2	4	4	7	9	
G'bor	7	7.5	2		100%	water	Gravels	R2				300										
G'bor	7.5	8	2		100%	water	Gravels/red sandstone	R3				400										
G'bor	8	8.5	2		100%	water		R4				n/r										
								34	SPT	8.5				8.5	1	2	3	3	5	20	22(70	
G'bor	8.5	9	2		100%	water		R5				n/r										
								35	CPT	9				9	0	25(70		50(25				

Standing Water Levels

	AM	PM
Time		13:00
BH Depth (m)		6.5
Casing Depth (m)		6
Water level (M)		2.3

Drilling Tool Record

From (m)	To(m)	Diameter (mm)	Type

Casing Record

Diameter (mm)	Base (m)
SW	7.5
G'bor	9

Water Strikes

Time	AM	PM
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F

Pipe No	Pipe Type & Diameter	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record Hourly Rated Work / Standing & Delays

Time From	Time To	Description
08:00	10:50	Await tractor to move rig from BH to BH
10:50	11:40	Load rig onto tractor & trailer & move to BH
11:40	12:00	Unload rig & track it to BH
12:00	13:00	Wait for bog boards before getting the trailer to position without disturbing the grass
		Set rig up for Water flush

Client Signature

Company

Borehole Complete YES NO

Date

Notes Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water

Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

E-Mail : info@claydrilling.co.uk
Website : www.claydrilling.co.uk

CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID	BH PTS 116	**Rig Type**	Barreta T44		
		Rig ID			
Contract No	765633	**Location**	A66	**Hammer ID**	
Client Name	RSK	**Driller**	lindon paisley	**Assistant**	Sean wakenshaw
Engineer	Ronan B	**Rig Move**	**From**	**To**	**Sheet** 2
Day	Friday	**Date**	17/03/2023	**Start Time**	08:00
Finish Time	15:00				

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
G'bor	9	9.5	5	red	90%	Water		R6				n/r			4							
								36	CPT	9.5				9.5	1	7	18(40	50(25				
G'bor	9.5	10	5	red	90%	water		R7				n/r			1							

Standard Penetration Tests

Standing Water Levels	AM	PM
Time		
BH Depth (m)		
Casing Depth (m)		
Water level (M)		

Drilling Tool Record From (m)	To(m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)
SW	7.5
G'bor	10

Water Strikes	AM	PM
Time		
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F

Pipe No	Pipe Type & Diameter	From (m)	To (m)

Backfill Materials	From (m)	To (m)
Bentonite	GL	10

Client Signature		**Company**	
Borehole Complete	YES	NO	**Date**

Record Hourly Rated Work / Standing & Delays

Time From	Time To	Description
08:00	09:00	Morning brief & drive to BH
09:30	11:20	Clear BH & move trailer to next position
11:20	15:00	Wait for tractor to be free to move us to next position along with extra fence pannels to be set up and more track matting to be put down

Notes Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water

Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

E-Mail : info@claydrilling.co.uk
Website : www.claydrilling.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	A66 NTP S03A / BH-PB 117	Rig Type	Pm 2an
		Rig ID	1
Contract Number	765633	Location	A66 NTP S03A
Company Name	JB	Driller	Jane Cox
Assistant(s)	Ross Stone	Engineer	Rowan
Date	6 4 23	Day	Thursday
Start Time	0800	Finish Time	1400
Hammer ID	JB-1	Rig Move	From / To / Sheet 1

Depth From (m)	Depth To (m)	Driller's Description of Strata
GL	0.20	Sandy Silty Gravelly Top Soil
0.20	0.50	Reddish Gravelly Sand with Cobbles
0.50	1.20	Light Brown Gravelly Sand & Cobbles
1.20	3.20	Silty Sand Gravel with Cobbles.

Samples and Tests						Metres Depth		Seating Drive		Main Test Drive				N
Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Casing	Water	75mm	75mm	75mm	75mm	75mm	75mm	
1	D	0.10												
201	D	0.10												
2	B	0.10	0.20											
3	D	0.30												
202	D	0.30												
4	B	0.30	0.50											
5	D	0.60												
203	D	0.60												
6	B	0.60	1.00											
7	S	1.20	1.65			1.20	dry	2	3	8	8	8	11	35
8	B	1.20	1.65											
9	B	1.20	1.70	x2										
10	D	1.80												
204	D	1.80				2	0.50							
11	C	2.00	2.45			2.4	1.17	14	7	10	9	10	9	35

ES101	0.70 x3	12 B - 2.00 - 2.50 x2
ES102	0.50 x3	13 D 2.80
ES103	1.00 x3	205 D 2.80
ES104	1.00 x3	14 C - 3.00 - 3.45 | 7, 10, 9, 15, 21 ~~5~~ 4
		Grey 3.00 - Green GL

Standing Water Levels

	Morning	Evening
Time	/	1400
BH Depth (m)	/	3.20
Casing Depth (m)	/	3.20
Water Level (m)	/	0.62

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
GL	1.20	250	Pn Tone
1.20	3.20	250	Shell

Casing Record

Diameter (mm)	Base (m)
250	3.20

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
/	/	/	/	/

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
1.20	3.20	750

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
800	840	Moving Plant Go To BH Location
840	920	Wait For Engineer For Inspection Pit + Permits
920	1010	Pit Inspection Pit To 1.20
1010	1105	Go To Compound - Crane Rhing Tool - Traffic Under Bore

Client Signature	Company		
	Date		
Borehole Completed	Yes / No		

Email: mail@scsls.co.uk
Web: www.scsls.co.uk

Mats/Rewash, Sample type Bulgets, Undisturbed, DSPT=disturbed from SPT test, Undisturbed, UT=UT100, W=water, SPT test types: Split spoon, Cones, Cover Type: U=upstanding, F=flush
Template SSL: DRILLERS LOG-CABLE v01-OCT-2018

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS117	Rig Type	Dando 2000
		Rig ID	Rig 1
Contract Number	765633	Location	A66 NTP 5034
Company Name	JJ. Shea	Driller	Brad Spears
Assistant(s)	Jamie Carr	Rig Move	From / To / Sheet 1
Date 11.4.23	Day Tuesday	Start Time 08:00	Finish Time 16:00
Hammer ID	J801	Engineer	

Depth From (m)	Depth To (m)	Driller's Description of Strata
3.20	5.45	Slight Sandy gravel (cobbles
5.45	7.20	weathered Sandstone

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow
15	B	3.00	3.50	XT	
16	D	3.80			
006	D	3.80			
17	C	4.00	4.45		
18	B	4.00	4.50	XT	
19	D	4.80			
007	D	4.80			
20	C	5.00	5.45		
21	B	5.00	5.50	XT	
22	D	5.80			
008	D	5.80			
23	S	6.00	6.45		
24	DS	6.00	6.45		
25	S	6.00	6.50		
26	D	6.80			

Standard Penetration Tests

Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
4.00	2.44	4	5	11	13	10	10	
5.00	2.62	5	13	7	7	15	12	
6.00	2.97	25/75	50/65					

Standing Water Levels

	Morning	Evening
Time	08:45	15:45
BH Depth (m)	3.20	7.20
Casing Depth (m)	3.20	7.00
Water Level (m)	1.04	3.21

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
3.20	7.20	100	Shell

Casing Record

Diameter (mm)	Base (m)
250	7.00

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
7.00	7.10	1/4	14:17	14:47

Water Added

Depth From (m)	Depth To (m)	Volume (litre)
3.20	7.20	1200

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)	/	Water Depth After (m)	/	Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
08:00	08:45	morning briefing get to BH
14:47	15:15	wait on decision
15:45		wait on rotary casing

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: info@structural-soils.co.uk Web: www.ssltd.co.uk

Notes/Remarks: Sample type/Status, Undisturbed, DGPT=disturbed from SPT test, Undisturbed, UT4/U100, Window, SPT test type, Slagdill spoon, C=core, Cover Type, Unguaranding, F=Seal.
Template:SSL_DHILLPRG/LOG/CABLE/A001-OCT-2016

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PT0117					Rig Type	Dando 2000
						Rig ID	Rig 1
Contract Number	765633	Location	A66NTP5074			Rig Move	From / To / Sheet 2
Company Name	JB. Site	Driller	Brad Speers	Assistant(s)	Jamie Carr	Engineer	
Date 11.4.23	Day Tuesday	Start Time	08:00	Finish Time	16:00	Hammer ID	JB01

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
27	S	7.00	7.45			7.00	3.77	53/59	50/62					
28	DS	7.00	7.45											

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: info@ssl.co.uk
Web: www.ssl.co.uk

Notes/Remarks: Sample types: B=Bulk, D=Disturbed, DIPT=derived from SPT test, U=undisturbed, UTHUT100, Winspec SPT test types: Sing=Single spoon, Cones, Cover Type: Unupgrading, P=Bush, Transfer: 635-001-PR06-0001-0481-E-001-001-2018

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS117					Rig Type	Dando 2000
						Rig ID	Rig 1
Contract Number	765633	Location	AGGNTPSC3A			Rig Move	From / To / Sheet 1
Company Name	JB Site	Driller	Brad Speirs	Assistant(s)	Jim & Co	Engineer	
Date 12.4.23	Day Wednesday	Start Time 05:00	Finish Time 17:00	Hammer ID	JB01		

Depth From (m)	Depth To (m)	Driller's Description of Strata
4.4		
10:30	11:40	Install rotary casing, fill 10", drop and leave rig
11:40	14:30	went on next BH position, went on H and S to assess as BH position is unsafe
14:30	16:40	move rig, trailer and bowser to next BH, set up
16:40	17:00	take trailer back to fire station

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow

Standard Penetration Tests

Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N

Standing Water Levels

	Morning	Evening
Time	16:30	
BH Depth (m)	7.00	
Casing Depth (m)	7.00	
Water Level (m)	3.47	

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type

Casing Record

Diameter (mm)	Base (m)

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added

Depth From (m)	Depth To (m)	Volume (litre)

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
08:00	08:45	Morning briefing, get to BH
08:45	10:20	go back to compound to get correct rotary casing, wrong casing was dropped off, go to Kirby & Lorne to collect rotary casing, get to BH
10:20	10:30	Clean over BH to install rotary casing

Client Signature	Company
	Date

Borehole Completed: Yes / No

Email: info@ssltd.co.uk
Web: www.ssltd.co.uk

Notes/Remarks: Sample type Bagged, Disturbed, DIPT=disturbed from SPT test, Undisturbed, UT=UT100, Winsitu: SPT test types: S=split spoon, C=core, Cover Type: U=padlocked, F=flush.
Template BSI - DRILLING LOG-CABLE-2010-OCT-2010

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS117

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
14/04/2023	07:30	7.2	10.2	Inspection pit	SSL-SN2240

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
	Sam Carter	Simon Pearson		Ronan Barker

Coring Data

Coring Data Grid

3 records

Top (m)	*Base (m)*	*Drilling Info*	*Run time (min)*	*Flush*	*Notes*
7.20	7.95	RC (Rock) Barrel: Geo-bor S Rec: 80%	2	Water 100% (max return) Brown	Description: Sandstone Box: 1 Liner used: Yes
7.95	8.70	RC (Rock) Rec: 120%	5	Water 100% (max return) Brown	Description: Sandstone stone Box: 2 Liner used: Yes Notes: Picked up 0.15 from previous run
8.70	10.20	RC (Rock) Barrel: Geo-bor S Rec: 0.09666666666666667%	4	Water 100% (max return) Brown	Description: Sandstone Box: 3 Liner used: Yes

Description of Strata

Stratums Grid

1 record

Top (m)	*Base (m)*	*Description*	*Stratum Classifications*	*Stratum Thickness (m)*
7.20	10.20	Sàndstone	Boundary: Solid	3.0

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Standing Water Levels

2 records

DateTime	Standing Water Levels Summary
14/04/2023, 09:00	Borehole depth = 7.2m. Casing depth = 7.2m. Water depth = 4.4m. Borehole diameter = 175mm.
14/04/2023, 10:30	Borehole depth = 10.2m. Casing depth = 7.2m. Water depth = 3.5m. Borehole diameter = 175mm.

Drilling Tool Record

Drilling Tool Record Grid

1 record

DateTime	From (m)	To (m)	Hole dia (mm)	Tool dia (mm)	Tool Type	Drill Tool Remarks
14/04/2023, 09:47	7.20	10.20	146	109.5	PDC	

Casing Record

Casing Record Grid

1 record

DateTime	Base depth (m)	Internal diameter (mm)	Casing Record Remarks
14/04/2023, 09:49	7.20	178	

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no pipes installed [X]

Backfill Grid

1 record

Section top depth (m)	*Section base depth (m)*	*Section fill*	*Date*	*By*	*Section length (m)*
0	10.20	BENTONITE SEAL	14/04/2023	Sam Carter sam.carter@soils.co.uk	10.2

Standing Time

Standing Time Grid

1 record

From	*To*	*Standing Time Summary*
11:00	13:00	Category: Dayworks - Moving Drilling Position Duration: 02:00 Description: Move rig ànd equipment to next borehole

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	10.2	Sam Carter	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHPTS118A	Rig Type	DANDO 2000 MK II
		Rig ID	2000 6699
Contract Number	765633	Location	AGENTB03A
Company Name	JB Site	Driller	Will Newns
Date 4.4.23	Day TUE	Start Time 8:00	Finish Time 5:00
Assistant(s)	Stephen Sharman	Hammer ID	5
Rig Move	From	To	Sheet
Engineer	RONIN		

Depth From (m)	Depth To (m)	Driller's Description of Strata
GL	0.40	GRASS OVER TOP SOIL
0.40	1.20	Loose Red sand + gravel large cobbles
1.20	4.50	Dense grey sand + gravel / boulders.
		D206 D 3.80

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
7	S	1.20	1.50			/	/	10	15	15	20	15		35mm
8	DS	1.20	1.50			/	/							
9	B	1.20	1.50											
10	D	1.80												
11	S	2m	2.43			2m	2m	3	8	11	14	15	10	45mm
12	DS	2m	2.43											
13	B	2m	2.50											
14	D	2.80												
15	C	3m	3.30			3m	3m	3	6	15	20	15		60mm
16	B	3m	3.50											
17	D	3.80												
18	C	4m	4.30			4m	3.50	4	8	20	20	15		70mm
19	B	4m	4.50											
20	D	1.80												
21	D	2.80												

Standing Water Levels

	Morning	Evening
Time		5:00
BH Depth (m)		4.50
Casing Depth (m)		4.50
Water Level (m)		4m

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
1.20	4.50	2.50	Shell

Casing Record

Diameter (mm)	Base (m)
300	4.50

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
1.20	4.50	3x Bowser

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Settled (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8:00	8:30	MORNING BRIEF
8:30	9:20	STANDING ON PERMITS
9:20	10:20	PIT
10:00	11:00	SLOW PROGRESS 1.50 - 1.70
/	/	FILLING Water BOWSER X3 14R
4:30	5:00	STANDING ON Water.

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: info@soils.co.uk Web: www.soils.co.uk

Notes/Remarks: Sample type:B=bulk, D=disturbed, DSP=disturbed from SPT test, U=undisturbed, UT=UT100, Winsitu, SPT test types: B=split spoon, C=cone, Cover Type: U=open/vent, F=sealed. Template:SSL-DRILLING-003-F-REV E-VOI-OCT-2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS-118A	Rig Type	DANDO 2000 MK11		
Contract Number	765633	Location	AGGNTPS03A	Rig ID	2000 66CLG
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sharman
Date	5-4-23	Day	WEDS	Start Time	8:00
Finish Time	5:00	Hammer ID	5	Rig Move	From 3:00 To 5:00 Sheet
Engineer	RONIN				

Depth From (m)	Depth To (m)	Driller's Description of Strata
4.50	6.20	Very dence grey sand + gravel large cobbles

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow
20	D	4.80			
207	D	4.80			
21	C	5m	5.23		
22	B	5m	5.50		
23	D	5.80			
208	D	5.80			
24	S	6m	6.20		
25	DS	6m	6.20		
26	B	6m	6.20		

Standard Penetration Tests

Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
5m	4.20	6	11	14	16	20		
6m	4.80	10	15	30	20			20 mm
—	—							

Standing Water Levels

	Morning	Evening
Time	8:00	
BH Depth (m)	4.50	
Casing Depth (m)	4.50	
Water Level (m)	3.80	

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
4.50	6.20	250	Shell

Casing Record

Diameter (mm)	Base (m)
300	6.20

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
4.50	6.20	4x Bowser

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)
35 Pellets Backfill	GL	6.20

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8:00	8:30	Brief
10:00	10:50	STANDING ON Water
1PM	2PM	BH DECISION
2PM	3PM	BACK fill BH 35 Pellets
3PM	5PM	Standing ON TRACK WAY

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: admin@ssl.co.uk, Web: www.ssls.co.uk

Notes/Remarks: Sample type Brown, Undisturbed, DSPT=disturbed from SPT test, Undisturbed, UT=UT100, Wireline, SPT test bypass Grapple space, Cocore, Cover Type: Unguaranteed, Fetpsh, Template SSL - DBS11-BTS-LOG-SABE-2011-001-2012

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS-118B	Rig Type	DANDO 2000 MK II		
		Rig ID	2000 ~~MK~~ 6099		
Contract Number	765633	Location	A66NTPS03A	Rig Move	From / To / Sheet 1
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sharman
Engineer					
Date	6-4-23	Day	THU	Start Time	8:00
Finish Time	2:00	Hammer ID	5		

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata	Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
GL	0.40	GRASS over TOPSOIL	1	C	1.20	1.45			/	/	7	14	25	25			35mm
0.40	1.20	Dence Red brown sand + cobbles	2	C	2m	2.40			2m	180	4	9	11	24	15		35mm
1.20	2m	Dence grey sand & gravels / cobbles															

Standing Water Levels	Morning	Evening
Time		2:00
BH Depth (m)		2m
Casing Depth (m)		2m
Water Level (m)		180

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type
~~GL~~			
6			
1.20	2m	250	Shell

Casing Record Diameter (mm)	Base (m)
300	2m

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)
1.20	2m	3 Bowsers

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Driver Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	To	Description
8	8:30	Brief
		Standing on CPS for Pit
8:30	10:00	
10:00	11:30	Pit

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Name/Periodic, Sample type B=bulk, Disturbed, DSPT=disturbed from SPT test, Undisturbed, UT100/UT50, Winkler SPT test types: Bright spoon, Cone, Cover Type, Unsplitting, Flush
Template SSL-DRILLED3-LOG-CABLE-V01-OCT-2015
Email: info@ssltd.co.uk
Web: www.ssltd.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	PTS118B	Rig Type	DANDO2000 MKII		
Contract Number	765633	Location	A66NTPS03A	Rig ID	2000 6644
Company Name	JBSite	Driller	Will Nevins	Assistant(s)	Stephen Sharman
Date	11-4-23	Day	TUE	Start Time	8:00
Finish Time	4:00	Hammer ID	5	Rig Move	From / To / Sheet
Engineer	RONIN				

Depth From (m)	Depth To (m)	Driller's Description of Strata
2m	6.20	Dence grey sand + gravels / large cobbles

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow
3	3m	3.45			
4	4m	4.45			
5	5m	5.25			
6	6m	6.20			

Standard Penetration Tests

Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
3m	2.50	9	7	7	8	7	7	
4m	BHDRY	4	6	8	10	10	10	
5m	Dry	9	12	20	30		=	50mm
6m	3m	10	15	30	20		=	15mm

Standing Water Levels

	Morning	Evening
Time	8:00	4:00
BH Depth (m)	2m	6.20
Casing Depth (m)	2m	6.20
Water Level (m)	1.30	3m

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
2m	6.20	250	Shell

Casing Record

Diameter (mm)	Base (m)
300	6.20

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
2m	6.20	4 x Bowsa

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
30 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)

Backfill Materials

	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8:00	8:30	MORNING BRIEF
2m	6.20	Water added through day 1.30
2m	6.20	Bag spoil 30mins
2.30	3:00	Toilet break AS its IN NEXT FIELD.

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: info@ssltd.co.uk
Web: www.ssltd.co.uk

Rotary/Percussive Sample Type: Bulk, D=Disturbed, DSPT=derived from SPT test, Undisturbed, UT=UT100, Wheeler, SPT test (type: Single spoon, Chrome, Cover Type: Unpenetrating, Pitback
Template:SSL_CABLE LOG-CABLE.F.001-OCT-2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS-118B	Rig Type	DANDO 2000 MKII		
Contract Number	765633	Rig ID	2000 6649		
Location	A66 NTPS03A	Rig Move	From	To	Sheet
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sharman
Engineer	Ronin				
Date	12-4-23	Day	WED	Start Time	8:00
Finish Time	5:00	Hammer ID	5		

Depth From (m)	Depth To (m)	Driller's Description of Strata
6.50	7.20	Dence grey Sand + gravels With limestone boulders
7.20	7.50	Red Weatherd Sandstone

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
7	D	6.80												
107	D	6.80												
8	C	7m	7.10			7m	3m	10	15	50	=	40mm		
9	B	7m	7.20											
10	B	7.20	7.50											

Standard Penetration Tests

Standing Water Levels	Morning	Evening
Time	8:00	5:00
BH Depth (m)	6.50	7.50
Casing Depth (m)	6m	7.20
Water Level (m)	2.50	5m

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type
6.50	7.50	250	Shell

Casing Record Diameter (mm)	Base (m)
300	7.20

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
6.80	6.90	½	10:30	11:00
6.90	7m	½	11:30	12:00
7m	20	½	12:30	1pm

Water Added Depth From (m)	Depth To (m)	Volume (litre)
6.20	7.50	4x Buser

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / P
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description
800	830	MORNING Brief
1100	1130	BH Decision
1pm	4pm	STANDING ON ROTARY CASEING
1pm	500	ASSISTING JB Rig 1

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: info@ssl.co.uk Web: www.ssl.co.uk

Notes/Remarks: Sample type B=pak, D=disturbed, DSPT=disturbed from SPT test, U=undisturbed, UTx/TT06, Wh=water, SPT test type: S=split spoon, C=cone, Cover Type: U=standing, P=open. Template SSL_DB14.4P03-LOG-SHEET-V01-OCT-2019

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS-118B	Rig Type	DANDO 2000 MK11		
		Rig ID	2000 6619		
Contract Number	765633	Location	A66 NTPS 03A	Rig Move	From / To / Sheet
Company Name	JB Site	Driller	WILL NEWINS	Assistant(s)	Stephen Sharman
Engineer	RONIN				
Date	13-4-23	Day	THU	Start Time	8:00
Finish Time	5:00	Hammer ID	5		

Email: admin@ssls.co.uk, Web: www.ssls.co.uk

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standard Penetration Tests

Standing Water Levels*	Morning	Evening
Time	8:00	
BH Depth (m)	7.50	
Casing Depth (m)	7.50	
Water Level (m)	3m	

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)
300	7.50

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
3m	7½ ROTARY CASING			GL	7.50

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description
8:00	8:30	MORNING BRIEF
8:30	9:00	MOB TRAILER RIG 1
9:00	10:00	FINDLEAD LENTH 7½" ROTARY
10:00	11:00	INSTALL & PULL 10"
11:00	1PM	STANDING ON NEXT POSITION

Client Signature	Company
	Date
Borehole Completed	Yes / No

Notes/Remarks: Samples/ps Break, D=disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: S=split spoon, C=cone, Cover Type: U=padlocking, F=flush
Template SSL: [R01/FRS-LOG-ARB-E-M]-LOG-2015

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	Name	Client
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS118B

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	Start time	Start depth	End depth	Initial technique	Equipment / Rig
17/04/2023	05:30	0.0	9.3		SSL-SN2240

Log Breakdown Grid 2

HammerID	Lead driller	Assistant 1	Assistant 2	Supervising Engineer
AR1240-2022	Sam Carter	Simon Pearson		Ronan Barker

Coring Data

Coring Data Grid

3 records

Top (m)	Base (m)	Drilling Info	Run time (min)	Flush	Notes
7.50	8.25	RC (Soil) Barrel: Geo-bor S Rec: 0%	2	Water 100% (max return) Brown	Box: 1 Liner used: Yes Notes: Dropped full run
8.25	8.80	RC (Soil) Barrel: Geo-bor S Rec: 0%	6	Water Brown 100% (min return)	Box: 2 Liner used: Yes Notes: No recovery
8.80	9.30	RC (Soil) Rec: 0%	5	Water 100% (max return) Brown	Box: 3 Liner used: Yes Notes: No recovery

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Samples

2 records

Top	Base	Ref	Type.	Test Details	Containers	Hazards	Description / Remarks
8.80	9.02	1	S	N-Value=50 Seating:3,12 = 15/150mm Test:50/70mm = 50/70mm Casing=7.2m Water=2.30m			

8.80	9.02	301	DSPT		Tubs = 1		

Standing Water Levels

Standing Water Levels

2 records

DateTime	Standing Water Levels Summary
17/04/2023, 14:00	Borehole depth = 7.5m. Casing depth = 7.5m. Water depth = 4.5m. Borehole diameter = 175mm.
17/04/2023, 16:10	Borehole depth = 7.5m. Casing depth = 7.5m. Water depth = 1.8m. Borehole diameter = 175mm.

Drilling Tool Record

Drilling Tool Record Grid

1 record

DateTime	From (m)	To (m)	Hole dia (mm)	Tool dia (mm)	Tool Type	Drill Tool Remarks
17/04/2023, 07:51	7.50	9.30	146	109.5	PDC	

Casing Record

Casing Record Grid

1 record

DateTime	Base depth (m)	Internal diameter (mm)	Casing Record Remarks
17/04/2023, 16:30	7.50	178	

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no backfill [X]

Standing Time

Standing Time Grid

1 record

From	*To*	*Standing Time Summary*
09:00	12:30	Category: Dayworks - Setting Up Rig Duration: 03:30 Description: Setting up rig over hole, had to drop rig several times due to the hole not being straight

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	9.3	Sam Carter	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	Name	Client
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
BH-PTS118B

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	Start time	Start depth	End depth	Initial technique	Equipment / Rig
18/04/2023	07:30	9.3	10.3		SSL-SN2240

Log Breakdown Grid 2

HammerID	Lead driller	Assistant 1	Assistant 2	Supervising Engineer
AR1240-2022	Sam Carter	Simon Pearson		Ronan Barker

Coring Data

Coring Data Grid

2 records

Top (m)	Base (m)	Drilling Info	Run time (min)	Flush	Notes
9.30	9.80	RC (Rock) Barrel: Geo-bor S Rec: 100%	4	Water 100% (max return) Brown	Box: 4 Liner used: Yes
9.80	10.30	RC (Rock) Barrel: Geo-bor S Rec: 0%	3	Water 100% (max return) Brown	Box: 5 Liner used: Yes

Description of Strata

Stratums Grid

1 record

Top (m)	Base (m)	Description	Stratum Classifications	Stratum Thickness (m)
9.30	10.30	Sandstone	Boundary: Solid	1.0

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Standing Water Levels

1 record

DateTime	Standing Water Levels Summary

18/04/2023, 09:10	Borehole depth = 9.3m. Casing depth = 7.5m. Water depth = 4.4m. Borehole diameter = 146mm.

Drilling Tool Record

Drilling Tool Record Grid

1 record

DateTime	From (m)	To (m)	Hole dia (mm)	Tool dia (mm)	Tool Type	Drill Tool Remarks
18/04/2023, 17:01	9.30	10.30	145	109.5	PDC	

Casing Record

Casing Record Grid

1 record

DateTime	Base depth (m)	Internal diameter (mm)	Casing Record Remarks
18/04/2023, 17:03	7.50	178	

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Pipes setup data

1 record

Ref	Desc	Install Summary (1)	RZ Summary	Install Summary (2)	Install Summary (3)
1	NA	Type: Gas monitoring point Desc: NA	Water before: 3.4m. Water after: 3.2m.	Date: 18 Apr 2023. Diameter: 50mm. Material: HDPE. Length: 3.5m.	Gas tap: Yes. Cover: UPSTANDING COVER. Installer: Sam Carter. Geowrap: Yes.

Pipe construction

2 records

Pipe ref	*Top (m)*	*Base (m)*	*Pipe type*	*Pipe Summary*	*Length (m)*
1	0	1.50	PLAIN	Type: PLAIN Diameter: 50mm	1.5
1	1.50	3.50	SLOTTED	Type: SLOTTED Diameter: 50mm	2.0

Backfill Grid

4 records

Section top depth (m)	*Section base depth (m)*	*Section fill*	*Date*	*By*	*Section length (m)*
0	0.2	CONCRETE	18/04/2023	Sam Carter sam.carter@soils.co.uk	0.2
0.2	1.5	BENTONITE SEAL	18/04/2023	Sam Carter sam.carter@soils.co.uk	1.3
1.40	5	GRAVEL FILTER	18/04/2023	Sam Carter sam.carter@soils.co.uk	3.6
4	10.30	BENTONITE SEAL	18/04/2023	Sam Carter sam.carter@soils.co.uk	6.3

Standing Time

Standing Time Grid

1 record

From	*To*	*Standing Time Summary*
13:00	17:00	Category: Dayworks - Other Duration: 04:00 Description: Waiting for next drilling position

General Remarks

Confirm no preset or general remarks [X]

Photos

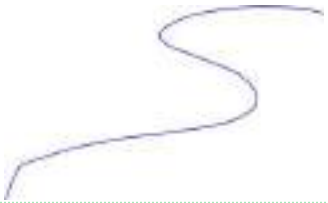
Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	10.3	Sam Carter	

RSK Completion confirmation



Client Completion confirmation

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID						Rig Type	Dando 2000
						Rig ID	JD01
Contract Number	765633	Location	A66			Rig Move	From / To / Sheet 1
Company Name	JD	Driller	Jonny Cook	Assistant(s)		Engineer	
Date 16.3.23	Day Thursday	Start Time	0800	Finish Time	1700	Hammer ID	JD-1

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests: Number	Type	From (m)	To (m)	Rec (mm)	U Blow

Standard Penetration Tests: Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels*	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record: From (m)	To (m)	Diameter (mm)	Type

Casing Record: Diameter (mm)	Base (m)

Record of Chiselling: Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added: Depth From (m)	Depth To (m)	Volume (lits)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays: Time From	Time To	Description
8am	17pm	Arrived Site Rigging Rig Rec Day (Catered Day)

Client Signature	Company
	Date
Borehole Completed	Yes / No

Notes/Remarks: Sample type Bulk, Undisturbed, D(SPT=disturbed from SPT test, Undisturbed, UT=UT100, Winwater, SPT test types: Split spoon, Cruciform, Cover Type: Unpaving, Flush, Tarmac, Grass. DRILLING-CABLE-V01-OCT-2015

Email: info@geotechs.co.uk Web: www.structural.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS 119	Rig Type	Dando 2000
		Rig ID	1
Contract Number	765633	Location	A66 NTR503A
		Rig Move	From / To / Sheet 1
Company Name	Friday JB	Driller	Ross Sproat
Assistant(s)	John Cree	Engineer	Daniel Morrison
Date	17-3-23	Day	Friday
Start Time	0800	Finish Time	1430
Hammer ID	JB-01		

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata
GL	0.20	Small area Sandy Top Soil
0.20	0.90	Loose Brown Slightly Gravelly Silty Sand
0.90	1.20	Dense Brown Sand + Gravel.
1.20	2.00	Medium Density, Slightly Gravelly, Slightly Silty Sand
2.00	3.50	Dense Brown Silty, Slightly Sandy Gravel — Sandstone Lumps + Cobbles
3.50	5.50	Weathered Sandstone.

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
1	D	0.10												
101	ES	0.20	x3											
2	D	0.30												
102	ES	0.80	x3											
4	D	1.00												
103	ES	1.00	x3											
5	B	0.90	1.20											
6	S	1.20	1.65			1.20	GL	3	5	3	4	3	3	13
7	DS	1.20	1.65											
8	B	1.20	1.70											
9	D	1.80												
10	S	2.00	2.45			2.00	1.09	4	6	7	14	12	16	49
11	DS	2.00	2.45											
12	B	2.00	2.50	x2										
13	D	2.80												

Standing Water Levels

	Morning	Evening
Time	/	14:30
BH Depth (m)	/	5.50
Casing Depth (m)	/	5.50
Water Level (m)	/	3.30

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
GL	1.20	200	Air Spoon
1.20	5.50	200	Steel

Casing Record

Diameter (mm)	Base (m)
200	5.50

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
3.70	3.45	1	12:00	12:30

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
1.20	5.50	500

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
800	845	Moving Rigs On To Location
845	945	Dig Inspection Pit To 1.20.

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Notes/Remarks: Sample Type: B=bulk, D=disturbed, DS/PT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water. SPT test types: S=split spoon, C=core. Cover Type: U=standing, F=flush.
Template:SSL_DRILLERS-LOG-CABLE-V01-OCT-2019

Email: info@ssltd.co.uk
Web: www.ssltd.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH- PTS- 119	Rig Type	Dando 2000		
		Rig ID	1		
Contract Number	765633	Location	A66 NTR3074	Rig Move	From / To / Sheet 2
Company Name	JB-1	Driller	D Sparks	Assistant(s)	JCAU	Engineer	Bruce Mackay
Date 17.3.23	Day Friday	Start Time 0800	Finish Time 1430	Hammer ID	JB-1		

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow
14	CPT	300	345		
15	D	300	300	x2	
16	D	360			
17	B	300	400		
18	S	400	445		
19	DS	400	443		
20	B	400	450		
21	D	480			
22	S	500	545		
23	DS	500	545		
24	D	500	550		

Standard Penetration Tests

Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
300	2.28	7	11	13	15	17	5/34	50
400	92	18	7/40	33	17/50			50
500	279	25/49	41	9/10				50

Standing Water Levels

	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type

Casing Record

Diameter (mm)	Base (m)

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description

Client Signature	Company
	Date

Borehole Completed Yes / No

Notes/Remarks: Sample type-Bulk, D-disturbed, DSPT-disturbed from SPT test, U-undisturbed, UT-U100, W-water, SPT test types: B-split spoon, C-core. Core Type: U-undistributed, Terrapoint SS- CRULE2/CO3 CABLE 101-OCT-2015

Email: admin@structs.co.uk. Web: www.ssltd.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS119					Rig Type	Dando 2000
						Rig ID	Rig 1
Contract Number	765633	Location	AGGNTPSOSA			Rig Move	From / To / Sheet 1
Company Name	JB Site	Driller	Brad Peters	Assistant(s)	Jamie Carr	Engineer	D. Morley
Date	20.3.23	Day	Monday	Start Time	08:00	Finish Time	16:15
Hammer ID	JB01						

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata
5.50	10.00	weathered Sand Stone
5.50	10.00	Poor Sample recovery

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
25	D	5.50												
26	S	6.00	6.45			6.00	2.41	25/20	50/24					
27	DS	6.00	6.45											
28	B	6.00	7.00											
29	S	7.00	7.45			6.00	2.57	25/24	50/51					
30	DS	7.00	7.45											
31	B	7.00	8.00											
32	S	8.00	8.45			6.00	2.77	25/22	50/58					
33	DS	8.00	8.45											
34	B	8.00	9.00											
35	S	9.00	9.45			6.00	3.01	25/51	50/43					
36	DS	9.00	9.45											
37	B	9.00	10.00											
38	S	10.00	10.45			6.00	3.30	25/42	50/58					
39	DS	10.00	10.45											

Standing Water Levels

	Morning	Evening
Time	08:50	17:50
BH Depth (m)	5.50	10.00
Casing Depth (m)	5.50	6.00
Water Level (m)	2.27	3.30

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
5.50	10.00	4 1/2"	Shell

Casing Record

Diameter (mm)	Base (m)
/	/

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
/	/	/	/	/

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
5.50	10.00	500

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins	/	/	/
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)	3.30	Water Depth After (m)	/	Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)
1	50mm Plain	GL	1.50
1	50mm Slotted	1.50	3.00

Backfill Materials	From (m)	To (m)
Concrete	GL	0.50
bento	0.50	1.00
gravel	1.00	3.50
bento	3.50	10.00

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
08:00	08:50	Morning briefing, get to BH
12:20	13:00	wait on install details
13:00	14:15	go get install gear from compound
14:15	16:00	install pile, pull casing (14:50-15:30 wait on extra gravel)
16:00	16:15	drop and load rig

Client Signature

Company

Date

Borehole Completed (Yes) / No

Email: ask@structs.co.uk
Web: www.soils.co.uk

Notes/Remarks: Sample types/Bulk, Disturbed, DSPT (disturbed from SPT test, Undisturbed, UTx (UT100, Wheeler, SPT test types: Sample spoon, Chisels, Cover Type: Unpotonding, Fetish.
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STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS120	Rig Type	Dando 2000		
		Rig ID	Rig 1		
Contract Number	765633	Location	A66 NTPS03A	Rig Move	From / To / Sheet 1
Company Name	JD. Site	Driller	Brad Speirs	Assistant(s)	Jamie Carr
Engineer	D. Norley				
Date	21.3.23	Day	Tuesday	Start Time	08:00
Finish Time	17:00	Hammer ID	JB01		

Depth From (m)	Depth To (m)	Driller's Description of Strata
GL	0.40	grass over Sandy, slight gravelly topsoil
0.40	1.20	dense brown slight gravelly sand
1.20	2.00	Sand and gravel cobbles

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow
1	D	0.20			
201	A	0.20			
2	B	GL	0.40		
3	D	0.50			
202	A	0.50			
4	B	0.50	1.00		
5	S	1.20	1.65		
6	DS	1.20	1.65		
7	B	1.20	1.70		
8	D	1.80			
101	ES	0.30			
102	ES	0.50			
103	ES	1.00			
104	ES	1.50			

Standard Penetration Tests

Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
1.20	GL	2	3	2	4	4	4	

Standing Water Levels

	Morning	Evening
Time	/	16:45
BH Depth (m)	/	1.90
Casing Depth (m)	/	1.90
Water Level (m)		0.50

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
GL	2.00	8"	Shell
GL	2.00	8"	Shell

Casing Record

Diameter (mm)	Base (m)
200	1.90

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
/	/	/	/	/

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes

Time		
Strike Depth (m)		
Casing Depth (m)	/	/
5 mins		
10 mins	/	/
15 mins		
20 mins		
Depth Sealed (m)		

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
/	/			/	/

Backfill Materials

	From (m)	To (m)
/	/	/

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
08:00	08:30	Morning briefing, get to BH
08:30	09:40	Move rig, trailer and bowser to next BH, set up, concrete cover 119
09:40	10:30	wait on engineer with CAT scan
10:30	11:40	Dig pit
14:00	16:00	prop rig, bowder causing casing to go off track, move rig, set up, dig pit

Client Signature

Company

Date

Borehole Completed Yes / No

Email: ask@soils.co.uk Web: www.soils.co.uk

Notes/Remarks: Sample type B=bulk, D=disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: S=split spoon, C=cone, Cover Type: U=upstanding, F=flush, Template SSL-DRILLERS-LOG-CABLE-V01-OCT-2018

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PT3TR0					Rig Type	Dando Terrier
						Rig ID	Rig 7
Contract Number	765653	Location	ACCNPD503A			Rig Move	From / To / Sheet T
Company Name	SG. Silva	Driller	Brad Sparrs	Assistant(s)	Jamie Carr	Engineer	D. Nerkay
Date 21.3.23	Day Tuesday	Start Time	08:00	Finish Time	17:00	Hammer ID	J801

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata	Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (litres)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description
16:00	17:00	Drive back down

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: info@structural.co.uk
Web: www.ssltd.co.uk

Notes/Remarks: Sample type Bulk/B, Disturbed, D(SPT=disturbed from SPT test, Undisturbed, UT=UT100, Winpaker, SPT test bypass, Snapdll space, Cocorne, Cover Type: Unpackaging, Felpuh.
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STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS120A	Rig Type	Dando 2000
Contract Number	765633	Rig ID	Rig 1
Location	A66NTPS03A	Rig Move	From / To / Sheet 4
Company Name	JB Site	Driller	Brad Sh's
Assistant(s)	Jamie Carr	Engineer	D. Norkey
Date	22.3.23	Day	Wednesday
Start Time	08:10	Finish Time	17:00
Hammer ID	JS01		

Depth From (m)	Depth To (m)	Driller's Description of Strata
1.90	2.30	Sand and gravel (cobbles)
2.30	5.30	Weathered Sandstone

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow
1	C	2.00	2.45		
2	B	2.00	2.30		
3	D	2.40			
4	B	2.40	3.00		
5	S	3.00	3.45		
6	DS	3.00	3.45		
7	B	3.00	3.50		
8	D	3.80			
9	S	4.00	4.45		
10	DS	4.00	4.45		
11	B	4.00	4.50		
12	D	4.80			
13	S	5.00	5.45		
14	DS	5.00	5.45		
15	B	5.00	5.30		

Standard Penetration Tests

Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
2.00	1.01	25/89	50/84					
3.00	1.29	6	6	8	7	11	14	
4.00	2.69	7	15/54	50/70				
5.00	2.80	25/67	50/68					

Standing Water Levels

	Morning	Evening
Time	08:30	16:00
BH Depth (m)	1.90	5.30
Casing Depth (m)	1.90	5.30
Water Level (m)	0.40	1.39

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
1.90	5.30	10"	Steel

Casing Record

Diameter (mm)	Base (m)
/	/

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
1.90	2.30	1	09:00	10:00
3.40	4.30	1/2	11:30	12:00
5.00	5.30	1	13:45	14:45

Water Added

Depth From (m)	Depth To (m)	Volume (lbs)
1.90	5.30	1000

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins	/	/	/
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)	1.39	Water Depth After (m)	/	Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)
1	50mm Plain	GL	2.00
1	50mm Slotted	2.00	4.50

Backfill Materials	From (m)	To (m)
Concrete	GL	0.50
bento	0.50	1.50
gravel	1.50	5.00
bento	5.00	5.30

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
08:00	08:30	Morning briefing. get to BH
08:30	09:00	try get casing straight
14:45	15:15	wait on decision
15:15	16:15	wait on install gear
16:15	17:00	Install pipe, pull casing

Client Signature

Company

Date

Borehole Completed (Yes) / No

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS1204	Rig Type	Dando 2000
		Rig ID	Rig 4
Contract Number	765633	Location	A66NTPS03A
Company Name	JB Site	Driller	Brad Spears
Assistant(s)	Jamie [illegible]	Engineer	O. Nasey
Date	22.3.23	Day	Wednesday
Start Time	05:00	Finish Time	17:00
Hammer ID	JB01		

Rig Move: From / To / Sheet 2

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
16	S	5.30				5.30	5.00	25/31	25/32					
17	DS	5.30												

Standing Water Levels

	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type

Casing Record

Diameter (mm)	Base (m)

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)

Backfill Materials

	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description

Client Signature

Company

Date

Borehole Completed Yes / No

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHPTS 121	Rig Type	DANDO 2000 MK II		
Contract Number	765633	Location	AG6NTPS03A	Rig ID	2000/8694a
Company Name	J&B Site	Driller	Will Nevins	Assistant(s)	Stephen Sharman
Rig Move	From 10:00	To 12:30	Sheet 1/2	Engineer	DANICL
Date 21-3-23	Day Tue	Start Time 8:00	Finish Time 5:00	Hammer ID	5

Driller's Description of Strata

Depth From (m)	Depth To (m)	Description
GL	0.20	loose brown sand.
0.20	0.50	loose Redbrown sand + gravels
0.50	1.20	large cobbles Same AS ABOVE
1.20	1.50	Dence sandy Silt large cobbles

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow
1	D	0.10			
201	D	0.10			
2	B	GL	0.30		
3	D	0.30			
101	ES	0.30			
102	ES	0.50			
202	D	0.30			
4	B	0.50	0.80		
5	D	0.80			
203	D	0.80			
103	ES	1m			
6	B	1m	1.20		
7	D	1m			
204	D	1m			
8	DS	1.20	1.65		

Standard Penetration Tests

Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N

Standing Water Levels

	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
1.20	1.50	250	CUTTER

Casing Record

Diameter (mm)	Base (m)

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
1.20	1.50	30mins	4:00	4:30

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	W / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
1:15	2:00	Set UP
2:00	3:00	Mob Tanker + Hopper
3:00	3:00	Rig low Pit
4:00	4:30	chissling from 1.20 - 1.50 30 mins
4:30	5:00	Writing up Samples.

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Notes/Remarks: Sample type Bulgas, Disturbed, DSPT=disturbed Pure SPT test, Undisturbed, UT=U/T100, Weather: SPT test types: S=split spoon, C=core, Cover Type: U=unstanding, F=flush.
Template SSL DRILLERS-LOG-CABLE-V01-OCT-2015

Email: ask@soils.co.uk
Web: www.soils.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHPTS 121					Rig Type	DANDO 2000 MK II
						Rig ID	2000 6649
Contract Number	765633	Location	A66NTPS03A			Rig Move	From / To / Sheet 2/3
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sherman	Engineer	DANIEL
Date 21-3-23	Day Tue	Start Time	8:00	Finish Time	5:00	Hammer ID	5

Depth From (m)	Depth To (m)	Driller's Description of Strata
[illegible]	[illegible]	[illegible]

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow
9	S	120	165		
10	B	120	150		
10A	CS	1.5			

Standard Penetration Tests: Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
/	/	7	6	7	12	10	10	

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type
120	150	250	CUTTER

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
120	150	2	4:00	4:30

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	L / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	To	Description

Client Signature	Company
	Date
Borehole Completed	Yes / ~~No~~

Email: info@ssoils.co.uk Web: www.ssoils.co.uk

Notes/Remarks: Sample Type/Scale, Undisturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: Single apport, Crocons, Cover Type: U=upstanding, F=flush.

Template SSL_GRA_PROS_CDG_CABLE_V01-OCT-2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHMTS 121	Rig Type	DANDO2000 MK II		
		Rig ID	2000 66CIA		
Contract Number	765633	Location	A66NTP503A	Rig Move	From / To / Sheet
Company Name	JBSite	Driller	Will Nevins	Assistant(s)	Stephen Sherman
				Engineer	DANIEL
Date	22-3-23	Day	Weds	Start Time	8:00
				Finish Time	5:00
				Hammer ID	5

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata
1.50	2.M	Dence grey silty sandy clay with large cobbles
2m	2.30	large boulders
2.30		obstruction

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
11	D	180												
205	D	180					9m							N/R
12	S	2m	2m			2m		25	50					
13	B	2m	2.30											

Standing Water Levels

	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
150	2.30	250	Shell

Casing Record

Diameter (mm)	Base (m)
300	2.30

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
1.50	1.80	30mins	9:00	9:30
1.80	2m	30mins	9:30	10:00
2m	2.30	1HR	10:00	11:00

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
1 Full Bowser		

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)

Backfill Materials	From (m)	To (m)
X 1h pellets	GL	2.30

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
11:00	11:30	BH Decision
11:30	12:00	~~[illegible]~~ Backfill

Client Signature	Company	
	Date	
Borehole Completed	Yes / ~~No~~	

Notes/Remarks: Sample type: Bulk/B, Disturbed, DS/PT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: Split spoon, C=core, Cover Type: U=splitting, F=flush
Template: BS5930 LOG CABLE (Jan-Oct 2010)
Email: info@structs.co.uk, Web: www.structs.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHPTS 121A			Rig Type	DANDO 2000 MK II
				Rig ID	200016699
Contract Number	765633	Location	A66 NTPS03A	Rig Move	From 12.30 To 1.30 Sheet 1/2
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sharman
Engineer	DANIEL.				
Date	22-3-23	Day	Weds	Start Time	8.00
Finish Time	5.00	Hammer ID	5		

Depth From (m)	Depth To (m)	Driller's Description of Strata	Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
GL	0.50	loose brown Sand	1	S	120	165			1.20	Dry	5	7	8	10	12	13	
050	0.80	Dence Red sandy clay / large cobbles															
0.80	1.20	layers of boulders															
1.20	1.50	Dence Sands + gravels + boulders															

Standing Water Levels

	Morning	Evening
Time		5.00
BH Depth (m)		1.70
Casing Depth (m)		1.70
Water Level (m)		1.50

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
120	170	250	Shell

Casing Record

Diameter (mm)	Base (m)
300	1.70

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
120	170	15 Drums

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
1.30	3.00	inspection pit
4.00	4.30	getting ~~case ting~~ caseing straight

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: ask@soils.co.uk
Web: www.soils.co.uk

Notes/Remarks: Sample type B=bulk, D=disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: B=split spoon, C=core, Cover Type: U=upstanding, F=flush.
Template: SSL - DRILLERS-LOG-CABLE-V01-OCT-2010

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHPTS 121A					Rig Type	DANDO2000 MKII
						Rig ID	2000 6699
Contract Number	765633	Location	A66NTPS03A			Rig Move	From / To / Sheet
Company Name	JBSite	Driller	Will Nevins	Assistant(s)	Stephen Sherman	Engineer	DANIEL
Date 23-3-23	Day THU	Start Time	8:00	Finish Time	5:00	Hammer ID	5

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata
1.50	3.30	Dence grey sands + gravels large cobbles
3.30	6m	Dence Red Weatherd Sandstone

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
2	B	2m	2.50											
3	D	2.80												
2a	D	2.80												
4	S	3m	3.30			3m	2.80	7	11	13	17	20	= 50mm	
5	DS	3m	3.30											
7	B	3m	3.50											
6	D	3.80												
2b	D	3.80												
8	S	4m	4.10			4m	3.80	25	50	=	40mm			
9	DS	4m	4.10											
10	B	4m	4.50											
11	D	4.80												
12	DS	5m	5.10			5m	4.50	25	50	=	50mm			
13	B	5m	5.50											
14	D	5.80												

Standing Water Levels

	Morning	Evening
Time		5:00
BH Depth (m)		6m
Casing Depth (m)		5m
Water Level (m)		4.50

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
1.50	6m	250	Shell

Casing Record

Diameter (mm)	Base (m)
300	5m

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
2.30	2.50	30min	10:30	11:00

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
1.50	6m	3x Bowsers

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8:30	9:00	Slow Progress 1.70 - 2m
9:00	9:30	Standing on Water
1:30	3:00	Waiting on clay drillers signing RAMS
3:30	4:00	Slow Progress Sandstone fragments

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Email: info@ssl.co.uk Web: www.ssl.co.uk
Notes/Remarks: Sample type B=bag, D=disturbed, DS=PT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water. SPT test types: Brought upon, Circular, Cover Type: Unprotected, F=flush.
Template:SSL_DRILLERS_LOG_CABLE_V01-OCT-2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH DTS 121A	Rig Type	DANDO 2000 MK11
		Rig ID	2000 MK11
Contract Number	765633	Location	A66 NTPS03A
Company Name	JB Site	Driller	Will Nevins
Assistant(s)	Stephen Sharman	Rig Move	From / To / Sheet
Engineer	DANIEL		
Date	24-3-23	Day	FRI
Start Time	8:00	Finish Time	12:30
Hammer ID	5		

Depth From (m)	Depth To (m)	Driller's Description of Strata
6m	10m	Dence Red Weatherd Sand Stone

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow
15	S	6m	6.10	~~550~~	
16	DS	6m	6.10		
17	B	6m	650		
18	D	680			
19	S	7m	7.10		
20	DS	7m	7.10		
21	B	7m	750		
22	D	780			
23	S	8m	8.10		
24	B	8m	850		
25	D	880			
26	S	9m	9.10		
27	B	9m	950		
28	D	980			
29	S	10m	10.10		

Standard Penetration Tests

Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
~~550~~	~~5m~~	25	50	=	40mm			
5m	550							
5m	6.50	25	50	=	70mm			
5m	750	25	50	=	60mm			
5m	8m	25	50	=	50mm			
5m	950	25	50	=	50mm			

Standing Water Levels

	Morning	Evening
Time	8.00	
BH Depth (m)	6m	
Casing Depth (m)	5m	
Water Level (m)	5.50	

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
6m	10m	250	Shell

Casing Record

Diameter (mm)	Base (m)
300	5m

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
6m	10m	50 Prouns

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / P
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)

Backfill Materials	From (m)	To (m)
25x pellets	10m	GL

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8.	9	MORNING BRIEFS
12.	12.30	INSTALL DECISION
12.30	2.00	BACKFILL 10m 10" 25 pellets FROM COMPOUND

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Notes/Remarks: Sample type: B=bulk, D=disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: S=split spoon, D=cone, Cover Type: U=upstanding, F=flush. Template: SSL_DRILLERS_LOG_CABLE_V01_OCT_2015

Email: ask@soils.co.uk Web: www.soils.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH PTS 121			Rig Type	JANDO 2000 MK II
				Rig ID	2000 6699
Contract Number	A765633	Location	A66NTPS03A	Rig Move	From / To / Sheet
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sharman
Engineer	RONIN				
Date	29-3-23	Day	WEDS	Start Time	8:00
Finish Time	5:00	Hammer ID	5		

Depth From (m)	Depth To (m)	Driller's Description of Strata	Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standard Penetration Tests

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type	Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	To (m)	Hours (h)	Time From (hh:mm)	To (hh:mm)	Water Added Depth From (m)	To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Client Signature	Company
	Date
Borehole Completed	Yes / No

Record of Hourly Rated Work / Standing / Delays

Time From	To	Description
8:00	8:30	MORNING BRIEF.
8:30	5:00	WINCH NOT WORKING Replacement Needed.
10:00	12:00	ASSIST RIG 1.
12:00	1:30	JB fitter induction
1:30	3:30	REPLACEMENT PARTS
3:30	5:00	ASSIST RIG 1.

Notes/Remarks: Sample type B=bulk, D=disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: S=split spoon, C=cone, Cover Type: U=upstanding, F=flush.
Template: SSL - DRILLERS-LOG-CABLE-V01-OCT-2013

Email: ask@socils.co.uk
Web: www.soils.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHPTS1T2					Rig Type	Dando 2000
						Rig ID	Rig 1
Contract Number	765633	Location	A66NTPS03A			Rig Move	From / To / Sheet 1
Company Name	JB. Site.	Driller	Brad Spe'rs	Assistant(s)	Jam'e Carr	Engineer	A. Nunney
Date 7.3.23	Day Tuesday	Start Time	08:00	Finish Time	17:00	Hammer ID	3801

Depth From (m)	Depth To (m)	Driller's Description of Strata
GL	0.35	Grass over slight sandy gravelly topsoil
0.35	0.65	redish, brown, gravelly silty sand
0.65	2.00	redish brown, slight sandy gravelly clay
2.00	3.50	redish, brown, gravelly very sandy clay (COBBLES)

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
1	D	0.10												
2	B	GL	0.30											
101	ES	0.30												
3	D	0.40												
4	B	0.35	0.65											
102	ES	0.50												
5	D	0.65												
6	D	0.70												
7	B	0.65	1.00											
103	ES	1.00												
8	D	1.20												
9	S	1.20	1.65			1.20	Dry	3	3	3	5	7	11	
10	DS	1.20	1.65											
11	B	1.20	1.70											
104	ES	1.50												

Standing Water Levels

	Morning	Evening
Time		17:00
BH Depth (m)		3.50
Casing Depth (m)		3.60
Water Level (m)		Dry

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
1.20	2.00	10" Cutter	
2.00	3.50	Shell	

Casing Record

Diameter (mm)	Base (m)
250	3.00

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
/	/	/	/	/

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins	/	/	/
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)	/	Water Depth After (m)	/	Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)
/	/	/	/

Backfill Materials	From (m)	To (m)
/	/	/

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
13:30	15:00	Rig Inspection pit

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Email: site@scl.co.uk Web: www.scl.co.uk

Notes/Remarks: Sample type Bags/s, Undisturbed, DSPT=disturbed hand SPT test, Undisturbed, U75=U75100, Winsler, SPT test types: Straight spoon, Cone; Cover Type: Unsatisfactory, F=Fail.

Template:SSL_DRILLING_LOG-CABLE-V01-OCT-2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHPTS122	Rig Type	Rig - Dando 2000		
		Rig ID	Rig 4		
Contract Number	765633	Location	A66 N TPS03A	Rig Move	From / To / Sheet 2
Company Name	JB. Sim	Driller	Brad Spaers	Assistant(s)	Jamie Carr
Engineer	D. Morley				
Date	Tue 23.03	Day	Tuesday	Start Time	08:00
Finish Time	17:00	Hammer ID	J801		

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
12	D	1.80												
13	S	2.00	2.45			2.00	Dry	4	3	4	4	6	9	NR
14	D	2.00	2.50											
15	D	2.50												
16	U	3.00	3.45	95%	93	3.00	Dry							
17	D	3.50												

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: info@ssls.co.uk
Web: www.ssls.co.uk

Notes/Remarks: Sample type Bristle, Disturbed, DSPT=disturbed from SPT test, U=undisturbed, UTHUT100, W=water, SPT test types: S=split spoon, C=cone, Cone Type: U=upperstring, F=flush.
Tender No.765633-DBHUK19-GSM-F201-0021-003

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHPTS122					Rig Type	Dando 2000
						Rig ID	Rig 1
Contract Number	765653	Location	AE6NTPS034			Rig Move	From / To / Sheet 1
Company Name	JB. Site	Driller	Rod Spain	Assistant(s)	Jamie Carr	Engineer	O. Norbury
Date 8.3.23	Day Wednesday	Start Time	08:00	Finish Time	17:40	Hammer ID	JP01

Depth From (m)	Depth To (m)	Driller's Description of Strata
3.50	3.90	redish brown, gravelly very Sandy Clay
3.90	4.20	Sandstone
4.20	8.00	weathered Sandstone

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
18	S	3.90	4.35			3.50	2.70	25/64	50/56					
19	DS	3.90	4.35											
20	B	3.90	4.20											
21	C	4.00				4.00	2.89	25/20	50/17					
22	U	4.20	4.70											
23	D	4.80												
24	S	5.00	5.45			4.53	3.10	10	50/69	25	50/42			
25	DS	5.00	5.45											
26	B	5.00	5.50											
27	D	5.80												
28	S	6.00	6.45			6.00	3.77	19	6/41	50/60				
29	DS	6.00	6.45											
30	B	6.00	6.50											
31	D	6.80												
32	S	7.00	7.45			6.00	4.42	25/44	50/39					

Standing Water Levels

	Morning	Evening
Time	08:30	/
BH Depth (m)	3.50	
Casing Depth (m)	3.50	
Water Level (m)	2.61	

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
3.50	6.00	10"	Shell
6.00	8.00	8"	Shell

Casing Record

Diameter (mm)	Base (m)
/	/

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
3.90	4.20	1hr	08:45	09:45

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
3.50	8.00	1200

Water Strikes

Time	
Strike Depth (m)	4.20
Casing Depth (m)	3.50
5 mins	4.11
10 mins	3.64
15 mins	3.09
20 mins	2.84
Depth Sealed (m)	

Backfill and Installation Details

Water Depth Before (m)	2.77	Water Depth After (m)	/

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)
1	50mm Plain	GL	1.00
	50mm Slotted	1.00	3.00

Backfill Materials	From (m)	To (m)
bentonite	0.70	1.00
gravel	1.00	3.50
bentonite	3.50	8.00
Concrete	GL	0.50

Cover Type	U / F

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
08:00	08:30	Morning briefing, get to BH
11:00	11:30	waiting on BH decision
11:30	12:00	reduce to 8" casing GL - 6.00
14:00	16:30	wait on BH decision, collect pipe from compound, wait on bentonite and gravel
16:30	17:30	install pipe, pull casing

Client Signature | Company | Date

Borehole Completed (Yes) / No

Notes/Remarks: Sample type Disturb, Undisturbed, DB/PT=disturbed from SPT test, Undisturbed, UT=UT100, Winkler SPT test types: 3-split spoon, Cone, Cover Type: Unguarding, Protum
Template:SSL-001 Issued:02-08-2012 Rev:1 01-OCT-2015
Email: info@structural-soils.co.uk Web: www.ssltd.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHPTS172	Rig Type	Dando 2000		
		Rig ID	Rig 1		
Contract Number	765633	Location	A66 NTF5073A	Rig Move	From / To / Sheet 2
Company Name	JB. Site	Driller	Brad Speers	Assistant(s)	Jamie Carr
				Engineer	D. Derby
Date	9.3.23	Day	Wednesday	Start Time	08:00
Finish Time	17:40	Hammer ID	JB 01		

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow
33	DS	7.00	7.45		
34	B	7.00	7.50		
35	D	7.90			
36	S	8.00	8.45		
1	WS	4.70			

Standard Penetration Tests: Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
8.00	6.56	25/33	50/27					NR

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description

Client Signature	Company
	Date
Borehole Completed	Yes / No

Notes/Remarks: Sample type/Suffix, D=Disturbed, ESPT=derived from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: S=split spoon, C=cone, Cover Type: U=unbalancing, F=fixed.
Template:SB_DRILLER_LOG-CABLE-401-OCT-2015
E-mail: info@ssltd.co.uk
Web: www.ssltd.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS122					Rig Type	Dando 2000
						Rig ID	Rig 1
Contract Number	76563J	Location	A66NTP503A			Rig Move	From / To / Sheet 1
Company Name	JD. Site	Driller	Dave Speirs	Assistant(s)	Jamie Carr	Engineer	D. Nunney
Date 9.3.23	Day Thursday	Start Time	08:00	Finish Time	17:00	Hammer ID	JB01

Depth From (m)	Depth To (m)	Driller's Description of Strata
/	/	/ /

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow
/	/	/	/	/	/

Standard Penetration Tests: Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
/	/	/	/	/	/	/	/	/

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)	/	/
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type
/	/	/	/

Casing Record Diameter (mm)	Base (m)
/	/

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
/	/	/	/	/

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)
/	/	/

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins	/	/	/
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details: Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)
/	/	/	/

Backfill Materials	From (m)	To (m)
/	/	/

Record of Hourly Rated Work / Standing / Delays: Time From	To	Description
08:00	08:30	Site briefing, get to BH
08:30	09:00	Drop and load rig
09:00	17:00	waiting on next BH position
		(access and trackway) Concrete
		BH cover

Client Signature	Company
	Date

Borehole Completed (Yes) / No

Email: ass@sscls.co.uk, Web: www.sscls.co.uk
Version/Template: Samples type: Bulk/Jar, Definitions: DEFFT=disturbed hand SPT test, U=undisturbed, UT=UT100, Vane=Vane SPT test bypass Grouplit space, Decorre, Cover Type: Unguaranteing, Fetlock
Template: SSL_DRILLERS LOG-CABLE-V01-OCT-2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS123	Rig Type	Dando 2000		
		Rig ID	Rig 1		
Contract Number	765633	Location	A66NTPS03A	Rig Move	From / To / Sheet 2
Company Name	JG Site	Driller	Brad Spears	Assistant(s)	Jamie Cox
Engineer	D. Newby				
Date	27.1.23	Day	Monday	Start Time	07:00
Finish Time		Hammer ID	3501		

Depth From (m)	Depth To (m)	Driller's Description of Strata
0.00	0.20	Slight sandy, gravelly topsoil
0.20	1.20	brown, slight gravelly silty sand

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow
1	D	0.10			
201	D	0.10			
2	B	0.10	0.20		
3	D	0.30			
202	D	0.30			
4	B	0.30	0.60		
5	B	0.80	1.20		
6	S	1.20	1.65		
7	DS	1.20	1.65		
101	ES	0.30			
102	ES	0.50			
103	ES	1.00			

Standard Penetration Tests: Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
1.20	/	3	4	3	5	2	3	

Standing Water Levels	Morning	Evening
Time		16:00
BH Depth (m)	/	1.20
Casing Depth (m)		1.20
Water Level (m)		DRY

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type
/	/	/	/

Casing Record Diameter (mm)	Base (m)
/	

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
/		/	/	

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)
/	/	/

Water Strikes			
Time	15:30		
Strike Depth (m)	1.20		
Casing Depth (m)	/		
5 mins	BH		
10 mins	Dump		
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)	/	Water Depth After (m)	/	Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)
/	/	/	/

Backfill Materials	From (m)	To (m)
/	/	/

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description
14:30	15:30	Dig pit
15:30	16:00	Write Samples, help engineer check VCM

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: info@structuralsoils.co.uk
Web: www.ssltd.co.uk

Notes/Remarks: Sample type: B=bulk, D=disturbed, DS/PT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water. SPT test types: S=split spoon, C=core. Cover Type: U=unlocking, F=flush
Template: SSL-003(JR12-01)-CABLE-201-06-12-003

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS123	Rig Type	Dando 2000		
		Rig ID	Rig 1		
Contract Number	765683	Location	A66NTPS03A	Rig Move	From / To / Sheet 1
Company Name	JS Site	Driller	Brad Sparks	Assistant(s)	Jamie Corr
Engineer	D. Nurney				
Date	28.3.23	Day	Tuesday	Start Time	08:00
Finish Time	17:00	Hammer ID	3801		

Depth From (m)	Depth To (m)	Driller's Description of Strata
1.20	3.00	brown, slight gravelly silty sand (cobbles)
3.00	7.60	brown, sandy gravelly clay
7.60	8.00	sandy gravel (cobbles)
8.00	9.00	weathered sandstone

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
8	B	1.20	1.70											
104	ES	1.50												
9	D	1.80												
105	D	1.80												
10	C	2.00	2.45			2.00	1.29	18	7/64	50/57				
11	B	2.00	2.50											
12	D	2.80												
106	D	2.80												
13	S	3.00	3.45			3.00	0.71	2	2	4	5	13	16	
14	DS	3.00	3.45											
15	B	3.00	3.50											
16	D	3.50												
107	D	3.50												
17	U	4.00	4.45	75%	111	4.00	3.53							
18	D	4.50												

Standing Water Levels

	Morning	Evening
Time	08:45	16:50
BH Depth (m)	1.20	9.00
Casing Depth (m)	1.20	9.00
Water Level (m)	0.40	7.20

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
1.20	3.00	8"	Shell
3.00	7.50	8"	Shubber
7.50	9.00	8"	Shell

Casing Record

Diameter (mm)	Base (m)
200	9.00

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
2.00	2.10	1/2	9:15	9:45
7.50	8.00	2	13:30	15:30

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
1.20	9.00	1000

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)	/	Water Depth After (m)	/	Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
08:00	08:40	Morning briefing, get to BH

Client Signature	Company
	Date
Borehole Completed	Yes / No

Notes/Remarks: Sample Type Details, Disturbed, DS/PT=disturbed from SPT test, Undisturbed, UT=UT100, W=water, SPT test types S=split spoon, C=core, Cover Type: U=standing, F=flush
Template:SSL_CABLE(PERC)(03)(E)(01)(03)(2013)

Email: info@ssl.co.uk
Web: www.ssl.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS123	Rig Type	Dando 2000		
		Rig ID	Rig 1		
Contract Number	765633	Location	A66NTP503A	Rig Move	From / To / Sheet 2
Company Name	JB. Site	Driller	Brad Spears	Assistant(s)	Jamie Carr
				Engineer	O. Nerbey
Date	28.3.23	Day	Tuesday	Start Time	08:00
Finish Time	17:00	Hammer ID	JB01		

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
19	B	4.50	5.00											
20	S	5.00	5.45			5.00	4.13	3	6	8	8	10	15	
21	DS	5.00	5.45											
22	B	5.00	5.50											
23	D	5.80												
206	D	5.80												
24	S	6.00	6.45			6.00	/	4	5	10	17	13	10/39	
25	DS	6.00	6.45											
26	B	6.00	6.50											
27	D	6.80												
207	D	6.80												
28	U	7.00	7.45	100%	150	7.00	/							
29	D	7.50												
30	D	7.70												
208	D	7.70												

Standard Penetration Tests

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (litre)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: info@ssltd.co.uk
Web: www.ssltd.co.uk

Rotarbrocks, Barnard Castle, Durham, DL12 8PT Registered Form SPT Test, Undisturbed, UT100, Water, SPT test types, Small spoon, Chisel, Core Type, Unspecified, Flush
Template SSL-DRILLERS-LOG-CABLE-V01-OCT-2013

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS123	Rig Type	Dando 7000		
		Rig ID	Rig 1		
Contract Number	765633	Location	A66NTPS03A	Rig Move	From / To / Sheet 3
Company Name	JB. S Ltd	Driller	Brad Spears	Assistant(s)	Jamie Carr
				Engineer	O. Nolley
Date 28.3.23	Day Tuesday	Start Time 08:00	Finish Time 17:00	Hammer ID	JB 01

Depth (From (m) / To (m)) — **Driller's Description of Strata**

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow
31	B	7.60	8.00		
32	S	8.00	8.45		
33	DS	8.00	8.45		
34	B	8.00	8.50		
35	D	8.00			

Standard Penetration Tests

Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
8.00	4.07	15/25	33	12/30				

Standing Water Levels

	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type

Casing Record

Diameter (mm)	Base (m)

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: data@ssltd.co.uk
Web: www.ssltd.co.uk
Notes/Remarks: Sample type B=bulk, D=disturbed, SDPT=Standard Pen test (SPT test, Unrepresented, UT=UT100, W=water, SPT test types: S=split spoon, C=cone, Cover Type: U=upstanding, F=flush.
Template SSL-DRILLER-LOG-CABLE-V01-OCT-2015

CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID	BH PTS 123	**Rig Type**	Barreta T44		
		Rig ID			
Contract No	765633	**Location**	A66	**Hammer ID**	
Client Name	RSK	**Driller**	lindon paisley	**Assistant**	Sean wakenshaw
Engineer		**Rig Move**	**From**	**To**	**Sheet** 1
Day	Wednesday	**Date**	29/03/2023	**Start Time**	08:00
Finish Time	17:00				

Standard Penetration Tests

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
G'bor	9.4	10	2	red	100%	water	Red sand onto sandstone	R1				500			9							
G'bor	10	10.5	2	red	100%	water	Red sandstone	R2				400			8							
G'bor	10.5	11	2	red	80%	water		R3				n/r			1							
									SPT	11	11.45			11	1	3	3	4	6	9	15	
G'bor	11	11.5	2	red	80%	water		R4				n/r			1							
									SPT	11.5	11.95			11.5	7	2	4	6	6	11	11	
G'bor	11.5	12	2	red	80%	water	red sandstone	R5				300			7							
G'bor	12	12.5	2	red	80%	water	red sandstone	R6				500			7							
G'bor	12.5	13.5	2	red	80%	water	red sandstone	R7				950			7							

Standing Water Levels

	AM	PM
Time		13:00
BH Depth (m)		9.4
Casing Depth (m)		9.4
Water level (M)		9

Drilling Tool Record

From (m)	To(m)	Diameter (mm)	Type

Casing Record

Diameter (mm)	Base (m)
6"	10.5
G'bor	13.5

Water Strikes

Time	AM	PM
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F

Pipe No	Pipe Type & Diameter	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record Hourly Rated Work / Standing & Delays

Time From	Time To	Description
08:00	08:30	Morning briefing
08:30	10:45	Wait for cable crew to move off position
10:45	13:00	Wait for telehandle to come to move bag of spoil before moving onto position
13:00	14:15	Track rig, trailer & bowser to position
		Set rig up for water flush
15:30	16:00	Wait for tractor to come with water to fill bowser before proceeding with drilling

Client Signature		**Company**	
Borehole Complete	YES	NO	**Date**

Notes Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water

Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

E-Mail : info@claydrilling.co.uk
Website : www.claydrilling.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS123					Rig Type	Dando 2000
						Rig ID	Rig 1
Contract Number	765633	Location	A66 NTPS03A			Rig Move	From / To / Sheet 4
Company Name	JB Site	Driller	Brad Spears	Assistant(s)	Jamie Cook	Engineer	D. Nerney
Date 24.3.23	Day Wednesday	Start Time	08:00	Finish Time	17:20	Hammer ID	JS 01

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests: Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth: Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time	08:45	
BH Depth (m)	9.00	
Casing Depth (m)	9.00	
Water Level (m)	7.17	

Drilling Tool Record: From (m)	To (m)	Diameter (mm)	Type

Casing Record: Diameter (mm)	Base (m)

Record of Chiselling: Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added: Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
30 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays: Time From	Time To	Description
08:00	08:45	Morning briefing, get to BH
08:45	10:15	Install rotary casing, pull 8", drop and load rig
10:15	11:00	Move rig, trailer and bowser to next BH, set up

Client Signature	Company
	Date

Borehole Completed (Yes) / No

Notes/Remarks: Sample types D=disturbed, DS/PT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water. SPT test types: S=split spoon, C=cone. Cover Type: U=unguarding, F=flush.

Email: info@structural-soils.co.uk Web: www.structural-soils.co.uk

Template:SSL_DRILLERS LOG CABLE 01-OCT-2015

CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID	BH PTS 123	**Rig Type**	Barreta T44		
		Rig ID			
Contract No	765633	**Location**	A66	**Hammer ID**	
Client Name	RSK	**Driller**	lindon paisley	**Assistant**	Sean wakenshaw
Engineer	Malic	**Rig Move**	**From**	**To**	**Sheet** 2
Day	Thursday	**Date**	30/03/2023	**Start Time**	08:00
Finish Time	17:00				

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
G'bor	13.5	15	5	red	90%	water	Red sandstone					1500			8							

Standard Penetration Tests

Standing Water Levels	AM	PM
Time	08:50	
BH Depth (m)	13.5	
Casing Depth (m)	13.5	
Water level (M)	8	

Drilling Tool Record From (m)	To(m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)
6"	10.5
G'bor	15

Water Strikes	AM	PM
Time		
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F

Pipe No	Pipe Type & Diameter	From (m)	To (m)
1	50mm plain	GL	1.5
1	50mm slotted	1.5	6.5

Backfill Materials	From (m)	To (m)
Raised cover & postcrete	GL	0.5
Bentonite	0.5	1
Gravel	1	7
Bentonite	7	15

Record Hourly Rated Work / Standing & Delays

Time From	Time To	Description
08:00	08:50	Morning brief & drive to BH
09:20	10:30	Wait for comformation of install details & wait for install gear to be brought out to BH
12:15	13:15	Load trailer & track rig, trailer & bowser to next position (BH-03B-101)
13:15	17:00	Wait for telehandler to move bag of spoil at BH-03B-101 before setting up rig as it was in the way & await ton bag to be brought out to empty slurry from the tanks into it

Client Signature		**Company**	
Borehole Complete	YES	NO	**Date**

Notes Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water

Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

E-Mail : info@claydrilling.co.uk
Website : www.claydrilling.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS124. ~~BH-PTS-124~~					Rig Type	DANDO 2000 Mk 2
						Rig ID	5
Contract Number	765633	Location	A66 NTPS03A			Rig Move	From 11.15 To 2.30 Sheet 2
Company Name	SB Site	Driller	Will Nevins	Assistant(s)	Stephen Sherman	Engineer	DANIEL
Date Wed	Day 8.3.23	Start Time	8.00	Finish Time	5.00	Hammer ID	5

Depth From (m)	Depth To (m)	Driller's Description of Strata
GL	0.05	GRASS
0.05	0.50	loose brown sand & large cobbles
0.50	1.70	dence Red/brown slightly silty sand with occasional cobbles.

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow
D1	D	0.05			
B2	B	0.05	0.30		
D3	D	0.50			
4	B	0.30	0.50		
5	B	[illegible]	0.70	1m	
6	S	1.20	1.65		
7	DS	1.20	1.65		
8	B	1.20	1.70		
[illegible]					
[illegible]					
101	ES	0.30			
102	ES	0.50			
103	ES	1m			
104	ES	1.50			

Standard Penetration Tests

Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
	/	3	2	3	4	5	4	

Standing Water Levels	Morning	Evening
Time		17.00
BH Depth (m)		1.70
Casing Depth (m)		
Water Level (m)		DRY.

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type
GL	1.70	250	

Casing Record Diameter (mm)	Base (m)
250	1.70

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (litre)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
14.30	16.00	1½ HOUR TO DIG 10" PIT
16.00	17.00	SECURING COMPOUNDS

Client Signature	Company
	Date
Borehole Completed	Yes / No

Notes/Remarks: Sample type Brisk, Disturbed, DCP Tests started from SPT test, Unsatisfactory, UTW102, Wheeler, SPT test types: Split spoon, Cone, Cover Type: Unpainting, Finish.
Tests: BS5930 - DEFINITIONS OF SOIL TERMS

Email: dan@structs.co.uk
Web: www.structs.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS 124	Rig Type	DANDO 2000 MK11		
		Rig ID	5		
Contract Number	765633	Location	A66NTPS03A	Rig Move	From / To / Sheet 1
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sharman
				Engineer	DANIEL
Date 9.3.23	Day THU	Start Time 6:00	Finish Time 5:00	Hammer ID	5

Driller's Description of Strata

Depth From (m)	Depth To (m)	Driller's Description of Strata
0.50	2.80	Dence Red Slightly Silty Sand large cobbles.
2.80	6.80	Dence Red Sand with occasional cobbles
6.80	8M	STIFF Red/brown sandy glacial Till

Samples and Tests / Standard Penetration Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
9	D	1.80												
10	S	2m	2.45			2m	1.80	3	4	5	7	7	8	
11	DS	2m	2.45			/	/							
12	B	2m	2.50											
13	D	2.80												
14	B	2.80	3m											
15	S	3m	3.45			3	2.80	3	5	5	6	8	12	
16	DS	3m	3.45			/	/							
17	B	3m	3.50											
18	D	3.80												
19	S	4m	4.45			4m	3.80	4	6	8	10	10	10	
20	DS	4m	4.45			/	/							
21	B	4m	4.50											
22	D	4.80												
23	S	5m	5.45			4.50	4.70	3	5	8	9	12	18	

Standing Water Levels

	Morning	Evening
Time	8.30	
BH Depth (m)	1.70	
Casing Depth (m)	1.70	
Water Level (m)	BH DRY	BH DRY

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
1.70	6.80	250	Shell
6.80	8M	300	STUBBER

Casing Record

Diameter (mm)	Base (m)
350	6.50

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
6.50	6.80	1	2.30	3.30

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
1.70m	6.50	1 Bucket

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8	8.30	TOOL BOX TALK.

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: info@jbsite.co.uk Web: www.jbsite.co.uk

Notes/Remarks: Sample type Bmpds, D=disturbed, DS2=Disturbed from SPT test, Undisturbed, UT=U100, Wrwater SPT test (open Snapdn spoon, Cncore, Cover Type, Unguarding, Fellpsh. Template:BSL_DBS_HRS_LOG_CABLE_V01.OCT.2023

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS 124					Rig Type	DANDO 2000 MK 2
						Rig ID	5
Contract Number	765633	Location	A66 NTPS03A			Rig Move	From / To / Sheet 2
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sherman	Engineer	DANIEL
Date 4.3.23	Day THU	Start Time	8.00	Finish Time	5.00	Hammer ID	5

Driller's Description of Strata

Depth From (m)	Depth To (m)	Description
0.50	2.80	Dence Red Slightly Silty Sand + cobbles
2.80	6.80	Dence Red sand with occasional cobbles
6.80	8m	Stiff Red brown Sandy glacial till.

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
24	SD	5m	5.45											
25	B	5m	550											
26	D	580												
27	S	6m	640			6m	3m	5	5	15	15	20	65mm	
28	SD	6m	640											
29	B	6m	650											
30	D	680												
31	S	7m	7.45			6m	BHDRY	5	4	4	5	6	7	
32	SD	7m	745											
33	B	7m	750											
34	D	780												

Standing Water Levels

	Morning	Evening
Time		
BH Depth (m)	BH DRY	
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
1.70	680	250	Shell
680	8m	300	STUBBER

Casing Record

Diameter (mm)	Base (m)
350	6.50

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
650	680	1	2.30	3.30

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
170	6.50	1 BOWSER

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8	8.30	TOOL BOX TALK

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: grp@ssltd.co.uk. Web: www.ssltd.co.uk.
Notes/Remarks: Sample type:Sd=s.&, Disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types, Single spoon, C=core, Cover Type, Unsplinding, F=flush, Template SSL_DRILLFIELD LOG CABLE F-001-OCT-2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS 124	Rig Type	DANDO 2000 MK II		
Contract Number	765633	Location	A66NTPS03A	Rig ID	5
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sharman
Date	10-3-23	Day	FRI	Start Time	8:00
Finish Time	2:00	Hammer ID	5	Rig Move	From / To / Sheet
Engineer	DANIEL				

Depth From (m)	Depth To (m)	Driller's Description of Strata
6.80	11M	Very STIFF BROWN Cobbly GLACIAL TILL

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
35	S	8M	8.30			6M	DRY	4	5	15	15	20	=	45M
36	DS	8M	8.30			/	/							
37	B	8M	850											
38	D	880												
39	S	9M	9.30			6M	DRY	10	15	20	20	10	=	10M50
40	DS	9M	9.30			/	/							
41	B	9M	950											
42	D	980												
43	S	10.M	1045			6M	DRY	4	6	8	10	15	15	
44	DS	10M	1045			/	/							
45	B	10.M	1050											
46	D	1080												
47	S	11M	11.30			6M	DRY	5	8	17	20	13	=	20M
48	DS	11M	11.30			/	/							

Standing Water Levels

	Morning	Evening
Time	BH DRY	
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
8M	11M	250	STOBBER

Casing Record

Diameter (mm)	Base (m)
300	6.6

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
8M	11M	N/A

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / P

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8:00	8:30	TOOLBOX TALK

Client Signature	Company
	Date
Borehole Completed	Yes / No

Notes/Remarks: Sample type B=Bulk, D=disturbed, DS=Disturbed from SPT test, U=undisturbed, UT=UT100, Wrwater: SPT test types: S=split spoon, C=cone, Cone Type: U=undrainable, F=flush.
Template SSL - DOC\LEN\100-CAB-F-011-OCT-2013

Email: info@ssl.co.uk, Web: www.ssl.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS 124	Rig Type	DANDO 2000 MK11
		Rig ID	5
Contract Number	765633	Location	A66 NTPS03A
Company Name	JB Site	Driller	Will Nevins
Assistant(s)	Stephen Sharman	Rig Move	From / To / Sheet
Engineer	DANIEL		
Date	13.3.23	Day	MON
Start Time	8:00	Finish Time	5:00
Hammer ID	5		

Depth From (m)	Depth To (m)	Driller's Description of Strata
11m	12m	STIFF Red brown GLACIAL TILL
12m	12m	WEATHERED Red Sandstone

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
49	B	11m	1150											
50	D	1180												
51	S	12m	12.10			6m	DRY	11	14	50	=	70mm		

Standard Penetration Tests

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type	Casing Record Diameter (mm)	Base (m)
11m	12m	250	STOBBER	300	6m

Record of Chiselling Depth From (m)	To (m)	Hours (h)	Time From (hh:mm)	To (hh:mm)

Water Added Depth From (m)	To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
DRY					
2m	Slotted			3½	½
1½	PLAIN			1½	ABOVE

Backfill Materials	From (m)	To (m)
40 Pellets	12m	2m
20 BAGS GRAVEL	4m	½
TOP COVER + GAS BUNG		

Record of Hourly Rated Work / Standing / Delays

Time From	To	Description
8:00	8:30	TOOL BOX TALK
11m	5:00	ASSIST ROTARY RIG.
10:00	11:00	INSTALL + BACKFILL.

Client Signature

Company

Date

Borehole Completed Yes / ~~No~~

Email: ask@soils.co.uk
Web: www.soils.co.uk

Notes/Remarks: Sample type B=bulk, D=disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: S=split spoon, C=cone, Cover Type: U=unstanding, F=flush.
Template SSL - DRILLERS LOG CABLE-V01-OCT-2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BM-PTS126	Rig Type	Dando 2000		
		Rig ID	Rig 1		
Contract Number	765633	Location	A66NTPS03A	Rig Move	From / To / Sheet 1
Company Name	JB. Sike	Driller	Brad Stems	Assistant(s)	Smile Cwr	Engineer
Date	19.4.23	Day	Wednesday	Start Time	08:00	Finish Time	17:00	Hammer ID	3801

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata
GL	0.30	grey, Sandy topsoil
0.30		Sub-base

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow
~~B1~~	~~ESAR~~				
1	D	0.10			
C01	D	0.10			
2	B	0.10	0.30		

Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
13:45	16:00	Dig pit
16:00	17:00	CAT scan picking up signal in pit, waiting on decision, dig second pit, picking up signal again, waiting on DFR

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Email: dan@structs.co.uk Web: www.structs.co.uk
Notes/Remarks: Sample type Breaks, D=disturbed, DSPT=disturbed from SPT test, U=undisturbed, UTHUT100, Windsor SPT test types: Square square, Circular, Cone Type, Unspecified, Fishtail.
Template SSL-DRILLING-LOG-CABLE-V001-OCT-2013

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS126	Rig Type	Dando 2000		
		Rig ID	Rig 1		
Contract Number	765633	Location	AGENTPS03A	Rig Move	From / To / Sheet 1
Company Name	JB Site	Driller	Brad Sparks	Assistant(s)	Jamie Cox
				Engineer	RONAN BARKER
Date	26.4.23	Day	Wednesday	Start Time	08:00
				Finish Time	17:00
				Hammer ID	J801

Depth From (m)	Depth To (m)	Driller's Description of Strata
0.50	0.70	Sub-base
0.70	1.20	brown Sand and gravel
1.20	2.00	Slight Sandy, grey Clay
2.00	3.00	Sand and gravel, Clay pockets
3.00	6.00	weathered Sandstone

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
3	D	0.40												
002	D	0.40												
4	B	0.40	0.60											
5	D	0.80												
003	D	0.80												
6	B	0.80	1.20											
7	S	1.20	1.65			1.20	CL	3	2	2	3	3	5	
8	DS	1.20	1.65											
9	B	1.20	1.70											
10	D	1.80												
004	D	1.80												
11	U	2.00	2.45	/	76	2.00	0.74							NR
12	B	2.00	2.50											
13	D	2.80												
005	D	2.80												

Standard Penetration Tests

Standing Water Levels	Morning	Evening
Time	/	16:45
BH Depth (m)	/	6.00
Casing Depth (m)	/	6.00
Water Level (m)		2.19

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type
1.20	4.50	104	Shell
4.50	6.00	8"	Shell

Casing Record Diameter (mm)	Base (m)
10"	3m
8"	6.00

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
/	/	/	/	/

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)
1.20	6.00	2200

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)	/	/	
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)	/	Water Depth After (m)	/	Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)
/	/	/	/

Backfill Materials	From (m)	To (m)
/	/	/

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description
08:00	08:40	Morning briefing, gas to BH
08:40	09:45	wait on gas
09:45	10:30	continue digging pit
13:50	14:10	reduce 8" to 6.50m
16:00	17:00	re-building wire rope

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Email: data@ssl.co.uk Web: www.ssl.co.uk
Notes/Remarks: Sample type Brackets, Disturbed, DBP Undisturbed from SPT test, Undisturbed, U/T-U/T100, Winsleeve, SPT test types: Bright spoon, Crocone, Cover Type: Unsplinting, F-flush
Template:SSL_DRILLERS LOG-CABLE-V01-OCT-2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS126	Rig Type	Dando 2000		
		Rig ID	Rig 1		
Contract Number	765633	Location	A66 NTPS03A	Rig Move	From / To / Sheet 2
Company Name	JB. Sidw	Driller	Brad Spears	Assistant(s)	Jamie Carr
Engineer	RONAN BARKER				
Date	20.4.23	Day	Thursday	Start Time	08:00
Finish Time	17:00	Hammer ID	J601		

Driller's Description of Strata

Depth From (m)	Depth To (m)	Driller's Description of Strata

ES101	0.30
ES102	0.50
ES103	1.00
ES104	2.00

Samples and Tests / Standard Penetration Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
14	S	3.00	3.45			3.00	CL	4	4	6	10	12	14	
15	DS	3.00	3.45											
16	B	3.00	3.50											
17	D	3.50												
18	S	4.00	4.45			4.00	0.47	12	13/54	14	10	11	11	
19	DS	4.00	4.45											
20	B	4.00	4.50											
21	D	4.50												
22	S	5.00	5.45			5.00	2.91	7	13	24	16	10/34		
23	DS	5.00	5.45											
24	B	5.00	5.50											
25	D	5.50												
26	S	6.00	6.45			6.00	4.84	25/9	50/0					
27	DS	6.00	6.45											

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Email: ask@structuralsoils.co.uk
Web: www.soils.co.uk

Notes/Remarks: Sample type Bag=B, Disturbed, DS; Undisturbed thin SPT test, U=undisturbed, UT4/UT100, Winwater, SPT test types: S=split spoon, D=core, Cover Type: U=upstanding, F=flush
Template SSL_DRILLING LOG-CABLE-v01-OCT-2019

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS126					Rig Type	Dando 2000
						Rig ID	Rig 1
Contract Number	765633	Location	AGENTPS0534			Rig Move	From / To / Sheet 1
Company Name	JB Sim	Driller	Brad Spears	Assistant(s)	Jamie Cuff	Engineer	
Date 21.4.23	Day Friday	Start Time	08:00	Finish Time	14:00	Hammer ID	3801

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata	Samples and Tests: Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth: Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time	08:45	16:00
BH Depth (m)	6.00	6.00
Casing Depth (m)	6.00	6.00
Water Level (m)	3.02	4.29

Drilling Tool Record: From (m)	To (m)	Diameter (mm)	Type

Casing Record: Diameter (mm)	Base (m)

Record of Chiselling: Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
6.00	/	1/2	07:50	08:20

Water Added: Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / P
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays: Time From	Time To	Description
08:00	09:40	Morning briefing, gear to BH
~~[illegible]~~		
09:45	10:00	wait on decision from IS to change to rotary for now.
10:00	10:30	wait on rotary casing
10:30	11:00	flush out rotary casing, pull 8" and 10"
11:00	14:00	wait on next BH

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Email: data@ssl.co.uk Web: www.ssl.co.uk

Notes/Remarks: Sample type: Bulk/B, Undisturbed, DSPT=disturbed from SPT test, Undisturbed, UT=UT100, Winspec, SPT test types: Sought seam, Chrome, Cover Type: Unsplanding, Failure. Template: SSL_DRILLER_LOG-CABLE-V01-OCT-2013

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	Name	Client
765634	A66 NTP Scheme S03B0405	National Highways

Exploratory Position

Borehole ID
BH-PTS126

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	Start time	Start depth	End depth	Initial technique	Equipment / Rig
25/04/2023	07:00	6.1	15.1		SSL-SN0686

Log Breakdown Grid 2

HammerID	Lead driller	Assistant 1	Assistant 2	Supervising Engineer
	William Whitelaw	David Laing		David Loach

Coring Data

Coring Data Grid

6 records

Top (m)	Base (m)	Drilling Info	Run time (min)	Flush	Notes
6.10	7.60	RC (Rock) Barrel: Geo-bor S Rec: 100%	15	Polymer-Mud 100% (max return) Brown 100% (min return)	Description: Very weak rusty brown slightly silty medium grain sandstone. Box: 1 Liner used: Yes
7.60	9.10	RC (Rock) Barrel: Geo-bor S Rec: 100%	10	Polymer-Mud 100% (max return) Brown 100% (min return)	Description: Very weak rusty brown slightly silty medium grain sandstone. Box: 2 Liner used: Yes
9.10	10.60	RC (Rock) Barrel: Geo-bor S Rec: 100%	15	Polymer-Mud 100% (max return) Brown 10% (min return)	Description: Very weak rusty brown slightly silty medium grain sandstone. Box: 3 Liner used: Yes
10.60	12.10	RC (Rock) Barrel: Geo-bor S Rec: 100%	10	Polymer-Mud 100% (max return) Brown 100% (min return)	Description: Very weak rusty brown slightly silty medium grain sandstone. Box: 4 Liner used: Yes
				Polymer-Mud	Description: Very weak rusty brown slightly silty

12.10	13.60	RC (Rock) Barrel: Geo-bor S Rec: 10%	10	100% (max return) Brown 100% (min return)	medium grain sandstone. Box: 5 Liner used: Yes
13.60	15.10	RC (Rock) Barrel: Geo-bor S Rec: 100%	10	Polymer-Mud 100% (max return) Brown 100% (min return)	Description: Very weak rusty brown slightly silty medium grain sandstone. Box: 6 Liner used: Yes

Description of Strata

Stratums Grid

1 record

Top (m)	*Base (m)*	*Description*	*Stratum Classifications*	*Stratum Thickness (m)*
6.10	15.10	Very weak rusty brown slightly silty medium grain sandstone.	Boundary: Solid	9.0

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Standing Water Levels

1 record

DateTime	*Standing Water Levels Summary*
	Borehole depth = 6.1m. Casing depth = 6.0m.

25/04/2023, 11:15	Water depth = 3.0m. Borehole diameter = 203mm.

Drilling Tool Record

Drilling Tool Record Grid

1 record

DateTime	From (m)	To (m)	Hole dia (mm)	Tool dia (mm)	Tool Type	Drill Tool Remarks
25/04/2023, 11:30	6.10	15.10	146	146	Open face PDC	

Casing Record

Casing Record Grid

1 record

DateTime	Base depth (m)	Internal diameter (mm)	Casing Record Remarks
25/04/2023, 11:30	15.10	113	

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no backfill [X]

Standing Time

Standing Time Grid

1 record

From	To	Standing Time Summary
07:00	11:00	Category: Dayworks - Other Duration: 04:00 Description: Standing awaiting BH position.

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

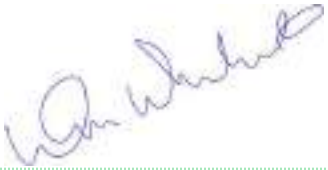
Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
14:00	15.1	William Whitelaw	

RSK Completion confirmation

Client Completion confirmation



Review all data [X]

Additional Email Distribution

Internal email distribution

David Loach	david.loach@soils.co.uk
Emily Clarkson	emily.clarkson@soils.co.uk

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	Name	Client
765634	A66 NTP Scheme S03B0405	National Highways

Exploratory Position

Borehole ID
BH-pts-126

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	Start time	Start depth	End depth	Initial technique	Equipment / Rig
26/04/2023	07:00	15.1	0.0		SSL-SN0686

Log Breakdown Grid 2

HammerID	Lead driller	Assistant 1	Assistant 2	Supervising Engineer
	William Whitelaw	David Laing		David Loach

Coring Data

Confirm no coring data [X]

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Standing Water Levels

1 record

DateTime	Standing Water Levels Summary
26/04/2023, 08:00	Borehole depth = 15.1m. Casing depth = 15.1m. Water depth = 6.0m. Borehole diameter = 146mm.

Drilling Tool Record

Confirm no drilling tool data [X]

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Pipes setup data

1 record

Ref	Desc	Install Summary (1)	RZ Summary	Install Summary (2)	Install Summary (3)
					Gas tap: Yes.

1	Shallow	Type: Standpipe Desc: Shallow	RZ Top: 3.0m. RZ Base: 6.0m. Water before: 6.0m. Water after: 3.1m.	Date: 26 Apr 2023. Diameter: 50mm. Material: PVC. Length: 5.5m.	Cover: UPSTANDING COVER. Installer: William Whitelaw. Geowrap: Yes.

Pipe construction

0 records

Backfill Grid

1 record

Section top depth (m)	*Section base depth (m)*	*Section fill*	*Date*	*By*	*Section length (m)*
6.00	15.10	BENTONITE SEAL	26/04/2023	William Whitelaw william.whitelaw@soils.co.uk	9.1

Standing Time

Standing Time Grid

1 record

From	*To*	*Standing Time Summary*
07:00	11:00	Category: Dayworks - Other Duration: 04:00 Description: Awaiting installation equipment.

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

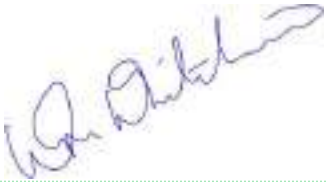
Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
12:15	0.0	William Whitelaw	

RSK Completion confirmation

Client Completion confirmation



Review all data [X]

Additional Email Distribution

Internal email distribution

David Loach	david.loach@soils.co.uk
Emily Clarkson	emily.clarkson@soils.co.uk

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS127					Rig Type	Dando 2000
						Rig ID	Rig 7
Contract Number	765633	Location	A66NTP503A			Rig Move	From / To / Sheet 7
Company Name	JB. Silva	Driller	Brad Sykes	Assistant(s)	Jamie Carr	Engineer	D. Nurney
Date 23.3.23	Day Thursday	Start Time	05:00	Finish Time	17:00	Hammer ID	JB 01

Depth From (m)	Depth To (m)	Driller's Description of Strata
GL	0.40	Slight gravelly, slight sandy topsoil
0.40	1.20	brown, slight gravelly silty sand

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow
1	D	0.10			
2	B	0.10	0.40		
3	D	0.50			
4	B	0.50	1.00		
5	B	1.00	1.20		
101	0.30				
102	0.30				
103	1.00				

Standard Penetration Tests: Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time		16:50
BH Depth (m)		1.20
Casing Depth (m)		/
Water Level (m)		Damp

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes	
Time	16:45
Strike Depth (m)	1.00
Casing Depth (m)	/
5 mins	B
10 mins	H
15 mins	D
20 mins	M
Depth Sealed (m)	P

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description
05:00	05:30	Morning briefing, get to BH
05:30	11:00	drop and load rig, move on next BH
11:00	13:00	assist other cable Rig
13:00	14:45	Move set up rig, trailer and bowser to next BH
14:45	16:00	waiting on permit
16:00	17:00	Dig pit

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: sales@sts.co.uk Web: www.sts.co.uk

Notes/Remarks: Sample type Details: D=Disturbed, DSPT=Disturbed from SPT test, Undisturbed, UT=UT100, Water, SPT test types: Split spoon, Cone, Cover Type: Unguaranteed, Fetish, Tarmac, Soil, [illegible] Issue: 01/08 CABLE PERC OCT 2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH- PTS 127	Rig Type	Pitra 200		
		Rig ID	/		
Contract Number	765633	Location	A66 NTP SOJA	Rig Move	From / To / Sheet /
Company Name	JB	Driller	Jamie Cann	Assistant(s)	B Jones
Engineer	Dennis				
Date	24 3 23	Day	Friday	Start Time	0800
Finish Time	1436	Hammer ID	JB-1		

Depth From (m)	Depth To (m)	Driller's Description of Strata
1.20	2.00	Brown Sandy Gravelly Silty
2.00	3.00	Brown Very Gravelly Clayey Silty
3.00	3.45	Brown Sandy Gravelly Silty
3.45	5.80	Firm Gravelly Sandy Silty Clay – Clay Silty Stony
5.80	7.50	Red Brown Silty – Weathering Sandstone

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
6	S	1.20	1.65			1.20	0.70	3	3	6	6	6	7	25
7	DS	1.20	1.65											
8	W	1.20												
9	B	1.70	1.70											
10	D	1.80												
11	S	2.00	2.45	(NR)		2.00	1.03	3	4	4	4	5	4	17
12	B	2.00	2.50											
13	ES	1.50												
13	D	2.86												
14	S	3.00	3.45			3.00	1.28	4	7	14	16	5	5	36
15	DS	3.00	3.45											
16	D	3.00	3.50											
17	D	3.50												
18	D	3.50	4.00											
19	UT	4.00	4.45	85%	168	4.00	3.07							

Standing Water Levels

	Morning	Evening
Time	0900	1436
BH Depth (m)	1.20	7.50
Casing Depth (m)	/	6.00
Water Level (m)	0.70	6.20

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
0.00	7.50	200	Shell

Casing Record

Diameter (mm)	Base (m)
200	6.00

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
/	/	/	/	/

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
1.20	7.50	6.50

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / P

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
800	900	Moving Plant + access Plant for Dry access 6.7 To BH
900	1230	Change + Repair Chisel + Rope Grab on Rope.

Client Signature | Company | Date

Borehole Completed: Yes / No

Nova/Terrametrix Sample type Details, Chiselled, CBP/Chiselled from SPT test, Undisturbed, UT=UT100, Water: SPT test types: Small spoon, Cover, Cover Type: Unspecified, Fitting, Terrametrix SSL: DHS LEHIS LOC:E436,E-3701-0021-2015

Email: info@ssl.co.uk Web: www.ssl.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-P15 - 127	Rig Type	Pm 2		
		Rig ID	/		
Contract Number	761237	Location	A46 NTP 1031A	Rig Move	From / To / Sheet 2
Company Name	JD	Driller	Jamie Green	Assistant(s)	D Jones	Engineer	Dave
Date	26 3 23	Day	Friday	Start Time	08:00	Finish Time	14:30	Hammer ID	JD-1

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
20	D	4.50												
21	B	4.50	5.00											
22	S	5.00	5.45			5.00	3.90	12	11	16	11	20	9/50	50
23	DS	5.00	5.45											
24	B	5.00	5.50											
25	D	5.90												
26	S	6.00	6.45			6.00	5.24	3	22	50				50
27	DS	6.00	6.50						67	52				
28	B	6.00	6.50											
29	D	6.80												
30	S	7.00	7.45			7.00	6.07	25	50					50
31	DS	7.00	7.45											
32	B	7.00	7.50											

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays Time From	Time To	Description

Client Signature	Company
	Date
Borehole Completed	Yes / No

Notes/Remarks: Samples from B-Hole. Dedicated DSPT equipment from DPT test. Undisturbed: UT=UT100, W=water. SPT tool types: SnapR spoon, C=core. Cover Type: U=upstanding, F=flush.
Template: SSL_SOIL_ERC-JOG-CABLE-V01-OCT-2015
Email: info@structs.co.uk. Web: www.soils.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS127	Rig Type	Gonda 2000		
		Rig ID	Rig 1		
Contract Number	765633	Location	A66 N TP5034	Rig Move	From / To / Sheet 1
Company Name	JB Site	Driller	Brad Sporns	Assistant(s)	Jamie Carr
Engineer	D. Worthing				
Date	Monday	Day	27.3.23	Start Time	09:00
Finish Time		Hammer ID	5301		

Depth From (m)	Depth To (m)	Driller's Description of Strata
7.50	10.00	weathered Sandstone

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
33	D	7.50												
34	S	8.00	8.45			7.50	2.14	25/34	50/45					
35	DS	8.00	7.45											
36	B	8.00	7.50											
37	D	8.80												
38	S	9.00	9.45			7.50	5.79	25/62	50/34					NR
39	B	9.00	9.50											
40	D	9.80												
41	S	10.00	10.45			7.50	4.86	25/49	50/37					NR

Standard Penetration Tests

Standing Water Levels

	Morning	Evening
Time	09:45	11:00
BH Depth (m)	7.50	10.00
Casing Depth (m)	7.50	7.50
Water Level (m)	5.23	4.84

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
7.50	10.00	97	Shell

Casing Record

Diameter (mm)	Base (m)
/	/

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
/	/	/	/	/

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
7.50	10.00	500

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)	/	/	/
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)	4.84	Water Depth After (m)	/	Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)
1	50mm plain	GL	1.50
2	50mm slotted	1.50	5.00

Backfill Materials	From (m)	To (m)
Concrete	GL	0.50
bentonite	0.50	1.00
gravel	1.00	5.50
bentonite	5.50	10.00

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
08:00	09:45	Morning briefing, get to BH
10:30	11:15	Waiting on Instrum delivery
11:15	12:45	Instrum pipe full casing (bentonite grouted)
13:30	14:30	Move rig, trailer and bowser to next BH, set up, concrete cover on 127

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Email: sslg@ssltd.co.uk
Web: www.ssltd.co.uk

Notes/Remarks: Sample type: B=bulk, D=disturbed, DS=disturbed from SPT test, U=undisturbed, UT=UT100, Weather: SPT test types: S=split spoon, D=cone, Cover Type: U=upstanding, F=flush.
Template:366 - DS10UR2-L100-C454 E-V31-OCT 2023

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS 128	Rig Type	5 DANDO 2000 MKII		
		Rig ID	5		
Contract Number	765633	Location	A66NTP503A	Rig Move	From 9:00 To 11:00 Sheet 1
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sharman
				Engineer	
Date 15-3-23	Day Weds	Start Time	8:00	Finish Time	5:00
		Hammer ID	5		

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow
1	D	0.10			
2	D	0.40			
3	B	0.30	0.50		
4	D	0.50			
5	B	0.50	0.70		
6	D	1M			
7	B	1M	1.20		

Standard Penetration Tests: Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels

	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type

Casing Record

Diameter (mm)	Base (m)

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8:00	9:00	MORNING BRIEF/A66 BRIEF
9:00	11:00	MOVE RIG/TRAILER/BOWSER.
11:00	11:00	GND UW HEAD CASSING/1M length 16"
12:00	1:15	INSTALL UW/PULL 16"
1:15	4:00	MOVE RIG 1 ON NEW POSITION
4:00	5:00	DIG PIT BH PTS 128

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: ssl@ssltd.co.uk Web: www.ssltd.co.uk

Notes/Remarks: Sample type Bulk, Undisturbed, DisPT=disturbed from SPT test, Undisturbed, UTW/TT06, Wrender, SPT test types: Rapid space, Crosses, Cover Type: U=spade/Seg, F=flush. Template SSL - DRILLING LOG-CABLE v01-OCT-2021

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS 128	Rig Type	DANDO 2000 MK11		
		Rig ID	2000 6699		
Contract Number	765633	Location	A66NTPS03A	Rig Move	From / To / Sheet 2
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sharman
				Engineer	DANIEL
Date 16-3-23	Day THU	Start Time 8:00	Finish Time 5:00	Hammer ID	5

Depth / Driller's Description of Strata

From (m)	To (m)	Driller's Description of Strata
120	140	Red silty sandy gravey clay
140	140	obstruction / Boulder.

Samples and Tests / Standard Penetration Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
8	S	120	140			N/A	DRY	2	3	4	46			
9	DS	120	140											
10	B	120	140											

Standing Water Levels

	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
120	140	256	CUTTER
140	140	250	Chisle

Casing Record

Diameter (mm)	Base (m)

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
140	140	1	8:30	9:30

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / P

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)
pellets 5 x	140	GL

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8:00	8:30	MORNING BRIEF
830	930	chissling
930	1030	BH DECISION
1030	11:15	collect Pellets + BACKFILL
11:30	12:00	Move rig forwards 1.5 m.

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Notes/Remarks: Sample type: Bulk, Undisturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: Split spoon, Cone, Cone Type: Unspecified, Fetish, Teardrop 83g, DRILLERS LOG CAN'S 4/01-002-2015

Email: info@sslts.co.uk, Web: www.sslts.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS 128	Rig Type	DANDO 2000 MK11		
		Rig ID	20006699		
Contract Number	705633	Location	A66NTP503A	Rig Move	From / To / Sheet 2
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sharman
				Engineer	DANIEL
Date 16-3-23	Day THU	Start Time 8:00	Finish Time 5:00	Hammer ID	5

Depth From (m)	Depth To (m)	Driller's Description of Strata
120	140	Red silty sandy gravely clay
140	140	obstruction / Boulder.

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
8	S	120	140			N/A	Dry	2	3	4	46			
9	DS	120	140											
10	B	120	140											

Standard Penetration Tests

Standing Water Levels

	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
120	140	250	CUTTER
140	140	250	chisle

Casing Record

Diameter (mm)	Base (m)

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
140	140	1	8:30	9:30

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)

Backfill Materials	From (m)	To (m)
pellets 5 x	140	GL

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8:00	8:50	MORNING BRIEF
8:50	9:50	chissling
9:50	10:30	BH DECISION
10:30	11:15	collect pellets + BACKFILL
11:30	12:00	Move rig forwards 1.5 m.

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Email: data@soils.co.uk Web: www.soils.co.uk
Make/Remarks, Sample type Breaks, Chiselling, DS/PT Indicated from SPT test, Unsatisfactory, UT-UT100, Window, SPT test types: Graphs issues, Groups, Cover Type: Unsplinting, Fetlock
Template:SSL_DRILLING LOG CABLE VB1 OCT 2013

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHPTS 128A	Rig Type	DANDO 2000 MK II
Contract Number	765633	Rig ID	2000 6699
Location	A66NTPS03A	Rig Move	From / To / Sheet
Company Name	JJ Site	Driller	Will Nevins
Assistant(s)	Stephen Sherman	Engineer	DANIEL.
Date 16.3.23	Day THU	Start Time 12:00	Finish Time 5:00
Hammer ID	5		

Depth From (m)	Depth To (m)	Driller's Description of Strata
GL	0.30	GRASS over top soil
0.30	1.20	loose Red brown gravelly sand pockets of clay.
1.20	1.65	loose sands + gravels large cobbles.
1.65	1.80	large cobble.
1.80	3m	firm Red brown gravelly silty clay.

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
1	DS	1.20	1.65			N/A	DRY	3	4	4	3	3	4	
2	S	1.20	1.65			—	—							
3	B	1.20	1.65											
4	D	1.80												
5	S	2m	2.45			2m	1.50	3	3	3	3	6	6	
6	DS	2m	2.45			—	—							
7	B	2m	2.50											
8	D	2.80												
9	S	3m	3.45			3m	2.50	2	0	0	0	0	3	
10	DS	3m	3.45			—	—							
104	ES	1.5												

Standing Water Levels

	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
~~GL~~			
~~0.30~~			
1.20	1.65	CUTTER	250
1.65	1.80	250	CHISSLE

Casing Record

Diameter (mm)	Base (m)
300	3m

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
1.65	1.80	1	2.30	3.30

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
6x25L DRUMS		

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
12.30	2.00	DIG 10m PIT
2.30	3.30	chissling cobble 1.65 – 1.80
4.00	5.00	toilet trip to compound as toilets were locked!

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Notes/Remarks: Sample type/Details, Disturbed, D/SPT=disturbed from SPT test, Undisturbed, UT=UT100, Winwater, SPT test types: Single spoon, Cocone, Cover Type: Unguestanding, Fetlock, Tendable 339, ...

Email: info@ssltd.co.uk, Web: www.ssltd.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH PTS 128A					Rig Type	DANDO 2000 MK II
						Rig ID	2000 0609
Contract Number	~~A66~~ 765633	Location	A66 NTP503A			Rig Move	From / To / Sheet
Company Name	JBSite	Driller	Will Nevins	Assistant(s)	Stephen Sharman	Engineer	DANNEC
Date 17-3-23	Day Fri	Start Time	8:00	Finish Time	2:30	Hammer ID	5

Depth From (m)	Depth To (m)	Driller's Description of Strata
1.80	4m	Firm Red brown gravelly silty sandy clay.
4m	5m	Dence Red brown sandst gravels pockets of clay
5m	6m	Dence Red Sand possible Weathered Sandstone

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Standard Penetration Tests: Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
11	B	3m	350											
12	D	380												
13	S	4m	4.45											
14	DS	4m	4.45			4M	1m	3	4	3	3	5	7	
15	B	4m	450			—	—							
16	D	480												
17	S	5m	540			4½	4m	3	10	15	35	=	55mm	
18	DS	5m	540			—	—							
19	B	5m	550											
20	D	580												
21	S	6m	640			4½	5m	5	12	15	15	20		
22	DS	6m	640											

Standing Water Levels

	Morning	Evening
Time	8:00	
BH Depth (m)	~~5.5~~ 6m	
Casing Depth (m)	4½	
Water Level (m)	5½	

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
3m	6m	250	Shell

Casing Record

Diameter (mm)	Base (m)

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added

Depth From (m)	Depth To (m)	Volume (litre)
3m	6m	8 drums

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8	9	MORNING BRIEF / TOOL BOX TALK.
9.45	10.45	Toilet! compound AS No toilet closer.
11.45	12.20	Toilet!

Client Signature	Company
	Date
Borehole Completed	Yes / No

Email: info@ssltd.co.uk Web: www.ssltd.co.uk
Notes/Remarks: Sample type Bulk, Disturbed, DSPT=Indicated from SPT test, Undisturbed, UT=UT100, Windsor: SPT test types: Split spoon, Core: Cover Type: Unguaranteed, Pattern
Template SSL: DRILLER-LOG-CABLE-V01-OCT-2013

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHPTS 128A	Rig Type	DANDO 2000 MK II
		Rig ID	2000 6699
Contract Number	765633	Location	A66NTPS03A
Company Name	JBSite	Driller	Will Nevins
Assistant(s)	Stephen Sharman	Engineer	DANIEL
Date	20-3-23	Day	MON
Start Time	8:00	Finish Time	5:00
Hammer ID	5	Rig Move	From / To / Sheet

Depth From (m)	Depth To (m)	Driller's Description of Strata
6m	8-30	Dence red Course Sand Possible Weathered Rock.

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow
23	B	6m	650		
24	D	680			
25	S	7m	7.20		
26	DS	7m	7.20		
27	B	7m	750		
28	D	780			
29	S	8m	8.10		
30	DS	8m	8.10		
31	B	8m	8.30		

Standard Penetration Tests

Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
7m	6m	25	50	=	40mm			
—	—							
8m	5.50	25	50	=	70mm			
—	—							

Standing Water Levels

	Morning	Evening
Time	8:00	4:00
BH Depth (m)	6m	8:30
Casing Depth (m)	4½	8:30
Water Level (m)	Dry	5.50

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
6m	8.30	200	Shell

Casing Record

Diameter (mm)	Base (m)
300	8.30

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
7.90	8.30	1HR	1.30	2.30

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
6m	8.30	1Bowser

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8:00	9:00	MORNING BRIEF
10:00	10:30	Fill Water bowser + BH
2:30	3:00	BH Decision
3:00	4:00	Collect INSTALL materials

Client Signature	Company
	Date

Borehole Completed ~~Yes~~ / No

Email: info@soils.co.uk Web: www.soils.co.uk
Notes/Remarks: Sample type: S=bulk, D=disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: S=split spoon, C=cone, Cover Type: U=upstanding, F=flush.
Template: SSL - DRILLING LOG CABLE V01-OCT-2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BHPTS 128A	Rig Type	DANDO 2000 MK11		
		Rig ID	2000/6690		
Contract Number	765633	Location	A66NTPSC3A	Rig Move	From / To / Sheet 1/3
Company Name	SBSite	Driller	Will Nevins	Assistant(s)	Stephen Sharman
Engineer	DANIEL				
Date	21-3-23	Day	TUE	Start Time	8:00
Finish Time	5:00	Hammer ID	5		

Depth From (m)	Depth To (m)	Driller's Description of Strata

Samples and Tests: Number	Type	From (m)	To (m)	Rec (mm)	U Blow

Standard Penetration Tests: Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time	8:30	
BH Depth (m)	8:30	
Casing Depth (m)	8:30	
Water Level (m)	5M	

Drilling Tool Record: From (m)	To (m)	Diameter (mm)	Type

Casing Record: Diameter (mm)	Base (m)
300	8:30

Record of Chiselling: Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added: Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details					
Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
5M	65mm SLOTTED			1.5	5M
	65mm PLAIN			1.5	SURFACE

Backfill Materials	From (m)	To (m)
Pellets	8.30	5.5
GRAVEL	5.5	1.5
Pellets	1.5	0.50
Concrete	0.50	G.L

Record of Hourly Rated Work / Standing / Delays: Time From	Time To	Description
8:00	8:30	MORNING BRIEF
8:30	9:30	INSTALL
10:00	12:30	BH changed from PTS 129 - 121

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Email: sales@ssl.co.uk Web: www.ssl.co.uk

Notes/Remarks: Sample type: Bulk, Disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: S=split spoon, C=core, Cover Type: U=upstanding, F=flush. Tensator Site: SBS LFR2/1/00 CABLE / 01 OCT 2015

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS-229	Rig Type	Dando 2000 MKII		
		Rig ID	2000 66019		
Contract Number	765633	Location	AGENTBS 03A	Rig Move	From 9.30 To 11.15 Sheet 1/2
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sherman
				Engineer	RONIN
Date 30-3-23	Day THU	Start Time	8.00	Finish Time	5.00
		Hammer ID	5		

Depth From (m)	Depth To (m)	Driller's Description of Strata
GL	0.10	Topsoil
0.10	0.50	loose Brown Slightly Clayey Sand -
0.50	2m	Medium dence Reddish Brown Clayey Sand -

Samples and Tests Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N
101	D	0.05												
201	D	0.05												
3	ES	0.30												
101	D	0.40												
202	D	0.40												
4	D	0.90												
5	D	1m												
6	S	1.20	1.65			/	/	1	0	1	1	1	1	
7	DS	1.20	1.65			/	/							
8	B	1.20	1.70											
9	D	1.80												
10	S	2m	2.45			150	1m	1	2	2	3	3	3	

Standard Penetration Tests

Standing Water Levels	Morning	Evening
Time	/	5.00
BH Depth (m)		4.10
Casing Depth (m)		4m
Water Level (m)		3.50

Drilling Tool Record From (m)	To (m)	Diameter (mm)	Type
1.20	4.10	200	Shell

Casing Record Diameter (mm)	Base (m)
300	4.10

Record of Chiselling Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
4m	4.10	1hr	16.15	17.00

Water Added Depth From (m)	Depth To (m)	Volume (litre)
1.20	4.10	½ Bowser

Water Strikes			
Time	11.30		
Strike Depth (m)	0.60		
Casing Depth (m)	/		
5 mins	0.58		
10 mins	0.57		
15 mins	0.56		
20 mins	0.55		
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F
Pipe No.	Pipe Type and Diameter (mm)			From (m)	To (m)
Backfill Materials				From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8.00	8.30	Morning Brief
8.30	9.00	Attach New Winch
11.10	11.40	Standing on Water Strike -

Client Signature	Company	
	Date	
Borehole Completed	Yes / No	

Notes/Remarks: Sample types Bulk, D=Disturbed, DSPT=disturbed from SPT test, Undisturbed, UT=UT100, Winwater, SPT test types: Small spoon, Cocore, Cover Type: Unpaving, Polish, Tarmac/asphalt, BBL/GRS=DG-CABLE-2/01-OCT-2015

Email: info@ssltd.co.uk
Web: www.ssltd.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS-129	Rig Type	DANDO 2000 MK11
		Rig ID	2000 6699
Contract Number	765633	Location	A66 NTPS03A
Rig Move	From 9:30 To 11.15 Sheet 2/2		
Company Name	JBSite	Driller	Will Nevins
Assistant(s)	STEPHEN Sharman	Engineer	RONIN
Date	30-3-23	Day	THU
Start Time	8:00	Finish Time	5:00
Hammer ID	5		

Depth From (m)	Depth To (m)	Driller's Description of Strata
2m	3m	Medium dence Redish Brown clayey Sand.
4m	4.10	Dence Redish Brown Sand large cobble.

Samples and Tests

Number	Type	From (m)	To (m)	Rec (mm)	U Blow
11	DS	2m	245		
12	B	2m	250		
13	D	280			
14	S	3m	345		
15	DS	3m	345		
16	B	3m	350		
17	D	380			
18	S	4m	430		
19	DS	4m	4.30		

Standard Penetration Tests

Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
150	1m							
3m	250	2	3	4	5	6	7	
4m	4m	4	11	22	28			

Standing Water Levels

	Morning	Evening
Time		5:00
BH Depth (m)		4m
Casing Depth (m)		4m
Water Level (m)		3:50

Drilling Tool Record

From (m)	To (m)	Diameter (mm)	Type
120	4m	200	Shell

Casing Record

Diameter (mm)	Base (m)
300	4m

Record of Chiselling

Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)
4m	4.10	1HR	16.15	17.00

Water Added

Depth From (m)	Depth To (m)	Volume (ltrs)
120	4m	½ Bouser

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
1600	1615	EMPTY Water from BH READY TO Chissle.

Client Signature	Company
	Date

Borehole Completed Yes / No

Notes/Remarks: Sample type B=bulk, D=disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: S=split spoon, C=cone, Cover Type: U=upstanding, F=flush. Template SSL - DRILLERS-LOG-CABLE-V01-OCT-2015
Email: ask@soils.co.uk Web: www.soils.co.uk

STRUCTURAL SOILS LTD
CABLE PERCUSSION - DAILY SITE REPORT

Borehole ID	BH-PTS-129					Rig Type	2000 MK II DANDO
						Rig ID	20006699
Contract Number	765633	Location	A6NTPS03A			Rig Move	From / To / Sheet
Company Name	JB Site	Driller	Will Nevins	Assistant(s)	Stephen Sharman	Engineer	RONIN
Date 31-3-23	Day FRI	Start Time	8:00	Finish Time	2:30	Hammer ID	5

Standard Penetration Tests

Depth From (m)	Depth To (m)	Driller's Description of Strata	Samples and Tests: Number	Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth: Casing	Water	Seating Drive 75mm	75mm	Main Test Drive 75mm	75mm	75mm	75mm	N

Standing Water Levels	Morning	Evening
Time		
BH Depth (m)		
Casing Depth (m)		
Water Level (m)		

Drilling Tool Record: From (m)	To (m)	Diameter (mm)	Type

Casing Record: Diameter (mm)	Base (m)

Record of Chiselling: Depth From (m)	Depth To (m)	Hours (h)	Time From (hh:mm)	Time To (hh:mm)

Water Added: Depth From (m)	Depth To (m)	Volume (ltrs)

Water Strikes			
Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)
4 x	6" ROTARY	GL	4.10

Backfill Materials	From (m)	To (m)

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description
8:00	8:30	MORNING BRIEF
8:30	9:20	Collect ROTARY CASEING + SWIVEL
9:20	10:30	INSTALL ROTARY + pull 10" 4m -
11:15	12:00	STANDING ON NEXT POSITION
12:00	2:00	MOB RIG + BOWSER + TRAILER

Client Signature	Company
	Date
Borehole Completed	~~Yes~~ / No

Email: info@structs.co.uk; Web: www.sts.co.uk
Notes/Remarks: Sample type: B=bulk, D=disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: S=split spoon, C=core, Cover Type: U=standing, F=flush.
Template: BH_LOG_CABLE_V01-OCT-2015

CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID	BH-PTS-129	**Rig Type**	Barreta T44		
		Rig ID			
Contract No	765633	**Location**	A66	**Hammer ID**	
Client Name	RSK	**Driller**	lindon paisley	**Assistant**	Sean wakenshaw
Engineer	Malic	**Rig Move**	**From**	**To**	**Sheet** 1
Day	Monday	**Date**	03/04/2023	**Start Time**	08:00
Finish Time	17:00				

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
G'bor	4	4.5	2	red	100%	water		R1				n/r			0.5							
								301	SPT	4.5	4.95			4.5	3	5	11	15	20	15(45		
G'bor	4.5	5	2	red	100%	water	Sandy gravelly clay	R2				500			3							
G'bor	5	6	5	red	100%	water	Sandy gravelly clay with boulders	R3				750										

Standard Penetration Tests

Standing Water Levels	AM	PM
Time		15:00
BH Depth (m)		4
Casing Depth (m)		4
Water level (M)		0.5

Drilling Tool Record From (m)	To(m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)
6"	6
G'bor	6

Water Strikes	AM	PM
Time		
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F

Pipe No	Pipe Type & Diameter	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Client Signature		**Company**	
Borehole Complete	YES	NO	**Date**

Record Hourly Rated Work / Standing & Delays

Time From	Time To	Description
12:00	14:30	Move trailer & bowser to BH PTS 123 and await tractor before moving rig to position
		Set rig up for water flush
16:30	17:00	Await tractor to fill bowser before proceeding with drilling

Notes Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water

Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

E-Mail : info@claydrilling.co.uk
Website : www.claydrilling.co.uk

CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID	BH-PTS-129	**Rig Type**	Barreta T44		
		Rig ID			
Contract No	765633	**Location**	A66	**Hammer ID**	
Client Name	RSK	**Driller**	lindon paisley	**Assistant**	Sean wakenshaw
Engineer	Malic	**Rig Move**	**From**	**To**	**Sheet** 2
Day	Tuesday	**Date**	04/04/2023	**Start Time**	08:00
Finish Time	17:00				

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Standard Penetration Tests: Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
G'bor	6	6.5	2	red	90%	water	Red sandstone	R4				400			0.5							
G'bor	6.5	7	2	red	90%	water	Red sandstone	R5				400			1							
G'bor	7	7.5	2	red	90%	water	Red sandstone	R6				500			1.5							
G'bor	7.5	9	5	red	90%	water	Red sandstone	R7				1450			1.5							
G'bor	9	10.5	5	red	90%	water	Red sandstone	R8				1500			3							
G'bor	10.5	12	5	red	90%	water	Red sandstone	R9				1500			5							
G'bor	12	13.5	5	red	90%	water	Red sandstone	R10				1450			5							
G'bor	13.5	15	5	red	90%	water	Red sandstone	R11				1500			6							

Standing Water Levels

	AM	PM
Time	09:00	
BH Depth (m)	6	
Casing Depth (m)	6	
Water level (M)	0.5	

Drilling Tool Record

From (m)	To(m)	Diameter (mm)	Type

Casing Record

Diameter (mm)	Base (m)
6"	6
G'bor	15

Record Hourly Rated Work / Standing & Delays

Time From	Time To	Description
08:00	12:15	Morning briefing, drive to BH & await tractor to bring water before proceeding with drilling
14:30	16:45	Wait for install gear to get delivered to BH & load core boxes onto van to get took away

Water Strikes

Time	AM	PM
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F

Pipe No	Pipe Type & Diameter	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Client Signature

Company

Borehole Complete YES NO

Date

Notes Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water

Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

E-Mail : info@claydrilling.co.uk
Website : www.claydrilling.co.uk

CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID	BH-PTS-129	**Rig Type**	Barreta T44		
		Rig ID			
Contract No	765633	**Location**	A66	**Hammer ID**	
Client Name	RSK	**Driller**	lindon paisley	**Assistant**	Sean wakenshaw
Engineer	Malic	**Rig Move**	**From**	**To**	**Sheet** 3
Day	Wednesday	**Date**	05/04/2023	**Start Time**	08:00
Finish Time	17:00				

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Standard Penetration Tests: Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N

Standing Water Levels	AM	PM
Time	09:00	
BH Depth (m)	15	
Casing Depth (m)	15	
Water level (M)	6.5	

Drilling Tool Record From (m)	To(m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)
6"	6
G'bor	15

Water Strikes	AM	PM
Time		
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details			
Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F
Pipe No	**Pipe Type & Diameter**	**From (m)**	**To (m)**
1	50mm plain	GL	1.5
1	50mm slotted	1.5	3.5

Backfill Materials	From (m)	To (m)
Raised cover & postcrete	GL	0.5
Bentonite	0.5	1
Gravel	1	4
Bentonite	4	15

Record Hourly Rated Work / Standing & Delays		
Time From	**Time To**	**Description**
08:00	08:45	Morning briefing & drive to BH
10:30	16:00	Take bowser & trailer back to main compound and await tractor to move rig back to main compound, ready to demobalise

Client Signature		**Company**
Borehole Complete	YES	NO
		Date

Notes Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water

Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

E-Mail : info@claydrilling.co.uk
Website : www.claydrilling.co.uk

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	Name	Client
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
GS-PTS102

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	Start time	Start depth	End depth	Initial technique	Equipment / Rig
20/04/2023	08:00	0.0	0.0	Inspection pit	SSL-SN2240

Log Breakdown Grid 2

HammerID	Lead driller	Assistant 1	Assistant 2	Supervising Engineer
	Sam Carter	Simon Pearson		Simon Groome

Coring Data

Confirm no coring data [X]

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Confirm no water level observations made [X]

Drilling Tool Record

Confirm no drilling tool data [X]

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no backfill [X]

Standing Time

Standing Time Grid

2 records

From	*To*	*Standing Time Summary*
08:00	08:30	Category: Standing - Other Duration: 00:30 Description: Site breifing
		Category: Dayworks - Moving Drilling Position

10:00	15:00	Duration: 05:00 Description: Moving position and getting gear across to position ,trying to get rig up steep embankment

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	0.0	Sam Carter	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	Name	Client
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
GS-PTS102

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	Start time	Start depth	End depth	Initial technique	Equipment / Rig
24/04/2023	08:00	0.0	1.2	Inspection pit	SSL-SN2240

Log Breakdown Grid 2

HammerID	Lead driller	Assistant 1	Assistant 2	Supervising Engineer
	Sam Carter	Simon Pearson		Maciej Turkowski

Coring Data

Confirm no coring data	[X]

Description of Strata

Confirm no stratum description data	[X]

Samples and SPTs

Confirm no samples data	[X]

Standing Water Levels

Confirm no water level observations made	[X]

Drilling Tool Record

Confirm no drilling tool data	[X]

Casing Record

Confirm no casing record data	[X]

Water Strikes

Confirm no water strikes	[X]

Backfill, Pipes and Covers

Confirm no pipes installed	[X]
Confirm no backfill	[X]

Standing Time

Standing Time Grid

3 records

From	*To*	*Standing Time Summary*
09:30	12:00	Category: Dayworks - Other Duration: 02:30 Description: Waiting for engineer

12:00	13:30	Category: Dayworks - Digging Inspection Pit (include if breaker was used) Duration: 01:30 Description: Dig inspection pit
13:30	16:30	Category: Dayworks - Other Duration: 03:00 Description: General site duty's

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
18:00	1.2	Sam Carter	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
GS-PTS102

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
25/04/2023	08:00	1.2	3.0	Inspection pit	SSL-SN2240

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
AR1240-2022	Sam Carter	Simon Pearson		Maciej Turkowski

Coring Data

Coring Data Grid

2 records

Top (m)	Base (m)	Drilling Info	Run time (min)	Flush	Notes
1.2	2.0	DS (Soil) Barrel: DS-131 Rec: 100%	0		Description: Sandy clay Box: 1 Liner used: Yes
2.0	3.0	DS (Soil) Barrel: DS-131 Rec: 100%	0		Box: 2 Liner used: Yes

Description of Strata

Stratums Grid

1 record

Top (m)	Base (m)	Description	Stratum Classifications	Stratum Thickness (m)
1.2	3.0	Sandy clay	Boundary: Solid	1.8

Samples and SPTs

Samples

4 records

Top	Base	Ref	Type.	Test Details	Containers	Hazards	Description / Remarks
				N-Value=14 Seating:1,1 = 2/150mm			

1.2	1.65	301	S	Test:3,5,3,3 = 14/300mm No Casing. Water=Dry			
1.2	1.65	302	DSPT		Tubs = 1		
2.0	2.45	303	S	N-Value=11 Seating:1,2 = 3/150mm Test:3,2,2,4 = 11/300mm No Casing. Water=Dry			
2.0	2.45	304	DSPT		Tubs = 1		

Standing Water Levels

Standing Water Levels

2 records

DateTime	*Standing Water Levels Summary*
25/04/2023, 08:00	Borehole depth = 1.2m. Casing depth = 0.0m. Water = Dry.
25/04/2023, 17:30	Borehole depth = 3.0m. Casing depth = 0.0m. Water = Dry.

Drilling Tool Record

Drilling Tool Record Grid

1 record

DateTime	*From (m)*	*To (m)*	*Hole dia (mm)*	*Tool dia (mm)*	*Tool Type*	*Drill Tool Remarks*
25/04/2023, 18:18	1.20	3.00	131	117	Dynamic sampling	

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no backfill [X]

Standing Time

Standing Time Grid

1 record

From	*To*	*Standing Time Summary*
09:00	14:00	Category: Dayworks - Setting Up Rig Duration: 05:00 Description: Setting up rig, getting equipment from various locations and getting it to the borehole location

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	3.0	Sam Carter	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	Name	Client
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
GS-PTS102

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	Start time	Start depth	End depth	Initial technique	Equipment / Rig
26/04/2023	08:00	3.0	7.55		SSL-SN2240

Log Breakdown Grid 2

HammerID	Lead driller	Assistant 1	Assistant 2	Supervising Engineer
AR1240-2022	Sam Carter	Simon Pearson		Maciej Turkowski

Coring Data

Coring Data Grid

5 records

Top (m)	*Base (m)*	*Drilling Info*	*Run time (min)*	*Flush*	*Notes*
3.00	4.00	DS (Soil) Barrel: DS-131 Rec: 80%	0		Box: 3 Liner used: Yes
4.00	4.70	DS (Soil) Barrel: DS-131 Rec: 100%	0		Box: 4 Liner used: Yes Notes: Refused at 4.70
4.70	5.30	RC (Soil) Barrel: Geo-bor S Rec: 100%	22	Water 100% (max return) Brown	Box: 5 Liner used: Yes
5.30	6.80	RC (Soil) Barrel: Geo-bor S Rec: 43.33333333333333333%	33	Water 100% (max return) Brown	Box: 6 Liner used: Yes
6.80	7.75	RC (Soil) Barrel: Geo-bor S Rec: 52.63157894736842105%	21	Water 100% (max return) Brown	Box: 7 Liner used: Yes

Description of Strata

Stratums Grid

1 record

Top (m)	Base (m)	Description	Stratum Classifications	Stratum Thickness (m)
3.00	7.55	Gravel	Boundary: Solid	4.55

Samples and SPTs

Samples

5 records

Top	Base	Ref	Type.	Test Details	Containers	Hazards	Description / Remarks
3.00	3.45	305	UT100	Blows = 27 Recovery = 450mm No Casing. Water=Dry			
4	4.45	306	S	N-Value=31 Seating:14,8 = 22/150mm Test:7,5,8,11 = 31/300mm No Casing. Water=Dry			
4	4.45	307	DSPT		Tubs = 1		
4.70	5.15	308	S	N-Value=42 Seating:9,10 = 19/150mm Test:8,14,9,11 = 42/300mm No Casing. Water=Dry			
4.70	5.15	309	DSPT		Tubs = 1		

Standing Water Levels

Standing Water Levels

2 records

DateTime	Standing Water Levels Summary
26/04/2023, 09:00	Borehole depth = 3.0m. Casing depth = 0.0m. Water = Dry. Borehole diameter = 131mm.
26/04/2023, 17:00	Borehole depth = 7.55m. Casing depth = 4.5m. Water depth = 0.2m. Borehole diameter = 146mm.

Drilling Tool Record

Drilling Tool Record Grid

2 records

DateTime	From (m)	To (m)	Hole dia (mm)	Tool dia (mm)	Tool Type	Drill Tool Remarks
26/04/2023, 17:00	3.00	4.70	119	102	Dynamic sampling	
26/04/2023, 17:00	4.70	7.55	146	109.5	PDC	

Casing Record

Casing Record Grid

1 record

DateTime	Base depth (m)	Internal diameter (mm)	Casing Record Remarks
26/04/2023, 17:00	4.50	178	

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no backfill [X]

Standing Time

Confirm no standing time [X]

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	7.55	Sam Carter	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	Name	Client
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
GS-PTS102

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	Start time	Start depth	End depth	Initial technique	Equipment / Rig
27/04/2023	08:00	7.55	12.05	Inspection pit	SSL-SN2240

Log Breakdown Grid 2

HammerID	Lead driller	Assistant 1	Assistant 2	Supervising Engineer
AR1240-2022	Sam Carter	Simon Pearson		Maciej Turkowski

Coring Data

Coring Data Grid

6 records

Top (m)	*Base (m)*	*Drilling Info*	*Run time (min)*	*Flush*	*Notes*
7.55	8.30	RC (Soil) Barrel: Geo-bor S Rec: 66.66666666666666667%	20	Water 100% (max return) Brown	Description: Gravel Box: 7 Liner used: Yes
8.30	9.05	RC (Soil) Rec: 14.66666666666666667%	38	Water 100% (max return) Brown	Description: Gravel Box: 8 Liner Used: No Notes: Dropped core
9.05	9.80	RC (Soil) Barrel: Geo-bor S Rec: 26.66666666666666667%	17	Water 100% (max return) Brown	Description: Gravel Box: 9 Liner used: Yes Notes: Scrubbed last run
9.80	10.55	RC (Soil) Barrel: Geo-bor S Rec: 46.66666666666666667%	22	Water 100% (max return) Brown	Description: Gravel Box: 10 Liner used: Yes
10.55	11.30	RC (Soil) Barrel: Geo-bor S Rec: 46.66666666666666667%	10	Water 100% (max return) Brown	Description: Gravel Liner used: Yes
11.30	12.55	RC (Rock) Barrel: Geo-bor S	30	Water 20% (max return)	Description: Gravel Liner used: Yes

		Rec: 32%		Brown	

Description of Strata

Stratums Grid

1 record

Top (m)	Base (m)	Description	Stratum Classifications	Stratum Thickness (m)
7.55	12.05	Gravel	Boundary: Solid	4.5

Samples and SPTs

Samples

2 records

Top	Base	Ref	Type.	Test Details	Containers	Hazards	Description / Remarks
9.80	10.07	310	S	N-Value=50 Seating:25/70mm = 25/70mm Test:12,26,12/50mm = 50/200mm Casing=4.5m Water=.40m			
9.80	10.07	311	DSPT		Tubs = 1		

Standing Water Levels

Standing Water Levels

2 records

DateTime	Standing Water Levels Summary

27/04/2023, 08:00	Borehole depth = 7.55m. Casing depth = 4.5m. Water depth = 0.6m. Borehole diameter = 146mm.
27/04/2023, 17:00	Borehole depth = 12.05m. Casing depth = 4.5m. Water depth = 1.8m. Borehole diameter = 146mm.

Drilling Tool Record

Drilling Tool Record Grid

1 record

DateTime	*From (m)*	*To (m)*	*Hole dia (mm)*	*Tool dia (mm)*	*Tool Type*	*Drill Tool Remarks*
27/04/2023, 17:00	7.55	12.05	146	109.5	PDC	

Casing Record

Casing Record Grid

1 record

DateTime	*Base depth (m)*	*Internal diameter (mm)*	*Casing Record Remarks*
27/04/2023, 17:00	4.50	178	

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no backfill [X]

Standing Time

Standing Time Grid

1 record

From	To	Standing Time Summary
11:30	13:00	Category: Dayworks - Other Duration: 01:30 Description: Clean tanks

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	Base depth	RSK Completion Confirmation	Client Confirmation
18:00	12.05	Sam Carter	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
GS-PTS102

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
28/04/2023	08:00	12.05	12.05	Inspection pit	SSL-SN2240

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
	Sam Carter	Simon Pearson		Maciej Turkowski

Coring Data

Confirm no coring data [X]

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Standing Water Levels

2 records

DateTime	Standing Water Levels Summary
28/04/2023, 08:30	Borehole depth = 12.05m. Casing depth = 4.5m. Water depth = 7.7m.
28/04/2023, 13:00	Borehole depth = 12.05m. Casing depth = 4.5m. Water depth = 3.3m.

Drilling Tool Record

Confirm no drilling tool data [X]

Casing Record

Casing Record Grid

1 record

DateTime	Base depth (m)	Internal diameter (mm)	Casing Record Remarks
28/04/2023, 13:00	4.50	178	

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no backfill [X]

Standing Time

Standing Time Grid

4 records

From	*To*	*Standing Time Summary*
09:00	10:30	Category: Dayworks - Other Duration: 01:30 Description: Guide tractor in and Filled tanks
10:30	11:00	Category: Dayworks - Other Duration: 00:30 Description: Tried drilling and could not advance
11:00	12:15	Category: Time Incurred due to Client Instruction (i.e. further chiselling, drill deeper than target depth etc) Duration: 01:15 Description: Await instructions from client
12:15	13:00	Category: Dayworks - Other Duration: 00:45 Description: Pulled geobore ready for installation on Tuesday

Confirm no standing time [X]

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	12.05	Sam Carter	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	Name	Client
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
GS-PTS102

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	Start time	Start depth	End depth	Initial technique	Equipment / Rig
02/05/2023	05:00	12.05	12.05		SSL-SN2240

Log Breakdown Grid 2

HammerID	Lead driller	Assistant 1	Assistant 2	Supervising Engineer
	Sam Carter	Simon Pearson		Maciej Turkowski

Coring Data

Confirm no coring data [X]

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Standing Water Levels

1 record

DateTime	Standing Water Levels Summary
02/05/2023, 08:30	Borehole depth = 12.05m. Casing depth = 4.5m. Water depth = 9.1m.

Drilling Tool Record

Confirm no drilling tool data [X]

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Pipes setup data

1 record

Ref	Desc	Install Summary (1)	RZ Summary	Install Summary (2)	Install Summary (3)
		Type: Gas monitoring	RZ Top: 1.5m.	Date: 02 May 2023.	Gas tap: Yes. Cover: UPSTANDING

1	NA	point Desc: NA	RZ Base: 4.0m. Water before: 9.1m. Water after: 0.0m.	Diameter: 50mm. Material: HDPE. Length: 4.0m.	COVER. Installer: Sam Carter. Geowrap: Yes.

Pipe construction

0 records

Standing Time

Standing Time Grid

1 record

From	*To*	*Standing Time Summary*
13:00	17:00	Category: Waiting for Access (SSL) Duration: 04:00 Description: Waiting for next position

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	12.05	Sam Carter	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	Name	Client
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
GS-PTS105

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	Start time	Start depth	End depth	Initial technique	Equipment / Rig
03/05/2023	08:00	0.0	0.0		SSL-SN2240

Log Breakdown Grid 2

HammerID	Lead driller	Assistant 1	Assistant 2	Supervising Engineer
	Sam Carter	Simon Pearson		Maciej Turkowski

Coring Data

Confirm no coring data [X]

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Confirm no water level observations made [X]

Drilling Tool Record

Confirm no drilling tool data [X]

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no backfill [X]

Standing Time

Standing Time Grid

3 records

From	*To*	*Standing Time Summary*
08:30	11:00	Category: Standing - Other Duration: 02:30 Description: Waiting for tractor and laborers to move
		Category: Dayworks - Moving Drilling Position

11:00	15:00	Duration: 04:00 Description: Moved position and filled tanks with water ready to drill
15:00	17:00	Category: Standing - Other Duration: 02:00 Description: Waiting for engineering to dig pit

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	0.0	Sam Carter	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	Name	Client
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
GS-PTS105

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	Start time	Start depth	End depth	Initial technique	Equipment / Rig
04/05/2023	08:01	0.0	2.0	Inspection pit	SSL-SN2240

Log Breakdown Grid 2

HammerID	Lead driller	Assistant 1	Assistant 2	Supervising Engineer
AR1240-2022	Sam Carter	Simon Pearson		Maciej Turkowski

Coring Data

Coring Data Grid

1 record

Top (m)	Base (m)	Drilling Info	Run time (min)	Flush	Notes
1.20	2.00	DS (Soil) Barrel: DS-131 Rec: 0.1%	0		Box: 1 Liner used: Yes

Description of Strata

Stratums Grid

1 record

Top (m)	Base (m)	Description	Stratum Classifications	Stratum Thickness (m)
1.20	2.00	Gravely clay	Boundary: Solid	0.8

Samples and SPTs

Samples

4 records

Top	Base	Ref	Type.	Test Details	Containers	Hazards	Description / Remarks
1.20	1.65	300	S	N-Value=39 Seating:4,9 = 13/150mm Test:9,10,9,11 = 39/300mm Casing=0.0m Water=Dry			
1.20	1.65	301	DSPT		Tubs = 1		

2.00	2.25	302	S	N-Value=50 Seating:7,9 = 16/150mm Test:20,30/25mm = 50/100mm No Casing. Water=Dry			
2.00	2.25	303	DSPT		Tubs = 1		

Standing Water Levels

Standing Water Levels

1 record

DateTime	*Standing Water Levels Summary*
04/05/2023, 17:00	Borehole depth = 2.0m. Casing depth = 1.8m. Water depth = 0.1m. Borehole diameter = 131mm.

Drilling Tool Record

Drilling Tool Record Grid

1 record

DateTime	*From (m)*	*To (m)*	*Hole dia (mm)*	*Tool dia (mm)*	*Tool Type*	*Drill Tool Remarks*
04/05/2023, 14:00	1.20	2.00	131	117	Dynamic sampling	

Casing Record

Casing Record Grid

1 record

DateTime	*Base depth (m)*	*Internal diameter (mm)*	*Casing Record Remarks*
04/05/2023, 17:00	1.80	178	

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no backfill [X]

Standing Time

Standing Time Grid

3 records

From	To	Standing Time Summary
08:30	10:30	Category: Standing - Other Duration: 02:00 Description: Waiting for engineering
10:30	13:00	Category: Dayworks - Digging Inspection Pit (include if breaker was used) Duration: 02:30 Description: Dig pit
13:00	14:00	Category: Dayworks - Other Duration: 01:00 Description: Went to pick up window sample gear

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	Base depth	RSK Completion Confirmation	Client Confirmation

17:00	2.0	Sam Carter	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	Name	Client
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
GS-PTS105

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	Start time	Start depth	End depth	Initial technique	Equipment / Rig
05/05/2023	08:00	2.0	5.15	Inspection pit	SSL-SN2240

Log Breakdown Grid 2

HammerID	Lead driller	Assistant 1	Assistant 2	Supervising Engineer
	Sam Carter	Simon Pearson		Maciej Turkowski

Coring Data

Coring Data Grid

4 records

Top (m)	*Base (m)*	*Drilling Info*	*Run time (min)*	*Flush*	*Notes*
2.00	2.90	RC (Soil) Barrel: Geo-bor S Rec: 0.02222222222222222%	21	Water 100% (max return) Brown	Box: 2 Liner used: Yes Notes: Dropped .30, try to pick up on next run
2.90	3.65	RC (Soil) Barrel: Geo-bor S Rec: 0.03333333333333333%	16	Water 100% (max return) Brown	Box: 3 Liner used: Yes Notes: Couldn't do SPT due to hole colapsing
3.65	4.40	RC (Soil) Barrel: Geo-bor S Rec: 0.06666666666666667%	11	Water 100% (max return) Brown	Box: 4 Liner used: Yes
4.40	5.15	RC (Soil) Barrel: Geo-bor S Rec: 0.1%	9	Water 100% (max return) Brown	Box: 5 Liner used: Yes

Description of Strata

Stratums Grid

1 record

Top (m)	*Base (m)*	*Description*	*Stratum Classifications*	*Stratum Thickness (m)*

2.00	5.15	Gravels	Boundary: Solid	3.15

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Standing Water Levels

2 records

DateTime	*Standing Water Levels Summary*
05/05/2023, 08:50	Borehole depth = 2.0m. Casing depth = 1.8m. Water depth = 0.0m. Borehole diameter = 131mm.
05/05/2023, 12:30	Borehole depth = 5.15m. Casing depth = 1.8m. Water depth = 0.3m. Borehole diameter = 146mm.

Drilling Tool Record

Drilling Tool Record Grid

1 record

DateTime	*From (m)*	*To (m)*	*Hole dia (mm)*	*Tool dia (mm)*	*Tool Type*	*Drill Tool Remarks*
05/05/2023, 08:00	2.00	5.15	146	109.5	PDC	

Casing Record

Casing Record Grid

1 record

DateTime	Base depth (m)	Internal diameter (mm)	Casing Record Remarks
05/05/2023, 17:00	1.80	178	

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no backfill [X]

Standing Time

Confirm no standing time [X]

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	Base depth	RSK Completion Confirmation	Client Confirmation
17:00	5.15	Sam Carter	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
GS-PTS105

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
09/05/2023	08:00	5.15	7.4	Inspection pit	SSL-SN2240

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
	Sam Carter	Simon Pearson		Maciej Turkowski

Coring Data

Coring Data Grid

3 records

Top (m)	Base (m)	Drilling Info	Run time (min)	Flush	Notes
5.15	5.90	RC (Soil) Barrel: Geo-bor S Rec: 0.1%	9	Water 100% (max return) Brown	Box: 6 Liner used: Yes
5.90	7.20	RC (Soil) Barrel: Geo-bor S Rec: 0.05769230769230769%	42	Water Brown Remarks: Intermittent flush returns	Box: 7 Liner used: Yes
7.20	7.40	RC (Soil) Barrel: Geo-bor S Rec: 0%	13	Water Brown Remarks: Intermittent flush returns	Box: 7 Liner used: Yes

Description of Strata

Stratums Grid

2 records

Top (m)	Base (m)	Description	Stratum Classifications	Stratum Thickness (m)
5.15	7.20	Clay	Boundary: Solid	2.05
			Boundary: Solid	

7.20	7.40	Gravel		0.2

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Standing Water Levels

2 records

DateTime	*Standing Water Levels Summary*
09/05/2023, 09:20	Borehole depth = 5.15m. Casing depth = 1.8m. Water depth = 0.6m. Borehole diameter = 146mm.
09/05/2023, 17:00	Borehole depth = 7.4m. Casing depth = 6.0m. Water depth = 0.3m. Borehole diameter = 146mm.

Drilling Tool Record

Drilling Tool Record Grid

1 record

DateTime	*From (m)*	*To (m)*	*Hole dia (mm)*	*Tool dia (mm)*	*Tool Type*	*Drill Tool Remarks*
09/05/2023, 17:00	5.15	7.40	146	109.5	PDC	

Casing Record

Casing Record Grid

1 record

DateTime	Base depth (m)	Internal diameter (mm)	Casing Record Remarks
09/05/2023, 17:00	6.00	178	

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no backfill [X]

Standing Time

Standing Time Grid

4 records

From	To	Standing Time Summary
09:30	10:15	Category: Dayworks - Other Duration: 00:45 Description: Mixing polymor
12:45	13:30	Category: Dayworks - Other Duration: 00:45 Description: Mixing polymor
14:15	15:15	Category: Dayworks - Other Duration: 01:00 Description: Running in casing
15:15	17:00	Category: Dayworks - Other Duration: 01:45 Description: Waiting for water then mixing polymor

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	7.4	Sam Carter	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
GS-PTS105

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
10/05/2023	07:30	7.4	10.4	Inspection pit	SSL-SN2240

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
	Sam Carter	Simon Pearson		Maciej Turkowski

Coring Data

Coring Data Grid

4 records

Top (m)	Base (m)	Drilling Info	Run time (min)	Flush	Notes
7.4	8.15	RC (Soil) Barrel: Geo-bor S Rec: 46.66666666666666667%	21	Water 90% (max return) Brown	Description: Gravel Box: 8 Liner used: Yes
8.15	8.9	RC (Soil) Barrel: Geo-bor S Rec: 46.66666666666666667%	31	Water 90% (max return) Brown	Description: Gravel Box: 9 Liner used: Yes
8.9	9.65	RC (Soil) Barrel: Geo-bor S Rec: 40%	20	Water 90% (max return) Brown	Description: Gravel Box: 10 Liner used: Yes
9.65	10.4	RC (Soil) Barrel: Geo-bor S Rec: 46.66666666666666667%	60	Water 90% (max return) Brown	Description: Gravel Box: 11 Liner used: Yes

Description of Strata

Stratums Grid

1 record

Top (m)	Base (m)	Description	Stratum Classifications	Stratum Thickness (m)
			Boundary: Solid	

7.4	10.4	Gravel		3.0

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Standing Water Levels

2 records

DateTime	*Standing Water Levels Summary*
10/05/2023, 08:30	Borehole depth = 7.4m. Casing depth = 6.0m. Water depth = 1.0m. Borehole diameter = 146mm.
10/05/2023, 17:00	Borehole depth = 10.4m. Casing depth = 7.5m. Water depth = 1.8m. Borehole diameter = 146mm.

Drilling Tool Record

Drilling Tool Record Grid

1 record

DateTime	*From (m)*	*To (m)*	*Hole dia (mm)*	*Tool dia (mm)*	*Tool Type*	*Drill Tool Remarks*
10/05/2023, 17:00	7.40	10.40	146	109.5	PDC	

Casing Record

Casing Record Grid

1 record

DateTime	*Base depth (m)*	*Internal diameter (mm)*	*Casing Record Remarks*

10/05/2023, 17:00	7.50	197	

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no backfill [X]

Standing Time

Standing Time Grid

2 records

From	*To*	*Standing Time Summary*
09:00	10:20	Category: Dayworks - Other Duration: 01:20 Description: Get geobore back down to bottom of the hole.
12:00	13:00	Category: Dayworks - Other Duration: 01:00 Description: Pull geobore and advance casing.

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	10.4	Sam Carter	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Borehole ID
GS-PTS105

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
11/05/2023	07:30	10.4	14.9	Inspection pit	SSL-SN2240

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
	Sam Carter	Tom Brookes	Michael Pine	Maciej Turkowski

Coring Data

Coring Data Grid

4 records

Top (m)	Base (m)	Drilling Info	Run time (min)	Flush	Notes
10.40	11.15	RC (Rock) Barrel: Geo-bor S Rec: 0.07333333333333333%	6	Water 100% (max return) Brown	Box: 12 Liner used: Yes
11.15	11.90	RC (Rock) Barrel: Geo-bor S Rec: 0.1%	7	Water 100% (max return) Brown	Box: 13 Liner used: Yes
11.90	13.40	RC (Rock) Barrel: Geo-bor S Rec: 0.1%	11	Water 100% (max return) Brown	Box: 14 Liner used: Yes
13.40	14.90	RC (Rock) Barrel: Geo-bor S Rec: 0.1%	12	Water 100% (max return) Brown	Box: 15 Liner used: Yes

Description of Strata

Stratums Grid

1 record

Top (m)	Base (m)	Description	Stratum Classifications	Stratum Thickness (m)
			Boundary: Solid	

10.4	14.9	Gravel onto sandstone @10.65		4.5

Samples and SPTs

Confirm no samples data [X]

Standing Water Levels

Standing Water Levels

1 record

DateTime	*Standing Water Levels Summary*
11/05/2023, 08:15	Borehole depth = 10.4m. Casing depth = 7.5m. Water depth = 7.0m. Borehole diameter = 146mm.

Drilling Tool Record

Drilling Tool Record Grid

1 record

DateTime	*From (m)*	*To (m)*	*Hole dia (mm)*	*Tool dia (mm)*	*Tool Type*	*Drill Tool Remarks*
11/05/2023, 17:00	10.40	14.90	146	109.5	PDC	

Casing Record

Casing Record Grid

1 record

DateTime	*Base depth (m)*	*Internal diameter (mm)*	*Casing Record Remarks*
11/05/2023, 17:00	9.00	197	

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Pipes setup data

1 record

Ref	Desc	Install Summary (1)	RZ Summary	Install Summary (2)	Install Summary (3)
1	NA	Type: Gas monitoring point Desc: NA	RZ Top: 1.5m. RZ Base: 9.5m.	Date: 11 May 2023. Diameter: 50mm. Material: HDPE. Length: 9.5m.	Gas tap: Yes. Cover: UPSTANDING COVER. Installer: Thomas Brookes. Geowrap: Yes.

Pipe construction

2 records

Pipe ref	Top (m)	Base (m)	Pipe type	Pipe Summary	Length (m)
1	0	1.5	PLAIN	Type: PLAIN Diameter: 50mm	1.5
1	1.5	9.5	SLOTTED	Type: SLOTTED Diameter: 50mm	8.0

Backfill Grid

4 records

Section top depth (m)	Section base depth (m)	Section fill	Date	By	Section length (m)
0	0.5	CONCRETE	11/05/2023	Thomas Brookes thomas.brookes@soils.co.uk	0.5
0.5	1	BENTONITE SEAL	11/05/2023	Thomas Brookes thomas.brookes@soils.co.uk	0.5
1	10	GRAVEL FILTER	11/05/2023	Thomas Brookes thomas.brookes@soils.co.uk	9.0

10	14.9	BENTONITE SEAL	11/05/2023	Thomas Brookes thomas.brookes@soils.co.uk	4.9

Standing Time

Standing Time Grid

2 records

From	*To*	*Standing Time Summary*
09:00	10:00	Category: Dayworks - Running in Additional Casing Duration: 01:00 Description: Advance UW to 9 metres.
10:00	11:30	Category: Dayworks - Other Duration: 01:30 Description: Get geobore back to the bottom of the hole.

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	14.9	Sam Carter	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID	GS PTS 107	**Rig Type**	Barreta T44		
		Rig ID			
Contract No	765633	**Location**	A66	**Hammer ID**	
Client Name	RSK	**Driller**	lindon paisley	**Assistant**	Sean wakenshaw
Day	Monday	**Date**	20/03/2023	**Start Time**	08:00
				Finish Time	17:30
Engineer	Ronan B	**Rig Move**	**From**	**To**	**Sheet**

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Standard Penetration Tests: Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
D	1						Reddish brown sandy clay	7														
ESX3	1						Reddish brown sandy clay	103														
D	1						Reddish brown sandy clay	204														

Standing Water Levels	AM	PM
Time		
BH Depth (m)		
Casing Depth (m)		
Water level (M)		

Drilling Tool Record From (m)	To(m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Water Strikes	AM	PM
Time		
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F

Pipe No	Pipe Type & Diameter	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Client Signature		**Company**	
Borehole Complete	YES	NO	**Date**

Record Hourly Rated Work / Standing & Delays

Time From	Time To	Description

Notes: Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water

Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

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CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID	GS PTS 107	**Rig Type**	Barreta T44		
		Rig ID			
Contract No	765633	**Location**	A66	**Hammer ID**	
Client Name	RSK	**Driller**	lindon paisley	**Assistant**	Sean wakenshaw
Engineer	Ronan B	**Rig Move**	**From**	**To**	**Sheet** 1
Day	Monday	**Date**	20/03/2023	**Start Time**	08:00
Finish Time	17:30				

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
D	0.05						Top soil	1														
B	0.2	0.4					Top soil	2														
D	0.05						brown sandy clay	201														
D	0.3						brown sandy clay	3														
Esx3	0.3						brown sandy clay	101														
B	0.4	0.6					brown sandy clay	4														
D	0.3						brown sandy clay	202														
D	0.5						brown sandy clay	5														
Esx3	0.5						brown sandy clay	102														
D	0.5						brown sandy clay	203														
B	0.9	1.1					Reddish brown sandy clay	6														

Standard Penetration Tests

Standing Water Levels	AM	PM
Time		
BH Depth (m)		
Casing Depth (m)		
Water level (M)		

Drilling Tool Record From (m)	To(m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Water Strikes	AM	PM
Time		
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F

Pipe No	Pipe Type & Diameter	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Client Signature		**Company**	
Borehole Complete	YES	NO	**Date**

Record Hourly Rated Work / Standing & Delays

Time From	Time To	Description
08:00	14:35	Morning brief & wait for tractor to move us to BH107
14:35	15:45	Move rig with tractor & trailer to BH107
16:10	17:30	Dig pit to 1.20m

Notes Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water

Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

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CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID	GS PTS 107	**Rig Type**	Barreta T44		
		Rig ID			
Contract No	765633	**Location**	A66	**Hammer ID**	
Client Name	RSK	**Driller**	lindon paisley	**Assistant**	Sean wakenshaw
Day	Tuesday	**Date**	21/03/2023	**Start Time**	08:00
				Finish Time	17:00
Engineer	Ronan B	**Rig Move**	**From**	**To**	**Sheet** 2

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
								301	SPT	1.2				n/a	n/a	2	3	3	3	3	1	
DS	1.2	2					Red sandy clay	R1				600		n/a	n/a							
								302	SPT	2				n/a	1.9	2	1	2	3	4	7	
DS	2	3					Red sandy clay	R2				1000		n/a	1.7							
								303	SPT	3				n/a	1.7	10	13	17	33			
DS	3	3.3					Red sand	R3						n/a	2.2							
G'bor	3.3	4	2	red	90%	water	Gravels	R4				300			2.2							
								304	SPT	4				4	2.2	10	15(65	50(50				
G'bor	4	4.5	2	Red	90%	water	Gravels/red sandstone	R5				200			2.2							
G'bor	4.5	5	2	Red	90%	water	Red sandstone	R6				300			2.2							
G'bor	5	5.5	2	red	80%	water	Red sandstone	R7				400			2.2							

Standard Penetration Tests

Standing Water Levels	AM	PM
Time		
BH Depth (m)		
Casing Depth (m)		
Water level (M)		

Drilling Tool Record From (m)	To(m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)
6"	4.5

Water Strikes	AM	PM
Time		
Strike Depth	09:30	
Casing Depth (m)	n/a	
5 Mins	1.95	
10 Mins	1.95	
15 Mins	1.9	
20 Mins	1.9	
Depth Sealed	1.9	

Backfill & Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F

Pipe No	Pipe Type & Diameter	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record Hourly Rated Work / Standing & Delays

Time From	Time To	Description
08:00	09:00	Morning brief, load van with core liner then drive to BH
11:15	11:45	Wait for tractor to arrive before filling bowser up
14:45	15:15	Wait for tractor to arrive before filling bowser up

Client Signature		**Company**	
Borehole Complete	YES	NO	**Date**

Notes Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water
Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

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CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID	GS PTS 107	Rig Type	Barreta T44		
		Rig ID			
Contract No	765633	Location	A66	Hammer ID	
Client Name	RSK	Driller	lindon paisley	Assistant	Sean wakenshaw
Engineer	Ronan B	Rig Move	From	To	Sheet 3
Day	Tuesday	Date	21/03/2023	Start Time	08:00
Finish Time	17:30				

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Standard Penetration Tests: Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
G'bor	5.5	6	2	Red	70%	water	Red sandstone	R8				400			2.2							
G'bor	6	6.5	2	Red	70%	water	Red sandstone	R9				500			2.2							
G'bor	6.5	7.5	2	Red	60%	water	Red sandstone	R10				850			2.5							
G'bor	7.5	8	2	Red	60%	water	Red sandstone	R11				500			2.5							
G'bor	8	9	5	Red	60%	water	Red sandstone	R12				950			2.5							
G'bor	9	10.5	5	Red	60%	water	Red sandstone	R13				1500			2.5							
G'bor	10.5	12	5	Red	60%	water	Red sandstone	R14				1500			2.5							

Standing Water Levels

	AM	PM
Time		
BH Depth (m)		
Casing Depth (m)		
Water level (M)		

Drilling Tool Record

From (m)	To(m)	Diameter (mm)	Type

Casing Record

Diameter (mm)	Base (m)
6"	4.5
G'bor	12

Record Hourly Rated Work / Standing & Delays

Time From	Time To	Description

Water Strikes

Time	AM	PM
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F

Pipe No	Pipe Type & Diameter	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Client Signature

Company

Borehole Complete: YES NO

Date

Notes: Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water

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ROTARY DRILLING - DAILY SITE REPORT

Borehole ID	GS PTS 107	**Rig Type**	Barreta T44		
		Rig ID			
Contract No	765633	**Location**	A66	**Hammer ID**	
Client Name	RSK	**Driller**	lindon paisley	**Assistant**	Sean wakenshaw
Engineer	Ronan B	**Rig Move**	**From**	**To**	**Sheet** 4
Day	Wednesday	**Date**	22/03/2022	**Start Time**	08:00
Finish Time	17:00				

Drill	Depth		Run	Flush			Drillers Description of Strata	Samples & Tests						Metres Depth		Seating Drive		Main Test Drive				N
Type	From (m)	To (m)	Time	Colour	Return %	Type		No	Type	From (m)	To (m)	Rec (mm)	U Blow	Casing	Water	75mm	75mm	75mm	75mm	75mm	75mm	
G'bor	12	13.5	5	red	80%	Water	Red sandstone	R15				1500			6							
G'bor	13.5	15	5	red	80%	Water	Red sandstone	R16				1500			5							
G'bor	15	16.5	5	red	80%	Water	Red sandstone	R17				1400			5							
G'bor	16.5	18	5	red	80%	Water	Red sandstone	R18				1500			5							
G'bor	18	19.5	5	red	80%	Water	Red sandstone	R19				1300			5							

Standard Penetration Tests

Standing Water Levels	AM	PM
Time	09:30	
BH Depth (m)	12	
Casing Depth (m)	11	
Water level (M)	6	

Drilling Tool Record			
From (m)	To(m)	Diameter (mm)	Type

Casing Record	
Diameter (mm)	Base (m)
6"	4.5
G'bor	19.5

Water Strikes	AM	PM
Time		
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F
Pipe No	**Pipe Type & Diameter**	**From (m)**	**To (m)**

Backfill Materials	From (m)	To (m)
Bentonite	GL	19.5

Client Signature		**Company**	
Borehole Complete	YES	NO	**Date**

Record Hourly Rated Work / Standing & Delays

Time From	Time To	Description
08:00	09:35	Morning brief & wait for gully sucker to empty tanks & bowser to be filled before proceeding with drilling
13:00	17:00	Load trailer & tidy up drilling area & wait for SSL instrcutions for next BH

Notes Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water

Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

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CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID		Rig Type	Barreta T44		
		Rig ID			
Contract No	765633	Location	A66	Hammer ID	
Client Name	RSK	Driller	lindon paisley	Assistant	Sean wakenshaw
Day	Thursday	Date	23/03/2023	Start Time	08:00
Finish Time	17:00	Engineer	Ronan B	Rig Move	From / To / Sheet

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N

Standard Penetration Tests

Standing Water Levels	AM	PM
Time		
BH Depth (m)		
Casing Depth (m)		
Water level (M)		

Drilling Tool Record From (m)	To(m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Water Strikes	AM	PM
Time		
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F

Pipe No	Pipe Type & Diameter	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Client Signature		Company
Borehole Complete	YES	NO
		Date

Record Hourly Rated Work / Standing & Delays

Time From	Time To	Description
08:00	17:00	Morning brief, wait for a position from SSL, set up a compound. Second & third man on a cable rig

Notes: Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water

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CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID		Rig Type	Barreta T44		
		Rig ID			
Contract No	765616	Location	A66	Hammer ID	
Client Name	RSK	Driller	lindon paisley	Assistant	Sean wakenshaw
Day	Tuesday	Date	28.2.23	Start Time	08:00
Finish Time	18:00	Engineer		Rig Move	From / To / Sheet

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N

Standard Penetration Tests

Standing Water Levels	AM	PM
Time		
BH Depth (m)		
Casing Depth (m)		
Water level (M)		

Drilling Tool Record From (m)	To(m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Water Strikes	AM	PM
Time		
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details			
Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F
Pipe No	Pipe Type & Diameter	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record Hourly Rated Work / Standing & Delays Time From	Time To	Description
08:00	18:00	Site induction & await position

Client Signature		Company	
Borehole Complete	YES	NO	Date

Notes: Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water
Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

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CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID		Rig Type	Barreta T44		
		Rig ID			
Contract No	765616	Location	A66	Hammer ID	
Client Name	RSK	Driller	lindon paisley	Assistant	Sean wakenshaw
Engineer		Rig Move	From	To	Sheet
Day	Wednesday	Date	01/03/2023	Start Time	08:00
Finish Time	18:00				

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Standard Penetration Tests: Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N

Standing Water Levels	AM	PM
Time		
BH Depth (m)		
Casing Depth (m)		
Water level (M)		

Drilling Tool Record From (m)	To(m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Record Hourly Rated Work / Standing & Delays: Time From	To	Description
08:00	18:00	Await position

Water Strikes	AM	PM
Time		
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details			
Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F
Pipe No	Pipe Type & Diameter	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Client Signature		Company	
Borehole Complete	YES	NO	Date

Notes: Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water
Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

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CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID		Rig Type	Barreta T44		
		Rig ID			
Contract No	765616	Location	A66	Hammer ID	
Client Name	RSK	Driller	lindon paisley	Assistant	Sean wakenshaw
Day	Thursday	Date	02/03/2023	Start Time	08:00
Finish Time	18:00	Engineer		Rig Move	From / To / Sheet

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N

Standard Penetration Tests

Standing Water Levels	AM	PM
Time		
BH Depth (m)		
Casing Depth (m)		
Water level (M)		

Drilling Tool Record From (m)	To(m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Water Strikes	AM	PM
Time		
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F

Pipe No	Pipe Type & Diameter	From (m)	To (m)

Company	Backfill Materials	From (m)	To (m)

Client Signature

Borehole Complete: YES / NO

Date

Record Hourly Rated Work / Standing & Delays

Time From	Time To	Description
08:00	18:00	Await position

Notes: Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water

Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

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ROTARY DRILLING - DAILY SITE REPORT

Borehole ID		Rig Type	Barreta T44		
		Rig ID			
Contract No	765616	Location	A66	Hammer ID	
Client Name	RSK	Driller	lindon paisley	Assistant	Sean wakenshaw
Day	Friday	Date	03/03/2023	Start Time	08:00
Finish Time	15:00	Engineer		Rig Move	From / To / Sheet

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N

Standard Penetration Tests

Standing Water Levels	AM	PM
Time		
BH Depth (m)		
Casing Depth (m)		
Water level (M)		

Drilling Tool Record From (m)	To(m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Water Strikes	AM	PM
Time		
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details			
Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F
Pipe No	Pipe Type & Diameter	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record Hourly Rated Work / Standing & Delays Time From	Time To	Description
08:00	15:00	Await position

Client Signature		Company	
Borehole Complete	YES	NO	Date

Notes: Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water
Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

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CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID		Rig Type	Barreta T44		
		Rig ID			
Contract No	765616	Location	A66	Hammer ID	
Client Name	RSK	Driller	lindon paisley	Assistant	Sean wakenshaw
Day	Monday	Date	06/03/2023	Start Time	08:00
Finish Time	18:00	Engineer		Rig Move	From / To / Sheet

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N

Standard Penetration Tests

Standing Water Levels	AM	PM
Time		
BH Depth (m)		
Casing Depth (m)		
Water level (M)		

Drilling Tool Record From (m)	To(m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Water Strikes	AM	PM
Time		
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F

Pipe No	Pipe Type & Diameter	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Client Signature		Company
Borehole Complete	YES	NO
		Date

Record Hourly Rated Work / Standing & Delays

Time From	Time To	Description
08:00	18:00	Wait for position

Notes: Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water

Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

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CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID	G5 PTS 108	Rig Type	Barreta T44
		Rig ID	
Contract No	765633	Hammer ID	
Client Name	RSK	Engineer	Ronan Barker
Day	Tuesday	Date	07/03/2023
Location	A66	Driller	lindon paisley
Assistant	Sean wakenshaw	Start Time	08:00
Finish Time	18:00	Rig Move	From / To
Sheet	1		

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Sampler & Tests No	Sampler & Tests Type	From (m)	To (m)	Box (mm)	U Blow	Standard Penetration Tests: Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
D	0.05						Top soil		1													
B	0.2	0.4					brown sand with cobbles		2													
D	0.3						brown sand with cobbles		3													
B	0.4	0.6					brown sand with cobbles		4													
ESx3	0.3						brown sand with cobbles		101													
D	0.5						brown sand with cobbles		5													
ESx3	0.5						brown sand with cobbles		102													
B	0.9						brown sand with cobbles		6													
D	1						Brownish sandy clay		7													
ESx3	1						Brownish sandy clay		103													

Standing Water Levels	AM	PM
Time		
BH Depth (m)		
Casing Depth (m)		
Water level (M)		

Drilling Tool Record	From (m)	To (m)	Diameter (mm)	Type

Casing Record	Diameter (mm)	Base (m)

Water Strikes	AM	PM
Time		
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details			
Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F
Pipe No	Pipe Type & Diameter	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record Hourly Rated Work / Standing & Delays		
Time From	Time To	Description
08:00	13:30	Wait for position
13:30	14:30	Mob rig & trailer to farm
14:30	15:00	Track rig & trailer to BH from farm
15:00	15:45	Wait for compound to be built
16:00	16:30	Dig pit to 1.20m
16:30	18:00	Wait for sunbelt to come out to move track mats due to us having to move hole due to obstruction

Client Signature		Company
Borehole Complete	YES	NO
		Date

Notes: Drill Type: RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type: A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water. Sample Types: Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

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CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID	GS PTS 108A	**Rig Type**	Barreta T44		
		Rig ID			
Contract No	765616	**Location**	A66	**Hammer ID**	
Client Name	RSK	**Driller**	lindon paisley	**Assistant**	Sean wakenshaw
Engineer	Ronan	**Rig Move**	**From**	**To**	**Sheet** 2
Day	Wednesday	**Date**	08/03/2023	**Start Time**	08:00
Finish Time	18:00				

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
DS	1.2	2					Brownish reddish sandy clay	R1				700										
									SPT	2				n/a	n/a	2	2	3	3	3	4	
DS	2	3					Brownish reddish sandy clay	R2				900										
									SPT	3				n/a	n/a	2	1	4	3	5	7	
DS	3	4					Brownish reddish sandy clay	R3				1000										
									SPT	4				n/a	n/a	3	7	7	10	9	9	
DS	4	4.7					Brownish reddish sandy clay	R4				700										
									SPT	4.7				n/a	n/a	21	4(20	25	25(71			

Standard Penetration Tests

Standing Water Levels	AM	PM
Time		
BH Depth (m)		
Casing Depth (m)		
Water level (M)		

Drilling Tool Record From (m)	To(m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)

Water Strikes	AM	PM
Time		
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F

Pipe No	Pipe Type & Diameter	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record Hourly Rated Work / Standing & Delays

Time From	Time To	Description
16:20	17:10	Wait for decission if we can start coring as not in rock but DS and SPT refused

Client Signature		**Company**	
Borehole Complete	YES	NO	**Date**

Notes Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water

Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

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CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID	GS PTS 108A	**Rig Type**	Barreta T44		
		Rig ID			
Contract No	765616	**Location**	A66	**Hammer ID**	
Client Name	RSK	**Driller**	lindon paisley	**Assistant**	Sean wakenshaw
Engineer	Ronan	**Rig Move**	**From**	**To**	**Sheet** 1
Day	Wednesday	**Date**	08/03/2023	**Start Time**	08:00
Finish Time	18:00				

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Standard Penetration Tests: Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
D	0.05						Top soil	1														
B	0.2	0.4					Brown sand with cobbles	2														
D	0.3						Brown sand with cobbles	3														
B	0.4	0.6					Brown sand with cobbles	4														
ESx3	0.3						Brown sand with cobbles	101														
D	0.5						Brown sand with cobbles	5														
ESx3	0.5						Brown sand with cobbles	102														
B	0.9						Brown sand with cobbles	6														
D	1						Brownish sandy clay	7														
ESx3	1						Brownish sandy clay	103														
									SPT	1.2				n/a	n/a	3	2	2	2	4	3	

Standing Water Levels

	AM	PM
Time		
BH Depth (m)		
Casing Depth (m)		
Water level (M)		

Drilling Tool Record

From (m)	To(m)	Diameter (mm)	Type

Casing Record

Diameter (mm)	Base (m)

Water Strikes

Time	AM	PM
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F

Pipe No	Pipe Type & Diameter	From (m)	To (m)

Company	Backfill Materials	From (m)	To (m)

Client Signature

Borehole Complete YES NO

Date

Record Hourly Rated Work / Standing & Delays

Time From	Time To	Description
08:00	10:15	Wait for sunbelt to move bog boards around before digging pit
10:15	11:00	Dig pit to 1.20m
11:00	12:30	Wait for further GPR before breaking ground
		Set rig up for water flush

Notes Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water

Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

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CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID	GS PTS 108A	**Rig Type**	Barreta T44		
		Rig ID			
Contract No	765616	**Location**	A66	**Hammer ID**	
Client Name	RSK	**Driller**	lindon paisley	**Assistant**	Sean wakenshaw
Day	Thursday	**Date**	09/03/2023	**Start Time**	08:00
				Finish Time	18:00
Engineer	Ronan	**Rig Move**	**From**	**To**	**Sheet** 3

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Standard Penetration Tests: Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	75mm	75mm	N
G'bor	4.7	5.5	2		100%	Water	Gravels	R5				500										
G'bor	5.5	6	2		100%	Water		R6				n/r										
									SPT	6				6	3	2	18	40	10(5			
G'bor	6	6.5	2		90%	Water	Red Sandstone	R7				300			3							
G'bor	6.5	7	2		90%	Water	Red Sandstone	R8				500			3							
G'bor	7	8.5	2		80%	Water	Red Sandstone	R9				1200			3							
G'bor	8.5	9.5	2		80%	Water	Red Sandstone	R10				1000			3.5							
G'bor	9.5	11	2		70%	Water	Red Sandstone	R11				1500			3.5							
G'bor	11	12.5	2		60%	water	Red Sandstone	R12				1450			3.5							
G'bor	12.5	14	2		50%	Water	Red Sandstone	R13				1500			3.5							
G'bor	14	15.5	2		50%	Water	Red Sandstone	R14				1500			3.5							

Standing Water Levels

	AM	PM
Time		
BH Depth (m)		
Casing Depth (m)		
Water level (M)		

Drilling Tool Record

From (m)	To(m)	Diameter (mm)	Type

Casing Record

Diameter (mm)	Base (m)
6"	6
G'bor	15.5

Water Strikes

Time	AM	PM
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F

Pipe No	Pipe Type & Diameter	From (m)	To (m)

Company	Backfill Materials	From (m)	To (m)

Client Signature

Borehole Complete YES NO

Date

Record Hourly Rated Work / Standing & Delays

Time From	Time To	Description
08:00	09:00	Morinng briefing & hitch bowser on from compound and take to BH
10:15	12:15	Wait for tractor to fill bowser up
15:40	16:40	Wait for tractor to fill bowser up & wait for dumpy bag to arrive to empty tanks before proceeding with drilling

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Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

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ROTARY DRILLING - DAILY SITE REPORT

Borehole ID	Gs PTS 108A	Rig Type	Barreta T44		
		Rig ID			
Contract No	765616	Location	A66	Hammer ID	
Client Name	RSK	Driller	lindon paisley	Assistant	Sean wakenshaw
Day	Friday	Date	10/03/2023	Start Time	08:00
Finish Time	18:00	Engineer	Ronan B	Rig Move	From / To
Sheet	4				

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Standard Penetration Tests: Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
G'bor	15.5	17	5	red	50%	Water	Red sandstone					800										

Standing Water Levels	AM	PM
Time		
BH Depth (m)		
Casing Depth (m)		
Water level (M)		

Drilling Tool Record From (m)	To(m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)
6"	6
G'bor	17

Water Strikes	AM	PM
Time		
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details			
Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F
Pipe No	Pipe Type & Diameter	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Client Signature		Company
Borehole Complete	YES	NO
		Date

Record Hourly Rated Work / Standing & Delays: Time From	Time To	Description
08:00	08:15	Morning brief
08:15	09:15	Wait for jetwash bowser to be filled in compound & tow it to BH
12:30	15:00	Free up casing from BH & pull out

Notes: Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water
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ROTARY DRILLING - DAILY SITE REPORT

Borehole ID	GS PTS 108A	**Rig Type**	Barreta T44		
		Rig ID			
Contract No	765616	**Location**	A66	**Hammer ID**	
Client Name	RSK	**Driller**	lindon paisley	**Assistant**	Sean wakenshaw
Engineer	Ronan	**Rig Move**	**From**	**To**	**Sheet** 5
Day	Monday	**Date**	13/03/2023	**Start Time**	08:00
Finish Time	18:00				

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
G'bor	17	18	2	red	80%	Water	Red sandstone					1000			9.4							
G'bor	18	19	2	red	80%	Water	Red sandstone					1000			2.5							
G'bor	19	20.5	5	red	80%	Water	Red sandstone					1500			2.5							

Standard Penetration Tests

Standing Water Levels	AM	PM
Time		
BH Depth (m)		
Casing Depth (m)		
Water level (M)		

Drilling Tool Record From (m)	To(m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)
6"	8.7
G'bor	20.5

Water Strikes	AM	PM
Time		
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F

Pipe No	Pipe Type & Diameter	From (m)	To (m)

Backfill Materials	From (m)	To (m)
Bentonite	GL	20.5

Client Signature		**Company**	
Borehole Complete	YES	NO	**Date**

Record Hourly Rated Work / Standing & Delays

Time From	Time To	Description
08:00	08:45	Morning brief & drive to BH
11:00	12:50	Wait for bentonite to be brought out before we pulled out and backfilled hole
14:00	18:00	Track rig, trailer & bowsers round to next position & wait for laborours to get more fence before making compound & wait for permit to dig before breaking ground

Notes Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water

Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

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CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID	GS PTS 109	**Rig Type**	Barreta T44		
		Rig ID			
Contract No	765633	**Location**	A66	**Hammer ID**	
Client Name	RSK	**Driller**	lindon paisley	**Assistant**	Sean wakenshaw
Engineer	Ronan B	**Rig Move**	**From**	**To**	**Sheet** 1
Day	Tuesday	**Date**	14/03/2023	**Start Time**	08:00
Finish Time	18:00				

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Standard Penetration Tests: Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
D1	0.05						Top soil															
B2	0.3	0.45					Dark brown clayey sand															
D3	0.3						Dark brown clayey sand															
ESx3	0.3						Dark brown clayey sand	101														
B4	0.5	0.7					Orangish brown clayey sand															
D5	0.5						Orangish brown clayey sand															
ESx3	0.5						Orangish brown clayey sand	102														
B6	1	1.15					Orangish brown clayey sand															
D7	1						Orangish brown clayey sand															
ESx3	1						Orangish brown clayey sand	103														
									SPT	1.2				n/a	n/a	4	4	5	4	5	6	

Standing Water Levels

	AM	PM
Time		
BH Depth (m)		
Casing Depth (m)		
Water level (M)		

Drilling Tool Record

From (m)	To(m)	Diameter (mm)	Type

Casing Record

Diameter (mm)	Base (m)

Water Strikes

Time	AM	PM
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F

Pipe No	Pipe Type & Diameter	From (m)	To (m)

Backfill Materials	From (m)	To (m)

Record Hourly Rated Work / Standing & Delays

Time From	Time To	Description
08:00	10:30	Wait for permit for BH
10:30	11:00	Dig pit to 1.20m
11:00	11:15	Wait for engineer to take hand vane test in BH

Client Signature		**Company**	
Borehole Complete	YES	NO	**Date**

Notes Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water

Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

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CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID	GS PTS 109	**Rig Type**	Barreta T44		
		Rig ID			
Contract No	765633	**Location**	A66	**Hammer ID**	
Client Name	RSK	**Driller**	lindon paisley	**Assistant**	Sean wakenshaw
Day	Tuesday	**Date**	14/03/2023	**Start Time**	08:00
				Finish Time	18:00
Engineer	Ronan B	**Rig Move**	**From**	**To**	**Sheet** 2

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Standard Penetration Tests: Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
DS	1.2	2					Orangish brown clayey sand	R1				700		n/a								
								8	SPT	2				n/a	1.7	1	1	2	2	3	2	
DS	2	3					Orangish brown clayey sand	R2				1000		n/a								
								9	SPT	3				n/a	1.7	4	9	11	13	22	4(5	
G'bor	3	4	2	red	80%	water	Gravels/Red sandstone	R3				300										
G'bor	4	4.5	2	red	80%	water	Red sandstone					200										
G'bor	4.5	5	2	red	80%	water	Red sandstone					200										
G'bor	5	5.5	2	red	80%	water	Red sandstone					N/R										
									SPT	5.5				5.5	1	5	20(60	50(66				

Standing Water Levels

	AM	PM
Time		
BH Depth (m)		
Casing Depth (m)		
Water level (M)		

Drilling Tool Record

From (m)	To(m)	Diameter (mm)	Type

Casing Record

Diameter (mm)	Base (m)
6"	4.5
G'bor	5.5

Record Hourly Rated Work / Standing & Delays

Time From	Time To	Description
12:40	13:00	Wait to get comformation before putting G'bor in
15:00	15:30	Wait for tractor to top bowser up with water

Water Strikes

Time	AM	PM
Strike Depth	11:40	
Casing Depth (m)	n/a	
5 Mins	1.9	
10 Mins	1.8	
15 Mins	1.75	
20 Mins	1.7	
Depth Sealed	1.7	

Backfill & Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F
Pipe No	**Pipe Type & Diameter**	**From (m)**	**To (m)**

Backfill Materials	From (m)	To (m)

Client Signature

Company

Borehole Complete YES NO

Date

Notes Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water

Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

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CLAY DRILLING LIMITED
ROTARY DRILLING - DAILY SITE REPORT

Borehole ID	GS PTS 109	Rig Type	Barreta T44		
		Rig ID			
Contract No	765633	Location	A66	Hammer ID	
Client Name	RSK	Driller	lindon paisley	Assistant	Sean wakenshaw
Day	Wednesday	Date	15/03/2023	Start Time	08:00
				Finish Time	17:00
Engineer	Ronan B	Rig Move	From	To	Sheet 3

Drill Type	Depth From (m)	Depth To (m)	Run Time	Flush Colour	Flush Return %	Flush Type	Drillers Description of Strata	Samples & Tests No	Samples & Tests Type	From (m)	To (m)	Rec (mm)	U Blow	Standard Penetration Tests: Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
G'bor	5.5	6	2	red	80%	water	Red sandstone	R7				300			5							
G'bor	6	6.5	2	red	80%	water	Red sandstone	R8				400			3							
G'bor	6.5	7	2	red	80%	water	Red sandstone	R9				500			2.5							
G'bor	7	7.5	2	red	80%	water	Red sandstone	R10				500			2							
G'bor	7.5	8.5	2	red	80%	water	Red sandstone	R11				900			2							
G'bor	8.5	9	2	red	80%	water	Red sandstone	R12				500			2							
G'bor	9	10	2	red	80%	water	Red sandstone	R13				900			2							

Standing Water Levels	AM	PM
Time		
BH Depth (m)		
Casing Depth (m)		
Water level (M)		

Drilling Tool Record From (m)	To(m)	Diameter (mm)	Type

Casing Record Diameter (mm)	Base (m)
6"	4.5
G'bor	10

Water Strikes	AM	PM
Time		
Strike Depth		
Casing Depth (m)		
5 Mins		
10 Mins		
15 Mins		
20 Mins		
Depth Sealed		

Backfill & Installation Details

Water Depth Before (m)	Water Depth After (m)	Cover Type	U / F

Pipe No	Pipe Type & Diameter	From (m)	To (m)
1	50mm plain	GL	4.5
1	50mm slotted	4.5	9

Backfill Materials	From (m)	To (m)
Raised cover & postcrete	GL	0.5
Bentonite	0.5	4.5
Gravel	4.5	9.5
Bentonite	9.5	10

Client Signature		Company
Borehole Complete	YES	NO
		Date

Record Hourly Rated Work / Standing & Delays

Time From	Time To	Description
08:00	09:00	Morning brief, sort liners out for G'bor & drive to BH
10:45	13:50	Wait for install pipe to get delivered to BH
15:15	17:00	Load trailer etc & await tractor to move us to next BH location

Notes: Drill Type; RC = Rotary Coring, RO = Rotary Open Hole, DS = Dynamic Sampling, FA = Flight Auger, SD = Sonic Drilling. Flush Type; A = Air, M = Mist, F = Foam, PM = Polymer Mud, W = Water
Sample Types; B=Bulk, D = Disturbed, U = Undisturbed, UT = UT100, W = Water

E-Mail : info@claydrilling.co.uk
Website : www.claydrilling.co.uk

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Window sample ID
WS-PTS101

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
11/05/2023	13:36	0.0	3.2	Inspection pit	SSL-SN384

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
DART384-2021	Benjamin Pine	Kyle Byram		Simon Groome

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Samples and SPTs

6 records

From	To	Ref	Type.	Test Details	Containers	Hazards	Description / Remarks
1.20	1.65	301	DSPT				
1.2	1.65	304	S	N-Value=13 Seating:1,1 = 2/150mm Test:3,3,4,3 = 13/300mm No Casing. Water=Dry			
2.00	2.45	302	DSPT				
2.00	2.45	305	S	N-Value=33 Seating:3,3 = 6/150mm Test:5,8,10,10 = 33/300mm No Casing. Water=Dry			
3.00	3.20	303	DSPT				
3.00	3.20	306	S	N-Value=50 Seating:8,11 = 19/150mm Test:50/50mm = 50/50mm No Casing. Water=Dry			

Windowless Sampling Run Data

Window sample run data grid

2 records

From (m)	*To (m)*	*Run#*	*Barrel ID (mm)*	*Rec (%)*	*Duration (mins)*	*Drillers description*
1.2	2	1	98	85		S
2	3	2	85	90		S

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Backfill Grid

2 records

Section top depth (m)	*Section base depth (m)*	*Section fill*	*Date*	*By*	*Section length (m)*
0	1	ARISINGS	11/05/2023	*No users*	1.0
1	3.2	BENTONITE CEMENT GROUT	11/05/2023	*No users*	2.2

Standing Time

Confirm no standing time [X]

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
15:48	3.2	Benjamin Pine	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765631	A66 NTP Scheme S01	National Highways

Exploratory Position

Window sample ID
WS-PTS105

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
04/05/2023	14:30	0.0	4.4	Inspection pit	SSL-SN384

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
	Michael O'Shea	Benjamin Chard		Iain Jordan

Description of Strata

Stratums Grid

2 records

From (m)	*To (m)*	*Description*	*Stratum Classifications*	*Stratum Thickness (m)*
0	0.4	ASHPHALT over compacted Type 1	Boundary: Solid	0.4
0.4	1.2	Reddish brown gravelly SAND	Boundary: Solid	0.8

Samples and SPTs

Samples and SPTs

4 records

From	*To*	*Ref*	*Type.*	*Test Details*	*Hazards*
1.2	1.65	305	S	N-Value=16 Seating:4,4 = 8/150mm Test:4,4,4,4 = 16/300mm No Casing. Water=Dry Remarks: Reddish brown gravelly CLAY	
2.0	2.45	306	S	N-Value=14 Seating:4,4 = 8/150mm Test:4,3,3,4 = 14/300mm No Casing. Water=Dry Remarks: Reddish brown gravelly CLAY	

3.0	3.45	307	S	N-Value=29 Seating:3,6 = 9/150mm Test:7,9,5,8 = 29/300mm No Casing. Water=Dry Remarks: Reddish brown gravelly CLAY	
4.0	4.40	308	S	N-Value=50 Seating:8,17/65mm = 25/140mm Test:15,12,12,11/35mm = 50/260mm No Casing. Water=Dry Remarks: Reddish brown gravelly CLAY	

Windowless Sampling Run Data

Window sample run data grid

3 records

From (m)	*To (m)*	*Run#*	*Barrel ID (mm)*	*Rec (%)*	*Duration (mins)*	*Drillers description*
1.2	2.0	1	85	85	03:00	Reddish brown gravelly CLAY
2.0	3.0	2	75	90	03:00	Reddish brown gravelly CLAY
3.0	4.0	3	65	85	05:00	Reddish brown gravelly CLAY

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no pipes installed [X]

Backfill Grid

3 records

Section top depth (m)	*Section base depth (m)*	*Section fill*	*Date*	*By*	*Section length (m)*
0	0.2	ASPHALT	05/05/2023	Michael O'Shea michael.oshea@soils.co.uk	0.2
0.2	1.0	ARISINGS	05/05/2023	Benjamin Chard bchard@soils.co.uk	0.8
1.00	4.40	BENTONITE SEAL	05/05/2023	*No users*	3.4

Standing Time

Confirm no standing time [X]

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:00	4.4	Michael O'Shea	

RSK Completion confirmation

No client completion confirmation possible	[X]
Review all data	[X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete?	( ) No	(X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Window sample ID
WS-PTS 107

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
05/04/2023	13:33	0.0	2.15	Inspection pit	SSL-SN0176

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
DART176-2021	Benjamin Pine	Kyle Byram		Finlay Price

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Samples and SPTs

3 records

From	*To*	*Ref*	*Type.*	*Test Details*	*Hazards*
1.2	1.65	1	S	N-Value=15 Seating:1,2 = 3/150mm Test:2,4,4,5 = 15/300mm No Casing. Water=Dry	
2	2.05	2	S	Seating:25 = 25/75mm No Casing. Water=Dry Remarks: Seating blow limit Reset to 0	
2.05	2.15	3	S	Seating:45,5/25mm = 50/100mm No Casing. Water=Dry Remarks: Refused at 2.15m	

Windowless Sampling Run Data

Window sample run data grid

1 record

From (m)	To (m)	Run#	Barrel ID (mm)	Rec (%)	Duration (mins)	Drillers description
1.2	2	1	98	85		S

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no pipes installed [X]

Backfill Grid

2 records

Section top depth (m)	Section base depth (m)	Section fill	Date	By	Section length (m)
0	1	ARISINGS	05/04/2023	*No users*	1.0
1	2.15	BENTONITE SEAL	05/04/2023	*No users*	1.15

Standing Time

Confirm no standing time [X]

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
14:35	2.15	Benjamin Pine	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Window sample ID
WS-PTS 107A

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
05/04/2023	14:50	0.0	4.3	Inspection pit	SSL-SN0176

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
DART176-2021	Benjamin Pine	Kyle Byram		Finlay Price

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Samples and SPTs

4 records

From	*To*	*Ref*	*Type.*	*Test Details*	*Hazards*
1.2	1.65	1	S	N-Value=11 Seating:1,0 = 1/150mm Test:1,2,4,4 = 11/300mm No Casing. Water=Dry	
2	2.45	2	S	N-Value=14 Seating:2,3 = 5/150mm Test:3,3,4,4 = 14/300mm No Casing. Water=Dry	
3	3.45	3	S	N-Value=35 Seating:5,9 = 14/150mm Test:8,8,9,10 = 35/300mm No Casing. Water=Dry	
4	4.30	4	S	N-Value=50 Seating:9,14 = 23/150mm Test:21,24,5 = 50/225mm No Casing. Water=Dry Remarks: Refused at 4.30m	

Windowless Sampling Run Data

Window sample run data grid

3 records

From (m)	*To (m)*	*Run#*	*Barrel ID (mm)*	*Rec (%)*	*Duration (mins)*	*Drillers description*
1.2	2	1	98	80		S
2	3	2	85	90		S
3	4	3	75	90		S

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Backfill Grid

2 records

Section top depth (m)	*Section base depth (m)*	*Section fill*	*Date*	*By*	*Section length (m)*
0	1	ARISINGS	05/04/2023	*No users*	1.0
1	4.30	BENTONITE SEAL	05/04/2023	*No users*	3.3

Standing Time

Confirm no standing time [X]

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
16:44	4.3	Benjamin Pine	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765632	A66 NTP Scheme S02	National Highways

Exploratory Position

Window sample ID
WS-PTS107B

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
26/04/2023	16:01	0.0	4.25	Inspection pit	SSL-SN0176

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
DART176-2021	Benjamin Pine	Kyle Byram		Simon Groome

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Samples and SPTs

4 records

From	*To*	*Ref*	*Type.*	*Test Details*	*Hazards*
1.2	1.65	1	S	N-Value=14 Seating:1,2 = 3/150mm Test:3,4,3,4 = 14/300mm No Casing. Water=Dry	
2	2.45	2	S	N-Value=13 Seating:1,2 = 3/150mm Test:3,2,4,4 = 13/300mm No Casing. Water=Dry	
3	3.45	3	S	N-Value=40 Seating:5,8 = 13/150mm Test:7,14,9,10 = 40/300mm No Casing. Water=Dry	
4	4.25	4	S	N-Value=50 Seating:8,11 = 19/150mm Test:25,25/45mm = 50/120mm No Casing. Water=Dry	

Windowless Sampling Run Data

Window sample run data grid

3 records

From (m)	*To (m)*	*Run#*	*Barrel ID (mm)*	*Rec (%)*	*Duration (mins)*	*Drillers description*
1.2	2	1	98	85		S
2	3	2	85	90		S
3	4	3	75	80		S

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Backfill Grid

2 records

Section top depth (m)	*Section base depth (m)*	*Section fill*	*Date*	*By*	*Section length (m)*
0	1	ARISINGS	26/04/2023	*No users*	1.0
1	4.25	BENTONITE CEMENT GROUT	26/04/2023	*No users*	3.25

Standing Time

Confirm no standing time [X]

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
17:35	4.25	Benjamin Pine	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Window sample ID
WS-PTS108

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
16/05/2023	09:45	0.0	4.0	Inspection pit	SSL-SN0176

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
DART176-2021	Benjamin Pine	Kyle Byram		Ronan Barker

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Samples and SPTs

8 records

From	To	Ref	Type.	Test Details	Containers	Hazards	Description / Remarks
1.2	1.65	301	S	N-Value=10 Seating:1,2 = 3/150mm Test:2,2,2,4 = 10/300mm No Casing. Water=Dry			
1.2	1.65	302	DSPT		Tubs = 1		
2	2.45	303	S	N-Value=19 Seating:3,4 = 7/150mm Test:4,4,5,6 = 19/300mm No Casing. Water=Dry			
2	2.45	304	DSPT				
3	3.45	305	S	N-Value=24 Seating:3,5 = 8/150mm Test:5,5,6,8 = 24/300mm No Casing. Water=Dry			
3	3.45	306	DSPT				
				N-Value=50 Seating:11,13 = 24/150mm			

3.75	4	307	S	Test:36,14/25mm = 50/100mm No Casing. Water=Dry			
3.75	4	308	DSPT				

Windowless Sampling Run Data

Window sample run data grid

3 records

From (m)	*To (m)*	*Run#*	*Barrel ID (mm)*	*Rec (%)*	*Duration (mins)*	*Drillers description*
1.2	2	1	98	90		S
2	3	2	85	80		S
3	4	3	75	90		S

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Backfill Grid

2 records

Section top depth (m)	*Section base depth (m)*	*Section fill*	*Date*	*By*	*Section length (m)*
0	0.5	ARISINGS	16/05/2023	*No users*	0.5
0.5	4	BENTONITE CEMENT GROUT	16/05/2023	*No users*	3.5

Standing Time

Confirm no standing time [X]

General Remarks

Confirm no preset or general remarks [X]

Photos

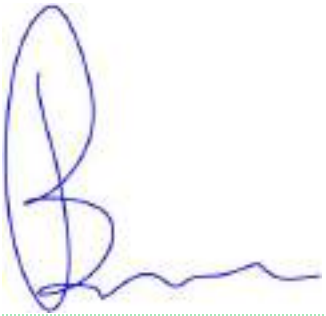
Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
12:06	4.0	Benjamin Pine	

RSK Completion confirmation



Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Window sample ID
WS-PTS110

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
12/05/2023	09:36	0.0	6.0	Inspection pit	SSL-SN0176

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
DART176-2021	Benjamin Pine	Kyle Byram		Ronan Barker

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Samples and SPTs

5 records

From	To	Ref	Type.	Test Details	Hazards
1.2	1.65	1	S	N-Value=29 Seating:4,6 = 10/150mm Test:6,8,8,7 = 29/300mm No Casing. Water=Dry	
2	2.45	2	S	N-Value=21 Seating:2,4 = 6/150mm Test:4,5,6,6 = 21/300mm No Casing. Water=Dry	
3	3.45	3	S	N-Value=22 Seating:4,4 = 8/150mm Test:6,5,5,6 = 22/300mm No Casing. Water=Dry	
4	4.45	4	S	N-Value=17 Seating:2,4 = 6/150mm Test:5,4,4,4 = 17/300mm No Casing. Water=Dry No recovery.	
				N-Value=39 Seating:4,10 = 14/150mm	

5	5.45	5	S	Test:9,9,11,10 = 39/300mm No Casing. Water=Dry	

Windowless Sampling Run Data

Window sample run data grid

5 records

From (m)	*To (m)*	*Run#*	*Barrel ID (mm)*	*Rec (%)*	*Duration (mins)*	*Drillers description*
1.2	2	1	85	90		S
2	3	2	75	100		S
3	4	3	65	85		S
4	5	4	65	80		S
5	6	5	55	70		S

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Backfill Grid

2 records

Section top depth (m)	*Section base depth (m)*	*Section fill*	*Date*	*By*	*Section length (m)*
0	1	ARISINGS	12/05/2023	*No users*	1.0
1	6	BENTONITE CEMENT GROUT	12/05/2023	*No users*	5.0

Standing Time

Confirm no standing time [X]

General Remarks

Confirm no preset or general remarks [X]

Photos

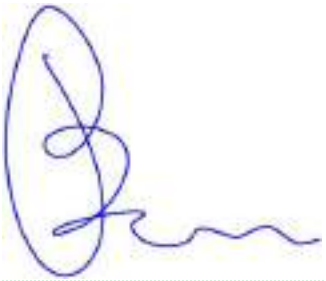
Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
11:49	6.0	Benjamin Pine	

RSK Completion confirmation



Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Window sample ID
WS-PTS113

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
05/04/2023	09:43	0.0	4.15	Inspection pit	SSL-SN0176

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
DART176-2021	Benjamin Pine	Kyle Byram		Finlay Price

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Samples and SPTs

4 records

From	*To*	*Ref*	*Type.*	*Test Details*	*Hazards*
1.2	1.65	1	S	N-Value=11 Seating:2,1 = 3/150mm Test:2,2,3,4 = 11/300mm No Casing. Water=Dry	
2	2.45	2	S	N-Value=16 Seating:4,3 = 7/150mm Test:3,4,4,5 = 16/300mm No Casing. Water=Dry No recovery.	
3	3.45	3	S	N-Value=18 Seating:1,2 = 3/150mm Test:4,5,4,5 = 18/300mm No Casing. Water=Dry	
3.80	4.15	4	S	N-Value=50 Seating:10,11 = 21/150mm Test:16,21,13 = 50/225mm No Casing. Water=Dry Remarks: Refused at 4.15m	

Windowless Sampling Run Data

Window sample run data grid

3 records

From (m)	*To (m)*	*Run#*	*Barrel ID (mm)*	*Rec (%)*	*Duration (mins)*	*Drillers description*
1.2	2	1	98	85		S
2	3	2	85	90		S
3	3.80	3	75	90		S Barrel refused at 3.80m

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no pipes installed [X]

Backfill Grid

2 records

Section top depth (m)	*Section base depth (m)*	*Section fill*	*Date*	*By*	*Section length (m)*
0	1	ARISINGS	05/04/2023	*No users*	1.0
1	4.15	BENTONITE SEAL	05/04/2023	*No users*	3.15

Standing Time

Confirm no standing time [X]

General Remarks

Confirm no preset or general

remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
11:50	4.15	Benjamin Pine	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Window sample ID
WS-PTS114

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
03/04/2023	09:06	0.0	4.45	Inspection pit	SSL-SN0176

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
DART176-2021	Benjamin Pine	Kyle Byram		Daniel Nartay

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Samples and SPTs

4 records

From	*To*	*Ref*	*Type.*	*Test Details*	*Hazards*
1.2	1.65	1	S	N-Value=16 Seating:1,3 = 4/150mm Test:3,4,4,5 = 16/300mm No Casing. Water=Dry	
2	2.45	2	S	N-Value=11 Seating:1,2 = 3/150mm Test:2,3,3,3 = 11/300mm No Casing. Water=Dry	
3	3.40	3	S	N-Value=51 Seating:4,10 = 14/150mm Test:15,18,18 = 51/225mm No Casing. Water=Dry No recovery. Remarks: Refused on blow count	
4	4.45	4	S	N-Value=41 Seating:5,8 = 13/150mm Test:11,10,10,10 = 41/300mm No Casing. Water=Dry	

Windowless Sampling Run Data

Window sample run data grid

3 records

From (m)	*To (m)*	*Run#*	*Barrel ID (mm)*	*Rec (%)*	*Duration (mins)*	*Drillers description*
1.2	2	1	98	90		S
2	3	2	85	85		S
3	4	3	75	90		S

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no pipes installed [X]

Backfill Grid

2 records

Section top depth (m)	*Section base depth (m)*	*Section fill*	*Date*	*By*	*Section length (m)*
0	1	ARISINGS	03/04/2023	*No users*	1.0
1	4.45	BENTONITE SEAL	03/04/2023	*No users*	3.45

Standing Time

Confirm no standing time [X]

General Remarks

General remarks

1 record

Note #	*General remark (free entry)*
1	Hole collapsed termination at 4.45

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
11:16	4.45	Benjamin Pine	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Window sample ID
WS-PTS116

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
03/04/2023	12:18	0.0	2.1	Inspection pit	SSL-SN0176

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
DART176-2021	Benjamin Pine	Kyle Byram		Daniel Nartay

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Samples and SPTs

3 records

From	*To*	*Ref*	*Type.*	*Test Details*	*Hazards*
1.2	1.65	1	S	N-Value=17 Seating:1,3 = 4/150mm Test:4,4,3,6 = 17/300mm No Casing. Water=Dry	
1.70	1.80	2	S	Seating:25 = 25/75mm No Casing. Water=Dry Remarks: Refused on seating blows reset and try again	
1.80	2.10	3	S	N-Value=50 Seating:14,10 = 24/150mm Test:24,26 = 50/150mm No Casing. Water=Dry Remarks: Refused at 2.10	

Windowless Sampling Run Data

Window sample run data grid

1 record

From (m)	To (m)	Run#	Barrel ID (mm)	Rec (%)	Duration (mins)	Drillers description
1.2	1.70	1	98	80		Barrel refused at 1.70m

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no pipes installed [X]

Backfill Grid

2 records

Section top depth (m)	Section base depth (m)	Section fill	Date	By	Section length (m)
0	1	ARISINGS	03/04/2023	*No users*	1.0
1	2.10	BENTONITE SEAL	03/04/2023	*No users*	1.1

Standing Time

Confirm no standing time [X]

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
12:37	2.1	Benjamin Pine	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Window sample ID
WS-PTS116A

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
03/05/2023	09:11	0.0	2.45	Inspection pit	SSL-SN384

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
	Michael O'Shea	Benjamin Chard		Iain Jordan

Description of Strata

Stratums Grid

3 records

From (m)	*To (m)*	*Description*	*Stratum Classifications*	*Stratum Thickness (m)*
0	0.35	brown gravelly SAND	Boundary: Solid	0.35
0.35	0.7	Brown clayey SAND with cobbles	Boundary: Solid	0.35
0.7	1.2	brown sandy CLAY	Boundary: Solid	0.5

Samples and SPTs

Samples and SPTs

2 records

From	*To*	*Ref*	*Type.*	*Test Details*	*Hazards*
1.2	1.65	300	S	N-Value=17 Seating:2,3 = 5/150mm Test:3,3,2,9 = 17/300mm No Casing. Water=Dry	
2.0	2.38	302	C	N-Value=50 Seating:10,15/40mm = 25/115mm Test:19,13,12,6/40mm = 50/265mm No Casing. Water=Dry	

Windowless Sampling Run Data

Window sample run data grid

1 record

From (m)	To (m)	Run#	Barrel ID (mm)	Rec (%)	Duration (mins)	Drillers description
1.2	2.0	1	85	85	05:00	brown gravelly CLAY

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no pipes installed [X]

Backfill Grid

1 record

Section top depth (m)	Section base depth (m)	Section fill	Date	By	Section length (m)
0	2.45	BACKFILL	03/05/2023	*No users*	2.45

Standing Time

Confirm no standing time [X]

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
23:45	2.45	Michael O'Shea	

RSK Completion confirmation

No client completion confirmation possible [X]

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Window sample ID
WS-PTS117

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
04/04/2023	10:23	0.0	1.4	Inspection pit	SSL-SN0176

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
DART176-2021	Benjamin Pine	Kyle Byram		Finlay Price

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Samples and SPTs

1 record

From	To	Ref	Type.	Test Details	Hazards
1.20	1.40	1	S	N-Value=50 Seating:12,12 = 24/150mm Test:50 = 50/75mm No Casing. Water=Dry Remarks: Refused at 1.40	

Windowless Sampling Run Data

Confirm no window sample run data [X]

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no pipes installed [X]

Backfill Grid

2 records

Section top depth (m)	Section base depth (m)	Section fill	Date	By	Section length (m)
0	0.5	ARISINGS	05/04/2023	*No users*	0.5

0.5	1.40	BENTONITE SEAL	05/04/2023	*No users*	0.9

Standing Time

Confirm no standing time [X]

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
10:45	1.4	Benjamin Pine	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Window sample ID
WS-PTS117A

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
05/04/2023	13:35	0.0	4.2	Inspection pit	SSL-SN0176

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
DART176-2021	Benjamin Pine	Kyle Byram		Finlay Price

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Samples and SPTs

4 records

From	To	Ref	Type.	Test Details	Hazards
1.2	1.65	1	S	N-Value=48 Seating:6,8 = 14/150mm Test:10,10,14,14 = 48/300mm No Casing. Water=Dry	
2	2.45	2	S	N-Value=42 Seating:5,12 = 17/150mm Test:8,10,10,14 = 42/300mm No Casing. Water=Dry	
3	3.45	3	S	N-Value=32 Seating:10,7 = 17/150mm Test:7,7,8,10 = 32/300mm No Casing. Water=Dry	
4	4.20	4	S	N-Value=50 Seating:10,14 = 24/150mm Test:50 = 50/75mm No Casing. Water=Dry Remarks: Refused at 4.20	

Windowless Sampling Run Data

Window sample run data grid

3 records

From (m)	*To (m)*	*Run#*	*Barrel ID (mm)*	*Rec (%)*	*Duration (mins)*	*Drillers description*
1.2	2	1	55	90		S
2	3	2	55	80		S
3	4	3	55	85		S

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no pipes installed [X]

Backfill Grid

2 records

Section top depth (m)	*Section base depth (m)*	*Section fill*	*Date*	*By*	*Section length (m)*
0	1	ARISINGS	04/04/2023	*No users*	1.0
1	4.20	BENTONITE SEAL	04/04/2023	*No users*	3.2

Standing Time

Confirm no standing time [X]

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
14:35	4.2	Benjamin Pine	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765631	A66 NTP Scheme S01	National Highways

Exploratory Position

Window sample ID
WS-PTS119

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
28/04/2023	08:51	0.0	2.9	Inspection pit	SSL-SN384

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
	Michael O'Shea			Iain Jordan

Description of Strata

Stratums Grid

2 records

From (m)	*To (m)*	*Description*	*Stratum Classifications*	*Stratum Thickness (m)*
0	0.35	Brown clayey SAND	Boundary: Solid	0.35
0.35	1.2	Brown gravelly SAND	Boundary: Solid	0.85

Samples and SPTs

Samples and SPTs

2 records

From	*To*	*Ref*	*Type.*	*Test Details*	*Hazards*
1.2	1.65	300	S	N-Value=25 Seating:7,9 = 16/150mm Test:7,7,5,6 = 25/300mm No Casing. Water=Dry	
2.0	2.45	303	S	N-Value=28 Seating:11,8 = 19/150mm Test:7,8,7,6 = 28/300mm Water=Dry	

Windowless Sampling Run Data

Window sample run data grid

2 records

From (m)	*To (m)*	*Run#*	*Barrel ID (mm)*	*Rec (%)*	*Duration (mins)*	*Drillers description*
1.2	2.0	1	85	80	03:00	Orange gravelly SAND
2.0	2.9	2	75	60	05:00	Orange gravelly SAND

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no pipes installed [X]

Backfill Grid

1 record

Section top depth (m)	*Section base depth (m)*	*Section fill*	*Date*	*By*	*Section length (m)*
0	2.3	ARISINGS	28/04/2023	Michael O'Shea michael.oshea@soils.co.uk	2.3

Standing Time

Confirm no standing time [X]

General Remarks

General remarks

1 record

Note #	*General remark (free entry)*
	Hole collapsedvack to 2.30

1	Spt would not penetrate this collapse and no clear out possible. EOH 2.9

Photos

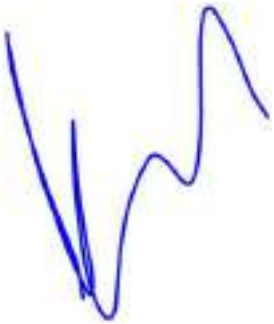
Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
11:08	2.9	Michael O'Shea	Iain Jordan

RSK Completion confirmation



Client Completion confirmation

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Window sample ID
WS-PTS120

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
28/03/2023	10:34	0.0	2.3	Inspection pit	SSL-SN0176

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
DART176-2021	Benjamin Pine	Kyle Byram		Andrew Bell

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Samples and SPTs

4 records

From	To	Ref	Type.	Test Details	Containers	Hazards	Description / Remarks
1.2	1.65	1	S	N-Value=4 Seating:1,0 = 1/150mm Test:0,1,1,2 = 4/300mm No Casing. Water=No			
1.2	1.65	2	DSPT		Tubs = 1		
2	2.3	3	S	N-Value=53 Seating:0,1 = 1/150mm Test:0,3,50 = 53/225mm No Casing. Water=Dry			
2	2.3	4	DSPT		Tubs = 1		

Windowless Sampling Run Data

Window sample run data grid

1 record

From (m)	To (m)	Run#	Barrel ID (mm)	Rec (%)	Duration (mins)	Drillers description
1.2	2	1	98	90		Sample

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Backfill Grid

2 records

Section top depth (m)	*Section base depth (m)*	*Section fill*	*Date*	*By*	*Section length (m)*
0	1	ARISINGS	28/03/2023	Benjamin Pine benjamin.pine@soils.co.uk	1.0
1	2.3	BENTONITE SEAL	28/03/2023	Benjamin Pine benjamin.pine@soils.co.uk	1.3

Standing Time

Confirm no standing time [X]

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
13:00	2.3	Benjamin Pine	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD
WINDOW SAMPLING - DAILY SITE REPORT

Borehole ID	WS- PTS 127	Rig Type	DART
		Rig ID	176
Contract Number	765633	Location	A66 NTP
Rig Moves	From	To	Sheet
Company Name		Driller	B PINE
Assistant(s)	K BYRAM	Engineer	B PRAYSON
Date	21/3/23	Day	TUES
Start Time		Finish Time	
Hammer ID			

Depth From (m)	Depth To (m)	Run Ref.	Core Diam. ID (mm)	Recovery %	Duration (mins)	Casing Record Dia. (mm)	Casing Record Base (m)	Driller's Description of Strata	Samples and Tests Number	Type	From (m)	To (m)	Rec. (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
1.2	2	1	101	90				HAND PIT TO 1.2m		SPT	1.2	1.65					1	1	3	2	2	3	
2	3	2	89	90						'	2	2.45					2	3	3	4	3	4	
3	4	3	79	90						'	3	3.45					1	2	2	3	1	3	
4	5	4	69	90						'	4	4.45					5	7	10	11	11	15	
										'	5	5.40					9	12	17	20	13		
										'													

Standard Penetration Tests

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Borehole Completed: Yes / No

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)
BENTO	5.40	1
SPOIL	1	GL

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description

Company	Client Signature	Date

Notes/Remarks: Sample types: B=bulk, D=disturbed, DSPT=disturbed from SPT test, U=undisturbed, UT=UT100, W=water, SPT test types: S=split spoon, C=cone, Cover Type: U=unprotected, F=flush.
Template: SSL_DRILLERS LOG-WS-V01-OCT-2015

Email: info@soils.co.uk
Web: www.soils.co.uk

STRUCTURAL SOILS LTD

Project Information

Project Information Grid

ID	*Name*	*Client*
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Window sample ID
WS-PTS127A

Location Coordinates / Position

Confirm no location information collected [X]

Log Breakdown

Log Breakdown Grid

Date	*Start time*	*Start depth*	*End depth*	*Initial technique*	*Equipment / Rig*
11/05/2023	09:18	0.0	5.32	Inspection pit	SSL-SN384

Log Breakdown Grid 2

HammerID	*Lead driller*	*Assistant 1*	*Assistant 2*	*Supervising Engineer*
DART384-2021	Benjamin Pine	Kyle Byram		Simon Groome

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Samples and SPTs

10 records

From	To	Ref	Type.	Test Details	Containers	Hazards	Description / Remarks
1.20	1.65	301	DSPT				
1.20	1.65	306	S	N-Value=19 Seating:1,1 = 2/150mm Test:3,3,5,8 = 19/300mm No Casing. Water=Dry			
2.00	2.45	302	DSPT				
2.00	2.45	307	S	N-Value=9 Seating:1,2 = 3/150mm Test:2,2,3,2 = 9/300mm No Casing. Water=Dry			
3.00	3.45	303	DSPT				
3.00	3.45	308	S	N-Value=14 Seating:2,3 = 5/150mm Test:3,3,4,4 = 14/300mm No Casing. Water=Dry			
4.00	4.45	304	DSPT				
				N-Value=44			

4.00	4.45	309	S	Seating:5,10 = 15/150mm Test:10,10,11,13 = 44/300mm No Casing. Water=Dry			
5.00	5.32	305	DSPT				
5.00	5.32	310	S	N-Value=50 Seating:10,13 = 23/150mm Test:18,20,12/15mm = 50/165mm No Casing. Water=Dry			

Windowless Sampling Run Data

Window sample run data grid

4 records

From (m)	*To (m)*	*Run#*	*Barrel ID (mm)*	*Rec (%)*	*Duration (mins)*	*Drillers description*
1.2	2	1	98	90		S
2	3	2	85	90		S
3	4	3	75	85		S
4	5	4	65	90		S

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Backfill Grid

1 record

Section top depth (m)	*Section base depth (m)*	*Section fill*	*Date*	*By*	*Section length (m)*
0.00	5.32	BENTONITE SEAL	16/05/2023	*No users*	5.32

Standing Time

Confirm no standing time [X]

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
12:35	5.32	Benjamin Pine	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

STRUCTURAL SOILS LTD
WINDOW SAMPLING - DAILY SITE REPORT

Borehole ID	WS-PTS 129	Rig Type	DART		
		Rig ID	176		
Contract Number	765633	Location	A66 NTP 503 A.	Rig Moves	From / To / Sheet
Company Name		Driller	B PINE	Assistant(s)	K BYRAM
		Engineer	B DRAYSON		
Date	21/3/23	Day	TUES	Start Time	Finish Time
Hammer ID					

Depth From (m)	Depth To (m)	Run Ref.	Core Diam. ID (mm)	Recovery %	Duration (mins)	Casing Record Dia. (mm)	Casing Record Base (m)	Driller's Description of Strata
1.2	2	1	101					
2	2.80	2	89					Barrel Bouncing @ 2.6m

Samples and Tests Number	Type	From (m)	To (m)	Rec. (mm)	U Blow	Metres Depth Casing	Metres Depth Water	Seating Drive 75mm	Seating Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	Main Test Drive 75mm	N
	SPT	1.2	1.65					0	1	1	0	1	1	
		2	2.45					3	5	8	8	10	7	
		2.80	3.20					7	9	12	10	20	8/0mm	

Standard Penetration Tests

Water Strikes

Time			
Strike Depth (m)			
Casing Depth (m)			
5 mins			
10 mins			
15 mins			
20 mins			
Depth Sealed (m)			

Borehole Completed: Yes / No

Backfill and Installation Details

Water Depth Before (m)		Water Depth After (m)		Cover Type	U / F

Pipe No.	Pipe Type and Diameter (mm)	From (m)	To (m)

Backfill Materials	From (m)	To (m)
BENTO	3.20	1
SPOIL	1	GL

Record of Hourly Rated Work / Standing / Delays

Time From	Time To	Description

Company	Client Signature	Date

Notes/Remarks: Sample types: Bulk, Disturbed, DGPT=disturbed from SPT test, Undisturbed, UT=UT100, Piezometer, SPT test types: Straight spoon, Cone; Cover Type: Unguarding, Fatigue
Template: SSL DRILLING LOG MK-V01-OCT-2020
Email: info@ssl.co.uk
Web: www.ssls.co.uk

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Project Information

Project Information Grid

ID	Name	Client
765633	A66 NTP Scheme S03A	National Highways

Exploratory Position

Window sample ID
WS-PTS130

Location Coordinates / Position

GPS Location

Elevation units toggle Not specified

Proposed Tablet GPS Location

Log Breakdown

Log Breakdown Grid

Date	Start time	Start depth	End depth	Initial technique	Equipment / Rig
23/03/2023	14:00	0.0	5.3	Inspection pit	SSL-SN0176

Log Breakdown Grid 2

HammerID	Lead driller	Assistant 1	Assistant 2	Supervising Engineer
DART176-2021	Benjamin Pine	Kyle Byram		Gareth Jones

Description of Strata

Confirm no stratum description data [X]

Samples and SPTs

Samples and SPTs

9 records

From	To	Ref	Type.	Test Details	Containers	Hazards	Description / Remarks
1.2	1.65	1	S	N-Value=13 Seating:1,1 = 2/150mm Test:3,3,4,3 = 13/300mm No Casing. Water=Dry			
1.20	1.65	2	DSPT				
2	2.45	3	S	N-Value=9 Seating:1,1 = 2/150mm Test:2,4,1,2 = 9/300mm Water=No			
2	2.45	4	DSPT				
3	3.45	5	S	N-Value=22 Seating:3,5 = 8/150mm Test:5,5,5,7 = 22/300mm No Casing. Water=Dry			
3	3.45	6	DSPT				

4	4.45	7	S	N-Value=38 Seating:6,8 = 14/150mm Test:8,5,10,15 = 38/300mm No Casing. Water=Dry			
4	4.45	8	DSPT				
5	5.30	9	S	N-Value=50 Seating:9,15 = 24/150mm Test:18,32 = 50/150mm No Casing. Water=Dry			

Windowless Sampling Run Data

Window sample run data grid

4 records

From (m)	*To (m)*	*Run#*	*Barrel ID (mm)*	*Rec (%)*	*Duration (mins)*	*Drillers description*
1.2	2	1	98	90		Sample
2	3	2	85	90		Sample
3	4	3	75	85		Sample
4	5	4	65	90		Sample

Casing Record

Confirm no casing record data [X]

Water Strikes

Confirm no water strikes [X]

Backfill, Pipes and Covers

Confirm no pipes installed [X]

Backfill Grid

2 records

Section top depth (m)	*Section base depth (m)*	*Section fill*	*Date*	*By*	*Section length (m)*
0	1	ARISINGS	23/03/2023	Benjamin Pine benjamin.pine@soils.co.uk	1.0
1	5.30	BENTONITE SEAL	23/03/2023	Benjamin Pine benjamin.pine@soils.co.uk	4.3

Standing Time

Confirm no standing time [X]

General Remarks

Confirm no preset or general remarks [X]

Photos

Confirm no photos required/taken [X]

Completion

Completion Grid

Finish Time	*Base depth*	*RSK Completion Confirmation*	*Client Confirmation*
16:27	5.3	Benjamin Pine	

RSK Completion confirmation

Client Completion confirmation

No data

Review all data [X]

Additional Email Distribution

Internal email distribution

No users

External email distribution

Completion Confirmation

Data collection is complete? ( ) No (X) Yes

Attachments

Attachments Grid

0 records

APPENDIX C - FIELD TESTING

(C01) Standard Penetration Test (SPT) Summary Sheet

(C02) SPT N value versus Depth Plots

(C03) Light Weight Deflectometer (LWD) Test Results

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH-PTS100	1.20	250	1.20	Dry	1,1	150	1,2,2,6		N=11	JB01-2023	06/01/2023	61	11	
	2.00	250	2.00	1.50	2,2	150	3,3,4,5		N=15	JB01-2023	06/01/2023	61	15	
	3.00	250	3.00	2.30	2,3	146	4,46+	146	2,3/4,46	JB01-2023	06/01/2023	61		
									for 71mm					
	4.00	250	4.00	3.50	19,6	119	31,19+	114	19,6/31,19	JB01-2023	06/01/2023	61		SPT(c)
									for 39mm					
	5.00	250	5.00	5.30	22,4	104	50+	37	22,4/50	JB01-2023	06/01/2023	61		SPT(c)
									for 37mm					
	6.00	250	6.00	5.30	25	63	50+	54	25/50	JB01-2023	06/01/2023	61		SPT(c)
									for 54mm					
	6.80	250	6.80	5.74	25	30	50+	27	25/50	JB01-2023	06/01/2023	61		
									for 27mm					
	8.00	250	7.50	4.41	25	28	50+	19	25/50	JB01-2023	06/01/2023	61		
									for 19mm					
	9.00	250	7.50	4.48	25	22	50+	20	25/50	JB01-2023	06/01/2023	61		
									for 20mm					
BH-PTS101	1.20	250	0.00	Dry	3,4	150	4,3,2,2		N=11	JB05-2023	06/01/2023	60	11	
	2.00	250	0.00	Dry	2,2	150	2,2,3,3		N=10	JB05-2023	06/01/2023	60	10	

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

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Compiled By		Date	Contract Ref:
	ALUMBER	**30.08.23**	**765633**
Contract: **A66 NTP Scheme S03A**			Page: **1** of **25**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH-PTS101	3.00	250	3.00	2.40	1,2	150	2,3,3,4		N=12	JB05-2023	06/01/2023	60	12	
	4.00	250	4.00	2.40	2,4	150	5,6,7,8		N=26	JB05-2023	06/01/2023	60	26	
	5.00	250	5.00	4.00	8,14	150	13,14,13,10		N=50	JB05-2023	06/01/2023	60	50	
	6.00	250	6.00	4.00	13,12	150	15,17,18+	226	13,12/15,17,18	JB05-2023	06/01/2023	60		
									for 76mm					
	7.00	250	7.00	3.00	12,13	150	30,20+	120	12,13/30,20	JB05-2023	06/01/2023	60		
									for 45mm					
BH-PTS102A	1.20	250	1.20	Dry	4,6	150	4,3,5,3		N=15	JB01-2023	06/01/2023	61	15	
	2.00	250	2.00	Dry	3,4	150	3,3,4,7		N=17	JB01-2023	06/01/2023	61	17	No Recovery
	4.00	250	4.00	Dry	3,4	150	10,5,3,2		N=20	JB01-2023	06/01/2023	61	20	
	6.00	250	6.00	4.34	4,10	150	12,8,8,6		N=34	JB01-2023	06/01/2023	61	35	SPT(c)
	7.00	250	7.00	2.79	4,6	150	6,7,8,7		N=28	JB01-2023	06/01/2023	61	28	SPT(c)
	8.00	250	8.00	5.28	7,9	150	18,16,16+	180	7,9/18,16,16	JB01-2023	06/01/2023	61		SPT(c)
									for 30mm					
	9.00	250	9.00	5.48	8,8	150	19,11,17,3+	249	8,8/19,11,17,3	JB01-2023	06/01/2023	61		SPT(c)
									for 24mm					
	10.00	250	10.00	6.72	9,7	150	9,10,14,17+	264	9,7/9,10,14,17	JB01-2023	06/01/2023	61		SPT(c)
									for 39mm					

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

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	ALUMBER	**30.08.23**	**765633**
Contract: **A66 NTP Scheme S03A**			Page: **2** of **25**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH-PTS106	1.20	200	0.00	Dry	2,2	150	2,2,3,3		N=10	AR2670-2023	27/03/2023	64	11	
	2.00	200	2.00	Dry	1	150	1+,1,2		N=4	AR2670-2023	27/03/2023	64	4	
	3.00	200	3.00	1.00	18,7	125	25,28,30,17+	265	18,7/25,28,30,17	AR2670-2023	27/03/2023	64		
									for 40mm					
	4.00	200	4.00	3.50	7,8	150	12,12,13,15		N=52	AR2670-2023	27/03/2023	64	55	
	5.00	200	5.00	1.00	15,10	125	100+	50	15,10/100	AR2670-2023	27/03/2023	64		
									for 50mm					
BH-PTS107	1.20	250	0.00	Dry	1,2	150	1,2,3,4		N=10	AR2670-2023	27/03/2023	64	11	
	2.00	250	1.50	Dry	2,3	150	4,4,6,6		N=20	AR2670-2023	27/03/2023	64	21	
BH-PTS107B	1.20	300	0.00	Dry	1,2	150	2,2,2,3		N=9	AR2670-2023	27/03/2023	64	10	
	2.00	98	1.50	Dry	15,10	125	25,35,25,15+	250	15,10/25,35,25,15	AR2670-2023	27/03/2023	64		
									for 25mm					
	3.00	85	3.00	Dry	18,7	90	36,36,28+	200	18,7/36,36,28	AR2670-2023	27/03/2023	64		
									for 50mm					
BH-PTS108	1.20	300	0.00	Dry	2,2	150	2,2,2,3		N=9	JB05-2023	06/01/2023	60	9	
	2.00	300	2.00	1.80	7,5	150	6,5,6,5		N=22	JB05-2023	06/01/2023	60	22	
	3.00	250	3.00	3.00	2,2	150	8,3,4,6		N=21	JB05-2023	06/01/2023	60	21	

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH-PTS108	4.00	250	3.20	Dry	2,5	150	14,14,14,8+	240	2,5/14,14,14,8	JB05-2023	06/01/2023	60		
									for 15mm					
	5.00	250	4.70	4.50	6,6	150	10,12,13,15		N=50	JB05-2023	06/01/2023	60	50	
	6.00	250	6.00	5.50	2,5	150	7,13,20,10+	260	2,5/7,13,20,10	JB05-2023	06/01/2023	60		
									for 35mm					
	7.00	250	7.00	7.00	6,19	150	25,25+	110	6,19/25,25	JB05-2023	06/01/2023	60		
									for 35mm					
	8.00	200	8.00	7.00	7,10	150	12,12,12,14		N=50	JB05-2023	06/01/2023	60	50	No Recovery
	10.00	200	9.00	8.40	5,9	150	16,34+	131	5,9/16,34	JB05-2023	06/01/2023	60		
									for 56mm					
	11.00	200	11.00	10.80	10,10	150	13,10,10,14		N=47	JB05-2023	06/01/2023	60	47	
	12.00	200	12.00	10.40	10,15	150	12,12,12,14		N=50	JB05-2023	06/01/2023	60	50	
	13.00	200	13.00	9.80	9,16	150	17,8,13,12		N=50	JB05-2023	06/01/2023	60	50	
	14.50	200	14.50	11.00	10,10	150	15,19,16+	200	10,10/15,19,16	JB05-2023	06/01/2023	60		SPT(c)
									for 50mm					
BH-PTS111	1.30	200	0.00	Dry	2,3	150	3,3,4,6		N=16	JB05-2023	06/01/2023	60	16	
	2.00	200	2.00	1.40	5,6	150	15,35+	115	5,6/15,35	JB05-2023	06/01/2023	60		
									for 40mm					

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH-PTS111	3.00	200	3.00	3.00	4,11	150	20,20,10+	175	4,11/20,20,10	JB05-2023	06/01/2023	60		
									for 25mm					
	4.00	200	4.00	2.00	25	75	50+	35	25/50	JB05-2023	06/01/2023	60		
									for 35mm					
BH-PTS112	1.20	250	0.00	Dry	2,2	150	2,2,2,2		N=8	JB05-2023	06/01/2023	60	8	SPT(c)
	3.00	250	3.00	2.80	3,5	150	7,8,8,9		N=32	JB05-2023	06/01/2023	60	32	
	4.00	250	4.00	2.60	9,16	150	41,9+	145	9,16/41,9	JB05-2023	06/01/2023	60		
									for 70mm					
	5.00	250	5.00	4.50	10,15	150	50+	35	10,15/50	JB05-2023	06/01/2023	60		
									for 35mm					
	6.00	250	6.00	6.00	19,6	150	50+	50	19,6/50	JB05-2023	06/01/2023	60		
									for 50mm					
	7.00	250	7.00	7.00	25	75	50+	20	25/50	JB05-2023	06/01/2023	60		
									for 20mm					
BH-PTS113	1.20	45	0.00	Dry	25	70	18,15,11,6+	255	25/18,15,11,6	DART384-2022	15/07/2022	67		SPT(c)
									for 30mm					
	2.00	45	0.00	Dry	3,5	150	4,4,3,3		N=14	DART384-2022	15/07/2022	67	16	
	3.00	45	0.00	Dry	8,6	150	3,4,5,9		N=21	DART384-2022	15/07/2022	67	23	

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

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Compiled By		Date	Contract Ref:
	ALUMBER	**30.08.23**	**765633**
Contract: **A66 NTP Scheme S03A**			Page: **5** of **25**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH-PTS113	4.00	45	0.00	Dry	8,3	150	3,3,4,9		N=19	DART384-2022	15/07/2022	67	21	
BH-PTS114	1.20	250	1.20	0.00	7,5	150	9,5,4,3		N=21	JB01-2023	06/01/2023	61	21	
	2.00	250	1.20	0.63	4,4	150	6,4,8,8		N=26	JB01-2023	06/01/2023	61	26	
	3.00	250	3.00	1.12	5,8	150	7,7,6,8		N=28	JB01-2023	06/01/2023	61	28	
	4.00	250	4.00	1.84	5,7	150	14,20,16+	205	5,7/14,20,16	JB01-2023	06/01/2023	61		
									for 55mm					
	5.00	250	5.00	1.67	22,3	92	44,6+	96	22,3/44,6	JB01-2023	06/01/2023	61		
									for 21mm					
	6.00	200	6.00	0.42	19,6	86	30,17,3+	152	19,6/30,17,3	JB01-2023	06/01/2023	61		
									for 2mm					
	7.00	200	7.00	2.07	25	36	50+	49	25/50	JB01-2023	06/01/2023	61		
									for 49mm					
	8.30	146	7.50	1.50	4,21	130	50+	40	4,21/50	AR1240-2022	15/07/2022	67.48		
									for 40mm					
BH-PTS115	1.20	250	1.20	0.30	3,5	150	8,8,8,6		N=30	JB01-2023	06/01/2023	61	30	
	2.00	250	2.00	0.53	3,7	150	37,13+	85	3,7/37,13	JB01-2023	06/01/2023	61		
									for 10mm					

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
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3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH-PTS115	3.00	250	3.00	1.63	20,5	82	50+	31	20,5/50	JB01-2023	06/01/2023	61		
									for 31mm					
	4.00	200	4.00	2.22	25	36	50+	44	25/50	JB01-2023	06/01/2023	61		
									for 44mm					
	5.00	200	5.00	2.53	5,10	150	50+	67	5,10/50	JB01-2023	06/01/2023	61		
									for 67mm					
	6.00	200	6.00	2.10	25	44	50+	56	25/50	JB01-2023	06/01/2023	61		
									for 56mm					
	7.00	200	7.00	1.52	25	62	50+	33	25/50	JB01-2023	06/01/2023	61		
									for 33mm					
	8.00	200	7.00	2.08	25	47	50+	28	25/50	JB01-2023	06/01/2023	61		
									for 28mm					
	9.00	200	7.50	3.64	25	54	50+	41	25/50	JB01-2023	06/01/2023	61		
									for 41mm					
	10.00	200	7.50	3.32	25	63	50+	28	25/50	JB01-2023	06/01/2023	61		
									for 28mm					
BH-PTS116	2.00	250	2.00	Dry	1,1	150	2,4,3,3		N=12	JB01-2023	06/01/2023	61	12	
	3.00	250	3.00	2.45	8,15	150	22,20,8+	167	8,15/22,20,8	JB01-2023	06/01/2023	61		

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

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1a Princess Street
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BS3 4AG

Compiled By		Date	Contract Ref:
	ALUMBER	**30.08.23**	**765633**
Contract: **A66 NTP Scheme S03A**			Page: **7** of **25**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
									for 17mm					
	4.00	250	4.00	2.50	10,15	137	26,24+	104	10,15/26,24	JB01-2023	06/01/2023	61		SPT(c)
									for 29mm					
	5.00	250	5.00	3.94	19,6	130	41,9+	112	19,6/41,9	JB01-2023	06/01/2023	61		SPT(c)
									for 37mm					
	6.00	250	6.00	2.37	3,5	150	8,42+	115	3,5/8,42	JB01-2023	06/01/2023	61		
									for 40mm					
	7.00	25	7.00	2.94	25	63	50+	40	25/50	JB01-2023	06/01/2023	61		Test carried out at base of
									for 40mm					cable percussion drilling.
	7.01	146	7.00	1.00	1,2	150	4,4,7,9		N=24	CD9.2.03-2023	09/03/2023	63	25	Test carried out during
														rotary drilling after clearing
														out of collapse material, and
														was likely completed on
														disturbed material.
	8.50	146	8.50	1.00	2,3	150	3,5,20,22+	295	2,3/3,5,20,22	CD9.2.03-2023	09/03/2023	63		
									for 70mm					
	9.00	146	7.00	0.00	25	70	50+	25	25/50	CD9.2.03-2023	09/03/2023	63		
									for 25mm					

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH-PTS116	9.50	146	9.50	1.00	7,18	115	50+	25	7,18/50	CD9.2.03-2023	09/03/2023	63		SPT(c)
									for 25mm					
BH-PTS117	1.20	250	1.20	Dry	2,3	150	8,8,8,11		N=35	JB01-2023	06/01/2023	61	36	
	2.00	250	2.00	0.50	4,7	150	7,9,10,9		N=35	JB01-2023	06/01/2023	61	36	SPT(c)
	3.00	250	3.00	1.00	7,10	150	9,15,21,5+	230	7,10/9,15,21,5	JB01-2023	06/01/2023	61		SPT(c)
									for 5mm					
	4.00	250	4.00	2.44	4,5	150	11,13,10,10		N=44	JB01-2023	06/01/2023	61	45	SPT(c)
	5.00	250	5.00	2.62	5,13	150	7,7,15,12		N=41	JB01-2023	06/01/2023	61	42	SPT(c)
	6.00	250	6.00	2.97	25	75	50+	68	25/50	JB01-2023	06/01/2023	61		
									for 68mm					
	7.00	250	7.00	3.77	25	29	50+	22	25/50	JB01-2023	06/01/2023	61		
									for 22mm					
BH-PTS118	1.20	300	0.00	Dry	6,8	150	15,20,15+	205	6,8/15,20,15	JB05-2023	06/01/2023	60		
									for 55mm					
BH-PTS118A	1.20	300	0.00	Dry	10,15	150	15,20,15+	180	10,15/15,20,15	JB05-2023	06/01/2023	60		
									for 30mm					
	2.00	300	2.00	2.00	3,8	150	11,14,15,10+	270	3,8/11,14,15,10	JB05-2023	06/01/2023	60		
									for 45mm					

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

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1a Princess Street
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BS3 4AG

Compiled By		Date	Contract Ref:
	ALUMBER	**30.08.23**	**765633**
Contract: **A66 NTP Scheme S03A**			Page: **9** of **25**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH-PTS118A	3.00	300	3.00	3.00	3,6	150	15,20,15+	210	3,6/15,20,15	JB05-2023	06/01/2023	60		SPT(c)
									for 60mm					
	4.00	300	3.00	3.50	4,8	150	20,20,10+	220	4,8/20,20,10	JB05-2023	06/01/2023	60		SPT(c)
									for 70mm					
	5.00	300	5.00	4.20	6,11	150	14,16,20	225	6,11/14,16,20	JB05-2023	06/01/2023	60		SPT(c)
									for 75mm					
	6.00	300	6.00	4.80	10,15	150	30,20+	95	10,15/30,20	JB05-2023	06/01/2023	60		
									for 20mm					
BH-PTS118B	1.20	300	0.00	Dry	7,14	150	25,25+	110	7,14/25,25	JB05-2023	06/01/2023	60		SPT(c)
									for 35mm					
	2.00	300	2.00	1.80	4,9	150	11,24,15+	185	4,9/11,24,15	JB05-2023	06/01/2023	60		SPT(c)
									for 35mm					
	3.00	300	3.00	2.50	9,7	150	7,8,7,7		N=29	JB05-2023	06/01/2023	60	29	
	4.00	300	4.00	Dry	4,6	150	8,10,10,10		N=38	JB05-2023	06/01/2023	60	38	
	5.00	300	5.00	Dry	9,12	150	20,30+	125	9,12/20,30	JB05-2023	06/01/2023	60		
									for 50mm					
	6.00	300	6.00	3.00	10,15	150	30,20+	90	10,15/30,20	JB05-2023	06/01/2023	60		
									for 15mm					

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

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1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date	Contract Ref:
	ALUMBER	**30.08.23**	**765633**
Contract: **A66 NTP Scheme S03A**			Page: **10** of **25**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH-PTS118B	7.00	300	7.00	3.00	10,15	150	50+	40	10,15/50	JB05-2023	06/01/2023	60		SPT(c)
									for 40mm					
	8.80	146	7.20	2.30	3,12	150	50+	70	3,12/50	AR1240-2022	15/07/2022	67.48		
									for 70mm					
BH-PTS119	1.20	200	0.00	Dry	3,5	150	3,4,3,3		N=13	JB01-2023	06/01/2023	61	13	
	2.00	200	2.00	Dry	4,6	150	7,14,12,16		N=49	JB01-2023	06/01/2023	61	50	
	3.00	200	3.00	2.22	7,11	150	13,15,17,5+	259	7,11/13,15,17,5	JB01-2023	06/01/2023	61		SPT(c)
									for 34mm					
	4.00	200	4.00	0.00	18,7	115	33,17+	132	18,7/33,17	JB01-2023	06/01/2023	61		
									for 57mm					
	5.00	200	5.00	2.79	25	49	41,9+	88	25/41,9	JB01-2023	06/01/2023	61		
									for 13mm					
	6.00	200	6.00	2.41	25	70	50+	24	25/50	JB01-2023	06/01/2023	61		
									for 24mm					
	7.00	200	6.00	2.57	25	61	50+	31	25/50	JB01-2023	06/01/2023	61		
									for 31mm					
	8.00	200	6.00	2.77	25	72	50+	58	25/50	JB01-2023	06/01/2023	61		
									for 58mm					

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH-PTS119	9.00	200	6.00	3.01	25	51	50+	43	25/50	JB01-2023	06/01/2023	61		
									for 43mm					
	10.00	200	6.00	3.30	25	42	50+	58	25/50	JB01-2023	06/01/2023	61		
									for 58mm					
BH-PTS120	1.20	200	1.20	0.00	2,3	150	2,4,4,4		N=14	JB01-2023	06/01/2023	61	14	
BH-PTS120A	2.00	250	0.00	1.01	25	69	50+	44	25/50	JB01-2023	06/01/2023	61		SPT(c)
									for 44mm					
	3.00	250	3.00	1.29	6,6	150	8,7,11,14		N=40	JB01-2023	06/01/2023	61	41	
	4.00	250	4.00	2.69	7,18	129	50+	70	7,18/50	JB01-2023	06/01/2023	61		
									for 70mm					
	5.00	250	5.00	2.80	25	67	50+	48	25/50	JB01-2023	06/01/2023	61		
									for 48mm					
	5.30	250	5.00	3.00	25	51	50+	32	25/50	JB01-2023	06/01/2023	61		
									for 32mm					
BH-PTS121	1.20	250	0.00	Dry	7,6	150	7,12,10,10		N=39	JB05-2023	06/01/2023	60	39	
	2.00	300	2.00	2.00	25	0	50+	0	NP	JB05-2023	06/01/2023	60		No Recovery

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH-PTS121A	1.20	250	0.00	Dry	5,7	150	8,10,12,13		N=43	JB05-2023	06/01/2023	60	43	
	3.00	250	3.00	2.80	7,11	150	13,17,20+	200	7,11/13,17,20	JB05-2023	06/01/2023	60		
									for 50mm					
	4.00	250	4.00	3.80	25	75	50+	40	25/50	JB05-2023	06/01/2023	60		
									for 40mm					
	5.00	250	5.00	4.50	25	75	50+	50	25/50	JB05-2023	06/01/2023	60		
									for 50mm					
	6.00	250	5.00	5.50	25	75	50+	40	25/50	JB05-2023	06/01/2023	60		
									for 40mm					
	7.00	250	5.00	6.50	25	75	50+	70	25/50	JB05-2023	06/01/2023	60		
									for 70mm					
	8.00	250	5.00	7.50	25	75	50+	60	25/50	JB05-2023	06/01/2023	60		
									for 60mm					
	9.00	250	5.00	8.50	25	75	50+	50	25/50	JB05-2023	06/01/2023	60		
									for 50mm					
	10.00	250	5.00	8.50	25	75	50+	50	25/50	JB05-2023	06/01/2023	60		
									for 50mm					
BH-PTS122	1.20	250	0.00	Dry	3,3	150	3,5,7,11		N=26	JB01-2023	06/01/2023	61	26	

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date	Contract Ref:
	ALUMBER	**30.08.23**	**765633**
Contract: **A66 NTP Scheme S03A**			Page: **13** of **25**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH-PTS122	2.00	250	2.00	Dry	4,3	150	4,4,6,9		N=23	JB01-2023	06/01/2023	61	23	No Recovery
	3.90	250	3.90	2.70	25	64	50+	56	25/50	JB01-2023	06/01/2023	61		
									for 56mm					
	4.00	250	4.00	2.89	25	20	50+	17	25/50	JB01-2023	06/01/2023	61		SPT(c)
									for 17mm					
	5.00	250	5.00	3.10	10,15	144	25,25+	147	10,15/25,25	JB01-2023	06/01/2023	61		
									for 72mm					
	6.00	250	6.00	3.77	19,6	116	50+	60	19,6/50	JB01-2023	06/01/2023	61		
									for 60mm					
	7.00	200	7.00	4.42	25	44	50+	39	25/50	JB01-2023	06/01/2023	61		
									for 39mm					
	8.00	200	8.00	6.56	25	33	50+	27	25/50	JB01-2023	06/01/2023	61		No Recovery
									for 27mm					
BH-PTS123	1.20	200	0.00	1.00	3,4	150	3,5,2,3		N=13	JB01-2023	06/01/2023	61	13	
	2.00	200	2.00	1.29	18,7	139	50+	57	18,7/50	JB01-2023	06/01/2023	61		SPT(c)
									for 57mm					
	3.00	200	3.00	0.71	2,2	150	4,5,13,10		N=32	JB01-2023	06/01/2023	61	33	
	5.00	200	5.00	4.13	3,6	150	8,8,10,15		N=41	JB01-2023	06/01/2023	61	42	

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

STRUCTURAL SOILS
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Bristol
BS3 4AG

Compiled By		Date	Contract Ref:
	ALUMBER	**30.08.23**	**765633**
Contract: **A66 NTP Scheme S03A**			Page: **14** of **25**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH-PTS123	6.00	200	6.00	Dry	4,5	150	10,17,13,10+	264	4,5/10,17,13,10	JB01-2023	06/01/2023	61		
									for 39mm					
	8.00	200	8.00	4.07	25	75	33,17+	125	25/33,17	JB01-2023	06/01/2023	61		
									for 50mm					
	11.00	146	11.00	1.00	3,3	150	4,6,9,15		N=34	CD9.2.03-2023	09/03/2023	63	36	
	11.50	146	11.50	7.00	2,4	150	6,6,11,11		N=34	CD9.2.03-2023	09/03/2023	63	36	
BH-PTS124	1.20	300	0.00	Dry	3,2	150	3,4,5,4		N=16	JB05-2023	06/01/2023	60	16	
	2.00	300	2.00	1.50	3,4	150	5,7,7,8		N=27	JB05-2023	06/01/2023	60	27	
	3.00	300	3.00	2.80	3,5	150	5,6,8,12		N=31	JB05-2023	06/01/2023	60	31	
	4.00	300	4.00	3.80	4,6	150	8,10,10,10		N=38	JB05-2023	06/01/2023	60	38	
	5.00	300	4.50	4.20	3,5	150	8,9,12,18		N=47	JB05-2023	06/01/2023	60	47	
	6.00	300	6.00	3.00	5,5	150	15,15,20+	215	5,5/15,15,20	JB05-2023	06/01/2023	60		
									for 65mm					
	7.00	300	6.00	Dry	5,4	150	4,5,6,7		N=22	JB05-2023	06/01/2023	60	22	
	8.00	300	6.00	Dry	4,5	150	15,15,20+	195	4,5/15,15,20	JB05-2023	06/01/2023	60		
									for 45mm					
	9.00	300	6.00	Dry	10,15	150	20,20,10+	160	10,15/20,20,10	JB05-2023	06/01/2023	60		

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
									for 10mm					
	10.00	300	6.00	Dry	4,6	150	8,10,15,15		N=48	JB05-2023	06/01/2023	60	48	
	11.00	300	6.00	Dry	5,8	150	17,20,13+	170	5,8/17,20,13	JB05-2023	06/01/2023	60		
									for 20mm					
	12.00	300	6.00	Dry	11,14	150	50+	70	11,14/50	JB05-2023	06/01/2023	60		
									for 70mm					
BH-PTS126	1.20	250	1.20	0.00	3,2	150	2,3,3,5		N=13	JB01-2023	06/01/2023	61	13	
	3.00	250	3.00	0.00	4,4	150	6,10,12,14		N=42	JB01-2023	06/01/2023	61	43	
	4.00	250	4.00	0.47	12,13	129	14,10,11,11		N=46	JB01-2023	06/01/2023	61	47	
	5.00	200	5.00	2.91	7,13	150	24,16,10+	209	7,13/24,16,10	JB01-2023	06/01/2023	61		
									for 59mm					
	6.00	200	6.00	4.54	25	9	50+	0	NP	JB01-2023	06/01/2023	61		
BH-PTS127	1.20	200	1.20	0.70	3,3	150	6,6,6,7		N=25	JB01-2023	06/01/2023	61	25	
	2.00	200	2.00	1.03	3,4	150	4,4,5,4		N=17	JB01-2023	06/01/2023	61	17	
	3.00	200	3.00	1.28	4,7	150	14,10,5,5		N=34	JB01-2023	06/01/2023	61	35	
	5.00	200	5.00	3.00	12,11	150	10,11,20,9+	284	12,11/10,11,20,9	JB01-2023	06/01/2023	61		
									for 59mm					

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH-PTS127	6.00	200	6.00	5.24	3,22	142	50+	52	3,22/50	JB01-2023	06/01/2023	61		
									for 52mm					
	7.00	200	7.00	6.07	25	75	50+	68	25/50	JB01-2023	06/01/2023	61		
									for 68mm					
	8.00	200	8.00	2.14	25	74	50+	45	25/50	JB01-2023	06/01/2023	61		
									for 45mm					
	9.00	200	9.00	3.79	25	65	50+	34	25/50	JB01-2023	06/01/2023	61		No Recovery
									for 34mm					
	10.00	200	10.00	4.84	25	49	50+	37	25/50	JB01-2023	06/01/2023	61		No Recovery
									for 37mm					
BH-PTS128	1.20	250	0.00	Dry	2,3	150	4,46	150	2,3/4,46	JB05-2023	06/01/2023	60		
									for 75mm					
BH-PTS128A	1.20	300	0.00	Dry	3,4	150	4,3,3,4		N=14	JB05-2023	06/01/2023	60	14	
	2.00	300	2.00	1.50	3,3	150	3,3,6,6		N=18	JB05-2023	06/01/2023	60	18	
	3.00	300	3.00	2.50	2	150	3+	300	N=3	JB05-2023	06/01/2023	60	3	
	4.00	300	4.00	3.50	3,4	150	3,3,5,7		N=18	JB05-2023	06/01/2023	60	18	
	5.00	300	4.50	4.00	3,10	150	15,35+	130	3,10/15,35	JB05-2023	06/01/2023	60		
									for 55mm					

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH-PTS128A	6.00	300	4.50	5.00	5,12	150	10,15,20	225	5,12/10,15,20	JB05-2023	06/01/2023	60		
									for 75mm					
	7.00	300	7.00	6.00	25	75	50+	40	25/50	JB05-2023	06/01/2023	60		
									for 40mm					
	8.00	300	8.00	5.50	25	75	50+	70	25/50	JB05-2023	06/01/2023	60		
									for 70mm					
BH-PTS129	1.20	200	0.00	Dry	1,0	150	1,1,1,1		N=4	JB05-2023	06/01/2023	60	4	
	2.00	200	1.50	1.00	1,2	150	2,3,3,3		N=11	JB05-2023	06/01/2023	60	11	
	3.00	200	3.00	2.50	2,3	150	4,5,6,7		N=22	JB05-2023	06/01/2023	60	22	
	4.00	200	4.00	4.00	4,11	150	22,28	150	4,11/22,28	JB05-2023	06/01/2023	60		
									for 75mm					
	4.50	146	4.50	3.00	3,5	150	11,15,20,15+	270	3,5/11,15,20,15	CD9.2.03-2023	09/03/2023	63		ID of SPT hammer used not
									for 45mm					recorded by driller.
GS-PTS102	1.20	146	0.00	Dry	1,1	150	3,5,3,3		N=14	AR1240-2022	15/07/2022	67.48	16	
	2.00	146	0.00	Dry	1,2	150	3,2,2,4		N=11	AR1240-2022	15/07/2022	67.48	12	
	4.00	146	0.00	Dry	14,8	150	7,5,8,11		N=31	AR1240-2022	15/07/2022	67.48	35	
	4.70	146	0.00	Dry	9,10	150	8,14,9,11		N=42	AR1240-2022	15/07/2022	67.48	47	
GS-PTS102	9.80	146	4.50	0.40	25	70	12,26,12+	200	25/12,26,12	AR1240-2022	15/07/2022	67.48		

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
									for 50mm					
GS-PTS105	1.20	131	0.00	Dry	4,9	150	9,10,9,11		N=39	AR1240-2022	15/07/2022	67.48	44	
	2.00	131	0.00	Dry	7,9	150	20,30+	100	7,9/20,30	AR1240-2022	15/07/2022	67.48		
									for 25mm					
GS-PTS107	1.20	150	0.00	Dry	2,3	150	3,3,3,1		N=10	CD9.2.03-2023	09/03/2023	63	10	
	2.00	150	0.00	1.90	2,1	150	2,3,4,7		N=16	CD9.2.03-2023	09/03/2023	63	17	
	3.00	150	0.00	1.70	10,13	150	17,33	150	10,13/17,33	CD9.2.03-2023	09/03/2023	63		
									for 75mm					
	4.00	150	4.00	2.20	10,15	140	50+	50	10,15/50	CD9.2.03-2023	09/03/2023	63		
									for 50mm					
GS-PTS108A	1.20	250	1.20	Dry	3,2	150	2,2,4,3		N=11	CD9.2.03-2023	09/03/2023	63	12	Hole diameter not recorded
														by driller.
	2.00	250	2.00	Dry	2,2	150	3,3,3,4		N=13	CD9.2.03-2023	09/03/2023	63	14	Hole diameter not recorded
														by driller.
	3.00	250	3.00	Dry	2,1	150	4,3,5,7		N=19	CD9.2.03-2023	09/03/2023	63	20	Hole diameter not recorded
														by driller.
	4.00	250	4.00	Dry	3,7	150	7,10,9,9		N=35	CD9.2.03-2023	09/03/2023	63	37	Hole diameter not recorded
														by driller.

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
GS-PTS108A	4.70	250	0.00	Dry	21,4	95	25,25+	146	21,4/25,25	CD9.2.03-2023	09/03/2023	63		Hole diameter not recorded
									for 71mm					by driller.
	6.00	250	4.70	3.00	3,2	150	18,40,10+	155	3,2/18,40,10	CD9.2.03-2023	09/03/2023	63		
									for 5mm					
GS-PTS109	1.20	150	0.00	Dry	4,4	150	5,4,5,6		N=20	CD9.2.03-2023	09/03/2023	63	21	
	2.00	150	1.70	Dry	1,1	150	2,2,3,2		N=9	CD9.2.03-2023	09/03/2023	63	9	
	3.00	150	1.70	Dry	4,9	150	11,13,22,4+	230	4,9/11,13,22,4	CD9.2.03-2023	09/03/2023	63		
									for 5mm					
	5.50	146	5.50	1.00	5,20	135	50+	66	5,20/50	CD9.2.03-2023	09/03/2023	63		
									for 66mm					
WS-PTS101	1.20	98	0.00	Dry	1,1	150	3,3,4,3		N=13	DART384-2022	15/07/2022	67	15	
	2.00	98	0.00	Dry	3,3	150	5,8,10,10		N=33	DART384-2022	15/07/2022	67	37	
	3.00	85	0.00	Dry	8,11	150	50+	50	8,11/50	DART384-2022	15/07/2022	67		
									for 50mm					
WS-PTS105	1.20	85	0.00	Dry	4,4	150	4,4,4,4		N=16	DART384-2022	15/07/2022	67	18	
	2.00	85	0.00	Dry	4,4	150	4,3,3,4		N=14	DART384-2022	15/07/2022	67	16	
	3.00	75	0.00	Dry	3,6	150	7,9,5,8		N=29	DART384-2022	15/07/2022	67	32	
WS-PTS105	4.00	65	0.00	Dry	8,17	140	15,12,12,11+	260	8,17/15,12,12,11	DART384-2022	15/07/2022	67		

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
									for 35mm					
WS-PTS107	1.20	98	0.00	Dry	1,2	150	2,4,4,5		N=15	DART176-2022	13/07/2022	65	16	
	2.00	98	0.00	Dry	25	75	45,5+	100	25/45,5	DART176-2022	13/07/2022	65		
									for 25mm					
WS-PTS107A	1.20	98	0.00	Dry	1,0	150	1,2,4,4		N=11	DART176-2022	13/07/2022	65	12	
	2.00	98	0.00	Dry	2,3	150	3,3,4,4		N=14	DART176-2022	13/07/2022	65	15	
	3.00	85	0.00	Dry	5,9	150	8,8,9,10		N=35	DART176-2022	13/07/2022	65	38	
	4.00	75	0.00	Dry	9,14	150	21,24,5	225	9,14/21,24,5	DART176-2022	13/07/2022	65		
									for 75mm					
WS-PTS107B	1.20	98	0.00	Dry	1,2	150	3,4,3,4		N=14	DART176-2022	13/07/2022	65	15	
	2.00	98	0.00	Dry	1,2	150	3,2,4,4		N=13	DART176-2022	13/07/2022	65	14	
	3.00	85	0.00	Dry	5,8	150	7,14,9,10		N=40	DART176-2022	13/07/2022	65	43	
	4.00	75	0.00	Dry	8,11	150	25,25+	120	8,11/25,25	DART176-2022	13/07/2022	65		
									for 45mm					
WS-PTS108	1.20	98	0.00	Dry	1,2	150	2,2,2,4		N=10	DART176-2022	13/07/2022	65	11	
	2.00	98	0.00	Dry	3,4	150	4,4,5,6		N=19	DART176-2022	13/07/2022	65	21	
	3.00	85	0.00	Dry	3,5	150	5,5,6,8		N=24	DART176-2022	13/07/2022	65	26	
WS-PTS108	3.75	75	0.00	Dry	11,13	150	36,14+	100	11,13/36,14	DART176-2022	13/07/2022	65		

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
									for 25mm					
WS-PTS110	1.20	85	0.00	Dry	4,6	150	6,8,8,7		N=29	DART176-2022	13/07/2022	65	31	
	2.00	85	0.00	Dry	2,4	150	4,5,6,6		N=21	DART176-2022	13/07/2022	65	23	
	3.00	75	0.00	Dry	4,4	150	6,5,5,6		N=22	DART176-2022	13/07/2022	65	24	
	4.00	65	0.00	Dry	2,4	150	5,4,4,4		N=17	DART176-2022	13/07/2022	65	18	
	5.00	65	0.00	Dry	4,10	150	9,9,11,10		N=39	DART176-2022	13/07/2022	65	42	
WS-PTS113	1.20	98	0.00	Dry	2,1	150	2,2,3,4		N=11	DART176-2022	13/07/2022	65	12	
	2.00	98	0.00	Dry	4,3	150	3,4,4,5		N=16	DART176-2022	13/07/2022	65	17	
	3.00	85	0.00	Dry	1,2	150	4,5,4,5		N=18	DART176-2022	13/07/2022	65	20	
	3.80	75	0.00	Dry	10,11	150	16,21,13	225	10,11/16,21,13	DART176-2022	13/07/2022	65		
									for 75mm					
WS-PTS114	1.20	98	0.00	Dry	1,3	150	3,4,4,5		N=16	DART176-2022	13/07/2022	65	17	
	2.00	98	0.00	Dry	1,2	150	2,3,3,3		N=11	DART176-2022	13/07/2022	65	12	
	3.00	85	0.00	Dry	4,10	150	15,18,18	225	4,10/15,18,18	DART176-2022	13/07/2022	65		
									for 75mm					
	4.00	75	0.00	Dry	5,8	150	11,10,10,10		N=41	DART176-2022	13/07/2022	65	44	

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date	Contract Ref:
	ALUMBER	**30.08.23**	**765633**
Contract: **A66 NTP Scheme S03A**			Page: **22** of **25**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
WS-PTS116	1.20	98	0.00	Dry	1,3	150	4,4,3,6		N=17	DART176-2022	13/07/2022	65	18	
	1.70	98	0.00	Dry	25	75		0	NP	DART176-2022	13/07/2022	65		Refused on seating blows,
														test reset and attempted
														again.
	1.80	98	0.00	Dry	14,10	150	24,26	150	14,10/24,26	DART176-2022	13/07/2022	65		
									for 75mm					
WS-PTS116A	1.20	85	0.00	Dry	2,3	150	3,3,2,9		N=17	DART384-2022	15/07/2022	67	19	
	2.00	85	0.00	Dry	10,15	115	19,13,12,6+	265	10,15/19,13,12,6	DART384-2022	15/07/2022	67		SPT(c)
									for 40mm					
WS-PTS117	1.20	500	0.00	Dry	12,12	150	50	75	12,12/50	DART176-2022	13/07/2022	65		
									for 75mm					
WS-PTS117A	1.20	55	0.00	Dry	6,8	150	10,10,14,14		N=48	DART176-2022	13/07/2022	65	52	
	2.00	55	0.00	Dry	5,12	150	8,10,10,14		N=42	DART176-2022	13/07/2022	65	46	
	3.00	55	0.00	Dry	10,7	150	7,7,8,10		N=32	DART176-2022	13/07/2022	65	35	
	4.00	55	0.00	Dry	10,14	150	50	75	10,14/50	DART176-2022	13/07/2022	65		
									for 75mm					
WS-PTS119	1.20	85	0.00	Dry	7,9	150	7,7,5,6		N=25	DART384-2022	15/07/2022	67	28	
WS-PTS119	2.00	75	0.00	Dry	11,8	150	7,8,7,6		N=28	DART384-2022	15/07/2022	67	31	

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

STRUCTURAL SOILS
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Compiled By		Date	Contract Ref:
	ALUMBER	**30.08.23**	**765633**
Contract: **A66 NTP Scheme S03A**			Page: **23** of **25**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
WS-PTS120	1.20	98	0.00	1.20	1,0	150	0,1,1,2		N=4	DART176-2022	13/07/2022	65	4	
	2.00	98	0.00	Dry	0,1	150	0,3,50	225	,1/,3,50	DART176-2022	13/07/2022	65		
									for 75mm					
WS-PTS127	1.20	101	0.00	Dry	1,1	150	3,2,2,3		N=10	DART176-2022	13/07/2022	65	11	
	2.00	89	0.00	Dry	2,3	150	3,4,3,4		N=14	DART176-2022	13/07/2022	65	15	
	3.00	79	0.00	Dry	1,2	150	2,3,1,3		N=9	DART176-2022	13/07/2022	65	10	
	4.00	69	0.00	Dry	5,7	150	10,11,11,15		N=47	DART176-2022	13/07/2022	65	51	
	5.00	69	0.00	Dry	9,12	150	17,20,13	225	9,12/17,20,13	DART176-2022	13/07/2022	65		
									for 75mm					
WS-PTS127A	1.20	98	0.00	Dry	1,1	150	3,3,5,8		N=19	DART384-2022	15/07/2022	67	21	
	2.00	98	0.00	Dry	1,2	150	2,2,3,2		N=9	DART384-2022	15/07/2022	67	10	
	3.00	85	0.00	Dry	2,3	150	3,3,4,4		N=14	DART384-2022	15/07/2022	67	16	
	4.00	75	0.00	Dry	5,10	150	10,10,11,13		N=44	DART384-2022	15/07/2022	67	49	
	5.00	65	0.00	Dry	10,13	150	18,20,12+	165	10,13/18,20,12	DART384-2022	15/07/2022	67		
									for 15mm					
WS-PTS129	1.20	101	0.00	Dry	1,1	150	1,0,1,1		N=3	DART176-2022	13/07/2022	65	3	
	2.00	101	0.00	Dry	3,5	150	8,8,10,7		N=33	DART176-2022	13/07/2022	65	36	

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date	Contract Ref:
	ALUMBER	**30.08.23**	**765633**
Contract: **A66 NTP Scheme S03A**			Page: **24** of **25**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
WS-PTS129	2.80	89	0.00	Dry	7,9	150	12,10,20,8+	225	7,9/12,10,20,8	DART176-2022	13/07/2022	65		
									for 0mm					
WS-PTS130	1.20	98	0.00	Dry	1,1	150	3,3,4,3		N=13	DART176-2022	13/07/2022	65	14	
	2.00	98	0.00	Dry	1,1	150	2,4,1,2		N=9	DART176-2022	13/07/2022	65	10	
	3.00	85	0.00	Dry	3,5	150	5,5,5,7		N=22	DART176-2022	13/07/2022	65	24	
	4.00	75	0.00	Dry	6,8	150	8,5,10,15		N=38	DART176-2022	13/07/2022	65	41	
	5.00	65	0.00	Dry	9,15	150	18,32	150	9,15/18,32	DART176-2022	13/07/2022	65		
									for 75mm					

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

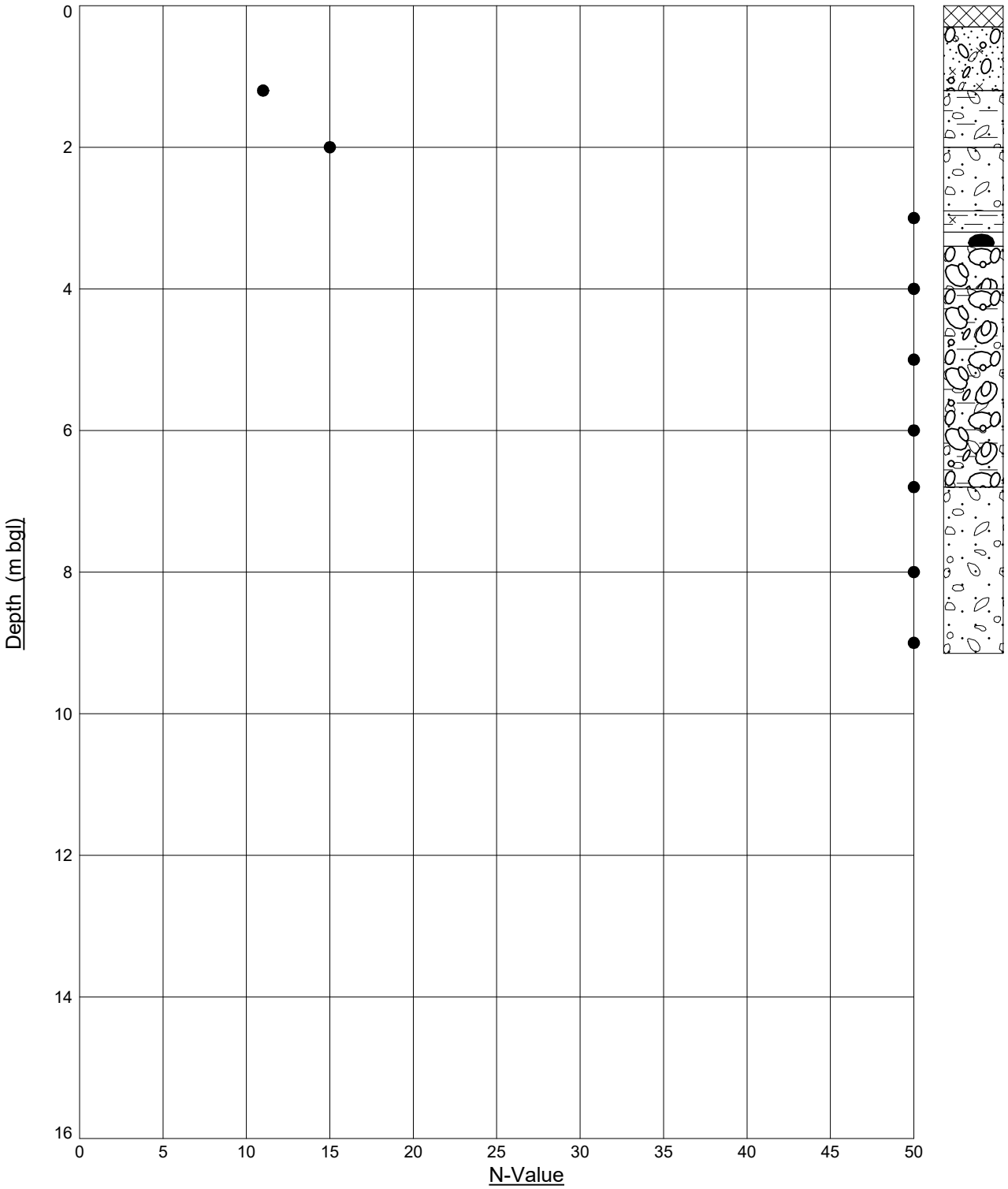
N_{60} = (Measured hammer energy ratio / 60) x N value

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date	Contract Ref:
	ALUMBER	**30.08.23**	**765633**
Contract: **A66 NTP Scheme S03A**			Page: **25** of **25**

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS100**

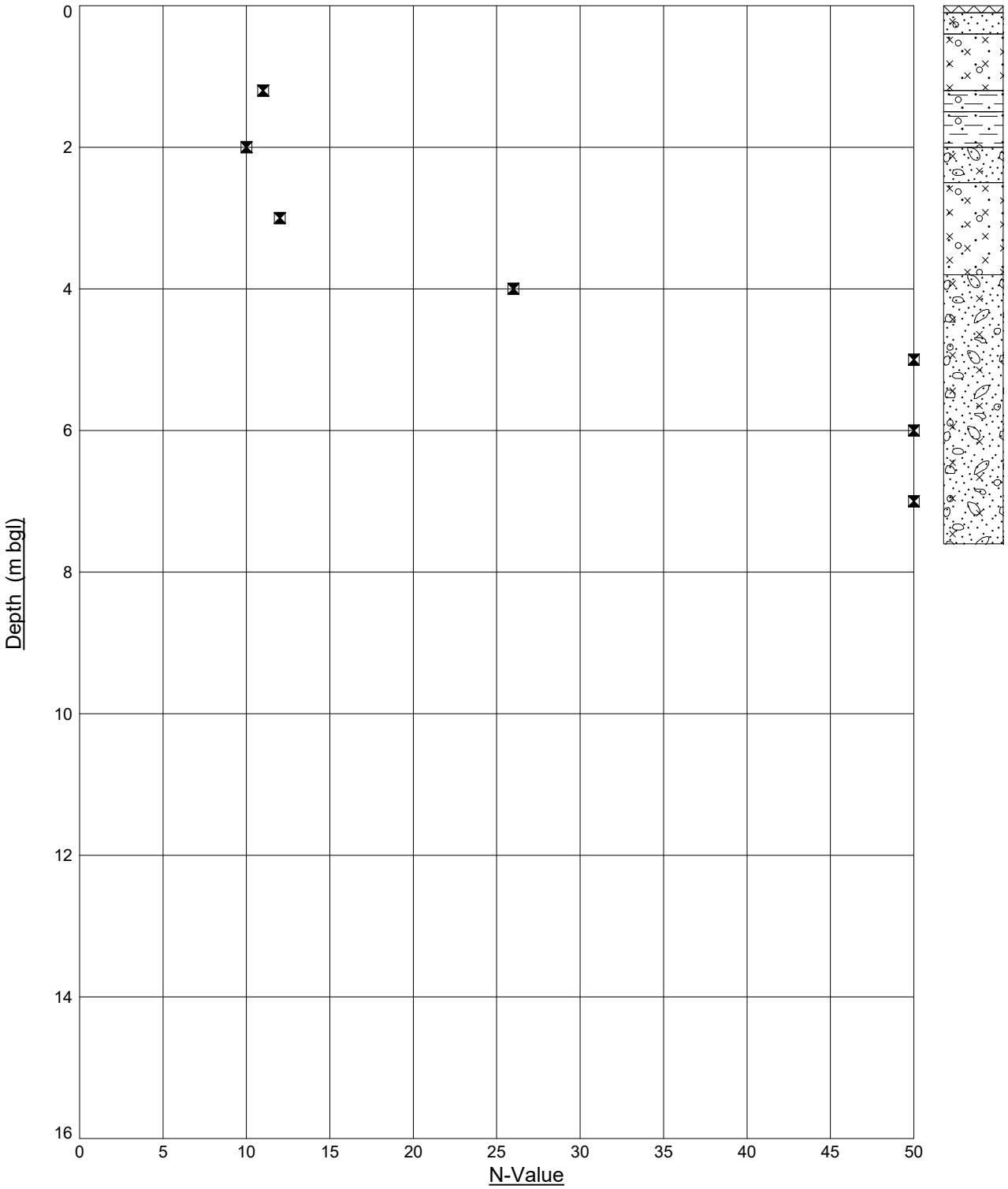


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS101**

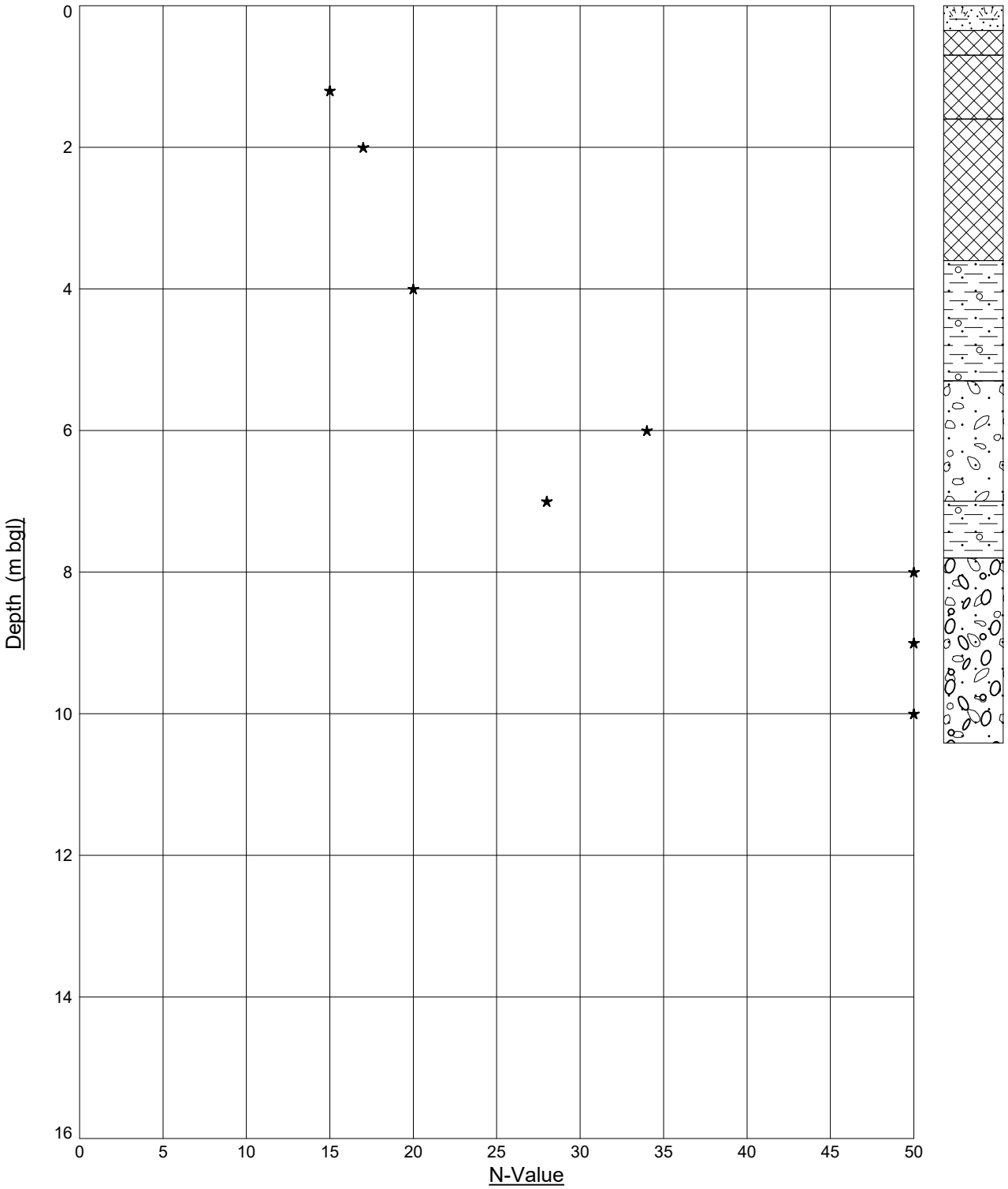


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
VS
DEPTH

Exploratory Hole : **BH-PTS102A**

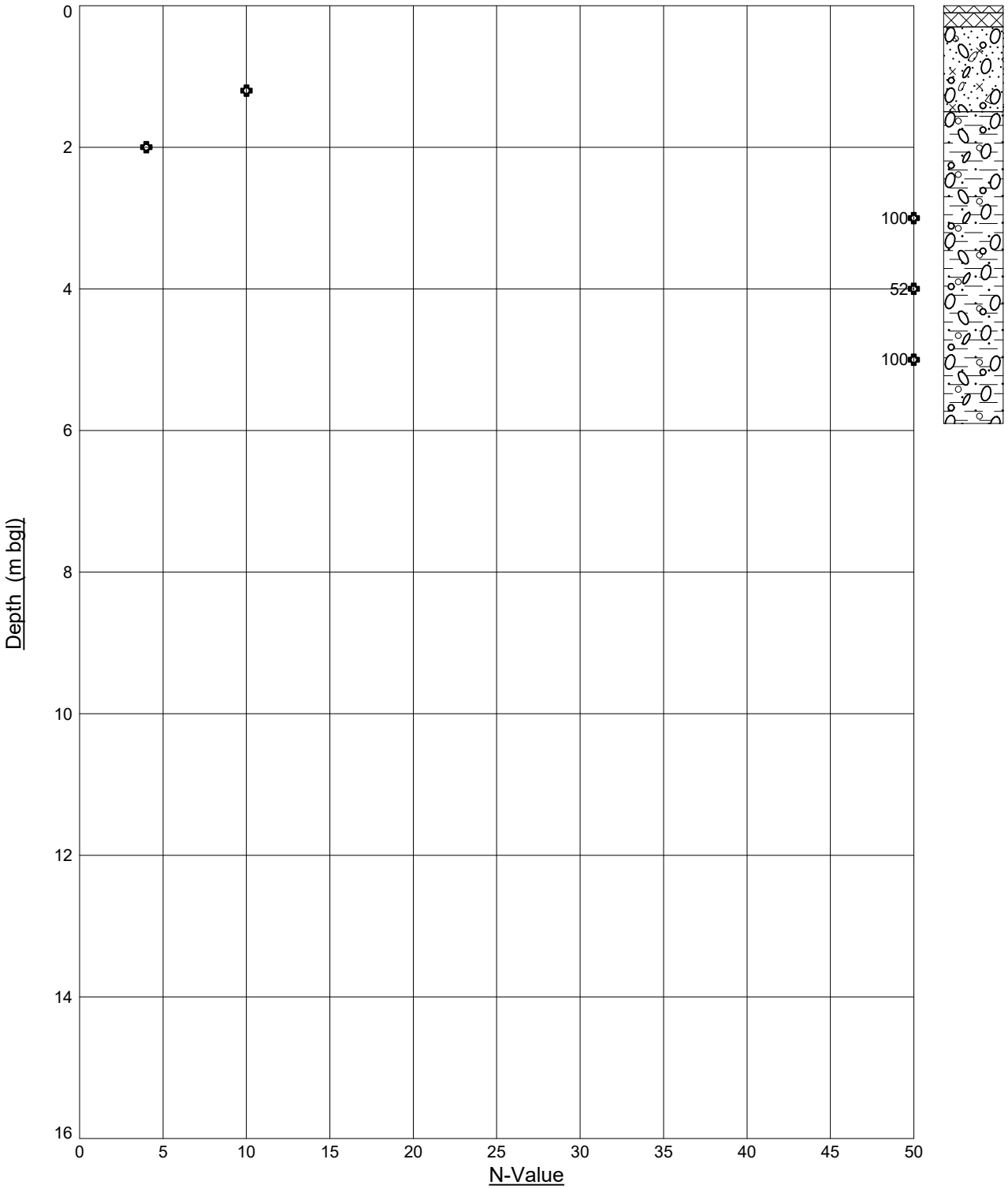


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS106**

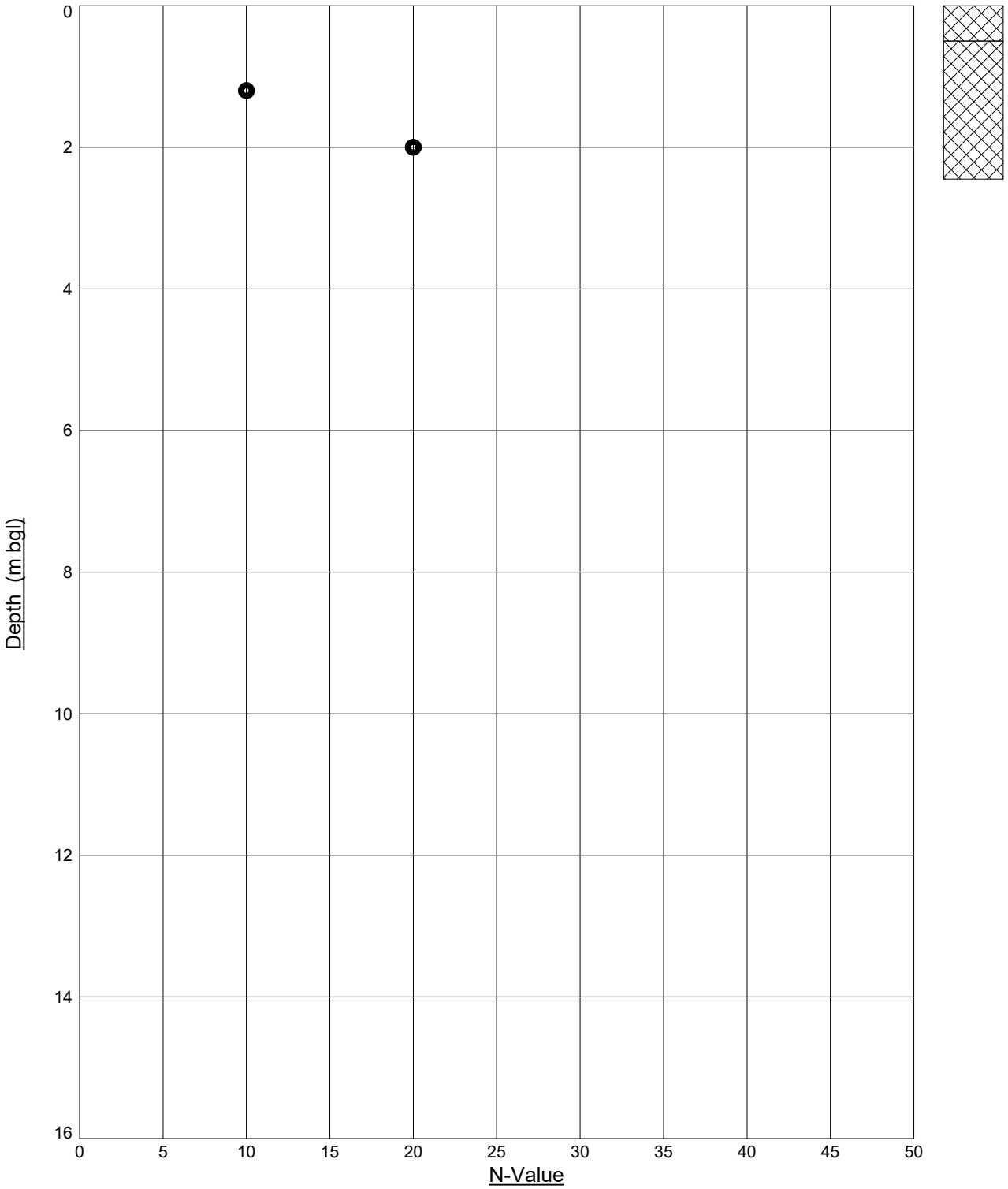


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
VS
DEPTH

Exploratory Hole : **BH-PTS107**

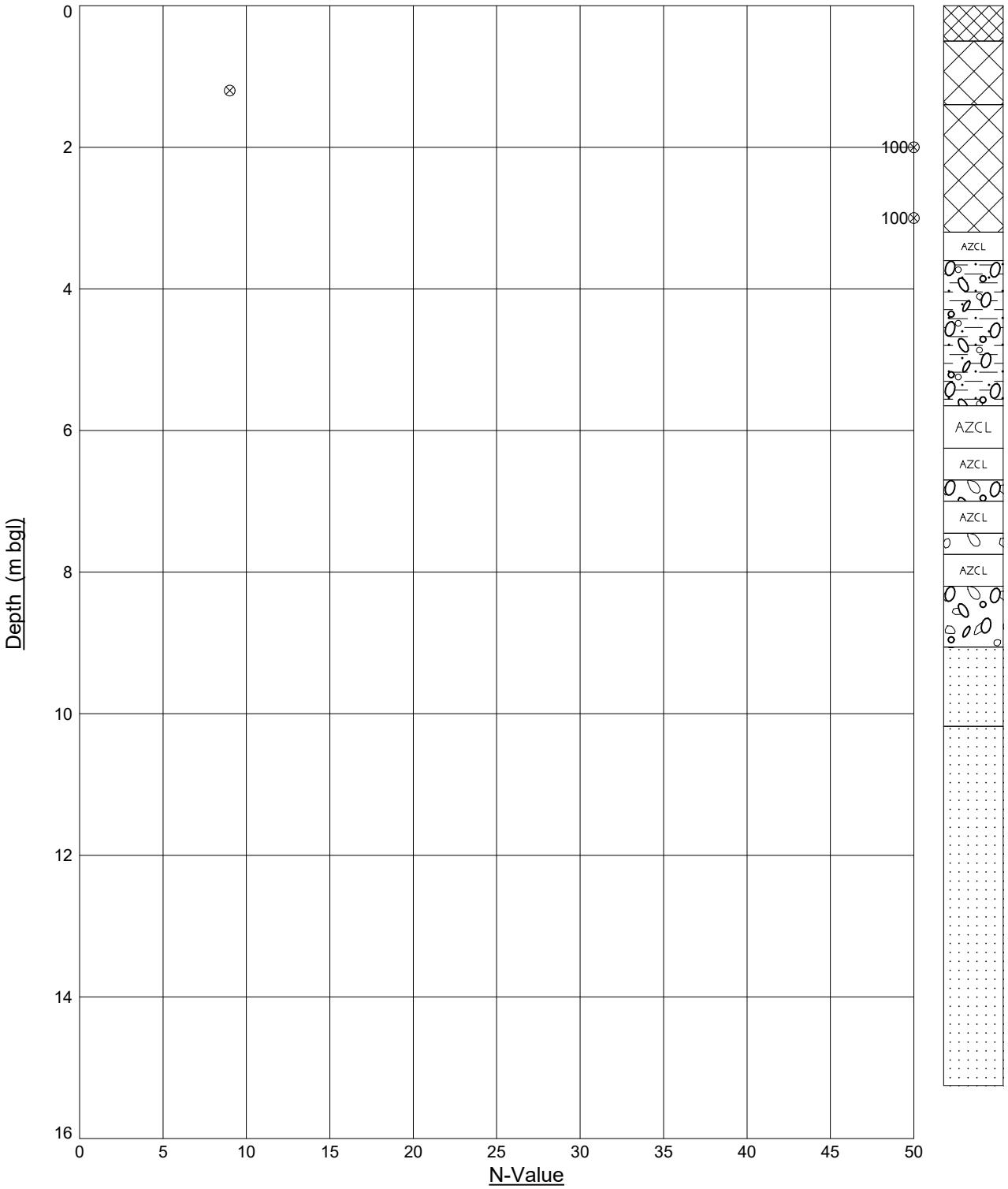


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS107B**

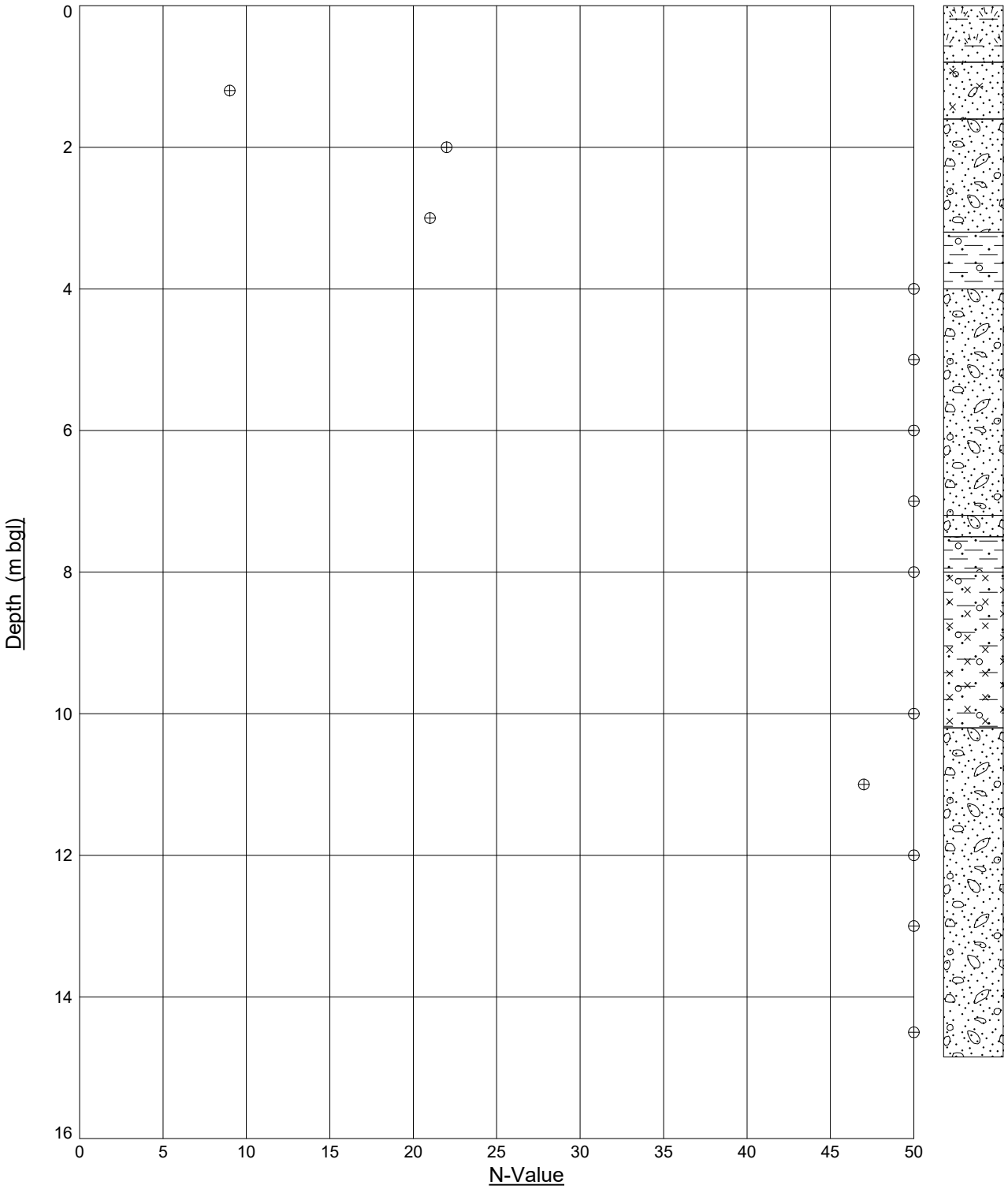


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS108**

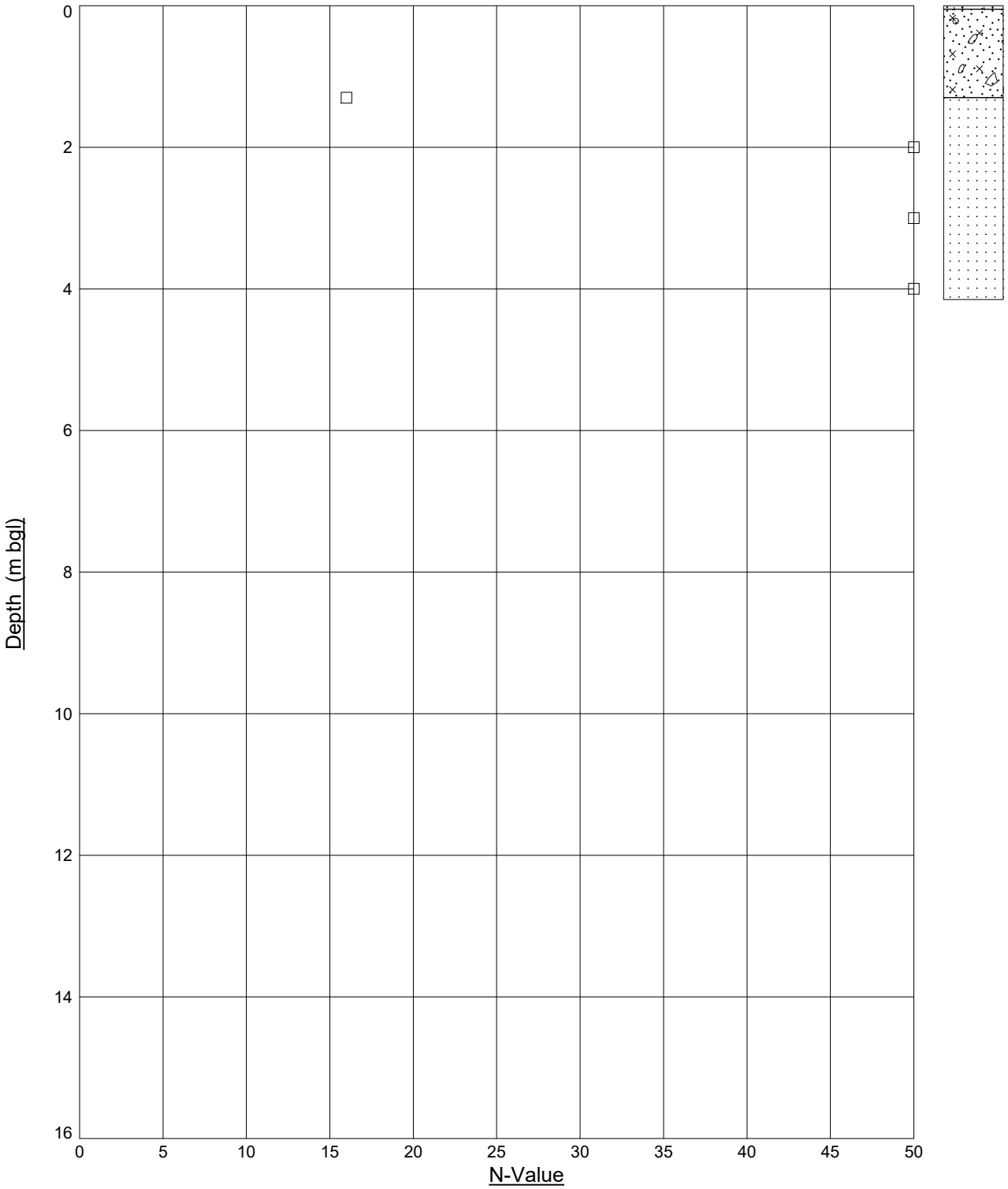


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
VS
DEPTH

Exploratory Hole : **BH-PTS111**

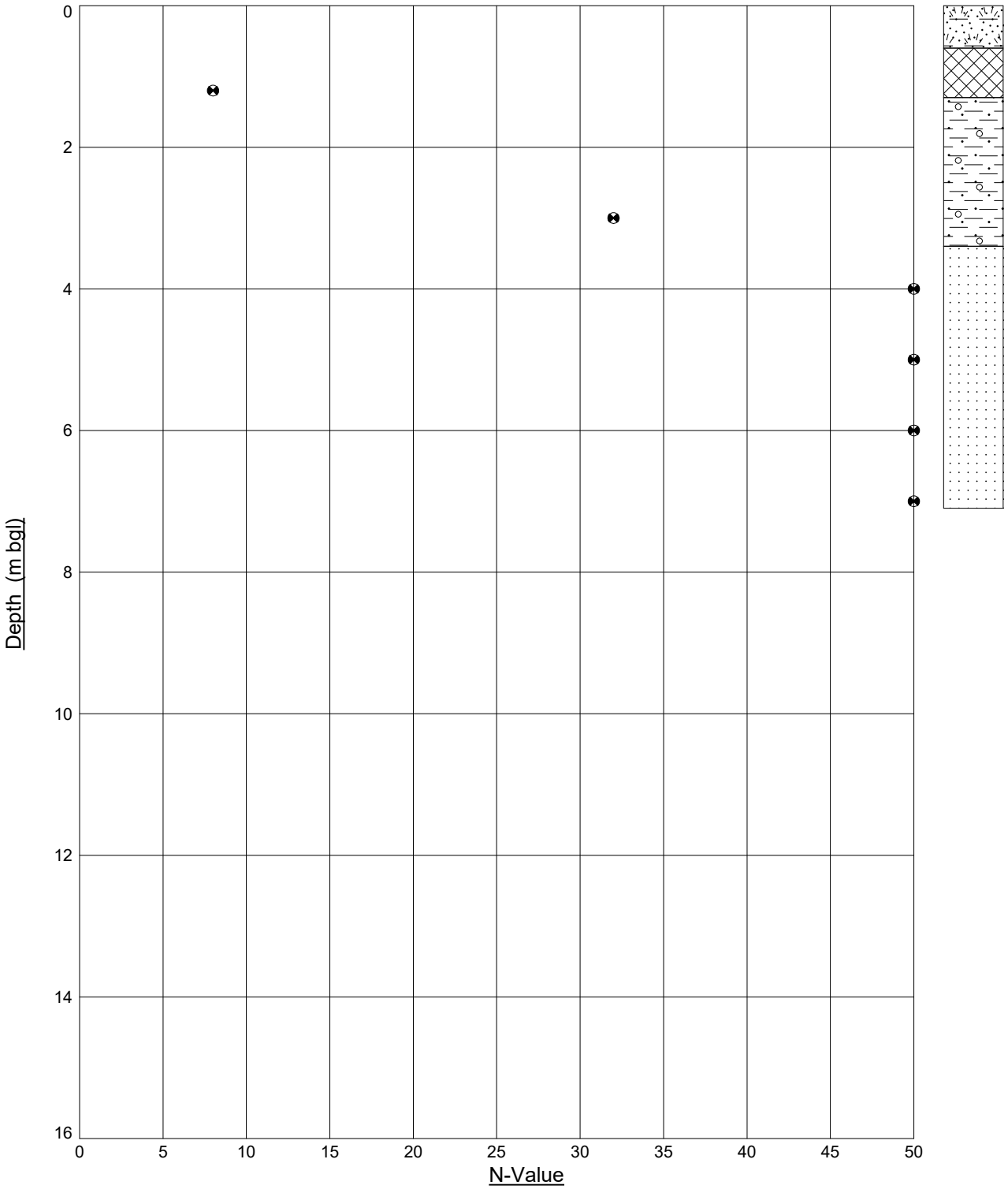


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
VS
DEPTH

Exploratory Hole : **BH-PTS112**

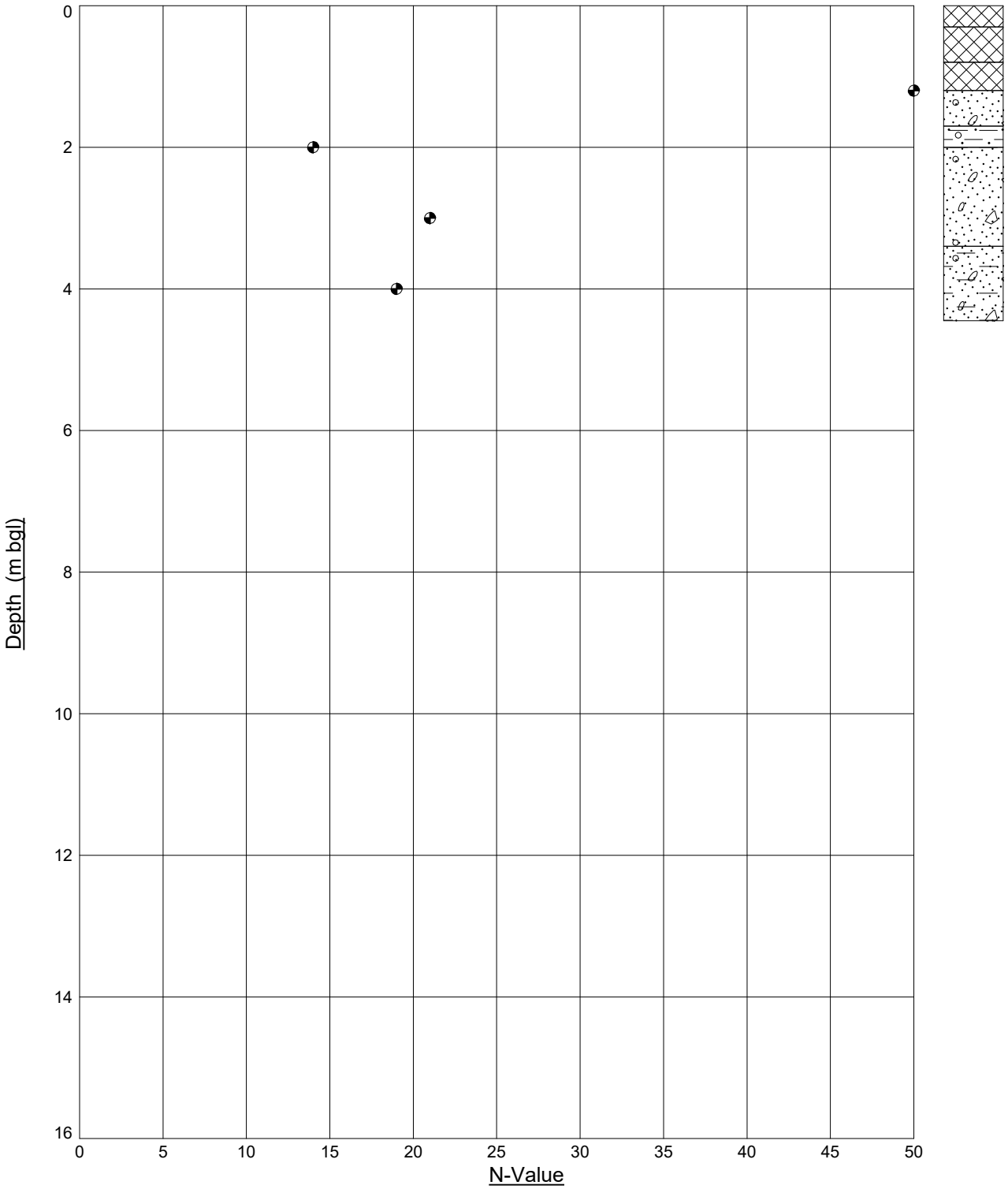


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
VS
DEPTH

Exploratory Hole : **BH-PTS113**

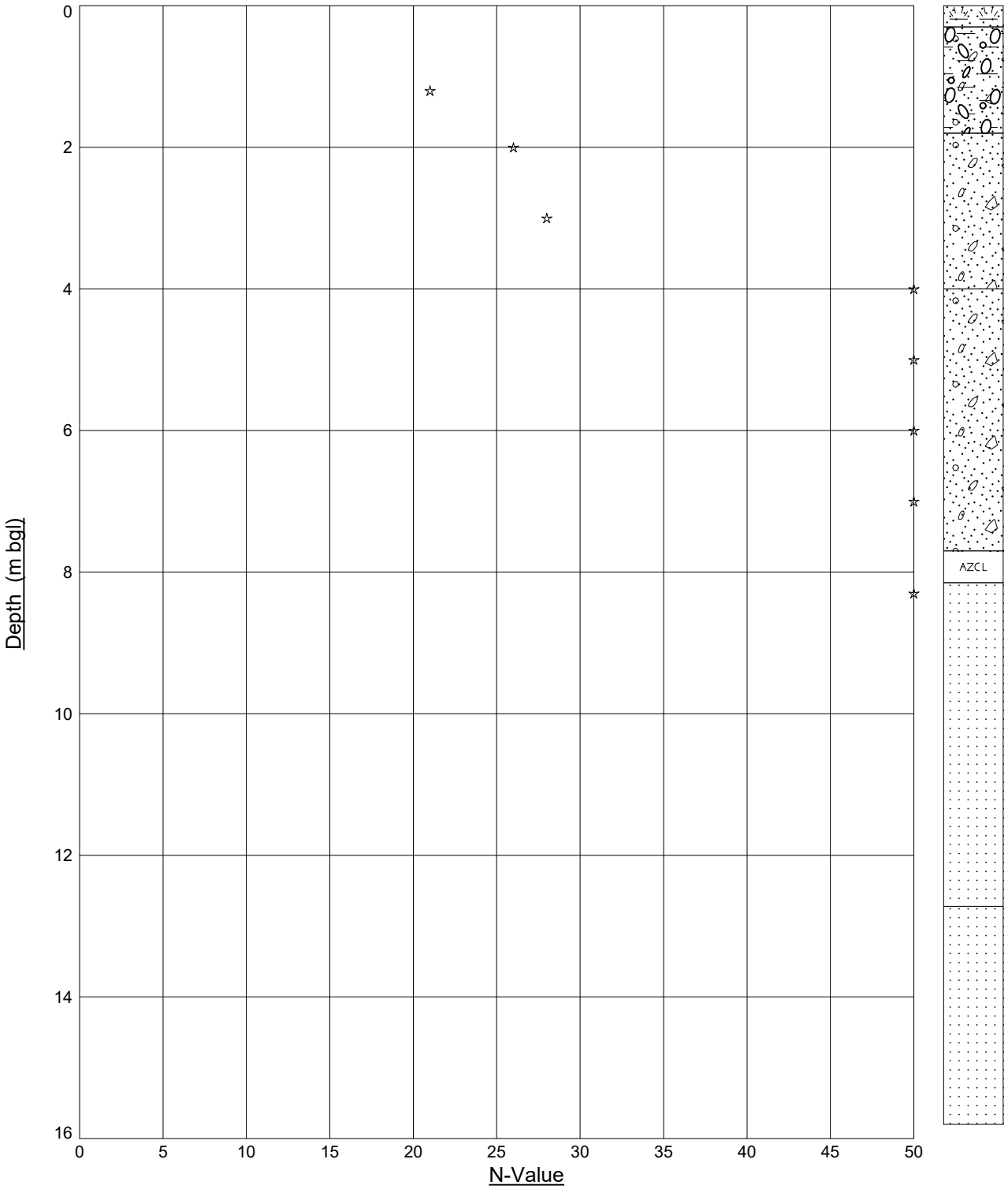


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
VS
DEPTH

Exploratory Hole : **BH-PTS114**

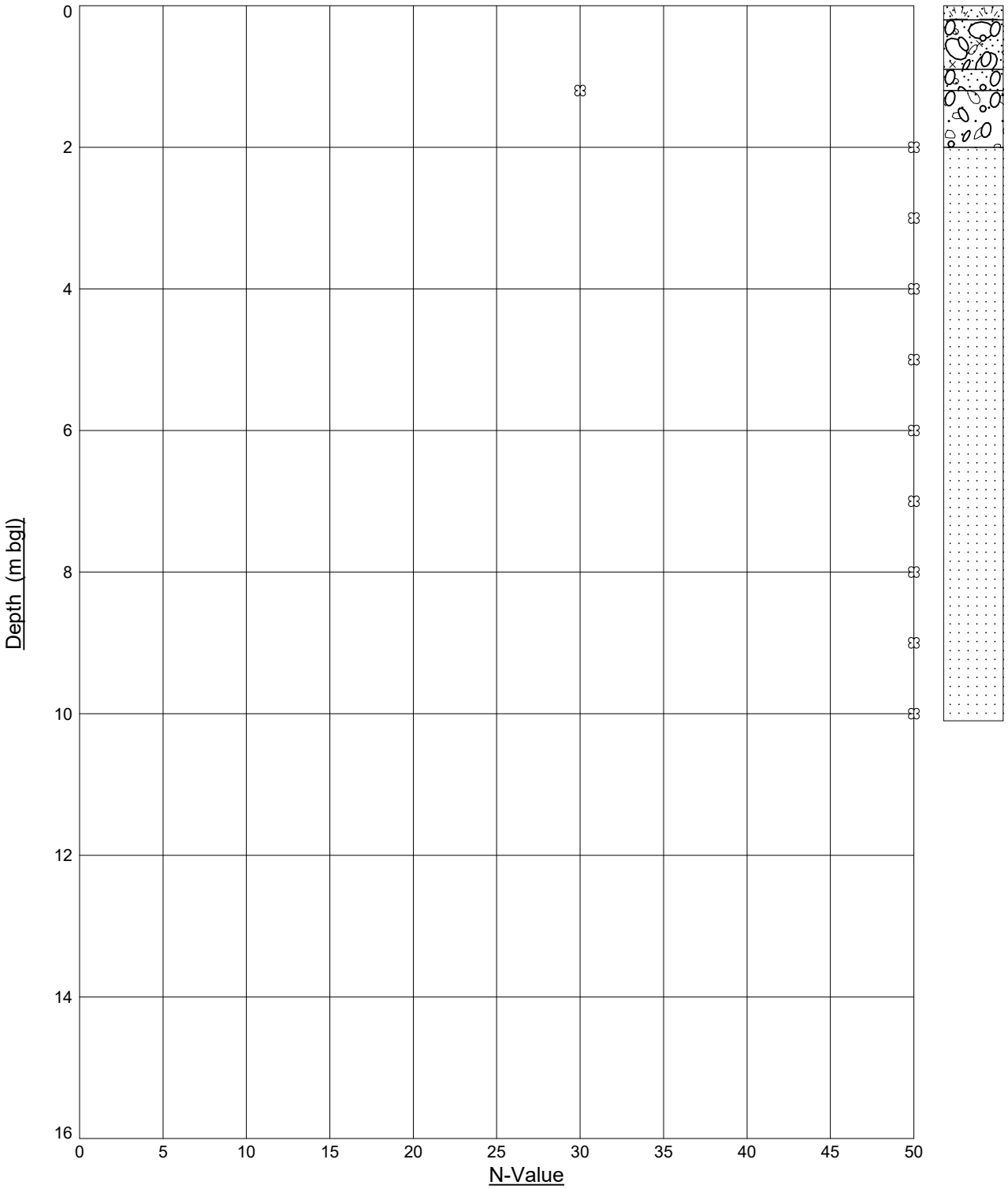


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS115**

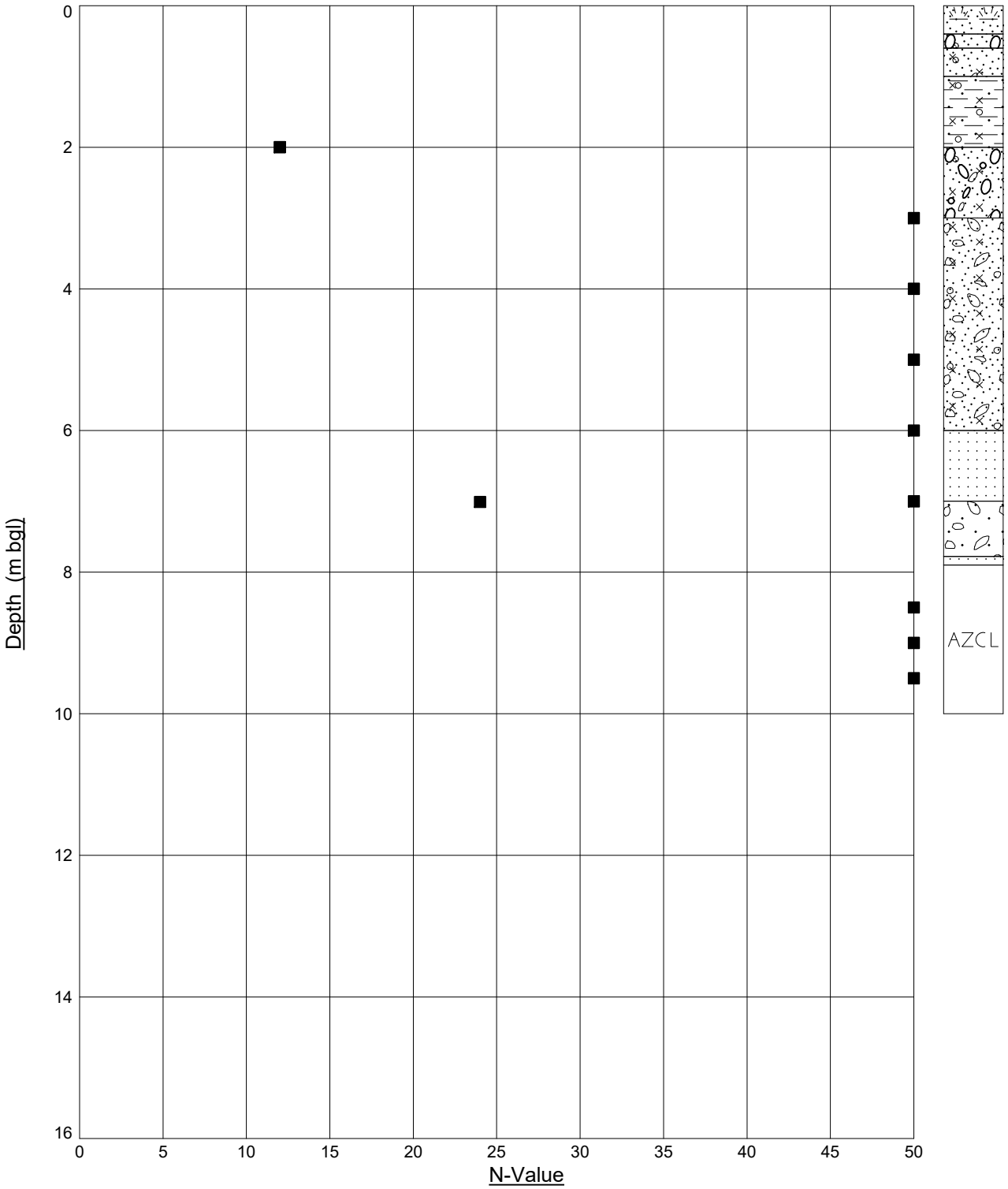


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS116**

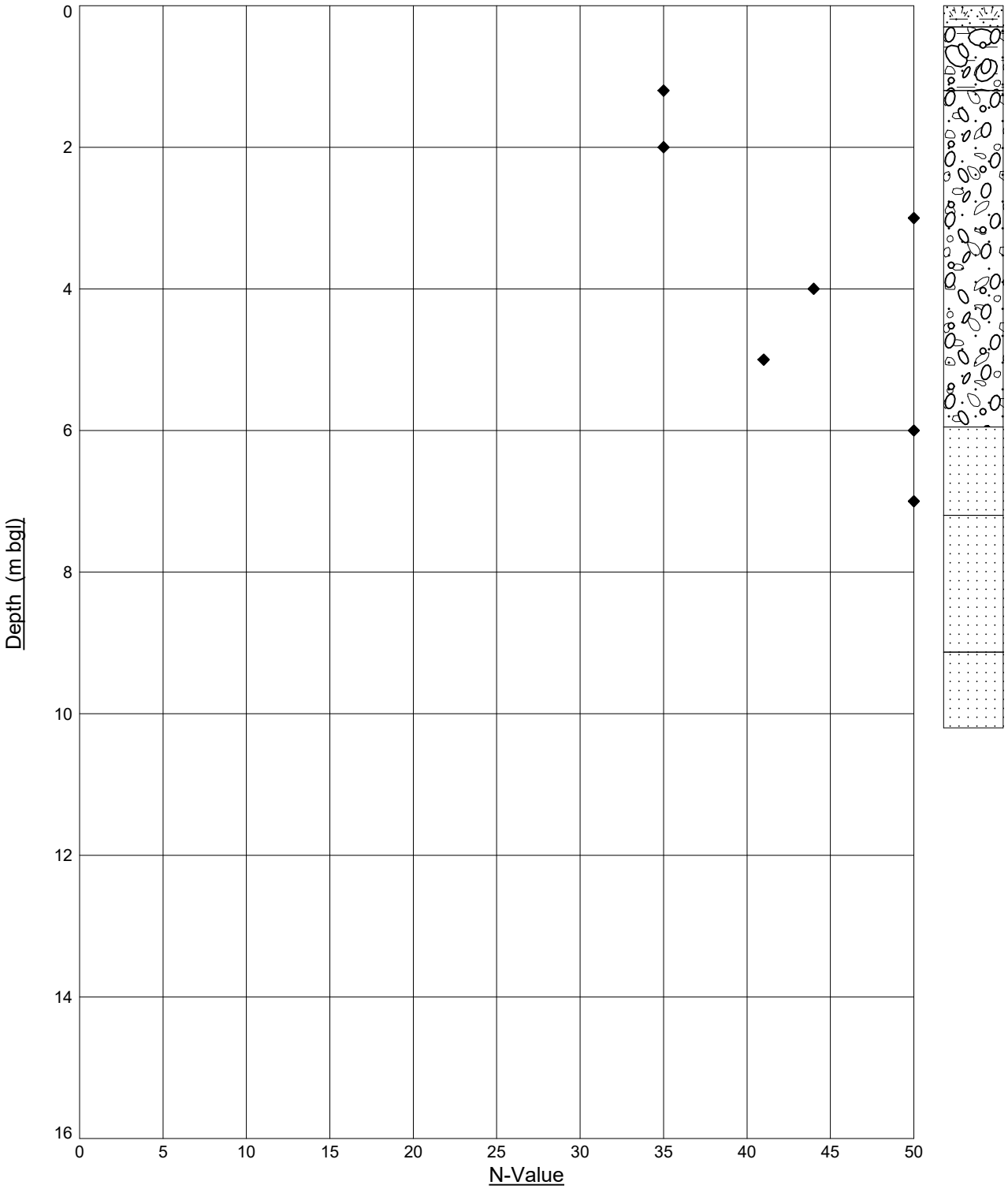


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS117**

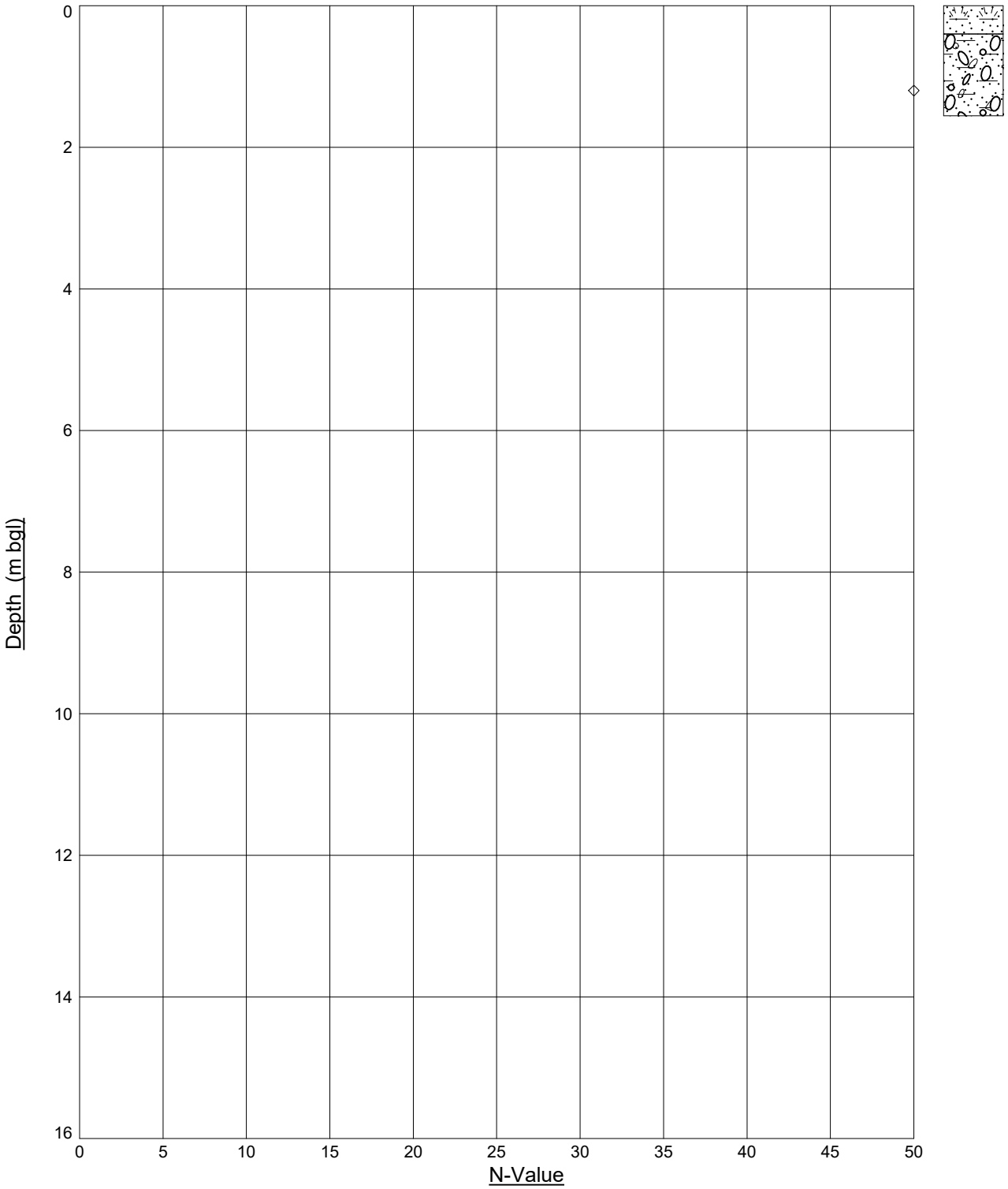


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS118**

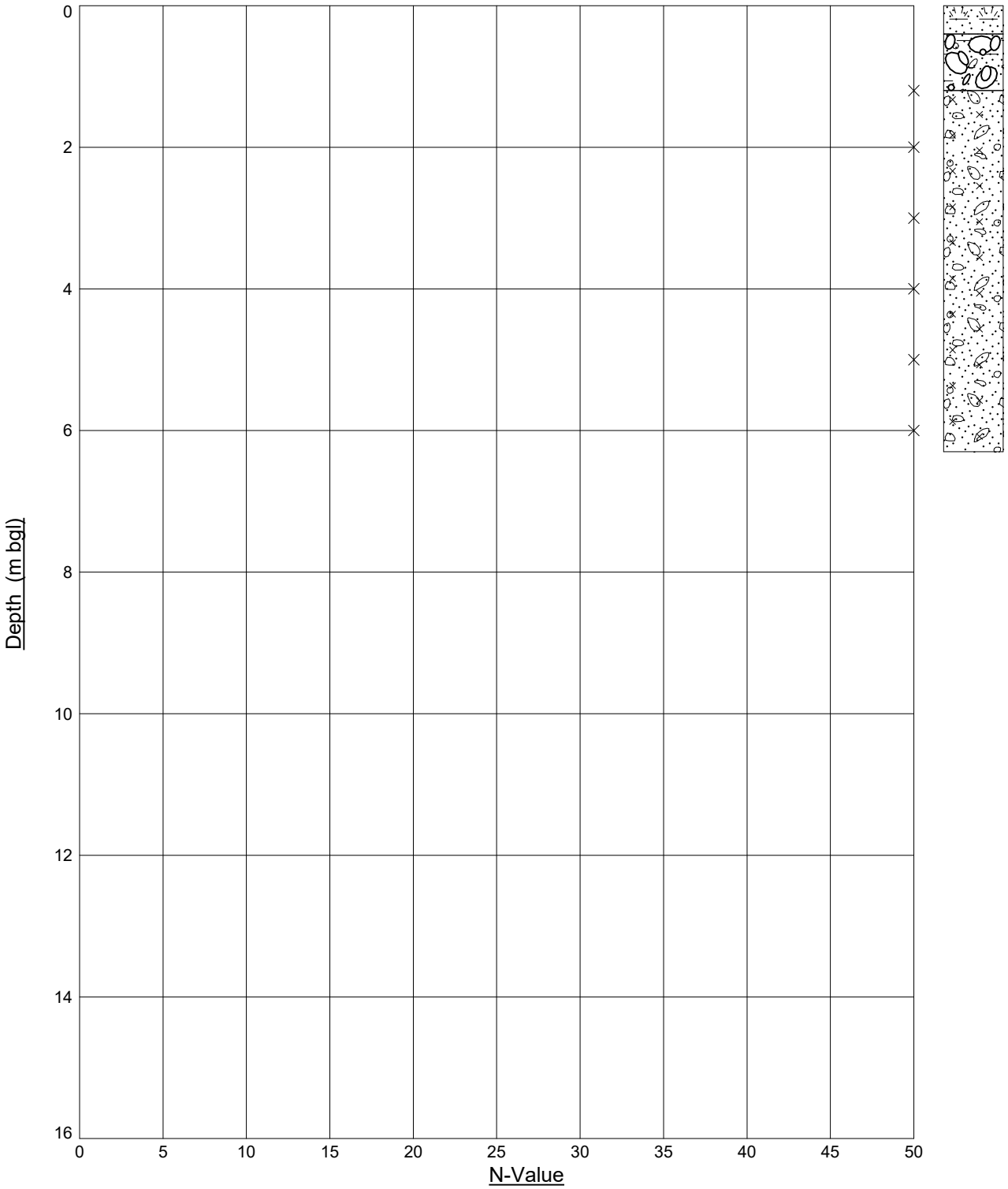


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS118A**

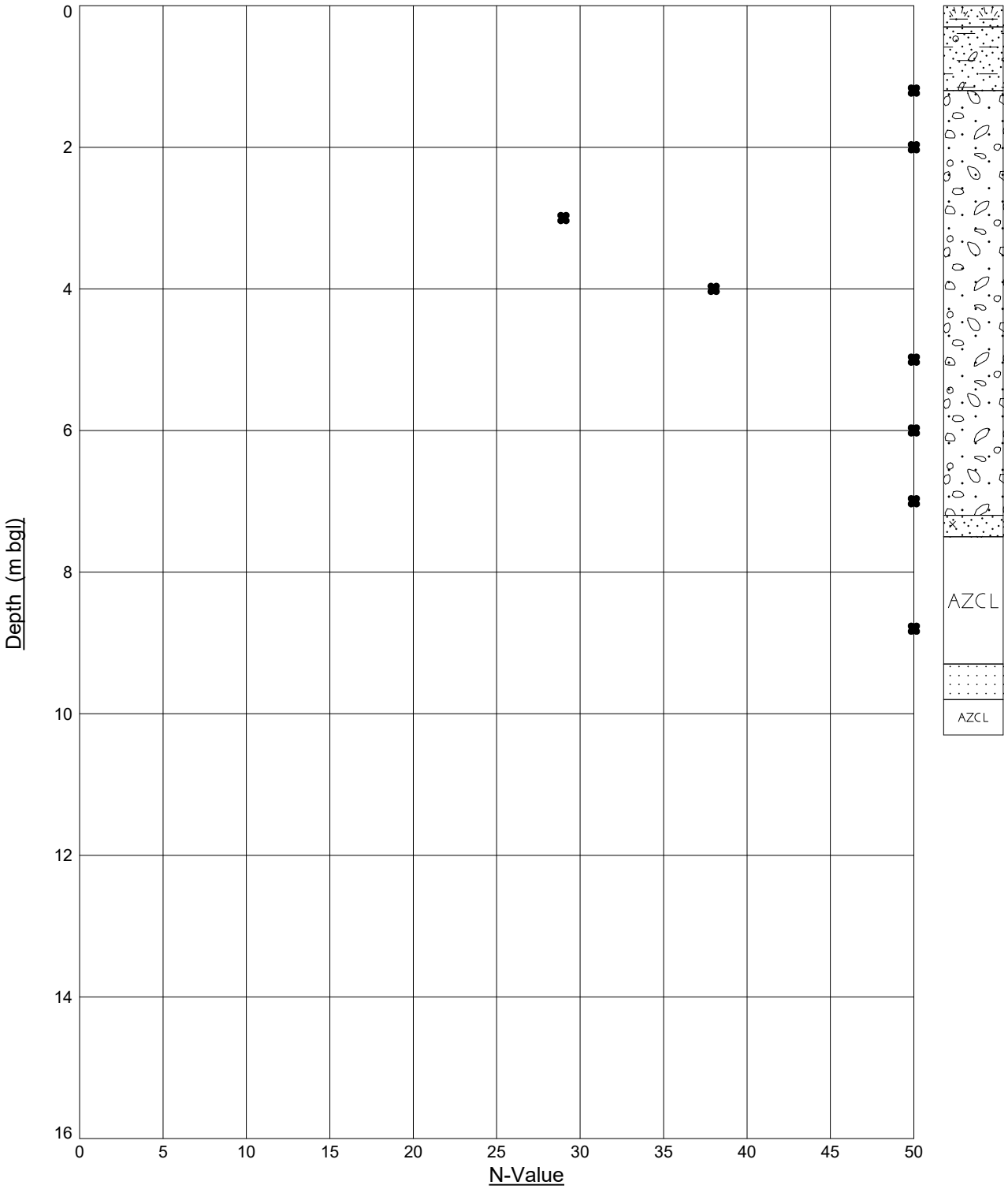


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS118B**

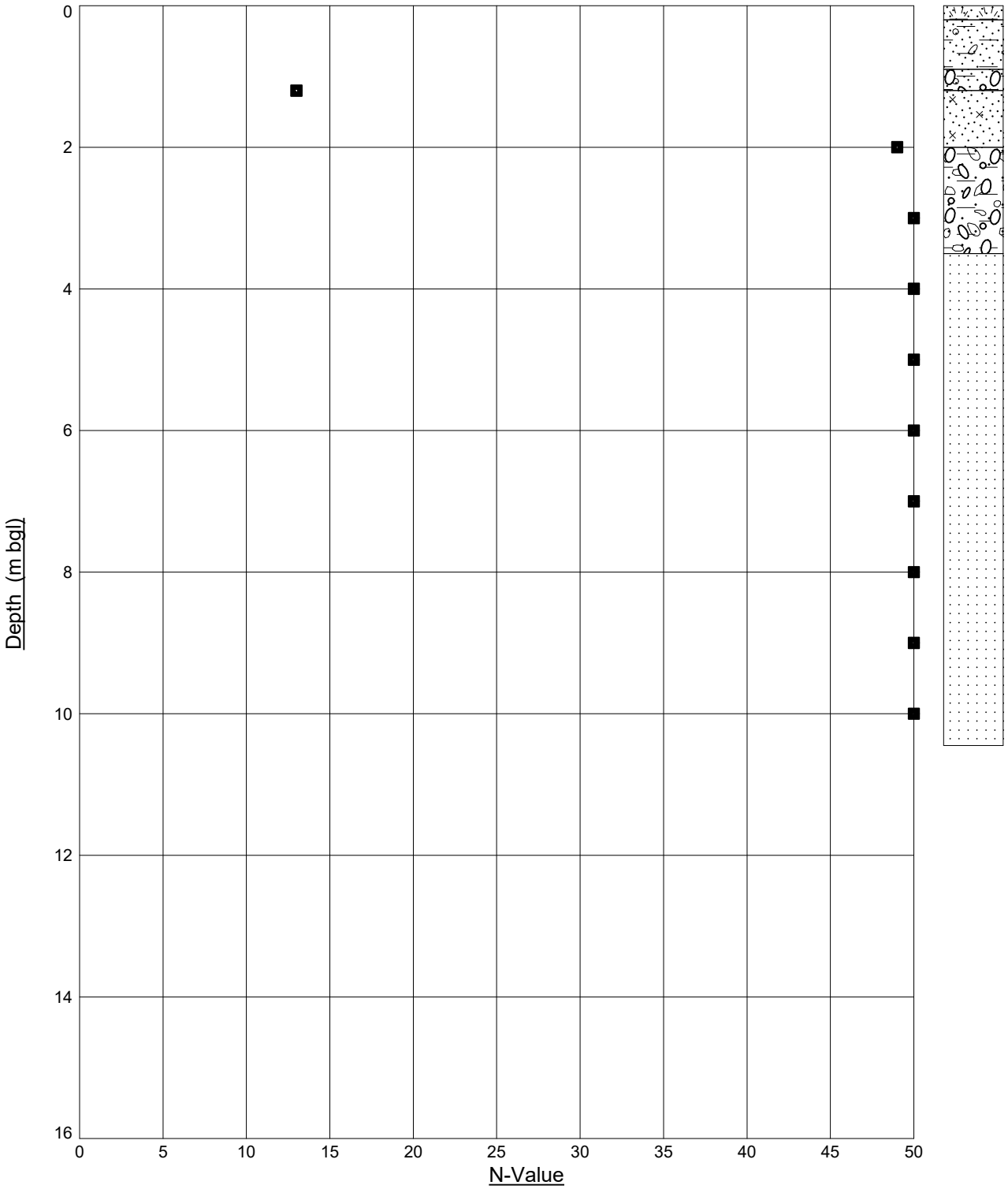


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS119**

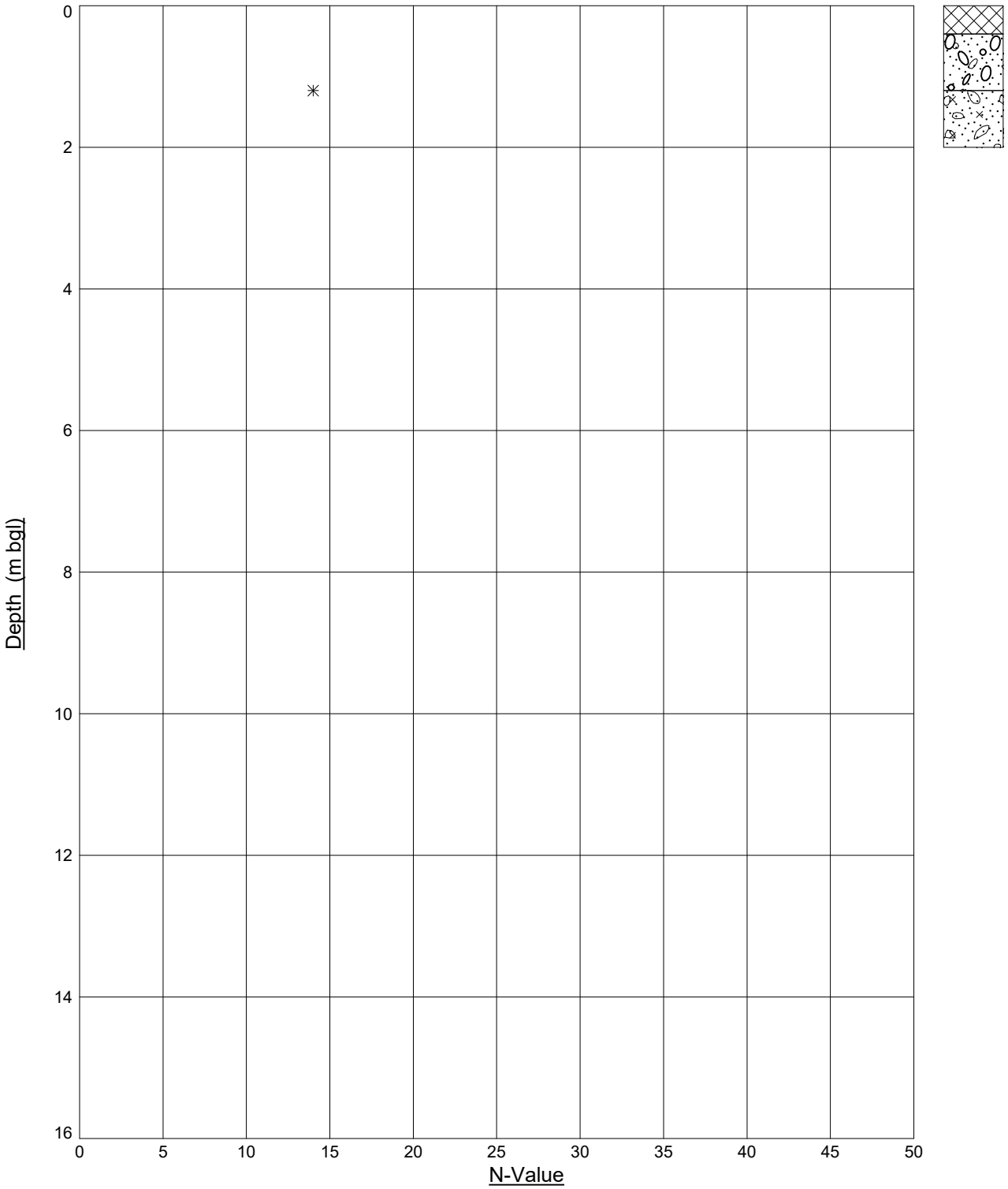


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS120**

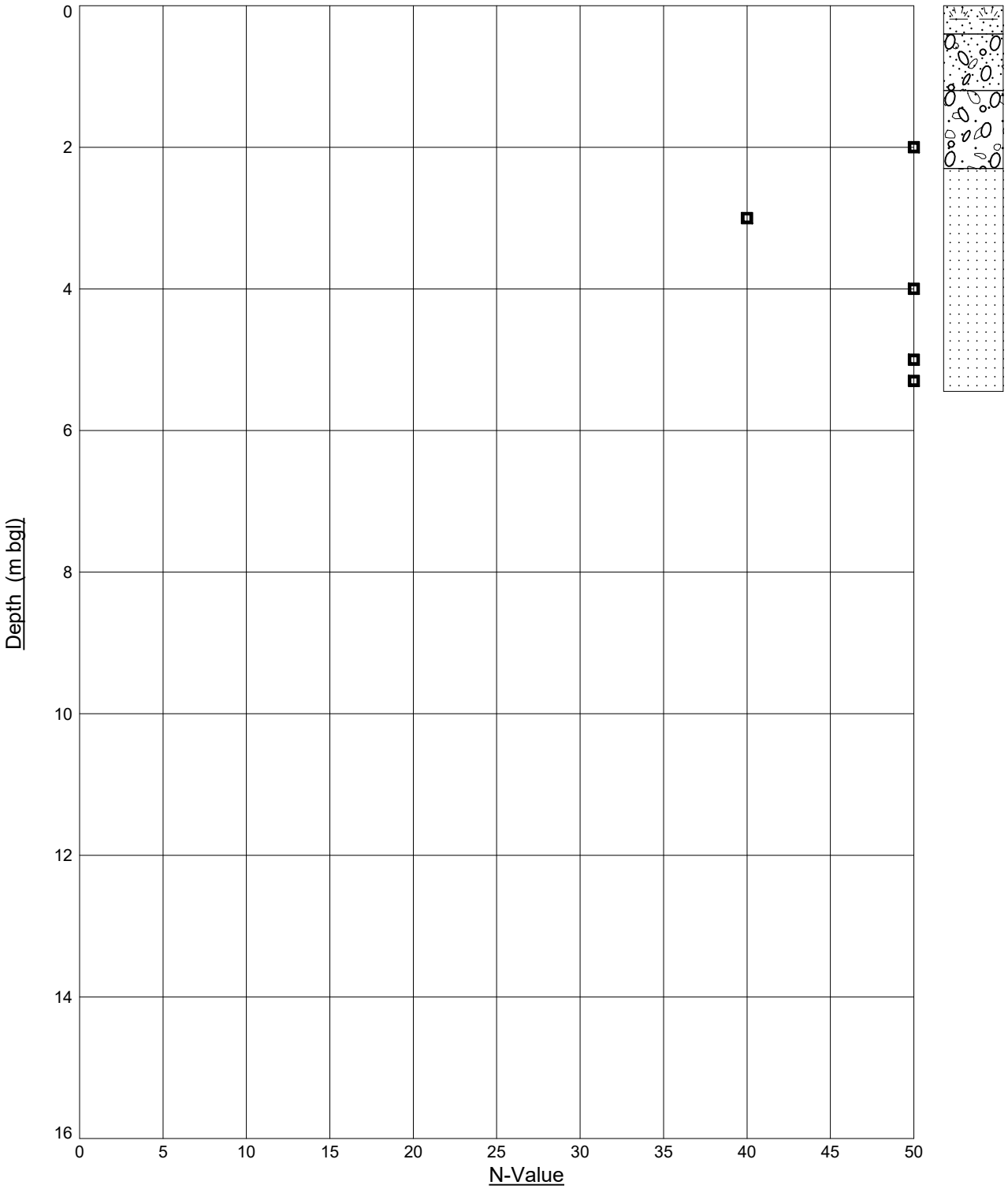


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS120A**

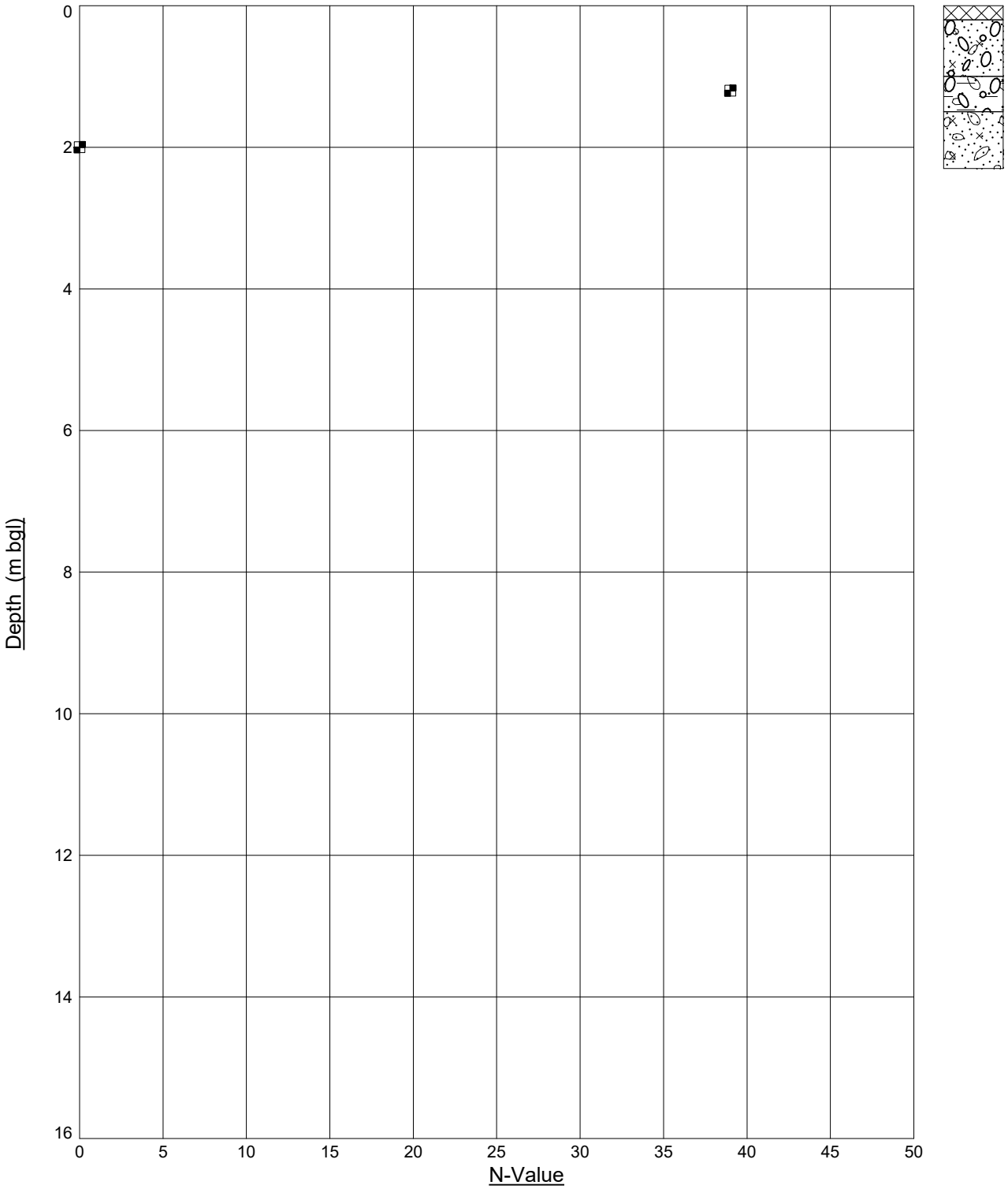


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS121**

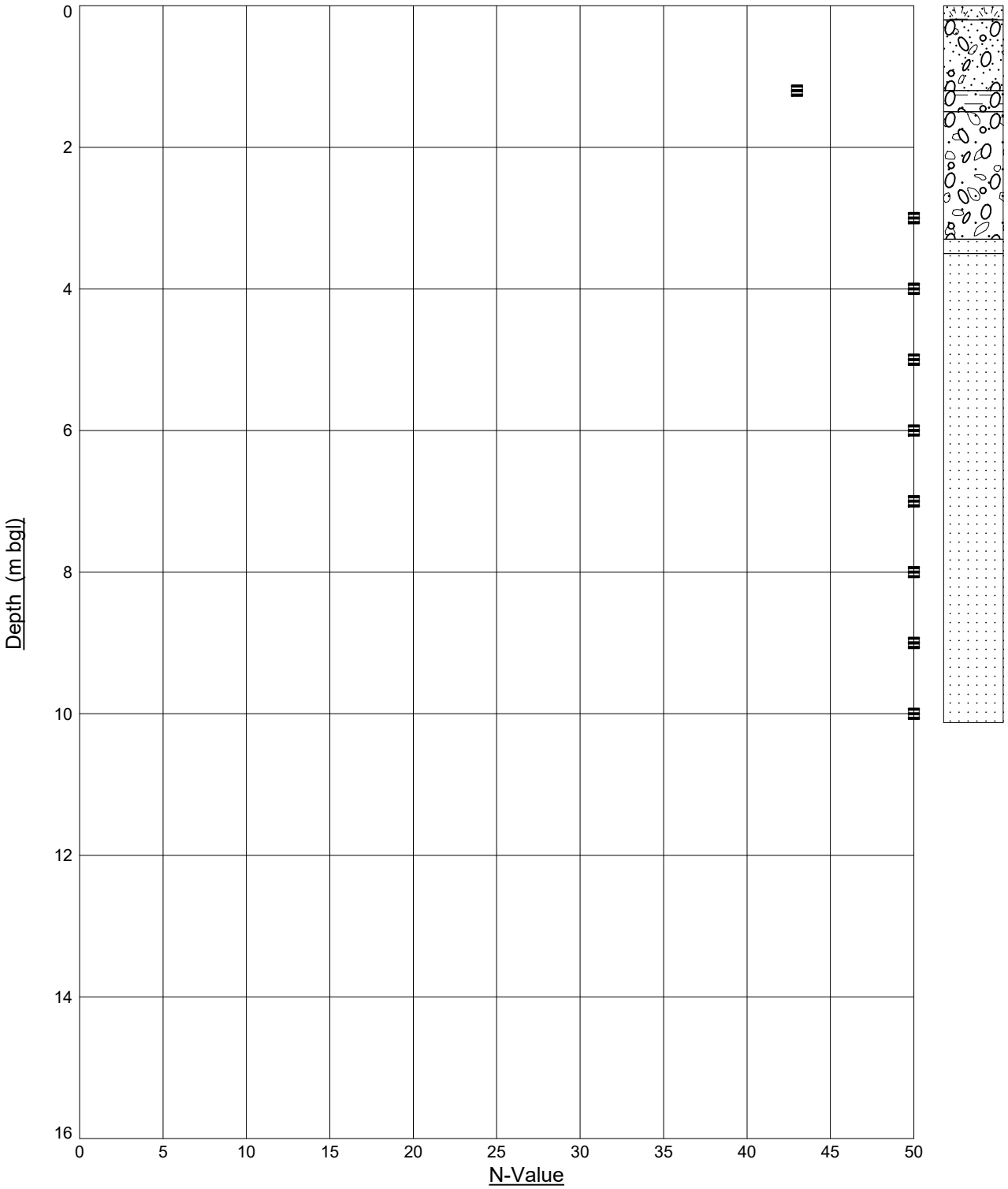


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS121A**

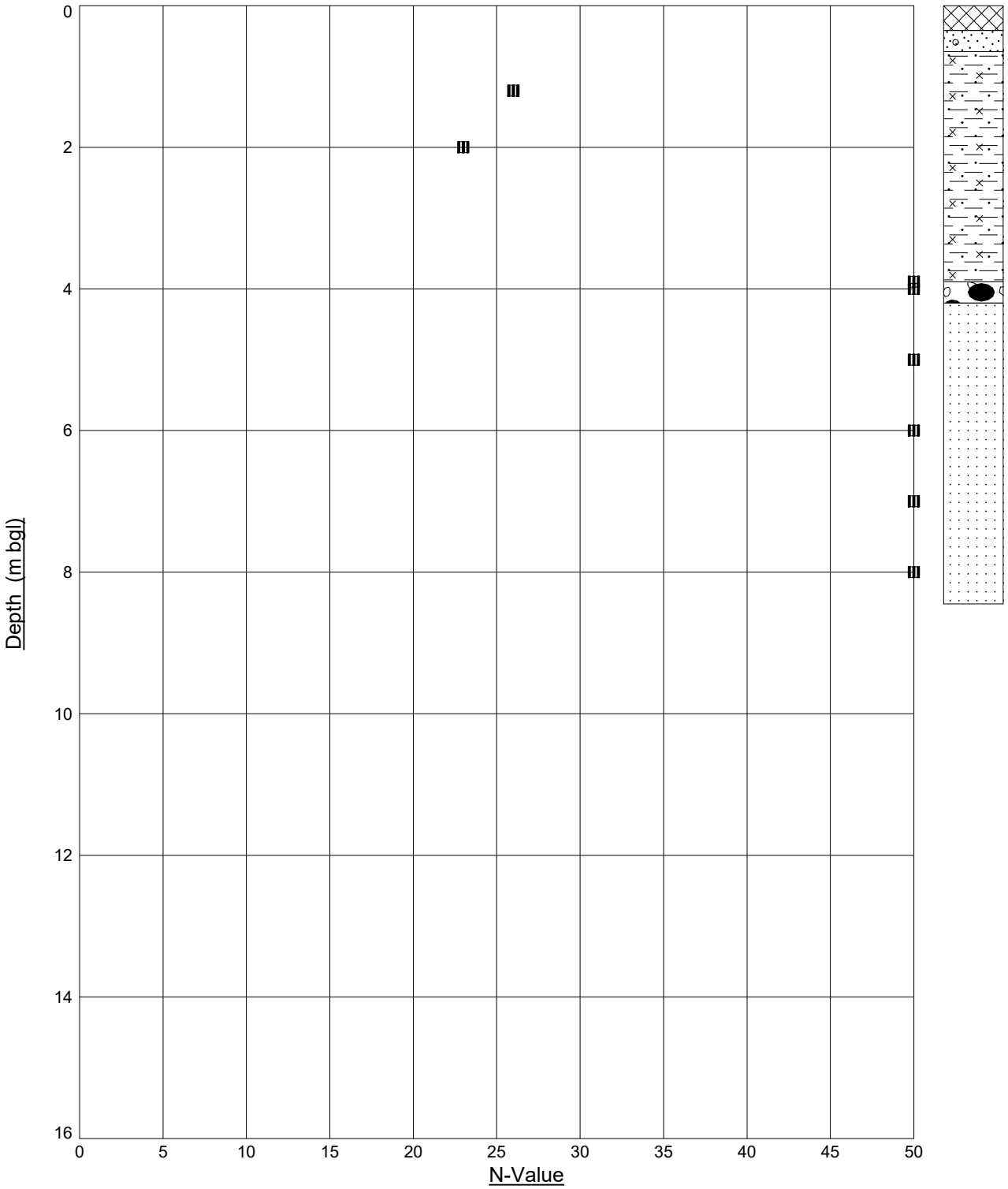


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS122**

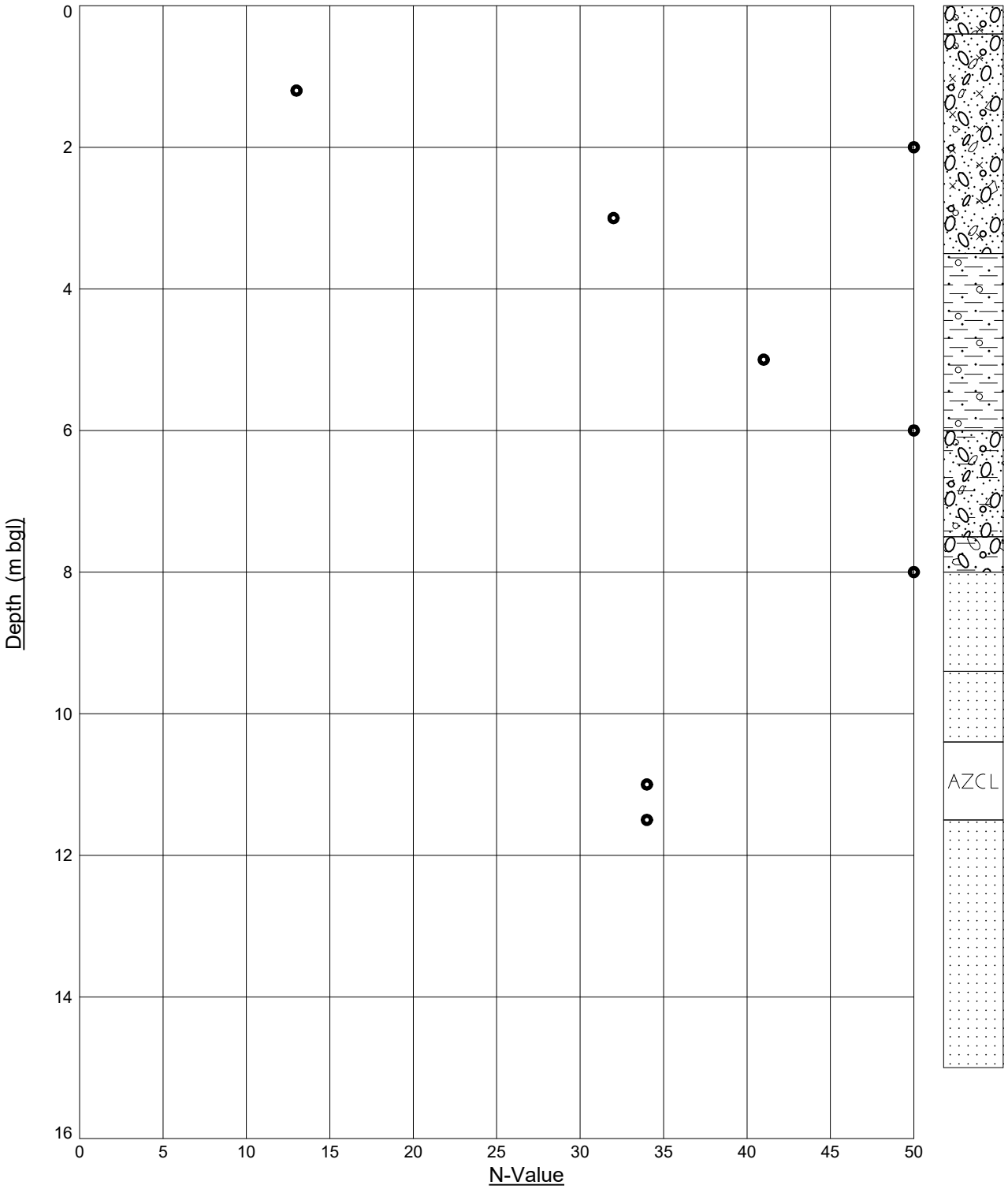


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS123**

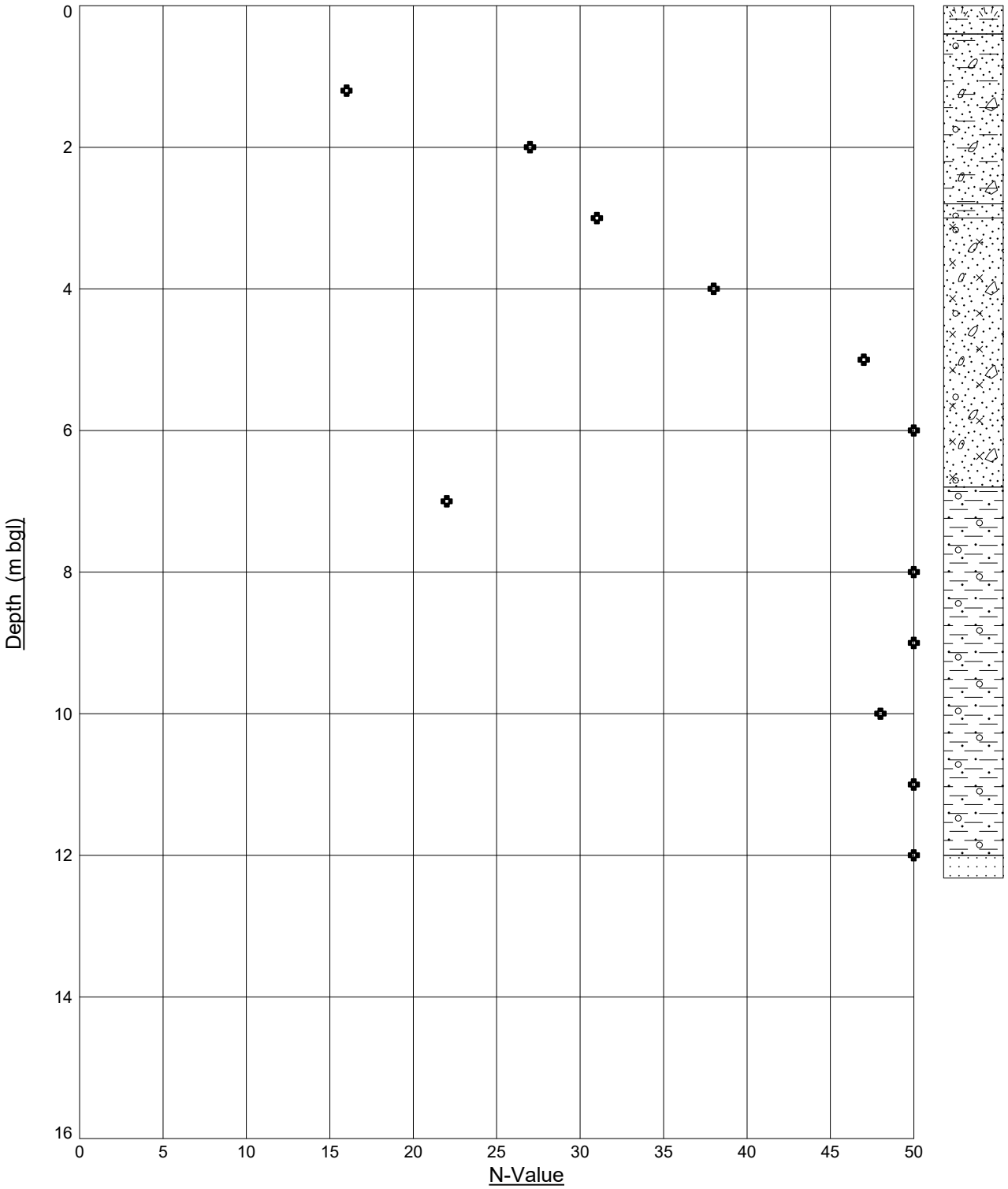


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS124**

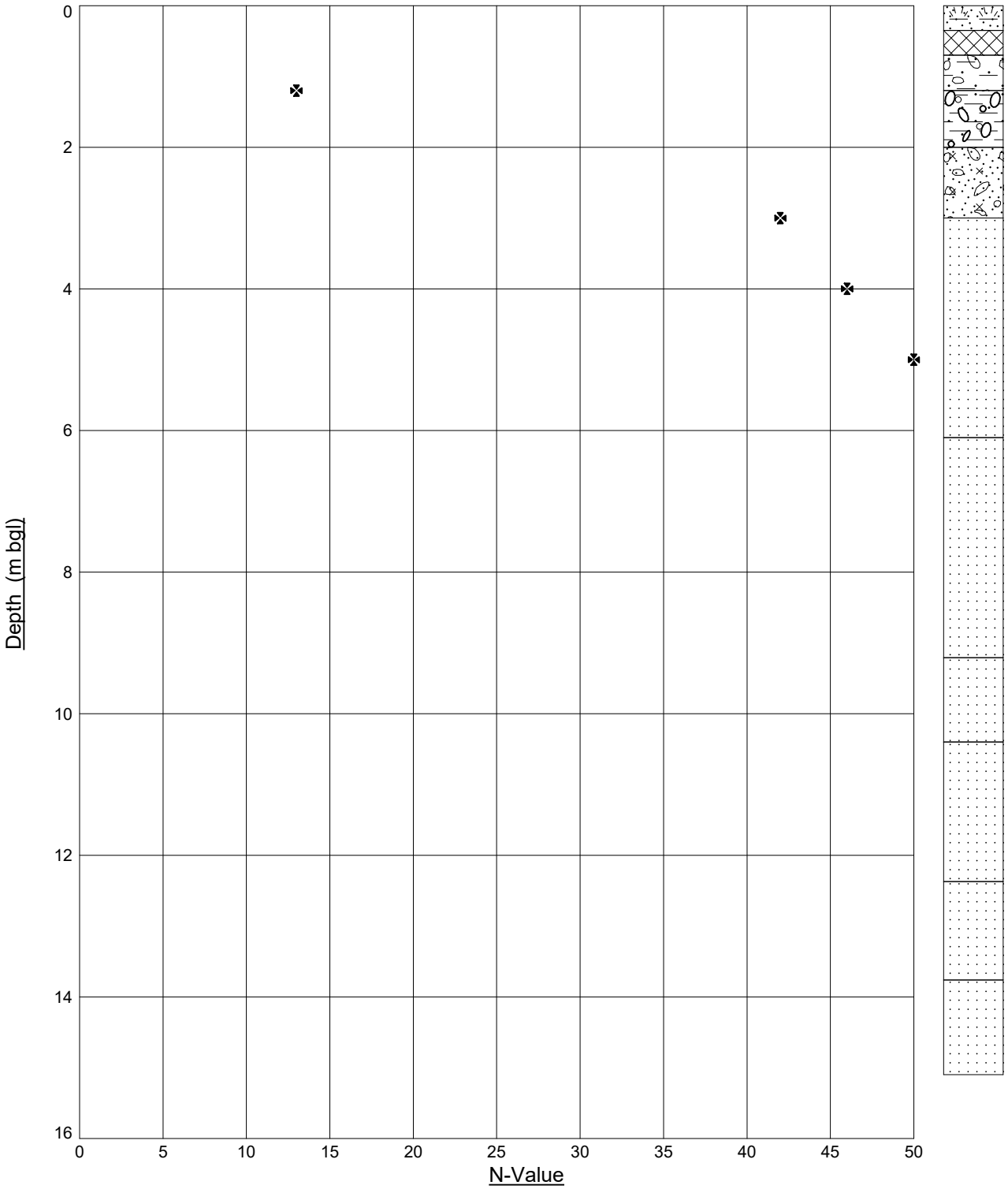


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS126**

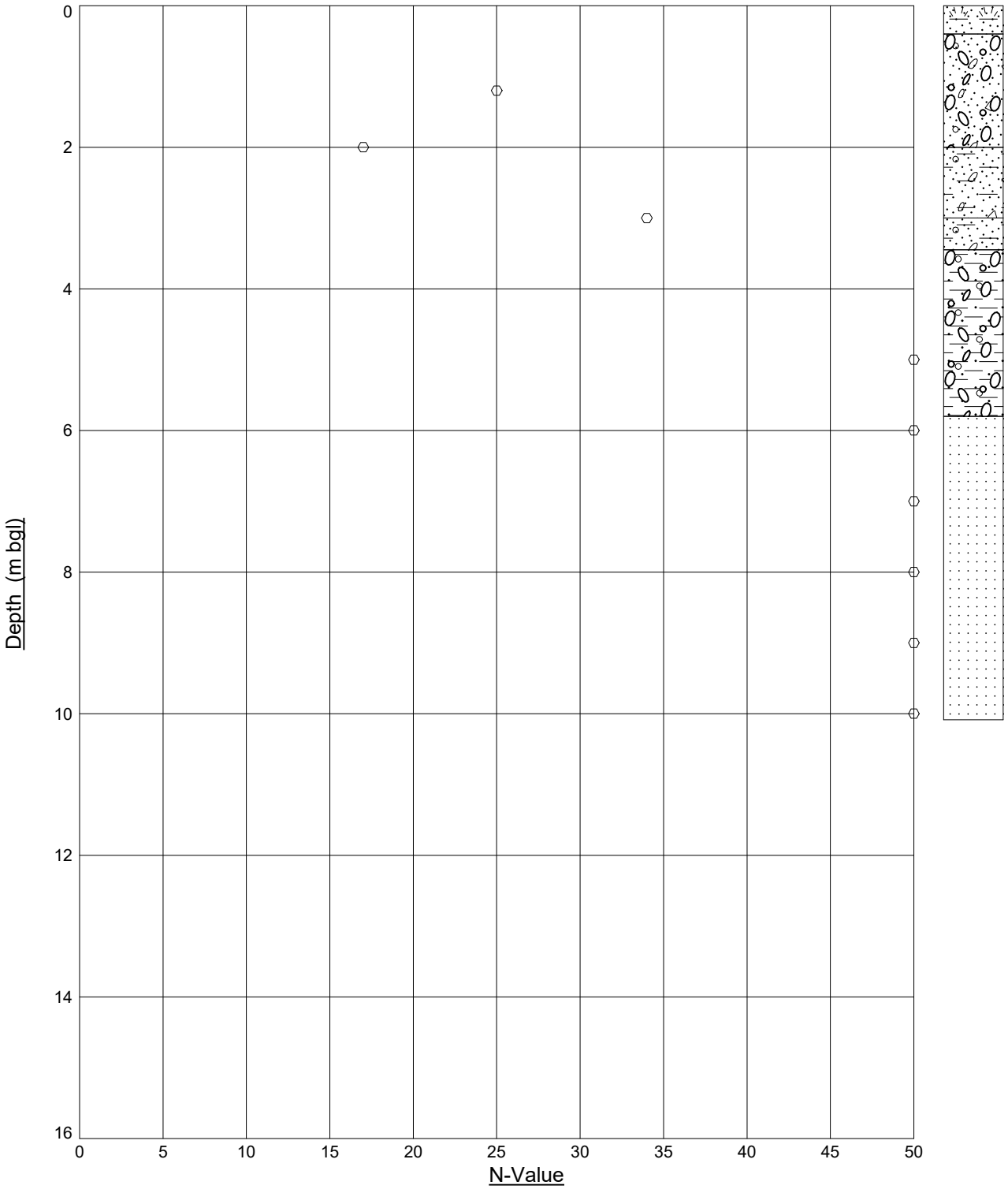


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS127**

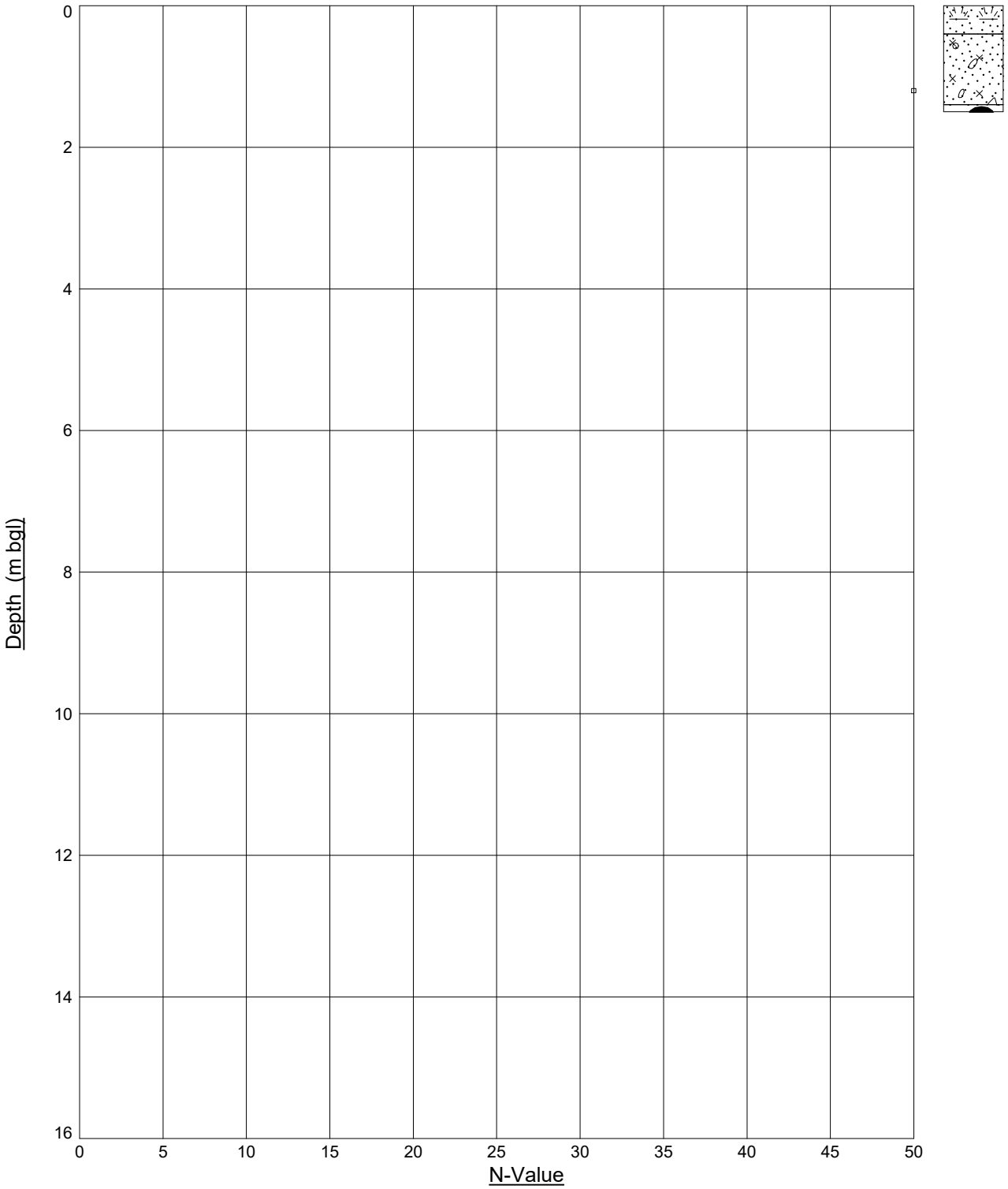


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS128**

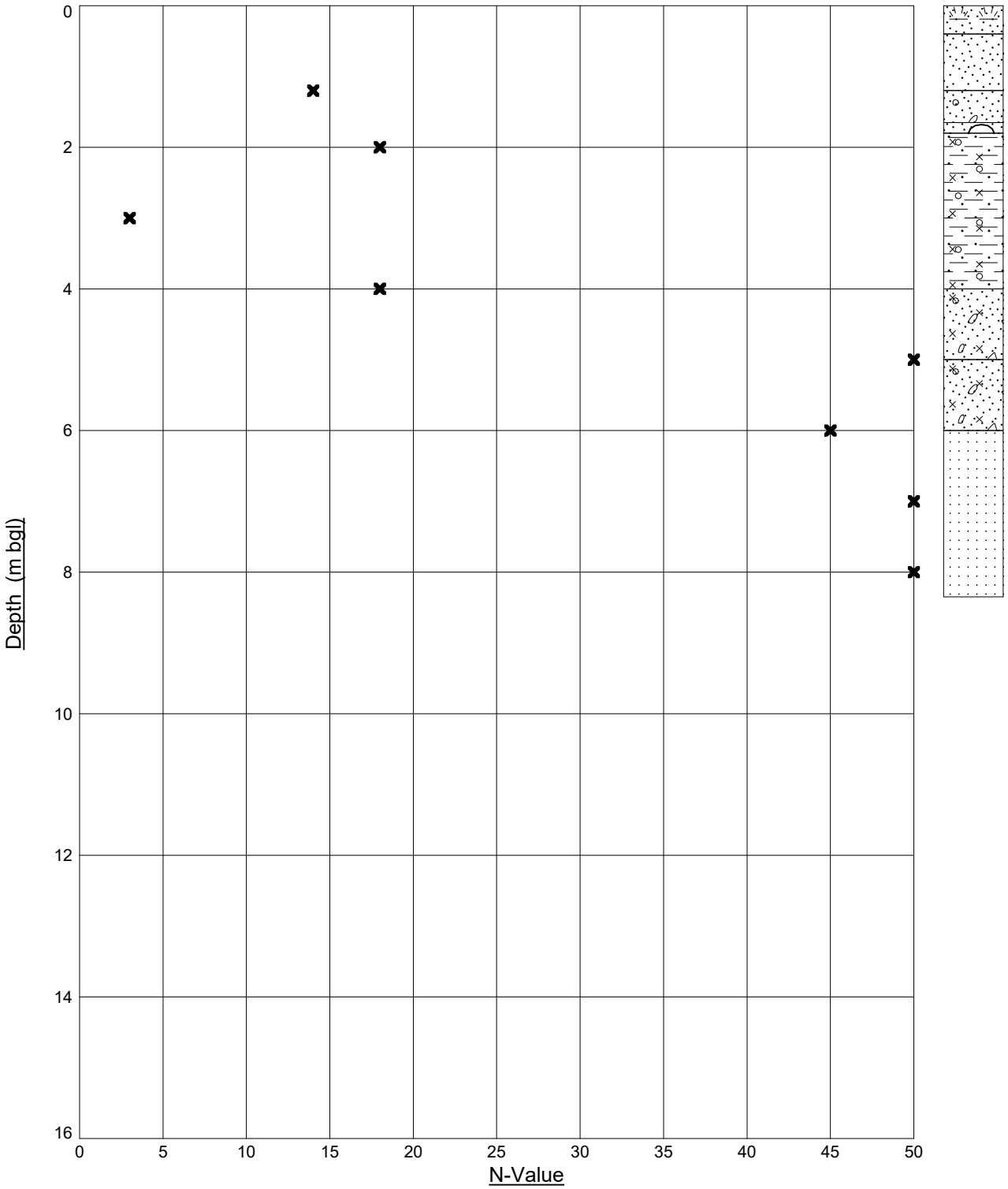


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
VS
DEPTH

Exploratory Hole : **BH-PTS128A**

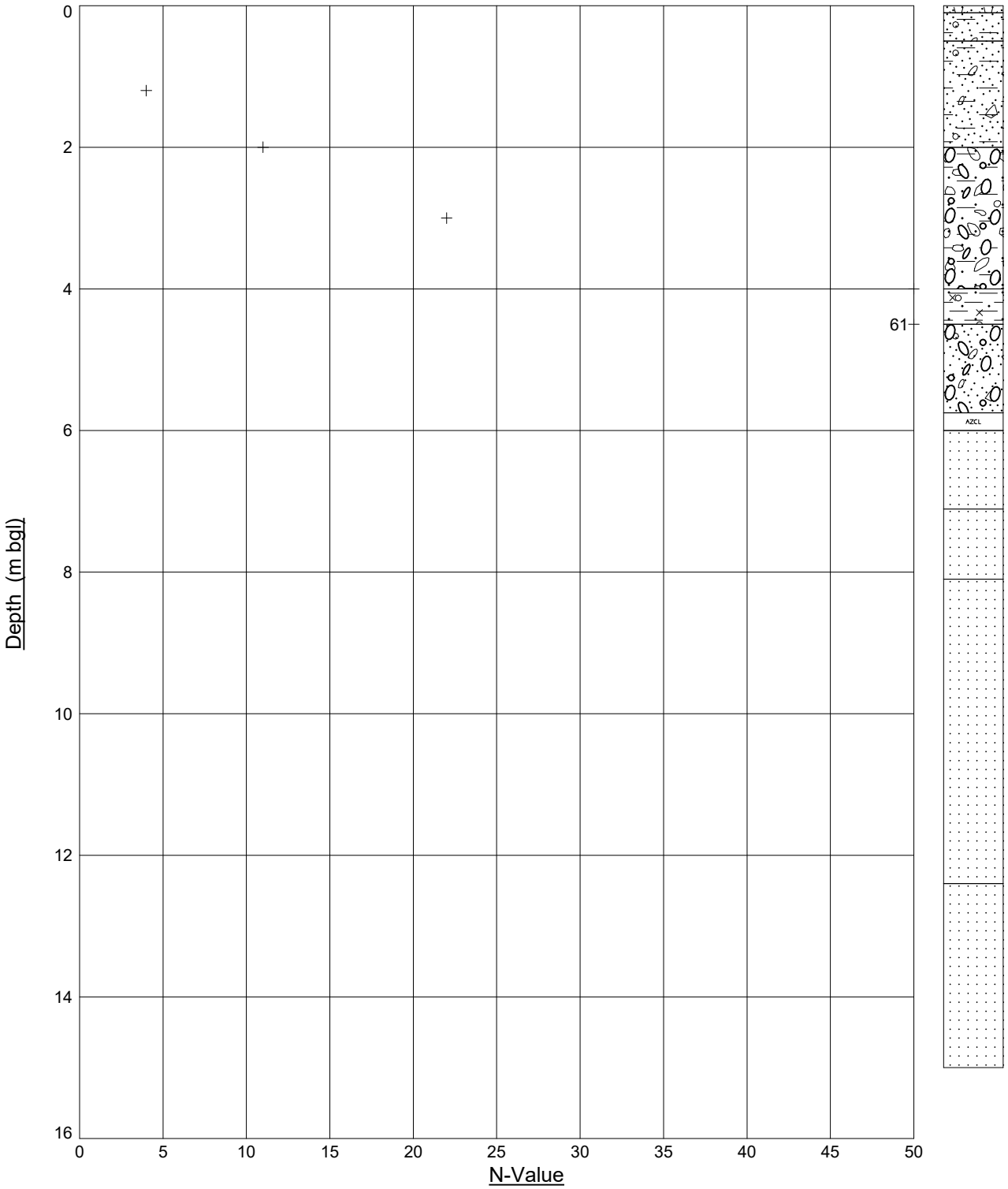


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **BH-PTS129**

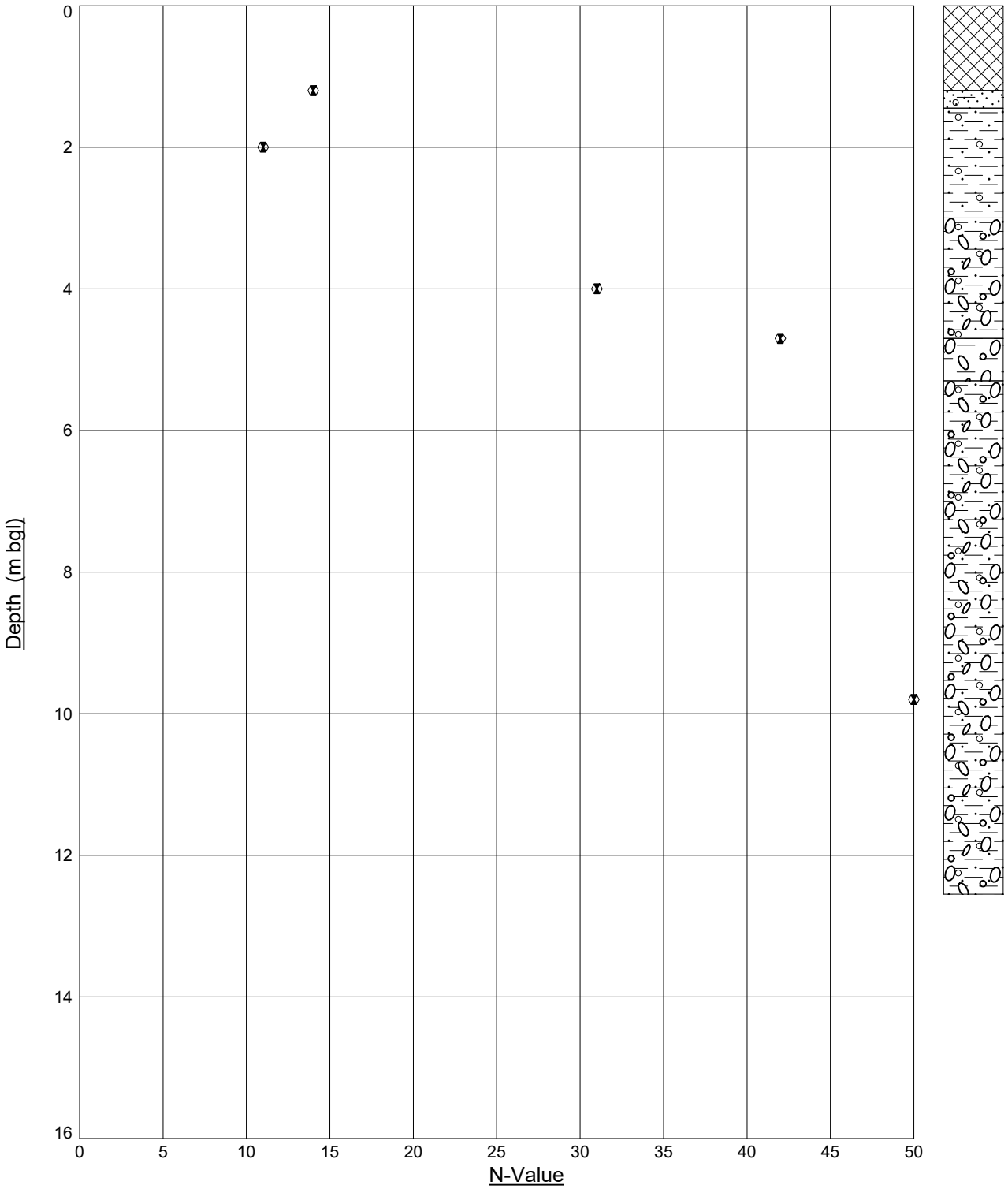


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
VS
DEPTH

Exploratory Hole : **GS-PTS102**

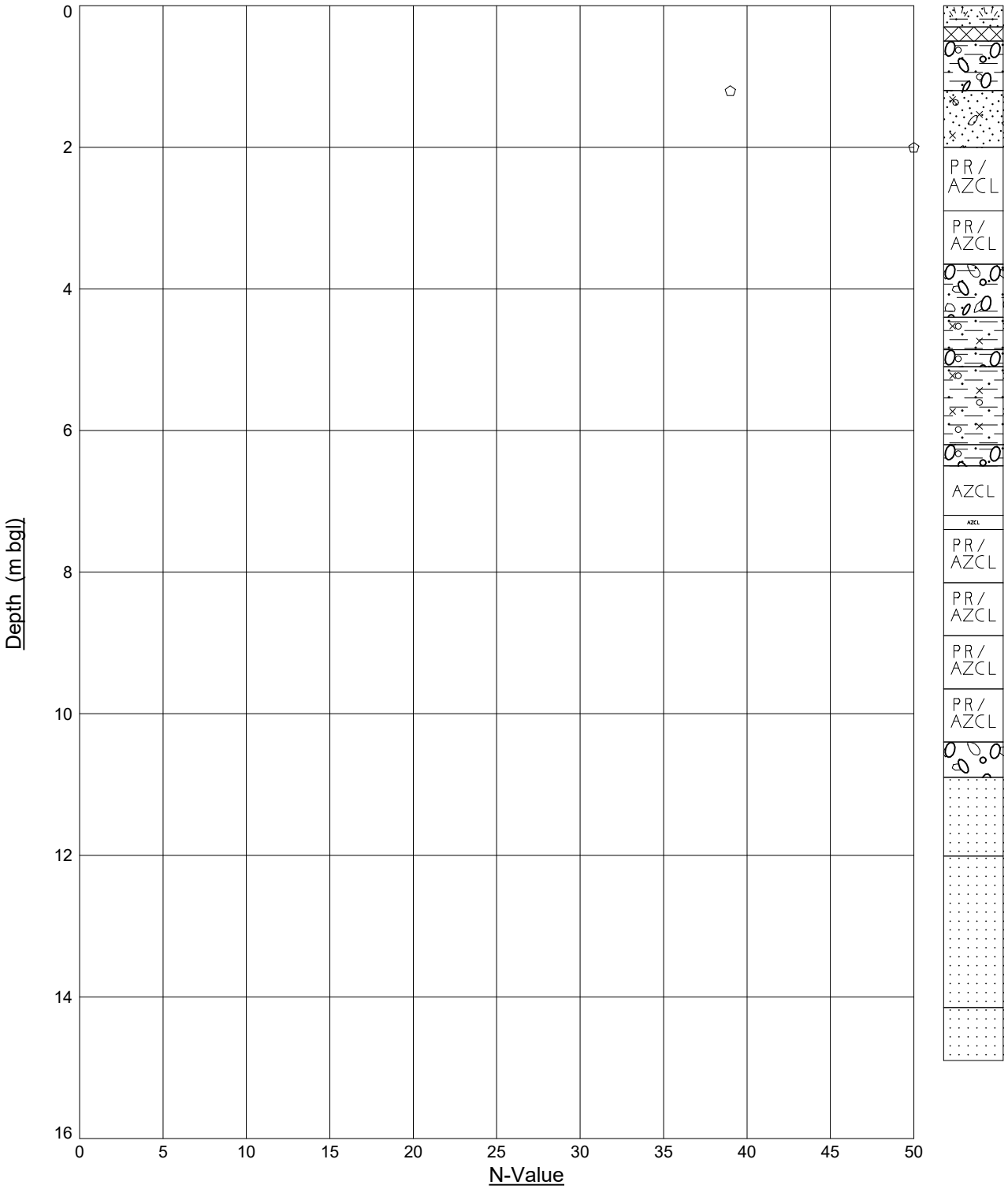


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **GS-PTS105**

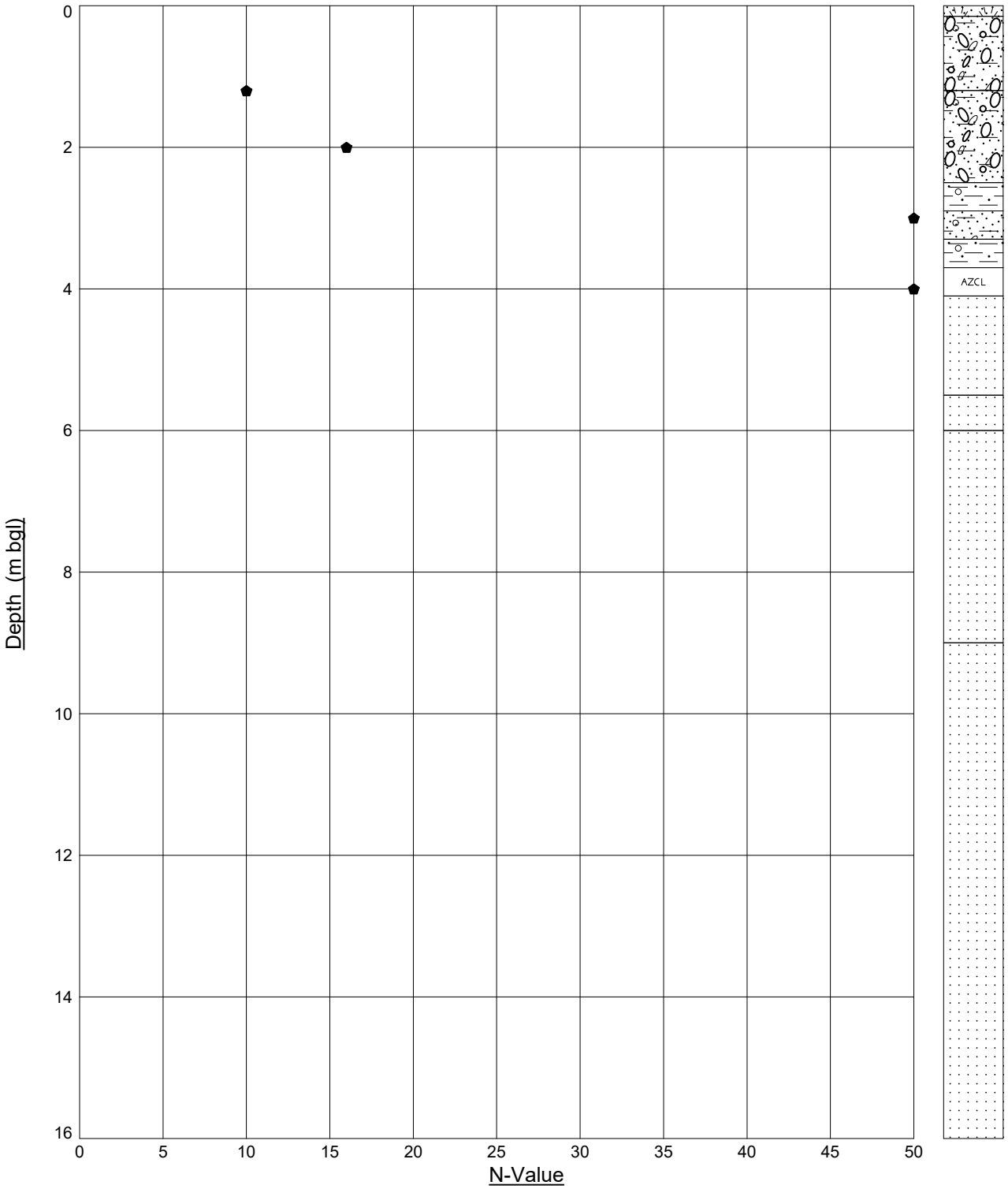


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **GS-PTS107**

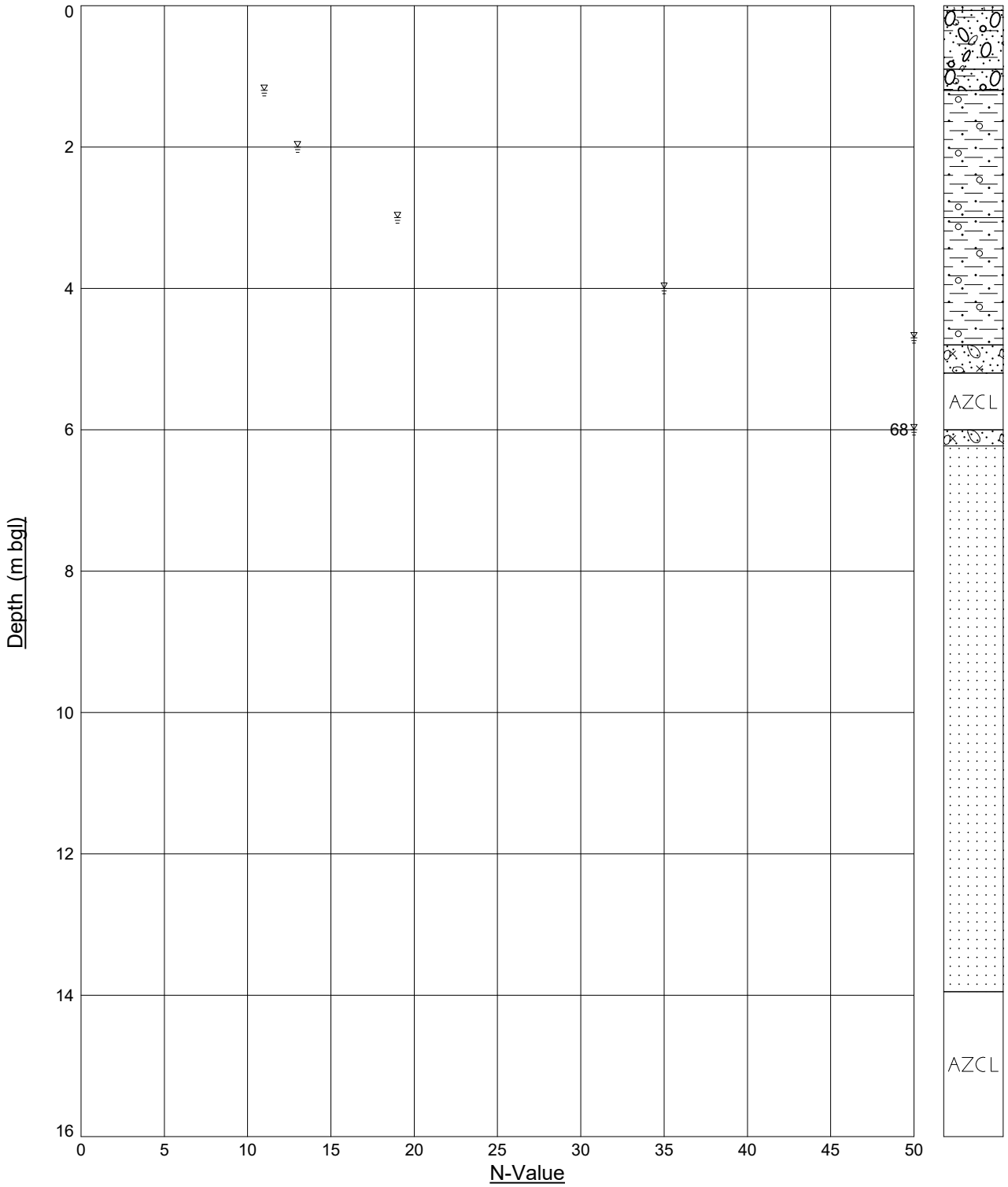


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **GS-PTS108A**

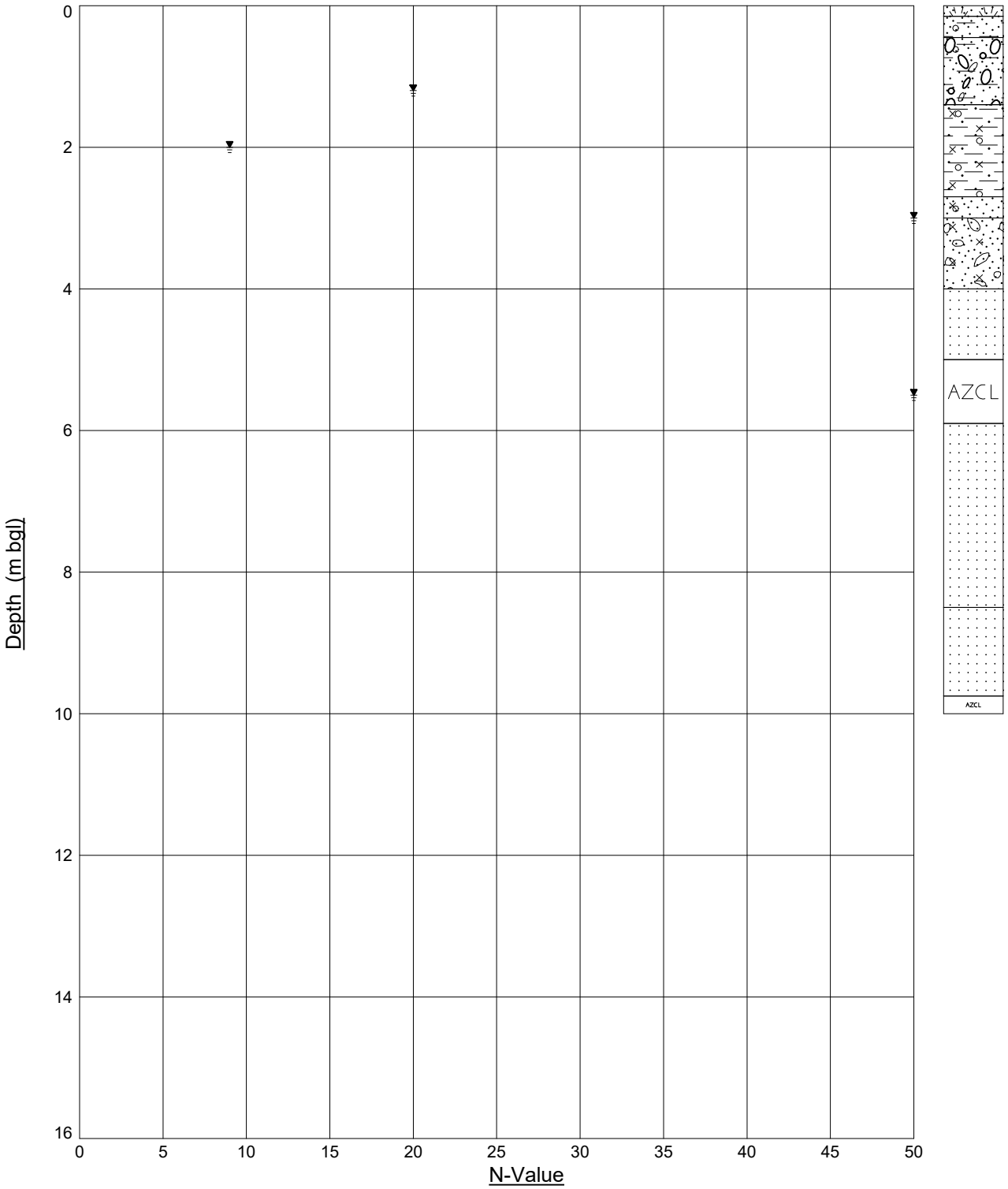


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **GS-PTS109**

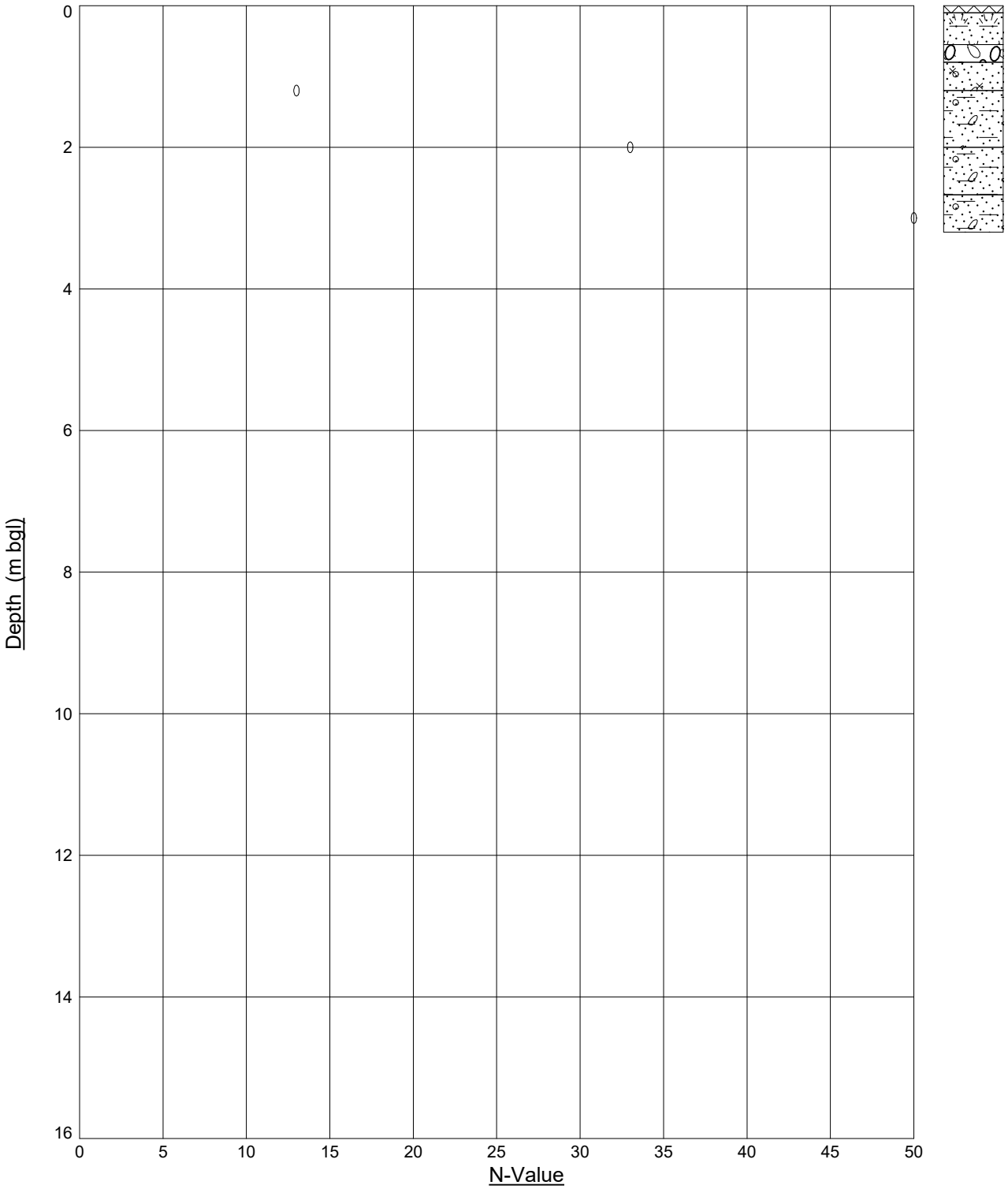


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
VS
DEPTH

Exploratory Hole : **WS-PTS101**

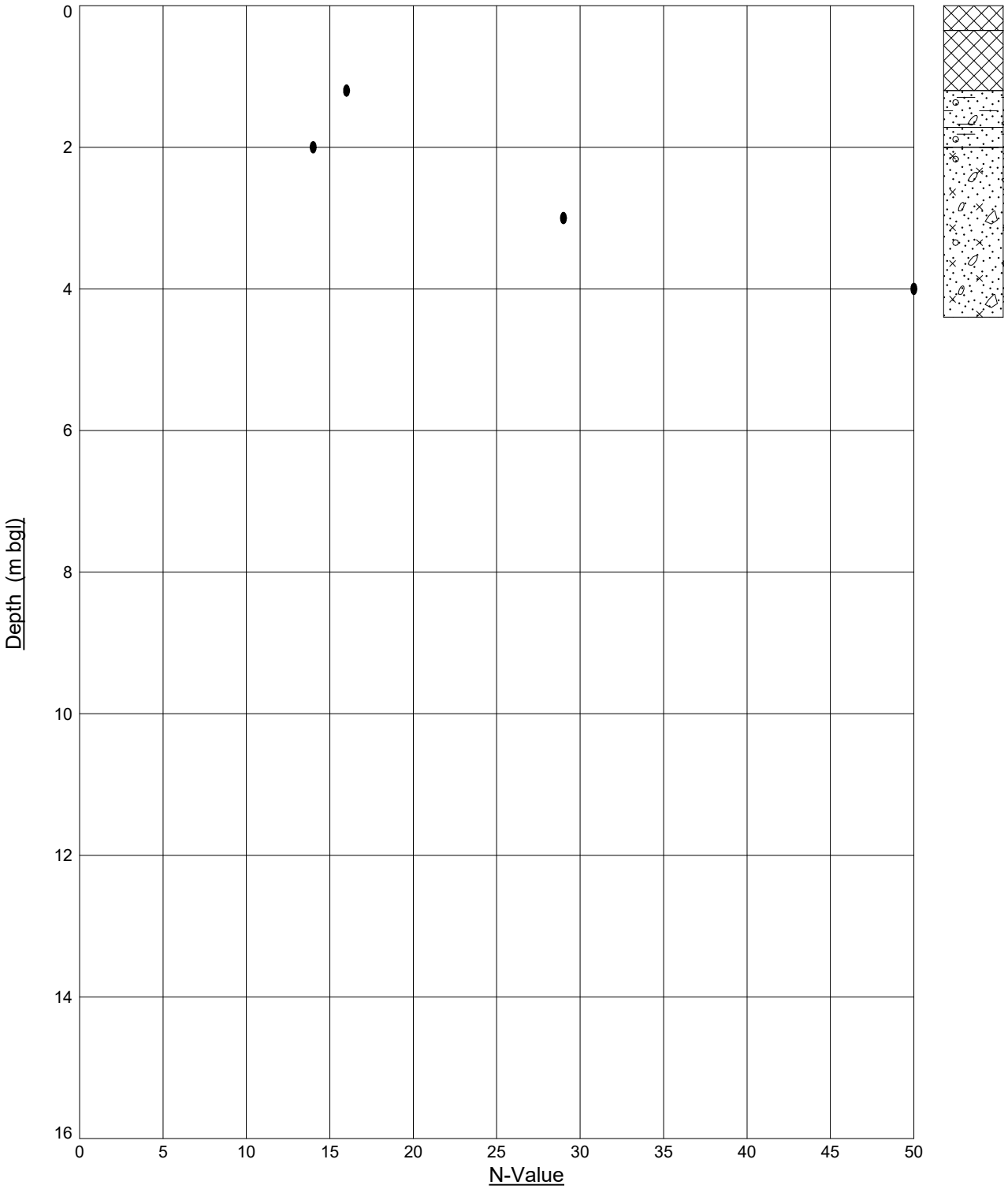


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
VS
DEPTH

Exploratory Hole : **WS-PTS105**

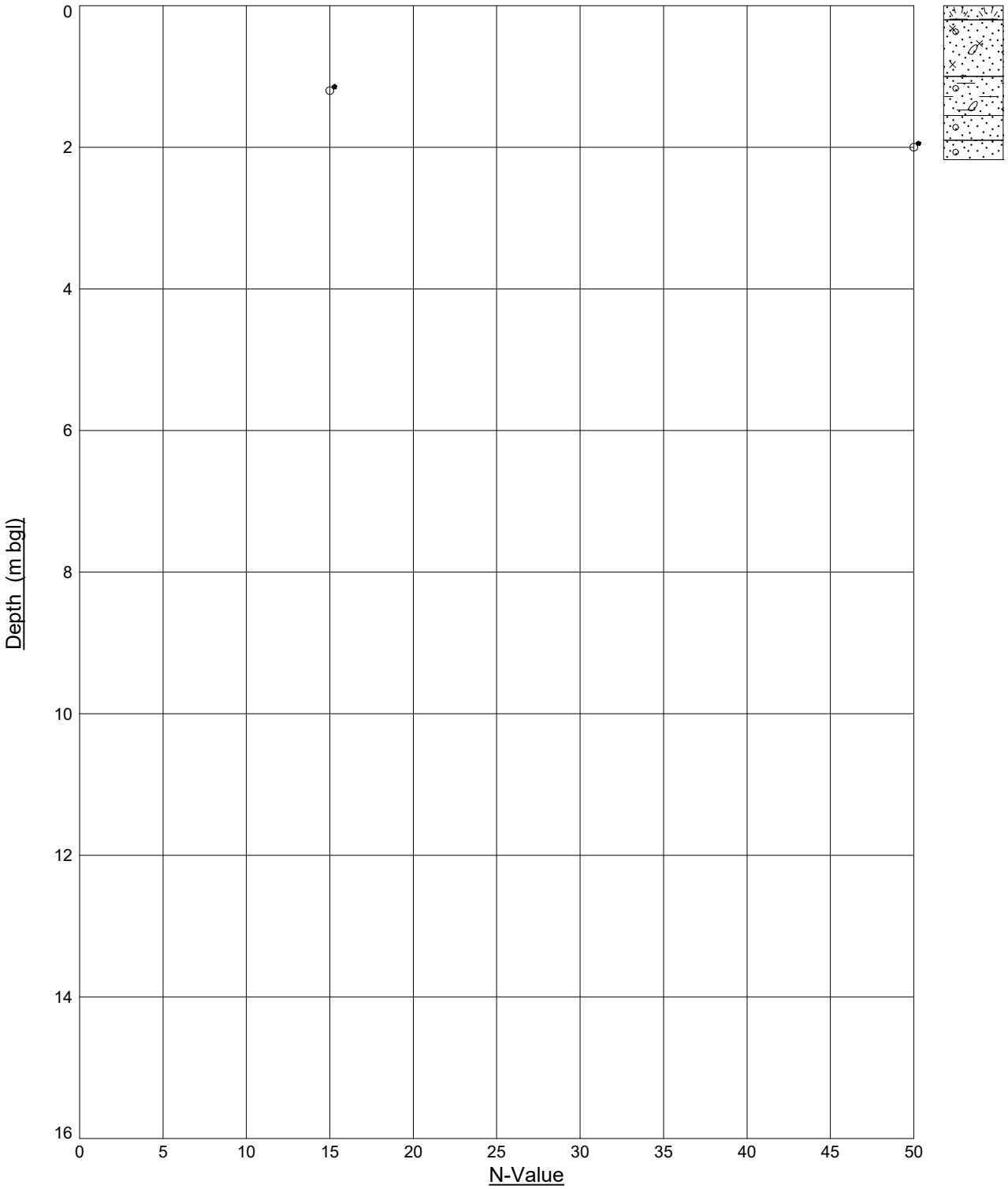


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **WS-PTS107**

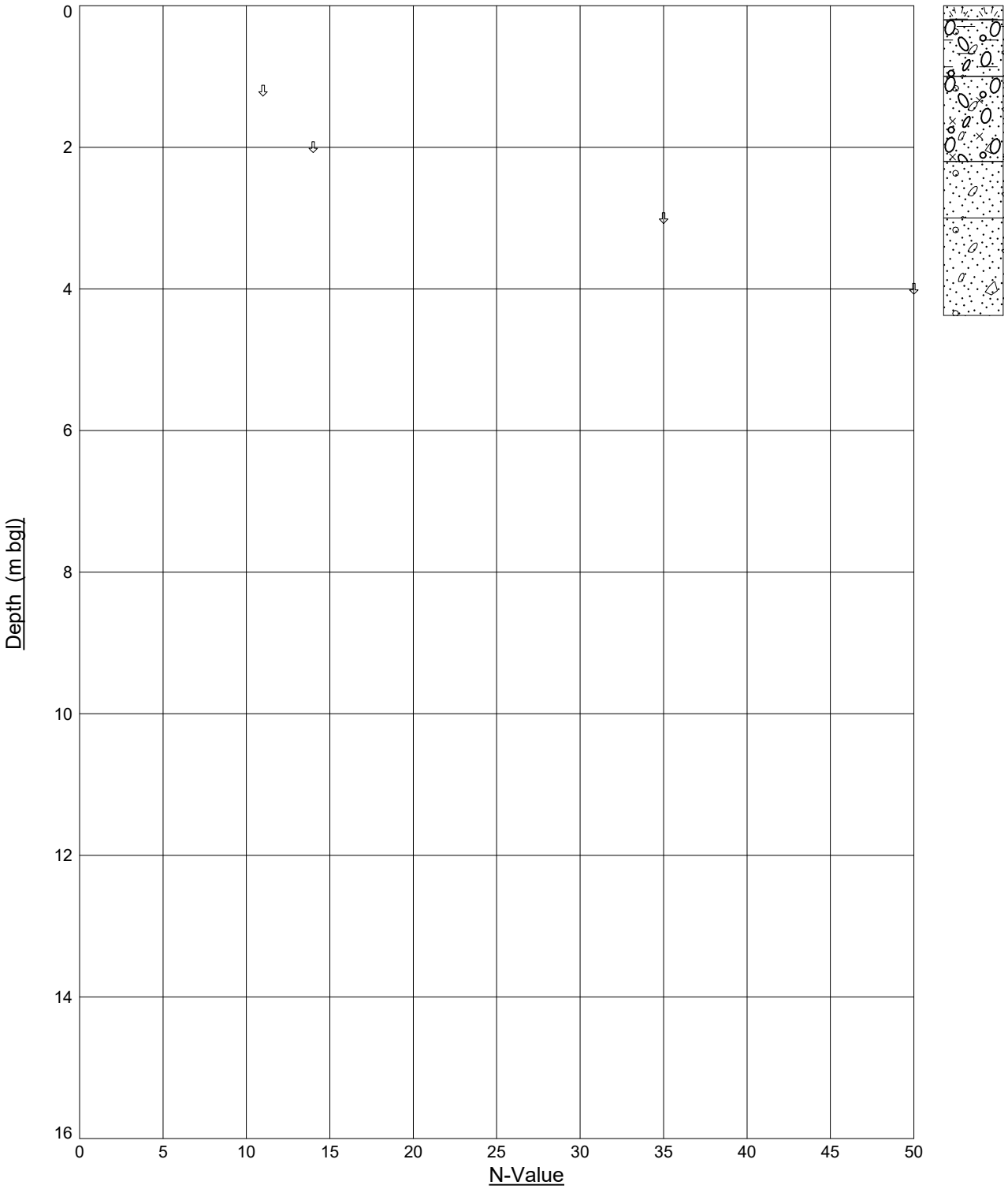


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **WS-PTS107A**

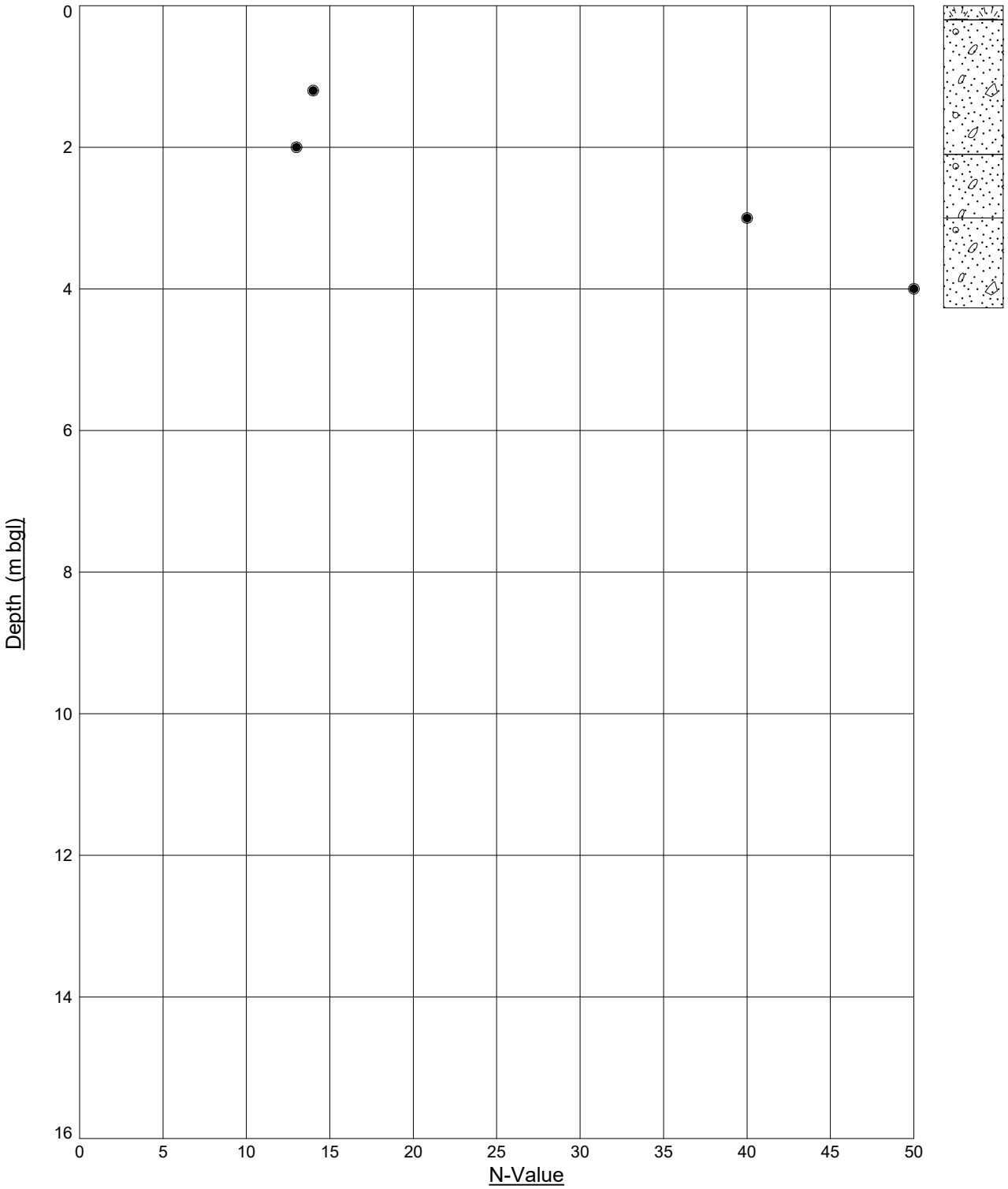


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
VS
DEPTH

Exploratory Hole : **WS-PTS107B**

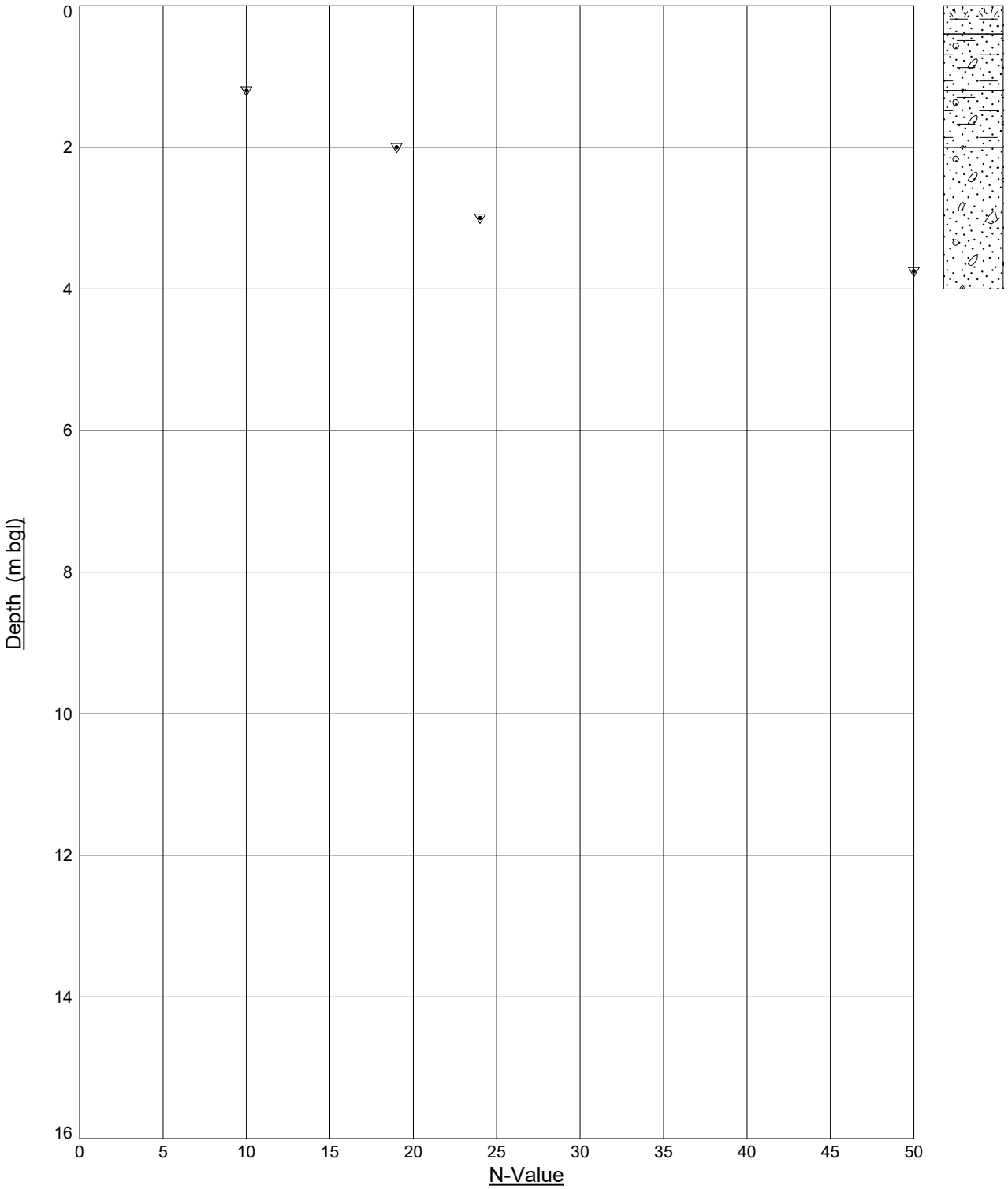


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **WS-PTS108**

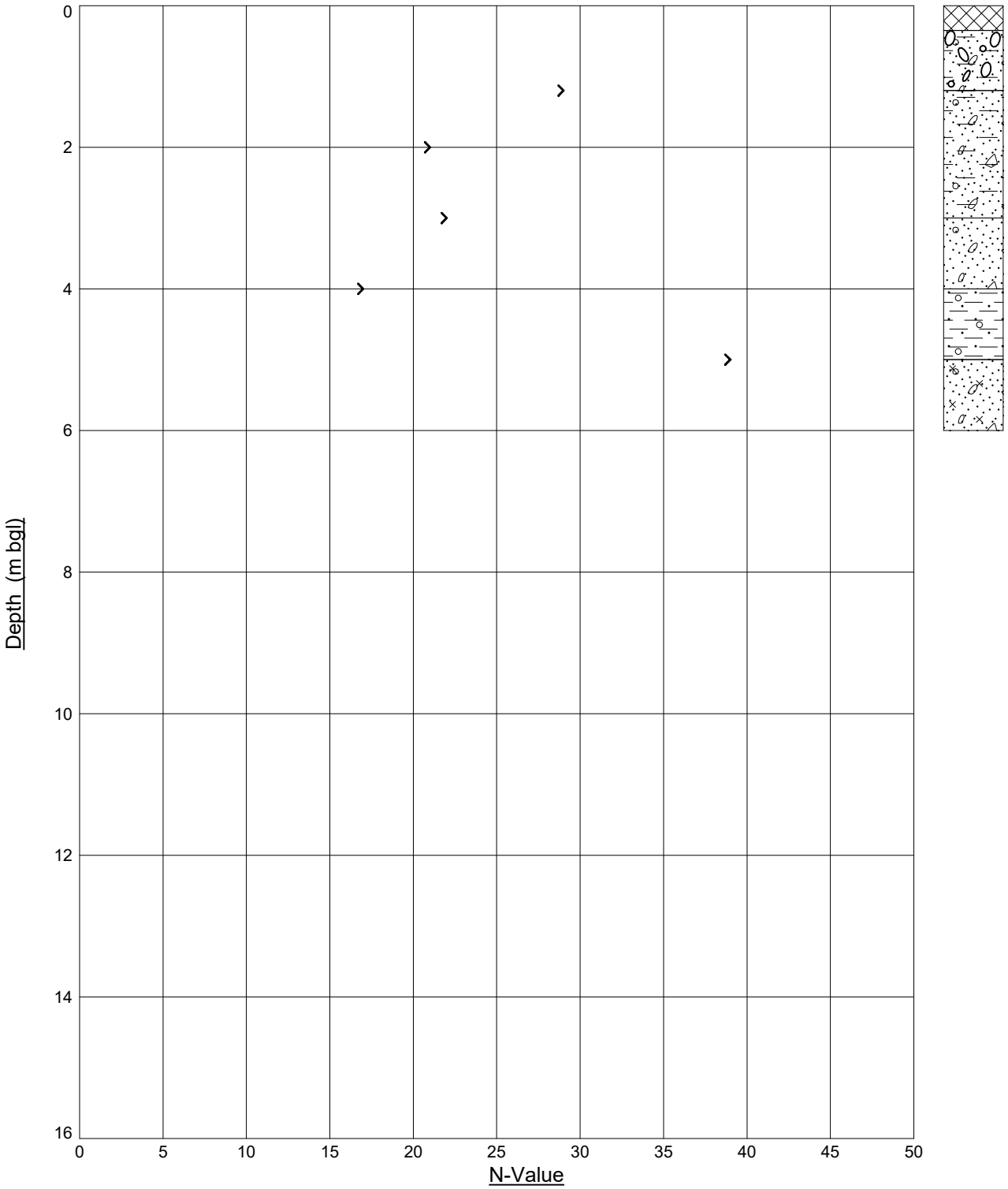


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **WS-PTS110**

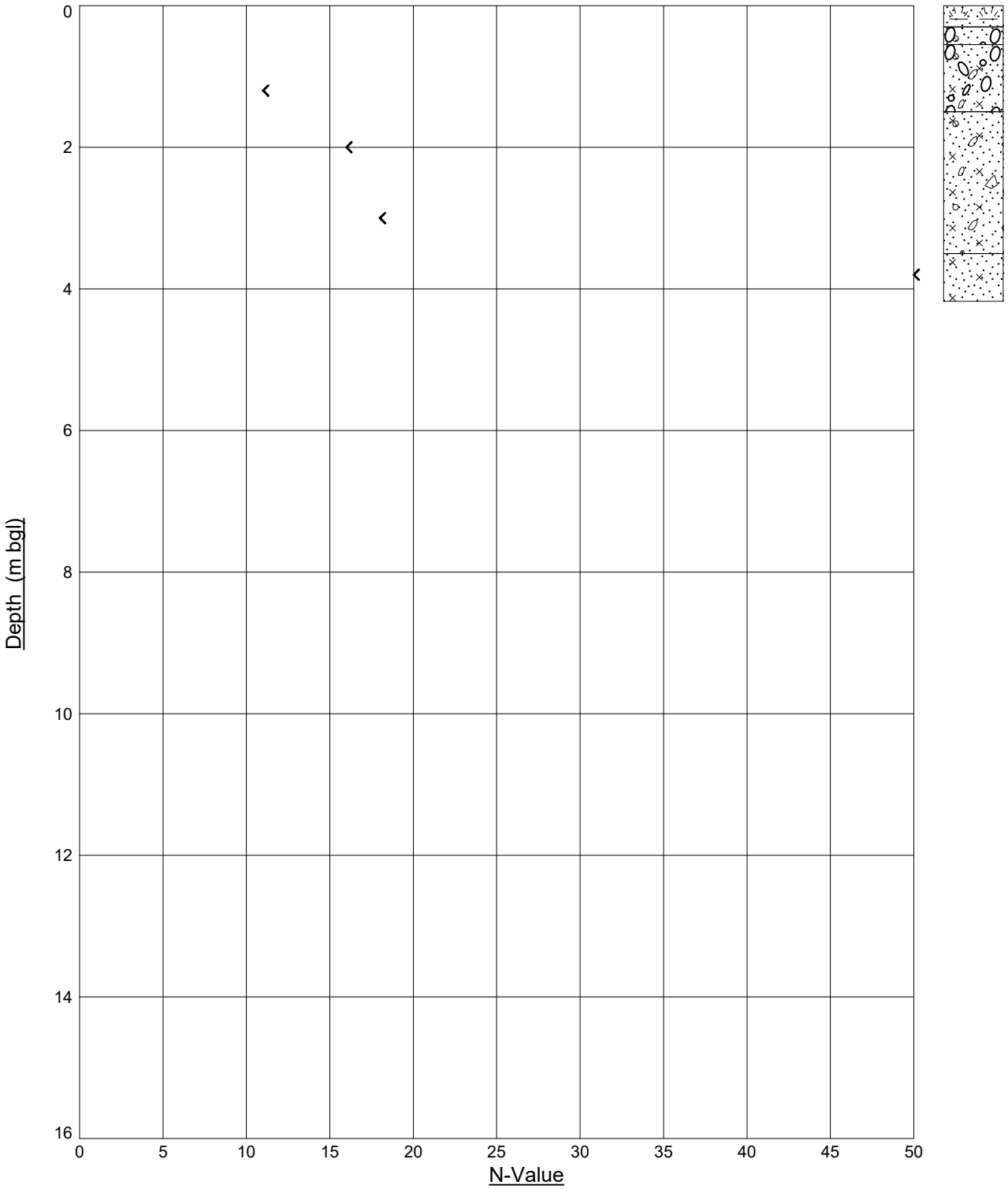


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
VS
DEPTH

Exploratory Hole : **WS-PTS113**

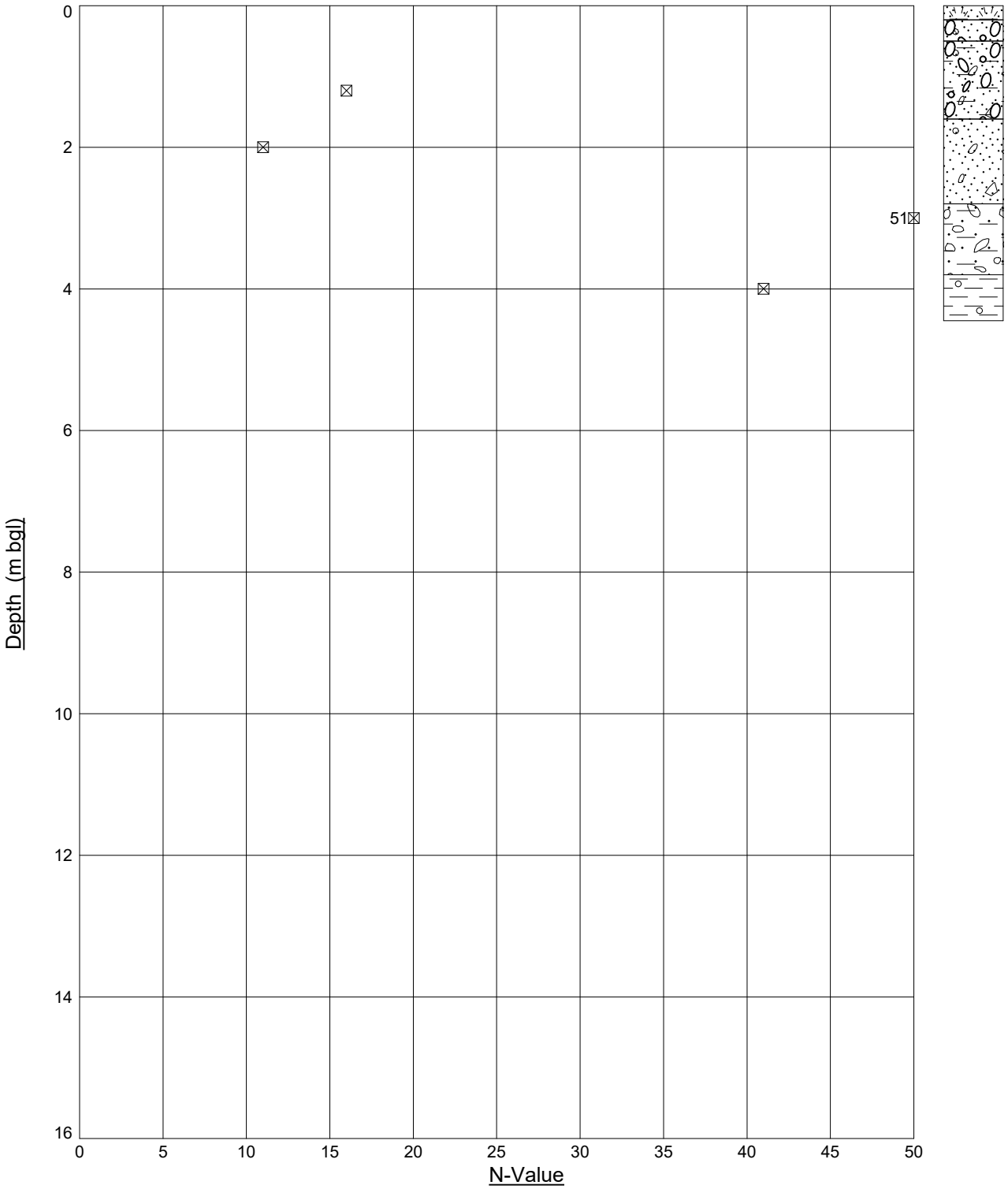


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **WS-PTS114**

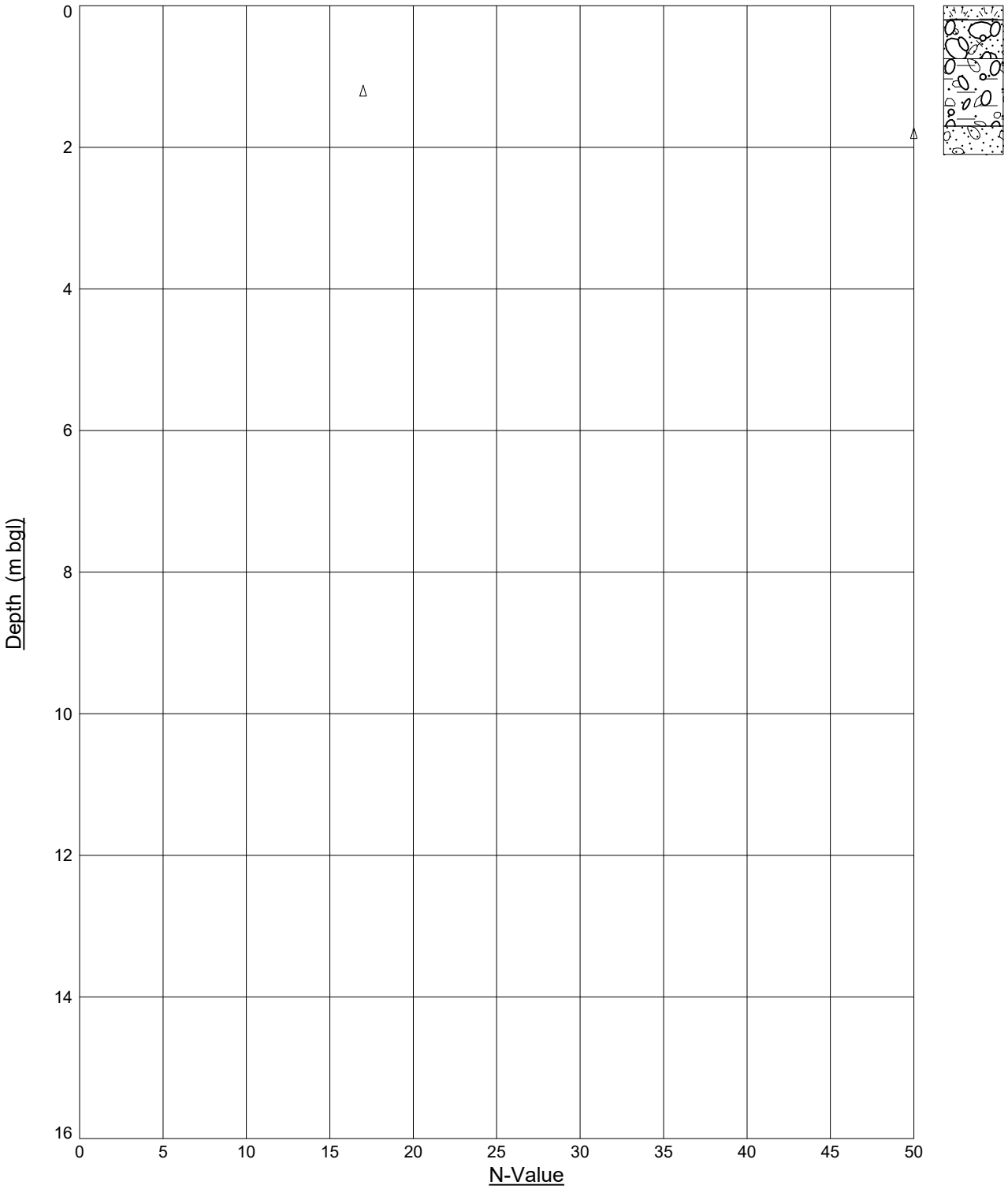


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **WS-PTS116**

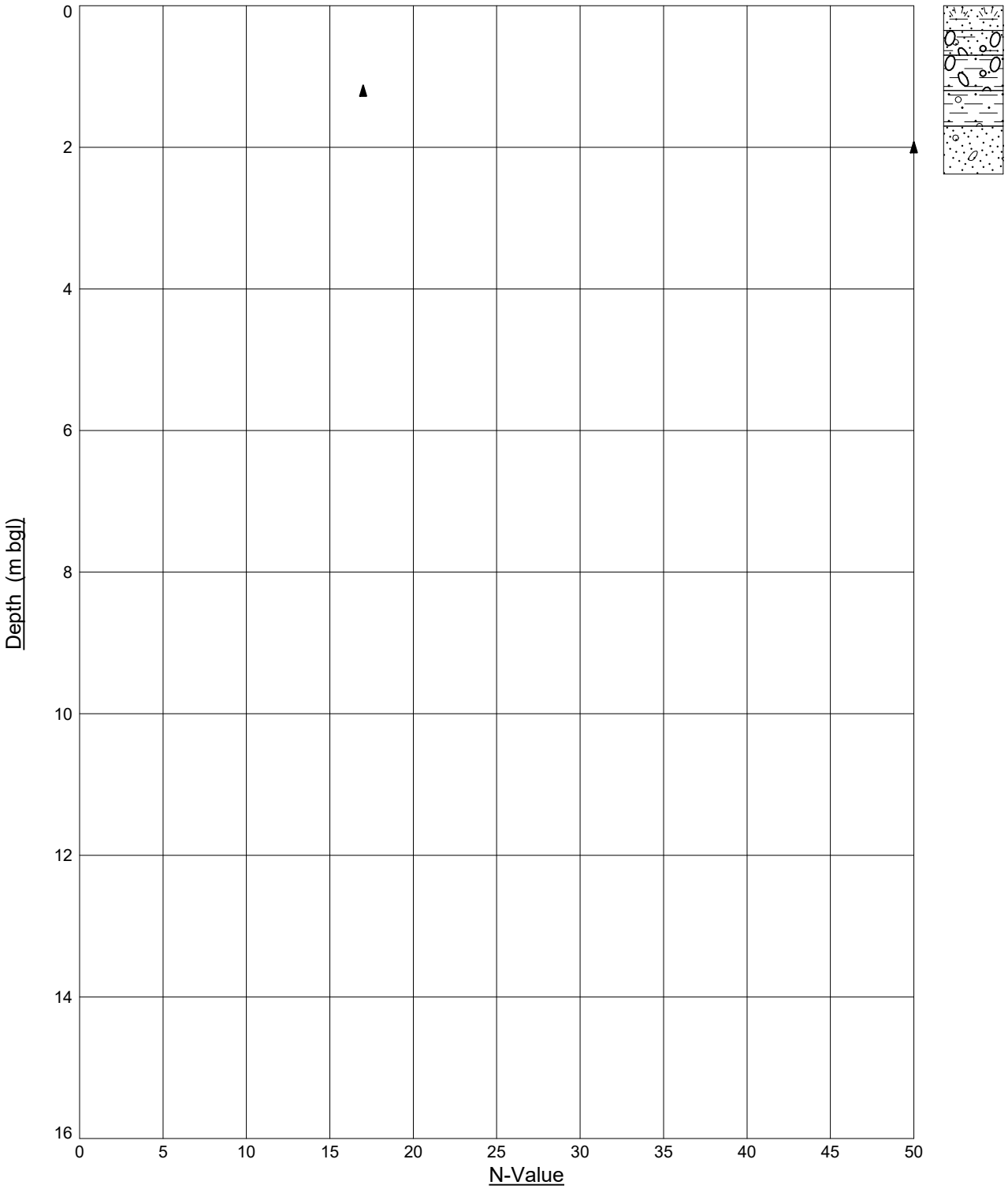


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
VS
DEPTH

Exploratory Hole : **WS-PTS116A**

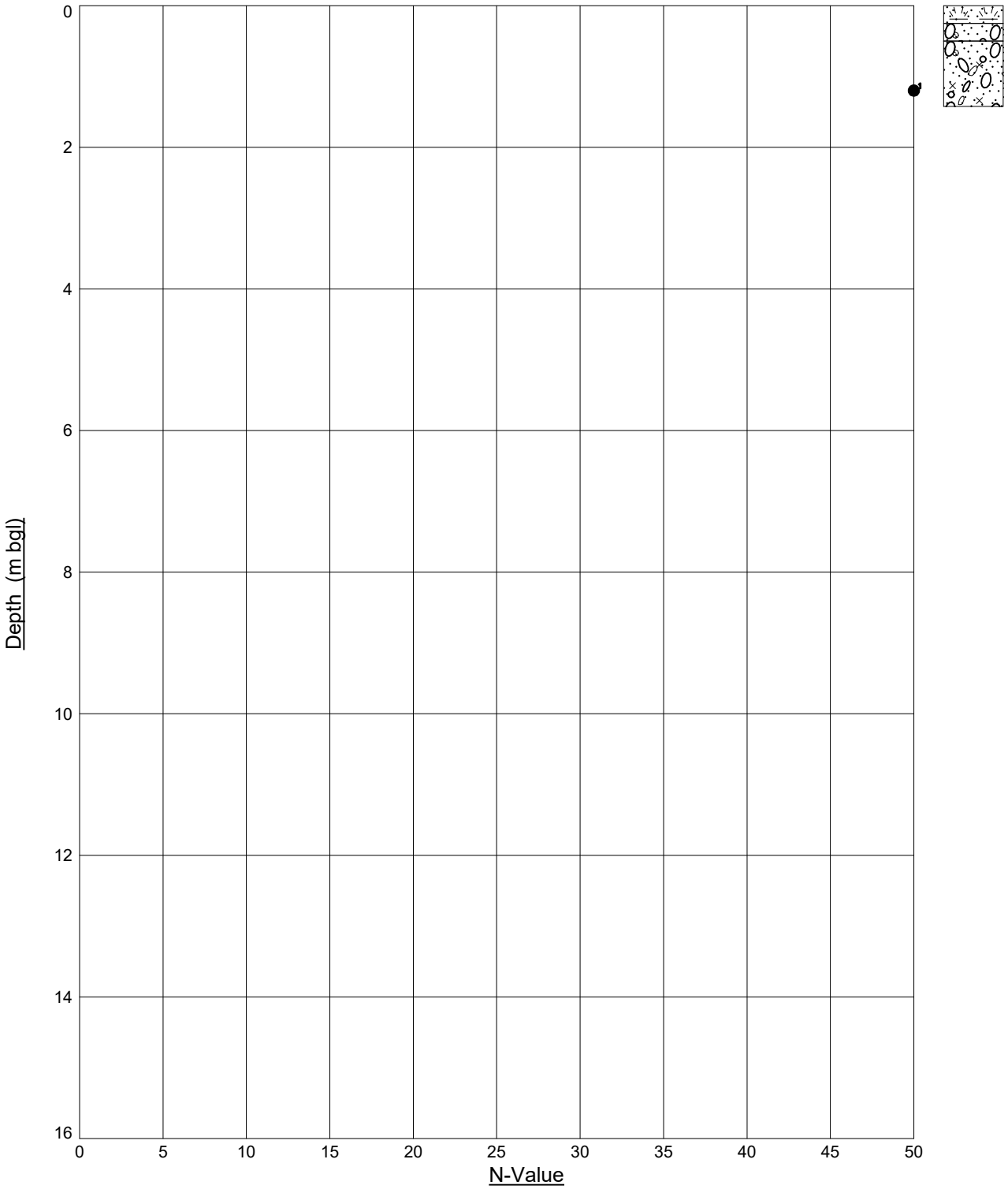


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
vs
DEPTH

Exploratory Hole : **WS-PTS117**

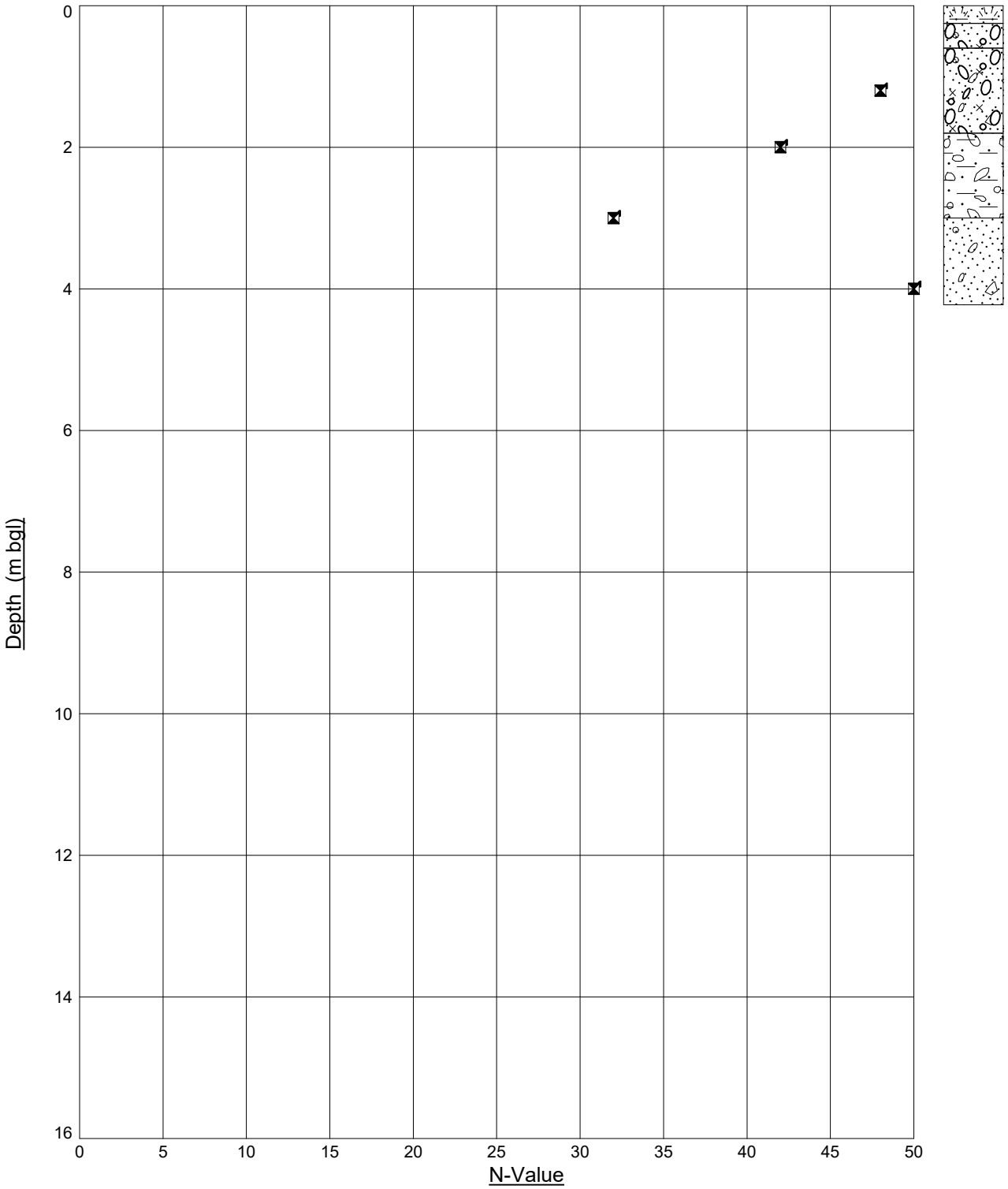


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
VS
DEPTH

Exploratory Hole : **WS-PTS117A**

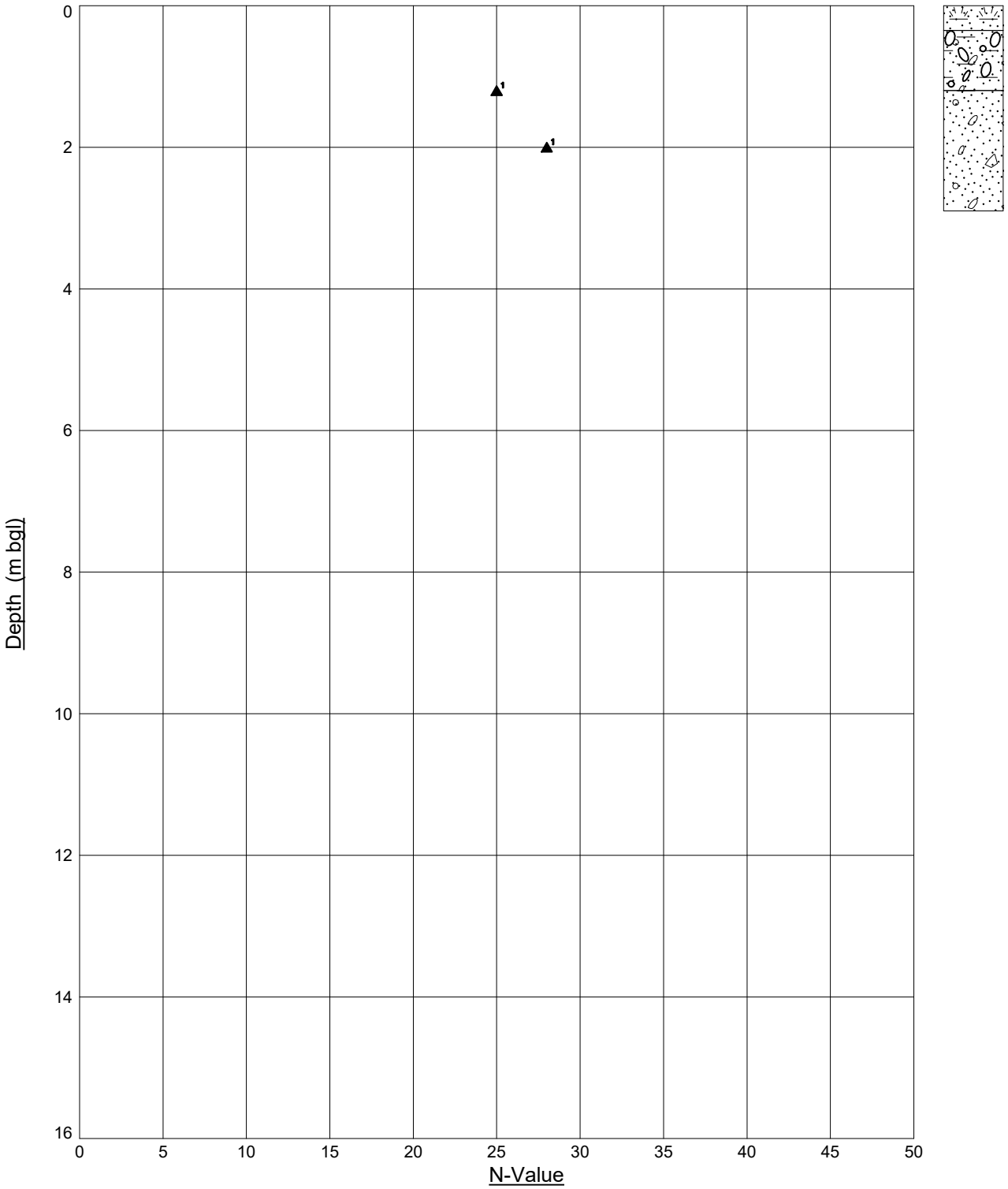


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
VS
DEPTH

Exploratory Hole : **WS-PTS119**

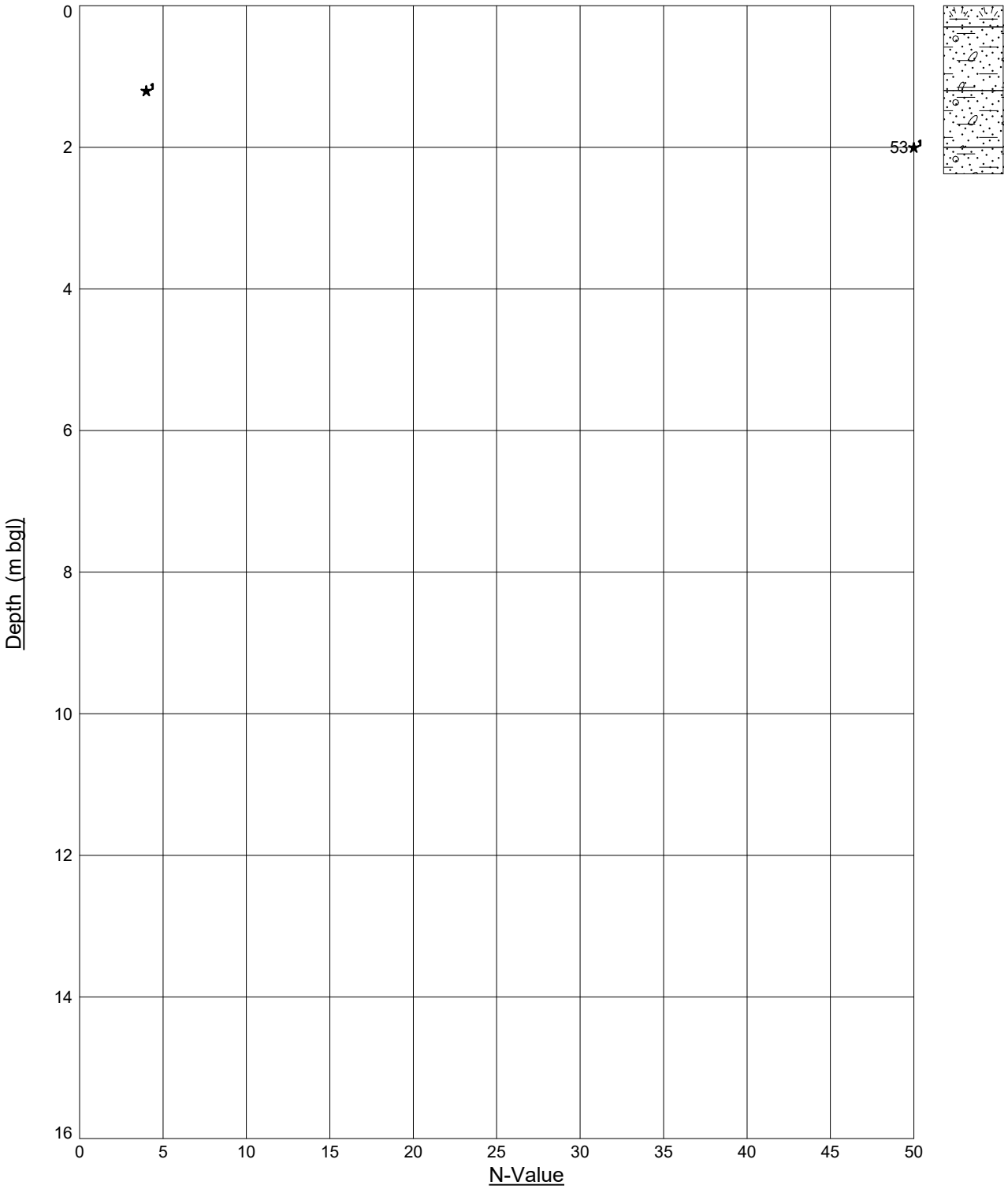


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
VS
DEPTH

Exploratory Hole : **WS-PTS120**

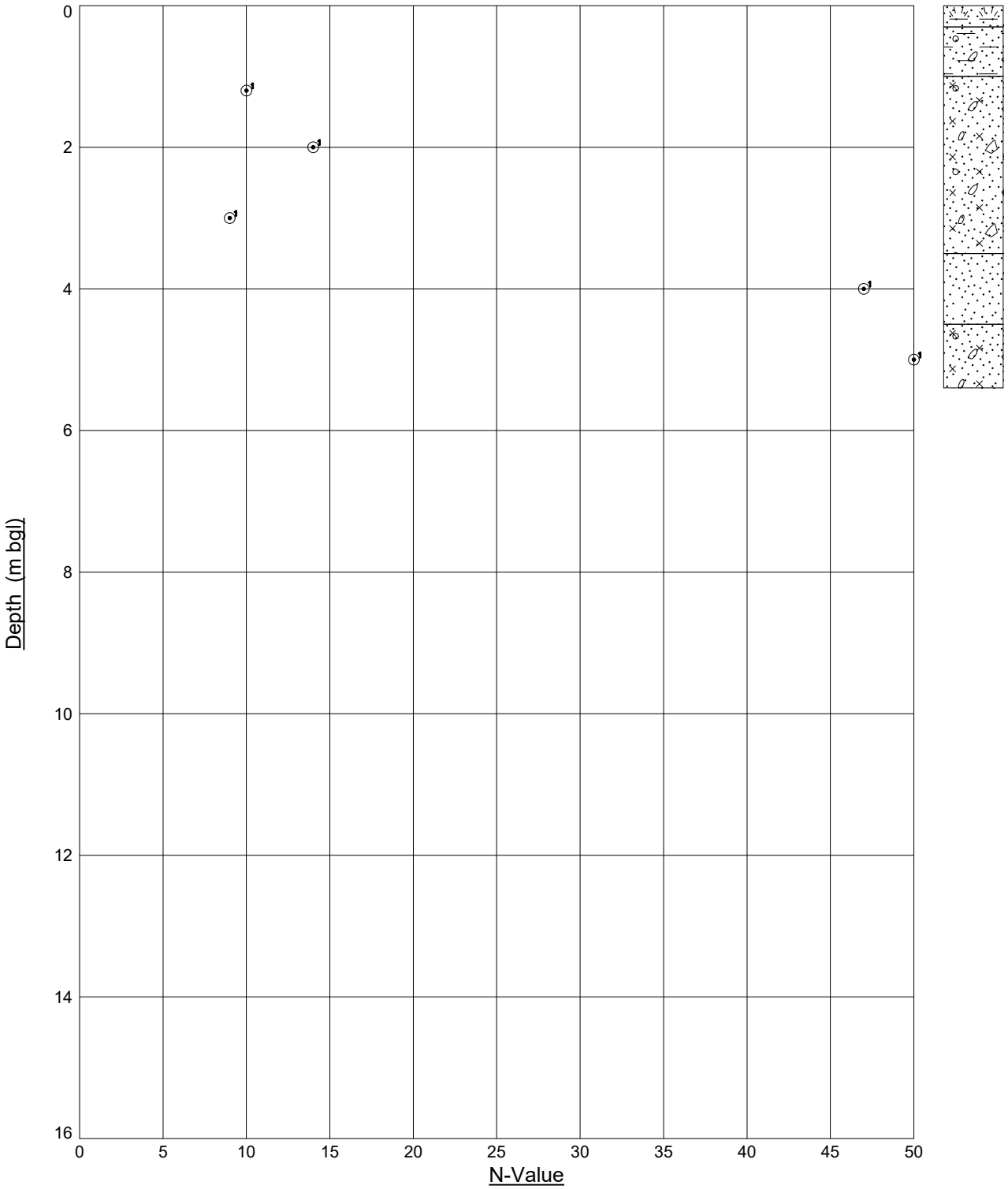


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
VS
DEPTH

Exploratory Hole : **WS-PTS127**

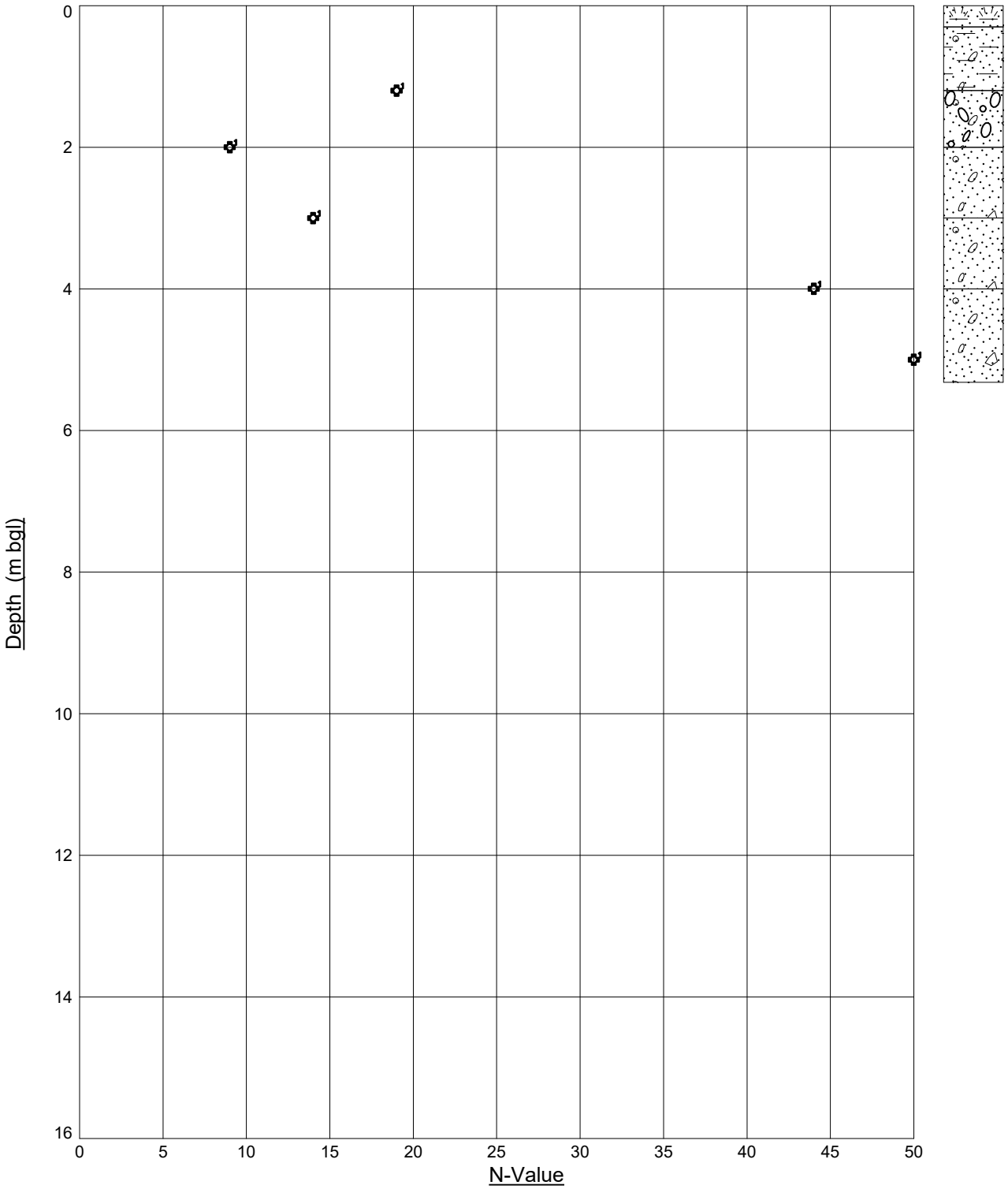


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
VS
DEPTH

Exploratory Hole : **WS-PTS127A**

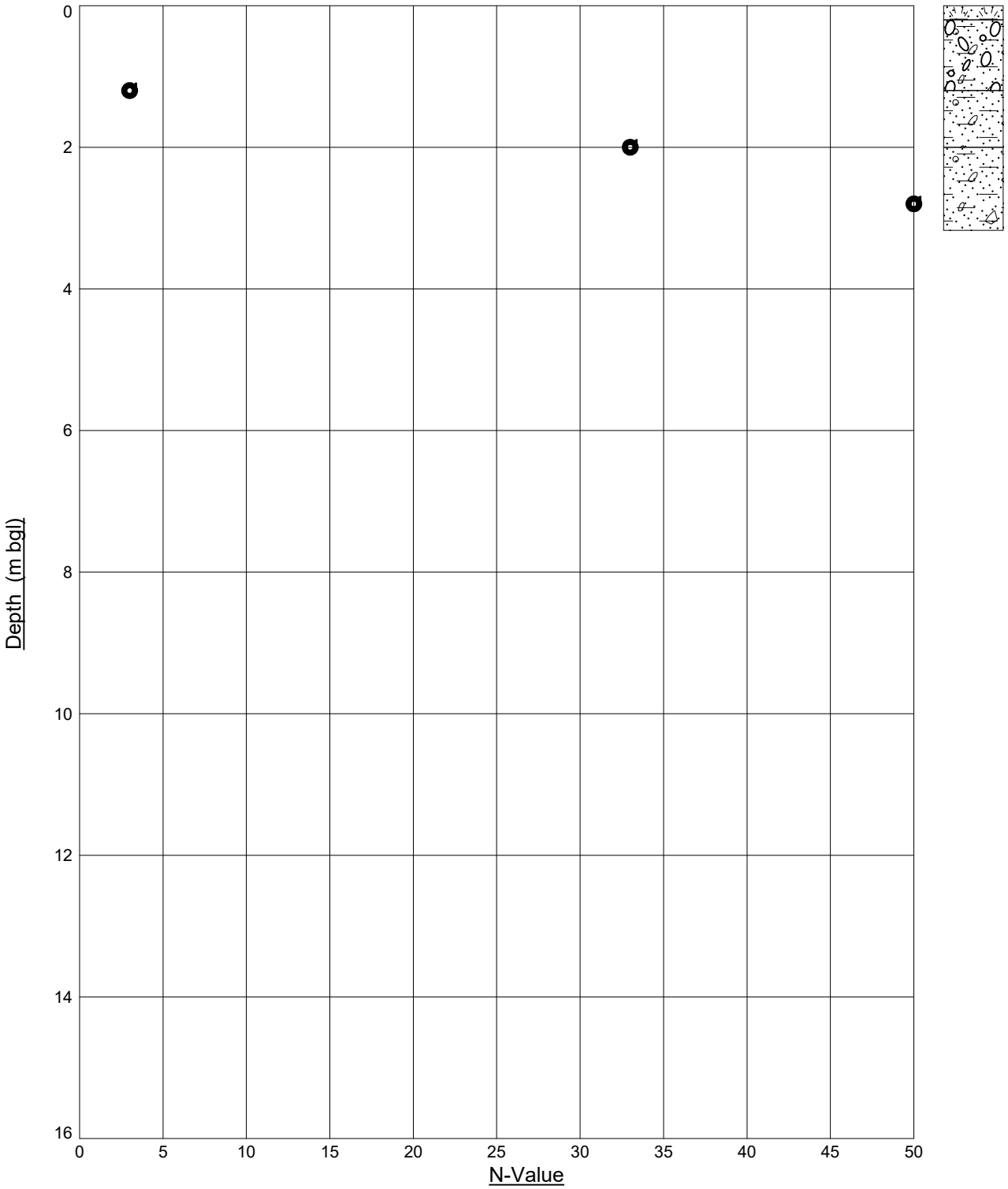


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
VS
DEPTH

Exploratory Hole : **WS-PTS129**

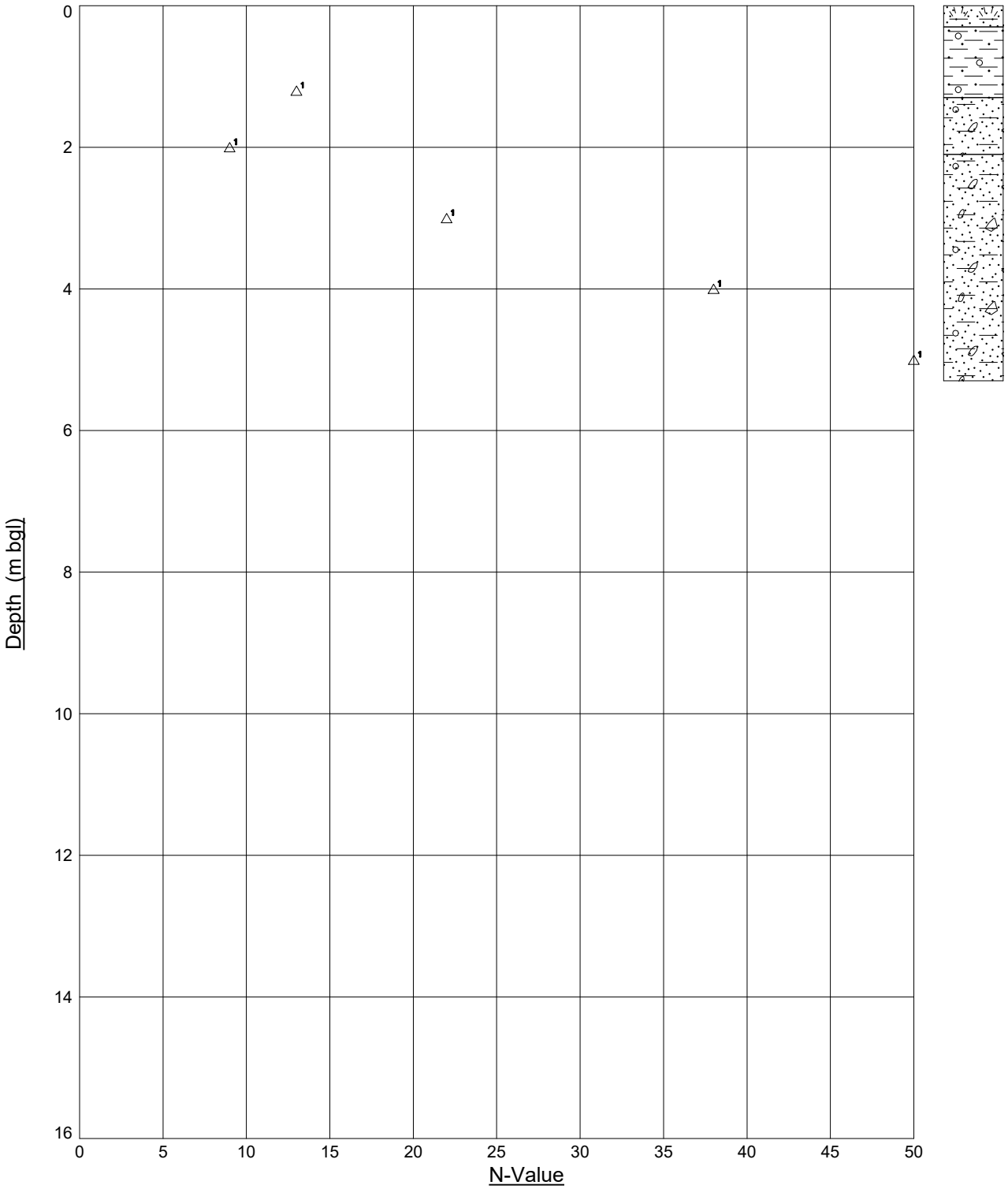


STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

STANDARD PENETRATION TEST (SPT N-Value)
VS
DEPTH

Exploratory Hole : **WS-PTS130**



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Contract **A66 NTP Scheme S03A**	Date **30.08.23**	Compiled By AML
	Client **National Highways**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - 1 PER PAGE - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 30/08/23 - 08:30 | AML1 |

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS205	13/04/2023	LCarty	1	300	5.89	83.37	26.0	129.918	168.93	Cloudy, 8°C	**Light reddish brown gravelly SAND with some cobbles**
			2	300	4.14	58.56	1.3	104.762	147.15		
			3	300	2.34	33.04	29.0	56.868	152.95		
			4	300	5.93	83.82	1.3	136.889	161.20		
			5	300	4.15	58.68	1.3	104.300	148.59		
			6	300	2.27	32.13	27.8	55.766	151.69		
			7	300	5.33	75.39	1.3	133.569	148.59		
			8	300	4.06	57.46	1.3	113.630	133.13		
			9	300	2.19	30.99	27.0	53.437	152.65		

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date	Contract Ref:
	MATTHEW DORAN	**14.04.23**	**765633**
Contract: **A66 NTP Scheme S03A**			

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS206	19/05/2023	LCarty	1	300	5.23	74.05	1.3	6901.555	2.82	Cloudy, 14°C	**Dark orangish brown slightly clayey slightly gravelly SAND with low cobble**
											content
			2	300	4.07	57.57	1.3	981.184	15.44		
			3	300	2.28	32.28	30.0	558.705	15.21		
			4	300	5.49	77.61	1.3	1067.224	19.14		
			5	300	4.03	57.00	1.3	824.668	18.20		
			6	300	2.22	31.34	27.8	465.081	17.74		
			7	300	5.51	77.91	1.3	983.979	20.84		
			8	300	3.81	53.91	28.8	803.968	17.65		
			9	300	2.20	31.15	28.8	442.225	18.55		

STRUCTURAL SOILS
The Potteries
Pottery Street
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W. Yorkshire WF10 1NJ

Compiled By		Date	Contract Ref:
	MATTHEW DORAN	**19.05.23**	**765633**
Contract: **A66 NTP Scheme S03A**			

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS207	30/03/2023	LCarty	1	300	5.19	73.45	29.3	15486.655	1.25	Sunny, 11°C	**Dark brown sandy GRAVEL**
			2	300	4.27	60.40	1.3	700.586	22.63		
			3	300	2.30	32.54	28.3	396.061	21.63		
			4	300	5.67	80.16	1.3	1231.401	17.14		
			5	300	4.27	60.42	32.8	917.091	17.34		
			6	300	2.21	31.30	27.3	641.471	12.84		
			7	300	5.60	79.27	27.8	1492.405	13.98		
			8	300	4.31	61.07	1.3	1146.427	14.01		
			9	300	2.33	33.04	29.0	967.835	8.98		

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date	Contract Ref:
	MATTHEW DORAN	**31.03.23**	**765633**
Contract: **A66 NTP Scheme S03A**			

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS208	18/04/2023	LCarty	1	300	5.45	77.09	28.5	3744.426	5.42	Sunny, 12°C	**Light brown gravelly SAND with some cobbles**
			2	300	4.10	57.99	1.3	1991.502	7.67		
			3	300	2.22	31.36	29.3	1257.146	6.57		
			4	300	5.50	77.84	1.3	2049.158	10.00		
			5	300	4.09	57.93	1.3	1788.701	8.53		
			6	300	2.26	31.97	30.3	1237.004	6.80		
			7	300	5.54	78.31	1.5	2232.131	9.24		
			8	300	3.98	56.24	1.3	1707.307	8.67		
			9	300	2.27	32.16	33.3	1124.077	7.53		

STRUCTURAL SOILS
The Potteries
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Compiled By		Date	Contract Ref:
	MATTHEW DORAN	**18.04.23**	**765633**
Contract: **A66 NTP Scheme S03A**			

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS209	29/03/2023	LCarty	1	300	5.38	76.14	27.0	819.099	24.47	Cloudy, 10°C	**Light orangish brown slightly gravelly SAND**
			2	300	3.96	56.04	30.0	474.189	31.11		
			3	300	2.34	33.16	31.0	288.416	30.27		
			4	300	5.32	75.25	1.3	607.747	32.60		
			5	300	3.80	53.71	1.3	501.240	28.21		
			6	300	2.22	31.42	27.8	258.340	32.02		
			7	300	5.40	76.34	26.5	596.380	33.70		
			8	300	3.92	55.47	1.3	474.040	30.81		
			9	300	2.41	34.15	35.0	288.679	31.14		

STRUCTURAL SOILS
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Compiled By		Date	Contract Ref:
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Contract: **A66 NTP Scheme S03A**			

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS210	29/03/2023	LCarty	1	300	5.43	76.82	1.3	2599.041	7.78	Cloudy, 13°C	**Dark greyish brown slightly clayey gravelly SAND with some cobbles**
			2	300	4.02	56.92	1.3	959.327	15.62		
			3	300	2.26	32.01	28.8	460.758	18.29		
			4	300	5.48	77.59	1.3	1021.714	19.99		
			5	300	4.11	58.14	1.3	751.397	20.37		
			6	300	2.20	31.16	28.5	431.418	19.01		
			7	300	3.49	77.67	1.3	938.496	21.79		
			8	300	4.11	58.12	1.3	708.443	21.60		
			9	300	2.22	31.37	28.8	418.019	19.75		

STRUCTURAL SOILS
The Potteries
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Compiled By		Date	Contract Ref:
	MATTHEW DORAN	**29.03.23**	**765633**
Contract: **A66 NTP Scheme S03A**			

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS211	04/04/2023	LCarty	1	300	5.13	72.51	26.8	2040.771	9.35	Sunny, 10°C	**Dark brown slightly gravelly SAND with high cobble content**
			2	300	3.97	56.21	1.3	491.841	30.09		
			3	300	2.33	33.02	31.5	255.916	33.97		
			4	300	5.48	77.51	1.3	692.309	29.47		
			5	300	3.92	55.43	1.3	457.031	31.92		
			6	300	2.20	31.17	27.8	243.254	33.73		
			7	300	5.43	76.85	1.3	725.269	27.90		
			8	300	3.97	56.11	1.3	483.623	30.54		
			9	300	2.17	30.64	28.3	260.072	31.01		

STRUCTURAL SOILS
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Compiled By		Date	Contract Ref:
	MATTHEW DORAN	**04.04.23**	**765633**
Contract: **A66 NTP Scheme S03A**			

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS212	30/03/2023	LCarty	1	300	5.19	73.43	1.3	3366.679	5.74	Cloudy, 11°C	**Light orangish brown slighty gravelly SAND with cobbles.**
			2	300	4.06	57.44	1.3	619.631	24.40		
			3	300	2.23	31.59	27.8	319.745	26.01		
			4	300	5.57	78.77	1.3	849.333	24.41		
			5	300	3.99	56.38	1.3	562.275	26.40		
			6	300	2.16	30.60	27.5	284.056	28.36		
			7	300	5.59	79.15	1.3	735.867	28.32		
			8	300	4.03	57.07	1.3	1726.757	8.70		
			9	300	2.34	33.04	34.3	444.464	19.57		

STRUCTURAL SOILS
The Potteries
Pottery Street
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W. Yorkshire WF10 1NJ

Compiled By		Date	Contract Ref:
	MATTHEW DORAN	**31.03.23**	**765633**
Contract: **A66 NTP Scheme S03A**			

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS213	14/04/2023	LCarty	1	300	5.26	74.47	30.8	20052.086	0.98	Sunny, 8°C	**Dark brown very gravelly SAND with high cobble content**
			2	300	4.12	58.27	1.3	692.103	22.17		
			3	300	2.25	31.88	27.3	302.804	27.72		
			4	300	5.63	79.66	1.3	1007.614	20.81		
			5	300	4.17	59.01	1.3	639.234	24.30		
			6	300	2.32	32.79	27.8	364.581	23.68		
			7	300	5.68	80.42	1.3	816.972	25.91		
			8	300	4.19	59.21	1.3	534.701	29.15		
			9	300	2.36	32.59	29.3	300.273	28.57		

STRUCTURAL SOILS
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W. Yorkshire WF10 1NJ

Compiled By		Date	Contract Ref:
	MATTHEW DORAN	**14.04.23**	**765633**
Contract: **A66 NTP Scheme S03A**			

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS214	31/03/2023	LCarty	1	300	5.59	79.11	1.3	1718.367	12.12	Overcast, 11°C	**Light brown fine - medium SAND**
			2	300	4.02	56.97	1.3	639.585	23.41		
			3	300	2.13	30.10	26.8	341.073	23.23		
			4	300	5.65	79.98	1.3	850.209	24.76		
			5	300	4.11	58.12	1.3	602.266	25.40		
			6	300	2.33	32.59	31.0	342.704	25.27		
			7	300	5.56	78.64	26.8	779.525	26.56		
			8	300	4.06	57.37	30.3	562.163	26.87		
			9	300	2.34	33.04	30.5	332.431	26.17		

STRUCTURAL SOILS
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Compiled By		Date	Contract Ref:
	MATTHEW DORAN	**31.03.23**	**765633**
Contract: **A66 NTP Scheme S03A**			

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS215	03/04/2023	LCarty	1	300	5.46	77.21	1.3	2506.736	8.11	Sunny, 9°C	**Dark reddish brown gravelly SAND with some cobbles**
			2	300	4.09	57.93	27.8	1006.865	15.14		
			3	300	2.36	33.44	30.0	575.947	15.28		
			4	300	5.59	79.08	26.3	1286.575	16.18		
			5	300	4.20	59.42	1.3	1023.338	15.29		
			6	300	2.25	31.87	27.5	581.244	14.44		
			7	300	5.59	79.10	26.3	1263.138	16.48		
			8	300	4.15	58.70	1.3	913.844	16.91		
			9	300	2.27	32.05	27.5	503.430	16.76		

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
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Compiled By		Date	Contract Ref:
	MATTHEW DORAN	**03.04.23**	**765633**
Contract: **A66 NTP Scheme S03A**			

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS217	03/04/2023	LCarty	1	300	5.79	81.90	1.3	491.937	43.83	Sunny, 10°C	**Dark brown slightly gravelly SAND with high cobble content**
			2	300	4.04	57.17	28.3	73.530	204.68		
			3	300	2.24	31.66	28.0	65.521	127.22		
			4	300	5.36	75.81	27.0	117.653	169.61		
			5	300	4.12	58.23	33.0	156.979	97.65		
			6	300	2.19	30.99	27.0	58.871	138.60		
			7	300	5.41	76.56	1.3	121.413	166.01		
			8	300	4.15	58.75	1.3	94.857	163.04		
			9	300	2.23	31.49	28.5	36.830	225.08		

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Contract: **A66 NTP Scheme S03A**			

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS220	20/03/2023	LCarty	1	300	5.39	76.26	26.5	12192.192	1.65	Light rain, 9°C	**Dark reddish brown slightly gravelly SAND**
			2	300	3.97	56.10	32.0	1426.045	10.36		
			3	300	2.40	33.94	34.8	940.025	9.52		
			4	300	5.42	76.69	1.3	18666.093	1.08		
			5	300	4.09	57.80	1.3	1315.651	11.57		
			6	300	2.17	30.65	28.5	826.821	9.76		
			7	300	5.40	76.45	1.3	1580.060	12.74		
			8	300	3.95	55.93	32.3	1257.012	11.91		
			9	300	2.19	31.00	28.5	805.301	10.14		

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Contract: **A66 NTP Scheme S03A**			

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS224	15/03/2023	LCarty	1	300	5.85	82.79	1.3	168.451	129.38	Overcast, 4°C	**Orangish brown slightly gravelly fine - medium SAND. Gravels are rounded -**
											sub-rounded fine - coarse.
			2	300	4.10	57.89	1.3	107.565	141.91		
			3	300	2.27	32.17	28.3	59.591	142.10		
			4	300	5.81	82.18	1.3	163.900	131.99		
			5	300	4.16	58.78	29.3	112.959	136.99		
			6	300	2.26	31.98	26.8	61.201	137.56		
			7	300	5.82	82.36	1.3	164.743	131.61		
			8	300	4.18	59.11	30.5	116.516	133.56		
			9	300	2.28	32.28	27.5	61.479	138.21		

STRUCTURAL SOILS
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Contract: **A66 NTP Scheme S03A**			

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS225	20/03/2023	LCarty	1	300	5.66	80.07	27.0	412.258	51.13	Overcast, 9°C	**Light orangish brown gravelly slightly clayey SAND.**
			2	300	4.23	59.87	1.3	276.319	57.02		
			3	300	2.31	32.72	29.5	144.143	59.74		
			4	300	5.63	79.69	1.3	391.213	53.62		
			5	300	4.28	60.54	1.3	283.654	56.19		
			6	300	2.28	32.31	29.0	144.924	58.69		
			7	300	5.50	77.81	27.0	415.831	49.26		
			8	300	4.24	59.99	33.0	310.225	50.91		
			9	300	2.27	32.09	28.5	149.538	56.47		

STRUCTURAL SOILS
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Compiled By		Date	Contract Ref:
	MATTHEW DORAN	**21.03.23**	**765633**
Contract: **A66 NTP Scheme S03A**			

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS226	14/03/2023	LCarty	1	300	5.69	80.53	1.3	298.743	70.96	Overcast, 4°C	**Soft reddish brown very sandy CLAY**
			2	300	4.07	57.53	27.5	190.675	79.42		
			3	300	2.19	30.93	26.8	106.855	76.19		
			4	300	5.85	82.76	1.3	281.395	77.42		
			5	300	4.21	59.61	1.3	197.008	79.65		
			6	300	2.29	32.41	28.8	110.561	77.18		
			7	300	5.74	81.18	25.3	276.965	77.16		
			8	300	4.08	57.76	27.5	197.032	77.17		
			9	300	2.29	32.42	29.3	112.292	76.00		

STRUCTURAL SOILS
The Potteries
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Compiled By		Date	Contract Ref:
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Contract: **A66 NTP Scheme S03A**			

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS228	16/03/2023	LCarty	1	300	5.74	81.23	1.3	121.260	176.35	Light rain, 4°C	**Light reddish brown slightly gravelly slightly clayey SAND**
			2	300	4.39	62.11	1.3	88.462	184.84		
			3	300	2.26	32.02	27.5	70.343	119.84		
			4	300	5.84	82.65	1.3	206.287	105.22		
			5	300	4.32	61.10	32.3	182.602	88.08		
			6	300	2.34	33.07	28.3	35.371	246.11		
			7	300	5.56	78.73	27.5	96.196	215.45		
			8	300	4.34	61.35	1.3	117.163	137.86		
			9	300	1.60	22.61	29.0	22.077	269.33		

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	MATTHEW DORAN	**16.03.23**	**765633**
Contract: **A66 NTP Scheme S03A**			

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS229	14/03/2023	LCarty	1	300	5.76	81.47	1.3	254.714	84.20	Overcast, 2°C	**Light reddish brown slightly clayey SAND**
			2	300	3.98	56.34	1.3	245.455	60.43		
			3	300	2.34	33.04	26.0	96.203	90.42		
			4	300	5.61	79.32	1.3	154.506	135.14		
			5	300	4.05	57.25	28.3	105.030	143.49		
			6	300	2.16	30.56	26.8	51.380	156.58		
			7	300	5.58	79.00	25.3	168.917	123.12		
			8	300	4.14	58.50	31.5	110.262	139.67		
			9	300	2.18	30.87	27.3	48.807	166.50		

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Compiled By		Date	Contract Ref:
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Contract: **A66 NTP Scheme S03A**			

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS230	28/03/2023	LCarty	1	300	5.30	74.98	26.0	841.857	23.45	Light rain, 6°C	**Light orangish brown slightly clayey gravelly SAND with some cobbles**
			2	300	3.77	53.33	1.3	477.488	29.40		
			3	300	2.11	29.87	26.8	277.648	28.33		
			4	300	5.19	73.47	25.8	670.719	28.84		
			5	300	3.79	53.58	1.3	551.574	25.57		
			6	300	2.31	32.73	30.5	293.657	29.34		
			7	300	5.13	72.52	26.0	803.503	23.76		
			8	300	3.81	53.86	32.0	641.299	22.11		
			9	300	2.15	30.40	27.5	306.451	26.12		

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Contract: **A66 NTP Scheme S03A**			

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS232	28/03/2023	LCarty	1	300	5.55	78.47	1.3	1170.905	17.64	Light rain, 7°C	**Light orangish brown slightly clayey gravelly SAND**
			2	300	3.92	55.41	27.3	560.273	26.03		
			3	300	2.42	34.20	32.0	303.587	29.66		
			4	300	5.54	78.31	1.3	767.566	26.86		
			5	300	4.03	57.04	32.0	519.829	28.89		
			6	300	2.33	32.97	32.3	293.725	29.55		
			7	300	5.49	77.69	1.3	724.223	28.24		
			8	300	4.00	56.55	1.3	524.271	28.40		
			9	300	2.32	32.79	32.8	285.925	30.19		

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Contract: **A66 NTP Scheme S03A**			

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS233-LC	27/03/2023	LCarty	1	300	5.43	76.75	25.8	440.506	45.87	Sunny, 6°C	**Light orangish brown gravelly SAND with some cobbles**
			2	300	4.03	56.98	1.3	310.127	48.37		
			3	300	2.32	32.89	30.0	191.272	45.27		
			4	300	5.66	80.04	26.8	404.211	52.13		
			5	300	4.04	57.13	27.3	300.398	50.07		
			6	300	2.33	33.02	31.3	184.475	47.12		
			7	300	5.72	80.94	1.3	385.446	55.28		
			8	300	4.15	58.65	1.3	311.426	49.58		
			9	300	2.32	32.89	30.3	183.876	47.09		

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Compiled By		Date	Contract Ref:
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Contract: **A66 NTP Scheme S03A**			

LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS234	24/03/2023	LCarty	1	300	5.71	80.81	1.3	458.684	46.38	Rain, 8°C	**Dark orangish brown slightly gravelly clayey SAND**
			2	300	4.04	57.19	1.3	221.497	67.97		
			3	300	2.29	32.59	29.8	111.063	76.78		
			4	300	5.49	77.62	25.5	329.402	62.03		
			5	300	4.07	57.62	1.3	223.200	67.96		
			6	300	2.30	32.54	31.8	128.054	66.89		
			7	300	5.66	80.07	1.3	325.489	64.76		
			8	300	4.02	56.84	28.5	233.519	64.07		
			9	300	2.38	33.69	33.0	135.305	65.55		

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LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS235	23/03/2023	LCarty	1	300	5.58	78.90	26.8	944.182	22.00	Cloudy, 8°C	**Dark reddish brown gravelly slightly clayey SAND with cobbles**
			2	300	4.02	56.82	1.3	409.744	36.50		
			3	300	2.26	31.90	1.3	244.354	34.37		
			4	300	5.52	78.13	25.3	540.199	38.08		
			5	300	4.02	56.86	1.3	393.497	38.04		
			6	300	2.32	32.77	31.8	241.578	35.71		
			7	300	5.54	78.33	26.0	532.865	38.70		
			8	300	4.09	57.80	32.5	380.404	40.00		
			9	300	2.15	30.43	27.0	225.716	35.48		

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LIGHT WEIGHT DEFLECTOMETER - DYNATEST 3032

In accordance with ASTM E2583-07

Exploratory Position ID	Date of Test	Technician	Drop Number	Plate Diameter (mm)	Load (kN)	Stress (kPa)	Pulse (ms)	Deflection (µm)	E mod (MPa)	Weather Conditions	Sample Description
TP-PTS236	22/03/2023	LCarty	1	300	5.47	77.34	28.3	747.894	27.22	Sunny, 6°C	**Light orangish brown gravelly SAND with cobbles**
			2	300	3.87	54.77	27.8	373.029	38.65		
			3	300	2.17	30.67	27.8	217.960	37.04		
			4	300	5.70	78.85	1.3	486.321	42.68		
			5	300	4.07	57.61	1.3	353.310	42.72		
			6	300	2.33	33.01	31.8	220.865	39.35		
			7	300	5.57	78.89	1.3	456.819	45.40		
			8	300	4.07	57.51	1.3	332.645	45.52		
			9	300	2.31	32.65	31.8	210.425	40.85		

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Contract: **A66 NTP Scheme S03A**			

APPENDIX D - GEOHYDRAULIC TESTING

(D01) Borehole Permeability Test Results

IN-SITU PERMEABILITY TEST - FALLING HEAD
In accordance with BS EN ISO 22282-2:2012

Borehole : **BH-PTS102A** Depth (m below GL): **3.30-4.30** Test Number: **1**

Test Date: **17/04/2023 15:23:00** Test Supervisor: **RBarker**

Ground Level (m AOD): **117.62** National Grid Co-ordinates: **E:354243.9 N:528988.4**

TEST SETUP DETAILS

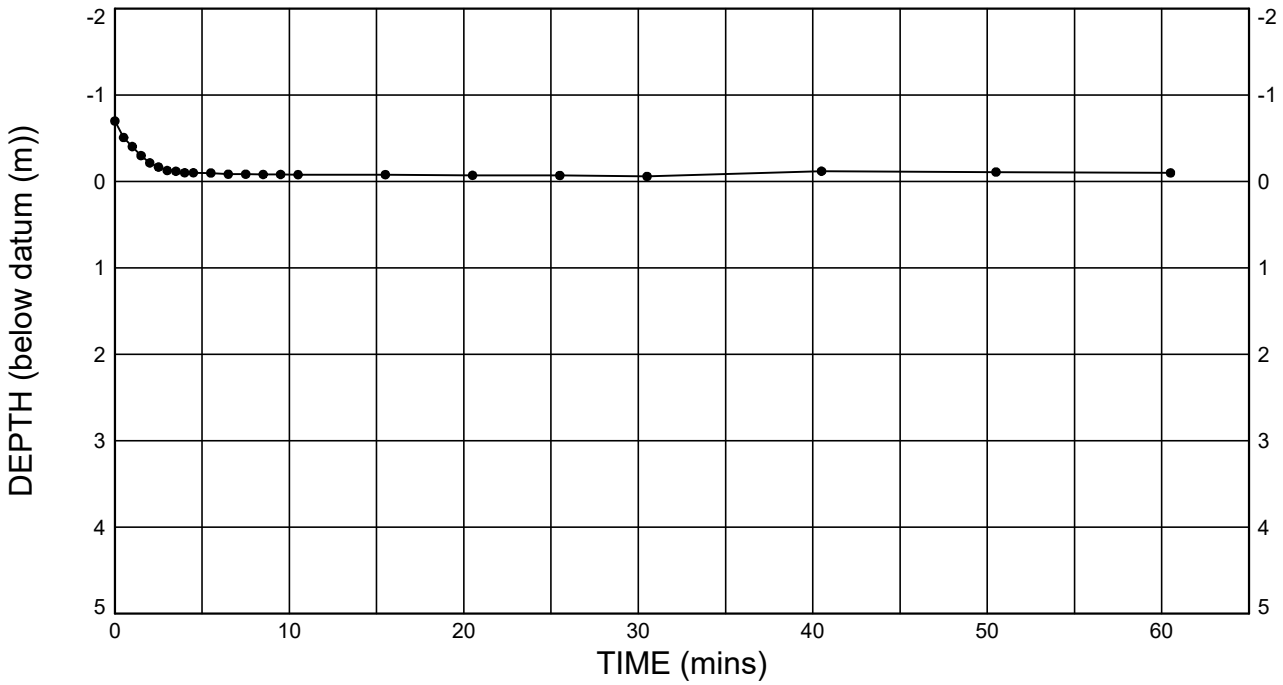
Depth measurements recorded from top of casing (top of casing 0.70m above GL).

Depth to top of response zone:	**4.00** m	Borehole diameter:	**275** mm
Depth to base of response zone:	**5.00** m	Depth to base of casing:	**4.00** m
Length of response zone:	**1.00** m	Casing diameter:	**275** mm
Initial groundwater level prior to test:	**-** m	Soil/Rock Description:	**Sl. gravelly sl. sandy silty CLAY**
Depth to base of borehole at start of test:	**5.00** m	Hydrogeological conditions:	**Test section dry**
Depth to base of borehole at completion of test:	**5.00** m	Weather:	**Overcast, dry**

TEST MEASUREMENTS

Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho
15:23:30	-0.70			15:29:00	-0.10			16:04:00	-0.12						
15:24:00	-0.51			15:30:00	-0.09			16:14:00	-0.11						
15:24:30	-0.41			15:31:00	-0.09			16:24:00	-0.10						
15:25:00	-0.30			15:32:00	-0.08										
15:25:30	-0.22			15:33:00	-0.08										
15:26:00	-0.17			15:34:00	-0.08										
15:26:30	-0.13			15:39:00	-0.08										
15:27:00	-0.12			15:44:00	-0.07										
15:27:30	-0.10			15:49:00	-0.07										
15:28:00	-0.10			15:54:00	-0.06										

PLOT OF WATER DEPTH AGAINST TIME



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Test Operator	Checked By	Date
	Ronan Barker		**26/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633** Client: **National Highways**	

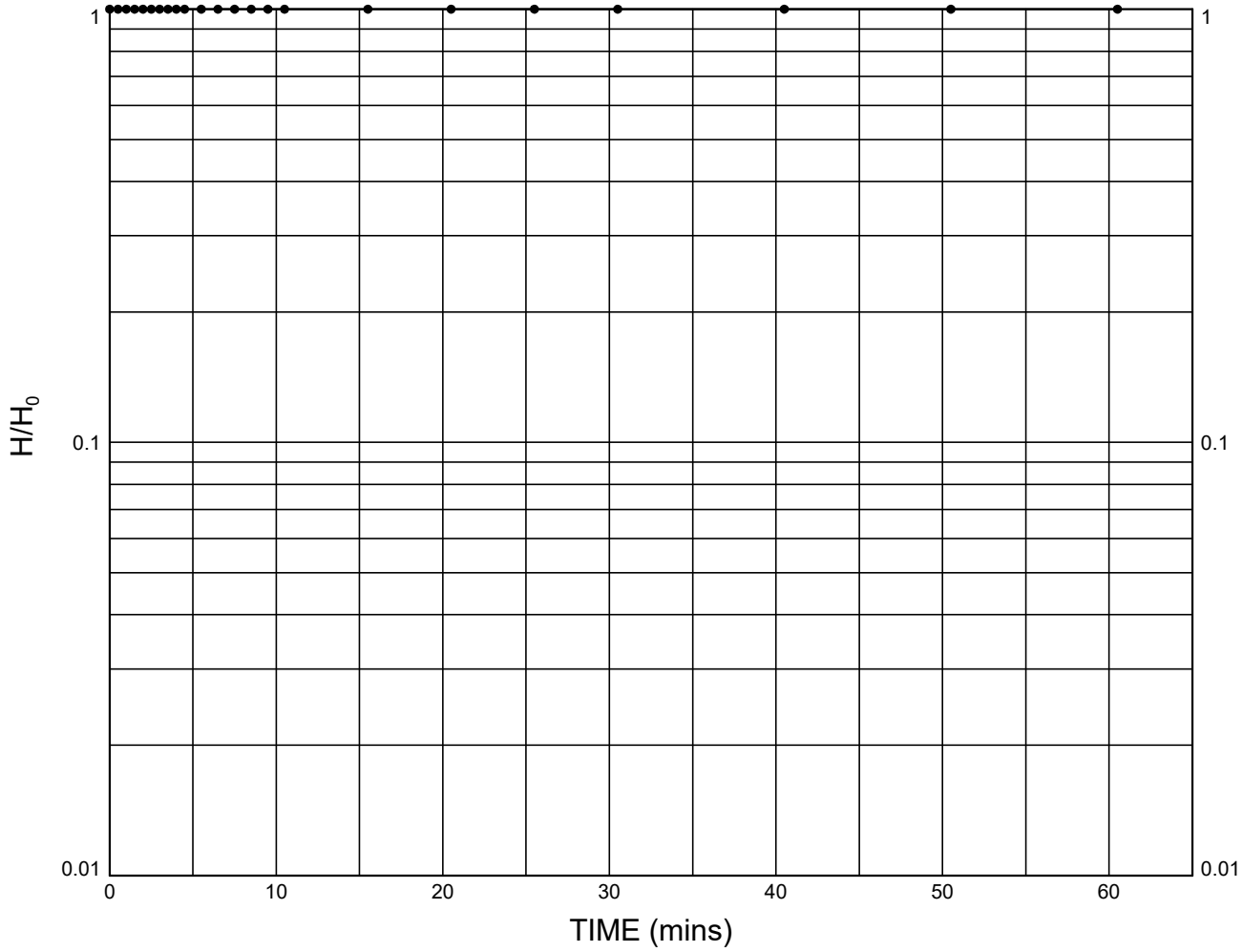
GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM 22282 - 1 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 26/07/23 - 10:39 | TP1 |

IN-SITU PERMEABILITY TEST - FALLING HEAD
In accordance with BS EN ISO 22282-2:2012

Borehole : **BH-PTS102A** Depth (m below GL): **3.30-4.30** Test Number: **1**
Test Date: **17/04/2023 15:23:00** Test Supervisor: **RBarker**

Ground Level (m AOD): **117.62** British National Grid Co-ordinates: E:354243.9 N:528988.4

PLOT OF H/Ho AGAINST TIME



Diameter of Test Section, D	=	**0.275**	m
Cross Sectional Area of Liaison Tube, A	=	**0.05940**	m^2
Test Section Length, L	=	**1.00**	m

Notes : **No calculation of permeability was possible due to unsuitable field data. Borehole dry at start of test.**

Sheet 2 of 2

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Test Operator	Checked By	Date
	Ronan Barker		**26/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	
		Client: **National Highways**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM 22282 - 2 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 26/07/23 - 10:39 | TP1 |

IN-SITU PERMEABILITY TEST - FALLING HEAD
In accordance with BS EN ISO 22282-2:2012

Borehole : **BH-PTS102A** Depth (m below GL): **4.00-5.00** Test Number: **2**

Test Date: **18/04/2023 09:57:00** Test Supervisor: **RBarker**

Ground Level (m AOD): **117.62** National Grid Co-ordinates: **E:354243.9 N:528988.4**

TEST SETUP DETAILS

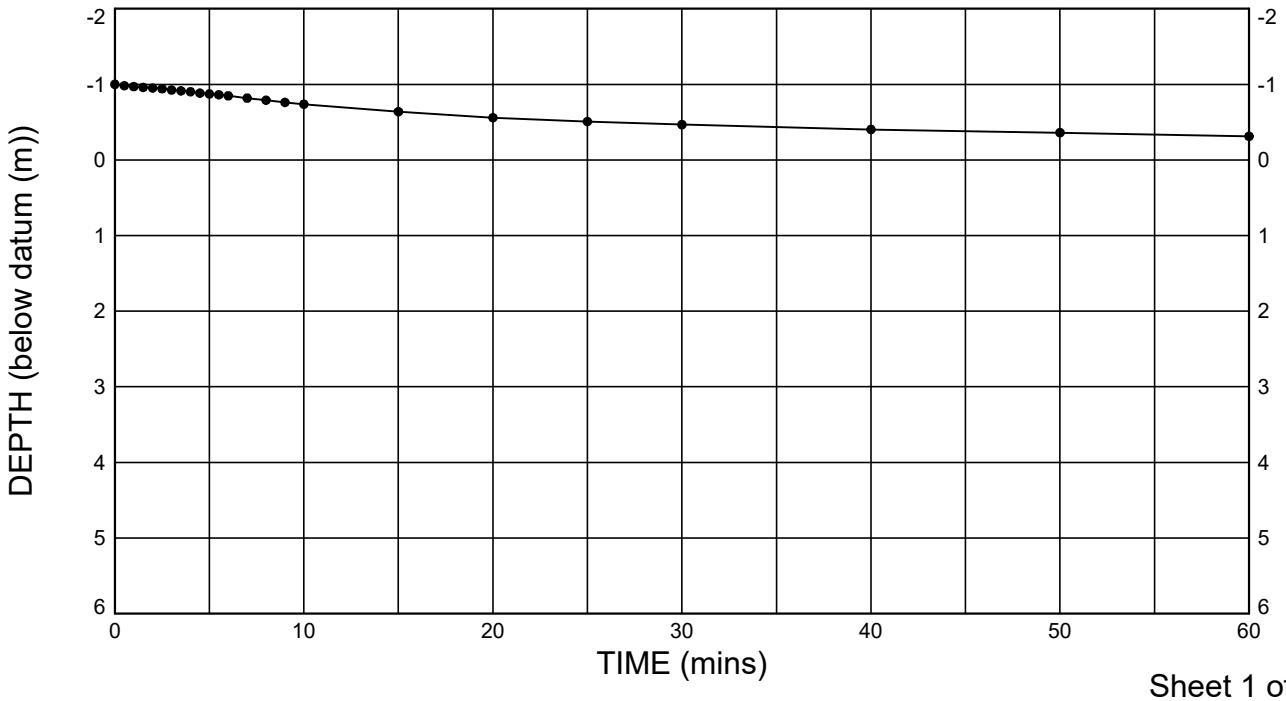
Depth measurements recorded from top of casing (top of casing 1.00m above GL).

Depth to top of response zone:	**5.00** m	Borehole diameter:	**275** mm
Depth to base of response zone:	**6.00** m	Depth to base of casing:	**5.00** m
Length of response zone:	**1.00** m	Casing diameter:	**275** mm
Initial groundwater level prior to test:	**0.49** m	Soil/Rock Description:	**V. sandy sl. silty GRAVEL**
Depth to base of borehole at start of test:	**6.00** m	Hydrogeological conditions:	**Entire test section below GW**
Depth to base of borehole at completion of test:	**5.95** m	Weather:	**Sunny, Dry**

TEST MEASUREMENTS

Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho
09:57:00	-1.00	1.49	1.00	10:02:00	-0.87	1.36	0.92	10:27:00	-0.47	0.96	0.64				
09:57:30	-0.98	1.47	0.99	10:02:30	-0.86	1.35	0.91	10:37:00	-0.40	0.89	0.60				
09:58:00	-0.97	1.46	0.98	10:03:00	-0.85	1.34	0.90	10:47:00	-0.36	0.85	0.57				
09:58:30	-0.96	1.45	0.97	10:04:00	-0.82	1.31	0.88	10:57:00	-0.31	0.80	0.54				
09:59:00	-0.95	1.44	0.97	10:05:00	-0.79	1.28	0.86								
09:59:30	-0.94	1.43	0.96	10:06:00	-0.76	1.25	0.84								
10:00:00	-0.93	1.42	0.95	10:07:00	-0.74	1.23	0.82								
10:00:30	-0.91	1.40	0.94	10:12:00	-0.64	1.13	0.76								
10:01:00	-0.90	1.39	0.93	10:17:00	-0.56	1.05	0.70								
10:01:30	-0.88	1.37	0.92	10:22:00	-0.51	1.00	0.67								

PLOT OF WATER DEPTH AGAINST TIME



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Test Operator	Checked By	Date
	Ronan Barker		**26/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	
		Client: **National Highways**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM 22282 - 1 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 26/07/23 - 10:27 | TP1 |

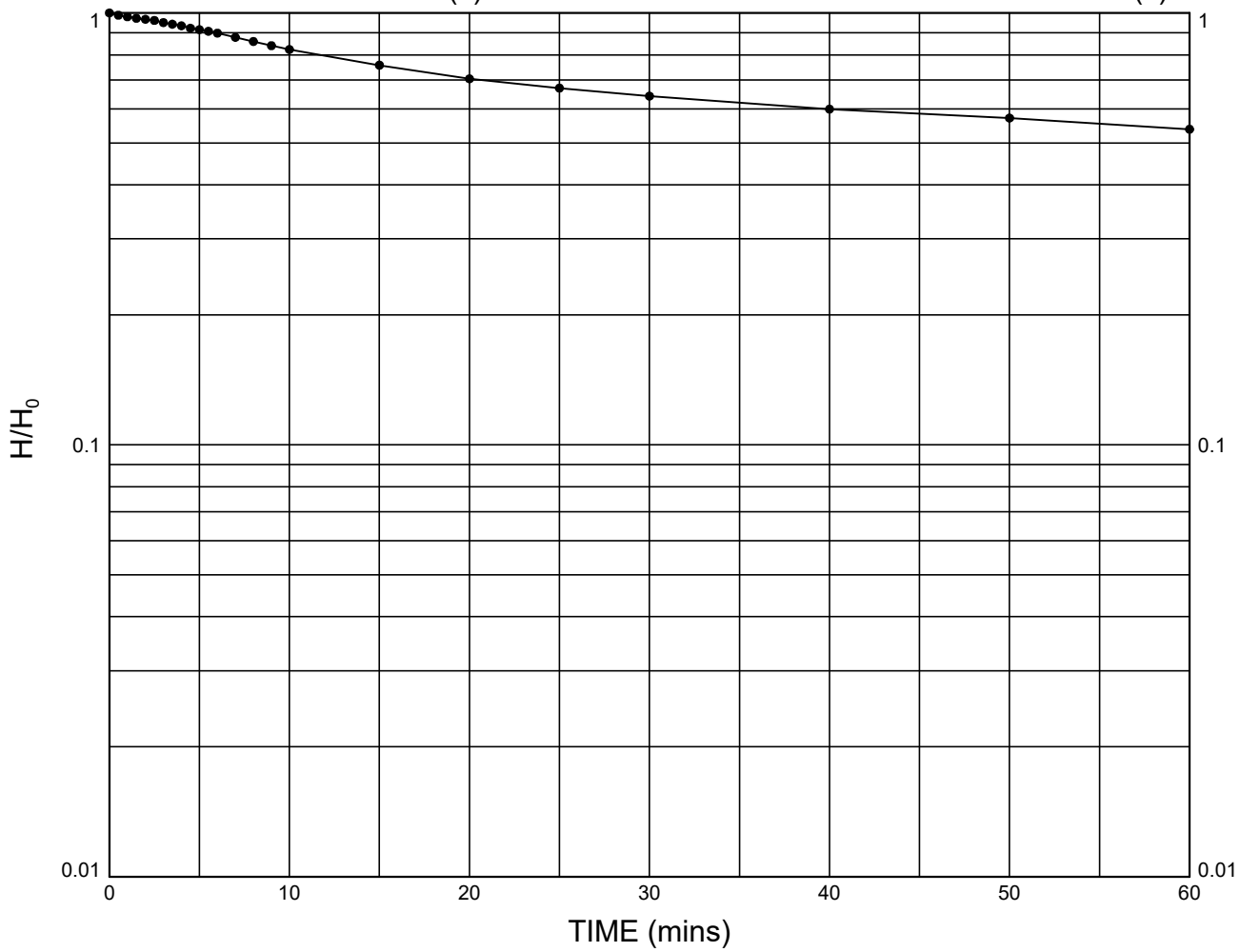
IN-SITU PERMEABILITY TEST - FALLING HEAD
In accordance with BS EN ISO 22282-2:2012

Borehole : **BH-PTS102A** Depth (m below GL): **4.00-5.00** Test Number: **2**
Test Date: **18/04/2023 09:57:00** Test Supervisor: **RBarker**

Ground Level (m AOD): **117.62** British National Grid Co-ordinates: E:354243.9 N:528988.4

PLOT OF H/Ho AGAINST TIME

Time used for t0 = 3000 (s) Time used for t = 3600 (s)



Diameter of Test Section, D	=	**0.275**	m
Cross Sectional Area of Liaison Tube, A	=	**0.05940**	m^2
Test Section Length, L	=	**1.00**	m
Shape Factor, F	=	**3.14**	m
Time, $t - t_0$	=	**600**	sec
In-situ Permeability, k	=	**1.913×10^{-6}**	m/sec

Notes : **Permeability calculated using velocity graph method in accordance with BS EN ISO 22282-2 (2012). To enable calculation of permeability an assumed standing water level of 0.49m below datum was used to determine head, H. Although the previous assumed standing water level has been used in the calculation of permeability the measured groundwater level prior to the test was recorded as 0.49m below datum.**

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Test Operator	Checked By	Date
	Ronan Barker		**26/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	
		Client: **National Highways**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM 22282 - 2 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 26/07/23 - 10:27 | TP1 |

IN-SITU PERMEABILITY TEST - FALLING HEAD
NON-STANDARD TEST

Borehole : **BH-PTS112** Depth (m below GL): **1.00-2.70** Test Number: **1**

Test Date: **10/06/2023 10:30:00** Test Supervisor: **DTiernan**

Ground Level (m AOD): **109.25** British National Grid Co-ordinates: E:354771.3 N:529033.9

TEST SETUP DETAILS

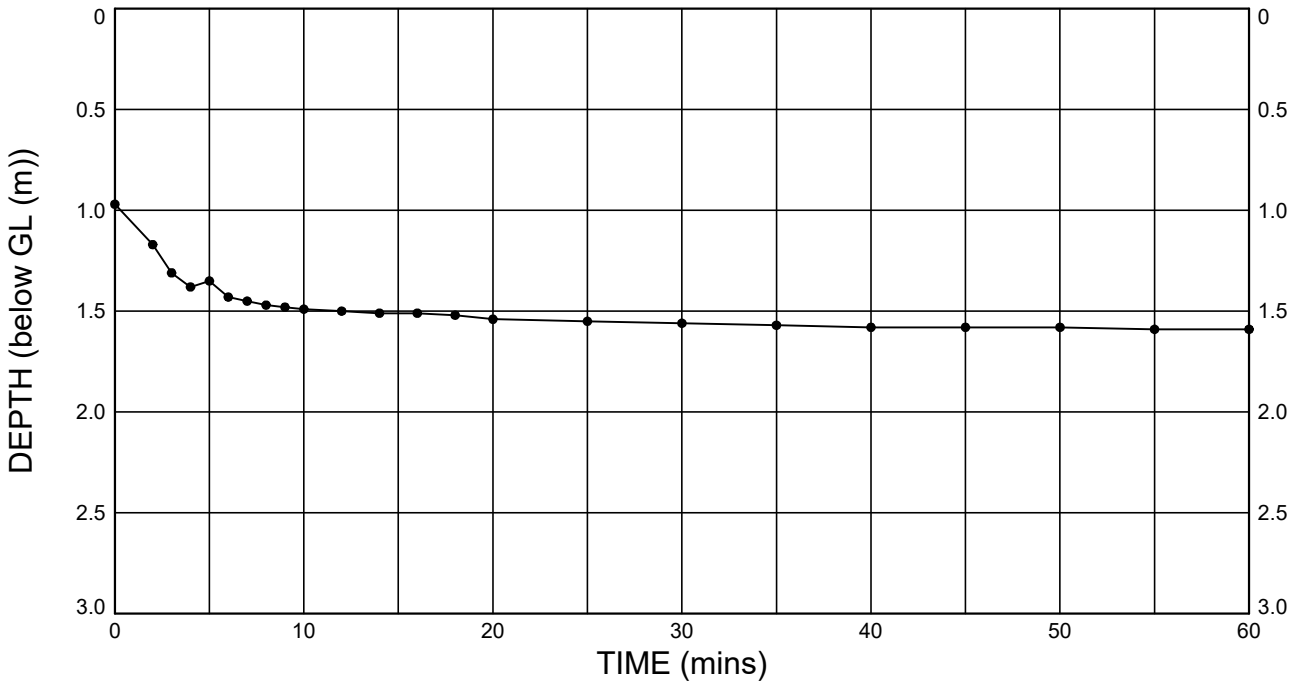
Depth measurements recorded from ground level.

Depth to top of response zone:	**1.00** m	Type of piezometer:	**Slotted standpipe**
Depth to base of response zone:	**2.70** m	Slotted pipe section:	**1.50-2.70** m **(Fitted with Geotextile)**
Length of response zone:	**1.70** m	Type of piezometer fill:	**Gravel**
Initial groundwater level prior to test:	**1.83** m	Soil/Rock Description:	**Slightly gravelly sandy CLAY**
Borehole diameter:	**300** mm	Hydrogeological conditions:	**Part of test section below GW**
Monitoring well diameter:	**50** mm	Weather:	**Sunny**

TEST MEASUREMENTS

Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho
10:31:00	0.97			10:43:00	1.50			11:21:00	1.58										
10:33:00	1.17			10:45:00	1.51			11:26:00	1.59										
10:34:00	1.31			10:47:00	1.51			11:31:00	1.59										
10:35:00	1.38			10:49:00	1.52														
10:36:00	1.35			10:51:00	1.54														
10:37:00	1.43			10:56:00	1.55														
10:38:00	1.45			11:01:00	1.56														
10:39:00	1.47			11:06:00	1.57														
10:40:00	1.48			11:11:00	1.58														
10:41:00	1.49			11:16:00	1.58														

PLOT OF WATER DEPTH AGAINST TIME



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Test Operator	Checked By	Date
	David Tiernan		**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633** Client: **National Highways**	

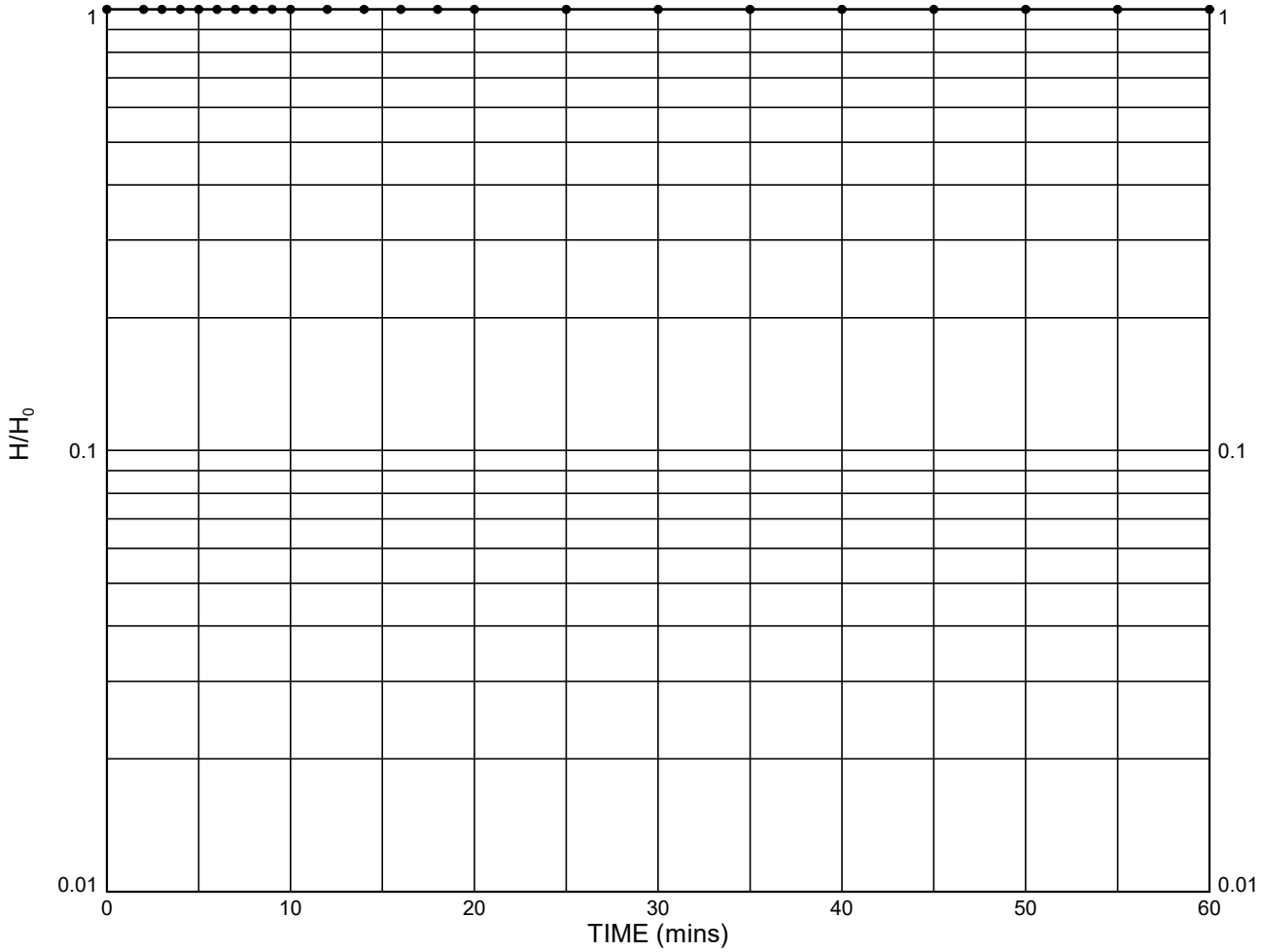
GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM WELL 22282 - 1 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 25/07/23 - 18:15 | TP1 |

IN-SITU PERMEABILITY TEST - FALLING HEAD
NON-STANDARD TEST

Borehole : **BH-PTS112** Depth (m below GL): **1.00-2.70** Test Number: **1**
Test Date: **10/06/2023 10:30:00** Test Supervisor: **DTiernan**

Ground Level (m AOD): **109.25** British National Grid Co-ordinates: E:354771.3 N:529033.9

PLOT OF H/Ho AGAINST TIME



Borehole Radius, R	=	**0.15**	m
Standpipe Radius, r	=	**0.025**	m
Test Section Length, L	=	**1.70**	m

Notes : **No calculation of permeability was possible due to unsuitable field data. Initial groundwater level within response zone prior to start of test.**

Sheet 2 of 2

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Test Operator	Checked By	Date
	David Tiernan		**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	
		Client: **National Highways**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM WELL 22282 - 2 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 25/07/23 - 18:17 | TP1 |

IN-SITU PERMEABILITY TEST - FALLING HEAD
NON-STANDARD TEST

Borehole : **BH-PTS112** Depth (m below GL): **1.00-2.70** Test Number: **2**

Test Date: **14/06/2023 10:30:00** Test Supervisor: **DTiernan**

Ground Level (m AOD): **109.25** British National Grid Co-ordinates: E:354771.3 N:529033.9

TEST SETUP DETAILS

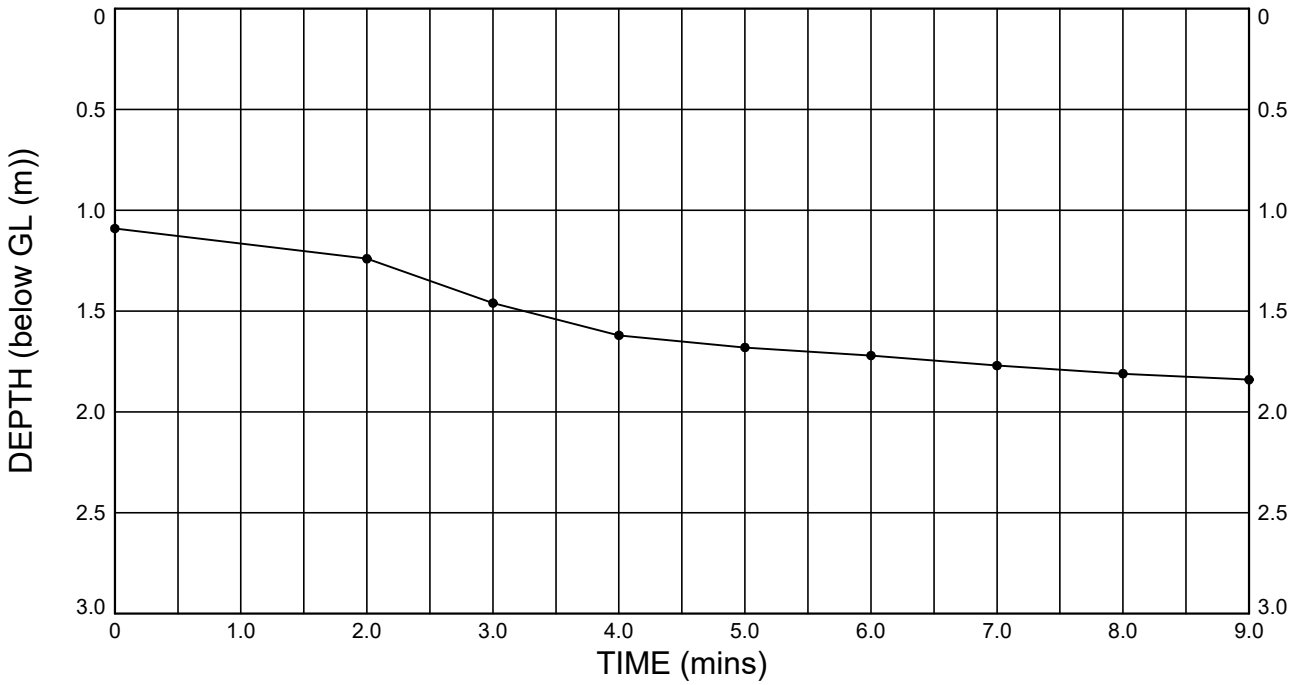
Depth measurements recorded from ground level.

Depth to top of response zone:	**1.00** m	Type of piezometer:	**Slotted standpipe**
Depth to base of response zone:	**2.70** m	Slotted pipe section:	**1.50-2.70** m **(Fitted with Geotextile)**
Length of response zone:	**1.70** m	Type of piezometer fill:	**Gravel**
Initial groundwater level prior to test:	**1.83** m	Soil/Rock Description:	**Slightly gravelly sandy CLAY**
Borehole diameter:	**300** mm	Hydrogeological conditions:	**Part of test section below GW**
Monitoring well diameter:	**50** mm	Weather:	**Sunny**

TEST MEASUREMENTS

Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho
10:31:00	1.09																		
10:33:00	1.24																		
10:34:00	1.46																		
10:35:00	1.62																		
10:36:00	1.68																		
10:37:00	1.72																		
10:38:00	1.77																		
10:39:00	1.81																		
10:40:00	1.84																		

PLOT OF WATER DEPTH AGAINST TIME



	Test Operator	Checked By	Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	**David Tiernan**		**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633** Client: **National Highways**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM WELL 22282 - 1 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 25/07/23 - 18:17 | TP1 |

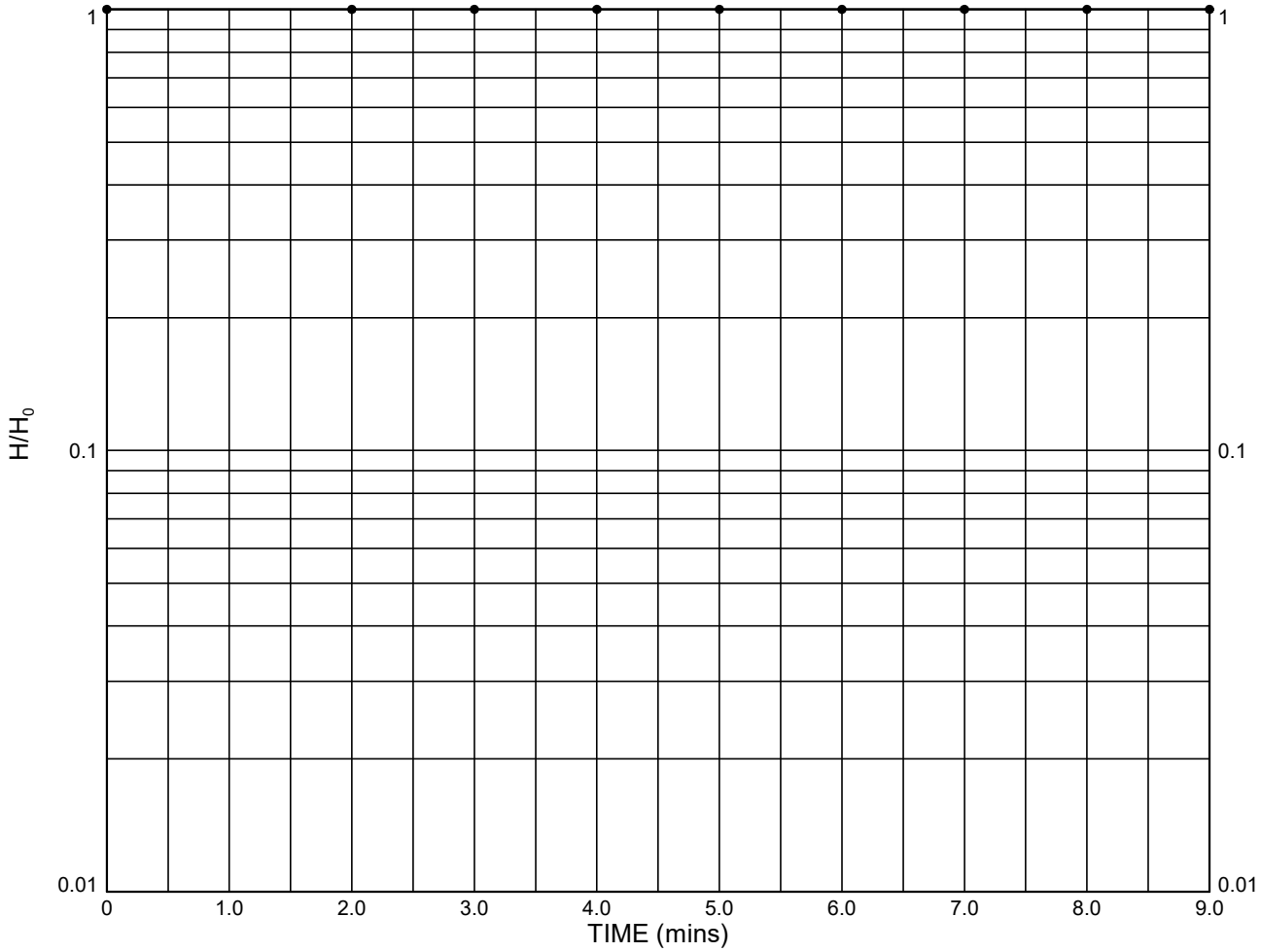
IN-SITU PERMEABILITY TEST - FALLING HEAD
NON-STANDARD TEST

Borehole : **BH-PTS112** Depth (m below GL): **1.00-2.70** Test Number: **2**

Test Date: **14/06/2023 10:30:00** Test Supervisor: **DTiernan**

Ground Level (m AOD): **109.25** British National Grid Co-ordinates: E:354771.3 N:529033.9

PLOT OF H/Ho AGAINST TIME



Borehole Radius, R	=	**0.15**	m
Standpipe Radius, r	=	**0.025**	m
Test Section Length, L	=	**1.70**	m

Notes : **No calculation of permeability was possible due to unsuitable field data. Initial groundwater level within response zone prior to start of test.**

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Test Operator	Checked By	Date
	David Tiernan		**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	
		Client: **National Highways**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM WELL 22282 - 2 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 25/07/23 - 18:18 | TP1 |

IN-SITU PERMEABILITY TEST - FALLING HEAD
NON-STANDARD TEST

Borehole : **BH-PTS112** Depth (m below GL): **1.00-2.70** Test Number: **3**

Test Date: **15/06/2023 10:30:00** Test Supervisor: **DTiernan**

Ground Level (m AOD): **109.25** British National Grid Co-ordinates: E:354771.3 N:529033.9

TEST SETUP DETAILS

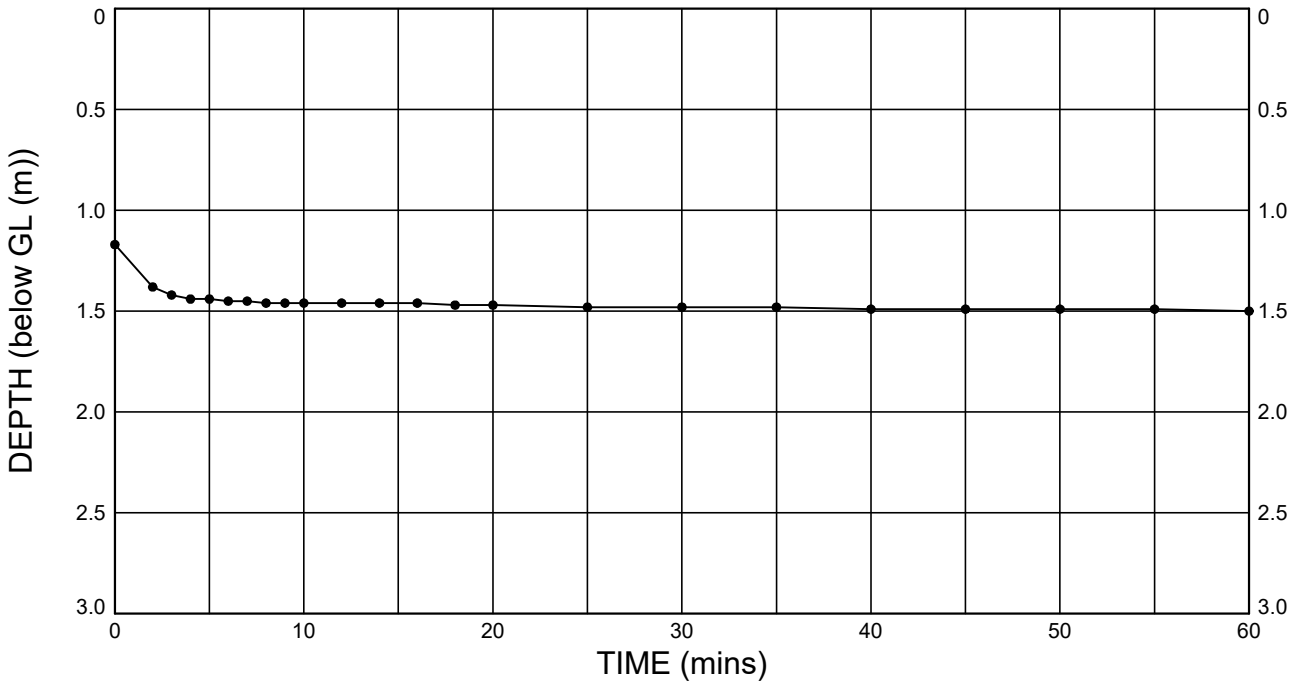
Depth measurements recorded from ground level.

Depth to top of response zone:	**1.00** m	Type of piezometer:	**Slotted standpipe**
Depth to base of response zone:	**2.70** m	Slotted pipe section:	**1.50-2.70** m **(Fitted with Geotextile)**
Length of response zone:	**1.70** m	Type of piezometer fill:	**Gravel**
Initial groundwater level prior to test:	**1.84** m	Soil/Rock Description:	**Slightly gravelly sandy CLAY**
Borehole diameter:	**300** mm	Hydrogeological conditions:	**Part of test section below GW**
Monitoring well diameter:	**50** mm	Weather:	**Sunny**

TEST MEASUREMENTS

Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho
10:31:00	1.17			10:43:00	1.46			11:21:00	1.49										
10:33:00	1.38			10:45:00	1.46			11:26:00	1.49										
10:34:00	1.42			10:47:00	1.46			11:31:00	1.50										
10:35:00	1.44			10:49:00	1.47														
10:36:00	1.44			10:51:00	1.47														
10:37:00	1.45			10:56:00	1.48														
10:38:00	1.45			11:01:00	1.48														
10:39:00	1.46			11:06:00	1.48														
10:40:00	1.46			11:11:00	1.49														
10:41:00	1.46			11:16:00	1.49														

PLOT OF WATER DEPTH AGAINST TIME



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Test Operator	Checked By	Date
	David Tiernan		**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633** Client: **National Highways**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM WELL 22282 - 1 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 25/07/23 - 18:16 | TP1 |

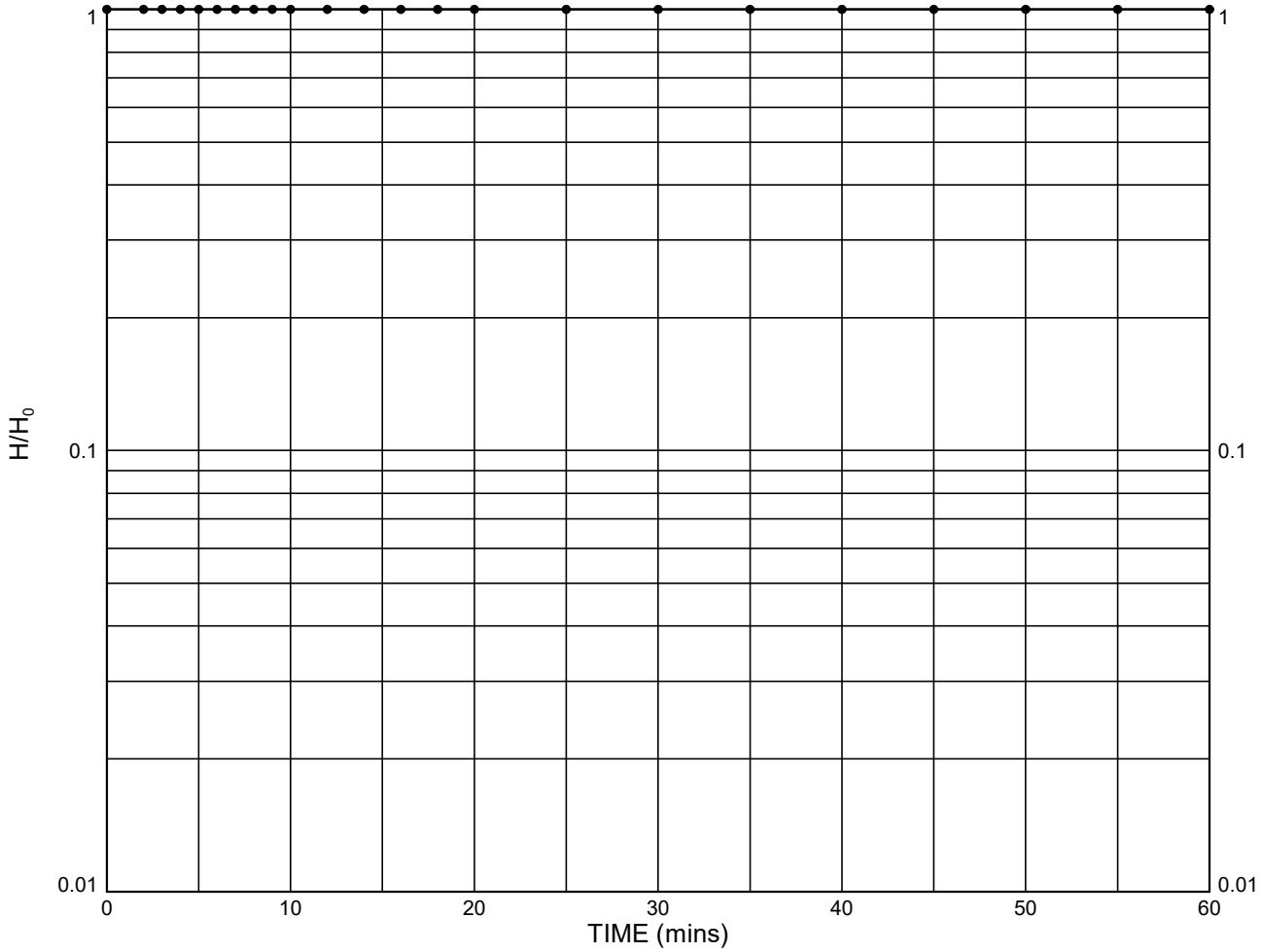
IN-SITU PERMEABILITY TEST - FALLING HEAD
NON-STANDARD TEST

Borehole : **BH-PTS112** Depth (m below GL): **1.00-2.70** Test Number: **3**

Test Date: **15/06/2023 10:30:00** Test Supervisor: **DTiernan**

Ground Level (m AOD): **109.25** British National Grid Co-ordinates: E:354771.3 N:529033.9

PLOT OF H/Ho AGAINST TIME



Borehole Radius, R	=	**0.15**	m
Standpipe Radius, r	=	**0.025**	m
Test Section Length, L	=	**1.70**	m

Notes : **No calculation of permeability was possible due to unsuitable field data. Initial groundwater level within response zone prior to start of test.**

Sheet 2 of 2

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Test Operator	Checked By	Date
	David Tiernan		**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	
		Client: **National Highways**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM WELL 22282 - 2 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 25/07/23 - 18:18 | TP1 |

IN-SITU PERMEABILITY TEST - FALLING HEAD
In accordance with BS EN ISO 22282-2:2012

Borehole : **BH-PTS115** Depth (m below GL): **1.00-6.50** Test Number: **1**

Test Date: **10/06/2023 10:30:00** Test Supervisor: **DTiernan**

Ground Level (m AOD): **110.36** British National Grid Co-ordinates: E:354985.9 N:529034.3

TEST SETUP DETAILS

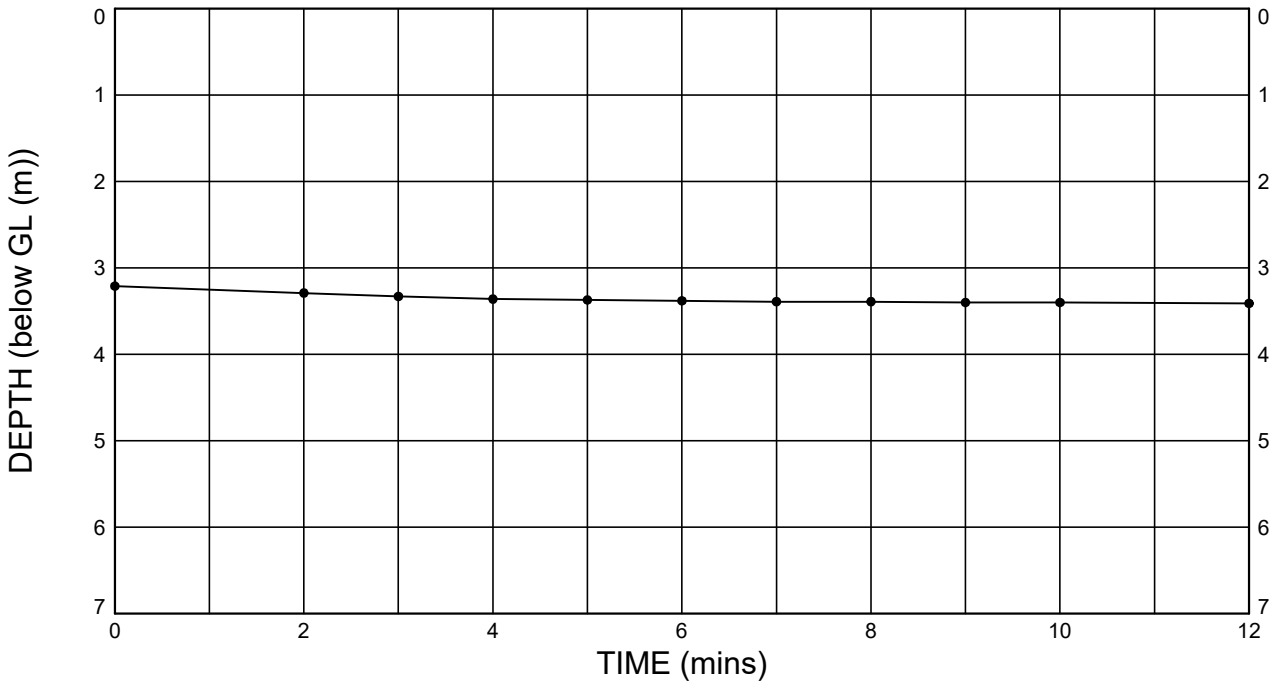
Depth measurements recorded from ground level.

Depth to top of response zone:	**1.00** m	Type of piezometer:	**Slotted standpipe**
Depth to base of response zone:	**6.50** m	Slotted pipe section:	**1.50-6.50** m **(Fitted with Geotextile)**
Length of response zone:	**5.50** m	Type of piezometer fill:	**Gravel**
Initial groundwater level prior to test:	**3.41** m	Soil/Rock Description:	**SANDSTONE**
Borehole diameter:	**200** mm	Hydrogeological conditions:	**Part of test section below GW**
Monitoring well diameter:	**50** mm	Weather:	**Sunny**

TEST MEASUREMENTS

Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho
10:31:00	3.21			10:43:00	3.41														
10:33:00	3.29																		
10:34:00	3.33																		
10:35:00	3.36																		
10:36:00	3.37																		
10:37:00	3.38																		
10:38:00	3.39																		
10:39:00	3.39																		
10:40:00	3.40																		
10:41:00	3.40																		

PLOT OF WATER DEPTH AGAINST TIME



	Test Operator	Checked By	Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	**David Tiernan**		**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633** Client: **National Highways**	

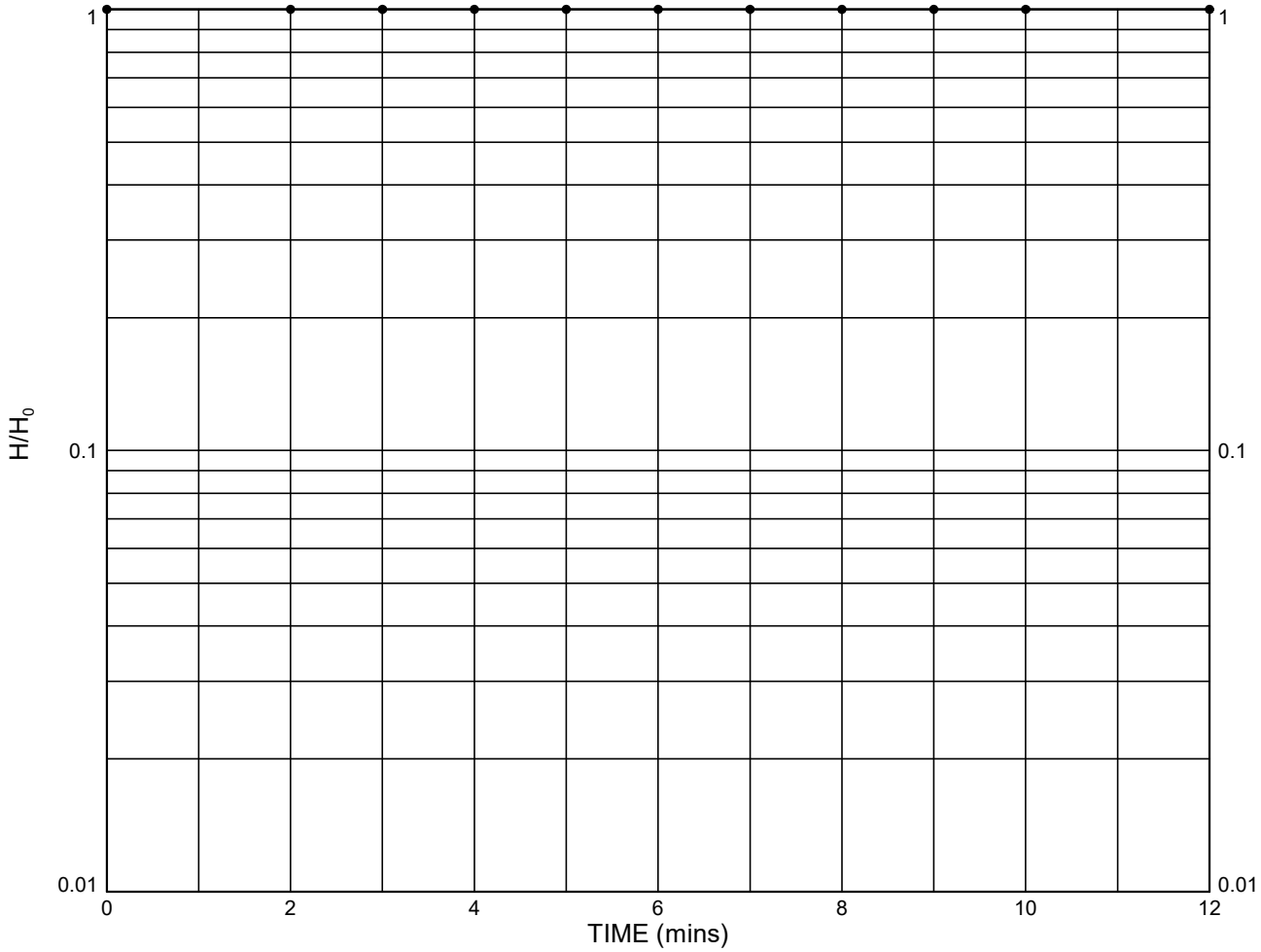
GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM WELL 22282 - 1 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 25/07/23 - 18:16 | TP1 |

IN-SITU PERMEABILITY TEST - FALLING HEAD
In accordance with BS EN ISO 22282-2:2012

Borehole : **BH-PTS115** Depth (m below GL): **1.00-6.50** Test Number: **1**
Test Date: **10/06/2023 10:30:00** Test Supervisor: **DTiernan**

Ground Level (m AOD): **110.36** British National Grid Co-ordinates: E:354985.9 N:529034.3

PLOT OF H/Ho AGAINST TIME



Borehole Radius, R	=	**0.1**	m
Standpipe Radius, r	=	**0.025**	m
Test Section Length, L	=	**5.50**	m

Notes : **No calculation of permeability was possible due to unsuitable field data. Initial groundwater level within response zone prior to start of test.**

Sheet 2 of 2

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Test Operator	Checked By	Date
	David Tiernan		**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	
		Client: **National Highways**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM WELL 22282 - 2 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 25/07/23 - 18:18 | TP1 |

IN-SITU PERMEABILITY TEST - FALLING HEAD
In accordance with BS EN ISO 22282-2:2012

Borehole : **BH-PTS115** Depth (m below GL): **1.00-6.50** Test Number: **2**

Test Date: **14/06/2023 10:30:00** Test Supervisor: **DTiernan**

Ground Level (m AOD): **110.36** British National Grid Co-ordinates: E:354985.9 N:529034.3

TEST SETUP DETAILS

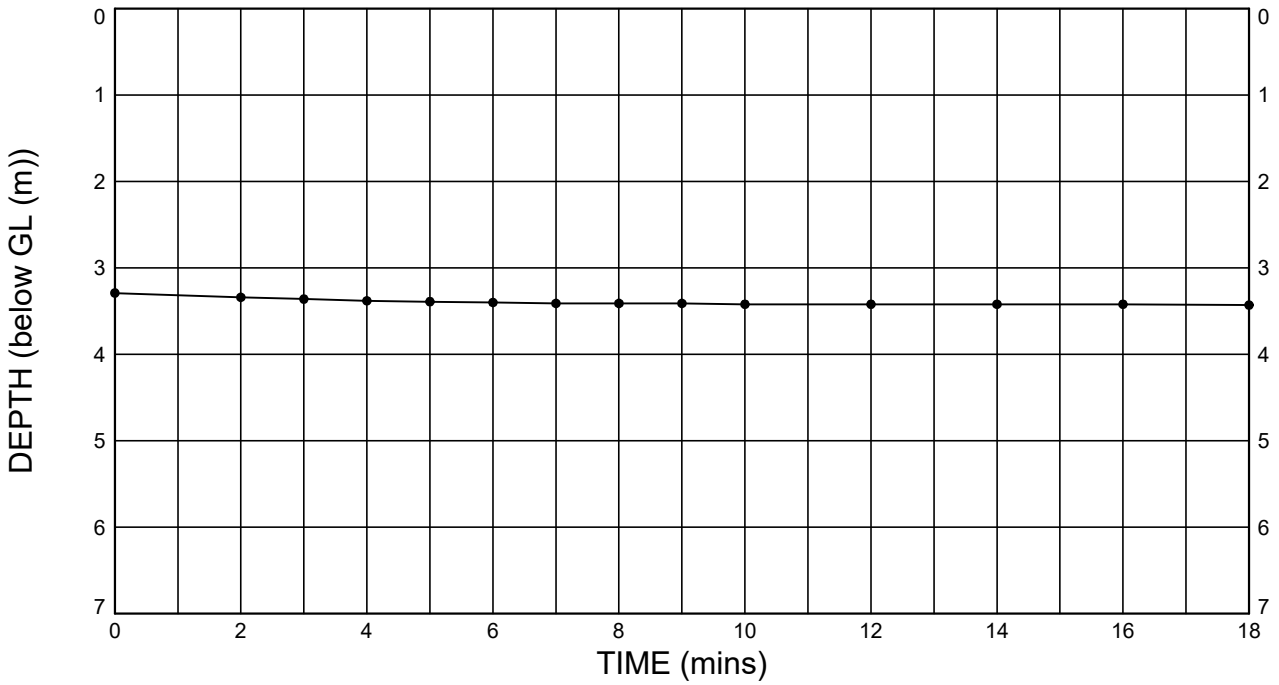
Depth measurements recorded from ground level.

Depth to top of response zone:	**1.00** m	Type of piezometer:	**Slotted standpipe**
Depth to base of response zone:	**6.50** m	Slotted pipe section:	**1.50-6.50** m **(Fitted with Geotextile)**
Length of response zone:	**5.50** m	Type of piezometer fill:	**Gravel**
Initial groundwater level prior to test:	**3.43** m	Soil/Rock Description:	**SANDSTONE**
Borehole diameter:	**200** mm	Hydrogeological conditions:	**Part of test section below GW**
Monitoring well diameter:	**50** mm	Weather:	**Sunny**

TEST MEASUREMENTS

Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho
10:31:00	3.29			10:43:00	3.42														
10:33:00	3.34			10:45:00	3.42														
10:34:00	3.36			10:47:00	3.42														
10:35:00	3.38			10:49:00	3.43														
10:36:00	3.39																		
10:37:00	3.40																		
10:38:00	3.41																		
10:39:00	3.41																		
10:40:00	3.41																		
10:41:00	3.42																		

PLOT OF WATER DEPTH AGAINST TIME



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Test Operator	Checked By	Date
	David Tiernan		**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633** Client: **National Highways**	

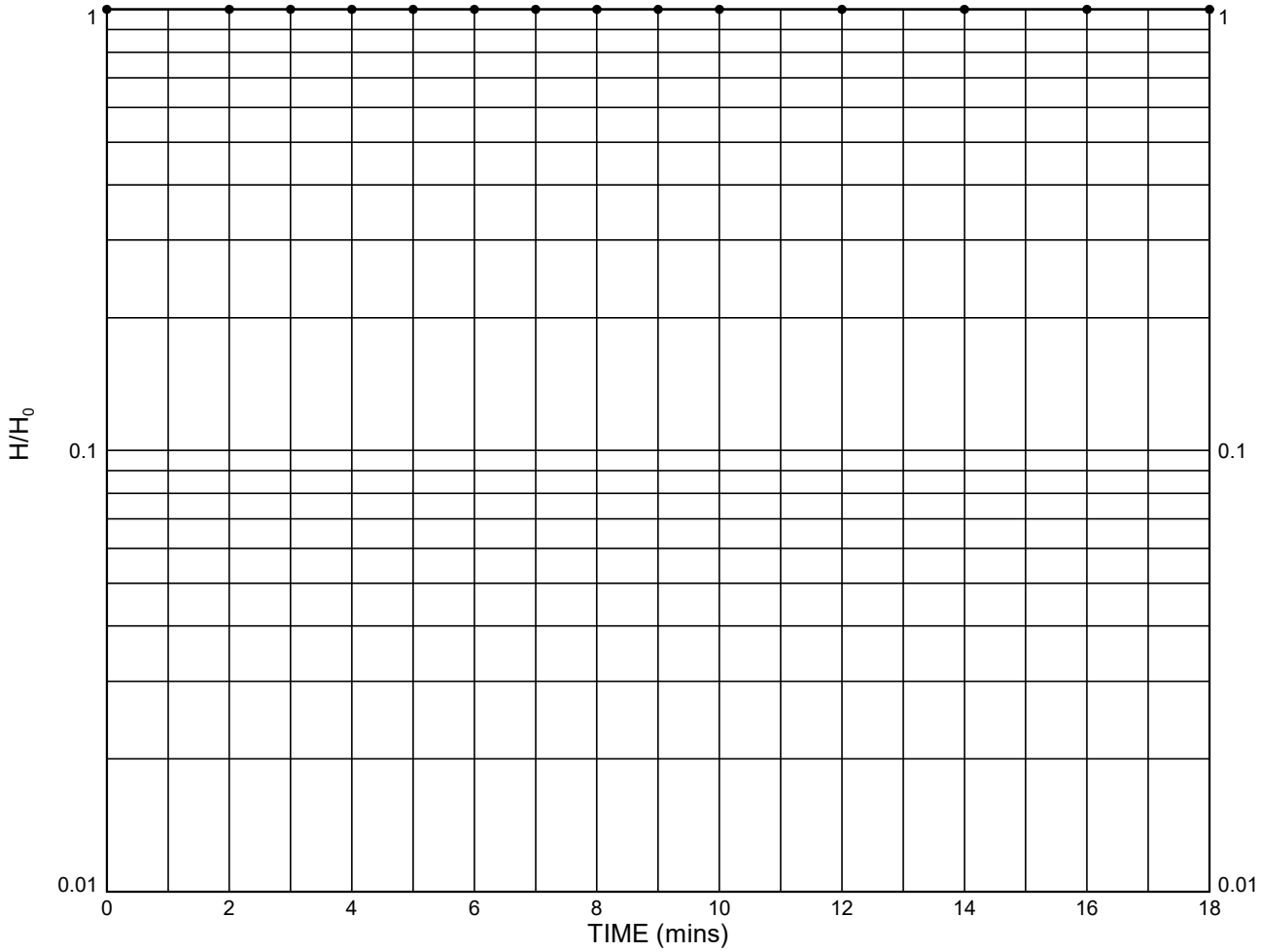
GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM WELL 22282 - 1 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 25/07/23 - 18:16 | TP1 |

IN-SITU PERMEABILITY TEST - FALLING HEAD
In accordance with BS EN ISO 22282-2:2012

Borehole : **BH-PTS115** Depth (m below GL): **1.00-6.50** Test Number: **2**
Test Date: **14/06/2023 10:30:00** Test Supervisor: **DTiernan**

Ground Level (m AOD): **110.36** British National Grid Co-ordinates: E:354985.9 N:529034.3

PLOT OF H/Ho AGAINST TIME



Borehole Radius, R	=	**0.1**	m
Standpipe Radius, r	=	**0.025**	m
Test Section Length, L	=	**5.50**	m

Notes : **No calculation of permeability was possible due to unsuitable field data. Initial groundwater level within response zone prior to start of test.**

Sheet 2 of 2

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Test Operator	Checked By	Date
	David Tiernan		**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	
		Client: **National Highways**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM WELL 22282 - 2 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 25/07/23 - 18:18 | TP1 |

IN-SITU PERMEABILITY TEST - FALLING HEAD
In accordance with BS EN ISO 22282-2:2012

Borehole : **BH-PTS115** Depth (m below GL): **1.00-6.50** Test Number: **3**

Test Date: **15/06/2023 10:30:00** Test Supervisor: **DTiernan**

Ground Level (m AOD): **110.36** British National Grid Co-ordinates: E:354985.9 N:529034.3

TEST SETUP DETAILS

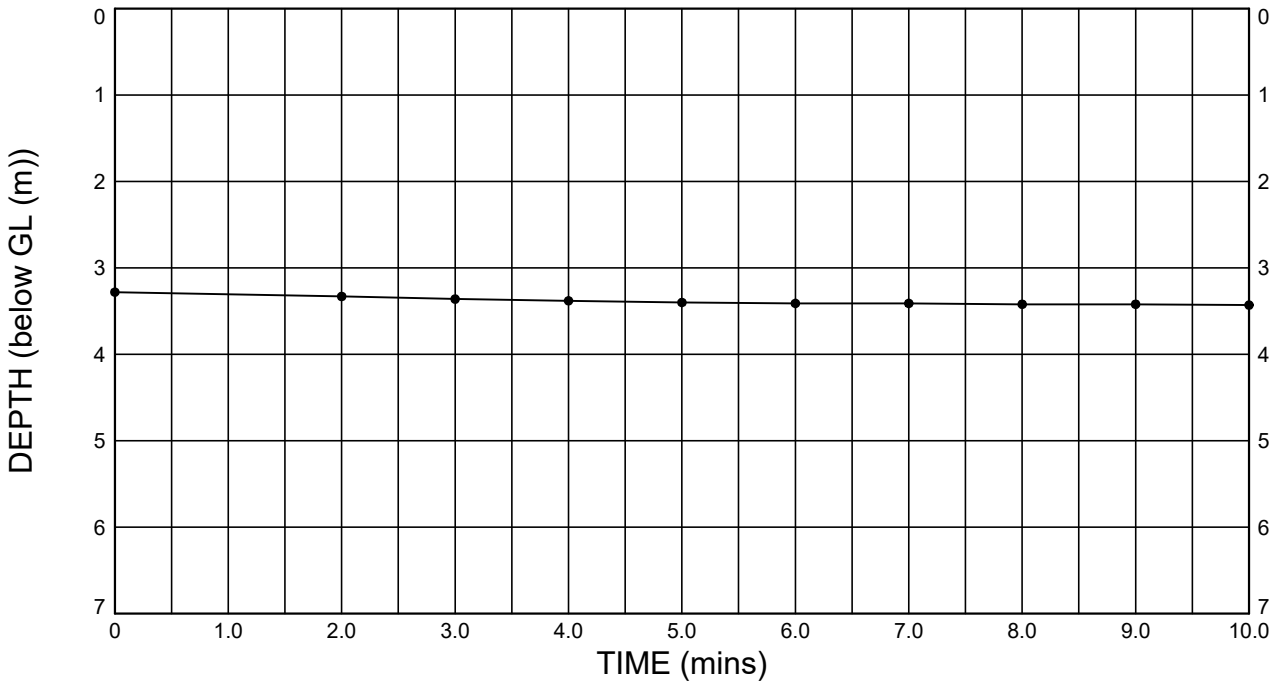
Depth measurements recorded from ground level.

Depth to top of response zone:	**1.00** m	Type of piezometer:	**Slotted standpipe**
Depth to base of response zone:	**6.50** m	Slotted pipe section:	**1.50-6.50** m **(Fitted with Geotextile)**
Length of response zone:	**5.50** m	Type of piezometer fill:	**Gravel**
Initial groundwater level prior to test:	**3.43** m	Soil/Rock Description:	**SANDSTONE**
Borehole diameter:	**200** mm	Hydrogeological conditions:	**Part of test section below GW**
Monitoring well diameter:	**50** mm	Weather:	**Sunny**

TEST MEASUREMENTS

Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho
10:31:00	3.28																		
10:33:00	3.33																		
10:34:00	3.36																		
10:35:00	3.38																		
10:36:00	3.40																		
10:37:00	3.41																		
10:38:00	3.41																		
10:39:00	3.42																		
10:40:00	3.42																		
10:41:00	3.43																		

PLOT OF WATER DEPTH AGAINST TIME



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Test Operator	Checked By	Date
	David Tiernan		**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	
		Client: **National Highways**	

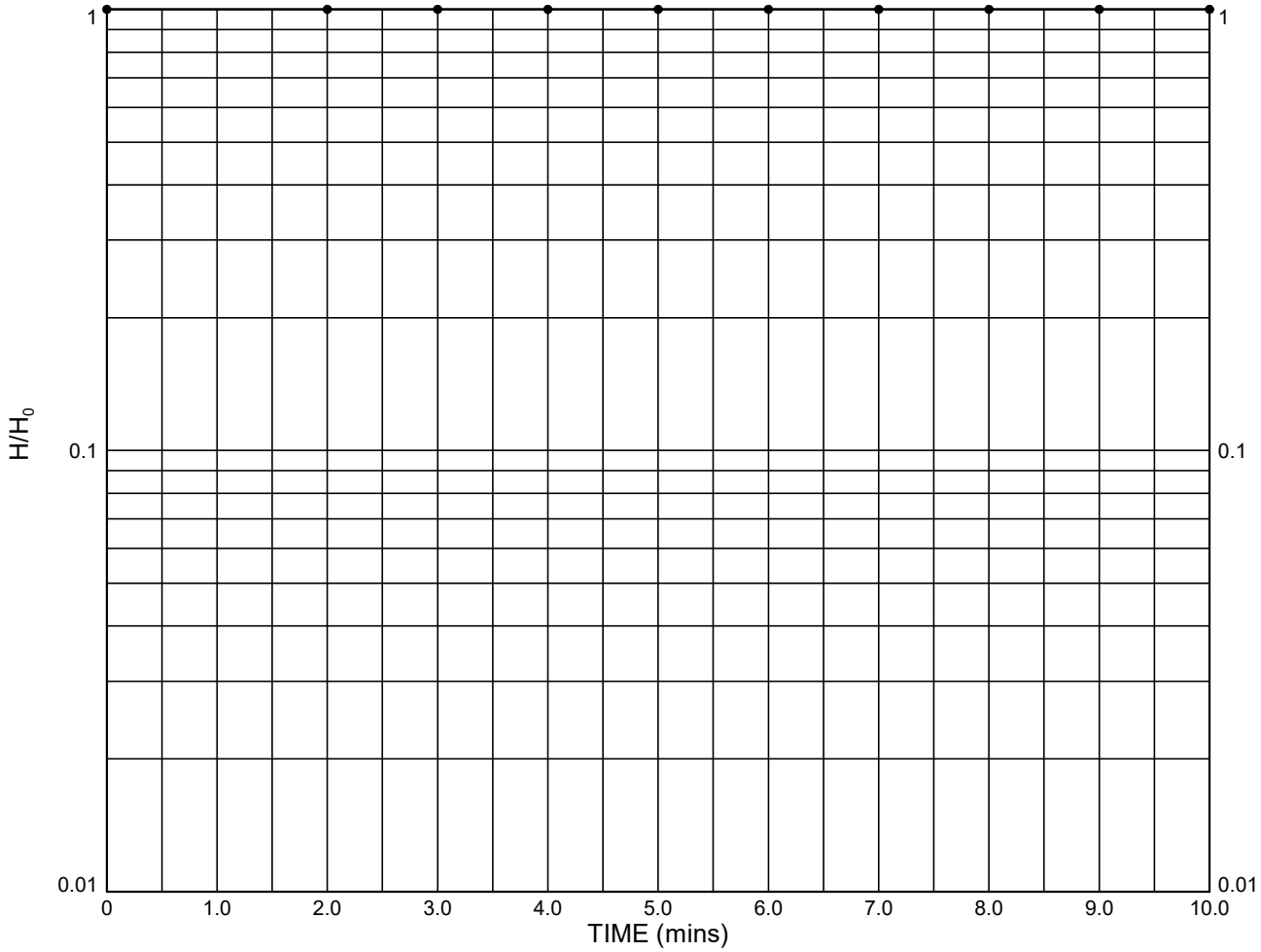
GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM WELL 22282 - 1 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 25/07/23 - 18:16 | TP1 |

IN-SITU PERMEABILITY TEST - FALLING HEAD
In accordance with BS EN ISO 22282-2:2012

Borehole : **BH-PTS115** Depth (m below GL): **1.00-6.50** Test Number: **3**
Test Date: **15/06/2023 10:30:00** Test Supervisor: **DTiernan**

Ground Level (m AOD): **110.36** British National Grid Co-ordinates: E:354985.9 N:529034.3

PLOT OF H/Ho AGAINST TIME



Borehole Radius, R	=	**0.1**	m
Standpipe Radius, r	=	**0.025**	m
Test Section Length, L	=	**5.50**	m

Notes : **No calculation of permeability was possible due to unsuitable field data. Initial groundwater level within response zone prior to start of test.**

Sheet 2 of 2

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Test Operator	Checked By	Date
	David Tiernan		**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	
		Client: **National Highways**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM WELL 22282 - 2 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 25/07/23 - 18:19 | TP1 |

IN-SITU PERMEABILITY TEST - FALLING HEAD
In accordance with BS EN ISO 22282-2:2012

Borehole : **BH-PTS120A** Depth (m below GL): **1.50-5.00** Test Number: **1**

Test Date: **11/06/2023 10:30:00** Test Supervisor: **DTiernan**

Ground Level (m AOD): **112.12** British National Grid Co-ordinates: E:355724.9 N:528994.4

TEST SETUP DETAILS

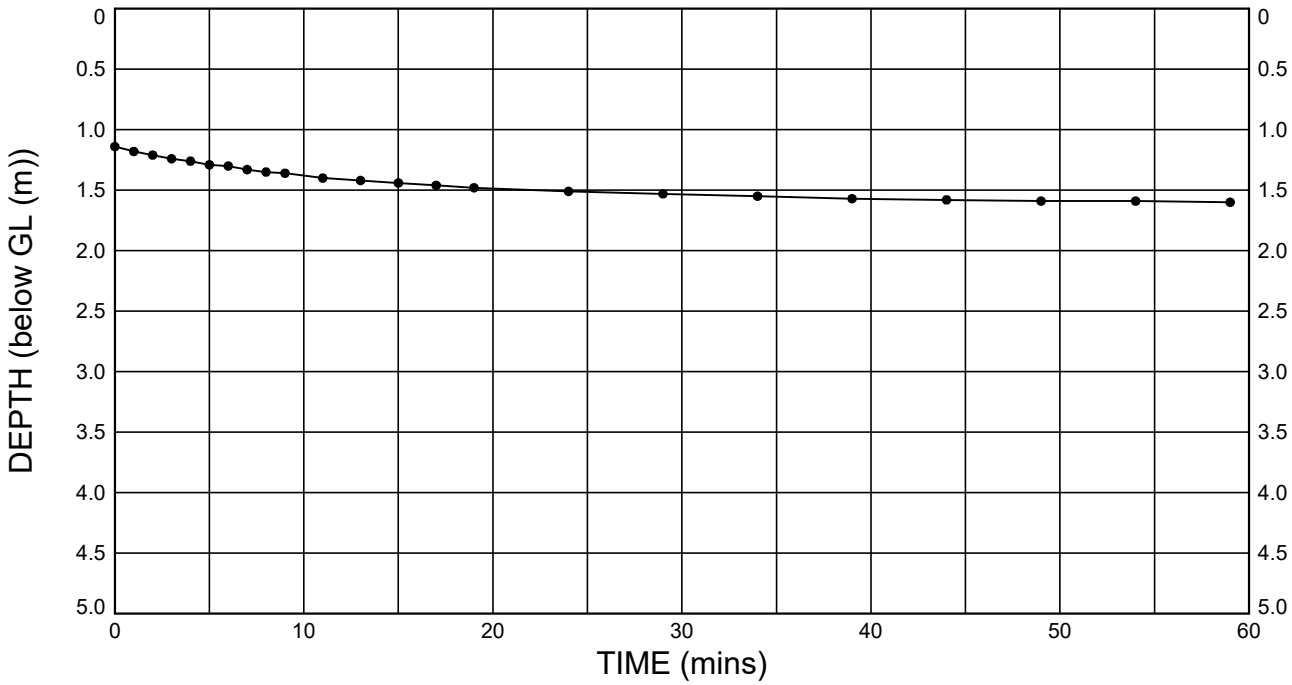
Depth measurements recorded from ground level.

Depth to top of response zone:	**1.50** m	Type of piezometer:	**Slotted standpipe**
Depth to base of response zone:	**5.00** m	Slotted pipe section:	**2.00-4.50** m **(Fitted with Geotextile)**
Length of response zone:	**3.50** m	Type of piezometer fill:	**Gravel**
Initial groundwater level prior to test:	**1.61** m	Soil/Rock Description:	**SANDSTONE**
Borehole diameter:	**250** mm	Hydrogeological conditions:	**Part of test section below GW**
Monitoring well diameter:	**50** mm	Weather:	**Sunny**

TEST MEASUREMENTS

Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho
10:31:00	1.14			10:42:00	1.40			11:20:00	1.59										
10:32:00	1.18			10:44:00	1.42			11:25:00	1.59										
10:33:00	1.21			10:46:00	1.44			11:30:00	1.60										
10:34:00	1.24			10:48:00	1.46														
10:35:00	1.26			10:50:00	1.48														
10:36:00	1.29			10:55:00	1.51														
10:37:00	1.30			11:00:00	1.53														
10:38:00	1.33			11:05:00	1.55														
10:39:00	1.35			11:10:00	1.57														
10:40:00	1.36			11:15:00	1.58														

PLOT OF WATER DEPTH AGAINST TIME



	Test Operator	Checked By	Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	**David Tiernan**		**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	
		Client: **National Highways**	

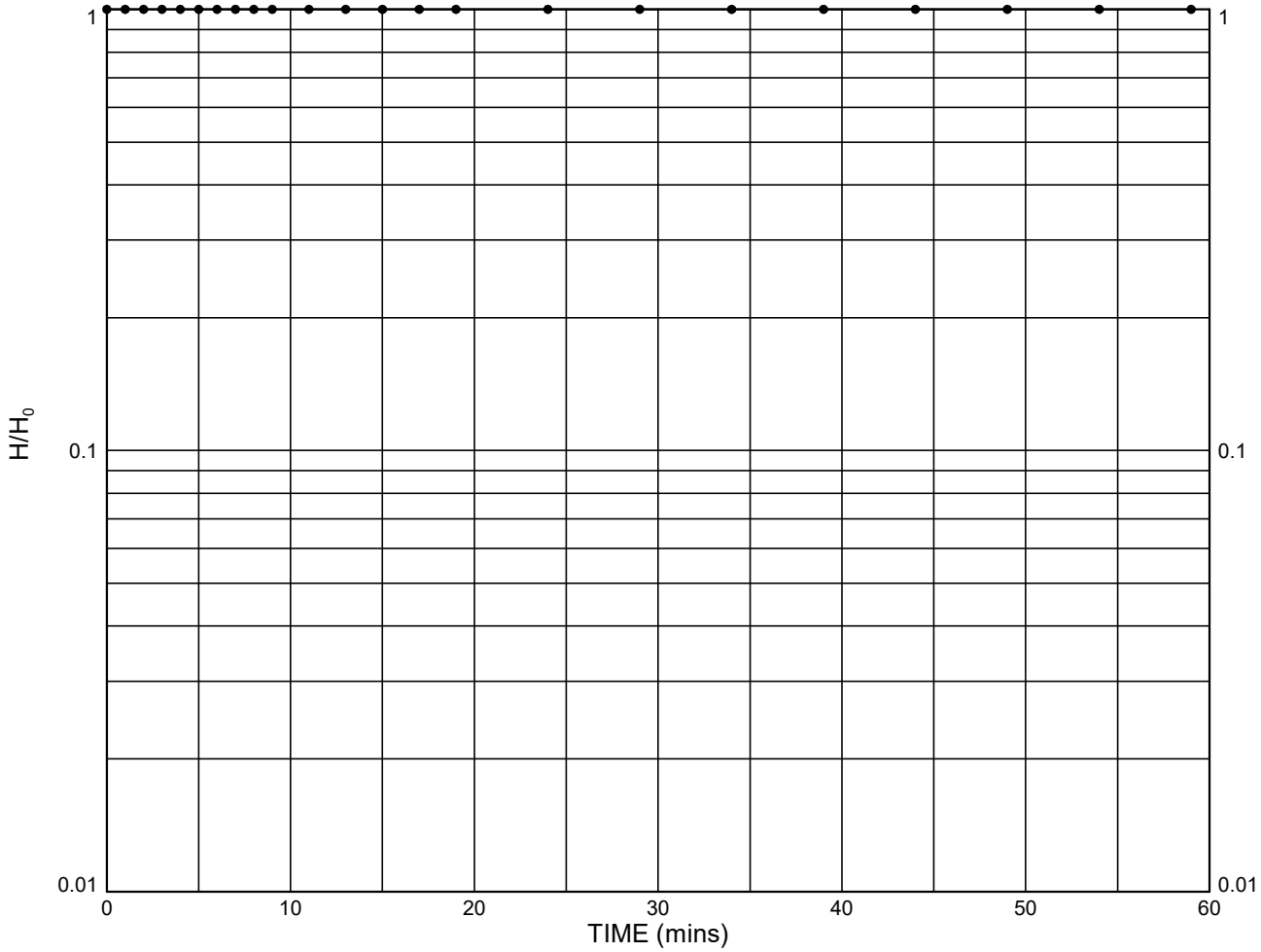
GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM WELL 22282 - 1 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 25/07/23 - 18:39 | TP1 |

IN-SITU PERMEABILITY TEST - FALLING HEAD
In accordance with BS EN ISO 22282-2:2012

Borehole : **BH-PTS120A** Depth (m below GL): **1.50-5.00** Test Number: **1**
Test Date: **11/06/2023 10:30:00** Test Supervisor: **DTiernan**

Ground Level (m AOD): **112.12** British National Grid Co-ordinates: E:355724.9 N:528994.4

PLOT OF H/Ho AGAINST TIME



Borehole Radius, R	=	**0.125**	m
Standpipe Radius, r	=	**0.025**	m
Test Section Length, L	=	**3.50**	m

Notes : **No calculation of permeability was possible due to unsuitable field data. Initial groundwater level within response zone prior to start of test.**

Sheet 2 of 2

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Test Operator	Checked By	Date
	David Tiernan		**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	
		Client: **National Highways**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM WELL 22282 - 2 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 25/07/23 - 18:40 | TP1 |

IN-SITU PERMEABILITY TEST - FALLING HEAD
In accordance with BS EN ISO 22282-2:2012

Borehole : **BH-PTS120A** Depth (m below GL): **1.50-5.00** Test Number: **2**

Test Date: **14/06/2023 10:30:00** Test Supervisor: **DTiernan**

Ground Level (m AOD): **112.12** British National Grid Co-ordinates: E:355724.9 N:528994.4

TEST SETUP DETAILS

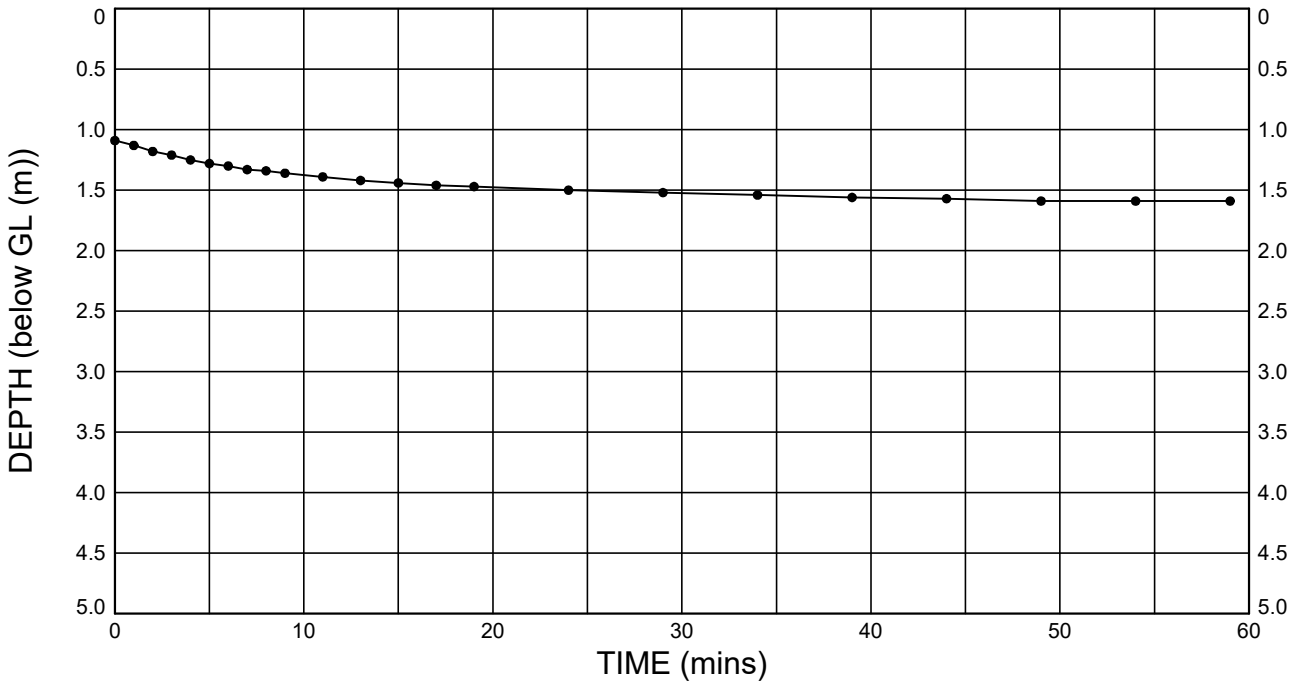
Depth measurements recorded from ground level.

Depth to top of response zone:	**1.50** m	Type of piezometer:	**Slotted standpipe**
Depth to base of response zone:	**5.00** m	Slotted pipe section:	**2.00-4.50** m **(Fitted with Geotextile)**
Length of response zone:	**3.50** m	Type of piezometer fill:	**Gravel**
Initial groundwater level prior to test:	**1.60** m	Soil/Rock Description:	**SANDSTONE**
Borehole diameter:	**250** mm	Hydrogeological conditions:	**Part of test section below GW**
Monitoring well diameter:	**50** mm	Weather:	**Sunny**

TEST MEASUREMENTS

Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho
10:31:00	1.09			10:42:00	1.39			11:20:00	1.59										
10:32:00	1.13			10:44:00	1.42			11:25:00	1.59										
10:33:00	1.18			10:46:00	1.44			11:30:00	1.59										
10:34:00	1.21			10:48:00	1.46														
10:35:00	1.25			10:50:00	1.47														
10:36:00	1.28			10:55:00	1.50														
10:37:00	1.30			11:00:00	1.52														
10:38:00	1.33			11:05:00	1.54														
10:39:00	1.34			11:10:00	1.56														
10:40:00	1.36			11:15:00	1.57														

PLOT OF WATER DEPTH AGAINST TIME



	Test Operator	Checked By	Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	**David Tiernan**		**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	
		Client: **National Highways**	

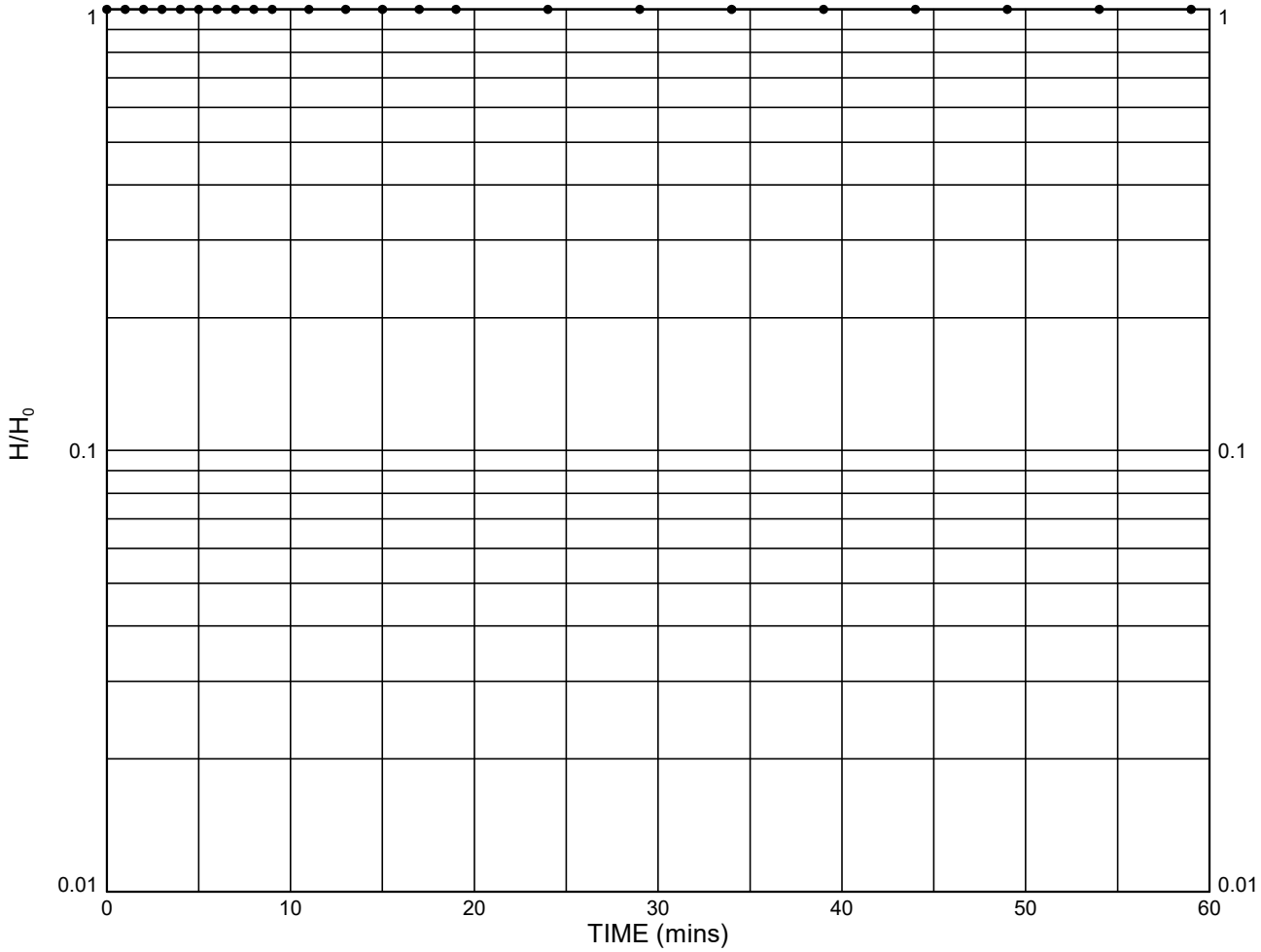
GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM WELL 22282 - 1 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 25/07/23 - 18:40 | TP1 |

IN-SITU PERMEABILITY TEST - FALLING HEAD
In accordance with BS EN ISO 22282-2:2012

Borehole : **BH-PTS120A** Depth (m below GL): **1.50-5.00** Test Number: **2**
Test Date: **14/06/2023 10:30:00** Test Supervisor: **DTiernan**

Ground Level (m AOD): **112.12** British National Grid Co-ordinates: E:355724.9 N:528994.4

PLOT OF H/Ho AGAINST TIME



Borehole Radius, R	=	**0.125**	m
Standpipe Radius, r	=	**0.025**	m
Test Section Length, L	=	**3.50**	m

Notes : **No calculation of permeability was possible due to unsuitable field data. Initial groundwater level within response zone prior to start of test.**

Sheet 2 of 2

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Test Operator	Checked By	Date
	David Tiernan		**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633** Client: **National Highways**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM WELL 22282 - 2 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 25/07/23 - 18:40 | TP1 |

IN-SITU PERMEABILITY TEST - FALLING HEAD
In accordance with BS EN ISO 22282-2:2012

Borehole : **BH-PTS120A** Depth (m below GL): **1.50-5.00** Test Number: **3**

Test Date: **15/06/2023 10:30:00** Test Supervisor: **DTiernan**

Ground Level (m AOD): **112.12** British National Grid Co-ordinates: E:355724.9 N:528994.4

TEST SETUP DETAILS

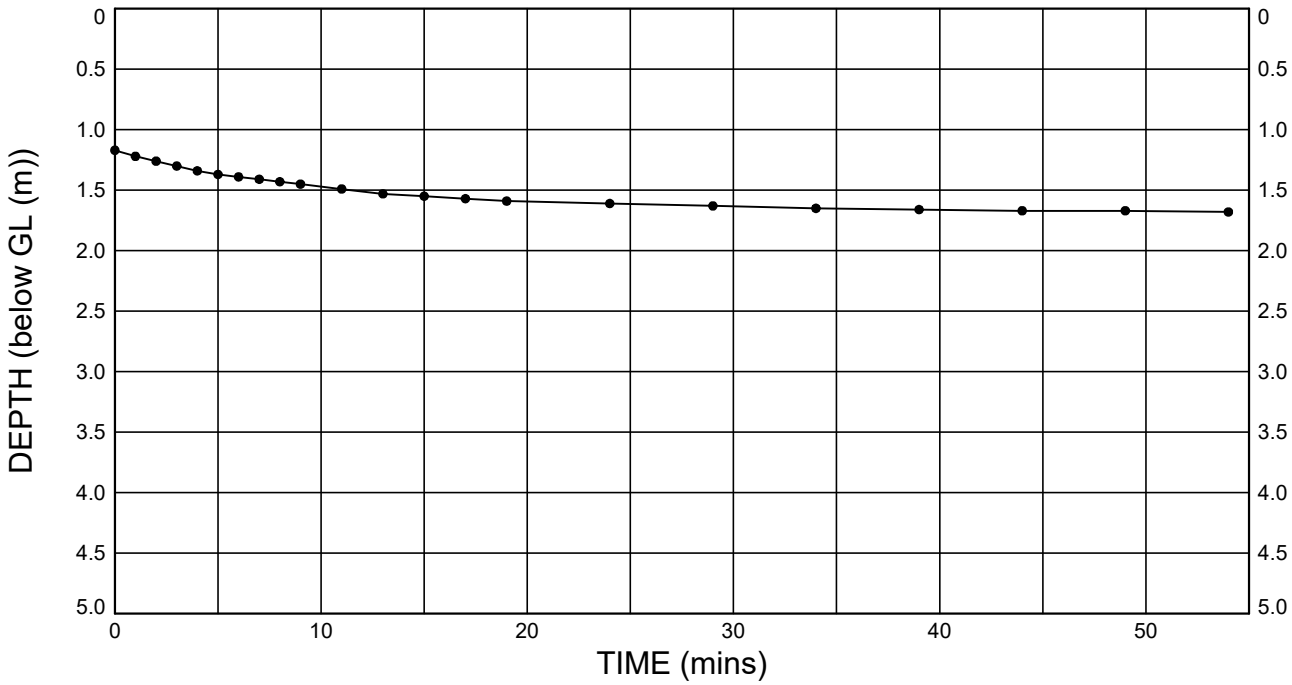
Depth measurements recorded from ground level.

Depth to top of response zone:	**1.50** m	Type of piezometer:	**Slotted standpipe**
Depth to base of response zone:	**5.00** m	Slotted pipe section:	**2.00-45.00** m **(Fitted with Geotextile)**
Length of response zone:	**3.50** m	Type of piezometer fill:	**Gravel**
Initial groundwater level prior to test:	**1.68** m	Soil/Rock Description:	**SANDSTONE**
Borehole diameter:	**250** mm	Hydrogeological conditions:	**Part of test section below GW**
Monitoring well diameter:	**50** mm	Weather:	**Sunny**

TEST MEASUREMENTS

Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho	Time (hh:mm:ss)	Water depth (m)	Head (m)	H/Ho
10:31:00	1.17			10:42:00	1.49			11:20:00	1.67										
10:32:00	1.22			10:44:00	1.53			11:25:00	1.68										
10:33:00	1.26			10:46:00	1.55														
10:34:00	1.30			10:48:00	1.57														
10:35:00	1.34			10:50:00	1.59														
10:36:00	1.37			10:55:00	1.61														
10:37:00	1.39			11:00:00	1.63														
10:38:00	1.41			11:05:00	1.65														
10:39:00	1.43			11:10:00	1.66														
10:40:00	1.45			11:15:00	1.67														

PLOT OF WATER DEPTH AGAINST TIME



	Test Operator	Checked By	Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	**David Tiernan**		**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633** Client: **National Highways**	

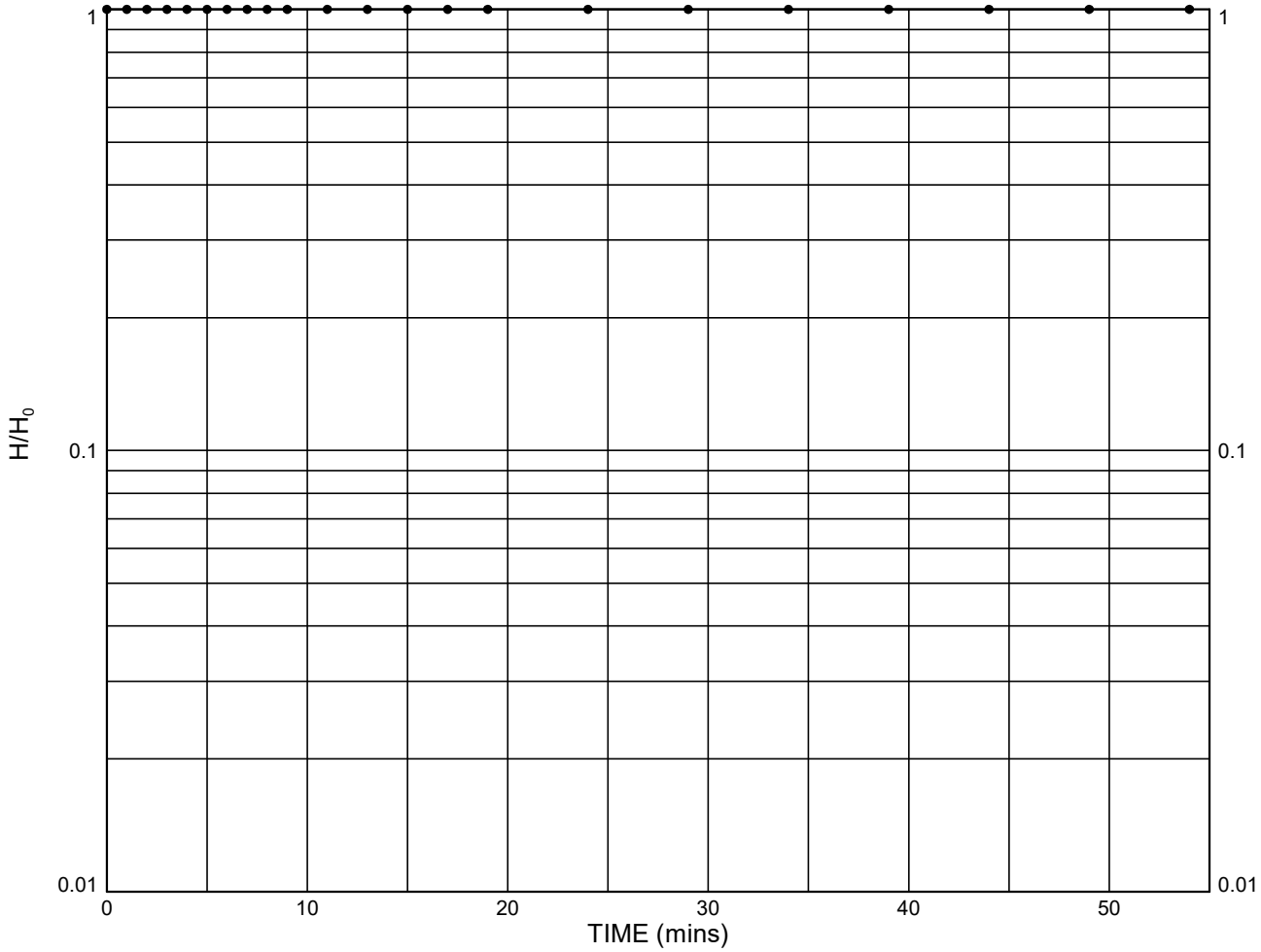
GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM WELL 22282 - 1 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 25/07/23 - 18:40 | TP1 |

IN-SITU PERMEABILITY TEST - FALLING HEAD
In accordance with BS EN ISO 22282-2:2012

Borehole : **BH-PTS120A** Depth (m below GL): **1.50-5.00** Test Number: **3**
Test Date: **15/06/2023 10:30:00** Test Supervisor: **DTiernan**

Ground Level (m AOD): **112.12** British National Grid Co-ordinates: E:355724.9 N:528994.4

PLOT OF H/Ho AGAINST TIME



Borehole Radius, R	=	**0.125**	m
Standpipe Radius, r	=	**0.025**	m
Test Section Length, L	=	**3.50**	m

Notes : **No calculation of permeability was possible due to unsuitable field data. Initial groundwater level within response zone prior to start of test.**

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Test Operator	Checked By	Date
	David Tiernan		**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	
		Client: **National Highways**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - BH PERM WELL 22282 - 2 OF 2 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 25/07/23 - 18:40 | TP1 |

APPENDIX E -
FIELD INSTRUMENTATION RECORDS

(E01) Standpipe Summary Table

STANDPIPE SUMMARY TABLE

Exploratory Position ID	Pipe ref/ Caption	Installation Date (dd/mm/yyyy)	Ground Level	Length of Pipe (m)	Response Zone Top (m)	Response Zone Base (m)	Slotted Pipe Top (m)	Slotted Pipe Base (m)	Pipe Internal Diameter (mm)	Remarks
BH-PTS101	1	08/03/2023	113.31	4.50	2.00	5.00	2.00	4.50	50	
BH-PTS106	1	11/05/2023	117.90	4.00	2.50	4.50	3.00	4.00	50	
BH-PTS108	1	27/04/2023	119.35	5.50	1.00	6.00	1.50	5.50	50	
BH-PTS111	1	24/05/2023	113.24	3.50	1.00	3.70	1.00	3.50	50	
BH-PTS112	1	18/04/2023	109.25	2.70	1.50	3.00	1.50	2.70	50	
BH-PTS114	1	13/04/2023	109.19	4.00	1.50	4.00	1.50	4.00	50	
BH-PTS115	1	04/04/2023	110.36	6.50	1.00	6.50	1.50	6.50	50	
BH-PTS118B	1	18/04/2023	114.51	3.50	1.50	3.50	1.50	3.50	50	
BH-PTS119	1	20/03/2023	114.05	3.00	1.00	3.50	1.50	3.00	50	

STANDPIPE SUMMARY TABLE

Exploratory Position ID	Pipe ref/ Caption	Installation Date (dd/mm/yyyy)	Ground Level	Length of Pipe (m)	Response Zone Top (m)	Response Zone Base (m)	Slotted Pipe Top (m)	Slotted Pipe Base (m)	Pipe Internal Diameter (mm)	Remarks
BH-PTS120A	1	22/03/2023	112.12	4.50	1.50	5.00	2.00	4.50	50	
BH-PTS122	1	08/03/2023	120.63	3.00	1.00	3.50	1.00	3.00	50	
BH-PTS123	1	30/03/2023	124.30	6.50	1.50	6.50	1.50	6.50	50	
BH-PTS124	1	13/03/2023	129.02	3.50	0.50	4.00	0.50	3.50	50	
BH-PTS126	1	26/04/2023	115.23	6.00	3.00	6.00	3.00	6.00	50	
BH-PTS127	1	27/03/2023	124.33	5.00	1.00	5.50	1.50	5.00	50	
BH-PTS128A	1	21/03/2023	128.33	5.00	1.50	5.50	1.50	5.00	50	
BH-PTS129	1	05/04/2023	122.04	3.50	1.00	4.00	1.50	3.50	50	

STANDPIPE SUMMARY TABLE

Exploratory Position ID	Pipe ref/ Caption	Installation Date (dd/mm/yyyy)	Ground Level	Length of Pipe (m)	Response Zone Top (m)	Response Zone Base (m)	Slotted Pipe Top (m)	Slotted Pipe Base (m)	Pipe Internal Diameter (mm)	Remarks
GS-PTS102	1	02/05/2023	120.67	4.00	1.00	4.50	1.50	4.00	50	
GS-PTS105	1	11/05/2023	116.08	9.50	1.00	10.00	1.50	9.50	50	
GS-PTS109	1	15/03/2023	119.02	9.00	4.50	9.00	4.50	9.00	50	

APPENDIX F - MONITORING RECORDS

(F01) Manual Groundwater Monitoring Results – Standpipes

(F02) Water Level Data Logger Monitoring Results

IN-SITU MONITORING ROUNDS SUMMARY

Monitoring Round Reference	Round Description	Start Date	End Date	Atmospheric Pressure Prior to Monitoring (mb)	Atmospheric Pressure During Monitoring (mb)	Atmospheric Pressure at Start of Round (mb)	Atmospheric Pressure at End of Round (mb)	Equipment Used	Weather Conditions	Ground Conditions	Wind Conditions	Air Temp (°C)
1	---	06/03/2023	10/03/2023	---	---	---	---	Dipmeter	---	Dry	---	---
2	---	13/03/2023	17/03/2023	---	---	---	---	Dipmeter	---	---	---	---
3	---	20/03/2023	24/03/2023	---	---	---	---	Dipmeter	---	---	---	---
4	---	27/03/2023	31/03/2023	---	---	---	---	Dipmeter + Water Quality Sensor	Overcast with showers	Wet	Medium	10
5	---	03/04/2023	07/04/2023	---	---	---	---	Dipmeter + Water Quality Sensor	Clear	Damp	Light	10
6	---	10/04/2023	14/04/2023	---	---	---	---	Dipmeter + Water Quality Sensor	Intermittent rain and hail	Wet	Strong	8
7	---	17/04/2023	21/04/2023	---	---	---	---	Dipmeter	---	Dry	Strong	12
8	---	24/04/2023	28/04/2023	---	---	---	---	Dipmeter + Water Quality Sensor	Sunny	Damp	Light	3
9	---	01/05/2023	05/05/2023	---	---	---	---	Dipmeter	---	Dry	Light	10
10	---	08/05/2023	12/05/2023	---	---	---	---	Dipmeter	---	---	---	---
11	---	15/05/2023	19/05/2023	---	---	---	---	Dipmeter	---	---	---	---
12	---	22/05/2023	26/05/2023	---	---	---	---	Dipmeter	---	---	---	---

Key: Dates in parenthesis after the equipment name refer to the calibration date

STRUCTURAL SOILS
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Checked By		Date	Contract Ref:
	Adam Lumber	**29/08/23**	**765633**
Contract: **A66 NTP Scheme S03A**			Page **1** of **2**

IN-SITU MONITORING ROUNDS SUMMARY

Monitoring Round Reference	Round Description	Start Date	End Date	Atmospheric Pressure Prior to Monitoring (mb)	Atmospheric Pressure During Monitoring (mb)	Atmospheric Pressure at Start of Round (mb)	Atmospheric Pressure at End of Round (mb)	Equipment Used	Weather Conditions	Ground Conditions	Wind Conditions	Air Temp (°C)
13	---	29/05/2023	02/06/2023	---	---	---	---	Dipmeter	---	Dry	Light	18
14	---	05/06/2023	09/06/2023	---	---	---	---	Dipmeter	---	Dry	Light	12
15	---	12/06/2023	16/06/2023	---	---	---	---	Dipmeter	---	Dry	---	27
16	---	19/06/2023	25/06/2023	---	---	---	---	Dipmeter	---	Dry	None	18
17	---	26/06/2023	02/07/2023	---	---	---	---	Dipmeter	---	Wet	Light	14
18	---	03/07/2023	09/07/2023	---	---	---	---	Dipmeter	---	Damp	Light	14
18.1	---	17/08/2023	17/08/2023	---	---	---	---	Dipmeter	---	Wet	Light	11
19	---	22/08/2023	23/08/2023	---	---	---	---	Dipmeter	---	Damp	Light	17

Key: Dates in parenthesis after the equipment name refer to the calibration date

IN-SITU WATER MONITORING RESULTS

Exploratory Position ID	Ground Level (m AOD)	Pipe Ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring	Water Depth (mbgl)	Water Elevation (m AOD)	pH	ORP (mV)	Eh (mV)	Conduc-tivity (uS/cm)	Temp-erature (°C)	Dissolved Oxygen (mg/l)
BH-PTS101	113.305	1	50	5 / 1	4.50	4.75	2.00 to 5.00	03/04/2023 12:10	1.47	111.84	---	---	---	---	---	---
BH-PTS101	113.305	1	50	5 / 2	4.50	NDA	2.00 to 5.00	03/04/2023 12:13	1.47	111.84	7.71	-41	204	413	11.7	7.1
BH-PTS101	113.305	1	50	5 / 2	---	NDA	---	03/04/2023 12:23	---	---	7.66	-67	181	339	9.4	7.1
BH-PTS101	113.305	1	50	5 / 2	---	NDA	---	03/04/2023 12:30	1.52	111.79	7.58	-61	188	351	9.2	5.4
	General Remarks: Standpipe developed. 130 litres of groundwater pumped out. Water remained a chocolate milk colour throughout, clearing slightly at around 80 litres but then returning to same colour. Purged significantly >3															
	well volumes.															
BH-PTS101	113.305	1	50	6 / 1	4.50	4.78	2.00 to 5.00	12/04/2023 14:55	1.53	111.78	---	---	---	---	---	---
BH-PTS101	113.305	1	50	17 / 1	4.50	4.77	2.00 to 5.00	28/06/2023 11:34	2.56	110.75	---	---	---	---	---	---
	General Remarks: Datalogger downloaded.															
BH-PTS101	113.305	1	50	19 / 1	4.50	4.77	2.00 to 5.00	22/08/2023 14:29	1.80	111.51	---	---	---	---	---	---
	General Remarks: Datalogger downloaded.															
BH-PTS106	117.898	1	50	11 / 1	4.00	4.01	2.50 to 4.50	16/05/2023 10:09	1.91	115.99	---	---	---	---	---	---
BH-PTS106	117.898	1	50	13 / 1	4.00	4.01	2.50 to 4.50	30/05/2023 13:58	2.25	115.65	---	---	---	---	---	---
BH-PTS106	117.898	1	50	14 / 1	4.00	4.03	2.50 to 4.50	06/06/2023 08:57	3.07	114.83	---	---	---	---	---	---
BH-PTS106	117.898	1	50	16 / 1	4.00	4.04	2.50 to 4.50	22/06/2023 10:22	3.00	114.90	---	---	---	---	---	---
BH-PTS106	117.898	1	50	18.1 / 1	4.00	3.97	2.50 to 4.50	17/08/2023 10:19	2.43	115.47	---	---	---	---	---	---
BH-PTS106	117.898	1	50	19 / 1	4.00	4.03	2.50 to 4.50	22/08/2023 14:43	2.67	115.23	---	---	---	---	---	---
	General Remarks: Datalogger downloaded.															
BH-PTS108	119.349	1	50	9 / 1	5.50	5.25	1.00 to 6.00	04/05/2023 13:13	1.94	117.41	---	---	---	---	---	---
BH-PTS108	119.349	1	50	11 / 1	5.50	5.25	1.00 to 6.00	16/05/2023 14:30	2.05	117.30	---	---	---	---	---	---
BH-PTS108	119.349	1	50	11 / 2	5.50	5.25	1.00 to 6.00	30/05/2023 14:33	2.17	117.18	---	---	---	---	---	---
BH-PTS108	119.349	1	50	17 / 1	5.50	5.25	1.00 to 6.00	28/06/2023 11:58	2.41	116.94	---	---	---	---	---	---
	General Remarks: Datalogger downloaded.															
BH-PTS108	119.349	1	50	19 / 1	5.50	5.25	1.00 to 6.00	22/08/2023 14:57	2.01	117.34	---	---	---	---	---	---

Key: NDA denotes 'no data available'.

IN-SITU WATER MONITORING RESULTS

Exploratory Position ID	Ground Level (m AOD)	Pipe Ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring	Water Depth (mbgl)	Water Elevation (m AOD)	pH	ORP (mV)	Eh (mV)	Conduc-tivity (uS/cm)	Temp-erature (°C)	Dissolved Oxygen (mg/l)
	General Remarks: Datalogger downloaded.															
BH-PTS111	113.236	1	50	13 / 1	3.50	3.16	1.00 to 3.70	30/05/2023 14:13	3.14	110.10	---	---	---	---	---	---
BH-PTS111	113.236	1	50	14 / 1	3.50	3.16	1.00 to 3.70	06/06/2023 09:09	3.15	110.09	---	---	---	---	---	---
BH-PTS111	113.236	1	50	15 / 1	3.50	3.16	1.00 to 3.70	13/06/2023 15:21	DRY	DRY	---	---	---	---	---	---
BH-PTS111	113.236	1	50	16 / 1	3.50	3.16	1.00 to 3.70	22/06/2023 10:18	3.15	110.09	---	---	---	---	---	---
BH-PTS112	109.245	1	50	8 / 1	2.70	3.06	1.50 to 3.00	25/04/2023 09:10	1.55	107.70	---	---	---	---	---	---
BH-PTS112	109.245	1	50	8 / 2	2.70	3.06	1.50 to 3.00	25/04/2023 09:37	DRY	DRY	7.78	-178	72	877	8.2	2.0
BH-PTS112	109.245	1	50	8 / 2	---	NDA	---	25/04/2023 09:40	2.90	106.35	---	---	---	---	---	---
BH-PTS112	109.245	1	50	8 / 2	---	NDA	---	25/04/2023 09:45	2.88	106.37	---	---	---	---	---	---
BH-PTS112	109.245	1	50	8 / 2	---	NDA	---	25/04/2023 09:50	2.86	106.39	---	---	---	---	---	---
	General Remarks: Standpipe developed, pumped dry. Recharge rate is only around 40 ml every 5 minutes, insufficient for water quality readings.															
BH-PTS112	109.245	1	50	9 / 1	2.70	3.04	1.50 to 3.00	04/05/2023 13:24	1.62	107.62	---	---	---	---	---	---
BH-PTS112	109.245	1	50	11 / 1	2.70	3.02	1.50 to 3.00	16/05/2023 14:32	1.73	107.52	---	---	---	---	---	---
BH-PTS112	109.245	1	50	17 / 1	2.70	3.02	1.50 to 3.00	28/06/2023 12:10	1.89	107.36	---	---	---	---	---	---
	General Remarks: Datalogger downloaded.															
BH-PTS112	109.245	1	50	19 / 1	2.70	3.02	1.50 to 3.00	22/08/2023 15:08	1.58	107.67	---	---	---	---	---	---
	General Remarks: Datalogger downloaded.															
BH-PTS114	109.190	1	50	4 / 1	4.00	2.88	1.50 to 4.00	29/03/2023 15:36	0.71	108.48	---	---	---	---	---	---
BH-PTS114	109.190	1	50	4 / 2	4.00	NDA	1.50 to 4.00	29/03/2023 15:45	---	---	8.18	204	454	619	8.1	7.3
	General Remarks: Standpipe developed. Standpipe ran dry after 1 minutes, 6 litres of water pumped out. Standpipe pumped dry a second time. Water opaque, silty sandy, brown.															
BH-PTS114	109.190	1	50	7 / 1	4.00	4.22	1.50 to 4.00	19/04/2023 12:20	2.36	106.83	---	---	---	---	---	---
BH-PTS114	109.190	1	50	8 / 1	4.00	4.12	1.50 to 4.00	25/04/2023 10:25	2.38	106.81	---	---	---	---	---	---
BH-PTS114	109.190	1	50	9 / 1	4.00	4.11	1.50 to 4.00	04/05/2023 13:33	2.43	106.76	---	---	---	---	---	---

Key: NDA denotes 'no data available'.

IN-SITU WATER MONITORING RESULTS

Exploratory Position ID	Ground Level (m AOD)	Pipe Ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring	Water Depth (mbgl)	Water Elevation (m AOD)	pH	ORP (mV)	Eh (mV)	Conduc-tivity (uS/cm)	Temp-erature (°C)	Dissolved Oxygen (mg/l)
BH-PTS114	109.190	1	50	11 / 1	4.00	4.11	1.50 to 4.00	16/05/2023 14:02	2.47	106.72	---	---	---	---	---	---
BH-PTS114	109.190	1	50	17 / 1	4.00	4.11	1.50 to 4.00	28/06/2023 12:24	2.55	106.65	---	---	---	---	---	---
	General Remarks: Datalogger downloaded.															
BH-PTS114	109.190	1	50	19 / 1	4.00	4.10	1.50 to 4.00	22/08/2023 15:16	2.42	106.77	---	---	---	---	---	---
	General Remarks: Datalogger downloaded.															
BH-PTS115	110.356	1	50	6 / 1	6.50	6.71	1.00 to 6.50	13/04/2023 09:39	3.16	107.20	---	---	---	---	---	---
	General Remarks: Standpipe developed.															
BH-PTS115	110.356	1	50	7 / 1	6.50	6.74	1.00 to 6.50	19/04/2023 12:22	3.26	107.10	---	---	---	---	---	---
BH-PTS115	110.356	1	50	8 / 1	6.50	6.75	1.00 to 6.50	25/04/2023 10:30	3.29	107.07	---	---	---	---	---	---
BH-PTS115	110.356	1	50	9 / 1	6.50	6.74	1.00 to 6.50	04/05/2023 13:37	3.34	107.02	---	---	---	---	---	---
BH-PTS115	110.356	1	50	17 / 1	6.50	6.68	1.00 to 6.50	28/06/2023 12:30	3.43	106.93	---	---	---	---	---	---
	General Remarks: Datalogger downloaded, padlock seized.															
BH-PTS115	110.356	1	50	19 / 1	6.50	6.68	1.00 to 6.50	22/08/2023 15:24	3.29	107.07	---	---	---	---	---	---
	General Remarks: Datalogger downloaded, padlock seized.															
BH-PTS118B	114.512	1	50	8 / 1	3.50	3.51	1.50 to 3.50	26/04/2023 10:40	DRY	DRY	---	---	---	---	---	---
	General Remarks: Unable to develop standpipe as standpipe is dry.															
BH-PTS118B	114.512	1	50	9 / 1	3.50	3.51	1.50 to 3.50	04/05/2023 13:43	DRY	DRY	---	---	---	---	---	---
BH-PTS118B	114.512	1	50	11 / 1	3.50	3.51	1.50 to 3.50	16/05/2023 14:09	DRY	DRY	---	---	---	---	---	---
BH-PTS118B	114.512	1	50	17 / 1	3.50	3.48	1.50 to 3.50	28/06/2023 12:41	DRY	DRY	---	---	---	---	---	---
BH-PTS119	114.054	1	50	4 / 1	3.00	3.12	1.00 to 3.50	29/03/2023 13:05	1.51	112.55	---	---	---	---	---	---
BH-PTS119	114.054	1	50	4 / 2	3.00	3.12	1.00 to 3.50	29/03/2023 13:20	---	---	7.81	279	529	524	7.8	8.6
BH-PTS119	114.054	1	50	4 / 2	---	3.12	---	29/03/2023 13:23	---	---	7.78	274	524	513	7.8	7.9
BH-PTS119	114.054	1	50	4 / 2	---	3.12	---	29/03/2023 13:26	1.60	112.45	7.68	265	515	517	7.8	7.7

Key: NDA denotes 'no data available'.

IN-SITU WATER MONITORING RESULTS

Exploratory Position ID	Ground Level (m AOD)	Pipe Ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring	Water Depth (mbgl)	Water Elevation (m AOD)	pH	ORP (mV)	Eh (mV)	Conduc-tivity (uS/cm)	Temp-erature (°C)	Dissolved Oxygen (mg/l)
	General Remarks: Standpipe developed. 45 litres of water pumped out in 10 minutes. Water opaque, brown, silty and sandy.															
BH-PTS119	114.054	1	50	5 / 1	3.00	3.12	1.00 to 3.50	05/04/2023 09:29	1.64	112.41	---	---	---	---	---	---
BH-PTS119	114.054	1	50	6 / 1	3.00	3.12	1.00 to 3.50	12/04/2023 12:33	1.57	112.48	---	---	---	---	---	---
BH-PTS119	114.054	1	50	17 / 1	3.00	3.13	1.00 to 3.50	28/06/2023 15:54	2.42	111.63	---	---	---	---	---	---
	General Remarks: Datalogger downloaded.															
BH-PTS119	114.054	1	50	19 / 1	3.00	3.12	1.00 to 3.50	23/08/2023 10:03	2.56	111.50	---	---	---	---	---	---
	General Remarks: Datalogger downloaded. Protective fence has been knocked or taken down.															
BH-PTS120A	112.121	1	50	4 / 1	4.50	4.55	1.50 to 5.00	29/03/2023 12:08	0.96	111.16	---	---	---	---	---	---
BH-PTS120A	112.121	1	50	4 / 2	4.50	4.58	1.50 to 5.00	29/03/2023 12:30	---	---	8.18	270	519	521	8.8	5.4
	General Remarks: Standpipe developed. Pipe ran dry after 1 minute, 8 litres of water removed. Water opaque, brown, silty and sandy. Pipe purged dry a second time.															
BH-PTS120A	112.121	1	50	5 / 1	4.50	4.51	1.50 to 5.00	05/04/2023 09:24	0.95	111.17	---	---	---	---	---	---
BH-PTS120A	112.121	1	50	6 / 1	4.50	4.47	1.50 to 5.00	12/04/2023 12:39	0.75	111.37	---	---	---	---	---	---
BH-PTS120A	112.121	1	50	17 / 1	4.50	4.47	1.50 to 5.00	28/06/2023 15:44	1.75	110.38	---	---	---	---	---	---
	General Remarks: Datalogger downloaded. Base of pipe is soft (silt?)															
BH-PTS120A	112.121	1	50	19 / 1	4.50	4.44	1.50 to 5.00	22/08/2023 16:24	1.54	110.58	---	---	---	---	---	---
	General Remarks: Datalogger downloaded, protective fence has been knocked or taken down.															
BH-PTS120A	112.121	1	50	19 / 2	4.50	4.44	1.50 to 5.00	23/08/2023 10:28	1.55	110.58	---	---	---	---	---	---
	General Remarks: Faulty datalogger replaced. Serial number of new datalogger is 1019018.															
BH-PTS122	120.627	1	50	4 / 1	3.00	2.94	1.00 to 3.50	29/03/2023 11:10	0.81	119.81	---	---	---	---	---	---
BH-PTS122	120.627	1	50	4 / 2	3.00	NDA	1.00 to 3.50	29/03/2023 11:28	---	---	8.11	294	544	475	8.1	5.1
	General Remarks: Standpipe developed. Standpipe ran dry after 4 minutes, 28 litres of water pumped out. Standpipe pumped dry a second time. Water opaque, brown, sandy.															
BH-PTS122	120.627	1	50	6 / 1	3.00	2.99	1.00 to 3.50	12/04/2023 14:24	2.86	117.77	---	---	---	---	---	---
BH-PTS122	120.627	1	50	18 / 1	3.00	3.05	1.00 to 3.50	05/07/2023 09:01	2.61	118.02	---	---	---	---	---	---
	General Remarks: Water level data logger downloaded.															

Key: NDA denotes 'no data available'.

IN-SITU WATER MONITORING RESULTS

Exploratory Position ID	Ground Level (m AOD)	Pipe Ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring	Water Depth (mbgl)	Water Elevation (m AOD)	pH	ORP (mV)	Eh (mV)	Conduc-tivity (uS/cm)	Temp-erature (°C)	Dissolved Oxygen (mg/l)
BH-PTS122	120.627	1	50	19 / 1	3.00	3.05	1.00 to 3.50	23/08/2023 08:59	1.23	119.40	---	---	---	---	---	---
	General Remarks: Water level data logger downloaded.															
BH-PTS123	124.295	1	50	5 / 1	6.50	6.32	1.50 to 6.50	03/04/2023 14:00	1.41	122.89	---	---	---	---	---	---
BH-PTS123	124.295	1	50	5 / 2	6.50	6.32	1.50 to 6.50	03/04/2023 14:03	0.82	123.48	7.60	1	246	399	12.3	3.6
BH-PTS123	124.295	1	50	5 / 2	---	6.32	---	03/04/2023 14:15	2.82	121.48	7.61	1	247	445	11.1	3.5
BH-PTS123	124.295	1	50	5 / 2	---	6.32	---	03/04/2023 14:20	3.81	120.49	7.56	-5	243	446	9.9	2.6
BH-PTS123	124.295	1	50	5 / 2	---	6.32	---	03/04/2023 14:31	6.10	118.20	7.40	-14	233	417	10.6	2.9
BH-PTS123	124.295	1	50	5 / 2	---	6.32	---	03/04/2023 14:36	5.86	118.44	---	---	---	---	---	---
	General Remarks: Standpipe developed. 52 litres of water pumped out before standpipe ran dry. Water often clear, sometimes with brown-red tint.															
BH-PTS123	124.295	1	50	7 / 1	6.50	6.43	1.50 to 6.50	19/04/2023 12:44	1.61	122.69	---	---	---	---	---	---
BH-PTS123	124.295	1	50	8 / 1	6.50	6.44	1.50 to 6.50	25/04/2023 11:15	1.84	122.46	---	---	---	---	---	---
BH-PTS123	124.295	1	50	17 / 1	6.50	6.47	1.50 to 6.50	28/06/2023 14:36	2.77	121.53	---	---	---	---	---	---
	General Remarks: Datalogger downloaded.															
BH-PTS123	124.295	1	50	19 / 1	6.50	6.47	1.50 to 6.50	22/08/2023 15:54	1.53	122.77	---	---	---	---	---	---
	General Remarks: Datalogger downloaded.															
BH-PTS124	129.023	1	50	4 / 1	3.50	3.65	0.50 to 4.00	29/03/2023 14:46	2.53	126.49	---	---	---	---	---	---
BH-PTS124	129.023	1	50	4 / 2	3.50	NDA	0.50 to 4.00	29/03/2023 14:58	---	---	7.78	199	449	802	8.1	7.4
	General Remarks: Standpipe developed. Standpipe ran dry after 4 minutes, 22 litres of groundwater pumped out. No significant recharge after 5 minutes, pumped out 0.5 litres and standpipe ran dry again. Water clear.															
BH-PTS124	129.023	1	50	6 / 1	3.50	3.65	0.50 to 4.00	12/04/2023 14:36	2.92	126.10	---	---	---	---	---	---
BH-PTS124	129.023	1	50	17 / 1	3.50	3.72	0.50 to 4.00	28/06/2023 13:53	DRY	DRY	---	---	---	---	---	---
BH-PTS126	115.225	1	50	9 / 1	6.00	6.09	3.00 to 6.00	04/05/2023 13:15	DRY	DRY	---	---	---	---	---	---
BH-PTS126	115.225	1	50	11 / 1	6.00	5.79	3.00 to 6.00	16/05/2023 14:33	DRY	DRY	---	---	---	---	---	---
	General Remarks: Measured depth to base of pipe has reduced by 300mm.															

Key: NDA denotes 'no data available'.

IN-SITU WATER MONITORING RESULTS

Exploratory Position ID	Ground Level (m AOD)	Pipe Ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring	Water Depth (mbgl)	Water Elevation (m AOD)	pH	ORP (mV)	Eh (mV)	Conduc-tivity (uS/cm)	Temp-erature (°C)	Dissolved Oxygen (mg/l)
BH-PTS126	115.225	1	50	11 / 2	6.00	5.80	3.00 to 6.00	30/05/2023 14:36	5.79	109.44	---	---	---	---	---	---
BH-PTS126	115.225	1	50	17 / 1	6.00	5.80	3.00 to 6.00	28/06/2023 12:02	DRY	DRY	---	---	---	---	---	---
	General Remarks: Datalogger downloaded.															
BH-PTS127	124.333	1	50	4 / 1	5.00	5.32	1.00 to 5.50	29/03/2023 14:00	1.79	122.54	---	---	---	---	---	---
BH-PTS127	124.333	1	50	4 / 2	5.00	5.37	1.00 to 5.50	29/03/2023 14:18	---	---	8.19	2867	3115	783	8.9	10.7
	General Remarks: Standpipe developed. Standpipe ran dry after 2 minutes, 10 litres of groundwater pumped out. Borehole pumped dry a second time, 10 litres pumped out. Water opaque, brown, silty and sandy.															
BH-PTS127	124.333	1	50	5 / 1	5.00	5.37	1.00 to 5.50	05/04/2023 09:54	1.91	122.42	---	---	---	---	---	---
BH-PTS127	124.333	1	50	6 / 1	5.00	5.37	1.00 to 5.50	13/04/2023 13:56	1.85	122.48	---	---	---	---	---	---
BH-PTS127	124.333	1	50	7 / 1	5.00	5.35	1.00 to 5.50	19/04/2023 12:50	1.87	122.46	---	---	---	---	---	---
BH-PTS127	124.333	1	50	17 / 1	5.00	5.33	1.00 to 5.50	28/06/2023 14:47	5.17	119.16	---	---	---	---	---	---
	General Remarks: Datalogger downloaded.															
BH-PTS127	124.333	1	50	19 / 1	5.00	5.32	1.00 to 5.50	22/08/2023 16:07	3.10	121.24	---	---	---	---	---	---
	General Remarks: Datalogger downloaded.															
BH-PTS128A	128.331	1	50	5 / 1	5.00	5.19	1.50 to 5.50	03/04/2023 15:07	DRY	DRY	---	---	---	---	---	---
	General Remarks: Unable to develop standpipe, as standpipe dry.															
BH-PTS128A	128.331	1	50	6 / 1	5.00	5.27	1.50 to 5.50	13/04/2023 14:27	DRY	DRY	---	---	---	---	---	---
BH-PTS128A	128.331	1	50	17 / 1	5.00	5.46	1.50 to 5.50	28/06/2023 14:08	DRY	DRY	---	---	---	---	---	---
BH-PTS129	122.038	1	50	6 / 1	3.50	3.61	1.00 to 4.00	12/04/2023 11:25	0.54	121.50	---	---	---	---	---	---
BH-PTS129	122.038	1	50	6 / 2	3.50	3.76	1.00 to 4.00	12/04/2023 11:38	1.73	120.31	7.55	---	---	484	8.4	---
BH-PTS129	122.038	1	50	6 / 2	---	3.76	---	12/04/2023 11:50	DRY	DRY	7.53	---	---	436	8.6	---
BH-PTS129	122.038	1	50	6 / 2	---	3.76	---	12/04/2023 12:05	---	---	7.47	---	---	470	8.8	---
BH-PTS129	122.038	1	50	6 / 2	---	3.76	---	12/04/2023 12:08	DRY	DRY	7.47	---	---	480	8.9	---
BH-PTS129	122.038	1	50	6 / 2	---	3.76	---	12/04/2023 12:10	3.20	118.84	---	---	---	---	---	---

Key: NDA denotes 'no data available'.

IN-SITU WATER MONITORING RESULTS

Exploratory Position ID	Ground Level (m AOD)	Pipe Ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring	Water Depth (mbgl)	Water Elevation (m AOD)	pH	ORP (mV)	Eh (mV)	Conduc-tivity (uS/cm)	Temp-erature (°C)	Dissolved Oxygen (mg/l)
	General Remarks: Standpipe developed. 42 litres of groundwater pumped out over 30 minutes. Standpipe ran dry twice during this. No oxygen reducing potential (ORP) or dissolved oxygen readings taken.															
BH-PTS129	122.038	1	50	7 / 1	3.50	3.53	1.00 to 4.00	19/04/2023 12:38	0.85	121.19	---	---	---	---	---	---
BH-PTS129	122.038	1	50	8 / 1	3.50	3.53	1.00 to 4.00	25/04/2023 11:08	0.91	121.13	---	---	---	---	---	---
BH-PTS129	122.038	1	50	9 / 1	3.50	3.53	1.00 to 4.00	04/05/2023 13:49	1.05	120.99	---	---	---	---	---	---
BH-PTS129	122.038	1	50	11 / 1	3.50	3.51	1.00 to 4.00	19/05/2023 13:48	1.51	120.53	---	---	---	---	---	---
BH-PTS129	122.038	1	50	17 / 1	3.50	3.48	1.00 to 4.00	28/06/2023 15:02	2.38	119.66	---	---	---	---	---	---
	General Remarks: Datalogger downloaded.															
BH-PTS129	122.038	1	50	19 / 1	3.50	3.49	1.00 to 4.00	22/08/2023 15:46	0.65	121.39	---	---	---	---	---	---
	General Remarks: Datalogger downloaded.															
GS-PTS102	120.668	1	50	11 / 1	4.00	4.09	1.00 to 4.50	19/05/2023 14:20	3.89	116.78	---	---	---	---	---	---
GS-PTS102	120.668	1	50	13 / 1	4.00	4.11	1.00 to 4.50	30/05/2023 14:01	3.87	116.80	---	---	---	---	---	---
GS-PTS102	120.668	1	50	14 / 1	4.00	4.11	1.00 to 4.50	06/06/2023 09:00	3.94	116.73	---	---	---	---	---	---
GS-PTS105	116.076	1	50	13 / 1	9.50	9.45	1.00 to 10.00	30/05/2023 14:48	7.50	108.58	---	---	---	---	---	---
GS-PTS105	116.076	1	50	14 / 1	9.50	9.45	1.00 to 10.00	06/06/2023 09:29	7.56	108.52	---	---	---	---	---	---
GS-PTS105	116.076	1	50	15 / 1	9.50	9.45	1.00 to 10.00	14/06/2023 15:41	7.81	108.27	---	---	---	---	---	---
GS-PTS105	116.076	1	50	18.1 / 1	9.50	9.39	1.00 to 10.00	17/08/2023 10:58	7.48	108.60	---	---	---	---	---	---
GS-PTS105	116.076	1	50	19 / 1	9.50	9.44	1.00 to 10.00	23/08/2023 09:35	7.49	108.59	---	---	---	---	---	---
	General Remarks: Datalogger downloaded.															
GS-PTS109	119.016	1	50	4 / 1	9.00	NDA	4.50 to 9.00	29/03/2023 10:50	---	---	8.27	296	---	359	9.5	9.0
GS-PTS109	119.016	1	50	4 / 1	---	NDA	---	29/03/2023 10:53	---	---	8.07	284	---	299	9.3	8.7
GS-PTS109	119.016	1	50	4 / 1	---	NDA	---	29/03/2023 10:56	---	---	8.02	281	---	295	9.3	8.4
	General Remarks: Standpipe developed. Pipe base depth and initial water level not recorded in error. Water at 7.06m depth after development. 60 litres of water pumped out in 10 minutes, water clear.															
GS-PTS109	119.016	1	50	6 / 1	9.00	8.91	4.50 to 9.00	13/04/2023 14:41	4.74	114.28	---	---	---	---	---	---

Key: NDA denotes 'no data available'.

IN-SITU WATER MONITORING RESULTS

Exploratory Position ID	Ground Level (m AOD)	Pipe Ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring	Water Depth (mbgl)	Water Elevation (m AOD)	pH	ORP (mV)	Eh (mV)	Conduc-tivity (uS/cm)	Temp-erature (°C)	Dissolved Oxygen (mg/l)
GS-PTS109	119.016	1	50	18 / 1	9.00	8.92	4.50 to 9.00	05/07/2023 09:08	5.61	113.41	---	---	---	---	---	---
	General Remarks: Water level data logger downloaded. Padlock missing.															
GS-PTS109	119.016	1	50	19 / 1	9.00	8.91	4.50 to 9.00	23/08/2023 10:28	5.74	113.28	---	---	---	---	---	---
	General Remarks: Water level data logger downloaded. Padlock missing.															

Key: NDA denotes 'no data available'.

SUMMARY OF WATER LEVEL AND BAROMETRIC DATA LOGGERS FOR WHICH DATA IS CONTAINED IN THIS REPORT

Note: All water level data loggers are In Situ Rugged TROLL 100. All barometric data loggers are In Situ Rugged BaroTROLL.

Location identifier	Data logger type	Data logger serial number	Installation depth m bgl	Pipe number	Installation date	Response zone top (m bgl)	Response zone base (m bgl)	Data from date	Data to date	Remarks
	Barometric	909816	-	-		-	-	24/05/2023	05/07/2023	Installed at location BH-PTS120A
BH-PTS101	Water level	998837	3.50	1	24/05/2023	2.00	5.00	24/05/2023	22/08/2023	
BH-PTS106	Water level	1004479	3.70	1	03/07/2023	2.50	4.50	03/07/2023	22/08/2023	
BH-PTS108	Water level	1004110	4.50	1	06/06/2023	1.00	6.00	06/06/2023	22/08/2023	
BH-PTS112	Water level	1001477	2.50	1	24/05/2023	1.00	3.00	24/05/2023	22/08/2023	
BH-PTS114	Water level	1004504	3.50	1	24/05/2023	1.50	4.00	24/05/2023	22/08/2023	
BH-PTS115	Water level	1004244	5.50	1	24/05/2023	1.00	6.50	24/05/2023	22/08/2023	
BH-PTS119	Water level	1004524	2.50	1	24/05/2023	1.00	3.50	24/05/2023	23/08/2023	
BH-PTS120A	Water level	1004513	3.50	1	24/05/2023	1.50	5.00	24/05/2023	n/a	The first datalogger (1004513) was faulty and failed to record any data. It was replaced on 23/08/2023.
BH-PTS120A	Water level	1019018	3.50	1	23/08/2023	1.50	5.00	Recording commenced 23/08/2023	n/a	
BH-PTS-122	Water level	1004088	2.60	1	25/05/2023	1.00	3.50	25/05/2023	23/08/2023	
BH-PTS123	Water level	1001336	5.50	1	24/05/2023	1.50	6.00	24/05/2023	22/08/2023	
BH-PTS127	Water level	1004604	4.50	1	25/05/2023	2.00	5.00	25/05/2023	22/08/2023	
BH-PTS129	Water level	1004555	3.00	1	24/05/2023	1.50	3.50	24/05/2023	22/08/2023	
GS-PTS-105	Water level	1004097	8.50	1	30/06/2023	1.00	10.00	30/06/2023	23/08/2023	
GS-PTS109	Water level	897831	8.00	1	25/05/2023	4.50	9.00	25/05/2023	23/08/2023	

Notes:

1. No data loggers were installed at the following locations due to the standpipes either being dry or containing insufficient height of water for correct operation of data logger:
BH-PTS111, BH-PTS118, BH-PTS124, BH-PTS-126, BH-PTS-128A and GS-PTS102.

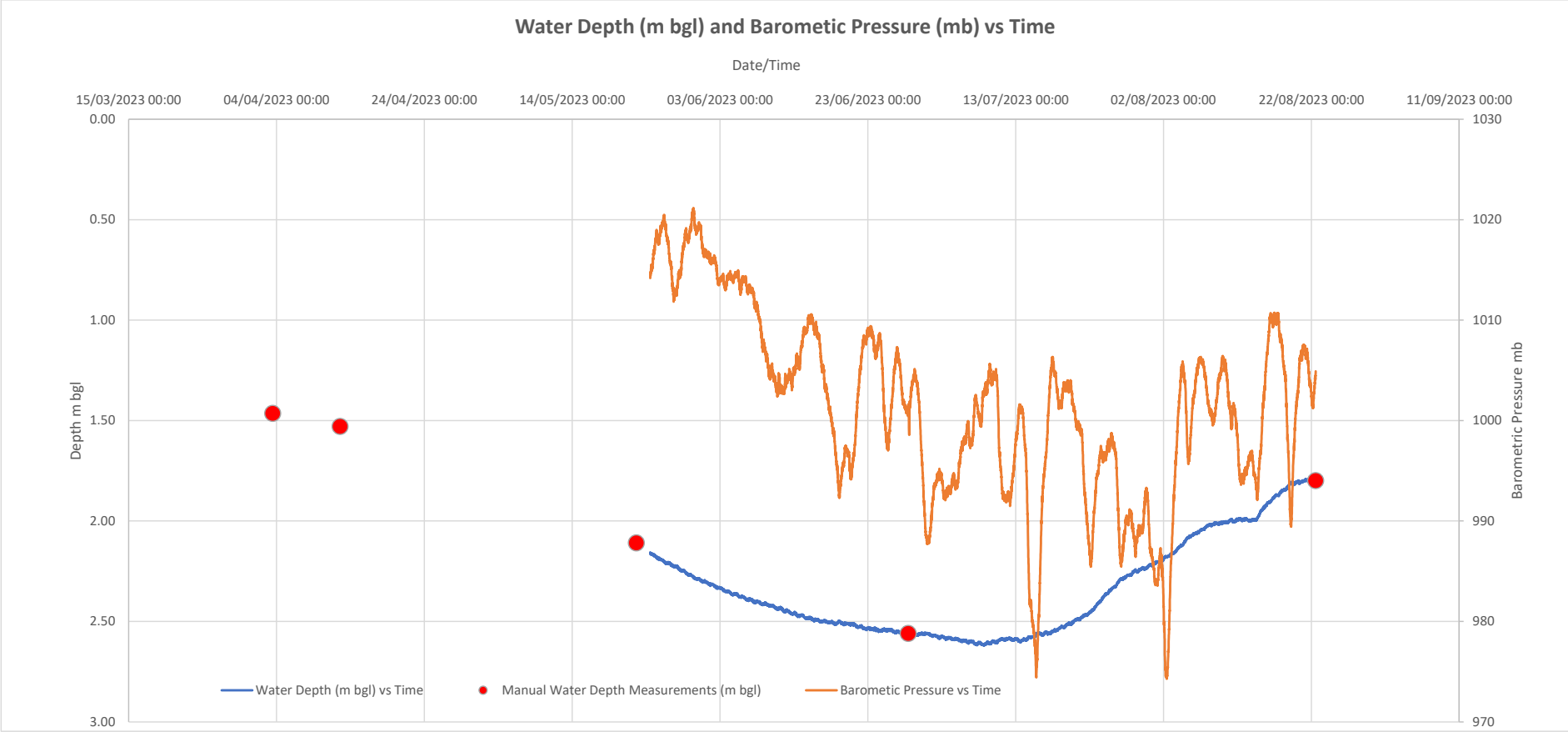
2. Data logger serial no. 11004513 installed in BH-PTS-120A reports a fault and no data has been recorded by or downloaded from it. Data logger was replaced on 23/08/2023.

'DIVER' WATER LEVEL DATA LOGGER MEASUREMENTS

Plots of Water Depth (m below ground level) and Barometric Pressure vs Time

Borehole No.: BH-PTS101 **Pipe No.:** 1 **Pipe Response Zone (m bgl):** 2.00 to 5.00 **Diver Installed Depth (m bgl):** 3.50 **Diver Serial No:** 998837

Ground Level (m AOD): 113.31 National Grid Coordinates: E: 354195.9 N: 528991.7 **Monitoring Period. Start:** 24/05/2023 13:43 **End:** 22/08/2023 14:28



Notes	
	1
	2
	3
	4

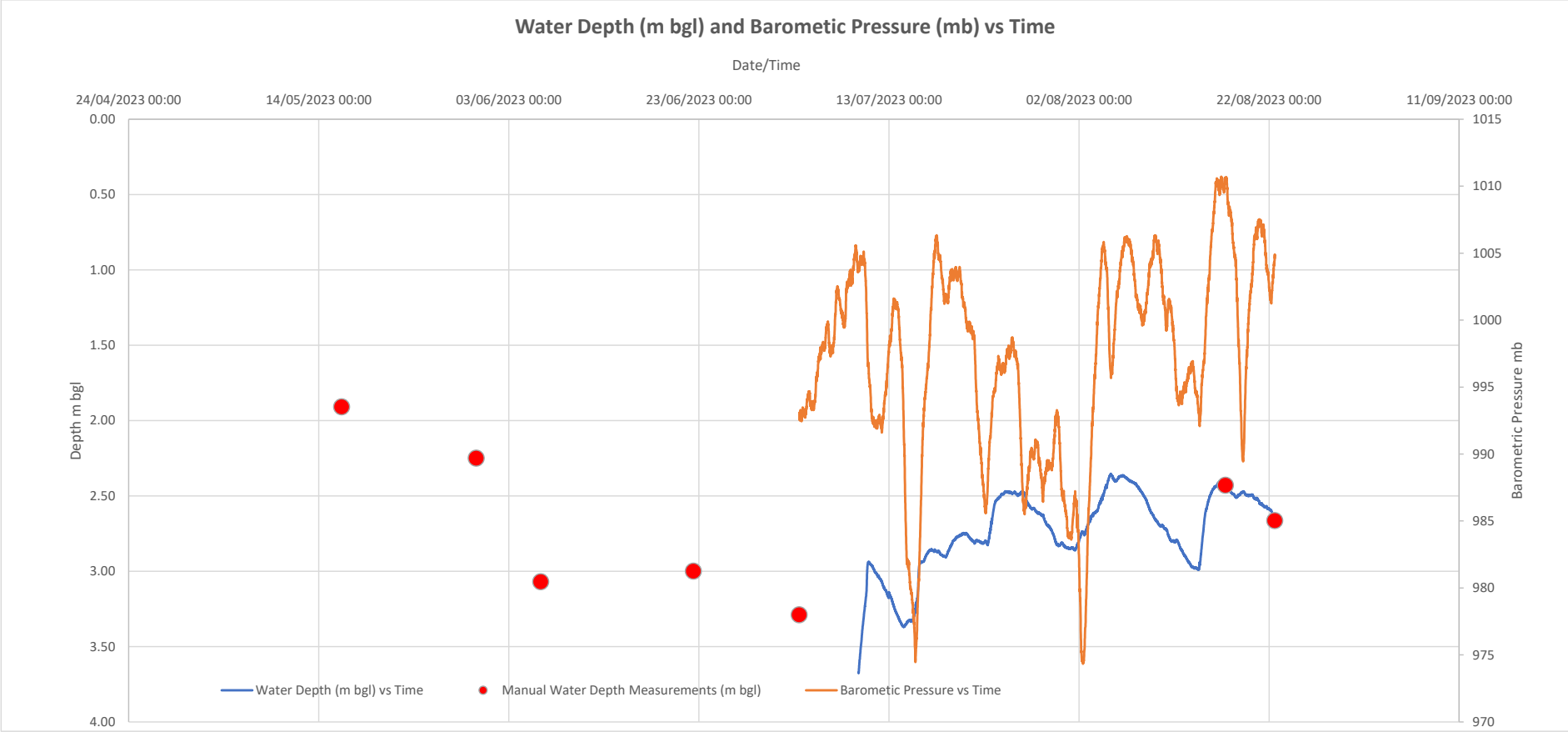
STRUCTURAL SOILS LTD The Old School Stillhouse Lane, Bedminster BRISTOL, BS3 4EB	Diver Installed By		Data Processed By:		Checked by (the Responsible Expert)		Date	Contract Ref:	765633
	Ben Kitchiner	22/05/2023	Gillean Brook	30/08/2023	Adam Lumber	Adam Lumber	30/08/2023		
	Contract:		A66 NTP Scheme 3A		Client	National Highways		Page	1 of 1

'DIVER' WATER LEVEL DATA LOGGER MEASUREMENTS

Plots of Water Depth (m below ground level) and Barometric Pressure vs Time

Borehole No.: BH-PTS106 **Pipe No.:** 1 **Pipe Response Zone (m bgl):** 2.50 to 4.50 **Diver Installed Depth (m bgl):** 3.70 **Diver Serial No:** 1004479

Ground Level (m AOD): 117.90 National Grid Coordinates: E: 354353.9 N: 528970.7 **Monitoring Period. Start:** 03/07/2023 13:55 **End:** 22/08/2023 14:40



Notes	
	1. Data logger recorded negative pressure from installation on 03.07.2023 until 09.07.2023 indicating that water level was below pressure sensor, no water levels therefore plotted for this period.
	2. Manual water level measurement of 3.29m below ground level recorded at time of data logger installation appears to either be incorrect or, possibly, data logger did not settle to correct installation depth and 'drop' below water level until 09.07.2023.
	3
	4

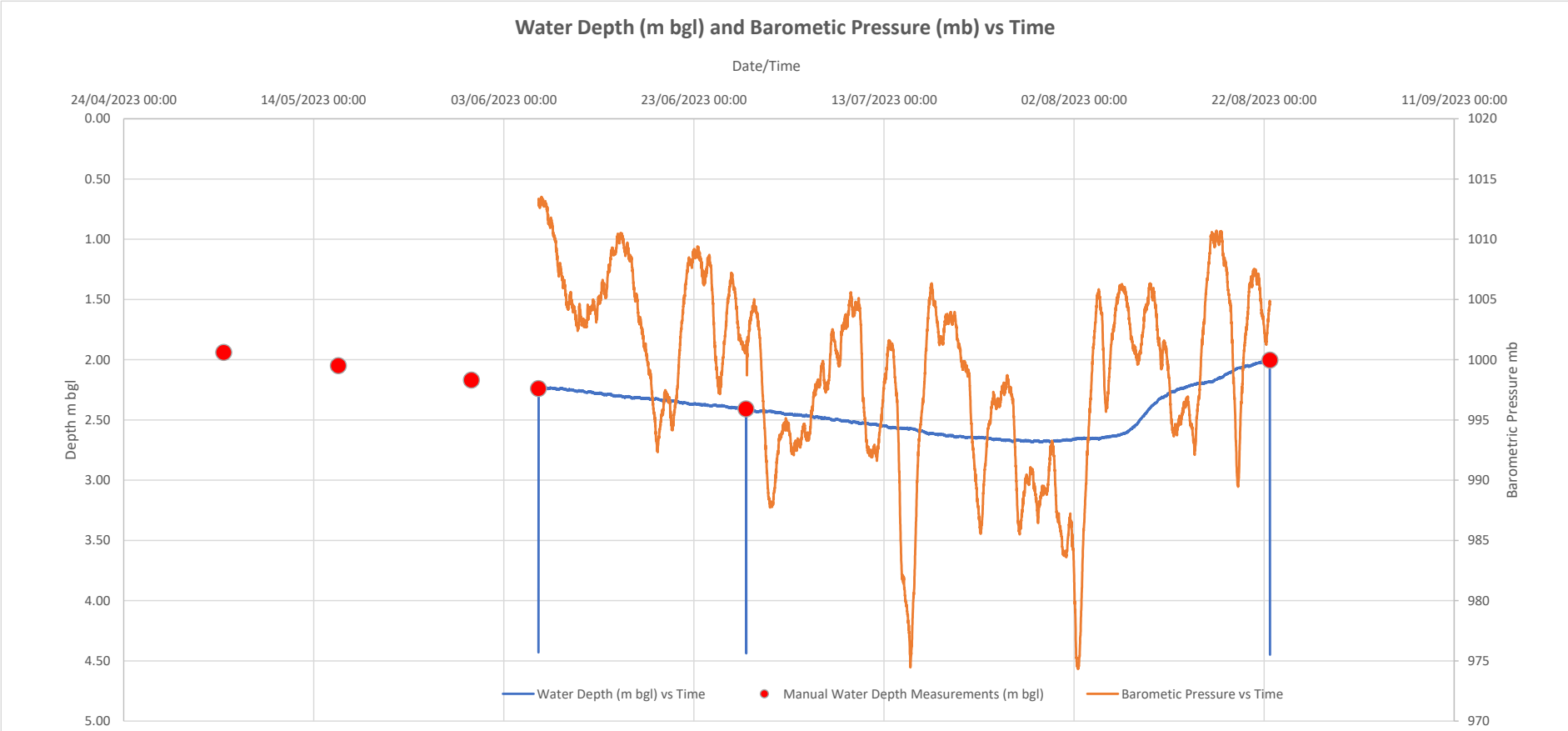
STRUCTURAL SOILS LTD The Old School Stillhouse Lane, Bedminster BRISTOL, BS3 4EB	Diver Installed By		Data Processed By:		Checked by (the Responsible Expert)		Date	Contract Ref:	765633
	Ben Kitchiner	03.07.2023	Gillean Brook	30.08.2023	Adam Lumber	Adam Lumber	30.08.2023		
	Contract:		A66 NTP Scheme 3A		Client	National Highways		Page	1 of 1

'DIVER' WATER LEVEL DATA LOGGER MEASUREMENTS

Plots of Water Depth (m below ground level) and Barometric Pressure vs Time

Borehole No.: BH-PTS108 **Pipe No.:** 1 **Pipe Response Zone (m bgl):** 1.00 to 6.00 **Diver Installed Depth (m bgl):** 4.50 **Diver Serial No:** 1004110

Ground Level (m AOD): 119.35 National Grid Coordinates: E: 354574.5 N: 529021.5 **Monitoring Period. Start:** 06/06/2023 15:41 **End:** 22/08/2023 14:56



Notes	
	1. Downwards spike in water level represents where data logger has been removed from hole for manual water level measurements.
	2
	3
	4

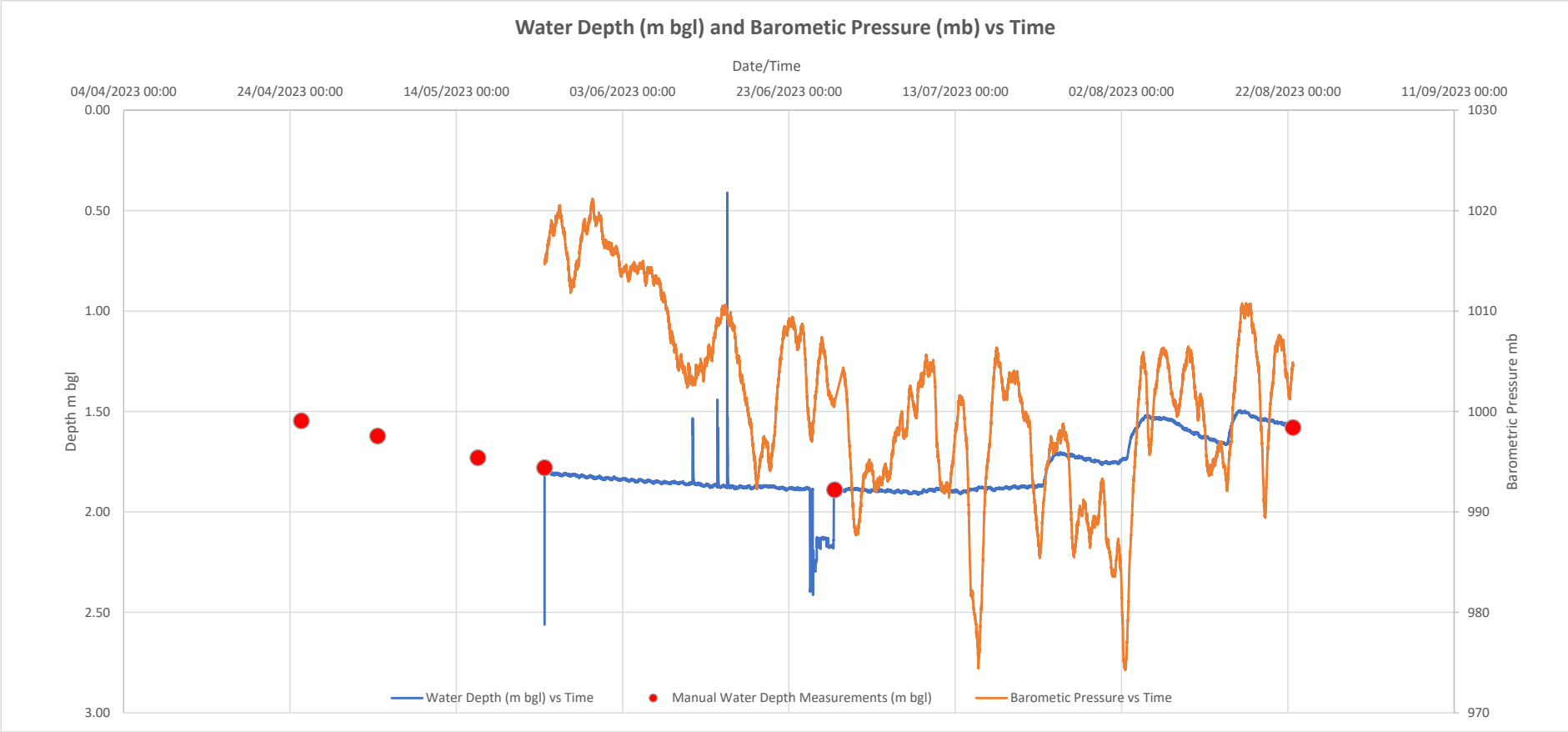
STRUCTURAL SOILS LTD **The Old School** **Stillhouse Lane,** **Bedminster** **BRISTOL, BS3 4EB**	Diver Installed By		Data Processed By:		Checked by (the Responsible Expert)		Date	**Contract Ref:** 765633
	Ben Kitchiner	22.05.2023	Gillean Brook	30.08.2023	Adam Lumber		30.08.2023	
	Contract:		**A66 NTP Scheme 3A**		**Client**	**National Highways**		**Page** 1 of 1

'DIVER' WATER LEVEL DATA LOGGER MEASUREMENTS

Plots of Water Depth (m below ground level) and Barometric Pressure vs Time

Borehole No.: BH-PTS112 **Pipe No.:** 1 **Pipe Response Zone (m bgl):** 1.00 to 3.00 **Diver Installed Depth (m bgl):** 2.50 **Diver Serial No:** 1001477

Ground Level (m AOD): 109.25 National Grid Coordinates: E: 354771.3 N: 529033.9 **Monitoring Period. Start:** 24/05/2023 14:45 **End:** 22/08/2023 15:00



Notes	
	1. Downwards spike in water level represents where data logger has been removed from hole for manual water level measurements.
	2. Upwards spike in water level represents where water was added to the borehole for permeability testing.
	3. Strange fluctuations in water level between 25/06/23 and 28/06/23, potentially due to diver being disturbed.
	4

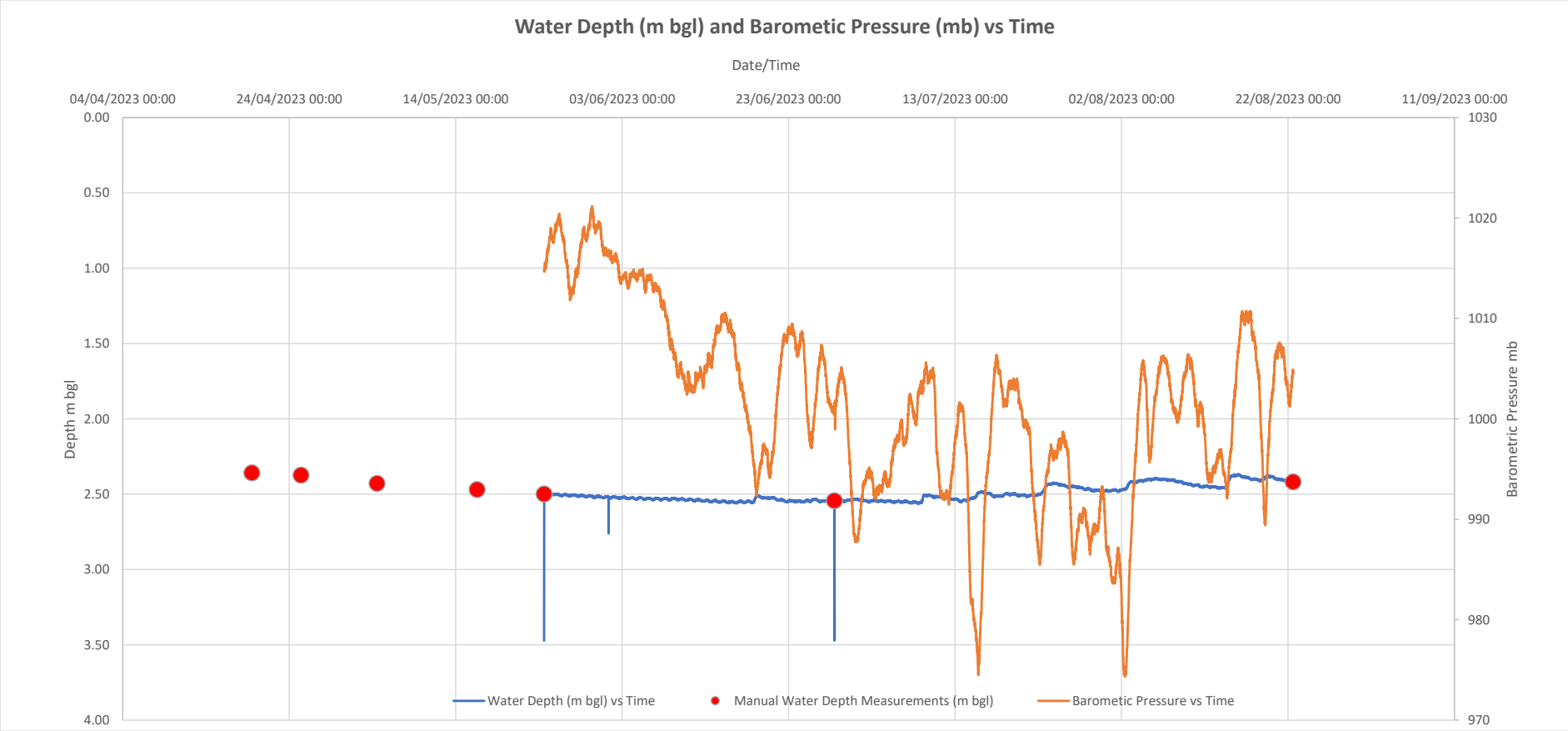
STRUCTURAL SOILS LTD **The Old School** **Stillhouse Lane,** **Bedminster** **BRISTOL, BS3 4EB**	Diver Installed By		Data Processed By:		Checked by (the Responsible Expert)		Date	**Contract Ref:** 76563
	Ben Kitchiner	22.05.2023	Gillean Brook	30.08.2023	Adam Lumber	Adam Lumber	30.08.2023	
	Contract:		**A66 NTP Scheme 3A**		**Client**	**National Highways**		**Page** 1 of 1

'DIVER' WATER LEVEL DATA LOGGER MEASUREMENTS

Plots of Water Depth (m below ground level) and Barometric Pressure vs Time

Borehole No.: BH-PTS114 **Pipe No.:** 1 **Pipe Response Zone (m bgl):** 1.50 to 4.00 **Diver Installed Depth (m bgl):** 3.50 **Diver Serial No:** 1004504

Ground Level (m AOD): 109.19 National Grid Coordinates: E: 354919.8 N: 529002.4 **Monitoring Period. Start:** 24/05/2023 15:04 **End:** 22/08/2023 15:04



Notes	
	1. Downwards spike in water level represents where data logger has been removed from hole for manual water level measurements.
	2
	3
	4

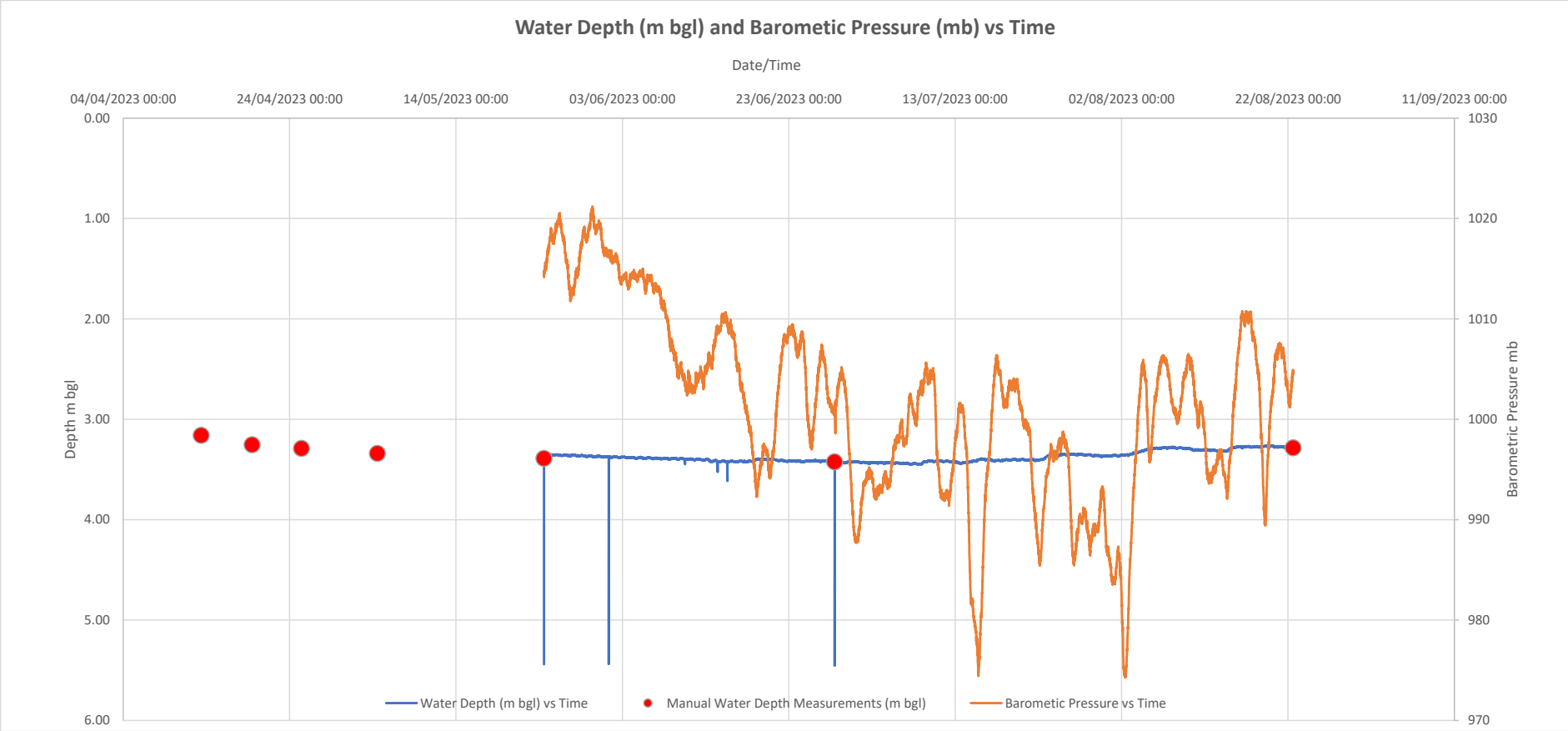
STRUCTURAL SOILS LTD **The Old School** **Stillhouse Lane,** **Bedminster** **BRISTOL, BS3 4EB**	Diver Installed By		Data Processed By:		Checked by (the Responsible Expert)		Date	**Contract Ref:** 765633
	Ben Kitchiner	22/05/2023	Gillean Brook	30/08/2023	Adam Lumber	Adam Lumber	30/08/2023	
	Contract:		**A66 NTP Scheme 3A**		**Client**	**National Highways**		**Page** 1 of 1

'DIVER' WATER LEVEL DATA LOGGER MEASUREMENTS

Plots of Water Depth (m below ground level) and Barometric Pressure vs Time

Borehole No.: BH-PTS115 **Pipe No.:** 1 **Pipe Response Zone (m bgl):** 1.00 to 6.50 **Diver Installed Depth (m bgl):** 5.50 **Diver Serial No:** 1004244

Ground Level (m AOD): 110.36 National Grid Coordinates: E: 354985.9 N: 529034.3 **Monitoring Period. Start:** 24/05/2023 13:47 **End:** 22/08/2023 15:17



Notes	
	1. Downwards spike in water level represents where data logger has been removed from hole for manual water level measurements.
	2
	3
	4

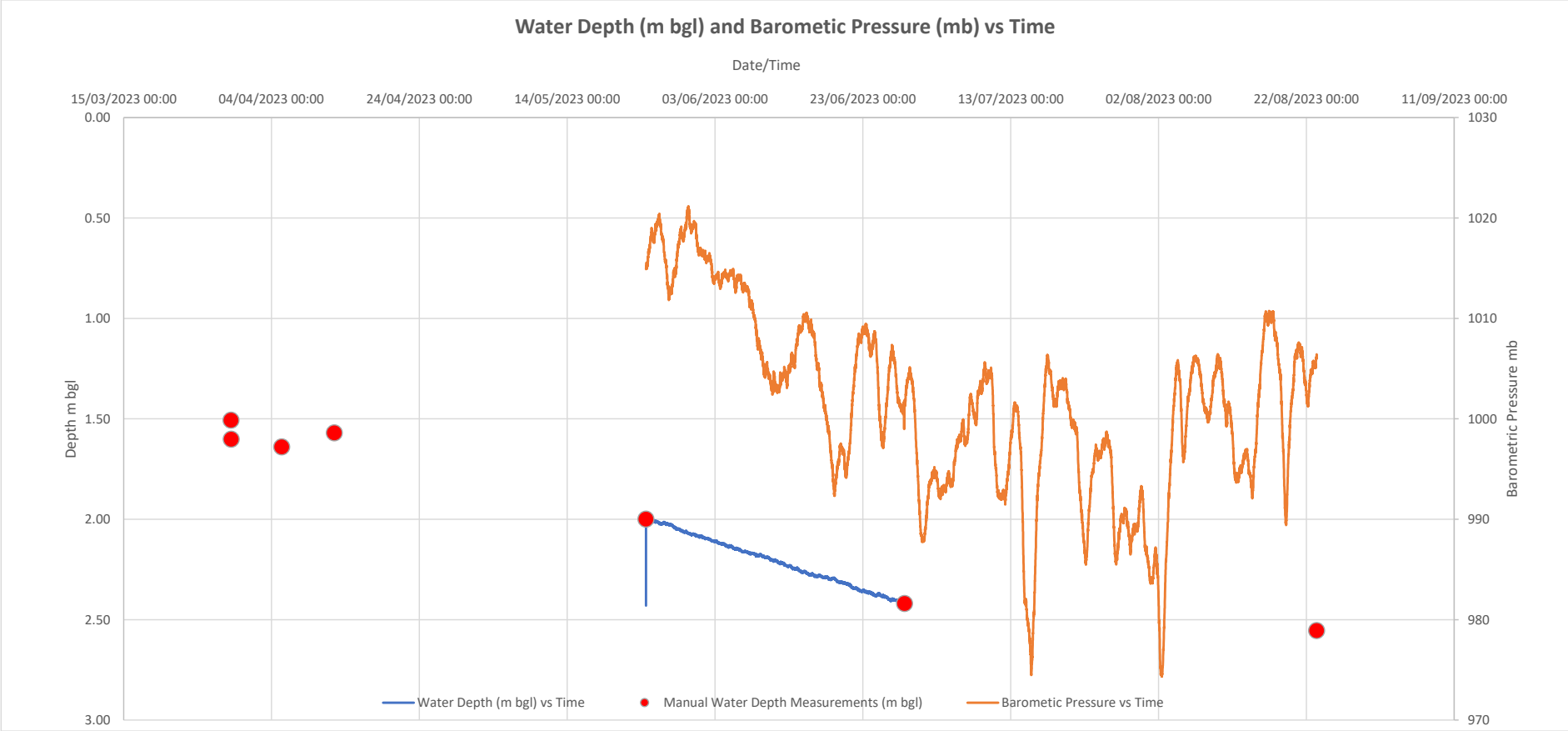
STRUCTURAL SOILS LTD The Old School Stillhouse Lane, Bedminster BRISTOL, BS3 4EB	Diver Installed By		Data Processed By:		Checked by (the Responsible Expert)		Date	Contract Ref:	765633
	Ben Kitchiner	22/05/2023	Gillean Brook	30/08/2023	Adam Lumber		30/08/2023		
	Contract:		A66 NTP Scheme 3A		Client	National Highways		Page	1 of 1

'DIVER' WATER LEVEL DATA LOGGER MEASUREMENTS

Plots of Water Depth (m below ground level) and Barometric Pressure vs Time

Borehole No.: BH-PTS119 **Pipe No.:** 1 **Pipe Response Zone (m bgl):** 1.00 to 3.50 **Diver Installed Depth (m bgl):** 2.50 **Diver Serial No:** 1004524

Ground Level (m AOD): 114.05 National Grid Coordinates: E: 355754.6 N: 528945.4 **Monitoring Period. Start:** 24/05/2023 15:49 **End:** 23/08/2023 09:49



Notes	
	1. Downwards spike in water level represents where data logger has been removed from hole for manual water level measurements.
	2. Data logger records consistently negative water pressures from 29.06.2023 indicating that water level has fallen below pressure sensor. No water level therefore plotted above for data logger after that time.
	3
	4

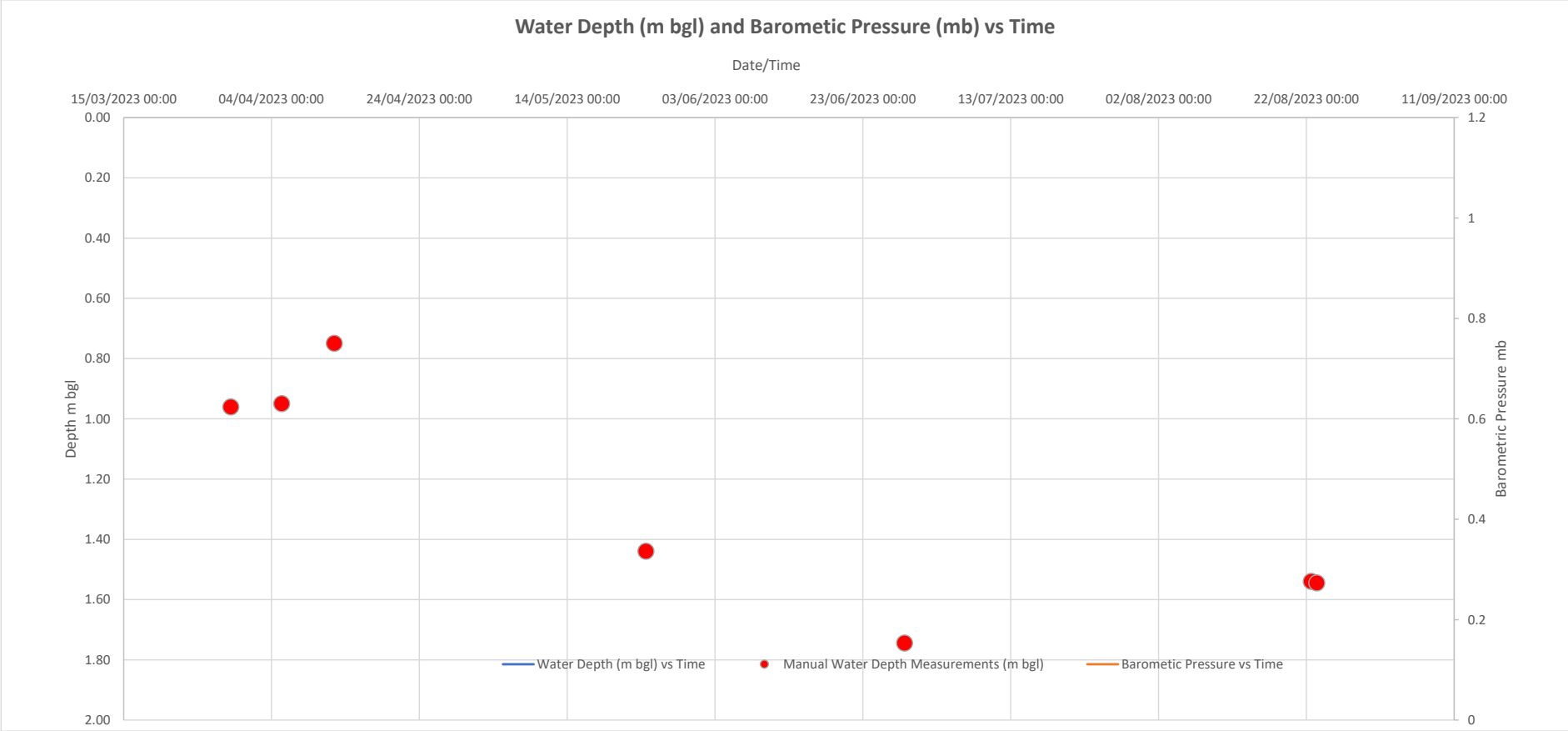
STRUCTURAL SOILS LTD The Old School Stillhouse Lane, Bedminster BRISTOL, BS3 4EB	Diver Installed By		Data Processed By:		Checked by (the Responsible Expert)		Date	Contract Ref:	765633
	Ben Kitchiner	22.05.2023	Gillean Brook	30.08.2023	Adam Lumber	Adam Lumber	30.08.2023		
	Contract:		A66 NTP Scheme 3A		Client	National Highways		Page	1 of 1

'DIVER' WATER LEVEL DATA LOGGER MEASUREMENTS

Plots of Water Depth (m below ground level) and Barometric Pressure vs Time

Borehole No.: BH-PTS120A **Pipe No.:** 1 **Pipe Response Zone (m bgl):** 1.50 to 5.00 **Diver Installed Depth (m bgl):** 3.50 **Diver Serial No:** 1004513 to 23/08/2023
1019018 from 23/08/2023

Ground Level (m AOD): 112.12 National Grid Coordinates: E: 355724.9 N: 528994.4 **Monitoring Period. Start:** 24/05/2023 16:19 **End:** 23/08/2023 10:28



Notes	
	1. Issue with data logger (serial no. 1004513), no data recorded from 24/05/23 to 23/08/23.
	2. Data logger replaced with new device, serial no. 1019018 on 23/08/2023. Manual dip measurements only reported up to this date.
	3
	4

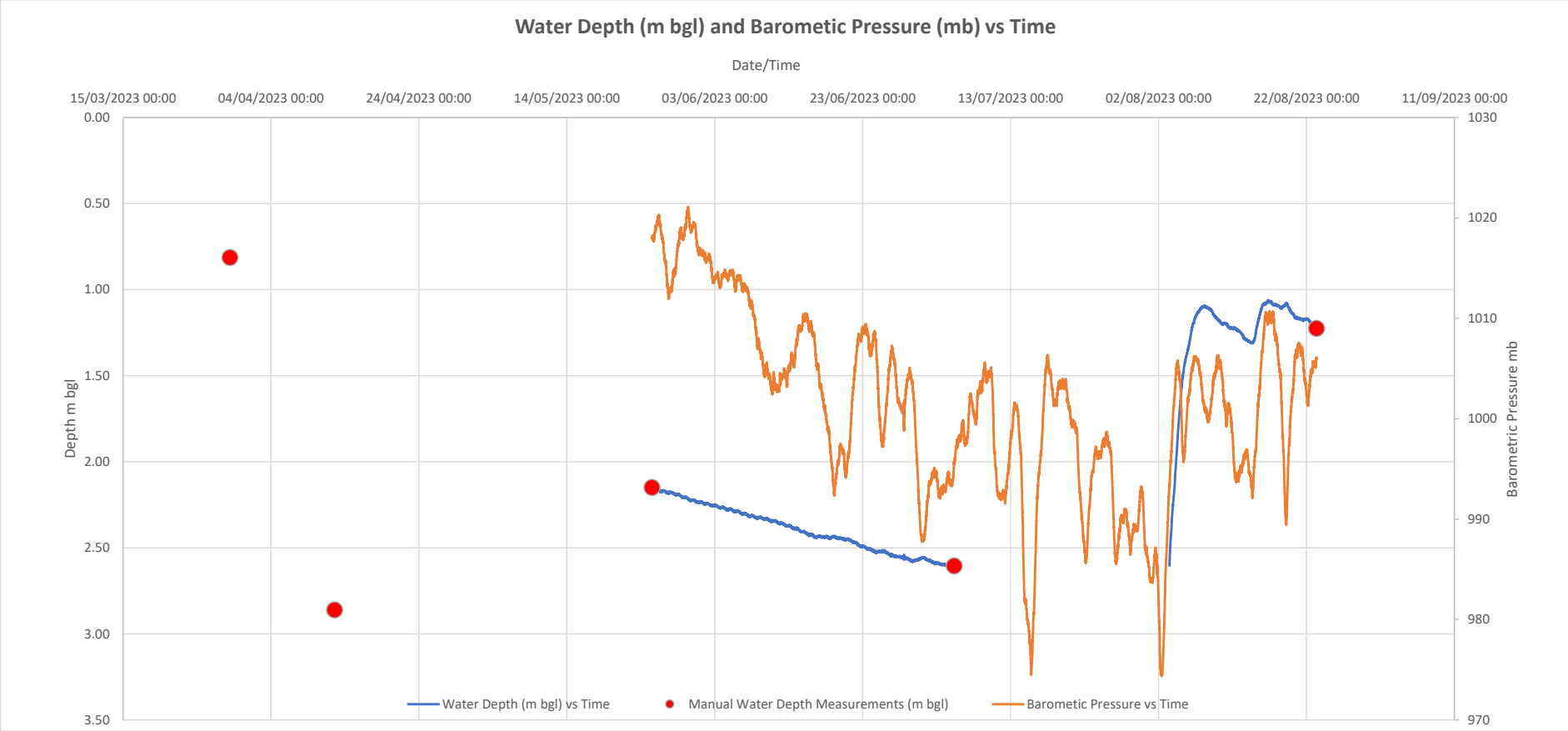
STRUCTURAL SOILS LTD The Old School Stillhouse Lane, Bedminster BRISTOL, BS3 4EB	Diver Installed By		Data Processed By:		Checked by (the Responsible Expert)		Date	Contract Ref:	76563
	Ben Kitchiner	22.05.2023	Gillean Brook	30.08.2023	Adam Lumber	Adam Lumber	30.08.2023		
	Contract:		A66 NTP Scheme 3A		Client	National Highways		Page	1 of 1

'DIVER' WATER LEVEL DATA LOGGER MEASUREMENTS

Plots of Water Depth (m below ground level) and Barometric Pressure vs Time

Borehole No.: BH-PTS122 **Pipe No.:** 1 **Pipe Response Zone (m bgl):** 1.00 to 3.50 **Diver Installed Depth (m bgl):** 2.60 **Diver Serial No:** 1004088

Ground Level (m AOD): 120.63 National Grid Coordinates: E: 355973.2 N: 528855.2 **Monitoring Period. Start:** 25/05/2023 12:39 **End:** 23/08/2023 08:54



Notes	
	1. Downwards spike in water level represents where data logger has been removed from hole for manual water level measurements.
	2. Measured water pressures are negative between 04/07/2023 and 03/08/2023 indicating that water level has fallen below pressure sensor; no water level plotted above for this period.
	3
	4

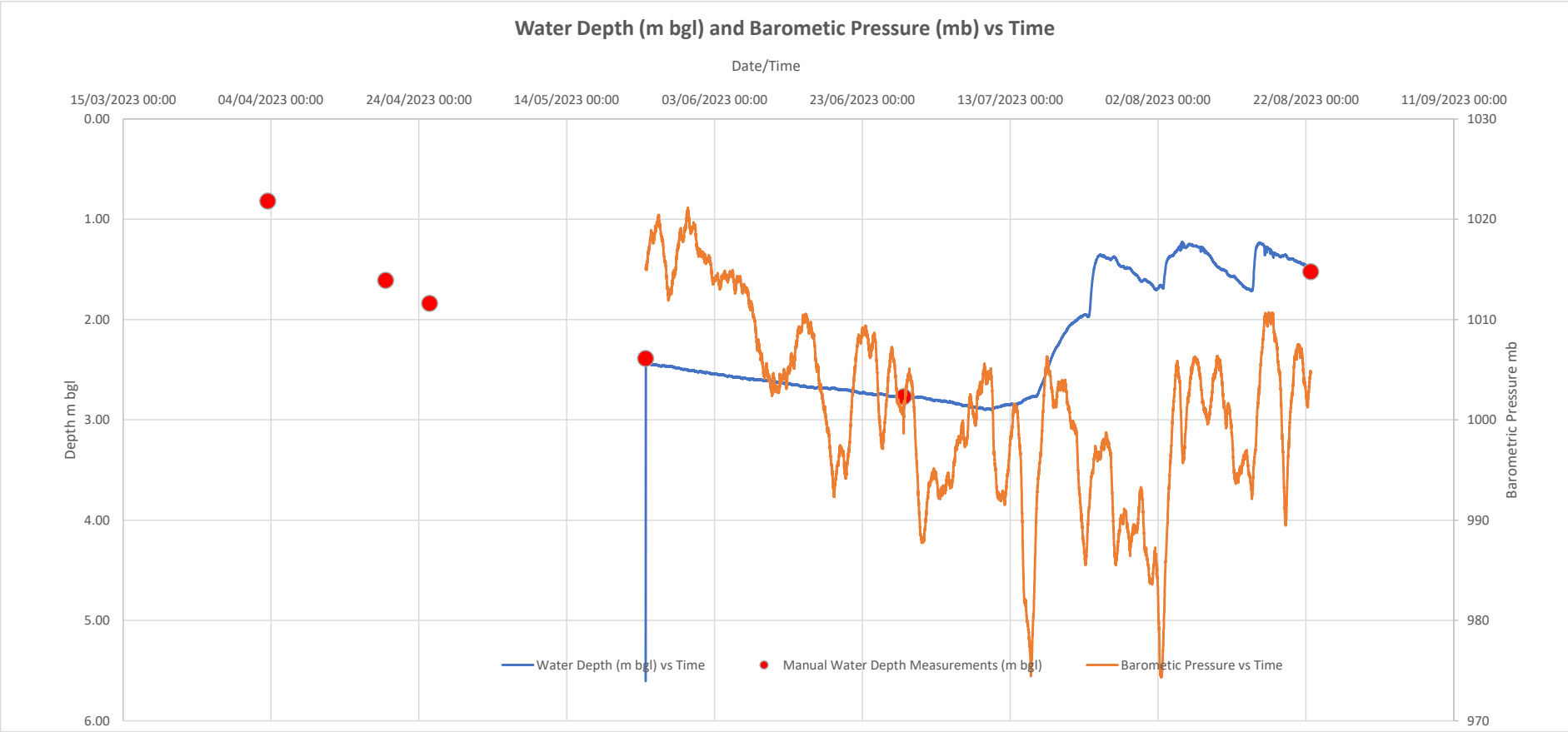
STRUCTURAL SOILS LTD The Old School Stillhouse Lane, Bedminster BRISTOL, BS3 4EB	Diver Installed By		Data Processed By:		Checked by (the Responsible Expert)		Date	Contract Ref:	765633
	Ben Kitchiner	25.05.2023	Gillean Brook	30.08.2023	Adam Lumber		30.08.2023		
	Contract:		A66 NTP Scheme 3A		Client	National Highways		Page	1 of 1

'DIVER' WATER LEVEL DATA LOGGER MEASUREMENTS

Plots of Water Depth (m below ground level) and Barometric Pressure vs Time

Borehole No.: BH-PTS123 **Pipe No.:** 1 **Pipe Response Zone (m bgl):** 1.50 to 6.00 **Diver Installed Depth (m bgl):** 5.50 **Diver Serial No:** 1001336

Ground Level (m AOD): 124.30 National Grid Coordinates: E: 356053.3 N: 528927.2 **Monitoring Period. Start:** 24/05/2023 16:27 **End:** 22/08/2023 15:42



Notes	
	1. Downwards spike in water level represents where data logger has been removed from hole for manual water level measurements.
	2
	3
	4

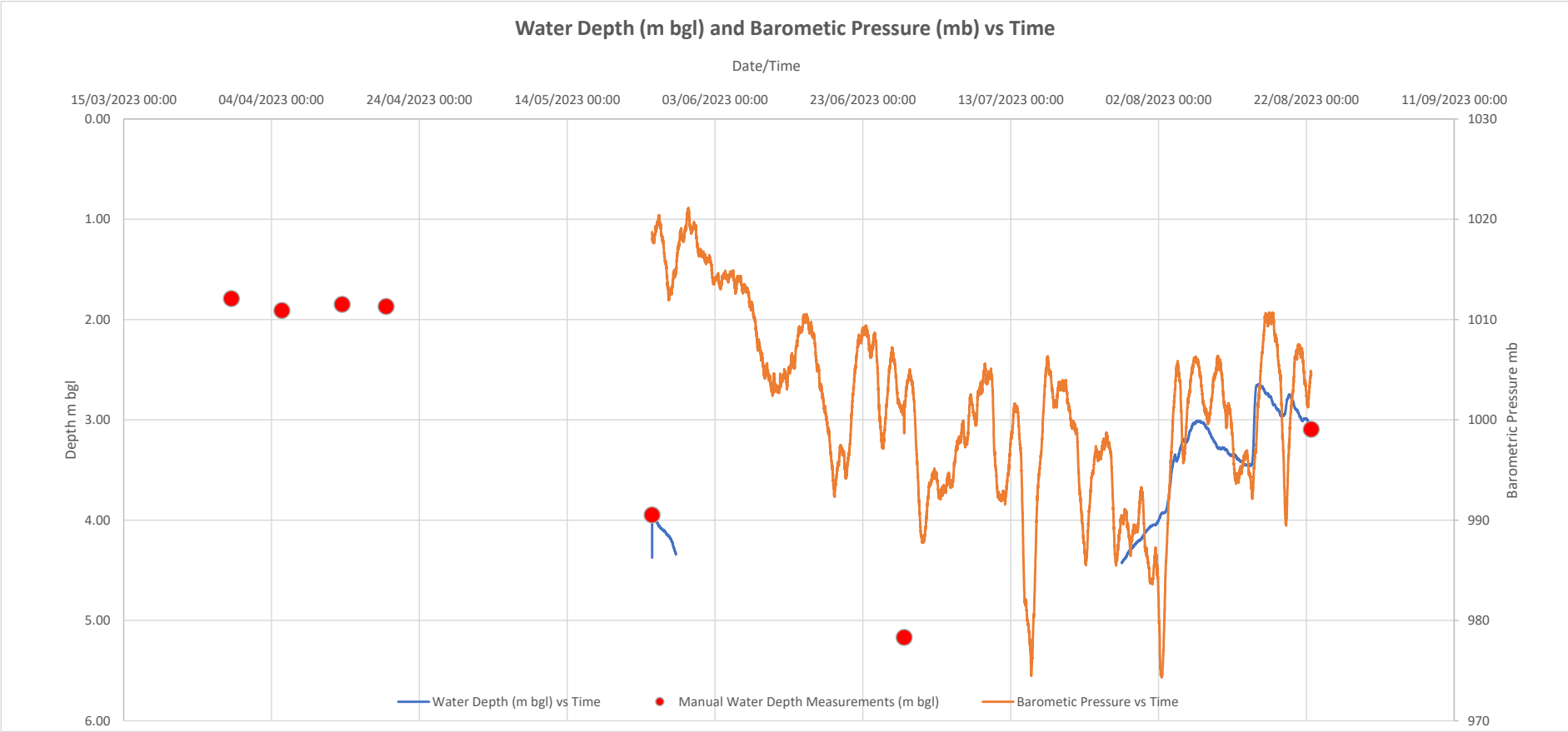
STRUCTURAL SOILS LTD The Old School Stillhouse Lane, Bedminster BRISTOL, BS3 4EB	Diver Installed By		Data Processed By:		Checked by (the Responsible Expert)		Date	Contract Ref:	765633
	Ben Kitchiner	22.05.2023	Gillean Brook	30.08.2023	Adam Lumber	Adam Lumber	30.08.2023		
	Contract:		A66 NTP Scheme 3A		Client	National Highways		Page	1 of 1

'DIVER' WATER LEVEL DATA LOGGER MEASUREMENTS

Plots of Water Depth (m below ground level) and Barometric Pressure vs Time

Borehole No.: BH-PTS127 **Pipe No.:** 1 **Pipe Response Zone (m bgl):** 2.00 to 5.50 **Diver Installed Depth (m bgl):** 4.50 **Diver Serial No:** 1004604

Ground Level (m AOD): 124.33 National Grid Coordinates: E: 356411.8 N: 528933.6 **Monitoring Period. Start:** 25/05/2023 11:42 **End:** 22/08/2023 15:57



Notes	
	1. Downwards spike in water level represents where data logger has been removed from hole for manual water level measurements.
	2 Pressure readings are close to zero or negative from 28/05/2023 to 28/07/2023 indicating that data logger is above water level, therefore no water level plotted for this period.
	3
	4

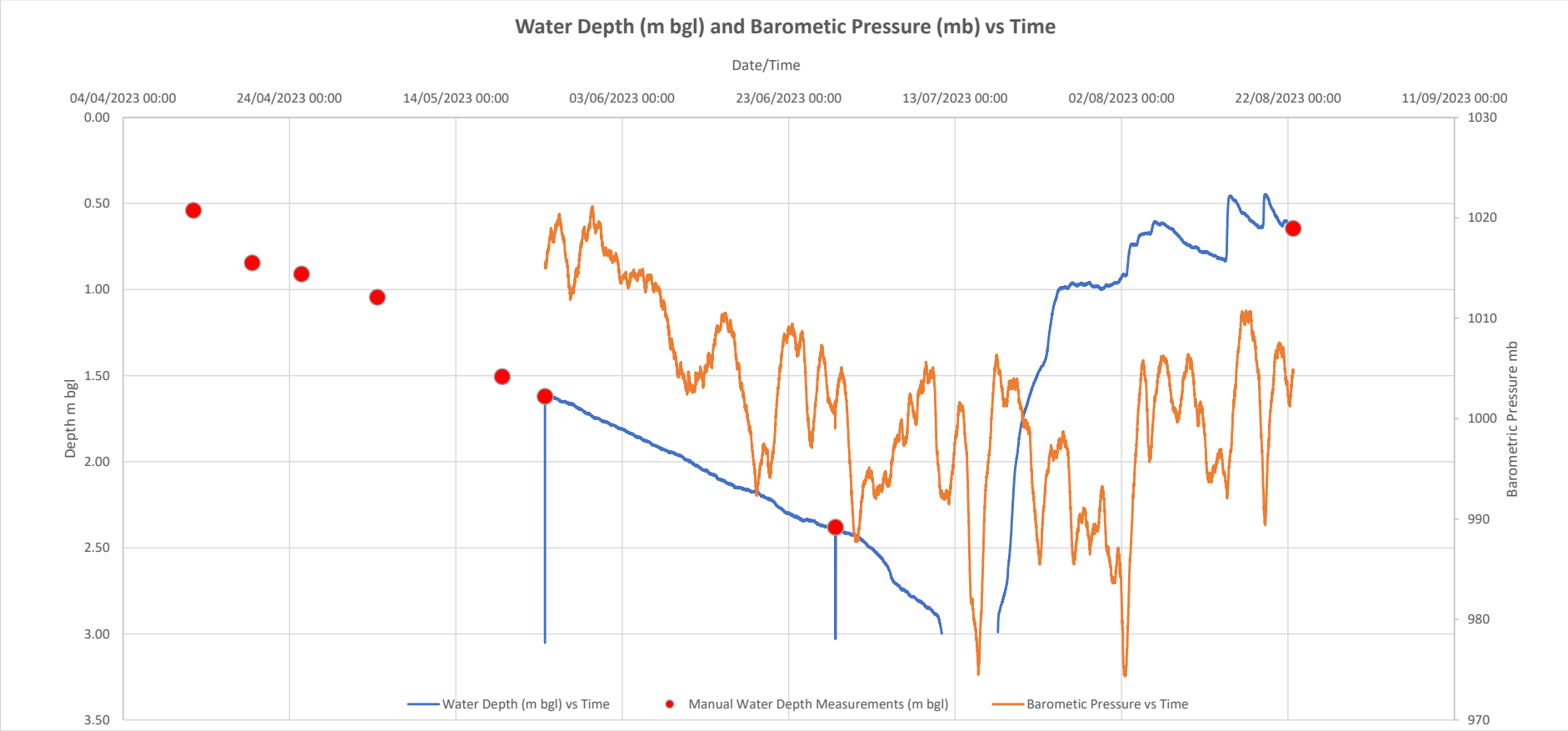
STRUCTURAL SOILS LTD The Old School Stillhouse Lane, Bedminster BRISTOL, BS3 4EB	Diver Installed By		Data Processed By:		Checked by (the Responsible Expert)		Date	Contract Ref:	765633
	Ben Kitchiner	22.05.2023	Gillean Brook	30.08.2023	Adam Lumber	Adam Lumber	30.08.2023		
	Contract:		A66 NTP Scheme 3A		Client	National Highways		Page	1 of 1

'DIVER' WATER LEVEL DATA LOGGER MEASUREMENTS

Plots of Water Depth (m below ground level) and Barometric Pressure vs Time

Borehole No.: BH-PTS129 **Pipe No.:** 1 **Pipe Response Zone (m bgl):** 1.50 to 3.50 **Diver Installed Depth (m bgl):** 3.00 **Diver Serial No:** 1004555

Ground Level (m AOD): 122.04 National Grid Coordinates: E: 355989.2 N: 528987.5 **Monitoring Period. Start:** 24/05/2023 16:49 **End:** 22/08/2023 15:34



Notes	
	1. Downwards spike in water level represents where data logger has been removed from hole for manual water level measurements.
	2. Measured water pressures are negative between 11.07.2023 and 18.07.2023 indicating that water level fell below pressure sensor. No water level plotted for this period.
	3
	4

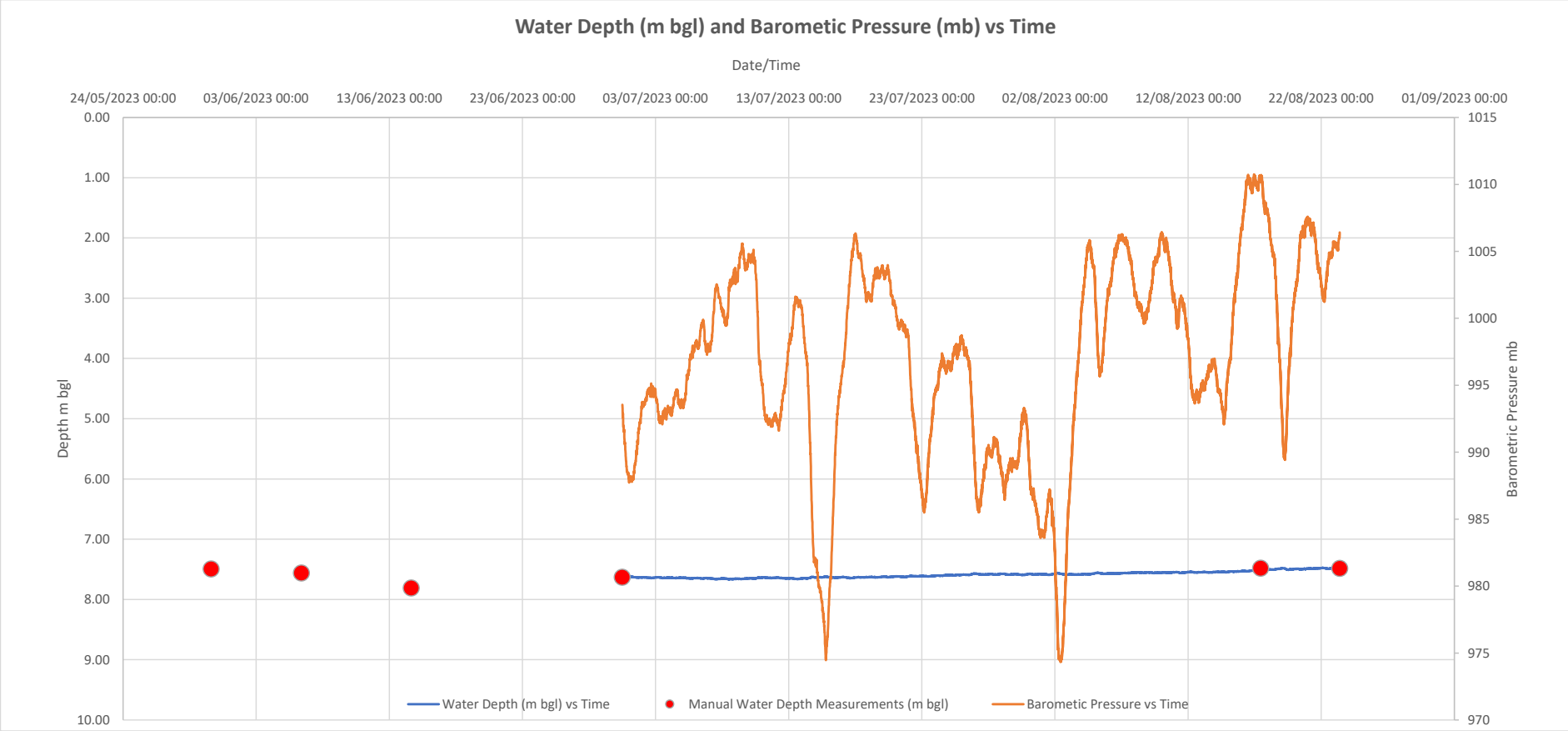
STRUCTURAL SOILS LTD **The Old School** **Stillhouse Lane,** **Bedminster** **BRISTOL, BS3 4EB**	Diver Installed By		Data Processed By:		Checked by (the Responsible Expert)		Date	**Contract Ref:** 765633
	Ben Kitchiner	22.05.2023	Gillean Brook	30.08.2023	Adam Lumber	Adam Lumber	30.08.2023	
	Contract:		**A66 NTP Scheme 3A**		**Client**	**National Highways**		**Page** 1 of 1

'DIVER' WATER LEVEL DATA LOGGER MEASUREMENTS

Plots of Water Depth (m below ground level) and Barometric Pressure vs Time

Borehole No.: GS-PTS105 **Pipe No.:** 1 **Pipe Response Zone (m bgl):** 1.00 to 10.00 **Diver Installed Depth (m bgl):** 8.50 **Diver Serial No:** 1004097

Ground Level (m AOD): 116.08 National Grid Coordinates: E: 354485.8 N: 529002.3 **Monitoring Period. Start:** 30/06/2023 12:10 **End:** 23/08/2023 09:25



Notes	
	1. Downwards spike in water level represents where data logger has been removed from hole for manual water level measurements.
	2
	3
	4

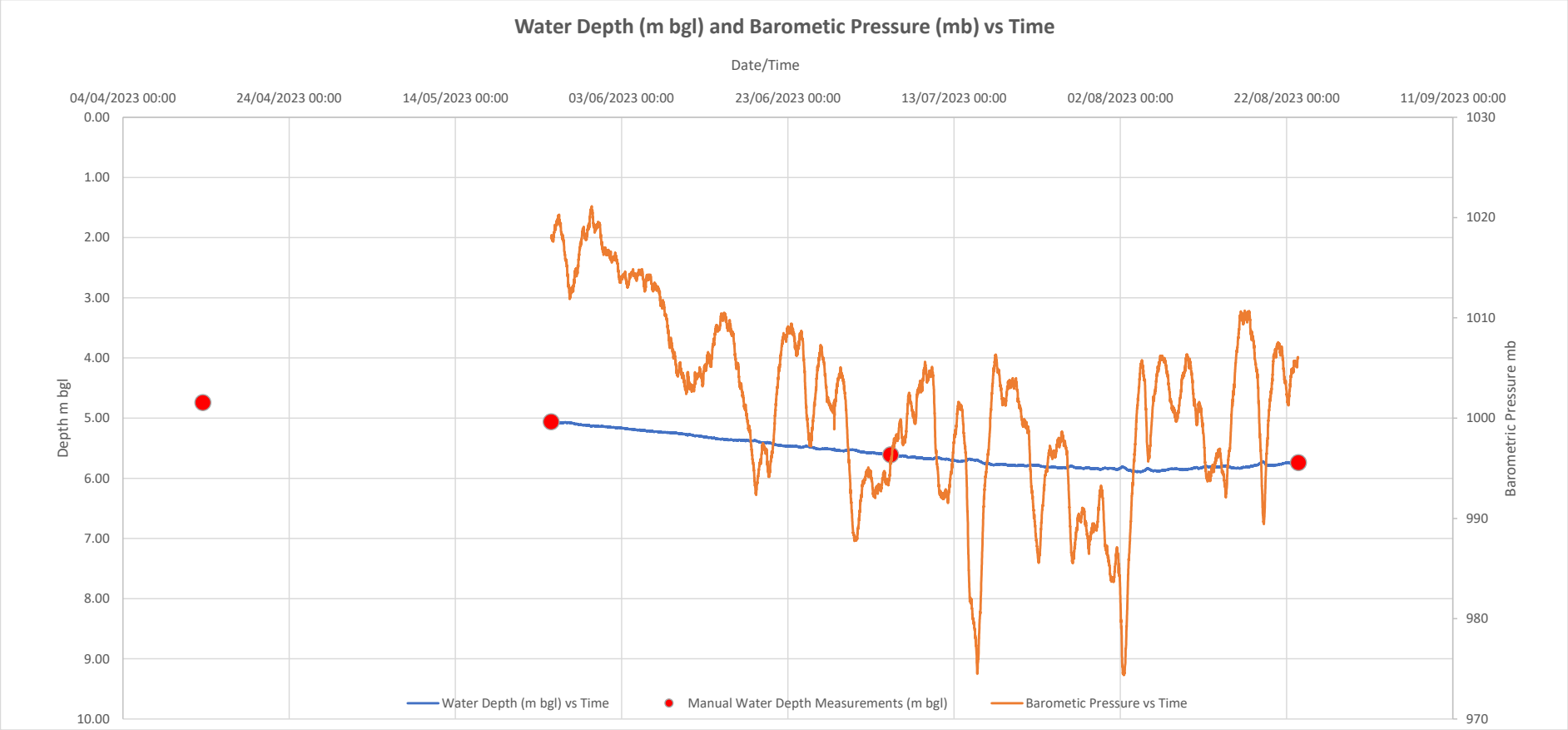
STRUCTURAL SOILS LTD **The Old School** **Stillhouse Lane,** **Bedminster** **BRISTOL, BS3 4EB**	Diver Installed By		Data Processed By:		Checked by (the Responsible Expert)		Date	**Contract Ref:** 765633
	Ben Kitchiner	30.65.2023	Gillean Brook	30.08.2023	Adam Lumber		30.08.2023	
	Contract:		**A66 NTP Scheme 3A**		**Client**	**National Highways**		**Page** 1 of 1

'DIVER' WATER LEVEL DATA LOGGER MEASUREMENTS

Plots of Water Depth (m below ground level) and Barometric Pressure vs Time

Borehole No.: GS-PTS109 **Pipe No.:** 1 **Pipe Response Zone (m bgl):** 4.50 to 9.00 **Diver Installed Depth (m bgl):** 8.00 **Diver Serial No:** 897831

Ground Level (m AOD): 119.02 National Grid Coordinates: E: 355935.9 N: 528885.9 **Monitoring Period. Start:** 25/05/2023 12:37 **End:** 23/08/2023 08:52



Notes	
	1. Downwards spike in water level represents where data logger has been removed from hole for manual water level measurements.
	2
	3
	4

STRUCTURAL SOILS LTD The Old School Stillhouse Lane, Bedminster BRISTOL, BS3 4EB	Diver Installed By		Data Processed By:		Checked by (the Responsible Expert)		Date	Contract Ref:	765633
	Ben Kitchiner	25.05.2023	Gillean Brook	30.08.2023	Adam Lumber		30.08.2023		
	Contract:		A66 NTP Scheme 3A		Client	National Highways		Page	1 of 1

APPENDIX G - GEOTECHNICAL LABORATORY TEST RESULTS

(G01) Laboratory Test Verification Sheet

(G02) Laboratory Test Results

TESTING VERIFICATION CERTIFICATE

1774

The test results included in this report are certified as:-

ISSUE STATUS: **FINAL**

In accordance with the Structural Soils Ltd Laboratory Quality Management System, results sheets and summaries of results issued by the laboratory are checked by an approved signatory. The integrity of the test data and results are ensured by control of the computer system employed by the laboratory as part of the Software Verification Program as detailed in the Laboratory Quality Manual.

This testing verification certificate covers all testing compiled on or before the following datetime: **31/08/2023 11:35:45**.

Testing reported after this date is not covered by this Verification Certificate.

Dimitris Xirouchakis

Approved Signatory
Dimitris Xirouchakis (Director of Laboratories)

(Head Office)
Bristol Laboratory
Unit 1A, Princess Street
Bedminster
Bristol
BS3 4AG

Castleford Laboratory
The Potteries, Pottery Street
Castleford
West Yorkshire
WF10 1NJ

Hemel Laboratory
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Tonbridge Laboratory
Anerley Court, Half Moon Lane
Hildenborough
Tonbridge
TN11 9HU

STRUCTURAL SOILS LTD	Contract: **A66 NTP Scheme S03A**	Job No: **765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - LAB VERIFICATION REPORT - V02 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 31/08/23 - 11:40 | DX1 |

SUMMARY OF WATER CONTENT TESTS

In accordance with BS EN ISO 17892-1 : 2014

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content (%)	Drying Temperature (degC)	Description	Lab location
BH-PTS100	6	D	0.70	18.0	105	Brown gravelly SILT	B
BH-PTS100	13	D	1.80	18.5	105	Brown sandy GRAVEL	B
BH-PTS100	17	D	2.80	8.6	105	Orangish brown mottled grey sandy GRAVEL	B
BH-PTS119	2	D	0.30	11.5	105	Brown slightly gravelly clayey SAND	B
BH-PTS119	16	D	3.60	18.3	105	Brown gravelly SAND	B
BH-PTS120	3	D	0.50	10.3	105	Brown gravelly SILT	B
BH-PTS120A	3	D	2.40	15.5	105	Brown sandy GRAVEL	B
BH-PTS120A	8	D	3.80	16.4	105	Brown sandy GRAVEL	B
BH-PTS121A	3	D	2.80	7.0	105	Brown sandy GRAVEL	B
BH-PTS121A	12	DSPT	5.00	14.3	105	Reddish brown SAND	B
BH-PTS121A	16	DSPT	6.00	15.7	105	Red SAND	B
BH-PTS122	27	D	5.80	23.1	105	Brown sandy SILT	B
BH-PTS122	33	DSPT	7.00	12.8	105	Reddish brown silty SAND	B
BH-PTS127	3	D	0.50	17.9	105	Brown SAND	B
BH-PTS128A	4	D	1.80	15.6	105	Brown slightly gravelly SAND	B
BH-PTS128A	6	DSPT	2.00	15.6	105	Red slightly gravelly silty CLAY	B
HDP-006	202	D	0.50	7.8	105	Orangish brown slightly silty gravelly SAND	B
HDP-006	5	D	1.00	10.4	105	Brown slightly sandy slightly gravelly SILT	B

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date	Contract Ref:
Francesca Bennett	FRANCESCA BENNETT	17.08.23	765633
Contract: A66 NTP Scheme S03A			

SUMMARY OF WATER CONTENT TESTS

In accordance with BS EN ISO 17892-1 : 2014

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content (%)	Drying Temperature (degC)	Description	Lab location
TP-PTS207	5	D	0.50	7.2	105	Brown gravelly SILT	B
TP-PTS208	5	D	0.50	8.9	105	Brown gravelly SAND	B
TP-PTS208	7	D	1.50	16.1	105	Brown very gravelly SAND	B
TP-PTS214	8	D	1.50	19.5	105	Brown SAND	B
TP-PTS217	11	D	2.50	5.1	105	Brown gravelly SAND	B
TP-PTS220	4	D	1.20	9.9	105	Reddish brown gravelly SAND with occasional clay pockets	B
TP-PTS220	6	D	2.20	13.3	105	Reddish brownslightly gravelly SAND	B
TP-PTS221	3	D	0.20	16.6	105	Reddish brown SILT	B
TP-PTS228	3	D	0.20	25.2	105	brown sandy CLAY with rootlets	B
TP-PTS228	6	D	1.00	8.5	105	Brown gravelly sandy SILT	B
TP-PTS228	9	D	2.10	11.6	105	Brown SAND	B
TP-PTS229	9	D	3.20	7.3	105	Reddish brown slightly gravelly SAND	B
TP-PTS236	3	D	0.30	18.3	105	Reddish brown clayey SAND	B
TP-PTS236	9	D	1.00	11.5	105	Brown gravelly SILT	B
WS-PTS130	301	DSPT	1.20	9.7	105	Red silty SAND	B
WS-PTS130	302	DSPT	2.00	8.5	105	Brown gravelly CLAY	B

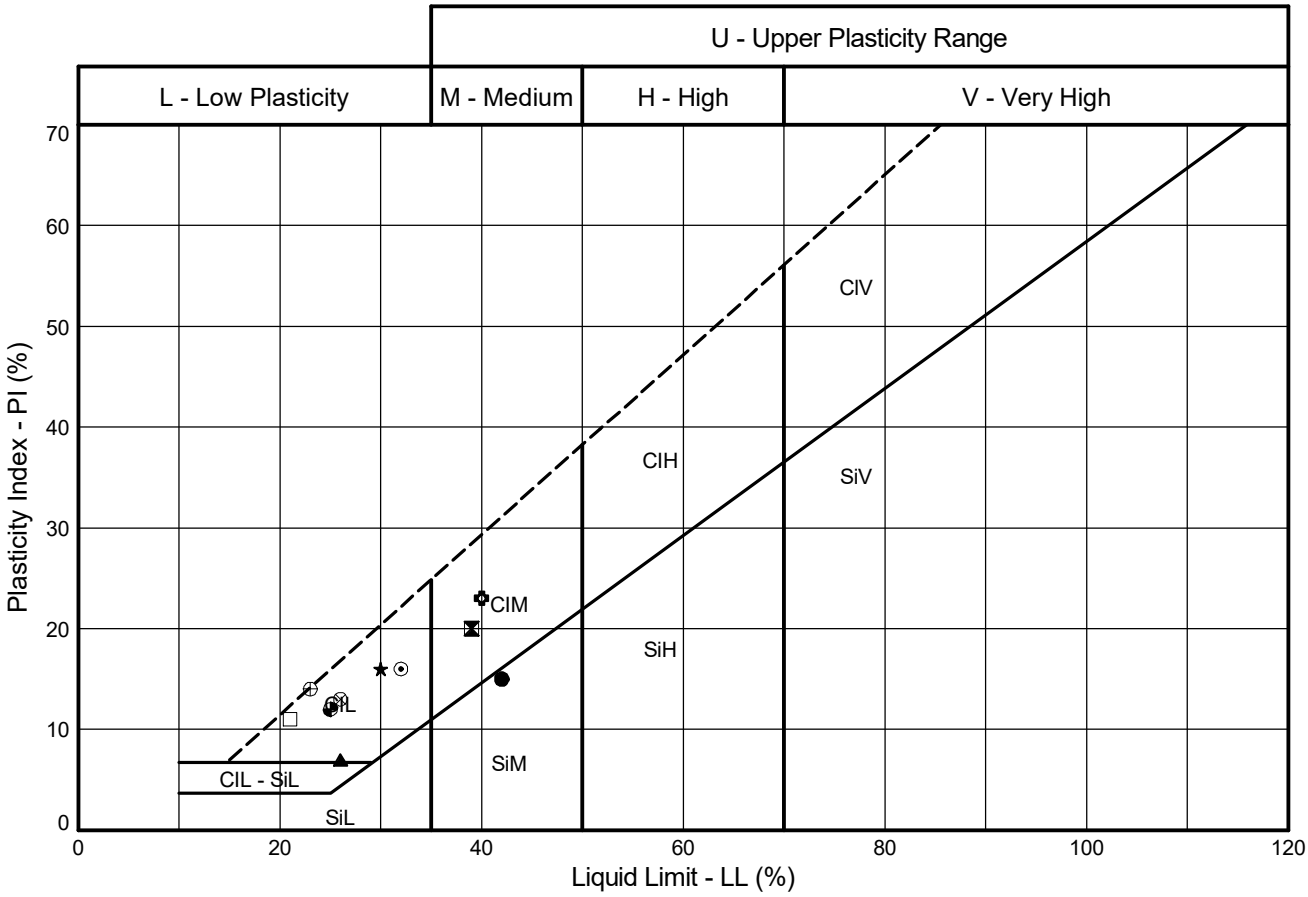
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date	Contract Ref:
Francesca Bennett	FRANCESCA BENNETT	17.08.23	765633
Contract: A66 NTP Scheme S03A			

PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A1:2021



Sample Identification				Test Method #	Preparation Method +	WC %	LL %	PL %	PI %	<425µm %	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)									
●	BH-PTS101	5D	0.50	5.3/5.5/6.5	5.2.1	18.4	42	27	15	56	B	I
⧗	BH-PTS101	13D	1.50	5.3/5.5/6.5	5.2.1	14.5	39	19	20	58	B	I
▲	BH-PTS101	24D	2.80	5.3/5.5/6.5	5.2.1	23.5	26	19	7	77	B	I
★	BH-PTS102A	4D	1.70	5.3/5.5/6.5	5.2.7	18.5	30	14	16	60	B	I
⊙	BH-PTS102A	8D	2.80	5.3/5.5/6.5	5.2.7	11.9	32	16	16	52	B	*I
✿	BH-PTS102A	11D	3.70	5.3/5.5/6.5	5.2.1	46.0	40	17	23	65	B	I
	BH-PTS104	3D	0.50	5.3/5.5/6.5	5.2.1	12.3	NP	NP	NP	69	B	
	BH-PTS106	3D	0.50	5.3/5.5/6.5	5.2.1	9.1	NP	NP	NP	81	B	
⊗	BH-PTS106	11DSPT	2.00	5.3/5.5/6.5	5.2.1	13.6	26	13	13	71	B	I
⊕	BH-PTS106	15DSPT	3.00	5.3/5.5/6.5	5.2.1	9.1	23	9.2	14	77	B	I
□	BH-PTS106	19DSPT	4.00	5.3/5.5/6.5	5.2.1	9.9	21	10	11	89	B	I
	BH-PTS106	AMAL	4.50	5.3/5.5/6.5	5.2.1	18.5	NP	NP	NP	69	B	
◕	BH-PTS107B	7DSPT	1.20	5.3/5.5/6.5	5.2.1	7.2	25	13	12	97	B	I

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method; 5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index

Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014

+ Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS LTD

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**31/08/23**

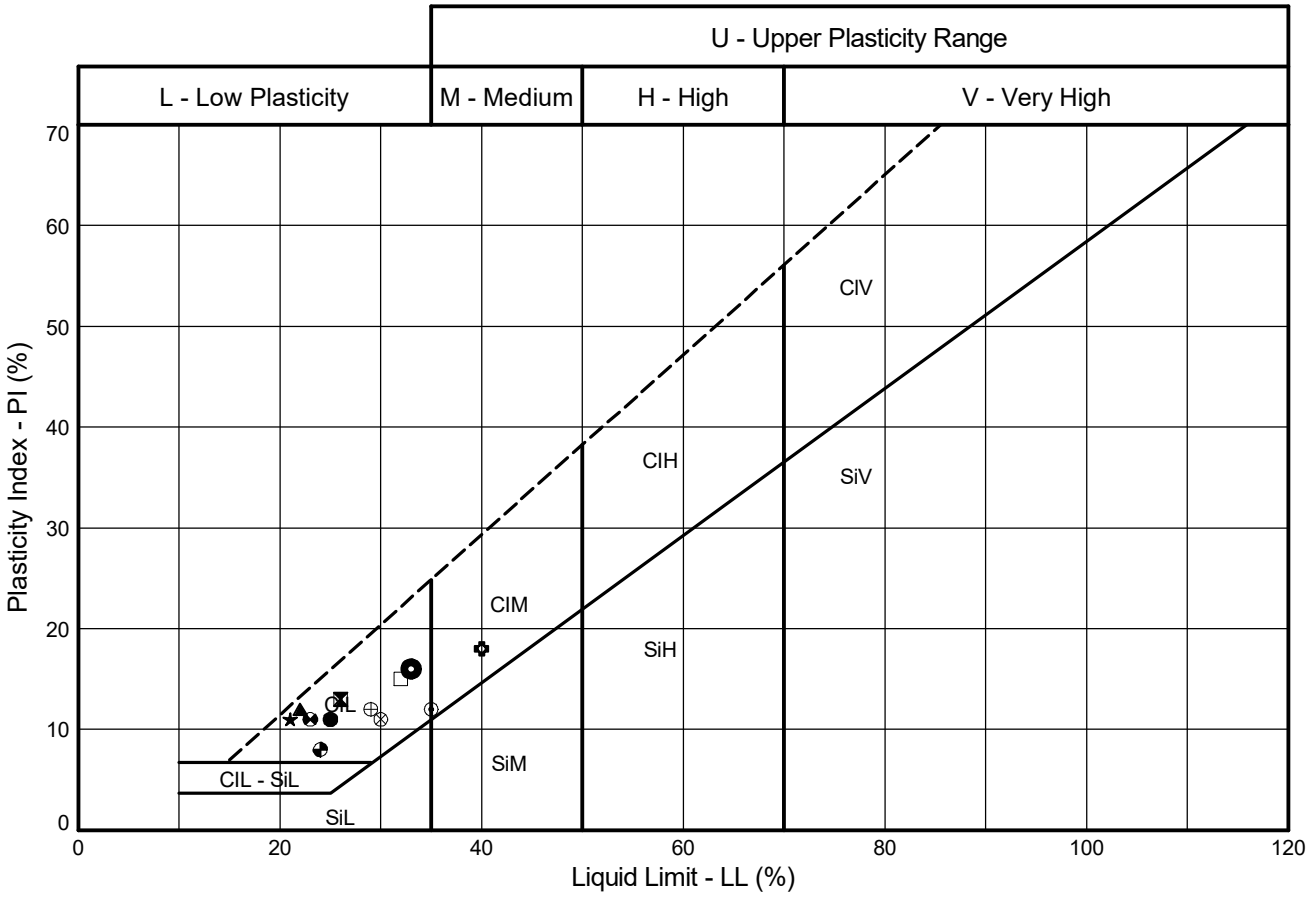
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - ALINE STANDARD - 17892 - A4P - W | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 31/08/23 - 11:40 | FB1 |

PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A1:2021



Sample Identification				Test Method #	Preparation Method +	WC %	LL %	PL %	PI %	<425µm %	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)									
●	BH-PTS107B	11DSPT	2.00	5.3/5.5/6.5	5.2.1	6.7	25	14	11	75	B	I
⧗	BH-PTS107B	15DSPT	3.00	5.3/5.5/6.5	5.2.1	7.9	26	13	13	60	B	I
▲	BH-PTS108	18DSPT	4.00	5.3/5.5/6.5	5.2.1	17.3	22	10	12	62	B	I
★	BH-PTS108	26DSPT	6.00	5.3/5.5/6.5	5.2.1	7.7	21	10	11	61	B	I
⊙	BH-PTS108	34DSPT	8.00	5.3/5.5/6.5	5.2.7	24.0	35	23	12	94	C	I
✿	BH-PTS108	38D	9.50	5.3/5.5/6.5	5.2.1	23.4	40	22	18	98	B	I
◉	BH-PTS108	40DSPT	10.00	5.3/5.5/6.5	5.2.1	14.3	33	17	16	94	B	I
	BH-PTS111	5D	1.00	5.3/5.5/6.5	5.2.1	7.1	NP	NP	NP	87	B	
⊗	BH-PTS112	6D	1.00	5.3/5.5/6.5	5.2.7	14.3	30	19	11	23	C	I
⊕	BH-PTS112	10D	1.80	5.3/5.5/6.5	5.2.7	10.6	29	17	12	36	C	I
□	BH-PTS112	15DSPT	3.00	5.3.14/5.5/6.5	5.2.7	13.6	32	17	15	21	C	
⊗	BH-PTS113	301DSPT	2.00	5.3/5.5/6.5	5.2.7	7.6	23	12	11	47	B	*I
◕	BH-PTS113	302DSPT	3.00	5.3/5.5/6.5	5.2.7	10.4	24	16	8	37	B	*I

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method; 5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index

Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014

+ Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

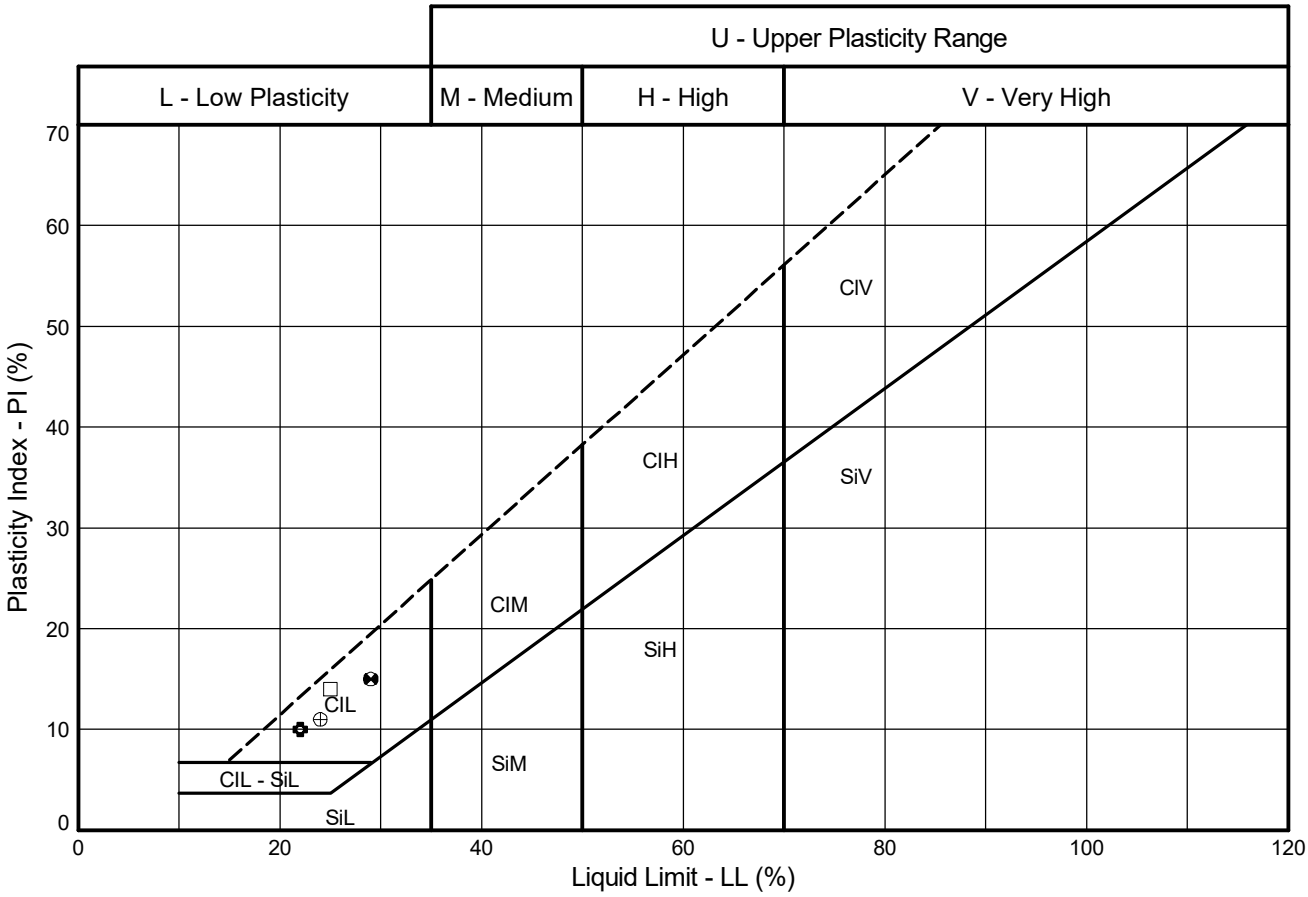
STRUCTURAL SOILS LTD

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**31/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - ALINE STANDARD - 17892 - A4P - W | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 31/08/23 - 11:41 | FB1 |

PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A1:2021



Sample Identification				Test Method #	Preparation Method +	WC %	LL %	PL %	PI %	<425µm %	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)									
	BH-PTS113	303DSPT	4.00	5.3/5.5/6.5	5.2.1	25.0	NP	NP	NP	85	B	
	BH-PTS114	7DSPT	1.20	5.3/5.5/6.5	5.2.1	12.2	NP	NP	NP	50	B	
	BH-PTS114	11DSPT	2.00	5.3/5.5/6.5	5.2.1	16.6	NP	NP	NP	85	B	
	BH-PTS115	202D	0.30	5.3/5.5/6.5	5.2.1	11.1	NP	NP	NP	12	B	
	BH-PTS116	8D	1.20	5.3/5.5/6.5	5.2.7	12.5	NP	NP	NP	53	B	
✿	BH-PTS116	13DSPT	2.00	5.3/5.5/6.5	5.2.1	9.7	22	12	10	52	B	I
	BH-PTS117	3D	0.30	5.3/5.5/6.5	5.2.1	11.0	NP	NP	NP	69	B	
	BH-PTS117	5D	0.60	5.3/5.5/6.5	5.2.1	7.0	NP	NP	NP	59	B	
	BH-PTS118A	5D	1.00	5.3/5.5/6.5	5.2.1	4.4	NP	NP	NP	33	B	
⊕	BH-PTS122	6D	0.70	5.3/5.5/6.5	5.2.1	12.3	24	13	11	92	B	I
□	BH-PTS122	17D	3.50	5.3/5.5/6.5	5.2.1	21.3	25	11	14	70	B	I
⊗	BH-PTS123	7DSPT	1.20	5.3/5.5/6.5	5.2.7	11.0	29	14	15	42	B	I
	BH-PTS123	25DSPT	6.00	5.3/5.5/6.5	5.2.1	5.4	NP	NP	NP	79	B	

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method; 5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index

Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014

+ Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS LTD

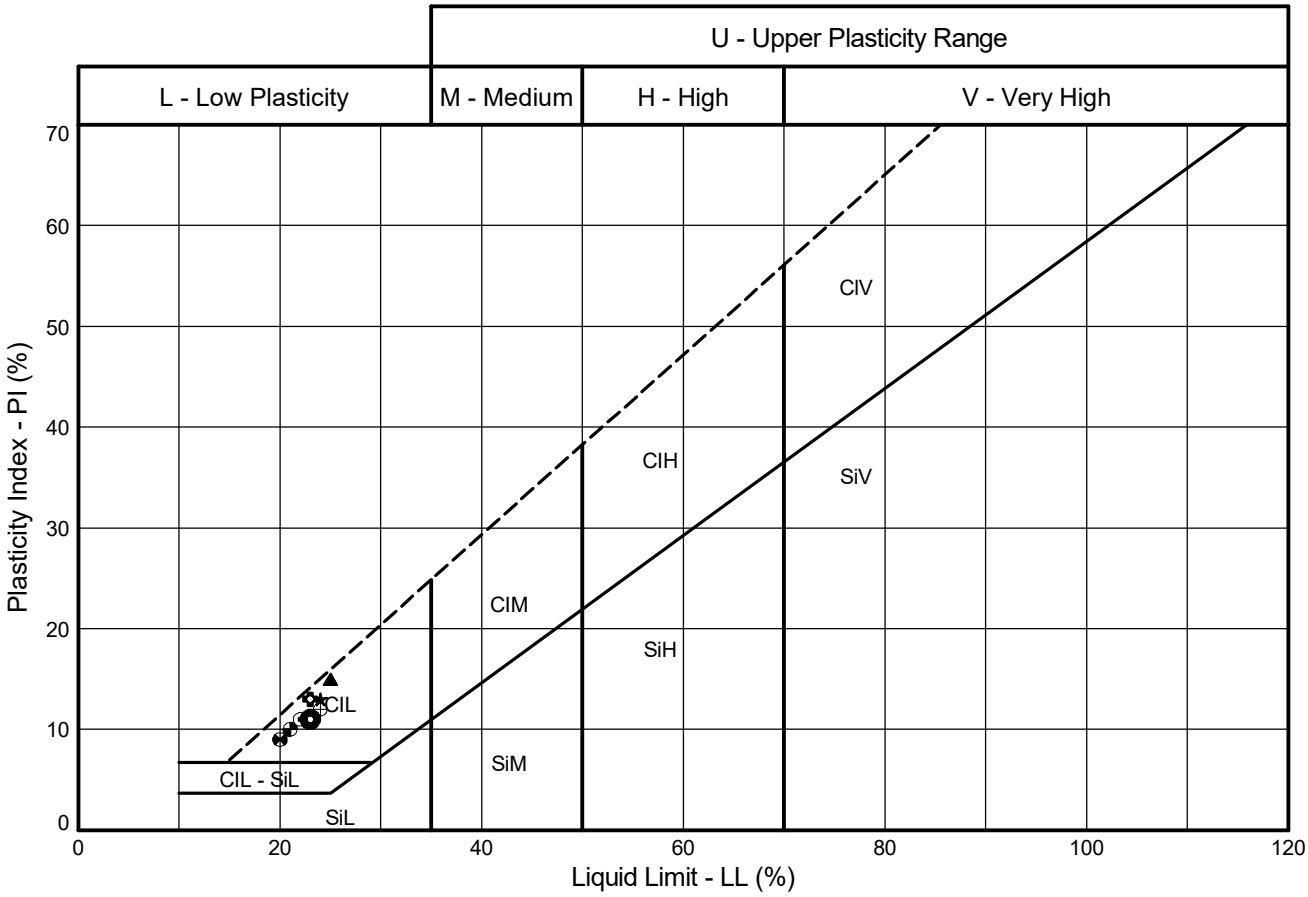
Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**31/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - ALINE STANDARD - 17892 - A4P - W | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 31/08/23 - 11:41 | FB1 |

PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A1:2021



Sample Identification				Test Method #	Preparation Method +	WC %	LL %	PL %	PI %	<425µm %	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)									
	BH-PTS124	3D	0.50	5.3/5.5/6.5	5.2.1	11.0	NP	NP	NP	88	B	
	BH-PTS124	11DSPT	2.00	5.3/5.5/6.5	5.2.1	10.3	NP	NP	NP	87	B	
▲	BH-PTS124	32DSPT	7.00	5.3/5.5/6.5	5.2.1	8.2	25	9.7	15	78	B	I
★	BH-PTS124	44DSPT	10.00	5.3/5.5/6.5	5.2.1	7.3	24	11	13	75	B	I
⊙	BH-PTS126	8DSPT	1.20	5.3/5.5/6.5	5.2.1	7.7	22	11	11	83	B	I
✿	BH-PTS126	10D	1.80	5.3/5.5/6.5	5.2.1	8.6	23	10	13	89	B	I
●	BH-PTS127	AMAL	3.50	5.3/5.5/6.5	5.2.1	14.2	23	12	11	89	B	I
	BH-PTS128	4D	0.60	5.3/5.5/6.5	5.2.1	9.0	NP	NP	NP	97	B	
	BH-PTS128	9DSPT	1.20	5.3/5.5/6.5	5.2.1	11.6	NP	NP	NP	96	B	
⊕	BH-PTS128A	6DSPT	2.00	5.3/5.5/6.5	5.2.1	11.4	24	12	12	89	B	I
	BH-PTS128A	10DSPT	3.00	5.3/5.5/6.5	5.2.1	14.7	NP	NP	NP	100	B	
⊗	BH-PTS129	203D	1.00	5.3/5.5/6.5	5.2.1	16.8	20	11	9	94	B	I
◐	BH-PTS129	7DSPT	1.20	5.3/5.5/6.5	5.2.1	12.2	21	11	10	90	B	I

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method; 5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index

Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014

+ Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS LTD

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**31/08/23**

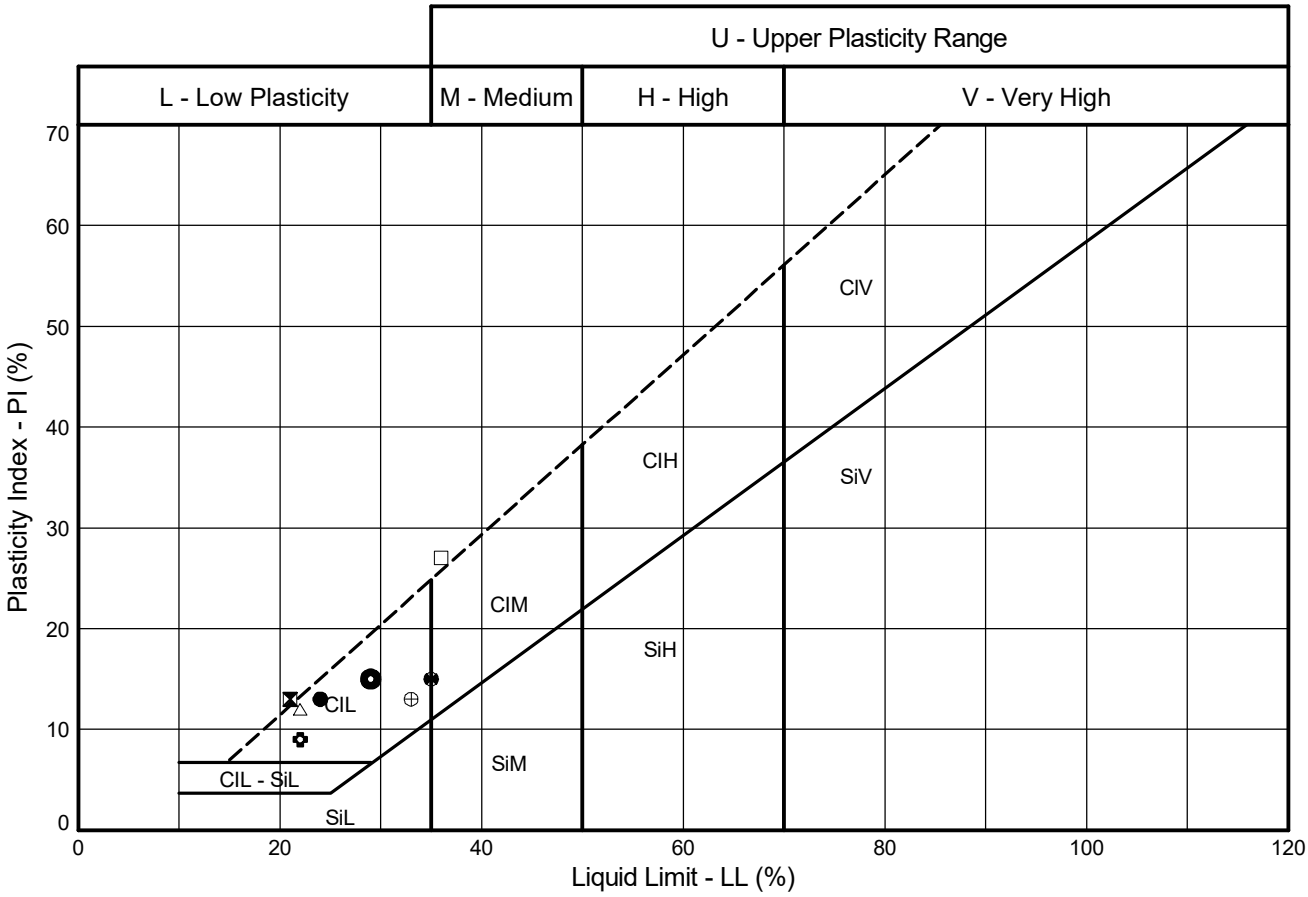
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - ALINE STANDARD - 17892 - A4P - W | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 31/08/23 - 11:41 | FB1 |

PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A1:2021



Sample Identification				Test Method #	Preparation Method +	WC %	LL %	PL %	PI %	<425µm %	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)									
●	BH-PTS129	11DSPT	2.00	5.3/5.5/6.5	5.2.1	10.3	24	11	13	88	B	I
⧗	BH-PTS129	15DSPT	3.00	5.3/5.5/6.5	5.2.1	9.3	21	8.4	13	85	B	I
	BH-PTS129	19DSPT	4.00	5.3/5.5/6.5	5.2.1	11.1	NP	NP	NP	76	B	
	GS-PTS102	3D	1.00	5.3/5.5/6.5	5.2.1	18.4	NP	NP	NP	80	B	
⊙	GS-PTS102	304DSPT	2.00	5.3/5.5/6.5	5.2.1	8.6	24	11	13	86	B	I
✿	GS-PTS102	11D	3.60	5.3/5.5/6.5	5.2.1	8.9	22	13	9	72	B	I
●	GS-PTS102	307DSPT	4.00	5.3/5.5/6.5	5.2.7	5.0	29	14	15	51	B	I
△	GS-PTS105	301DSPT	1.20	5.3/5.5/6.5	5.2.1	4.6	22	10	12	46	B	I
	GS-PTS105	303DSPT	2.00	5.3/5.5/6.5	5.2.7	6.7	NP	NP	NP	24	B	
⊕	GS-PTS105	14D	4.70	5.3/5.5/6.5	5.2.1	17.2	33	20	13	97	B	I
□	GS-PTS105	18D	5.50	5.3/5.5/6.5	5.2.1	22.5	36	8.6	27	83	B	I
⊗	GS-PTS105	21D	6.20	5.3/5.5/6.5	5.2.1	16.5	35	20	15	80	B	I
	GS-PTS107	5D	0.50	5.3/5.5/6.5	5.2.1	11.4	NP	NP	NP	92	B	

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method; 5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index

Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014

+ Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS LTD

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**31/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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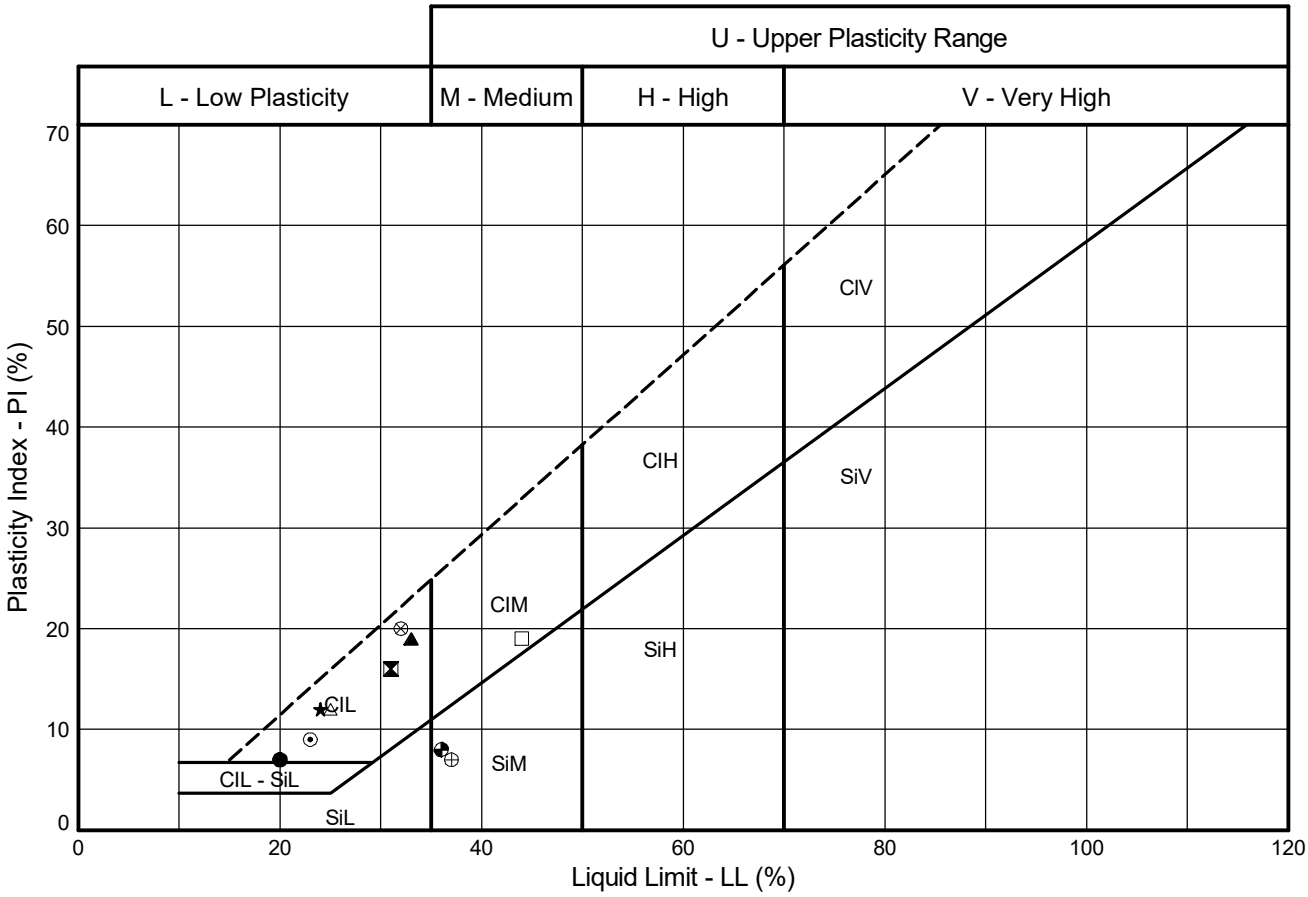
GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - ALINE STANDARD - 17892 - A4P - W | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 31/08/23 - 11:41 | FB1 |

PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A1:2021



Sample Identification				Test Method #	Preparation Method +	WC %	LL %	PL %	PI %	<425µm %	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)									
●	GS-PTS107	9D	1.70	5.3/5.5/6.5	5.2.1	11.6	20	13	7	93	B	I
⊠	GS-PTS108A	8DSPT	1.20	5.3/5.5/6.5	5.2.1	15.4	31	15	16	82	B	I
▲	GS-PTS108A	9DSPT	2.00	5.3/5.5/6.5	5.2.1	14.7	33	14	19	77	B	I
★	GS-PTS108A	10DSPT	3.00	5.3/5.5/6.5	5.2.1	12.8	24	12	12	75	B	I
⊙	GS-PTS108A	11DSPT	4.00	5.3/5.5/6.5	5.2.1	11.9	23	14	9	87	B	I
	GS-PTS108A	12DSPT	4.70	5.3/5.5/6.5	5.2.1	7.4	NP	NP	NP	93	B	
	GS-PTS109	3D	0.30	5.3/5.5/6.5	5.2.1	17.8	NP	NP	NP	96	B	
△	GS-PTS109	9D	1.70	5.3/5.5/6.5	5.2.1	11.6	25	13	12	80	B	I
⊗	GS-PTS109	11D	2.50	5.3/5.5/6.5	5.2.1	17.5	32	12	20	92	B	I
⊕	HDP-001	3D	0.50	5.3/5.5/6.5	5.2.7	11.4	37	30	7	32	C	I
□	HDP-002	3D	0.50	5.3/5.5/6.5	5.2.7	11.7	44	25	19	19	C	I
	HDP-003	6D	1.00	5.3/5.5/6.5	5.2.7	7.9	NP	NP	NP	18	C	
◕	HDP-004	5D	1.00	5.3.14/5.5/6.5	5.2.7	11.6	36	28	8	8	C	

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method; 5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index

Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014

+ Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS LTD

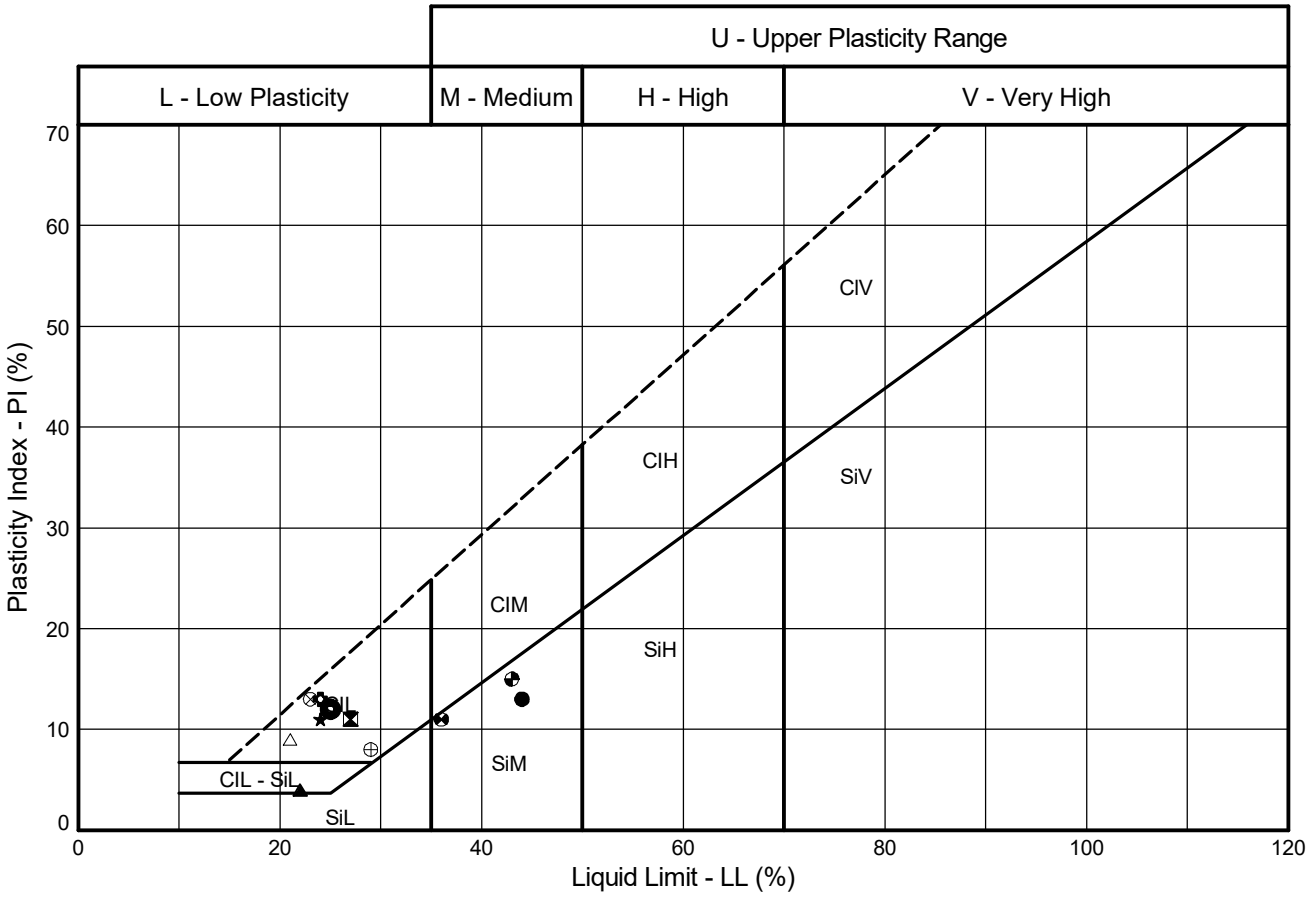
Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**31/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - ALINE STANDARD - 17892 - A4P - W | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 31/08/23 - 11:41 | FB1 |

PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A1:2021



Sample Identification				Test Method #	Preparation Method +	WC %	LL %	PL %	PI %	<425µm %	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)									
●	HDP-005	4D	0.50	5.3.14/5.5/6.5	5.2.7	9.9	44	31	13	14	C	
⊠	TP-PTS205	5D	0.50	5.3/5.5/6.5	5.2.7	11.6	27	16	11	39	C	I
▲	TP-PTS205	8D	1.50	5.3/5.5/6.5	5.2.7	12.6	22	18	4	41	C	I
★	TP-PTS205	11D	3.00	5.3/5.5/6.5	5.2.7	12.2	24	13	11	41	C	I
	TP-PTS206	5D	0.50	5.3/5.5/6.5	5.2.1	4.4	NP	NP	NP	94	B	
✿	TP-PTS206	11D	3.00	5.3/5.5/6.5	5.2.1	10.4	24	11	13	81	B	I
◉	TP-PTS209	8D	1.00	5.3/5.5/6.5	5.2.1	15.2	25	13	12	93	B	I
△	TP-PTS209	10D	2.00	5.3/5.5/6.5	5.2.1	12.8	21	12	9	89	B	I
⊗	TP-PTS209	12D	2.70	5.3/5.5/6.5	5.2.1	10.6	23	9.6	13	76	B	I
⊕	TP-PTS210	5D	0.50	5.3/5.5/6.5	5.2.7	6.8	29	21	8	49	B	I
	TP-PTS210	8D	1.50	5.3/5.5/6.5	5.2.1	12.3	NP	NP	NP	69	B	
⊗	TP-PTS211	5D	0.50	5.3/5.5/6.5	5.2.1	10.7	36	25	11	49	B	I
◕	TP-PTS213	5D	0.50	5.3/5.5/6.5	5.2.7	14.0	43	28	15	28	B	I

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method; 5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index

Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014

+ Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS LTD

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**31/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - ALINE STANDARD - 17892 - A4P - W | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 31/08/23 - 11:41 | FB1 |

PI vs LL CHART

According to BS EN 14688-2:2018
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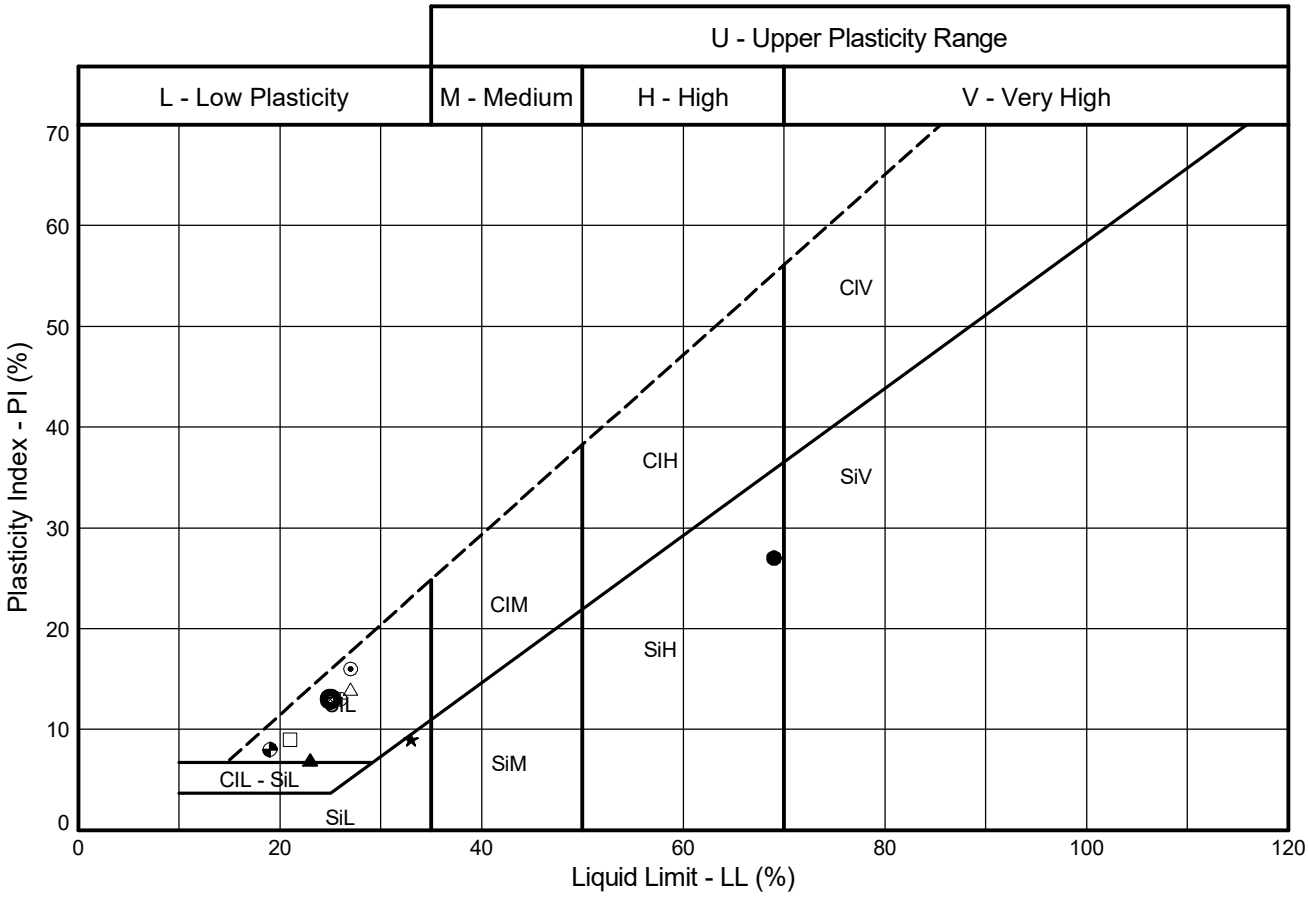

Sample Identification				Test Method #	Preparation Method +	WC %	LL %	PL %	PI %	<425µm %	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)									
●	TP-PTS214	5D	0.50	5.3/5.5/6.5	5.2.1	55.8	69	42	27	100	B	I
	TP-PTS214	6B	1.50	5.3/5.5/6.5	5.2.1	16.5	NP	NP	NP	97	B	
▲	TP-PTS215	7D	1.50	5.3/5.5/6.5	5.2.1	13.2	23	16	7	75	B	I
★	TP-PTS217	5D	0.50	5.3/5.5/6.5	5.2.7	6.3	33	24	9	31	B	I
⊙	TP-PTS225	7D	1.50	5.3/5.5/6.5	5.2.1	12.7	27	11	16	82	B	I
	TP-PTS225	12LB	2.20	5.3/5.5/6.5	5.2.1	12.5	NP	NP	NP	66	B	
◘	TP-PTS225	13D	3.30	5.3/5.5/6.5	5.2.1	17.4	25	12	13	86	B	I
△	TP-PTS226	6D	1.20	5.3/5.5/6.5	5.2.1	19.0	27	13	14	96	B	I
⊗	TP-PTS226	8D	2.20	5.3/5.5/6.5	5.2.1	13.8	25	12	13	89	B	I
⊕	TP-PTS229	4D	1.20	5.3/5.5/6.5	5.2.1	13.6	26	13	13	88	B	I
□	TP-PTS229	7D	2.20	5.3/5.5/6.5	5.2.1	12.8	21	12	9	98	B	I
	TP-PTS230	5D	0.50	5.3/5.5/6.5	5.2.1	13.5	NP	NP	NP	100	B	
◕	TP-PTS230	8D	1.50	5.3/5.5/6.5	5.2.1	13.9	19	11	8	81	B	I

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method; 5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index

Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014

+ Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS LTD

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**31/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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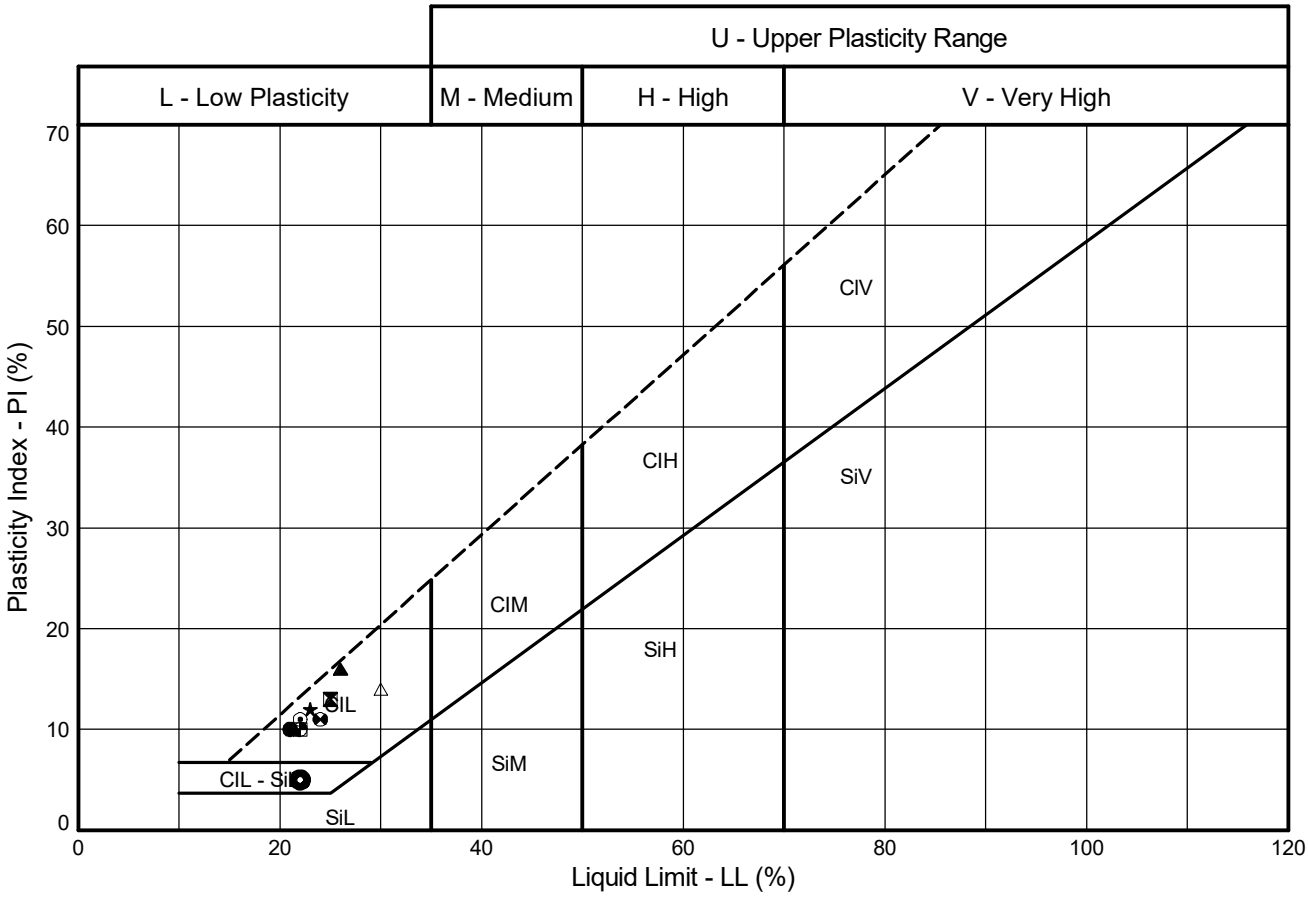
PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A1:2021



Sample Identification				Test Method #	Preparation Method +	WC %	LL %	PL %	PI %	<425µm %	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)									
●	TP-PTS231	2D	1.20	5.3/5.5/6.5	5.2.1	13.1	21	11	10	94	B	I
⧗	TP-PTS231	8D	2.20	5.3/5.5/6.5	5.2.1	13.0	25	12	13	71	B	I
▲	TP-PTS231	11D	3.20	5.3/5.5/6.5	5.2.1	12.3	26	9.8	16	70	B	I
★	TP-PTS232	5D	0.50	5.3/5.5/6.5	5.2.1	11.7	23	11	12	81	B	I
⊙	TP-PTS232	7D	1.50	5.3/5.5/6.5	5.2.1	12.8	22	11	11	79	B	I
	TP-PTS233-LC	11D	3.50	5.3/5.5/6.5	5.2.1	13.4	NP	NP	NP	98	B	
◉	TP-PTS234	6D	1.00	5.3/5.5/6.5	5.2.1	11.3	22	17	5	41	B	I
△	TP-PTS234	8D	2.20	5.3/5.5/6.5	5.2.7	11.2	30	16	14	53	B	I
	TP-PTS235	3D	0.30	5.3/5.5/6.5	5.2.1	18.8	NP	NP	NP	87	B	
	TP-PTS235	8D	1.30	5.3/5.5/6.5	5.2.1	13.0	NP	NP	NP	93	B	
□	TP-PTS236	12D	2.00	5.3/5.5/6.5	5.2.1	11.8	22	12	10	89	B	I
⊗	TP-PTS236	14D	3.00	5.3/5.5/6.5	5.2.1	11.2	24	13	11	89	B	I
◕	WS-PTS101	5D	1.00	5.3/5.5/6.5	5.2.1	9.0	22	12	10	69	B	I

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method; 5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index

Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014

+ Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS LTD

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**31/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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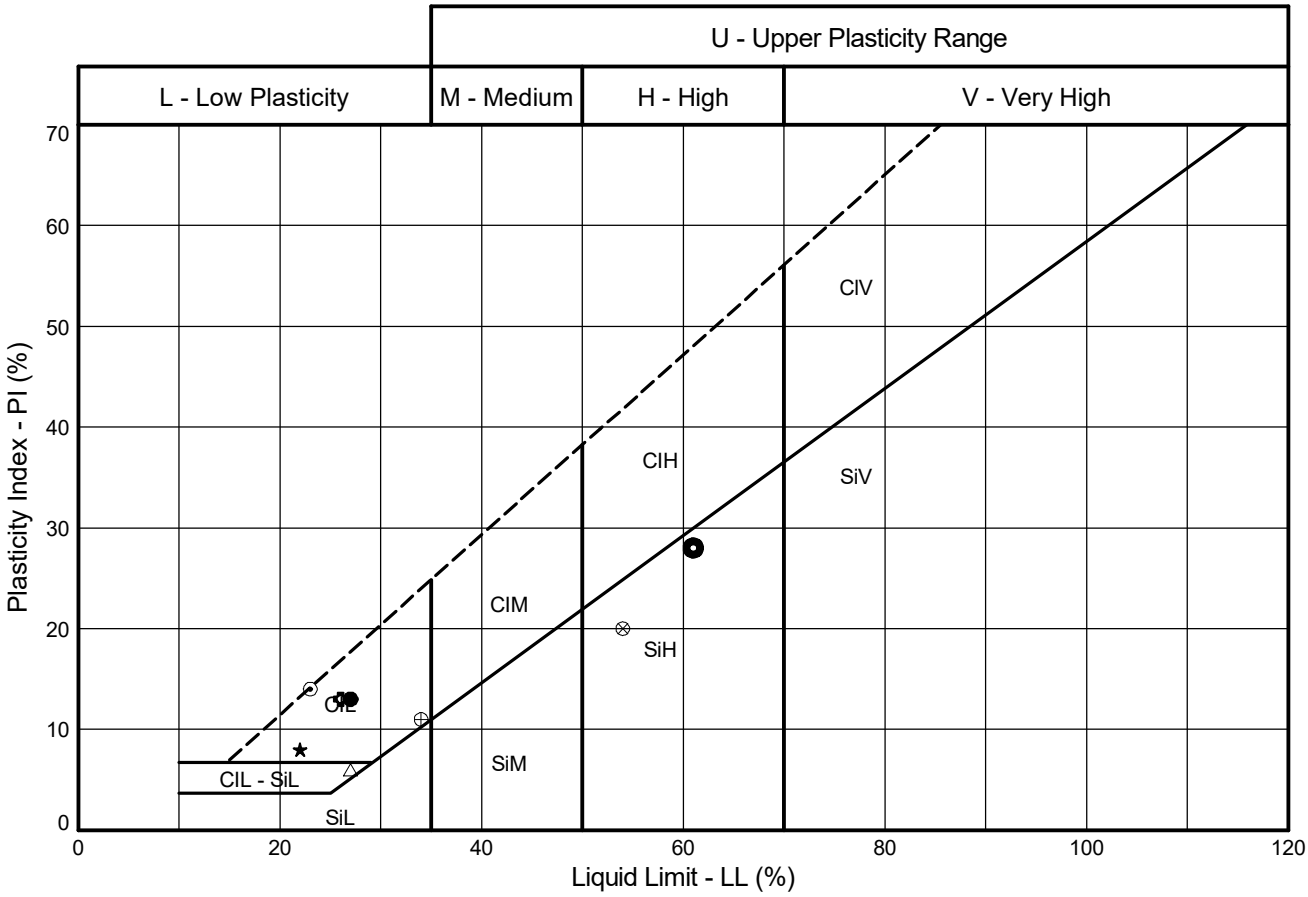
PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A1:2021



Sample Identification				Test Method #	Preparation Method +	WC %	LL %	PL %	PI %	<425µm %	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)									
●	WS-PTS101	301DSPT	1.20	5.3/5.5/6.5	5.2.7	10.6	27	14	13	56	B	I
	WS-PTS101	303DSPT	3.00	5.3/5.5/6.5	5.2.1	8.4	NP	NP	NP	95	B	
	WS-PTS105	4D	0.50	5.3/5.5/6.5	5.2.1	6.2	NP	NP	NP	63	B	
★	WS-PTS105	AMAL	1.20	5.3/5.5/6.5	5.2.1	8.7	22	14	8	73	B	I
⊙	WS-PTS105	302DSPT	2.00	5.3/5.5/6.5	5.2.1	9.2	23	9.4	14	62	B	I
✿	WS-PTS105	304DSPT	4.00	5.3/5.5/6.5	5.2.1	5.3	26	13	13	40	B	I
●	WS-PTS107	3D	0.50	5.3/5.5/6.5	5.2.7	13.9	61	33	28	28	B	I
△	WS-PTS107	5D	1.00	5.3/5.5/6.5	5.2.1	15.7	27	21	6	54	B	I
⊗	WS-PTS107A	3D	0.50	5.3/5.5/6.5	5.2.7	47.1	54	34	20	13	B	I
⊕	WS-PTS107A	5D	1.00	5.3/5.5/6.5	5.2.7	14.5	34	23	11	48	B	I
	WS-PTS107A	7D	1.80	5.3/5.5/6.5	5.2.1	13.2	NP	NP	NP	64	B	
	WS-PTS108	3D	0.50	5.3/5.5/6.5	5.2.1	12.2	NP	NP	NP	80	B	
	WS-PTS108	7D	1.20	5.3/5.5/6.5	5.2.1	8.7	NP	NP	NP	59	B	

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method; 5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index

Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014

+ Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS LTD

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**31/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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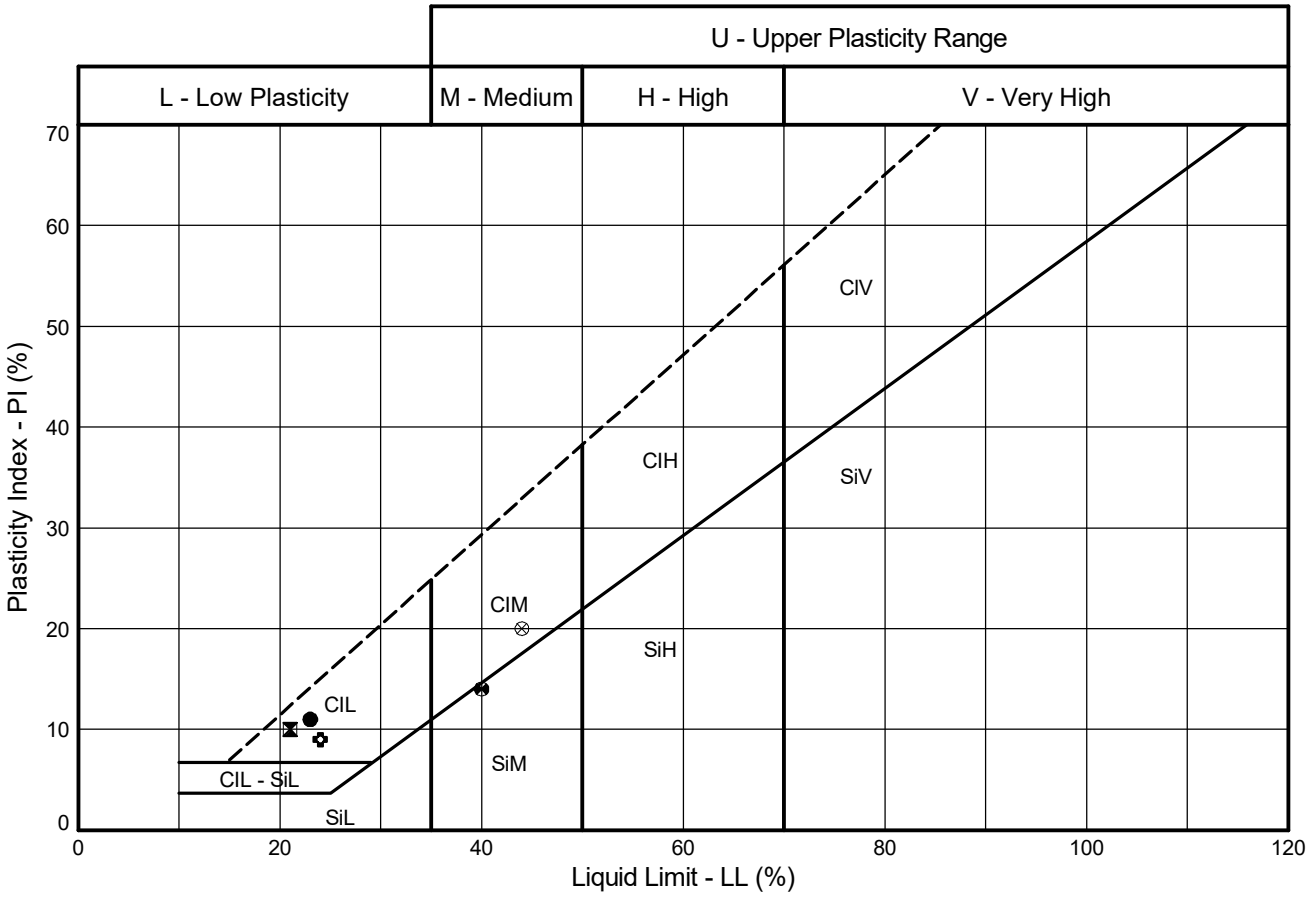
PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A1:2021



Sample Identification				Test Method #	Preparation Method +	WC %	LL %	PL %	PI %	<425µm %	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)									
●	WS-PTS110	3D	0.50	5.3/5.5/6.5	5.2.1	11.4	23	12	11	52	B	*I
⧗	WS-PTS110	301DSPT	1.20	5.3/5.5/6.5	5.2.1	10.0	21	11	10	71	B	I
	WS-PTS110	302DSPT	2.00	5.3/5.5/6.5	5.2.7	5.1	NP	NP	NP	51	B	I
	WS-PTS113	4D	1.00	5.3/5.5/6.5	5.2.1	7.4	NP	NP	NP	86	B	I
	WS-PTS114	8DSPT	1.20	5.3/5.5/6.5	5.2.7	11.1	NP	NP	NP	30	B	*
✿	WS-PTS116	3D	0.50	5.3/5.5/6.5	5.2.1	13.7	24	15	9	72	B	I
	WS-PTS117	2B	0.50	5.3/5.5/6.5	5.2.1	15.6	NP	NP	NP	74	B	
	WS-PTS117	203D	1.20	5.3/5.5/6.5	5.2.7	2.7	NP	NP	NP	48	B	
⊗	WS-PTS117A	4D	1.00	5.3/5.5/6.5	5.2.7	11.8	44	24	20	53	B	I
	WS-PTS119	202D	0.60	5.3/5.5/6.5	5.2.1	5.5	NP	NP	NP	71	B	
	WS-PTS119	301DSPT	1.20	5.3/5.5/6.5	5.2.1	5.1	NP	NP	NP	46	B	
⊗	WS-PTS120	302DSPT	1.20	5.3/5.5/6.5	5.2.1	27.5	40	26	14	88	B	I
	WS-PTS120	304DSPT	2.00	5.3/5.5/6.5	5.2.1	185	305	232	73	87	B	I

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method; 5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index

Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014

+ Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS LTD

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**31/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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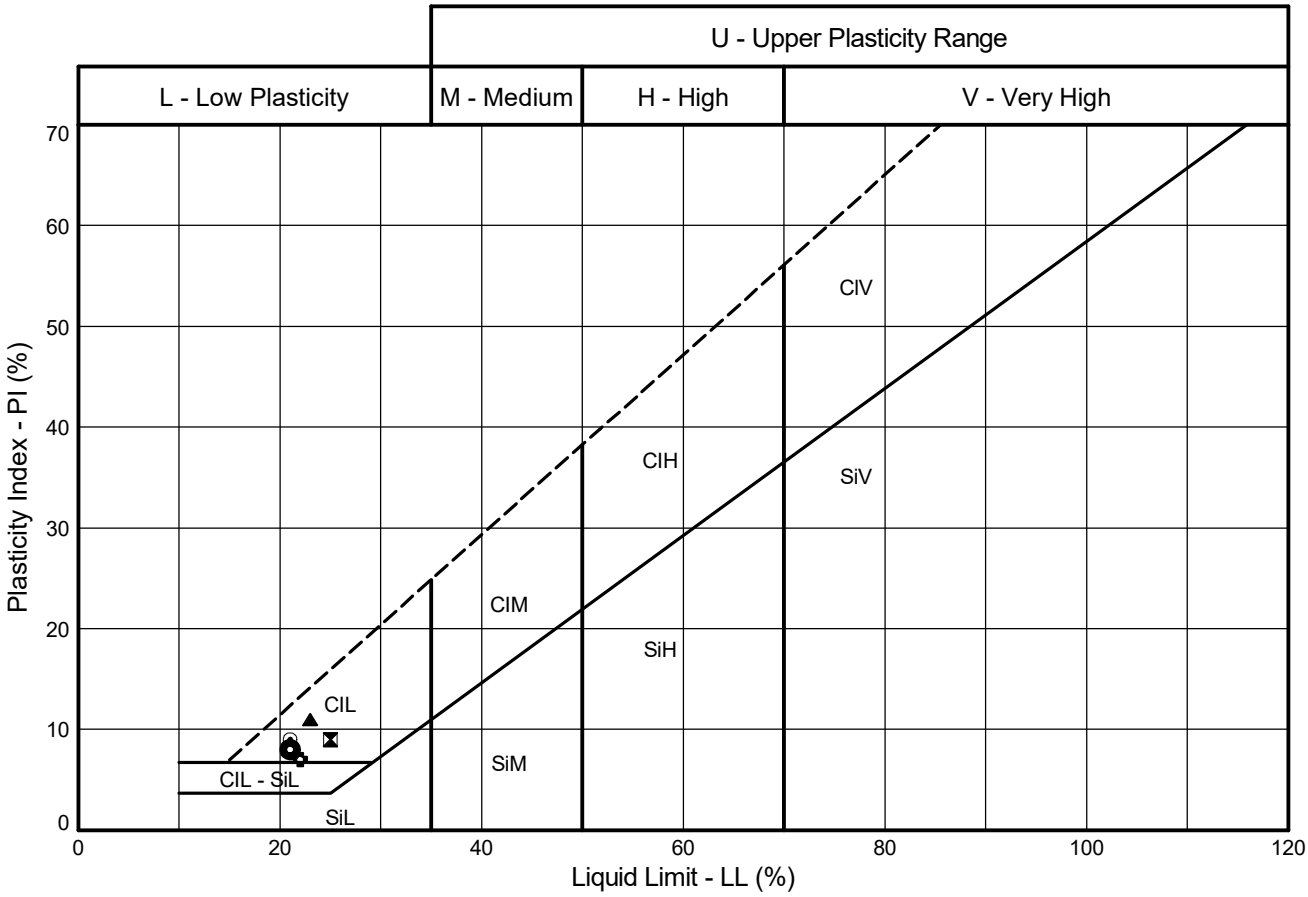
PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A1:2021



Sample Identification				Test Method #	Preparation Method +	WC %	LL %	PL %	PI %	<425µm %	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)									
	WS-PTS127	4D	1.00	5.3/5.5/6.5	5.2.1	9.8	NP	NP	NP	97	B	
⧗	WS-PTS127	7D	1.80	5.3/5.5/6.5	5.2.1	13.6	25	16	9	97	B	I
▲	WS-PTS129	3D	0.50	5.3/5.5/6.5	5.2.1	9.9	23	12	11	91	B	I
	WS-PTS129	7D	1.80	5.3/5.5/6.5	5.2.1	9.8	NP	NP	NP	97	B	
⊙	WS-PTS129	9D	2.60	5.3/5.5/6.5	5.2.1	11.0	21	12	9	96	B	I
✿	WS-PTS130	2D	0.50	5.3/5.5/6.5	5.2.1	13.7	22	15	7	98	B	I
●	WS-PTS130	4D	1.00	5.3/5.5/6.5	5.2.1	11.3	21	13	8	83	B	I

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method; 5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index

Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014

+ Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS LTD

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**31/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892
In accordance with clauses 3.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
BH-PTS101	5	D	0.50	18.4	42	27	15	56	Brown gravelly slightly sandy SILT
BH-PTS101	13	D	1.50	14.5	39	19	20	58	Brown slightly gravelly CLAY
BH-PTS101	24	D	2.80	23.5	26	19	7	77	Brown slightly gravelly silty CLAY
BH-PTS102A	4	D	1.70	18.5	30	14	16	60	Brown slightly sandy gravelly CLAY
BH-PTS102A	8	D	2.80	11.9	32	16	16	52	Brown slightly sandy gravelly CLAY
BH-PTS102A	11	D	3.70	46.0	40	17	23	65	Brown slightly sandy slightly gravelly CLAY
BH-PTS104	3	D	0.50	12.3	NP	NP	NP	69	Brown slightly gravelly sandy SILT
BH-PTS106	3	D	0.50	9.1	NP	NP	NP	81	Reddish brown very gravelly silty SAND

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD	Contract: A66 NTP Scheme S03A	Contract Ref: 765633

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892
In accordance with clauses 3.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
BH-PTS106	11	DSPT	2.00	13.6	26	13	13	71	Red slightly gravelly sandy CLAY
BH-PTS106	15	DSPT	3.00	9.1	23	9.2	14	77	Brown gravelly silty CLAY
BH-PTS106	19	DSPT	4.00	9.9	21	10	11	89	Brown slightly gravelly sandy CLAY
BH-PTS106		AMAL	4.50	18.5	NP	NP	NP	69	Brown slightly gravelly sandy SILT
									Amalgamation comprises: BH-PTS106 Depth:4.50 Ref:20 Type:B SampleID:B1 + BH-PTS106 Depth:5.00
									Ref:23 Type:D SampleID:B1
BH-PTS107B	7	DSPT	1.20	7.2	25	13	12	97	Brown slightly sandy slightly gravelly CLAY
BH-PTS107B	11	DSPT	2.00	6.7	25	14	11	75	Brown slighlty sandy slightly gravelly silty CLAY
BH-PTS107B	15	DSPT	3.00	7.9	26	13	13	60	Brown gravelly slightly sandy CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD	Contract: A66 NTP Scheme S03A	Contract Ref: 765633

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892
In accordance with clauses 3.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
BH-PTS108	18	DSPT	4.00	17.3	22	10	12	62	Red slightly sandy slightly gravelly CLAY
BH-PTS108	26	DSPT	6.00	7.7	21	10	11	61	Red slightly sandy gravelly CLAY
BH-PTS108	34	DSPT	8.00	24.0	35	23	12	94	Brown slightly sandy slightly gravelly CLAY
BH-PTS108	38	D	9.50	23.4	40	22	18	98	Brown slightly sandy slightly gravelly CLAY
BH-PTS108	40	DSPT	10.00	14.3	33	17	16	94	Brown slightly gravelly slightly sandy CLAY
BH-PTS111	5	D	1.00	7.1	NP	NP	NP	87	Brown slightly gravelly sandy SILT
BH-PTS112	6	D	1.00	14.3	30	19	11	23	Brown mottled white very gravelly sandy CLAY
BH-PTS112	10	D	1.80	10.6	29	17	12	36	Reddish brownslightly gravelly sandy CLAY with high cobble content

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD	Contract: A66 NTP Scheme S03A	Contract Ref: 765633

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892
In accordance with clauses 3.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
BH-PTS112	15	DSPT	3.00	13.6	32	17	15	21	Reddish brown slightly gravelly very sandy CLAY with high cobble content
BH-PTS113	301	DSPT	2.00	7.6	23	12	11	47	Brown sandy very gravelly CLAY
BH-PTS113	302	DSPT	3.00	10.4	24	16	8	37	Brown mottled grey very gravelly sandy CLAY
BH-PTS113	303	DSPT	4.00	25.0	NP	NP	NP	85	Greyish brown slightly gravelly SAND
BH-PTS114	7	DSPT	1.20	12.2	NP	NP	NP	50	Brown gravelly sandy SILT
BH-PTS114	11	DSPT	2.00	16.6	NP	NP	NP	85	Red slightly gravelly SAND
BH-PTS115	202	D	0.30	11.1	NP	NP	NP	12	Brown sandy very gravelly SILT
BH-PTS116	8	D	1.20	12.5	NP	NP	NP	53	Brown gravelly sandy CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD	Contract: A66 NTP Scheme S03A	Contract Ref: 765633

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892
In accordance with clauses 3.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
BH-PTS116	13	DSPT	2.00	9.7	22	12	10	52	Brown gravelly sandy silty CLAY
BH-PTS117	3	D	0.30	11.0	NP	NP	NP	69	Brown gravelly sandy SILT
BH-PTS117	5	D	0.60	7.0	NP	NP	NP	59	Brown gravelly sandy SILT
BH-PTS118A	5	D	1.00	4.4	NP	NP	NP	33	Brown very gravelly SAND
BH-PTS122	6	D	0.70	12.3	24	13	11	92	Brown slightly sandy slightly gravelly CLAY
BH-PTS122	17	D	3.50	21.3	25	11	14	70	Brown slightly gravelly slightly sandy CLAY
BH-PTS123	7	DSPT	1.20	11.0	29	14	15	42	Brown very gravelly sandy CLAY
BH-PTS123	25	DSPT	6.00	5.4	NP	NP	NP	79	Brown gravelly slightly clayey SILT

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD	Contract: A66 NTP Scheme S03A	Contract Ref: 765633

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892
In accordance with clauses 3.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
BH-PTS124	3	D	0.50	11.0	NP	NP	NP	88	Brown slightly gravelly sandy CLAY
BH-PTS124	11	DSPT	2.00	10.3	NP	NP	NP	87	Red slightly gravelly SAND
BH-PTS124	32	DSPT	7.00	8.2	25	9.7	15	78	Brow gravelly silty CLAY
BH-PTS124	44	DSPT	10.00	7.3	24	11	13	75	Brown slightly sandy gravelly CLAY
BH-PTS126	8	DSPT	1.20	7.7	22	11	11	83	Red slightly gravelly slightly sandy silty CLAY
BH-PTS126	10	D	1.80	8.6	23	10	13	89	Brown slightly sandy slightly gravelly CLAY
BH-PTS127		AMAL	3.50	14.2	23	12	11	89	Brown slightly gravelly slightly sandy CLAY
									Amalgamation comprises: BH-PTS127 Depth:5.00 Ref:23 Type:DSPT SampleID:B1 + BH-PTS127
									Depth:4.50 Ref:21 Type:B SampleID:B1 + BH-PTS127 Depth:3.50 Ref:17 Type:D SampleID:B1

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD	Contract: A66 NTP Scheme S03A	Contract Ref: 765633

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892
In accordance with clauses 3.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
BH-PTS128	4	D	0.60	9.0	NP	NP	NP	97	Brown slightly gravelly clayey SAND
BH-PTS128	9	DSPT	1.20	11.6	NP	NP	NP	96	Brown slightly gravelly clayey SAND
BH-PTS128A	6	DSPT	2.00	11.4	24	12	12	89	Red slightly gravelly silty CLAY
BH-PTS128A	10	DSPT	3.00	14.7	NP	NP	NP	100	Brown sandy SILT
BH-PTS129	203	D	1.00	16.8	20	11	9	94	Brown slightly gravelly sandy silty CLAY
BH-PTS129	7	DSPT	1.20	12.2	21	11	10	90	Brown slightly gravelly sandy silty CLAY
BH-PTS129	11	DSPT	2.00	10.3	24	11	13	88	Brown slightly gravelly sandy silty CLAY
BH-PTS129	15	DSPT	3.00	9.3	21	8.4	13	85	Brown slightly gravelly slightly sandy CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD	Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892
In accordance with clauses 3.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
BH-PTS129	19	DSPT	4.00	11.1	NP	NP	NP	76	Brown slightly gravelly sandy silty CLAY
GS-PTS102	3	D	1.00	18.4	NP	NP	NP	80	Brown slightly gravelly sandy SILT
GS-PTS102	304	DSPT	2.00	8.6	24	11	13	86	Brown slightly sandy gravelly CLAY
GS-PTS102	11	D	3.60	8.9	22	13	9	72	Brown slightly sandy gravelly CLAY
GS-PTS102	307	DSPT	4.00	5.0	29	14	15	51	Brown very gravelly silty CLAY
GS-PTS105	301	DSPT	1.20	4.6	22	10	12	46	Brown slightly sandy very gravelly CLAY
GS-PTS105	303	DSPT	2.00	6.7	NP	NP	NP	24	Brown very gravelly clayey SAND
GS-PTS105	14	D	4.70	17.2	33	20	13	97	Brown slightly sandy slightly gravelly CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD	Contract: A66 NTP Scheme S03A	Contract Ref: 765633

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892
In accordance with clauses 3.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
GS-PTS105	18	D	5.50	22.5	36	8.6	27	83	Brown slightly sandy slightly gravelly CLAY
GS-PTS105	21	D	6.20	16.5	35	20	15	80	Brown slightly sandy slightly gravelly CLAY
GS-PTS107	5	D	0.50	11.4	NP	NP	NP	92	Brown slightly gravelly clayey SAND
GS-PTS107	9	D	1.70	11.6	20	13	7	93	Brown slightly gravelly sandy CLAY
GS-PTS108A	8	DSPT	1.20	15.4	31	15	16	82	Brown slightly sandy slightly gravelly CLAY
GS-PTS108A	9	DSPT	2.00	14.7	33	14	19	77	Brown slightly sandy slightly gravelly CLAY
GS-PTS108A	10	DSPT	3.00	12.8	24	12	12	75	Brown gravelly sandy CLAY
GS-PTS108A	11	DSPT	4.00	11.9	23	14	9	87	Brown slightly gravelly slightly sandy CLAY

SYMBOLS: * denotes BS 1377

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892
In accordance with clauses 3.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
GS-PTS108A	12	DSPT	4.70	7.4	NP	NP	NP	93	Brown slightly gravelly very sandy SILT
GS-PTS109	3	D	0.30	17.8	NP	NP	NP	96	Dark brown slightly gravelly silty SAND
GS-PTS109	9	D	1.70	11.6	25	13	12	80	Brown gravelly sandy CLAY
GS-PTS109	11	D	2.50	17.5	32	12	20	92	Brown slightly sandy slightly gravelly CLAY
HDP-001	3	D	0.50	11.4	37	30	7	32	Dark brown gravelly sandy SILT
HDP-002	3	D	0.50	11.7	44	25	19	19	Dark brown very gravelly very sandy CLAY with medium cobble content
HDP-003	6	D	1.00	7.9	NP	NP	NP	18	Dark brown very sandy clayey GRAVEL
HDP-004	5	D	1.00	11.6	36	28	8	8	Dark brown very sandy very gravelly SILT

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD	Contract: A66 NTP Scheme S03A	Contract Ref: 765633

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892
In accordance with clauses 3.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
HDP-005	4	D	0.50	9.9	44	31	13	14	Reddish brown very sandy gravelly CLAY with medium cobble content
TP-PTS205	5	D	0.50	11.6	27	16	11	39	Reddish brown slightly sandy very gravelly CLAY
TP-PTS205	8	D	1.50	12.6	22	18	4	41	Reddish brown very gravelly very sandy CLAY
TP-PTS205	11	D	3.00	12.2	24	13	11	41	Reddish brown very sandy very gravelly CLAY
TP-PTS206	5	D	0.50	4.4	NP	NP	NP	94	Brown slightly gravelly silty SAND
TP-PTS206	11	D	3.00	10.4	24	11	13	81	Brown slightly gravelly sandy CLAY
TP-PTS209	8	D	1.00	15.2	25	13	12	93	Brown slightly gravelly sandy silty CLAY
TP-PTS209	10	D	2.00	12.8	21	12	9	89	Red slightly gravelly sandy CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD	Contract: A66 NTP Scheme S03A	Contract Ref: 765633

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892
In accordance with clauses 3.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
TP-PTS209	12	D	2.70	10.6	23	9.6	13	76	Red slightly gravelly sandy CLAY
TP-PTS210	5	D	0.50	6.8	29	21	8	49	Brown very gravelly silty CLAY
TP-PTS210	8	D	1.50	12.3	NP	NP	NP	69	Brown slightly gravelly silty SAND
TP-PTS211	5	D	0.50	10.7	36	25	11	49	Brown gravelly sandy SILT
TP-PTS213	5	D	0.50	14.0	43	28	15	28	Brown gravelly slightly sandy SILT
TP-PTS214	5	D	0.50	55.8	69	42	27	100	Dark brown slightly sandy SILT
TP-PTS214	6	B	1.50	16.5	NP	NP	NP	97	Brown slightly gravelly SAND
TP-PTS215	7	D	1.50	13.2	23	16	7	75	Brown slightly gravelly sandy silty CLAY

SYMBOLS: * denotes BS 1377

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892
In accordance with clauses 3.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
TP-PTS217	5	D	0.50	6.3	33	24	9	31	Brown slightly sandy very gravelly SILT
TP-PTS225	7	D	1.50	12.7	27	11	16	82	Reddish brown slightly sandy slightly gravelly CLAY
TP-PTS225	12	LB	2.20	12.5	NP	NP	NP	66	Reddish brown slightly silty SAND
TP-PTS225	13	D	3.30	17.4	25	12	13	86	Reddish brown slightly gravelly sandy silty CLAY
TP-PTS226	6	D	1.20	19.0	27	13	14	96	Reddish brown slightly gravelly slightly sandy CLAY
TP-PTS226	8	D	2.20	13.8	25	12	13	89	Reddish brown slightly sandy slightly gravelly CLAY
TP-PTS229	4	D	1.20	13.6	26	13	13	88	Reddish brown slightly gravelly slightly sandy CLAY
TP-PTS229	7	D	2.20	12.8	21	12	9	98	Brown slightly gravelly slightly sandy CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD	Contract: A66 NTP Scheme S03A	Contract Ref: 765633

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892
In accordance with clauses 3.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
TP-PTS230	5	D	0.50	13.5	NP	NP	NP	100	Brown SAND
TP-PTS230	8	D	1.50	13.9	19	11	8	81	Brown slightly gravelly silty SAND
TP-PTS231	2	D	1.20	13.1	21	11	10	94	Brown slightly gravelly sandy CLAY
TP-PTS231	8	D	2.20	13.0	25	12	13	71	Brown slightly gravelly sandy CLAY
TP-PTS231	11	D	3.20	12.3	26	9.8	16	70	Brown mottled black gravelly sandy CLAY
TP-PTS232	5	D	0.50	11.7	23	11	12	81	Brown slightly gravelly sandy silty CLAY
TP-PTS232	7	D	1.50	12.8	22	11	11	79	Brown sandy silty CLAY
TP-PTS233-LC	11	D	3.50	13.4	NP	NP	NP	98	Red slightly gravelly SAND

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD	Contract: A66 NTP Scheme S03A	Contract Ref: 765633

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892
In accordance with clauses 3.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
TP-PTS234	6	D	1.00	11.3	22	17	5	41	Brown clayey gravelly sandy SILT
TP-PTS234	8	D	2.20	11.2	30	16	14	53	Brown gravelly sandy CLAY
TP-PTS235	3	D	0.30	18.8	NP	NP	NP	87	Brown slightly gravelly silty SAND
TP-PTS235	8	D	1.30	13.0	NP	NP	NP	93	Brown silty SAND
TP-PTS236	12	D	2.00	11.8	22	12	10	89	Brown slightly gravelly sandy silty CLAY
TP-PTS236	14	D	3.00	11.2	24	13	11	89	Brown very sandy SILT
WS-PTS101	5	D	1.00	9.0	22	12	10	69	Brown slightly gravelly slightly sandy CLAY
WS-PTS101	301	DSPT	1.20	10.6	27	14	13	56	Red slightly sandy gravelly silty CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD	Contract: A66 NTP Scheme S03A	Contract Ref: 765633

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892
In accordance with clauses 3.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
WS-PTS101	303	DSPT	3.00	8.4	NP	NP	NP	95	Red slightly gravelly sandy SILT
WS-PTS105	4	D	0.50	6.2	NP	NP	NP	63	Brown gravelly sandy SILT
WS-PTS105		AMAL	1.20	8.7	22	14	8	73	Brown slightly gravelly sandy CLAY
									Amalgamation comprises: WS-PTS105 Depth:1.20 Ref:301 Type:D SampleID:B1 + WS-PTS105
									Depth:1.30 Ref:8 Type:B SampleID:B2
WS-PTS105	302	DSPT	2.00	9.2	23	9.4	14	62	Red gravelly sandy CLAY
WS-PTS105	304	DSPT	4.00	5.3	26	13	13	40	Brown gravelly slightly sandy silty CLAY
WS-PTS107	3	D	0.50	13.9	61	33	28	28	Brown very gravelly sandy SILT
WS-PTS107	5	D	1.00	15.7	27	21	6	54	Brown slightly sandy gravelly clayey SILT

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD	Contract: A66 NTP Scheme S03A	Contract Ref: 765633

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892
In accordance with clauses 3.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
WS-PTS107A	3	D	0.50	47.1	54	34	20	13	Brown gravelly slightly sandy SILT
WS-PTS107A	5	D	1.00	14.5	34	23	11	48	Brown gravelly slightly sandy CLAY
WS-PTS107A	7	D	1.80	13.2	NP	NP	NP	64	Brown gravelly sandy SILT
WS-PTS108	3	D	0.50	12.2	NP	NP	NP	80	Brown slightly gravelly sandy SILT
WS-PTS108	7	D	1.20	8.7	NP	NP	NP	59	Brown gravelly sandy SILT
WS-PTS110	3	D	0.50	11.4	23	12	11	52	Brown sandy gravelly CLAY
WS-PTS110	301	DSPT	1.20	10.0	21	11	10	71	Brown sandy gravelly CLAY
WS-PTS110	302	DSPT	2.00	5.1	NP	NP	NP	51	Brown gravelly clayey SAND

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD	Contract: A66 NTP Scheme S03A	Contract Ref: 765633

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892
In accordance with clauses 3.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
WS-PTS113	4	D	1.00	7.4	NP	NP	NP	86	Brown slightly gravelly SAND
WS-PTS114	8	DSPT	1.20	11.1	NP	NP	NP	30	Brown gravelly sandy SILT
WS-PTS116	3	D	0.50	13.7	24	15	9	72	Brown slightly gravelly sandy SILT
WS-PTS117	2	B	0.50	15.6	NP	NP	NP	74	Brown very gravelly silty SAND with high cobble content
WS-PTS117	203	D	1.20	2.7	NP	NP	NP	48	Brown very gravelly silty SAND
WS-PTS117A	4	D	1.00	11.8	44	24	20	53	Brown slightly sandy gravelly CLAY
WS-PTS119	202	D	0.60	5.5	NP	NP	NP	71	Brown slightly gravelly SAND
WS-PTS119	301	DSPT	1.20	5.1	NP	NP	NP	46	Brown very gravelly slightly clayey SAND

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD	Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892
In accordance with clauses 3.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
WS-PTS120	302	DSPT	1.20	27.5	40	26	14	88	Brown slightly gravelly slightly sandy clayey SILT
WS-PTS120	304	DSPT	2.00	185	305	232	73	87	Black slightly gravelly silty PEAT
WS-PTS127	4	D	1.00	9.8	NP	NP	NP	97	Brown slightly gravelly sandy SILT
WS-PTS127	7	D	1.80	13.6	25	16	9	97	Brown slightly gravelly sandy CLAY
WS-PTS129	3	D	0.50	9.9	23	12	11	91	Brown gravelly sandy CLAY
WS-PTS129	7	D	1.80	9.8	NP	NP	NP	97	Red slightly gravelly sandy CLAY
WS-PTS129	9	D	2.60	11.0	21	12	9	96	Brown slightly gravelly slightly sandy CLAY
WS-PTS130	2	D	0.50	13.7	22	15	7	98	Brown sandy clayey SILT

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD	Contract: A66 NTP Scheme S03A	Contract Ref: 765633

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892
In accordance with clauses 3.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
WS-PTS130	4	D	1.00	11.3	21	13	8	83	Brown slightly gravelly sandy CLAY

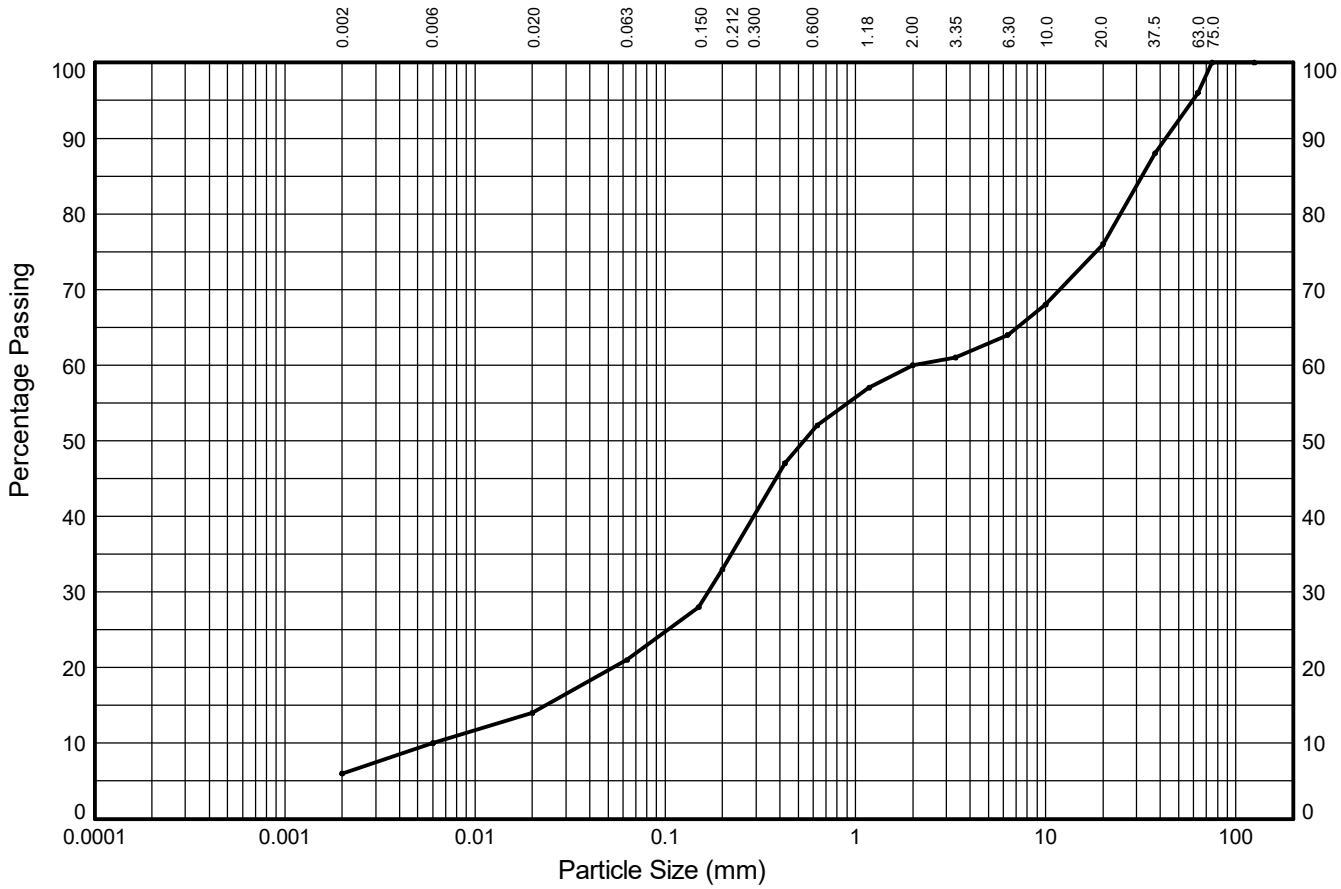
SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD	Contract: A66 NTP Scheme S03A	Contract Ref: 765633

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS100** Sample Ref: **4** Sample Type: **B** Depth (m): **0.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	4%	7%	12%	19%	8%	4%	12%	20%	
	SILT			SAND			GRAVEL			
6%	15%			39%			36%			4%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**96**
37.5	**88**
20.0	**76**
10.0	**68**
6.30	**64**
3.35	**61**
2.00	**60**
1.18	**57**
0.630	**52**
0.425	**47**
0.200	**33**
0.150	**28**
0.063	**21**

Particle Diameter (mm)	Percent Passing (%)
0.02	**14**
0.006	**10**
0.002	**6**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.006**
D_{15} (mm)	**0.024**
D_{30} (mm)	**0.168**
D_{50} (mm)	**0.538**
D_{60} (mm)	**2.000**
D_{85} (mm)	**32.047**
D_{90} (mm)	**42.693**
C_U	**333**
C_C	**2**

Soil Description:

Dark brown very gravelly silty SAND with low cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

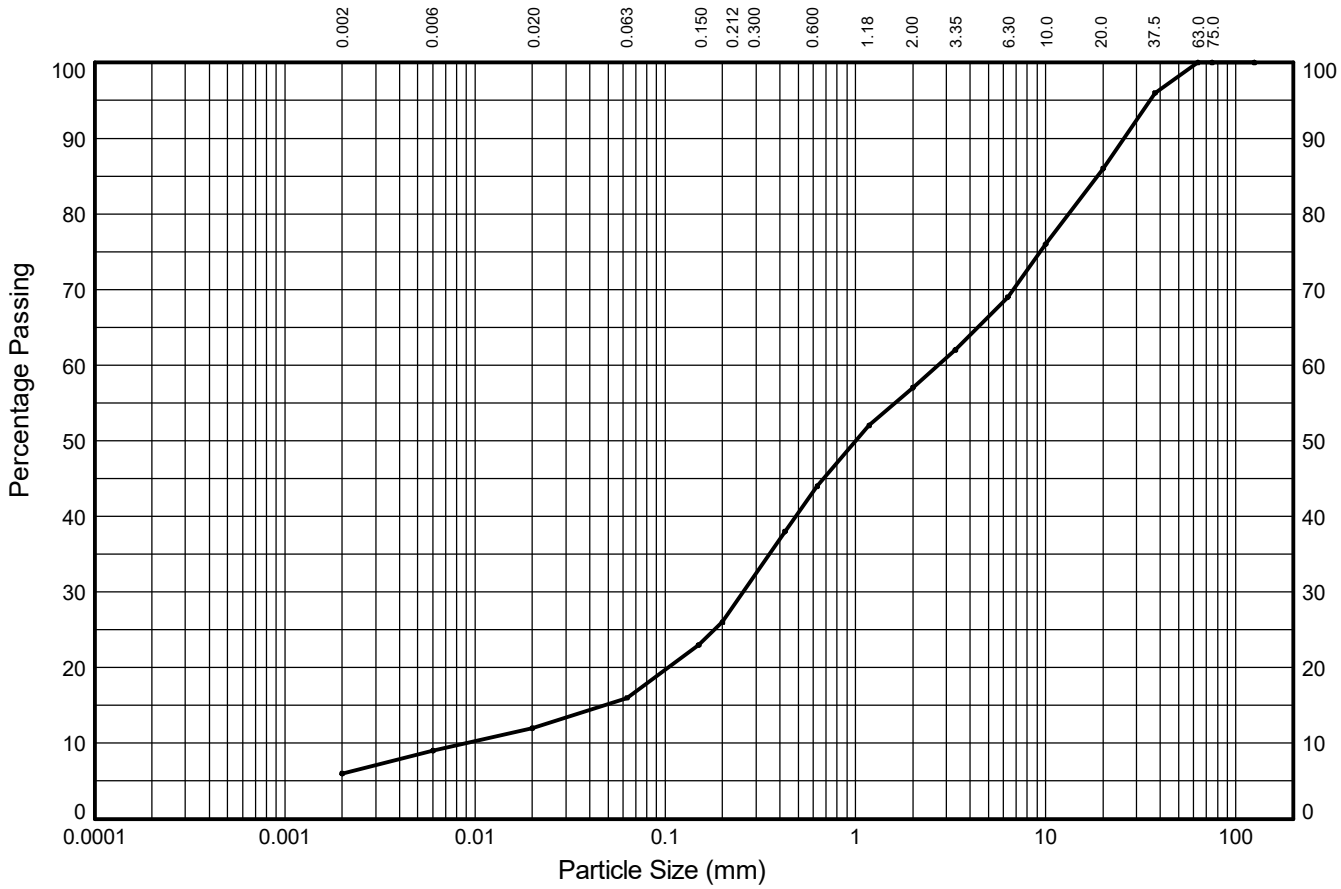
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Maduka	**PRECIOUS MADUKA**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:06 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS100** Sample Ref: **11** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	4%	10%	18%	13%	12%	17%	14%	
	SILT			SAND			GRAVEL			
6%	10%			41%			43%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**96**
20.0	**86**
10.0	**76**
6.30	**69**
3.35	**62**
2.00	**57**
1.18	**52**
0.630	**44**
0.425	**38**
0.200	**26**
0.150	**23**
0.063	**16**

Particle Diameter (mm)	Percent Passing (%)
0.02	**12**
0.006	**9**
0.002	**6**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.009**
D_{15} (mm)	**0.047**
D_{30} (mm)	**0.257**
D_{50} (mm)	**1.009**
D_{60} (mm)	**2.725**
D_{85} (mm)	**18.661**
D_{90} (mm)	**25.718**
C_U	**304**
C_C	**3**

Soil Description:

Dark brown very sandy clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

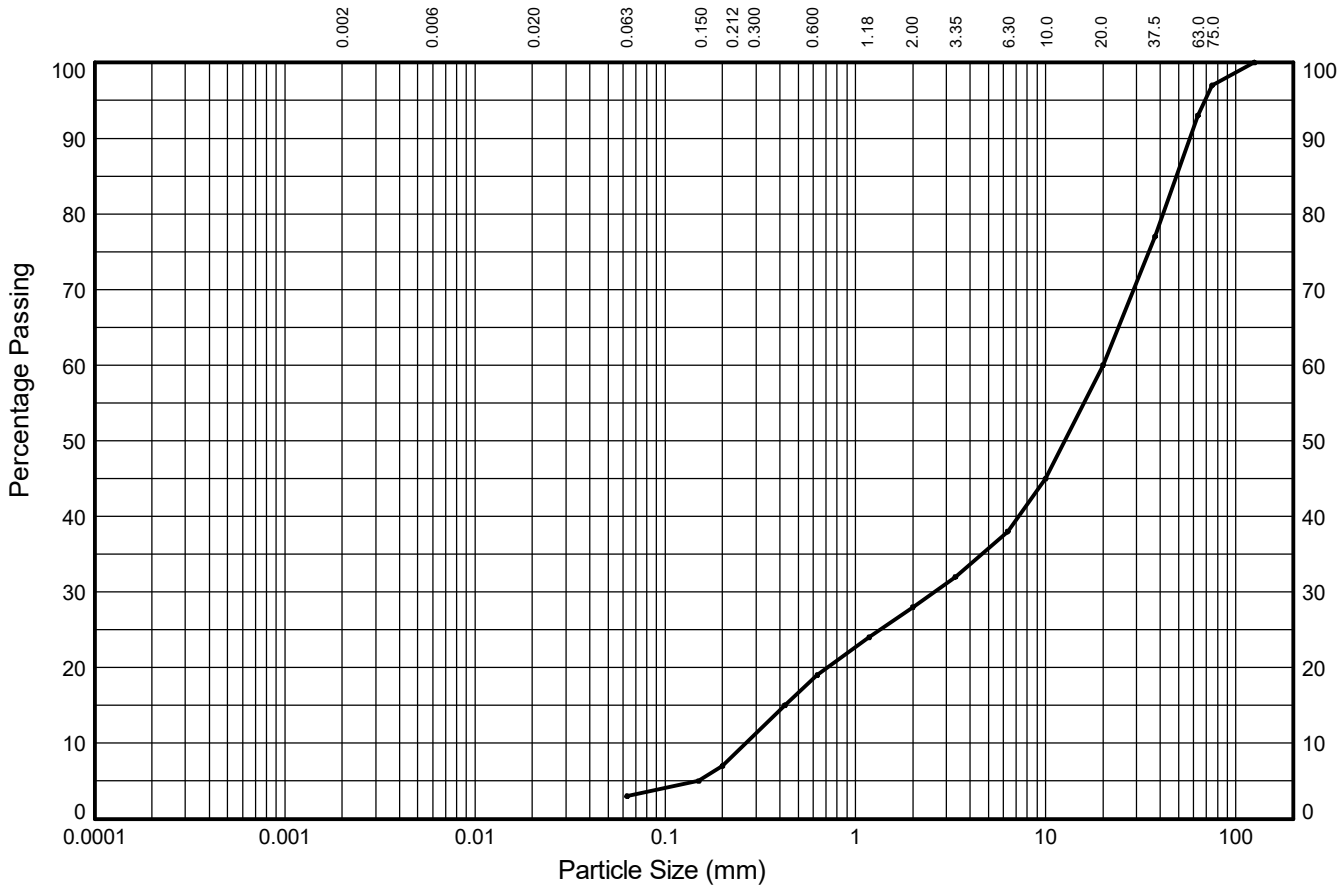
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Maduka	**PRECIOUS MADUKA**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:06 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS100** Sample Ref: **16** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	4%	12%	9%	10%	22%	33%	
	SILT			SAND			GRAVEL			
3%				25%			65%			7%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**97**
63.0	**93**
37.5	**77**
20.0	**60**
10.0	**45**
6.30	**38**
3.35	**32**
2.00	**28**
1.18	**24**
0.630	**19**
0.425	**15**
0.200	**7**
0.150	**5**
0.063	**3**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.265**
D_{15} (mm)	**0.425**
D_{30} (mm)	**2.588**
D_{50} (mm)	**12.599**
D_{60} (mm)	**20.000**
D_{85} (mm)	**48.606**
D_{90} (mm)	**57.160**
C_U	**75**
C_C	**1**

Soil Description:
Brown very sandy slightly silty GRAVEL with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
	DAISY RICHARDS	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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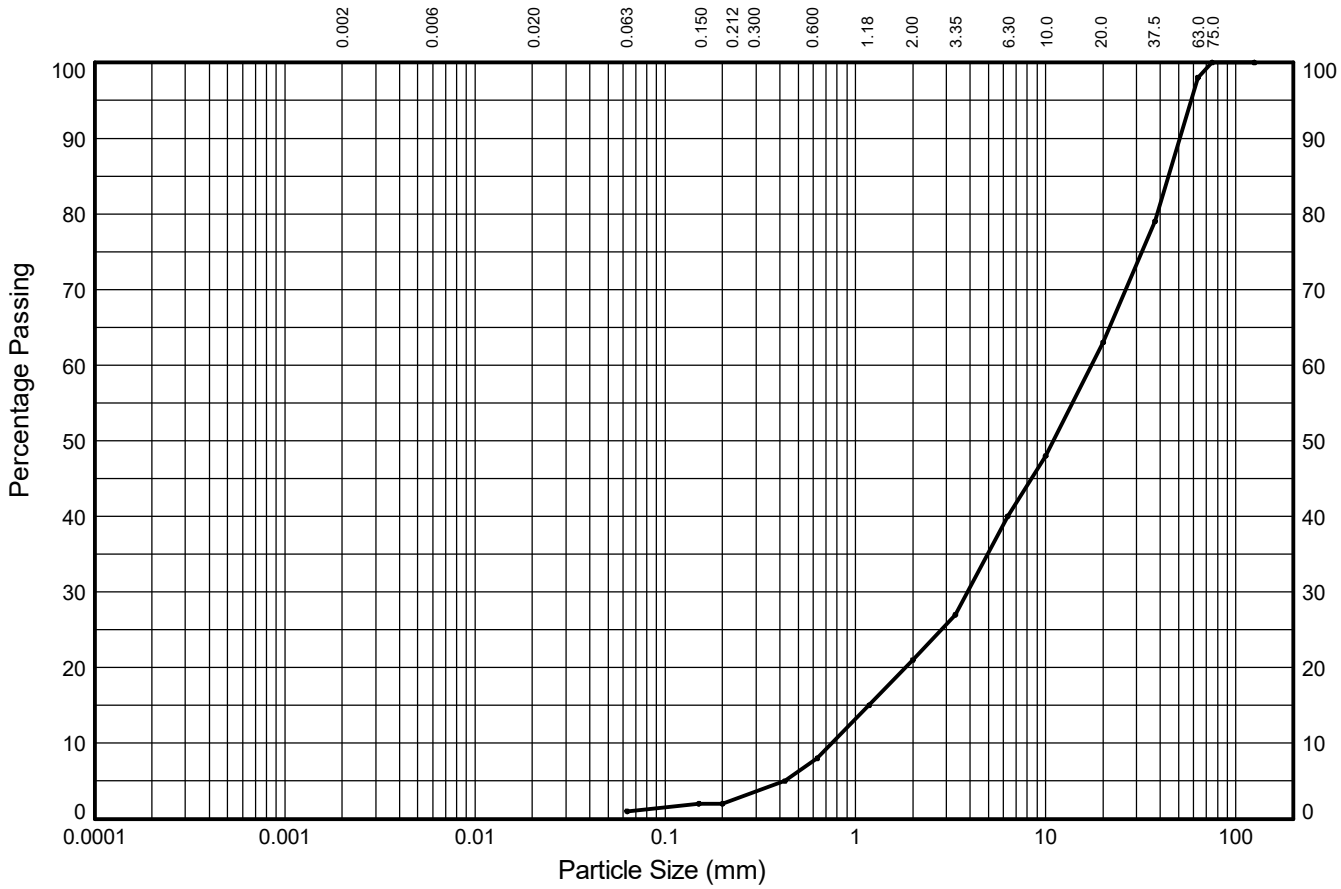
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS100** Sample Ref: **25** Sample Type: **B** Depth (m): **4.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	1%	6%	13%	19%	23%	35%	
	SILT			SAND			GRAVEL			
1%				20%			77%			2%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**98**
37.5	**79**
20.0	**63**
10.0	**48**
6.30	**40**
3.35	**27**
2.00	**21**
1.18	**15**
0.630	**8**
0.425	**5**
0.200	**2**
0.150	**2**
0.063	**1**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.754**
D_{15} (mm)	**1.180**
D_{30} (mm)	**3.876**
D_{50} (mm)	**10.968**
D_{60} (mm)	**17.411**
D_{85} (mm)	**44.176**
D_{90} (mm)	**50.638**
C_U	**23**
C_C	**1**

Soil Description:

Brown very sandy slightly silty GRAVEL with low cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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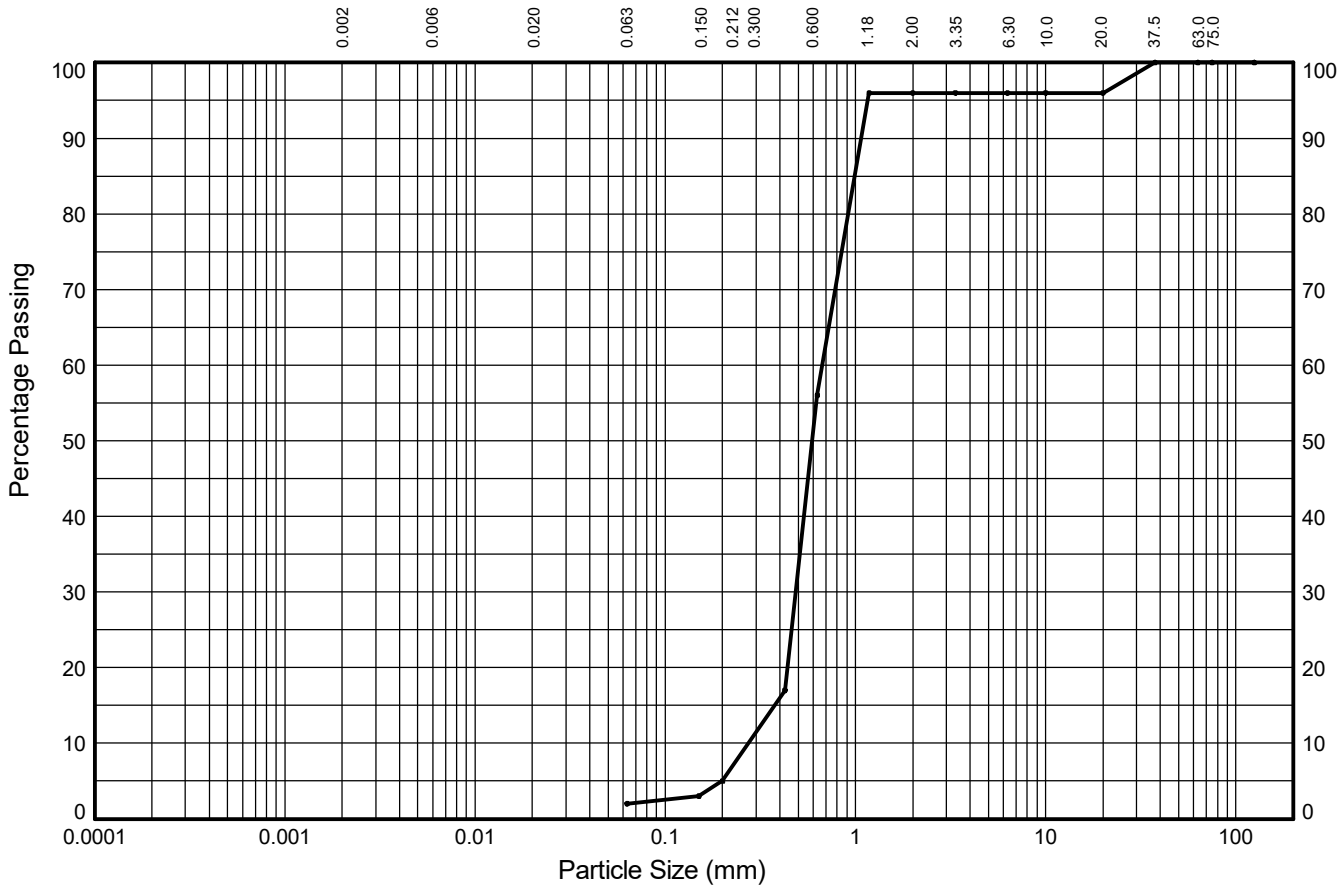
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS100** Sample Ref: **34** Sample Type: **B** Depth (m): **7.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	3%	51%	40%	0%	0%	4%	
	SILT			SAND			GRAVEL			
2%				94%			4%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**96**
10.0	**96**
6.30	**96**
3.35	**96**
2.00	**96**
1.18	**96**
0.630	**56**
0.425	**17**
0.200	**5**
0.150	**3**
0.063	**2**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.274**
D_{15} (mm)	**0.375**
D_{30} (mm)	**0.485**
D_{50} (mm)	**0.593**
D_{60} (mm)	**0.671**
D_{85} (mm)	**0.993**
D_{90} (mm)	**1.074**
C_U	**2.4**
C_C	**1.3**

Soil Description:

Reddish brown slightly gravelly slightly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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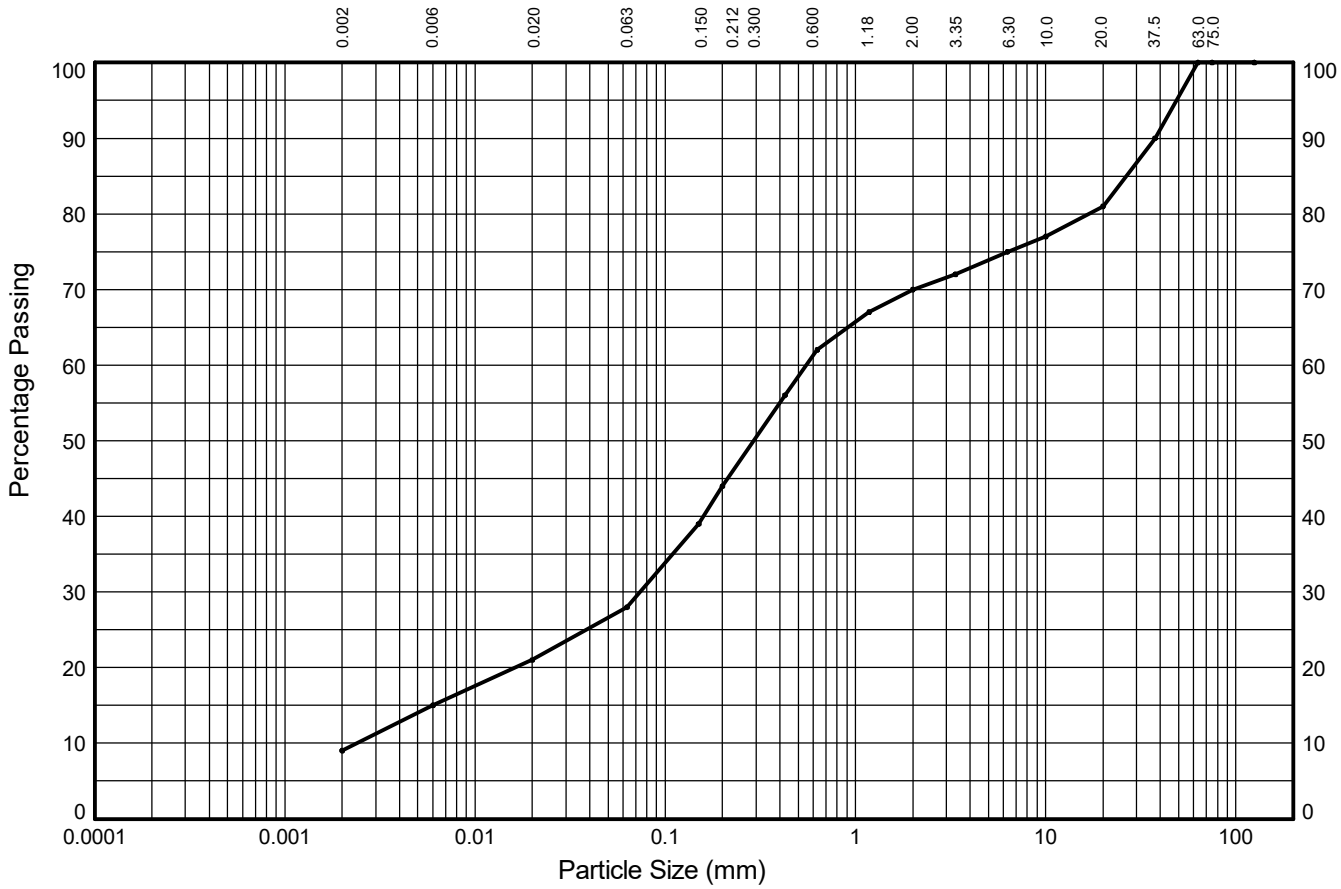
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS101** Sample Ref: **4** Sample Type: **B** Depth (m): **0.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	6%	6%	7%	16%	18%	8%	5%	6%	19%	
	SILT			SAND			GRAVEL			
9%	19%			42%			30%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**90**
20.0	**81**
10.0	**77**
6.30	**75**
3.35	**72**
2.00	**70**
1.18	**67**
0.630	**62**
0.425	**56**
0.200	**44**
0.150	**39**
0.063	**28**

Particle Diameter (mm)	Percent Passing (%)
0.02	**21**
0.006	**15**
0.002	**9**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.002**
D_{15} (mm)	**0.006**
D_{30} (mm)	**0.074**
D_{50} (mm)	**0.292**
D_{60} (mm)	**0.553**
D_{85} (mm)	**26.446**
D_{90} (mm)	**37.500**
C_U	**230**
C_C	**4**

Soil Description:

Dark brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Maduka	**PRECIOUS MADUKA**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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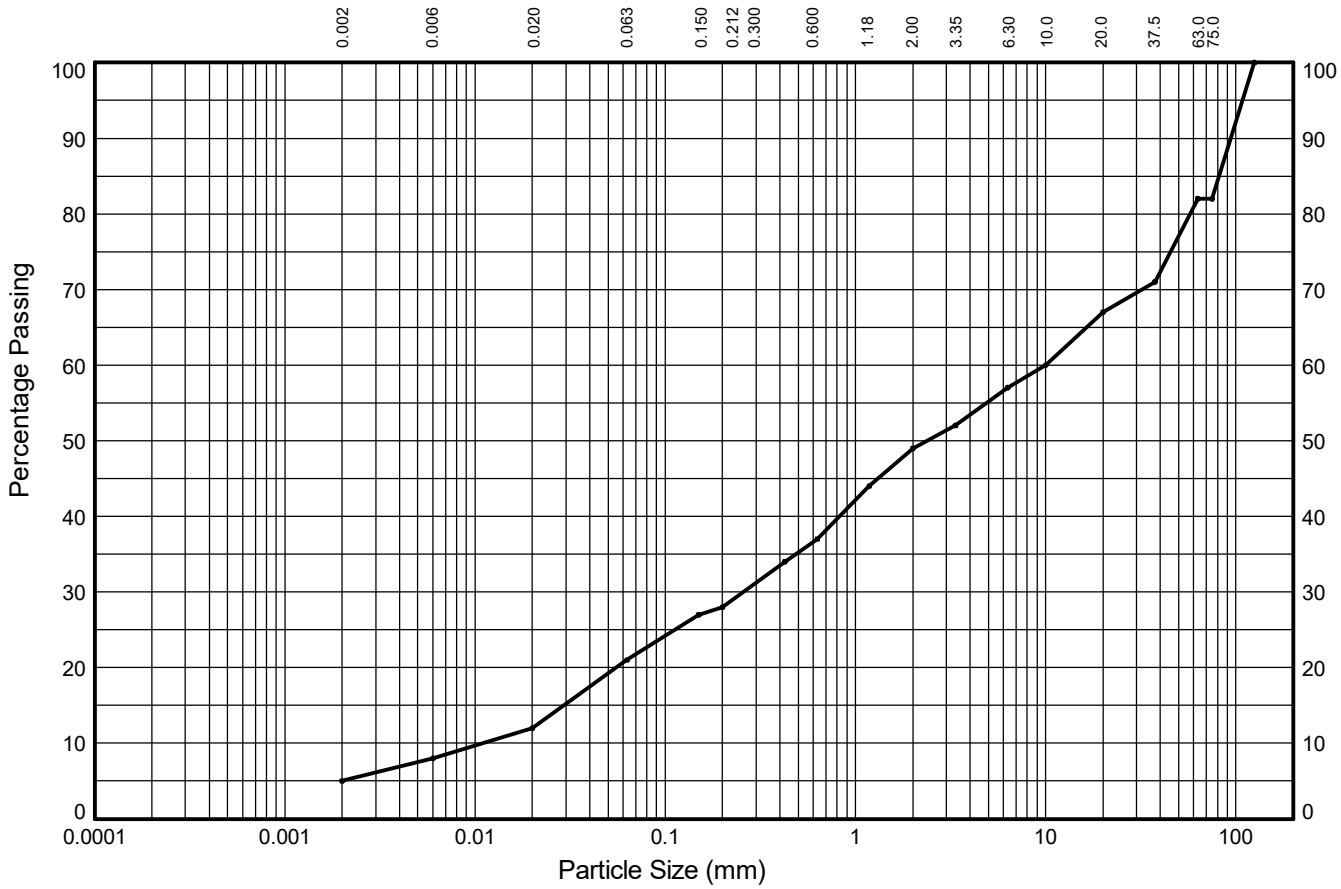
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS101** Sample Ref: **22** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	4%	9%	7%	9%	12%	8%	10%	15%	
	SILT			SAND			GRAVEL			
5%	16%			28%			33%			18%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**82**
63.0	**82**
37.5	**71**
20.0	**67**
10.0	**60**
6.30	**57**
3.35	**52**
2.00	**49**
1.18	**44**
0.630	**37**
0.425	**34**
0.200	**28**
0.150	**27**
0.063	**21**

Particle Diameter (mm)	Percent Passing (%)
0.02	**12**
0.006	**8**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.011**
D_{15} (mm)	**0.029**
D_{30} (mm)	**0.257**
D_{50} (mm)	**2.375**
D_{60} (mm)	**10.000**
D_{85} (mm)	**81.665**
D_{90} (mm)	**94.115**
C_U	**913**
C_C	**0.60**

Soil Description:

Brown very sandy silty GRAVEL with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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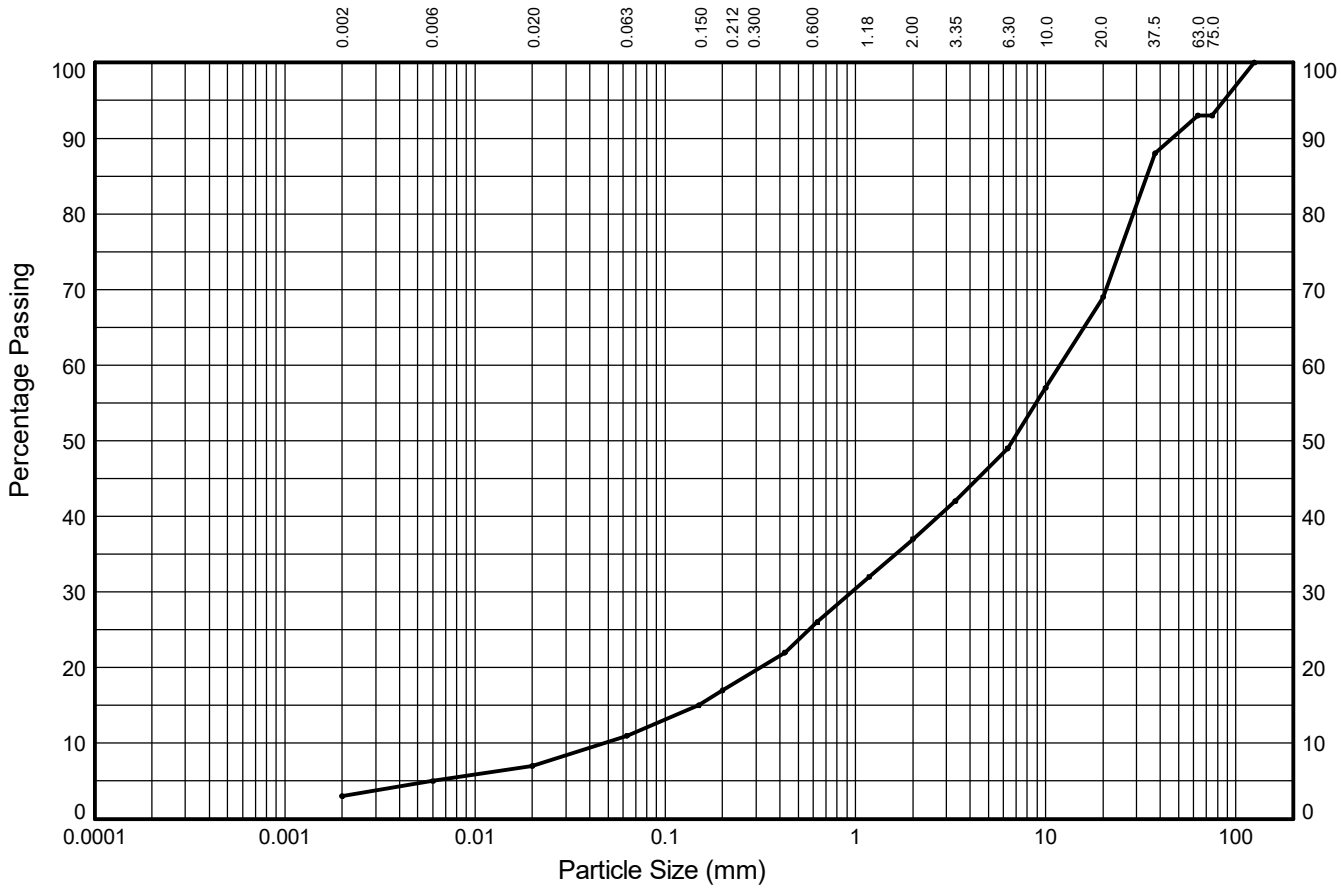
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS101** Sample Ref: **31** Sample Type: **B** Depth (m): **4.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	2%	4%	6%	9%	11%	12%	20%	24%	
	SILT			SAND			GRAVEL			
3%	8%			26%			56%			7%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**93**
63.0	**93**
37.5	**88**
20.0	**69**
10.0	**57**
6.30	**49**
3.35	**42**
2.00	**37**
1.18	**32**
0.630	**26**
0.425	**22**
0.200	**17**
0.150	**15**
0.063	**11**

Particle Diameter (mm)	Percent Passing (%)
0.02	**7**
0.006	**5**
0.002	**3**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.047**
D_{15} (mm)	**0.150**
D_{30} (mm)	**0.957**
D_{50} (mm)	**6.675**
D_{60} (mm)	**11.892**
D_{85} (mm)	**33.957**
D_{90} (mm)	**46.148**
C_U	**251**
C_C	**2**

Soil Description:
Purplish brown very sandy silty GRAVEL with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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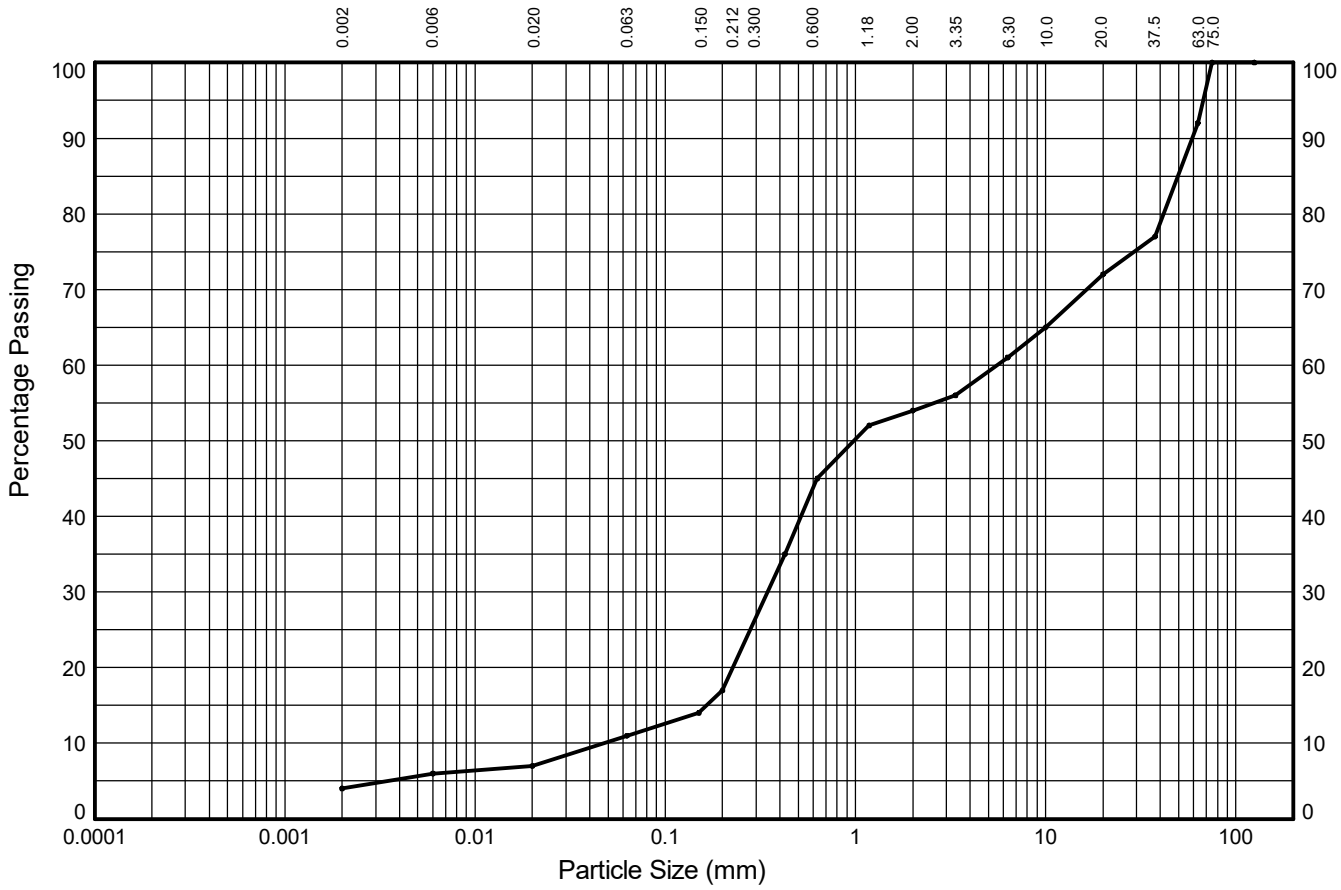
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS102A** Sample Ref: **3** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	1%	4%	6%	28%	9%	7%	11%	20%	
	SILT			SAND			GRAVEL			
4%	7%			43%			38%			8%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**92**
37.5	**77**
20.0	**72**
10.0	**65**
6.30	**61**
3.35	**56**
2.00	**54**
1.18	**52**
0.630	**45**
0.425	**35**
0.200	**17**
0.150	**14**
0.063	**11**

Particle Diameter (mm)	Percent Passing (%)
0.02	**7**
0.006	**6**
0.002	**4**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.047**
D_{15} (mm)	**0.165**
D_{30} (mm)	**0.345**
D_{50} (mm)	**0.986**
D_{60} (mm)	**5.552**
D_{85} (mm)	**49.453**
D_{90} (mm)	**58.789**
C_U	**117**
C_C	**0.45**

Soil Description:

Red very gravelly clayey SAND with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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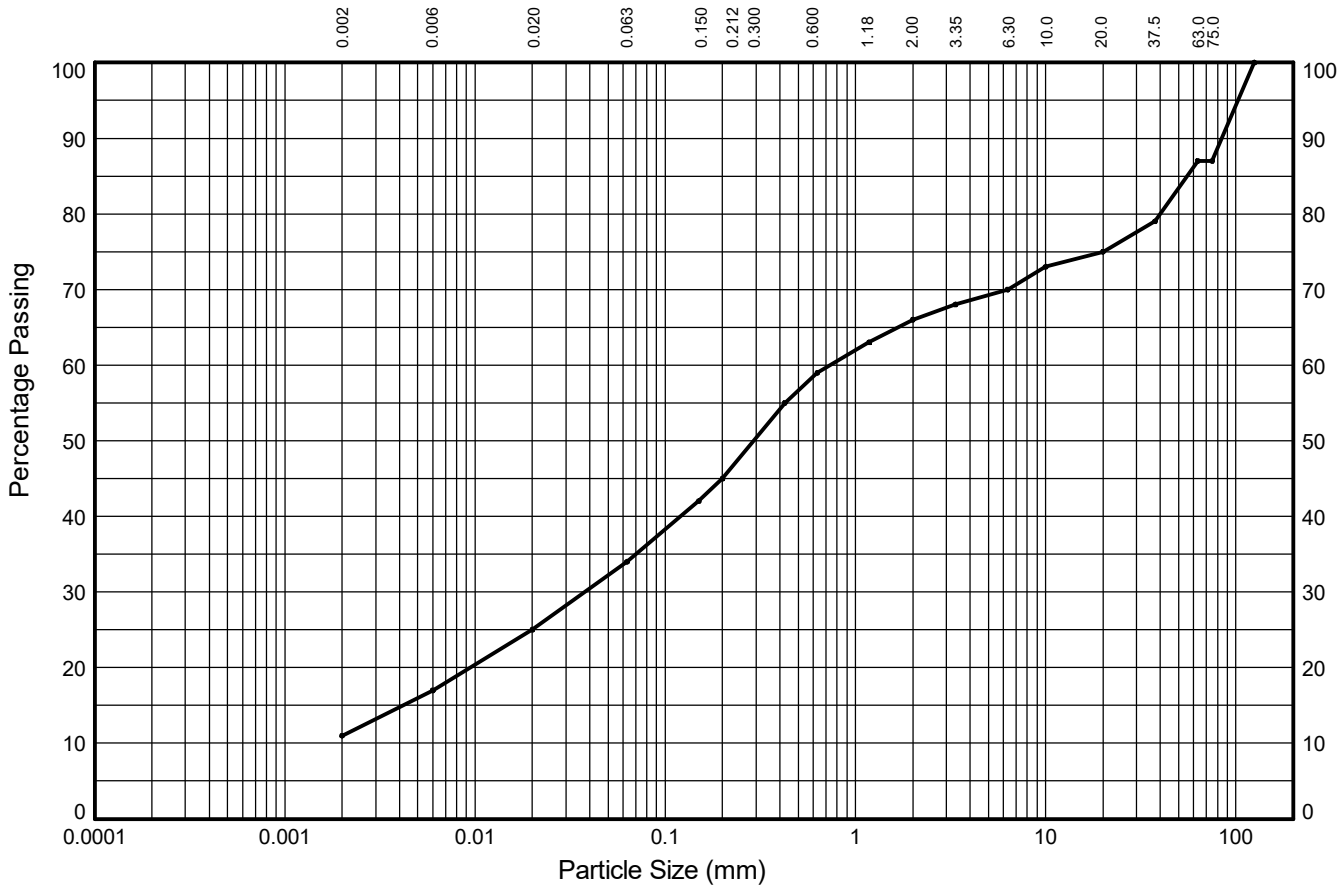
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS102A** Sample Ref: **5** Sample Type: **B** Depth (m): **1.70**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	6%	8%	9%	11%	14%	7%	4%	5%	12%	
	SILT			SAND			GRAVEL			
11%	23%			32%			21%			13%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**87**
63.0	**87**
37.5	**79**
20.0	**75**
10.0	**73**
6.30	**70**
3.35	**68**
2.00	**66**
1.18	**63**
0.630	**59**
0.425	**55**
0.200	**45**
0.150	**42**
0.063	**34**

Particle Diameter (mm)	Percent Passing (%)
0.02	**25**
0.006	**17**
0.002	**11**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.004**
D_{30} (mm)	**0.038**
D_{50} (mm)	**0.292**
D_{60} (mm)	**0.737**
D_{85} (mm)	**55.337**
D_{90} (mm)	**84.383**
C_U	**NA**
C_C	**NA**

Soil Description:
Brown slightly gravelly slightly sandy clayey SILT with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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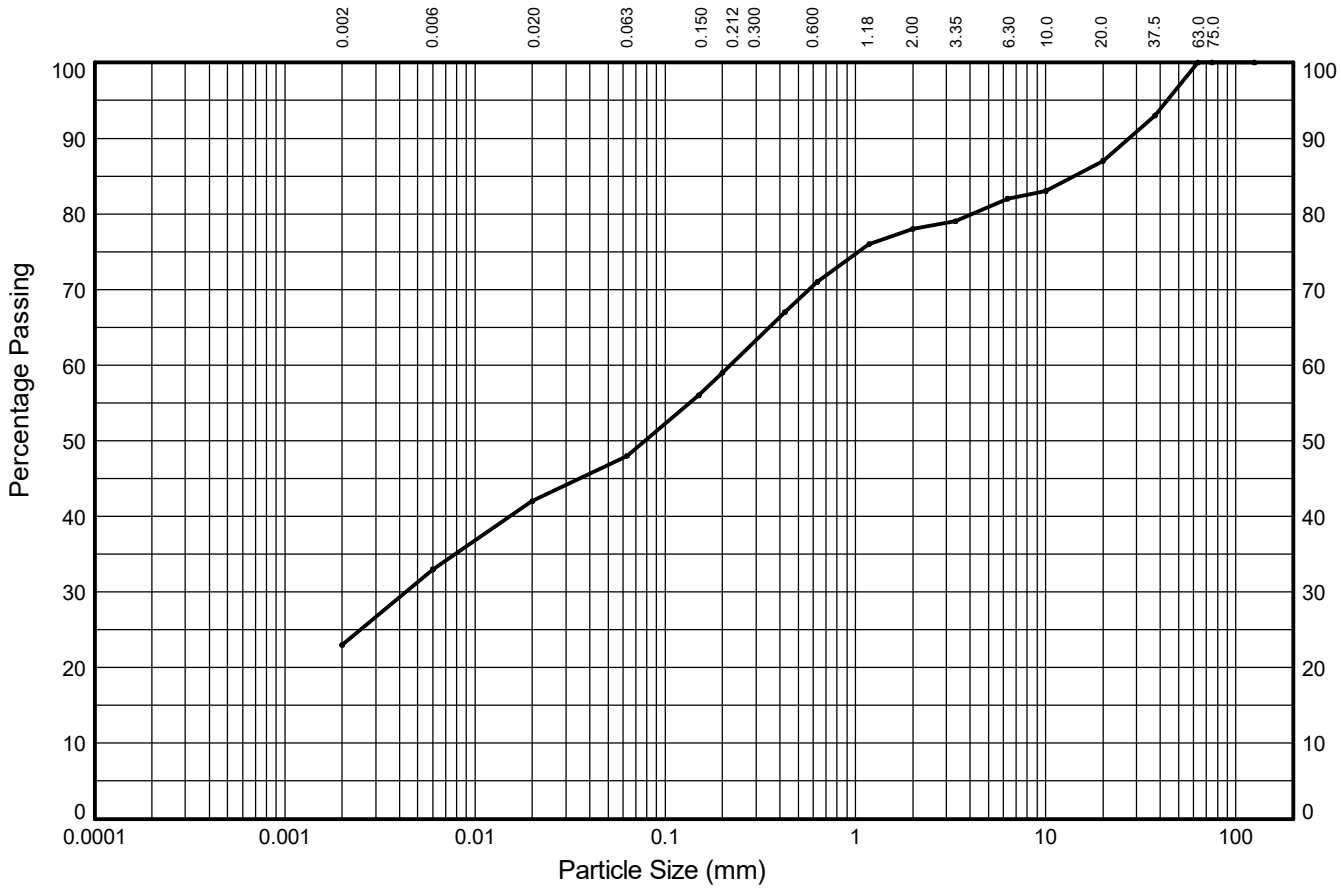
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS102A** Sample Ref: **12** Sample Type: **B** Depth (m): **3.70**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	10%	9%	6%	11%	12%	7%	4%	5%	13%	
	SILT			SAND			GRAVEL			
23%	25%			30%			22%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**93**
20.0	**87**
10.0	**83**
6.30	**82**
3.35	**79**
2.00	**78**
1.18	**76**
0.630	**71**
0.425	**67**
0.200	**59**
0.150	**56**
0.063	**48**

Particle Diameter (mm)	Percent Passing (%)
0.02	**42**
0.006	**33**
0.002	**23**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.004**
D_{50} (mm)	**0.078**
D_{60} (mm)	**0.220**
D_{85} (mm)	**14.142**
D_{90} (mm)	**27.386**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly slightly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	E. Hort	**ELIZABETH HORT**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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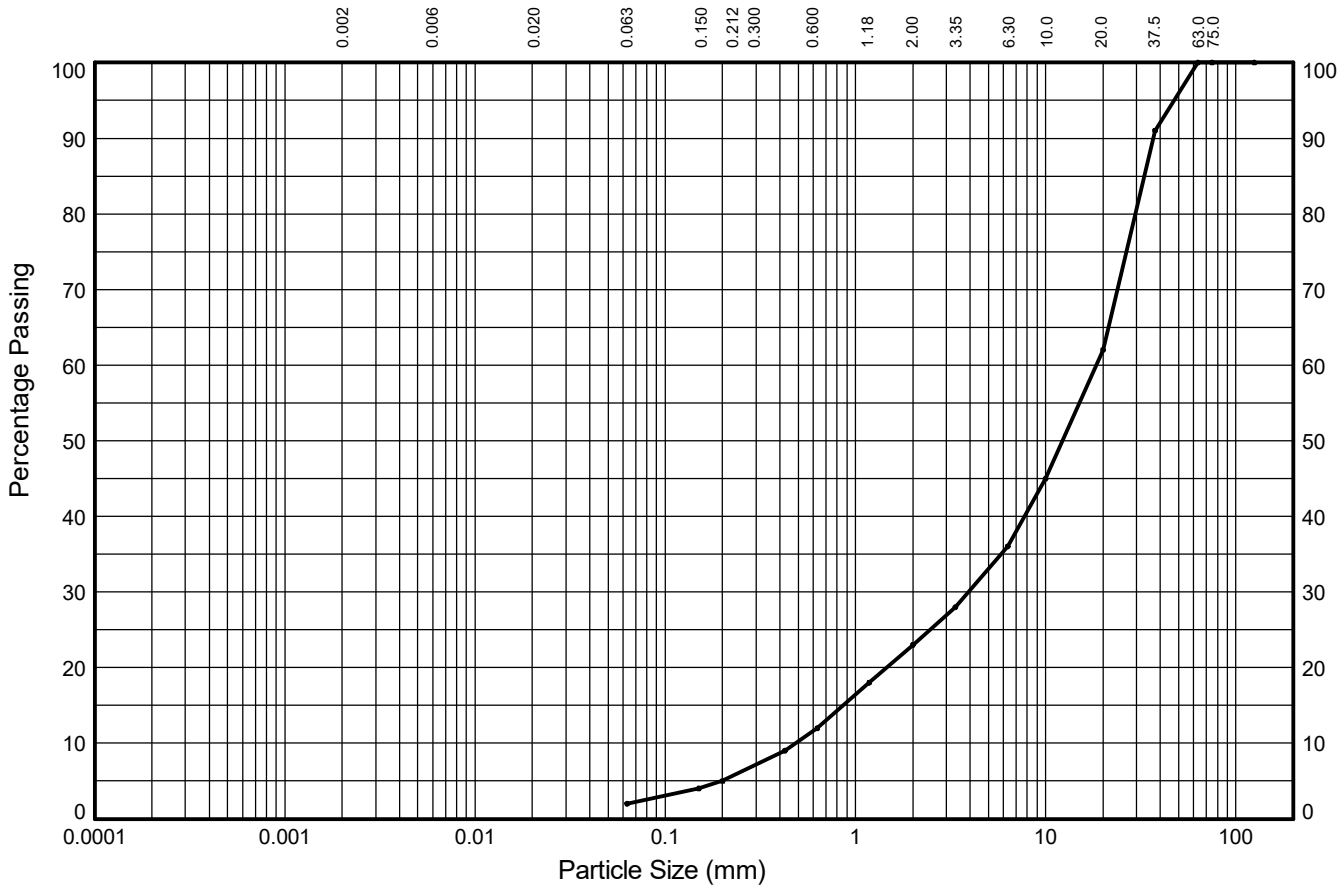
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS102A** Sample Ref: **19** Sample Type: **B** Depth (m): **5.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	3%	7%	11%	13%	26%	38%	
	SILT			SAND			GRAVEL			
2%				21%			77%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**91**
20.0	**62**
10.0	**45**
6.30	**36**
3.35	**28**
2.00	**23**
1.18	**18**
0.630	**12**
0.425	**9**
0.200	**5**
0.150	**4**
0.063	**2**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.485**
D_{15} (mm)	**0.862**
D_{30} (mm)	**3.923**
D_{50} (mm)	**12.261**
D_{60} (mm)	**18.434**
D_{85} (mm)	**32.927**
D_{90} (mm)	**36.696**
C_U	**38**
C_C	**2**

Soil Description:

Brown very sandy slightly silty GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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	E. Hort	**ELIZABETH HORT**	**22/08/23**
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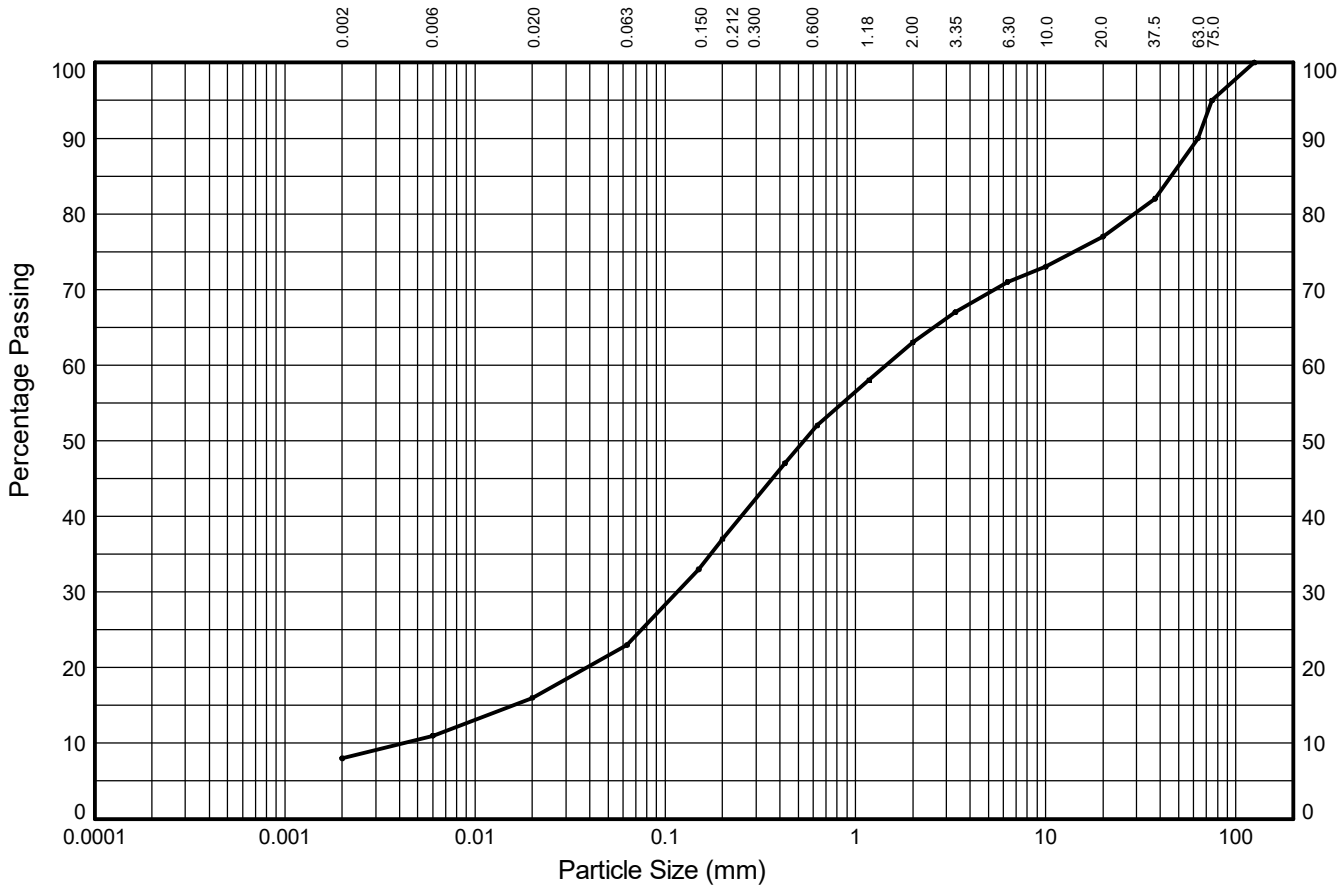
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS102A** Sample Ref: **24** Sample Type: **B** Depth (m): **7.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	5%	7%	14%	15%	11%	8%	6%	13%	
	SILT			SAND			GRAVEL			
8%	15%			40%			27%			10%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**95**
63.0	**90**
37.5	**82**
20.0	**77**
10.0	**73**
6.30	**71**
3.35	**67**
2.00	**63**
1.18	**58**
0.630	**52**
0.425	**47**
0.200	**37**
0.150	**33**
0.063	**23**

Particle Diameter (mm)	Percent Passing (%)
0.02	**16**
0.006	**11**
0.002	**8**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.004**
D_{15} (mm)	**0.016**
D_{30} (mm)	**0.116**
D_{50} (mm)	**0.538**
D_{60} (mm)	**1.457**
D_{85} (mm)	**45.554**
D_{90} (mm)	**63.000**
C_U	**350**
C_C	**2**

Soil Description:

Brown very gravelly clayey SAND with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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1a Princess Street
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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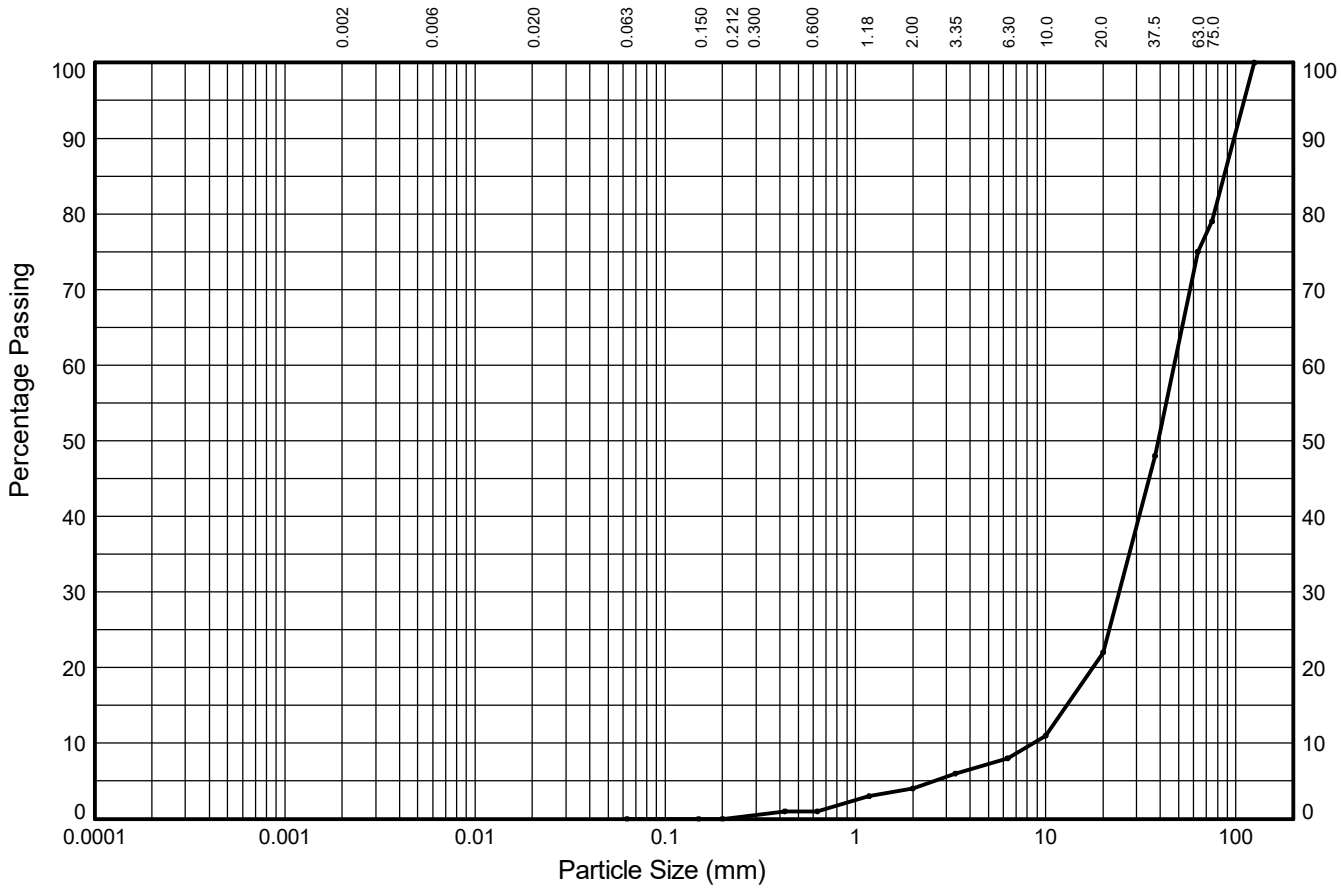
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS102A** Sample Ref: **30** Sample Type: **B** Depth (m): **9.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	0%	1%	3%	4%	14%	53%	
	SILT			SAND			GRAVEL			
0%				4%			71%			25%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**79**
63.0	**75**
37.5	**48**
20.0	**22**
10.0	**11**
6.30	**8**
3.35	**6**
2.00	**4**
1.18	**3**
0.630	**1**
0.425	**1**
0.200	**0**
0.150	**0**
0.063	**0**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**8.573**
D_{15} (mm)	**12.867**
D_{30} (mm)	**24.268**
D_{50} (mm)	**38.969**
D_{60} (mm)	**47.225**
D_{85} (mm)	**86.785**
D_{90} (mm)	**98.009**
C_U	**5.5**
C_C	**1.5**

Soil Description:

Grey slightly sandy GRAVEL with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
E. Hort	**ELIZABETH HORT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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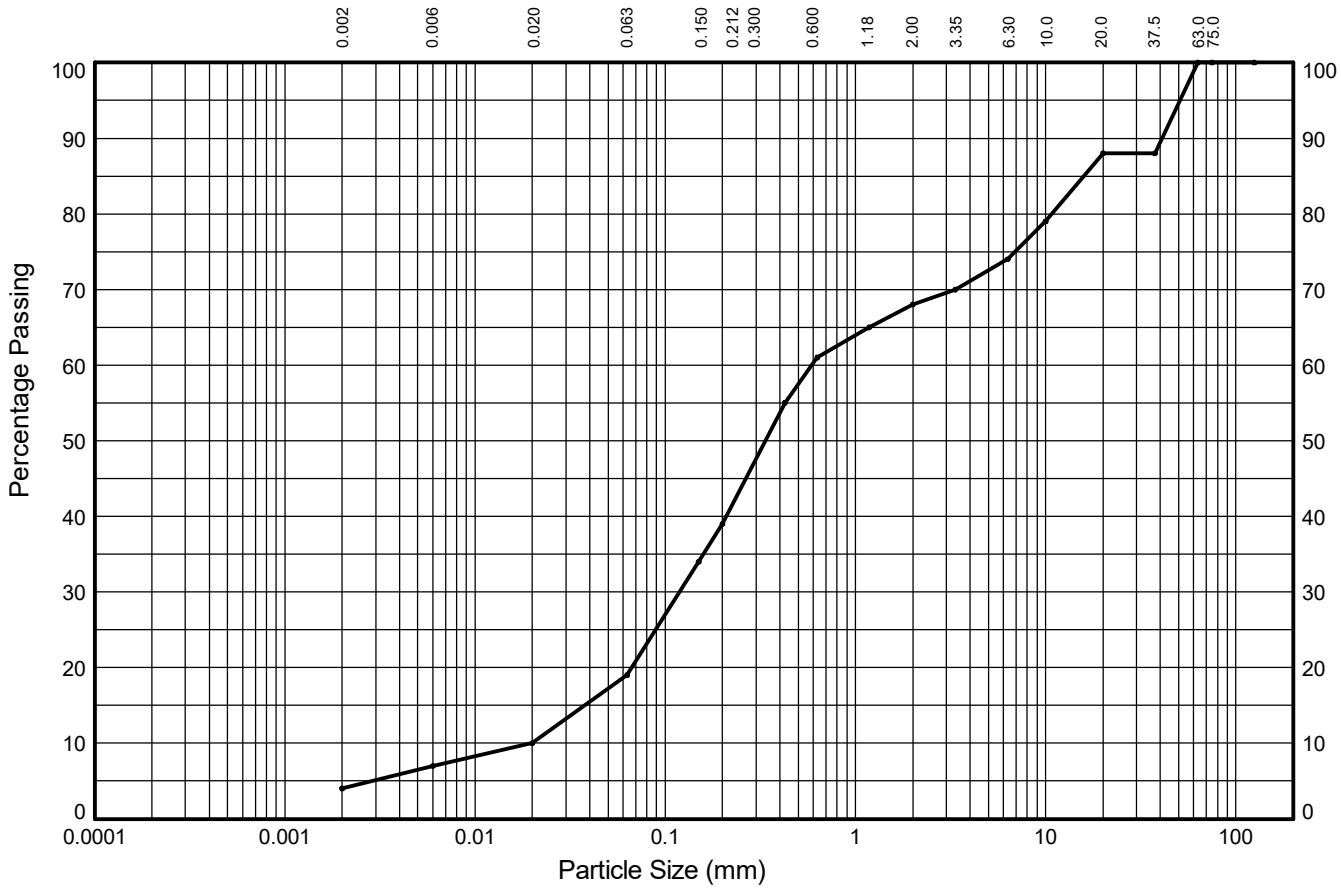
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS104** Sample Ref: **2** Sample Type: **B** Depth (m): **0.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	9%	20%	22%	7%	6%	14%	12%	
	SILT			SAND			GRAVEL			
4%	15%			49%			32%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**88**
20.0	**88**
10.0	**79**
6.30	**74**
3.35	**70**
2.00	**68**
1.18	**65**
0.630	**61**
0.425	**55**
0.200	**39**
0.150	**34**
0.063	**19**

Particle Diameter (mm)	Percent Passing (%)
0.02	**10**
0.006	**7**
0.002	**4**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.020**
D_{15} (mm)	**0.038**
D_{30} (mm)	**0.119**
D_{50} (mm)	**0.336**
D_{60} (mm)	**0.590**
D_{85} (mm)	**15.874**
D_{90} (mm)	**40.887**
C_U	**29**
C_C	**1**

Soil Description:
Brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
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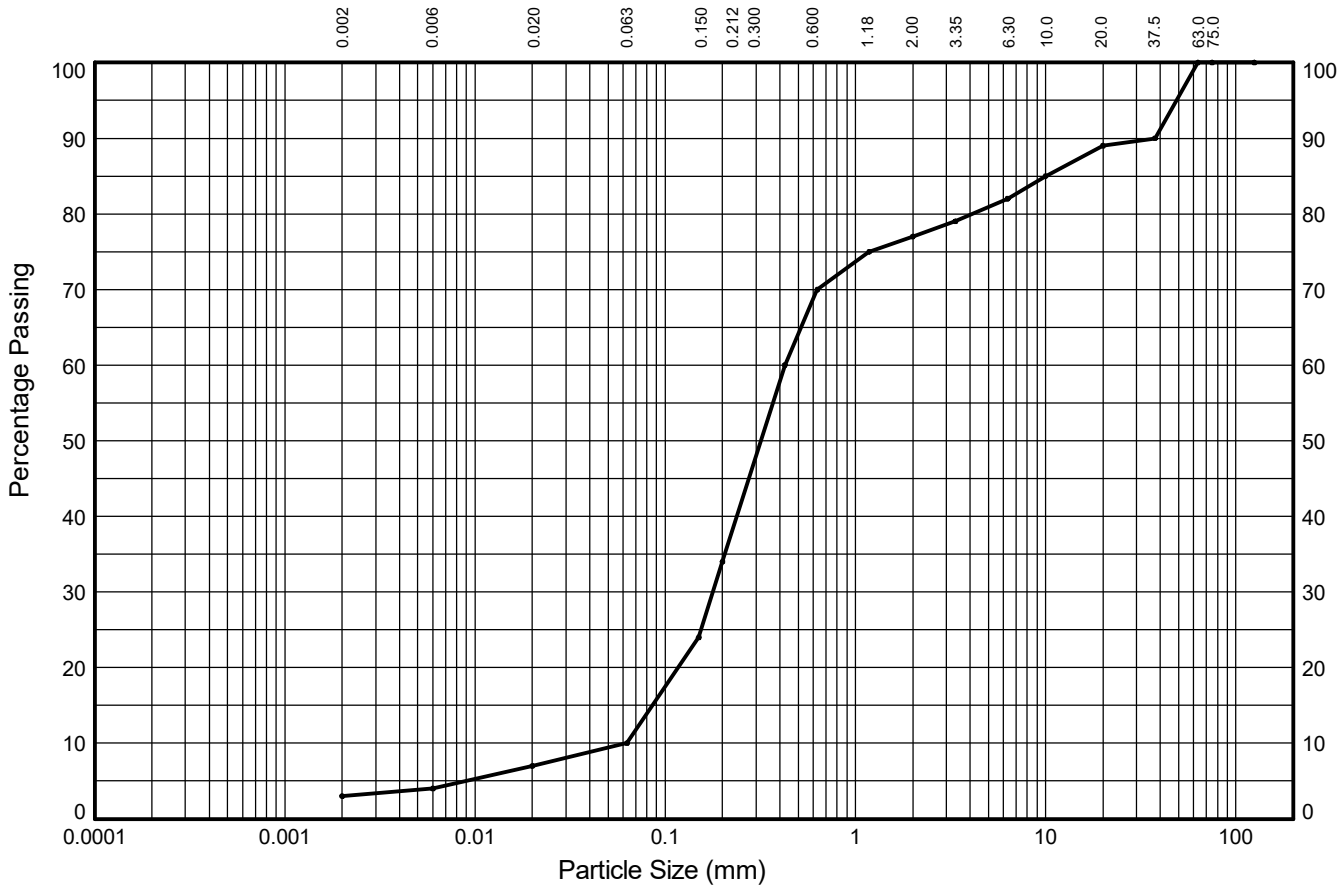
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS106** Sample Ref: **4** Sample Type: **B** Depth (m): **0.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	1%	3%	3%	24%	36%	7%	5%	7%	11%	
	SILT			SAND			GRAVEL			
3%	7%			67%			23%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**90**
20.0	**89**
10.0	**85**
6.30	**82**
3.35	**79**
2.00	**77**
1.18	**75**
0.630	**70**
0.425	**60**
0.200	**34**
0.150	**24**
0.063	**10**

Particle Diameter (mm)	Percent Passing (%)
0.02	**7**
0.006	**4**
0.002	**3**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.063**
D_{15} (mm)	**0.086**
D_{30} (mm)	**0.178**
D_{50} (mm)	**0.318**
D_{60} (mm)	**0.425**
D_{85} (mm)	**10.000**
D_{90} (mm)	**37.500**
C_U	**6.7**
C_C	**1.2**

Soil Description:

Reddish brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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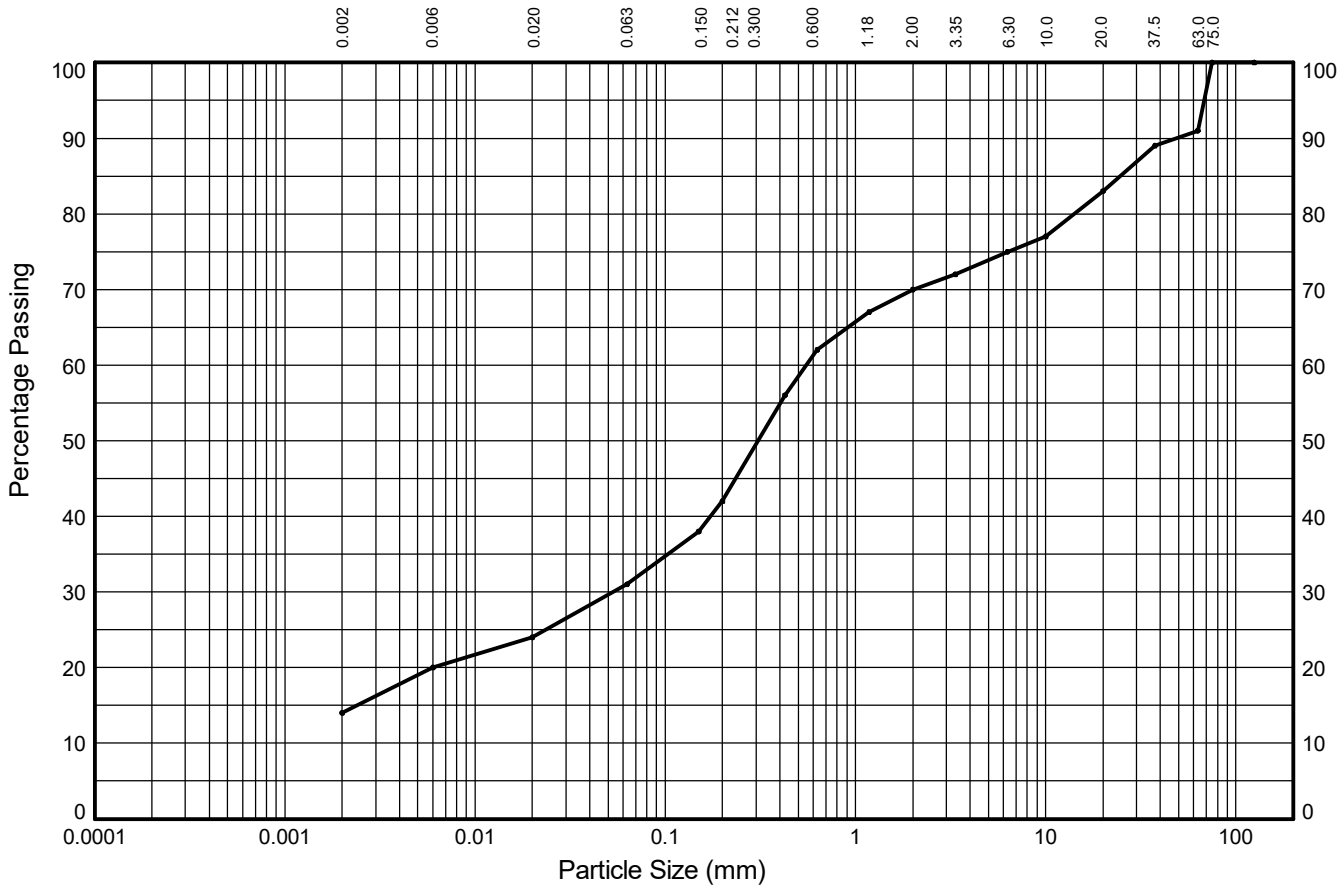
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS106** Sample Ref: **12** Sample Type: **B** Depth (m): **2.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	6%	4%	7%	11%	20%	8%	5%	8%	8%	
	SILT			SAND			GRAVEL			
14%	17%			39%			21%			9%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**91**
37.5	**89**
20.0	**83**
10.0	**77**
6.30	**75**
3.35	**72**
2.00	**70**
1.18	**67**
0.630	**62**
0.425	**56**
0.200	**42**
0.150	**38**
0.063	**31**

Particle Diameter (mm)	Percent Passing (%)
0.02	**24**
0.006	**20**
0.002	**14**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.002**
D_{30} (mm)	**0.053**
D_{50} (mm)	**0.308**
D_{60} (mm)	**0.553**
D_{85} (mm)	**24.662**
D_{90} (mm)	**48.606**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly sandy silty CLAY with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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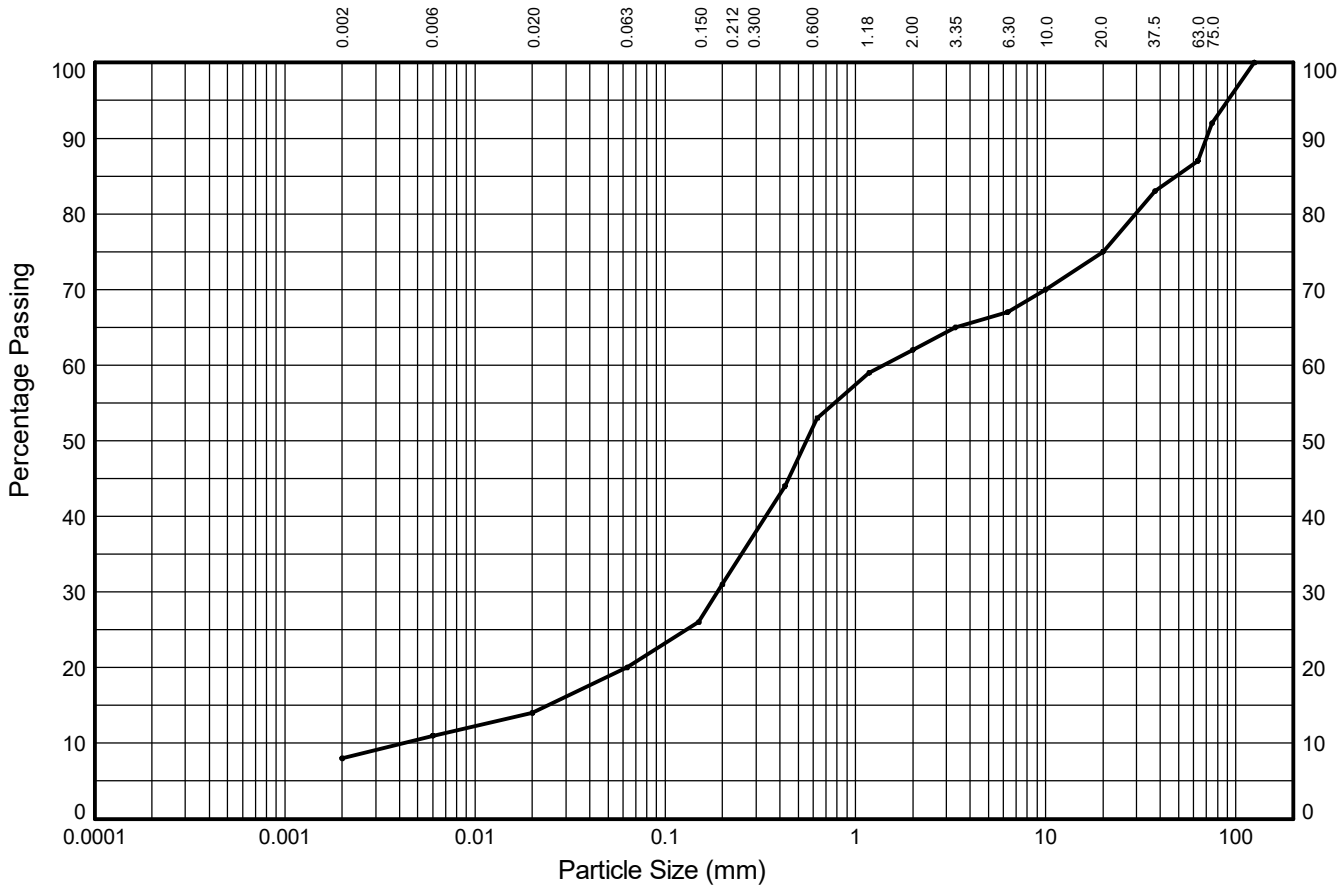
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS106** Sample Ref: **16** Sample Type: **B** Depth (m): **3.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	6%	11%	22%	9%	5%	8%	12%	
	SILT			SAND			GRAVEL			
8%	12%			42%			25%			13%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**92**
63.0	**87**
37.5	**83**
20.0	**75**
10.0	**70**
6.30	**67**
3.35	**65**
2.00	**62**
1.18	**59**
0.630	**53**
0.425	**44**
0.200	**31**
0.150	**26**
0.063	**20**

Particle Diameter (mm)	Percent Passing (%)
0.02	**14**
0.006	**11**
0.002	**8**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.004**
D_{15} (mm)	**0.024**
D_{30} (mm)	**0.189**
D_{50} (mm)	**0.553**
D_{60} (mm)	**1.407**
D_{85} (mm)	**48.606**
D_{90} (mm)	**69.948**
C_U	**338**
C_C	**6**

Soil Description:

Brown very gravelly clayey SAND with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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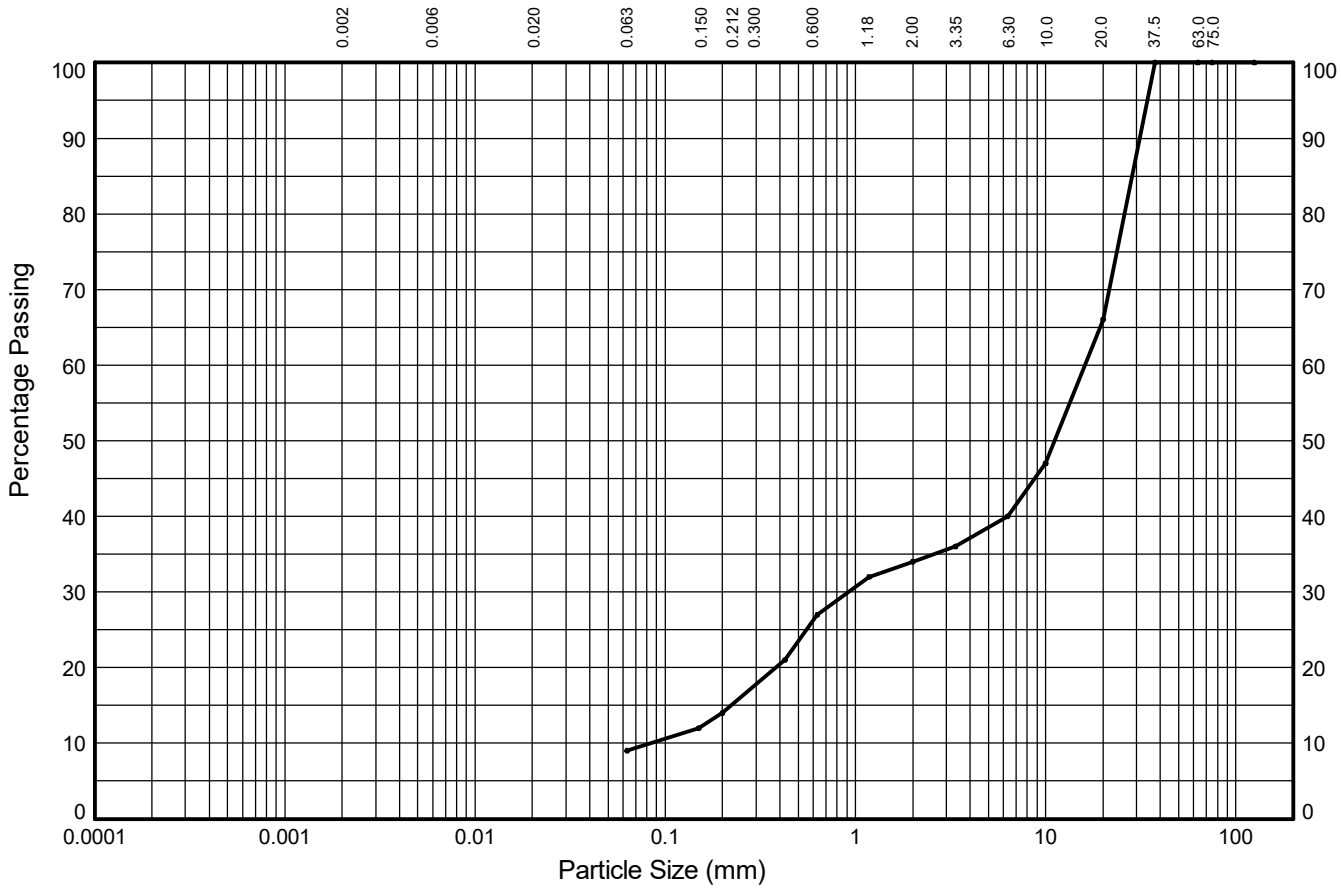
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS107** Sample Ref: **4** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	5%	13%	7%	6%	26%	34%	
	SILT			SAND			GRAVEL			
9%				25%			66%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**66**
10.0	**47**
6.30	**40**
3.35	**36**
2.00	**34**
1.18	**32**
0.630	**27**
0.425	**21**
0.200	**14**
0.150	**12**
0.063	**9**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.084**
D_{15} (mm)	**0.223**
D_{30} (mm)	**0.918**
D_{50} (mm)	**11.157**
D_{60} (mm)	**16.068**
D_{85} (mm)	**28.418**
D_{90} (mm)	**31.170**
C_U	**191**
C_C	**0.62**

Soil Description:

Brown very sandy silty GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
V. Chacin M.	**VALERIA CHACIN MIJOVA**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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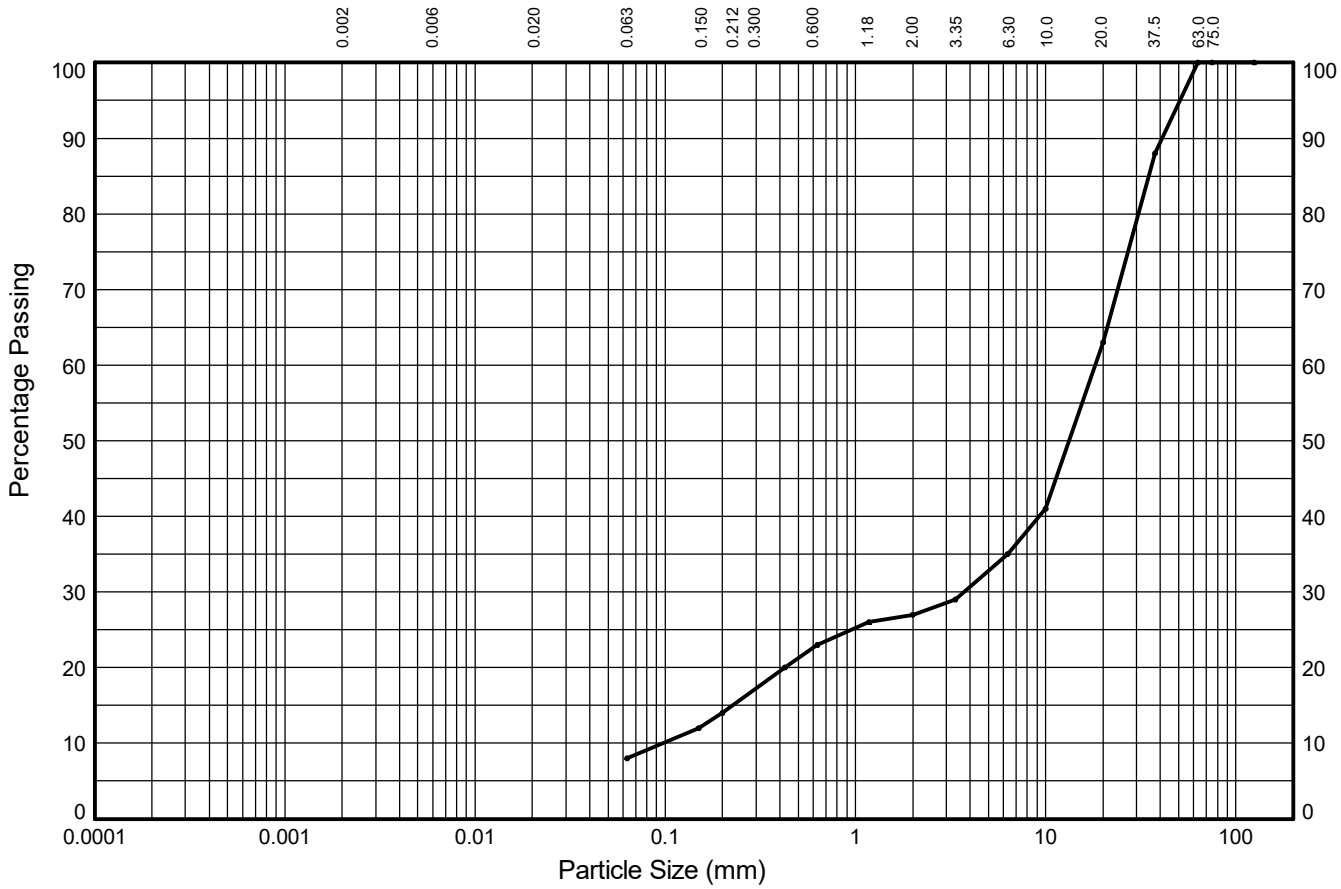
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS107B** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	6%	9%	4%	8%	28%	37%	
	SILT			SAND			GRAVEL			
8%				19%			73%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**88**
20.0	**63**
10.0	**41**
6.30	**35**
3.35	**29**
2.00	**27**
1.18	**26**
0.630	**23**
0.425	**20**
0.200	**14**
0.150	**12**
0.063	**8**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.097**
D_{15} (mm)	**0.227**
D_{30} (mm)	**3.722**
D_{50} (mm)	**13.278**
D_{60} (mm)	**18.196**
D_{85} (mm)	**34.775**
D_{90} (mm)	**40.887**
C_U	**187**
C_C	**8**

Soil Description:
Brown sandy silty GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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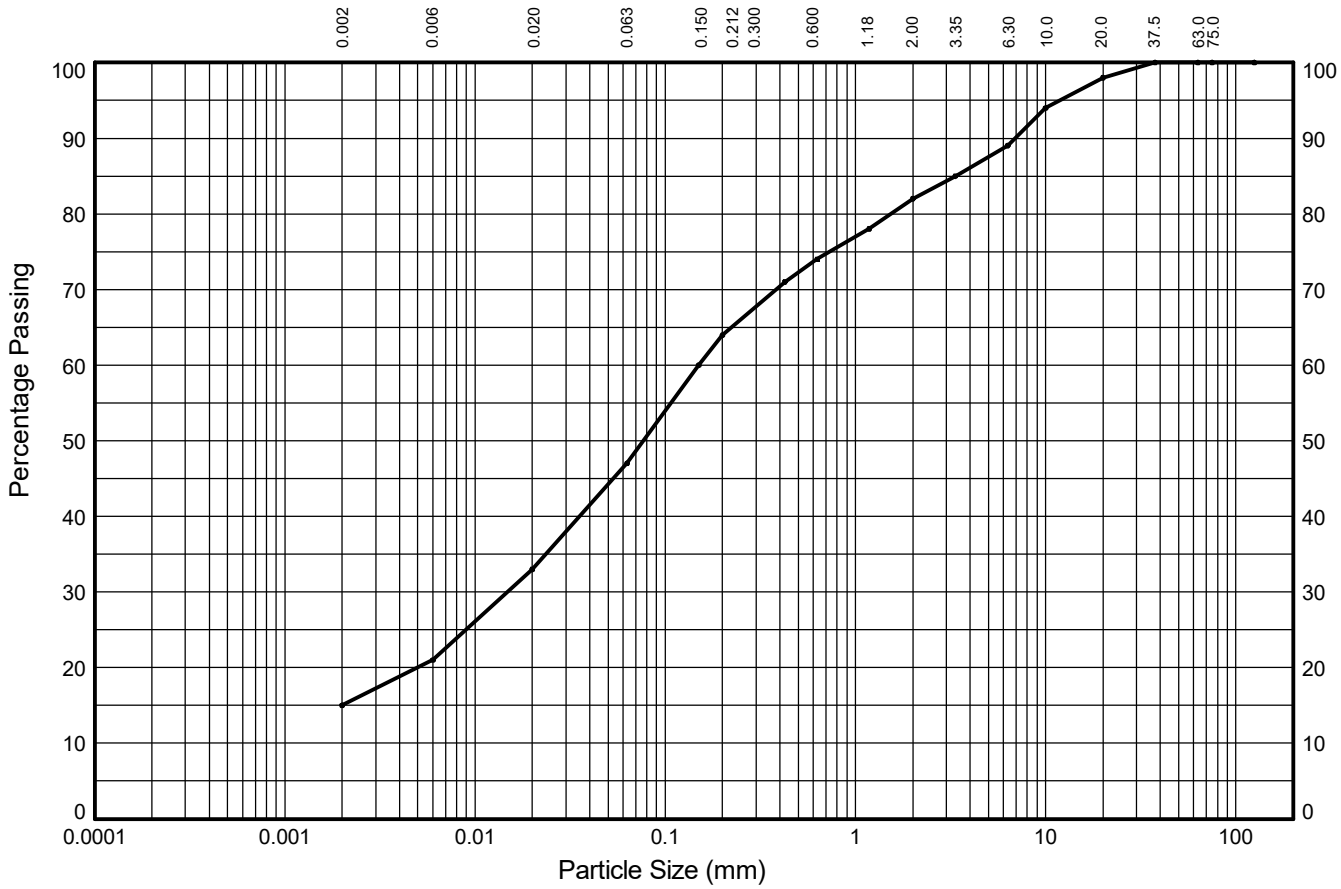
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS107B** Sample Ref: **8** Sample Type: **B** Depth (m): **1.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	6%	12%	14%	17%	10%	8%	7%	9%	2%	
	SILT			SAND			GRAVEL			
15%	32%			35%			18%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**98**
10.0	**94**
6.30	**89**
3.35	**85**
2.00	**82**
1.18	**78**
0.630	**74**
0.425	**71**
0.200	**64**
0.150	**60**
0.063	**47**

Particle Diameter (mm)	Percent Passing (%)
0.02	**33**
0.006	**21**
0.002	**15**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.002**
D_{30} (mm)	**0.015**
D_{50} (mm)	**0.077**
D_{60} (mm)	**0.150**
D_{85} (mm)	**3.350**
D_{90} (mm)	**6.910**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly sandy clayey SILT

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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	Maduka	**PRECIOUS MADUKA**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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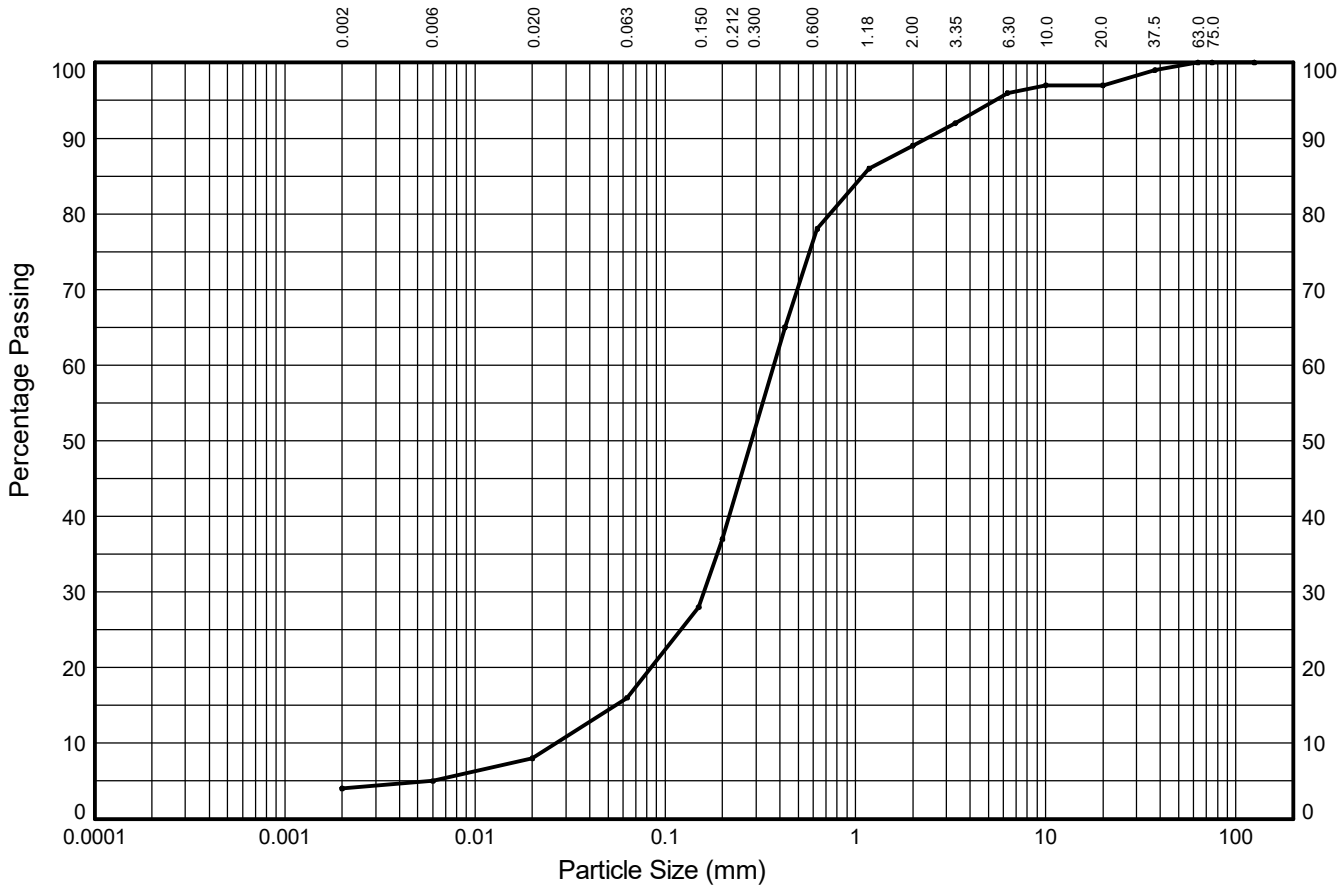
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS108** Sample Ref: **4** Sample Type: **B** Depth (m): **0.80**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	1%	3%	8%	21%	41%	11%	7%	1%	3%	
	SILT			SAND			GRAVEL			
4%	12%			73%			11%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**99**
20.0	**97**
10.0	**97**
6.30	**96**
3.35	**92**
2.00	**89**
1.18	**86**
0.630	**78**
0.425	**65**
0.200	**37**
0.150	**28**
0.063	**16**

Particle Diameter (mm)	Percent Passing (%)
0.02	**8**
0.006	**5**
0.002	**4**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.027**
D_{15} (mm)	**0.055**
D_{30} (mm)	**0.160**
D_{50} (mm)	**0.284**
D_{60} (mm)	**0.371**
D_{85} (mm)	**1.091**
D_{90} (mm)	**2.375**
C_U	**14**
C_C	**3**

Soil Description:

Brown gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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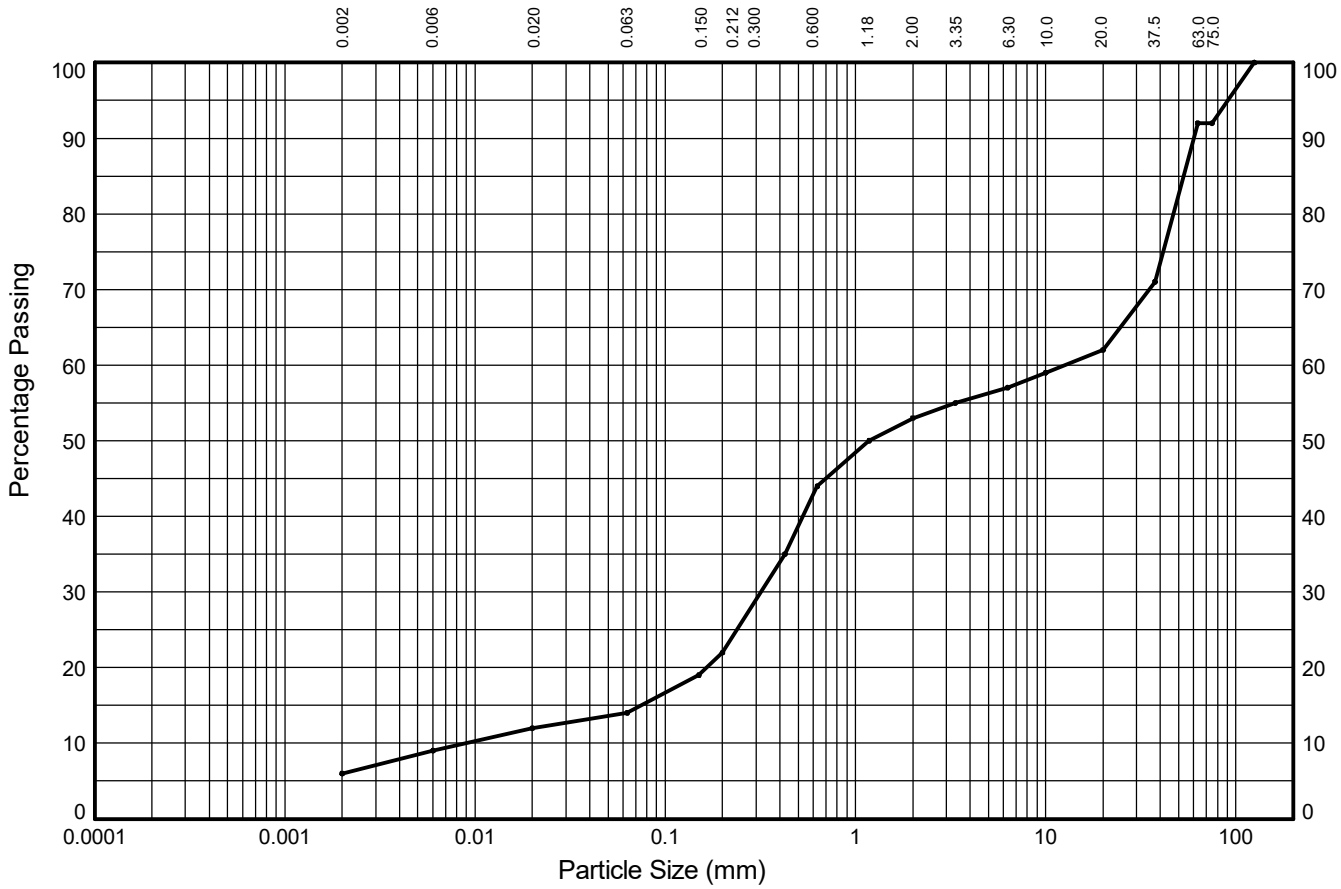
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS108** Sample Ref: **19** Sample Type: **B** Depth (m): **4.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	2%	8%	22%	9%	4%	5%	30%	
	SILT			SAND			GRAVEL			
6%	8%			39%			39%			8%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**92**
63.0	**92**
37.5	**71**
20.0	**62**
10.0	**59**
6.30	**57**
3.35	**55**
2.00	**53**
1.18	**50**
0.630	**44**
0.425	**35**
0.200	**22**
0.150	**19**
0.063	**14**

Particle Diameter (mm)	Percent Passing (%)
0.02	**12**
0.006	**9**
0.002	**6**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.009**
D_{15} (mm)	**0.075**
D_{30} (mm)	**0.318**
D_{50} (mm)	**1.180**
D_{60} (mm)	**12.599**
D_{85} (mm)	**52.995**
D_{90} (mm)	**59.963**
C_U	**1406**
C_C	**0.90**

Soil Description:

Brown very sandy clayey GRAVEL with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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The Potteries
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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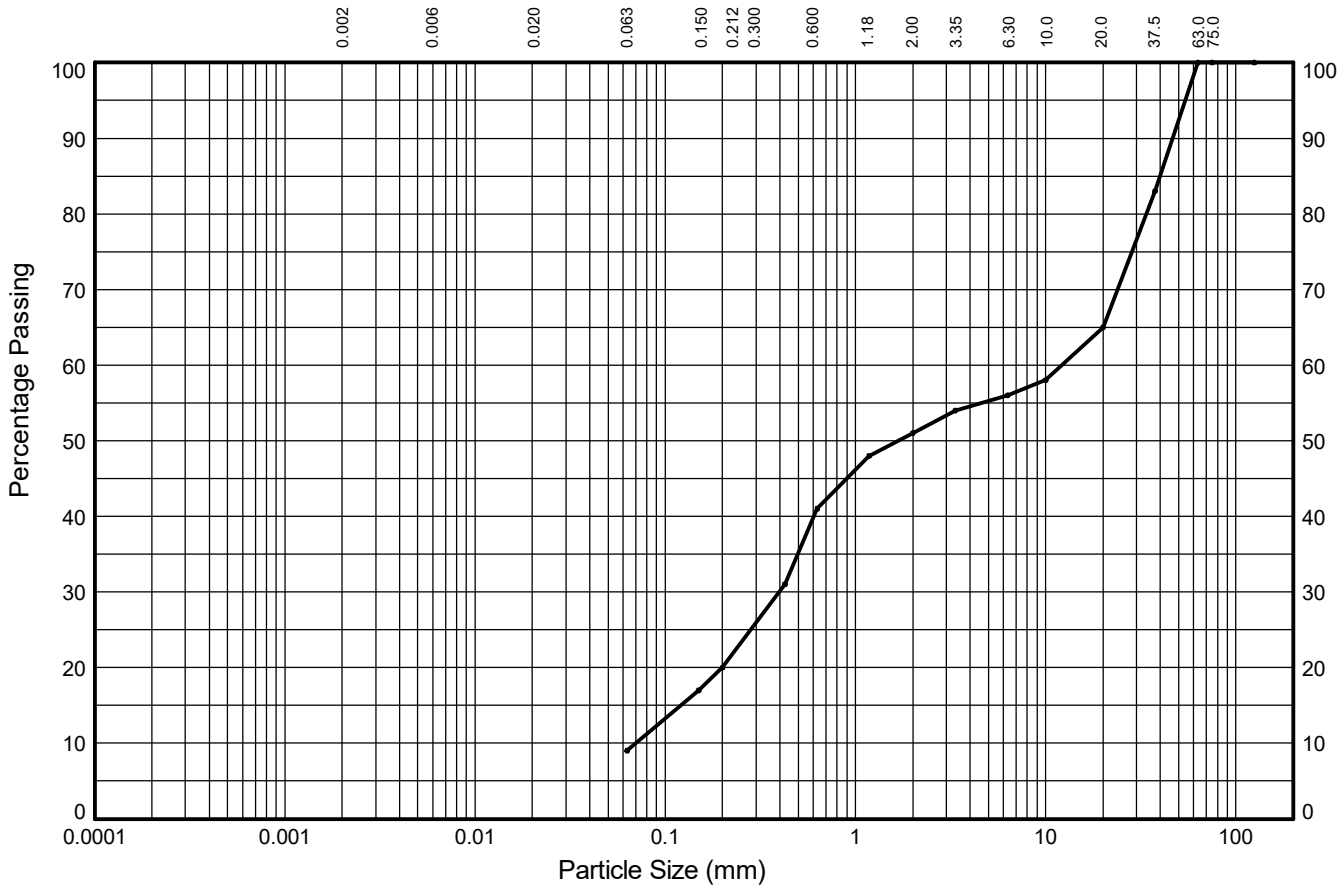
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS108** Sample Ref: **27** Sample Type: **B** Depth (m): **6.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	11%	21%	10%	5%	9%	35%	
	SILT			SAND			GRAVEL			
9%				42%			49%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**83**
20.0	**65**
10.0	**58**
6.30	**56**
3.35	**54**
2.00	**51**
1.18	**48**
0.630	**41**
0.425	**31**
0.200	**20**
0.150	**17**
0.063	**9**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.070**
D_{15} (mm)	**0.121**
D_{30} (mm)	**0.397**
D_{50} (mm)	**1.677**
D_{60} (mm)	**12.190**
D_{85} (mm)	**39.860**
D_{90} (mm)	**46.431**
C_U	**174**
C_C	**0.18**

Soil Description:
Brown very sandy clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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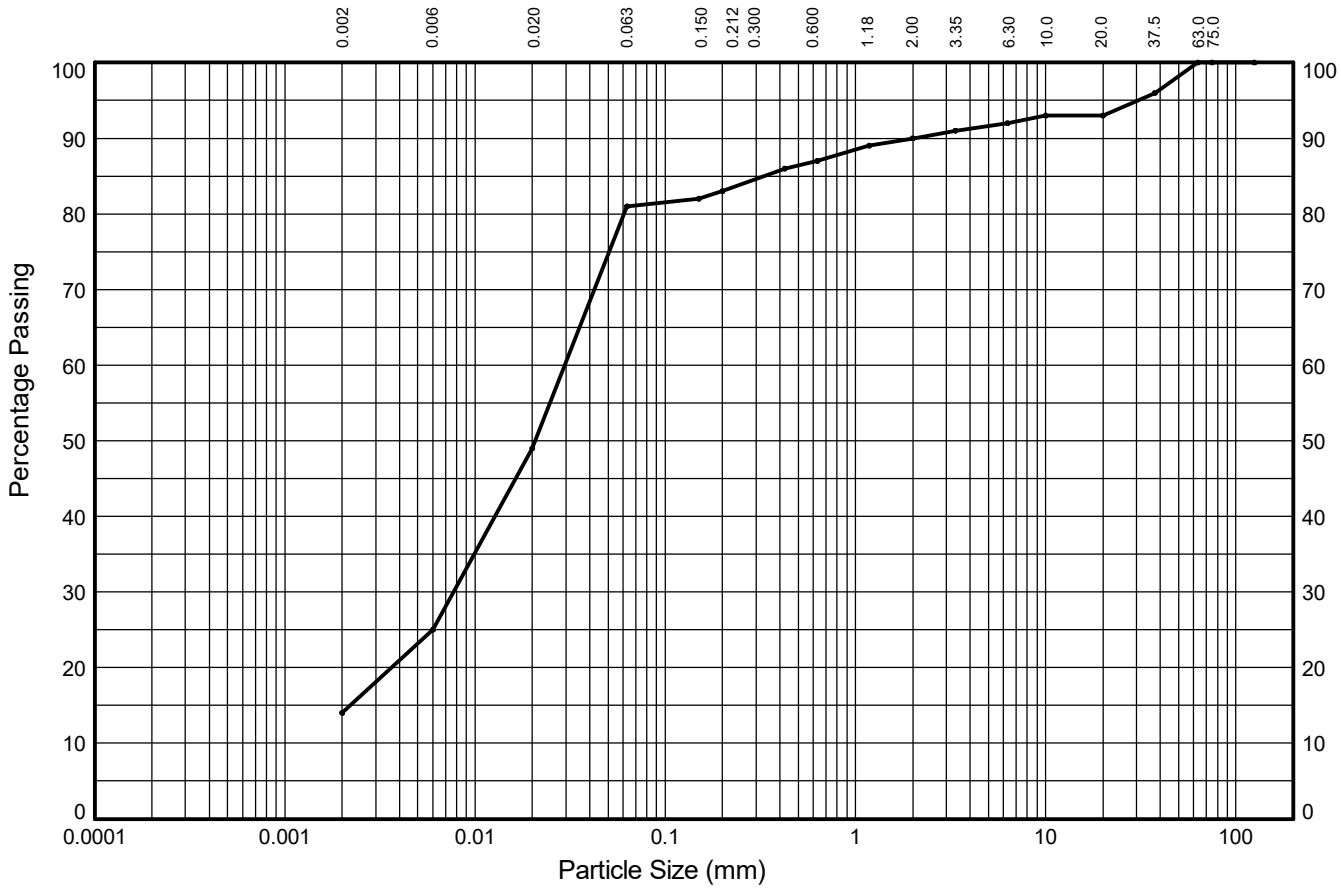
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS108** Sample Ref: **35** Sample Type: **B** Depth (m): **8.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	12%	23%	32%	2%	4%	3%	2%	1%	7%	
	SILT			SAND			GRAVEL			
14%	67%			9%			10%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**96**
20.0	**93**
10.0	**93**
6.30	**92**
3.35	**91**
2.00	**90**
1.18	**89**
0.630	**87**
0.425	**86**
0.200	**83**
0.150	**82**
0.063	**81**

Particle Diameter (mm)	Percent Passing (%)
0.02	**49**
0.006	**25**
0.002	**14**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.002**
D_{30} (mm)	**0.008**
D_{50} (mm)	**0.021**
D_{60} (mm)	**0.030**
D_{85} (mm)	**0.331**
D_{90} (mm)	**2.000**
C_U	**NA**
C_C	**NA**

Soil Description:

Brownish grey slightly sandy slightly gravelly clayey SILT

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
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Compiled By		Date
V. Chacin M.	**VALERIA CHACIN MIJOVA**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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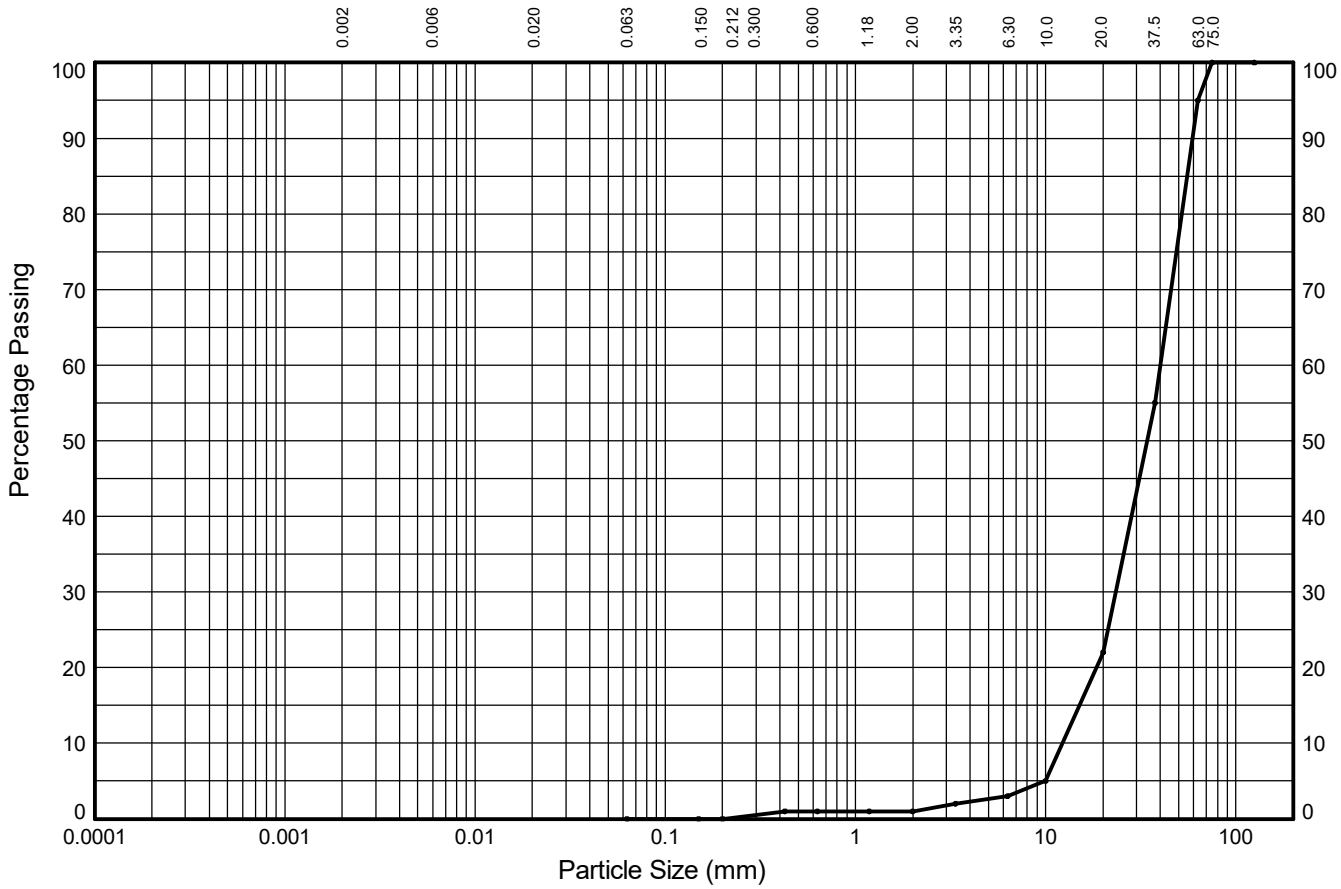
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS108** Sample Ref: **42** Sample Type: **B** Depth (m): **10.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	0%	1%	0%	2%	19%	73%	
	SILT			SAND			GRAVEL			
0%				1%			94%			5%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**95**
37.5	**55**
20.0	**22**
10.0	**5**
6.30	**3**
3.35	**2**
2.00	**1**
1.18	**1**
0.630	**1**
0.425	**1**
0.200	**0**
0.150	**0**
0.063	**0**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**12.261**
D_{15} (mm)	**15.034**
D_{30} (mm)	**23.292**
D_{50} (mm)	**34.093**
D_{60} (mm)	**40.012**
D_{85} (mm)	**55.337**
D_{90} (mm)	**59.044**
C_U	**3.3**
C_C	**1.1**

Soil Description:
Greish brown slightly sandy GRAVEL with a medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
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Compiled By		Date
V. Chacin M.	**VALERIA CHACIN MIJOVA**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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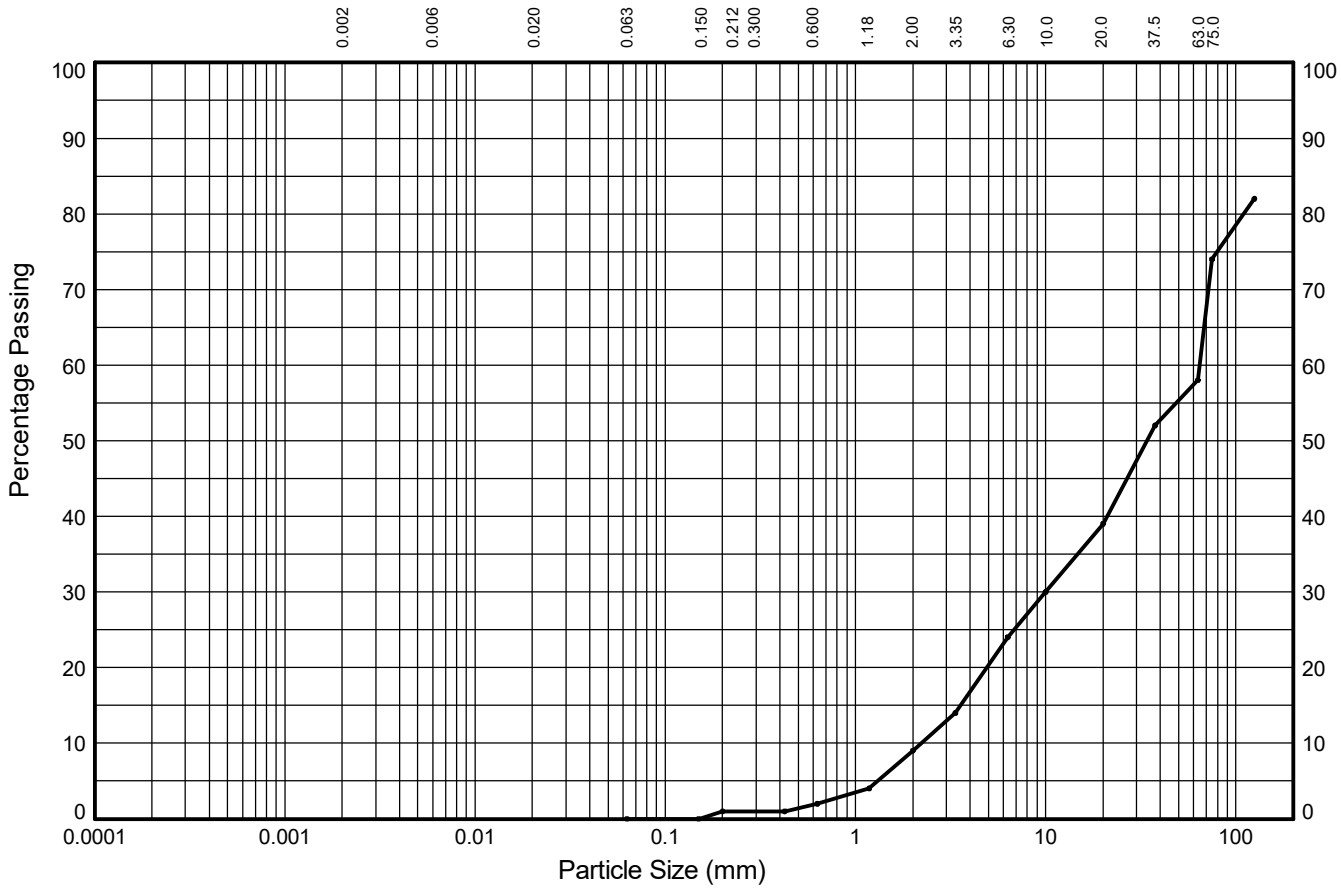
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS108** Sample Ref: **50** Sample Type: **B** Depth (m): **12.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	1%	1%	7%	15%	15%	19%	
	SILT			SAND			GRAVEL			
0%				9%			49%			42%

Test Sieve (mm)	Percent Passing (%)
125.0	**82**
75.0	**74**
63.0	**58**
37.5	**52**
20.0	**39**
10.0	**30**
6.30	**24**
3.35	**14**
2.00	**9**
1.18	**4**
0.630	**2**
0.425	**1**
0.200	**1**
0.150	**0**
0.063	**0**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**2.217**
D_{15} (mm)	**3.568**
D_{30} (mm)	**10.000**
D_{50} (mm)	**34.043**
D_{60} (mm)	**64.388**
D_{85} (mm)	
D_{90} (mm)	
C_U	**29**
C_C	**0.70**

Soil Description:

Grey sandy GRAVEL with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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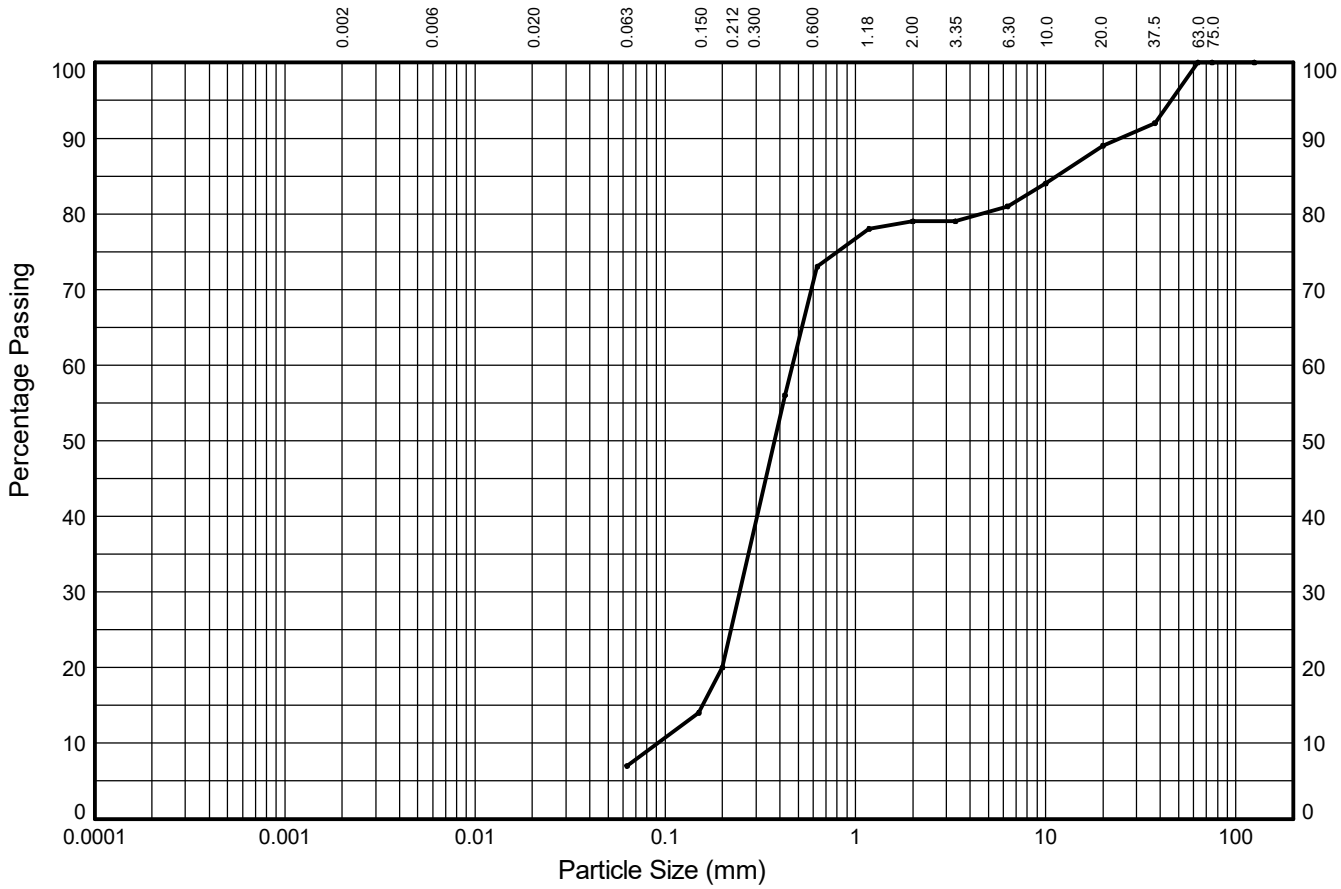
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS111** Sample Ref: **4** Sample Type: **B** Depth (m): **0.90**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	13%	53%	6%	2%	8%	11%	
	SILT			SAND			GRAVEL			
7%				72%			21%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**92**
20.0	**89**
10.0	**84**
6.30	**81**
3.35	**79**
2.00	**79**
1.18	**78**
0.630	**73**
0.425	**56**
0.200	**20**
0.150	**14**
0.063	**7**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.091**
D_{15} (mm)	**0.157**
D_{30} (mm)	**0.247**
D_{50} (mm)	**0.375**
D_{60} (mm)	**0.466**
D_{85} (mm)	**11.487**
D_{90} (mm)	**24.662**
C_U	**5.1**
C_C	**1.4**

Soil Description:

Orangish brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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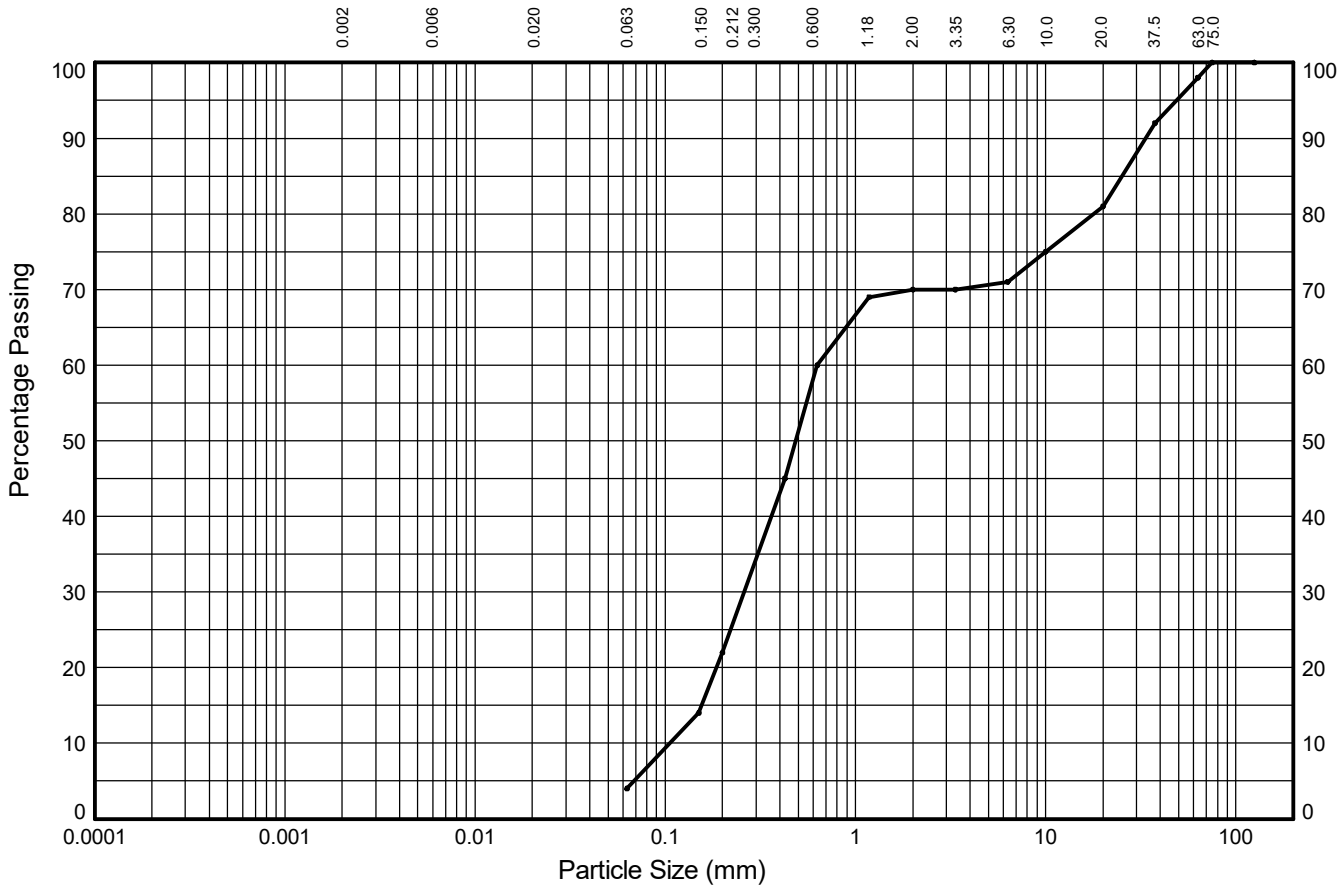
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS111** Sample Ref: **12** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	18%	38%	10%	1%	10%	17%	
	SILT			SAND			GRAVEL			
4%				66%			28%			2%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**98**
37.5	**92**
20.0	**81**
10.0	**75**
6.30	**71**
3.35	**70**
2.00	**70**
1.18	**69**
0.630	**60**
0.425	**45**
0.200	**22**
0.150	**14**
0.063	**4**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.106**
D_{15} (mm)	**0.155**
D_{30} (mm)	**0.260**
D_{50} (mm)	**0.485**
D_{60} (mm)	**0.630**
D_{85} (mm)	**25.136**
D_{90} (mm)	**33.450**
C_U	**5.9**
C_C	**1.0**

Soil Description:

Reddish brown very gravelly slightly silty SAND with a low cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
V. Chacin M.	**VALERIA CHACIN MIJOVA**	**22/08/23**

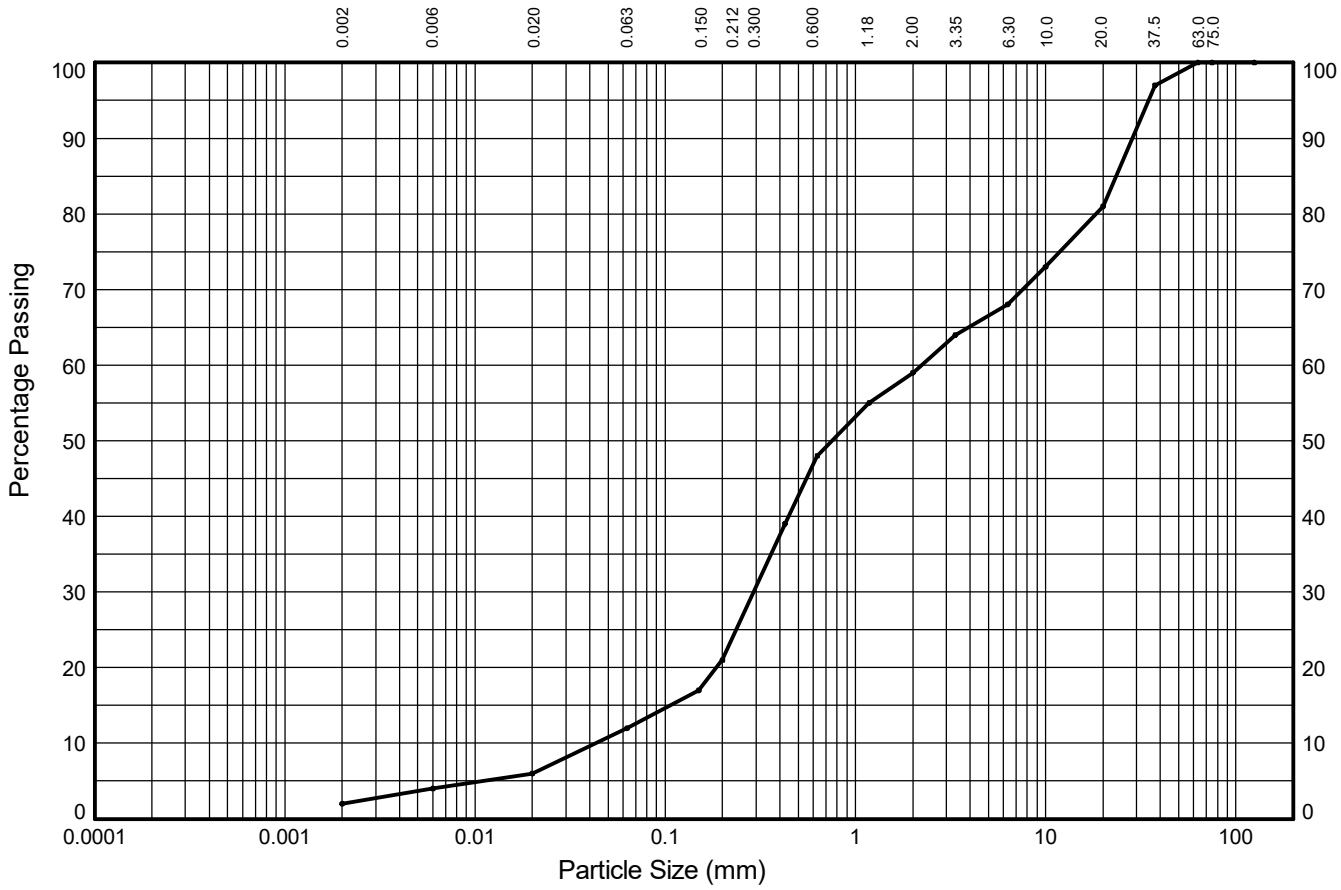
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:07 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS112** Sample Ref: **4** Sample Type: **B** Depth (m): **0.65**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	2%	6%	9%	27%	11%	9%	13%	19%	
	SILT			SAND			GRAVEL			
2%	10%			47%			41%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**97**
20.0	**81**
10.0	**73**
6.30	**68**
3.35	**64**
2.00	**59**
1.18	**55**
0.630	**48**
0.425	**39**
0.200	**21**
0.150	**17**
0.063	**12**

Particle Diameter (mm)	Percent Passing (%)
0.02	**6**
0.006	**4**
0.002	**2**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.043**
D_{15} (mm)	**0.106**
D_{30} (mm)	**0.292**
D_{50} (mm)	**0.754**
D_{60} (mm)	**2.217**
D_{85} (mm)	**23.403**
D_{90} (mm)	**28.483**
C_U	**52**
C_C	**0.89**

Soil Description:

Dark brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By	Date
LORNA WHITWORTH	**22/08/23**

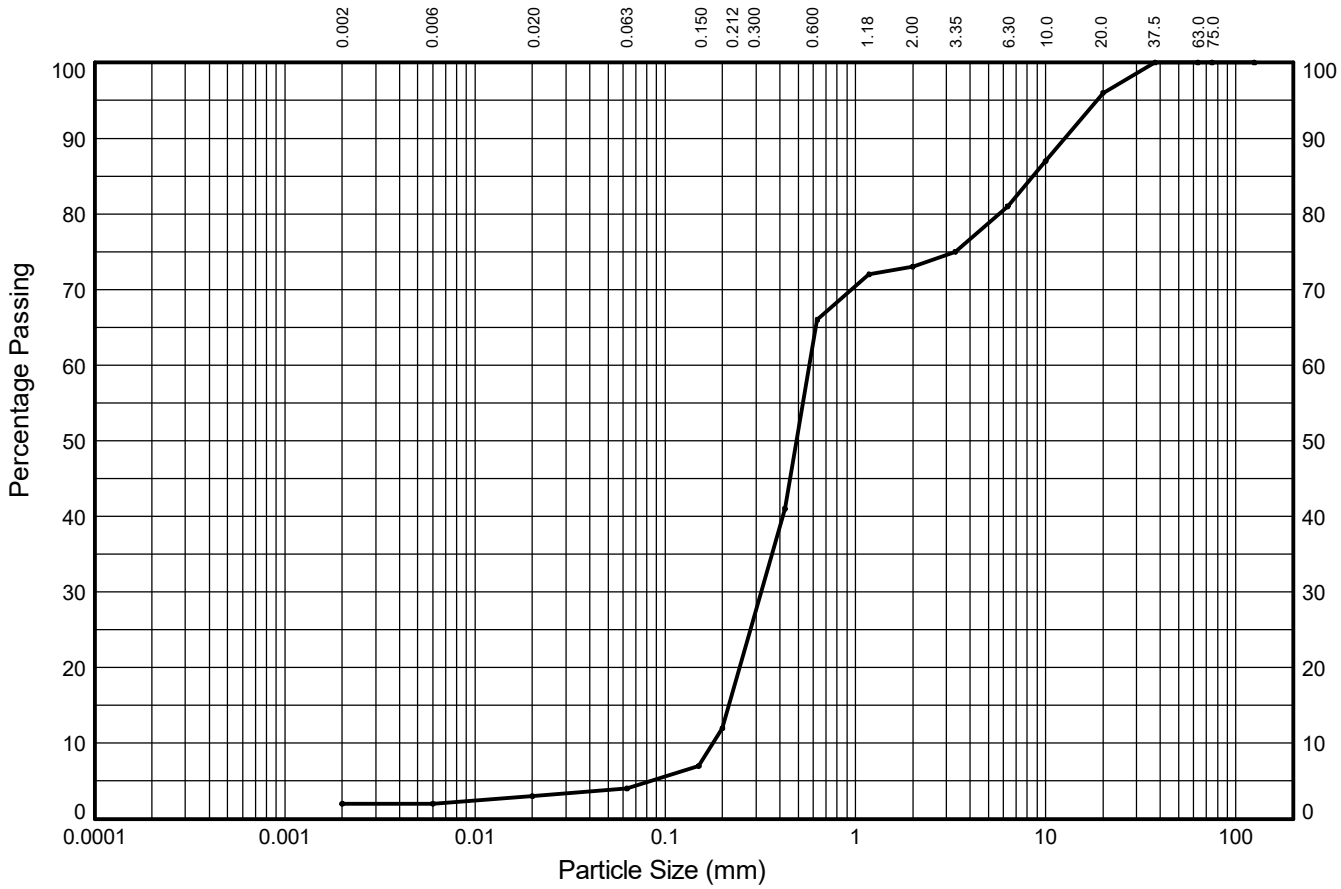
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:07 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS112** Sample Ref: **20** Sample Type: **B** Depth (m): **4.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	0%	1%	1%	8%	54%	7%	8%	15%	4%	
	SILT			SAND			GRAVEL			
2%	2%			69%			27%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**96**
10.0	**87**
6.30	**81**
3.35	**75**
2.00	**73**
1.18	**72**
0.630	**66**
0.425	**41**
0.200	**12**
0.150	**7**
0.063	**4**

Particle Diameter (mm)	Percent Passing (%)
0.02	**3**
0.006	**2**
0.002	**2**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.178**
D_{15} (mm)	**0.216**
D_{30} (mm)	**0.319**
D_{50} (mm)	**0.490**
D_{60} (mm)	**0.573**
D_{85} (mm)	**8.573**
D_{90} (mm)	**12.599**
C_U	**3.2**
C_C	**1.00**

Soil Description:

Red very gravelly slightly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By	Date
LORNA WHITWORTH	**22/08/23**

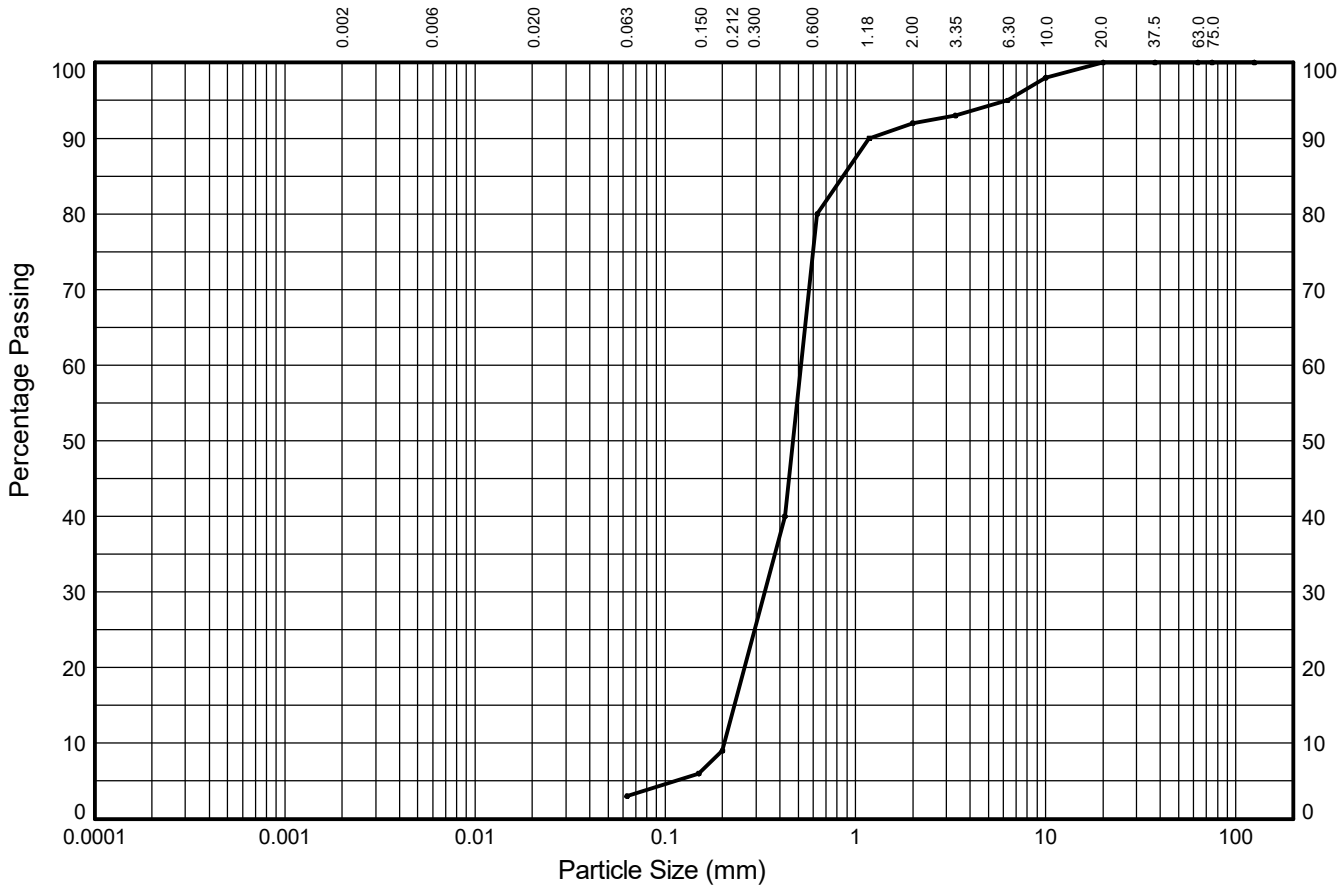
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:07 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS112** Sample Ref: **24** Sample Type: **B** Depth (m): **5.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	6%	71%	12%	3%	5%	0%	
	SILT			SAND			GRAVEL			
3%				89%			8%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**98**
6.30	**95**
3.35	**93**
2.00	**92**
1.18	**90**
0.630	**80**
0.425	**40**
0.200	**9**
0.150	**6**
0.063	**3**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.205**
D_{15} (mm)	**0.231**
D_{30} (mm)	**0.333**
D_{50} (mm)	**0.469**
D_{60} (mm)	**0.517**
D_{85} (mm)	**0.862**
D_{90} (mm)	**1.180**
C_U	**2.5**
C_C	**1.0**

Soil Description:

Reddish brown gravelly slightly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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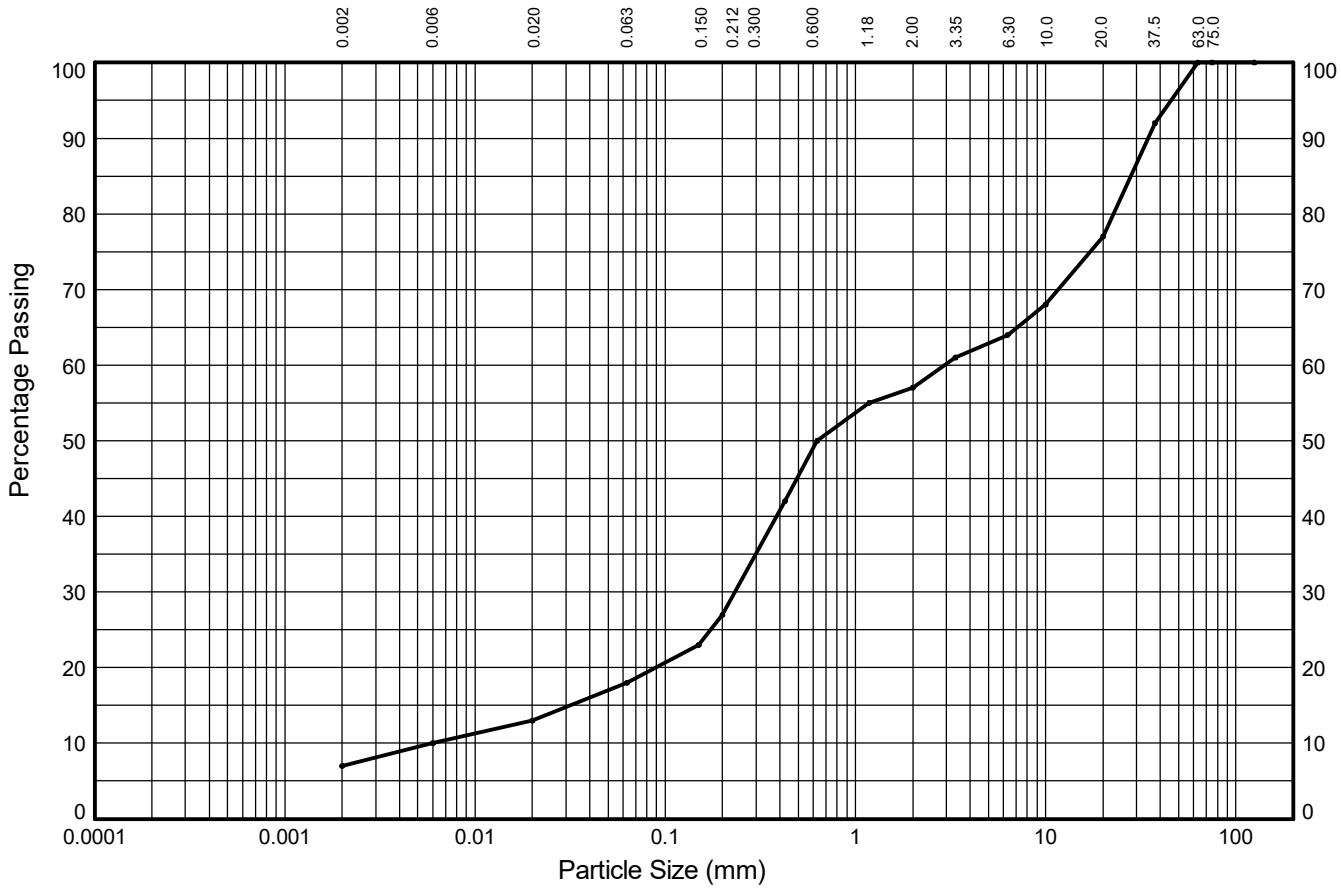
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS113** Sample Ref: **3** Sample Type: **B** Depth (m): **0.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	5%	9%	23%	7%	7%	13%	23%	
	SILT			SAND			GRAVEL			
7%	11%			39%			43%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**92**
20.0	**77**
10.0	**68**
6.30	**64**
3.35	**61**
2.00	**57**
1.18	**55**
0.630	**50**
0.425	**42**
0.200	**27**
0.150	**23**
0.063	**18**

Particle Diameter (mm)	Percent Passing (%)
0.02	**13**
0.006	**10**
0.002	**7**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.006**
D_{15} (mm)	**0.032**
D_{30} (mm)	**0.233**
D_{50} (mm)	**0.630**
D_{60} (mm)	**2.945**
D_{85} (mm)	**27.966**
D_{90} (mm)	**34.485**
C_U	**491**
C_C	**3**

Soil Description:

Brown very sandy clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

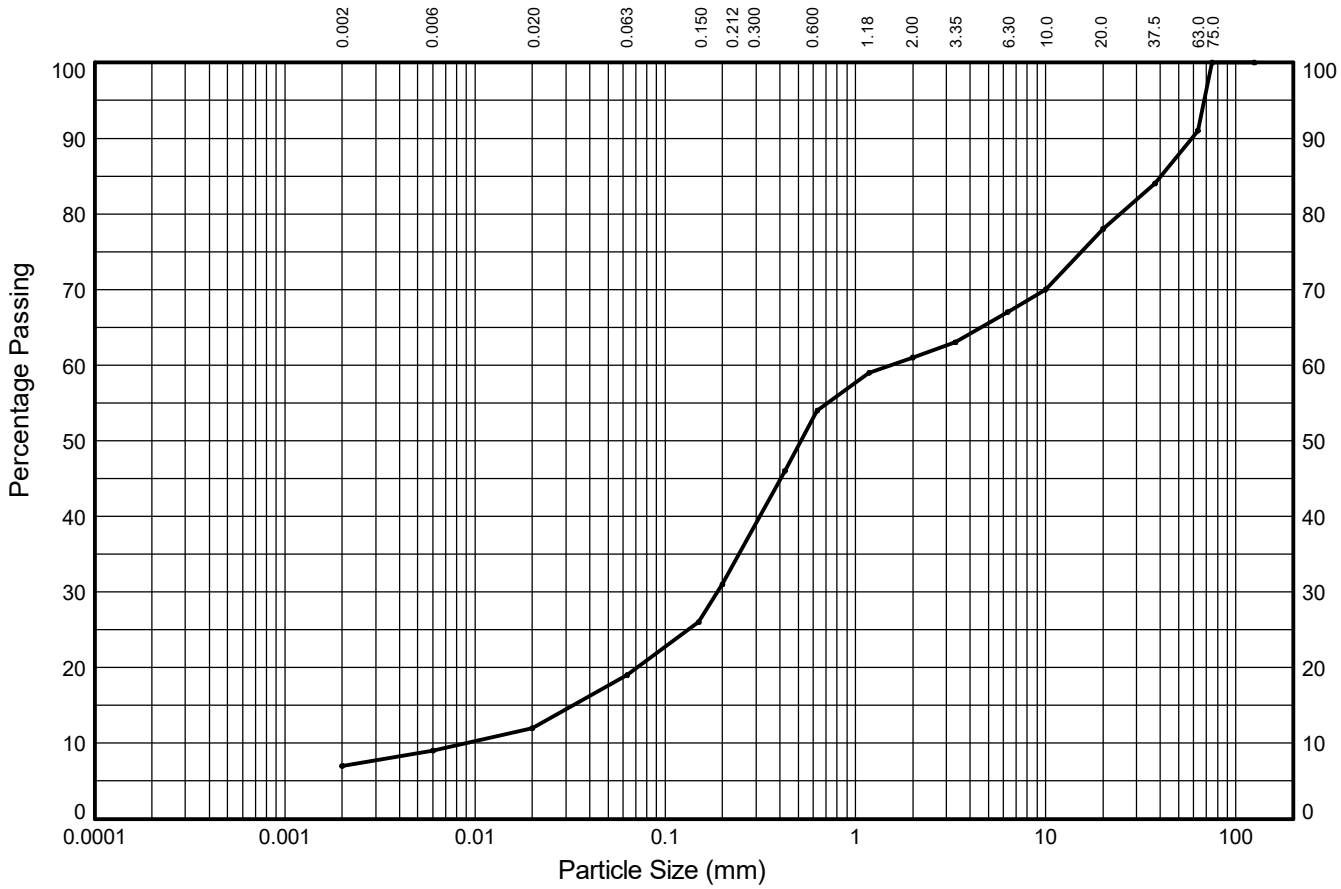
Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:07 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS113** Sample Ref: **5** Sample Type: **B** Depth (m): **0.80**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	3%	7%	12%	23%	7%	6%	11%	13%	
	SILT			SAND			GRAVEL			
7%	12%			42%			30%			9%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**91**
37.5	**84**
20.0	**78**
10.0	**70**
6.30	**67**
3.35	**63**
2.00	**61**
1.18	**59**
0.630	**54**
0.425	**46**
0.200	**31**
0.150	**26**
0.063	**19**

Particle Diameter (mm)	Percent Passing (%)
0.02	**12**
0.006	**9**
0.002	**7**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.009**
D_{15} (mm)	**0.033**
D_{30} (mm)	**0.189**
D_{50} (mm)	**0.517**
D_{60} (mm)	**1.536**
D_{85} (mm)	**40.385**
D_{90} (mm)	**58.500**
C_U	**171**
C_C	**3**

Soil Description:

Brown very gravelly clayey SAND with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

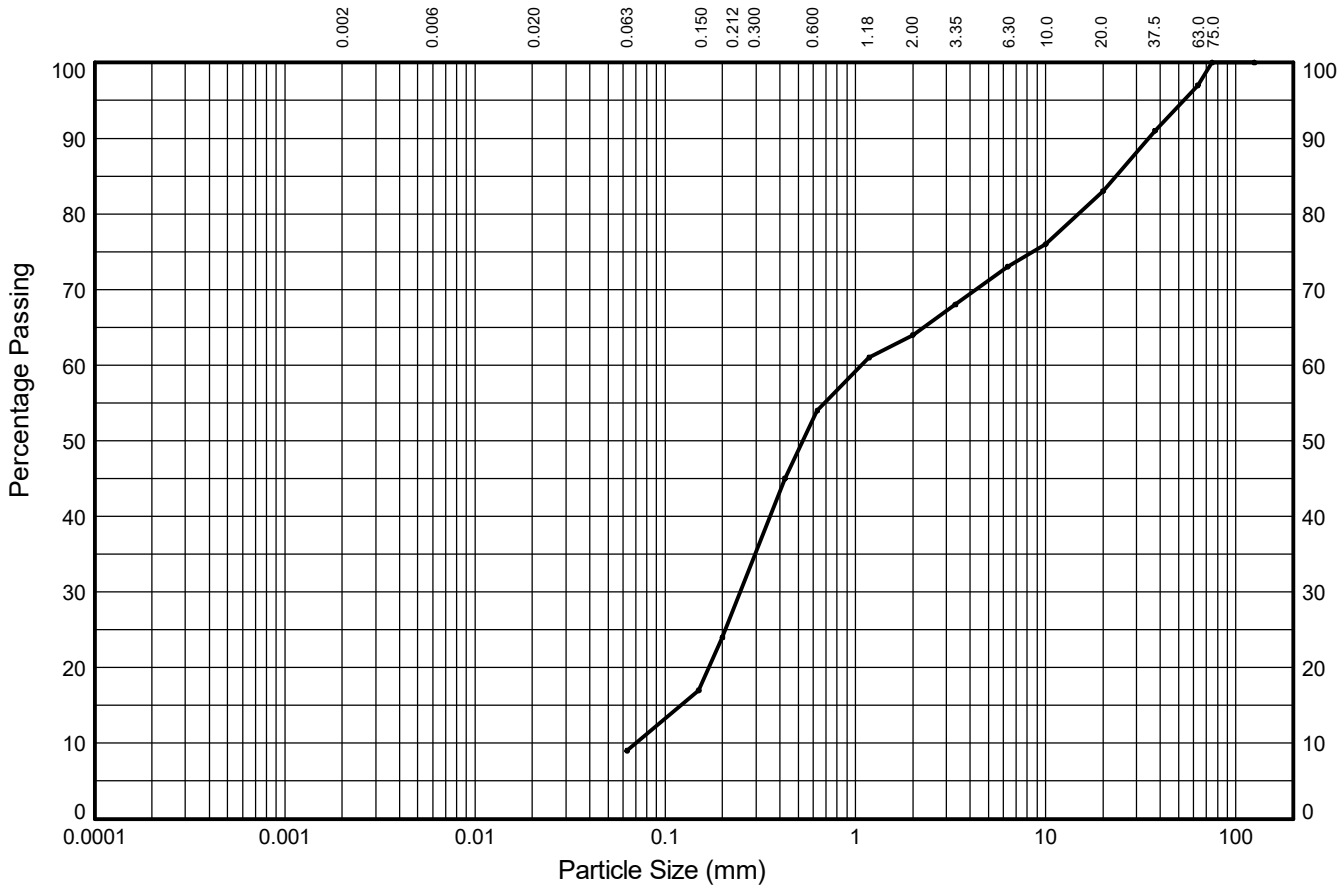
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:07 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS114** Sample Ref: **4** Sample Type: **B** Depth (m): **0.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	15%	30%	10%	9%	10%	14%	
	SILT			SAND			GRAVEL			
9%				55%			33%			3%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**97**
37.5	**91**
20.0	**83**
10.0	**76**
6.30	**73**
3.35	**68**
2.00	**64**
1.18	**61**
0.630	**54**
0.425	**45**
0.200	**24**
0.150	**17**
0.063	**9**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.070**
D_{15} (mm)	**0.121**
D_{30} (mm)	**0.248**
D_{50} (mm)	**0.529**
D_{60} (mm)	**1.079**
D_{85} (mm)	**23.403**
D_{90} (mm)	**34.666**
C_U	**15**
C_C	**0.81**

Soil Description:

Reddish brown very gravelly silty SAND with low cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

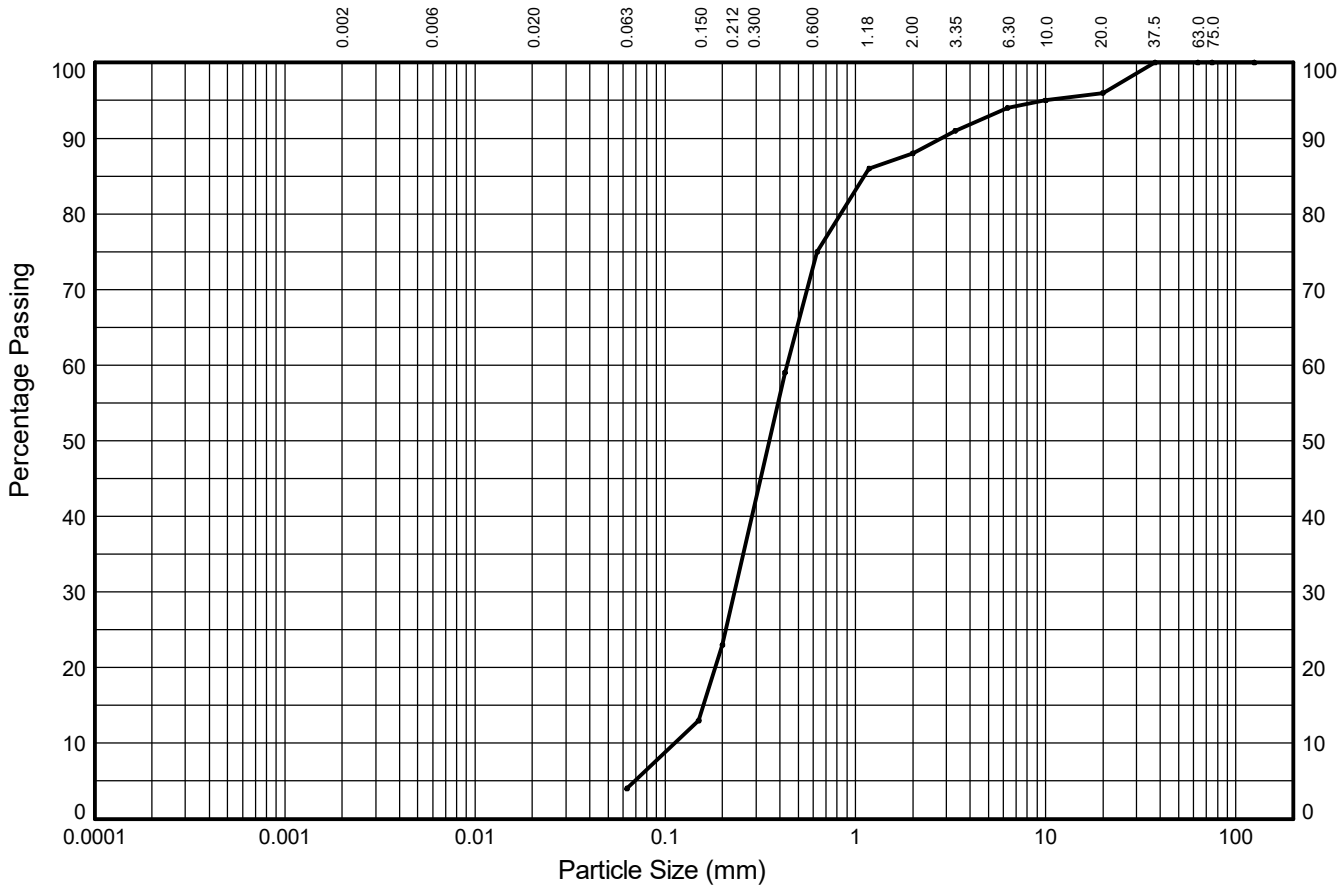
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:08 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS114** Sample Ref: **12** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	19%	52%	13%	6%	2%	4%	
	SILT			SAND			GRAVEL			
4%				84%			12%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**96**
10.0	**95**
6.30	**94**
3.35	**91**
2.00	**88**
1.18	**86**
0.630	**75**
0.425	**59**
0.200	**23**
0.150	**13**
0.063	**4**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.112**
D_{15} (mm)	**0.159**
D_{30} (mm)	**0.232**
D_{50} (mm)	**0.352**
D_{60} (mm)	**0.436**
D_{85} (mm)	**1.115**
D_{90} (mm)	**2.821**
C_U	**3.9**
C_C	**1.1**

Soil Description:

Reddish brown gravelly slightly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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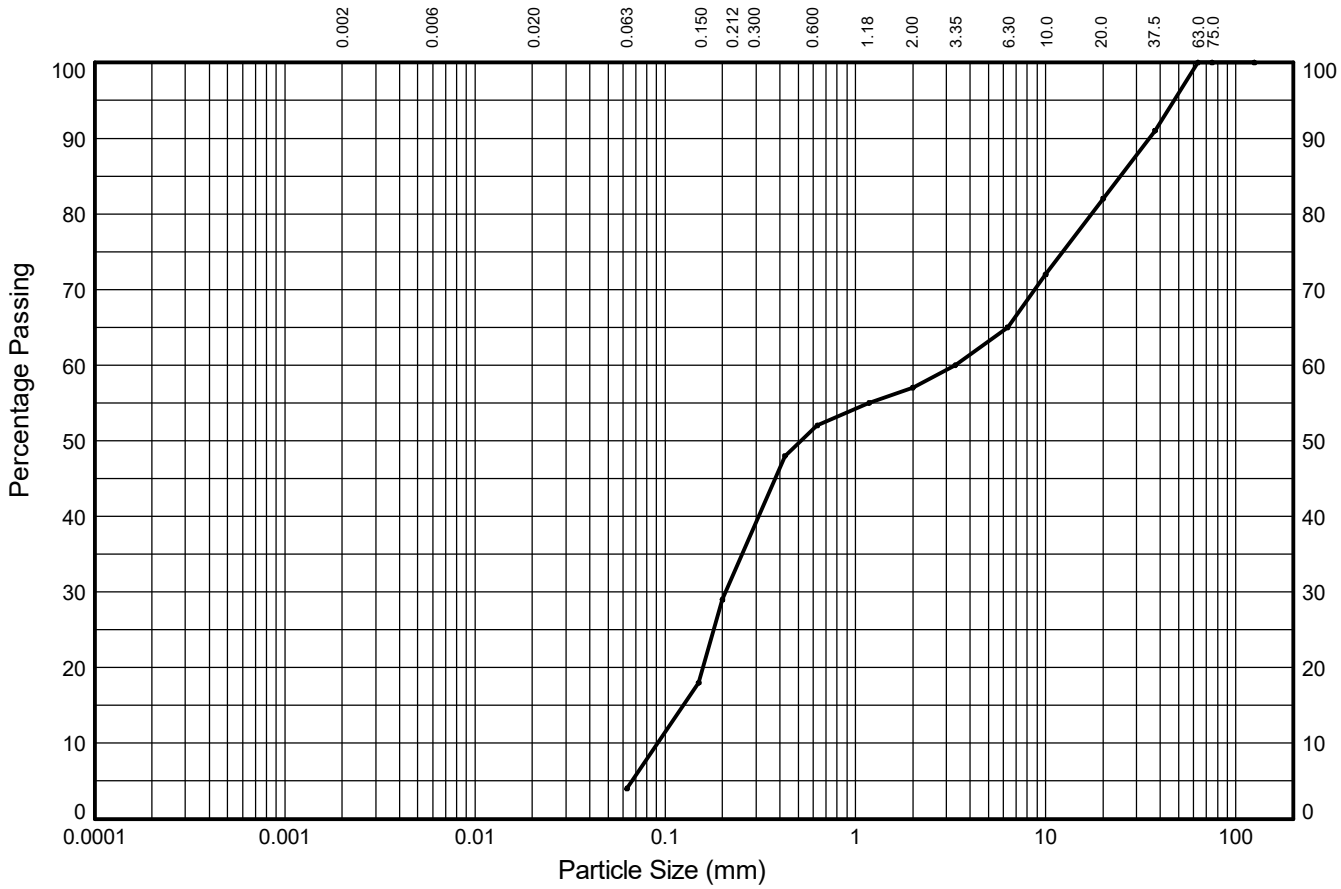
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS114** Sample Ref: **24** Sample Type: **B** Depth (m): **5.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	25%	23%	5%	8%	17%	18%	
	SILT			SAND			GRAVEL			
4%				53%			43%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**91**
20.0	**82**
10.0	**72**
6.30	**65**
3.35	**60**
2.00	**57**
1.18	**55**
0.630	**52**
0.425	**48**
0.200	**29**
0.150	**18**
0.063	**4**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.091**
D_{15} (mm)	**0.125**
D_{30} (mm)	**0.208**
D_{50} (mm)	**0.517**
D_{60} (mm)	**3.350**
D_{85} (mm)	**24.662**
D_{90} (mm)	**34.970**
C_U	**37**
C_C	**0.14**

Soil Description:

Reddish brown very sandy slightly silty GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

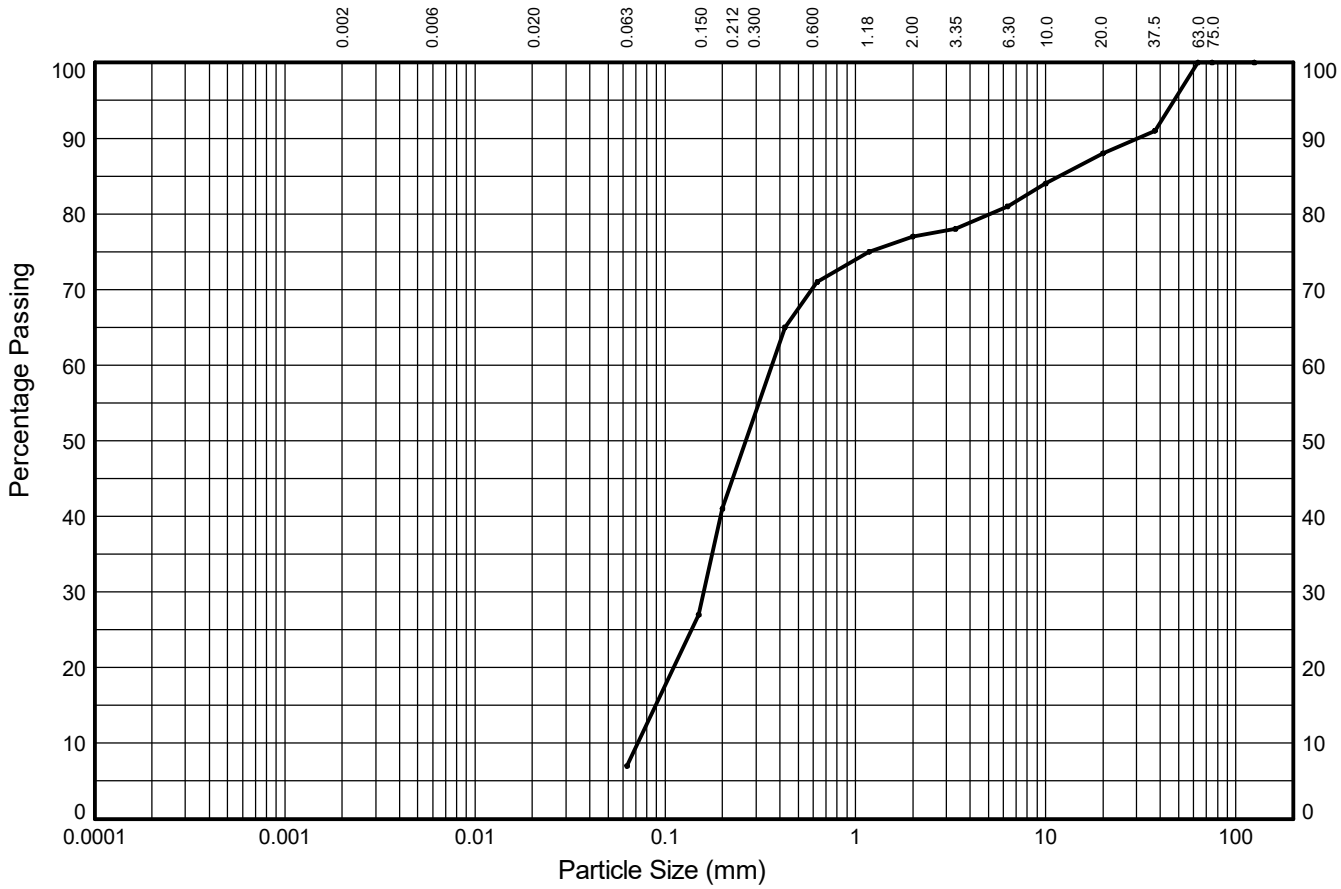
Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:08 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS114** Sample Ref: **32** Sample Type: **B** Depth (m): **7.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	34%	30%	6%	4%	7%	12%	
	SILT			SAND			GRAVEL			
7%				70%			23%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**91**
20.0	**88**
10.0	**84**
6.30	**81**
3.35	**78**
2.00	**77**
1.18	**75**
0.630	**71**
0.425	**65**
0.200	**41**
0.150	**27**
0.063	**7**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.072**
D_{15} (mm)	**0.089**
D_{30} (mm)	**0.160**
D_{50} (mm)	**0.265**
D_{60} (mm)	**0.363**
D_{85} (mm)	**11.892**
D_{90} (mm)	**30.411**
C_U	**5.1**
C_C	**0.98**

Soil Description:

Reddish brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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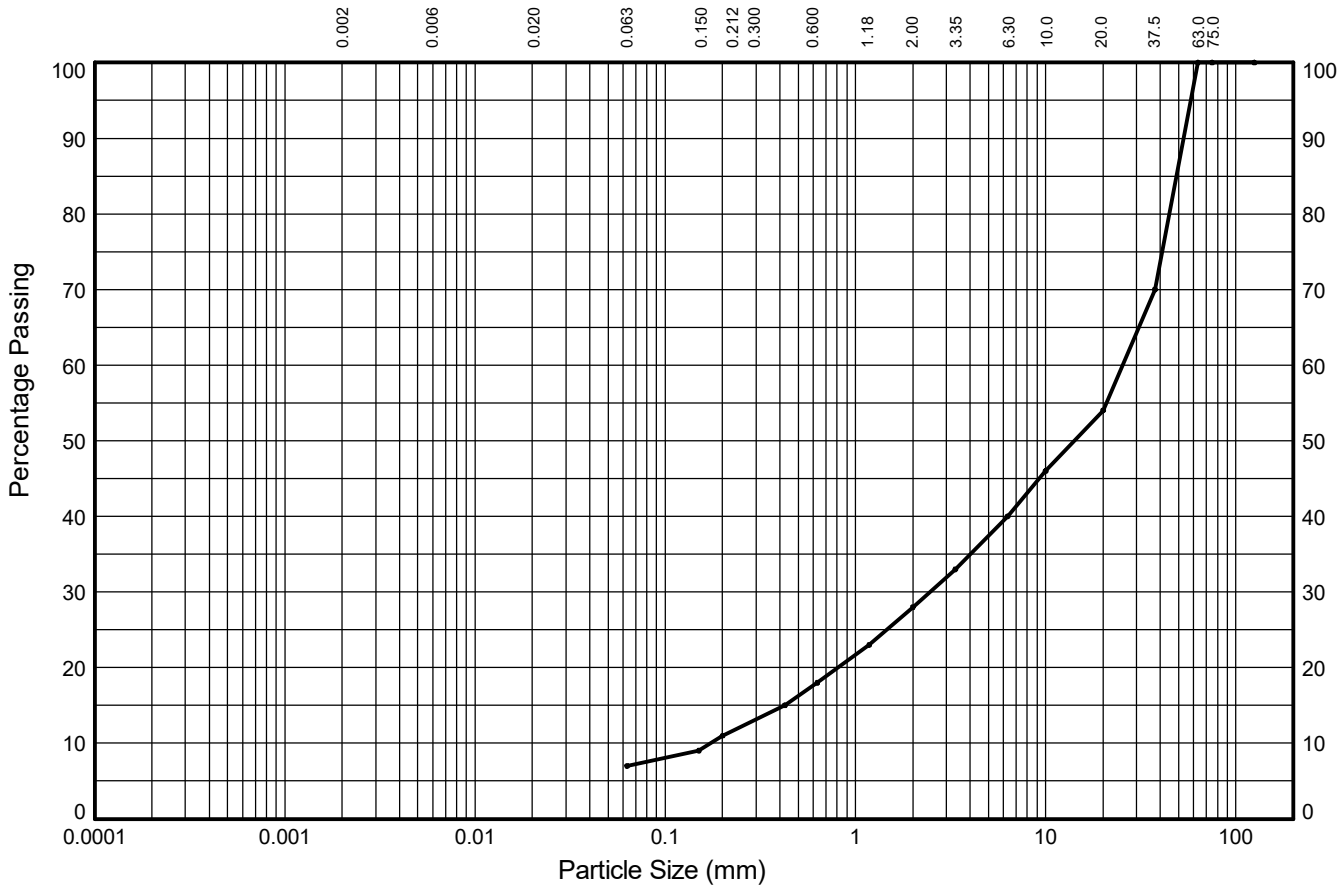
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS115** Sample Ref: **4** Sample Type: **B** Depth (m): **0.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	4%	7%	10%	12%	14%	46%	
	SILT			SAND			GRAVEL			
7%				21%			72%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**70**
20.0	**54**
10.0	**46**
6.30	**40**
3.35	**33**
2.00	**28**
1.18	**23**
0.630	**18**
0.425	**15**
0.200	**11**
0.150	**9**
0.063	**7**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.173**
D_{15} (mm)	**0.425**
D_{30} (mm)	**2.458**
D_{50} (mm)	**14.142**
D_{60} (mm)	**25.317**
D_{85} (mm)	**48.606**
D_{90} (mm)	**52.995**
C_U	**146**
C_C	**1**

Soil Description:
Brown very sandy silty GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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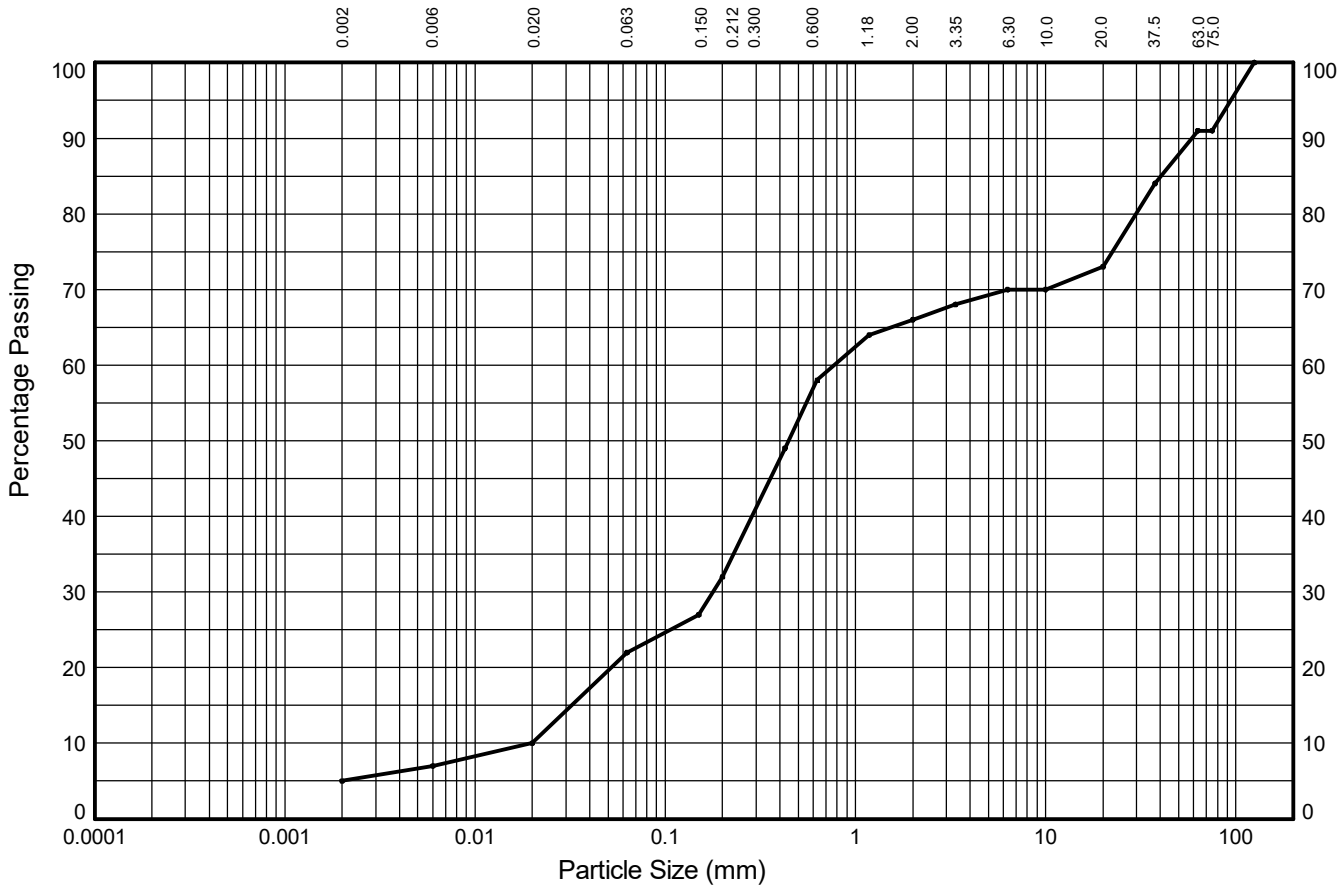
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS115** Sample Ref: **6** Sample Type: **B** Depth (m): **1.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	3%	12%	10%	26%	8%	4%	3%	18%	
	SILT			SAND			GRAVEL			
5%	17%			44%			25%			9%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**91**
63.0	**91**
37.5	**84**
20.0	**73**
10.0	**70**
6.30	**70**
3.35	**68**
2.00	**66**
1.18	**64**
0.630	**58**
0.425	**49**
0.200	**32**
0.150	**27**
0.063	**22**

Particle Diameter (mm)	Percent Passing (%)
0.02	**10**
0.006	**7**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.020**
D_{15} (mm)	**0.032**
D_{30} (mm)	**0.178**
D_{50} (mm)	**0.444**
D_{60} (mm)	**0.777**
D_{85} (mm)	**40.385**
D_{90} (mm)	**58.500**
C_U	**39**
C_C	**2**

Soil Description:

Brown very gravelly silty SAND with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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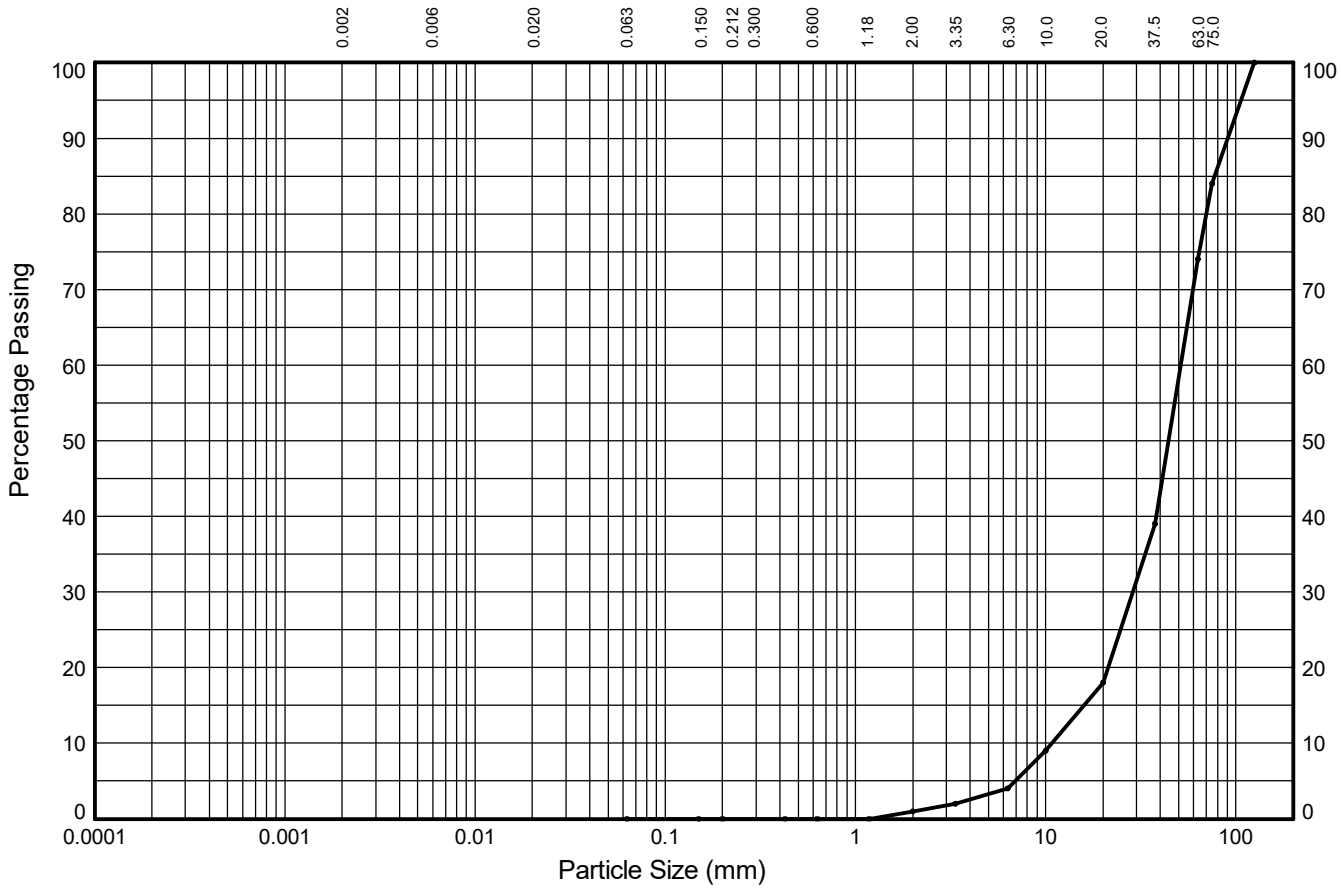
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS115** Sample Ref: **9** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	0%	0%	1%	3%	14%	56%	
	SILT			SAND			GRAVEL			
0%				1%			73%			26%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**84**
63.0	**74**
37.5	**39**
20.0	**18**
10.0	**9**
6.30	**4**
3.35	**2**
2.00	**1**
1.18	**0**
0.630	**0**
0.425	**0**
0.200	**0**
0.150	**0**
0.063	**0**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**10.801**
D_{15} (mm)	**15.874**
D_{30} (mm)	**28.644**
D_{50} (mm)	**44.141**
D_{60} (mm)	**51.194**
D_{85} (mm)	**77.433**
D_{90} (mm)	**90.835**
C_U	**4.7**
C_C	**1.5**

Soil Description:

Grey slightly sandy GRAVEL with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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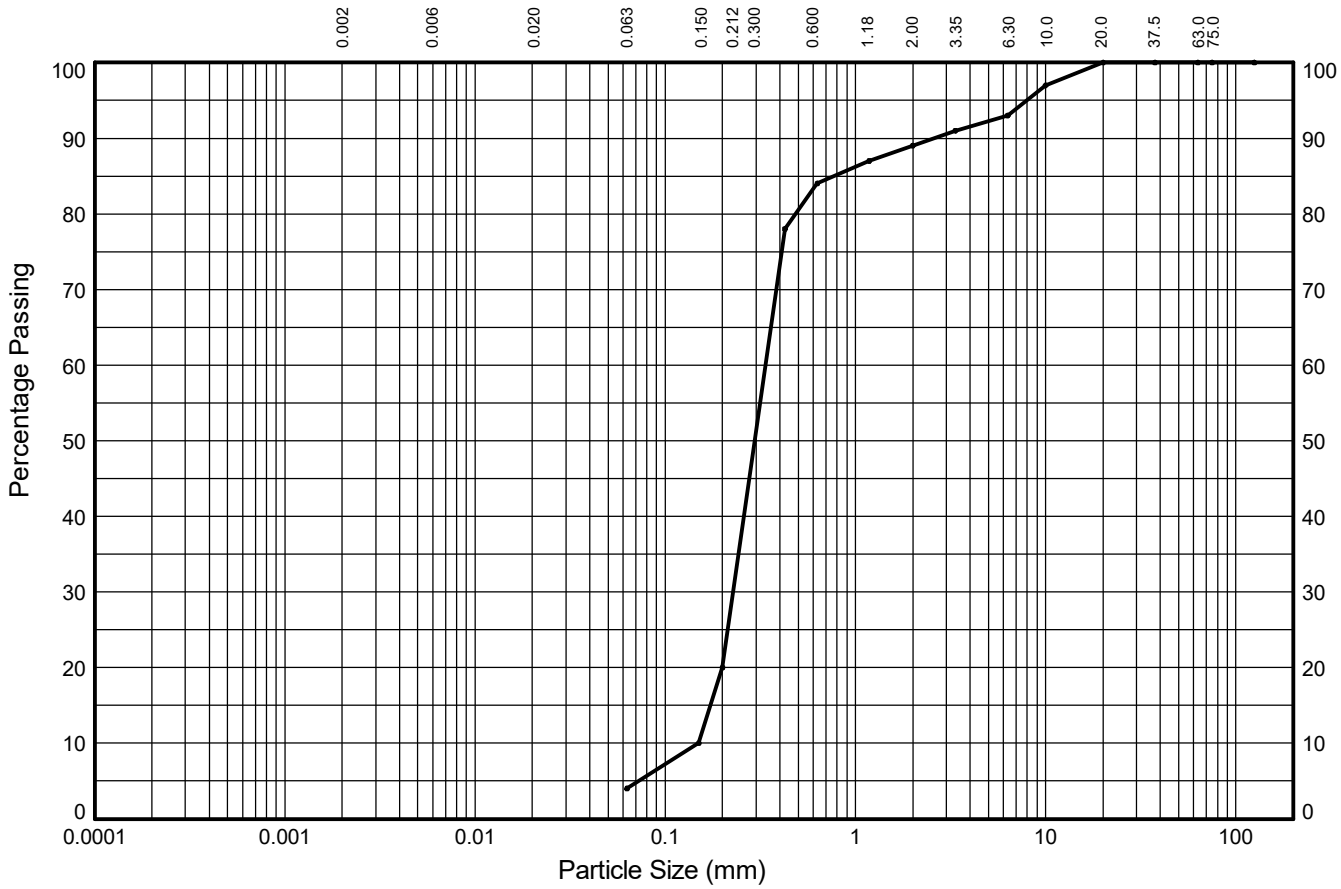
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS115** Sample Ref: **13** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	16%	64%	5%	4%	7%	0%	
	SILT			SAND			GRAVEL			
4%				85%			11%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**97**
6.30	**93**
3.35	**91**
2.00	**89**
1.18	**87**
0.630	**84**
0.425	**78**
0.200	**20**
0.150	**10**
0.063	**4**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.150**
D_{15} (mm)	**0.173**
D_{30} (mm)	**0.228**
D_{50} (mm)	**0.295**
D_{60} (mm)	**0.336**
D_{85} (mm)	**0.777**
D_{90} (mm)	**2.588**
C_U	**2.2**
C_C	**1.0**

Soil Description:

Brown gravelly slightly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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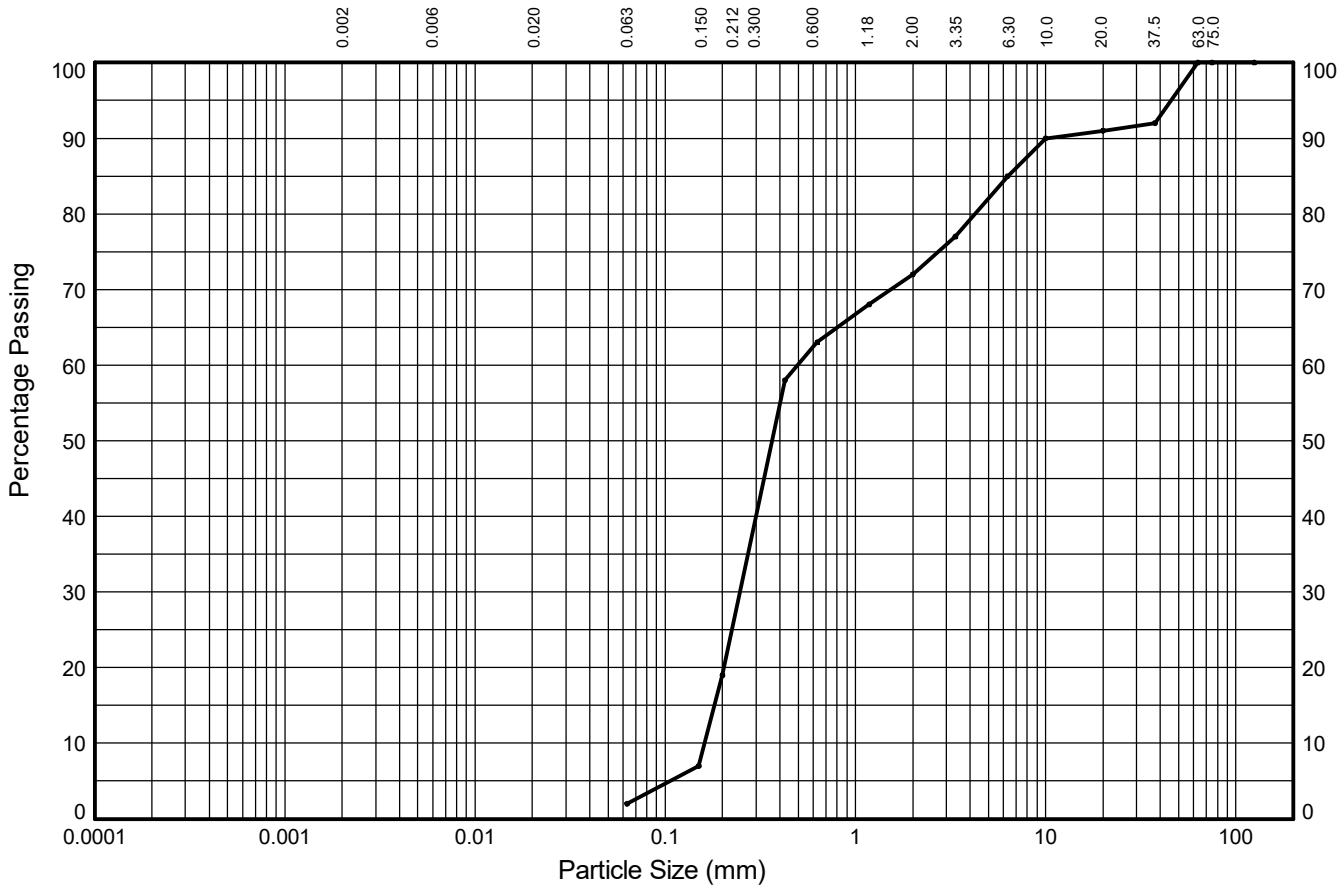
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS115** Sample Ref: **21** Sample Type: **B** Depth (m): **4.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	17%	44%	9%	13%	6%	9%	
	SILT			SAND			GRAVEL			
2%				70%			28%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**92**
20.0	**91**
10.0	**90**
6.30	**85**
3.35	**77**
2.00	**72**
1.18	**68**
0.630	**63**
0.425	**58**
0.200	**19**
0.150	**7**
0.063	**2**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.161**
D_{15} (mm)	**0.182**
D_{30} (mm)	**0.247**
D_{50} (mm)	**0.364**
D_{60} (mm)	**0.497**
D_{85} (mm)	**6.300**
D_{90} (mm)	**10.000**
C_U	**3.1**
C_C	**0.76**

Soil Description:

Reddish brown very gravelly slightly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
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Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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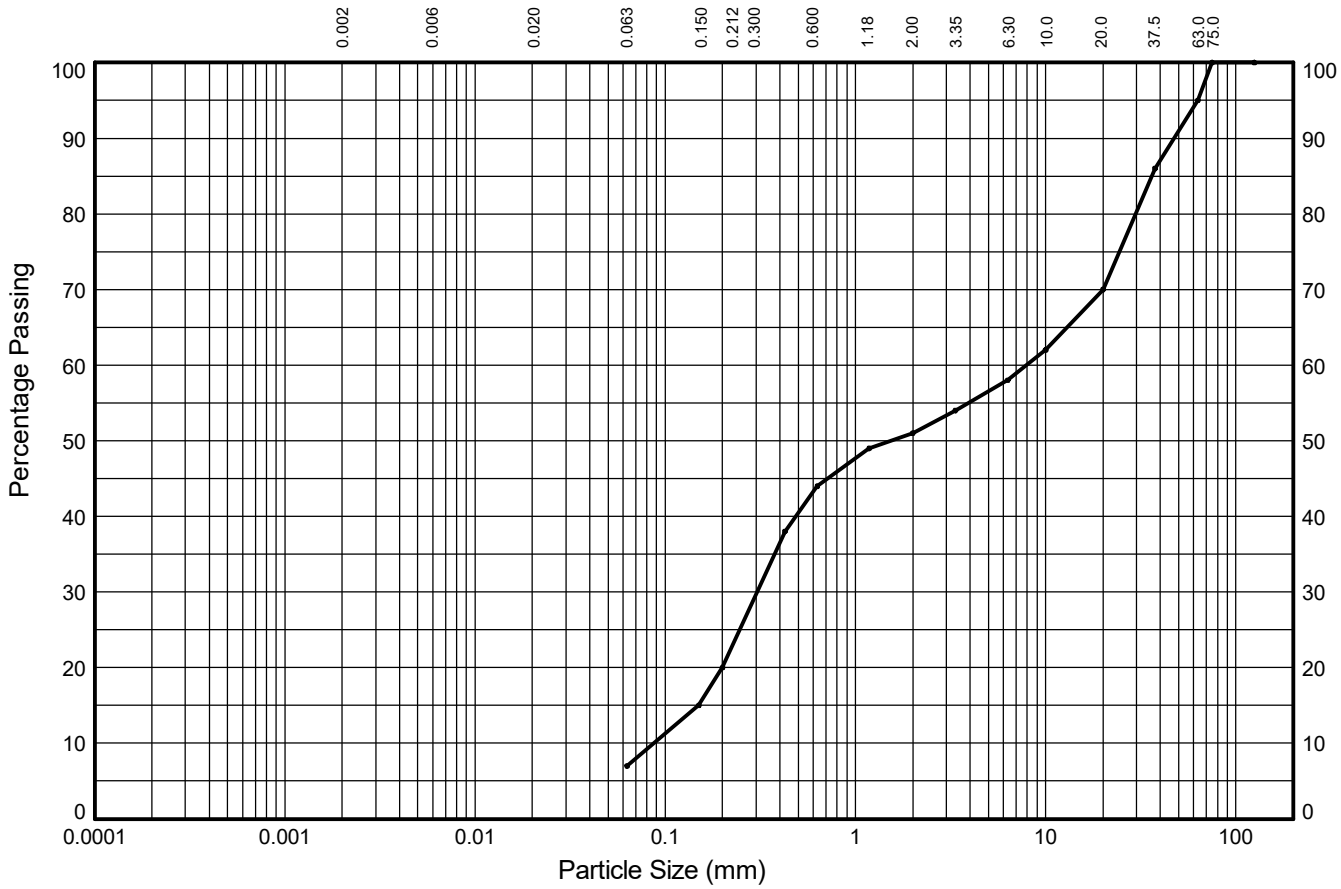
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS116** Sample Ref: **4** Sample Type: **B** Depth (m): **0.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	13%	24%	7%	7%	12%	25%	
	SILT			SAND			GRAVEL			
7%				44%			44%			5%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**95**
37.5	**86**
20.0	**70**
10.0	**62**
6.30	**58**
3.35	**54**
2.00	**51**
1.18	**49**
0.630	**44**
0.425	**38**
0.200	**20**
0.150	**15**
0.063	**7**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.087**
D_{15} (mm)	**0.150**
D_{30} (mm)	**0.304**
D_{50} (mm)	**1.536**
D_{60} (mm)	**7.937**
D_{85} (mm)	**36.055**
D_{90} (mm)	**47.225**
C_U	**91**
C_C	**0.13**

Soil Description:

Brown very sandy silty GRAVEL with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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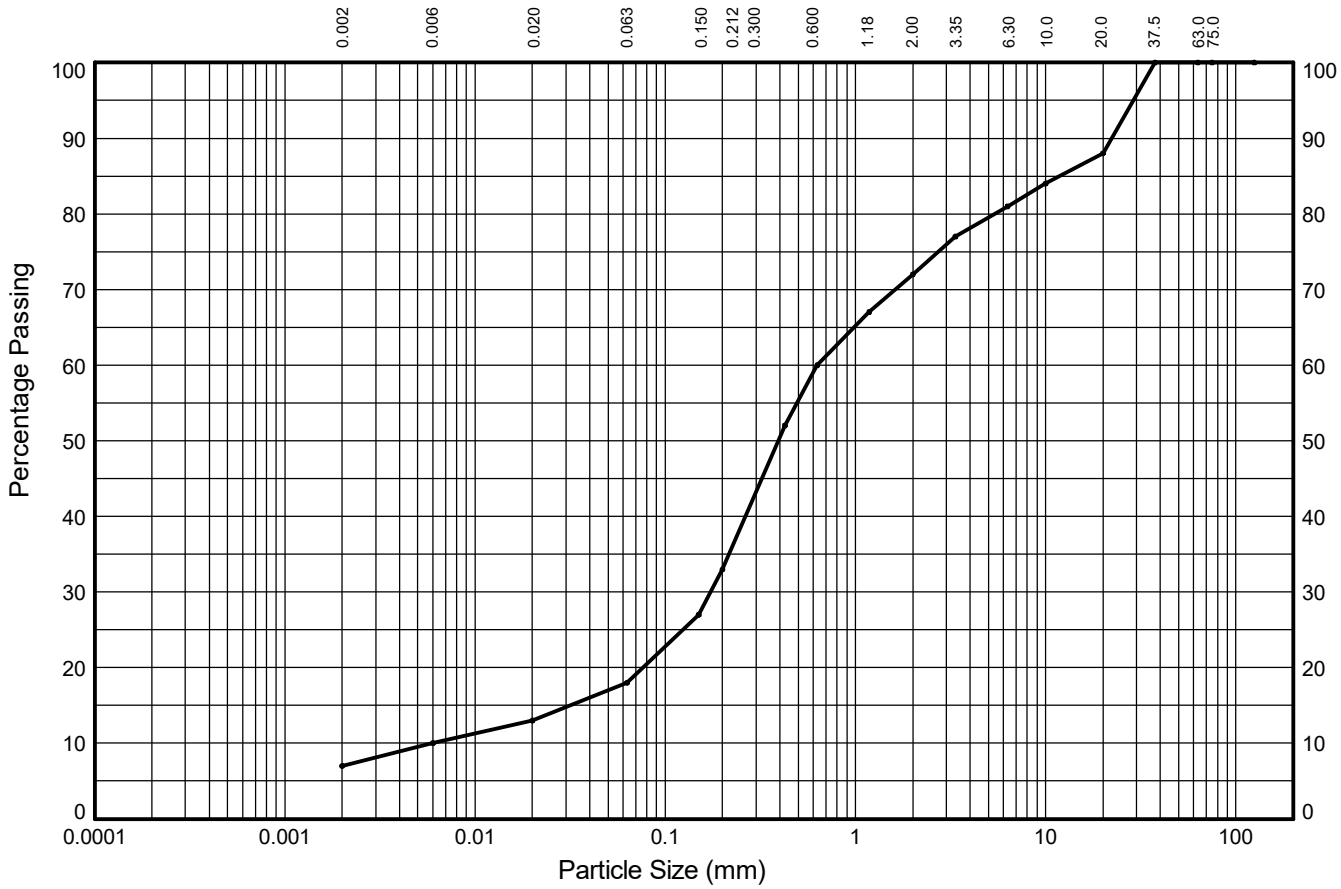
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS116** Sample Ref: **7** Sample Type: **B** Depth (m): **0.60**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	5%	15%	27%	12%	9%	7%	12%	
	SILT			SAND			GRAVEL			
7%	11%			54%			28%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**88**
10.0	**84**
6.30	**81**
3.35	**77**
2.00	**72**
1.18	**67**
0.630	**60**
0.425	**52**
0.200	**33**
0.150	**27**
0.063	**18**

Particle Diameter (mm)	Percent Passing (%)
0.02	**13**
0.006	**10**
0.002	**7**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.006**
D_{15} (mm)	**0.032**
D_{30} (mm)	**0.173**
D_{50} (mm)	**0.393**
D_{60} (mm)	**0.630**
D_{85} (mm)	**11.892**
D_{90} (mm)	**22.209**
C_U	**105**
C_C	**8**

Soil Description:

Reddish brown very gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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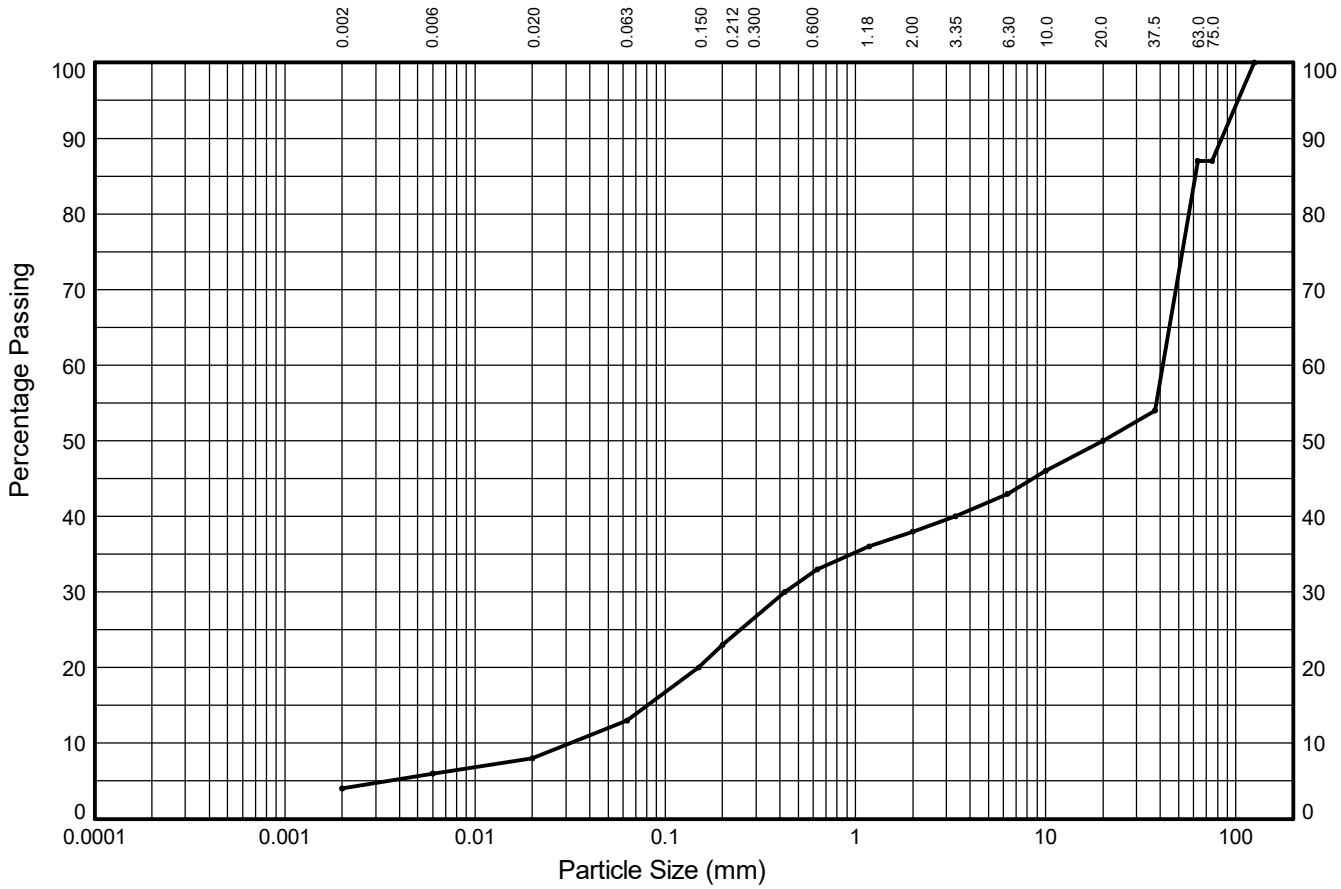
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS116** Sample Ref: **14** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	2%	5%	10%	10%	5%	5%	7%	37%	
	SILT			SAND			GRAVEL			
4%	9%			25%			49%			13%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**87**
63.0	**87**
37.5	**54**
20.0	**50**
10.0	**46**
6.30	**43**
3.35	**40**
2.00	**38**
1.18	**36**
0.630	**33**
0.425	**30**
0.200	**23**
0.150	**20**
0.063	**13**

Particle Diameter (mm)	Percent Passing (%)
0.02	**8**
0.006	**6**
0.002	**4**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.032**
D_{15} (mm)	**0.081**
D_{30} (mm)	**0.425**
D_{50} (mm)	**20.000**
D_{60} (mm)	**41.209**
D_{85} (mm)	**61.050**
D_{90} (mm)	**84.383**
C_U	**1302**
C_C	**0.14**

Soil Description:

Red very sandy silty GRAVEL with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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1a Princess Street
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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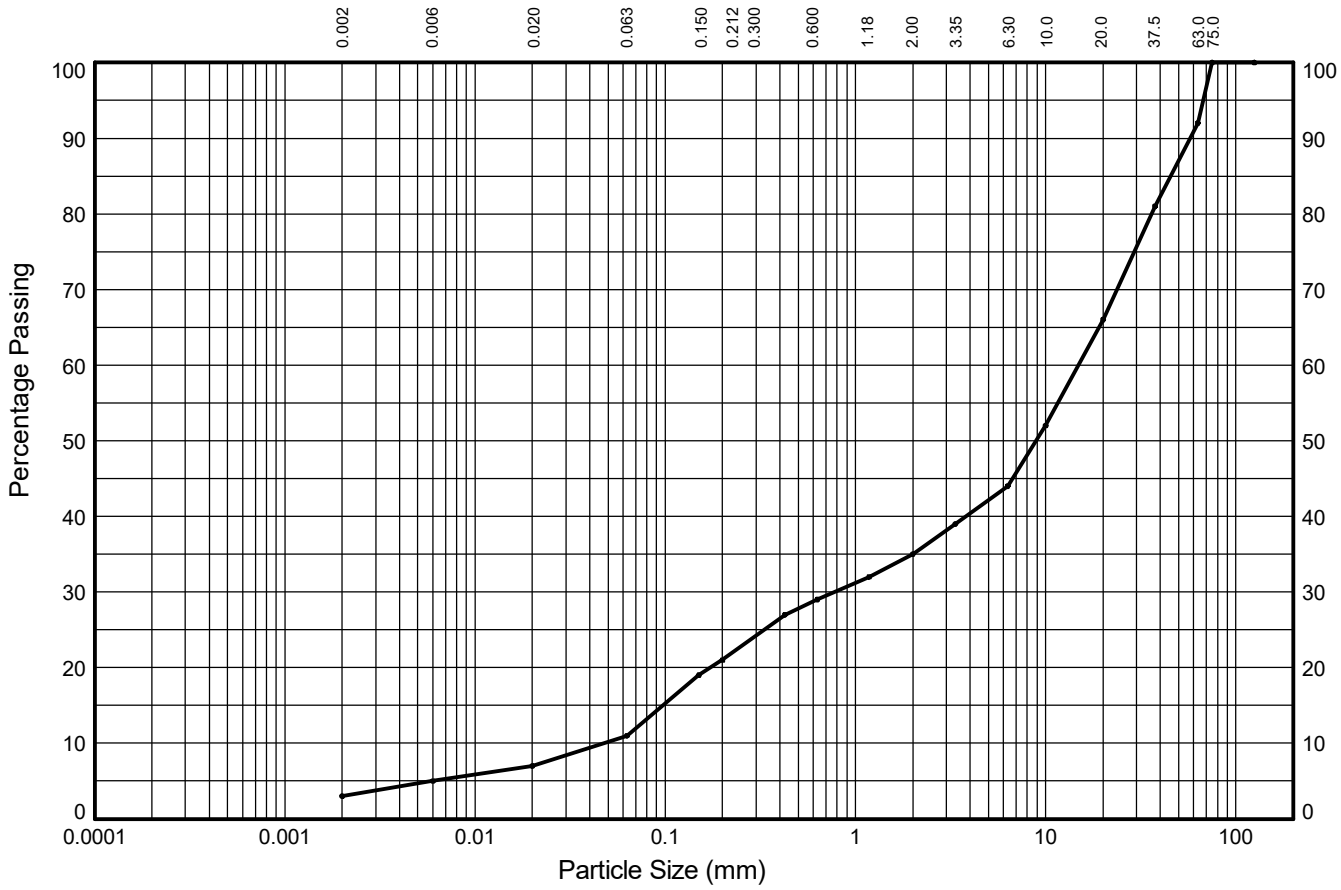
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS116** Sample Ref: **16** Sample Type: **B** Depth (m): **2.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	2%	4%	10%	8%	6%	9%	22%	26%	
	SILT			SAND			GRAVEL			
3%	8%			24%			57%			8%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**92**
37.5	**81**
20.0	**66**
10.0	**52**
6.30	**44**
3.35	**39**
2.00	**35**
1.18	**32**
0.630	**29**
0.425	**27**
0.200	**21**
0.150	**19**
0.063	**11**

Particle Diameter (mm)	Percent Passing (%)
0.02	**7**
0.006	**5**
0.002	**3**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.047**
D_{15} (mm)	**0.097**
D_{30} (mm)	**0.777**
D_{50} (mm)	**8.909**
D_{60} (mm)	**14.860**
D_{85} (mm)	**45.286**
D_{90} (mm)	**57.329**
C_U	**314**
C_C	**0.86**

Soil Description:
Reddish brown very sandy silty GRAVEL with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

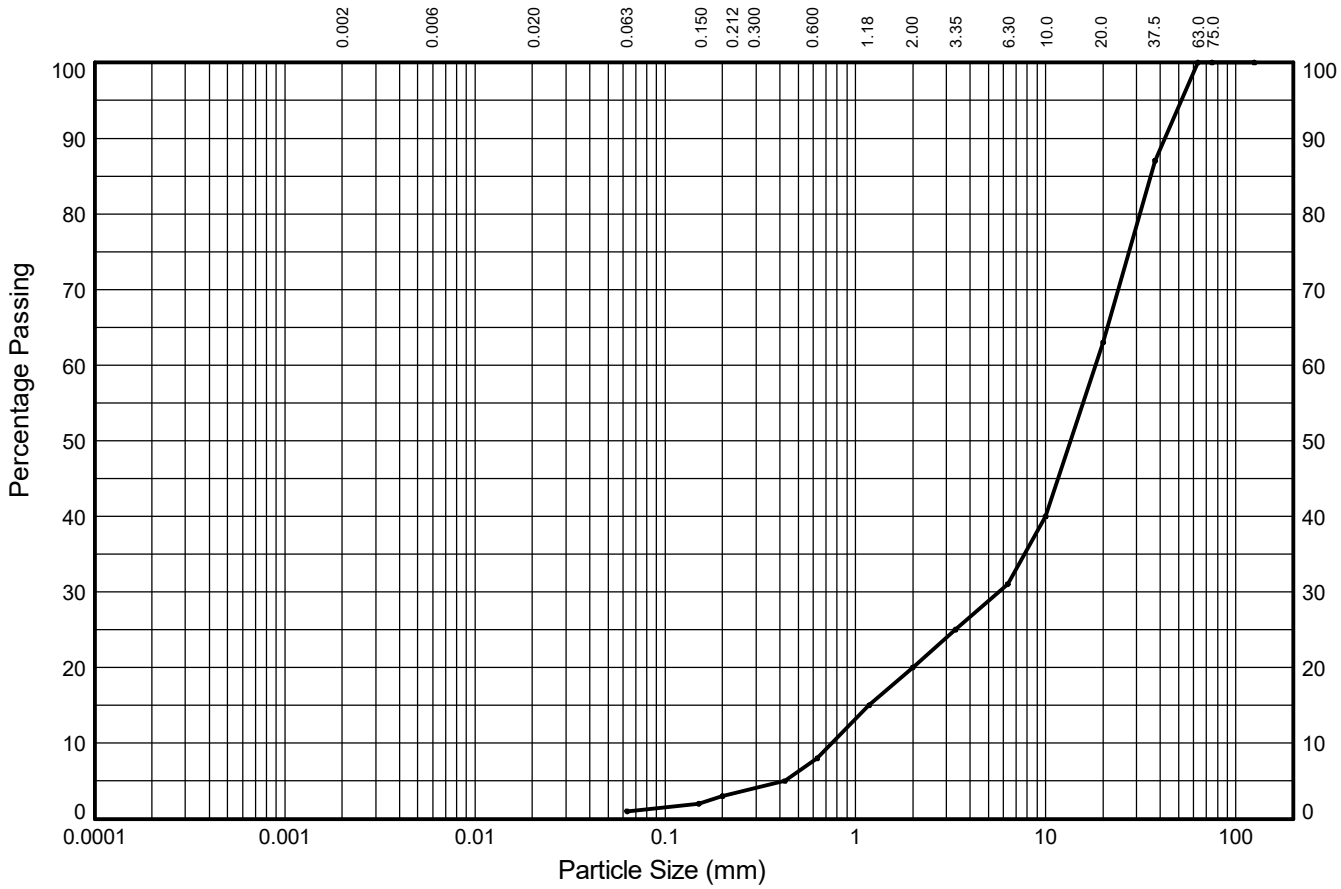
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Maduka	**PRECIOUS MADUKA**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:08 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS116** Sample Ref: **19** Sample Type: **B** Depth (m): **3.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	2%	5%	12%	11%	32%	37%	
	SILT			SAND			GRAVEL			
1%				19%			80%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**87**
20.0	**63**
10.0	**40**
6.30	**31**
3.35	**25**
2.00	**20**
1.18	**15**
0.630	**8**
0.425	**5**
0.200	**3**
0.150	**2**
0.063	**1**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.754**
D_{15} (mm)	**1.180**
D_{30} (mm)	**5.671**
D_{50} (mm)	**13.517**
D_{60} (mm)	**18.271**
D_{85} (mm)	**35.586**
D_{90} (mm)	**42.269**
C_U	**24**
C_C	**2**

Soil Description:
Brown sandy slightly silty GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	E. Hort	**ELIZABETH HORT**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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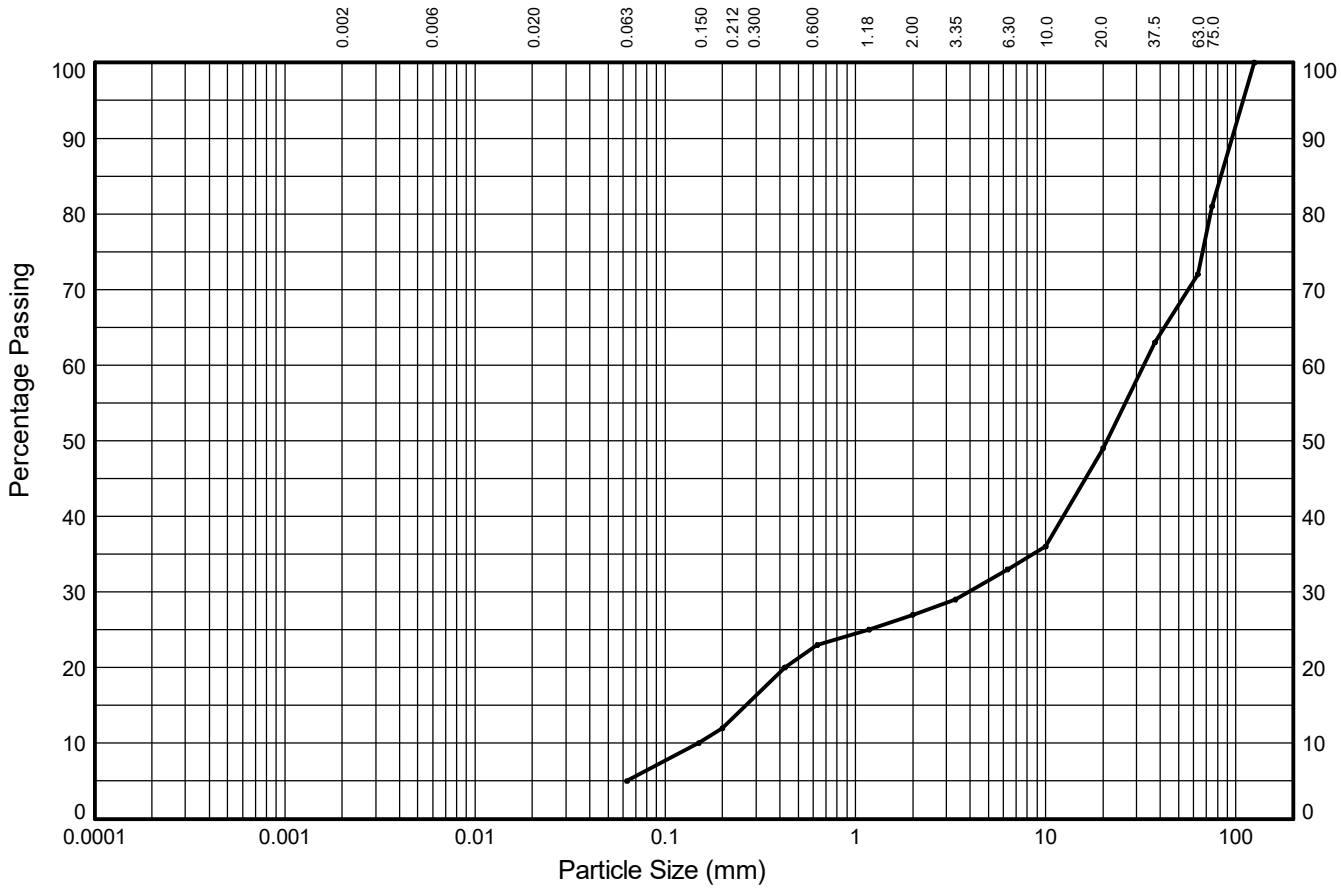
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS117** Sample Ref: **4** Sample Type: **B** Depth (m): **0.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	7%	11%	4%	6%	16%	23%	
	SILT			SAND			GRAVEL			
5%				22%			45%			28%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**81**
63.0	**72**
37.5	**63**
20.0	**49**
10.0	**36**
6.30	**33**
3.35	**29**
2.00	**27**
1.18	**25**
0.630	**23**
0.425	**20**
0.200	**12**
0.150	**10**
0.063	**5**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.150**
D_{15} (mm)	**0.265**
D_{30} (mm)	**3.923**
D_{50} (mm)	**20.918**
D_{60} (mm)	**32.774**
D_{85} (mm)	**83.515**
D_{90} (mm)	**95.532**
C_U	**218**
C_C	**3**

Soil Description:
Reddish brown very sandy clayey GRAVEL with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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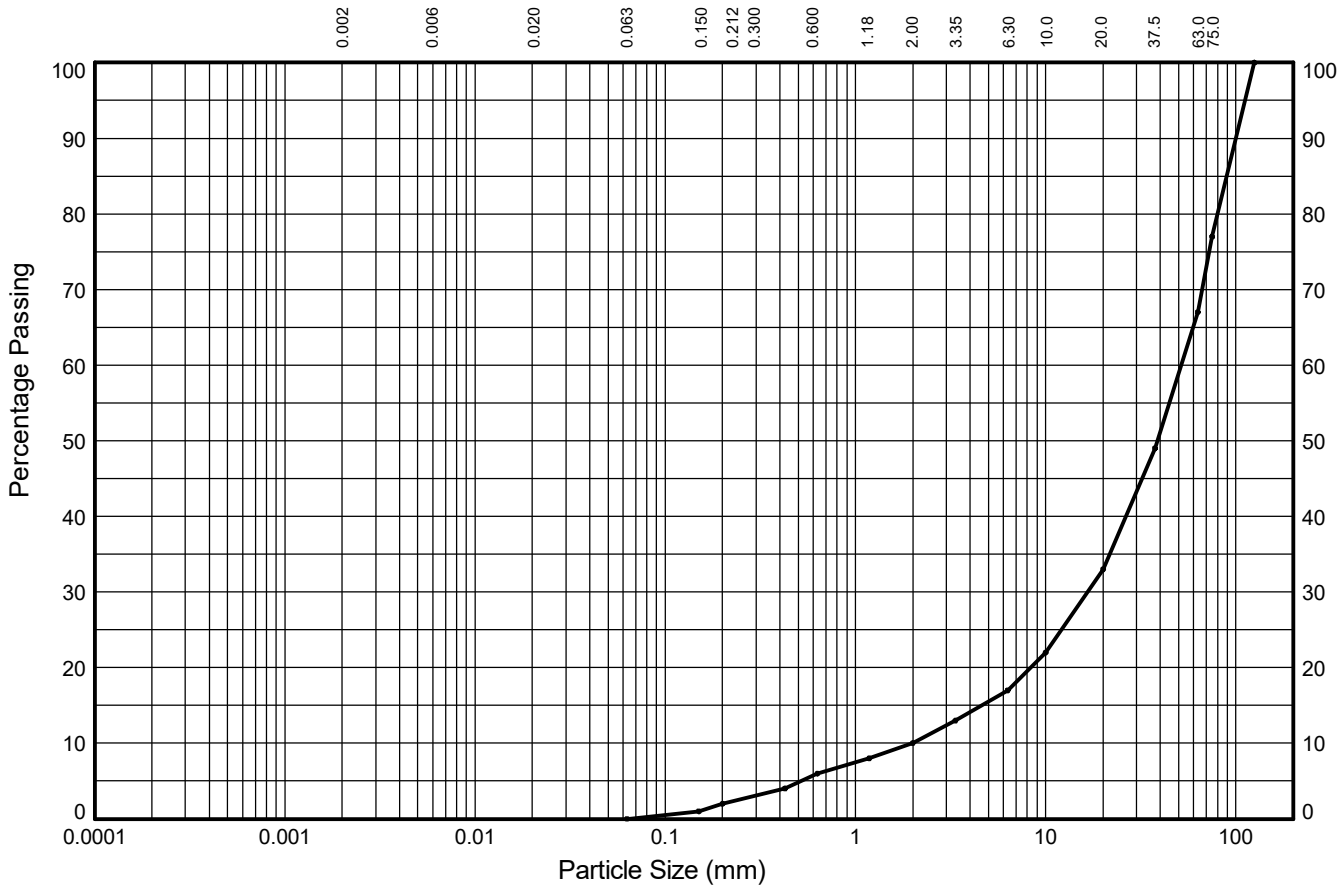
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS117** Sample Ref: **9** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	2%	4%	4%	7%	16%	34%	
	SILT			SAND			GRAVEL			
0%				10%			57%			33%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**77**
63.0	**67**
37.5	**49**
20.0	**33**
10.0	**22**
6.30	**17**
3.35	**13**
2.00	**10**
1.18	**8**
0.630	**6**
0.425	**4**
0.200	**2**
0.150	**1**
0.063	**0**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**2.000**
D_{15} (mm)	**4.594**
D_{30} (mm)	**16.555**
D_{50} (mm)	**38.597**
D_{60} (mm)	**51.490**
D_{85} (mm)	**89.583**
D_{90} (mm)	**100.105**
C_U	**26**
C_C	**3**

Soil Description:
Brown sandy GRAVEL with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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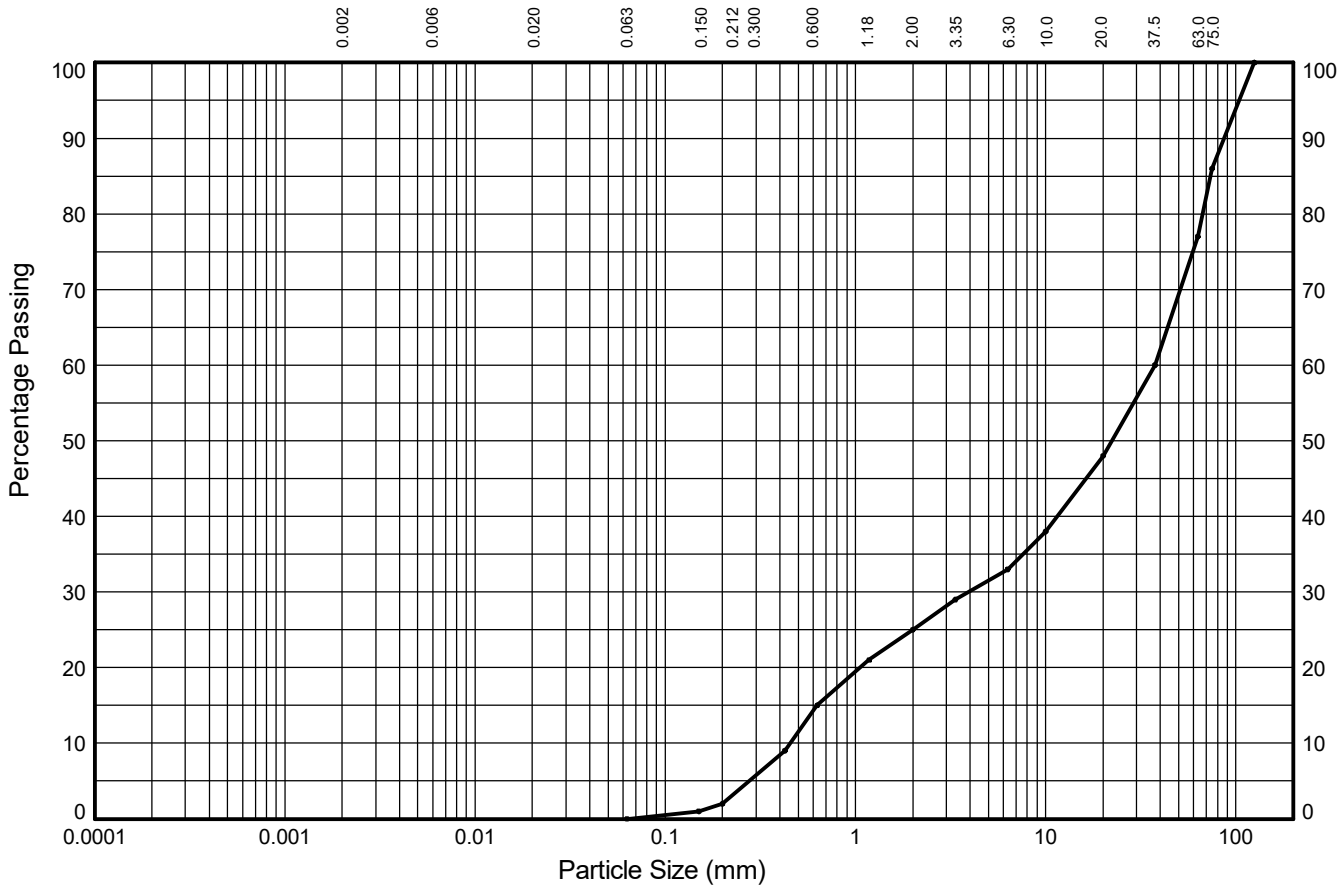
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS117** Sample Ref: **12** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	2%	13%	10%	8%	15%	29%	
	SILT			SAND			GRAVEL			
0%				25%			52%			23%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**86**
63.0	**77**
37.5	**60**
20.0	**48**
10.0	**38**
6.30	**33**
3.35	**29**
2.00	**25**
1.18	**21**
0.630	**15**
0.425	**9**
0.200	**2**
0.150	**1**
0.063	**0**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.454**
D_{15} (mm)	**0.630**
D_{30} (mm)	**3.923**
D_{50} (mm)	**22.209**
D_{60} (mm)	**37.500**
D_{85} (mm)	**73.561**
D_{90} (mm)	**86.785**
C_U	**83**
C_C	**0.90**

Soil Description:

Reddish brown very sandy GRAVEL with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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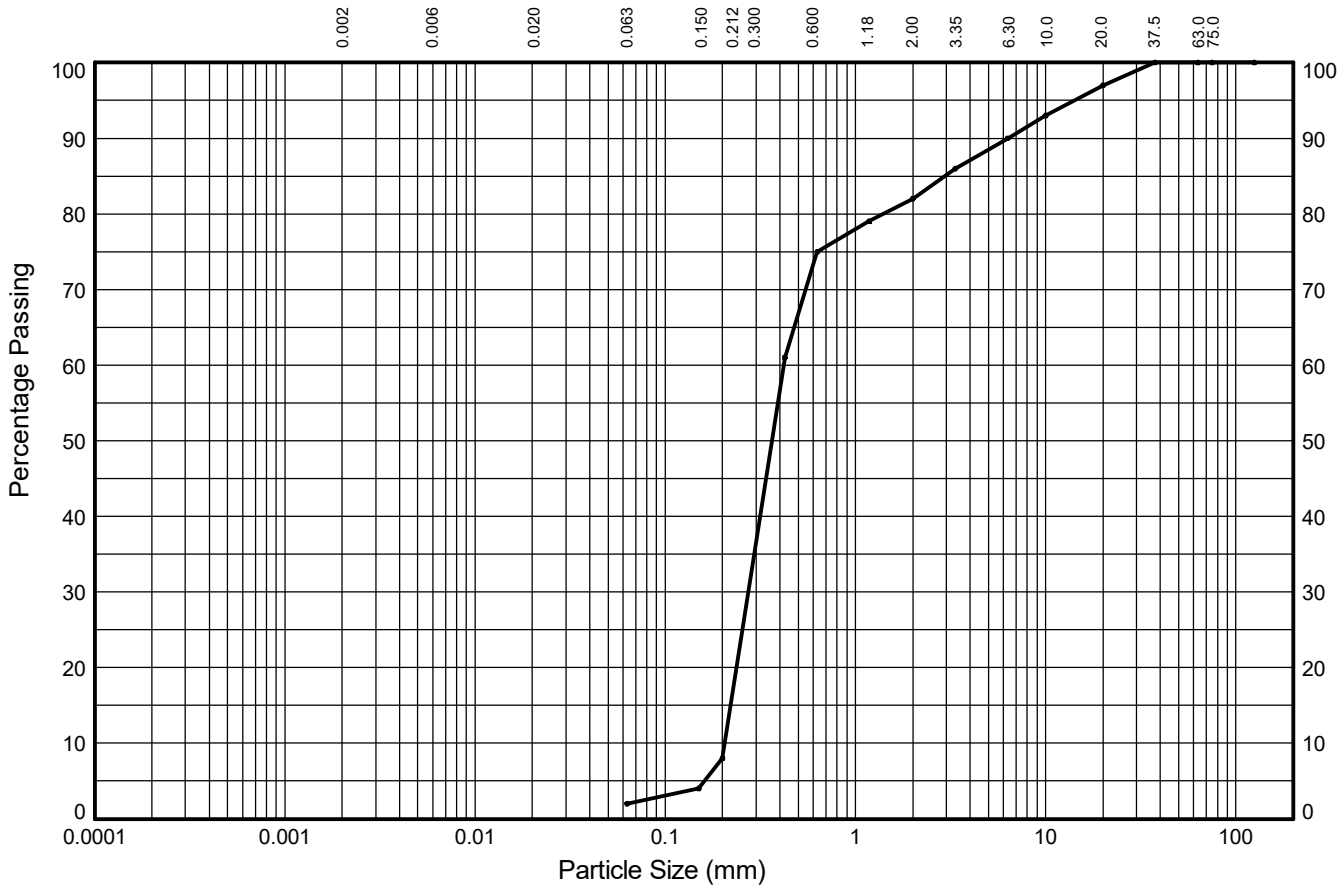
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS117** Sample Ref: **25** Sample Type: **B** Depth (m): **6.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	6%	67%	7%	8%	7%	3%	
	SILT			SAND			GRAVEL			
2%				80%			18%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**97**
10.0	**93**
6.30	**90**
3.35	**86**
2.00	**82**
1.18	**79**
0.630	**75**
0.425	**61**
0.200	**8**
0.150	**4**
0.063	**2**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.206**
D_{15} (mm)	**0.221**
D_{30} (mm)	**0.273**
D_{50} (mm)	**0.363**
D_{60} (mm)	**0.419**
D_{85} (mm)	**2.945**
D_{90} (mm)	**6.300**
C_U	**2.0**
C_C	**0.87**

Soil Description:

Red gravelly slightly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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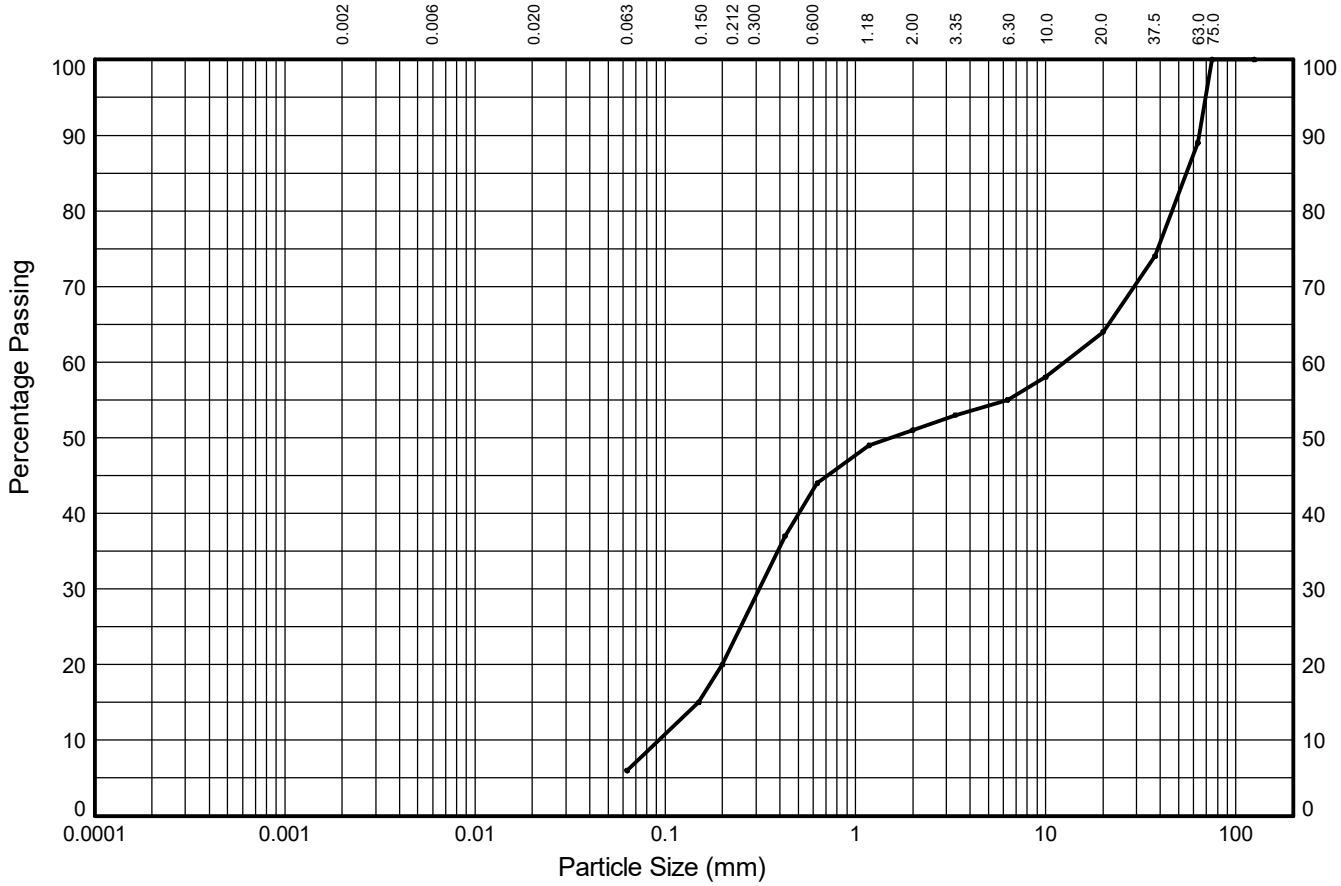
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS118** Sample Ref: **2** Sample Type: **B** Depth (m): **0.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	14%	24%	7%	4%	9%	25%	
	SILT			SAND			GRAVEL			
6%				45%			38%			11%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**89**
37.5	**74**
20.0	**64**
10.0	**58**
6.30	**55**
3.35	**53**
2.00	**51**
1.18	**49**
0.630	**44**
0.425	**37**
0.200	**20**
0.150	**15**
0.063	**6**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.093**
D_{15} (mm)	**0.150**
D_{30} (mm)	**0.312**
D_{50} (mm)	**1.536**
D_{60} (mm)	**12.599**
D_{85} (mm)	**54.860**
D_{90} (mm)	**64.007**
C_U	**136**
C_C	**0.08**

Soil Description:

Brown very gravelly silty SAND with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	E. Hort	**ELIZABETH HORT**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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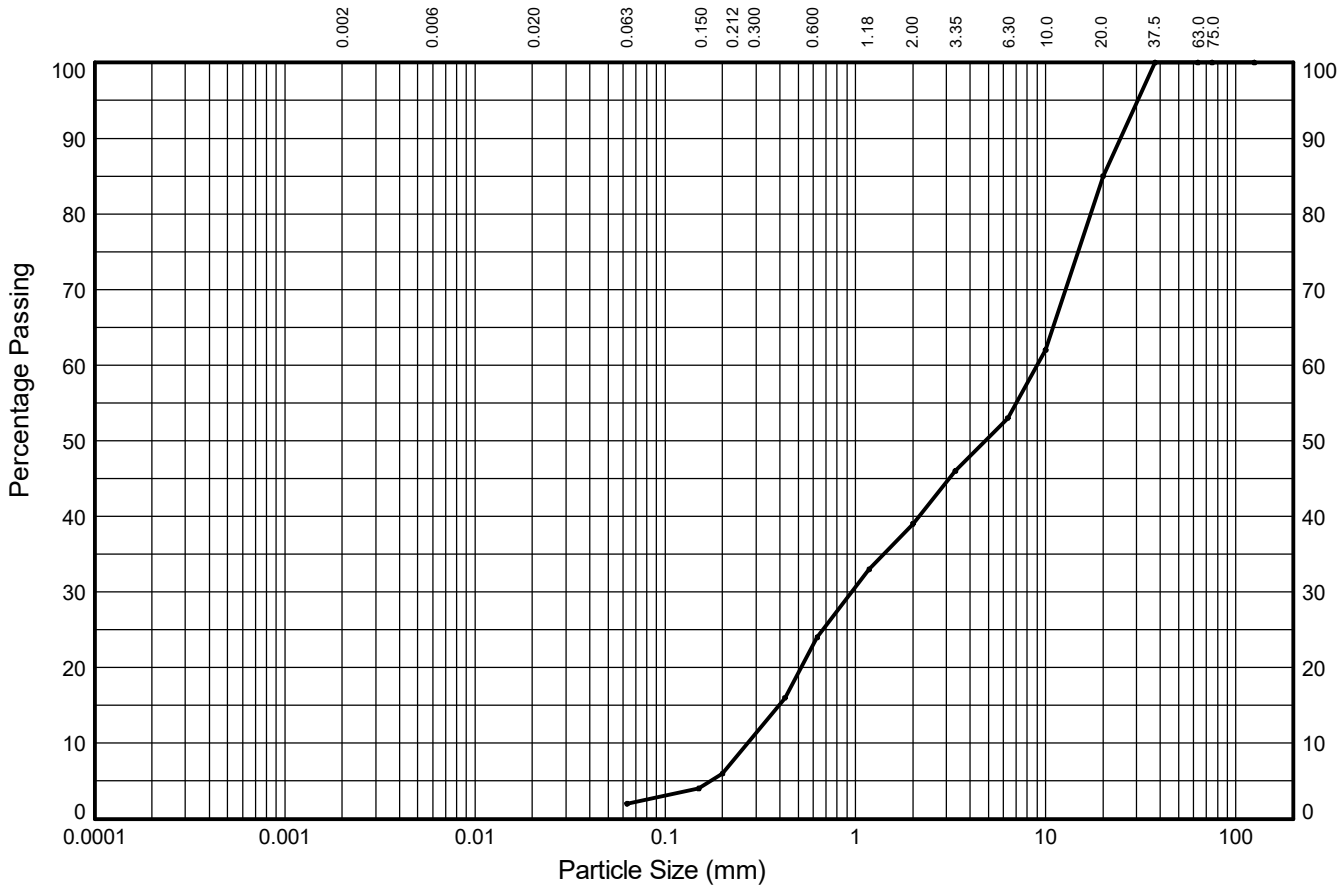
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS118A** Sample Ref: **2** Sample Type: **B** Depth (m): **0.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	4%	18%	15%	14%	32%	15%	
	SILT			SAND			GRAVEL			
2%				37%			61%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**85**
10.0	**62**
6.30	**53**
3.35	**46**
2.00	**39**
1.18	**33**
0.630	**24**
0.425	**16**
0.200	**6**
0.150	**4**
0.063	**2**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.270**
D_{15} (mm)	**0.394**
D_{30} (mm)	**0.957**
D_{50} (mm)	**4.806**
D_{60} (mm)	**9.024**
D_{85} (mm)	**20.000**
D_{90} (mm)	**24.662**
C_U	**33**
C_C	**0.38**

Soil Description:
Brown very sandy slightly silty GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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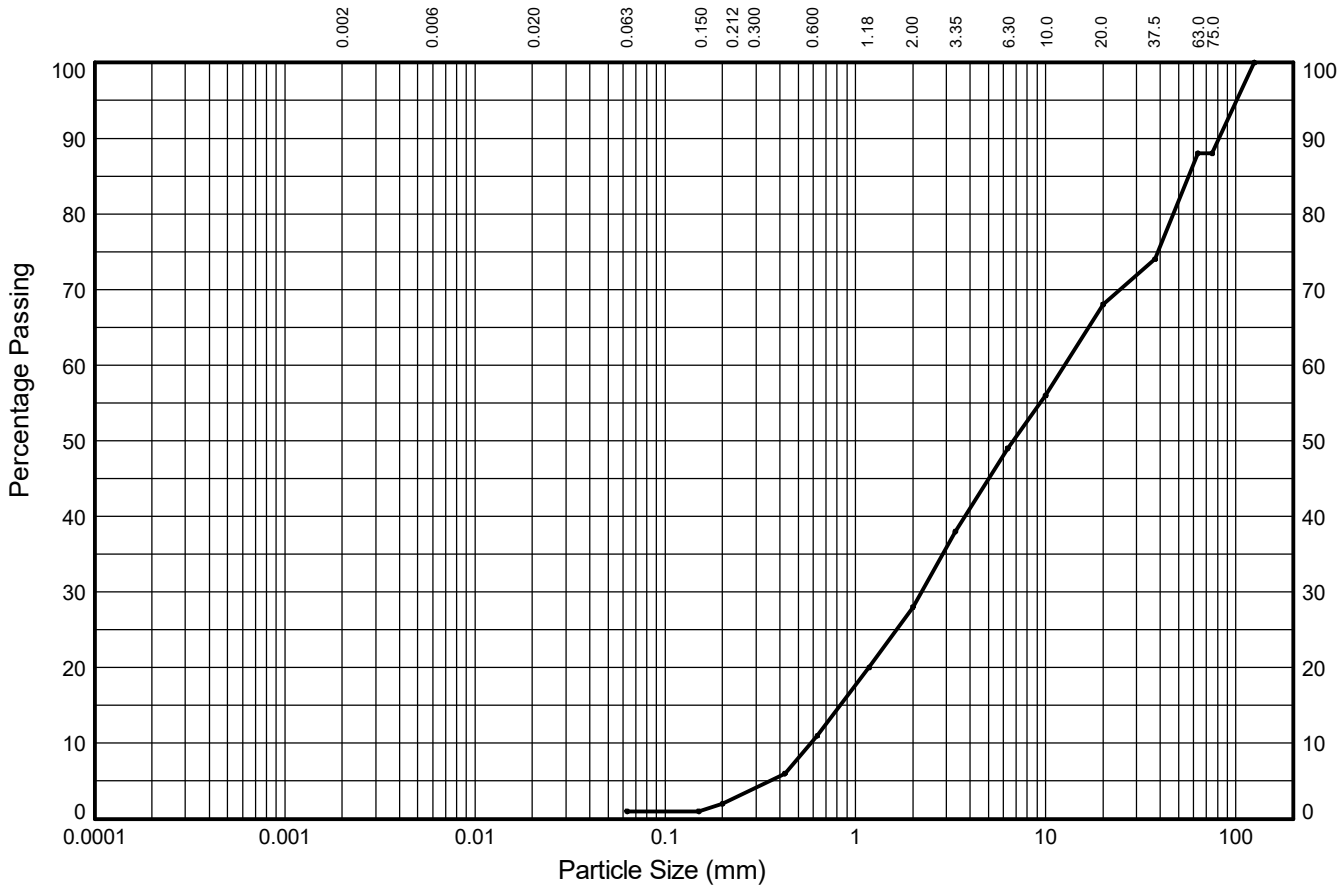
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS118A** Sample Ref: **9** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	1%	9%	17%	21%	19%	20%	
	SILT			SAND			GRAVEL			
1%				27%			60%			12%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**88**
63.0	**88**
37.5	**74**
20.0	**68**
10.0	**56**
6.30	**49**
3.35	**38**
2.00	**28**
1.18	**20**
0.630	**11**
0.425	**6**
0.200	**2**
0.150	**1**
0.063	**1**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.582**
D_{15} (mm)	**0.833**
D_{30} (mm)	**2.217**
D_{50} (mm)	**6.730**
D_{60} (mm)	**12.599**
D_{85} (mm)	**56.372**
D_{90} (mm)	**81.665**
C_U	**22**
C_C	**0.67**

Soil Description:
Brown very sandy slightly silty GRAVEL with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
E. Hort	**ELIZABETH HORT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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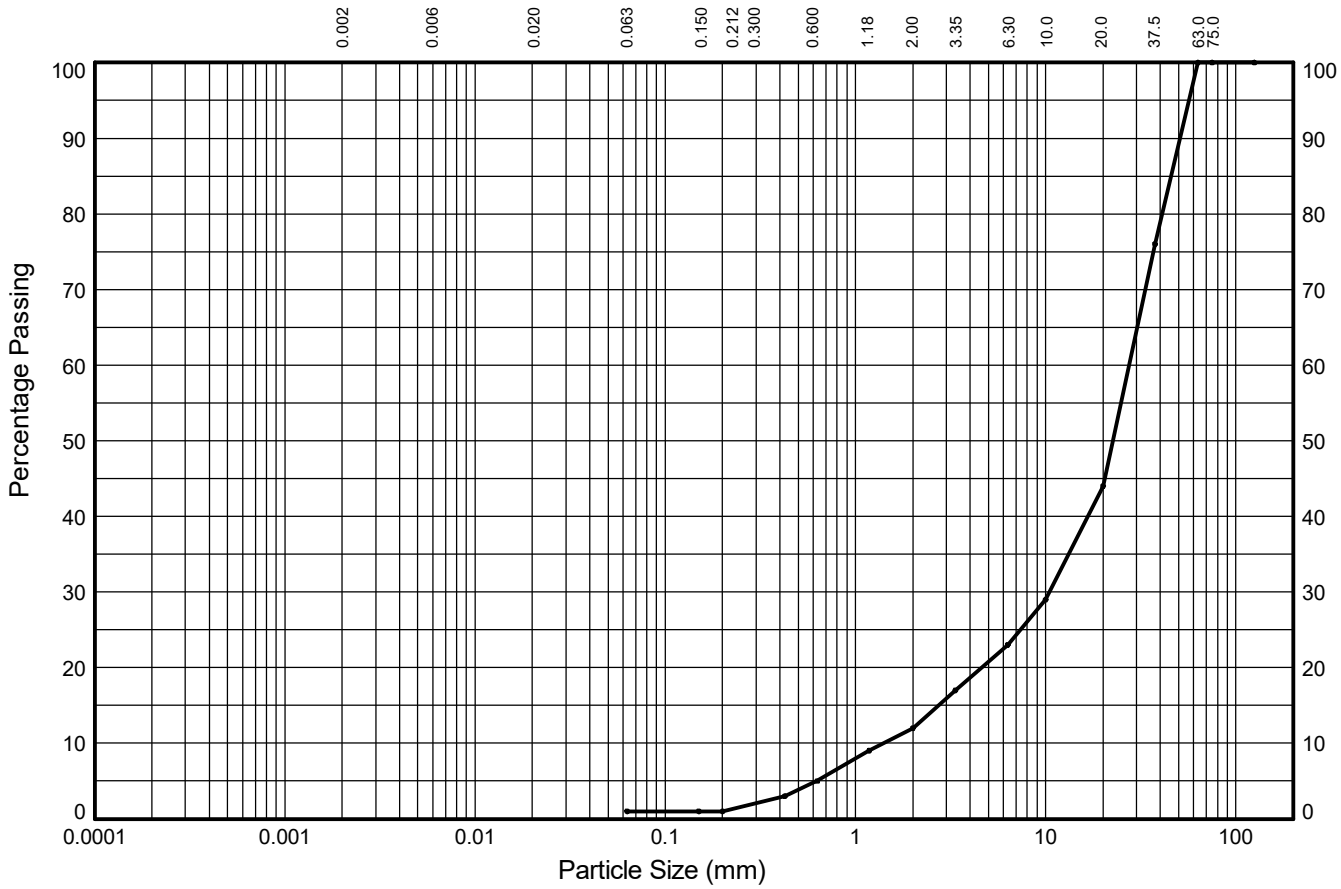
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS118A** Sample Ref: **13** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	0%	4%	7%	11%	21%	56%	
	SILT			SAND			GRAVEL			
1%				11%			88%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**76**
20.0	**44**
10.0	**29**
6.30	**23**
3.35	**17**
2.00	**12**
1.18	**9**
0.630	**5**
0.425	**3**
0.200	**1**
0.150	**1**
0.063	**1**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**1.407**
D_{15} (mm)	**2.725**
D_{30} (mm)	**10.473**
D_{50} (mm)	**22.502**
D_{60} (mm)	**27.386**
D_{85} (mm)	**45.554**
D_{90} (mm)	**50.753**
C_U	**19**
C_C	**3**

Soil Description:
Grey sandy GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
E. Hort	**ELIZABETH HORT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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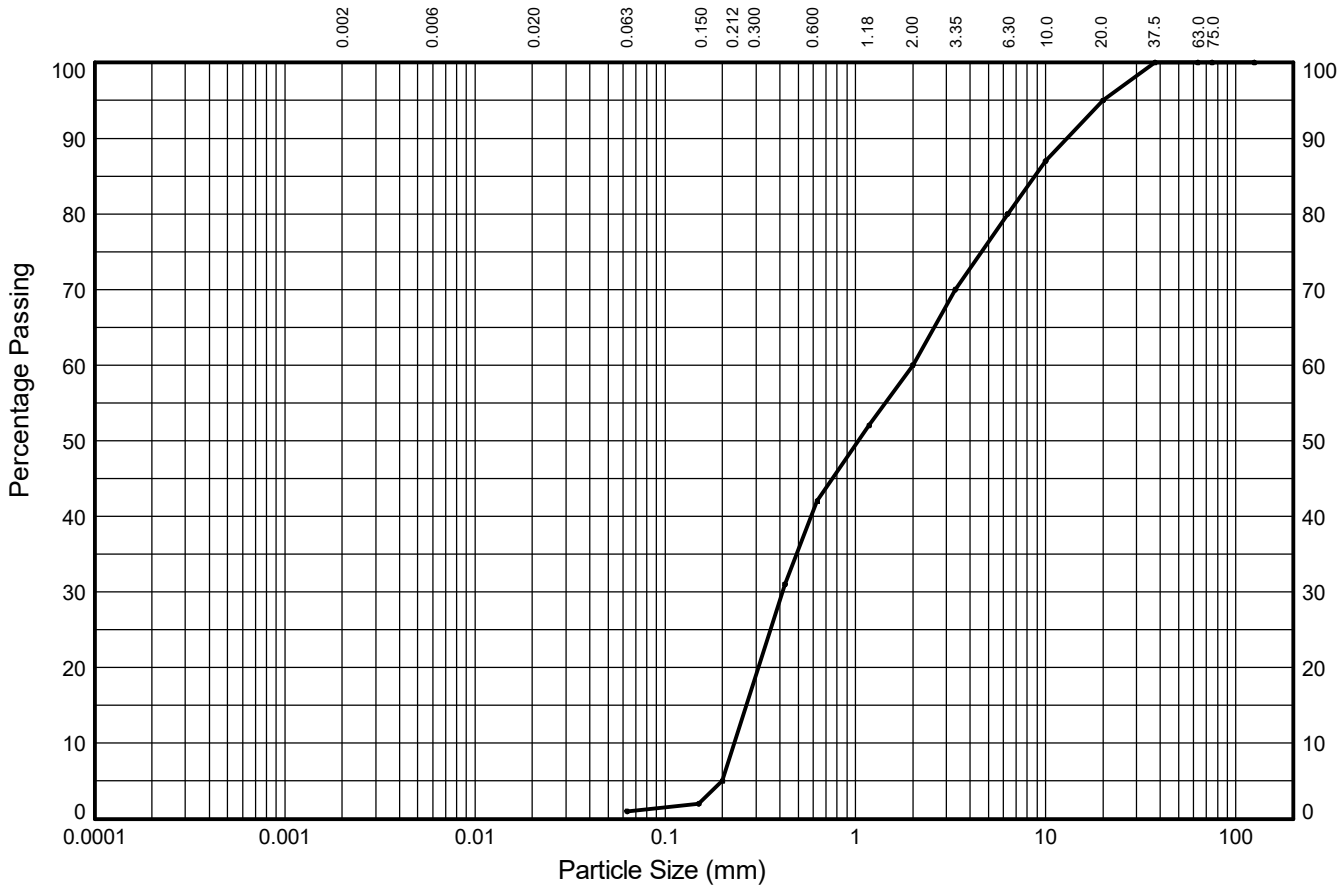
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS118B** Sample Ref: **10** Sample Type: **B** Depth (m): **7.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	4%	37%	18%	20%	15%	5%	
	SILT			SAND			GRAVEL			
1%				59%			40%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**95**
10.0	**87**
6.30	**80**
3.35	**70**
2.00	**60**
1.18	**52**
0.630	**42**
0.425	**31**
0.200	**5**
0.150	**2**
0.063	**1**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.231**
D_{15} (mm)	**0.267**
D_{30} (mm)	**0.413**
D_{50} (mm)	**1.041**
D_{60} (mm)	**2.000**
D_{85} (mm)	**8.763**
D_{90} (mm)	**12.968**
C_U	**8.7**
C_C	**0.37**

Soil Description:

Reddish brown very gravelly slightly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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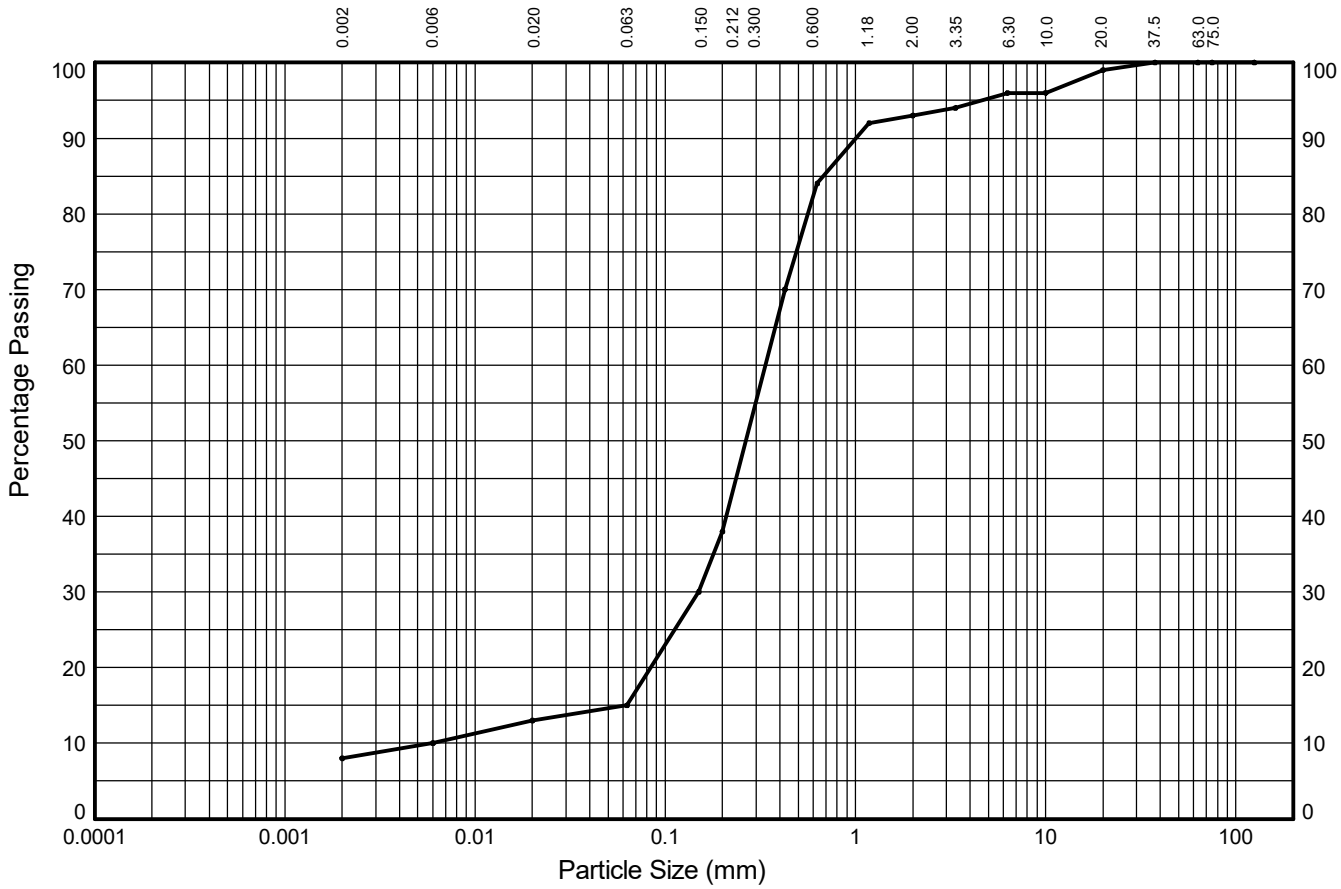
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS119** Sample Ref: **3** Sample Type: **B** Depth (m): **0.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	3%	2%	23%	46%	9%	3%	3%	1%	
	SILT			SAND			GRAVEL			
8%	7%			78%			7%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**99**
10.0	**96**
6.30	**96**
3.35	**94**
2.00	**93**
1.18	**92**
0.630	**84**
0.425	**70**
0.200	**38**
0.150	**30**
0.063	**15**

Particle Diameter (mm)	Percent Passing (%)
0.02	**13**
0.006	**10**
0.002	**8**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.006**
D_{15} (mm)	**0.063**
D_{30} (mm)	**0.150**
D_{50} (mm)	**0.265**
D_{60} (mm)	**0.336**
D_{85} (mm)	**0.681**
D_{90} (mm)	**1.009**
C_U	**56**
C_C	**11**

Soil Description:

Brown gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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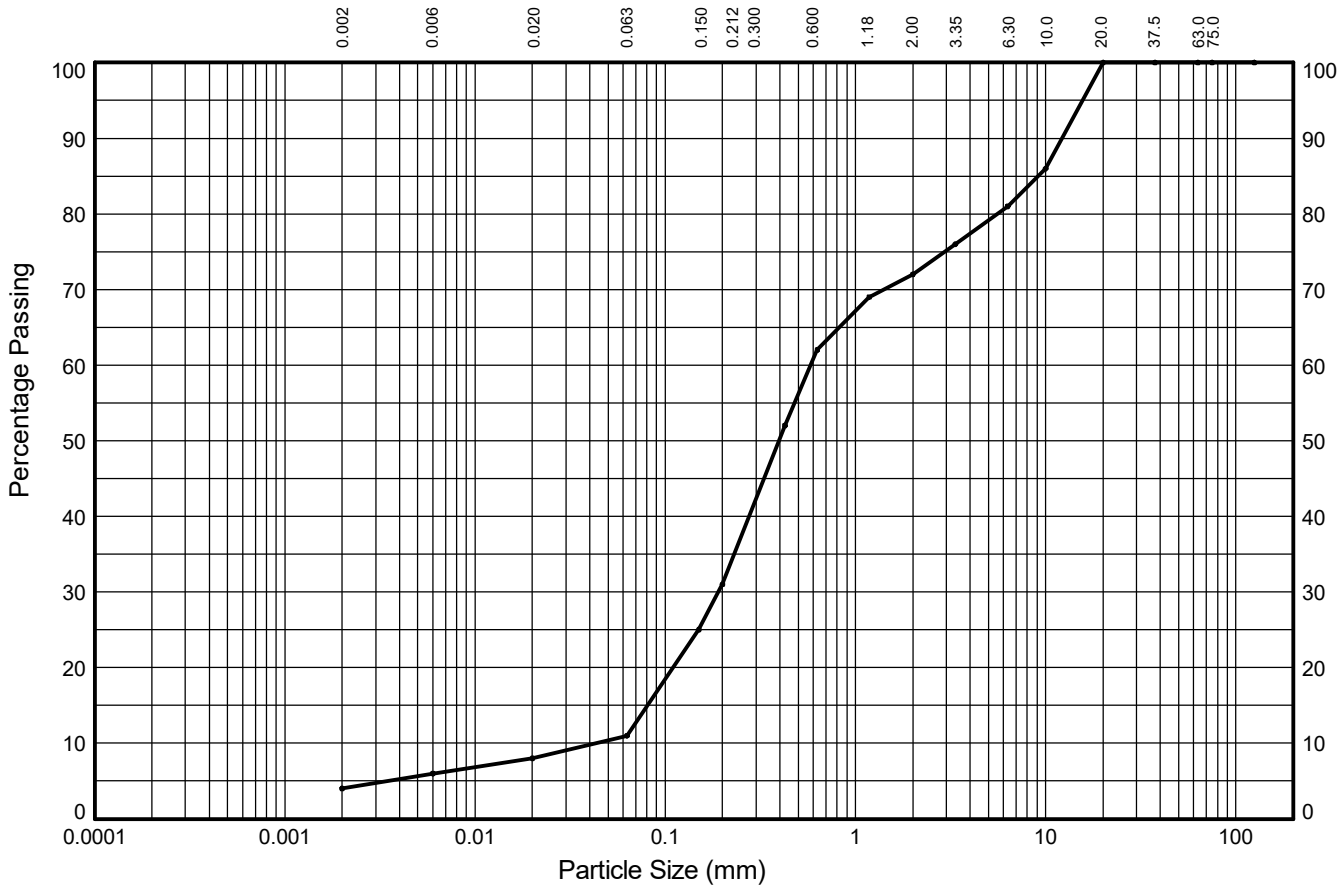
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS119** Sample Ref: **8** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	2%	3%	20%	31%	10%	9%	19%	0%	
	SILT			SAND			GRAVEL			
4%	7%			61%			28%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**86**
6.30	**81**
3.35	**76**
2.00	**72**
1.18	**69**
0.630	**62**
0.425	**52**
0.200	**31**
0.150	**25**
0.063	**11**

Particle Diameter (mm)	Percent Passing (%)
0.02	**8**
0.006	**6**
0.002	**4**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.043**
D_{15} (mm)	**0.081**
D_{30} (mm)	**0.191**
D_{50} (mm)	**0.396**
D_{60} (mm)	**0.582**
D_{85} (mm)	**9.117**
D_{90} (mm)	**12.190**
C_U	**14**
C_C	**1**

Soil Description:

Reddish brown very gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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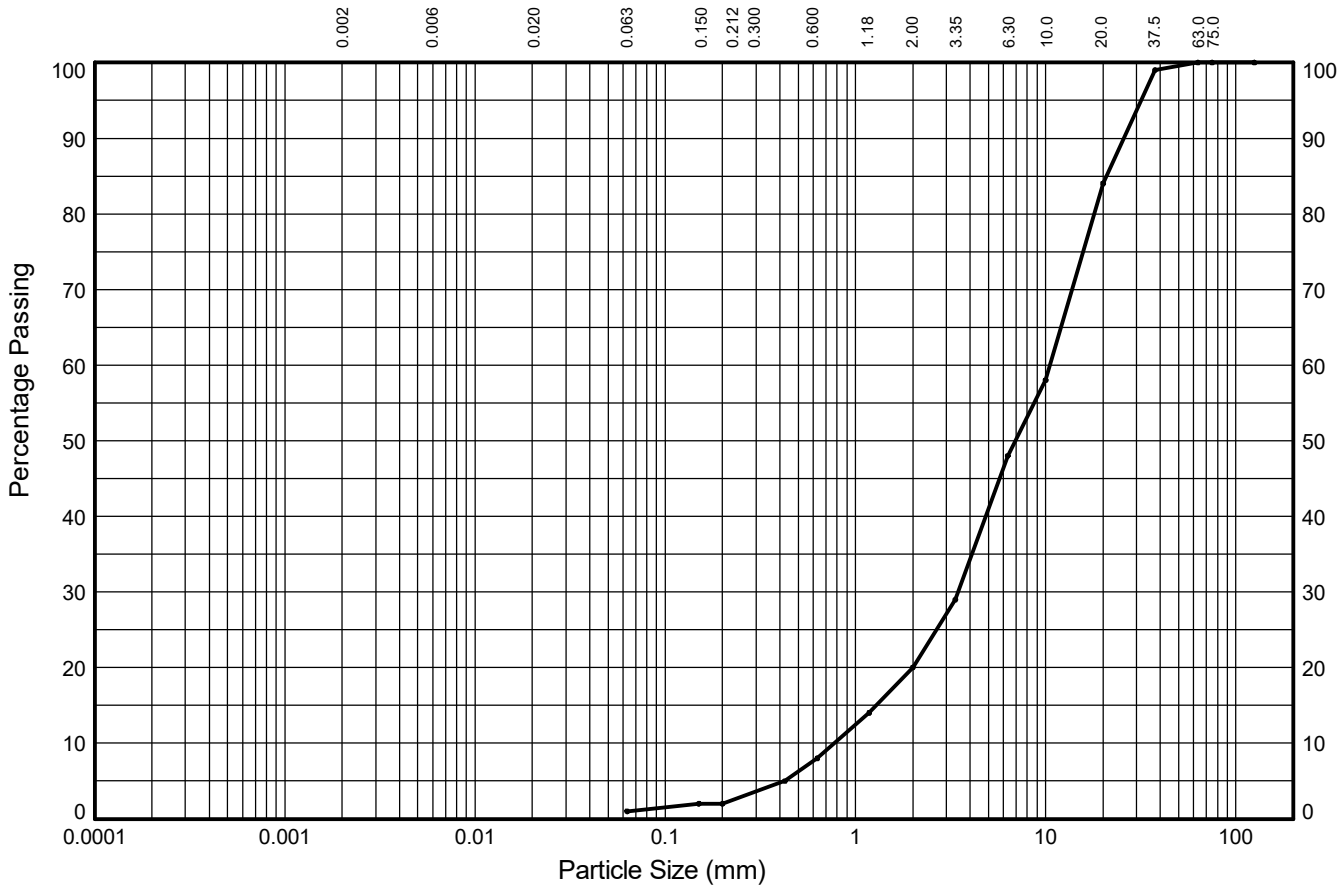
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS119** Sample Ref: **12** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	1%	6%	12%	28%	36%	16%	
	SILT			SAND			GRAVEL			
1%				19%			80%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**99**
20.0	**84**
10.0	**58**
6.30	**48**
3.35	**29**
2.00	**20**
1.18	**14**
0.630	**8**
0.425	**5**
0.200	**2**
0.150	**2**
0.063	**1**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.777**
D_{15} (mm)	**1.288**
D_{30} (mm)	**3.463**
D_{50} (mm)	**6.910**
D_{60} (mm)	**10.548**
D_{85} (mm)	**20.856**
D_{90} (mm)	**25.718**
C_U	**14**
C_C	**1**

Soil Description:

Dark brown sandy slightly clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By	Date
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Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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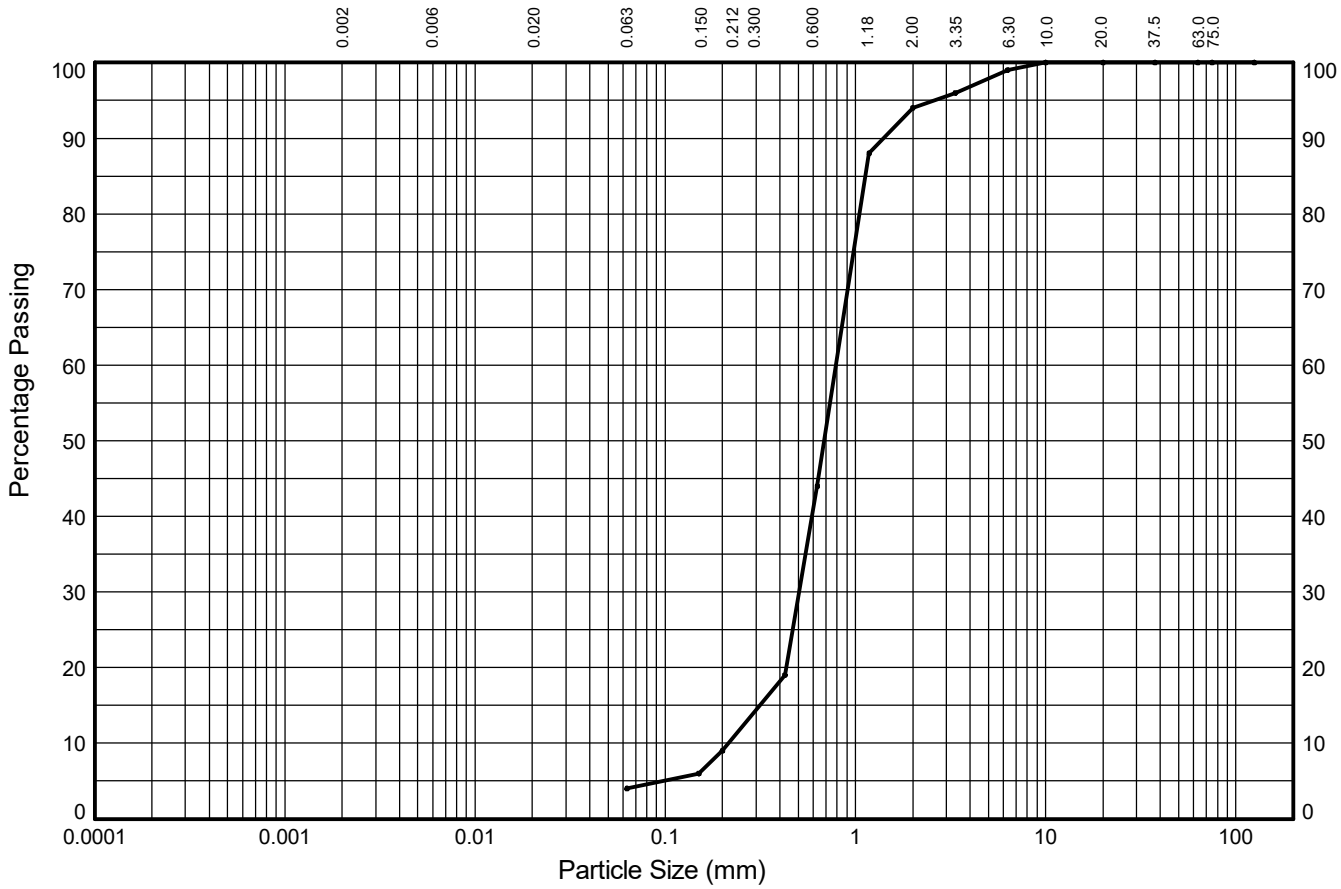
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS119** Sample Ref: **17** Sample Type: **B** Depth (m): **3.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	5%	35%	50%	5%	1%	0%	
	SILT			SAND			GRAVEL			
4%				90%			6%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**99**
3.35	**96**
2.00	**94**
1.18	**88**
0.630	**44**
0.425	**19**
0.200	**9**
0.150	**6**
0.063	**4**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.216**
D_{15} (mm)	**0.314**
D_{30} (mm)	**0.505**
D_{50} (mm)	**0.686**
D_{60} (mm)	**0.791**
D_{85} (mm)	**1.131**
D_{90} (mm)	**1.407**
C_U	**3.7**
C_C	**1.5**

Soil Description:

Red gravelly slightly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
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Compiled By	Date
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Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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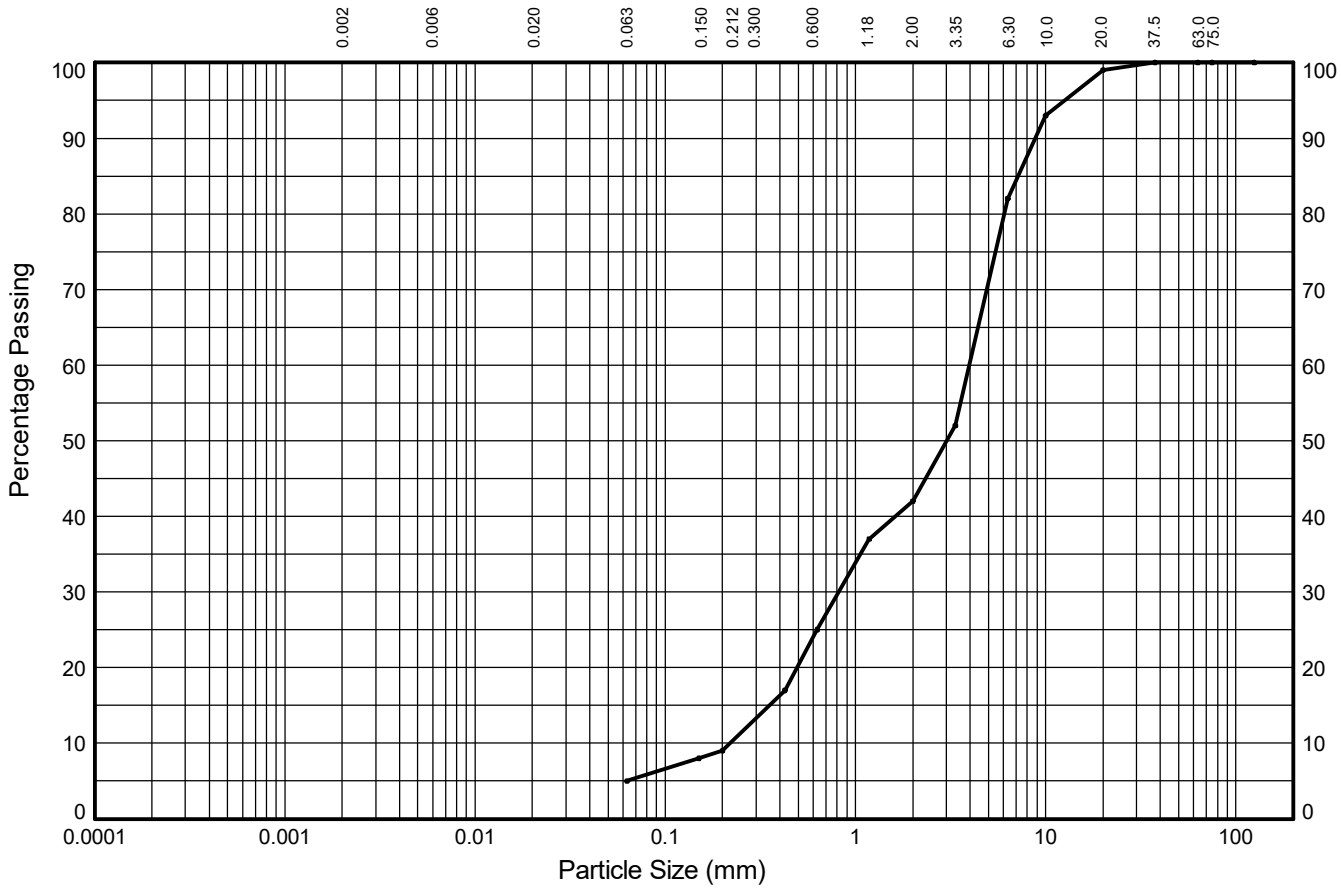
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS119** Sample Ref: **24** Sample Type: **B** Depth (m): **5.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	4%	16%	17%	40%	17%	1%	
	SILT			SAND			GRAVEL			
5%				37%			58%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**99**
10.0	**93**
6.30	**82**
3.35	**52**
2.00	**42**
1.18	**37**
0.630	**25**
0.425	**17**
0.200	**9**
0.150	**8**
0.063	**5**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.220**
D_{15} (mm)	**0.352**
D_{30} (mm)	**0.818**
D_{50} (mm)	**3.022**
D_{60} (mm)	**3.965**
D_{85} (mm)	**7.146**
D_{90} (mm)	**8.816**
C_U	**18**
C_C	**0.77**

Soil Description:

Reddish brown very sandy clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
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Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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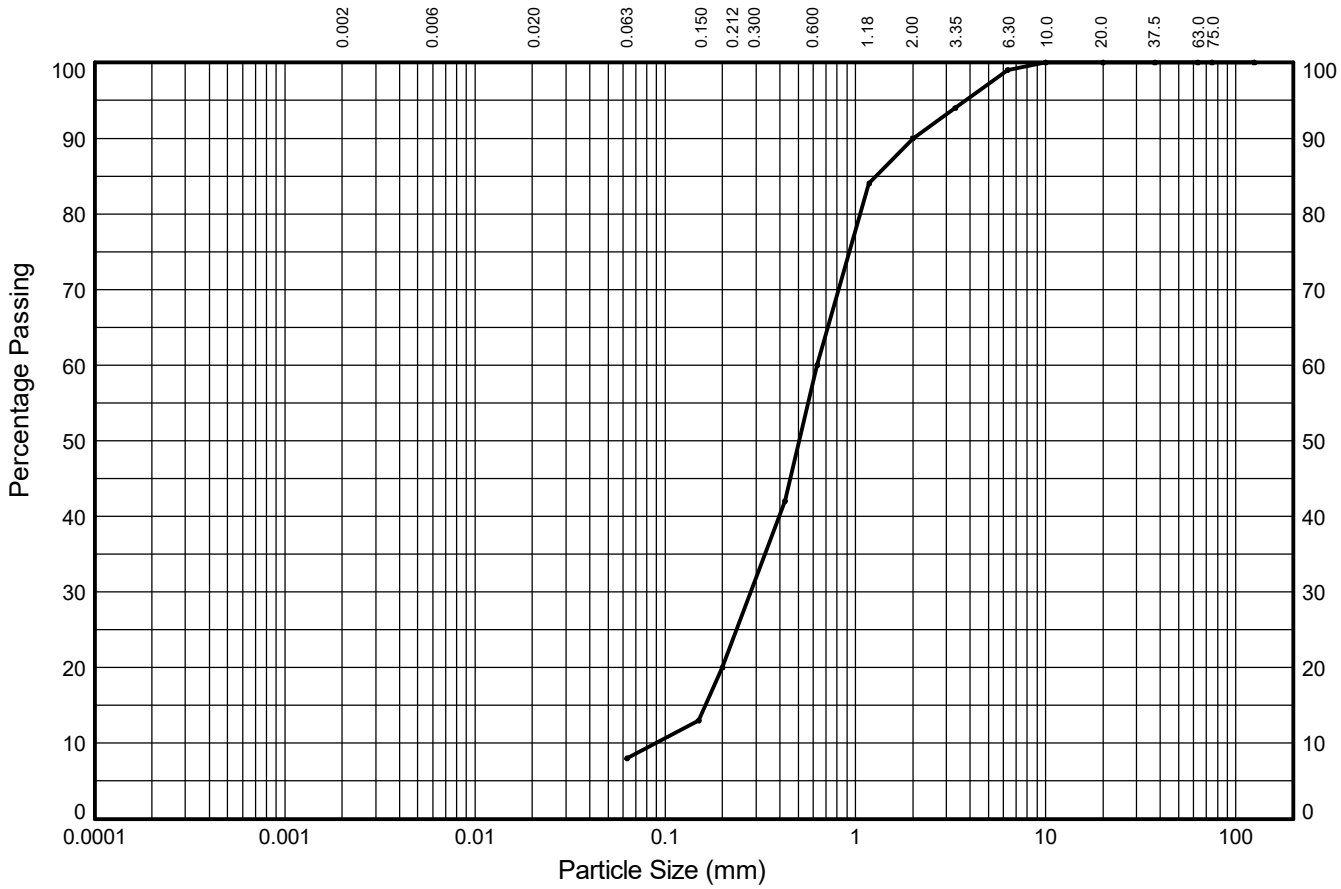
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS119** Sample Ref: **34** Sample Type: **B** Depth (m): **8.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	12%	40%	30%	9%	1%	0%	
	SILT			SAND			GRAVEL			
8%				82%			10%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**99**
3.35	**94**
2.00	**90**
1.18	**84**
0.630	**60**
0.425	**42**
0.200	**20**
0.150	**13**
0.063	**8**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.089**
D_{15} (mm)	**0.163**
D_{30} (mm)	**0.282**
D_{50} (mm)	**0.506**
D_{60} (mm)	**0.630**
D_{85} (mm)	**1.288**
D_{90} (mm)	**2.000**
C_U	**7.1**
C_C	**1.4**

Soil Description:

Reddish brown gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
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Compiled By	Date
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Contract	Contract Ref:
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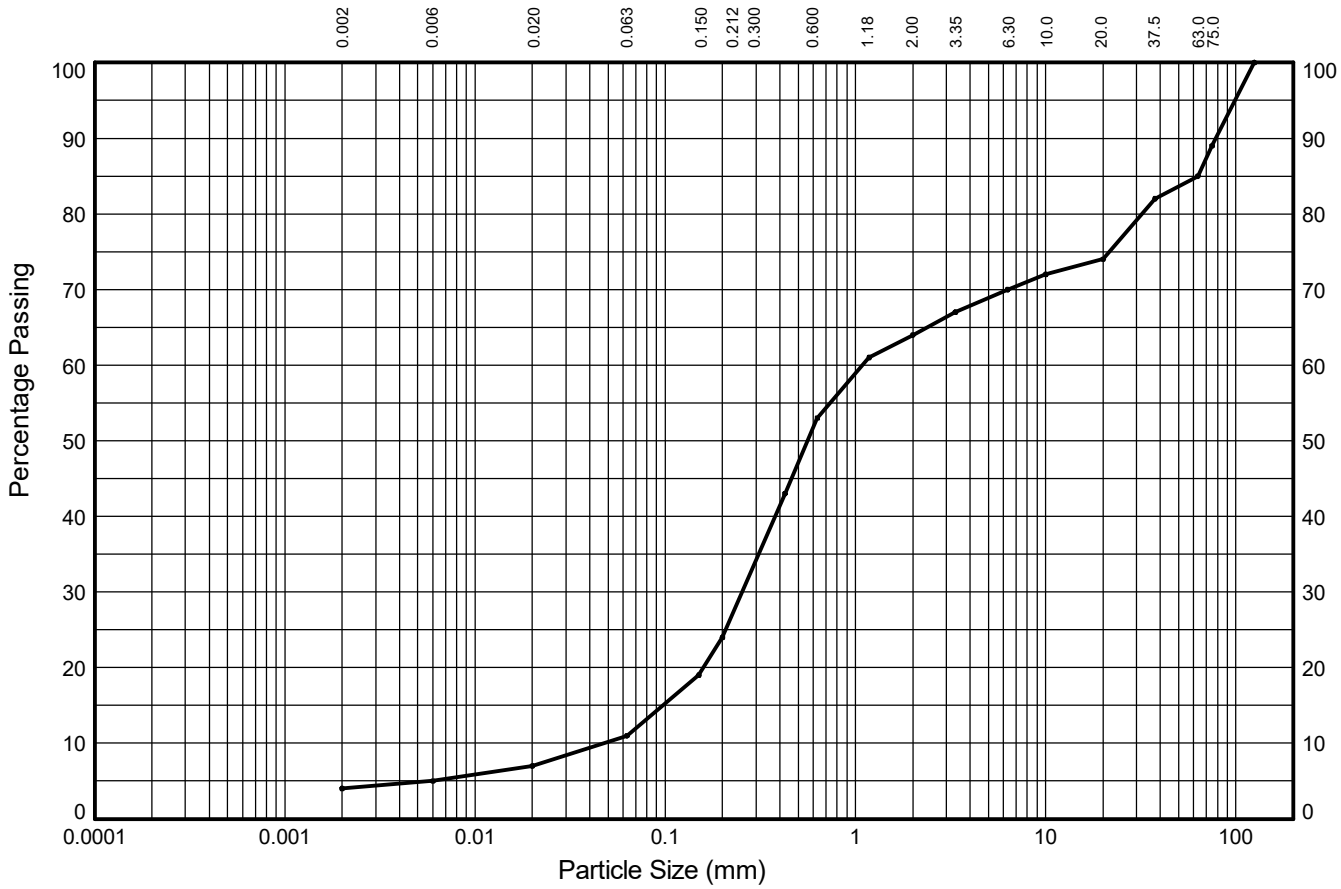
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS120** Sample Ref: **4** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	1%	2%	4%	13%	29%	11%	6%	4%	11%	
	SILT			SAND			GRAVEL			
4%	7%			53%			21%			15%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**89**
63.0	**85**
37.5	**82**
20.0	**74**
10.0	**72**
6.30	**70**
3.35	**67**
2.00	**64**
1.18	**61**
0.630	**53**
0.425	**43**
0.200	**24**
0.150	**19**
0.063	**11**

Particle Diameter (mm)	Percent Passing (%)
0.02	**7**
0.006	**5**
0.002	**4**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.047**
D_{15} (mm)	**0.097**
D_{30} (mm)	**0.254**
D_{50} (mm)	**0.560**
D_{60} (mm)	**1.091**
D_{85} (mm)	**63.000**
D_{90} (mm)	**78.565**
C_U	**23**
C_C	**1**

Soil Description:

Brown very gravelly clayey SAND with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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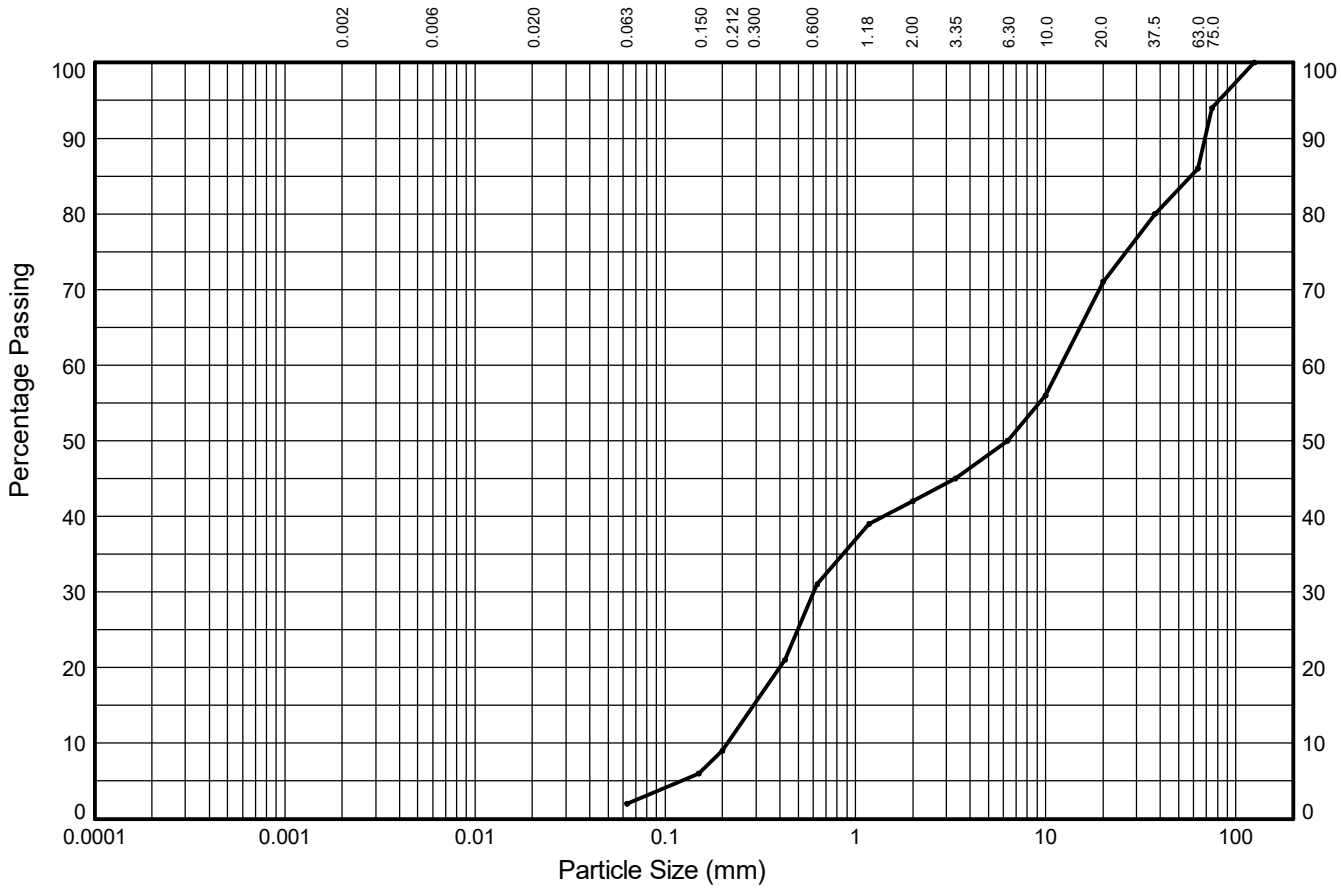
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS120** Sample Ref: **7** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	7%	22%	11%	8%	21%	15%	
	SILT			SAND			GRAVEL			
2%				40%			44%			14%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**94**
63.0	**86**
37.5	**80**
20.0	**71**
10.0	**56**
6.30	**50**
3.35	**45**
2.00	**42**
1.18	**39**
0.630	**31**
0.425	**21**
0.200	**9**
0.150	**6**
0.063	**2**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.213**
D_{15} (mm)	**0.292**
D_{30} (mm)	**0.606**
D_{50} (mm)	**6.300**
D_{60} (mm)	**12.030**
D_{85} (mm)	**57.782**
D_{90} (mm)	**68.739**
C_U	**56**
C_C	**0.14**

Soil Description:

Orangish brown very sandy slightly silty GRAVEL with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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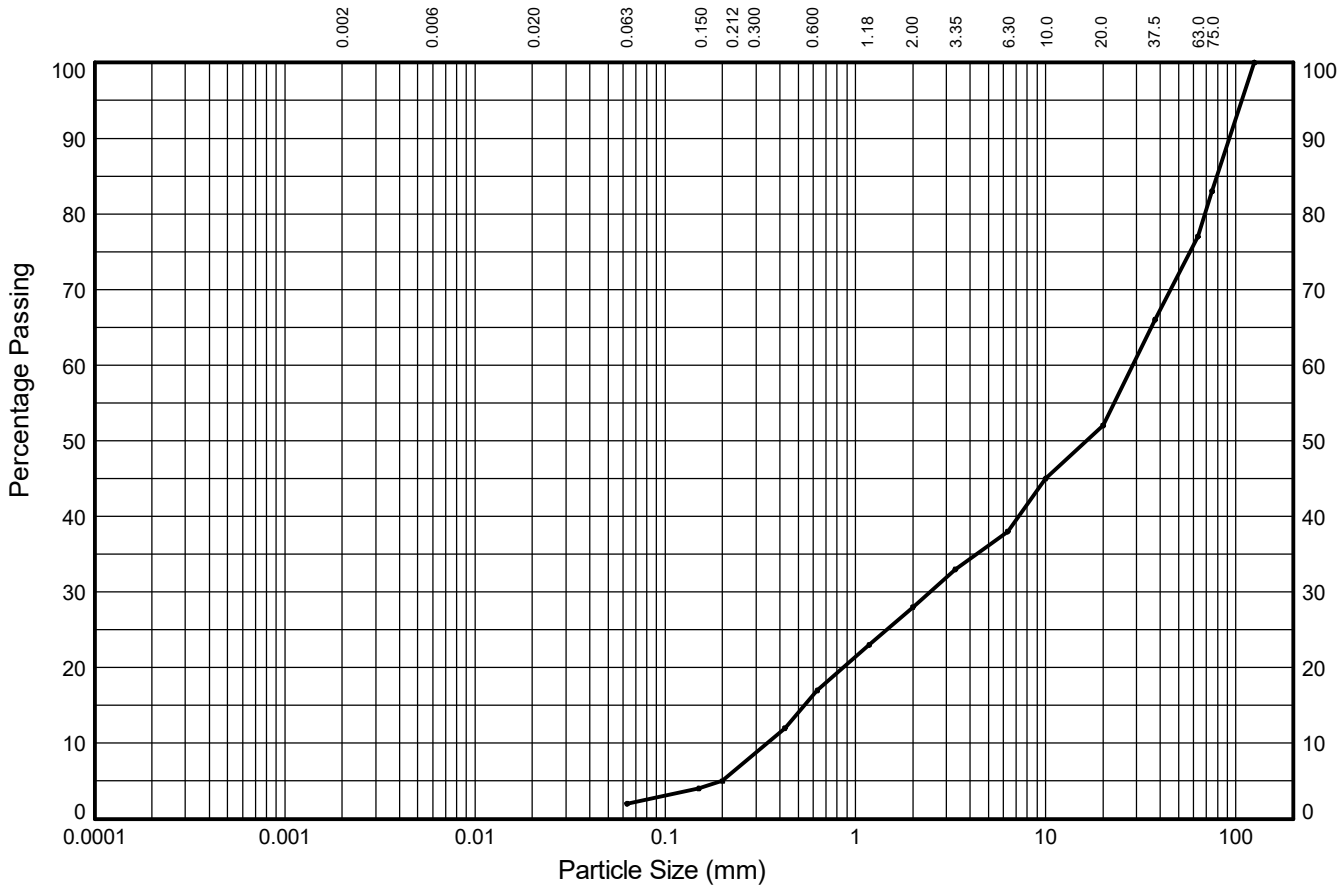
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS120A** Sample Ref: **2** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	3%	12%	11%	10%	14%	25%	
	SILT			SAND			GRAVEL			
2%				26%			49%			23%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**83**
63.0	**77**
37.5	**66**
20.0	**52**
10.0	**45**
6.30	**38**
3.35	**33**
2.00	**28**
1.18	**23**
0.630	**17**
0.425	**12**
0.200	**5**
0.150	**4**
0.063	**2**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.343**
D_{15} (mm)	**0.538**
D_{30} (mm)	**2.458**
D_{50} (mm)	**16.407**
D_{60} (mm)	**28.644**
D_{85} (mm)	**79.645**
D_{90} (mm)	**92.557**
C_U	**84**
C_C	**0.62**

Soil Description:
Brown very sandy slightly clayey GRAVEL with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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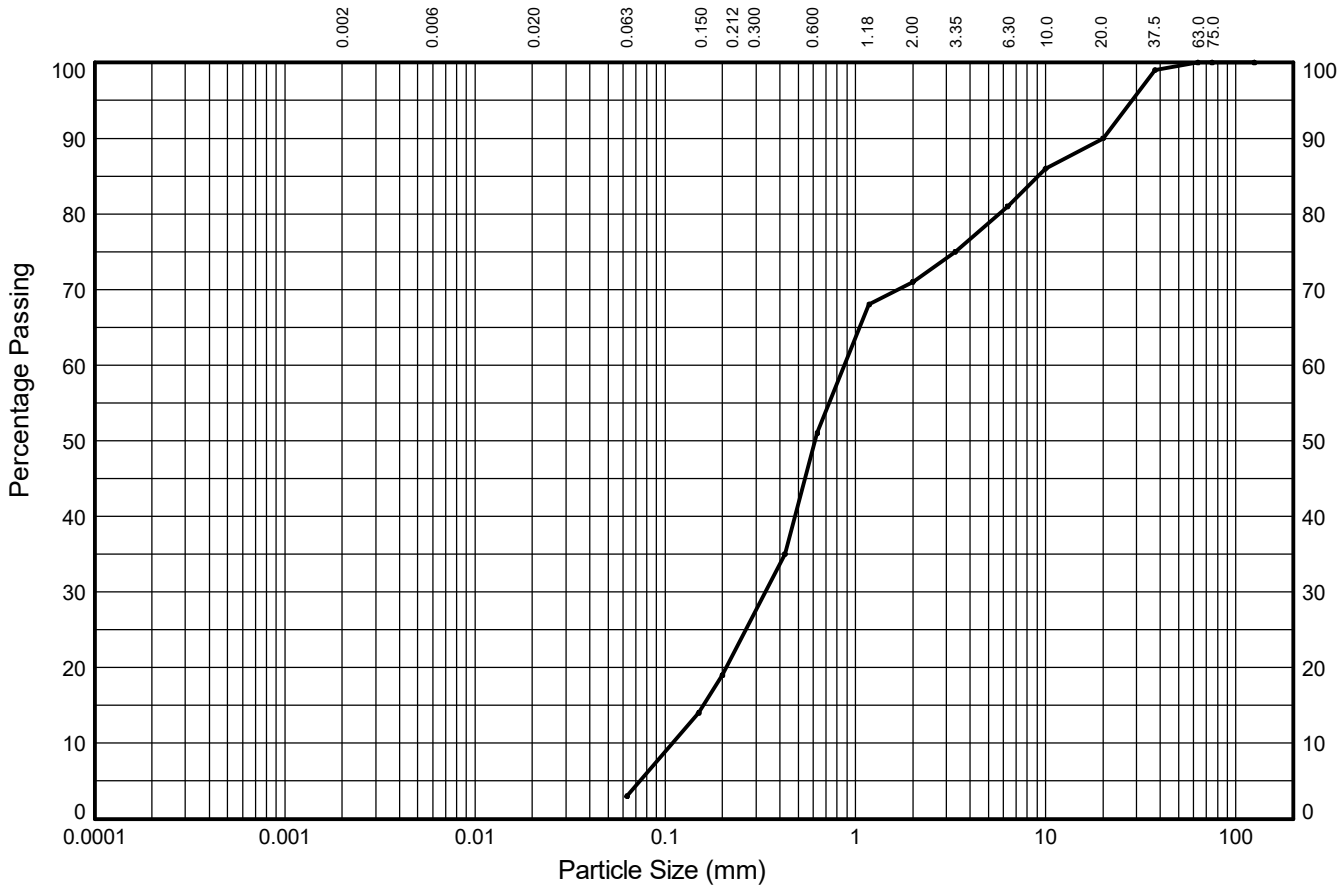
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS120A** Sample Ref: **4** Sample Type: **B** Depth (m): **2.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	16%	32%	20%	10%	9%	10%	
	SILT			SAND			GRAVEL			
3%				68%			29%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**99**
20.0	**90**
10.0	**86**
6.30	**81**
3.35	**75**
2.00	**71**
1.18	**68**
0.630	**51**
0.425	**35**
0.200	**19**
0.150	**14**
0.063	**3**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.109**
D_{15} (mm)	**0.159**
D_{30} (mm)	**0.336**
D_{50} (mm)	**0.615**
D_{60} (mm)	**0.878**
D_{85} (mm)	**9.117**
D_{90} (mm)	**20.000**
C_U	**8.0**
C_C	**1.2**

Soil Description:

Brown very gravelly slightly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Maduka	**PRECIOUS MADUKA**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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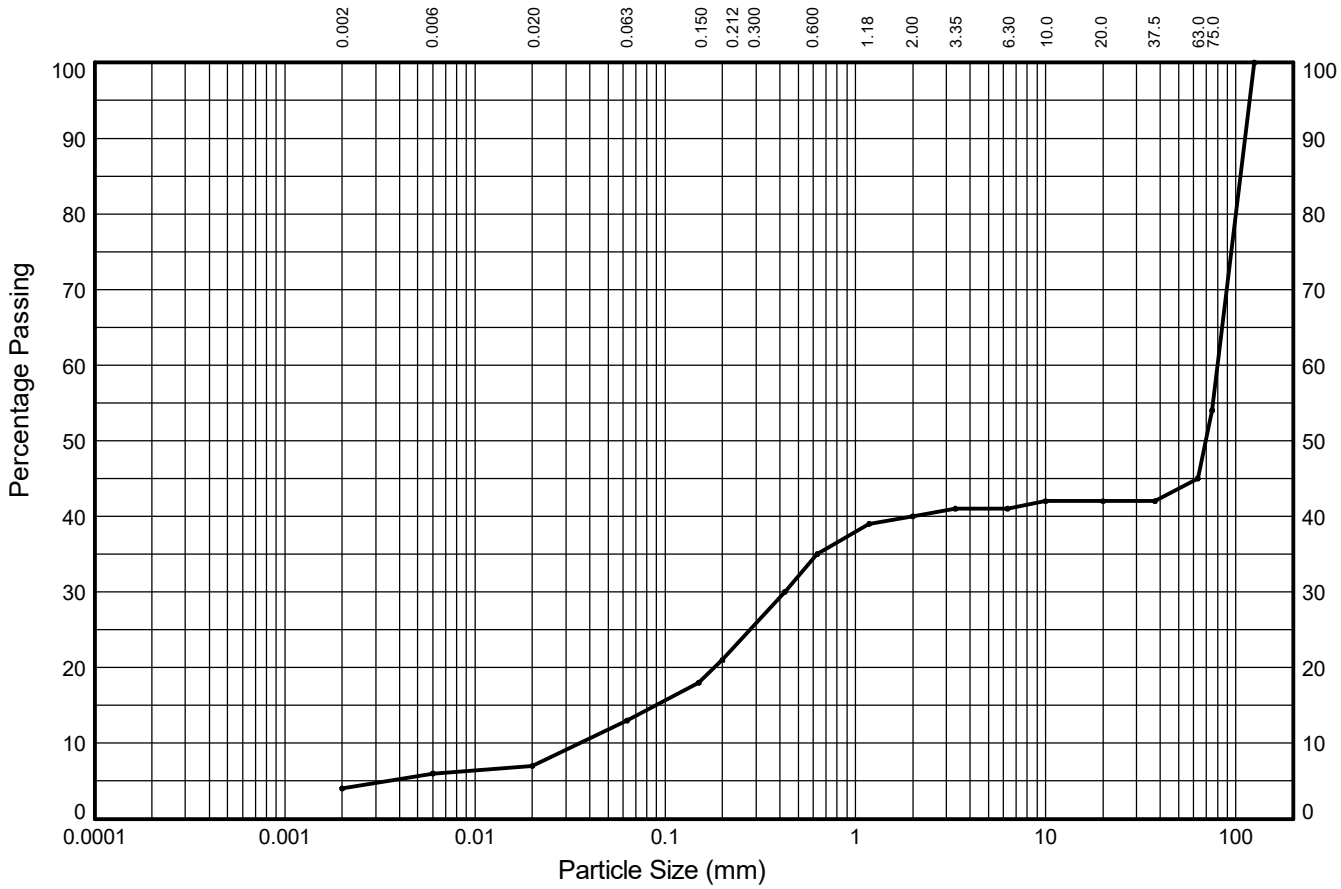
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS121** Sample Ref: **4** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	1%	6%	8%	14%	5%	1%	1%	3%	
	SILT			SAND			GRAVEL			
4%	9%			27%			5%			55%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**54**
63.0	**45**
37.5	**42**
20.0	**42**
10.0	**42**
6.30	**41**
3.35	**41**
2.00	**40**
1.18	**39**
0.630	**35**
0.425	**30**
0.200	**21**
0.150	**18**
0.063	**13**

Particle Diameter (mm)	Percent Passing (%)
0.02	**7**
0.006	**6**
0.002	**4**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.035**
D_{15} (mm)	**0.089**
D_{30} (mm)	**0.425**
D_{50} (mm)	**69.408**
D_{60} (mm)	**80.167**
D_{85} (mm)	**105.820**
D_{90} (mm)	**111.862**
C_U	**2258**
C_C	**0.06**

Soil Description:

Brown COBBLES with gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	E. Hort	**ELIZABETH HORT**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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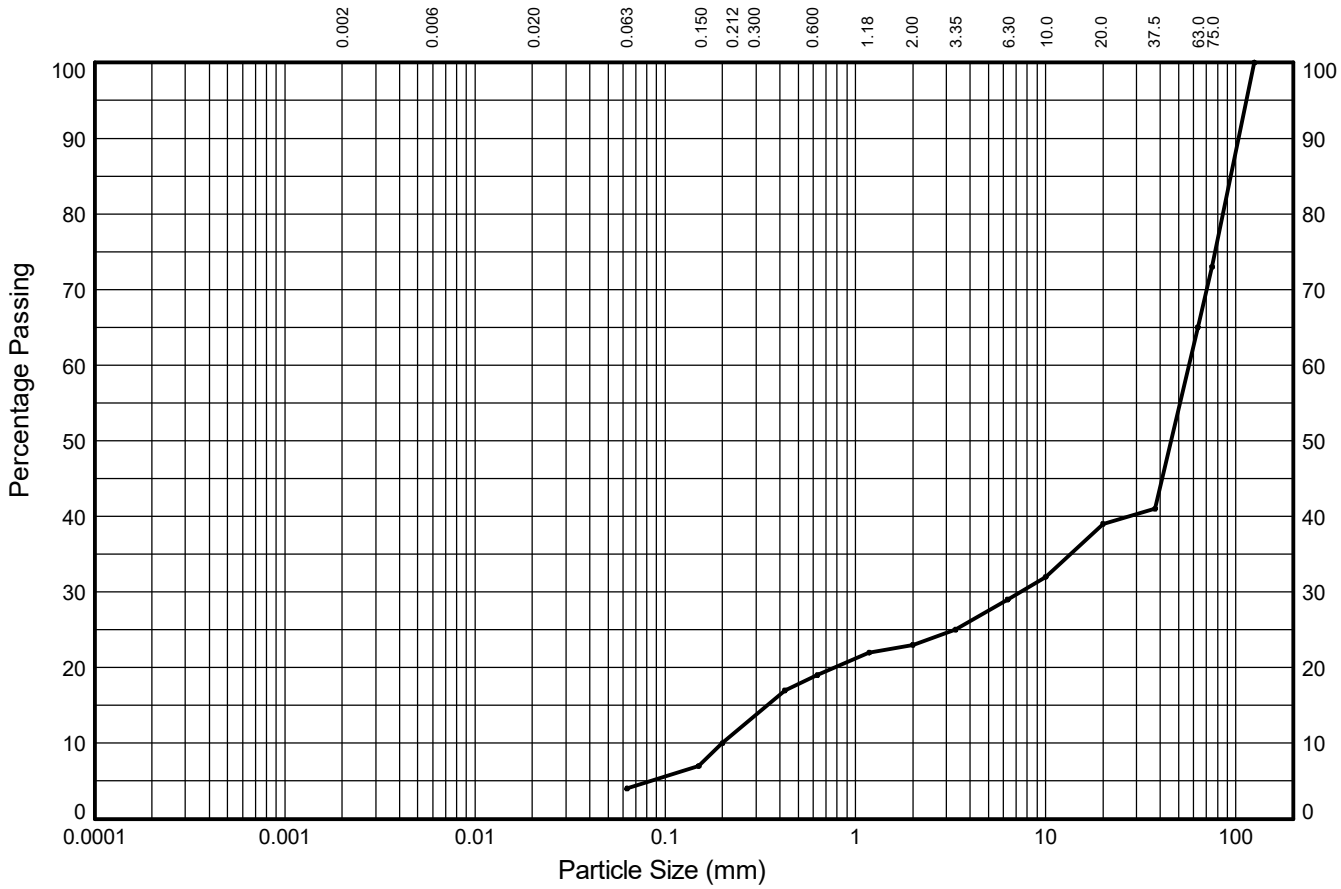
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS121** Sample Ref: **6** Sample Type: **B** Depth (m): **1.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	6%	9%	4%	6%	10%	26%	
	SILT			SAND			GRAVEL			
4%				19%			42%			35%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**73**
63.0	**65**
37.5	**41**
20.0	**39**
10.0	**32**
6.30	**29**
3.35	**25**
2.00	**23**
1.18	**22**
0.630	**19**
0.425	**17**
0.200	**10**
0.150	**7**
0.063	**4**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.200**
D_{15} (mm)	**0.343**
D_{30} (mm)	**7.349**
D_{50} (mm)	**45.554**
D_{60} (mm)	**56.546**
D_{85} (mm)	**94.115**
D_{90} (mm)	**103.453**
C_U	**283**
C_C	**5**

Soil Description:

Brown sandy slightly silty GRAVEL with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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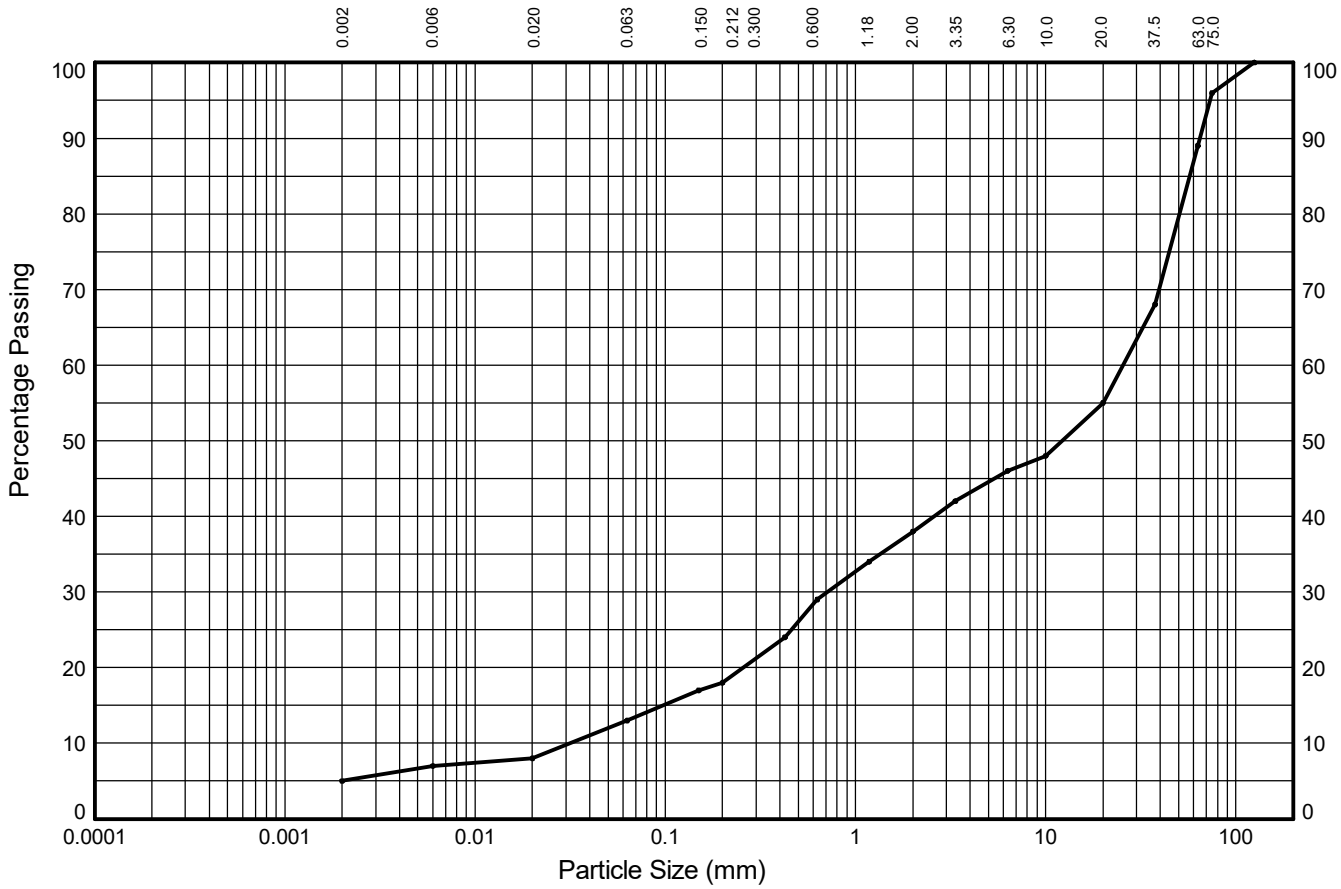
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS121** Sample Ref: **10** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	1%	5%	5%	11%	9%	8%	9%	34%	
	SILT			SAND			GRAVEL			
5%	8%			25%			51%			11%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**96**
63.0	**89**
37.5	**68**
20.0	**55**
10.0	**48**
6.30	**46**
3.35	**42**
2.00	**38**
1.18	**34**
0.630	**29**
0.425	**24**
0.200	**18**
0.150	**17**
0.063	**13**

Particle Diameter (mm)	Percent Passing (%)
0.02	**8**
0.006	**7**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.032**
D_{15} (mm)	**0.097**
D_{30} (mm)	**0.714**
D_{50} (mm)	**12.190**
D_{60} (mm)	**25.470**
D_{85} (mm)	**57.072**
D_{90} (mm)	**64.589**
C_U	**805**
C_C	**0.63**

Soil Description:

Brown very sandy clayey GRAVEL with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
E. Hort	**ELIZABETH HORT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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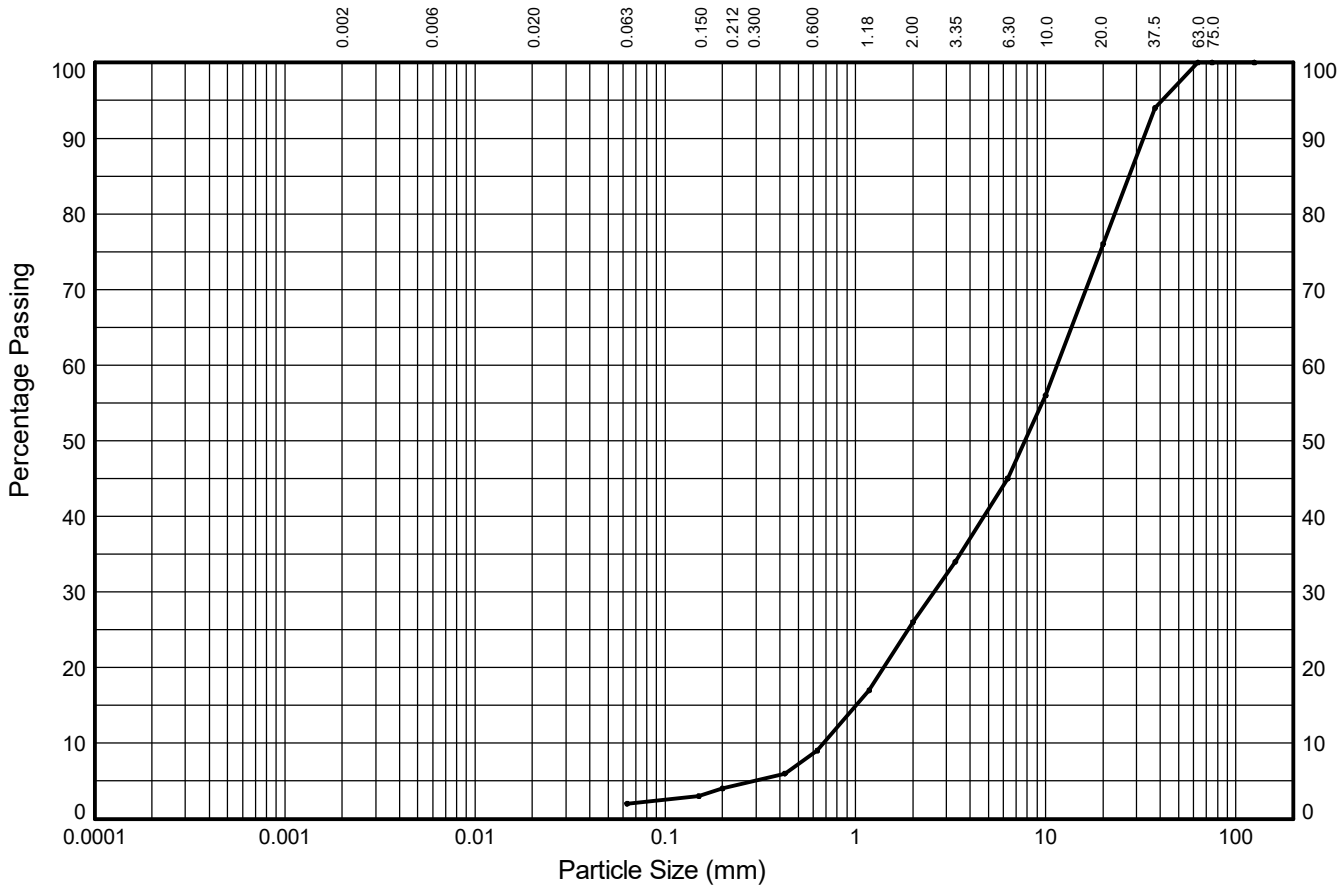
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS121** Sample Ref: **13** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	2%	5%	17%	19%	31%	24%	
	SILT			SAND			GRAVEL			
2%				24%			74%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**94**
20.0	**76**
10.0	**56**
6.30	**45**
3.35	**34**
2.00	**26**
1.18	**17**
0.630	**9**
0.425	**6**
0.200	**4**
0.150	**3**
0.063	**2**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.681**
D_{15} (mm)	**1.009**
D_{30} (mm)	**2.588**
D_{50} (mm)	**7.772**
D_{60} (mm)	**11.487**
D_{85} (mm)	**27.386**
D_{90} (mm)	**32.611**
C_U	**17**
C_C	**0.86**

Soil Description:
Brown very sandy slightly silty GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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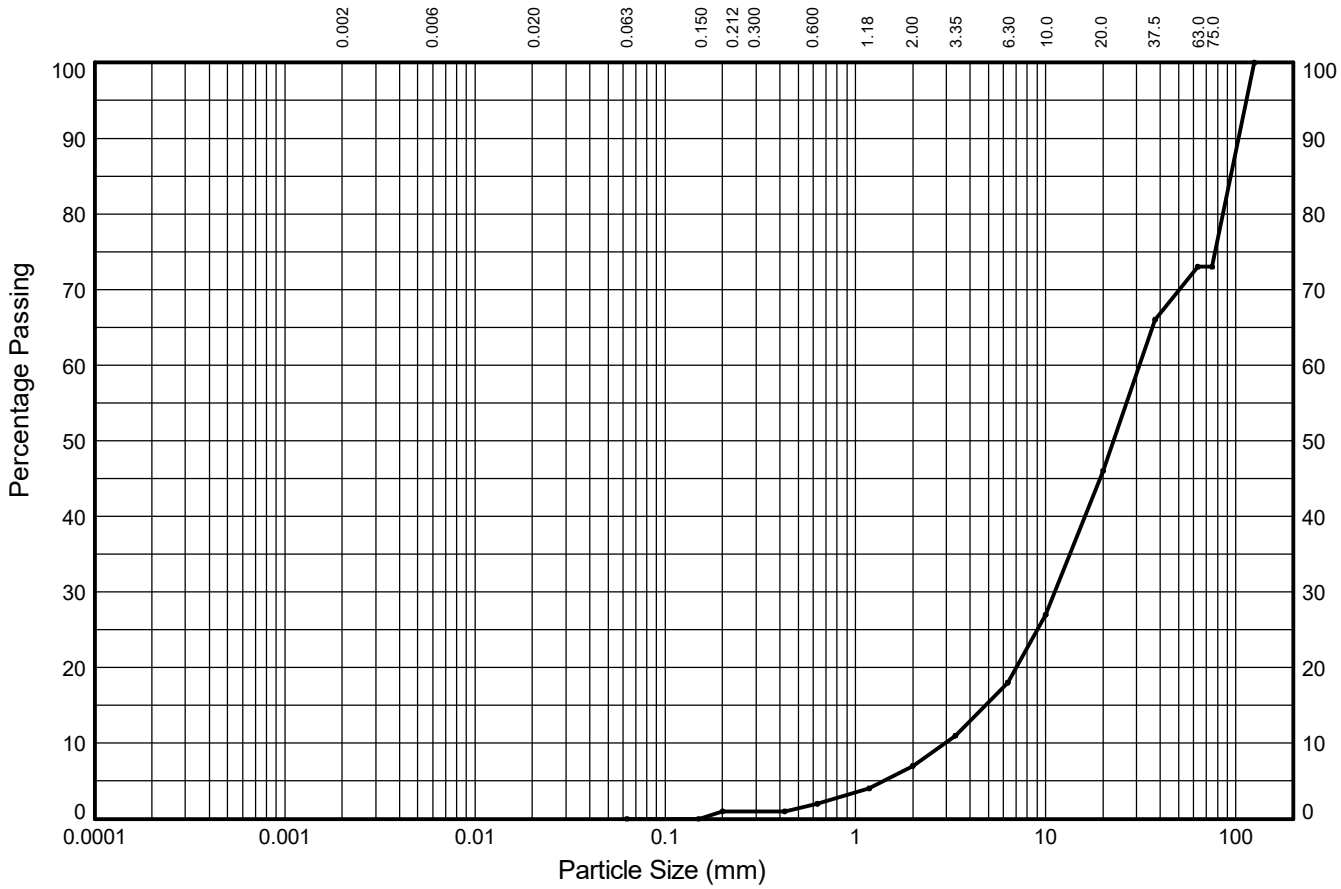
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS121A** Sample Ref: **2** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	1%	1%	5%	11%	28%	27%	
	SILT			SAND			GRAVEL			
0%				7%			66%			27%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**73**
63.0	**73**
37.5	**66**
20.0	**46**
10.0	**27**
6.30	**18**
3.35	**11**
2.00	**7**
1.18	**4**
0.630	**2**
0.425	**1**
0.200	**1**
0.150	**0**
0.063	**0**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**2.945**
D_{15} (mm)	**4.806**
D_{30} (mm)	**11.157**
D_{50} (mm)	**22.679**
D_{60} (mm)	**31.055**
D_{85} (mm)	**94.115**
D_{90} (mm)	**103.453**
C_U	**11**
C_C	**1**

Soil Description:

Brown sandy GRAVEL with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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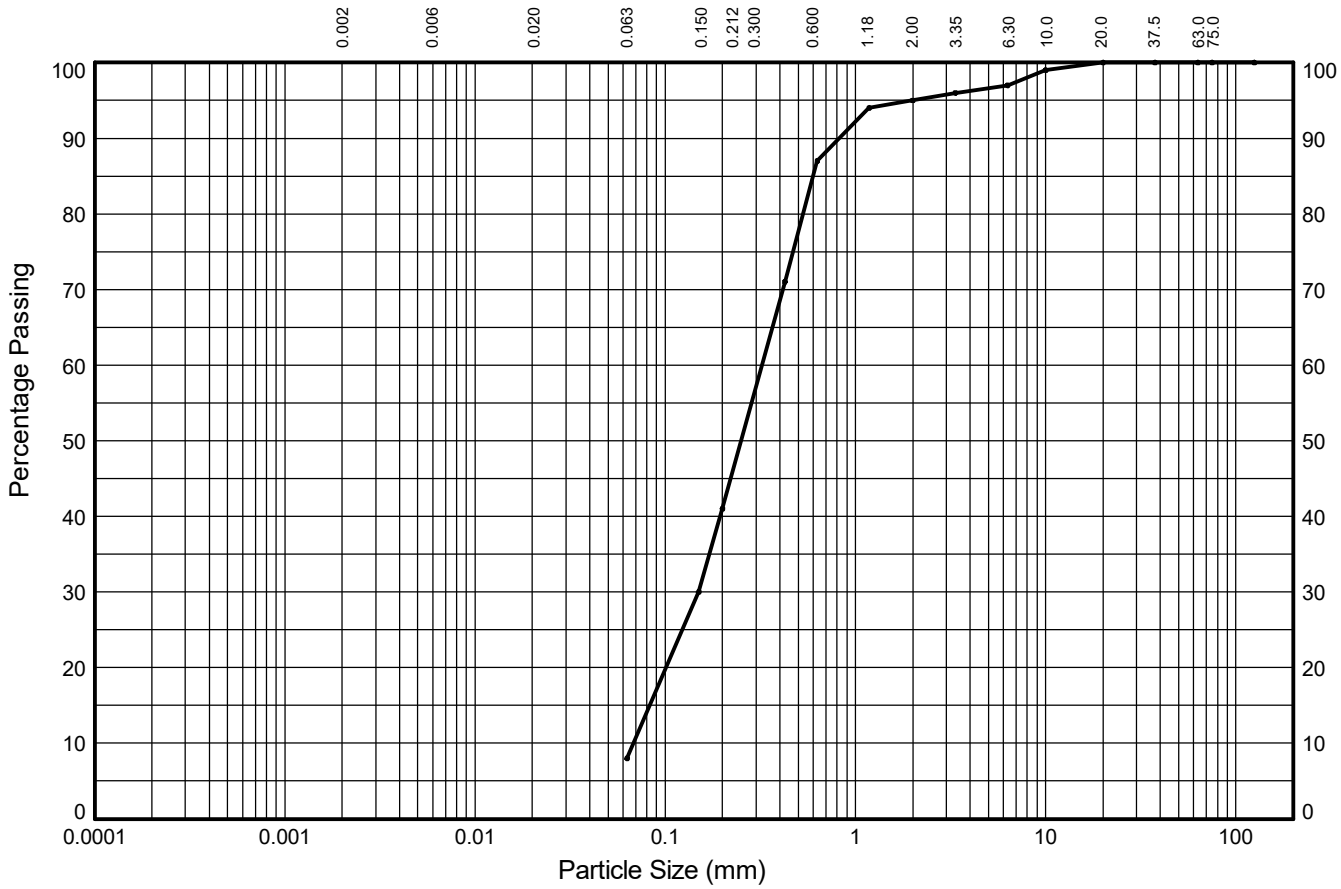
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS121A** Sample Ref: **9** Sample Type: **B** Depth (m): **4.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	33%	46%	8%	2%	3%	0%	
	SILT			SAND			GRAVEL			
8%				87%			5%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**99**
6.30	**97**
3.35	**96**
2.00	**95**
1.18	**94**
0.630	**87**
0.425	**71**
0.200	**41**
0.150	**30**
0.063	**8**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.068**
D_{15} (mm)	**0.083**
D_{30} (mm)	**0.150**
D_{50} (mm)	**0.251**
D_{60} (mm)	**0.322**
D_{85} (mm)	**0.600**
D_{90} (mm)	**0.824**
C_U	**4.7**
C_C	**1.0**

Soil Description:

Reddish brown gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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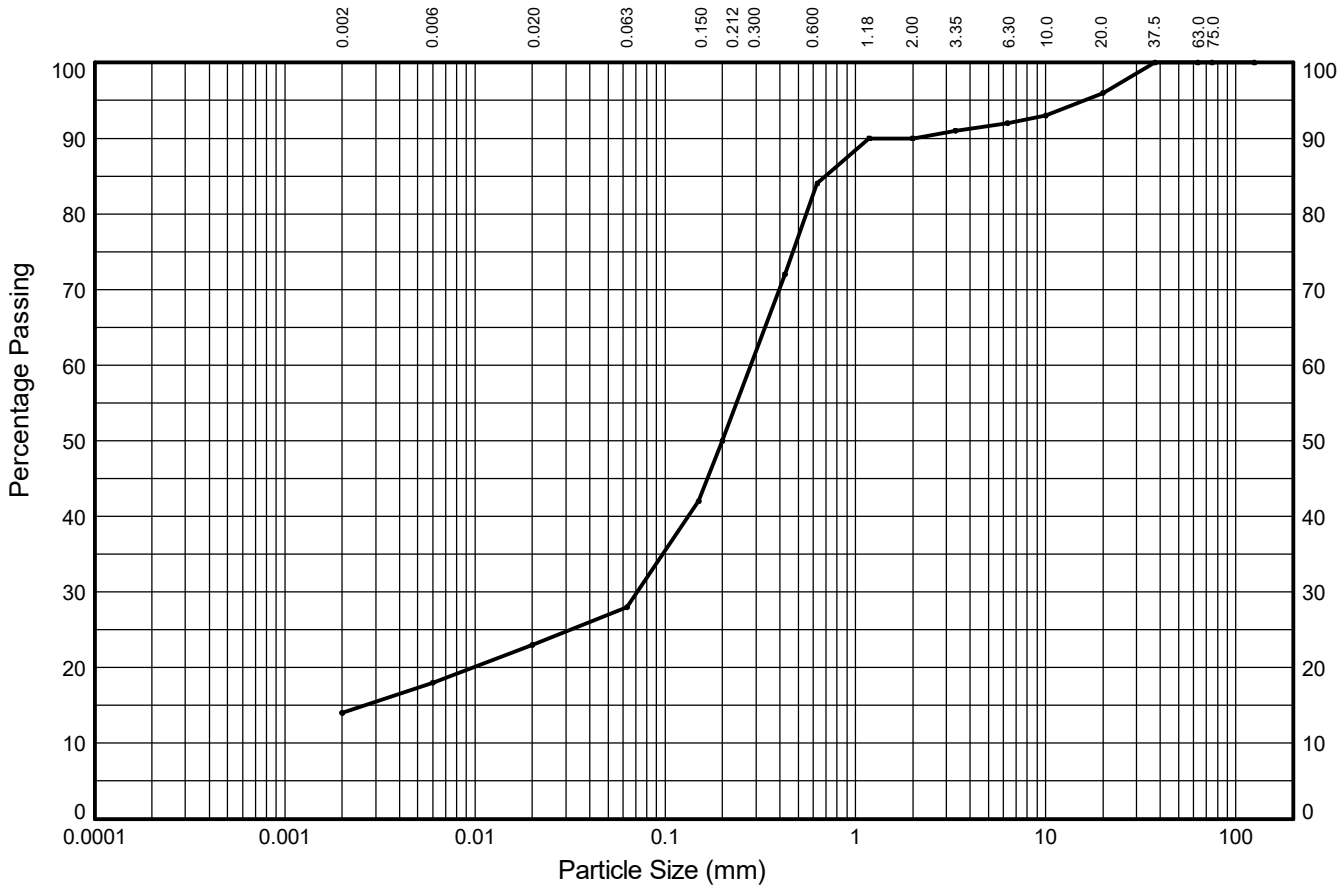
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS122** Sample Ref: **7** Sample Type: **B** Depth (m): **0.65**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	5%	5%	22%	34%	6%	2%	4%	4%	
	SILT			SAND			GRAVEL			
14%	14%			62%			10%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**96**
10.0	**93**
6.30	**92**
3.35	**91**
2.00	**90**
1.18	**90**
0.630	**84**
0.425	**72**
0.200	**50**
0.150	**42**
0.063	**28**

Particle Diameter (mm)	Percent Passing (%)
0.02	**23**
0.006	**18**
0.002	**14**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.003**
D_{30} (mm)	**0.071**
D_{50} (mm)	**0.200**
D_{60} (mm)	**0.282**
D_{85} (mm)	**0.699**
D_{90} (mm)	**1.180**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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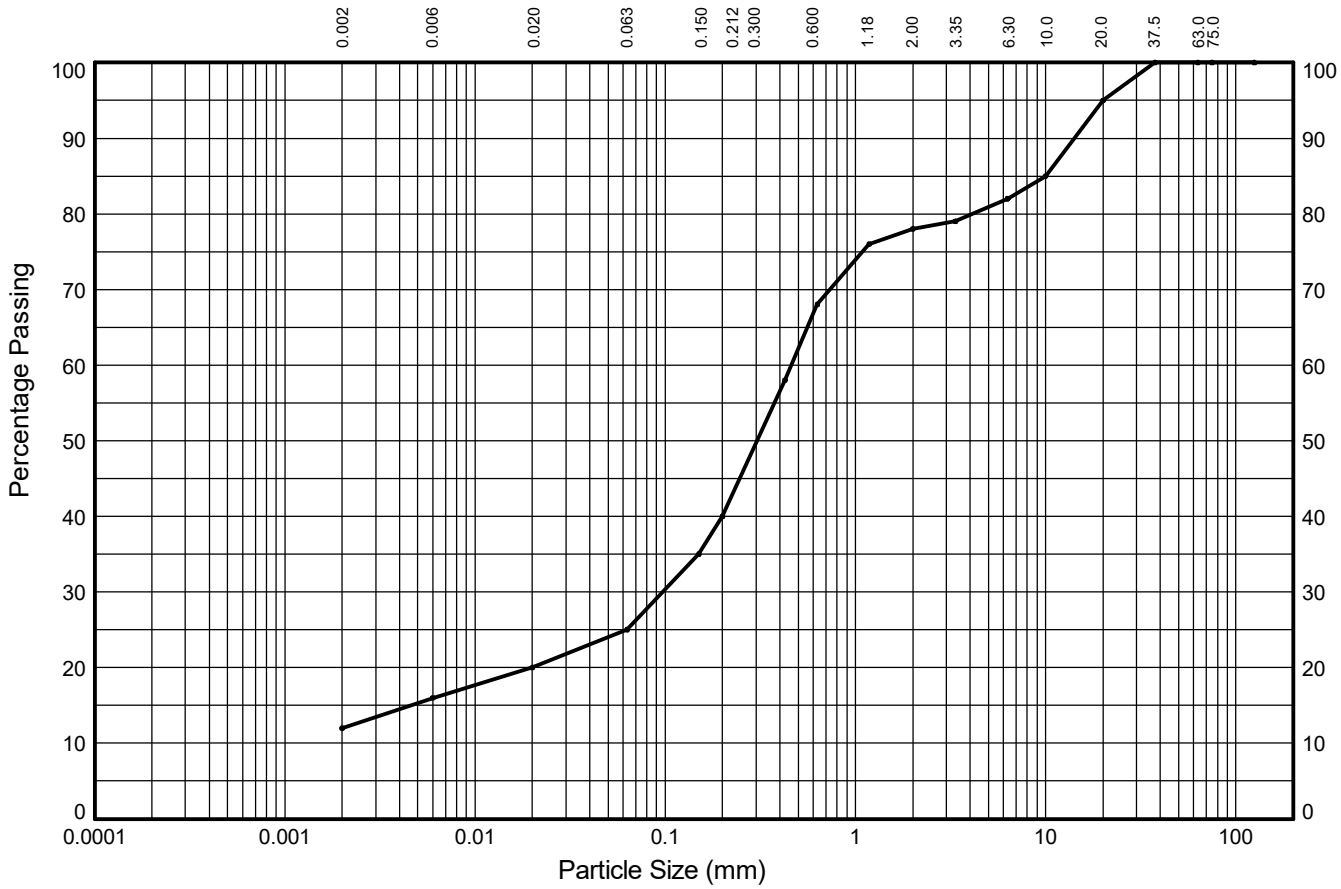
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS122** Sample Ref: **14** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	4%	5%	15%	28%	10%	4%	13%	5%	
	SILT			SAND			GRAVEL			
12%	13%			53%			22%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**95**
10.0	**85**
6.30	**82**
3.35	**79**
2.00	**78**
1.18	**76**
0.630	**68**
0.425	**58**
0.200	**40**
0.150	**35**
0.063	**25**

Particle Diameter (mm)	Percent Passing (%)
0.02	**20**
0.006	**16**
0.002	**12**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.005**
D_{30} (mm)	**0.097**
D_{50} (mm)	**0.304**
D_{60} (mm)	**0.460**
D_{85} (mm)	**10.000**
D_{90} (mm)	**14.142**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown very gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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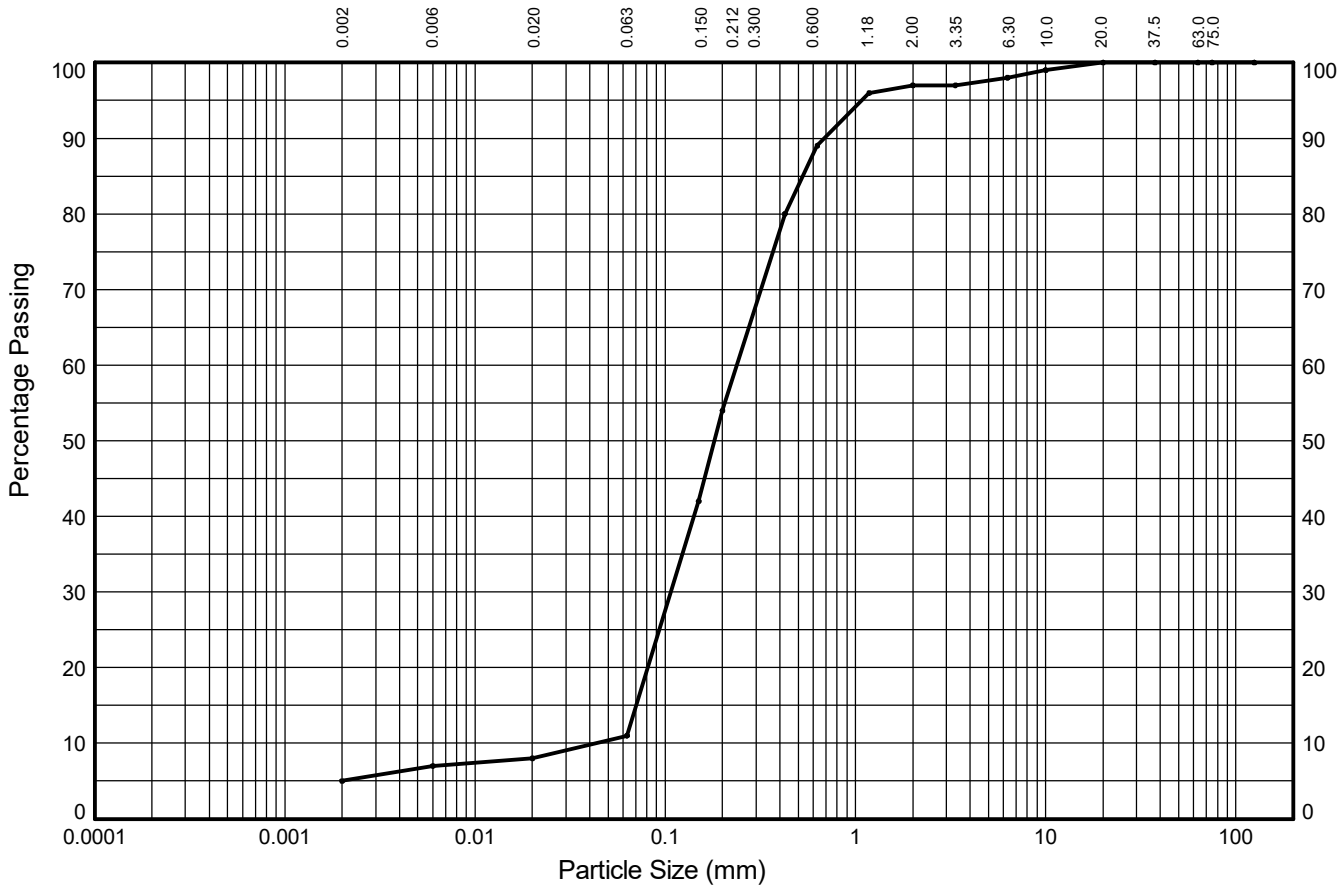
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS122** Sample Ref: **34** Sample Type: **B** Depth (m): **7.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	1%	3%	43%	35%	8%	1%	2%	0%	
	SILT			SAND			GRAVEL			
5%	6%			86%			3%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**99**
6.30	**98**
3.35	**97**
2.00	**97**
1.18	**96**
0.630	**89**
0.425	**80**
0.200	**54**
0.150	**42**
0.063	**11**

Particle Diameter (mm)	Percent Passing (%)
0.02	**8**
0.006	**7**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.043**
D_{15} (mm)	**0.070**
D_{30} (mm)	**0.107**
D_{50} (mm)	**0.182**
D_{60} (mm)	**0.238**
D_{85} (mm)	**0.529**
D_{90} (mm)	**0.689**
C_U	**5.5**
C_C	**1.1**

Soil Description:

Orangish brown slightly gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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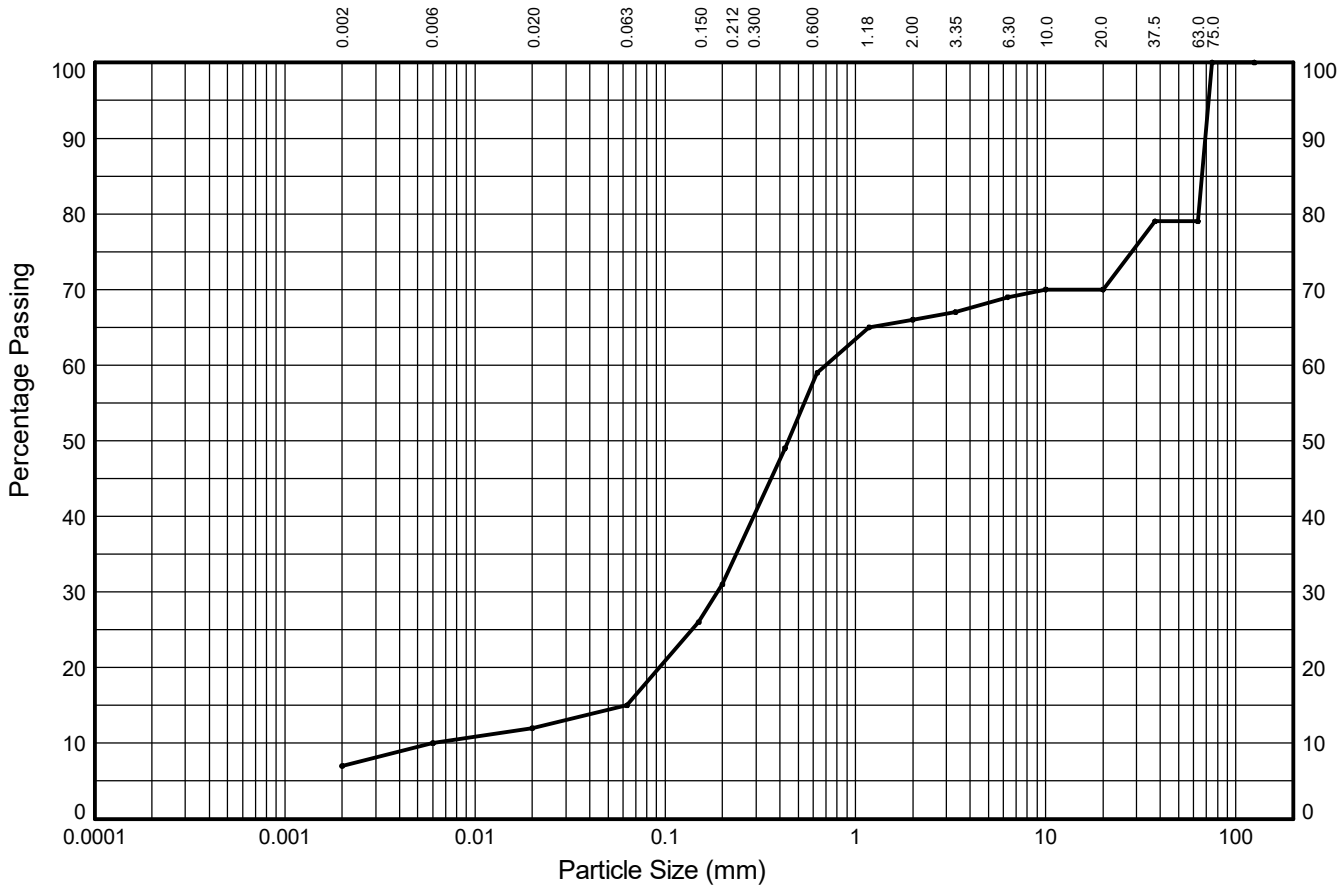
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS123** Sample Ref: **5** Sample Type: **B** Depth (m): **0.80**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	2%	3%	16%	28%	7%	3%	1%	9%	
	SILT			SAND			GRAVEL			
7%	8%			51%			13%			21%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**79**
37.5	**79**
20.0	**70**
10.0	**70**
6.30	**69**
3.35	**67**
2.00	**66**
1.18	**65**
0.630	**59**
0.425	**49**
0.200	**31**
0.150	**26**
0.063	**15**

Particle Diameter (mm)	Percent Passing (%)
0.02	**12**
0.006	**10**
0.002	**7**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.006**
D_{15} (mm)	**0.063**
D_{30} (mm)	**0.189**
D_{50} (mm)	**0.442**
D_{60} (mm)	**0.699**
D_{85} (mm)	**66.218**
D_{90} (mm)	**69.025**
C_U	**117**
C_C	**8**

Soil Description:

Reddish brown gravelly clayey SAND with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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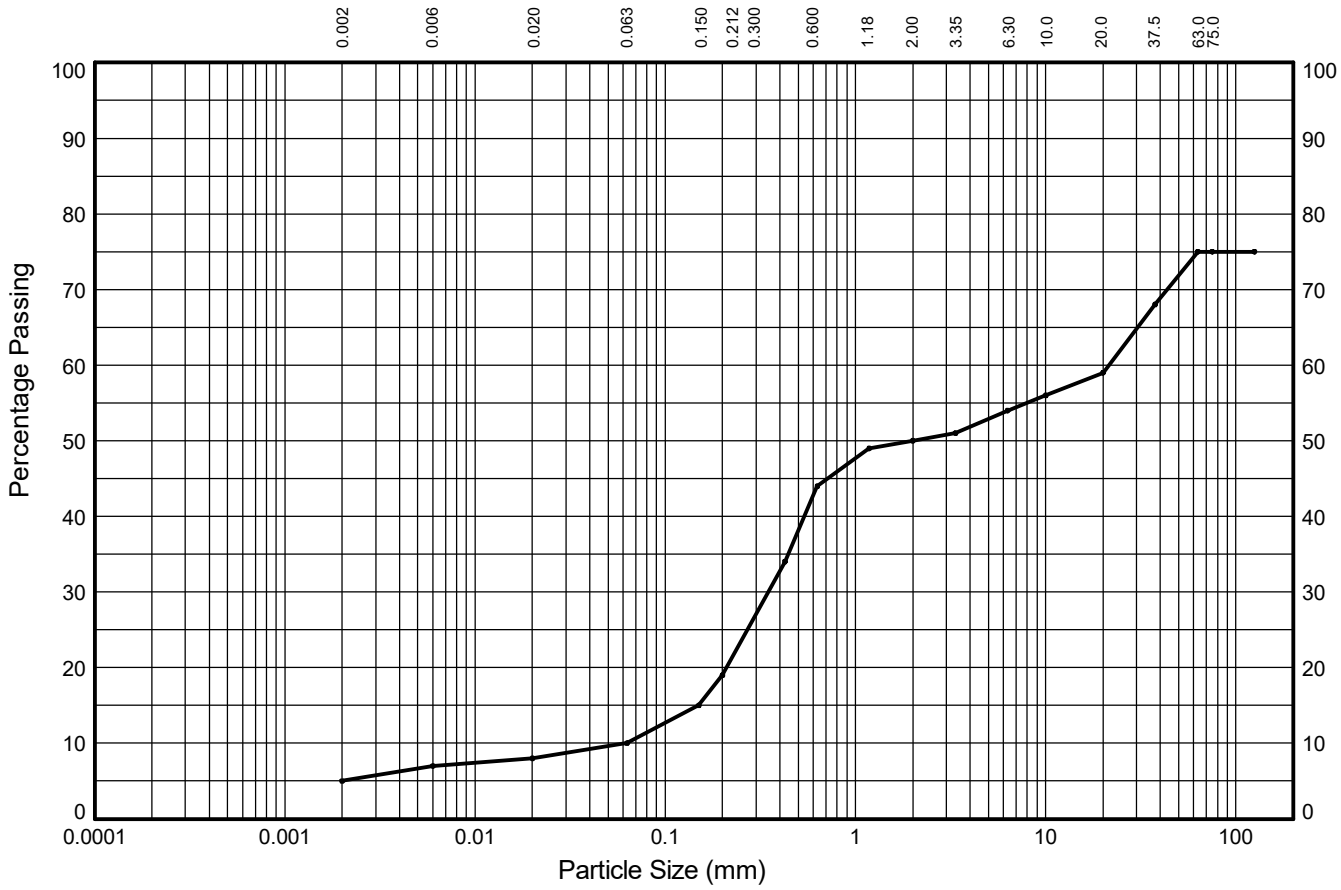
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS123** Sample Ref: **11** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	1%	2%	9%	25%	6%	4%	5%	16%	
	SILT			SAND			GRAVEL			
5%	5%			40%			25%			25%

Test Sieve (mm)	Percent Passing (%)
125.0	**75**
75.0	**75**
63.0	**75**
37.5	**68**
20.0	**59**
10.0	**56**
6.30	**54**
3.35	**51**
2.00	**50**
1.18	**49**
0.630	**44**
0.425	**34**
0.200	**19**
0.150	**15**
0.063	**10**

Particle Diameter (mm)	Percent Passing (%)
0.02	**8**
0.006	**7**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.063**
D_{15} (mm)	**0.150**
D_{30} (mm)	**0.348**
D_{50} (mm)	**2.000**
D_{60} (mm)	**21.447**
D_{85} (mm)	
D_{90} (mm)	
C_U	**340**
C_C	**0.09**

Soil Description:
Dark reddish brown very gravelly clayey SAND with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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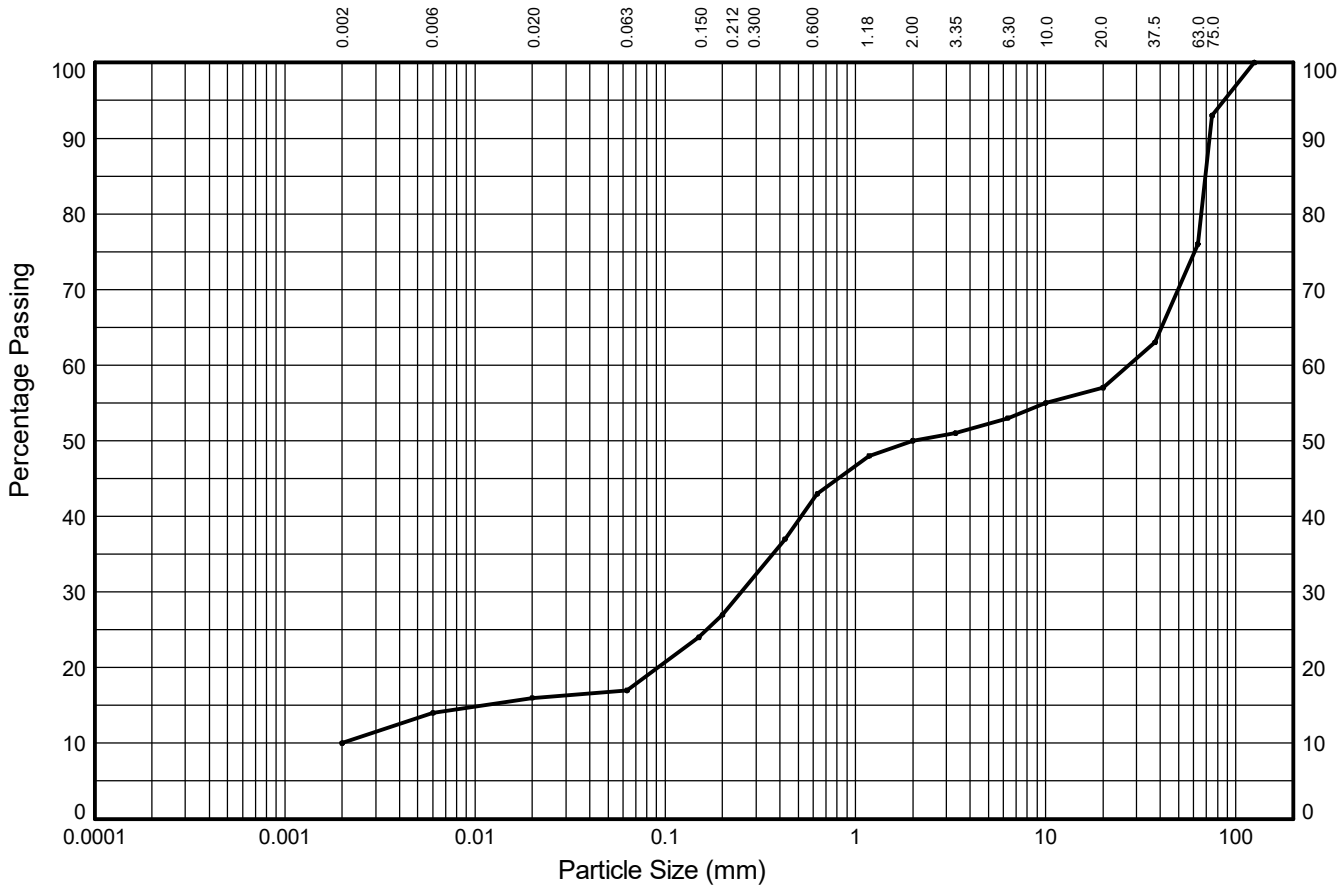
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS123** Sample Ref: **15** Sample Type: **B** Depth (m): **3.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	2%	1%	10%	16%	7%	3%	4%	19%	
	SILT			SAND			GRAVEL			
10%	7%			33%			26%			24%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**93**
63.0	**76**
37.5	**63**
20.0	**57**
10.0	**55**
6.30	**53**
3.35	**51**
2.00	**50**
1.18	**48**
0.630	**43**
0.425	**37**
0.200	**27**
0.150	**24**
0.063	**17**

Particle Diameter (mm)	Percent Passing (%)
0.02	**16**
0.006	**14**
0.002	**10**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.002**
D_{15} (mm)	**0.011**
D_{30} (mm)	**0.251**
D_{50} (mm)	**2.000**
D_{60} (mm)	**27.386**
D_{85} (mm)	**69.092**
D_{90} (mm)	**72.728**
C_U	**13693**
C_C	**1**

Soil Description:

Brown very gravelly very clayey SAND with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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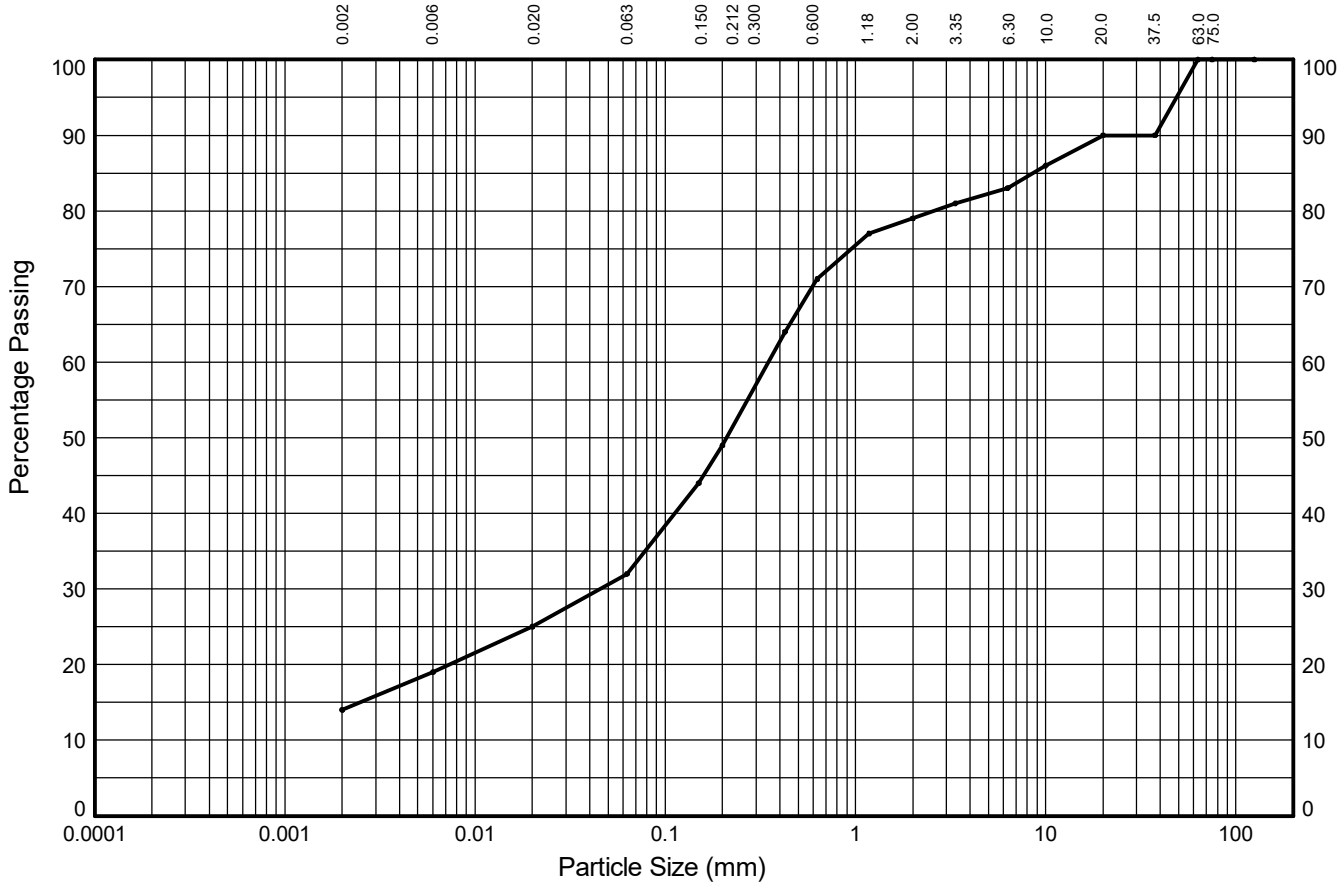
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS123** Sample Ref: **18** Sample Type: **B** Depth (m): **4.60**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	5%	6%	7%	17%	22%	8%	4%	7%	10%	
	SILT			SAND			GRAVEL			
14%	18%			47%			21%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**90**
20.0	**90**
10.0	**86**
6.30	**83**
3.35	**81**
2.00	**79**
1.18	**77**
0.630	**71**
0.425	**64**
0.200	**49**
0.150	**44**
0.063	**32**

Particle Diameter (mm)	Percent Passing (%)
0.02	**25**
0.006	**19**
0.002	**14**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.002**
D_{30} (mm)	**0.045**
D_{50} (mm)	**0.210**
D_{60} (mm)	**0.348**
D_{85} (mm)	**8.573**
D_{90} (mm)	**20.000**
C_U	**NA**
C_C	**NA**

Soil Description:

Orangish brown very gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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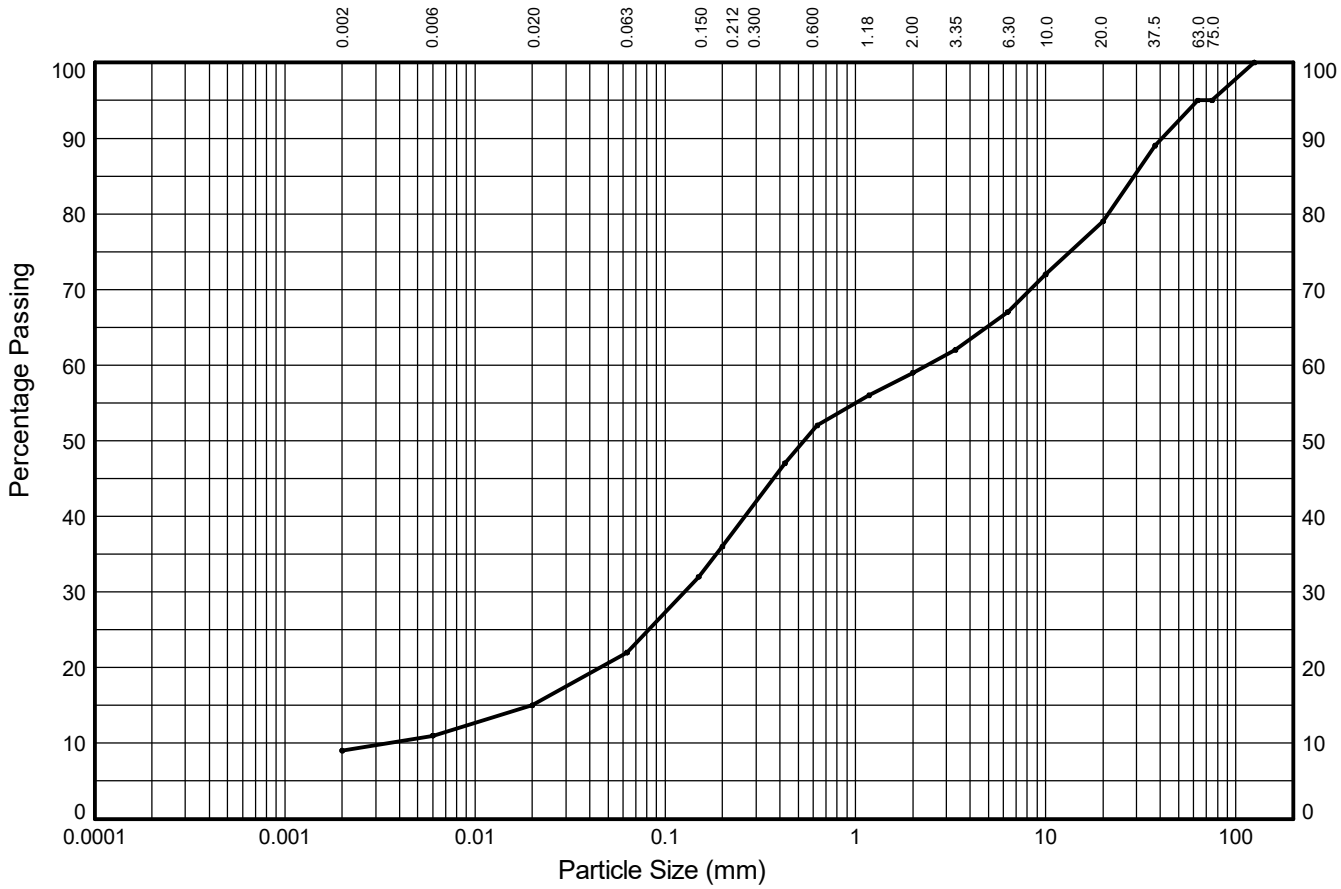
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS123** Sample Ref: **26** Sample Type: **B** Depth (m): **6.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	4%	7%	14%	16%	7%	8%	12%	16%	
	SILT			SAND			GRAVEL			
9%	13%			37%			36%			5%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**95**
63.0	**95**
37.5	**89**
20.0	**79**
10.0	**72**
6.30	**67**
3.35	**62**
2.00	**59**
1.18	**56**
0.630	**52**
0.425	**47**
0.200	**36**
0.150	**32**
0.063	**22**

Particle Diameter (mm)	Percent Passing (%)
0.02	**15**
0.006	**11**
0.002	**9**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.003**
D_{15} (mm)	**0.020**
D_{30} (mm)	**0.126**
D_{50} (mm)	**0.538**
D_{60} (mm)	**2.375**
D_{85} (mm)	**29.163**
D_{90} (mm)	**40.887**
C_U	**686**
C_C	**2**

Soil Description:

Brown very gravelly clayey SAND with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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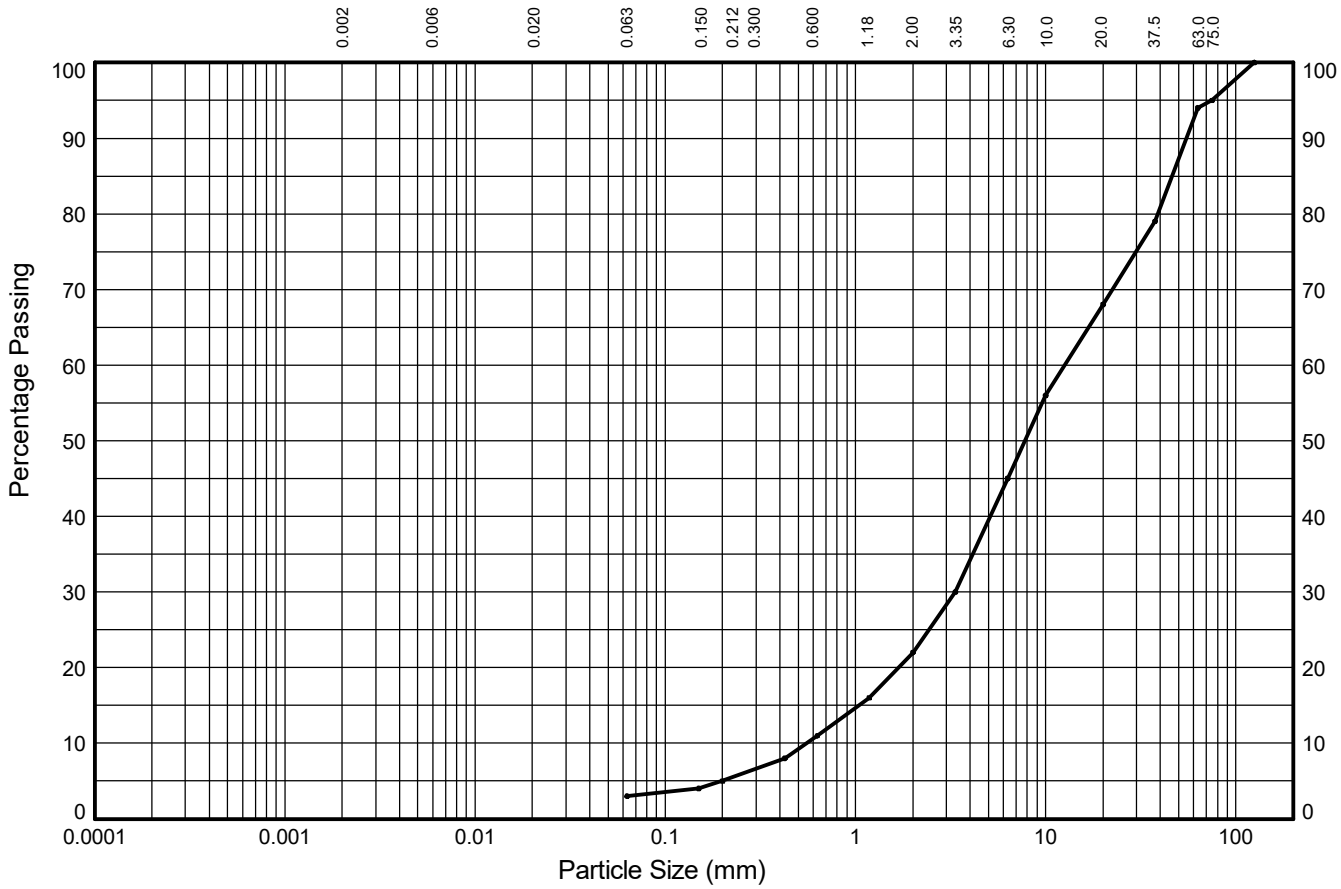
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS123** Sample Ref: **31** Sample Type: **B** Depth (m): **7.60**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	2%	6%	11%	23%	23%	26%	
	SILT			SAND			GRAVEL			
3%				19%			72%			6%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**95**
63.0	**94**
37.5	**79**
20.0	**68**
10.0	**56**
6.30	**45**
3.35	**30**
2.00	**22**
1.18	**16**
0.630	**11**
0.425	**8**
0.200	**5**
0.150	**4**
0.063	**3**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.553**
D_{15} (mm)	**1.041**
D_{30} (mm)	**3.350**
D_{50} (mm)	**7.772**
D_{60} (mm)	**12.599**
D_{85} (mm)	**46.148**
D_{90} (mm)	**54.860**
C_U	**23**
C_C	**2**

Soil Description:
Brown sandy slightly clayey GRAVEL with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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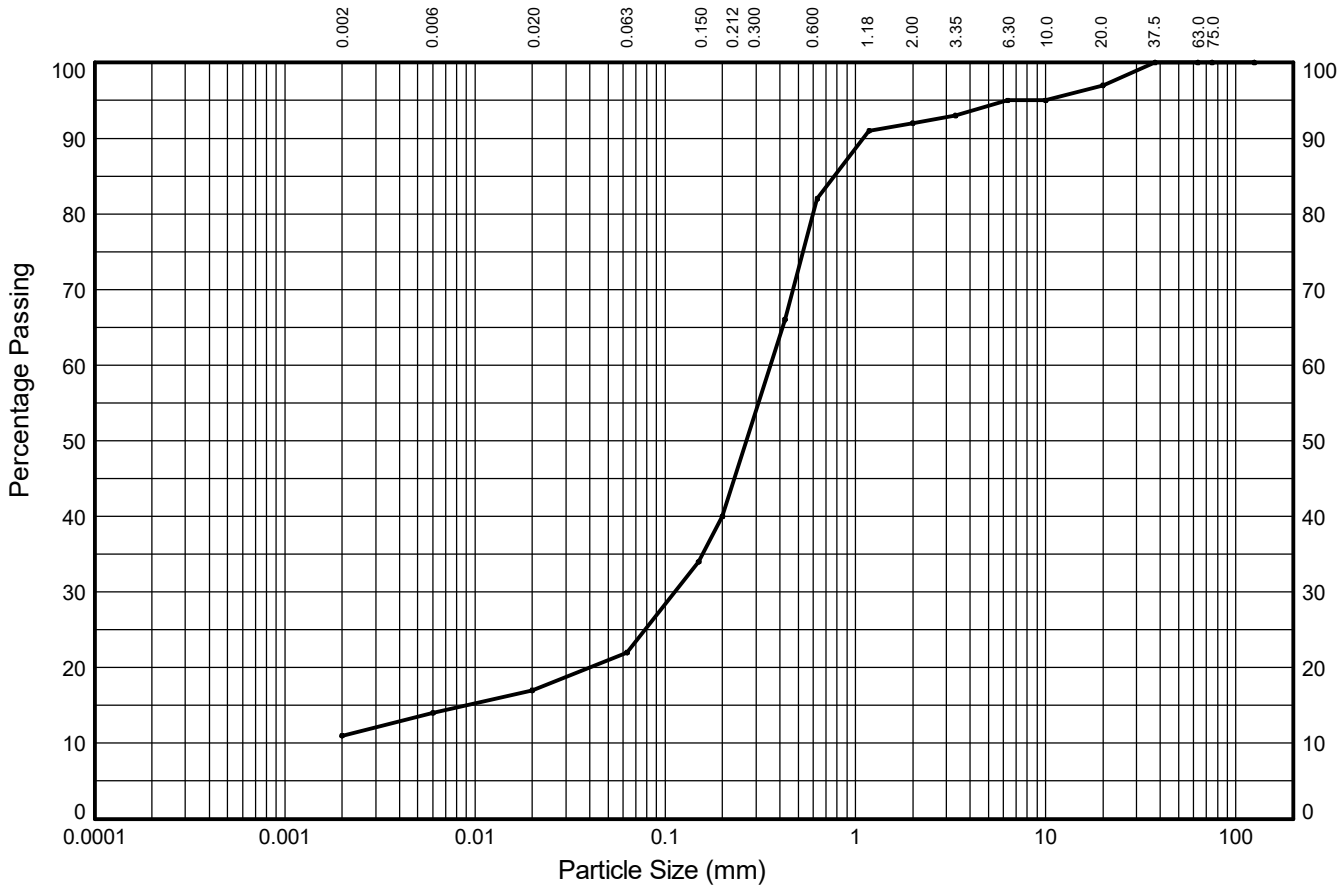
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS124** Sample Ref: **5** Sample Type: **B** Depth (m): **0.70**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	5%	18%	42%	10%	3%	2%	3%	
	SILT			SAND			GRAVEL			
11%	11%			70%			8%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**97**
10.0	**95**
6.30	**95**
3.35	**93**
2.00	**92**
1.18	**91**
0.630	**82**
0.425	**66**
0.200	**40**
0.150	**34**
0.063	**22**

Particle Diameter (mm)	Percent Passing (%)
0.02	**17**
0.006	**14**
0.002	**11**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.009**
D_{30} (mm)	**0.112**
D_{50} (mm)	**0.267**
D_{60} (mm)	**0.357**
D_{85} (mm)	**0.777**
D_{90} (mm)	**1.101**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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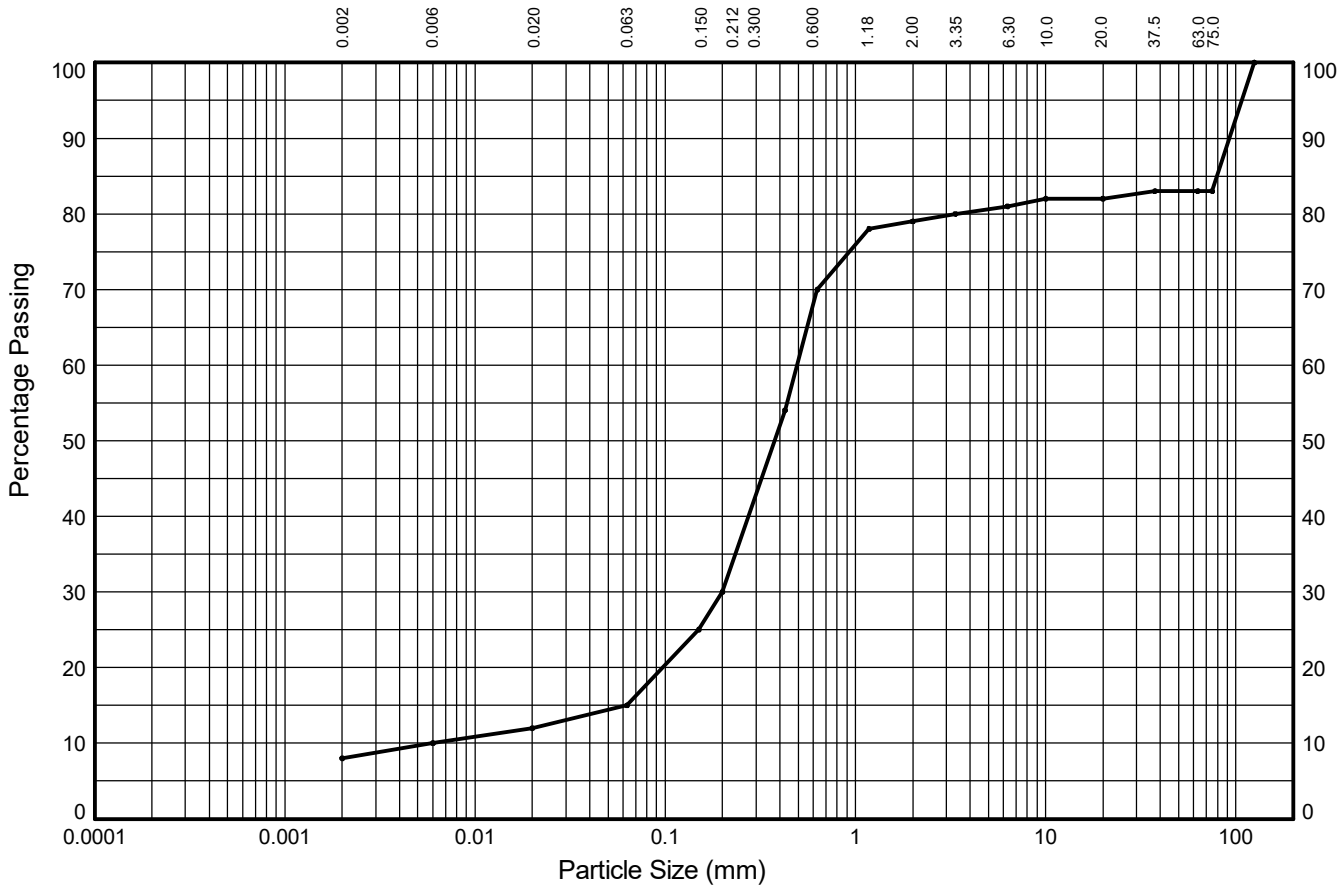
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS124** Sample Ref: **8** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	2%	3%	15%	40%	9%	2%	1%	1%	
	SILT			SAND			GRAVEL			
8%	7%			64%			4%			17%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**83**
63.0	**83**
37.5	**83**
20.0	**82**
10.0	**82**
6.30	**81**
3.35	**80**
2.00	**79**
1.18	**78**
0.630	**70**
0.425	**54**
0.200	**30**
0.150	**25**
0.063	**15**

Particle Diameter (mm)	Percent Passing (%)
0.02	**12**
0.006	**10**
0.002	**8**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.006**
D_{15} (mm)	**0.063**
D_{30} (mm)	**0.200**
D_{50} (mm)	**0.375**
D_{60} (mm)	**0.493**
D_{85} (mm)	**79.645**
D_{90} (mm)	**92.557**
C_U	**82**
C_C	**14**

Soil Description:
Reddish brown slightly gravelly clayey SAND with a medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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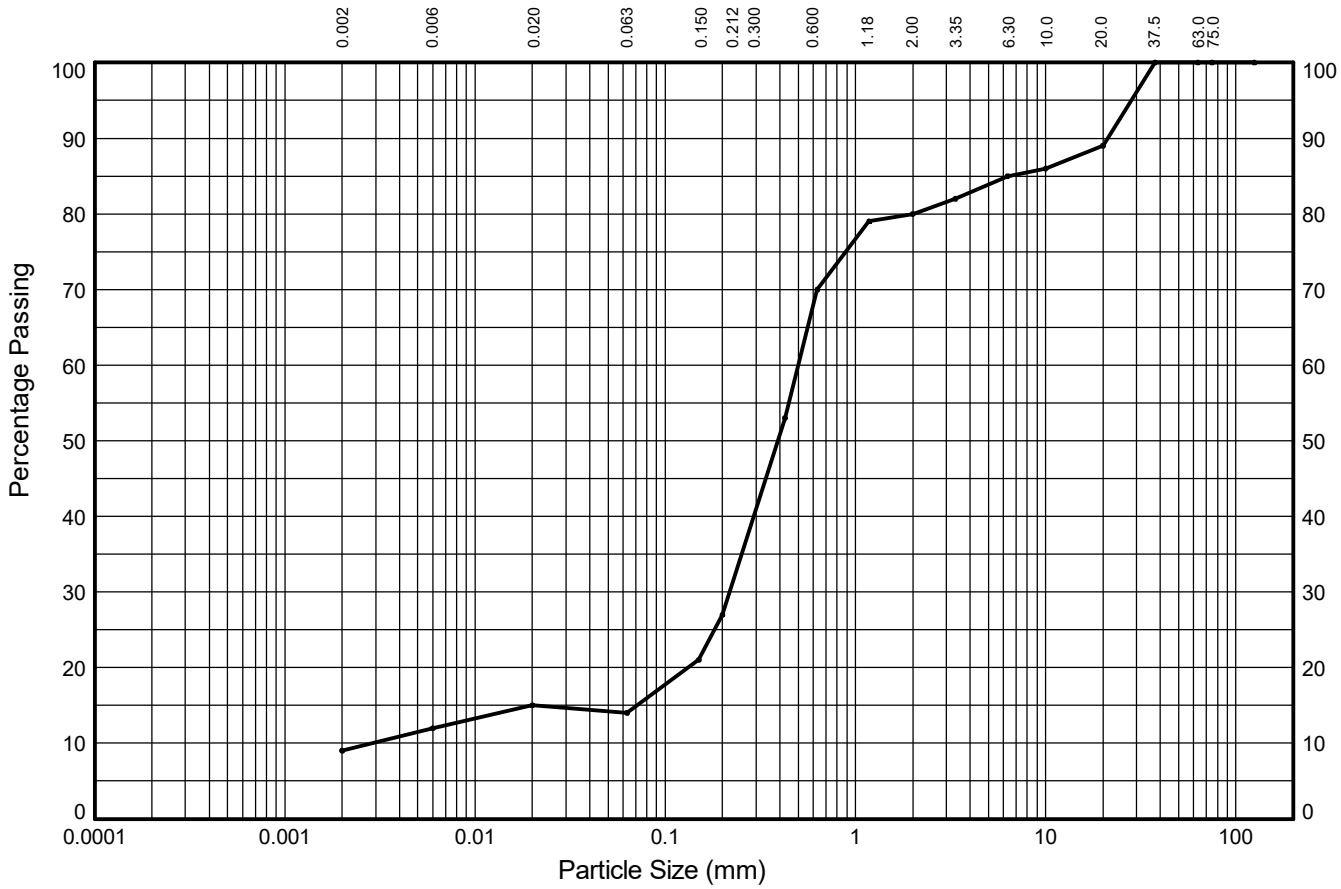
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS124** Sample Ref: **12** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	-1%	13%	43%	10%	5%	4%	11%	
	SILT			SAND			GRAVEL			
9%	5%			66%			20%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**89**
10.0	**86**
6.30	**85**
3.35	**82**
2.00	**80**
1.18	**79**
0.630	**70**
0.425	**53**
0.200	**27**
0.150	**21**
0.063	**14**

Particle Diameter (mm)	Percent Passing (%)
0.02	**15**
0.006	**12**
0.002	**9**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.003**
D_{15} (mm)	**0.020**
D_{30} (mm)	**0.218**
D_{50} (mm)	**0.390**
D_{60} (mm)	**0.500**
D_{85} (mm)	**6.300**
D_{90} (mm)	**21.176**
C_U	**173**
C_C	**33**

Soil Description:

Reddish brown very gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
E. Hort	**ELIZABETH HORT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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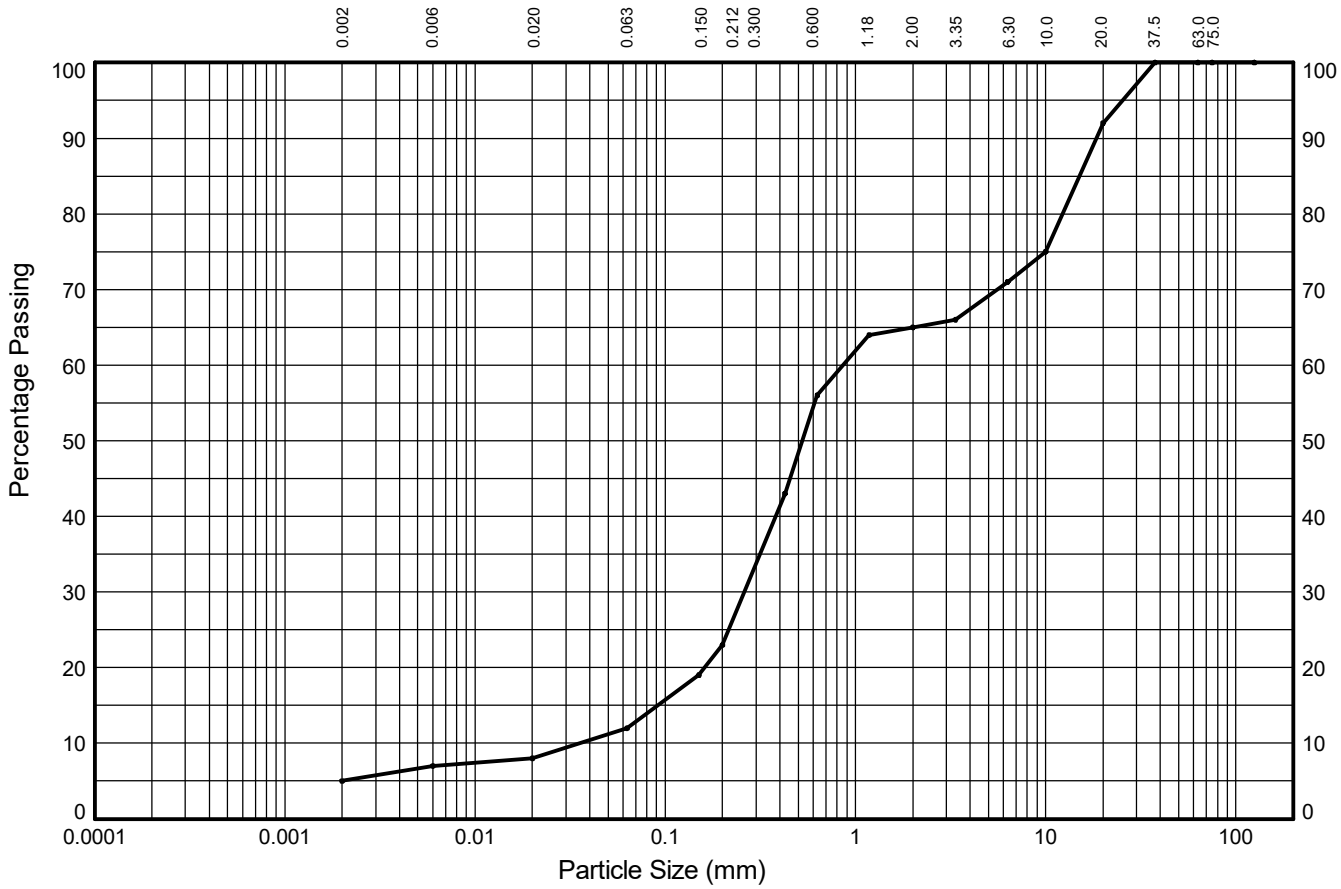
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS124** Sample Ref: **14** Sample Type: **B** Depth (m): **2.80**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	1%	4%	11%	33%	9%	6%	21%	8%	
	SILT			SAND			GRAVEL			
5%	7%			53%			35%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**92**
10.0	**75**
6.30	**71**
3.35	**66**
2.00	**65**
1.18	**64**
0.630	**56**
0.425	**43**
0.200	**23**
0.150	**19**
0.063	**12**

Particle Diameter (mm)	Percent Passing (%)
0.02	**8**
0.006	**7**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.035**
D_{15} (mm)	**0.091**
D_{30} (mm)	**0.260**
D_{50} (mm)	**0.525**
D_{60} (mm)	**0.862**
D_{85} (mm)	**15.034**
D_{90} (mm)	**18.434**
C_U	**24**
C_C	**2**

Soil Description:

Reddish brown very gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**
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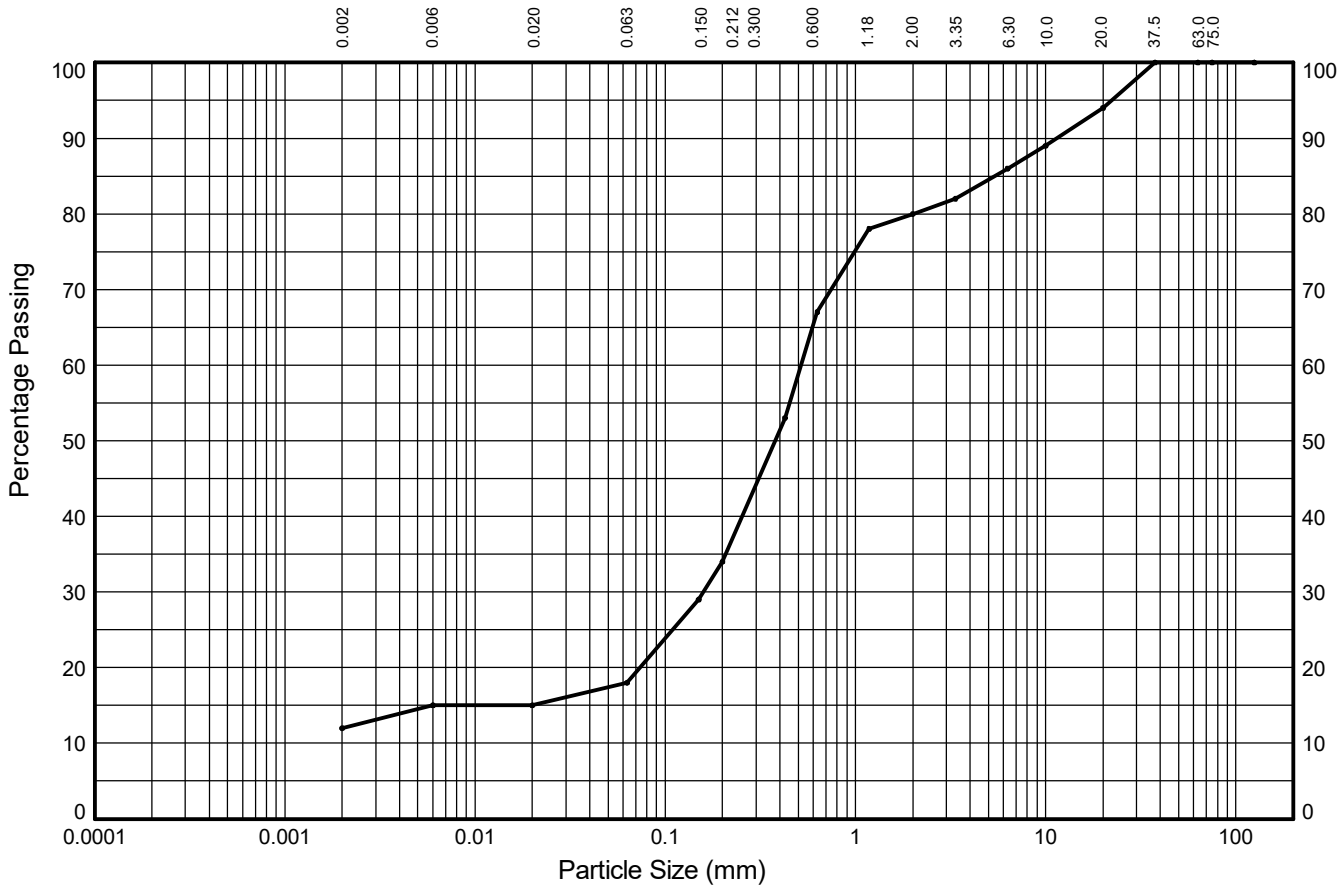
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS124** Sample Ref: **17** Sample Type: **B** Depth (m): **3.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	0%	3%	16%	33%	13%	6%	8%	6%	
	SILT			SAND			GRAVEL			
12%	6%			62%			20%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**94**
10.0	**89**
6.30	**86**
3.35	**82**
2.00	**80**
1.18	**78**
0.630	**67**
0.425	**53**
0.200	**34**
0.150	**29**
0.063	**18**

Particle Diameter (mm)	Percent Passing (%)
0.02	**15**
0.006	**15**
0.002	**12**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.006**
D_{30} (mm)	**0.159**
D_{50} (mm)	**0.377**
D_{60} (mm)	**0.517**
D_{85} (mm)	**5.380**
D_{90} (mm)	**11.487**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown very gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
E. Hort	**ELIZABETH HORT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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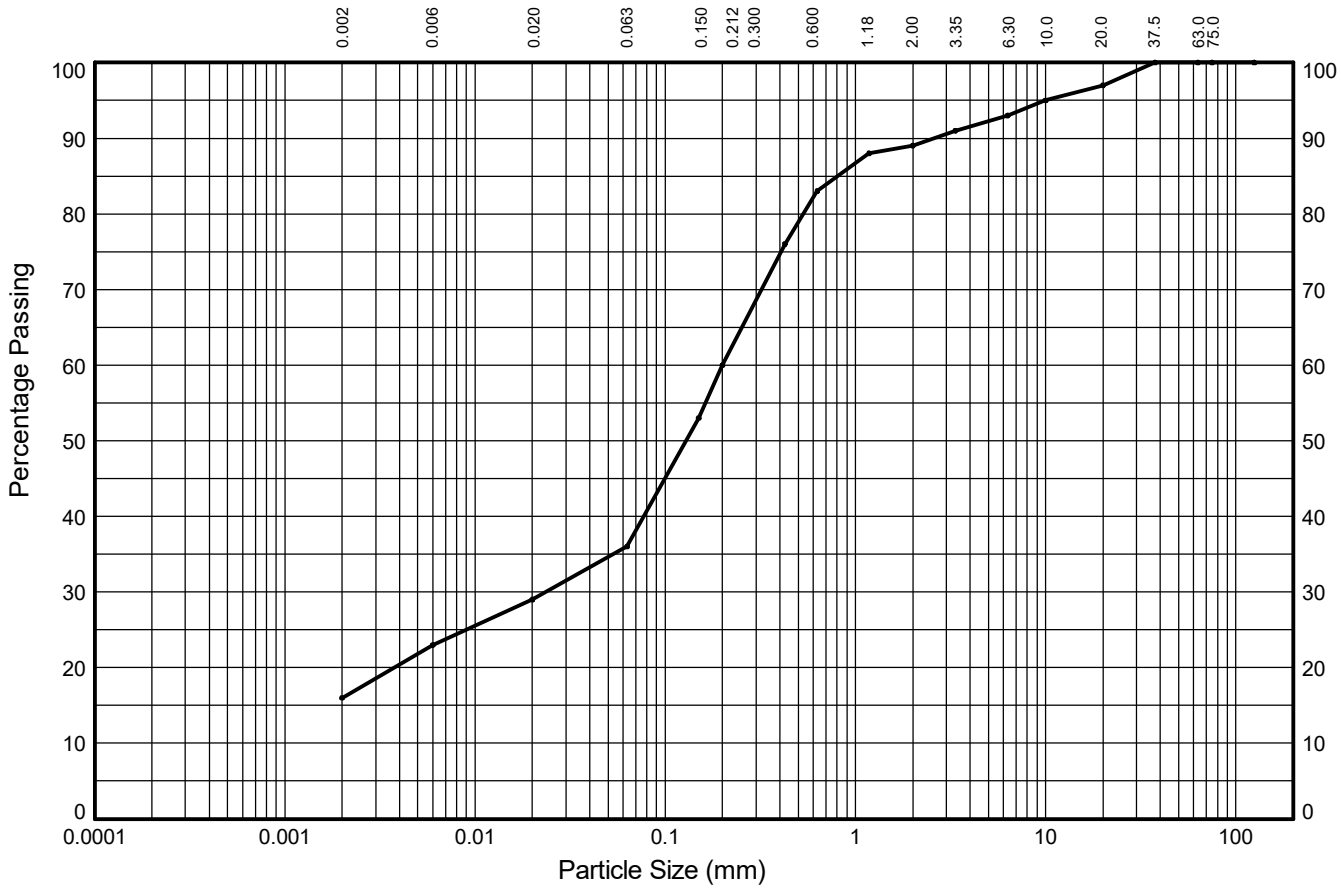
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS124** Sample Ref: **37** Sample Type: **B** Depth (m): **8.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	7%	6%	7%	24%	23%	6%	4%	4%	3%	
	SILT			SAND			GRAVEL			
16%	20%			53%			11%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**97**
10.0	**95**
6.30	**93**
3.35	**91**
2.00	**89**
1.18	**88**
0.630	**83**
0.425	**76**
0.200	**60**
0.150	**53**
0.063	**36**

Particle Diameter (mm)	Percent Passing (%)
0.02	**29**
0.006	**23**
0.002	**16**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.024**
D_{50} (mm)	**0.129**
D_{60} (mm)	**0.200**
D_{85} (mm)	**0.810**
D_{90} (mm)	**2.588**
C_U	**NA**
C_C	**NA**

Soil Description:

Orangish brown slightly gravelly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
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Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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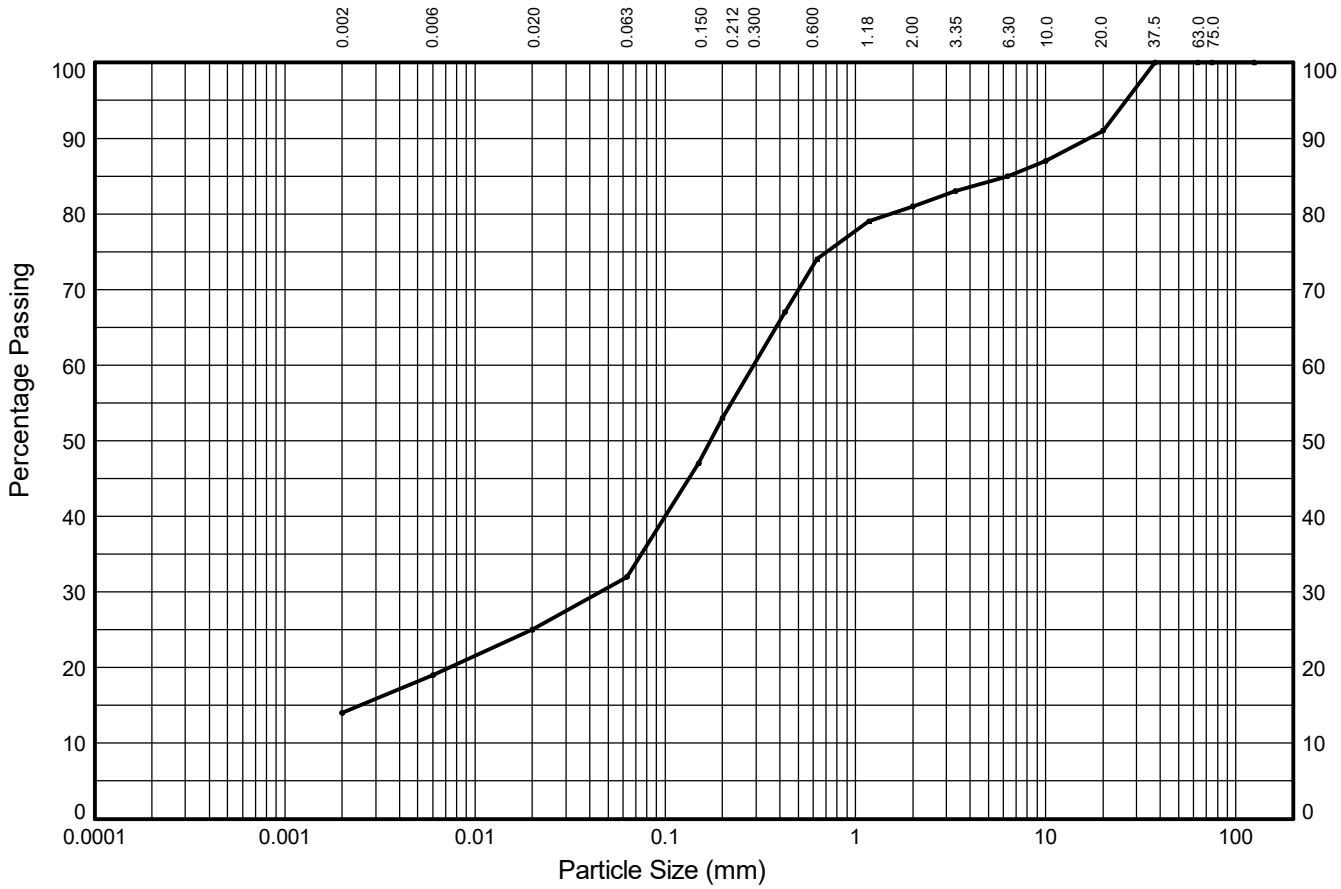
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS124** Sample Ref: **45** Sample Type: **B** Depth (m): **10.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	5%	6%	7%	21%	21%	7%	4%	6%	9%	
	SILT			SAND			GRAVEL			
14%	18%			49%			19%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**91**
10.0	**87**
6.30	**85**
3.35	**83**
2.00	**81**
1.18	**79**
0.630	**74**
0.425	**67**
0.200	**53**
0.150	**47**
0.063	**32**

Particle Diameter (mm)	Percent Passing (%)
0.02	**25**
0.006	**19**
0.002	**14**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.002**
D_{30} (mm)	**0.045**
D_{50} (mm)	**0.173**
D_{60} (mm)	**0.292**
D_{85} (mm)	**6.300**
D_{90} (mm)	**16.818**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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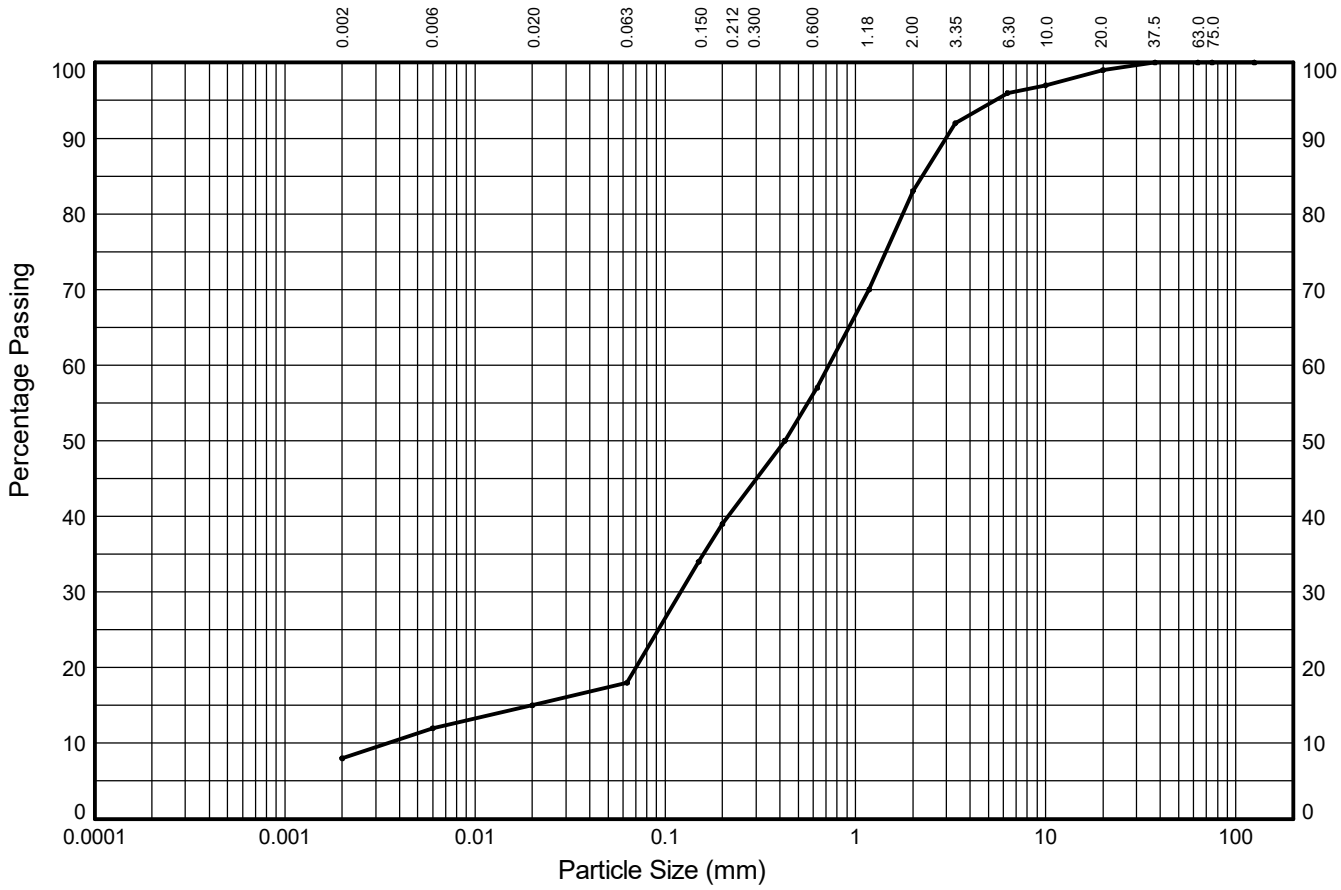
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS126** Sample Ref: **4** Sample Type: **B** Depth (m): **0.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	3%	3%	21%	18%	26%	13%	3%	1%	
	SILT			SAND			GRAVEL			
8%	10%			65%			17%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**99**
10.0	**97**
6.30	**96**
3.35	**92**
2.00	**83**
1.18	**70**
0.630	**57**
0.425	**50**
0.200	**39**
0.150	**34**
0.063	**18**

Particle Diameter (mm)	Percent Passing (%)
0.02	**15**
0.006	**12**
0.002	**8**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.003**
D_{15} (mm)	**0.020**
D_{30} (mm)	**0.121**
D_{50} (mm)	**0.425**
D_{60} (mm)	**0.728**
D_{85} (mm)	**2.243**
D_{90} (mm)	**2.987**
C_U	**210**
C_C	**6**

Soil Description:

Red gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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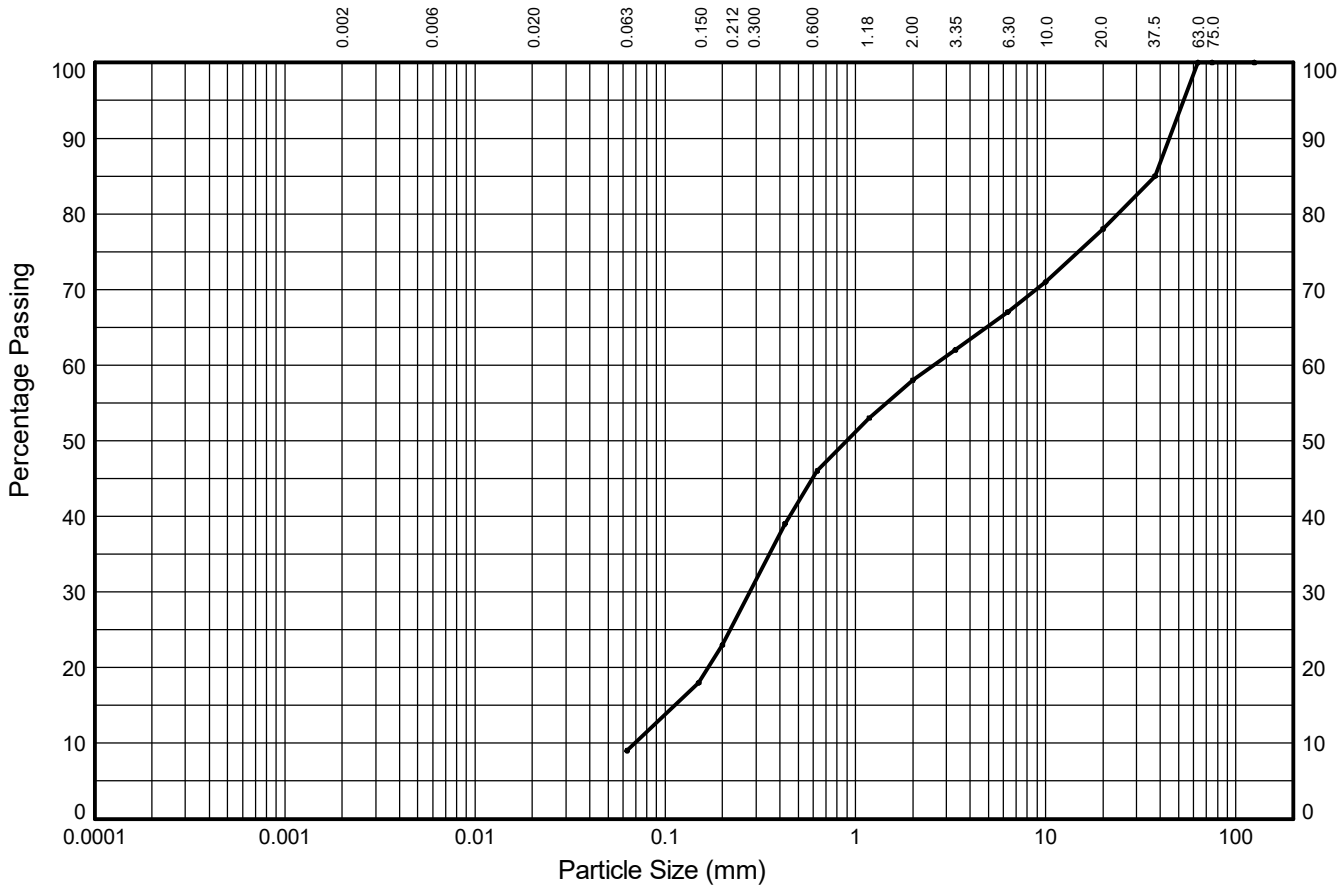
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS126** Sample Ref: **6** Sample Type: **B** Depth (m): **0.80**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	14%	23%	12%	9%	11%	22%	
	SILT			SAND			GRAVEL			
9%				49%			42%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**85**
20.0	**78**
10.0	**71**
6.30	**67**
3.35	**62**
2.00	**58**
1.18	**53**
0.630	**46**
0.425	**39**
0.200	**23**
0.150	**18**
0.063	**9**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.069**
D_{15} (mm)	**0.112**
D_{30} (mm)	**0.278**
D_{50} (mm)	**0.902**
D_{60} (mm)	**2.588**
D_{85} (mm)	**37.500**
D_{90} (mm)	**44.579**
C_U	**37**
C_C	**0.43**

Soil Description:

Brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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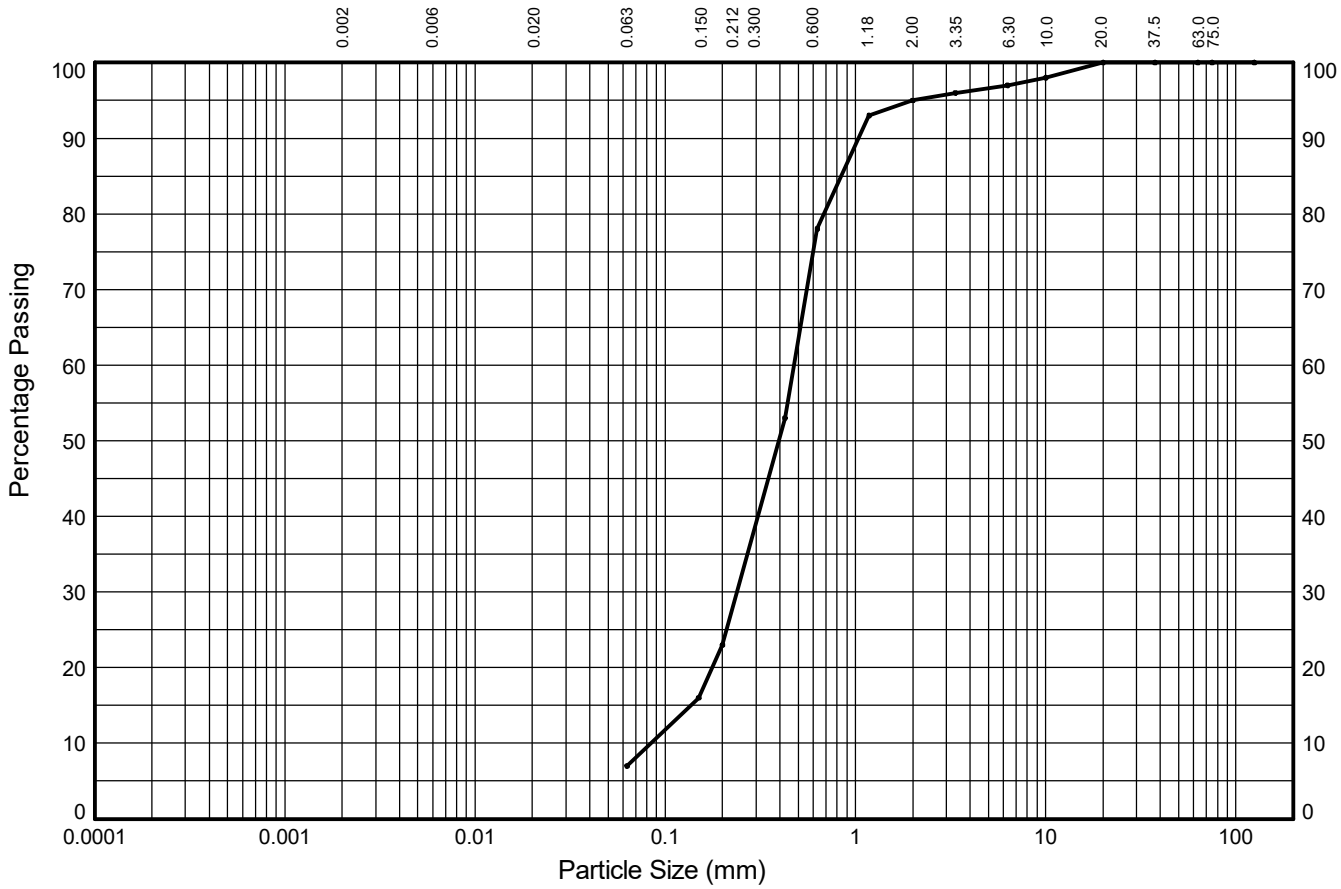
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS126** Sample Ref: **12** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	16%	55%	17%	2%	3%	0%	
	SILT			SAND			GRAVEL			
7%				88%			5%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**98**
6.30	**97**
3.35	**96**
2.00	**95**
1.18	**93**
0.630	**78**
0.425	**53**
0.200	**23**
0.150	**16**
0.063	**7**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.084**
D_{15} (mm)	**0.136**
D_{30} (mm)	**0.238**
D_{50} (mm)	**0.394**
D_{60} (mm)	**0.475**
D_{85} (mm)	**0.844**
D_{90} (mm)	**1.041**
C_U	**5.6**
C_C	**1.4**

Soil Description:

Reddish brown gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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1a Princess Street
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Compiled By	Date
DAISY RICHARDS	22/08/23

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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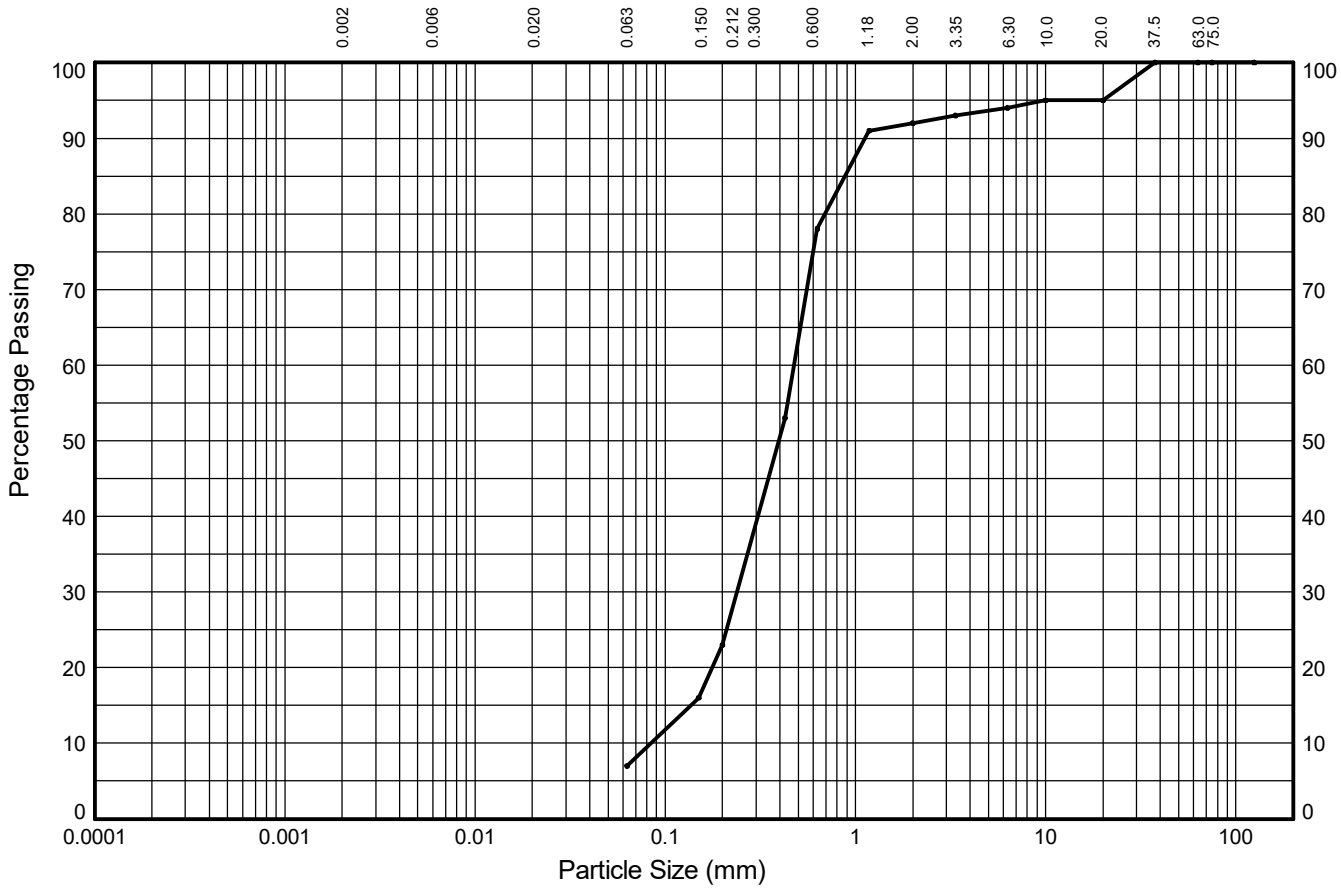
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS126** Sample Ref: **16** Sample Type: **B** Depth (m): **3.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	16%	55%	14%	2%	1%	5%	
	SILT			SAND			GRAVEL			
7%				85%			8%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**95**
10.0	**95**
6.30	**94**
3.35	**93**
2.00	**92**
1.18	**91**
0.630	**78**
0.425	**53**
0.200	**23**
0.150	**16**
0.063	**7**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.084**
D_{15} (mm)	**0.136**
D_{30} (mm)	**0.238**
D_{50} (mm)	**0.394**
D_{60} (mm)	**0.475**
D_{85} (mm)	**0.883**
D_{90} (mm)	**1.124**
C_U	**5.6**
C_C	**1.4**

Soil Description:

Reddish brown gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
V. Chacin M.	VALERIA CHACIN MIJOVA	22/08/23

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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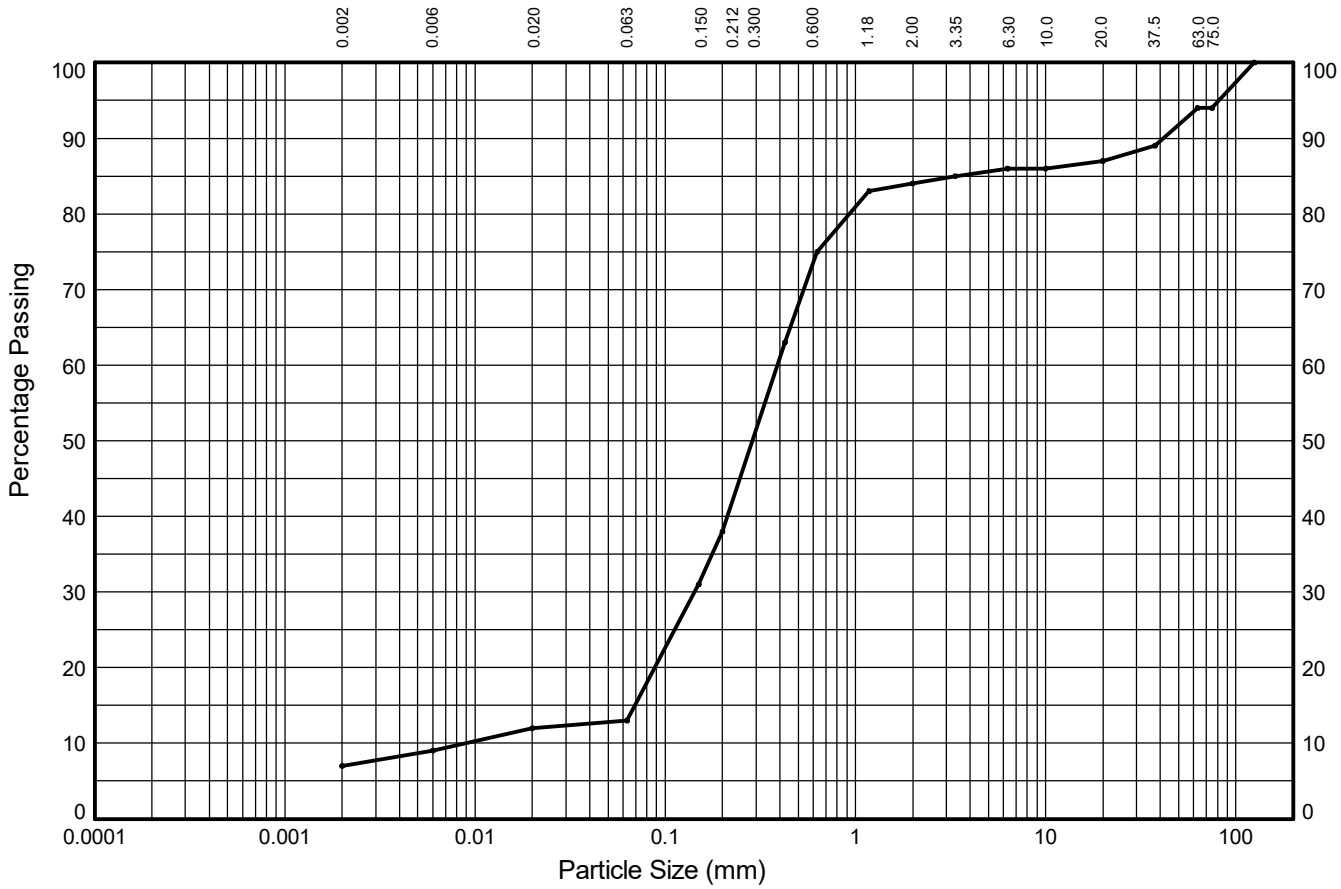
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS127** Sample Ref: **4** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	3%	1%	25%	37%	9%	2%	1%	7%	
	SILT			SAND			GRAVEL			
7%	6%			71%			10%			6%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**94**
63.0	**94**
37.5	**89**
20.0	**87**
10.0	**86**
6.30	**86**
3.35	**85**
2.00	**84**
1.18	**83**
0.630	**75**
0.425	**63**
0.200	**38**
0.150	**31**
0.063	**13**

Particle Diameter (mm)	Percent Passing (%)
0.02	**12**
0.006	**9**
0.002	**7**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.009**
D_{15} (mm)	**0.069**
D_{30} (mm)	**0.143**
D_{50} (mm)	**0.287**
D_{60} (mm)	**0.388**
D_{85} (mm)	**3.350**
D_{90} (mm)	**41.600**
C_U	**43**
C_C	**6**

Soil Description:

Red gravelly clayey SAND with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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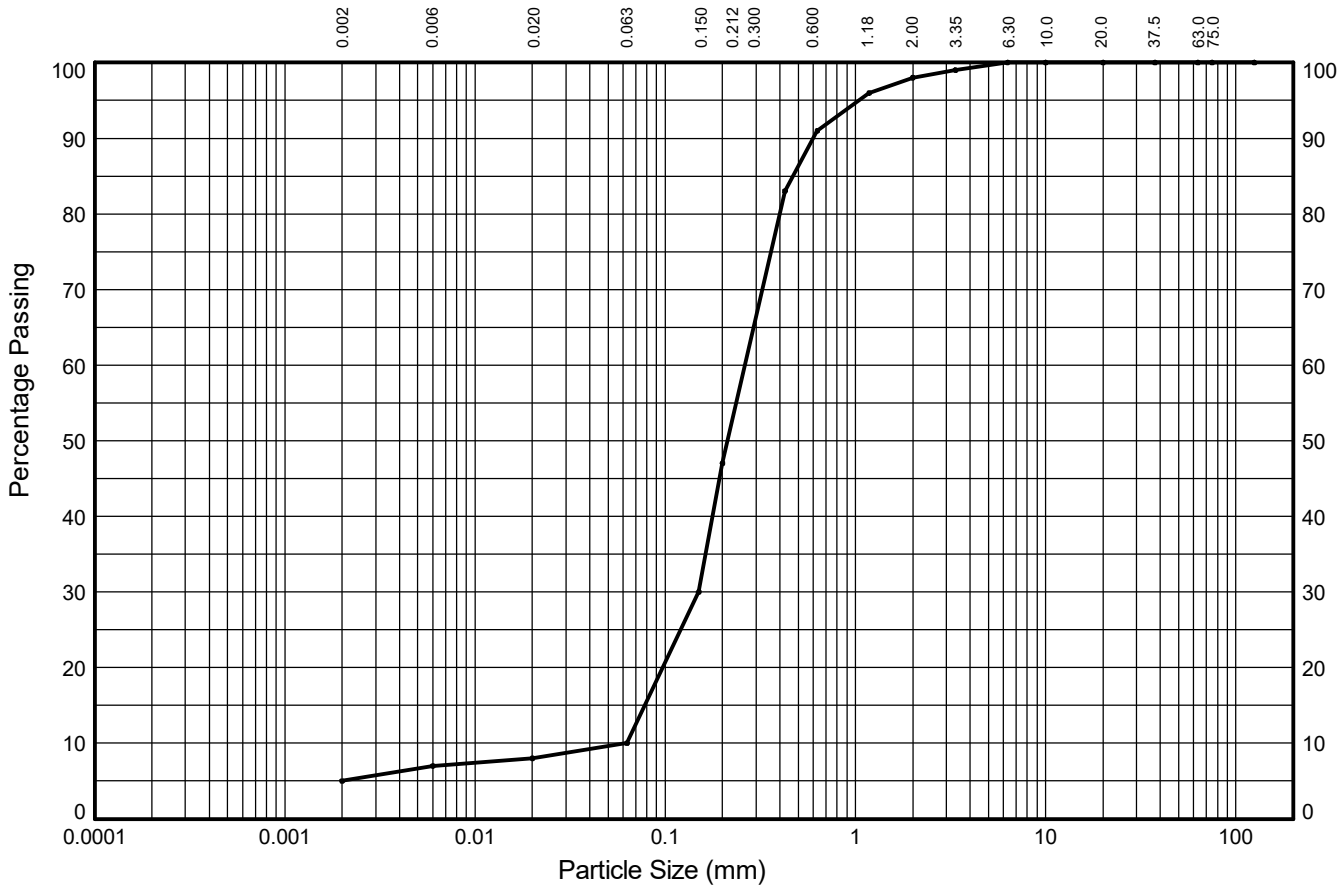
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS127** Sample Ref: **12** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	1%	2%	37%	44%	7%	2%	0%	0%	
	SILT			SAND			GRAVEL			
5%	5%			88%			2%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**100**
3.35	**99**
2.00	**98**
1.18	**96**
0.630	**91**
0.425	**83**
0.200	**47**
0.150	**30**
0.063	**10**

Particle Diameter (mm)	Percent Passing (%)
0.02	**8**
0.006	**7**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.063**
D_{15} (mm)	**0.078**
D_{30} (mm)	**0.150**
D_{50} (mm)	**0.213**
D_{60} (mm)	**0.263**
D_{85} (mm)	**0.469**
D_{90} (mm)	**0.600**
C_U	**4.2**
C_C	**1.4**

Soil Description:

Red slightly gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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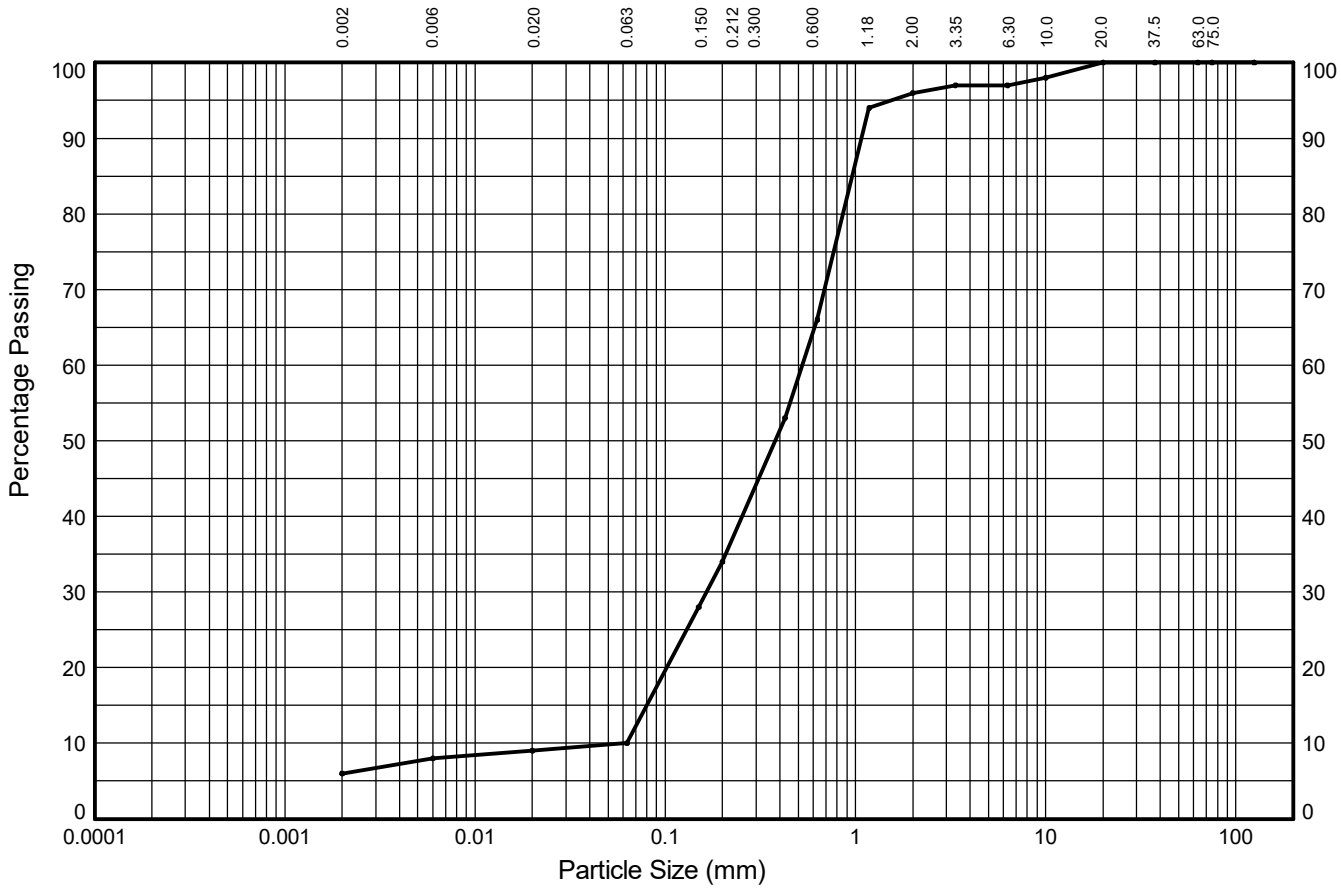
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS127** Sample Ref: **28** Sample Type: **B** Depth (m): **6.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	1%	1%	24%	32%	30%	1%	3%	0%	
	SILT			SAND			GRAVEL			
6%	4%			86%			4%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**98**
6.30	**97**
3.35	**97**
2.00	**96**
1.18	**94**
0.630	**66**
0.425	**53**
0.200	**34**
0.150	**28**
0.063	**10**

Particle Diameter (mm)	Percent Passing (%)
0.02	**9**
0.006	**8**
0.002	**6**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.063**
D_{15} (mm)	**0.080**
D_{30} (mm)	**0.165**
D_{50} (mm)	**0.377**
D_{60} (mm)	**0.525**
D_{85} (mm)	**0.964**
D_{90} (mm)	**1.079**
C_U	**8.3**
C_C	**0.82**

Soil Description:

Orangish brown slightly gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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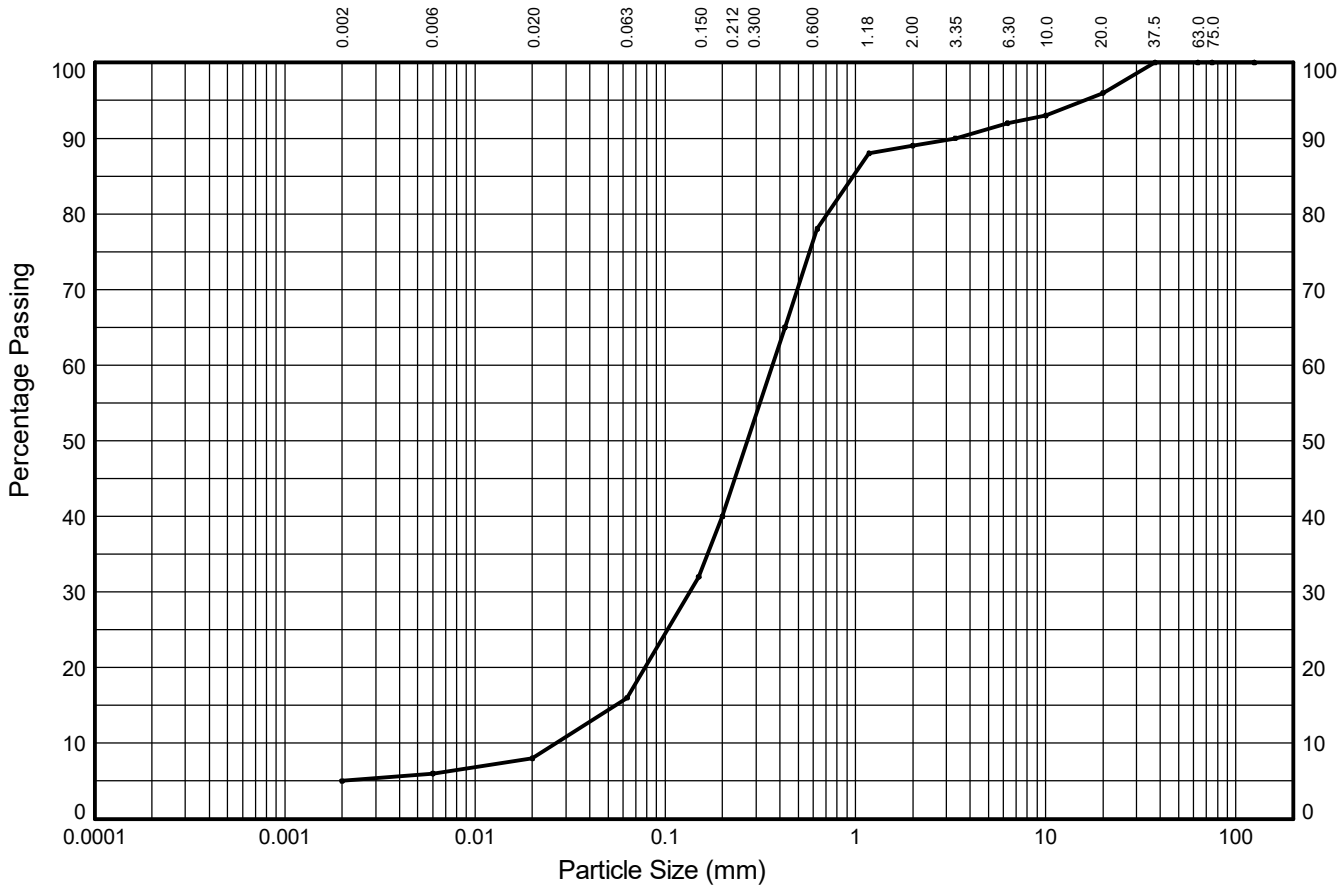
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS128** Sample Ref: **5** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	1%	2%	8%	24%	38%	11%	3%	4%	4%	
	SILT			SAND			GRAVEL			
5%	11%			73%			11%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**96**
10.0	**93**
6.30	**92**
3.35	**90**
2.00	**89**
1.18	**88**
0.630	**78**
0.425	**65**
0.200	**40**
0.150	**32**
0.063	**16**

Particle Diameter (mm)	Percent Passing (%)
0.02	**8**
0.006	**6**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.027**
D_{15} (mm)	**0.055**
D_{30} (mm)	**0.135**
D_{50} (mm)	**0.270**
D_{60} (mm)	**0.366**
D_{85} (mm)	**0.978**
D_{90} (mm)	**3.350**
C_U	**14**
C_C	**2**

Soil Description:

Orangish brown gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By	Date
PRECIOUS MADUKA	22/08/23

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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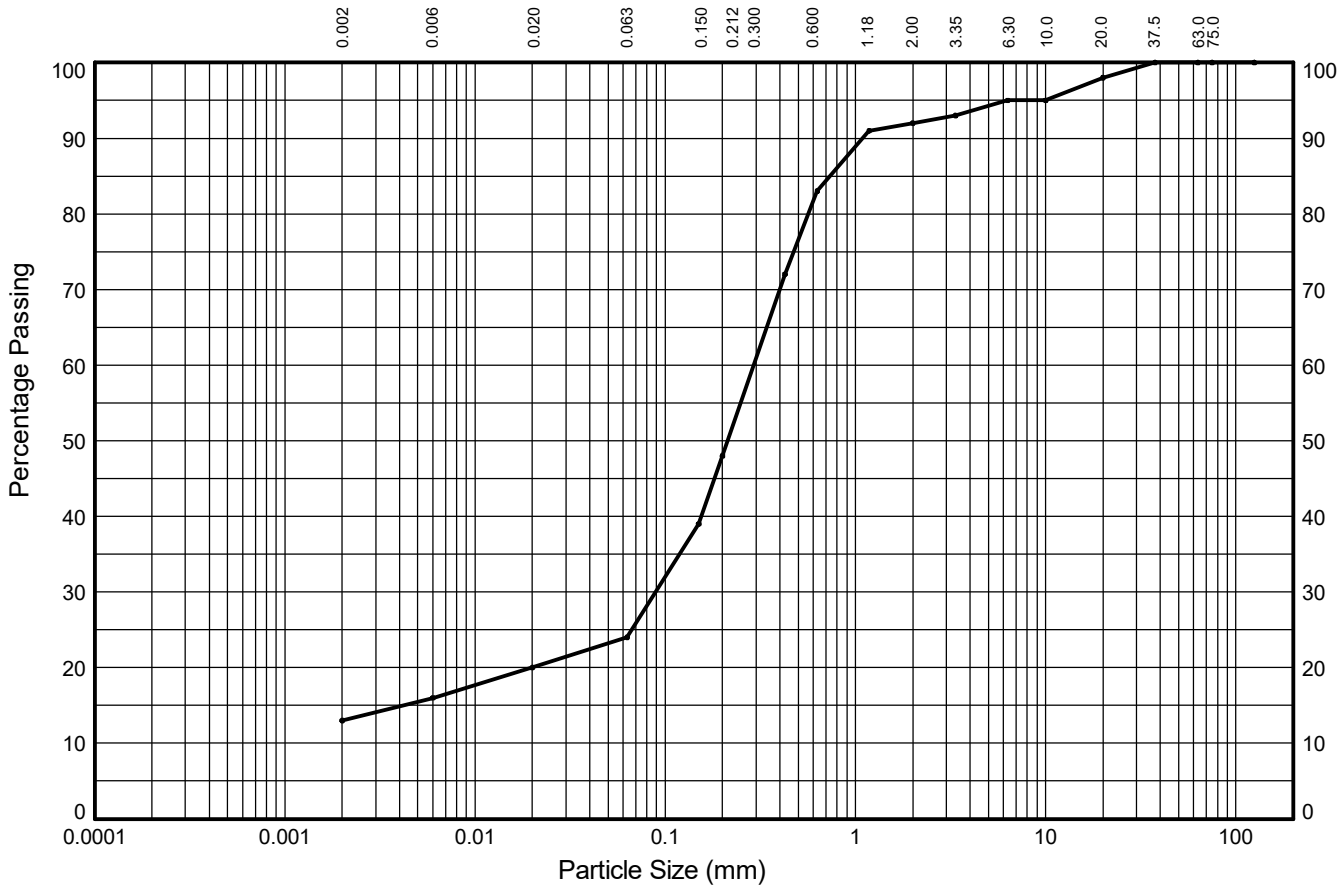
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS128** Sample Ref: **7** Sample Type: **B** Depth (m): **1.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	4%	4%	24%	35%	9%	3%	3%	2%	
	SILT			SAND			GRAVEL			
13%	11%			68%			8%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**98**
10.0	**95**
6.30	**95**
3.35	**93**
2.00	**92**
1.18	**91**
0.630	**83**
0.425	**72**
0.200	**48**
0.150	**39**
0.063	**24**

Particle Diameter (mm)	Percent Passing (%)
0.02	**20**
0.006	**16**
0.002	**13**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.004**
D_{30} (mm)	**0.089**
D_{50} (mm)	**0.213**
D_{60} (mm)	**0.292**
D_{85} (mm)	**0.737**
D_{90} (mm)	**1.091**
C_U	**NA**
C_C	**NA**

Soil Description:

Orangish brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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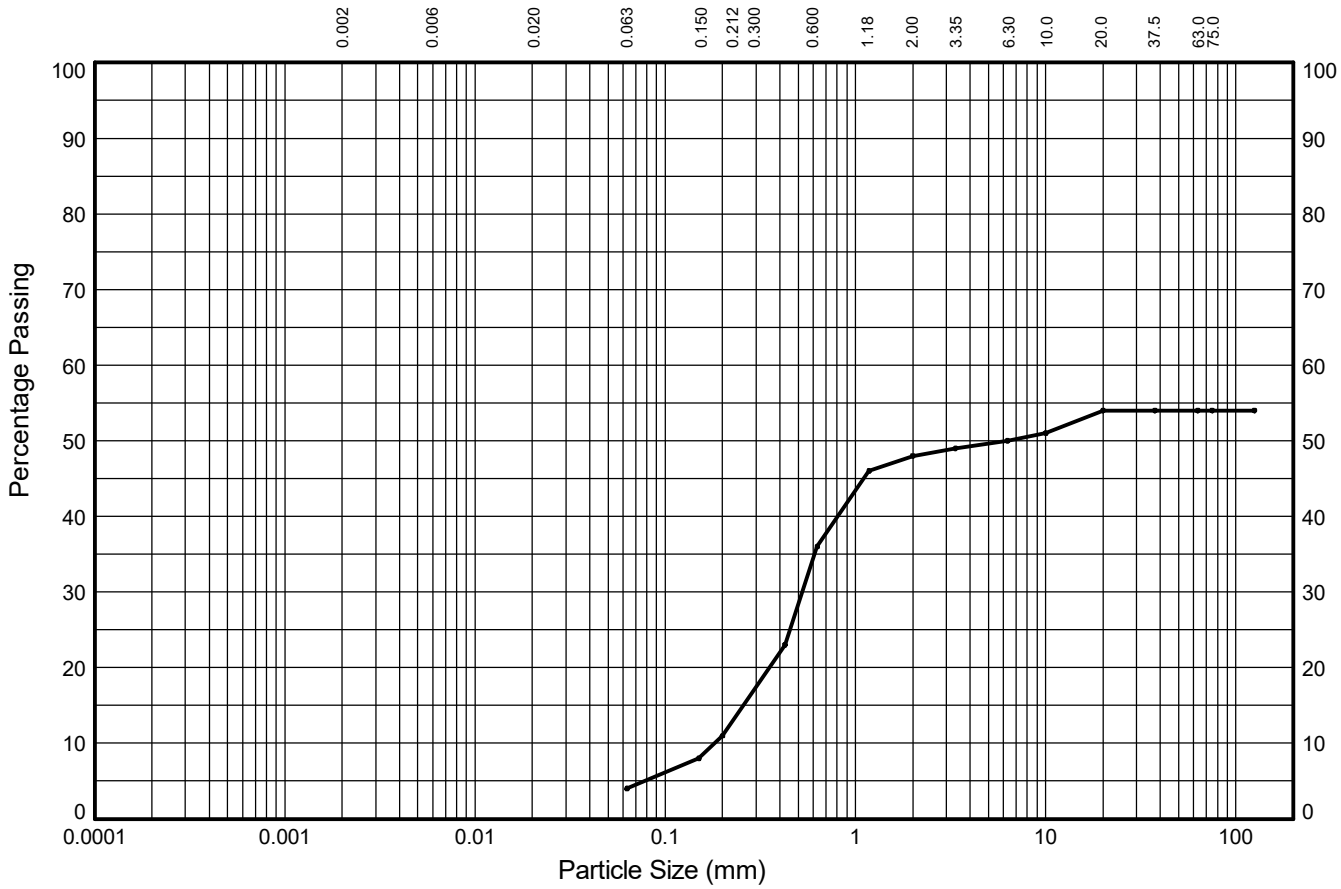
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS128A** Sample Ref: **3** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	7%	25%	12%	2%	4%	0%	
	SILT			SAND			GRAVEL			
4%				44%			6%			46%

Test Sieve (mm)	Percent Passing (%)
125.0	**54**
75.0	**54**
63.0	**54**
37.5	**54**
20.0	**54**
10.0	**51**
6.30	**50**
3.35	**49**
2.00	**48**
1.18	**46**
0.630	**36**
0.425	**23**
0.200	**11**
0.150	**8**
0.063	**4**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.182**
D_{15} (mm)	**0.257**
D_{30} (mm)	**0.525**
D_{50} (mm)	**6.300**
D_{60} (mm)	
D_{85} (mm)	
D_{90} (mm)	
C_U	**0.00**
C_C	**0.00**

Soil Description:
Brown COBBLES with gravelly slightly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
E. Hort	**ELIZABETH HORT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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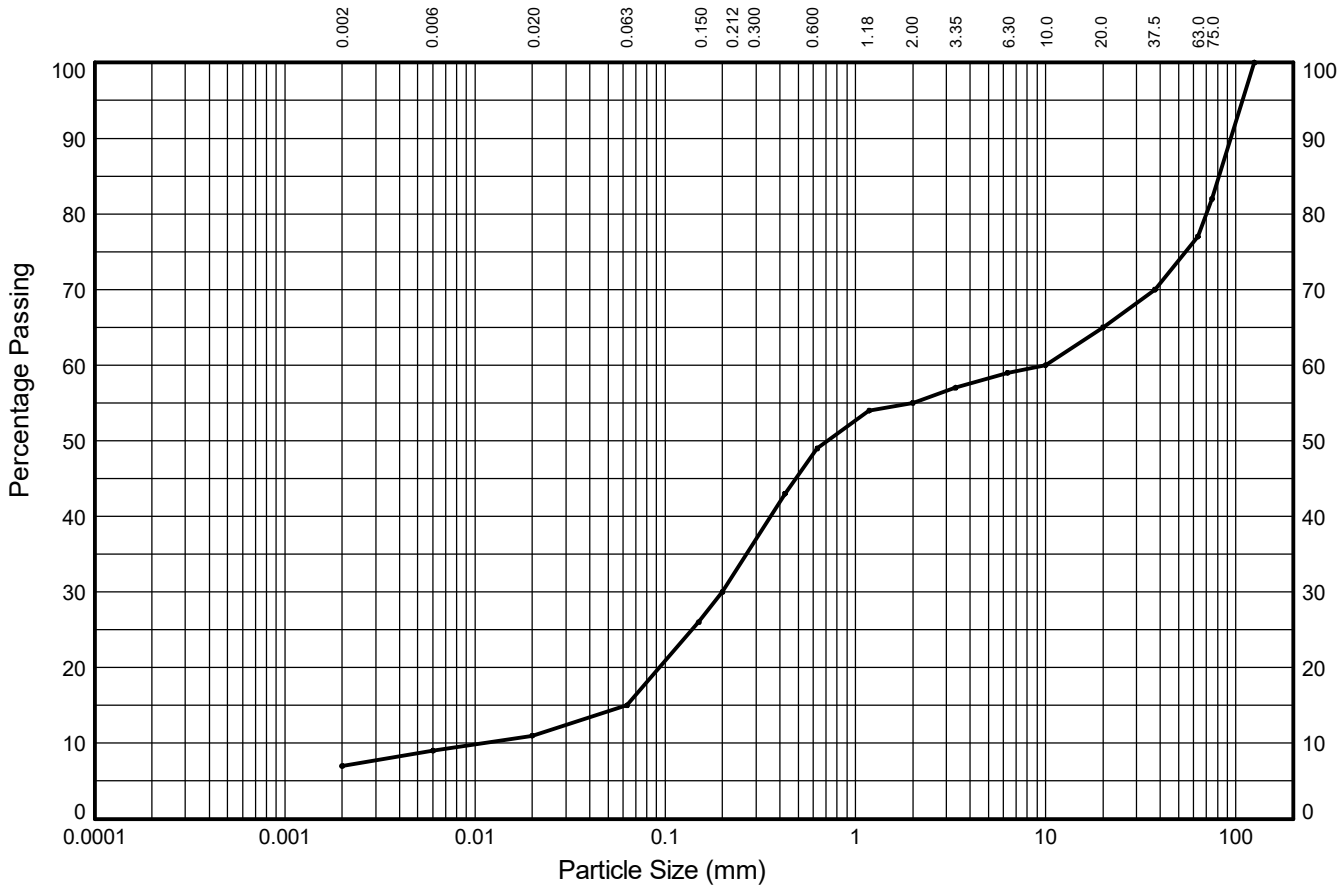
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS128A** Sample Ref: **7** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	2%	4%	15%	19%	6%	4%	6%	12%	
	SILT			SAND			GRAVEL			
7%	8%			40%			22%			23%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**82**
63.0	**77**
37.5	**70**
20.0	**65**
10.0	**60**
6.30	**59**
3.35	**57**
2.00	**55**
1.18	**54**
0.630	**49**
0.425	**43**
0.200	**30**
0.150	**26**
0.063	**15**

Particle Diameter (mm)	Percent Passing (%)
0.02	**11**
0.006	**9**
0.002	**7**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.011**
D_{15} (mm)	**0.063**
D_{30} (mm)	**0.200**
D_{50} (mm)	**0.714**
D_{60} (mm)	**10.000**
D_{85} (mm)	**81.665**
D_{90} (mm)	**94.115**
C_U	**913**
C_C	**0.37**

Soil Description:
Reddish brown very gravelly clayey SAND with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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1a Princess Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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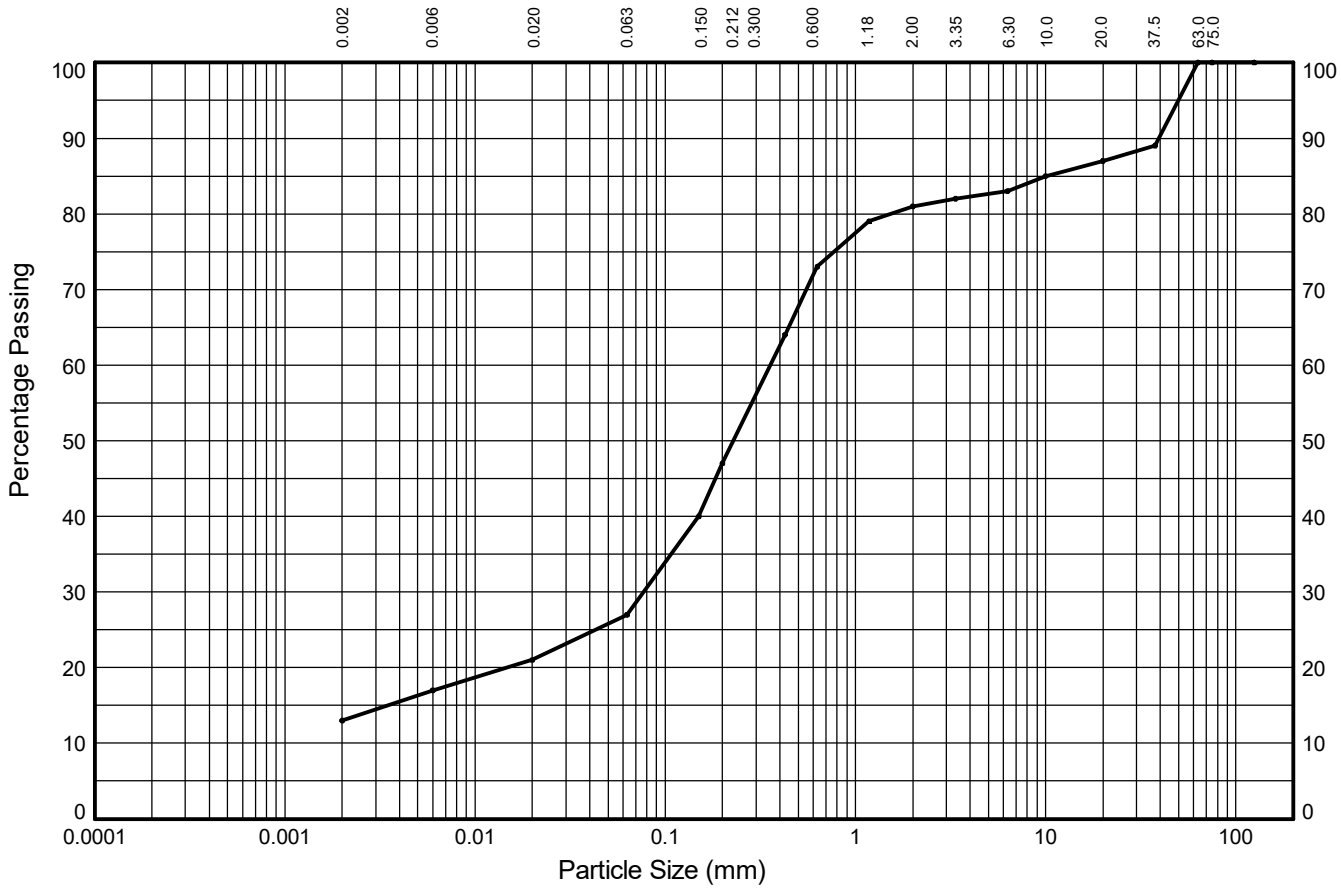
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS128A** Sample Ref: **15** Sample Type: **B** Depth (m): **4.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	4%	6%	20%	26%	8%	2%	4%	13%	
	SILT			SAND			GRAVEL			
13%	14%			54%			19%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**89**
20.0	**87**
10.0	**85**
6.30	**83**
3.35	**82**
2.00	**81**
1.18	**79**
0.630	**73**
0.425	**64**
0.200	**47**
0.150	**40**
0.063	**27**

Particle Diameter (mm)	Percent Passing (%)
0.02	**21**
0.006	**17**
0.002	**13**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.003**
D_{30} (mm)	**0.077**
D_{50} (mm)	**0.228**
D_{60} (mm)	**0.356**
D_{85} (mm)	**10.000**
D_{90} (mm)	**39.311**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
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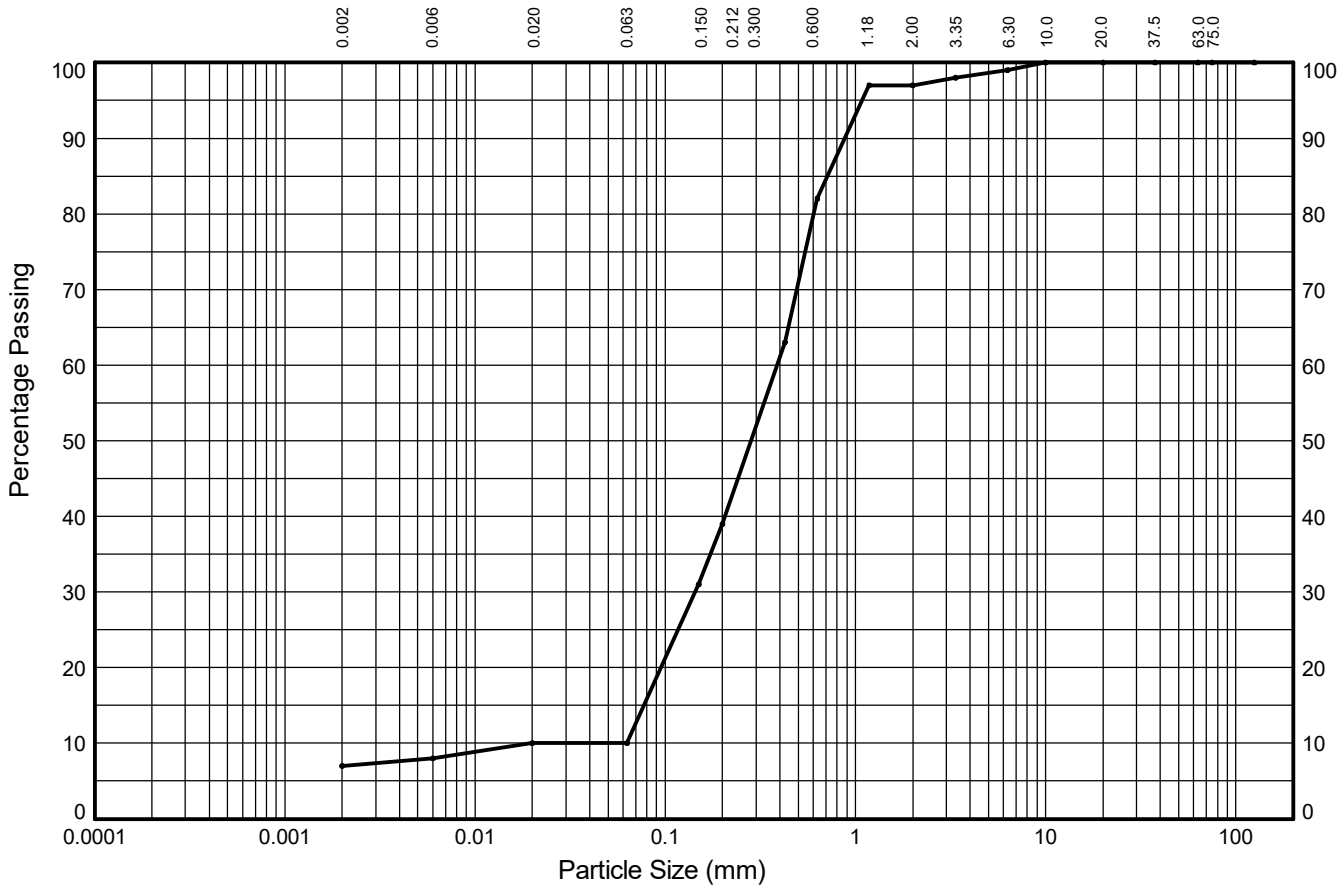
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS128A** Sample Ref: **19** Sample Type: **B** Depth (m): **5.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	1%	2%	0%	29%	43%	15%	2%	1%	0%	
	SILT			SAND			GRAVEL			
7%	3%			87%			3%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**99**
3.35	**98**
2.00	**97**
1.18	**97**
0.630	**82**
0.425	**63**
0.200	**39**
0.150	**31**
0.063	**10**

Particle Diameter (mm)	Percent Passing (%)
0.02	**10**
0.006	**8**
0.002	**7**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.020**
D_{15} (mm)	**0.077**
D_{30} (mm)	**0.144**
D_{50} (mm)	**0.283**
D_{60} (mm)	**0.387**
D_{85} (mm)	**0.714**
D_{90} (mm)	**0.880**
C_U	**19**
C_C	**3**

Soil Description:

Reddish brown slightly gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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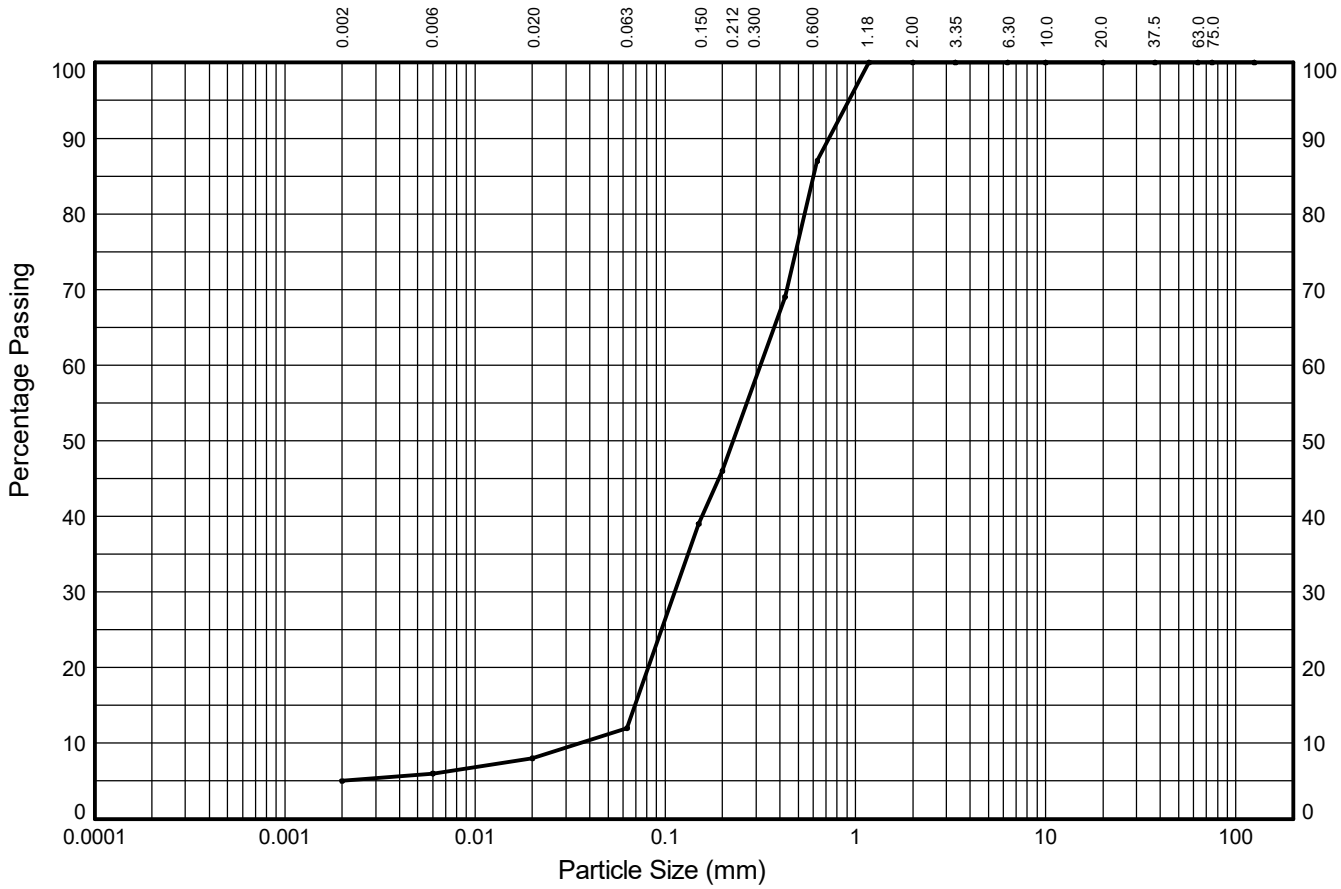
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS128A** Sample Ref: **27** Sample Type: **B** Depth (m): **7.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	1%	2%	4%	34%	41%	13%	0%	0%	0%	
	SILT			SAND			GRAVEL			
5%	7%			88%			0%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**100**
3.35	**100**
2.00	**100**
1.18	**100**
0.630	**87**
0.425	**69**
0.200	**46**
0.150	**39**
0.063	**12**

Particle Diameter (mm)	Percent Passing (%)
0.02	**8**
0.006	**6**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.035**
D_{15} (mm)	**0.069**
D_{30} (mm)	**0.112**
D_{50} (mm)	**0.228**
D_{60} (mm)	**0.316**
D_{85} (mm)	**0.603**
D_{90} (mm)	**0.728**
C_U	**8.9**
C_C	**1.1**

Soil Description:

Reddish brown clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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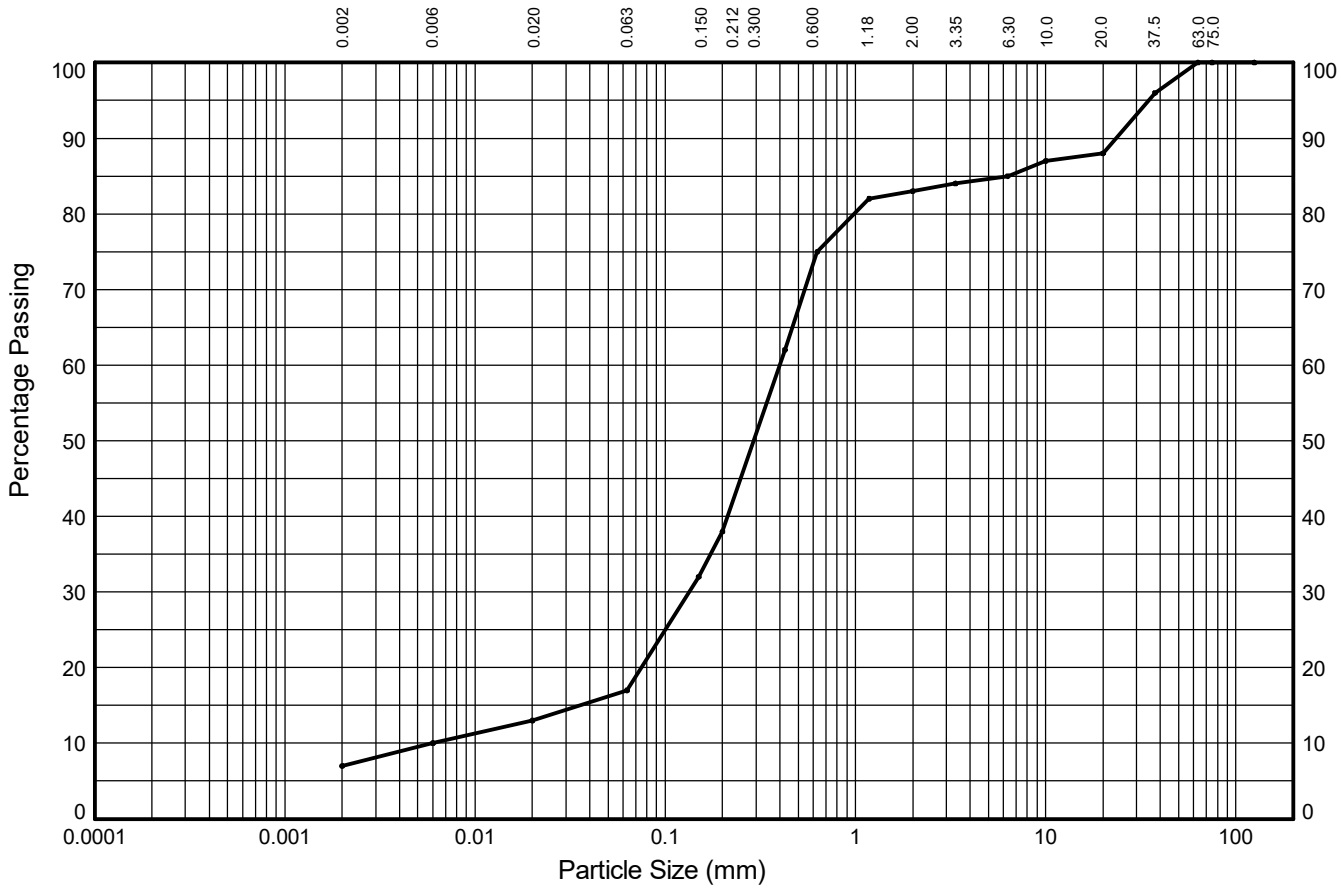
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS129** Sample Ref: **2** Sample Type: **B** Depth (m): **0.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	4%	21%	37%	8%	2%	3%	12%	
	SILT			SAND			GRAVEL			
7%	10%			66%			17%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**96**
20.0	**88**
10.0	**87**
6.30	**85**
3.35	**84**
2.00	**83**
1.18	**82**
0.630	**75**
0.425	**62**
0.200	**38**
0.150	**32**
0.063	**17**

Particle Diameter (mm)	Percent Passing (%)
0.02	**13**
0.006	**10**
0.002	**7**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.006**
D_{15} (mm)	**0.035**
D_{30} (mm)	**0.134**
D_{50} (mm)	**0.292**
D_{60} (mm)	**0.399**
D_{85} (mm)	**6.300**
D_{90} (mm)	**23.403**
C_U	**67**
C_C	**7**

Soil Description:

Brown gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
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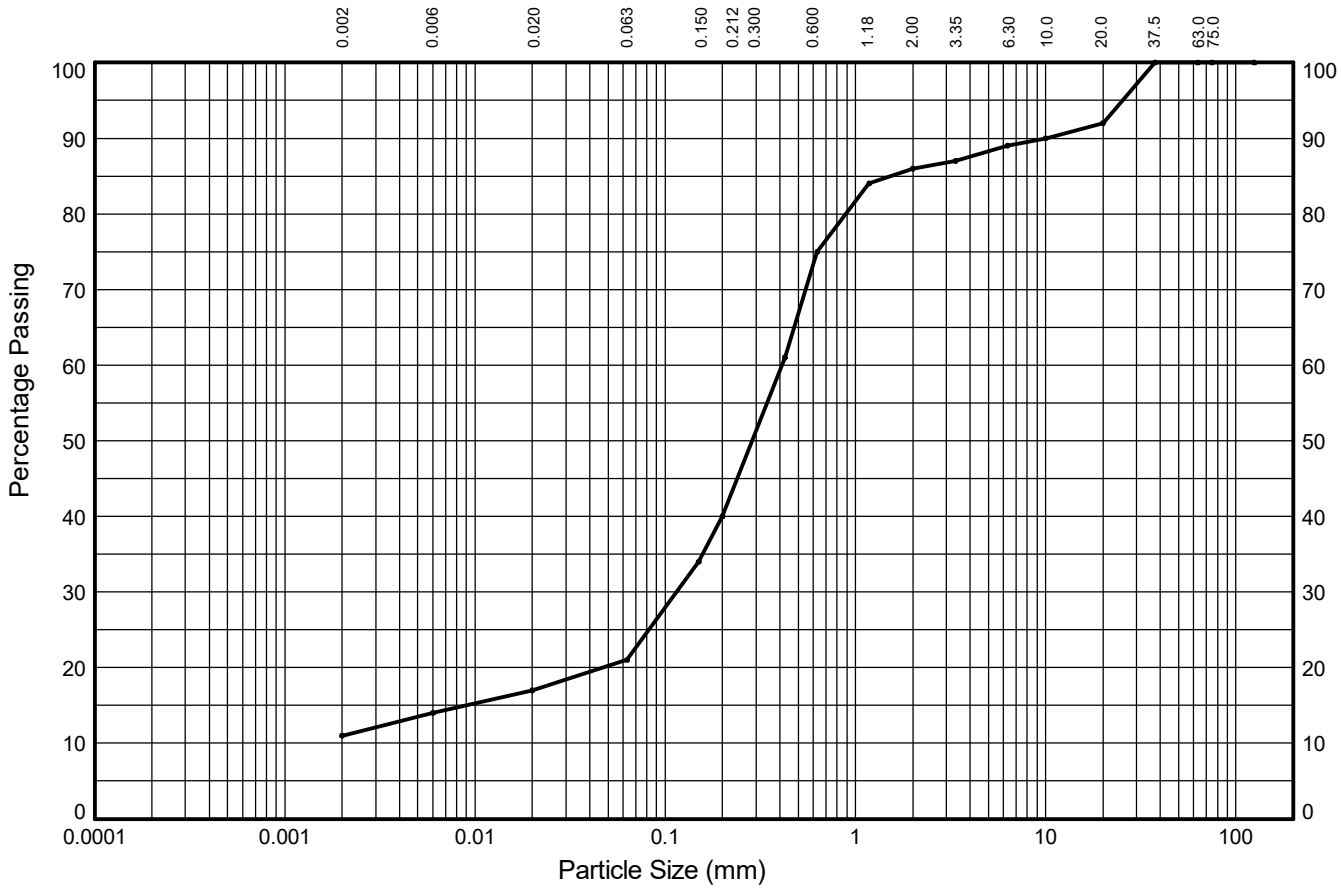
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS129** Sample Ref: **8** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	4%	19%	35%	11%	3%	3%	8%	
	SILT			SAND			GRAVEL			
11%	10%			65%			14%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**92**
10.0	**90**
6.30	**89**
3.35	**87**
2.00	**86**
1.18	**84**
0.630	**75**
0.425	**61**
0.200	**40**
0.150	**34**
0.063	**21**

Particle Diameter (mm)	Percent Passing (%)
0.02	**17**
0.006	**14**
0.002	**11**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.009**
D_{30} (mm)	**0.115**
D_{50} (mm)	**0.286**
D_{60} (mm)	**0.410**
D_{85} (mm)	**1.536**
D_{90} (mm)	**10.000**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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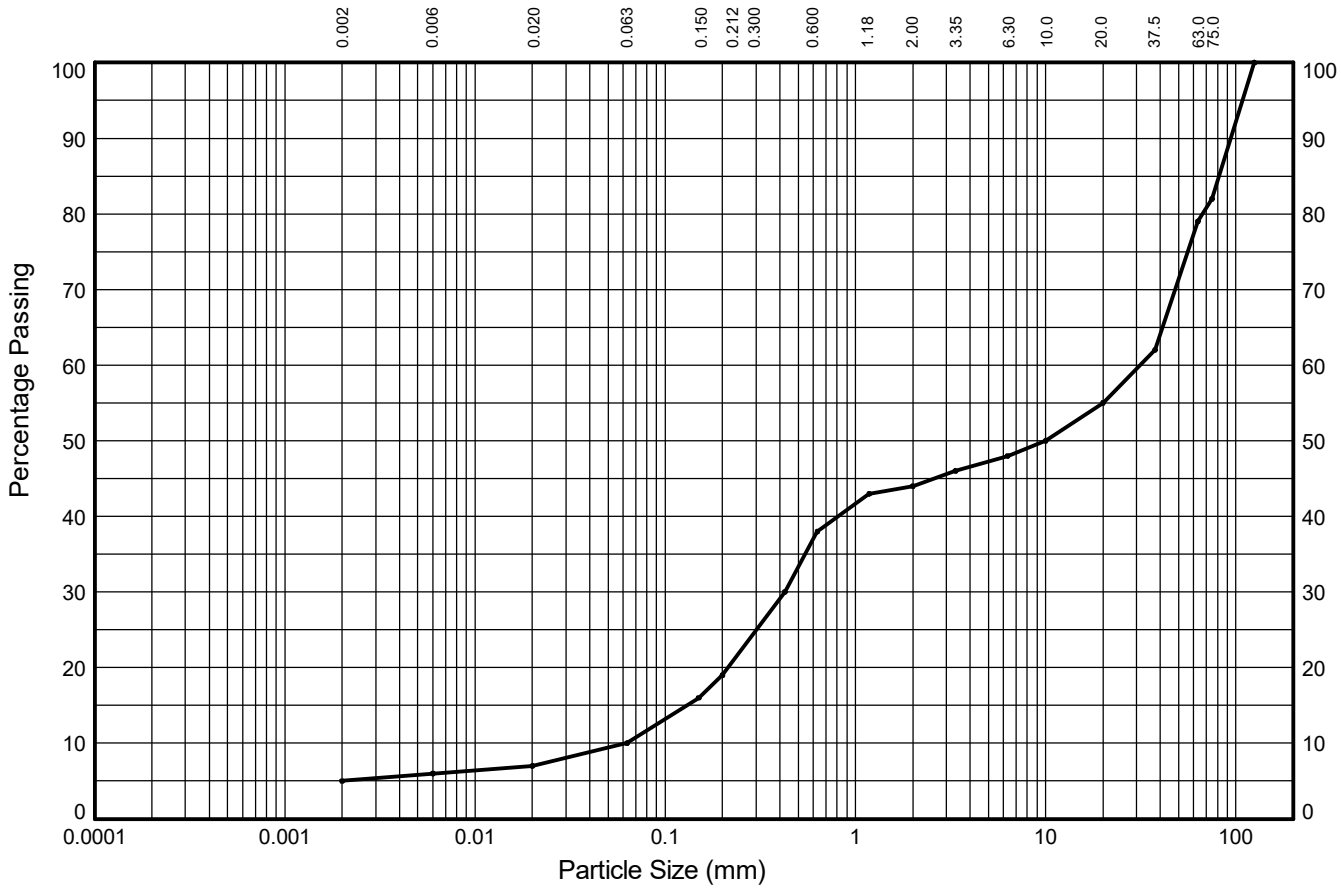
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Borehole: **BH-PTS129** Sample Ref: **12** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	1%	1%	3%	9%	19%	6%	4%	7%	24%	
	SILT			SAND			GRAVEL			
5%	5%			34%			35%			21%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**82**
63.0	**79**
37.5	**62**
20.0	**55**
10.0	**50**
6.30	**48**
3.35	**46**
2.00	**44**
1.18	**43**
0.630	**38**
0.425	**30**
0.200	**19**
0.150	**16**
0.063	**10**

Particle Diameter (mm)	Percent Passing (%)
0.02	**7**
0.006	**6**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.063**
D_{15} (mm)	**0.130**
D_{30} (mm)	**0.425**
D_{50} (mm)	**10.000**
D_{60} (mm)	**31.335**
D_{85} (mm)	**81.665**
D_{90} (mm)	**94.115**
C_U	**497**
C_C	**0.09**

Soil Description:
Reddish brown very sandy clayey GRAVEL with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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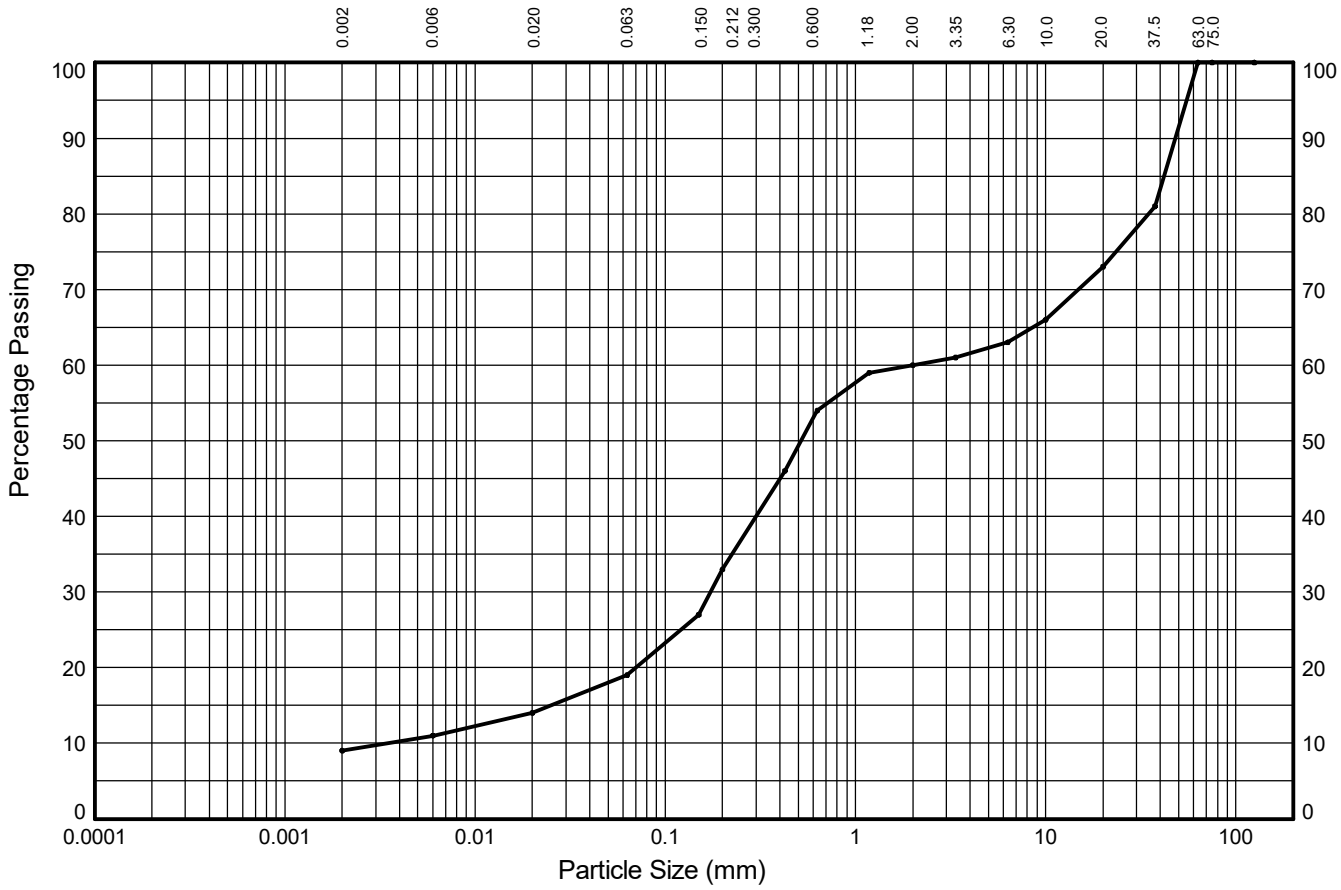
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH-PTS129** Sample Ref: **21** Sample Type: **B** Depth (m): **4.60**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	3%	5%	14%	21%	6%	3%	10%	27%	
	SILT			SAND			GRAVEL			
9%	10%			41%			40%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**81**
20.0	**73**
10.0	**66**
6.30	**63**
3.35	**61**
2.00	**60**
1.18	**59**
0.630	**54**
0.425	**46**
0.200	**33**
0.150	**27**
0.063	**19**

Particle Diameter (mm)	Percent Passing (%)
0.02	**14**
0.006	**11**
0.002	**9**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.003**
D_{15} (mm)	**0.025**
D_{30} (mm)	**0.173**
D_{50} (mm)	**0.517**
D_{60} (mm)	**2.000**
D_{85} (mm)	**41.828**
D_{90} (mm)	**47.946**
C_U	**577**
C_C	**4**

Soil Description:

Reddish brown very gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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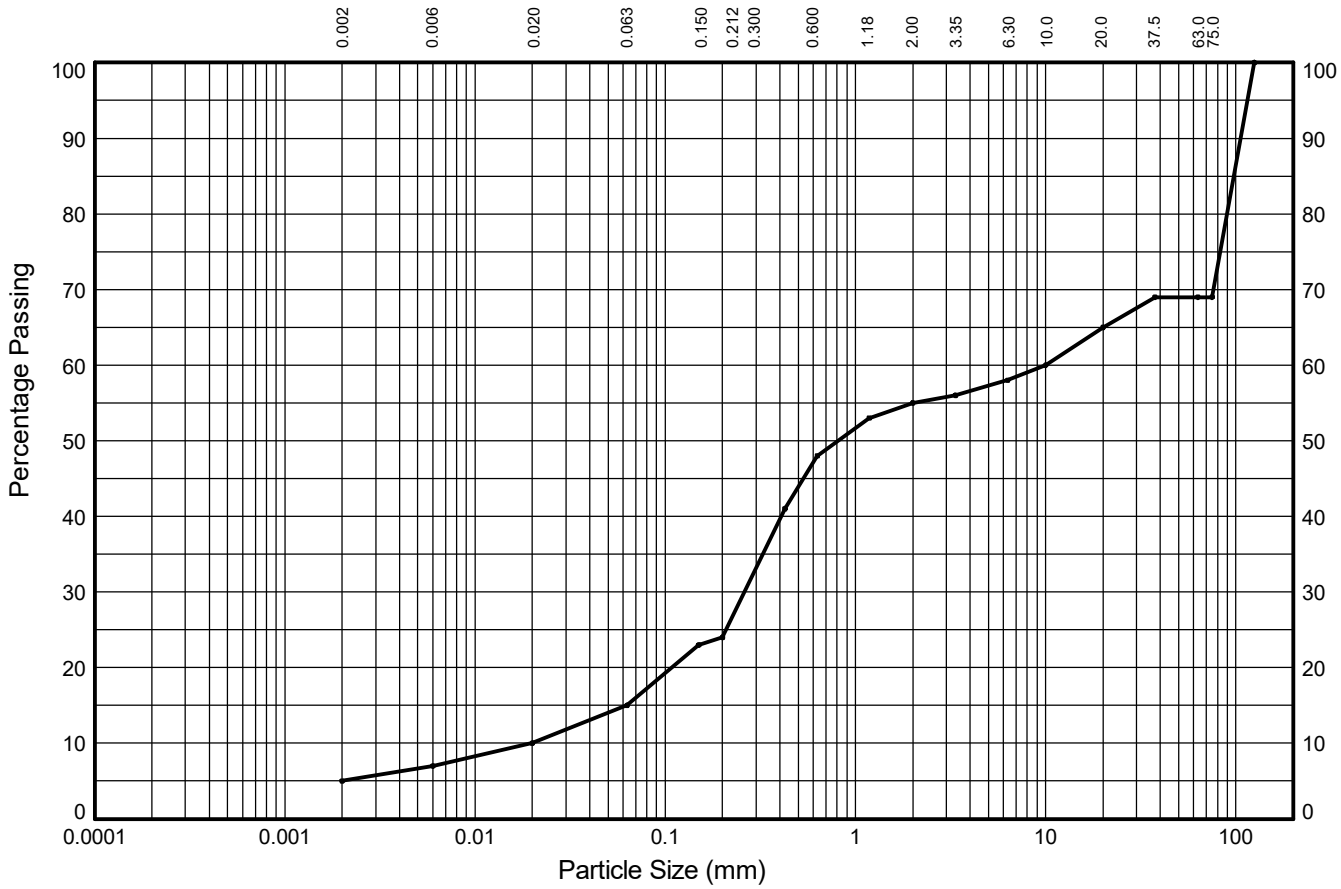
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Position ID: **GS-PTS102** Sample Ref: **4** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	3%	5%	9%	24%	7%	3%	7%	4%	
	SILT			SAND			GRAVEL			
5%	10%			40%			14%			31%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**69**
63.0	**69**
37.5	**69**
20.0	**65**
10.0	**60**
6.30	**58**
3.35	**56**
2.00	**55**
1.18	**53**
0.630	**48**
0.425	**41**
0.200	**24**
0.150	**23**
0.063	**15**

Particle Diameter (mm)	Percent Passing (%)
0.02	**10**
0.006	**7**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.020**
D_{15} (mm)	**0.063**
D_{30} (mm)	**0.261**
D_{50} (mm)	**0.810**
D_{60} (mm)	**10.000**
D_{85} (mm)	**97.626**
D_{90} (mm)	**106.010**
C_U	**500**
C_C	**0.34**

Soil Description:
Brown gravelly silty SAND with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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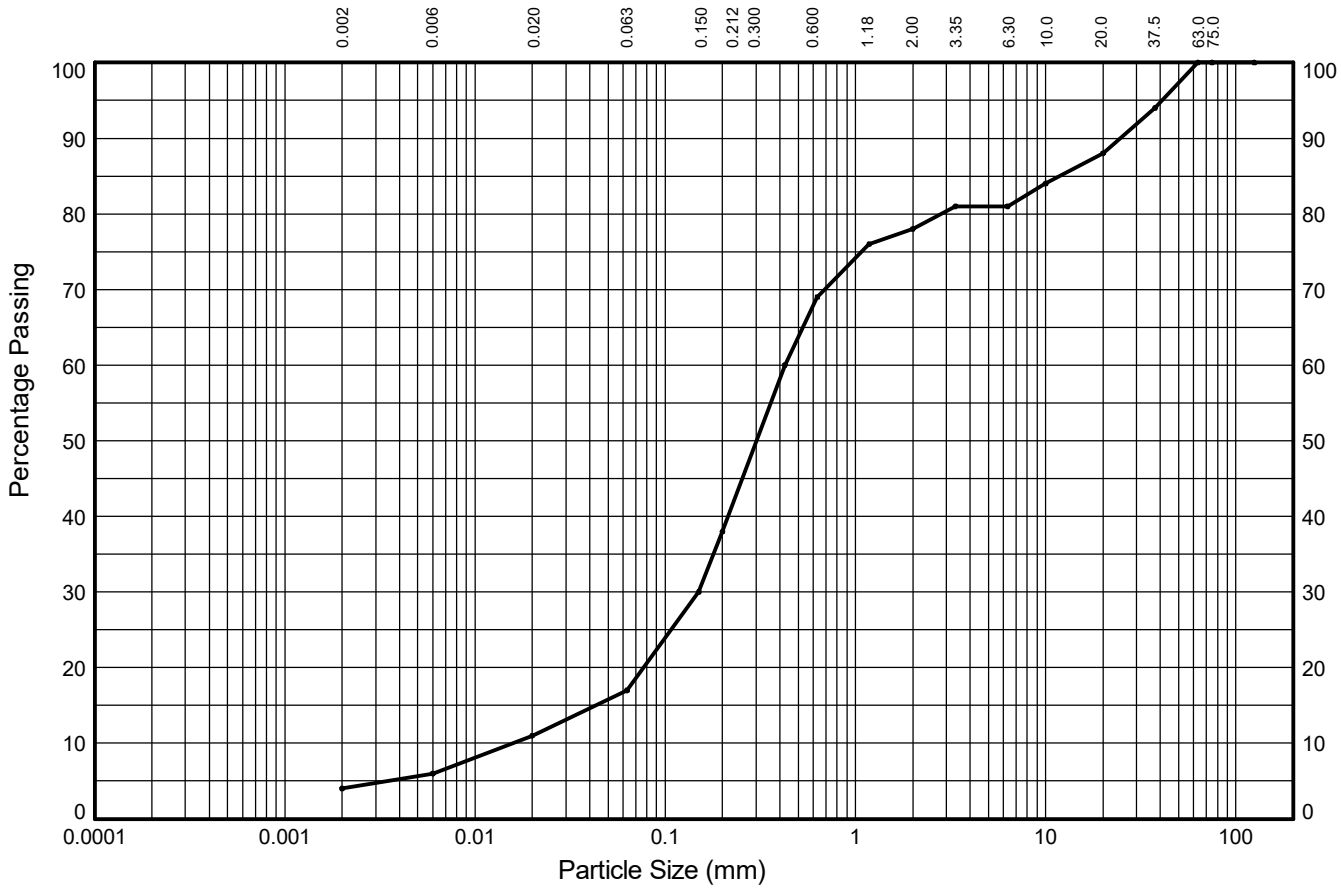
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **GS-PTS102** Sample Ref: **4** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	5%	6%	21%	31%	9%	3%	7%	12%	
	SILT			SAND			GRAVEL			
4%	13%			61%			22%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**94**
20.0	**88**
10.0	**84**
6.30	**81**
3.35	**81**
2.00	**78**
1.18	**76**
0.630	**69**
0.425	**60**
0.200	**38**
0.150	**30**
0.063	**17**

Particle Diameter (mm)	Percent Passing (%)
0.02	**11**
0.006	**6**
0.002	**4**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.016**
D_{15} (mm)	**0.043**
D_{30} (mm)	**0.150**
D_{50} (mm)	**0.302**
D_{60} (mm)	**0.425**
D_{85} (mm)	**11.892**
D_{90} (mm)	**24.662**
C_U	**27**
C_C	**3**

Soil Description:

Brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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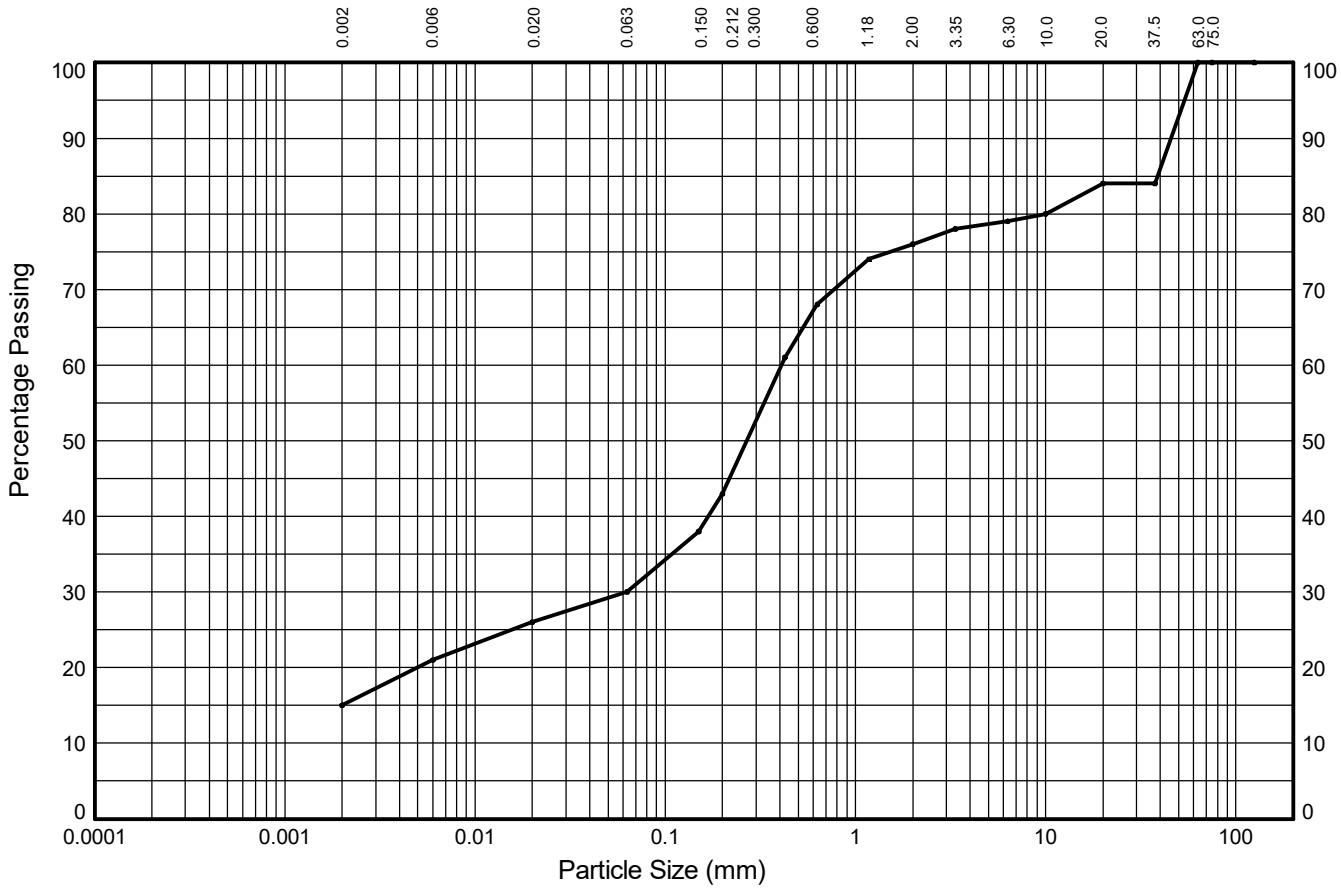
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Position ID: **GS-PTS102** Sample Ref: **7** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	6%	5%	4%	13%	25%	8%	3%	5%	16%	
	SILT			SAND			GRAVEL			
15%	15%			46%			24%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**84**
20.0	**84**
10.0	**80**
6.30	**79**
3.35	**78**
2.00	**76**
1.18	**74**
0.630	**68**
0.425	**61**
0.200	**43**
0.150	**38**
0.063	**30**

Particle Diameter (mm)	Percent Passing (%)
0.02	**26**
0.006	**21**
0.002	**15**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.002**
D_{30} (mm)	**0.063**
D_{50} (mm)	**0.268**
D_{60} (mm)	**0.408**
D_{85} (mm)	**38.736**
D_{90} (mm)	**45.554**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown very gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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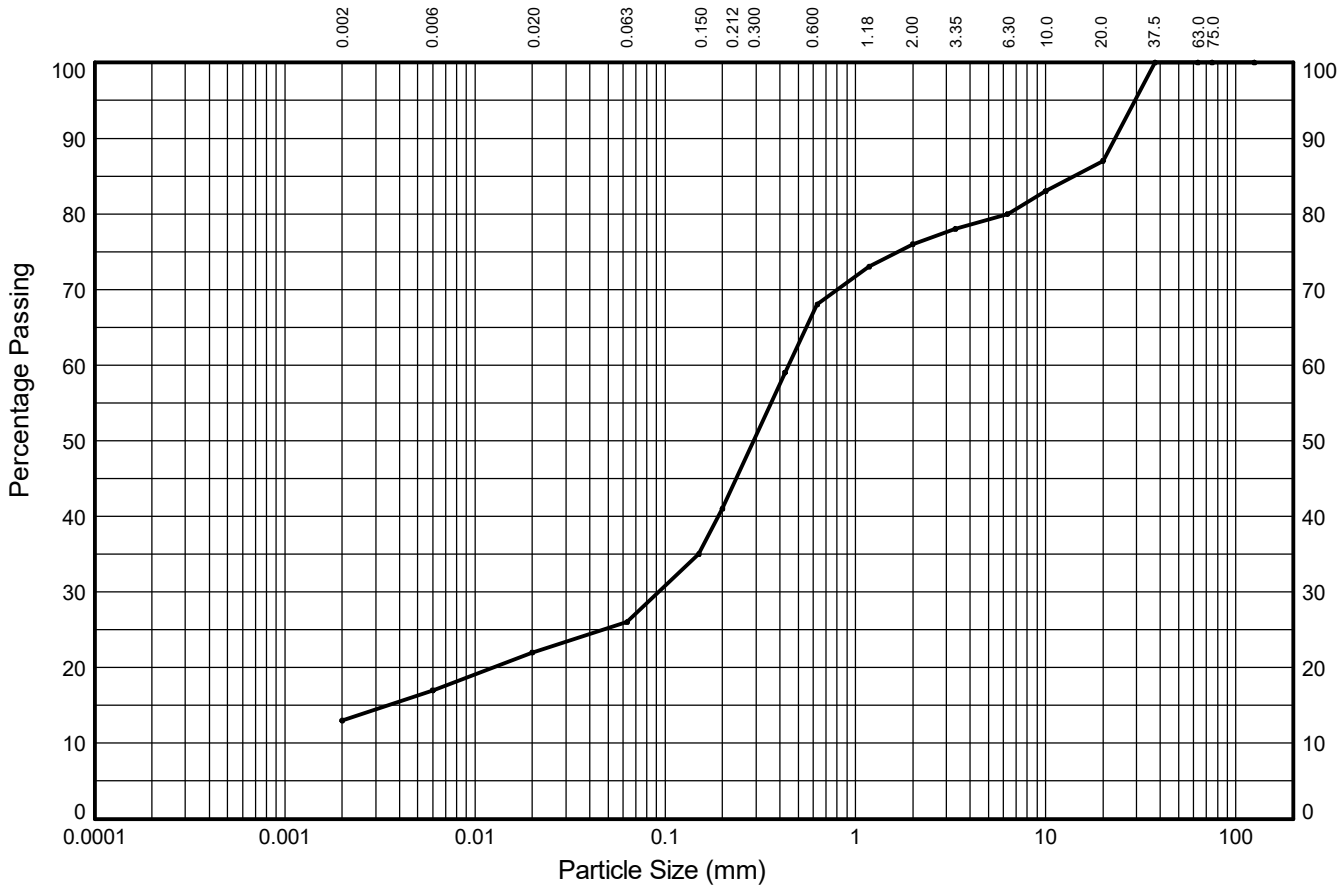
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Position ID: **GS-PTS102** Sample Ref: **10** Sample Type: **B** Depth (m): **3.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	5%	4%	15%	27%	8%	4%	7%	13%	
	SILT			SAND			GRAVEL			
13%	13%			50%			24%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**87**
10.0	**83**
6.30	**80**
3.35	**78**
2.00	**76**
1.18	**73**
0.630	**68**
0.425	**59**
0.200	**41**
0.150	**35**
0.063	**26**

Particle Diameter (mm)	Percent Passing (%)
0.02	**22**
0.006	**17**
0.002	**13**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.003**
D_{30} (mm)	**0.093**
D_{50} (mm)	**0.292**
D_{60} (mm)	**0.444**
D_{85} (mm)	**14.142**
D_{90} (mm)	**23.122**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown very gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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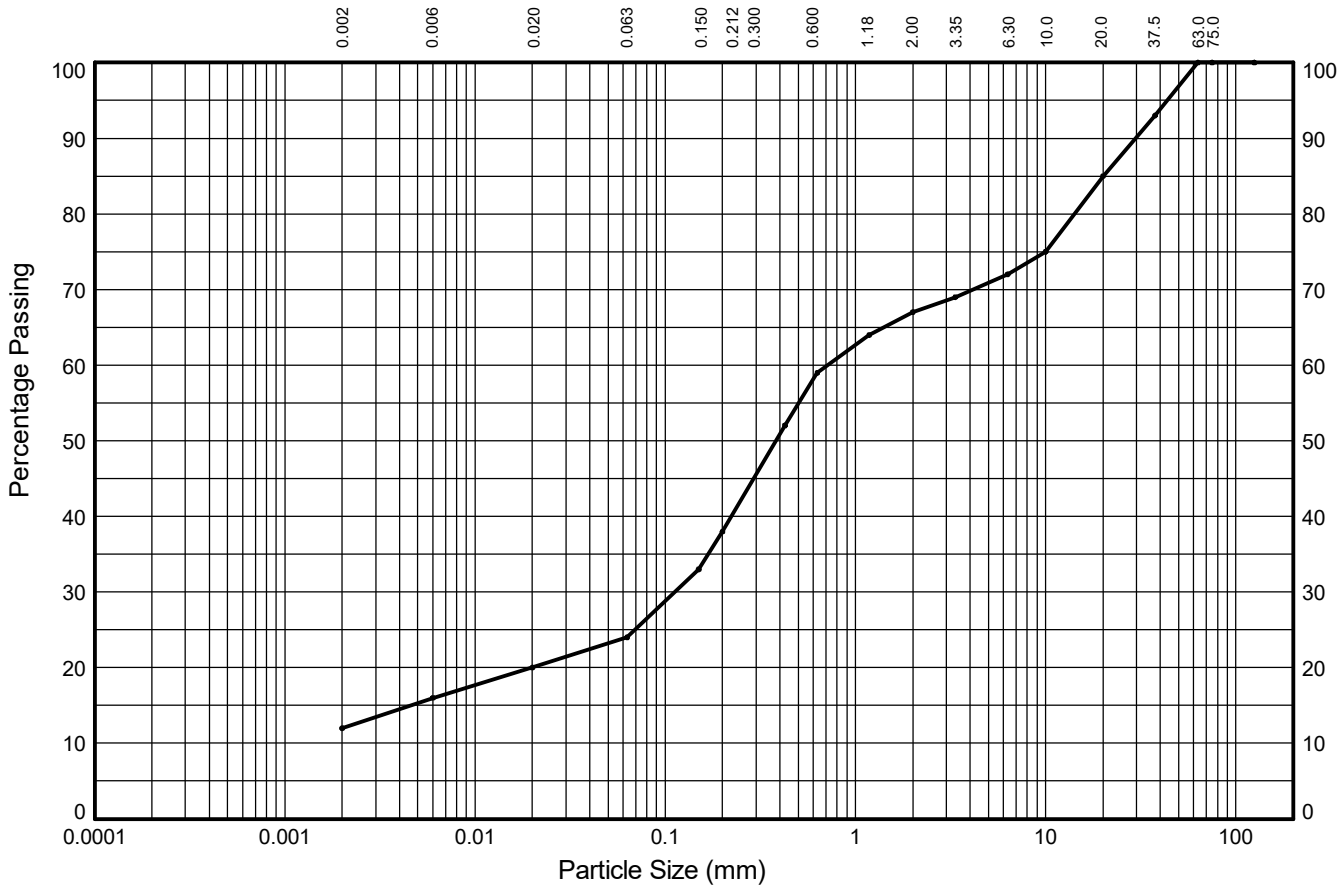
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Position ID: **GS-PTS102** Sample Ref: **13** Sample Type: **B** Depth (m): **4.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	4%	4%	14%	21%	8%	5%	13%	15%	
	SILT			SAND			GRAVEL			
12%	12%			43%			33%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**93**
20.0	**85**
10.0	**75**
6.30	**72**
3.35	**69**
2.00	**67**
1.18	**64**
0.630	**59**
0.425	**52**
0.200	**38**
0.150	**33**
0.063	**24**

Particle Diameter (mm)	Percent Passing (%)
0.02	**20**
0.006	**16**
0.002	**12**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.005**
D_{30} (mm)	**0.112**
D_{50} (mm)	**0.382**
D_{60} (mm)	**0.714**
D_{85} (mm)	**20.000**
D_{90} (mm)	**29.625**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown very gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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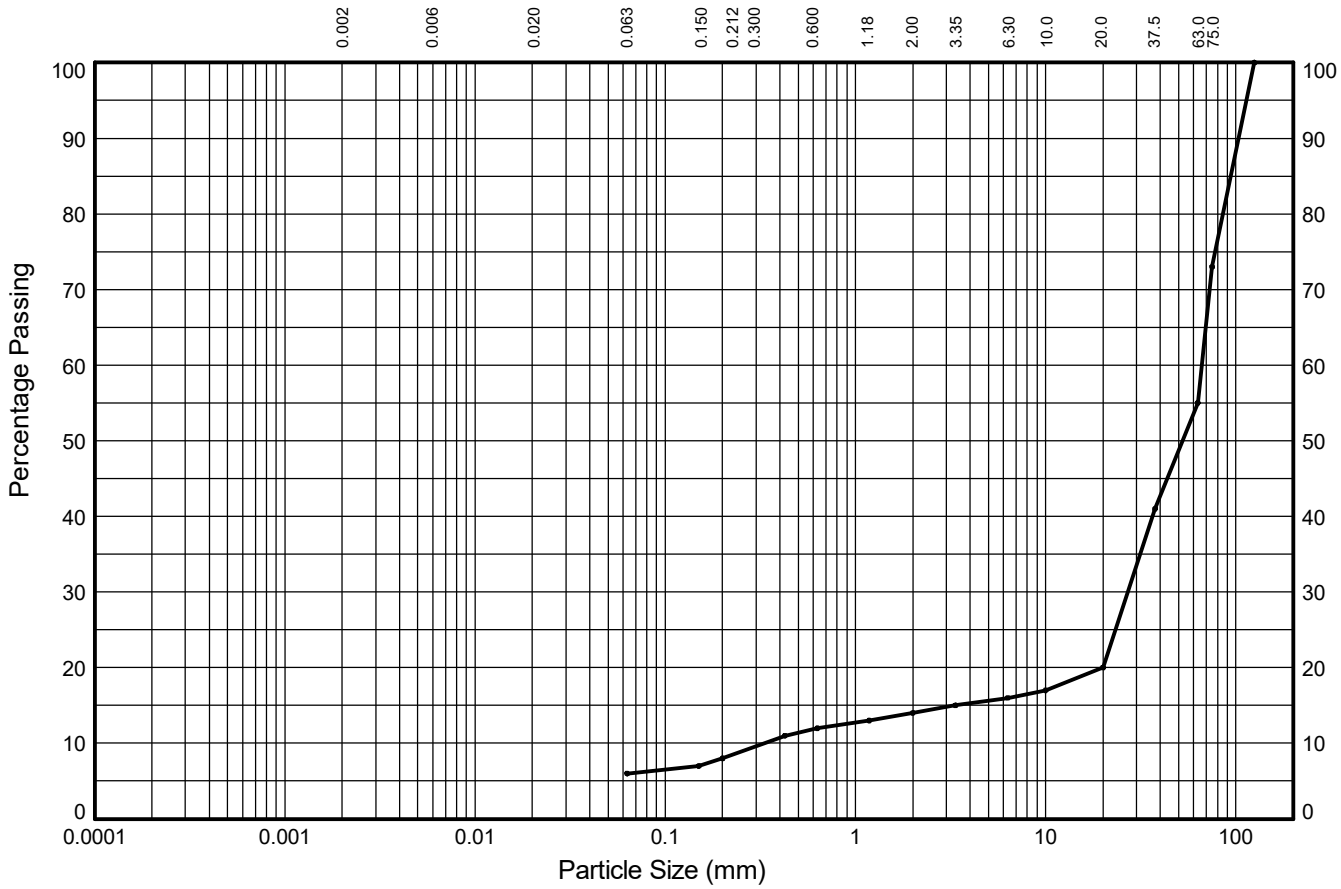
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Position ID: **GS-PTS102** Sample Ref: **15** Sample Type: **B** Depth (m): **4.70**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	2%	4%	2%	2%	4%	35%	
	SILT			SAND			GRAVEL			
6%				8%			41%			45%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**73**
63.0	**55**
37.5	**41**
20.0	**20**
10.0	**17**
6.30	**16**
3.35	**15**
2.00	**14**
1.18	**13**
0.630	**12**
0.425	**11**
0.200	**8**
0.150	**7**
0.063	**6**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.331**
D_{15} (mm)	**3.350**
D_{30} (mm)	**26.979**
D_{50} (mm)	**52.345**
D_{60} (mm)	**66.126**
D_{85} (mm)	**94.115**
D_{90} (mm)	**103.453**
C_U	**200**
C_C	**33**

Soil Description:

Reddish brown sandy silty GRAVEL with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Maduka	**PRECIOUS MADUKA**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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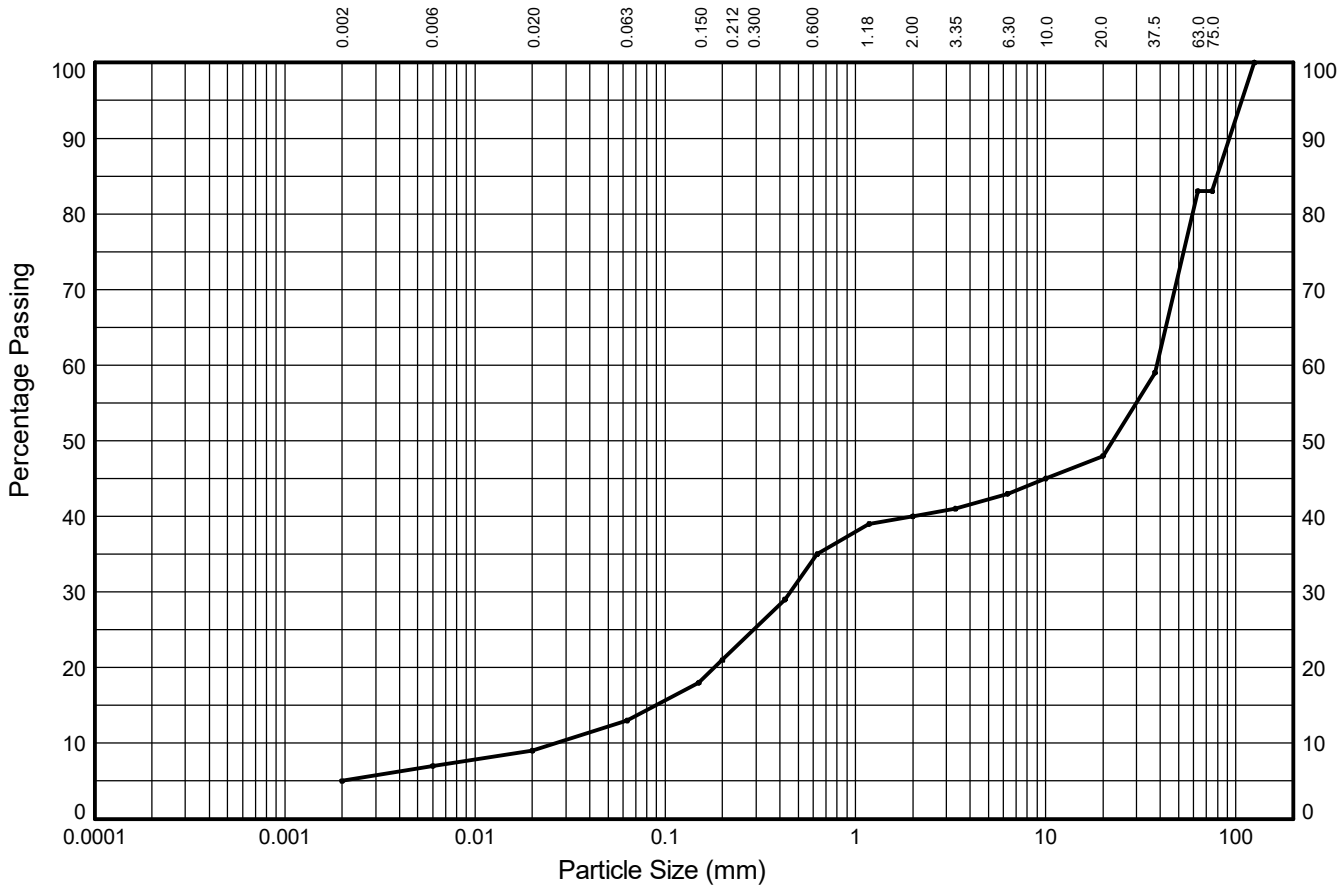
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Position ID: **GS-PTS102** Sample Ref: **18** Sample Type: **B** Depth (m): **7.55**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	2%	4%	8%	14%	5%	3%	5%	35%	
	SILT			SAND			GRAVEL			
5%	8%			27%			43%			17%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**83**
63.0	**83**
37.5	**59**
20.0	**48**
10.0	**45**
6.30	**43**
3.35	**41**
2.00	**40**
1.18	**39**
0.630	**35**
0.425	**29**
0.200	**21**
0.150	**18**
0.063	**13**

Particle Diameter (mm)	Percent Passing (%)
0.02	**9**
0.006	**7**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.027**
D_{15} (mm)	**0.089**
D_{30} (mm)	**0.454**
D_{50} (mm)	**22.422**
D_{60} (mm)	**38.319**
D_{85} (mm)	**79.645**
D_{90} (mm)	**92.557**
C_U	**1438**
C_C	**0.20**

Soil Description:

Brown very sandy clayey GRAVEL with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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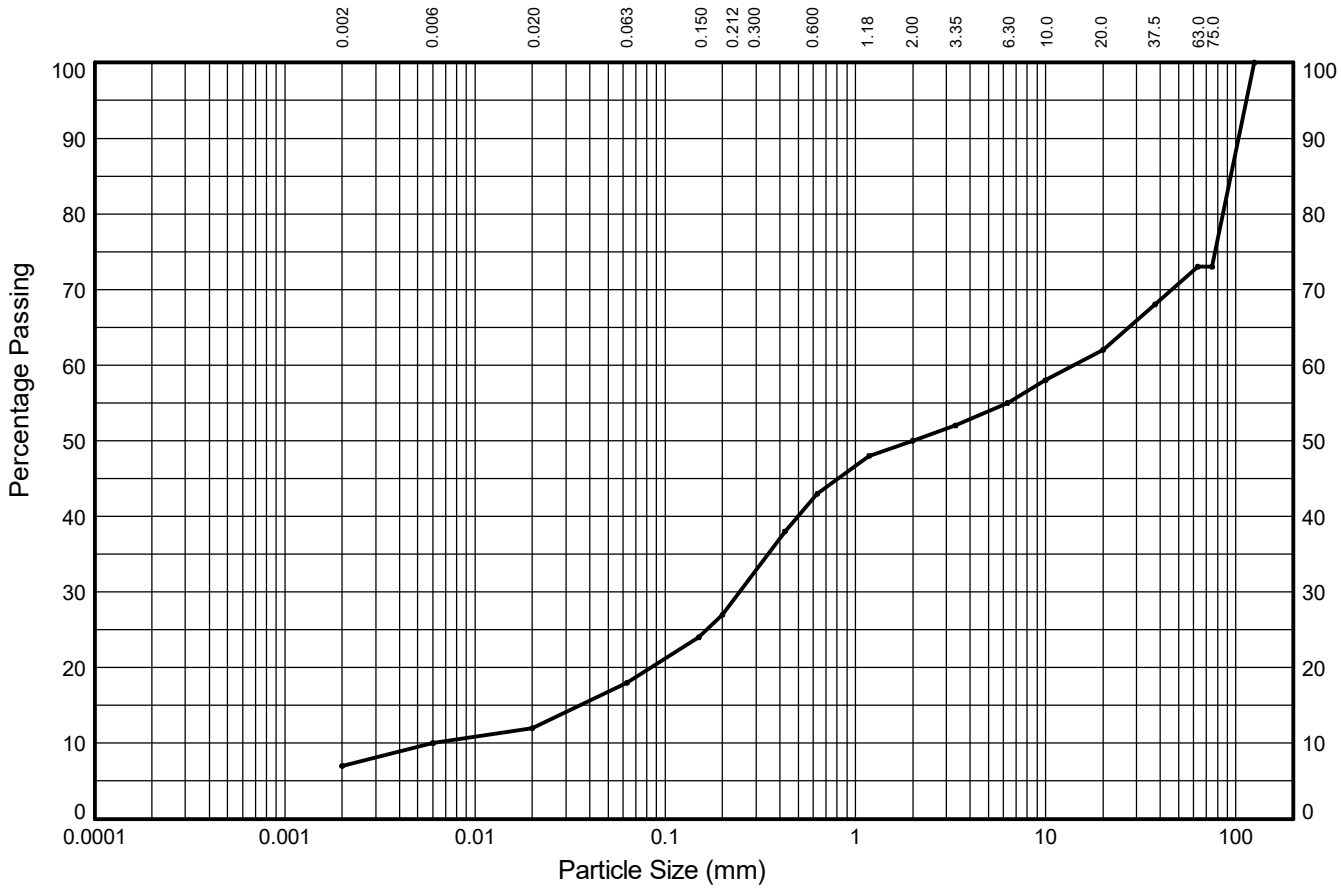
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Position ID: **GS-PTS105** Sample Ref: **6** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	2%	6%	9%	16%	7%	5%	7%	11%	
	SILT			SAND			GRAVEL			
7%	11%			32%			23%			27%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**73**
63.0	**73**
37.5	**68**
20.0	**62**
10.0	**58**
6.30	**55**
3.35	**52**
2.00	**50**
1.18	**48**
0.630	**43**
0.425	**38**
0.200	**27**
0.150	**24**
0.063	**18**

Particle Diameter (mm)	Percent Passing (%)
0.02	**12**
0.006	**10**
0.002	**7**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.006**
D_{15} (mm)	**0.035**
D_{30} (mm)	**0.246**
D_{50} (mm)	**2.000**
D_{60} (mm)	**14.142**
D_{85} (mm)	**94.115**
D_{90} (mm)	**103.453**
C_U	**2357**
C_C	**0.71**

Soil Description:
Reddish brown very gravelly clayey SAND with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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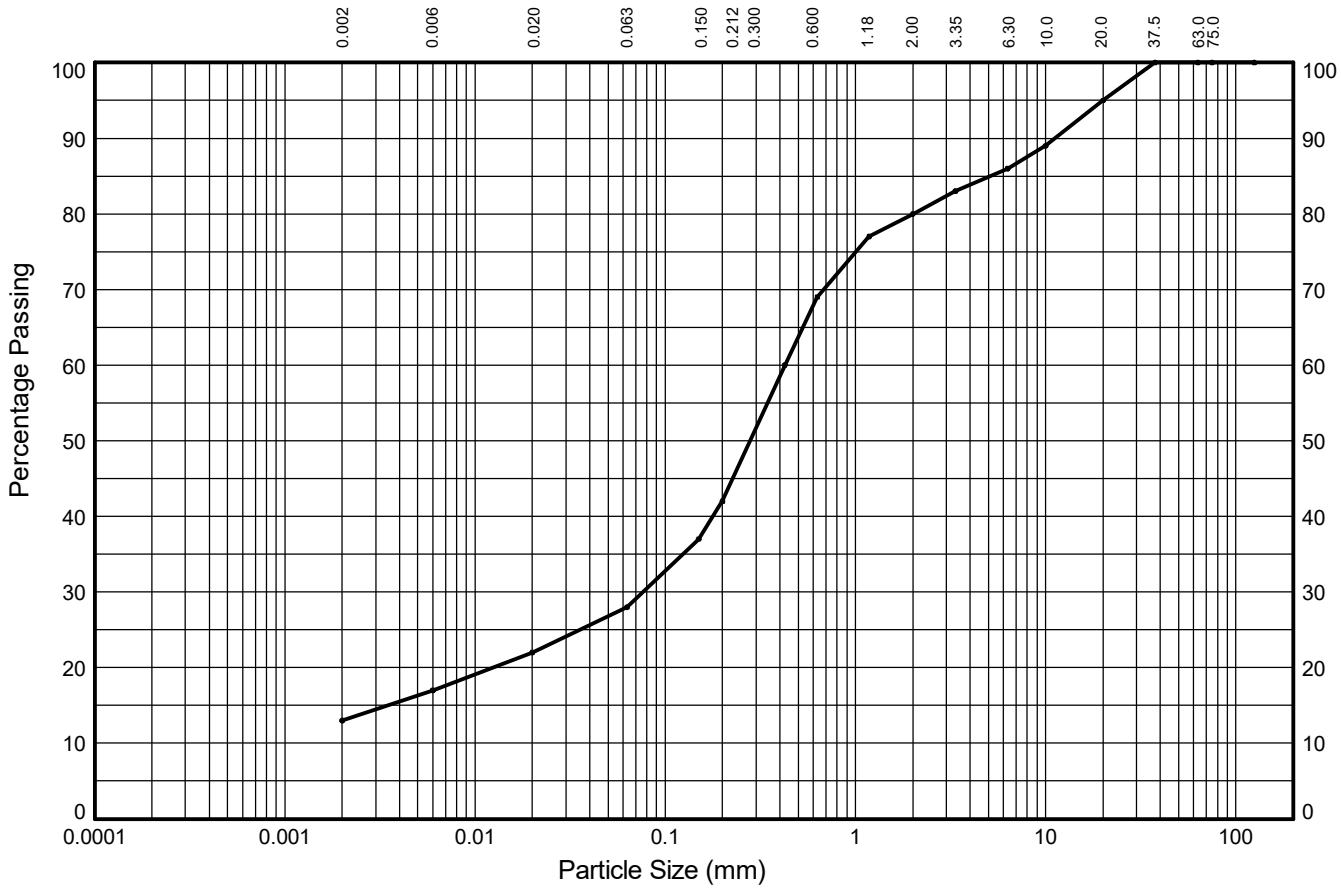
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **GS-PTS105** Sample Ref: **8** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	5%	6%	14%	27%	11%	6%	9%	5%	
	SILT			SAND			GRAVEL			
13%	15%			52%			20%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**95**
10.0	**89**
6.30	**86**
3.35	**83**
2.00	**80**
1.18	**77**
0.630	**69**
0.425	**60**
0.200	**42**
0.150	**37**
0.063	**28**

Particle Diameter (mm)	Percent Passing (%)
0.02	**22**
0.006	**17**
0.002	**13**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.003**
D_{30} (mm)	**0.076**
D_{50} (mm)	**0.280**
D_{60} (mm)	**0.425**
D_{85} (mm)	**5.104**
D_{90} (mm)	**11.225**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown very gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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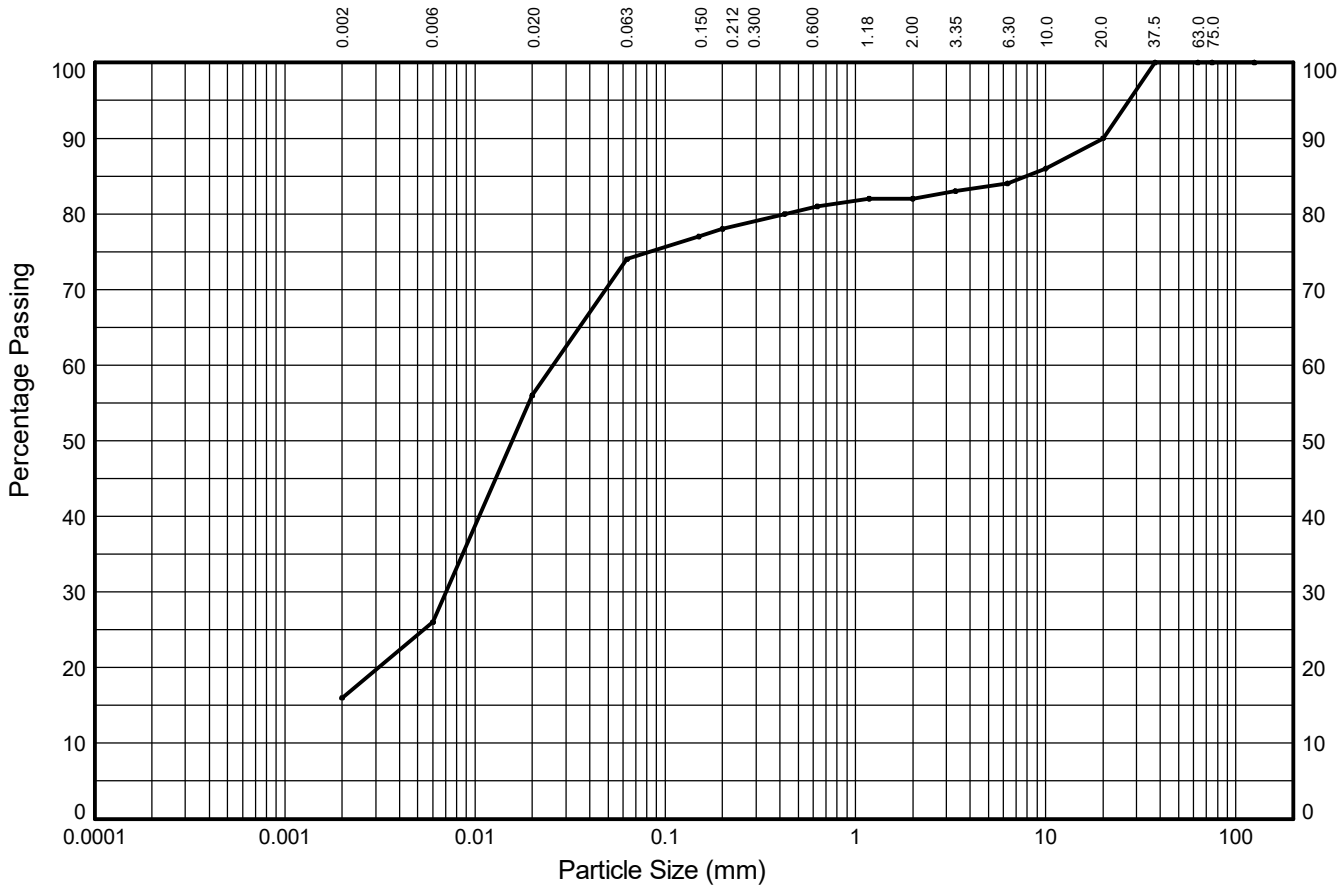
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **GS-PTS105** Sample Ref: **13** Sample Type: **B** Depth (m): **4.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	11%	29%	18%	4%	3%	1%	2%	6%	10%	
	SILT			SAND			GRAVEL			
16%	58%			8%			18%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**90**
10.0	**86**
6.30	**84**
3.35	**83**
2.00	**82**
1.18	**82**
0.630	**81**
0.425	**80**
0.200	**78**
0.150	**77**
0.063	**74**

Particle Diameter (mm)	Percent Passing (%)
0.02	**56**
0.006	**26**
0.002	**16**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.007**
D_{50} (mm)	**0.016**
D_{60} (mm)	**0.026**
D_{85} (mm)	**7.937**
D_{90} (mm)	**20.000**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly slightly sandy clayey SILT

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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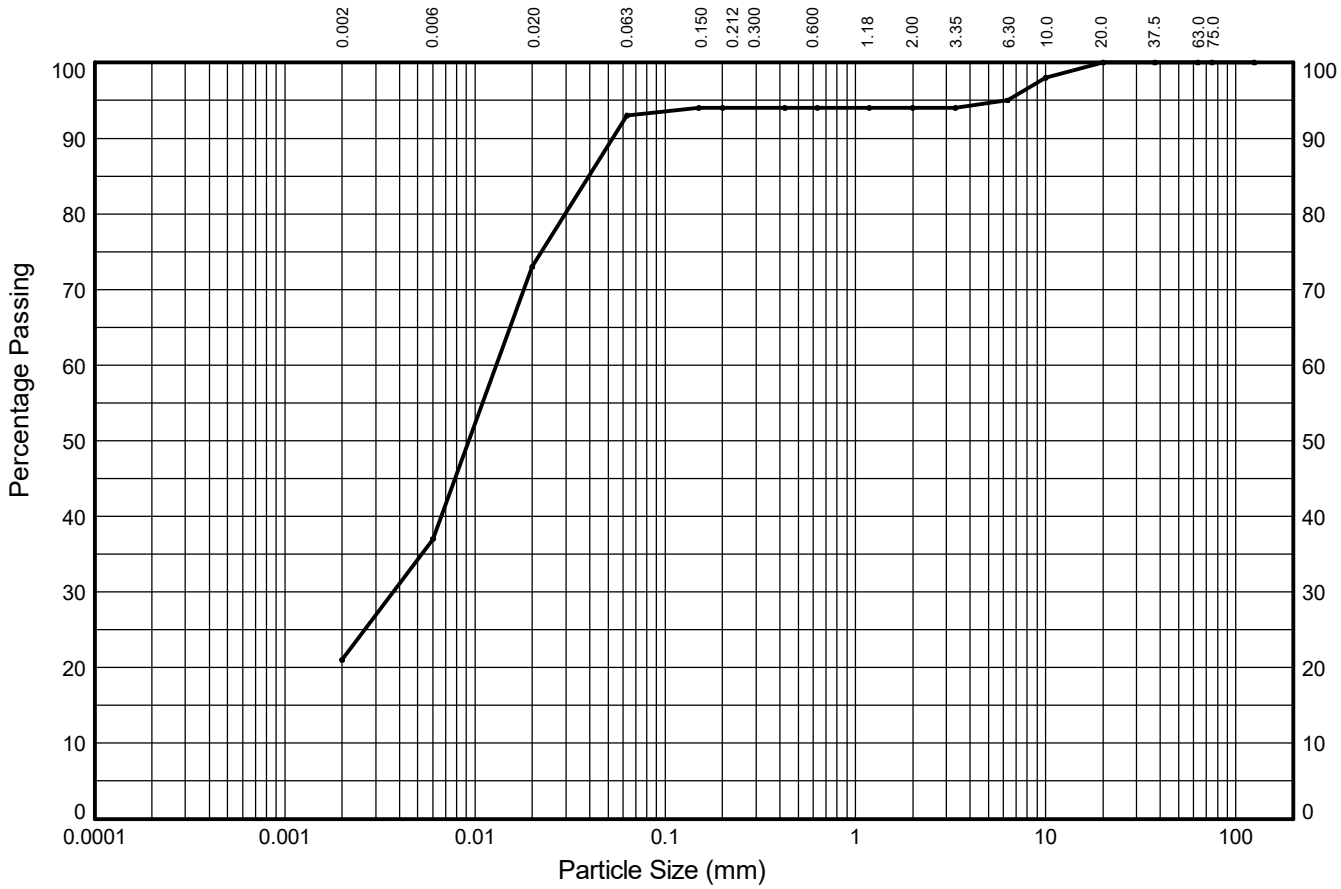
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **GS-PTS105** Sample Ref: **17** Sample Type: **B** Depth (m): **5.15**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	17%	35%	20%	1%	0%	0%	1%	5%	0%	
	SILT			SAND			GRAVEL			
21%	72%			1%			6%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**98**
6.30	**95**
3.35	**94**
2.00	**94**
1.18	**94**
0.630	**94**
0.425	**94**
0.200	**94**
0.150	**94**
0.063	**93**

Particle Diameter (mm)	Percent Passing (%)
0.02	**73**
0.006	**37**
0.002	**21**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.004**
D_{50} (mm)	**0.009**
D_{60} (mm)	**0.013**
D_{85} (mm)	**0.040**
D_{90} (mm)	**0.053**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly sandy slightly gravelly clayey SILT

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Maduka'k	**PRECIOUS MADUKA**	**22/08/23**
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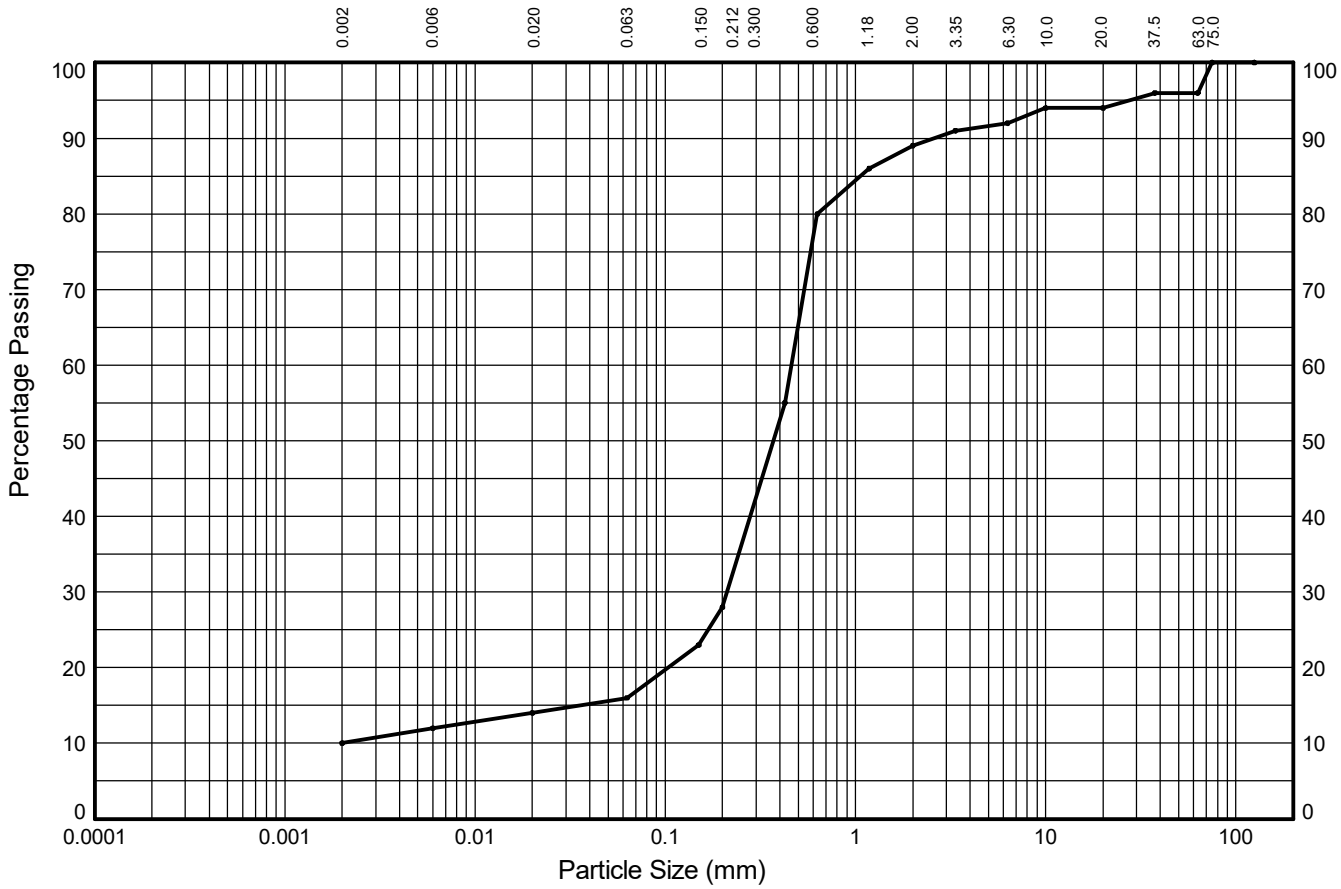
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Position ID: **GS-PTS107** Sample Ref: **4** Sample Type: **B** Depth (m): **0.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	2%	2%	12%	52%	9%	3%	2%	2%	
	SILT			SAND			GRAVEL			
10%	6%			73%			7%			4%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**96**
37.5	**96**
20.0	**94**
10.0	**94**
6.30	**92**
3.35	**91**
2.00	**89**
1.18	**86**
0.630	**80**
0.425	**55**
0.200	**28**
0.150	**23**
0.063	**16**

Particle Diameter (mm)	Percent Passing (%)
0.02	**14**
0.006	**12**
0.002	**10**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.002**
D_{15} (mm)	**0.035**
D_{30} (mm)	**0.211**
D_{50} (mm)	**0.370**
D_{60} (mm)	**0.460**
D_{85} (mm)	**1.063**
D_{90} (mm)	**2.588**
C_U	**230**
C_C	**49**

Soil Description:

Brown gravelly very clayey SAND with low cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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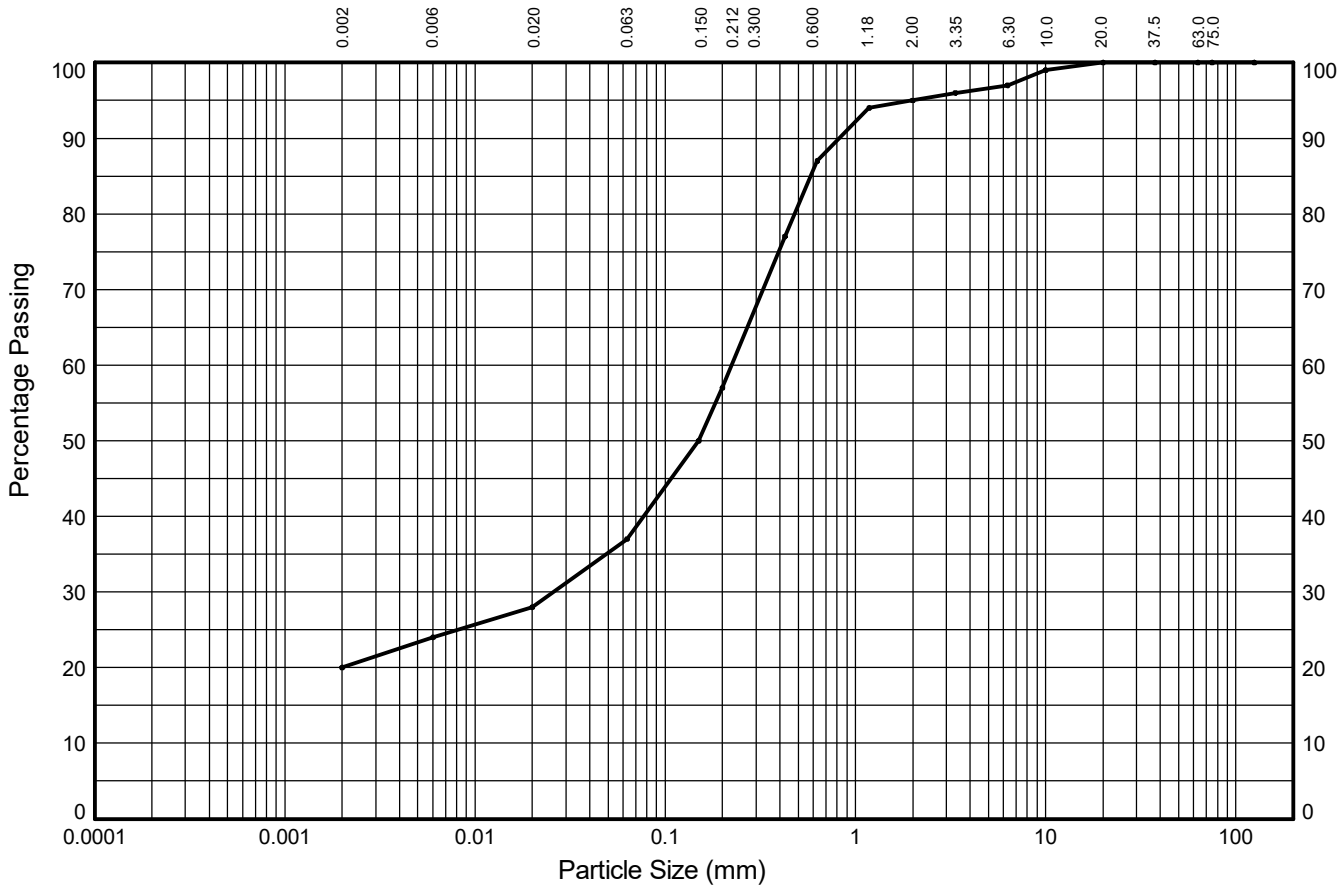
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **GS-PTS107** Sample Ref: **10** Sample Type: **B** Depth (m): **2.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	4%	9%	20%	30%	8%	2%	3%	0%	
	SILT			SAND			GRAVEL			
20%	17%			58%			5%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**99**
6.30	**97**
3.35	**96**
2.00	**95**
1.18	**94**
0.630	**87**
0.425	**77**
0.200	**57**
0.150	**50**
0.063	**37**

Particle Diameter (mm)	Percent Passing (%)
0.02	**28**
0.006	**24**
0.002	**20**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.026**
D_{50} (mm)	**0.150**
D_{60} (mm)	**0.224**
D_{85} (mm)	**0.582**
D_{90} (mm)	**0.824**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown slightly gravelly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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The Potteries
Pottery Street
Castleford
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Compiled By		Date
V. Chacin M.	VALERIA CHACIN MIJOVA	22/08/23

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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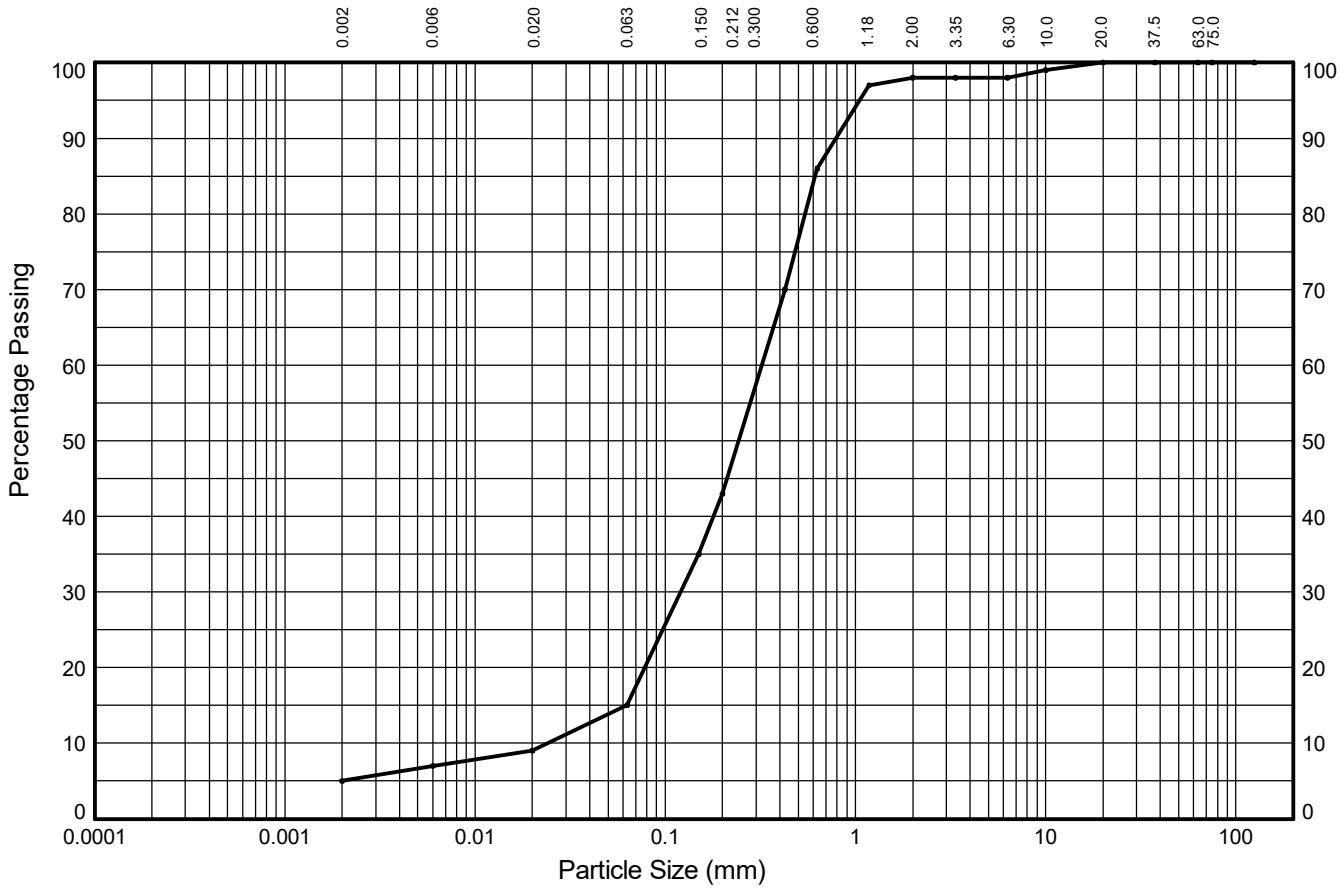
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **GS-PTS107** Sample Ref: **12** Sample Type: **B** Depth (m): **3.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	2%	6%	28%	43%	12%	0%	2%	0%	
	SILT			SAND			GRAVEL			
5%	10%			83%			2%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**99**
6.30	**98**
3.35	**98**
2.00	**98**
1.18	**97**
0.630	**86**
0.425	**70**
0.200	**43**
0.150	**35**
0.063	**15**

Particle Diameter (mm)	Percent Passing (%)
0.02	**9**
0.006	**7**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.024**
D_{15} (mm)	**0.063**
D_{30} (mm)	**0.121**
D_{50} (mm)	**0.243**
D_{60} (mm)	**0.321**
D_{85} (mm)	**0.615**
D_{90} (mm)	**0.791**
C_U	**13**
C_C	**2**

Soil Description:

Brown slightly gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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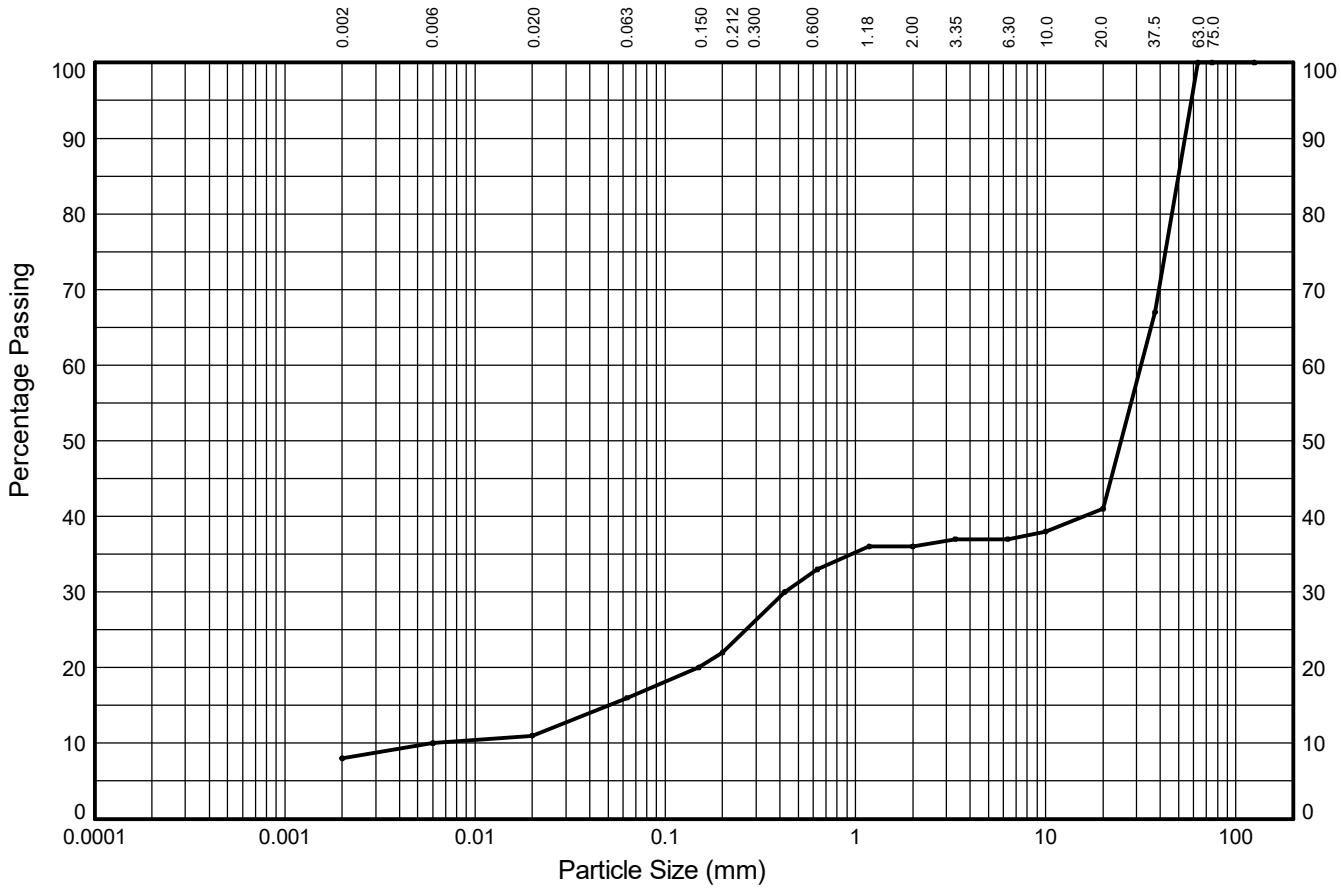
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Position ID: **GS-PTS107** Sample Ref: **13** Sample Type: **B** Depth (m): **3.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	1%	5%	6%	11%	3%	1%	4%	59%	
	SILT			SAND			GRAVEL			
8%	8%			20%			64%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**67**
20.0	**41**
10.0	**38**
6.30	**37**
3.35	**37**
2.00	**36**
1.18	**36**
0.630	**33**
0.425	**30**
0.200	**22**
0.150	**20**
0.063	**16**

Particle Diameter (mm)	Percent Passing (%)
0.02	**11**
0.006	**10**
0.002	**8**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.006**
D_{15} (mm)	**0.050**
D_{30} (mm)	**0.425**
D_{50} (mm)	**24.862**
D_{60} (mm)	**31.661**
D_{85} (mm)	**49.765**
D_{90} (mm)	**53.835**
C_U	**5277**
C_C	**0.95**

Soil Description:
Brown very sandy clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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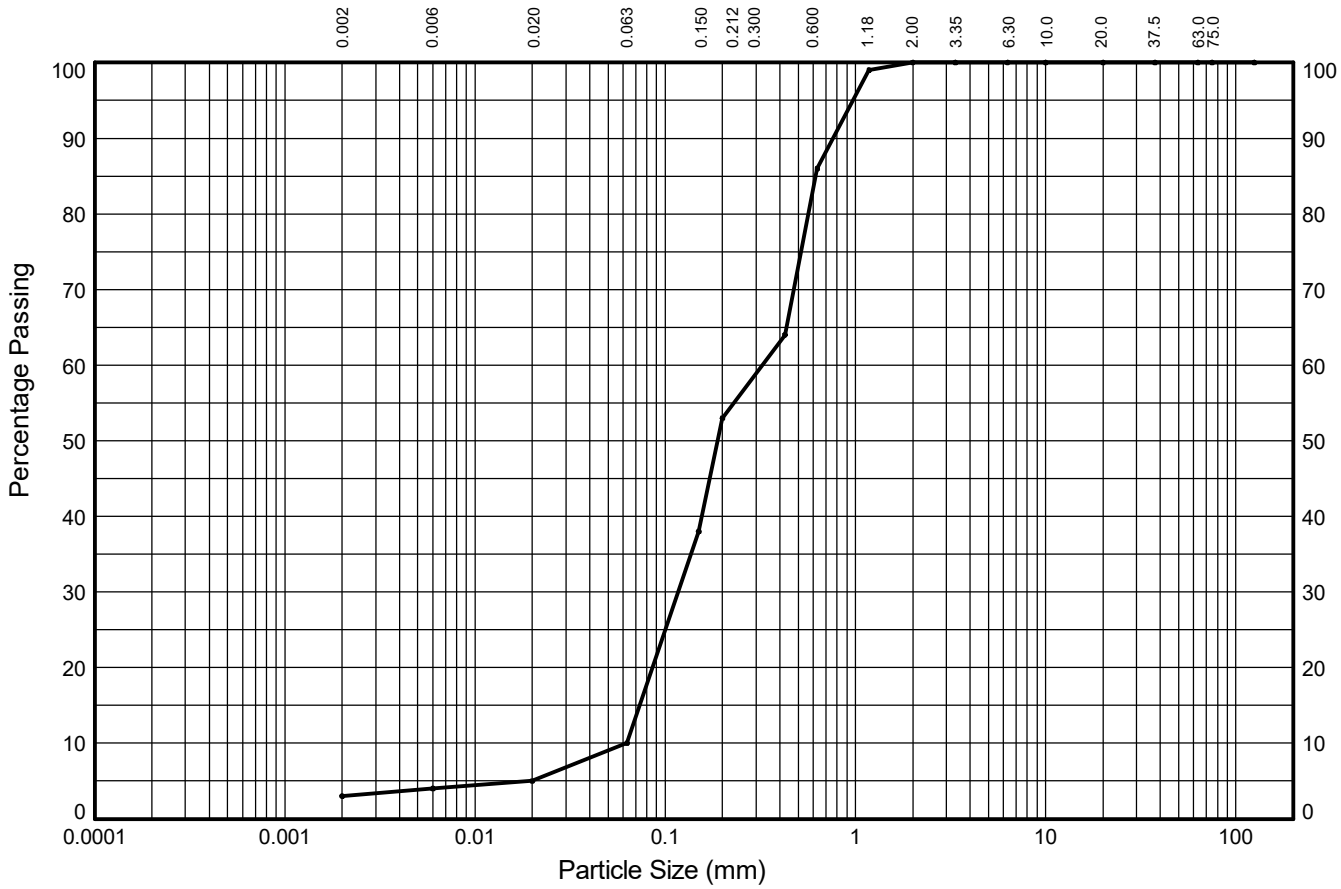
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **GS-PTS107** Sample Ref: **15** Sample Type: **B** Depth (m): **4.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	1%	1%	5%	43%	33%	14%	0%	0%	0%	
	SILT			SAND			GRAVEL			
3%	7%			90%			0%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**100**
3.35	**100**
2.00	**100**
1.18	**99**
0.630	**86**
0.425	**64**
0.200	**53**
0.150	**38**
0.063	**10**

Particle Diameter (mm)	Percent Passing (%)
0.02	**5**
0.006	**4**
0.002	**3**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.063**
D_{15} (mm)	**0.074**
D_{30} (mm)	**0.117**
D_{50} (mm)	**0.189**
D_{60} (mm)	**0.323**
D_{85} (mm)	**0.619**
D_{90} (mm)	**0.764**
C_U	**5.1**
C_C	**0.67**

Soil Description:

Brown silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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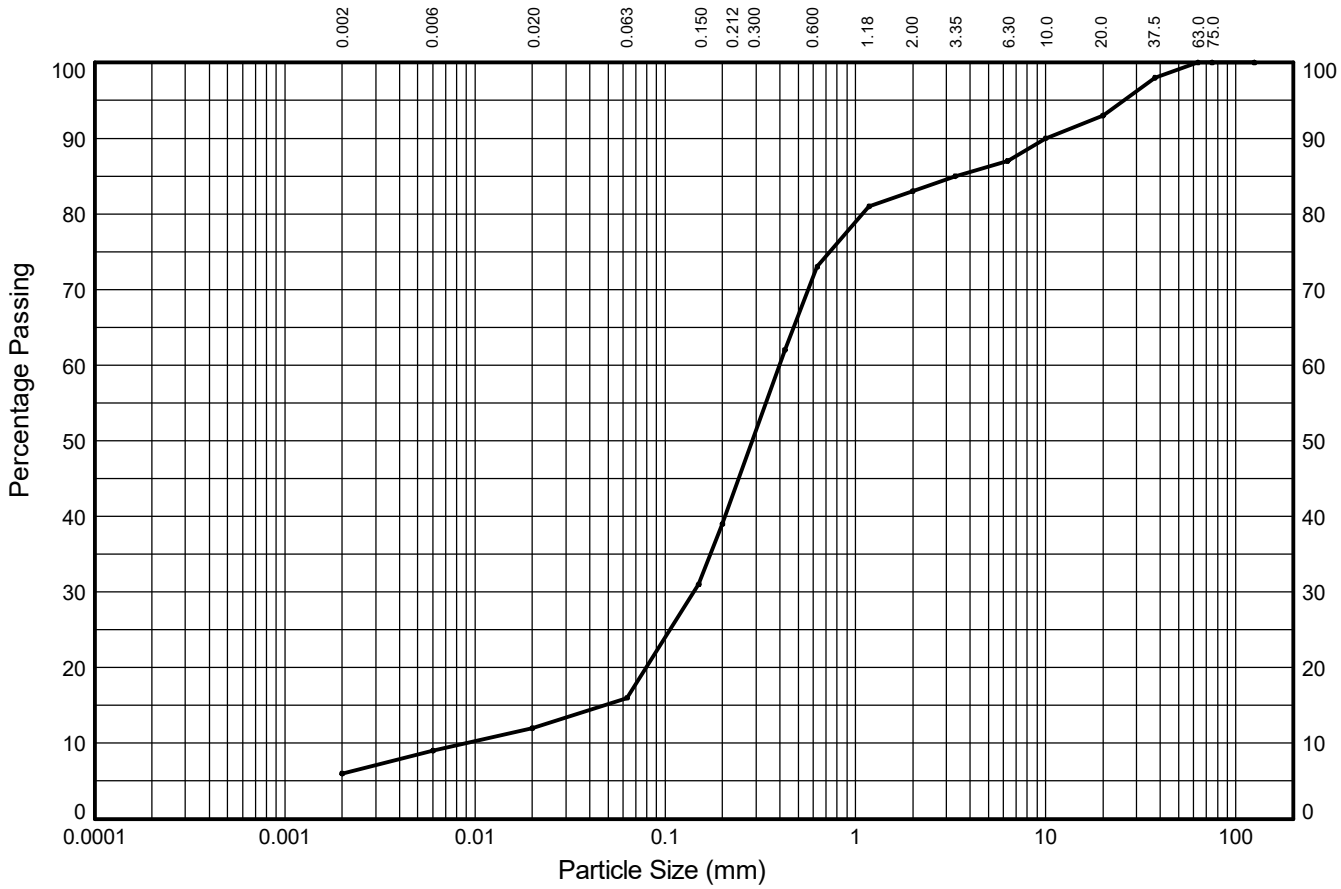
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **GS-PTS108A** Sample Ref: **2** Sample Type: **B** Depth (m): **0.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	4%	23%	34%	10%	4%	6%	7%	
	SILT			SAND			GRAVEL			
6%	10%			67%			17%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**98**
20.0	**93**
10.0	**90**
6.30	**87**
3.35	**85**
2.00	**83**
1.18	**81**
0.630	**73**
0.425	**62**
0.200	**39**
0.150	**31**
0.063	**16**

Particle Diameter (mm)	Percent Passing (%)
0.02	**12**
0.006	**9**
0.002	**6**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.009**
D_{15} (mm)	**0.047**
D_{30} (mm)	**0.142**
D_{50} (mm)	**0.287**
D_{60} (mm)	**0.398**
D_{85} (mm)	**3.350**
D_{90} (mm)	**10.000**
C_U	**44**
C_C	**6**

Soil Description:

Reddish brown gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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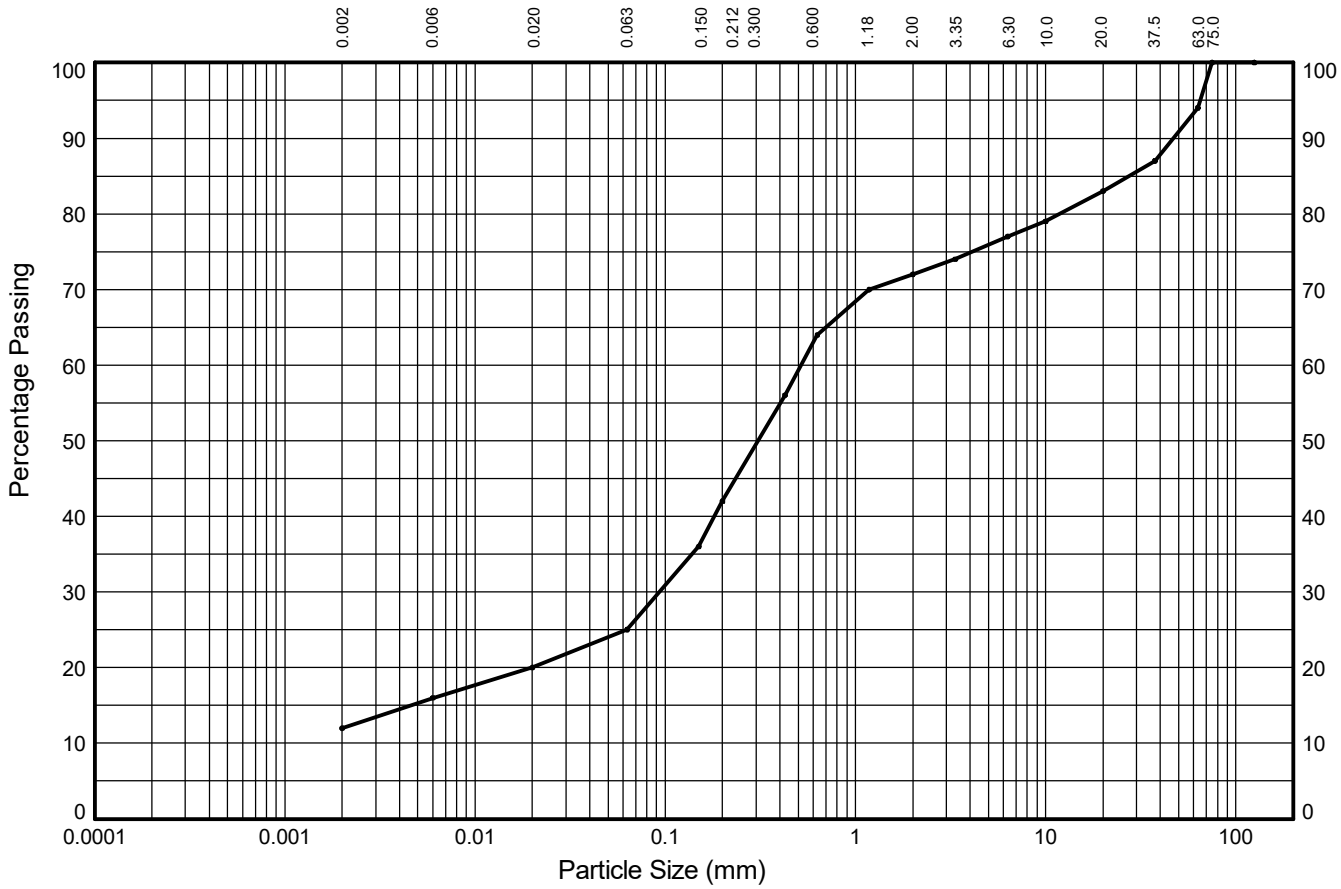
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Position ID: **GS-PTS108A** Sample Ref: **6** Sample Type: **B** Depth (m): **0.90**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	4%	5%	17%	22%	8%	5%	6%	11%	
	SILT			SAND			GRAVEL			
12%	13%			47%			22%			6%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**94**
37.5	**87**
20.0	**83**
10.0	**79**
6.30	**77**
3.35	**74**
2.00	**72**
1.18	**70**
0.630	**64**
0.425	**56**
0.200	**42**
0.150	**36**
0.063	**25**

Particle Diameter (mm)	Percent Passing (%)
0.02	**20**
0.006	**16**
0.002	**12**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.005**
D_{30} (mm)	**0.093**
D_{50} (mm)	**0.308**
D_{60} (mm)	**0.517**
D_{85} (mm)	**27.386**
D_{90} (mm)	**46.837**
C_U	**NA**
C_C	**NA**

Soil Description:
Reddish brown very gravelly very clayey SAND with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Maduka	**PRECIOUS MADUKA**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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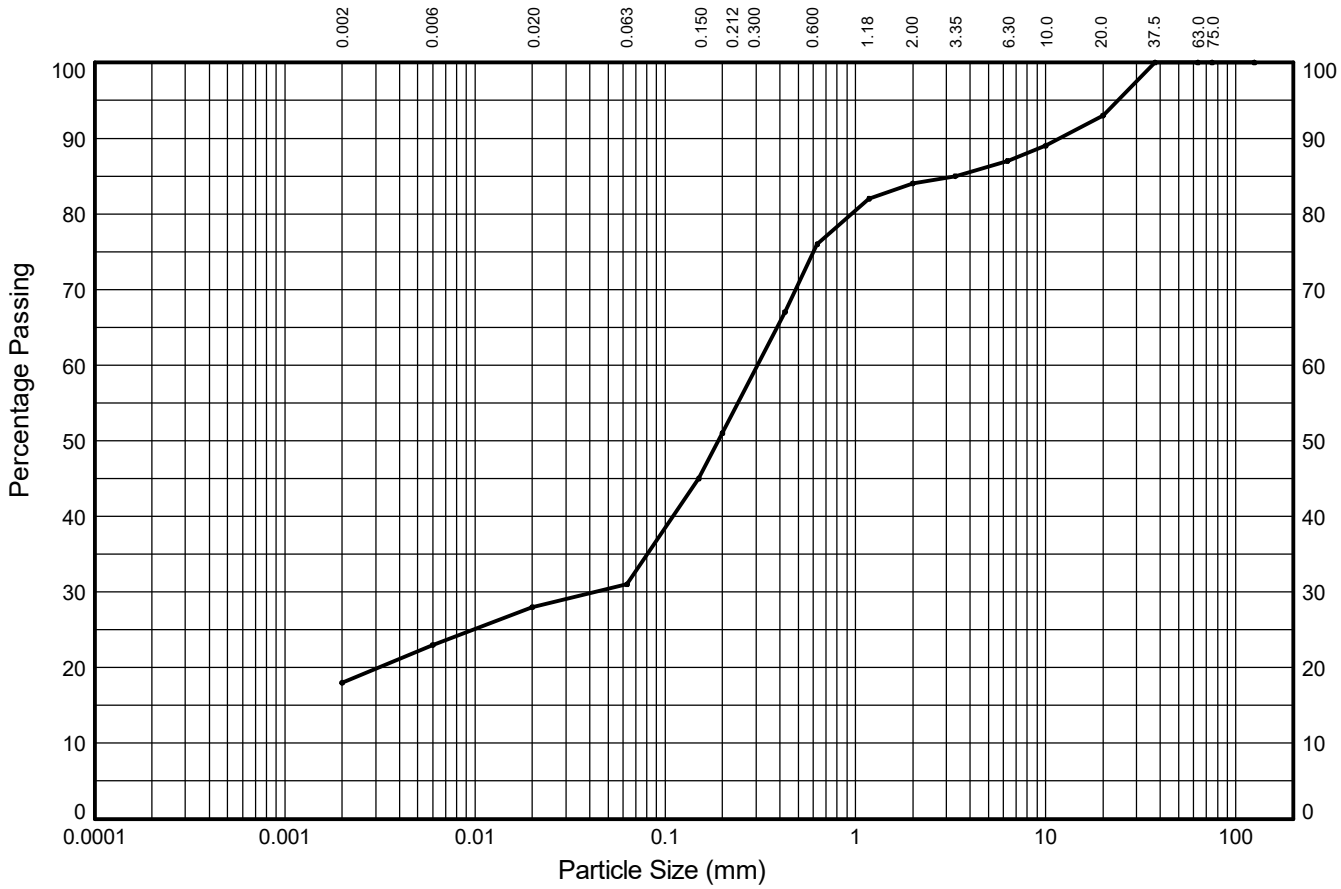
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **GS-PTS108A** Sample Ref: **8** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	5%	5%	3%	20%	25%	8%	3%	6%	7%	
	SILT			SAND			GRAVEL			
18%	13%			53%			16%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**93**
10.0	**89**
6.30	**87**
3.35	**85**
2.00	**84**
1.18	**82**
0.630	**76**
0.425	**67**
0.200	**51**
0.150	**45**
0.063	**31**

Particle Diameter (mm)	Percent Passing (%)
0.02	**28**
0.006	**23**
0.002	**18**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.043**
D_{50} (mm)	**0.191**
D_{60} (mm)	**0.306**
D_{85} (mm)	**3.350**
D_{90} (mm)	**11.892**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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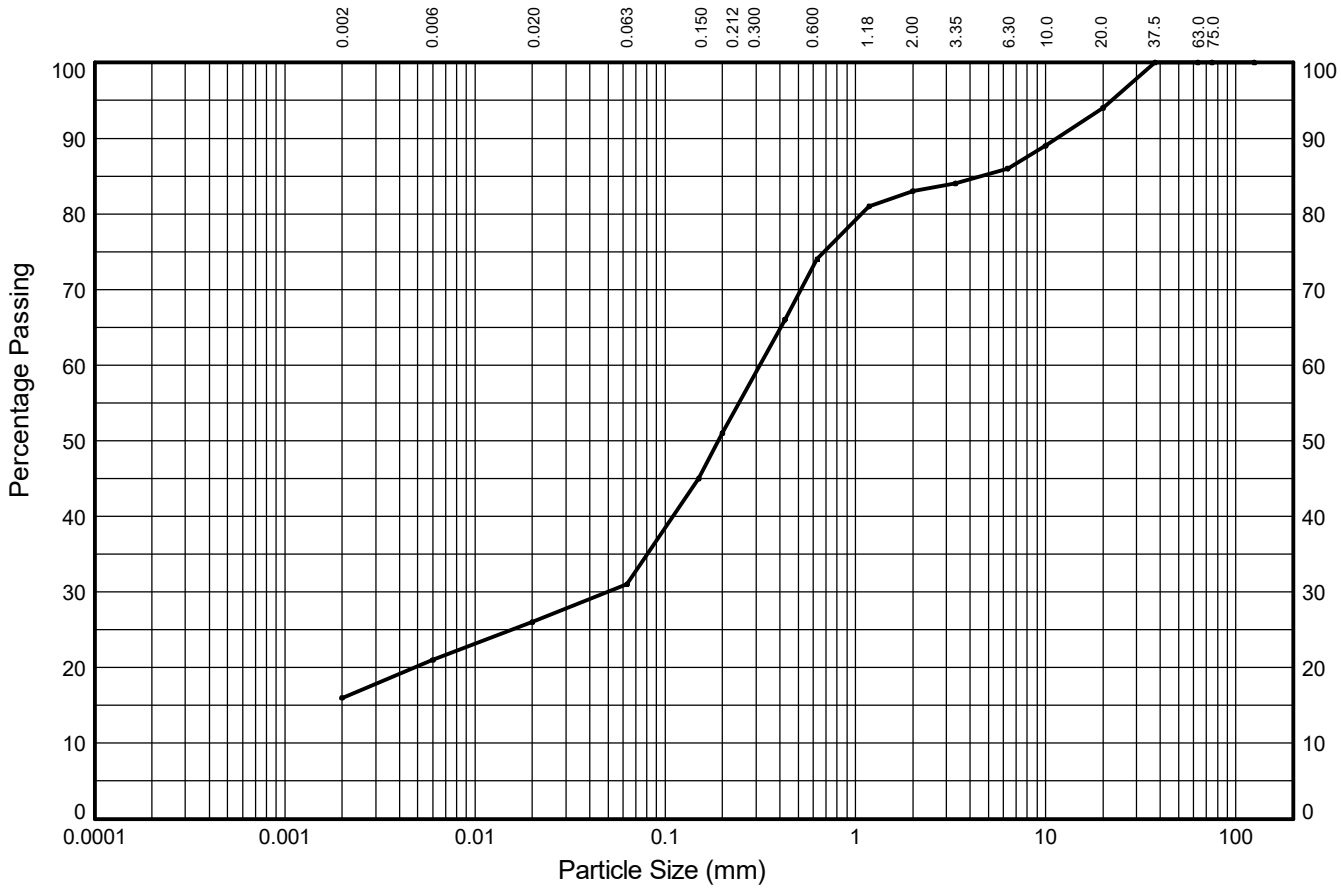
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **GS-PTS108A** Sample Ref: **10** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	5%	5%	5%	20%	23%	9%	3%	8%	6%	
	SILT			SAND			GRAVEL			
16%	15%			52%			17%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**94**
10.0	**89**
6.30	**86**
3.35	**84**
2.00	**83**
1.18	**81**
0.630	**74**
0.425	**66**
0.200	**51**
0.150	**45**
0.063	**31**

Particle Diameter (mm)	Percent Passing (%)
0.02	**26**
0.006	**21**
0.002	**16**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.050**
D_{50} (mm)	**0.191**
D_{60} (mm)	**0.314**
D_{85} (mm)	**4.594**
D_{90} (mm)	**11.487**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	E. Hort	**ELIZABETH HORT**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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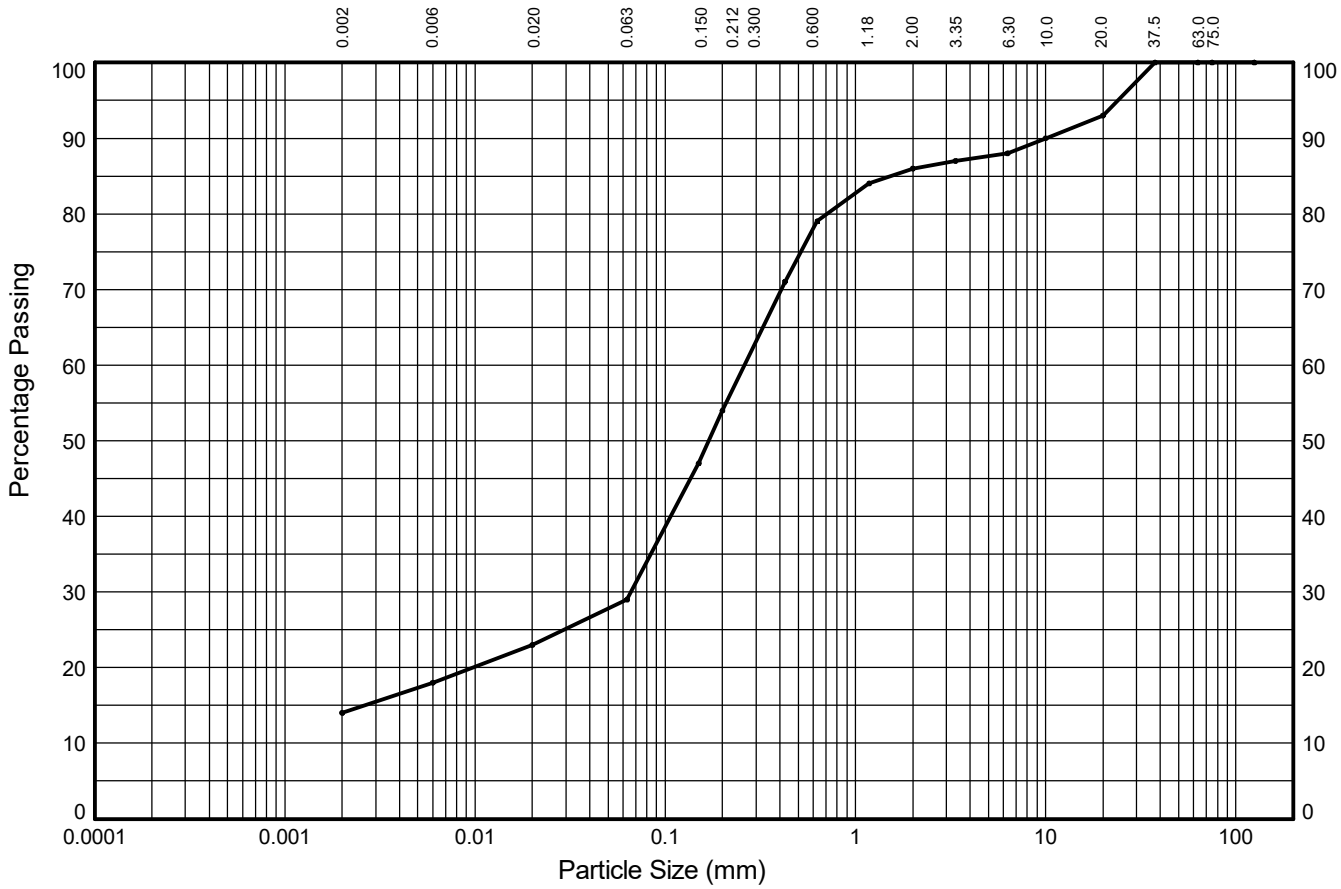
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **GS-PTS108A** Sample Ref: **15** Sample Type: **B** Depth (m): **3.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	5%	6%	25%	25%	7%	2%	5%	7%	
	SILT			SAND			GRAVEL			
14%	15%			57%			14%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**93**
10.0	**90**
6.30	**88**
3.35	**87**
2.00	**86**
1.18	**84**
0.630	**79**
0.425	**71**
0.200	**54**
0.150	**47**
0.063	**29**

Particle Diameter (mm)	Percent Passing (%)
0.02	**23**
0.006	**18**
0.002	**14**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.003**
D_{30} (mm)	**0.066**
D_{50} (mm)	**0.170**
D_{60} (mm)	**0.261**
D_{85} (mm)	**1.536**
D_{90} (mm)	**10.000**
C_U	**NA**
C_C	**NA**

Soil Description:

Dark red gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

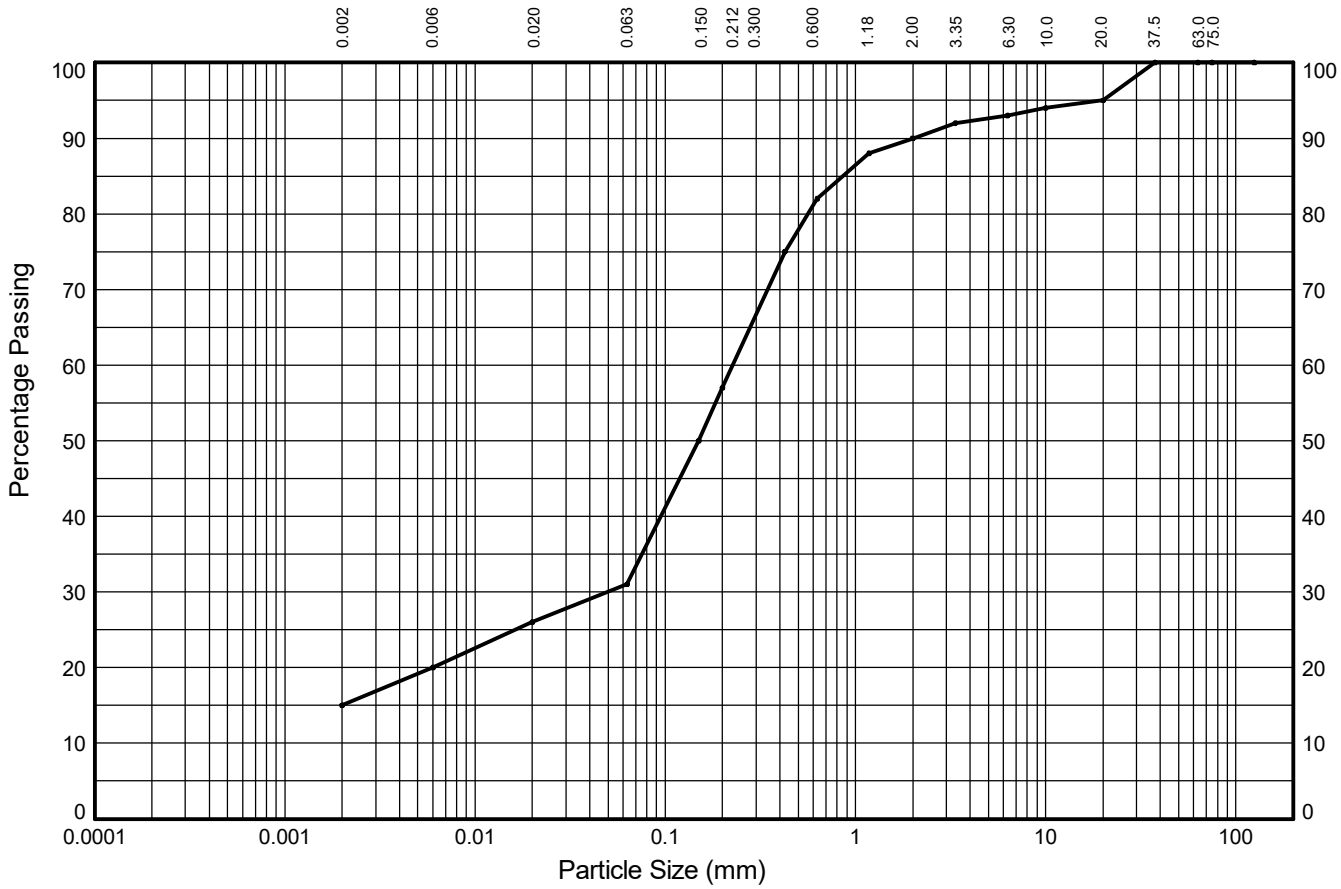
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Maduka'k	**PRECIOUS MADUKA**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:13 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **GS-PTS108A** Sample Ref: **17** Sample Type: **B** Depth (m): **4.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	5%	6%	5%	26%	25%	8%	3%	2%	5%	
	SILT			SAND			GRAVEL			
15%	16%			59%			10%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**95**
10.0	**94**
6.30	**93**
3.35	**92**
2.00	**90**
1.18	**88**
0.630	**82**
0.425	**75**
0.200	**57**
0.150	**50**
0.063	**31**

Particle Diameter (mm)	Percent Passing (%)
0.02	**26**
0.006	**20**
0.002	**15**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.002**
D_{30} (mm)	**0.050**
D_{50} (mm)	**0.150**
D_{60} (mm)	**0.227**
D_{85} (mm)	**0.862**
D_{90} (mm)	**2.000**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

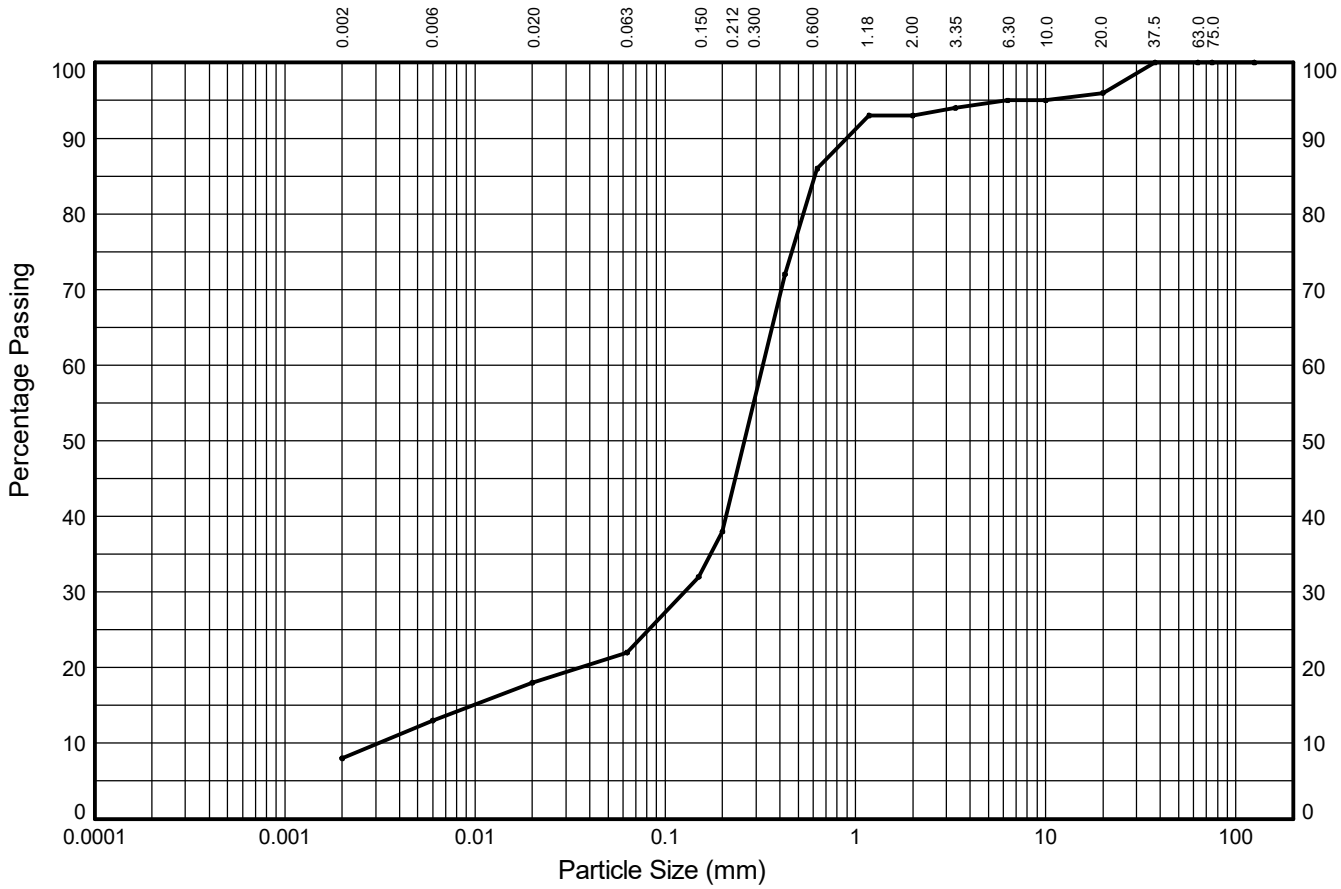
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	E. Hort	**ELIZABETH HORT**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:13 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **GS-PTS109** Sample Ref: **2** Sample Type: **B** Depth (m): **0.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	5%	5%	4%	16%	48%	7%	2%	1%	4%	
	SILT			SAND			GRAVEL			
8%	14%			71%			7%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**96**
10.0	**95**
6.30	**95**
3.35	**94**
2.00	**93**
1.18	**93**
0.630	**86**
0.425	**72**
0.200	**38**
0.150	**32**
0.063	**22**

Particle Diameter (mm)	Percent Passing (%)
0.02	**18**
0.006	**13**
0.002	**8**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.003**
D_{15} (mm)	**0.010**
D_{30} (mm)	**0.126**
D_{50} (mm)	**0.261**
D_{60} (mm)	**0.326**
D_{85} (mm)	**0.613**
D_{90} (mm)	**0.902**
C_U	**105**
C_C	**16**

Soil Description:

Brown gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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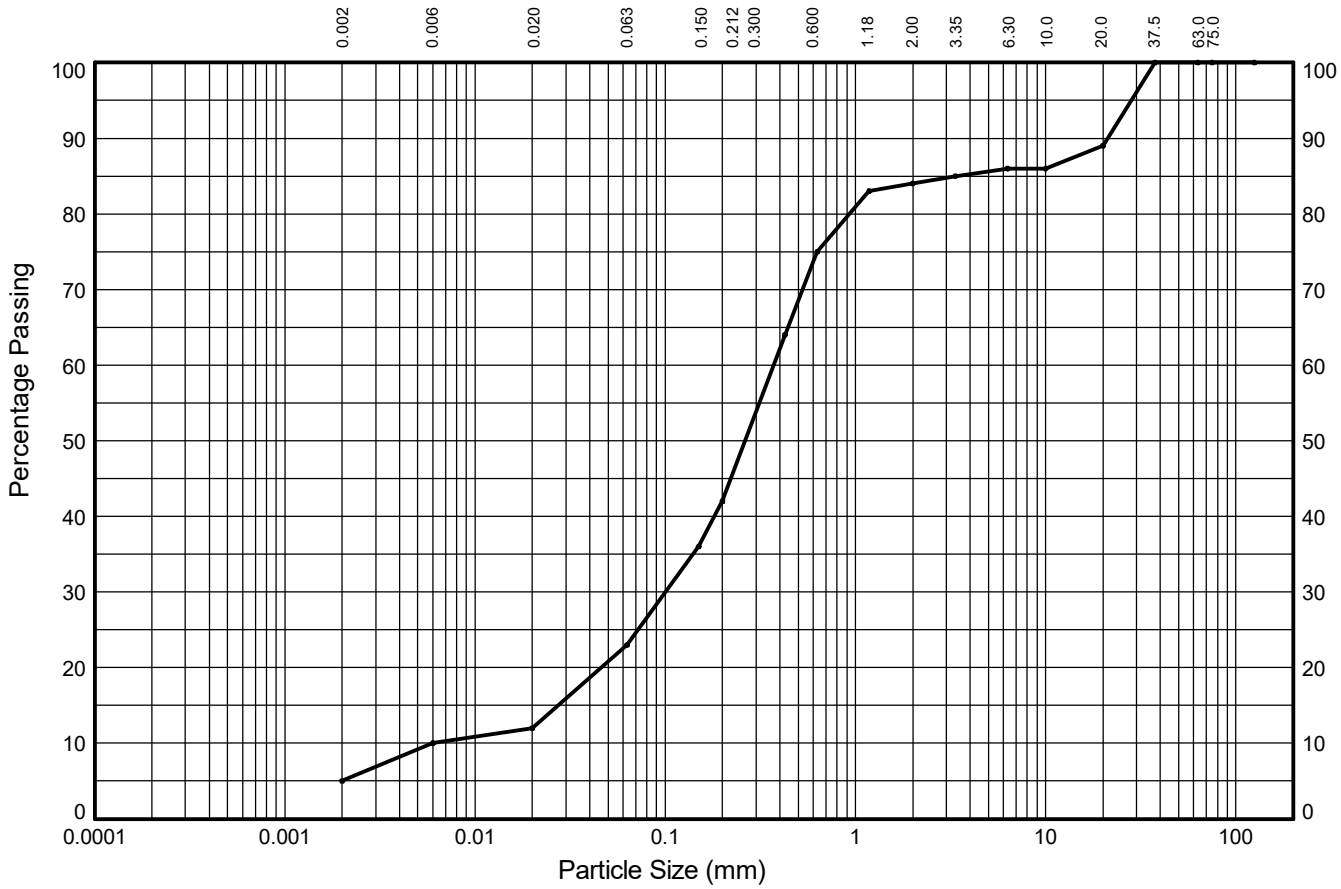
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **GS-PTS109** Sample Ref: **4** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	5%	2%	11%	19%	33%	9%	2%	3%	11%	
	SILT			SAND			GRAVEL			
5%	18%			61%			16%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**89**
10.0	**86**
6.30	**86**
3.35	**85**
2.00	**84**
1.18	**83**
0.630	**75**
0.425	**64**
0.200	**42**
0.150	**36**
0.063	**23**

Particle Diameter (mm)	Percent Passing (%)
0.02	**12**
0.006	**10**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.006**
D_{15} (mm)	**0.027**
D_{30} (mm)	**0.101**
D_{50} (mm)	**0.263**
D_{60} (mm)	**0.371**
D_{85} (mm)	**3.350**
D_{90} (mm)	**21.176**
C_U	**62**
C_C	**5**

Soil Description:

Red gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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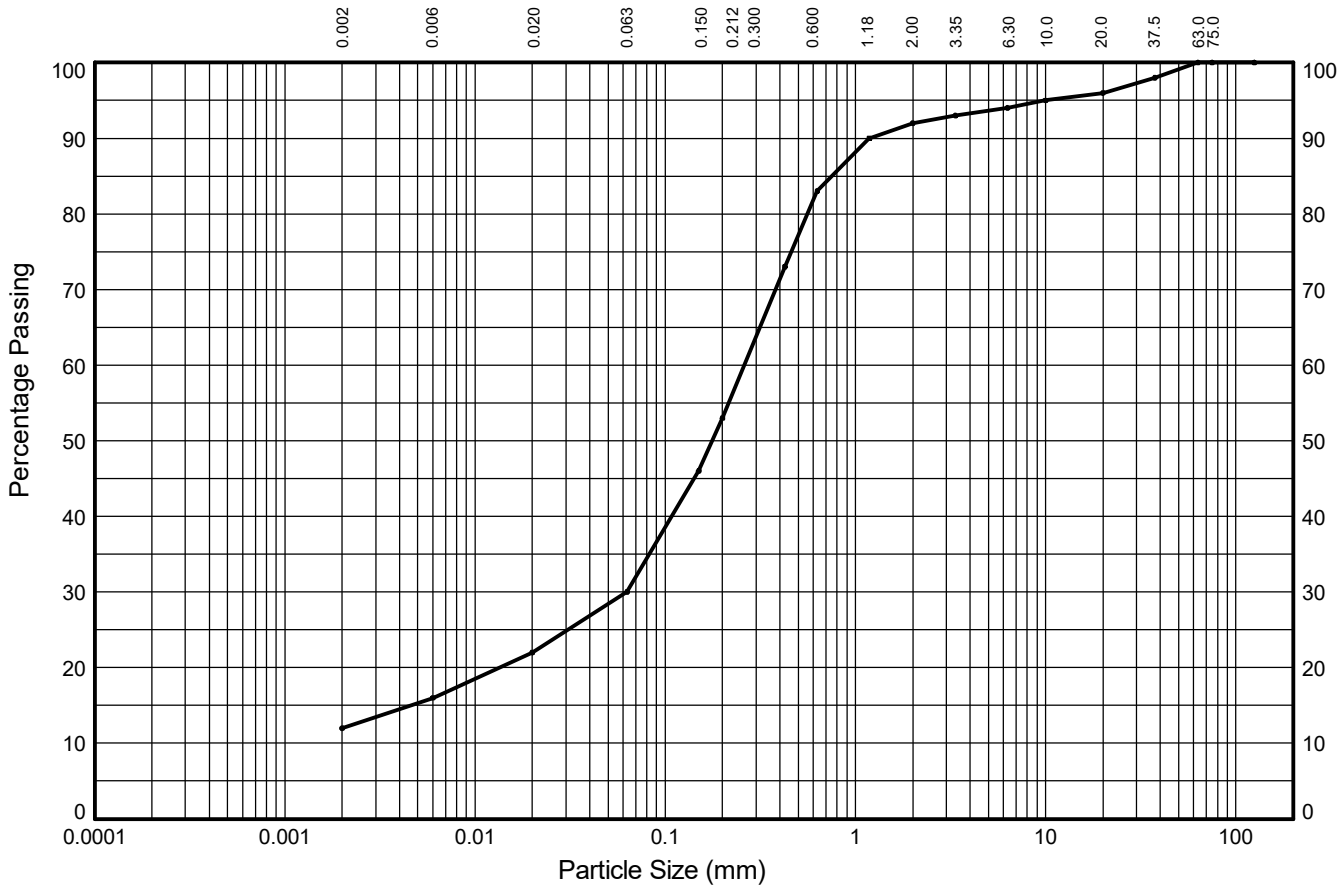
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **GS-PTS109** Sample Ref: **6** Sample Type: **B** Depth (m): **1.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	6%	8%	23%	30%	9%	2%	2%	4%	
	SILT			SAND			GRAVEL			
12%	18%			62%			8%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**98**
20.0	**96**
10.0	**95**
6.30	**94**
3.35	**93**
2.00	**92**
1.18	**90**
0.630	**83**
0.425	**73**
0.200	**53**
0.150	**46**
0.063	**30**

Particle Diameter (mm)	Percent Passing (%)
0.02	**22**
0.006	**16**
0.002	**12**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.005**
D_{30} (mm)	**0.063**
D_{50} (mm)	**0.177**
D_{60} (mm)	**0.260**
D_{85} (mm)	**0.754**
D_{90} (mm)	**1.180**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

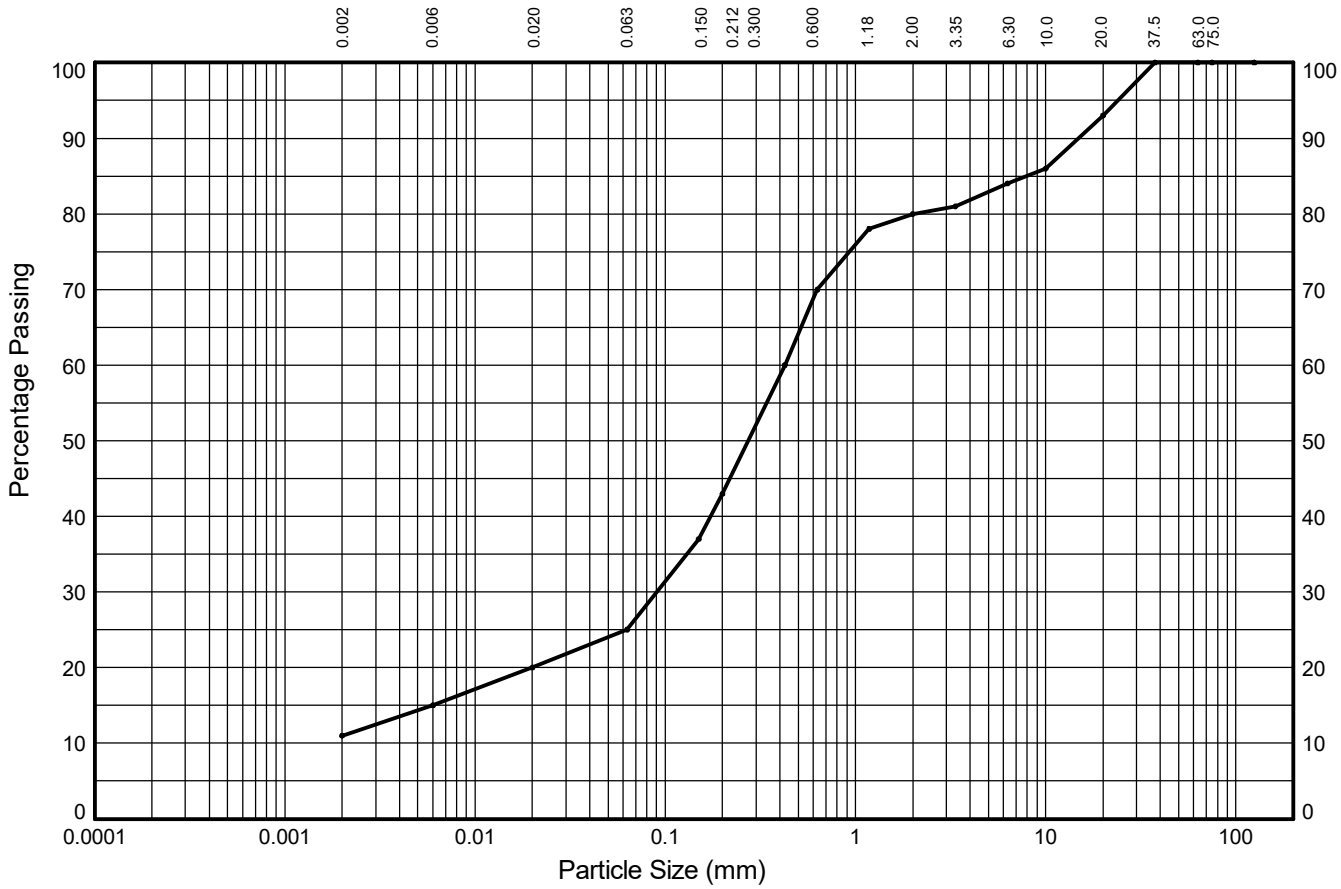
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:13 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **GS-PTS109** Sample Ref: **8** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	5%	5%	18%	27%	10%	4%	9%	7%	
	SILT			SAND			GRAVEL			
11%	14%			55%			20%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**93**
10.0	**86**
6.30	**84**
3.35	**81**
2.00	**80**
1.18	**78**
0.630	**70**
0.425	**60**
0.200	**43**
0.150	**37**
0.063	**25**

Particle Diameter (mm)	Percent Passing (%)
0.02	**20**
0.006	**15**
0.002	**11**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.006**
D_{30} (mm)	**0.090**
D_{50} (mm)	**0.273**
D_{60} (mm)	**0.425**
D_{85} (mm)	**7.937**
D_{90} (mm)	**14.860**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown very gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

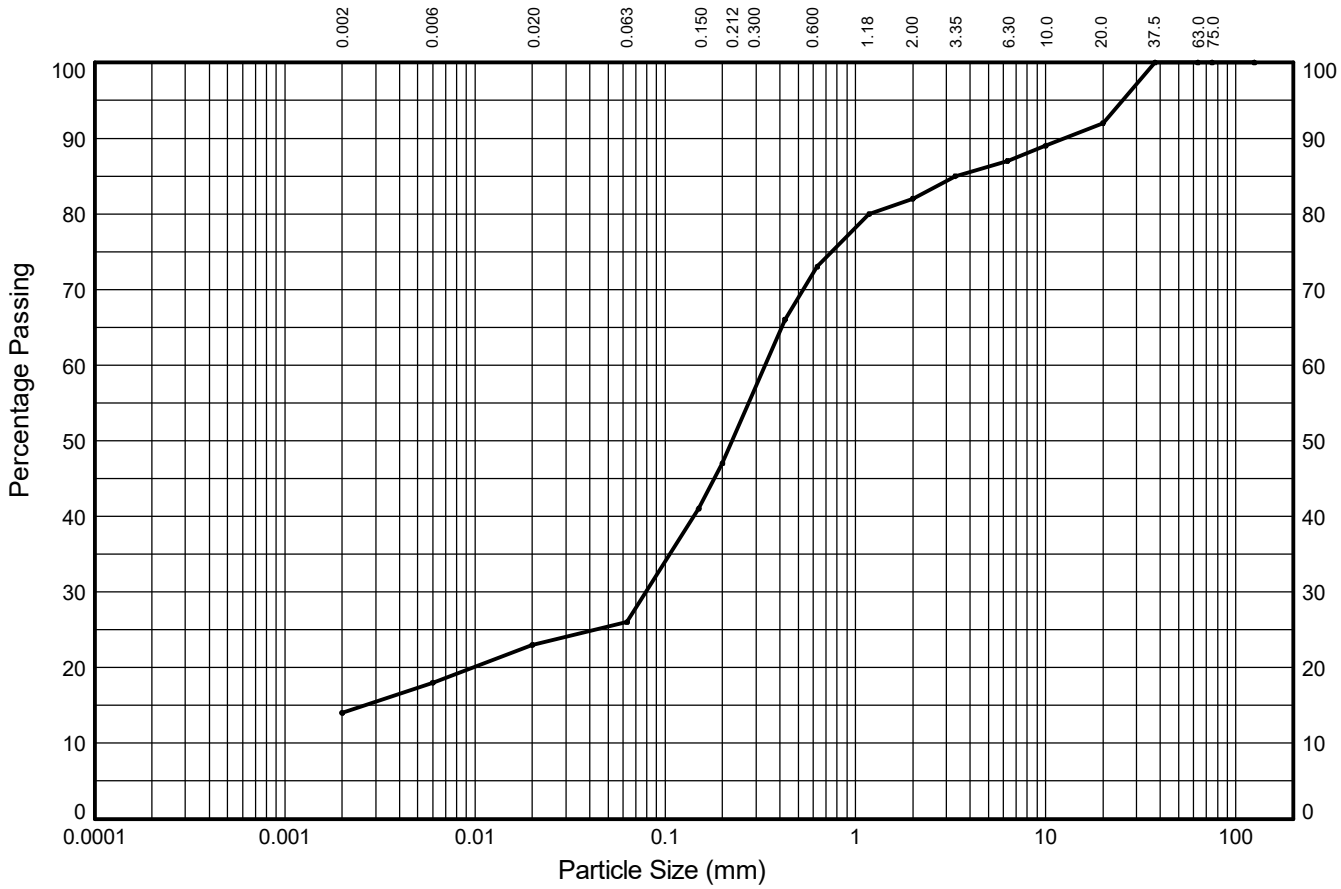
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:13 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **GS-PTS109** Sample Ref: **10** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	5%	3%	21%	26%	9%	5%	5%	8%	
	SILT			SAND			GRAVEL			
14%	12%			56%			18%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**92**
10.0	**89**
6.30	**87**
3.35	**85**
2.00	**82**
1.18	**80**
0.630	**73**
0.425	**66**
0.200	**47**
0.150	**41**
0.063	**26**

Particle Diameter (mm)	Percent Passing (%)
0.02	**23**
0.006	**18**
0.002	**14**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.003**
D_{30} (mm)	**0.079**
D_{50} (mm)	**0.225**
D_{60} (mm)	**0.335**
D_{85} (mm)	**3.350**
D_{90} (mm)	**12.599**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

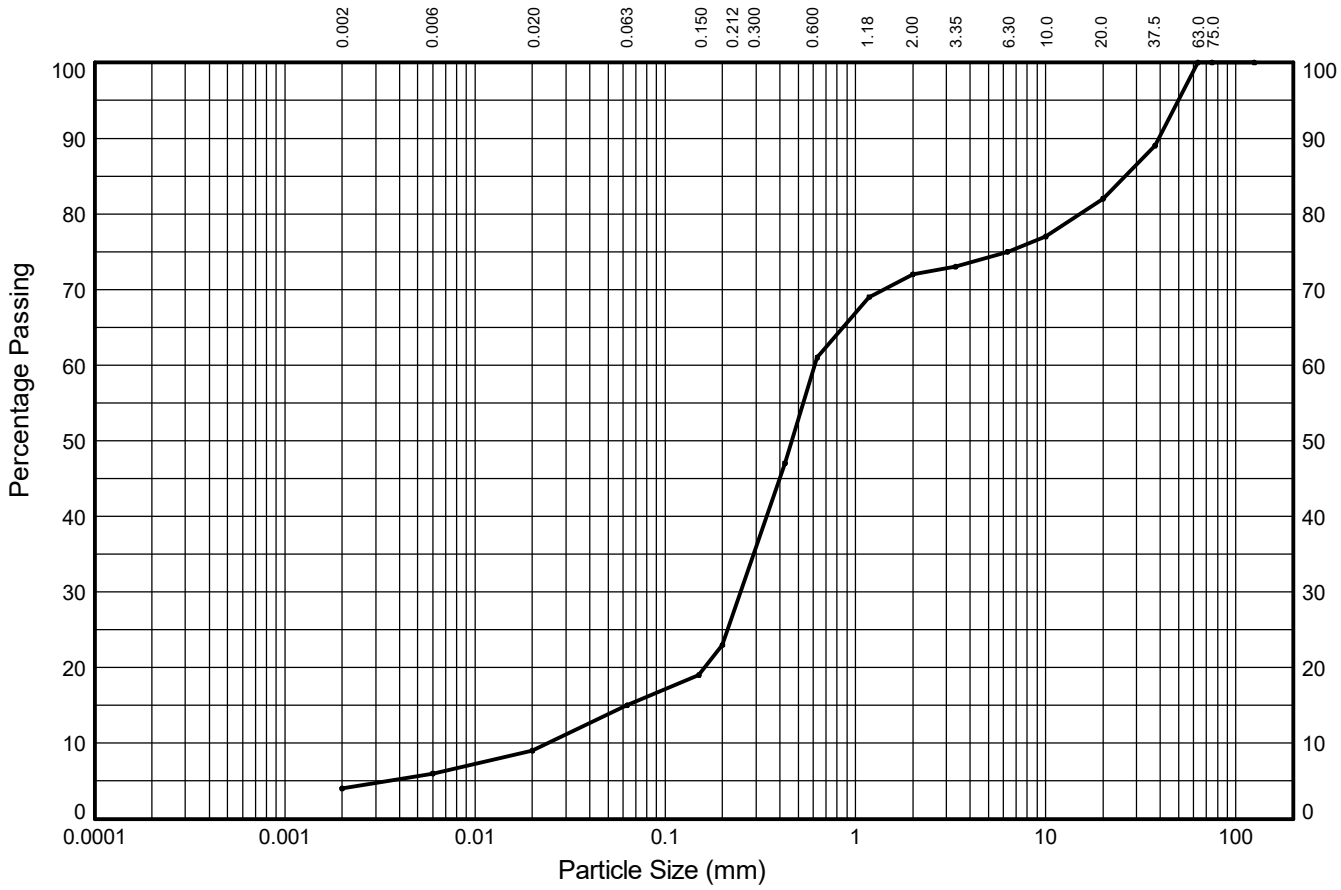
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:13 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **HDP-001** Sample Ref: **2** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	3%	6%	8%	38%	11%	3%	7%	18%	
	SILT			SAND			GRAVEL			
4%	11%			57%			28%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**89**
20.0	**82**
10.0	**77**
6.30	**75**
3.35	**73**
2.00	**72**
1.18	**69**
0.630	**61**
0.425	**47**
0.200	**23**
0.150	**19**
0.063	**15**

Particle Diameter (mm)	Percent Passing (%)
0.02	**9**
0.006	**6**
0.002	**4**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.024**
D_{15} (mm)	**0.063**
D_{30} (mm)	**0.249**
D_{50} (mm)	**0.462**
D_{60} (mm)	**0.613**
D_{85} (mm)	**26.184**
D_{90} (mm)	**39.311**
C_U	**25**
C_C	**4**

Soil Description:

Brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By	Date
LORNA WHITWORTH	22/08/23

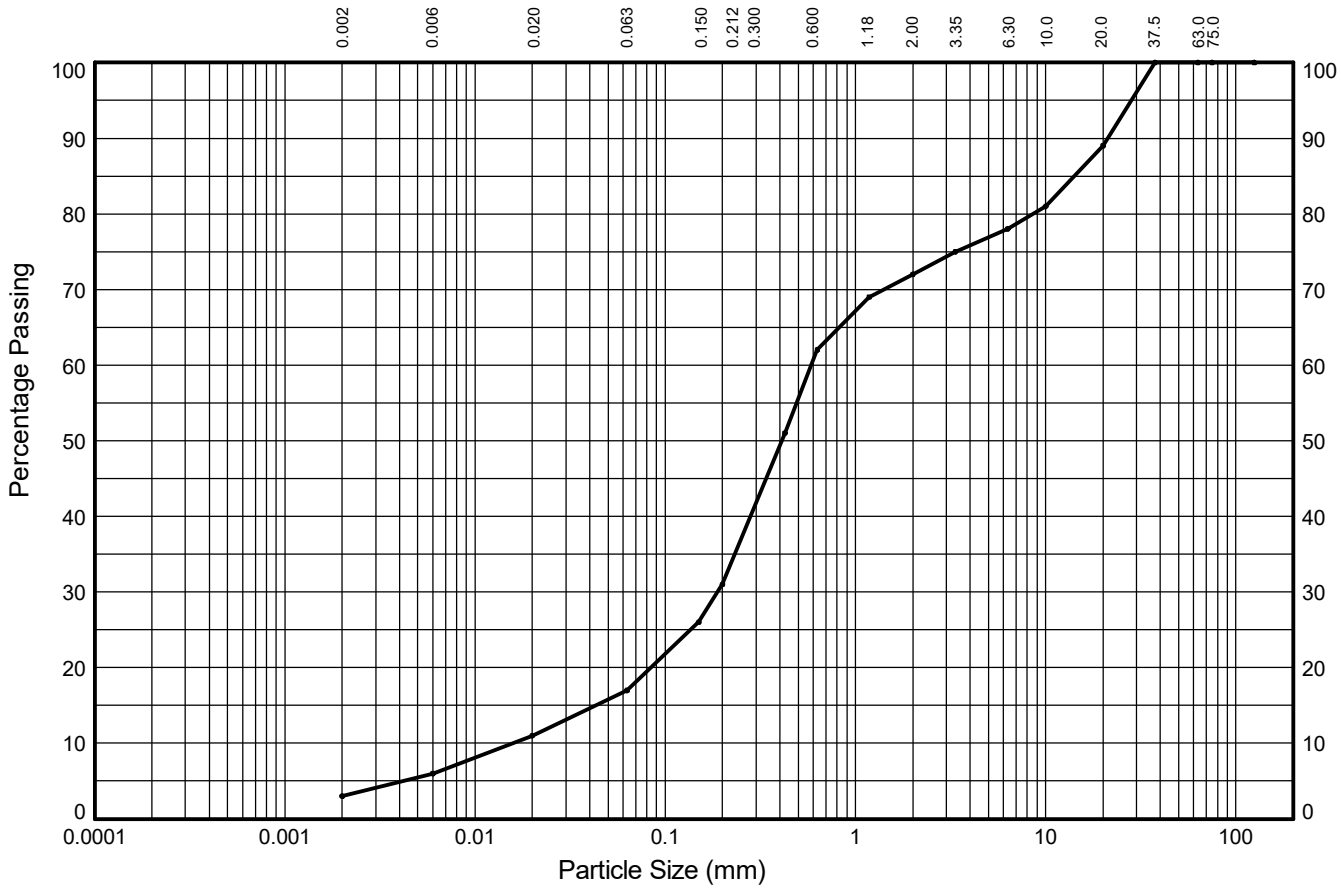
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:13 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **HDP-002** Sample Ref: **2** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	5%	6%	14%	31%	10%	6%	11%	11%	
	SILT			SAND			GRAVEL			
3%	14%			55%			28%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**89**
10.0	**81**
6.30	**78**
3.35	**75**
2.00	**72**
1.18	**69**
0.630	**62**
0.425	**51**
0.200	**31**
0.150	**26**
0.063	**17**

Particle Diameter (mm)	Percent Passing (%)
0.02	**11**
0.006	**6**
0.002	**3**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.016**
D_{15} (mm)	**0.043**
D_{30} (mm)	**0.189**
D_{50} (mm)	**0.409**
D_{60} (mm)	**0.586**
D_{85} (mm)	**14.142**
D_{90} (mm)	**21.176**
C_U	**37**
C_C	**4**

Soil Description:

Brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date
E. Hort	ELIZABETH HORT	22/08/23
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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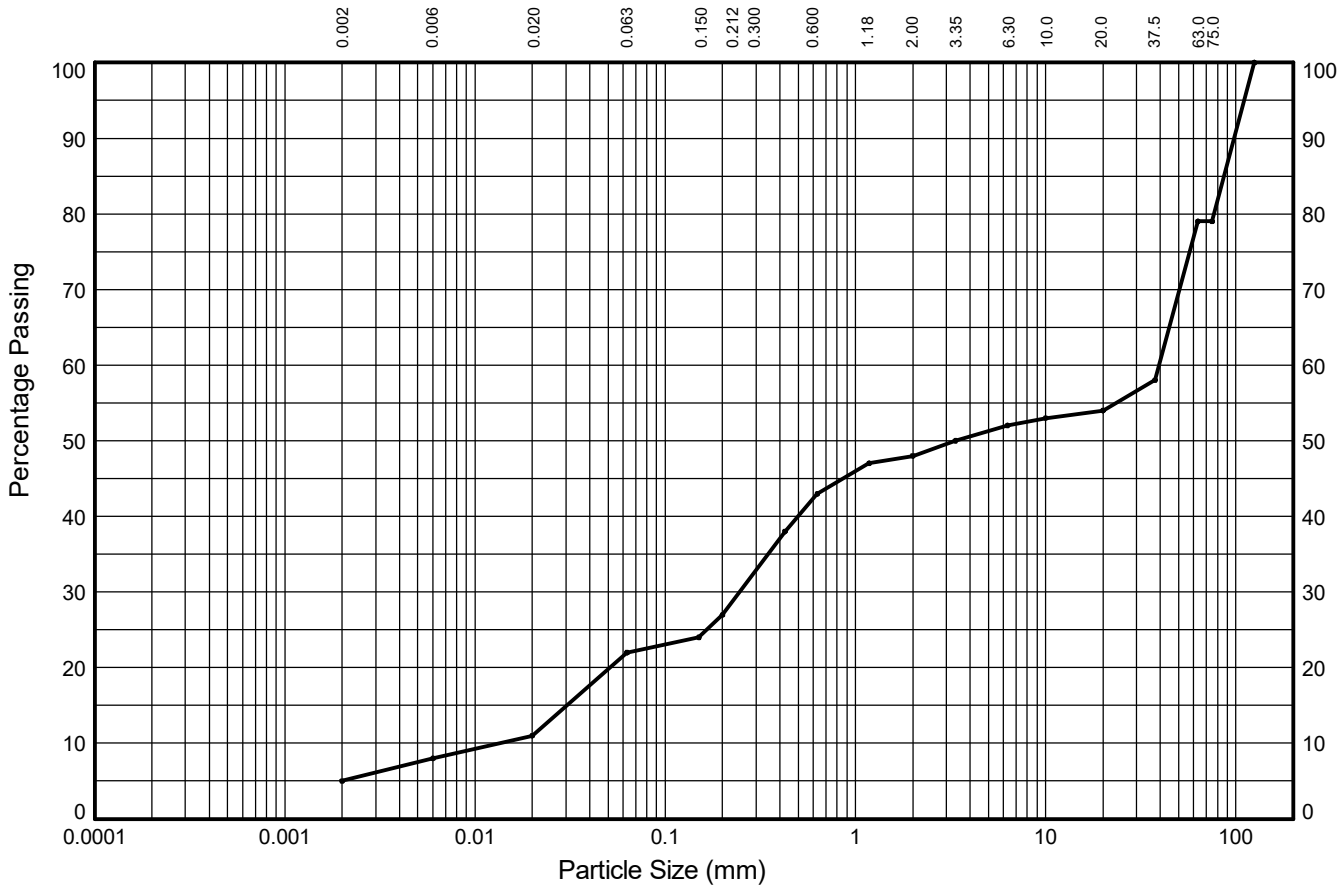
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **HDP-003** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	11%	5%	16%	5%	4%	2%	25%	
	SILT			SAND			GRAVEL			
5%	17%			26%			31%			21%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**79**
63.0	**79**
37.5	**58**
20.0	**54**
10.0	**53**
6.30	**52**
3.35	**50**
2.00	**48**
1.18	**47**
0.630	**43**
0.425	**38**
0.200	**27**
0.150	**24**
0.063	**22**

Particle Diameter (mm)	Percent Passing (%)
0.02	**11**
0.006	**8**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.013**
D_{15} (mm)	**0.030**
D_{30} (mm)	**0.246**
D_{50} (mm)	**3.350**
D_{60} (mm)	**39.399**
D_{85} (mm)	**86.785**
D_{90} (mm)	**98.009**
C_U	**2943**
C_C	**0.11**

Soil Description:

Brown very sandy silty GRAVEL with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
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Compiled By	Date
LORNA WHITWORTH	22/08/23

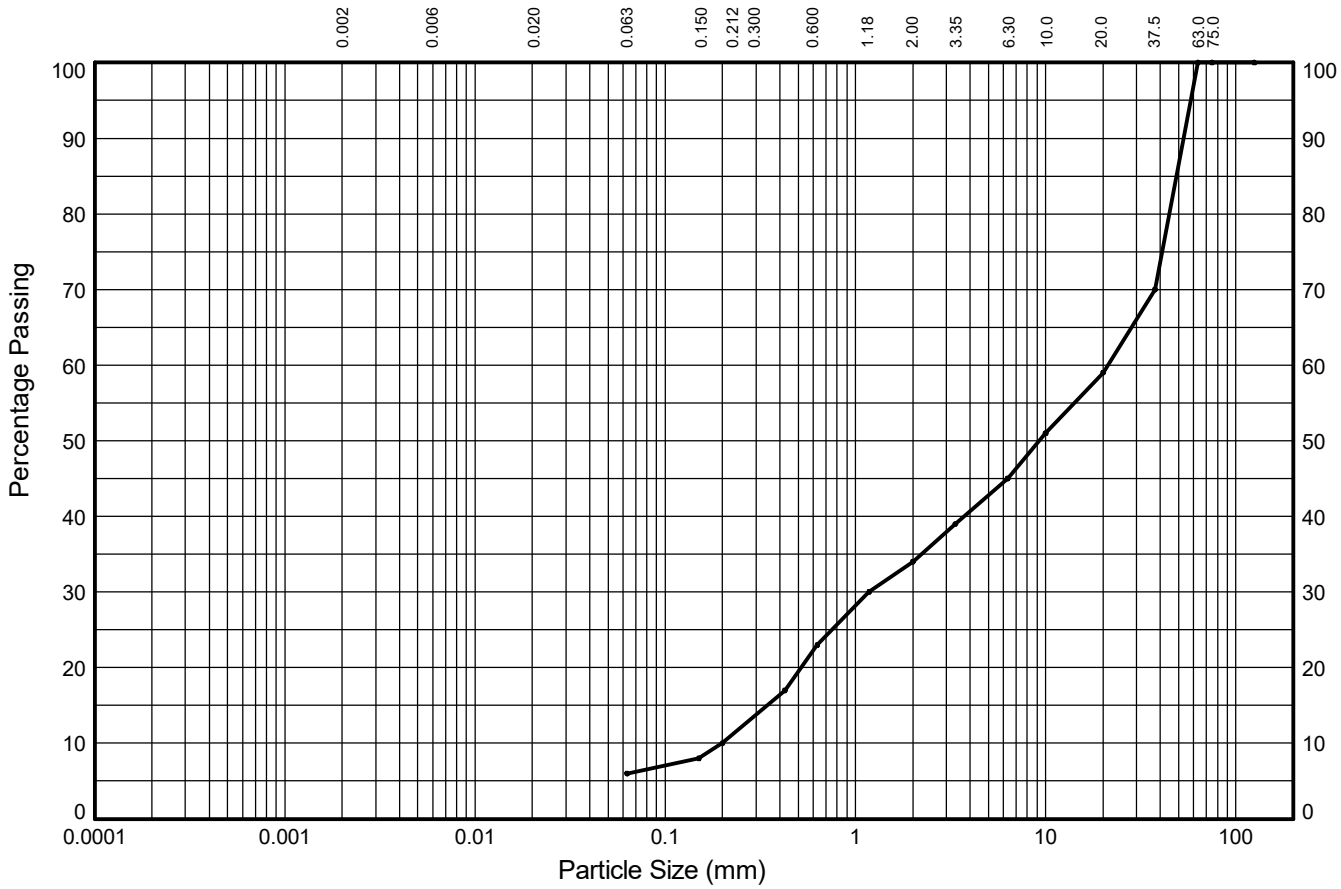
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:14 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Position ID: **HDP-003** Sample Ref: **5** Sample Type: **B** Depth (m): **1.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	%	%	%	4%	13%	11%	11%	14%	41%	
	SILT			SAND			GRAVEL			
%	%			28%			66%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**70**
20.0	**59**
10.0	**51**
6.30	**45**
3.35	**39**
2.00	**34**
1.18	**30**
0.630	**23**
0.425	**17**
0.200	**10**
0.150	**8**
0.063	**6**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.200**
D_{15} (mm)	**0.343**
D_{30} (mm)	**1.180**
D_{50} (mm)	**9.259**
D_{60} (mm)	**21.176**
D_{85} (mm)	**48.606**
D_{90} (mm)	**52.995**
C_U	**106**
C_C	**0.33**

Soil Description:

Dark brown very sandy clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
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Compiled By	Date
LORNA WHITWORTH	22/08/23

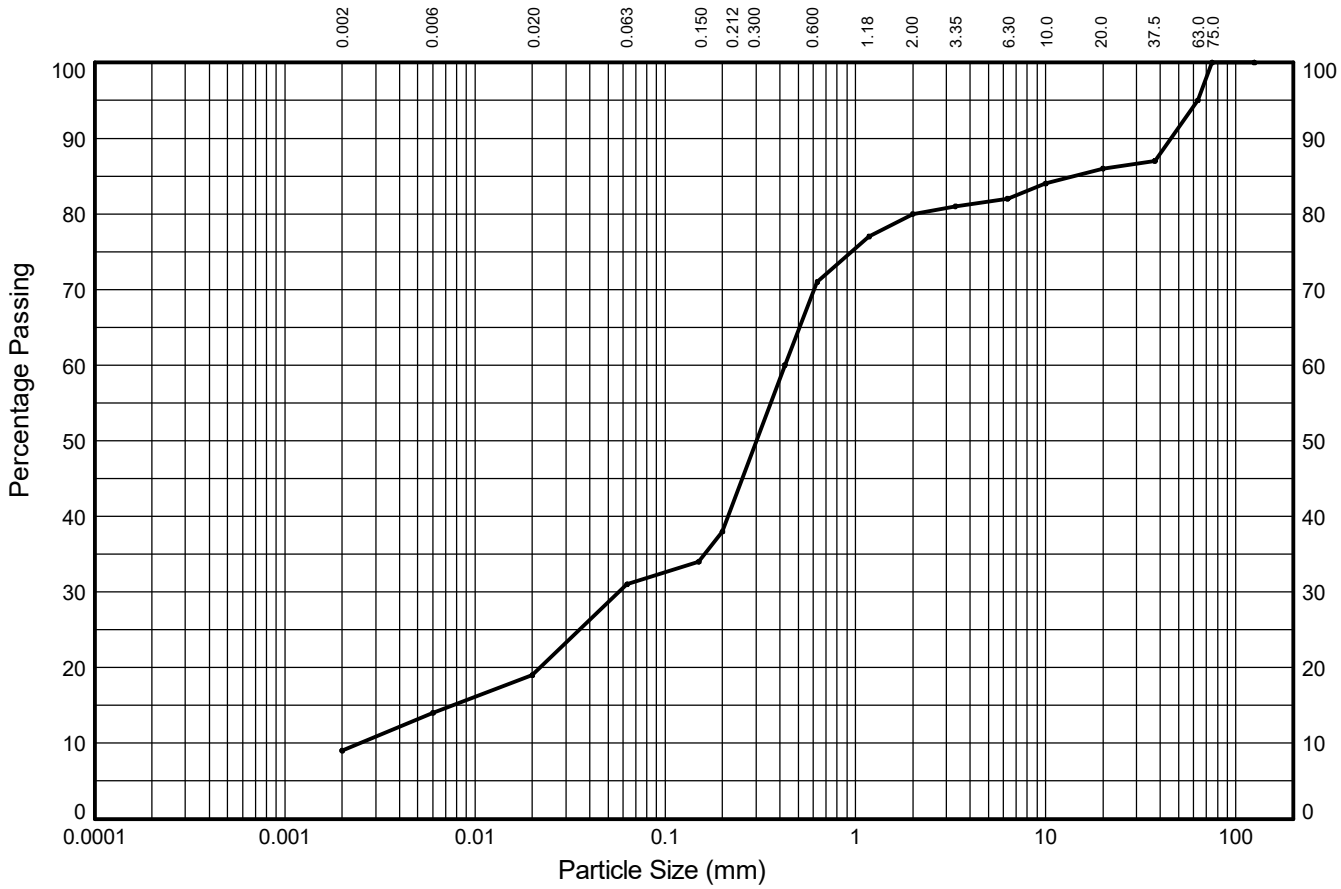
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:14 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Position ID: **HDP-004** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	5%	5%	12%	7%	33%	9%	2%	4%	9%	
	SILT			SAND			GRAVEL			
9%	22%			49%			15%			5%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**95**
37.5	**87**
20.0	**86**
10.0	**84**
6.30	**82**
3.35	**81**
2.00	**80**
1.18	**77**
0.630	**71**
0.425	**60**
0.200	**38**
0.150	**34**
0.063	**31**

Particle Diameter (mm)	Percent Passing (%)
0.02	**19**
0.006	**14**
0.002	**9**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.002**
D_{15} (mm)	**0.008**
D_{30} (mm)	**0.057**
D_{50} (mm)	**0.302**
D_{60} (mm)	**0.425**
D_{85} (mm)	**14.142**
D_{90} (mm)	**45.554**
C_U	**171**
C_C	**3**

Soil Description:

Brown slightly gravelly sandy SILT with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
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W. Yorkshire WF10 1NJ

Compiled By		Date
E. Hort	**ELIZABETH HORT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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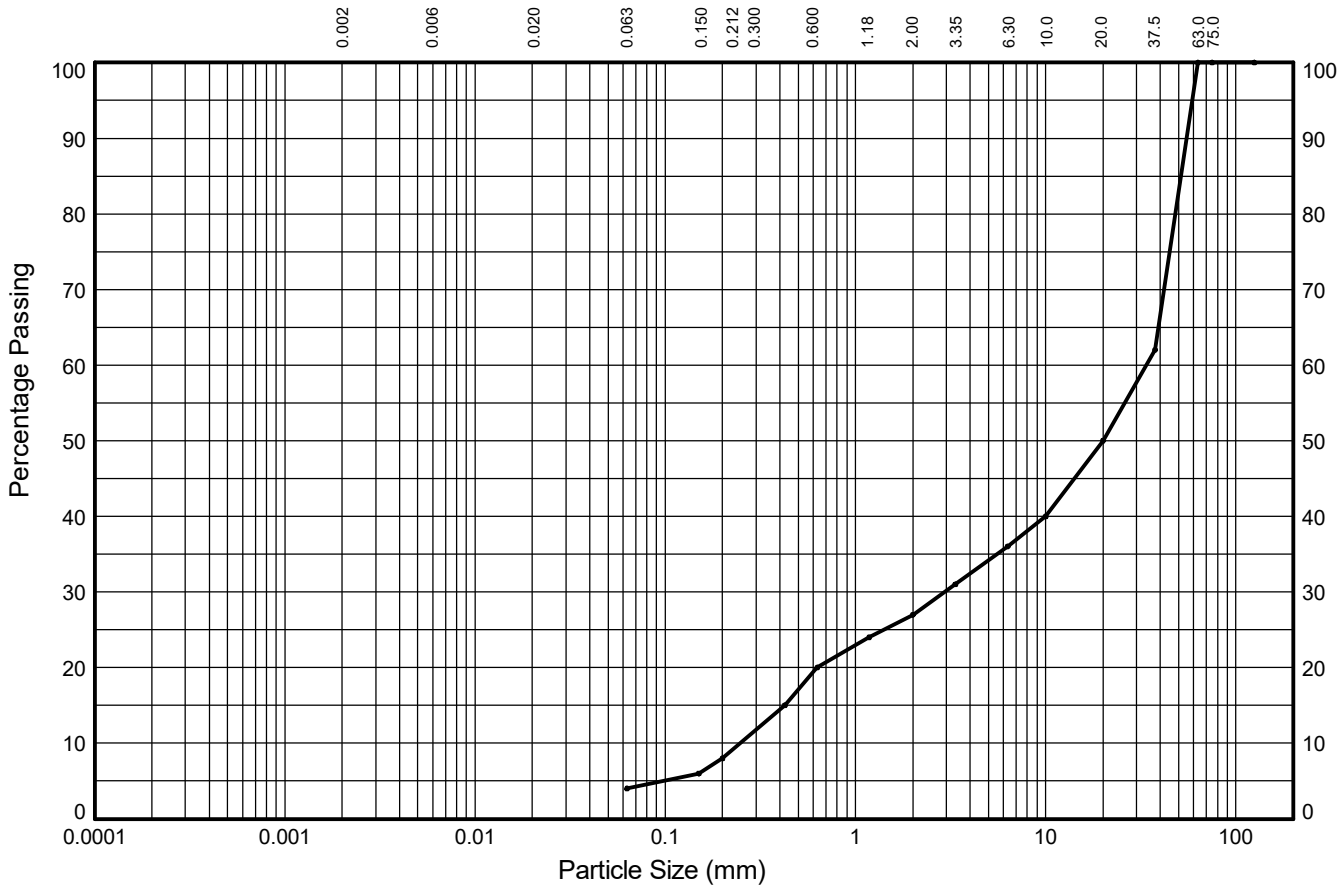
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Position ID: **HDP-005** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	4%	12%	7%	9%	14%	50%	
	SILT			SAND			GRAVEL			
4%				23%			73%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**62**
20.0	**50**
10.0	**40**
6.30	**36**
3.35	**31**
2.00	**27**
1.18	**24**
0.630	**20**
0.425	**15**
0.200	**8**
0.150	**6**
0.063	**4**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.248**
D_{15} (mm)	**0.425**
D_{30} (mm)	**2.945**
D_{50} (mm)	**20.000**
D_{60} (mm)	**33.770**
D_{85} (mm)	**51.334**
D_{90} (mm)	**54.960**
C_U	**136**
C_C	**1**

Soil Description:
Brown very sandy slightly silty GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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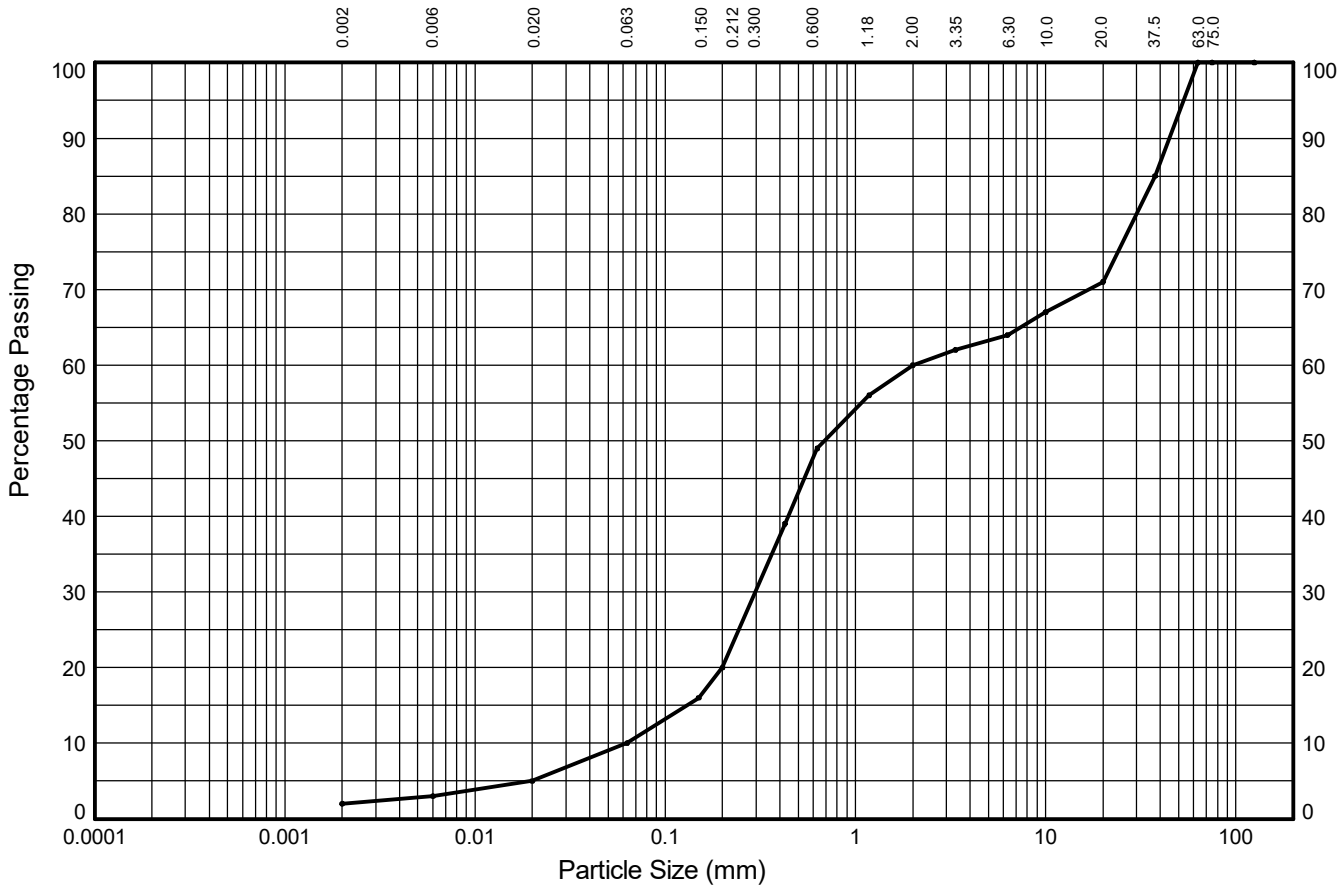
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:14 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Position ID: **HDP-006** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	1%	2%	5%	10%	29%	11%	4%	7%	29%	
	SILT			SAND			GRAVEL			
2%	8%			50%			40%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**85**
20.0	**71**
10.0	**67**
6.30	**64**
3.35	**62**
2.00	**60**
1.18	**56**
0.630	**49**
0.425	**39**
0.200	**20**
0.150	**16**
0.063	**10**

Particle Diameter (mm)	Percent Passing (%)
0.02	**5**
0.006	**3**
0.002	**2**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.063**
D_{15} (mm)	**0.130**
D_{30} (mm)	**0.297**
D_{50} (mm)	**0.689**
D_{60} (mm)	**2.000**
D_{85} (mm)	**37.500**
D_{90} (mm)	**44.579**
C_U	**32**
C_C	**0.70**

Soil Description:
Brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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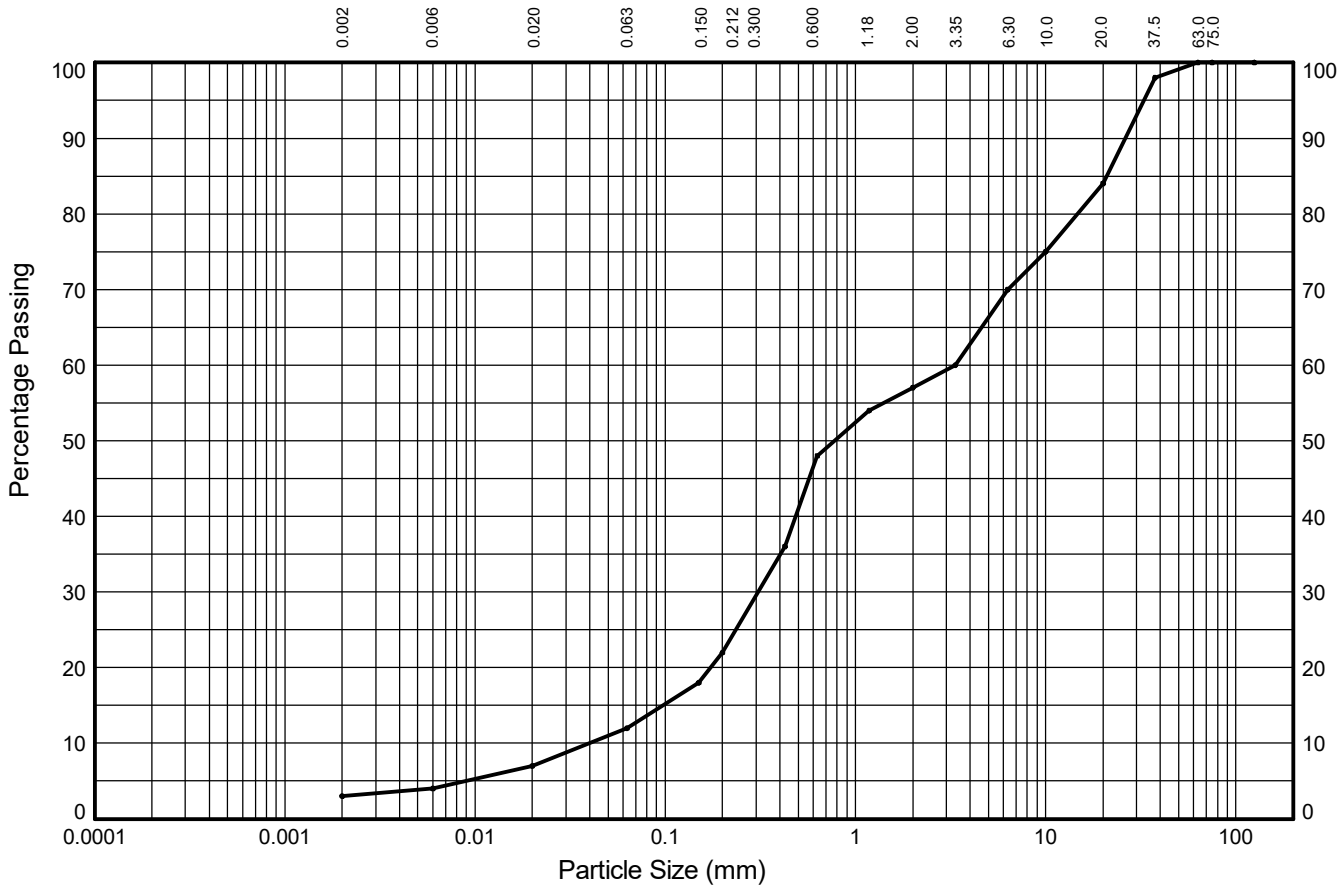
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS205** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	1%	3%	5%	10%	26%	9%	13%	14%	16%	
	SILT			SAND			GRAVEL			
3%	9%			45%			43%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**98**
20.0	**84**
10.0	**75**
6.30	**70**
3.35	**60**
2.00	**57**
1.18	**54**
0.630	**48**
0.425	**36**
0.200	**22**
0.150	**18**
0.063	**12**

Particle Diameter (mm)	Percent Passing (%)
0.02	**7**
0.006	**4**
0.002	**3**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.040**
D_{15} (mm)	**0.097**
D_{30} (mm)	**0.308**
D_{50} (mm)	**0.777**
D_{60} (mm)	**3.350**
D_{85} (mm)	**20.918**
D_{90} (mm)	**26.184**
C_U	**84**
C_C	**0.71**

Soil Description:

Reddish brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
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Compiled By	Date
LORNA WHITWORTH	**22/08/23**

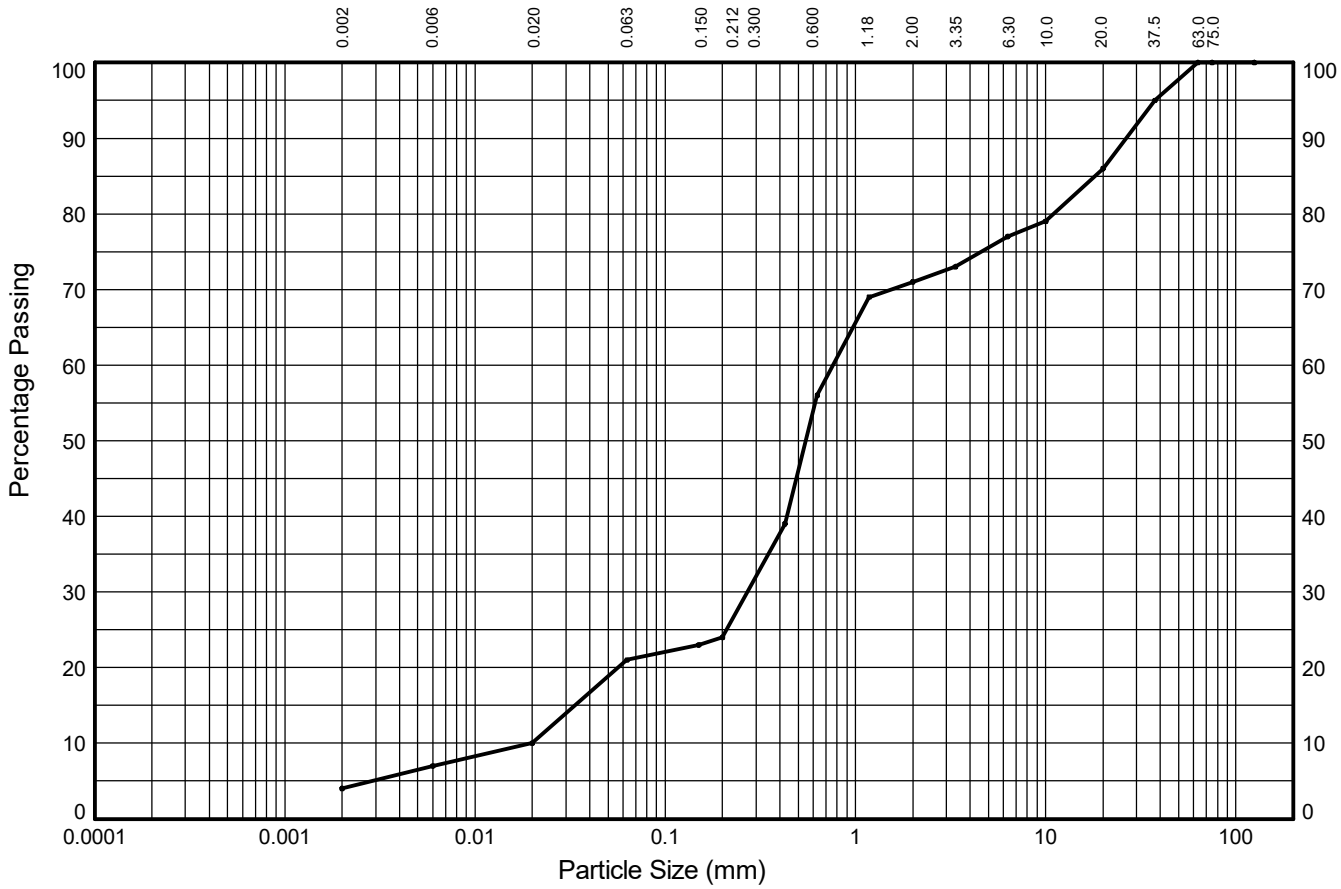
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:14 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS205** Sample Ref: **9** Sample Type: **B** Depth (m): **2.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	11%	3%	32%	15%	6%	9%	14%	
	SILT			SAND			GRAVEL			
4%	17%			50%			29%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**95**
20.0	**86**
10.0	**79**
6.30	**77**
3.35	**73**
2.00	**71**
1.18	**69**
0.630	**56**
0.425	**39**
0.200	**24**
0.150	**23**
0.063	**21**

Particle Diameter (mm)	Percent Passing (%)
0.02	**10**
0.006	**7**
0.002	**4**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.020**
D_{15} (mm)	**0.034**
D_{30} (mm)	**0.270**
D_{50} (mm)	**0.548**
D_{60} (mm)	**0.764**
D_{85} (mm)	**18.114**
D_{90} (mm)	**26.446**
C_U	**38**
C_C	**5**

Soil Description:

Reddish brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
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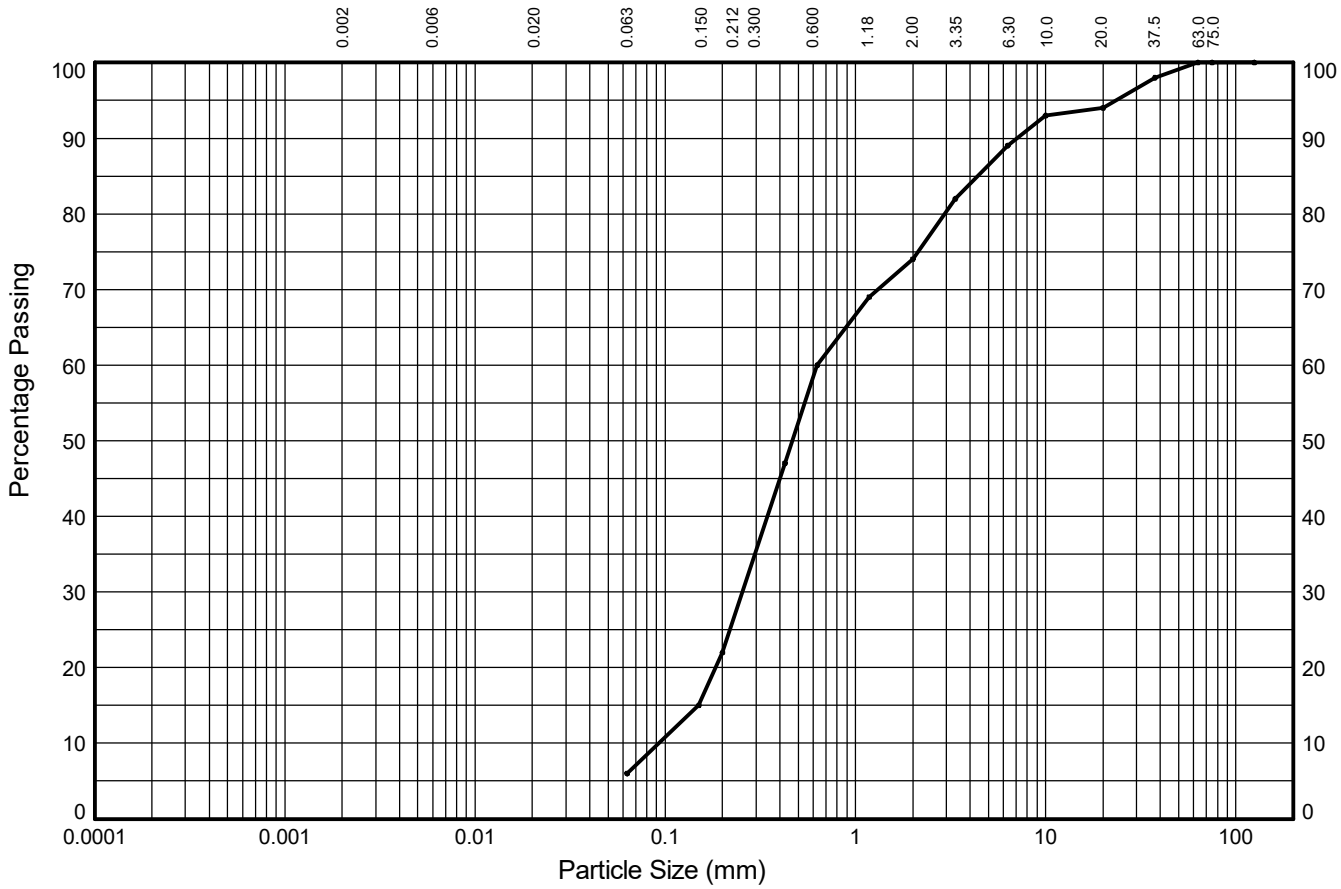
Compiled By		Date
E. Hort	**ELIZABETH HORT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:14 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS206** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	16%	38%	14%	15%	5%	6%	
	SILT			SAND			GRAVEL			
6%				68%			26%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**98**
20.0	**94**
10.0	**93**
6.30	**89**
3.35	**82**
2.00	**74**
1.18	**69**
0.630	**60**
0.425	**47**
0.200	**22**
0.150	**15**
0.063	**6**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.093**
D_{15} (mm)	**0.150**
D_{30} (mm)	**0.255**
D_{50} (mm)	**0.465**
D_{60} (mm)	**0.630**
D_{85} (mm)	**4.391**
D_{90} (mm)	**7.071**
C_U	**6.8**
C_C	**1.1**

Soil Description:

Reddish brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
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Compiled By		Date
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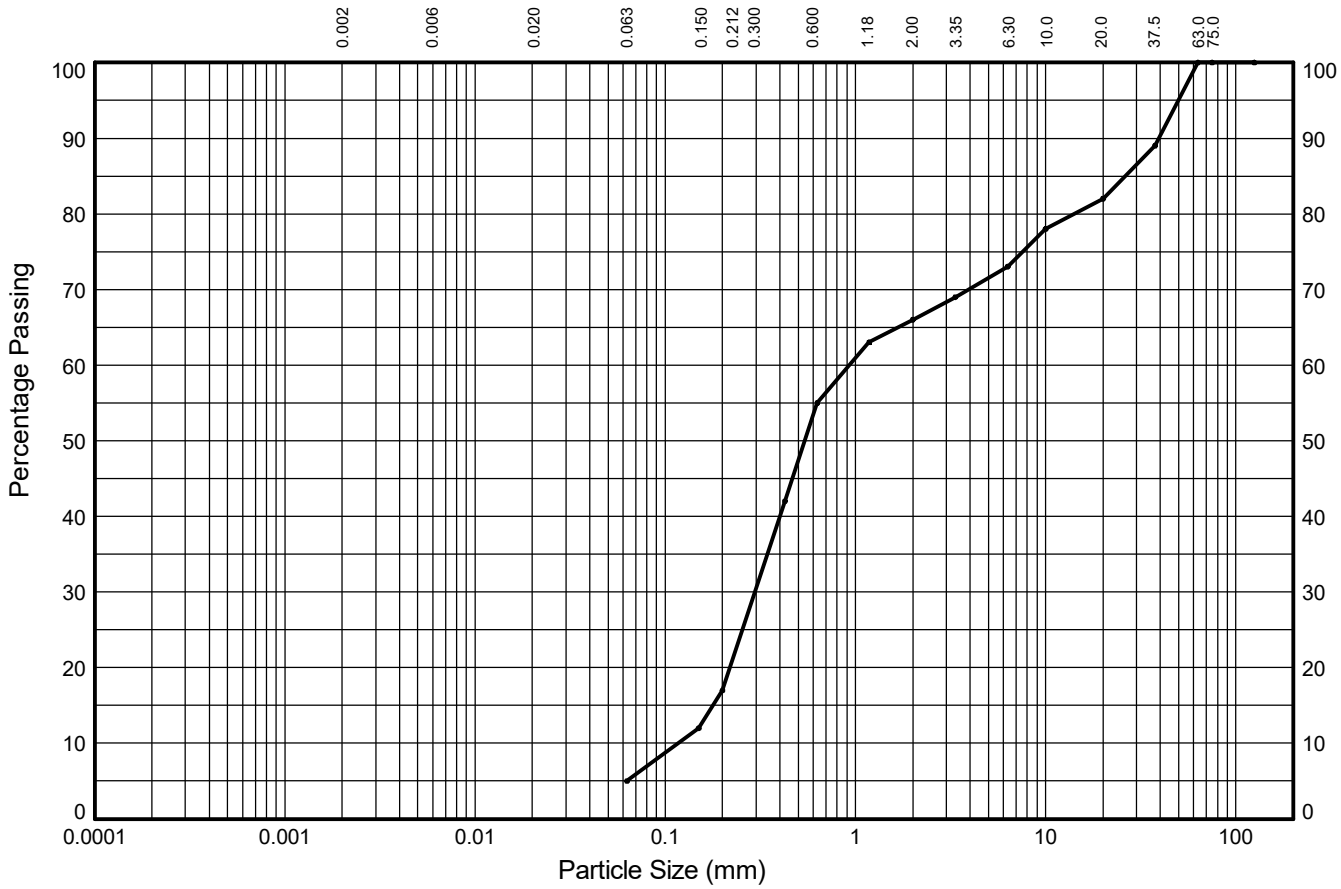
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:14 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Trial Pit: **TP-PTS206** Sample Ref: **6** Sample Type: **B** Depth (m): **1.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	12%	38%	11%	7%	9%	18%	
	SILT			SAND			GRAVEL			
5%				61%			34%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**89**
20.0	**82**
10.0	**78**
6.30	**73**
3.35	**69**
2.00	**66**
1.18	**63**
0.630	**55**
0.425	**42**
0.200	**17**
0.150	**12**
0.063	**5**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.117**
D_{15} (mm)	**0.178**
D_{30} (mm)	**0.296**
D_{50} (mm)	**0.541**
D_{60} (mm)	**0.933**
D_{85} (mm)	**26.184**
D_{90} (mm)	**39.311**
C_U	**8.0**
C_C	**0.80**

Soil Description:
Reddish brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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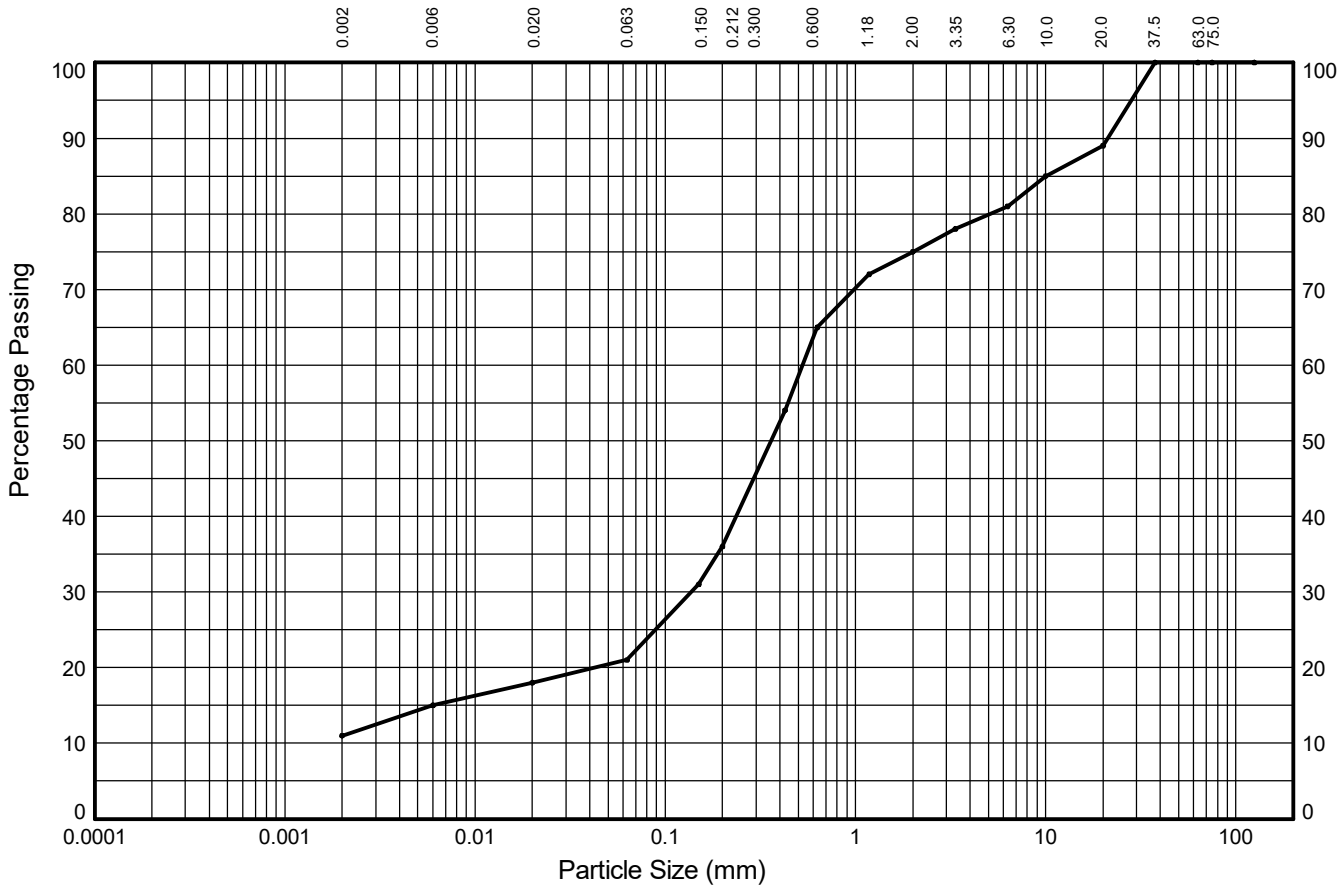
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS206** Sample Ref: **8** Sample Type: **B** Depth (m): **2.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	3%	3%	15%	29%	10%	6%	8%	11%	
	SILT			SAND			GRAVEL			
11%	10%			54%			25%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**89**
10.0	**85**
6.30	**81**
3.35	**78**
2.00	**75**
1.18	**72**
0.630	**65**
0.425	**54**
0.200	**36**
0.150	**31**
0.063	**21**

Particle Diameter (mm)	Percent Passing (%)
0.02	**18**
0.006	**15**
0.002	**11**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.006**
D_{30} (mm)	**0.138**
D_{50} (mm)	**0.359**
D_{60} (mm)	**0.527**
D_{85} (mm)	**10.000**
D_{90} (mm)	**21.176**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown very gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Maduka	**PRECIOUS MADUKA**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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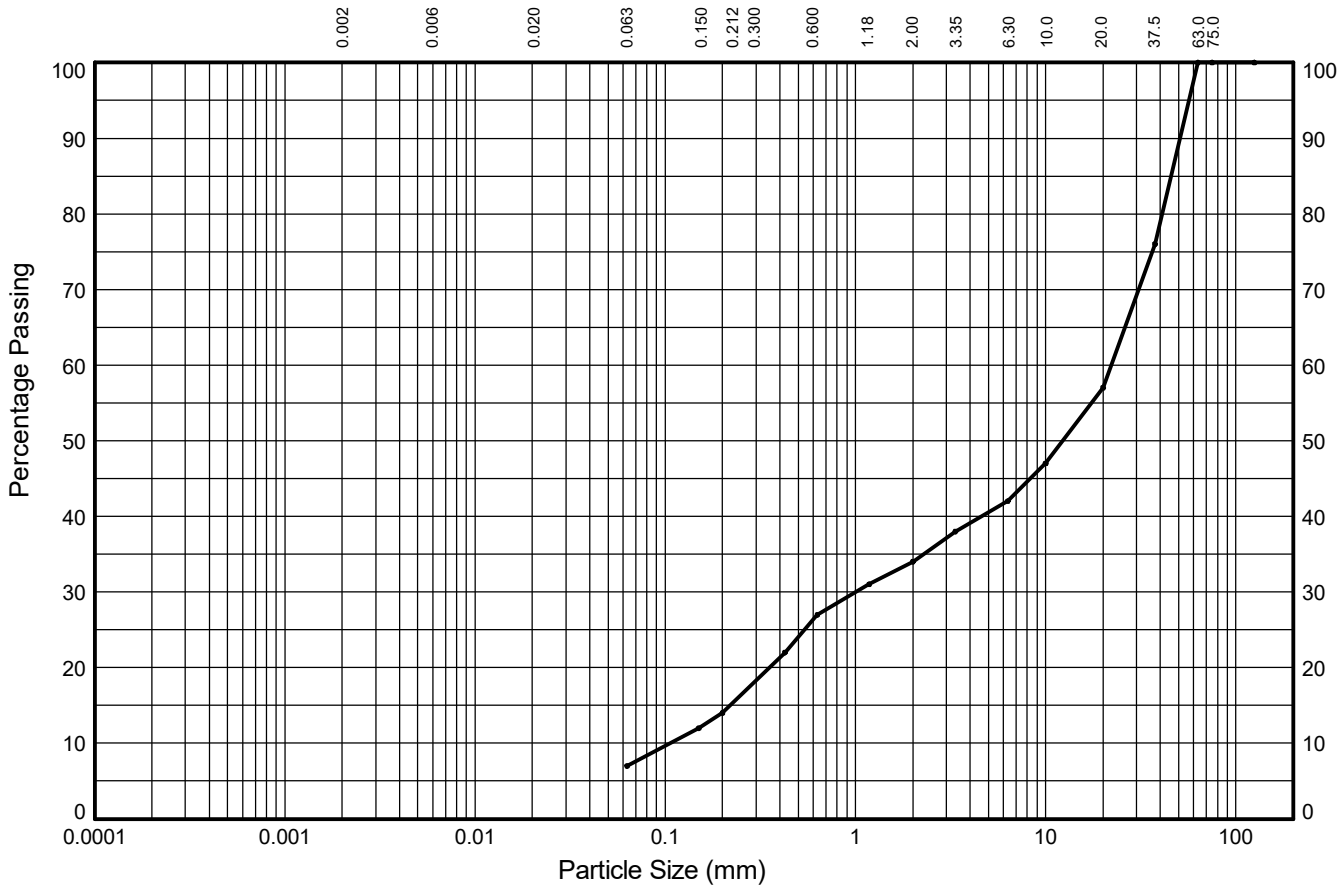
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Trial Pit: **TP-PTS207** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	7%	13%	7%	8%	15%	43%	
	SILT			SAND			GRAVEL			
7%				27%			66%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**76**
20.0	**57**
10.0	**47**
6.30	**42**
3.35	**38**
2.00	**34**
1.18	**31**
0.630	**27**
0.425	**22**
0.200	**14**
0.150	**12**
0.063	**7**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.106**
D_{15} (mm)	**0.220**
D_{30} (mm)	**1.009**
D_{50} (mm)	**12.311**
D_{60} (mm)	**22.087**
D_{85} (mm)	**45.554**
D_{90} (mm)	**50.753**
C_U	**208**
C_C	**0.43**

Soil Description:

Brown very sandy silty GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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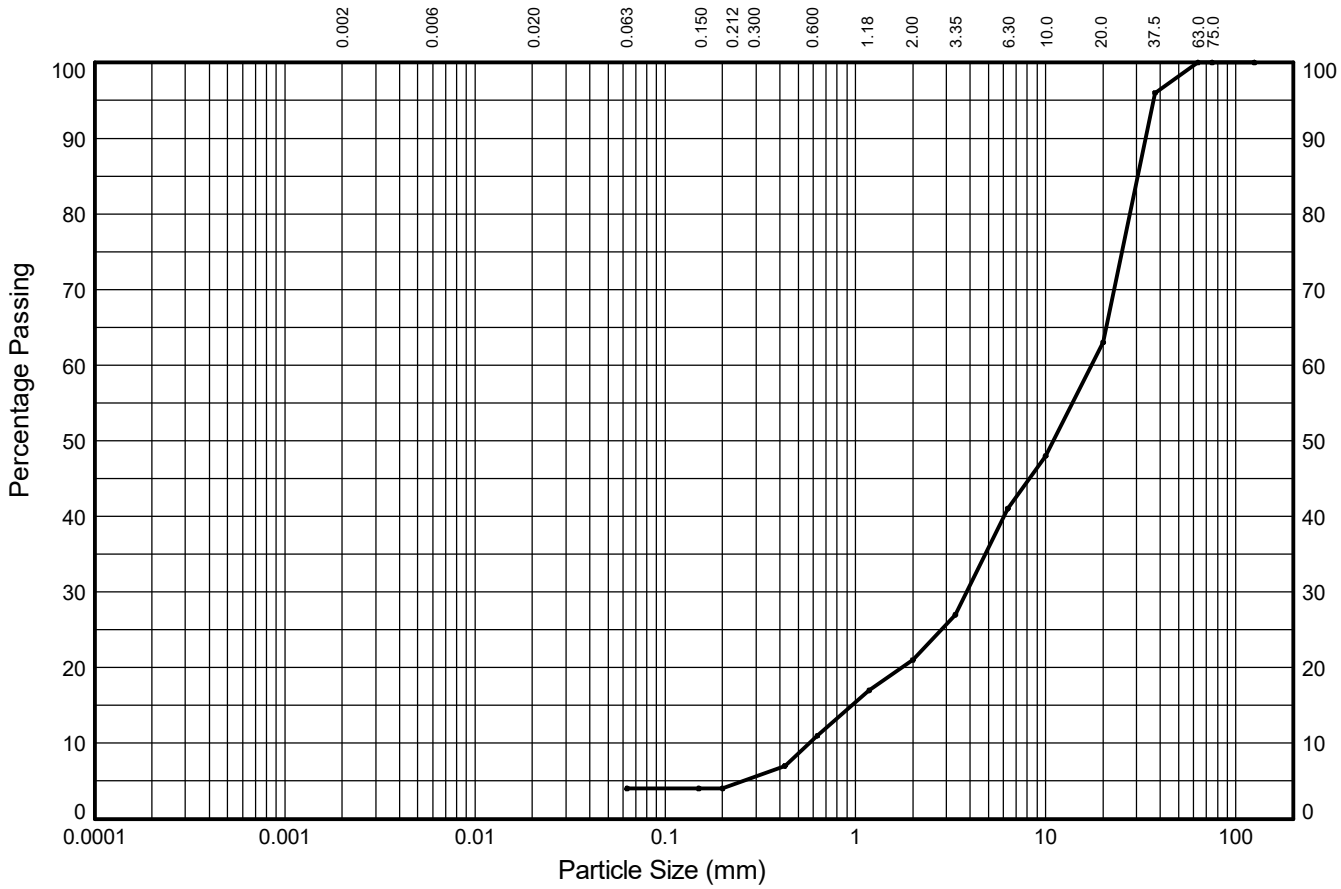
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS208** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	0%	7%	10%	20%	22%	37%	
	SILT			SAND			GRAVEL			
4%				17%			79%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**96**
20.0	**63**
10.0	**48**
6.30	**41**
3.35	**27**
2.00	**21**
1.18	**17**
0.630	**11**
0.425	**7**
0.200	**4**
0.150	**4**
0.063	**4**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.571**
D_{15} (mm)	**0.957**
D_{30} (mm)	**3.836**
D_{50} (mm)	**10.968**
D_{60} (mm)	**17.411**
D_{85} (mm)	**30.411**
D_{90} (mm)	**33.450**
C_U	**30**
C_C	**1**

Soil Description:

Reddish brown sandy slightly clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By	Date
LORNA WHITWORTH	22/08/23

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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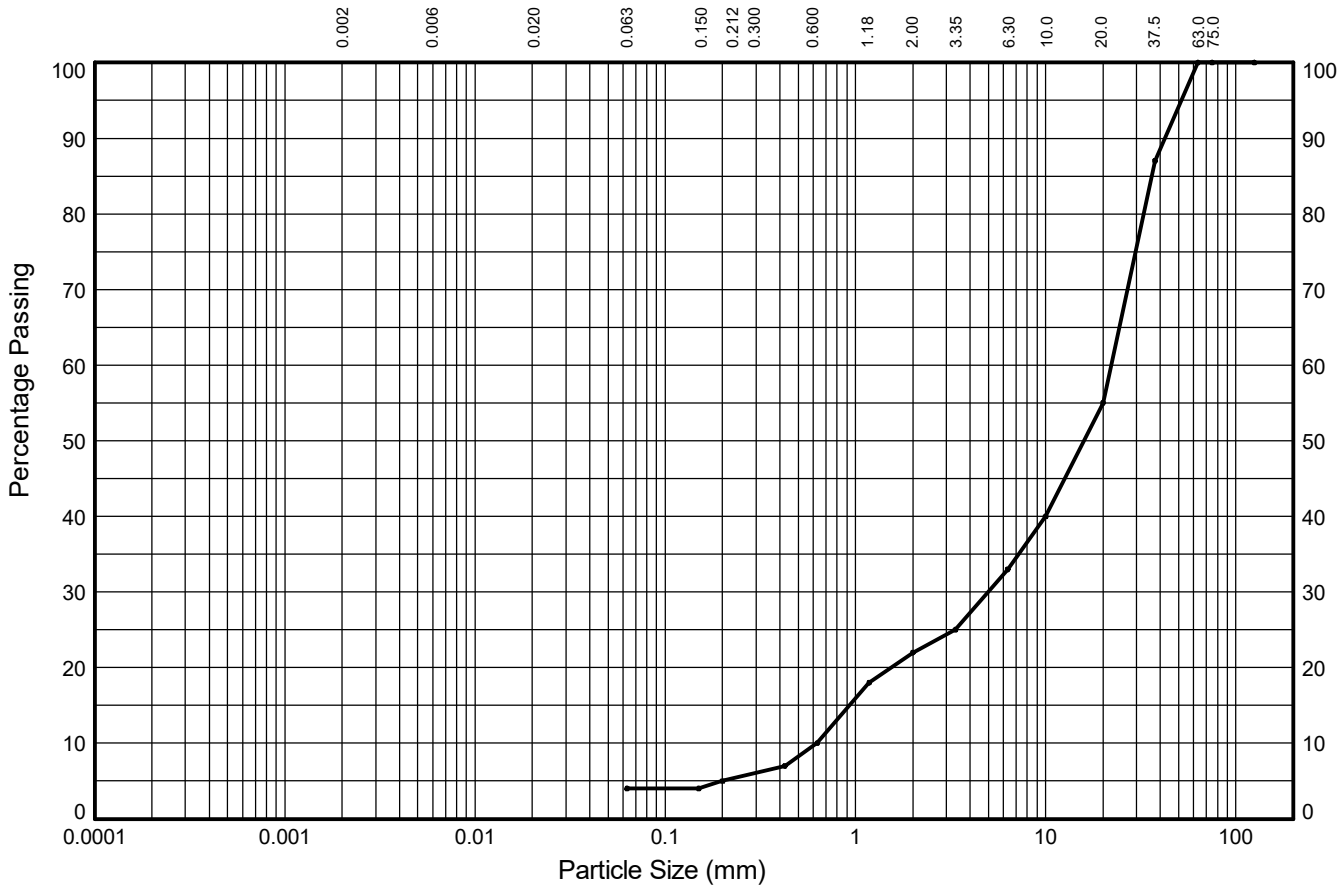
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Trial Pit: **TP-PTS208** Sample Ref: **6** Sample Type: **B** Depth (m): **1.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	1%	5%	12%	11%	22%	45%	
	SILT			SAND			GRAVEL			
4%				18%			78%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**87**
20.0	**55**
10.0	**40**
6.30	**33**
3.35	**25**
2.00	**22**
1.18	**18**
0.630	**10**
0.425	**7**
0.200	**5**
0.150	**4**
0.063	**4**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.630**
D_{15} (mm)	**0.933**
D_{30} (mm)	**4.971**
D_{50} (mm)	**15.874**
D_{60} (mm)	**22.064**
D_{85} (mm)	**36.055**
D_{90} (mm)	**42.269**
C_U	**35**
C_C	**2**

Soil Description:

Red brown sandy slightly clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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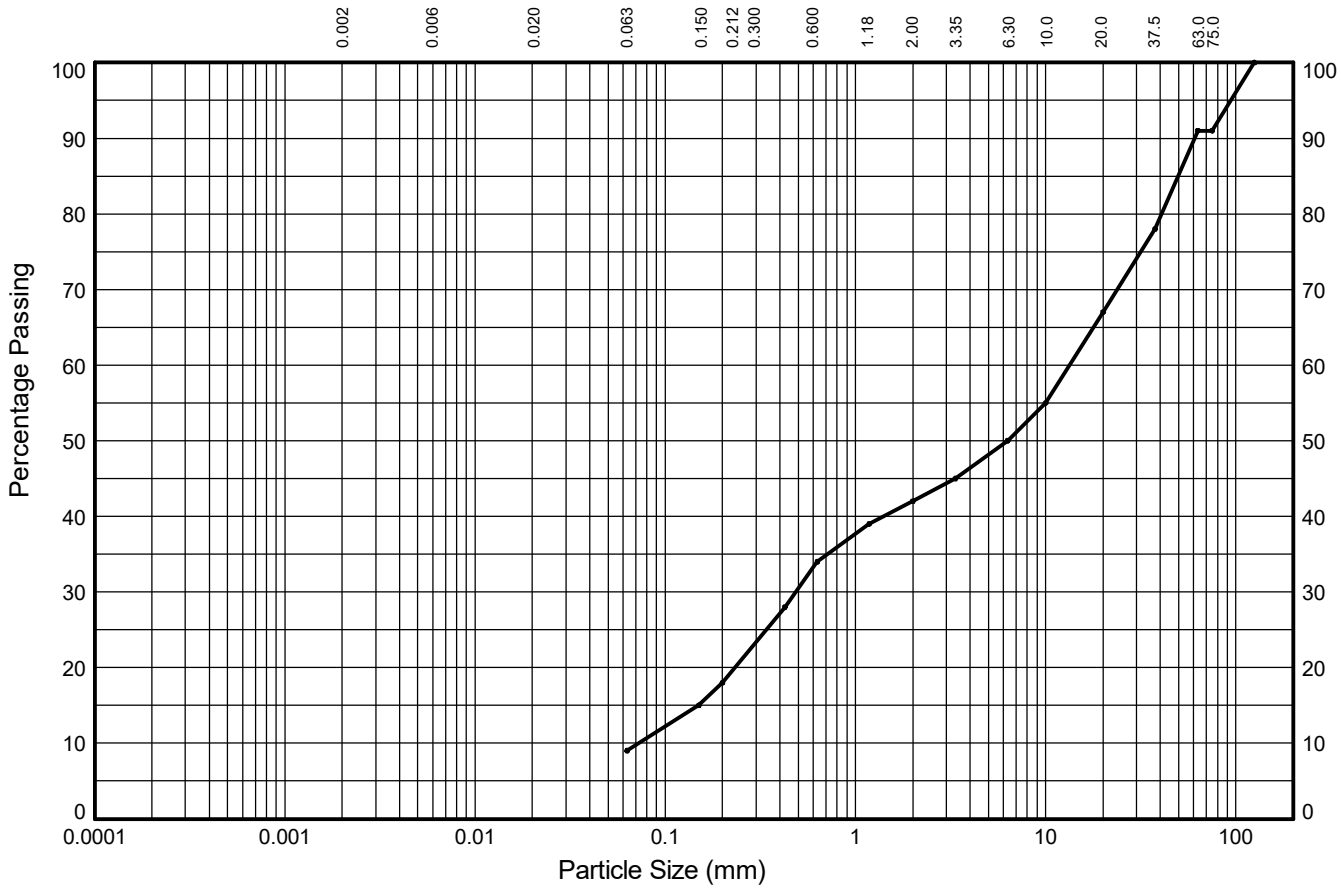
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Trial Pit: **TP-PTS209** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	9%	16%	8%	8%	17%	24%	
	SILT			SAND			GRAVEL			
9%				33%			49%			9%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**91**
63.0	**91**
37.5	**78**
20.0	**67**
10.0	**55**
6.30	**50**
3.35	**45**
2.00	**42**
1.18	**39**
0.630	**34**
0.425	**28**
0.200	**18**
0.150	**15**
0.063	**9**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.073**
D_{15} (mm)	**0.150**
D_{30} (mm)	**0.485**
D_{50} (mm)	**6.300**
D_{60} (mm)	**13.348**
D_{85} (mm)	**49.585**
D_{90} (mm)	**60.535**
C_U	**183**
C_C	**0.24**

Soil Description:

Brown very sandy silty GRAVEL with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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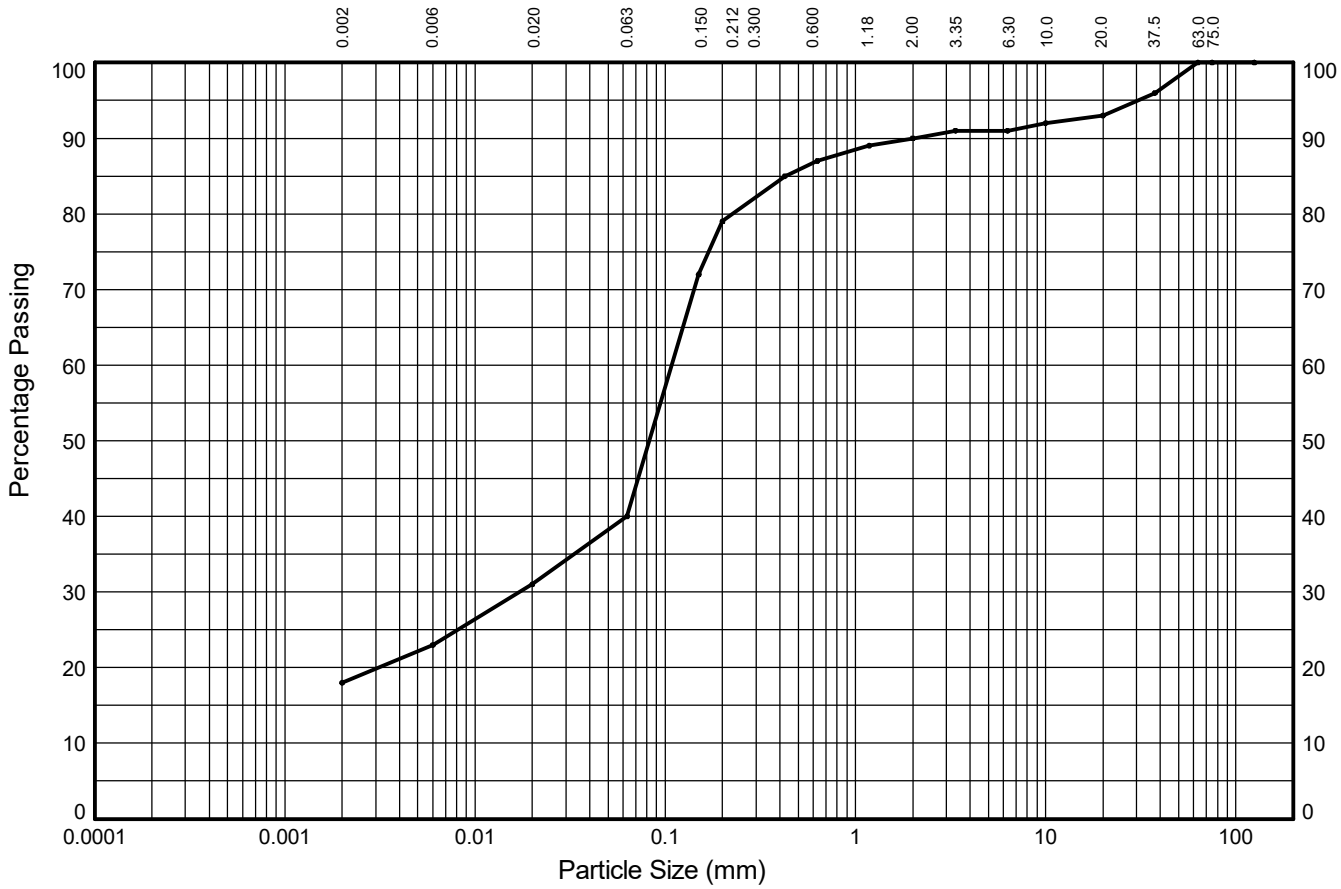
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS209** Sample Ref: **6** Sample Type: **B** Depth (m): **1.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	5%	8%	9%	39%	8%	3%	1%	2%	7%	
	SILT			SAND			GRAVEL			
18%	22%			50%			10%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**96**
20.0	**93**
10.0	**92**
6.30	**91**
3.35	**91**
2.00	**90**
1.18	**89**
0.630	**87**
0.425	**85**
0.200	**79**
0.150	**72**
0.063	**40**

Particle Diameter (mm)	Percent Passing (%)
0.02	**31**
0.006	**23**
0.002	**18**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.017**
D_{50} (mm)	**0.083**
D_{60} (mm)	**0.108**
D_{85} (mm)	**0.425**
D_{90} (mm)	**2.000**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown slightly gravelly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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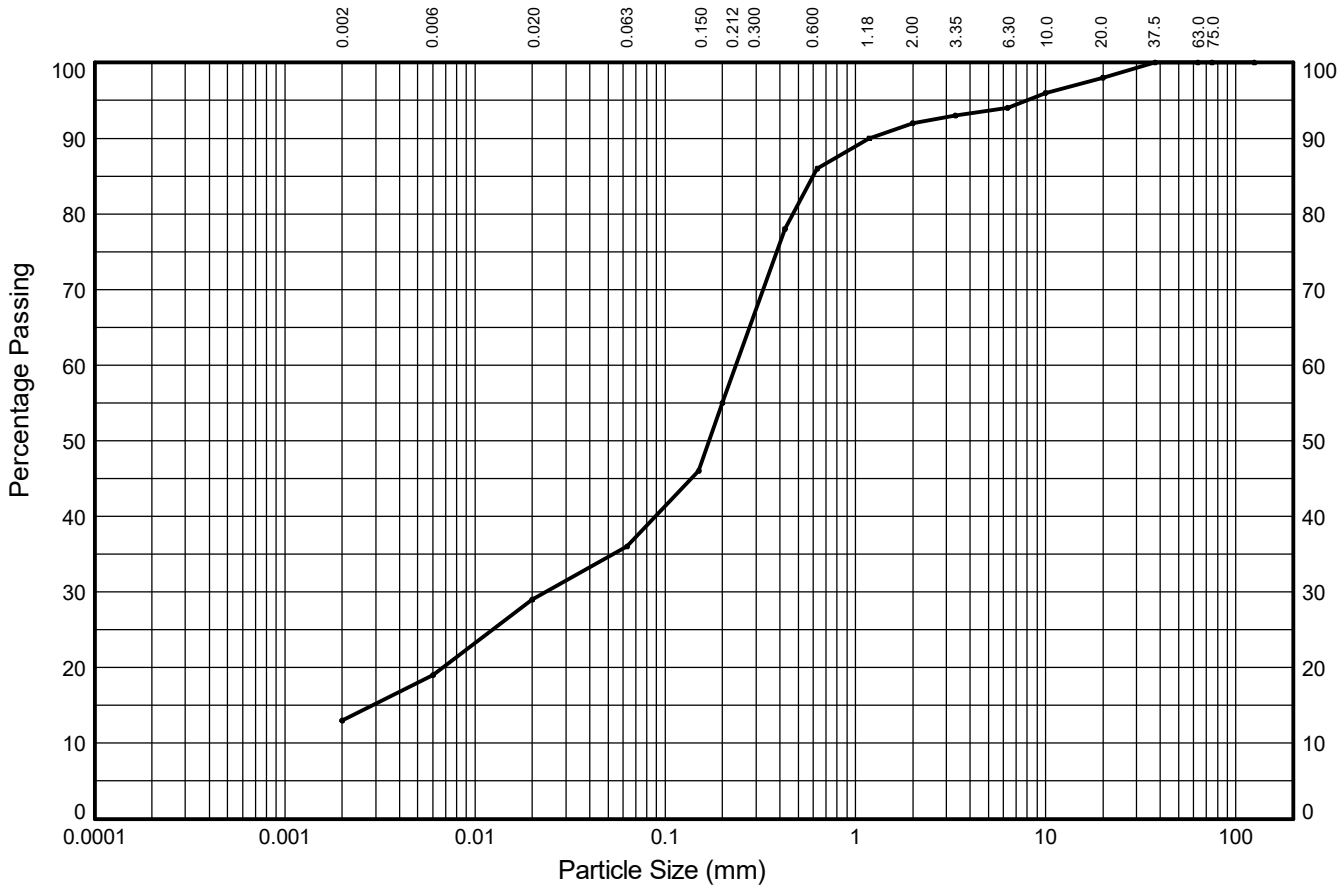
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS209** Sample Ref: **9** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	6%	10%	7%	19%	31%	6%	2%	4%	2%	
	SILT			SAND			GRAVEL			
13%	23%			56%			8%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**98**
10.0	**96**
6.30	**94**
3.35	**93**
2.00	**92**
1.18	**90**
0.630	**86**
0.425	**78**
0.200	**55**
0.150	**46**
0.063	**36**

Particle Diameter (mm)	Percent Passing (%)
0.02	**29**
0.006	**19**
0.002	**13**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.003**
D_{30} (mm)	**0.024**
D_{50} (mm)	**0.170**
D_{60} (mm)	**0.236**
D_{85} (mm)	**0.600**
D_{90} (mm)	**1.180**
C_U	**NA**
C_C	**NA**

Soil Description:

Orangish brown slightly gravelly sandy slightly silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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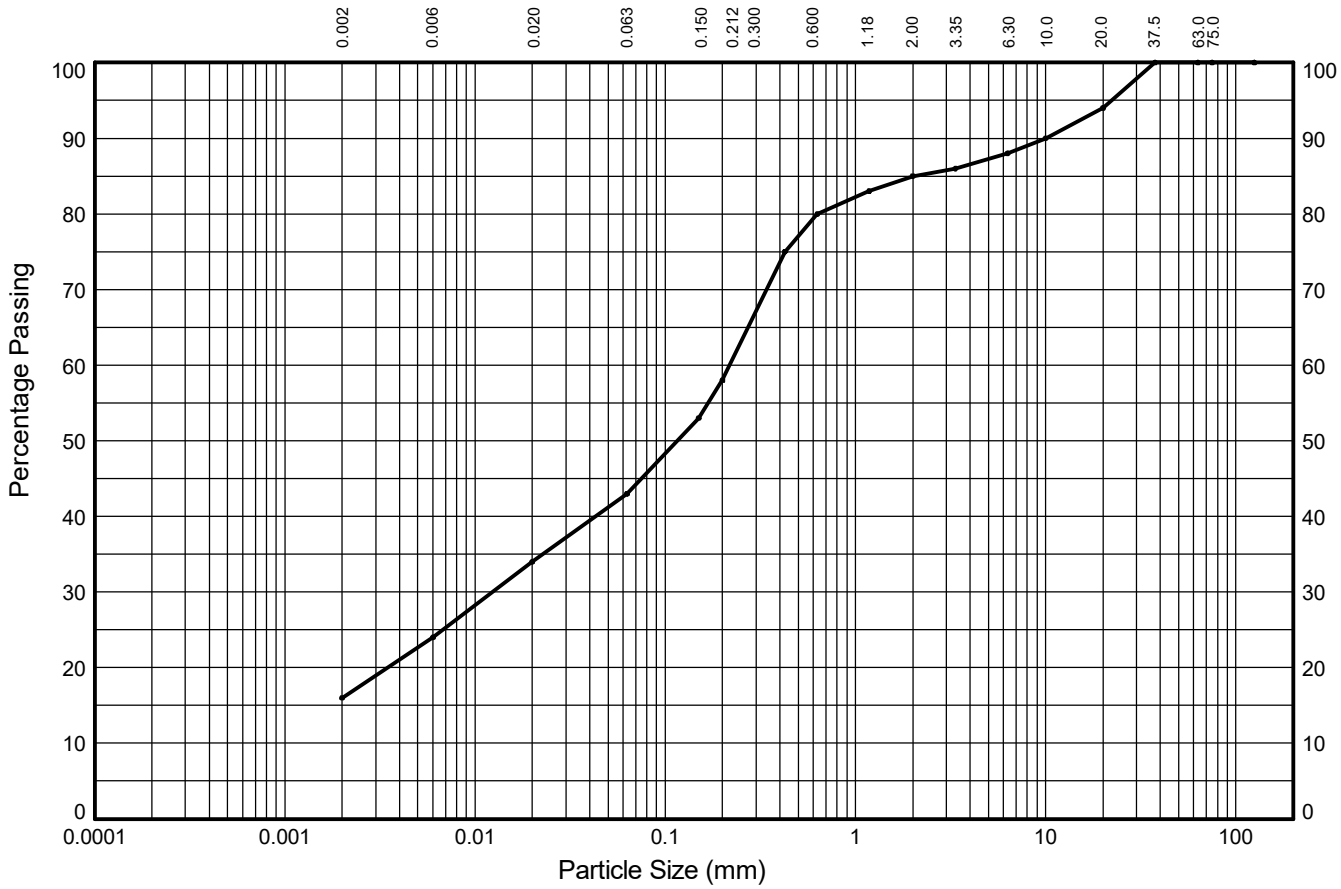
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS209** Sample Ref: **11** Sample Type: **B** Depth (m): **2.70**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	8%	10%	9%	15%	22%	5%	3%	6%	6%	
	SILT			SAND			GRAVEL			
16%	27%			42%			15%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**94**
10.0	**90**
6.30	**88**
3.35	**86**
2.00	**85**
1.18	**83**
0.630	**80**
0.425	**75**
0.200	**58**
0.150	**53**
0.063	**43**

Particle Diameter (mm)	Percent Passing (%)
0.02	**34**
0.006	**24**
0.002	**16**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.012**
D_{50} (mm)	**0.116**
D_{60} (mm)	**0.219**
D_{85} (mm)	**2.000**
D_{90} (mm)	**10.000**
C_U	**NA**
C_C	**NA**

Soil Description:

Red slightly gravelly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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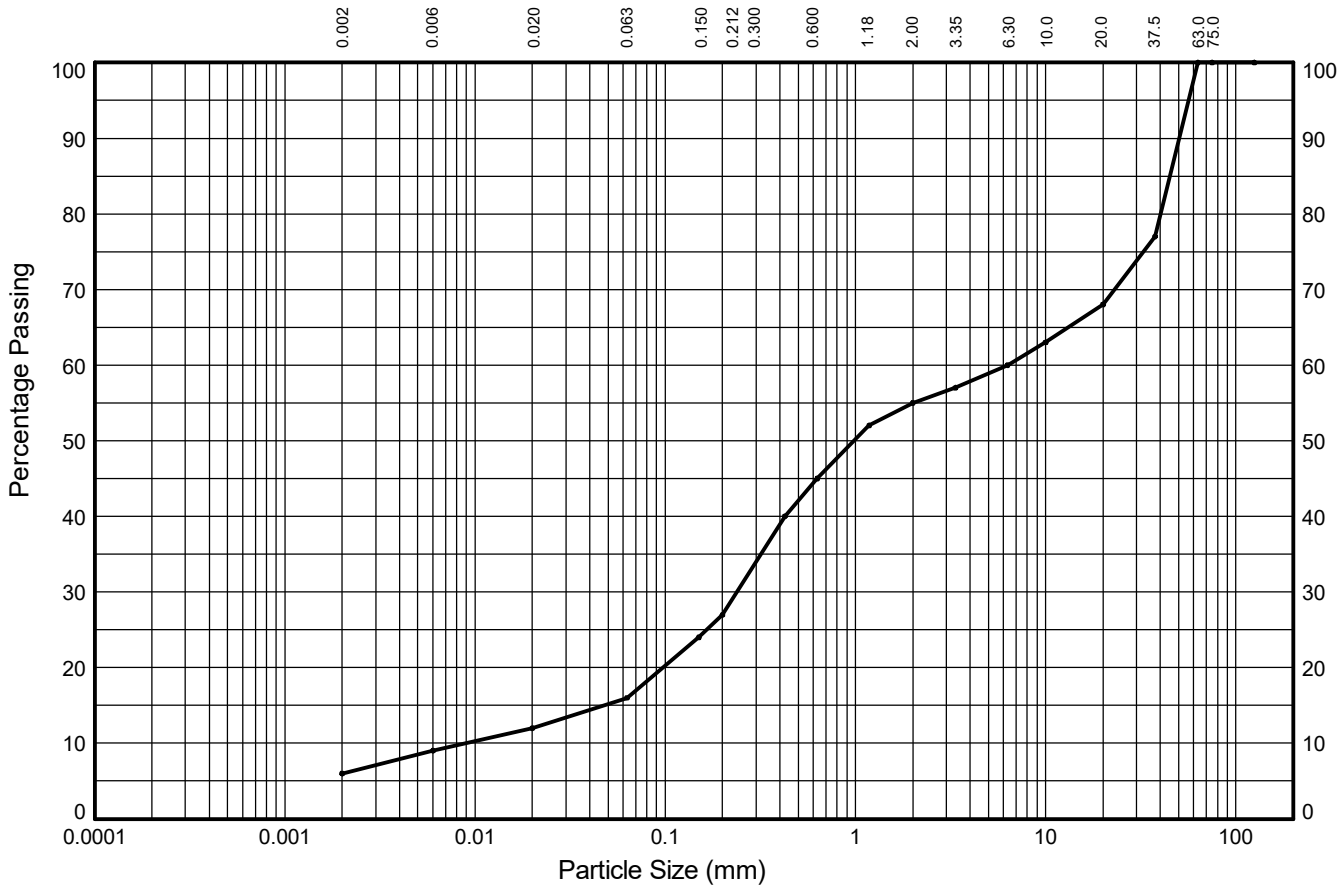
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Trial Pit: **TP-PTS210** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	4%	11%	18%	10%	5%	8%	32%	
	SILT			SAND			GRAVEL			
6%	10%			39%			45%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**77**
20.0	**68**
10.0	**63**
6.30	**60**
3.35	**57**
2.00	**55**
1.18	**52**
0.630	**45**
0.425	**40**
0.200	**27**
0.150	**24**
0.063	**16**

Particle Diameter (mm)	Percent Passing (%)
0.02	**12**
0.006	**9**
0.002	**6**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.009**
D_{15} (mm)	**0.047**
D_{30} (mm)	**0.238**
D_{50} (mm)	**0.986**
D_{60} (mm)	**6.300**
D_{85} (mm)	**44.916**
D_{90} (mm)	**50.278**
C_U	**703**
C_C	**1**

Soil Description:

Dark brown very sandy clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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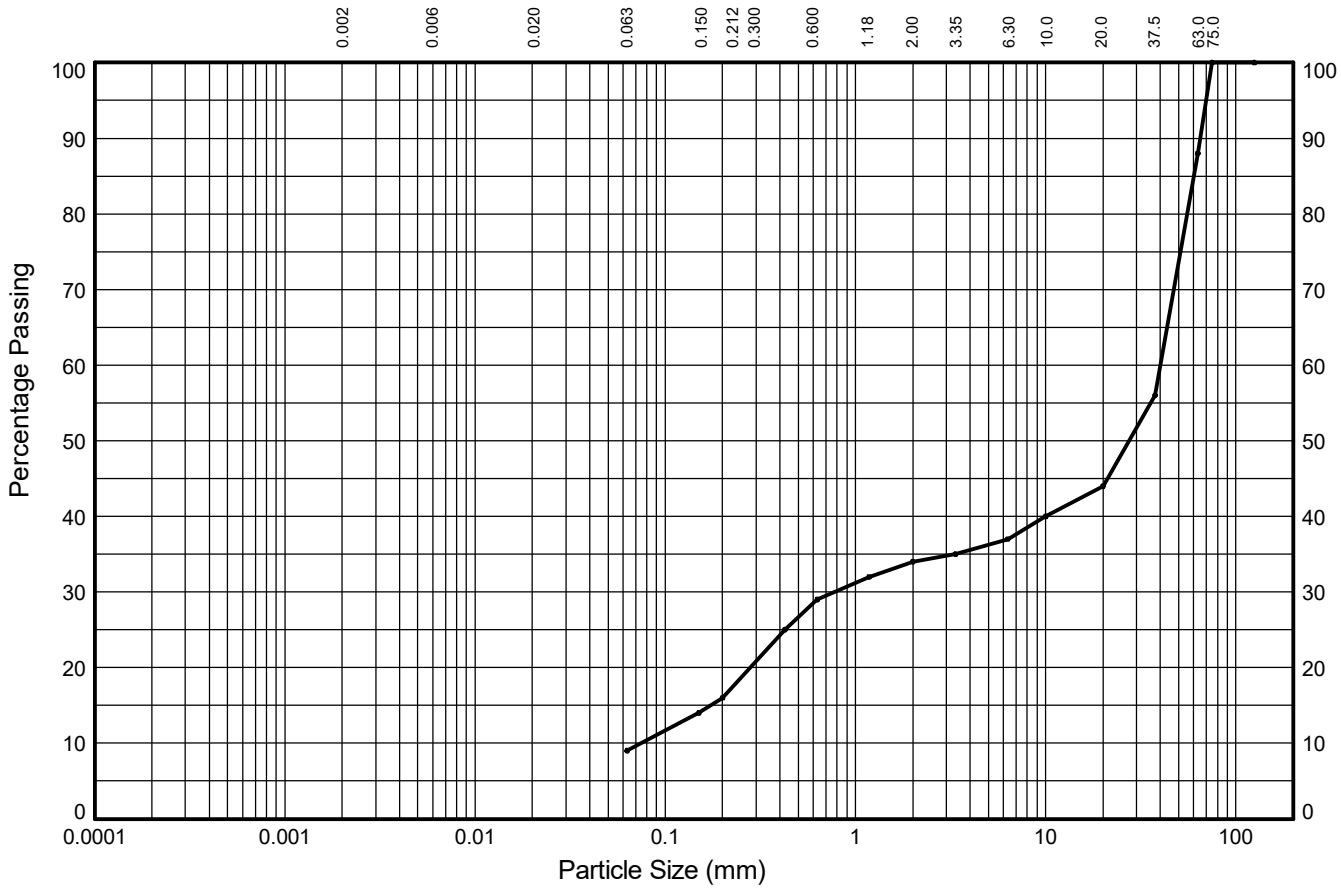
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Trial Pit: **TP-PTS210** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	7%	13%	5%	3%	7%	44%	
	SILT			SAND			GRAVEL			
9%				25%			54%			12%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**88**
37.5	**56**
20.0	**44**
10.0	**40**
6.30	**37**
3.35	**35**
2.00	**34**
1.18	**32**
0.630	**29**
0.425	**25**
0.200	**16**
0.150	**14**
0.063	**9**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.075**
D_{15} (mm)	**0.173**
D_{30} (mm)	**0.777**
D_{50} (mm)	**27.386**
D_{60} (mm)	**40.012**
D_{85} (mm)	**60.009**
D_{90} (mm)	**64.858**
C_U	**534**
C_C	**0.20**

Soil Description:

Brown very sandy silty GRAVEL with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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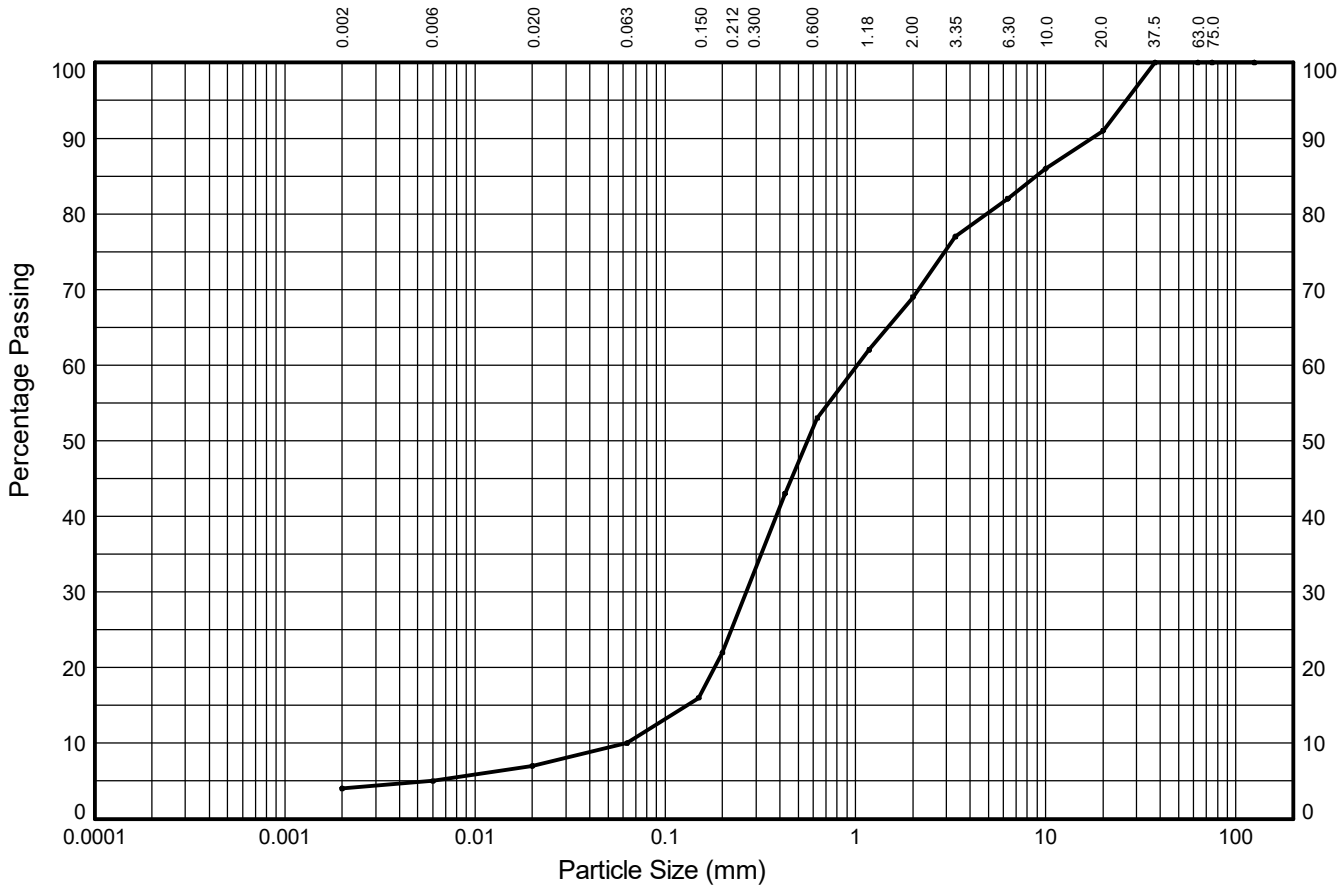
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS210** Sample Ref: **7** Sample Type: **LB** Depth (m): **1.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	1%	2%	3%	12%	31%	16%	13%	9%	9%	
	SILT			SAND			GRAVEL			
4%	6%			59%			31%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**91**
10.0	**86**
6.30	**82**
3.35	**77**
2.00	**69**
1.18	**62**
0.630	**53**
0.425	**43**
0.200	**22**
0.150	**16**
0.063	**10**

Particle Diameter (mm)	Percent Passing (%)
0.02	**7**
0.006	**5**
0.002	**4**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.063**
D_{15} (mm)	**0.130**
D_{30} (mm)	**0.267**
D_{50} (mm)	**0.560**
D_{60} (mm)	**1.026**
D_{85} (mm)	**8.909**
D_{90} (mm)	**17.411**
C_U	**16**
C_C	**1**

Soil Description:

Brown very gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Maduka	**PRECIOUS MADUKA**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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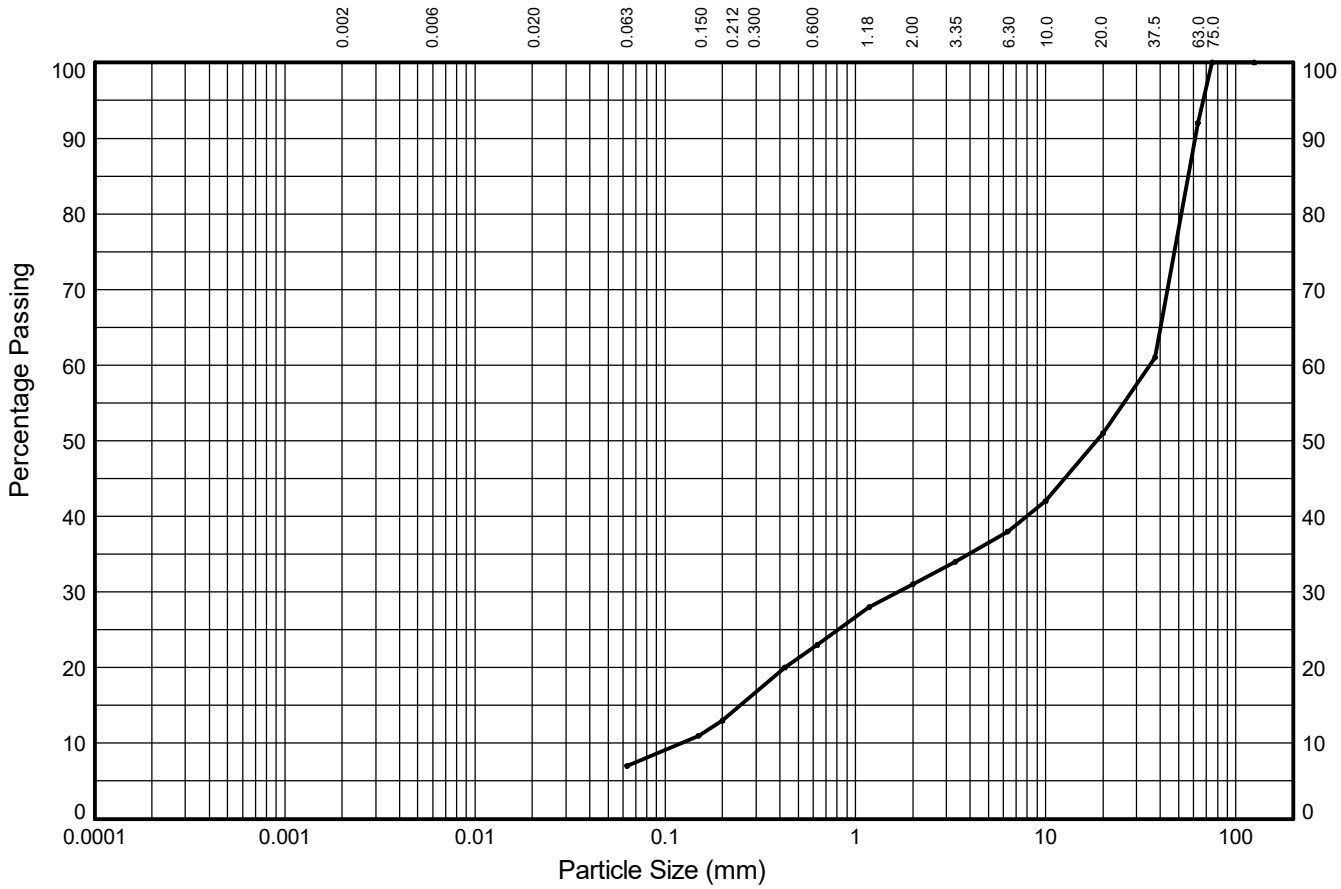
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Trial Pit: **TP-PTS211** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	6%	10%	8%	7%	13%	41%	
	SILT			SAND			GRAVEL			
7%				24%			61%			8%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**92**
37.5	**61**
20.0	**51**
10.0	**42**
6.30	**38**
3.35	**34**
2.00	**31**
1.18	**28**
0.630	**23**
0.425	**20**
0.200	**13**
0.150	**11**
0.063	**7**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.121**
D_{15} (mm)	**0.248**
D_{30} (mm)	**1.677**
D_{50} (mm)	**18.517**
D_{60} (mm)	**35.215**
D_{85} (mm)	**56.036**
D_{90} (mm)	**60.926**
C_U	**292**
C_C	**0.66**

Soil Description:
Dark brown very sandy silty GRAVEL with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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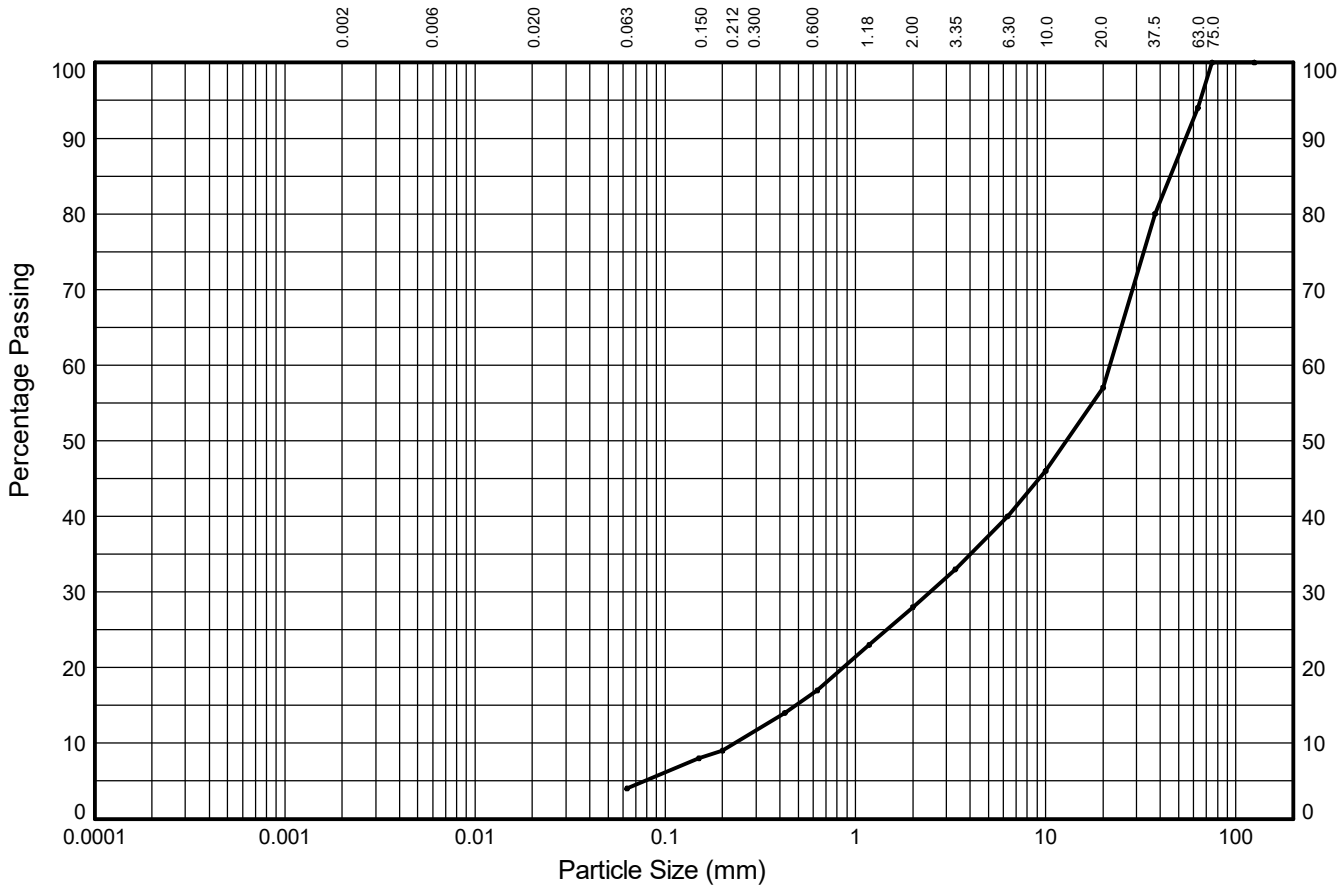
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Trial Pit: **TP-PTS211** Sample Ref: **7** Sample Type: **LB** Depth (m): **1.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	5%	8%	11%	12%	17%	37%	
	SILT			SAND			GRAVEL			
4%				24%			66%			6%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**94**
37.5	**80**
20.0	**57**
10.0	**46**
6.30	**40**
3.35	**33**
2.00	**28**
1.18	**23**
0.630	**17**
0.425	**14**
0.200	**9**
0.150	**8**
0.063	**4**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.233**
D_{15} (mm)	**0.485**
D_{30} (mm)	**2.458**
D_{50} (mm)	**12.867**
D_{60} (mm)	**21.709**
D_{85} (mm)	**45.133**
D_{90} (mm)	**54.321**
C_U	**93**
C_C	**1**

Soil Description:
Brown very sandy slightly silty GRAVEL with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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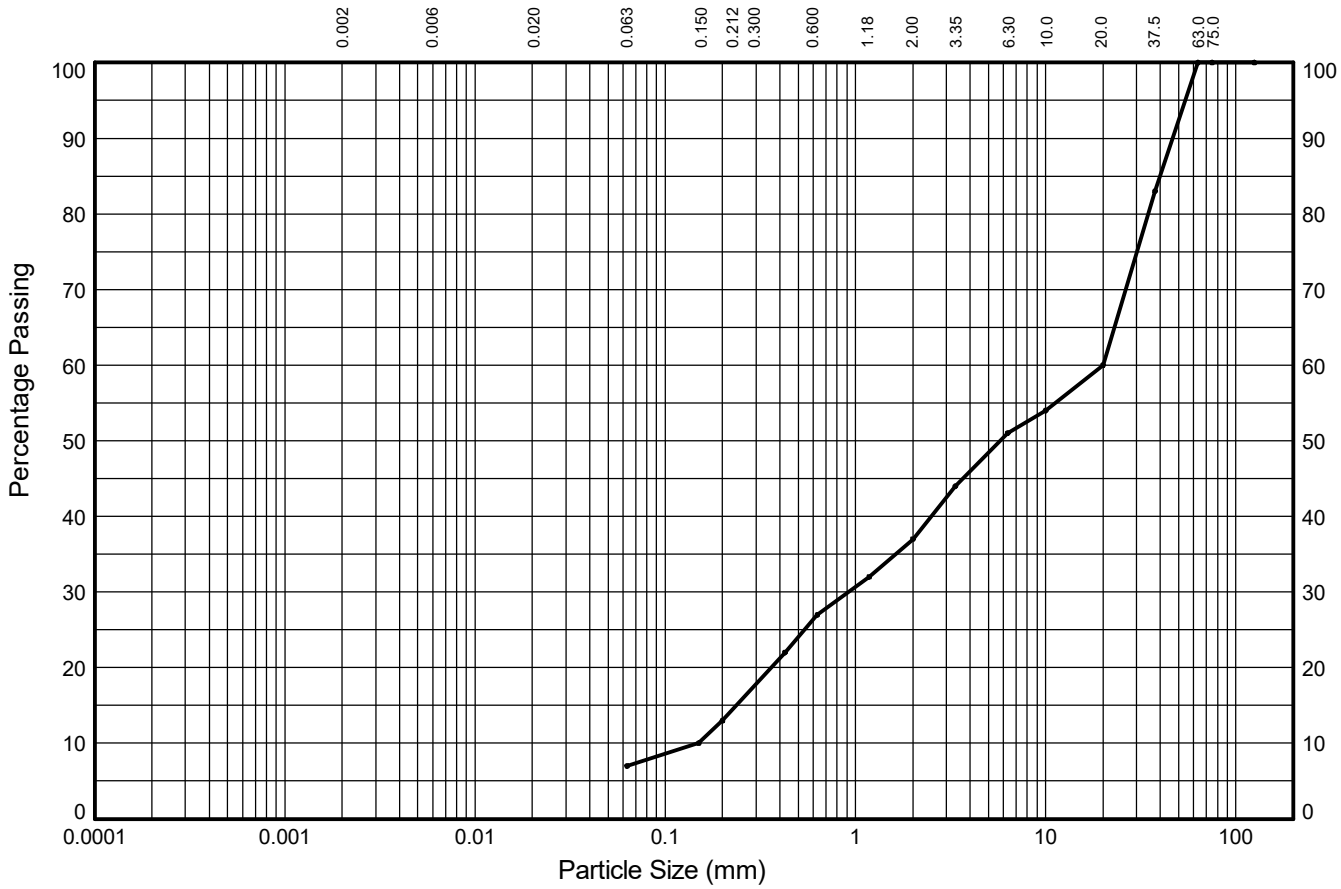
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Trial Pit: **TP-PTS212** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	6%	14%	10%	14%	9%	40%	
	SILT			SAND			GRAVEL			
7%				30%			63%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**83**
20.0	**60**
10.0	**54**
6.30	**51**
3.35	**44**
2.00	**37**
1.18	**32**
0.630	**27**
0.425	**22**
0.200	**13**
0.150	**10**
0.063	**7**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.150**
D_{15} (mm)	**0.236**
D_{30} (mm)	**0.918**
D_{50} (mm)	**5.756**
D_{60} (mm)	**20.000**
D_{85} (mm)	**39.860**
D_{90} (mm)	**46.431**
C_U	**133**
C_C	**0.28**

Soil Description:

Reddish brown very sandy silty GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Maduka	**PRECIOUS MADUKA**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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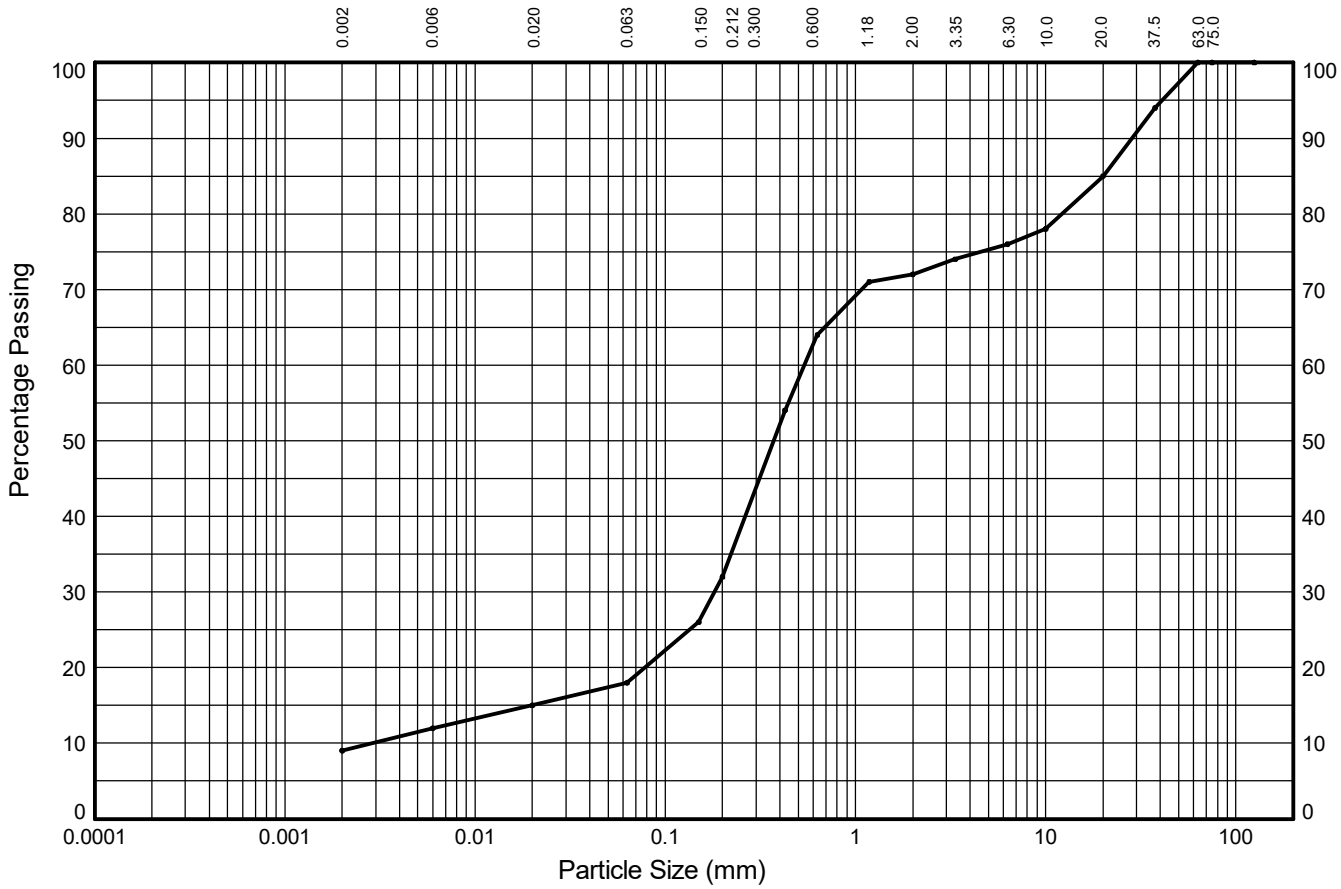
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Trial Pit: **TP-PTS213** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	3%	14%	32%	8%	4%	9%	15%	
	SILT			SAND			GRAVEL			
9%	9%			54%			28%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**94**
20.0	**85**
10.0	**78**
6.30	**76**
3.35	**74**
2.00	**72**
1.18	**71**
0.630	**64**
0.425	**54**
0.200	**32**
0.150	**26**
0.063	**18**

Particle Diameter (mm)	Percent Passing (%)
0.02	**15**
0.006	**12**
0.002	**9**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.003**
D_{15} (mm)	**0.020**
D_{30} (mm)	**0.182**
D_{50} (mm)	**0.371**
D_{60} (mm)	**0.538**
D_{85} (mm)	**20.000**
D_{90} (mm)	**28.359**
C_U	**187**
C_C	**21**

Soil Description:
Brown very gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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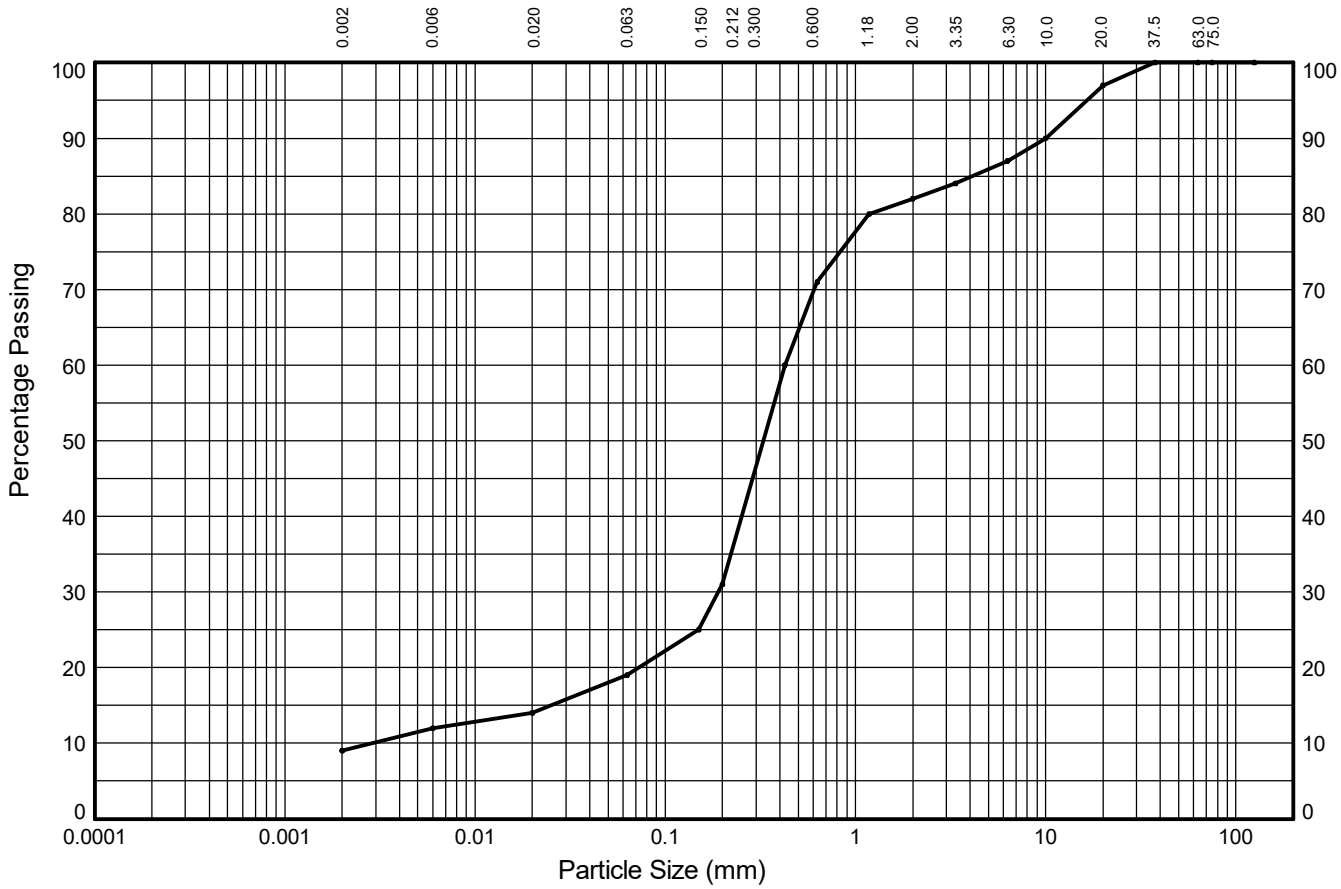
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS213** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	2%	5%	12%	40%	11%	5%	10%	3%	
	SILT			SAND			GRAVEL			
9%	10%			63%			18%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**97**
10.0	**90**
6.30	**87**
3.35	**84**
2.00	**82**
1.18	**80**
0.630	**71**
0.425	**60**
0.200	**31**
0.150	**25**
0.063	**19**

Particle Diameter (mm)	Percent Passing (%)
0.02	**14**
0.006	**12**
0.002	**9**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.003**
D_{15} (mm)	**0.025**
D_{30} (mm)	**0.191**
D_{50} (mm)	**0.328**
D_{60} (mm)	**0.425**
D_{85} (mm)	**4.135**
D_{90} (mm)	**10.000**
C_U	**147**
C_C	**30**

Soil Description:

Brown gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
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BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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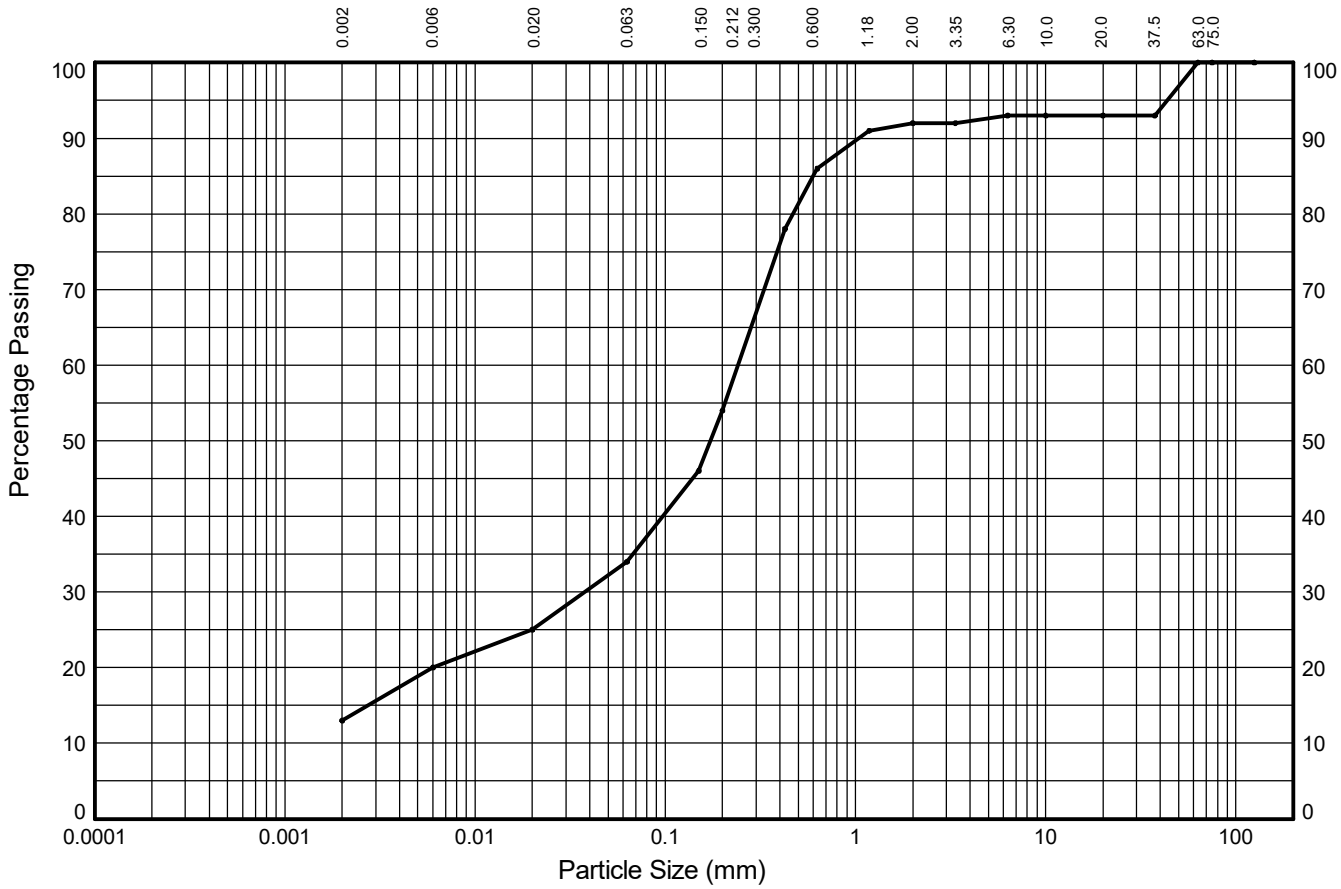
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS214** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	7%	5%	9%	20%	32%	6%	1%	0%	7%	
	SILT			SAND			GRAVEL			
13%	21%			58%			8%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**93**
20.0	**93**
10.0	**93**
6.30	**93**
3.35	**92**
2.00	**92**
1.18	**91**
0.630	**86**
0.425	**78**
0.200	**54**
0.150	**46**
0.063	**34**

Particle Diameter (mm)	Percent Passing (%)
0.02	**25**
0.006	**20**
0.002	**13**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.003**
D_{30} (mm)	**0.038**
D_{50} (mm)	**0.173**
D_{60} (mm)	**0.241**
D_{85} (mm)	**0.600**
D_{90} (mm)	**1.041**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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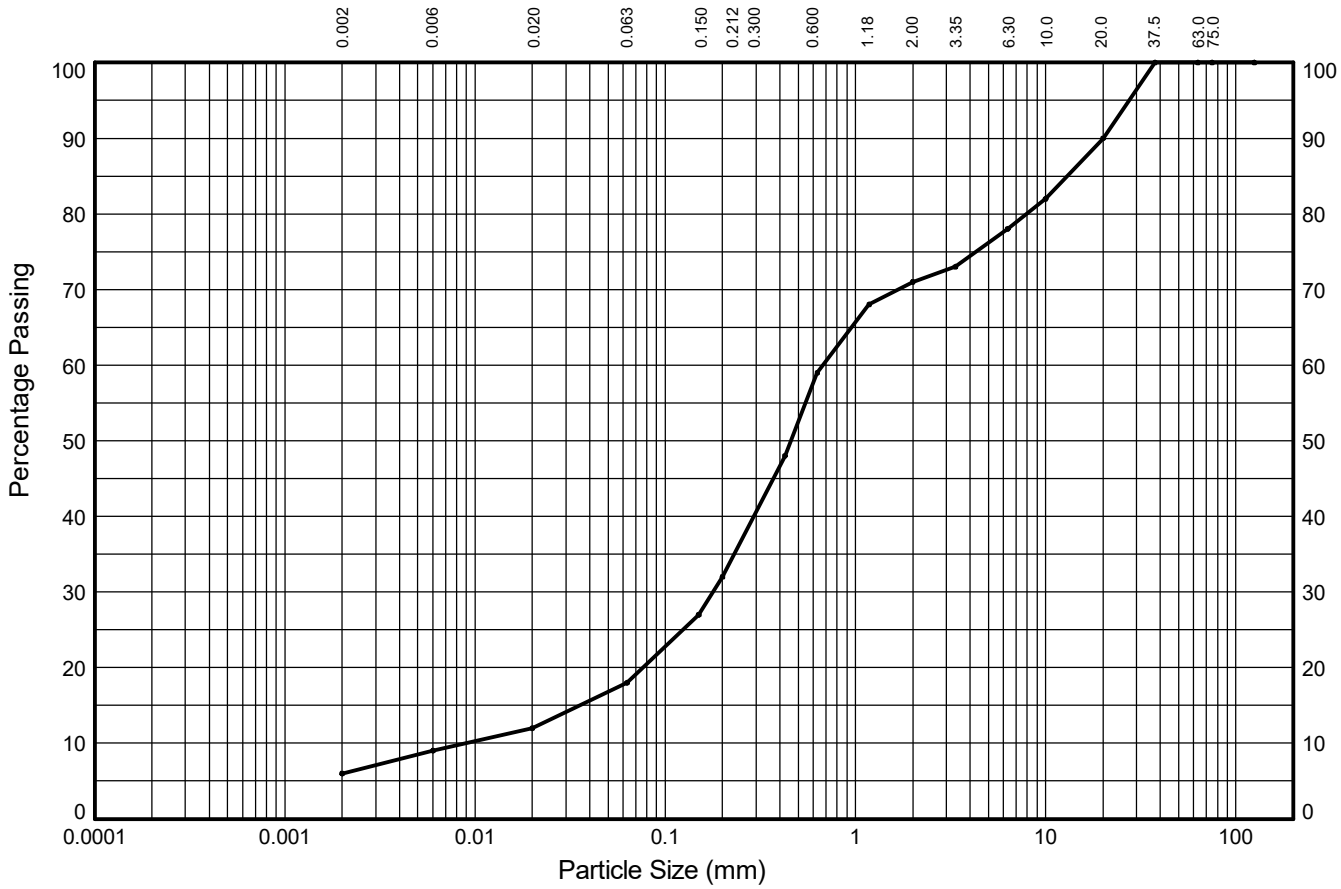
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS215** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	6%	14%	27%	12%	7%	12%	10%	
	SILT			SAND			GRAVEL			
6%	12%			53%			29%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**90**
10.0	**82**
6.30	**78**
3.35	**73**
2.00	**71**
1.18	**68**
0.630	**59**
0.425	**48**
0.200	**32**
0.150	**27**
0.063	**18**

Particle Diameter (mm)	Percent Passing (%)
0.02	**12**
0.006	**9**
0.002	**6**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.009**
D_{15} (mm)	**0.035**
D_{30} (mm)	**0.178**
D_{50} (mm)	**0.457**
D_{60} (mm)	**0.675**
D_{85} (mm)	**12.968**
D_{90} (mm)	**20.000**
C_U	**75**
C_C	**5**

Soil Description:

Brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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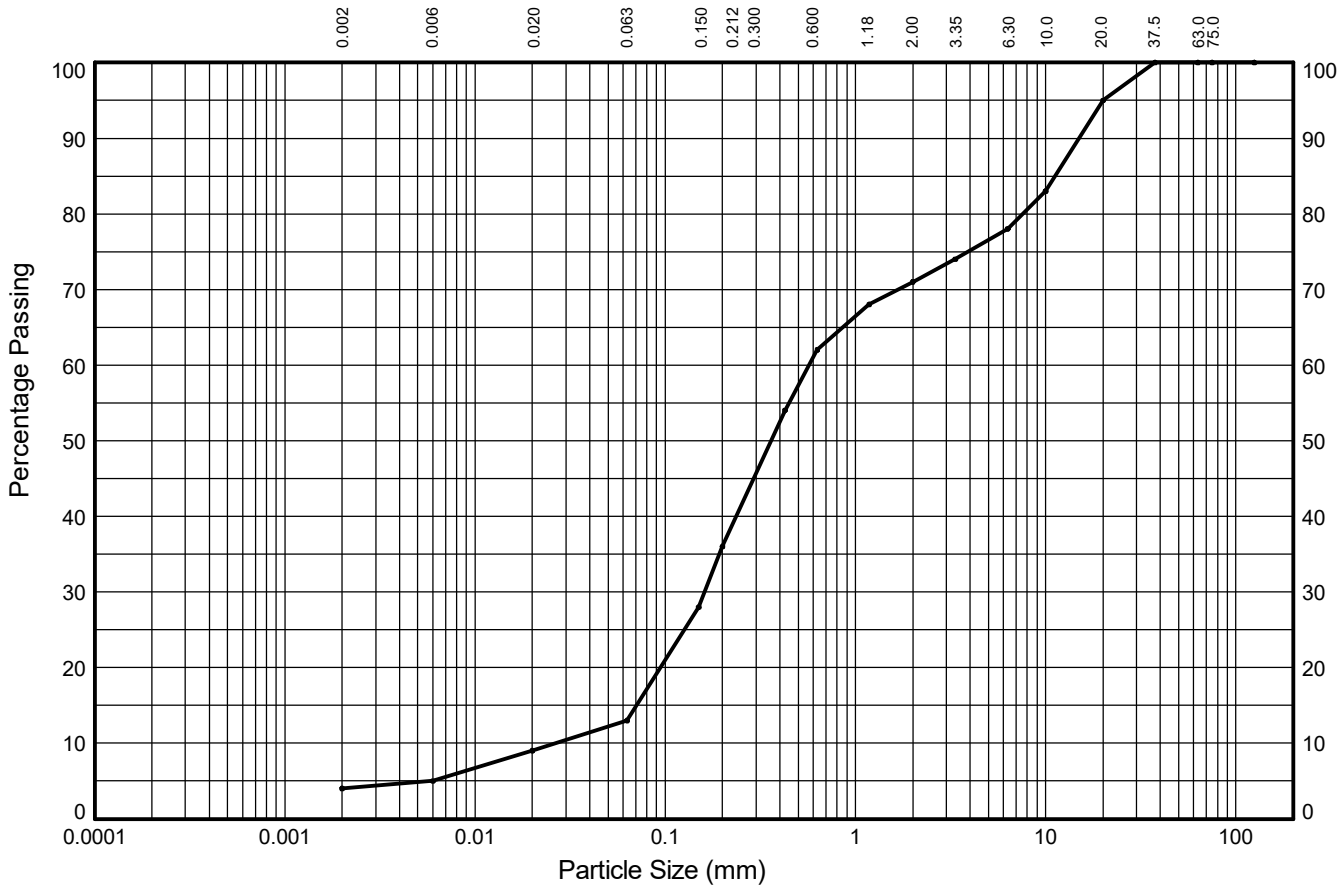
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS215** Sample Ref: **6** Sample Type: **B** Depth (m): **1.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	1%	4%	4%	23%	26%	9%	7%	17%	5%	
	SILT			SAND			GRAVEL			
4%	9%			58%			29%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**95**
10.0	**83**
6.30	**78**
3.35	**74**
2.00	**71**
1.18	**68**
0.630	**62**
0.425	**54**
0.200	**36**
0.150	**28**
0.063	**13**

Particle Diameter (mm)	Percent Passing (%)
0.02	**9**
0.006	**5**
0.002	**4**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.027**
D_{15} (mm)	**0.071**
D_{30} (mm)	**0.161**
D_{50} (mm)	**0.359**
D_{60} (mm)	**0.571**
D_{85} (mm)	**11.225**
D_{90} (mm)	**14.983**
C_U	**21**
C_C	**2**

Soil Description:

Orangish brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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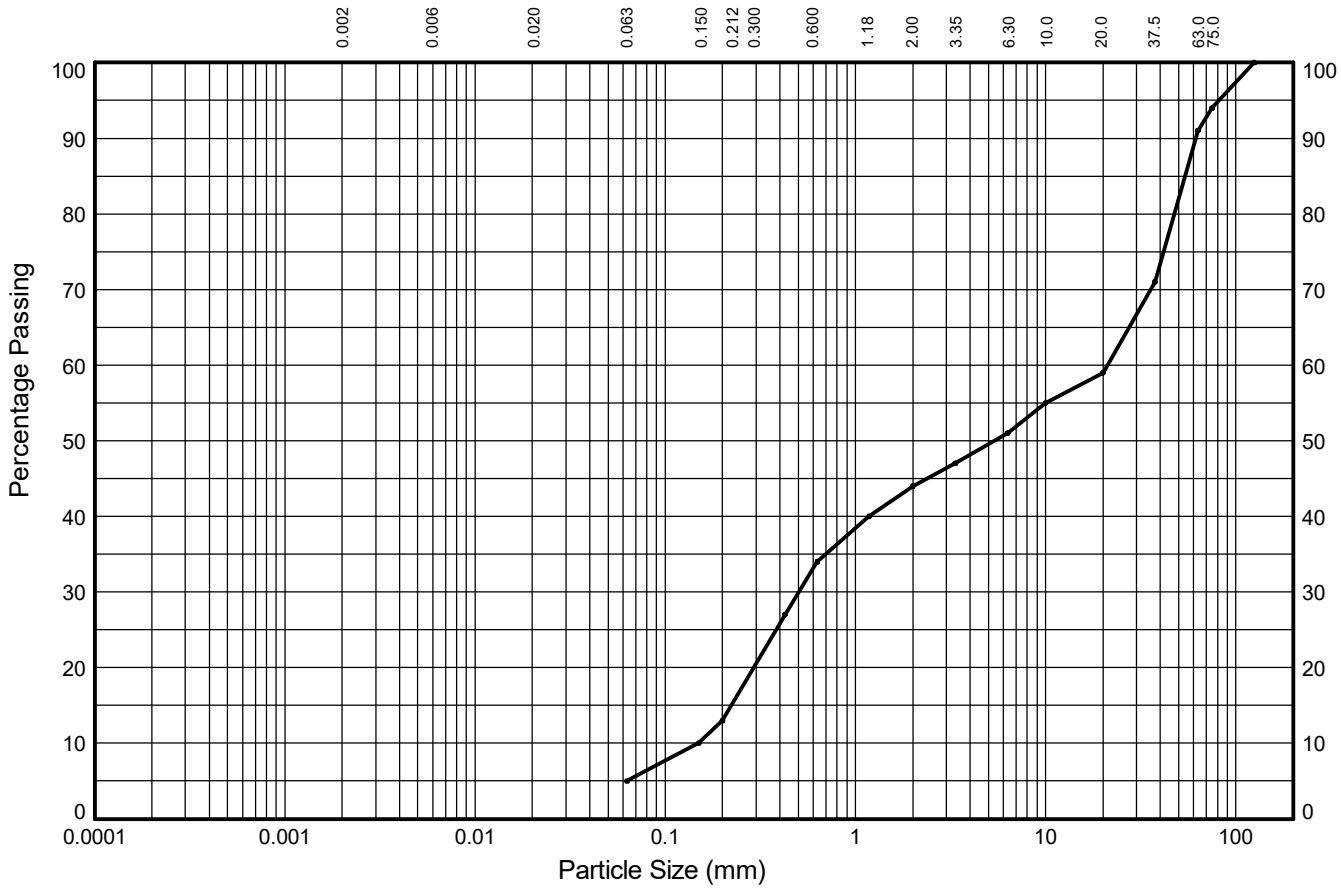
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Trial Pit: **TP-PTS217** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	8%	21%	10%	7%	8%	32%	
	SILT			SAND			GRAVEL			
5%				39%			47%			9%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**94**
63.0	**91**
37.5	**71**
20.0	**59**
10.0	**55**
6.30	**51**
3.35	**47**
2.00	**44**
1.18	**40**
0.630	**34**
0.425	**27**
0.200	**13**
0.150	**10**
0.063	**5**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.150**
D_{15} (mm)	**0.223**
D_{30} (mm)	**0.503**
D_{50} (mm)	**5.380**
D_{60} (mm)	**21.076**
D_{85} (mm)	**53.920**
D_{90} (mm)	**61.387**
C_U	**141**
C_C	**0.08**

Soil Description:
Reddish brown very sandy silty GRAVEL with medium gravel content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
E. Hort	ELIZABETH HORT	22/08/23

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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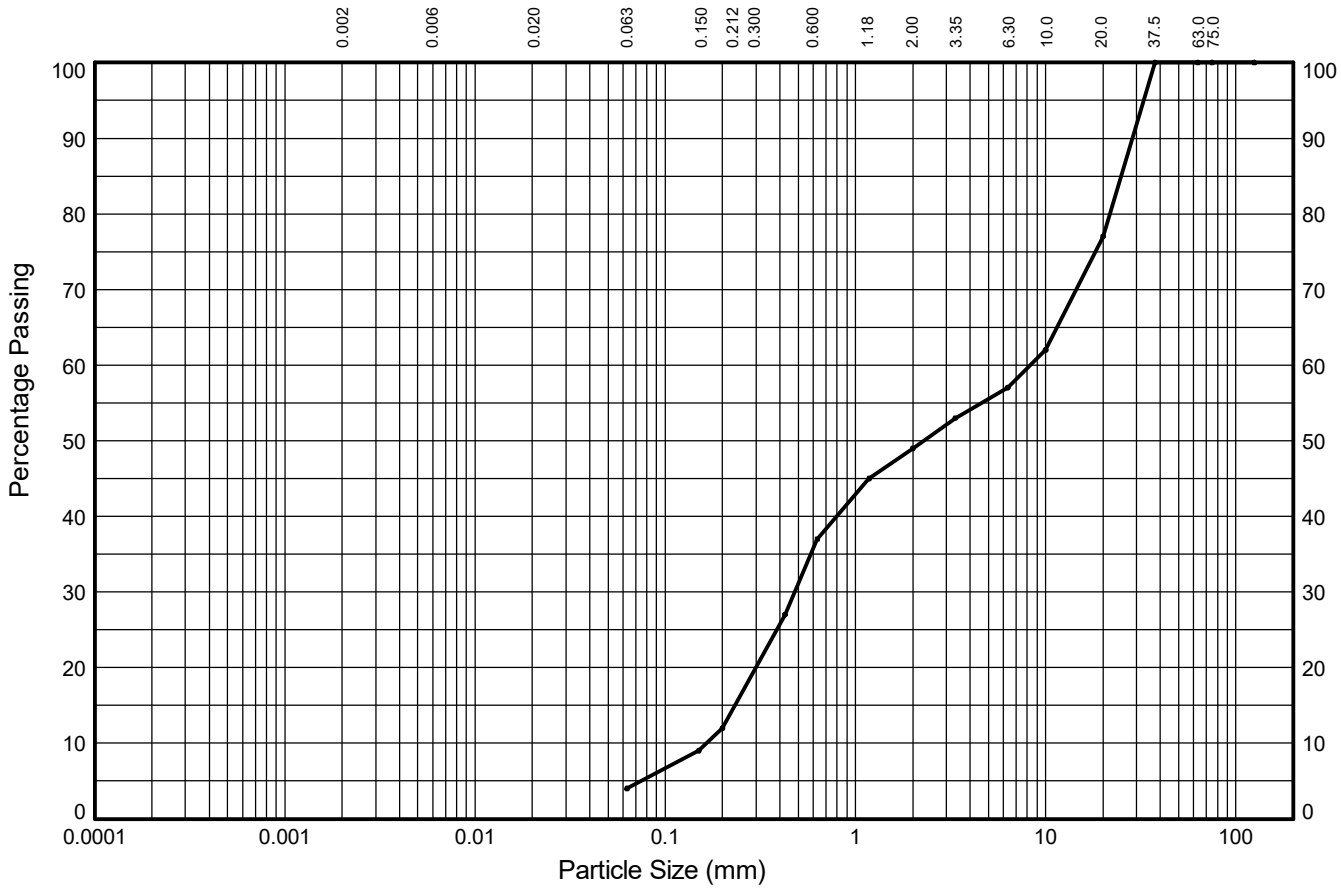
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Trial Pit: **TP-PTS217** Sample Ref: **7** Sample Type: **LB** Depth (m): **1.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	8%	25%	12%	8%	20%	23%	
	SILT			SAND			GRAVEL			
4%				45%			51%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**77**
10.0	**62**
6.30	**57**
3.35	**53**
2.00	**49**
1.18	**45**
0.630	**37**
0.425	**27**
0.200	**12**
0.150	**9**
0.063	**4**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.165**
D_{15} (mm)	**0.233**
D_{30} (mm)	**0.478**
D_{50} (mm)	**2.275**
D_{60} (mm)	**8.313**
D_{85} (mm)	**24.888**
D_{90} (mm)	**28.532**
C_U	**50**
C_C	**0.17**

Soil Description:

Brown very sandy slightly silty GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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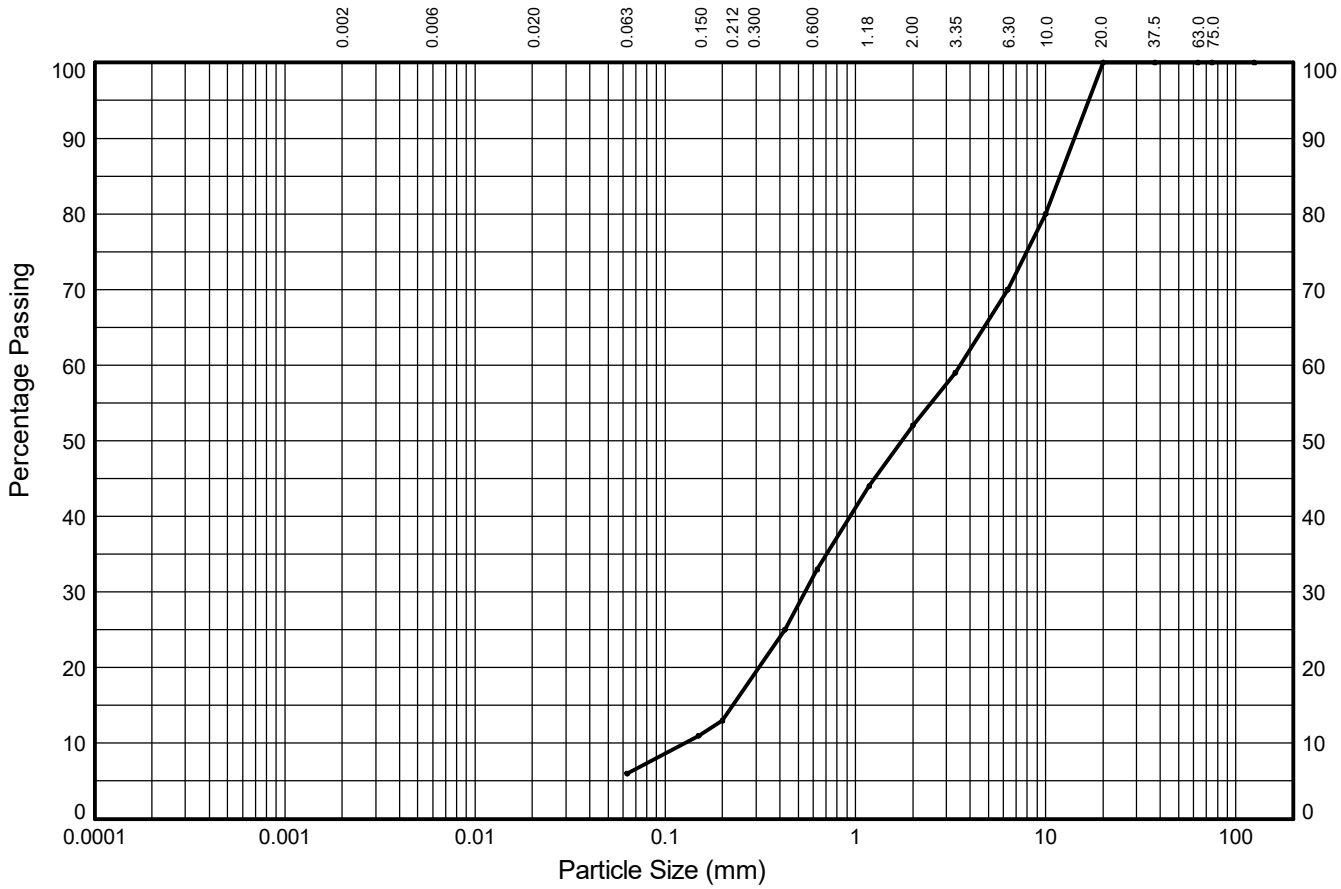
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS217** Sample Ref: **10** Sample Type: **LB** Depth (m): **2.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	7%	20%	19%	18%	30%	0%	
	SILT			SAND			GRAVEL			
6%				46%			48%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**80**
6.30	**70**
3.35	**59**
2.00	**52**
1.18	**44**
0.630	**33**
0.425	**25**
0.200	**13**
0.150	**11**
0.063	**6**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.126**
D_{15} (mm)	**0.227**
D_{30} (mm)	**0.544**
D_{50} (mm)	**1.753**
D_{60} (mm)	**3.548**
D_{85} (mm)	**11.892**
D_{90} (mm)	**14.142**
C_U	**28**
C_C	**0.66**

Soil Description:

Brown very sandy silty GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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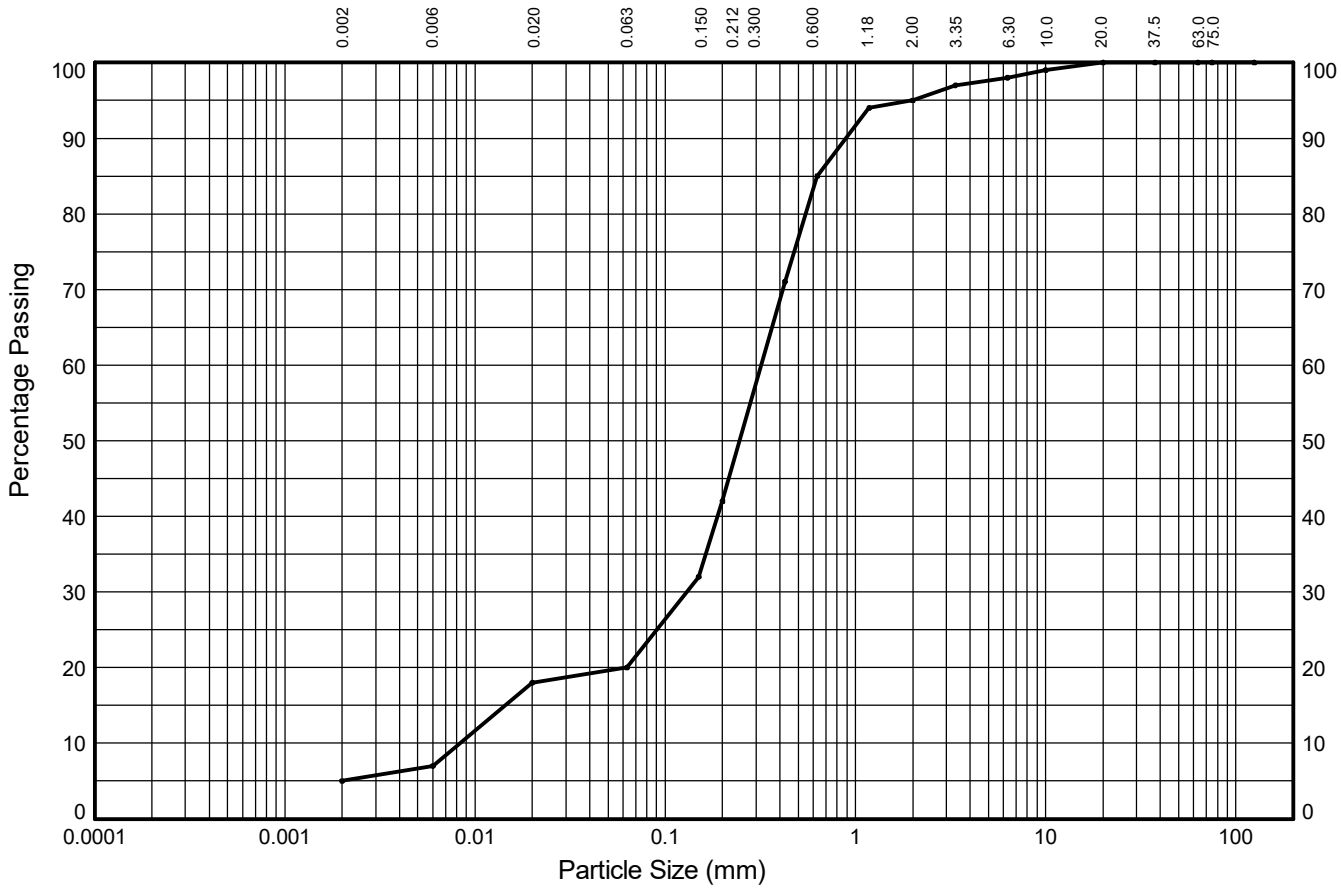
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS220** Sample Ref: **5** Sample Type: **B** Depth (m): **0.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	11%	2%	22%	43%	10%	3%	2%	0%	
	SILT			SAND			GRAVEL			
5%	15%			75%			5%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**99**
6.30	**98**
3.35	**97**
2.00	**95**
1.18	**94**
0.630	**85**
0.425	**71**
0.200	**42**
0.150	**32**
0.063	**20**

Particle Diameter (mm)	Percent Passing (%)
0.02	**18**
0.006	**7**
0.002	**5**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.008**
D_{15} (mm)	**0.014**
D_{30} (mm)	**0.130**
D_{50} (mm)	**0.246**
D_{60} (mm)	**0.319**
D_{85} (mm)	**0.630**
D_{90} (mm)	**0.893**
C_U	**38**
C_C	**6**

Soil Description:

Red gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
	DAISY RICHARDS	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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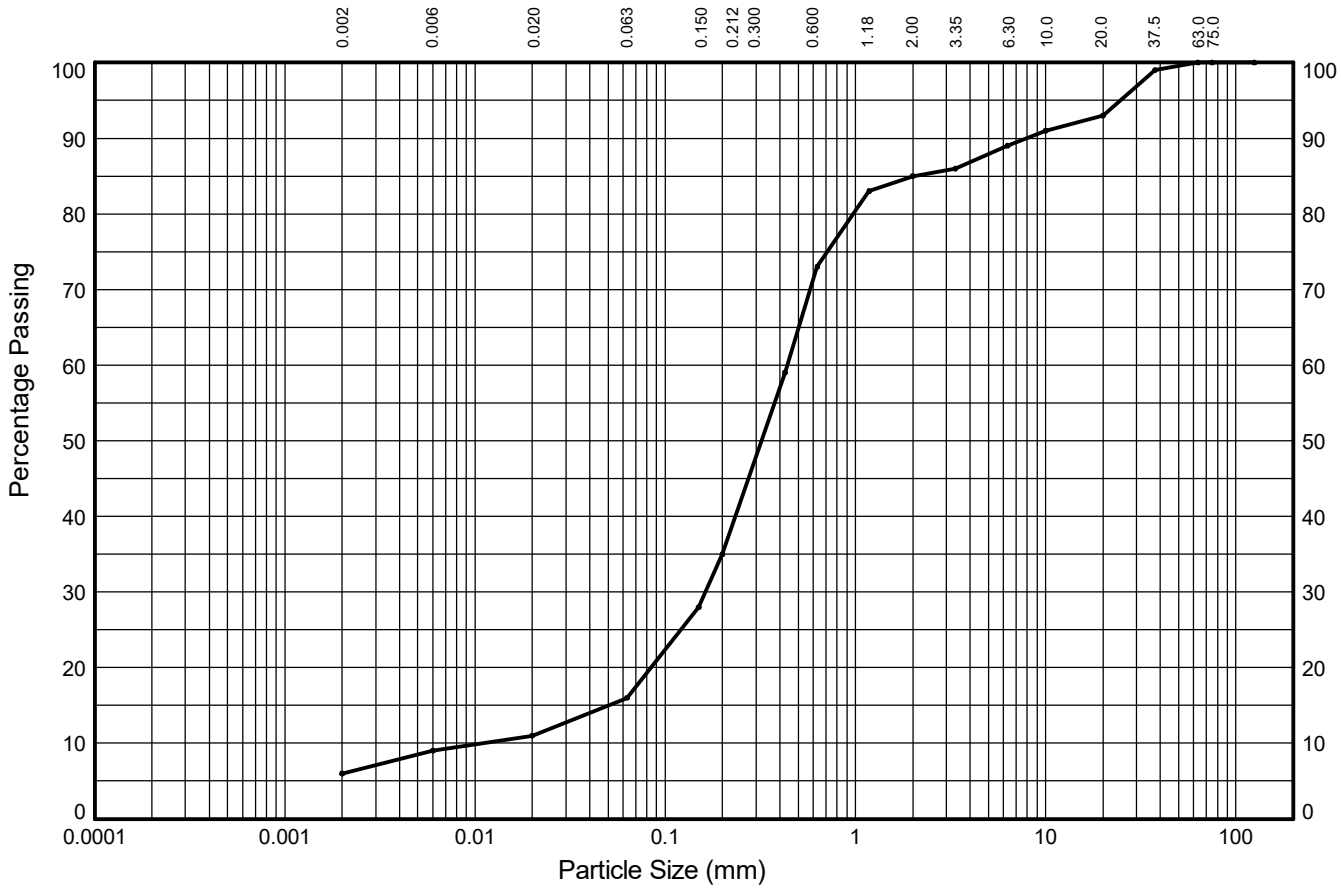
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS220** Sample Ref: **7** Sample Type: **B** Depth (m): **1.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	2%	5%	19%	38%	12%	4%	4%	7%	
	SILT			SAND			GRAVEL			
6%	10%			69%			15%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**99**
20.0	**93**
10.0	**91**
6.30	**89**
3.35	**86**
2.00	**85**
1.18	**83**
0.630	**73**
0.425	**59**
0.200	**35**
0.150	**28**
0.063	**16**

Particle Diameter (mm)	Percent Passing (%)
0.02	**11**
0.006	**9**
0.002	**6**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.011**
D_{15} (mm)	**0.050**
D_{30} (mm)	**0.163**
D_{50} (mm)	**0.320**
D_{60} (mm)	**0.437**
D_{85} (mm)	**2.000**
D_{90} (mm)	**7.937**
C_U	**40**
C_C	**6**

Soil Description:

Brown gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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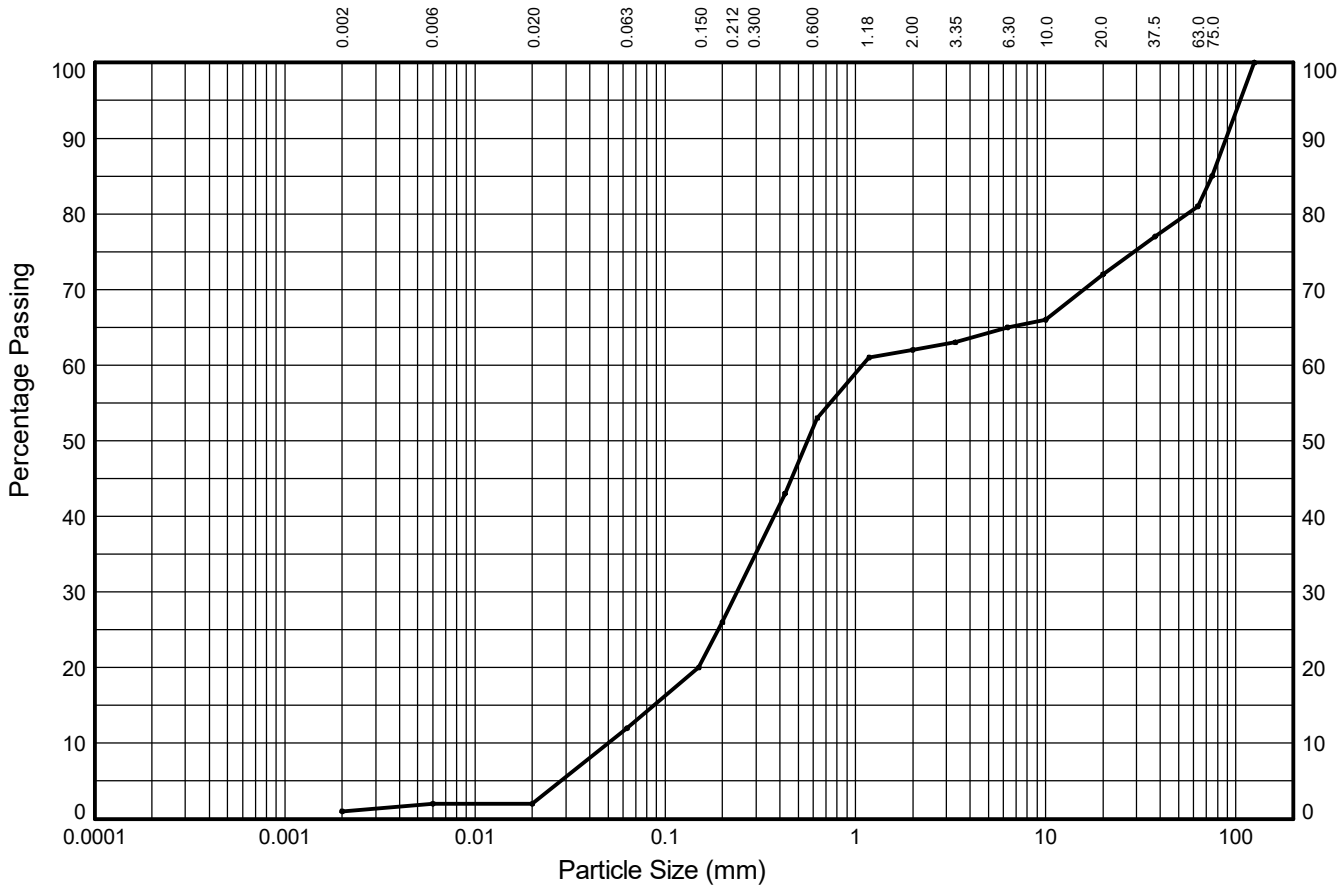
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS220** Sample Ref: **10** Sample Type: **B** Depth (m): **2.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	1%	0%	10%	14%	27%	9%	3%	7%	9%	
	SILT			SAND			GRAVEL			
1%	11%			50%			19%			19%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**85**
63.0	**81**
37.5	**77**
20.0	**72**
10.0	**66**
6.30	**65**
3.35	**63**
2.00	**62**
1.18	**61**
0.630	**53**
0.425	**43**
0.200	**26**
0.150	**20**
0.063	**12**

Particle Diameter (mm)	Percent Passing (%)
0.02	**2**
0.006	**2**
0.002	**1**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.050**
D_{15} (mm)	**0.087**
D_{30} (mm)	**0.239**
D_{50} (mm)	**0.560**
D_{60} (mm)	**1.091**
D_{85} (mm)	**75.000**
D_{90} (mm)	**88.922**
C_U	**22**
C_C	**1**

Soil Description:

Reddish brown gravelly silty SAND with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
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BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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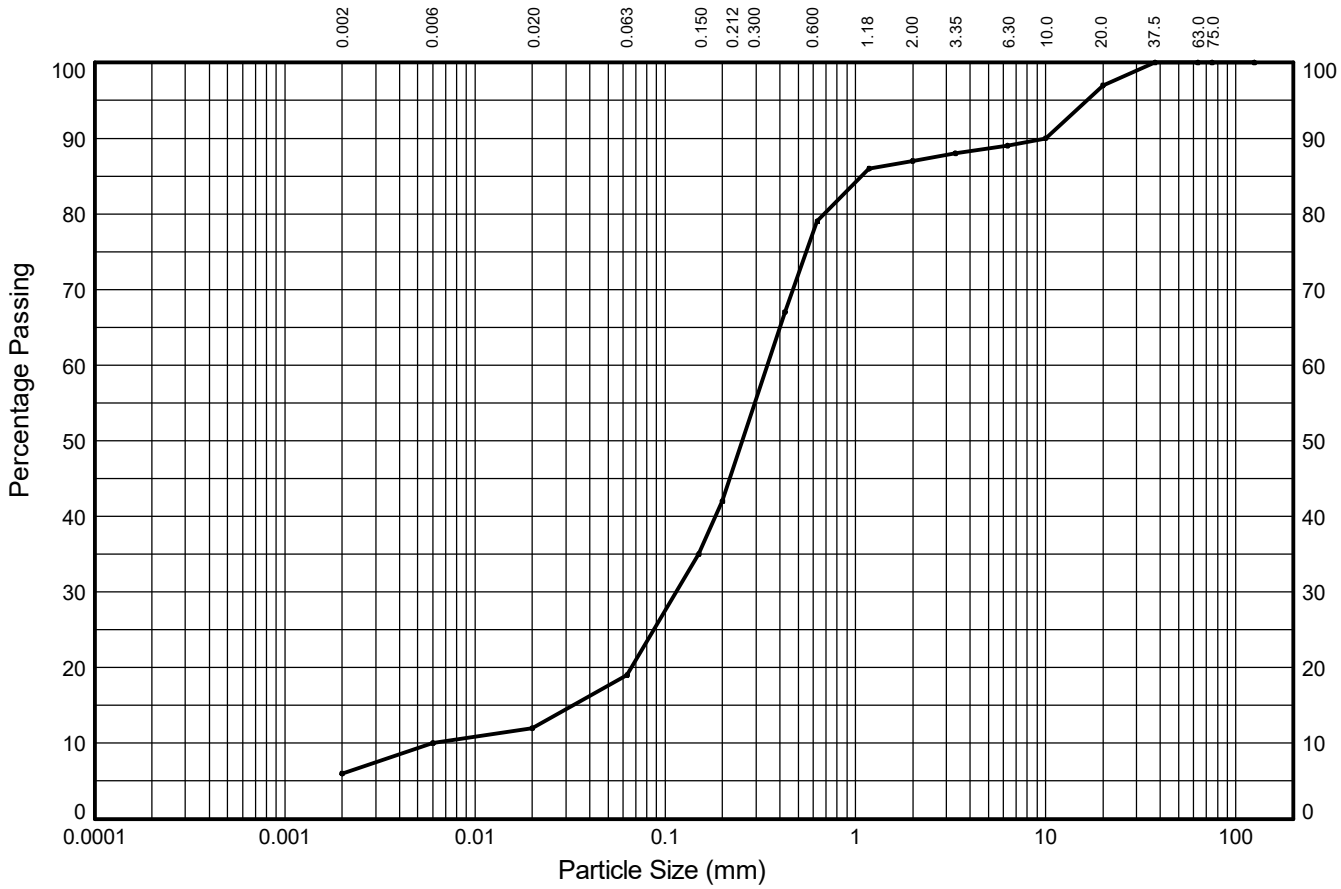
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS221** Sample Ref: **1** Sample Type: **LB** Depth (m): **0.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	2%	7%	23%	37%	8%	2%	8%	3%	
	SILT			SAND			GRAVEL			
6%	13%			68%			13%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**97**
10.0	**90**
6.30	**89**
3.35	**88**
2.00	**87**
1.18	**86**
0.630	**79**
0.425	**67**
0.200	**42**
0.150	**35**
0.063	**19**

Particle Diameter (mm)	Percent Passing (%)
0.02	**12**
0.006	**10**
0.002	**6**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.006**
D_{15} (mm)	**0.033**
D_{30} (mm)	**0.114**
D_{50} (mm)	**0.255**
D_{60} (mm)	**0.344**
D_{85} (mm)	**1.079**
D_{90} (mm)	**10.000**
C_U	**57**
C_C	**6**

Soil Description:

Dark brown gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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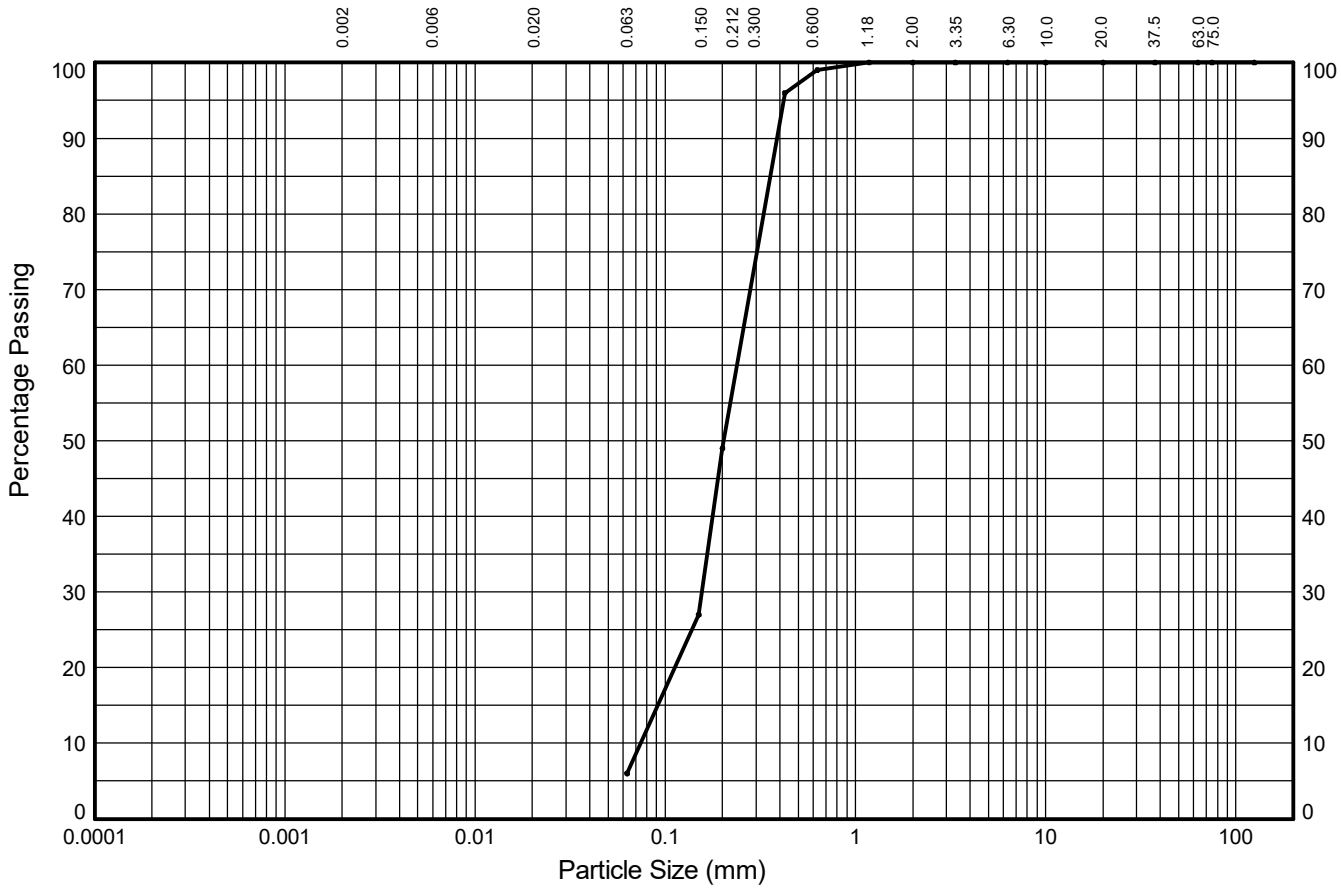
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS221** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	43%	50%	1%	0%	0%	0%	
	SILT			SAND			GRAVEL			
6%				94%			0%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**100**
3.35	**100**
2.00	**100**
1.18	**100**
0.630	**99**
0.425	**96**
0.200	**49**
0.150	**27**
0.063	**6**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.074**
D_{15} (mm)	**0.091**
D_{30} (mm)	**0.156**
D_{50} (mm)	**0.203**
D_{60} (mm)	**0.239**
D_{85} (mm)	**0.356**
D_{90} (mm)	**0.386**
C_U	**3.2**
C_C	**1.4**

Soil Description:

Red silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Maduka	**PRECIOUS MADUKA**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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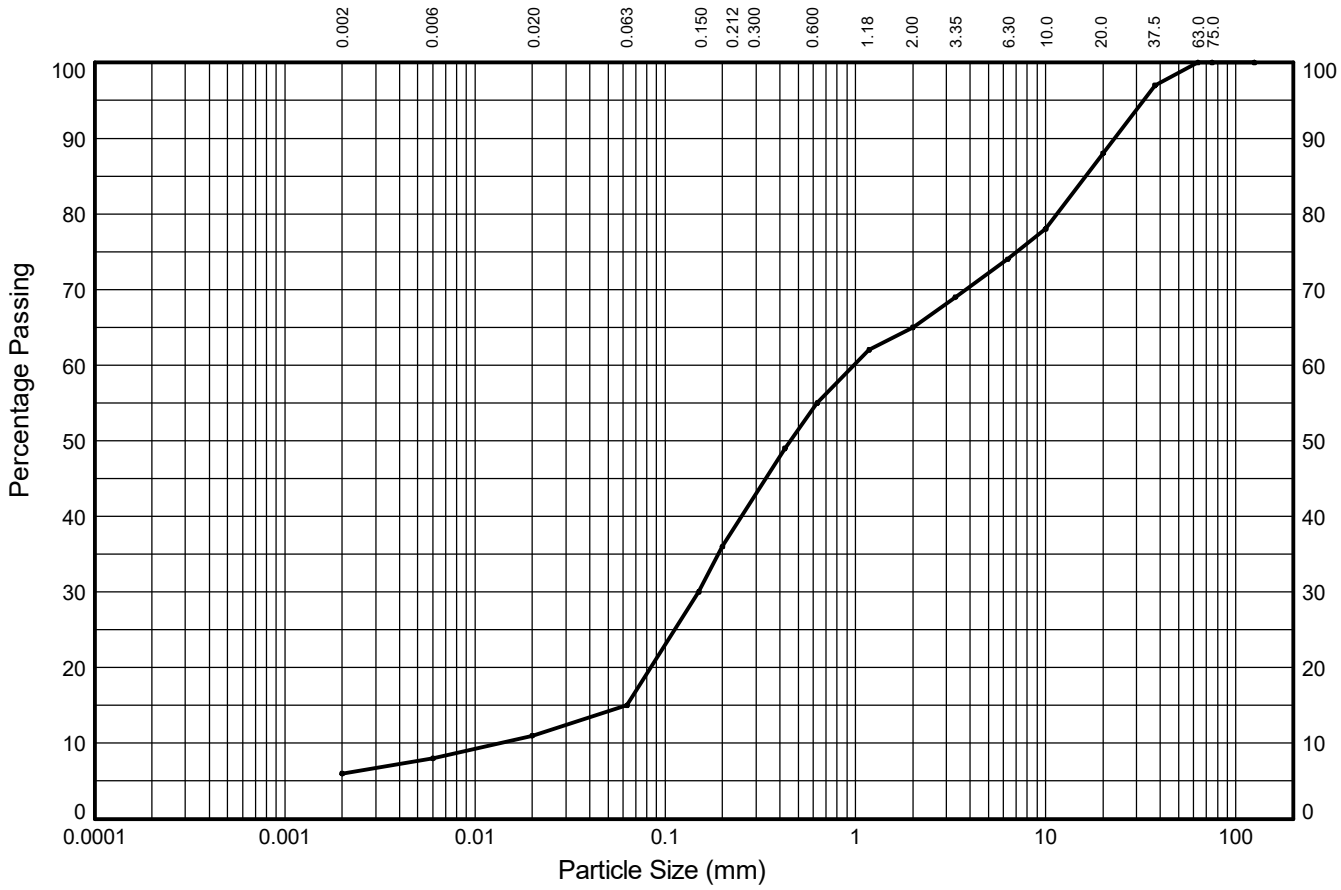
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS221** Sample Ref: **7** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	3%	4%	21%	19%	10%	9%	14%	12%	
	SILT			SAND			GRAVEL			
6%	9%			50%			35%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**97**
20.0	**88**
10.0	**78**
6.30	**74**
3.35	**69**
2.00	**65**
1.18	**62**
0.630	**55**
0.425	**49**
0.200	**36**
0.150	**30**
0.063	**15**

Particle Diameter (mm)	Percent Passing (%)
0.02	**11**
0.006	**8**
0.002	**6**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.013**
D_{15} (mm)	**0.063**
D_{30} (mm)	**0.150**
D_{50} (mm)	**0.454**
D_{60} (mm)	**0.986**
D_{85} (mm)	**16.245**
D_{90} (mm)	**22.998**
C_U	**74**
C_C	**2**

Soil Description:

Orangish brown very gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
V. Chacin M.	**VALERIA CHACIN MIJOVA**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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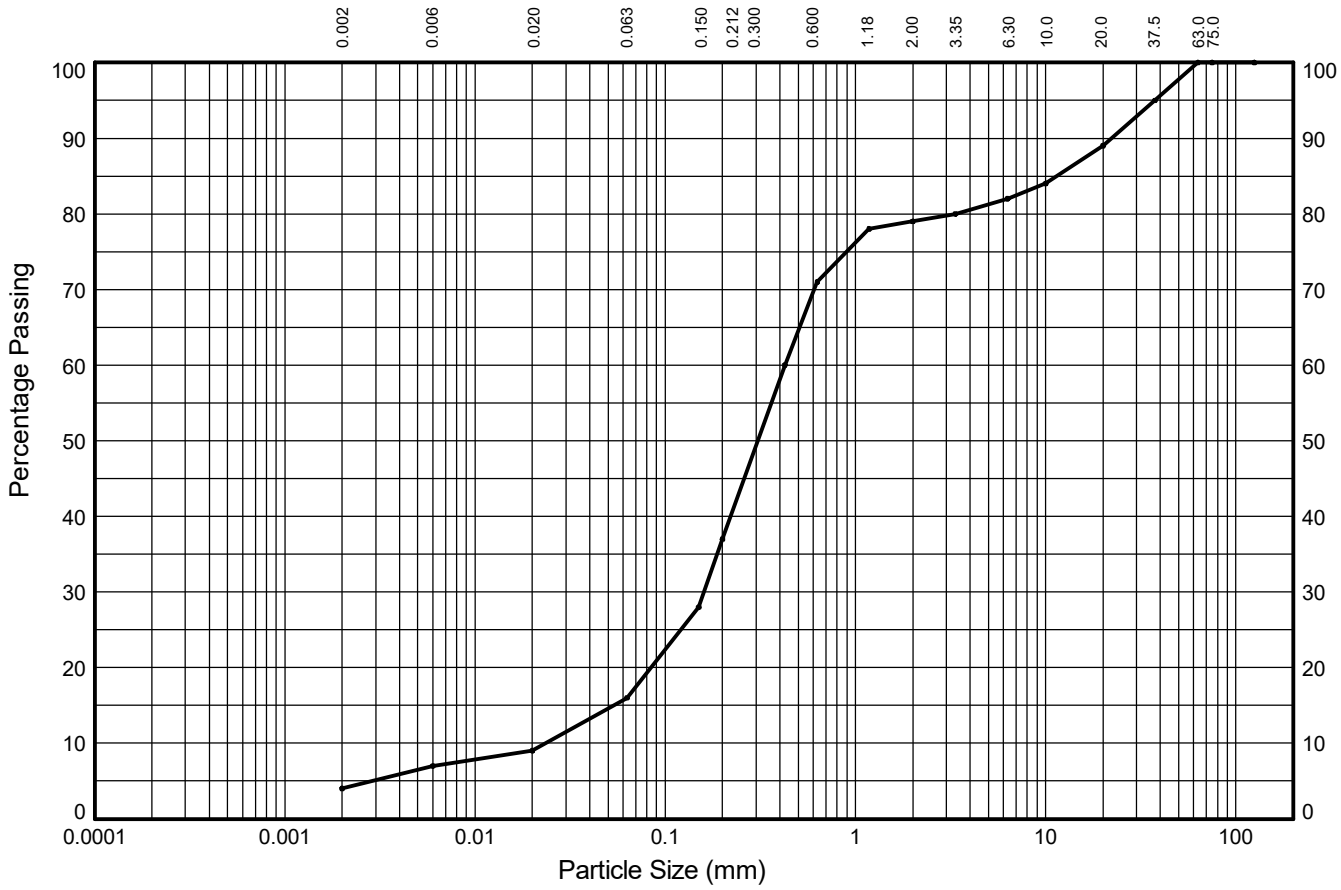
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS224** Sample Ref: **1** Sample Type: **LB** Depth (m): **0.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	2%	7%	21%	34%	8%	3%	7%	11%	
	SILT			SAND			GRAVEL			
4%	12%			63%			21%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**95**
20.0	**89**
10.0	**84**
6.30	**82**
3.35	**80**
2.00	**79**
1.18	**78**
0.630	**71**
0.425	**60**
0.200	**37**
0.150	**28**
0.063	**16**

Particle Diameter (mm)	Percent Passing (%)
0.02	**9**
0.006	**7**
0.002	**4**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.024**
D_{15} (mm)	**0.053**
D_{30} (mm)	**0.160**
D_{50} (mm)	**0.306**
D_{60} (mm)	**0.425**
D_{85} (mm)	**11.487**
D_{90} (mm)	**22.209**
C_U	**18**
C_C	**3**

Soil Description:

Brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By	Date
DAISY RICHARDS	22/08/23

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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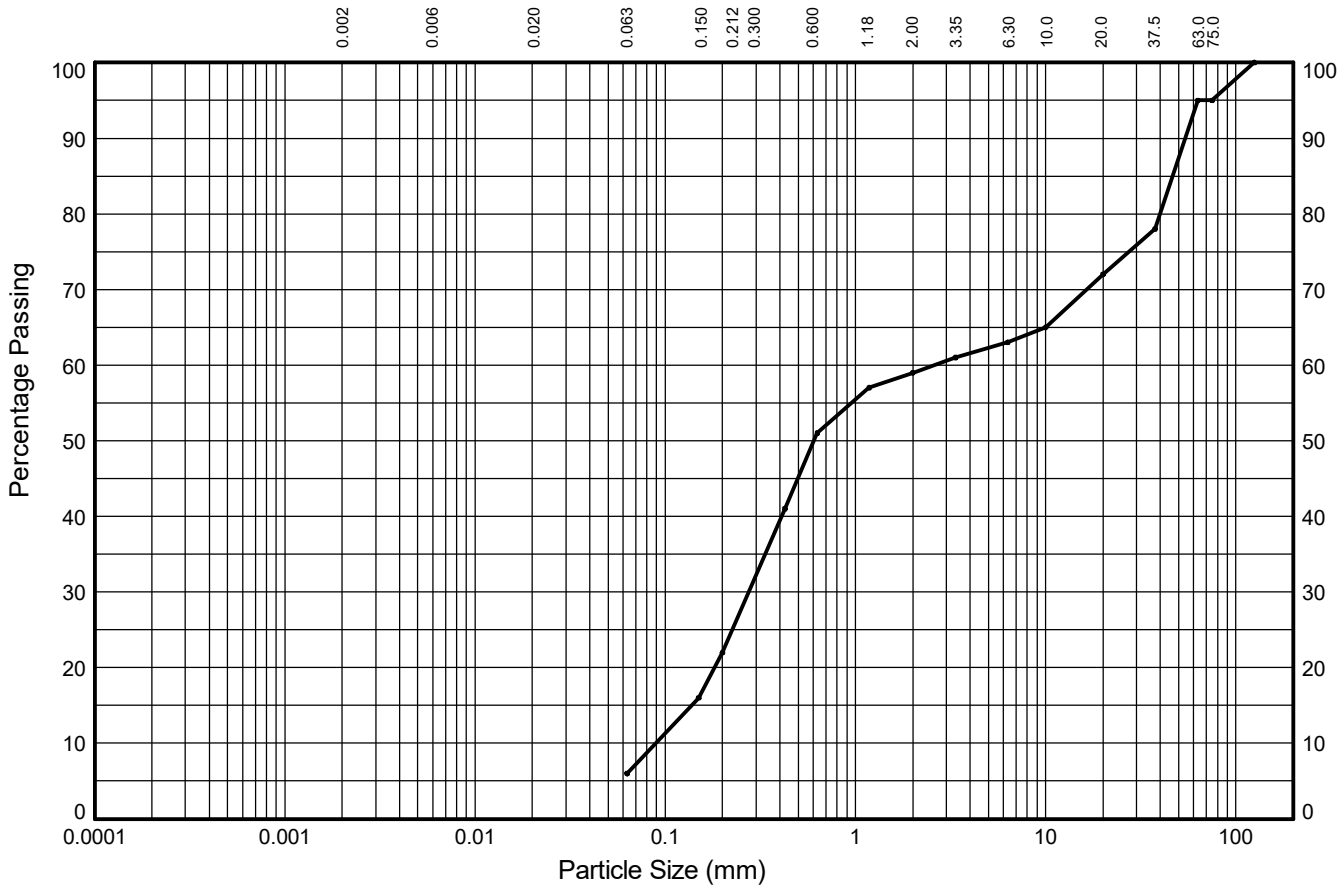
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Trial Pit: **TP-PTS224** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	16%	29%	8%	4%	9%	23%	
	SILT			SAND			GRAVEL			
6%				53%			36%			5%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**95**
63.0	**95**
37.5	**78**
20.0	**72**
10.0	**65**
6.30	**63**
3.35	**61**
2.00	**59**
1.18	**57**
0.630	**51**
0.425	**41**
0.200	**22**
0.150	**16**
0.063	**6**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.089**
D_{15} (mm)	**0.138**
D_{30} (mm)	**0.275**
D_{50} (mm)	**0.606**
D_{60} (mm)	**2.588**
D_{85} (mm)	**46.431**
D_{90} (mm)	**54.085**
C_U	**29**
C_C	**0.33**

Soil Description:
Orangish brown very gravelly silty SAND with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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1a Princess Street
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Compiled By		Date
	DAISY RICHARDS	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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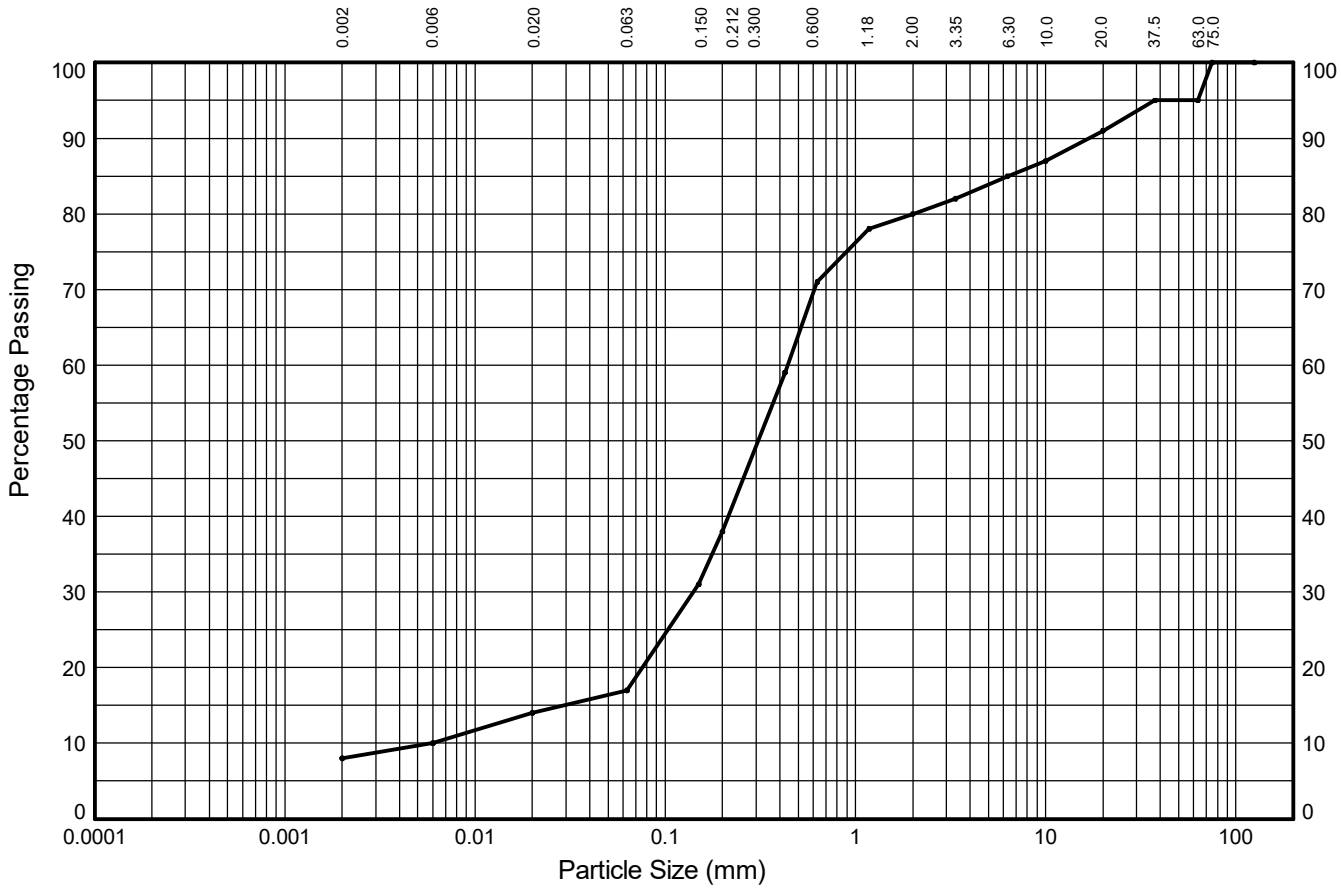
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS224** Sample Ref: **5** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	4%	3%	21%	33%	9%	5%	6%	4%	
	SILT			SAND			GRAVEL			
8%	9%			63%			15%			5%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**95**
37.5	**95**
20.0	**91**
10.0	**87**
6.30	**85**
3.35	**82**
2.00	**80**
1.18	**78**
0.630	**71**
0.425	**59**
0.200	**38**
0.150	**31**
0.063	**17**

Particle Diameter (mm)	Percent Passing (%)
0.02	**14**
0.006	**10**
0.002	**8**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.006**
D_{15} (mm)	**0.029**
D_{30} (mm)	**0.141**
D_{50} (mm)	**0.308**
D_{60} (mm)	**0.439**
D_{85} (mm)	**6.300**
D_{90} (mm)	**16.818**
C_U	**73**
C_C	**8**

Soil Description:

Red gravelly clayey SAND with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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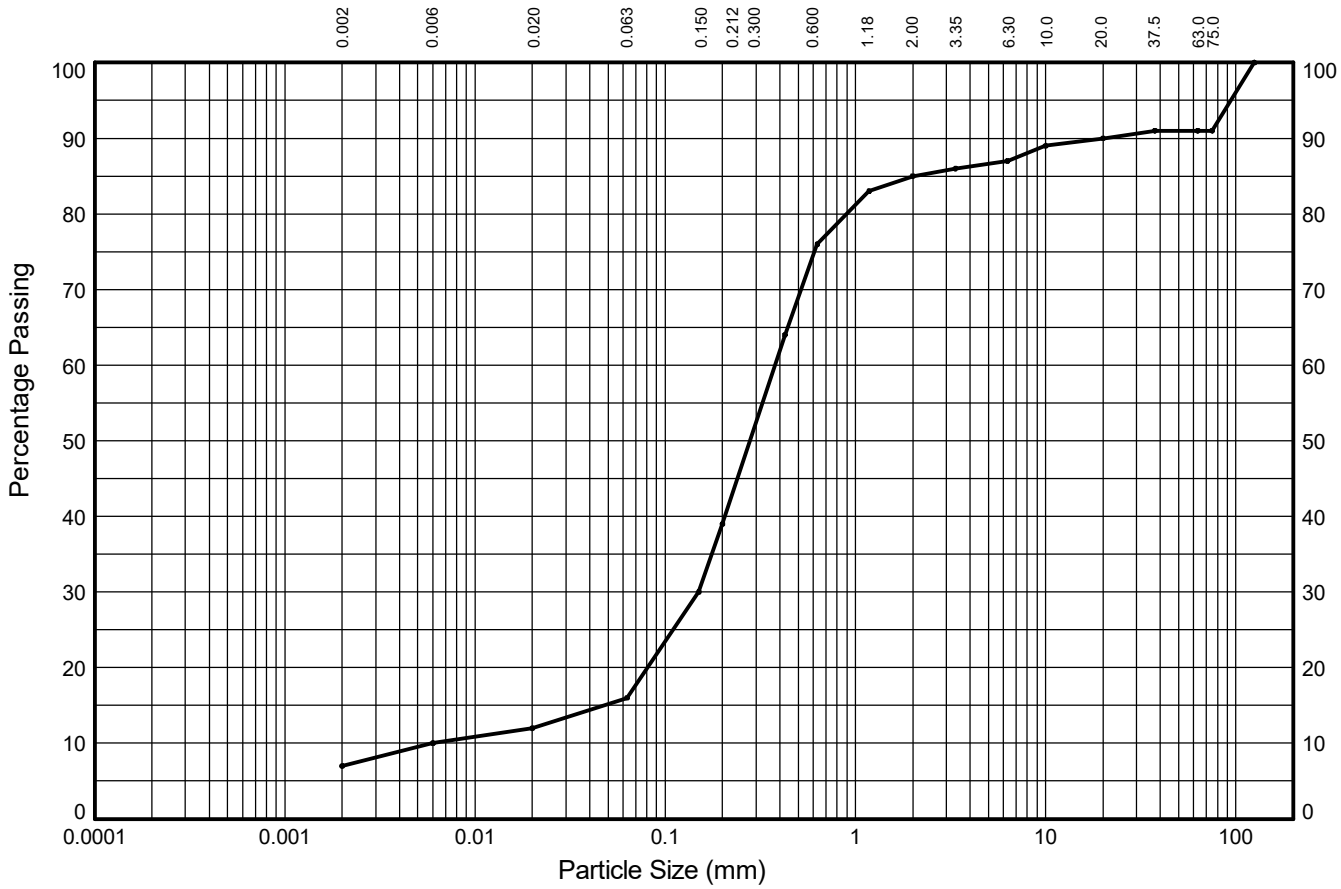
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS225** Sample Ref: **5** Sample Type: **B** Depth (m): **0.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	2%	4%	23%	37%	9%	2%	3%	1%	
	SILT			SAND			GRAVEL			
7%	9%			69%			6%			9%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**91**
63.0	**91**
37.5	**91**
20.0	**90**
10.0	**89**
6.30	**87**
3.35	**86**
2.00	**85**
1.18	**83**
0.630	**76**
0.425	**64**
0.200	**39**
0.150	**30**
0.063	**16**

Particle Diameter (mm)	Percent Passing (%)
0.02	**12**
0.006	**10**
0.002	**7**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.006**
D_{15} (mm)	**0.047**
D_{30} (mm)	**0.150**
D_{50} (mm)	**0.279**
D_{60} (mm)	**0.377**
D_{85} (mm)	**2.000**
D_{90} (mm)	**20.000**
C_U	**63**
C_C	**10**

Soil Description:

Orangish brown gravelly clayey SAND with a medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
V. Chacin M.	**VALERIA CHACIN MIJOVA**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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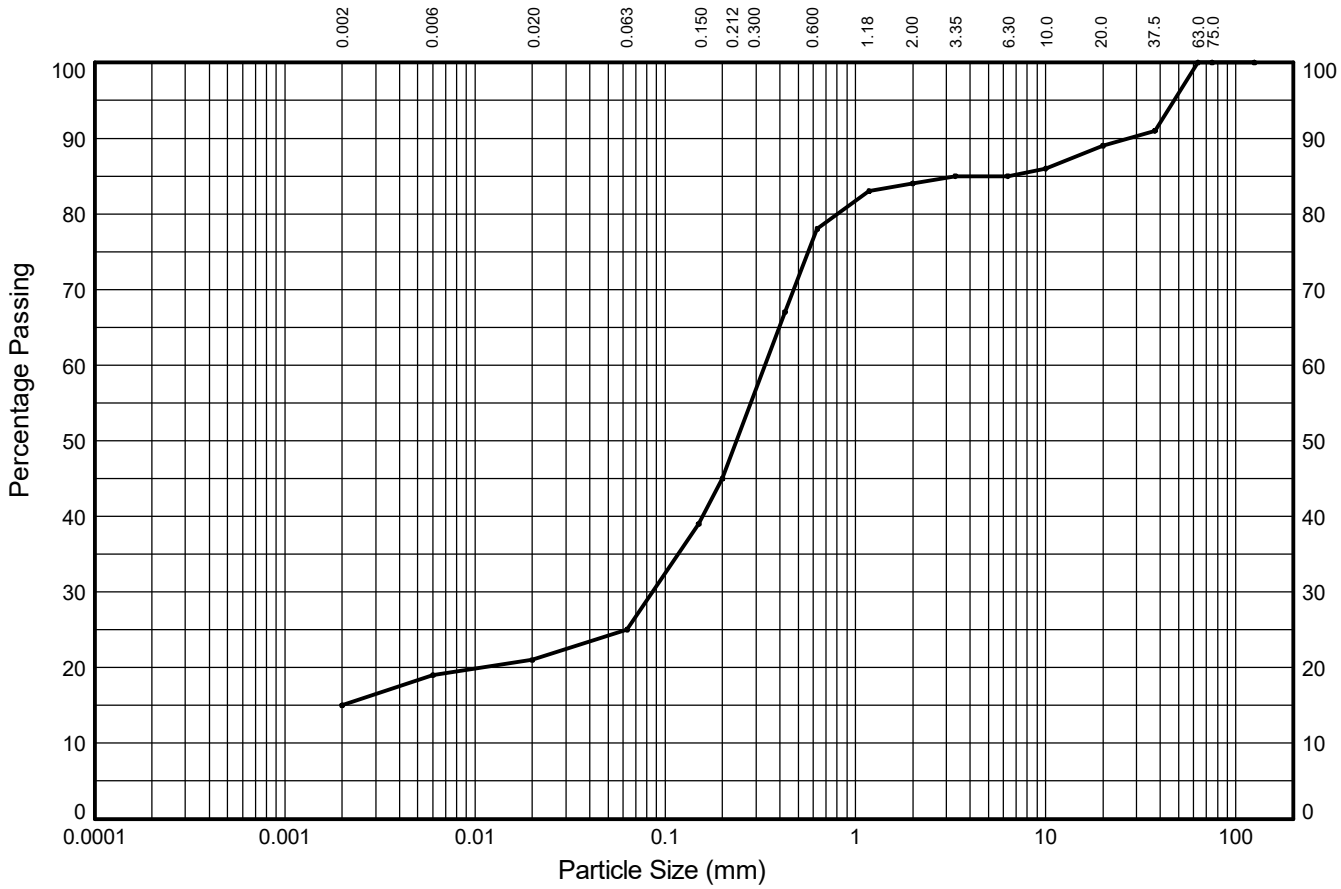
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS225** Sample Ref: **9** Sample Type: **LB** Depth (m): **1.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	2%	4%	20%	33%	6%	1%	4%	11%	
	SILT			SAND			GRAVEL			
15%	10%			59%			16%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**91**
20.0	**89**
10.0	**86**
6.30	**85**
3.35	**85**
2.00	**84**
1.18	**83**
0.630	**78**
0.425	**67**
0.200	**45**
0.150	**39**
0.063	**25**

Particle Diameter (mm)	Percent Passing (%)
0.02	**21**
0.006	**19**
0.002	**15**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.002**
D_{30} (mm)	**0.086**
D_{50} (mm)	**0.237**
D_{60} (mm)	**0.334**
D_{85} (mm)	**3.350**
D_{90} (mm)	**27.386**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	V. Chacin M.	**VALERIA CHACIN MIJOVA**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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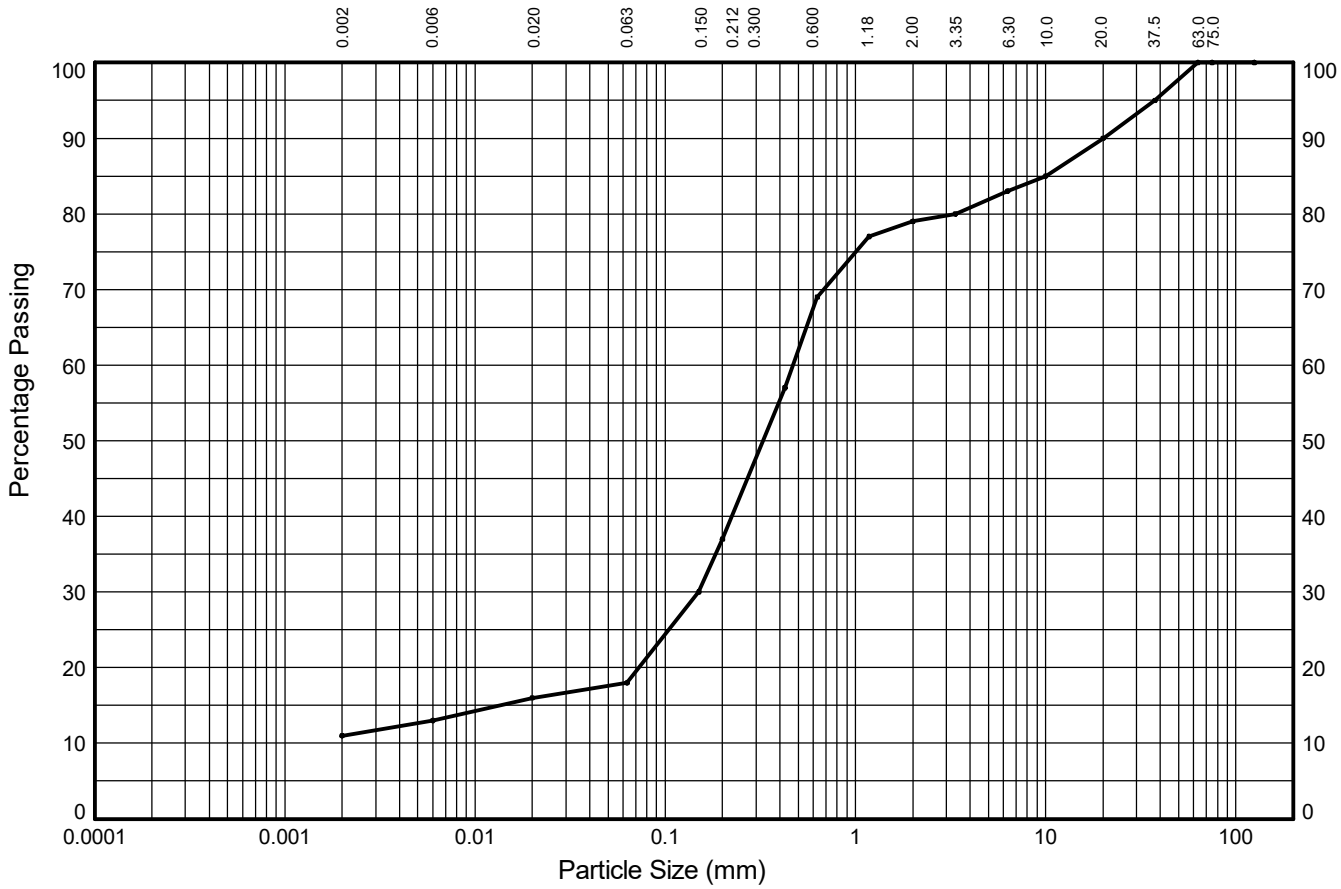
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS225** Sample Ref: **14** Sample Type: **B** Depth (m): **3.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	3%	2%	19%	32%	10%	4%	7%	10%	
	SILT			SAND			GRAVEL			
11%	7%			61%			21%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**95**
20.0	**90**
10.0	**85**
6.30	**83**
3.35	**80**
2.00	**79**
1.18	**77**
0.630	**69**
0.425	**57**
0.200	**37**
0.150	**30**
0.063	**18**

Particle Diameter (mm)	Percent Passing (%)
0.02	**16**
0.006	**13**
0.002	**11**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.013**
D_{30} (mm)	**0.150**
D_{50} (mm)	**0.326**
D_{60} (mm)	**0.469**
D_{85} (mm)	**10.000**
D_{90} (mm)	**20.000**
C_U	**NA**
C_C	**NA**

Soil Description:

Orangish brown very gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
V. Chacin M.	**VALERIA CHACIN MIJOVA**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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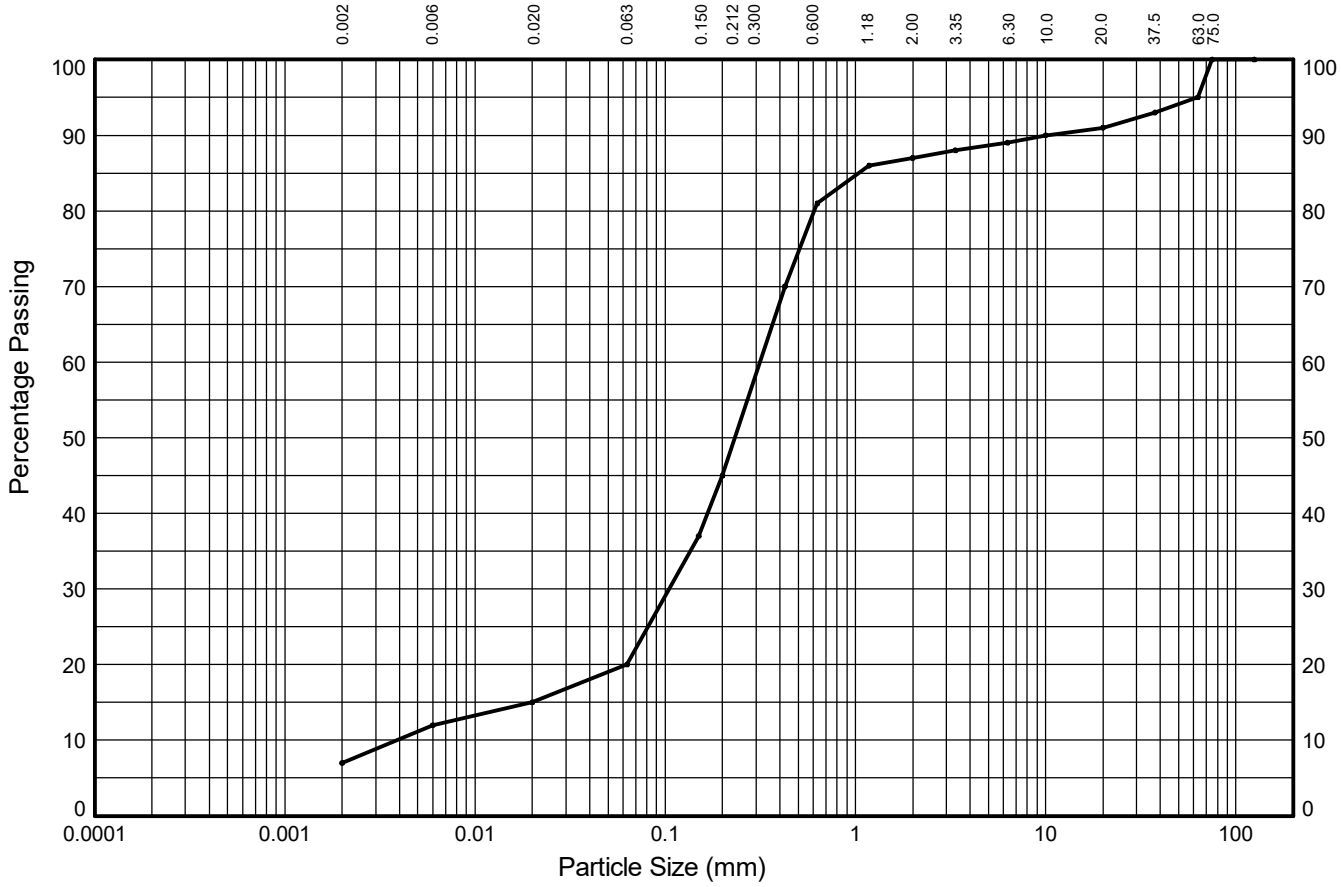
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS226** Sample Ref: **1** Sample Type: **LB** Depth (m): **0.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	5%	3%	5%	25%	36%	6%	2%	2%	4%	
	SILT			SAND			GRAVEL			
7%	13%			67%			8%			5%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**95**
37.5	**93**
20.0	**91**
10.0	**90**
6.30	**89**
3.35	**88**
2.00	**87**
1.18	**86**
0.630	**81**
0.425	**70**
0.200	**45**
0.150	**37**
0.063	**20**

Particle Diameter (mm)	Percent Passing (%)
0.02	**15**
0.006	**12**
0.002	**7**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.004**
D_{15} (mm)	**0.020**
D_{30} (mm)	**0.105**
D_{50} (mm)	**0.233**
D_{60} (mm)	**0.314**
D_{85} (mm)	**1.041**
D_{90} (mm)	**10.000**
C_U	**81**
C_C	**9**

Soil Description:

Brown gravelly clayey SAND with a medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
V. Chacin M.	**VALERIA CHACIN MIJOVA**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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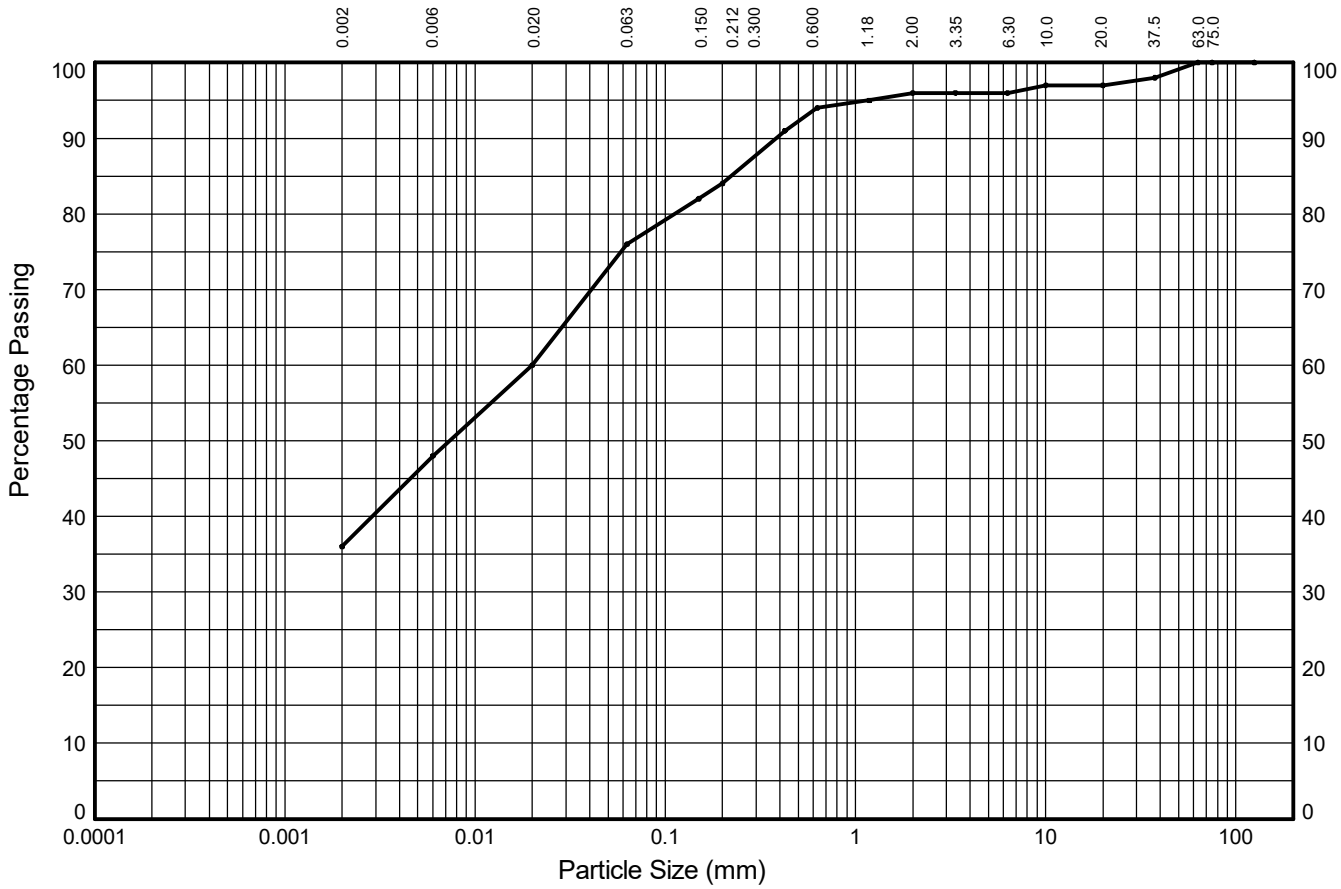
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS226** Sample Ref: **2** Sample Type: **B** Depth (m): **0.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	12%	12%	16%	8%	10%	2%	0%	1%	3%	
	SILT			SAND			GRAVEL			
36%	40%			20%			4%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**98**
20.0	**97**
10.0	**97**
6.30	**96**
3.35	**96**
2.00	**96**
1.18	**95**
0.630	**94**
0.425	**91**
0.200	**84**
0.150	**82**
0.063	**76**

Particle Diameter (mm)	Percent Passing (%)
0.02	**60**
0.006	**48**
0.002	**36**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**0.007**
D_{60} (mm)	**0.020**
D_{85} (mm)	**0.223**
D_{90} (mm)	**0.382**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly slightly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
V. Chacin M.	**VALERIA CHACIN MIJOVA**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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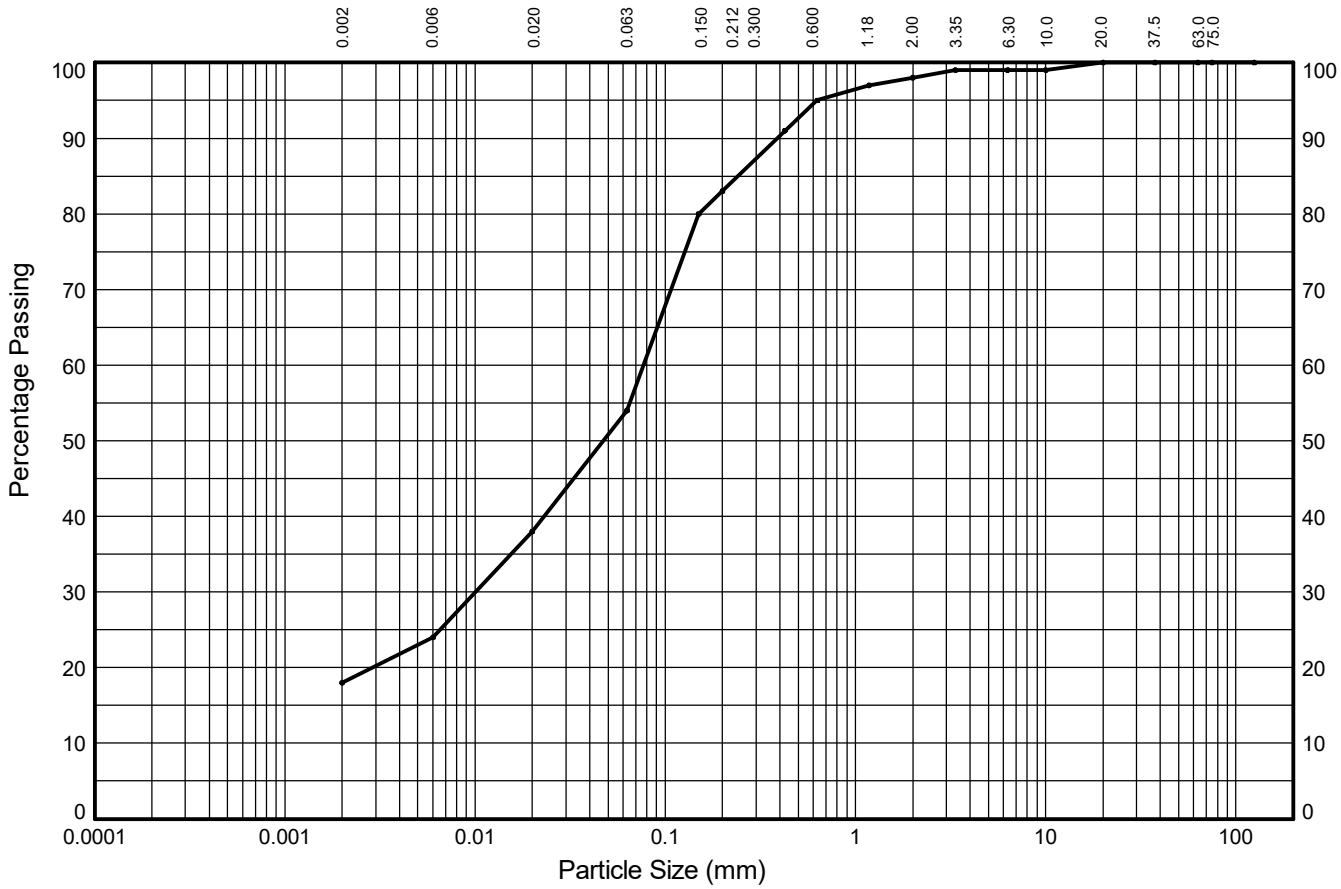
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS226** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	6%	14%	16%	29%	12%	3%	1%	1%	0%	
	SILT			SAND			GRAVEL			
18%	36%			44%			2%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**99**
6.30	**99**
3.35	**99**
2.00	**98**
1.18	**97**
0.630	**95**
0.425	**91**
0.200	**83**
0.150	**80**
0.063	**54**

Particle Diameter (mm)	Percent Passing (%)
0.02	**38**
0.006	**24**
0.002	**18**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.010**
D_{50} (mm)	**0.047**
D_{60} (mm)	**0.077**
D_{85} (mm)	**0.241**
D_{90} (mm)	**0.387**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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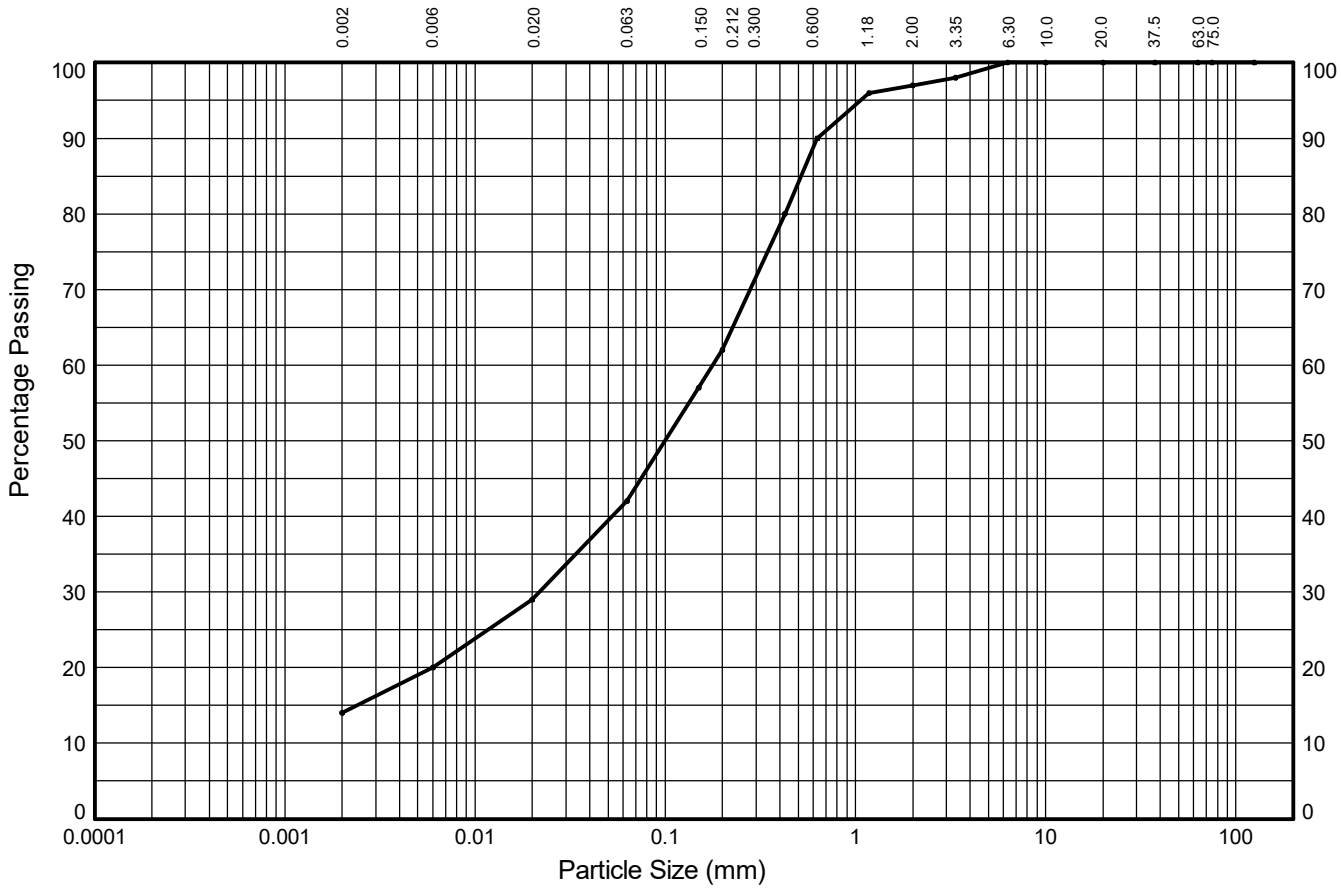
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS226** Sample Ref: **5** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	6%	9%	13%	20%	28%	7%	3%	0%	0%	
	SILT			SAND			GRAVEL			
14%	28%			55%			3%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**100**
3.35	**98**
2.00	**97**
1.18	**96**
0.630	**90**
0.425	**80**
0.200	**62**
0.150	**57**
0.063	**42**

Particle Diameter (mm)	Percent Passing (%)
0.02	**29**
0.006	**20**
0.002	**14**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.002**
D_{30} (mm)	**0.022**
D_{50} (mm)	**0.100**
D_{60} (mm)	**0.178**
D_{85} (mm)	**0.517**
D_{90} (mm)	**0.630**
C_U	**NA**
C_C	**NA**

Soil Description:

Orangish brown slightly gravelly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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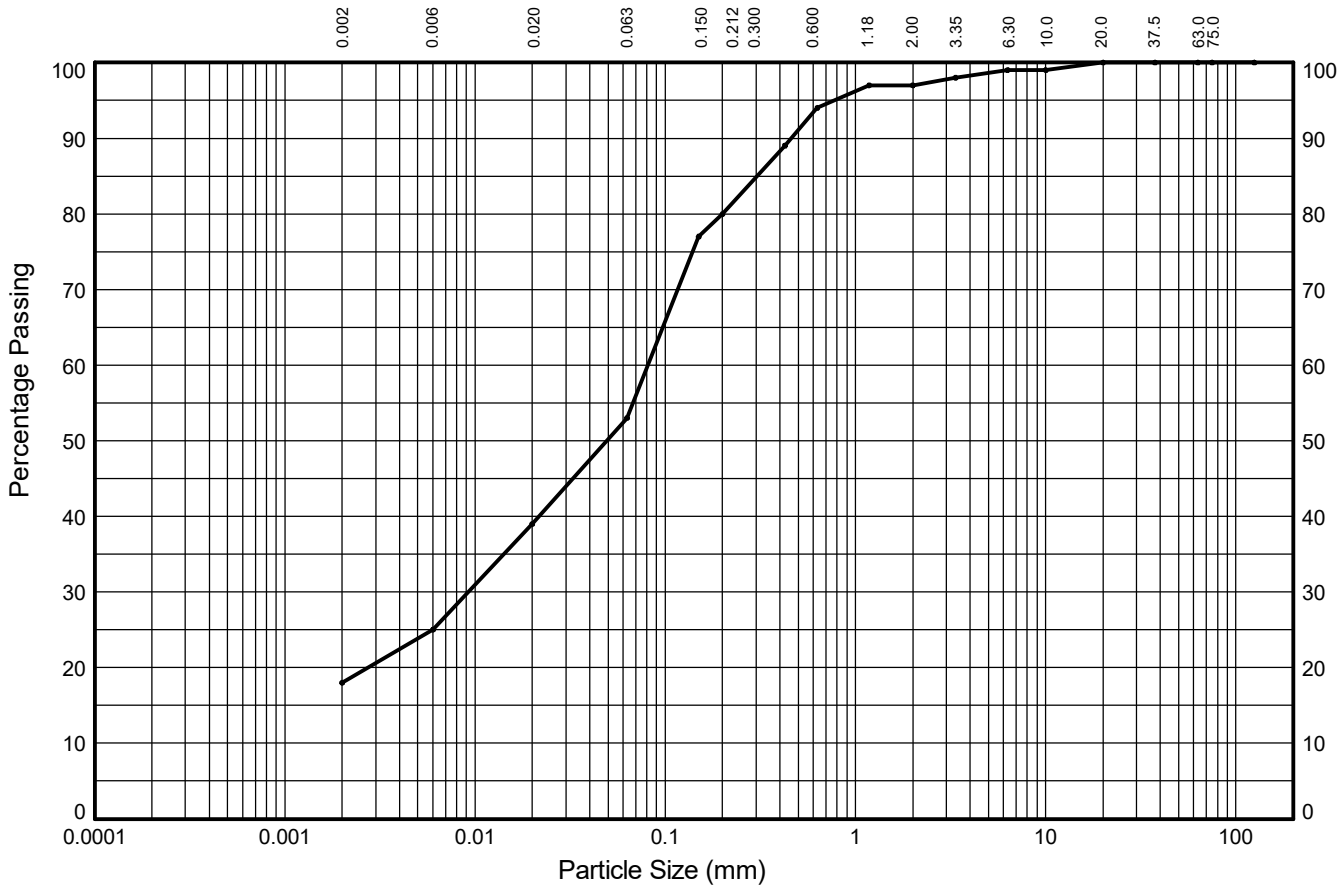
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS226** Sample Ref: **7** Sample Type: **B** Depth (m): **2.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	7%	14%	14%	27%	14%	3%	2%	1%	0%	
	SILT			SAND			GRAVEL			
18%	35%			44%			3%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**99**
6.30	**99**
3.35	**98**
2.00	**97**
1.18	**97**
0.630	**94**
0.425	**89**
0.200	**80**
0.150	**77**
0.063	**53**

Particle Diameter (mm)	Percent Passing (%)
0.02	**39**
0.006	**25**
0.002	**18**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.009**
D_{50} (mm)	**0.049**
D_{60} (mm)	**0.081**
D_{85} (mm)	**0.304**
D_{90} (mm)	**0.460**
C_U	**NA**
C_C	**NA**

Soil Description:

Orangish brown slightly gravelly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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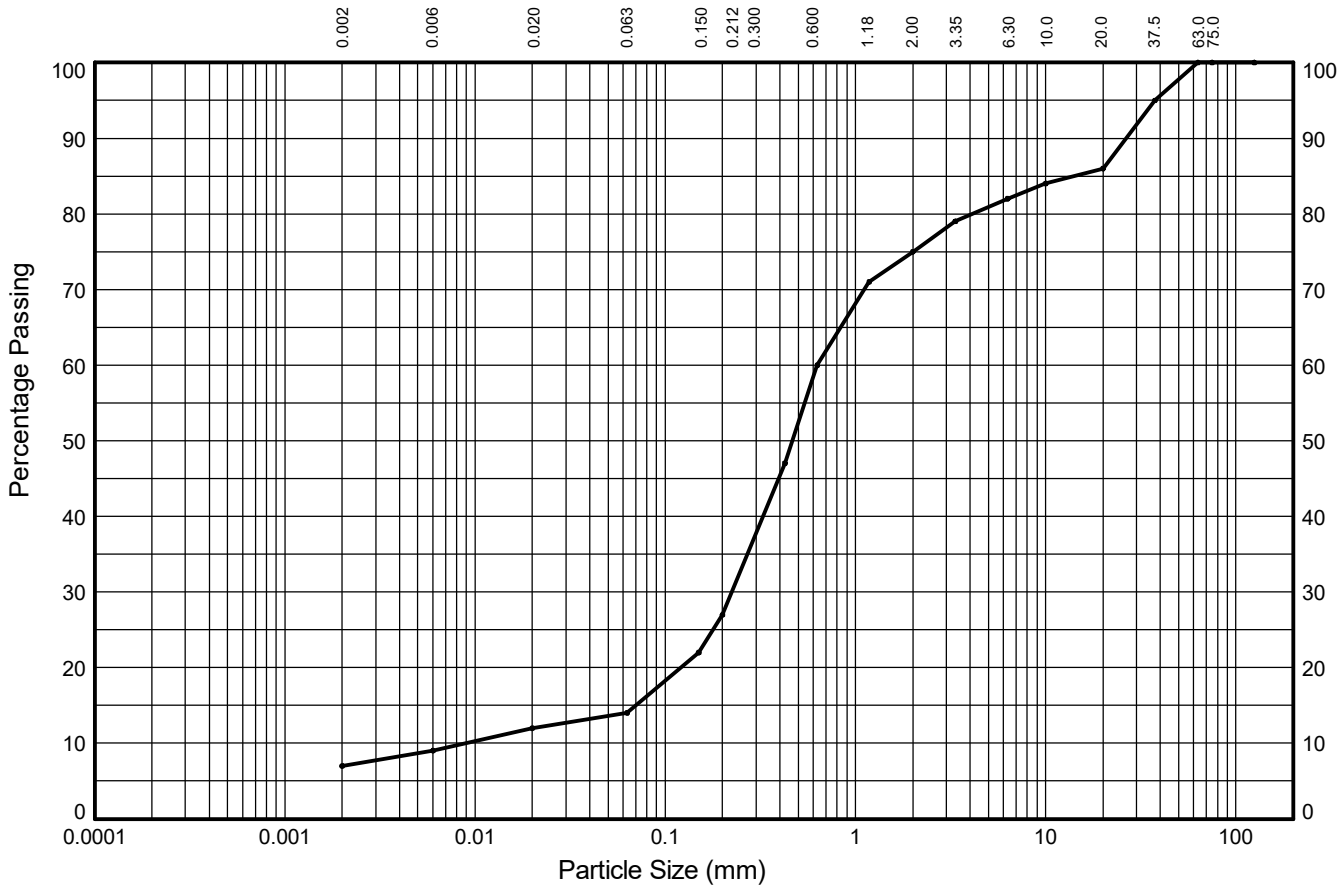
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS226** Sample Ref: **9** Sample Type: **LB** Depth (m): **2.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	3%	2%	13%	33%	15%	7%	4%	14%	
	SILT			SAND			GRAVEL			
7%	7%			61%			25%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**95**
20.0	**86**
10.0	**84**
6.30	**82**
3.35	**79**
2.00	**75**
1.18	**71**
0.630	**60**
0.425	**47**
0.200	**27**
0.150	**22**
0.063	**14**

Particle Diameter (mm)	Percent Passing (%)
0.02	**12**
0.006	**9**
0.002	**7**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.009**
D_{15} (mm)	**0.070**
D_{30} (mm)	**0.224**
D_{50} (mm)	**0.465**
D_{60} (mm)	**0.630**
D_{85} (mm)	**14.142**
D_{90} (mm)	**26.446**
C_U	**70**
C_C	**9**

Soil Description:

Orangish brown very gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
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Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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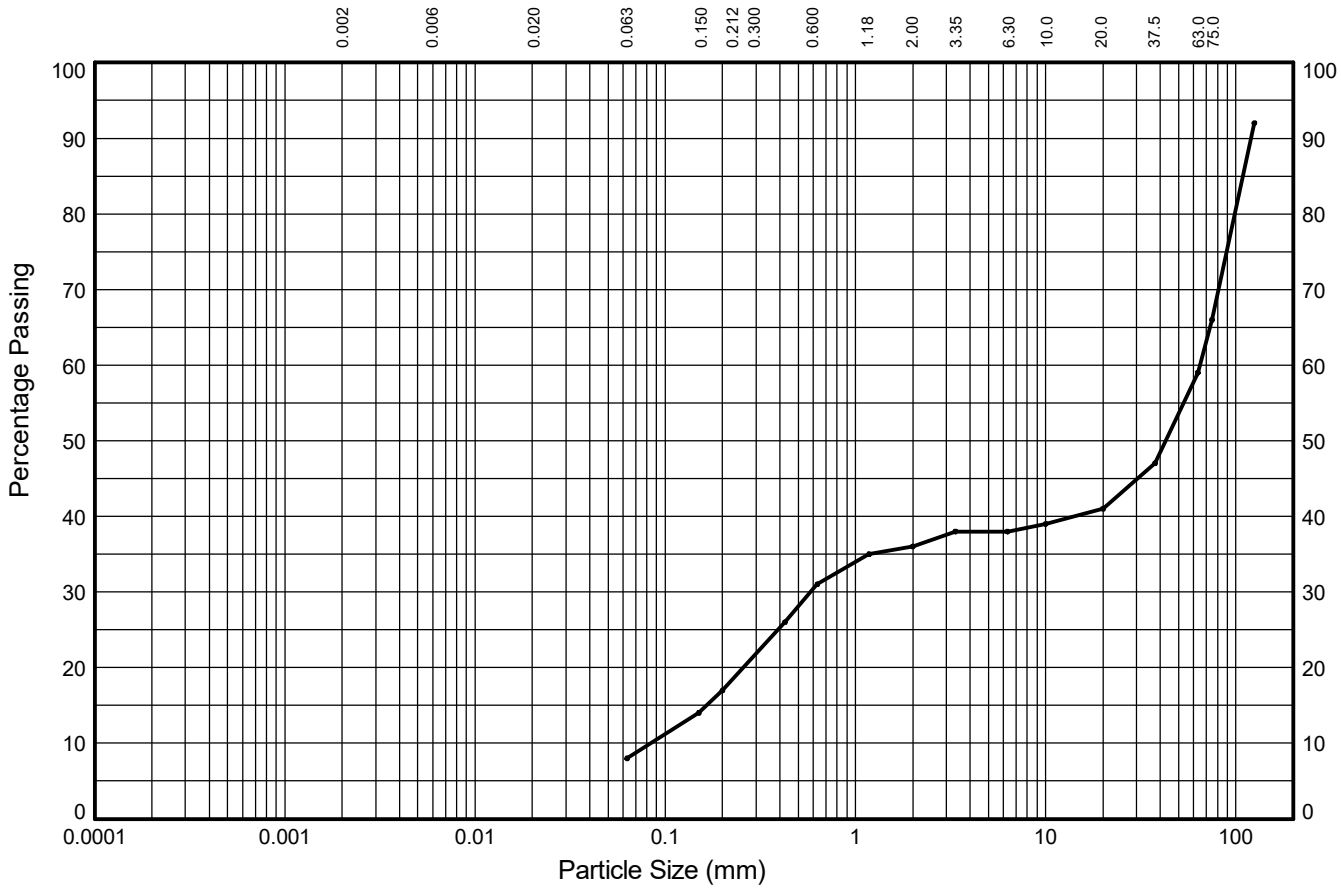
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Trial Pit: **TP-PTS226** Sample Ref: **12** Sample Type: **B** Depth (m): **4.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	9%	14%	5%	2%	3%	18%	
	SILT			SAND			GRAVEL			
8%				28%			23%			41%

Test Sieve (mm)	Percent Passing (%)
125.0	**92**
75.0	**66**
63.0	**59**
37.5	**47**
20.0	**41**
10.0	**39**
6.30	**38**
3.35	**38**
2.00	**36**
1.18	**35**
0.630	**31**
0.425	**26**
0.200	**17**
0.150	**14**
0.063	**8**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.084**
D_{15} (mm)	**0.165**
D_{30} (mm)	**0.582**
D_{50} (mm)	**42.693**
D_{60} (mm)	**64.589**
D_{85} (mm)	**108.939**
D_{90} (mm)	**120.183**
C_U	**768**
C_C	**0.06**

Soil Description:

Orangish brown very gravelly silty SAND with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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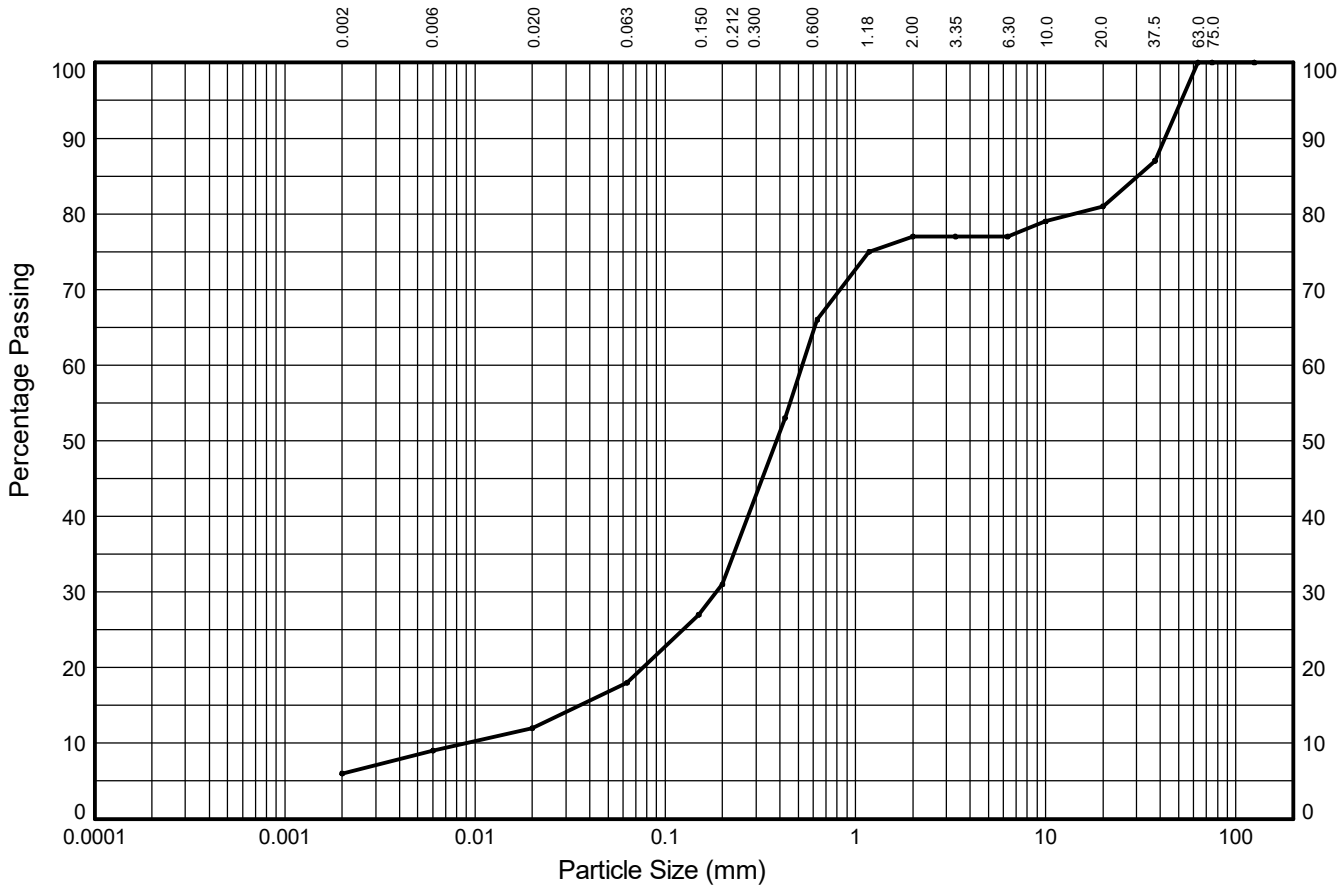
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Trial Pit: **TP-PTS228** Sample Ref: **2** Sample Type: **B** Depth (m): **0.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	6%	13%	35%	11%	0%	4%	19%	
	SILT			SAND			GRAVEL			
6%	12%			59%			23%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**87**
20.0	**81**
10.0	**79**
6.30	**77**
3.35	**77**
2.00	**77**
1.18	**75**
0.630	**66**
0.425	**53**
0.200	**31**
0.150	**27**
0.063	**18**

Particle Diameter (mm)	Percent Passing (%)
0.02	**12**
0.006	**9**
0.002	**6**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.009**
D_{15} (mm)	**0.035**
D_{30} (mm)	**0.186**
D_{50} (mm)	**0.383**
D_{60} (mm)	**0.525**
D_{85} (mm)	**30.411**
D_{90} (mm)	**42.269**
C_U	**59**
C_C	**7**

Soil Description:
Brown very gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
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Compiled By		Date
E. Hort	ELIZABETH HORT	22/08/23

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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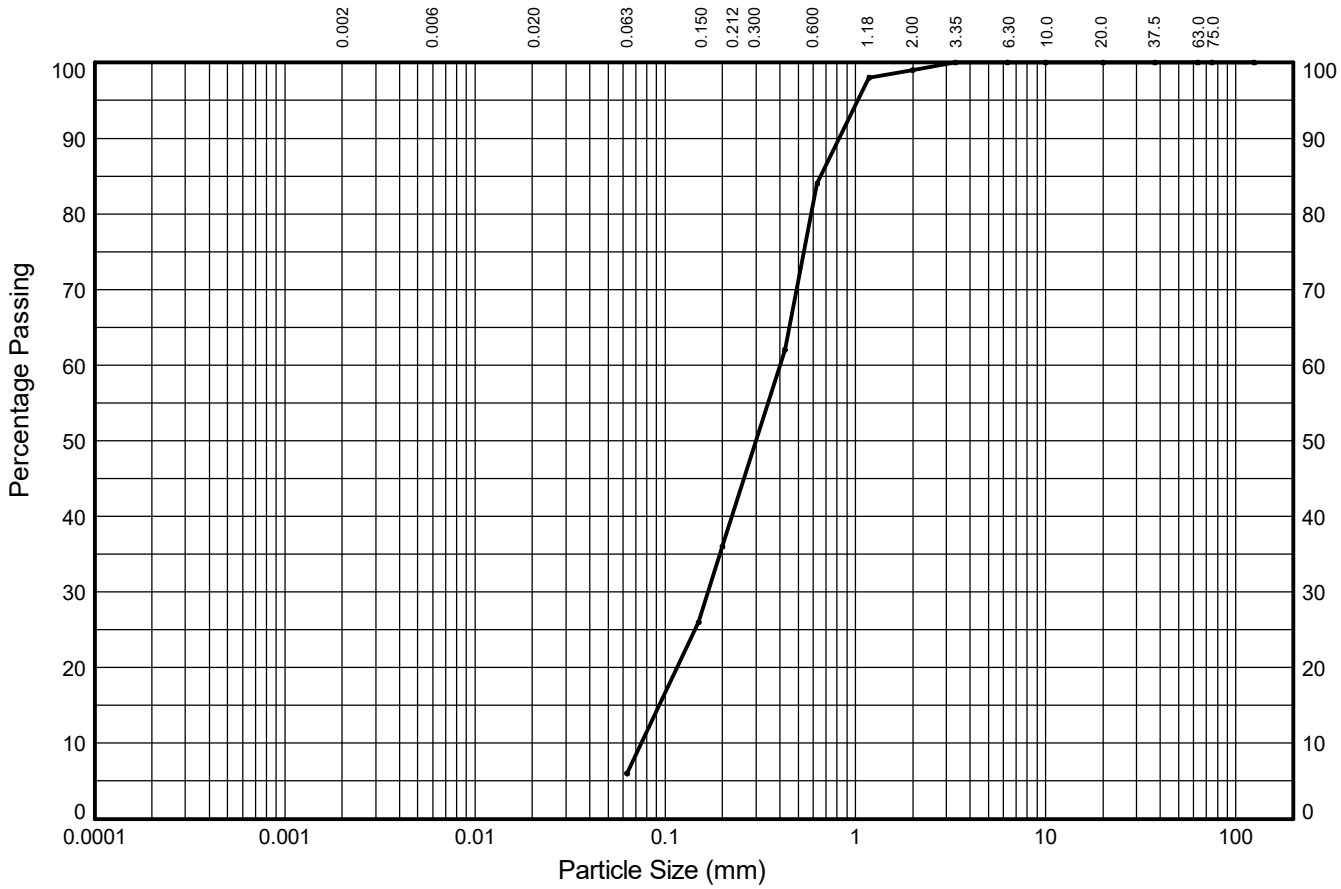
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS228** Sample Ref: **8** Sample Type: **B** Depth (m): **1.90**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	30%	48%	15%	1%	0%	0%	
	SILT			SAND			GRAVEL			
6%				93%			1%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**100**
3.35	**100**
2.00	**99**
1.18	**98**
0.630	**84**
0.425	**62**
0.200	**36**
0.150	**26**
0.063	**6**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.075**
D_{15} (mm)	**0.093**
D_{30} (mm)	**0.168**
D_{50} (mm)	**0.300**
D_{60} (mm)	**0.401**
D_{85} (mm)	**0.659**
D_{90} (mm)	**0.824**
C_U	**5.4**
C_C	**0.94**

Soil Description:

Reddish brown slightly gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
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BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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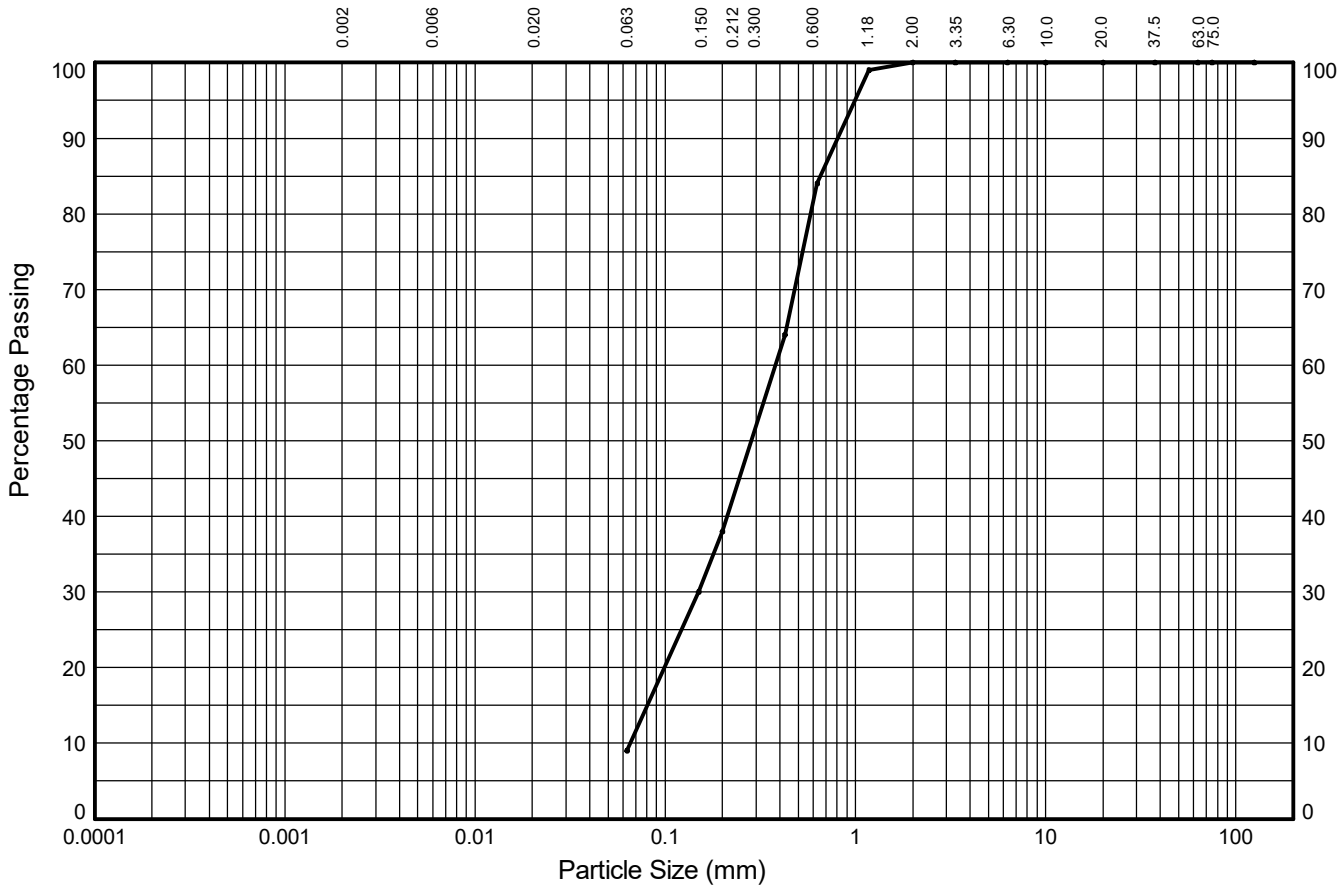
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS228** Sample Ref: **11** Sample Type: **B** Depth (m): **3.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	29%	46%	16%	0%	0%	0%	
	SILT			SAND			GRAVEL			
9%				91%			0%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**100**
3.35	**100**
2.00	**100**
1.18	**99**
0.630	**84**
0.425	**64**
0.200	**38**
0.150	**30**
0.063	**9**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.066**
D_{15} (mm)	**0.081**
D_{30} (mm)	**0.150**
D_{50} (mm)	**0.283**
D_{60} (mm)	**0.378**
D_{85} (mm)	**0.657**
D_{90} (mm)	**0.810**
C_U	**5.8**
C_C	**0.91**

Soil Description:

Reddish brown silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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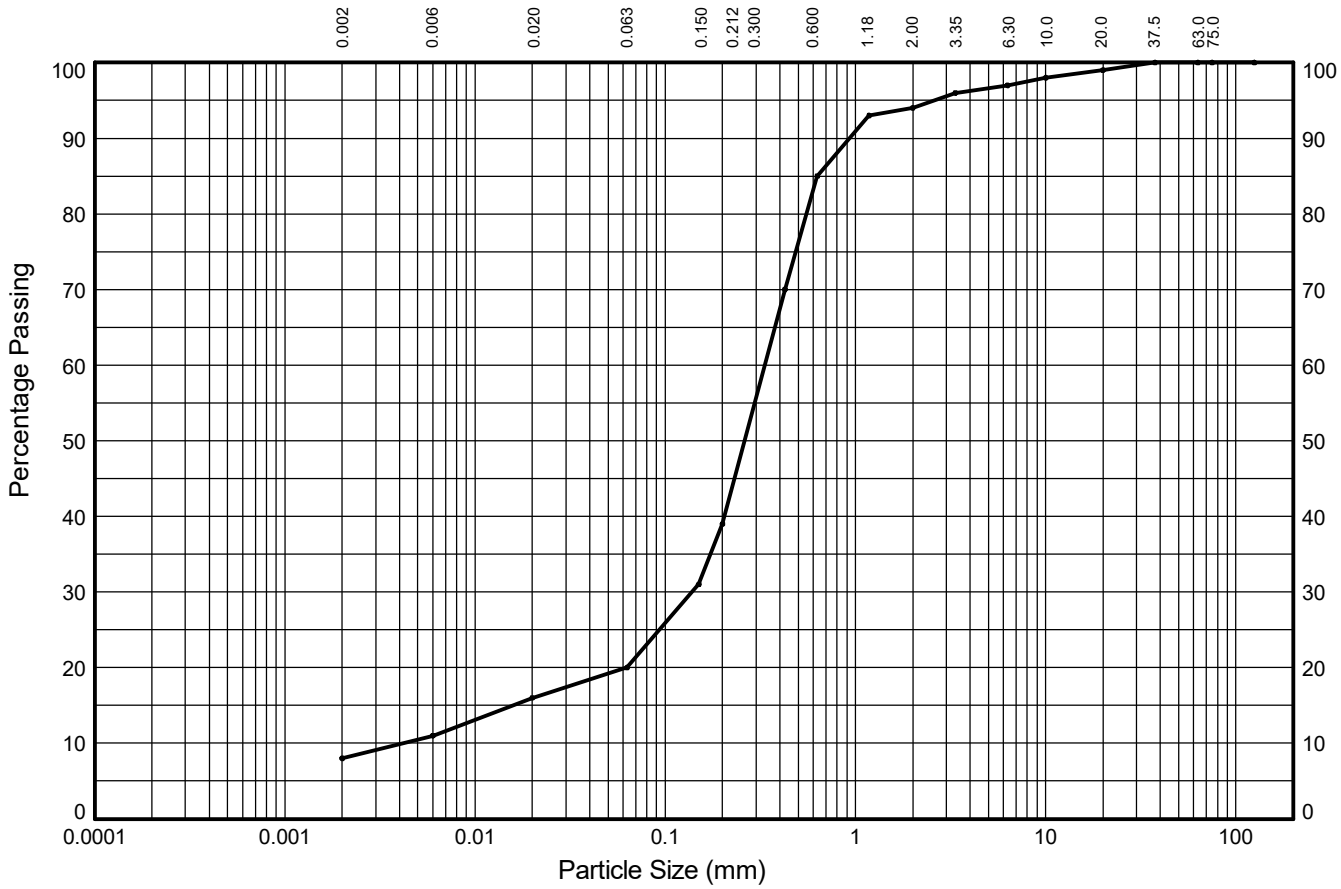
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS229** Sample Ref: **2** Sample Type: **B** Depth (m): **0.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	5%	4%	19%	46%	9%	3%	2%	1%	
	SILT			SAND			GRAVEL			
8%	12%			74%			6%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**99**
10.0	**98**
6.30	**97**
3.35	**96**
2.00	**94**
1.18	**93**
0.630	**85**
0.425	**70**
0.200	**39**
0.150	**31**
0.063	**20**

Particle Diameter (mm)	Percent Passing (%)
0.02	**16**
0.006	**11**
0.002	**8**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.004**
D_{15} (mm)	**0.016**
D_{30} (mm)	**0.139**
D_{50} (mm)	**0.261**
D_{60} (mm)	**0.333**
D_{85} (mm)	**0.630**
D_{90} (mm)	**0.933**
C_U	**80**
C_C	**14**

Soil Description:

Brown gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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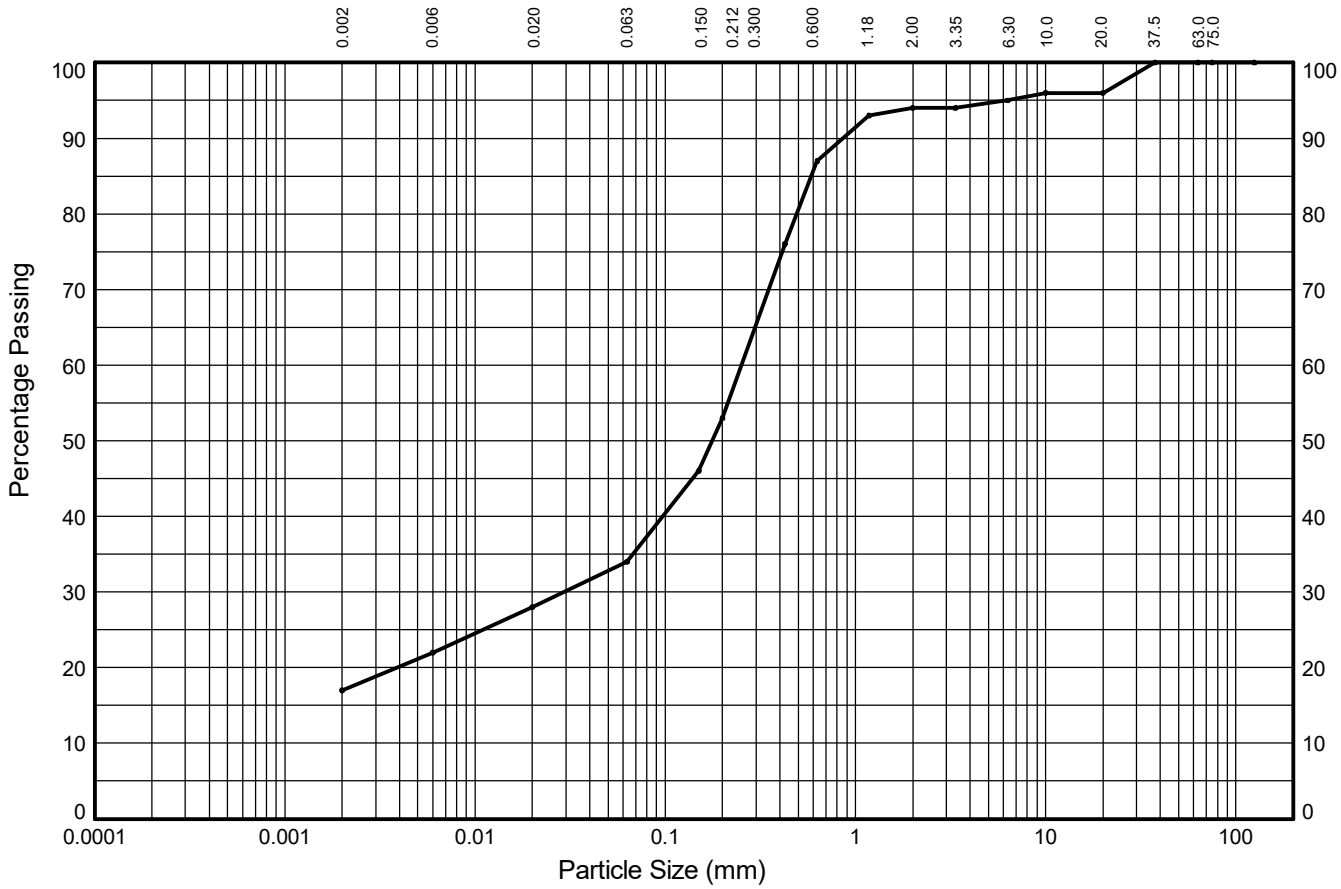
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS229** Sample Ref: **5** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	5%	6%	6%	19%	34%	7%	1%	1%	4%	
	SILT			SAND			GRAVEL			
17%	17%			60%			6%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**96**
10.0	**96**
6.30	**95**
3.35	**94**
2.00	**94**
1.18	**93**
0.630	**87**
0.425	**76**
0.200	**53**
0.150	**46**
0.063	**34**

Particle Diameter (mm)	Percent Passing (%)
0.02	**28**
0.006	**22**
0.002	**17**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.029**
D_{50} (mm)	**0.177**
D_{60} (mm)	**0.252**
D_{85} (mm)	**0.586**
D_{90} (mm)	**0.862**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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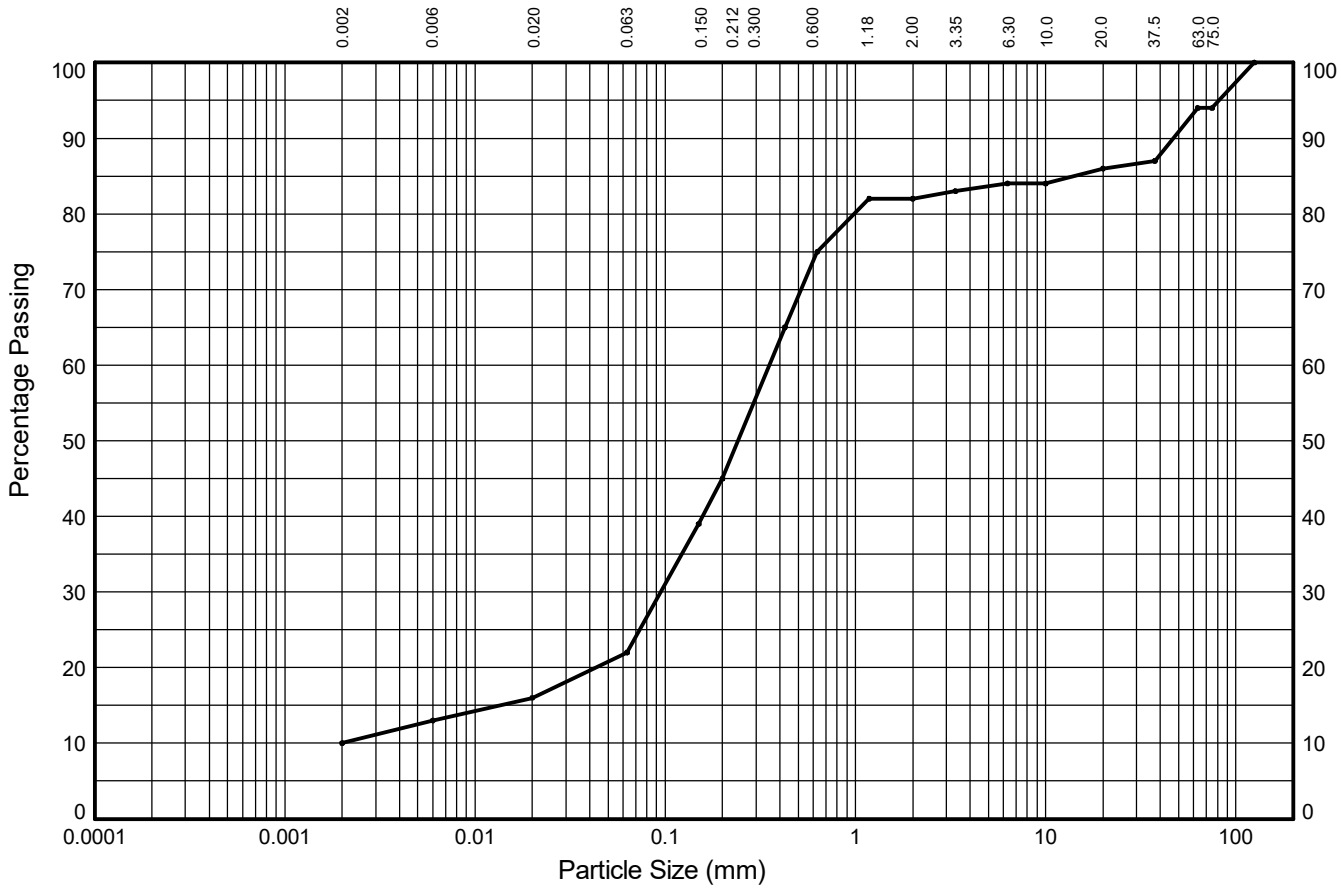
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS229** Sample Ref: **8** Sample Type: **B** Depth (m): **2.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	6%	23%	30%	7%	2%	2%	8%	
	SILT			SAND			GRAVEL			
10%	12%			60%			12%			6%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**94**
63.0	**94**
37.5	**87**
20.0	**86**
10.0	**84**
6.30	**84**
3.35	**83**
2.00	**82**
1.18	**82**
0.630	**75**
0.425	**65**
0.200	**45**
0.150	**39**
0.063	**22**

Particle Diameter (mm)	Percent Passing (%)
0.02	**16**
0.006	**13**
0.002	**10**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.002**
D_{15} (mm)	**0.013**
D_{30} (mm)	**0.095**
D_{50} (mm)	**0.241**
D_{60} (mm)	**0.352**
D_{85} (mm)	**14.142**
D_{90} (mm)	**46.837**
C_U	**176**
C_C	**13**

Soil Description:

Orangish brown gravelly very clayey SAND with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
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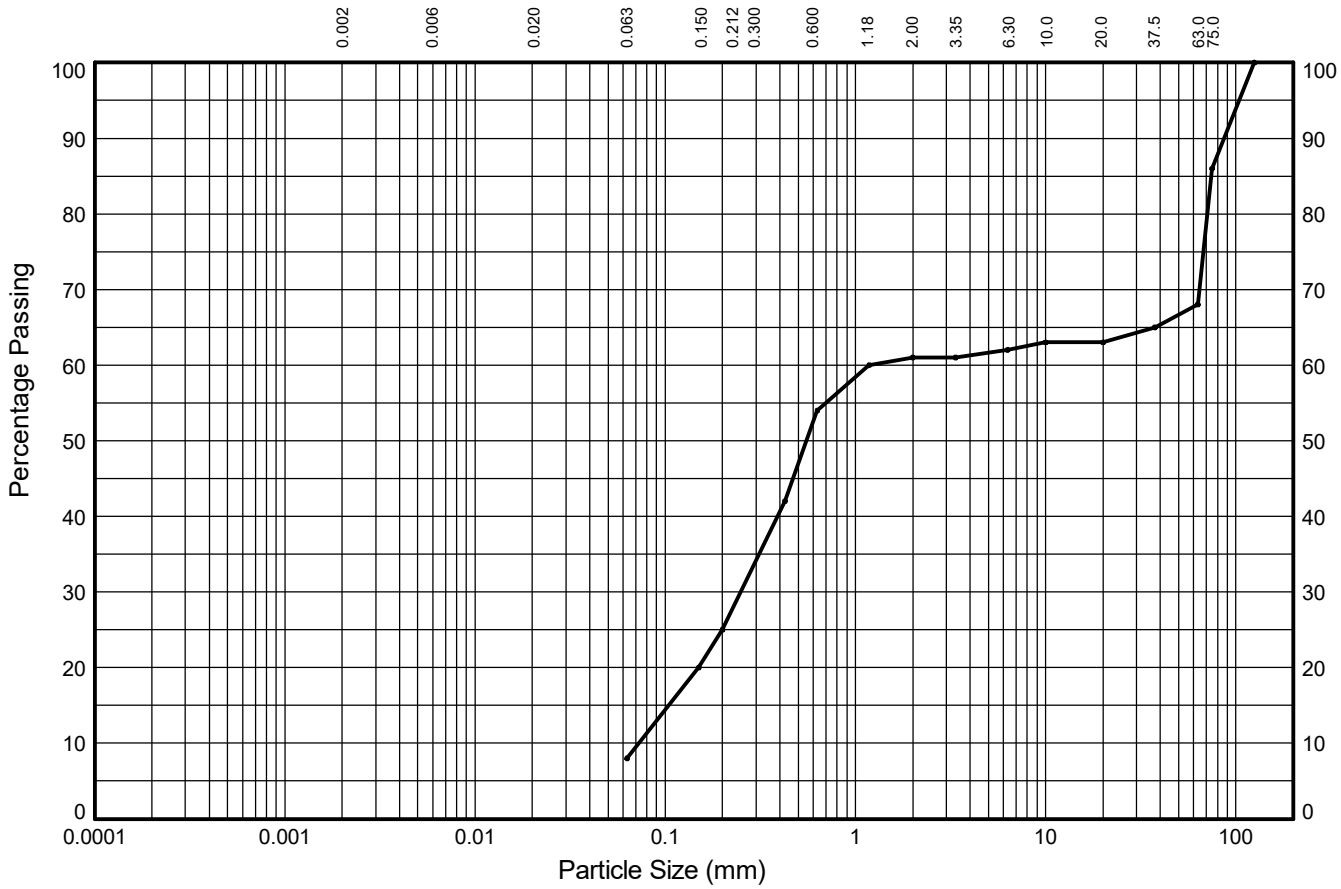
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Trial Pit: **TP-PTS229** Sample Ref: **11** Sample Type: **LB** Depth (m): **2.90**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	17%	29%	7%	1%	1%	5%	
	SILT			SAND			GRAVEL			
8%				53%			7%			32%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**86**
63.0	**68**
37.5	**65**
20.0	**63**
10.0	**63**
6.30	**62**
3.35	**61**
2.00	**61**
1.18	**60**
0.630	**54**
0.425	**42**
0.200	**25**
0.150	**20**
0.063	**8**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.073**
D_{15} (mm)	**0.104**
D_{30} (mm)	**0.250**
D_{50} (mm)	**0.553**
D_{60} (mm)	**1.180**
D_{85} (mm)	**74.277**
D_{90} (mm)	**86.785**
C_U	**16**
C_C	**0.73**

Soil Description:

Reddish brown gravelly silty SAND with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
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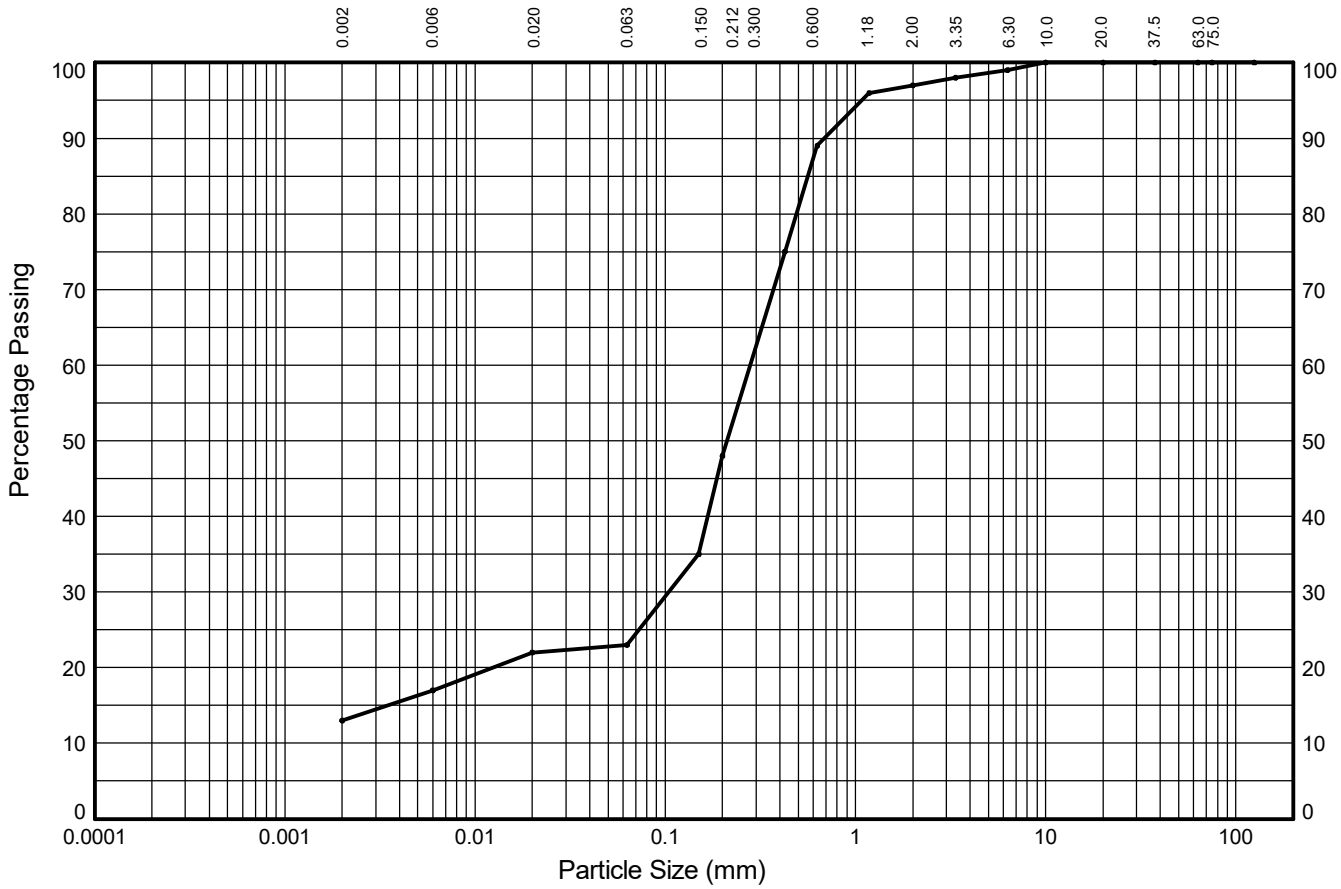
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS230** Sample Ref: **3** Sample Type: **LB** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	5%	1%	25%	41%	8%	2%	1%	0%	
	SILT			SAND			GRAVEL			
13%	10%			74%			3%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**99**
3.35	**98**
2.00	**97**
1.18	**96**
0.630	**89**
0.425	**75**
0.200	**48**
0.150	**35**
0.063	**23**

Particle Diameter (mm)	Percent Passing (%)
0.02	**22**
0.006	**17**
0.002	**13**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.003**
D_{30} (mm)	**0.104**
D_{50} (mm)	**0.211**
D_{60} (mm)	**0.280**
D_{85} (mm)	**0.563**
D_{90} (mm)	**0.689**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown slightly gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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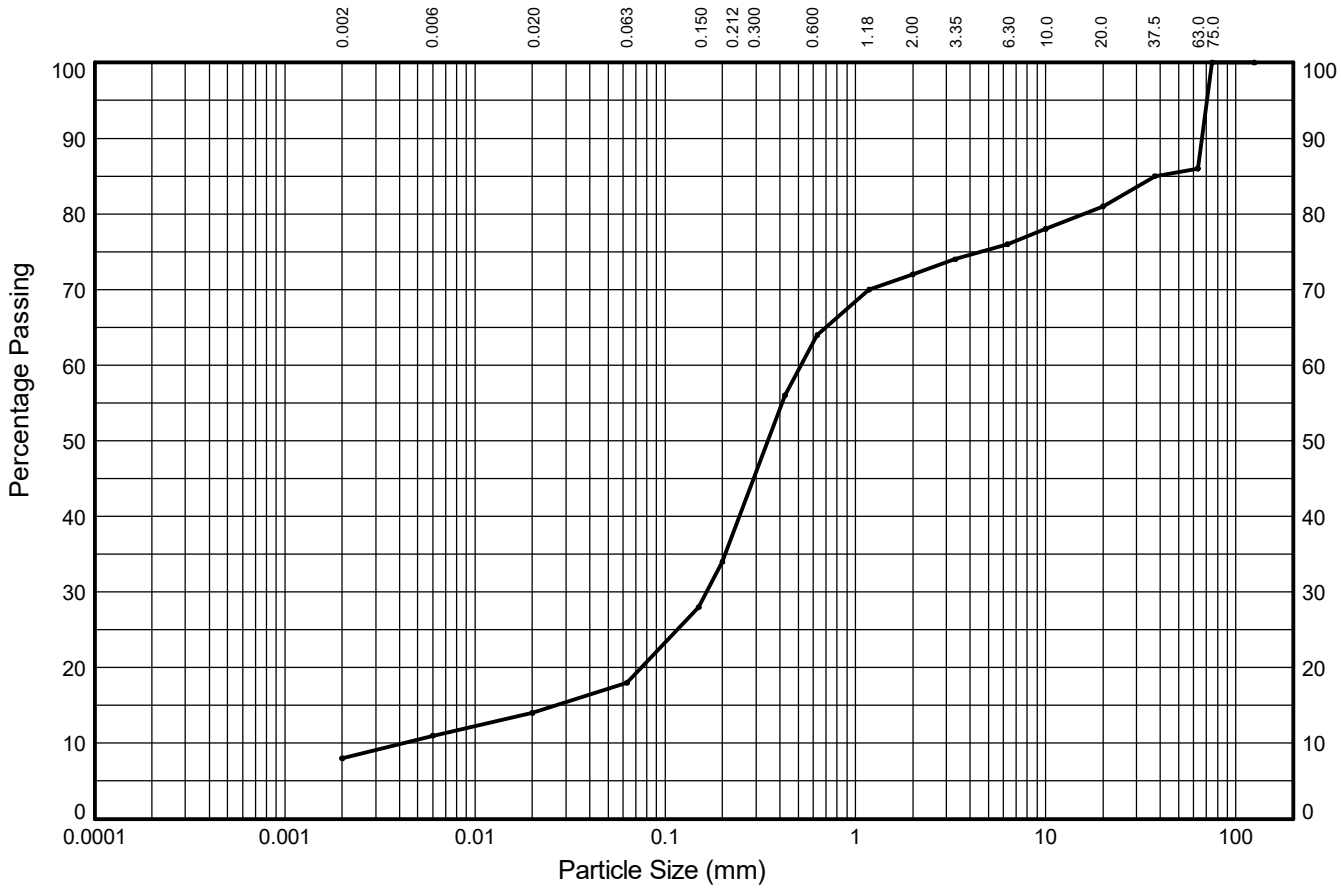
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Trial Pit: **TP-PTS230** Sample Ref: **6** Sample Type: **LB** Depth (m): **1.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	4%	16%	30%	8%	4%	5%	5%	
	SILT			SAND			GRAVEL			
8%	10%			54%			14%			14%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**86**
37.5	**85**
20.0	**81**
10.0	**78**
6.30	**76**
3.35	**74**
2.00	**72**
1.18	**70**
0.630	**64**
0.425	**56**
0.200	**34**
0.150	**28**
0.063	**18**

Particle Diameter (mm)	Percent Passing (%)
0.02	**14**
0.006	**11**
0.002	**8**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.004**
D_{15} (mm)	**0.027**
D_{30} (mm)	**0.165**
D_{50} (mm)	**0.346**
D_{60} (mm)	**0.517**
D_{85} (mm)	**37.500**
D_{90} (mm)	**66.218**
C_U	**124**
C_C	**13**

Soil Description:

Brown gravelly clayey SAND with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
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Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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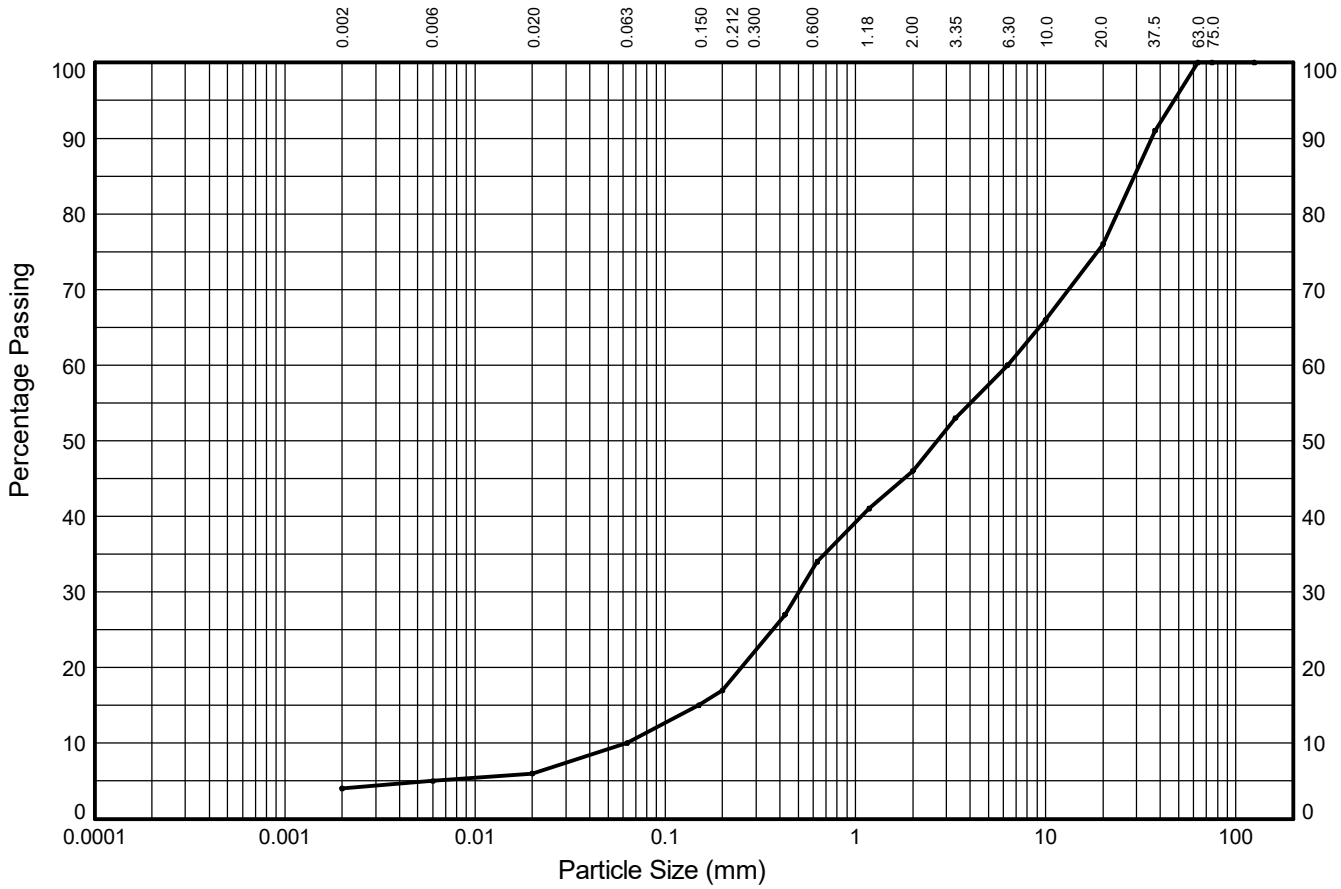
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS230** Sample Ref: **9** Sample Type: **B** Depth (m): **2.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	1%	1%	4%	7%	17%	12%	14%	16%	24%	
	SILT			SAND			GRAVEL			
4%	6%			36%			54%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**91**
20.0	**76**
10.0	**66**
6.30	**60**
3.35	**53**
2.00	**46**
1.18	**41**
0.630	**34**
0.425	**27**
0.200	**17**
0.150	**15**
0.063	**10**

Particle Diameter (mm)	Percent Passing (%)
0.02	**6**
0.006	**5**
0.002	**4**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.063**
D_{15} (mm)	**0.150**
D_{30} (mm)	**0.503**
D_{50} (mm)	**2.686**
D_{60} (mm)	**6.300**
D_{85} (mm)	**29.163**
D_{90} (mm)	**35.961**
C_U	**100**
C_C	**0.64**

Soil Description:

Reddish brown very sandy clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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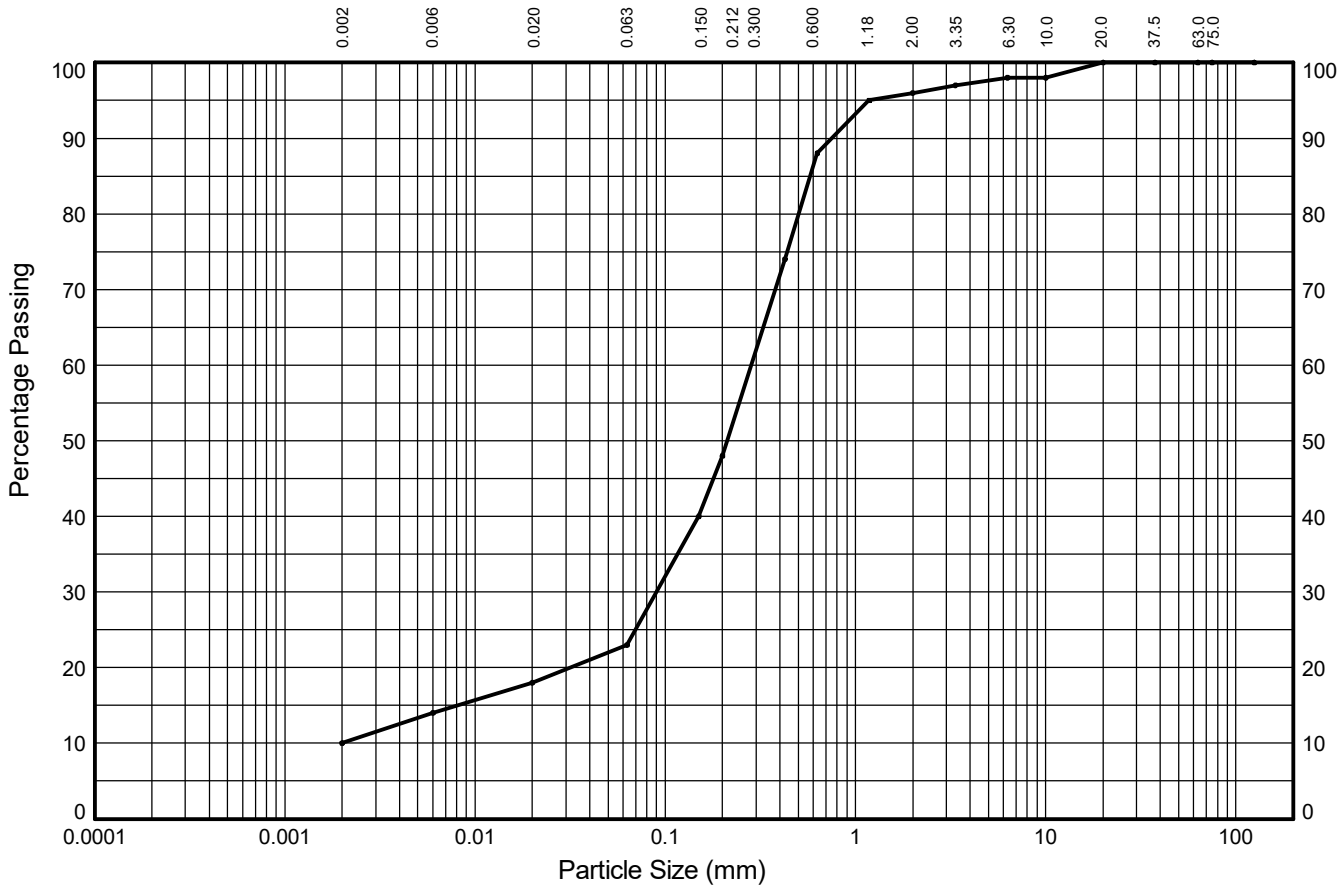
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS231** Sample Ref: **2** Sample Type: **B** Depth (m): **0.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	4%	5%	25%	40%	8%	2%	2%	0%	
	SILT			SAND			GRAVEL			
10%	13%			73%			4%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**98**
6.30	**98**
3.35	**97**
2.00	**96**
1.18	**95**
0.630	**88**
0.425	**74**
0.200	**48**
0.150	**40**
0.063	**23**

Particle Diameter (mm)	Percent Passing (%)
0.02	**18**
0.006	**14**
0.002	**10**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.002**
D_{15} (mm)	**0.008**
D_{30} (mm)	**0.090**
D_{50} (mm)	**0.212**
D_{60} (mm)	**0.283**
D_{85} (mm)	**0.579**
D_{90} (mm)	**0.754**
C_U	**142**
C_C	**14**

Soil Description:

Brown slightly gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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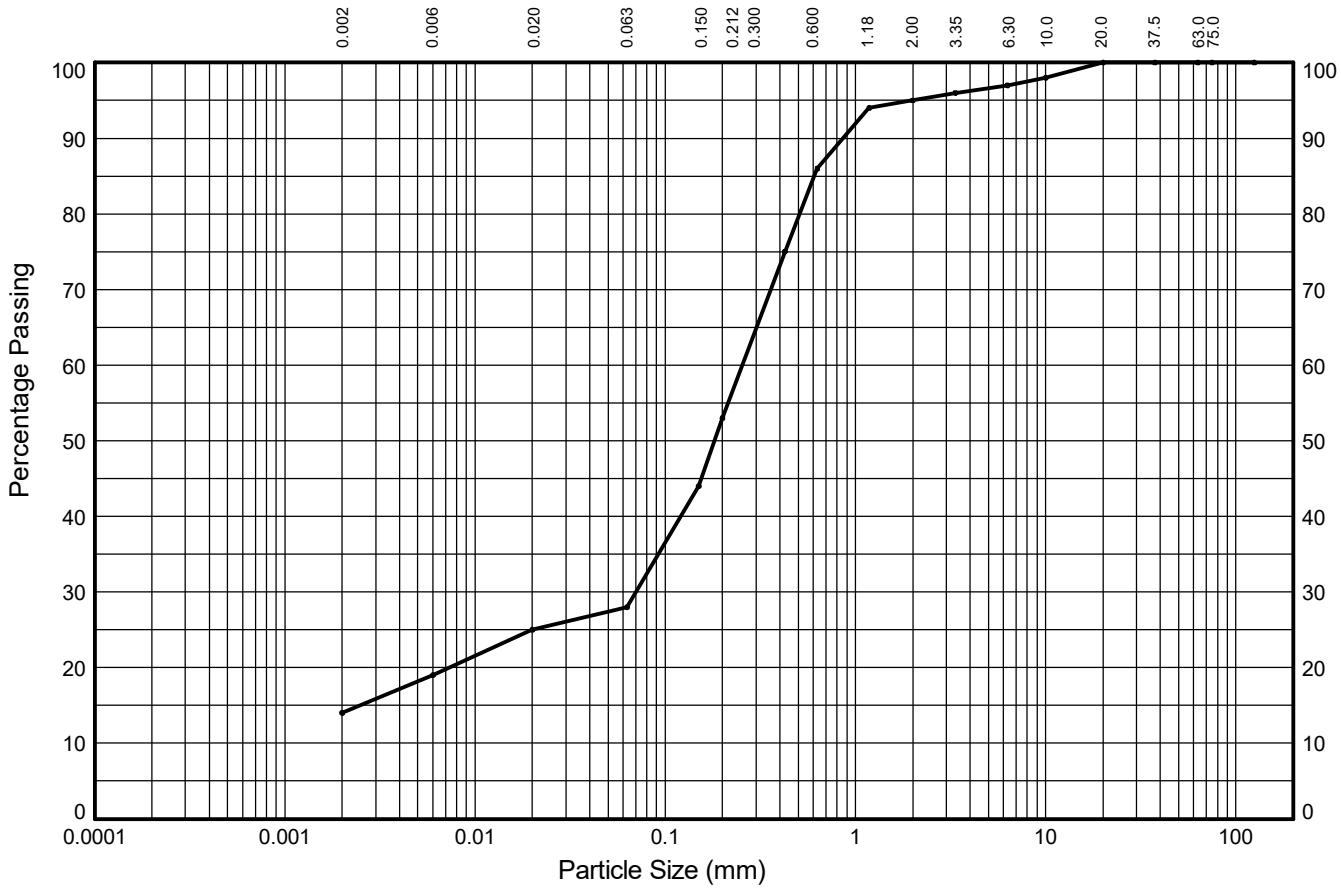
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS231** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	5%	6%	3%	25%	33%	9%	2%	3%	0%	
	SILT			SAND			GRAVEL			
14%	14%			67%			5%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**98**
6.30	**97**
3.35	**96**
2.00	**95**
1.18	**94**
0.630	**86**
0.425	**75**
0.200	**53**
0.150	**44**
0.063	**28**

Particle Diameter (mm)	Percent Passing (%)
0.02	**25**
0.006	**19**
0.002	**14**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.002**
D_{30} (mm)	**0.070**
D_{50} (mm)	**0.182**
D_{60} (mm)	**0.254**
D_{85} (mm)	**0.608**
D_{90} (mm)	**0.862**
C_U	**NA**
C_C	**NA**

Soil Description:

Red gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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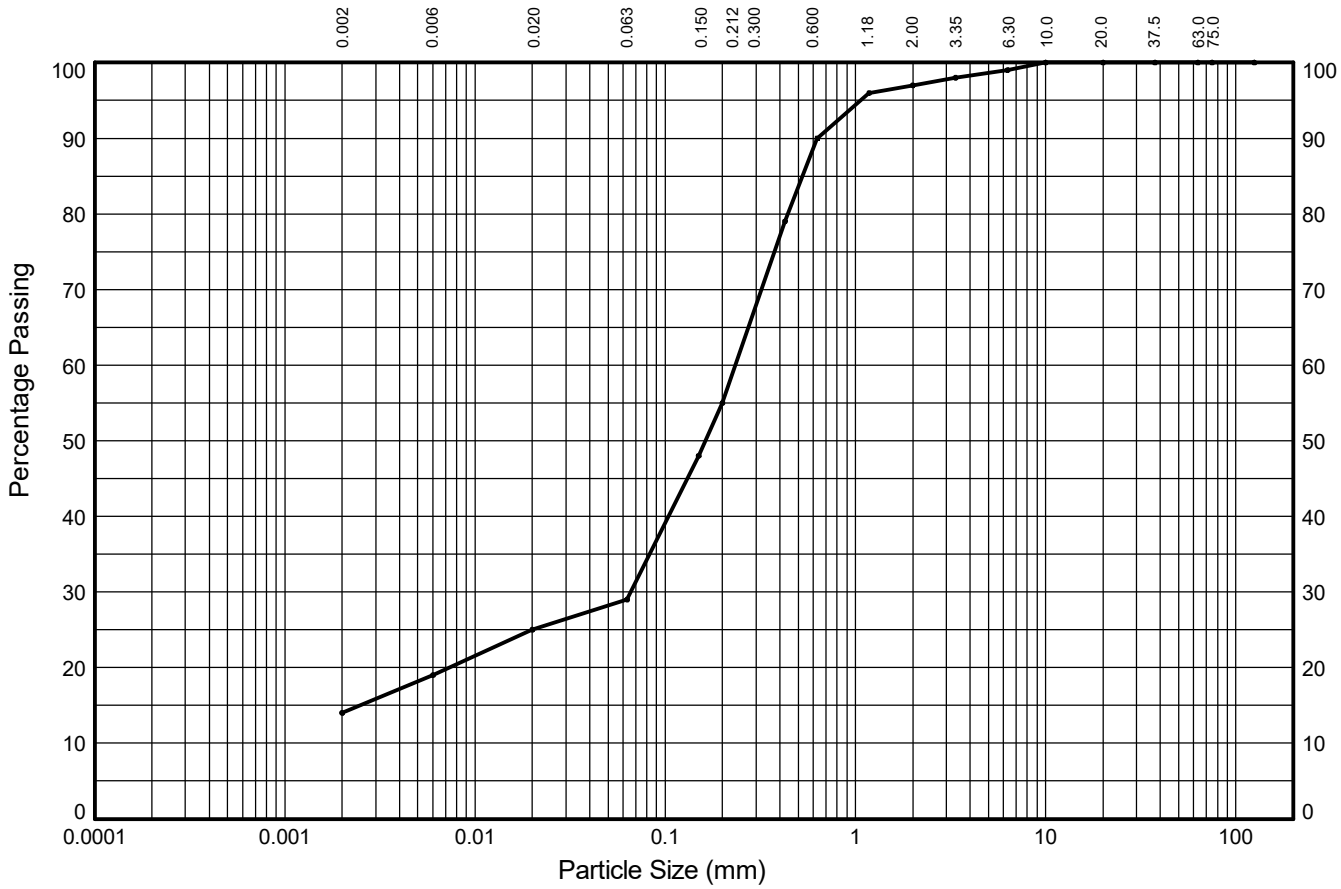
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS231** Sample Ref: **5** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	5%	6%	4%	26%	35%	7%	2%	1%	0%	
	SILT			SAND			GRAVEL			
14%	15%			68%			3%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**99**
3.35	**98**
2.00	**97**
1.18	**96**
0.630	**90**
0.425	**79**
0.200	**55**
0.150	**48**
0.063	**29**

Particle Diameter (mm)	Percent Passing (%)
0.02	**25**
0.006	**19**
0.002	**14**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.002**
D_{30} (mm)	**0.066**
D_{50} (mm)	**0.163**
D_{60} (mm)	**0.234**
D_{85} (mm)	**0.527**
D_{90} (mm)	**0.630**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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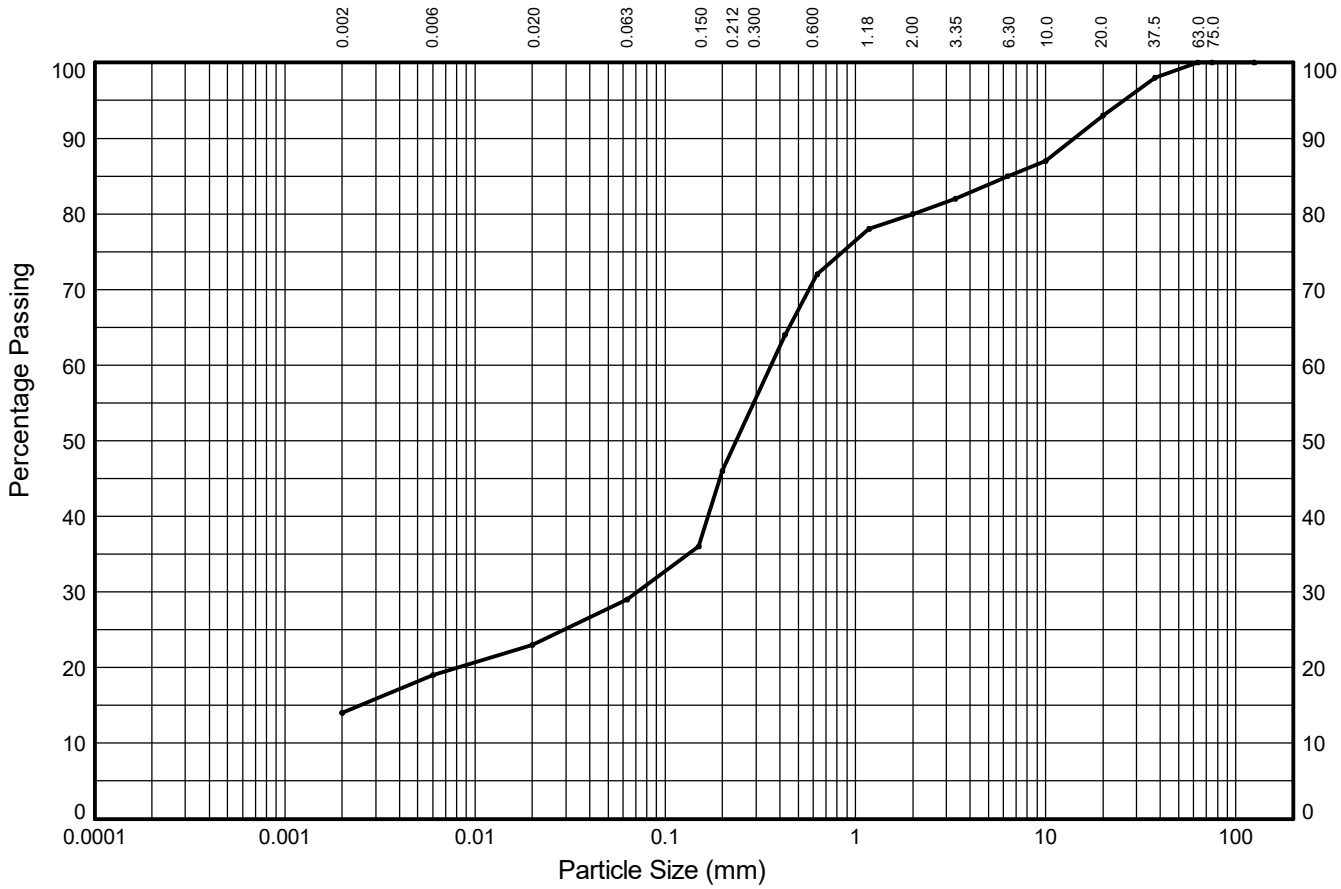
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS231** Sample Ref: **9** Sample Type: **LB** Depth (m): **2.90**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	5%	4%	6%	17%	26%	8%	5%	8%	7%	
	SILT			SAND			GRAVEL			
14%	15%			51%			20%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**98**
20.0	**93**
10.0	**87**
6.30	**85**
3.35	**82**
2.00	**80**
1.18	**78**
0.630	**72**
0.425	**64**
0.200	**46**
0.150	**36**
0.063	**29**

Particle Diameter (mm)	Percent Passing (%)
0.02	**23**
0.006	**19**
0.002	**14**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.002**
D_{30} (mm)	**0.071**
D_{50} (mm)	**0.236**
D_{60} (mm)	**0.359**
D_{85} (mm)	**6.300**
D_{90} (mm)	**14.142**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown very gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

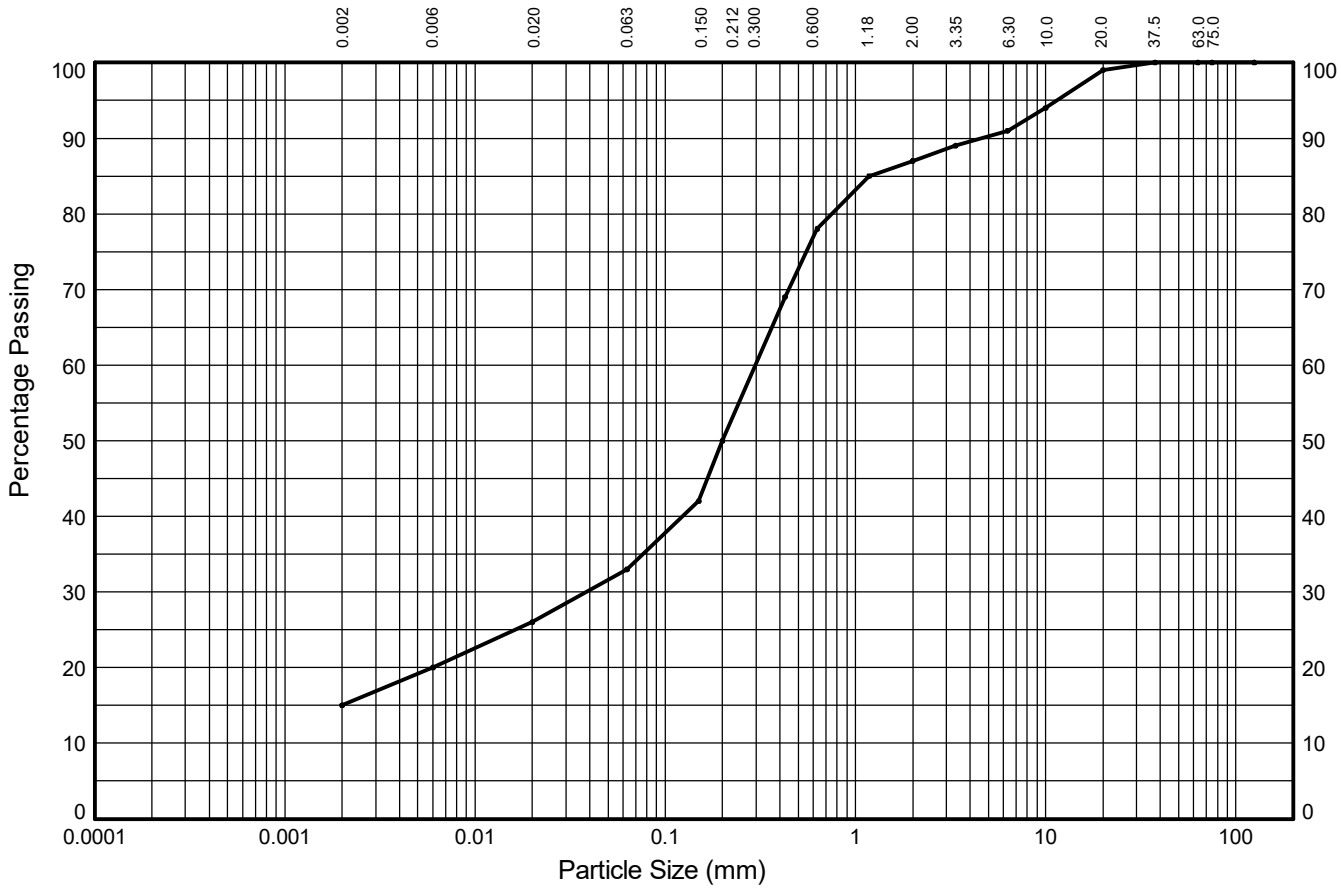
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:18 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS231** Sample Ref: **10** Sample Type: **B** Depth (m): **3.10**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	5%	6%	7%	17%	28%	9%	4%	8%	1%	
	SILT			SAND			GRAVEL			
15%	18%			54%			13%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**99**
10.0	**94**
6.30	**91**
3.35	**89**
2.00	**87**
1.18	**85**
0.630	**78**
0.425	**69**
0.200	**50**
0.150	**42**
0.063	**33**

Particle Diameter (mm)	Percent Passing (%)
0.02	**26**
0.006	**20**
0.002	**15**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.002**
D_{30} (mm)	**0.039**
D_{50} (mm)	**0.200**
D_{60} (mm)	**0.297**
D_{85} (mm)	**1.180**
D_{90} (mm)	**4.594**
C_U	**NA**
C_C	**NA**

Soil Description:

Orangish brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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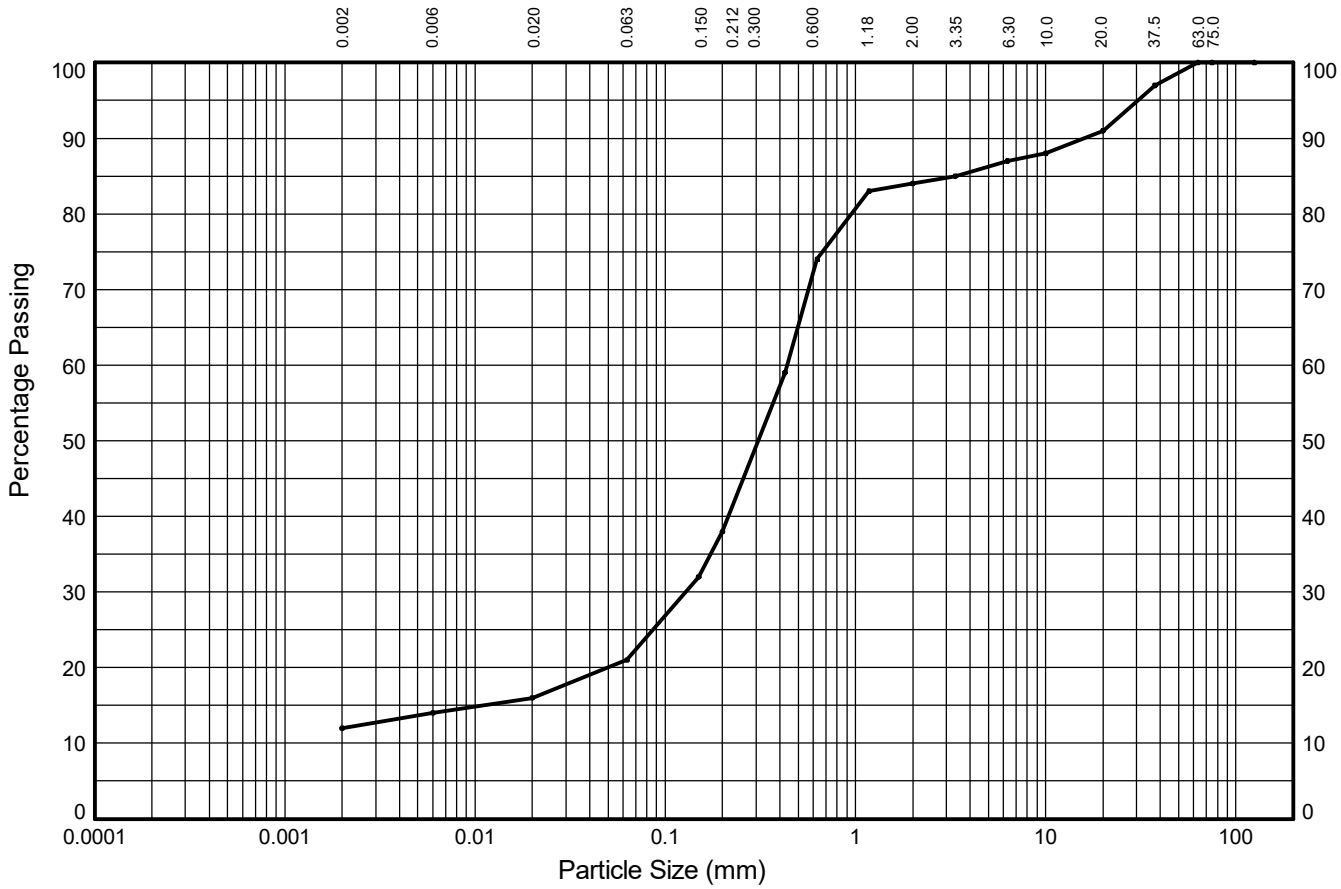
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS232** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	2%	5%	17%	36%	10%	3%	4%	9%	
	SILT			SAND			GRAVEL			
12%	9%			63%			16%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**97**
20.0	**91**
10.0	**88**
6.30	**87**
3.35	**85**
2.00	**84**
1.18	**83**
0.630	**74**
0.425	**59**
0.200	**38**
0.150	**32**
0.063	**21**

Particle Diameter (mm)	Percent Passing (%)
0.02	**16**
0.006	**14**
0.002	**12**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.011**
D_{30} (mm)	**0.128**
D_{50} (mm)	**0.308**
D_{60} (mm)	**0.436**
D_{85} (mm)	**3.350**
D_{90} (mm)	**15.874**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By	Date
LORNA WHITWORTH	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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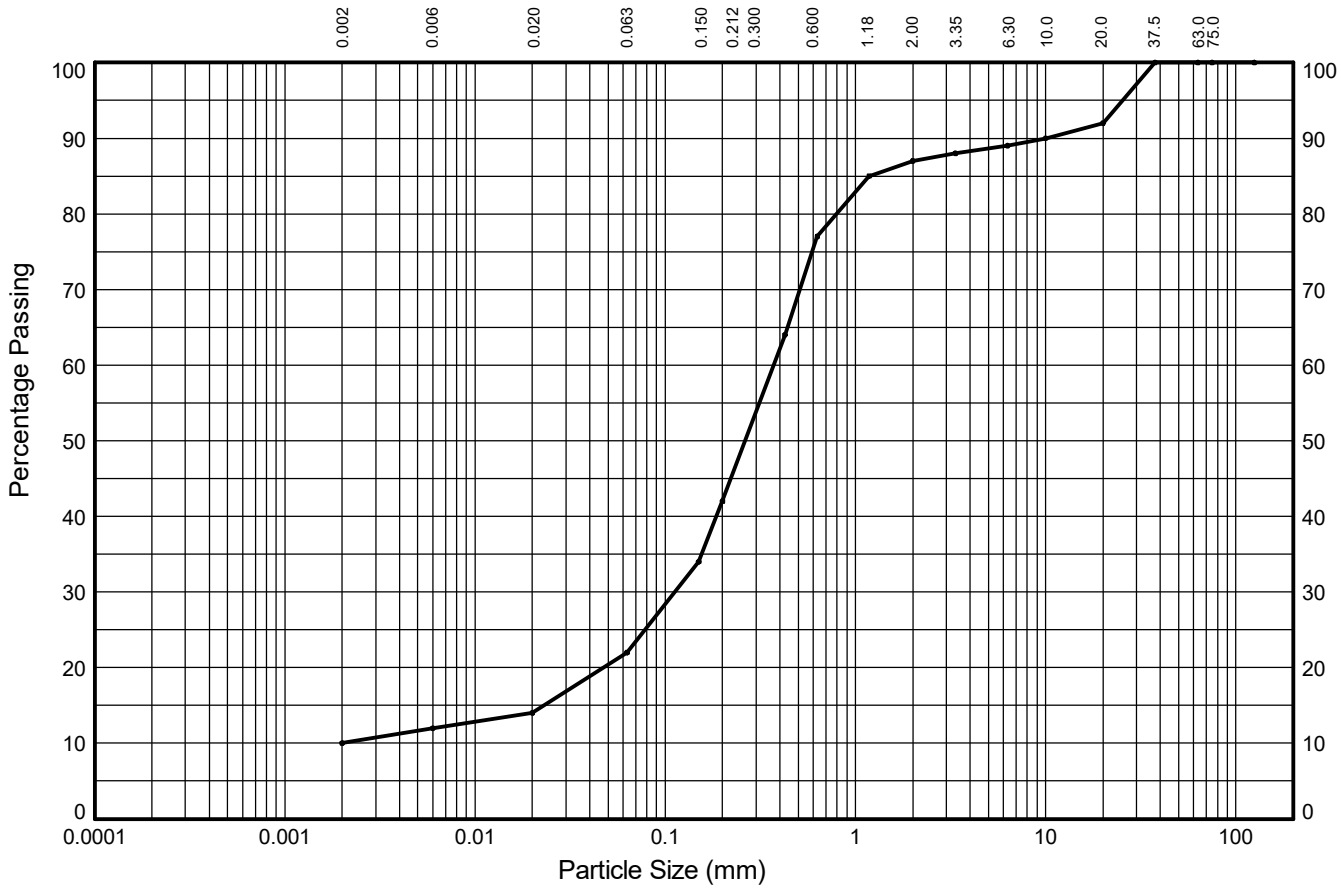
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS232** Sample Ref: **6** Sample Type: **B** Depth (m): **1.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	2%	8%	20%	35%	10%	2%	3%	8%	
	SILT			SAND			GRAVEL			
10%	12%			65%			13%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**92**
10.0	**90**
6.30	**89**
3.35	**88**
2.00	**87**
1.18	**85**
0.630	**77**
0.425	**64**
0.200	**42**
0.150	**34**
0.063	**22**

Particle Diameter (mm)	Percent Passing (%)
0.02	**14**
0.006	**12**
0.002	**10**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.002**
D_{15} (mm)	**0.023**
D_{30} (mm)	**0.112**
D_{50} (mm)	**0.263**
D_{60} (mm)	**0.371**
D_{85} (mm)	**1.180**
D_{90} (mm)	**10.000**
C_U	**185**
C_C	**17**

Soil Description:

Brown gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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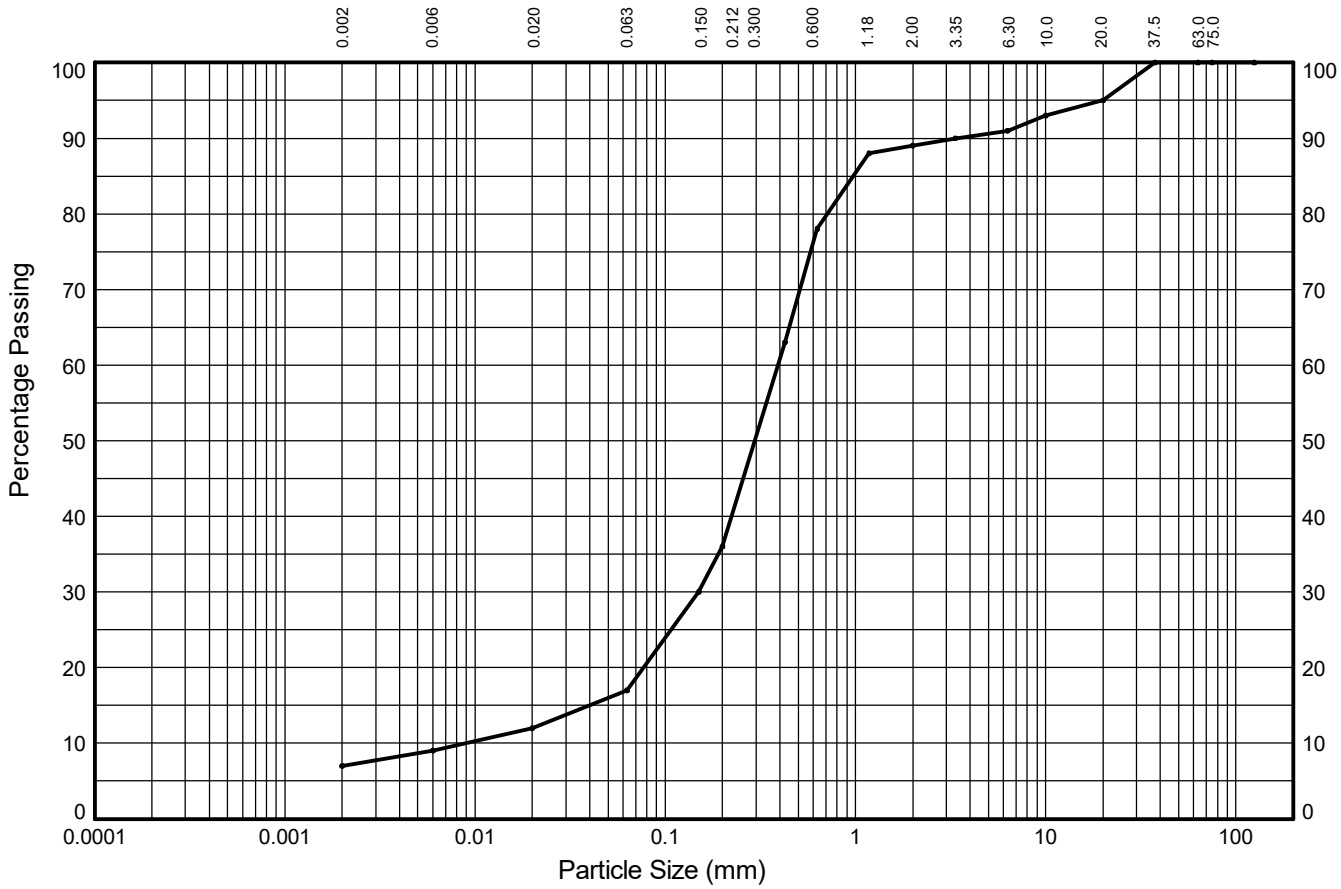
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS233-LC** Sample Ref: **3** Sample Type: **LB** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	3%	5%	19%	42%	11%	2%	4%	5%	
	SILT			SAND			GRAVEL			
7%	10%			72%			11%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**95**
10.0	**93**
6.30	**91**
3.35	**90**
2.00	**89**
1.18	**88**
0.630	**78**
0.425	**63**
0.200	**36**
0.150	**30**
0.063	**17**

Particle Diameter (mm)	Percent Passing (%)
0.02	**12**
0.006	**9**
0.002	**7**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.009**
D_{15} (mm)	**0.040**
D_{30} (mm)	**0.150**
D_{50} (mm)	**0.296**
D_{60} (mm)	**0.391**
D_{85} (mm)	**0.978**
D_{90} (mm)	**3.350**
C_U	**44**
C_C	**6**

Soil Description:

Brown gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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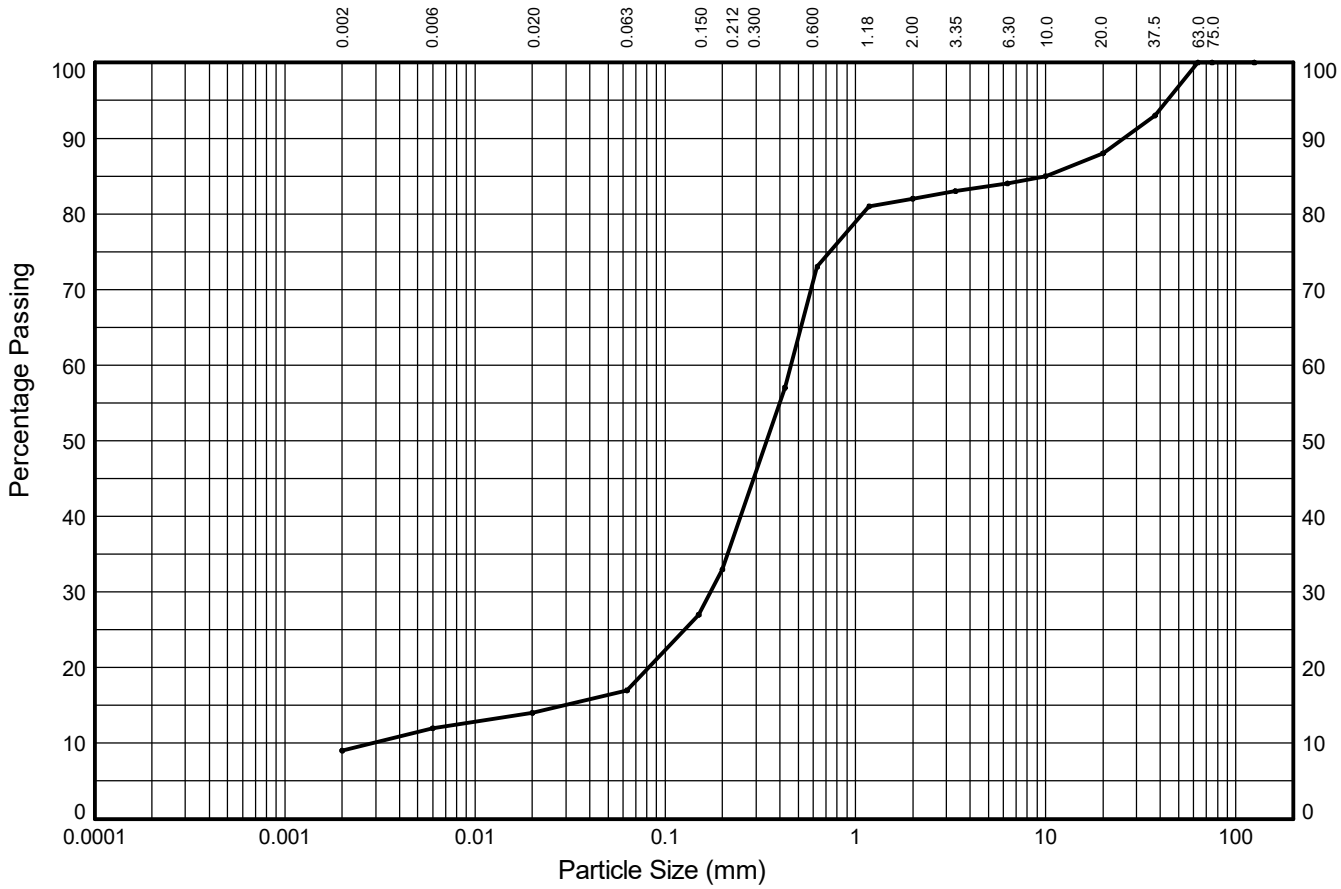
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS233-LC** Sample Ref: **8** Sample Type: **B** Depth (m): **2.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	2%	3%	16%	40%	9%	2%	4%	12%	
	SILT			SAND			GRAVEL			
9%	8%			65%			18%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**93**
20.0	**88**
10.0	**85**
6.30	**84**
3.35	**83**
2.00	**82**
1.18	**81**
0.630	**73**
0.425	**57**
0.200	**33**
0.150	**27**
0.063	**17**

Particle Diameter (mm)	Percent Passing (%)
0.02	**14**
0.006	**12**
0.002	**9**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.003**
D_{15} (mm)	**0.029**
D_{30} (mm)	**0.173**
D_{50} (mm)	**0.341**
D_{60} (mm)	**0.458**
D_{85} (mm)	**10.000**
D_{90} (mm)	**25.718**
C_U	**159**
C_C	**23**

Soil Description:

Reddish brown gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

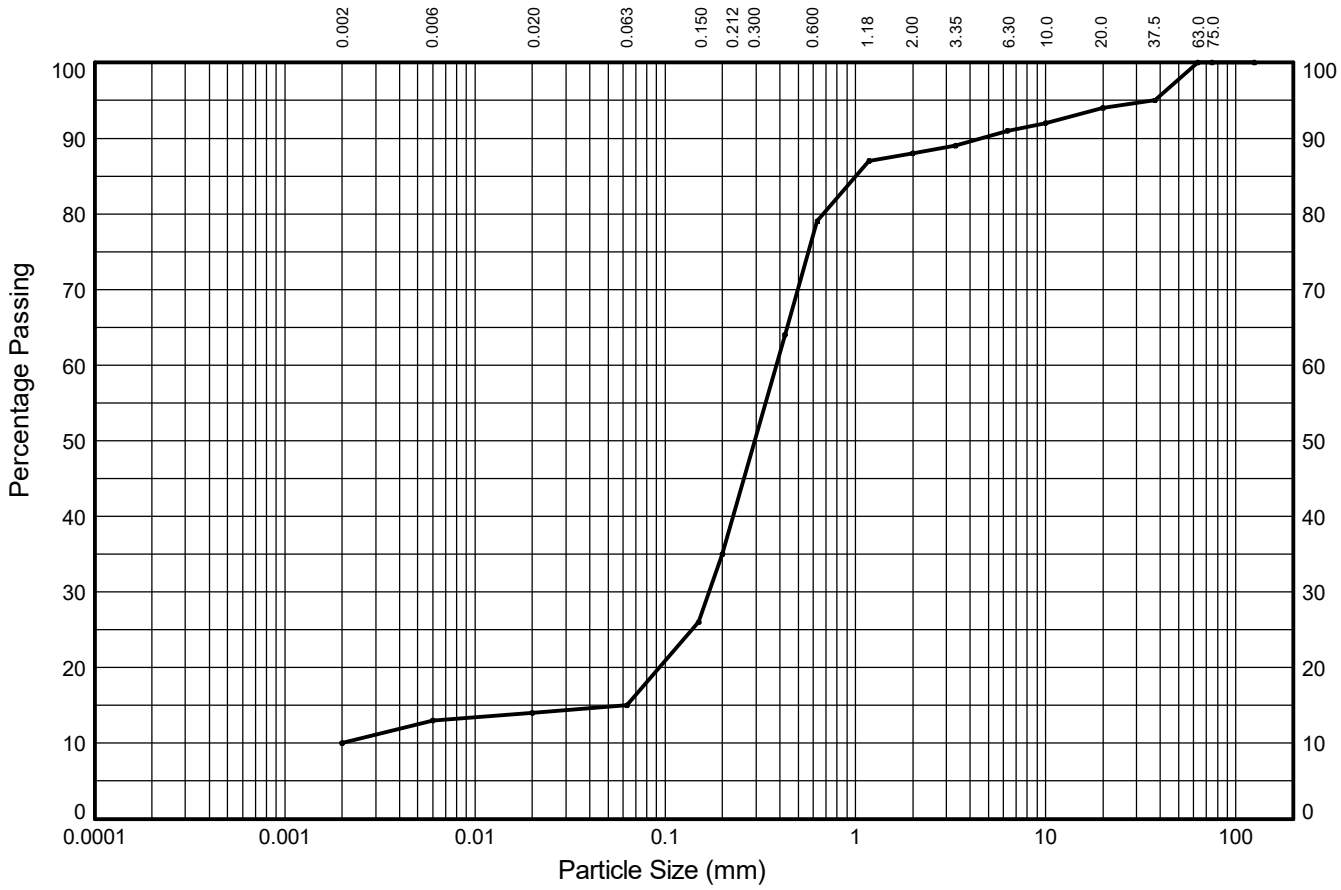
Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:18 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS233-LC** Sample Ref: **10** Sample Type: **B** Depth (m): **3.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	1%	1%	20%	44%	9%	3%	3%	6%	
	SILT			SAND			GRAVEL			
10%	5%			73%			12%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**95**
20.0	**94**
10.0	**92**
6.30	**91**
3.35	**89**
2.00	**88**
1.18	**87**
0.630	**79**
0.425	**64**
0.200	**35**
0.150	**26**
0.063	**15**

Particle Diameter (mm)	Percent Passing (%)
0.02	**14**
0.006	**13**
0.002	**10**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.002**
D_{15} (mm)	**0.063**
D_{30} (mm)	**0.170**
D_{50} (mm)	**0.295**
D_{60} (mm)	**0.383**
D_{85} (mm)	**1.009**
D_{90} (mm)	**4.594**
C_U	**192**
C_C	**38**

Soil Description:

Brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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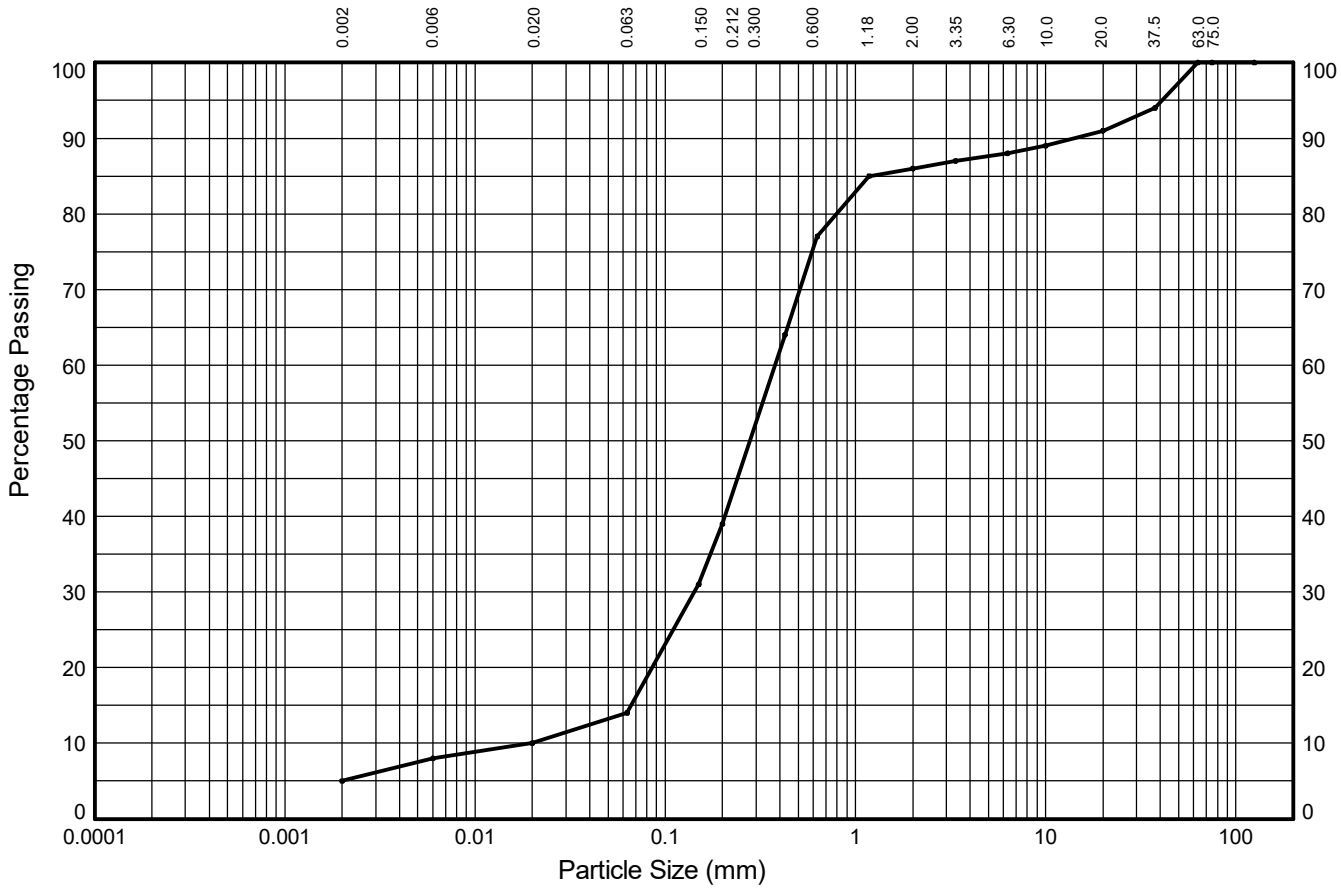
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS234** Sample Ref: **2** Sample Type: **B** Depth (m): **0.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	2%	4%	25%	38%	9%	2%	3%	9%	
	SILT			SAND			GRAVEL			
5%	9%			72%			14%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**94**
20.0	**91**
10.0	**89**
6.30	**88**
3.35	**87**
2.00	**86**
1.18	**85**
0.630	**77**
0.425	**64**
0.200	**39**
0.150	**31**
0.063	**14**

Particle Diameter (mm)	Percent Passing (%)
0.02	**10**
0.006	**8**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.020**
D_{15} (mm)	**0.066**
D_{30} (mm)	**0.143**
D_{50} (mm)	**0.279**
D_{60} (mm)	**0.377**
D_{85} (mm)	**1.180**
D_{90} (mm)	**14.142**
C_U	**19**
C_C	**3**

Soil Description:

Reddish brown gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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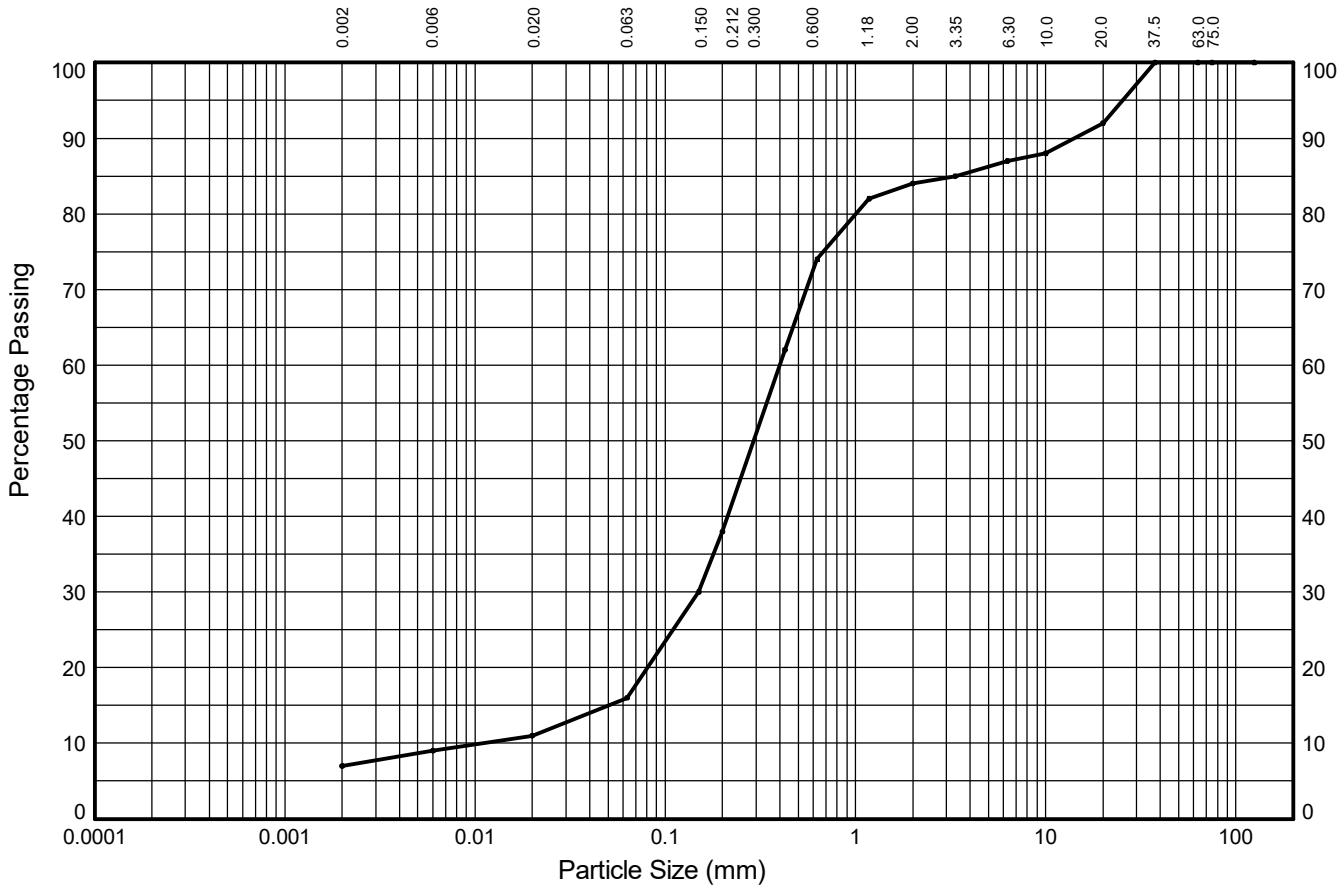
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS234** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	2%	5%	22%	36%	10%	3%	5%	8%	
	SILT			SAND			GRAVEL			
7%	9%			68%			16%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**92**
10.0	**88**
6.30	**87**
3.35	**85**
2.00	**84**
1.18	**82**
0.630	**74**
0.425	**62**
0.200	**38**
0.150	**30**
0.063	**16**

Particle Diameter (mm)	Percent Passing (%)
0.02	**11**
0.006	**9**
0.002	**7**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.011**
D_{15} (mm)	**0.050**
D_{30} (mm)	**0.150**
D_{50} (mm)	**0.292**
D_{60} (mm)	**0.399**
D_{85} (mm)	**3.350**
D_{90} (mm)	**14.142**
C_U	**36**
C_C	**5**

Soil Description:

Brown gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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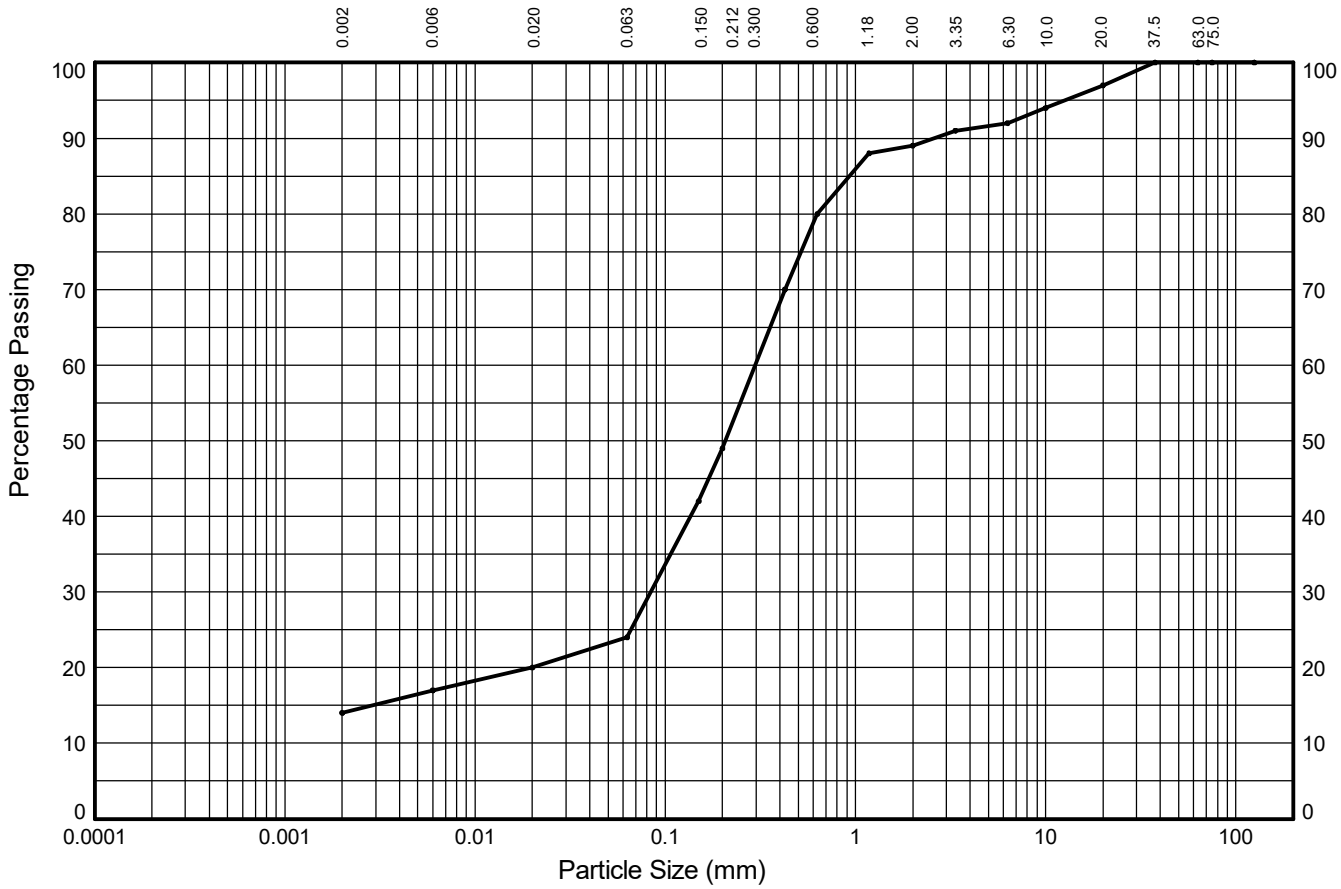
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS234** Sample Ref: **7** Sample Type: **B** Depth (m): **1.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	4%	25%	31%	9%	3%	5%	3%	
	SILT			SAND			GRAVEL			
14%	10%			65%			11%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**97**
10.0	**94**
6.30	**92**
3.35	**91**
2.00	**89**
1.18	**88**
0.630	**80**
0.425	**70**
0.200	**49**
0.150	**42**
0.063	**24**

Particle Diameter (mm)	Percent Passing (%)
0.02	**20**
0.006	**17**
0.002	**14**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.003**
D_{30} (mm)	**0.084**
D_{50} (mm)	**0.207**
D_{60} (mm)	**0.297**
D_{85} (mm)	**0.933**
D_{90} (mm)	**2.588**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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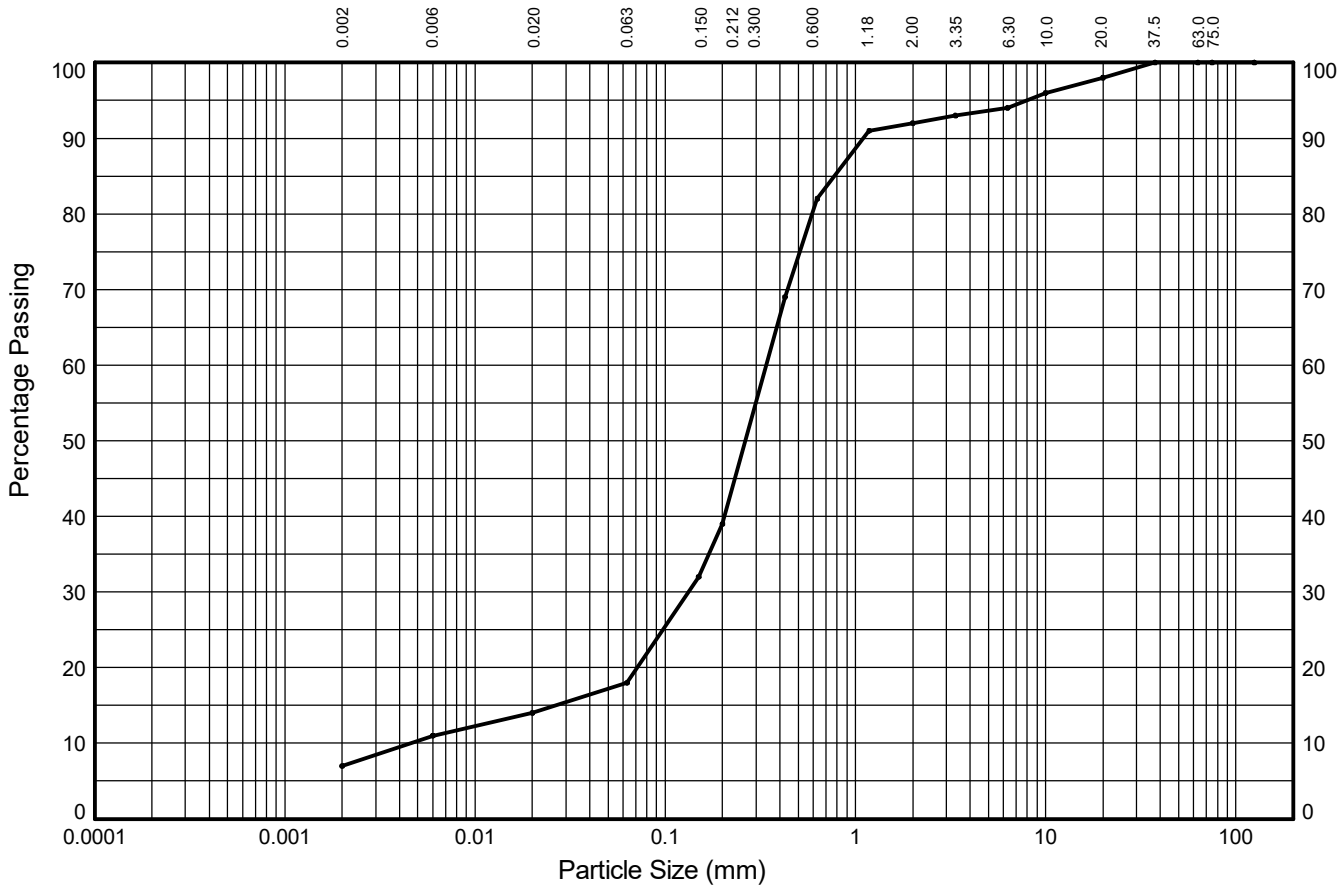
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS235** Sample Ref: **2** Sample Type: **B** Depth (m): **0.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	3%	4%	21%	43%	10%	2%	4%	2%	
	SILT			SAND			GRAVEL			
7%	11%			74%			8%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**98**
10.0	**96**
6.30	**94**
3.35	**93**
2.00	**92**
1.18	**91**
0.630	**82**
0.425	**69**
0.200	**39**
0.150	**32**
0.063	**18**

Particle Diameter (mm)	Percent Passing (%)
0.02	**14**
0.006	**11**
0.002	**7**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.005**
D_{15} (mm)	**0.027**
D_{30} (mm)	**0.133**
D_{50} (mm)	**0.264**
D_{60} (mm)	**0.339**
D_{85} (mm)	**0.777**
D_{90} (mm)	**1.101**
C_U	**74**
C_C	**11**

Soil Description:

Brown gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
E. Hort	**ELIZABETH HORT**	**22/08/23**
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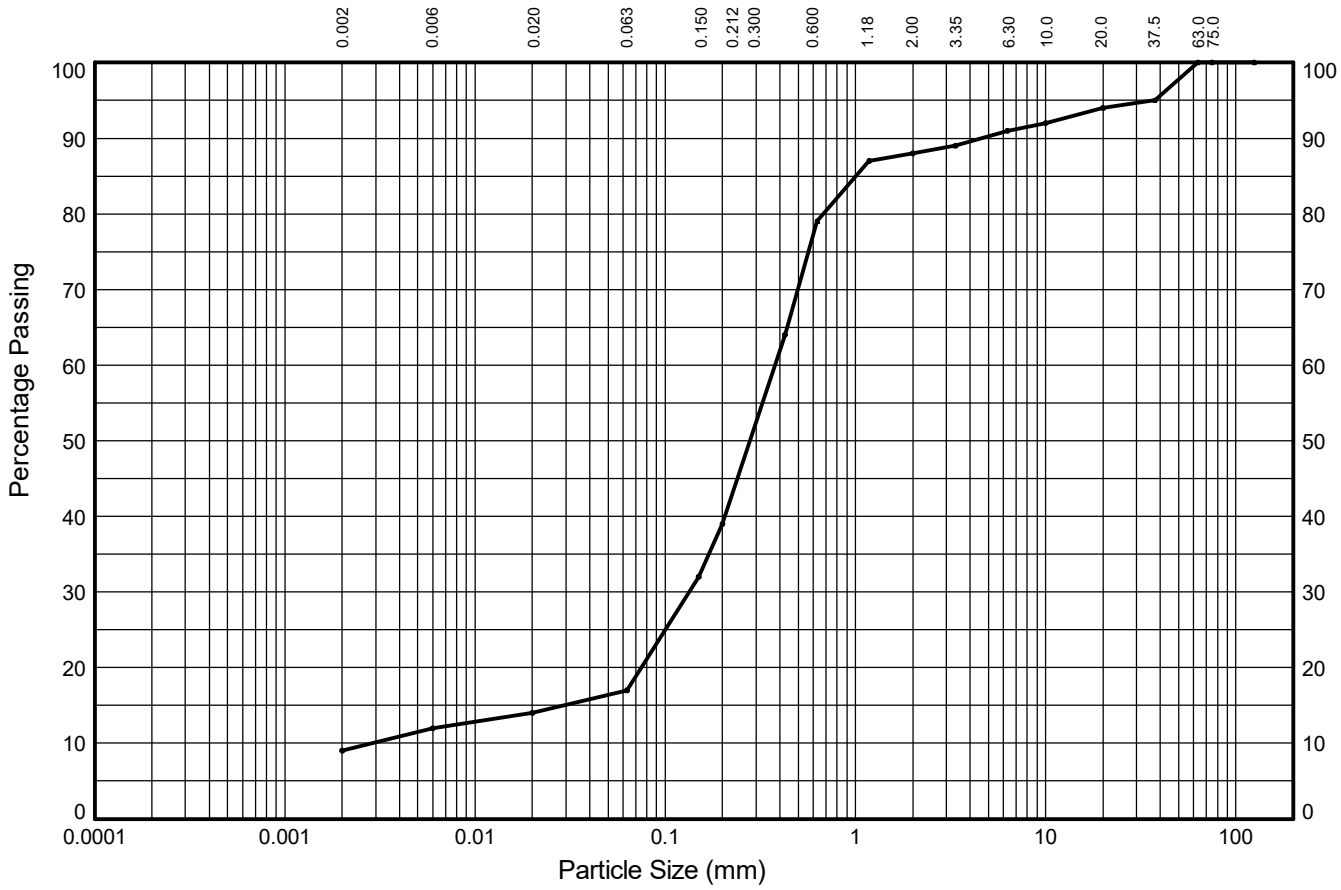
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS235** Sample Ref: **5** Sample Type: **B** Depth (m): **0.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	2%	3%	22%	40%	9%	3%	3%	6%	
	SILT			SAND			GRAVEL			
9%	8%			71%			12%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**95**
20.0	**94**
10.0	**92**
6.30	**91**
3.35	**89**
2.00	**88**
1.18	**87**
0.630	**79**
0.425	**64**
0.200	**39**
0.150	**32**
0.063	**17**

Particle Diameter (mm)	Percent Passing (%)
0.02	**14**
0.006	**12**
0.002	**9**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.003**
D_{15} (mm)	**0.029**
D_{30} (mm)	**0.134**
D_{50} (mm)	**0.279**
D_{60} (mm)	**0.377**
D_{85} (mm)	**1.009**
D_{90} (mm)	**4.594**
C_U	**131**
C_C	**16**

Soil Description:

Brown gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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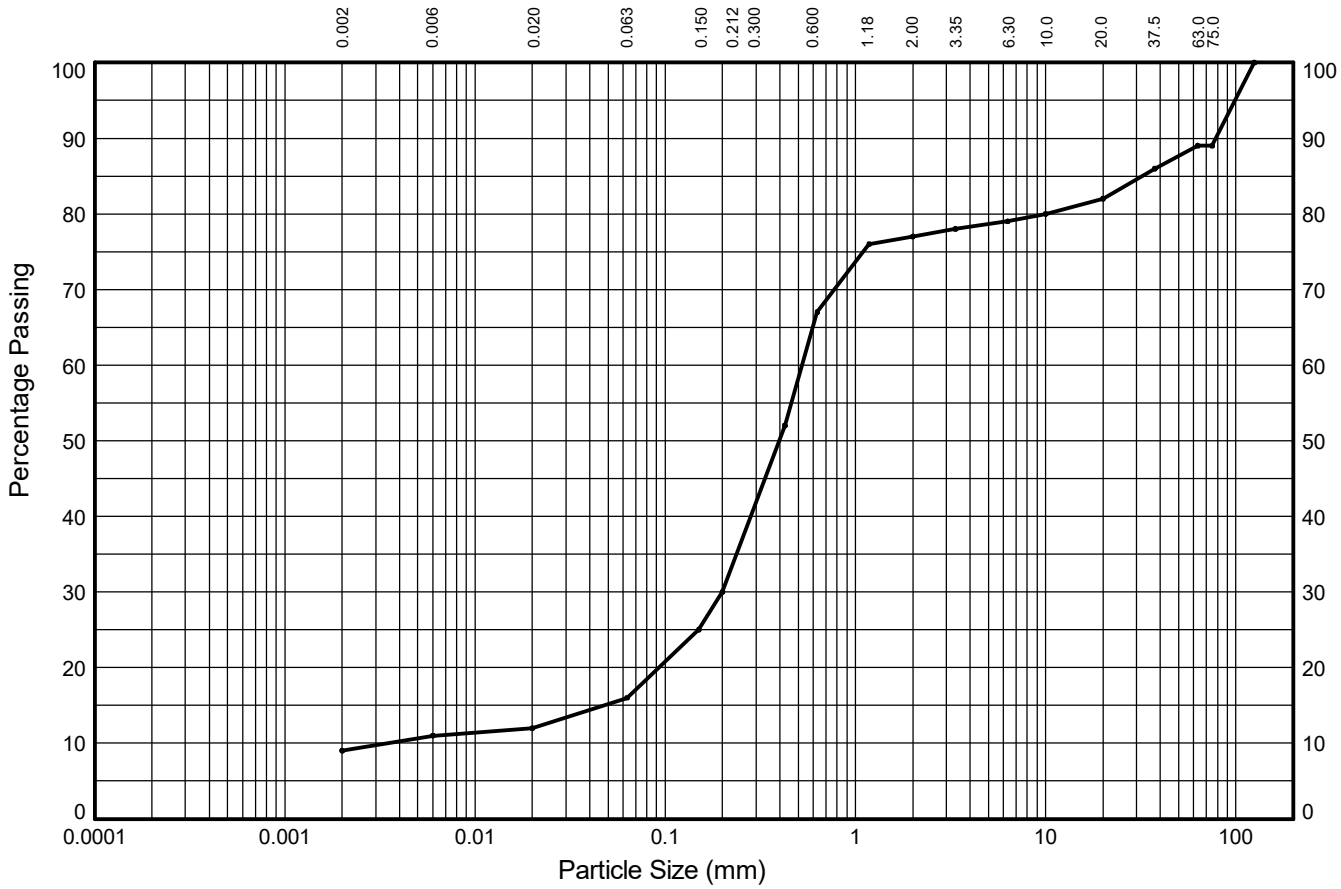
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Trial Pit: **TP-PTS235** Sample Ref: **7** Sample Type: **B** Depth (m): **0.90**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	1%	4%	14%	37%	10%	2%	3%	7%	
	SILT			SAND			GRAVEL			
9%	7%			61%			12%			11%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**89**
63.0	**89**
37.5	**86**
20.0	**82**
10.0	**80**
6.30	**79**
3.35	**78**
2.00	**77**
1.18	**76**
0.630	**67**
0.425	**52**
0.200	**30**
0.150	**25**
0.063	**16**

Particle Diameter (mm)	Percent Passing (%)
0.02	**12**
0.006	**11**
0.002	**9**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.003**
D_{15} (mm)	**0.047**
D_{30} (mm)	**0.200**
D_{50} (mm)	**0.397**
D_{60} (mm)	**0.524**
D_{85} (mm)	**32.047**
D_{90} (mm)	**78.565**
C_U	**151**
C_C	**22**

Soil Description:

Reddish brown gravelly clayey SAND with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
	DAISY RICHARDS	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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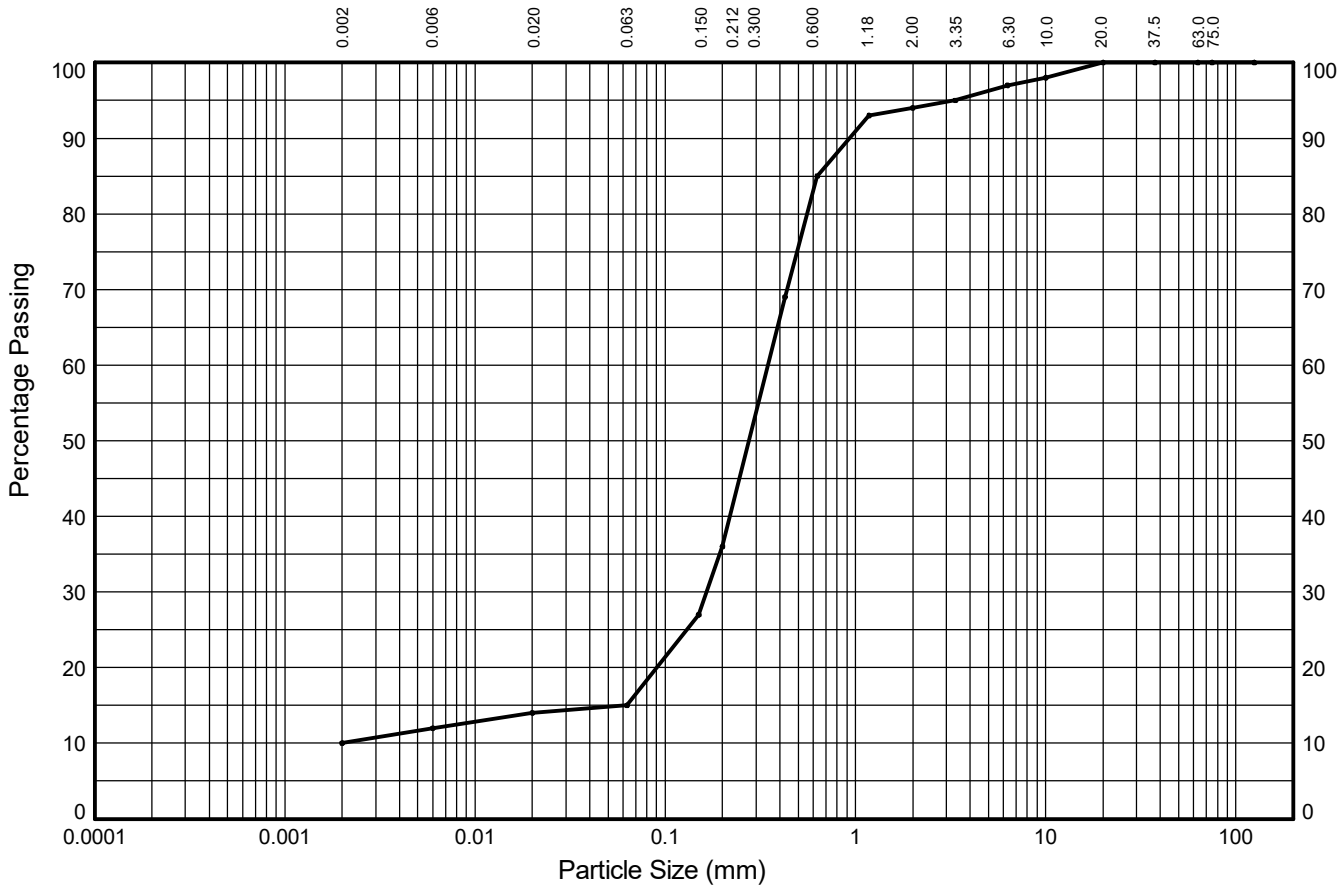
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS235** Sample Ref: **10** Sample Type: **LB** Depth (m): **2.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	2%	1%	21%	49%	9%	3%	3%	0%	
	SILT			SAND			GRAVEL			
10%	5%			79%			6%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**98**
6.30	**97**
3.35	**95**
2.00	**94**
1.18	**93**
0.630	**85**
0.425	**69**
0.200	**36**
0.150	**27**
0.063	**15**

Particle Diameter (mm)	Percent Passing (%)
0.02	**14**
0.006	**12**
0.002	**10**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.002**
D_{15} (mm)	**0.063**
D_{30} (mm)	**0.165**
D_{50} (mm)	**0.275**
D_{60} (mm)	**0.346**
D_{85} (mm)	**0.630**
D_{90} (mm)	**0.933**
C_U	**173**
C_C	**39**

Soil Description:

Brown gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
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Compiled By		Date
E. Hort	**ELIZABETH HORT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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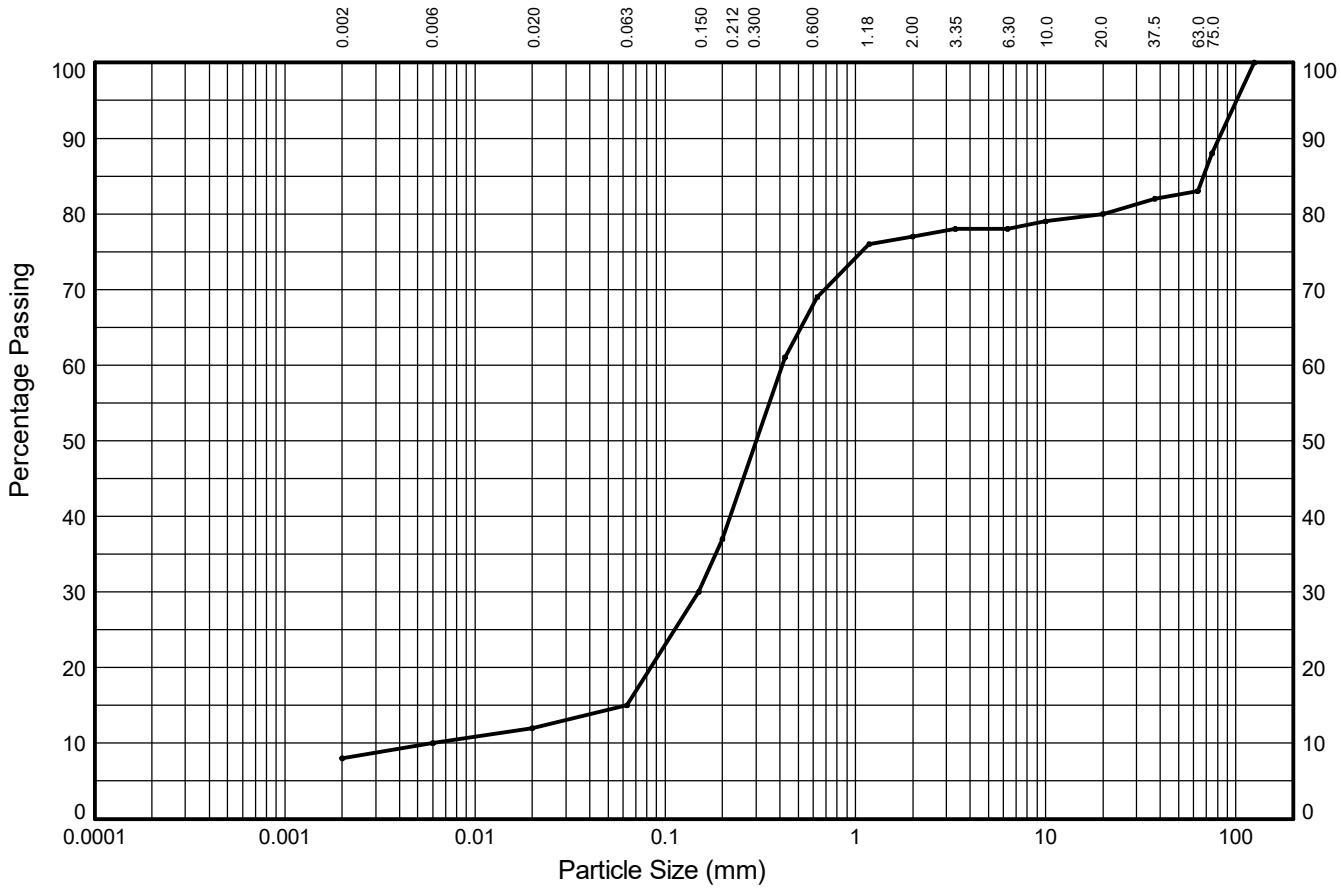
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Trial Pit: **TP-PTS236** Sample Ref: **5** Sample Type: **B** Depth (m): **0.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	2%	3%	22%	32%	8%	1%	2%	3%	
	SILT			SAND			GRAVEL			
8%	7%			62%			6%			17%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**88**
63.0	**83**
37.5	**82**
20.0	**80**
10.0	**79**
6.30	**78**
3.35	**78**
2.00	**77**
1.18	**76**
0.630	**69**
0.425	**61**
0.200	**37**
0.150	**30**
0.063	**15**

Particle Diameter (mm)	Percent Passing (%)
0.02	**12**
0.006	**10**
0.002	**8**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.006**
D_{15} (mm)	**0.063**
D_{30} (mm)	**0.150**
D_{50} (mm)	**0.301**
D_{60} (mm)	**0.412**
D_{85} (mm)	**67.551**
D_{90} (mm)	**81.665**
C_U	**69**
C_C	**9**

Soil Description:

Brown gravelly clayey SAND with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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	E. Hort	**ELIZABETH HORT**	**22/08/23**
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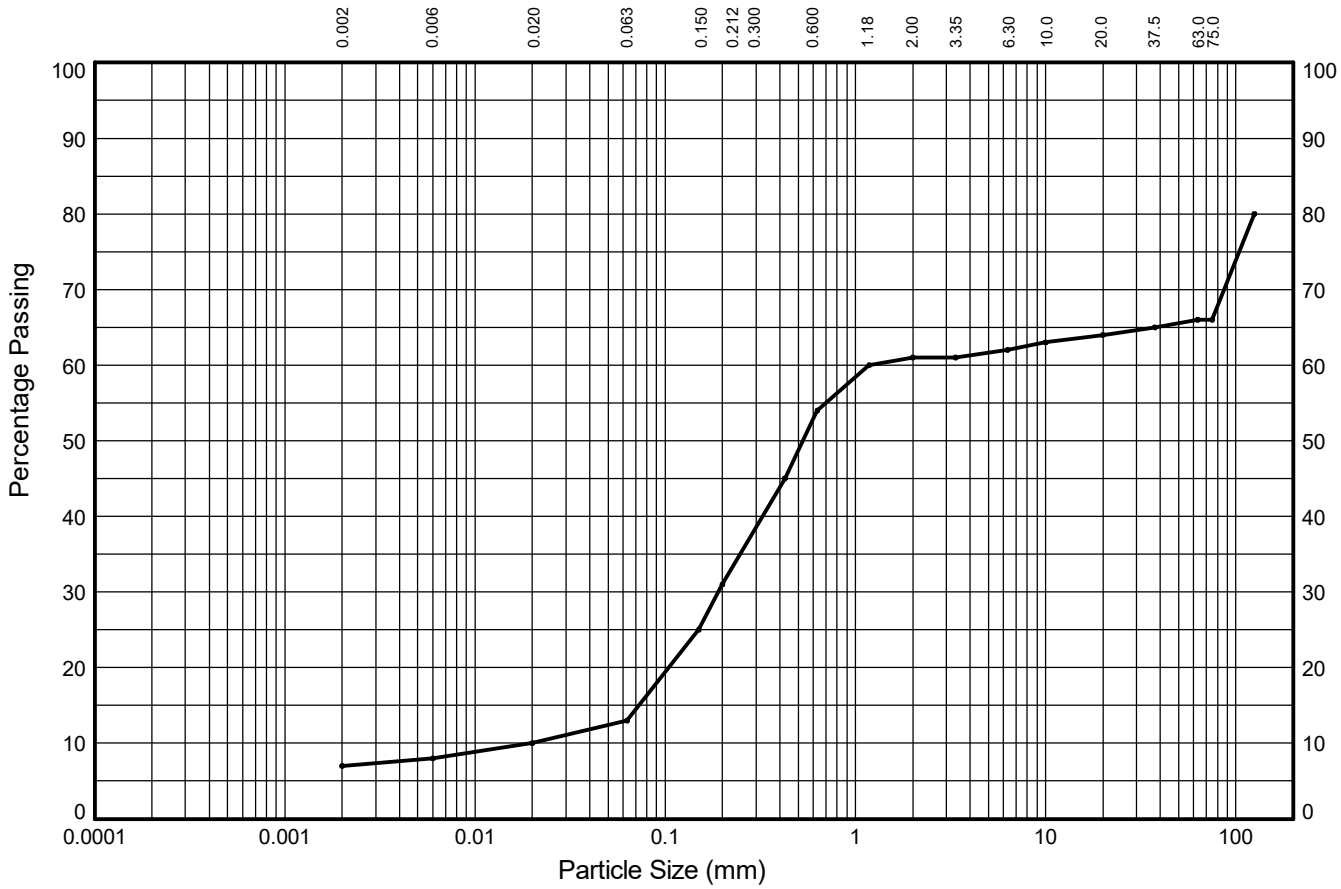
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Trial Pit: **TP-PTS236** Sample Ref: **8** Sample Type: **B** Depth (m): **0.80**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	1%	2%	3%	18%	23%	7%	1%	2%	2%	
	SILT			SAND			GRAVEL			
7%	6%			48%			5%			34%

Test Sieve (mm)	Percent Passing (%)
125.0	**80**
75.0	**66**
63.0	**66**
37.5	**65**
20.0	**64**
10.0	**63**
6.30	**62**
3.35	**61**
2.00	**61**
1.18	**60**
0.630	**54**
0.425	**45**
0.200	**31**
0.150	**25**
0.063	**13**

Particle Diameter (mm)	Percent Passing (%)
0.02	**10**
0.006	**8**
0.002	**7**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.020**
D_{15} (mm)	**0.073**
D_{30} (mm)	**0.191**
D_{50} (mm)	**0.529**
D_{60} (mm)	**1.180**
D_{85} (mm)	
D_{90} (mm)	
C_U	**59**
C_C	**2**

Soil Description:

Brown slightly gravelly clayey SAND with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
E. Hort	**ELIZABETH HORT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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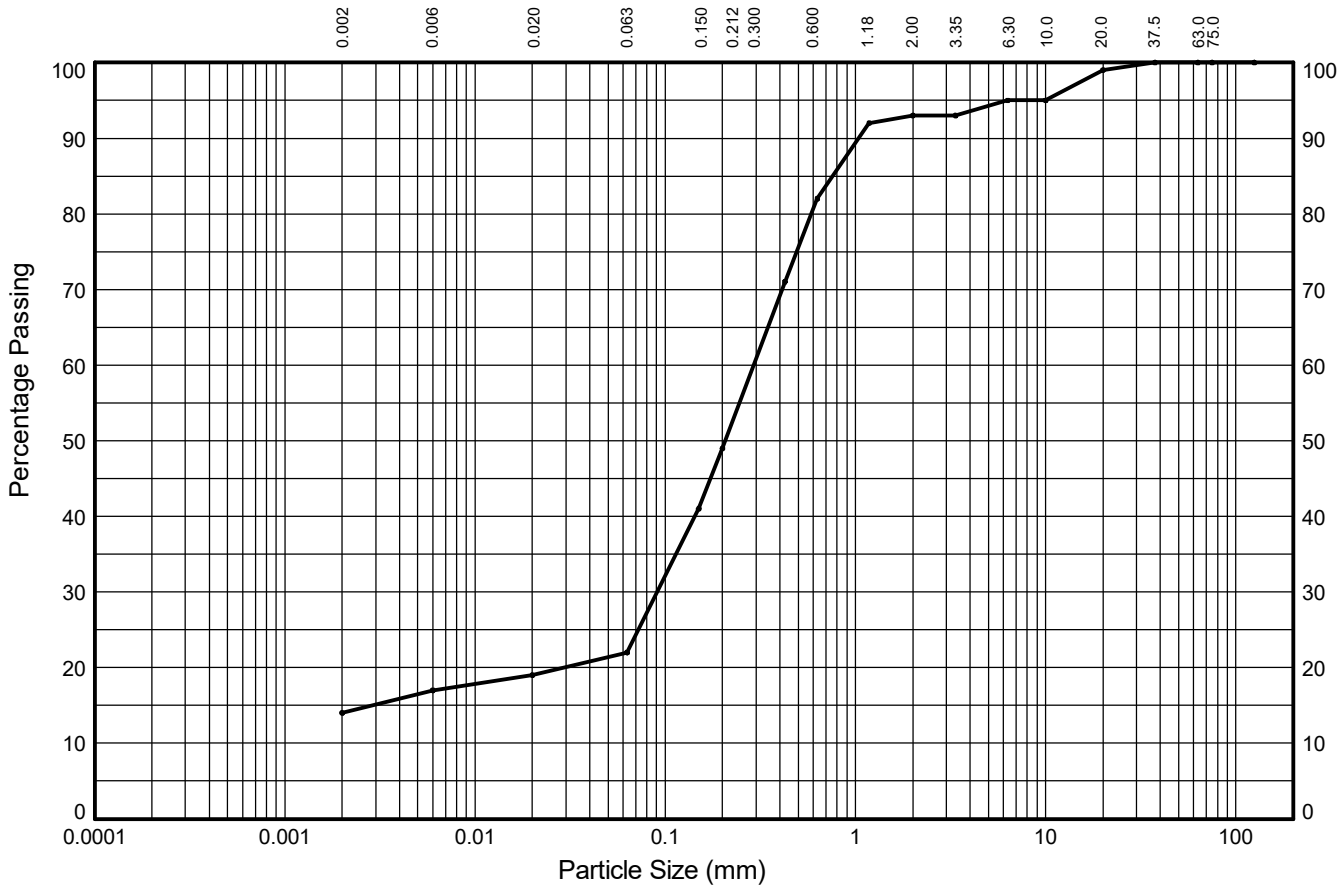
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS236** Sample Ref: **11** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	2%	3%	27%	33%	11%	2%	4%	1%	
	SILT			SAND			GRAVEL			
14%	8%			71%			7%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**99**
10.0	**95**
6.30	**95**
3.35	**93**
2.00	**93**
1.18	**92**
0.630	**82**
0.425	**71**
0.200	**49**
0.150	**41**
0.063	**22**

Particle Diameter (mm)	Percent Passing (%)
0.02	**19**
0.006	**17**
0.002	**14**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.003**
D_{30} (mm)	**0.091**
D_{50} (mm)	**0.207**
D_{60} (mm)	**0.292**
D_{85} (mm)	**0.761**
D_{90} (mm)	**1.041**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
E. Hort	**ELIZABETH HORT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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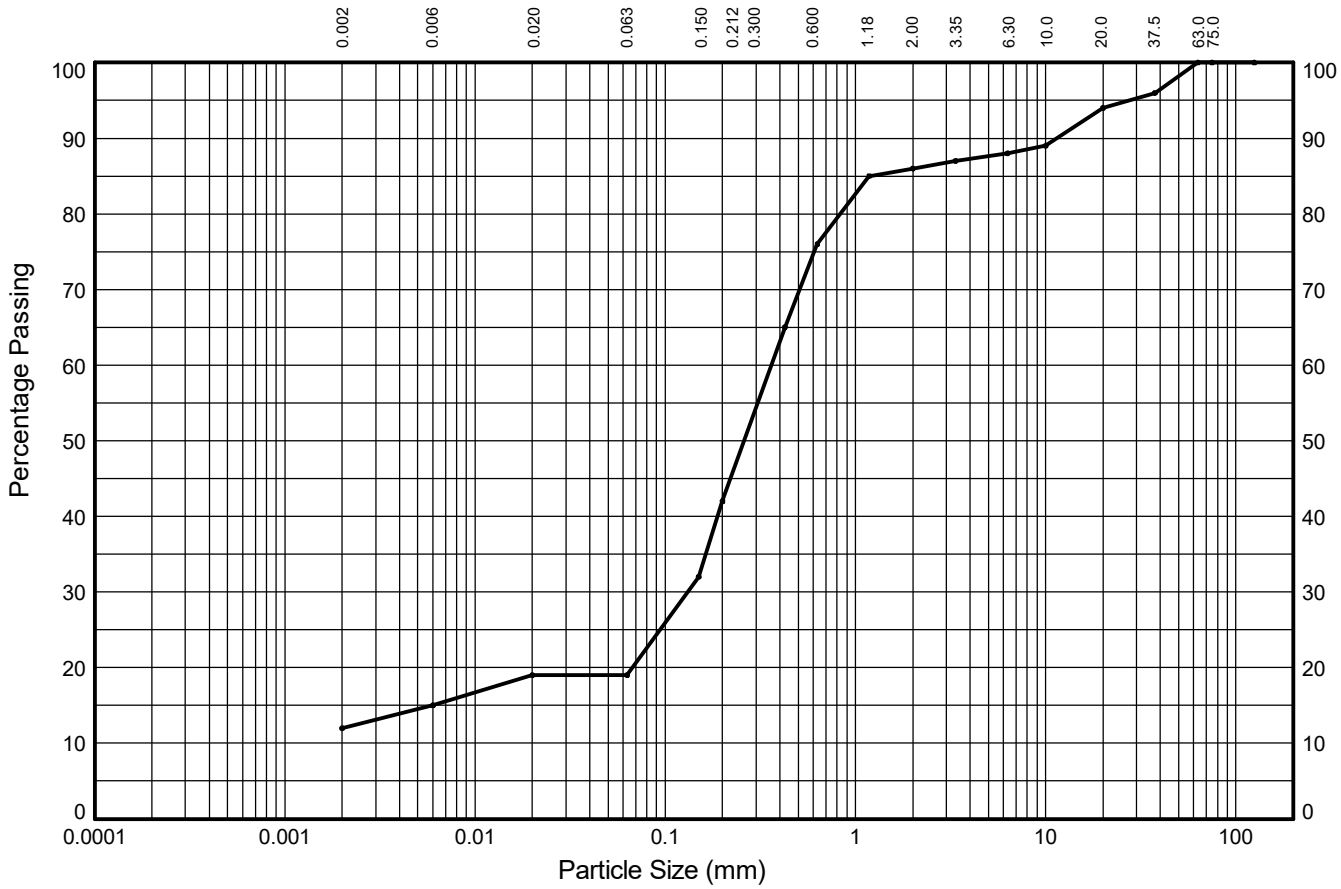
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP-PTS236** Sample Ref: **13** Sample Type: **B** Depth (m): **2.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	4%	0%	23%	34%	10%	2%	6%	6%	
	SILT			SAND			GRAVEL			
12%	7%			67%			14%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**96**
20.0	**94**
10.0	**89**
6.30	**88**
3.35	**87**
2.00	**86**
1.18	**85**
0.630	**76**
0.425	**65**
0.200	**42**
0.150	**32**
0.063	**19**

Particle Diameter (mm)	Percent Passing (%)
0.02	**19**
0.006	**15**
0.002	**12**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.006**
D_{30} (mm)	**0.131**
D_{50} (mm)	**0.260**
D_{60} (mm)	**0.361**
D_{85} (mm)	**1.180**
D_{90} (mm)	**11.487**
C_U	**NA**
C_C	**NA**

Soil Description:

Orangish brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
E. Hort	**ELIZABETH HORT**	**22/08/23**
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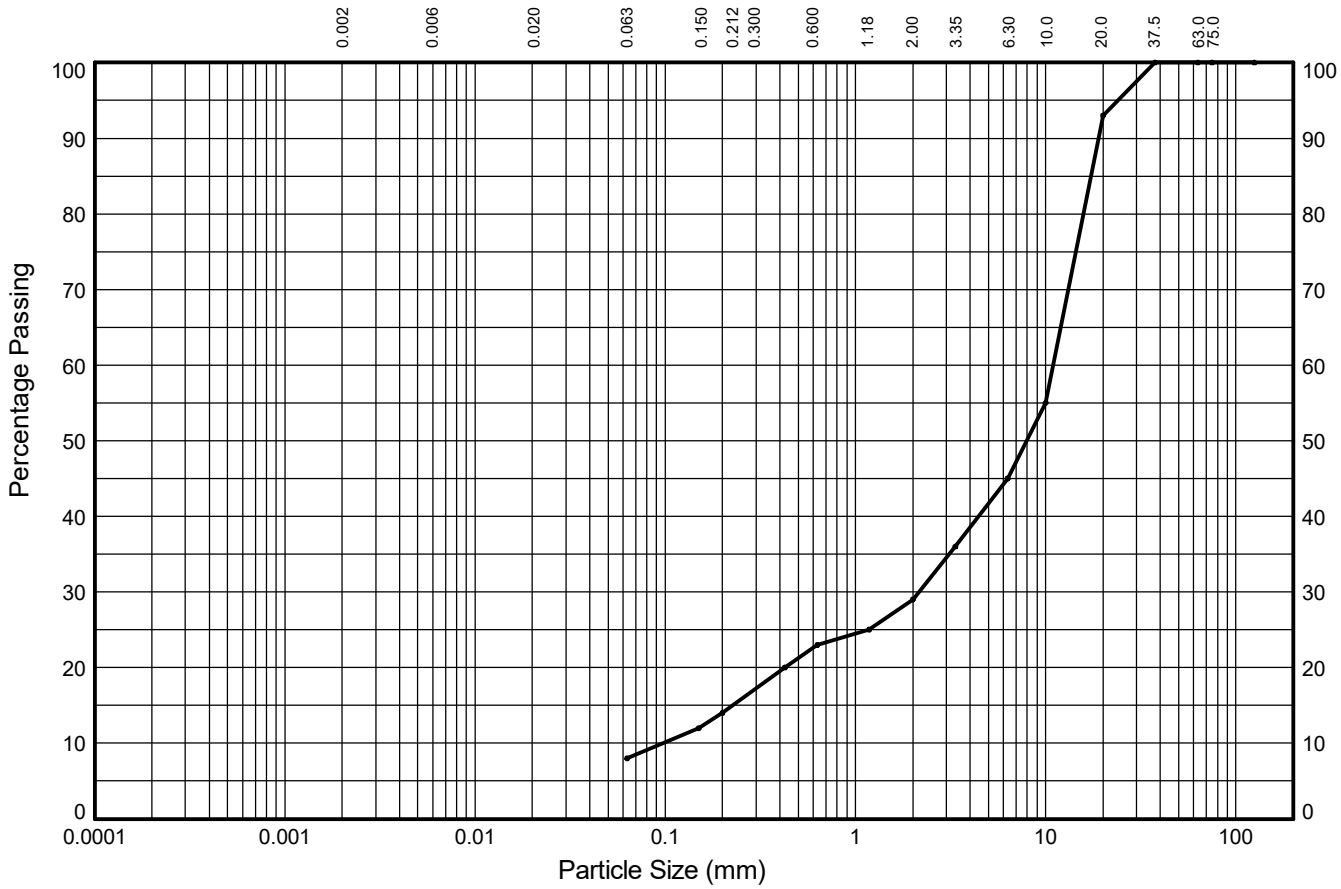
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS101** Sample Ref: **2** Sample Type: **B** Depth (m): **0.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	6%	9%	6%	16%	48%	7%	
	SILT			SAND			GRAVEL			
8%				21%			71%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**93**
10.0	**55**
6.30	**45**
3.35	**36**
2.00	**29**
1.18	**25**
0.630	**23**
0.425	**20**
0.200	**14**
0.150	**12**
0.063	**8**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.097**
D_{15} (mm)	**0.227**
D_{30} (mm)	**2.153**
D_{50} (mm)	**7.937**
D_{60} (mm)	**10.955**
D_{85} (mm)	**17.284**
D_{90} (mm)	**18.935**
C_U	**113**
C_C	**4**

Soil Description:

Brown very sandy silty GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
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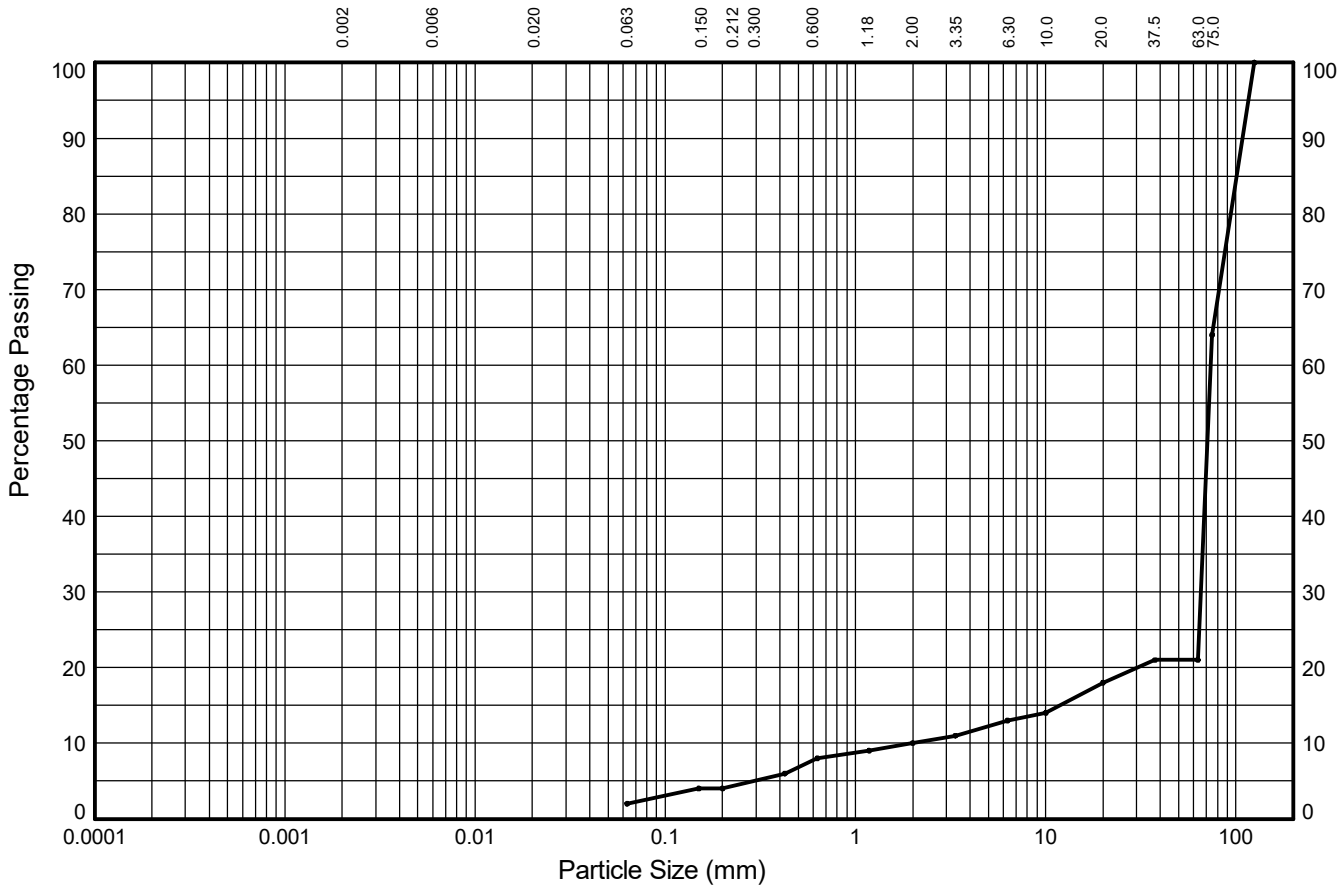
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Window Sample: **WS-PTS101** Sample Ref: **4** Sample Type: **B** Depth (m): **0.55**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	2%	4%	2%	3%	5%	3%	
	SILT			SAND			GRAVEL			
2%				8%			11%			79%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**64**
63.0	**21**
37.5	**21**
20.0	**18**
10.0	**14**
6.30	**13**
3.35	**11**
2.00	**10**
1.18	**9**
0.630	**8**
0.425	**6**
0.200	**4**
0.150	**4**
0.063	**2**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**2.000**
D_{15} (mm)	**11.892**
D_{30} (mm)	**65.341**
D_{50} (mm)	**70.861**
D_{60} (mm)	**73.793**
D_{85} (mm)	**101.035**
D_{90} (mm)	**108.464**
C_U	**37**
C_C	**29**

Soil Description:

Dark brown COBBLES with sandy slightly silty GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
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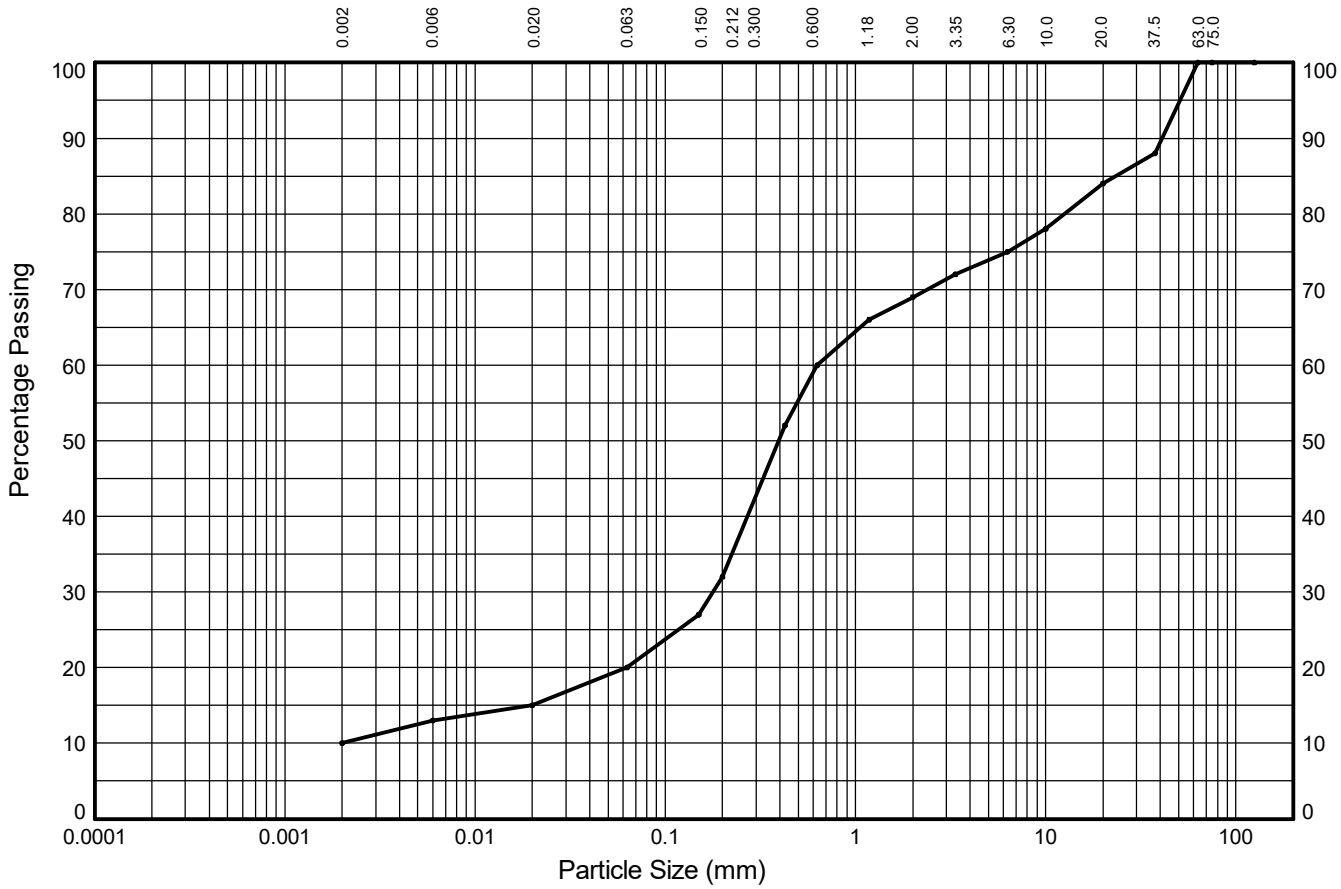
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Window Sample: **WS-PTS101** Sample Ref: **6** Sample Type: **B** Depth (m): **1.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	2%	5%	12%	28%	9%	6%	9%	16%	
	SILT			SAND			GRAVEL			
10%	10%			49%			31%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**88**
20.0	**84**
10.0	**78**
6.30	**75**
3.35	**72**
2.00	**69**
1.18	**66**
0.630	**60**
0.425	**52**
0.200	**32**
0.150	**27**
0.063	**20**

Particle Diameter (mm)	Percent Passing (%)
0.02	**15**
0.006	**13**
0.002	**10**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.002**
D_{15} (mm)	**0.020**
D_{30} (mm)	**0.178**
D_{50} (mm)	**0.394**
D_{60} (mm)	**0.630**
D_{85} (mm)	**23.403**
D_{90} (mm)	**40.887**
C_U	**315**
C_C	**25**

Soil Description:

Reddish brown very gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
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Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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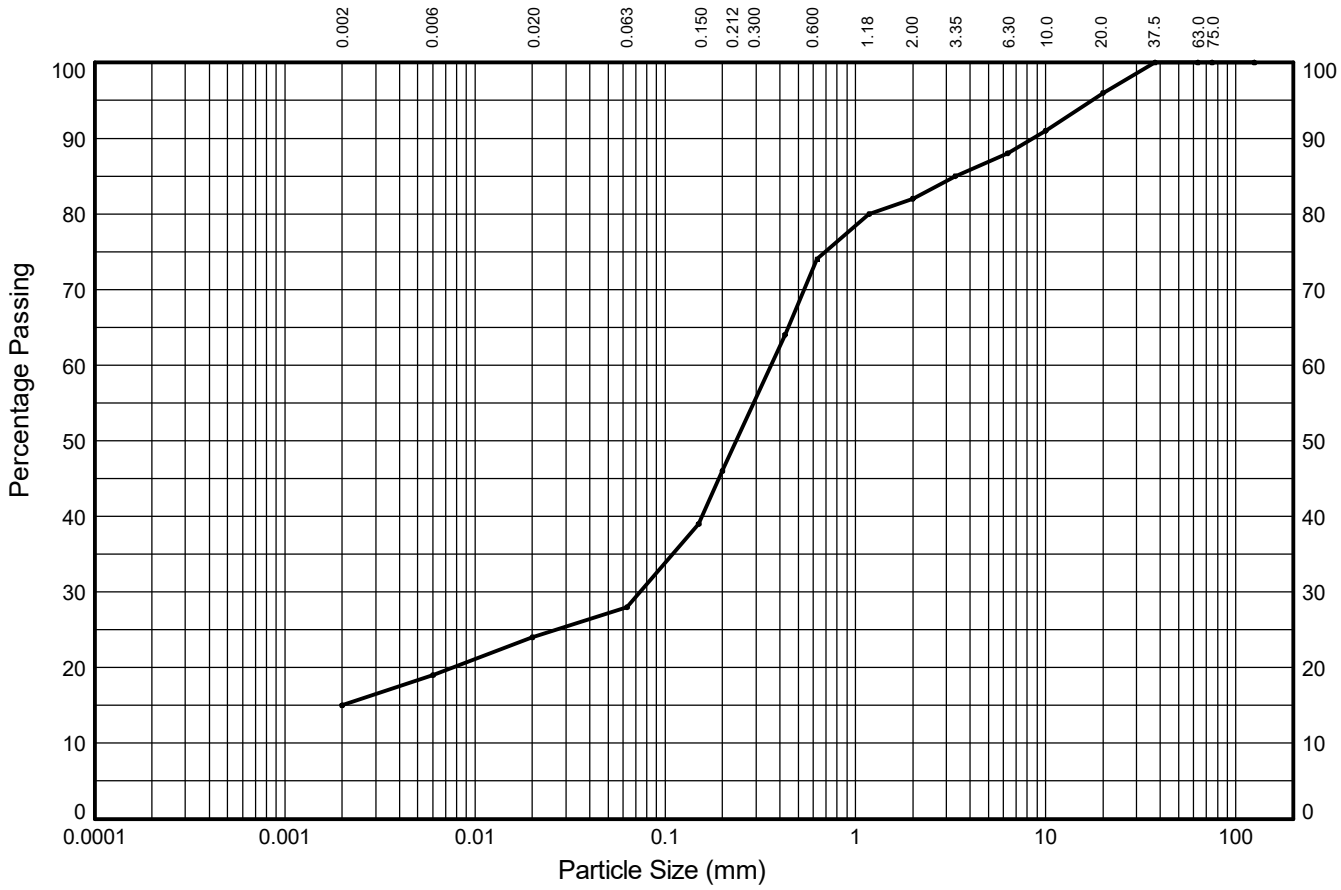
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS101** Sample Ref: **8** Sample Type: **B** Depth (m): **1.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	5%	4%	18%	28%	8%	6%	8%	4%	
	SILT			SAND			GRAVEL			
15%	13%			54%			18%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**96**
10.0	**91**
6.30	**88**
3.35	**85**
2.00	**82**
1.18	**80**
0.630	**74**
0.425	**64**
0.200	**46**
0.150	**39**
0.063	**28**

Particle Diameter (mm)	Percent Passing (%)
0.02	**24**
0.006	**19**
0.002	**15**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.002**
D_{30} (mm)	**0.074**
D_{50} (mm)	**0.236**
D_{60} (mm)	**0.359**
D_{85} (mm)	**3.350**
D_{90} (mm)	**8.573**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
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Compiled By		Date
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Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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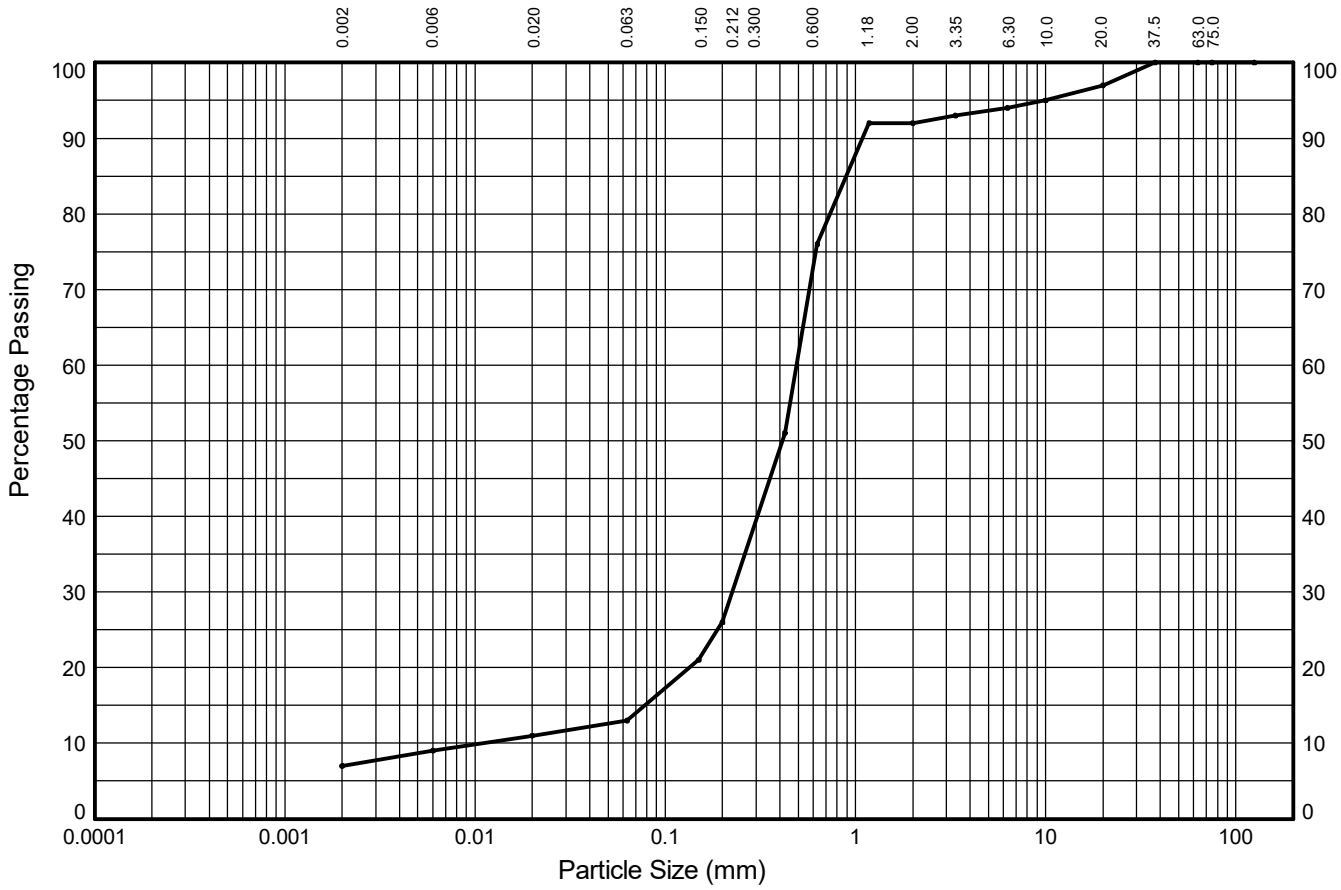
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS101** Sample Ref: **10** Sample Type: **B** Depth (m): **2.10**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	2%	2%	13%	50%	16%	2%	3%	3%	
	SILT			SAND			GRAVEL			
7%	6%			79%			8%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**97**
10.0	**95**
6.30	**94**
3.35	**93**
2.00	**92**
1.18	**92**
0.630	**76**
0.425	**51**
0.200	**26**
0.150	**21**
0.063	**13**

Particle Diameter (mm)	Percent Passing (%)
0.02	**11**
0.006	**9**
0.002	**7**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.011**
D_{15} (mm)	**0.078**
D_{30} (mm)	**0.226**
D_{50} (mm)	**0.412**
D_{60} (mm)	**0.490**
D_{85} (mm)	**0.897**
D_{90} (mm)	**1.091**
C_U	**45**
C_C	**9**

Soil Description:

Reddish brown gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
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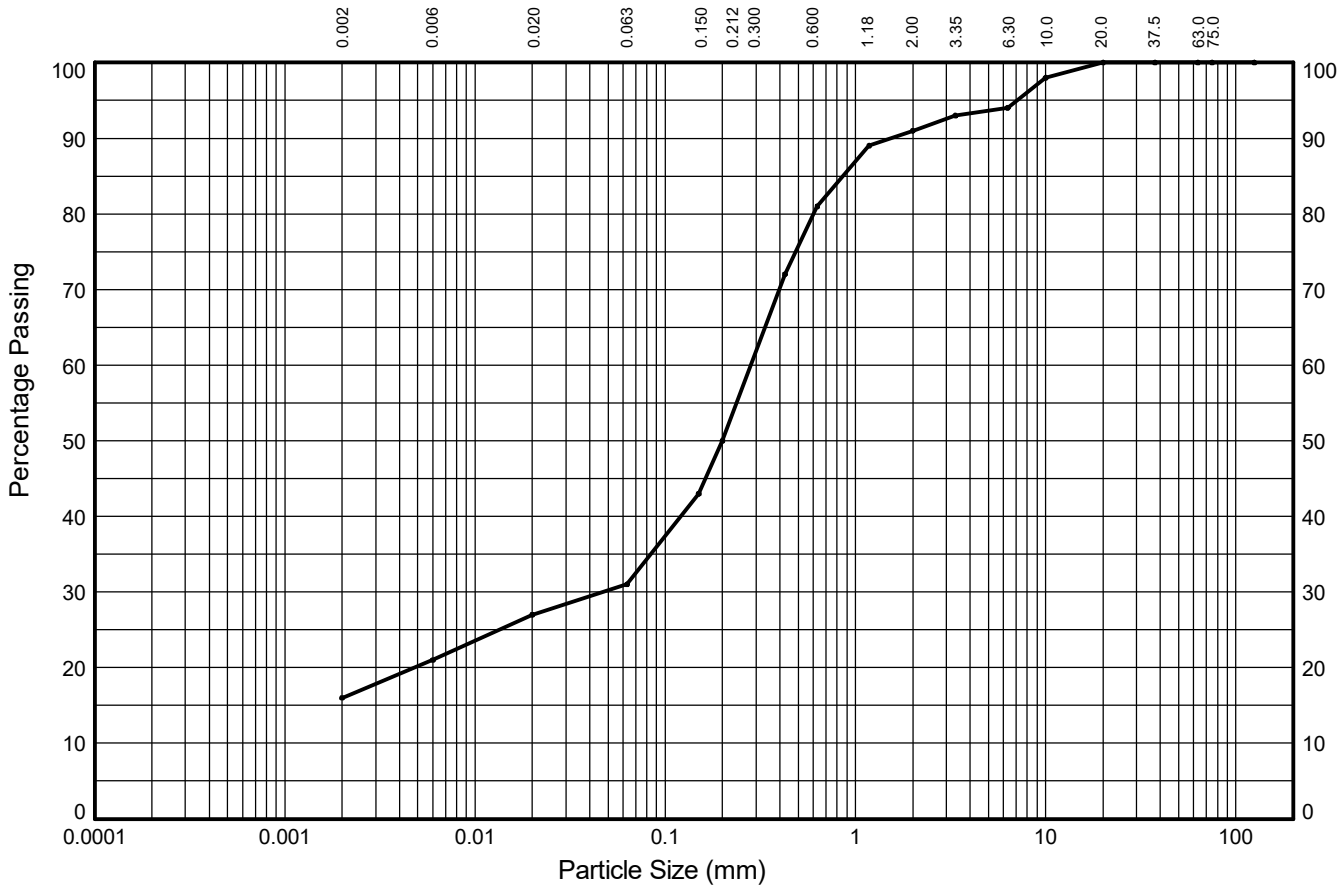
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS101** Sample Ref: **11** Sample Type: **B** Depth (m): **2.67**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	5%	6%	4%	19%	31%	10%	3%	6%	0%	
	SILT			SAND			GRAVEL			
16%	15%			60%			9%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**98**
6.30	**94**
3.35	**93**
2.00	**91**
1.18	**89**
0.630	**81**
0.425	**72**
0.200	**50**
0.150	**43**
0.063	**31**

Particle Diameter (mm)	Percent Passing (%)
0.02	**27**
0.006	**21**
0.002	**16**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.047**
D_{50} (mm)	**0.200**
D_{60} (mm)	**0.282**
D_{85} (mm)	**0.862**
D_{90} (mm)	**1.536**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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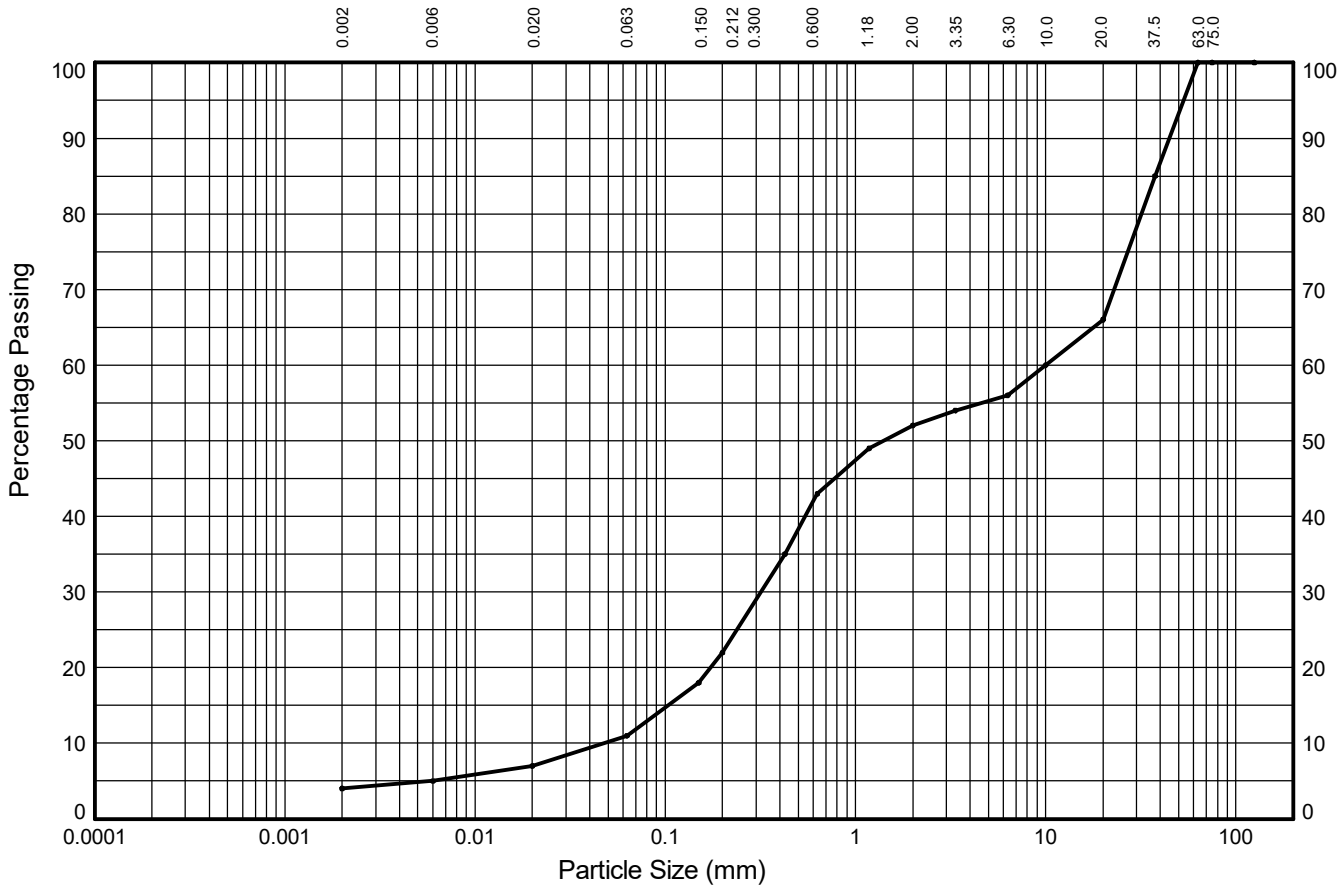
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Window Sample: **WS-PTS105** Sample Ref: **3** Sample Type: **B** Depth (m): **0.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	1%	2%	4%	11%	21%	9%	4%	10%	34%	
	SILT			SAND			GRAVEL			
4%	7%			41%			48%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**85**
20.0	**66**
10.0	**60**
6.30	**56**
3.35	**54**
2.00	**52**
1.18	**49**
0.630	**43**
0.425	**35**
0.200	**22**
0.150	**18**
0.063	**11**

Particle Diameter (mm)	Percent Passing (%)
0.02	**7**
0.006	**5**
0.002	**4**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.047**
D_{15} (mm)	**0.103**
D_{30} (mm)	**0.318**
D_{50} (mm)	**1.407**
D_{60} (mm)	**10.000**
D_{85} (mm)	**37.500**
D_{90} (mm)	**44.579**
C_U	**211**
C_C	**0.21**

Soil Description:
Brown very sandy clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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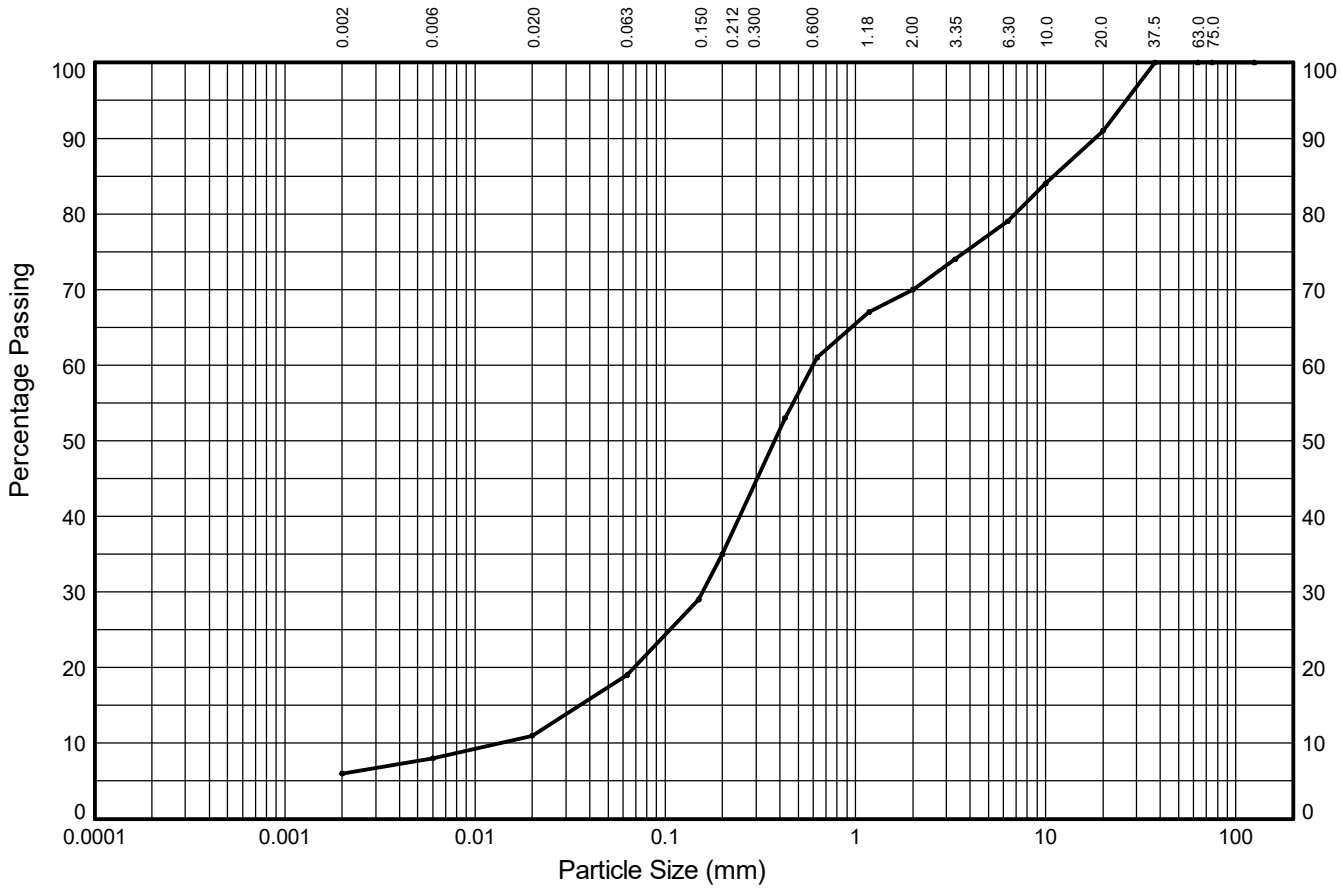
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS105** Sample Ref: **8** Sample Type: **B** Depth (m): **1.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	3%	8%	16%	26%	9%	9%	12%	9%	
	SILT			SAND			GRAVEL			
6%	13%			51%			30%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**91**
10.0	**84**
6.30	**79**
3.35	**74**
2.00	**70**
1.18	**67**
0.630	**61**
0.425	**53**
0.200	**35**
0.150	**29**
0.063	**19**

Particle Diameter (mm)	Percent Passing (%)
0.02	**11**
0.006	**8**
0.002	**6**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.013**
D_{15} (mm)	**0.035**
D_{30} (mm)	**0.157**
D_{50} (mm)	**0.375**
D_{60} (mm)	**0.600**
D_{85} (mm)	**11.041**
D_{90} (mm)	**18.114**
C_U	**45**
C_C	**3**

Soil Description:

Reddish brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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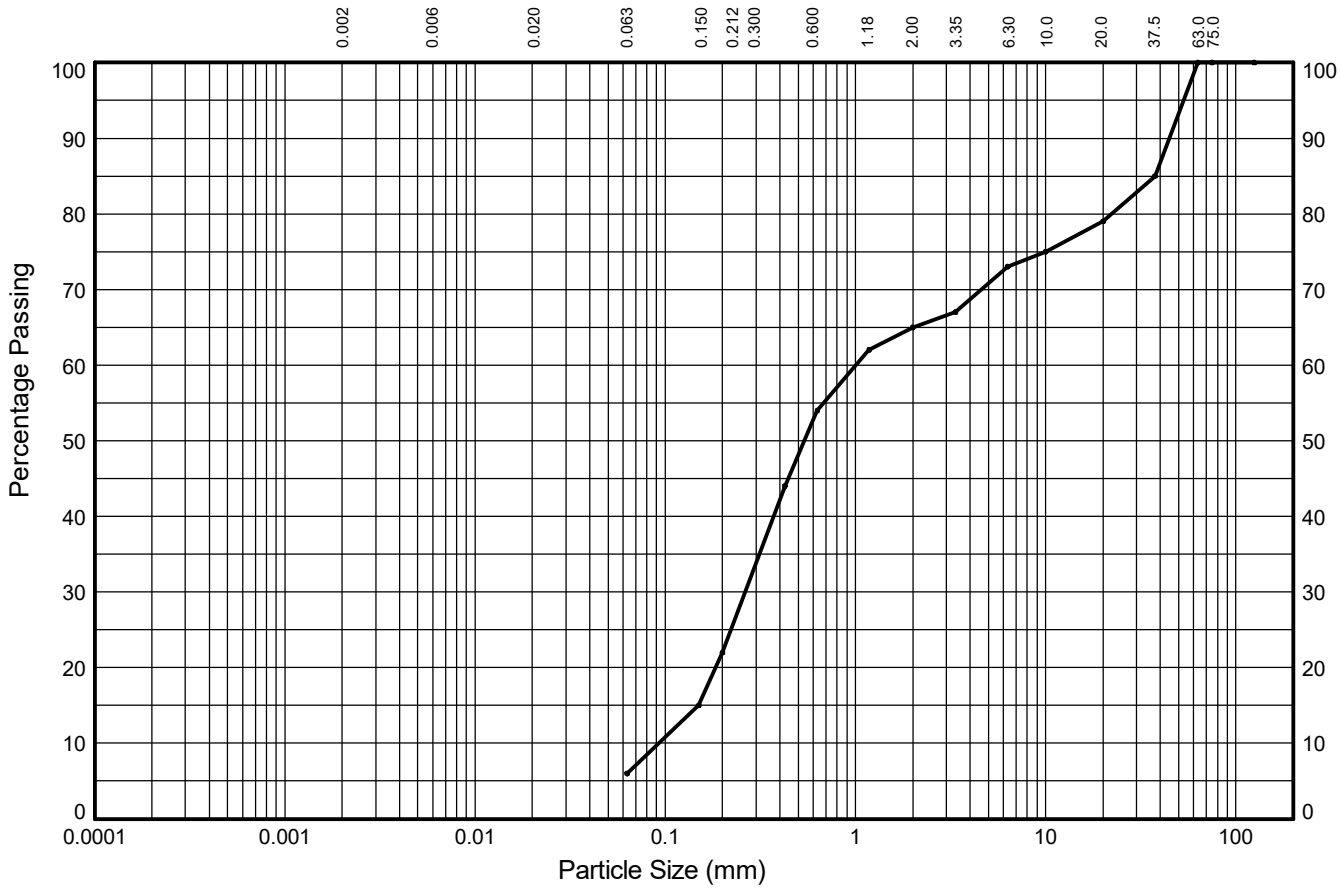
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Window Sample: **WS-PTS105** Sample Ref: **9** Sample Type: **B** Depth (m): **1.72**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	16%	32%	11%	8%	6%	21%	
	SILT			SAND			GRAVEL			
6%				59%			35%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**85**
20.0	**79**
10.0	**75**
6.30	**73**
3.35	**67**
2.00	**65**
1.18	**62**
0.630	**54**
0.425	**44**
0.200	**22**
0.150	**15**
0.063	**6**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.093**
D_{15} (mm)	**0.150**
D_{30} (mm)	**0.263**
D_{50} (mm)	**0.538**
D_{60} (mm)	**1.009**
D_{85} (mm)	**37.500**
D_{90} (mm)	**44.579**
C_U	**11**
C_C	**0.74**

Soil Description:

Reddish brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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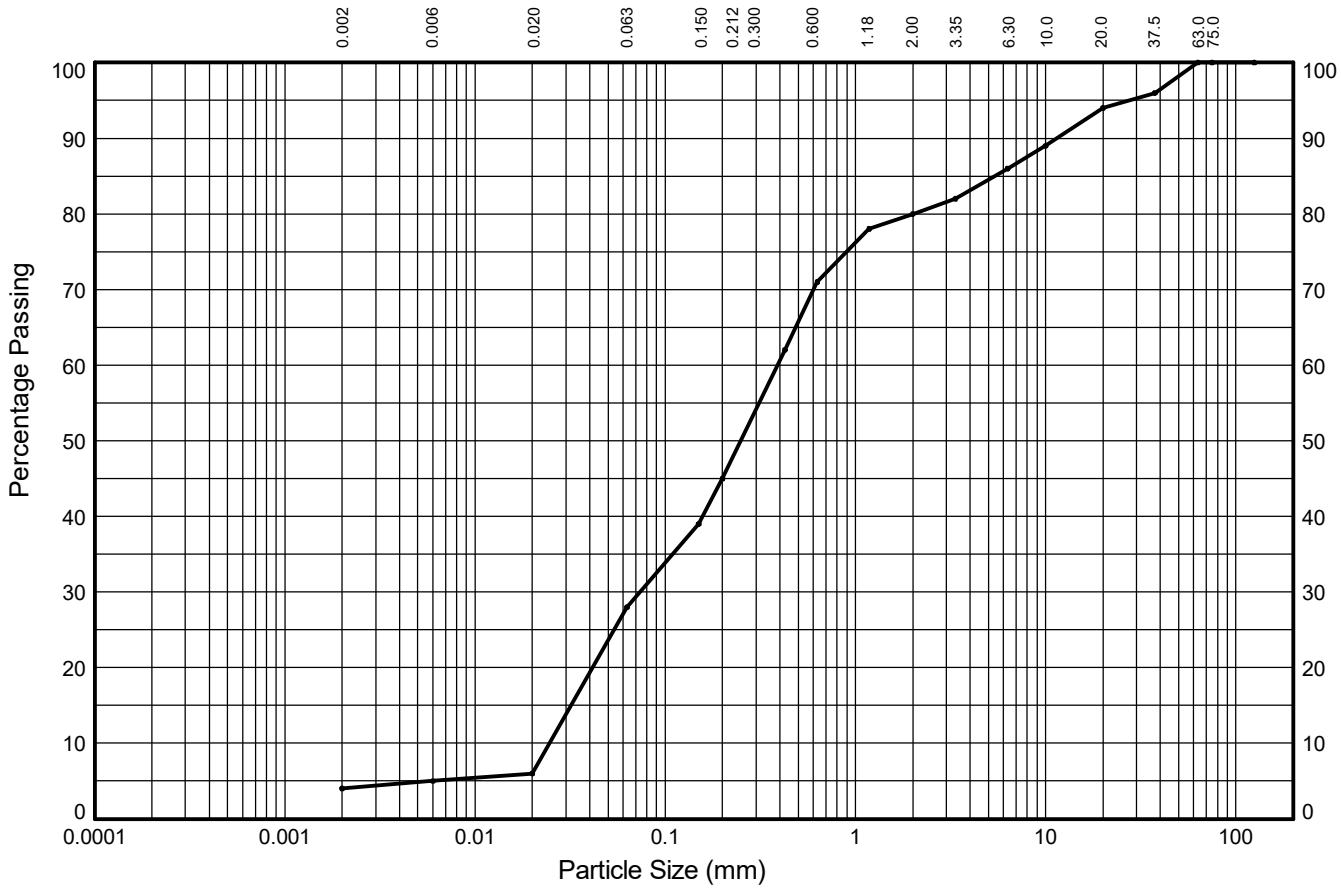
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS105** Sample Ref: **11** Sample Type: **B** Depth (m): **2.10**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	1%	1%	22%	17%	26%	9%	6%	8%	6%	
	SILT			SAND			GRAVEL			
4%	24%			52%			20%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**96**
20.0	**94**
10.0	**89**
6.30	**86**
3.35	**82**
2.00	**80**
1.18	**78**
0.630	**71**
0.425	**62**
0.200	**45**
0.150	**39**
0.063	**28**

Particle Diameter (mm)	Percent Passing (%)
0.02	**6**
0.006	**5**
0.002	**4**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.025**
D_{15} (mm)	**0.032**
D_{30} (mm)	**0.074**
D_{50} (mm)	**0.250**
D_{60} (mm)	**0.389**
D_{85} (mm)	**5.380**
D_{90} (mm)	**11.487**
C_U	**16**
C_C	**0.57**

Soil Description:

Brown very gravelly very silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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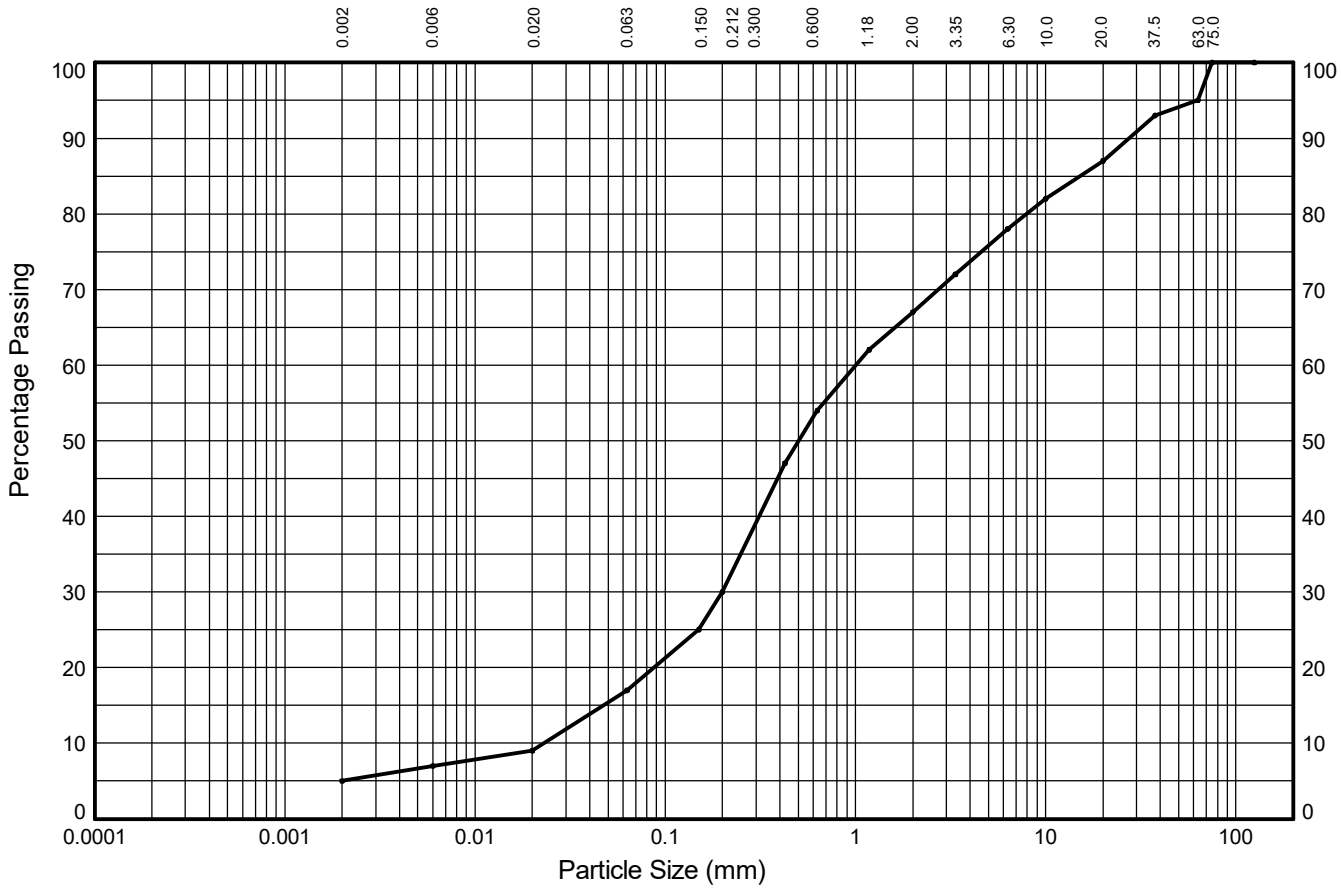
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS107** Sample Ref: **2** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	2%	8%	13%	24%	13%	11%	9%	8%	
	SILT			SAND			GRAVEL			
5%	12%			50%			28%			5%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**95**
37.5	**93**
20.0	**87**
10.0	**82**
6.30	**78**
3.35	**72**
2.00	**67**
1.18	**62**
0.630	**54**
0.425	**47**
0.200	**30**
0.150	**25**
0.063	**17**

Particle Diameter (mm)	Percent Passing (%)
0.02	**9**
0.006	**7**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.023**
D_{15} (mm)	**0.047**
D_{30} (mm)	**0.200**
D_{50} (mm)	**0.503**
D_{60} (mm)	**1.009**
D_{85} (mm)	**15.157**
D_{90} (mm)	**27.386**
C_U	**44**
C_C	**2**

Soil Description:

Brown very gravelly silty SAND with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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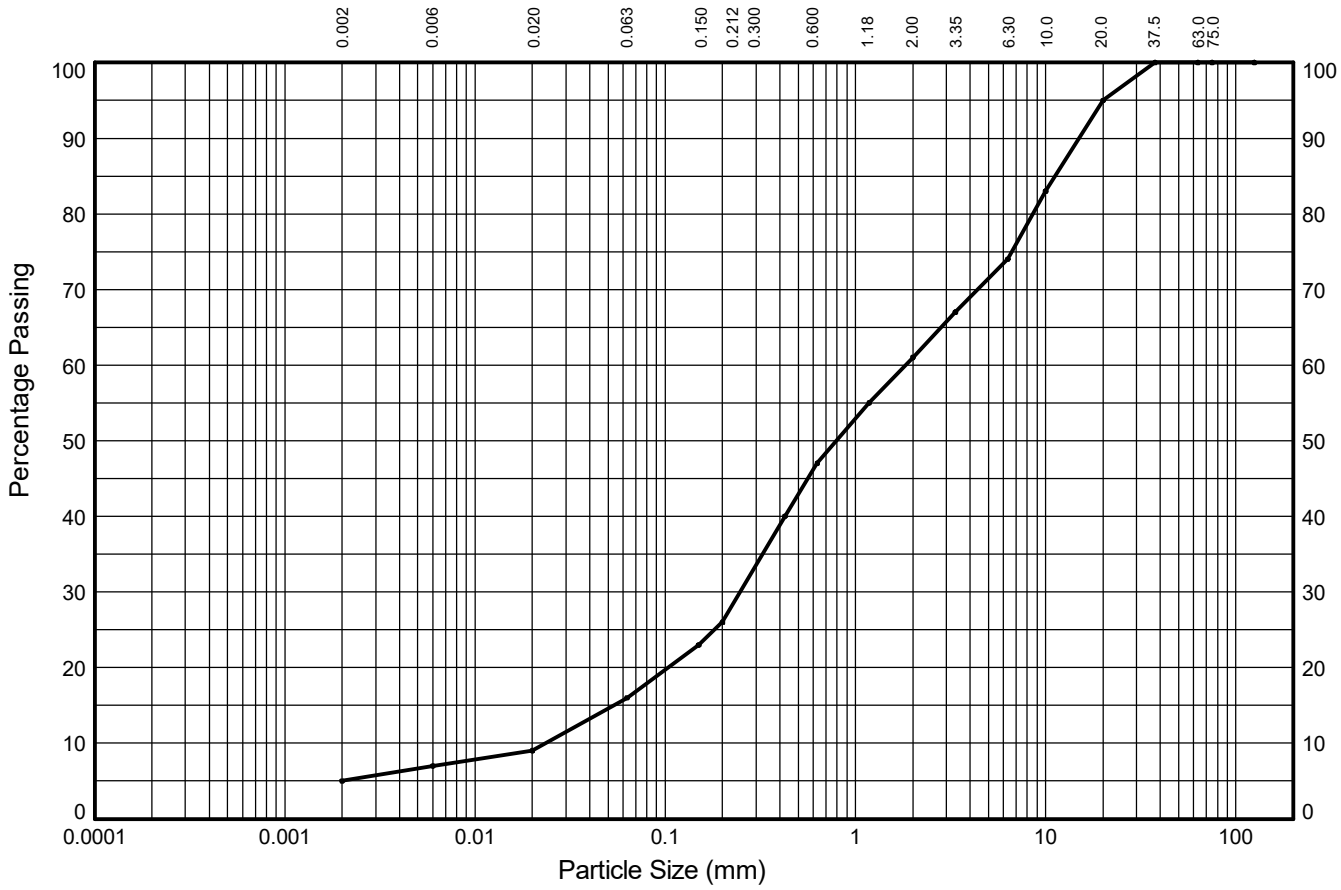
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS107** Sample Ref: **4** Sample Type: **B** Depth (m): **1.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	2%	7%	10%	21%	14%	13%	21%	5%	
	SILT			SAND			GRAVEL			
5%	11%			45%			39%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**95**
10.0	**83**
6.30	**74**
3.35	**67**
2.00	**61**
1.18	**55**
0.630	**47**
0.425	**40**
0.200	**26**
0.150	**23**
0.063	**16**

Particle Diameter (mm)	Percent Passing (%)
0.02	**9**
0.006	**7**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.024**
D_{15} (mm)	**0.053**
D_{30} (mm)	**0.248**
D_{50} (mm)	**0.797**
D_{60} (mm)	**1.832**
D_{85} (mm)	**11.225**
D_{90} (mm)	**14.983**
C_U	**78**
C_C	**1**

Soil Description:

Brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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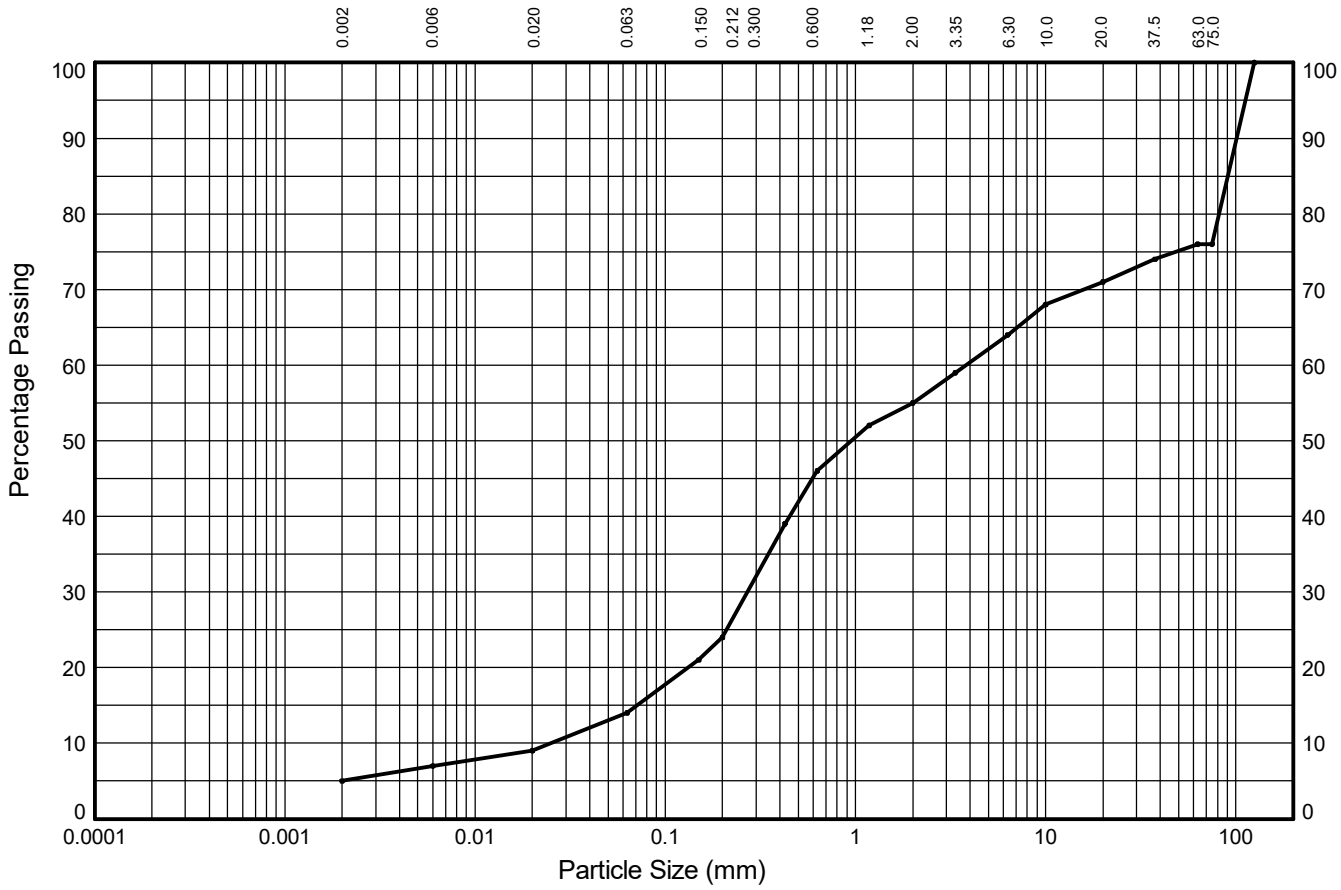
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Window Sample: **WS-PTS107A** Sample Ref: **2** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	2%	5%	10%	22%	9%	9%	7%	5%	
	SILT			SAND			GRAVEL			
5%	9%			41%			21%			24%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**76**
63.0	**76**
37.5	**74**
20.0	**71**
10.0	**68**
6.30	**64**
3.35	**59**
2.00	**55**
1.18	**52**
0.630	**46**
0.425	**39**
0.200	**24**
0.150	**21**
0.063	**14**

Particle Diameter (mm)	Percent Passing (%)
0.02	**9**
0.006	**7**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.025**
D_{15} (mm)	**0.071**
D_{30} (mm)	**0.270**
D_{50} (mm)	**0.957**
D_{60} (mm)	**3.801**
D_{85} (mm)	**90.835**
D_{90} (mm)	**101.035**
C_U	**151**
C_C	**0.76**

Soil Description:

Brown very gravelly clayey SAND with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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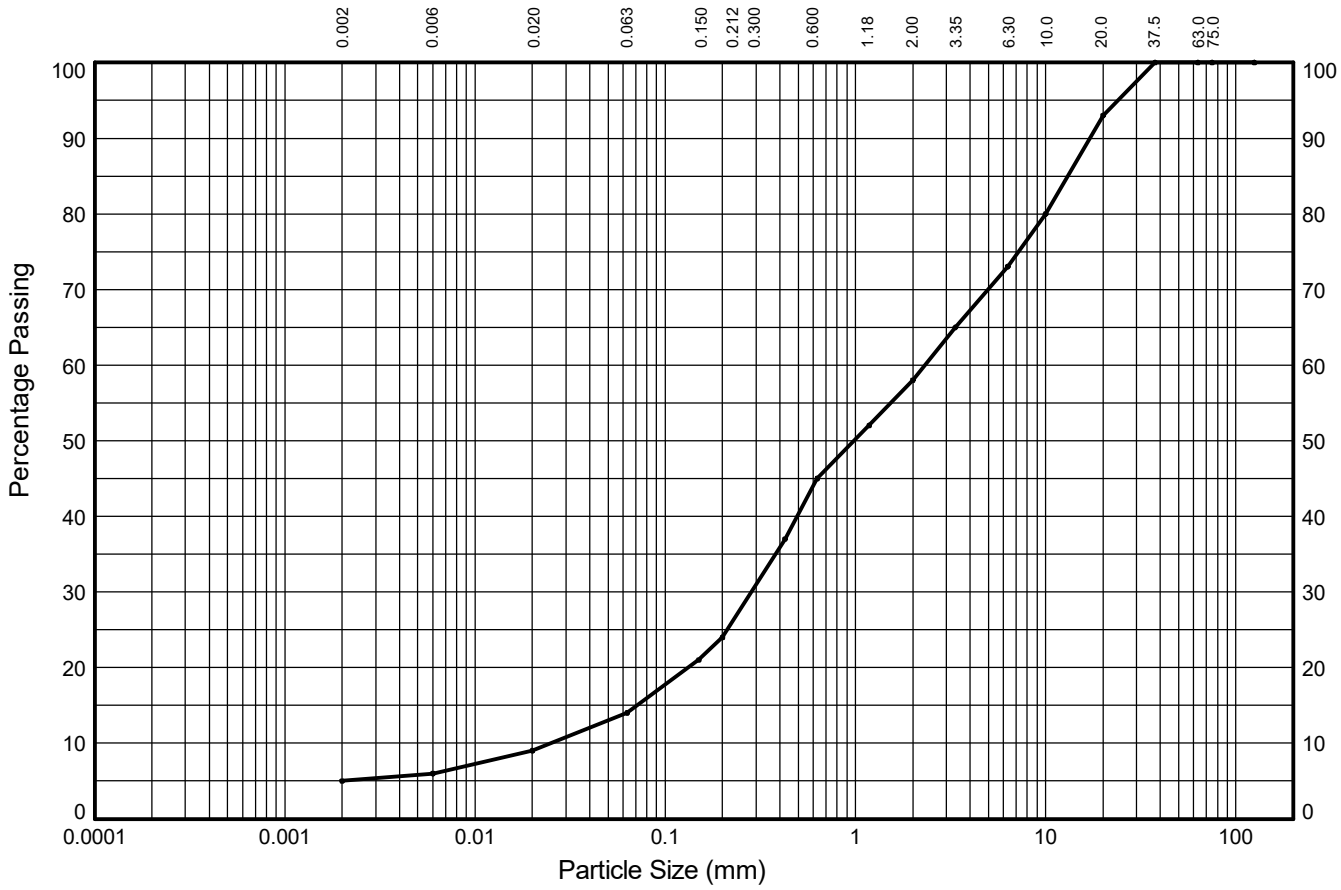
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS107A** Sample Ref: **4** Sample Type: **B** Depth (m): **1.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	1%	3%	5%	10%	21%	13%	15%	20%	7%	
	SILT			SAND			GRAVEL			
5%	9%			44%			42%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**93**
10.0	**80**
6.30	**73**
3.35	**65**
2.00	**58**
1.18	**52**
0.630	**45**
0.425	**37**
0.200	**24**
0.150	**21**
0.063	**14**

Particle Diameter (mm)	Percent Passing (%)
0.02	**9**
0.006	**6**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.025**
D_{15} (mm)	**0.071**
D_{30} (mm)	**0.283**
D_{50} (mm)	**0.986**
D_{60} (mm)	**2.318**
D_{85} (mm)	**13.055**
D_{90} (mm)	**17.044**
C_U	**92**
C_C	**1**

Soil Description:

Brown very gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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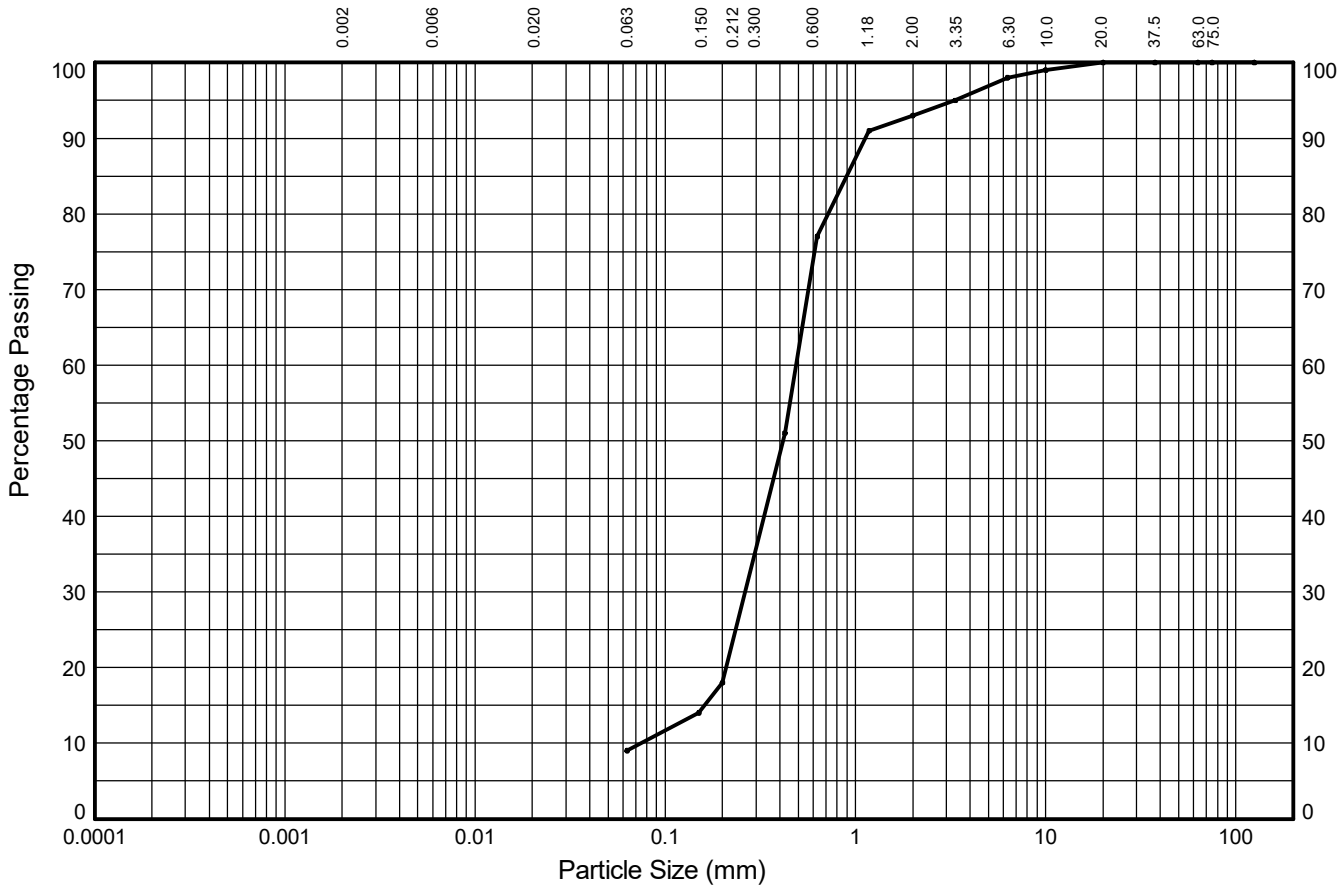
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS107A** Sample Ref: **8** Sample Type: **B** Depth (m): **2.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	9%	59%	16%	5%	2%	0%	
	SILT			SAND			GRAVEL			
9%				84%			7%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**99**
6.30	**98**
3.35	**95**
2.00	**93**
1.18	**91**
0.630	**77**
0.425	**51**
0.200	**18**
0.150	**14**
0.063	**9**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.075**
D_{15} (mm)	**0.161**
D_{30} (mm)	**0.263**
D_{50} (mm)	**0.415**
D_{60} (mm)	**0.487**
D_{85} (mm)	**0.902**
D_{90} (mm)	**1.128**
C_U	**6.5**
C_C	**1.9**

Soil Description:

Orangish brown gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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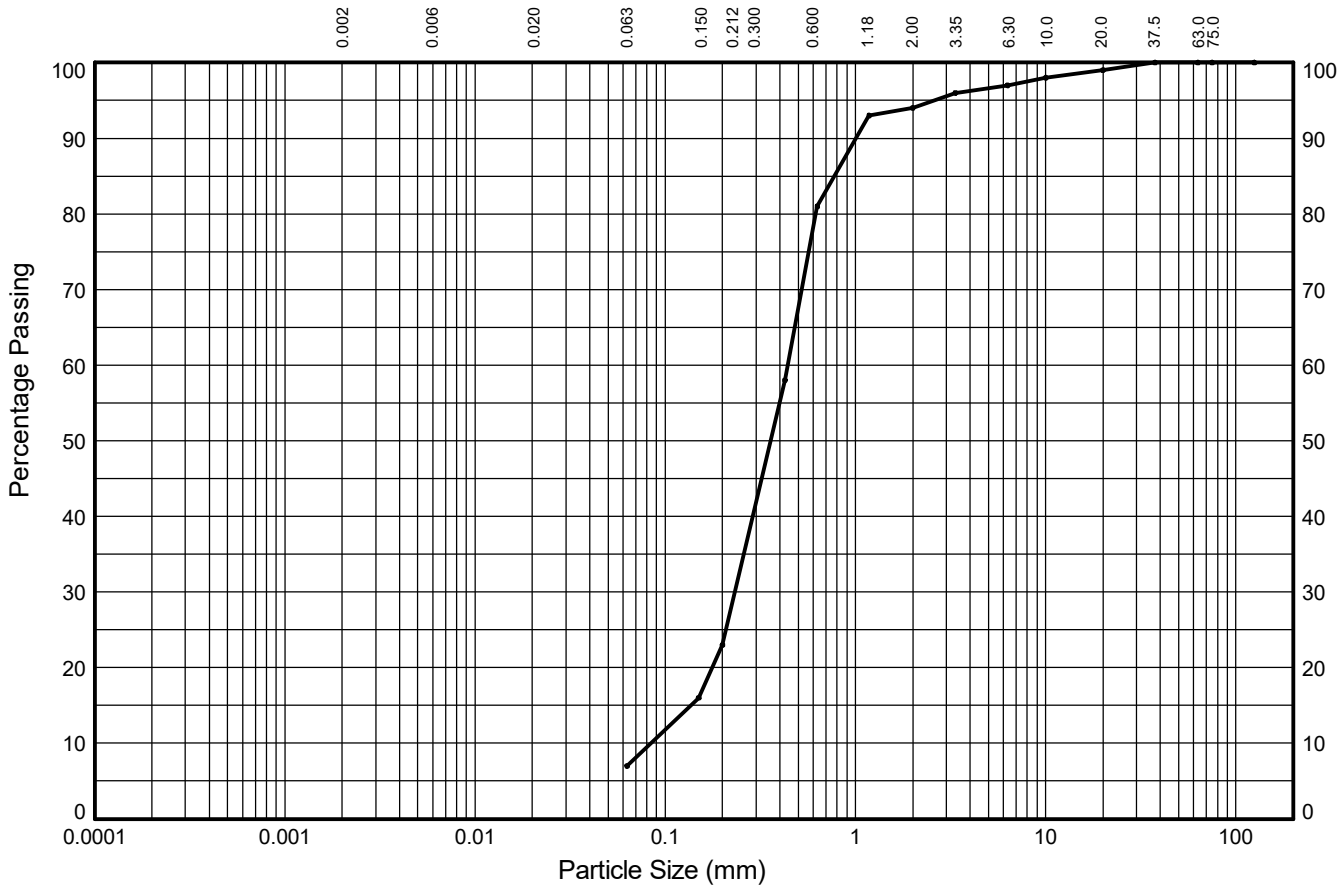
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS107A** Sample Ref: **10** Sample Type: **B** Depth (m): **3.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	16%	58%	13%	3%	2%	1%	
	SILT			SAND			GRAVEL			
7%				87%			6%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**99**
10.0	**98**
6.30	**97**
3.35	**96**
2.00	**94**
1.18	**93**
0.630	**81**
0.425	**58**
0.200	**23**
0.150	**16**
0.063	**7**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.084**
D_{15} (mm)	**0.136**
D_{30} (mm)	**0.233**
D_{50} (mm)	**0.358**
D_{60} (mm)	**0.440**
D_{85} (mm)	**0.777**
D_{90} (mm)	**1.009**
C_U	**5.2**
C_C	**1.5**

Soil Description:

Red gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	E. Hort	**ELIZABETH HORT**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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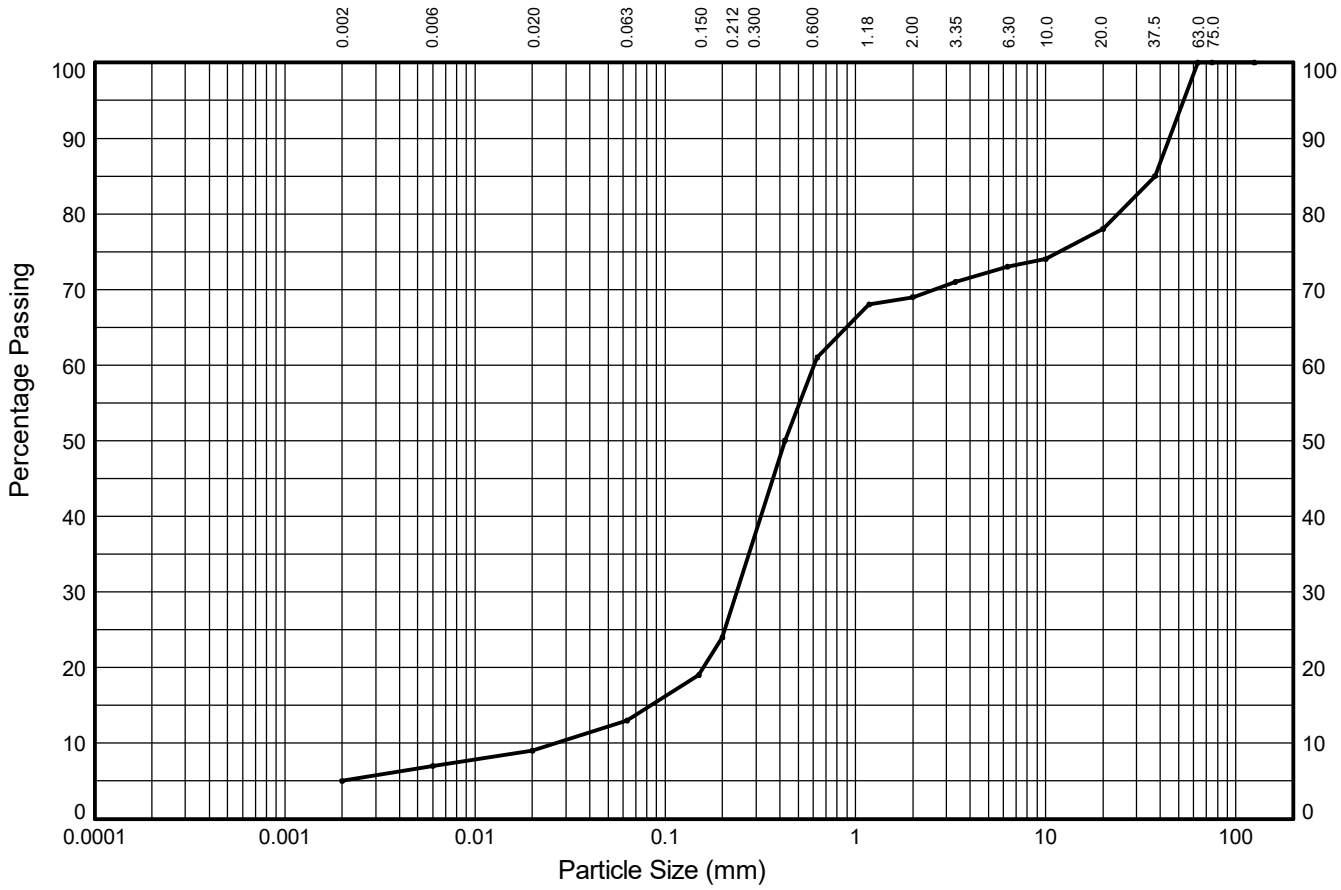
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Window Sample: **WS-PTS108** Sample Ref: **2** Sample Type: **B** Depth (m): **0.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	2%	4%	11%	37%	8%	4%	5%	22%	
	SILT			SAND			GRAVEL			
5%	8%			56%			31%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**85**
20.0	**78**
10.0	**74**
6.30	**73**
3.35	**71**
2.00	**69**
1.18	**68**
0.630	**61**
0.425	**50**
0.200	**24**
0.150	**19**
0.063	**13**

Particle Diameter (mm)	Percent Passing (%)
0.02	**9**
0.006	**7**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.027**
D_{15} (mm)	**0.084**
D_{30} (mm)	**0.238**
D_{50} (mm)	**0.425**
D_{60} (mm)	**0.608**
D_{85} (mm)	**37.500**
D_{90} (mm)	**44.579**
C_U	**23**
C_C	**3**

Soil Description:
Brown very gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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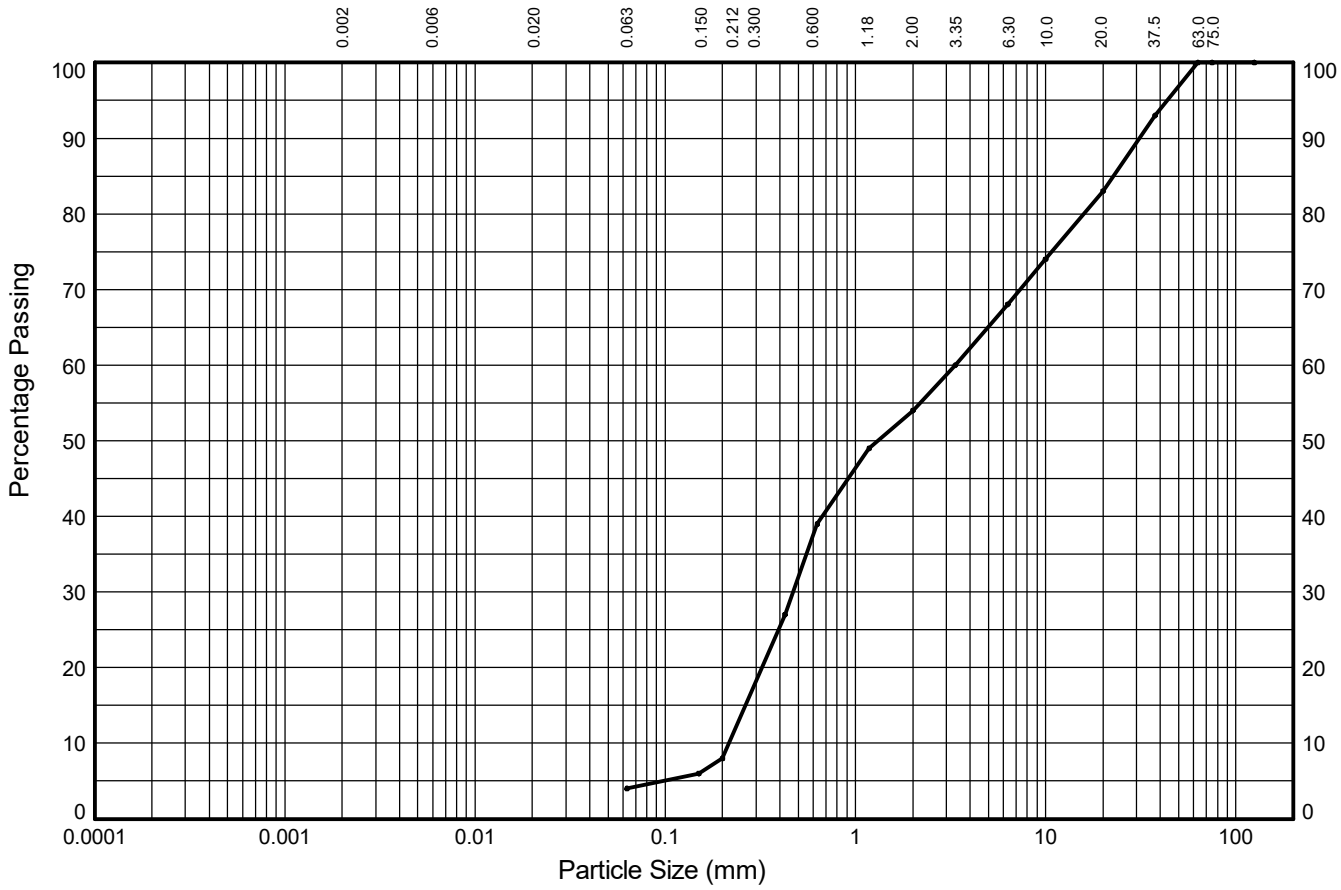
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS108** Sample Ref: **8** Sample Type: **B** Depth (m): **1.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	4%	31%	15%	14%	15%	17%	
	SILT			SAND			GRAVEL			
4%				50%			46%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**93**
20.0	**83**
10.0	**74**
6.30	**68**
3.35	**60**
2.00	**54**
1.18	**49**
0.630	**39**
0.425	**27**
0.200	**8**
0.150	**6**
0.063	**4**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.217**
D_{15} (mm)	**0.264**
D_{30} (mm)	**0.469**
D_{50} (mm)	**1.311**
D_{60} (mm)	**3.350**
D_{85} (mm)	**22.679**
D_{90} (mm)	**31.055**
C_U	**15**
C_C	**0.30**

Soil Description:

Brown very gravelly slightly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

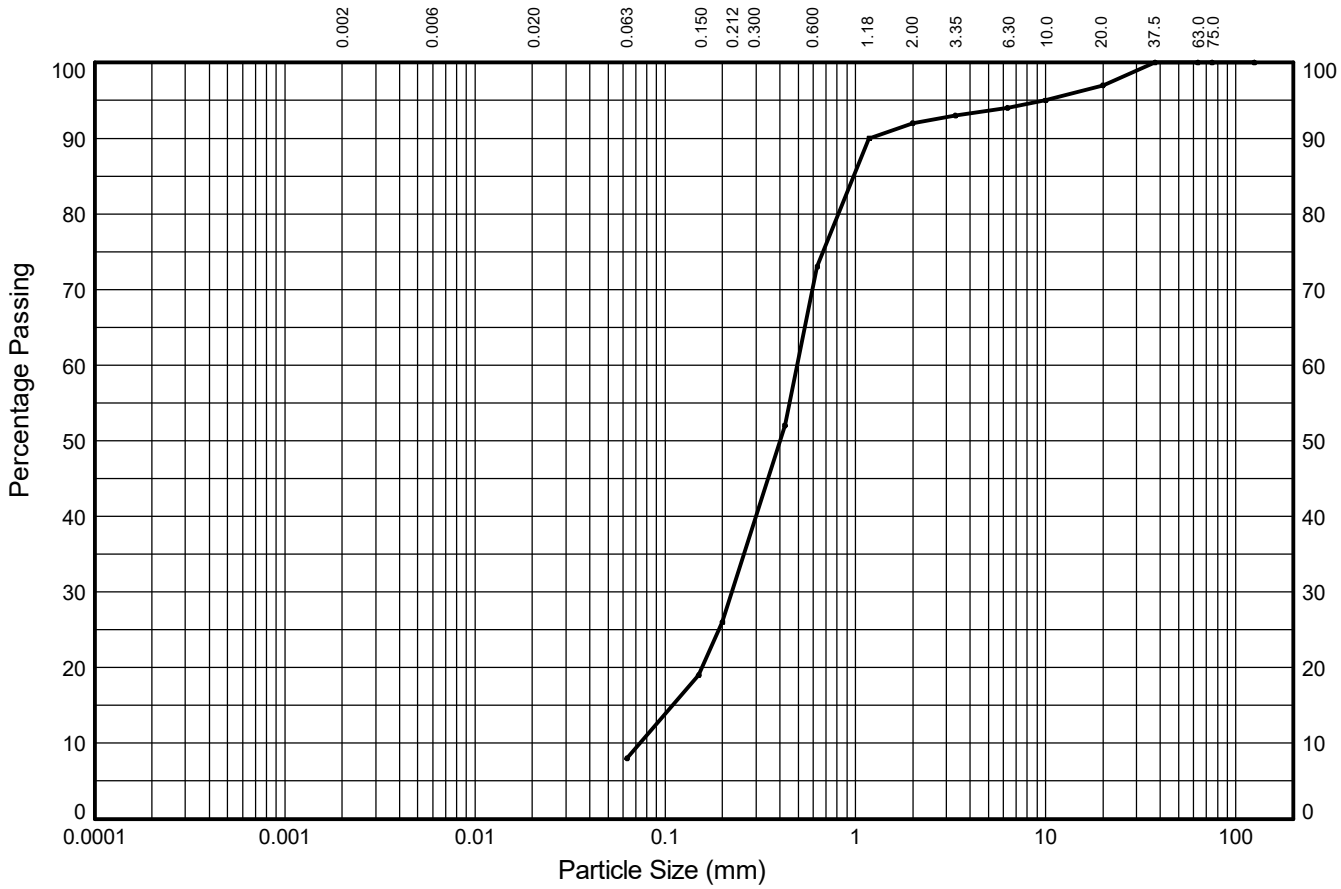
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Maduka	**PRECIOUS MADUKA**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:20 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS108** Sample Ref: **10** Sample Type: **B** Depth (m): **2.10**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	18%	47%	19%	2%	3%	3%	
	SILT			SAND			GRAVEL			
8%				84%			8%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**97**
10.0	**95**
6.30	**94**
3.35	**93**
2.00	**92**
1.18	**90**
0.630	**73**
0.425	**52**
0.200	**26**
0.150	**19**
0.063	**8**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.074**
D_{15} (mm)	**0.109**
D_{30} (mm)	**0.225**
D_{50} (mm)	**0.401**
D_{60} (mm)	**0.494**
D_{85} (mm)	**0.981**
D_{90} (mm)	**1.180**
C_U	**6.7**
C_C	**1.4**

Soil Description:

Red gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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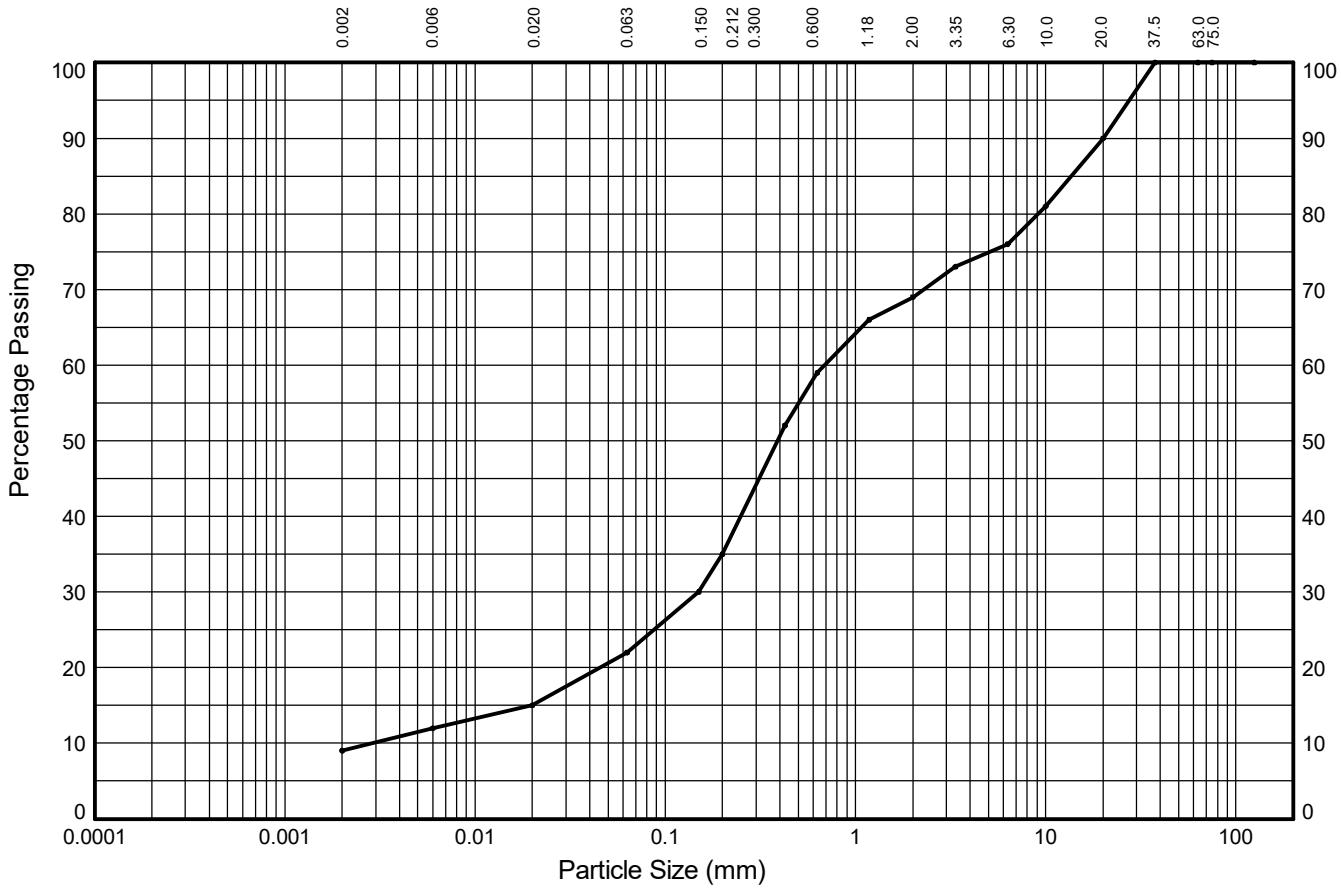
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS110** Sample Ref: **4** Sample Type: **B** Depth (m): **0.90**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	7%	13%	24%	10%	7%	14%	10%	
	SILT			SAND			GRAVEL			
9%	13%			47%			31%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**90**
10.0	**81**
6.30	**76**
3.35	**73**
2.00	**69**
1.18	**66**
0.630	**59**
0.425	**52**
0.200	**35**
0.150	**30**
0.063	**22**

Particle Diameter (mm)	Percent Passing (%)
0.02	**15**
0.006	**12**
0.002	**9**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**0.003**
D_{15} (mm)	**0.020**
D_{30} (mm)	**0.150**
D_{50} (mm)	**0.389**
D_{60} (mm)	**0.689**
D_{85} (mm)	**13.608**
D_{90} (mm)	**20.000**
C_U	**239**
C_C	**11**

Soil Description:

Brown very gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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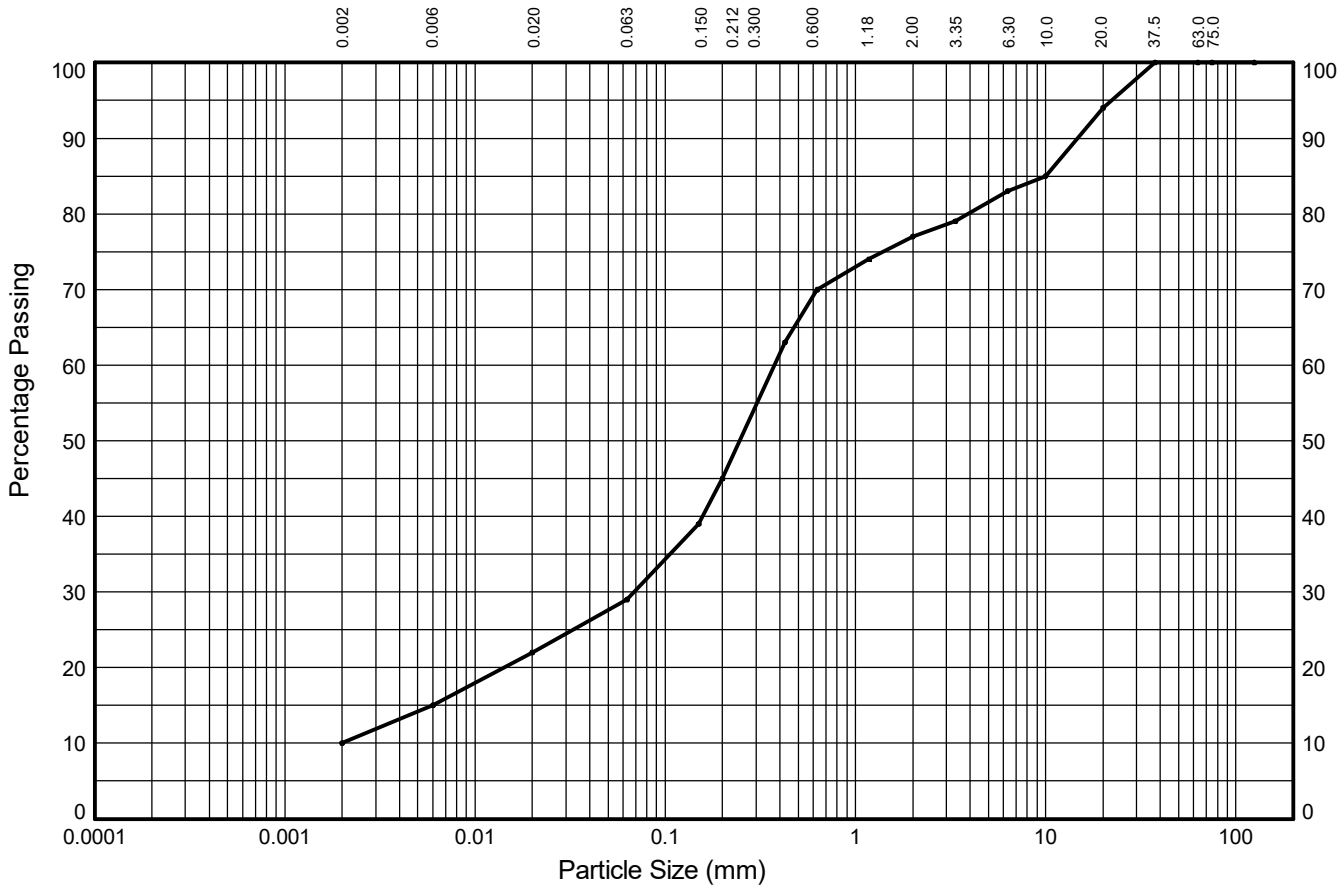
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS110** Sample Ref: **4** Sample Type: **B** Depth (m): **1.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	5%	7%	7%	16%	25%	7%	6%	11%	6%	
	SILT			SAND			GRAVEL			
10%	19%			48%			23%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**94**
10.0	**85**
6.30	**83**
3.35	**79**
2.00	**77**
1.18	**74**
0.630	**70**
0.425	**63**
0.200	**45**
0.150	**39**
0.063	**29**

Particle Diameter (mm)	Percent Passing (%)
0.02	**22**
0.006	**15**
0.002	**10**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.002**
D_{15} (mm)	**0.006**
D_{30} (mm)	**0.069**
D_{50} (mm)	**0.247**
D_{60} (mm)	**0.375**
D_{85} (mm)	**10.000**
D_{90} (mm)	**14.697**
C_U	**187**
C_C	**6**

Soil Description:

Red very gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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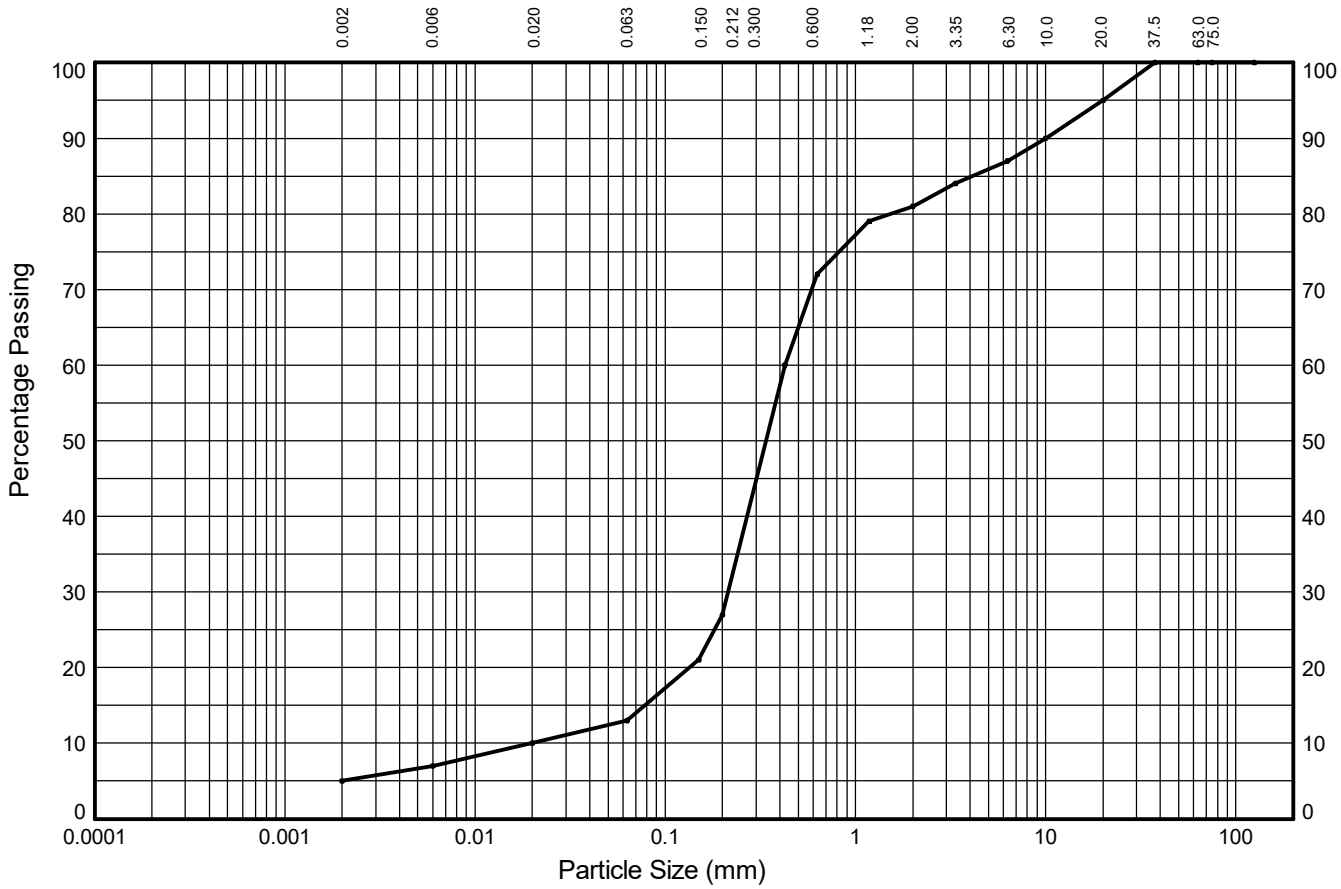
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS110** Sample Ref: **5** Sample Type: **B** Depth (m): **3.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	3%	3%	14%	45%	9%	6%	8%	5%	
	SILT			SAND			GRAVEL			
5%	8%			68%			19%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**95**
10.0	**90**
6.30	**87**
3.35	**84**
2.00	**81**
1.18	**79**
0.630	**72**
0.425	**60**
0.200	**27**
0.150	**21**
0.063	**13**

Particle Diameter (mm)	Percent Passing (%)
0.02	**10**
0.006	**7**
0.002	**5**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.020**
D_{15} (mm)	**0.078**
D_{30} (mm)	**0.214**
D_{50} (mm)	**0.338**
D_{60} (mm)	**0.425**
D_{85} (mm)	**4.135**
D_{90} (mm)	**10.000**
C_U	**21**
C_C	**5**

Soil Description:

Reddish brown gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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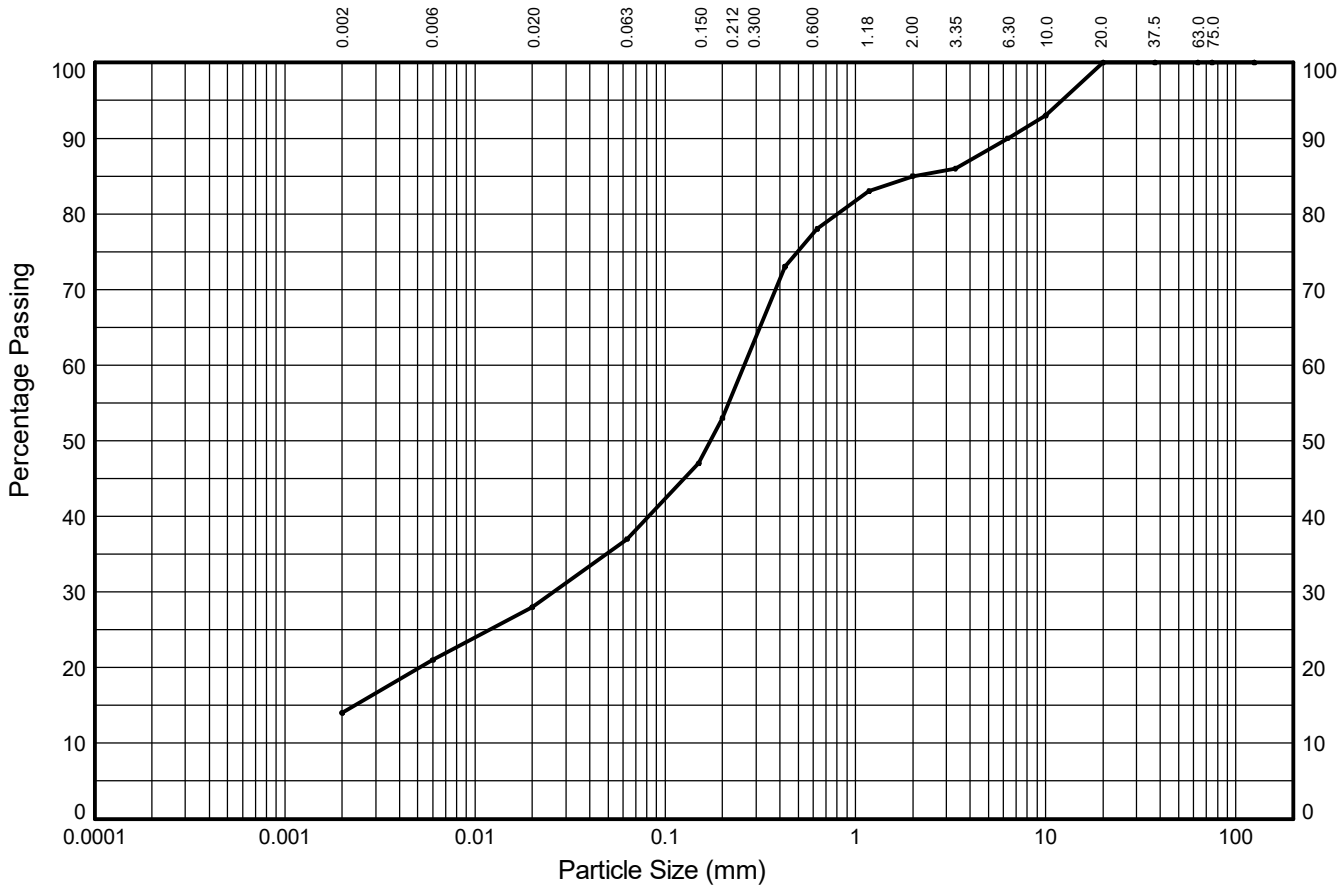
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS110** Sample Ref: **6** Sample Type: **B** Depth (m): **4.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	7%	7%	9%	16%	25%	7%	5%	10%	0%	
	SILT			SAND			GRAVEL			
14%	23%			48%			15%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**93**
6.30	**90**
3.35	**86**
2.00	**85**
1.18	**83**
0.630	**78**
0.425	**73**
0.200	**53**
0.150	**47**
0.063	**37**

Particle Diameter (mm)	Percent Passing (%)
0.02	**28**
0.006	**21**
0.002	**14**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.002**
D_{30} (mm)	**0.026**
D_{50} (mm)	**0.173**
D_{60} (mm)	**0.260**
D_{85} (mm)	**2.000**
D_{90} (mm)	**6.300**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown slightly gravelly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Maduka'k	**PRECIOUS MADUKA**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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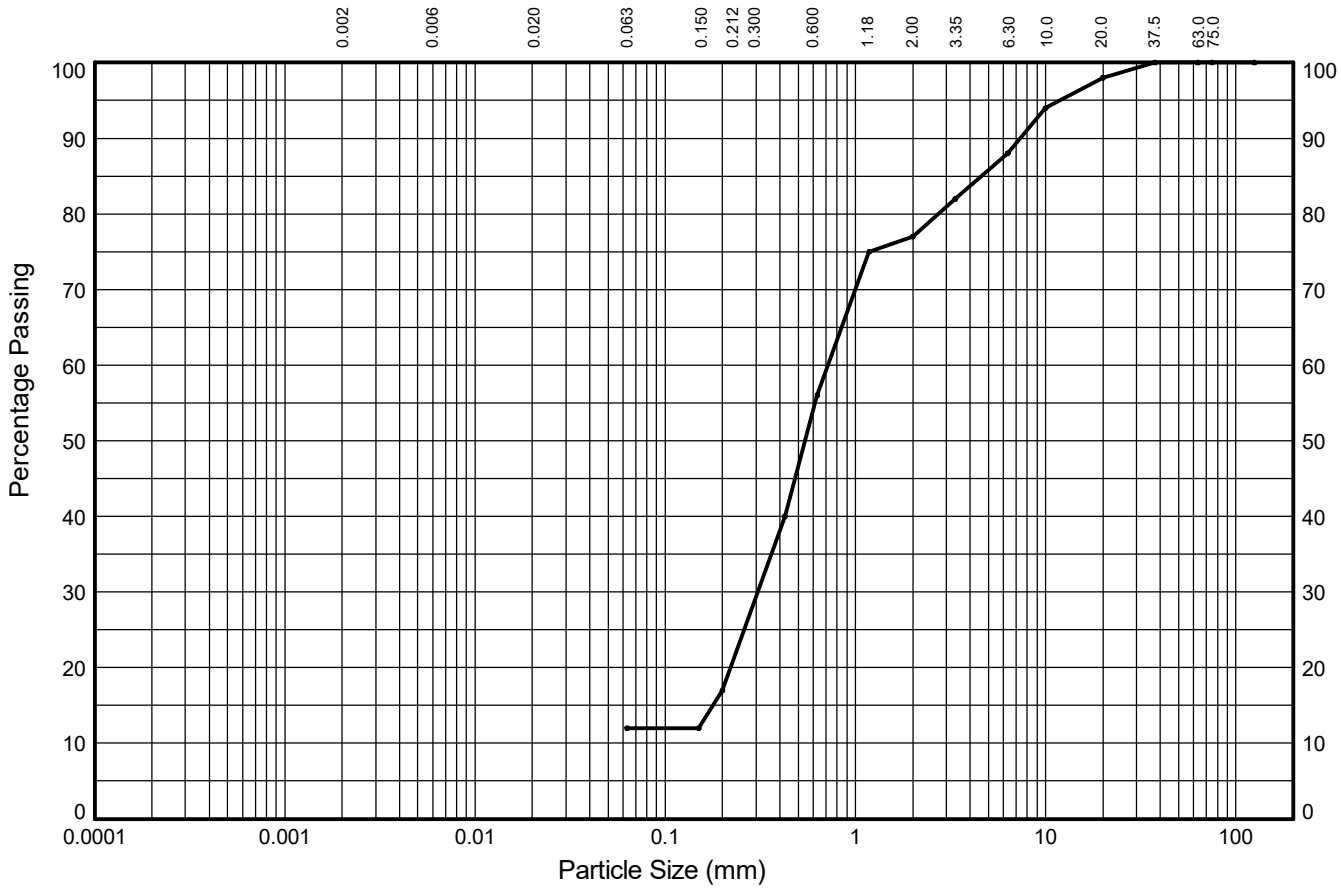
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS110** Sample Ref: **7** Sample Type: **B** Depth (m): **5.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	5%	39%	21%	11%	10%	2%	
	SILT			SAND			GRAVEL			
12%				65%			23%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**98**
10.0	**94**
6.30	**88**
3.35	**82**
2.00	**77**
1.18	**75**
0.630	**56**
0.425	**40**
0.200	**17**
0.150	**12**
0.063	**12**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.178**
D_{30} (mm)	**0.306**
D_{50} (mm)	**0.544**
D_{60} (mm)	**0.719**
D_{85} (mm)	**4.594**
D_{90} (mm)	**7.349**
C_U	**NA**
C_C	**NA**

Soil Description:

Red brown very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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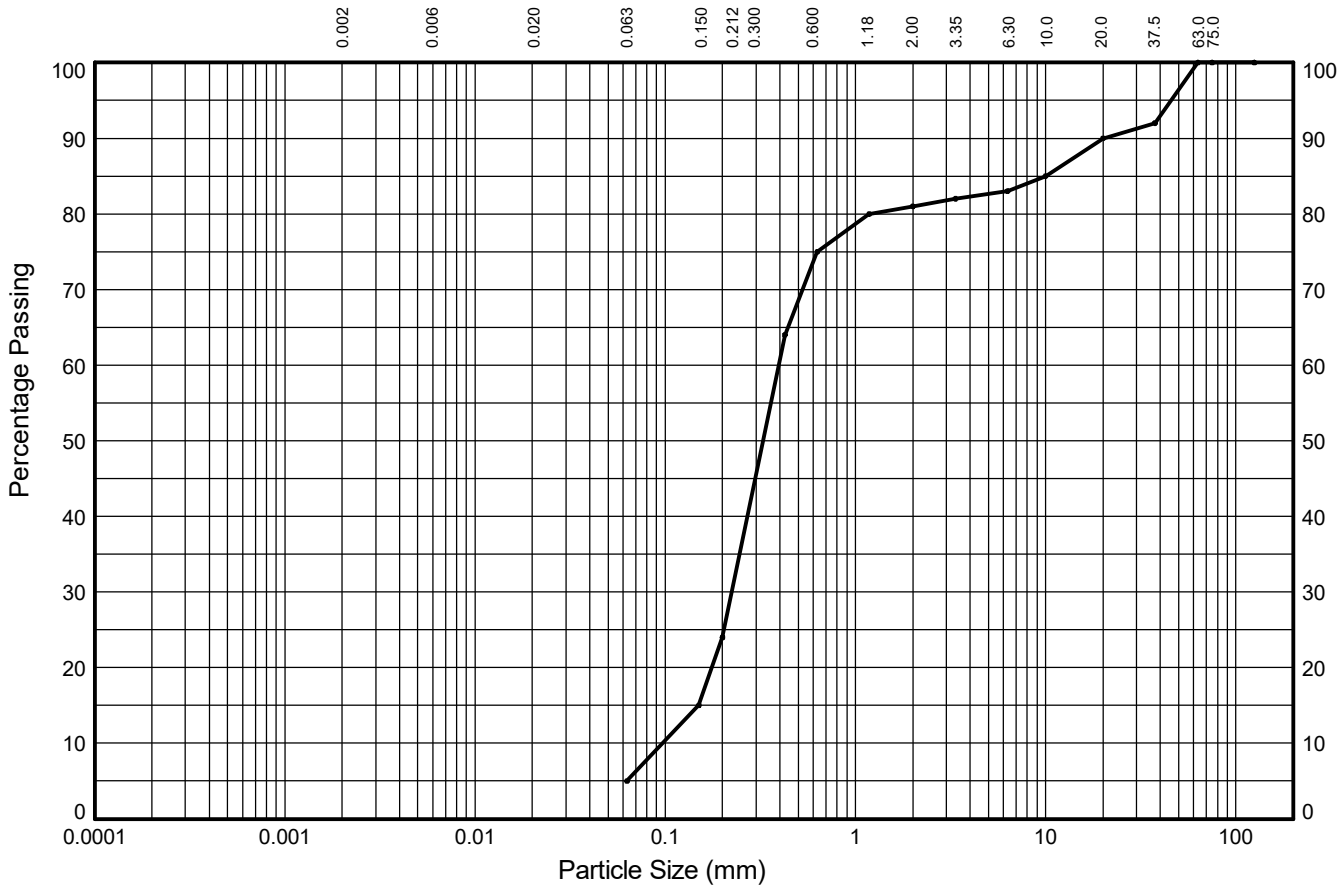
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS113** Sample Ref: **5** Sample Type: **B** Depth (m): **1.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	19%	51%	6%	2%	7%	10%	
	SILT			SAND			GRAVEL			
5%				76%			19%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**92**
20.0	**90**
10.0	**85**
6.30	**83**
3.35	**82**
2.00	**81**
1.18	**80**
0.630	**75**
0.425	**64**
0.200	**24**
0.150	**15**
0.063	**5**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.097**
D_{15} (mm)	**0.150**
D_{30} (mm)	**0.224**
D_{50} (mm)	**0.326**
D_{60} (mm)	**0.394**
D_{85} (mm)	**10.000**
D_{90} (mm)	**20.000**
C_U	**4.1**
C_C	**1.3**

Soil Description:

Reddish brown gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

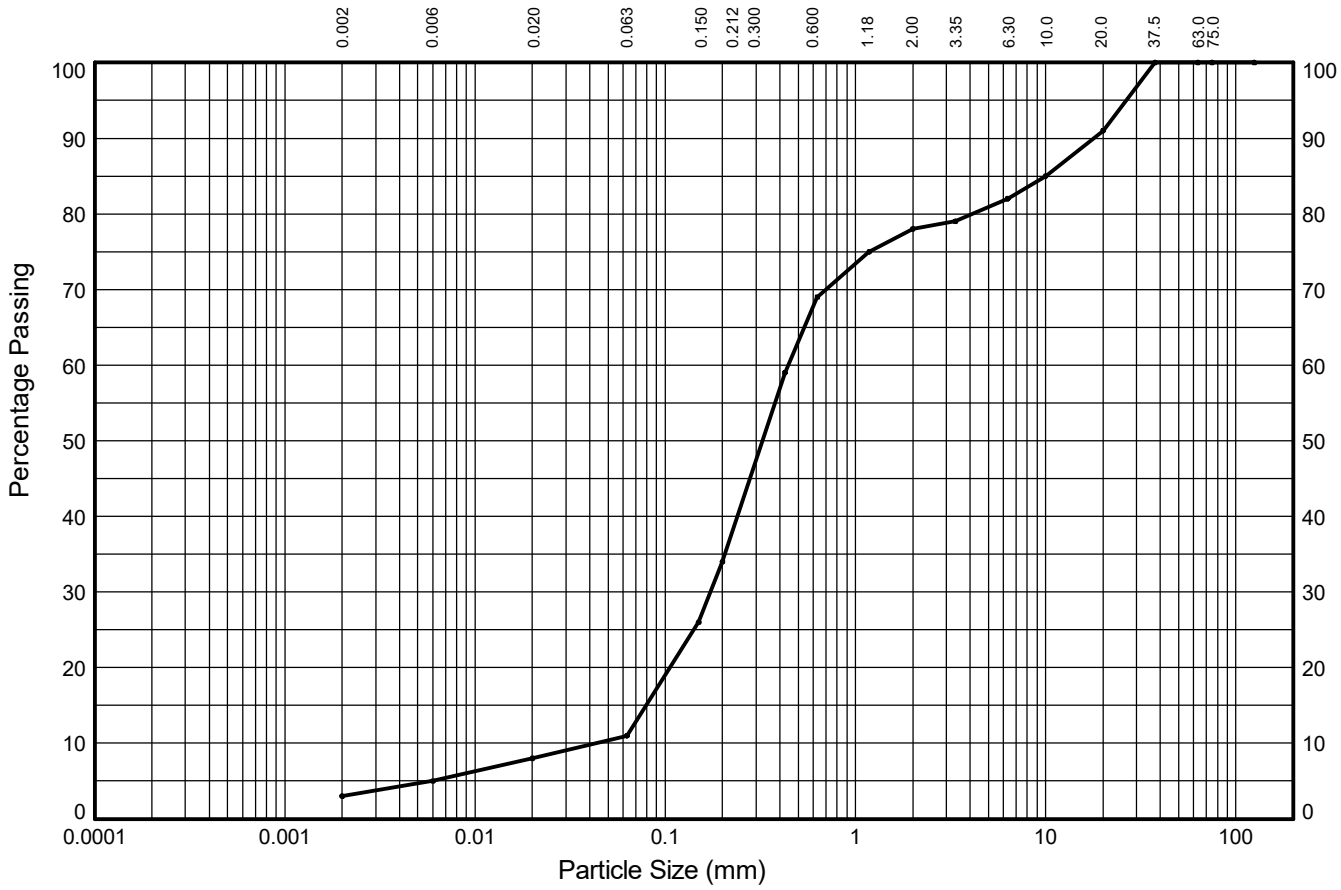
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:21 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS113** Sample Ref: **8** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	3%	3%	23%	35%	9%	4%	9%	9%	
	SILT			SAND			GRAVEL			
3%	8%			67%			22%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**91**
10.0	**85**
6.30	**82**
3.35	**79**
2.00	**78**
1.18	**75**
0.630	**69**
0.425	**59**
0.200	**34**
0.150	**26**
0.063	**11**

Particle Diameter (mm)	Percent Passing (%)
0.02	**8**
0.006	**5**
0.002	**3**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.043**
D_{15} (mm)	**0.079**
D_{30} (mm)	**0.173**
D_{50} (mm)	**0.324**
D_{60} (mm)	**0.442**
D_{85} (mm)	**10.000**
D_{90} (mm)	**17.818**
C_U	**10**
C_C	**2**

Soil Description:

Red very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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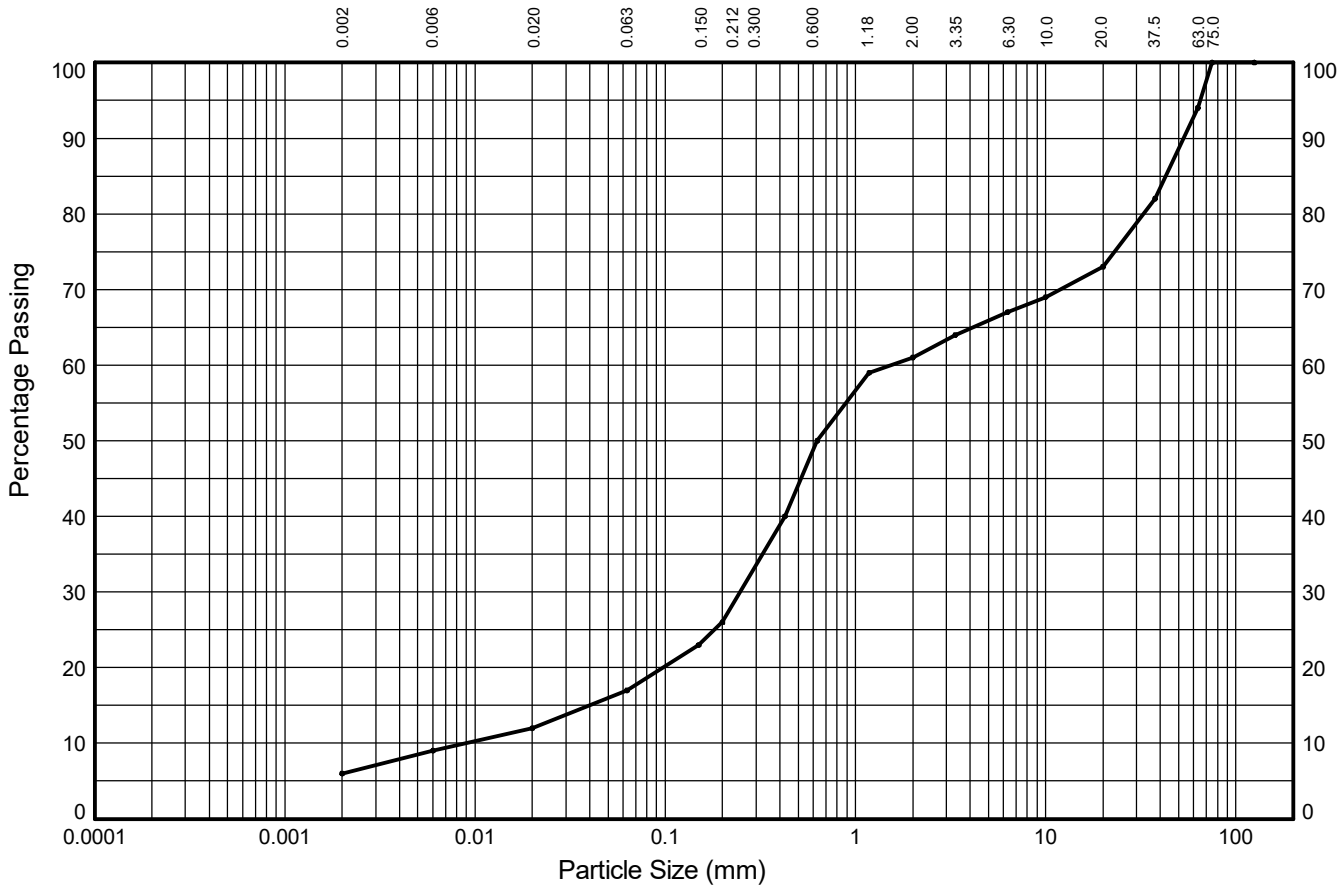
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Window Sample: **WS-PTS114** Sample Ref: **4** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	5%	9%	24%	11%	6%	6%	21%	
	SILT			SAND			GRAVEL			
6%	11%			44%			33%			6%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**94**
37.5	**82**
20.0	**73**
10.0	**69**
6.30	**67**
3.35	**64**
2.00	**61**
1.18	**59**
0.630	**50**
0.425	**40**
0.200	**26**
0.150	**23**
0.063	**17**

Particle Diameter (mm)	Percent Passing (%)
0.02	**12**
0.006	**9**
0.002	**6**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.009**
D_{15} (mm)	**0.040**
D_{30} (mm)	**0.248**
D_{50} (mm)	**0.630**
D_{60} (mm)	**1.536**
D_{85} (mm)	**42.693**
D_{90} (mm)	**52.995**
C_U	**171**
C_C	**4**

Soil Description:

Brown very gravelly clayey SAND with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

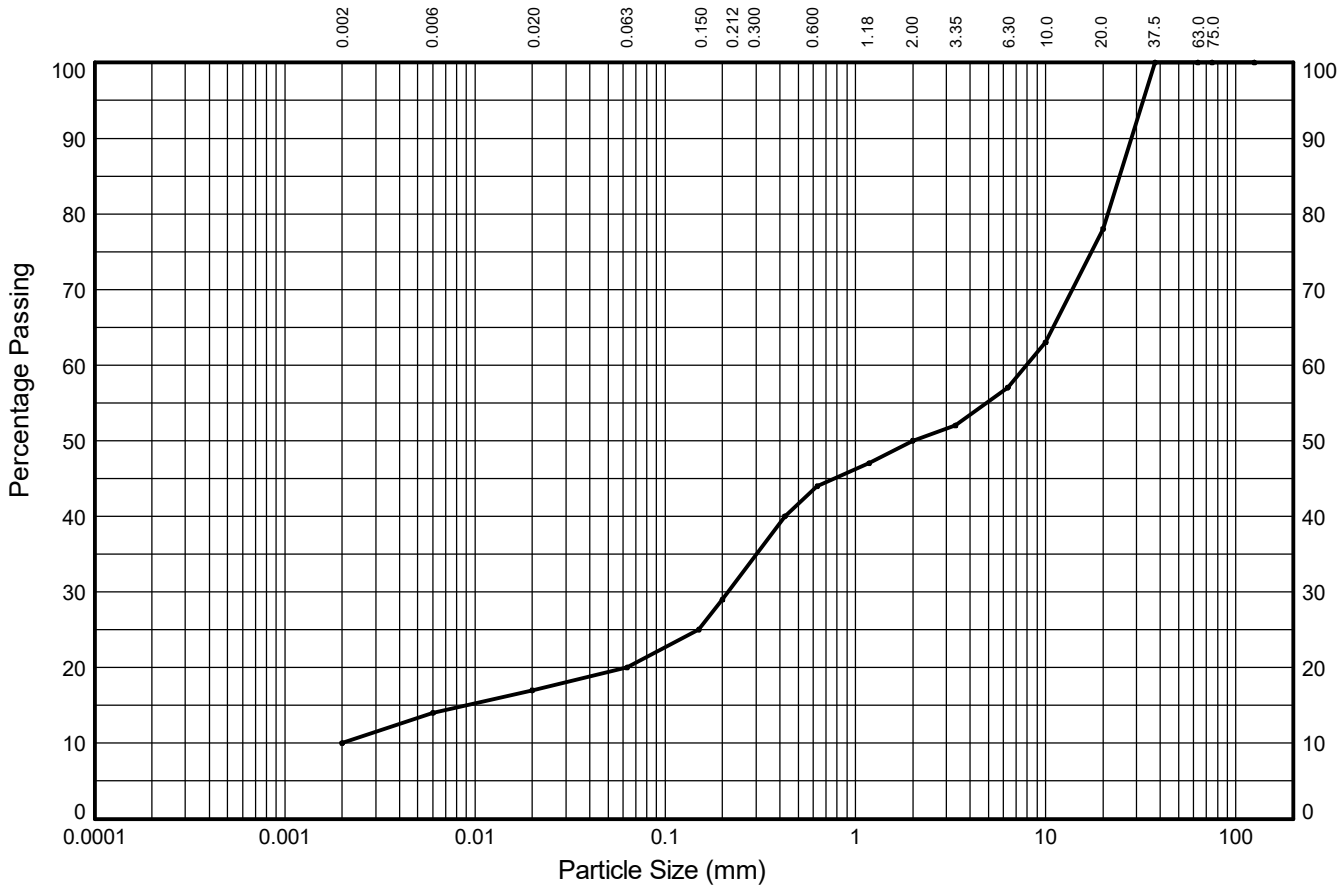
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:21 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS114** Sample Ref: **14** Sample Type: **C** Depth (m): **3.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	3%	3%	9%	15%	6%	7%	21%	22%	
	SILT			SAND			GRAVEL			
10%	10%			30%			50%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**78**
10.0	**63**
6.30	**57**
3.35	**52**
2.00	**50**
1.18	**47**
0.630	**44**
0.425	**40**
0.200	**29**
0.150	**25**
0.063	**20**

Particle Diameter (mm)	Percent Passing (%)
0.02	**17**
0.006	**14**
0.002	**10**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.002**
D_{15} (mm)	**0.009**
D_{30} (mm)	**0.214**
D_{50} (mm)	**2.000**
D_{60} (mm)	**7.937**
D_{85} (mm)	**24.428**
D_{90} (mm)	**28.180**
C_U	**3969**
C_C	**3**

Soil Description:

Brown very sandy very clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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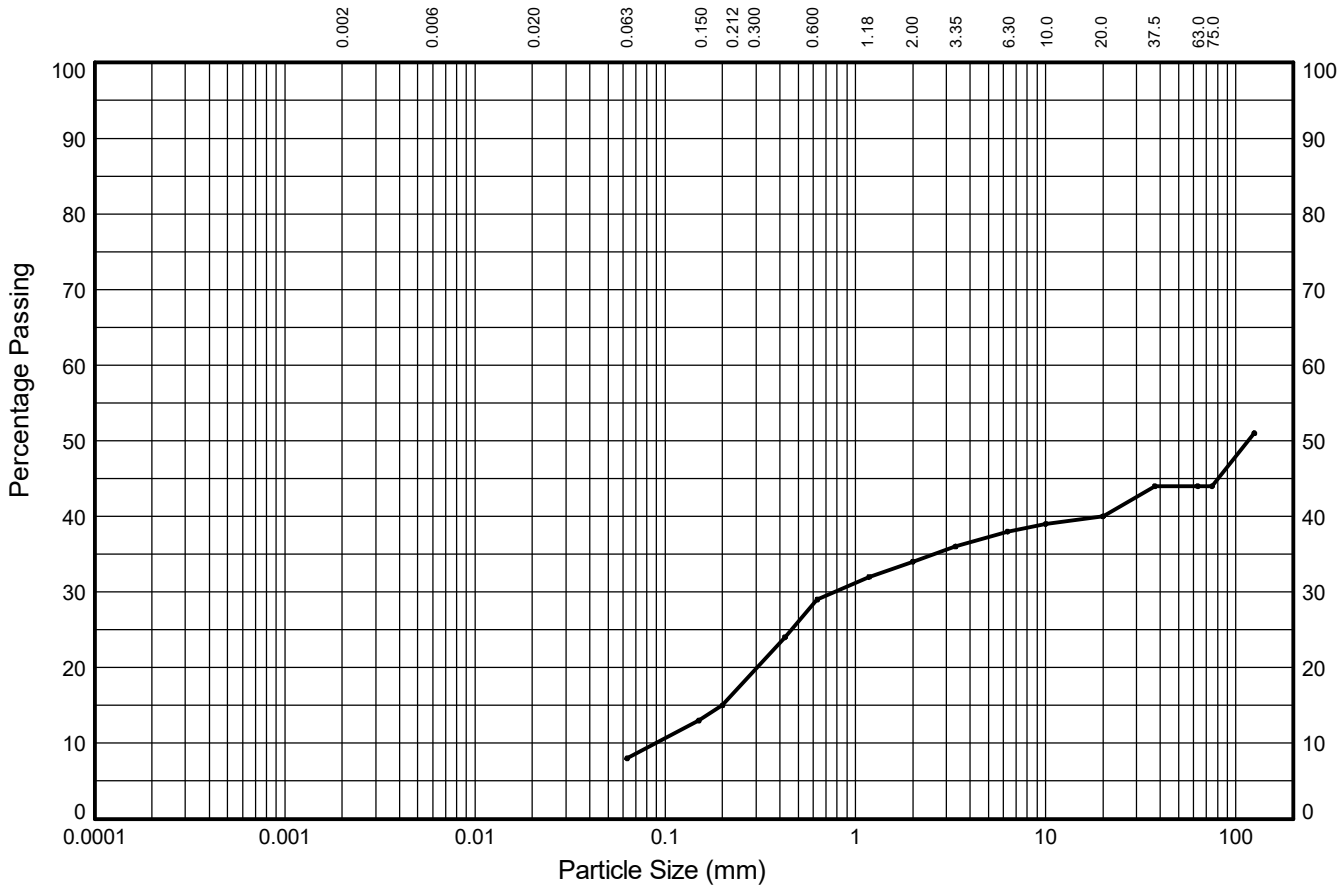
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Window Sample: **WS-PTS116** Sample Ref: **4** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	7%	14%	5%	4%	2%	4%	
	SILT			SAND			GRAVEL			
8%				26%			10%			56%

Test Sieve (mm)	Percent Passing (%)
125.0	**51**
75.0	**44**
63.0	**44**
37.5	**44**
20.0	**40**
10.0	**39**
6.30	**38**
3.35	**36**
2.00	**34**
1.18	**32**
0.630	**29**
0.425	**24**
0.200	**15**
0.150	**13**
0.063	**8**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.089**
D_{15} (mm)	**0.200**
D_{30} (mm)	**0.777**
D_{50} (mm)	**116.203**
D_{60} (mm)	
D_{85} (mm)	
D_{90} (mm)	
C_U	**0.00**
C_C	**0.00**

Soil Description:

Brown COBBLES with gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

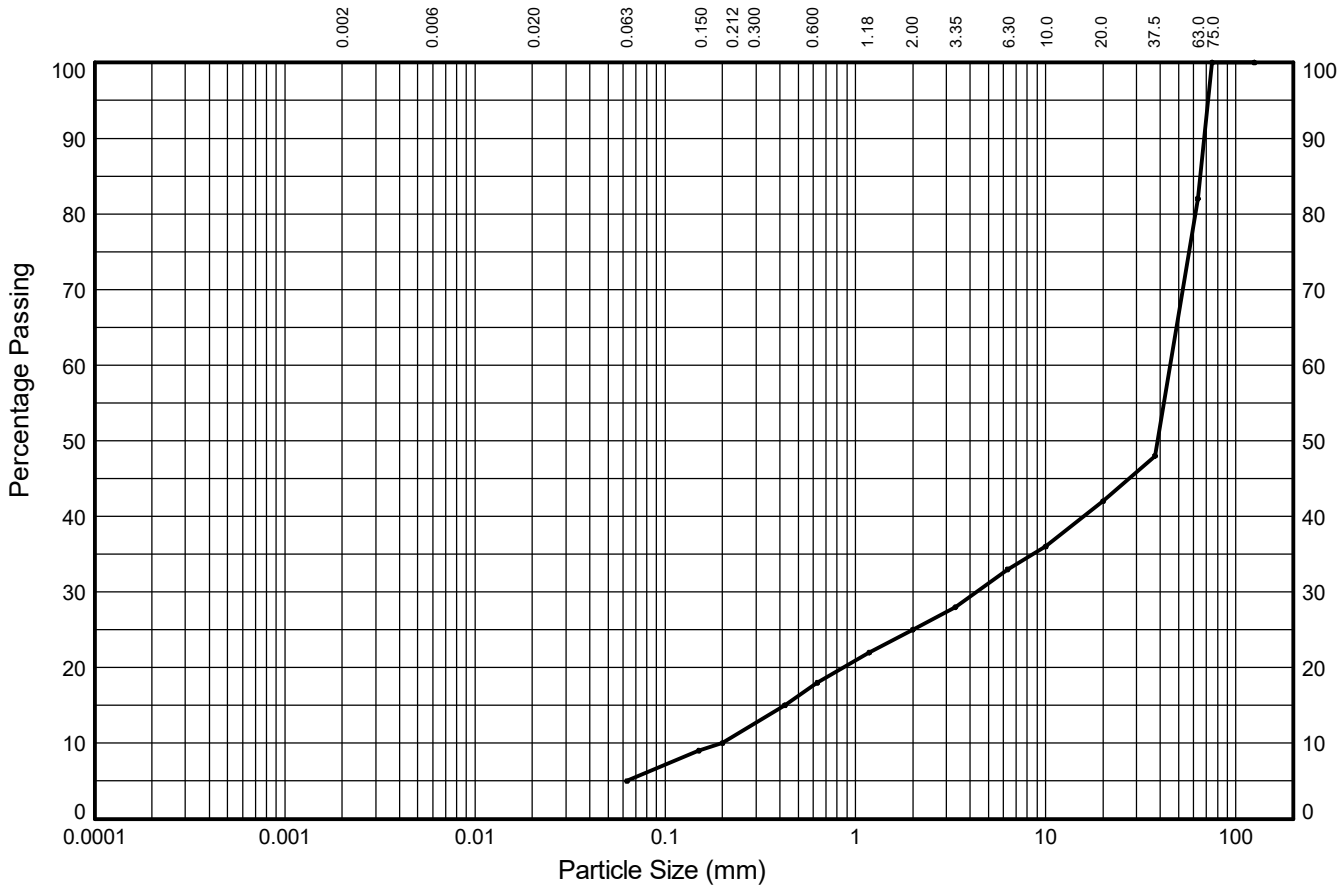
Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:21 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Window Sample: **WS-PTS116** Sample Ref: **9** Sample Type: **C** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	5%	8%	7%	8%	9%	40%	
	SILT			SAND			GRAVEL			
5%				20%			57%			18%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**82**
37.5	**48**
20.0	**42**
10.0	**36**
6.30	**33**
3.35	**28**
2.00	**25**
1.18	**22**
0.630	**18**
0.425	**15**
0.200	**10**
0.150	**9**
0.063	**5**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.200**
D_{15} (mm)	**0.425**
D_{30} (mm)	**4.313**
D_{50} (mm)	**38.662**
D_{60} (mm)	**45.035**
D_{85} (mm)	**64.858**
D_{90} (mm)	**68.076**
C_U	**225**
C_C	**2**

Soil Description:

Brown sandy GRAVEL with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

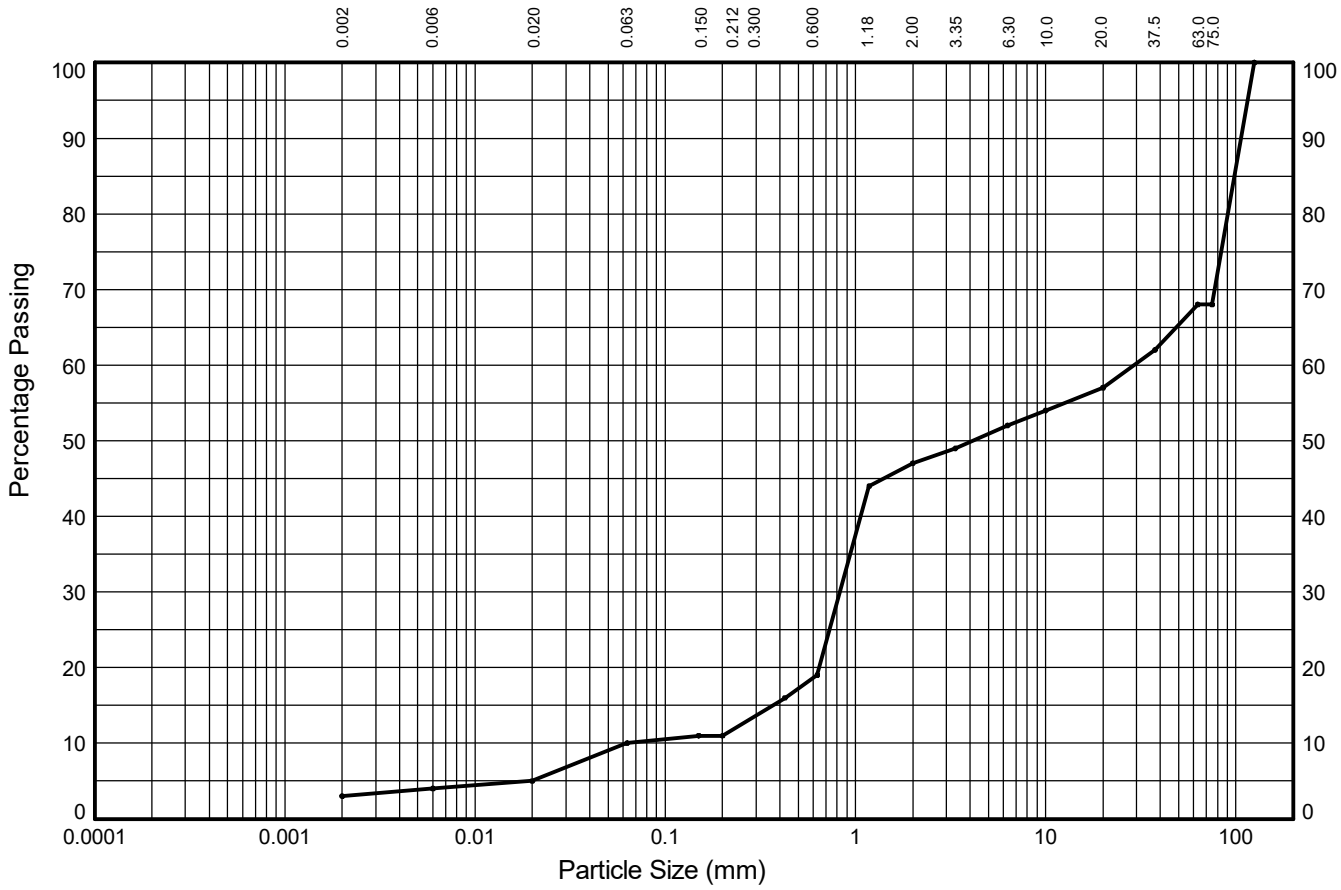
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	E. Hort	**ELIZABETH HORT**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:21 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Window Sample: **WS-PTS117** Sample Ref: **2** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	1%	1%	5%	1%	8%	28%	5%	5%	11%	
	SILT			SAND			GRAVEL			
3%	7%			37%			21%			32%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**68**
63.0	**68**
37.5	**62**
20.0	**57**
10.0	**54**
6.30	**52**
3.35	**49**
2.00	**47**
1.18	**44**
0.630	**19**
0.425	**16**
0.200	**11**
0.150	**11**
0.063	**10**

Particle Diameter (mm)	Percent Passing (%)
0.02	**5**
0.006	**4**
0.002	**3**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.063**
D_{15} (mm)	**0.366**
D_{30} (mm)	**0.830**
D_{50} (mm)	**4.135**
D_{60} (mm)	**29.163**
D_{85} (mm)	**98.383**
D_{90} (mm)	**106.557**
C_U	**463**
C_C	**0.38**

Soil Description:

Brown very gravelly silty SAND with high cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

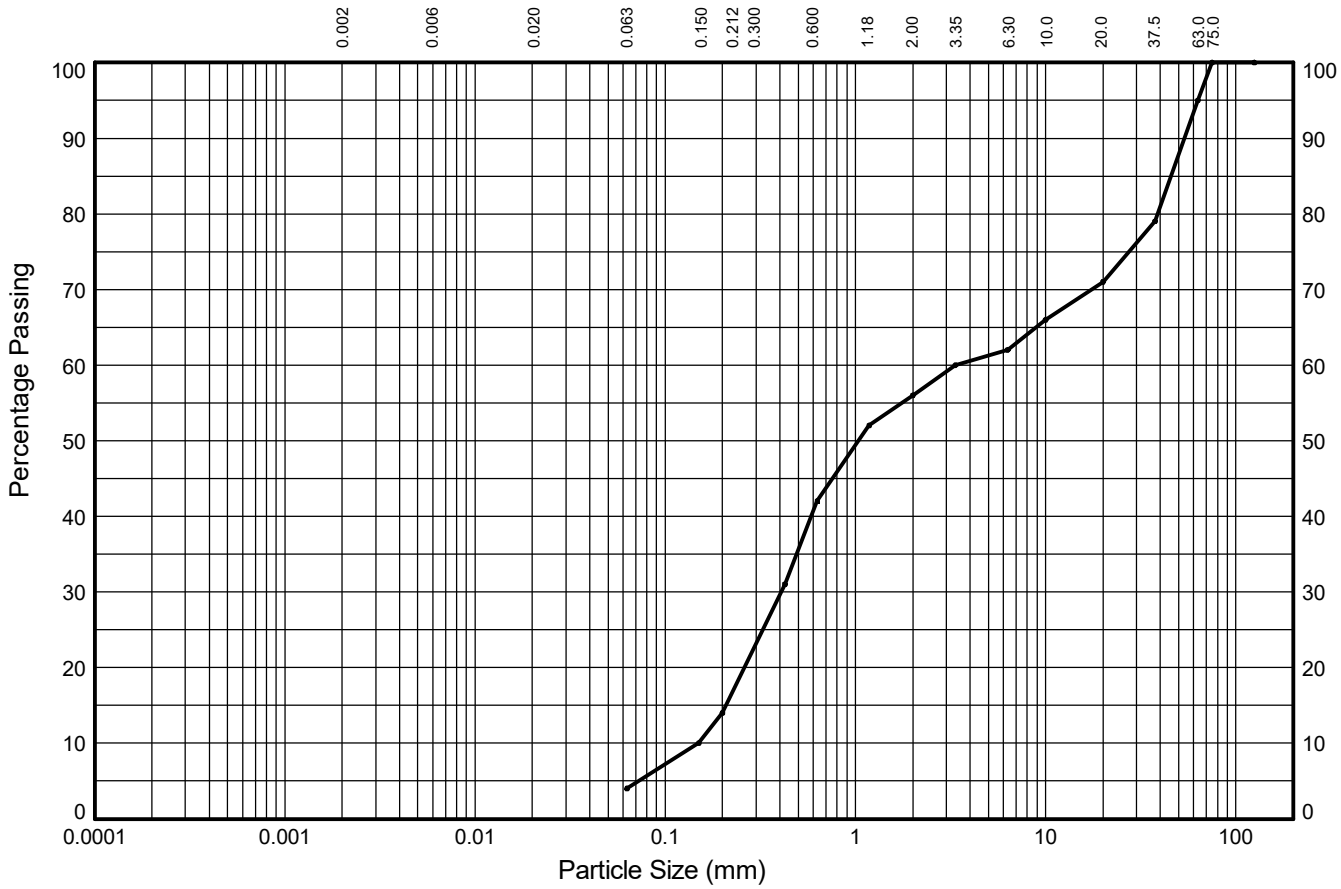
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Maduka	**PRECIOUS MADUKA**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:21 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Window Sample: **WS-PTS119** Sample Ref: **4** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	10%	28%	14%	6%	9%	24%	
	SILT			SAND			GRAVEL			
4%				52%			39%			5%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**95**
37.5	**79**
20.0	**71**
10.0	**66**
6.30	**62**
3.35	**60**
2.00	**56**
1.18	**52**
0.630	**42**
0.425	**31**
0.200	**14**
0.150	**10**
0.063	**4**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.150**
D_{15} (mm)	**0.209**
D_{30} (mm)	**0.407**
D_{50} (mm)	**1.041**
D_{60} (mm)	**3.350**
D_{85} (mm)	**45.554**
D_{90} (mm)	**53.571**
C_U	**22**
C_C	**0.33**

Soil Description:
Brown very gravelly slightly clayey SAND with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

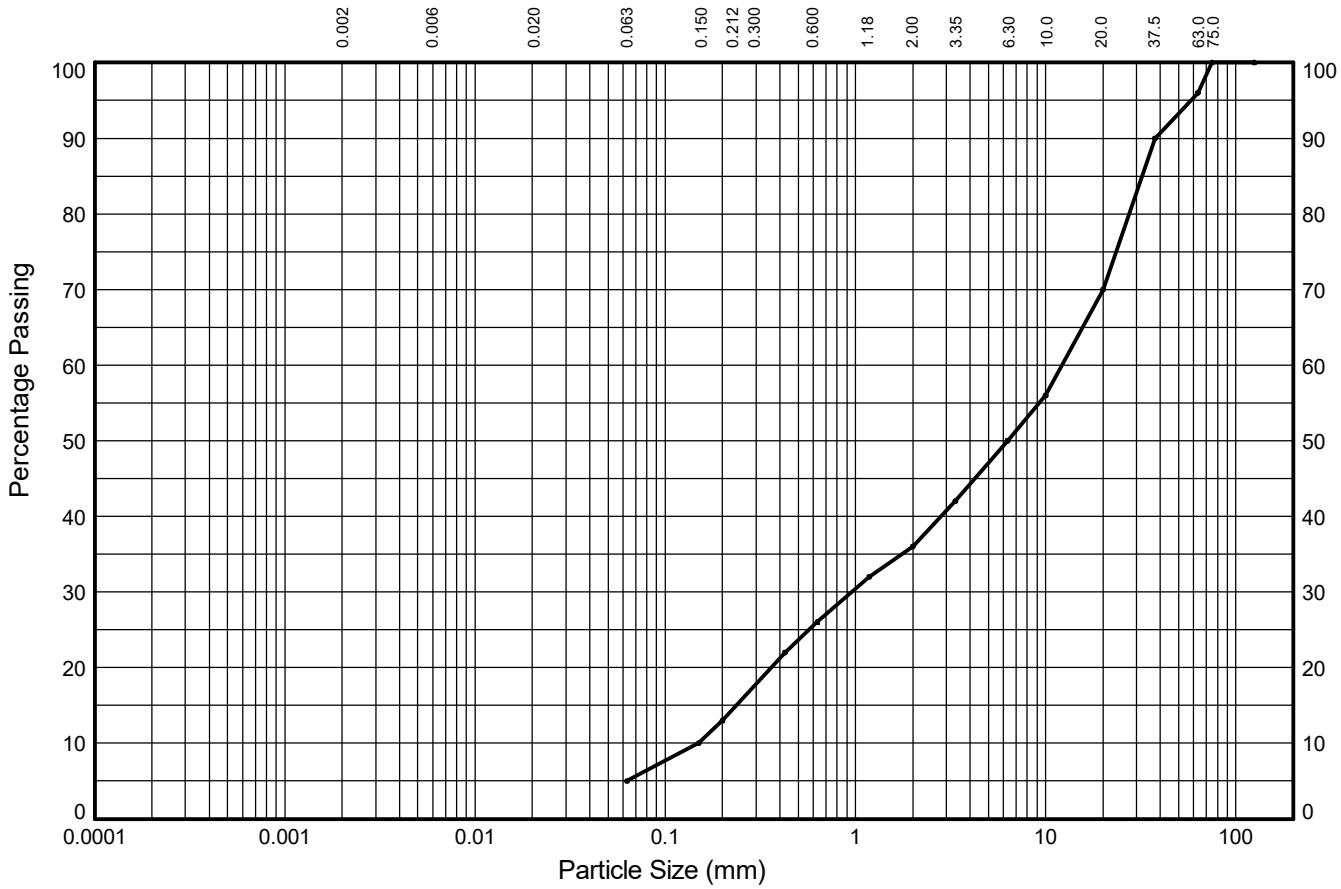
Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:21 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Window Sample: **WS-PTS119** Sample Ref: **8** Sample Type: **B** Depth (m): **1.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	8%	13%	10%	14%	20%	26%	
	SILT			SAND			GRAVEL			
5%				31%			60%			4%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**96**
37.5	**90**
20.0	**70**
10.0	**56**
6.30	**50**
3.35	**42**
2.00	**36**
1.18	**32**
0.630	**26**
0.425	**22**
0.200	**13**
0.150	**10**
0.063	**5**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.150**
D_{15} (mm)	**0.236**
D_{30} (mm)	**0.957**
D_{50} (mm)	**6.300**
D_{60} (mm)	**12.190**
D_{85} (mm)	**32.047**
D_{90} (mm)	**37.500**
C_U	**81**
C_C	**0.50**

Soil Description:

Brown very sandy silty GRAVEL with low cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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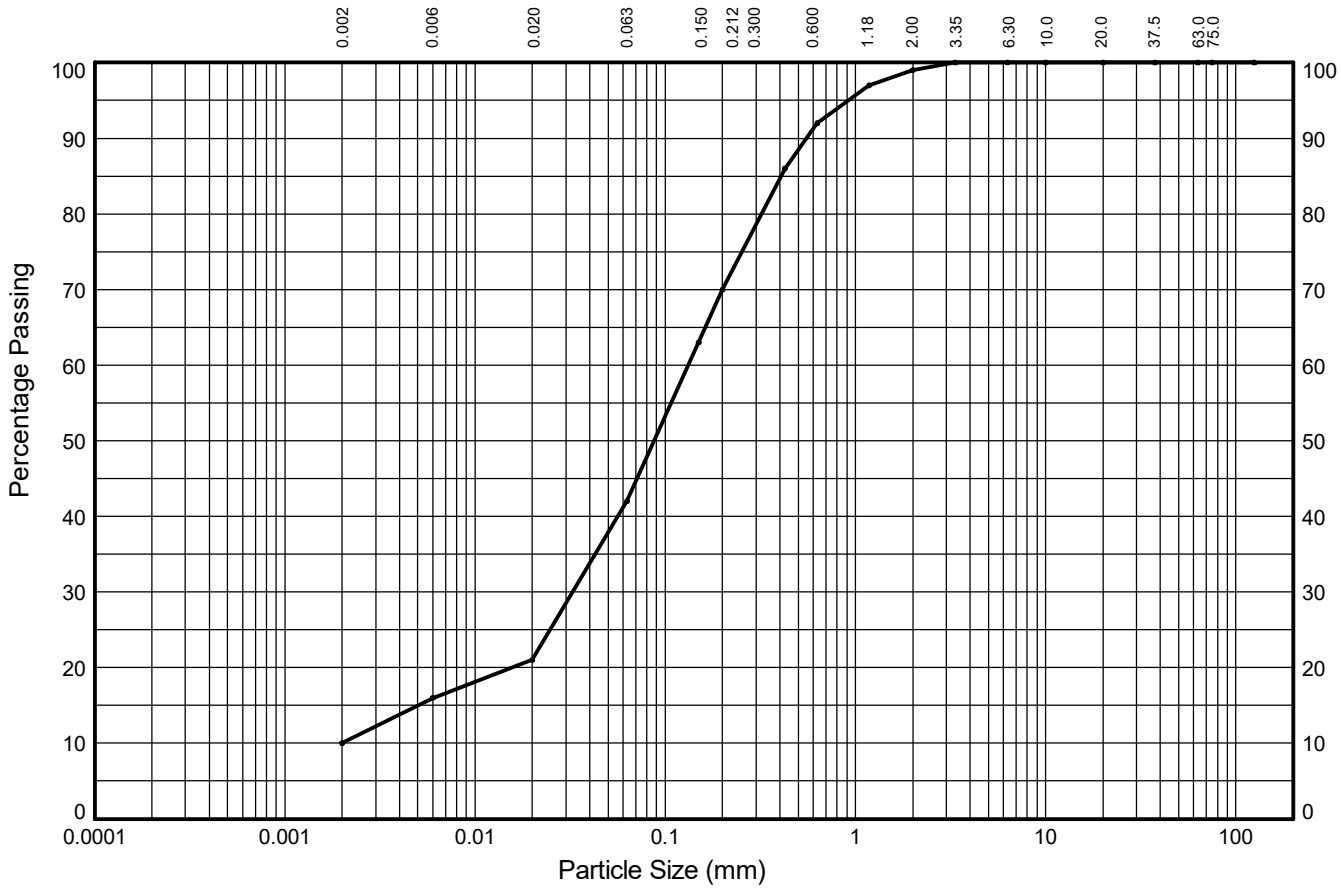
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS120** Sample Ref: **4** Sample Type: **B** Depth (m): **0.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	6%	5%	21%	28%	22%	7%	1%	0%	0%	
	SILT			SAND			GRAVEL			
10%	32%			57%			1%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**100**
3.35	**100**
2.00	**99**
1.18	**97**
0.630	**92**
0.425	**86**
0.200	**70**
0.150	**63**
0.063	**42**

Particle Diameter (mm)	Percent Passing (%)
0.02	**21**
0.006	**16**
0.002	**10**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.002**
D_{15} (mm)	**0.005**
D_{30} (mm)	**0.033**
D_{50} (mm)	**0.088**
D_{60} (mm)	**0.133**
D_{85} (mm)	**0.405**
D_{90} (mm)	**0.553**
C_U	**66**
C_C	**4**

Soil Description:

Greyish brown sandy clayey SILT

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

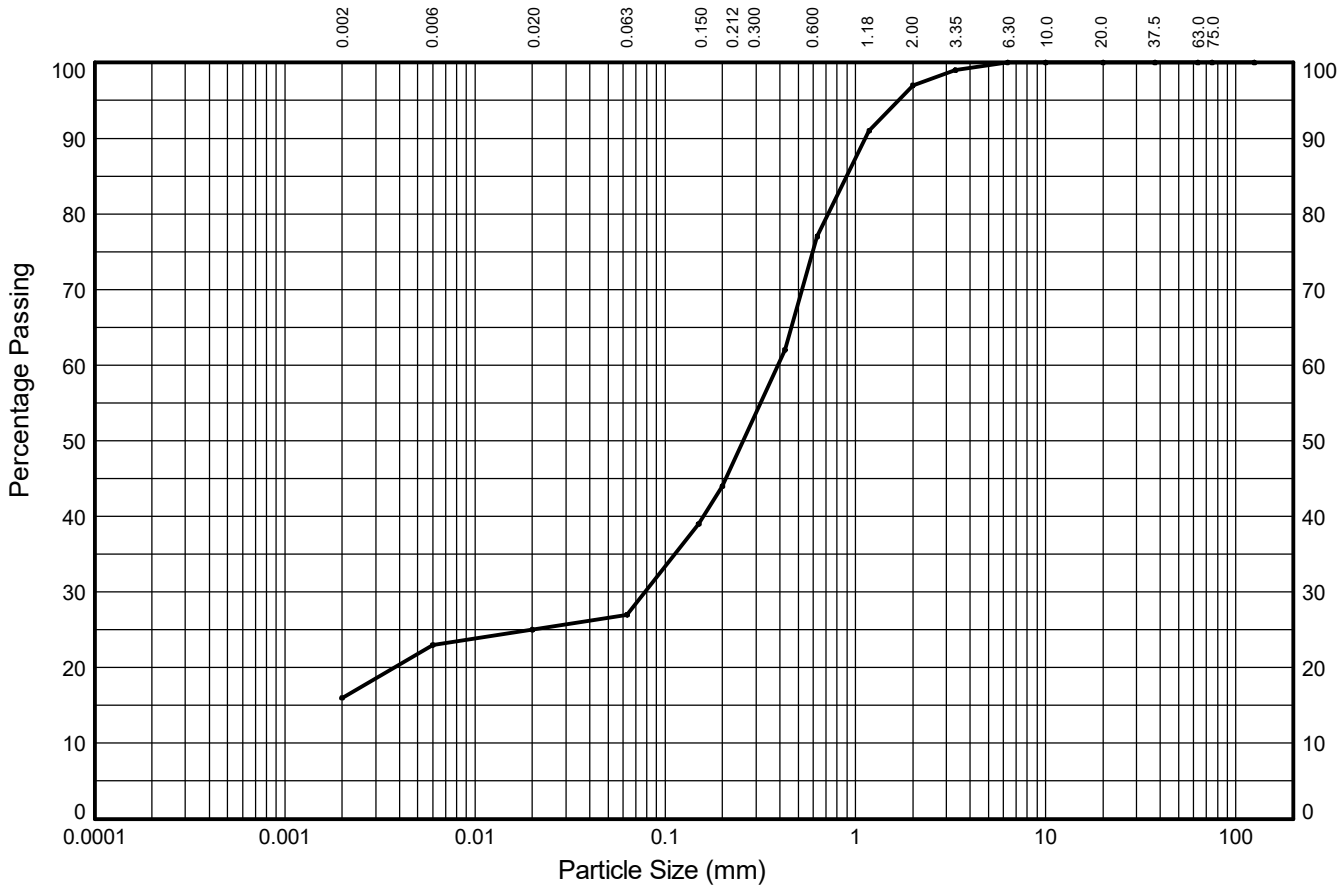
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	E. Hort	**ELIZABETH HORT**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:21 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS120** Sample Ref: **5** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	7%	2%	2%	17%	33%	20%	3%	0%	0%	
	SILT			SAND			GRAVEL			
16%	11%			70%			3%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**100**
3.35	**99**
2.00	**97**
1.18	**91**
0.630	**77**
0.425	**62**
0.200	**44**
0.150	**39**
0.063	**27**

Particle Diameter (mm)	Percent Passing (%)
0.02	**25**
0.006	**23**
0.002	**16**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.078**
D_{50} (mm)	**0.257**
D_{60} (mm)	**0.391**
D_{85} (mm)	**0.902**
D_{90} (mm)	**1.128**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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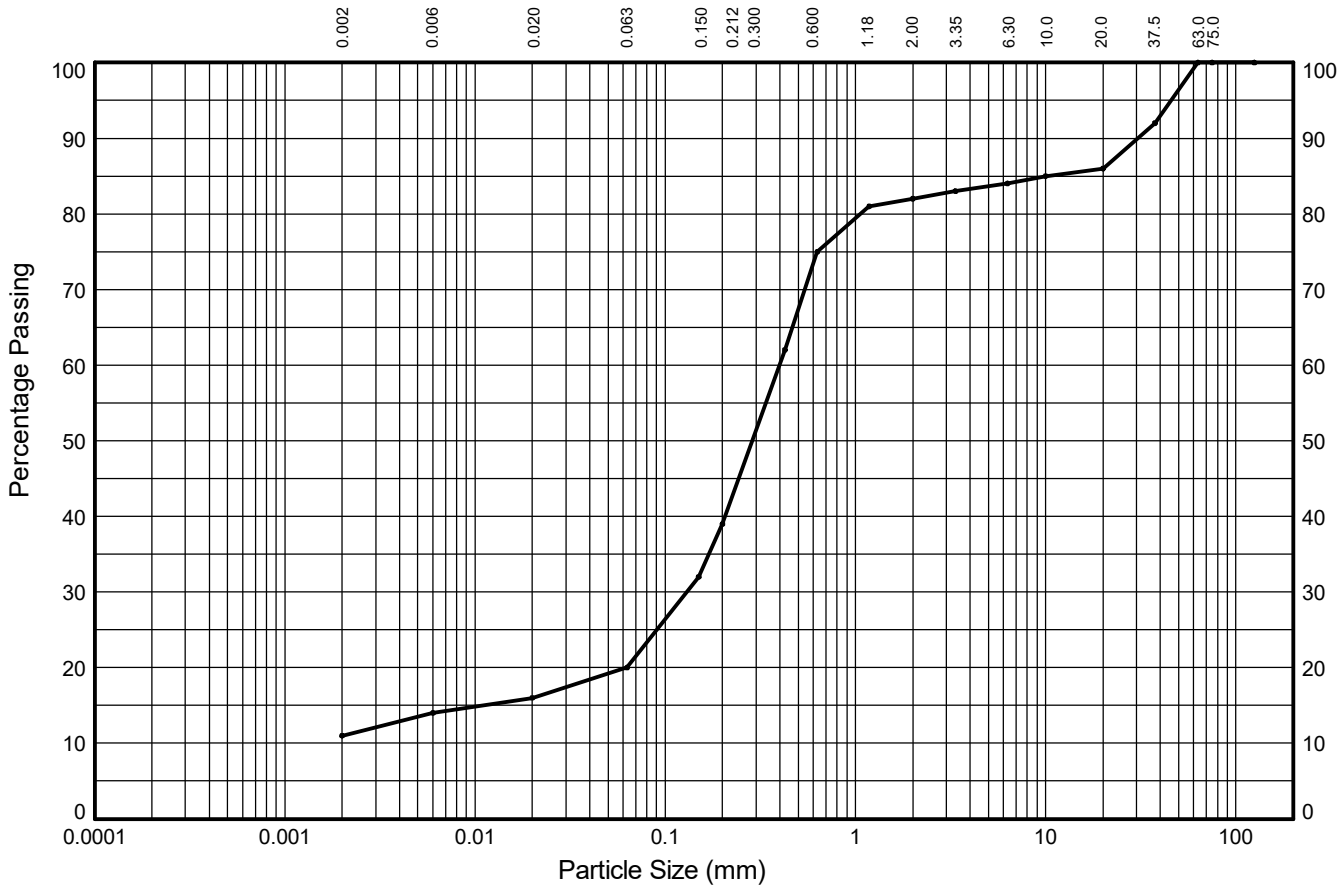
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS127** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	2%	4%	19%	36%	7%	2%	2%	14%	
	SILT			SAND			GRAVEL			
11%	9%			62%			18%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**92**
20.0	**86**
10.0	**85**
6.30	**84**
3.35	**83**
2.00	**82**
1.18	**81**
0.630	**75**
0.425	**62**
0.200	**39**
0.150	**32**
0.063	**20**

Particle Diameter (mm)	Percent Passing (%)
0.02	**16**
0.006	**14**
0.002	**11**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.011**
D_{30} (mm)	**0.130**
D_{50} (mm)	**0.287**
D_{60} (mm)	**0.398**
D_{85} (mm)	**10.000**
D_{90} (mm)	**30.411**
C_U	**NA**
C_C	**NA**

Soil Description:

Orangish brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

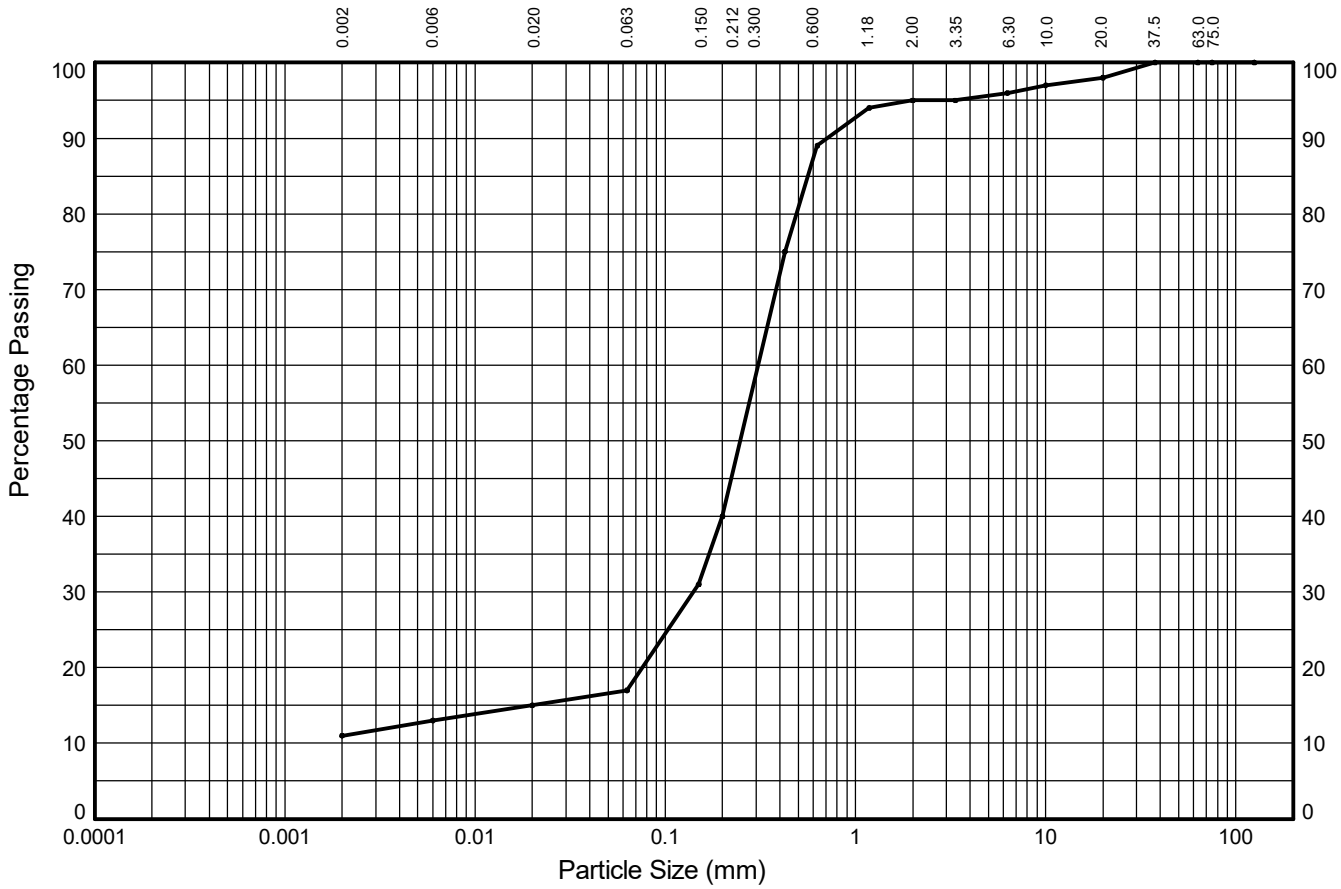
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Maduka	**PRECIOUS MADUKA**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:21 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS127** Sample Ref: **5** Sample Type: **B** Depth (m): **1.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	2%	2%	23%	49%	6%	1%	2%	2%	
	SILT			SAND			GRAVEL			
11%	6%			78%			5%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**98**
10.0	**97**
6.30	**96**
3.35	**95**
2.00	**95**
1.18	**94**
0.630	**89**
0.425	**75**
0.200	**40**
0.150	**31**
0.063	**17**

Particle Diameter (mm)	Percent Passing (%)
0.02	**15**
0.006	**13**
0.002	**11**
Sedimentation sample was not pre-treated	

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.020**
D_{30} (mm)	**0.141**
D_{50} (mm)	**0.248**
D_{60} (mm)	**0.308**
D_{85} (mm)	**0.563**
D_{90} (mm)	**0.714**
C_U	**NA**
C_C	**NA**

Soil Description:

Orangish brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Maduka	**PRECIOUS MADUKA**	**22/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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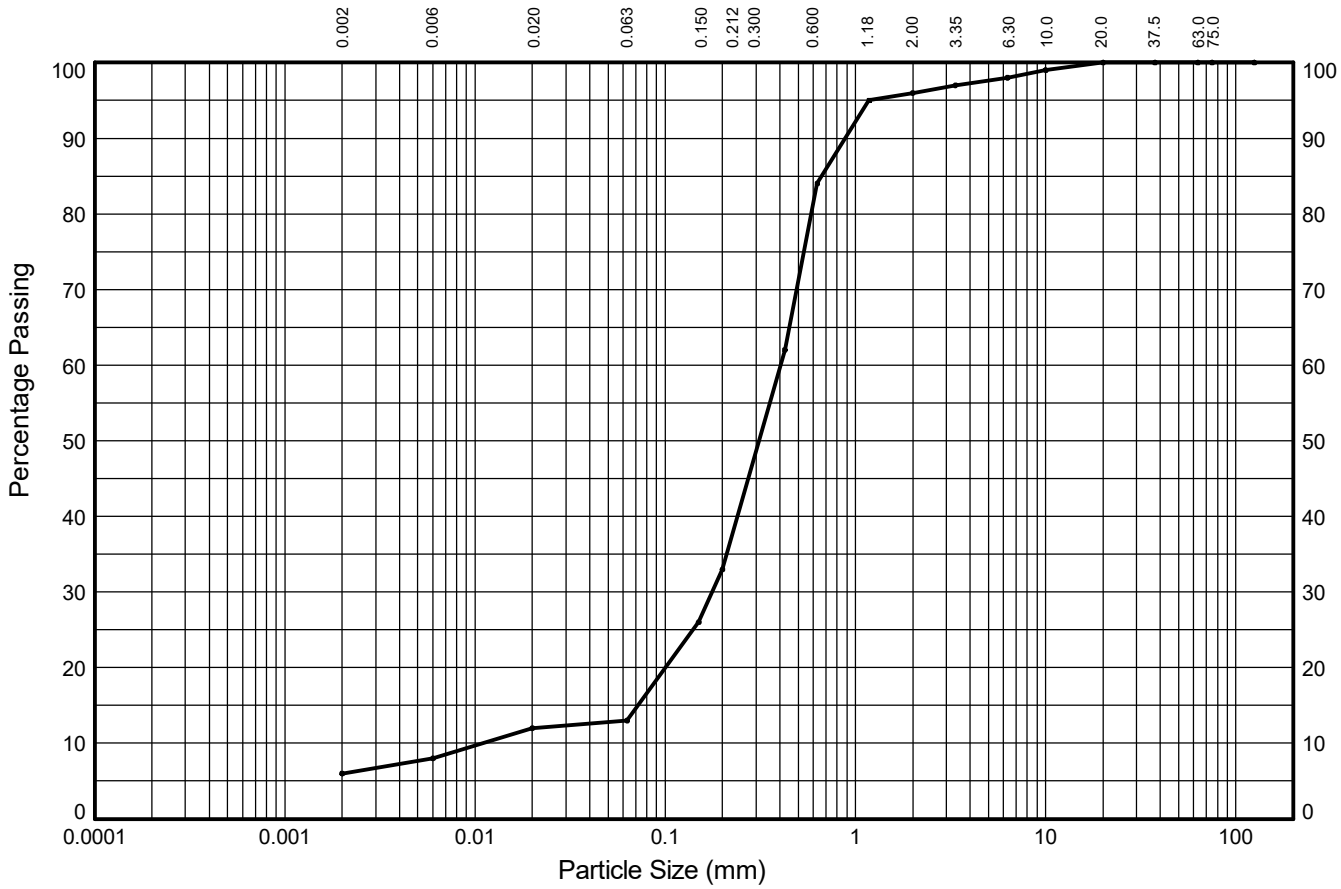
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS127** Sample Ref: **10** Sample Type: **B** Depth (m): **3.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	4%	1%	20%	51%	12%	2%	2%	0%	
	SILT			SAND			GRAVEL			
6%	7%			83%			4%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**99**
6.30	**98**
3.35	**97**
2.00	**96**
1.18	**95**
0.630	**84**
0.425	**62**
0.200	**33**
0.150	**26**
0.063	**13**

Particle Diameter (mm)	Percent Passing (%)
0.02	**12**
0.006	**8**
0.002	**6**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.011**
D_{15} (mm)	**0.072**
D_{30} (mm)	**0.177**
D_{50} (mm)	**0.311**
D_{60} (mm)	**0.403**
D_{85} (mm)	**0.667**
D_{90} (mm)	**0.887**
C_U	**37**
C_C	**7**

Soil Description:

Brown slightly gravelly clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Maduka	**PRECIOUS MADUKA**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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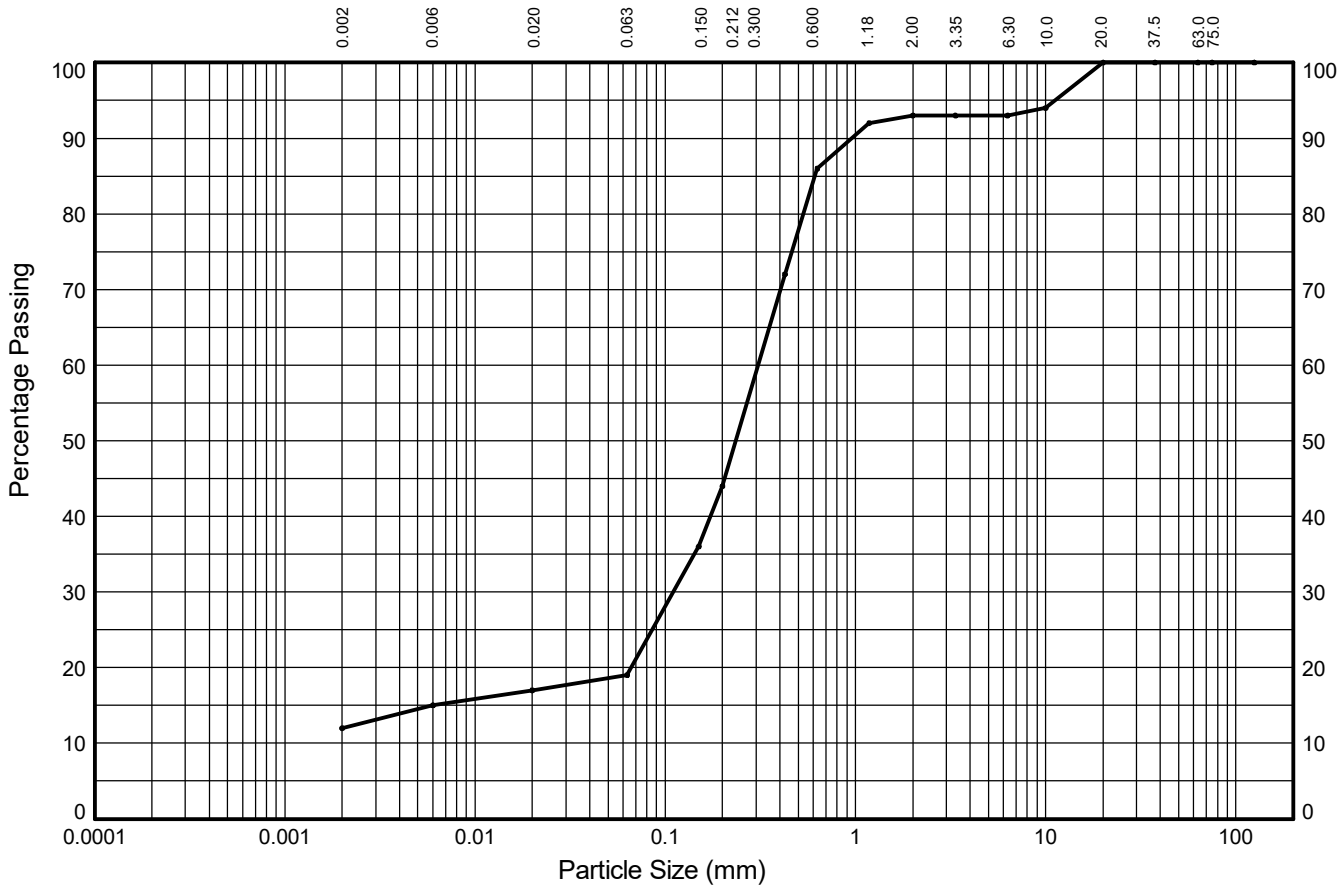
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS129** Sample Ref: **2** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	2%	2%	25%	42%	7%	0%	7%	0%	
	SILT			SAND			GRAVEL			
12%	7%			74%			7%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**94**
6.30	**93**
3.35	**93**
2.00	**93**
1.18	**92**
0.630	**86**
0.425	**72**
0.200	**44**
0.150	**36**
0.063	**19**

Particle Diameter (mm)	Percent Passing (%)
0.02	**17**
0.006	**15**
0.002	**12**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.006**
D_{30} (mm)	**0.110**
D_{50} (mm)	**0.235**
D_{60} (mm)	**0.308**
D_{85} (mm)	**0.613**
D_{90} (mm)	**0.957**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	E. Hort	**ELIZABETH HORT**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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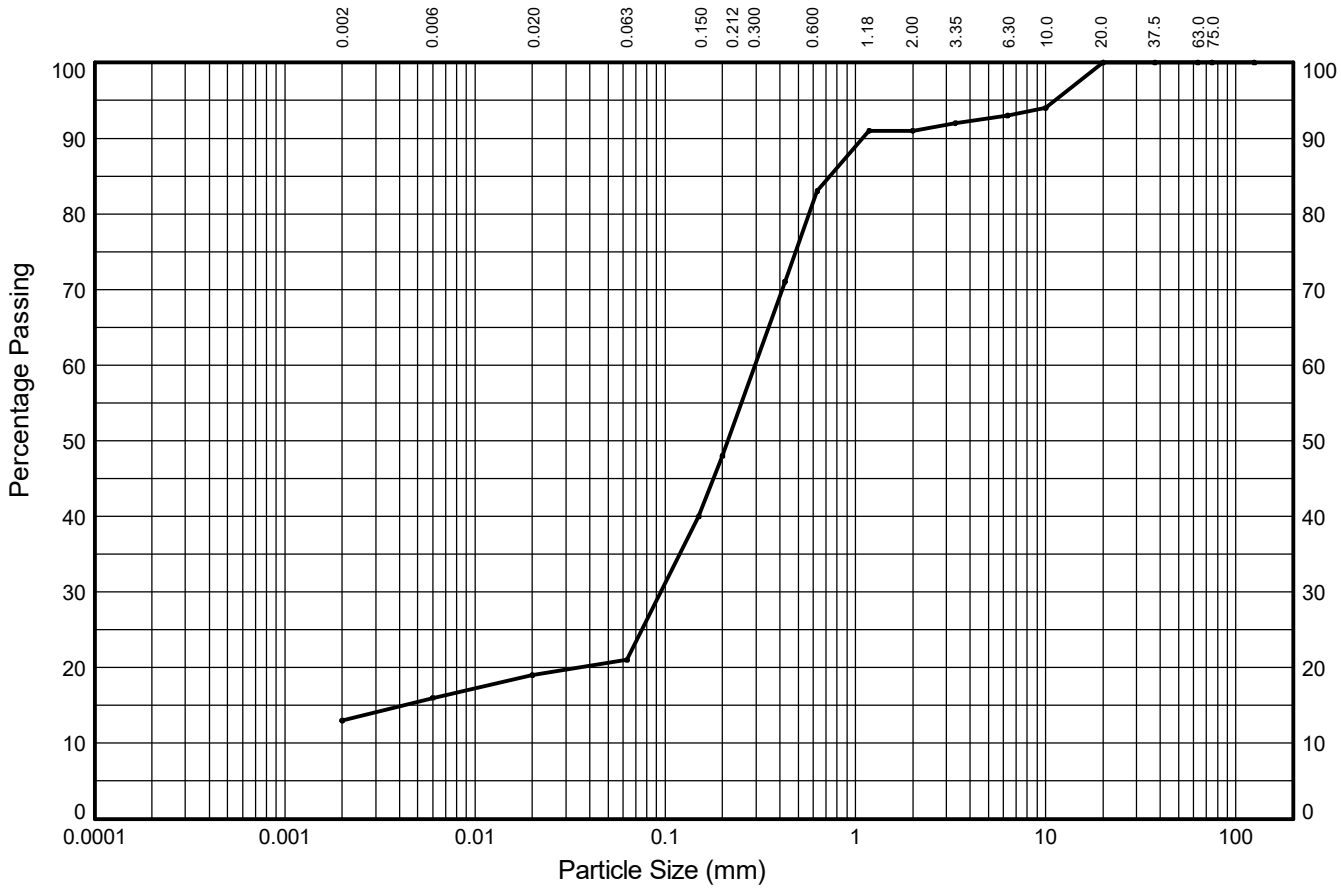
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS129** Sample Ref: **6** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	2%	27%	35%	8%	2%	7%	0%	
	SILT			SAND			GRAVEL			
13%	8%			70%			9%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**94**
6.30	**93**
3.35	**92**
2.00	**91**
1.18	**91**
0.630	**83**
0.425	**71**
0.200	**48**
0.150	**40**
0.063	**21**

Particle Diameter (mm)	Percent Passing (%)
0.02	**19**
0.006	**16**
0.002	**13**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.004**
D_{30} (mm)	**0.095**
D_{50} (mm)	**0.214**
D_{60} (mm)	**0.296**
D_{85} (mm)	**0.737**
D_{90} (mm)	**1.091**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	E. Hort	**ELIZABETH HORT**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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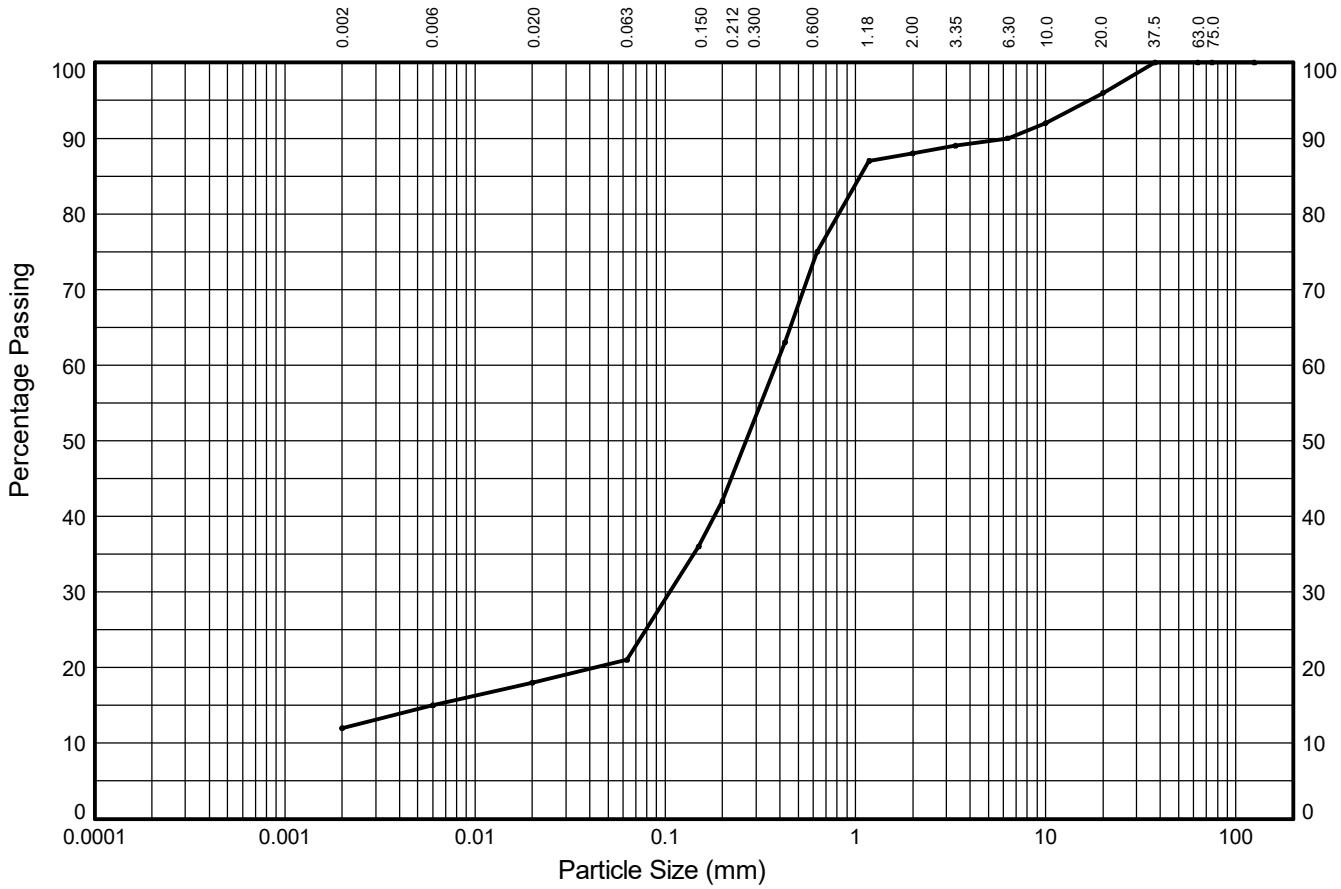
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS129** Sample Ref: **8** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	3%	21%	33%	13%	2%	6%	4%	
	SILT			SAND			GRAVEL			
12%	9%			67%			12%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**96**
10.0	**92**
6.30	**90**
3.35	**89**
2.00	**88**
1.18	**87**
0.630	**75**
0.425	**63**
0.200	**42**
0.150	**36**
0.063	**21**

Particle Diameter (mm)	Percent Passing (%)
0.02	**18**
0.006	**15**
0.002	**12**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.006**
D_{30} (mm)	**0.106**
D_{50} (mm)	**0.267**
D_{60} (mm)	**0.382**
D_{85} (mm)	**1.063**
D_{90} (mm)	**6.300**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	E. Hort	**ELIZABETH HORT**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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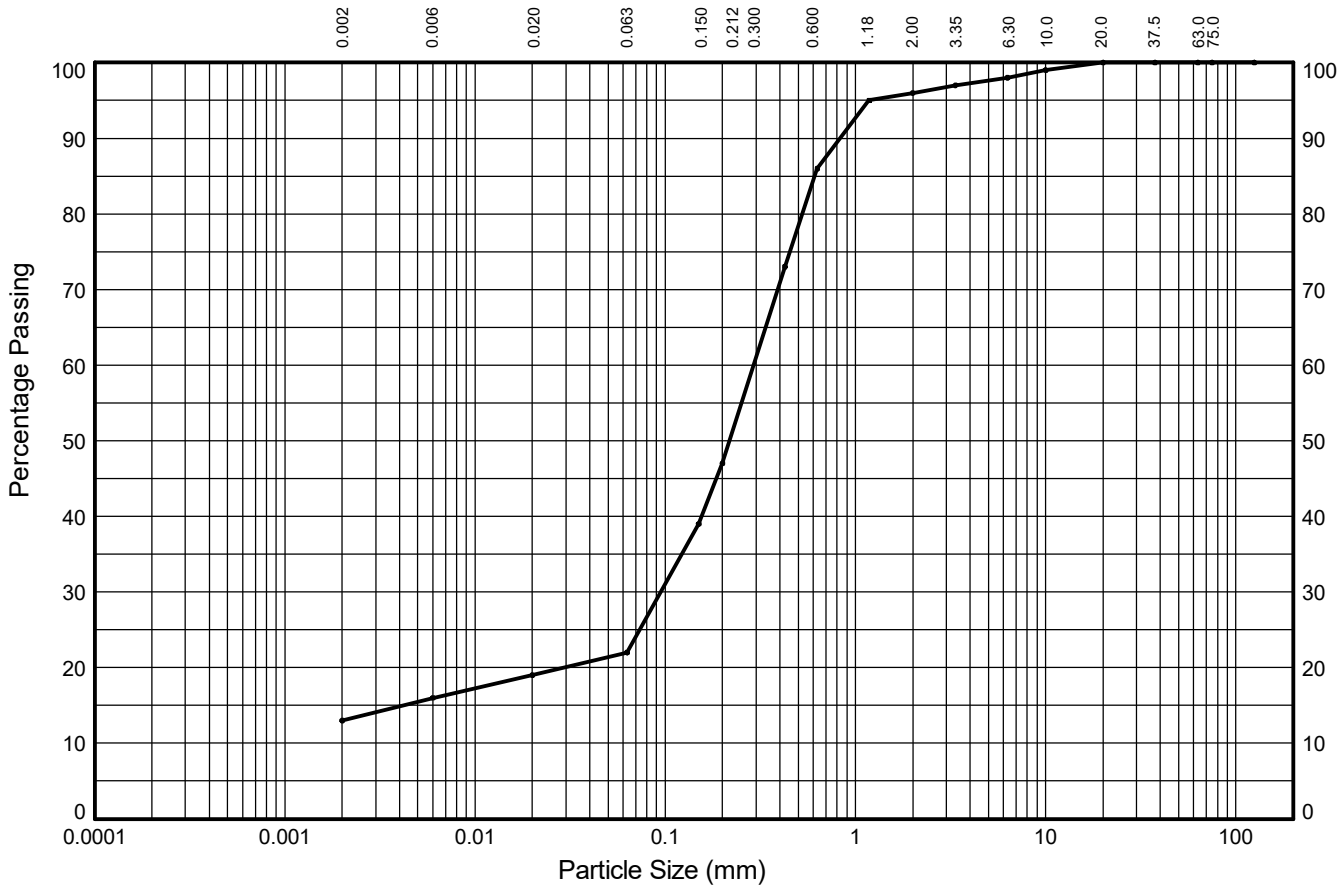
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS130** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	3%	3%	25%	39%	10%	2%	2%	0%	
	SILT			SAND			GRAVEL			
13%	9%			74%			4%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**99**
6.30	**98**
3.35	**97**
2.00	**96**
1.18	**95**
0.630	**86**
0.425	**73**
0.200	**47**
0.150	**39**
0.063	**22**

Particle Diameter (mm)	Percent Passing (%)
0.02	**19**
0.006	**16**
0.002	**13**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.004**
D_{30} (mm)	**0.095**
D_{50} (mm)	**0.218**
D_{60} (mm)	**0.292**
D_{85} (mm)	**0.611**
D_{90} (mm)	**0.833**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

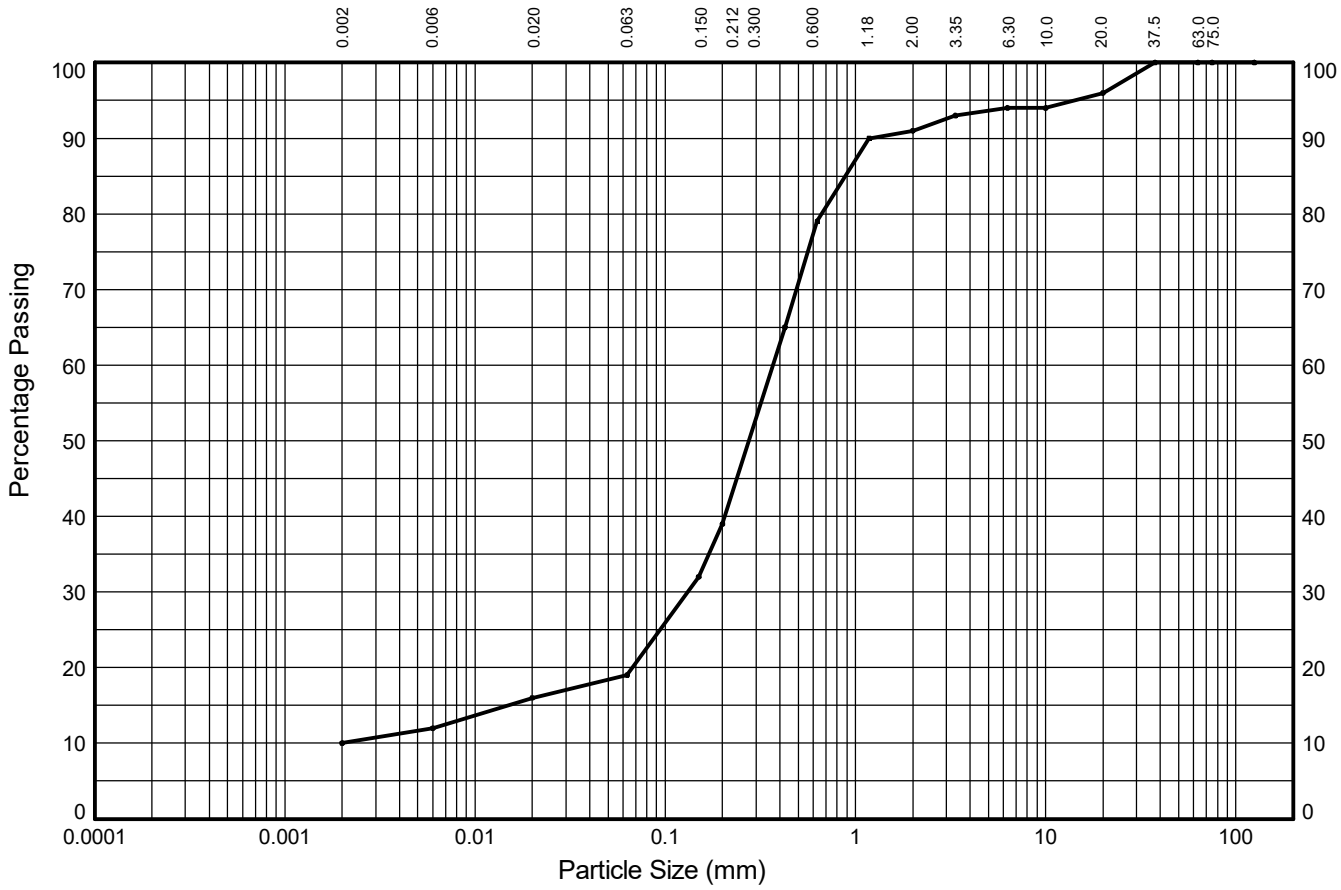
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	E. Hort	**ELIZABETH HORT**	**22/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/08/23 - 11:22 | FB1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS130** Sample Ref: **8** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	4%	3%	20%	40%	12%	3%	2%	4%	
	SILT			SAND			GRAVEL			
10%	9%			72%			9%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**96**
10.0	**94**
6.30	**94**
3.35	**93**
2.00	**91**
1.18	**90**
0.630	**79**
0.425	**65**
0.200	**39**
0.150	**32**
0.063	**19**

Particle Diameter (mm)	Percent Passing (%)
0.02	**16**
0.006	**12**
0.002	**10**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.002**
D_{15} (mm)	**0.015**
D_{30} (mm)	**0.131**
D_{50} (mm)	**0.275**
D_{60} (mm)	**0.368**
D_{85} (mm)	**0.887**
D_{90} (mm)	**1.180**
C_U	**184**
C_C	**23**

Soil Description:

Reddish brown gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
E. Hort	**ELIZABETH HORT**	**22/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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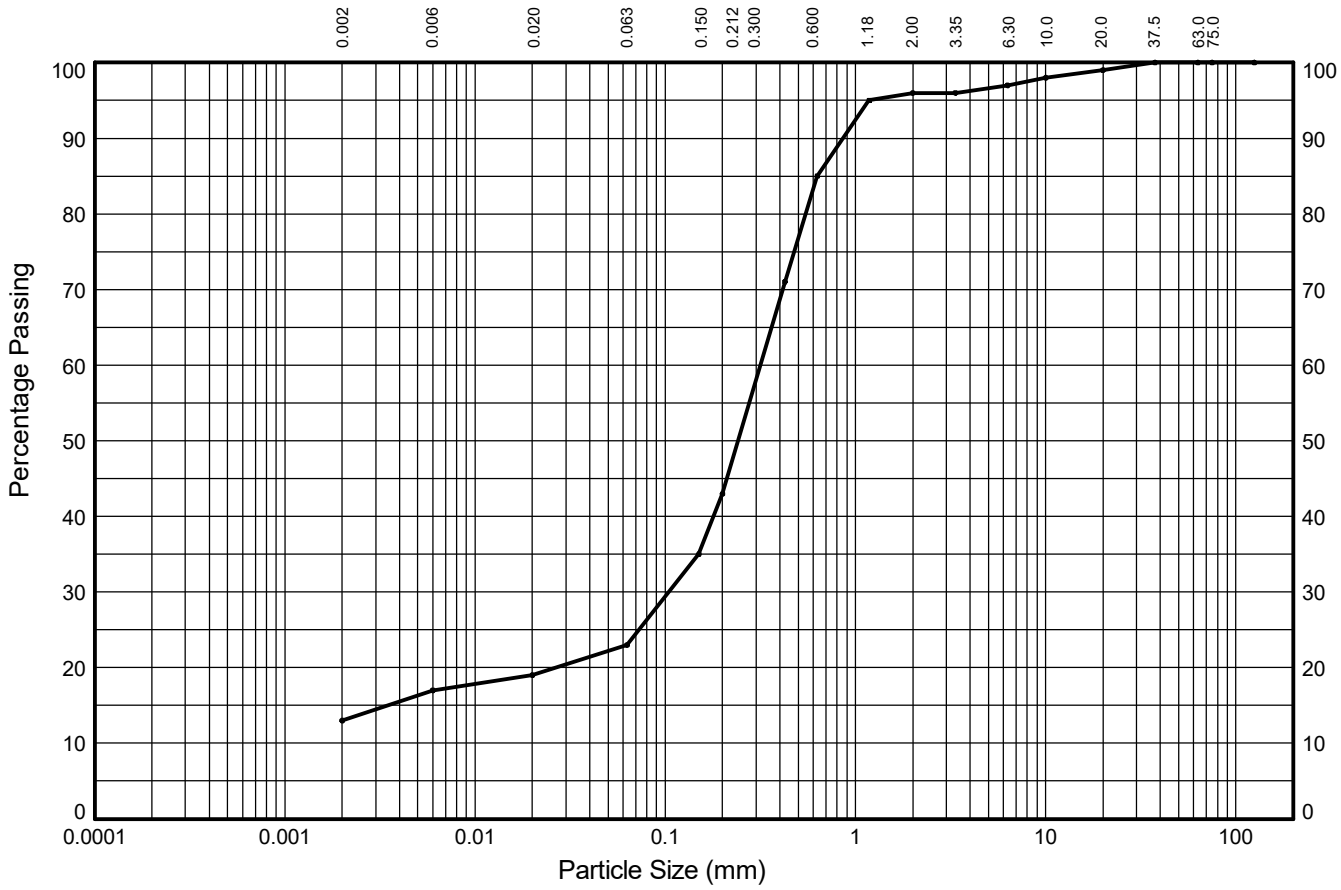
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS-PTS130** Sample Ref: **10** Sample Type: **B** Depth (m): **3.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	2%	4%	20%	42%	11%	1%	2%	1%	
	SILT			SAND			GRAVEL			
13%	10%			73%			4%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**99**
10.0	**98**
6.30	**97**
3.35	**96**
2.00	**96**
1.18	**95**
0.630	**85**
0.425	**71**
0.200	**43**
0.150	**35**
0.063	**23**

Particle Diameter (mm)	Percent Passing (%)
0.02	**19**
0.006	**17**
0.002	**13**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.003**
D_{30} (mm)	**0.104**
D_{50} (mm)	**0.241**
D_{60} (mm)	**0.316**
D_{85} (mm)	**0.630**
D_{90} (mm)	**0.862**
C_U	**NA**
C_C	**NA**

Soil Description:

Reddish brown slightly gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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MEASUREMENT OF RESISTIVITY
WENNER PROBE METHOD

Please use output template for open container method (L - RESISTIVITY OPEN CONTAINER - A4P)
Water Content reported to BS EN ISO 17892-1:2014
Bulk Density reported to BS EN ISO 17892-2:2014

Borehole: **BH-PTS114** Sample Ref: **27** Sample Type: **DSPT** Depth (m): **6.00**

Description: **Reddish brown SAND**

Sample Condition: **Recompacted** Number of Compacted Layers: Compaction Method:

Number of Probes: **4** Probe Material: **Stainless Steel** Probe Location in Sample: **Side**

Probe Diameter (mm): **8** Probe Length (mm): **200** Probe Depth (mm): **30**

Probe Spacing (mm): **68.9**

Length of Test Specimen (mm): **108.10**

Diameter of Test Specimen (mm):

Water Content (%): **17.2**

Bulk Density (Mg/m^3): **1.9**

Dry Density (Mg/m^3): **1.62**

Temperature at Time of Test (^oC): **22.9**

Electrical Resistivity at 20^oC (ohm.m): **78.35**

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	Contract **A66 NTP Scheme S03A**	Job No **765633**	

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MEASUREMENT OF RESISTIVITY
WENNER PROBE METHOD

Please use output template for open container method (L - RESISTIVITY OPEN CONTAINER - A4P)
Water Content reported to BS EN ISO 17892-1:2014
Bulk Density reported to BS EN ISO 17892-2:2014

Borehole: **BH-PTS116** Sample Ref: **19** Sample Type: **B** Depth (m): **3.00**

Description: **Brown sandy slightly silty GRAVEL**

Sample Condition: **Recompacted** Number of Compacted Layers: Compaction Method:

Number of Probes: **4** Probe Material: **Stainless Steel** Probe Location in Sample: **Side**

Probe Diameter (mm): **8** Probe Length (mm): **200** Probe Depth (mm): **30**

Probe Spacing (mm): **124.1**

Length of Test Specimen (mm): **219.20**

Diameter of Test Specimen (mm):

Water Content (%): **5.0**

Bulk Density (Mg/m^3): **1.82**

Dry Density (Mg/m^3): **1.73**

Temperature at Time of Test (^oC): **20.7**

Electrical Resistivity at 20^oC (ohm.m): **1145.82**

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	Contract **A66 NTP Scheme S03A**	Job No **765633**	

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MEASUREMENT OF RESISTIVITY
WENNER PROBE METHOD

Please use output template for open container method (L - RESISTIVITY OPEN CONTAINER - A4P)
Water Content reported to BS EN ISO 17892-1:2014
Bulk Density reported to BS EN ISO 17892-2:2014

Borehole: **BH-PTS118** Sample Ref: **4** Sample Type: **B** Depth (m): **0.90**

Description: **Reddish brown very gravelly silty SAND with medium cobble content**

Sample Condition: **Recompacted** Number of Compacted Layers: Compaction Method:

Number of Probes: **4** Probe Material: **Stainless Steel** Probe Location in Sample: **Side**

Probe Diameter (mm): **8** Probe Length (mm): **200** Probe Depth (mm): **30**

Probe Spacing (mm): **124.1**

Length of Test Specimen (mm): **219.20**

Diameter of Test Specimen (mm):

Water Content (%): **10.8**

Bulk Density (Mg/m^3): **2.14**

Dry Density (Mg/m^3): **1.93**

Temperature at Time of Test (^{o}C): **20.6**

Electrical Resistivity at 20°C (ohm.m): **276.28**

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MEASUREMENT OF RESISTIVITY
WENNER PROBE METHOD

Please use output template for open container method (L - RESISTIVITY OPEN CONTAINER - A4P)
Water Content reported to BS EN ISO 17892-1:2014
Bulk Density reported to BS EN ISO 17892-2:2014

Borehole: **BH-PTS119** Sample Ref: **3** Sample Type: **B** Depth (m): **0.20**

Description: **Brown gravelly clayey SAND**

Sample Condition: **Recompacted** Number of Compacted Layers: Compaction Method:

Number of Probes: **4** Probe Material: **Stainless Steel** Probe Location in Sample: **Side**

Probe Diameter (mm): **8** Probe Length (mm): **200** Probe Depth (mm): **30**

Probe Spacing (mm): **124.0**

Length of Test Specimen (mm): **219.20**

Diameter of Test Specimen (mm):

Water Content (%): **10.7**

Bulk Density (Mg/m^3): **1.83**

Dry Density (Mg/m^3): **1.65**

Temperature at Time of Test (^oC): **20.8**

Electrical Resistivity at 20^oC (ohm.m): **398.59**

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MEASUREMENT OF RESISTIVITY
WENNER PROBE METHOD

Please use output template for open container method (L - RESISTIVITY OPEN CONTAINER - A4P)
Water Content reported to BS EN ISO 17892-1:2014
Bulk Density reported to BS EN ISO 17892-2:2014

Borehole: **BH-PTS120A** Sample Ref: **11** Sample Type: **B** Depth (m): **4.00**

Description: **Reddish brown sandy GRAVEL with medium cobble content**

Sample Condition: **Recompacted** Number of Compacted Layers: Compaction Method:

Number of Probes: **4** Probe Material: **Stainless Steel** Probe Location in Sample: **Side**

Probe Diameter (mm): **8** Probe Length (mm): **200** Probe Depth (mm): **30**

Probe Spacing (mm): **40.0**

Length of Test Specimen (mm): **219.20**

Diameter of Test Specimen (mm):

Water Content (%): **9.3**

Bulk Density (Mg/m^3): **2.17**

Dry Density (Mg/m^3): **1.99**

Temperature at Time of Test (^{o}C): **20.7**

Electrical Resistivity at 20°C (ohm.m): **610.31**

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MEASUREMENT OF RESISTIVITY
WENNER PROBE METHOD

Please use output template for open container method (L - RESISTIVITY OPEN CONTAINER - A4P)
Water Content reported to BS EN ISO 17892-1:2014
Bulk Density reported to BS EN ISO 17892-2:2014

Borehole: **BH-PTS121A** Sample Ref: **2** Sample Type: **B** Depth (m): **2.00**

Description: **Brown sandy GRAVEL with high cobble content**

Sample Condition: **Recompacted** Number of Compacted Layers: Compaction Method:

Number of Probes: **4** Probe Material: **Stainless Steel** Probe Location in Sample: **Side**

Probe Diameter (mm): **8** Probe Length (mm): **200** Probe Depth (mm): **30**

Probe Spacing (mm): **124.0**

Length of Test Specimen (mm): **219.20**

Diameter of Test Specimen (mm):

Water Content (%): **4.5**

Bulk Density (Mg/m^3): **1.73**

Dry Density (Mg/m^3): **1.65**

Temperature at Time of Test (^oC): **22.3**

Electrical Resistivity at 20^oC (ohm.m): **1287.62**

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MEASUREMENT OF RESISTIVITY
WENNER PROBE METHOD

Please use output template for open container method (L - RESISTIVITY OPEN CONTAINER - A4P)
Water Content reported to BS EN ISO 17892-1:2014
Bulk Density reported to BS EN ISO 17892-2:2014

Borehole: **BH-PTS124** Sample Ref: **14** Sample Type: **B** Depth (m): **2.80**

Description: **Reddish brown very gravelly clayey SAND**

Sample Condition: **Recompacted** Number of Compacted Layers: Compaction Method:

Number of Probes: **4** Probe Material: **Stainless Steel** Probe Location in Sample: **Side**

Probe Diameter (mm): **8** Probe Length (mm): **200** Probe Depth (mm): **30**

Probe Spacing (mm): **124.0**

Length of Test Specimen (mm): **219.20**

Diameter of Test Specimen (mm):

Water Content (%): **12.6**

Bulk Density (Mg/m^3): **2.2**

Dry Density (Mg/m^3): **1.95**

Temperature at Time of Test (^oC): **21.2**

Electrical Resistivity at 20^oC (ohm.m): **120.93**

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		DAISY RICHARDS	**31/08/23**
	Contract **A66 NTP Scheme S03A**	Job No **765633**	

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MEASUREMENT OF RESISTIVITY
WENNER PROBE METHOD

Please use output template for open container method (L - RESISTIVITY OPEN CONTAINER - A4P)
Water Content reported to BS EN ISO 17892-1:2014
Bulk Density reported to BS EN ISO 17892-2:2014

Borehole: **BH-PTS127** Sample Ref: **5** Sample Type: **B** Depth (m): **1.00**

Description: **Reddish brown slightly gravelly very clayey SAND**

Sample Condition: **Recompacted** Number of Compacted Layers: Compaction Method:

Number of Probes: **4** Probe Material: **Stainless Steel** Probe Location in Sample: **Side**

Probe Diameter (mm): **8** Probe Length (mm): **200** Probe Depth (mm): **30**

Probe Spacing (mm): **124.0**

Length of Test Specimen (mm): **219.20**

Diameter of Test Specimen (mm):

Water Content (%): **13.5**

Bulk Density (Mg/m^3): **2.07**

Dry Density (Mg/m^3): **1.82**

Temperature at Time of Test (^oC): **20.2**

Electrical Resistivity at 20^oC (ohm.m): **106.51**

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	Contract **A66 NTP Scheme S03A**	Job No **765633**	

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MEASUREMENT OF RESISTIVITY
WENNER PROBE METHOD

Please use output template for open container method (L - RESISTIVITY OPEN CONTAINER - A4P)
Water Content reported to BS EN ISO 17892-1:2014
Bulk Density reported to BS EN ISO 17892-2:2014

Position ID: **GS-PTS102** Sample Ref: **7** Sample Type: **B** Depth (m): **2.00**

Description: **Reddish brown very gravelly very clayey SAND**

Sample Condition: **Recompacted** Number of Compacted Layers: Compaction Method:

Number of Probes: **4** Probe Material: **Stainless Steel** Probe Location in Sample: **Side**

Probe Diameter (mm): **8** Probe Length (mm): **200** Probe Depth (mm): **30**

Probe Spacing (mm): **124.0**

Length of Test Specimen (mm): **219.20**

Diameter of Test Specimen (mm):

Water Content (%): **11.2**

Bulk Density (Mg/m^3): **2.13**

Dry Density (Mg/m^3): **1.92**

Temperature at Time of Test (^oC): **23.1**

Electrical Resistivity at 20^oC (ohm.m): **74.08**

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MEASUREMENT OF RESISTIVITY
WENNER PROBE METHOD

Please use output template for open container method (L - RESISTIVITY OPEN CONTAINER - A4P)
Water Content reported to BS EN ISO 17892-1:2014
Bulk Density reported to BS EN ISO 17892-2:2014

Position ID: **GS-PTS102** Sample Ref: **13** Sample Type: **B** Depth (m): **4.00**

Description: **Reddish brown very gravelly very clayey SAND**

Sample Condition: **Recompacted** Number of Compacted Layers: Compaction Method:

Number of Probes: **4** Probe Material: **Stainless Steel** Probe Location in Sample: **Side**

Probe Diameter (mm): **8** Probe Length (mm): **200** Probe Depth (mm): **30**

Probe Spacing (mm): **124.1**

Length of Test Specimen (mm): **219.20**

Diameter of Test Specimen (mm):

Water Content (%): **8.1**

Bulk Density (Mg/m^3): **1.89**

Dry Density (Mg/m^3): **1.75**

Temperature at Time of Test (^oC): **21.9**

Electrical Resistivity at 20^oC (ohm.m): **95.74**

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
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	Contract **A66 NTP Scheme S03A**	Job No **765633**	

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MEASUREMENT OF RESISTIVITY
WENNER PROBE METHOD

Please use output template for open container method (L - RESISTIVITY OPEN CONTAINER - A4P)
Water Content reported to BS EN ISO 17892-1:2014
Bulk Density reported to BS EN ISO 17892-2:2014

Trial Pit: **TP-PTS206** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**

Description: **Orangish brown gravelly SAND**

Sample Condition: **Recompacted** Number of Compacted Layers: Compaction Method:

Number of Probes: **4** Probe Material: **Stainless Steel** Probe Location in Sample: **Side**

Probe Diameter (mm): **8** Probe Length (mm): **200** Probe Depth (mm): **30**

Probe Spacing (mm): **124.1**

Length of Test Specimen (mm): **219.20**

Diameter of Test Specimen (mm):

Water Content (%): **4.9**

Bulk Density (Mg/m^3): **1.74**

Dry Density (Mg/m^3): **1.66**

Temperature at Time of Test (^{o}C): **23.7**

Electrical Resistivity at 20°C (ohm.m): **1192.14**

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	Contract **A66 NTP Scheme S03A**	Job No **765633**	

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MEASUREMENT OF RESISTIVITY
WENNER PROBE METHOD

Please use output template for open container method (L - RESISTIVITY OPEN CONTAINER - A4P)
Water Content reported to BS EN ISO 17892-1:2014
Bulk Density reported to BS EN ISO 17892-2:2014

Trial Pit: **TP-PTS210** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**

Description: **Dark brown very sandy clayey GRAVEL**

Sample Condition: **Recompacted** Number of Compacted Layers: Compaction Method:

Number of Probes: **4** Probe Material: **Stainless Steel** Probe Location in Sample: **Side**

Probe Diameter (mm): **8** Probe Length (mm): **200** Probe Depth (mm): **30**

Probe Spacing (mm): **124.1**

Length of Test Specimen (mm): **219.20**

Diameter of Test Specimen (mm):

Water Content (%): **18.3**

Bulk Density (Mg/m^3): **1.88**

Dry Density (Mg/m^3): **1.59**

Temperature at Time of Test (^oC): **22.7**

Electrical Resistivity at 20^oC (ohm.m): **148.61**

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	Daria Ignaczak	**DARIA IGNACZAK**	**31/08/23**
	Contract **A66 NTP Scheme S03A**	Job No **765633**	

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MEASUREMENT OF RESISTIVITY
WENNER PROBE METHOD

Please use output template for open container method (L - RESISTIVITY OPEN CONTAINER - A4P)
Water Content reported to BS EN ISO 17892-1:2014
Bulk Density reported to BS EN ISO 17892-2:2014

Trial Pit: **TP-PTS211** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**

Description: **Brown sandy silty GRAVEL**

Sample Condition: **Recompacted** Number of Compacted Layers: Compaction Method:

Number of Probes: **4** Probe Material: **Stainless Steel** Probe Location in Sample: **Side**

Probe Diameter (mm): **8** Probe Length (mm): **200** Probe Depth (mm): **30**

Probe Spacing (mm): **124.0**

Length of Test Specimen (mm): **219.20**

Diameter of Test Specimen (mm):

Water Content (%): **16.5**

Bulk Density (Mg/m^3): **1.9**

Dry Density (Mg/m^3): **1.63**

Temperature at Time of Test (^oC): **21.2**

Electrical Resistivity at 20^oC (ohm.m): **172.17**

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MEASUREMENT OF RESISTIVITY
WENNER PROBE METHOD

Please use output template for open container method (L - RESISTIVITY OPEN CONTAINER - A4P)
Water Content reported to BS EN ISO 17892-1:2014
Bulk Density reported to BS EN ISO 17892-2:2014

Trial Pit: **TP-PTS215** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**

Description: **Brown very gravelly silty SAND**

Sample Condition: **Recompacted** Number of Compacted Layers: Compaction Method:

Number of Probes: **4** Probe Material: **Stainless Steel** Probe Location in Sample: **Side**

Probe Diameter (mm): **8** Probe Length (mm): **200** Probe Depth (mm): **30**

Probe Spacing (mm): **124.1**

Length of Test Specimen (mm): **219.20**

Diameter of Test Specimen (mm):

Water Content (%): **14.7**

Bulk Density (Mg/m^3): **2.01**

Dry Density (Mg/m^3): **1.75**

Temperature at Time of Test (^oC): **20.9**

Electrical Resistivity at 20^oC (ohm.m): **163.90**

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MEASUREMENT OF RESISTIVITY
WENNER PROBE METHOD

Please use output template for open container method (L - RESISTIVITY OPEN CONTAINER - A4P)
Water Content reported to BS EN ISO 17892-1:2014
Bulk Density reported to BS EN ISO 17892-2:2014

Trial Pit: **TP-PTS217** Sample Ref: **9** Sample Type: **B** Depth (m): **2.50**

Description: **Brown very sandy GRAVEL**

Sample Condition: **Recompacted** Number of Compacted Layers: Compaction Method:

Number of Probes: **4** Probe Material: **Stainless Steel** Probe Location in Sample: **Side**

Probe Diameter (mm): **8** Probe Length (mm): **200** Probe Depth (mm): **30**

Probe Spacing (mm): **68.9**

Length of Test Specimen (mm): **108.10**

Diameter of Test Specimen (mm):

Water Content (%): **6.3**

Bulk Density (Mg/m^3): **1.88**

Dry Density (Mg/m^3): **1.77**

Temperature at Time of Test (^oC): **23.1**

Electrical Resistivity at 20^oC (ohm.m): **603.92**

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MEASUREMENT OF RESISTIVITY
WENNER PROBE METHOD

Please use output template for open container method (L - RESISTIVITY OPEN CONTAINER - A4P)
Water Content reported to BS EN ISO 17892-1:2014
Bulk Density reported to BS EN ISO 17892-2:2014

Window Sample: **WS-PTS113** Sample Ref: **5** Sample Type: **B** Depth (m): **1.00**

Description: **Reddish brown gravelly silty SAND**

Sample Condition: **Recompacted** Number of Compacted Layers: Compaction Method:

Number of Probes: **4** Probe Material: **Stainless Steel** Probe Location in Sample: **Side**

Probe Diameter (mm): **8** Probe Length (mm): **200** Probe Depth (mm): **30**

Probe Spacing (mm): **124.0**

Length of Test Specimen (mm): **219.20**

Diameter of Test Specimen (mm):

Water Content (%): **8.0**

Bulk Density (Mg/m^3): **1.72**

Dry Density (Mg/m^3): **1.59**

Temperature at Time of Test (^oC): **21.0**

Electrical Resistivity at 20^oC (ohm.m): **735.67**

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	Contract **A66 NTP Scheme S03A**	Job No **765633**	

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MEASUREMENT OF RESISTIVITY
WENNER PROBE METHOD

Please use output template for open container method (L - RESISTIVITY OPEN CONTAINER - A4P)
Water Content reported to BS EN ISO 17892-1:2014
Bulk Density reported to BS EN ISO 17892-2:2014

Window Sample: **WS-PTS117** Sample Ref: **202** Sample Type: **D** Depth (m): **0.50**

Description: **Brown gravelly very silty SAND with low cobble content**

Sample Condition: **Recompacted** Number of Compacted Layers: Compaction Method:

Number of Probes: **4** Probe Material: **Stainless Steel** Probe Location in Sample: **Side**

Probe Diameter (mm): **8** Probe Length (mm): **200** Probe Depth (mm): **30**

Probe Spacing (mm): **124.0**

Length of Test Specimen (mm): **219.20**

Diameter of Test Specimen (mm):

Water Content (%): **18.3**

Bulk Density (Mg/m^3): **1.99**

Dry Density (Mg/m^3): **1.68**

Temperature at Time of Test (^oC): **20.7**

Electrical Resistivity at 20^oC (ohm.m): **75.10**

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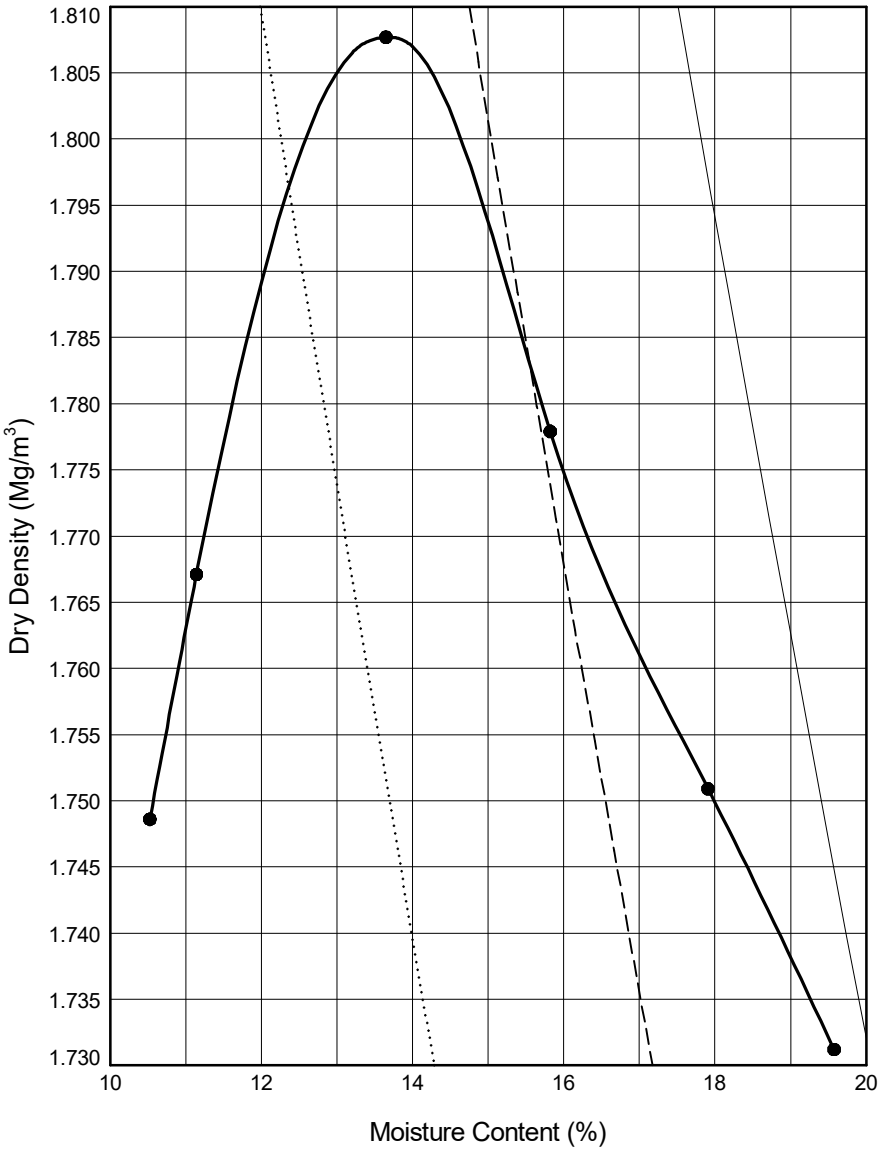
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Borehole: **BH-PTS100** Sample Ref: **7** Sample Type: **B** Depth (m): **0.70**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **20**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.81**
% Retained on 37.5mm BS Sieve	: **21**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **13.6**
% Retained on 20.0mm BS Sieve	: **12**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Dark grey silty sandy GRAVEL	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**30/08/23**
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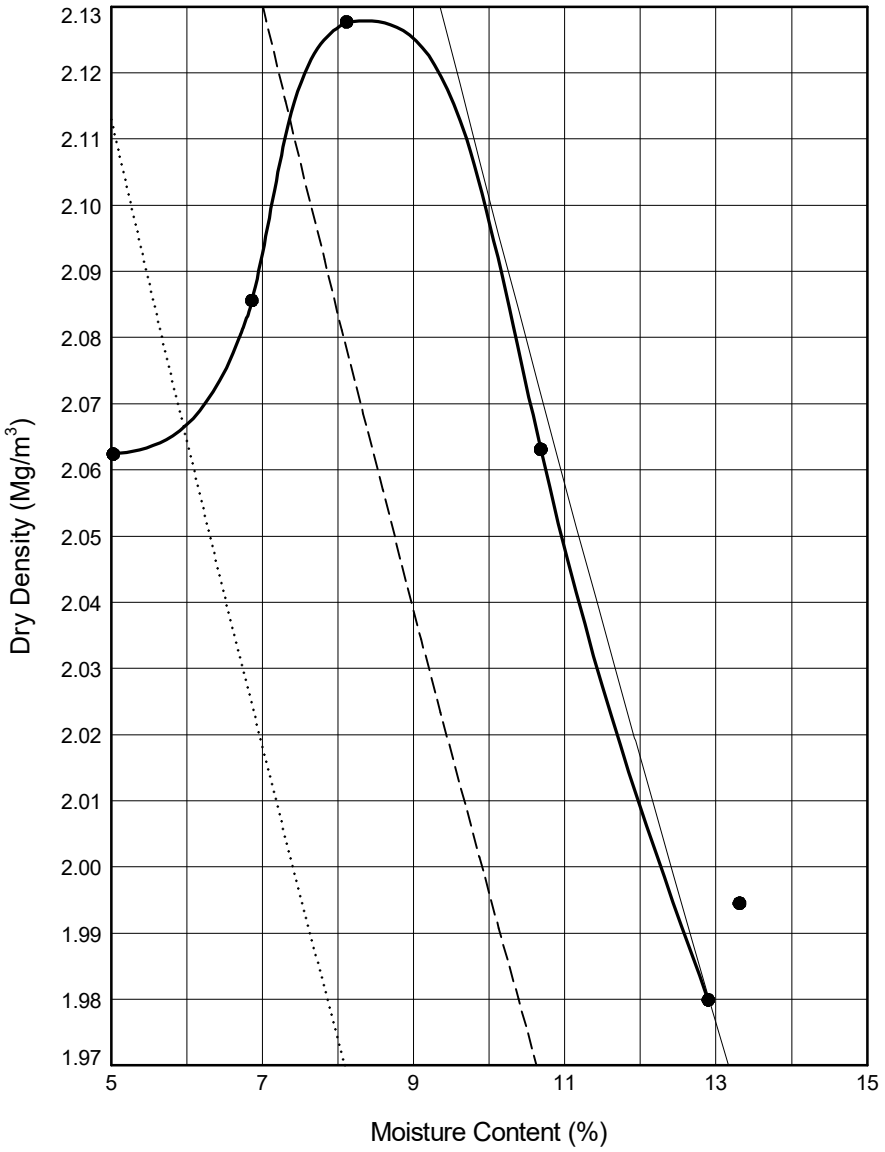
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS100** Sample Ref: **11** Sample Type: **B** Depth (m): **1.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **13**	Compaction Type	: **Heavy**	Maximum Dry Density (Mg/m^3)	: **2.13**
% Retained on 37.5mm BS Sieve	: **2**	Mass of Rammer (kg):	**4.5**	Optimum Moisture Content (%)	: **8.5**
% Retained on 20.0mm BS Sieve	: **10**	Type of Mould	: **CBR**	Method Used:	**Clause 3.6**
Particle Density - assumed (Mg/m^3)	: **2.66**			Remarks:	
Size of Soil Pieces	: **<37.5**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Dark brown very sandy clayey GRAVEL	——— 0%	– – – - 5%	····· 10%

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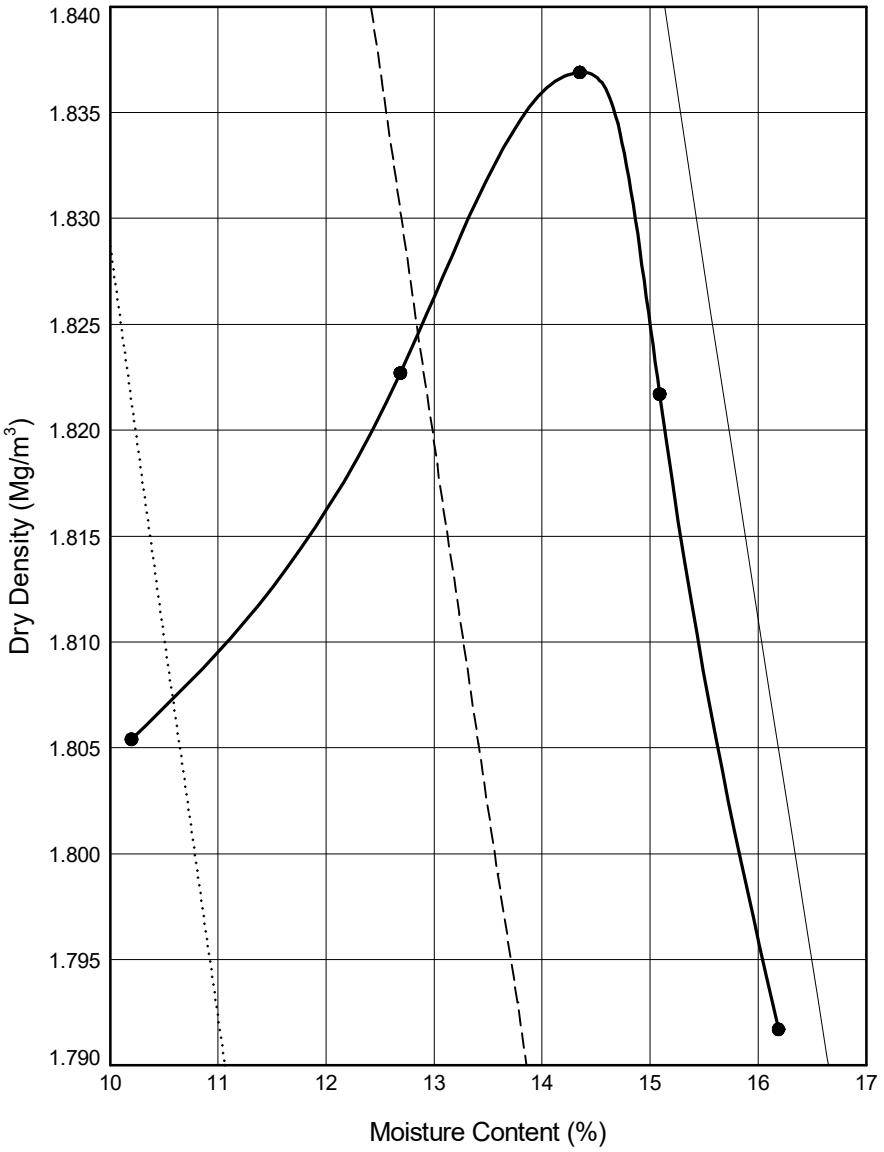
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Borehole: **BH-PTS101** Sample Ref: **9** Sample Type: **B** Depth (m): **0.90**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **15**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.84**
% Retained on 37.5mm BS Sieve	: **11**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **14**
% Retained on 20.0mm BS Sieve	: **16**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m^3)	: **2.55**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Dark brown gravelly clayey SILT	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
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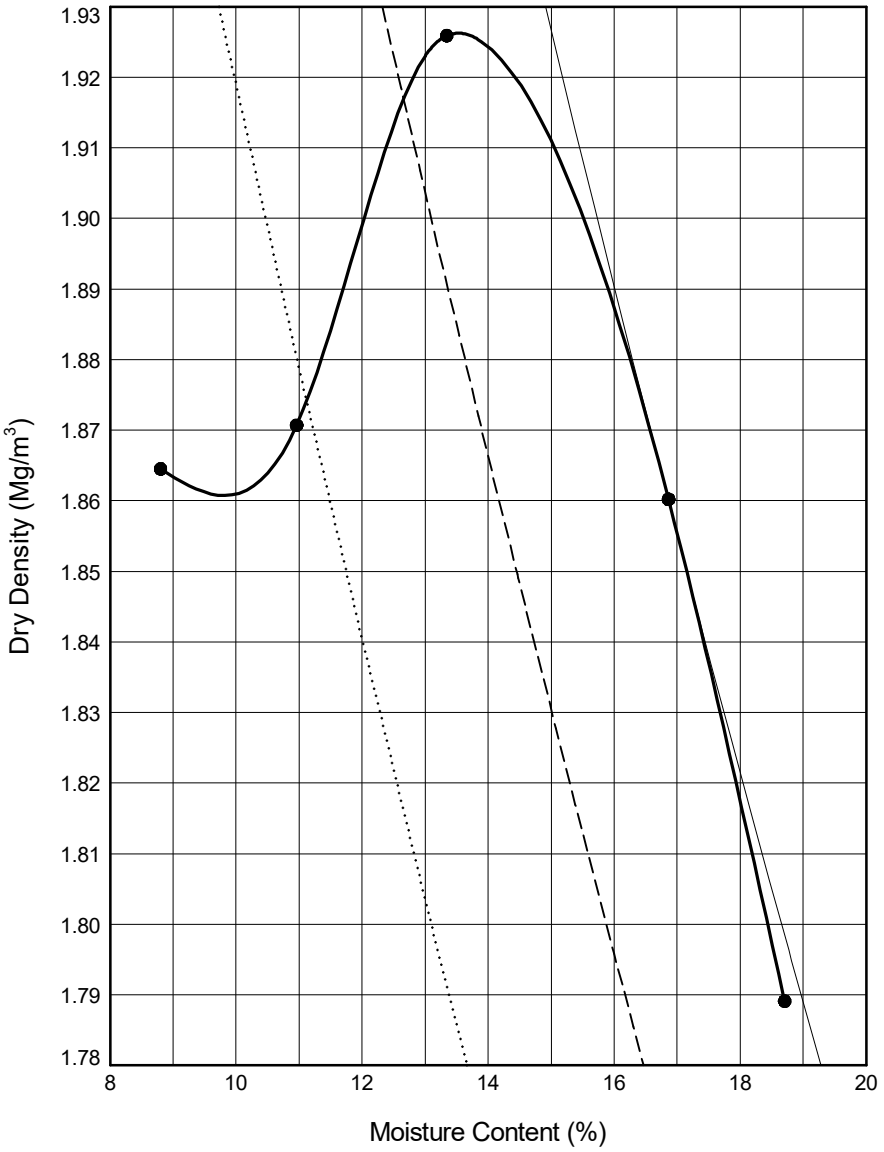
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS102A** Sample Ref: **7** Sample Type: **B** Depth (m): **2.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **25**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **1.93**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **13.5**
% Retained on 20.0mm BS Sieve	: **4**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.71**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown slightly gravelly slightly silty CLAY	——— 0%	– – – - 5%	····· 10%

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Contract	Contract Ref:
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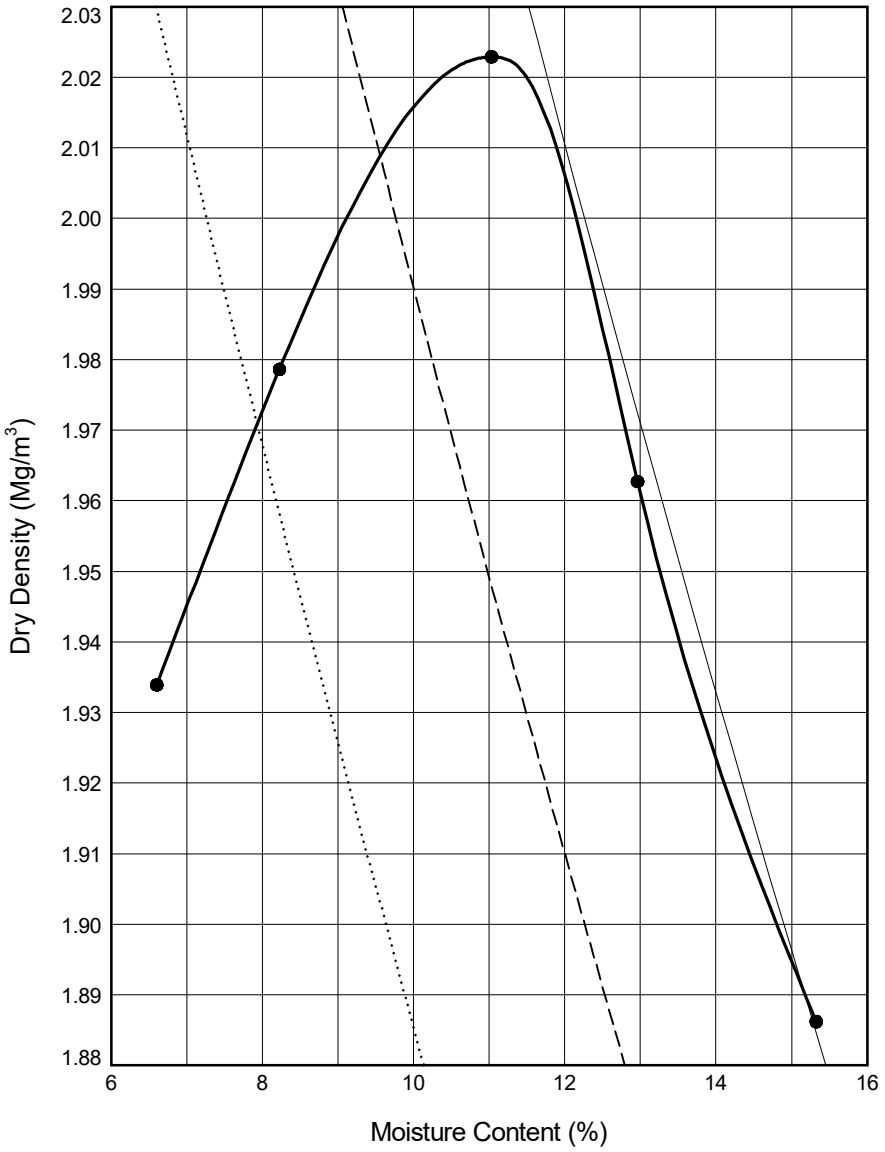
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS106** Sample Ref: **8** Sample Type: **B** Depth (m): **1.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **13**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.02**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **11**
% Retained on 20.0mm BS Sieve	: **1**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Red slightly gravelly silty CLAY	——— 0%	– – – - 5%	····· 10%

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Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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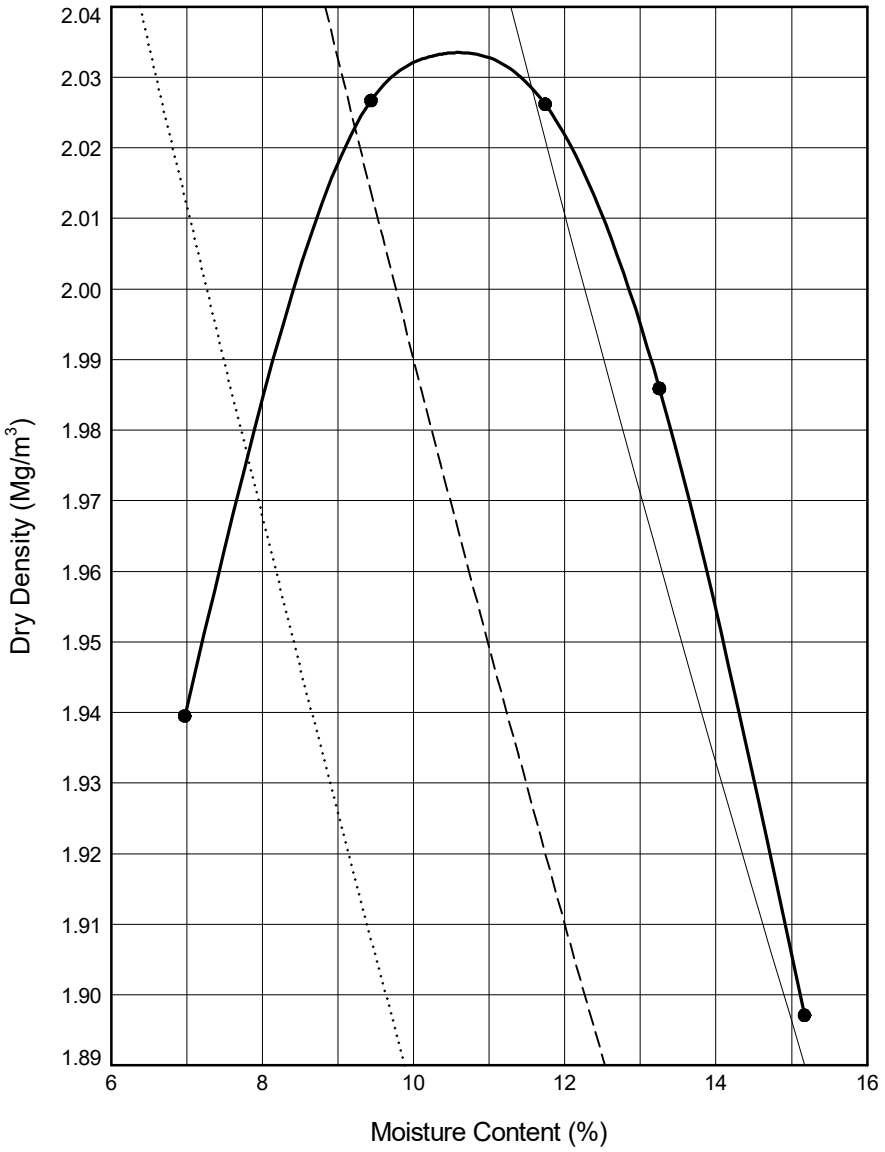
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS107B** Sample Ref: **12** Sample Type: **B** Depth (m): **2.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **15**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.03**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10.5**
% Retained on 20.0mm BS Sieve	: **4**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown clayey SILT	——— 0%	– – – - 5%	····· 10%

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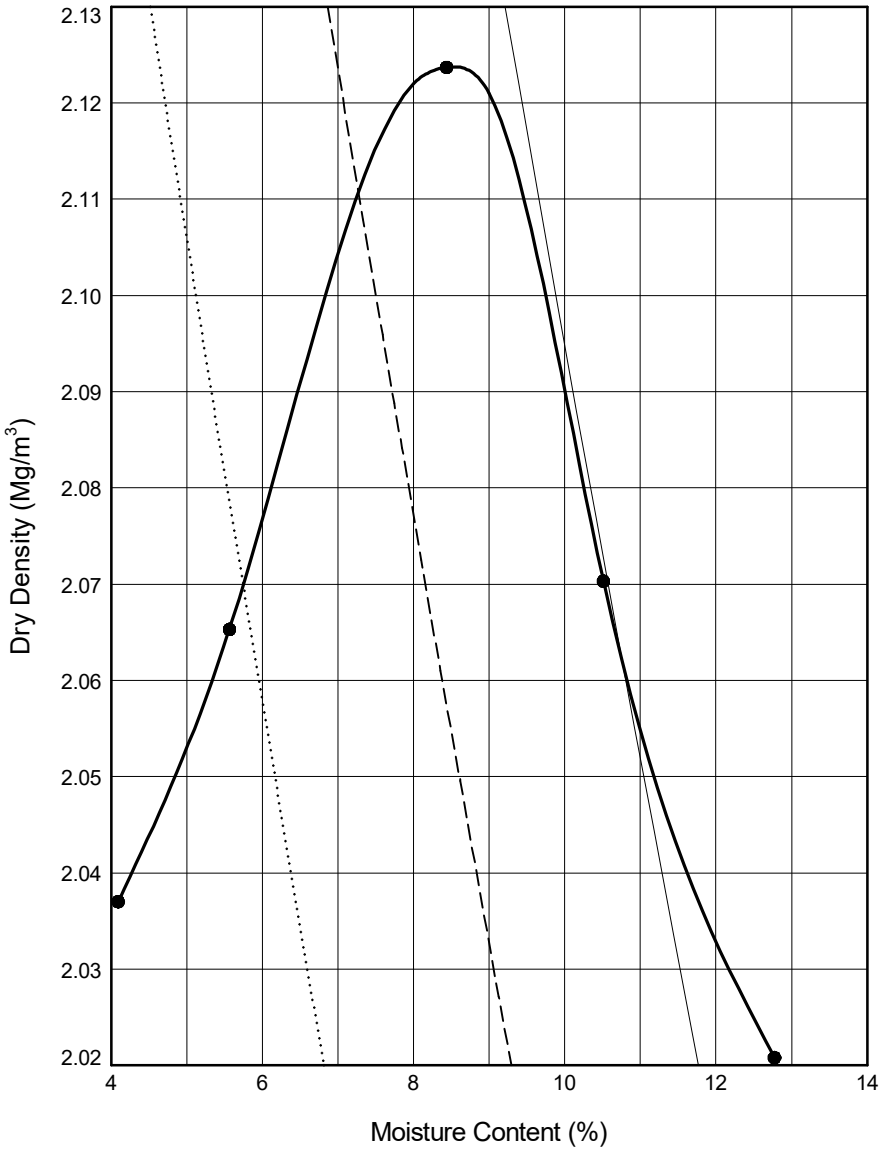
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Borehole: **BH-PTS108** Sample Ref: **11** Sample Type: **B** Depth (m): **2.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **4.1**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.12**
% Retained on 37.5mm BS Sieve	: **46**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **8.4**
% Retained on 20.0mm BS Sieve	: **11**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Red slightly gravelly SAND	——— 0%	– – – - 5%	····· 10%

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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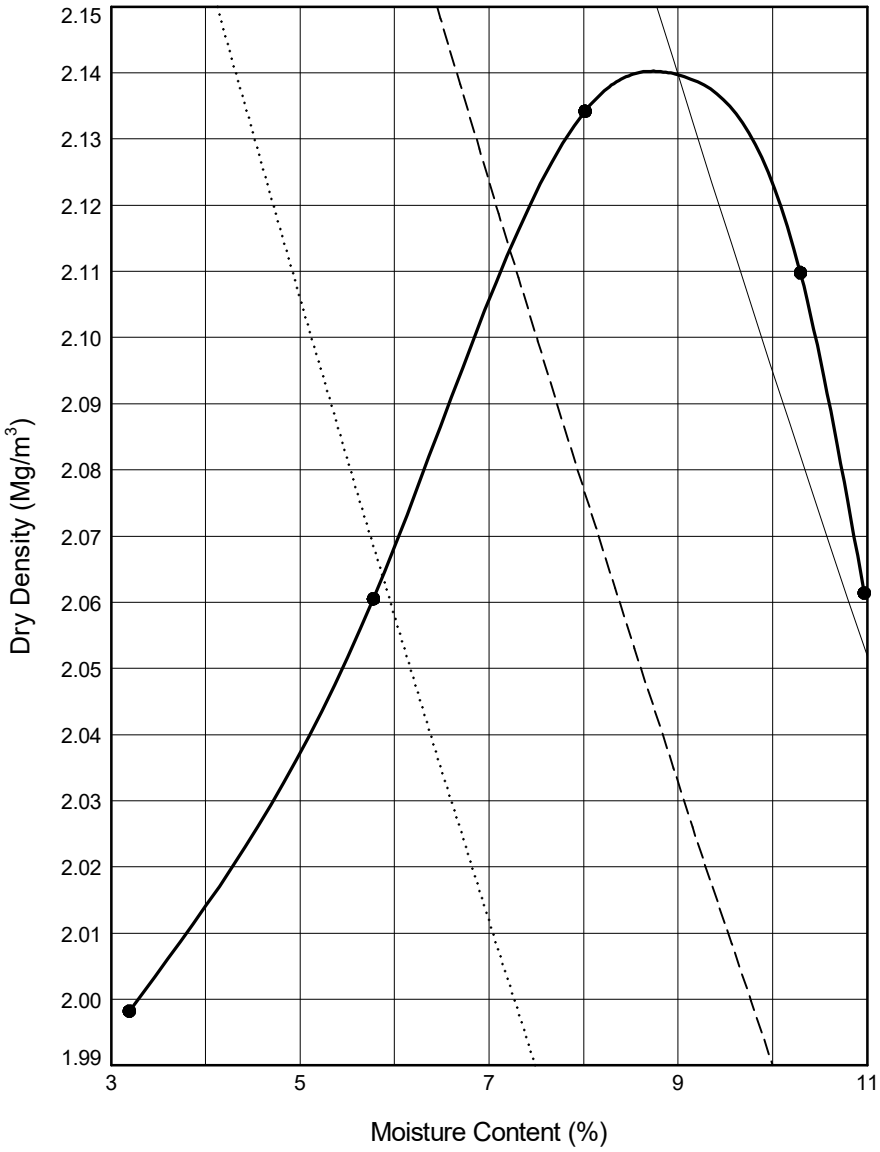
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS108** Sample Ref: **23** Sample Type: **B** Depth (m): **5.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **10.0**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.14**
% Retained on 37.5mm BS Sieve	: **6**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **8.7**
% Retained on 20.0mm BS Sieve	: **13**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown slightly gravelly CLAY	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**

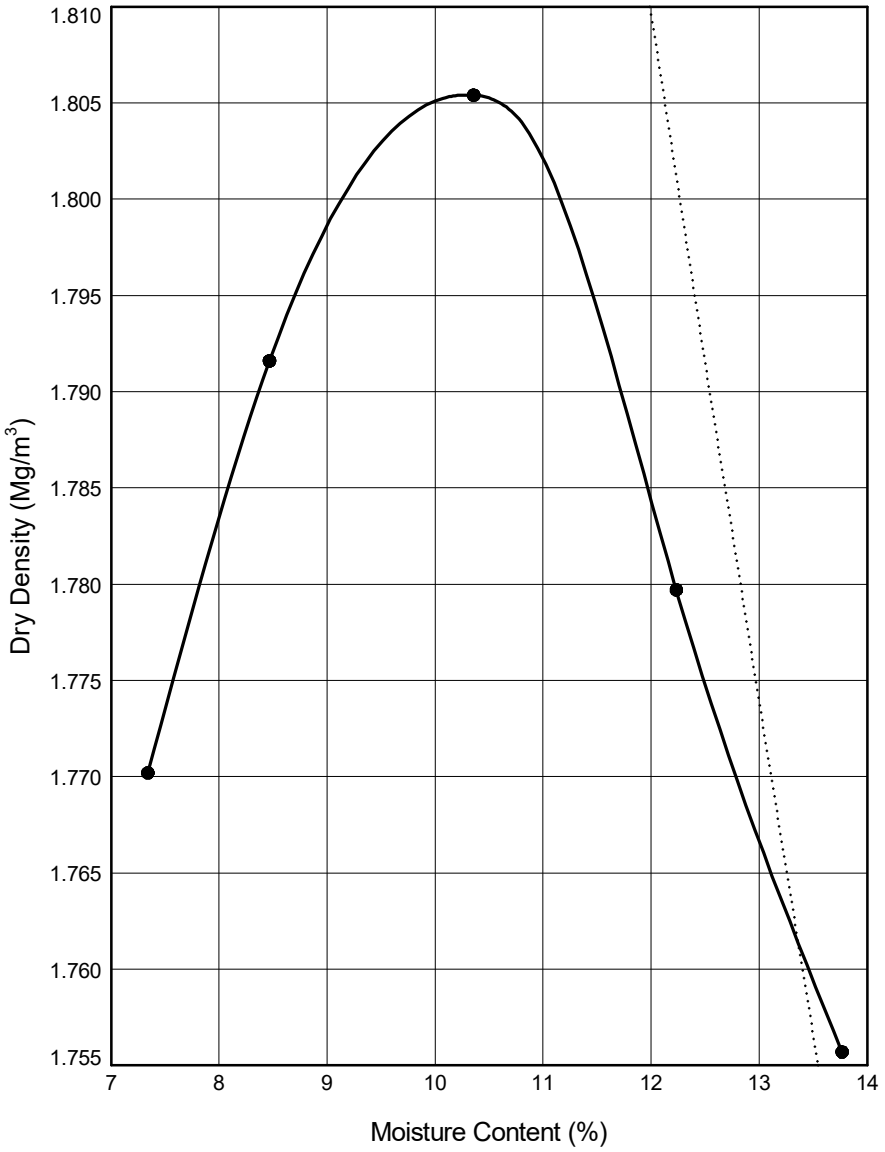
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/08/23 - 10:23 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS111** Sample Ref: **16** Sample Type: **B** Depth (m): **3.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.81**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10.4**
% Retained on 20.0mm BS Sieve	: **0**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Reddish brown SAND	——— 0%	– – – - 5%	····· 10%

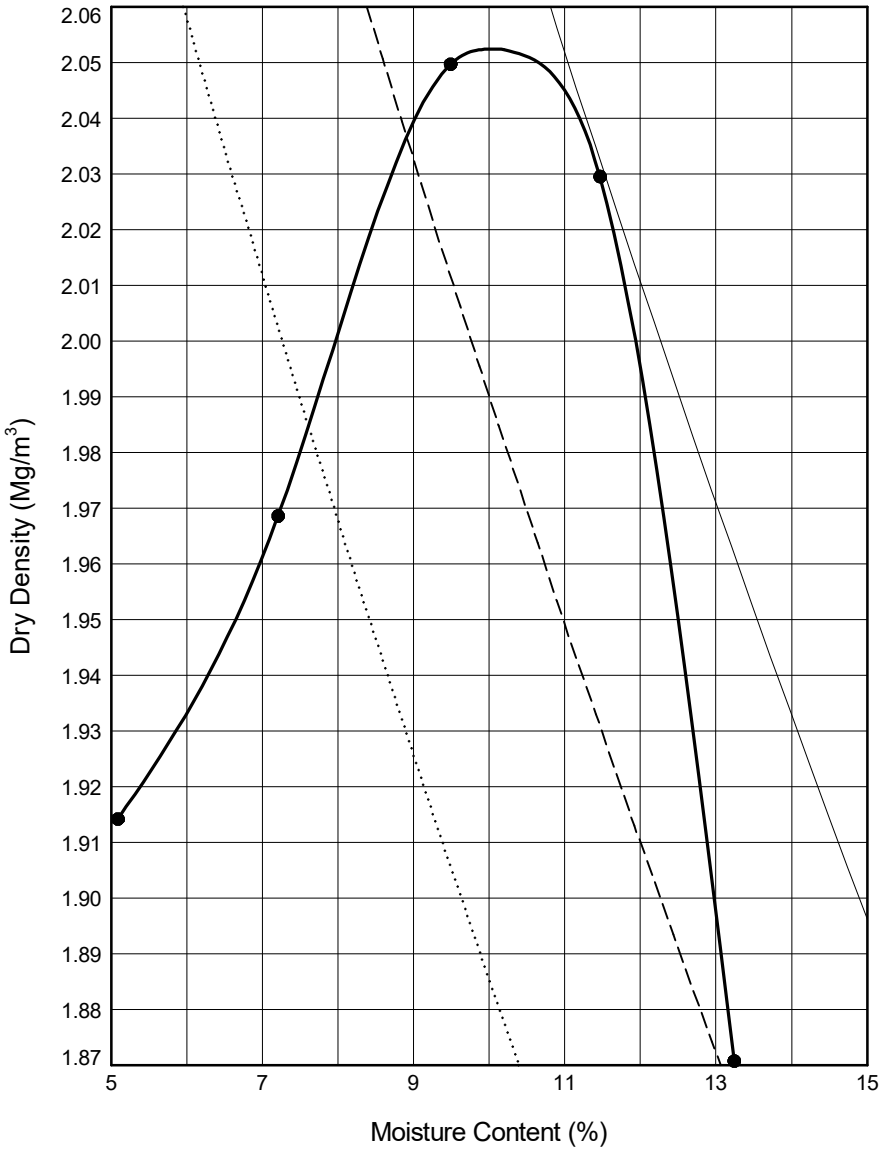
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/08/23 - 10:23 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Borehole: **BH-PTS112** Sample Ref: **9** Sample Type: **B** Depth (m): **1.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **11**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.05**
% Retained on 37.5mm BS Sieve	: **22**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10**
% Retained on 20.0mm BS Sieve	: **18**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	**Sample combined with 12B @ 2.50m**
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Brown very gravelly silty SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By	Date
DAISY RICHARDS	**19/08/23**

Contract: **A66 NTP Scheme S03A**

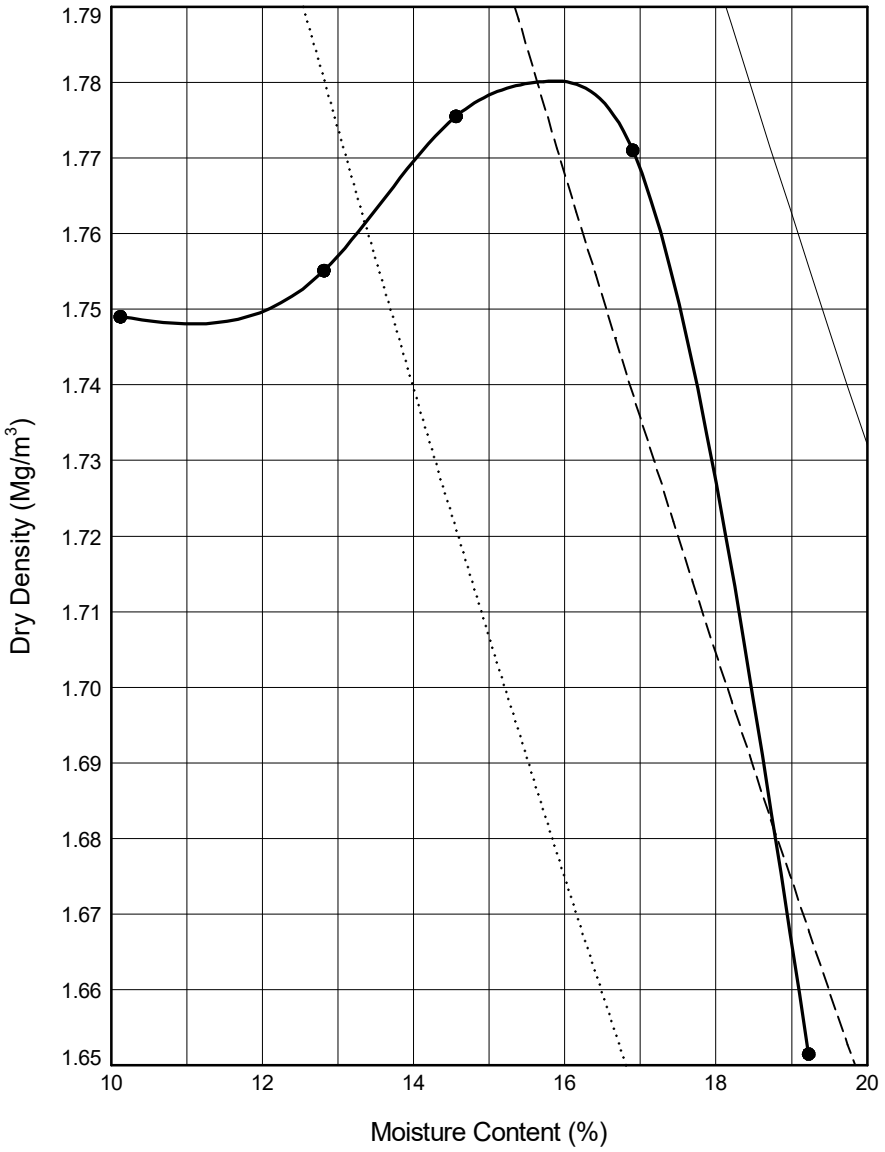
Contract Ref: **765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/08/23 - 10:24 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS112** Sample Ref: **24** Sample Type: **B** Depth (m): **5.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **16**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.78**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **16**
% Retained on 20.0mm BS Sieve	: **0**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Reddish brown gravelly slightly silty SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

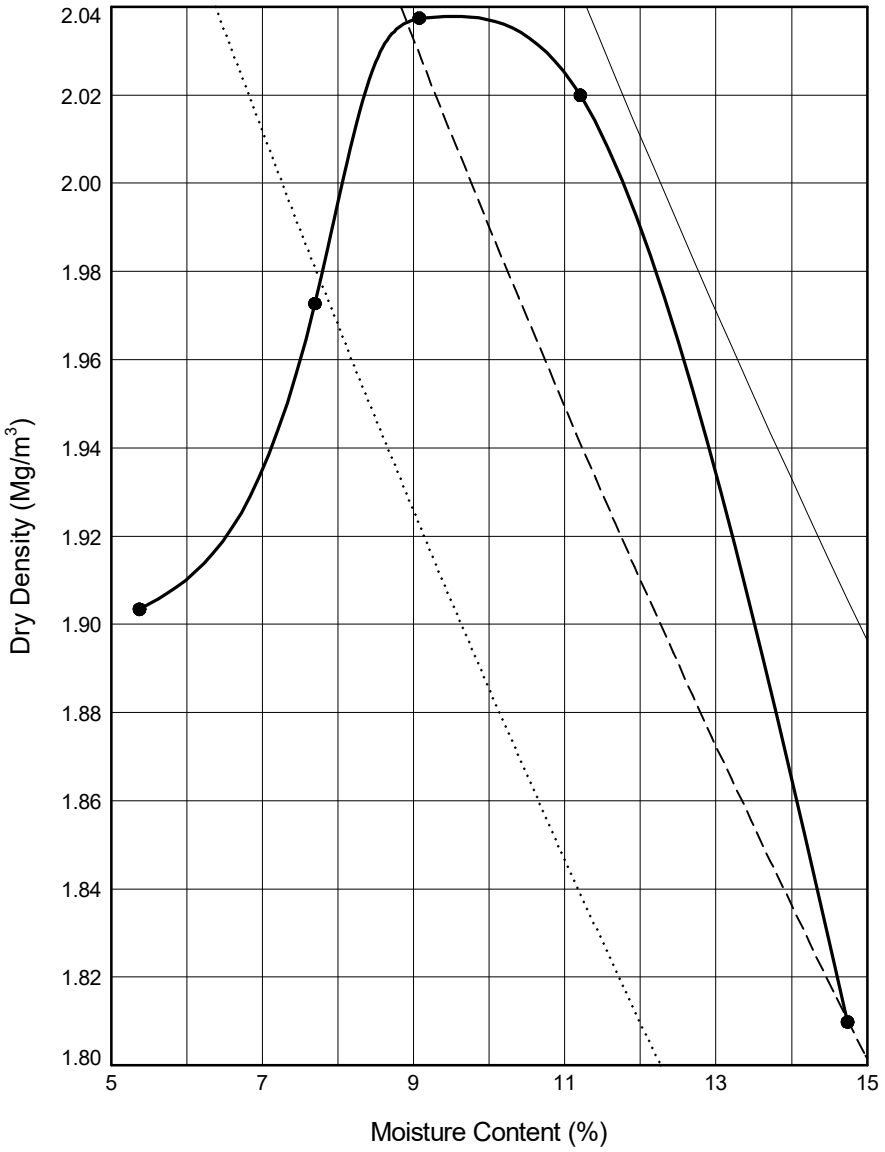
Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/08/23 - 10:24 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Borehole: **BH-PTS112** Sample Ref: **28** Sample Type: **B** Depth (m): **6.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **5.4**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.04**
% Retained on 37.5mm BS Sieve	: **7**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9.5**
% Retained on 20.0mm BS Sieve	: **8**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown gravelly slightly clayey SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

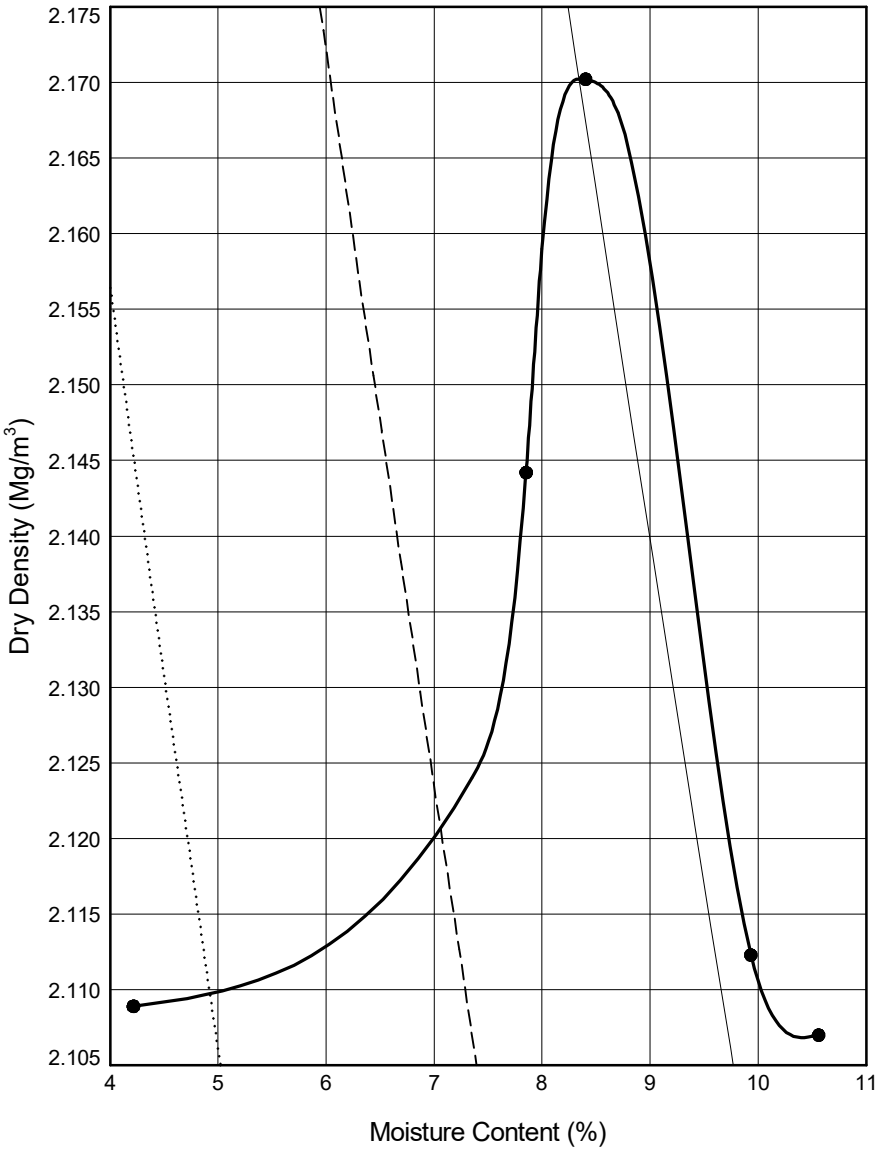
Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/08/23 - 10:25 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS114** Sample Ref: **8** Sample Type: **B** Depth (m): **1.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **4.2**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.17**
% Retained on 37.5mm BS Sieve	: **19**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **8.4**
% Retained on 20.0mm BS Sieve	: **15**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Red gravelly SAND	——— 0%	– – – - 5%	····· 10%

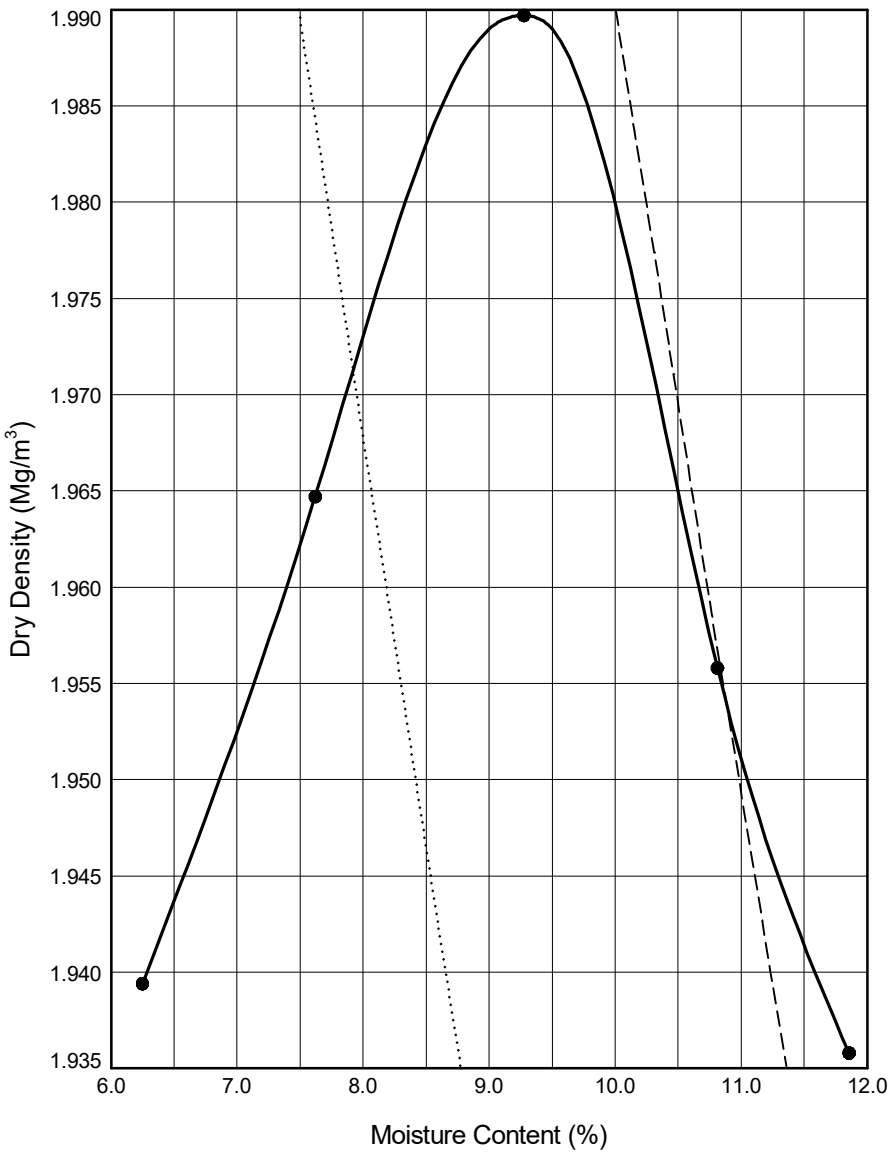
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/08/23 - 10:25 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS114** Sample Ref: **20** Sample Type: **B** Depth (m): **4.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **11**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.99**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9.3**
% Retained on 20.0mm BS Sieve	: **2**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Red slightly gravelly SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

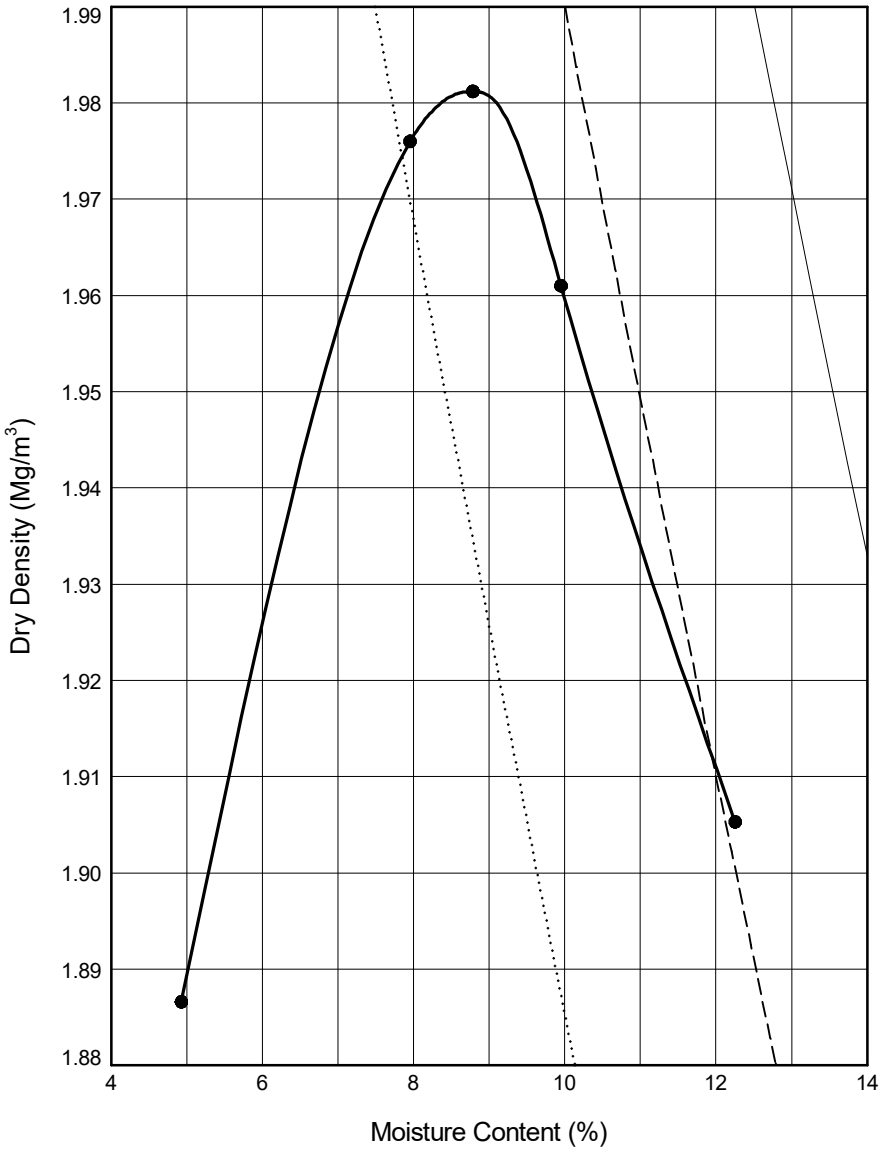
Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**19/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/08/23 - 10:25 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Borehole: **BH-PTS115** Sample Ref: **4** Sample Type: **B** Depth (m): **0.30**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **8.8**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.98**
% Retained on 37.5mm BS Sieve	: **22**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **8.8**
% Retained on 20.0mm BS Sieve	: **14**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Brown very sandy silty GRAVEL	——— 0%	– – – - 5%	····· 10%

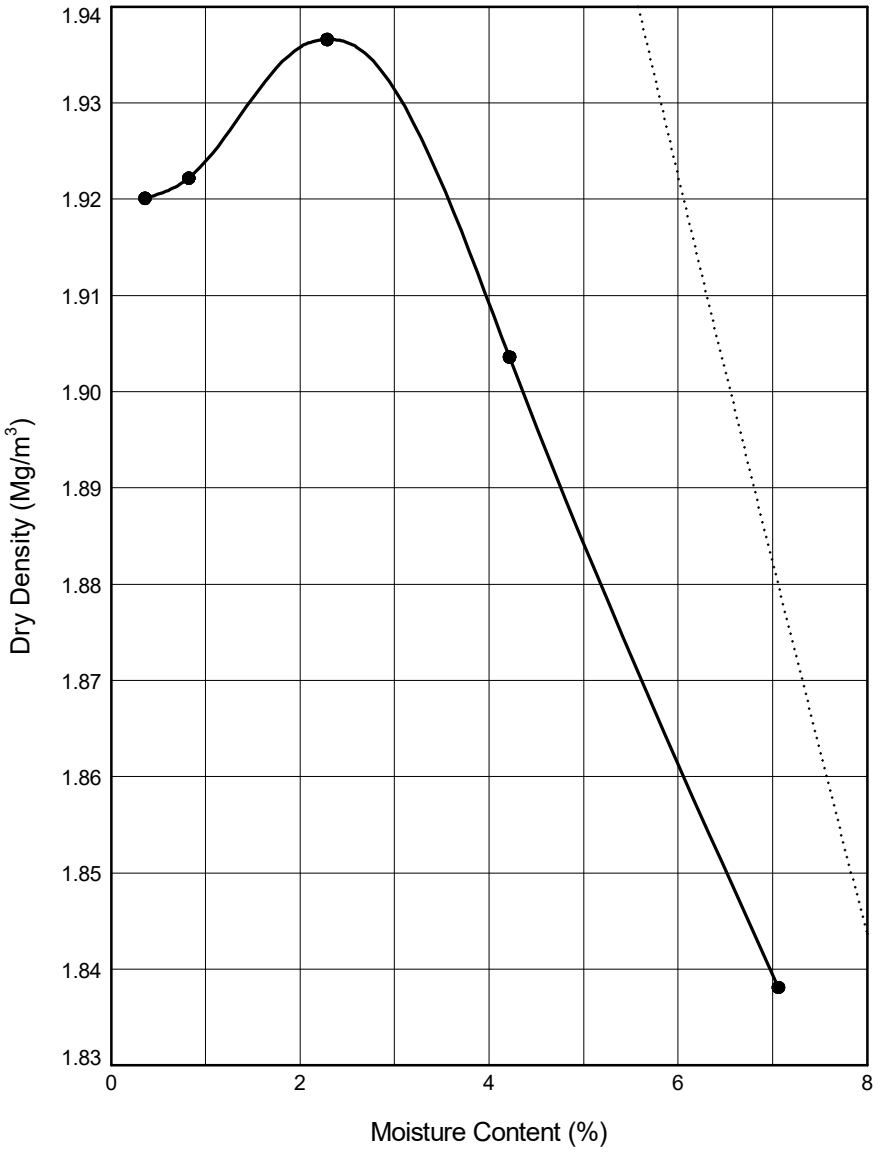
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/08/23 - 10:26 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Borehole: **BH-PTS115** Sample Ref: **9** Sample Type: **B** Depth (m): **1.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **2.3**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.94**
% Retained on 37.5mm BS Sieve	: **40**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **2.3**
% Retained on 20.0mm BS Sieve	: **20**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.45**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Grey slightly sandy GRAVEL with high cobble content	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**

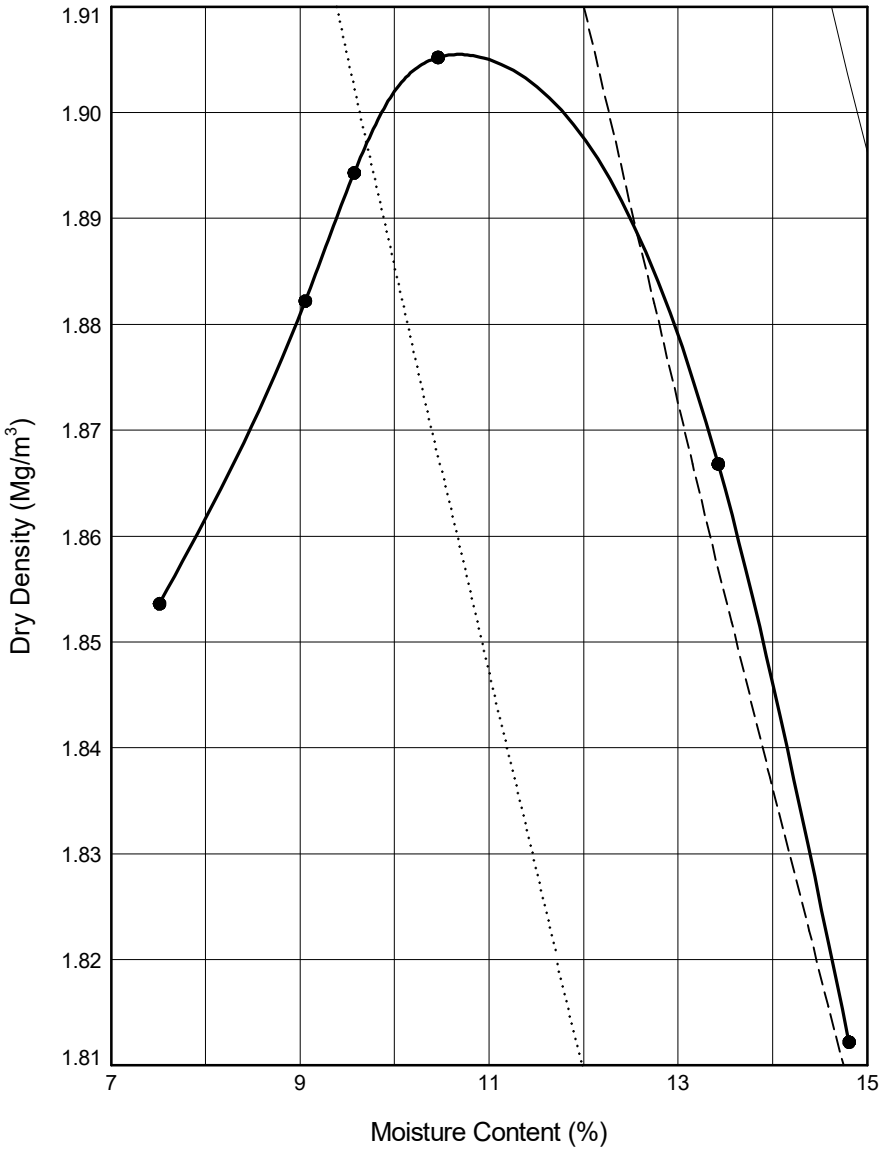
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/08/23 - 10:27 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS115** Sample Ref: **17** Sample Type: **B** Depth (m): **3.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **13**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.91**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10.7**
% Retained on 20.0mm BS Sieve	: **3**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Red gravelly SAND	——— 0%	– – – - 5%	····· 10%

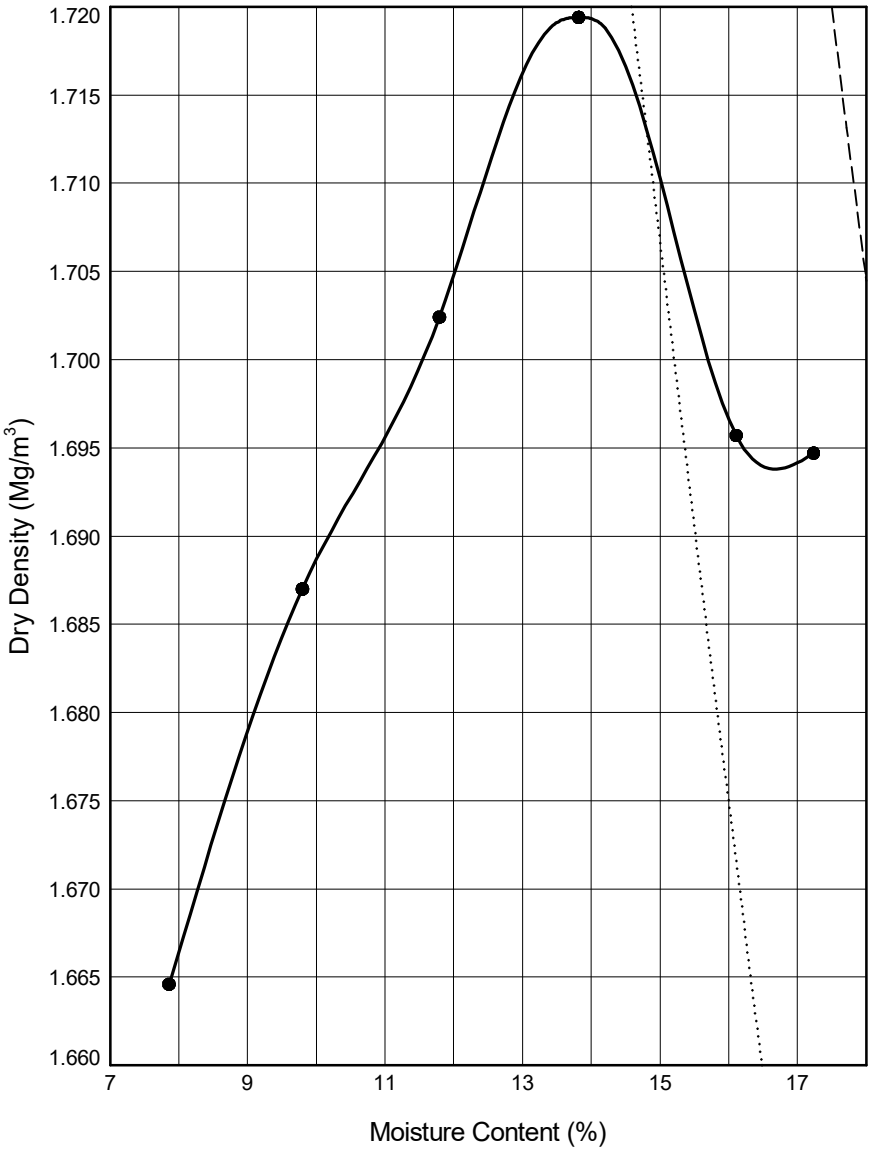
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/08/23 - 10:28 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS115** Sample Ref: **29** Sample Type: **B** Depth (m): **6.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **16**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.72**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **13.8**
% Retained on 20.0mm BS Sieve	: **0**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Red SAND	——— 0%	– – – - 5%	····· 10%

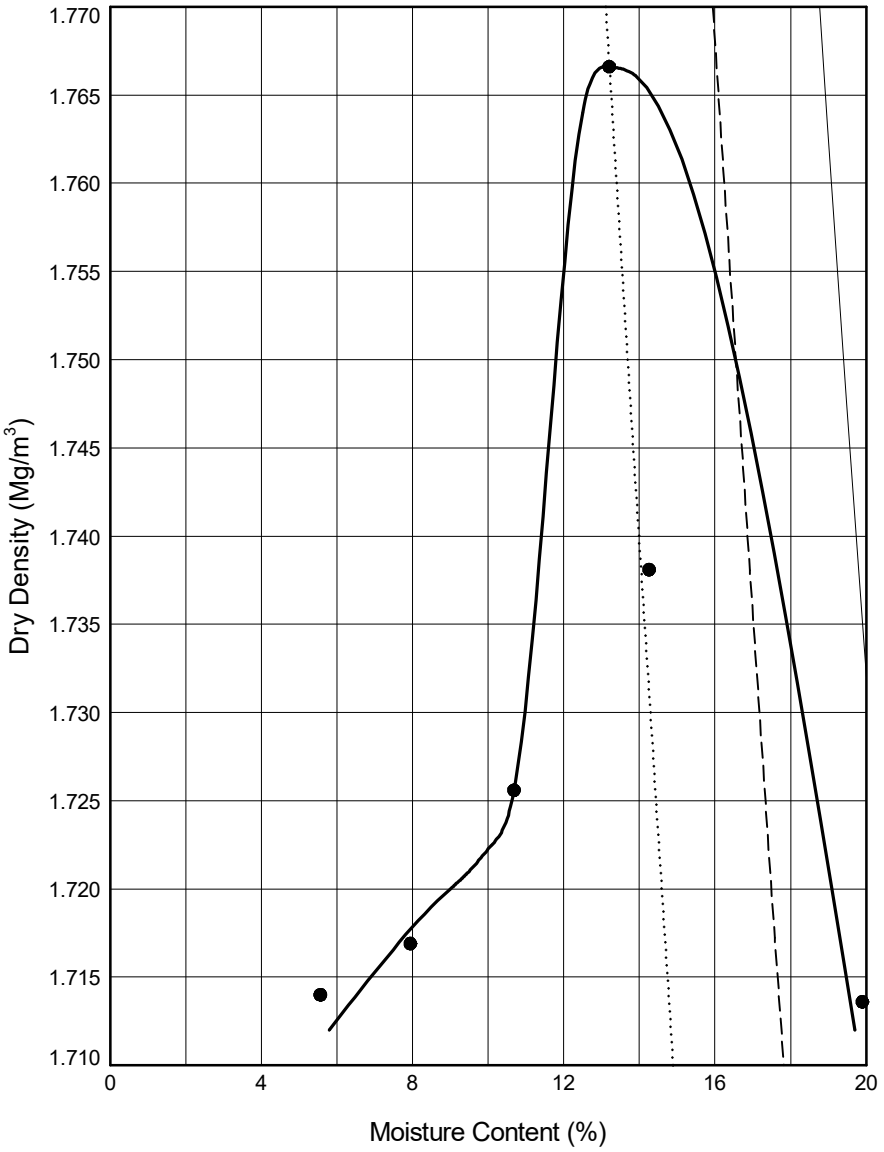
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**30/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 13:03 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS115** Sample Ref: **33** Sample Type: **B** Depth (m): **7.00**



Initial Sample Conditions			Test Details		Test Results	
Initial Moisture Content (%)	:	**14**	Compaction Type :	**Heavy**	Maximum Dry Density (Mg/m^3)	: **1.77**
% Retained on 37.5mm BS Sieve	:	**0**	Mass of Rammer (kg):	**4.5**	Optimum Moisture Content (%)	: **13.2**
% Retained on 20.0mm BS Sieve	:	**0**	Type of Mould :	**1 LITRE**	Method Used:	**Clause 3.5**
Particle Density - assumed (Mg/m^3)	:	**2.65**			Remarks:	
Size of Soil Pieces	:	**<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Red SAND	0%	5%	10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**30/08/23**

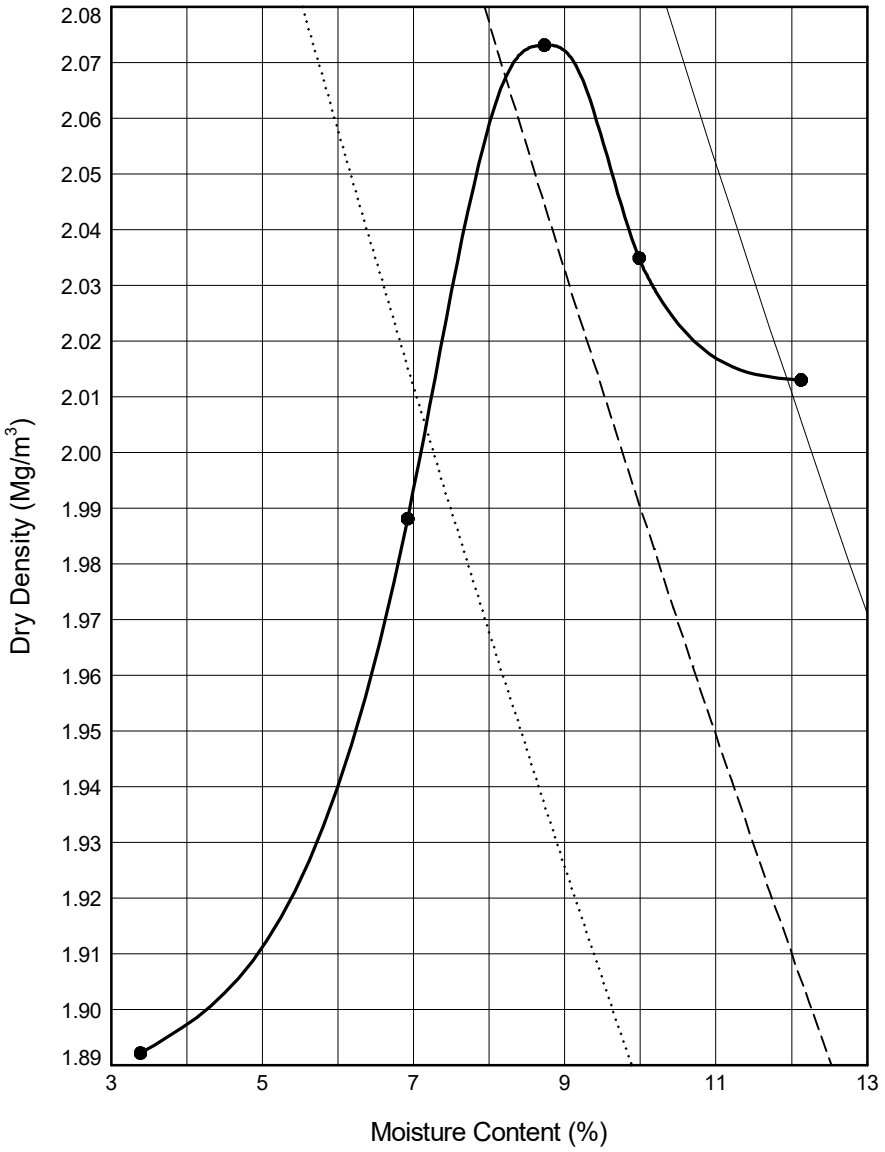
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 14:36 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS116** Sample Ref: **7** Sample Type: **B** Depth (m): **0.60**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.07**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **8.7**
% Retained on 20.0mm BS Sieve	: **5**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown very gravelly clayey SAND	——— 0%	– – – - 5%	····· 10%

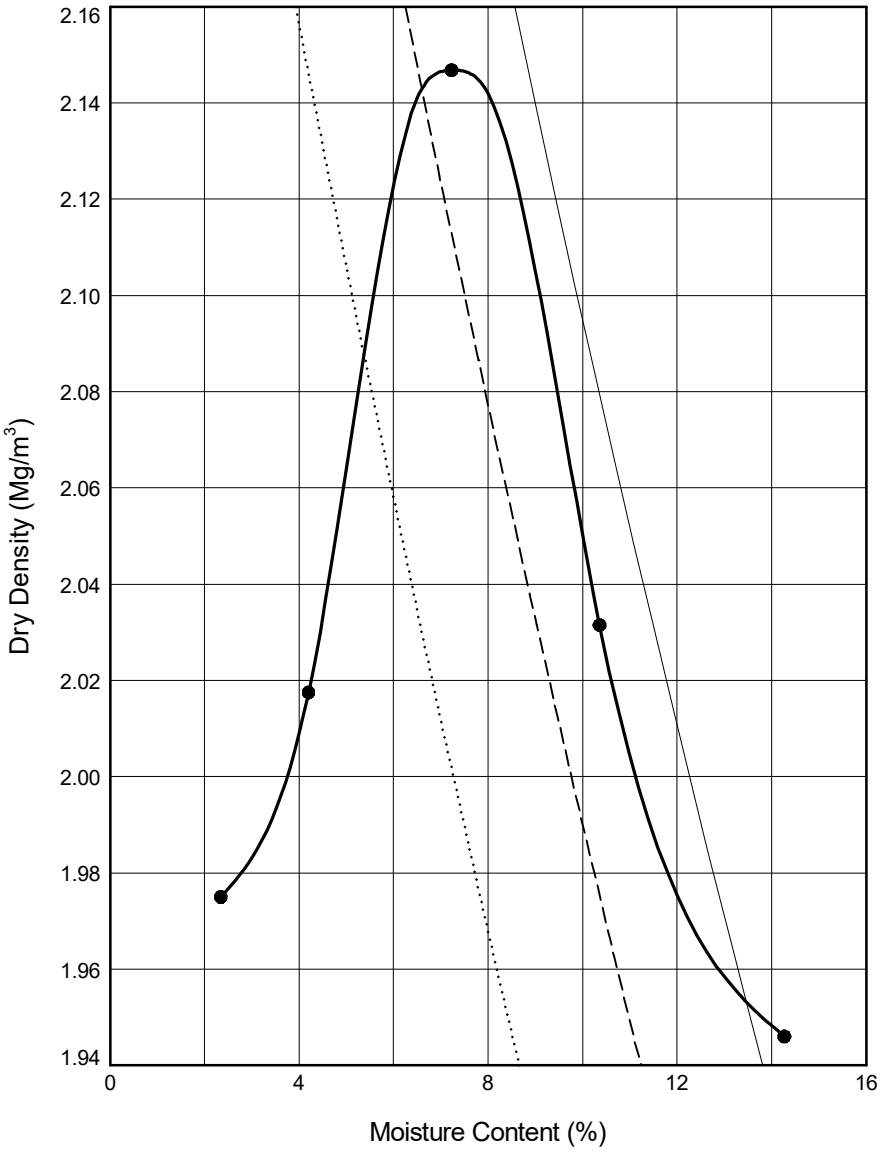
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/08/23 - 10:29 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Borehole: **BH-PTS116** Sample Ref: **14** Sample Type: **B** Depth (m): **2.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **14**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.15**
% Retained on 37.5mm BS Sieve	: **23**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **7.2**
% Retained on 20.0mm BS Sieve	: **7**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Red very sandy silty GRAVEL with medium cobble content	——— 0%	– – – - 5%	····· 10%

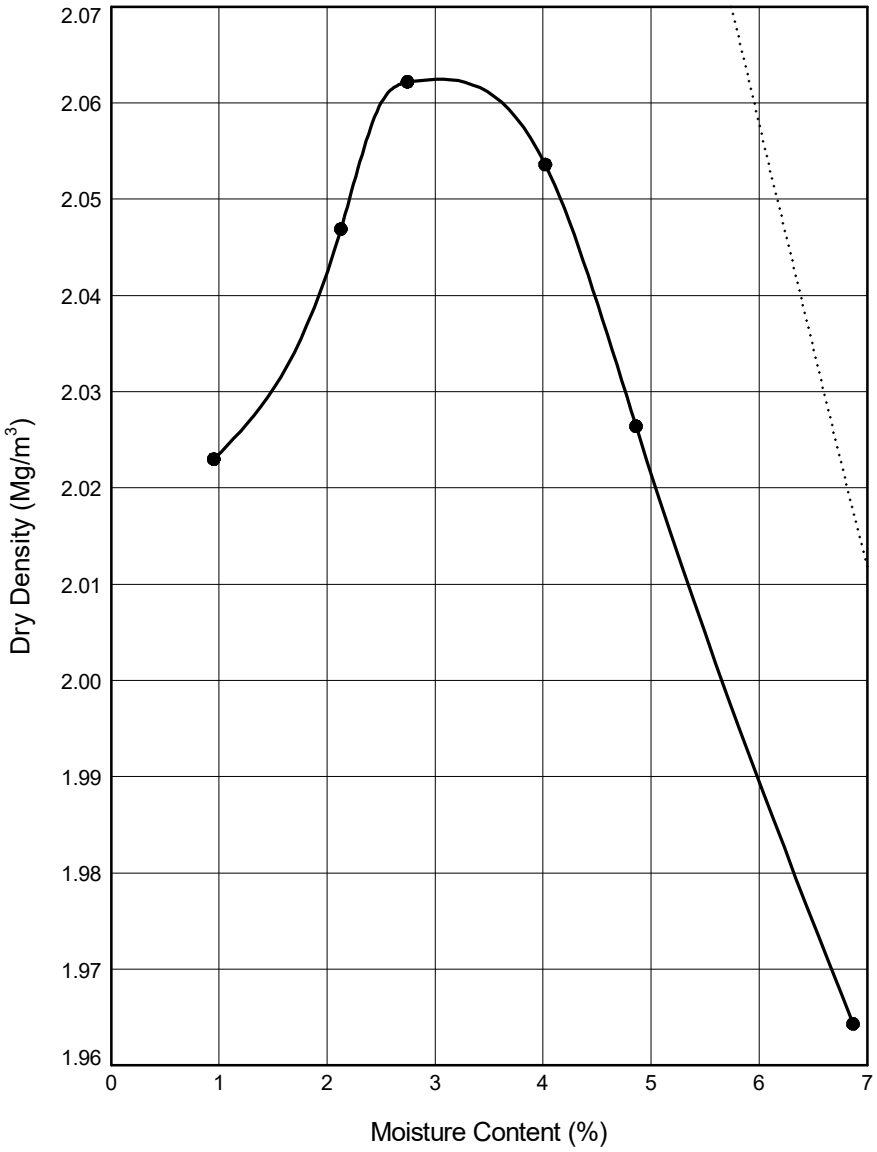
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/08/23 - 10:30 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Borehole: **BH-PTS116** Sample Ref: **22** Sample Type: **B** Depth (m): **4.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **4.9**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.06**
% Retained on 37.5mm BS Sieve	: **18**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **3.0**
% Retained on 20.0mm BS Sieve	: **17**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Dark grey gravelly SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**30/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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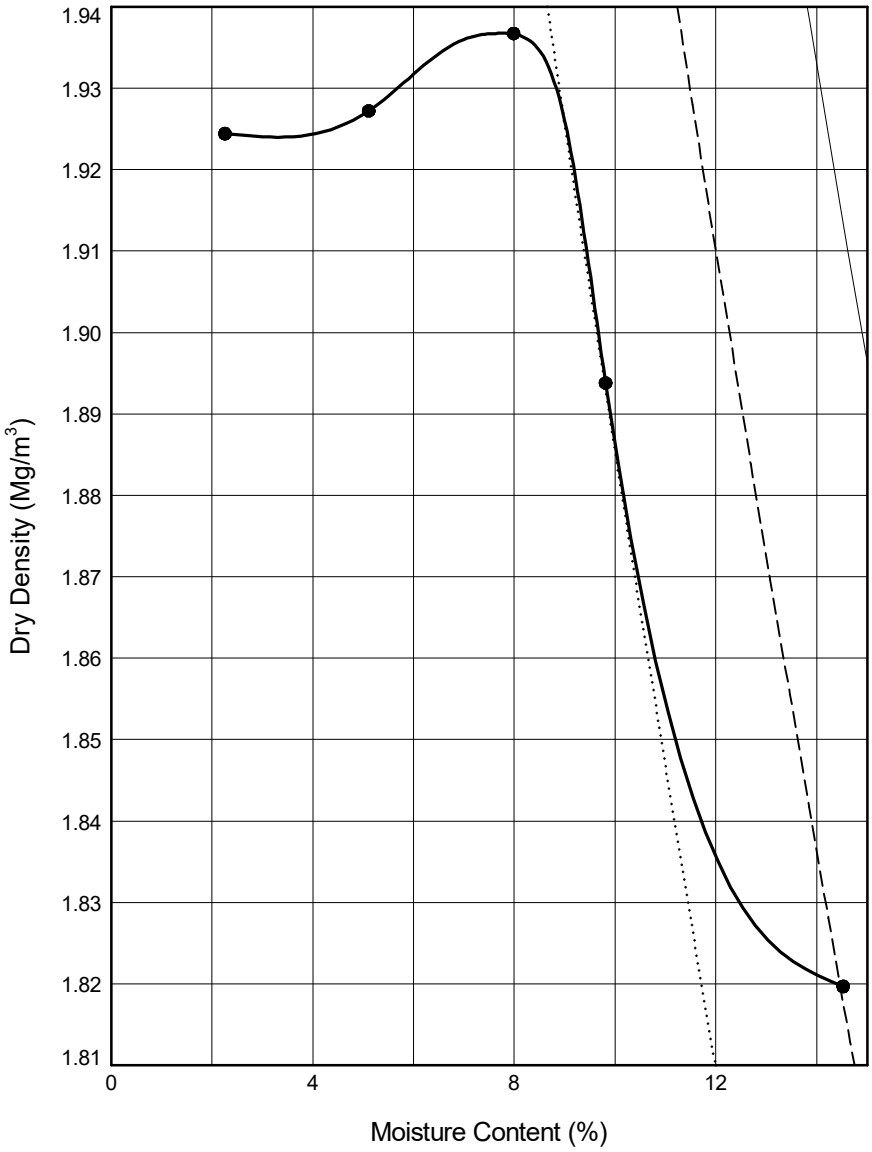
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Borehole: **BH-PTS116** Sample Ref: **25** Sample Type: **B** Depth (m): **5.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **9.8**	Compaction Type	: **Heavy**	Maximum Dry Density (Mg/m^3)	: **1.94**
% Retained on 37.5mm BS Sieve	: **21**	Mass of Rammer (kg):	**4.5**	Optimum Moisture Content (%)	: **8.0**
% Retained on 20.0mm BS Sieve	: **5**	Type of Mould	: **CBR**	Method Used:	**Clause 3.6**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Red gravelly SAND	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**30/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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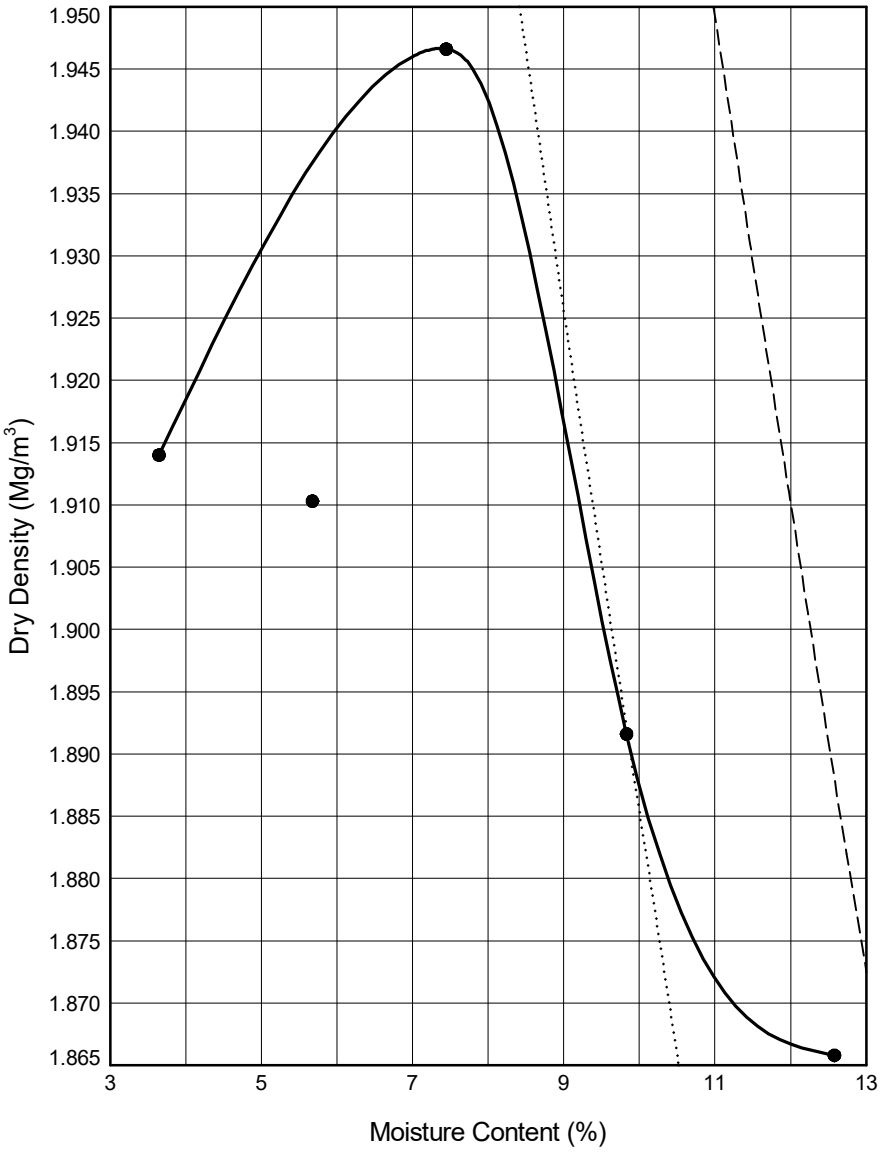
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS117** Sample Ref: **6** Sample Type: **B** Depth (m): **0.60**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **9.8**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.95**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **7.40**
% Retained on 20.0mm BS Sieve	: **4**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Reddish brown slightly gravelly SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**19/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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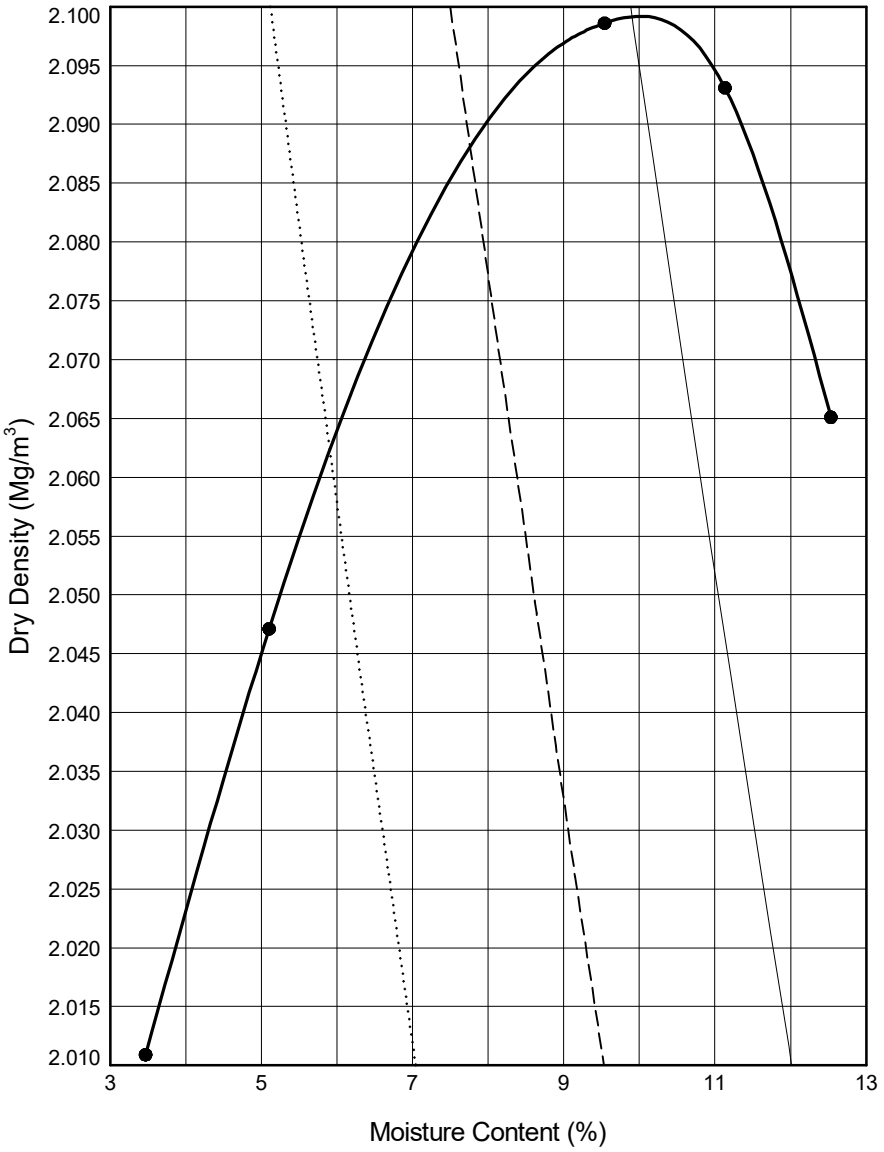
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS117** Sample Ref: **15** Sample Type: **B** Depth (m): **3.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **5.4**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.10**
% Retained on 37.5mm BS Sieve	: **9**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10**
% Retained on 20.0mm BS Sieve	: **15**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Brown gravelly SAND	——— 0%	– – – - 5%	····· 10%

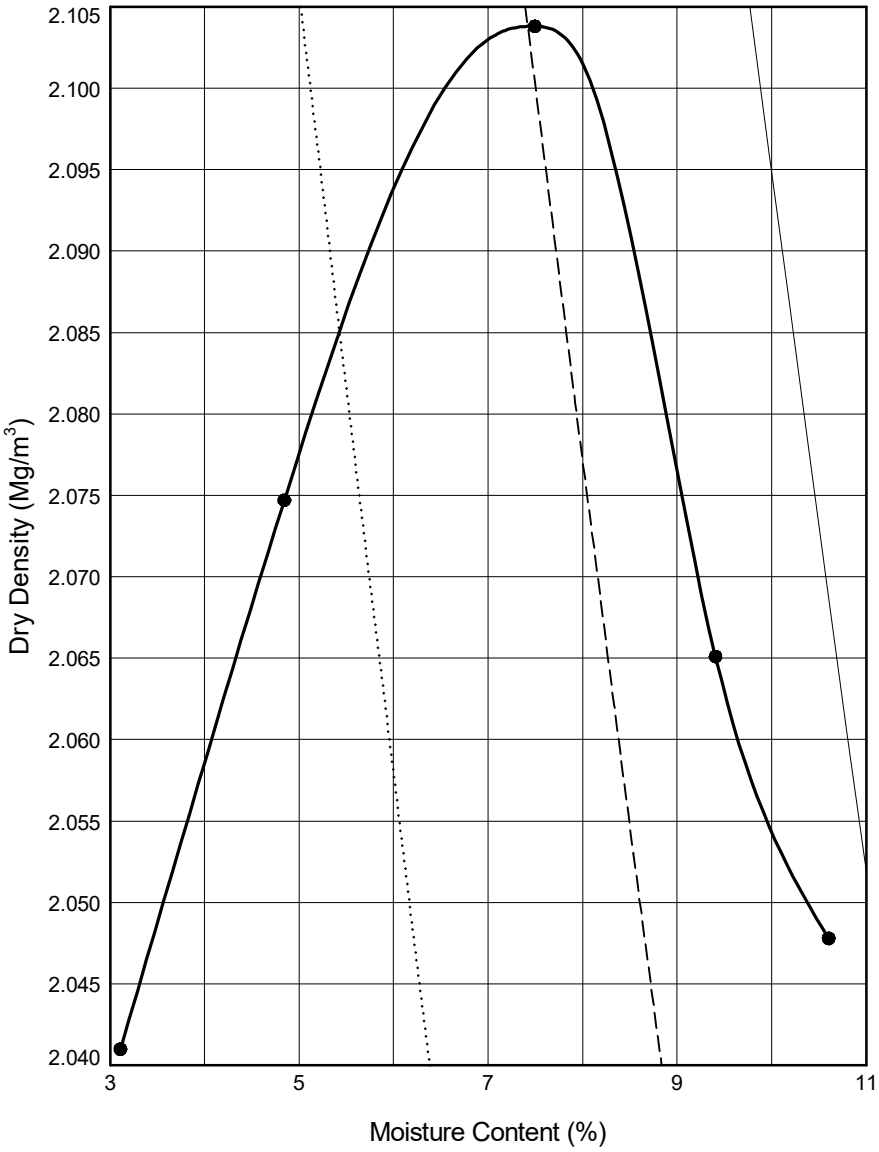
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Daria Ignaczak	**DARIA IGNACZAK**	**19/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/08/23 - 10:32 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS118A** Sample Ref: **2** Sample Type: **B** Depth (m): **0.40**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **5.8**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.10**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **7.5**
% Retained on 20.0mm BS Sieve	: **12**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Brown very sandy slightly silty GRAVEL	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**

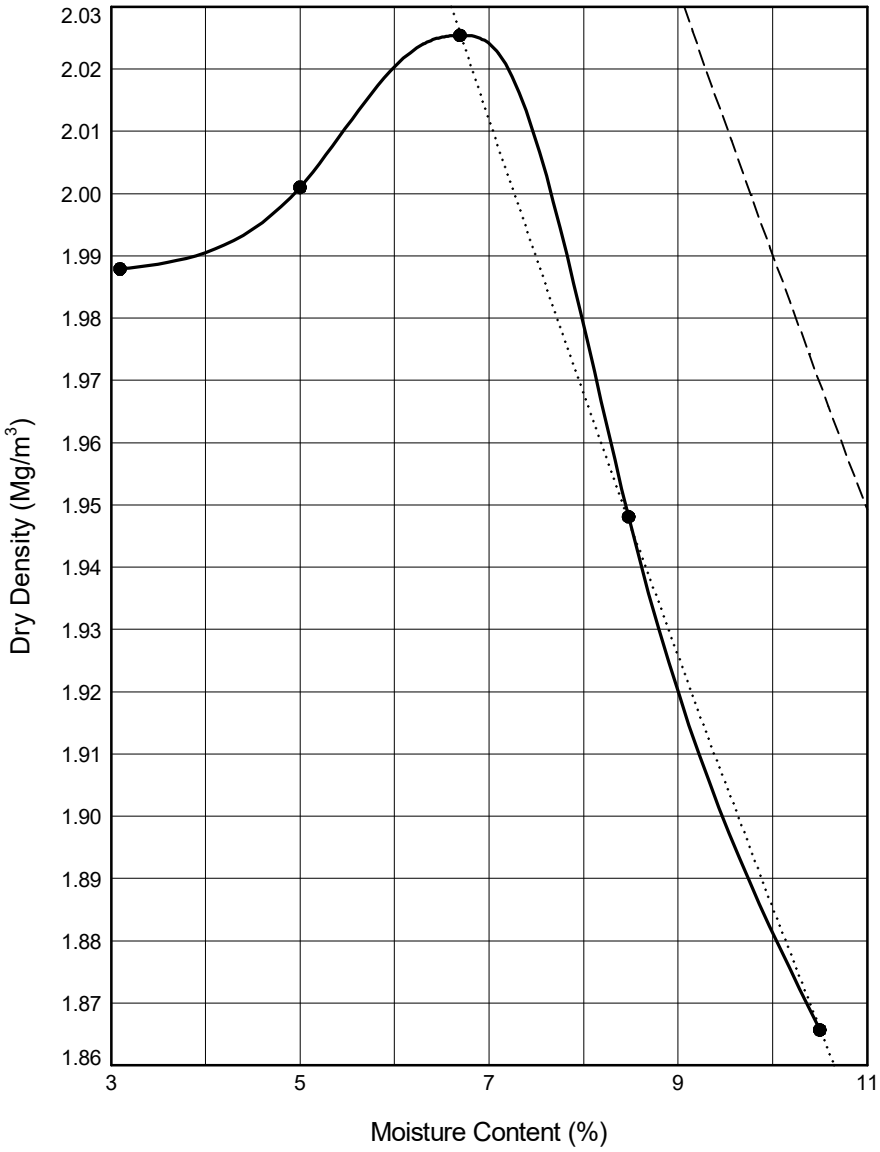
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/08/23 - 10:32 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Borehole: **BH-PTS118A** Sample Ref: **19** Sample Type: **B** Depth (m): **4.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **3.1**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.03**
% Retained on 37.5mm BS Sieve	: **14**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **6.7**
% Retained on 20.0mm BS Sieve	: **21**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Grey sandy GRAVEL	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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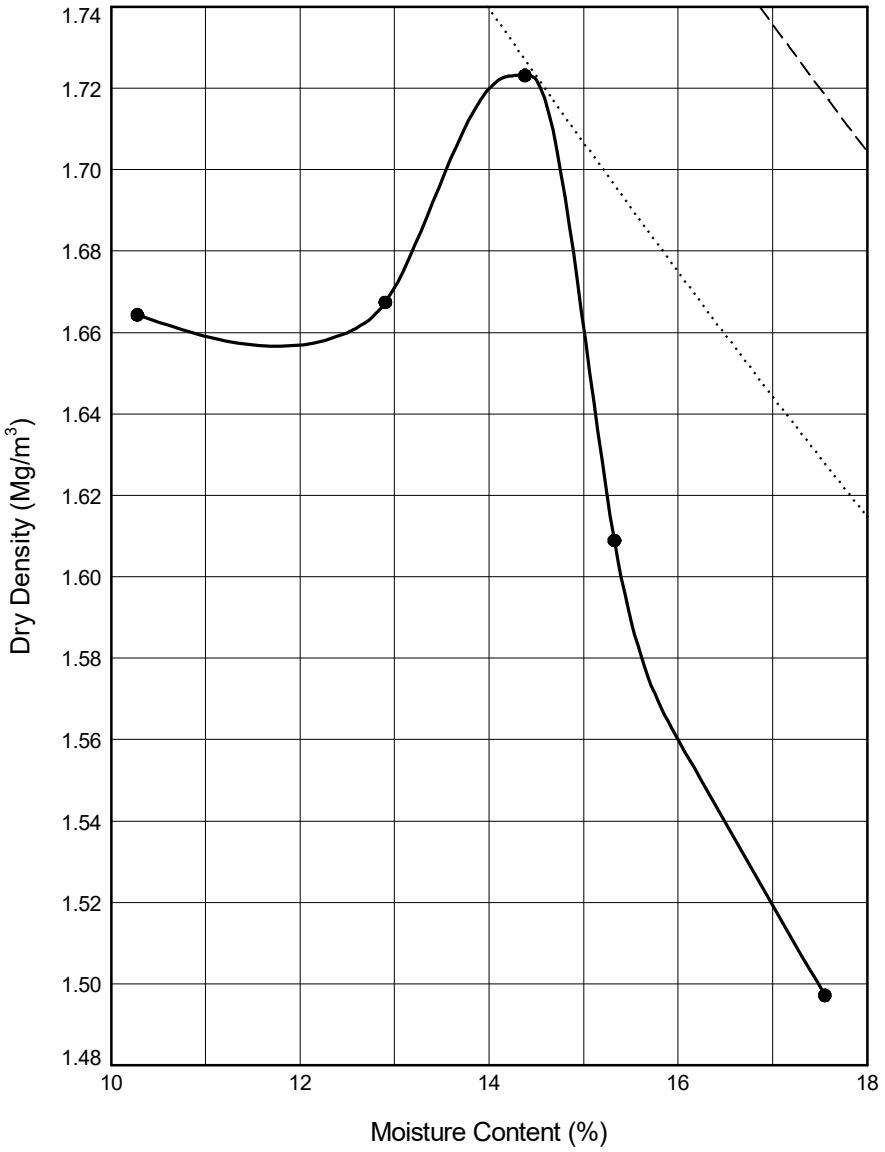
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS119** Sample Ref: **5** Sample Type: **B** Depth (m): **0.90**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **14**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.73**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **14**
% Retained on 20.0mm BS Sieve	: **0**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Reddish brown slightly gravelly clayey SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

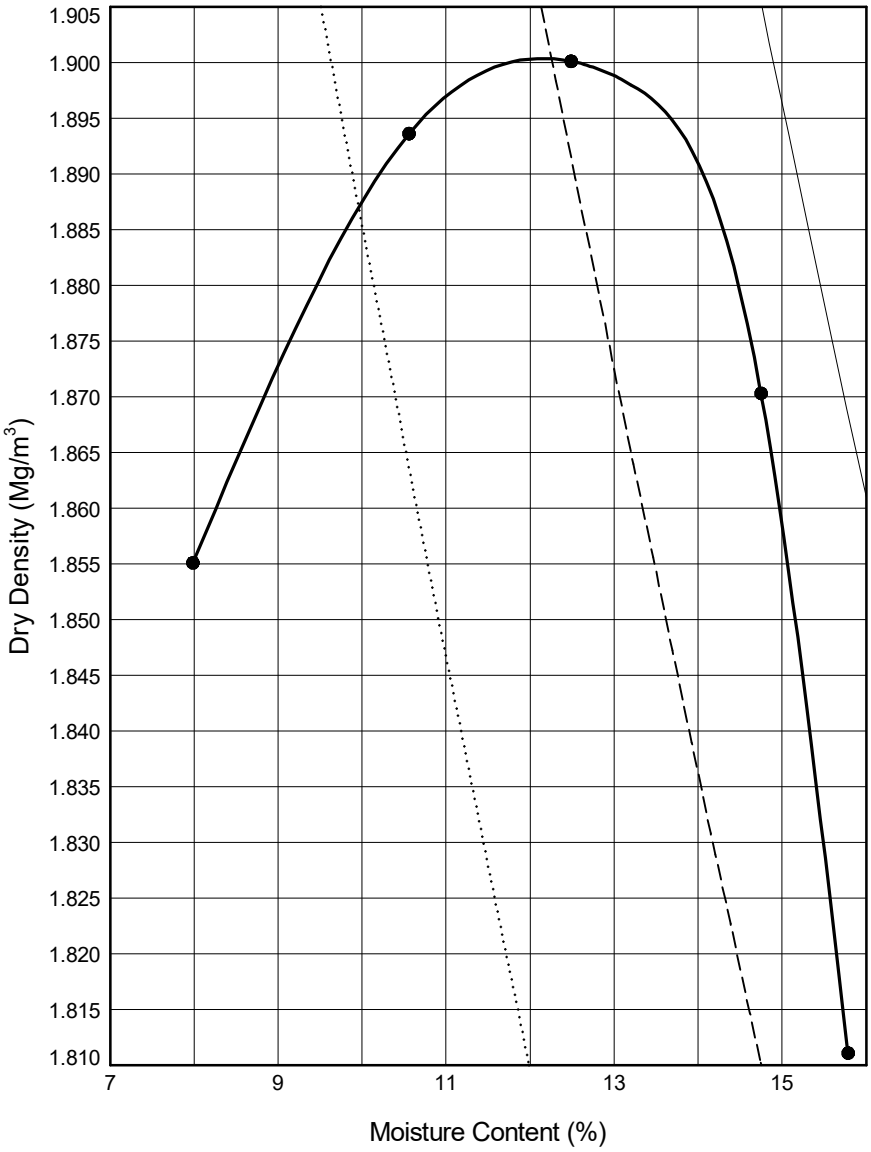
Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/08/23 - 10:33 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Borehole: **BH-PTS120** Sample Ref: **4** Sample Type: **B** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **1.90**
% Retained on 37.5mm BS Sieve	: **16**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **12.3**
% Retained on 20.0mm BS Sieve	: **5**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<37.5**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Brown very gravelly clayey SAND with medium cobble content	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**30/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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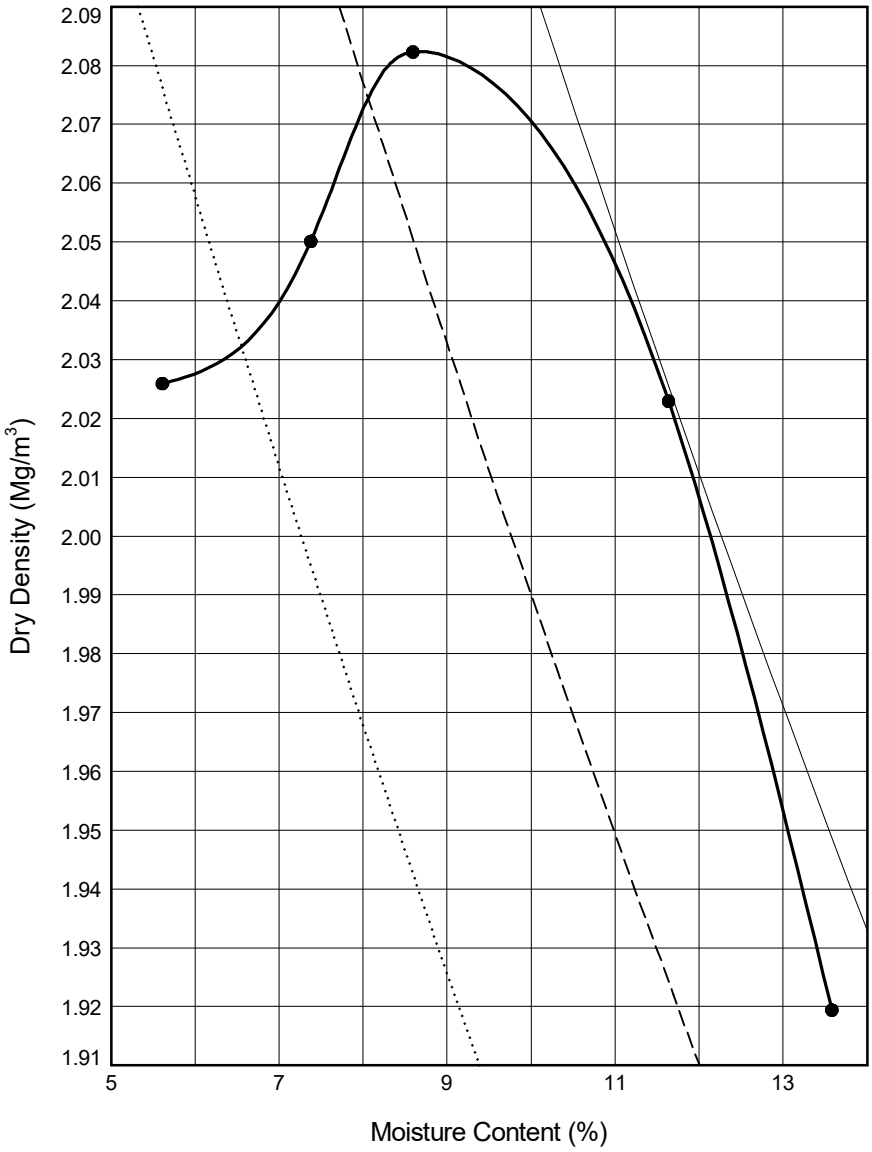
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Borehole: **BH-PTS120A** Sample Ref: **7** Sample Type: **B** Depth (m): **3.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Heavy**	Maximum Dry Density (Mg/m^3)	: **2.08**
% Retained on 37.5mm BS Sieve	: **11**	Mass of Rammer (kg):	**4.5**	Optimum Moisture Content (%)	: **8.6**
% Retained on 20.0mm BS Sieve	: **5**	Type of Mould	: **CBR**	Method Used:	**Clause 3.6**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Red gravelly SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**30/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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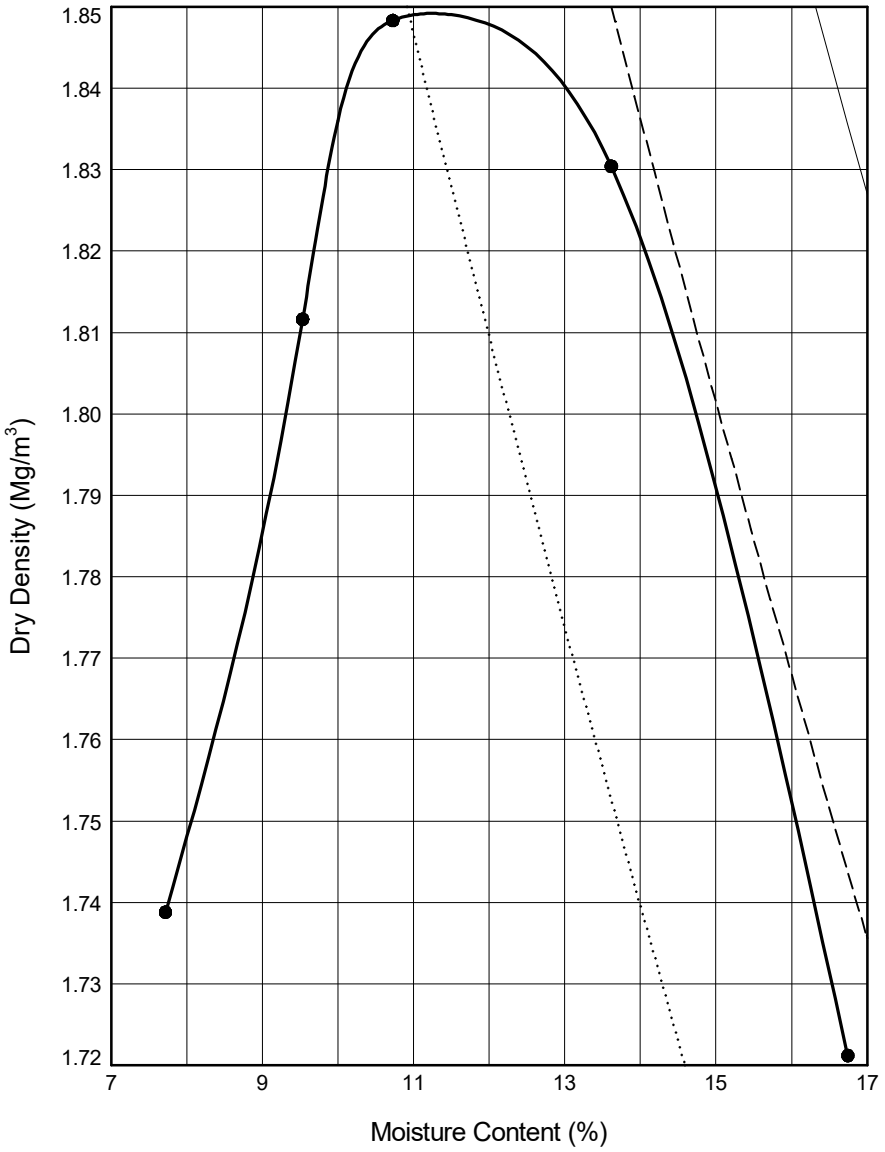
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS121A** Sample Ref: **17** Sample Type: **B** Depth (m): **6.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **24**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.85**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **11.5**
% Retained on 20.0mm BS Sieve	: **0**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Red SAND	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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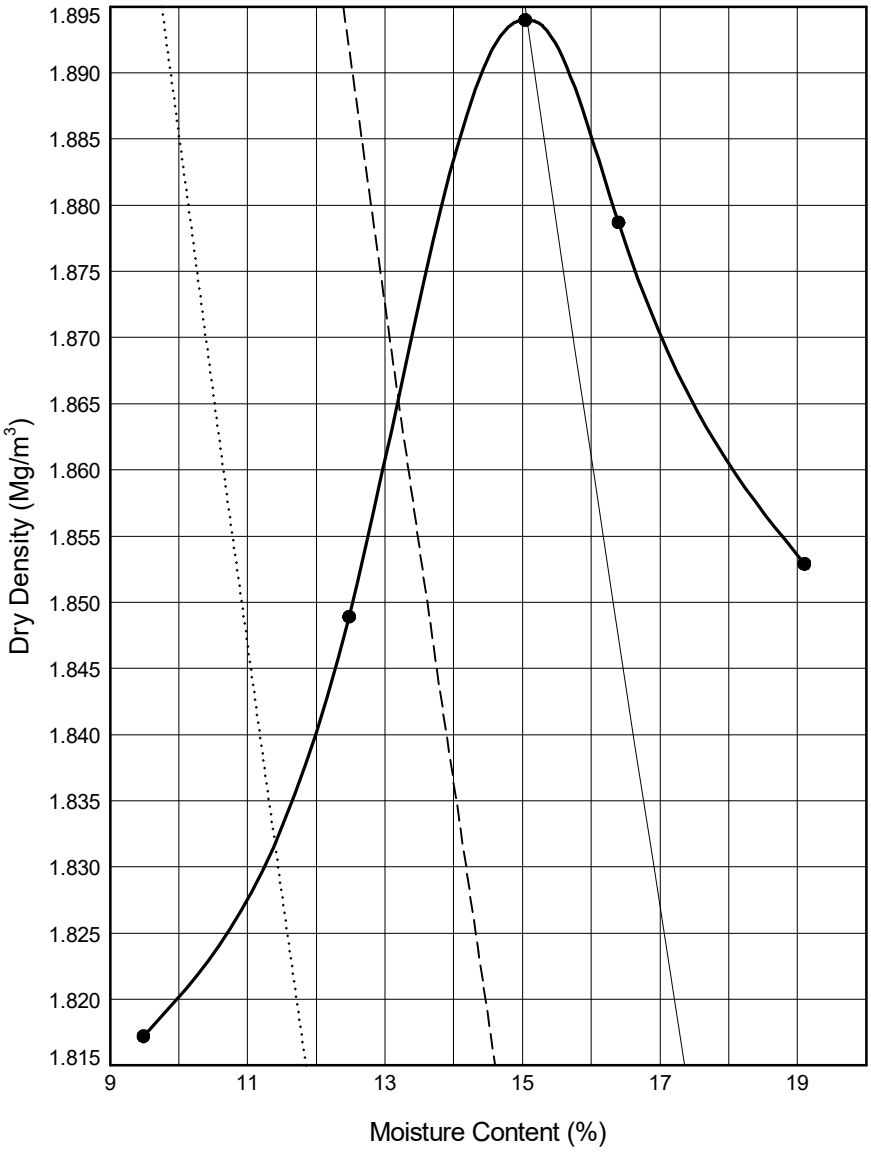
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Borehole: **BH-PTS122** Sample Ref: **11** Sample Type: **B** Depth (m): **1.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **15**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **1.89**
% Retained on 37.5mm BS Sieve	: **15**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **15**
% Retained on 20.0mm BS Sieve	: **1**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Reddish brown gravelly silty CLAY	——— 0%	– – – - 5%	····· 10%

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**30/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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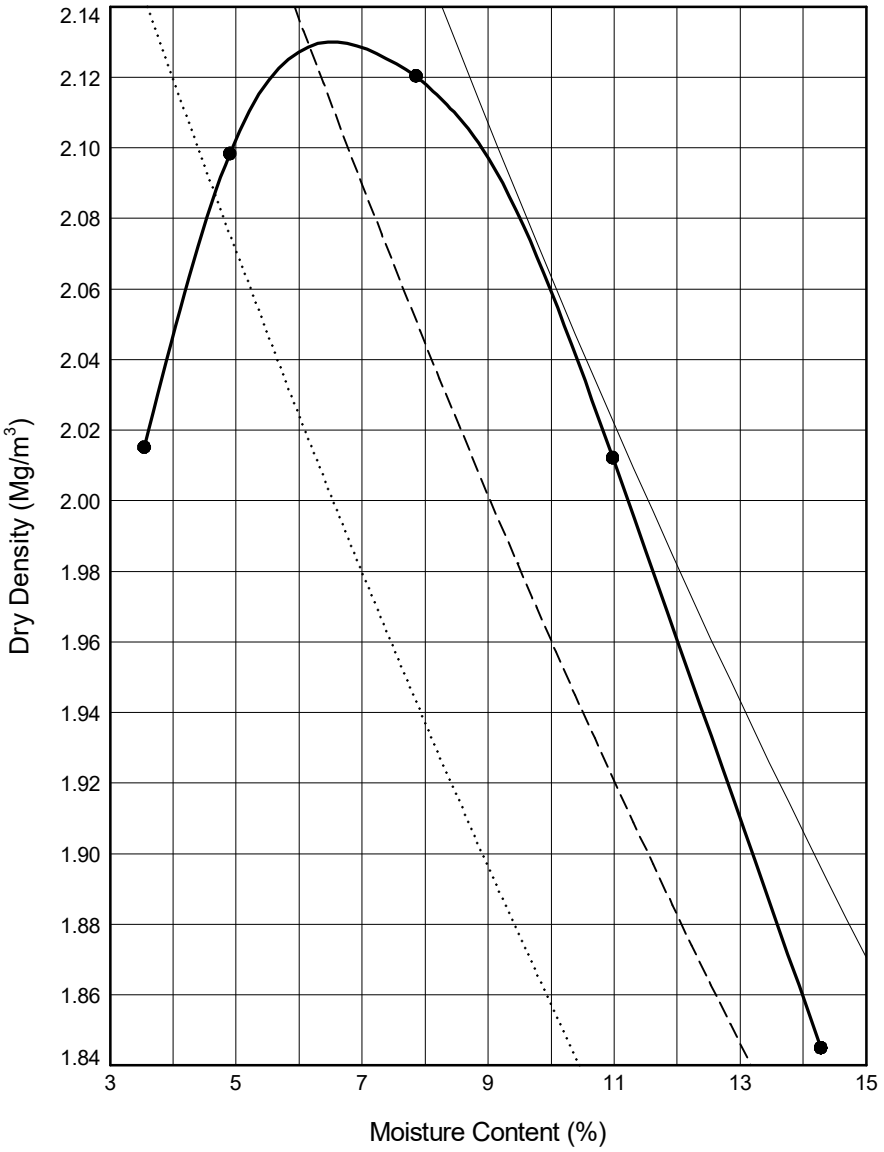
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS122** Sample Ref: **22** Sample Type: **B** Depth (m): **4.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **14**	Compaction Type	: **Heavy**	Maximum Dry Density (Mg/m^3)	: **2.12**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**4.5**	Optimum Moisture Content (%)	: **6.5**
% Retained on 20.0mm BS Sieve	: **0**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.5**
Particle Density - assumed (Mg/m^3)	: **2.60**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown sandy SILT	——— 0%	– – – - 5%	····· 10%

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Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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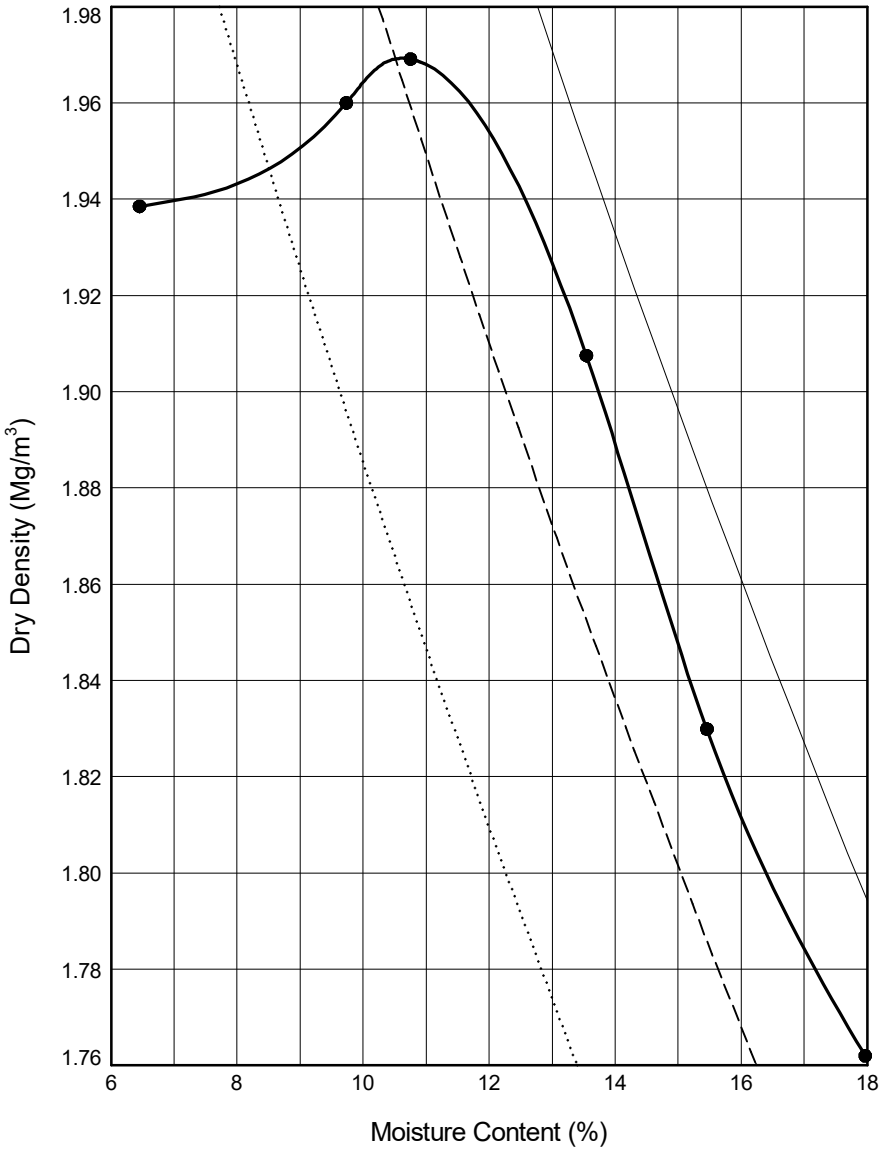
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS122** Sample Ref: **26** Sample Type: **B** Depth (m): **5.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **18**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.97**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10.6**
% Retained on 20.0mm BS Sieve	: **0**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Red silty SAND	——— 0%	– – – - 5%	····· 10%

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Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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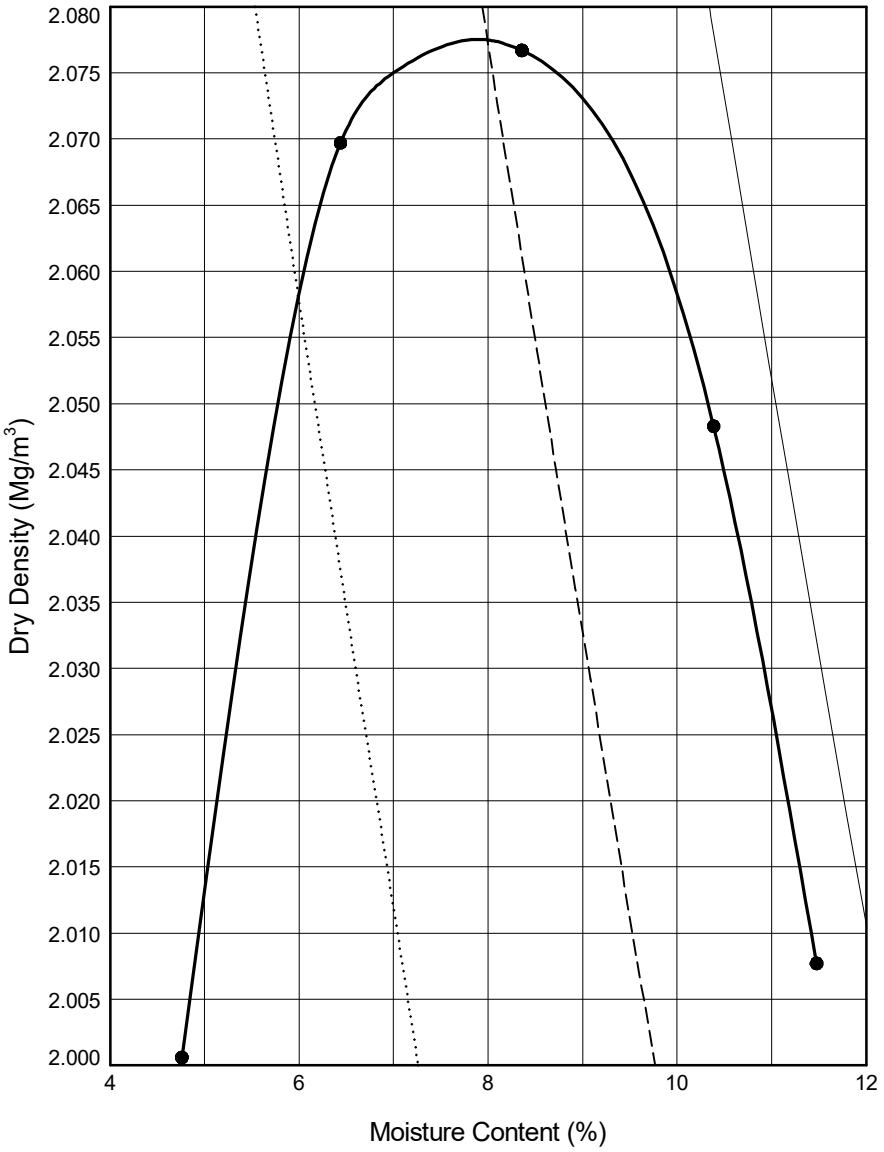
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Borehole: **BH-PTS123** Sample Ref: **11** Sample Type: **B** Depth (m): **2.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **11**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.08**
% Retained on 37.5mm BS Sieve	: **27**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **8**
% Retained on 20.0mm BS Sieve	: **4**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Dark reddish brown very gravelly clayey SAND with high cobble content	——— 0%	– – – - 5%	····· 10%

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Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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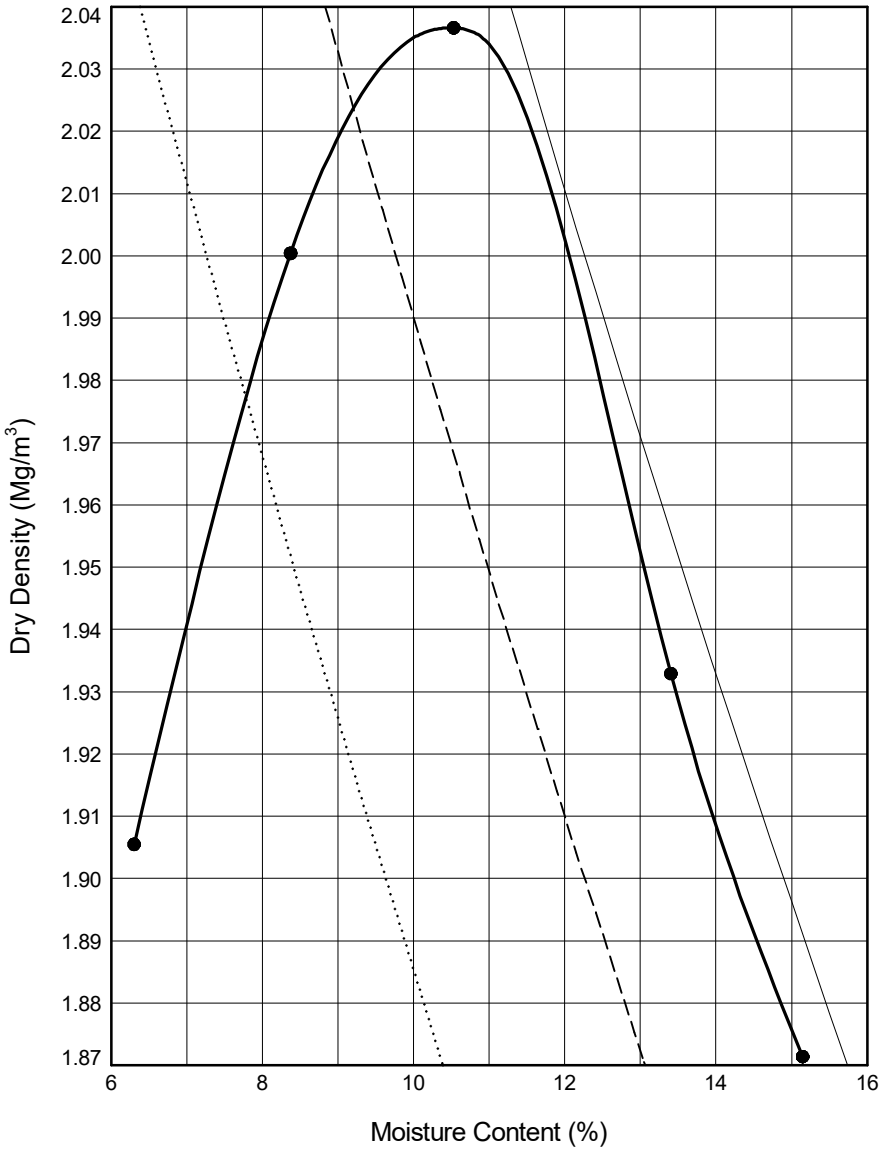
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS124** Sample Ref: **5** Sample Type: **B** Depth (m): **0.70**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **13**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.03**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10.5**
% Retained on 20.0mm BS Sieve	: **2**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Brown gravelly very clayey SAND	——— 0%	– – – - 5%	····· 10%

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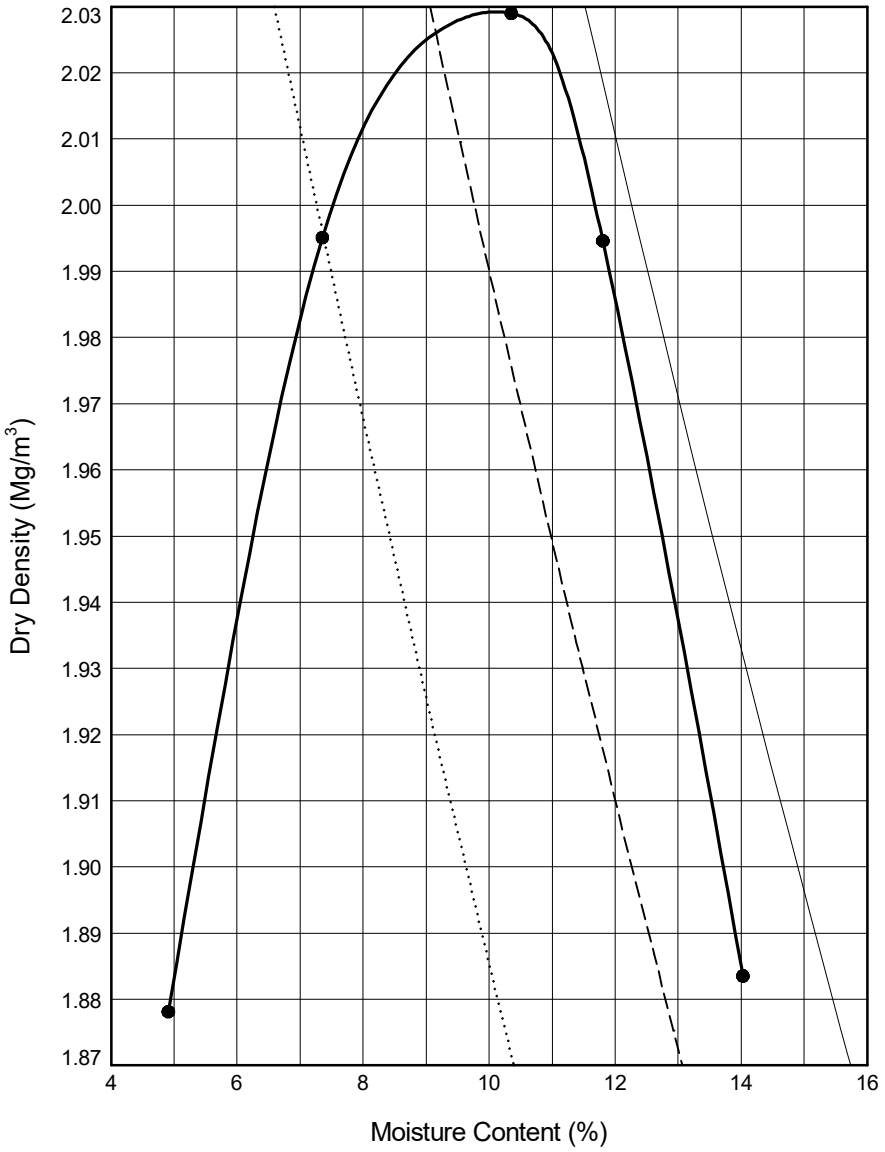
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS124** Sample Ref: **12** Sample Type: **B** Depth (m): **2.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **14**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.03**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10.3**
% Retained on 20.0mm BS Sieve	: **3**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown very gravelly clayey SAND	——— 0%	– – – - 5%	····· 10%

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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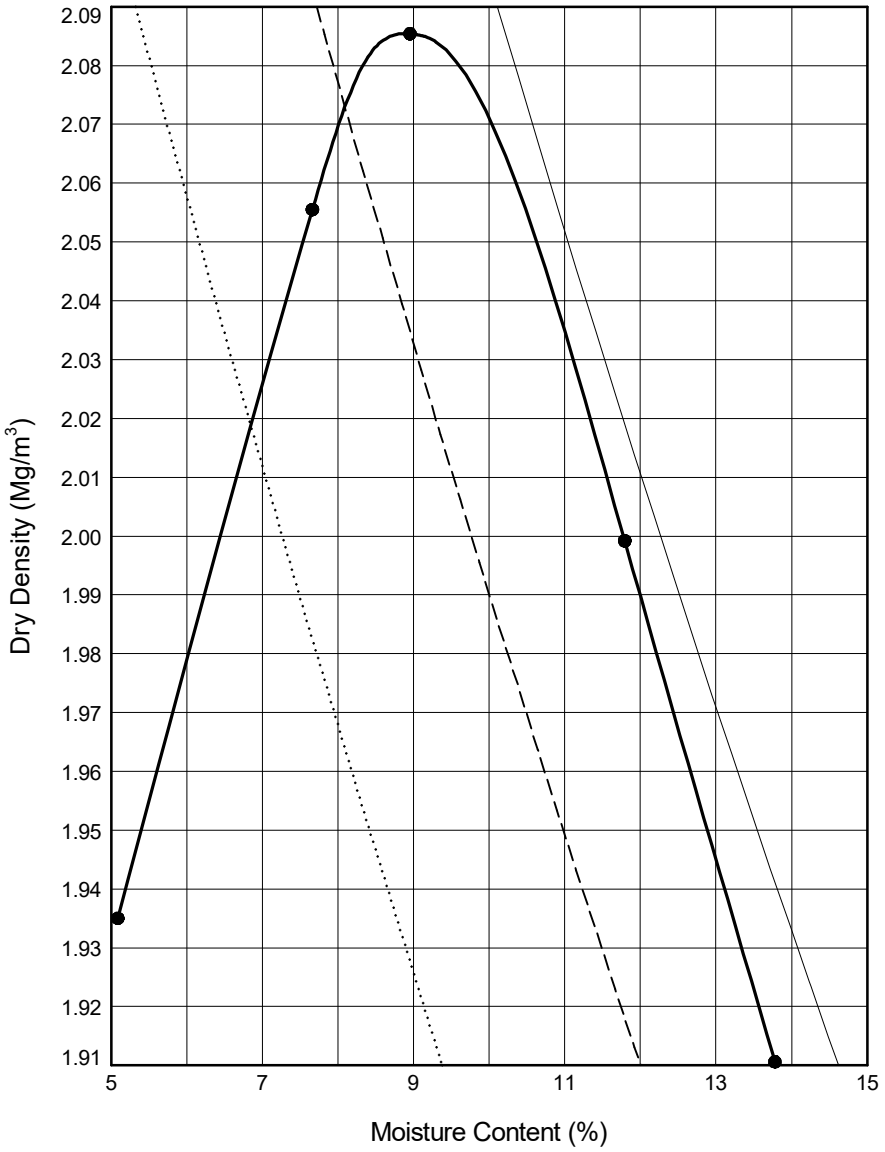
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS124** Sample Ref: **17** Sample Type: **B** Depth (m): **3.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **14**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.09**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9**
% Retained on 20.0mm BS Sieve	: **4**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown very gravelly very clayey SAND	——— 0%	– – – - 5%	····· 10%

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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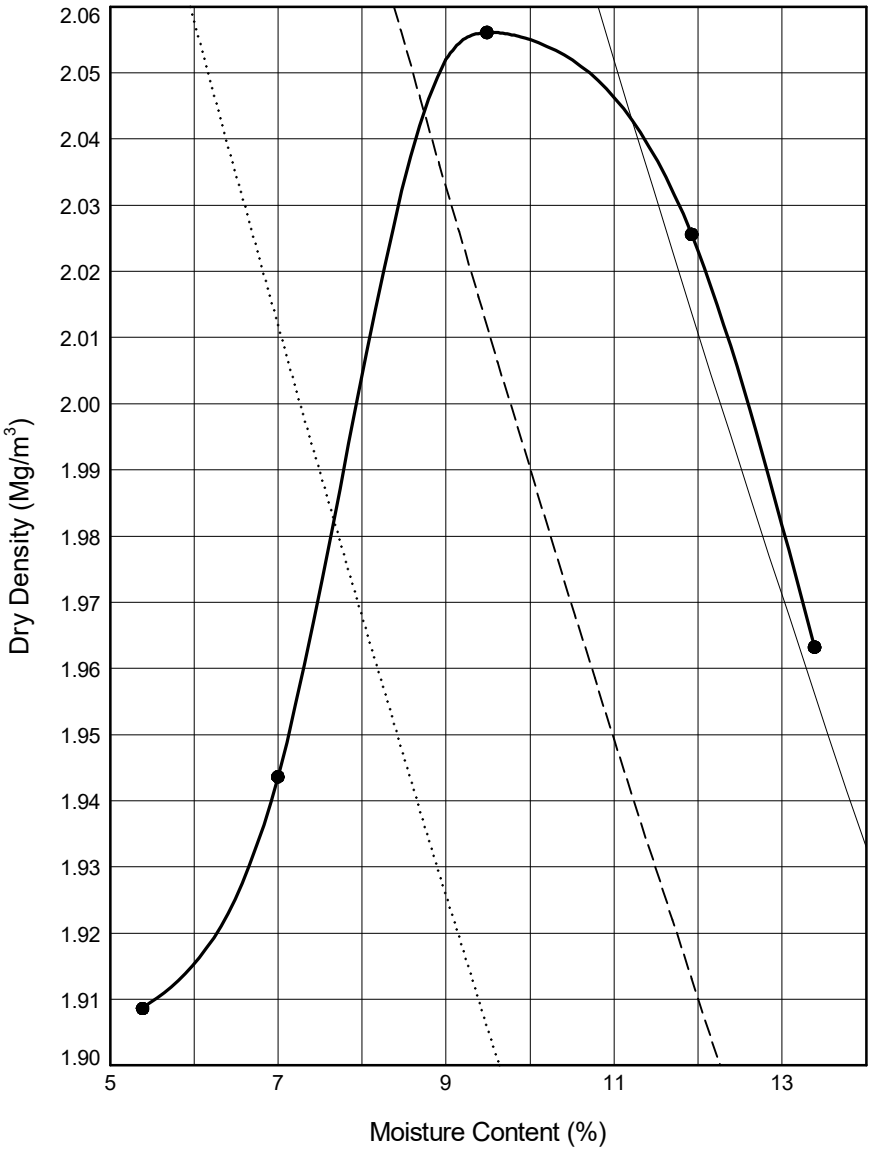
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS124** Sample Ref: **33** Sample Type: **B** Depth (m): **7.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.06**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9.5**
% Retained on 20.0mm BS Sieve	: **3**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Red gravelly sandy silty CLAY	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**30/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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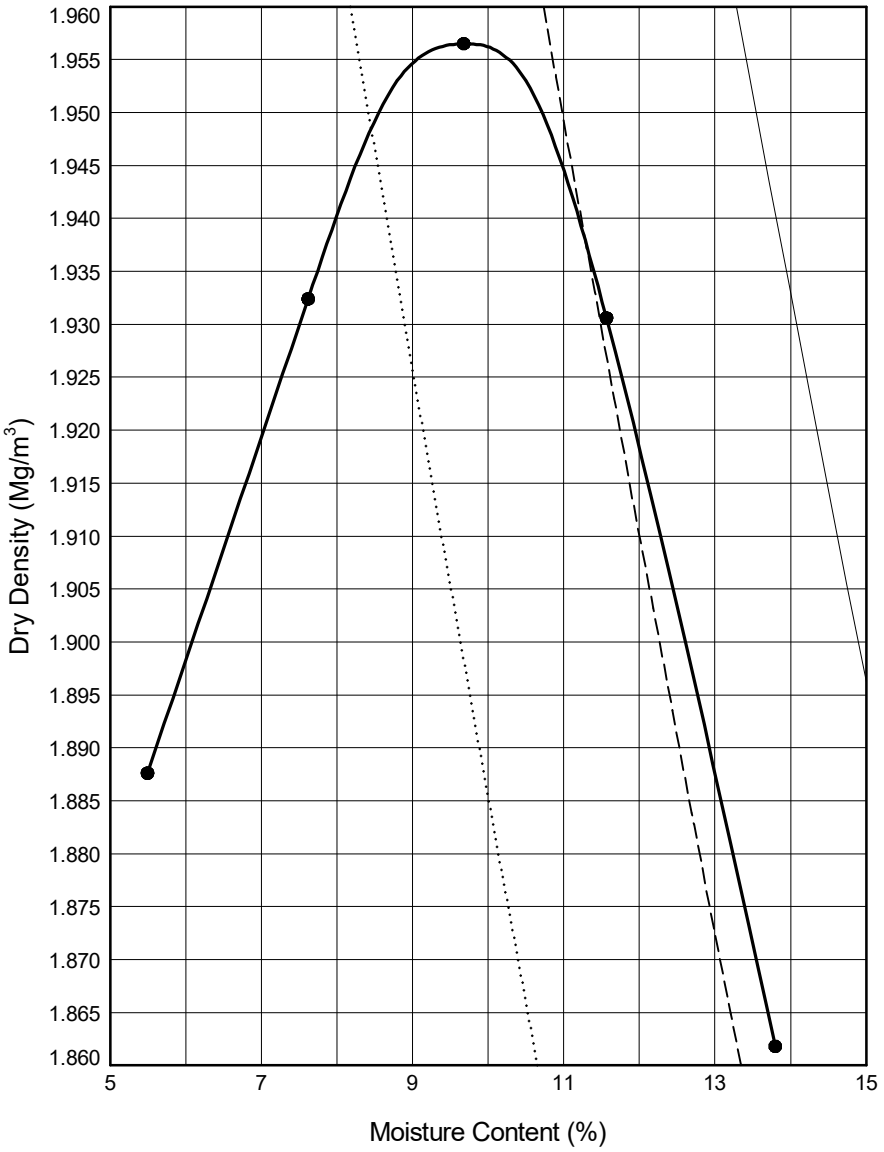
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS124** Sample Ref: **41** Sample Type: **B** Depth (m): **9.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **1.96**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9.7**
% Retained on 20.0mm BS Sieve	: **4**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Red slightly gravelly silty CLAY	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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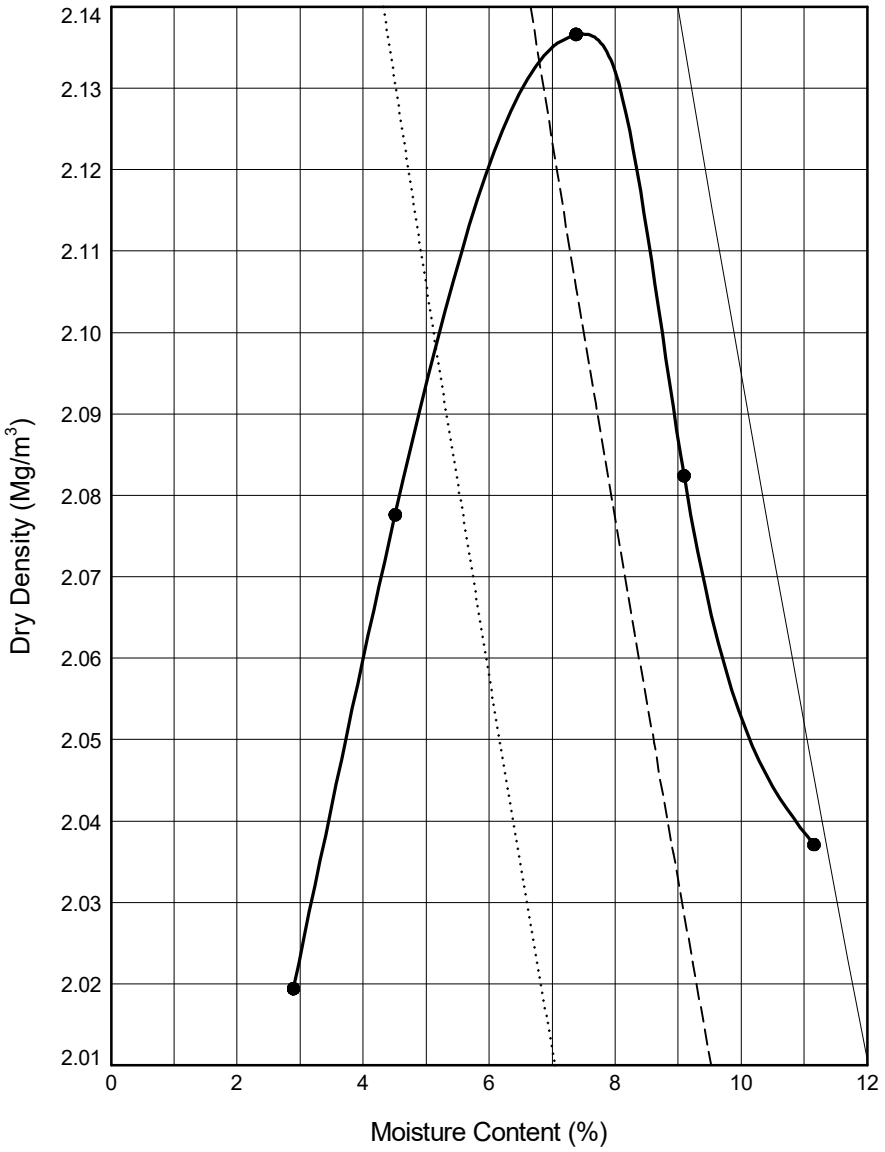
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Borehole: **BH-PTS126** Sample Ref: **6** Sample Type: **B** Depth (m): **0.80**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **6.7**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.14**
% Retained on 37.5mm BS Sieve	: **11**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **7,4**
% Retained on 20.0mm BS Sieve	: **9**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Brown very gravelly silty SAND	——— 0%	– – – - 5%	····· 10%

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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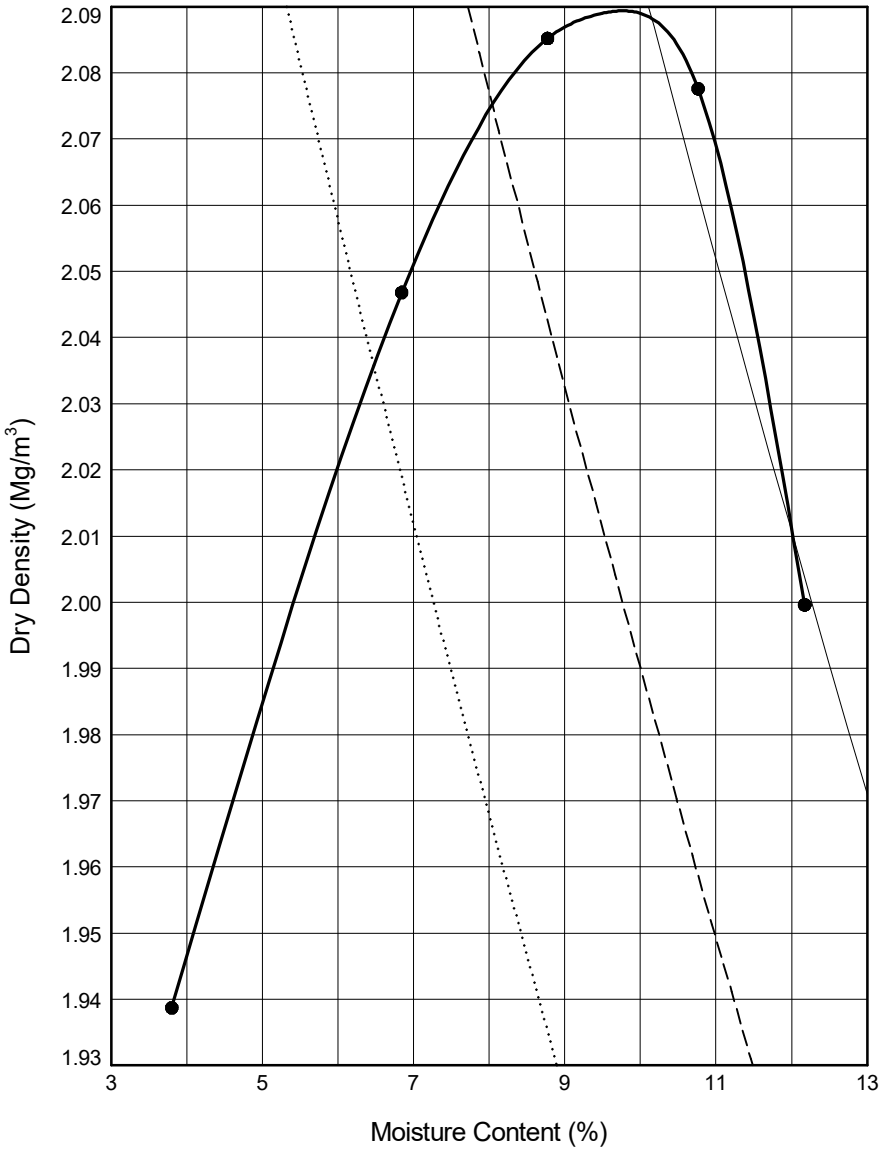
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS126** Sample Ref: **9** Sample Type: **B** Depth (m): **1.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.09**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9.9**
% Retained on 20.0mm BS Sieve	: **6**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown gravelly clayey SILT	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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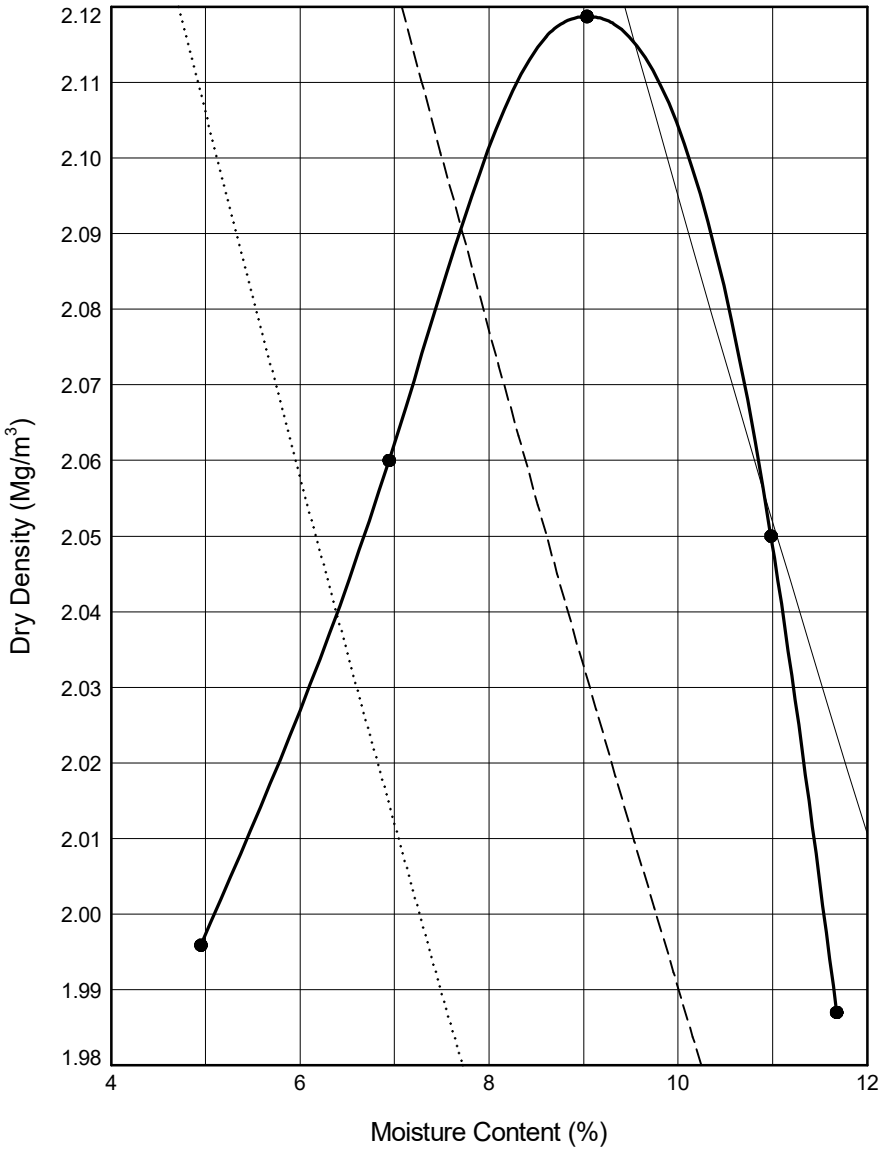
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS126** Sample Ref: **20** Sample Type: **B** Depth (m): **4.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **11**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.12**
% Retained on 37.5mm BS Sieve	: **25**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9**
% Retained on 20.0mm BS Sieve	: **11**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown gravelly sandy SILT	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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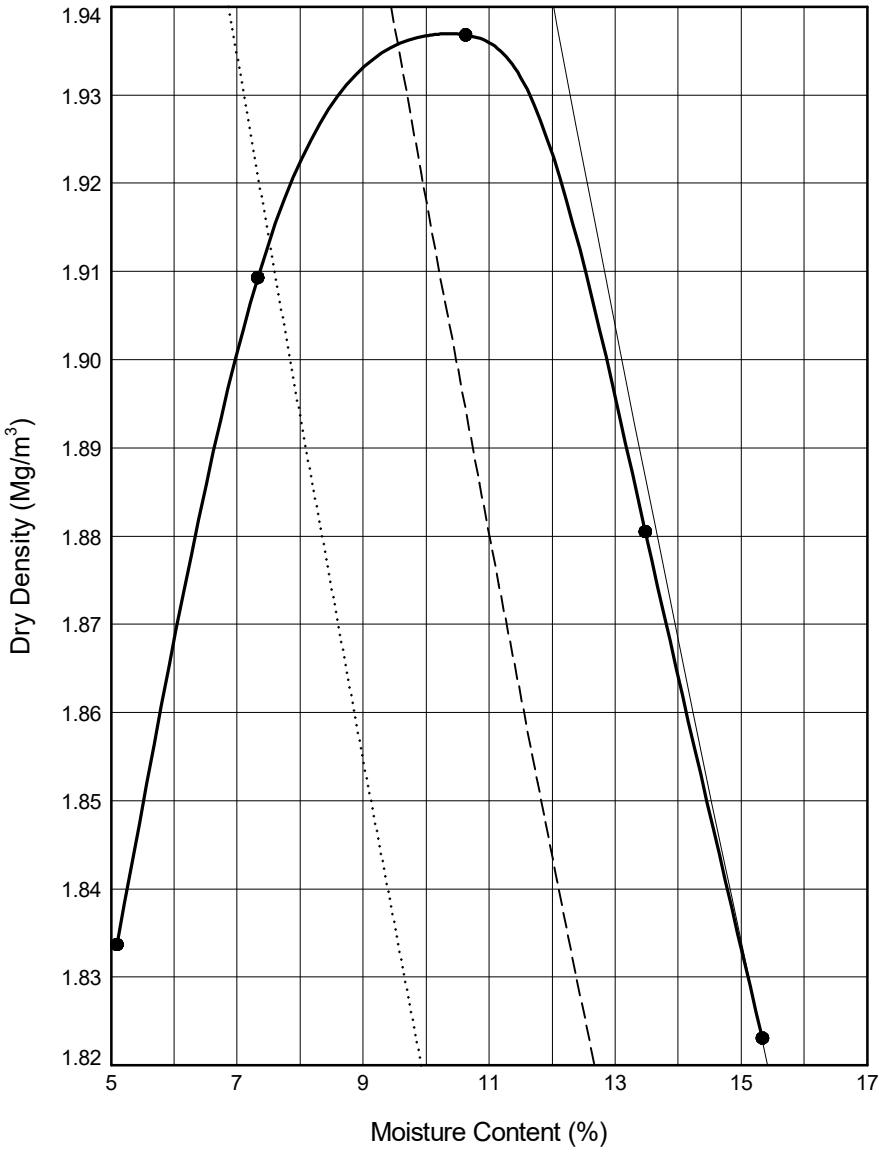
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS127** Sample Ref: **4** Sample Type: **B** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **15**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.94**
% Retained on 37.5mm BS Sieve	: **9**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10.6**
% Retained on 20.0mm BS Sieve	: **2**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m^3)	: **2.53**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Red gravelly clayey SAND with medium cobble content	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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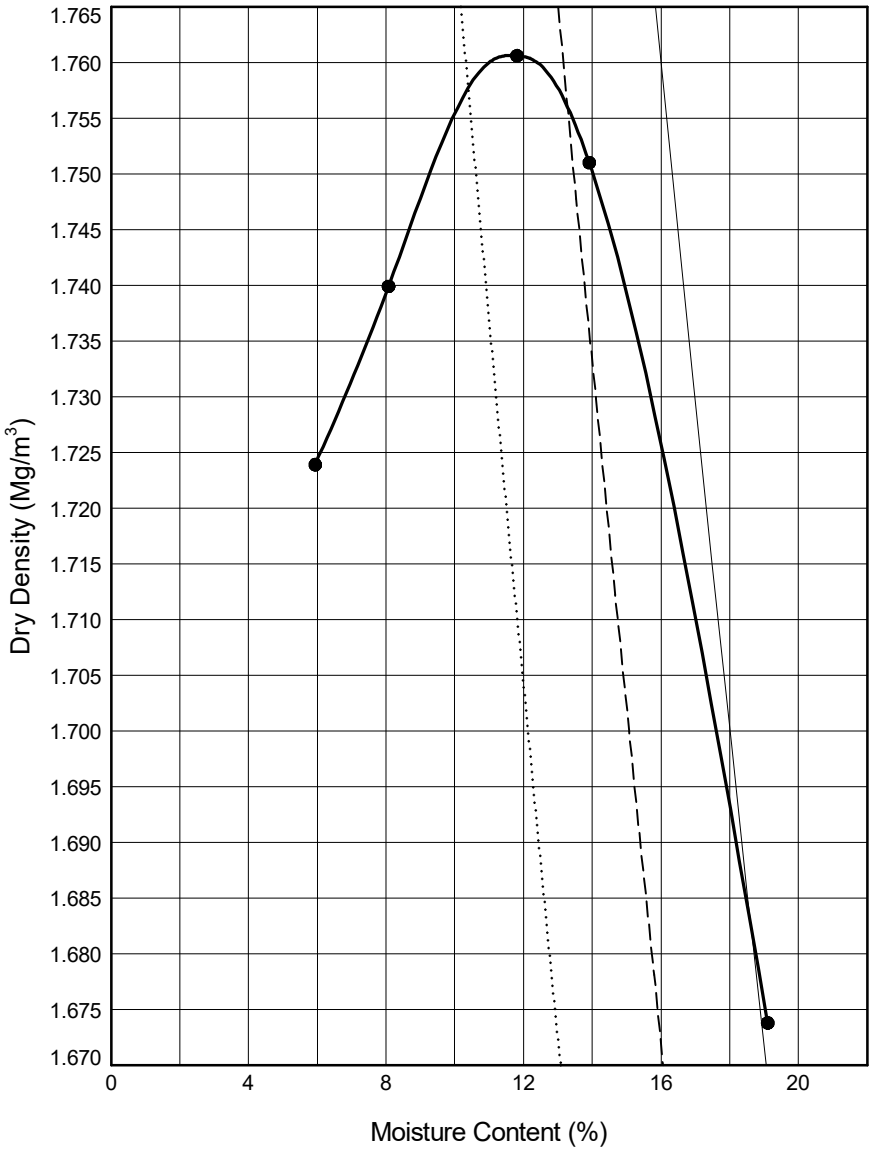
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS127** Sample Ref: **12** Sample Type: **B** Depth (m): **2.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **19**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.76**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **12**
% Retained on 20.0mm BS Sieve	: **0**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.45**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Red slightly gravelly clayey SAND	——— 0%	– – – - 5%	····· 10%

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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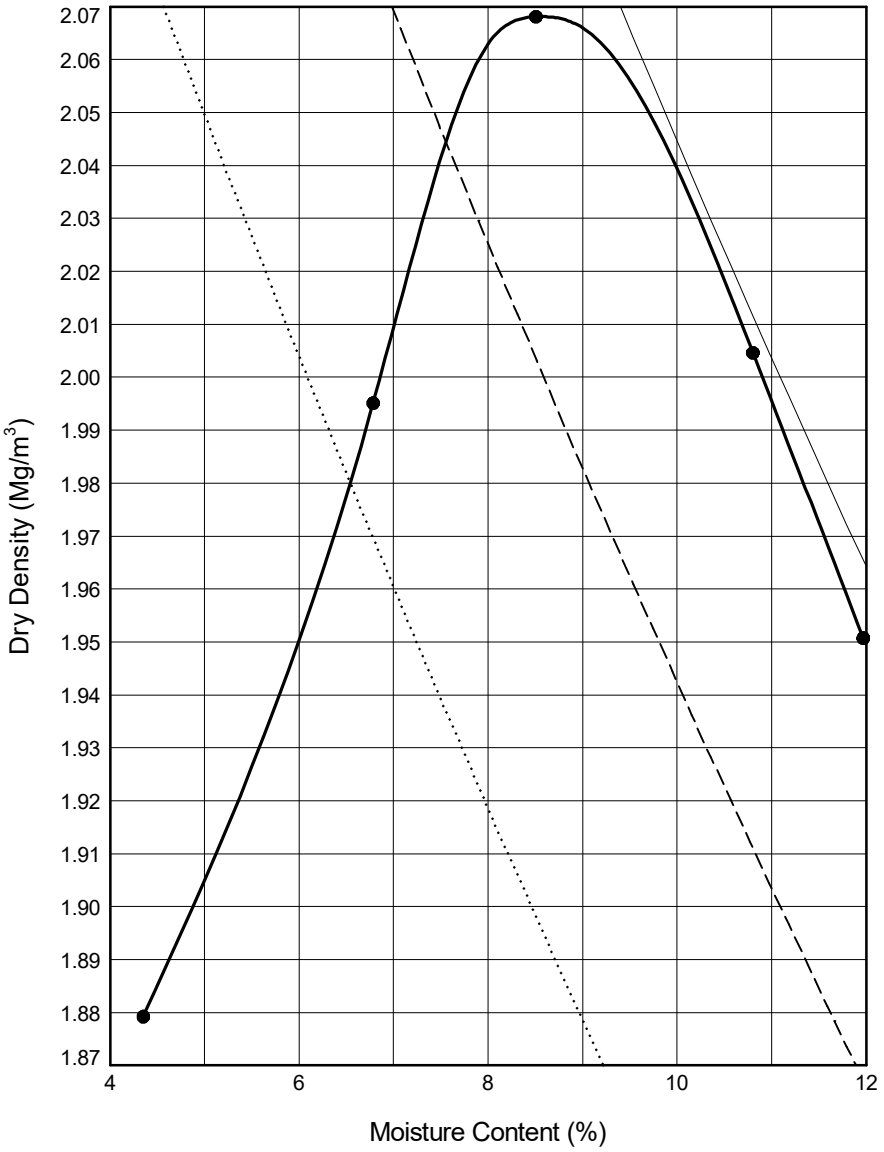
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS127** Sample Ref: **16** Sample Type: **B** Depth (m): **3.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **4.4**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.07**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **8.5**
% Retained on 20.0mm BS Sieve	: **1**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.57**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Red slightly gravelly clayey SAND	——— 0%	– – – - 5%	····· 10%

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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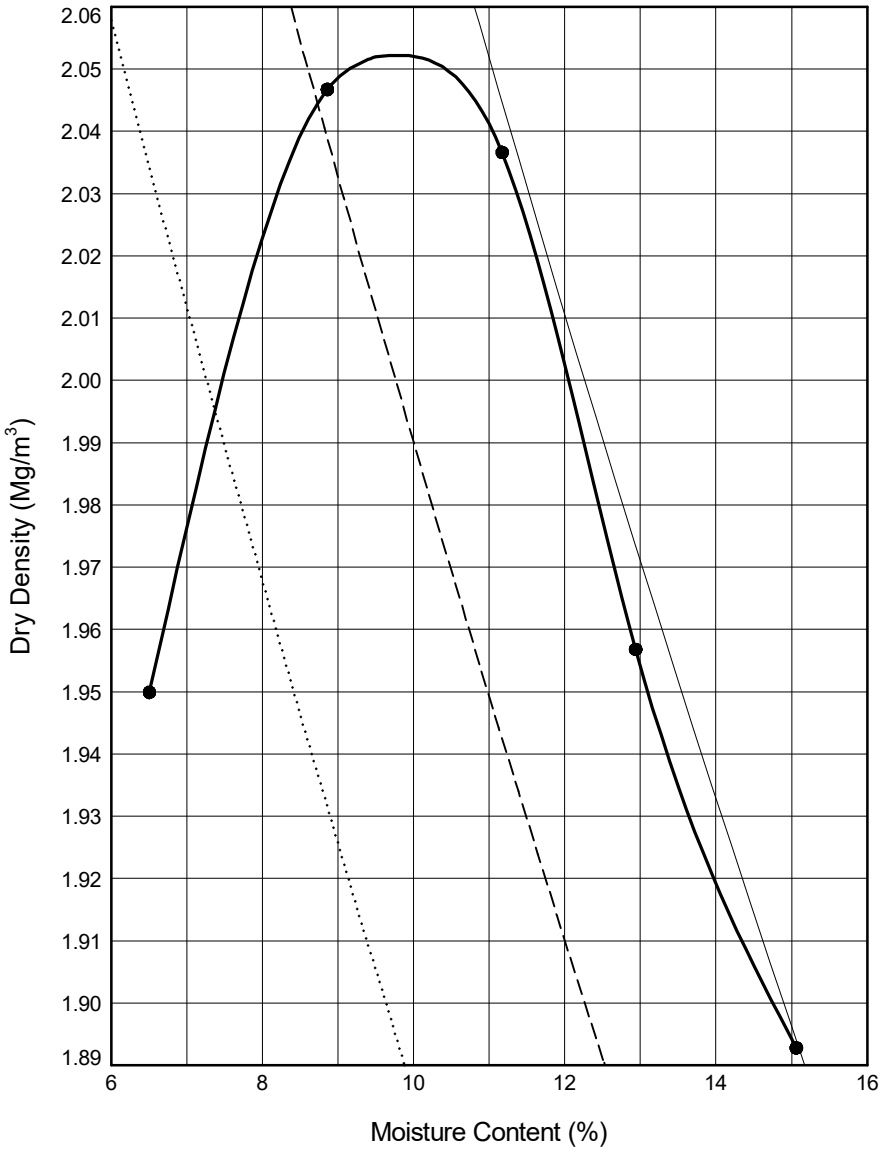
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS128A** Sample Ref: **11** Sample Type: **B** Depth (m): **3.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **13**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.05**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9.8**
% Retained on 20.0mm BS Sieve	: **3**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown clayey SAND	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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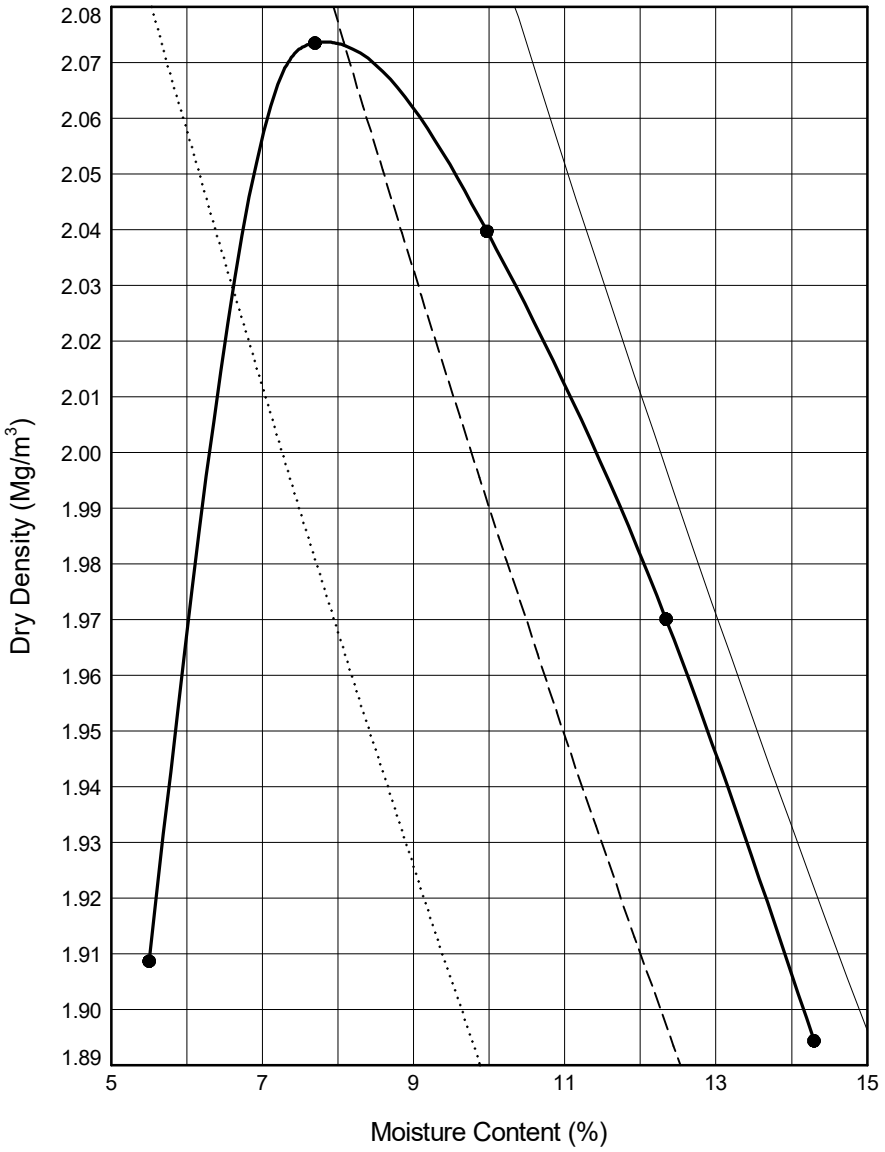
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS129** Sample Ref: **4** Sample Type: **B** Depth (m): **0.90**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.07**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **7.7**
% Retained on 20.0mm BS Sieve	: **3**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown slightly gravelly sandy SILT	——— 0%	– – – - 5%	····· 10%

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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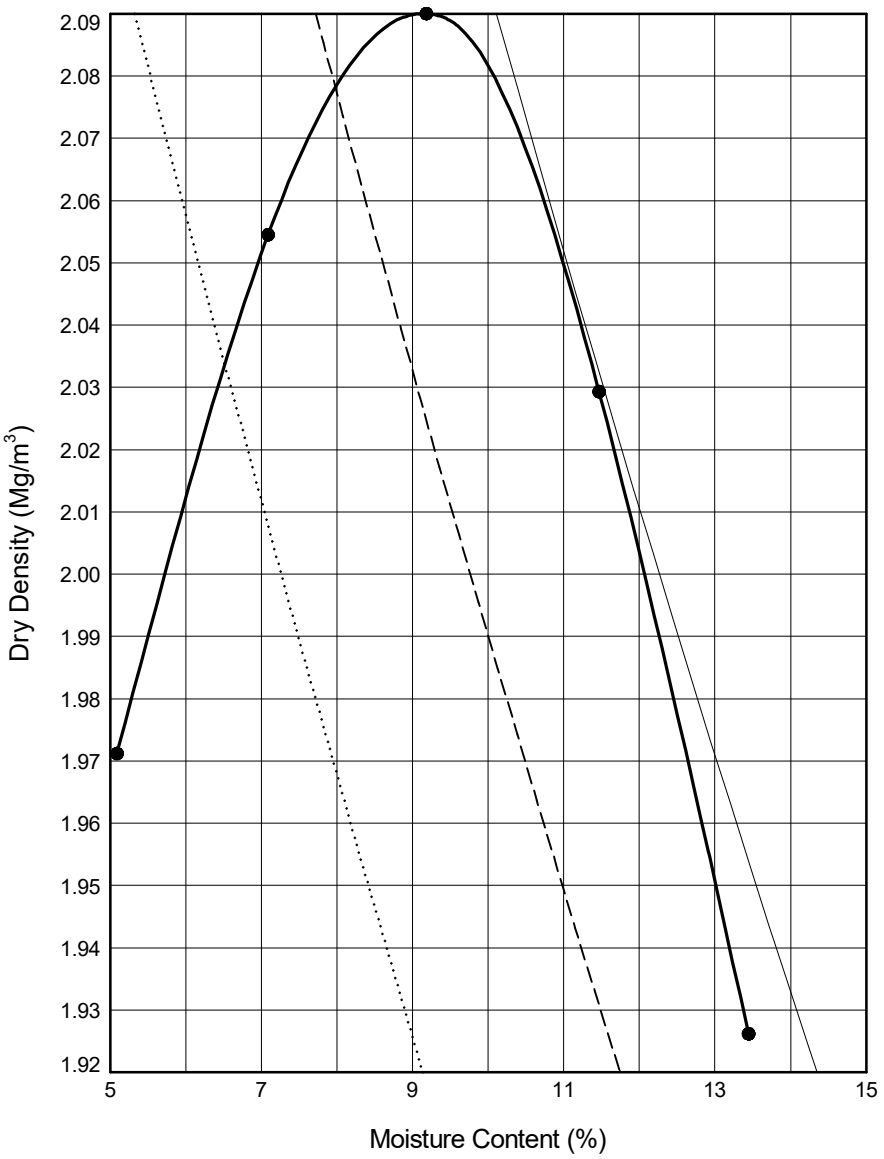
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Borehole: **BH-PTS129** Sample Ref: **16** Sample Type: **B** Depth (m): **3.00**



Initial Sample Conditions		Test Details		Test Results
Initial Moisture Content (%)	: **11**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3) :
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%) :
% Retained on 20.0mm BS Sieve	: **4**	Type of Mould	: **1 LITRE**	Method Used: **Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:
Size of Soil Pieces	: **<20mm**	Separate samples were used.		

Sample Description	Key to Air Voids Lines		
Red slightly gravelly silty SAND	——— 0%	– – – - 5%	····· 10%

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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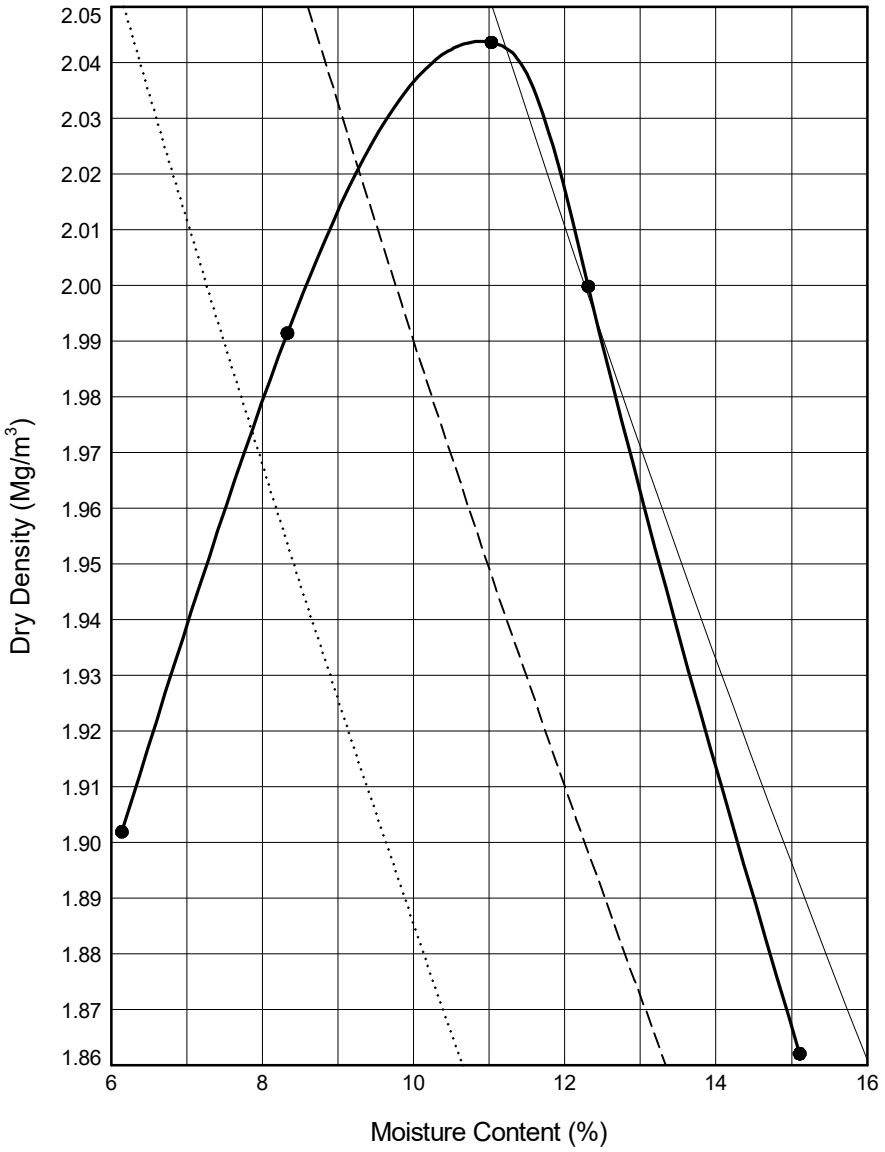
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Position ID: **GS-PTS102** Sample Ref: **5** Sample Type: **B** Depth (m): **1.45**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **11**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.04**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **11**
% Retained on 20.0mm BS Sieve	: **4**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown slightly gravelly sandy silty CLAY	——— 0%	– – – - 5%	····· 10%

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1a Princess Street
Bedminster
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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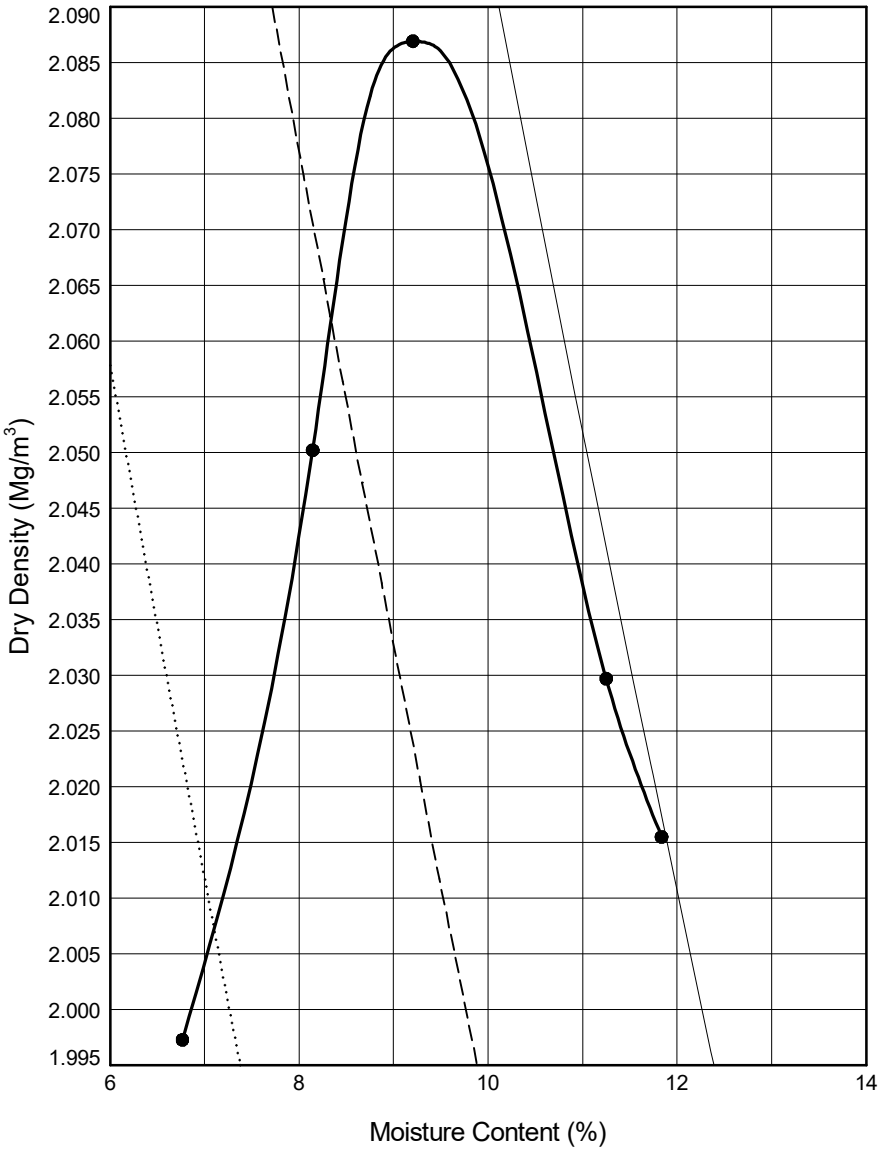
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Position ID: **GS-PTS102** Sample Ref: **9** Sample Type: **B** Depth (m): **3.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.09**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9.2**
% Retained on 20.0mm BS Sieve	: **7**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Red slightly gravelly sandy silty CLAY	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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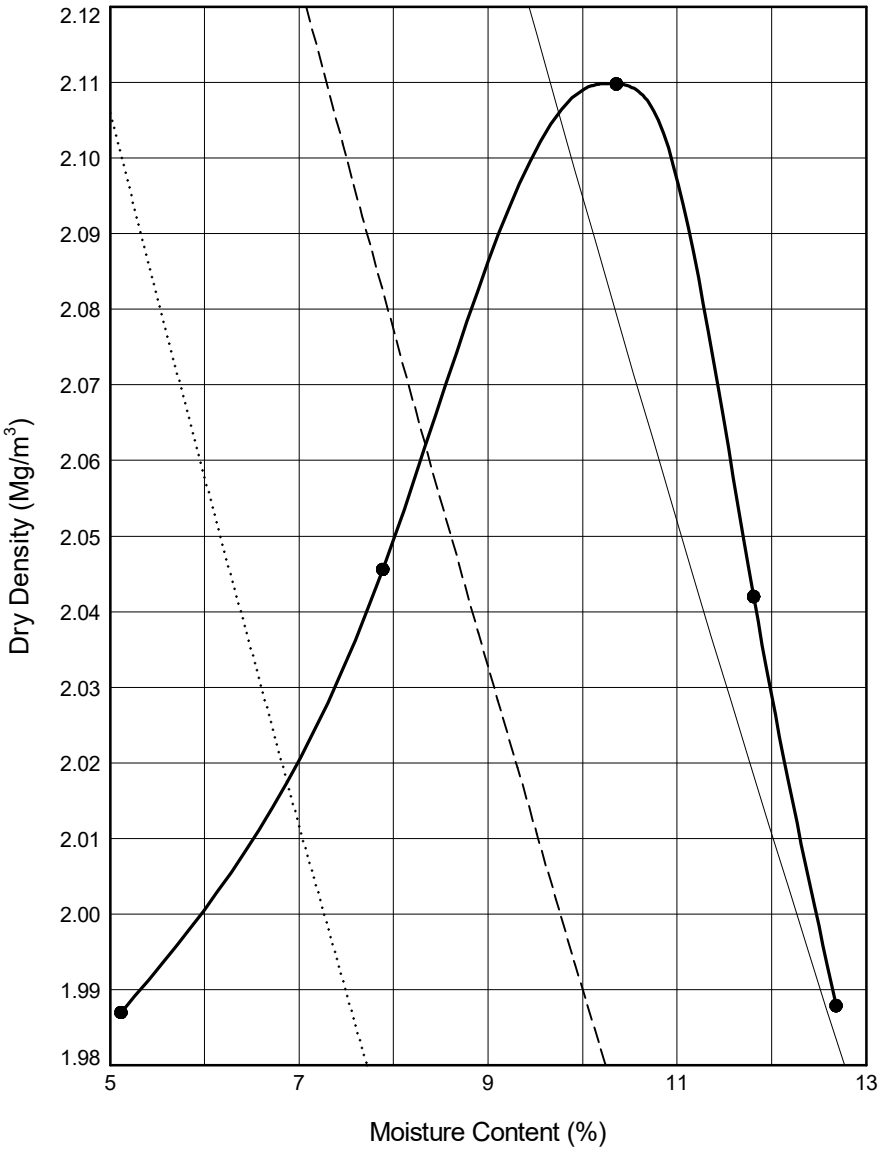
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Position ID: **GS-PTS102** Sample Ref: **16** Sample Type: **B** Depth (m): **5.30**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **10.0**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.11**
% Retained on 37.5mm BS Sieve	: **39**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10.4**
% Retained on 20.0mm BS Sieve	: **17**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown very gravelly silty CLAY	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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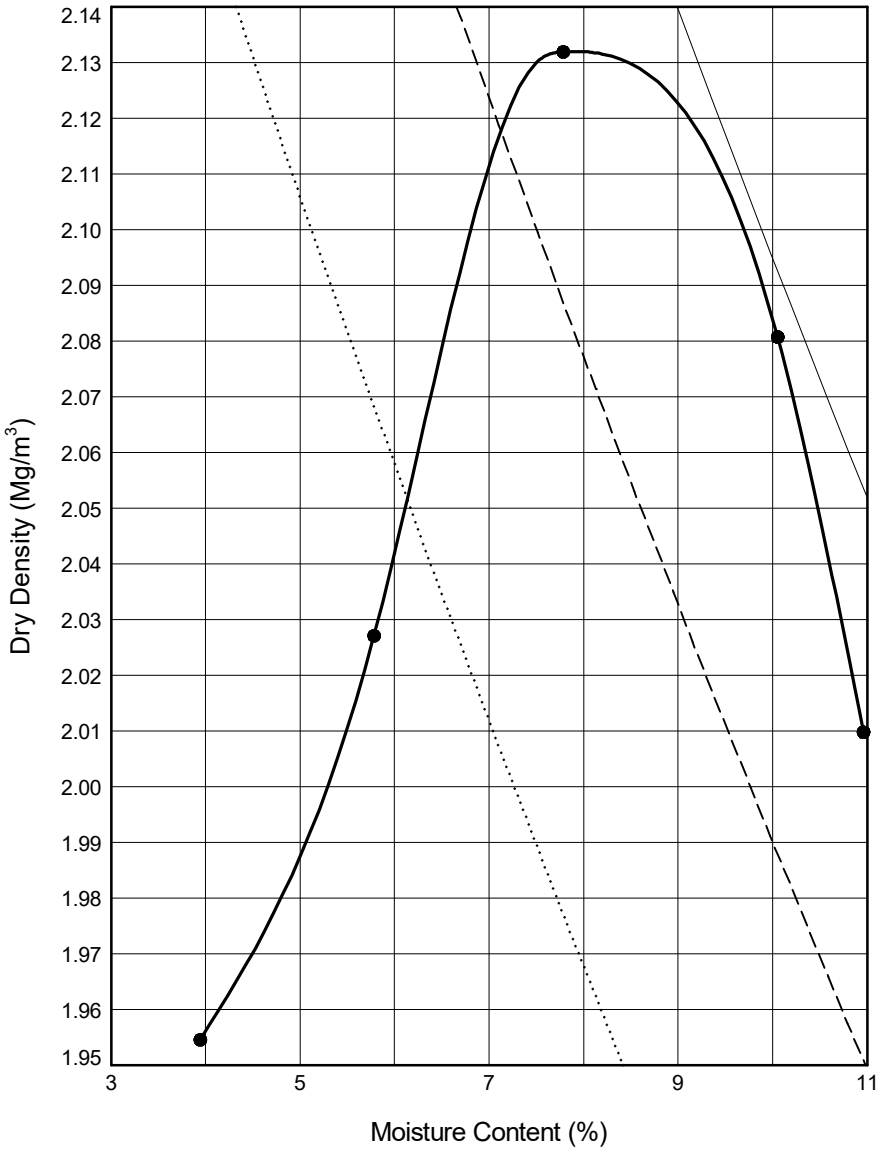
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Position ID: **GS-PTS105** Sample Ref: **6** Sample Type: **B** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **5.8**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.13**
% Retained on 37.5mm BS Sieve	: **28**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **7.8**
% Retained on 20.0mm BS Sieve	: **5**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown very gravelly clayey SAND with high cobble content	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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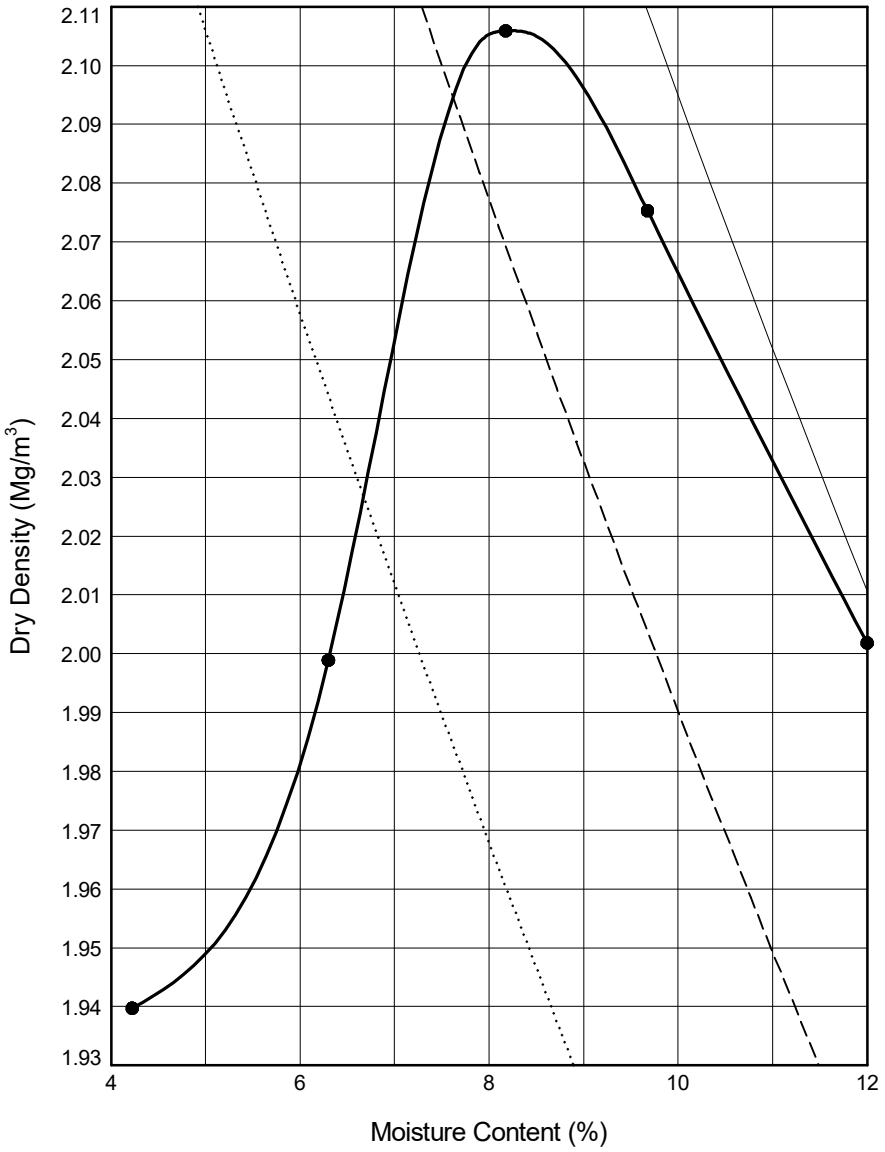
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Position ID: **GS-PTS105** Sample Ref: **8** Sample Type: **B** Depth (m): **1.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **6.3**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.11**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **8.2**
% Retained on 20.0mm BS Sieve	: **6**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown very gravelly very clayey SAND	——— 0%	– – – - 5%	····· 10%

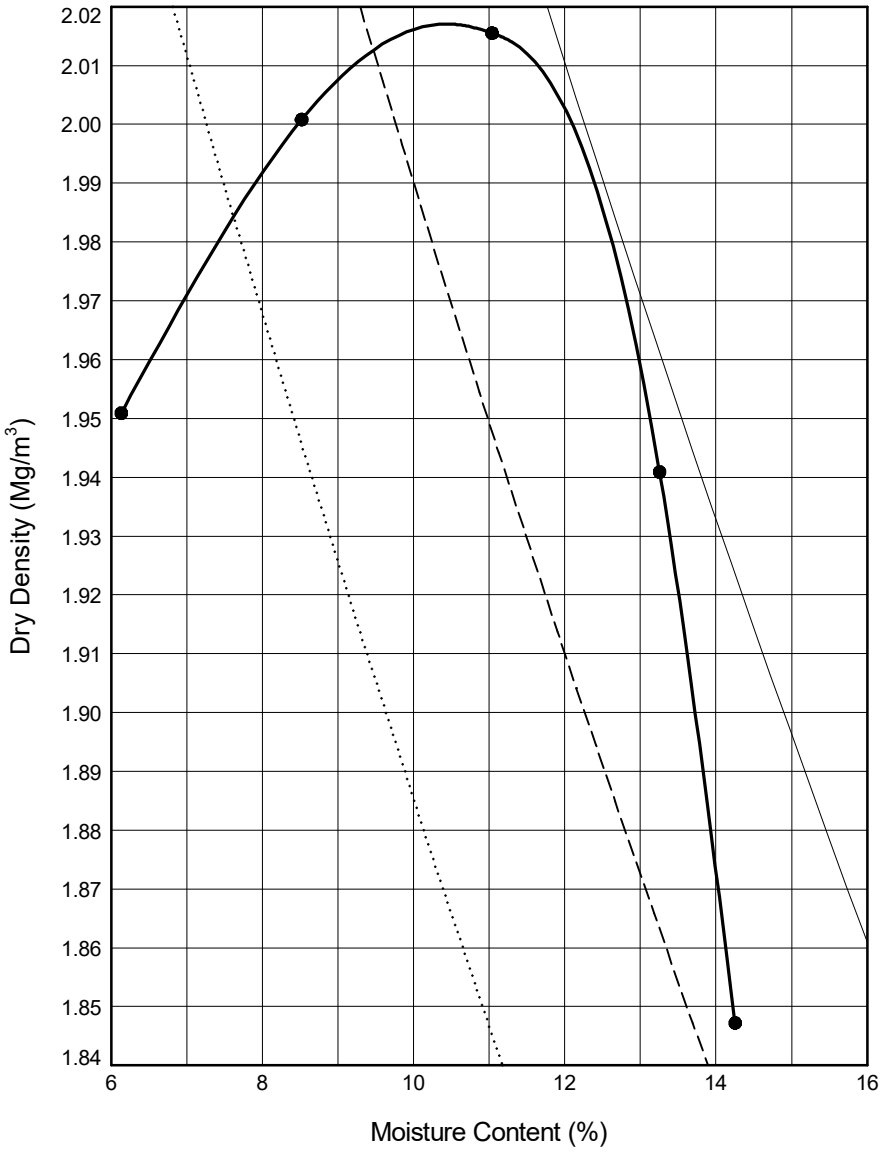
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/08/23 - 10:49 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Position ID: **GS-PTS107** Sample Ref: **8** Sample Type: **B** Depth (m): **1.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **11**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.02**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10.5**
% Retained on 20.0mm BS Sieve	: **3**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown clayey sandy SILT	——— 0%	– – – - 5%	····· 10%

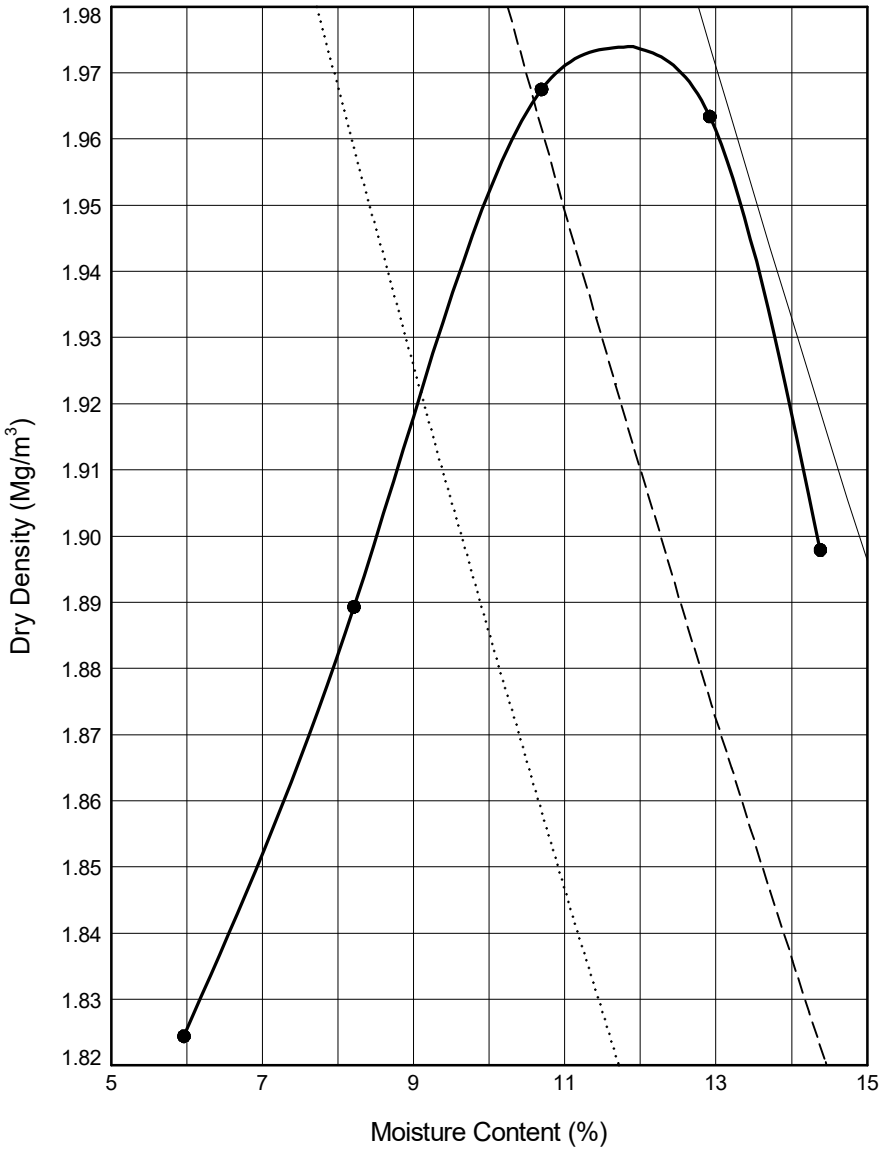
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/08/23 - 10:50 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Position ID: **GS-PTS108A** Sample Ref: **8** Sample Type: **B** Depth (m): **1.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **13**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **1.97**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **11.8**
% Retained on 20.0mm BS Sieve	: **5**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Brown gravelly very clayey SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**30/08/23**

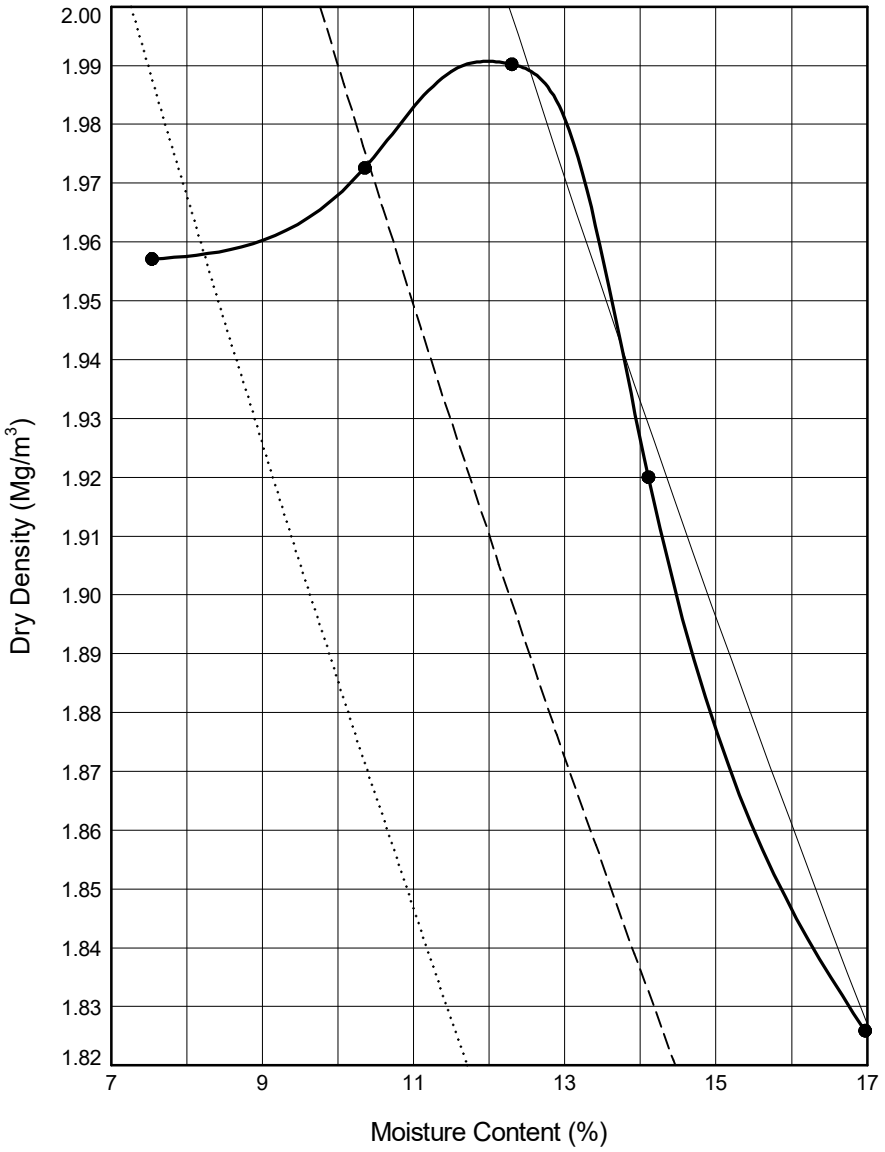
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 13:07 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Position ID: **GS-PTS108A** Sample Ref: **15** Sample Type: **B** Depth (m): **3.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.99**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **12**
% Retained on 20.0mm BS Sieve	: **4**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Dark red gravelly very clayey SAND	——— 0%	– – – - 5%	····· 10%

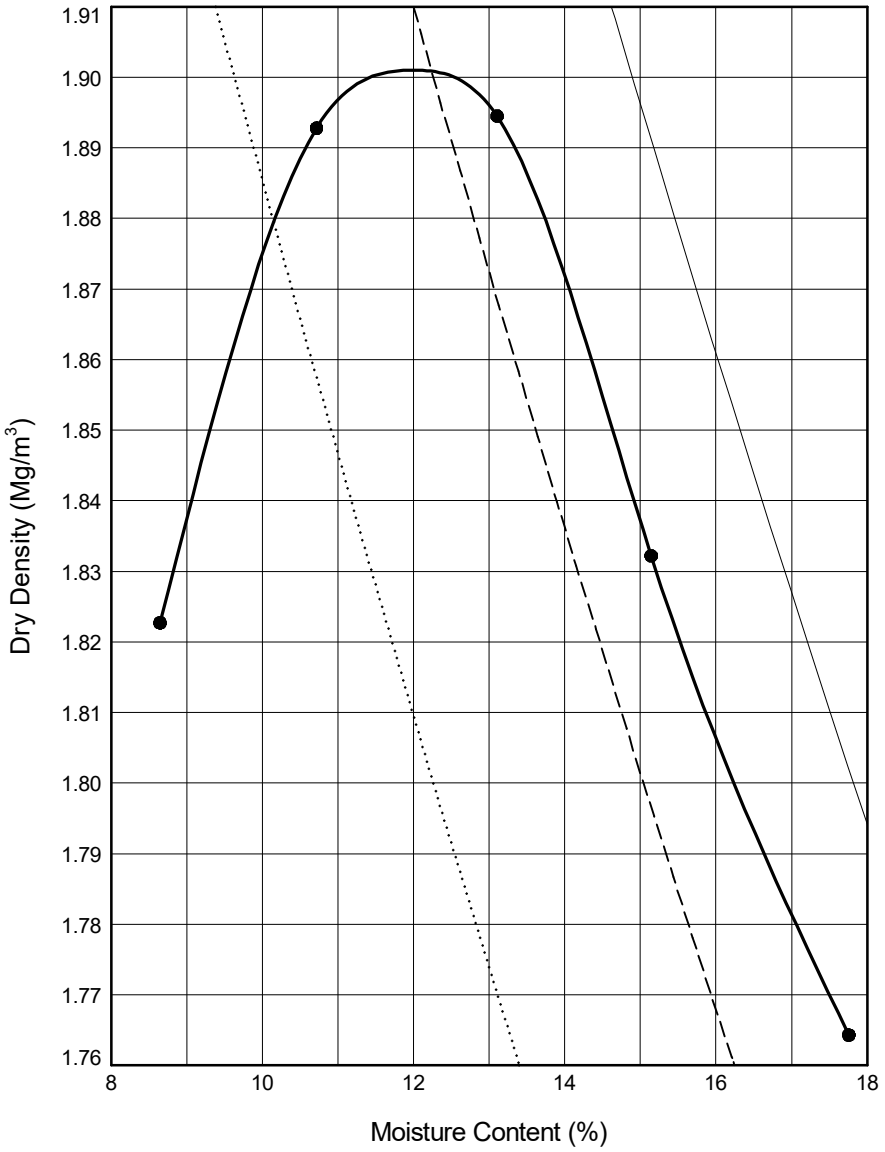
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**19/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/08/23 - 10:50 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Position ID: **GS-PTS109** Sample Ref: **4** Sample Type: **B** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **15**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **1.90**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **12**
% Retained on 20.0mm BS Sieve	: **2**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Red gravelly silty SAND	——— 0%	– – – - 5%	····· 10%

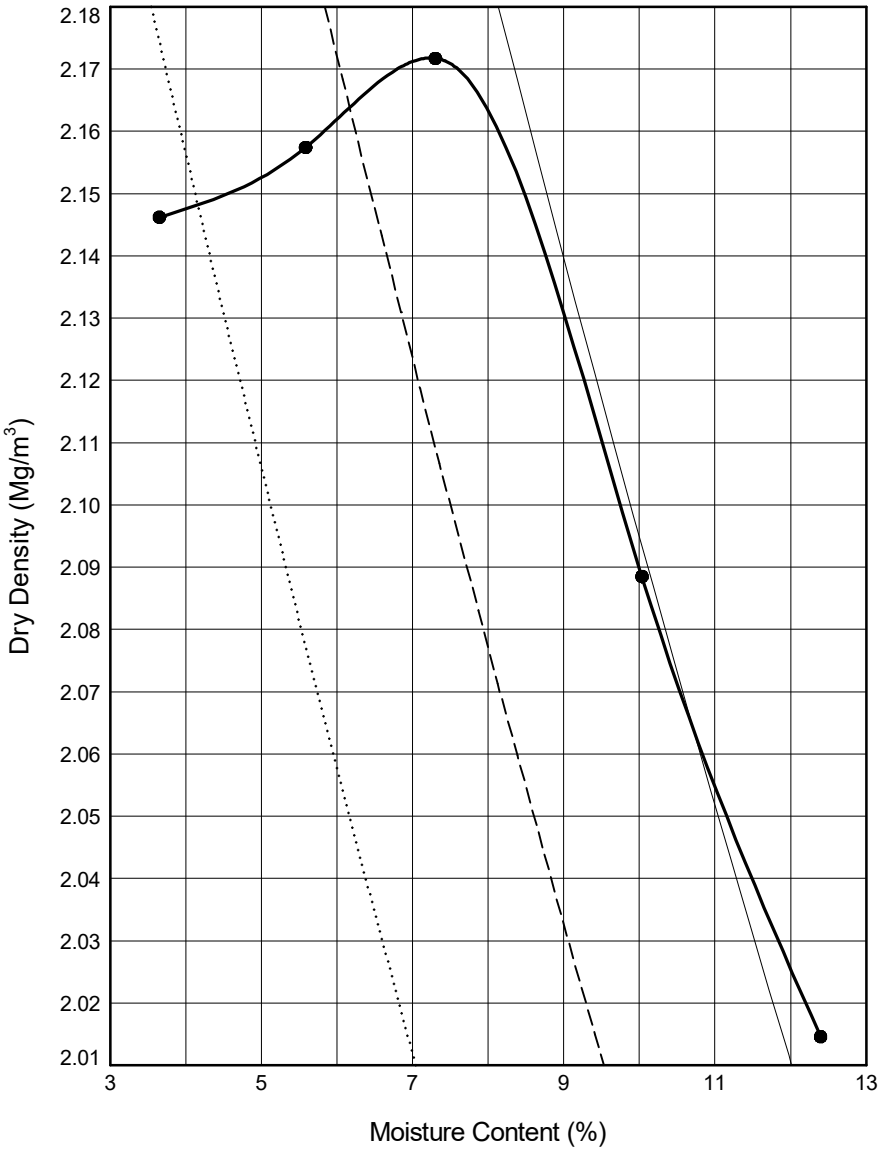
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**30/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 30/08/23 - 13:08 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS205** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **10.0**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.17**
% Retained on 37.5mm BS Sieve	: **13**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **7.3**
% Retained on 20.0mm BS Sieve	: **12**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Brown gravelly SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

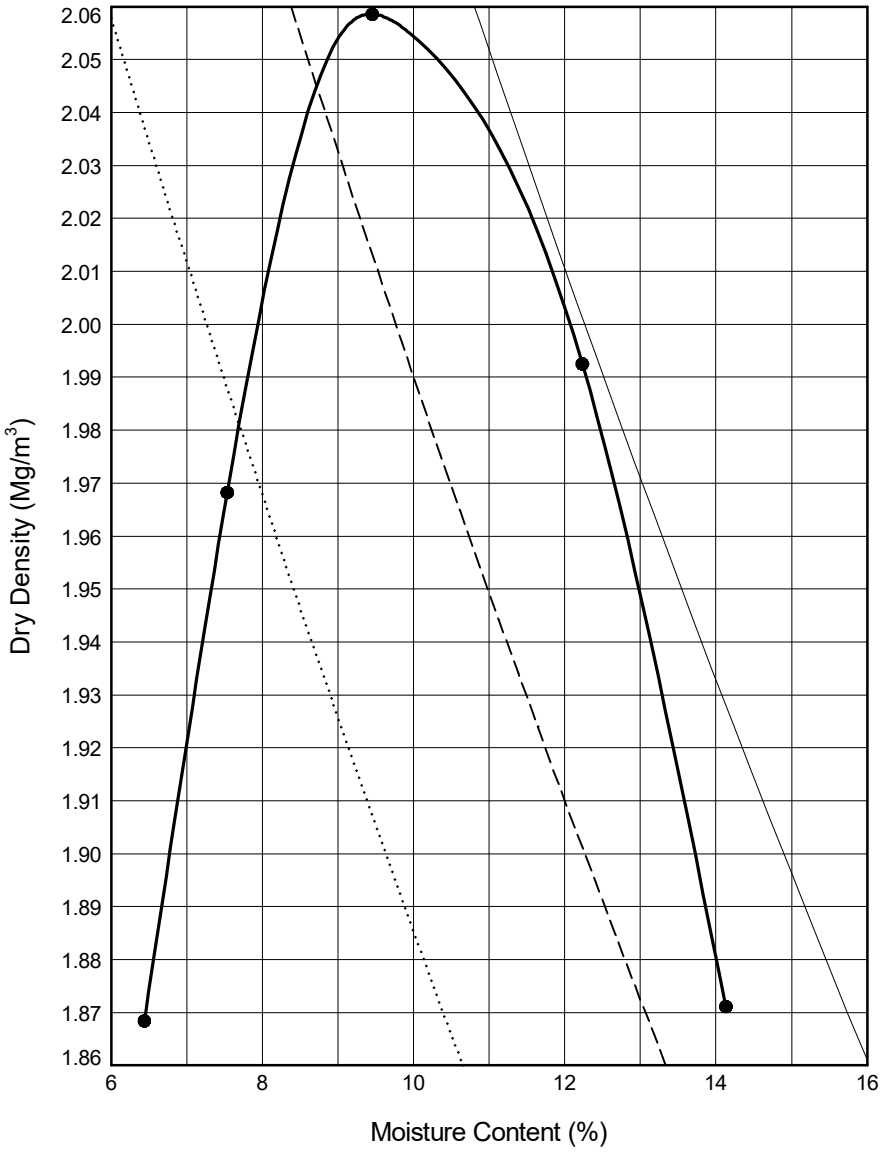
Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**20/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/08/23 - 11:41 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Trial Pit: **TP-PTS205** Sample Ref: **7** Sample Type: **AMAL** Depth (m): **1.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.06**
% Retained on 37.5mm BS Sieve	: **11**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9.5**
% Retained on 20.0mm BS Sieve	: **11**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Brown slightly clayey gravelly SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By	Date
DAISY RICHARDS	**20/08/23**

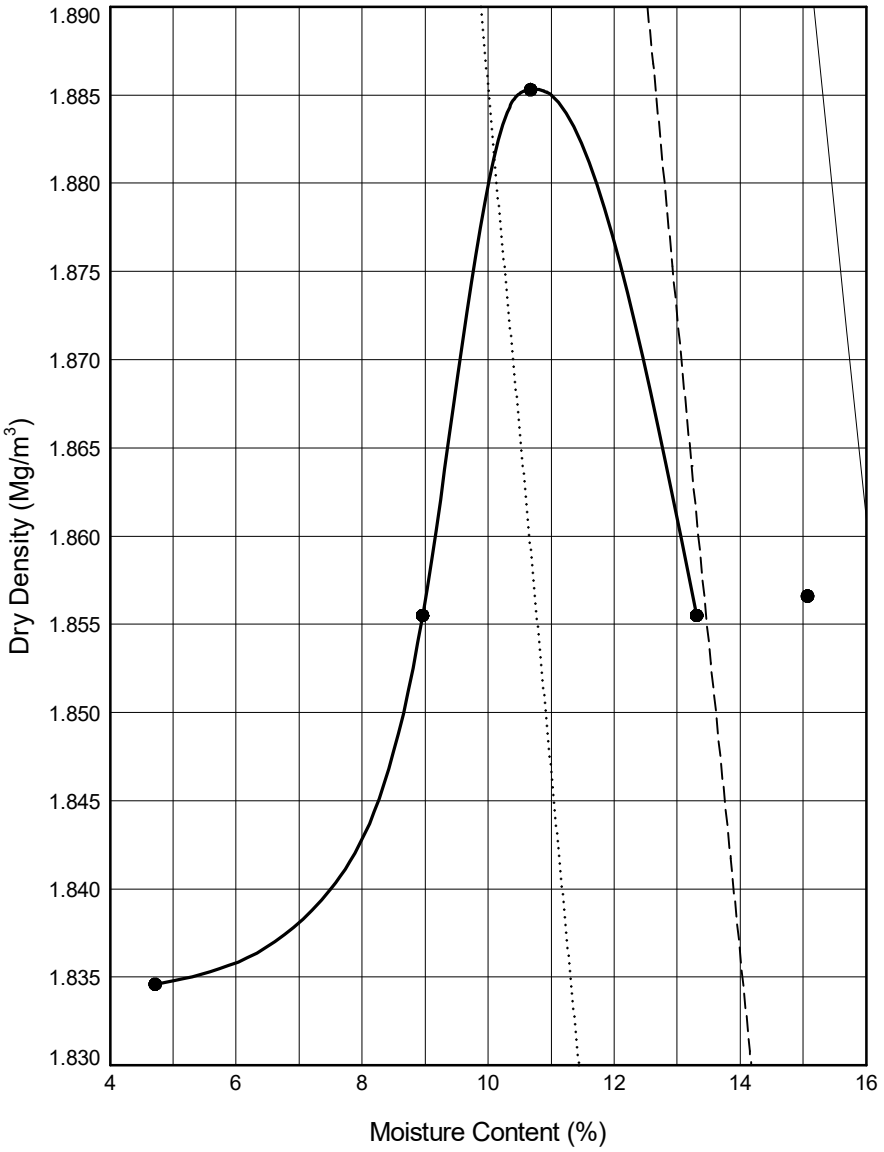
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/08/23 - 11:42 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS206** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **4.7**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.89**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10.7**
% Retained on 20.0mm BS Sieve	: **2**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Orangish brown gravelly SAND	——— 0%	– – – - 5%	····· 10%

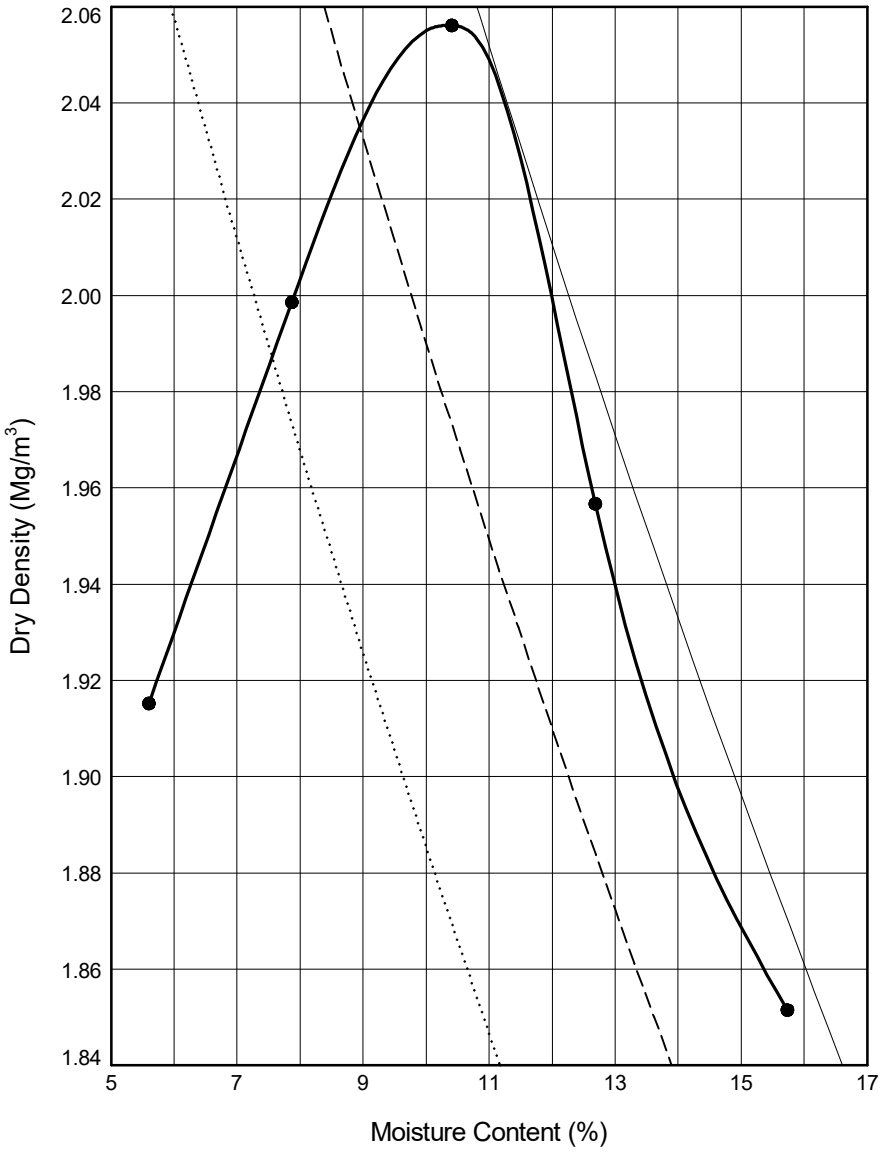
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**20/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/08/23 - 11:42 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS206** Sample Ref: **9** Sample Type: **LB** Depth (m): **2.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **11**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.06**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10.4**
% Retained on 20.0mm BS Sieve	: **5**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown gravelly clayey SAND	——— 0%	– – – - 5%	····· 10%

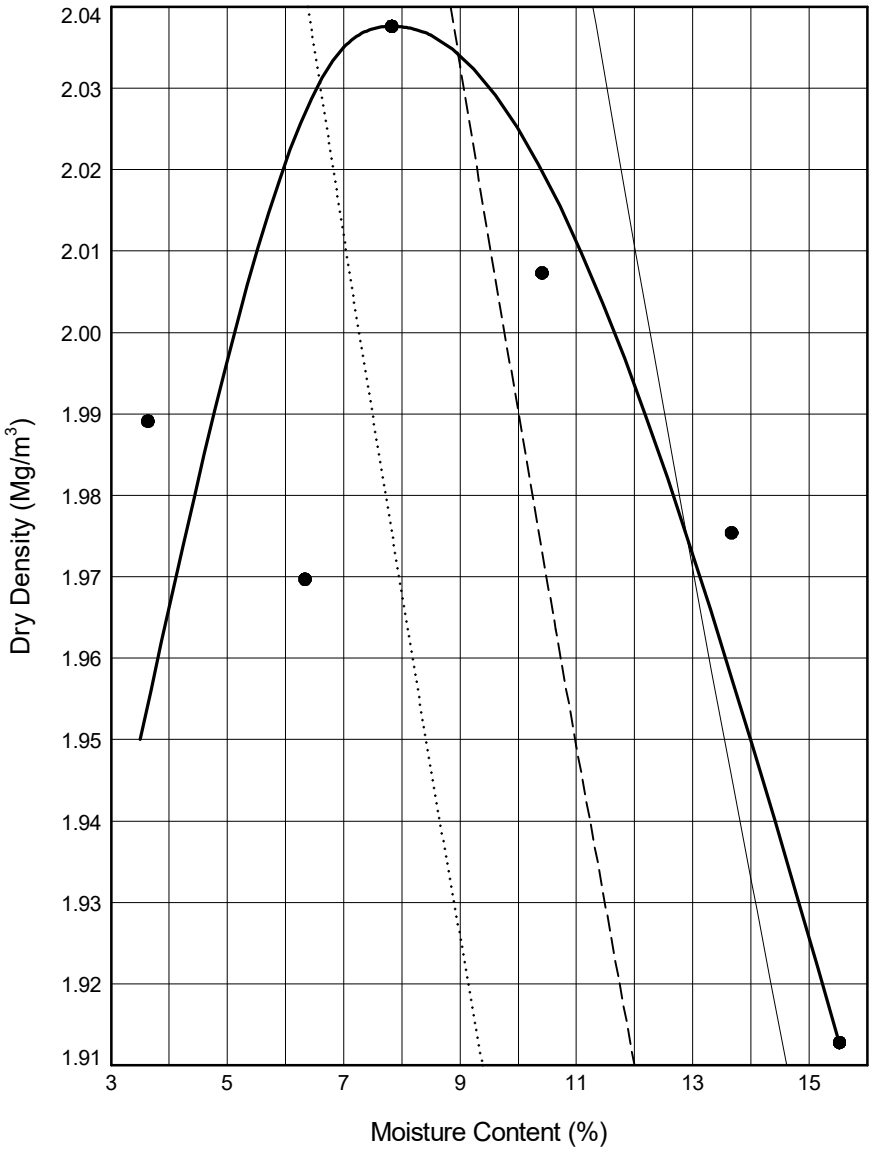
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**20/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/08/23 - 11:43 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS207** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **10.0**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.04**
% Retained on 37.5mm BS Sieve	: **3**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **7.8**
% Retained on 20.0mm BS Sieve	: **13**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Dark brown slightly gravelly sandy SILT	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**30/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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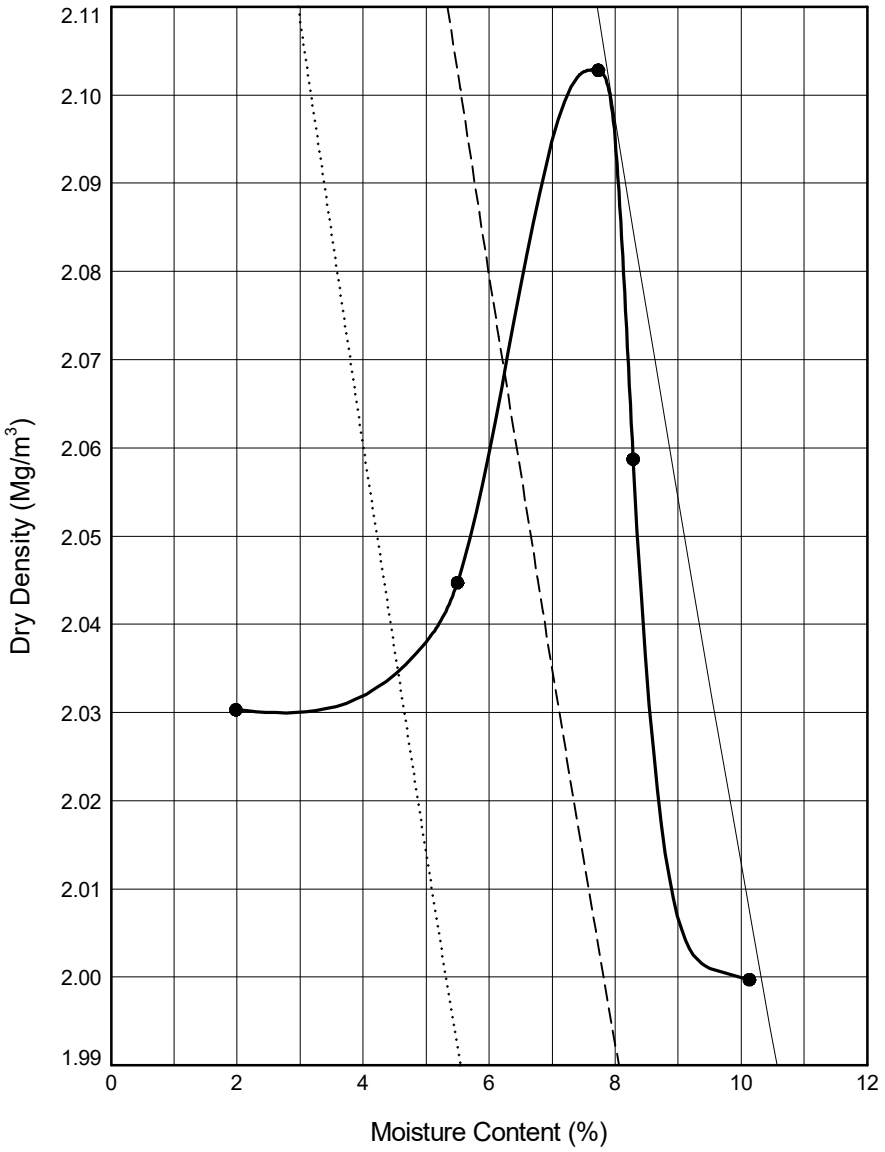
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS207** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **10.0**	Compaction Type	: **Heavy**	Maximum Dry Density (Mg/m^3)	: **2.06**
% Retained on 37.5mm BS Sieve	: **5**	Mass of Rammer (kg):	**4.5**	Optimum Moisture Content (%)	: **8.3**
% Retained on 20.0mm BS Sieve	: **13**	Type of Mould	: **CBR**	Method Used:	**Clause 3.6**
Particle Density - assumed (Mg/m^3)	: **2.52**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Brown very sandy silty GRAVEL	——— 0%	– – – - 5%	····· 10%

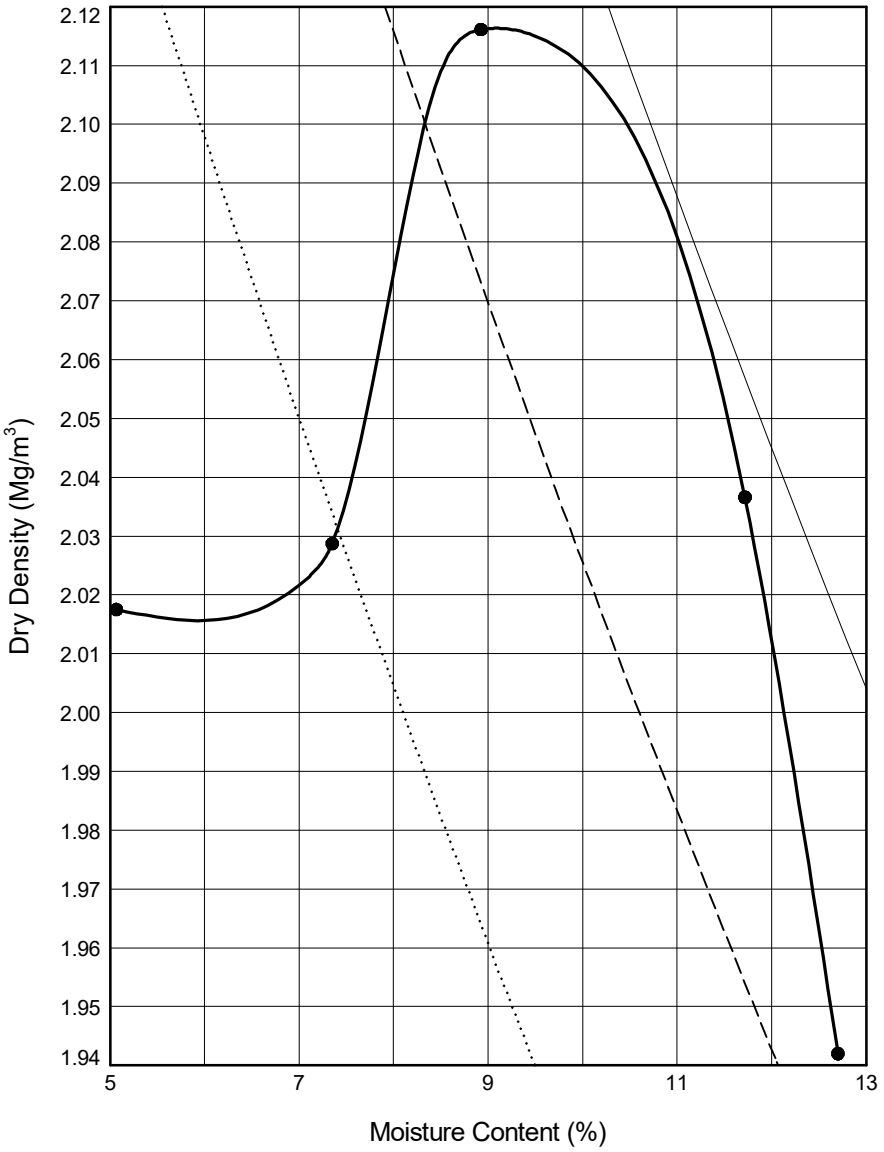
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**20/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/08/23 - 11:45 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS208** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **8.9**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.12**
% Retained on 37.5mm BS Sieve	: **28**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **8**
% Retained on 20.0mm BS Sieve	: **23**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m^3)	: **2.71**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Reddish brown sandy slightly clayey GRAVEL	——— 0%	– – – - 5%	····· 10%

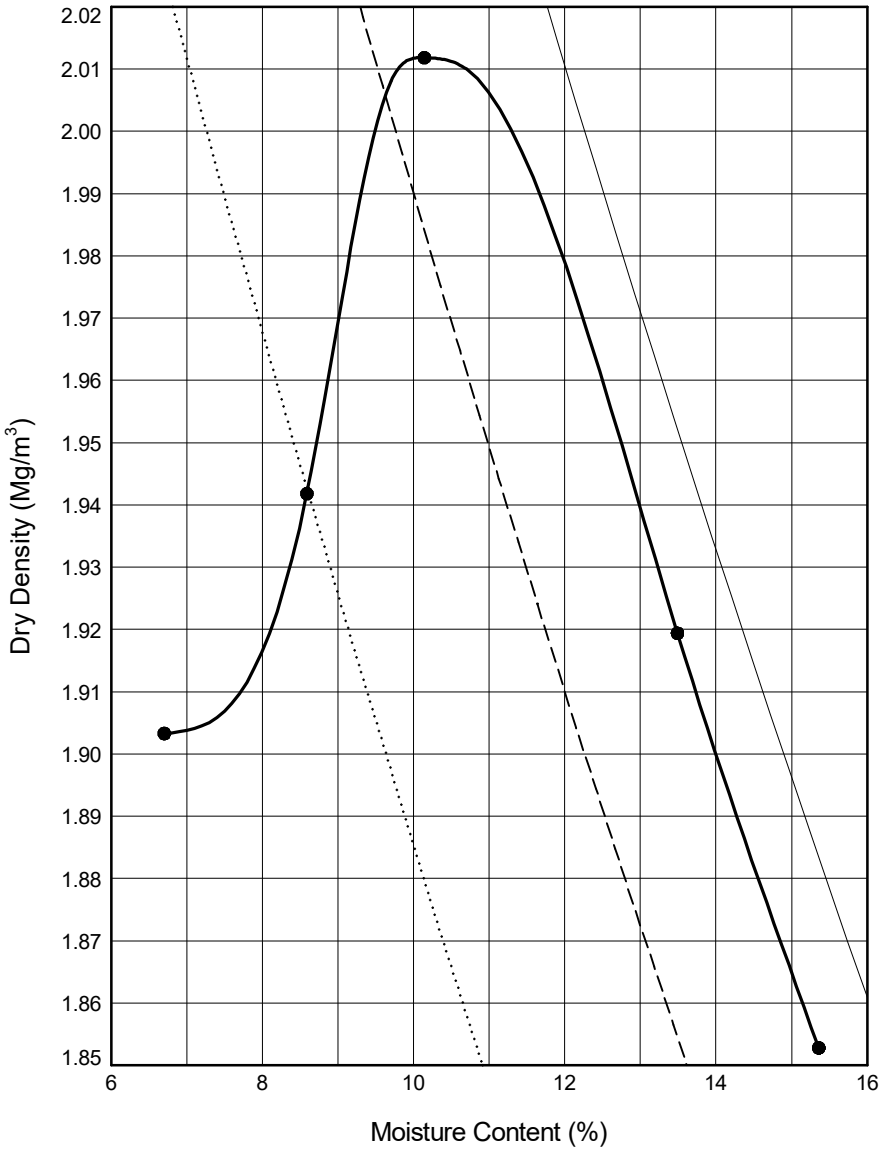
	Compiled By		Date
STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Francesca Bennett	**FRANCESCA BENNETT**	**20/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/08/23 - 11:45 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Trial Pit: **TP-PTS209** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **13**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.01**
% Retained on 37.5mm BS Sieve	: **12**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10.1**
% Retained on 20.0mm BS Sieve	: **10**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Brown gravelly sandy SILT	——— 0%	– – – - 5%	····· 10%

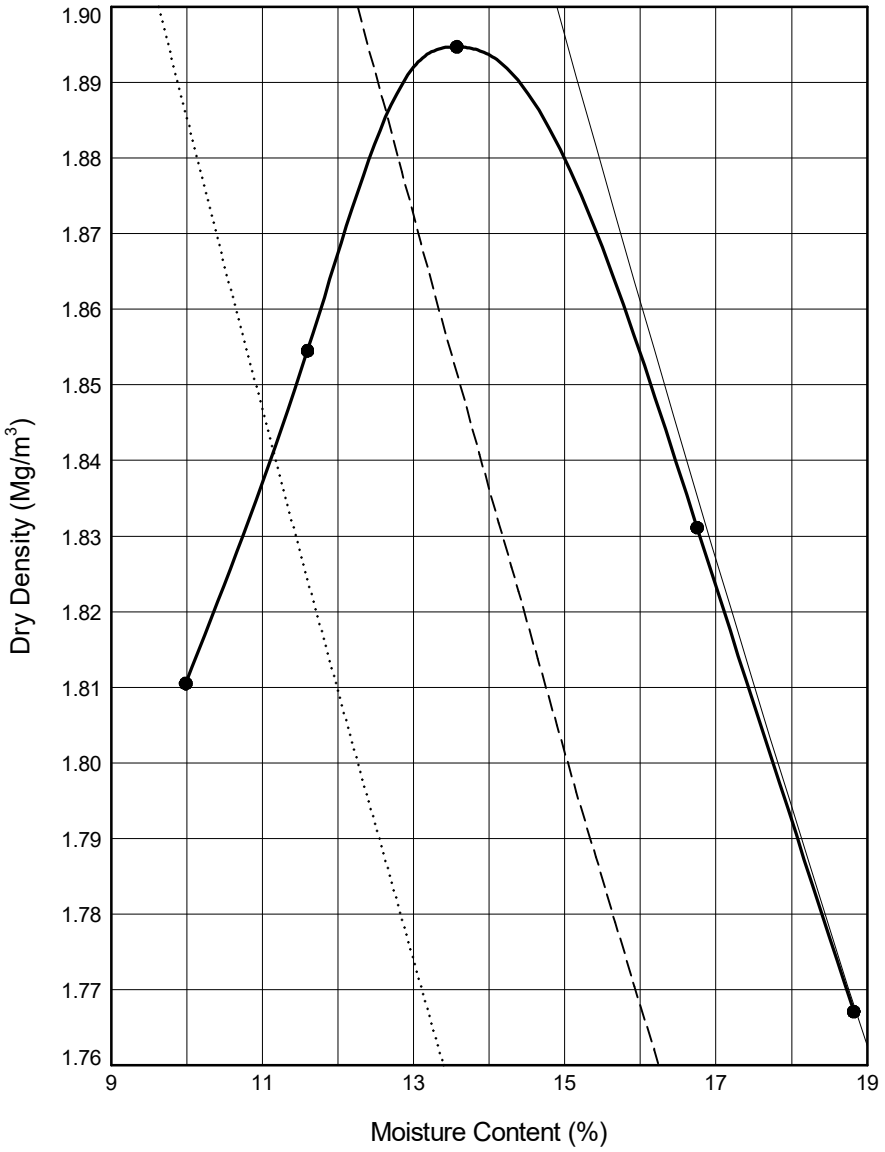
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**20/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/08/23 - 11:45 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS209** Sample Ref: **6** Sample Type: **B** Depth (m): **1.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **17**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.89**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **13.6**
% Retained on 20.0mm BS Sieve	: **3**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown slightly gravelly sandy silty CLAY	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**20/08/23**

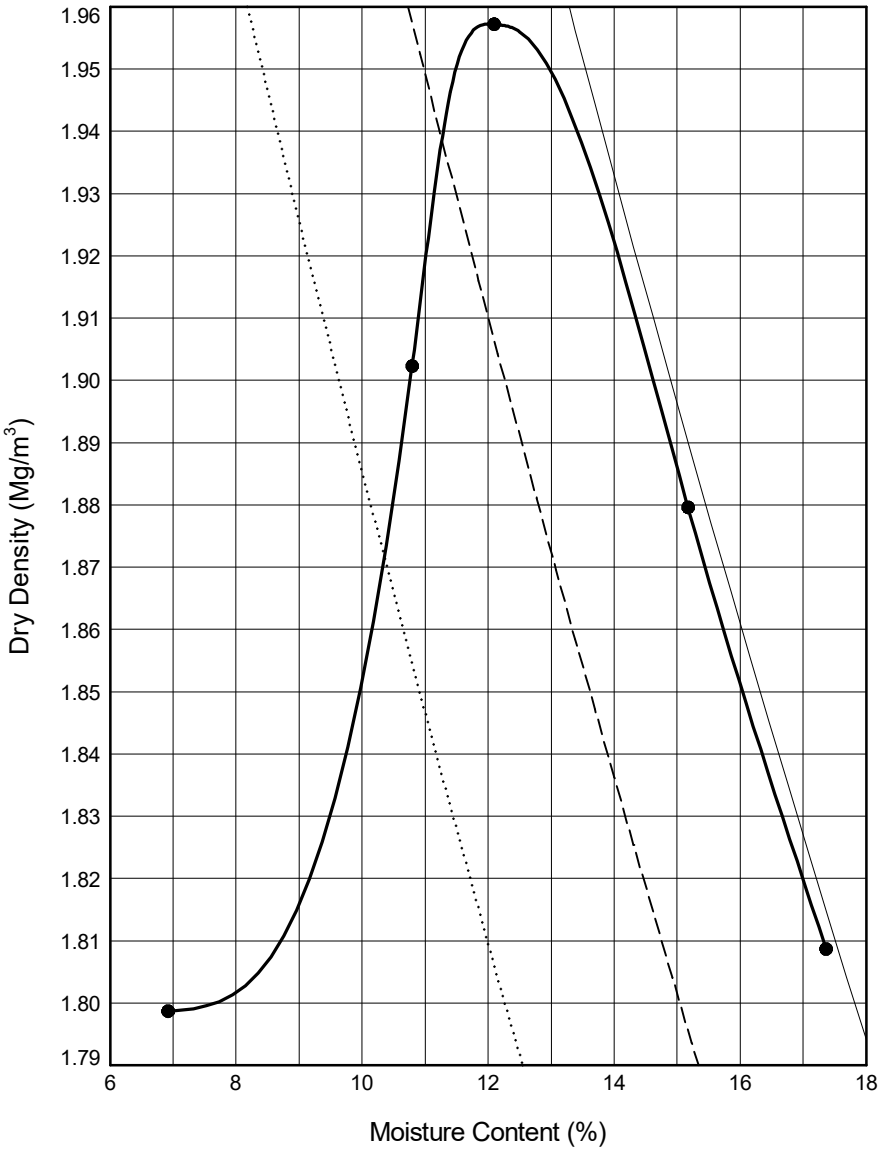
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/08/23 - 11:46 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS209** Sample Ref: **7** Sample Type: **LB** Depth (m): **1.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **15**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **1.96**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **12.1**
% Retained on 20.0mm BS Sieve	: **1**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Red slightly gravelly silty CLAY	——— 0%	– – – - 5%	····· 10%

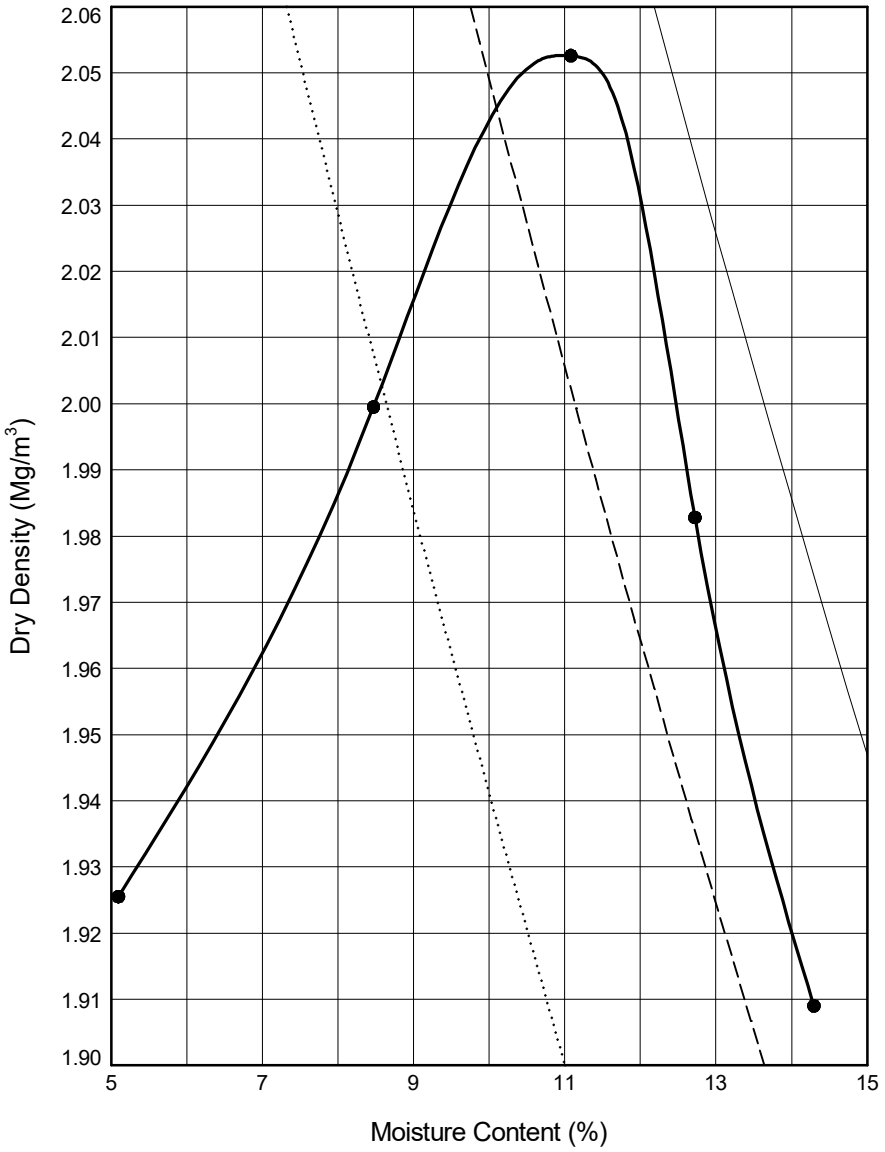
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**20/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/08/23 - 11:47 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS209** Sample Ref: **11** Sample Type: **B** Depth (m): **2.70**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **11**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.05**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **11.1**
% Retained on 20.0mm BS Sieve	: **2**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.75**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Red slightly gravelly sandy silty CLAY	——— 0%	– – – - 5%	····· 10%

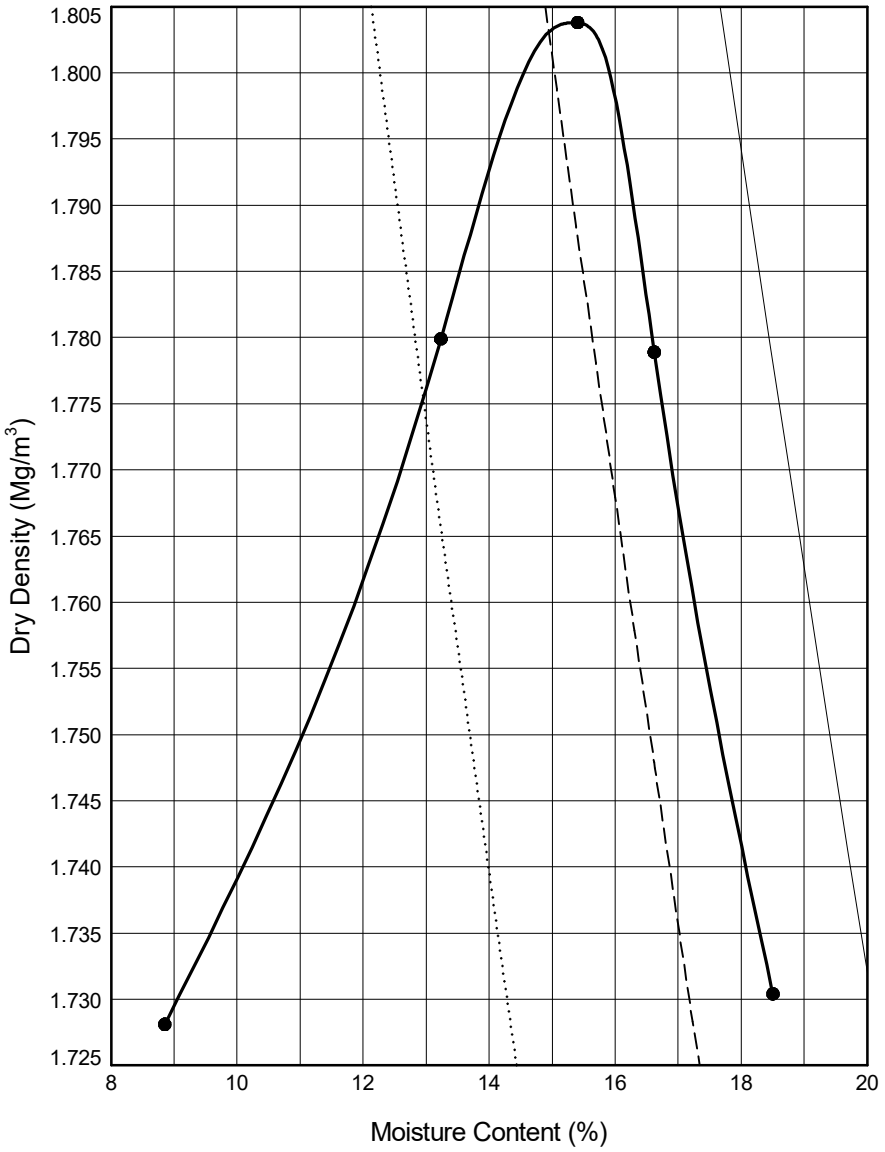
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**20/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/08/23 - 11:47 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Trial Pit: **TP-PTS210** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **17**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.80**
% Retained on 37.5mm BS Sieve	: **7**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **15.4**
% Retained on 20.0mm BS Sieve	: **7**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Dark brown very sandy clayey GRAVEL	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**20/08/23**

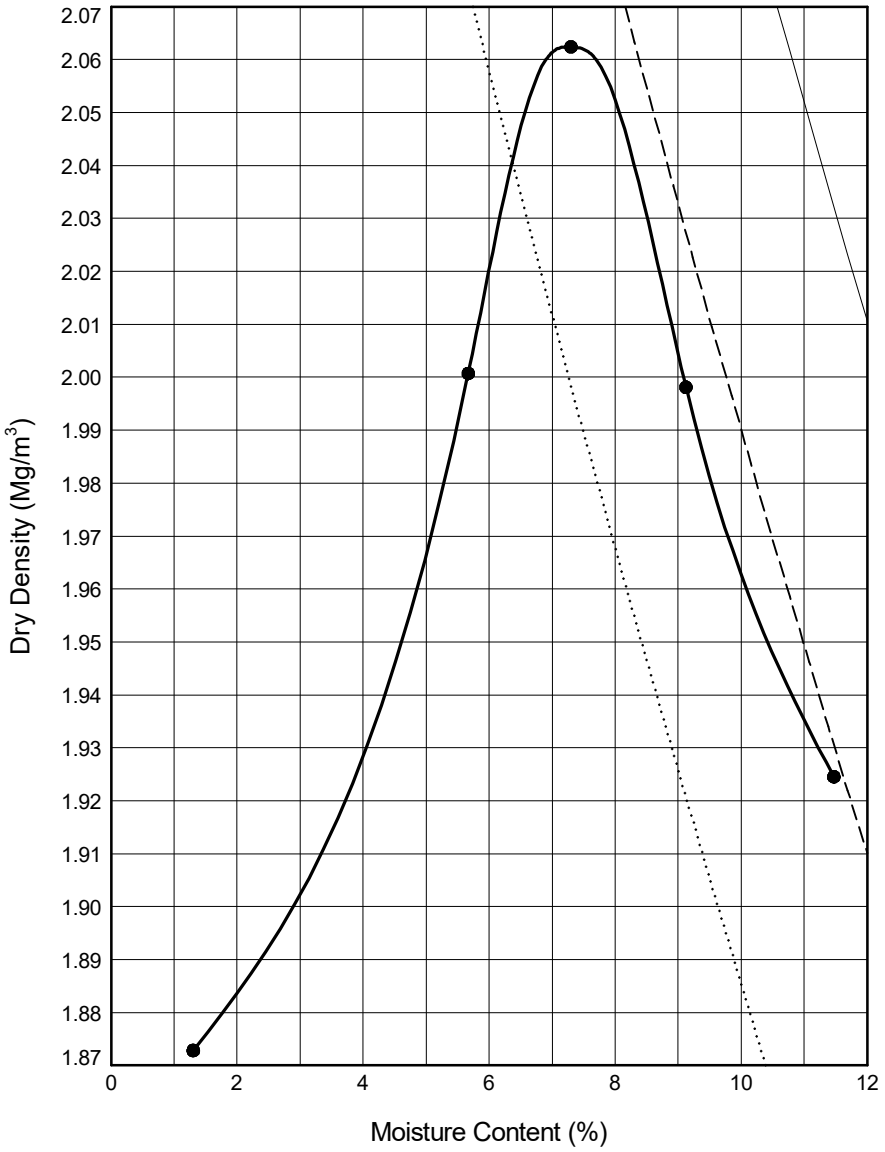
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/08/23 - 11:48 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS210** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **11**	Compaction Type	: **Heavy**	Maximum Dry Density (Mg/m³)	: **2.06**
% Retained on 37.5mm BS Sieve	: **6**	Mass of Rammer (kg):	**4.5**	Optimum Moisture Content (%)	: **7.3**
% Retained on 20.0mm BS Sieve	: **7**	Type of Mould	: **CBR**	Method Used:	**Clause 3.6**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Brown very sandy silty GRAVEL with medium cobble content	——— 0%	– – – - 5%	····· 10%

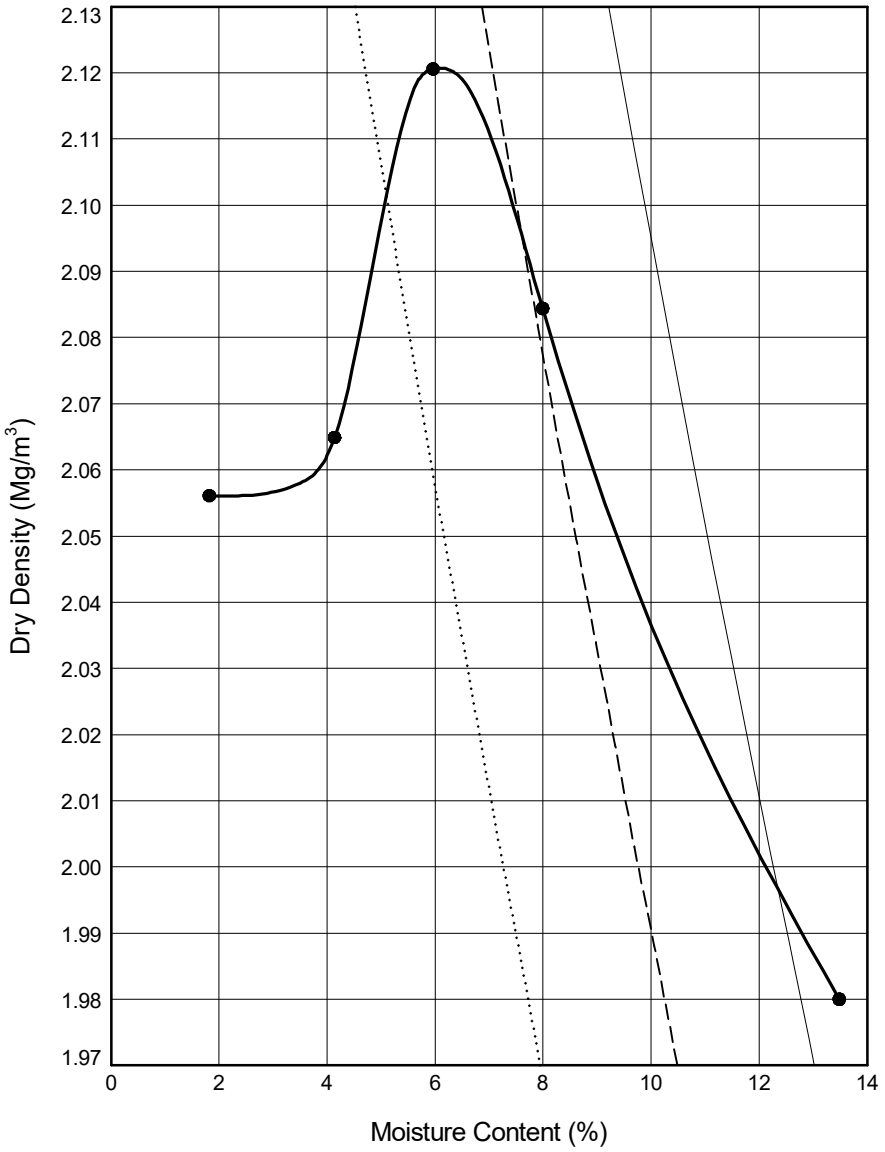
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**20/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/08/23 - 11:48 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS210** Sample Ref: **6** Sample Type: **B** Depth (m): **1.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **13**	Compaction Type	: **Heavy**	Maximum Dry Density (Mg/m³)	: **2.12**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**4.5**	Optimum Moisture Content (%)	: **6**
% Retained on 20.0mm BS Sieve	: **5**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.5**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Brown gravelly SAND	——— 0%	– – – - 5%	····· 10%

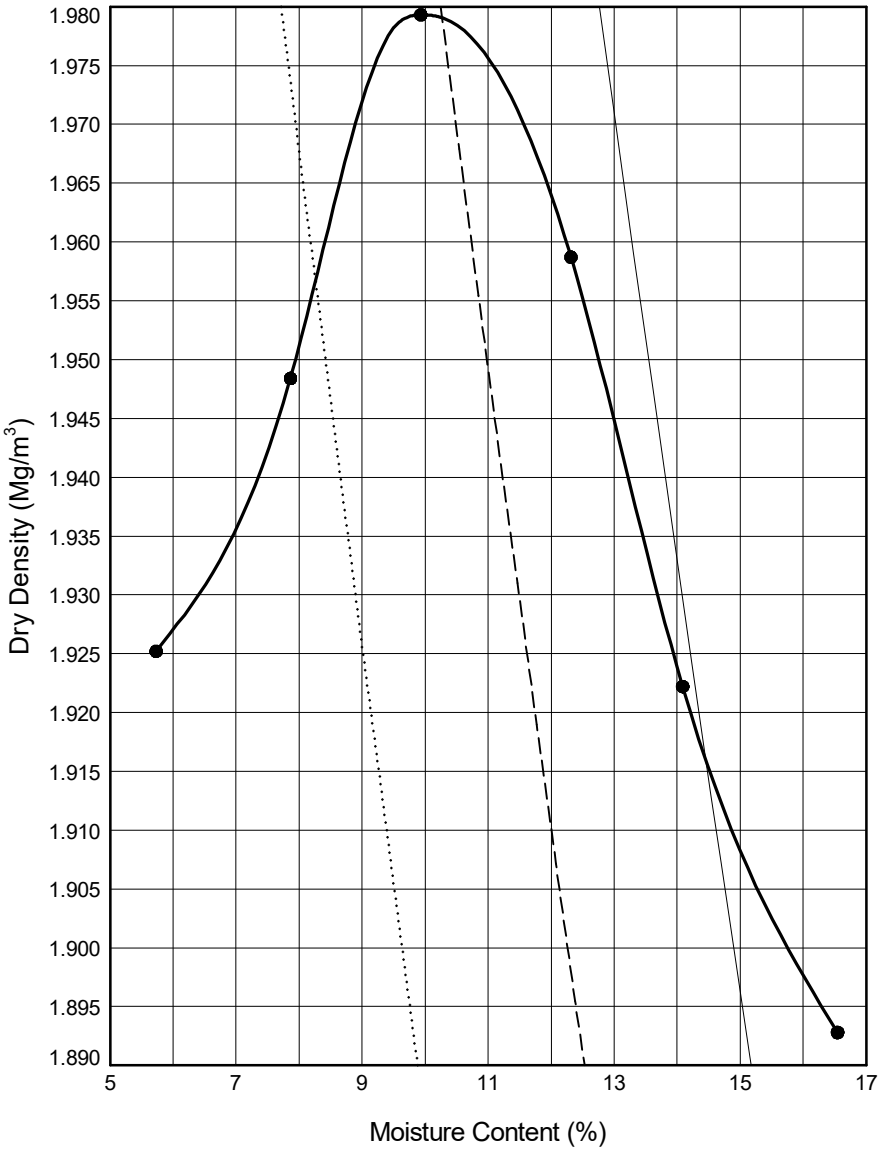
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**20/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/08/23 - 11:48 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS210** Sample Ref: **7** Sample Type: **LB** Depth (m): **1.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **14**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **1.98**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10**
% Retained on 20.0mm BS Sieve	: **3**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Brown very gravelly clayey SAND	——— 0%	– – – - 5%	····· 10%

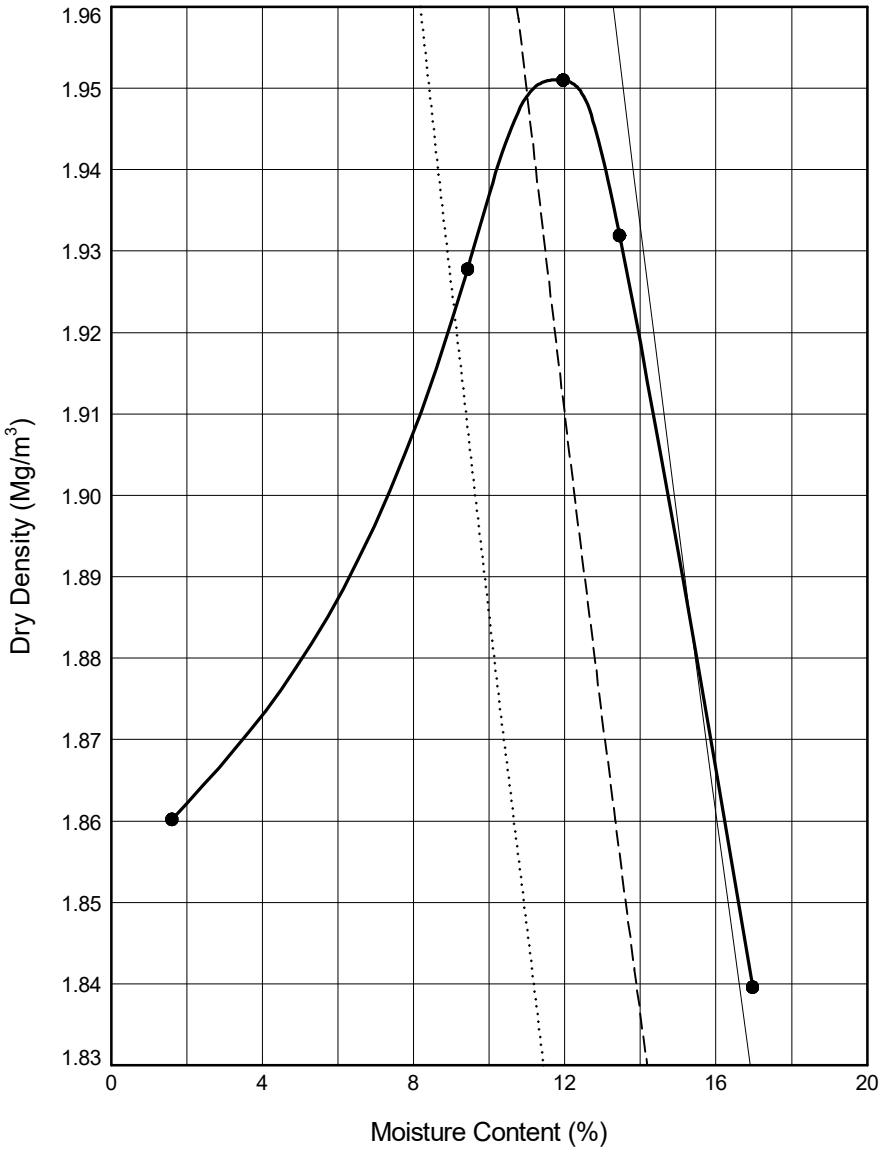
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**20/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/08/23 - 11:49 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS211** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **17**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **1.95**
% Retained on 37.5mm BS Sieve	: **8**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **12**
% Retained on 20.0mm BS Sieve	: **13**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Dark brown very sandy silty GRAVEL with medium cobble content	——— 0%	– – – - 5%	····· 10%

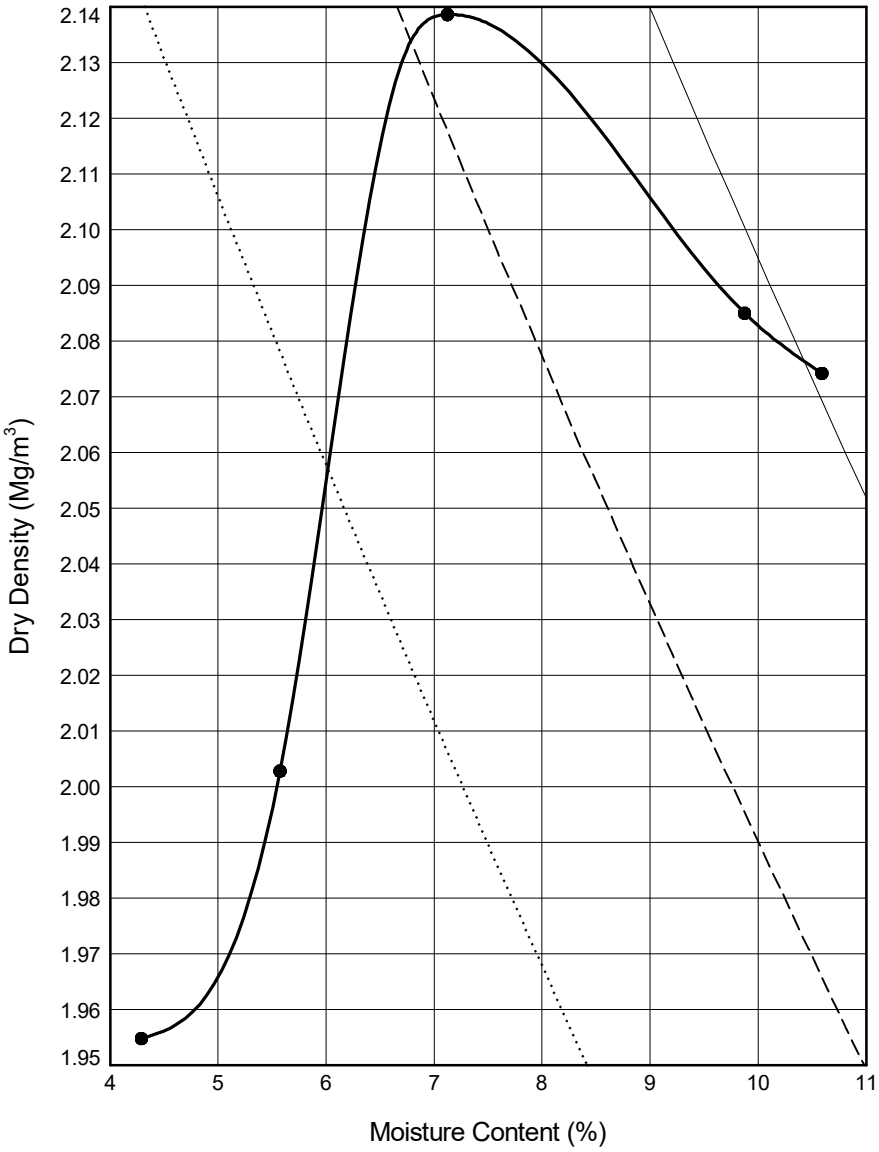
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**20/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/08/23 - 11:50 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Trial Pit: **TP-PTS211** Sample Ref: **7** Sample Type: **LB** Depth (m): **1.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **7.6**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.14**
% Retained on 37.5mm BS Sieve	: **23**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **7.1**
% Retained on 20.0mm BS Sieve	: **17**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Brown very sandy slightly silty GRAVEL with medium cobble content	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**20/08/23**

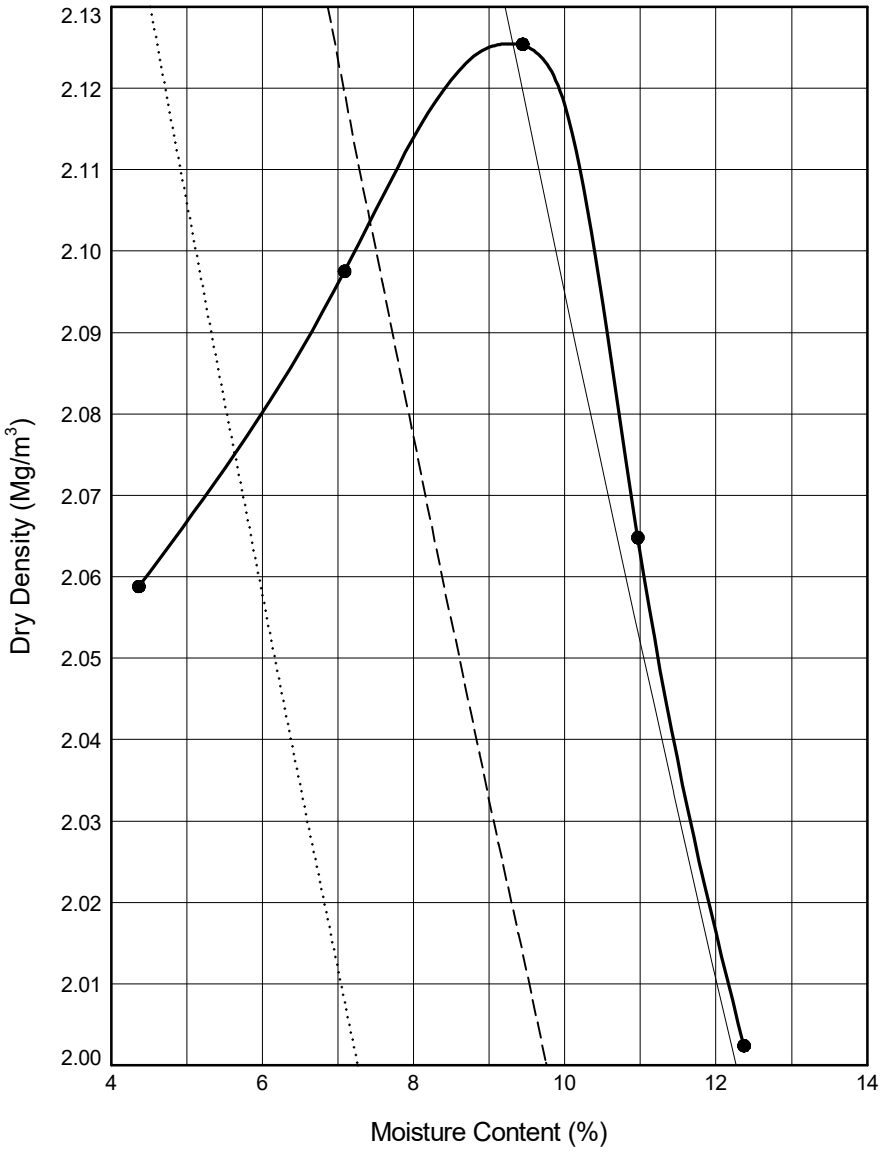
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/08/23 - 11:50 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS212** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **9.4**	Compaction Type	: **Heavy**	Maximum Dry Density (Mg/m^3)	: **2.13**
% Retained on 37.5mm BS Sieve	: **7**	Mass of Rammer (kg):	**4.5**	Optimum Moisture Content (%)	: **9.3**
% Retained on 20.0mm BS Sieve	: **14**	Type of Mould	: **CBR**	Method Used:	**Clause 3.6**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown very sandy silty GRAVEL	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**20/08/23**

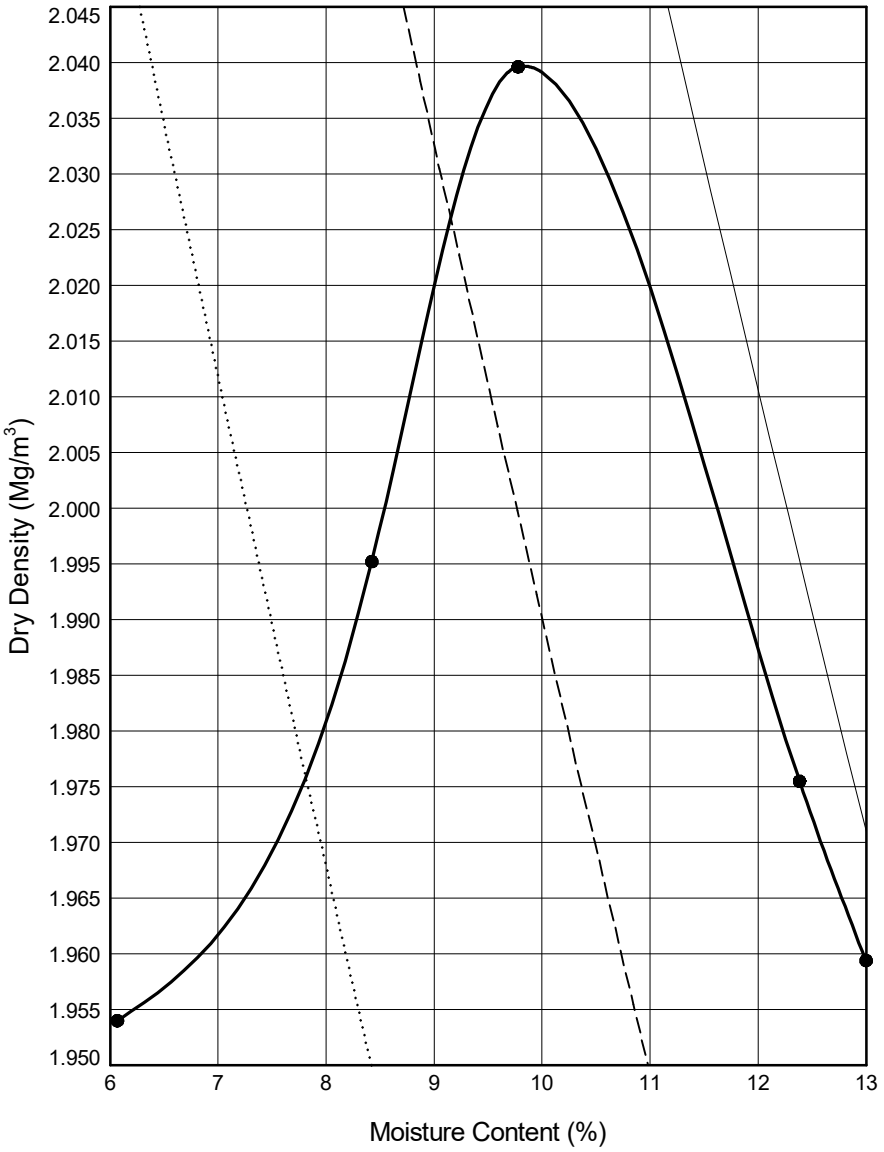
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/08/23 - 11:51 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Trial Pit: **TP-PTS212** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **8.4**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.04**
% Retained on 37.5mm BS Sieve	: **8**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9.9**
% Retained on 20.0mm BS Sieve	: **18**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown gravelly silty SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**20/08/23**

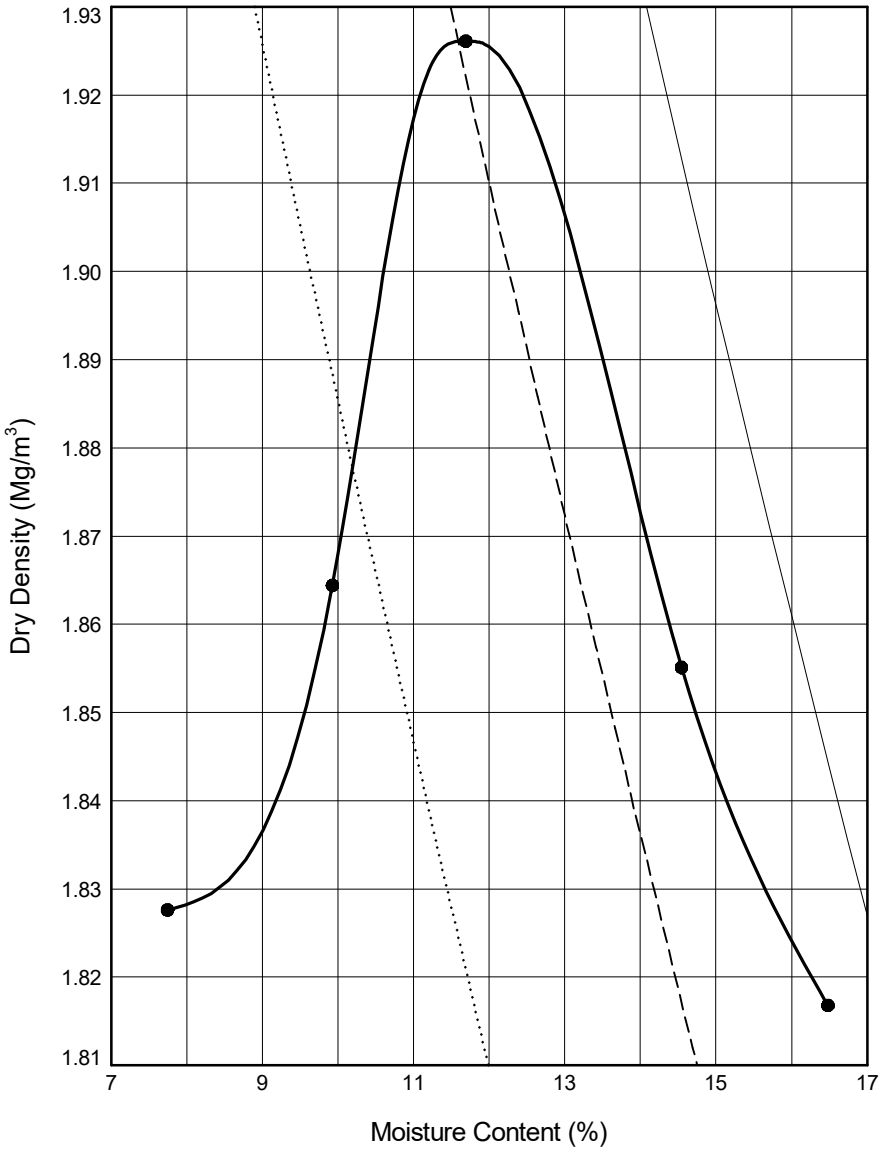
Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/08/23 - 11:52 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Trial Pit: **TP-PTS213** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **15**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.93**
% Retained on 37.5mm BS Sieve	: **15**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **11.7**
% Retained on 20.0mm BS Sieve	: **7**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Brown gravelly clayey SAND	——— 0%	– – – - 5%	····· 10%

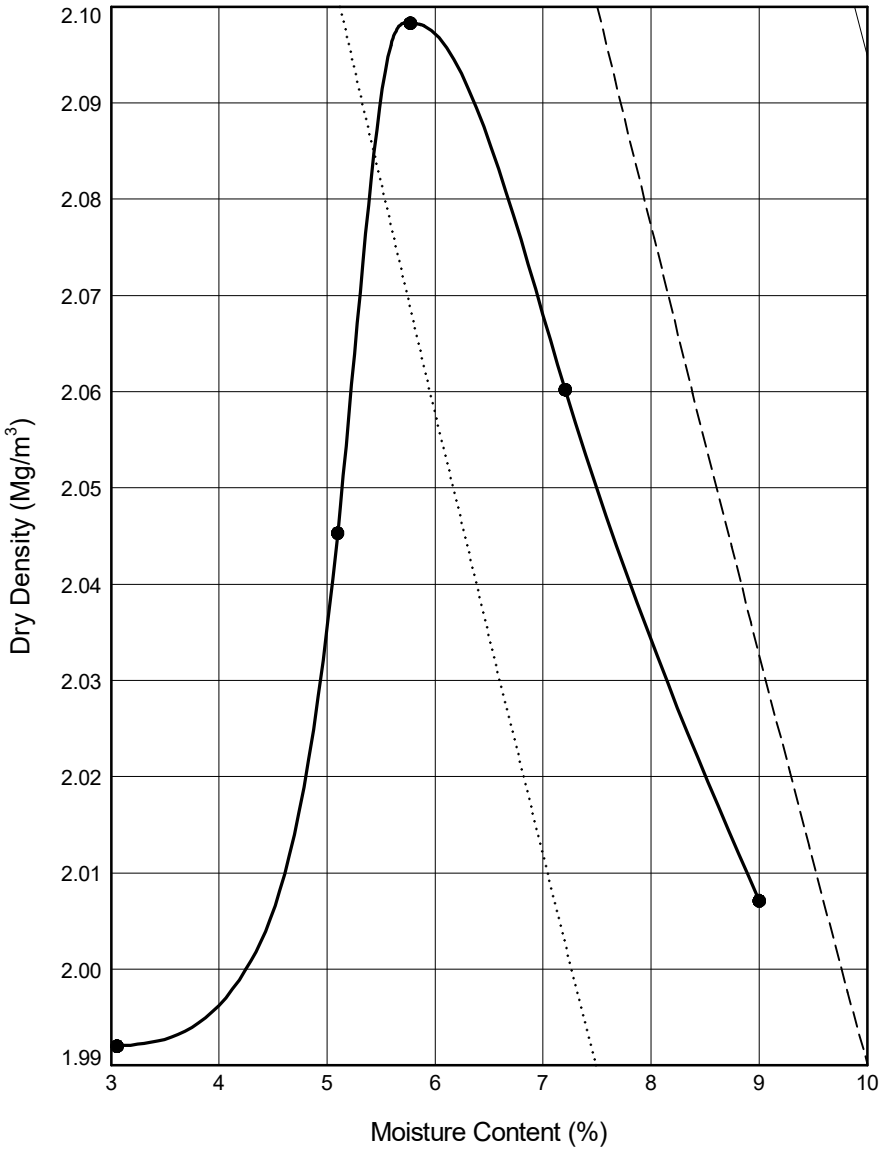
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**20/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/08/23 - 11:53 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS213** Sample Ref: **6** Sample Type: **B** Depth (m): **1.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **9.0**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.10**
% Retained on 37.5mm BS Sieve	: **4**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **5.8**
% Retained on 20.0mm BS Sieve	: **15**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Reddish brown very gravelly SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**20/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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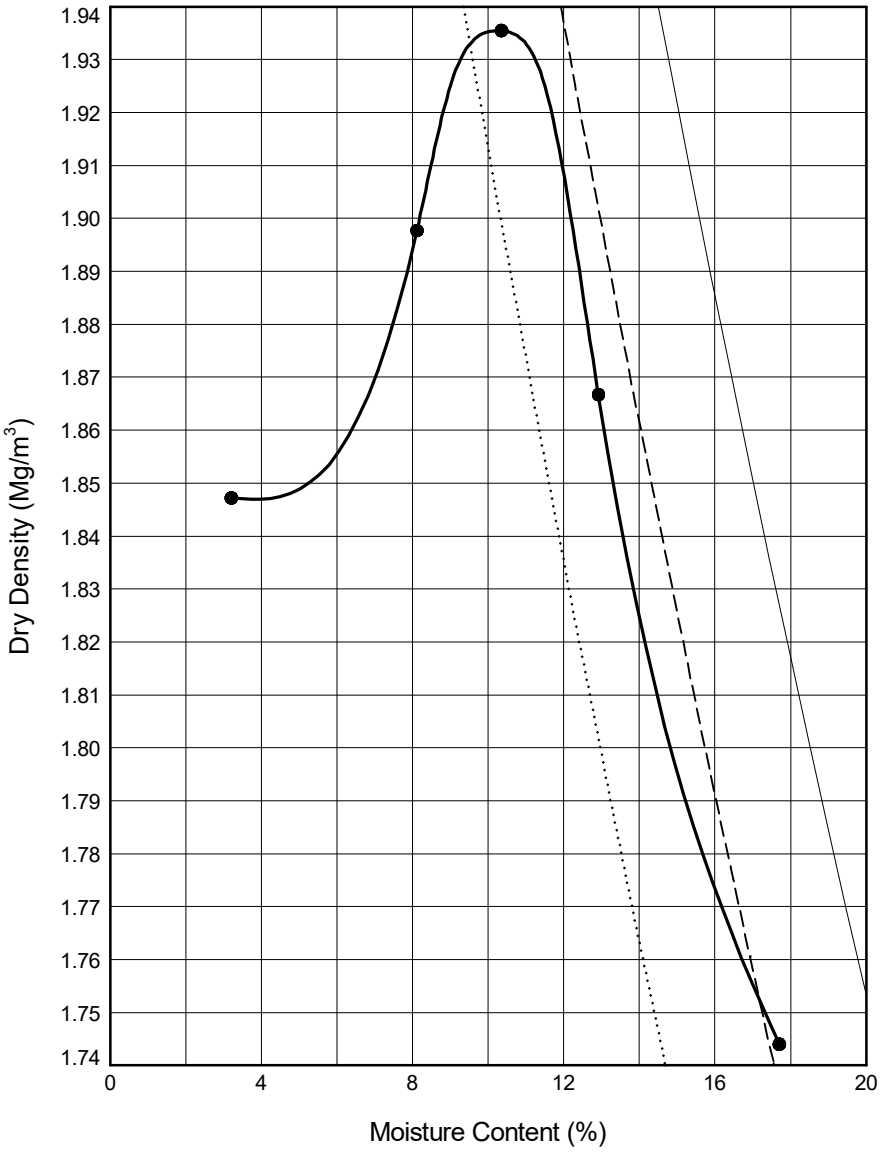
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS214** Sample Ref: **6** Sample Type: **B** Depth (m): **1.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **18**	Compaction Type	: **Heavy**	Maximum Dry Density (Mg/m^3)	: **1.94**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**4.5**	Optimum Moisture Content (%)	: **10**
% Retained on 20.0mm BS Sieve	: **1**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.5**
Particle Density - assumed (Mg/m^3)	: **2.70**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Brown slightly gravelly SAND	——— 0%	– – – - 5%	····· 10%

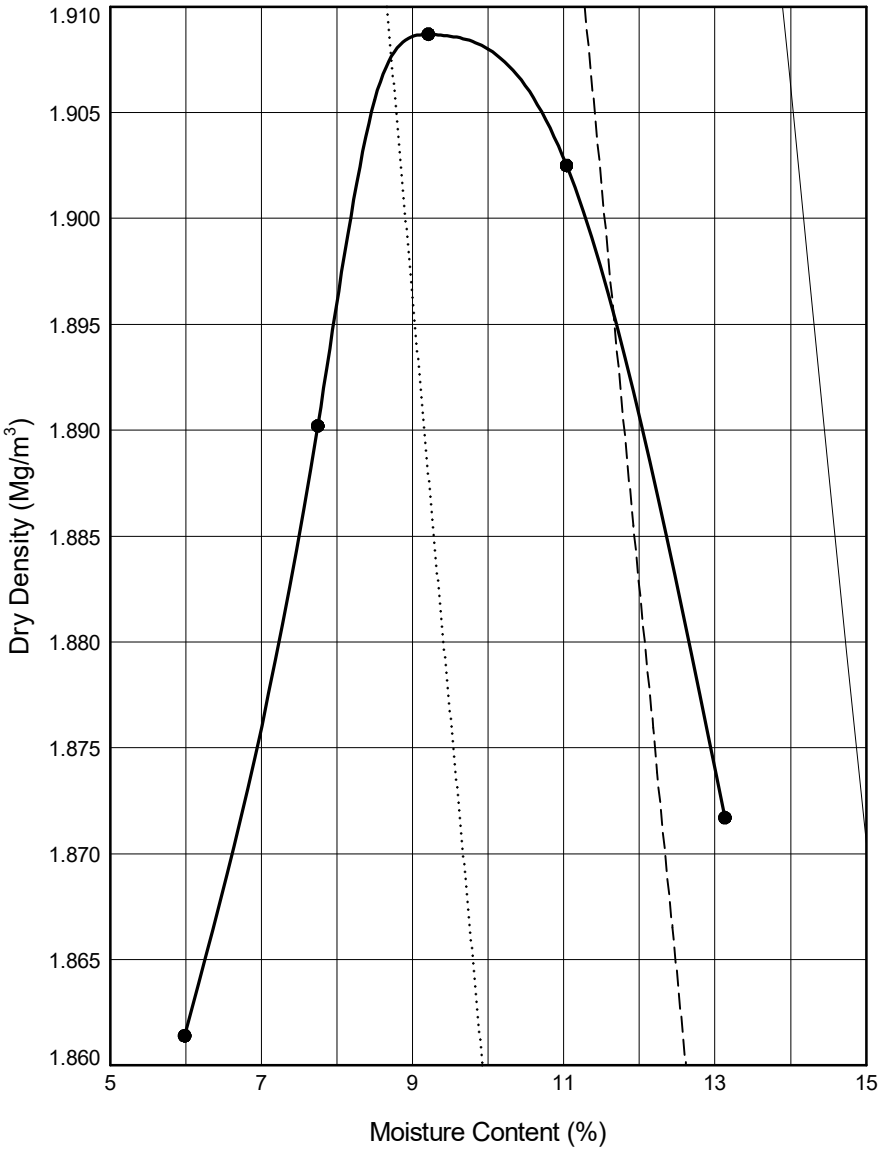
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**20/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/08/23 - 11:54 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS214** Sample Ref: **7** Sample Type: **LB** Depth (m): **1.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **13**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.91**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10**
% Retained on 20.0mm BS Sieve	: **2**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.60**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Red gravelly SAND	——— 0%	– – – - 5%	····· 10%

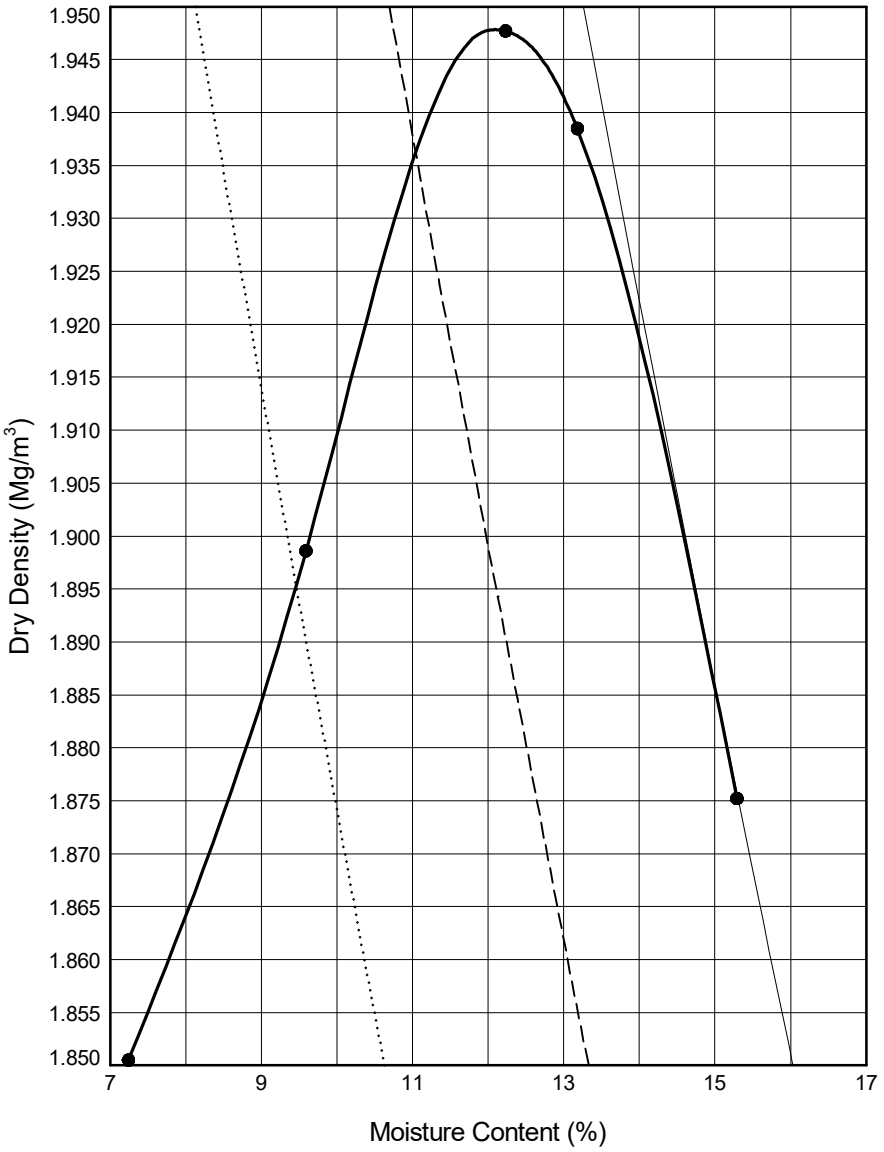
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**20/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/08/23 - 11:55 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS215** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **13**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.95**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **12.2**
% Retained on 20.0mm BS Sieve	: **5**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.63**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Brown very gravelly silty SAND	——— 0%	– – – - 5%	····· 10%

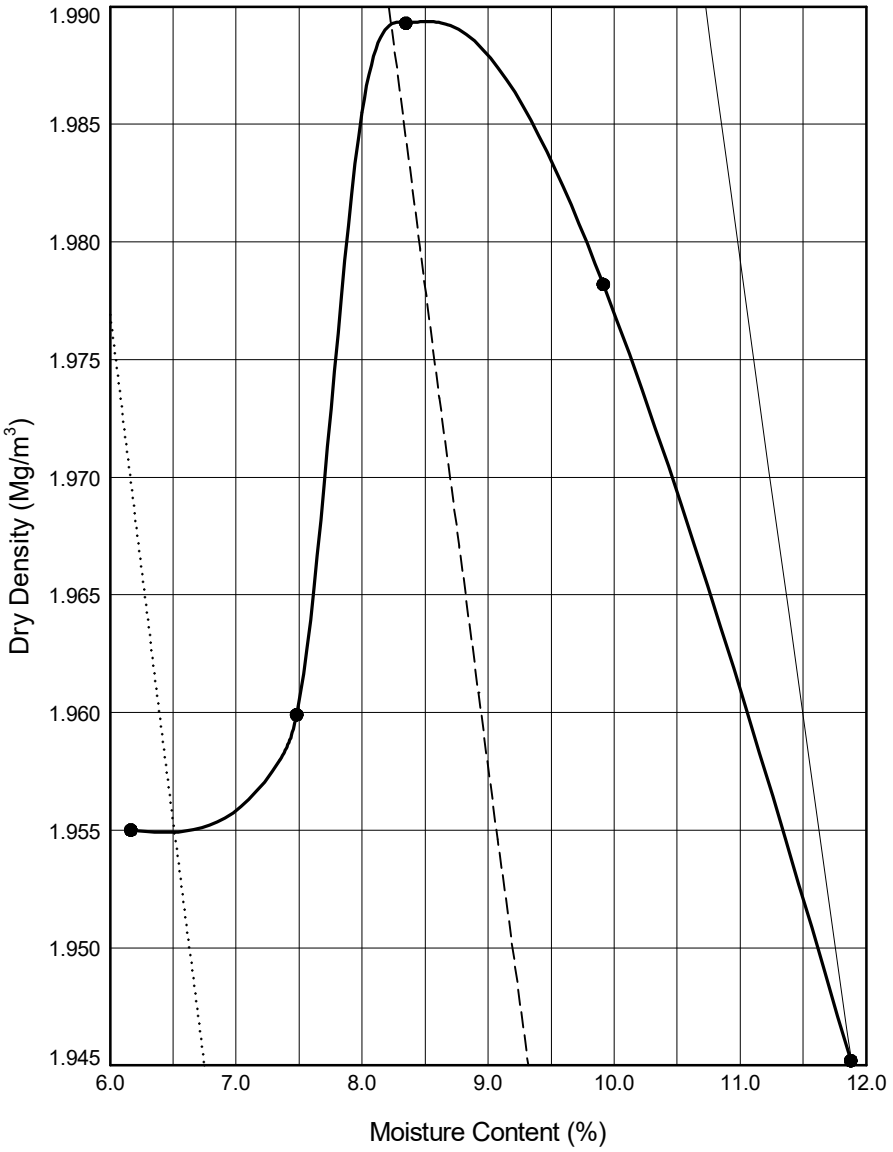
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 21/08/23 - 11:12 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS215** Sample Ref: **6** Sample Type: **B** Depth (m): **1.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.99**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9**
% Retained on 20.0mm BS Sieve	: **5**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.53**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Orangish brown very gravelly silty SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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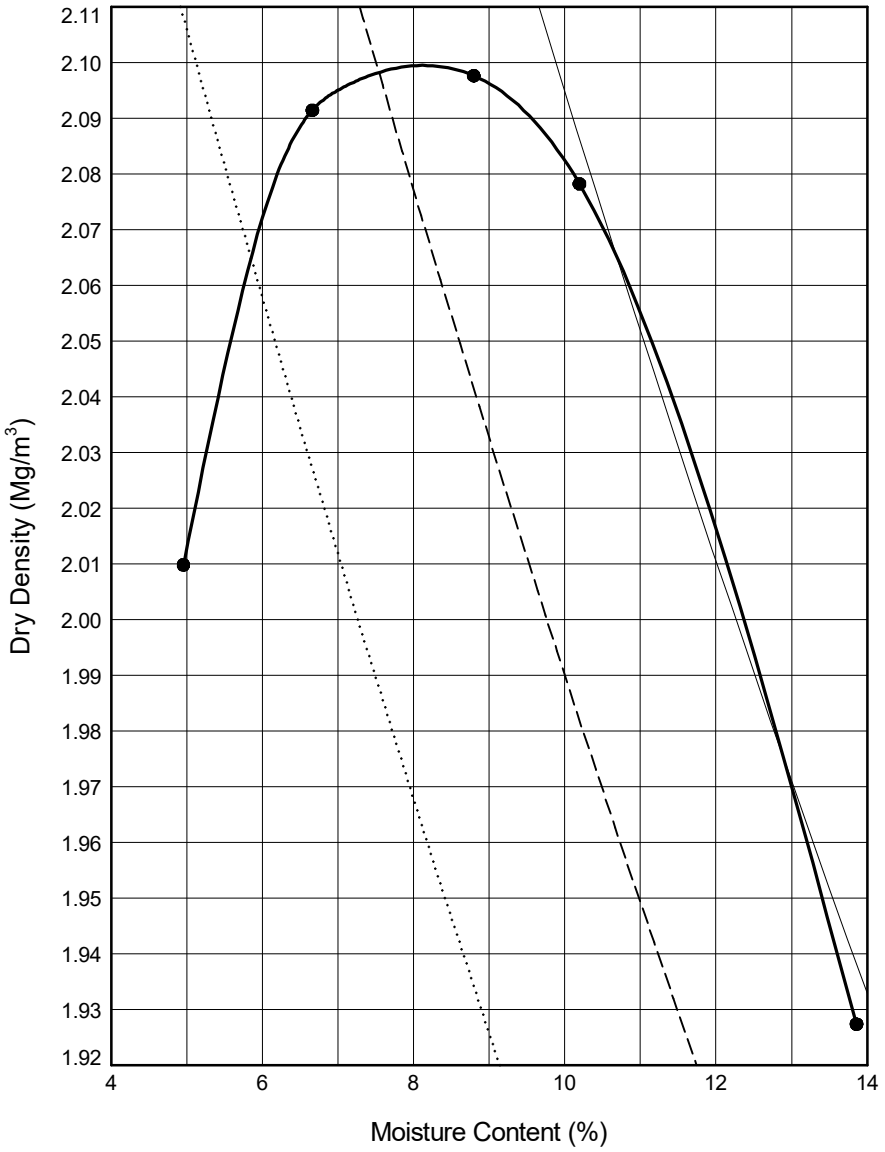
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Trial Pit: **TP-PTS217** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **6.7**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.10**
% Retained on 37.5mm BS Sieve	: **21**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **8**
% Retained on 20.0mm BS Sieve	: **13**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown very sandy silty GRAVEL with medium gravel content	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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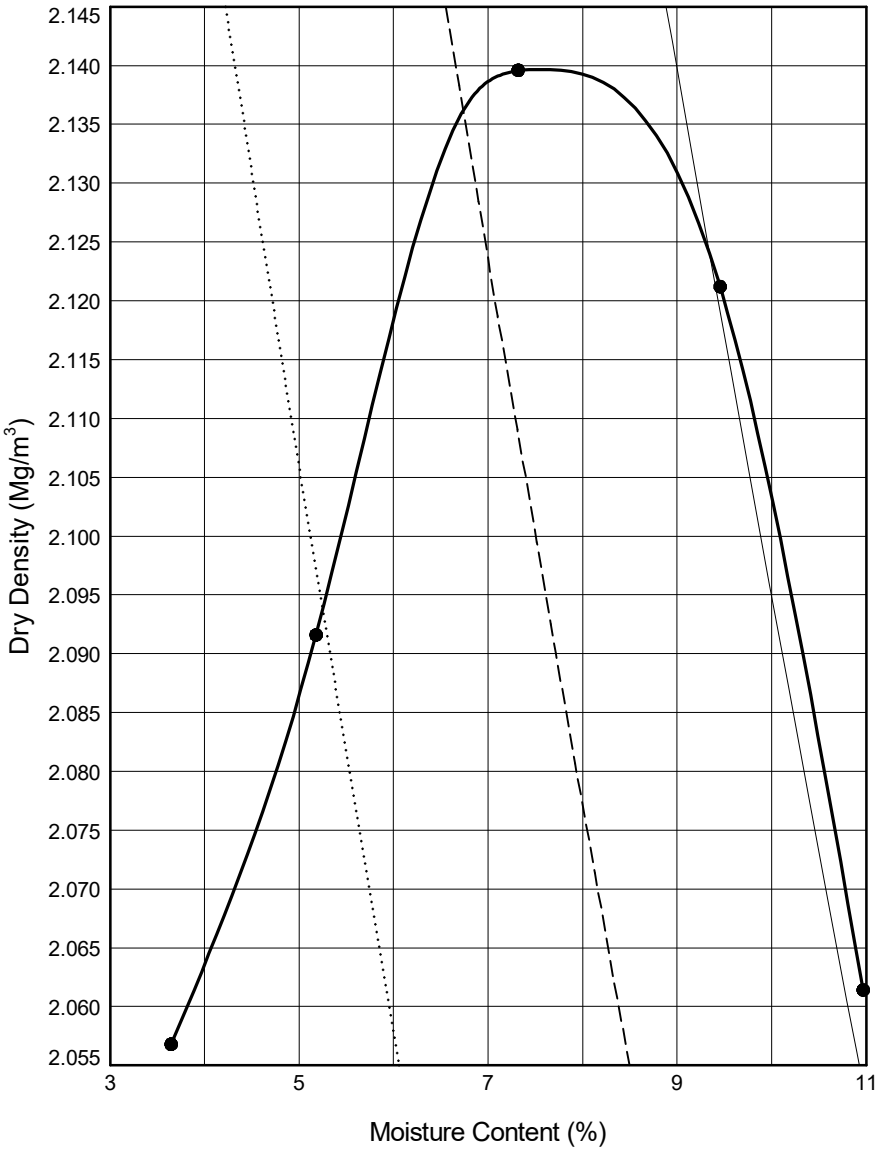
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Trial Pit: **TP-PTS217** Sample Ref: **10** Sample Type: **LB** Depth (m): **2.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **5.2**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.14**
% Retained on 37.5mm BS Sieve	: **17**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9.6**
% Retained on 20.0mm BS Sieve	: **11**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Brown very sandy silty GRAVEL	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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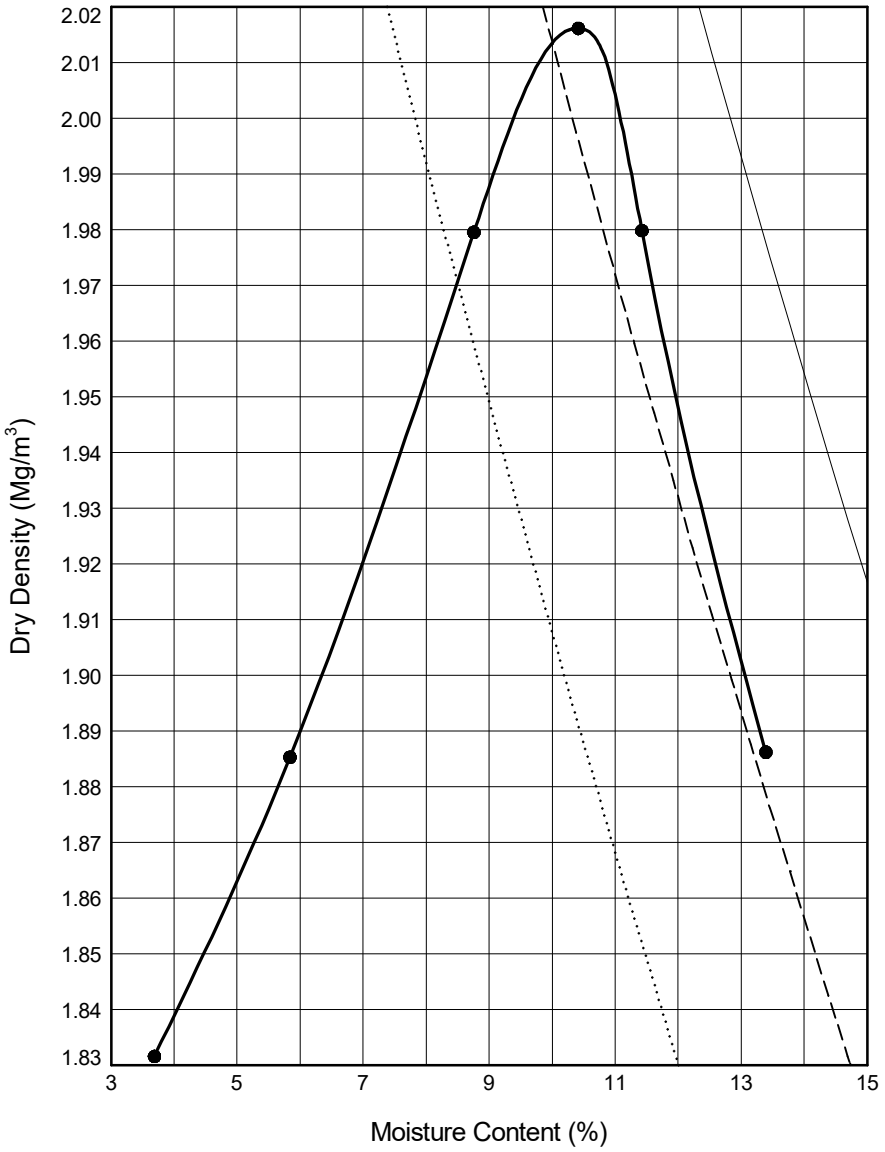
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS220** Sample Ref: **5** Sample Type: **B** Depth (m): **0.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **10.0**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.02**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10**
% Retained on 20.0mm BS Sieve	: **0**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.69**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Red gravelly silty SAND	——— 0%	– – – - 5%	····· 10%

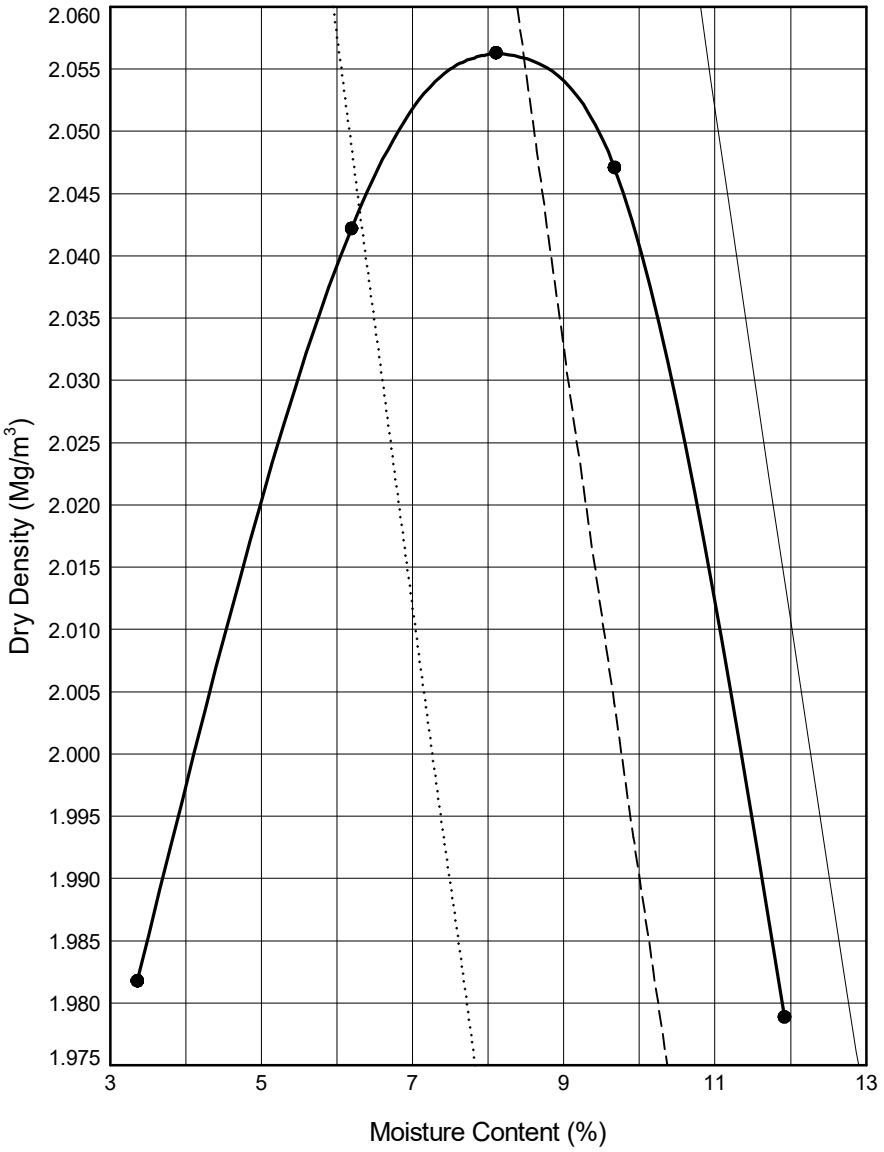
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Daria Ignaczak	**DARIA IGNACZAK**	**21/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 21/08/23 - 11:20 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS220** Sample Ref: **9** Sample Type: **LB** Depth (m): **2.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.06**
% Retained on 37.5mm BS Sieve	: **7**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **8.1**
% Retained on 20.0mm BS Sieve	: **4**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown sandy SILT with occasional rounded gravel	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By	Date
DAISY RICHARDS	**21/08/23**

Contract: **A66 NTP Scheme S03A**

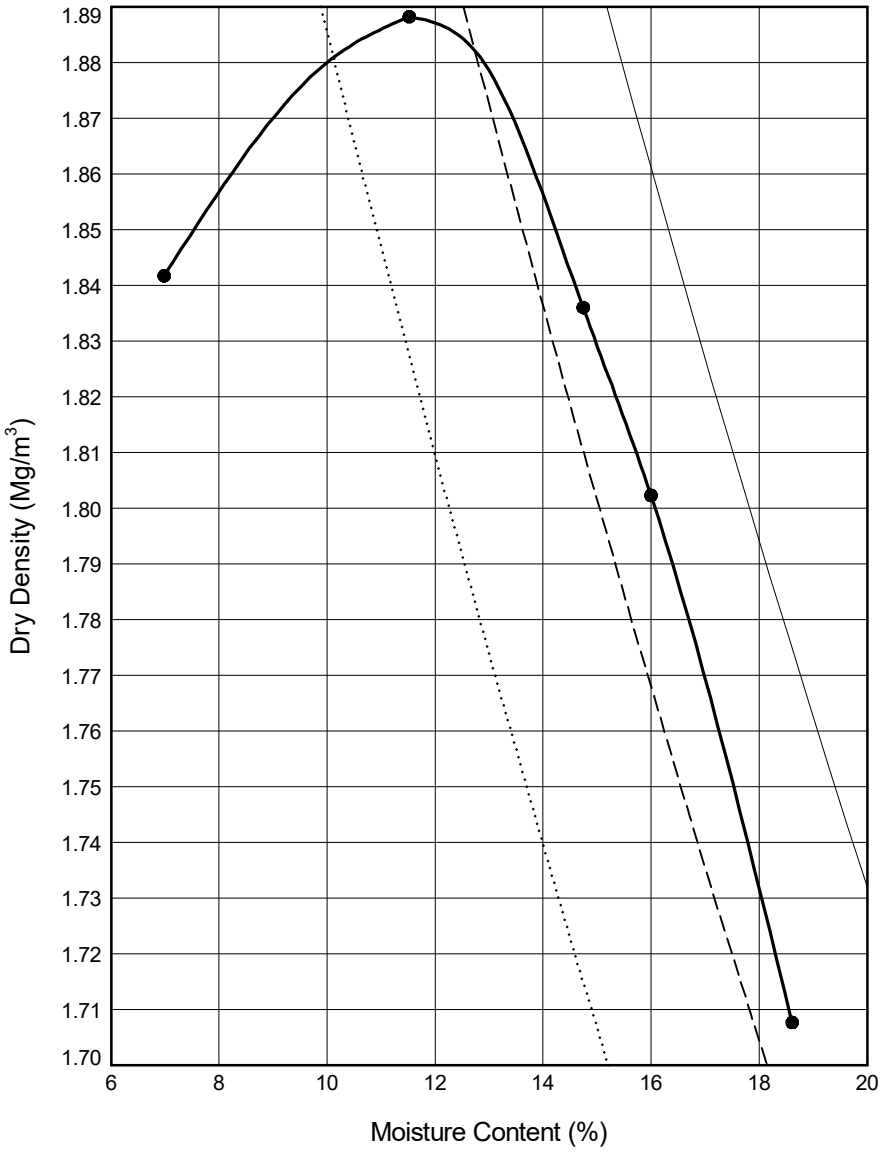
Contract Ref: **765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 21/08/23 - 11:22 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS221** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.30**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **15**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.89**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **12**
% Retained on 20.0mm BS Sieve	: **0**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Red silty SAND	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Daria Ignaczak	**DARIA IGNACZAK**	**21/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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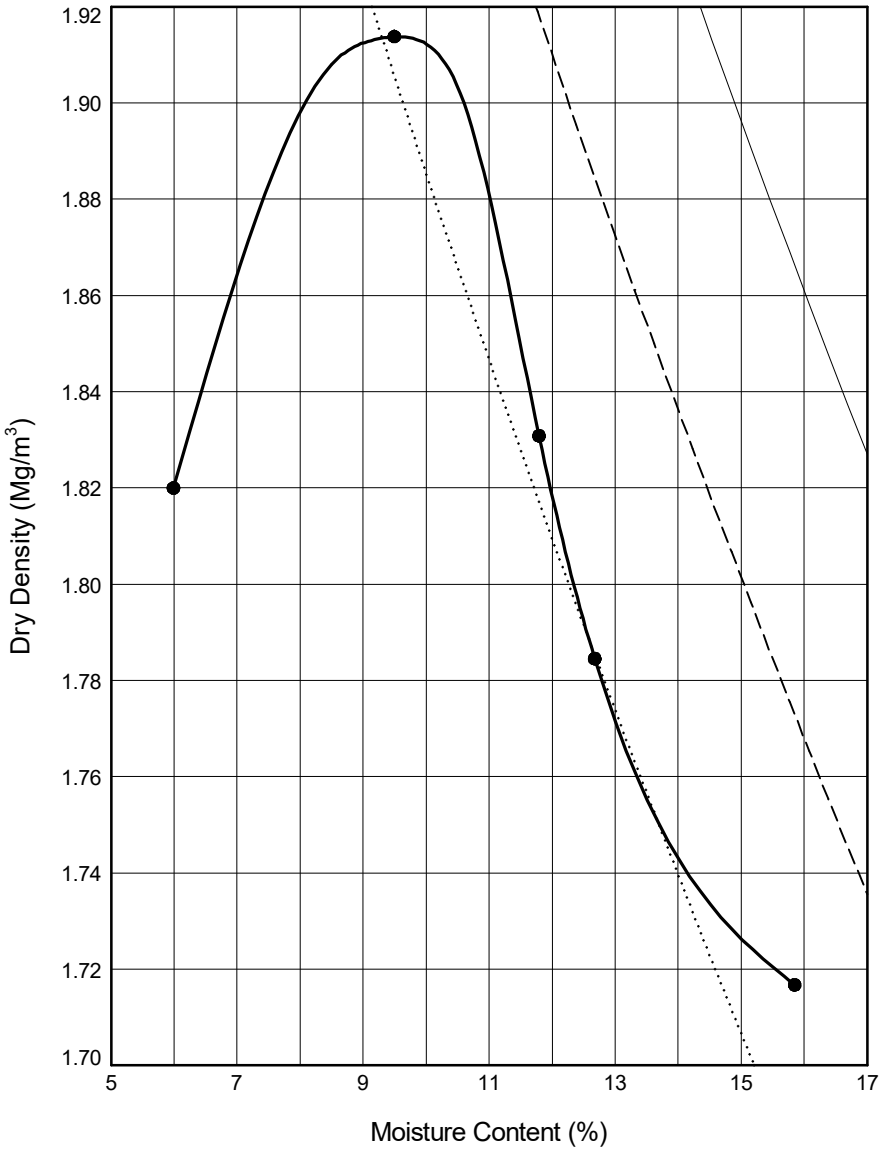
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS221** Sample Ref: **5** Sample Type: **B** Depth (m): **1.10**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **13**	Compaction Type	: **Heavy**	Maximum Dry Density (Mg/m^3)	: **1.91**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**4.5**	Optimum Moisture Content (%)	: **9.5**
% Retained on 20.0mm BS Sieve	: **0**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.5**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Reddish brownSAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By	Date
DAISY RICHARDS	**21/08/23**

Contract: **A66 NTP Scheme S03A**

Contract Ref: **765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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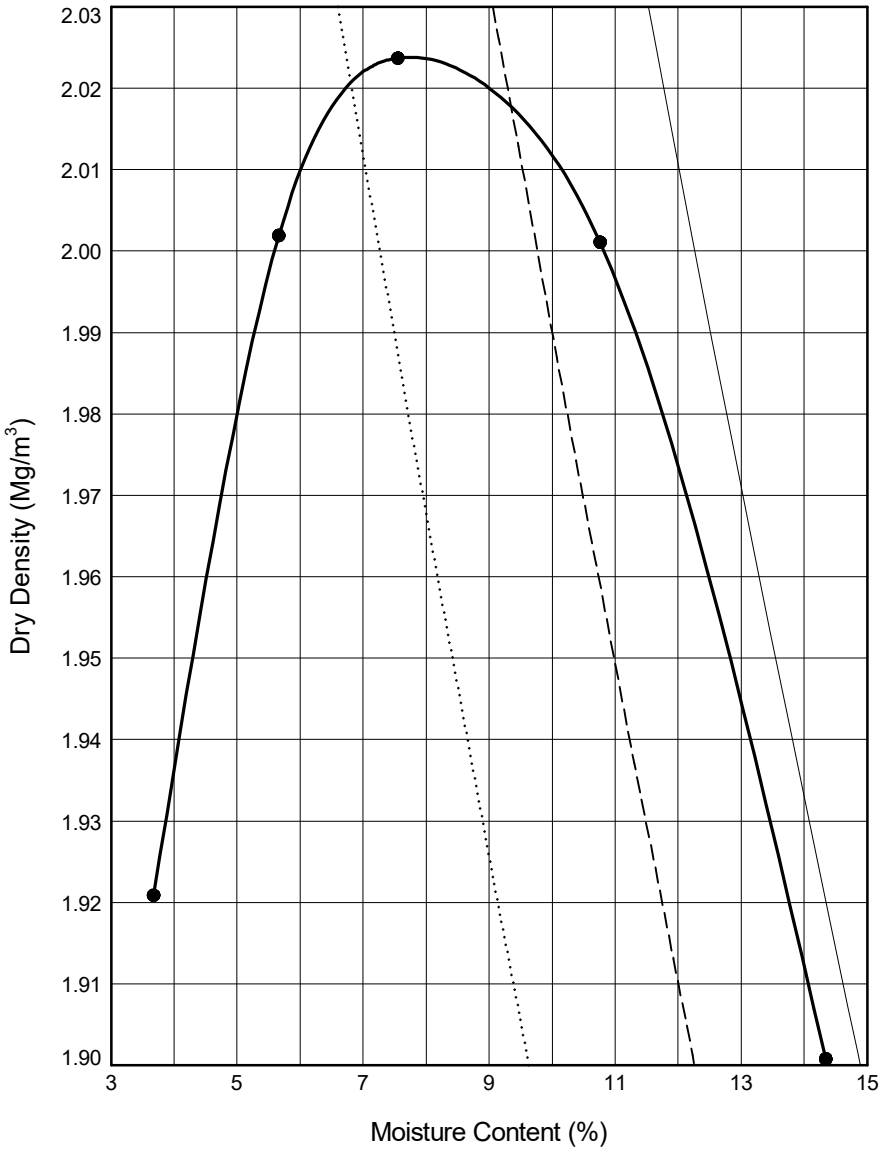
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Trial Pit: **TP-PTS221** Sample Ref: **7** Sample Type: **B** Depth (m): **2.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **14**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.02**
% Retained on 37.5mm BS Sieve	: **18**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **7.6**
% Retained on 20.0mm BS Sieve	: **5**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Orangish brown very gravelly clayey SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
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BS3 4AG

Compiled By	Date
DAISY RICHARDS	**30/08/23**

Contract: **A66 NTP Scheme S03A**

Contract Ref: **765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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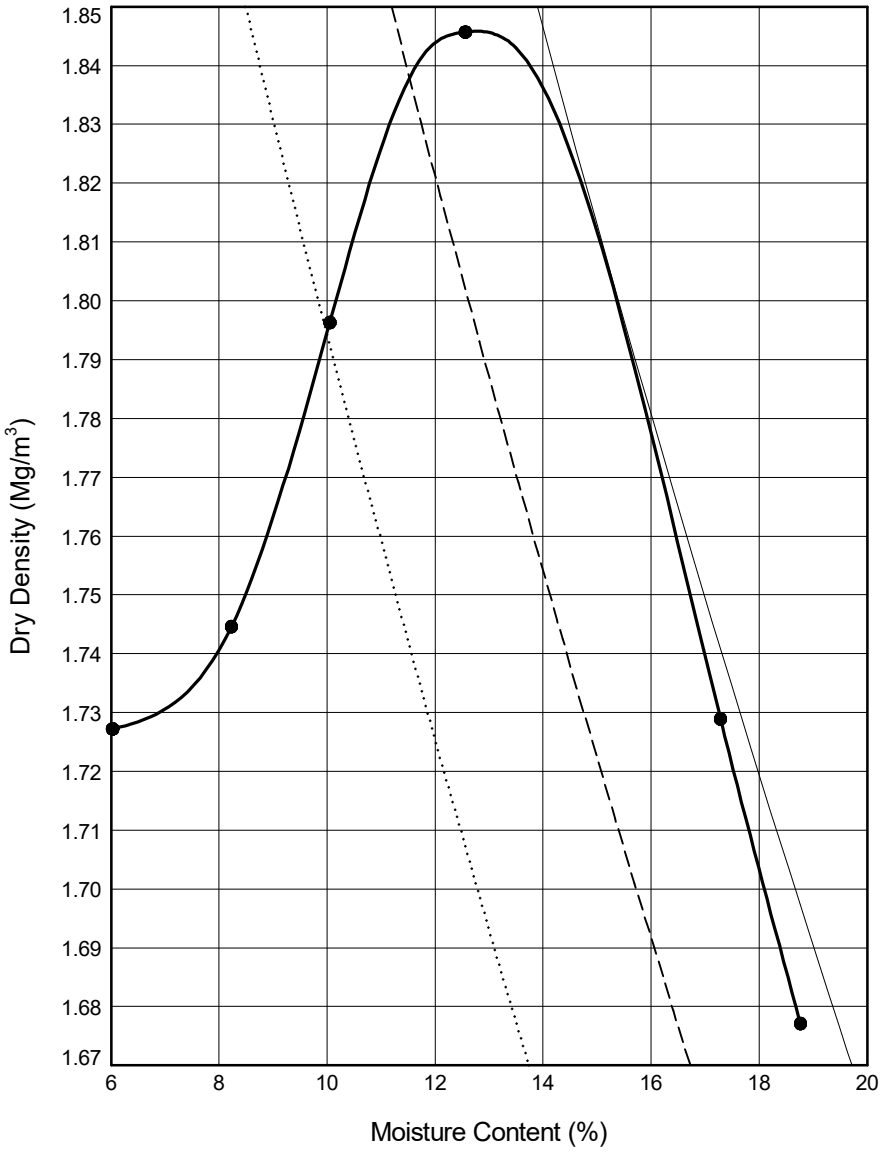
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS224** Sample Ref: **2** Sample Type: **B** Depth (m): **0.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **19**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **1.85**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **13**
% Retained on 20.0mm BS Sieve	: **7**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.49**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Dark brownish grey SAND	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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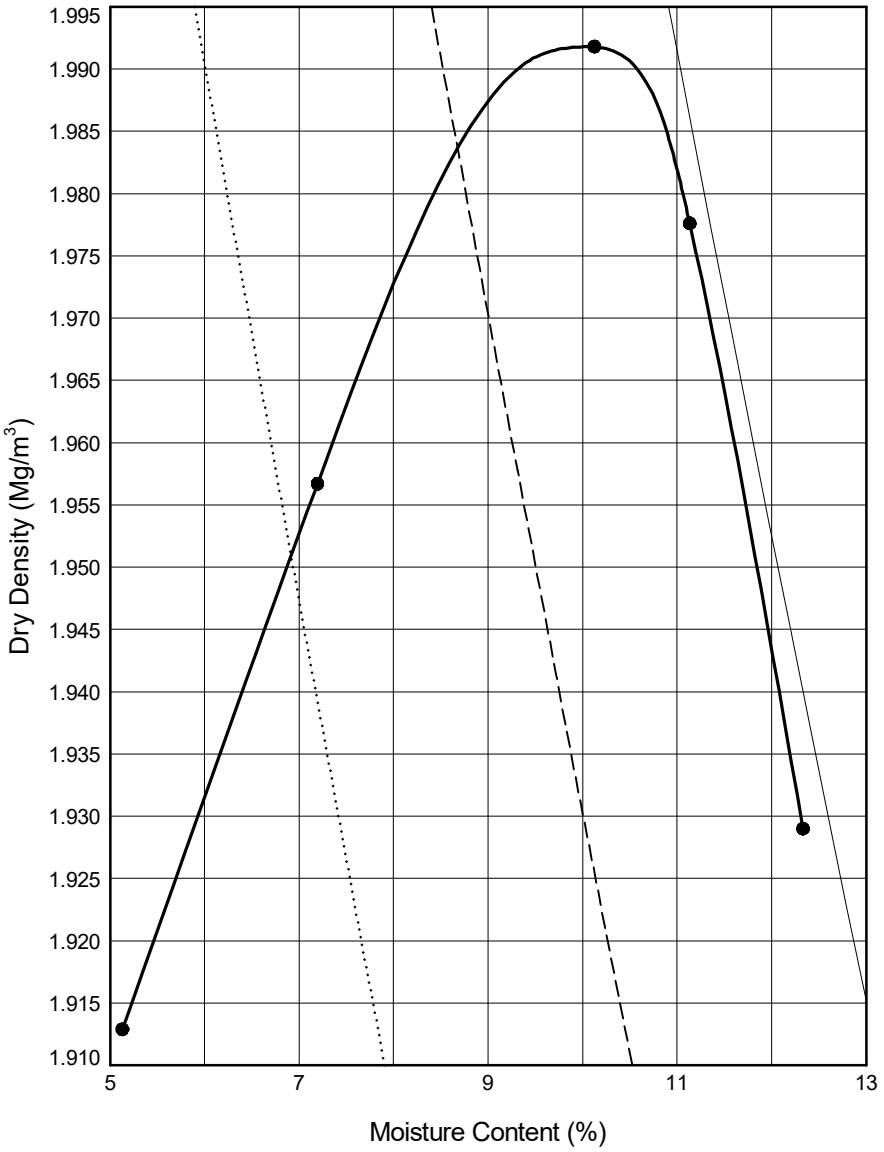
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS224** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.40**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.99**
% Retained on 37.5mm BS Sieve	: **9**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10**
% Retained on 20.0mm BS Sieve	: **6**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m^3)	: **2.55**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Orangish brown very gravelly silty SAND with medium cobble content	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**21/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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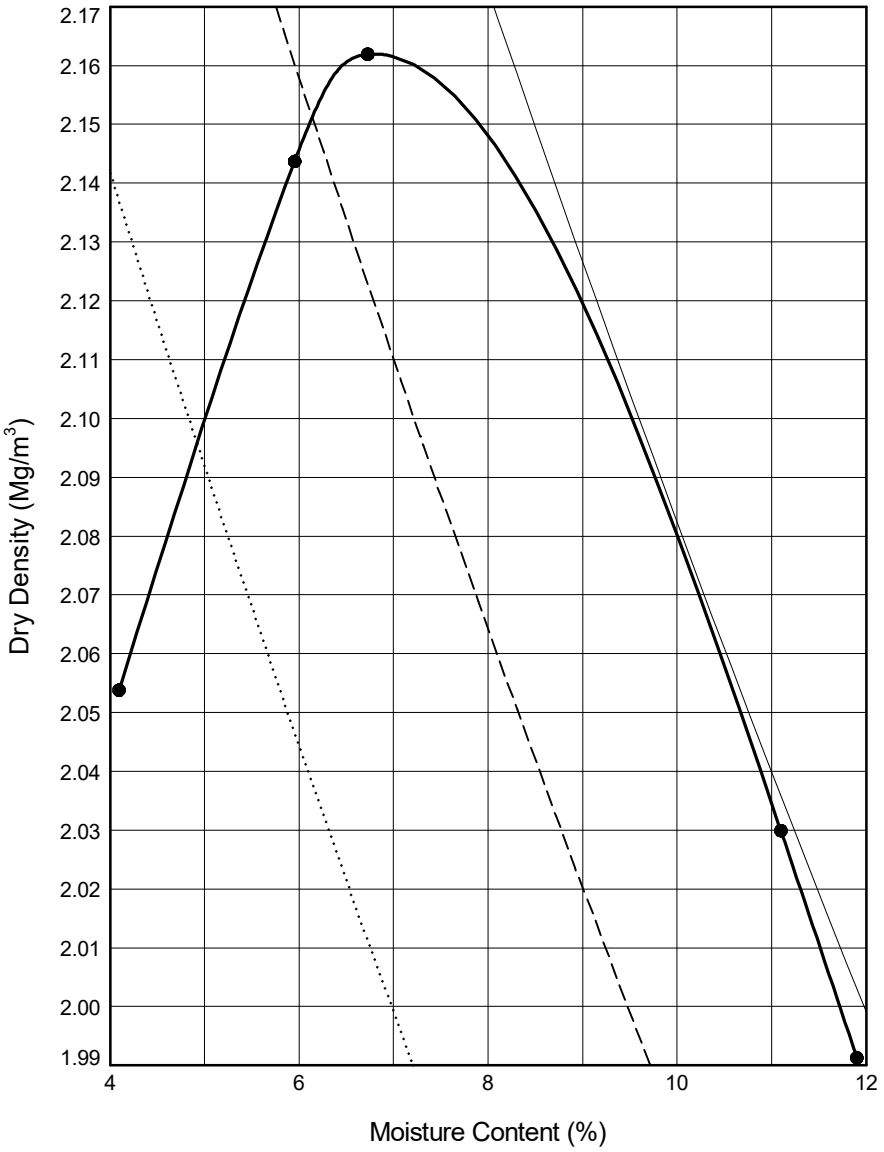
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS224** Sample Ref: **5** Sample Type: **B** Depth (m): **1.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Heavy**	Maximum Dry Density (Mg/m³)	: **2.16**
% Retained on 37.5mm BS Sieve	: **4**	Mass of Rammer (kg):	**4.5**	Optimum Moisture Content (%)	: **6.7**
% Retained on 20.0mm BS Sieve	: **8**	Type of Mould	: **CBR**	Method Used:	**Clause 3.6**
Particle Density - assumed (Mg/m³)	: **2.63**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Red gravelly clayey SAND with medium cobble content	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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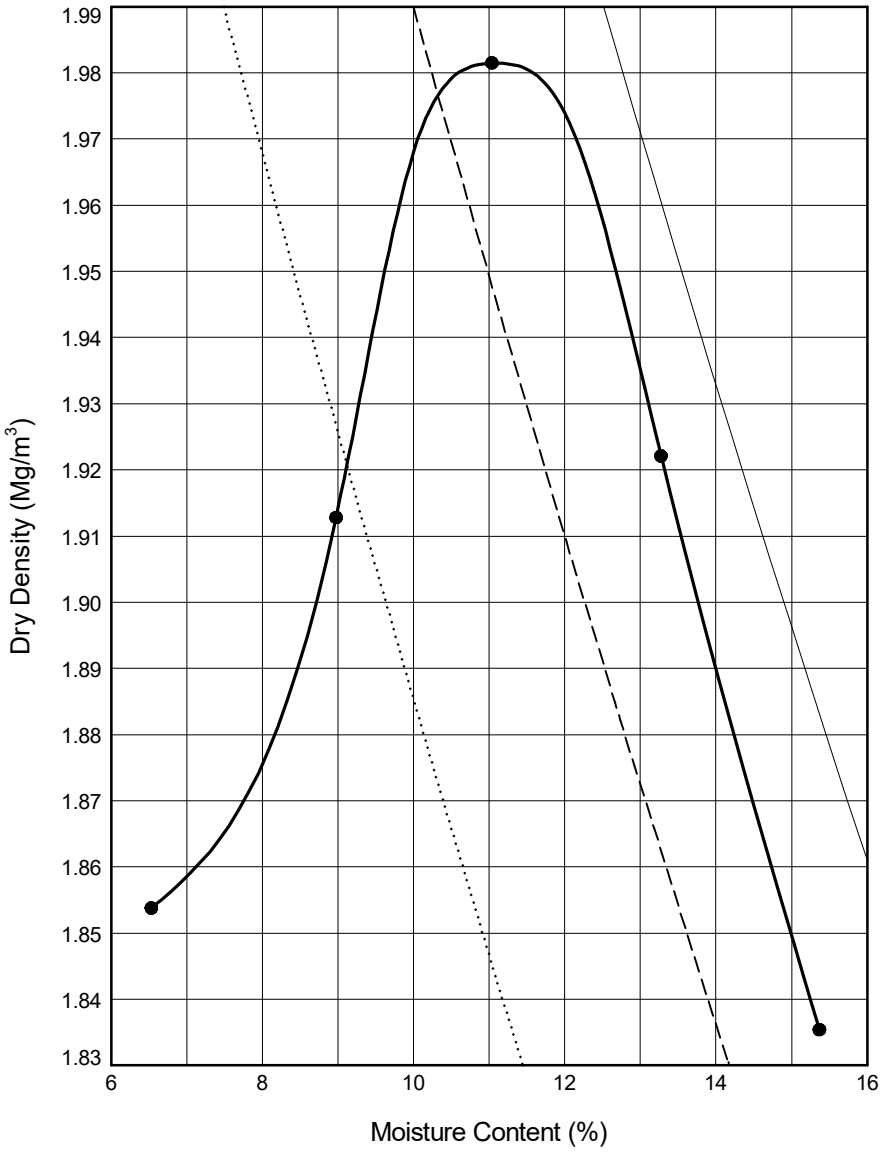
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS225** Sample Ref: **6** Sample Type: **LB** Depth (m): **0.40**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **11**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.98**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **11**
% Retained on 20.0mm BS Sieve	: **2**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown slightly gravelly SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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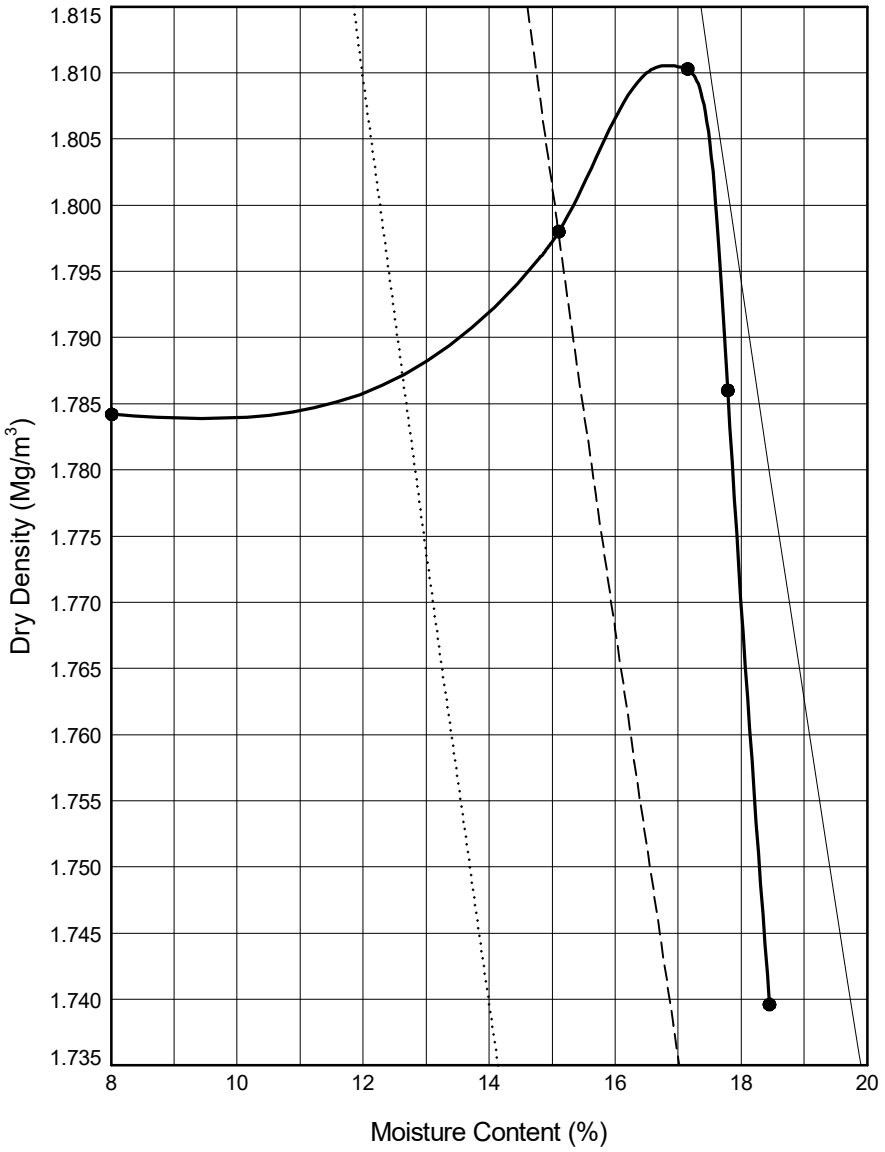
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS225** Sample Ref: **11** Sample Type: **B** Depth (m): **2.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **15**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **1.81**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **17**
% Retained on 20.0mm BS Sieve	: **2**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Red slightly gravelly slightly silty SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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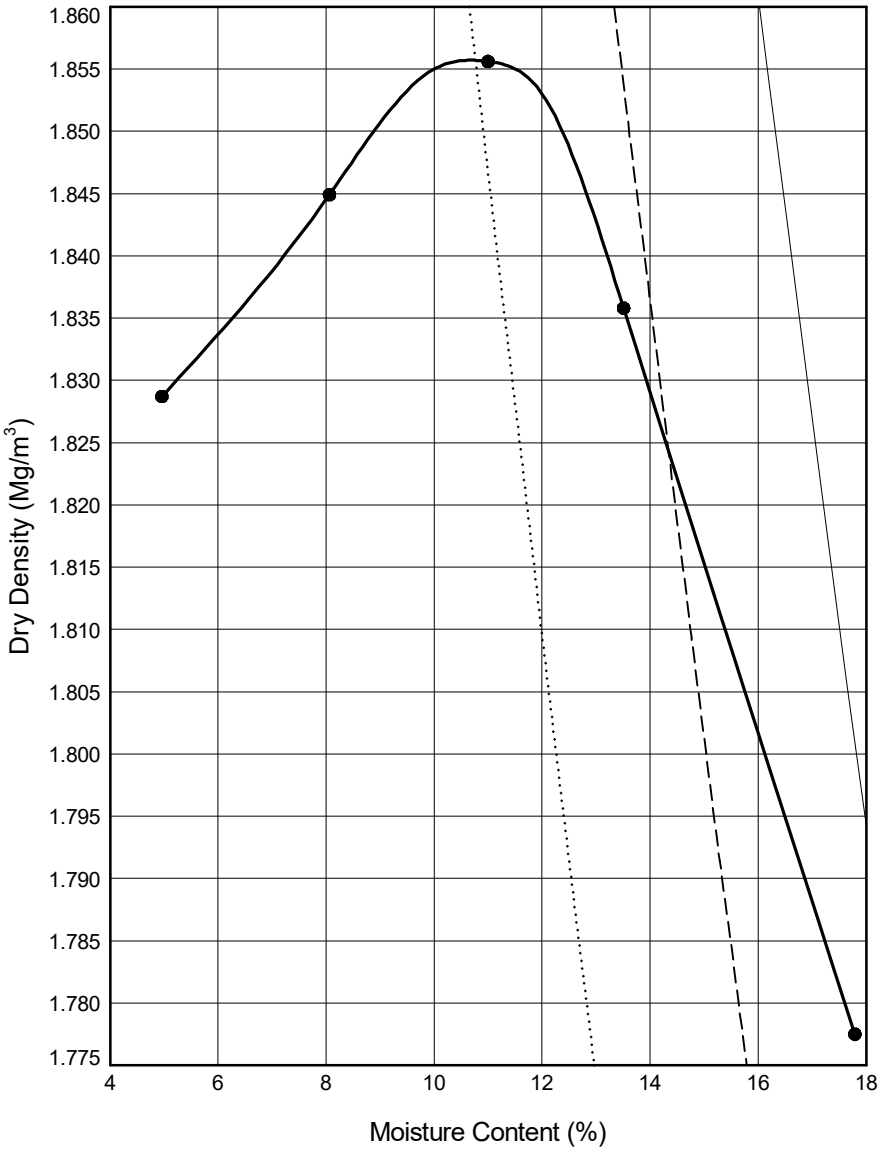
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS225** Sample Ref: **12** Sample Type: **LB** Depth (m): **2.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **14**	Compaction Type	: **Heavy**	Maximum Dry Density (Mg/m³)	: **1.86**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**4.5**	Optimum Moisture Content (%)	: **11**
% Retained on 20.0mm BS Sieve	: **4**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.5**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown slightly silty SAND	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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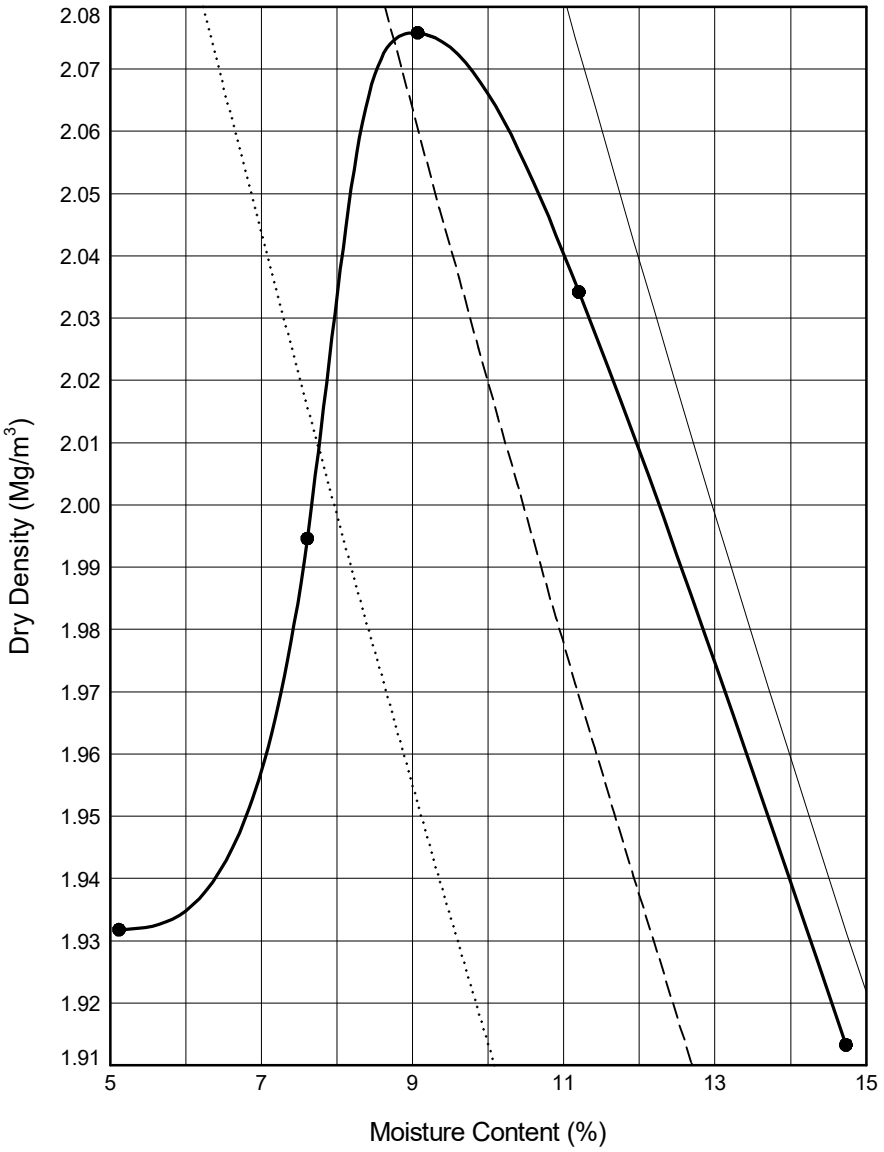
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS225** Sample Ref: **15** Sample Type: **LB** Depth (m): **3.30**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **11**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.08**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9**
% Retained on 20.0mm BS Sieve	: **2**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.70**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown silty SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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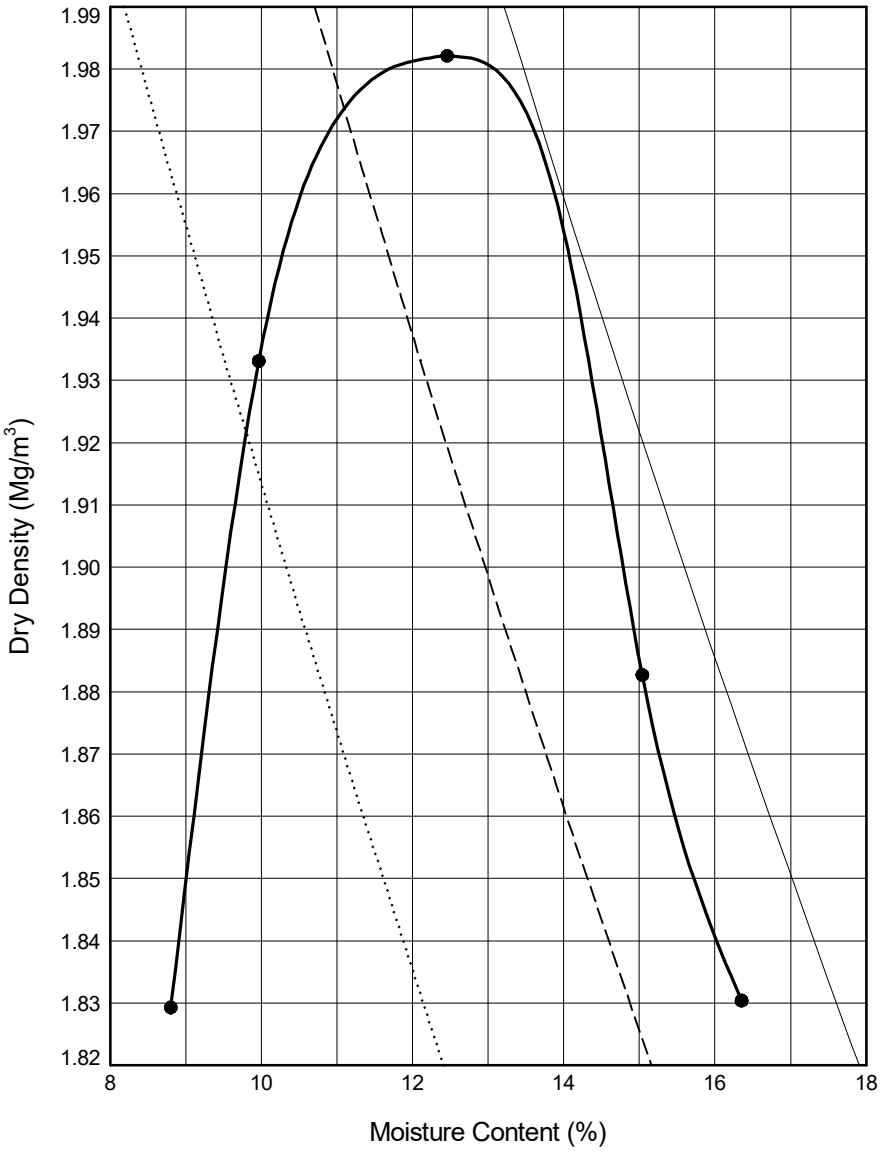
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS226** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.30**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **15**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.98**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **12**
% Retained on 20.0mm BS Sieve	: **1**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.70**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Brown slightly gravelly sandy silty CLAY	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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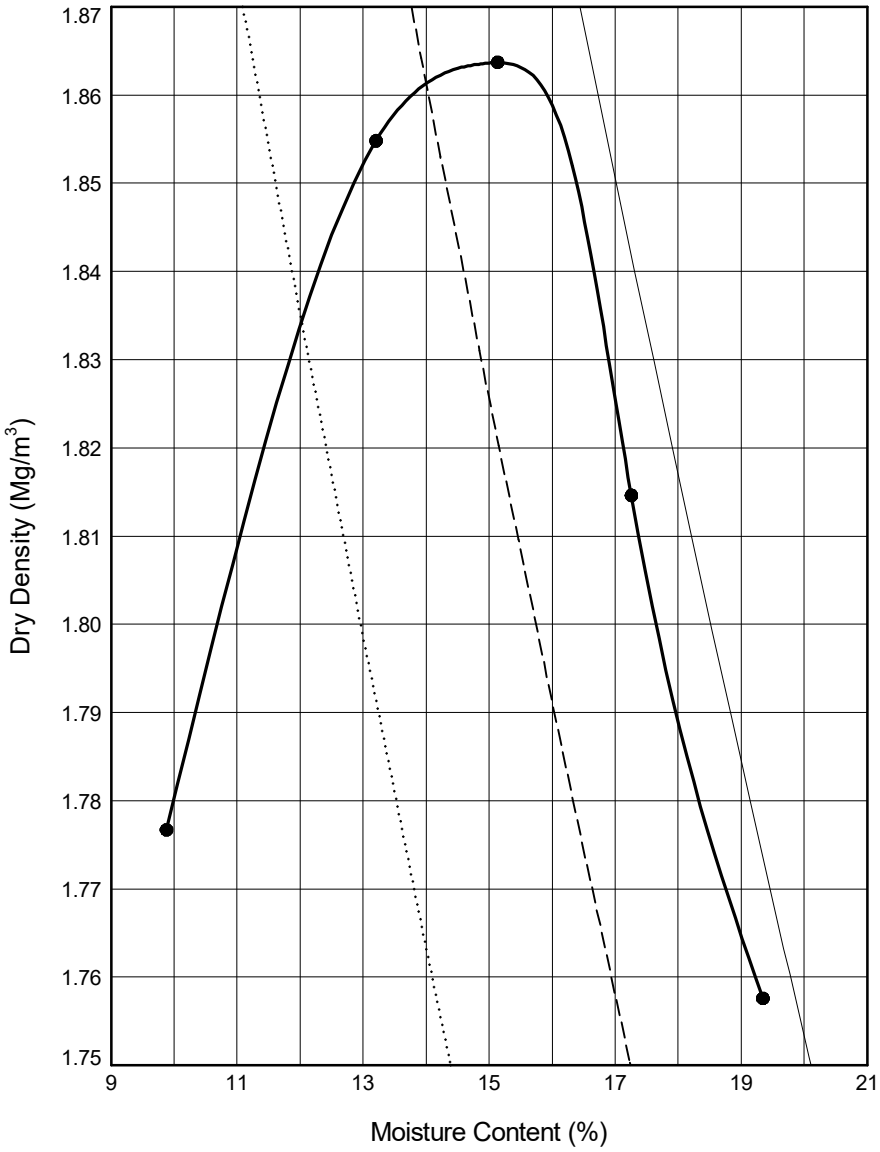
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS226** Sample Ref: **7** Sample Type: **B** Depth (m): **2.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **19**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.86**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **15**
% Retained on 20.0mm BS Sieve	: **0**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.70**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Orangish brown slightly gravelly sandy silty CLAY	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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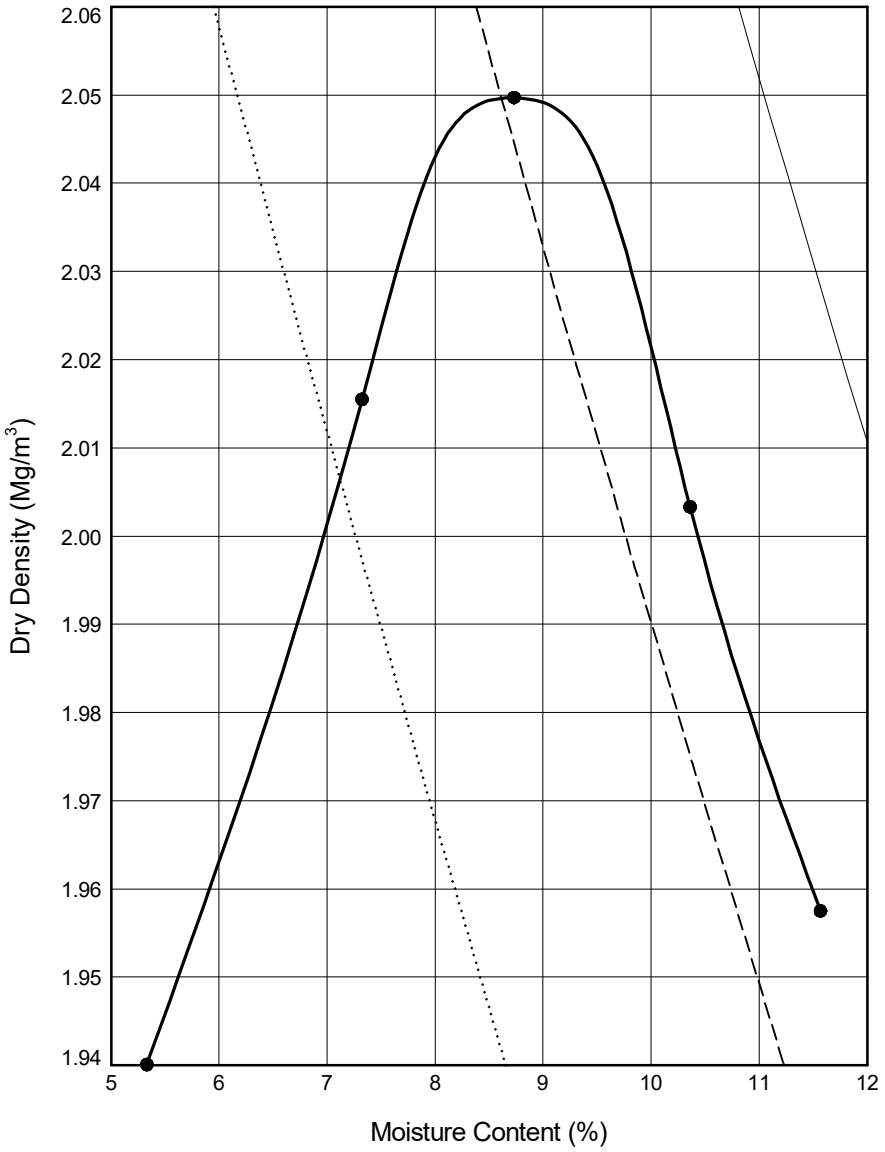
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS226** Sample Ref: **9** Sample Type: **LB** Depth (m): **2.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **8.7**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.05**
% Retained on 37.5mm BS Sieve	: **6**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **8.7**
% Retained on 20.0mm BS Sieve	: **2**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Orangish brown very gravelly clayey SAND	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Daria Ignaczak	**DARIA IGNACZAK**	**21/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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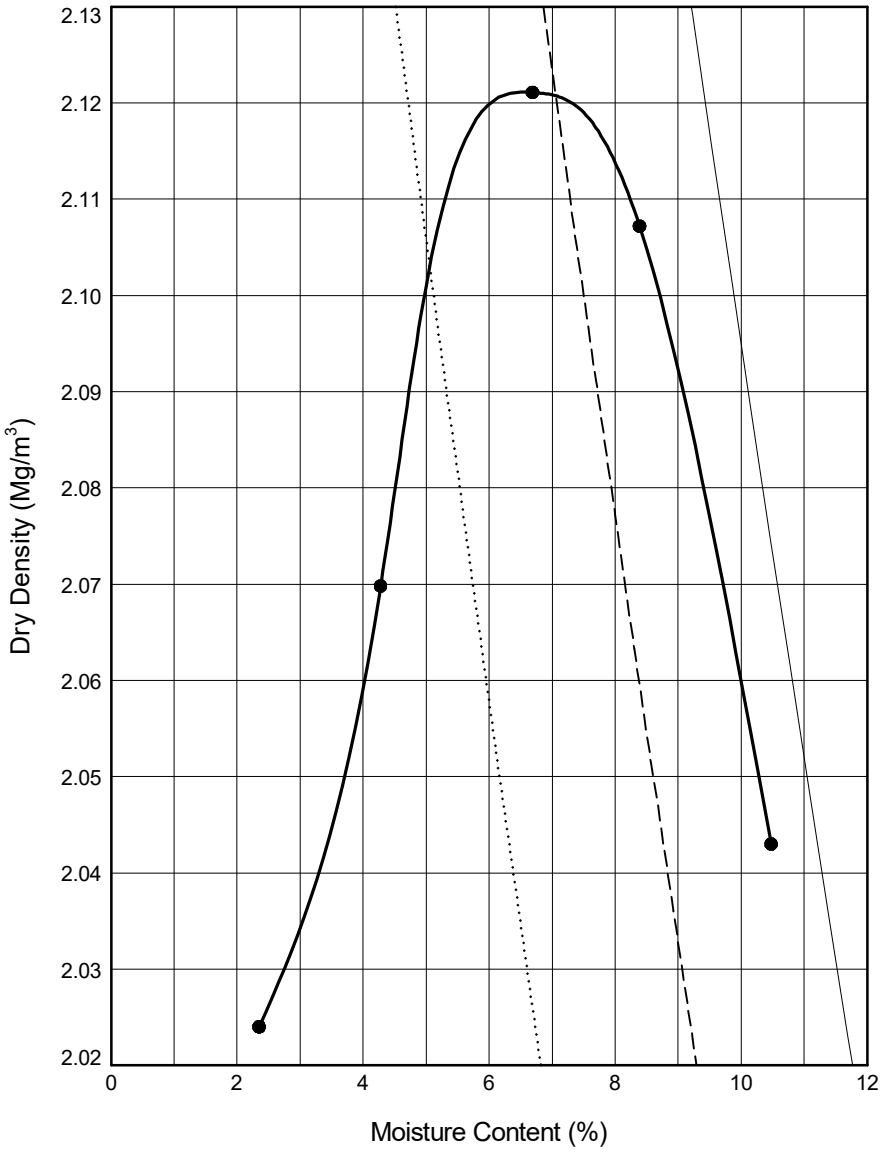
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS226** Sample Ref: **10** Sample Type: **B** Depth (m): **3.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **8.4**	Compaction Type	: **Heavy**	Maximum Dry Density (Mg/m³)	: **2.12**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**4.5**	Optimum Moisture Content (%)	: **6.7**
% Retained on 20.0mm BS Sieve	: **1**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.5**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Red slightly silty SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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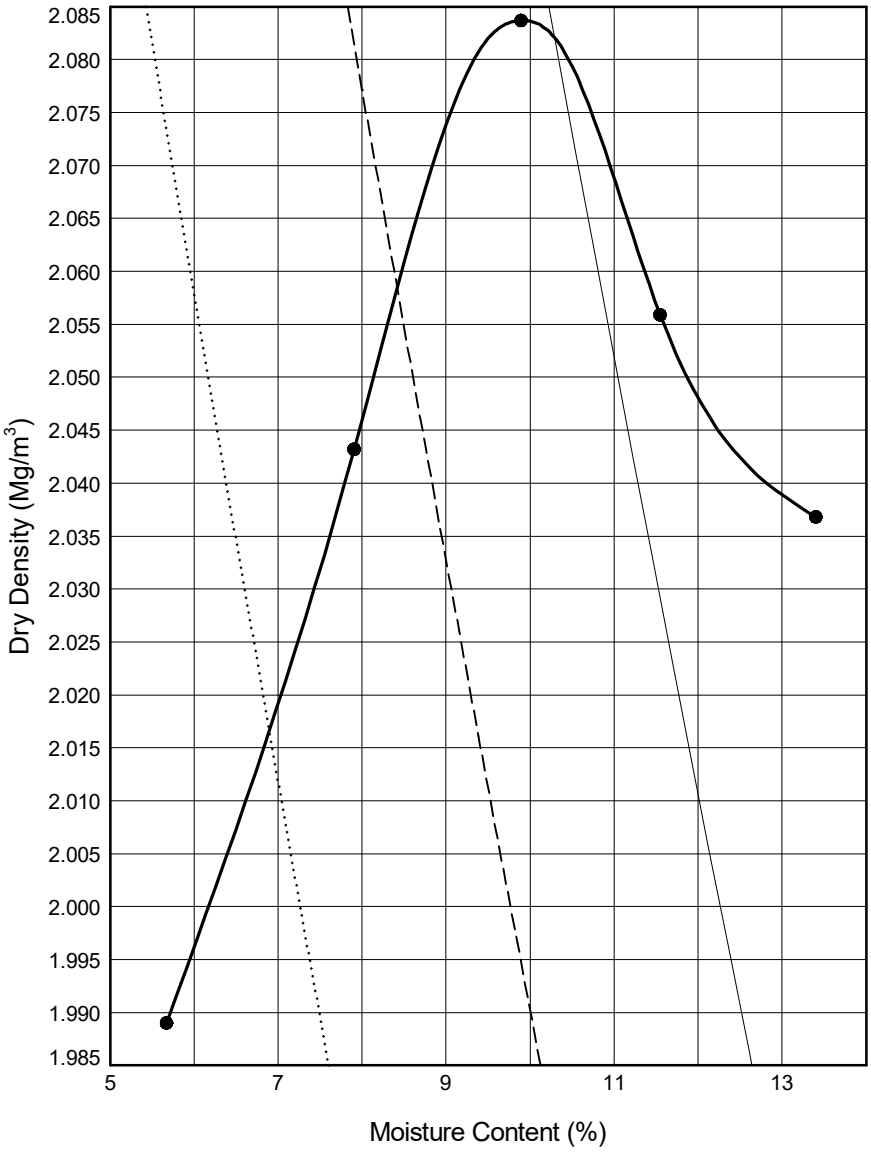
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Trial Pit: **TP-PTS228** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.80**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **9.9**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.08**
% Retained on 37.5mm BS Sieve	: **21**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9.9**
% Retained on 20.0mm BS Sieve	: **13**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<37.5**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown silty SAND	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**30/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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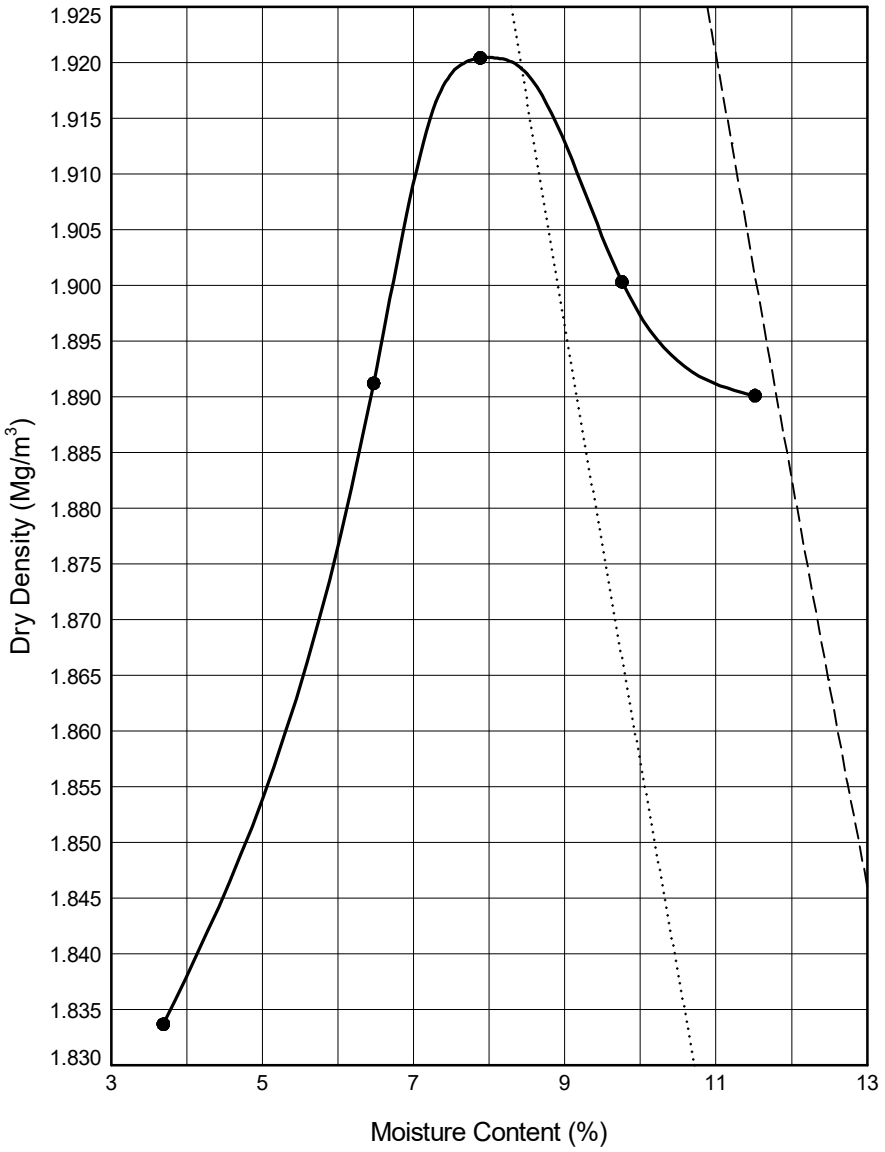
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS228** Sample Ref: **8** Sample Type: **B** Depth (m): **1.90**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **1.92**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **8**
% Retained on 20.0mm BS Sieve	: **0**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.60**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown slightly gravelly clayey SAND	——— 0%	– – – - 5%	····· 10%

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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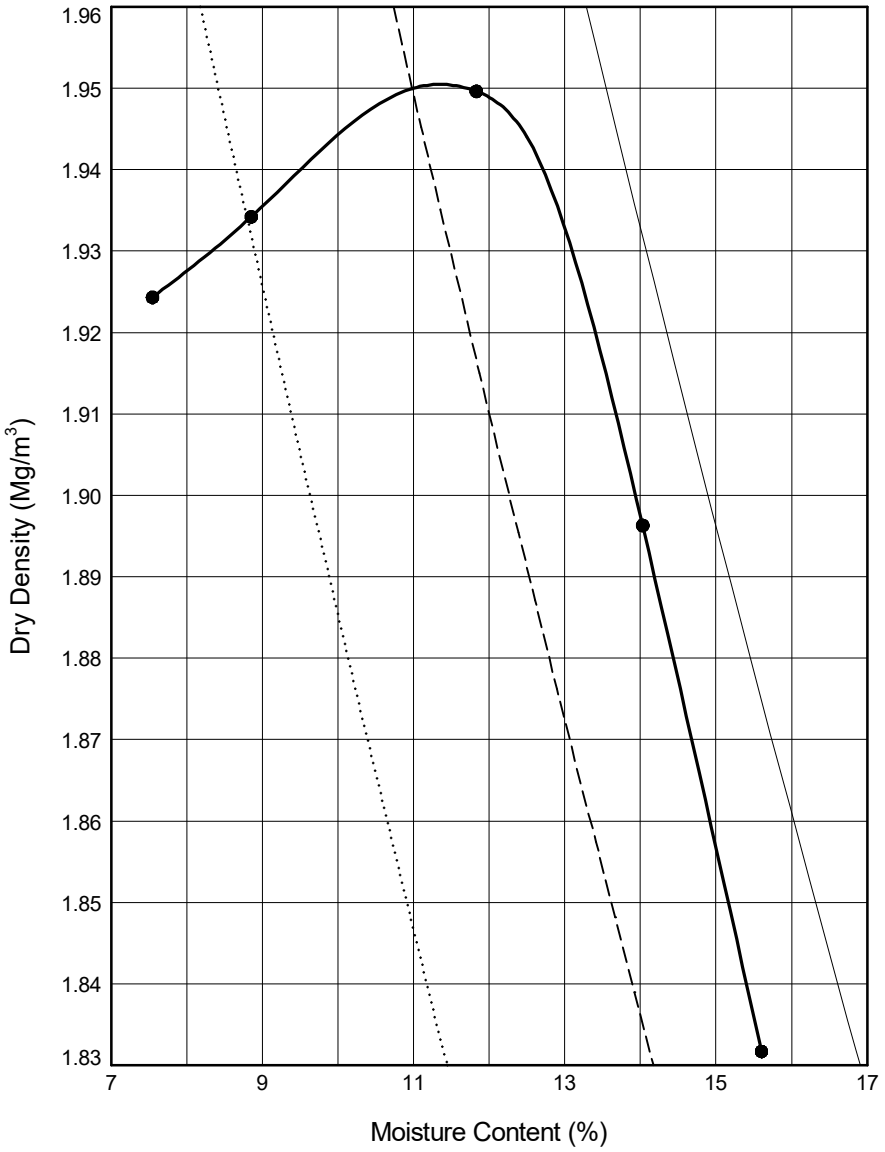
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS228** Sample Ref: **10** Sample Type: **LB** Depth (m): **3.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.95**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **11**
% Retained on 20.0mm BS Sieve	: **0**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown silty SAND	——— 0%	– – – - 5%	····· 10%

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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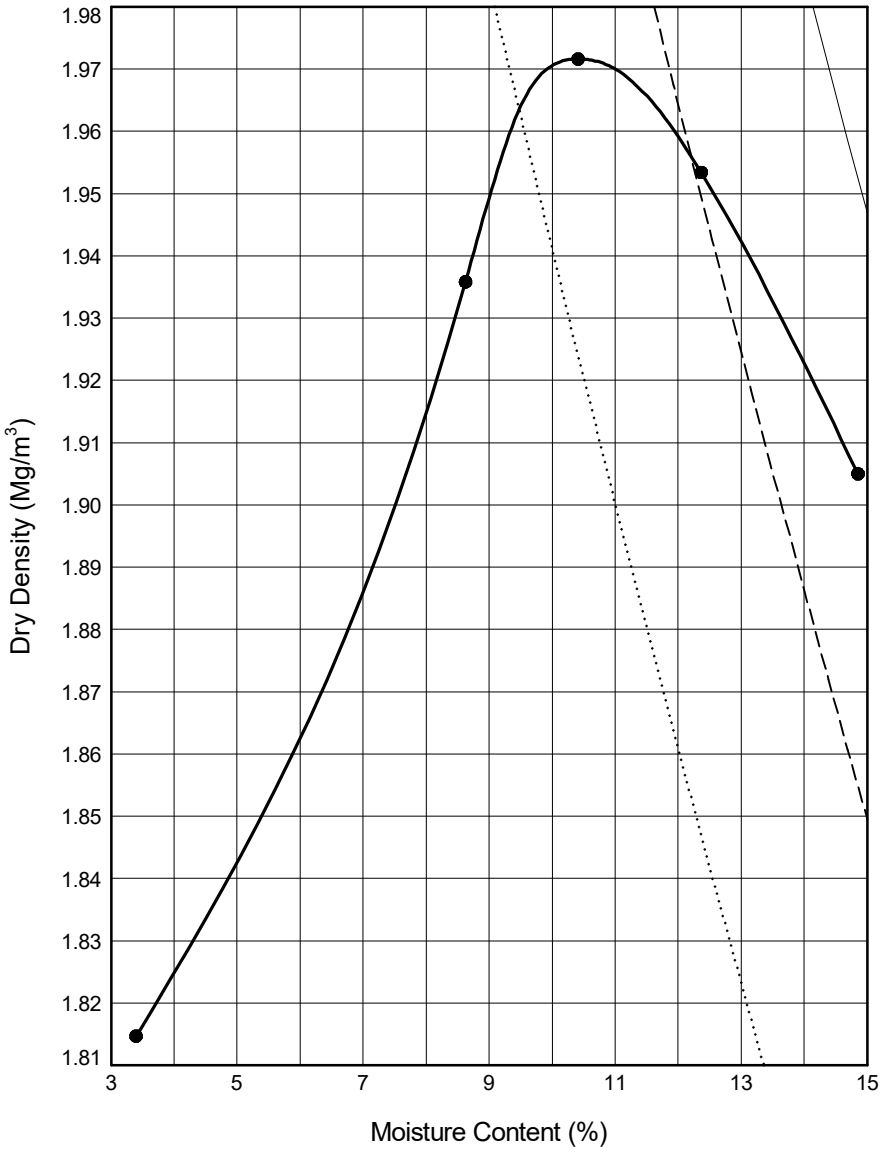
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS229** Sample Ref: **6** Sample Type: **LB** Depth (m): **0.30**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.97**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10**
% Retained on 20.0mm BS Sieve	: **2**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.75**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown slightly gravelly SILT	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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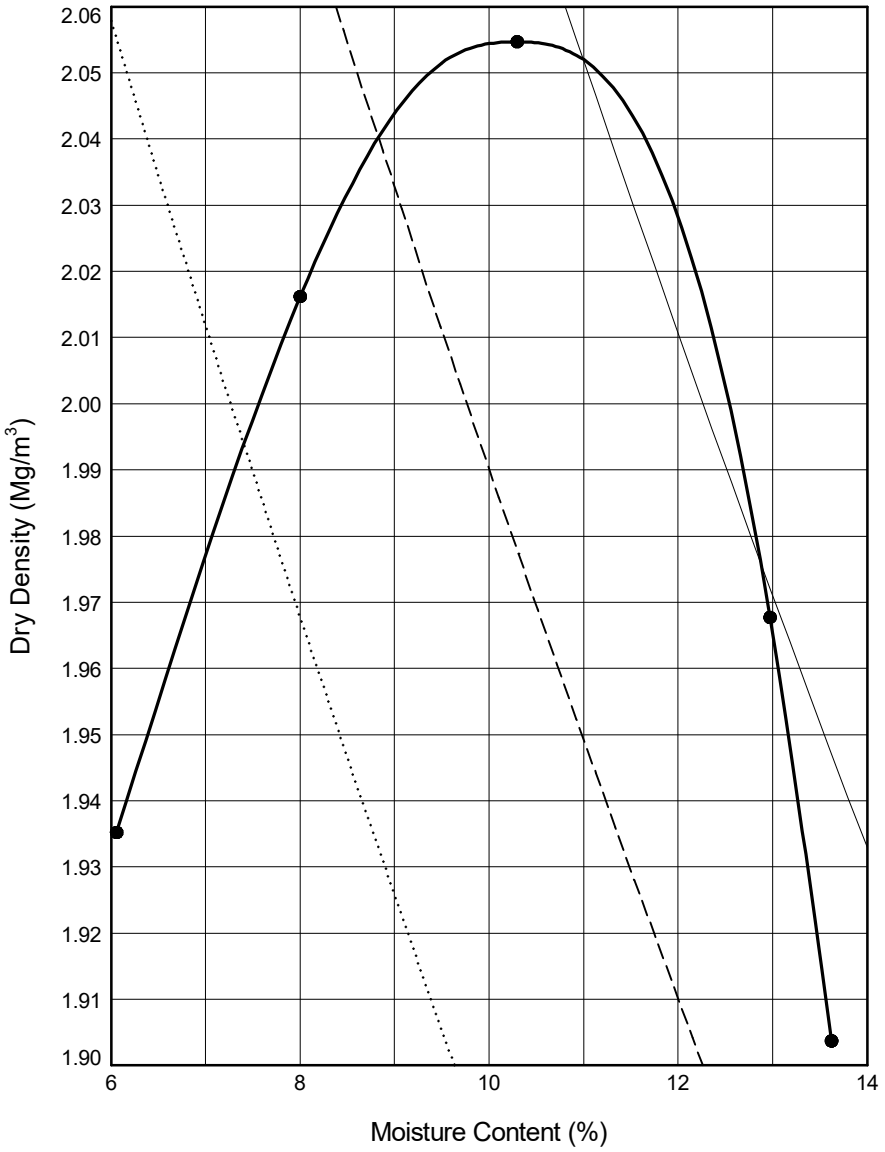
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS229** Sample Ref: **8** Sample Type: **B** Depth (m): **2.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **13**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.05**
% Retained on 37.5mm BS Sieve	: **7**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10**
% Retained on 20.0mm BS Sieve	: **2**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Orangish brown gravelly very clayey SAND with medium cobble content	——— 0%	– – – - 5%	····· 10%

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BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**30/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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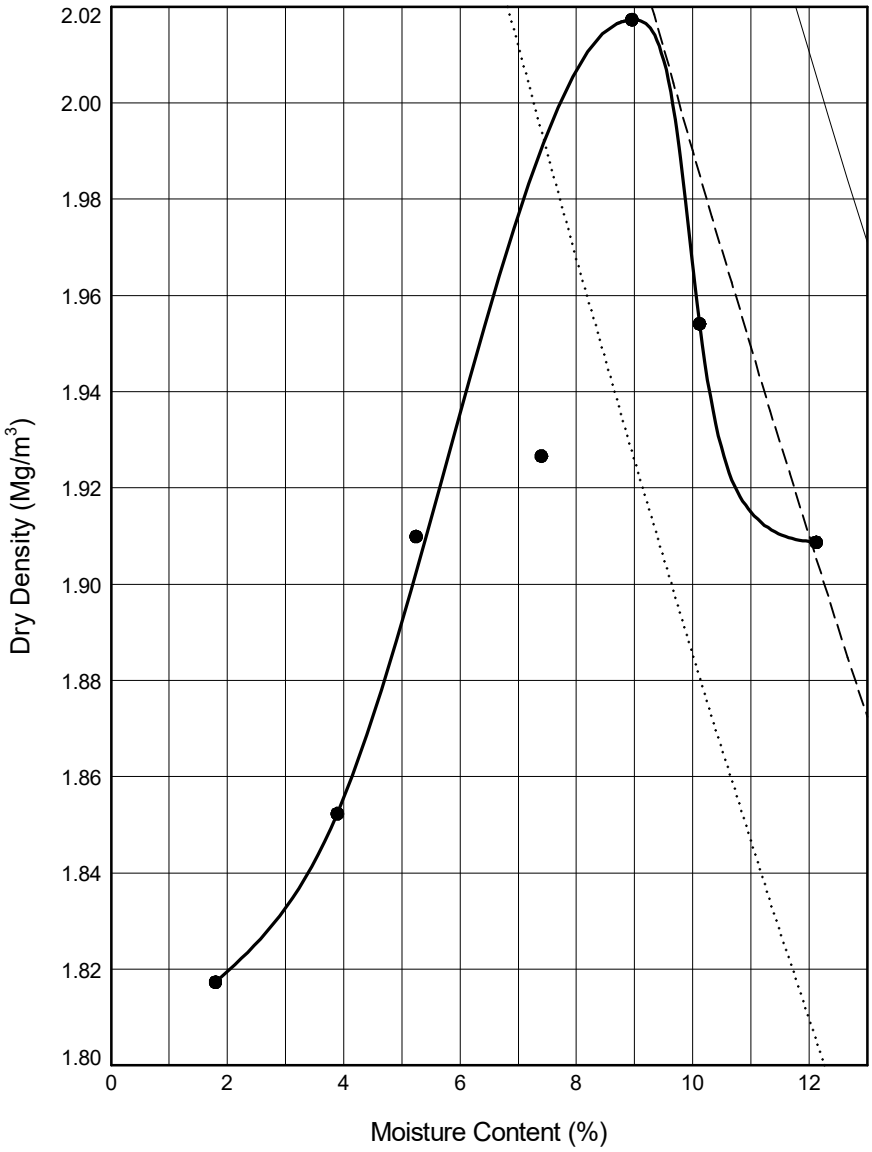
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS229** Sample Ref: **11** Sample Type: **LB** Depth (m): **2.90**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **7.4**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.02**
% Retained on 37.5mm BS Sieve	: **6**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9**
% Retained on 20.0mm BS Sieve	: **2**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown gravelly silty SAND with high cobble content	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**30/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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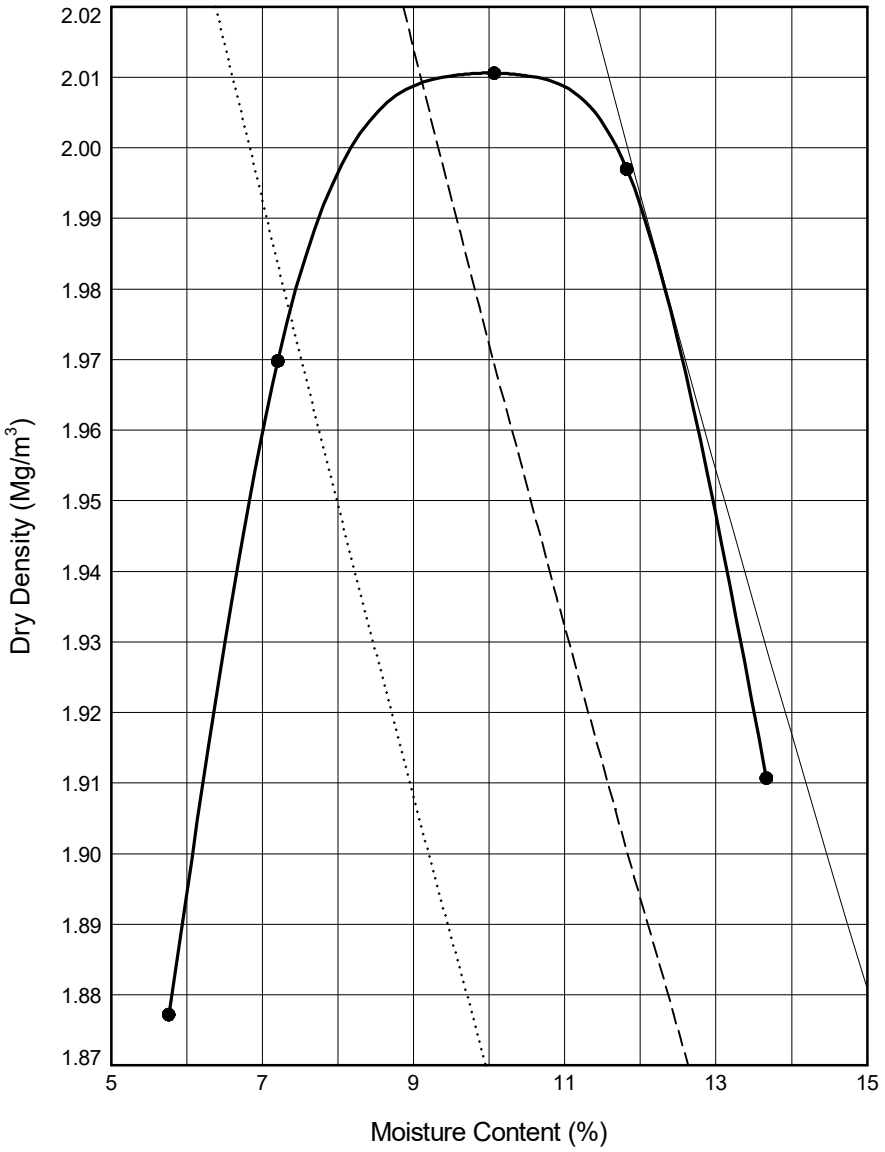
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS230** Sample Ref: **3** Sample Type: **LB** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.01**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10.1**
% Retained on 20.0mm BS Sieve	: **0**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.62**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown slightly gravelly very clayey SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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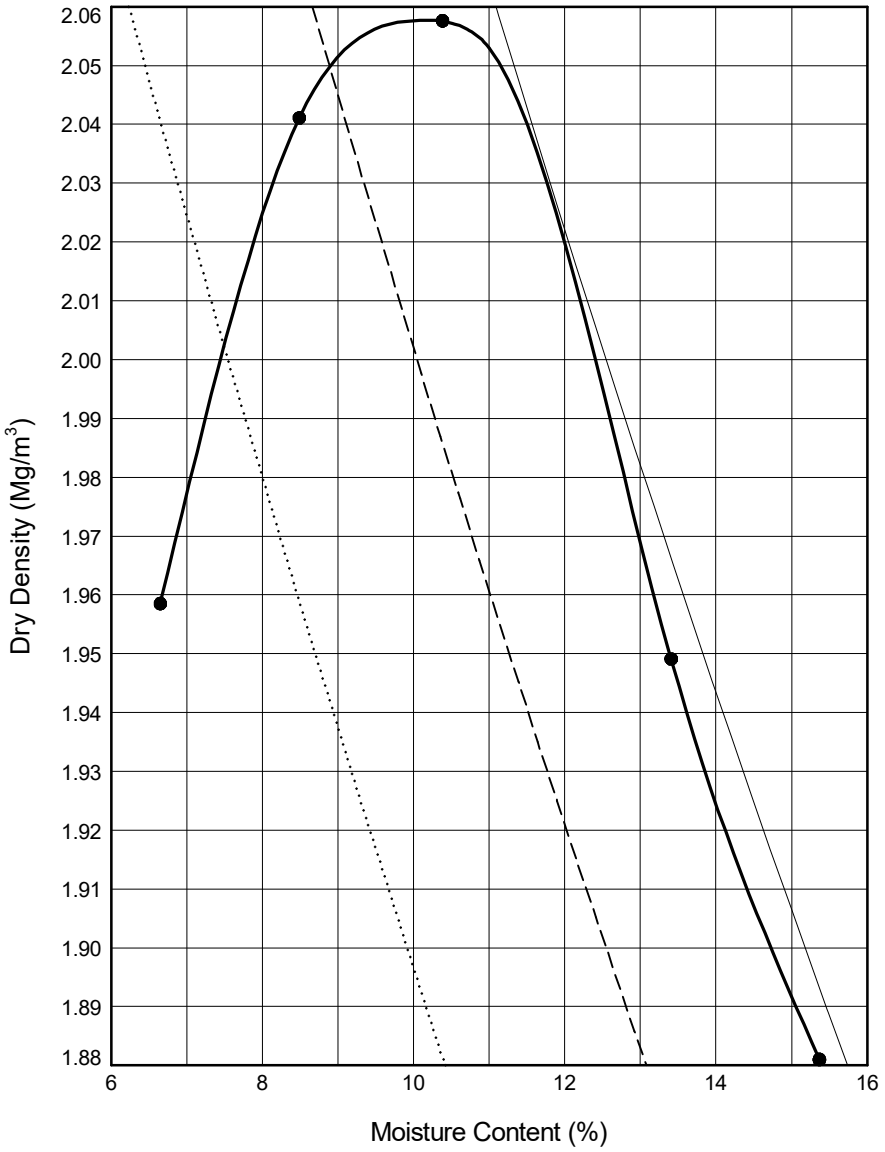
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS230** Sample Ref: **6** Sample Type: **LB** Depth (m): **1.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **13**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.06**
% Retained on 37.5mm BS Sieve	: **10**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9.5**
% Retained on 20.0mm BS Sieve	: **7**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.67**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Brown gravelly clayey SAND with medium cobble content	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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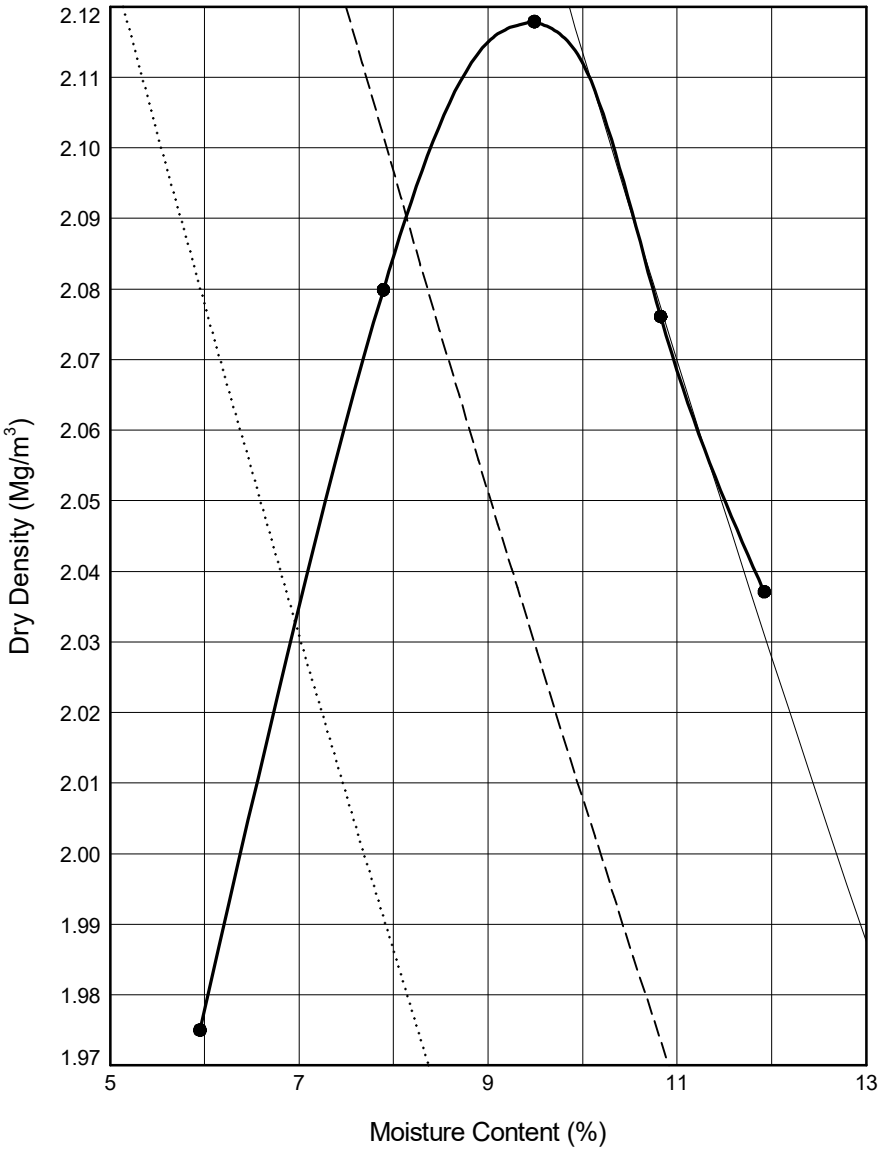
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Trial Pit: **TP-PTS230** Sample Ref: **9** Sample Type: **B** Depth (m): **2.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **9.5**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.12**
% Retained on 37.5mm BS Sieve	: **29**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9.5**
% Retained on 20.0mm BS Sieve	: **12**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.68**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown very sandy clayey GRAVEL	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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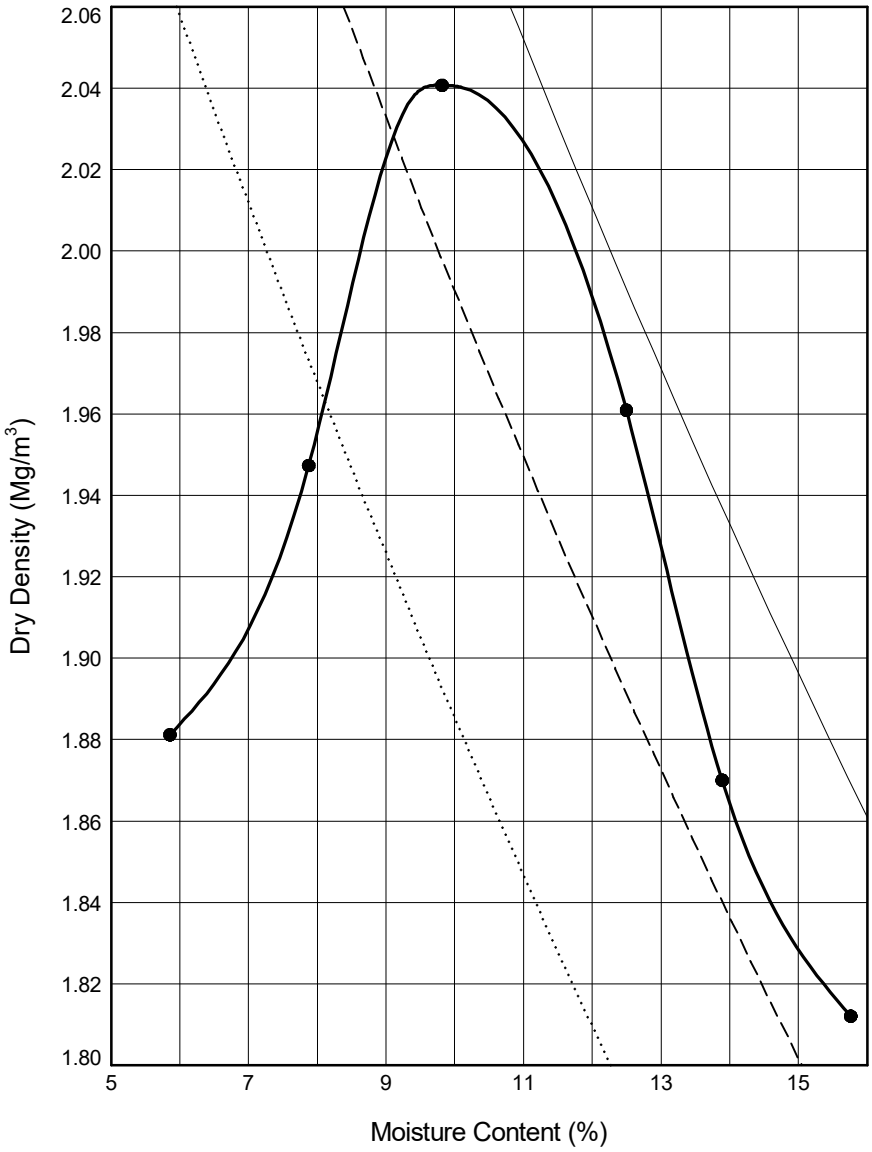
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS231** Sample Ref: **5** Sample Type: **B** Depth (m): **1.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.04**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9.8**
% Retained on 20.0mm BS Sieve	: **0**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Brown slightly gravelly very clayey SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
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BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**30/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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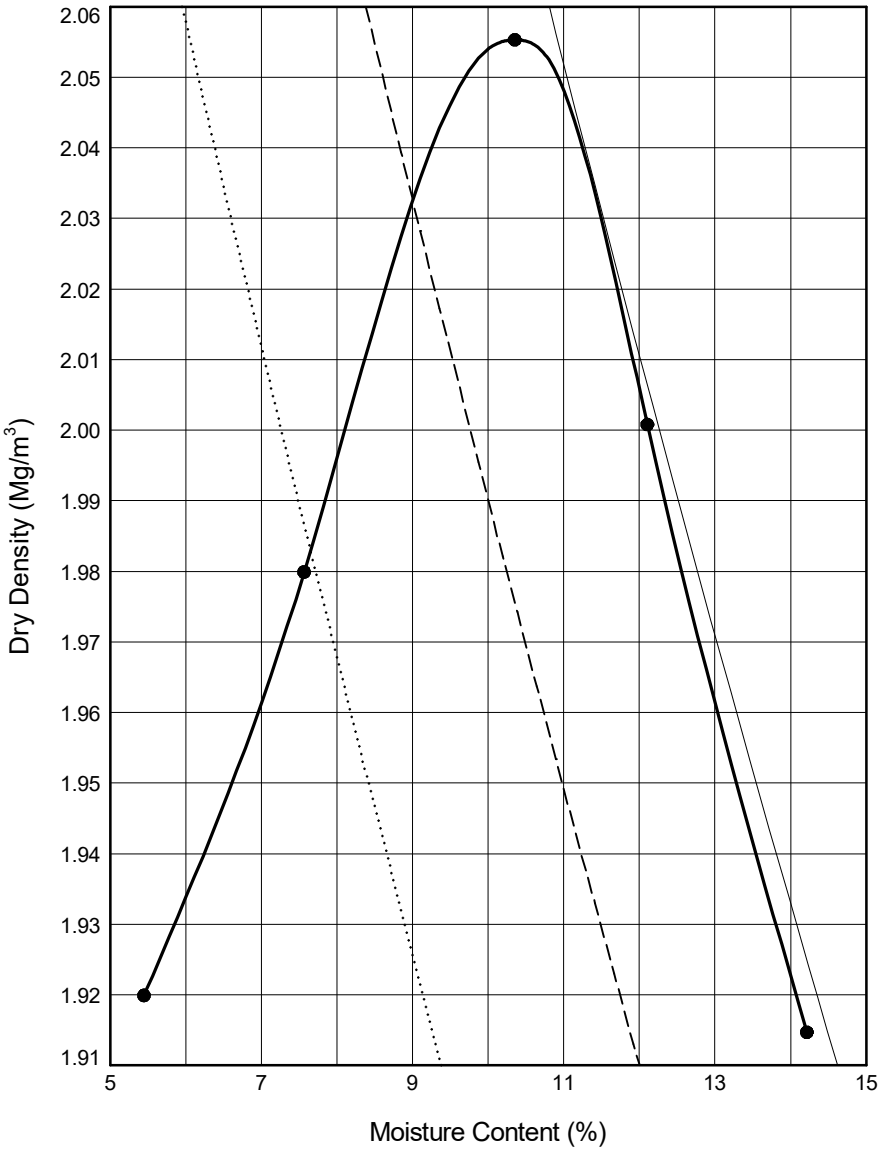
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS231** Sample Ref: **7** Sample Type: **B** Depth (m): **2.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.06**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10.4**
% Retained on 20.0mm BS Sieve	: **4**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown slightly gravelly silty CLAY	——— 0%	– – – - 5%	····· 10%

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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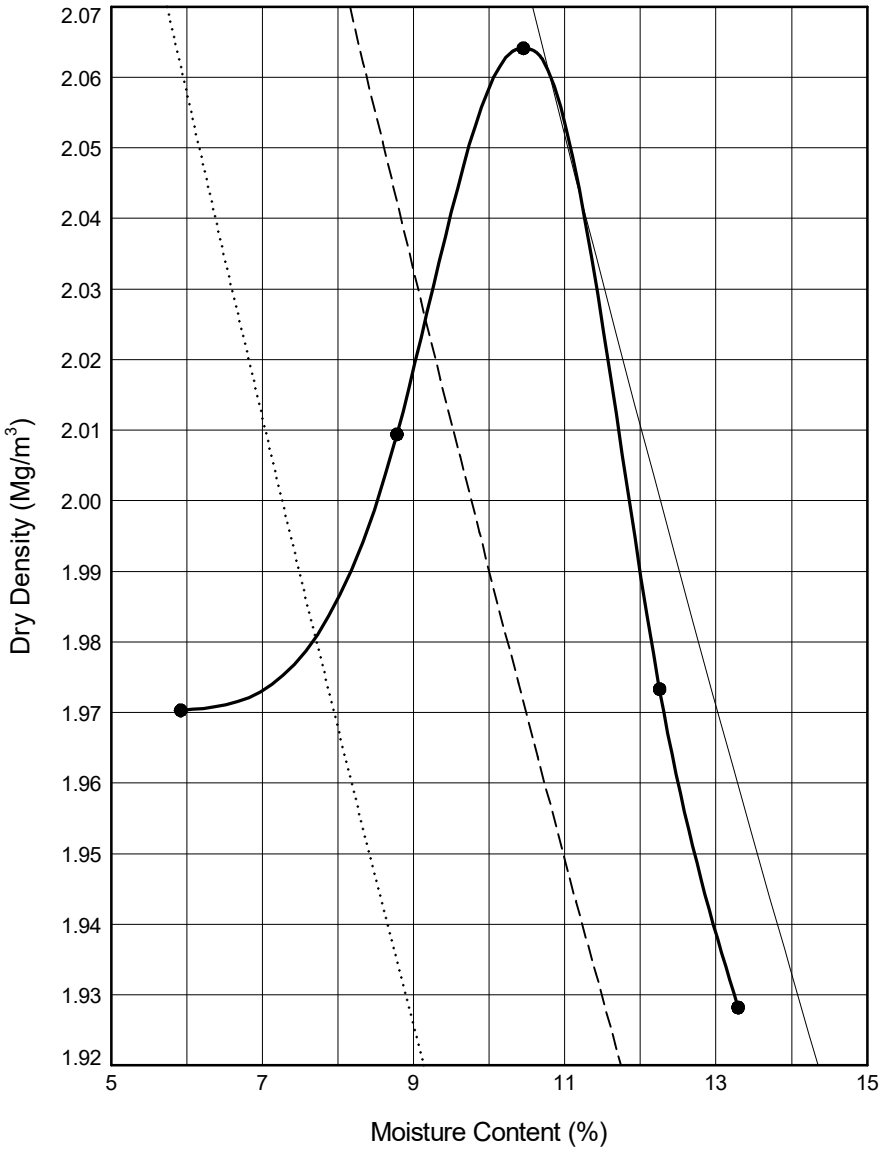
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS231** Sample Ref: **9** Sample Type: **LB** Depth (m): **2.90**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **10.0**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.06**
% Retained on 37.5mm BS Sieve	: **6**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10.5**
% Retained on 20.0mm BS Sieve	: **4**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Brown very gravelly very clayey SAND	——— 0%	– – – - 5%	····· 10%

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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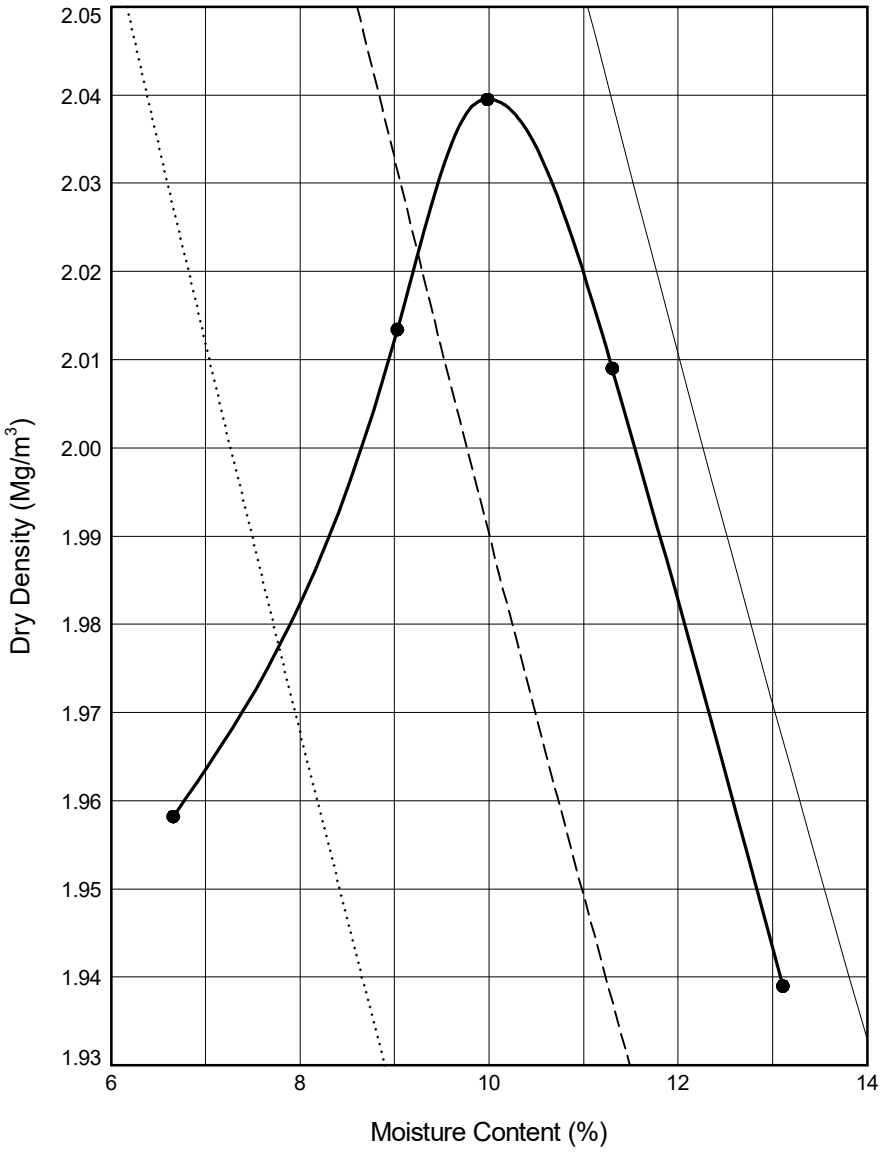
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS233-LC** Sample Ref: **3** Sample Type: **LB** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **11**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.04**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10**
% Retained on 20.0mm BS Sieve	: **1**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Brown gravelly clayey SAND	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
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	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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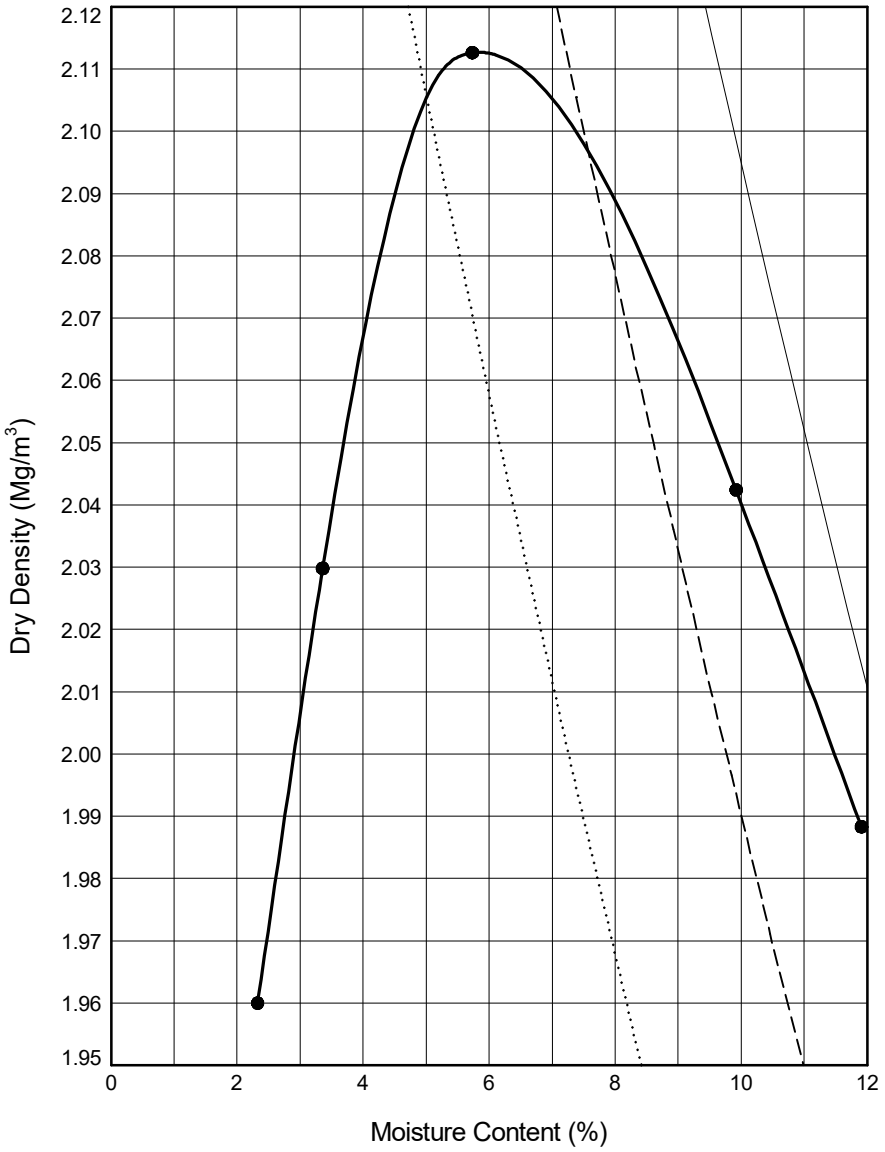
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS233-LC** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Heavy**	Maximum Dry Density (Mg/m³)	: **2.12**
% Retained on 37.5mm BS Sieve	: **3**	Mass of Rammer (kg):	**4.5**	Optimum Moisture Content (%)	: **5.7**
% Retained on 20.0mm BS Sieve	: **2**	Type of Mould	: **CBR**	Method Used:	**Clause 3.6**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown gravelly very clayey SAND	——— 0%	– – – - 5%	····· 10%

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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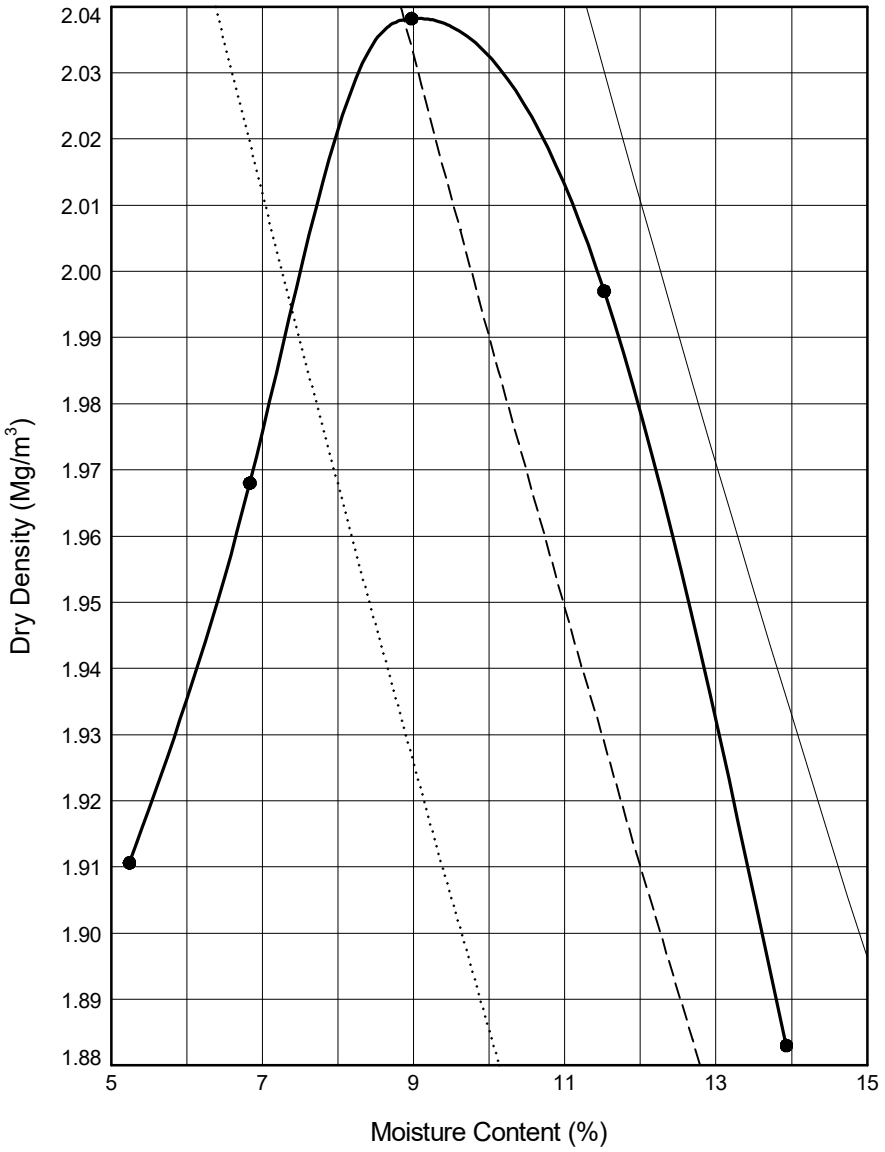
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS233-LC** Sample Ref: **6** Sample Type: **B** Depth (m): **1.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.04**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9.0**
% Retained on 20.0mm BS Sieve	: **2**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown clayey sandy SILT	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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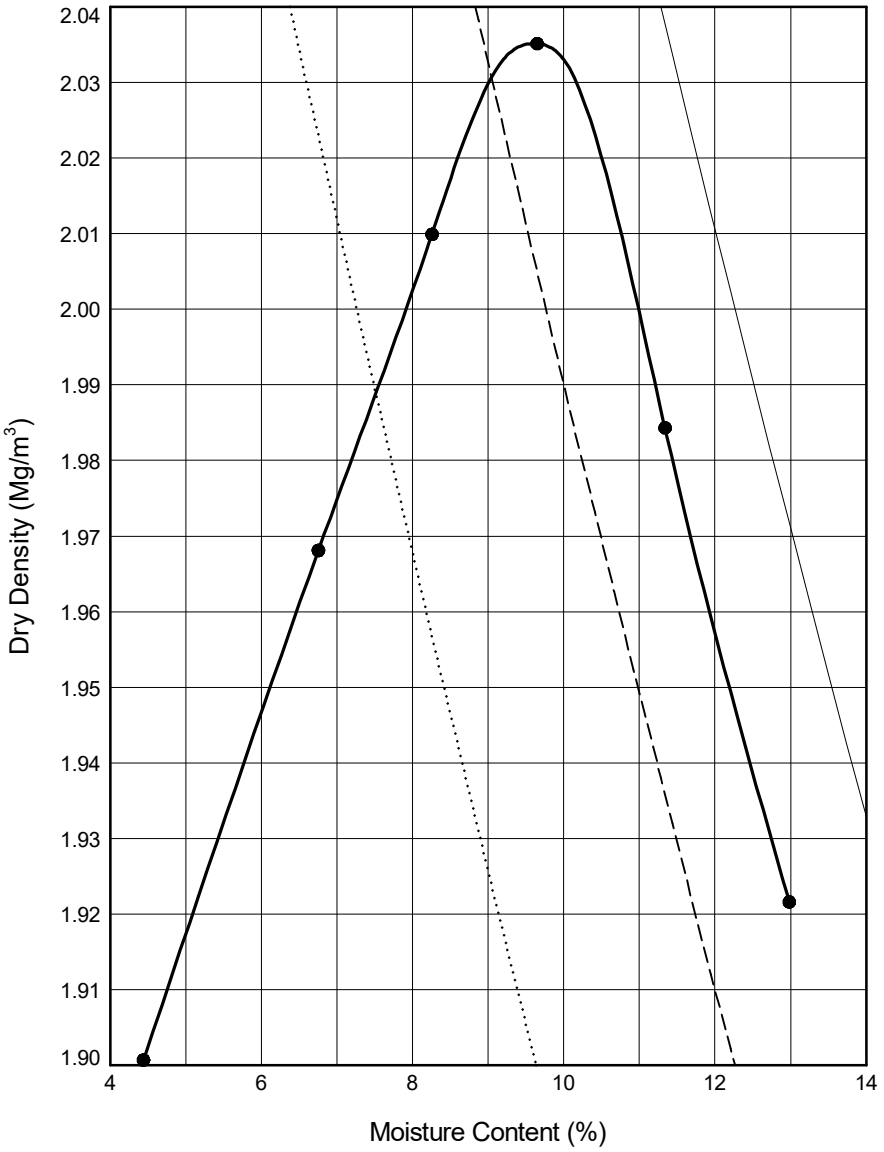
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS233-LC** Sample Ref: **8** Sample Type: **B** Depth (m): **2.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **11**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.04**
% Retained on 37.5mm BS Sieve	: **3**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9.6**
% Retained on 20.0mm BS Sieve	: **2**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown gravelly clayey SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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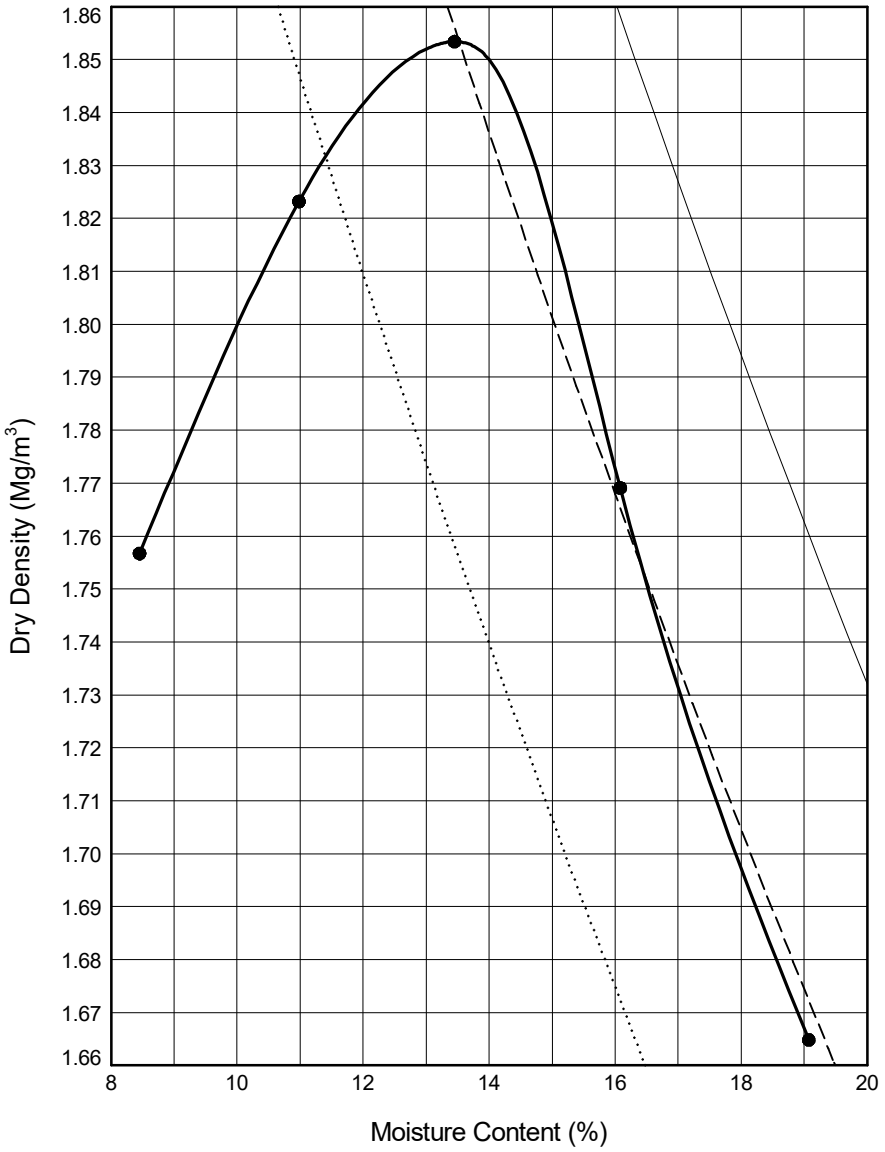
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS234** Sample Ref: **2** Sample Type: **B** Depth (m): **0.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **16**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **1.85**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **13.4**
% Retained on 20.0mm BS Sieve	: **4**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Reddish brown gravelly clayey SAND	——— 0%	– – – - 5%	····· 10%

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**30/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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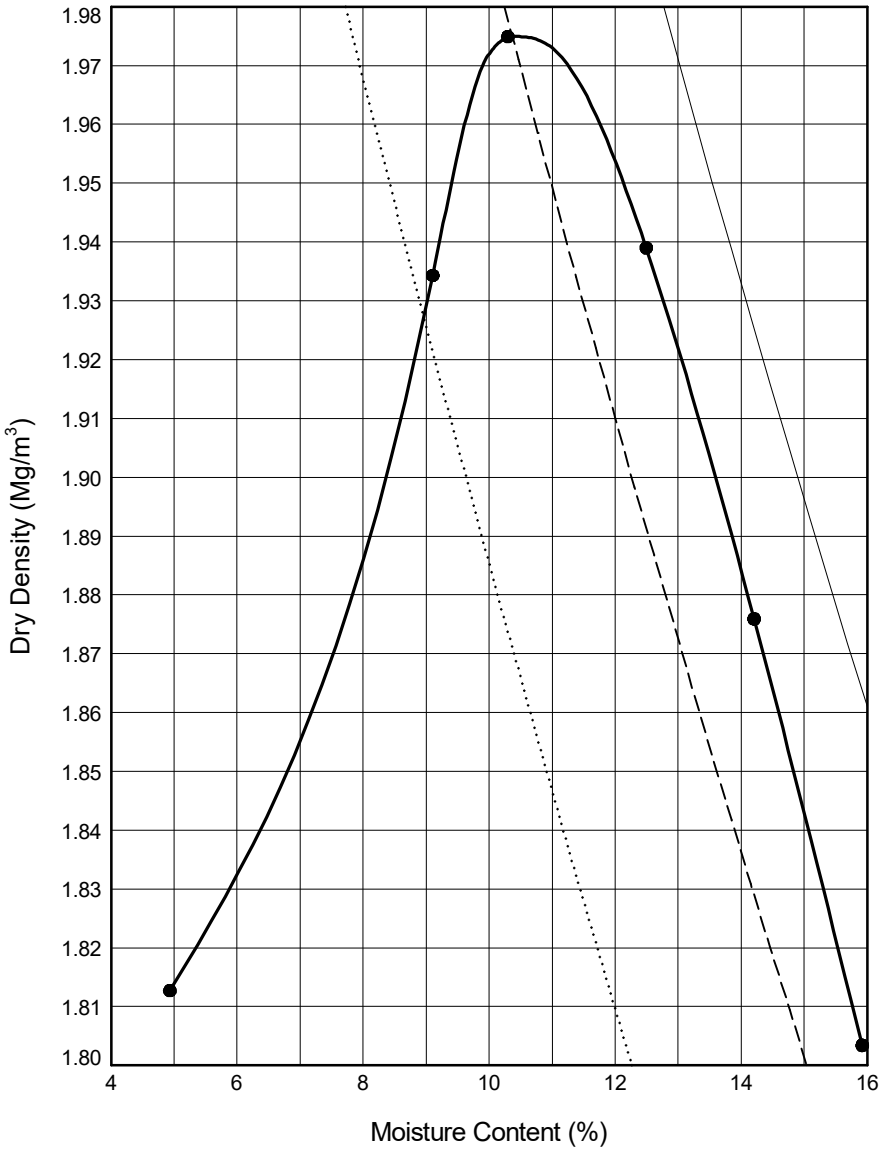
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS234** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.30**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **1.97**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10.5**
% Retained on 20.0mm BS Sieve	: **2**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Brown gravelly clayey SAND	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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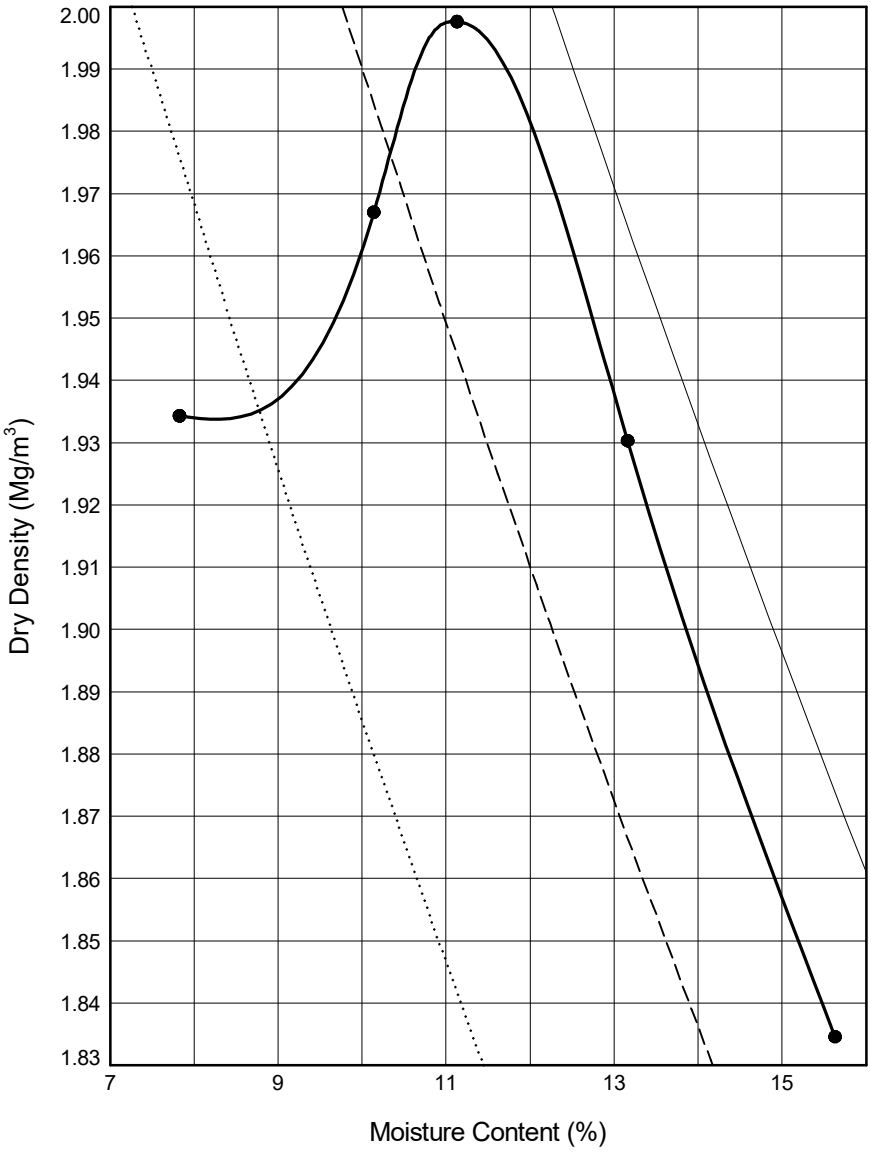
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS235** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.30**



Initial Sample Conditions			Test Details			Test Results		
Initial Moisture Content (%)	:	**11**	Compaction Type	:	**Light**	Maximum Dry Density (Mg/m^3)	:	**2.00**
% Retained on 37.5mm BS Sieve	:	**5**	Mass of Rammer (kg):		**2.5**	Optimum Moisture Content (%)	:	**11.1**
% Retained on 20.0mm BS Sieve	:	**2**	Type of Mould	:	**CBR**	Method Used: **Clause 3.4**		
Particle Density - assumed (Mg/m^3)	:	**2.65**				Remarks:		
Size of Soil Pieces	:	**<37.5**	Separate samples were used.					

Sample Description	Key to Air Voids Lines		
Reddish brown slightly gravelly silty SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**30/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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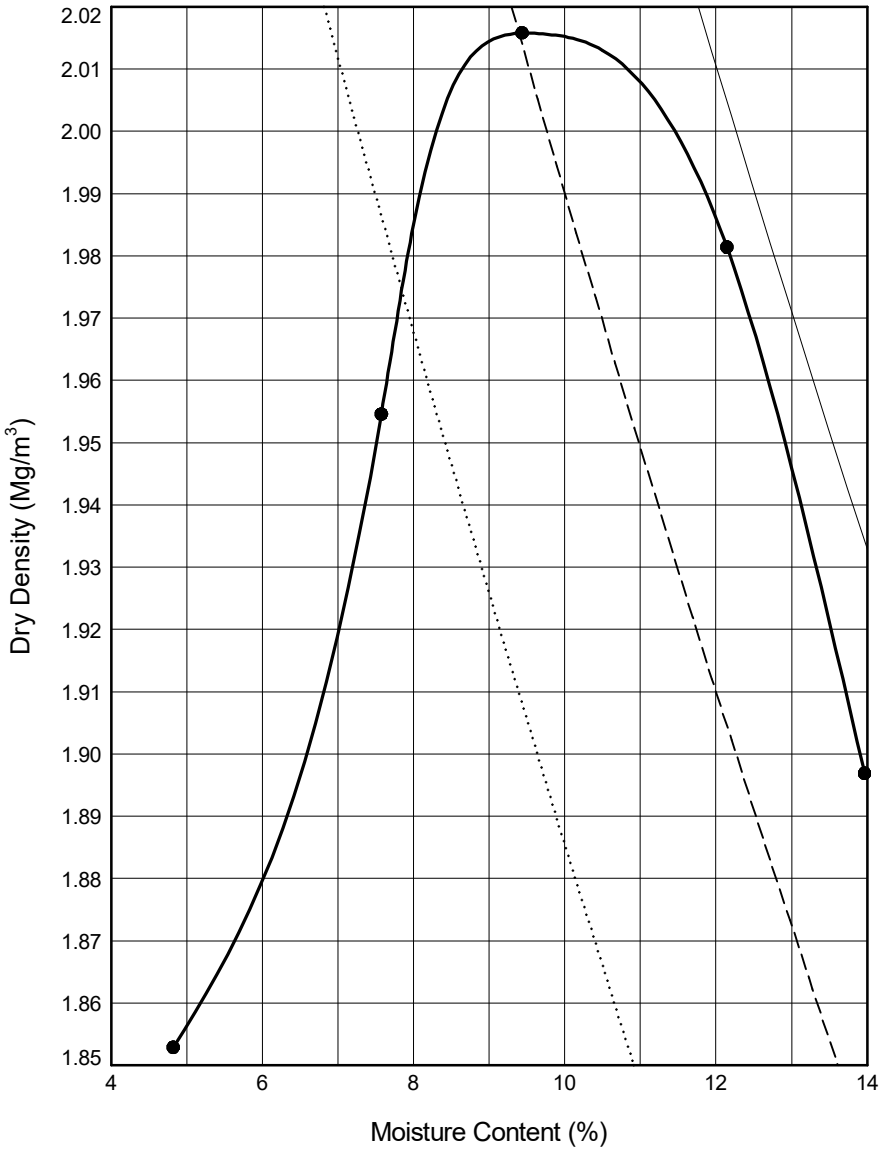
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS235** Sample Ref: **9** Sample Type: **B** Depth (m): **1.40**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.02**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9**
% Retained on 20.0mm BS Sieve	: **1**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Red slightly gravelly clayey SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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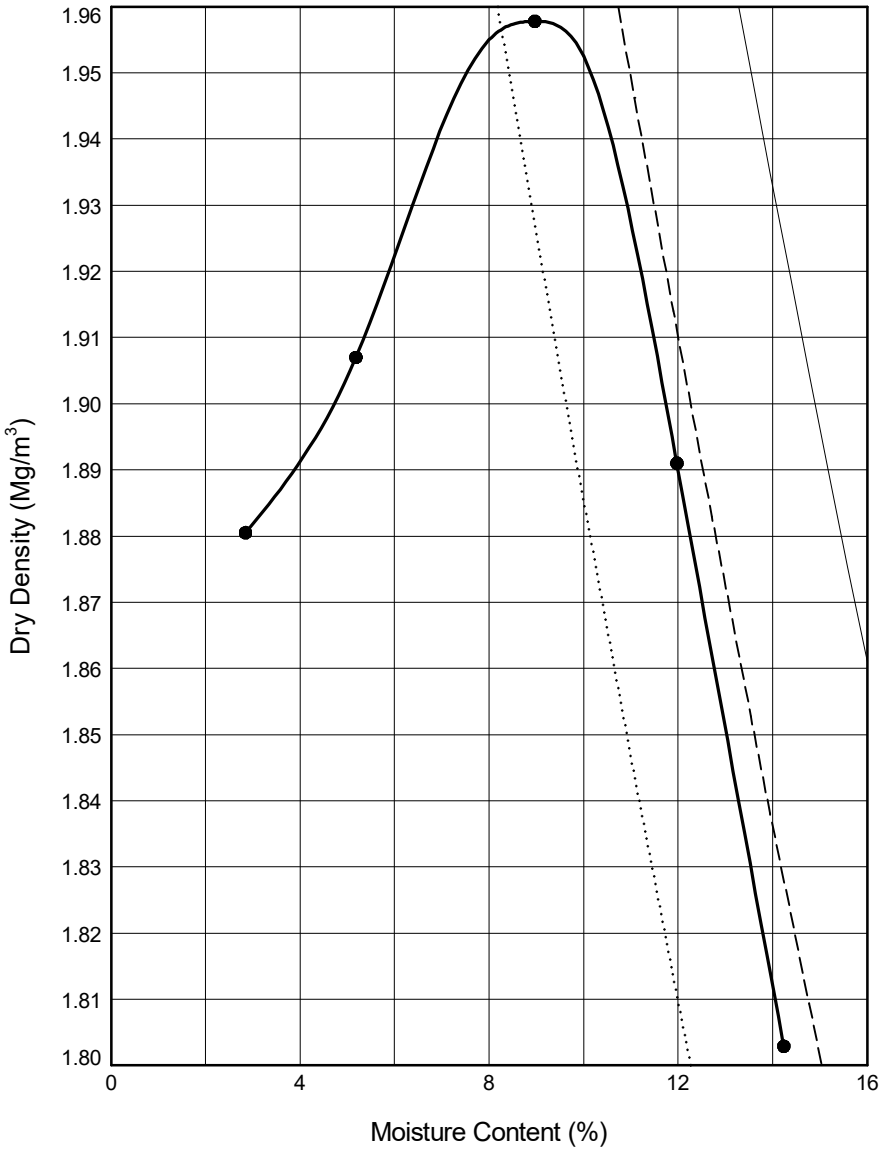
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS235** Sample Ref: **12** Sample Type: **LB** Depth (m): **2.40**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **7.5**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.96**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9**
% Retained on 20.0mm BS Sieve	: **2**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Red slightly silty SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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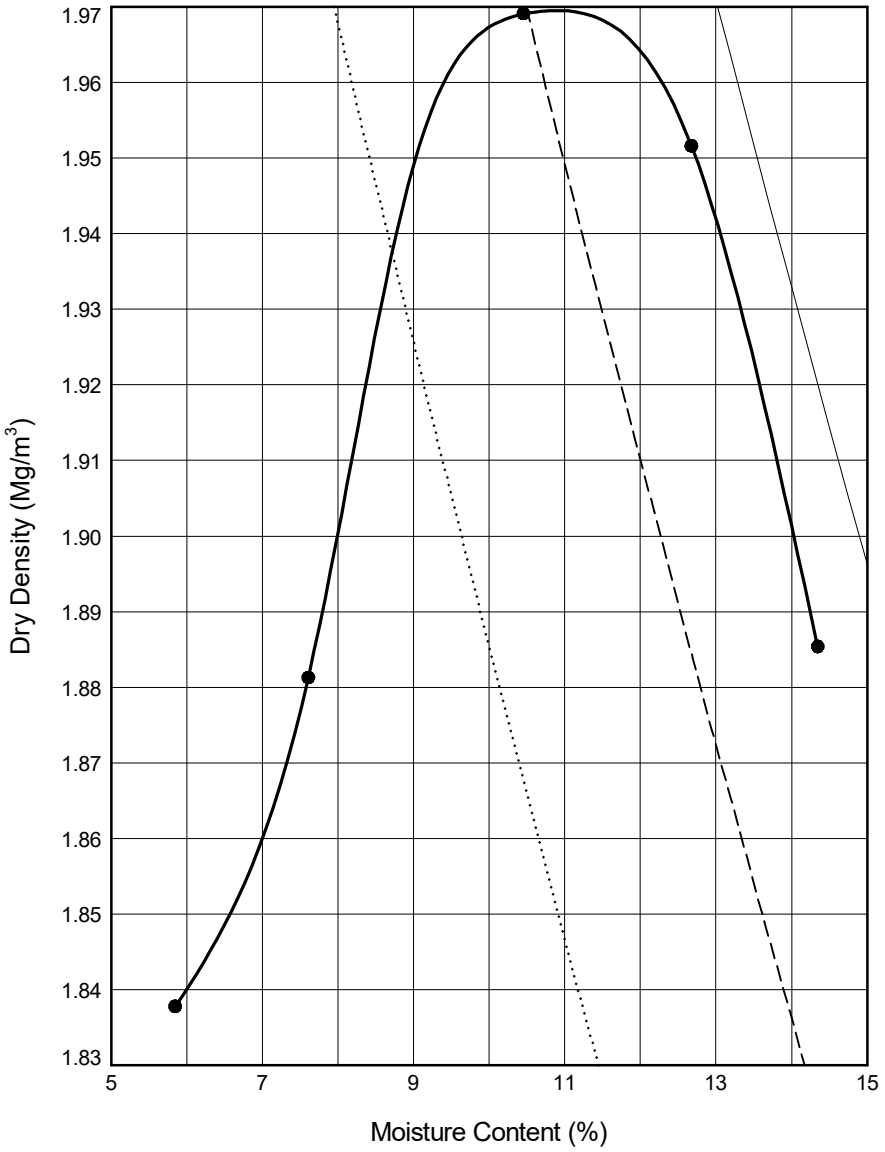
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS236** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.30**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **13**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.97**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **11**
% Retained on 20.0mm BS Sieve	: **1**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown sandy SILT	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**30/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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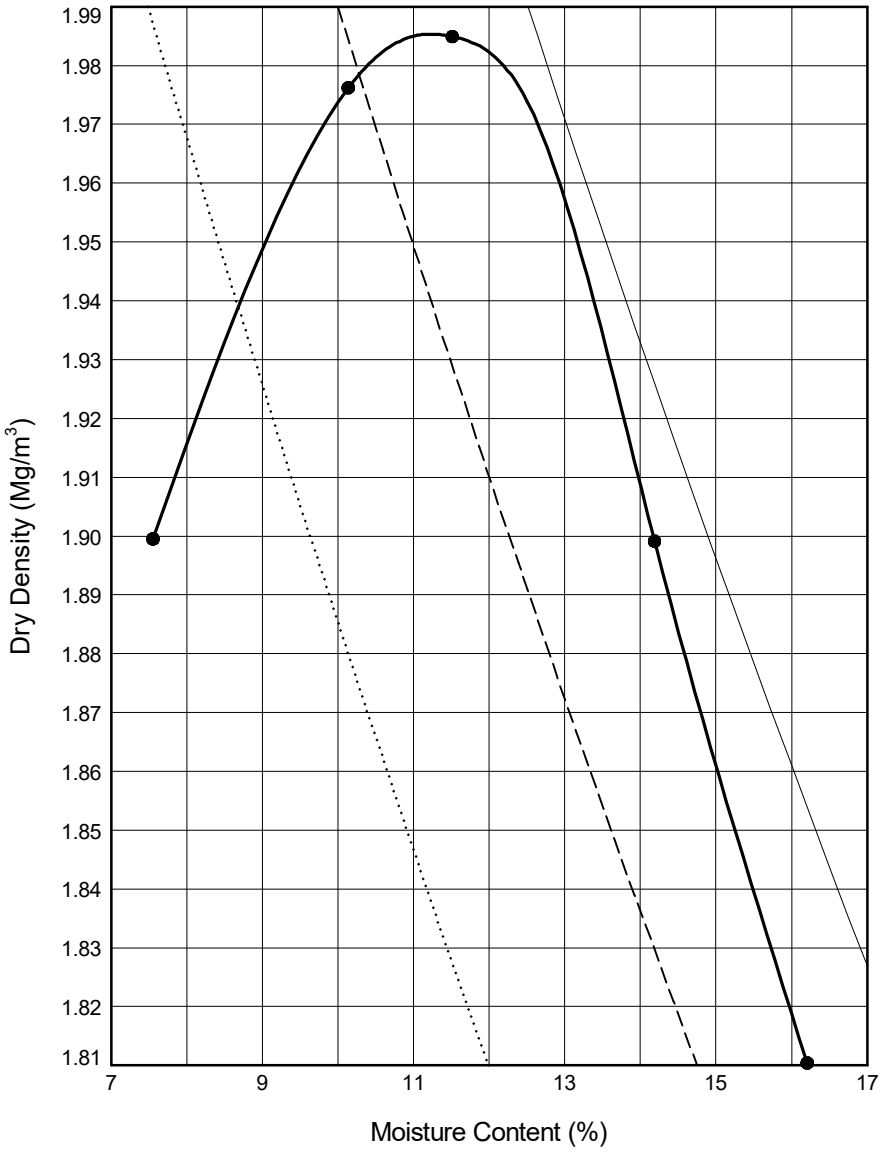
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS236** Sample Ref: **7** Sample Type: **LB** Depth (m): **0.60**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.99**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **11**
% Retained on 20.0mm BS Sieve	: **2**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Red clayey silty SAND	——— 0%	– – – - 5%	····· 10%

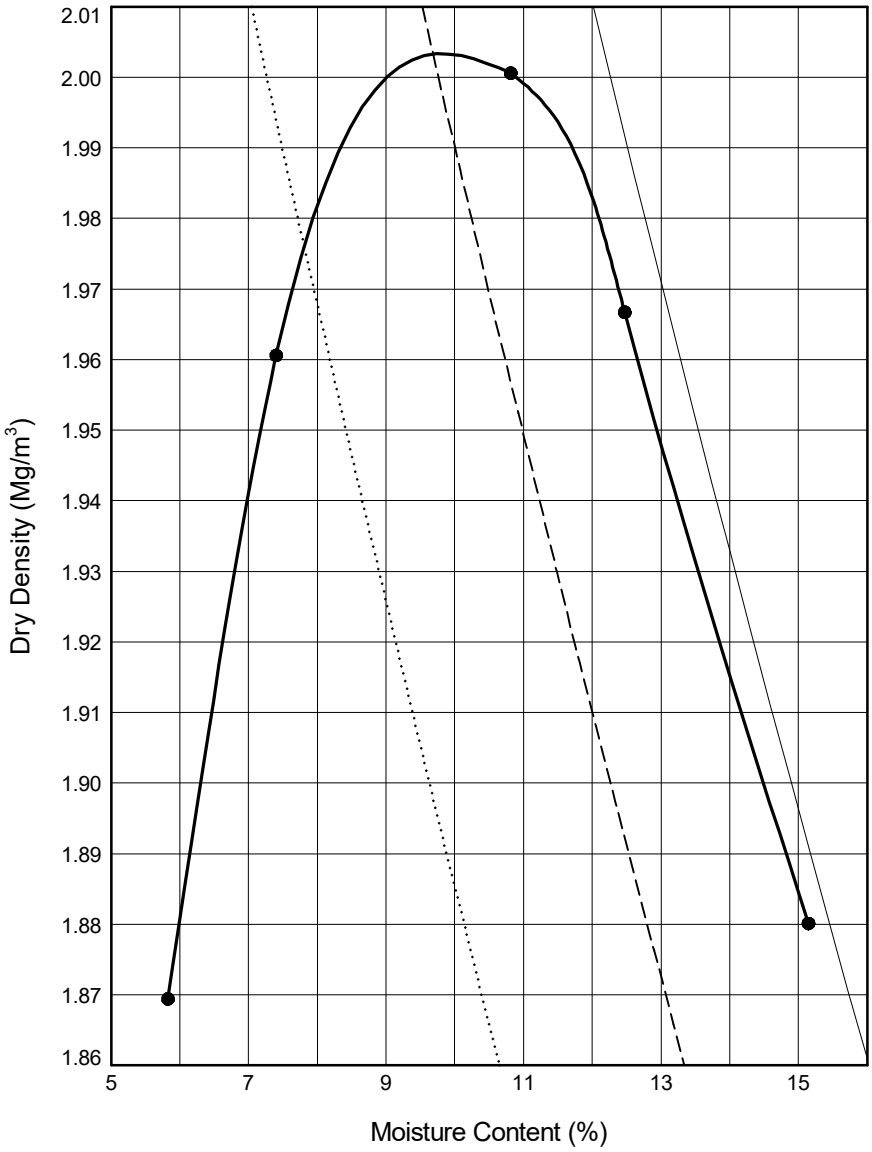
	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 21/08/23 - 11:44 | FB1 |

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS236** Sample Ref: **10** Sample Type: **LB** Depth (m): **1.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.00**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10**
% Retained on 20.0mm BS Sieve	: **2**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown clayey SILT	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
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Bristol
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**30/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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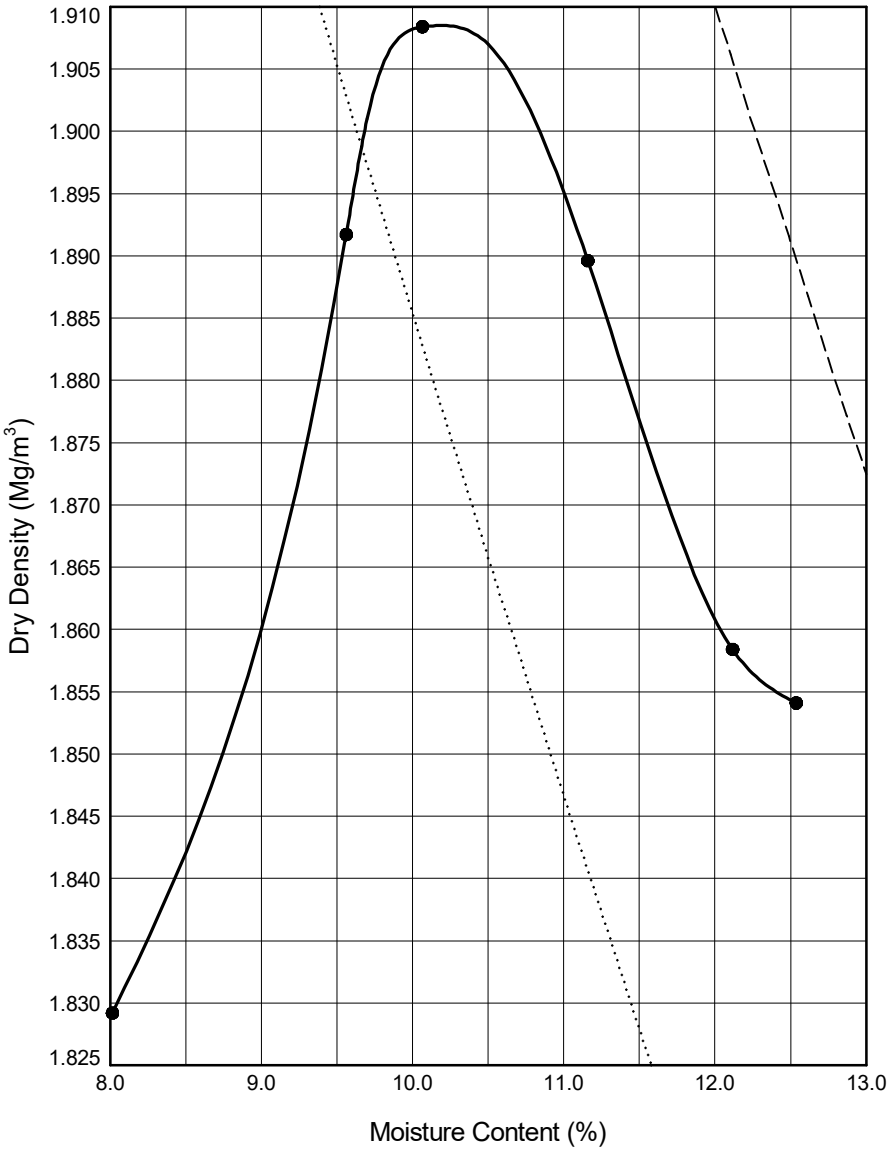
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Window Sample: **WS-PTS107** Sample Ref: **7** Sample Type: **B** Depth (m): **1.55**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **11**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.91**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10.1**
% Retained on 20.0mm BS Sieve	: **3**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Reddish brown slightly gravelly slightly silty SAND	——— 0%	– – – - 5%	····· 10%

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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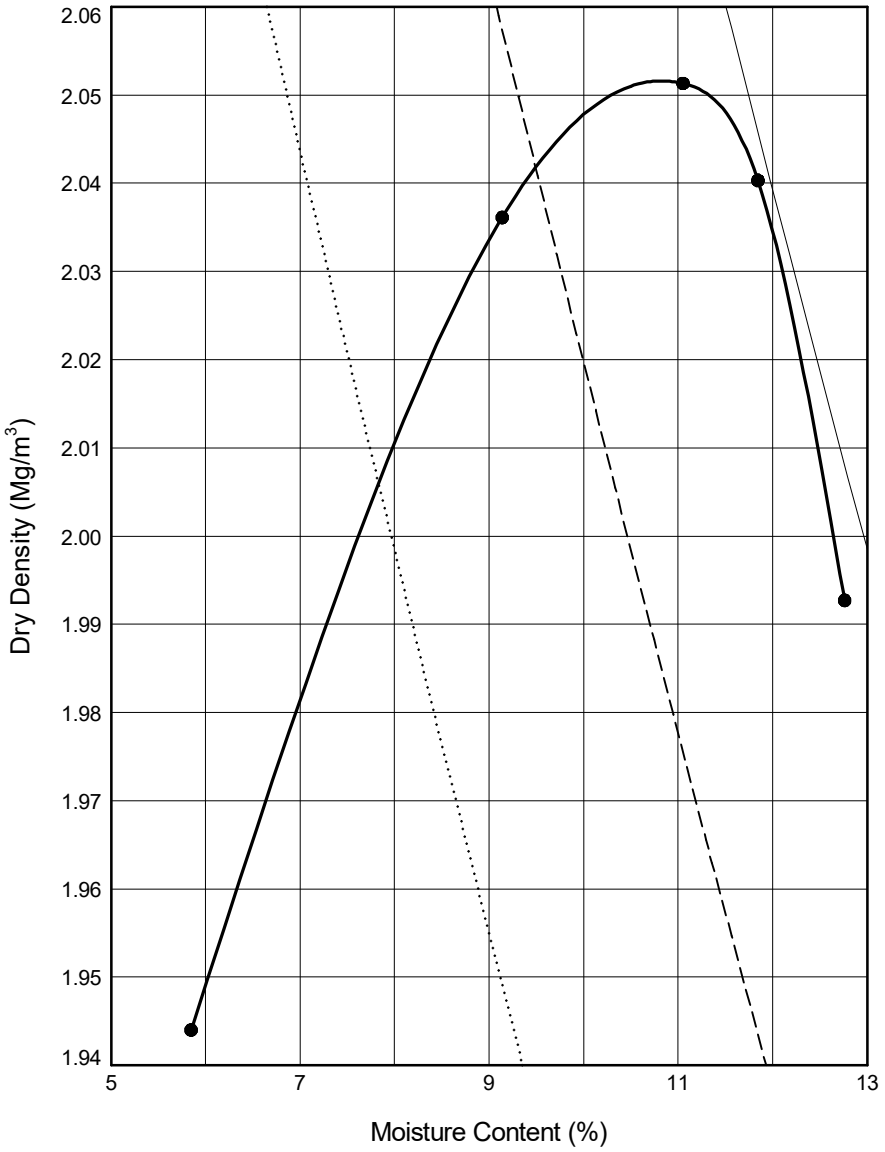
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Window Sample: **WS-PTS107A** Sample Ref: **6** Sample Type: **B** Depth (m): **1.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.05**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10.5**
% Retained on 20.0mm BS Sieve	: **0**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.70**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Dark brown slightly gravelly silty SAND	——— 0%	– – – - 5%	····· 10%

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Bristol
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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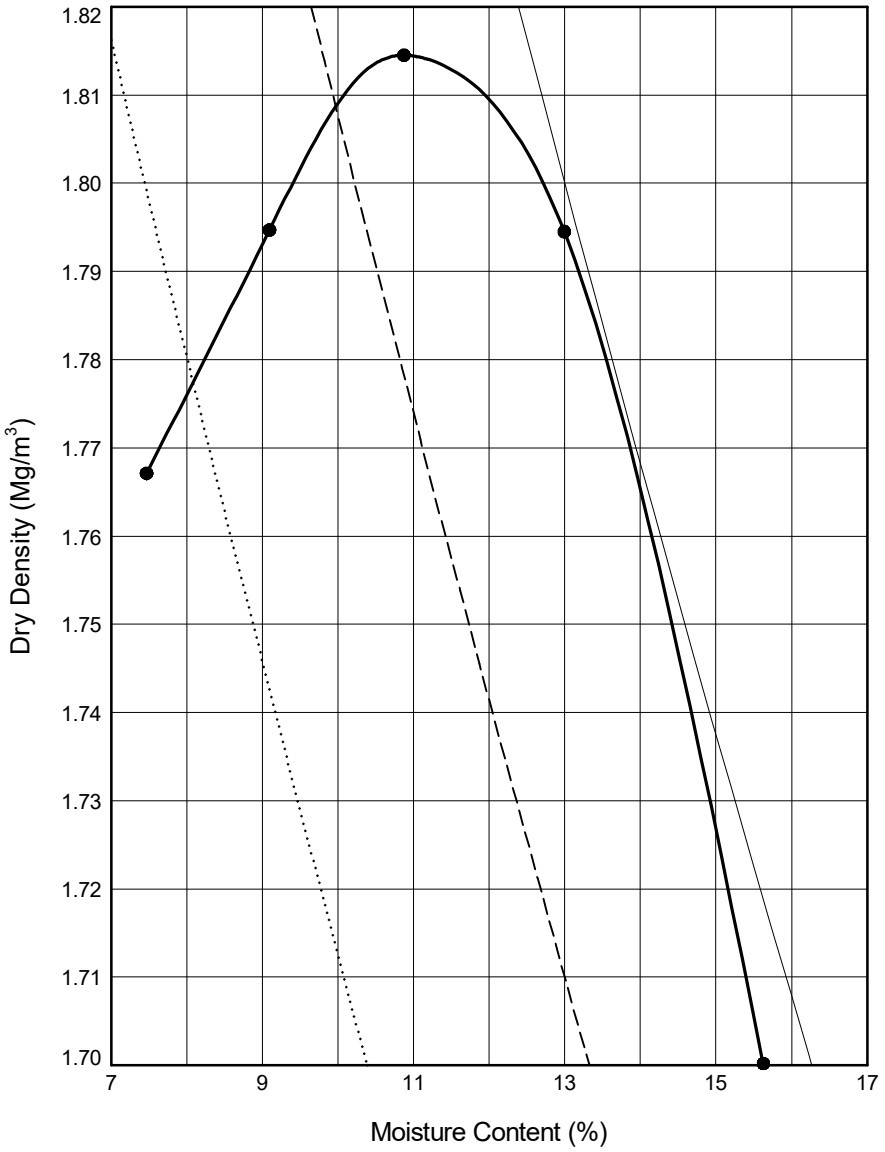
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Window Sample: **WS-PTS107A** Sample Ref: **8** Sample Type: **B** Depth (m): **2.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **16**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.81**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **11**
% Retained on 20.0mm BS Sieve	: **0**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.35**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Orangish brown gravelly silty SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	D. Richards	**DAISY RICHARDS**	**21/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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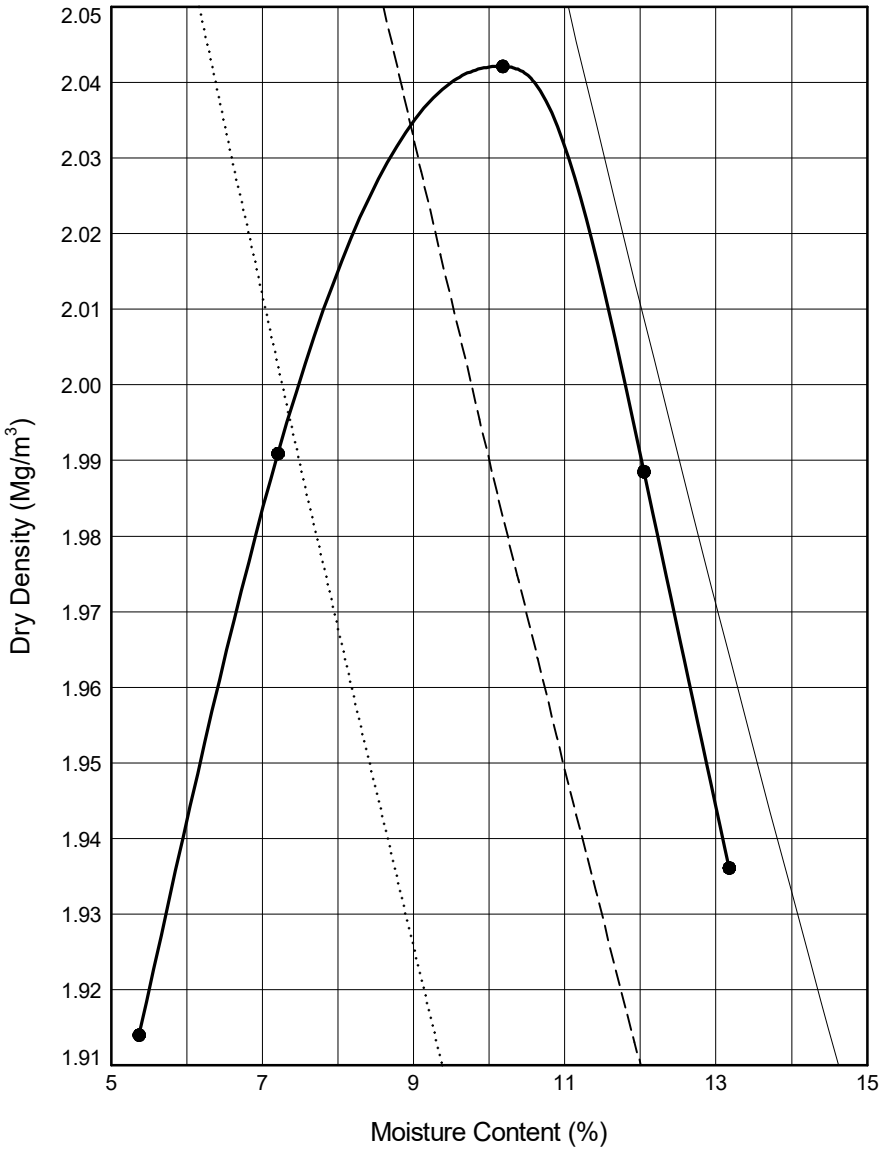
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Window Sample: **WS-PTS110** Sample Ref: **4** Sample Type: **B** Depth (m): **0.90**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **10.0**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.04**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10.2**
% Retained on 20.0mm BS Sieve	: **6**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Brown very gravelly clayey SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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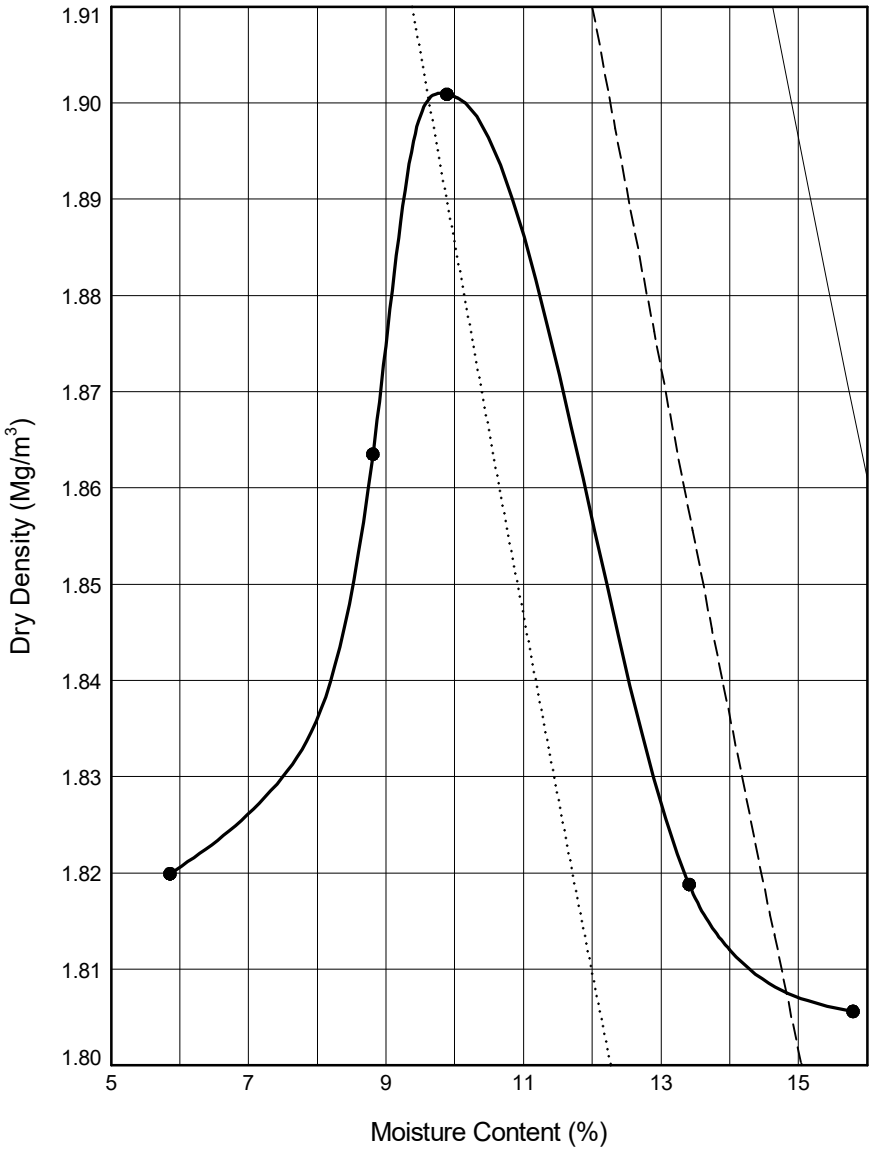
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Window Sample: **WS-PTS113** Sample Ref: **6** Sample Type: **B** Depth (m): **1.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **16**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.90**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **10**
% Retained on 20.0mm BS Sieve	: **0**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Reddish brown SAND	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**30/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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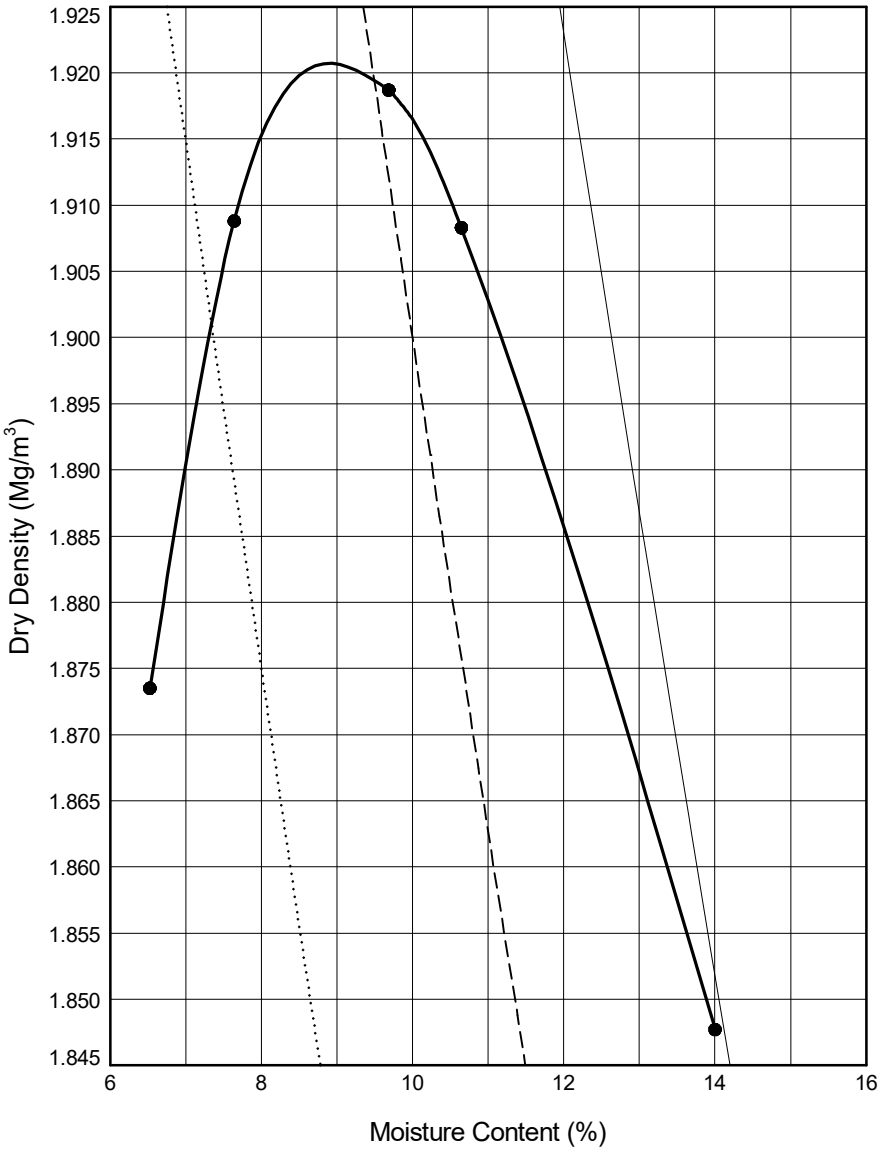
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Window Sample: **WS-PTS113** Sample Ref: **8** Sample Type: **B** Depth (m): **2.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **14**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **1.92**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **8.9**
% Retained on 20.0mm BS Sieve	: **6**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.50**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Red very gravelly silty SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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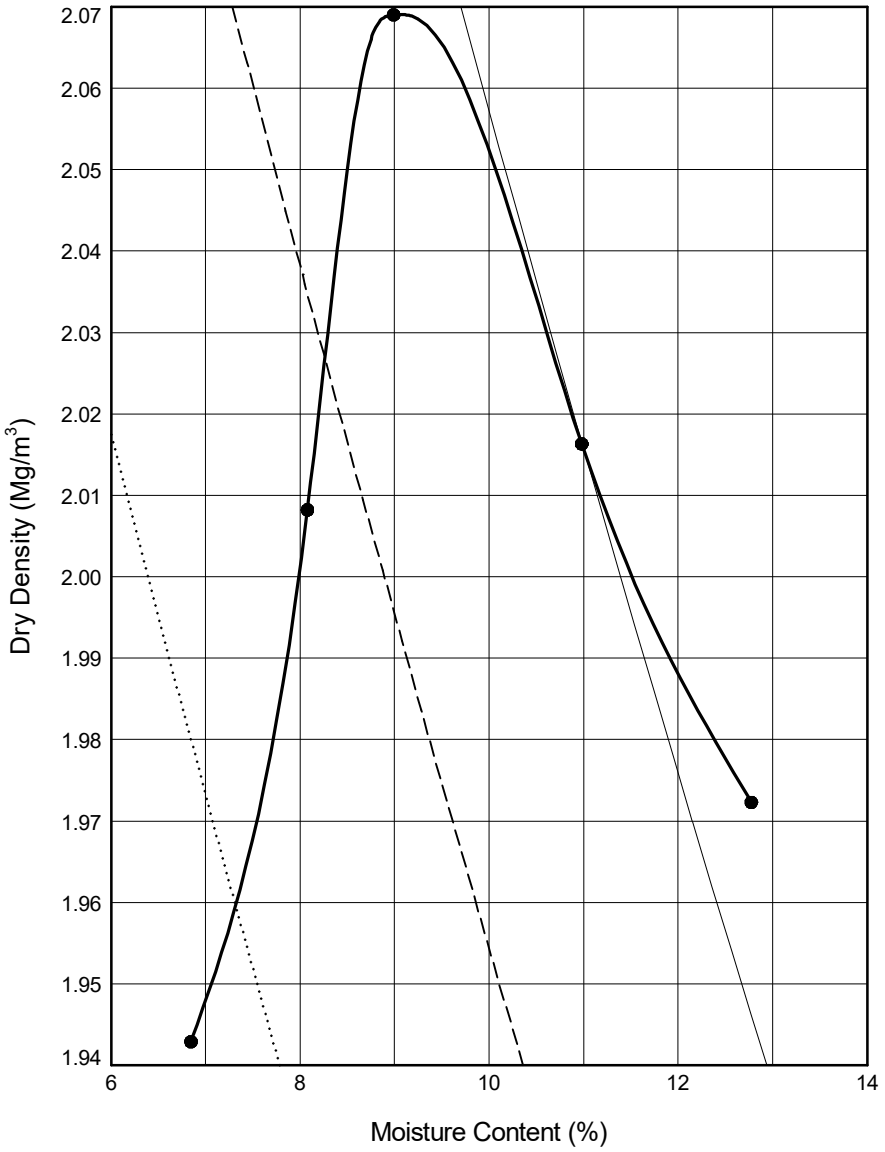
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Window Sample: **WS-PTS114** Sample Ref: **6** Sample Type: **B** Depth (m): **1.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **13**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.07**
% Retained on 37.5mm BS Sieve	: **7**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9.0**
% Retained on 20.0mm BS Sieve	: **10**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m^3)	: **2.59**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Greyish brown slightly gravelly sandy CLAY	——— 0%	– – – - 5%	····· 10%

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Bristol
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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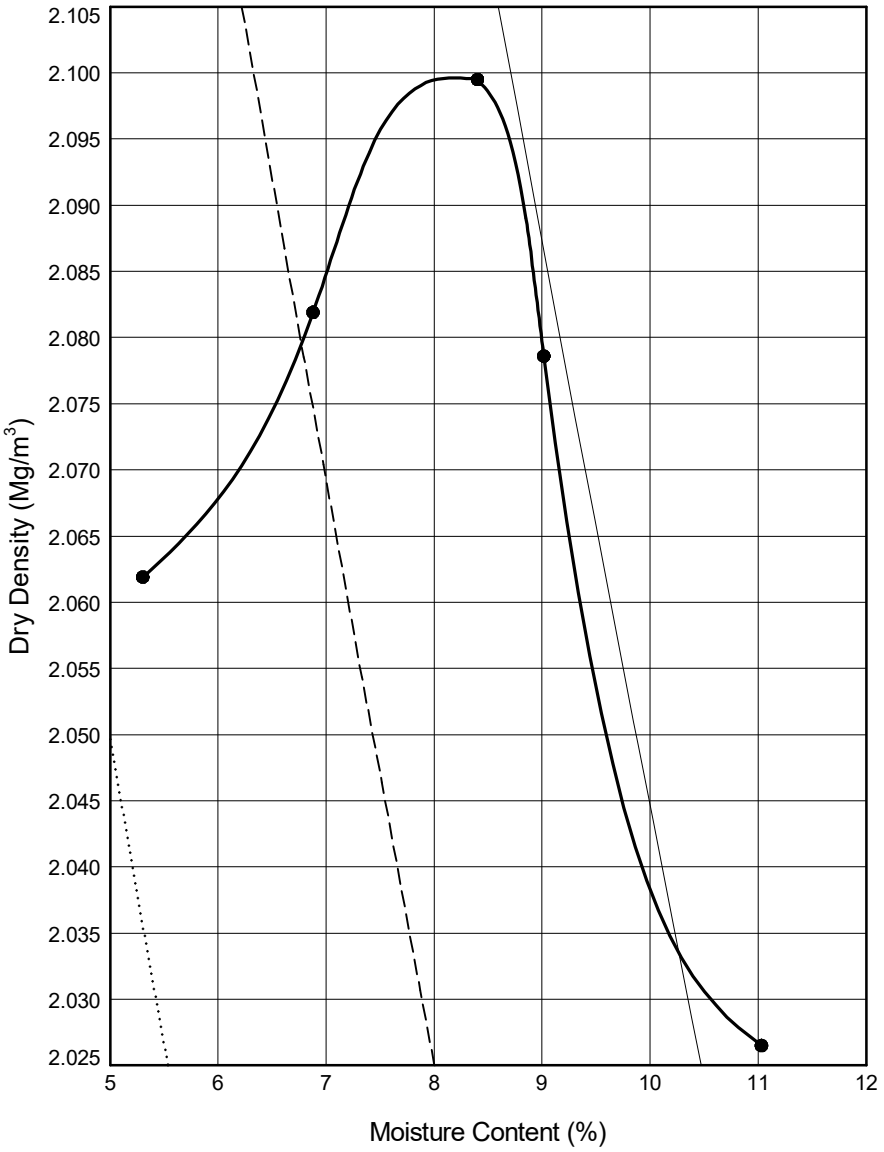
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Window Sample: **WS-PTS114** Sample Ref: **11** Sample Type: **C** Depth (m): **2.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **9.0**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.10**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **8.2**
% Retained on 20.0mm BS Sieve	: **6**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.57**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Red slightly gravelly silty SAND	——— 0%	– – – - 5%	····· 10%

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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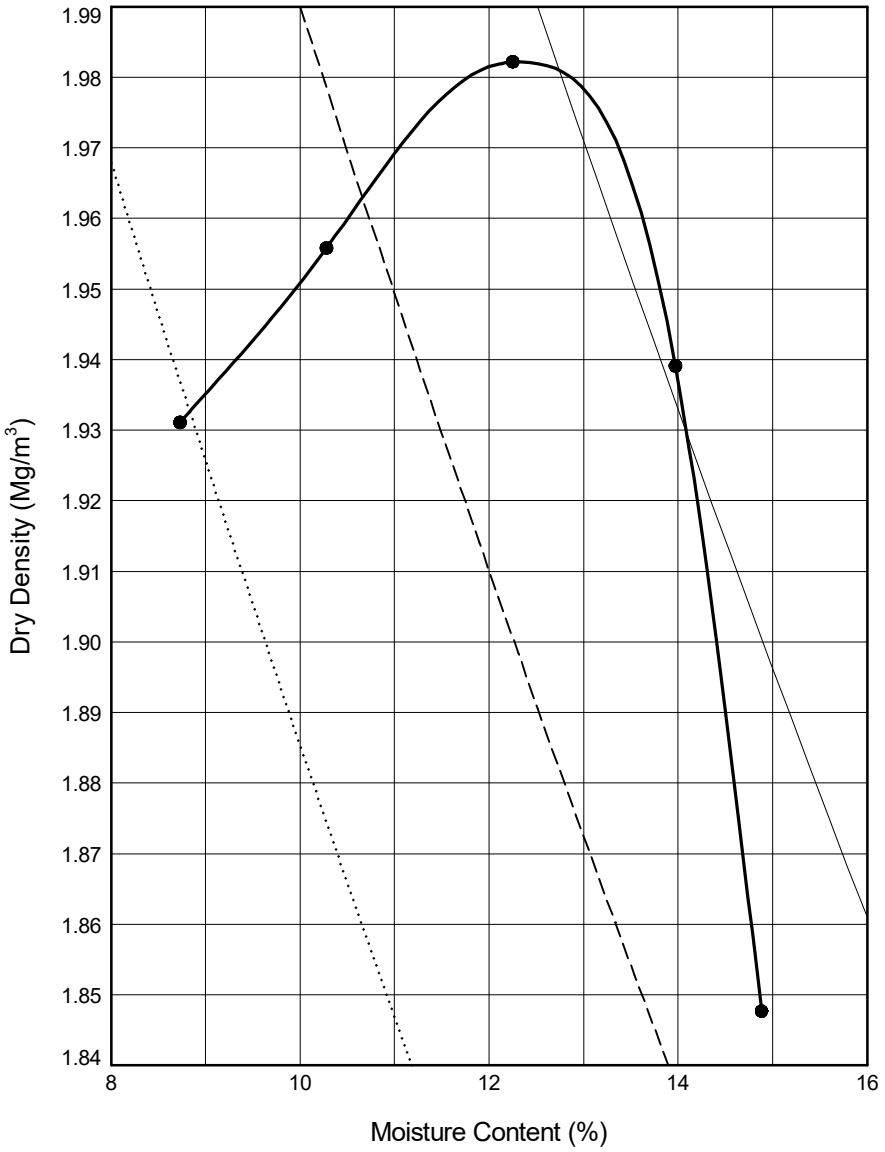
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Window Sample: **WS-PTS117** Sample Ref: **4** Sample Type: **B** Depth (m): **1.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **1.98**
% Retained on 37.5mm BS Sieve	: **27**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **12.3**
% Retained on 20.0mm BS Sieve	: **10**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown very gravelly silty SAND	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**21/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - COMPACTIONS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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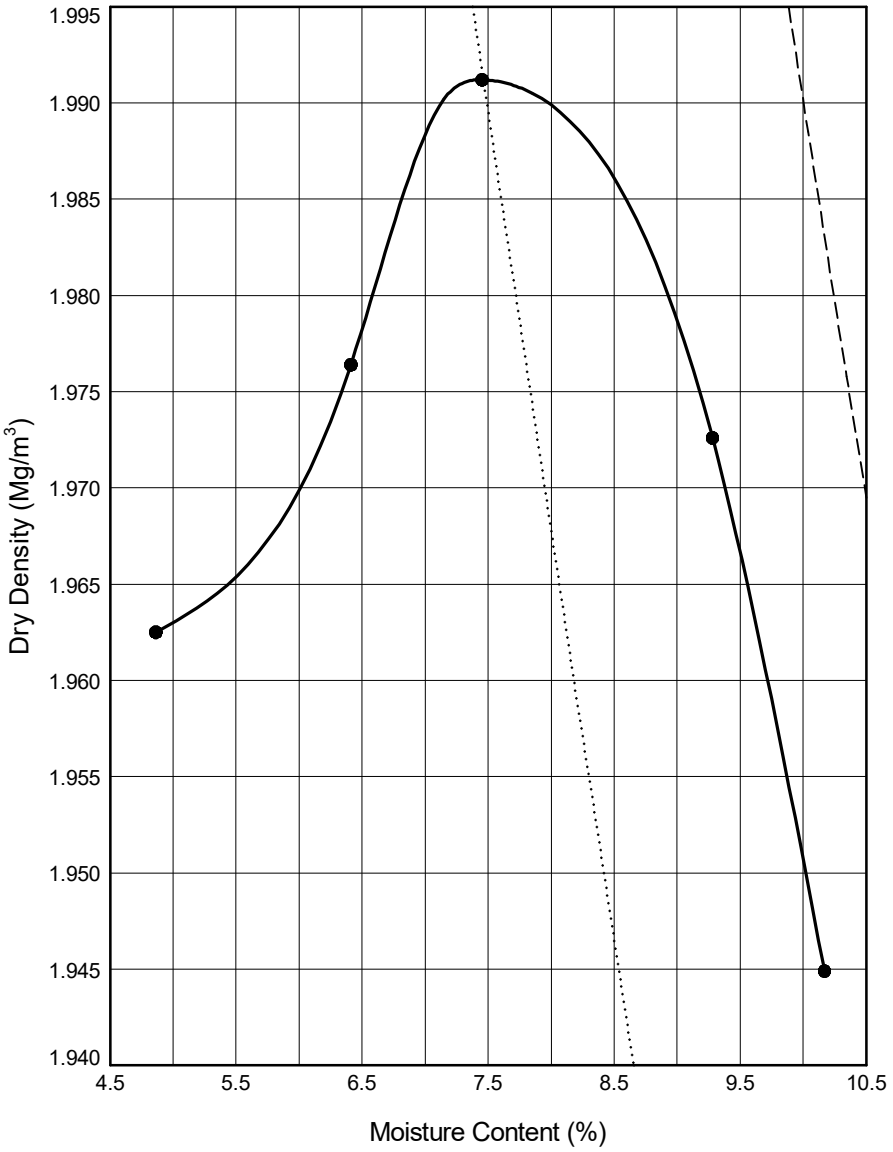
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Window Sample: **WS-PTS119** Sample Ref: **6** Sample Type: **B** Depth (m): **1.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **4.9**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **1.99**
% Retained on 37.5mm BS Sieve	: **8**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **7.4**
% Retained on 20.0mm BS Sieve	: **11**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Separate samples were used.			

Sample Description	Key to Air Voids Lines		
Reddish brown gravelly SAND	——— 0%	– – – - 5%	····· 10%

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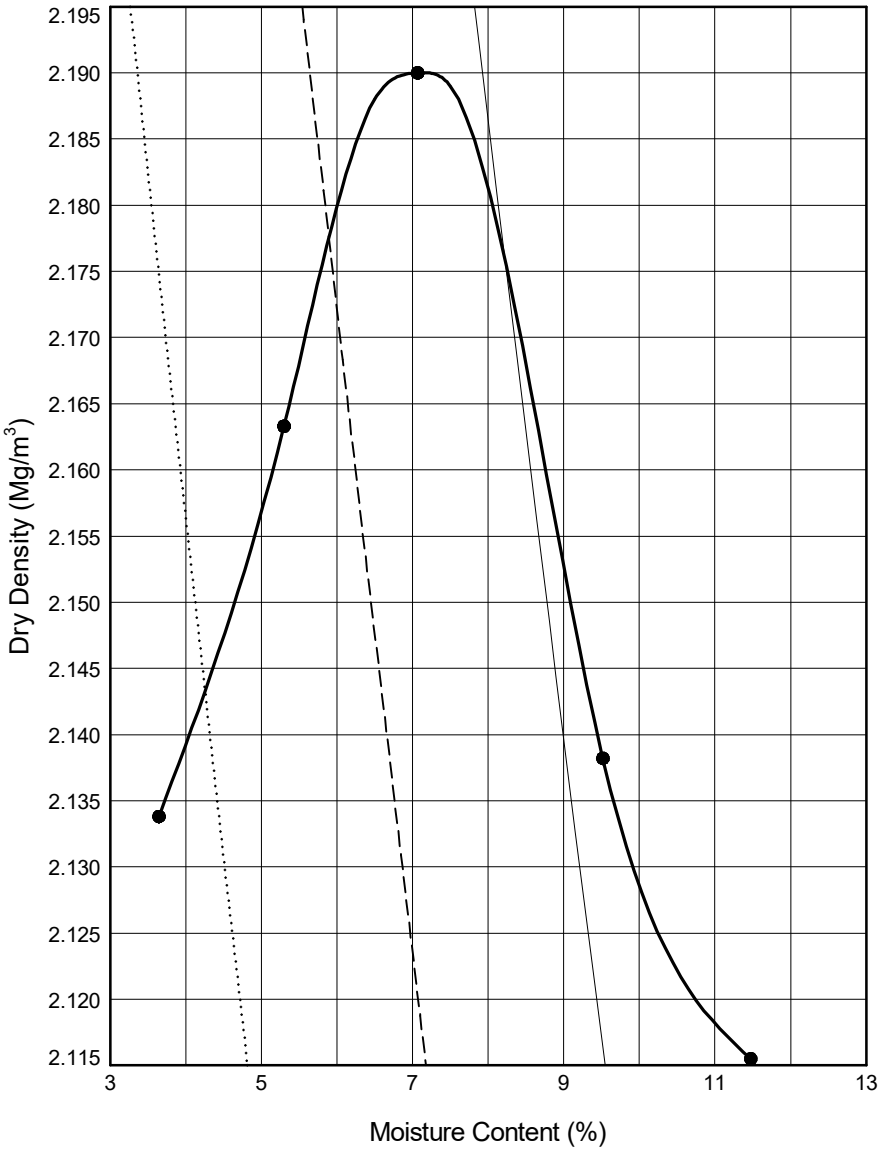
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Window Sample: **WS-PTS119** Sample Ref: **8** Sample Type: **B** Depth (m): **1.30**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **5.3**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	: **2.19**
% Retained on 37.5mm BS Sieve	: **7**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **7.1**
% Retained on 20.0mm BS Sieve	: **16**	Type of Mould	: **CBR**	Method Used:	**Clause 3.4**
Particle Density - assumed (Mg/m³)	: **2.65**			Remarks:	
Size of Soil Pieces	:**<37.5mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Brown very sandy silty GRAVEL with low cobble content	——— 0%	– – – - 5%	····· 10%

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Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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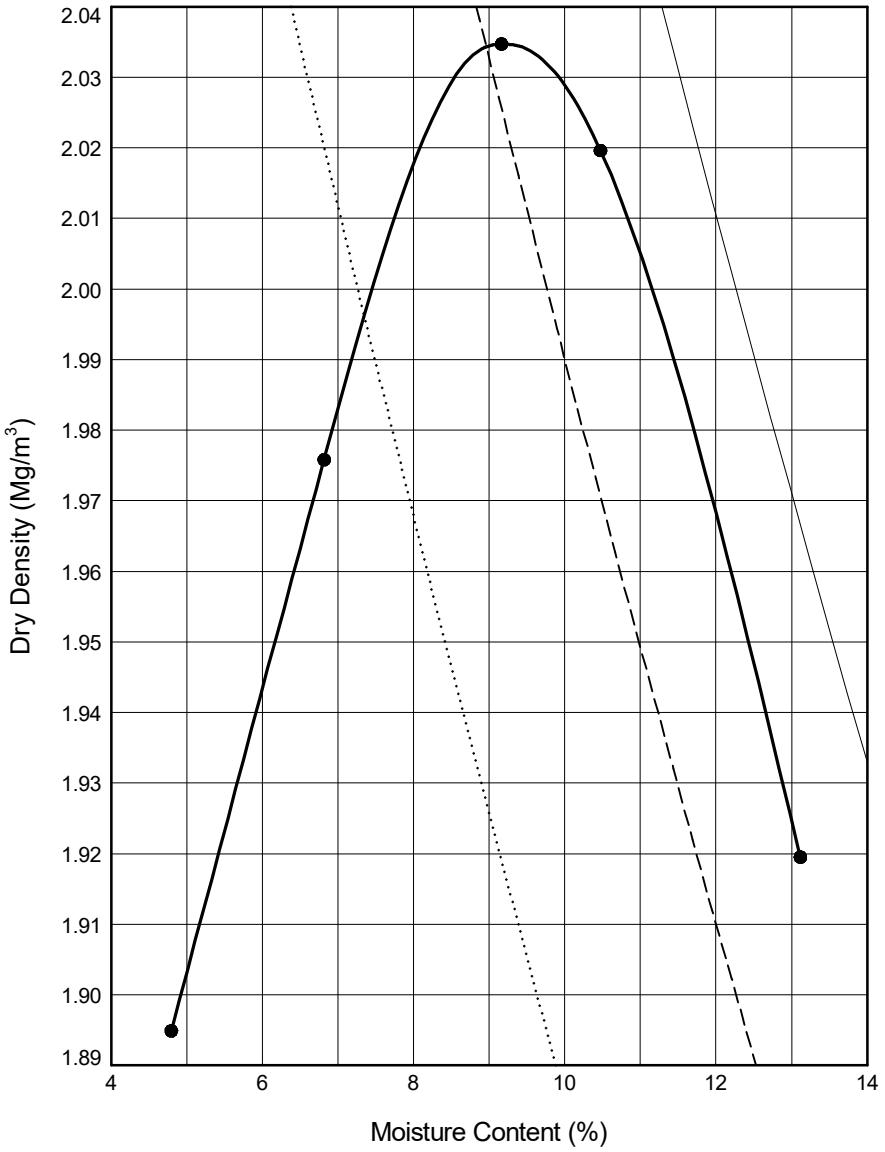
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Window Sample: **WS-PTS127** Sample Ref: **6** Sample Type: **B** Depth (m): **1.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **10.0**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.03**
% Retained on 37.5mm BS Sieve	: **0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **9.2**
% Retained on 20.0mm BS Sieve	: **4**	Type of Mould	: **1 LITRE**	Method Used:	**Clause 3.3**
Particle Density - assumed (Mg/m^3)	: **2.65**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Dark reddish brown slightly gravelly sandy SILT	——— 0%	– – – - 5%	····· 10%

	Compiled By		Date
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	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

Borehole: **BH-PTS112** Sample Ref: **16** Sample Type: **B** Depth (m): **3.00**

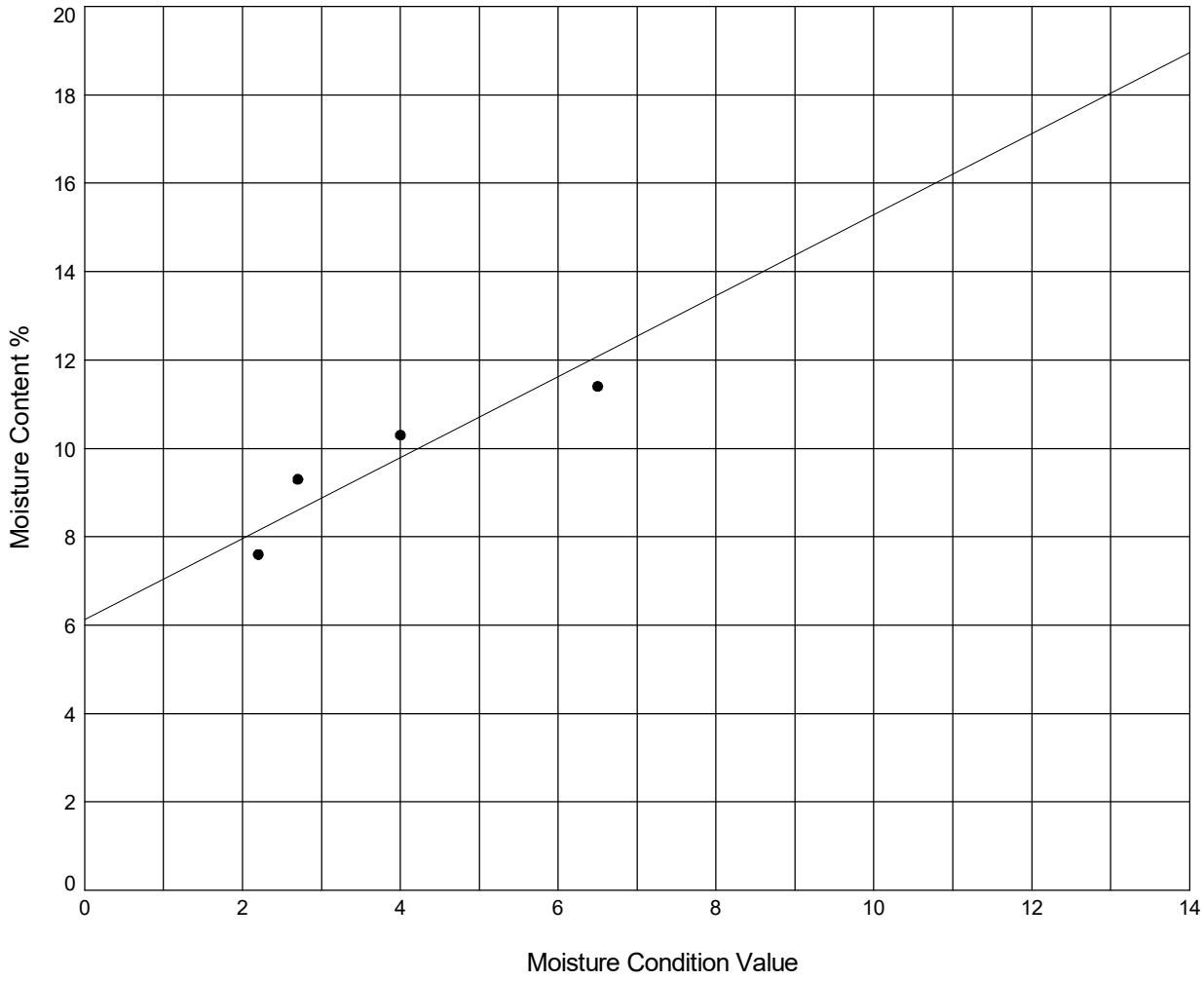
Percentage retained on 20mm sieve : **0**

Description : **Reddish brown slightly gravelly slightly clayey SAND**

Single/Separate Sample Used : **Separate**

Remarks : **MCC ineffective**

Test Number	1	2	3	4	5
Moisture Content	11.4	10.3	9.3	7.6	-
MCV	6.5	4	2.7	2.2	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



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	Francesca Bennett	FRANCESCA BENNETT	31/08/23
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

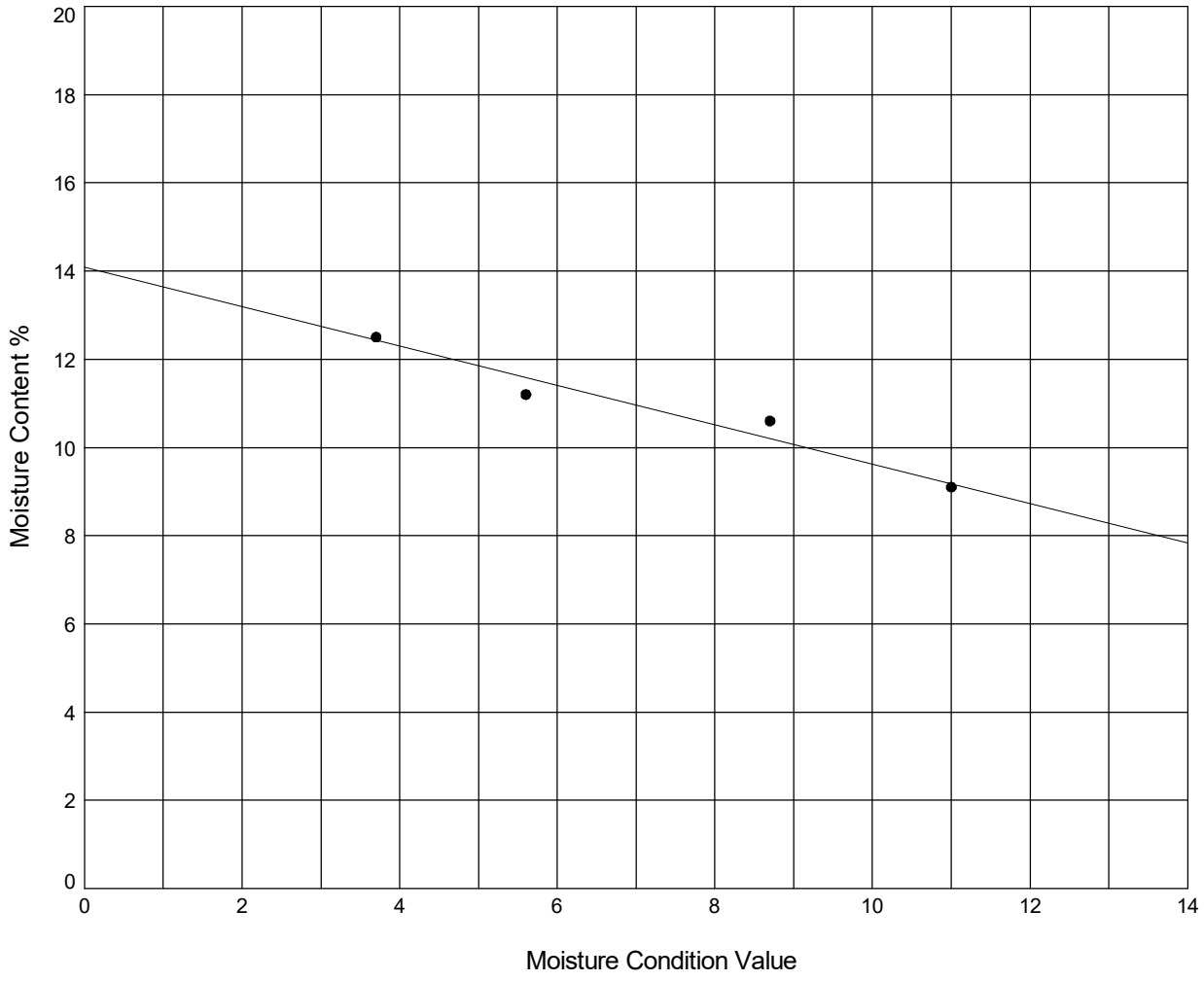
Borehole: **BH-PTS127** Sample Ref: **18** Sample Type: **B** Depth (m): **3.50**

Percentage retained on 20mm sieve : **32**

Description : **Reddish brown clayey SILT**

Single/Separate Sample Used : **Separate**

Test Number	1	2	3	4	5
Moisture Content	11.2	12.5	10.6	9.1	-
MCV	5.6	3.7	8.7	11	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



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	Dania Ignaczak	DARIA IGNACZAK	31/08/23
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

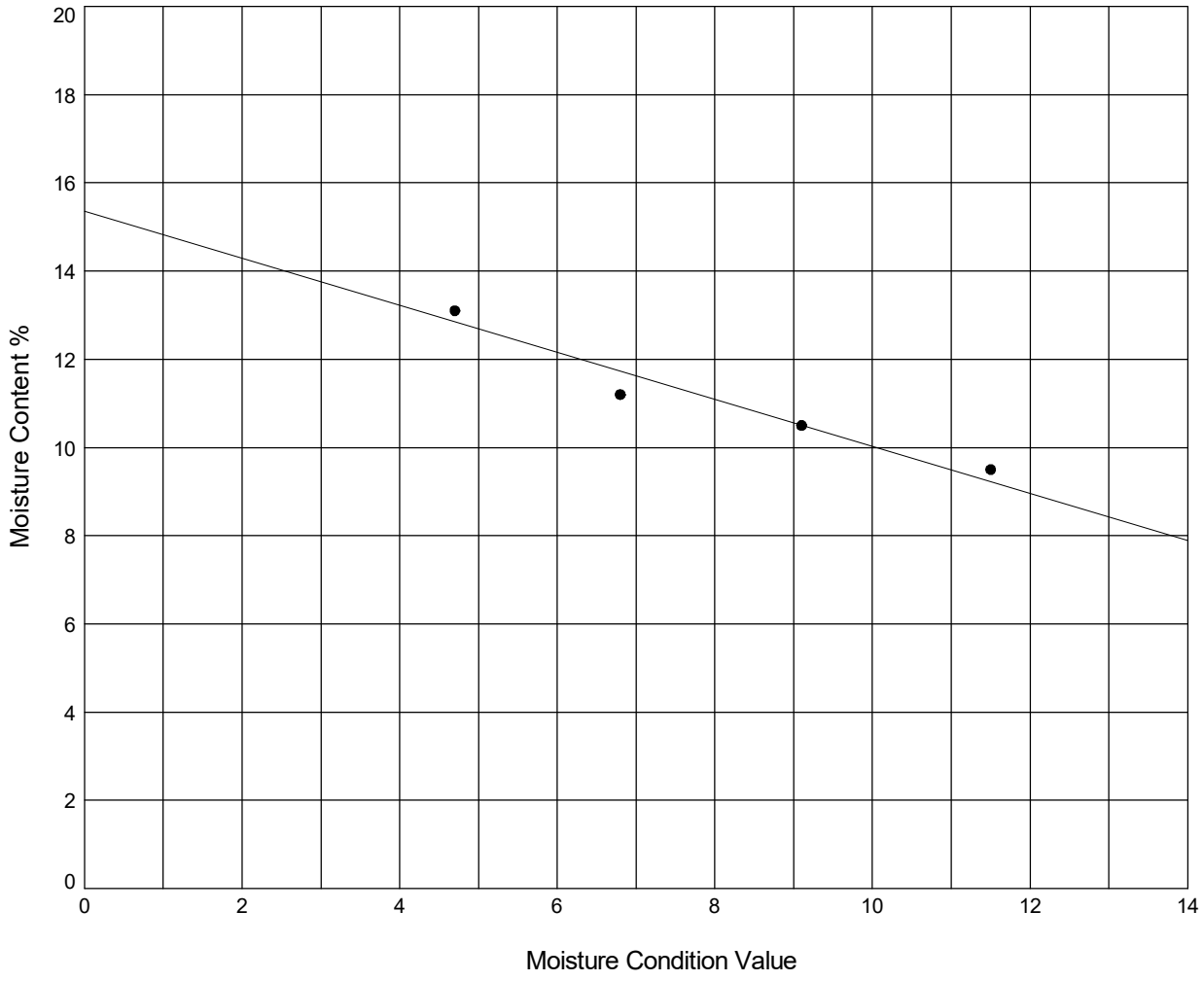
Borehole: **BH-PTS128A** Sample Ref: **7** Sample Type: **B** Depth (m): **2.00**

Percentage retained on 20mm sieve : **22**

Description : **Reddish brown very gravelly clayey SAND with high cobble content**

Single/Separate Sample Used : **Separate**

Test Number	1	2	3	4	5
Moisture Content	13.1	10.5	9.5	11.2	-
MCV	4.7	9.1	11.5	6.8	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



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Daria Ignaczak	DARIA IGNACZAK	31/08/23
Contract: A66 NTP Scheme S03A	Contract Ref: 765633	

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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

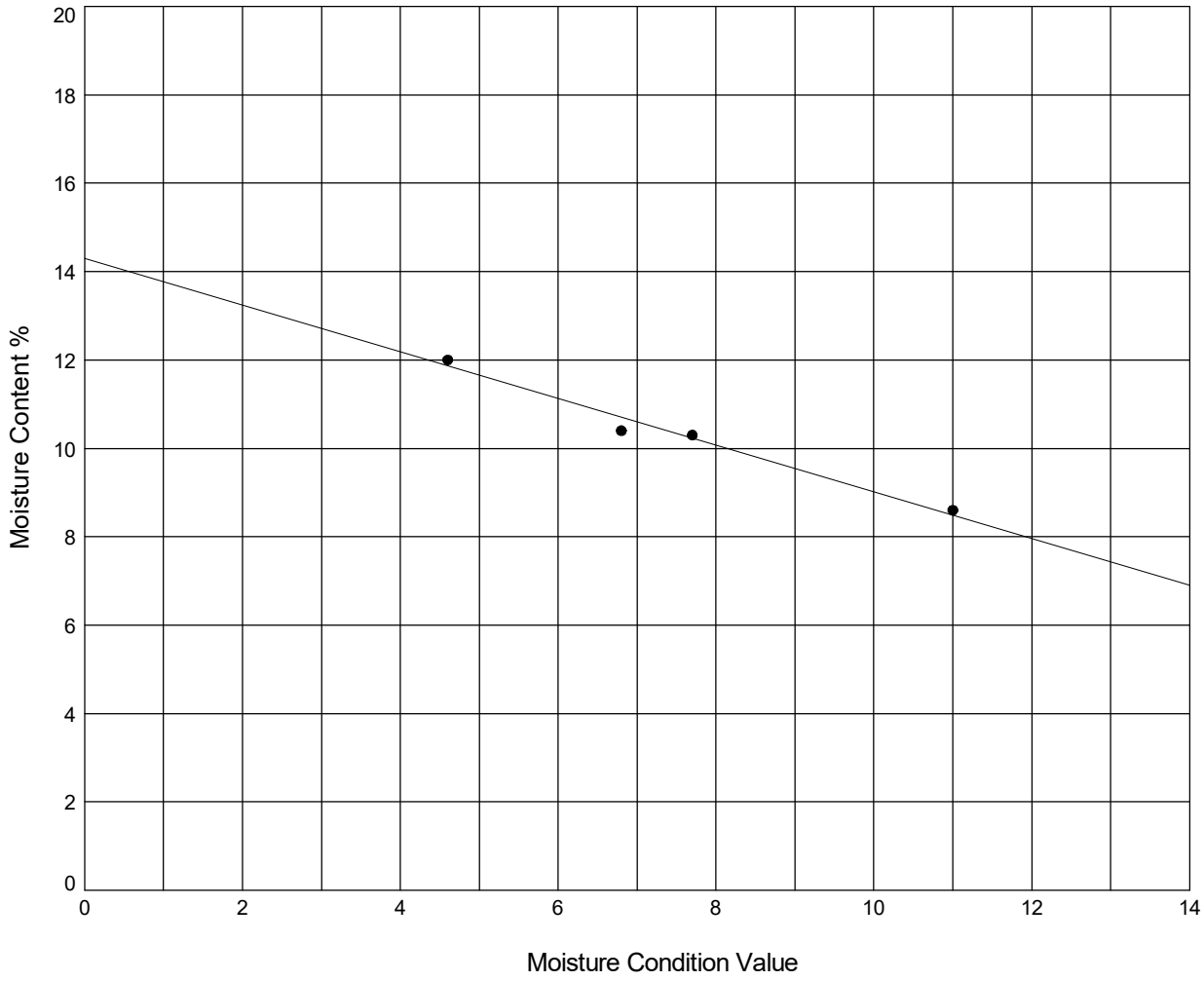
Trial Pit: **TP-PTS205** Sample Ref: **7** Sample Type: **AMAL** Depth (m): **1.50**

Percentage retained on 20mm sieve : **22**

Description : **Brown slightly clayey gravelly SAND**

Single/Separate Sample Used : **Separate**

Test Number	1	2	3	4	5
Moisture Content	12.0	10.4	10.3	8.6	-
MCV	4.6	6.8	7.7	11	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

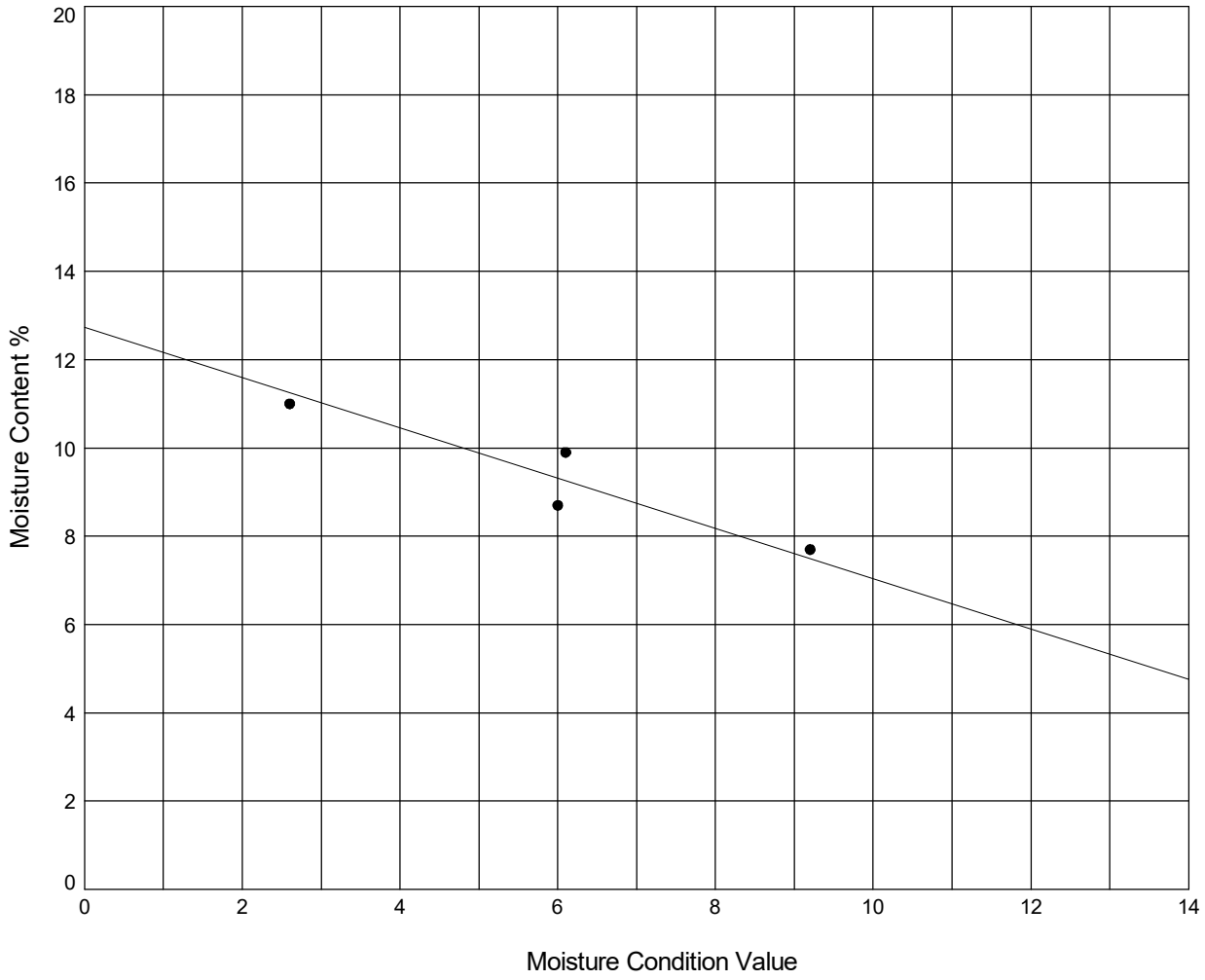
Trial Pit: **TP-PTS207** Sample Ref: **6** Sample Type: **B** Depth (m): **1.50**

Percentage retained on 20mm sieve : **13**

Description : **Brown slightly coarse SAND**

Single/Separate Sample Used : **Separate**

Test Number	1	2	3	4	5
Moisture Content	7.7	8.7	9.9	11.0	-
MCV	9.2	6	6.1	2.6	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	DARIA IGNACZAK	31/08/23
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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

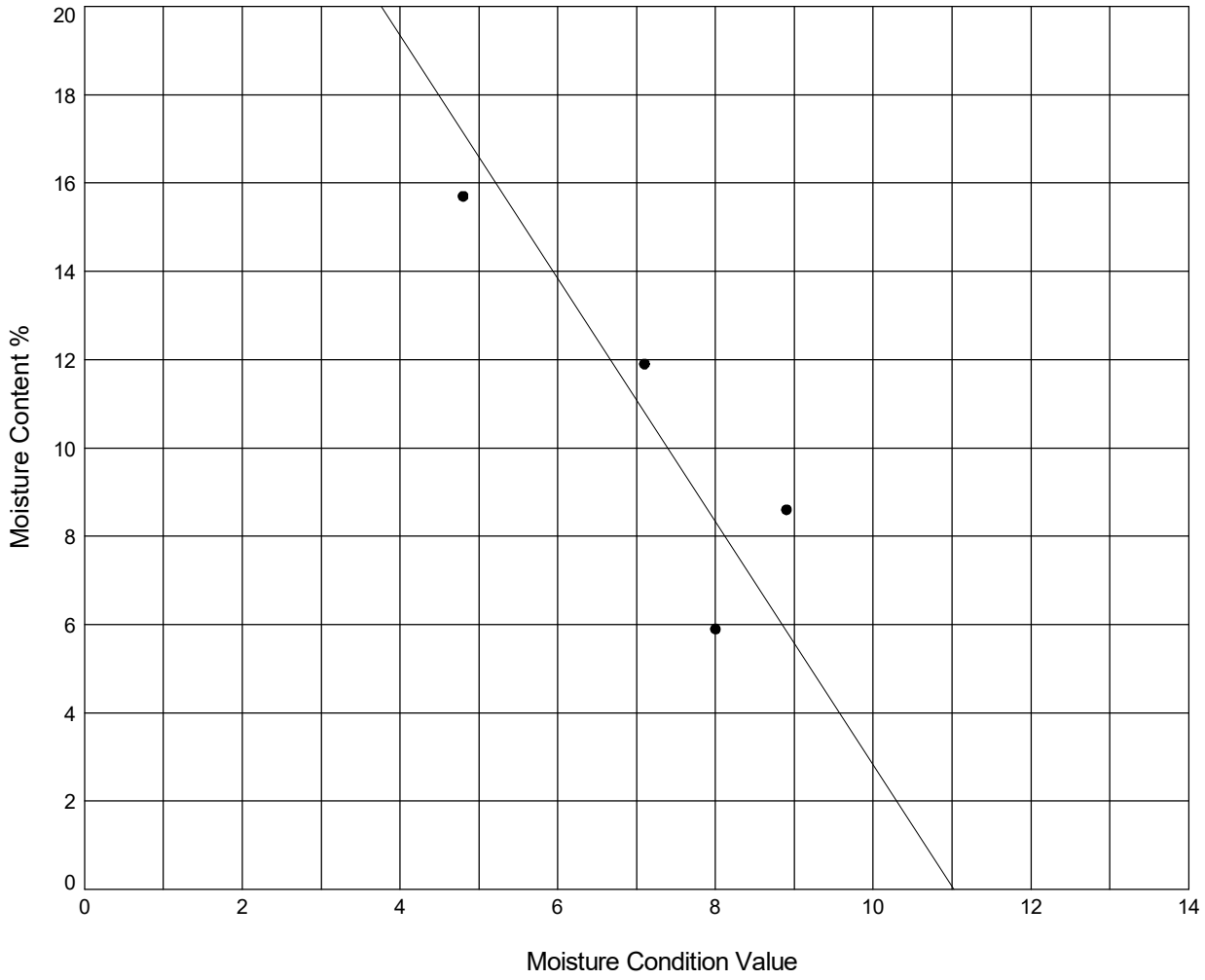
Trial Pit: **TP-PTS209** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**

Percentage retained on 20mm sieve : **21**

Description : **Brown gravelly sandy SILT**

Single/Separate Sample Used : **Single**

Test Number	1	2	3	4	5
Moisture Content	15.7	5.9	11.9	8.6	-
MCV	4.8	8	7.1	8.9	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



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	Francesca Bennett	FRANCESCA BENNETT	31/08/23
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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

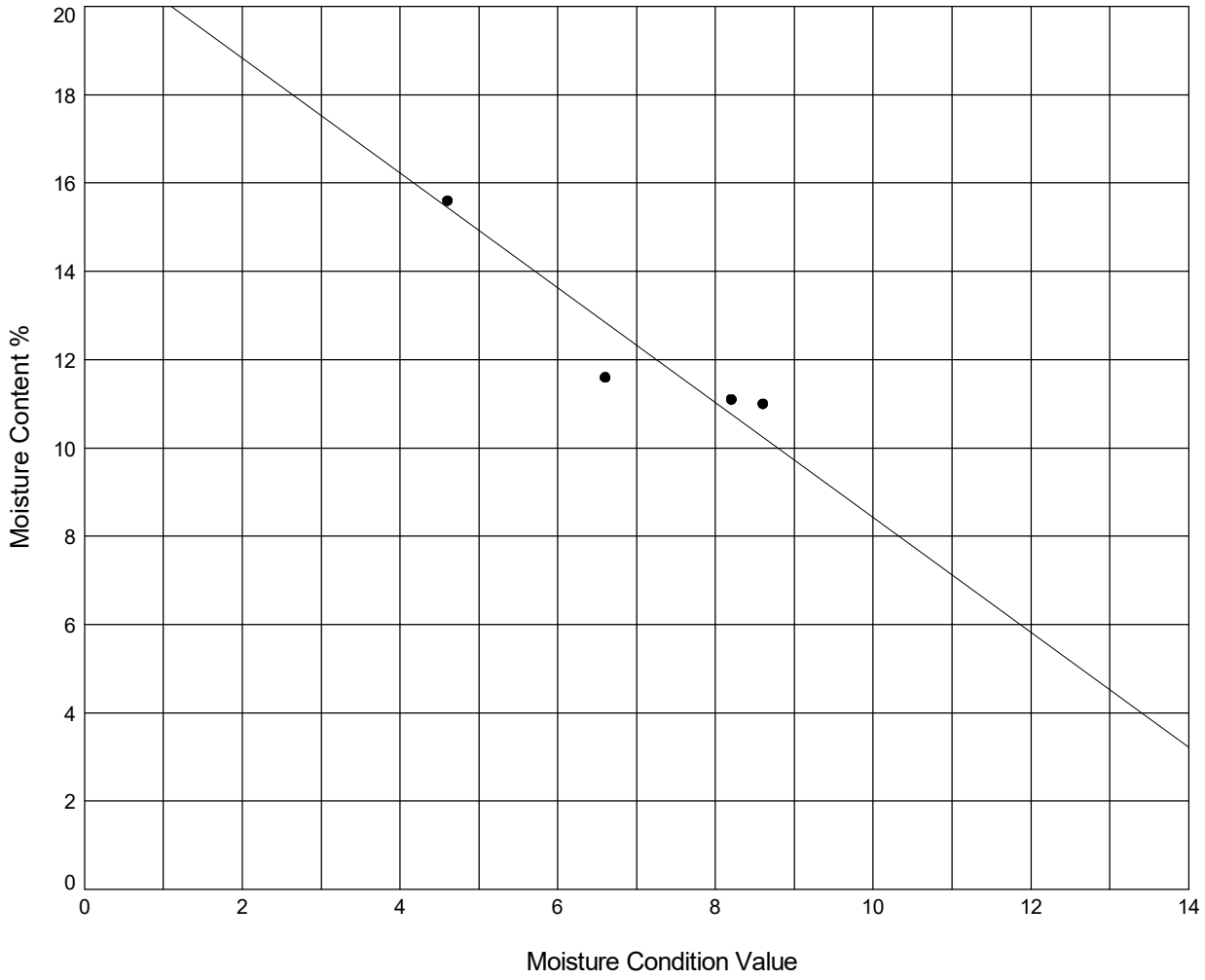
Trial Pit: **TP-PTS209** Sample Ref: **7** Sample Type: **LB** Depth (m): **1.00**

Percentage retained on 20mm sieve : **1**

Description : **Red slightly gravelly silty CLAY**

Single/Separate Sample Used : **Separate**

Test Number	1	2	3	4	5
Moisture Content	15.6	11.6	11.1	11.0	-
MCV	4.6	6.6	8.2	8.6	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

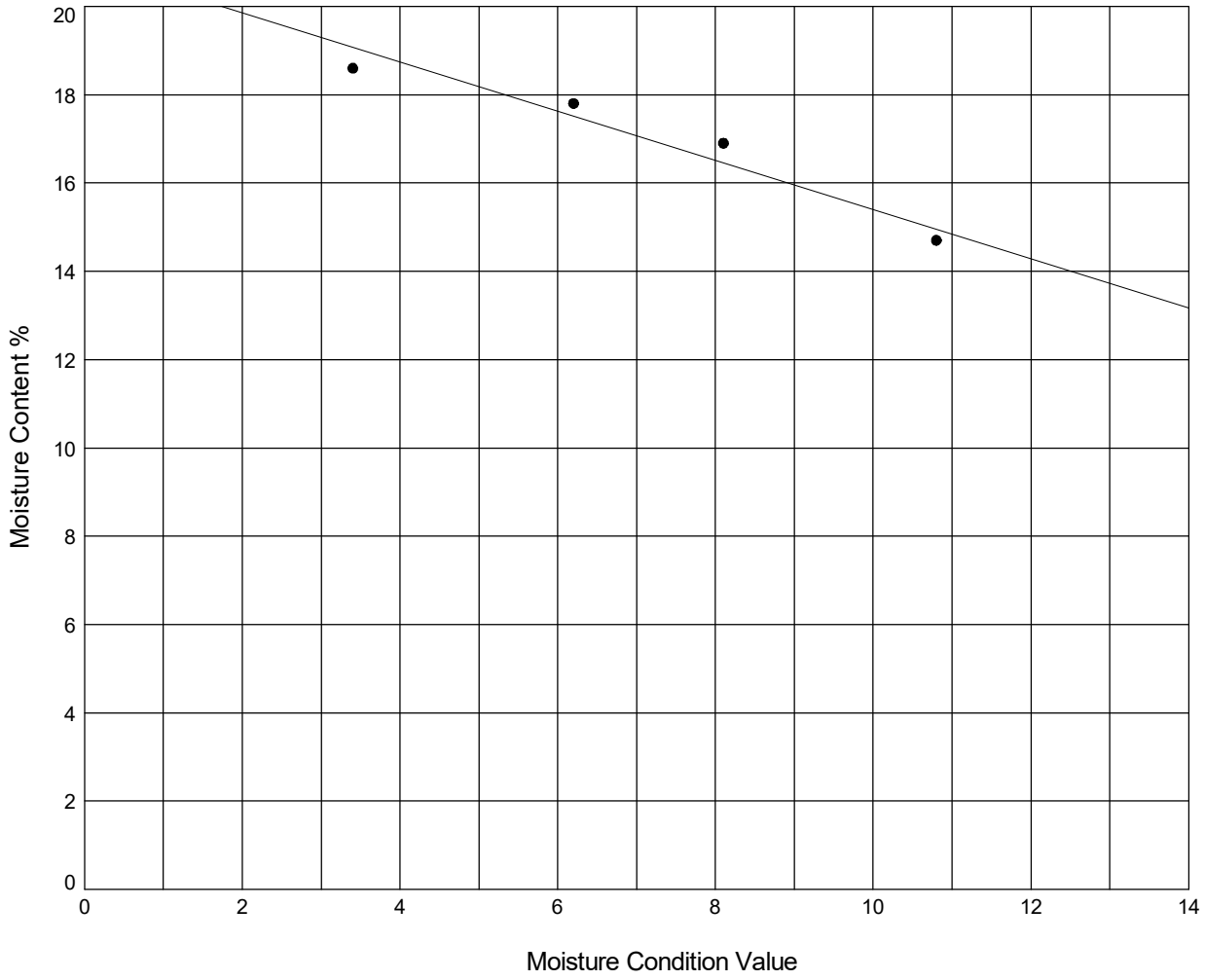
Trial Pit: **TP-PTS210** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**

Percentage retained on 20mm sieve : **14**

Description : **Brown very sandy silty GRAVEL with medium cobble content**

Single/Separate Sample Used : **Separate**

Test Number	1	2	3	4	5
Moisture Content	17.8	18.6	16.9	14.7	-
MCV	6.2	3.4	8.1	10.8	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

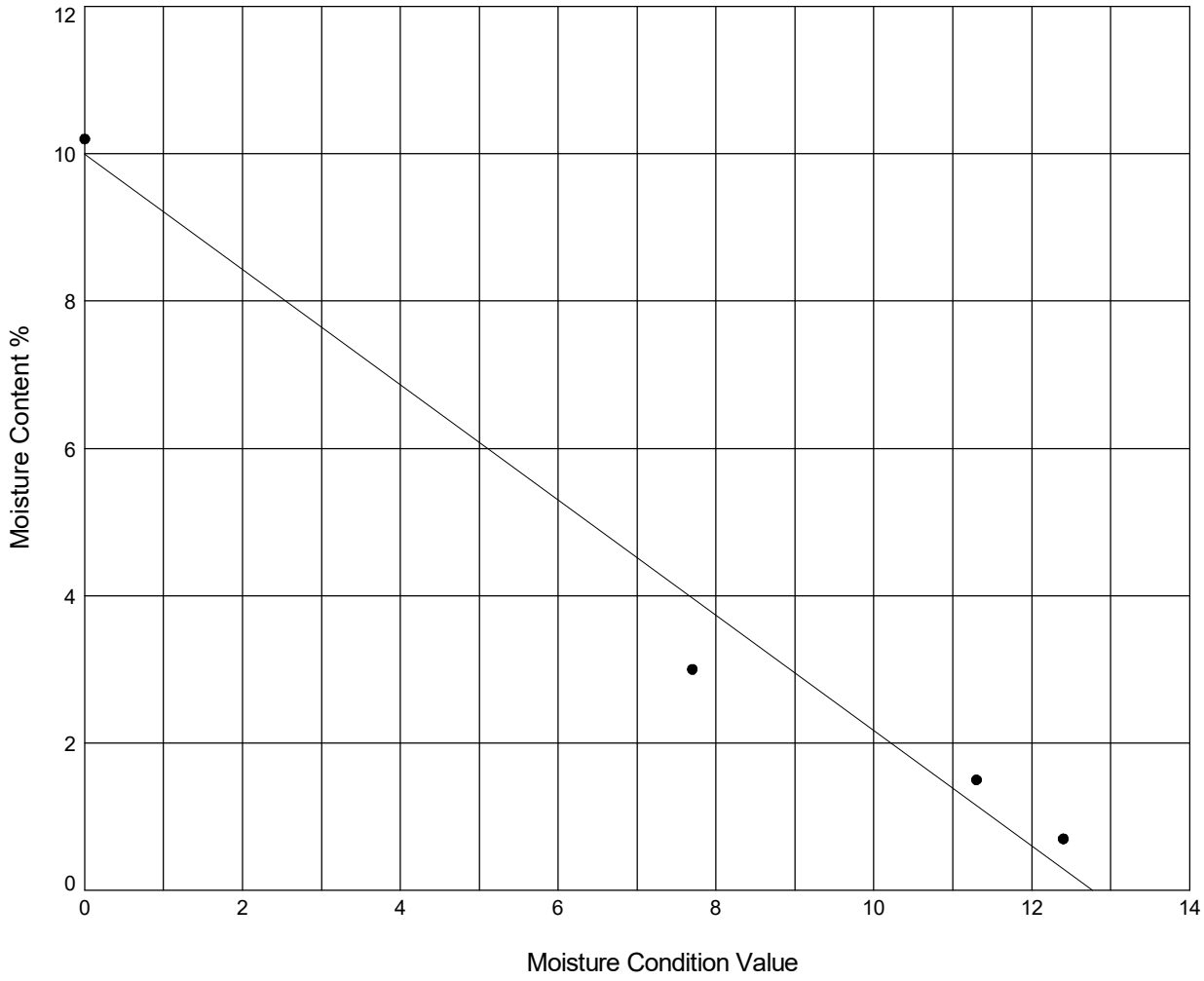
Trial Pit: **TP-PTS214** Sample Ref: **7** Sample Type: **LB** Depth (m): **1.50**

Percentage retained on 20mm sieve : **1**

Description : **Red gravelly SAND**

Single/Separate Sample Used : **Separate**

Test Number	1	2	3	4	5
Moisture Content	10.2	3.0	1.5	0.7	-
MCV	0	7.7	11.3	12.4	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	DARIA IGNACZAK	31/08/23
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

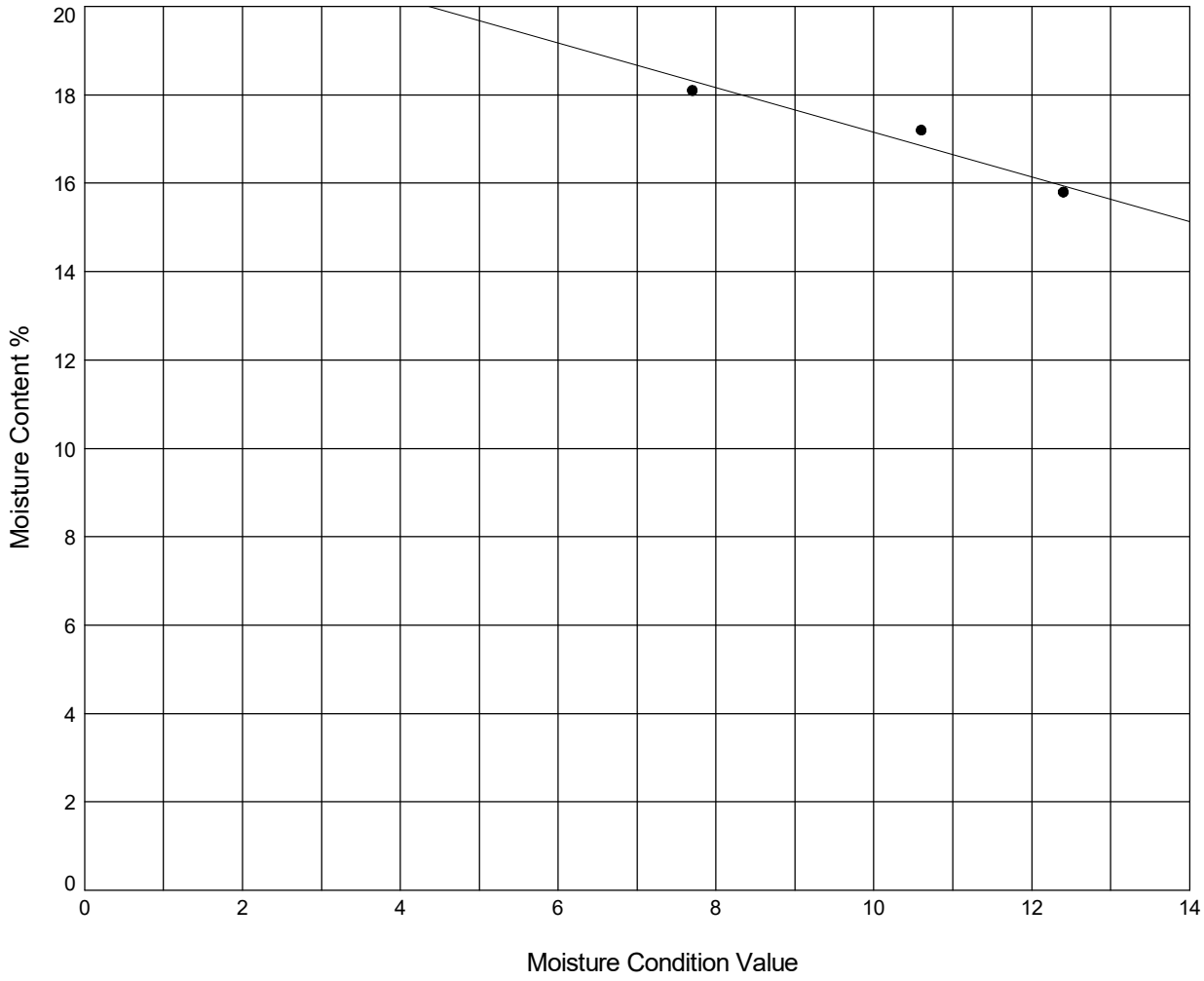
Trial Pit: **TP-PTS226** Sample Ref: **2** Sample Type: **B** Depth (m): **0.20**

Percentage retained on 20mm sieve : **5**

Description : **Brown slightly gravelly slightly sandy silty CLAY**

Single/Separate Sample Used : **Separate**

Test Number	1	2	3	4	5
Moisture Content	18.1	17.2	15.8	15.0	20.2
MCV	7.7	10.6	12.4	14.2	4
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	FRANCESCA BENNETT	31/08/23
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

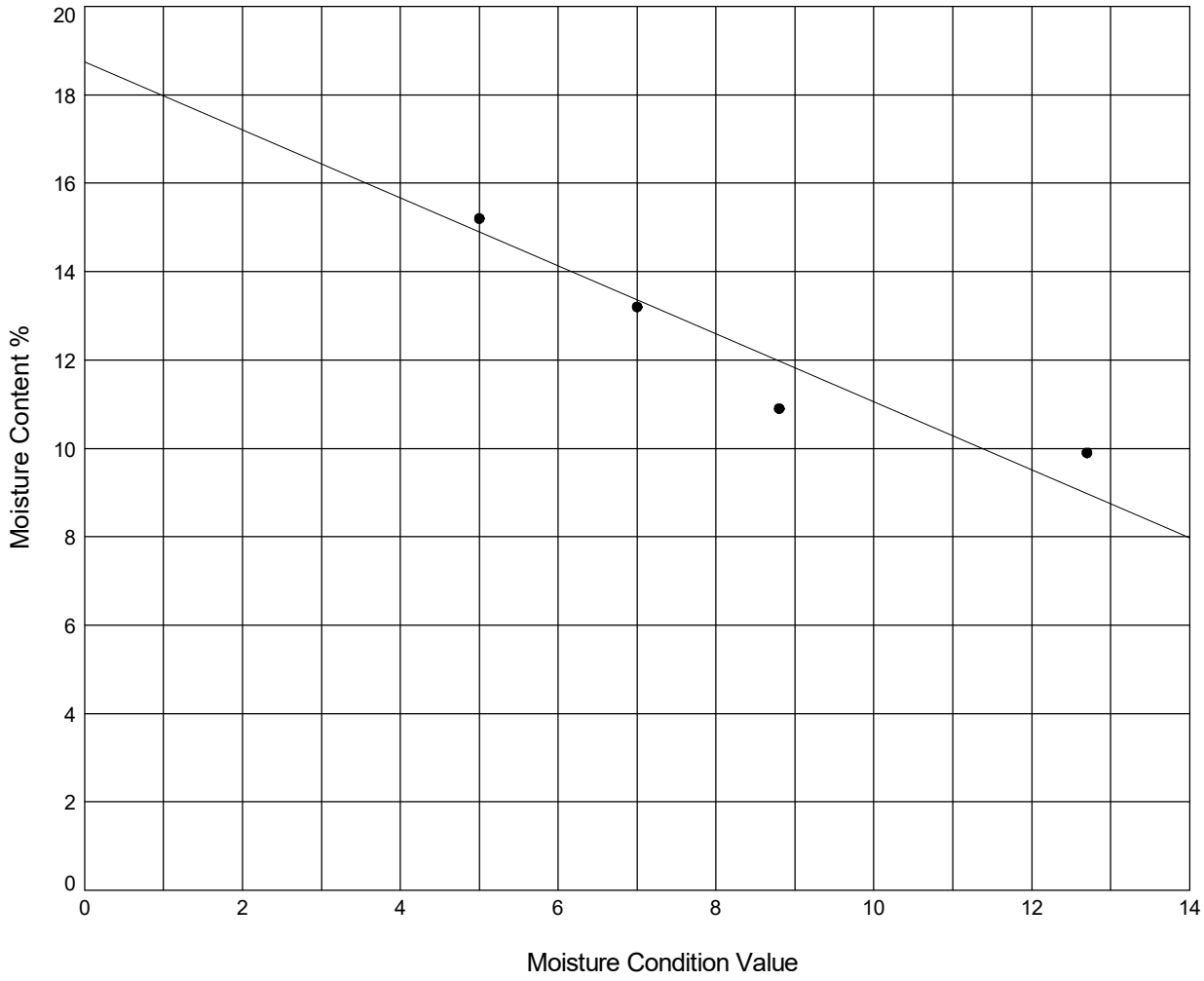
Trial Pit: **TP-PTS226** Sample Ref: **5** Sample Type: **B** Depth (m): **1.20**

Percentage retained on 20mm sieve : **2**

Description : **Orangish brown slightly gravelly sandy silty CLAY**

Single/Separate Sample Used : **Separate**

Test Number	1	2	3	4	5
Moisture Content	13.2	15.2	10.9	9.9	-
MCV	7	5	8.8	12.7	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



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	Dania Ignaczak	DARIA IGNACZAK	31/08/23
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

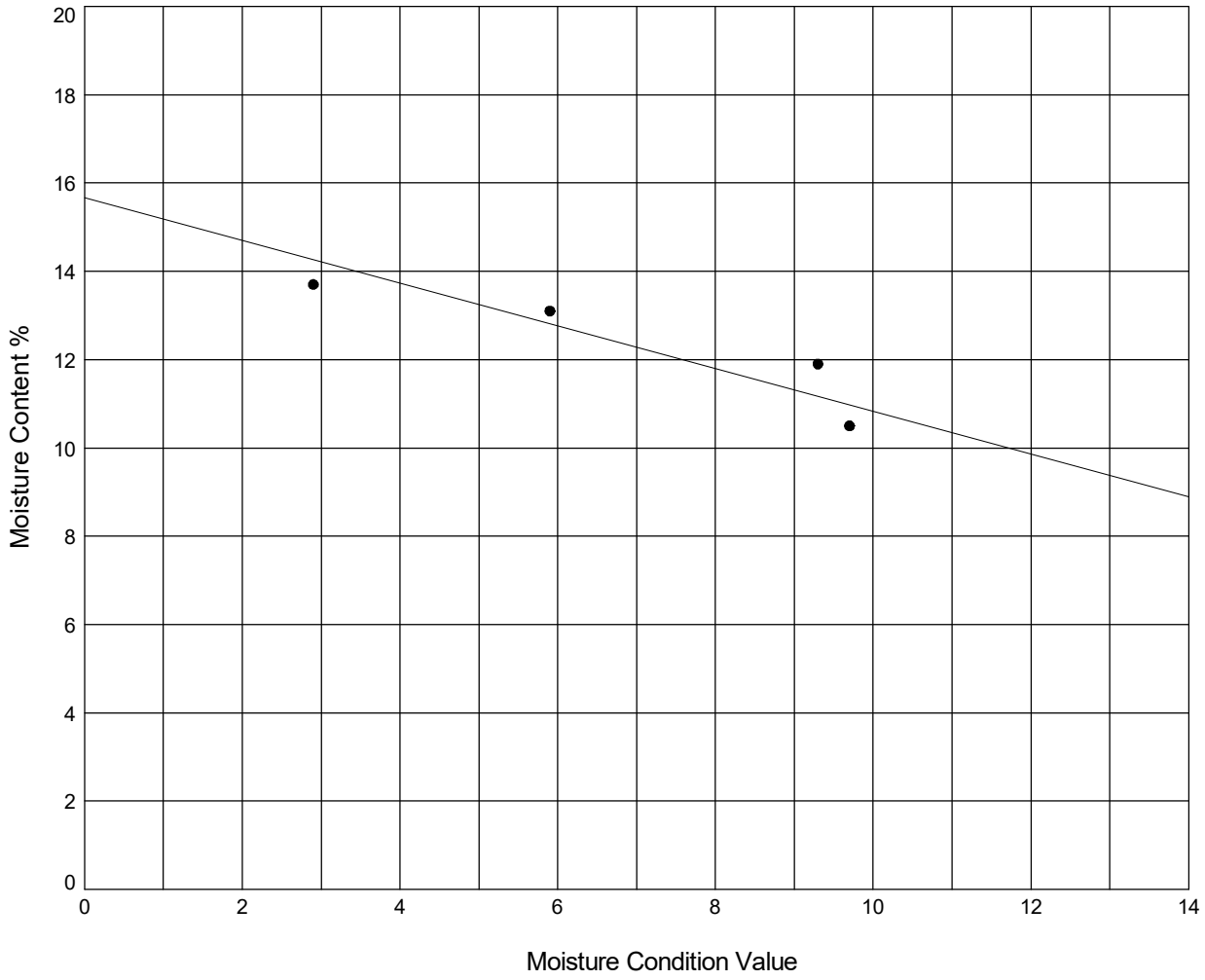
Trial Pit: **TP-PTS229** Sample Ref: **6** Sample Type: **LB** Depth (m): **0.30**

Percentage retained on 20mm sieve : **2**

Description : **Reddish brown slightly gravelly SILT**

Single/Separate Sample Used : **Separate**

Test Number	1	2	3	4	5
Moisture Content	13.1	11.9	10.5	13.7	-
MCV	5.9	9.3	9.7	2.9	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



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	Daria Ignaczak	DARIA IGNACZAK	31/08/23
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

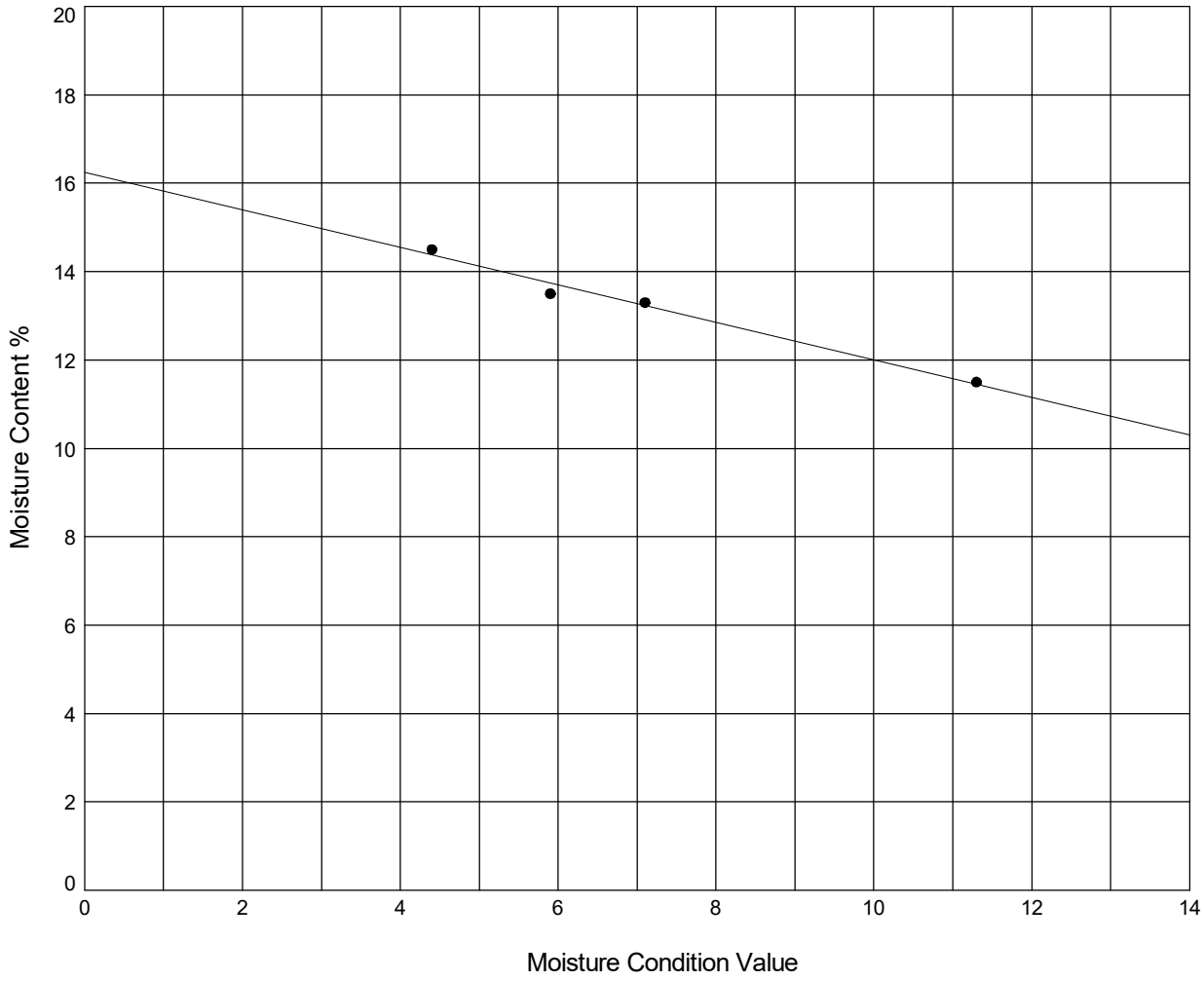
Trial Pit: **TP-PTS229** Sample Ref: **5** Sample Type: **B** Depth (m): **1.20**

Percentage retained on 20mm sieve : **1**

Description : **Brown gravelly very clayey SAND**

Single/Separate Sample Used : **Separate**

Test Number	1	2	3	4	5
Moisture Content	13.5	13.3	11.5	14.5	-
MCV	5.9	7.1	11.3	4.4	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	FRANCESCA BENNETT	31/08/23
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

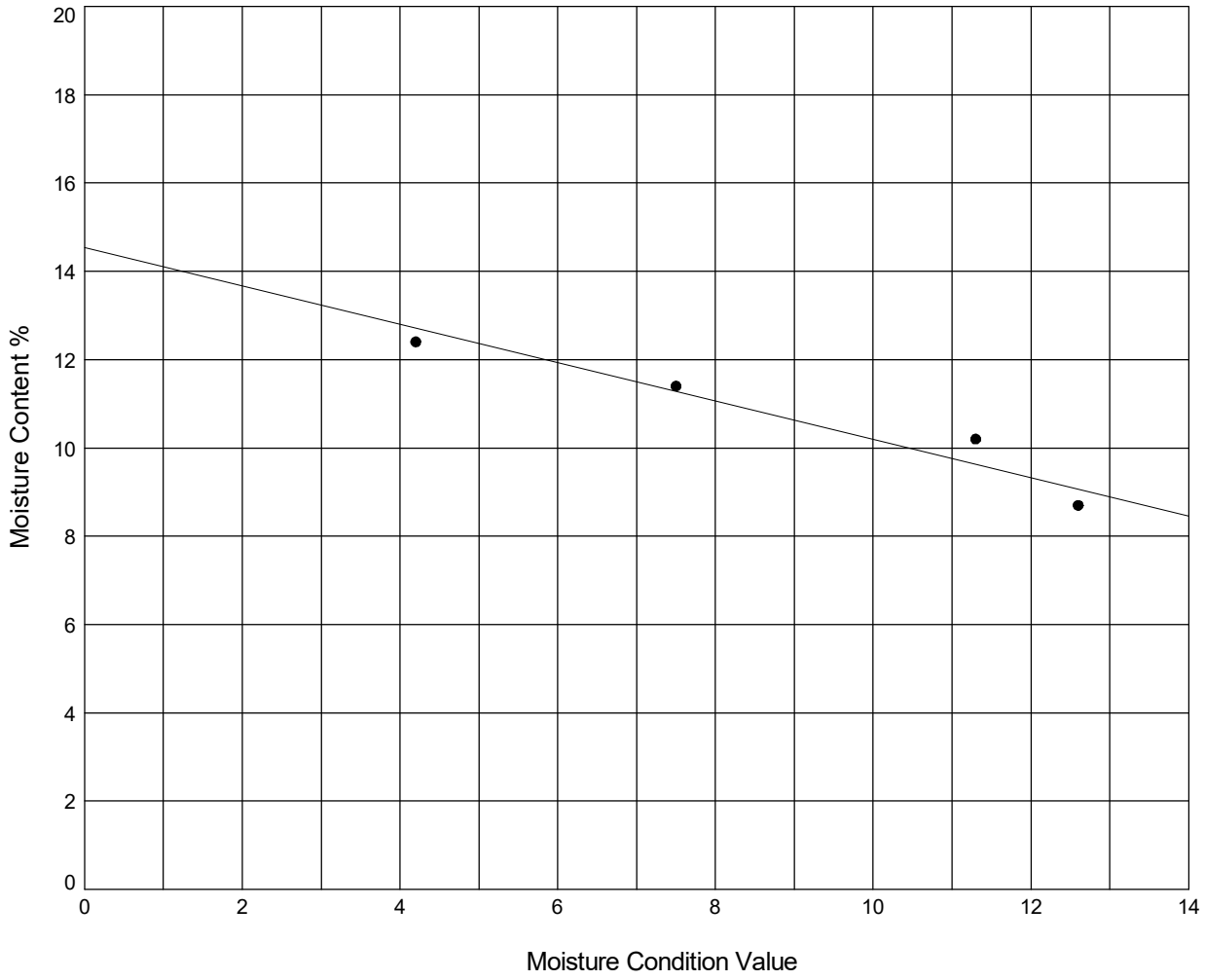
Trial Pit: **TP-PTS231** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.30**

Percentage retained on 20mm sieve : **0**

Description : **Red gravelly very clayey SAND**

Single/Separate Sample Used : **Separate**

Test Number	1	2	3	4	5
Moisture Content	12.4	11.4	10.2	8.7	-
MCV	4.2	7.5	11.3	12.6	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



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	Daria Ignaczak	DARIA IGNACZAK	31/08/23
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

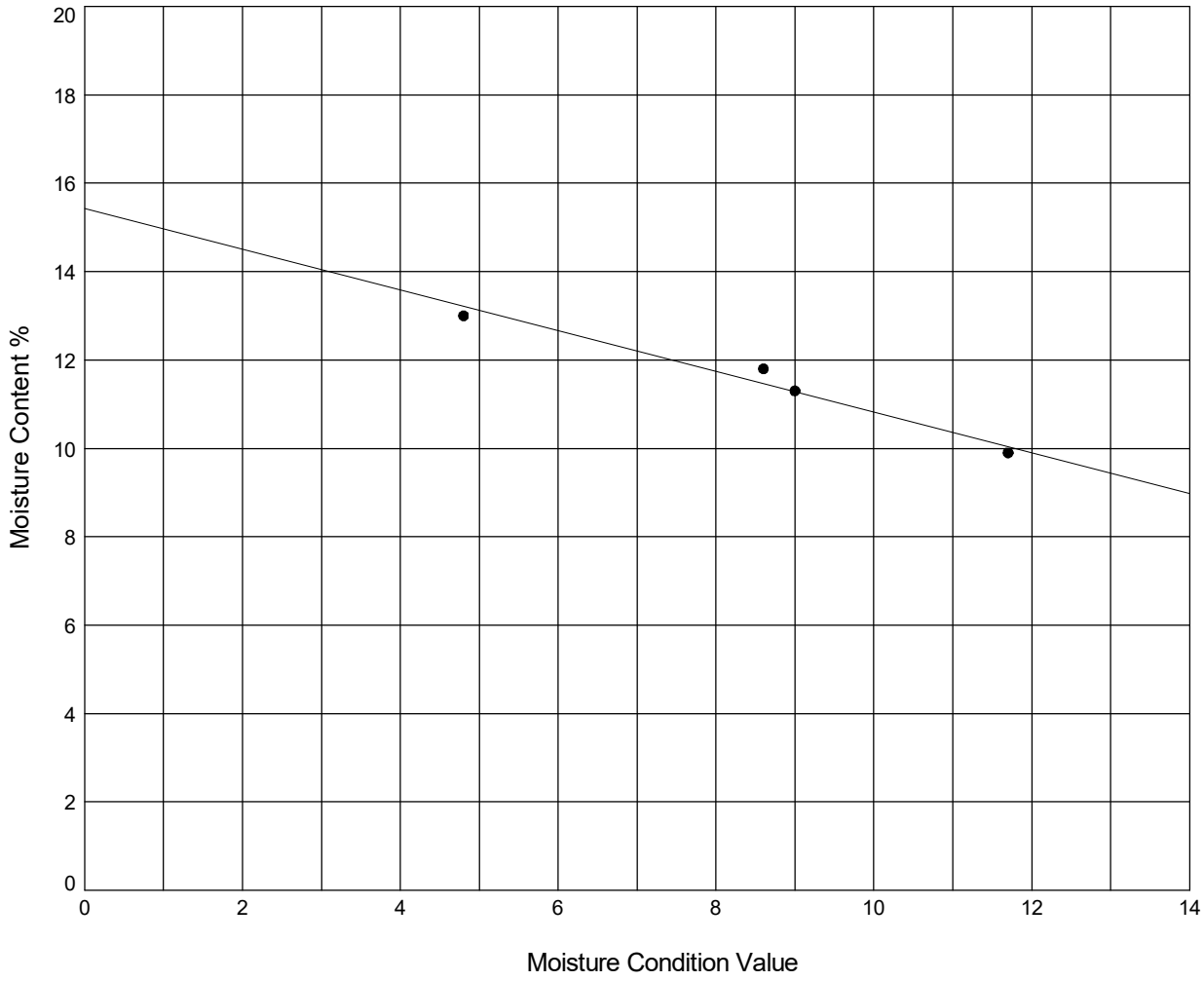
Trial Pit: **TP-PTS235** Sample Ref: **7** Sample Type: **B** Depth (m): **0.90**

Percentage retained on 20mm sieve : **6**

Description : **Reddish brown gravelly clayey SAND with medium cobble content**

Single/Separate Sample Used : **Separate**

Test Number	1	2	3	4	5
Moisture Content	13.0	11.8	11.3	9.9	-
MCV	4.8	8.6	9	11.7	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	FRANCESCA BENNETT	31/08/23
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

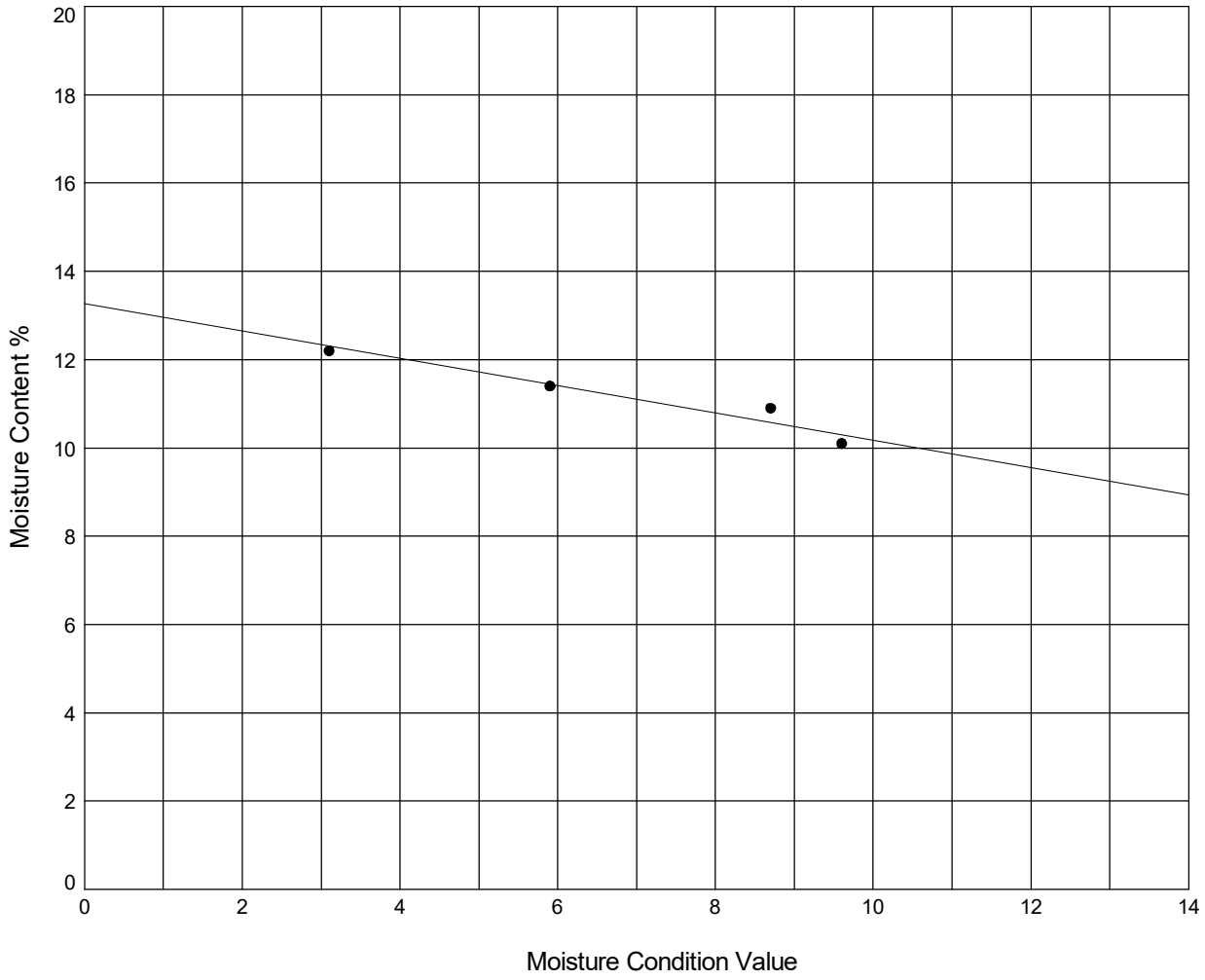
Trial Pit: **TP-PTS236** Sample Ref: **10** Sample Type: **LB** Depth (m): **1.20**

Percentage retained on 20mm sieve : **2**

Description : **Reddish brown clayey SILT**

Single/Separate Sample Used : **Separate**

Test Number	1	2	3	4	5
Moisture Content	12.2	10.9	10.1	11.4	-
MCV	3.1	8.7	9.6	5.9	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



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	Francesca Bennett	FRANCESCA BENNETT	31/08/23
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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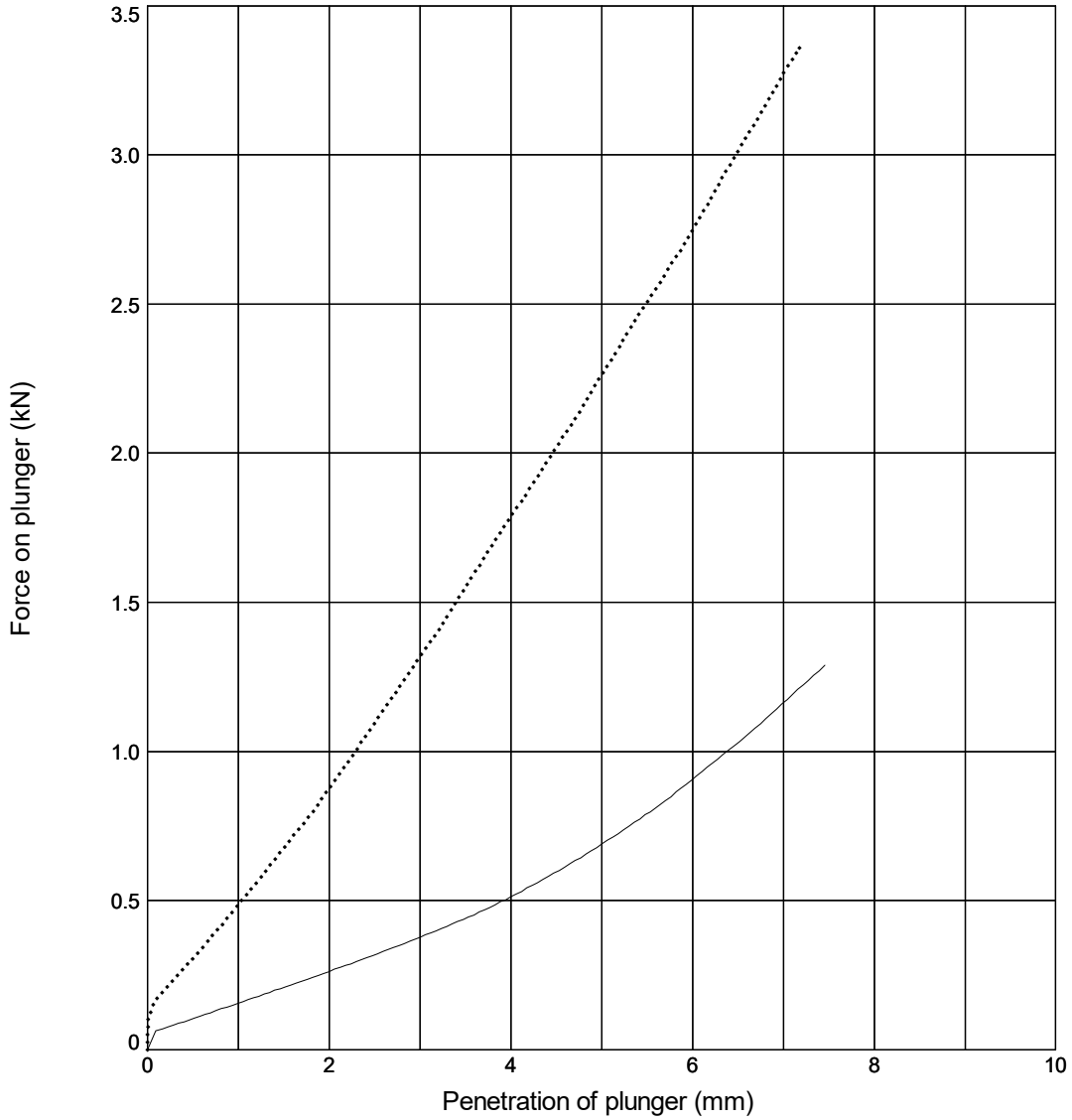
LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS207** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**



Initial Sample Conditions			Test Details			Test Results	Top	Base
Initial Moisture Content (%)	:	**13**	Compaction Type	:	**2.5 kg Dynamic**	Moisture Content (%)	**14**	**14**
Initial Bulk Density (Mg/m^3)	:	**2.18**	Surcharge (kg)	:	**4.0**	CBR Value (%)	**3.5**	**11**
Initial Dry Density (Mg/m^3)	:	**1.93**	Soaking Time (hrs)	:	**24**	Correction Applied (mm)	**NA**	**NA**
% Retained on 20mm Sieve	:	**18**	Swelling (mm)	:	**-**	CBR Value (Corrected) (%)	**NA**	**NA**

Sample Description	Key
Brown very sandy silty GRAVEL	——— **Top** ····· **Base**

Remarks: None

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**04/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - CBR DATALOGGED - 1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01
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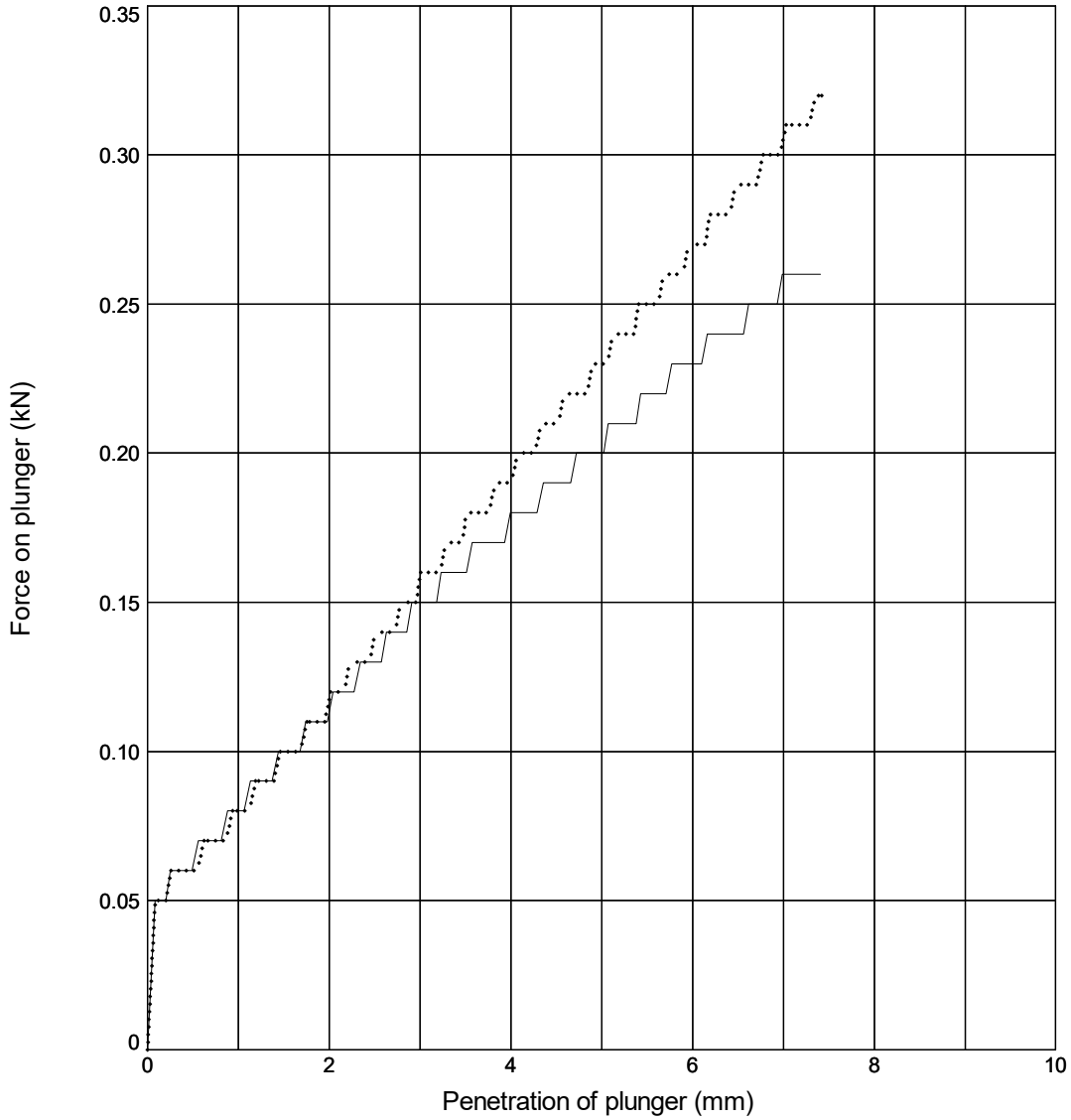
LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990
NON STANDARD TEST

Trial Pit: **TP-PTS209** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



Initial Sample Conditions			Test Details			Test Results	Top	Base
Initial Moisture Content (%)	:	**15**	Compaction Type	:	**2.5 kg Dynamic**	Moisture Content (%)	**14**	**15**
Initial Bulk Density (Mg/m^3)	:	**2.15**	Surcharge (kg)	:	**4.0**	CBR Value (%)	**1.0**	**1.2**
Initial Dry Density (Mg/m^3)	:	**1.87**	Soaking Time (hrs)	:	**-**	Correction Applied (mm)	**NA**	**NA**
% Retained on 20mm Sieve	:	**30**	Swelling (mm)	:	**-**	CBR Value (Corrected) (%)	**NA**	**NA**

Sample Description	Key
Brown very sandy silty GRAVEL with medium cobble content	——— **Top** ····· **Base**

Remarks: None

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Francesca Bennett	**FRANCESCA BENNETT**	**27/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - CBR DATALOGGED - 1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01
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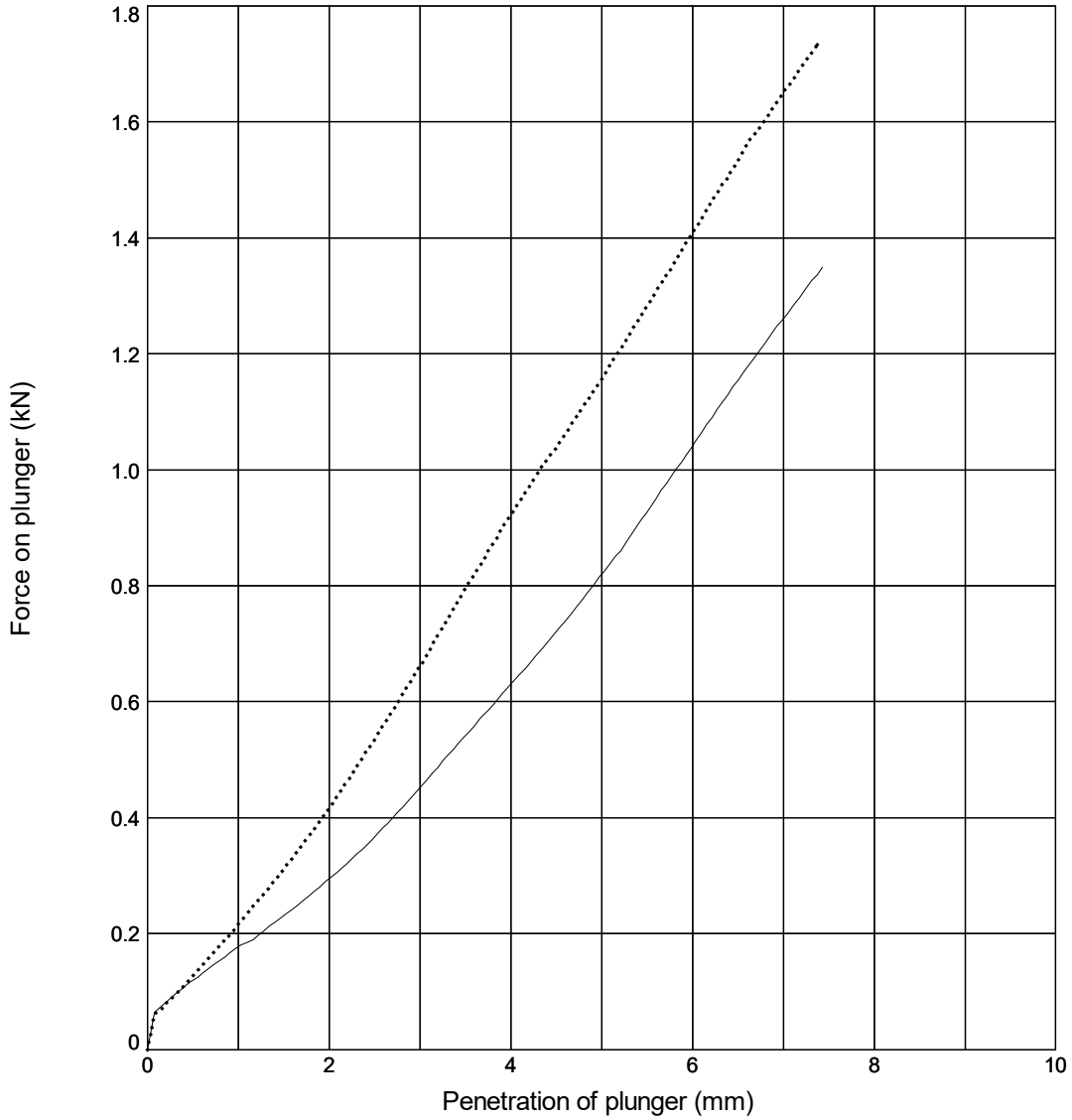
LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS210** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**



Initial Sample Conditions			Test Details			Test Results	Top	Base
Initial Moisture Content (%)	:	**13**	Compaction Type	:	**2.5 kg Dynamic**	Moisture Content (%)	**17**	**13**
Initial Bulk Density (Mg/m^3)	:	**2.10**	Surcharge (kg)	:	**4.0**	CBR Value (%)	**4.1**	**5.8**
Initial Dry Density (Mg/m^3)	:	**1.85**	Soaking Time (hrs)	:	**-**	Correction Applied (mm)	**NA**	**NA**
% Retained on 20mm Sieve	:	**14**	Swelling (mm)	:	**-**	CBR Value (Corrected) (%)	**NA**	**NA**

Sample Description	Key
Brown very sandy silty GRAVEL with medium cobble content	——— **Top** ····· **Base**
Remarks: None	

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**04/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - CBR DATALOGGED - 1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01
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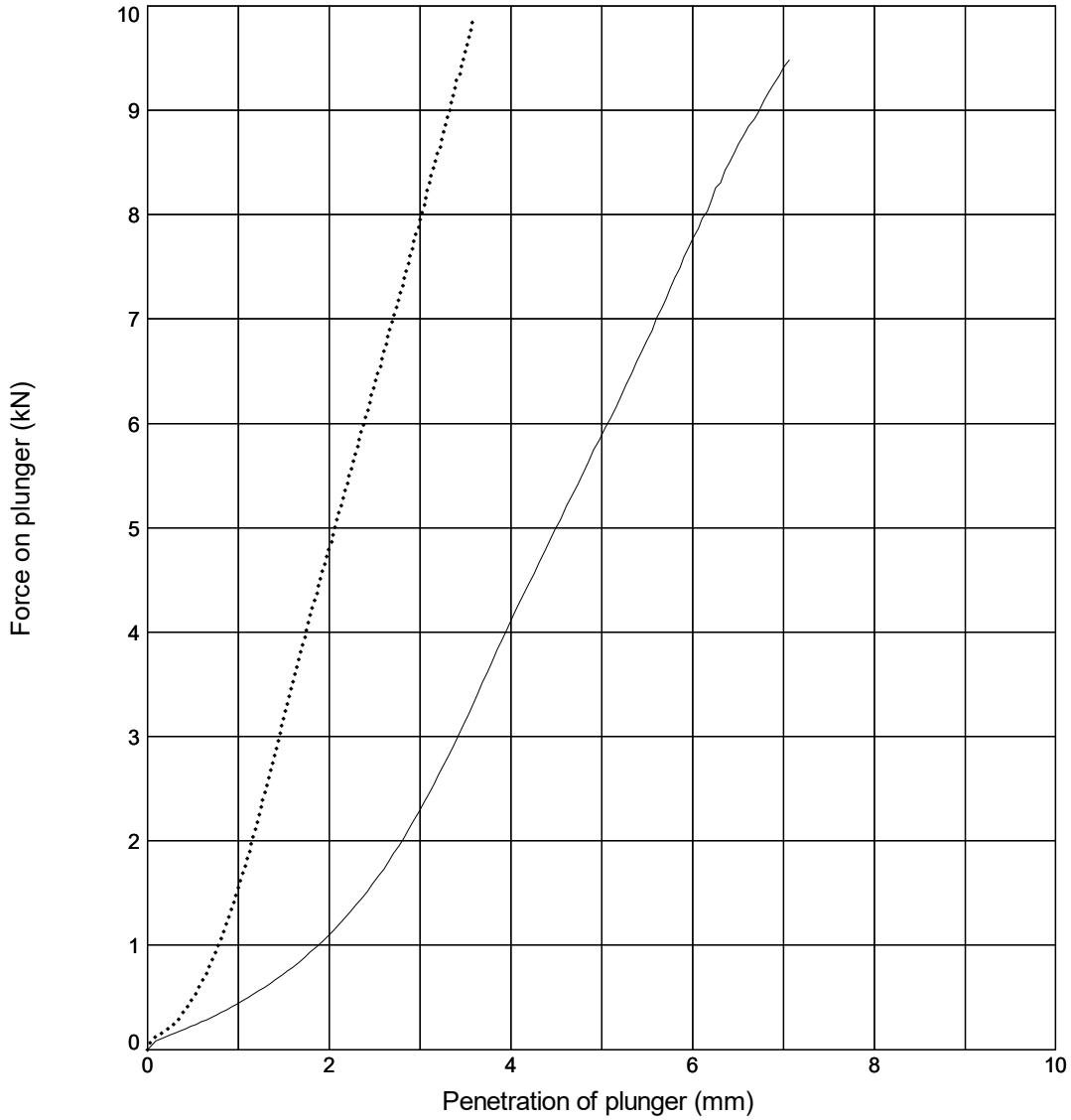
LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS212** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



Initial Sample Conditions			Test Details			Test Results	Top	Base
Initial Moisture Content (%)	:	**1.7**	Compaction Type	:	**2.5 kg Dynamic**	Moisture Content (%)	**17**	**8.7**
Initial Bulk Density (Mg/m^3)	:	**2.22**	Surcharge (kg)	:	**4.0**	CBR Value (%)	**29**	**48**
Initial Dry Density (Mg/m^3)	:	**2.19**	Soaking Time (hrs)	:	**-**	Correction Applied (mm)	**NA**	**NA**
% Retained on 20mm Sieve	:	**23**	Swelling (mm)	:	**-**	CBR Value (Corrected) (%)	**NA**	**NA**

Sample Description	Key
Reddish brown very sandy silty GRAVEL	——— **Top** ····· **Base**
Remarks: None	

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**19/07/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - CBR DATALOGGED - 1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01
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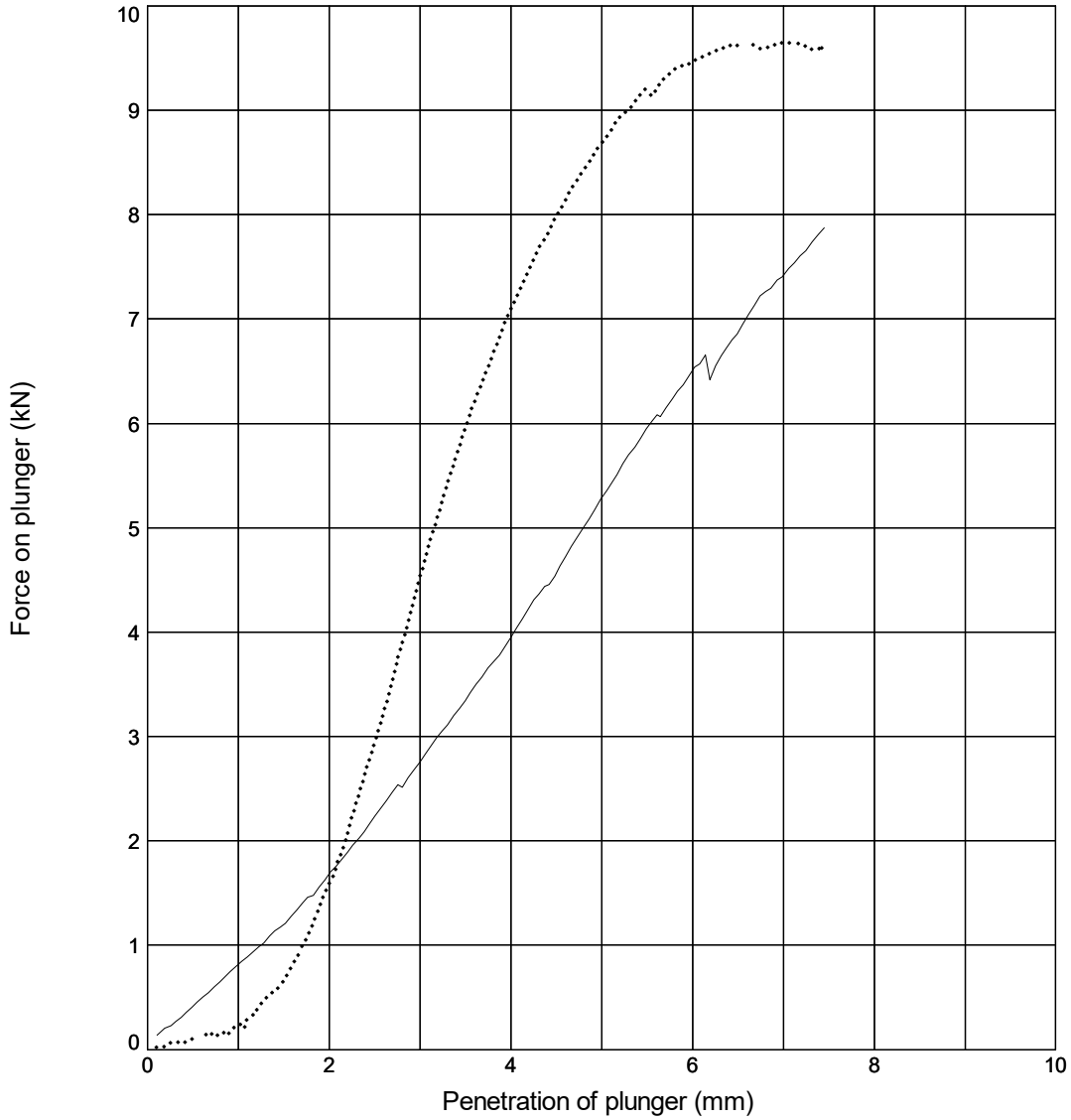
LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990
NON STANDARD TEST

Trial Pit: **TP-PTS217** Sample Ref: **10** Sample Type: **LB** Depth (m): **2.50**



Initial Sample Conditions			Test Details			Test Results	Top	Base
Initial Moisture Content (%)	:	**5.2**	Compaction Type	:	**2.5 kg Dynamic**	Moisture Content (%)	**5.2**	**5.3**
Initial Bulk Density (Mg/m^3)	:	**2.20**	Surcharge (kg)	:	**4.0**	CBR Value (%)	**26**	**43**
Initial Dry Density (Mg/m^3)	:	**2.09**	Soaking Time (hrs)	:	**-**	Correction Applied (mm)	**NA**	**0.5**
% Retained on 20mm Sieve	:	**27**	Swelling (mm)	:	**-**	CBR Value (Corrected) (%)	**NA**	**46**

Sample Description	Key
Brown very sandy silty GRAVEL	——— **Top** ····· **Base**
Remarks: None	

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Daria Ignaczak	**DARIA IGNACZAK**	**31/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - CBR DATALOGGED - 1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01
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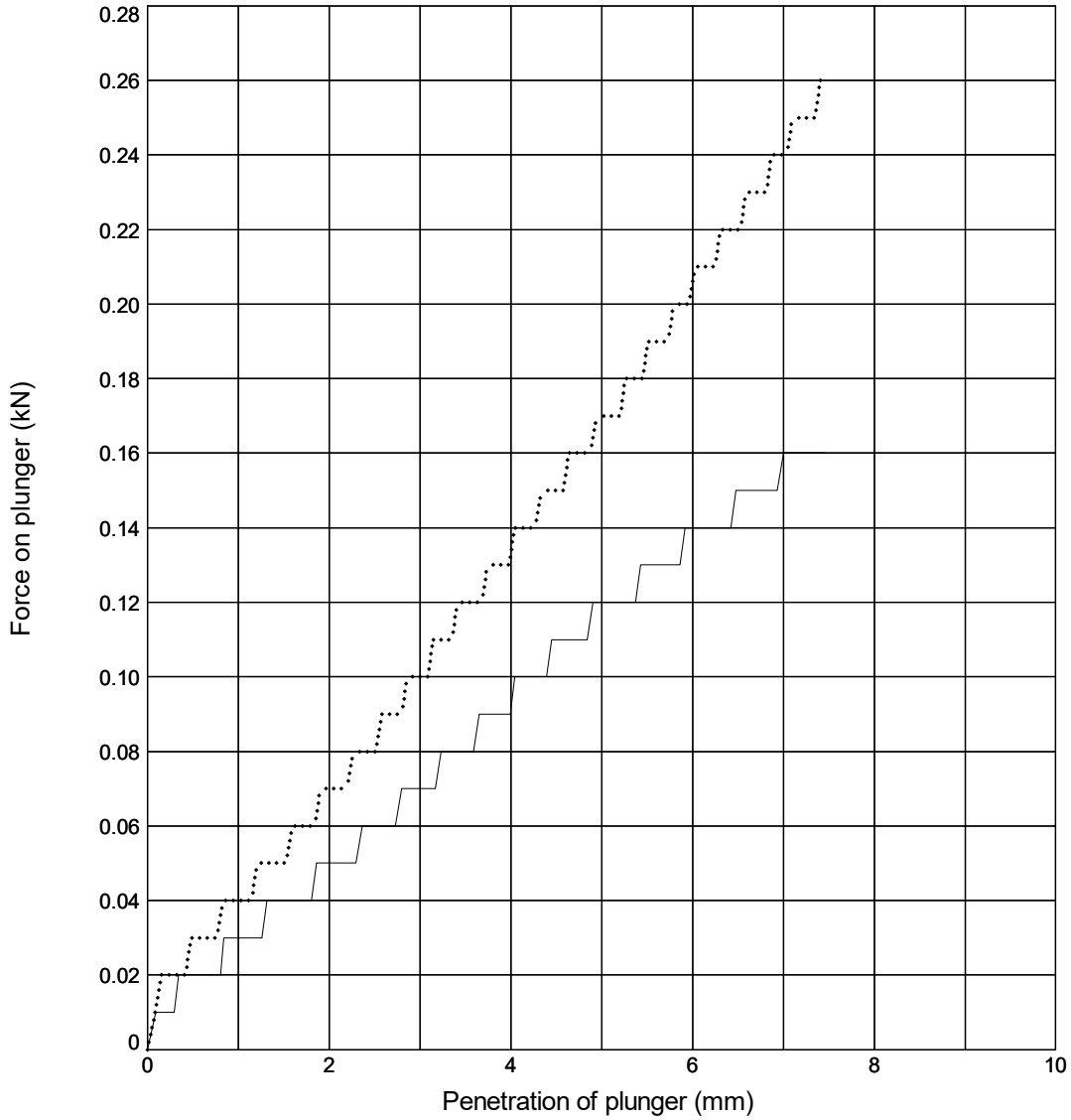
LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS220** Sample Ref: **10** Sample Type: **B** Depth (m): **2.20**



Initial Sample Conditions			Test Details			Test Results	Top	Base
Initial Moisture Content (%)	:	**12**	Compaction Type	:	**2.5 kg Dynamic**	Moisture Content (%)	**12**	**12**
Initial Bulk Density (Mg/m^3)	:	**2.23**	Surcharge (kg)	:	**4.0**	CBR Value (%)	**0.60**	**0.85**
Initial Dry Density (Mg/m^3)	:	**1.99**	Soaking Time (hrs)	:	**-**	Correction Applied (mm)	**NA**	**NA**
% Retained on 20mm Sieve	:	**20**	Swelling (mm)	:	**-**	CBR Value (Corrected) (%)	**NA**	**NA**

Sample Description	Key
Reddish brown gravelly silty SAND with medium cobble content	——— **Top** ····· **Base**

Remarks: None

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	D. Richards	**DAISY RICHARDS**	**17/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - CBR DATALOGGED - 1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01
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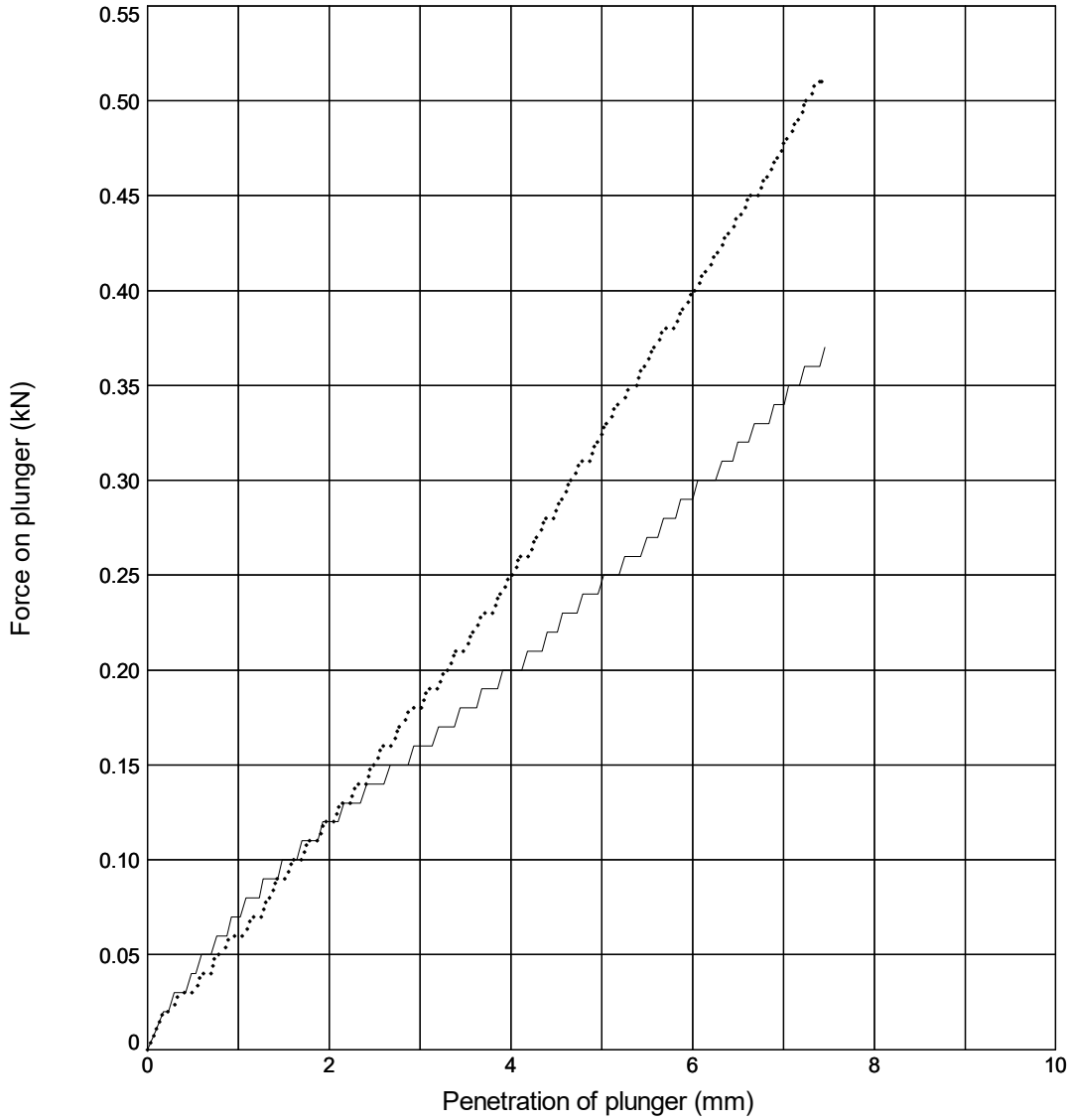
LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS221** Sample Ref: **1** Sample Type: **LB** Depth (m): **0.00**



Initial Sample Conditions			Test Details			Test Results	Top	Base
Initial Moisture Content (%)	:	**18**	Compaction Type	:	**2.5 kg Dynamic**	Moisture Content (%)	**18**	**17**
Initial Bulk Density (Mg/m^3)	:	**2.02**	Surcharge (kg)	:	**4.0**	CBR Value (%)	**1.2**	**1.6**
Initial Dry Density (Mg/m^3)	:	**1.71**	Soaking Time (hrs)	:	**-**	Correction Applied (mm)	**NA**	**NA**
% Retained on 20mm Sieve	:	**1**	Swelling (mm)	:	**-**	CBR Value (Corrected) (%)	**NA**	**NA**

Sample Description	Key
Dark brown gravelly silty SAND	——— **Top** ····· **Base**
Remarks: None	

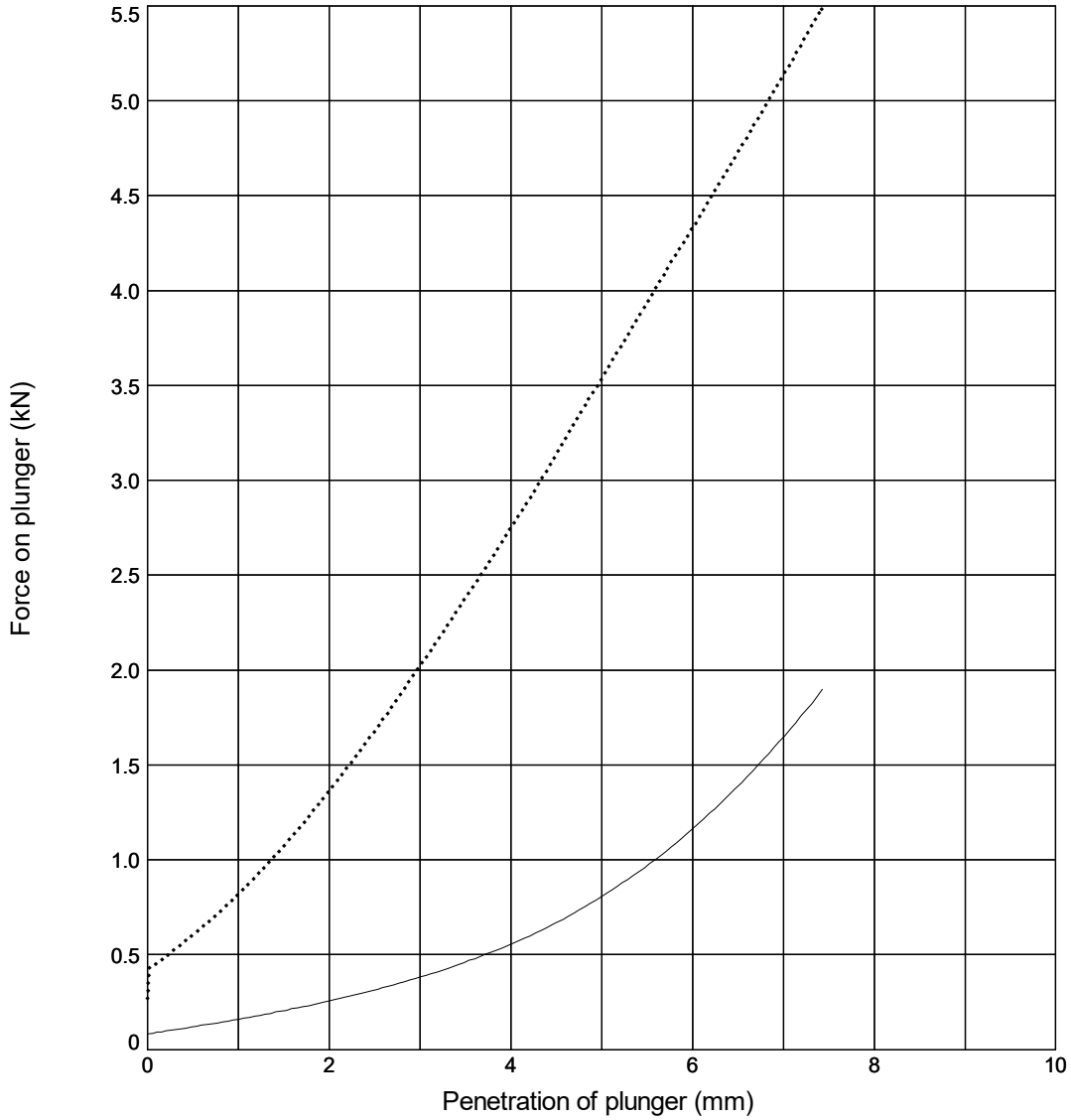
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	DAISY RICHARDS		**17/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - CBR DATALOGGED - 1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 17/08/23 - 16:43 | FB1 |

LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS225** Sample Ref: **6** Sample Type: **LB** Depth (m): **0.40**



Initial Sample Conditions			Test Details			Test Results	Top	Base
Initial Moisture Content (%)	:	**11**	Compaction Type	:	**2.5 kg Dynamic**	Moisture Content (%)	**11**	**11**
Initial Bulk Density (Mg/m^3)	:	**2.18**	Surcharge (kg)	:	**4.0**	CBR Value (%)	**4.0**	**18**
Initial Dry Density (Mg/m^3)	:	**1.96**	Soaking Time (hrs)	:	**-**	Correction Applied (mm)	**NA**	**NA**
% Retained on 20mm Sieve	:	**2**	Swelling (mm)	:	**-**	CBR Value (Corrected) (%)	**NA**	**NA**

Sample Description	Key
Reddish brown slightly gravelly SAND	——— **Top** ····· **Base**
Remarks: None	

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

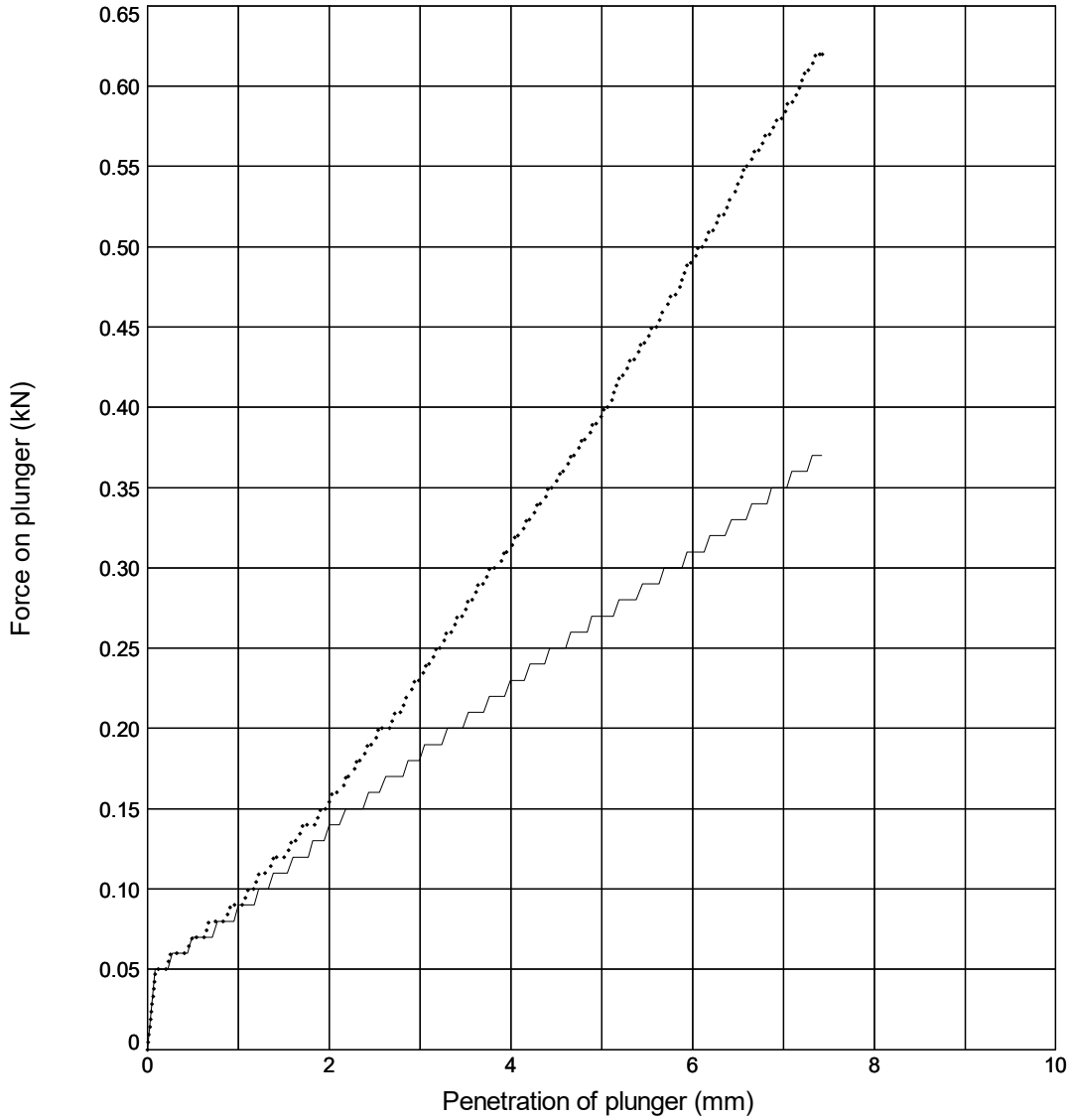
Compiled By		Date
E. Hort	**ELIZABETH HORT**	**17/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - CBR DATALOGGED - 1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 17/08/23 - 16:53 | FB1 |

LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS230** Sample Ref: **3** Sample Type: **LB** Depth (m): **0.50**



Initial Sample Conditions			Test Details			Test Results	Top	Base
Initial Moisture Content (%)	:	**12**	Compaction Type	:	**2.5 kg Dynamic**	Moisture Content (%)	**12**	**12**
Initial Bulk Density (Mg/m^3)	:	**2.19**	Surcharge (kg)	:	**4.0**	CBR Value (%)	**1.4**	**2.0**
Initial Dry Density (Mg/m^3)	:	**1.95**	Soaking Time (hrs)	:	**-**	Correction Applied (mm)	**NA**	**NA**
% Retained on 20mm Sieve	:	**1**	Swelling (mm)	:	**-**	CBR Value (Corrected) (%)	**NA**	**NA**

Sample Description	Key
Reddish brown slightly gravelly very clayey SAND	——— **Top** ····· **Base**

Remarks: None

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG		**DAISY RICHARDS**	**12/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - CBR DATALOGGED - 1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01
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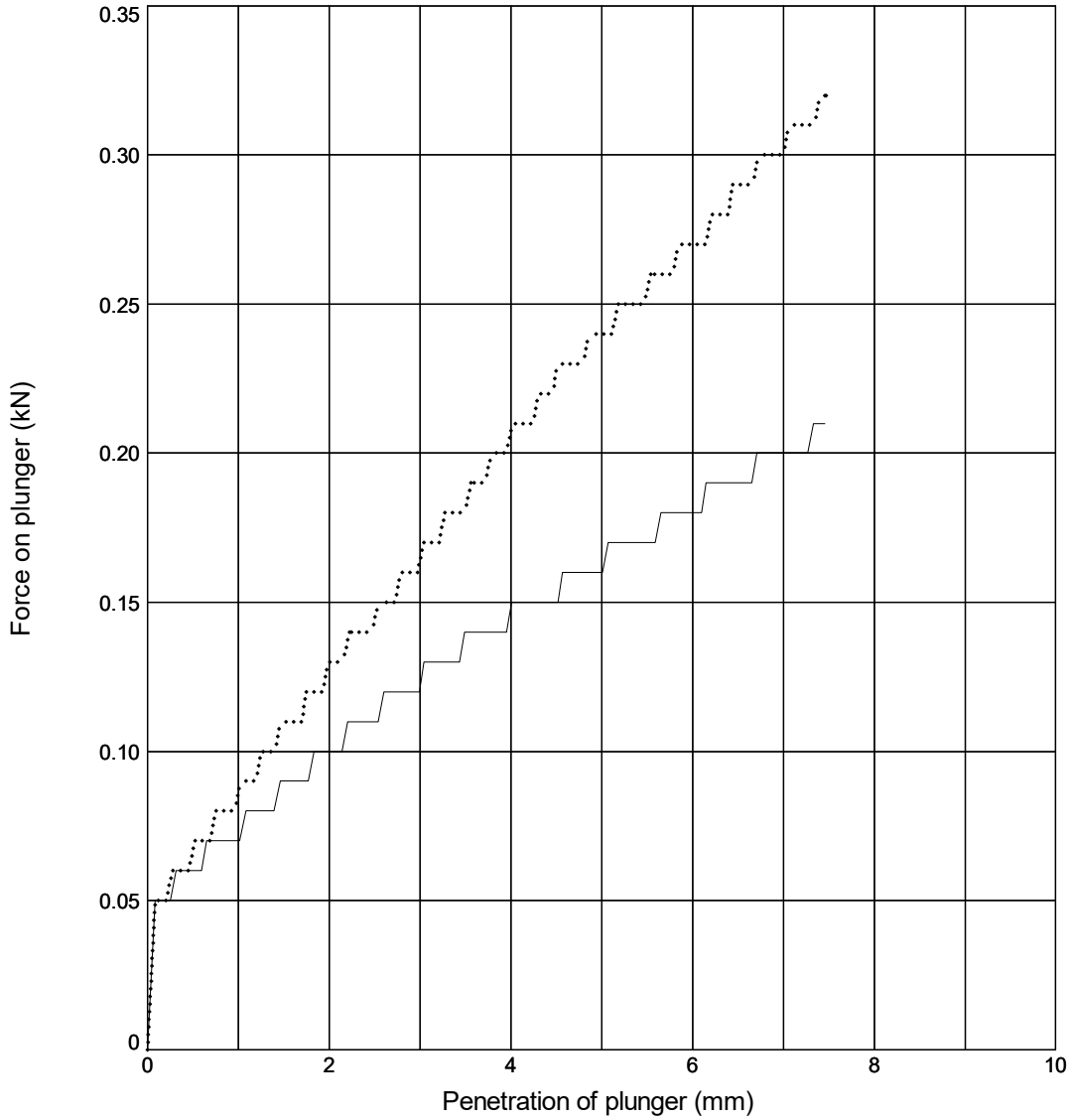
LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS230** Sample Ref: **6** Sample Type: **LB** Depth (m): **1.50**



Initial Sample Conditions			Test Details			Test Results	Top	Base
Initial Moisture Content (%)	:	**13**	Compaction Type	:	**2.5 kg Dynamic**	Moisture Content (%)	**13**	**13**
Initial Bulk Density (Mg/m^3)	:	**2.23**	Surcharge (kg)	:	**4.0**	CBR Value (%)	**0.83**	**1.2**
Initial Dry Density (Mg/m^3)	:	**1.98**	Soaking Time (hrs)	:	**-**	Correction Applied (mm)	**NA**	**NA**
% Retained on 20mm Sieve	:	**25**	Swelling (mm)	:	**-**	CBR Value (Corrected) (%)	**NA**	**NA**

Sample Description	Key
Brown gravelly clayey SAND with medium cobble content	——— **Top** ····· **Base**

Remarks: None

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG		**DAISY RICHARDS**	**12/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - CBR DATALOGGED - 1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01
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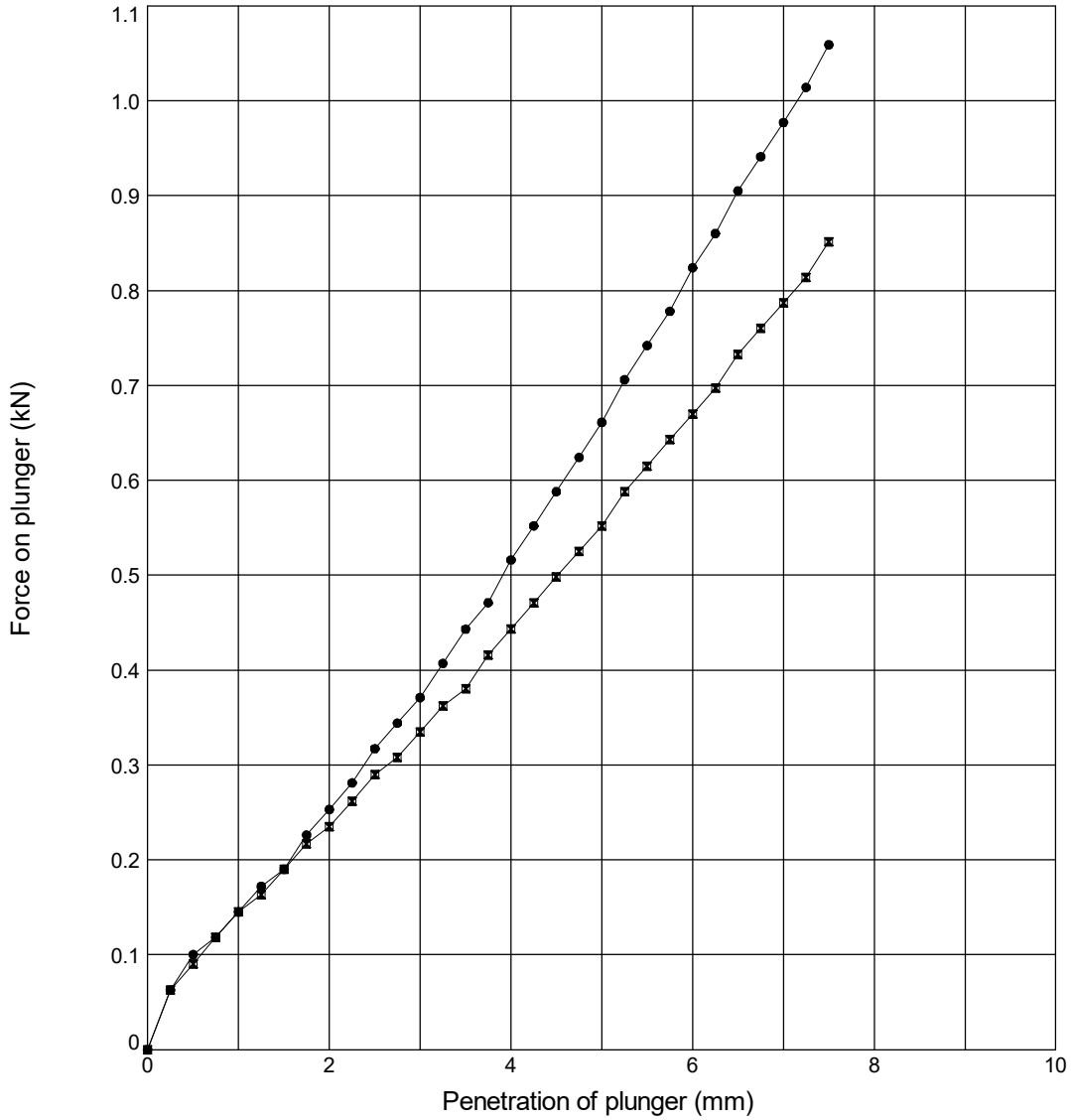
LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS232** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



Initial Sample Conditions			Test Details			Test Results	Top	Base
Initial Moisture Content (%)	:	**12**	Compaction Type	:	**2.5 kg Dynamic**	Moisture Content (%)	**12**	**12**
Initial Bulk Density (Mg/m^3)	:	**2.23**	Surcharge (kg)	:	**4.0**	CBR value (%)	**3.3**	**2.8**
Initial Dry Density (Mg/m^3)	:	**1.99**	Soaking Time (hrs)	:	**-**	Remarks: **None**		
% retained on 20mm sieve	:	**7**	Swelling (mm)	:	**-**			

Sample Description	Key
Reddish brown gravelly very clayey SAND	● **Top** ⧗ **Base**

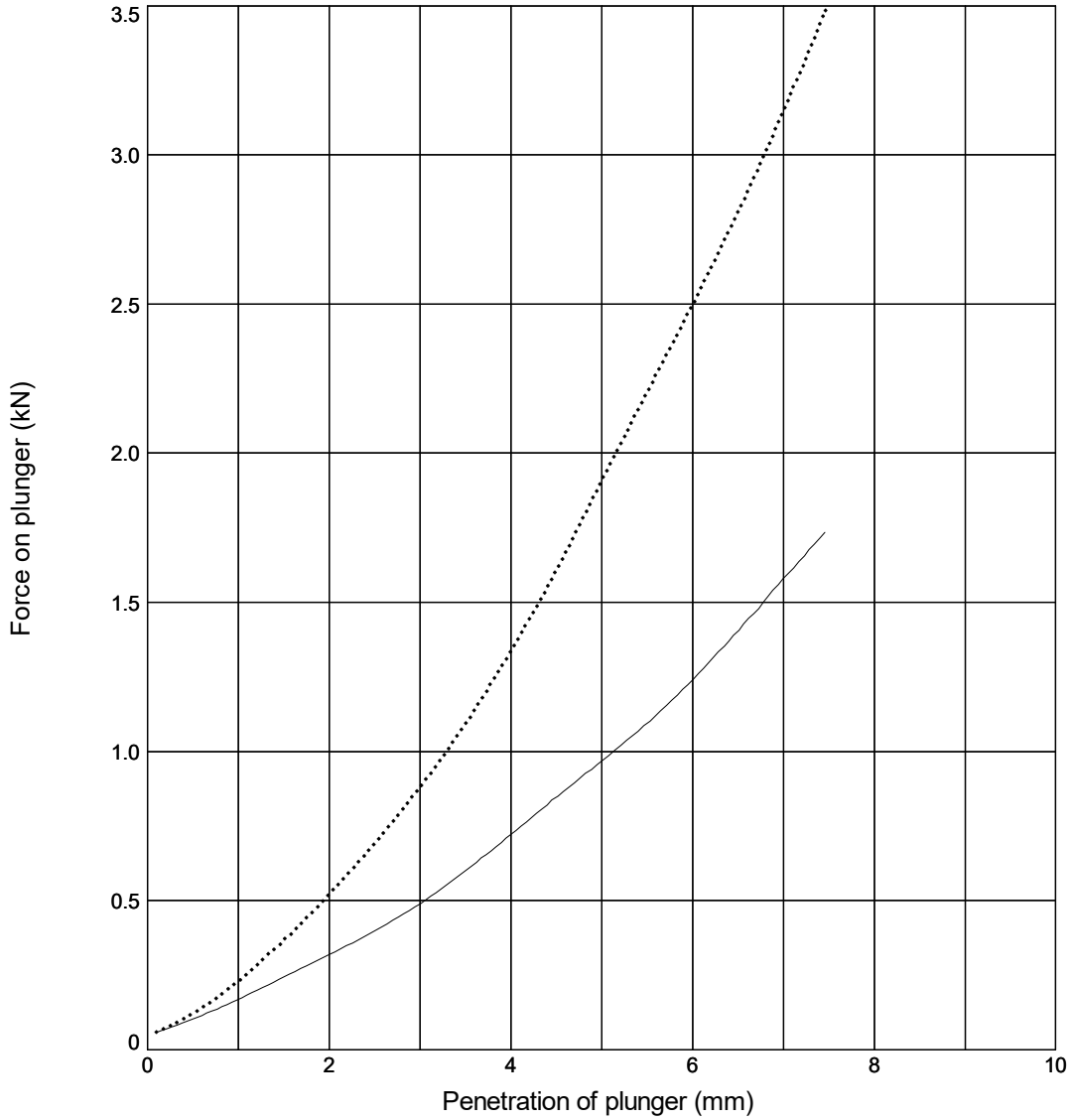
	Compiled By		Date
STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Francesca Bennett	**FRANCESCA BENNETT**	**31/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - CBR - LAB -3- REPORT - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 31/08/23 - 10:28 | FB1 |

LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS233-LC** Sample Ref: **3** Sample Type: **LB** Depth (m): **0.50**



Initial Sample Conditions			Test Details			Test Results	Top	Base
Initial Moisture Content (%)	:	**10**	Compaction Type	:	**2.5 kg Dynamic**	Moisture Content (%)	**11**	**11**
Initial Bulk Density (Mg/m^3)	:	**2.25**	Surcharge (kg)	:	**4.0**	CBR Value (%)	**4.8**	**9.6**
Initial Dry Density (Mg/m^3)	:	**2.04**	Soaking Time (hrs)	:	**-**	Correction Applied (mm)	**NA**	**NA**
% Retained on 20mm Sieve	:	**1**	Swelling (mm)	:	**-**	CBR Value (Corrected) (%)	**NA**	**NA**

Sample Description	Key
Brown gravelly clayey SAND	——— **Top** ····· **Base**
Remarks: None	

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Daria Ignaczak	**DARIA IGNACZAK**	**02/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - CBR DATALOGGED - 1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01
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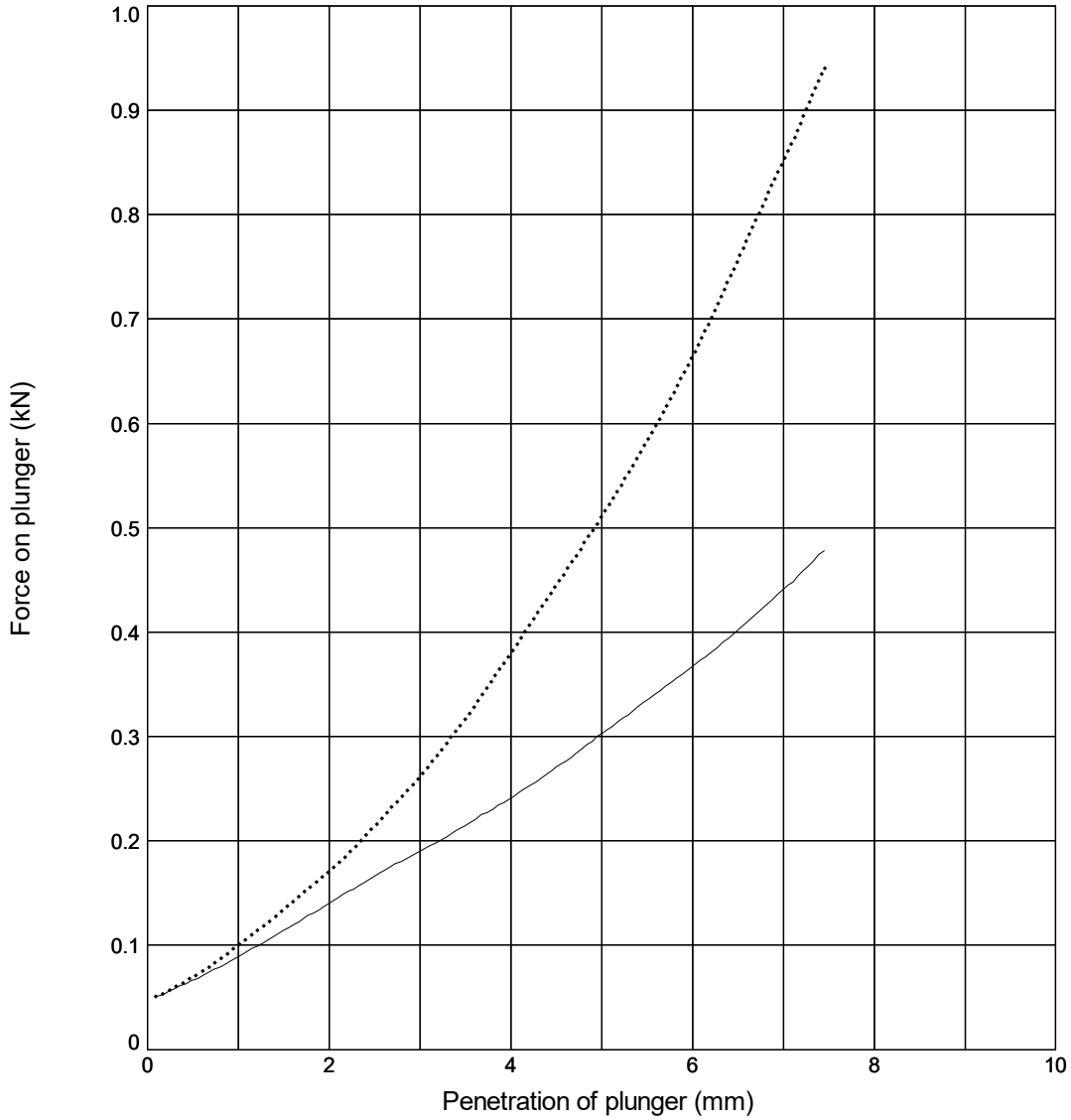
LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS233-LC** Sample Ref: **10** Sample Type: **B** Depth (m): **3.20**



Initial Sample Conditions			Test Details			Test Results	Top	Base
Initial Moisture Content (%)	:	**12**	Compaction Type	:	**2.5 kg Dynamic**	Moisture Content (%)	**13**	**13**
Initial Bulk Density (Mg/m^3)	:	**2.19**	Surcharge (kg)	:	**4.0**	CBR Value (%)	**1.5**	**2.6**
Initial Dry Density (Mg/m^3)	:	**1.96**	Soaking Time (hrs)	:	**-**	Correction Applied (mm)	**NA**	**NA**
% Retained on 20mm Sieve	:	**8**	Swelling (mm)	:	**-**	CBR Value (Corrected) (%)	**NA**	**NA**

Sample Description	Key
Brown gravelly very clayey SAND	——— **Top** ····· **Base**
Remarks: None	

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**02/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - CBR DATALOGGED - 1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01
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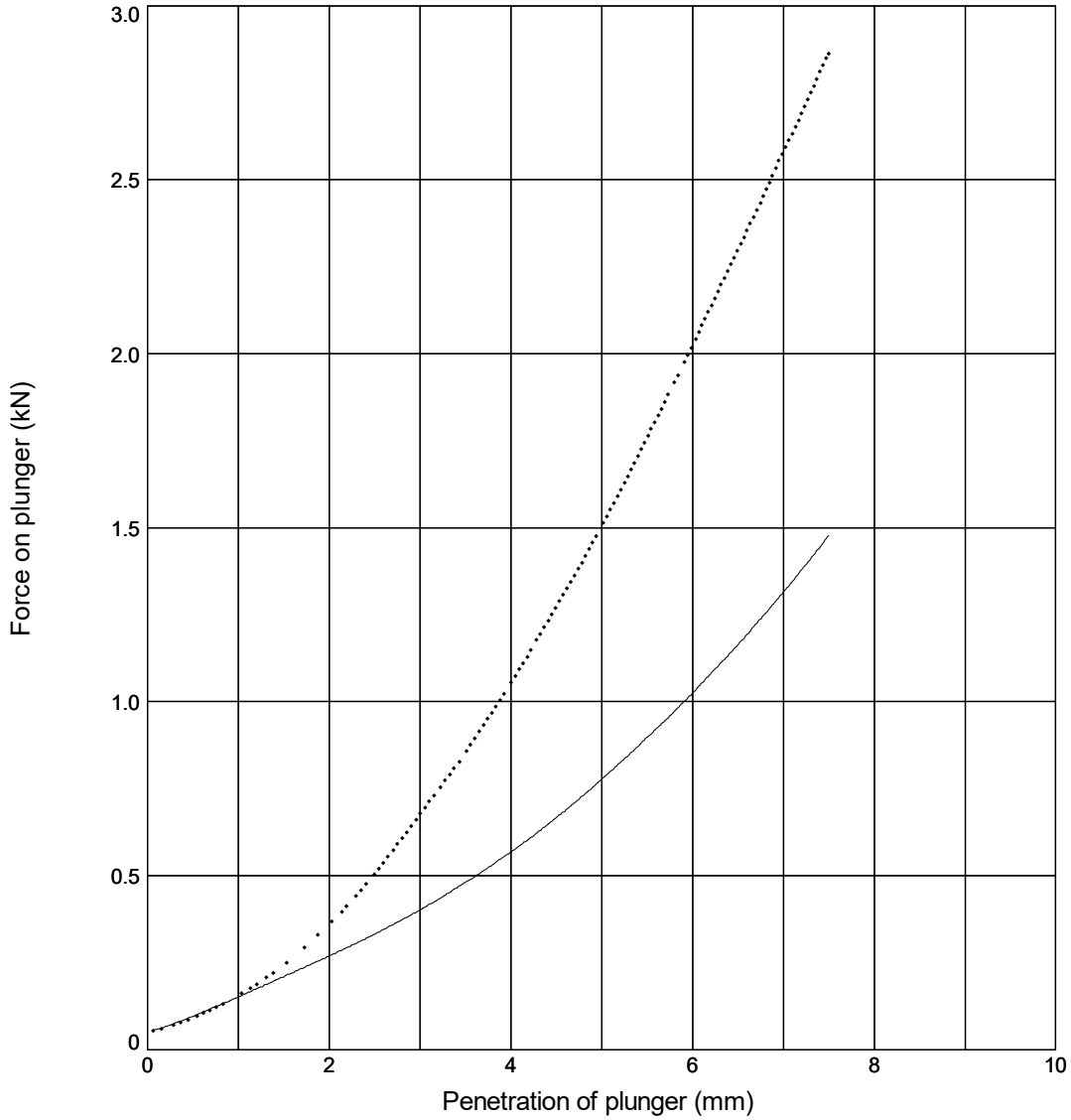
LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS234** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.30**



Initial Sample Conditions			Test Details			Test Results	Top	Base
Initial Moisture Content (%)	:	**11**	Compaction Type	:	**2.5 kg Dynamic**	Moisture Content (%)	**12**	**12**
Initial Bulk Density (Mg/m^3)	:	**2.17**	Surcharge (kg)	:	**4.0**	CBR Value (%)	**3.9**	**7.5**
Initial Dry Density (Mg/m^3)	:	**1.96**	Soaking Time (hrs)	:	**-**	Correction Applied (mm)	**NA**	**NA**
% Retained on 20mm Sieve	:	**2**	Swelling (mm)	:	**-**	CBR Value (Corrected) (%)	**NA**	**NA**

Sample Description	Key
Brown gravelly clayey SAND	——— **Top** ····· **Base**
Remarks: None	

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**26/07/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - CBR DATALOGGED - 1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01
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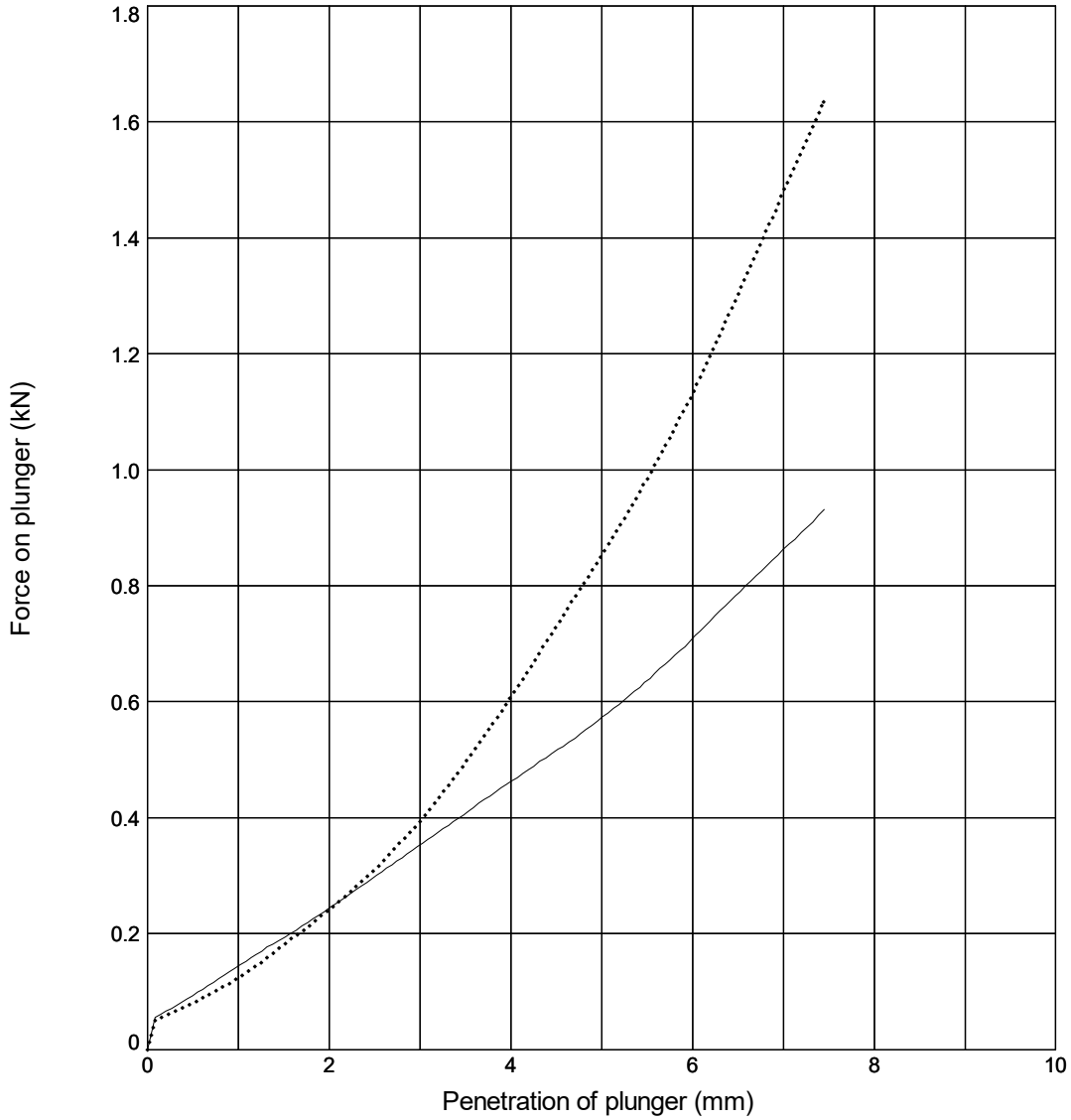
LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS235** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.30**



Initial Sample Conditions			Test Details			Test Results	Top	Base
Initial Moisture Content (%)	:	**11**	Compaction Type	:	**2.5 kg Dynamic**	Moisture Content (%)	**11**	**11**
Initial Bulk Density (Mg/m^3)	:	**2.20**	Surcharge (kg)	:	**4.0**	CBR Value (%)	**2.9**	**4.3**
Initial Dry Density (Mg/m^3)	:	**1.98**	Soaking Time (hrs)	:	**-**	Correction Applied (mm)	**NA**	**NA**
% Retained on 20mm Sieve	:	**8**	Swelling (mm)	:	**-**	CBR Value (Corrected) (%)	**NA**	**NA**

Sample Description	Key
Reddish brown slightly gravelly silty SAND	——— **Top** ····· **Base**

Remarks: None

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**17/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - CBR DATALOGGED - 1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01
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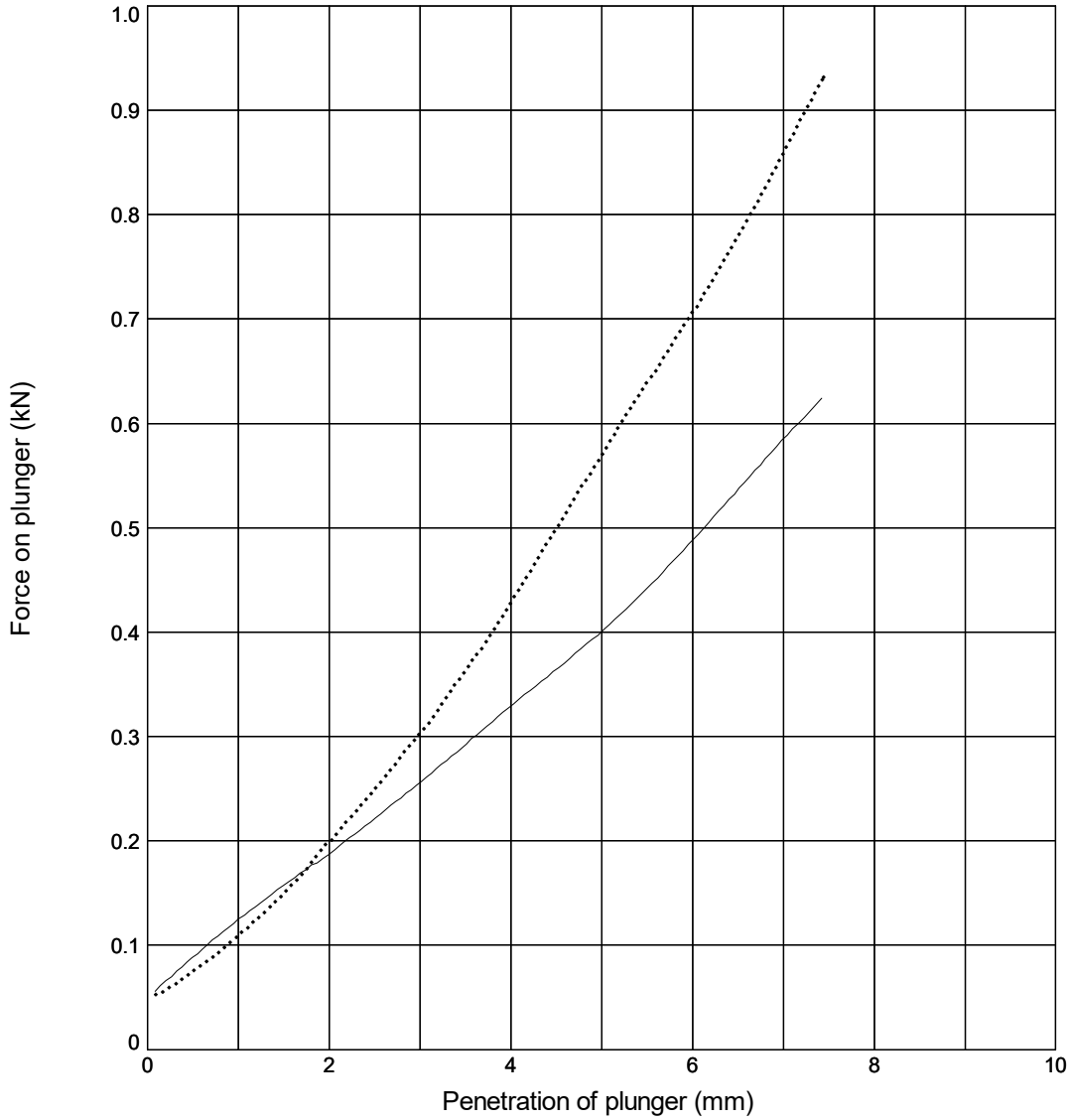
LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP-PTS236** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.30**



Initial Sample Conditions			Test Details			Test Results	Top	Base
Initial Moisture Content (%)	:	**12**	Compaction Type	:	**2.5 kg Dynamic**	Moisture Content (%)	**12**	**12**
Initial Bulk Density (Mg/m^3)	:	**2.16**	Surcharge (kg)	:	**4.0**	CBR Value (%)	**2.0**	**2.9**
Initial Dry Density (Mg/m^3)	:	**1.93**	Soaking Time (hrs)	:	**-**	Correction Applied (mm)	**NA**	**NA**
% Retained on 20mm Sieve	:	**1**	Swelling (mm)	:	**-**	CBR Value (Corrected) (%)	**NA**	**NA**

Sample Description	Key
Reddish brown sandy SILT	——— **Top** ····· **Base**
Remarks: None	

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**17/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - CBR DATALOGGED - 1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01
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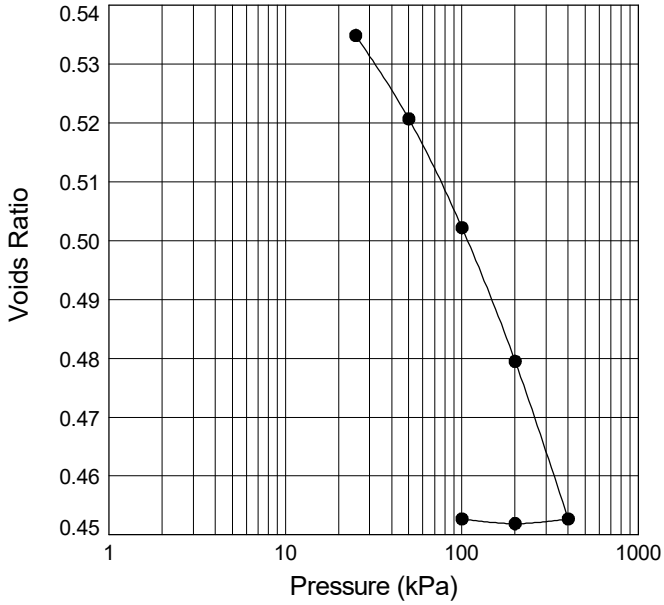
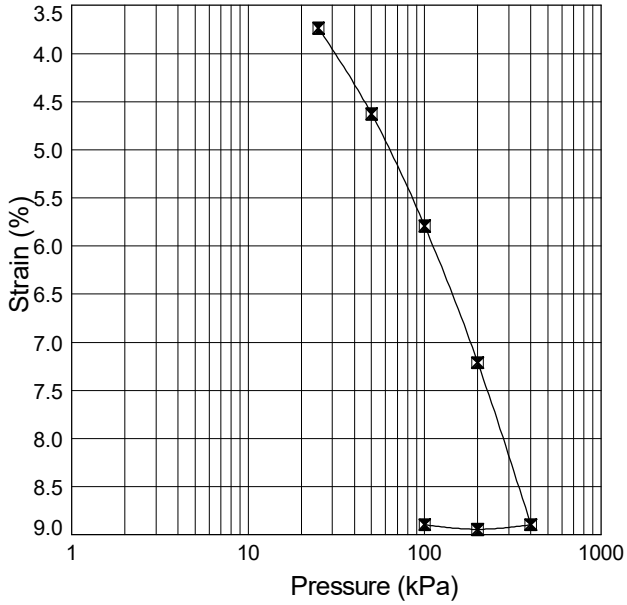
ONE-DIMENSIONAL CONSOLIDATION TEST

In accordance with BS EN ISO 17892 Part 5

Borehole: **BH-PTS102A** Sample Ref: **17** Sample Type: **U** Depth (m): **5.19**

Description : Reddish brown slightly gravelly sandy CLAY





SPECIMEN DETAILS	INITIAL	FINAL
Diameter (mm) :	75.00	75.00
Height (mm) :	19.01	17.32
Assumed Particle Density (Mg/m^3) :	2.65	2.65
Water Content (%) :	23.1	18.6
Wet Density (Mg/m^3) :	2.05	2.16
Dry Density (Mg/m^3) :	1.66	1.82
Voids Ratio :	0.5945	0.4527

TEST DETAILS

Stage	Duration (days)	Pressure (kPa)	Strain (%)	Void Ratio	M_v (m^2/MN)	T_{90} (min)	C_v (m^2/yr)	Comments etc.
Loading	1	0 - 25	3.735	0.5349	1.5	12	3.2	
Loading	1	25 - 50	4.629	0.5207	0.37	7	5.7	
Loading	1	50 - 100	5.792	0.5022	0.24	4.0	9.0	
Loading	1	100 - 200	7.212	0.4795	0.15	3.6	9.7	
Loading	1	200 - 400	8.895	0.4527	0.091	2.1	16	
Unloading	1	400 - 200	8.943	0.4519	NA	NA	NA	
Unloading	1	200 - 100	8.895	0.4527	NA	NA	NA	

Notes: Method of time-setting used (min): **T_{90}**. Average temperature during test (degC): **22.6**.
Frame Correction Applied

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**31/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - 1D CONSOL DL -1- A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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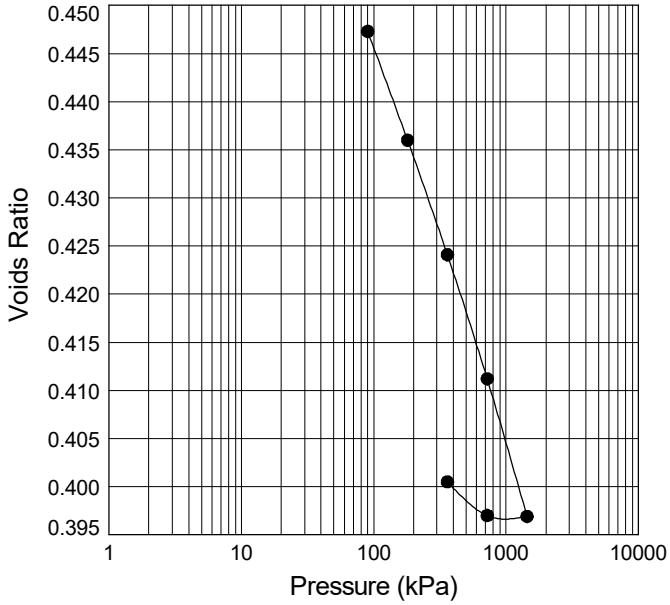
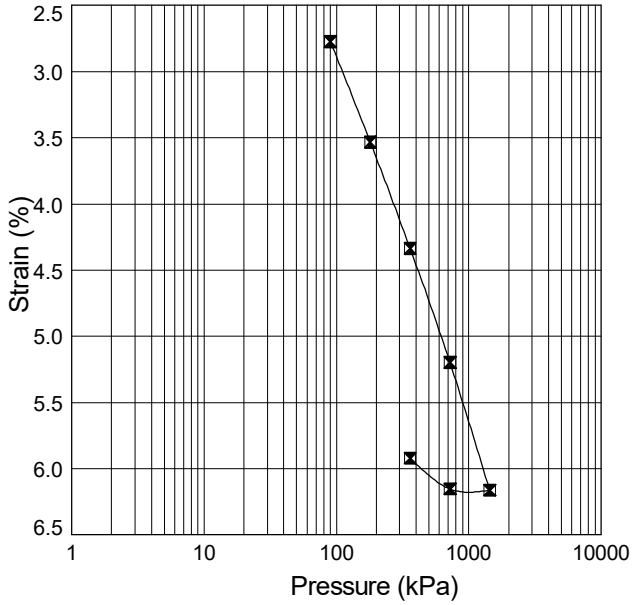
ONE-DIMENSIONAL CONSOLIDATION TEST

In accordance with BS EN ISO 17892 Part 5

Borehole: **BH-PTS108** Sample Ref: **37** Sample Type: **U** Depth (m): **9.08**

Description : Reddish brown clayey SILT





SPECIMEN DETAILS	INITIAL	FINAL
Diameter (mm) :	75.00	75.00
Height (mm) :	20.30	19.10
Assumed Particle Density (Mg/m^3) :	2.65	2.65
Water Content (%) :	19.8	20.2
Wet Density (Mg/m^3) :	2.13	2.27
Dry Density (Mg/m^3) :	1.78	1.89
Voids Ratio :	0.4886	0.4005

TEST DETAILS

Stage	Duration (days)	Pressure (kPa)	Strain (%)	Void Ratio	M_v (m^2/MN)	T_{90} (min)	C_v (m^2/yr)	Comments etc.
Loading	1	0 - 90	2.773	0.4473	0.31	1.3	34	
Loading	0.5	90 - 180	3.532	0.4360	0.087	1.1	39	
Loading	0.5	180 - 360	4.335	0.4241	0.046	0.7	60	
Loading	1	360 - 720	5.197	0.4112	0.025	0.9	46	
Loading	0.5	720 - 1440	6.163	0.3969	0.014	0.9	45	
Unloading	0.5	1440 - 720	6.153	0.3970	NA	NA	NA	
Unloading	1	720 - 360	5.921	0.4005	NA	NA	NA	

Notes: Method of time-setting used (min): **T_{90}**. Average temperature during test (degC): **22.4**.
Frame Correction Applied

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**31/08/23**

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - 1D CONSOL DL -1- A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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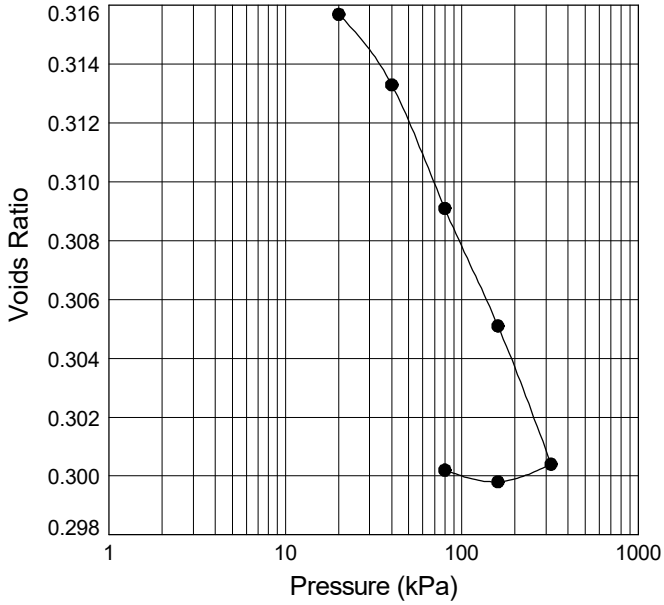
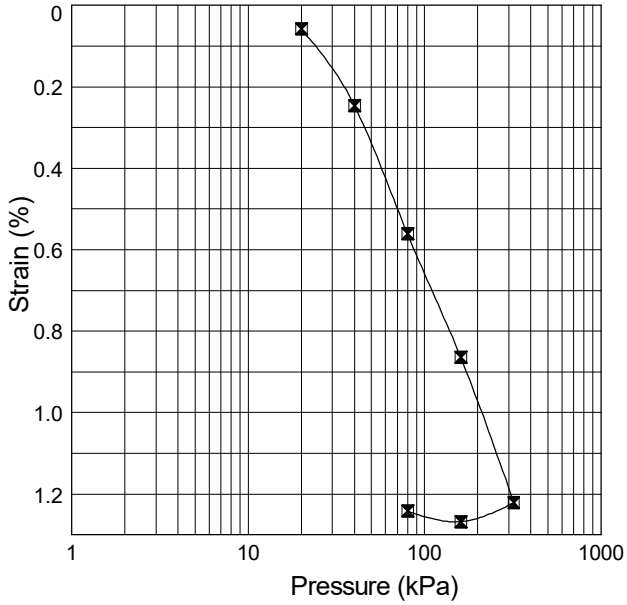
ONE-DIMENSIONAL CONSOLIDATION TEST

In accordance with BS EN ISO 17892 Part 5

Borehole: **BH-PTS127** Sample Ref: **19** Sample Type: **UT** Depth (m): **4.18**

Description : Reddish brown slightly gravelly sandy CLAY





SPECIMEN DETAILS	INITIAL	FINAL
Diameter (mm) :	75.00	75.00
Height (mm) :	19.09	18.85
Assumed Particle Density (Mg/m^3) :	2.65	2.65
Water Content (%) :	10.7	10.7
Wet Density (Mg/m^3) :	2.23	2.26
Dry Density (Mg/m^3) :	2.01	2.04
Voids Ratio :	0.3165	0.3002

TEST DETAILS

Stage	Duration (days)	Pressure (kPa)	Strain (%)	Void Ratio	M_v (m^2/MN)	T_{90} (min)	C_v (m^2/yr)	Comments etc.
Loading	1	0 - 20	0.058	0.3157	0.029	1.4	29	
Loading	1	20 - 40	0.246	0.3133	0.094	2.2	18	
Loading	1	40 - 80	0.561	0.3091	0.079	2.5	16	
Loading	3	80 - 160	0.864	0.3051	0.038	2.2	18	
Loading	1	160 - 320	1.221	0.3004	0.022	1.6	25	
Unloading	1	320 - 160	1.268	0.2998	NA	NA	NA	
Unloading	1	160 - 80	1.242	0.3002	NA	NA	NA	

Notes: Method of time-setting used (min): **T_{90}**. Average temperature during test (degC): **22.7**.
Frame Correction Applied

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	DARIA IGNACZAK	31/08/23

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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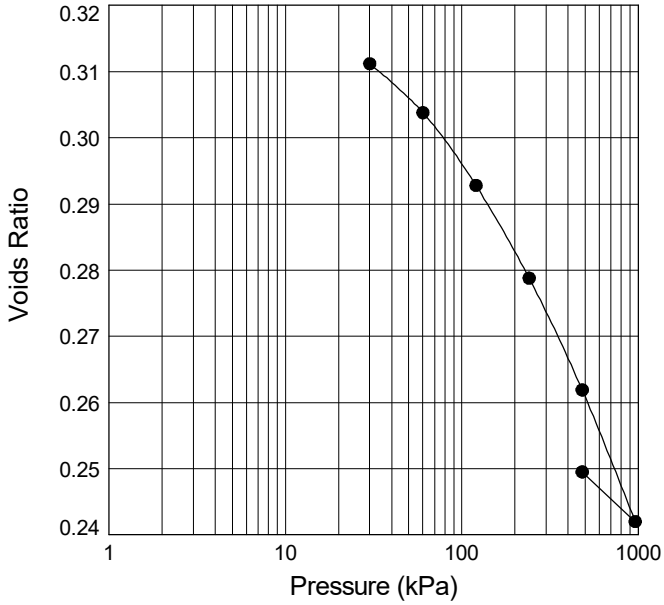
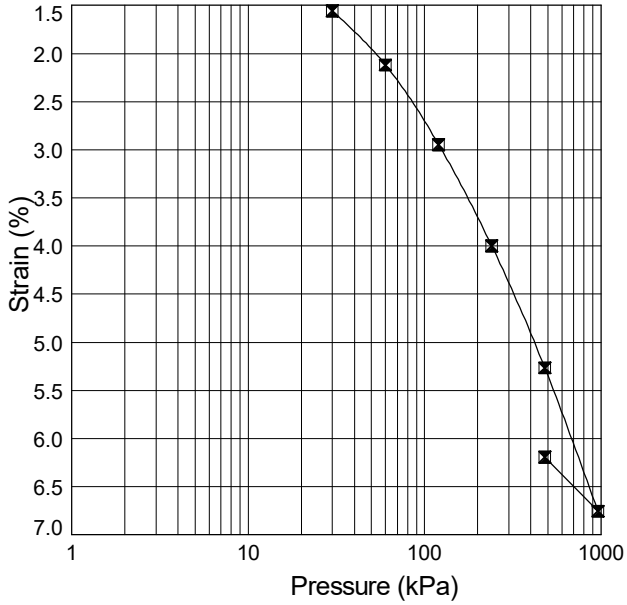
ONE-DIMENSIONAL CONSOLIDATION TEST

In accordance with BS EN ISO 17892 Part 5

Position ID: **GS-PTS102** Sample Ref: **305** Sample Type: **UT** Depth (m): **3.28**

Description : Reddish brown slightly gravelly sandy silty CLAY





SPECIMEN DETAILS	INITIAL	FINAL
Diameter (mm) :	75.00	75.00
Height (mm) :	20.34	19.08
Assumed Particle Density (Mg/m^3) :	2.65	2.65
Water Content (%) :	12.1	10.8
Wet Density (Mg/m^3) :	2.23	2.35
Dry Density (Mg/m^3) :	1.99	2.12
Voids Ratio :	0.3320	0.2495

TEST DETAILS

Stage	Duration (days)	Pressure (kPa)	Strain (%)	Void Ratio	M_v (m^2/MN)	T_{90} (min)	C_v (m^2/yr)	Comments etc.
Loading	1	0 - 30	1.559	0.3112	0.52	16	2.8	
Loading	1	30 - 60	2.119	0.3038	0.19	19	2.3	
Loading	1	60 - 120	2.945	0.2928	0.14	20	2.2	
Loading	1	120 - 240	3.997	0.2788	0.090	21	2.1	
Loading	1	240 - 480	5.266	0.2619	0.055	10	4.3	
Loading	1	480 - 960	6.755	0.2420	0.033	8	5.3	
Unloading	1	960 - 480	6.195	0.2495	NA	NA	NA	

Notes: Method of time-setting used (min): **T_{90}**. Average temperature during test (degC): **22.2**.
Frame Correction Applied

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	FRANCESCA BENNETT	31/08/23

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

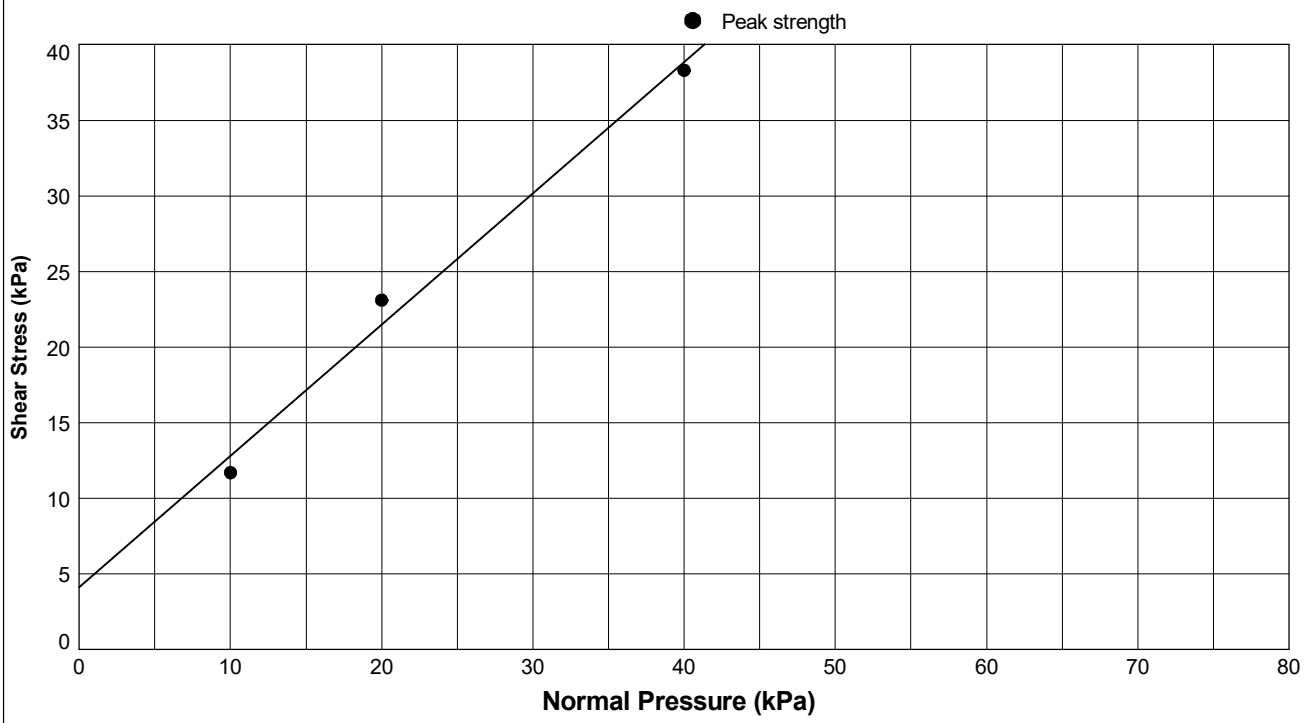
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS101** Sample Ref: **12** Sample Type: **UT** Depth (m): **1.20**

Description: **Brown slightly sandy slightly clayey silty GRAVEL** Start Date: **10/05/2023**

Sample Condition: **Recompacted** End Date: **11/05/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**14.9**	**14.9**	**14.9**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.1**	**19.1**	**19.1**
	Initial Bulk Density	(Mg/m^3)	**2.08**	**2.08**	**2.08**
	Initial Dry Density	(Mg/m^3)	**1.81**	**1.81**	**1.81**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.4631**	**0.4627**	**0.4629**
	Initial Degree of Saturation	(%)	**85**	**85**	**85**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**2**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**18.8**	**18.6**	**18.5**
SHEAR	Shearing Rate	(mm/min)	**0.0171**	**0.0254**	**0.0290**
	Horiz. Displacement at Peak Shear Stress	(mm)	**2.0**	**1.8**	**2.4**
	Peak Shear Stress	(kPa)	**12**	**23**	**38**
PEAK STRENGTH	Effective Cohesion (C ') **4**	(kPa)	Effective Angle of Friction (ϕ ') **41**		(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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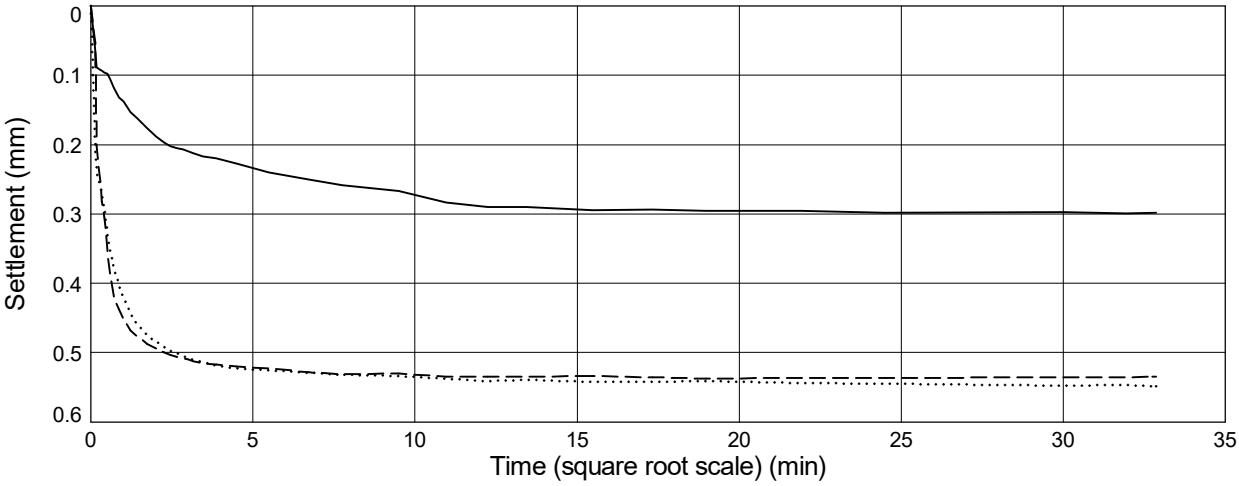
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

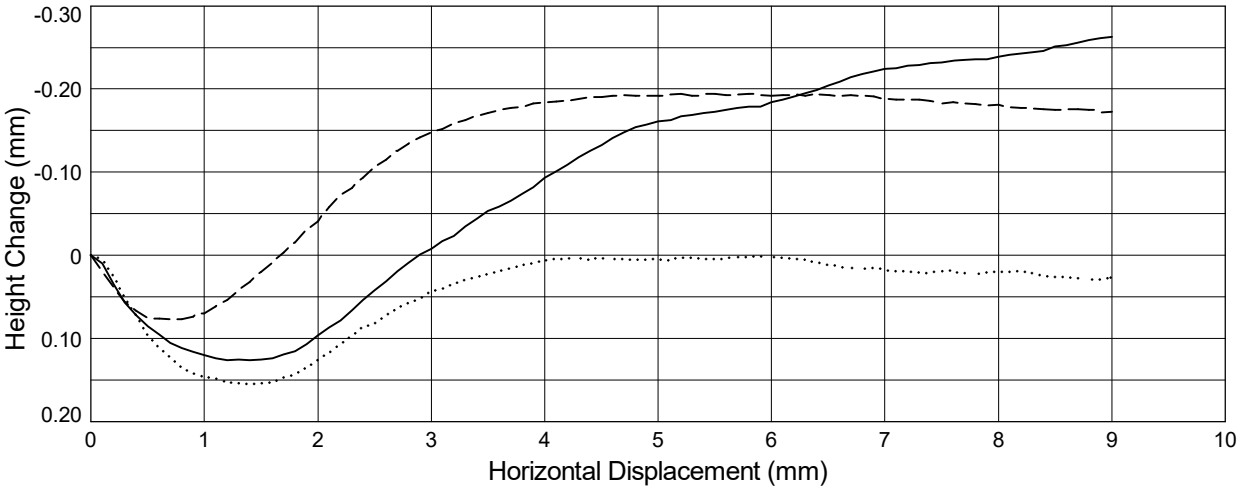
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS101** Sample Ref: **12** Sample Type: **UT** Depth (m): **1.20**

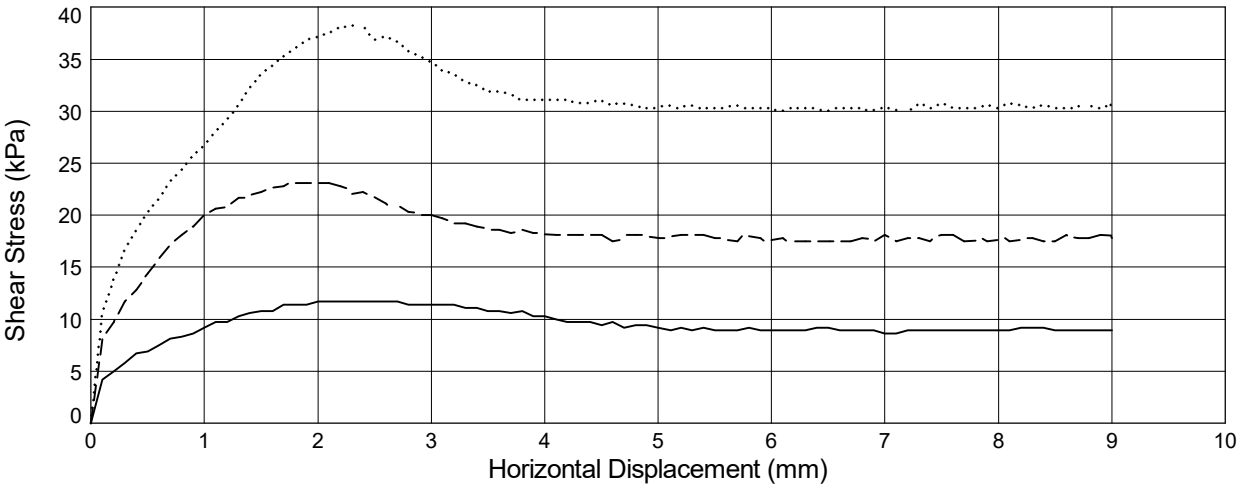
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

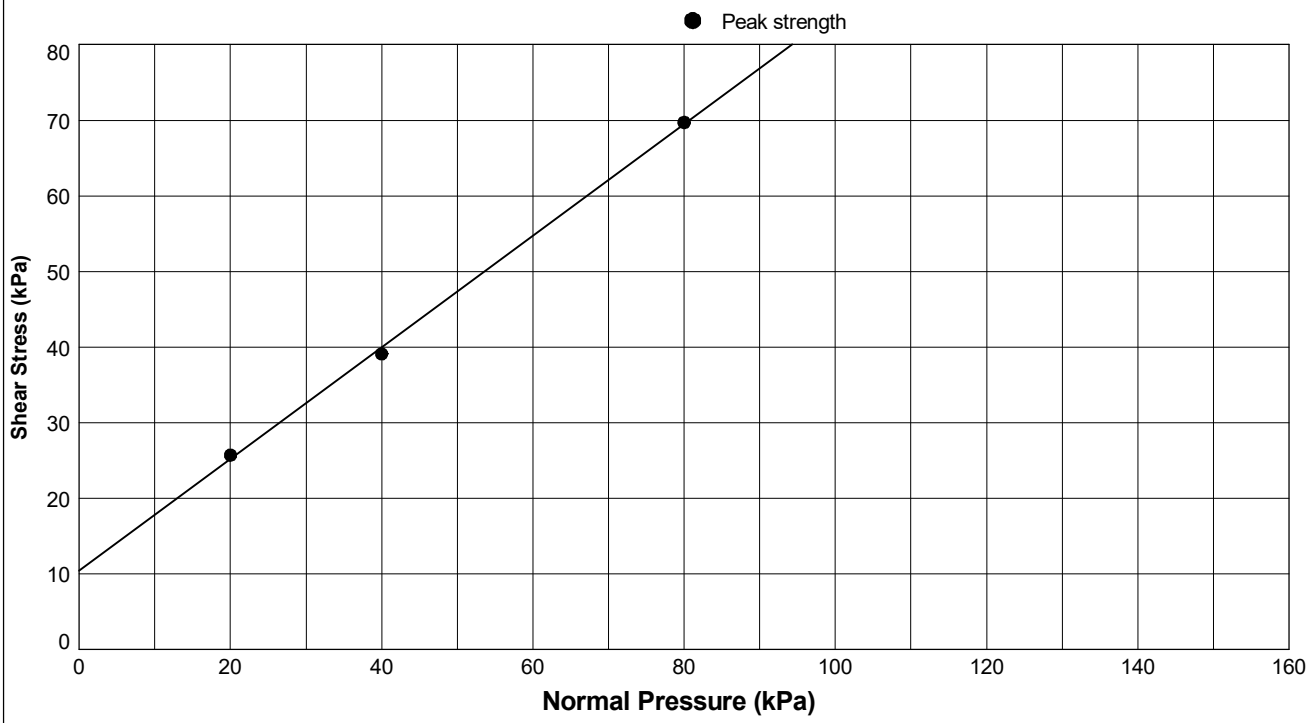
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS101** Sample Ref: **19** Sample Type: **UT** Depth (m): **2.00**

Description: **Brown sandy silty GRAVEL** Start Date: **11/05/2023**

Sample Condition: **Recompacted** End Date: **13/05/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**20.7**	**20.7**	**20.7**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.2**	**19.2**	**19.2**
	Initial Bulk Density	(Mg/m^3)	**2.10**	**2.10**	**2.10**
	Initial Dry Density	(Mg/m^3)	**1.74**	**1.74**	**1.74**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.5226**	**0.5229**	**0.5227**
	Initial Degree of Saturation	(%)	**105**	**105**	**105**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**3**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**20**	**40**	**80**
	Consolidated Height	(mm)	**18.1**	**17.7**	**17.3**
SHEAR	Shearing Rate	(mm/min)	**0.0133**	**0.0165**	**0.0214**
	Horiz. Displacement at Peak Shear Stress	(mm)	**3.5**	**3.7**	**3.7**
	Peak Shear Stress	(kPa)	**26**	**39**	**70**
PEAK STRENGTH	Effective Cohesion (C ') **10**	(kPa)	Effective Angle of Friction (ϕ ') **36.5**		(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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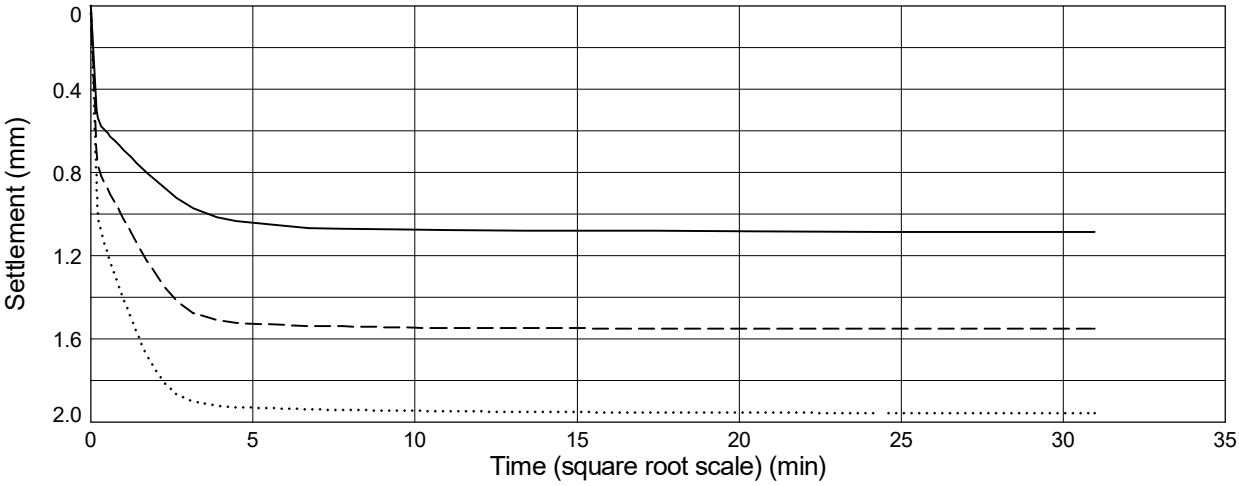
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

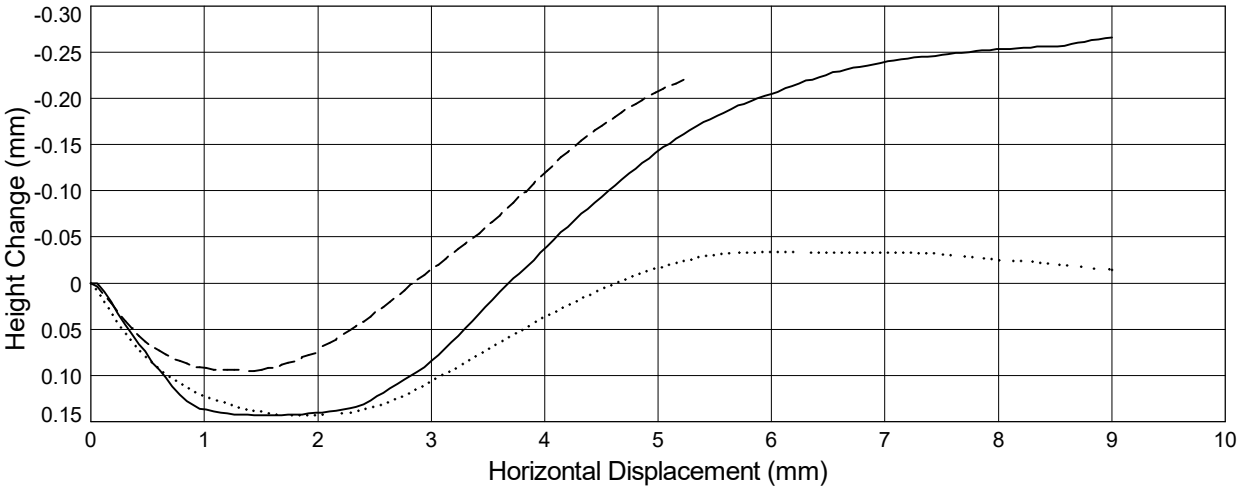
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS101** Sample Ref: **19** Sample Type: **UT** Depth (m): **2.00**

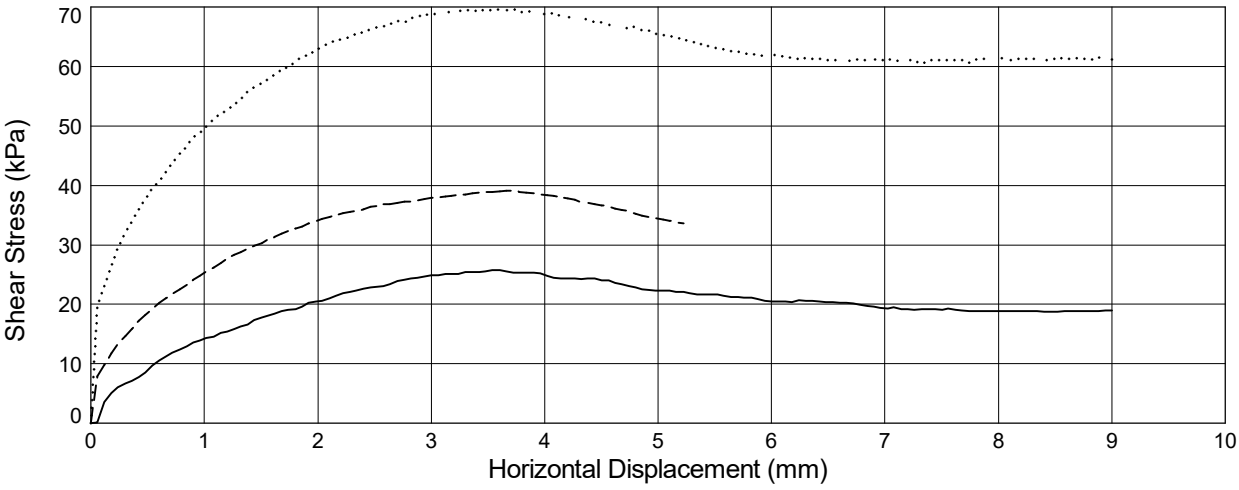
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**20** kPa) *Dashed Line* = Specimen 2 (**40** kPa) *Dotted Line* = Specimen 3 (**80** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

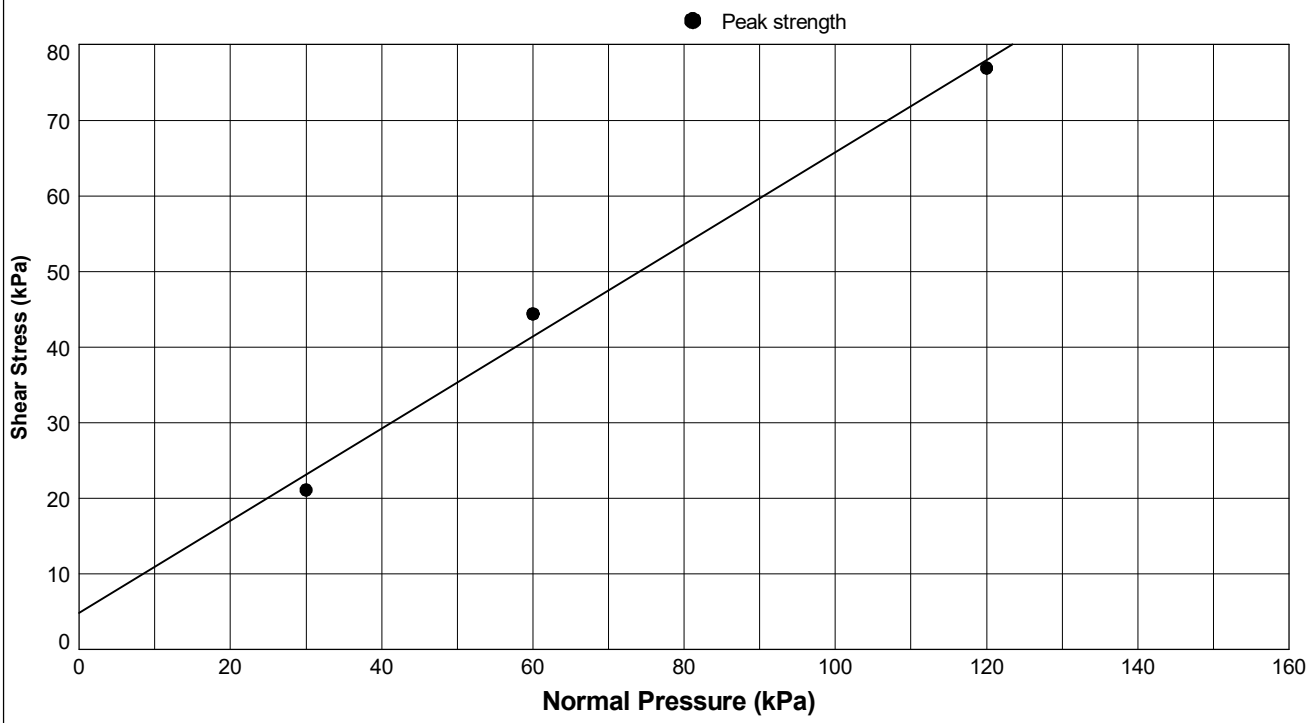
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS108** Sample Ref: **15** Sample Type: **B** Depth (m): **3.00**

Description: **Reddish brown gravelly clayey SAND** Start Date: **30/06/2023**

Sample Condition: **Recompacted** End Date: **04/07/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**15.9**	**15.9**	**15.9**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.2**	**19.2**	**19.2**
	Initial Bulk Density	(Mg/m^3)	**2.12**	**2.12**	**2.12**
	Initial Dry Density	(Mg/m^3)	**1.83**	**1.83**	**1.83**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.4488**	**0.4492**	**0.4486**
	Initial Degree of Saturation	(%)	**94**	**94**	**94**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**3**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**30**	**60**	**120**
	Consolidated Height	(mm)	**18.3**	**17.8**	**17.3**
SHEAR	Shearing Rate	(mm/min)	**0.0104**	**0.0128**	**0.0201**
	Horiz. Displacement at Peak Shear Stress	(mm)	**4.2**	**4.9**	**5.1**
	Peak Shear Stress	(kPa)	**21**	**44**	**77**
PEAK STRENGTH	Effective Cohesion (C ') **5**	(kPa)	Effective Angle of Friction (ϕ ')	**31.5**	(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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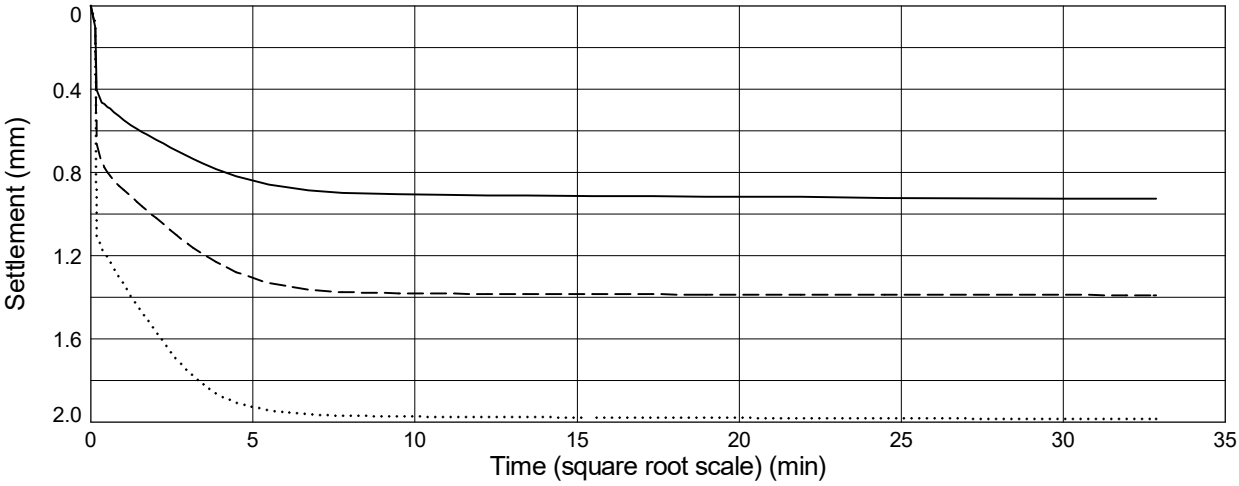
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

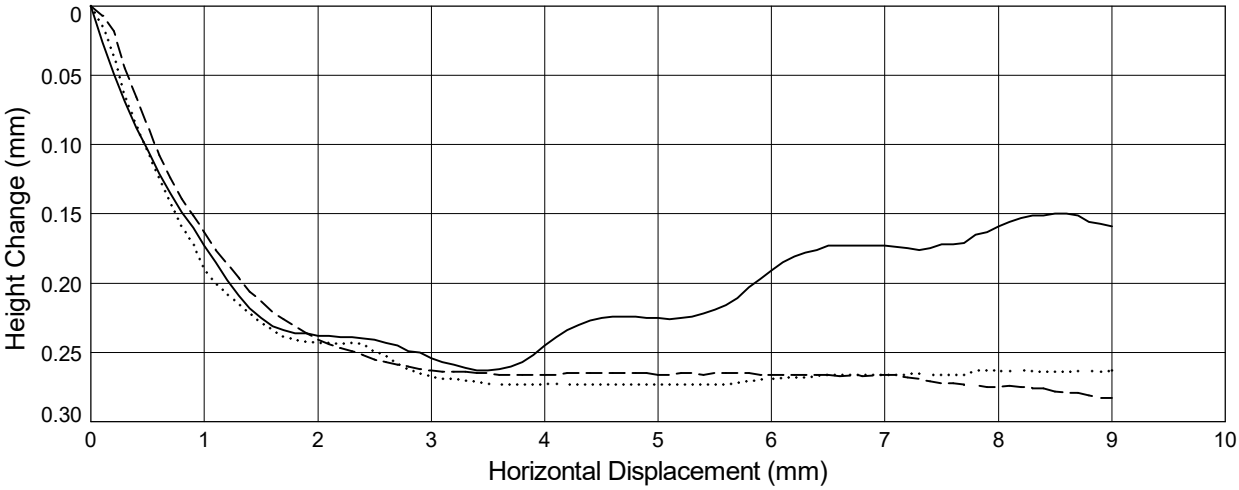
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS108** Sample Ref: **15** Sample Type: **B** Depth (m): **3.00**

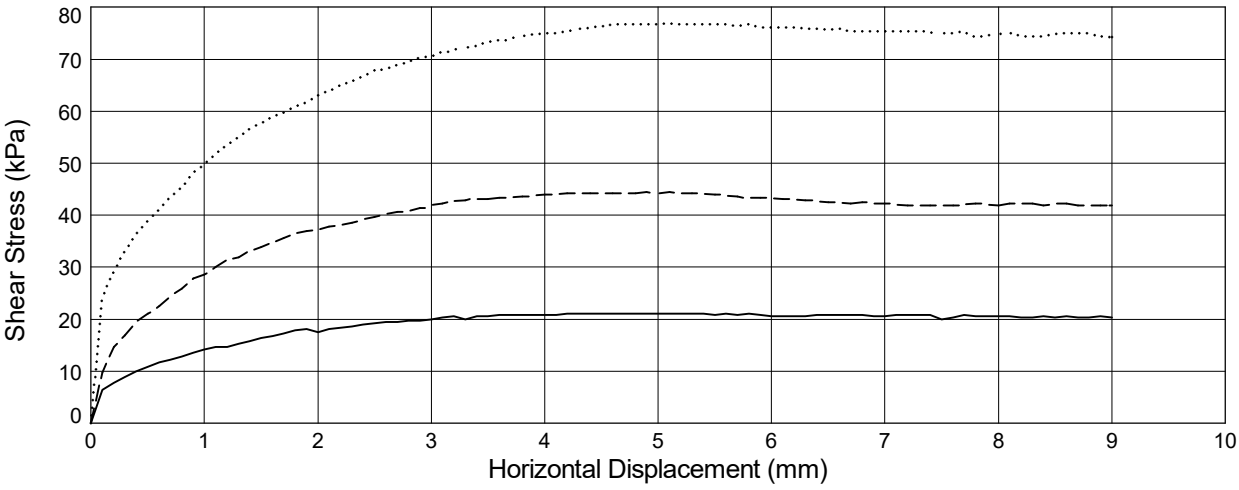
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**30** kPa) *Dashed Line* = Specimen 2 (**60** kPa) *Dotted Line* = Specimen 3 (**120** kPa)

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Daria Ignaczak	**DARIA IGNACZAK**	**27/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P2,1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

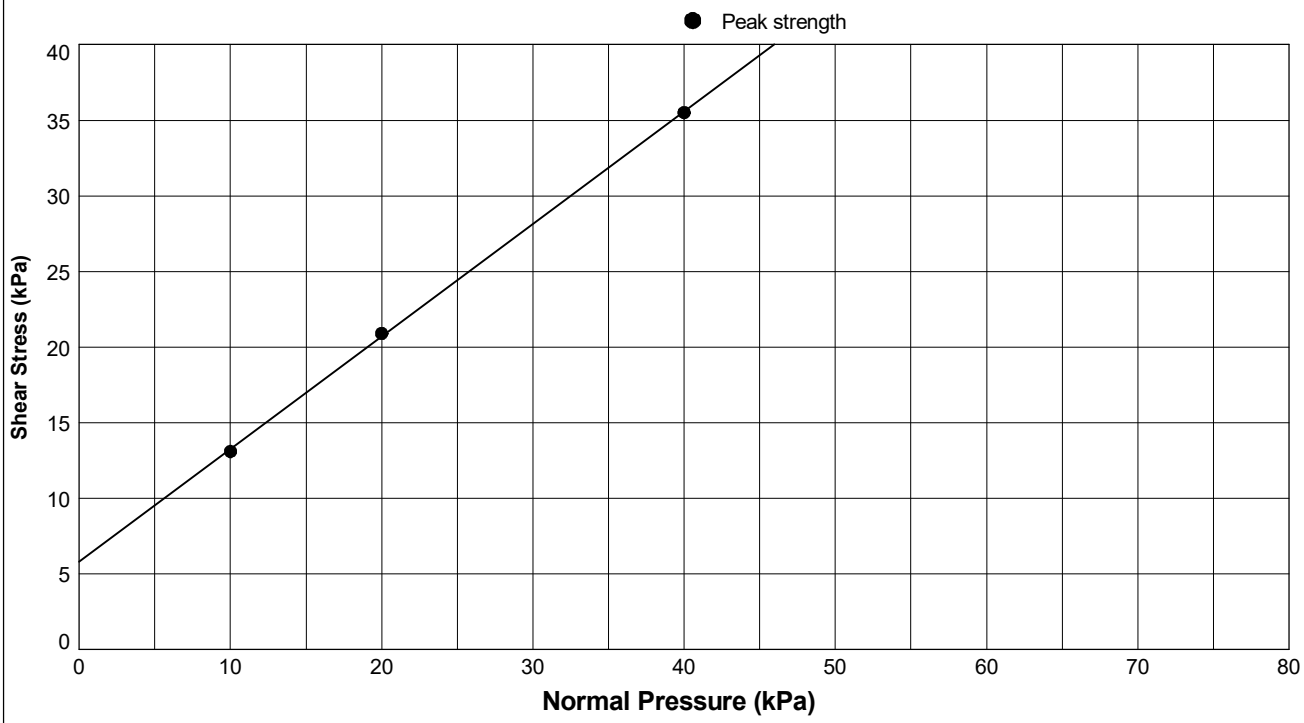
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS114** Sample Ref: **5** Sample Type: **B** Depth (m): **1.00**

Description: **Reddish brown gravelly clayey SAND** Start Date: **12/06/2023**

Sample Condition: **Recompacted** End Date: **15/06/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**11.3**	**11.3**	**11.3**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.2**	**19.2**	**19.2**
	Initial Bulk Density	(Mg/m^3)	**1.96**	**1.96**	**1.96**
	Initial Dry Density	(Mg/m^3)	**1.76**	**1.76**	**1.76**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.5040**	**0.5055**	**0.5048**
	Initial Degree of Saturation	(%)	**59**	**59**	**59**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**3**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**19.0**	**18.8**	**18.4**
SHEAR	Shearing Rate	(mm/min)	**0.0075**	**0.0075**	**0.0073**
	Horiz. Displacement at Peak Shear Stress	(mm)	**8.8**	**1.6**	**1.5**
	Peak Shear Stress	(kPa)	**13**	**21**	**36**
PEAK STRENGTH	Effective Cohesion (C ') **6**	(kPa)	Effective Angle of Friction (ϕ ') **36.5**		(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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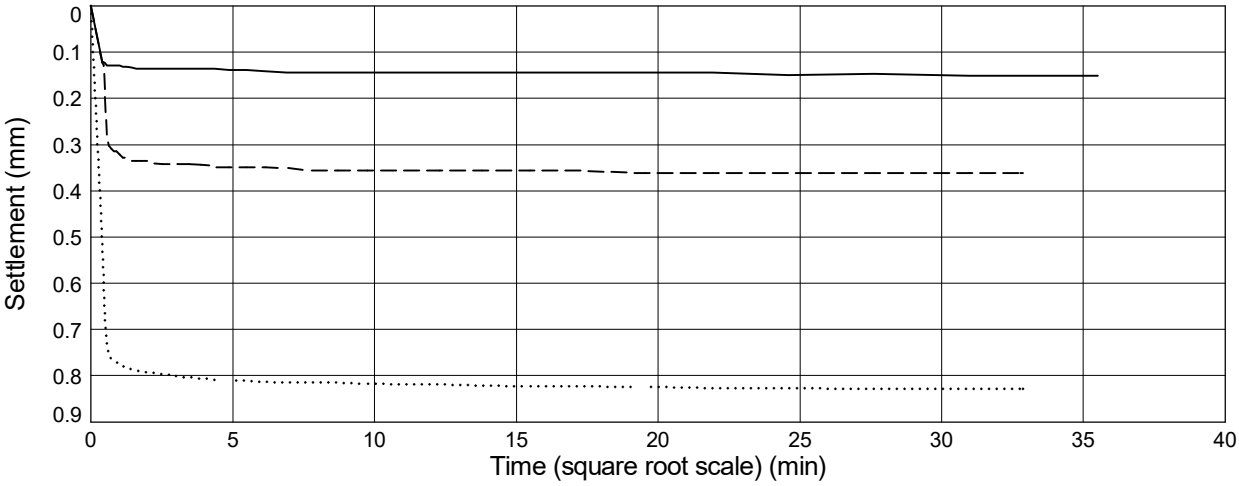
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

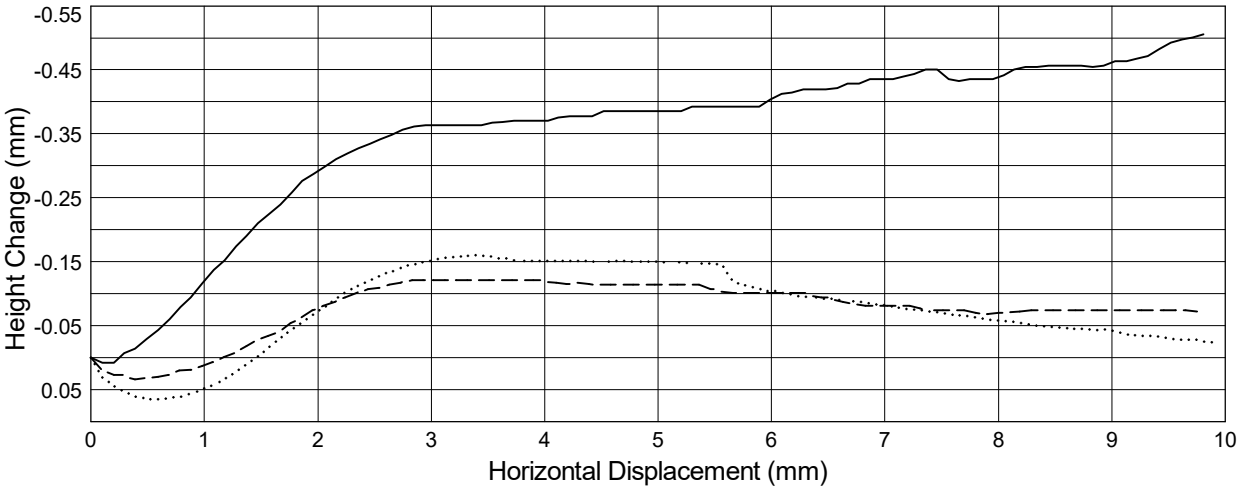
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS114** Sample Ref: **5** Sample Type: **B** Depth (m): **1.00**

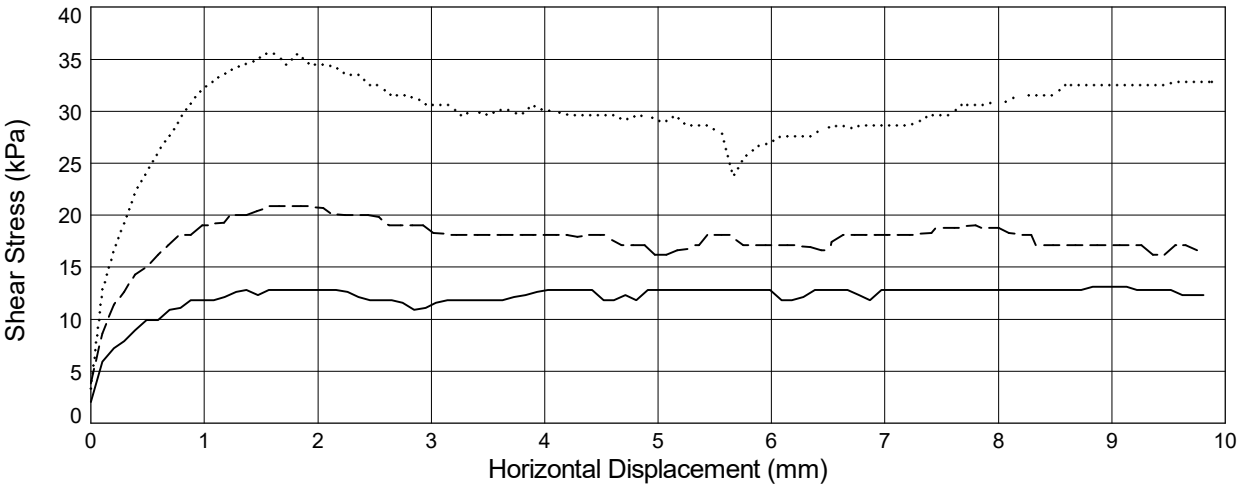
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Daria Ignaczak	**DARIA IGNACZAK**	**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

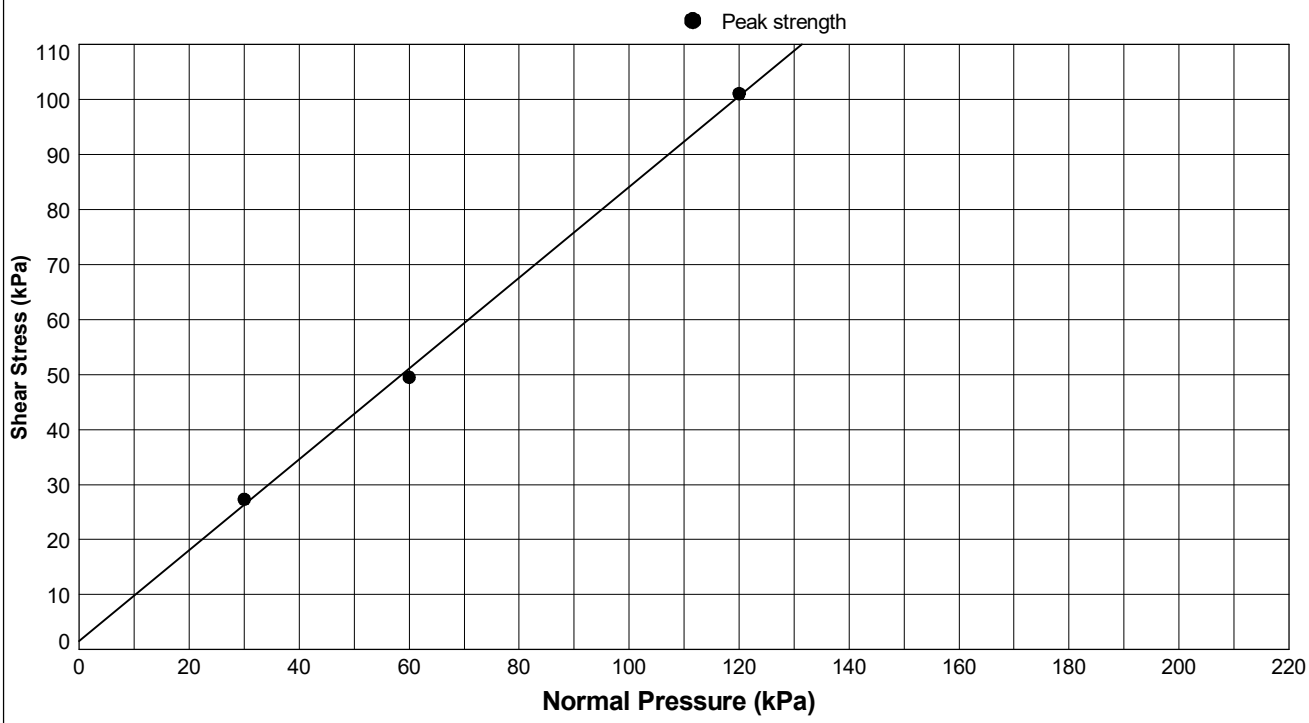
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS114** Sample Ref: **16** Sample Type: **B** Depth (m): **3.00**

Description: **Reddish brown gravelly slightly silty SAND** Start Date: **12/06/2023**

Sample Condition: **Recompacted** End Date: **13/06/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**11.5**	**11.5**	**11.5**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.2**	**19.2**	**19.2**
	Initial Bulk Density	(Mg/m^3)	**1.81**	**1.82**	**1.82**
	Initial Dry Density	(Mg/m^3)	**1.63**	**1.63**	**1.63**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.6297**	**0.6271**	**0.6272**
	Initial Degree of Saturation	(%)	**48**	**48**	**48**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**2**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**30**	**60**	**120**
	Consolidated Height	(mm)	**18.8**	**18.2**	**18.2**
SHEAR	Shearing Rate	(mm/min)	**0.0960**	**0.0830**	**0.0700**
	Horiz. Displacement at Peak Shear Stress	(mm)	**1.6**	**2.0**	**3.2**
	Peak Shear Stress	(kPa)	**27**	**50**	**101**
PEAK STRENGTH	Effective Cohesion (C ') **1**	(kPa)	Effective Angle of Friction (ϕ ')	**39.5**	(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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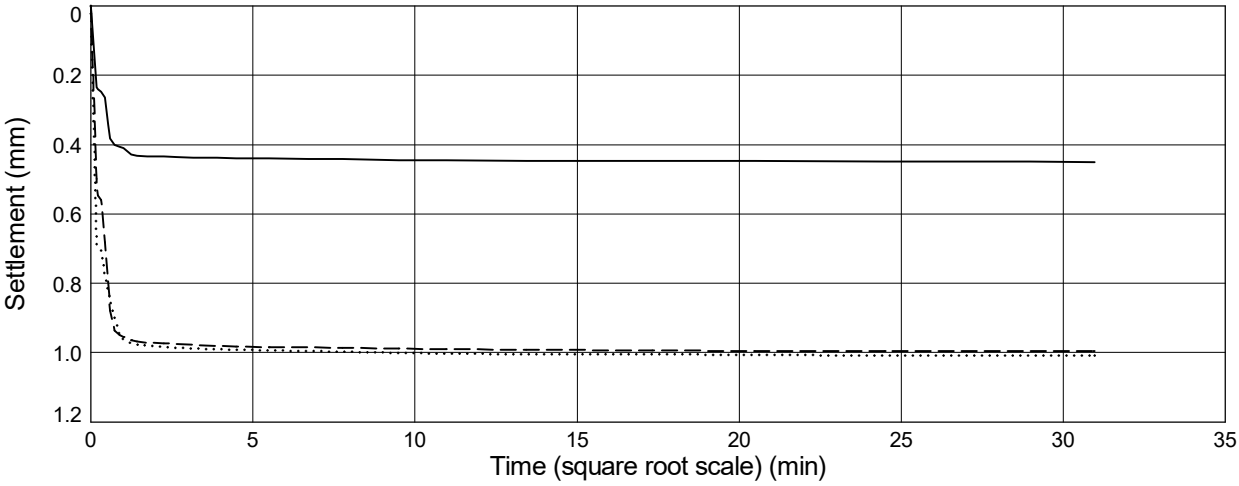
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

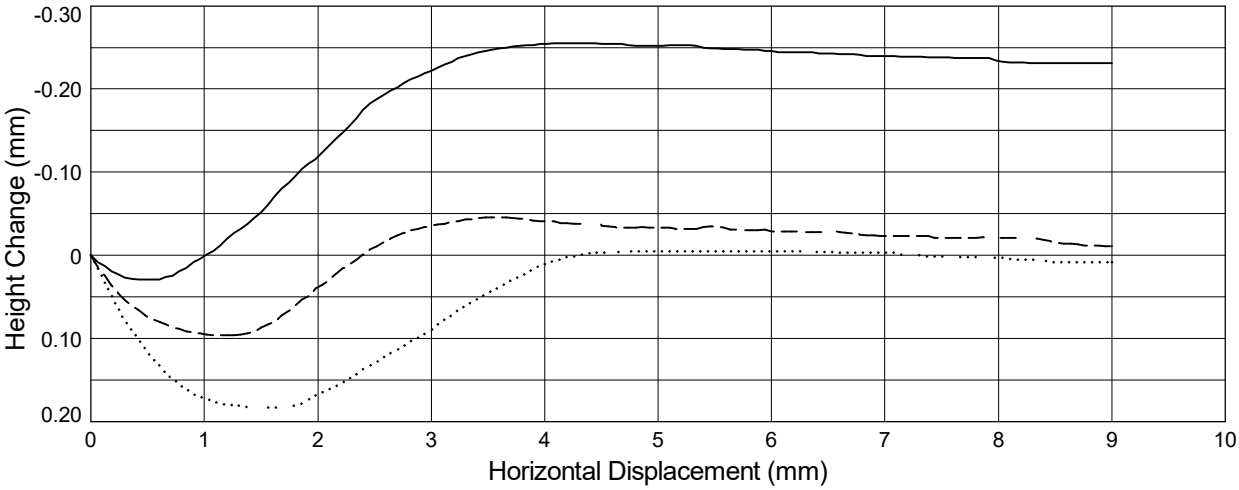
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS114** Sample Ref: **16** Sample Type: **B** Depth (m): **3.00**

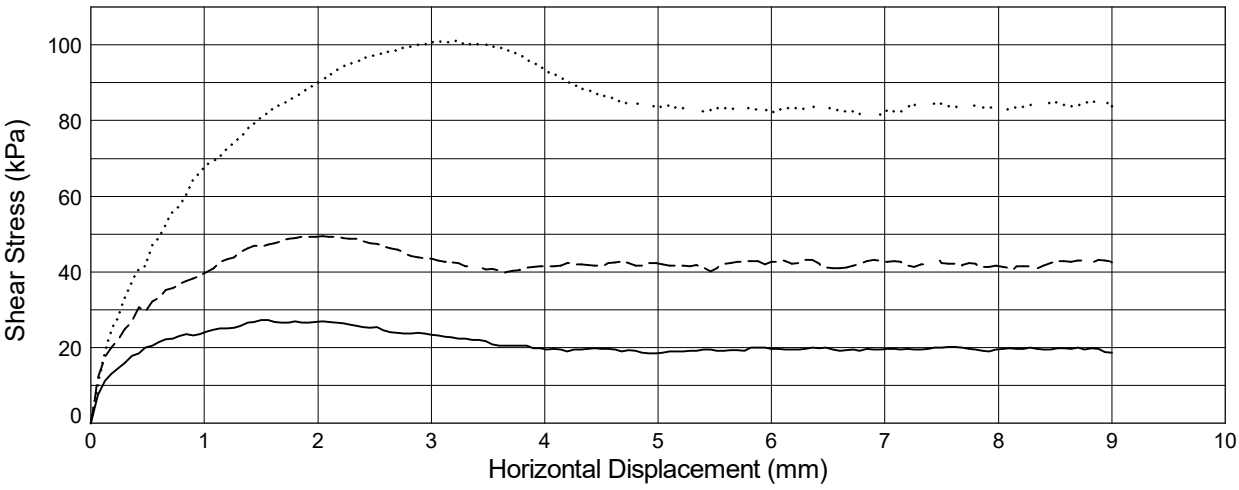
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**30** kPa) *Dashed Line* = Specimen 2 (**60** kPa) *Dotted Line* = Specimen 3 (**120** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

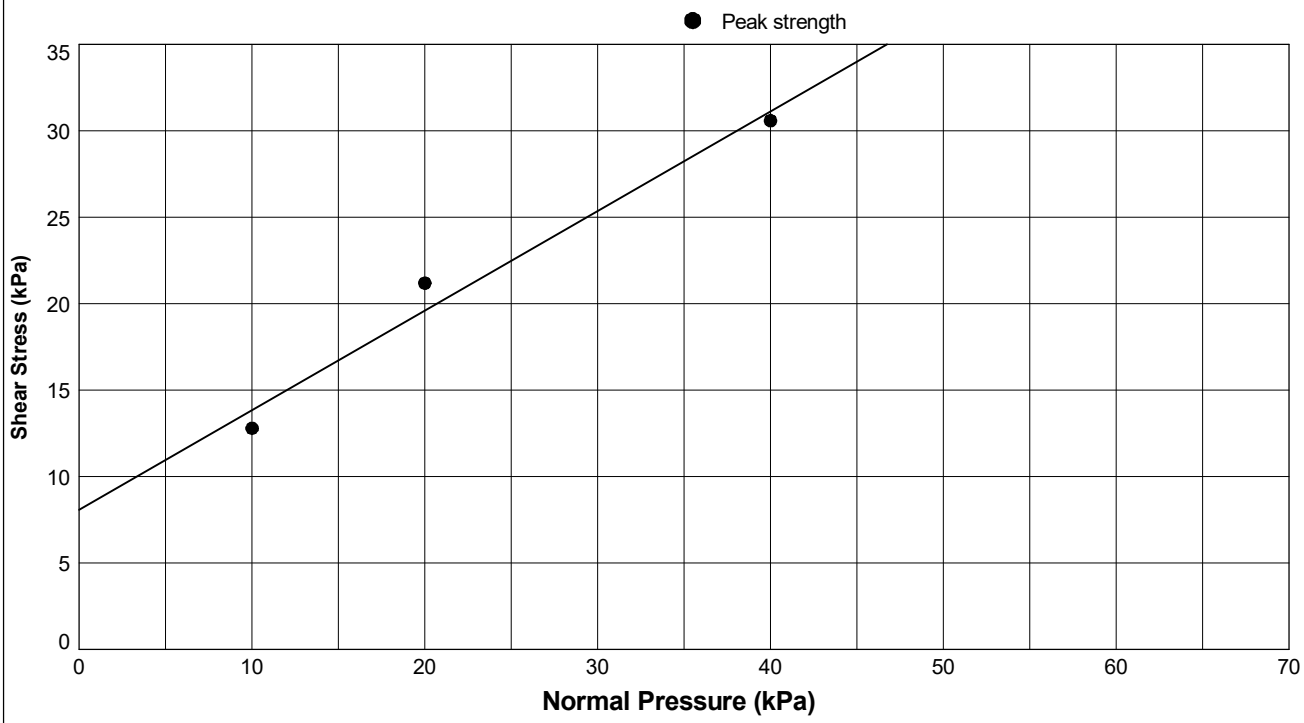
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS115** Sample Ref: **6** Sample Type: **B** Depth (m): **1.00**

Description: **Brown very gravelly silty SAND with medium cobble content** Start Date: **12/05/2023**

Sample Condition: **Recompacted** End Date: **14/05/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**13.6**	**13.6**	**13.6**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.2**	**19.2**	**19.2**
	Initial Bulk Density	(Mg/m^3)	**1.97**	**1.97**	**1.97**
	Initial Dry Density	(Mg/m^3)	**1.73**	**1.73**	**1.73**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.5291**	**0.5298**	**0.5291**
	Initial Degree of Saturation	(%)	**68**	**68**	**68**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**3**	**3**	**3**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**18.9**	**18.9**	**18.6**
SHEAR	Shearing Rate	(mm/min)	**0.0074**	**0.0074**	**0.0074**
	Horiz. Displacement at Peak Shear Stress	(mm)	**1.5**	**1.9**	**1.6**
	Peak Shear Stress	(kPa)	**13**	**21**	**31**
PEAK STRENGTH	Effective Cohesion (C ') **8**	(kPa)	Effective Angle of Friction (ϕ ') **30**		(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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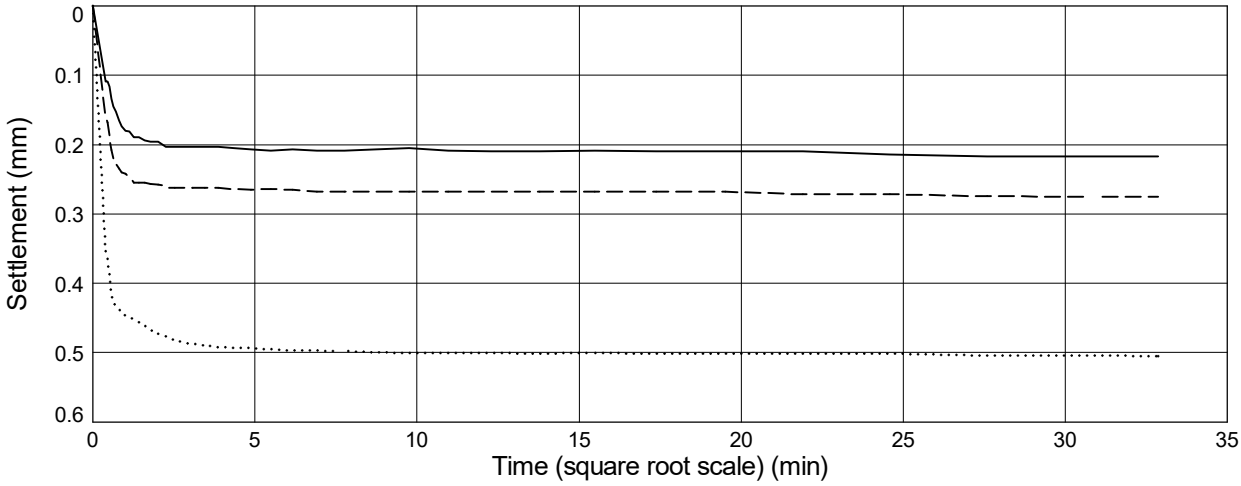
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

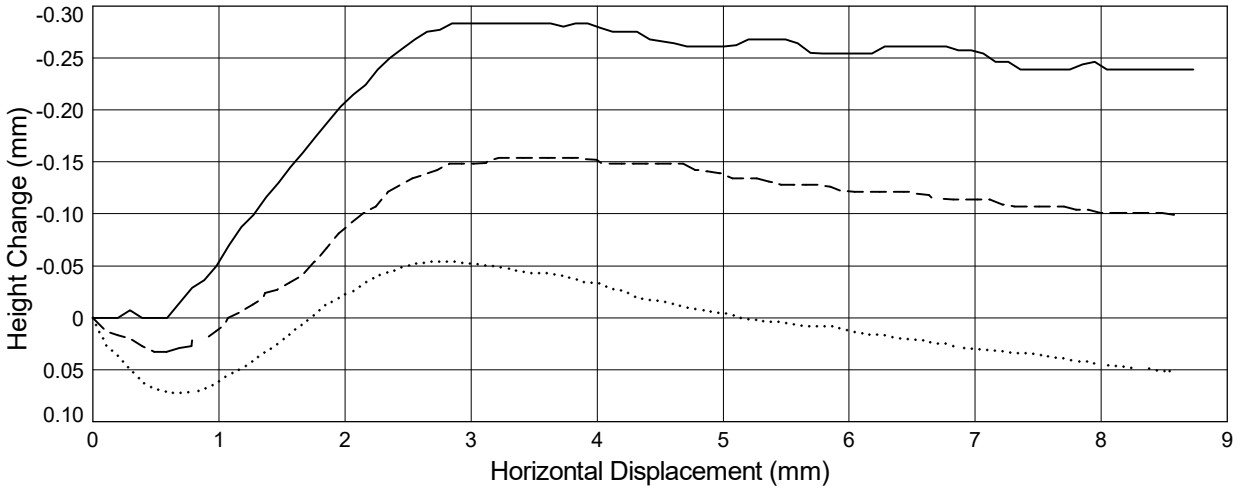
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS115** Sample Ref: **6** Sample Type: **B** Depth (m): **1.00**

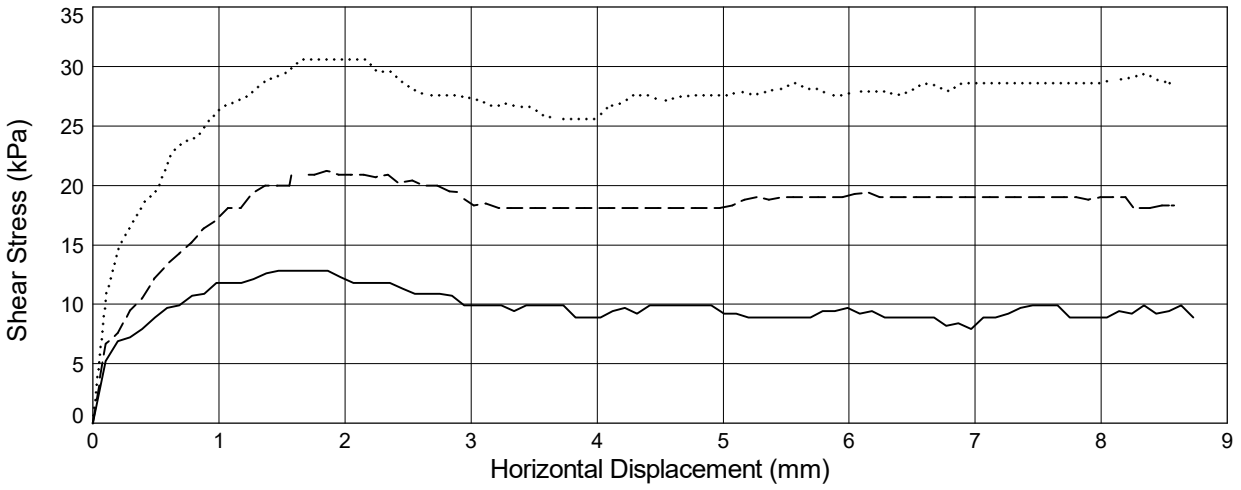
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**01/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

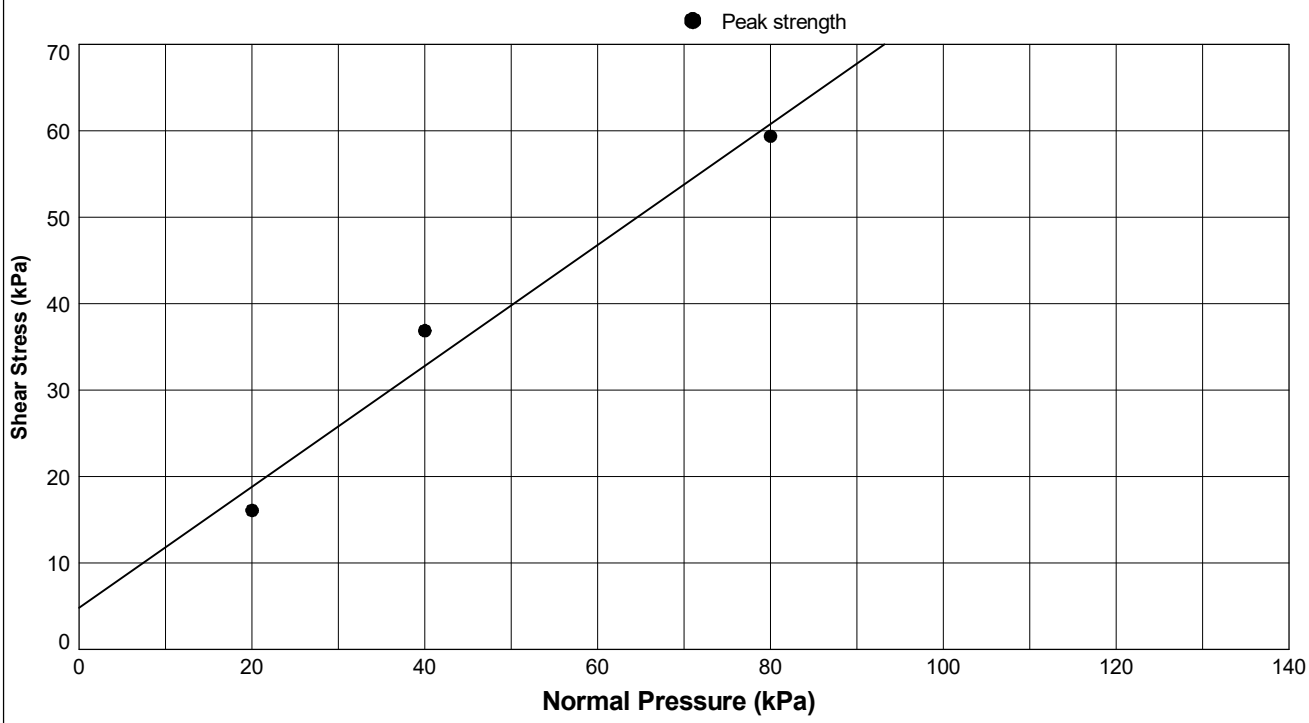
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS115** Sample Ref: **13** Sample Type: **B** Depth (m): **2.00**

Description: **Brown gravelly slightly silty SAND** Start Date: **12/05/2023**

Sample Condition: **Recompacted** End Date: **13/05/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**16.1**	**16.1**	**16.1**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.2**	**19.2**	**19.2**
	Initial Bulk Density	(Mg/m^3)	**1.87**	**1.87**	**1.87**
	Initial Dry Density	(Mg/m^3)	**1.61**	**1.61**	**1.61**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.6454**	**0.6461**	**0.6449**
	Initial Degree of Saturation	(%)	**66**	**66**	**66**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**2**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**20**	**40**	**80**
	Consolidated Height	(mm)	**18.8**	**19.0**	**18.9**
SHEAR	Shearing Rate	(mm/min)	**0.0158**	**0.0192**	**0.0214**
	Horiz. Displacement at Peak Shear Stress	(mm)	**3.2**	**2.2**	**3.3**
	Peak Shear Stress	(kPa)	**16**	**37**	**59**
PEAK STRENGTH	Effective Cohesion (C ') **5**	(kPa)	Effective Angle of Friction (ϕ ')	**35**	(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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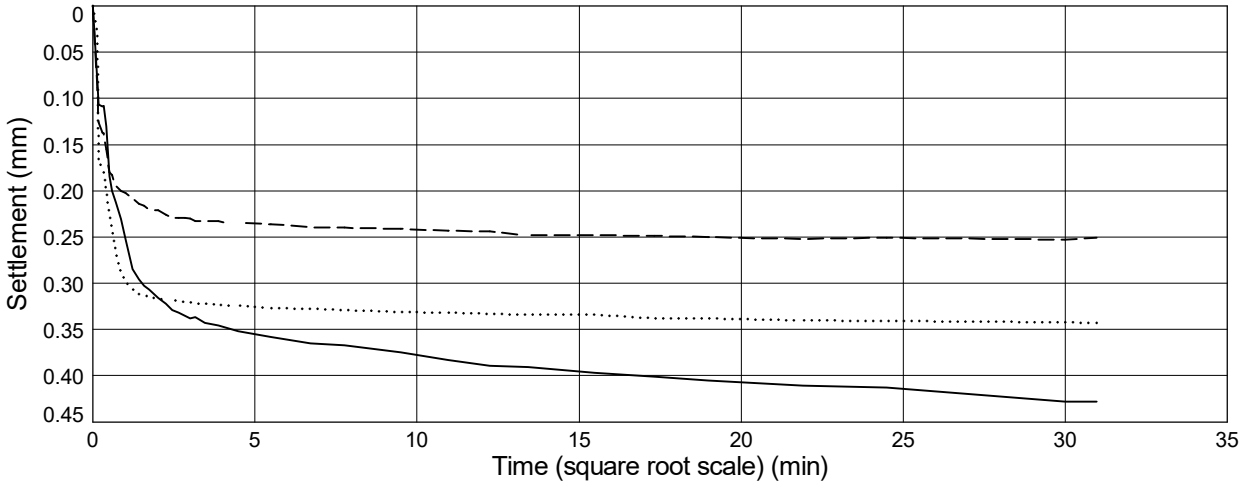
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

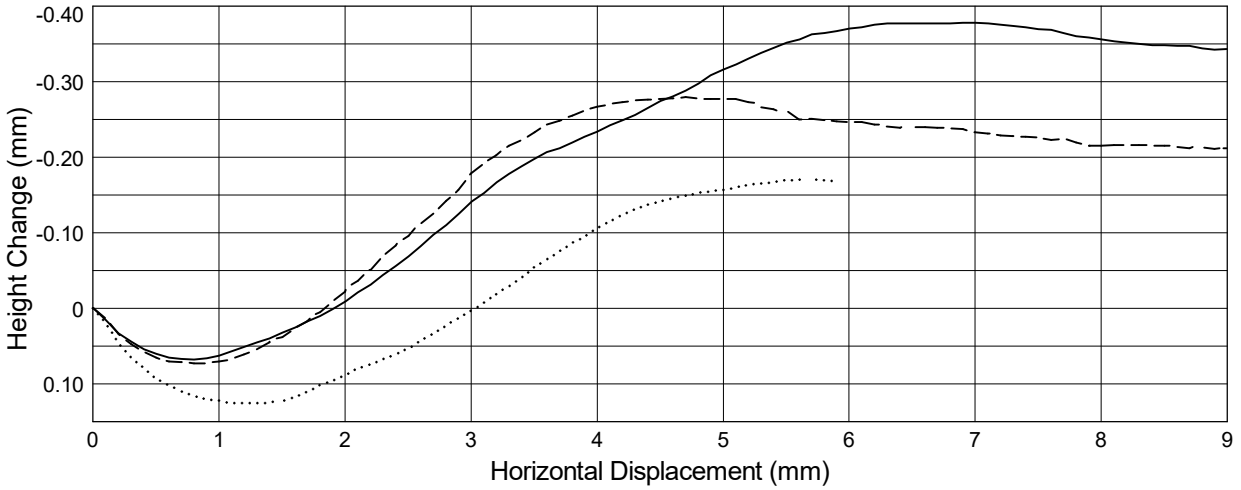
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS115** Sample Ref: **13** Sample Type: **B** Depth (m): **2.00**

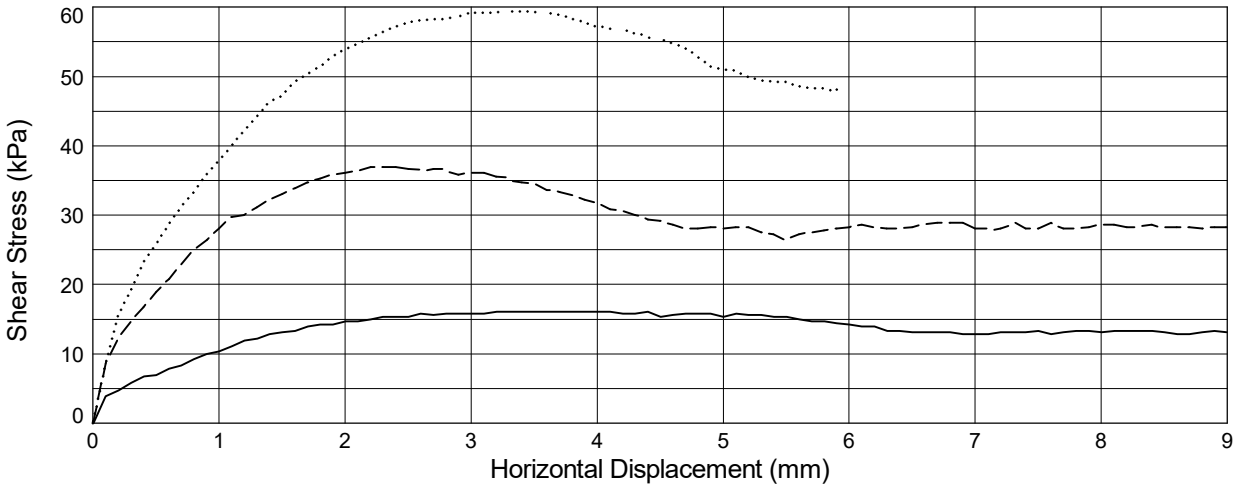
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**20** kPa) *Dashed Line* = Specimen 2 (**40** kPa) *Dotted Line* = Specimen 3 (**80** kPa)

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**01/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P2.1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

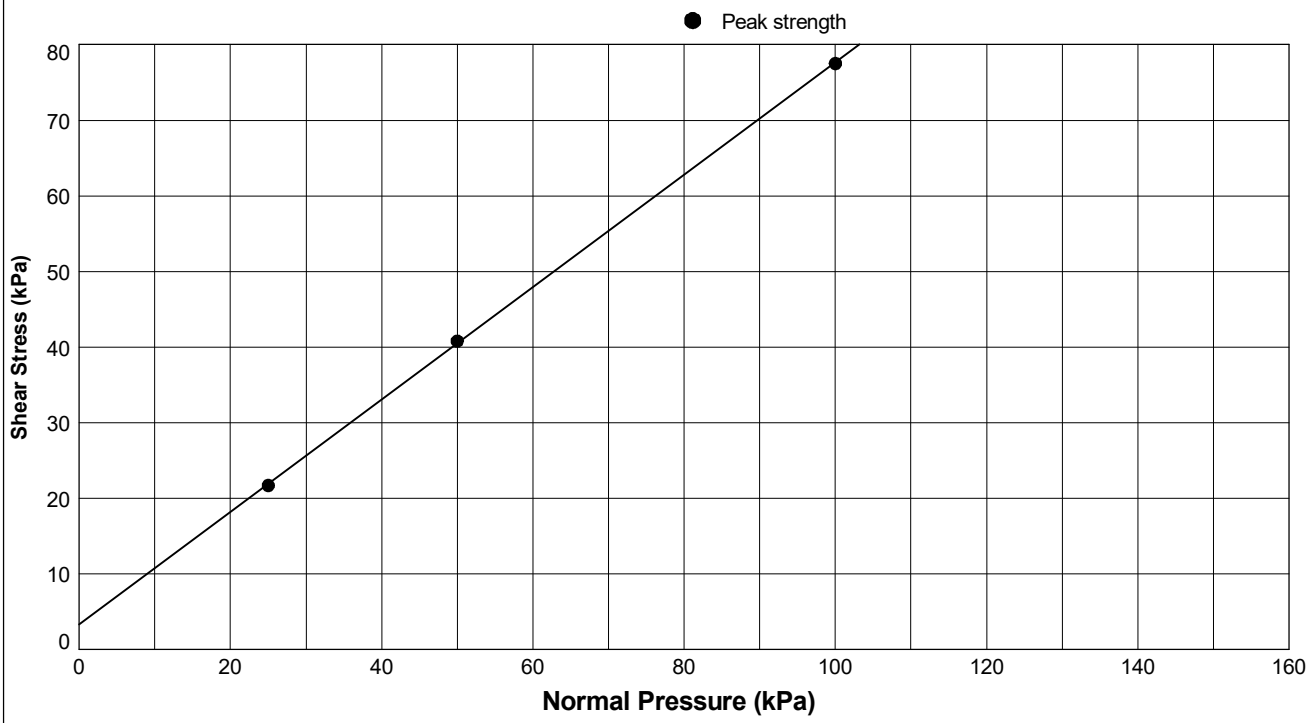
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS115** Sample Ref: **25** Sample Type: **B** Depth (m): **5.00**

Description: **Reddish brown gravelly silty SAND** Start Date: **26/07/2023**

Sample Condition: **Recompacted** End Date: **28/07/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**15.9**	**15.9**	**15.9**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.2**	**19.2**	**19.2**
	Initial Bulk Density	(Mg/m^3)	**1.80**	**1.80**	**1.80**
	Initial Dry Density	(Mg/m^3)	**1.55**	**1.55**	**1.55**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.7087**	**0.7082**	**0.7083**
	Initial Degree of Saturation	(%)	**60**	**60**	**60**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**2**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**25**	**50**	**100**
	Consolidated Height	(mm)	**18.8**	**18.7**	**18.5**
SHEAR	Shearing Rate	(mm/min)	**0.0057**	**0.0069**	**0.0052**
	Horiz. Displacement at Peak Shear Stress	(mm)	**2.5**	**3.3**	**2.9**
	Peak Shear Stress	(kPa)	**22**	**41**	**78**
PEAK STRENGTH	Effective Cohesion (C ') **3**	(kPa)	Effective Angle of Friction (ϕ ') **36.5**		(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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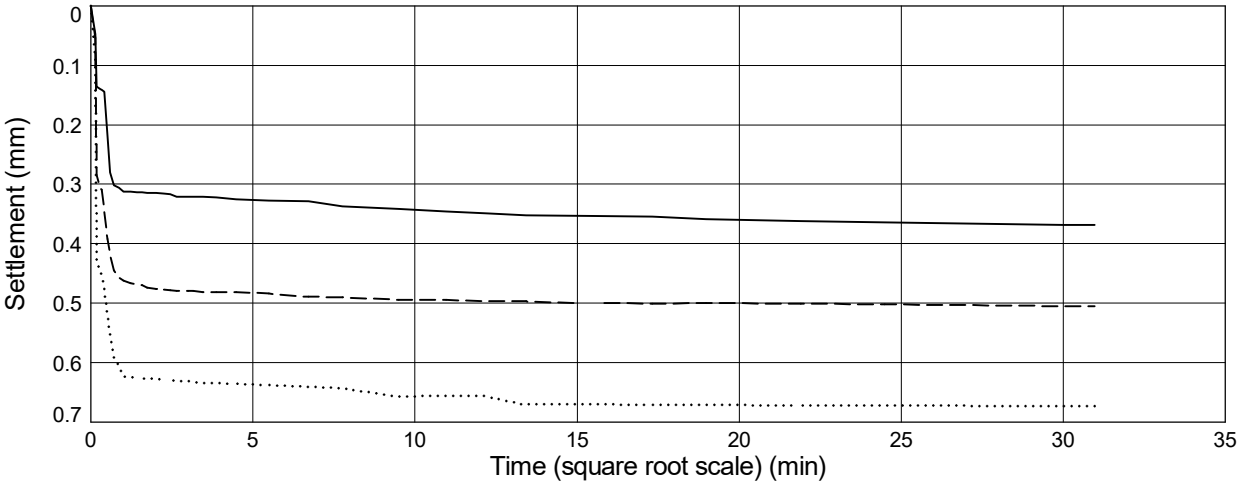
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

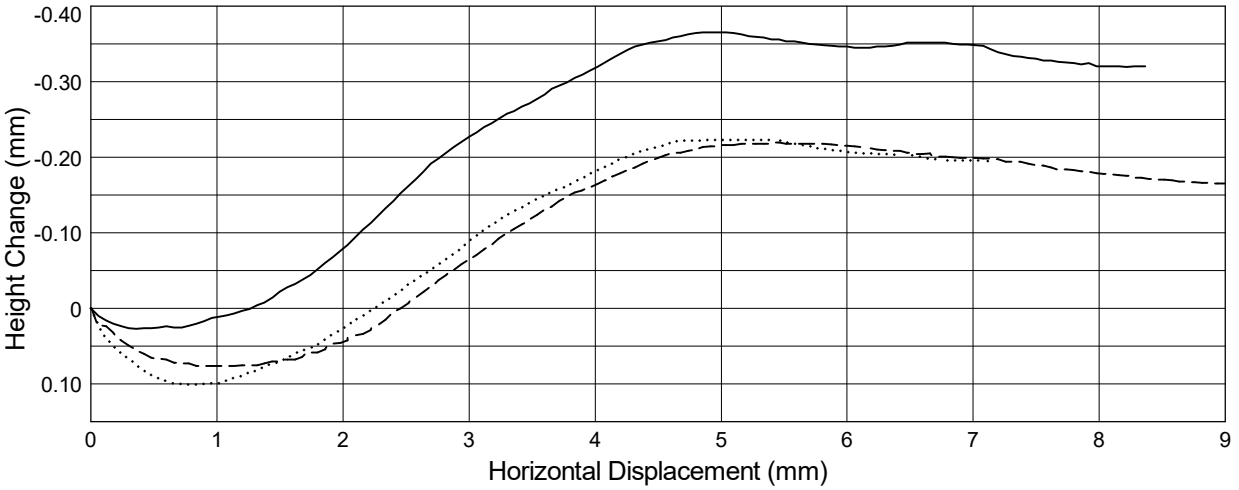
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS115** Sample Ref: **25** Sample Type: **B** Depth (m): **5.00**

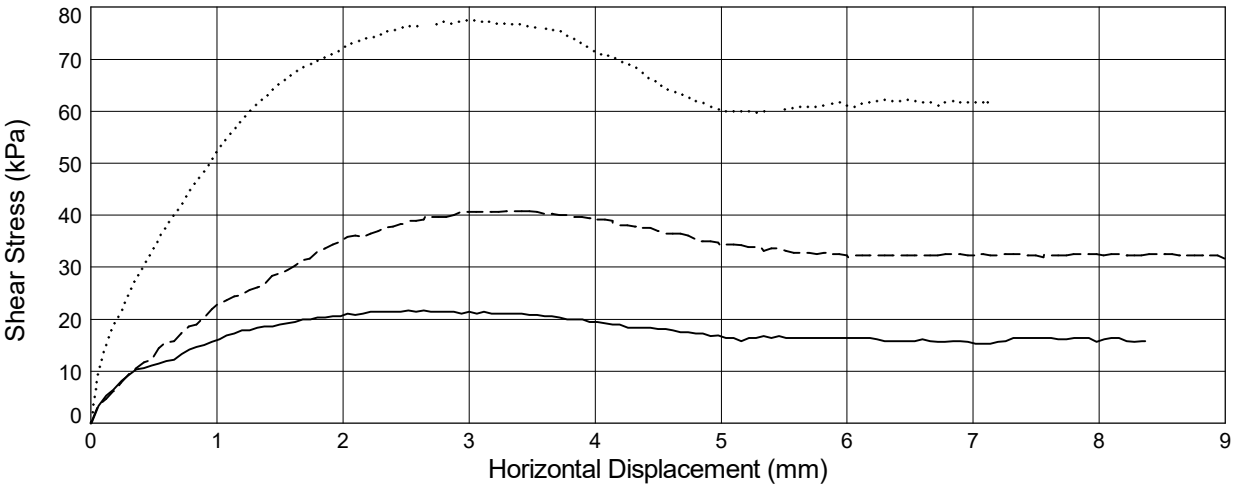
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**25** kPa) *Dashed Line* = Specimen 2 (**50** kPa) *Dotted Line* = Specimen 3 (**100** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**01/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P2.1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

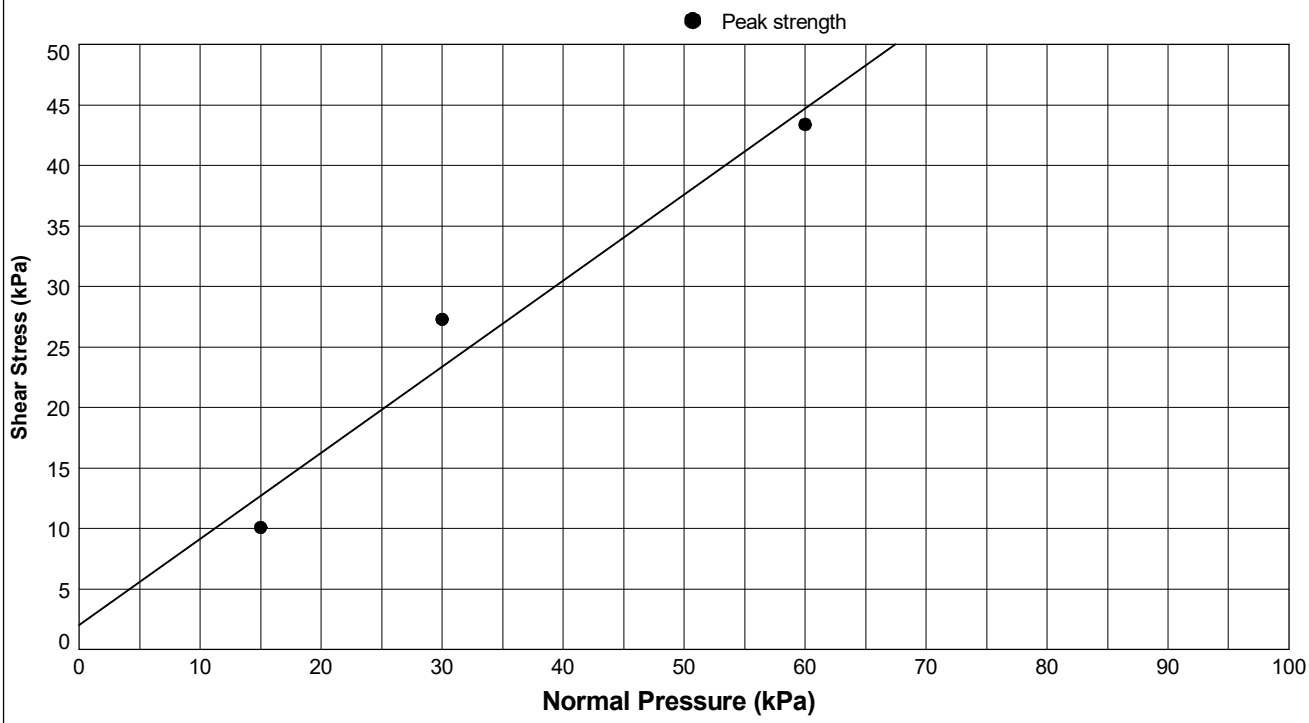
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS116** Sample Ref: **16** Sample Type: **B** Depth (m): **2.50**

Description: **Reddish brown very sandy silty GRAVEL with medium cobble content** Start Date: **27/06/2023**

Sample Condition: **Recompacted** End Date: **28/06/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**6.4**	**6.4**	**6.4**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.1**	**19.1**	**19.1**
	Initial Bulk Density	(Mg/m^3)	**1.81**	**1.81**	**1.81**
	Initial Dry Density	(Mg/m^3)	**1.70**	**1.70**	**1.70**
	Particle Density	(Mg/m^3)	**2.65**(Assumed)	**2.65**(Assumed)	**2.65**(Assumed)
	Initial Voids Ratio		**0.5578**	**0.5574**	**0.5580**
	Initial Degree of Saturation	(%)	**31**	**31**	**31**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**2**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**15**	**30**	**60**
	Consolidated Height	(mm)	**17.3**	**16.9**	**15.9**
SHEAR	Shearing Rate	(mm/min)	**0.0427**	**0.0550**	**0.0466**
	Horiz. Displacement at Peak Shear Stress	(mm)	**8.6**	**6.9**	**8.9**
	Peak Shear Stress	(kPa)	**10**	**27**	**43**
PEAK STRENGTH	Effective Cohesion (C ') **2**	(kPa)	Effective Angle of Friction (ϕ ') **35.5**		(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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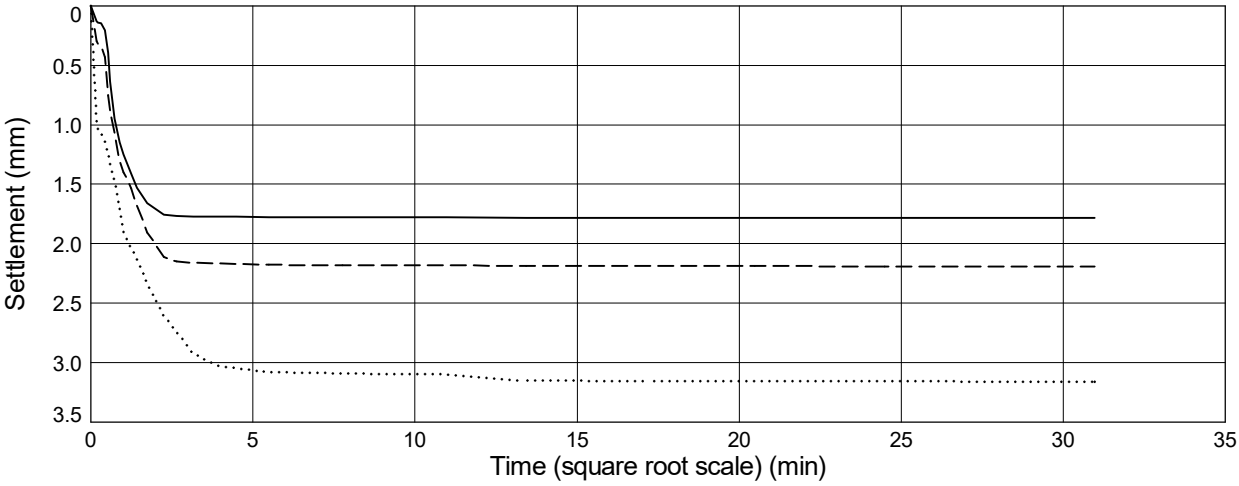
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

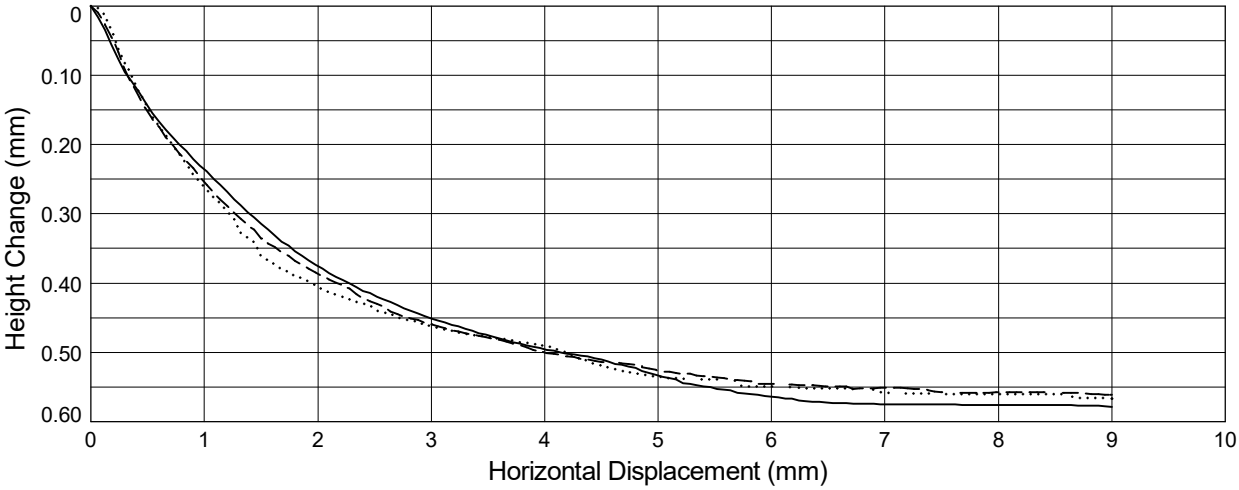
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS116** Sample Ref: **16** Sample Type: **B** Depth (m): **2.50**

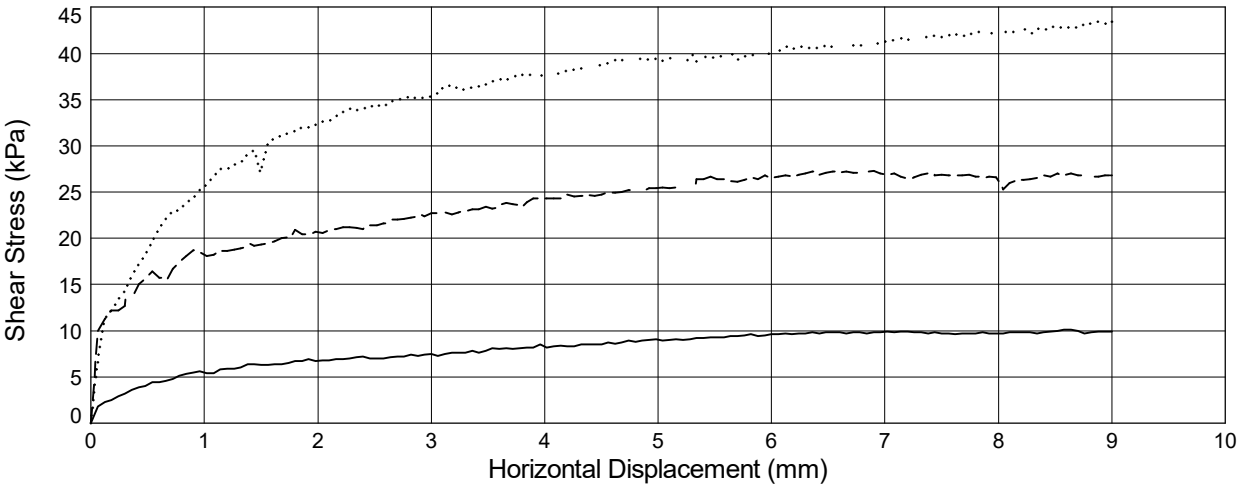
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**15** kPa) *Dashed Line* = Specimen 2 (**30** kPa) *Dotted Line* = Specimen 3 (**60** kPa)

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Daria Ignaczak	**DARIA IGNACZAK**	**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P2.1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

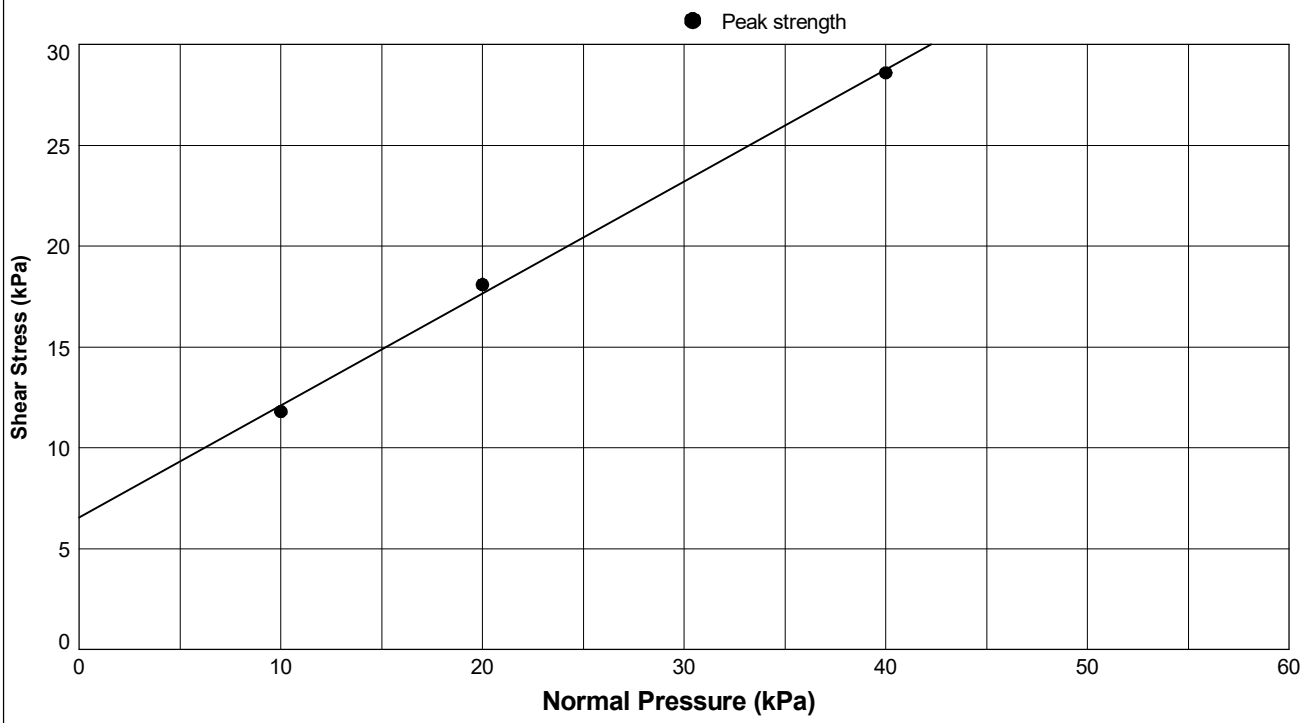
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS118A** Sample Ref: **4** Sample Type: **B** Depth (m): **0.90**

Description: **Reddish brown slightly silty sandy GRAVEL** Start Date: **29/06/2023**

Sample Condition: **Recompacted** End Date: **30/06/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**9.3**	**9.3**	**9.3**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.2**	**19.2**	**19.2**
	Initial Bulk Density	(Mg/m^3)	**1.90**	**1.90**	**1.90**
	Initial Dry Density	(Mg/m^3)	**1.74**	**1.74**	**1.74**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.5227**	**0.5237**	**0.5225**
	Initial Degree of Saturation	(%)	**47**	**47**	**47**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**1**	**1**	**1**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**19.1**	**18.6**	**18.7**
SHEAR	Shearing Rate	(mm/min)	**0.4000**	**0.4000**	**0.4000**
	Horiz. Displacement at Peak Shear Stress	(mm)	**1.4**	**9.4**	**8.7**
	Peak Shear Stress	(kPa)	**12**	**18**	**29**
PEAK STRENGTH	Effective Cohesion (C ') **7**	(kPa)	Effective Angle of Friction (ϕ ') **29**		(deg)



STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By	Date
DAISY RICHARDS	18/08/23

Contract: **A66 NTP Scheme S03A**

Contract Ref: **765633**

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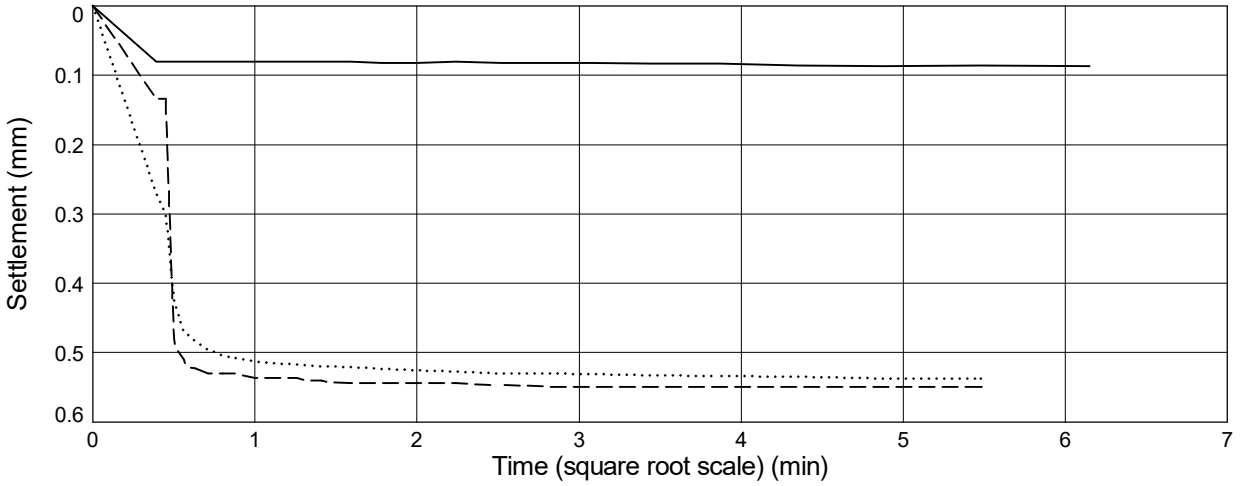
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

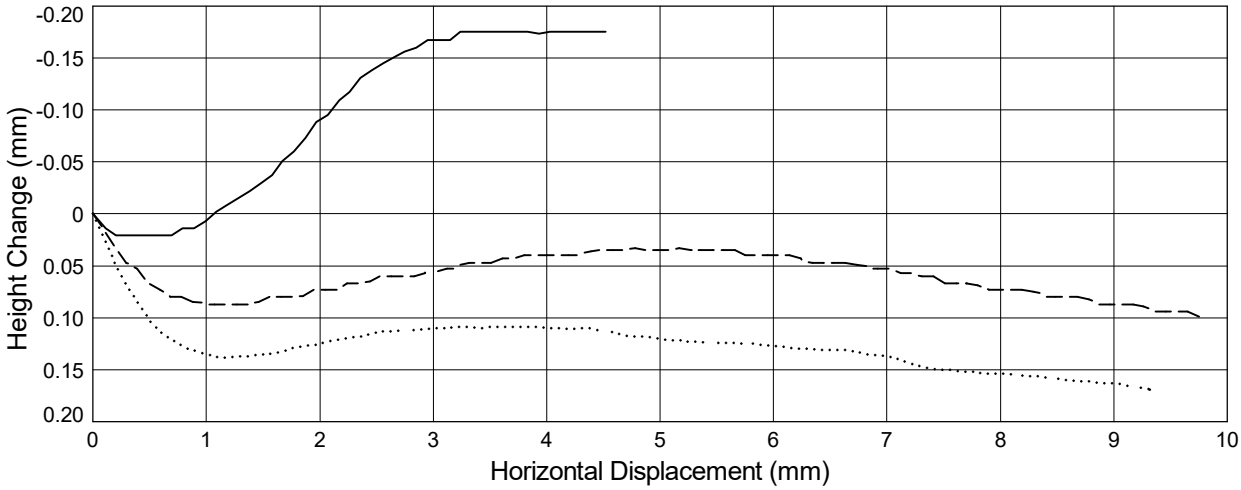
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS118A** Sample Ref: **4** Sample Type: **B** Depth (m): **0.90**

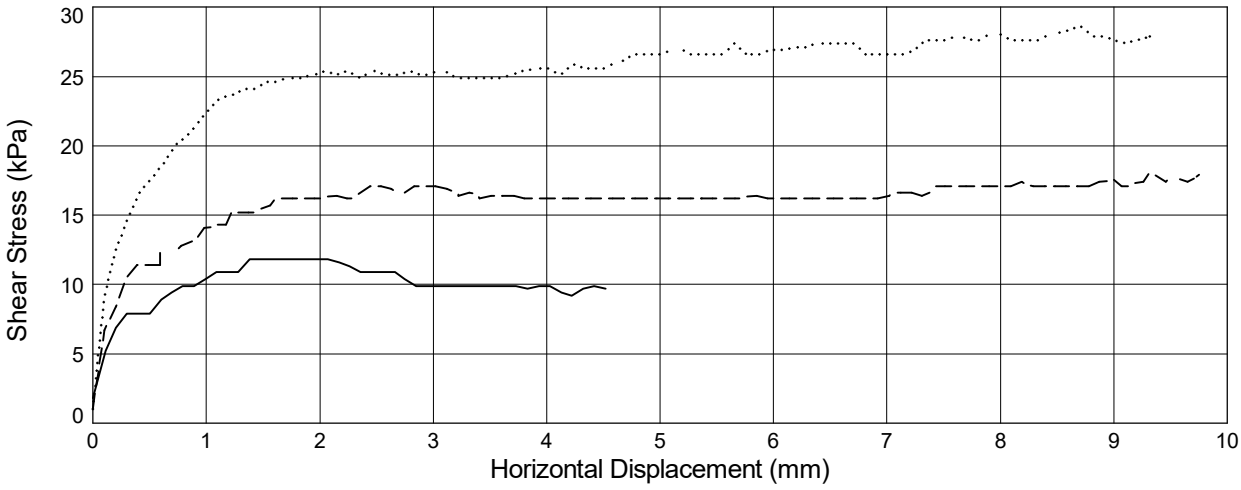
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**28/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P2.1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

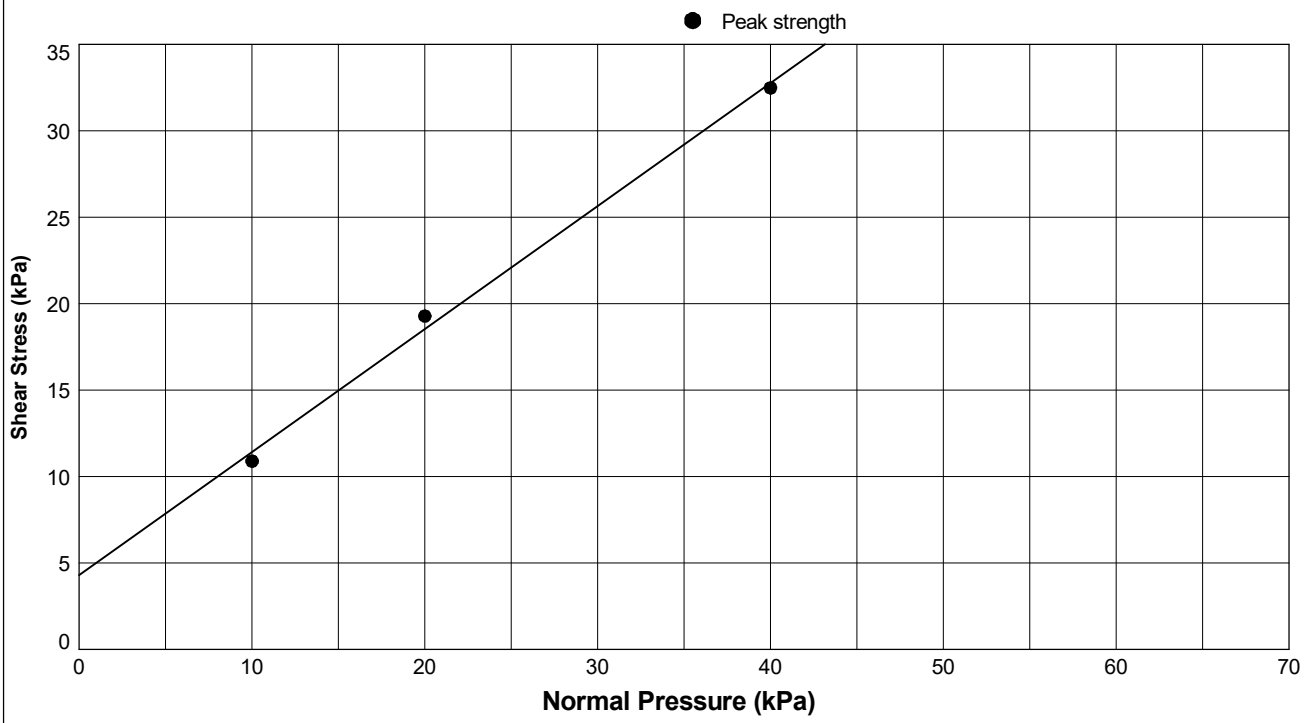
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS118A** Sample Ref: **9** Sample Type: **B** Depth (m): **1.20**

Description: **Brown very sandy slightly silty GRAVEL with medium cobble content** Start Date: **23/05/2023**

Sample Condition: **Recompacted** End Date: **24/05/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**5.6**	**5.6**	**5.6**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.0**	**19.0**	**19.0**
	Initial Bulk Density	(Mg/m^3)	**1.58**	**1.58**	**1.58**
	Initial Dry Density	(Mg/m^3)	**1.50**	**1.50**	**1.50**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.7712**	**0.7711**	**0.7706**
	Initial Degree of Saturation	(%)	**19**	**19**	**19**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**1**	**1**	**1**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**18.8**	**16.8**	**18.7**
SHEAR	Shearing Rate	(mm/min)	**0.4000**	**0.4000**	**0.4000**
	Horiz. Displacement at Peak Shear Stress	(mm)	**4.9**	**9.7**	**9.4**
	Peak Shear Stress	(kPa)	**11**	**19**	**33**
PEAK STRENGTH	Effective Cohesion (C ') **4**	(kPa)	Effective Angle of Friction (ϕ ')	**35.5**	(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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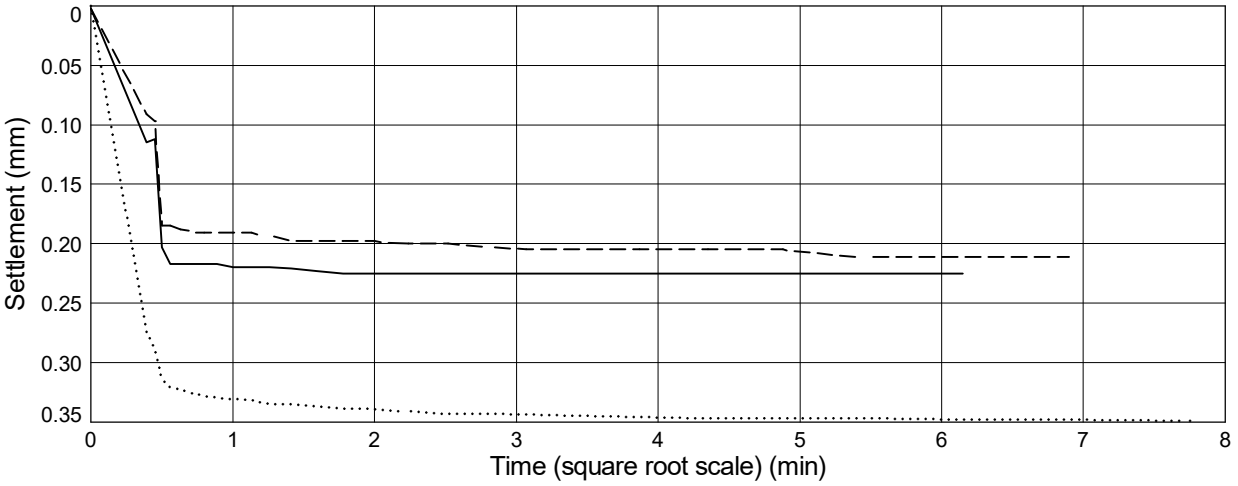
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

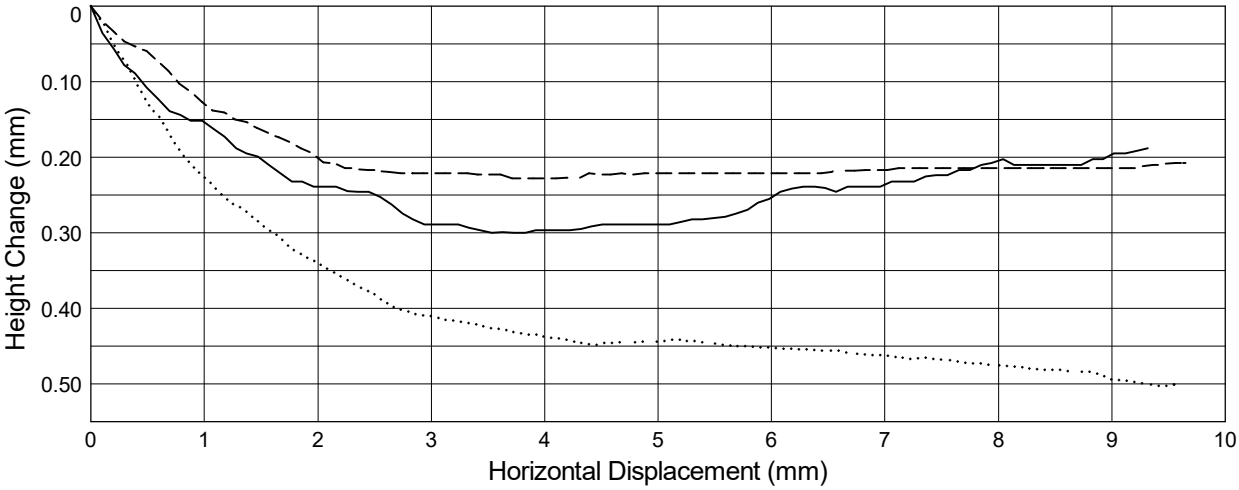
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS118A** Sample Ref: **9** Sample Type: **B** Depth (m): **1.20**

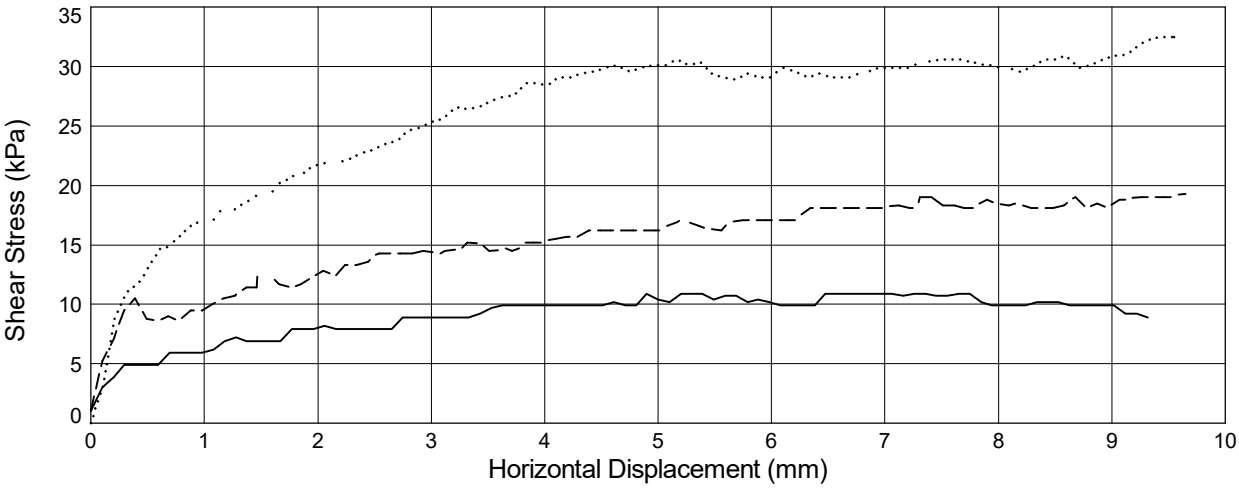
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**28/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

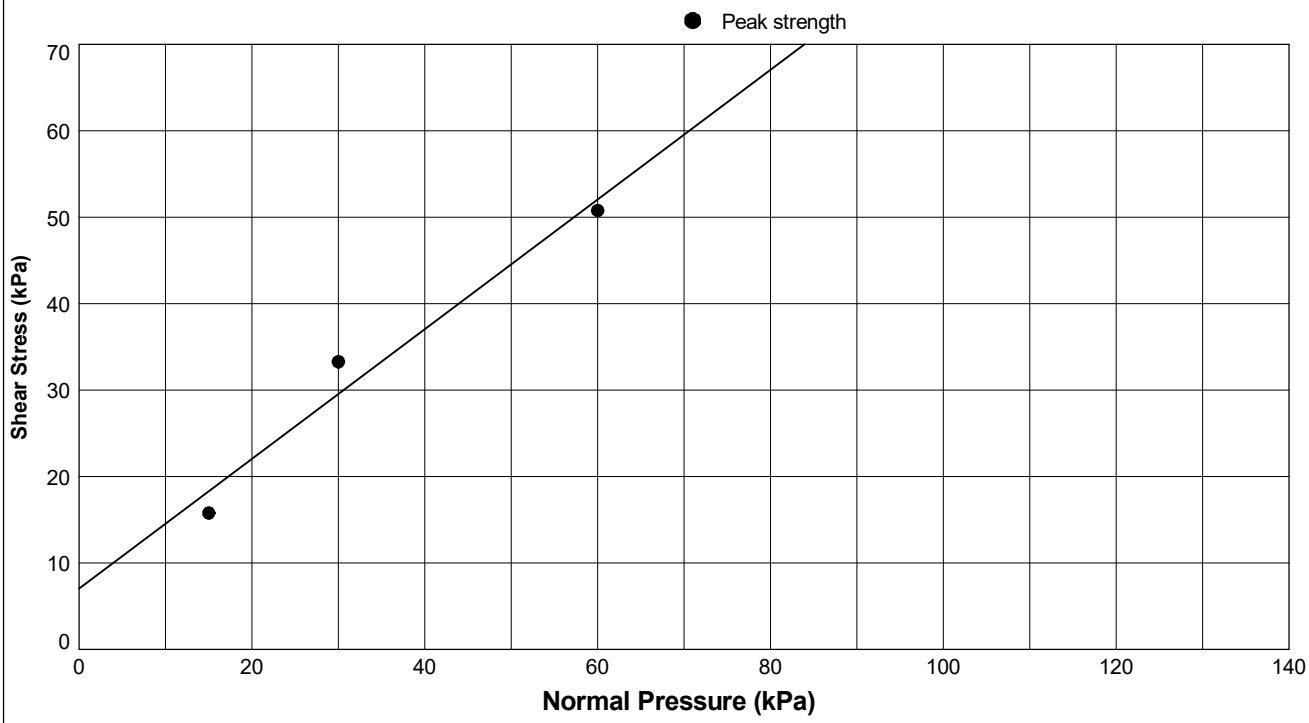
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS118A** Sample Ref: **16** Sample Type: **B** Depth (m): **3.00**

Description: **Grey sandy slightly silty GRAVEL** Start Date: **22/05/2023**

Sample Condition: **Recompacted** End Date: **23/05/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**4.7**	**4.7**	**4.7**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.0**	**19.0**	**19.0**
	Initial Bulk Density	(Mg/m^3)	**1.57**	**1.57**	**1.57**
	Initial Dry Density	(Mg/m^3)	**1.50**	**1.50**	**1.50**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.7645**	**0.7638**	**0.7643**
	Initial Degree of Saturation	(%)	**16**	**16**	**16**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**1**	**1**	**1**
CONSOLIDATION	Normal Pressure	(kPa)	**15**	**30**	**60**
	Consolidated Height	(mm)	**18.9**	**18.7**	**18.8**
SHEAR	Shearing Rate	(mm/min)	**0.4000**	**0.4000**	**0.4000**
	Horiz. Displacement at Peak Shear Stress	(mm)	**3.1**	**7.1**	**3.8**
	Peak Shear Stress	(kPa)	**16**	**33**	**51**
PEAK STRENGTH	Effective Cohesion (C ') **7**	(kPa)	Effective Angle of Friction (ϕ ') **37**		(deg)



STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By	Date
DAISY RICHARDS	18/08/23

Contract: **A66 NTP Scheme S03A**

Contract Ref: **765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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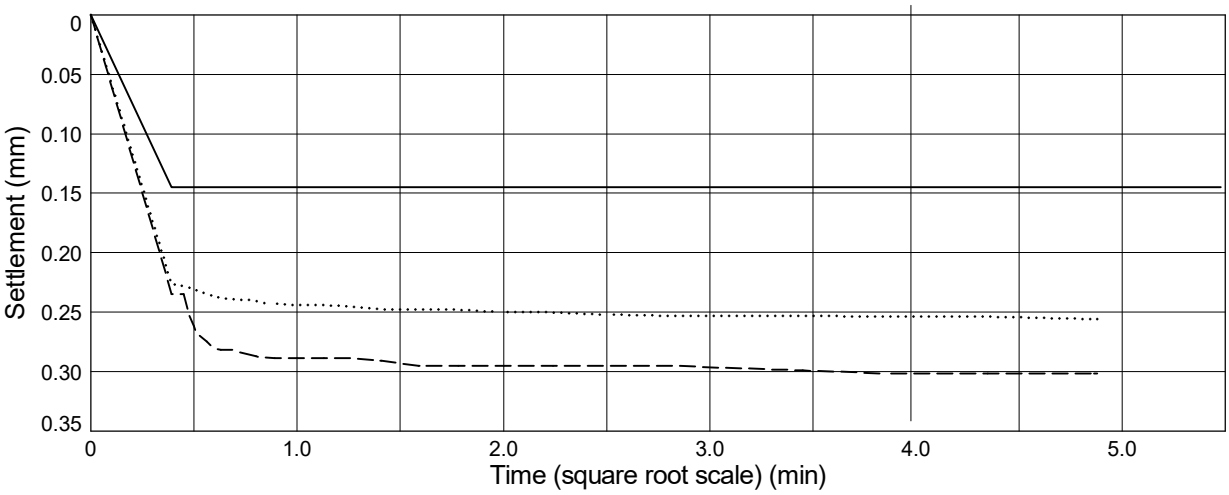
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

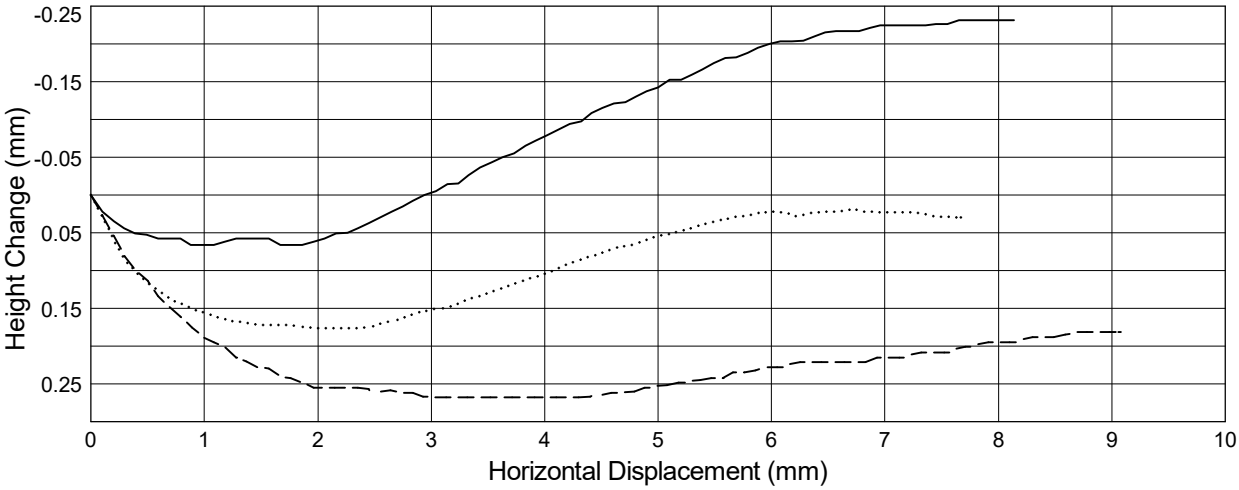
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS118A** Sample Ref: **16** Sample Type: **B** Depth (m): **3.00**

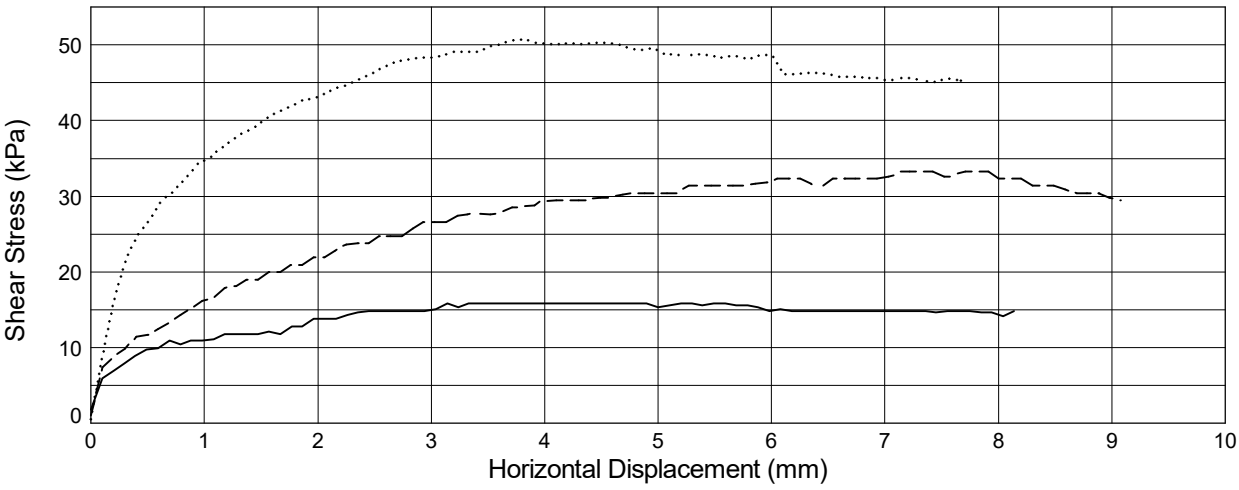
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**15** kPa) *Dashed Line* = Specimen 2 (**30** kPa) *Dotted Line* = Specimen 3 (**60** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**28/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

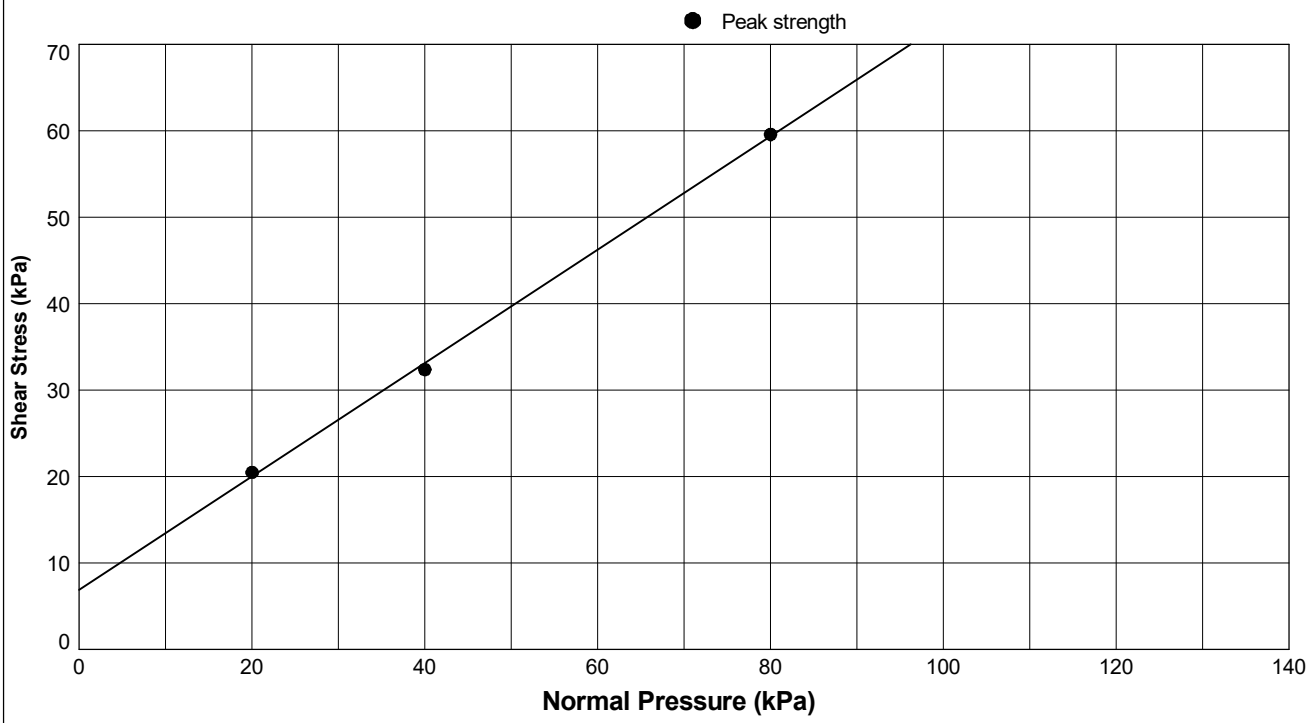
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS119** Sample Ref: **8** Sample Type: **B** Depth (m): **1.20**

Description: **Reddish brown very gravelly clayey SAND** Start Date: **27/06/2023**

Sample Condition: **Recompacted** End Date: **28/06/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**11.0**	**11.0**	**11.0**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.1**	**19.1**	**19.1**
	Initial Bulk Density	(Mg/m^3)	**2.12**	**2.12**	**2.12**
	Initial Dry Density	(Mg/m^3)	**1.91**	**1.91**	**1.91**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.3865**	**0.3861**	**0.3864**
	Initial Degree of Saturation	(%)	**76**	**76**	**76**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**2**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**20**	**40**	**80**
	Consolidated Height	(mm)	**18.7**	**18.6**	**18.3**
SHEAR	Shearing Rate	(mm/min)	**0.0165**	**0.0201**	**0.0237**
	Horiz. Displacement at Peak Shear Stress	(mm)	**1.7**	**1.5**	**2.3**
	Peak Shear Stress	(kPa)	**21**	**32**	**60**
PEAK STRENGTH	Effective Cohesion (C ') **7**	(kPa)	Effective Angle of Friction (ϕ ')	**33.5**	(deg)



STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By	Date
DAISY RICHARDS	18/08/23

Contract: **A66 NTP Scheme S03A**

Contract Ref: **765633**

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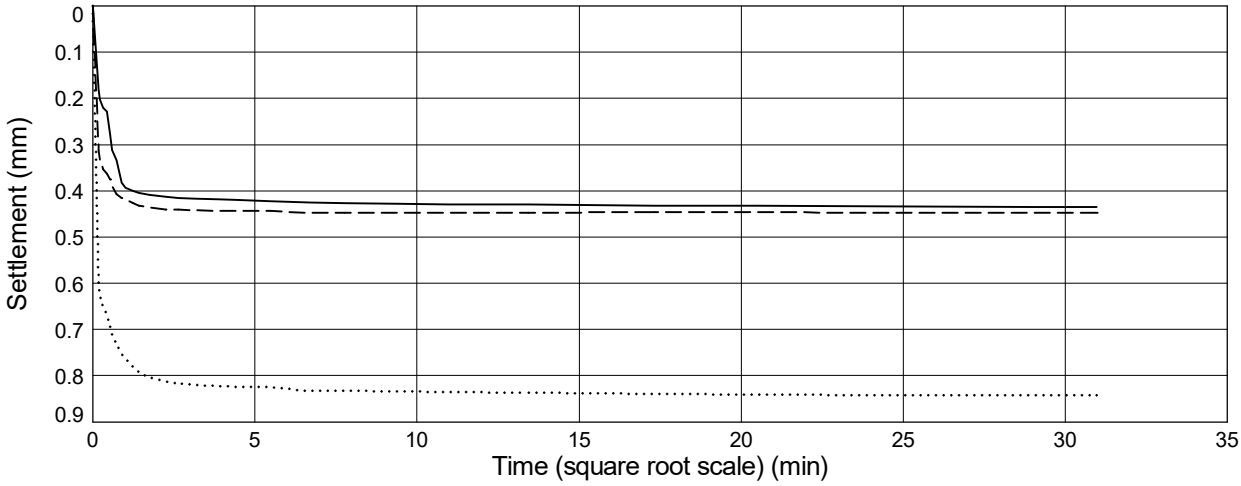
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

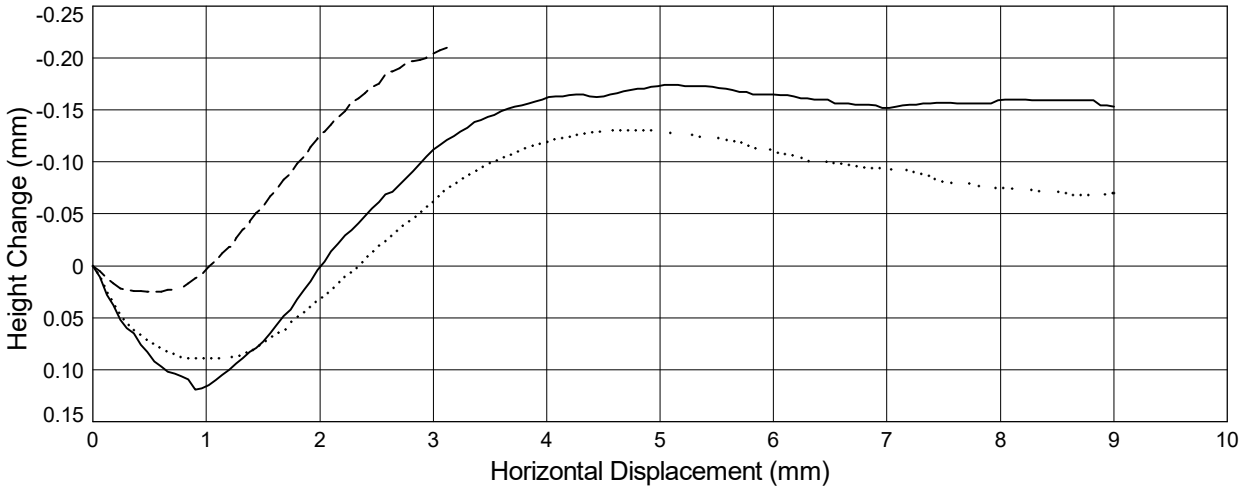
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS119** Sample Ref: **8** Sample Type: **B** Depth (m): **1.20**

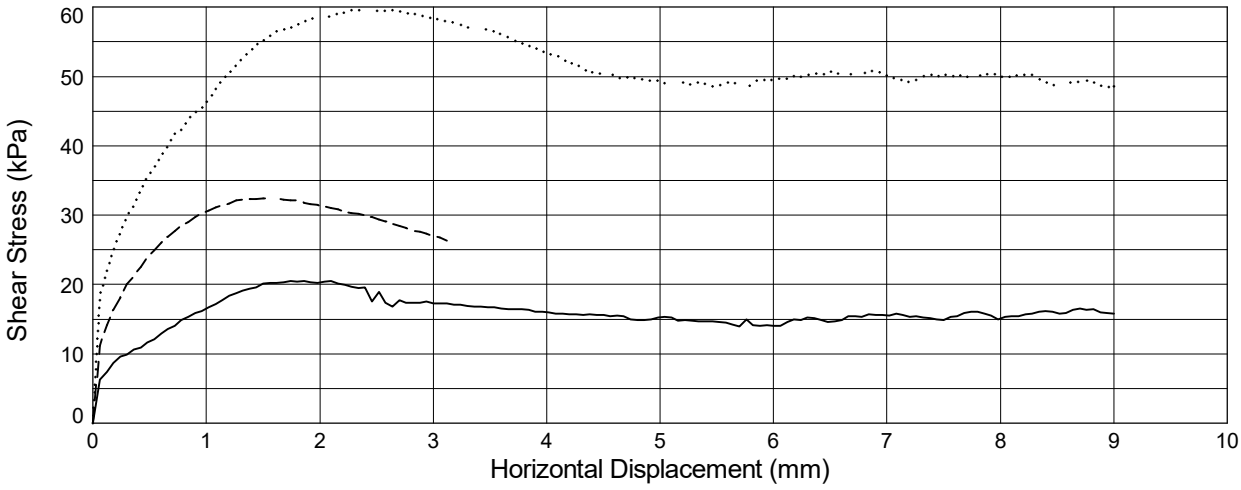
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**20** kPa) *Dashed Line* = Specimen 2 (**40** kPa) *Dotted Line* = Specimen 3 (**80** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**26/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P2.1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

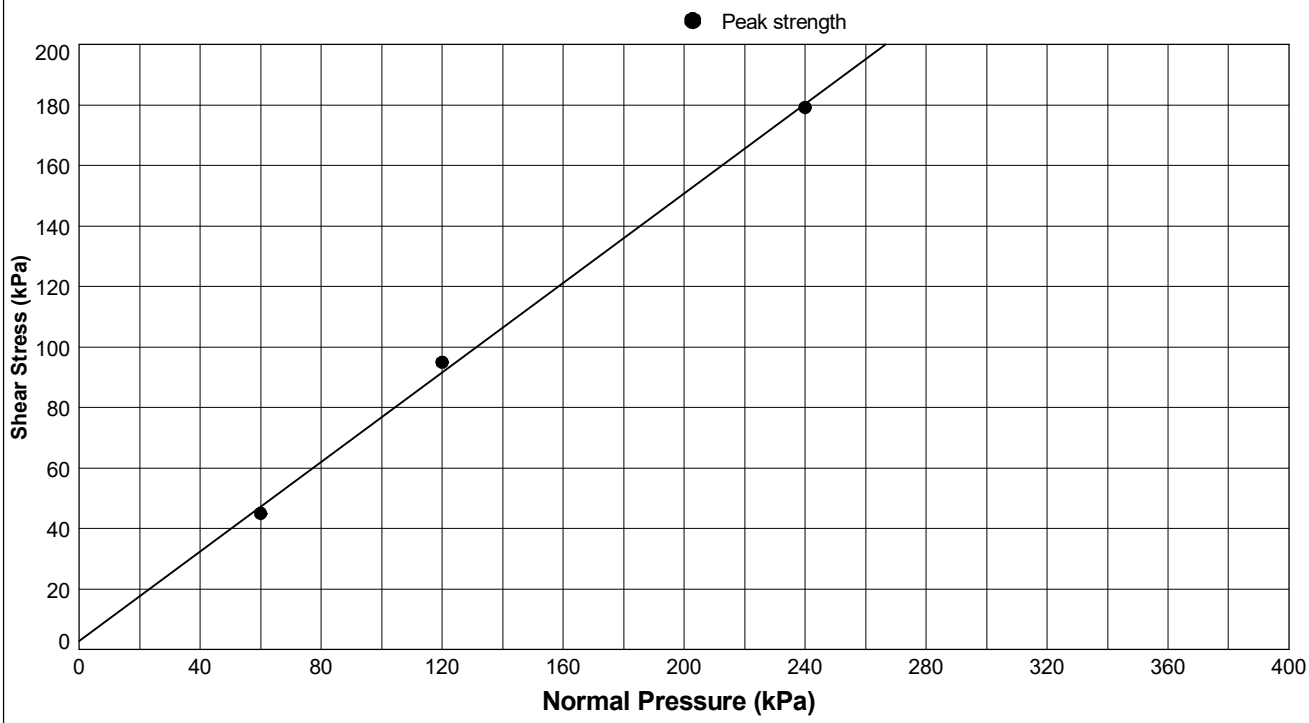
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS122** Sample Ref: **30** Sample Type: **B** Depth (m): **6.00**

Description: **Reddish brown slightly gravelly clayey SAND** Start Date: **28/06/2023**

Sample Condition: **Recompacted** End Date: **29/06/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**16.4**	**16.4**	**16.4**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.2**	**19.2**	**19.2**
	Initial Bulk Density	(Mg/m^3)	**2.11**	**2.11**	**2.11**
	Initial Dry Density	(Mg/m^3)	**1.82**	**1.81**	**1.81**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.4600**	**0.4604**	**0.4602**
	Initial Degree of Saturation	(%)	**95**	**94**	**95**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**2**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**60**	**120**	**240**
	Consolidated Height	(mm)	**18.4**	**18.3**	**18.0**
SHEAR	Shearing Rate	(mm/min)	**0.0275**	**0.0299**	**0.0328**
	Horiz. Displacement at Peak Shear Stress	(mm)	**2.8**	**3.3**	**3.6**
	Peak Shear Stress	(kPa)	**45**	**95**	**179**
PEAK STRENGTH	Effective Cohesion (C ') **3**	(kPa)	Effective Angle of Friction (ϕ ') **36.5**		(deg)



STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	DARIA IGNACZAK	18/08/23

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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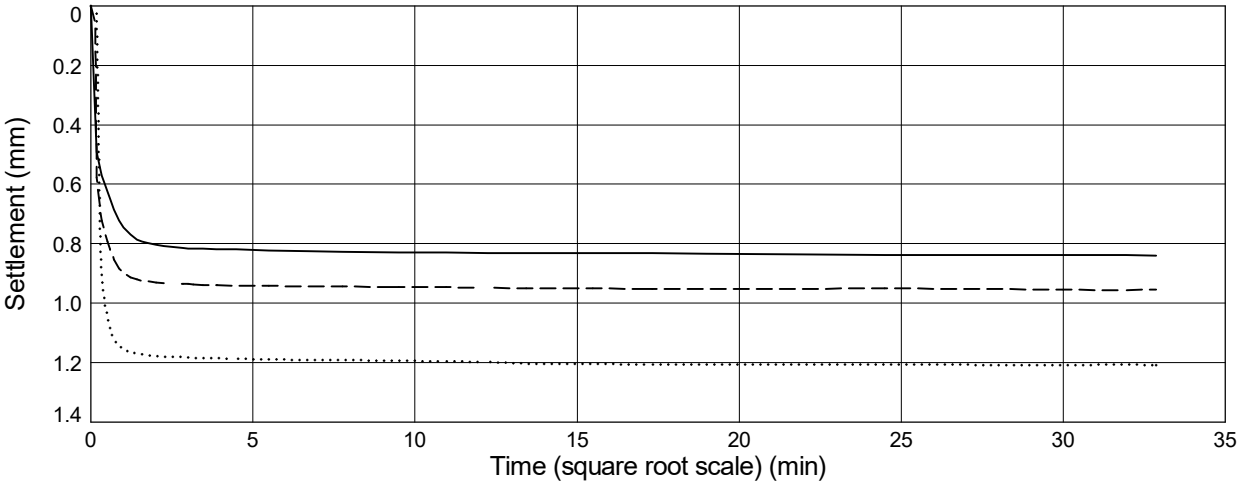
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

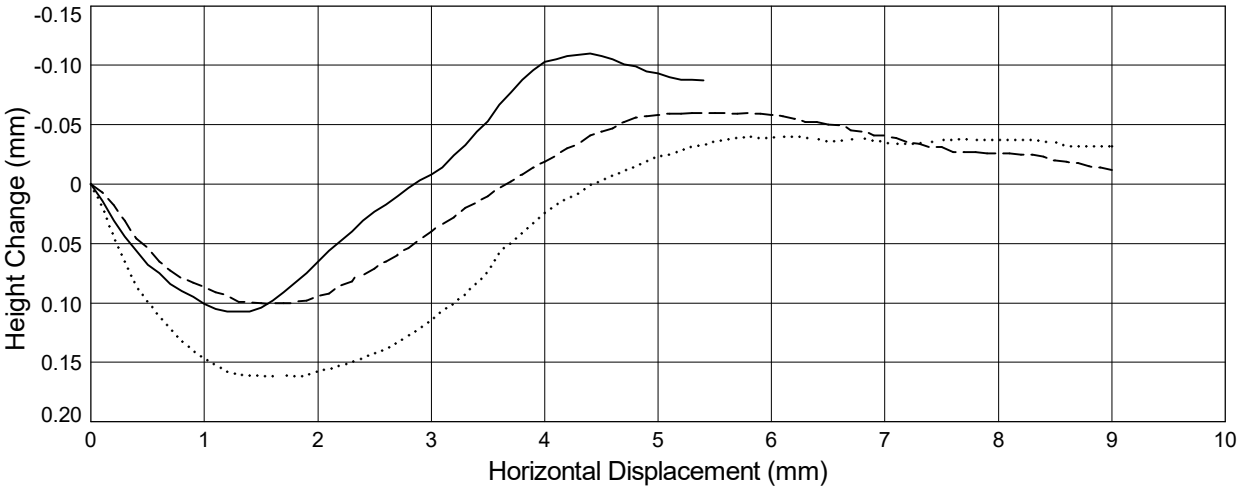
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS122** Sample Ref: **30** Sample Type: **B** Depth (m): **6.00**

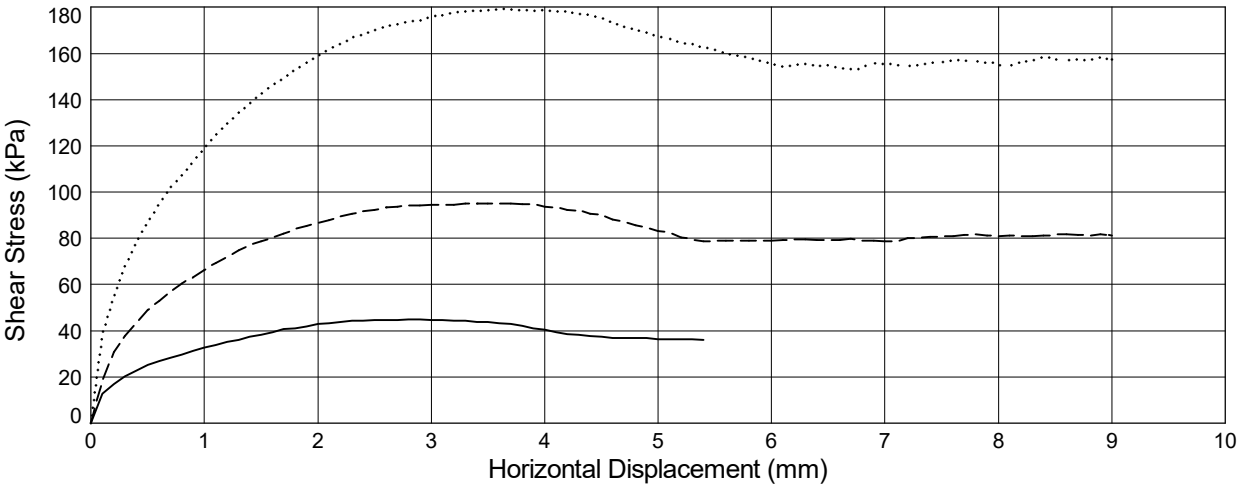
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**60** kPa) *Dashed Line* = Specimen 2 (**120** kPa) *Dotted Line* = Specimen 3 (**240** kPa)

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Daria Ignaczak	**DARIA IGNACZAK**	**24/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

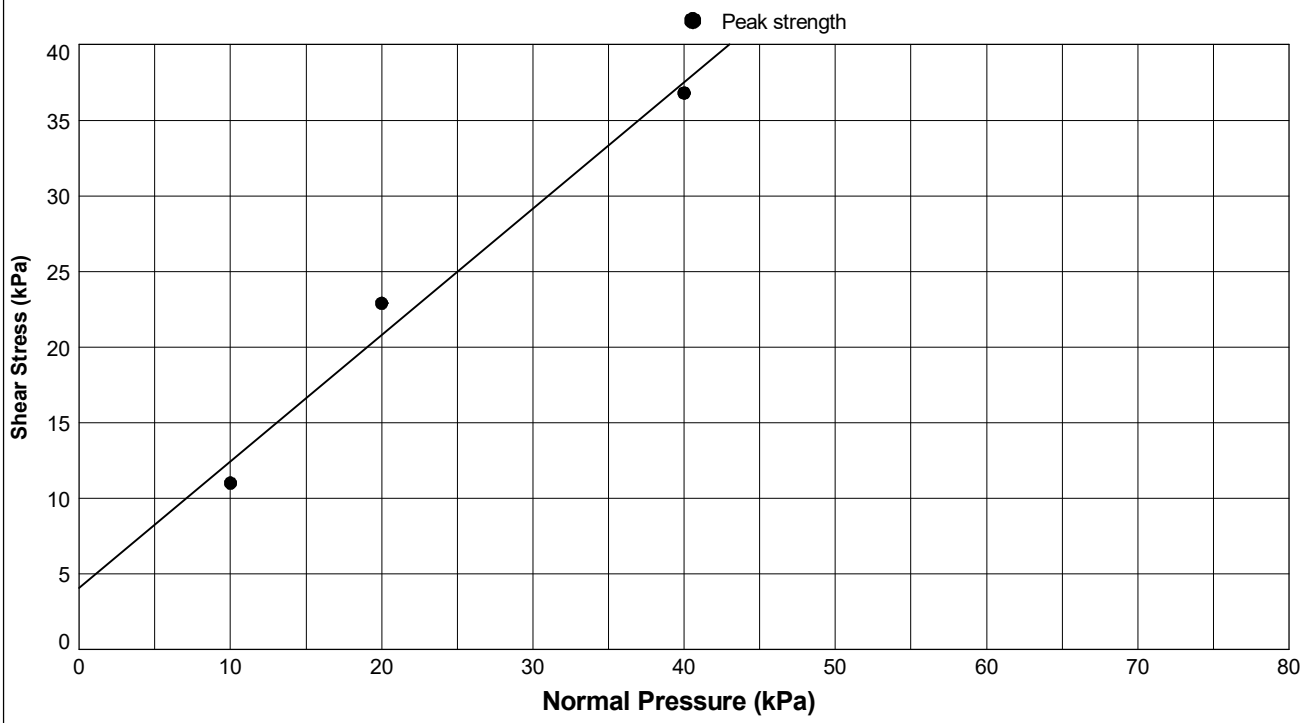
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS123** Sample Ref: **8** Sample Type: **B** Depth (m): **1.20**

Description: **Reddish brown gravelly sandy CLAY** Start Date: **28/06/2023**

Sample Condition: **Recompacted** End Date: **30/06/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**12.9**	**12.9**	**12.9**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.2**	**19.2**	**19.2**
	Initial Bulk Density	(Mg/m^3)	**2.10**	**2.10**	**2.10**
	Initial Dry Density	(Mg/m^3)	**1.86**	**1.86**	**1.86**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.4221**	**0.4220**	**0.4224**
	Initial Degree of Saturation	(%)	**81**	**81**	**81**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**3**	**3**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**19.0**	**18.9**	**18.6**
SHEAR	Shearing Rate	(mm/min)	**0.0076**	**0.0089**	**0.0117**
	Horiz. Displacement at Peak Shear Stress	(mm)	**2.0**	**2.1**	**2.4**
	Peak Shear Stress	(kPa)	**11**	**23**	**37**
PEAK STRENGTH	Effective Cohesion (C ') **4**	(kPa)	Effective Angle of Friction (ϕ ') **40**		(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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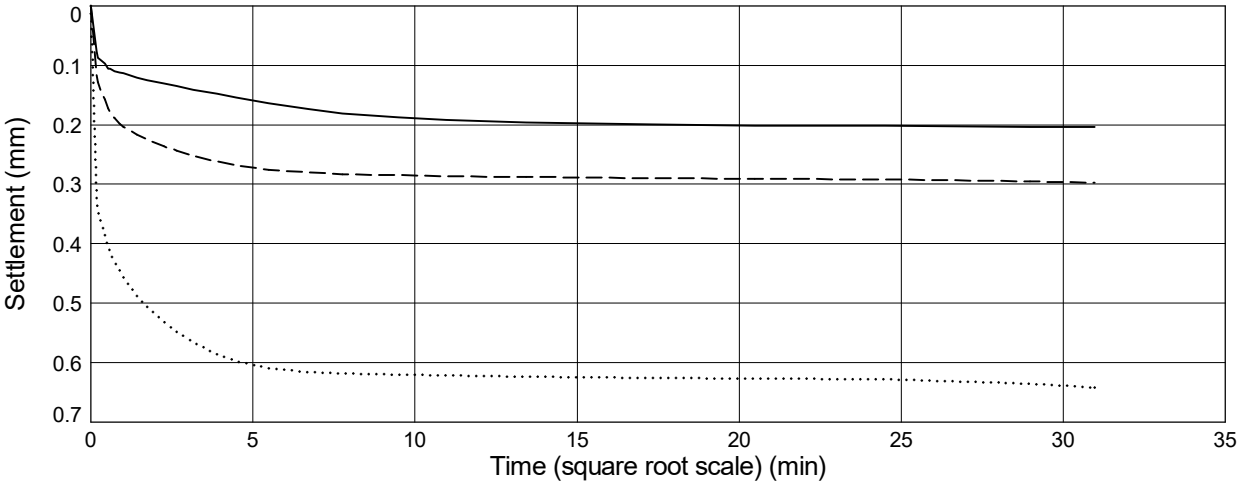
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

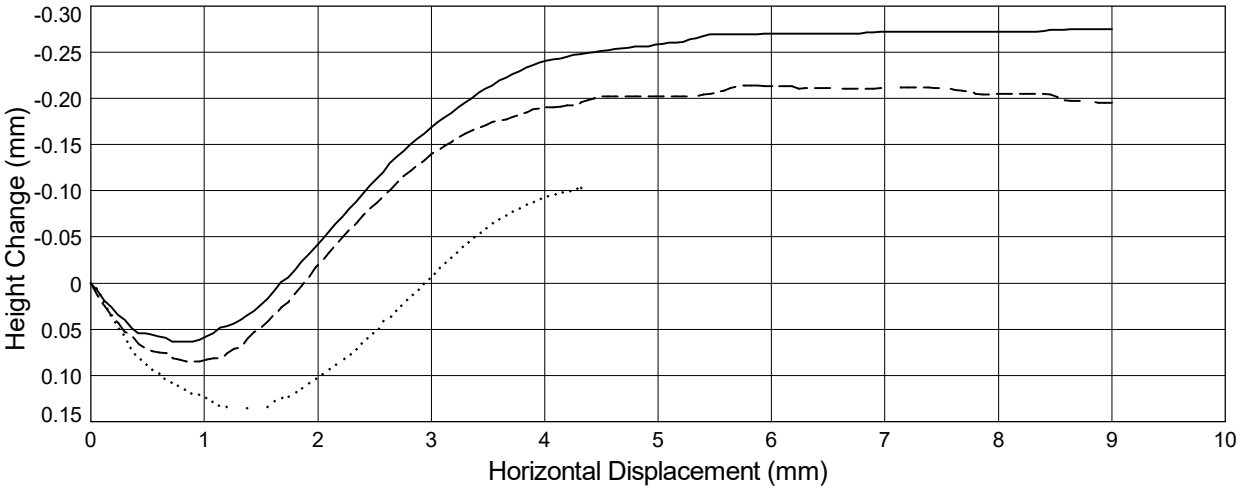
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS123** Sample Ref: **8** Sample Type: **B** Depth (m): **1.20**

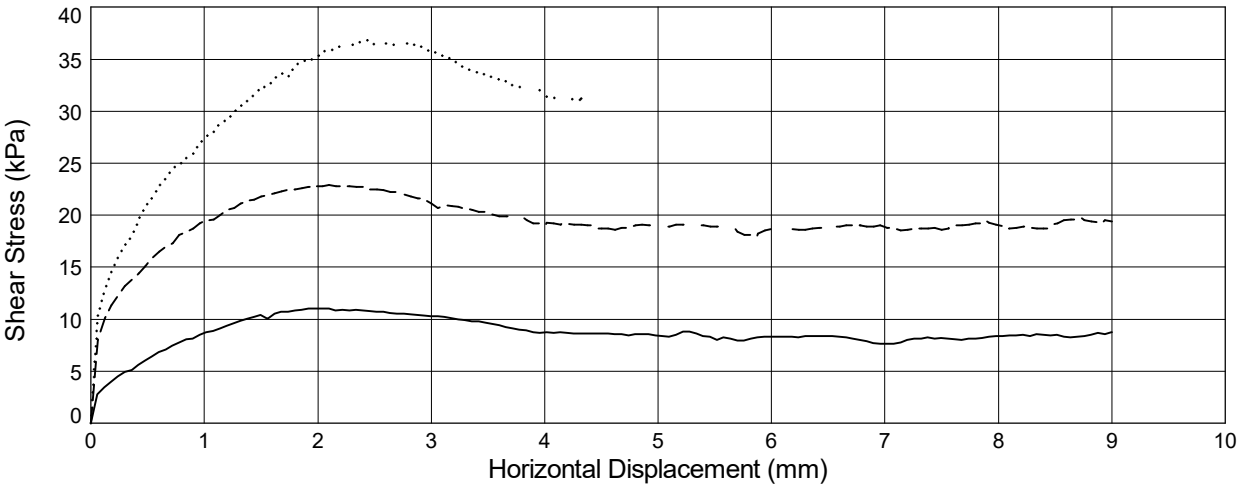
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**28/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P2,1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

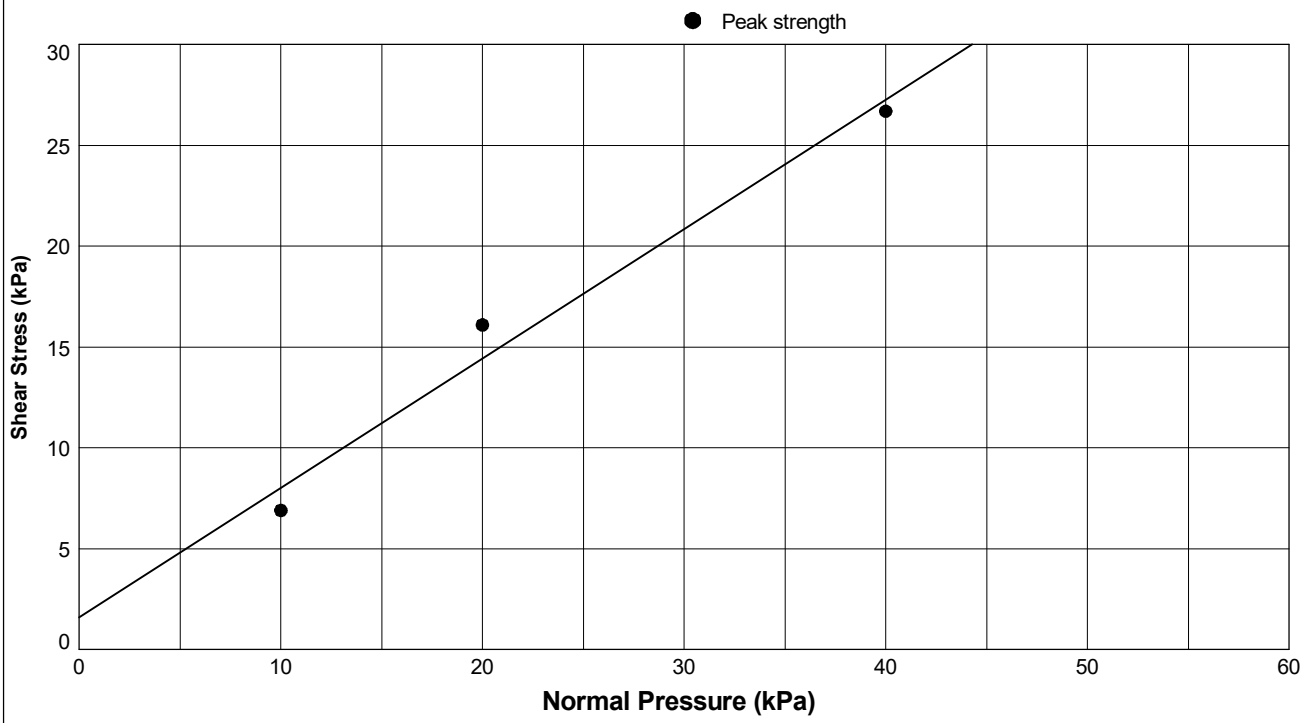
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS124** Sample Ref: **8** Sample Type: **B** Depth (m): **1.20**

Description: **Reddish brown slightly gravelly clayey SAND with a medium cobble content** Start Date: **23/06/2023**

Sample Condition: **Recompacted** End Date: **24/06/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**7.7**	**7.7**	**7.7**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.1**	**19.1**	**19.1**
	Initial Bulk Density	(Mg/m^3)	**1.89**	**1.89**	**1.89**
	Initial Dry Density	(Mg/m^3)	**1.75**	**1.75**	**1.75**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.5142**	**0.5131**	**0.5141**
	Initial Degree of Saturation	(%)	**40**	**40**	**40**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**2**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**17.9**	**18.1**	**17.7**
SHEAR	Shearing Rate	(mm/min)	**0.0281**	**0.0307**	**0.0454**
	Horiz. Displacement at Peak Shear Stress	(mm)	**8.2**	**7.7**	**6.5**
	Peak Shear Stress	(kPa)	**7**	**16**	**27**
PEAK STRENGTH	Effective Cohesion (C ') **2**	(kPa)	Effective Angle of Friction (ϕ ')	**32.5**	(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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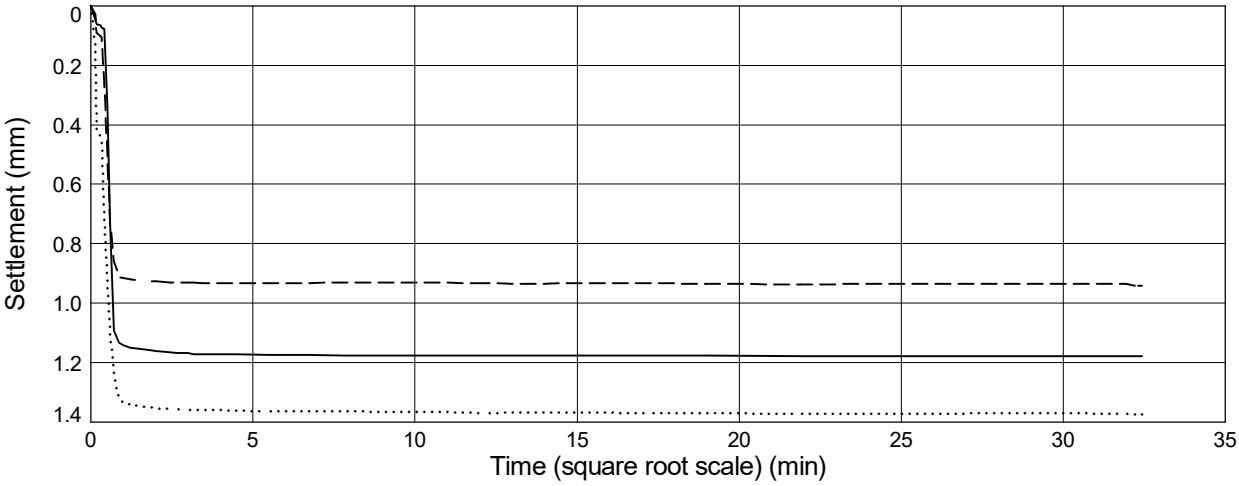
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

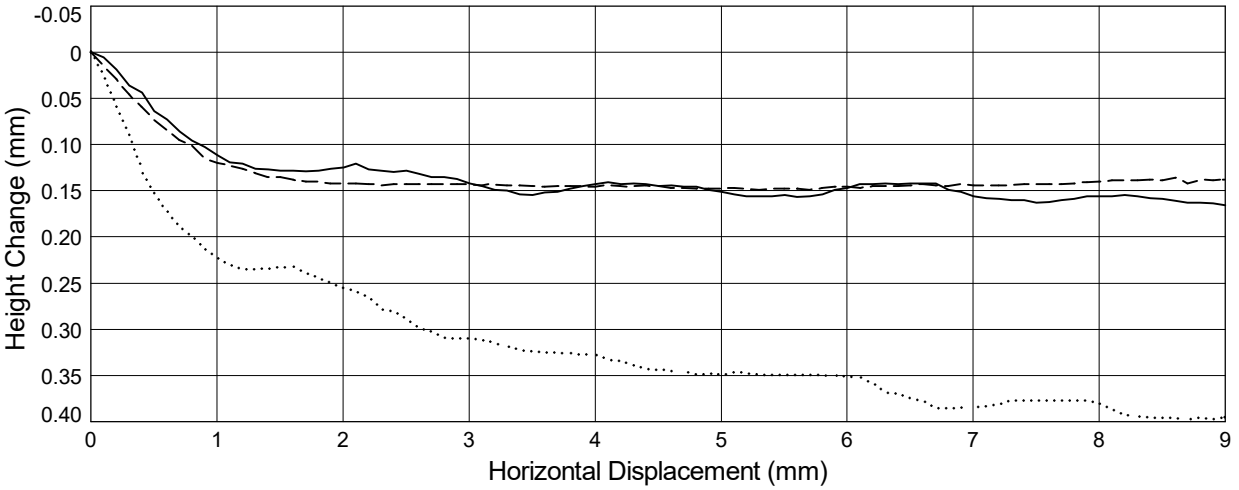
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS124** Sample Ref: **8** Sample Type: **B** Depth (m): **1.20**

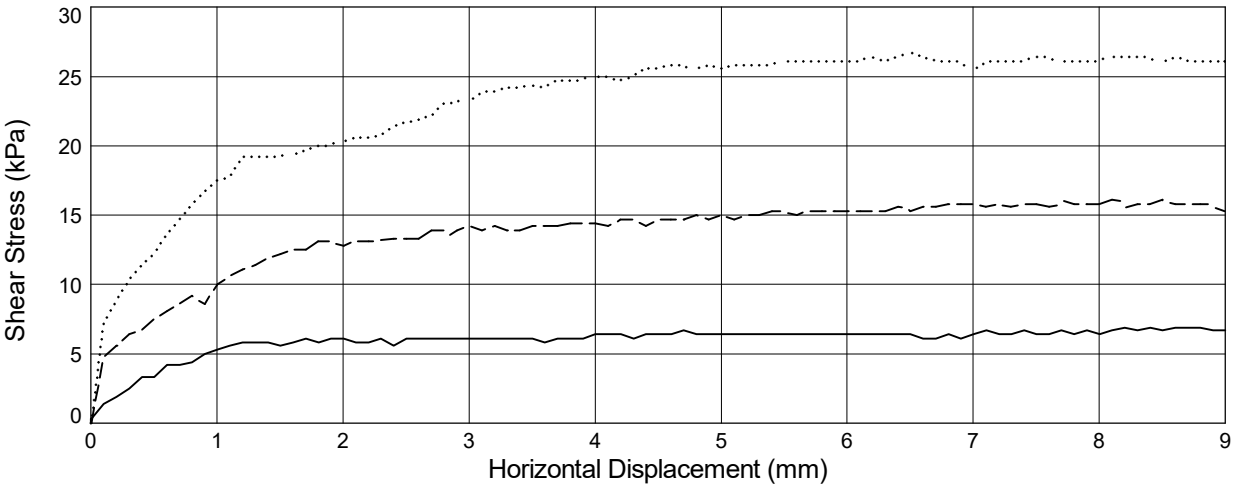
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**01/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P2.1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

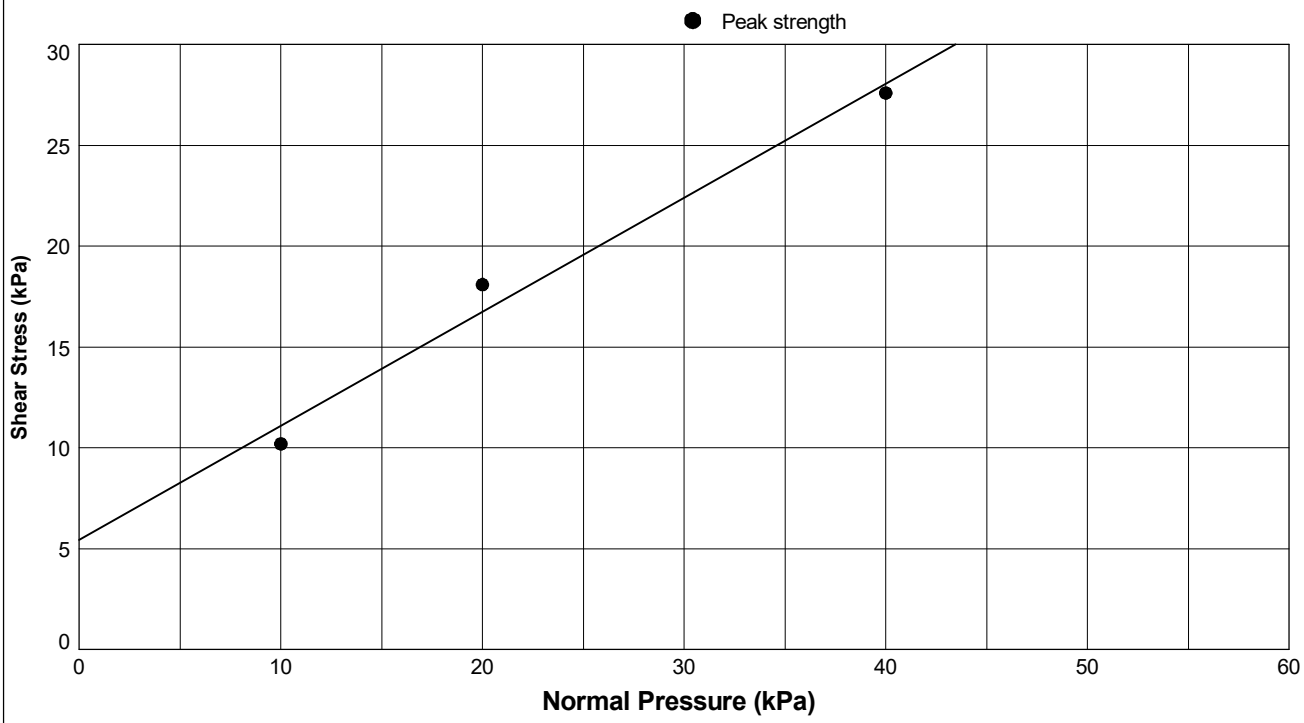
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS129** Sample Ref: **8** Sample Type: **B** Depth (m): **1.20**

Description: **Reddish brown gravelly clayey SAND** Start Date: **16/08/2023**

Sample Condition: **Recompacted** End Date: **17/08/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**10.3**	**10.3**	**10.3**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.0**	**19.0**	**19.0**
	Initial Bulk Density	(Mg/m^3)	**1.96**	**1.96**	**1.96**
	Initial Dry Density	(Mg/m^3)	**1.78**	**1.78**	**1.78**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.4892**	**0.4899**	**0.4895**
	Initial Degree of Saturation	(%)	**56**	**56**	**56**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**2**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**18.3**	**18.3**	**18.1**
SHEAR	Shearing Rate	(mm/min)	**0.0534**	**0.0548**	**0.0558**
	Horiz. Displacement at Peak Shear Stress	(mm)	**7.4**	**7.0**	**7.4**
	Peak Shear Stress	(kPa)	**10**	**18**	**28**
PEAK STRENGTH	Effective Cohesion (C ') **5**	(kPa)	Effective Angle of Friction (ϕ ')	**29.5**	(deg)



STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**21/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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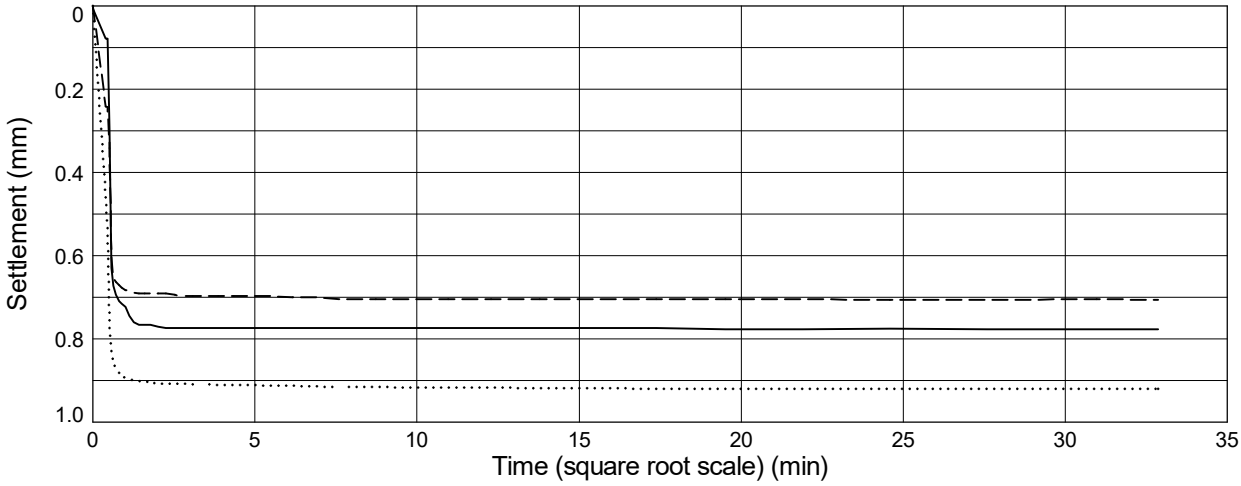
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

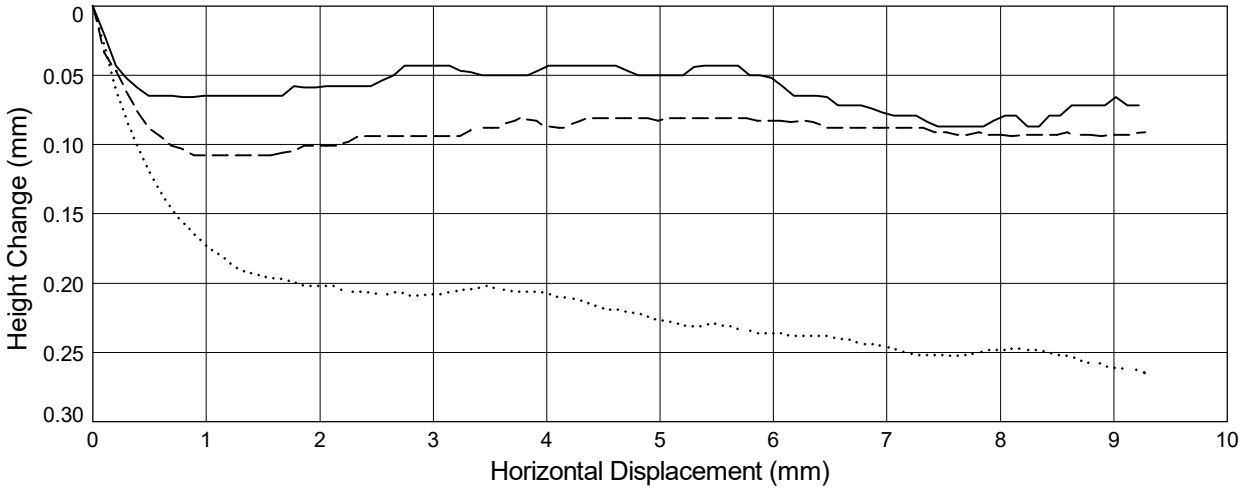
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS129** Sample Ref: **8** Sample Type: **B** Depth (m): **1.20**

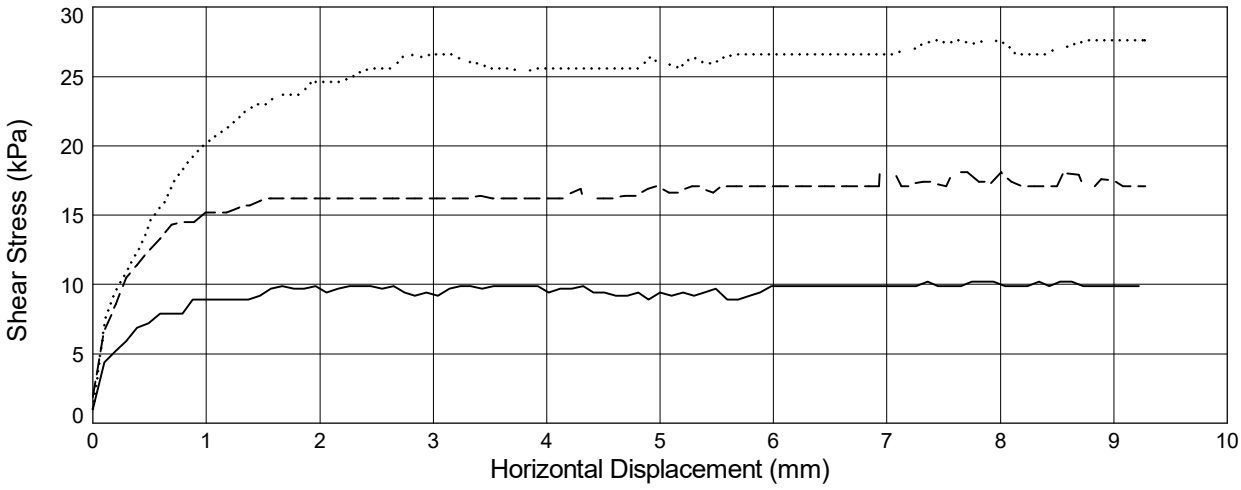
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**21/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P2.1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

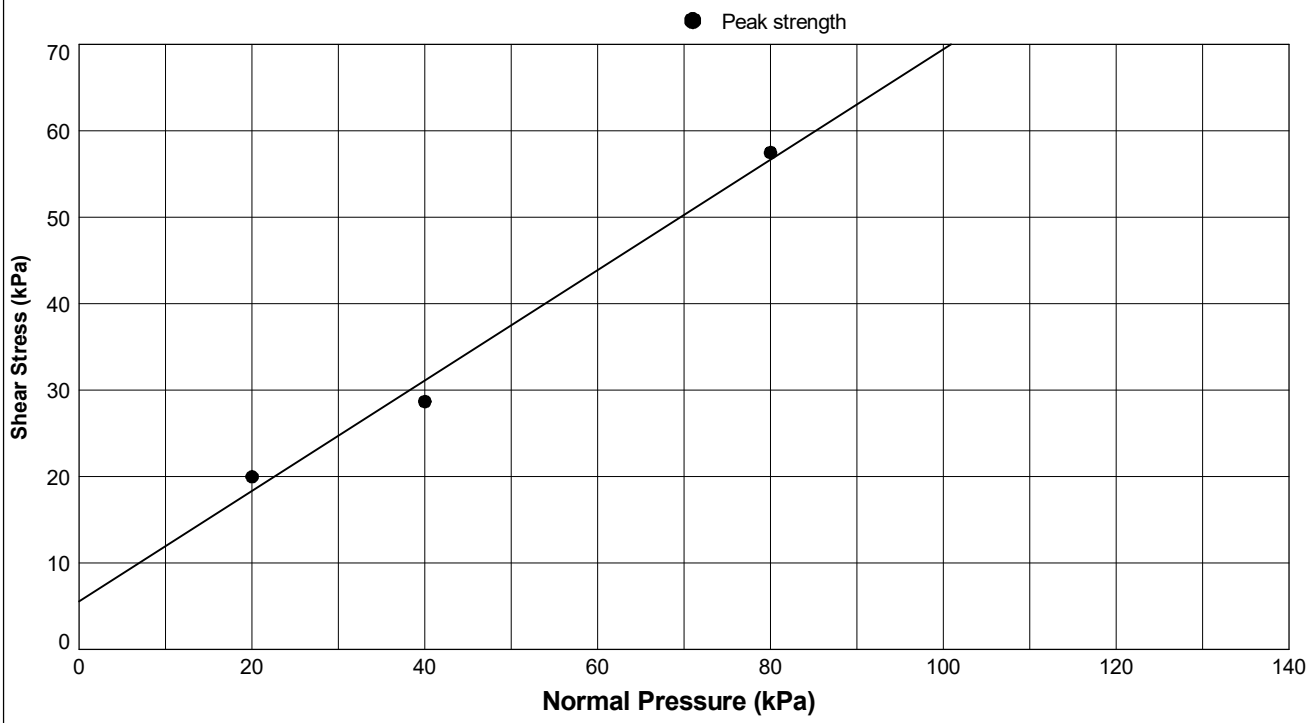
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS129** Sample Ref: **12** Sample Type: **B** Depth (m): **2.00**

Description: **Reddish brown very sandy clayey GRAVEL with high cobble content** Start Date: **09/08/2023**

Sample Condition: **Recompacted** End Date: **10/08/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**11.4**	**11.4**	**11.4**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.1**	**19.1**	**19.1**
	Initial Bulk Density	(Mg/m^3)	**2.08**	**2.08**	**2.08**
	Initial Dry Density	(Mg/m^3)	**1.87**	**1.87**	**1.87**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.4181**	**0.4187**	**0.4182**
	Initial Degree of Saturation	(%)	**72**	**72**	**72**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**2**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**20**	**40**	**80**
	Consolidated Height	(mm)	**18.6**	**18.3**	**18.1**
SHEAR	Shearing Rate	(mm/min)	**0.0226**	**0.0252**	**0.0268**
	Horiz. Displacement at Peak Shear Stress	(mm)	**1.7**	**8.7**	**2.4**
	Peak Shear Stress	(kPa)	**20**	**29**	**58**
PEAK STRENGTH	Effective Cohesion (C ') **6**	(kPa)	Effective Angle of Friction (ϕ ')	**32.5**	(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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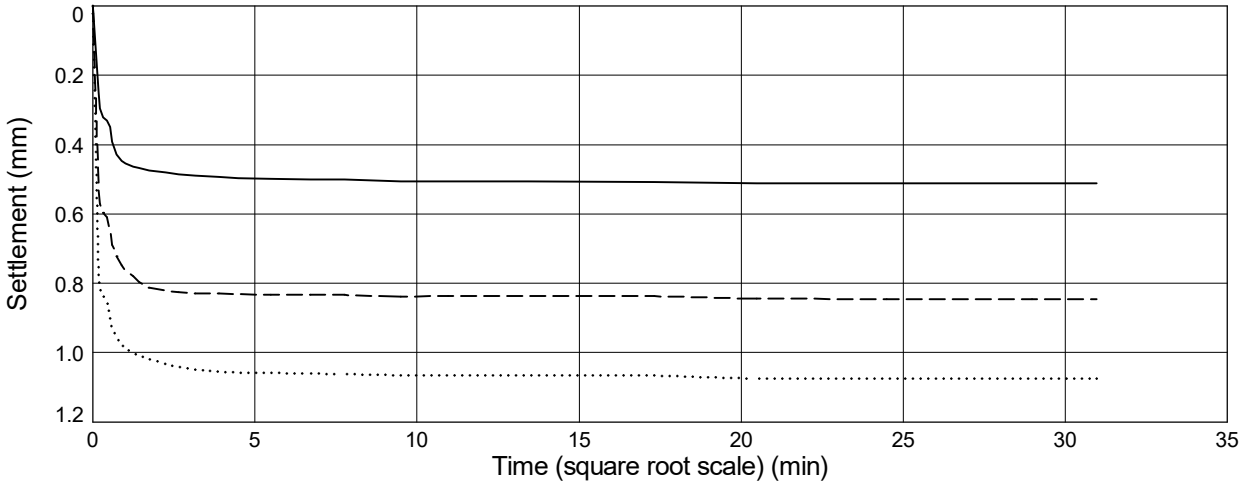
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

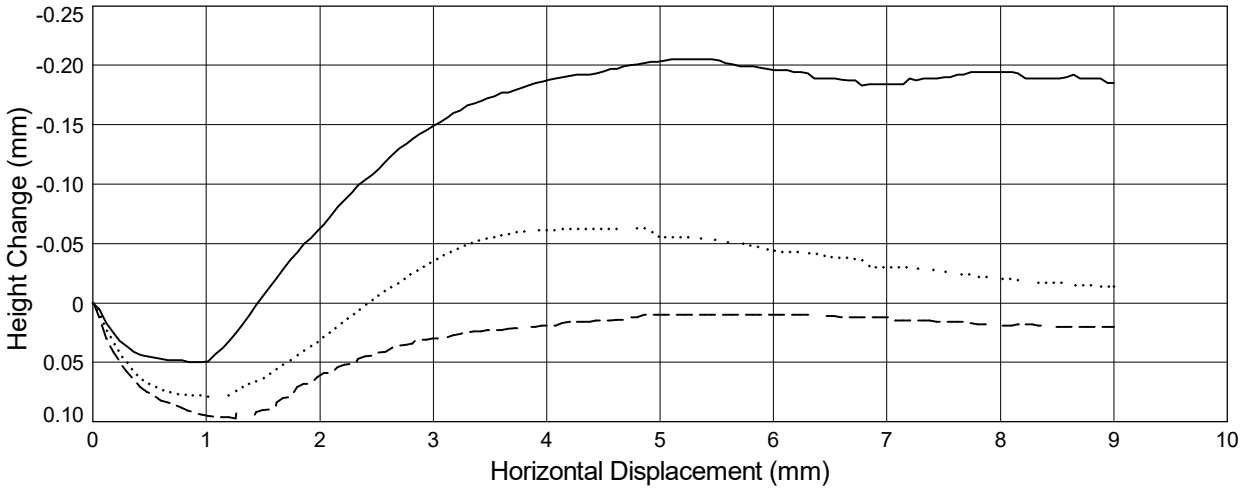
In accordance with BS EN ISO 17892-10

Borehole: **BH-PTS129** Sample Ref: **12** Sample Type: **B** Depth (m): **2.00**

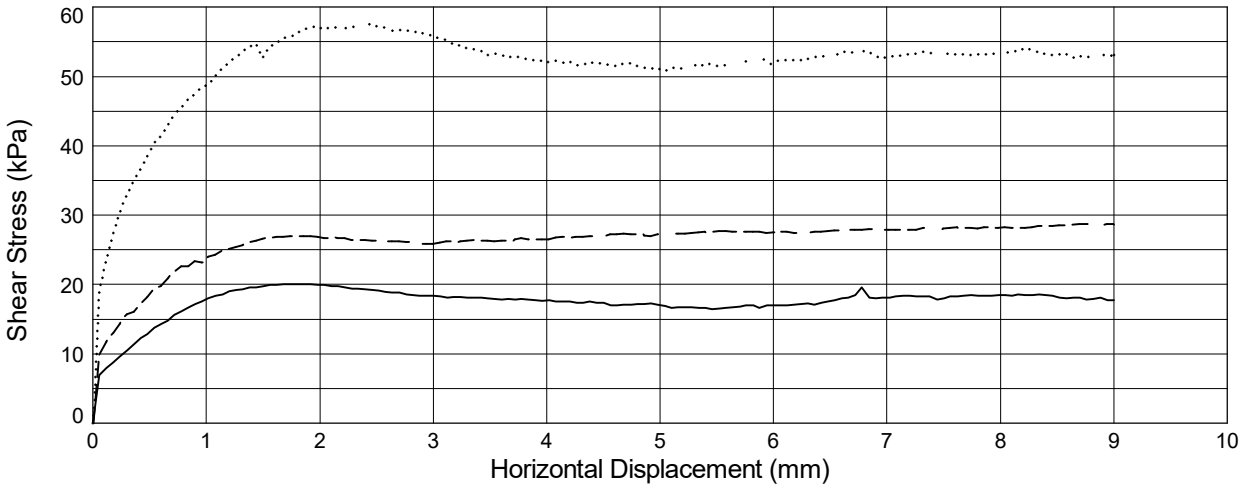
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**20** kPa) *Dashed Line* = Specimen 2 (**40** kPa) *Dotted Line* = Specimen 3 (**80** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P2.1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

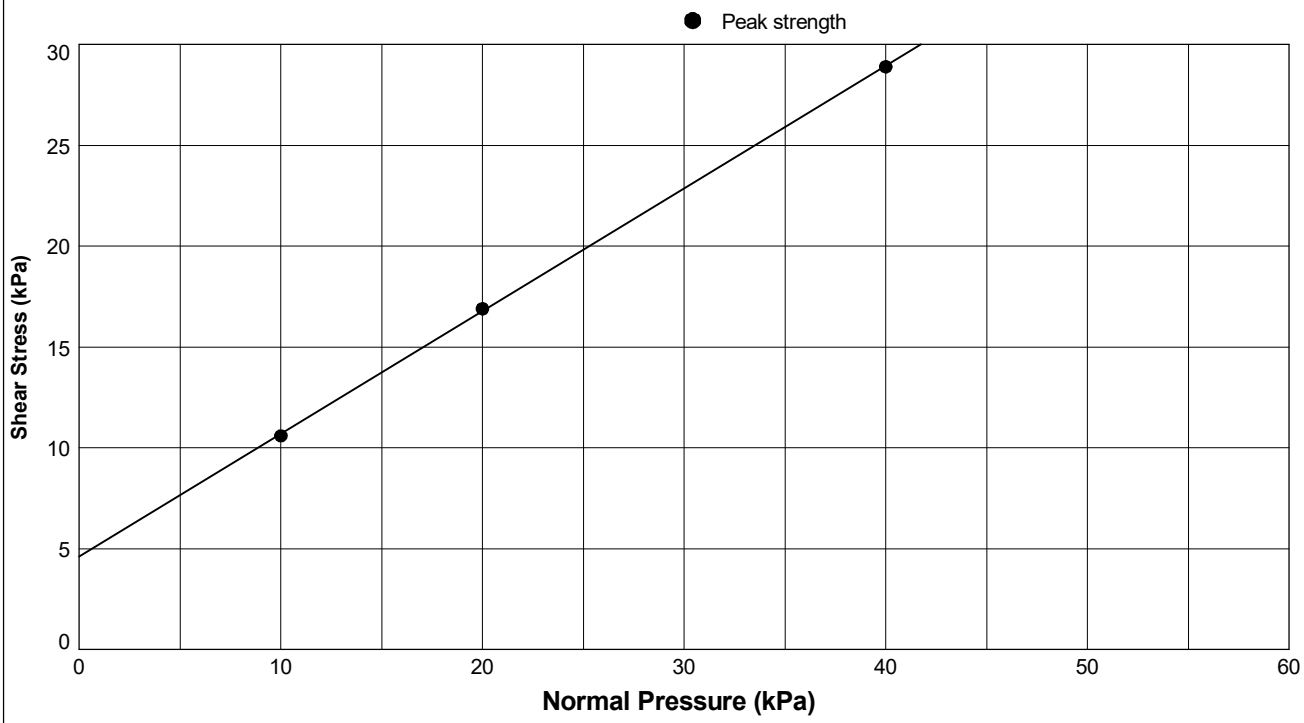
In accordance with BS EN ISO 17892-10

Position ID: **GS-PTS107** Sample Ref: **6** Sample Type: **B** Depth (m): **0.90**

Description: **Reddish brown gravelly silty SAND** Start Date: **09/06/2023**

Sample Condition: **Recompacted** End Date: **13/06/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**9.8**	**9.8**	**9.8**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.1**	**19.1**	**19.1**
	Initial Bulk Density	(Mg/m^3)	**1.99**	**1.99**	**1.99**
	Initial Dry Density	(Mg/m^3)	**1.81**	**1.81**	**1.81**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.4657**	**0.4658**	**0.4657**
	Initial Degree of Saturation	(%)	**56**	**56**	**56**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**3**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**18.3**	**18.1**	**18.1**
SHEAR	Shearing Rate	(mm/min)	**0.0126**	**0.0155**	**0.0180**
	Horiz. Displacement at Peak Shear Stress	(mm)	**1.8**	**9.0**	**1.5**
	Peak Shear Stress	(kPa)	**11**	**17**	**29**
PEAK STRENGTH	Effective Cohesion (C ') **5**	(kPa)	Effective Angle of Friction (ϕ ')	**31.5**	(deg)



STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	DARIA IGNACZAK	18/08/23

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

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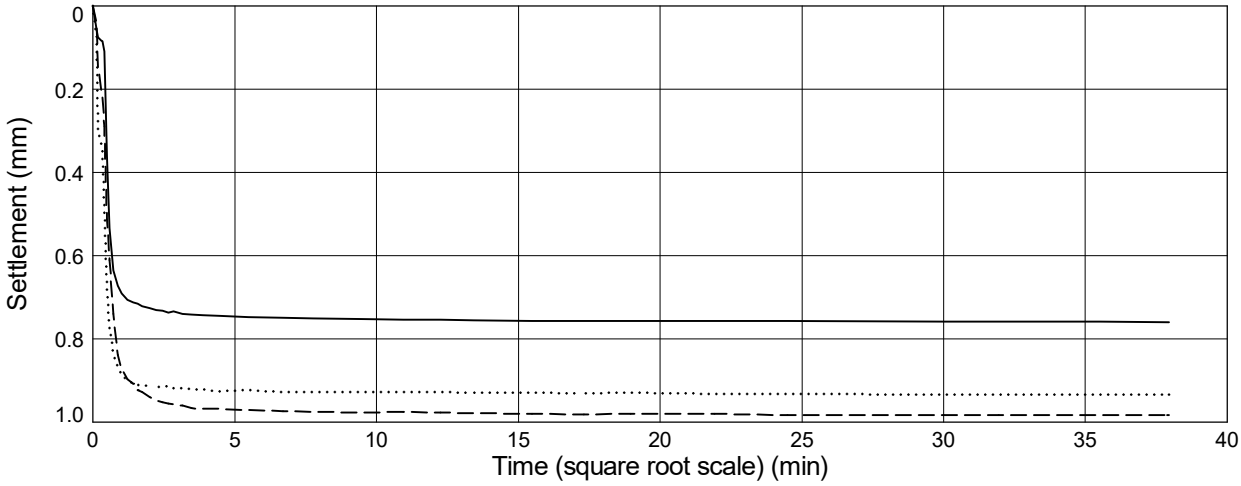
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

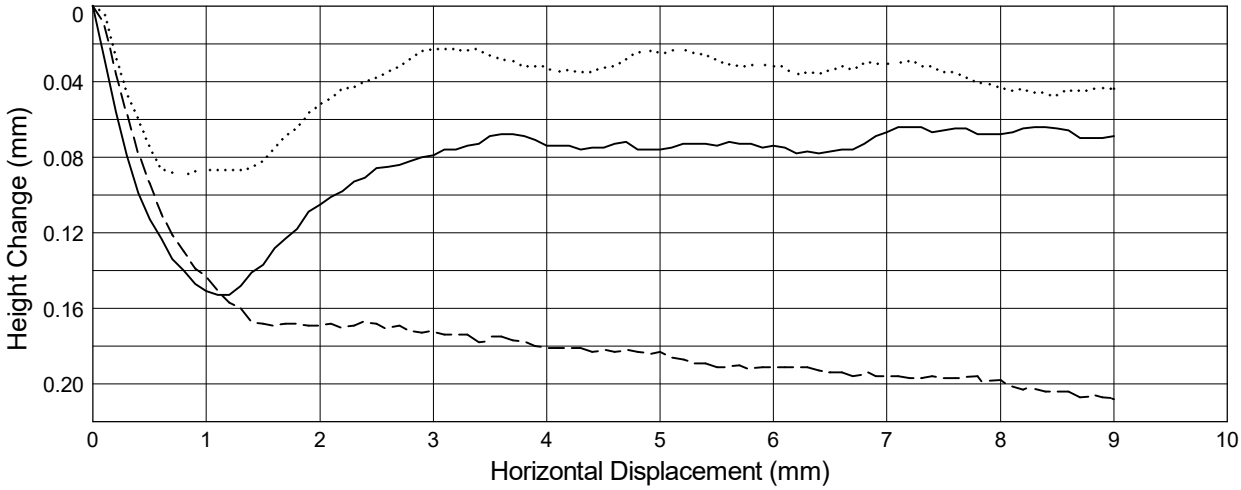
In accordance with BS EN ISO 17892-10

Position ID: **GS-PTS107** Sample Ref: **6** Sample Type: **B** Depth (m): **0.90**

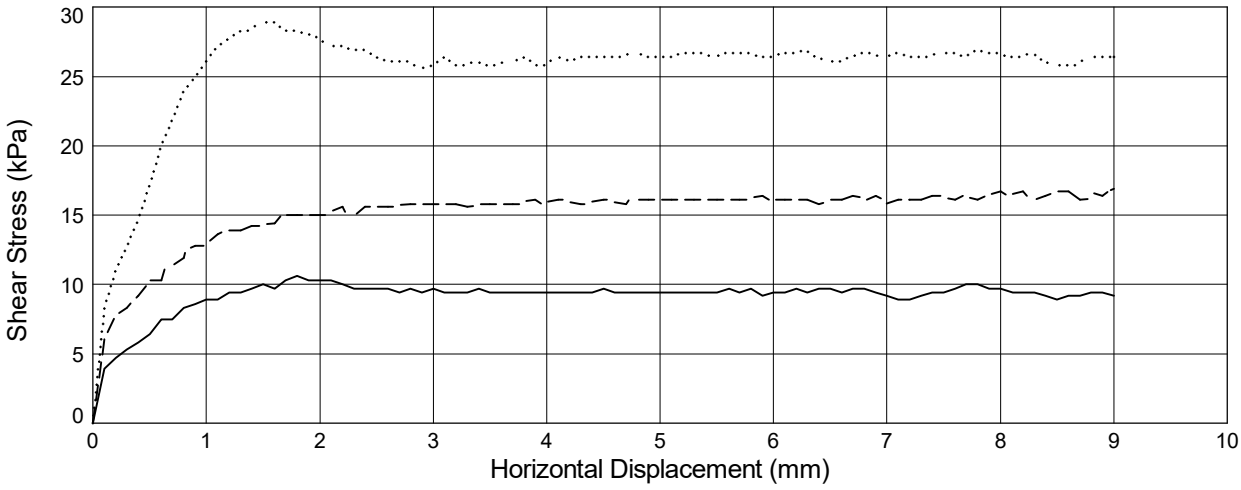
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**27/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

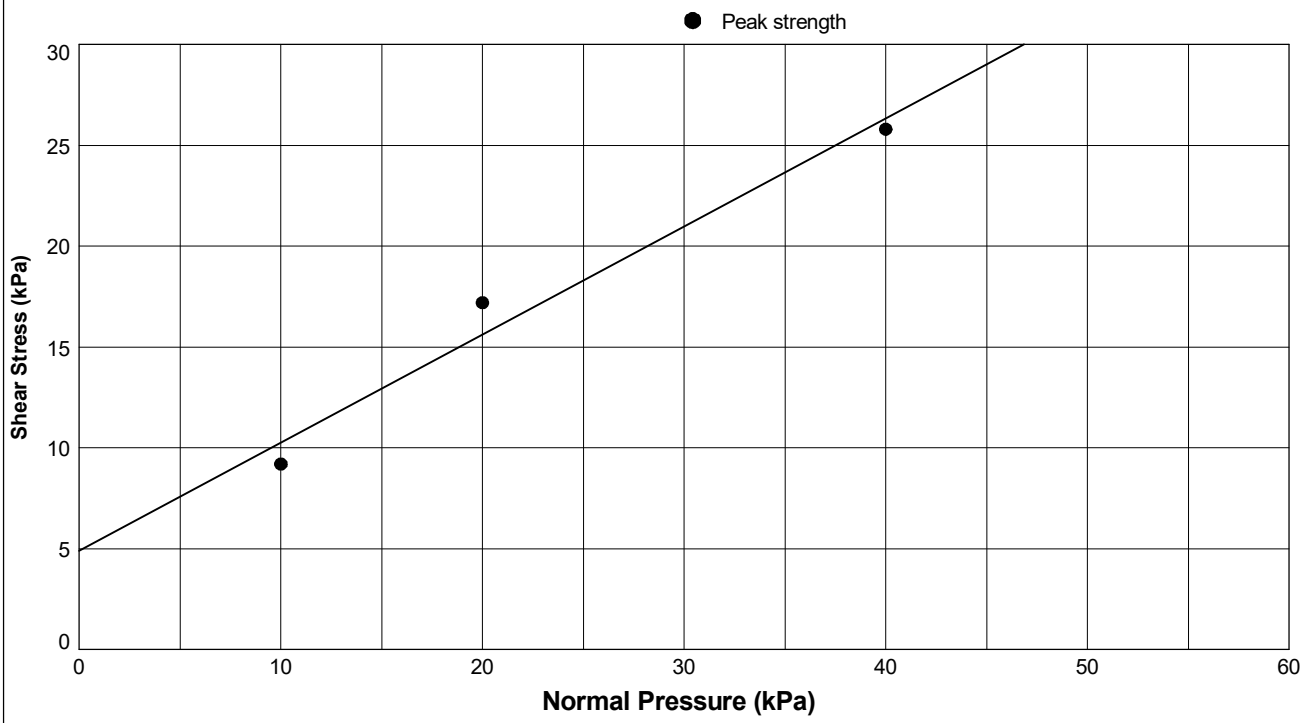
In accordance with BS EN ISO 17892-10

Position ID: **GS-PTS108A** Sample Ref: **4** Sample Type: **B** Depth (m): **0.40**

Description: **Brown slightly sandy gravelly SILT** Start Date: **26/06/2023**

Sample Condition: **Recompacted** End Date: **28/06/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**14.4**	**14.4**	**14.4**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.1**	**19.1**	**19.1**
	Initial Bulk Density	(Mg/m^3)	**1.79**	**1.79**	**1.79**
	Initial Dry Density	(Mg/m^3)	**1.57**	**1.57**	**1.57**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.6924**	**0.6918**	**0.6923**
	Initial Degree of Saturation	(%)	**55**	**55**	**55**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**3**	**3**	**3**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**10.5**	**19.0**	**16.3**
SHEAR	Shearing Rate	(mm/min)	**0.0118**	**0.0123**	**0.0128**
	Horiz. Displacement at Peak Shear Stress	(mm)	**1.8**	**1.8**	**7.9**
	Peak Shear Stress	(kPa)	**9**	**17**	**26**
PEAK STRENGTH	Effective Cohesion (C ') **5**	(kPa)	Effective Angle of Friction (ϕ ')	**28**	(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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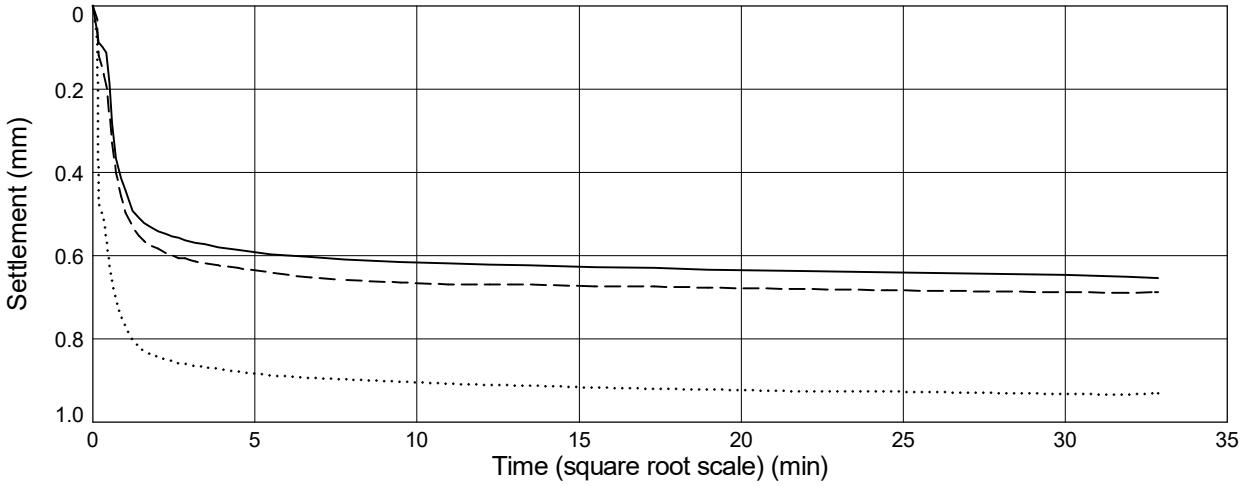
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

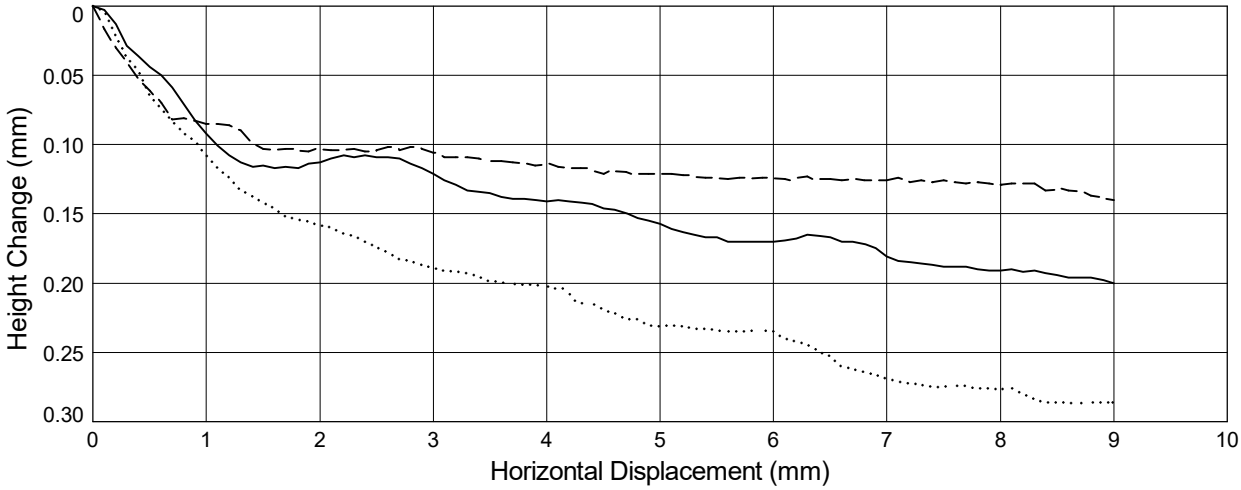
In accordance with BS EN ISO 17892-10

Position ID: **GS-PTS108A** Sample Ref: **4** Sample Type: **B** Depth (m): **0.40**

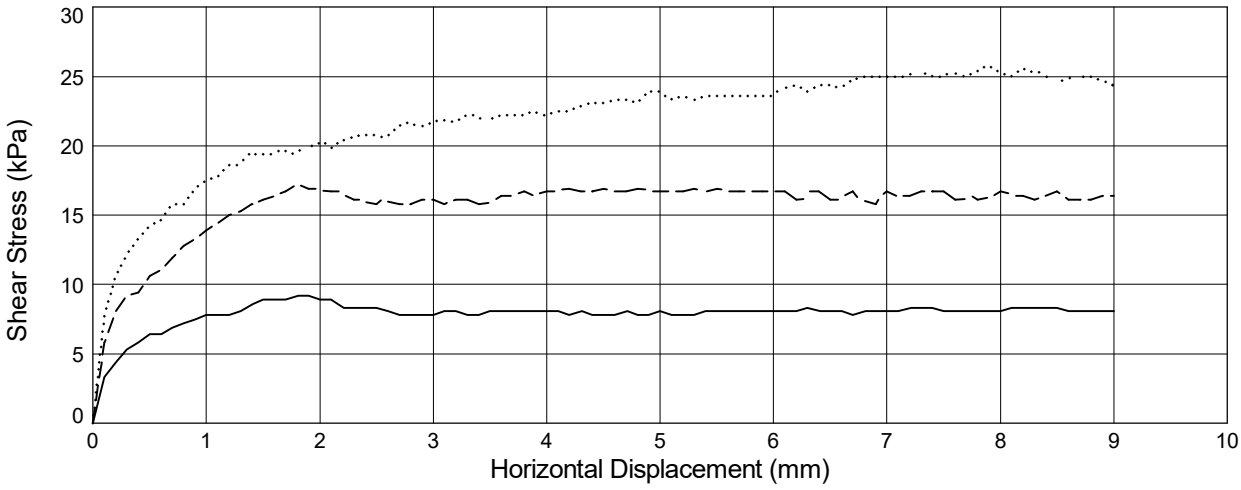
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**31/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

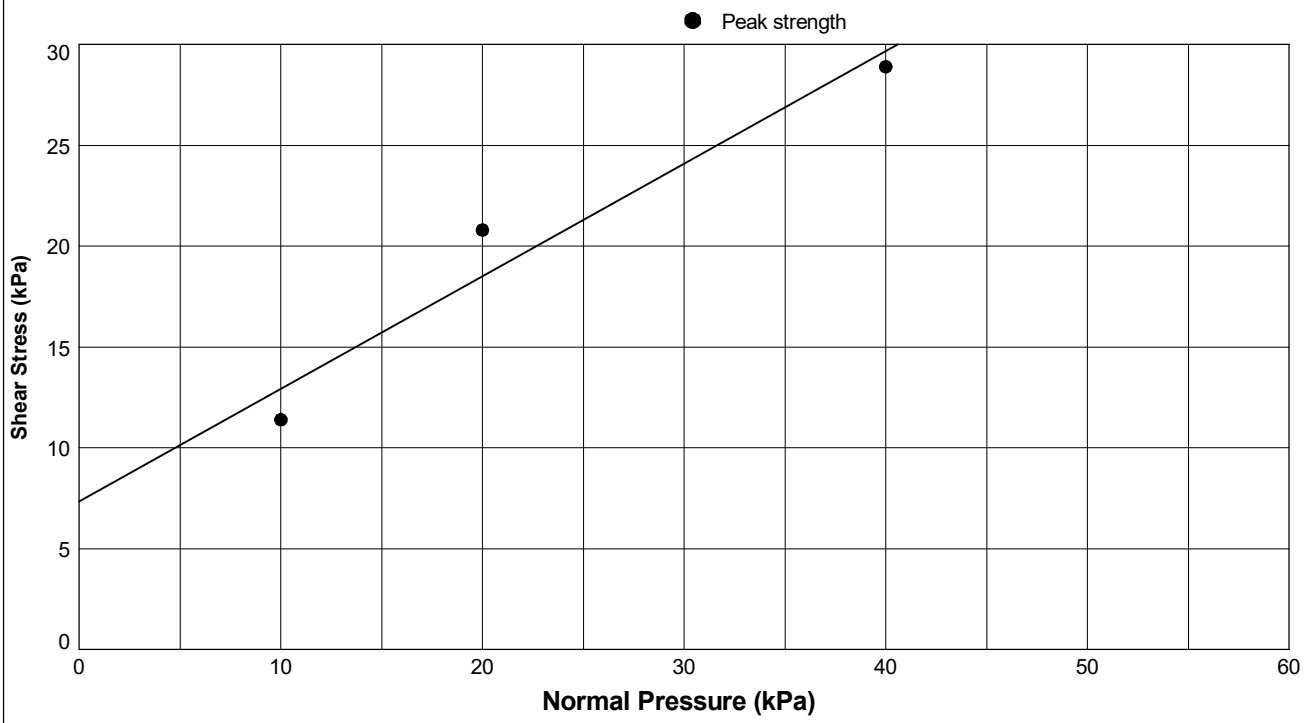
In accordance with BS EN ISO 17892-10

Position ID: **GS-PTS108A** Sample Ref: **10** Sample Type: **B** Depth (m): **2.00**

Description: **Reddish brown gravelly very clayey SAND** Start Date: **16/05/2023**

Sample Condition: **Recompacted** End Date: **17/05/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**16.4**	**16.4**	**16.4**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.2**	**19.2**	**19.2**
	Initial Bulk Density	(Mg/m^3)	**2.11**	**2.11**	**2.11**
	Initial Dry Density	(Mg/m^3)	**1.81**	**1.81**	**1.81**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.4638**	**0.4642**	**0.4639**
	Initial Degree of Saturation	(%)	**94**	**94**	**94**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**2**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**18.7**	**18.3**	**18.2**
SHEAR	Shearing Rate	(mm/min)	**0.0171**	**0.0180**	**0.0213**
	Horiz. Displacement at Peak Shear Stress	(mm)	**2.0**	**2.2**	**2.6**
	Peak Shear Stress	(kPa)	**11**	**21**	**29**
PEAK STRENGTH	Effective Cohesion (C ') **7**	(kPa)	Effective Angle of Friction (ϕ ')	**29**	(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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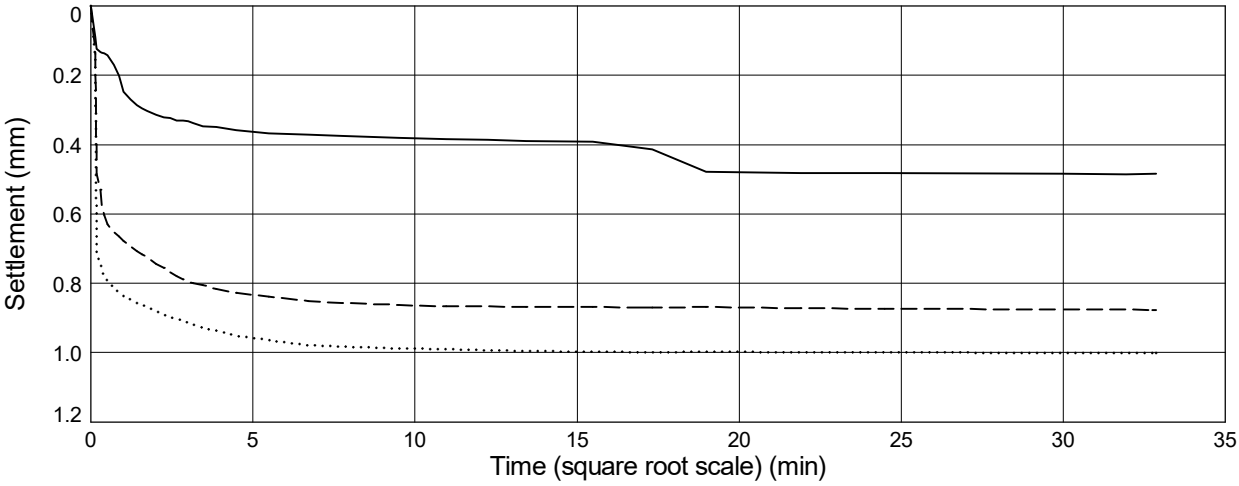
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

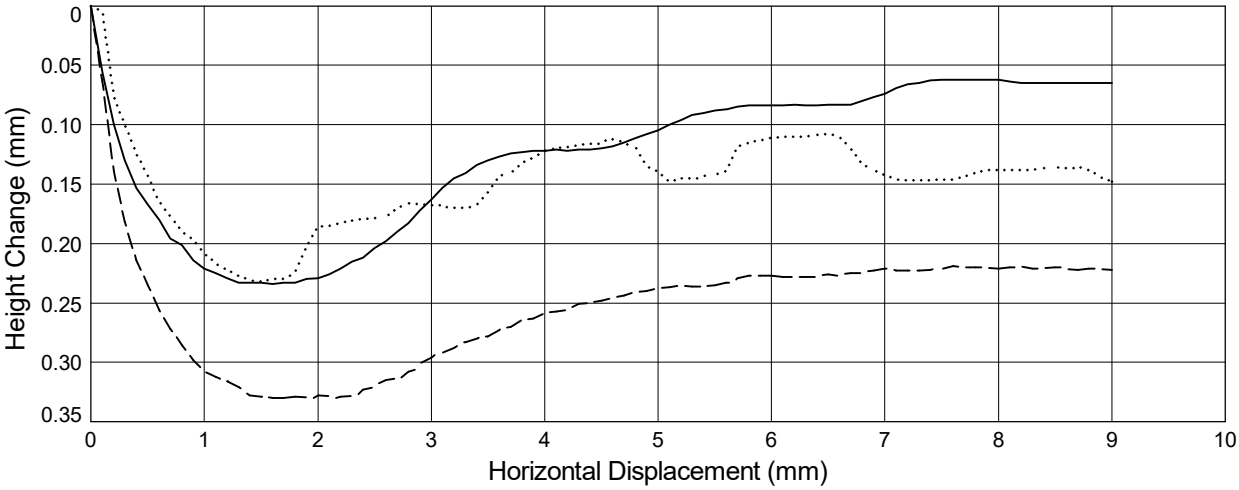
In accordance with BS EN ISO 17892-10

Position ID: **GS-PTS108A** Sample Ref: **10** Sample Type: **B** Depth (m): **2.00**

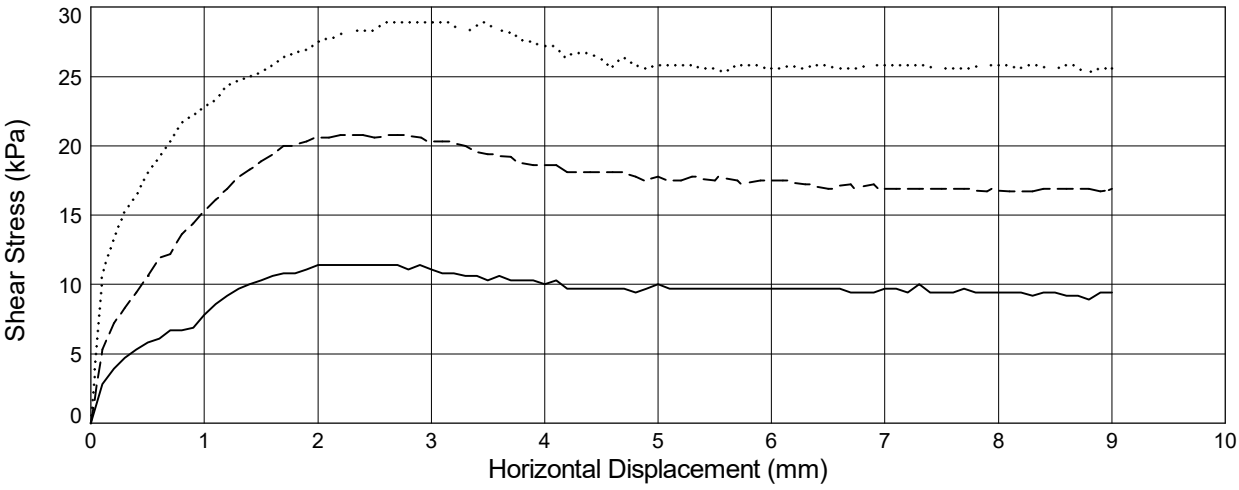
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**31/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P2.1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

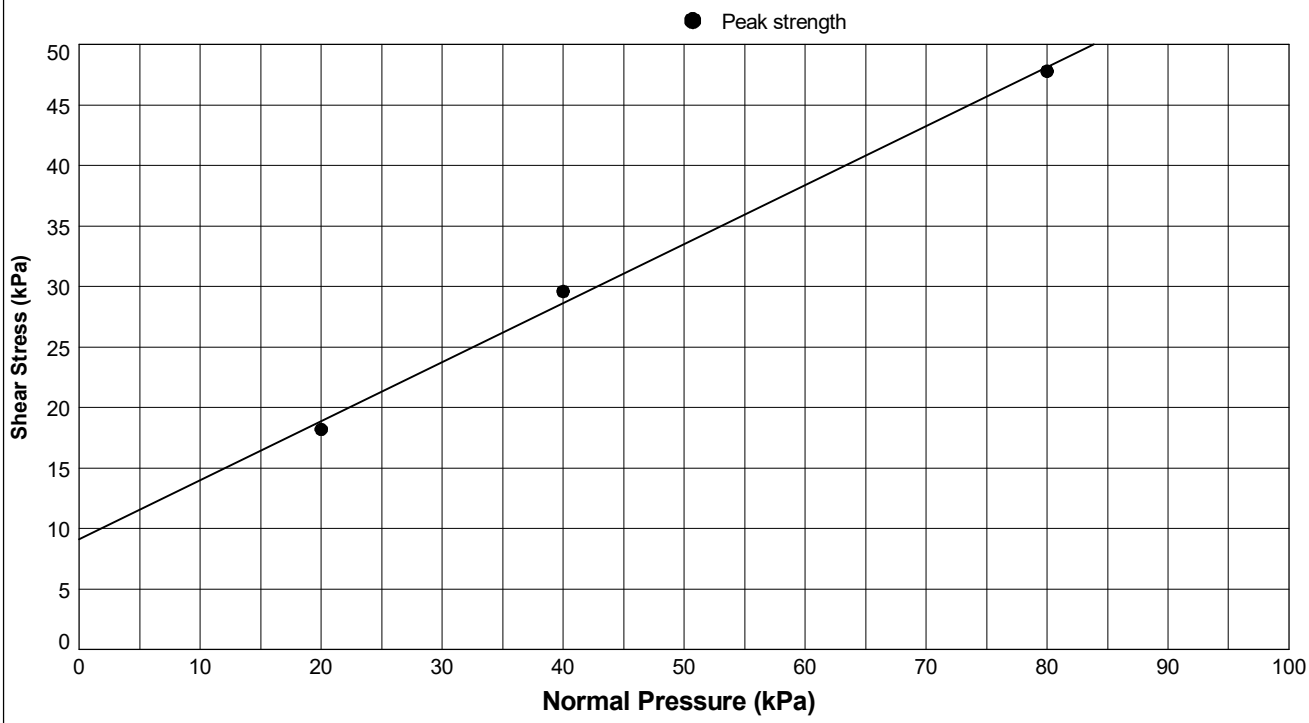
In accordance with BS EN ISO 17892-10

Position ID: **GS-PTS108A** Sample Ref: **17** Sample Type: **B** Depth (m): **4.00**

Description: **Reddish brown gravelly very clayey SAND** Start Date: **16/05/2023**

Sample Condition: **Recompacted** End Date: **17/05/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**10.6**	**10.6**	**10.6**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.1**	**19.1**	**19.1**
	Initial Bulk Density	(Mg/m^3)	**2.09**	**2.09**	**2.09**
	Initial Dry Density	(Mg/m^3)	**1.89**	**1.89**	**1.89**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.4008**	**0.4007**	**0.4010**
	Initial Degree of Saturation	(%)	**70**	**70**	**70**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**2**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**20**	**40**	**80**
	Consolidated Height	(mm)	**17.6**	**17.7**	**17.7**
SHEAR	Shearing Rate	(mm/min)	**0.0226**	**0.0305**	**0.0324**
	Horiz. Displacement at Peak Shear Stress	(mm)	**1.2**	**1.7**	**3.3**
	Peak Shear Stress	(kPa)	**18**	**30**	**48**
PEAK STRENGTH	Effective Cohesion (C ') **9**	(kPa)	Effective Angle of Friction (ϕ ') **26**		(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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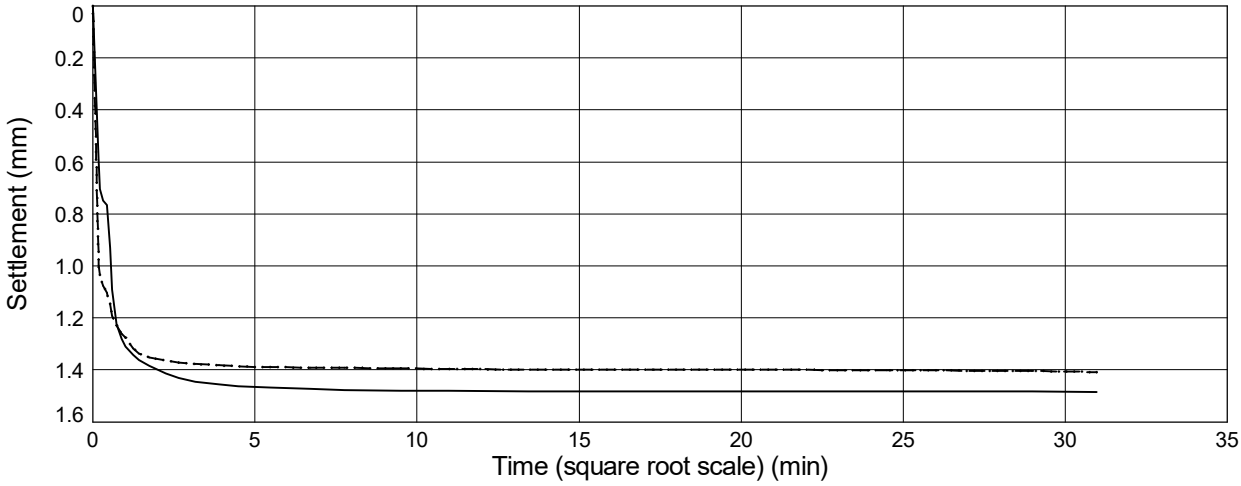
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

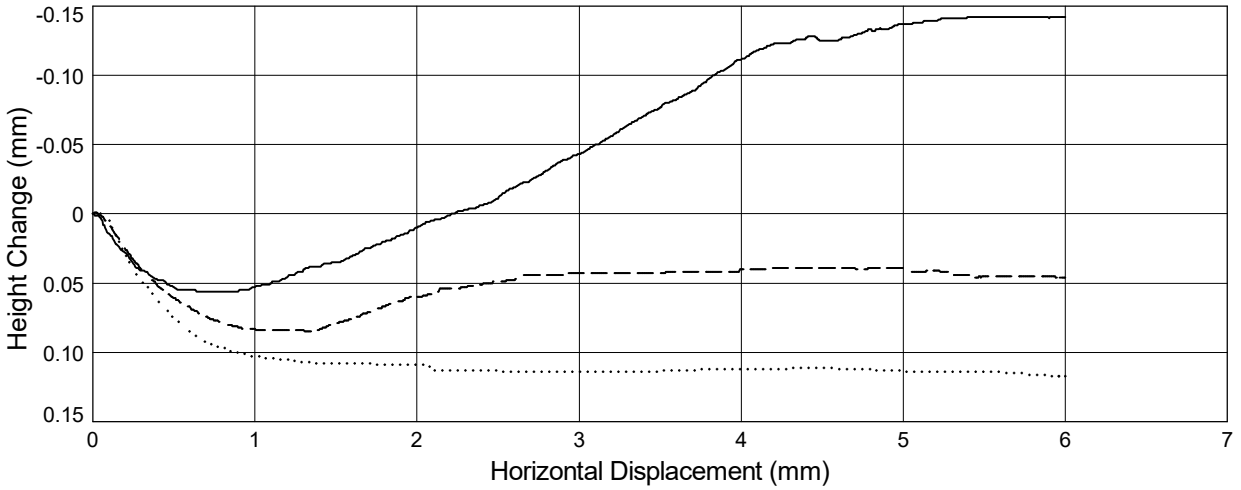
In accordance with BS EN ISO 17892-10

Position ID: **GS-PTS108A** Sample Ref: **17** Sample Type: **B** Depth (m): **4.00**

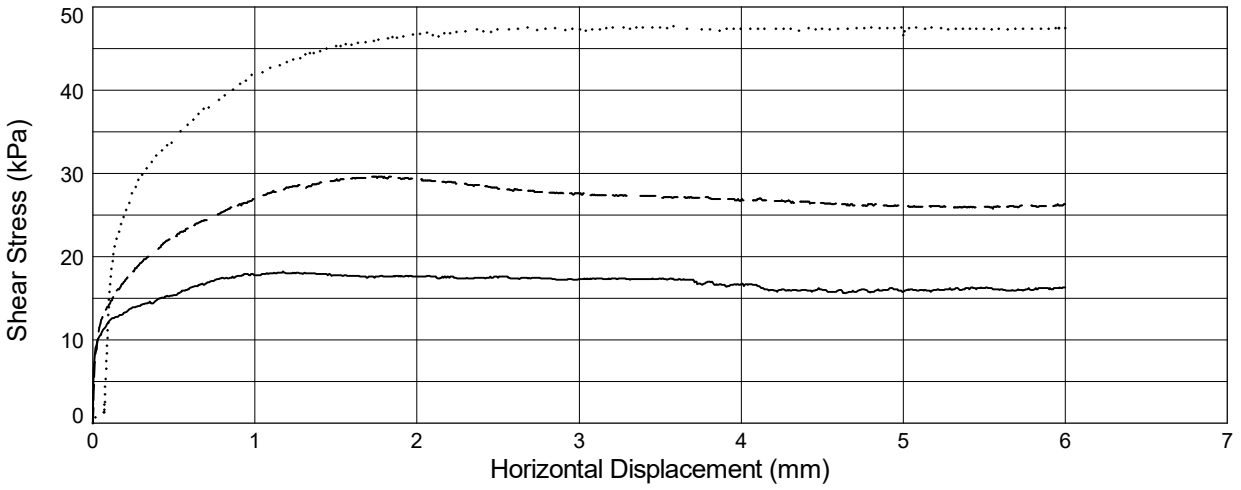
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**20** kPa) *Dashed Line* = Specimen 2 (**40** kPa) *Dotted Line* = Specimen 3 (**80** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P2.1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

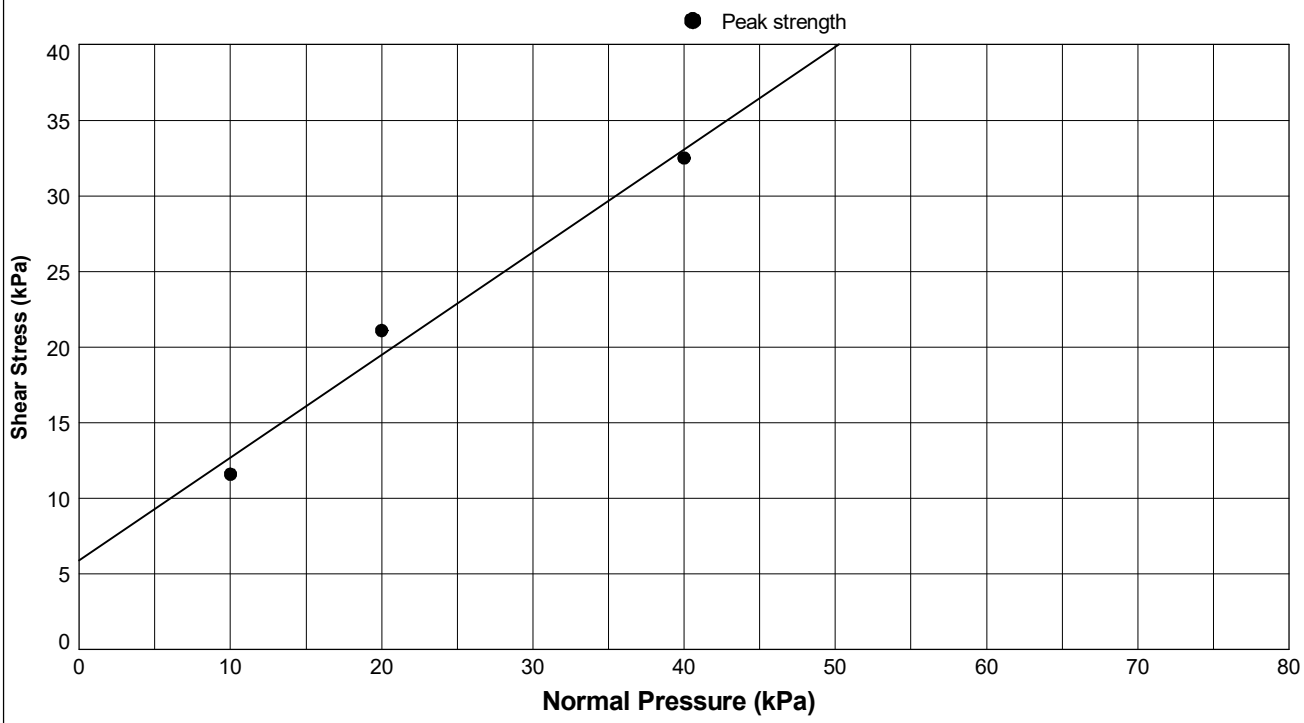
In accordance with BS EN ISO 17892-10

Position ID: **GS-PTS109** Sample Ref: **6** Sample Type: **B** Depth (m): **1.00**

Description: **Reddish brown gravelly very clayey SAND** Start Date: **22/05/2023**

Sample Condition: **Recompacted** End Date: **23/05/2023**

SPECIMEN NUMBER			1	2	3
PROPERTIES	Initial Water Content	(%)	**12.1**	**12.1**	**12.1**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.1**	**19.1**	**19.1**
	Initial Bulk Density	(Mg/m^3)	**2.11**	**2.10**	**2.11**
	Initial Dry Density	(Mg/m^3)	**1.88**	**1.88**	**1.88**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.4100**	**0.4111**	**0.4107**
	Initial Degree of Saturation	(%)	**78**	**78**	**78**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**2**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**19.0**	**18.1**	**18.1**
SHEAR	Shearing Rate	(mm/min)	**0.0226**	**0.0305**	**0.0400**
	Horiz. Displacement at Peak Shear Stress	(mm)	**2.2**	**1.7**	**2.0**
	Peak Shear Stress	(kPa)	**12**	**21**	**33**
PEAK STRENGTH	Effective Cohesion (C ') **6**	(kPa)	Effective Angle of Friction (ϕ ') **34**		(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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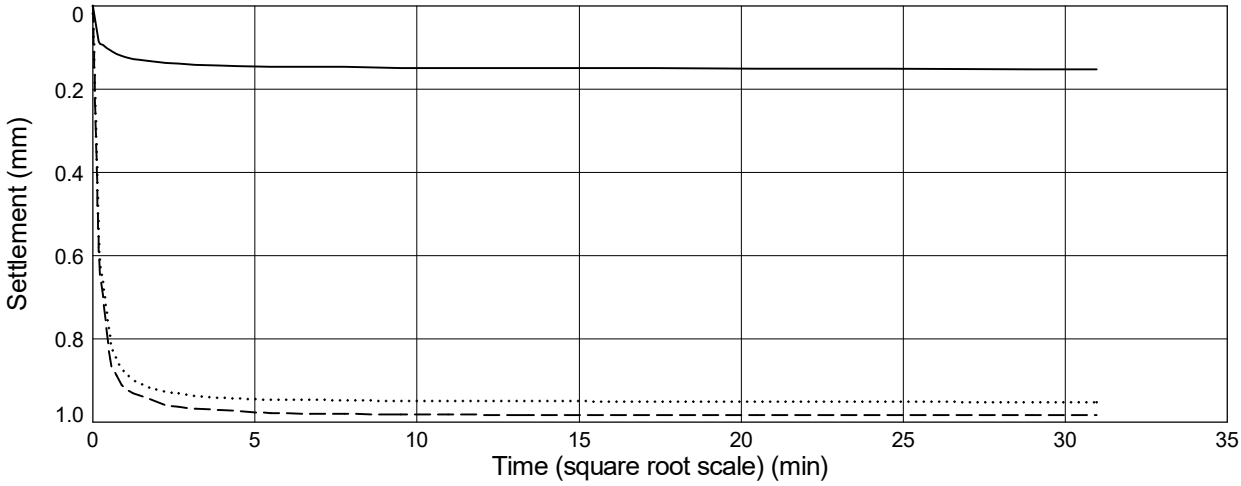
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

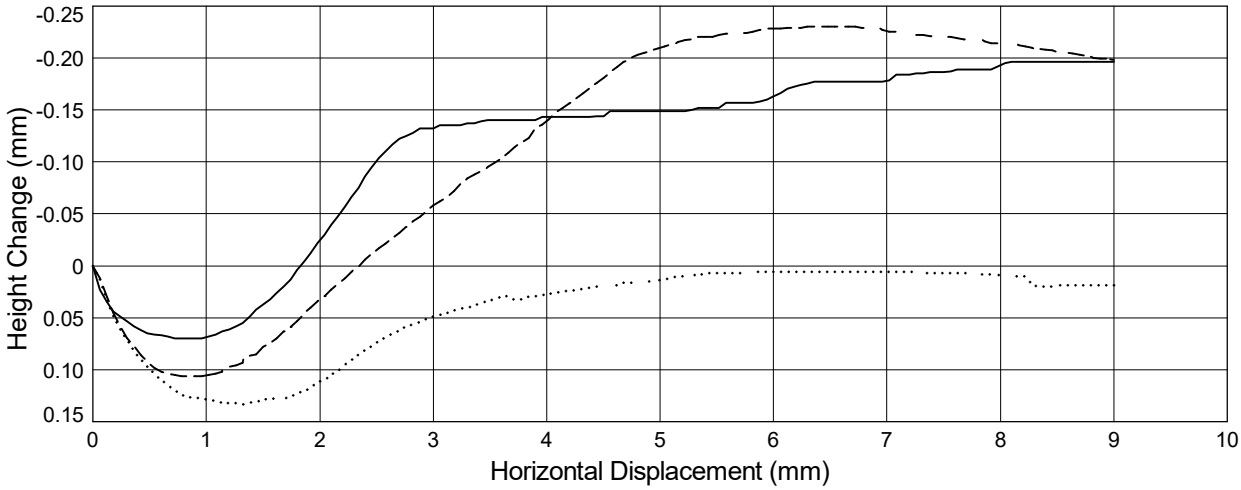
In accordance with BS EN ISO 17892-10

Position ID: **GS-PTS109** Sample Ref: **6** Sample Type: **B** Depth (m): **1.00**

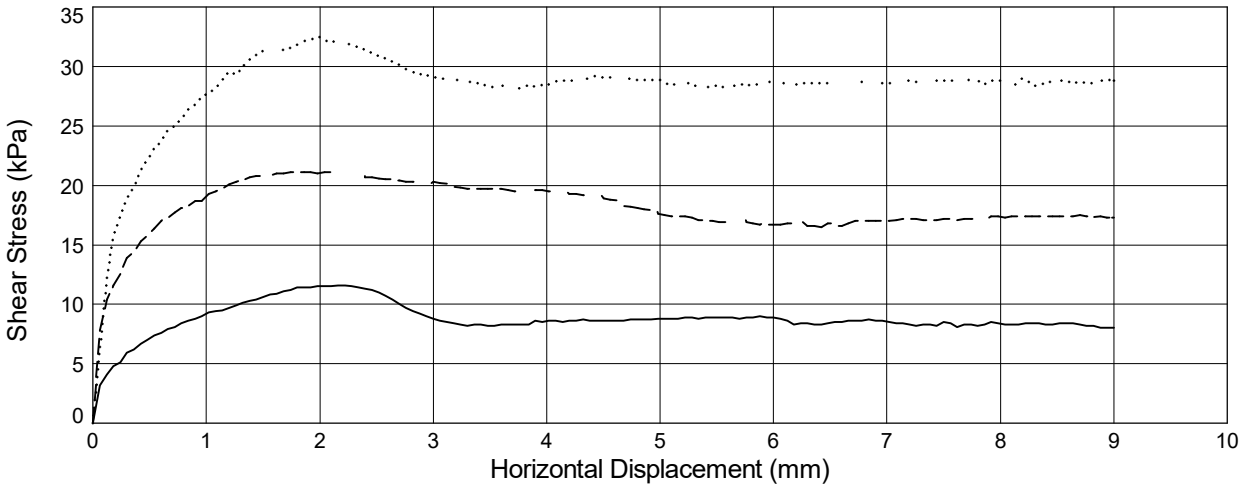
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P2.1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

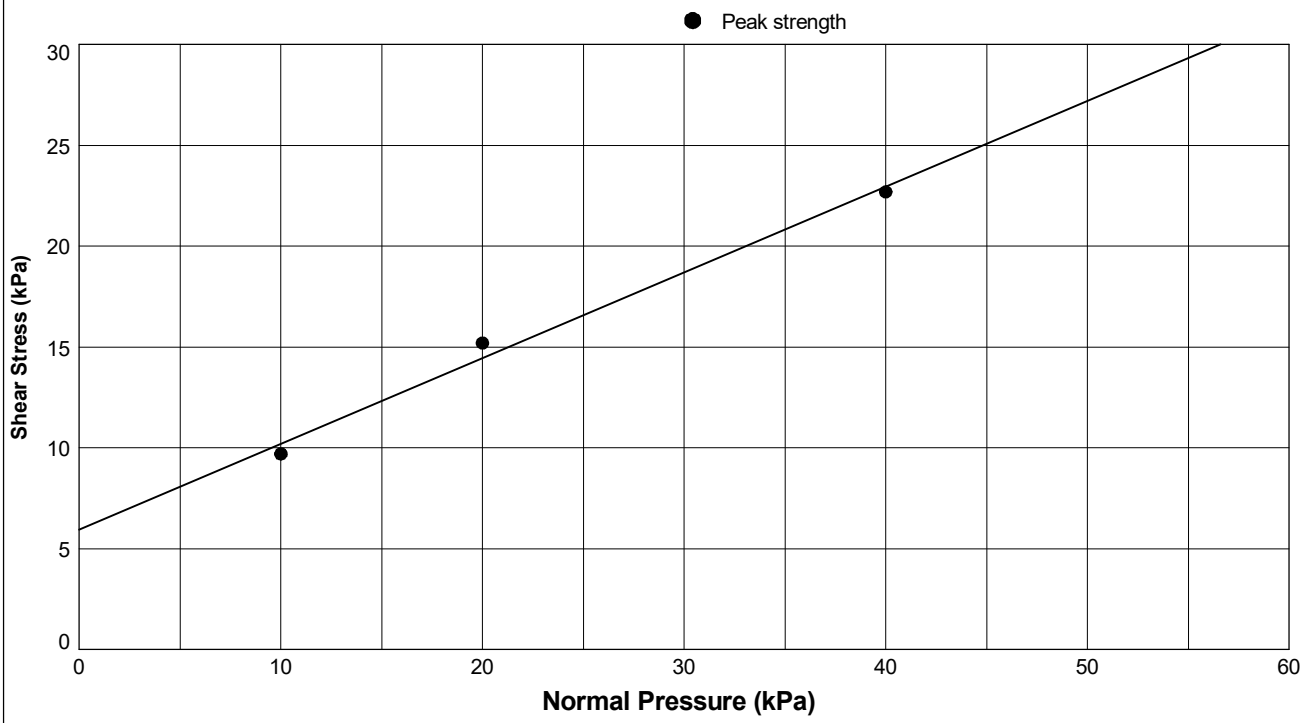
In accordance with BS EN ISO 17892-10

Trial Pit: **TP-PTS206** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**

Description: **Orangish brown gravelly SAND** Start Date: **19/07/2023**

Sample Condition: **Recompacted** End Date: **19/07/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**5.7**	**5.7**	**5.7**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.1**	**19.1**	**19.1**
	Initial Bulk Density	(Mg/m^3)	**1.72**	**1.72**	**1.72**
	Initial Dry Density	(Mg/m^3)	**1.63**	**1.63**	**1.63**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.6262**	**0.6264**	**0.6258**
	Initial Degree of Saturation	(%)	**24**	**24**	**24**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**1**	**1**	**1**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**18.4**	**18.2**	**17.4**
SHEAR	Shearing Rate	(mm/min)	**0.4000**	**0.4000**	**0.4000**
	Horiz. Displacement at Peak Shear Stress	(mm)	**8.3**	**2.8**	**8.1**
	Peak Shear Stress	(kPa)	**10**	**15**	**23**
PEAK STRENGTH	Effective Cohesion (C ') **6**	(kPa)	Effective Angle of Friction (ϕ ') **23**		(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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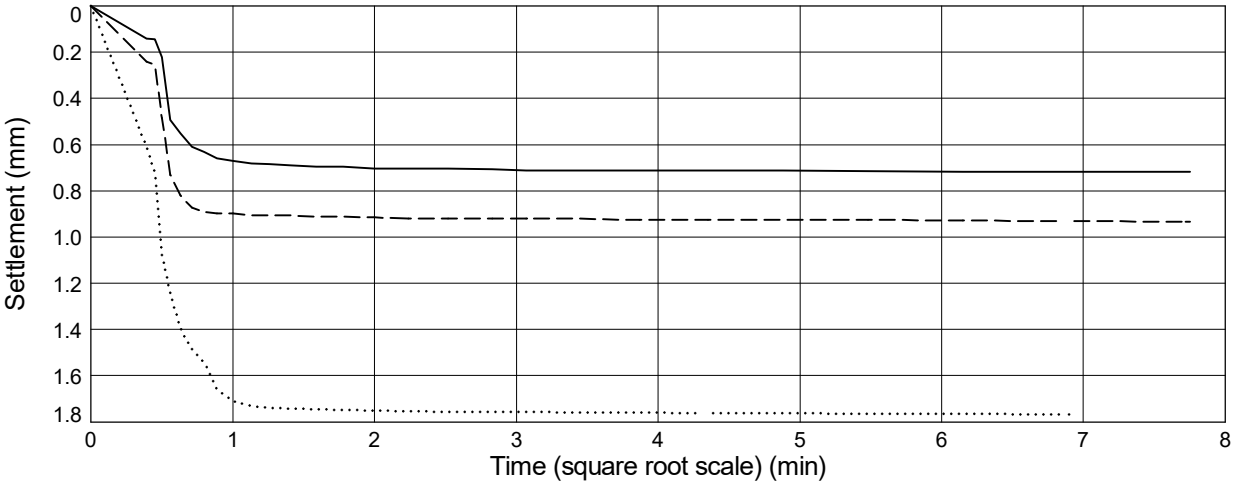
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

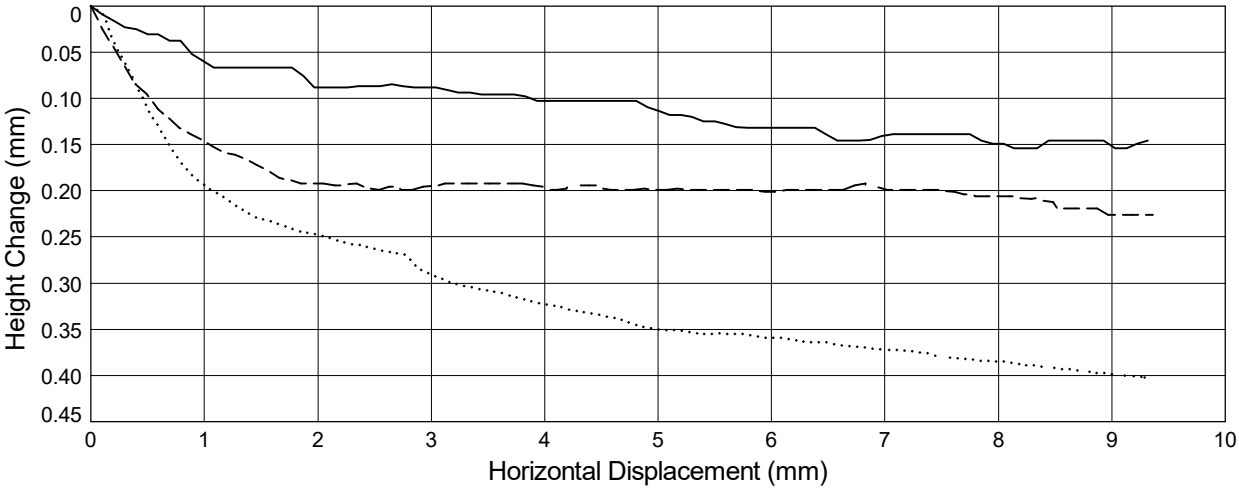
In accordance with BS EN ISO 17892-10

Trial Pit: **TP-PTS206** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**

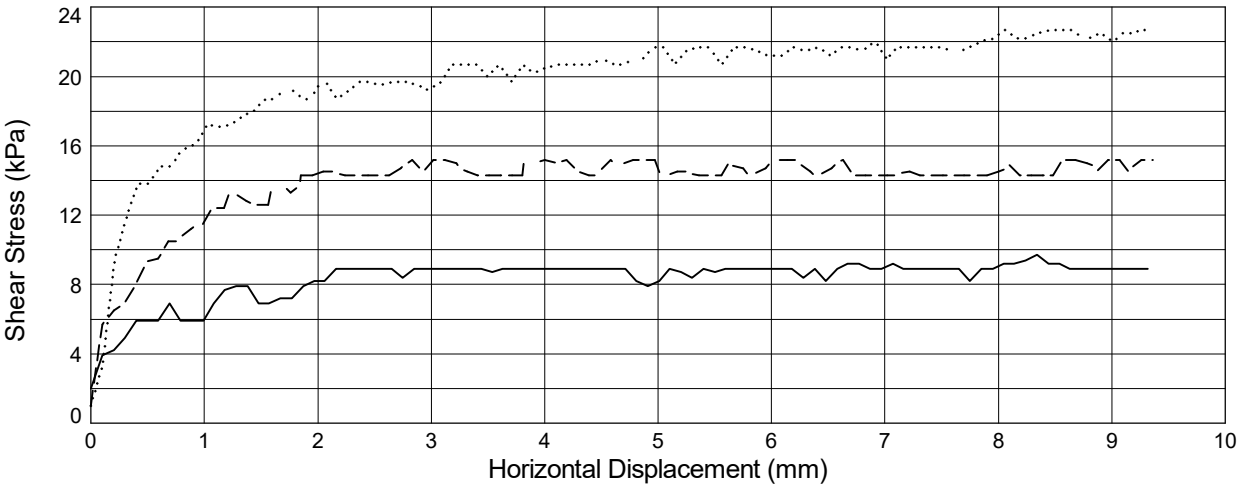
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Daria Ignaczak	**DARIA IGNACZAK**	**28/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

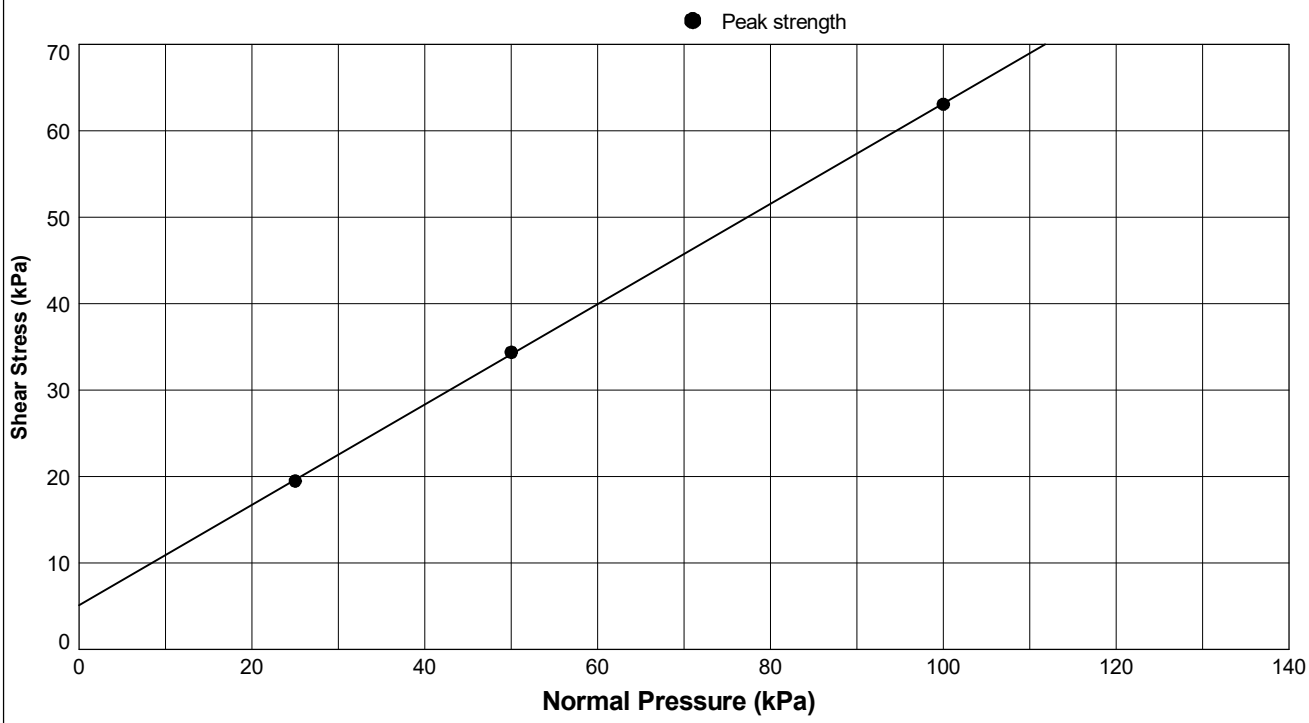
In accordance with BS EN ISO 17892-10

Trial Pit: **TP-PTS206** Sample Ref: **9** Sample Type: **LB** Depth (m): **2.50**

Description: **Reddish brown gravelly clayey SAND** Start Date: **18/07/2023**

Sample Condition: **Recompacted** End Date: **19/07/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**10.8**	**10.8**	**10.8**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.1**	**19.1**	**19.1**
	Initial Bulk Density	(Mg/m^3)	**1.92**	**1.92**	**1.92**
	Initial Dry Density	(Mg/m^3)	**1.73**	**1.73**	**1.73**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.5319**	**0.5319**	**0.5321**
	Initial Degree of Saturation	(%)	**54**	**54**	**54**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**2**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**25**	**50**	**100**
	Consolidated Height	(mm)	**17.7**	**17.4**	**17.4**
SHEAR	Shearing Rate	(mm/min)	**0.0375**	**0.0504**	**0.0504**
	Horiz. Displacement at Peak Shear Stress	(mm)	**7.0**	**8.9**	**8.2**
	Peak Shear Stress	(kPa)	**20**	**34**	**63**
PEAK STRENGTH	Effective Cohesion (C ') **5**	(kPa)	Effective Angle of Friction (ϕ ')	**30**	(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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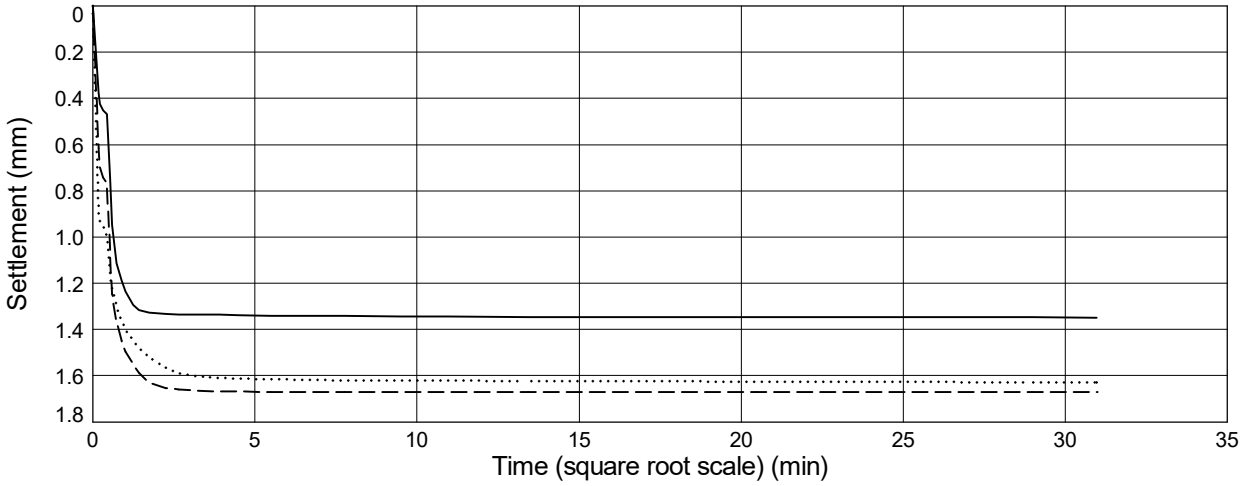
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

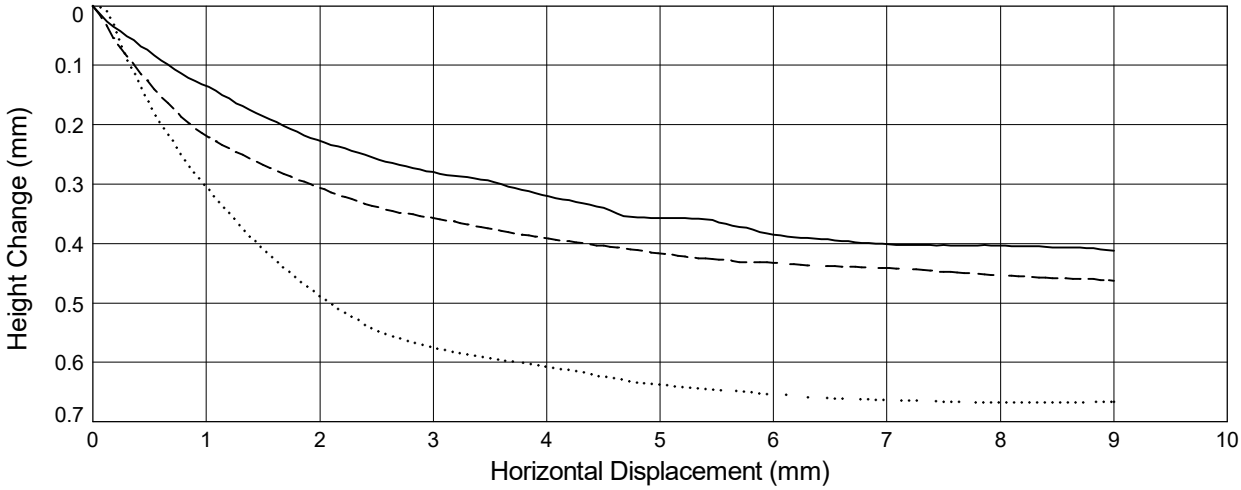
In accordance with BS EN ISO 17892-10

Trial Pit: **TP-PTS206** Sample Ref: **9** Sample Type: **LB** Depth (m): **2.50**

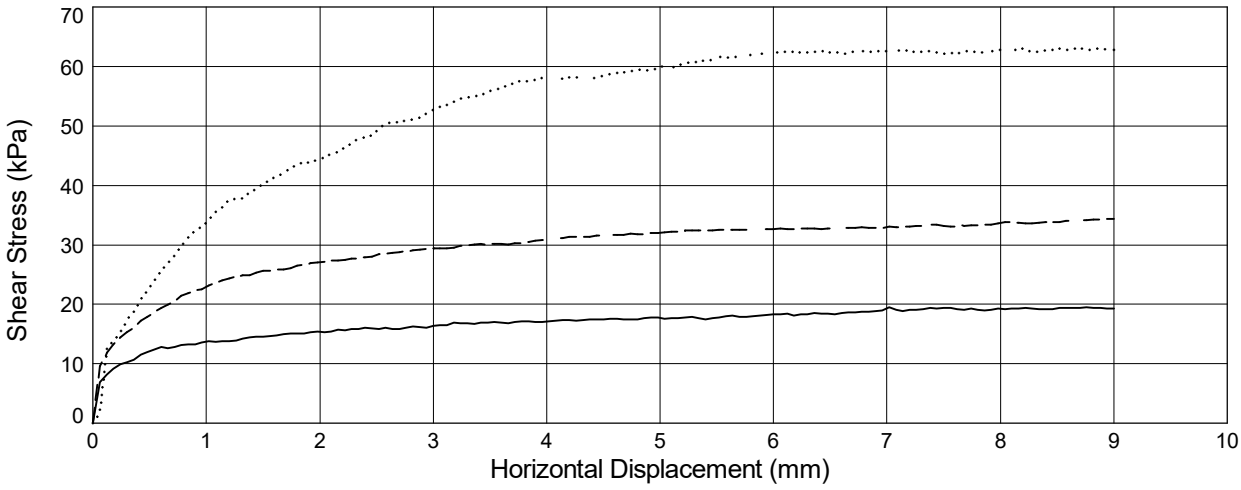
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**25** kPa) *Dashed Line* = Specimen 2 (**50** kPa) *Dotted Line* = Specimen 3 (**100** kPa)

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Daria Ignaczak	**DARIA IGNACZAK**	**28/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P2.1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

In accordance with BS EN ISO 17892-10

Trial Pit: **TP-PTS211** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**

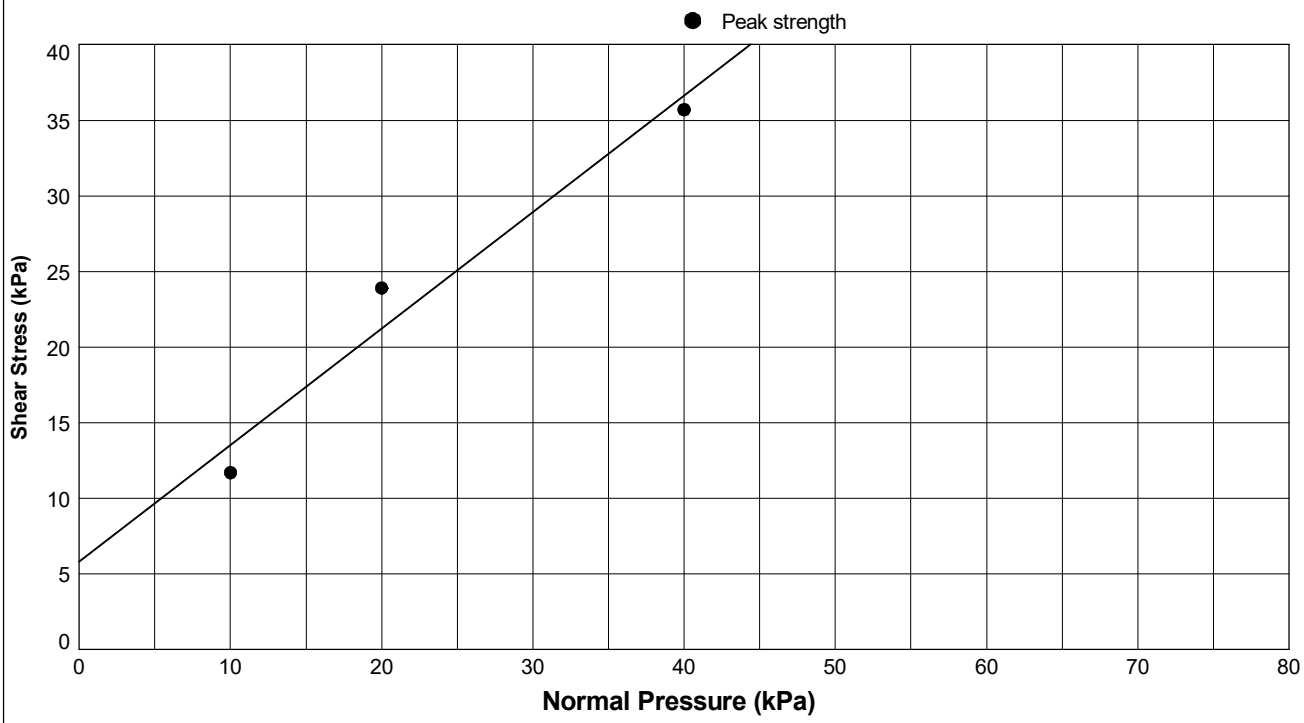
Description: **Brown sandy silty GRAVEL**

Sample Condition: **Recompacted**

Start Date: **18/05/2023**

End Date: **20/05/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**18.8**	**18.8**	**18.8**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.2**	**19.2**	**19.2**
	Initial Bulk Density	(Mg/m^3)	**1.85**	**1.85**	**1.85**
	Initial Dry Density	(Mg/m^3)	**1.56**	**1.56**	**1.56**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.7038**	**0.7039**	**0.7039**
	Initial Degree of Saturation	(%)	**71**	**71**	**71**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**3**	**3**	**3**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**18.6**	**18.1**	**18.0**
SHEAR	Shearing Rate	(mm/min)	**0.0084**	**0.0112**	**0.0127**
	Horiz. Displacement at Peak Shear Stress	(mm)	**2.3**	**9.0**	**8.9**
	Peak Shear Stress	(kPa)	**12**	**24**	**36**
PEAK STRENGTH	Effective Cohesion (C ') **6**	(kPa)	Effective Angle of Friction (ϕ ') **37.5**		(deg)



STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	DARIA IGNACZAK	18/08/23

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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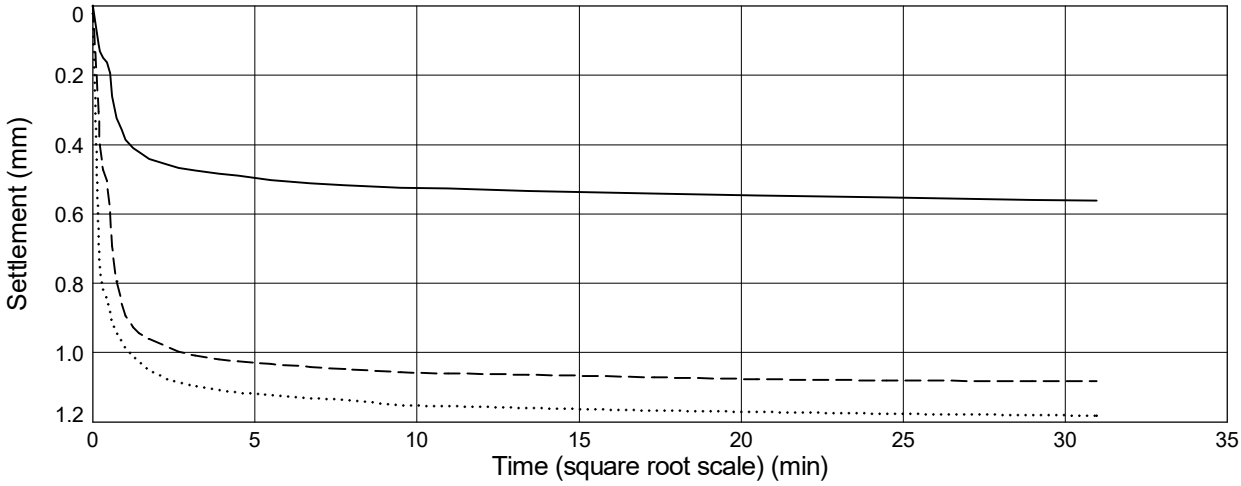
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

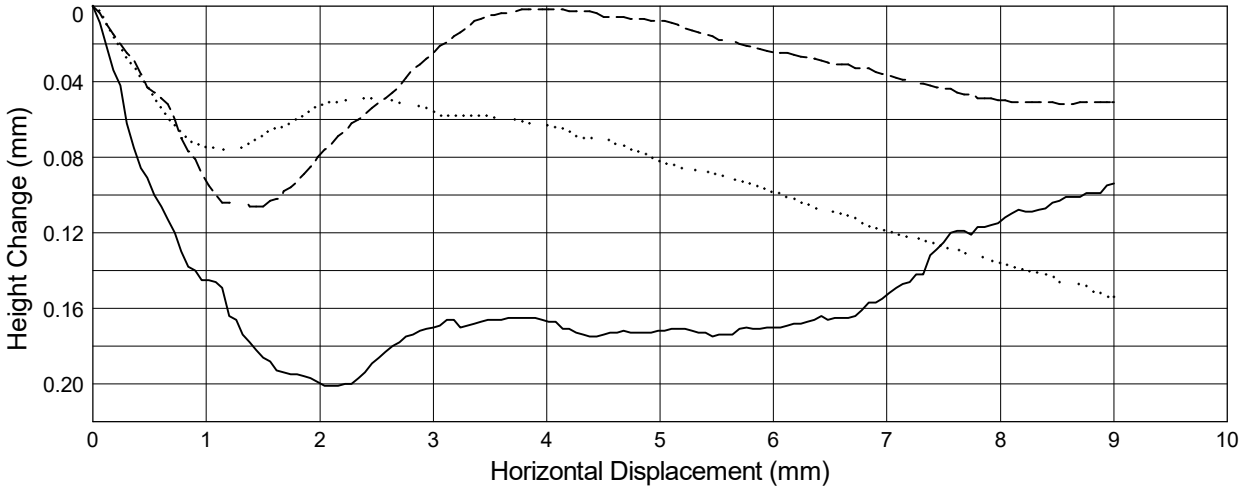
In accordance with BS EN ISO 17892-10

Trial Pit: **TP-PTS211** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**

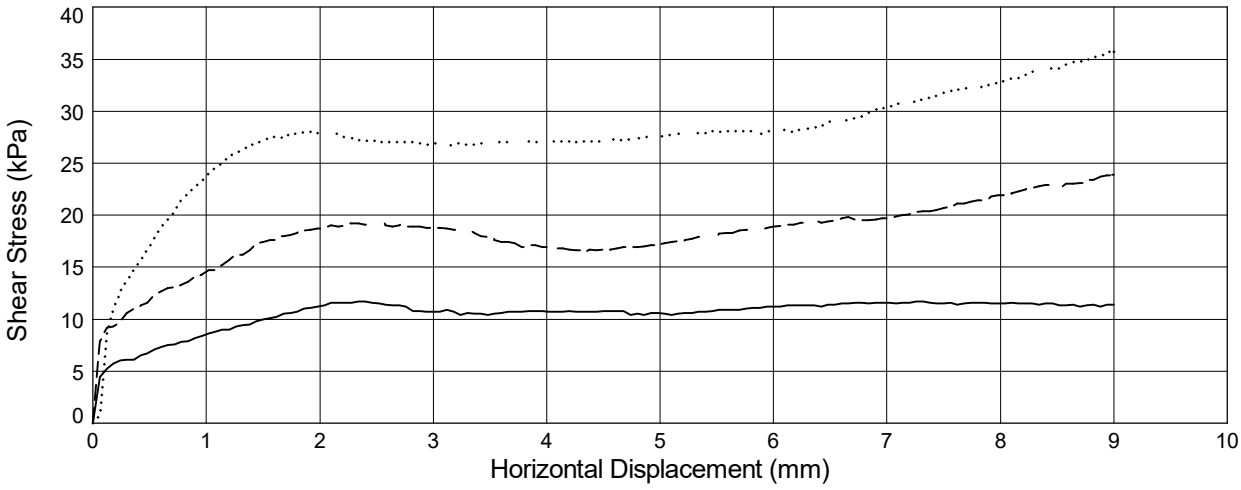
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Daria Ignaczak	**DARIA IGNACZAK**	**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P2,1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

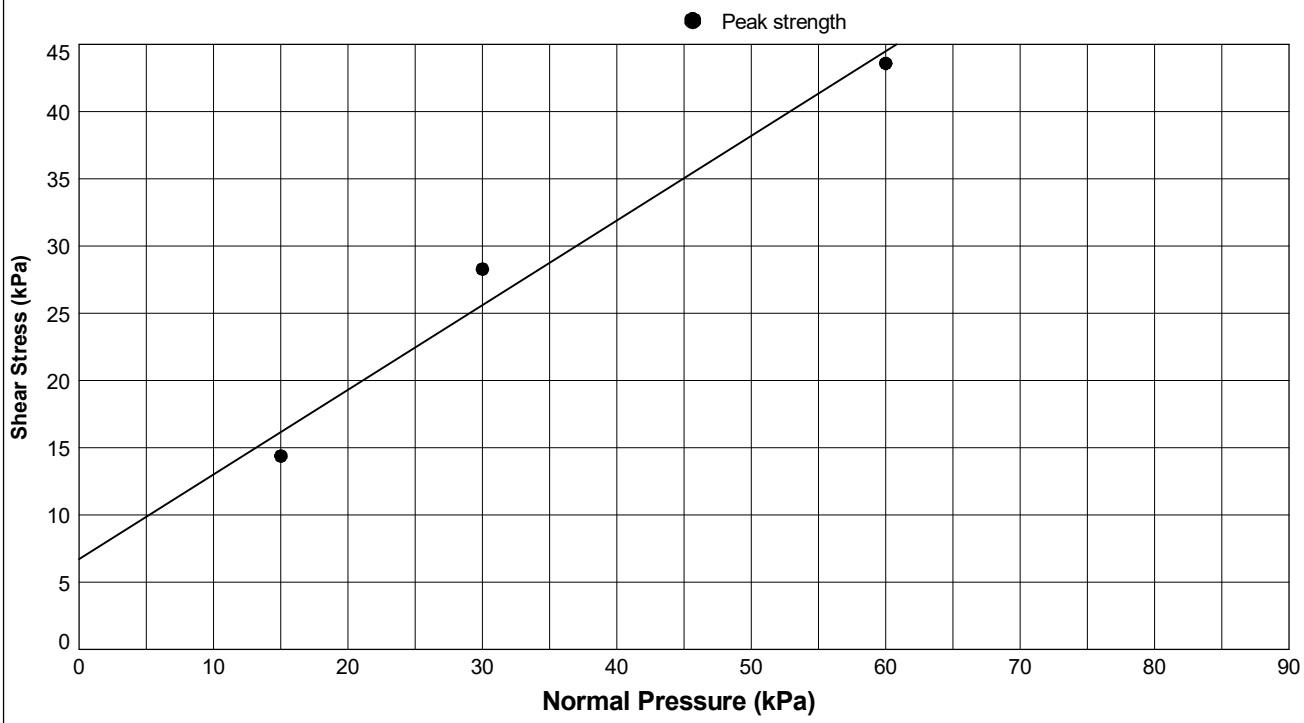
In accordance with BS EN ISO 17892-10

Trial Pit: **TP-PTS211** Sample Ref: **6** Sample Type: **B** Depth (m): **1.50**

Description: **Brown sandy clayey GRAVEL** Start Date: **18/05/2023**

Sample Condition: **Recompacted** End Date: **19/05/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**11.9**	**11.9**	**11.9**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.2**	**19.2**	**19.2**
	Initial Bulk Density	(Mg/m^3)	**1.85**	**1.85**	**1.85**
	Initial Dry Density	(Mg/m^3)	**1.66**	**1.66**	**1.66**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.5994**	**0.5995**	**0.6004**
	Initial Degree of Saturation	(%)	**53**	**53**	**53**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**2**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**15**	**30**	**60**
	Consolidated Height	(mm)	**18.3**	**18.2**	**18.2**
SHEAR	Shearing Rate	(mm/min)	**0.0186**	**0.0275**	**0.0328**
	Horiz. Displacement at Peak Shear Stress	(mm)	**1.9**	**2.3**	**3.1**
	Peak Shear Stress	(kPa)	**14**	**28**	**44**
PEAK STRENGTH	Effective Cohesion (C ') **7**	(kPa)	Effective Angle of Friction (ϕ ') **32**		(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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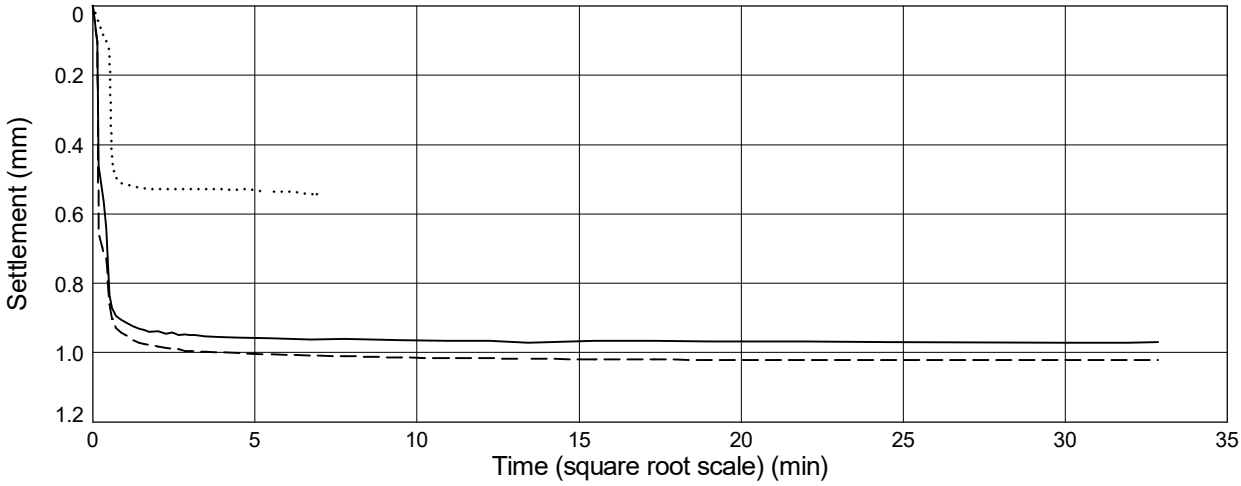
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

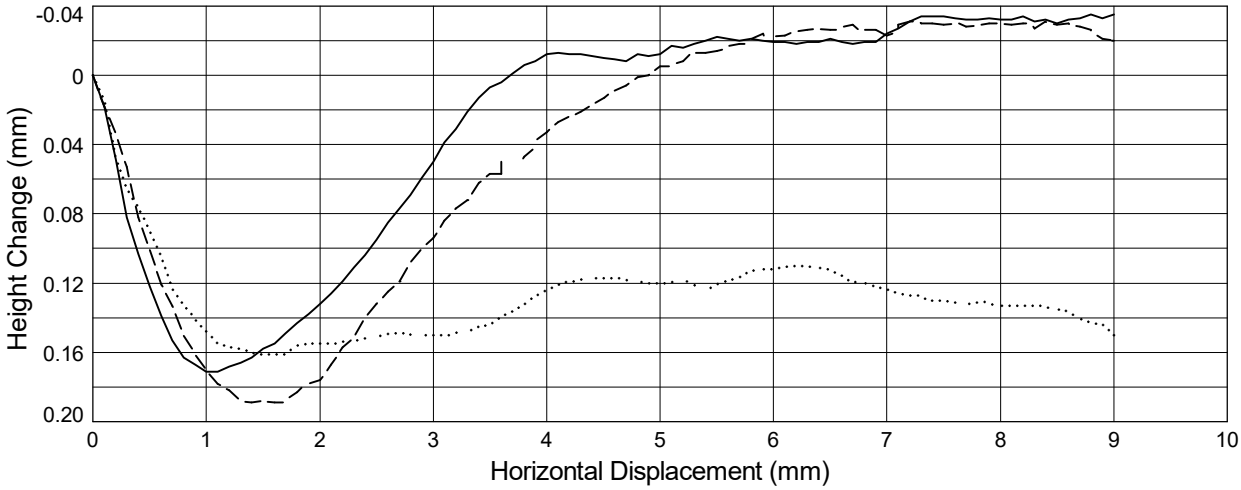
In accordance with BS EN ISO 17892-10

Trial Pit: **TP-PTS212** Sample Ref: **6** Sample Type: **B** Depth (m): **1.50**

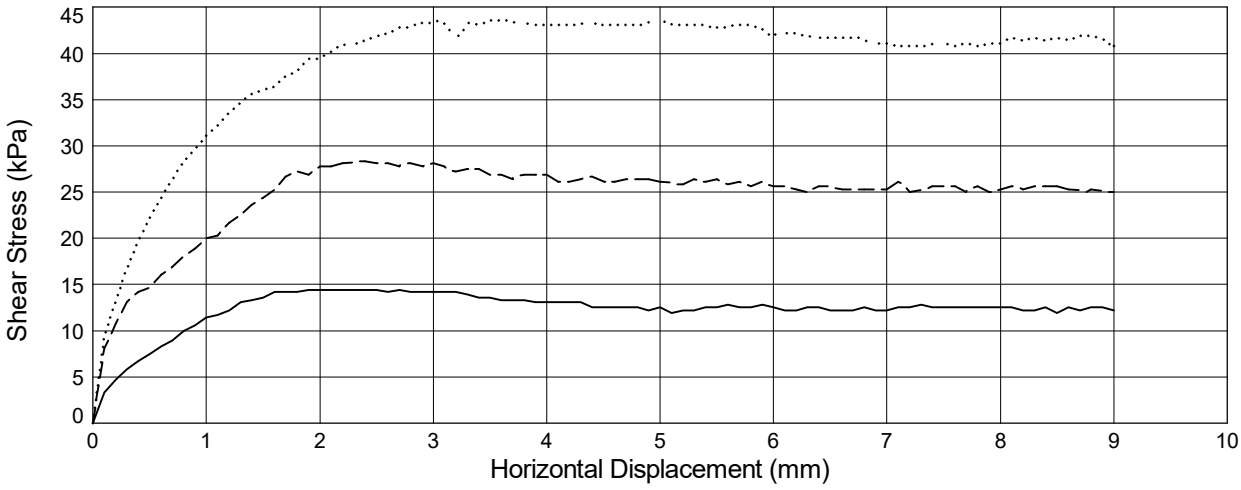
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**15** kPa) *Dashed Line* = Specimen 2 (**30** kPa) *Dotted Line* = Specimen 3 (**60** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

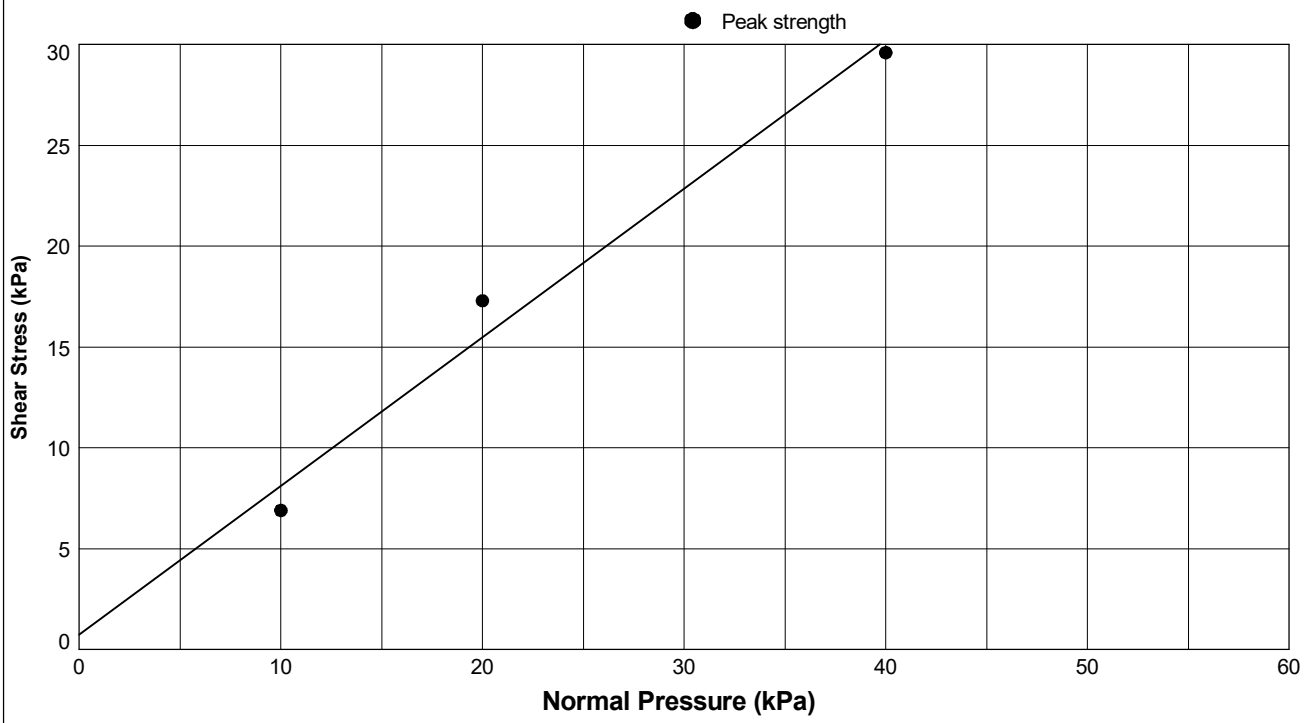
In accordance with BS EN ISO 17892-10

Trial Pit: **TP-PTS217** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**

Description: **Brown very gravelly silty SAND** Start Date: **19/05/2023**

Sample Condition: **Recompacted** End Date: **20/05/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**7.7**	**7.7**	**7.7**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.2**	**19.2**	**19.2**
	Initial Bulk Density	(Mg/m^3)	**1.80**	**1.80**	**1.80**
	Initial Dry Density	(Mg/m^3)	**1.67**	**1.67**	**1.67**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.5886**	**0.5893**	**0.5887**
	Initial Degree of Saturation	(%)	**35**	**35**	**35**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**2**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**18.8**	**17.5**	**18.0**
SHEAR	Shearing Rate	(mm/min)	**0.0192**	**0.0226**	**0.0268**
	Horiz. Displacement at Peak Shear Stress	(mm)	**3.8**	**3.6**	**8.2**
	Peak Shear Stress	(kPa)	**7**	**17**	**30**
PEAK STRENGTH	Effective Cohesion (C ') **1**	(kPa)	Effective Angle of Friction (ϕ ')	**36.5**	(deg)



STRUCTURAL SOILS
1a Princess Street
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BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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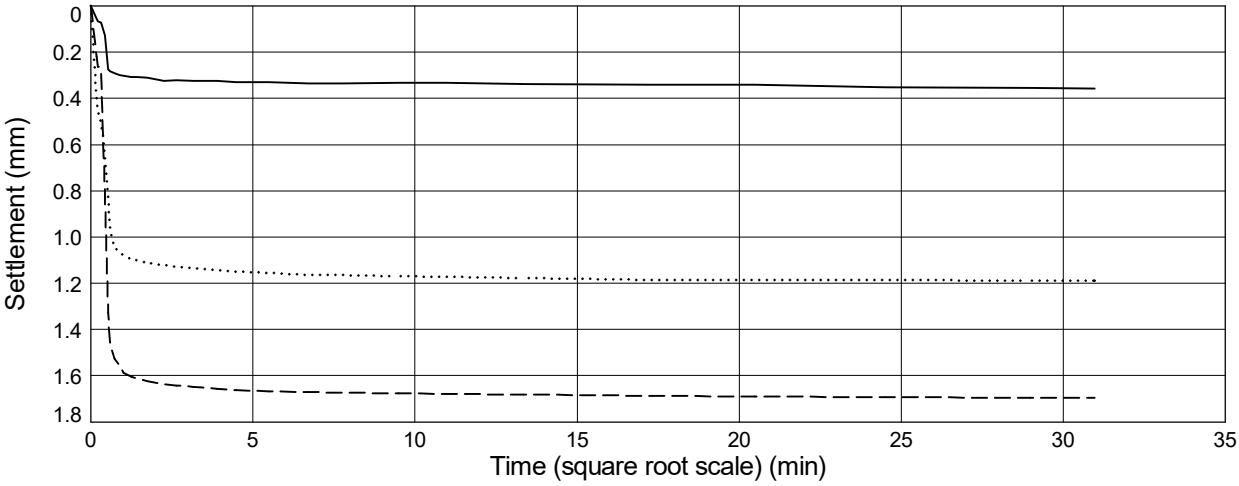
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

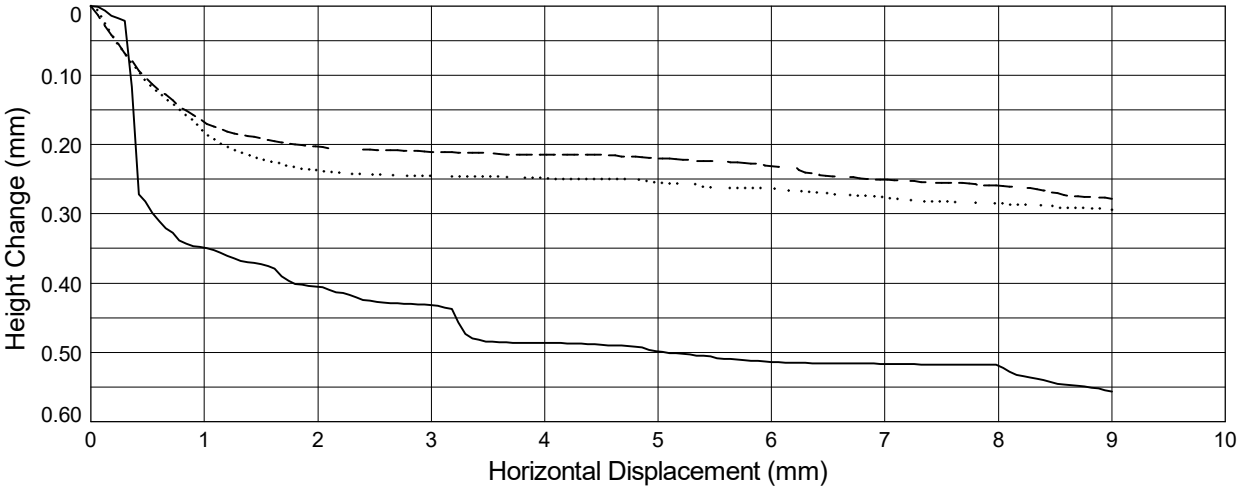
In accordance with BS EN ISO 17892-10

Trial Pit: **TP-PTS217** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**

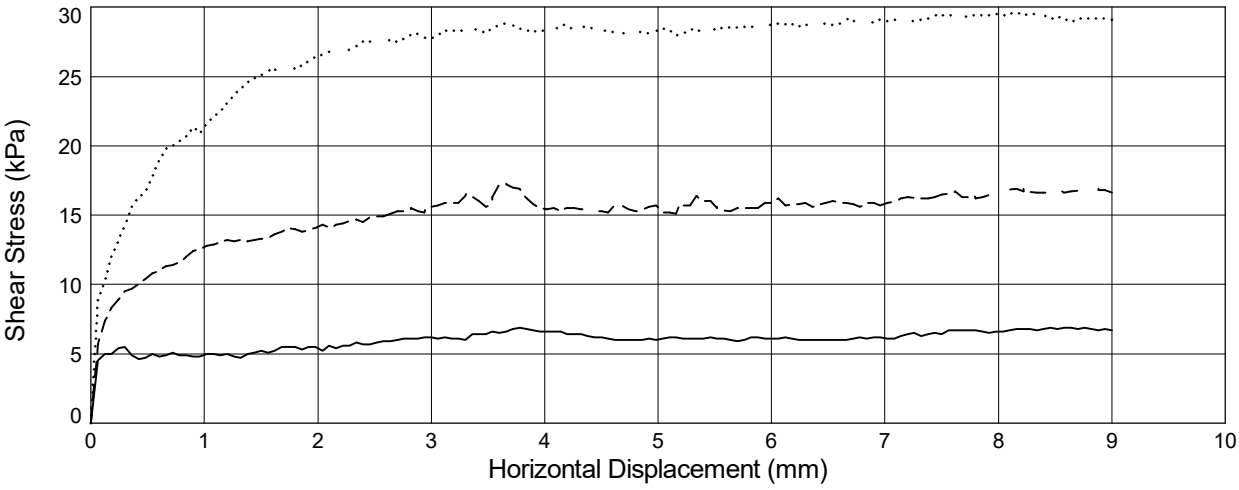
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Daria Ignaczak	**DARIA IGNACZAK**	**31/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

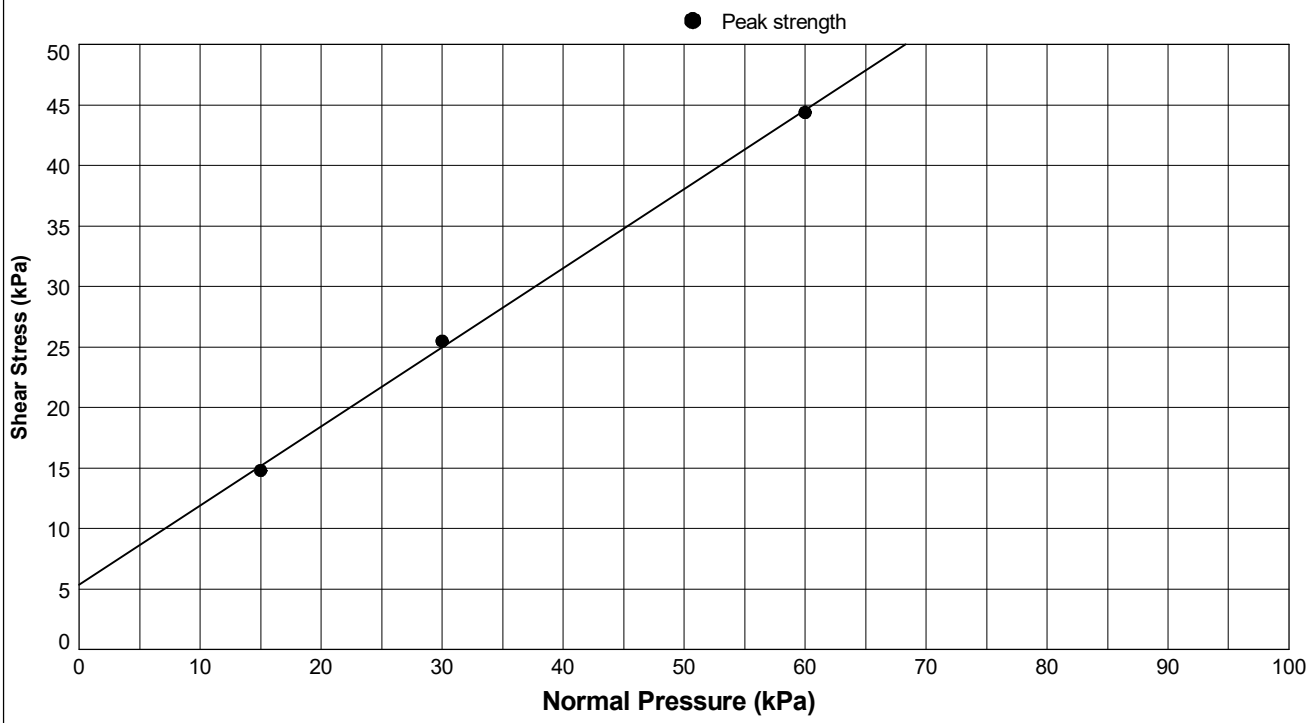
In accordance with BS EN ISO 17892-10

Trial Pit: **TP-PTS230** Sample Ref: **7** Sample Type: **B** Depth (m): **1.50**

Description: **Reddish brown slightly gravelly clayey SAND** Start Date: **18/05/2023**

Sample Condition: **Recompacted** End Date: **19/05/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**11.8**	**11.8**	**11.8**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.1**	**19.1**	**19.2**
	Initial Bulk Density	(Mg/m^3)	**2.06**	**2.06**	**2.06**
	Initial Dry Density	(Mg/m^3)	**1.84**	**1.84**	**1.84**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.4374**	**0.4383**	**0.4378**
	Initial Degree of Saturation	(%)	**72**	**72**	**72**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**2**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**15**	**30**	**60**
	Consolidated Height	(mm)	**18.8**	**18.6**	**18.1**
SHEAR	Shearing Rate	(mm/min)	**0.0412**	**0.0421**	**0.0441**
	Horiz. Displacement at Peak Shear Stress	(mm)	**1.2**	**8.1**	**1.9**
	Peak Shear Stress	(kPa)	**15**	**26**	**44**
PEAK STRENGTH	Effective Cohesion (C ') **5**	(kPa)	Effective Angle of Friction (ϕ ')	**33**	(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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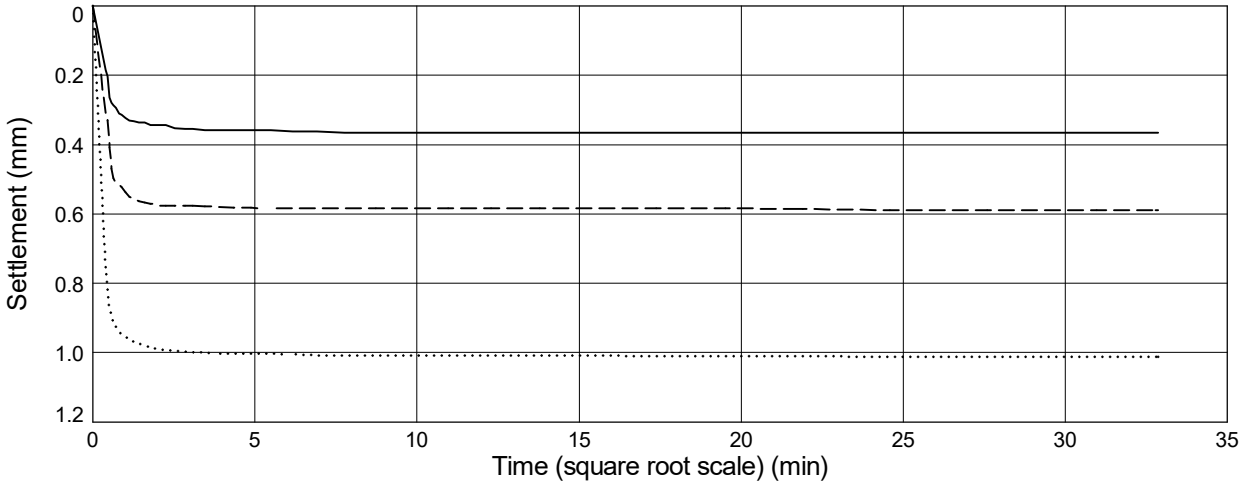
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

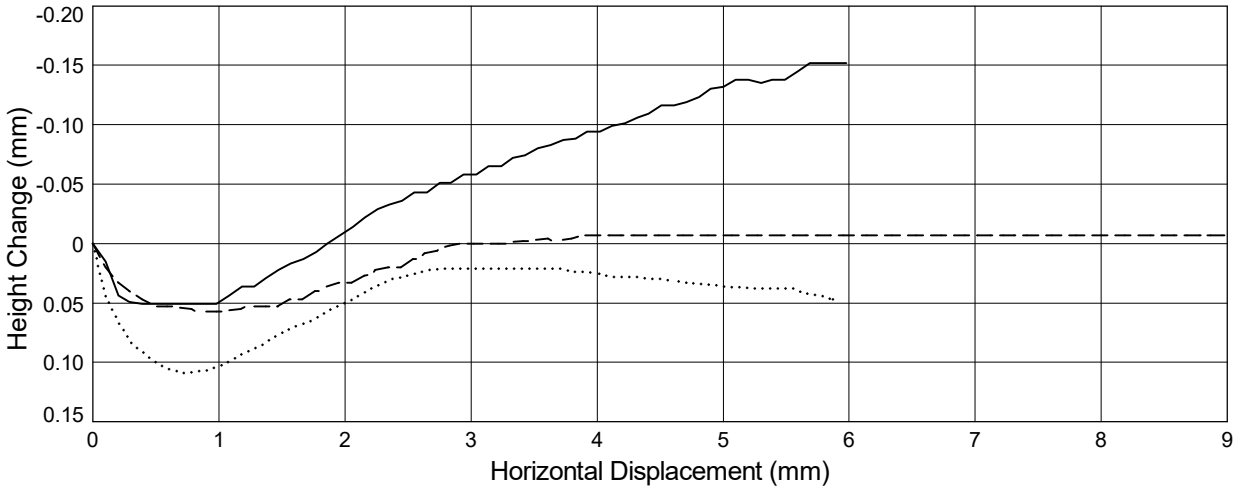
In accordance with BS EN ISO 17892-10

Trial Pit: **TP-PTS230** Sample Ref: **7** Sample Type: **B** Depth (m): **1.50**

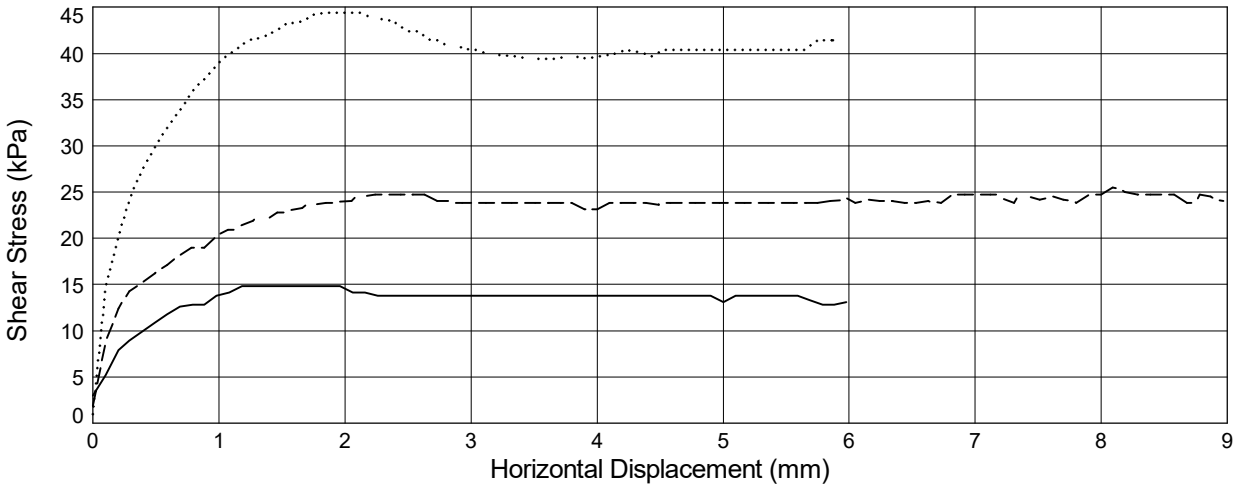
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**15** kPa) *Dashed Line* = Specimen 2 (**30** kPa) *Dotted Line* = Specimen 3 (**60** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P2.1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

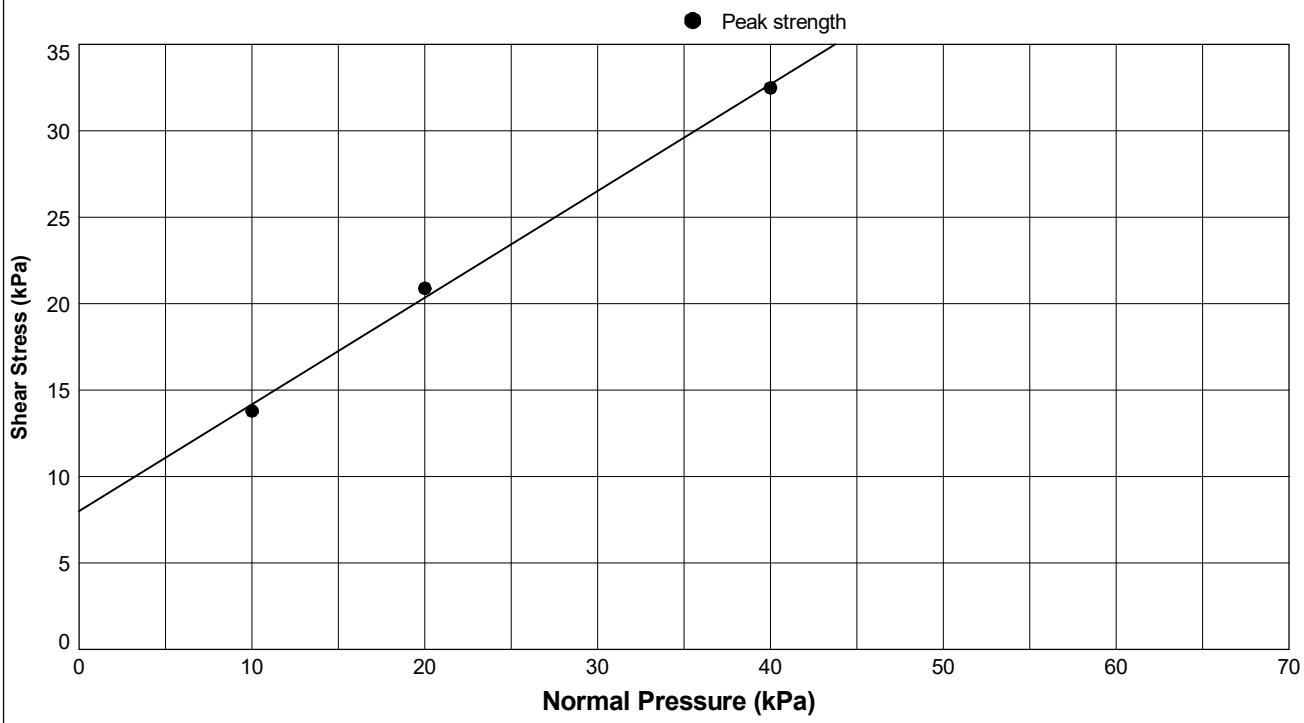
In accordance with BS EN ISO 17892-10

Trial Pit: **TP-PTS234** Sample Ref: **5** Sample Type: **B** Depth (m): **0.30**

Description: **Reddish brown slightly gravelly clayey SAND** Start Date: **19/05/2023**

Sample Condition: **Recompacted** End Date: **20/05/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**12.1**	**12.1**	**12.1**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.1**	**19.1**	**19.1**
	Initial Bulk Density	(Mg/m^3)	**2.05**	**2.05**	**2.05**
	Initial Dry Density	(Mg/m^3)	**1.83**	**1.83**	**1.83**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.4483**	**0.4489**	**0.4485**
	Initial Degree of Saturation	(%)	**71**	**71**	**71**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**2**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**18.8**	**18.7**	**18.6**
SHEAR	Shearing Rate	(mm/min)	**0.0526**	**0.0567**	**0.0584**
	Horiz. Displacement at Peak Shear Stress	(mm)	**1.5**	**2.9**	**1.4**
	Peak Shear Stress	(kPa)	**14**	**21**	**33**
PEAK STRENGTH	Effective Cohesion (C ') **8**	(kPa)	Effective Angle of Friction (ϕ ') **31.5**		(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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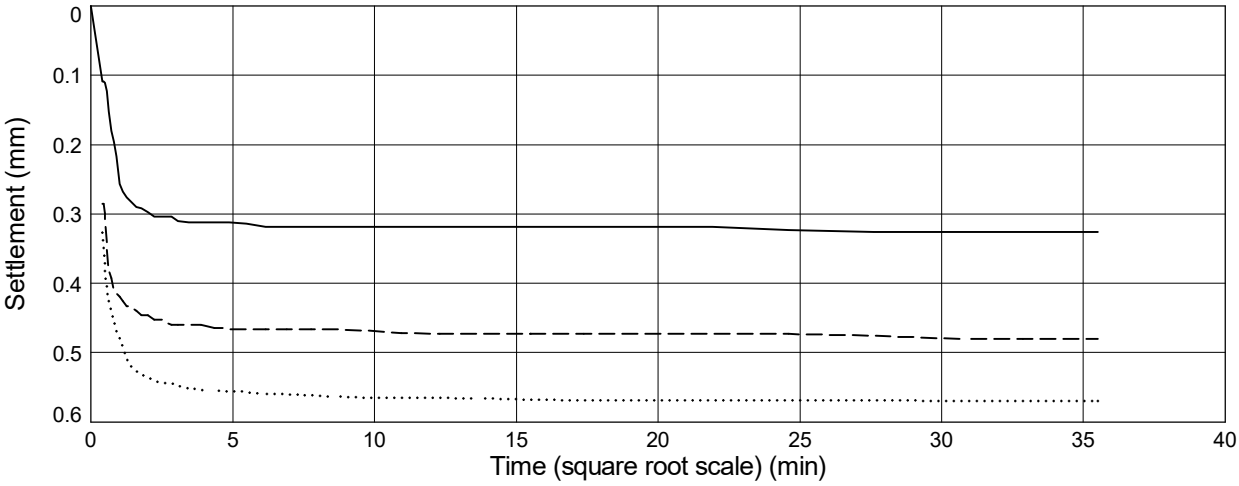
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

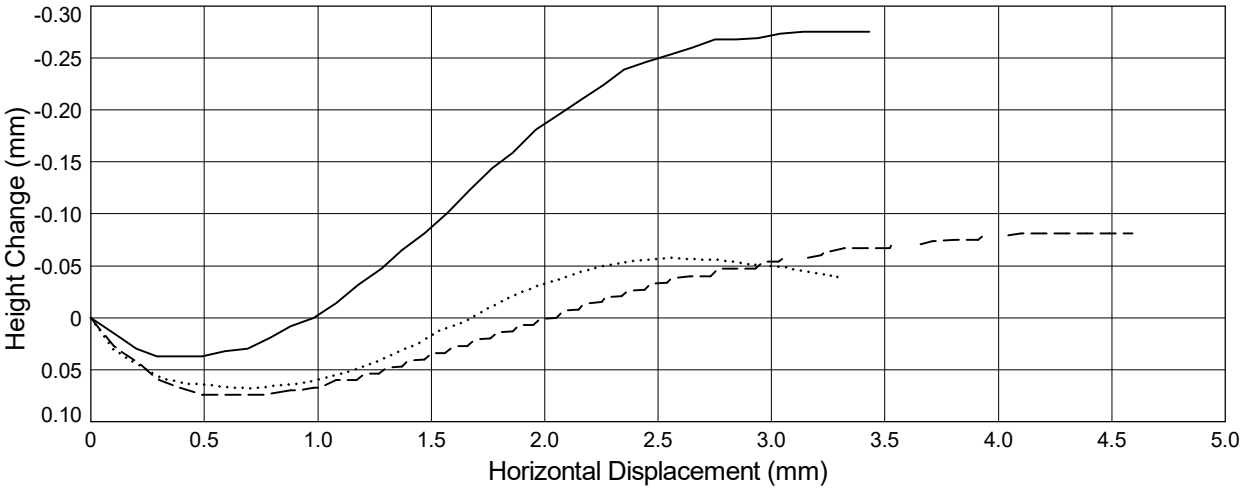
In accordance with BS EN ISO 17892-10

Trial Pit: **TP-PTS234** Sample Ref: **5** Sample Type: **B** Depth (m): **0.30**

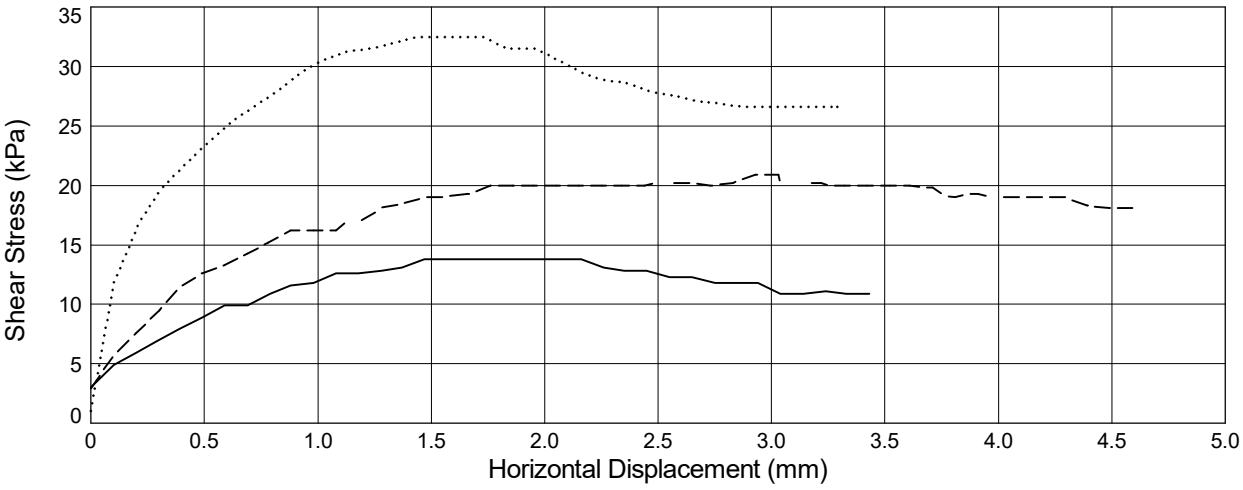
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**26/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

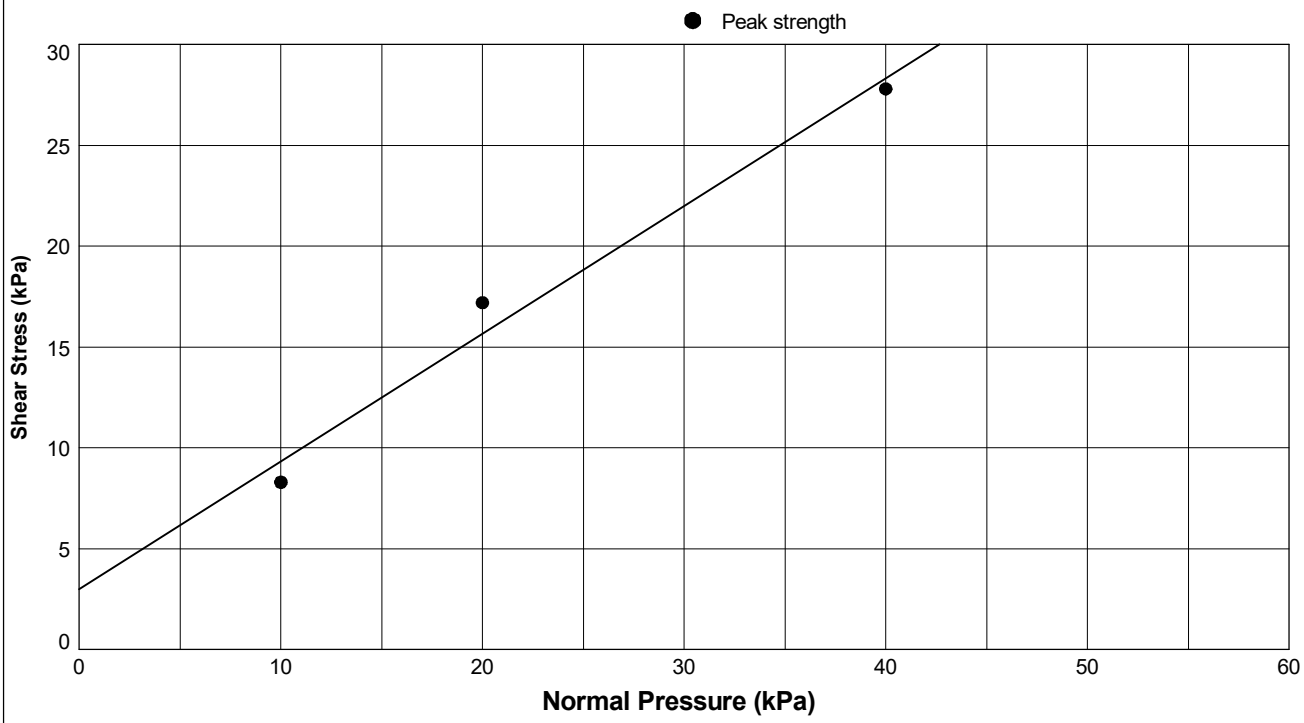
In accordance with BS EN ISO 17892-10

Trial Pit: **TP-PTS234** Sample Ref: **7** Sample Type: **B** Depth (m): **1.30**

Description: **Brown gravelly very clayey SAND** Start Date: **18/07/2023**

Sample Condition: **Recompacted** End Date: **19/07/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**10.5**	**10.5**	**10.5**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.1**	**19.1**	**19.1**
	Initial Bulk Density	(Mg/m^3)	**1.95**	**1.95**	**1.95**
	Initial Dry Density	(Mg/m^3)	**1.77**	**1.77**	**1.77**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.5010**	**0.5005**	**0.5002**
	Initial Degree of Saturation	(%)	**55**	**55**	**55**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**2**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**18.2**	**18.1**	**17.7**
SHEAR	Shearing Rate	(mm/min)	**0.0241**	**0.0333**	**0.0363**
	Horiz. Displacement at Peak Shear Stress	(mm)	**4.7**	**8.9**	**8.0**
	Peak Shear Stress	(kPa)	**8**	**17**	**28**
PEAK STRENGTH	Effective Cohesion (C ') **3**	(kPa)	Effective Angle of Friction (ϕ ')	**32.5**	(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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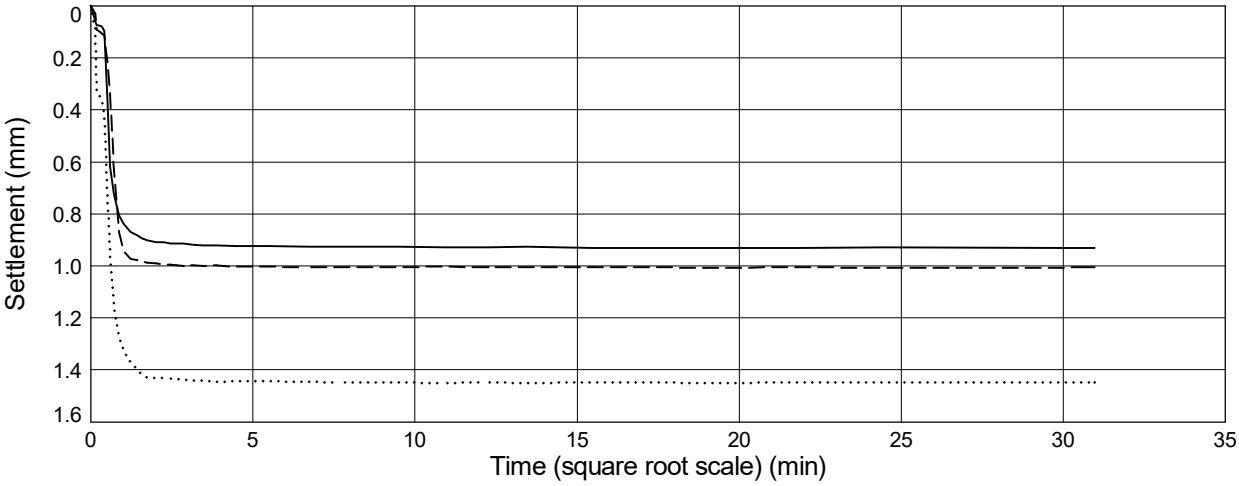
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

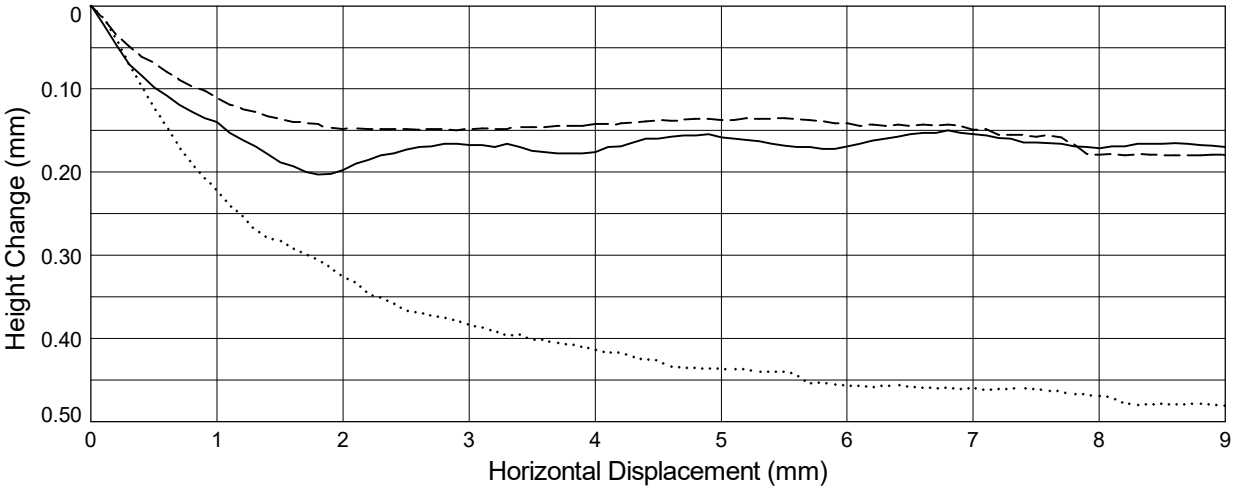
In accordance with BS EN ISO 17892-10

Trial Pit: **TP-PTS234** Sample Ref: **7** Sample Type: **B** Depth (m): **1.30**

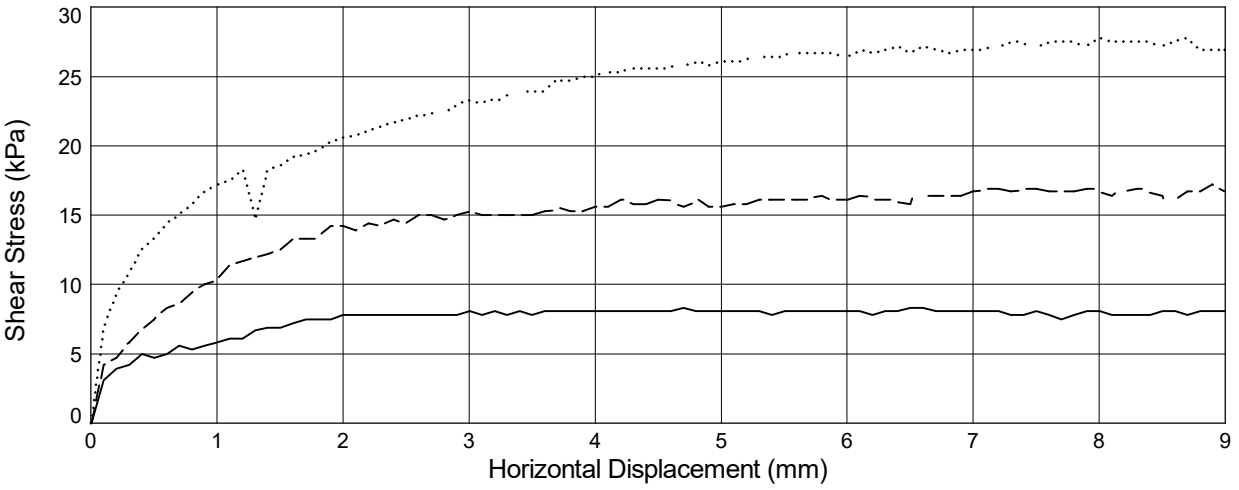
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**26/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

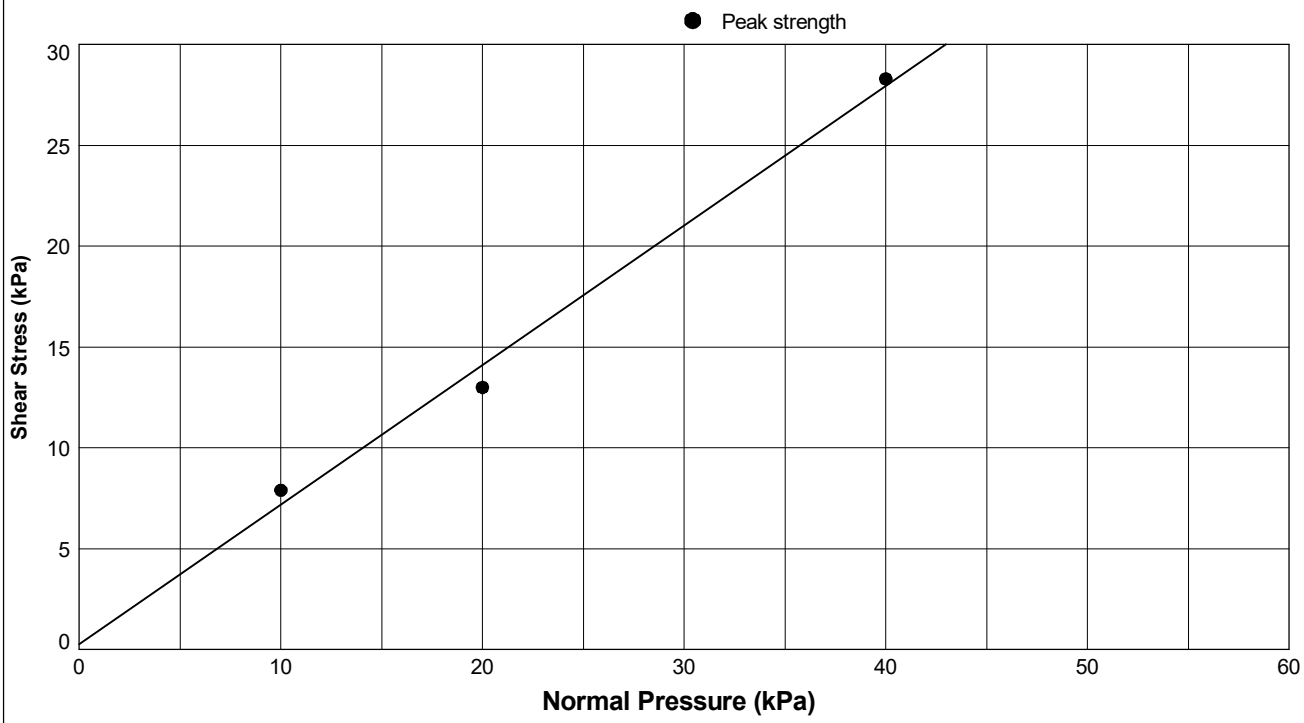
In accordance with BS EN ISO 17892-10

Window Sample: **WS-PTS108** Sample Ref: **4** Sample Type: **B** Depth (m): **0.90**

Description: **Brown silty sandy GRAVEL** Start Date: **03/07/2023**

Sample Condition: **Recompacted** End Date: **04/07/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**8.8**	**8.8**	**8.8**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.2**	**19.2**	**19.2**
	Initial Bulk Density	(Mg/m^3)	**1.69**	**1.69**	**1.69**
	Initial Dry Density	(Mg/m^3)	**1.56**	**1.55**	**1.55**
	Particle Density	(Mg/m^3)	**2.65**(Assumed)	**2.65**(Assumed)	**2.65**(Assumed)
	Initial Voids Ratio		**0.7041**	**0.7102**	**0.7100**
	Initial Degree of Saturation	(%)	**33**	**33**	**33**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**2**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**18.5**	**17.8**	**17.3**
SHEAR	Shearing Rate	(mm/min)	**0.0237**	**0.0324**	**0.0371**
	Horiz. Displacement at Peak Shear Stress	(mm)	**2.2**	**8.6**	**6.5**
	Peak Shear Stress	(kPa)	**8**	**13**	**28**
PEAK STRENGTH	Effective Cohesion (C ') **0**	(kPa)	Effective Angle of Friction (ϕ ')	**34.5**	(deg)



STRUCTURAL SOILS
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Compiled By		Date
Daria Ignaczak	DARIA IGNACZAK	18/08/23
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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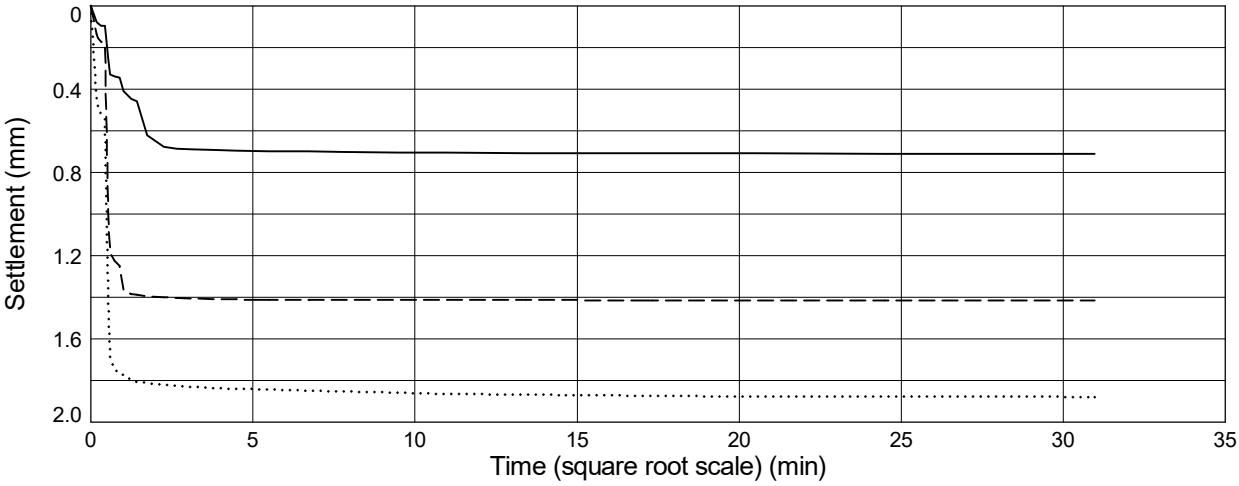
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

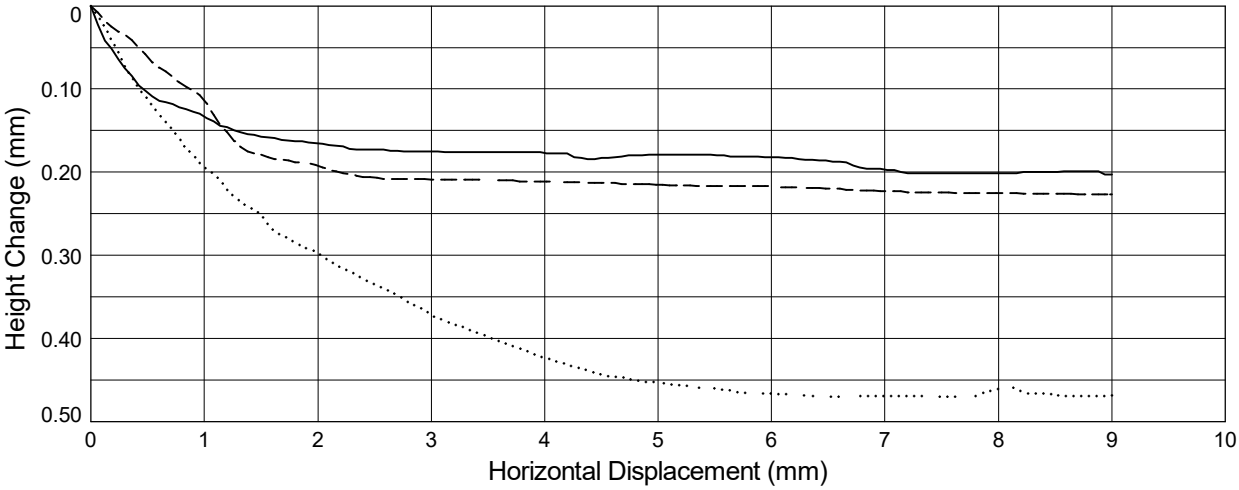
In accordance with BS EN ISO 17892-10

Window Sample: **WS-PTS108** Sample Ref: **4** Sample Type: **B** Depth (m): **0.90**

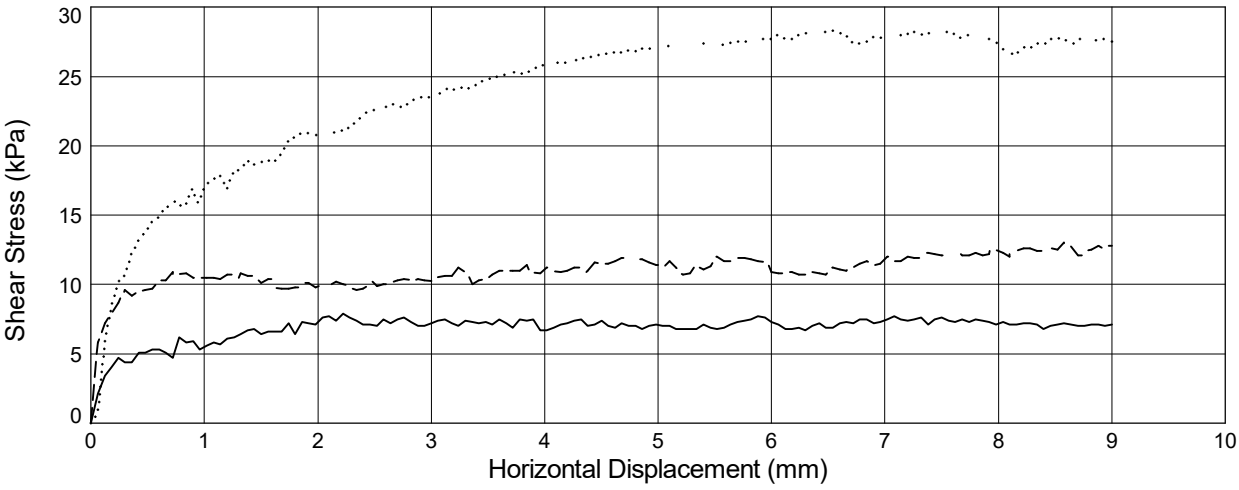
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

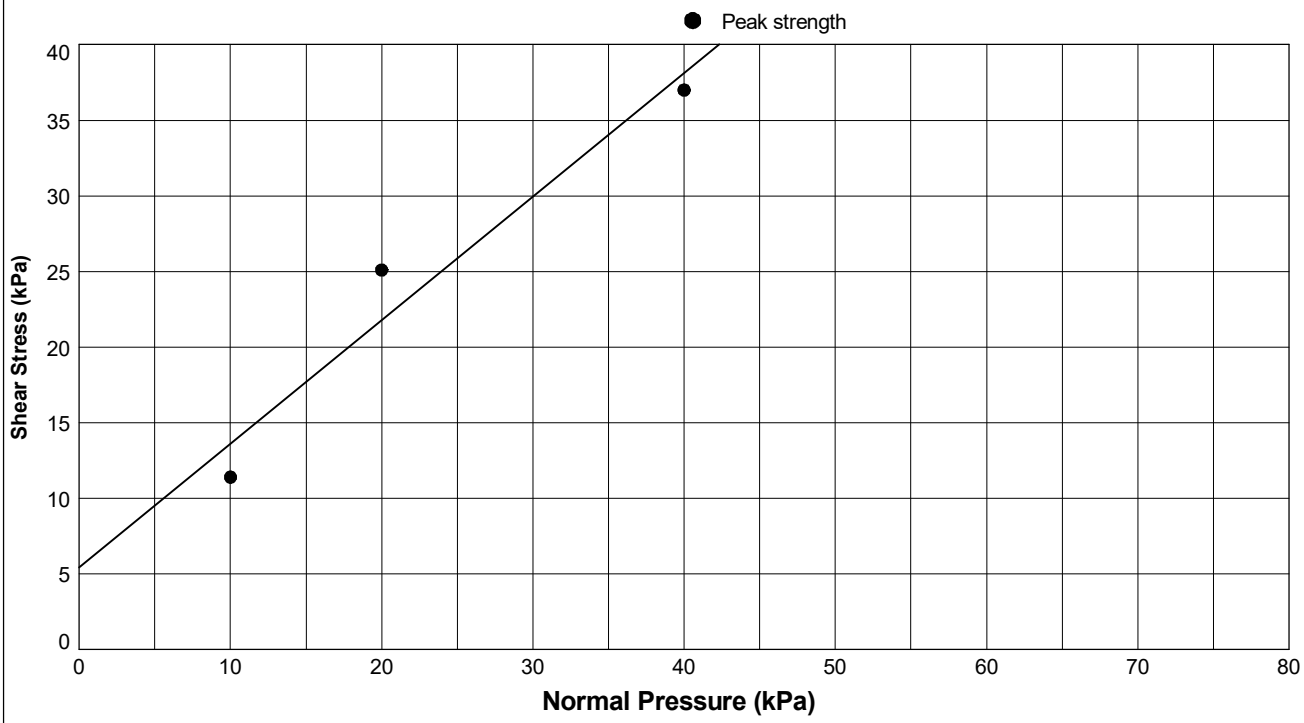
In accordance with BS EN ISO 17892-10

Window Sample: **WS-PTS116** Sample Ref: **6** Sample Type: **B** Depth (m): **1.00**

Description: **Brown sandy clayey GRAVEL with low cobble content** Start Date: **17/05/2023**

Sample Condition: **Recompacted** End Date: **19/05/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**14.4**	**14.4**	**14.4**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.1**	**19.1**	**19.2**
	Initial Bulk Density	(Mg/m^3)	**1.98**	**1.98**	**1.98**
	Initial Dry Density	(Mg/m^3)	**1.73**	**1.73**	**1.73**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.5279**	**0.5283**	**0.5280**
	Initial Degree of Saturation	(%)	**72**	**72**	**72**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**3**	**3**	**3**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**18.6**	**18.5**	**18.1**
SHEAR	Shearing Rate	(mm/min)	**0.0127**	**0.0139**	**0.0174**
	Horiz. Displacement at Peak Shear Stress	(mm)	**6.9**	**1.9**	**8.2**
	Peak Shear Stress	(kPa)	**11**	**25**	**37**
PEAK STRENGTH	Effective Cohesion (C ') **5**	(kPa)	Effective Angle of Friction (ϕ ') **39**		(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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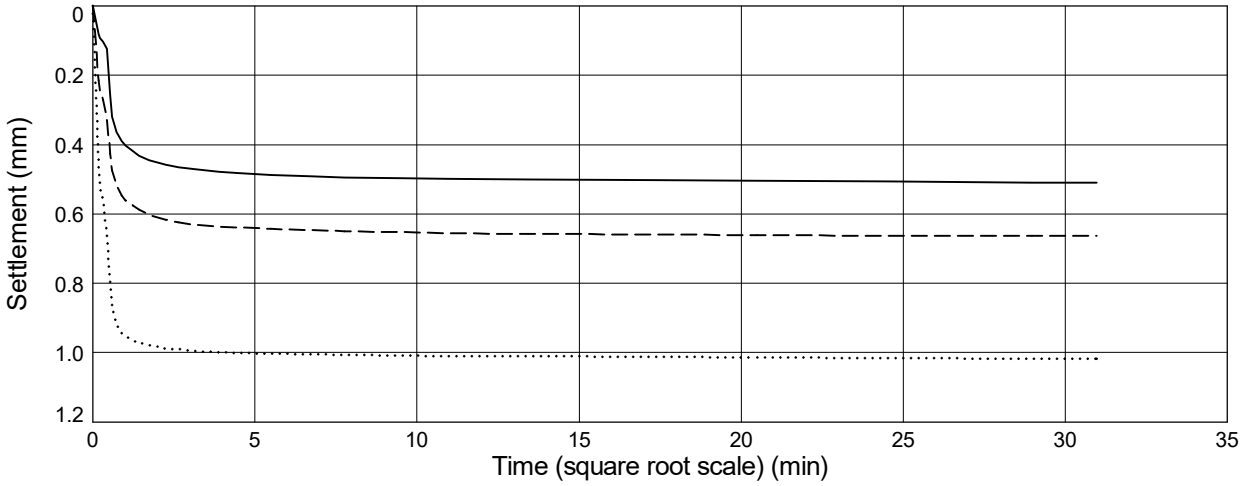
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

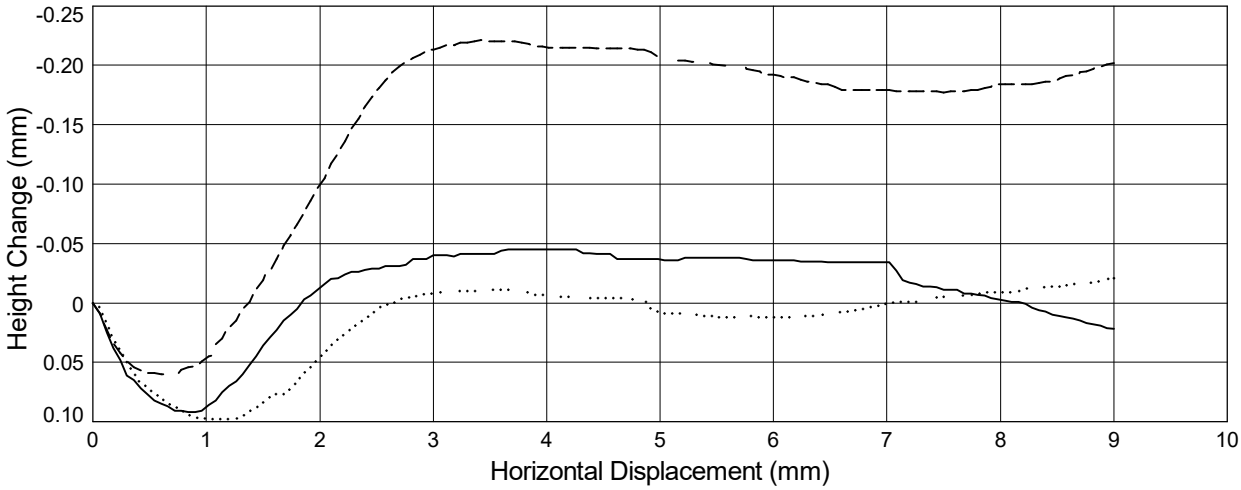
In accordance with BS EN ISO 17892-10

Window Sample: **WS-PTS116** Sample Ref: **6** Sample Type: **B** Depth (m): **1.00**

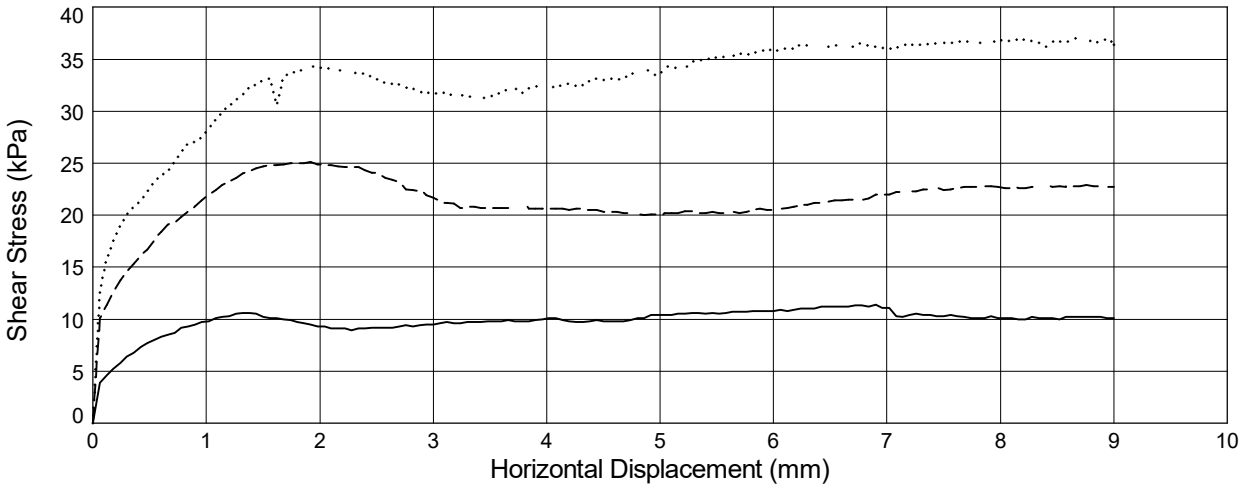
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Daria Ignaczak	**DARIA IGNACZAK**	**24/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

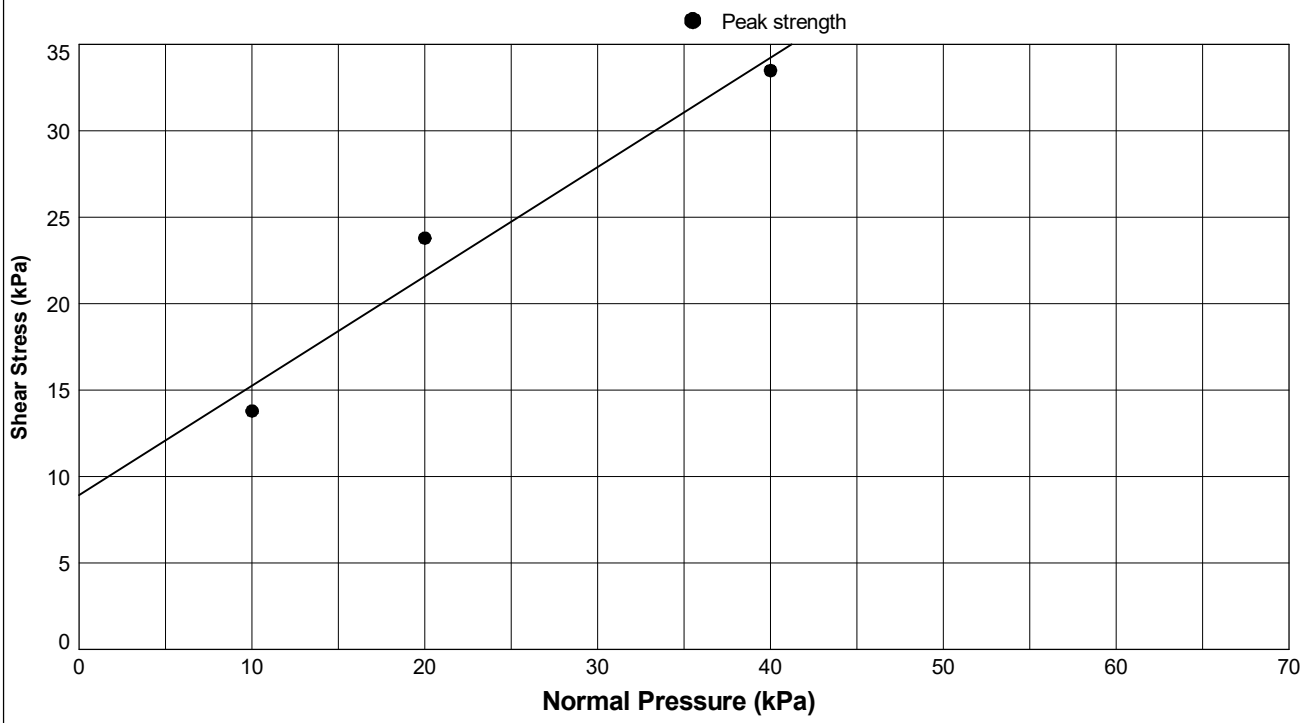
In accordance with BS EN ISO 17892-10

Window Sample: **WS-PTS127** Sample Ref: **8** Sample Type: **B** Depth (m): **2.00**

Description: **Reddish brown gravelly clayey SAND** Start Date: **17/05/2023**

Sample Condition: **Recompacted** End Date: **18/05/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**11.6**	**11.6**	**11.6**
	Initial Length (L_1)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Width (L_2)	(mm)	**60.0**	**60.0**	**60.0**
	Initial Height	(mm)	**19.1**	**19.1**	**19.1**
	Initial Bulk Density	(Mg/m^3)	**2.11**	**2.11**	**2.11**
	Initial Dry Density	(Mg/m^3)	**1.89**	**1.89**	**1.89**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.4026**	**0.4030**	**0.4025**
	Initial Degree of Saturation	(%)	**76**	**76**	**76**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**2**	**2**	**2**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**18.8**	**18.6**	**18.2**
SHEAR	Shearing Rate	(mm/min)	**0.0394**	**0.0403**	**0.0415**
	Horiz. Displacement at Peak Shear Stress	(mm)	**1.4**	**1.8**	**1.7**
	Peak Shear Stress	(kPa)	**14**	**24**	**34**
PEAK STRENGTH	Effective Cohesion (C ') **9**	(kPa)	Effective Angle of Friction (ϕ ')	**32.5**	(deg)



STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	DARIA IGNACZAK	18/08/23

Contract	Contract Ref:
A66 NTP Scheme S03A	**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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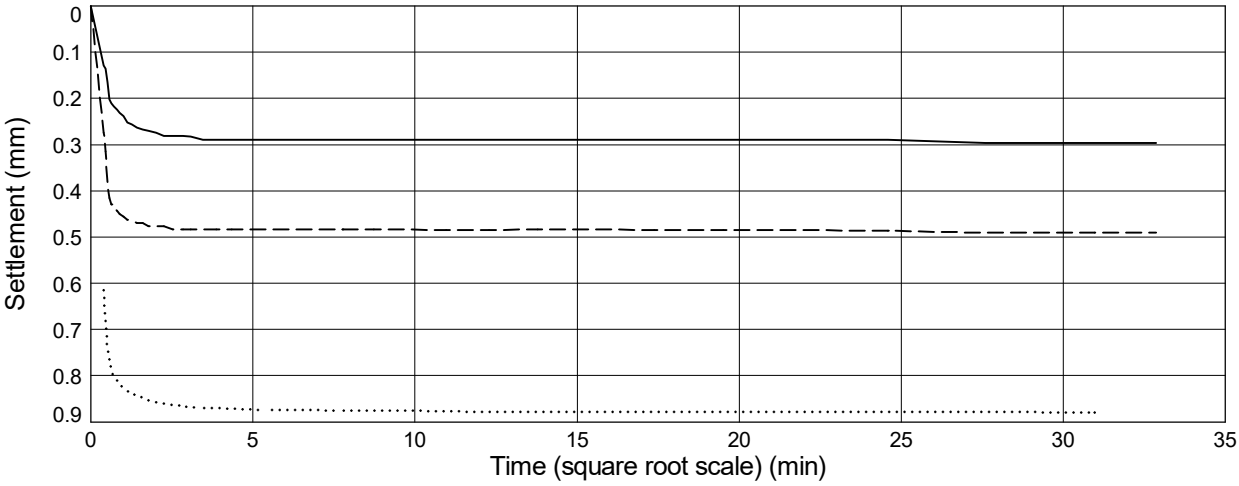
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEAR BOX APPARATUS)

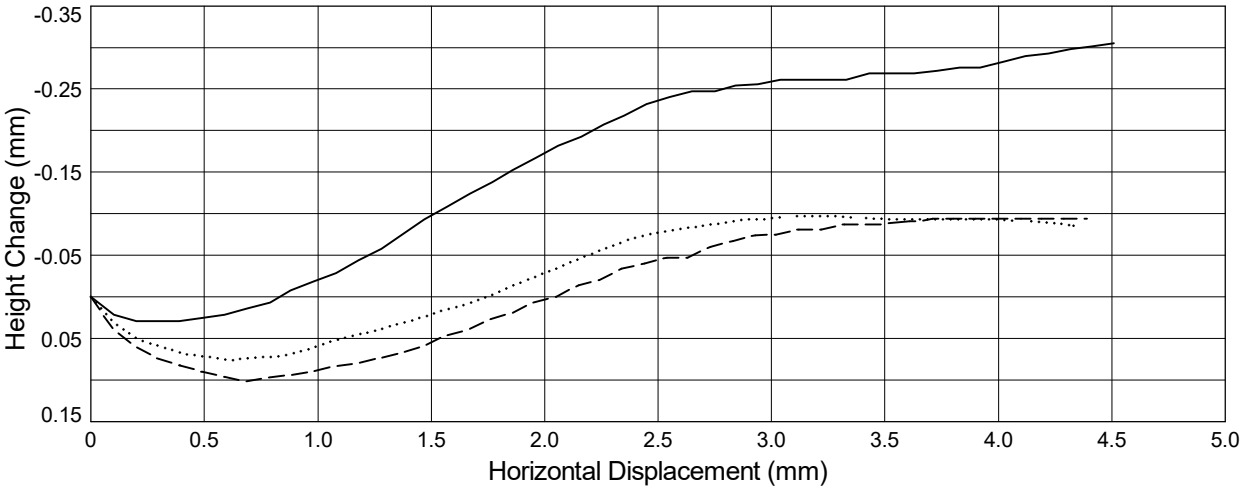
In accordance with BS EN ISO 17892-10

Window Sample: **WS-PTS127** Sample Ref: **8** Sample Type: **B** Depth (m): **2.00**

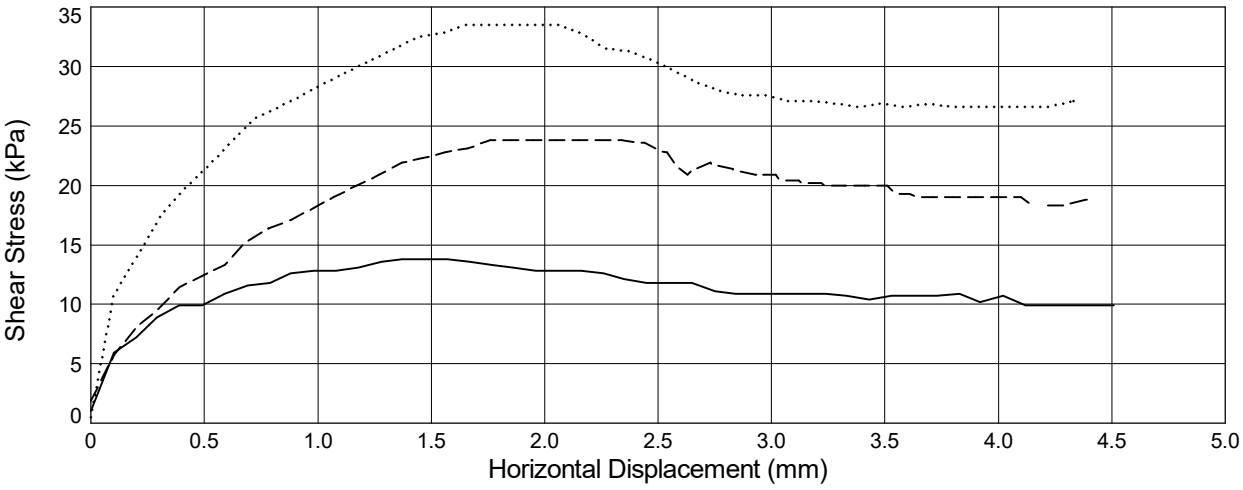
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Daria Ignaczak	**DARIA IGNACZAK**	**25/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 25/07/23 - 14:36 | FB1 |

DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (LARGE SHEAR BOX APPARATUS)

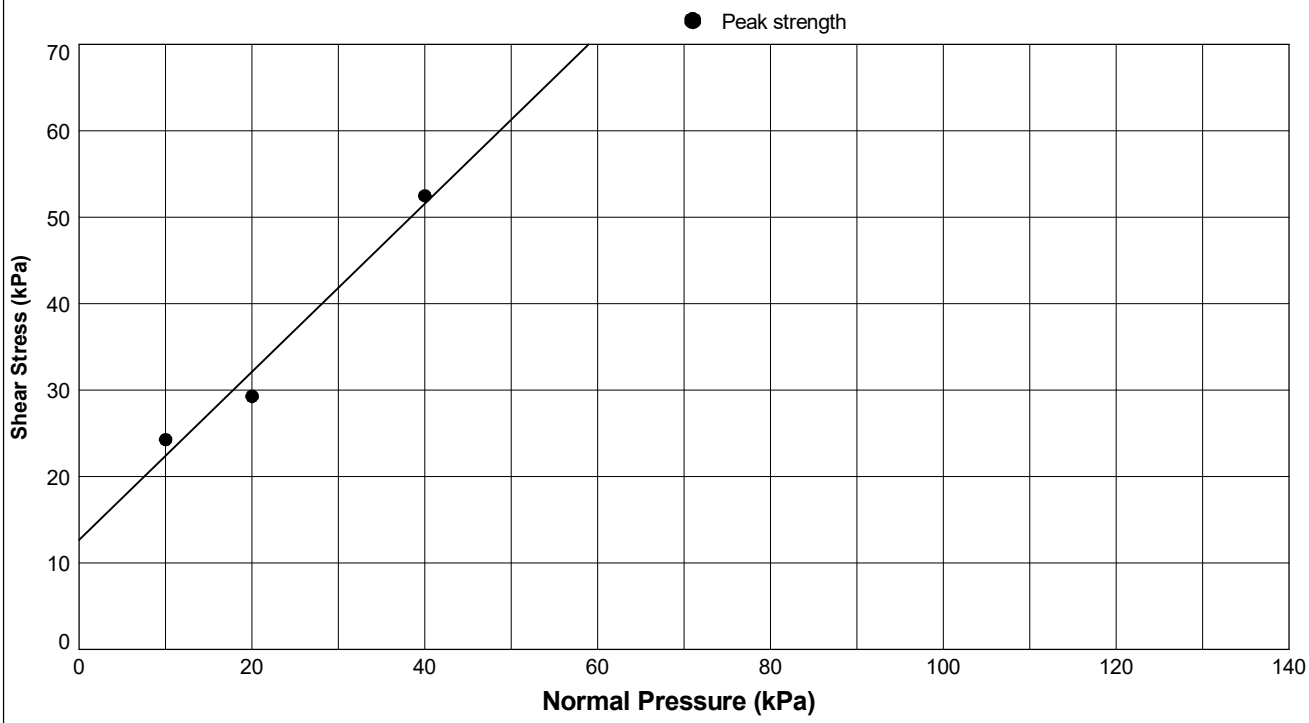
In accordance with BS EN ISO 17892-10 + SHW 600 clause 636

Trial Pit: **TP-PTS215** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**

Description: **Reddish brown gravelly slightly clayey SAND** Start Date: **06/06/2023**

Sample Condition: **Recompacted** End Date: **22/06/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**14.2**	**14.2**	**14.2**
	Initial Length (L_1)	(mm)	**304.8**	**304.8**	**304.8**
	Initial Width (L_2)	(mm)	**304.8**	**304.8**	**304.8**
	Initial Height	(mm)	**180.2**	**180.0**	**180.0**
	Initial Bulk Density	(Mg/m^3)	**2.15**	**2.15**	**2.15**
	Initial Dry Density	(Mg/m^3)	**1.88**	**1.88**	**1.88**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.4095**	**0.4082**	**0.4082**
	Initial Degree of Saturation	(%)	**92**	**93**	**93**
TEST CONDITIONS	Specimen Conditions		**Dry**	**Dry**	**Dry**
	Test Duration	(days)	**6**	**6**	**6**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**175.9**	**176.3**	**176.2**
SHEAR	Shearing Rate	(mm/min)	**0.0380**	**0.0380**	**0.0500**
	Horiz. Displacement at Peak Shear Stress	(mm)	**13.4**	**12.1**	**23.1**
	Peak Shear Stress	(kPa)	**24**	**29**	**53**
PEAK STRENGTH	Effective Cohesion (C ') **13**	(kPa)	Effective Angle of Friction (ϕ ') **44**		(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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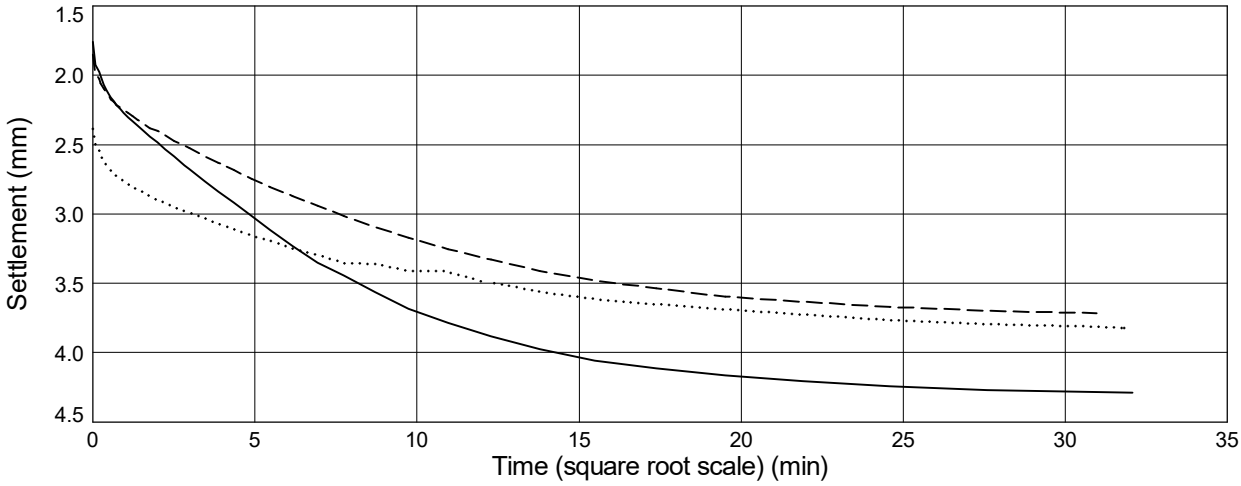
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (LARGE SHEAR BOX APPARATUS)

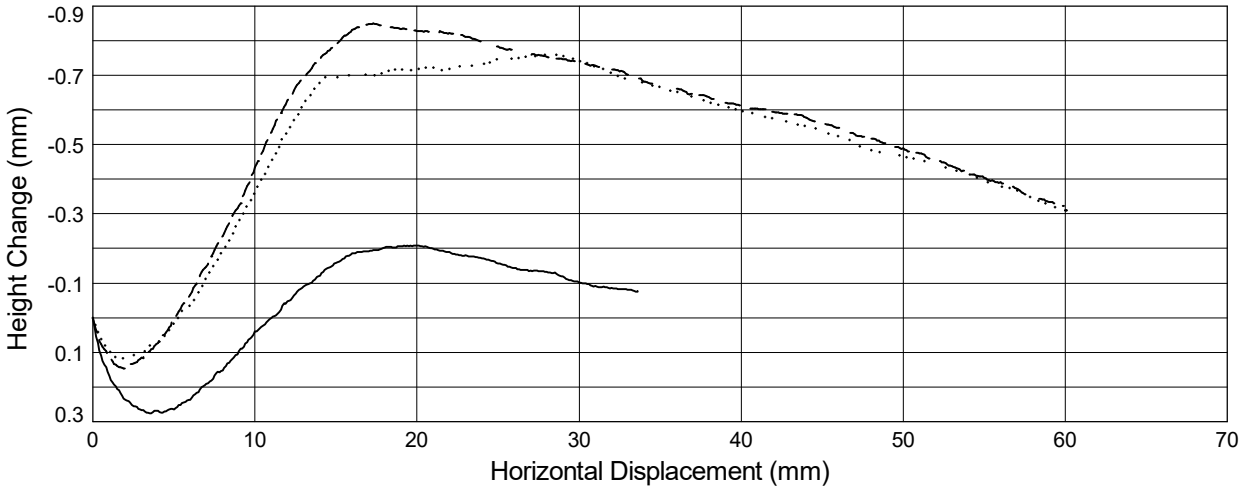
In accordance with BS EN ISO 17892-10 + SHW 600 clause 636

Trial Pit: **TP-PTS215** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**

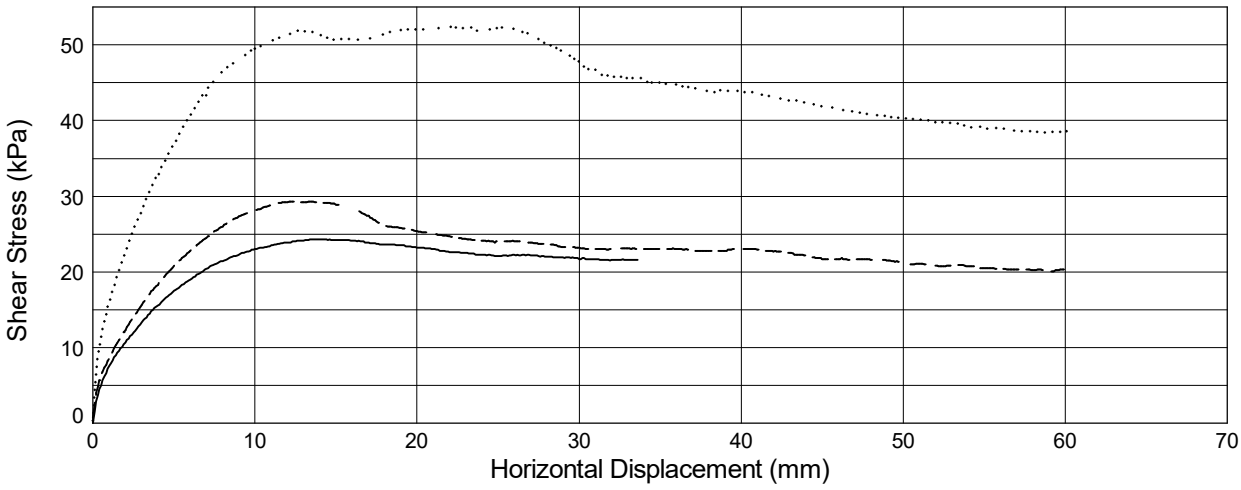
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P2,1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 18/08/23 - 11:34 | FB1 |

DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (LARGE SHEAR BOX APPARATUS)

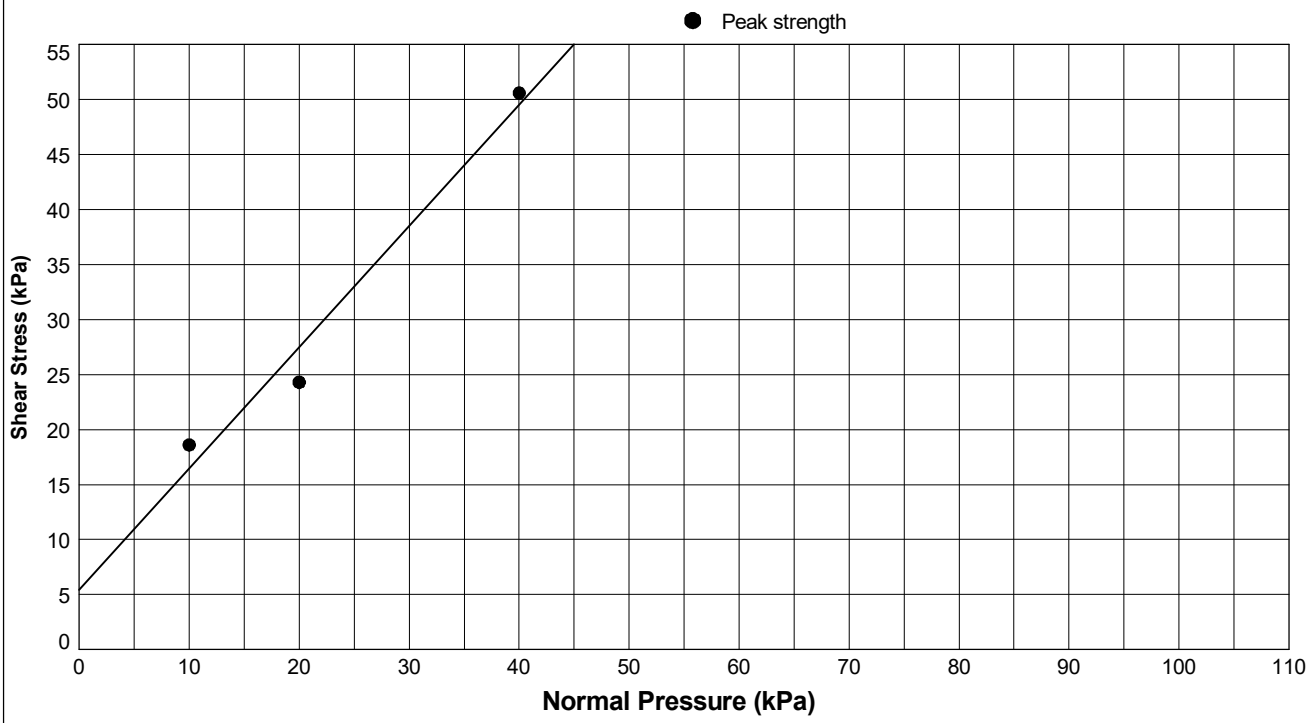
In accordance with BS EN ISO 17892-10 + SHW 600 clause 636

Trial Pit: **TP-PTS217** Sample Ref: **6** Sample Type: **B** Depth (m): **1.50**

Description: **Reddish brown gravelly SAND** Start Date: **04/05/2023**

Sample Condition: **Recompacted** End Date: **05/05/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**5.3**	**5.3**	**5.3**
	Initial Length (L_1)	(mm)	**304.8**	**304.8**	**304.8**
	Initial Width (L_2)	(mm)	**304.8**	**304.8**	**304.8**
	Initial Height	(mm)	**150.5**	**150.3**	**149.8**
	Initial Bulk Density	(Mg/m^3)	**1.98**	**1.99**	**1.99**
	Initial Dry Density	(Mg/m^3)	**1.88**	**1.89**	**1.89**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.4064**	**0.4049**	**0.4002**
	Initial Degree of Saturation	(%)	**34**	**34**	**35**
TEST CONDITIONS	Specimen Conditions		**Dry**	**Dry**	**Dry**
	Test Duration	(days)	**1**	**1**	**1**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**150.1**	**149.6**	**148.8**
SHEAR	Shearing Rate	(mm/min)	**1.0000**	**1.0000**	**1.0000**
	Horiz. Displacement at Peak Shear Stress	(mm)	**4.4**	**4.2**	**3.6**
	Peak Shear Stress	(kPa)	**19**	**24**	**51**
PEAK STRENGTH	Effective Cohesion (C ') **5**	(kPa)	Effective Angle of Friction (ϕ ') **48**		(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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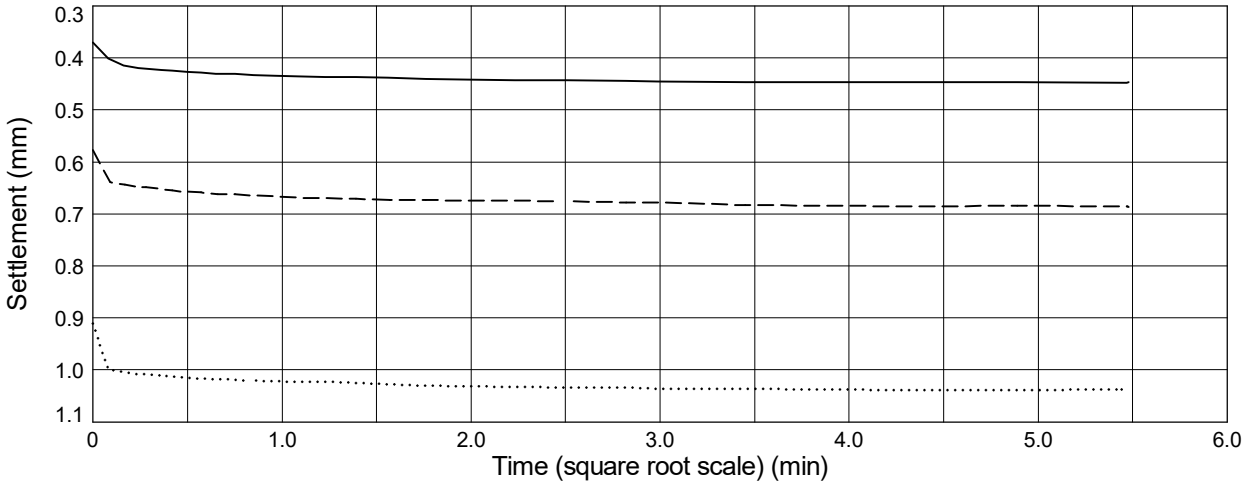
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (LARGE SHEAR BOX APPARATUS)

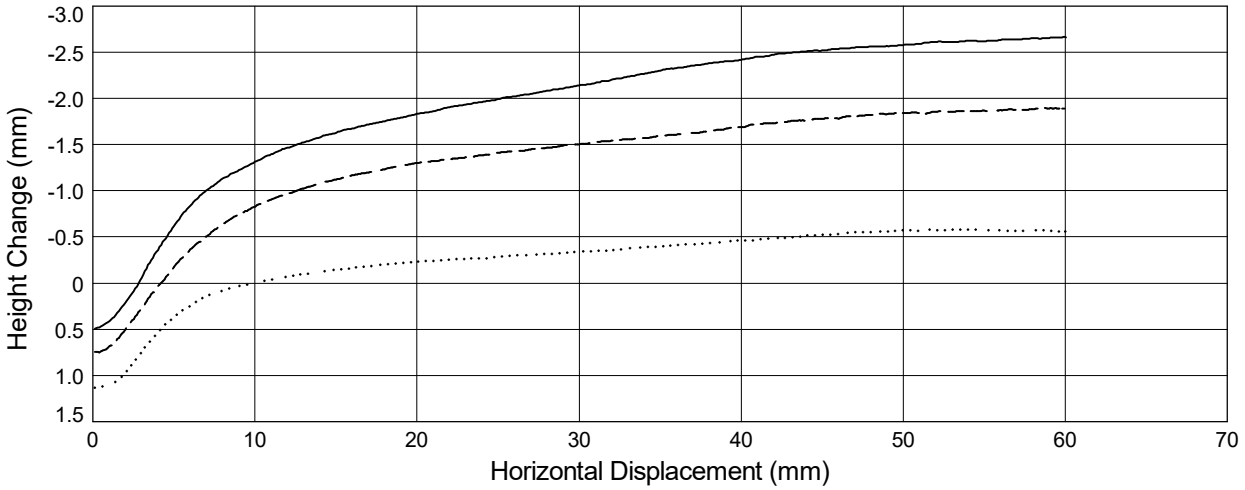
In accordance with BS EN ISO 17892-10 + SHW 600 clause 636

Trial Pit: **TP-PTS217** Sample Ref: **6** Sample Type: **B** Depth (m): **1.50**

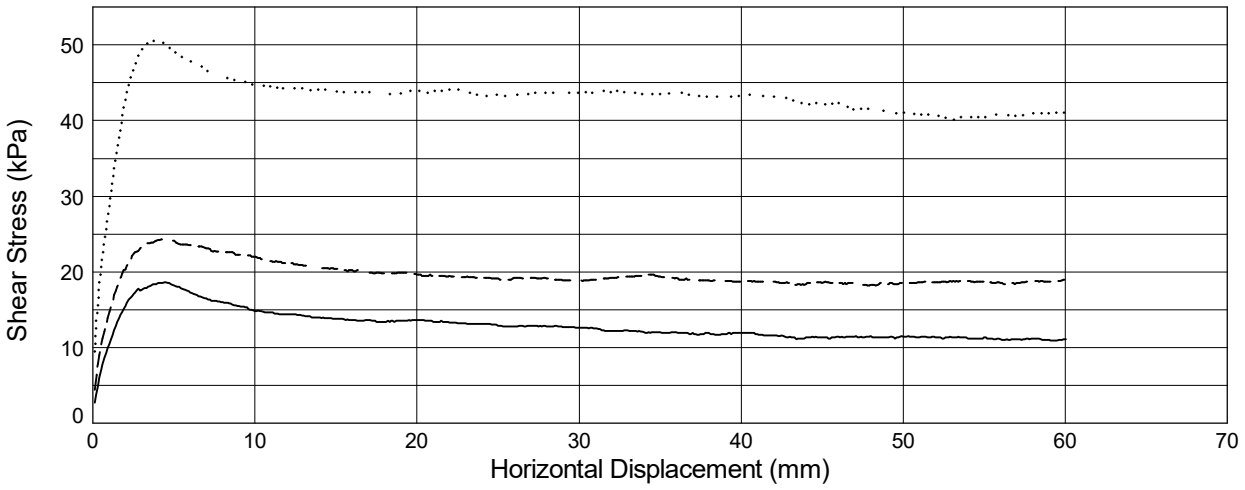
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P2,1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 18/08/23 - 11:43 | FB1 |

DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (LARGE SHEAR BOX APPARATUS)

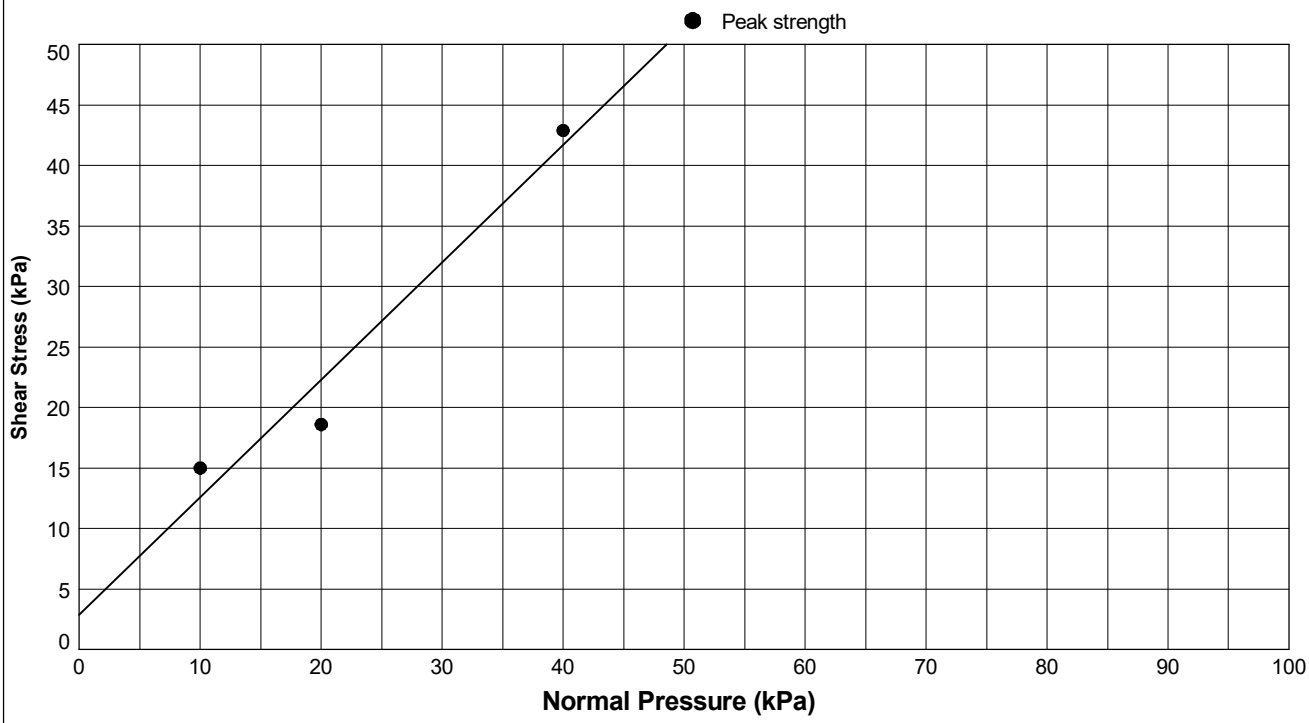
In accordance with BS EN ISO 17892-10 + SHW 600 clause 636

Trial Pit: **TP-PTS230** Sample Ref: **4** Sample Type: **B** Depth (m): **0.50**

Description: **Reddish brown slightly gravelly very clayey SAND** Start Date: **11/05/2023**

Sample Condition: **Recompacted** End Date: **22/05/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**12.4**	**12.4**	**12.4**
	Initial Length (L_1)	(mm)	**304.8**	**304.8**	**304.8**
	Initial Width (L_2)	(mm)	**304.8**	**304.8**	**304.8**
	Initial Height	(mm)	**150.2**	**149.7**	**150.0**
	Initial Bulk Density	(Mg/m^3)	**2.18**	**2.18**	**2.18**
	Initial Dry Density	(Mg/m^3)	**1.94**	**1.94**	**1.94**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.3674**	**0.3628**	**0.3658**
	Initial Degree of Saturation	(%)	**89**	**90**	**90**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**6**	**6**	**6**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**148.1**	**145.6**	**145.3**
SHEAR	Shearing Rate	(mm/min)	**0.0400**	**0.0300**	**0.0300**
	Horiz. Displacement at Peak Shear Stress	(mm)	**9.4**	**9.5**	**12.7**
	Peak Shear Stress	(kPa)	**15**	**19**	**43**
PEAK STRENGTH	Effective Cohesion (C ') **3**	(kPa)	Effective Angle of Friction (ϕ ') **44**		(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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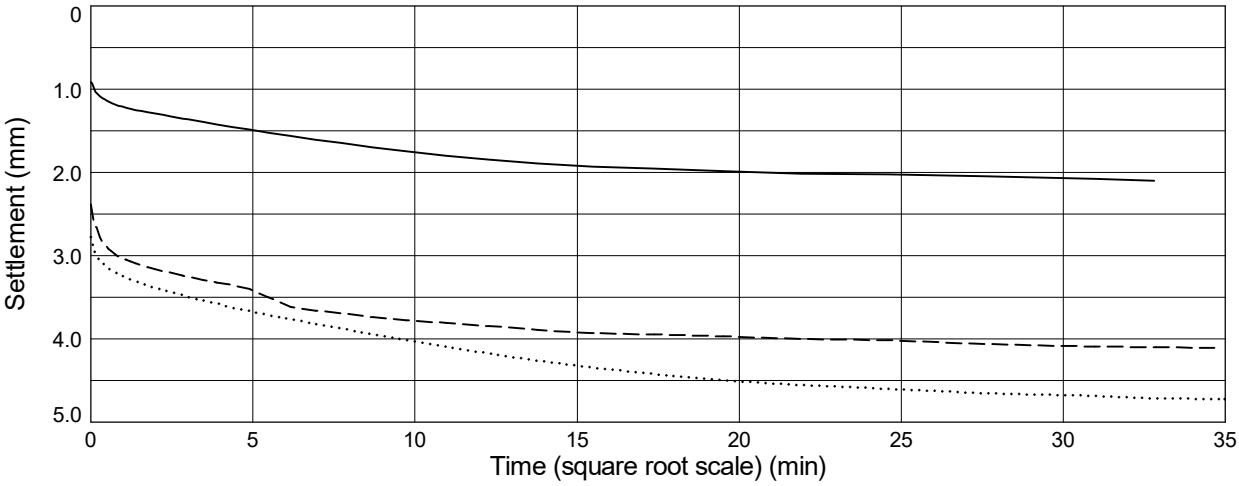
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (LARGE SHEAR BOX APPARATUS)

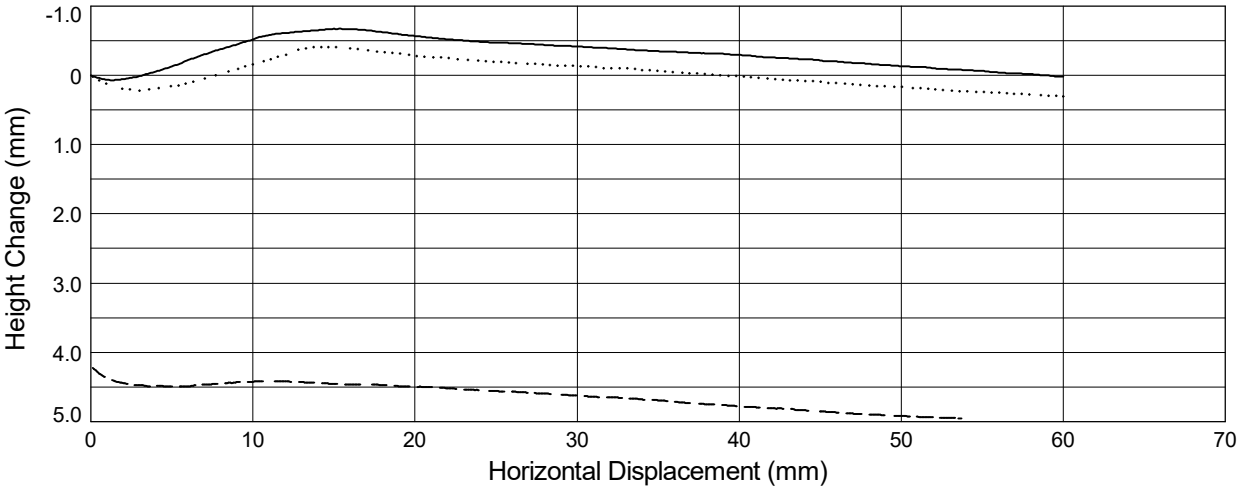
In accordance with BS EN ISO 17892-10 + SHW 600 clause 636

Trial Pit: **TP-PTS230** Sample Ref: **4** Sample Type: **B** Depth (m): **0.50**

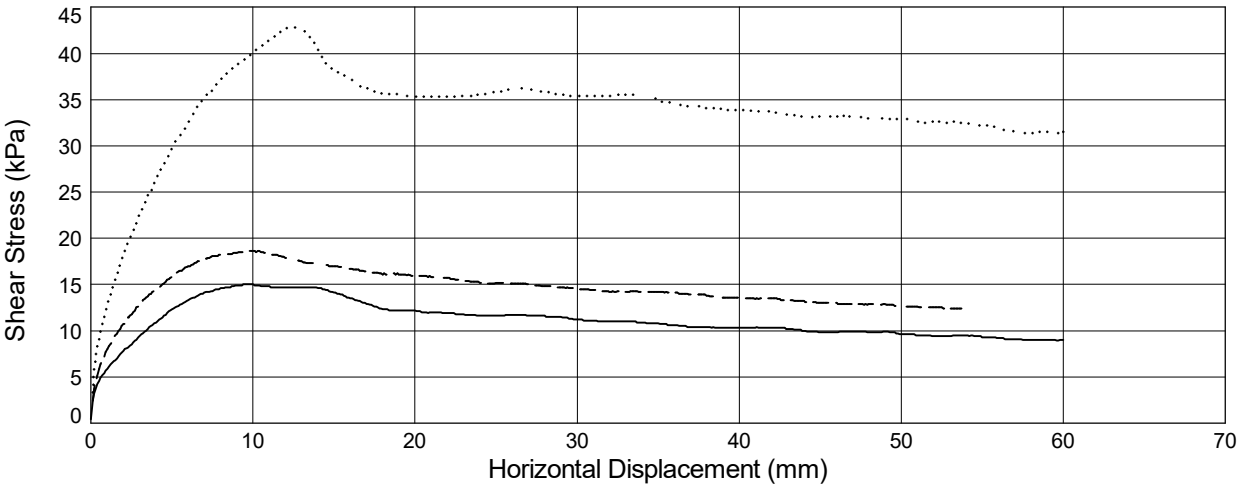
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P2.1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (LARGE SHEAR BOX APPARATUS)

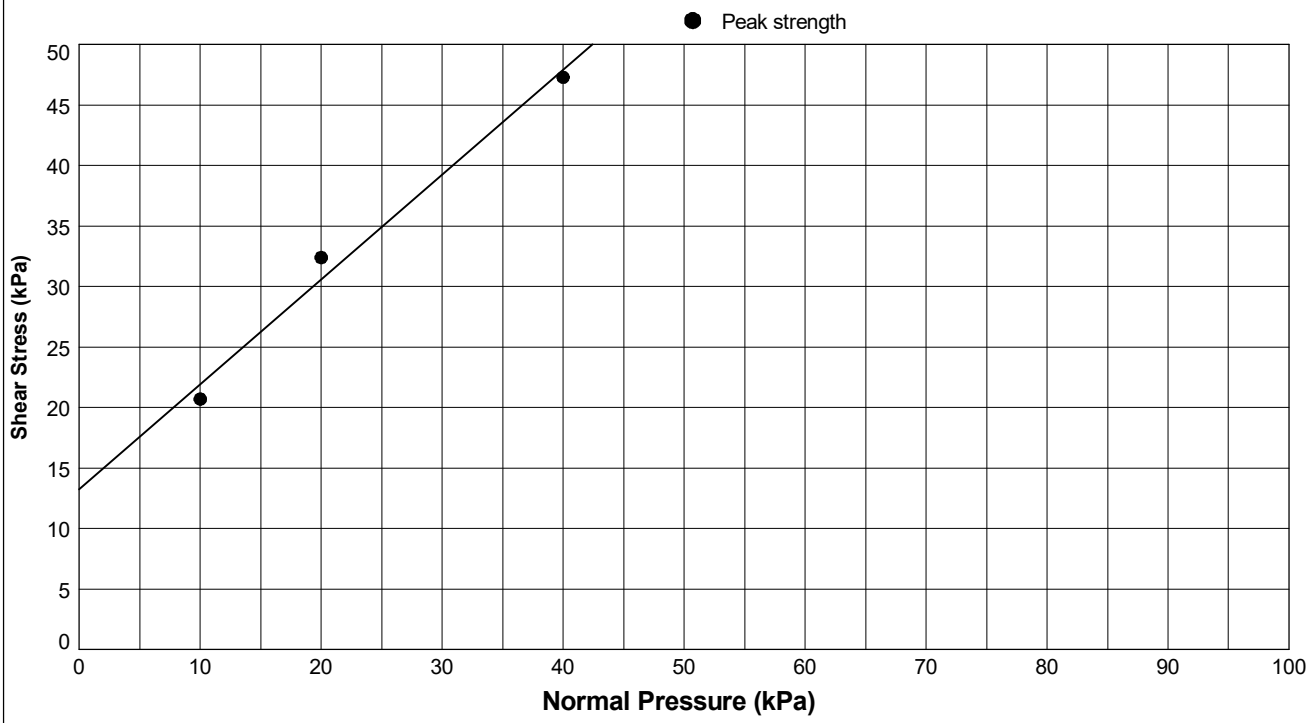
In accordance with BS EN ISO 17892-10 + SHW 600 clause 636

Trial Pit: **TP-PTS233-LC** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**

Description: **Reddish brown gravelly very clayey SAND** Start Date: **06/07/2023**

Sample Condition: **Recompacted** End Date: **19/07/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**11.2**	**11.2**	**11.2**
	Initial Length (L_1)	(mm)	**304.8**	**304.8**	**304.8**
	Initial Width (L_2)	(mm)	**304.8**	**304.8**	**304.8**
	Initial Height	(mm)	**180.3**	**180.2**	**180.0**
	Initial Bulk Density	(Mg/m^3)	**2.23**	**2.23**	**2.23**
	Initial Dry Density	(Mg/m^3)	**2.00**	**2.00**	**2.01**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.3236**	**0.3224**	**0.3212**
	Initial Degree of Saturation	(%)	**92**	**92**	**92**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**7**	**7**	**7**
CONSOLIDATION	Normal Pressure	(kPa)	**10**	**20**	**40**
	Consolidated Height	(mm)	**177.6**	**177.4**	**175.6**
SHEAR	Shearing Rate	(mm/min)	**0.0210**	**0.0230**	**0.0310**
	Horiz. Displacement at Peak Shear Stress	(mm)	**7.5**	**28.1**	**10.5**
	Peak Shear Stress	(kPa)	**21**	**32**	**47**
PEAK STRENGTH	Effective Cohesion (C ') **13**	(kPa)	Effective Angle of Friction (ϕ ') **41**		(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

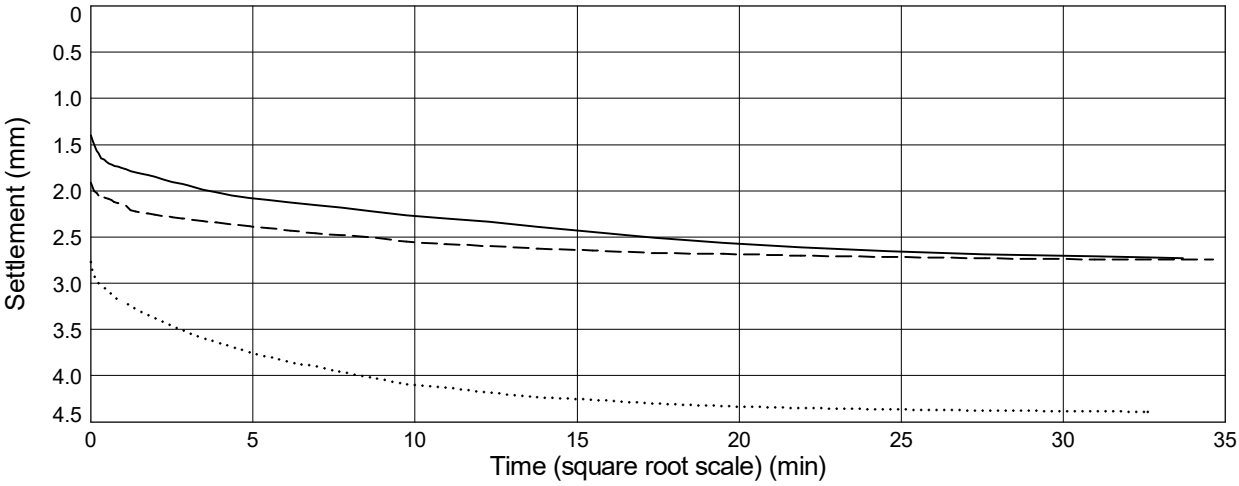
GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 18/08/23 - 11:58 | FB1 |

DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (LARGE SHEAR BOX APPARATUS)

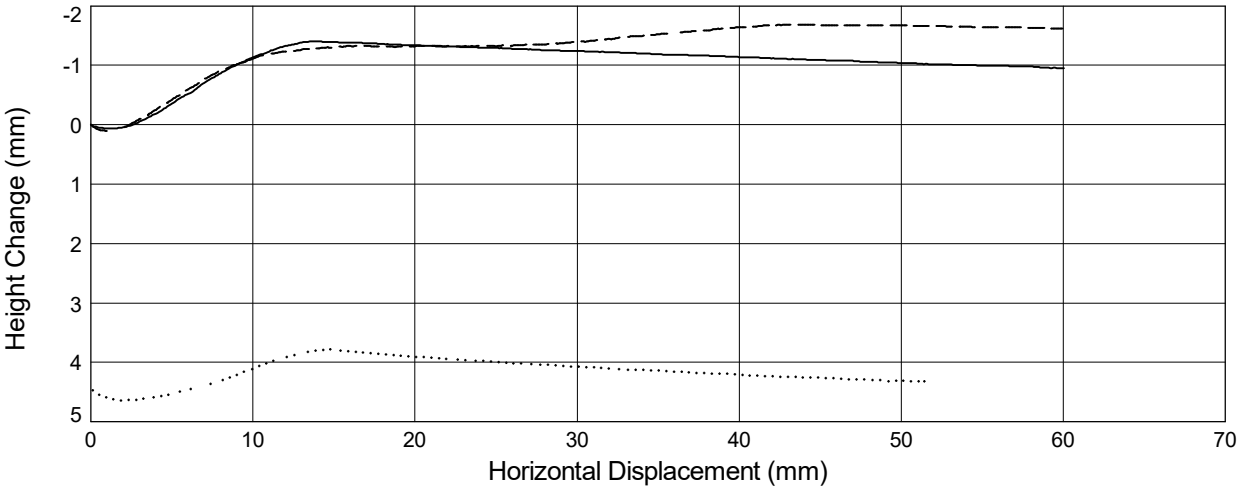
In accordance with BS EN ISO 17892-10 + SHW 600 clause 636

Trial Pit: **TP-PTS233-LC** Sample Ref: **4** Sample Type: **LB** Depth (m): **0.50**

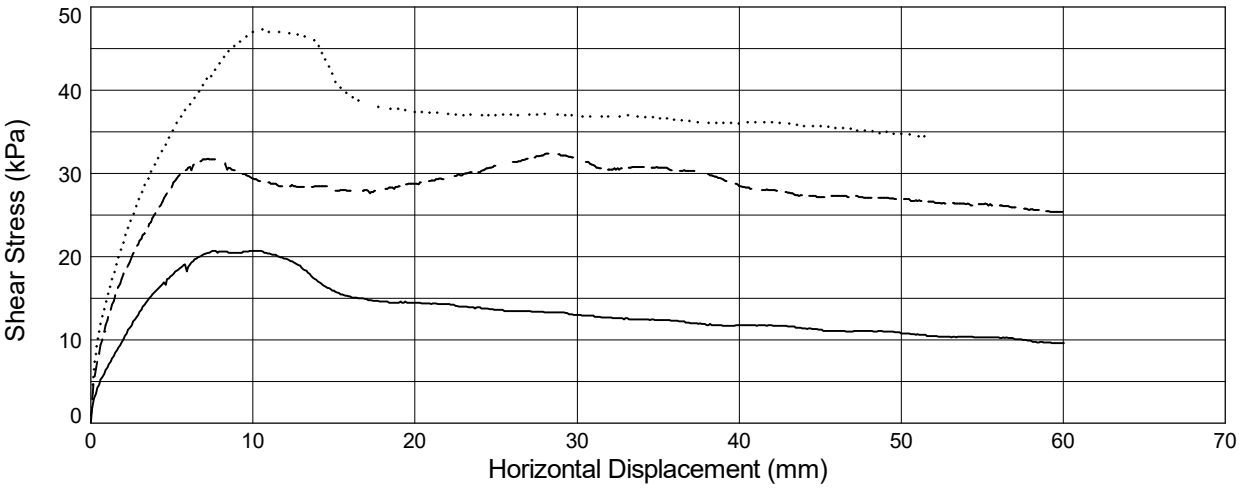
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**10** kPa) *Dashed Line* = Specimen 2 (**20** kPa) *Dotted Line* = Specimen 3 (**40** kPa)

	Compiled By		Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Daria Ignaczak	**DARIA IGNACZAK**	**02/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - SBOX - AUTO - P2.1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (LARGE SHEAR BOX APPARATUS)

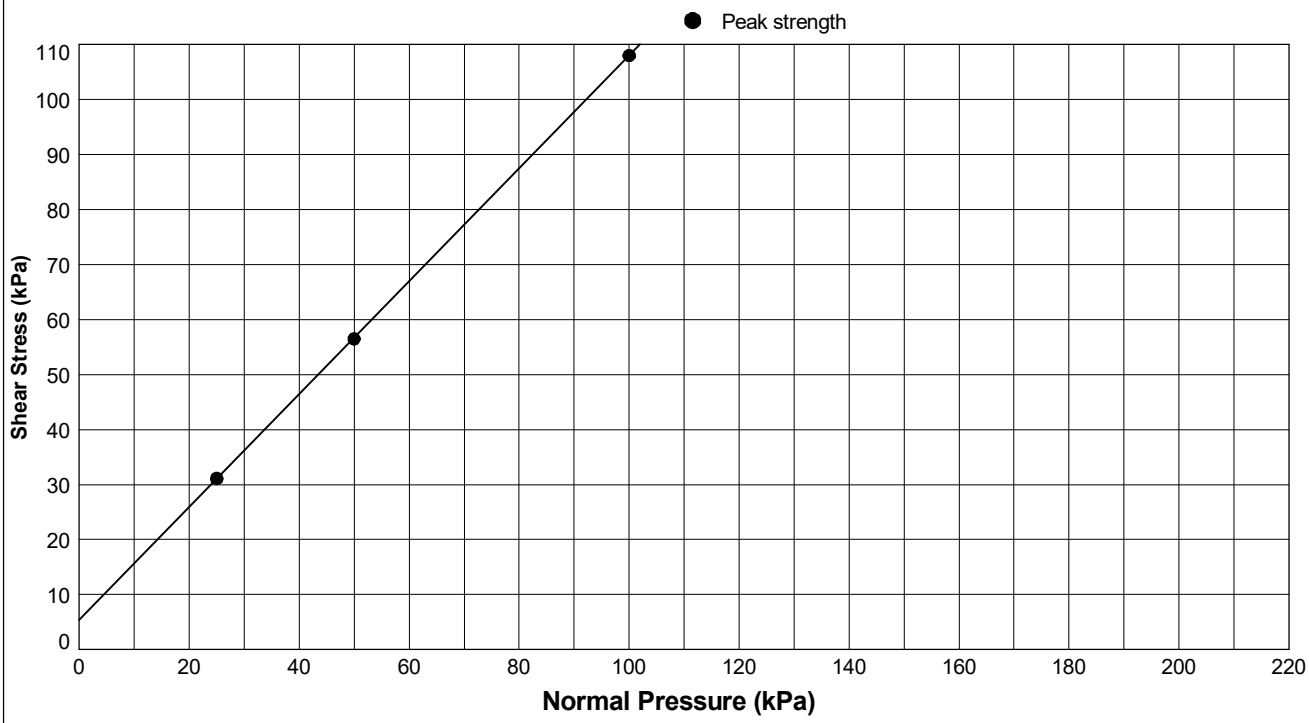
In accordance with BS EN ISO 17892-10 + SHW 600 clause 636

Trial Pit: **TP-PTS233-LC** Sample Ref: **8** Sample Type: **B** Depth (m): **2.50**

Description: **Reddish brown gravelly clayey SAND** Start Date: **27/07/2023**

Sample Condition: **Recompacted** End Date: **05/08/2023**

	SPECIMEN NUMBER		1	2	3
PROPERTIES	Initial Water Content	(%)	**11.2**	**11.2**	**11.2**
	Initial Length (L_1)	(mm)	**304.8**	**304.8**	**304.8**
	Initial Width (L_2)	(mm)	**304.8**	**304.8**	**304.8**
	Initial Height	(mm)	**150.5**	**150.0**	**150.3**
	Initial Bulk Density	(Mg/m^3)	**2.22**	**2.23**	**2.23**
	Initial Dry Density	(Mg/m^3)	**2.00**	**2.01**	**2.00**
	Particle Density	(Mg/m^3)	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$	**2.65**$_{(Assumed)}$
	Initial Voids Ratio		**0.3259**	**0.3214**	**0.3244**
	Initial Degree of Saturation	(%)	**91**	**92**	**92**
TEST CONDITIONS	Specimen Conditions		**Submerged**	**Submerged**	**Submerged**
	Test Duration	(days)	**6**	**6**	**6**
CONSOLIDATION	Normal Pressure	(kPa)	**25**	**50**	**100**
	Consolidated Height	(mm)	**147.4**	**146.2**	**146.4**
SHEAR	Shearing Rate	(mm/min)	**0.0760**	**0.0550**	**0.0680**
	Horiz. Displacement at Peak Shear Stress	(mm)	**7.1**	**13.3**	**13.2**
	Peak Shear Stress	(kPa)	**31**	**57**	**108**
PEAK STRENGTH	Effective Cohesion (C ') **5**	(kPa)	Effective Angle of Friction (ϕ ')	**45.5**	(deg)



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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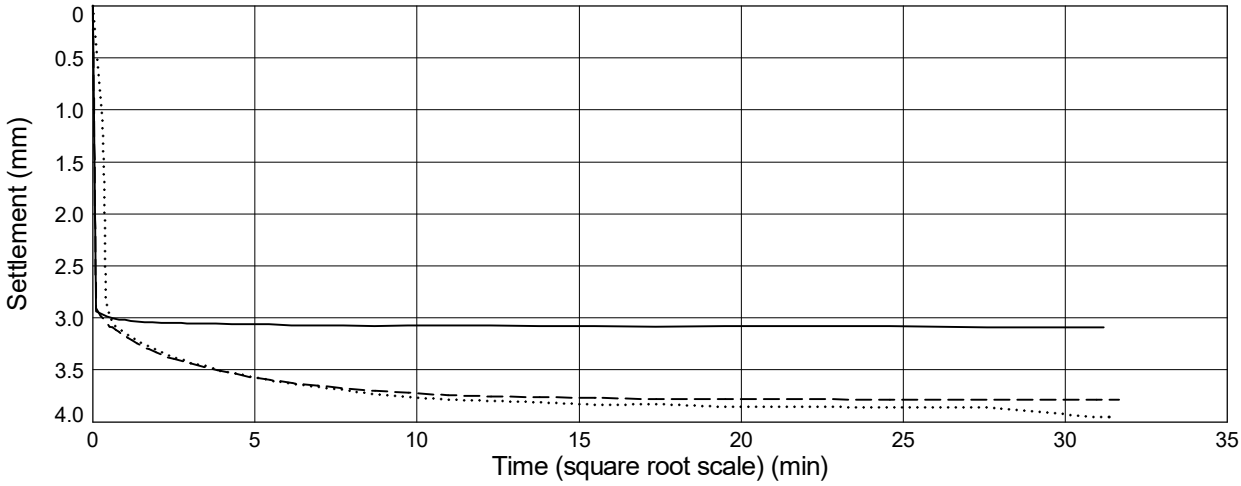
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (LARGE SHEAR BOX APPARATUS)

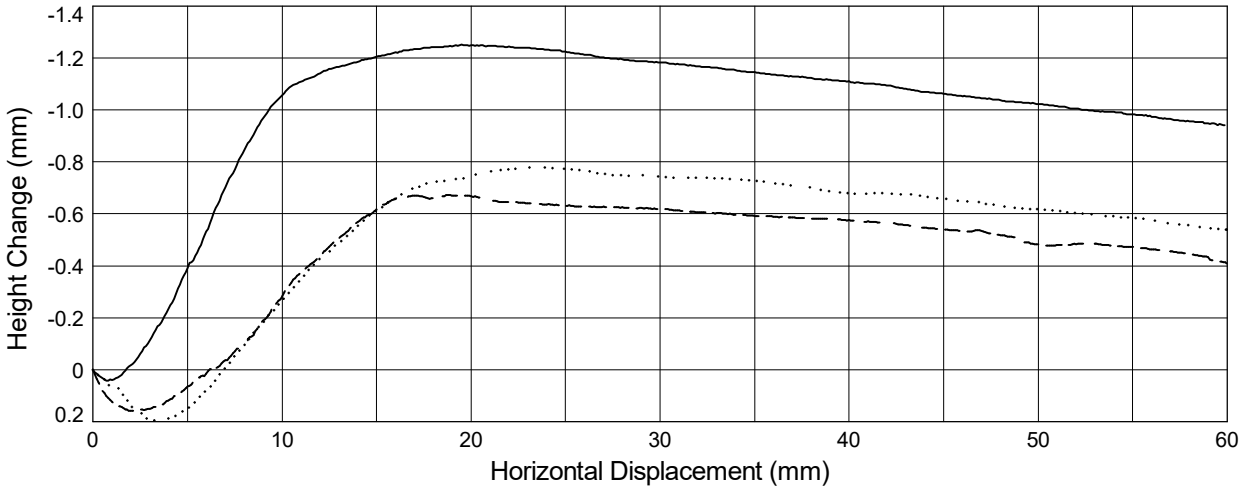
In accordance with BS EN ISO 17892-10 + SHW 600 clause 636

Trial Pit: **TP-PTS233-LC** Sample Ref: **8** Sample Type: **B** Depth (m): **2.50**

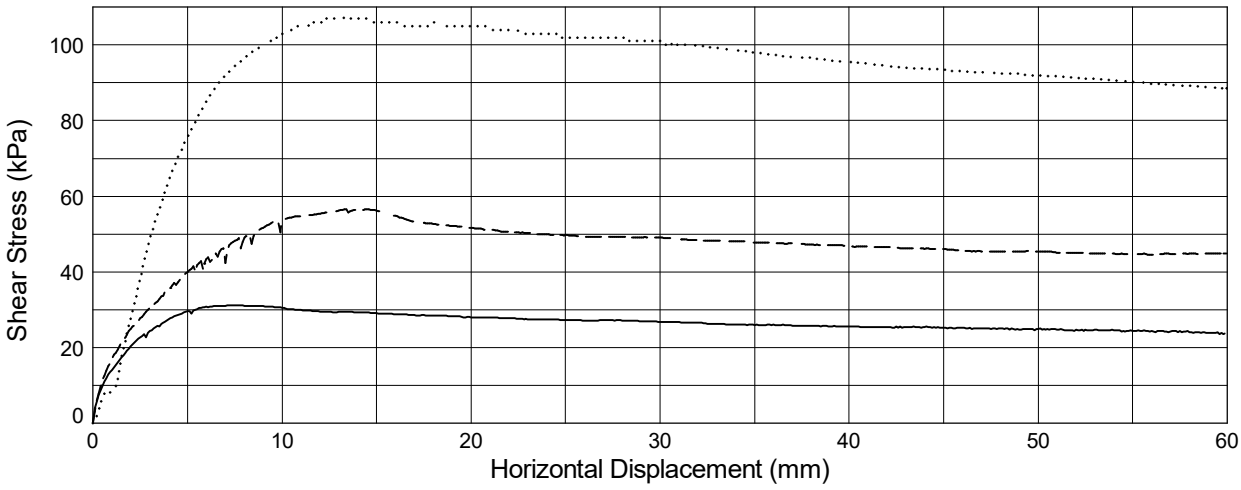
Consolidation Stage



Shear Stage



Shear Stage



Solid Line = Specimen 1 (**25** kPa) *Dashed Line* = Specimen 2 (**50** kPa) *Dotted Line* = Specimen 3 (**100** kPa)

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**07/08/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

Borehole : **BH-PTS102A** Sample Ref : **9** Sample Type : **UT** Depth (m) : **3.23**

Description : **Reddish brown gravelly CLAY** Condition : **Undisturbed**

Saturation Type : **Back Pressure**

SPECIMEN DETAILS			
Initial Diameter (mm)	103.42		
Initial Height (mm)	182.72		
Initial Mass (g)	3561.57		
Sample Orientation	Vertical		
Initial Water Content (%)	11.5		
Initial Bulk Density (Mg/m^3)	2.32		
Initial Dry Density (Mg/m^3)	2.08		
Initial Voids Ratio	0.2697		
Initial B-Value	0.55		
Final Water Content (%)	12.1		
Final Bulk Density (Mg/m^3)	2.37		
Final Dry Density (Mg/m^3)	2.11		
SATURATION			
Duration (days)	6		
Final B-Value	0.95		
Voids Ratio	0.2697		
CONSOLIDATION			
Stage	1	2	3
Duration (days)	1	1	1
Cell Pressure (kPa)	380	395	425
Back Pressure (kPa)	365	365	365
Initial Volume (cm^3)	1535	1533	1524
Final Volume (cm^3)	1533	1524	1511
Voids Ratio	0.2678	0.2608	0.2503
Effective Major Principal Stress (kPa)	15	30	60
Effective Minor Principal Stress (kPa)	15	30	60
Ext. Axial Strain (%)	-	-	-
Ext. Volumetric Strain (%)	0.15	0.71	1.53

STRUCTURAL SOILS
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Compiled By		Date
	DAISY RICHARDS	**06/07/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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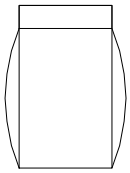
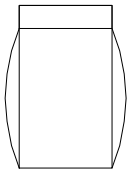
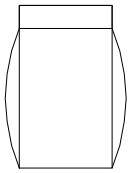
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

Borehole : **BH-PTS102A** Sample Ref : **9** Sample Type : **UT** Depth (m) : **3.23**

Description : **Reddish brown gravelly CLAY** Condition : **Undisturbed**

Saturation Type : **Back Pressure**

COMPRESSION			
Duration (days)	1	1	1
Cell Pressure (kPa)	380	395	425
Initial Porewater Pressure (kPa)	365	366	366
Strain Rate (mm/min)	0.00254	0.00188	0.00135
Failure Criteria	Maximum Stress Ratio	Maximum Stress Ratio	Maximum Stress Ratio
Axial Strain at Failure (%)	0.92	0.72	1.07
Time to Failure (h)	11.0	8.7	24.0
Deviator Stress at Failure (kPa)	36	59	94
Vertical Membrane Correction at Failure (kPa)	0.230	0.227	0.373
Horizontal Membrane Correction at Failure (kPa)	0.012	0.056	0.120
Side Drain Correction at Failure (kPa)	1.698	1.327	1.960
Porewater Pressure at Failure (kPa)	368	374	389
Effective Major Principal Stress (kPa)	48	79	131
Effective Minor Principal Stress (kPa)	12	21	36
Effective Principal Stress Ratio	3.93	3.85	3.59
Pore Pressure Coefficient - A_f	0.08	0.14	0.24
Mode of Failure Plastic (Barrelling) Plastic (Barrelling) Plastic (Barrelling)			

Effective Cohesion (kPa) :	**2.1**	Angle of Shear Resistance (degs) :	**33**

STRUCTURAL SOILS
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Compiled By		Date
	DAISY RICHARDS	**06/07/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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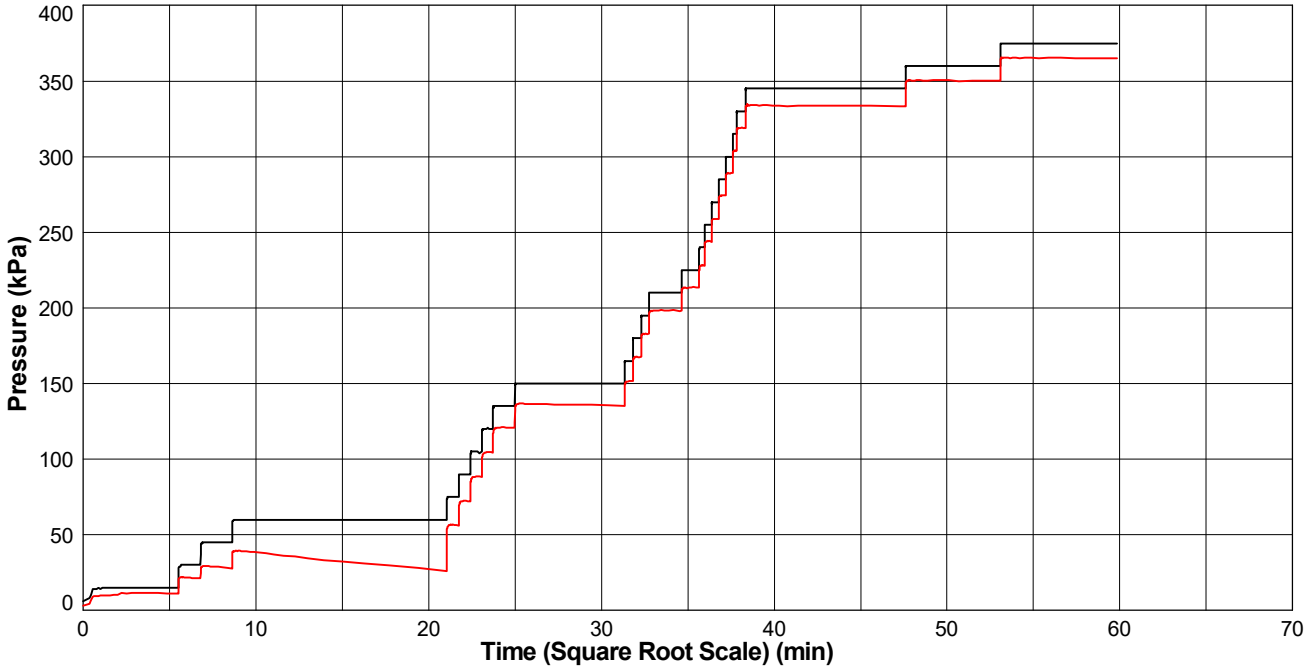
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

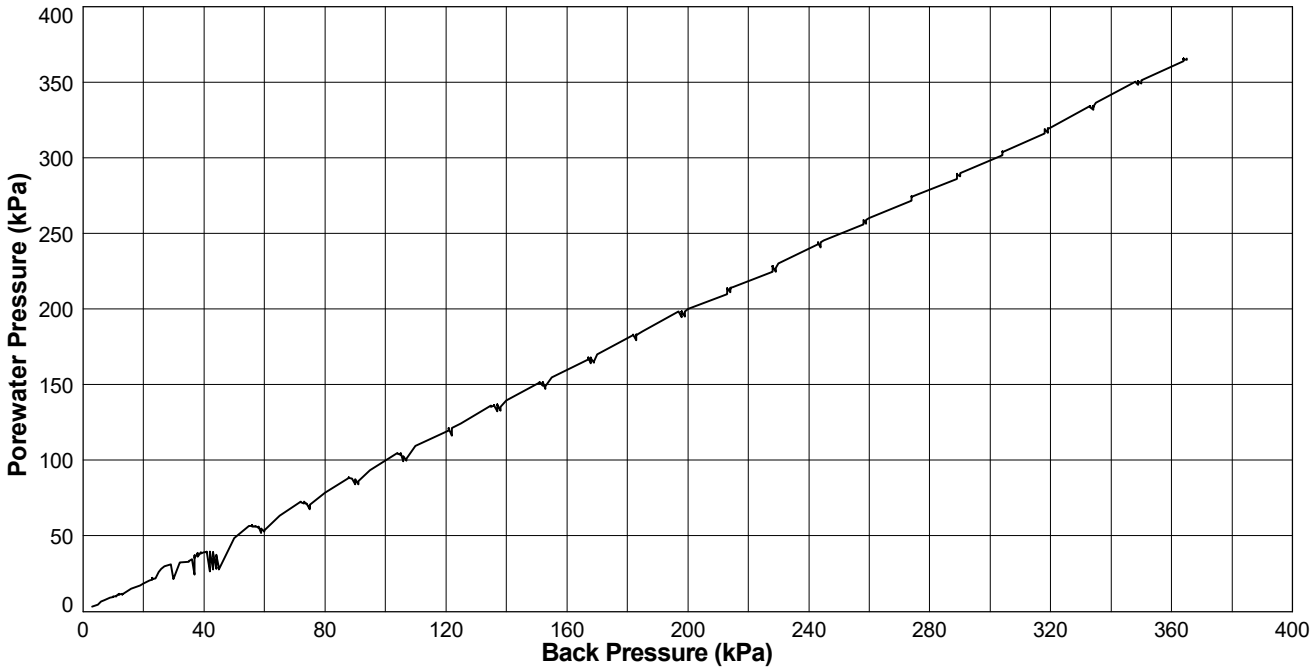
Borehole: **BH-PTS102A** Sample Ref: **9** Sample Type: **UT** Depth (m): **3.23**

SATURATION



Key: Cell Pressure: PWP (Base):

SATURATION



Key: PWP (Base):

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		DAISY RICHARDS	**06/07/23**
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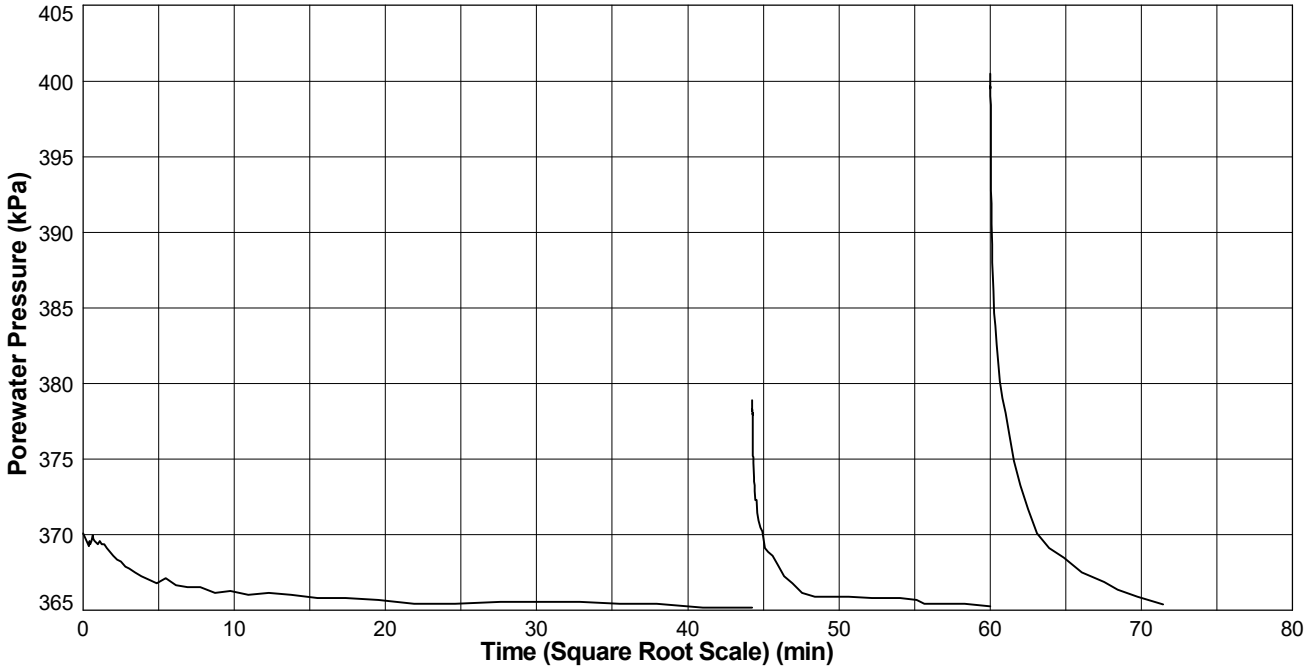
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

Borehole: **BH-PTS102A** Sample Ref: **9** Sample Type: **UT** Depth (m): **3.23**

CONSOLIDATION



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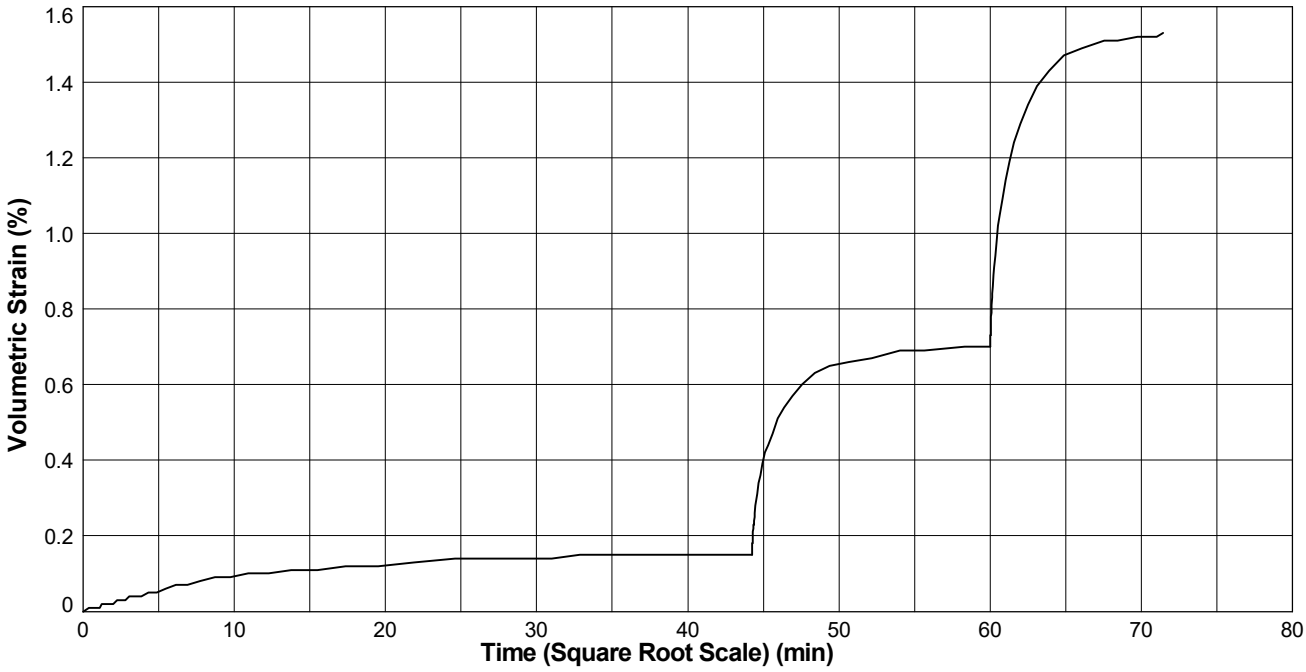
CONSOLIDATION



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**06/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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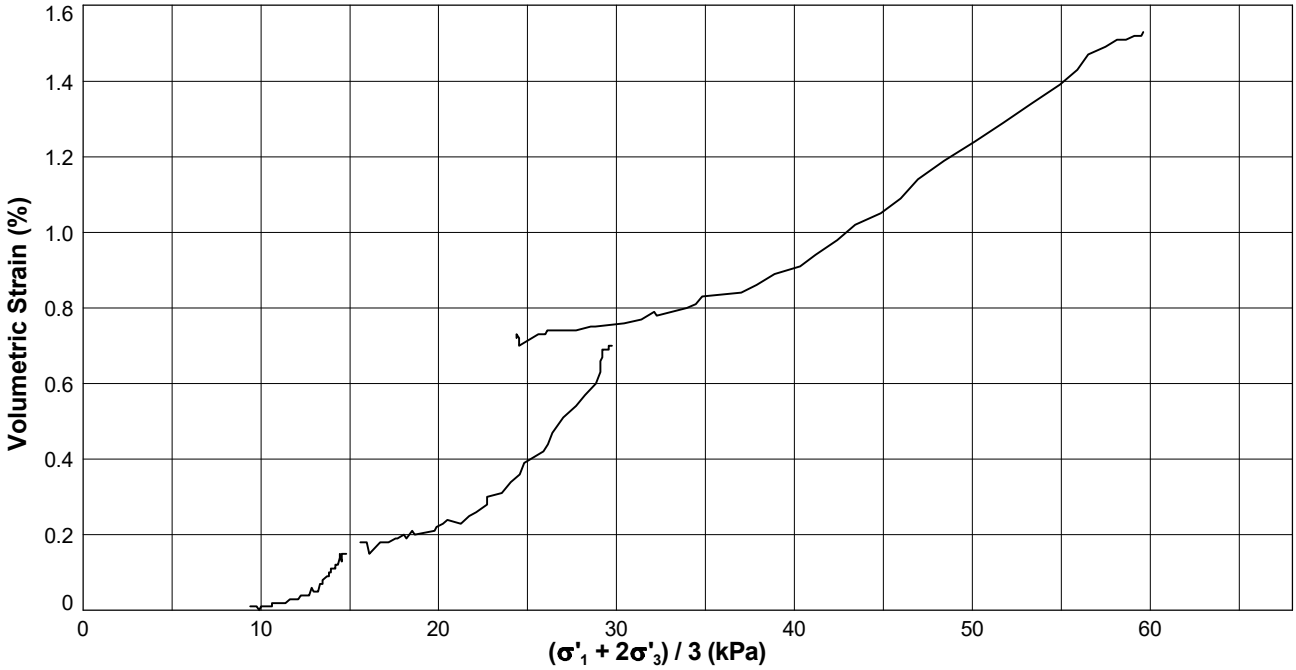
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

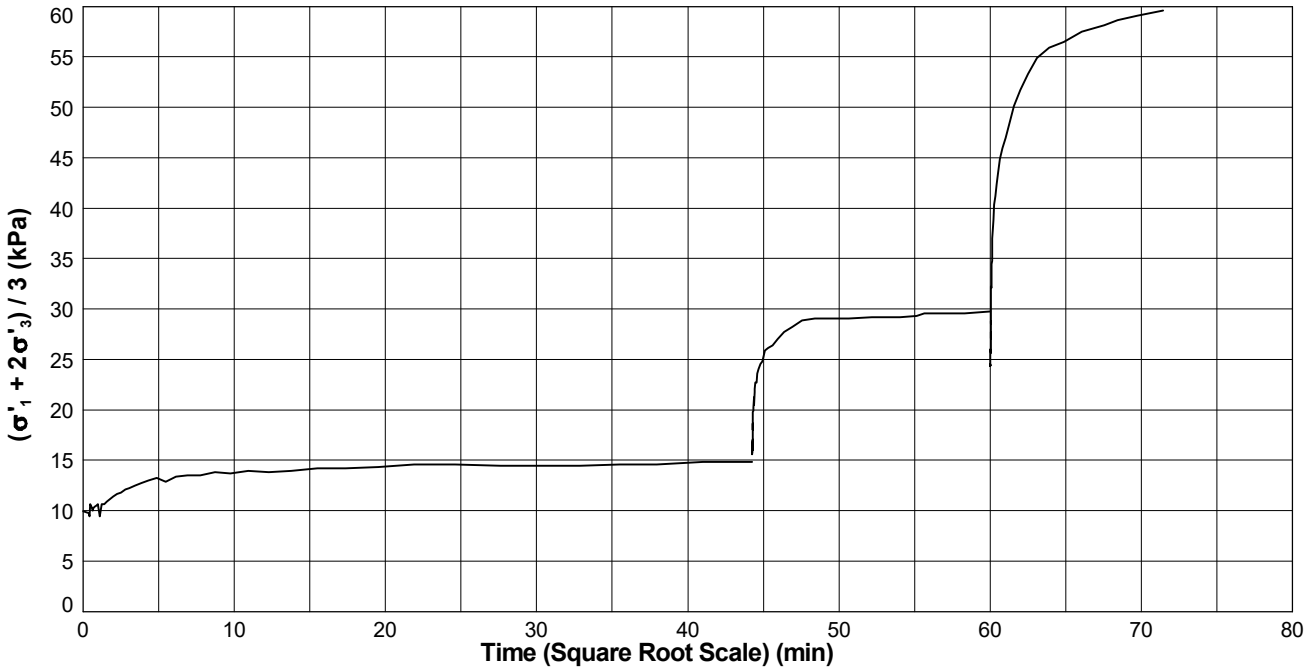
In accordance with BS EN ISO 17892 Part 9

Borehole: **BH-PTS102A** Sample Ref: **9** Sample Type: **UT** Depth (m): **3.23**

CONSOLIDATION



CONSOLIDATION



Key: ext. (Base):

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**06/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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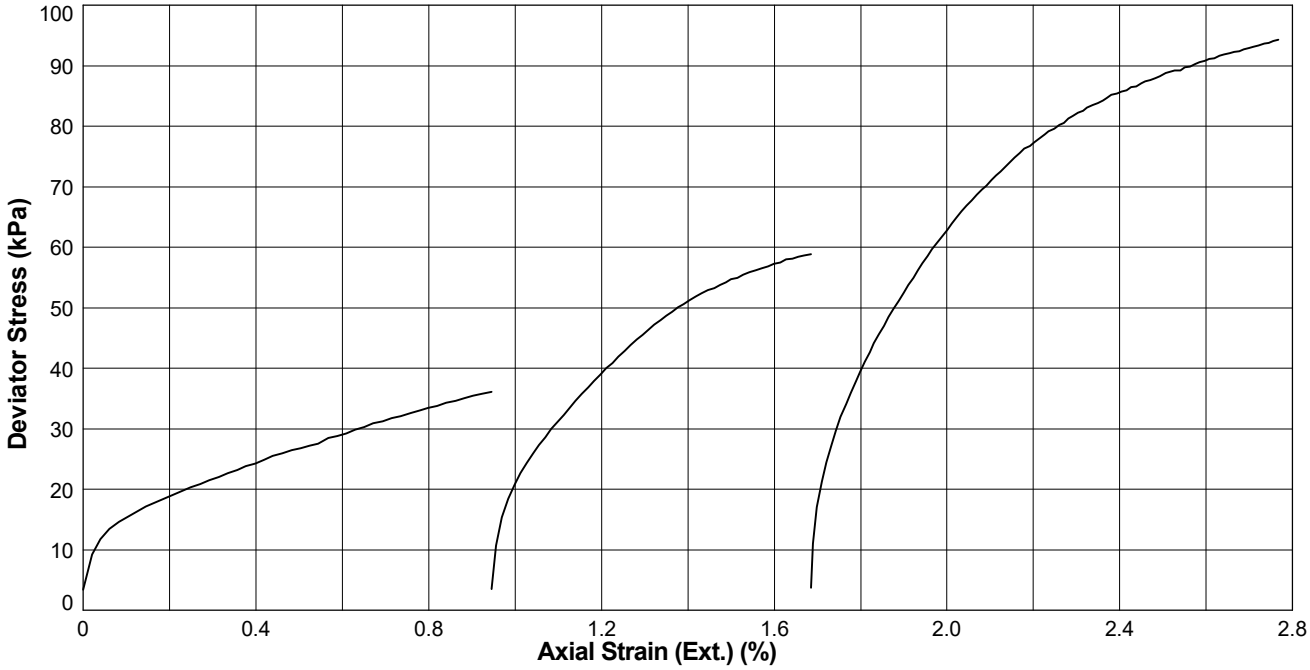
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

Borehole: **BH-PTS102A** Sample Ref: **9** Sample Type: **UT** Depth (m): **3.23**

SHEAR



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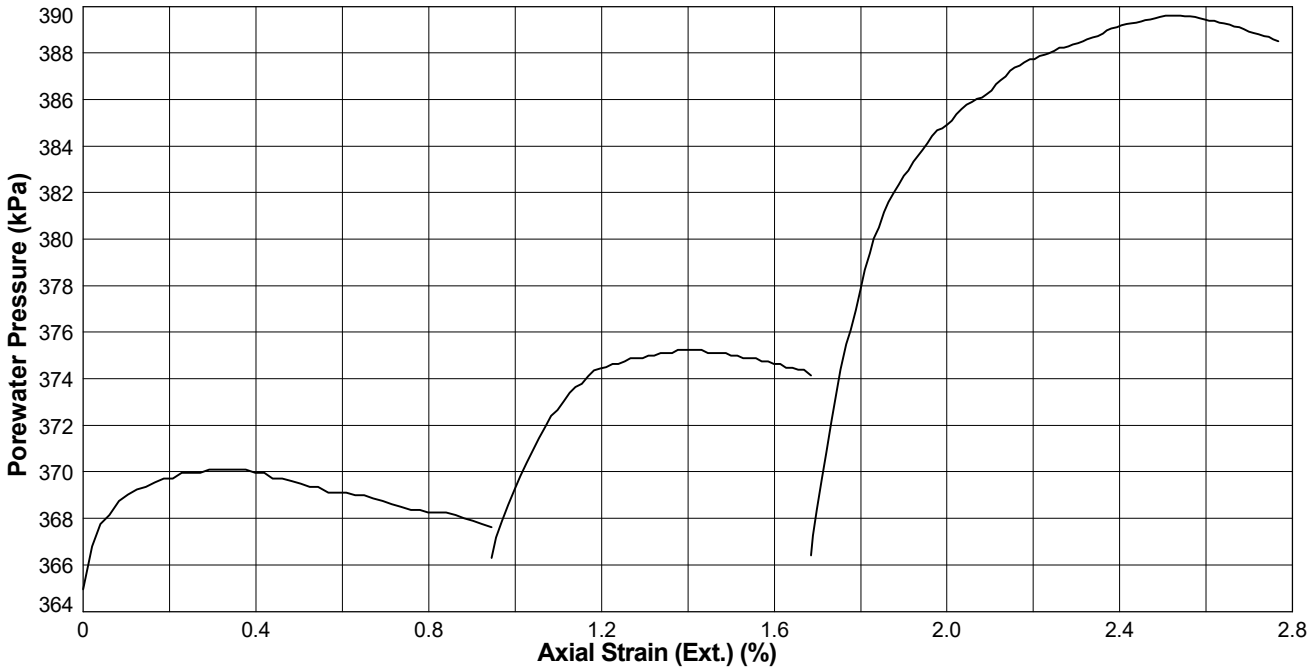
SHEAR



Key: PWP (Base): ————

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**06/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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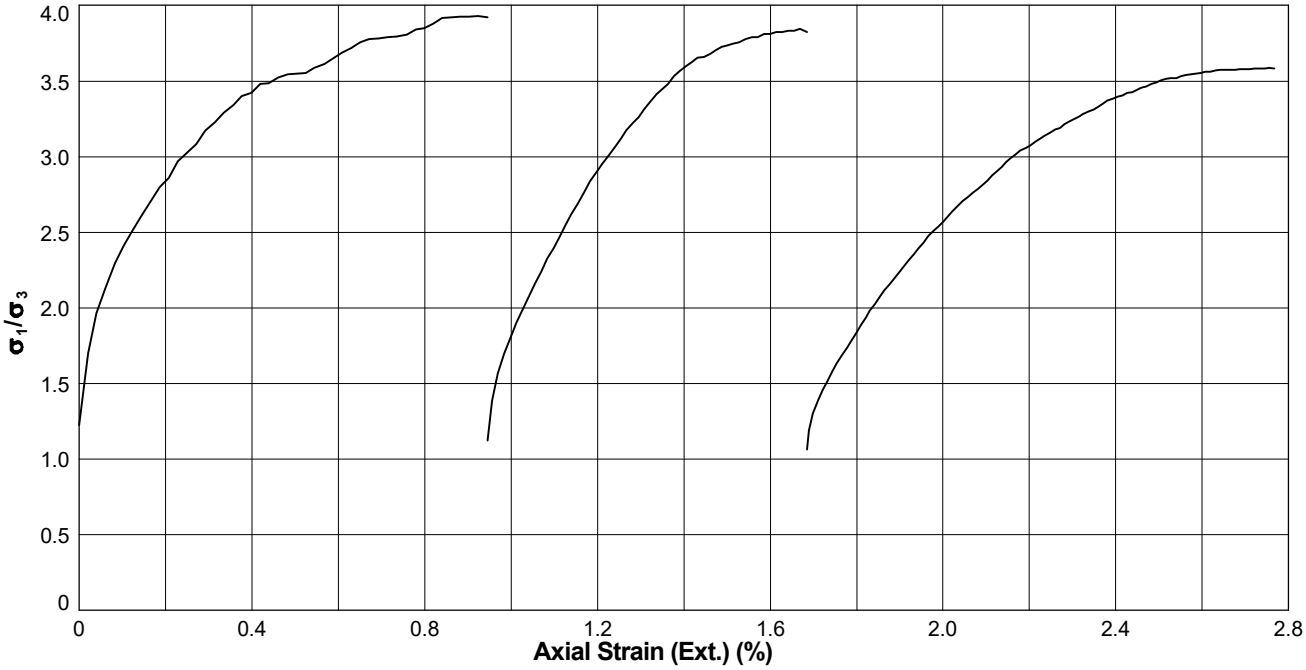
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

Borehole: **BH-PTS102A** Sample Ref: **9** Sample Type: **UT** Depth (m): **3.23**

SHEAR



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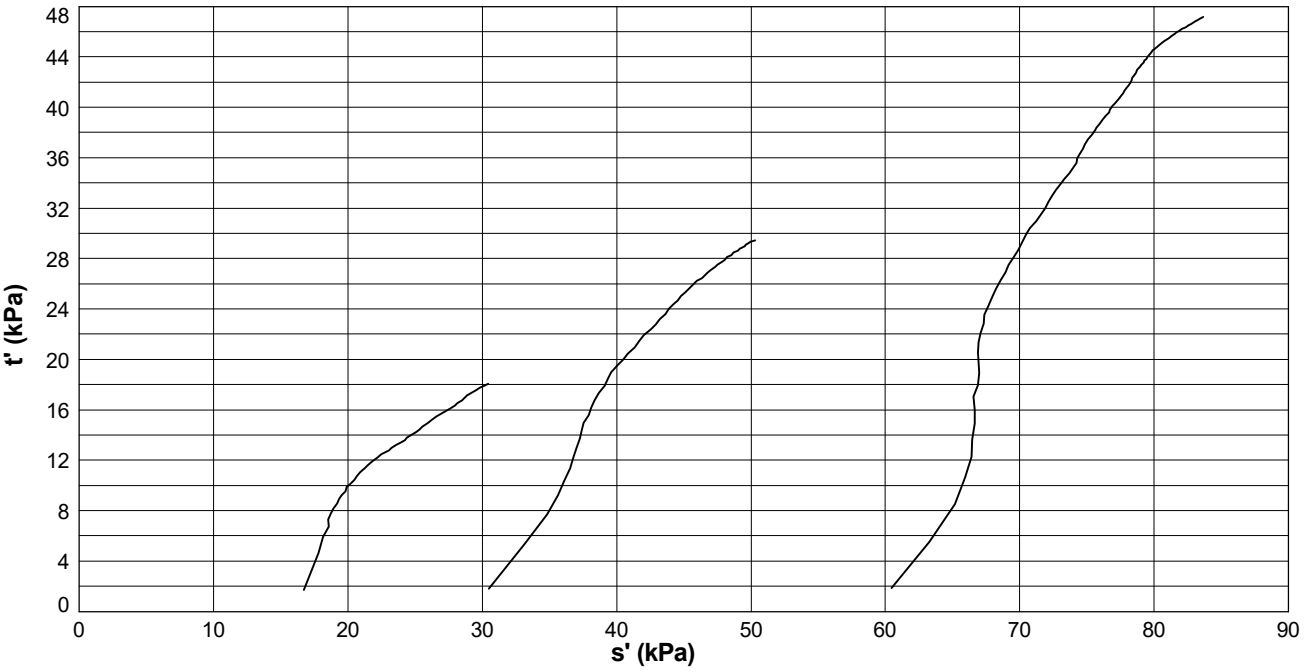
SHEAR



Key: ext. (Base):

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		DAISY RICHARDS	**06/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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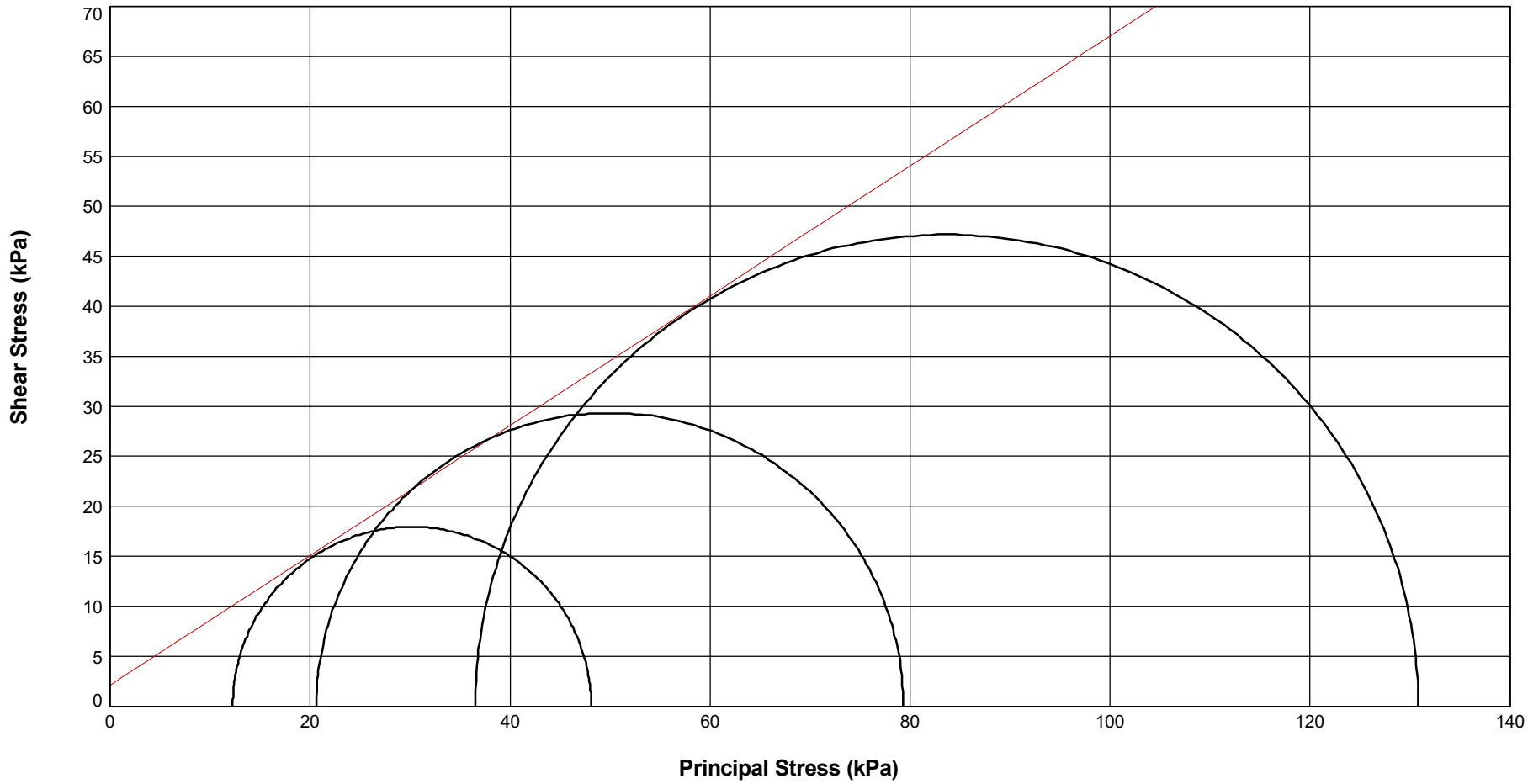
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

Borehole: **BH-PTS102A** Sample Ref: **9** Sample Type: **UT** Depth (m): **3.23**



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By	Date	Contract Ref:
	DAISY RICHARDS	06.07.23	
	Contract **A66 NTP Scheme S03A**		**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - EFFECTIVE STRESS MOHR CIRCLES - A4L | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

Borehole : **BH-PTS116** Sample Ref : **9** Sample Type : **UT** Depth (m) : **1.31**

Description : **Reddish brown slightly sandy slightly gravelly silty CLAY** Condition : **Undisturbed**

Saturation Type : **Back Pressure**

SPECIMEN DETAILS			
Initial Diameter (mm)	103.44		
Initial Height (mm)	202.83		
Initial Mass (g)	3840.11		
Sample Orientation	Vertical		
Initial Water Content (%)	13.7		
Initial Bulk Density (Mg/m^3)	2.25		
Initial Dry Density (Mg/m^3)	1.98		
Initial Voids Ratio	0.3339		
Initial B-Value	0.69		
Final Water Content (%)	13.3		
Final Bulk Density (Mg/m^3)	2.28		
Final Dry Density (Mg/m^3)	2.02		
SATURATION			
Duration (days)	4		
Final B-Value	0.97		
Voids Ratio	0.3339		
CONSOLIDATION			
Stage	1	2	3
Duration (days)	1	1	1
Cell Pressure (kPa)	370	390	430
Back Pressure (kPa)	350	350	350
Initial Volume (cm^3)	1702	1702	1690
Final Volume (cm^3)	1702	1690	1675
Voids Ratio	0.3318	0.3224	0.3110
Effective Major Principal Stress (kPa)	20	40	80
Effective Minor Principal Stress (kPa)	20	40	80
Ext. Axial Strain (%)	-	-	-
Ext. Volumetric Strain (%)	0.16	0.86	1.72

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
	DAISY RICHARDS	**13/07/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcTbl L - EFFECTIVE STRESS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 13/07/23 - 11:11 | DR1 |

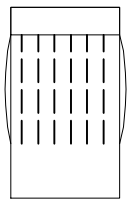
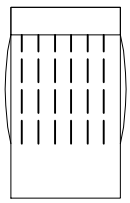
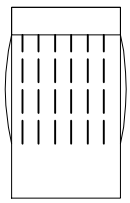
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

Borehole : **BH-PTS116** Sample Ref : **9** Sample Type : **UT** Depth (m) : **1.31**

Description : **Reddish brown slightly sandy slightly gravelly silty CLAY** Condition : **Undisturbed**

Saturation Type : **Back Pressure**

COMPRESSION			
Duration (days)	0.5	0.5	1
Cell Pressure (kPa)	370	390	430
Initial Porewater Pressure (kPa)	351	350	350
Strain Rate (mm/min)	0.01126	0.00557	0.00661
Failure Criteria	Maximum Stress Ratio	Maximum Stress Ratio	Maximum Stress Ratio
Axial Strain at Failure (%)	0.76	0.90	1.57
Time to Failure (h)	2.3	5.7	8.0
Deviator Stress at Failure (kPa)	46	85	155
Vertical Membrane Correction at Failure (kPa)	0.200	0.292	0.528
Horizontal Membrane Correction at Failure (kPa)	0.013	0.071	0.141
Side Drain Correction at Failure (kPa)	1.393	1.651	2.877
Porewater Pressure at Failure (kPa)	355	360	375
Effective Major Principal Stress (kPa)	61	114	210
Effective Minor Principal Stress (kPa)	15	30	55
Effective Principal Stress Ratio	4.15	3.87	3.79
Pore Pressure Coefficient - A_f	0.10	0.12	0.16
Mode of Failure Semi-plastic (axial splitting with bulging) Semi-plastic (axial splitting with bulging) Semi-plastic (axial splitting with bulging)			

Effective Cohesion (kPa) : **1.8**	Angle of Shear Resistance (degs) : **34.8**

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
	DAISY RICHARDS	**13/07/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

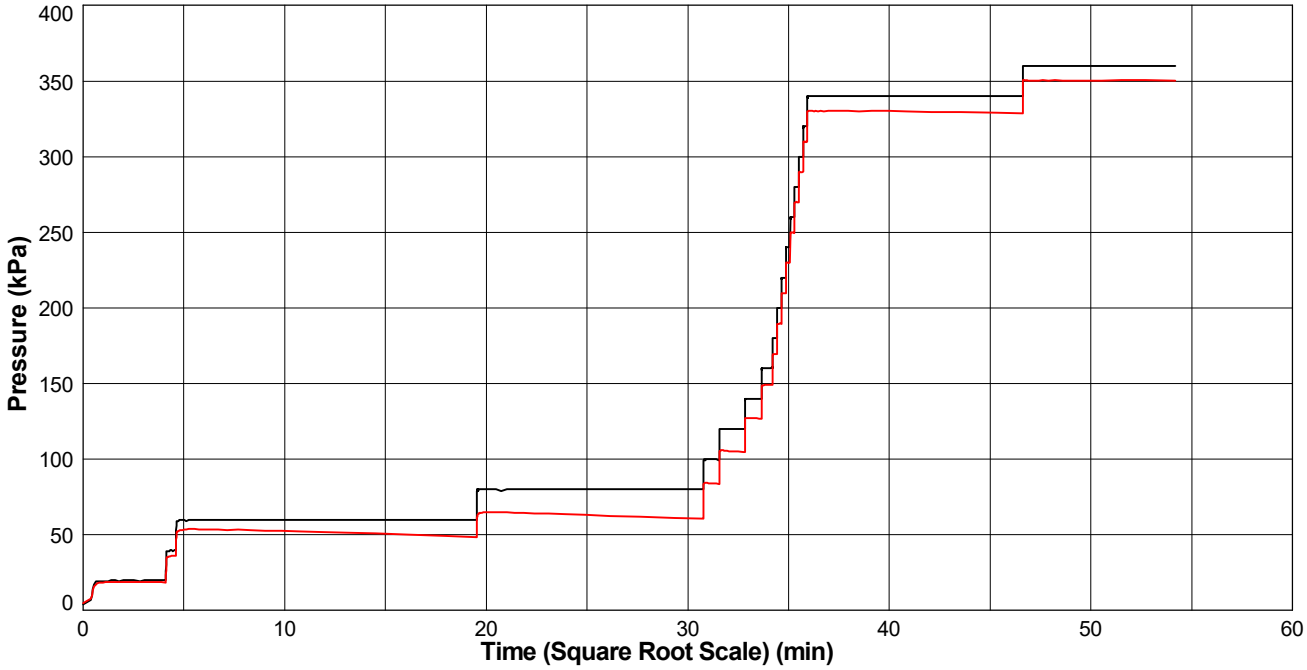
GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcTbl L - EFFECTIVE STRESS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 13/07/23 - 11:11 | DR1 |

ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

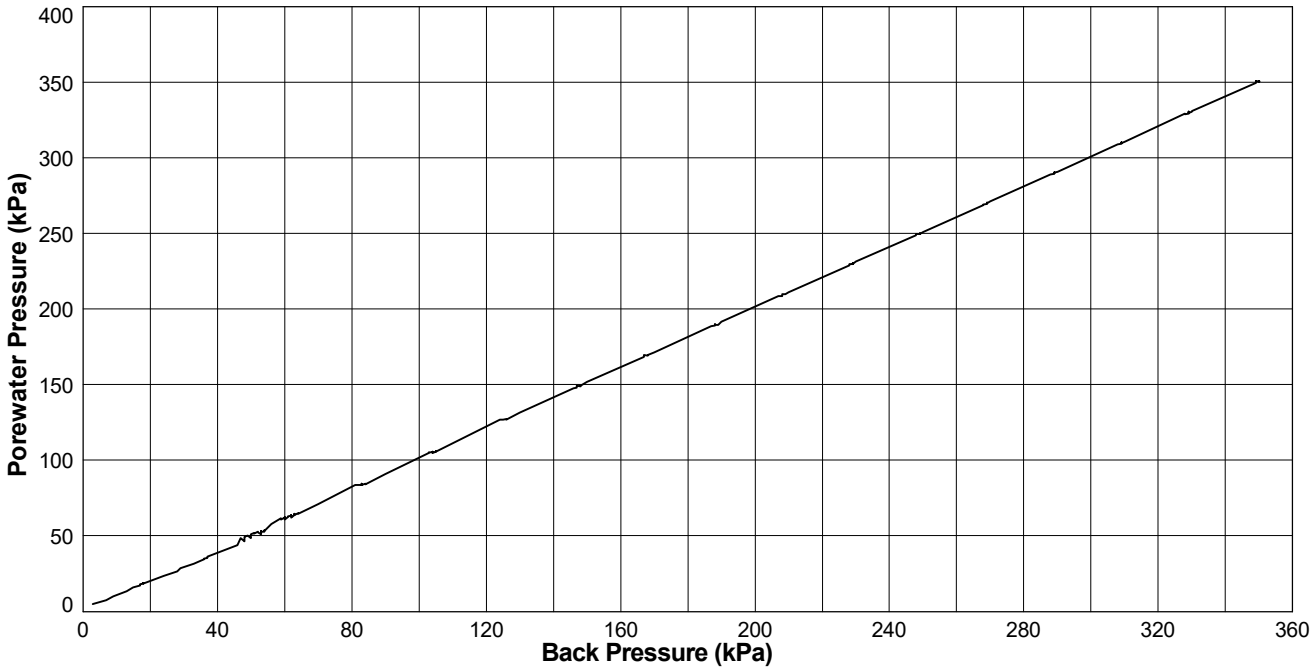
Borehole: **BH-PTS116** Sample Ref: **9** Sample Type: **UT** Depth (m): **1.31**

SATURATION



Key: Cell Pressure: PWP (Base):

SATURATION



Key: PWP (Base):

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**13/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - EFFECTIVE STRESS - GRAPH 1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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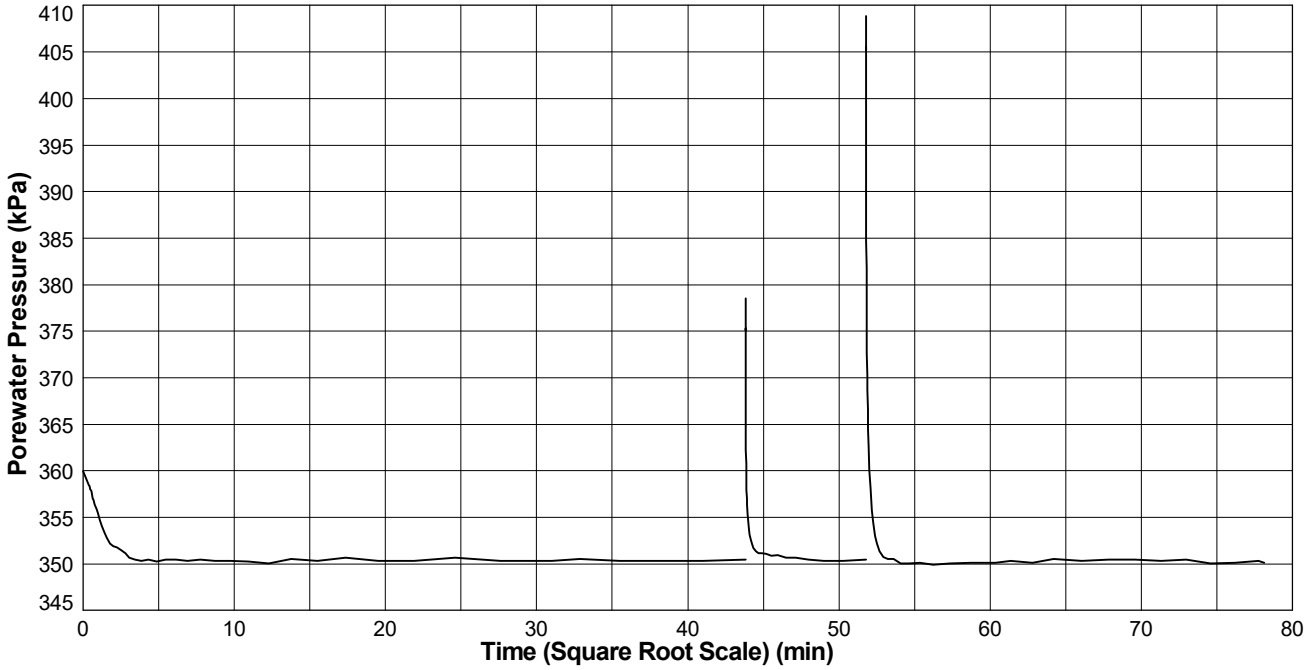
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

Borehole: **BH-PTS116** Sample Ref: **9** Sample Type: **UT** Depth (m): **1.31**

CONSOLIDATION



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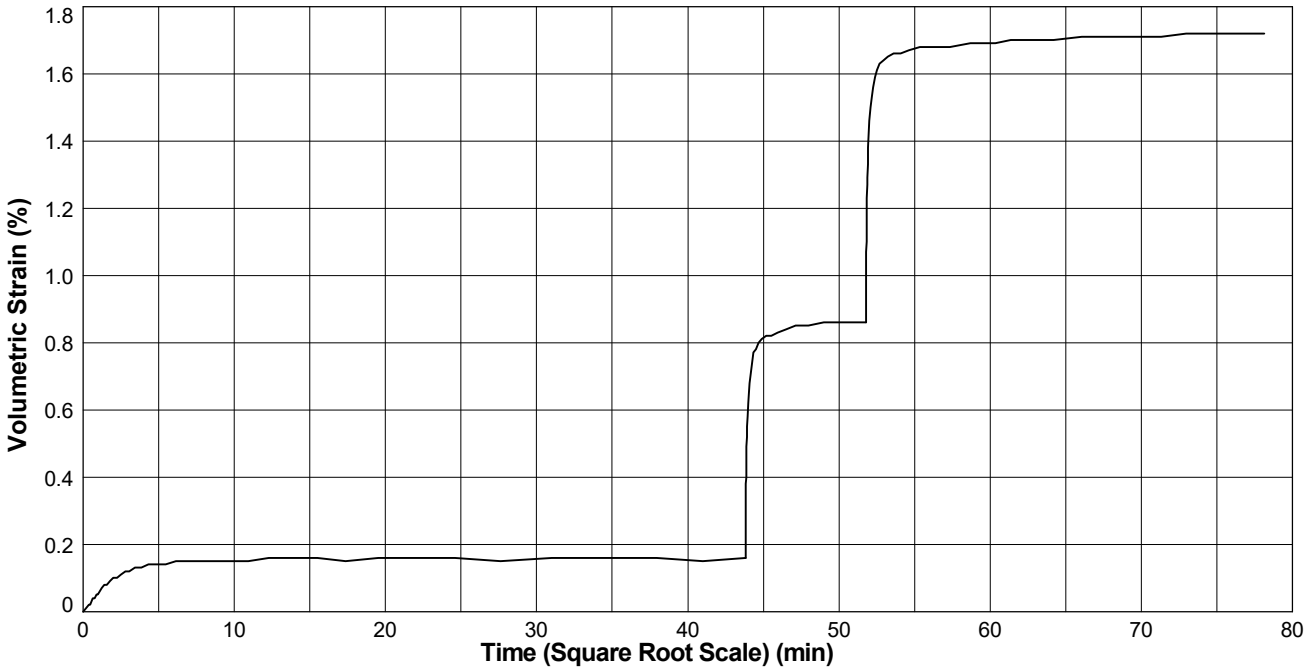
CONSOLIDATION



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		DAISY RICHARDS	**13/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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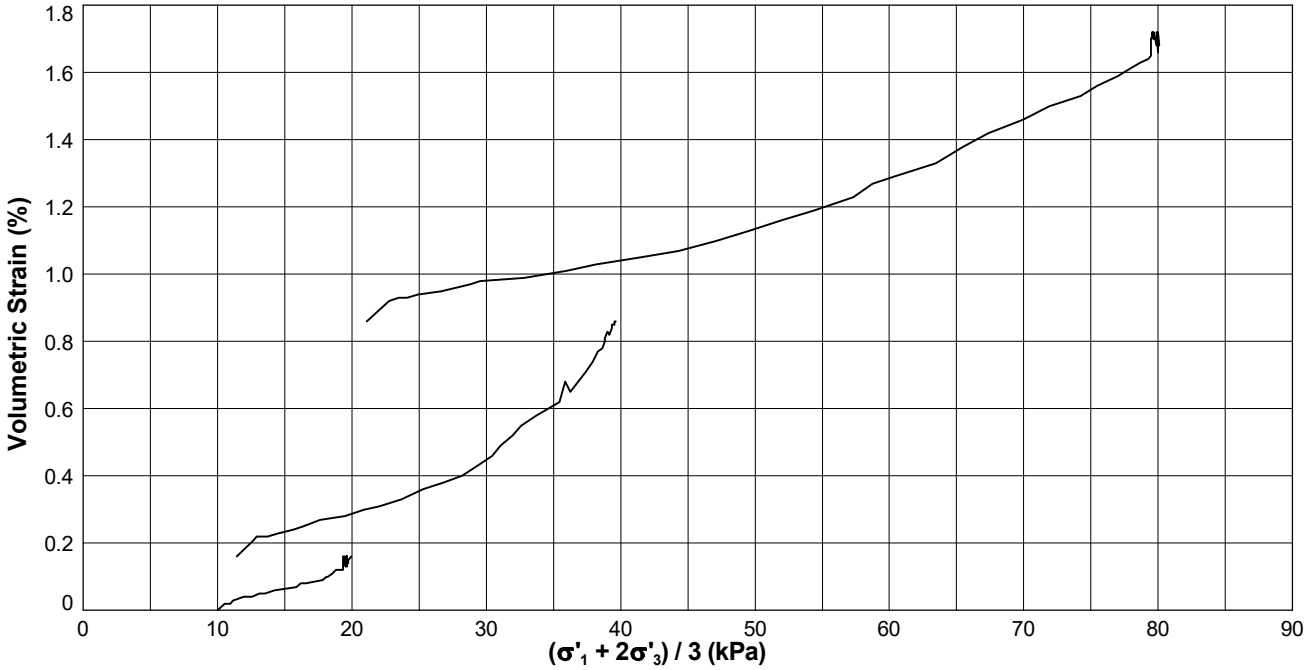
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

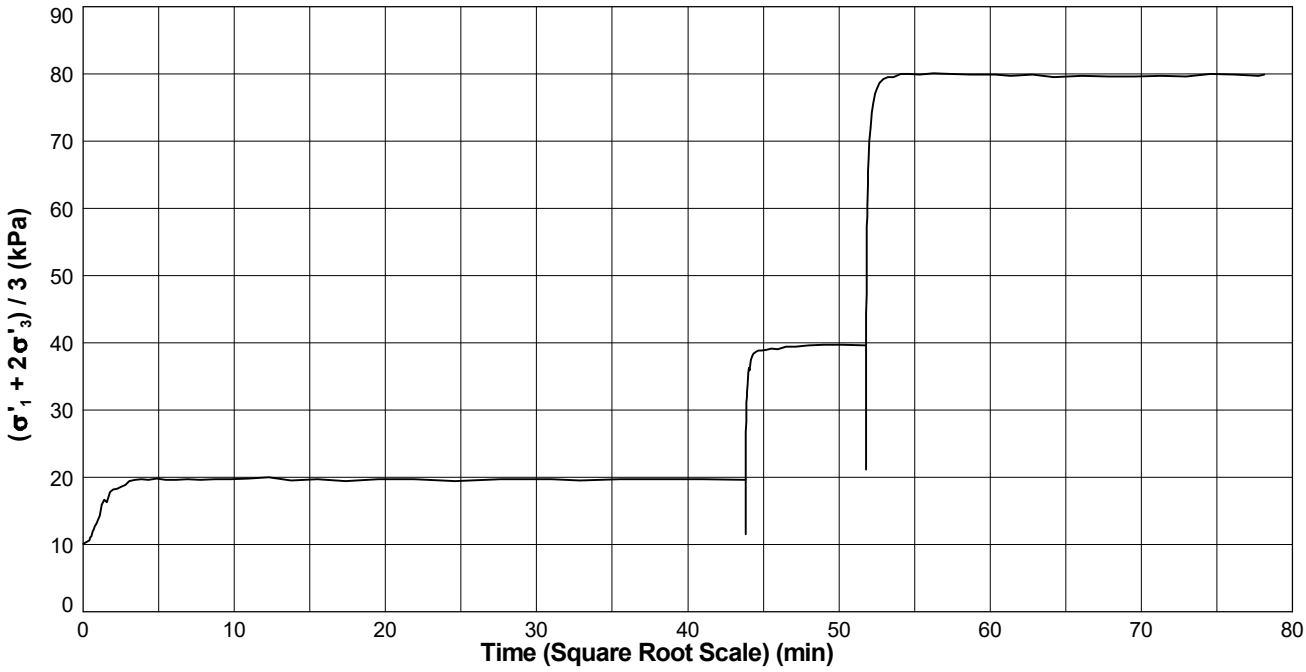
In accordance with BS EN ISO 17892 Part 9

Borehole: **BH-PTS116** Sample Ref: **9** Sample Type: **UT** Depth (m): **1.31**

CONSOLIDATION



CONSOLIDATION



Key: ext. (Base): ————

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**13/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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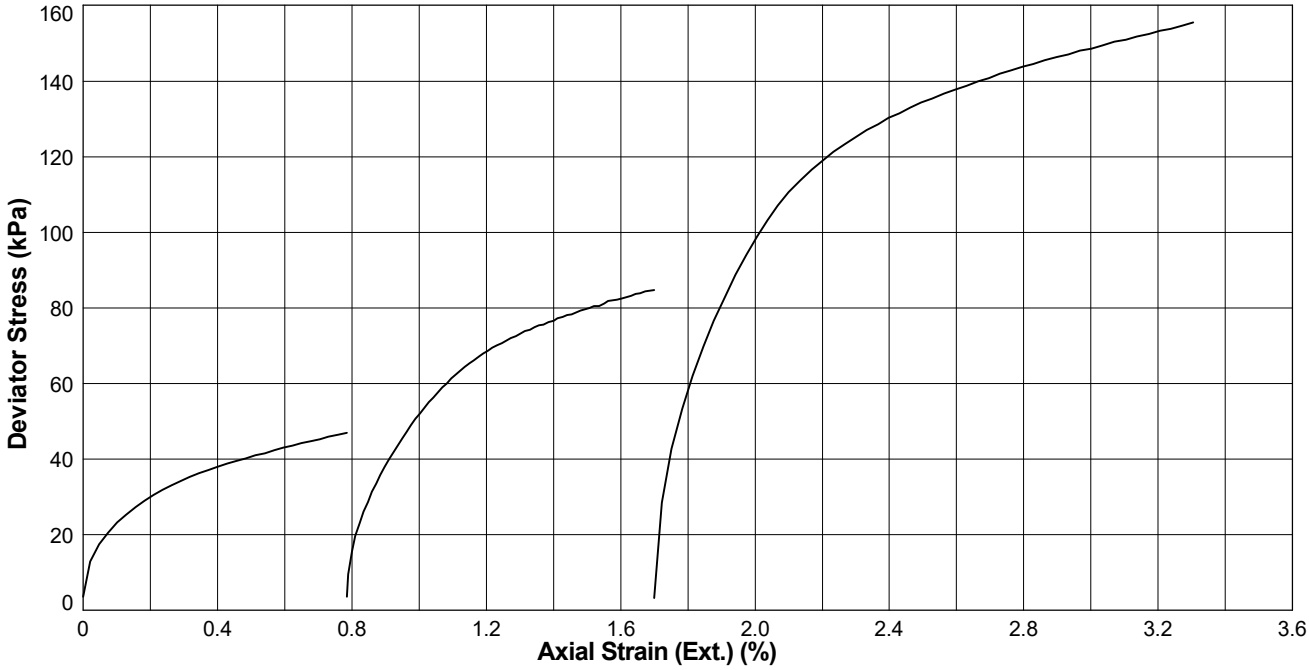
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

Borehole: **BH-PTS116** Sample Ref: **9** Sample Type: **UT** Depth (m): **1.31**

SHEAR



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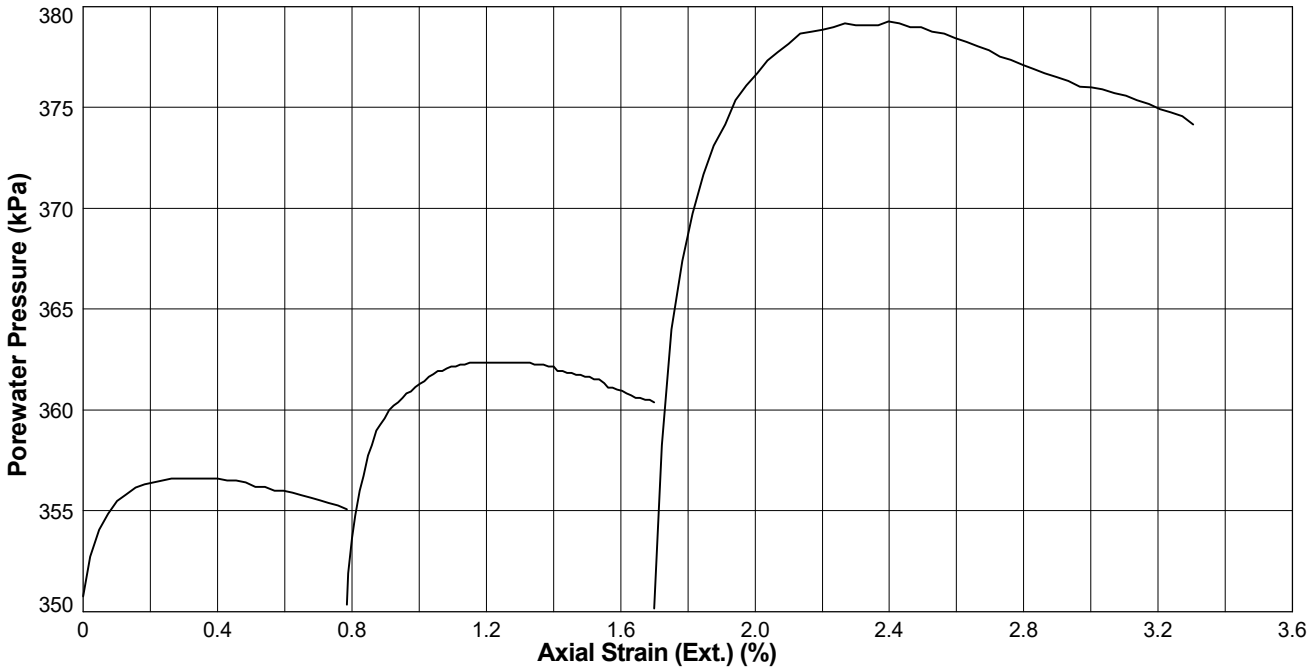
SHEAR



Key: PWP (Base): ———

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**13/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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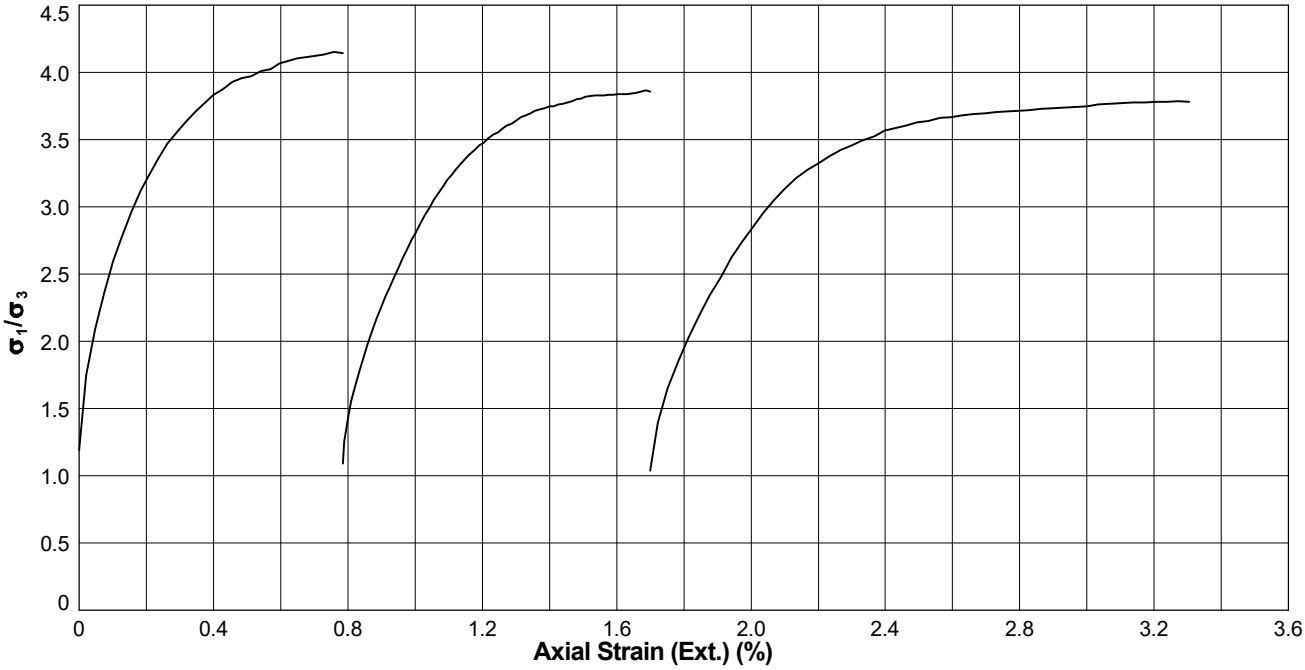
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

Borehole: **BH-PTS116** Sample Ref: **9** Sample Type: **UT** Depth (m): **1.31**

SHEAR



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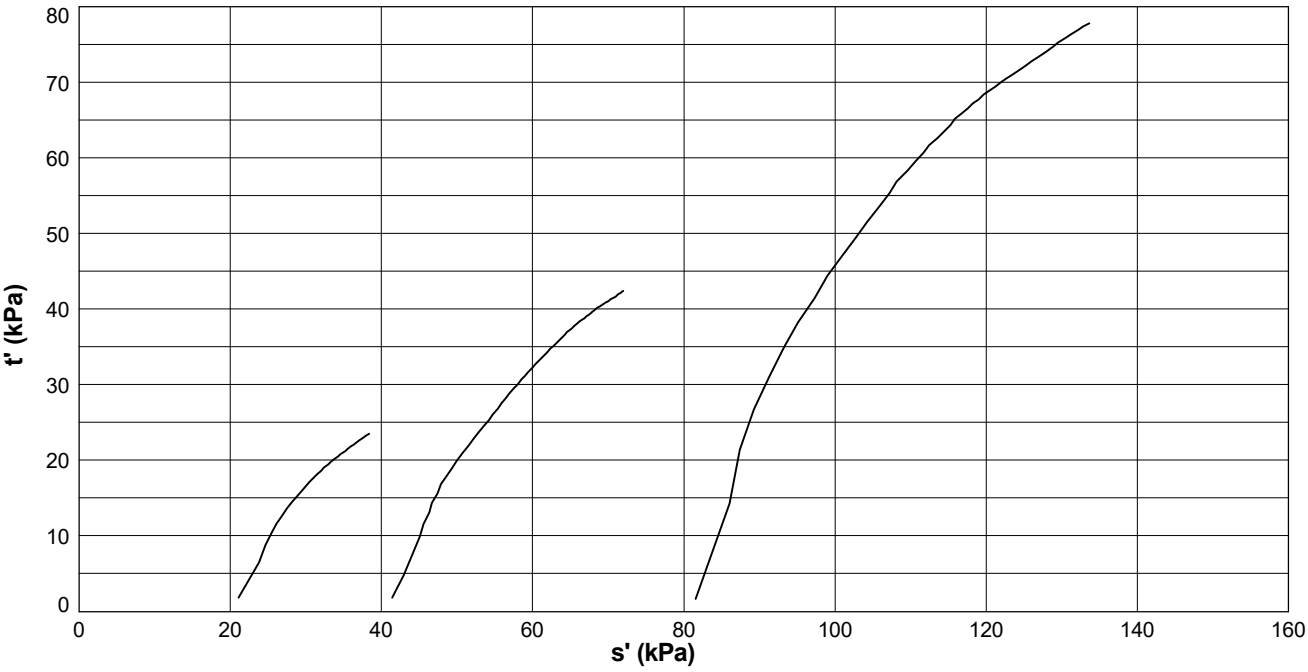

Key: ext. (Base): ————

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**13/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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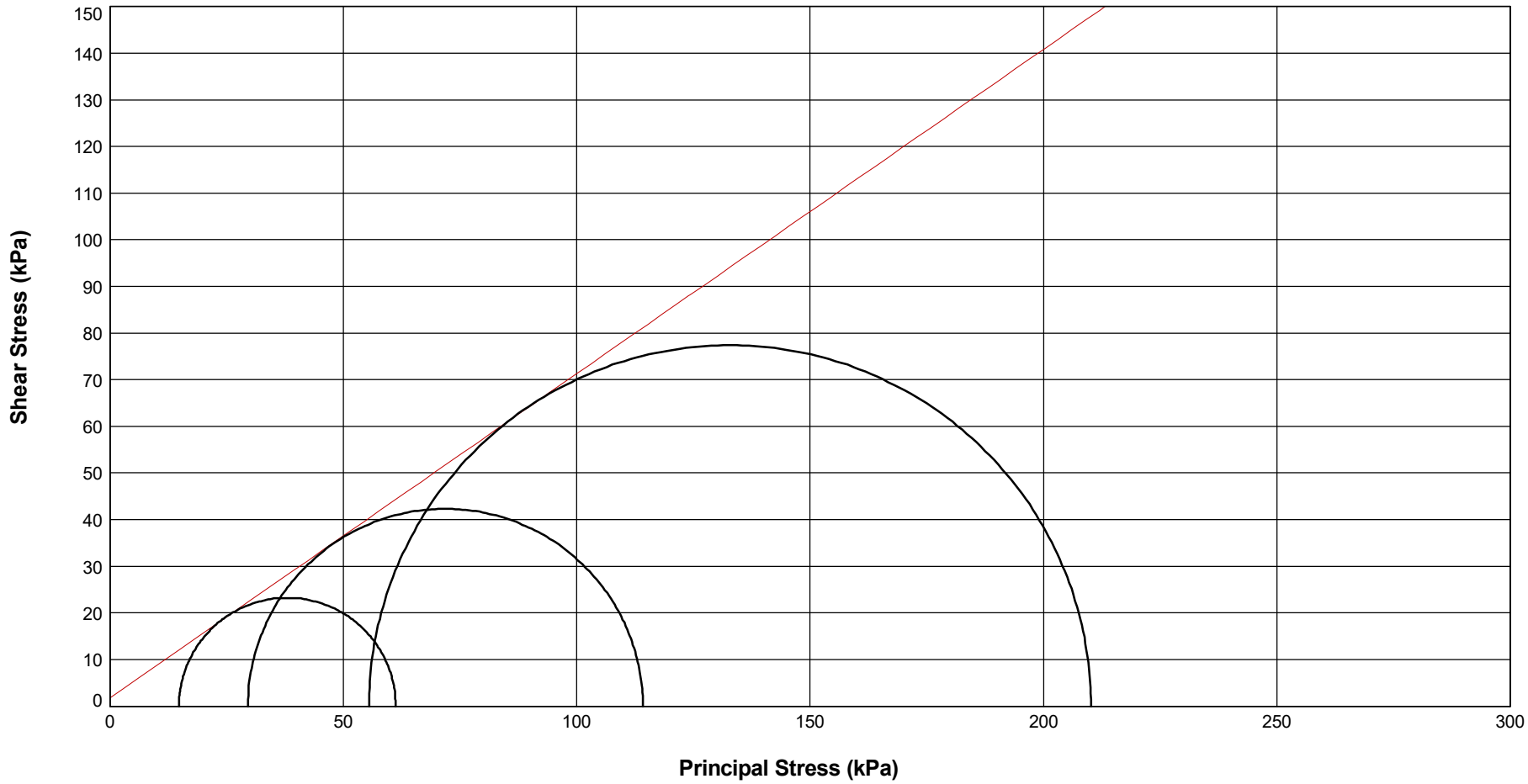
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

Borehole: **BH-PTS116** Sample Ref: **9** Sample Type: **UT** Depth (m): **1.31**



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By	Date	Contract Ref:
	DAISY RICHARDS	13.07.23	
	Contract **A66 NTP Scheme S03A**		**765633**

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ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

Borehole : **BH-PTS122** Sample Ref : **16** Sample Type : **UT** Depth (m) : **3.02**

Description : **Reddish brown slightly sandy gravelly CLAY** Condition : **Undisturbed**

Saturation Type : **Back Pressure**

SPECIMEN DETAILS			
Initial Diameter (mm)	103.01		
Initial Height (mm)	182.03		
Initial Mass (g)	3492.78		
Sample Orientation	Vertical		
Initial Water Content (%)	13.5		
Initial Bulk Density (Mg/m^3)	2.30		
Initial Dry Density (Mg/m^3)	2.03		
Initial Voids Ratio	0.3026		
Initial B-Value	0.62		
Final Water Content (%)	12.5		
Final Bulk Density (Mg/m^3)	2.34		
Final Dry Density (Mg/m^3)	2.08		
SATURATION			
Duration (days)	3		
Final B-Value	0.99		
Voids Ratio	0.3026		
CONSOLIDATION			
Stage	1	2	3
Duration (days)	1	1	1
Cell Pressure (kPa)	380	395	425
Back Pressure (kPa)	365	365	365
Initial Volume (cm^3)	1517	1514	1498
Final Volume (cm^3)	1514	1498	1479
Voids Ratio	0.2996	0.2863	0.2703
Effective Major Principal Stress (kPa)	15	30	59
Effective Minor Principal Stress (kPa)	15	30	59
Ext. Axial Strain (%)	-	-	-
Ext. Volumetric Strain (%)	0.23	1.25	2.48

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**29/06/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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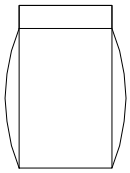
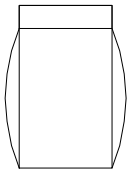
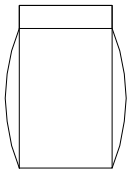
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

Borehole : **BH-PTS122** Sample Ref : **16** Sample Type : **UT** Depth (m) : **3.02**

Description : **Reddish brown slightly sandy gravelly CLAY** Condition : **Undisturbed**

Saturation Type : **Back Pressure**

COMPRESSION			
Duration (days)	1	1	1
Cell Pressure (kPa)	380	395	425
Initial Porewater Pressure (kPa)	365	365	366
Strain Rate (mm/min)	0.00284	0.00186	0.00245
Failure Criteria	Maximum Stress Ratio	Maximum Stress Ratio	Maximum Stress Ratio
Axial Strain at Failure (%)	1.30	0.97	1.87
Time to Failure (h)	14.3	16.3	23.5
Deviator Stress at Failure (kPa)	21	36	63
Vertical Membrane Correction at Failure (kPa)	0.266	0.269	0.522
Horizontal Membrane Correction at Failure (kPa)	0.015	0.081	0.160
Side Drain Correction at Failure (kPa)	2.396	1.792	3.442
Porewater Pressure at Failure (kPa)	370	377	396
Effective Major Principal Stress (kPa)	31	54	92
Effective Minor Principal Stress (kPa)	10	18	29
Effective Principal Stress Ratio	3.09	3.03	3.14
Pore Pressure Coefficient - A_f	0.25	0.34	0.47
Mode of Failure Plastic (Barrelling) Plastic (Barrelling) Plastic (Barrelling)			

Effective Cohesion (kPa) :	**0.3**	Angle of Shear Resistance (degs) :	**30.3**

STRUCTURAL SOILS
1a Princess Street
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BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**29/06/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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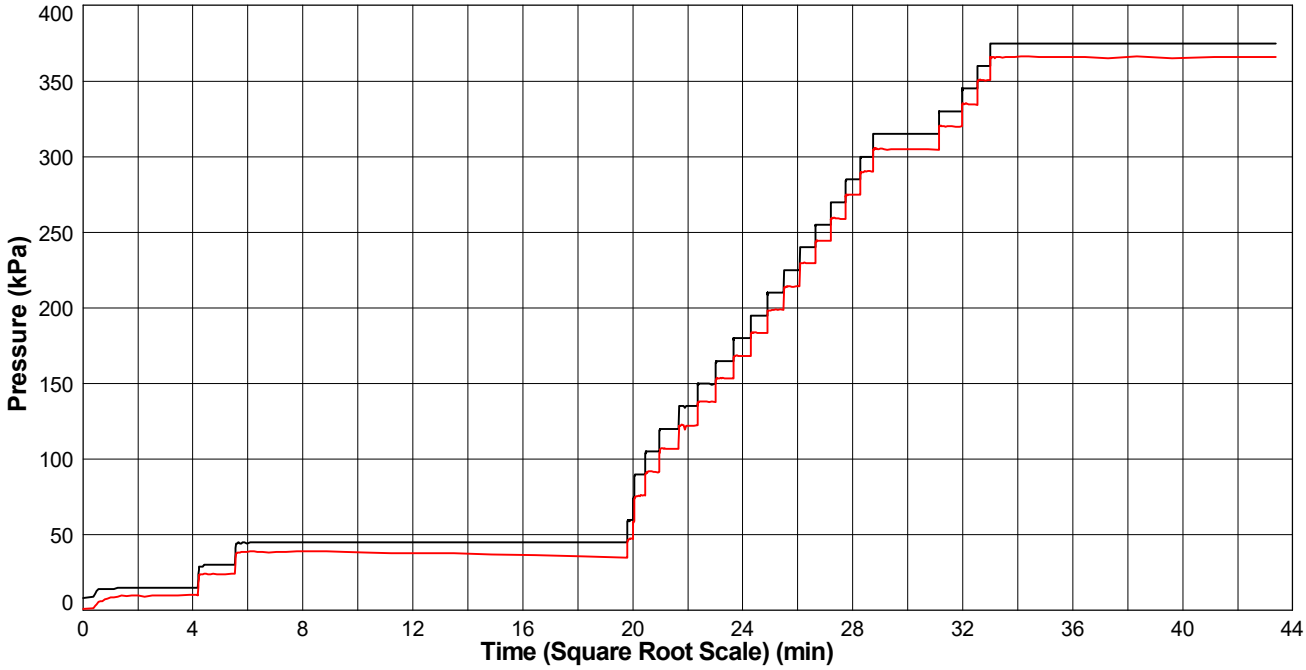
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

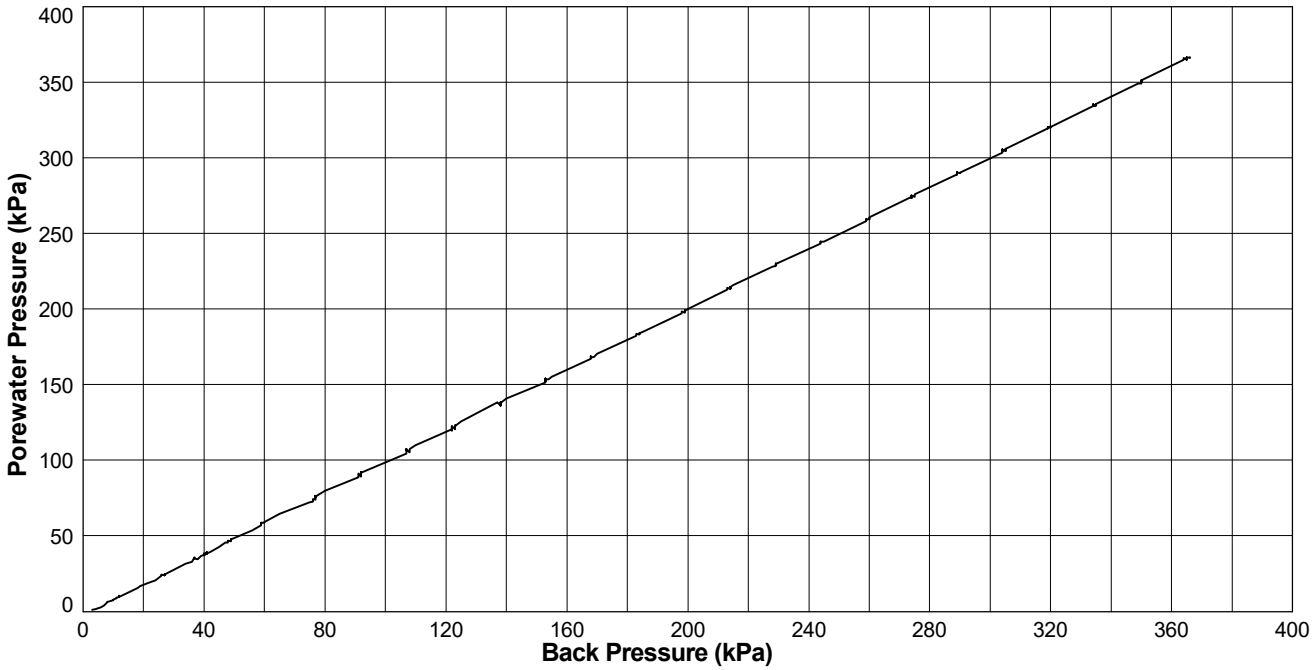
Borehole: **BH-PTS122** Sample Ref: **16** Sample Type: **UT** Depth (m): **3.02**

SATURATION



Key: Cell Pressure: PWP (Base):

SATURATION



Key: PWP (Base):

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**29/06/23**
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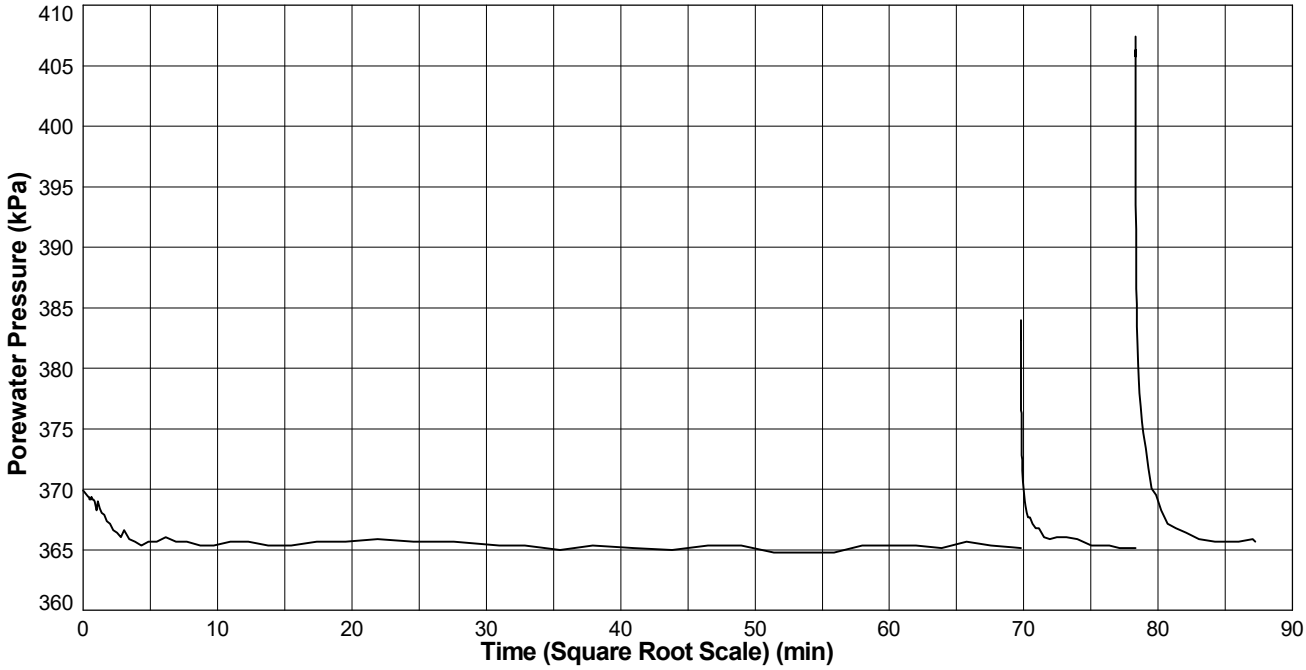
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

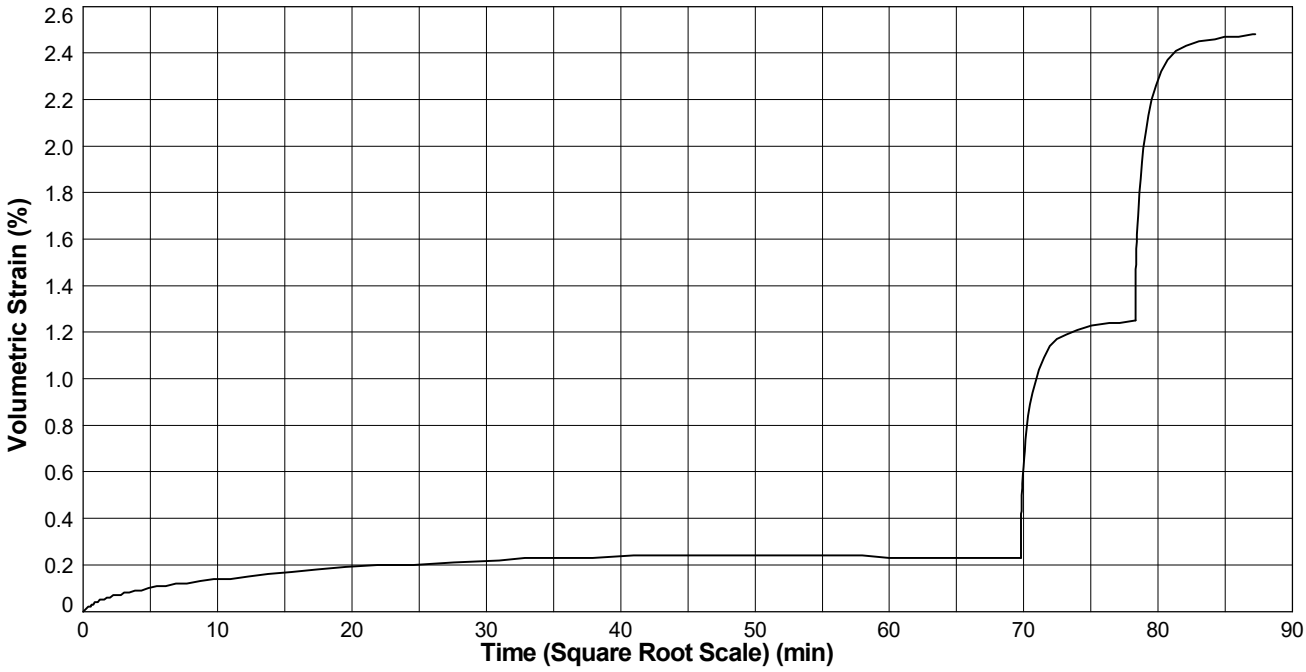
Borehole: **BH-PTS122** Sample Ref: **16** Sample Type: **UT** Depth (m): **3.02**

CONSOLIDATION



Key: PWP (Base):

CONSOLIDATION



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**29/06/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - EFFECTIVE STRESS - GRAPH 1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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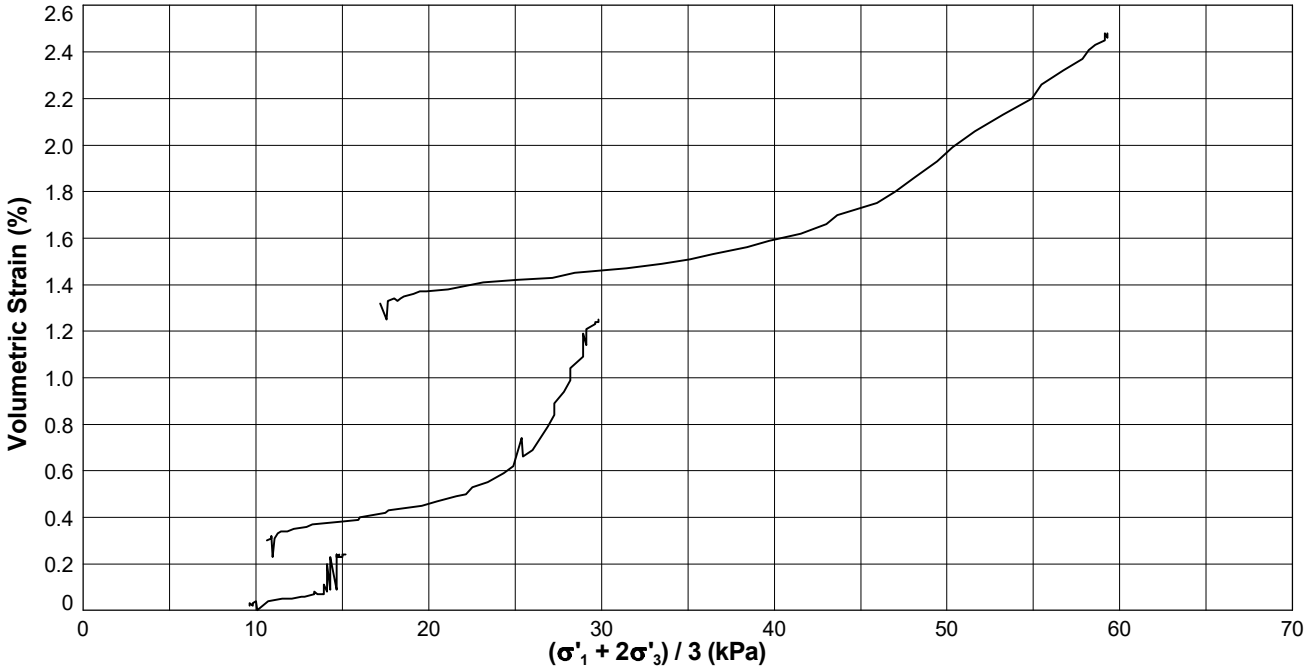
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

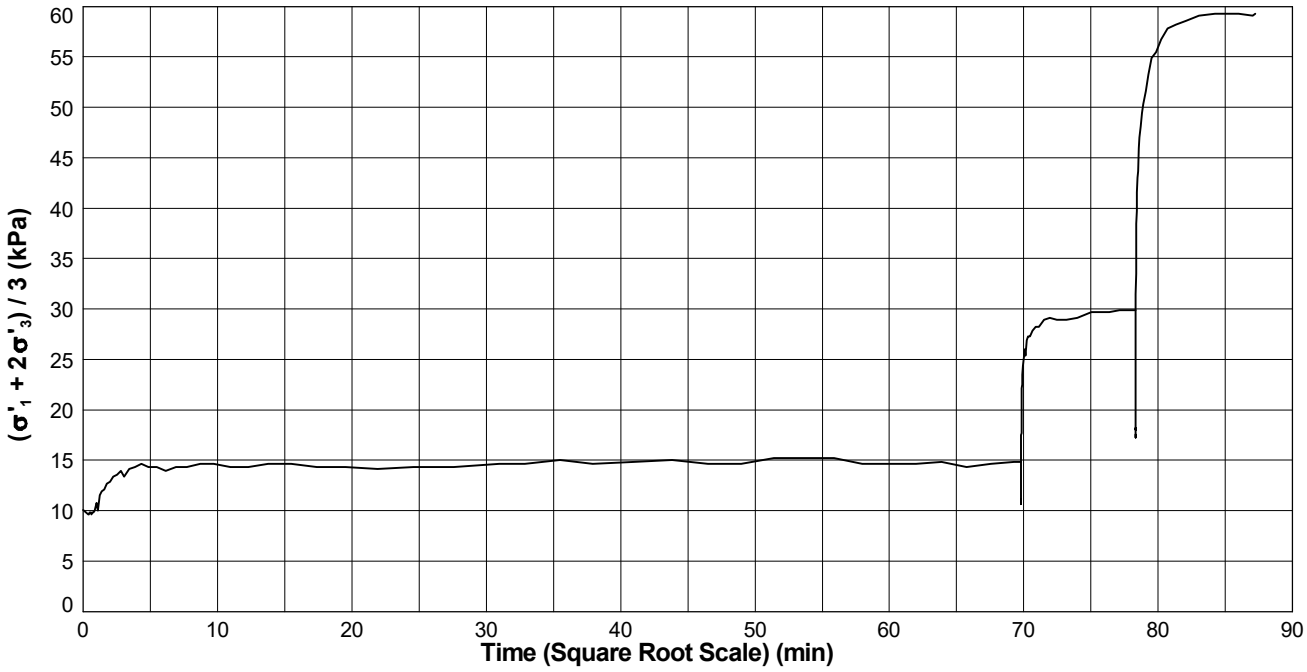
In accordance with BS EN ISO 17892 Part 9

Borehole: **BH-PTS122** Sample Ref: **16** Sample Type: **UT** Depth (m): **3.02**

CONSOLIDATION



CONSOLIDATION



Key: ext. (Base): ————

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**29/06/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - EFFECTIVE STRESS - GRAPH 1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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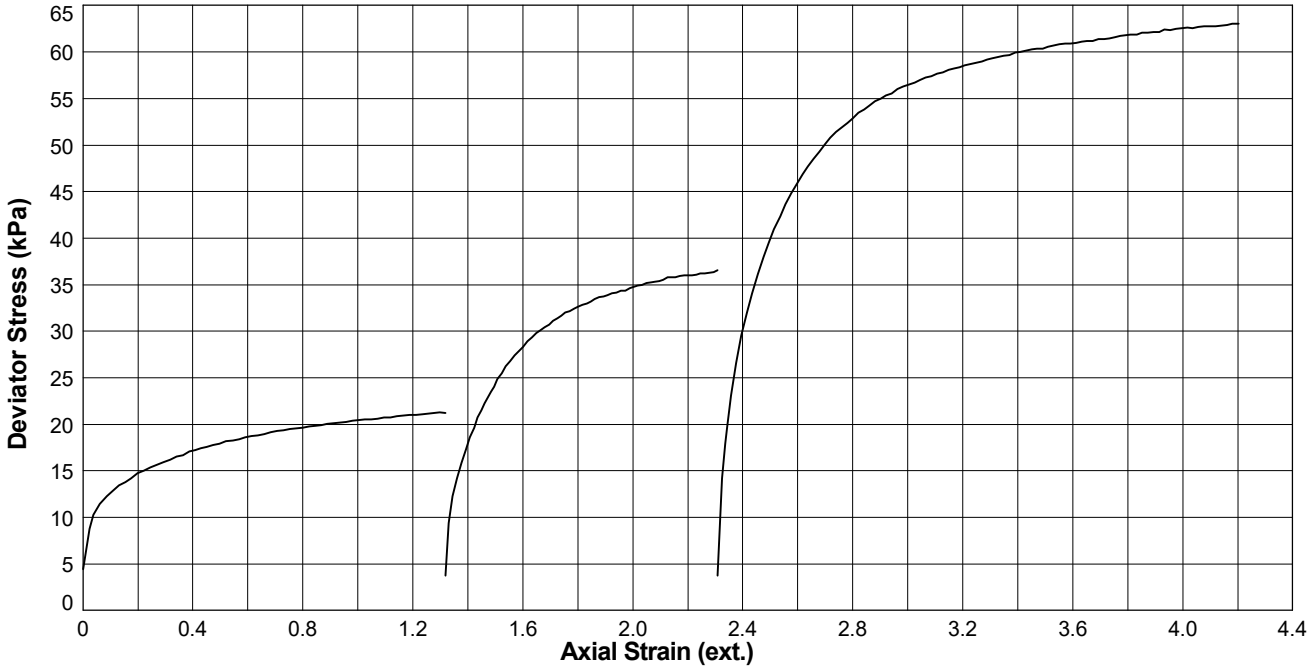
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

Borehole: **BH-PTS122** Sample Ref: **16** Sample Type: **UT** Depth (m): **3.02**

SHEAR



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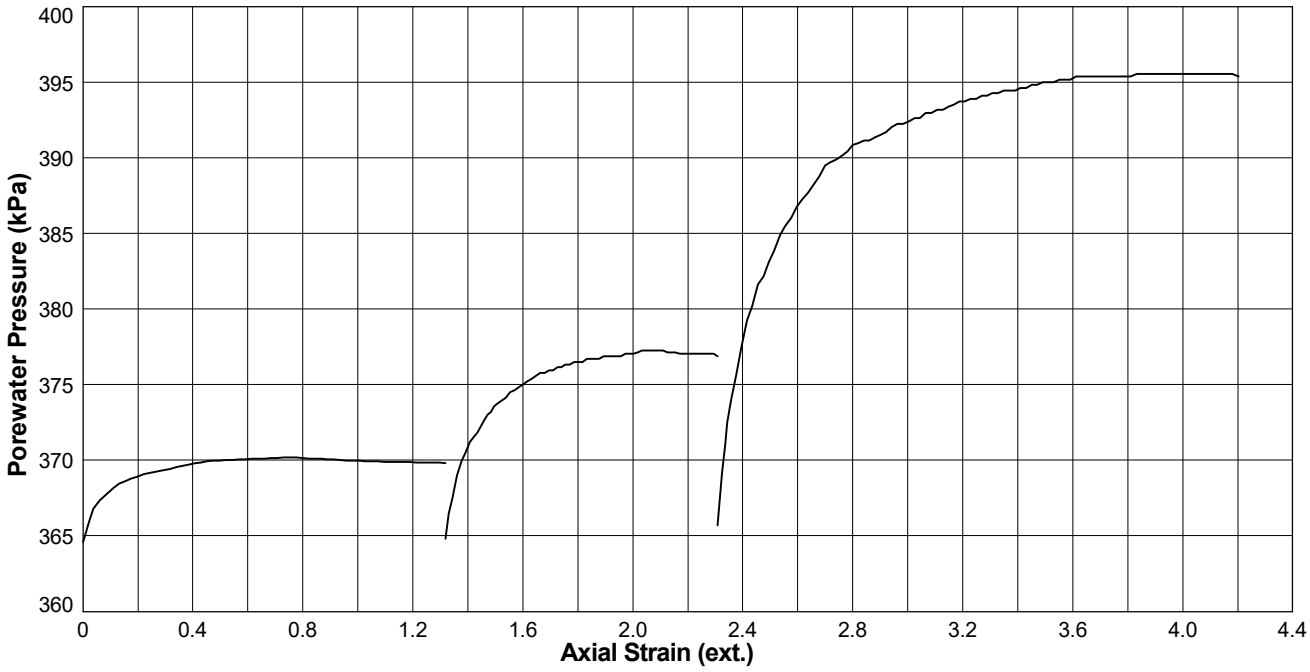
SHEAR



Key: PWP (Base): ————

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**29/06/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - EFFECTIVE STRESS - GRAPH 1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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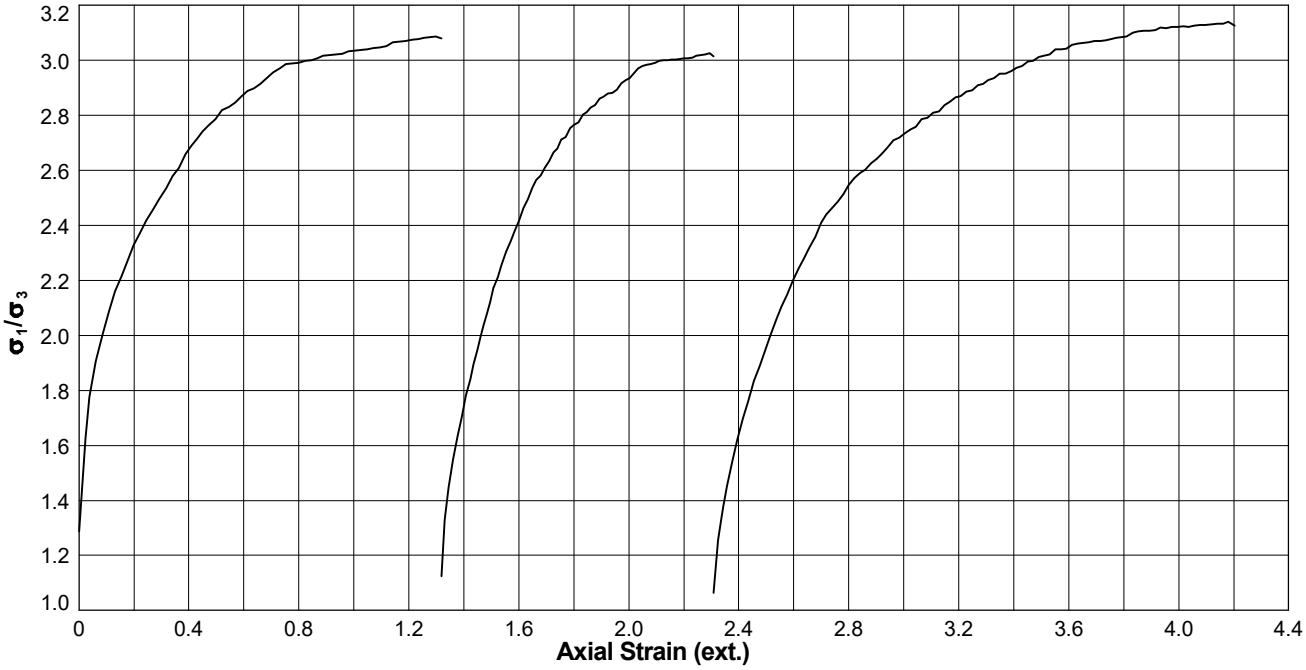
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

Borehole: **BH-PTS122** Sample Ref: **16** Sample Type: **UT** Depth (m): **3.02**

SHEAR



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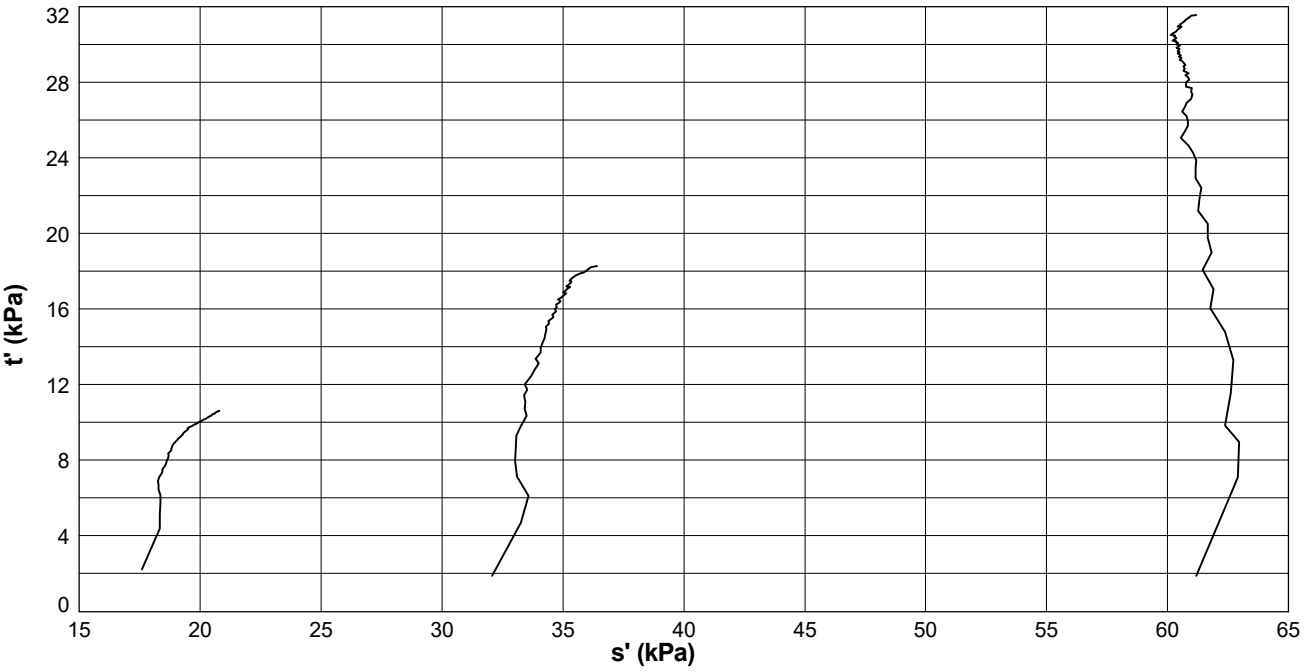

Key: ext. (Base): ————

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**29/06/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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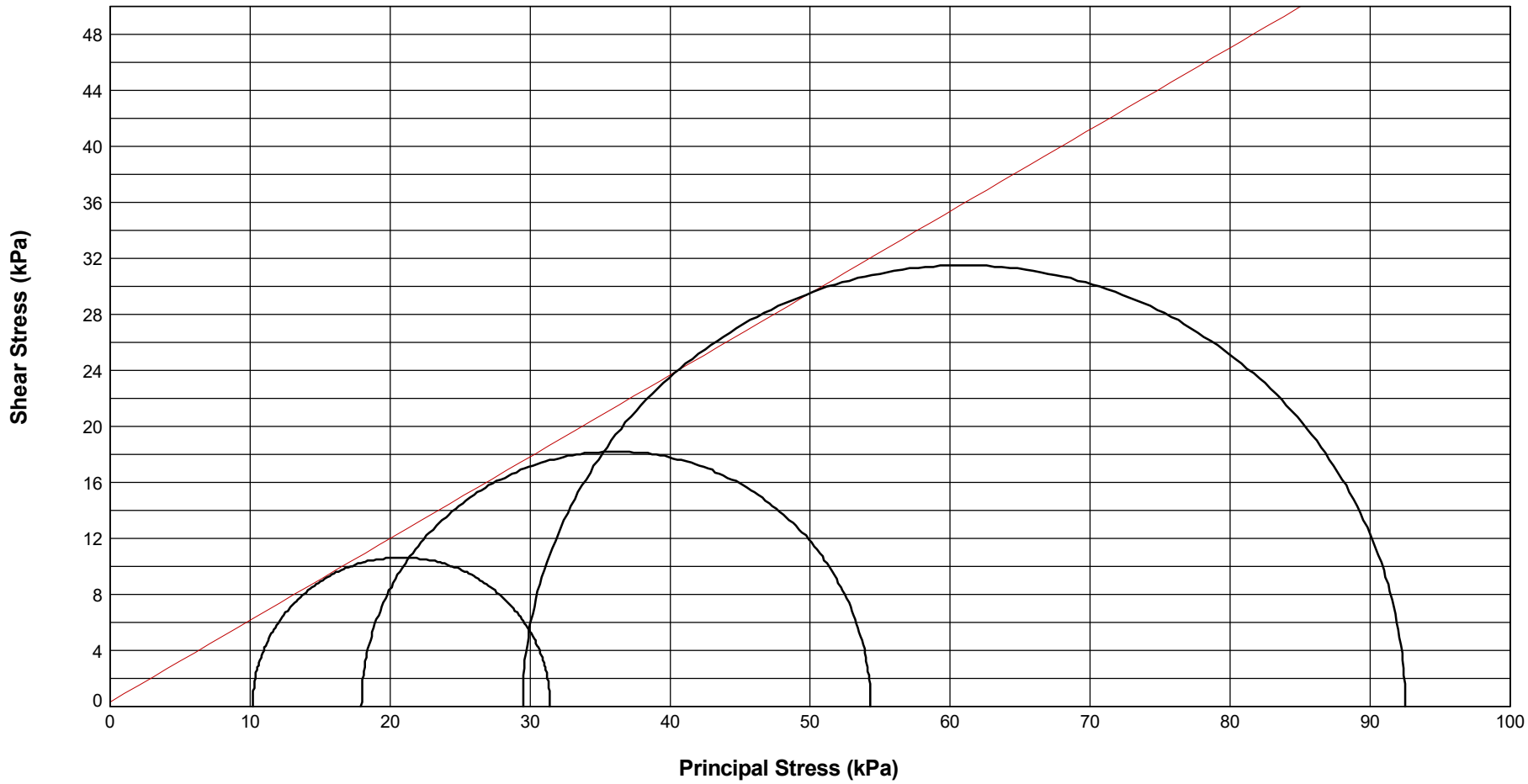
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

Borehole: **BH-PTS122** Sample Ref: **16** Sample Type: **UT** Depth (m): **3.02**



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By	Date	Contract Ref:
	Francesca Bennett — FRANCESCA BENNETT	29.06.23	765633
	Contract **A66 NTP Scheme S03A**		

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - EFFECTIVE STRESS MOHR CIRCLES - A4L | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 29/06/23 - 15:30 | FB1 |

ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

Borehole : **BH-PTS123** Sample Ref : **17** Sample Type : **UT** Depth (m) : **4.07**

Description : **Reddish brown slightly sandy gravelly CLAY** Condition : **Undisturbed**

Saturation Type : **Back Pressure**

SPECIMEN DETAILS			
Initial Diameter (mm)	103.48		
Initial Height (mm)	187.24		
Initial Mass (g)	3633.95		
Sample Orientation	Vertical		
Initial Water Content (%)	12.1		
Initial Bulk Density (Mg/m^3)	2.31		
Initial Dry Density (Mg/m^3)	2.06		
Initial Voids Ratio	0.2835		
Initial B-Value	0.84		
Final Water Content (%)	11.5		
Final Bulk Density (Mg/m^3)	2.33		
Final Dry Density (Mg/m^3)	2.09		
SATURATION			
Duration (days)	4		
Final B-Value	0.96		
Voids Ratio	0.2835		
CONSOLIDATION			
Stage	1	2	3
Duration (days)	1	1	1
Cell Pressure (kPa)	390	410	450
Back Pressure (kPa)	370	370	370
Initial Volume (cm^3)	1575	1573	1563
Final Volume (cm^3)	1573	1563	1551
Voids Ratio	0.2820	0.2740	0.2640
Effective Major Principal Stress (kPa)	20	40	80
Effective Minor Principal Stress (kPa)	20	40	80
Ext. Axial Strain (%)	-	-	-
Ext. Volumetric Strain (%)	0.11	0.74	1.52

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
	DAISY RICHARDS	**06/07/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcTbl L - EFFECTIVE STRESS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 06/07/23 - 10:47 | DR1 |

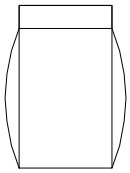
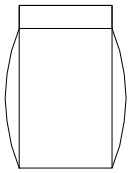
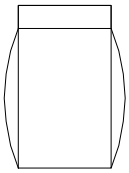
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

Borehole : **BH-PTS123** Sample Ref : **17** Sample Type : **UT** Depth (m) : **4.07**

Description : **Reddish brown slightly sandy gravelly CLAY** Condition : **Undisturbed**

Saturation Type : **Back Pressure**

COMPRESSION			
Duration (days)	0.5	1	2
Cell Pressure (kPa)	390	410	450
Initial Porewater Pressure (kPa)	370	370	371
Strain Rate (mm/min)	0.0078	0.00192	0.0019
Failure Criteria	Maximum Stress Ratio	Maximum Stress Ratio	Maximum Stress Ratio
Axial Strain at Failure (%)	1.12	1.10	2.22
Time to Failure (h)	4.7	19.0	37.5
Deviator Stress at Failure (kPa)	54	86	161
Vertical Membrane Correction at Failure (kPa)	0.281	0.328	0.663
Horizontal Membrane Correction at Failure (kPa)	0.009	0.060	0.123
Side Drain Correction at Failure (kPa)	2.058	2.014	3.649
Porewater Pressure at Failure (kPa)	377	382	388
Effective Major Principal Stress (kPa)	67	114	223
Effective Minor Principal Stress (kPa)	13	28	62
Effective Principal Stress Ratio	5.10	4.06	3.58
Pore Pressure Coefficient - A_f	0.12	0.13	0.10
Mode of Failure Plastic (Barrelling) Plastic (Barrelling) Plastic (Barrelling)			

Effective Cohesion (kPa) : **7.1**	Angle of Shear Resistance (degs) : **31.4**

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**06/07/23**
	Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

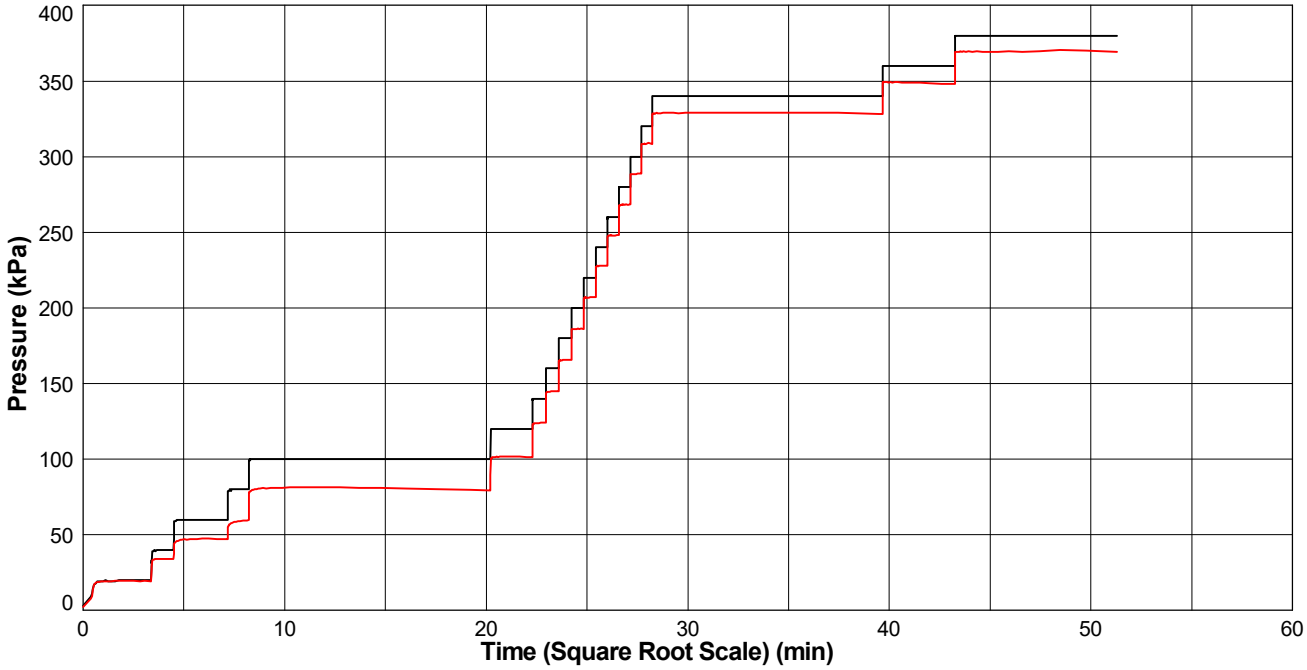
GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcTbl L - EFFECTIVE STRESS - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01. | 06/07/23 - 10:47 | DR1 |

ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

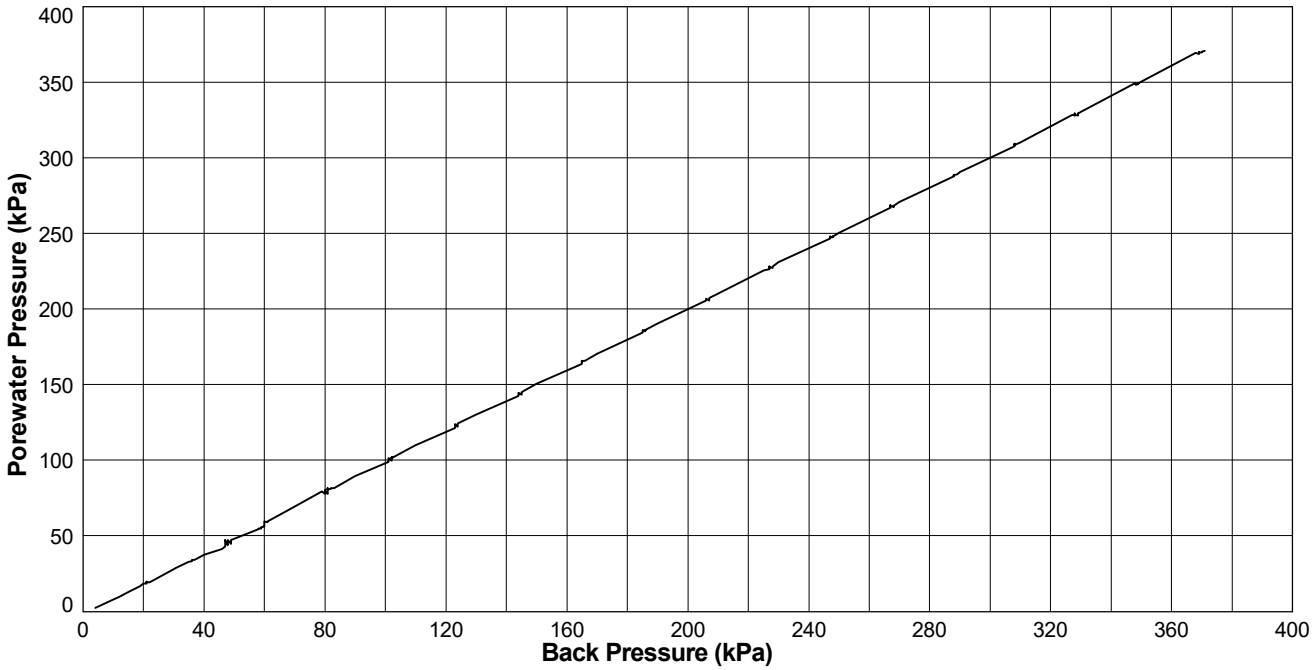
Borehole: **BH-PTS123** Sample Ref: **17** Sample Type: **UT** Depth (m): **4.07**

SATURATION



Key: Cell Pressure: PWP (Base):

SATURATION



Key: PWP (Base):

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**06/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - EFFECTIVE STRESS - GRAPH 1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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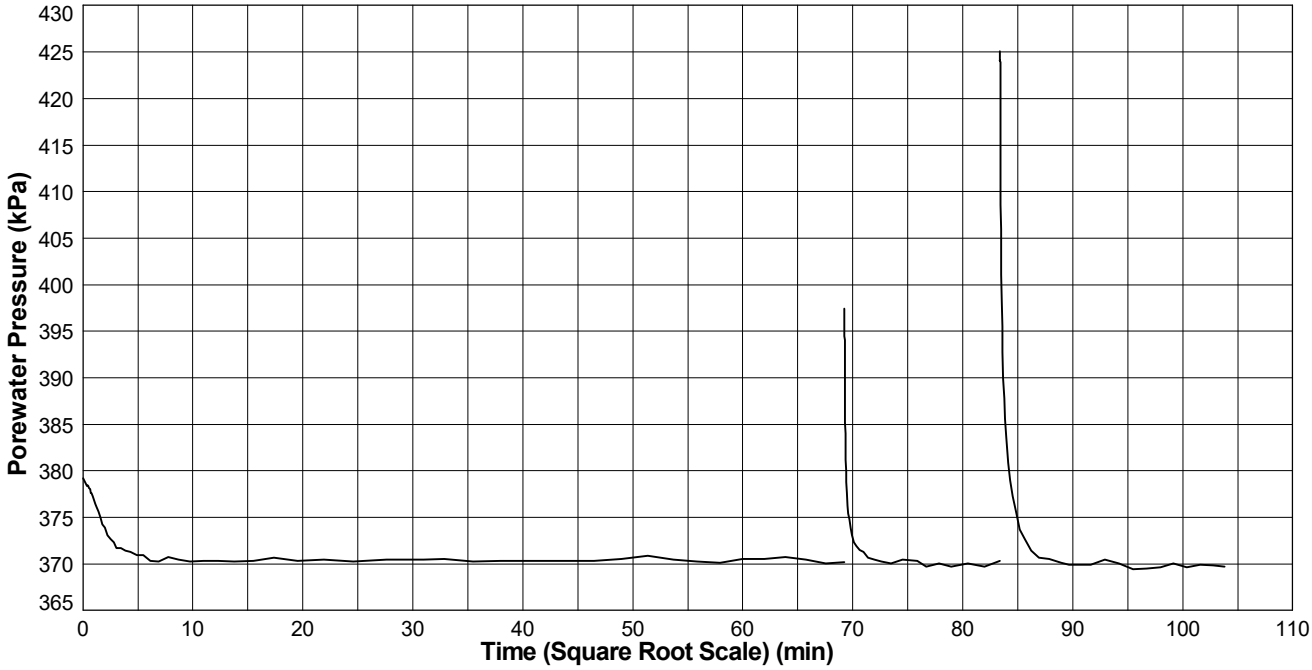
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

Borehole: **BH-PTS123** Sample Ref: **17** Sample Type: **UT** Depth (m): **4.07**

CONSOLIDATION



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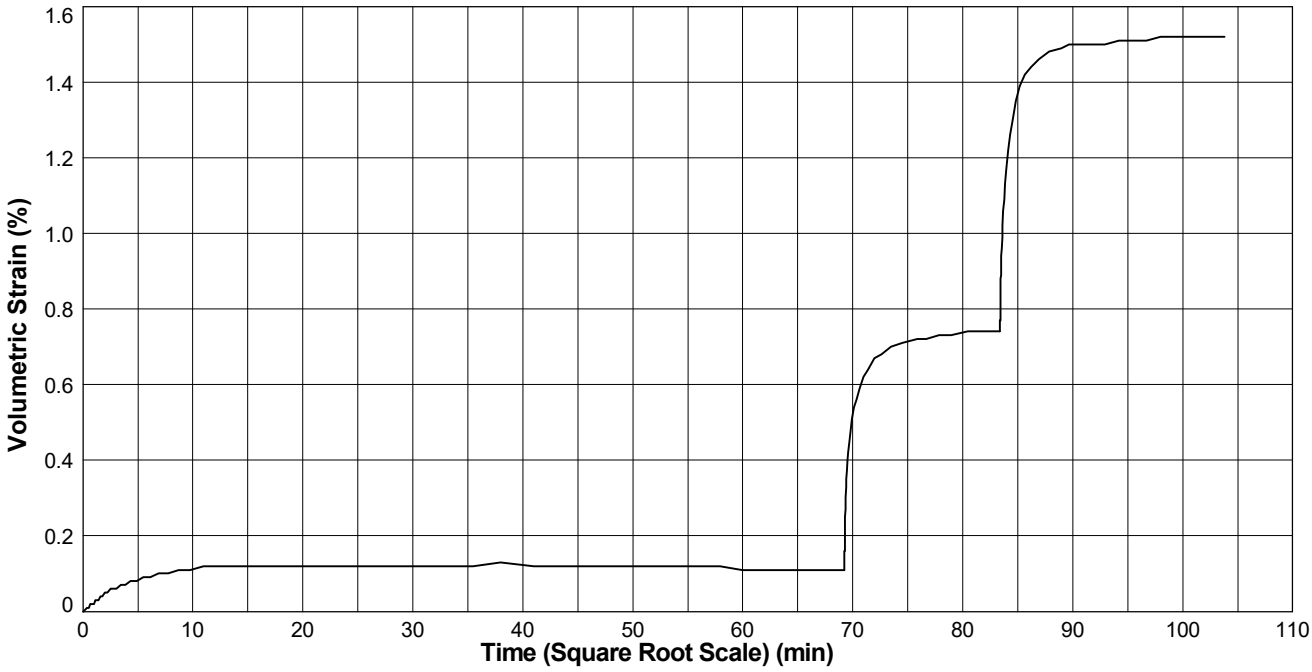
CONSOLIDATION



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	D. Richards	**DAISY RICHARDS**	**06/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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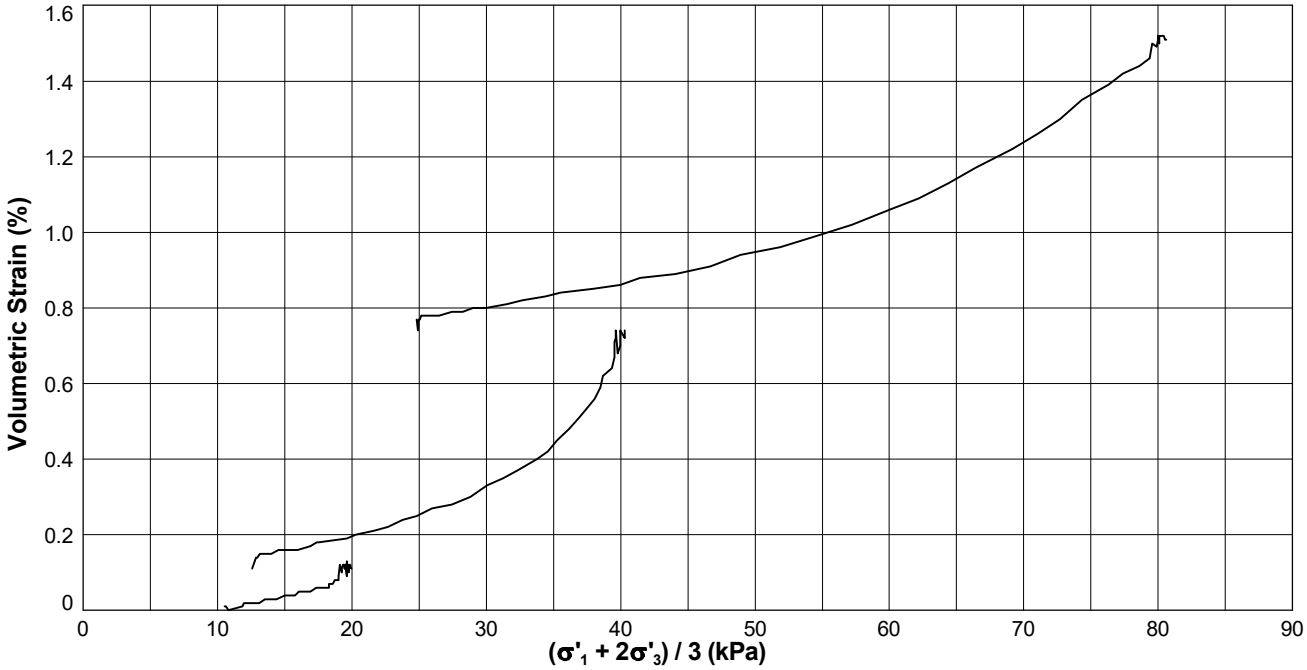
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

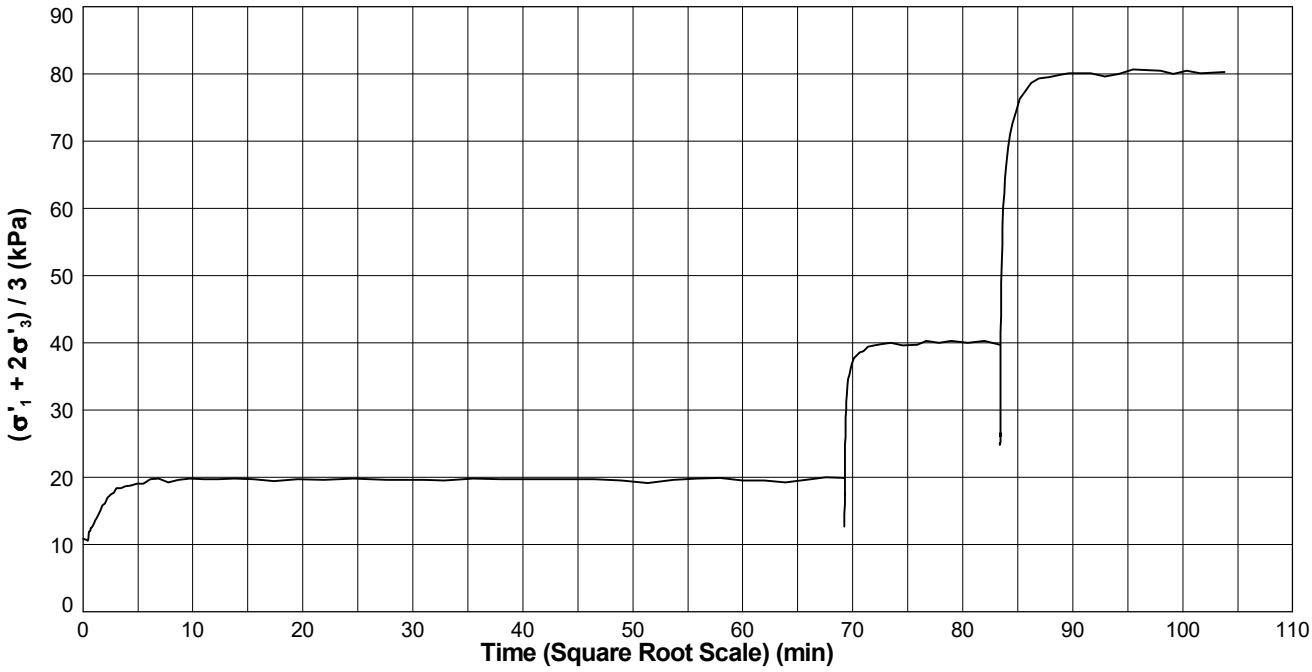
In accordance with BS EN ISO 17892 Part 9

Borehole: **BH-PTS123** Sample Ref: **17** Sample Type: **UT** Depth (m): **4.07**

CONSOLIDATION



CONSOLIDATION



Key: ext. (Base): ————

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	D. Richards	**DAISY RICHARDS**	**06/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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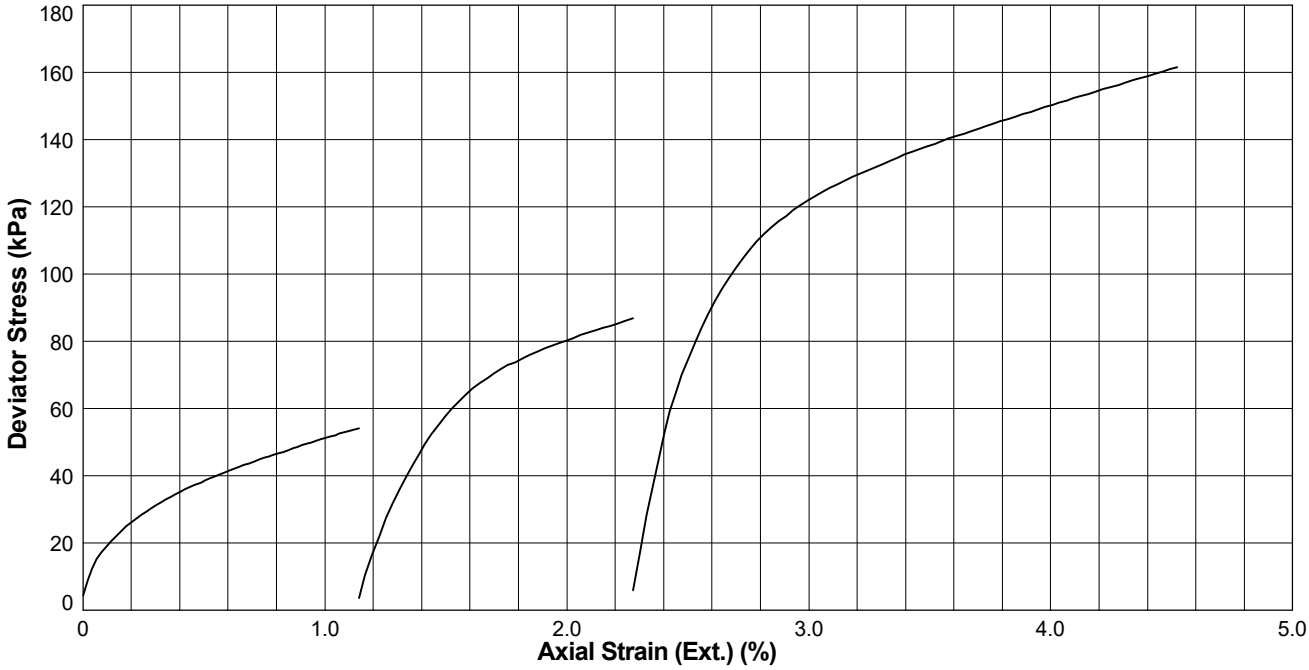
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

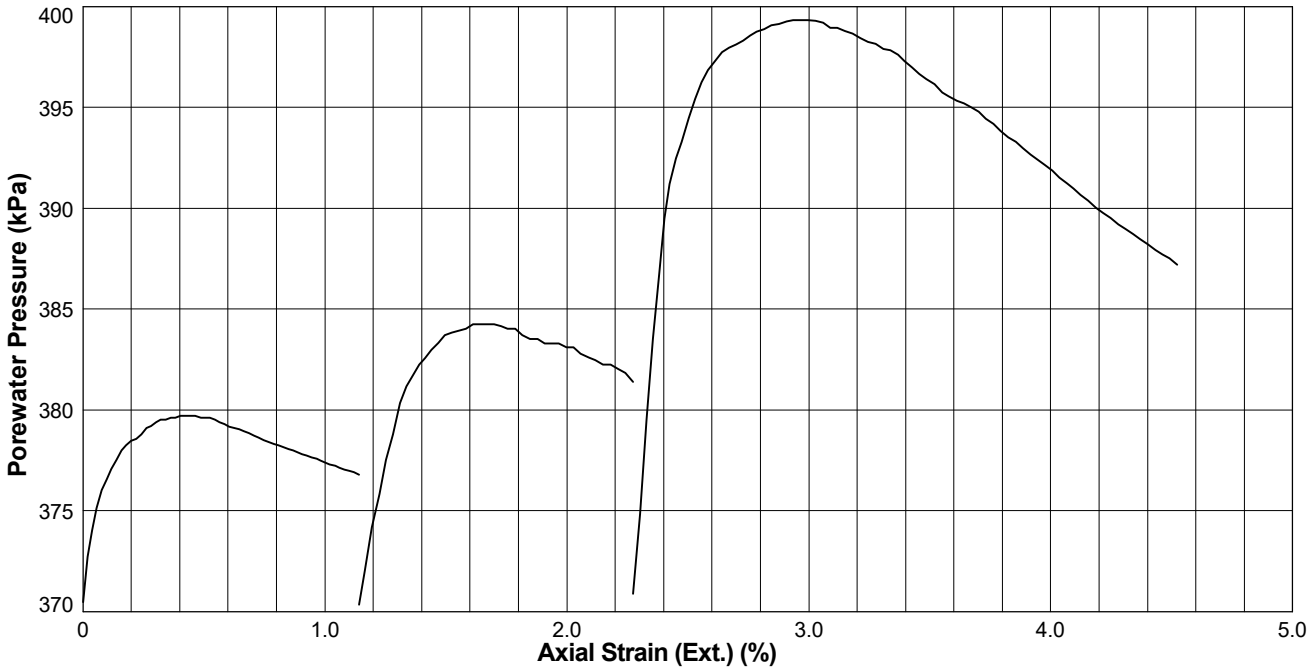
Borehole: **BH-PTS123** Sample Ref: **17** Sample Type: **UT** Depth (m): **4.07**

SHEAR



Key: ext.: ———

SHEAR



Key: PWP (Base): ———

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**06/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - EFFECTIVE STRESS - GRAPH 1 - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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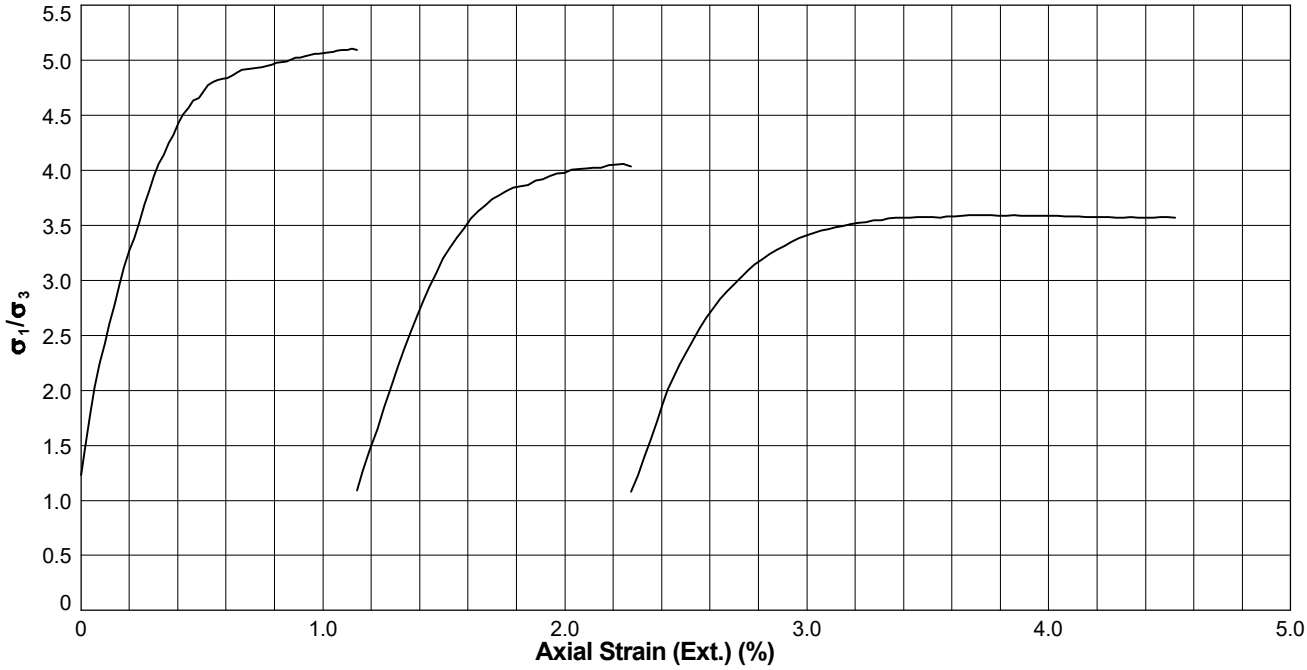
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

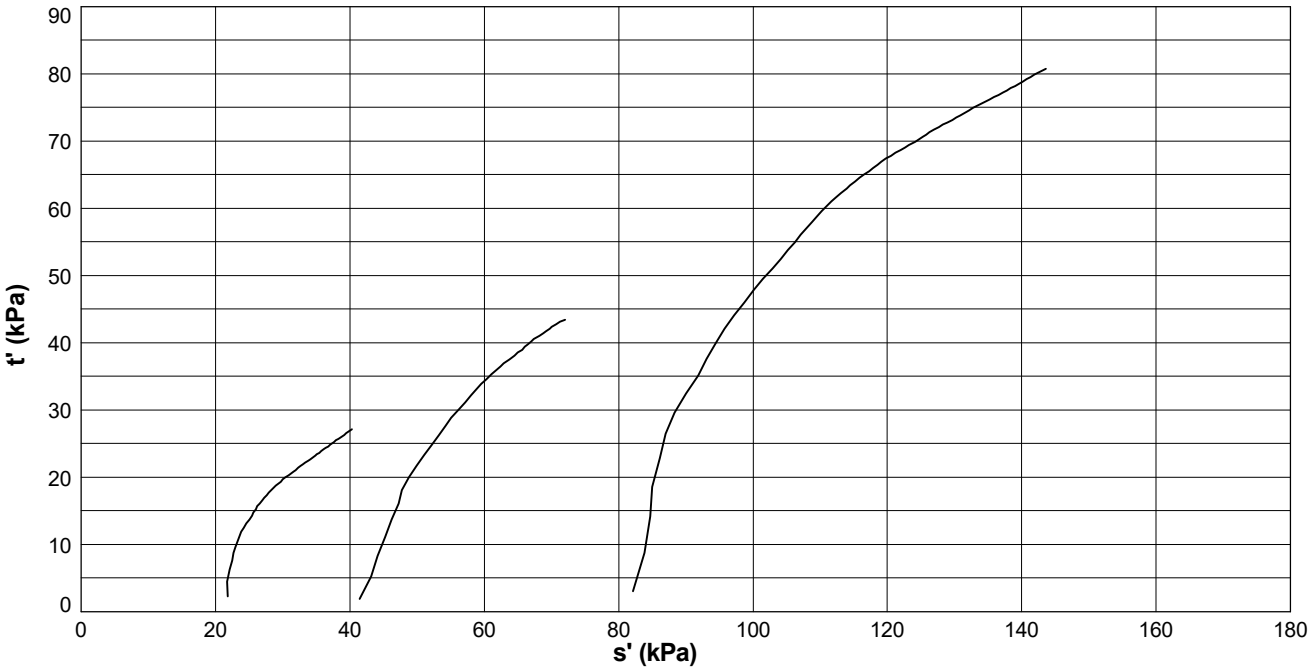
Borehole: **BH-PTS123** Sample Ref: **17** Sample Type: **UT** Depth (m): **4.07**

SHEAR



Key: ext. (Base): ————

SHEAR



Key: ext. (Base): ————

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		DAISY RICHARDS	**06/07/23**
	Contract **A66 NTP Scheme S03A**	Contract Ref: **765633**	

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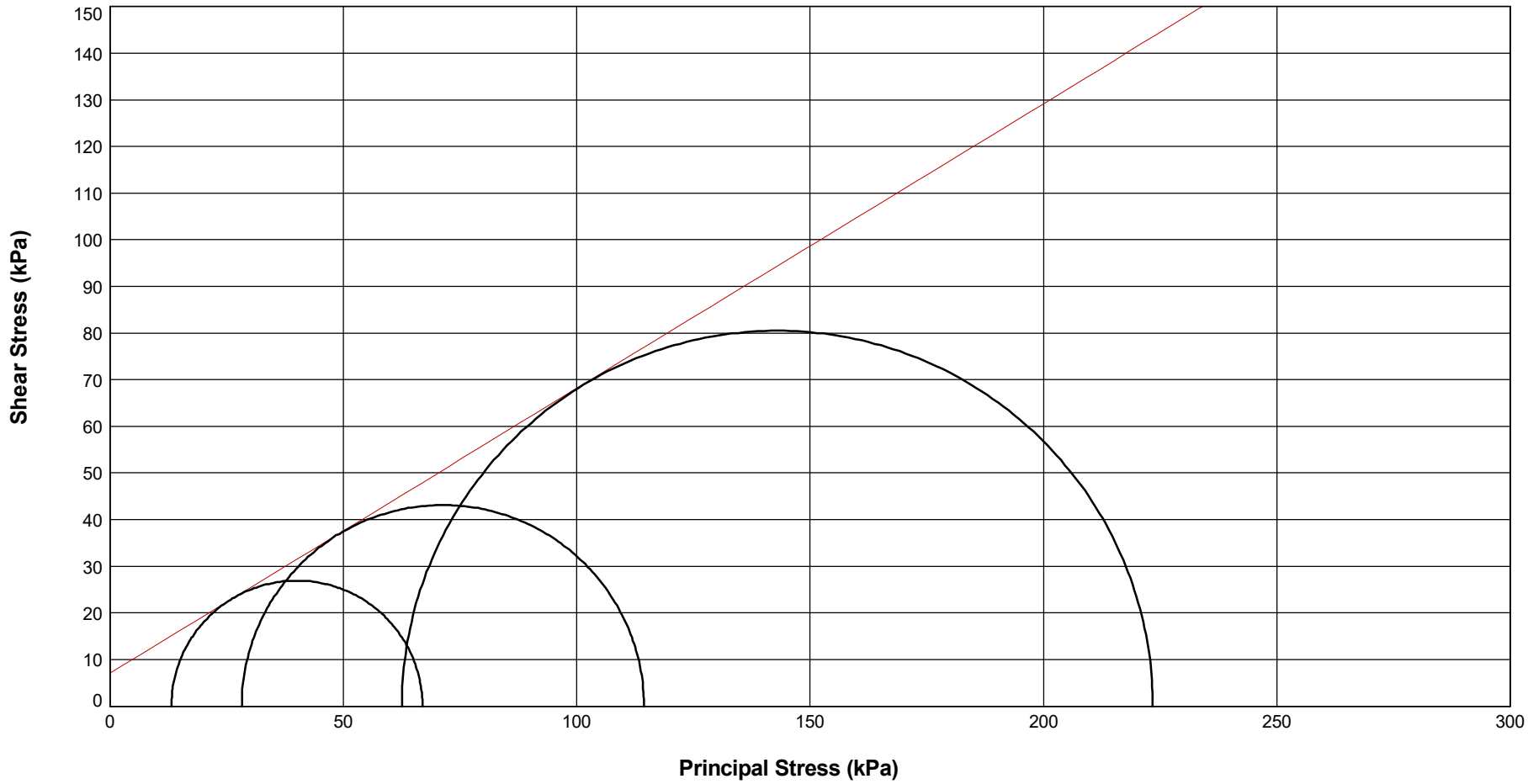
ISOTROPICALLY CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH POREWATER PRESSURE MEASUREMENT

In accordance with BS EN ISO 17892 Part 9

Borehole: **BH-PTS123** Sample Ref: **17** Sample Type: **UT** Depth (m): **4.07**



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By	Date	Contract Ref:
	DAISY RICHARDS	06.07.23	
	Contract **A66 NTP Scheme S03A**		**765633**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - EFFECTIVE STRESS MOHR CIRCLES - A4L | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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SUMMARY OF WATER CONTENT TESTS

RT08 Water Content of Rock (in accordance with ISRM 2007)

Exploratory Position ID	Sample Ref	Depth (m)	Sample Type	Water Content (%)	Lab	
BH-PTS107B	**16**	**5.28**	**C**	**16.1**	**B**	
BH-PTS107B	**17**	**9.81**	**C**	**8.1**	**B**	

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**18/08/23**
Contract: **A66 NTP Scheme S03A**	Contract Ref: **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcTbl L - SUMMARY OF ROCK STANDALONE WC - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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UNIAXIAL COMPRESSIVE STRENGTH

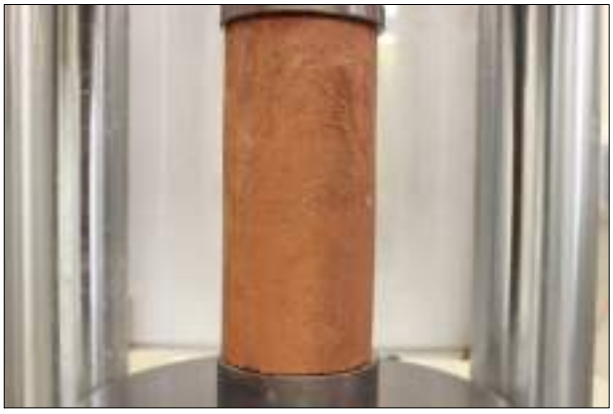
Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **BH-PTS126** Sample Ref: **31** Sample Type: **C** Depth (m) : **10.60**

Bulk Density (Mg/m^3): **2.29** Dry Density (Mg/m^3): **2.09** Moisture Content (%): **9.4**
Length (mm): **215.58** Diameter (mm): **101.90** Length/Diameter Ratio: **2.12**
Test Duration (mins:secs): **08:04** Stress Rate (MPa/s): **0.0245** Load at Failure (kN): **108.2**
UCS (MPa): **13.3** Failure Type: **Multiple fracture**

Note: **Axis of loading parallel to core axis**
Description: **Orangish brown SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **FAIL**. Flatness: **FAIL**. Perpendicularity: **FAIL**.

Front view (pre-test)



Rear view (pre-test)

Front view (post-test)

Rear view (post-test)

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Daria Ignaczak	**DARIA IGNACZAK**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Job No **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - UCS STRESS CONTROL - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 18/08/23 - 12:22 | FB1 |

UNIAXIAL COMPRESSIVE STRENGTH

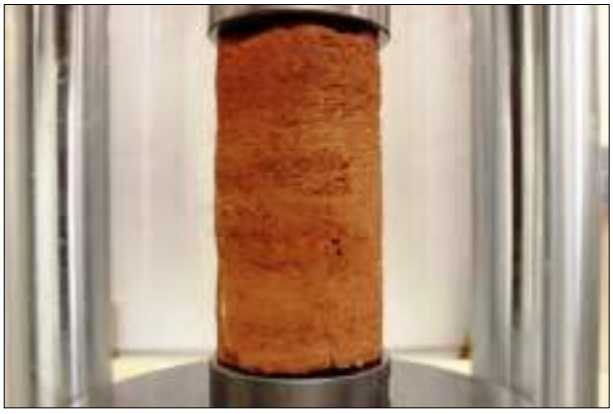
Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **GS-PTS107** Sample Ref: **22** Sample Type: **C** Depth (m) : **8.08**

Bulk Density (Mg/m^3): **2.16** Dry Density (Mg/m^3): **1.96** Moisture Content (%): **10**
Length (mm): **189.13** Diameter (mm): **100.33** Length/Diameter Ratio: **1.89**
Test Duration (mins:secs): **03:56** Stress Rate (MPa/s): **0.0063** Load at Failure (kN): **10.7**
UCS (MPa): **1.4** Failure Type: **Vertical splitting**

Note: **Axis of loading parallel to core axis**
Description: **Reddish brown SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **FAIL**. Flatness: **FAIL**. Perpendicularity: **FAIL**.

Front view (pre-test)



Rear view (pre-test)

Front view (post-test)

Rear view (post-test)

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Job No **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - UCS STRESS CONTROL - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01
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UNIAXIAL COMPRESSIVE STRENGTH

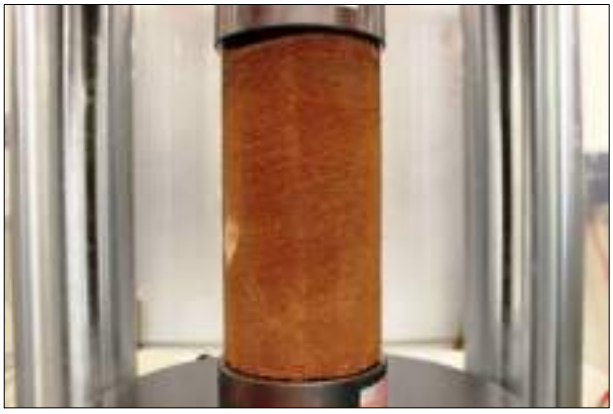
Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **GS-PTS107** Sample Ref: **24** Sample Type: **C** Depth (m) : **9.98**

Bulk Density (Mg/m^3): **2.17** Dry Density (Mg/m^3): **1.92** Moisture Content (%): **13**
Length (mm): **196.60** Diameter (mm): **101.52** Length/Diameter Ratio: **1.94**
Test Duration (mins:secs): **09:18** Stress Rate (MPa/s): **0.0062** Load at Failure (kN): **20.4**
UCS (MPa): **2.5** Failure Type: **Vertical splitting**

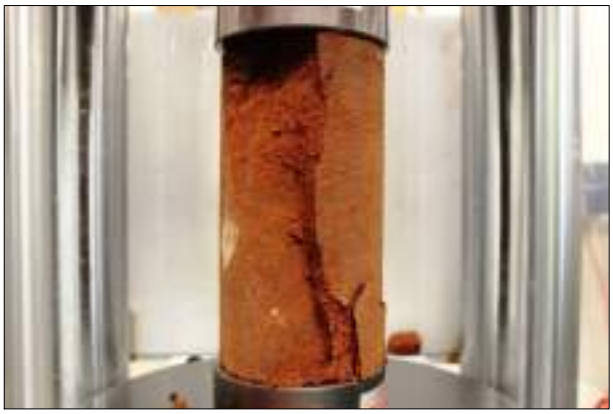
Note: **Axis of loading parallel to core axis**
Description: **Reddish brown SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **FAIL**. Flatness: **FAIL**. Perpendicularity: **FAIL**.

Front view (pre-test)



Rear view (pre-test)

Front view (post-test)



Rear view (post-test)

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Job No **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - UCS STRESS CONTROL - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01
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UNIAXIAL COMPRESSIVE STRENGTH

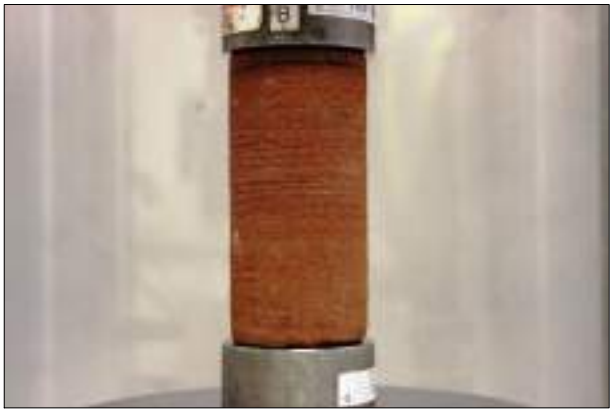
Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **GS-PTS109** Sample Ref: **17** Sample Type: **C** Depth (m) : **9.57**

Bulk Density (Mg/m^3): **2.18** Dry Density (Mg/m^3): **1.95** Moisture Content (%): **12**
Length (mm): **111.63** Diameter (mm): **53.86** Length/Diameter Ratio: **2.07**
Test Duration (mins:secs): **02:47** Stress Rate (MPa/s): **0.0219** Load at Failure (kN): **8.7**
UCS (MPa): **3.8** Failure Type: **Vertical splitting**

Note: **Axis of loading parallel to core axis**
Description: **Dark brown SANDSTONE**
Specimen Preparation: **Specimen was recored.**
Sample tolerance checks: Straightness: **PASS**. Flatness: **FAIL**. Perpendicularity: **FAIL**.

Front view (pre-test)



Rear view (pre-test)

Front view (post-test)

Rear view (post-test)

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**18/08/23**
	Contract **A66 NTP Scheme S03A**	Job No **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - UCS STRESS CONTROL - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01
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DEFORMABILITY OF ROCK IN UNIAXIAL COMPRESSION

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **BH-PTS107B** Sample Ref: **18** Sample Type: **C** Depth (m): **10.59**

Bulk Density (Mg/m^3): **2.24** Dry Density (Mg/m^3): **2.01** Moisture Content (%): **11**
Length (mm): **214.12** Diameter (mm): **99.89** Length/Diameter Ratio: **2.14**
Test Duration (mins:secs): **07:31** Stress Rate (MPa/s): **0.0383** Load at Failure (kN): **126.4**
UCS (MPa): **16.1** Failure Type: **Multiple fracture**

Note: **Axis of loading parallel to core axis**
Description: **Orangish brown SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **FAIL**. Flatness: **FAIL**. Perpendicularity: **FAIL**.

Front view (pre-test)

Rear view (pre-test)

Front view (post-test)

Rear view (post-test)

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**14/07/23**
	Contract **A66 NTP Scheme S03A**	Job No **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - UCS WITH DEFORMATION - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS
1A Princess Street
Bristol BS3 4AG

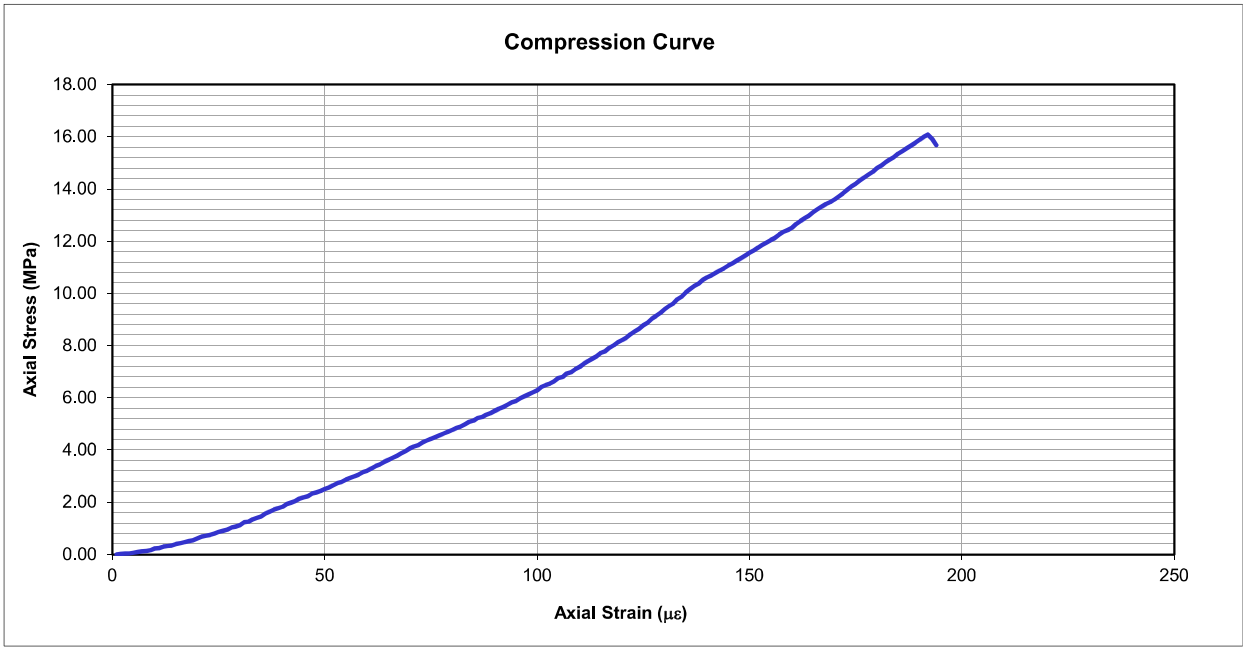
Test Date 23/06/2023

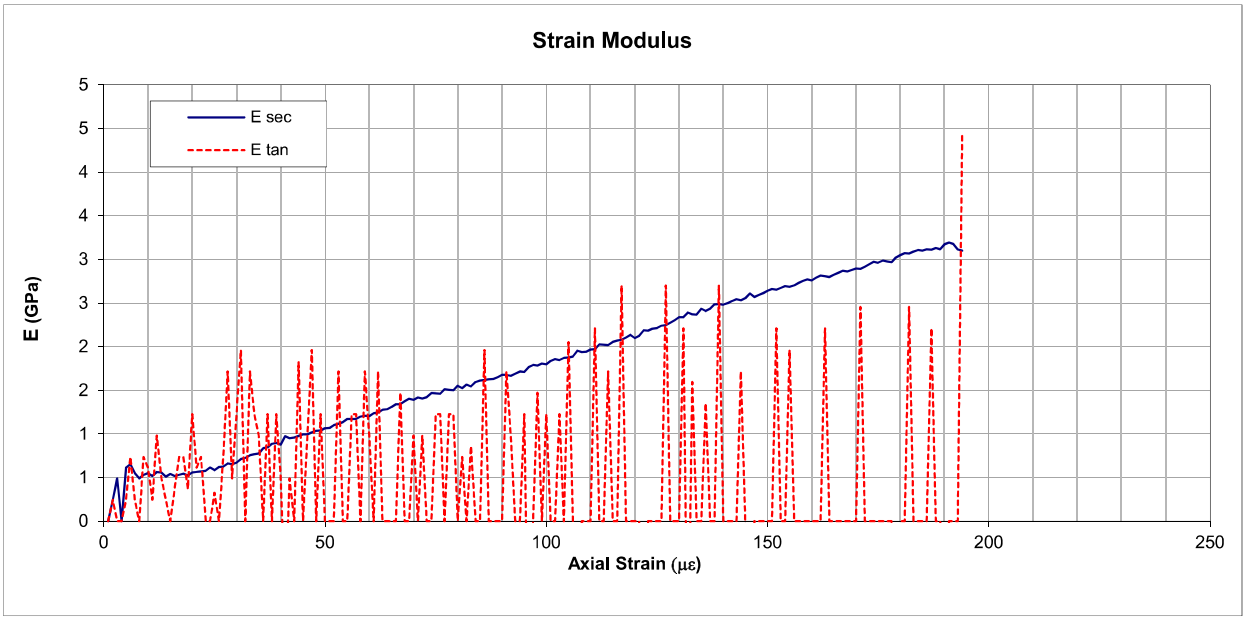
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006

Job No	765633	Cross section area	78.37 cm^2
Site		Height	214.12 mm
BH No	BH-PTS107B	Max logged strength	16.08 MPa
Specimen Depth	10.59-10.90	E_{tan} (*)	0.00 GPa
Specimen Type	C18	E_{sec} (^)	2.10 GPa
(*) Calculated for axial σ =	8.04 MPa		
(^) Calculated for axial σ =	8.04 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





Graph 2

STRUCTURAL SOILS
1A Princess Street
Bristol BS3 4AG

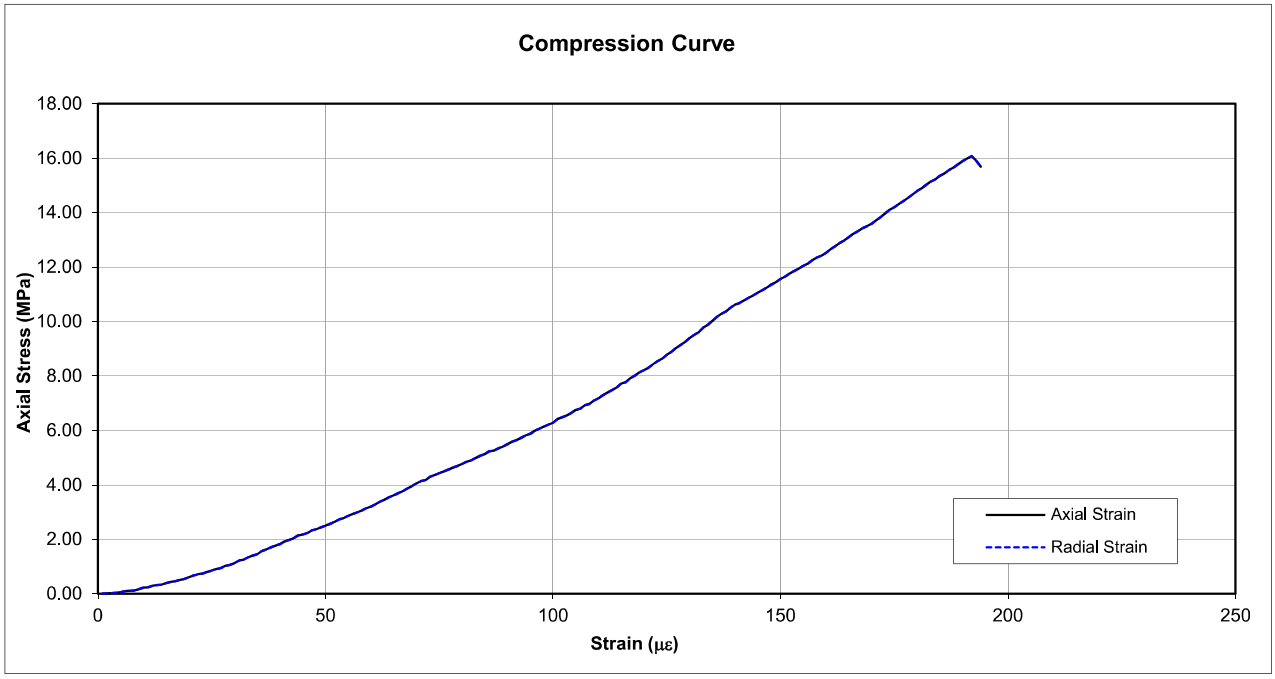
Test Date 23/06/2023

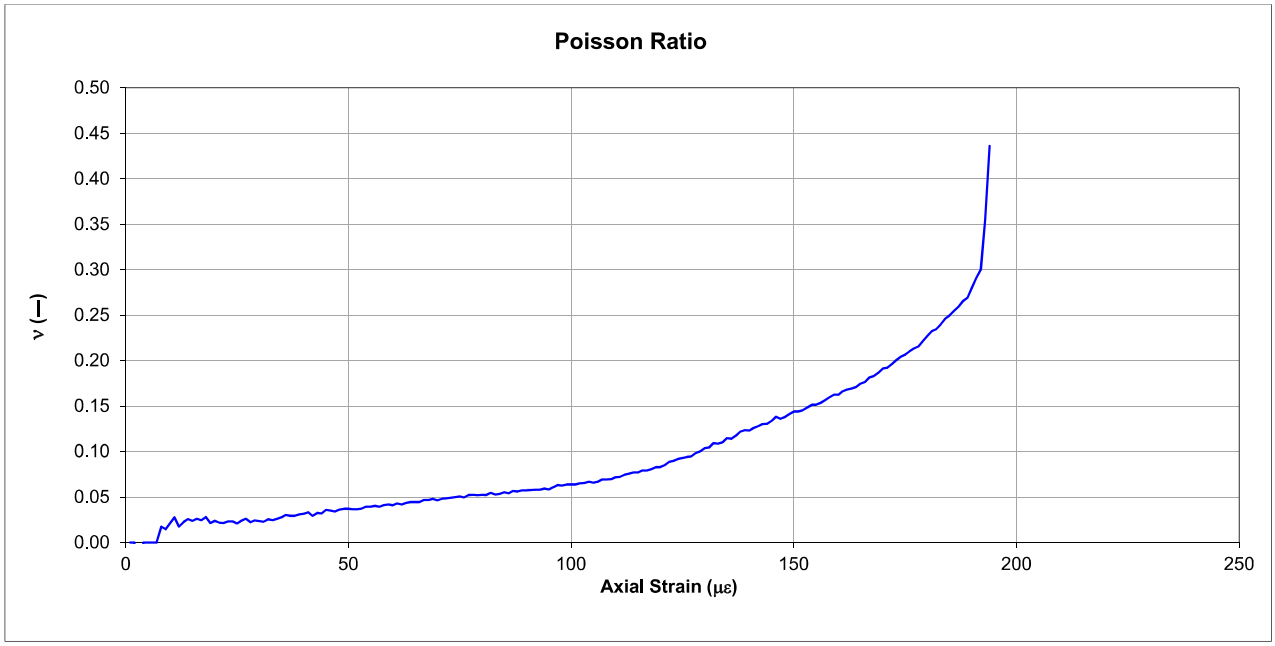
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006 and ASTM D4543-08

Job No	765633	Cross section area	78.37 cm^2
Site		Height	214.12 mm
BH No	BH-PTS107B	Max logged strength	16.08 MPa
Specimen Depth	10.59-10.90	Poisson at failure	0.436
Specimen Type	C18	Poisson (*)	0.081
(*) Calculated for axial σ =	8.04 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





DEFORMABILITY OF ROCK IN UNIAXIAL COMPRESSION

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **BH-PTS107B** Sample Ref: **21** Sample Type: **C** Depth (m): **13.84**

Bulk Density (Mg/m^3): **2.19** Dry Density (Mg/m^3): **1.94** Moisture Content (%): **13**
Length (mm): **223.31** Diameter (mm): **98.77** Length/Diameter Ratio: **2.26**
Test Duration (mins:secs): **07:08** Stress Rate (MPa/s): **0.0392** Load at Failure (kN): **147.8**
UCS (MPa): **19.3** Failure Type: **Vertical splitting**

Note: **Axis of loading parallel to core axis**
Description: **Reddish brown SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **FAIL**. Flatness: **FAIL**. Perpendicularity: **FAIL**.

Front view (pre-test)

Rear view (pre-test)

Front view (post-test)

Rear view (post-test)

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**11/07/23**
	Contract **A66 NTP Scheme S03A**	Job No **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - UCS WITH DEFORMATION - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS
1A Princess Street
Bristol BS3 4AG

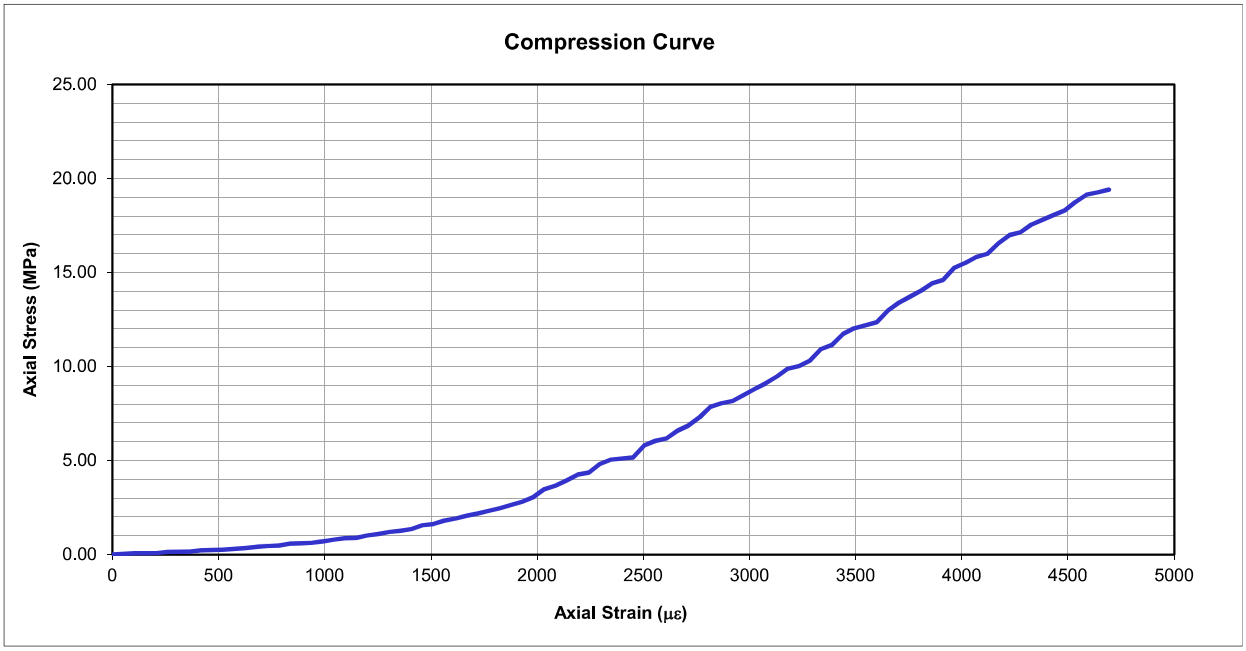
Test Date 23/06/2023

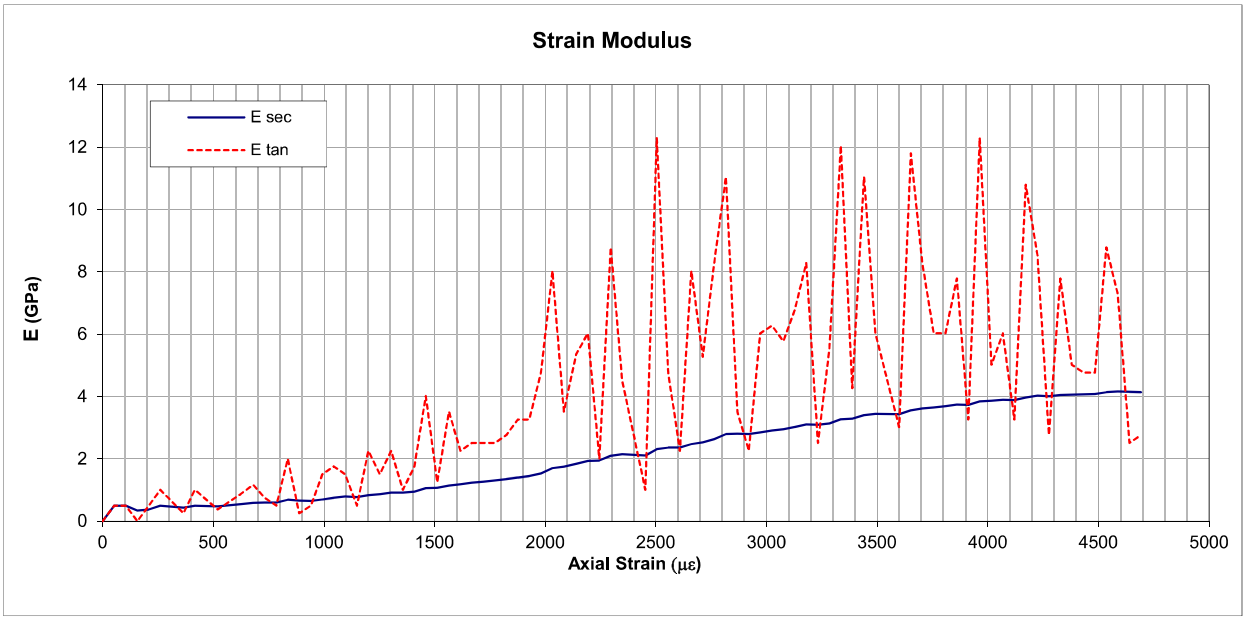
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006

Job No	765633	Cross section area	76.60 cm^2
Site		Height	223.31 mm
BH No	BH-PTS107B	Max logged strength	19.41 MPa
Specimen Depth	13.84-14.21m	E_{tan} (*)	6.78 GPa
Specimen Type	C21	E_{sec} (^)	3.02 GPa
(*) Calculated for axial σ =	9.71 MPa		
(^) Calculated for axial σ =	9.71 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





Graph 2

STRUCTURAL SOILS
1A Princess Street
Bristol BS3 4AG

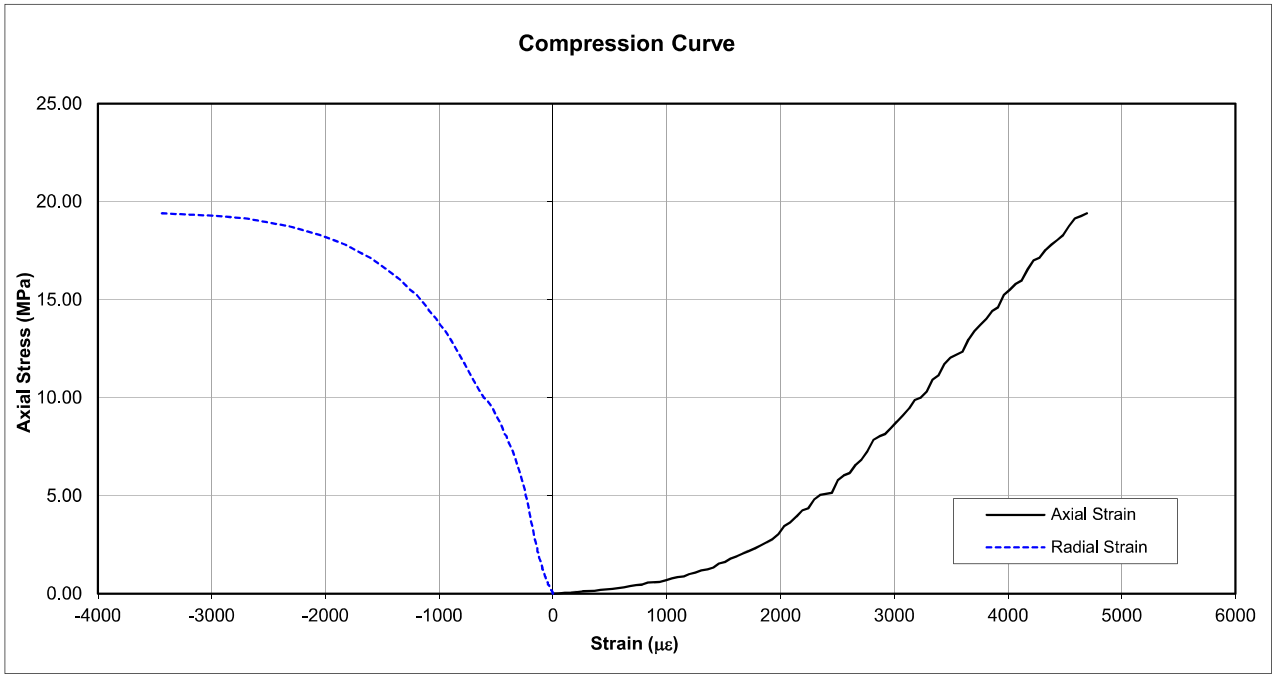
Test Date 23/06/2023

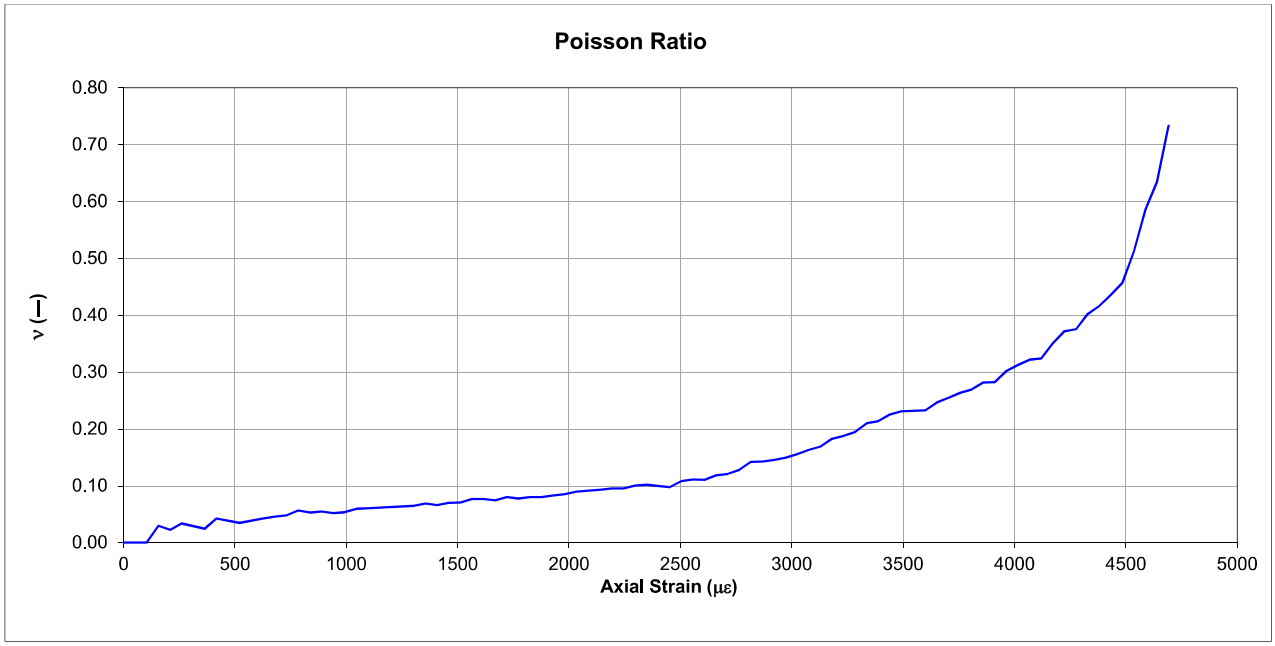
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006 and ASTM D4543-08

Job No	765633	Cross section area	76.60 cm^2
Site		Height	223.31 mm
BH No	BH-PTS107B	Max logged strength	19.41 MPa
Specimen Depth	13.84-14.21m	Poisson at failure	0.733
Specimen Type	C21	Poisson (*)	0.169
(*) Calculated for axial σ =	9.71 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





DEFORMABILITY OF ROCK IN UNIAXIAL COMPRESSION

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **BH-PTS114** Sample Ref: **35** Sample Type: **C** Depth (m): **9.55**

Bulk Density (Mg/m^3): **2.16** Dry Density (Mg/m^3): **1.89** Moisture Content (%): **14**
Length (mm): **226.27** Diameter (mm): **101.52** Length/Diameter Ratio: **2.23**
Test Duration (mins:secs): **06:21** Stress Rate (MPa/s): **0.0124** Load at Failure (kN): **132.0**
UCS (MPa): **16.3** Failure Type: **Vertical splitting**

Note: **Axis of loading parallel to core axis**
Description: **Red SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **FAIL**. Flatness: **FAIL**. Perpendicularity: **FAIL**.

Front view (pre-test)

Rear view (pre-test)

Front view (post-test)

Rear view (post-test)

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**28/06/23**
	Contract **A66 NTP Scheme S03A**	Job No **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - UCS WITH DEFORMATION - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 28/06/23 - 11:46 | FB1 |

STRUCTURAL SOILS
1A Princess Street
Bristol BS3 4AG

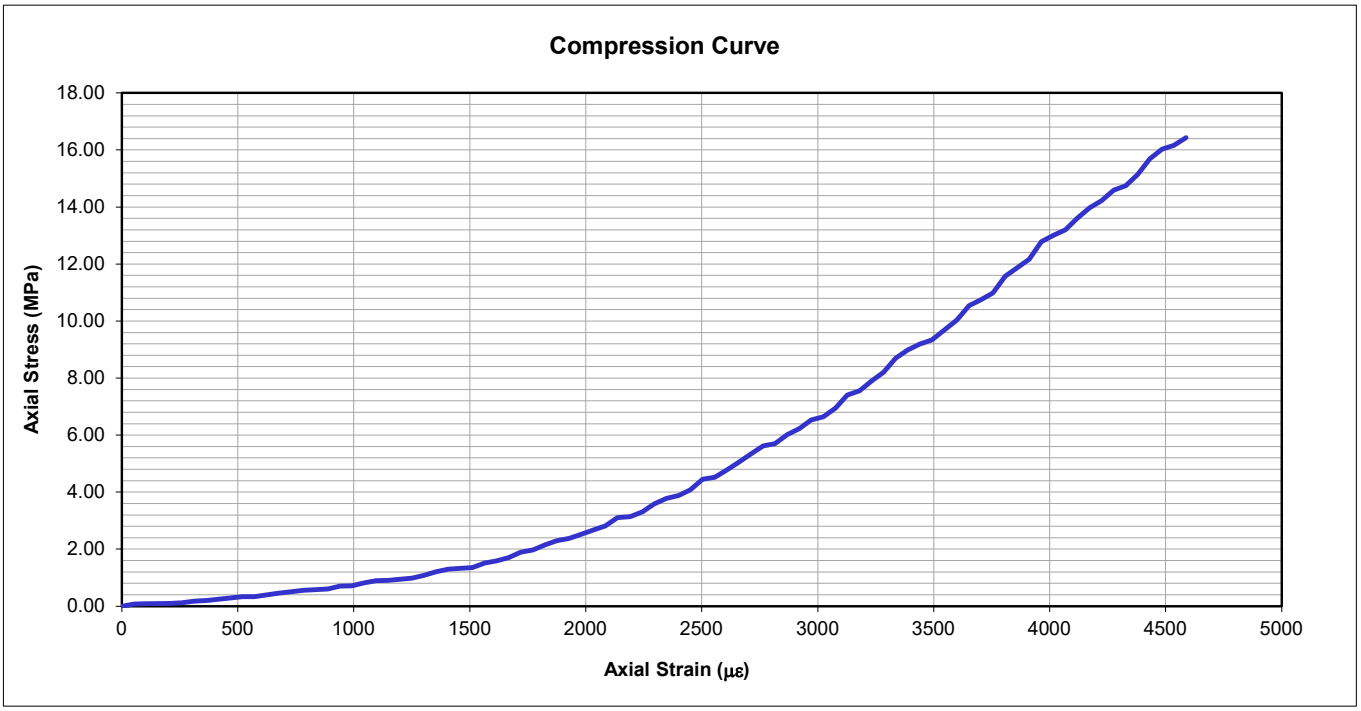
Test Date 14/06/2023

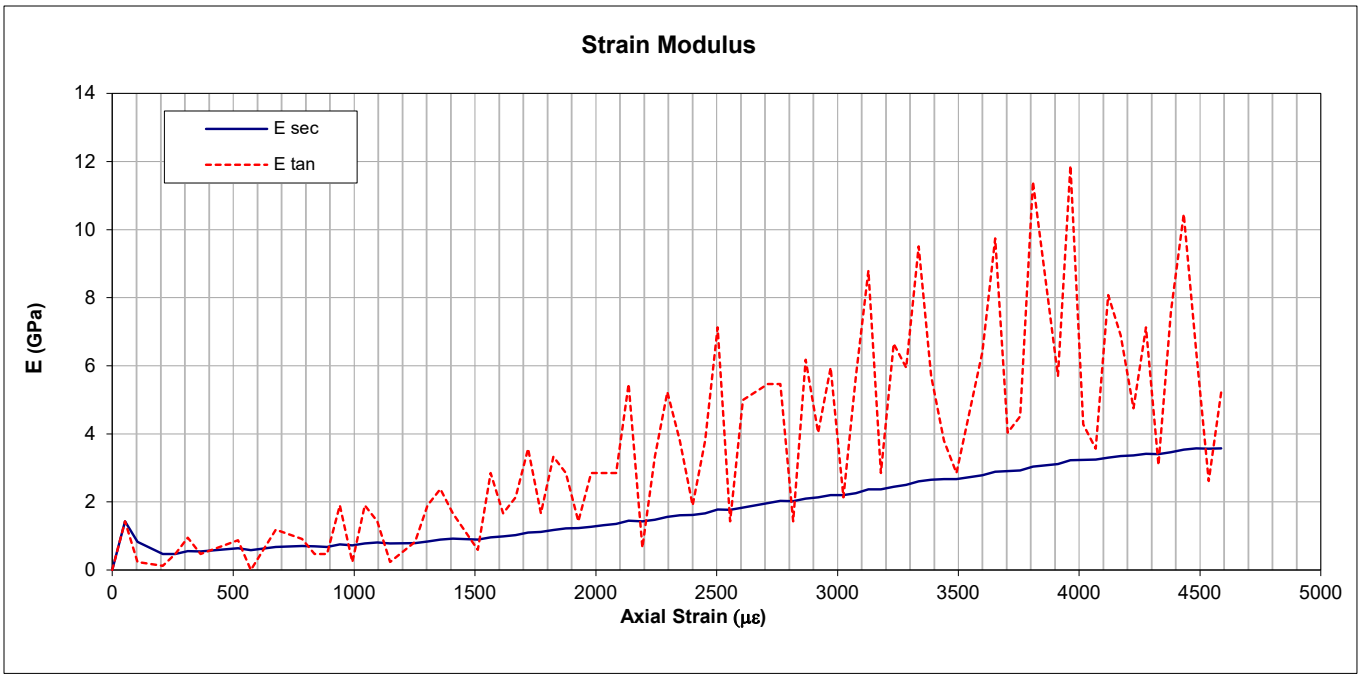
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006

Job No	765633	Cross section area	80.95 cm^2
Site		Height	226.27 mm
BH No	BH-PTS 114	Max logged strength	16.43 MPa
Specimen Depth	9.55-9.80m	E_{tan} (*)	5.94 GPa
Specimen Type	C35	E_{sec} (^)	2.50 GPa
(*) Calculated for axial σ =	8.22 MPa		
(^) Calculated for axial σ =	8.22 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





Graph 2

STRUCTURAL SOILS
1A Princess Street
Bristol BS3 4AG

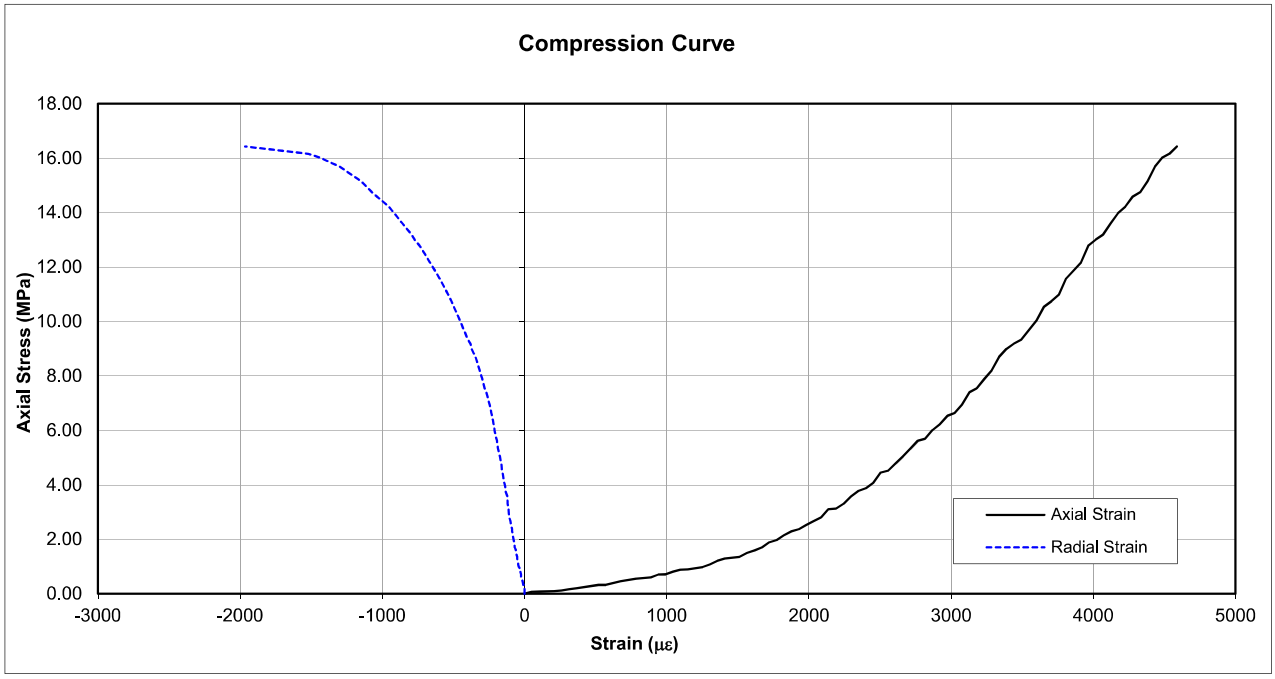
Test Date 14/06/2023

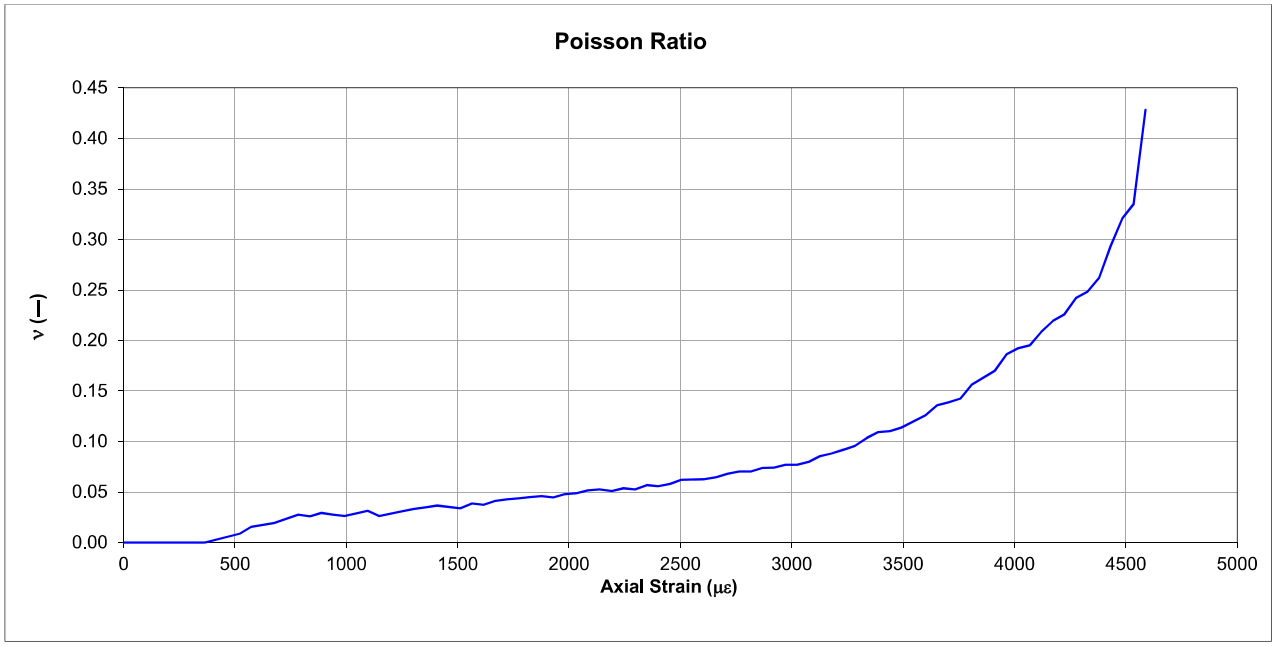
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006 and ASTM D4543-08

Job No	765633	Cross section area	80.95 cm^2
Site		Height	226.27 mm
BH No	BH-PTS 114	Max logged strength	16.43 MPa
Specimen Depth	9.55-9.80m	Poisson at failure	0.428
Specimen Type	C35	Poisson (*)	0.096
(*) Calculated for axial σ =	8.22 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





DEFORMABILITY OF ROCK IN UNIAXIAL COMPRESSION

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **BH-PTS114** Sample Ref: **37** Sample Type: **C** Depth (m): **10.93**

Bulk Density (Mg/m^3): **2.16** Dry Density (Mg/m^3): **1.90** Moisture Content (%): **14**
Length (mm): **209.43** Diameter (mm): **101.20** Length/Diameter Ratio: **2.07**
Test Duration (mins:secs): **08:31** Stress Rate (MPa/s): **0.0124** Load at Failure (kN): **125.3**
UCS (MPa): **15.6** Failure Type: **Multiple fracture**

Note: **Axis of loading parallel to core axis**
Description: **Red SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **FAIL**. Flatness: **FAIL**. Perpendicularity: **FAIL**.

Front view (pre-test)

Rear view (pre-test)

Front view (post-test)

Rear view (post-test)

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**28/06/23**
	Contract **A66 NTP Scheme S03A**	Job No **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - UCS WITH DEFORMATION - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
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STRUCTURAL SOILS
1A Princess Street
Bristol BS3 4AG

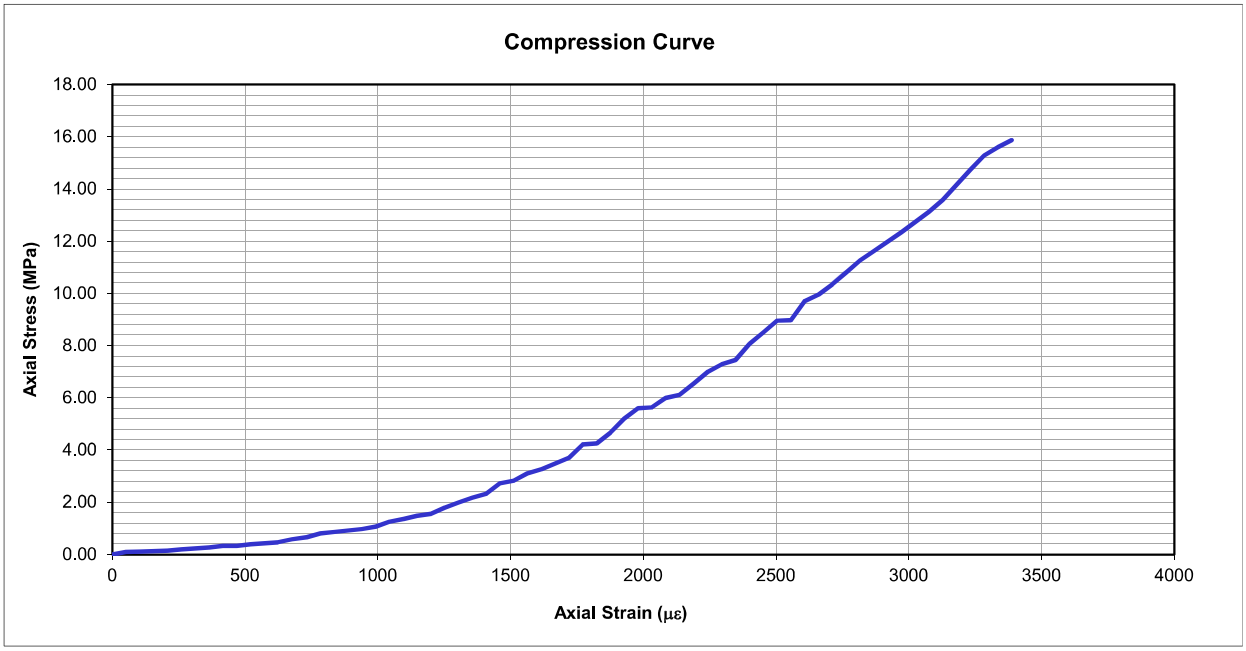
Test Date 14/06/2023

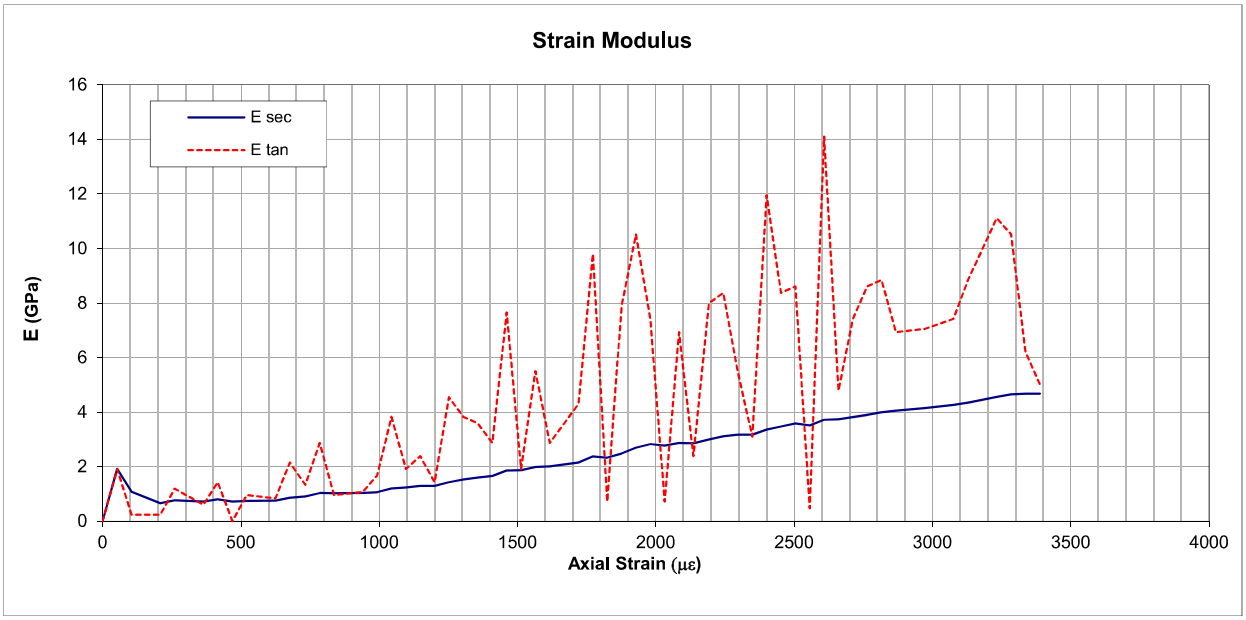
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006

Job No	765633	Cross section area	80.44 cm^2
Site		Height	209.43 mm
BH No	BH-PTS 114	Max logged strength	15.86 MPa
Specimen Depth	10.93-11.21	E_{tan} (*)	3.11 GPa
Specimen Type	C37	E_{sec} (^)	3.17 GPa
(*) Calculated for axial σ =	7.93 MPa		
(^) Calculated for axial σ =	7.93 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





Graph 2

STRUCTURAL SOILS
1A Princess Street
Bristol BS3 4AG

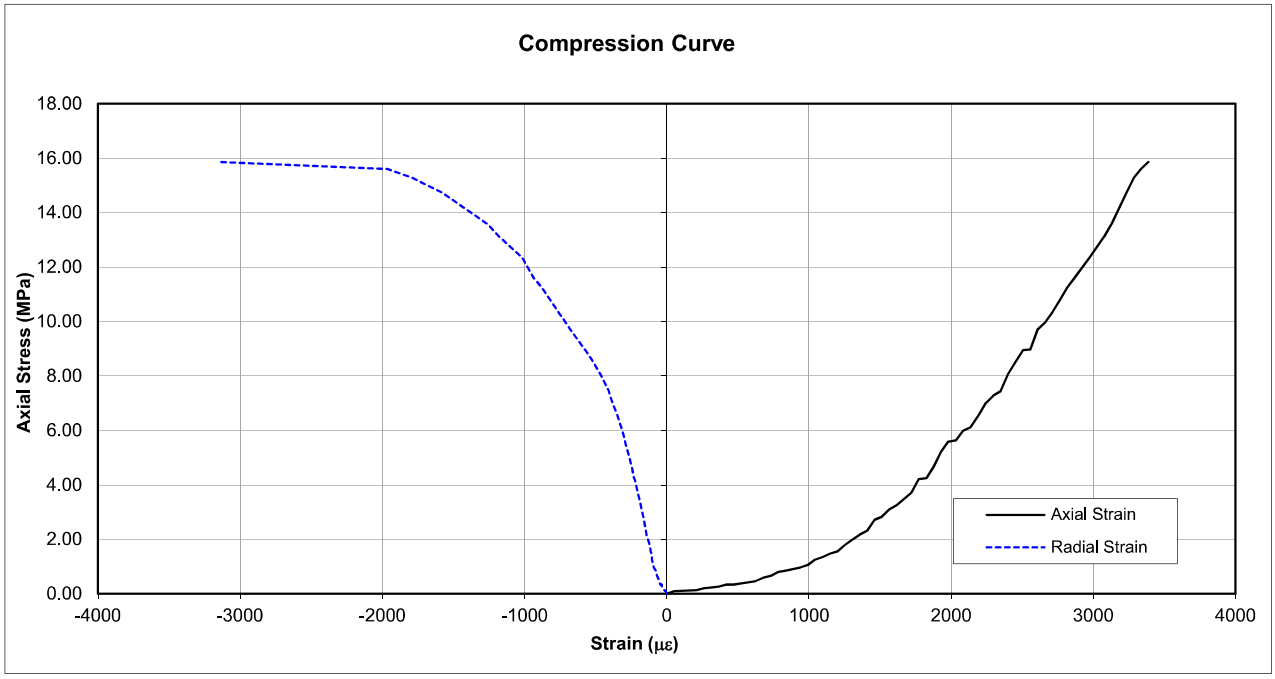
Test Date 14/06/2023

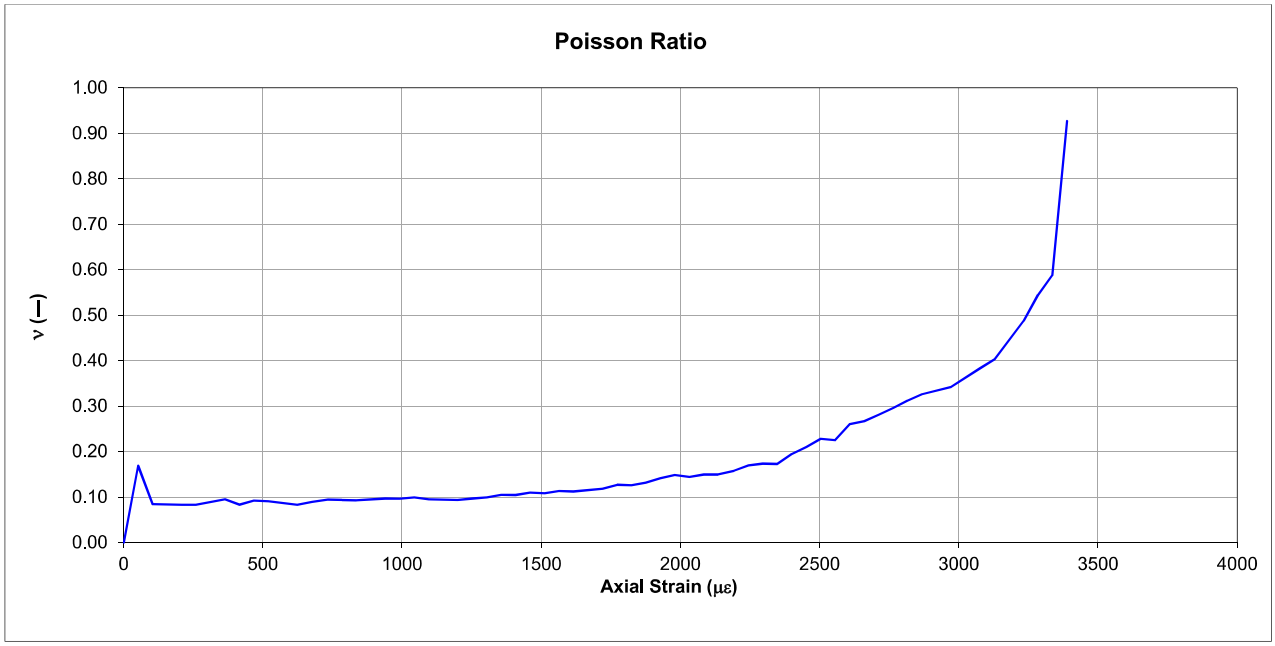
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006 and ASTM D4543-08

Job No	765633	Cross section area	80.44 cm^2
Site		Height	209.43 mm
BH No	BH-PTS 114	Max logged strength	15.86 MPa
Specimen Depth	10.93-11.21	Poisson at failure	0.927
Specimen Type	C37	Poisson (*)	0.173
(*) Calculated for axial σ =	7.93 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





DEFORMABILITY OF ROCK IN UNIAXIAL COMPRESSION

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **BH-PTS114** Sample Ref: **40** Sample Type: **C** Depth (m): **13.32**

Bulk Density (Mg/m^3): **2.15** Dry Density (Mg/m^3): **1.90** Moisture Content (%): **13**
Length (mm): **228.43** Diameter (mm): **101.62** Length/Diameter Ratio: **2.25**
Test Duration (mins:secs): **09:56** Stress Rate (MPa/s): **0.0123** Load at Failure (kN): **64.1**
UCS (MPa): **7.9** Failure Type: **Vertical splitting**

Note: **Axis of loading parallel to core axis**
Description: **Red SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **FAIL**. Flatness: **FAIL**. Perpendicularity: **FAIL**.

Front view (pre-test)

Rear view (pre-test)

Front view (post-test)

Rear view (post-test)

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**28/06/23**
	Contract **A66 NTP Scheme S03A**	Job No **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - UCS WITH DEFORMATION - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 28/06/23 - 11:50 | FB1 |

STRUCTURAL SOILS
1A Princess Street
Bristol BS3 4AG

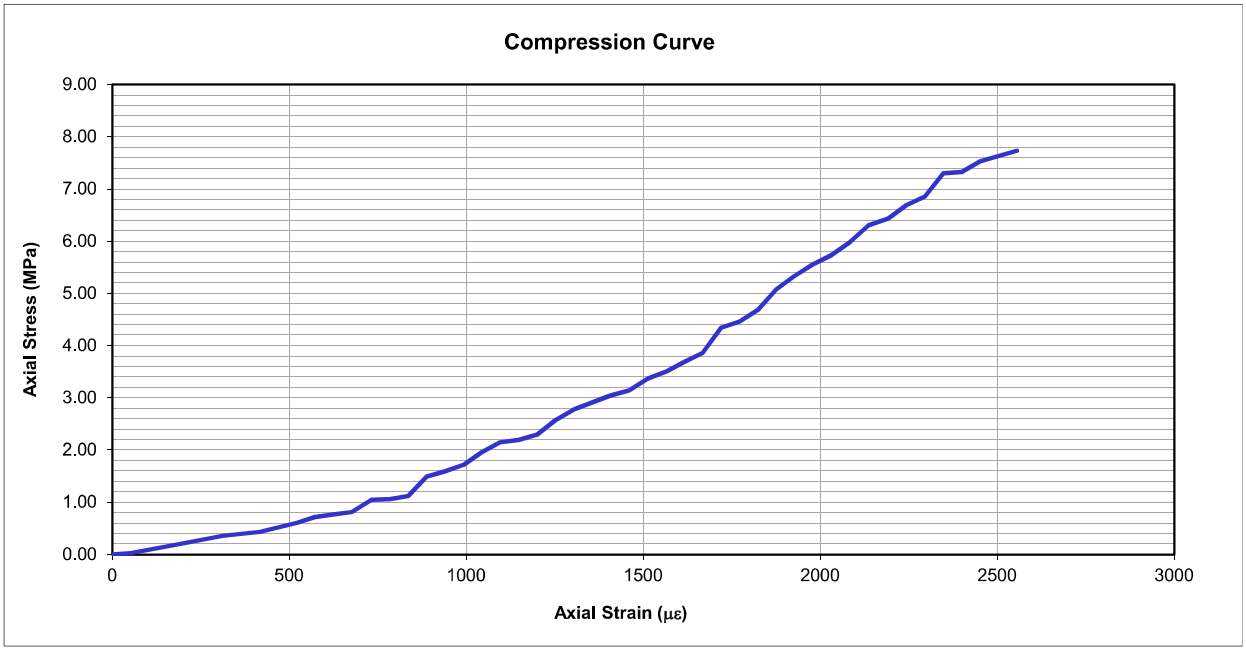
Test Date 14/06/2023

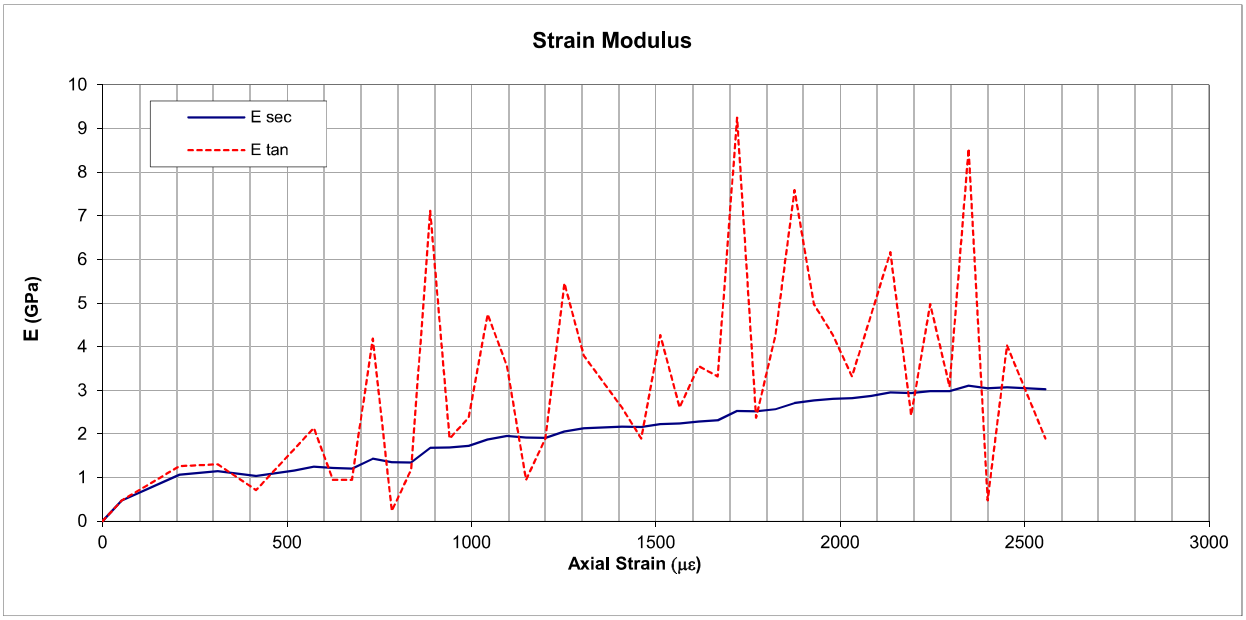
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006

Job No	765633	Cross section area	81.11 cm^2
Site		Height	228.43 mm
BH No	BH-PTS 114	Max logged strength	7.73 MPa
Specimen Depth	13.32-13.60	E_{tan} (*)	3.32 GPa
Specimen Type	C40	E_{sec} (^)	2.31 GPa
(*) Calculated for axial σ =	3.87 MPa		
(^) Calculated for axial σ =	3.87 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





Graph 2

STRUCTURAL SOILS
1A Princess Street
Bristol BS3 4AG

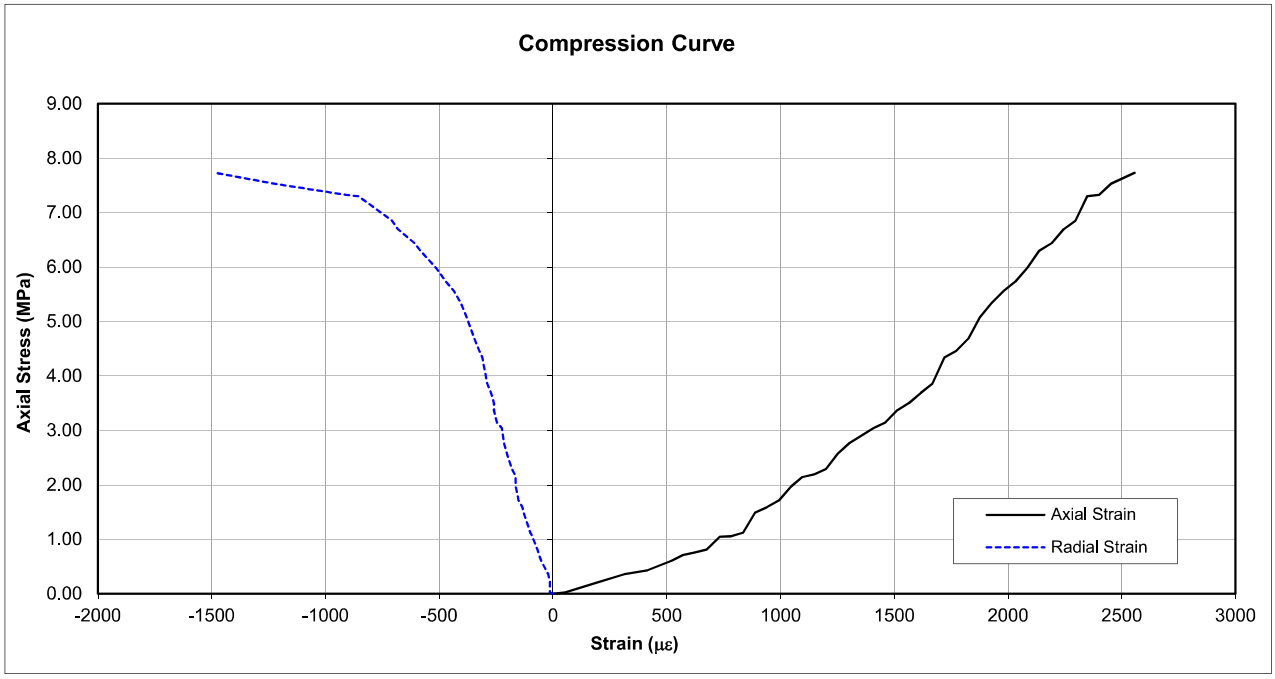
Test Date 14/06/2023

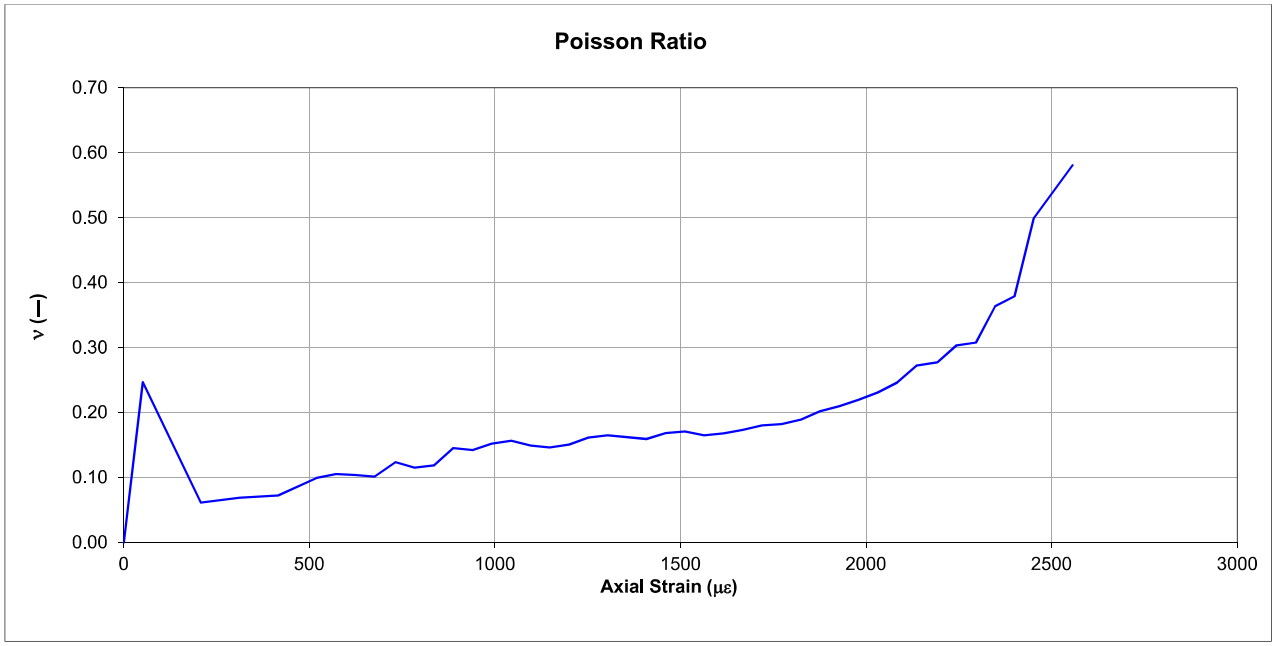
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006 and ASTM D4543-08

Job No	765633	Cross section area	81.11 cm^2
Site		Height	228.43 mm
BH No	BH-PTS 114	Max logged strength	7.73 MPa
Specimen Depth	13.32-13.60	Poisson at failure	0.581
Specimen Type	C40	Poisson (*)	0.173
(*) Calculated for axial σ =	3.87 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





DEFORMABILITY OF ROCK IN UNIAXIAL COMPRESSION

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **BH-PTS126** Sample Ref: **30** Sample Type: **C** Depth (m): **9.50**

Bulk Density (Mg/m^3): **2.16** Dry Density (Mg/m^3): **1.88** Moisture Content (%): **15**
Length (mm): **217.53** Diameter (mm): **101.04** Length/Diameter Ratio: **2.15**
Test Duration (mins:secs): **07:45** Stress Rate (MPa/s): **0.0374** Load at Failure (kN): **133.3**
UCS (MPa): **16.6** Failure Type: **Multiple fracture**

Note: **Axis of loading parallel to core axis**
Description: **Orangish brown SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **FAIL**. Flatness: **FAIL**. Perpendicularity: **FAIL**.

Front view (pre-test)

Rear view (pre-test)

Front view (post-test)

Rear view (post-test)

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	Francesca Bennett	**FRANCESCA BENNETT**	**11/07/23**
	Contract **A66 NTP Scheme S03A**	Job No **765633**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - UCS WITH DEFORMATION - A4P | 765633_A66_NTP_SCHEME_S03A.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 11/07/23 - 11:26 | FB1 |

STRUCTURAL SOILS
1A Princess Street
Bristol BS3 4AG

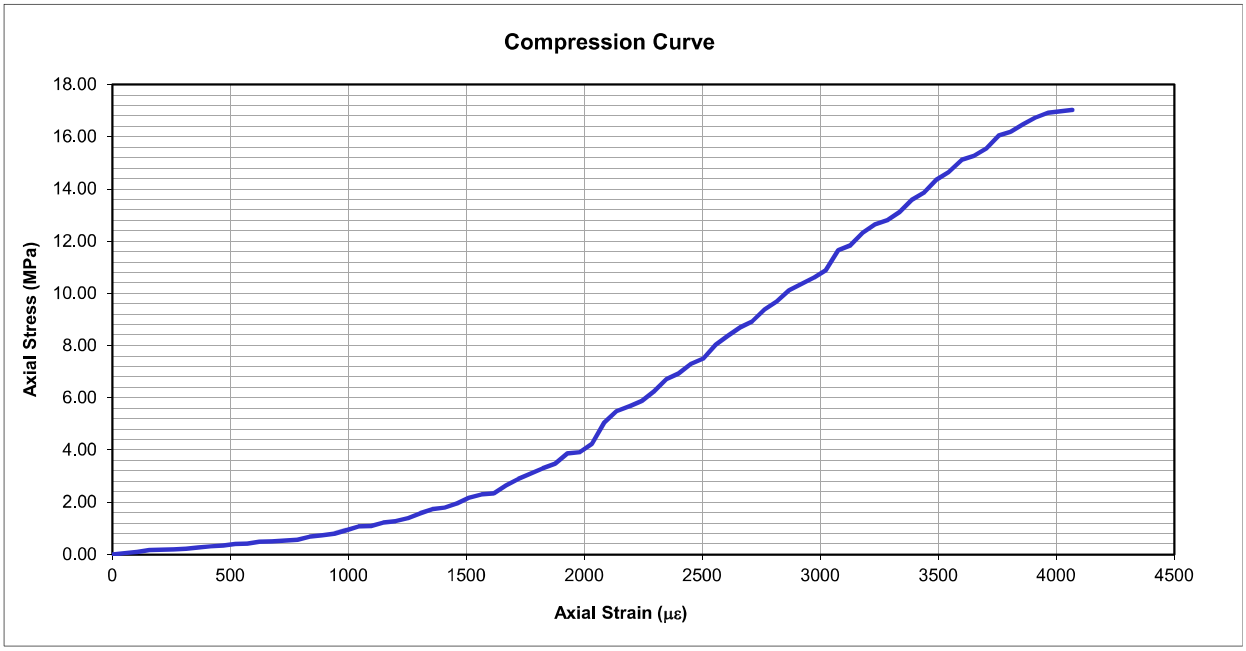
Test Date 23/06/2023

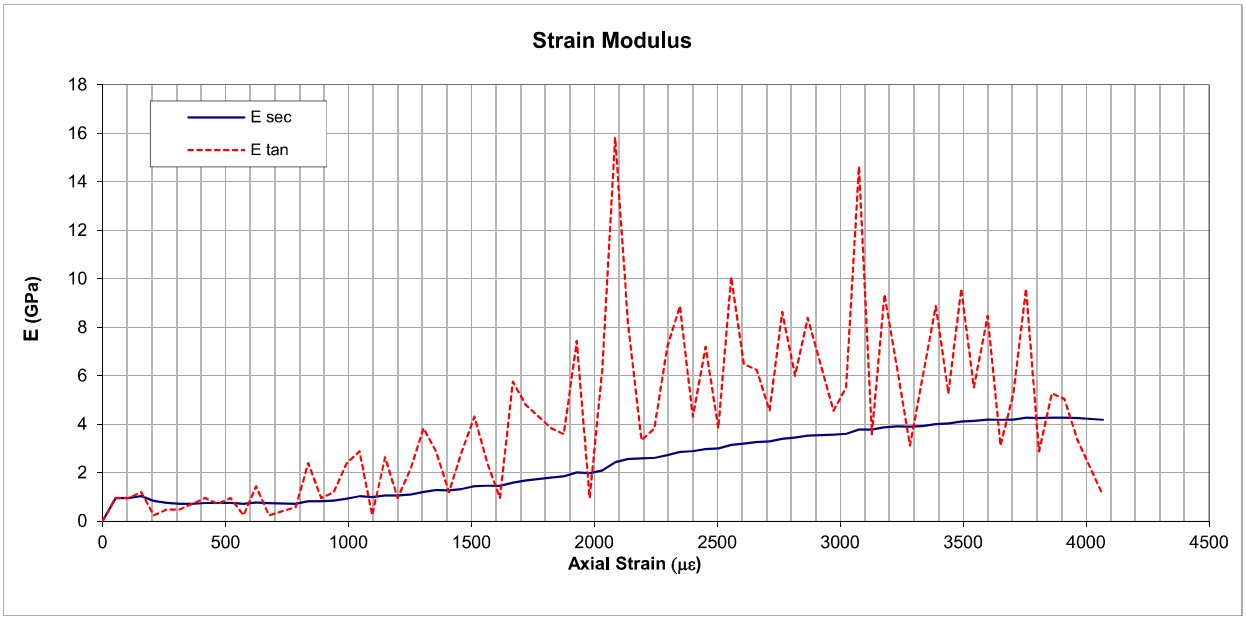
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006

Job No	765633	Cross section area	80.18 cm^2
Site		Height	217.53 mm
BH No	BH-PTS126	Max logged strength	17.02 MPa
Specimen Depth	9.50-9.94m	E_{tan} (*)	6.48 GPa
Specimen Type	C30	E_{sec} (^)	3.21 GPa
(*) Calculated for axial σ =	8.51 MPa		
(^) Calculated for axial σ =	8.51 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





STRUCTURAL SOILS
1A Princess Street
Bristol BS3 4AG

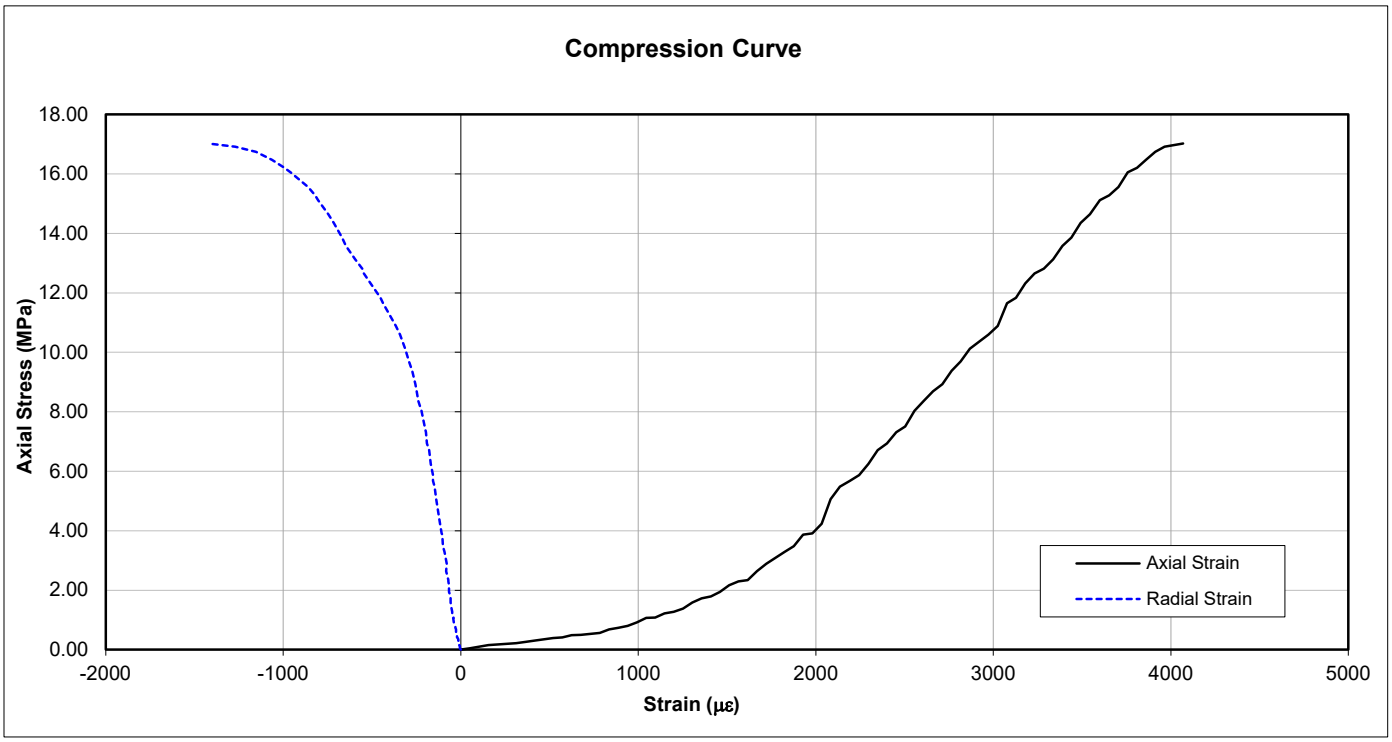
Test Date 23/06/2023

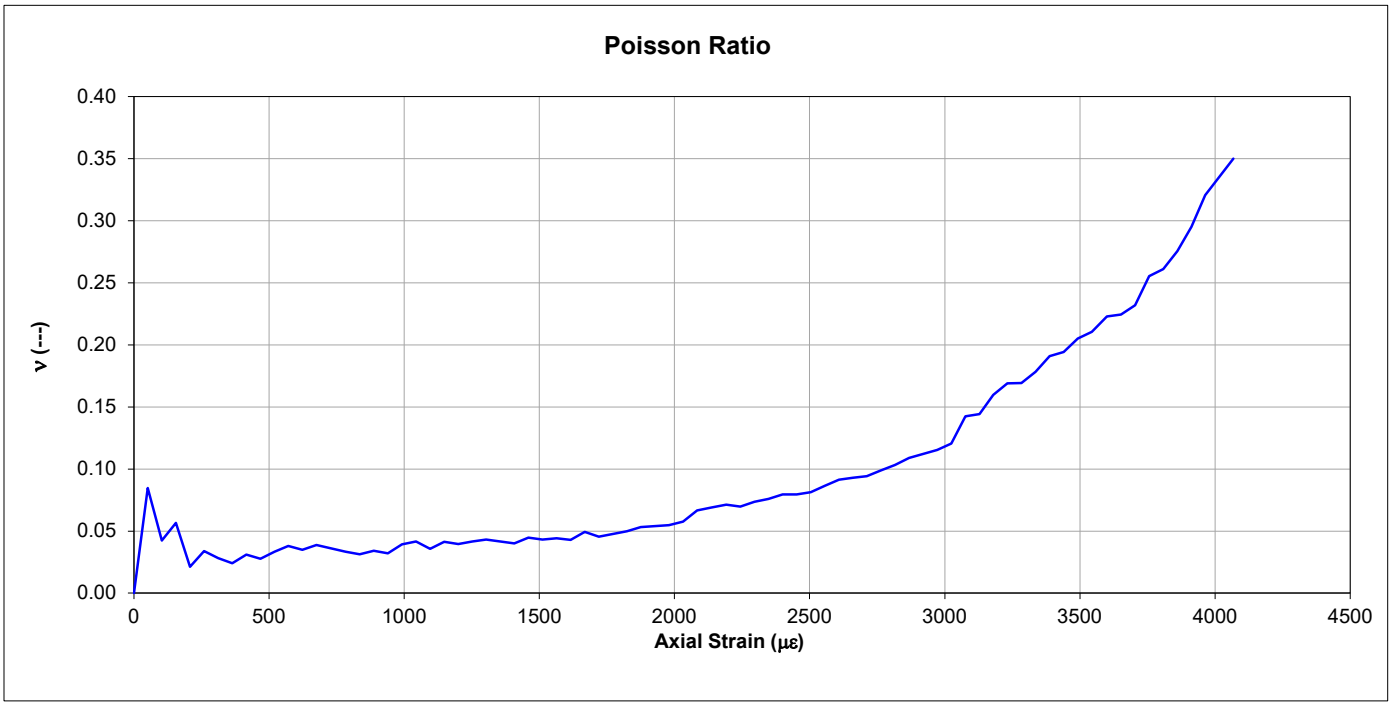
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006 and ASTM D4543-08

Job No	765633	Cross section area	80.18 cm^2
Site		Height	217.53 mm
BH No	BH-PTS126	Max logged strength	17.02 MPa
Specimen Depth	9.50-9.94m	Poisson at failure	0.350
Specimen Type	C30	Poisson (*)	0.091
(*) Calculated for axial σ =	8.51 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS107B	16	5.28	A	100	68	0.160	93	0.02	1.32	0.02 (✓)	16	Sandy gravelly CLAY with COBBLES	**B**

Results

$I_s(50)$ Mean Axial tests = **0.02** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date	Contract Ref:
Francesca Bennett	**FRANCESCA BENNETT**	**31.08.23**	**765633**
Contract: **A66 NTP Scheme S03A**			

DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS107B	17	9.81	D	55	101	0.332	101	0.03	1.37	0.04 (✓)	8.1	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0.04** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS
1a Princess Street
Bedminster
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BS3 4AG

Compiled By		Date	Contract Ref:
Francesca Bennett	**FRANCESCA BENNETT**	**31.08.23**	**765633**
Contract: **A66 NTP Scheme S03A**			

DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS107B	19	11.50	D	59	100	1.396	100	0.14	1.37	0.19 (✓)	14	SANDSTONE	**B**
BH-PTS107B	19	11.50	A	100	64	1.366	90	0.17	1.30	0.22 (✓)	14	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.22** MN/m^2
$I_s(50)$ Mean Diametral tests = **0.19** MN/m^2
$I_a(50)$ Strength Anisotropy Index = **1.15** (calculated from highest and lowest diametral and axial $I_s(50)$ ratio)
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date	Contract Ref:
Francesca Bennett	**FRANCESCA BENNETT**	**31.08.23**	**765633**
Contract: **A66 NTP Scheme S03A**			

DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS107B	20	12.63	A	100	84	4.342	103	0.41	1.39	0.56 (✓)	11	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.56** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date	Contract Ref:
Francesca Bennett	FRANCESCA BENNETT	31.08.23	765633
Contract:	A66 NTP Scheme S03A		

DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS107B	21	13.84	A	97	99	5.690	111	0.47	1.43	0.67 (✓)	11	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.67** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date	Contract Ref:
Francesca Bennett	**FRANCESCA BENNETT**	**31.08.23**	**765633**
Contract: **A66 NTP Scheme S03A**			

DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS107B	22	14.86	D	55	100	1.412	100	0.14	1.37	0.19 (✓)	13	SANDSTONE	**B**
BH-PTS107B	22	14.86	A	100	50	1.862	80	0.29	1.23	0.36 (✓)	13	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.36** MN/m^2
$I_s(50)$ Mean Diametral tests = **0.19** MN/m^2
$I_a(50)$ Strength Anisotropy Index = **1.87** (calculated from highest and lowest diametral and axial $I_s(50)$ ratio)
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date	Contract Ref:
Francesca Bennett	**FRANCESCA BENNETT**	**31.08.23**	**765633**
Contract: **A66 NTP Scheme S03A**			

DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS114	33	8.21	A	95	81	3.450	99	0.35	1.36	0.48 (✓)	11	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.48** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date	Contract Ref:
Francesca Bennett	**FRANCESCA BENNETT**	**31.08.23**	**765633**
Contract: **A66 NTP Scheme S03A**			

DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS114	34	8.61	D	70	102	0.676	102	0.06	1.38	0.09 (✓)	13	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0.09** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note:Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS114	36	10.17	A	100	85	5.882	104	0.54	1.39	0.76 (✓)	11	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.76** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
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In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS114	38	11.47	A	101	88	1.412	106	0.12	1.40	0.18 (✓)	15	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.18** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
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DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS114	39	12.35	D	70	101	1.896	101	0.19	1.37	0.26 (✓)	9.0	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0.26** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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DETERMINATION OF POINT LOAD STRENGTH

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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS114	41	14.48	A	100	81	0.272	102	0.03	1.38	0.04 (✓)	17	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.04** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note:Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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DETERMINATION OF POINT LOAD STRENGTH

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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS114	42	15.13	D	70	101	0.940	101	0.09	1.37	0.13 (✓)	9.1	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0.13** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS117	33	7.38	A	100	100	1.654	113	0.13	1.44	0.19 (✓)	15	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.19** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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DETERMINATION OF POINT LOAD STRENGTH

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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS117	34	8.56	D	50	100	0.352	100	0.04	1.37	0.05 (✓)	16	SANDSTONE	**B**
BH-PTS117	34	8.56	A	100	67	0.718	92	0.08	1.32	0.11 (✓)	16	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.11** MN/m^2
$I_s(50)$ Mean Diametral tests = **0.05** MN/m^2
$I_a(50)$ Strength Anisotropy Index = **2.31** (calculated from highest and lowest diametral and axial $I_s(50)$ ratio)
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS117	35	9.13	A	100	90	0.972	107	0.08	1.41	0.12 (✓)	11	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.12** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note:Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS117	36	9.76	D	50	100	0.168	100	0.02	1.37	0.02 (✓)	10	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0.02** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS118B	11	9.61	D	50	100	0.400	100	0.04	1.37	0.05 (✓)	11	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0.05** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS123	37	12.10	A	100	94	0.076	109	0.01	1.42	0.01 (✓)	12	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.01** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS123	38	13.14	D	55	99	0.014	99	0.00	1.36	0.00 (✓)	10	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note:Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

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Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS123	39	14.64	A	98	98	0.524	111	0.04	1.43	0.06 (✓)	11	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.06** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

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Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS126	28	6.50	A	103	71	1.058	96	0.11	1.34	0.15 (✓)	9.1	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.15** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

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Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS126	29	6.97	D	70	101	0.292	101	0.03	1.37	0.04 (✓)	8.1	SANDSTONE	**B**
BH-PTS126	29	6.97	A	101	83	2.420	103	0.23	1.39	0.31 (✓)	8.1	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.31** MN/m^2
$I_s(50)$ Mean Diametral tests = **0.04** MN/m^2
$I_a(50)$ Strength Anisotropy Index = **8** (calculated from highest and lowest diametral and axial $I_s(50)$ ratio)
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS126	31	10.60	A	102	95	2.836	111	0.23	1.43	0.33 (✓)	9.9	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.33** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

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DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS126	32	14.56	D	55	102	0.204	102	0.02	1.38	0.03 (✓)	12	SANDSTONE	**B**
BH-PTS126	32	14.56	A	102	69	0.768	95	0.09	1.33	0.11 (✓)	12	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.11** MN/m^2
$I_s(50)$ Mean Diametral tests = **0.03** MN/m^2
$I_a(50)$ Strength Anisotropy Index = **4.23** (calculated from highest and lowest diametral and axial $I_s(50)$ ratio)
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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DETERMINATION OF POINT LOAD STRENGTH

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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS129	24	6.64	A	98	48	0.192	77	0.03	1.22	0.04 (✓)	10	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.04** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS129	25	7.39	A	100	55	0.302	84	0.04	1.26	0.05 (✓)	9.3	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.05** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note:Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS129	26	8.13	A	100	74	0.256	97	0.03	1.35	0.04 (✓)	10	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.04** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note:Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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DETERMINATION OF POINT LOAD STRENGTH

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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS129	27	9.12	D	50	99	0.090	99	0.01	1.36	0.01 (✓)	9.8	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0.01** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note:Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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DETERMINATION OF POINT LOAD STRENGTH

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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS129	28	10.06	D	50	100	0.146	100	0.01	1.37	0.02 (✓)	10	SANDSTONE	**B**
BH-PTS129	28	10.06	A	100	49	0.500	79	0.08	1.23	0.10 (✓)	10	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.1** MN/m^2
$I_s(50)$ Mean Diametral tests = **0.02** MN/m^2
$I_a(50)$ Strength Anisotropy Index = **4.94** (calculated from highest and lowest diametral and axial $I_s(50)$ ratio)
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

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Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS129	29	10.61	A	100	91	0.850	108	0.07	1.41	0.10 (✓)	10	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.1** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note:Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS129	30	12.84	D	50	100	0.128	100	0.01	1.37	0.02 (✓)	10	SANDSTONE	**B**
BH-PTS129	30	12.84	A	100	46	0.398	77	0.07	1.21	0.08 (✓)	10	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.08** MN/m^2
$I_s(50)$ Mean Diametral tests = **0.02** MN/m^2
$I_a(50)$ Strength Anisotropy Index = **4.71** (calculated from highest and lowest diametral and axial $I_s(50)$ ratio)
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

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Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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DETERMINATION OF POINT LOAD STRENGTH

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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
BH-PTS129	31	14.43	D	50	100	0.266	100	0.03	1.37	0.04 (✓)	11	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0.04** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS102	8	2.60	I	70	52	0.112	68	0.02	1.15	0.03	12	Sandy gravelly CLAY	**B**

Results

$I_s(50)$ Mean Irregular tests = **0.03** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note:Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

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Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS105	20	10.70	D	56	102	0.096	102	0.01	1.38	0.01 (✓)	11	GRAVEL with COBBLES	**B**
GS-PTS105	20	10.70	A	102	83	0.546	104	0.05	1.39	0.07 (✓)	11	GRAVEL with COBBLES	**B**

Results

$I_s(50)$ Mean Axial tests = **0.07** MN/m^2
$I_s(50)$ Mean Diametral tests = **0.01** MN/m^2
$I_a(50)$ Strength Anisotropy Index = **5.53** (calculated from highest and lowest diametral and axial $I_s(50)$ ratio)
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS105	27	11.60	D	51	100	0.232	100	0.02	1.37	0.03 (✓)	9.8	SANDSTONE	**B**
GS-PTS105	27	11.60	A	100	71	0.536	95	0.06	1.34	0.08 (✓)	9.8	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.08** MN/m^2
$I_s(50)$ Mean Diametral tests = **0.03** MN/m^2
$I_a(50)$ Strength Anisotropy Index = **2.5** (calculated from highest and lowest diametral and axial $I_s(50)$ ratio)
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

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Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS105	28	12.17	D	70	102	0.834	102	0.08	1.38	0.11 (✓)	13	SANDSTONE	**B**
GS-PTS105	28	12.17	A	102	66	1.684	93	0.20	1.32	0.26 (✓)	13	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.26** MN/m^2
$I_s(50)$ Mean Diametral tests = **0.11** MN/m^2
$I_a(50)$ Strength Anisotropy Index = **2.35** (calculated from highest and lowest diametral and axial $I_s(50)$ ratio)
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

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Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS105	29	13.61	D	70	102	1.522	102	0.15	1.38	0.20 (✓)	13	SANDSTONE	**B**
GS-PTS105	29	13.61	A	102	72	1.438	97	0.15	1.35	0.21 (✓)	13	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.21** MN/m^2
$I_s(50)$ Mean Diametral tests = **0.2** MN/m^2
$I_a(50)$ Strength Anisotropy Index = **1.03** (calculated from highest and lowest diametral and axial $I_s(50)$ ratio)
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS105	30	14.25	D	55	102	0.582	102	0.06	1.38	0.08 (✓)	13	SANDSTONE	**B**
GS-PTS105	30	14.25	A	102	84	1.276	104	0.12	1.39	0.16 (✓)	13	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.16** MN/m^2
$I_s(50)$ Mean Diametral tests = **0.08** MN/m^2
$I_a(50)$ Strength Anisotropy Index = **2.11** (calculated from highest and lowest diametral and axial $I_s(50)$ ratio)
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

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DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS107	18	6.15	A	98	104	0.066	114	0.01	1.45	0.01 (✓)	12	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.01** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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Contract: **A66 NTP Scheme S03A**			

DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS107	19	6.63	D	75	100	0.066	100	0.01	1.37	0.01 (✓)	13	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0.01** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS107	20	6.97	A	100	78	0.294	100	0.03	1.36	0.04 (✓)	10	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.04** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS107	21	7.56	D	55	98	0.025	98	0.00	1.35	0.00 (✓)	11	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS107	23	8.62	A	100	92	0.520	108	0.04	1.42	0.06 (✓)	12	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.06** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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DETERMINATION OF POINT LOAD STRENGTH

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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS107	25	10.19	D	51	100	0.264	100	0.03	1.37	0.04 (✓)	13	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0.04** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS107	26	11.20	A	99	87	0.224	105	0.02	1.39	0.03 (✓)	12	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.03** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note:Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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GS-PTS107	27	11.64	D	55	98	0.044	98	0.00	1.35	0.01 (✓)	13	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0.01** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note:Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS107	28	12.10	A	100	88	0.856	106	0.08	1.40	0.11 (✓)	11	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.11** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS107	29	12.96	D	75	101	0.236	101	0.02	1.37	0.03 (✓)	11	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0.03** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS107	30	13.87	A	100	94	1.582	109	0.13	1.42	0.19 (✓)	14	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.19** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS107	31	14.14	D	52	100	0.268	100	0.03	1.37	0.04 (✓)	12	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0.04** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note:Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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GS-PTS107	32	15.26	A	100	89	0.698	106	0.06	1.41	0.09 (✓)	11	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.09** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note:Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS107	33	16.66	D	52	100	0.105	100	0.01	1.37	0.01 (✓)	11	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0.01** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS107	34	17.80	A	99	95	0.574	109	0.05	1.42	0.07 (✓)	11	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.07** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note:Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS107	35	18.15	D	90	100	0.098	100	0.01	1.37	0.01 (✓)	14	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0.01** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note:Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
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Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS107	36	18.85	A	100	66	0.422	92	0.05	1.31	0.07 (✓)	9.8	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.07** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note:Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date	Contract Ref:
Francesca Bennett	**FRANCESCA BENNETT**	**31.08.23**	**765633**
Contract: **A66 NTP Scheme S03A**			

DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS108A	21	9.26	A	100	56	0.276	84	0.04	1.27	0.05 (✓)	12	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.05** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note:Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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Contract:	A66 NTP Scheme S03A		

DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS108A	22	10.08	D+L	51	100	0.156	100	0.02	1.37	0.02 (✓)	10	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0.02** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note:Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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Compiled By		Date	Contract Ref:
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Contract: **A66 NTP Scheme S03A**			

DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS108A	23	11.79	A+P	100	86	1.252	105	0.11	1.39	0.16 (✓)	13	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.16** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note:Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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Compiled By		Date	Contract Ref:
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Contract: **A66 NTP Scheme S03A**			

DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS108A	24	13.44	D+L	52	100	0.201	100	0.02	1.37	0.03 (✓)	10	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0.03** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note:Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS108A	25	16.78	A	100	60	0.558	87	0.07	1.29	0.09 (✓)	14	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.09** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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Compiled By		Date	Contract Ref:
Francesca Bennett	**FRANCESCA BENNETT**	**31.08.23**	**765633**
Contract: **A66 NTP Scheme S03A**			

DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS108A	26	17.39	D	51	100	0.336	100	0.03	1.37	0.05 (✓)	11	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0.05** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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Contract: **A66 NTP Scheme S03A**			

DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS109	13	6.13	A+P	100	98	0.674	112	0.05	1.44	0.08 (✓)	12	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.08** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note:Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS109	14	7.23	D+L	50	100	0.126	100	0.01	1.37	0.02 (✓)	12	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0.02** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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Contract: **A66 NTP Scheme S03A**			

DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS109	15	7.76	A+P	100	100	0.660	113	0.05	1.44	0.07 (✓)	12	SANDSTONE	**B**

Results

$I_s(50)$ Mean Axial tests = **0.07** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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Compiled By		Date	Contract Ref:
Francesca Bennett	**FRANCESCA BENNETT**	**31.08.23**	**765633**
Contract: **A66 NTP Scheme S03A**			

DETERMINATION OF POINT LOAD STRENGTH

In accordance with ISRM 1974-2006

Exploratory Position ID	Sample Ref	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Water Content (%)	Rock Type	Lab location
GS-PTS109	16	8.81	D+L	52	100	0.104	100	0.01	1.37	0.01 (✓)	13	SANDSTONE	**B**

Results

$I_s(50)$ Mean Diametral tests = **0.01** MN/m^2
Unable to calculate $I_a(50)$ Strength Anisotropy Index from this dataset.
Note: Size Correction Factor (F) calculated using $F = (D_e/50)^{0.45}$ (where D_e is equivalent core diameter).

Key

Type of Test column:, A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel, P = Perpendicular, [NS] denotes Non-standard Test.
Point Load Index column: (✓) = included in mean calculations, (χ) = excluded from mean calculations
Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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Contract: **A66 NTP Scheme S03A**			

SUMMARY OF THERMAL RESISTIVITY TESTS

In accordance with ASTM D5334

Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Initial Water Content %	Initial Bulk Density Mg/m^3	Initial Dry Density Mg/m^3	Thermal Conductivity W/m K	Thermal Resistivity K.cm/W	Soil Temperature °C	Description of Sample	Lab location
WS-PTS130	12	B	4.00	9.5	2.24	2.05	3.106	32.20	22.10	Reddish brown clayey SAND	**B**
WS-PTS130	12	B	4.00	9.5	2.24	2.05	3.141	31.80	22.00	Reddish brown clayey SAND	**B**
WS-PTS130	12	B	4.00	9.5	2.24	2.05	3.135	31.90	22.00	Reddish brown clayey SAND	**B**

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/05709
Issue Number: 1 **Date:** 20 June, 2023

Client: Structural Soils Limited (Bristol Lab)
Unit 1a
Princess Street
Bedminster
Bristol
UK
BS3 4AG

Project Manager: Bristolchem
Project Name: A66 S03
Project Ref: 765633
Order No: N/A
Date Samples Received: 09/06/23
Date Instructions Received: 09/06/23
Date Analysis Completed: 20/06/23

Approved by:

Gemma Berrisford
Client Manager

Envirolab Job Number: 23/05709

Client Project Name: A66 S03

Client Project Ref: 765633

Lab Sample ID	23/05709/1	23/05709/2	23/05709/3	23/05709/4	23/05709/5	23/05709/6	23/05709/7	Units	Limit of Detection	Method ref
Client Sample No	19	11	14	5	4	3	5			
Client Sample ID	BH-PTS116	BH-PTS120A	BH-PTS124	BH-PTS127	TP-PTS215	BH-PTS119	WS-PTS113			
Depth to Top	3.00	4.00	2.80	1.00	0.50	0.20	1.00			
Depth To Bottom	3.50	4.50	3.00	1.20	0.80	0.60	1.20			
Date Sampled	14-Mar-23	22-Mar-23	08-Mar-23	23-Mar-23	03-Apr-23	17-Mar-23	05-Apr-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	1A	1A	5A	1A	1A	1A	1A			
% Stones >10mm$_{A}$	23.1	8.5	<0.1	4.5	13.4	<0.1	20.8	% w/w	0.1	A-T-044
Redox Potential (water soluble)$_{D}$	181	201	199	233	260	282	268	mV		Redox

Envirolab Job Number: 23/05709

Client Project Name: A66 S03

Client Project Ref: 765633

Lab Sample ID	23/05709/8	23/05709/9	23/05709/10	23/05709/11	23/05709/12	23/05709/13		Units	Limit of Detection	Method ref
Client Sample No	202	9	16	7	4	3				
Client Sample ID	WS-PTS117	BH-PTS123	BH-PTS123	GS-PTS107	HPD-006	WS-PTS119				
Depth to Top	0.50	1.80	3.80	1.00	0.50	0.60				
Depth To Bottom										
Date Sampled	04-Apr-23	27-Mar-23	27-Mar-23	20-Mar-23	26-Apr-23	28-Apr-23				
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL				
Sample Matrix Code	1A	4A	5A	1A	1A	1A				
% Stones >10mm$_{A}$	3.0	12.5	<0.1	<0.1	12.7	12.8		% w/w	0.1	A-T-044
pH BRE$_{D}^{M\#}$	-	7.87	8.66	7.61	6.73	6.83		pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1) ICP$_{D}$	-	<10	<10	<10	<10	<10		mg/l	10	A-T-SOLMETS
Sulphate BRE (acid sol)$_{D}^{M\#}$	-	<0.02	<0.02	<0.02	<0.02	<0.02		% w/w	0.02	A-T-028s
Sulphur BRE (total)$_{D}$	-	<0.01	<0.01	<0.01	<0.01	<0.01		% w/w	0.01	A-T-024s
Redox Potential (water soluble)$_{D}$	266	-	-	-	-	-		mV		Redox

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Bristol Lab), Unit 1a, Princess Street, Bedminster, Bristol, UK, BS3 4AG

Project: A66 S03

Clients Project No: 765633

Project No: 23/05709

Date Received: 09/06/2023 (pm)

Cool Box Temperatures (°C): 14.2

Lab Sample ID	23/05709/9	23/05709/10	23/05709/11	23/05709/12	23/05709/13
Client Sample No	9	16	7	4	3
Client Sample ID/Depth	BH-PTS123 1.80m	BH-PTS123 3.80m	GS-PTS107 1.00m	HPD-006 0.50m	WS-PTS119 0.60m
Date Sampled	27/03/23	27/03/23	20/03/23	26/04/23	28/04/23
Deviation Code					
F	✓	✓	✓	✓	✓

Key

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/05709/9	23/05709/10	23/05709/11	23/05709/12	23/05709/13
Client Sample No	9	16	7	4	3
Client Sample ID/Depth	BH-PTS123 1.80m	BH-PTS123 3.80m	GS-PTS107 1.00m	HPD-006 0.50m	WS-PTS119 0.60m
Date Sampled	27/03/23	27/03/23	20/03/23	26/04/23	28/04/23
Sulphate BRE (water sol 2:1) ICP	✓	✓	✓	✓	✓
Sulphate BRE (acid sol)	✓	✓	✓	✓	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/05709/1	23/05709/2	23/05709/3	23/05709/4	23/05709/5	23/05709/6	23/05709/7	23/05709/8	23/05709/9	23/05709/10	23/05709/11	23/05709/12
Client Sample No	19	11	14	5	4	3	5	202	9	16	7	4
Client Sample ID/Depth	BH-PTS116 3.00-3.50m	BH-PTS120A 4.00-4.50m	BH-PTS124 2.80-3.00m	BH-PTS127 1.00-1.20m	TP-PTS215 0.50-0.80m	BH-PTS119 0.20-0.60m	WS-PTS113 1.00-1.20m	WS-PTS117 0.50m	BH-PTS123 1.80m	BH-PTS123 3.80m	GS-PTS107 1.00m	HPD-006 0.50m
Date Sampled	14/03/23	22/03/23	08/03/23	23/03/23	03/04/23	17/03/23	05/04/23	04/04/23	27/03/23	27/03/23	20/03/23	26/04/23
A-T-024s									15/06/2023	15/06/2023	15/06/2023	15/06/2023
A-T-028s									20/06/2023	20/06/2023	20/06/2023	20/06/2023
A-T-031s									15/06/2023	15/06/2023	15/06/2023	15/06/2023
A-T-044	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023
A-T-SOLMETS									16/06/2023	16/06/2023	16/06/2023	16/06/2023
Redox	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023				

Lab Sample ID	23/05709/13
Client Sample No	3
Client Sample ID/Depth	WS-PTS119 0.60m
Date Sampled	28/04/23
A-T-024s	15/06/2023
A-T-028s	20/06/2023
A-T-031s	15/06/2023
A-T-044	20/06/2023
A-T-SOLMETS	16/06/2023
Redox	

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/05905
Issue Number: 1 **Date:** 27 June, 2023

Client: Structural Soils Limited (Bristol Lab)
Unit 1a
Princess Street
Bedminster
Bristol
UK
BS3 4AG

Project Manager: Bristolchem/Elizabeth Hort/Valeria Chacinmijova
Project Name: A66 S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 15/06/23
Date Instructions Received: 15/06/23
Date Analysis Completed: 27/06/23

Approved by:

Gemma Berrisford
Client Manager

1247

Envirolab Job Number: 23/05905

Client Project Name: A66 S03A

Client Project Ref: 765633

Lab Sample ID	23/05905/1	23/05905/2	23/05905/3	23/05905/4	23/05905/5	23/05905/6	23/05905/7	Units	Limit of Detection	Method ref
Client Sample No	6	3	7	13	17	9	7			
Client Sample ID	WS-PTS105	WS-PTS101	WS-PTS101	BH-PTS114	BH-PTS114	BH-PTS106	TP-PTS230			
Depth to Top	1.00	0.55	1.20	2.80	3.80	2.00	1.50			
Depth To Bottom		0.80	1.70				1.80			
Date Sampled	04-May-23	12-May-23	17-May-23	04-Apr-23	04-Apr-23	04-May-23	28-Mar-23			
Sample Type	SOIL - D	SOIL - D	SOIL - D	SOIL - D	SOIL - D	SOIL - D	SOIL - B			
Sample Matrix Code	1A	4A	5A	1A	1A	5A	1A			
% Stones >10mm$_{A}$	27.3	29.1	2.7	0.1	25.7	<0.1	<0.1	% w/w	0.1	A-T-044
pH BRE$_{D}^{M\#}$	6.27	8.07	7.67	8.22	8.78	7.22	6.83	pH	0.01	A-T-031s
Chloride BRE, SO4 equiv. (water sol 2:1)$_{D}^{M\#}$	-	-	-	-	-	-	<7	mg/l	7	A-T-026s
Sulphate BRE (water sol 2:1) ICP$_{D}$	16	13	<10	<10	<10	<10	<10	mg/l	10	A-T-SOLMETS
Sulphate BRE (acid sol)$_{D}^{M\#}$	0.05	0.03	<0.02	<0.02	-	<0.02	<0.02	% w/w	0.02	A-T-028s
Sulphur BRE (total)$_{D}$	<0.01	0.04	<0.01	<0.01	-	<0.01	<0.01	% w/w	0.01	A-T-024s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Bristol Lab), Unit 1a, Princess Street, Bedminster, Bristol, UK, BS3 4AG

Project: A66 S03A

Clients Project No: 765633

Project No: 23/05905

Date Received: 15/06/2023 (am)

Cool Box Temperatures (°C): 22.0

Lab Sample ID	23/05905/1	23/05905/2	23/05905/3	23/05905/4	23/05905/5	23/05905/6	23/05905/7
Client Sample No	6	3	7	13	17	9	7
Client Sample ID/Depth	WS-PTS105 1.00m	WS-PTS101 0.55-0.80m	WS-PTS101 1.20-1.70m	BH-PTS114 2.80m	BH-PTS114 3.80m	BH-PTS106 2.00m	TP-PTS230 1.50-1.80m
Date Sampled	04/05/23	12/05/23	17/05/23	04/04/23	04/04/23	04/05/23	28/03/23
Deviation Code							
F	✓	✓	✓	✓	✓	✓	✓

Key

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/05905/1	23/05905/2	23/05905/3	23/05905/4	23/05905/5	23/05905/6	23/05905/7
Client Sample No	6	3	7	13	17	9	7
Client Sample ID/Depth	WS-PTS105 1.00m	WS-PTS101 0.55-0.80m	WS-PTS101 1.20-1.70m	BH-PTS114 2.80m	BH-PTS114 3.80m	BH-PTS106 2.00m	TP-PTS230 1.50-1.80m
Date Sampled	04/05/23	12/05/23	17/05/23	04/04/23	04/04/23	04/05/23	28/03/23
Sulphate BRE (acid sol)	✓	✓	✓	✓		✓	✓
Sulphate BRE (water sol 2:1) ICP	✓	✓	✓	✓	✓	✓	✓
Chloride BRE, SO4 equiv. (water sol 2:1)							✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/05905/1	23/05905/2	23/05905/3	23/05905/4	23/05905/5	23/05905/6	23/05905/7
Client Sample No	6	3	7	13	17	9	7
Client Sample ID/Depth	WS-PTS105 1.00m	WS-PTS101 0.55-0.80m	WS-PTS101 1.20-1.70m	BH-PTS114 2.80m	BH-PTS114 3.80m	BH-PTS106 2.00m	TP-PTS230 1.50-1.80m
Date Sampled	04/05/23	12/05/23	17/05/23	04/04/23	04/04/23	04/05/23	28/03/23
A-T-024s	26/06/2023	26/06/2023	26/06/2023	26/06/2023		26/06/2023	26/06/2023
A-T-026s							27/06/2023
A-T-028s	27/06/2023	27/06/2023	27/06/2023	27/06/2023		27/06/2023	27/06/2023
A-T-031s	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023
A-T-044	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023
A-T-SOLMETS	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/06405
Issue Number: 1 **Date:** 07 July, 2023

Client: Structural Soils Limited (Bristol Lab)
Unit 1a
Princess Street
Bedminster
Bristol
UK
BS3 4AG

Project Manager: Bristolchem/Elizabeth Hort/Valeria Chacinmijova
Project Name: A66 S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 27/06/23
Date Instructions Received: 28/06/23
Date Analysis Completed: 07/07/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/06405

Client Project Name: A66 S03A

Client Project Ref: 765633

Lab Sample ID	23/06405/1	23/06405/2	23/06405/3	23/06405/4	23/06405/5	23/06405/6	23/06405/7	Units	Limit of Detection	Method ref
Client Sample No	3	13	5	401	3	5	8			
Client Sample ID	BH-PTS100	BH-PTS124	TP-PTS210	TP-PTS210	TP-PTS210	TP-PTS212	TP-PTS217			
Depth to Top	0.40	2.80	0.50	0.50	0.50	0.50	1.50			
Depth To Bottom	0.40	2.80	0.50		0.80	0.50	1.50			
Date Sampled	02-Mar-23	08-Mar-23	29-Mar-23	29-Mar-23	29-Mar-23	30-Mar-23	03-Apr-23			
Sample Type	SOIL - D	SOIL - D	SOIL - D	SOIL - B	SOIL - B	SOIL - D	SOIL - D			
Sample Matrix Code	4AB	1A	1A	1A	1A	4AE	1A			
% Stones >10mm$_{A}$	38.3	8.6	1.2	22.5	11.3	19.6	19.5	% w/w	0.1	A-T-044
pH BRE$_{D}^{M\#}$	6.67	8.06	6.14	-	-	7.23	8.11	pH	0.01	A-T-031s
Chloride BRE, SO4 equiv. (water sol 2:1)$_{D}^{M\#}$	-	-	-	<7	-	<7	-	mg/l	7	A-T-026s
Sulphate BRE (water sol 2:1) ICP$_{D}$	<10	<10	<10	-	-	<10	<10	mg/l	10	A-T-SOLMETS
Sulphate BRE (acid sol)$_{D}^{M\#}$	0.04	<0.02	0.05	-	-	<0.02	<0.02	% w/w	0.02	A-T-028s
Sulphur BRE (total)$_{D}$	0.01	<0.01	0.02	-	-	<0.01	<0.01	% w/w	0.01	A-T-024s
Redox Potential (water soluble)$_{D}$	-	-	-	-	266	-	-	mV		Redox

Envirolab Job Number: 23/06405

Client Project Name: A66 S03A

Client Project Ref: 765633

Lab Sample ID	23/06405/8	23/06405/9	23/06405/10					Units	Limit of Detection	Method ref
Client Sample No	12	9	4							
Client Sample ID	TP-PTS217	TP-PTS217	BH-PTS118							
Depth to Top	3.50	2.50	0.90							
Depth To Bottom	3.50	2.80	1.10							
Date Sampled	03-Apr-23	03-Apr-23	03-Apr-23							
Sample Type	SOIL - D	SOIL - B	SOIL - B							
Sample Matrix Code	1A	1A	1A							
% Stones >10mm$_{A}$	35.7	34.6	27.0					% w/w	0.1	A-T-044
pH BRE$_{D}^{M\#}$	8.12	-	-					pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1) ICP$_{D}$	<10	-	-					mg/l	10	A-T-SOLMETS
Sulphate BRE (acid sol)$_{D}^{M\#}$	<0.02	-	-					% w/w	0.02	A-T-028s
Sulphur BRE (total)$_{D}$	<0.01	-	-					% w/w	0.01	A-T-024s
Redox Potential (water soluble)$_{D}$	-	226	246					mV		Redox

Report Notes

General
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The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Bristol Lab), Unit 1a, Princess Street, Bedminster, Bristol, UK, BS3 4AG

Project: A66 S03A

Clients Project No: 765633

Project No: 23/06405

Date Received: 28/06/2023 (am)

Cool Box Temperatures (°C): 19.9

Lab Sample ID	23/06405/1	23/06405/2	23/06405/3	23/06405/4	23/06405/6	23/06405/7	23/06405/8
Client Sample No	3	13	5	401	5	8	12
Client Sample ID/Depth	BH-PTS100 0.40-0.40m	BH-PTS124 2.80-2.80m	TP-PTS210 0.50-0.50m	TP-PTS210 0.50m	TP-PTS212 0.50-0.50m	TP-PTS217 1.50-1.50m	TP-PTS217 3.50-3.50m
Date Sampled	02/03/23	08/03/23	29/03/23	29/03/23	30/03/23	03/04/23	03/04/23
Deviation Code							
F	✓	✓	✓	✓	✓	✓	✓

Key

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/06405/1	23/06405/2	23/06405/3	23/06405/4	23/06405/6	23/06405/7	23/06405/8
Client Sample No	3	13	5	401	5	8	12
Client Sample ID/Depth	BH-PTS100 0.40-0.40m	BH-PTS124 2.80-2.80m	TP-PTS210 0.50-0.50m	TP-PTS210 0.50m	TP-PTS212 0.50-0.50m	TP-PTS217 1.50-1.50m	TP-PTS217 3.50-3.50m
Date Sampled	02/03/23	08/03/23	29/03/23	29/03/23	30/03/23	03/04/23	03/04/23
Sulphate BRE (acid sol)	✓	✓	✓		✓	✓	✓
Sulphate BRE (water sol 2:1) ICP	✓	✓	✓		✓	✓	✓
Chloride BRE, SO4 equiv. (water sol 2:1)				✓	✓		

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/06405/1	23/06405/2	23/06405/3	23/06405/4	23/06405/5	23/06405/6	23/06405/7	23/06405/8	23/06405/9	23/06405/10
Client Sample No	3	13	5	401	3	5	8	12	9	4
Client Sample ID/Depth	BH-PTS100 0.40-0.40m	BH-PTS124 2.80-2.80m	TP-PTS210 0.50-0.50m	TP-PTS210 0.50m	TP-PTS210 0.50-0.80m	TP-PTS212 0.50-0.50m	TP-PTS217 1.50-1.50m	TP-PTS217 3.50-3.50m	TP-PTS217 2.50-2.80m	BH-PTS118 0.90-1.10m
Date Sampled	02/03/23	08/03/23	29/03/23	29/03/23	29/03/23	30/03/23	03/04/23	03/04/23	03/04/23	03/04/23
A-T-024s	06/07/2023	06/07/2023	06/07/2023			06/07/2023	06/07/2023	06/07/2023		
A-T-026s				07/07/2023		07/07/2023				
A-T-028s	06/07/2023	06/07/2023	06/07/2023			06/07/2023	06/07/2023	06/07/2023		
A-T-031s	07/07/2023	07/07/2023	07/07/2023			07/07/2023	07/07/2023	07/07/2023		
A-T-044	06/07/2023	06/07/2023	06/07/2023	06/07/2023	06/07/2023	06/07/2023	06/07/2023	06/07/2023	06/07/2023	06/07/2023
A-T-SOLMETS	06/07/2023	06/07/2023	06/07/2023			06/07/2023	06/07/2023	06/07/2023		
Redox					07/07/2023				07/07/2023	07/07/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/06554
Issue Number: 1 **Date:** 12 July, 2023

Client: Structural Soils Limited (Bristol Lab)
Unit 1a
Princess Street
Bedminster
Bristol
UK
BS3 4AG

Project Manager: Bristolchem/Valeria Chacinmijova
Project Name: A66 S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 03/07/23
Date Instructions Received: 03/07/23
Date Analysis Completed: 11/07/23

Approved by:

Gemma Berrisford
Client Manager

envirolab

Envirolab Job Number: 23/06554

Client Project Name: A66 S03A

Client Project Ref: 765633

Lab Sample ID	23/06554/1	23/06554/2	23/06554/3	23/06554/4	23/06554/5	23/06554/6	23/06554/7	Units	Limit of Detection	Method ref
Client Sample No	2	7	5	202	202	3	7			
Client Sample ID	BH-PTS121A	BH-PTS124	TP-PTS209	WS-PTS117	WS-PTS110	WS-PTS110	TP-PTS206			
Depth to Top	2.00	1.20	0.50	0.50	0.50	1.20	1.50			
Depth To Bottom	2.50	1.65	0.50			1.30	1.50			
Date Sampled	23-Mar-23	08-Mar-23	29-Mar-23	04-Apr-23	12-May-23	25-May-23	19-May-23			
Sample Type	SOIL - B	SOIL - D	SOIL - D	SOIL - D	SOIL - D	SOIL - D	SOIL - D			
Sample Matrix Code	4AB	1A	1A	1A	4A	4A	1A			
% Stones >10mm$_{A}$	23.4	5.0	5.7	4.3	7.6	4.5	8.8	% w/w	0.1	A-T-044
pH BRE$_{D}^{M\#}$	-	7.65	6.41	-	8.15	8.13	7.82	pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1) ICP$_{D}$	-	<10	14	-	<10	21	<10	mg/l	10	A-T-SOLMETS
Sulphate BRE (acid sol)$_{D}^{M\#}$	-	<0.02	0.03	-	<0.02	<0.02	<0.02	% w/w	0.02	A-T-028s
Sulphur BRE (total)$_{D}$	-	<0.01	<0.01	-	<0.01	<0.01	<0.01	% w/w	0.01	A-T-024s
Redox Potential (water soluble)$_{D}$	211	-	-	207	-	-	-	mV		Redox

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Envirolab Job Number: 23/06554

Client Project Name: A66 S03A

Client Project Ref: 765633

Lab Sample ID	23/06554/8	23/06554/9	23/06554/10	23/06554/11	23/06554/12	23/06554/13	23/06554/14	Units	Limit of Detection	Method ref
Client Sample No	5	11	1	6	14	7	13			
Client Sample ID	GS-PTS105	GS-PTS105	GS-PTS102	GS-PTS102	GS-PTS102	GS-PTS102	GS-PTS102			
Depth to Top	1.00	3.80	0.50	1.60	4.60	2.00	4.00			
Depth To Bottom		3.90		1.70	4.70	2.60	4.60			
Date Sampled	04-May-23	25-May-23	24-Apr-23	11-May-23	11-May-23	11-May-23	11-May-23			
Sample Type	SOIL - D	SOIL - D	SOIL - D	SOIL - D	SOIL - D	SOIL - B	SOIL - B			
Sample Matrix Code	4A	5A	1A	5A	6A	5A	6A			
% Stones >10mm$_{A}$	23.2	12.2	4.4	10.4	7.8	12.8	13.1	% w/w	0.1	A-T-044
pH BRE$_{D}^{M\#}$	8.40	8.93	7.35	7.63	8.75	-	-	pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1) ICP$_{D}$	<10	<10	<10	<10	<10	-	-	mg/l	10	A-T-SOLMETS
Sulphate BRE (acid sol)$_{D}^{M\#}$	<0.02	<0.02	<0.02	<0.02	<0.02	-	-	% w/w	0.02	A-T-028s
Sulphur BRE (total)$_{D}$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	% w/w	0.01	A-T-024s
Redox Potential (water soluble)$_{D}$	-	-	-	-	-	215	221	mV		Redox

Envirolab Job Number: 23/06554

Client Project Name: A66 S03A

Client Project Ref: 765633

Lab Sample ID	23/06554/15	23/06554/16	23/06554/17	23/06554/18	23/06554/19			Units	Limit of Detection	Method ref
Client Sample No	5	4	9	5	3					
Client Sample ID	BH-PTS126	BH-PTS113	BH-PTS111	BH-PTS107B	BH-PTS107					
Depth to Top	0.80	0.50	1.80	1.00	0.60					
Depth To Bottom										
Date Sampled	20-Apr-23	03-May-23	23-May-23	26-May-23	25-May-23					
Sample Type	SOIL - D	SOIL - D	SOIL - D	SOIL - D	SOIL - D					
Sample Matrix Code	1A	1A	1A	5A	4AB					
% Stones >10mm$_{A}$	17.1	14.3	9.9	3.8	6.4			% w/w	0.1	A-T-044
pH BRE$_{D}^{M\#}$	8.18	8.26	8.33	8.18	8.35			pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1) ICP$_{D}$	<10	<10	<10	<10	<10			mg/l	10	A-T-SOLMETS
Sulphate BRE (acid sol)$_{D}^{M\#}$	<0.02	<0.02	<0.02	<0.02	<0.02			% w/w	0.02	A-T-028s
Sulphur BRE (total)$_{D}$	<0.01	<0.01	<0.01	<0.01	<0.01			% w/w	0.01	A-T-024s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Bristol Lab), Unit 1a, Princess Street, Bedminster, Bristol, UK, BS3 4AG

Project: A66 S03A

Clients Project No: 765633

Project No: 23/06554

Date Received: 03/07/2023 (am)

Cool Box Temperatures (°C): 15.5, 15.7

Lab Sample ID	23/06554/1	23/06554/2	23/06554/3	23/06554/4	23/06554/5	23/06554/6	23/06554/7	23/06554/8	23/06554/9	23/06554/10	23/06554/11	23/06554/12
Client Sample No	2	7	5	202	202	3	7	5	11	1	6	14
Client Sample ID/Depth	BH-PTS121A 2.00-2.50m	BH-PTS124 1.20-1.65m	TP-PTS209 0.50-0.50m	WS-PTS117 0.50m	WS-PTS110 0.50m	WS-PTS110 1.20-1.30m	TP-PTS206 1.50-1.50m	GS-PTS105 1.00m	GS-PTS105 3.80-3.90m	GS-PTS102 0.50m	GS-PTS102 1.60-1.70m	GS-PTS102 4.60-4.70m
Date Sampled	23/03/23	08/03/23	29/03/23	04/04/23	12/05/23	25/05/23	19/05/23	04/05/23	25/05/23	24/04/23	11/05/23	11/05/23
Deviation Code												
E (no date)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
F		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓

Lab Sample ID	23/06554/15	23/06554/16	23/06554/17	23/06554/18	23/06554/19
Client Sample No	5	4	9	5	3
Client Sample ID/Depth	BH-PTS126 0.80m	BH-PTS113 0.50m	BH-PTS111 1.80m	BH-PTS107B 1.00m	BH-PTS107 0.60m
Date Sampled	20/04/23	03/05/23	23/05/23	26/05/23	25/05/23
Deviation Code					
E (no date)	✓	✓	✓	✓	
F	✓	✓	✓	✓	✓

Key

E (no date) *No sampling date provided (all results affected if not provided)*

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/06554/2	23/06554/3	23/06554/5	23/06554/6	23/06554/7	23/06554/8	23/06554/9	23/06554/10	23/06554/11	23/06554/12	23/06554/15	23/06554/16
Client Sample No	7	5	202	3	7	5	11	1	6	14	5	4
Client Sample ID/Depth	BH-PTS124 1.20-1.65m	TP-PTS209 0.50-0.50m	WS-PTS110 0.50m	WS-PTS110 1.20-1.30m	TP-PTS206 1.50-1.50m	GS-PTS105 1.00m	GS-PTS105 3.80-3.90m	GS-PTS102 0.50m	GS-PTS102 1.60-1.70m	GS-PTS102 4.60-4.70m	BH-PTS126 0.80m	BH-PTS113 0.50m
Date Sampled	08/03/23	29/03/23	12/05/23	25/05/23	19/05/23	04/05/23	25/05/23	24/04/23	11/05/23	11/05/23	20/04/23	03/05/23
Sulphate BRE (acid sol)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Lab Sample ID	23/06554/2	23/06554/3	23/06554/5	23/06554/6	23/06554/7	23/06554/8	23/06554/9	23/06554/10	23/06554/11	23/06554/12	23/06554/15	23/06554/16
Client Sample No	7	5	202	3	7	5	11	1	6	14	5	4
Client Sample ID/Depth	BH-PTS124 1.20-1.65m	TP-PTS209 0.50-0.50m	WS-PTS110 0.50m	WS-PTS110 1.20-1.30m	TP-PTS206 1.50-1.50m	GS-PTS105 1.00m	GS-PTS105 3.80-3.90m	GS-PTS102 0.50m	GS-PTS102 1.60-1.70m	GS-PTS102 4.60-4.70m	BH-PTS126 0.80m	BH-PTS113 0.50m
Date Sampled	08/03/23	29/03/23	12/05/23	25/05/23	19/05/23	04/05/23	25/05/23	24/04/23	11/05/23	11/05/23	20/04/23	03/05/23
Sulphate BRE (water sol 2:1) ICP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Lab Sample ID	23/06554/17	23/06554/18	23/06554/19
Client Sample No	9	5	3
Client Sample ID/Depth	BH-PTS111 1.80m	BH-PTS107B 1.00m	BH-PTS107 0.60m
Date Sampled	23/05/23	26/05/23	25/05/23
Sulphate BRE (acid sol)	✓	✓	✓
Sulphate BRE (water sol 2:1) ICP	✓	✓	✓

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/06554/1	23/06554/2	23/06554/3	23/06554/4	23/06554/5	23/06554/6	23/06554/7	23/06554/8	23/06554/9	23/06554/10	23/06554/11	23/06554/12
Client Sample No	2	7	5	202	202	3	7	5	11	1	6	14
Client Sample ID/Depth	BH-PTS121A 2.00-2.50m	BH-PTS124 1.20-1.65m	TP-PTS209 0.50-0.50m	WS-PTS117 0.50m	WS-PTS110 0.50m	WS-PTS110 1.20-1.30m	TP-PTS206 1.50-1.50m	GS-PTS105 1.00m	GS-PTS105 3.80-3.90m	GS-PTS102 0.50m	GS-PTS102 1.60-1.70m	GS-PTS102 4.60-4.70m
Date Sampled	23/03/23	08/03/23	29/03/23	04/04/23	12/05/23	25/05/23	19/05/23	04/05/23	25/05/23	24/04/23	11/05/23	11/05/23
A-T-024s		11/07/2023	11/07/2023		11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023
A-T-028s		11/07/2023	11/07/2023		11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023
A-T-031s		11/07/2023	11/07/2023		11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023
A-T-044	10/07/2023	10/07/2023	10/07/2023	10/07/2023	10/07/2023	10/07/2023	10/07/2023	10/07/2023	10/07/2023	10/07/2023	10/07/2023	10/07/2023
A-T-SOLMETS		11/07/2023	11/07/2023		11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023
Redox	11/07/2023			11/07/2023								

Lab Sample ID	23/06554/13	23/06554/14	23/06554/15	23/06554/16	23/06554/17	23/06554/18	23/06554/19
Client Sample No	7	13	5	4	9	5	3
Client Sample ID/Depth	GS-PTS102 2.00-2.60m	GS-PTS102 4.00-4.60m	BH-PTS126 0.80m	BH-PTS113 0.50m	BH-PTS111 1.80m	BH-PTS107B 1.00m	BH-PTS107 0.60m
Date Sampled	11/05/23	11/05/23	20/04/23	03/05/23	23/05/23	26/05/23	25/05/23
A-T-024s			11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023
A-T-028s			11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023
A-T-031s			11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023
A-T-044	10/07/2023	10/07/2023	10/07/2023	10/07/2023	10/07/2023	10/07/2023	10/07/2023
A-T-SOLMETS			11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023
Redox	11/07/2023	11/07/2023					

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/07045
Issue Number: 1 **Date:** 25 July, 2023

Client: Structural Soils Limited (Bristol Lab)
Unit 1a
Princess Street
Bedminster
Bristol
UK
BS3 4AG

Project Manager: Bristolchem/Elizabeth Hort/Valeria Chacinmijova
Project Name: A66 S03A
Project Ref: 765633
Order No: P05103794
Date Samples Received: 14/07/23
Date Instructions Received: 14/07/23
Date Analysis Completed: 25/07/23

Approved by:

Danielle Brierley
Client Services Supervisor

1247

Envirolab Job Number: 23/07045

Client Project Name: A66 S03A

Client Project Ref: 765633

Lab Sample ID	23/07045/1	23/07045/2	23/07045/3	23/07045/4				Units	Limit of Detection	Method ref
Client Sample No	203	5	5	401						
Client Sample ID	BH-PTS115	GS-PTS109	WS-PTS108	TP-PTS206						
Depth to Top	1.00	0.50	1.00	0.50						
Depth To Bottom	1.00									
Date Sampled	30-Mar-23	14-Mar-23	16-May-23	19-May-23						
Sample Type	SOIL - D	SOIL - D	SOIL - D	SOIL - B						
Sample Matrix Code	1A	1A	1A	1A						
% Stones >10mm$_{A}$	21.4	<0.1	9.1	<0.1				% w/w	0.1	A-T-044
pH BRE$_{D}^{M\#}$	7.00	5.99	7.50	-				pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1) ICP$_{D}$	14	<10	<10	-				mg/l	10	A-T-SOLMETS
Sulphate BRE (acid sol)$_{D}^{M\#}$	<0.02	<0.02	<0.02	-				% w/w	0.02	A-T-028s
Sulphur BRE (total)$_{D}$	<0.01	<0.01	<0.01	-				% w/w	0.01	A-T-024s
Redox Potential (water soluble)$_{D}$	-	-	-	254				mV		Redox

Report Notes

General
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The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Bristol Lab), Unit 1a, Princess Street, Bedminster, Bristol, UK, BS3 4AG

Project: A66 S03A

Clients Project No: 765633

Project No: 23/07045

Date Received: 14/07/2023 (am)

Cool Box Temperatures (°C): 19.1

Lab Sample ID	23/07045/1	23/07045/2	23/07045/3
Client Sample No	203	5	5
Client Sample ID/Depth	BH-PTS115 1.00-1.00m	GS-PTS109 0.50m	WS-PTS108 1.00m
Date Sampled	30/03/23	14/03/23	16/05/23
Deviation Code			
F	✓	✓	✓

Key

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/07045/1	23/07045/2	23/07045/3
Client Sample No	203	5	5
Client Sample ID/Depth	BH-PTS115 1.00-1.00m	GS-PTS109 0.50m	WS-PTS108 1.00m
Date Sampled	30/03/23	14/03/23	16/05/23
Sulphate BRE (water sol 2:1) ICP	✓	✓	✓
Sulphate BRE (acid sol)	✓	✓	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/07045/1	23/07045/2	23/07045/3	23/07045/4
Client Sample No	203	5	5	401
Client Sample ID/Depth	BH-PTS115 1.00-1.00m	GS-PTS109 0.50m	WS-PTS108 1.00m	TP-PTS206 0.50m
Date Sampled	30/03/23	14/03/23	16/05/23	19/05/23
A-T-024s	24/07/2023	24/07/2023	24/07/2023	
A-T-028s	21/07/2023	21/07/2023	21/07/2023	
A-T-031s	21/07/2023	21/07/2023	21/07/2023	
A-T-044	18/07/2023	18/07/2023	18/07/2023	18/07/2023
A-T-SOLMETS	25/07/2023	25/07/2023	25/07/2023	
Redox				25/07/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/07342
Issue Number: 1 **Date:** 02 August, 2023

Client: Structural Soils Limited (Bristol Lab)
Unit 1a
Princess Street
Bedminster
Bristol
UK
BS3 4AG

Project Manager: Bristolchem/Elizabeth Hort/Valeria Chacinmijova
Project Name: A66 S03A
Project Ref: 765633
Order No: P05103794
Date Samples Received: 21/07/23
Date Instructions Received: 21/07/23
Date Analysis Completed: 02/08/23

Approved by:

Richard Wong
Client Manager

1247

envirolab

Envirolab Job Number: 23/07342

Client Project Name: A66 S03A

Client Project Ref: 765633

Lab Sample ID	23/07342/1	23/07342/2	23/07342/3	23/07342/4	23/07342/5	23/07342/6	23/07342/7	Units	Limit of Detection	Method ref
Client Sample No	6	10	3	203	12	7	25			
Client Sample ID	BH-PTS116	BH-PTS116	BH-PTS118A	BH-PTS118A	BH-PTS128A	BH-PTS113	BH-PTS114			
Depth to Top	0.70	1.70	0.50	1.00	3.80	1.20	5.80			
Depth To Bottom	0.70	1.70			3.80	1.70				
Date Sampled	14-Mar-23	14-Mar-23	04-Apr-23	04-Apr-23	16-Mar-23	04-May-23	05-Apr-23			
Sample Type	SOIL - D	SOIL - D	SOIL - D	SOIL - D	SOIL - D	SOIL - D	SOIL - D			
Sample Matrix Code	5A	6A	1A	1	5A	4A	4A			
% Stones >10mm$_{A}$	12.6	<0.1	16.5	<0.1	<0.1	14.9	14.7	% w/w	0.1	A-T-044
pH BRE$_{D}^{M\#}$	6.48	7.03	7.19	7.28	7.40	8.48	-	pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1) ICP$_{D}$	<10	<10	<10	<10	<10	<10	-	mg/l	10	A-T-SOLMETS
Sulphate BRE (acid sol)$_{D}^{M\#}$	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	-	% w/w	0.02	A-T-028s
Sulphur BRE (total)$_{D}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	% w/w	0.01	A-T-024s
Redox Potential (water soluble)$_{D}$	-	-	-	-	-	-	233	mV		Redox

Envirolab Job Number: 23/07342

Client Project Name: A66 S03A

Client Project Ref: 765633

Lab Sample ID	23/07342/8							Units	Limit of Detection	Method ref
Client Sample No	3									
Client Sample ID	TP-PTS211									
Depth to Top	0.50									
Depth To Bottom	0.80									
Date Sampled	04-Apr-23									
Sample Type	SOIL - D									
Sample Matrix Code	4A									
% Stones >10mm$_{A}$	22.6							% w/w	0.1	A-T-044
Redox Potential (water soluble)$_{D}$	236							mV		Redox

Report Notes

General
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The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Bristol Lab), Unit 1a, Princess Street, Bedminster, Bristol, UK, BS3 4AG

Project: A66 S03A

Clients Project No: 765633

Project No: 23/07342

Date Received: 21/07/2023 (pm)

Cool Box Temperatures (°C): 18.7

Lab Sample ID	23/07342/1	23/07342/2	23/07342/3	23/07342/4	23/07342/5	23/07342/6
Client Sample No	6	10	3	203	12	7
Client Sample ID/Depth	BH-PTS116 0.70-0.70m	BH-PTS116 1.70-1.70m	BH-PTS118A 0.50m	BH-PTS118A 1.00m	BH-PTS128A 3.80-3.80m	BH-PTS113 1.20-1.70m
Date Sampled	14/03/23	14/03/23	04/04/23	04/04/23	16/03/23	04/05/23
Deviation Code						
F	✓	✓	✓	✓	✓	✓

Key

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/07342/1	23/07342/2	23/07342/3	23/07342/4	23/07342/5	23/07342/6
Client Sample No	6	10	3	203	12	7
Client Sample ID/Depth	BH-PTS116 0.70-0.70m	BH-PTS116 1.70-1.70m	BH-PTS118A 0.50m	BH-PTS118A 1.00m	BH-PTS128A 3.80-3.80m	BH-PTS113 1.20-1.70m
Date Sampled	14/03/23	14/03/23	04/04/23	04/04/23	16/03/23	04/05/23
Sulphate BRE (acid sol)	✓	✓	✓	✓	✓	✓
Sulphate BRE (water sol 2:1) ICP	✓	✓	✓	✓	✓	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/07342/1	23/07342/2	23/07342/3	23/07342/4	23/07342/5	23/07342/6	23/07342/7	23/07342/8
Client Sample No	6	10	3	203	12	7	25	3
Client Sample ID/Depth	BH-PTS116 0.70-0.70m	BH-PTS116 1.70-1.70m	BH-PTS118A 0.50m	BH-PTS118A 1.00m	BH-PTS128A 3.80-3.80m	BH-PTS113 1.20-1.70m	BH-PTS114 5.80m	TP-PTS211 0.50-0.80m
Date Sampled	14/03/23	14/03/23	04/04/23	04/04/23	16/03/23	04/05/23	05/04/23	04/04/23
A-T-024s	01/08/2023	01/08/2023	01/08/2023	02/08/2023	02/08/2023	01/08/2023		
A-T-028s	01/08/2023	01/08/2023	01/08/2023	01/08/2023	01/08/2023	01/08/2023		
A-T-031s	31/07/2023	31/07/2023	31/07/2023	31/07/2023	31/07/2023	31/07/2023		
A-T-044	28/07/2023	28/07/2023	28/07/2023	28/07/2023	28/07/2023	28/07/2023	28/07/2023	28/07/2023
A-T-SOLMETS	31/07/2023	31/07/2023	31/07/2023	31/07/2023	31/07/2023	31/07/2023		
Redox							01/08/2023	01/08/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/07641
Issue Number: 1 **Date:** 14 August, 2023

Client: Structural Soils Limited (Bristol Lab)
Unit 1a
Princess Street
Bedminster
Bristol
UK
BS3 4AG

Project Manager: Bristolchem/Valeria Chacinmijova
Project Name: A66 S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 31/07/23
Date Instructions Received: 31/07/23
Date Analysis Completed: 14/08/23

Approved by:

Gemma Berrisford
Deputy Client Services Supervisor

1247

Envirolab Job Number: 23/07641

Client Project Name: A66 S03A

Client Project Ref: 765633

Lab Sample ID	23/07641/1	23/07641/2	23/07641/3					Units	Limit of Detection	Method ref
Client Sample No	3	8	9							
Client Sample ID	BH-PTS108	BH-PTS108	WS-PTS108							
Depth to Top	1.00	1.80	2.00							
Depth To Bottom			2.10							
Date Sampled	19-Apr-23	19-Apr-23	25-May-23							
Sample Type	SOIL - D	SOLID	SOIL - D							
Sample Matrix Code	1A	7	1A							
% Stones >10mm$_{A}$	<0.1	<0.1	<0.1					% w/w	0.1	A-T-044
pH BRE$_{D}^{M\#}$	7.81	8.17^{U}	8.26					pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1) ICP$_{D}$	<10	<10	<10					mg/l	10	A-T-SOLMETS
Sulphate BRE (acid sol)$_{D}^{M\#}$	<0.02	<0.02^{U}	<0.02					% w/w	0.02	A-T-028s
Sulphur BRE (total)$_{D}$	<0.01	<0.01	<0.01					% w/w	0.01	A-T-024s

Report Notes

General
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The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Bristol Lab), Unit 1a, Princess Street, Bedminster, Bristol, UK, BS3 4AG

Project: A66 S03A

Clients Project No: 765633

Project No: 23/07641

Date Received: 31/07/2023 (am)

Cool Box Temperatures (°C): 16.9

Lab Sample ID	23/07641/1	23/07641/2	23/07641/3
Client Sample No	3	8	9
Client Sample ID/Depth	BH-PTS108 1.00m	BH-PTS108 1.80m	WS-PTS108 2.00-2.10m
Date Sampled	19/04/23	19/04/23	25/05/23
Deviation Code			
F	✓	✓	✓

Key

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/07641/1	23/07641/2	23/07641/3
Client Sample No	3	8	9
Client Sample ID/Depth	BH-PTS108 1.00m	BH-PTS108 1.80m	WS-PTS108 2.00-2.10m
Date Sampled	19/04/23	19/04/23	25/05/23
Sulphate BRE (acid sol)	✓	✓	✓
Sulphate BRE (water sol 2:1) ICP	✓	✓	✓

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/07641/1	23/07641/2	23/07641/3
Client Sample No	3	8	9
Client Sample ID/Depth	BH-PTS108 1.00m	BH-PTS108 1.80m	WS-PTS108 2.00-2.10m
Date Sampled	19/04/23	19/04/23	25/05/23
A-T-024s	09/08/2023	09/08/2023	09/08/2023
A-T-028s	09/08/2023	09/08/2023	09/08/2023
A-T-031s	08/08/2023	08/08/2023	08/08/2023
A-T-044	03/08/2023	03/08/2023	03/08/2023
A-T-SOLMETS	14/08/2023	14/08/2023	14/08/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/08027
Issue Number: 1 **Date:** 16 August, 2023

Client: Structural Soils Limited (Bristol Lab)
Unit 1a
Princess Street
Bedminster
Bristol
UK
BS3 4AG

Project Manager: Bristolchem/Valeria Chacinmijova
Project Name: A66 S03A
Project Ref: 765633
Order No: P05103794
Date Samples Received: 10/08/23
Date Instructions Received: 10/08/23
Date Analysis Completed: 15/08/23

Approved by:

Gemma Berrisford
Deputy Client Services Supervisor

1247

Envirolab Job Number: 23/08027

Client Project Name: A66 S03A

Client Project Ref: 765633

Lab Sample ID	23/08027/1	23/08027/2	23/08027/3					Units	Limit of Detection	Method ref
Client Sample No	202	17	10							
Client Sample ID	BH-PTS129	BH-PTS129	BH-PTS117							
Depth to Top	0.40	3.80	1.80							
Depth To Bottom										
Date Sampled	30-Mar-23	30-Mar-23	06-Apr-23							
Sample Type	SOIL - D	SOIL - D	SOLID							
Sample Matrix Code	1A	5A	7							
% Stones >10mm$_{A}$	7.3	<0.1	<0.1					% w/w	0.1	A-T-044
pH BRE$_{D}^{M\#}$	6.91	8.39	8.70^{U}					pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1) ICP$_{D}$	<10	50	31					mg/l	10	A-T-SOLMETS
Sulphate BRE (acid sol)$_{D}^{M\#}$	0.03	<0.02	<0.02^{U}					% w/w	0.02	A-T-028s
Sulphur BRE (total)$_{D}$	<0.01	<0.01	<0.01					% w/w	0.01	A-T-024s

Report Notes

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Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Bristol Lab), Unit 1a, Princess Street, Bedminster, Bristol, UK, BS3 4AG

Project: A66 S03A

Clients Project No: 765633

Project No: 23/08027

Date Received: 10/08/2023 (am)

Cool Box Temperatures (°C): 20.5

Lab Sample ID	23/08027/1	23/08027/2	23/08027/3
Client Sample No	202	17	10
Client Sample ID/Depth	BH-PTS129 0.40m	BH-PTS129 3.80m	BH-PTS117 1.80m
Date Sampled	30/03/23	30/03/23	06/04/23
Deviation Code			
F	✓	✓	✓

Key

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/08027/1	23/08027/2	23/08027/3
Client Sample No	202	17	10
Client Sample ID/Depth	BH-PTS129 0.40m	BH-PTS129 3.80m	BH-PTS117 1.80m
Date Sampled	30/03/23	30/03/23	06/04/23
Sulphate BRE (acid sol)	✓	✓	✓
Sulphate BRE (water sol 2:1) ICP	✓	✓	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/08027/1	23/08027/2	23/08027/3
Client Sample No	202	17	10
Client Sample ID/Depth	BH-PTS129 0.40m	BH-PTS129 3.80m	BH-PTS117 1.80m
Date Sampled	30/03/23	30/03/23	06/04/23
A-T-024s	15/08/2023	14/08/2023	14/08/2023
A-T-028s	15/08/2023	13/08/2023	13/08/2023
A-T-031s	14/08/2023	14/08/2023	14/08/2023
A-T-044	15/08/2023	15/08/2023	15/08/2023
A-T-SOLMETS	14/08/2023	14/08/2023	14/08/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Certificate of Analysis

Certificate Number 23-08912 *Issued:* 24-Apr-23

Client Structural Soils Limited
1a Princess Street
Bedminster
Bristol
BS3 4AG

Our Reference 23-08912

Client Reference 765633

Order No P05102665

Contract Title A66 Scheme SO3A

Description 13 Soil samples.

Date Received 14-Apr-23

Date Started 14-Apr-23

Date Completed 24-Apr-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 23-08912
Client Ref 765633
Contract Title A66 Scheme SO3A

			Lab No	2156143	2156144	2156145	2156146	2156147	2156148	2156149	2156150	2156151	2156152	2156153
			.Sample ID	BH-PTS100	BH-PTS101	BH-PTS101	TP-PTS220	TP-PTS221	TP-PTS224	TP-PTS225	TP-PTS225	TP-PTS226	TP-PTS226	TP-PTS229
			Depth	1.80	1.00	1.50	1.20	0.20-0.30	0.20	0.20	0.50	0.20	3.20	0.20
			Other ID	13	8	15	4	2	3	1	4	3	11	1
			Sample Type	D	D	D	D	B	D	D	D	D	D	D
			Sampling Date	02/03/2023	02/03/2023	03/03/2023	08/03/2023	15/03/2023	15/03/2023	09/03/2023	09/03/2023	14/03/2023	14/03/2023	13/03/2023
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**											
Inorganics														
pH	DETSC 2008#		pH	7.1	7.3	7.4	7.2	5.7	6.1	6.4	6.9	6.7	6.9	5.9
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	12	16	14	14	12	17	< 10	< 10	11	< 10	< 10
Sulphur as S, Total	DETSC 2320	0.01	%	< 0.01			0.02	0.02	0.02	0.02	0.01	0.02	< 0.01	0.02
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.02			0.01	0.05	0.05	0.05	< 0.01	0.04	< 0.01	0.06

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 23-08912
Client Ref 765633
Contract Title A66 Scheme SO3A

			Lab No	2156154	2156155
			.Sample ID	TP-PTS231	TP-PTS231
			Depth	0.30-2.90	2.20-2.30
			Other ID	4	7
			Sample Type	LB	B
			Sampling Date	14/03/2023	14/03/2023
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Inorganics					
pH	DETSC 2008#		pH	6.9	7.1
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	11	13
Sulphur as S, Total	DETSC 2320	0.01	%	< 0.01	< 0.01
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.04	0.01

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 23-08912
Client Ref 765633
Contract A66 Scheme SO3A

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2156143	BH-PTS100 1.80 SOIL	02/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2156144	BH-PTS101 1.00 SOIL	02/03/23	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2156145	BH-PTS101 1.50 SOIL	03/03/23	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2156146	TP-PTS220 1.20 SOIL	08/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2156147	TP-PTS221 0.20-0.30 SOIL	15/03/23	PT 500ml	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2156148	TP-PTS224 0.20 SOIL	15/03/23	PT 500ml	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2156149	TP-PTS225 0.20 SOIL	09/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2156150	TP-PTS225 0.50 SOIL	09/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2156151	TP-PTS226 0.20 SOIL	14/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2156152	TP-PTS226 3.20 SOIL	14/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2156153	TP-PTS229 0.20 SOIL	13/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2156154	TP-PTS231 0.30-2.90 SOIL	14/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2156155	TP-PTS231 2.20-2.30 SOIL	14/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Information in Support of the Analytical Results

Our Ref 23-08912
Client Ref 765633
Contract A66 Scheme SO3A

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

Certificate of Analysis

Certificate Number 23-10847 *Issued:* 16-May-23

Client Structural Soils Limited
1a Princess Street
Bedminster
Bristol
BS3 4AG

Our Reference 23-10847

Client Reference 765633

Order No P05132665

Contract Title A66 Scheme SO3A

Description 11 Soil samples.

Date Received 09-May-23

Date Started 09-May-23

Date Completed 16-May-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 23-10847
Client Ref 765633
Contract Title A66 Scheme SO3A

			Lab No	2167660	2167661	2167662	2167663	2167664	2167665	2167666	2167667	2167668	2167669	2167670
			.Sample ID	BH-PTS120	BH-PTS121	BH-PTS121	BH-PTS236	BH-PTS236	TP-PT228	WS-PTS129	WS-PTS129	WS-PTS129	WS-PTS130	WS-PTS130
			Depth	1.20-1.65	0.80	1.80	0.30	0.50	0.20	1.00	2.00-2.45	2.60-2.80	1.00	2.90-3.00
			Other ID	6	5	11	3	6	3	5	2	9	5	9
			Sample Type	SPT	D	D	D	D	D	D	SPT	D	B	D
			Sampling Date	21/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	16/03/2023	21/03/2023	21/03/2023	21/03/2023	23/03/2023	23/03/2023
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**											
Inorganics														
Loss on Ignition at 440oC	DETSC 2003#	0.01	%									1.3	1.3	
pH	DETSC 2008#		pH	8.5	8.7	8.2	8.3	8.0	6.9	8.2	7.9			8.1
Organic matter	DETSC 2002#	0.1	%									0.2	0.3	
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	28	65	11	20	11	15	10	< 10			< 10
Sulphur as S, Total	DETSC 2320	0.01	%	< 0.01	0.02	0.01	0.02	0.01	0.04	< 0.01	< 0.01			< 0.01
Sulphate as SO4, Total	DETSC 2321#	0.01	%	< 0.01	0.02	0.01	0.05	< 0.01	0.03	0.02	0.02			0.01

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 23-10847
Client Ref 765633
Contract A66 Scheme SO3A

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2167660	BH-PTS120 1.20-1.65 SOIL	21/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2167661	BH-PTS121 0.80 SOIL	22/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2167662	BH-PTS121 1.80 SOIL	22/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2167663	BH-PTS236 0.30 SOIL	22/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2167664	BH-PTS236 0.50 SOIL	22/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2167665	TP-PT228 0.20 SOIL	16/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2167666	WS-PTS129 1.00 SOIL	21/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2167667	WS-PTS129 2.00-2.45 SOIL	21/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2167668	WS-PTS129 2.60-2.80 SOIL	21/03/23	PT 500ml	Organic Matter (Manual) (28 days)	
2167669	WS-PTS130 1.00 SOIL	23/03/23	PT 500ml	Organic Matter (Manual) (28 days)	
2167670	WS-PTS130 2.90-3.00 SOIL	23/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Information in Support of the Analytical Results

Our Ref 23-10847
Client Ref 765633
Contract A66 Scheme SO3A

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

Certificate of Analysis

Certificate Number 23-11169 *Issued:* 22-May-23

Client Structural Soils Limited
1a Princess Street
Bedminster
Bristol
BS3 4AG

Our Reference 23-11169

Client Reference 765633

Order No P05102665

Contract Title A66 Scheme SO3A

Description 19 Soil samples.

Date Received 12-May-23

Date Started 12-May-23

Date Completed 22-May-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 23-11169
Client Ref 765633
Contract Title A66 Scheme SO3A

			Lab No	2169857	2169858	2169859	2169860	2169861	2169862	2169863	2169864	2169865	2169866	2169867
			.Sample ID	BH-PTS121A	BH-PTS121A	BH-PTS127	BH-PTS127	BH-PTS127	BH-PTS128A	BH-PTS128A	TP-PTS211	TP-PTS211	TP-PTS214	TP-PTS215
			Depth	2.80	4.10	1.20-1.65	1.80	2.80	2.80	4.80	1.50	1.70	0.50-0.70	0.50
			Other ID	201	8	7	10	13	8	16	8	9	4	5
			Sample Type	D	SPT	SPT	D	D	D	D	D	D	LB	D
			Sampling Date	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	16/03/2023	16/03/2023	04/04/2023	31/03/2023	03/04/2023	03/04/2023
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**											
Inorganics														
Loss on Ignition at 440oC	DETSC 2003#	0.01	%			0.93				0.87	1.7		14	
pH	DETSC 2008#		pH	8.8	8.0			7.6	7.1					
Organic matter	DETSC 2002#	0.1	%			< 0.1				< 0.1	0.1		8.2	
Chloride Aqueous Extract (2:1)	DETSC 2055	1	mg/l				4.4					3.5		4.3
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	29	11			12	12					
Sulphur as S, Total	DETSC 2320	0.01	%	< 0.01	< 0.01			< 0.01	< 0.01					
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.01	< 0.01			< 0.01	< 0.01					

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 23-11169
Client Ref 765633
Contract Title A66 Scheme SO3A

			Lab No	2169868	2169869	2169870	2169871	2169872	2169873	2169874	2169875
			.Sample ID	TP-PTS215	TP-PTS215	TP-PTS217	TP-PTS233-LC	TP-PTS233-LC	TP-PTS233-LC	TP-PTS234	TP-PTS234
			Depth	1.50	2.00	0.50	0.50	1.50	2.50	1.00	2.20
			Other ID	7	8	5	5	7	9	6	8
			Sample Type	D	D	D	D	D	D	D	D
			Sampling Date	03/04/2023	03/04/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	24/03/2023	24/03/2023
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**								
Inorganics											
Loss on Ignition at 440oC	DETSC 2003#	0.01	%						0.56		1.2
pH	DETSC 2008#		pH	6.9			7.1	7.2		6.7	
Organic matter	DETSC 2002#	0.1	%						0.1		0.2
Chloride Aqueous Extract (2:1)	DETSC 2055	1	mg/l		4.1	12		4.6			
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	12			13	13		11	
Sulphur as S, Total	DETSC 2320	0.01	%	0.14			< 0.01	< 0.01		< 0.01	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.03			0.02	0.01		0.02	

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 23-11169
Client Ref 765633
Contract A66 Scheme SO3A

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2169857	BH-PTS121A 2.80 SOIL	23/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2169858	BH-PTS121A 4.10 SOIL	23/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2169859	BH-PTS127 1.20-1.65 SOIL	23/03/23	PT 500ml	Organic Matter (Manual) (28 days)	
2169860	BH-PTS127 1.80 SOIL	23/03/23	PT 500ml	Anions 2:1 (30 days)	
2169861	BH-PTS127 2.80 SOIL	23/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2169862	BH-PTS128A 2.80 SOIL	16/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2169863	BH-PTS128A 4.80 SOIL	16/03/23	PT 500ml	Organic Matter (Manual) (28 days)	
2169864	TP-PTS211 1.50 SOIL	04/04/23	PT 500ml	Organic Matter (Manual) (28 days)	
2169865	TP-PTS211 1.70 SOIL	31/03/23	PT 500ml	Anions 2:1 (30 days)	
2169866	TP-PTS214 0.50-0.70 SOIL	03/04/23	PT 500ml	Organic Matter (Manual) (28 days)	
2169867	TP-PTS215 0.50 SOIL	03/04/23	PT 500ml	Anions 2:1 (30 days)	
2169868	TP-PTS215 1.50 SOIL	03/04/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2169869	TP-PTS215 2.00 SOIL	03/04/23	PT 500ml	Anions 2:1 (30 days)	
2169870	TP-PTS217 0.50 SOIL	27/03/23	PT 500ml	Anions 2:1 (30 days)	
2169871	TP-PTS233-LC 0.50 SOIL	27/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2169872	TP-PTS233-LC 1.50 SOIL	27/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2169873	TP-PTS233-LC 2.50 SOIL	27/03/23	PT 500ml	Organic Matter (Manual) (28 days)	
2169874	TP-PTS234 1.00 SOIL	24/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2169875	TP-PTS234 2.20 SOIL	24/03/23	PT 500ml	Organic Matter (Manual) (28 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Information in Support of the Analytical Results

Our Ref 23-11169
Client Ref 765633
Contract A66 Scheme SO3A

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

Certificate of Analysis

Certificate Number 23-11667 *Issued:* 25-May-23

Client Structural Soils Limited
1a Princess Street
Bedminster
Bristol
BS3 4AG

Our Reference 23-11667

Client Reference 765633

Order No 5102665

Contract Title A66 Scheme SO3A

Description 4 Soil samples.

Date Received 17-May-23

Date Started 17-May-23

Date Completed 25-May-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 23-11667
Client Ref 765633
Contract Title A66 Scheme SO3A

			Lab No	2172689	2172690	2172691	2172692
			.Sample ID	TP-PTS230	TP-PTS230	TP-PTS232	TP-PTS232
			Depth	0.50	2.50	0.50	2.50
			Other ID	5	10	5	9
			Sample Type	D	D	D	D
			Sampling Date	28/03/2023	28/03/2023	28/03/2023	28/03/2023
			Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Inorganics							
pH	DETSC 2008#		pH	7.4		7.1	7.0
Chloride Aqueous Extract (2:1)	DETSC 2055	1	mg/l		8.0		
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	< 10		< 10	51
Sulphur as S, Total	DETSC 2320	0.01	%	< 0.01		< 0.01	0.04
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.01		< 0.01	0.07

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 23-11667
Client Ref 765633
Contract A66 Scheme SO3A

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2172689	TP-PTS230 0.50 SOIL	28/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2172690	TP-PTS230 2.50 SOIL	28/03/23	PT 500ml	Anions 2:1 (30 days)	
2172691	TP-PTS232 0.50 SOIL	28/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2172692	TP-PTS232 2.50 SOIL	28/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

Certificate of Analysis

Certificate Number 23-12192 *Issued:* 05-Jun-23

Client Structural Soils Limited
1a Princess Street
Bedminster
Bristol
BS3 4AG

Our Reference 23-12192

Client Reference 765633

Order No P05102665

Contract Title A55 Scheme SO3A

Description 7 Soil samples.

Date Received 24-May-23

Date Started 24-May-23

Date Completed 05-Jun-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 23-12192
Client Ref 765633
Contract Title A55 Scheme SO3A

			Lab No	2175836	2175837	2175838	2175839	2175840
			.Sample ID	BH-PTS122	TP-PTS235	WS-PTS130	GS-PTS108A	GS-PTS108A
			Depth	0.40	0.80	0.50	0.30	1.00
			Other ID	3	6	2	3	7
			Sample Type	D	D	D	D	D
			Sampling Date	08/03/2023	23/03/2023	23/03/2023	08/03/2023	08/03/2023
			Sampling Time	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
Inorganics								
Loss on Ignition at 440oC	DETSC 2003#	0.01	%					
pH	DETSC 2008#		pH	6.1	7.0	7.4	6.3	6.4
Organic matter	DETSC 2002#	0.1	%					
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	1600	39	< 10	< 10	10
Sulphur as S, Total	DETSC 2320	0.01	%	< 0.01	< 0.01	0.01	0.01	< 0.01
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.02	0.01	< 0.01	0.02	0.01

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 23-12192
Client Ref 765633
Contract Title A55 Scheme SO3A

			Lab No	2175841	2175842
			.Sample ID	GS-PTS108A	GS-PTS109
			Depth	1.70-1.80	1.70
			Other ID	9	9
			Sample Type	D	D
			Sampling Date	21/03/2023	29/03/2023
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Inorganics					
Loss on Ignition at 440oC	DETSC 2003#	0.01	%		1.6
pH	DETSC 2008#		pH	5.6	
Organic matter	DETSC 2002#	0.1	%		0.3
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	12	
Sulphur as S, Total	DETSC 2320	0.01	%	< 0.01	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.01	

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 23-12192
Client Ref 765633
Contract A55 Scheme SO3A

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2175836	BH-PTS122 0.40 SOIL	08/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2175837	TP-PTS235 0.80 SOIL	23/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2175838	WS-PTS130 0.50 SOIL	23/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2175839	GS-PTS108A 0.30 SOIL	08/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2175840	GS-PTS108A 1.00 SOIL	08/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2175841	GS-PTS108A 1.70-1.80 SOIL	21/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2175842	GS-PTS109 1.70 SOIL	29/03/23	PT 500ml	Organic Matter (Manual) (28 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

Certificate of Analysis

Certificate Number 23-12467 *Issued:* 08-Jun-23

Client Structural Soils Limited
1a Princess Street
Bedminster
Bristol
BS3 4AG

Our Reference 23-12467

Client Reference 765633

Order No P01502665

Contract Title A66 S cheme SO3A

Description 19 Soil samples.

Date Received 26-May-23

Date Started 26-May-23

Date Completed 08-Jun-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 23-12467
Client Ref 765633
Contract Title A66 S cheme SO3A

			Lab No	2177423	2177424	2177425	2177426	2177427	2177428	2177429	2177430	2177431	2177432
			.Sample ID	BH-PTS102A	BH-PTS102A	BH-PTS112	BH-PTS112	BH-PTS119	BH-PTS119	HDP-002	HPD-003	TP-PTS205	TP-PTS213
			Depth	1.70	3.50	0.70	2.90	1.00	2.00-2.45	1.00-1.20	0.50	2.50	1.50
			Other ID	4	10	5	13	4	11	4	4	10	7
			Sample Type	D	D	D	D	D	SPT	D	D	D	D
			Sampling Date	17/04/2023	17/04/2023	13/04/2023	15/04/2023	17/04/2023	17/04/2023	06/04/2023	26/04/2023	13/04/2023	14/04/2023
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**										
Inorganics													
Loss on Ignition at 440oC	DETSC 2003#	0.01	%							2.7			
pH	DETSC 2008#		pH	8.4	8.1	6.7	8.6	6.8	7.6		6.1	6.9	6.4
Organic matter	DETSC 2002#	0.1	%							2.1			
Chloride Aqueous Extract (2:1)	DETSC 2055	1	mg/l										
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	51	43	12	12	< 10	< 10		47	13	< 10
Sulphur as S, Total	DETSC 2320	0.01	%	0.07	0.06	0.04	0.01	< 0.01	0.01		0.02	< 0.01	< 0.01
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.02	0.03	0.03	< 0.01	0.01	< 0.01		0.04	< 0.01	0.01

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 23-12467
Client Ref 765633
Contract Title A66 S cheme SO3A

			Lab No	2177433	2177434	2177435	2177436	2177437	2177438	2177439	2177440	2177441
			.Sample ID	TP-PTS213	WS-PTS113	WS-PTS113	WS-PTS113	WS-PTS114	WS-PTS114	WS-PTS116	WS-PTS117A	WS-PTS127
			Depth	1.80	0.30-0.50	1.90-2.00	3.00-3.50	0.50	1.00	1.00	1.50-1.80	2.80-3.00
			Other ID	8	3	7	10	3	5	5	6	9
			Sample Type	D	D	D	D	D	D	D	D	D
			Sampling Date	14/04/2023	05/04/2023	05/04/2023	05/04/2023	03/04/2023	03/04/2023	03/04/2023	04/04/2023	21/03/2023
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**									
Inorganics												
Loss on Ignition at 440oC	DETSC 2003#	0.01	%			0.59	0.52				1.2	
pH	DETSC 2008#		pH		6.2			6.5		6.7		7.1
Organic matter	DETSC 2002#	0.1	%				0.2				0.6	
Chloride Aqueous Extract (2:1)	DETSC 2055	1	mg/l	4.3					5.2			
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l		< 10			< 10		< 10		< 10
Sulphur as S, Total	DETSC 2320	0.01	%		0.02			0.02		< 0.01		< 0.01
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.04			0.02		0.02		< 0.01

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 23-12467
Client Ref 765633
Contract A66 S cheme SO3A

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2177423	BH-PTS102A 1.70 SOIL	17/04/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2177424	BH-PTS102A 3.50 SOIL	17/04/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2177425	BH-PTS112 0.70 SOIL	13/04/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2177426	BH-PTS112 2.90 SOIL	15/04/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2177427	BH-PTS119 1.00 SOIL	17/04/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2177428	BH-PTS119 2.00-2.45 SOIL	17/04/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2177429	HDP-002 1.00-1.20 SOIL	06/04/23	PT 500ml	Organic Matter (Manual) (28 days)	
2177430	HPD-003 0.50 SOIL	26/04/23	PT 500ml	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2177431	TP-PTS205 2.50 SOIL	13/04/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2177432	TP-PTS213 1.50 SOIL	14/04/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2177433	TP-PTS213 1.80 SOIL	14/04/23	PT 500ml	Anions 2:1 (30 days)	
2177434	WS-PTS113 0.30-0.50 SOIL	05/04/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2177435	WS-PTS113 1.90-2.00 SOIL	05/04/23	PT 500ml		
2177436	WS-PTS113 3.00-3.50 SOIL	05/04/23	PT 500ml	Organic Matter (Manual) (28 days)	
2177437	WS-PTS114 0.50 SOIL	03/04/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2177438	WS-PTS114 1.00 SOIL	03/04/23	PT 500ml	Anions 2:1 (30 days)	
2177439	WS-PTS116 1.00 SOIL	03/04/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2177440	WS-PTS117A 1.50-1.80 SOIL	04/04/23	PT 500ml	Organic Matter (Manual) (28 days)	
2177441	WS-PTS127 2.80-3.00 SOIL	21/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	

Information in Support of the Analytical Results

Our Ref 23-12467
Client Ref 765633
Contract A66 S cheme SO3A

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

Certificate of Analysis

Certificate Number 23-12470 *Issued:* 06-Jun-23

Client Structural Soils Limited
1a Princess Street
Bedminster
Bristol
BS3 4AG

Our Reference 23-12470

Client Reference 765633

Order No P01502665

Contract Title A66 Scheme SO3A

Description 2 Soil samples.

Date Received 26-May-23

Date Started 26-May-23

Date Completed 06-Jun-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 23-12470
Client Ref 765633
Contract Title A66 Scheme SO3A

			Lab No	2177453	2177454
			.Sample ID	BH-PTS115	BH-PTS115
			Depth	0.30	0.30
			Other ID	202	3
			Sample Type	D	D
			Sampling Date	30/03/2023	30/03/2023
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Inorganics					
Loss on Ignition at 440oC	DETSC 2003#	0.01	%	2.6	2.4
pH	DETSC 2008#		pH	6.8	
Organic matter	DETSC 2002#	0.1	%		2.2
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	11	
Sulphur as S, Total	DETSC 2320	0.01	%	0.01	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.03	

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 23-12470
Client Ref 765633
Contract A66 Scheme SO3A

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2177453	BH-PTS115 0.30 SOIL	30/03/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2177454	BH-PTS115 0.30 SOIL	30/03/23	PT 500ml	Organic Matter (Manual) (28 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

Certificate of Analysis

Certificate Number 23-16149 *Issued:* 27-Jul-23

Client Structural Soils Limited
1a Princess Street
Bedminster
Bristol
BS3 4AG

Our Reference 23-16149

Client Reference 765633

Order No PO5102665

Contract Title A66 Scheme SO3A

Description 5 Soil samples.

Date Received 06-Jul-23

Date Started 06-Jul-23

Date Completed 27-Jul-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 23-16149
Client Ref 765633
Contract Title A66 Scheme SO3A

			Lab No	2198674	2198675	2198676	2198677	2198678
			.Sample ID	BH-PTS118	GS-PTS105	GS-PTS102	GS-PTS102	BH-PTS111
			Depth	0.50	1.70-1.80	3.40-3.80	4.70-5.30	0.50
			Other ID	D3	D7	B10	B15	D3
			Sample Type	D	D	B	B	D
			Sampling Date	03/04/2023	25/05/2023	11/05/2023	11/05/2023	23/05/2023
			Sampling Time	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
Inorganics								
Loss on Ignition at 440oC	DETSC 2003#	0.01	%	2.3	0.54	0.84	0.89	1.3
Organic matter	DETSC 2002#	0.1	%		0.2	< 0.1	0.1	1.7

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 23-16149
Client Ref 765633
Contract A66 Scheme SO3A

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2198674	BH-PTS118 0.50 SOIL	03/04/23	PT 500ml		
2198675	GS-PTS105 1.70-1.80 SOIL	25/05/23	PT 500ml	Organic Matter (Manual) (28 days)	
2198676	GS-PTS102 3.40-3.80 SOIL	11/05/23	PT 500ml	Organic Matter (Manual) (28 days)	
2198677	GS-PTS102 4.70-5.30 SOIL	11/05/23	PT 500ml	Organic Matter (Manual) (28 days)	
2198678	BH-PTS111 0.50 SOIL	23/05/23	PT 500ml	Organic Matter (Manual) (28 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

Certificate of Analysis

Certificate Number 23-18125 *Issued:* 23-Aug-23

Client Structural Soils Limited
1a Princess Street
Bedminster
Bristol
BS3 4AG

Our Reference 23-18125

Client Reference 765633

Order No PPO5102665

Contract Title A66 Scheme S03A

Description 2 Soil samples.

Date Received 31-Jul-23

Date Started 31-Jul-23

Date Completed 23-Aug-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 23-18125
Client Ref 765633
Contract Title A66 Scheme S03A

			Lab No	2210775	2210776
			.Sample ID	BH-PTS118A	BH-PTS128A
			Depth	0.50	1.80
			Other ID	D202	D4
			Sample Type	SOIL	SOIL
			Sampling Date	04/04/2023	16/03/2023
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Inorganics					
Loss on Ignition at 440oC	DETSC 2003#	0.01	%	0.78	
Chloride Aqueous Extract (2:1)	DETSC 2055	1	mg/l		3.8
Chloride, Acid Soluble	DETSC 2007	0.01	%	< 0.01	
Chloride, Water Soluble	DETSC 2006	0.01	%	0.01	

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 23-18125
Client Ref 765633
Contract A66 Scheme S03A

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2210775	BH-PTS118A 0.50 SOIL	04/04/23	PT 500ml		
2210776	BH-PTS128A 1.80 SOIL	16/03/23	PT 500ml	Anions 2:1 (30 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

Certificate of Analysis

Certificate Number 23-18838 *Issued:* 29-Aug-23

Client Structural Soils Limited
1a Princess Street
Bedminster
Bristol
BS3 4AG

Our Reference 23-18838

Client Reference 765633

Order No po5102665

Contract Title A66 SCH20

Description 2 Soil samples.

Date Received 08-Aug-23

Date Started 08-Aug-23

Date Completed 29-Aug-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 23-18838
Client Ref 765633
Contract Title A66 SCH20

			Lab No	2215421	2215422
			.Sample ID	BH-PTS116	BH-PTS116
			Depth	0.50	1.80
			Other ID	3	11
			Sample Type	D	D
			Sampling Date	14/03/2023	14/03/2023
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Inorganics					
Loss on Ignition at 440oC	DETSC 2003#	0.01	%	1.4	1.1
Organic matter	DETSC 2002#	0.1	%	0.3	

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 23-18838
Client Ref 765633
Contract A66 SCH20

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2215421	BH-PTS116 0.50 SOIL	14/03/23	PT 500ml	Organic Matter (Manual) (28 days)	
2215422	BH-PTS116 1.80 SOIL	14/03/23	PT 500ml		

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

Certificate of Analysis

Certificate Number 23-19271 *Issued:* 01-Sep-23

Client Structural Soils Limited
1a Princess Street
Bedminster
Bristol
BS3 4AG

Our Reference 23-19271

Client Reference (not supplied)

Order No PO5102665

Contract Title 765633 - A66 Scheme S03A

Description 2 Soil samples.

Date Received 11-Aug-23

Date Started 11-Aug-23

Date Completed 01-Sep-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 23-19271
Client Ref
Contract Title 765633 - A66 Scheme S03A

			Lab No	2217819	2217820
			.Sample ID	BH-PTS129	BH-PTS117
			Depth	1.00	1.20
			Other ID	5	8
			Sample Type	D	D
			Sampling Date	30/03/2023	06/04/2023
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Inorganics					
Loss on Ignition at 440oC	DETSC 2003#	0.01	%	2.6	1.5
Organic matter	DETSC 2002#	0.1	%	1.1	0.6

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 23-19271
Client Ref
Contract 765633 - A66 Scheme S03A

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2217819	BH-PTS129 1.00 SOIL	30/03/23	PB 500ml	Organic Matter (Manual) (28 days)	
2217820	BH-PTS117 1.20 SOIL	06/04/23	PB 500ml	Organic Matter (Manual) (28 days)	

Key: P-Plastic B-Bottle

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

APPENDIX H – GEOENVIRONMENTAL LABORATORY TEST RESULTS

(H01) Geoenvironmental Laboratory Test Results – Soil

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/02201
Issue Number: 1 **Date:** 22 March, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 09/03/23
Date Instructions Received: 09/03/23
Date Analysis Completed: 22/03/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/02201

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02201/1	23/02201/5						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	BH-PTS-100	BH-PTS-101								
Depth to Top	0.30	0.10								
Depth To Bottom										
Date Sampled	03-Mar-23	02-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4ABE								
% Stones >10mm$_{A}$	31.8	23.2						% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	5.68	4.81						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	2.1	2.0						% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	5	3						mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0						mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	0.5	0.5						mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	21	25						mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	15	15						mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	44	65						mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17						mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	8	8						mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	42	45						mg/kg	5	A-T-024s

Envirolab Job Number: 23/02201

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02201/1	23/02201/5						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	BH-PTS-100	BH-PTS-101								
Depth to Top	0.30	0.10								
Depth To Bottom										
Date Sampled	03-Mar-23	02-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4ABE								
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 23/02201

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02201/1	23/02201/5						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	BH-PTS-100	BH-PTS-101								
Depth to Top	0.30	0.10								
Depth To Bottom										
Date Sampled	03-Mar-23	02-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4ABE								
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.13	<0.04						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.15	<0.04						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.19	<0.05						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	0.11	<0.05						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	0.08	<0.07						mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	0.16	<0.06						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.29	<0.08						mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.12	<0.03						mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	0.09	<0.03						mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.22	<0.07						mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	1.54	<0.08						mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/02201

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02201/1	23/02201/5						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	BH-PTS-100	BH-PTS-101								
Depth to Top	0.30	0.10								
Depth To Bottom										
Date Sampled	03-Mar-23	02-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4ABE								
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	5	4						mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	5	4						mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	5	<1						mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	22	3						mg/kg	1	A-T-055s
Total Aromatics$_{A}$	27	4						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	32	7						mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/02201
		Date Received:	09/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	4.1
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02201/1	23/02201/5
Client Sample No	101	101
Client Sample ID/Depth	BH-PTS-100 0.30m	BH-PTS-101 0.10m
Date Sampled	03/03/23	02/03/23
A-T-019s	15/03/2023	15/03/2023
A-T-022s	14/03/2023	14/03/2023
A-T-024s	17/03/2023	17/03/2023
A-T-026s	17/03/2023	17/03/2023
A-T-027s	17/03/2023	17/03/2023
A-T-031s	21/03/2023	21/03/2023
A-T-032s	22/03/2023	22/03/2023
A-T-042sTCN	13/03/2023	13/03/2023
A-T-044	16/03/2023	16/03/2023
A-T-045	10/03/2023	10/03/2023
A-T-050s	20/03/2023	20/03/2023
A-T-055s	20/03/2023	20/03/2023
Calc-As Recd	20/03/2023	20/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/02266
Issue Number: 1 **Date:** 24 March, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 10/03/23
Date Instructions Received: 10/03/23
Date Analysis Completed: 24/03/23

Approved by:

Gemma Berrisford
Client Manager

1247

Envirolab Job Number: 23/02266

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02266/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-220									
Depth to Top	0.10									
Depth To Bottom										
Date Sampled	08-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
% Stones >10mm$_{A}$	<0.1							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.27							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	0.2							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	4							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	5							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	10							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	5							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	6							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	11							mg/kg	5	A-T-024s

Envirolab Job Number: 23/02266

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02266/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-220									
Depth to Top	0.10									
Depth To Bottom										
Date Sampled	08-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/02266

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02266/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-220									
Depth to Top	0.10									
Depth To Bottom										
Date Sampled	08-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/02266

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02266/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-220									
Depth to Top	0.10									
Depth To Bottom										
Date Sampled	08-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	4							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	4							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	4							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/02266
		Date Received:	10/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	2.3
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02266/1
Client Sample No	101
Client Sample ID/Depth	TP-PTS-220 0.10m
Date Sampled	08/03/23
A-T-019s	20/03/2023
A-T-022s	20/03/2023
A-T-024s	20/03/2023
A-T-026s	20/03/2023
A-T-027s	20/03/2023
A-T-031s	21/03/2023
A-T-032s	24/03/2023
A-T-042sTCN	16/03/2023
A-T-044	16/03/2023
A-T-045	13/03/2023
A-T-050s	20/03/2023
A-T-055s	20/03/2023
Calc-As Recd	20/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/02317
Issue Number: 1 **Date:** 27 March, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 13/03/23
Date Instructions Received: 13/03/23
Date Analysis Completed: 27/03/23

Approved by:

Gemma Berrisford
Client Manager

1247

Envirolab Job Number: 23/02317

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02317/5							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	GS-PTS-108A									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	08-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
% Stones >10mm$_{A}$	<0.1							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	7.32							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	0.02							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	0.5							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	4							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	0.8							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	10							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	23							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	8							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	16							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	30							mg/kg	5	A-T-024s

Envirolab Job Number: 23/02317

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02317/5							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	GS-PTS-108A									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	08-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/02317

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02317/5							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	GS-PTS-108A									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	08-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/02317

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02317/5							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	GS-PTS-108A									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	08-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	<1							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	<1							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/02317
		Date Received:	13/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	7.1
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02317/5
Client Sample No	102
Client Sample ID/Depth	GS-PTS-108A 0.50m
Date Sampled	08/03/23
A-T-019s	20/03/2023
A-T-022s	20/03/2023
A-T-024s	21/03/2023
A-T-026s	21/03/2023
A-T-027s	21/03/2023
A-T-031s	22/03/2023
A-T-032s	27/03/2023
A-T-042sTCN	20/03/2023
A-T-044	16/03/2023
A-T-045	15/03/2023
A-T-050s	21/03/2023
A-T-055s	20/03/2023
Calc-As Recd	20/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/02362
Issue Number: 1 **Date:** 28 March, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 13/03/23
Date Instructions Received: 14/03/23
Date Analysis Completed: 28/03/23

Approved by:

Gemma Berrisford
Client Manager

1247

Envirolab Job Number: 23/02362

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02362/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-225									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	09-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
% Stones >10mm$_{A}$	<0.1							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	5.67							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	0.3							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	3							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	3							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	9							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	4							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	6							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	11							mg/kg	5	A-T-024s

Envirolab Job Number: 23/02362

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02362/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-225									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	09-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/02362

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02362/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-225									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	09-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	*<0.03*							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/02362

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02362/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-225									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	09-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	<1							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	<1							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General

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Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/02362
		Date Received:	14/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	11.1
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02362/2
Client Sample No	102
Client Sample ID/Depth	TP-PTS-225 0.50m
Date Sampled	09/03/23
A-T-019s	24/03/2023
A-T-022s	20/03/2023
A-T-024s	22/03/2023
A-T-026s	21/03/2023
A-T-027s	22/03/2023
A-T-031s	23/03/2023
A-T-032s	28/03/2023
A-T-042sTCN	17/03/2023
A-T-044	21/03/2023
A-T-045	16/03/2023
A-T-050s	20/03/2023
A-T-055s	24/03/2023
Calc-As Recd	24/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/02425
Issue Number: 1 **Date:** 28 March, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 14/03/23
Date Instructions Received: 15/03/23
Date Analysis Completed: 28/03/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/02425

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02425/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-229									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	10-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
% Stones >10mm$_{A}$	<0.1							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	4.99							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	2.0							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	2							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	6							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	13							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	19							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	7							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	18							mg/kg	5	A-T-024s

Envirolab Job Number: 23/02425

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02425/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-229									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	10-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/02425

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02425/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-229									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	10-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.07							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.07							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.10							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	0.08							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	*<0.04*							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.14							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.05							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	0.06							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.10							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	0.67							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/02425

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02425/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-229									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	10-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	6							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	6							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	1							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	6							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	7							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	13							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/02425
		Date Received:	15/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	8.0
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02425/1
Client Sample No	101
Client Sample ID/Depth	TP-PTS-229 0.20m
Date Sampled	10/03/23
A-T-019s	22/03/2023
A-T-022s	22/03/2023
A-T-024s	23/03/2023
A-T-026s	22/03/2023
A-T-027s	22/03/2023
A-T-031s	22/03/2023
A-T-032s	28/03/2023
A-T-042sTCN	17/03/2023
A-T-044	21/03/2023
A-T-045	16/03/2023
A-T-050s	23/03/2023
A-T-055s	21/03/2023
Calc-As Recd	22/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/02571
Issue Number: 1 **Date:** 30 March, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 17/03/23
Date Instructions Received: 17/03/23
Date Analysis Completed: 30/03/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/02571

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02571/2	23/02571/5	23/02571/7					Units	Limit of Detection	Method ref
Client Sample No	102	102	101							
Client Sample ID	TP-PTS226	TP-PTS231	GS PTS 109							
Depth to Top	0.50	0.50	0.30							
Depth To Bottom										
Date Sampled	14-Mar-23	14-Mar-23	14-Mar-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4	1	1E							
% Stones >10mm$_{A}$	<0.1	<0.1	<0.1					% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	7.54	7.03	6.30					pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	0.01	<0.01					g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	0.2	0.3	2.2					% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	<1	<1	1					mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5	<0.5					mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	6	3	5					mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	13	9	8					mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	5	4	24					mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	8	6	4					mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	12	12	20					mg/kg	5	A-T-024s

Envirolab Job Number: 23/02571

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02571/2	23/02571/5	23/02571/7					Units	Limit of Detection	Method ref
Client Sample No	102	102	101							
Client Sample ID	TP-PTS226	TP-PTS231	GS PTS 109							
Depth to Top	0.50	0.50	0.30							
Depth To Bottom										
Date Sampled	14-Mar-23	14-Mar-23	14-Mar-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4	1	1E							
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD							A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-							A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A							A-T-045

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Envirolab Job Number: 23/02571

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02571/2	23/02571/5	23/02571/7					Units	Limit of Detection	Method ref
Client Sample No	102	102	101							
Client Sample ID	TP-PTS226	TP-PTS231	GS PTS 109							
Depth to Top	0.50	0.50	0.30							
Depth To Bottom										
Date Sampled	14-Mar-23	14-Mar-23	14-Mar-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4	1	1E							
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	<0.04	0.06					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	<0.04	0.06					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	<0.05	0.08					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	<0.06	<0.06					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	<0.08	0.13					mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	*<0.03*	*<0.03*	*0.05*					mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	<0.03	0.05					mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	<0.07	0.11					mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	<0.08	0.54					mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/02571

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02571/2	23/02571/5	23/02571/7					Units	Limit of Detection	Method ref
Client Sample No	102	102	101							
Client Sample ID	TP-PTS226	TP-PTS231	GS PTS 109							
Depth to Top	0.50	0.50	0.30							
Depth To Bottom										
Date Sampled	14-Mar-23	14-Mar-23	14-Mar-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4	1	1E							
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	<1	<1	4					mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	<1	<1	4					mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1	<1	2					mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1	<1	2					mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	<1	<1	6					mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

REPORT NOTES

General

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The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
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Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/02571
		Date Received:	17/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	11.3 & 12.0
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02571/2	23/02571/5	23/02571/7
Client Sample No	102	102	101
Client Sample ID/Depth	TP-PTS226 0.50m	TP-PTS231 0.50m	GS PTS 109 0.30m
Date Sampled	14/03/23	14/03/23	14/03/23
A-T-019s	24/03/2023	24/03/2023	24/03/2023
A-T-022s	22/03/2023	22/03/2023	22/03/2023
A-T-024s	27/03/2023	27/03/2023	27/03/2023
A-T-026s	24/03/2023	24/03/2023	24/03/2023
A-T-027s	24/03/2023	24/03/2023	24/03/2023
A-T-031s	24/03/2023	24/03/2023	24/03/2023
A-T-032s	30/03/2023	30/03/2023	30/03/2023
A-T-042sTCN	22/03/2023	22/03/2023	22/03/2023
A-T-044	23/03/2023	23/03/2023	23/03/2023
A-T-045	20/03/2023	20/03/2023	20/03/2023
A-T-050s	27/03/2023	27/03/2023	27/03/2023
A-T-055s	29/03/2023	29/03/2023	29/03/2023
Calc-As Recd	29/03/2023	29/03/2023	29/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/02684
Issue Number: 1 **Date:** 03 April, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 20/03/23
Date Instructions Received: 21/03/23
Date Analysis Completed: 03/04/23

Approved by:

Gemma Berrisford
Client Manager

Envirolab Job Number: 23/02684

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02684/1	23/02684/5	23/02684/6					Units	Limit of Detection	Method ref
Client Sample No	101	102	101							
Client Sample ID	BH-PTS128	TP-PTS221	TP-PTS224							
Depth to Top	0.30	0.50	0.20							
Depth To Bottom										
Date Sampled	15-Mar-23	15-Mar-23	15-Mar-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4AE	1	1E							
% Stones >10mm$_{A}$	<0.1	2.0	7.2					% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.95	6.05	7.63					pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01	<0.01					g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	2.1	1.1	2.6					% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	5	2	2					mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5	<0.5					mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	6	3	3					mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	8	9	8					mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	19	8	11					mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	4	5	5					mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	22	12	14					mg/kg	5	A-T-024s

Envirolab Job Number: 23/02684

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02684/1	23/02684/5	23/02684/6					Units	Limit of Detection	Method ref
Client Sample No	101	102	101							
Client Sample ID	BH-PTS128	TP-PTS221	TP-PTS224							
Depth to Top	0.30	0.50	0.20							
Depth To Bottom										
Date Sampled	15-Mar-23	15-Mar-23	15-Mar-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4AE	1	1E							
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD							A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-							A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A							A-T-045

Envirolab Job Number: 23/02684

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02684/1	23/02684/5	23/02684/6					Units	Limit of Detection	Method ref
Client Sample No	101	102	101							
Client Sample ID	BH-PTS128	TP-PTS221	TP-PTS224							
Depth to Top	0.30	0.50	0.20							
Depth To Bottom										
Date Sampled	15-Mar-23	15-Mar-23	15-Mar-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4AE	1	1E							
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.08	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.07	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.09	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	0.09	<0.06	<0.06					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.17	<0.08	<0.08					mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.05	<0.03	<0.03					mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	0.09	<0.03	<0.03					mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.14	<0.07	<0.07					mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	0.78	<0.08	<0.08					mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/02684

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02684/1	23/02684/5	23/02684/6					Units	Limit of Detection	Method ref
Client Sample No	101	102	101							
Client Sample ID	BH-PTS128	TP-PTS221	TP-PTS224							
Depth to Top	0.30	0.50	0.20							
Depth To Bottom										
Date Sampled	15-Mar-23	15-Mar-23	15-Mar-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4AE	1	1E							
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	8	<1	4					mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	8	<1	4					mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	2	<1	1					mg/kg	1	A-T-055s
Total Aromatics$_{A}$	2	<1	1					mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	10	<1	5					mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/02684
		Date Received:	21/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	10.1
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02684/1	23/02684/5	23/02684/6
Client Sample No	101	102	101
Client Sample ID/Depth	BH-PTS128 0.30m	TP-PTS221 0.50m	TP-PTS224 0.20m
Date Sampled	15/03/23	15/03/23	15/03/23
A-T-019s	27/03/2023	27/03/2023	27/03/2023
A-T-022s	27/03/2023	27/03/2023	27/03/2023
A-T-024s	28/03/2023	28/03/2023	28/03/2023
A-T-026s	28/03/2023	28/03/2023	28/03/2023
A-T-027s	28/03/2023	28/03/2023	28/03/2023
A-T-031s	27/03/2023	27/03/2023	27/03/2023
A-T-032s	03/04/2023	03/04/2023	03/04/2023
A-T-042sTCN	23/03/2023	23/03/2023	23/03/2023
A-T-044	28/03/2023	28/03/2023	28/03/2023
A-T-045	23/03/2023	23/03/2023	23/03/2023
A-T-050s	29/03/2023	29/03/2023	29/03/2023
A-T-055s	03/04/2023	03/04/2023	03/04/2023
Calc-As Recd	03/04/2023	03/04/2023	03/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/02685
Issue Number: 1 **Date:** 03 April, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 20/03/23
Date Instructions Received: 21/03/23
Date Analysis Completed: 03/04/23

Approved by:

Gemma Berrisford
Client Manager

1247

Envirolab Job Number: 23/02685

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02685/1	23/02685/5						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	TP-PTS228	BH-PTS116								
Depth to Top	0.20	0.30								
Depth To Bottom										
Date Sampled	16-Mar-23	14-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
% Stones >10mm$_{A}$	<0.1	13.2						% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	9.31	4.40						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	3.0	1.7						% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	3	4						mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0						mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5						mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	7	6						mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	16	14						mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	25	16						mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17						mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	8	8						mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	36	20						mg/kg	5	A-T-024s

Envirolab Job Number: 23/02685

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02685/1	23/02685/5						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	TP-PTS228	BH-PTS116								
Depth to Top	0.20	0.30								
Depth To Bottom										
Date Sampled	16-Mar-23	14-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 23/02685

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02685/1	23/02685/5						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	TP-PTS228	BH-PTS116								
Depth to Top	0.20	0.30								
Depth To Bottom										
Date Sampled	16-Mar-23	14-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	0.03	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	0.06	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.56	0.05						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.75	0.05						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.99	0.06						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	0.58	<0.05						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	0.38	<0.07						mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	0.65	<0.06						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	0.13	*<0.04*						mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.85	0.12						mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.59	<0.03						mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	0.19	0.06						mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.75	0.10						mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	6.51	0.44						mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/02685

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02685/1	23/02685/5						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	TP-PTS228	BH-PTS116								
Depth to Top	0.20	0.30								
Depth To Bottom										
Date Sampled	16-Mar-23	14-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	8	3						mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	8	3						mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<2	<1						mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	1	<1						mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	6	<1						mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	45	2						mg/kg	1	A-T-055s
Total Aromatics$_{A}$	53	2						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	60	5						mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s

REPORT NOTES

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Analytical results reflect the quality of the sample at the time of analysis only.
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If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/02685
		Date Received:	21/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	9.8
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02685/1	23/02685/5
Client Sample No	101	101
Client Sample ID/Depth	TP-PTS228 0.20m	BH-PTS116 0.30m
Date Sampled	16/03/23	14/03/23
A-T-019s	28/03/2023	29/03/2023
A-T-022s	24/03/2023	29/03/2023
A-T-024s	27/03/2023	31/03/2023
A-T-026s	27/03/2023	31/03/2023
A-T-027s	28/03/2023	31/03/2023
A-T-031s	27/03/2023	30/03/2023
A-T-032s	03/04/2023	03/04/2023
A-T-042sTCN	23/03/2023	29/03/2023
A-T-044	28/03/2023	28/03/2023
A-T-045	23/03/2023	27/03/2023
A-T-050s	29/03/2023	31/03/2023
A-T-055s	31/03/2023	03/04/2023
Calc-As Recd	31/03/2023	03/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/02790
Issue Number: 1 **Date:** 05 April, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 21/03/23
Date Instructions Received: 23/03/23
Date Analysis Completed: 04/04/23

Approved by:

Danielle Brierley
Deputy Client Services Supervisor

1247

Envirolab Job Number: 23/02790

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02790/3	23/02790/4						Units	Limit of Detection	Method ref
Client Sample No	103	101								
Client Sample ID	GS-PTS107	BH-PTS119								
Depth to Top	1.00	0.10								
Depth To Bottom										
Date Sampled	20-Mar-23	17-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	1A	4AE								
% Stones >10mm$_{A}$	3.3	2.7						% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	7.78	6.52						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	0.2	1.5						% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	4	2						mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0						mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5						mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	4	3						mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	8	6						mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	5	8						mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17						mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	5	3						mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	10	13						mg/kg	5	A-T-024s

Envirolab Job Number: 23/02790

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02790/3	23/02790/4						Units	Limit of Detection	Method ref
Client Sample No	103	101								
Client Sample ID	GS-PTS107	BH-PTS119								
Depth to Top	1.00	0.10								
Depth To Bottom										
Date Sampled	20-Mar-23	17-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	1A	4AE								
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 23/02790

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02790/3	23/02790/4						Units	Limit of Detection	Method ref
Client Sample No	103	101								
Client Sample ID	GS-PTS107	BH-PTS119								
Depth to Top	1.00	0.10								
Depth To Bottom										
Date Sampled	20-Mar-23	17-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	1A	4AE								
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	<0.05						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	<0.05						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07						mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	<0.06						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	*<0.04*	*<0.04*						mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	<0.08						mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	<0.07						mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	<0.08						mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/02790

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02790/3	23/02790/4						Units	Limit of Detection	Method ref
Client Sample No	103	101								
Client Sample ID	GS-PTS107	BH-PTS119								
Depth to Top	1.00	0.10								
Depth To Bottom										
Date Sampled	20-Mar-23	17-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	1A	4AE								
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	<1	2						mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	<1	2						mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1	1						mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1	1						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	<1	3						mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/02790
		Date Received:	23/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	11.7, 10.4
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02790/3	23/02790/4
Client Sample No	103	101
Client Sample ID/Depth	GS-PTS107 1.00m	BH-PTS119 0.10m
Date Sampled	20/03/23	17/03/23
A-T-019s	29/03/2023	29/03/2023
A-T-022s	29/03/2023	29/03/2023
A-T-024s	31/03/2023	31/03/2023
A-T-026s	31/03/2023	31/03/2023
A-T-027s	31/03/2023	31/03/2023
A-T-031s	30/03/2023	30/03/2023
A-T-032s	04/04/2023	04/04/2023
A-T-042sTCN	30/03/2023	30/03/2023
A-T-044	28/03/2023	28/03/2023
A-T-045	27/03/2023	27/03/2023
A-T-050s	30/03/2023	30/03/2023
A-T-055s	31/03/2023	31/03/2023
Calc-As Recd	31/03/2023	31/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03021
Issue Number: 1 **Date:** 13 April, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 24/03/23
Date Instructions Received: 29/03/23
Date Analysis Completed: 13/04/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/03021

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03021/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	WS-PTS129									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	21-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
% Stones >10mm$_{A}$	1.8							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	5.29							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.5							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	4							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	7							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	12							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	18							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	6							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	25							mg/kg	5	A-T-024s

Envirolab Job Number: 23/03021

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03021/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	WS-PTS129									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	21-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/03021

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03021/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	WS-PTS129									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	21-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.06							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.06							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.07							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	0.07							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.12							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.05							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	0.05							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.09							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	0.57							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03021

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03021/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	WS-PTS129									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	21-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	8							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	8							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	2							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	6							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	8							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	16							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB

Project: A66 NTP - Scheme S03A

Clients Project No: 765633

Project No: 23/03021

Date Received: 29/03/2023 (am)

Cool Box Temperatures (°C): 8.4

Lab Sample ID	23/03021/1
Client Sample No	101
Client Sample ID/Depth	WS-PTS129 0.20m
Date Sampled	21/03/23
Deviation Code	
F	✓

Key

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/03021/1
Client Sample No	101
Client Sample ID/Depth	WS-PTS129 0.20m
Date Sampled	21/03/23
PAH-16MS	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03021/1
Client Sample No	101
Client Sample ID/Depth	WS-PTS129 0.20m
Date Sampled	21/03/23
A-T-019s	10/04/2023
A-T-022s	04/04/2023
A-T-024s	12/04/2023
A-T-026s	12/04/2023
A-T-027s	12/04/2023
A-T-031s	12/04/2023
A-T-032s	13/04/2023
A-T-042sTCN	04/04/2023
A-T-044	12/04/2023
A-T-045	04/04/2023
A-T-050s	11/04/2023
A-T-055s	05/04/2023
Calc-As Recd	05/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

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Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT
SUPPLEMENT TO TEST REPORT 23/03088/1

Amendments: Re-issue following query/investigation

Envirolab Job Number: 23/03088
Issue Number: 2 **Date:** 15 August, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 27/03/23
Date Instructions Received: 31/03/23
Date Analysis Completed: 17/04/23

Approved by:

Sophie France
Client Manager

1247

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Envirolab Job Number: 23/03088

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03088/1	23/03088/6						Units	Limit of Detection	Method ref
Client Sample No	101	103								
Client Sample ID	BH-PTS121	BH-PTS120								
Depth to Top	0.30	1.00								
Depth To Bottom										
Date Sampled	22-Mar-23	22-Mar-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	1A	1A								
% Stones >10mm$_{A}$	<0.1	12.3						% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.73	7.64						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	2.5	0.2						% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	4	2						mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	1.1						mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5						mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	5	3						mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	10	7						mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	14	2						mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17						mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	5	4						mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	22	11						mg/kg	5	A-T-024s

Envirolab Job Number: 23/03088

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03088/1	23/03088/6						Units	Limit of Detection	Method ref
Client Sample No	101	103								
Client Sample ID	BH-PTS121	BH-PTS120								
Depth to Top	0.30	1.00								
Depth To Bottom										
Date Sampled	22-Mar-23	22-Mar-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	1A	1A								
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 23/03088

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03088/1	23/03088/6						Units	Limit of Detection	Method ref
Client Sample No	101	103								
Client Sample ID	BH-PTS121	BH-PTS120								
Depth to Top	0.30	1.00								
Depth To Bottom										
Date Sampled	22-Mar-23	22-Mar-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	1A	1A								
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.15	<0.04						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.19	<0.04						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.23	<0.05						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	0.11	<0.05						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	0.09	<0.07						mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	0.18	<0.06						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.26	<0.08						mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.13	<0.03						mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	0.07	<0.03						mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.21	<0.07						mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	1.62	<0.08						mg/kg	0.01	A-T-019s

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Envirolab Job Number: 23/03088

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03088/1	23/03088/6						Units	Limit of Detection	Method ref
Client Sample No	101	103								
Client Sample ID	BH-PTS121	BH-PTS120								
Depth to Top	0.30	1.00								
Depth To Bottom										
Date Sampled	22-Mar-23	22-Mar-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	1A	1A								
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	6	<1						mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	6	<1						mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	1	<1						mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	8	<1						mg/kg	1	A-T-055s
Total Aromatics$_{A}$	9	<1						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	15	<1						mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/03088
		Date Received:	31/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	8.8 & 9.1
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03088/1	23/03088/6
Client Sample No	101	103
Client Sample ID/Depth	BH-PTS121 0.30m	BH-PTS120 1.00m
Date Sampled	22/03/23	22/03/23
A-T-019s	10/04/2023	10/04/2023
A-T-022s	06/04/2023	06/04/2023
A-T-024s	17/04/2023	17/04/2023
A-T-026s	14/04/2023	14/04/2023
A-T-027s	17/04/2023	17/04/2023
A-T-031s	14/04/2023	14/04/2023
A-T-032s	17/04/2023	17/04/2023
A-T-042sTCN	05/04/2023	05/04/2023
A-T-044	12/04/2023	12/04/2023
A-T-045	05/04/2023	05/04/2023
A-T-050s	11/04/2023	11/04/2023
A-T-055s	11/04/2023	11/04/2023
Calc-As Recd	11/04/2023	11/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

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Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03090
Issue Number: 1 **Date:** 17 April, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 30/03/23
Date Instructions Received: 31/03/23
Date Analysis Completed: 17/04/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/03090

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03090/1	23/03090/4						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	TP-PTS230	TP-PTS232								
Depth to Top	0.10	0.10								
Depth To Bottom										
Date Sampled	28-Mar-23	28-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
% Stones >10mm$_{A}$	5.6	1.3						% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.94	6.79						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	2.6	2.5						% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	5	6						mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0						mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5						mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	5	5						mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	8	10						mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	12	12						mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	0.25						mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	5	4						mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	18	17						mg/kg	5	A-T-024s

Envirolab Job Number: 23/03090

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03090/1	23/03090/4						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	TP-PTS230	TP-PTS232								
Depth to Top	0.10	0.10								
Depth To Bottom										
Date Sampled	28-Mar-23	28-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 23/03090

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03090/1	23/03090/4						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	TP-PTS230	TP-PTS232								
Depth to Top	0.10	0.10								
Depth To Bottom										
Date Sampled	28-Mar-23	28-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	0.13						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	0.16						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	0.21						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	0.09						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07						mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	0.17						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	0.21						mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03	0.10						mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	0.05						mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	0.17						mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	1.29						mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03090

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03090/1	23/03090/4						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	TP-PTS230	TP-PTS232								
Depth to Top	0.10	0.10								
Depth To Bottom										
Date Sampled	28-Mar-23	28-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	8	7						mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	8	7						mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	2						mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	3	13						mg/kg	1	A-T-055s
Total Aromatics$_{A}$	3	15						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	12	22						mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/03090
		Date Received:	31/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	12.1 & 12.4
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03090/1	23/03090/4
Client Sample No	101	101
Client Sample ID/Depth	TP-PTS230 0.10m	TP-PTS232 0.10m
Date Sampled	28/03/23	28/03/23
A-T-019s	10/04/2023	10/04/2023
A-T-022s	06/04/2023	06/04/2023
A-T-024s	17/04/2023	17/04/2023
A-T-026s	14/04/2023	14/04/2023
A-T-027s	17/04/2023	17/04/2023
A-T-031s	14/04/2023	14/04/2023
A-T-032s	14/04/2023	17/04/2023
A-T-042sTCN	05/04/2023	05/04/2023
A-T-044	12/04/2023	12/04/2023
A-T-045	05/04/2023	05/04/2023
A-T-050s	11/04/2023	11/04/2023
A-T-055s	11/04/2023	11/04/2023
Calc-As Recd	11/04/2023	11/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03091
Issue Number: 1 **Date:** 17 April, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 30/03/23
Date Instructions Received: 31/03/23
Date Analysis Completed: 17/04/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/03091

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03091/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS234									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
% Stones >10mm$_{A}$	<0.1							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.64							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.9							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	3							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	3							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	7							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	9							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	3							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	14							mg/kg	5	A-T-024s

Envirolab Job Number: 23/03091

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03091/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS234									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/03091

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03091/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS234									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03091

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03091/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS234									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	4							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	4							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	4							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General

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The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB

Project: A66 NTP - Scheme S03A

Clients Project No: 765633

Project No: 23/03091

Date Received: 31/03/2023 (am)

Cool Box Temperatures (°C): 12.4

Lab Sample ID	23/03091/1
Client Sample No	101
Client Sample ID/Depth	TP-PTS234 0.20m
Date Sampled	24/03/23
Deviation Code	
B1 (no VPH)	✓
D (no glass)	✓

Key

B1 (no VPH)	*Separate container not supplied for VPH/BTEX analysis*
D (no glass)	*Glass container not provided for extractable organics analysis*

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03091/1
Client Sample No	101
Client Sample ID/Depth	TP-PTS234 0.20m
Date Sampled	24/03/23
A-T-019s	10/04/2023
A-T-022s	06/04/2023
A-T-024s	17/04/2023
A-T-026s	14/04/2023
A-T-027s	17/04/2023
A-T-031s	14/04/2023
A-T-032s	14/04/2023
A-T-042sTCN	05/04/2023
A-T-044	12/04/2023
A-T-045	05/04/2023
A-T-050s	13/04/2023
A-T-055s	11/04/2023
Calc-As Recd	11/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03397
Issue Number: 1 **Date:** 24 April, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 06/04/23
Date Instructions Received: 11/04/23
Date Analysis Completed: 24/04/23

Approved by:

Gemma Berrisford
Client Manager

envirolab

Envirolab Job Number: 23/03397

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03397/1	23/03397/3	23/03397/6	23/03397/9	23/03397/12	23/03397/17	23/03397/18	Units	Limit of Detection	Method ref
Client Sample No	101	101	101	101	101	101	101			
Client Sample ID	BH-PTS118	TP-PTS215	TP-PTS217	BH-PTS114	TP-PTS211	WS-PTS114	WS-PTS116			
Depth to Top	0.50	0.10	0.10	0.30	0.10	1.00	0.10			
Depth To Bottom					0.10					
Date Sampled	05-Apr-23	05-Apr-23	03-Apr-23	04-Apr-23	04-Apr-23	03-Apr-23	03-Apr-23			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	1A	1A	4AE	1A	4AE	4A	4AE			
% Stones >10mm$_{A}$	<0.1	<0.1	14.0	6.7	<0.1	14.1	11.0	% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	7.11	6.03	6.95	7.91	7.24	6.76	6.36	pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.1	2.4	3.1	1.0	2.3	0.5	2.1	% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	8	8	2	12	6	<1	4	mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	7	14	9	9	18	3	9	mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	12	48	26	16	23	17	15	mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	16	22	23	18	38	9	19	mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	8	17	11	11	16	9	7	mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	27	35	41	31	63	16	36	mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (1 no)$_{A}$	-	-	-	-	-	-	*			A-T-001
pH (leachable)$_{A}^{\#}$	-	-	-	-	-	-	7.70	pH	0.01	A-T-031w
Cyanide (total) (leachable)$_{A}^{\#}$	-	-	-	-	-	-	<0.005	mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_{A}$	-	-	-	-	-	-	<0.01	mg/l	0.01	A-T-050w
Arsenic (leachable)$_{A}$	-	-	-	-	-	-	2	µg/l	1	A-T-025w
Boron (leachable)$_{A}$	-	-	-	-	-	-	18	µg/l	10	A-T-025w
Cadmium (leachable)$_{A}$	-	-	-	-	-	-	<1	µg/l	1	A-T-025w
Copper (leachable)$_{A}$	-	-	-	-	-	-	9	µg/l	4	A-T-025w
Chromium (leachable)$_{A}$	-	-	-	-	-	-	<1	µg/l	1	A-T-025w
Lead (leachable)$_{A}$	-	-	-	-	-	-	3	µg/l	1	A-T-025w
Mercury (leachable)$_{A}$	-	-	-	-	-	-	<0.1	µg/l	0.1	A-T-025w
Nickel (leachable)$_{A}$	-	-	-	-	-	-	<2	µg/l	2	A-T-025w
Selenium (leachable)$_{A}$	-	-	-	-	-	-	<1	µg/l	1	A-T-025w
Zinc (leachable)$_{A}$	-	-	-	-	-	-	8	µg/l	2	A-T-025w

Envirolab Job Number: 23/03397

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03397/1	23/03397/3	23/03397/6	23/03397/9	23/03397/12	23/03397/17	23/03397/18	Units	Limit of Detection	Method ref
Client Sample No	101	101	101	101	101	101	101			
Client Sample ID	BH-PTS118	TP-PTS215	TP-PTS217	BH-PTS114	TP-PTS211	WS-PTS114	WS-PTS116			
Depth to Top	0.50	0.10	0.10	0.30	0.10	1.00	0.10			
Depth To Bottom					0.10					
Date Sampled	05-Apr-23	05-Apr-23	03-Apr-23	04-Apr-23	04-Apr-23	03-Apr-23	03-Apr-23			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	1A	1A	4AE	1A	4AE	4A	4AE			
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD	NAD	NAD	NAD	NAD			A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A	N/A	N/A	N/A	N/A			A-T-045

Envirolab Job Number: 23/03397

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03397/1	23/03397/3	23/03397/6	23/03397/9	23/03397/12	23/03397/17	23/03397/18	Units	Limit of Detection	Method ref
Client Sample No	101	101	101	101	101	101	101			
Client Sample ID	BH-PTS118	TP-PTS215	TP-PTS217	BH-PTS114	TP-PTS211	WS-PTS114	WS-PTS116			
Depth to Top	0.50	0.10	0.10	0.30	0.10	1.00	0.10			
Depth To Bottom					0.10					
Date Sampled	05-Apr-23	05-Apr-23	03-Apr-23	04-Apr-23	04-Apr-23	03-Apr-23	03-Apr-23			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	1A	1A	4AE	1A	4AE	4A	4AE			
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04	<0.04	0.05	0.07	0.07	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	<0.04	0.05	<0.04	0.07	0.08	0.10	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	0.06	0.06	<0.05	0.08	0.09	0.11	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	<0.06	<0.06	<0.06	0.07	0.07	0.08	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	<0.08	0.09	<0.08	0.13	0.12	0.17	mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03	<0.03	0.04	<0.03	0.04	0.04	0.06	mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	<0.03	<0.03	<0.03	0.04	0.03	0.06	mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	<0.07	<0.07	<0.07	0.11	0.10	0.14	mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	<0.08	0.24	<0.08	0.59	0.60	0.85	mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03397

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03397/1	23/03397/3	23/03397/6	23/03397/9	23/03397/12	23/03397/17	23/03397/18	Units	Limit of Detection	Method ref
Client Sample No	101	101	101	101	101	101	101			
Client Sample ID	BH-PTS118	TP-PTS215	TP-PTS217	BH-PTS114	TP-PTS211	WS-PTS114	WS-PTS116			
Depth to Top	0.50	0.10	0.10	0.30	0.10	1.00	0.10			
Depth To Bottom					0.10					
Date Sampled	05-Apr-23	05-Apr-23	03-Apr-23	04-Apr-23	04-Apr-23	03-Apr-23	03-Apr-23			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	1A	1A	4AE	1A	4AE	4A	4AE			
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	2	6	9	3	7	<1	7	mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	2	6	9	3	7	<1	7	mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	1	mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1	2	2	2	2	<1	4	mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1	2	2	2	2	<1	5	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	2	8	11	5	9	<1	12	mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/03397
		Date Received:	11/04/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	9.8 - 14.0
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03397/1	23/03397/3	23/03397/6	23/03397/9	23/03397/12	23/03397/17	23/03397/18
Client Sample No	101	101	101	101	101	101	101
Client Sample ID/Depth	BH-PTS118 0.50m	TP-PTS215 0.10m	TP-PTS217 0.10m	BH-PTS114 0.30m	TP-PTS211 0.10-0.10m	WS-PTS114 1.00m	WS-PTS116 0.10m
Date Sampled	05/04/23	05/04/23	03/04/23	04/04/23	04/04/23	03/04/23	03/04/23
A-T-019s	18/04/2023	18/04/2023	18/04/2023	18/04/2023	18/04/2023	18/04/2023	18/04/2023
A-T-022s	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023
A-T-024s	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023
A-T-025w							17/04/2023
A-T-026s	24/04/2023	24/04/2023	24/04/2023	24/04/2023	24/04/2023	24/04/2023	24/04/2023
A-T-027s	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023
A-T-031s	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023
A-T-031w							21/04/2023
A-T-032s	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023
A-T-042sTCN	18/04/2023	18/04/2023	18/04/2023	18/04/2023	18/04/2023	18/04/2023	18/04/2023
A-T-042wTCN							18/04/2023
A-T-044	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023
A-T-045	13/04/2023	13/04/2023	13/04/2023	13/04/2023	13/04/2023	13/04/2023	13/04/2023
A-T-050s	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023
A-T-050w							20/04/2023
A-T-055s	17/04/2023	17/04/2023	17/04/2023	17/04/2023	17/04/2023	17/04/2023	17/04/2023
Calc-As Recd	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03512
Issue Number: 1 **Date:** 26 April, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 12/04/23
Date Instructions Received: 13/04/23
Date Analysis Completed: 26/04/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/03512

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03512/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	BH-PTS117									
Depth to Top	0.30									
Depth To Bottom										
Date Sampled	06-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1AE									
% Stones >10mm$_{A}$	16.0							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	7.28							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.2							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	4							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	7							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	14							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	8							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	9							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	30							mg/kg	5	A-T-024s

Envirolab Job Number: 23/03512

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03512/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	BH-PTS117									
Depth to Top	0.30									
Depth To Bottom										
Date Sampled	06-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1AE									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/03512

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03512/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	BH-PTS117									
Depth to Top	0.30									
Depth To Bottom										
Date Sampled	06-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1AE									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	*<0.04*							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03512

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03512/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	BH-PTS117									
Depth to Top	0.30									
Depth To Bottom										
Date Sampled	06-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1AE									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	2							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	2							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	2							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/03512
		Date Received:	13/04/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	6.4
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03512/1
Client Sample No	101
Client Sample ID/Depth	BH-PTS117 0.30m
Date Sampled	06/04/23
A-T-019s	19/04/2023
A-T-022s	19/04/2023
A-T-024s	26/04/2023
A-T-026s	26/04/2023
A-T-027s	25/04/2023
A-T-031s	25/04/2023
A-T-032s	25/04/2023
A-T-042sTCN	19/04/2023
A-T-044	19/04/2023
A-T-045	14/04/2023
A-T-050s	24/04/2023
A-T-055s	19/04/2023
Calc-As Recd	19/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03609
Issue Number: 1 **Date:** 28 April, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 11/04/23
Date Instructions Received: 17/04/23
Date Analysis Completed: 28/04/23

Approved by:

Danielle Brierley
Deputy Client Services Supervisor

1247

Envirolab Job Number: 23/03609

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03609/1	23/03609/7						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	WS-PTS107	WS-PTS113								
Depth to Top	0.20	0.20								
Depth To Bottom										
Date Sampled	05-Apr-23	04-Apr-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
% Stones >10mm$_{A}$	12.6	4.7						% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.09	5.82						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	2.4	2.9						% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	9	6						mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0						mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5						mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	12	9						mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	14	11						mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	25	24						mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17						mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	6	4						mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	40	34						mg/kg	5	A-T-024s

Envirolab Job Number: 23/03609

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03609/1	23/03609/7						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	WS-PTS107	WS-PTS113								
Depth to Top	0.20	0.20								
Depth To Bottom										
Date Sampled	05-Apr-23	04-Apr-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 23/03609

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03609/1	23/03609/7						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	WS-PTS107	WS-PTS113								
Depth to Top	0.20	0.20								
Depth To Bottom										
Date Sampled	05-Apr-23	04-Apr-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	0.02	0.08						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.09	0.37						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.09	0.30						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.10	0.36						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	0.12						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	0.17						mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	0.10	0.36						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.21	0.79						mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.06	0.17						mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	0.10	0.27						mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.16	0.61						mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	0.93	3.62						mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03609

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03609/1	23/03609/7						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	WS-PTS107	WS-PTS113								
Depth to Top	0.20	0.20								
Depth To Bottom										
Date Sampled	05-Apr-23	04-Apr-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	4	8						mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	4	8						mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	1						mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	1						mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	2						mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	3	8						mg/kg	1	A-T-055s
Total Aromatics$_{A}$	3	12						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	7	20						mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s

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The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/03609
		Date Received:	17/04/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	11.9, 11.3
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03609/1	23/03609/7
Client Sample No	101	101
Client Sample ID/Depth	WS-PTS107 0.20m	WS-PTS113 0.20m
Date Sampled	05/04/23	04/04/23
A-T-019s	24/04/2023	24/04/2023
A-T-022s	20/04/2023	20/04/2023
A-T-024s	27/04/2023	27/04/2023
A-T-026s	28/04/2023	28/04/2023
A-T-027s	27/04/2023	27/04/2023
A-T-031s	25/04/2023	25/04/2023
A-T-032s	25/04/2023	25/04/2023
A-T-042sTCN	20/04/2023	20/04/2023
A-T-044	28/04/2023	28/04/2023
A-T-045	19/04/2023	19/04/2023
A-T-050s	26/04/2023	26/04/2023
A-T-055s	19/04/2023	19/04/2023
Calc-As Recd	20/04/2023	20/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03620
Issue Number: 1 **Date:** 28 April, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 17/04/23
Date Instructions Received: 17/04/23
Date Analysis Completed: 28/04/23

Approved by:

Danielle Brierley
Deputy Client Services Supervisor

1247

Envirolab Job Number: 23/03620

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03620/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	WS-PTS117									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	04-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
% Stones >10mm$_{A}$	11.0							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	7.96							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.0							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	<1							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	4							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	9							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	6							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	4							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	12							mg/kg	5	A-T-024s

Envirolab Job Number: 23/03620

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03620/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	WS-PTS117									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	04-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/03620

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03620/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	WS-PTS117									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	04-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03620

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03620/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	WS-PTS117									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	04-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	2							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	12							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	15							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	8							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	3							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	12							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	27							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/03620
		Date Received:	17/04/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	9.0
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03620/2
Client Sample No	102
Client Sample ID/Depth	WS-PTS117 0.50m
Date Sampled	04/04/23
A-T-019s	24/04/2023
A-T-022s	20/04/2023
A-T-024s	27/04/2023
A-T-026s	28/04/2023
A-T-027s	27/04/2023
A-T-031s	26/04/2023
A-T-032s	26/04/2023
A-T-042sTCN	19/04/2023
A-T-044	28/04/2023
A-T-045	19/04/2023
A-T-050s	25/04/2023
A-T-055s	20/04/2023
Calc-As Recd	20/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03655
Issue Number: 1 **Date:** 03 May, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 24/03/23
Date Instructions Received: 18/04/23
Date Analysis Completed: 02/05/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/03655

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03655/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-236									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
% Stones >10mm$_{A}$	13.9							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	7.92							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.1							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	3							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	3							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	7							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	8							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	3							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	13							mg/kg	5	A-T-024s

Envirolab Job Number: 23/03655

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03655/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-236									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/03655

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03655/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-236									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03655

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03655/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-236									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	<1							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	<1							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General

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The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB

Project: A66 NTP - Scheme S03A

Clients Project No: 765633

Project No: 23/03655

Date Received: 18/04/2023 (am)

Cool Box Temperatures (°C): 11.2 & 11.9

Lab Sample ID	23/03655/2
Client Sample No	102
Client Sample ID/Depth	TP-PTS-236 0.50m
Date Sampled	22/03/23
Deviation Code	
F	✓

Key

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/03655/2
Client Sample No	102
Client Sample ID/Depth	TP-PTS-236 0.50m
Date Sampled	22/03/23
Sulphate (water sol 2:1)	✓
Organic Matter	✓
PAH-16MS	✓
Cyanide (total)	✓
VPHCWG	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03655/2
Client Sample No	102
Client Sample ID/Depth	TP-PTS-236 0.50m
Date Sampled	22/03/23
A-T-019s	21/04/2023
A-T-022s	21/04/2023
A-T-024s	29/04/2023
A-T-026s	02/05/2023
A-T-027s	28/04/2023
A-T-031s	27/04/2023
A-T-032s	27/04/2023
A-T-042sTCN	20/04/2023
A-T-044	02/05/2023
A-T-045	19/04/2023
A-T-050s	26/04/2023
A-T-055s	21/04/2023
Calc-As Recd	21/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03676
Issue Number: 1 **Date:** 04 May, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 18/04/23
Date Instructions Received: 19/04/23
Date Analysis Completed: 04/05/23

Approved by:

Danielle Brierley
Deputy Client Services Supervisor

1247

Envirolab Job Number: 23/03676

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03676/1	23/03676/5						Units	Limit of Detection	Method ref
Client Sample No	101	102								
Client Sample ID	BH-PTS102	BH-PTS112								
Depth to Top	0.30	0.70								
Depth To Bottom										
Date Sampled	13-Apr-23	13-Apr-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4A	1A								
% Stones >10mm$_{A}$	6.7	10.6						% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	8.06	6.38						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	0.02	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.7	0.9						% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	9	4						mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0						mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	0.8	<0.5						mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	16	7						mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	25	12						mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	22	10						mg/kg	1	A-T-024s
Mercury$_{D}$	0.77	<0.17						mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	18	9						mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	49	26						mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (1 no)$_{A}$	-	*								A-T-001
pH (leachable)$_{A}^{\#}$	-	6.47						pH	0.01	A-T-031w
Cyanide (total) (leachable)$_{A}^{\#}$	-	<0.005						mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_{A}$	-	<0.01						mg/l	0.01	A-T-050w
Arsenic (leachable)$_{A}$	-	<1						µg/l	1	A-T-025w
Boron (leachable)$_{A}$	-	<10						µg/l	10	A-T-025w
Cadmium (leachable)$_{A}$	-	<1						µg/l	1	A-T-025w
Copper (leachable)$_{A}$	-	<4						µg/l	4	A-T-025w
Chromium (leachable)$_{A}$	-	<1						µg/l	1	A-T-025w
Lead (leachable)$_{A}$	-	1						µg/l	1	A-T-025w
Mercury (leachable)$_{A}$	-	<0.1						µg/l	0.1	A-T-025w
Nickel (leachable)$_{A}$	-	<2						µg/l	2	A-T-025w
Selenium (leachable)$_{A}$	-	<1						µg/l	1	A-T-025w
Zinc (leachable)$_{A}$	-	3						µg/l	2	A-T-025w

Envirolab Job Number: 23/03676

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03676/1	23/03676/5						Units	Limit of Detection	Method ref
Client Sample No	101	102								
Client Sample ID	BH-PTS102	BH-PTS112								
Depth to Top	0.30	0.70								
Depth To Bottom										
Date Sampled	13-Apr-23	13-Apr-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4A	1A								
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}$ #	NAD	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 23/03676

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03676/1	23/03676/5						Units	Limit of Detection	Method ref
Client Sample No	101	102								
Client Sample ID	BH-PTS102	BH-PTS112								
Depth to Top	0.30	0.70								
Depth To Bottom										
Date Sampled	13-Apr-23	13-Apr-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4A	1A								
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	0.69	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	0.04	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	0.22	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.57	<0.04						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.54	<0.04						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.76	<0.05						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	0.34	<0.05						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	*0.40*	*<0.07*						mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	0.45	<0.06						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	0.06	<0.04						mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	1.37	<0.08						mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	0.15	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.32	<0.03						mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	0.27	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	1.08	<0.03						mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.95	<0.07						mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	8.21	<0.08						mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03676

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03676/1	23/03676/5						Units	Limit of Detection	Method ref
Client Sample No	101	102								
Client Sample ID	BH-PTS102	BH-PTS112								
Depth to Top	0.30	0.70								
Depth To Bottom										
Date Sampled	13-Apr-23	13-Apr-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4A	1A								
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	12	2						mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	12	2						mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	2	<1						mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	5	<1						mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	24	<1						mg/kg	1	A-T-055s
Total Aromatics$_{A}$	32	<1						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	43	2						mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/03676
		Date Received:	19/04/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	8.6 & 8.9
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03676/1	23/03676/5	23/03676/9
Client Sample No	101	102	102
Client Sample ID/Depth	BH-PTS102 0.30m	BH-PTS112 0.70m	TP-PTS-213 0.50m
Date Sampled	13/04/23	13/04/23	14/04/23
A-T-019s	24/04/2023	24/04/2023	26/04/2023
A-T-022s	24/04/2023	24/04/2023	26/04/2023
A-T-024s	03/05/2023	03/05/2023	03/05/2023
A-T-025w		02/05/2023	
A-T-026s	02/05/2023	02/05/2023	02/05/2023
A-T-027s	29/04/2023	29/04/2023	03/05/2023
A-T-031s	03/05/2023	03/05/2023	04/05/2023
A-T-031w		02/05/2023	
A-T-032s	28/04/2023	02/05/2023	02/05/2023
A-T-042sTCN	24/04/2023	24/04/2023	26/04/2023
A-T-042wTCN		03/05/2023	
A-T-044	03/05/2023	03/05/2023	03/05/2023
A-T-045	20/04/2023	20/04/2023	21/04/2023
A-T-050s	02/05/2023	02/05/2023	02/05/2023
A-T-050w		03/05/2023	
A-T-055s	24/04/2023	24/04/2023	26/04/2023
Calc-As Recd	24/04/2023	24/04/2023	26/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03676
Issue Number: 1 **Date:** 04 May, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 18/04/23
Date Instructions Received: 19/04/23
Date Analysis Completed: 04/05/23

Approved by:

Danielle Brierley
Deputy Client Services Supervisor

1247

Envirolab Job Number: 23/03676

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03676/9							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-213									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	14-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1AE									
% Stones >10mm$_{A}$	8.9							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	5.95							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	0.7							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	5							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	7							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	14							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	11							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	8							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	27							mg/kg	5	A-T-024s

Envirolab Job Number: 23/03676

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03676/9							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-213									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	14-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1AE									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/03676

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03676/9							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-213									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	14-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1AE									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	*<0.07*							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03676

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03676/9							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-213									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	14-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1AE									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	<1							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	<1							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/03676
		Date Received:	19/04/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	8.6 & 8.9
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03676/1	23/03676/5	23/03676/9
Client Sample No	101	102	102
Client Sample ID/Depth	BH-PTS102 0.30m	BH-PTS112 0.70m	TP-PTS-213 0.50m
Date Sampled	13/04/23	13/04/23	14/04/23
A-T-019s	24/04/2023	24/04/2023	26/04/2023
A-T-022s	24/04/2023	24/04/2023	26/04/2023
A-T-024s	03/05/2023	03/05/2023	03/05/2023
A-T-025w		02/05/2023	
A-T-026s	02/05/2023	02/05/2023	02/05/2023
A-T-027s	29/04/2023	29/04/2023	03/05/2023
A-T-031s	03/05/2023	03/05/2023	04/05/2023
A-T-031w		02/05/2023	
A-T-032s	28/04/2023	02/05/2023	02/05/2023
A-T-042sTCN	24/04/2023	24/04/2023	26/04/2023
A-T-042wTCN		03/05/2023	
A-T-044	03/05/2023	03/05/2023	03/05/2023
A-T-045	20/04/2023	20/04/2023	21/04/2023
A-T-050s	02/05/2023	02/05/2023	02/05/2023
A-T-050w		03/05/2023	
A-T-055s	24/04/2023	24/04/2023	26/04/2023
Calc-As Recd	24/04/2023	24/04/2023	26/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03747
Issue Number: 1 **Date:** 04 May, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 19/04/23
Date Instructions Received: 20/04/23
Date Analysis Completed: 04/05/23

Approved by:

Danielle Brierley
Deputy Client Services Supervisor

1247

Envirolab Job Number: 23/03747

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03747/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-208									
Depth to Top	0.10									
Depth To Bottom										
Date Sampled	17-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
% Stones >10mm$_{A}$	14.6							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.15							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	3.7							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	3							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	9							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	21							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	26							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	9							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	38							mg/kg	5	A-T-024s

Envirolab Job Number: 23/03747

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03747/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-208									
Depth to Top	0.10									
Depth To Bottom										
Date Sampled	17-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/03747

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03747/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-208									
Depth to Top	0.10									
Depth To Bottom										
Date Sampled	17-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.06							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.07							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.10							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	0.08							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.14							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.05							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	0.05							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.11							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	0.66							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03747

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03747/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-208									
Depth to Top	0.10									
Depth To Bottom										
Date Sampled	17-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	7							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	7							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	1							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	4							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	5							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	12							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General

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The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
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If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/03747
		Date Received:	20/04/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	12.9
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03747/1
Client Sample No	101
Client Sample ID/Depth	TP-PTS-208 0.10m
Date Sampled	17/04/23
A-T-019s	02/05/2023
A-T-022s	28/04/2023
A-T-024s	03/05/2023
A-T-026s	02/05/2023
A-T-027s	03/05/2023
A-T-031s	04/05/2023
A-T-032s	02/05/2023
A-T-042sTCN	27/04/2023
A-T-044	04/05/2023
A-T-045	24/04/2023
A-T-050s	02/05/2023
A-T-055s	28/04/2023
Calc-As Recd	28/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03983
Issue Number: 1 **Date:** 18 May, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 24/04/23
Date Instructions Received: 27/04/23
Date Analysis Completed: 18/05/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/03983

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03983/2	23/03983/5	23/03983/8					Units	Limit of Detection	Method ref
Client Sample No	102	101	101							
Client Sample ID	BH-PTS108	TP-PTS205	BH-PTS126							
Depth to Top	0.50	0.10	0.30							
Depth To Bottom										
Date Sampled	19-Apr-23	13-Apr-23	20-Apr-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	1A	1A	1A							
% Stones >10mm$_{A}$	2.5	1.6	<0.1					% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.04	5.78	8.63					pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01	<0.01					g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.3	1.8	2.5					% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	2	6	1					mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5	0.8					mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	10	15	4					mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	11	12	11					mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	14	19	5					mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17	3.18					mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	5	7	6					mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	21	28	9					mg/kg	5	A-T-024s

Envirolab Job Number: 23/03983

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03983/2	23/03983/5	23/03983/8					Units	Limit of Detection	Method ref
Client Sample No	102	101	101							
Client Sample ID	BH-PTS108	TP-PTS205	BH-PTS126							
Depth to Top	0.50	0.10	0.30							
Depth To Bottom										
Date Sampled	19-Apr-23	13-Apr-23	20-Apr-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	1A	1A	1A							
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD							A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-							A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A							A-T-045

Envirolab Job Number: 23/03983

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03983/2	23/03983/5	23/03983/8					Units	Limit of Detection	Method ref
Client Sample No	102	101	101							
Client Sample ID	BH-PTS108	TP-PTS205	BH-PTS126							
Depth to Top	0.50	0.10	0.30							
Depth To Bottom										
Date Sampled	19-Apr-23	13-Apr-23	20-Apr-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	1A	1A	1A							
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	<0.06	<0.06					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	<0.08	<0.08					mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	<0.08	<0.08					mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03983

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03983/2	23/03983/5	23/03983/8					Units	Limit of Detection	Method ref
Client Sample No	102	101	101							
Client Sample ID	BH-PTS108	TP-PTS205	BH-PTS126							
Depth to Top	0.50	0.10	0.30							
Depth To Bottom										
Date Sampled	19-Apr-23	13-Apr-23	20-Apr-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	1A	1A	1A							
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	<1	2	<1					mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	<1	2	<1					mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1	<1	<1					mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	<1	2	<1					mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB

Project: A66 NTP - Scheme S03A

Clients Project No: 765633

Project No: 23/03983

Date Received: 27/04/2023 (am)

Cool Box Temperatures (°C): 12.4

Lab Sample ID	23/03983/5	23/03983/8
Client Sample No	101	101
Client Sample ID/Depth	TP-PTS205 0.10m	BH-PTS126 0.30m
Date Sampled	13/04/23	20/04/23
Deviation Code		
F	✓	✓

Key

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/03983/5	23/03983/8
Client Sample No	101	101
Client Sample ID/Depth	TP-PTS205 0.10m	BH-PTS126 0.30m
Date Sampled	13/04/23	20/04/23
PAH-16MS	✓	✓
Cyanide (total)	✓	✓
VPHCWG	✓	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03983/2	23/03983/5	23/03983/8
Client Sample No	102	101	101
Client Sample ID/Depth	BH-PTS108 0.50m	TP-PTS205 0.10m	BH-PTS126 0.30m
Date Sampled	19/04/23	13/04/23	20/04/23
A-T-019s	04/05/2023	04/05/2023	15/05/2023
A-T-022s	05/05/2023	05/05/2023	12/05/2023
A-T-024s	11/05/2023	11/05/2023	17/05/2023
A-T-026s	10/05/2023	10/05/2023	16/05/2023
A-T-027s	10/05/2023	10/05/2023	16/05/2023
A-T-031s	12/05/2023	12/05/2023	18/05/2023
A-T-032s	12/05/2023	12/05/2023	18/05/2023
A-T-042sTCN	05/05/2023	05/05/2023	12/05/2023
A-T-044	12/05/2023	12/05/2023	12/05/2023
A-T-045	04/05/2023	04/05/2023	09/05/2023
A-T-050s	09/05/2023	09/05/2023	17/05/2023
A-T-055s	04/05/2023	04/05/2023	15/05/2023
Calc-As Recd	05/05/2023	05/05/2023	15/05/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/04065
Issue Number: 1 **Date:** 15 May, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 26/04/23
Date Instructions Received: 28/04/23
Date Analysis Completed: 15/05/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/04065

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04065/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	GS-PTS102									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
% Stones >10mm$_{A}$	10.5							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.14							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	3.1							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	5							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	15							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	17							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	33							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	6							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	33							mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (1 no)$_{A}$	*									A-T-001
pH (leachable)$_{A}^{\#}$	6.92							pH	0.01	A-T-031w
Cyanide (total) (leachable)$_{A}^{\#}$	<0.005							mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_{A}$	<0.01							mg/l	0.01	A-T-050w
Arsenic (leachable)$_{A}$	2							µg/l	1	A-T-025w
Boron (leachable)$_{A}$	35							µg/l	10	A-T-025w
Cadmium (leachable)$_{A}$	<1							µg/l	1	A-T-025w
Copper (leachable)$_{A}$	19							µg/l	4	A-T-025w
Chromium (leachable)$_{A}$	1							µg/l	1	A-T-025w
Lead (leachable)$_{A}$	16							µg/l	1	A-T-025w
Mercury (leachable)$_{A}$	<0.1							µg/l	0.1	A-T-025w
Nickel (leachable)$_{A}$	<2							µg/l	2	A-T-025w
Selenium (leachable)$_{A}$	<1							µg/l	1	A-T-025w
Zinc (leachable)$_{A}$	8							µg/l	2	A-T-025w

Envirolab Job Number: 23/04065

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04065/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	GS-PTS102									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/04065

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04065/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	GS-PTS102									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.10							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.11							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.14							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	0.07							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	0.12							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.21							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.08							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	0.07							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.17							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	1.07							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/04065

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04065/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	GS-PTS102									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
SVOC excluding PAH-16										
4-Bromophenyl phenyl ether$_A$	<100							µg/kg	100	A-T-052s
Hexachlorobenzene$_A$	<100							µg/kg	100	A-T-052s
Diethyl phthalate$_A$	<100							µg/kg	100	A-T-052s
Dimethyl phthalate$_A$	<100							µg/kg	100	A-T-052s
Dibenzofuran$_A$	<100							µg/kg	100	A-T-052s
Carbazole$_A$	<100							µg/kg	100	A-T-052s
Butylbenzyl phthalate$_A$	<100							µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate$_A$	<500							µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane$_A$	<100							µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether$_A$	<100							µg/kg	100	A-T-052s
4-Nitrophenol$_A$	<100							µg/kg	100	A-T-052s
3+4-Methylphenol$_A$	<100							µg/kg	100	A-T-052s
4-Chloro-3-methylphenol$_A$	<100							µg/kg	100	A-T-052s
2-Nitrophenol$_A$	<100							µg/kg	100	A-T-052s
2-Methylphenol$_A$	<100							µg/kg	100	A-T-052s
1,2,4-Trichlorobenzene$_A$	<100							µg/kg	100	A-T-052s
2-Chlorophenol$_A$	<100							µg/kg	100	A-T-052s
2,6-Dinitrotoluene$_A$	<100							µg/kg	100	A-T-052s
2,4-Dinitrotoluene$_A$	<100							µg/kg	100	A-T-052s
2,4-Dimethylphenol$_A$	<100							µg/kg	100	A-T-052s
2,4-Dichlorophenol$_A$	<100							µg/kg	100	A-T-052s
2,4,6-Trichlorophenol$_A$	<100							µg/kg	100	A-T-052s
2,4,5-Trichlorophenol$_A$	<100							µg/kg	100	A-T-052s
1,4-Dichlorobenzene$_A$	<100							µg/kg	100	A-T-052s
1,3-Dichlorobenzene$_A$	<100							µg/kg	100	A-T-052s
1,2-Dichlorobenzene$_A$	<100							µg/kg	100	A-T-052s
2-Chloronaphthalene$_A$	<100							µg/kg	100	A-T-052s
2-Methylnaphthalene$_A$	<100							µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether$_A$	<100							µg/kg	100	A-T-052s
Phenol$_A$	<100							µg/kg	100	A-T-052s
Pentachlorophenol$_A$	<100							µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine$_A$	<100							µg/kg	100	A-T-052s

Envirolab Job Number: 23/04065

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04065/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	GS-PTS102									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
n-Dioctylphthalate$_A$	<500							µg/kg	500	A-T-052s
n-Dibutylphthalate$_A$	<100							µg/kg	100	A-T-052s
Nitrobenzene$_A$	<100							µg/kg	100	A-T-052s
Isophorone$_A$	<100							µg/kg	100	A-T-052s
Hexachloroethane$_A$	<100							µg/kg	100	A-T-052s
Hexachlorobutadiene$_A$	<100							µg/kg	100	A-T-052s
Perylene$_A$	<100							µg/kg	100	A-T-052s

Envirolab Job Number: 23/04065

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04065/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	GS-PTS102									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
VOC										
Dichlorodifluoromethane$_{A}$	<1							µg/kg	1	A-T-006s
Chloromethane$_{A}$	<10							µg/kg	10	A-T-006s
Vinyl Chloride (Chloroethene)$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Bromomethane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Chloroethane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Trichlorofluoromethane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,1-Dichloroethene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Carbon Disulphide$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Dichloromethane$_{A}$	<5							µg/kg	5	A-T-006s
trans 1,2-Dichloroethene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,1-Dichloroethane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
cis 1,2-Dichloroethene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
2,2-Dichloropropane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Bromochloromethane$_{A}^{\#}$	<5							µg/kg	5	A-T-006s
Chloroform$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,1,1-Trichloroethane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,1-Dichloropropene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Carbon Tetrachloride$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,2-Dichloroethane$_{A}^{\#}$	<2							µg/kg	2	A-T-006s
Benzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Trichloroethene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,2-Dichloropropane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Dibromomethane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Bromodichloromethane$_{A}^{\#}$	<10							µg/kg	10	A-T-006s
cis 1,3-Dichloropropene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Toluene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
trans 1,3-Dichloropropene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,1,2-Trichloroethane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,3-Dichloropropane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Tetrachloroethene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Dibromochloromethane$_{A}^{\#}$	<3							µg/kg	3	A-T-006s
1,2-Dibromoethane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s

Envirolab Job Number: 23/04065

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04065/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	GS-PTS102									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
Chlorobenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,1,1,2-Tetrachloroethane$_{A}$	<1							µg/kg	1	A-T-006s
Ethylbenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
m & p Xylene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
o-Xylene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Styrene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Bromoform$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Isopropylbenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,1,2,2-Tetrachloroethane$_{A}$	<1							µg/kg	1	A-T-006s
1,2,3-Trichloropropane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Bromobenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
n-Propylbenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
2-Chlorotoluene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
4-Chlorotoluene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
tert-Butylbenzene$_{A}^{\#}$	<2							µg/kg	2	A-T-006s
1,2,4-Trimethylbenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
sec-Butylbenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
4-Isopropyltoluene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,3-Dichlorobenzene$_{A}$	<1							µg/kg	1	A-T-006s
1,4-Dichlorobenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
n-Butylbenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,2-Dichlorobenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,2-Dibromo-3-chloropropane (DCBP)$_{A}$	<2							µg/kg	2	A-T-006s
1,2,4-Trichlorobenzene$_{A}$	<3							µg/kg	3	A-T-006s
Hexachlorobutadiene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,2,3-Trichlorobenzene$_{A}$	<3							µg/kg	3	A-T-006s

Envirolab Job Number: 23/04065

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04065/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	GS-PTS102									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	6							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	6							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	2							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	7							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	9							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	15							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/04065
		Date Received:	28/04/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	10.2
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/04065/1
Client Sample No	101
Client Sample ID/Depth	GS-PTS102 0.20m
Date Sampled	24/04/23
A-T-006s	09/05/2023
A-T-019s	10/05/2023
A-T-022s	09/05/2023
A-T-024s	12/05/2023
A-T-025w	10/05/2023
A-T-026s	11/05/2023
A-T-027s	11/05/2023
A-T-031s	15/05/2023
A-T-031w	11/05/2023
A-T-032s	12/05/2023
A-T-042sTCN	09/05/2023
A-T-042wTCN	11/05/2023
A-T-044	12/05/2023
A-T-045	04/05/2023
A-T-050s	09/05/2023
A-T-050w	15/05/2023
A-T-052s	09/05/2023
A-T-055s	09/05/2023
Calc-As Recd	09/05/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/04406
Issue Number: 1 **Date:** 25 May, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 28/04/23
Date Instructions Received: 09/05/23
Date Analysis Completed: 25/05/23

Approved by:

Danielle Brierley
Deputy Client Services Supervisor

UKAS TESTING 1247

Envirolab Job Number: 23/04406

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04406/1	23/04406/5	23/04406/9	23/04406/12				Units	Limit of Detection	Method ref
Client Sample No	101	102	102	102						
Client Sample ID	BH-PTS113	BH-PTS106	GS-PTS105	WS-PTS105						
Depth to Top	0.20	0.50	0.30	0.50						
Depth To Bottom										
Date Sampled	03-May-23	03-May-23	04-May-23	04-May-23						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4AE	1A	4A	1AB						
% Stones >10mm$_{A}$	34.5	15.1	14.6	33.6				% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	7.96	8.05	8.41	7.70				pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01	0.06	0.03				g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1	<1	<1				mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2	<0.2	<0.2				mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	2.1	0.4	0.3	0.4				% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	3	<1	2	1				mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0	<1.0	<1.0				mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5	0.5	<0.5				mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	13	5	9	5				mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	14	25	18	8				mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	22	4	8	7				mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	2.85	0.27	<0.17				mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	9	18	15	5				mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	29	18	20	15				mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (1 no)$_{A}$	*	*	*	*						A-T-001
pH (leachable)$_{A}^{\#}$	7.79	7.35	7.61	7.26				pH	0.01	A-T-031w
Cyanide (total) (leachable)$_{A}^{\#}$	<0.005	<0.005	<0.005	<0.005				mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_{A}$	<0.01	<0.01	<0.01	<0.01				mg/l	0.01	A-T-050w
Arsenic (leachable)$_{A}$	2	3	1	3				µg/l	1	A-T-025w
Boron (leachable)$_{A}$	<10	<10	<10	<10				µg/l	10	A-T-025w
Cadmium (leachable)$_{A}$	<1	<1	<1	<1				µg/l	1	A-T-025w
Copper (leachable)$_{A}$	6	7	<4	7				µg/l	4	A-T-025w
Chromium (leachable)$_{A}$	<1	2	<1	<1				µg/l	1	A-T-025w
Lead (leachable)$_{A}$	1	9	<1	9				µg/l	1	A-T-025w
Mercury (leachable)$_{A}$	<0.1	<0.1	<0.1	<0.1				µg/l	0.1	A-T-025w
Nickel (leachable)$_{A}$	<2	<2	<2	<2				µg/l	2	A-T-025w
Selenium (leachable)$_{A}$	<1	<1	<1	<1				µg/l	1	A-T-025w
Zinc (leachable)$_{A}$	2	8	<2	2				µg/l	2	A-T-025w

Envirolab Job Number: 23/04406

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04406/1	23/04406/5	23/04406/9	23/04406/12				Units	Limit of Detection	Method ref
Client Sample No	101	102	102	102						
Client Sample ID	BH-PTS113	BH-PTS106	GS-PTS105	WS-PTS105						
Depth to Top	0.20	0.50	0.30	0.50						
Depth To Bottom										
Date Sampled	03-May-23	03-May-23	04-May-23	04-May-23						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4AE	1A	4A	1AB						
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD	NAD						A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-						A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-						A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A	N/A						A-T-045

Envirolab Job Number: 23/04406

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04406/1	23/04406/5	23/04406/9	23/04406/12				Units	Limit of Detection	Method ref
Client Sample No	101	102	102	102						
Client Sample ID	BH-PTS113	BH-PTS106	GS-PTS105	WS-PTS105						
Depth to Top	0.20	0.50	0.30	0.50						
Depth To Bottom										
Date Sampled	03-May-23	03-May-23	04-May-23	04-May-23						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4AE	1A	4A	1AB						
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	0.14	0.73	<0.01	0.48				mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	0.09	0.06	<0.01	0.19				mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	0.83	1.45	<0.02	0.77				mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	5.18	1.51	0.06	0.61				mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	5.37	1.10	0.08	0.50				mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	5.64	1.41	0.09	0.53				mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	2.35	0.51	0.05	0.23				mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	2.06	0.63	<0.07	0.27				mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	4.28	1.37	0.07	0.56				mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	0.61	0.09	<0.04	0.06				mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	8.03	4.50	0.12	1.63				mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	0.12	0.81	<0.01	0.83				mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	3.25	0.62	0.07	0.29				mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	0.17	<0.03	1.29				mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	1.68	4.86	0.05	2.70				mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	7.41	3.50	0.09	1.11				mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	47	23.3	0.68	12.1				mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/04406

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04406/1	23/04406/5	23/04406/9	23/04406/12				Units	Limit of Detection	Method ref
Client Sample No	101	102	102	102						
Client Sample ID	BH-PTS113	BH-PTS106	GS-PTS105	WS-PTS105						
Depth to Top	0.20	0.50	0.30	0.50						
Depth To Bottom										
Date Sampled	03-May-23	03-May-23	04-May-23	04-May-23						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4AE	1A	4A	1AB						
SVOC excluding PAH-16										
4-Bromophenyl phenyl ether$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Hexachlorobenzene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Diethyl phthalate$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Dimethyl phthalate$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Dibenzofuran$_A$	105	105	<100	-				µg/kg	100	A-T-052s
Carbazole$_A$	121	158	<100	-				µg/kg	100	A-T-052s
Butylbenzyl phthalate$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate$_A$	<500	<500	<500	-				µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
4-Nitrophenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
3+4-Methylphenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
4-Chloro-3-methylphenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2-Nitrophenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2-Methylphenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
1,2,4-Trichlorobenzene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2-Chlorophenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2,6-Dinitrotoluene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2,4-Dinitrotoluene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2,4-Dimethylphenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2,4-Dichlorophenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2,4,6-Trichlorophenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2,4,5-Trichlorophenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
1,4-Dichlorobenzene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
1,3-Dichlorobenzene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
1,2-Dichlorobenzene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2-Chloronaphthalene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2-Methylnaphthalene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Phenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Pentachlorophenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s

Envirolab Job Number: 23/04406

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04406/1	23/04406/5	23/04406/9	23/04406/12				Units	Limit of Detection	Method ref
Client Sample No	101	102	102	102						
Client Sample ID	BH-PTS113	BH-PTS106	GS-PTS105	WS-PTS105						
Depth to Top	0.20	0.50	0.30	0.50						
Depth To Bottom										
Date Sampled	03-May-23	03-May-23	04-May-23	04-May-23						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4AE	1A	4A	1AB						
n-Dioctylphthalate$_A$	<500	<500	<500	-				µg/kg	500	A-T-052s
n-Dibutylphthalate$_A$	<200	<100	<200	-				µg/kg	100	A-T-052s
Nitrobenzene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Isophorone$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Hexachloroethane$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Hexachlorobutadiene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Perylene$_A$	319	132	<100	-				µg/kg	100	A-T-052s

Envirolab Job Number: 23/04406

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04406/1	23/04406/5	23/04406/9	23/04406/12				Units	Limit of Detection	Method ref
Client Sample No	101	102	102	102						
Client Sample ID	BH-PTS113	BH-PTS106	GS-PTS105	WS-PTS105						
Depth to Top	0.20	0.50	0.30	0.50						
Depth To Bottom										
Date Sampled	03-May-23	03-May-23	04-May-23	04-May-23						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4AE	1A	4A	1AB						
VOC										
Dichlorodifluoromethane$_{A}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Chloromethane$_{A}$	<10	<10	<10	-				µg/kg	10	A-T-006s
Vinyl Chloride (Chloroethene)$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Bromomethane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Chloroethane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Trichlorofluoromethane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,1-Dichloroethene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Carbon Disulphide$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Dichloromethane$_{A}$	<5	<5	<5	-				µg/kg	5	A-T-006s
trans 1,2-Dichloroethene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,1-Dichloroethane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
cis 1,2-Dichloroethene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
2,2-Dichloropropane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Bromochloromethane$_{A}^{\#}$	<5	<5	<5	-				µg/kg	5	A-T-006s
Chloroform$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,1,1-Trichloroethane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,1-Dichloropropene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Carbon Tetrachloride$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,2-Dichloroethane$_{A}^{\#}$	<2	<2	<2	-				µg/kg	2	A-T-006s
Benzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Trichloroethene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,2-Dichloropropane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Dibromomethane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Bromodichloromethane$_{A}^{\#}$	<10	<10	<10	-				µg/kg	10	A-T-006s
cis 1,3-Dichloropropene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Toluene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
trans 1,3-Dichloropropene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,1,2-Trichloroethane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,3-Dichloropropane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Tetrachloroethene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Dibromochloromethane$_{A}^{\#}$	<3	<3	<3	-				µg/kg	3	A-T-006s
1,2-Dibromoethane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s

Envirolab Job Number: 23/04406

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04406/1	23/04406/5	23/04406/9	23/04406/12				Units	Limit of Detection	Method ref
Client Sample No	101	102	102	102						
Client Sample ID	BH-PTS113	BH-PTS106	GS-PTS105	WS-PTS105						
Depth to Top	0.20	0.50	0.30	0.50						
Depth To Bottom										
Date Sampled	03-May-23	03-May-23	04-May-23	04-May-23						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4AE	1A	4A	1AB						
Chlorobenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,1,1,2-Tetrachloroethane$_{A}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Ethylbenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
m & p Xylene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
o-Xylene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Styrene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Bromoform$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Isopropylbenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,1,2,2-Tetrachloroethane$_{A}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,2,3-Trichloropropane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Bromobenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
n-Propylbenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
2-Chlorotoluene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
4-Chlorotoluene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
tert-Butylbenzene$_{A}^{\#}$	<2	<2	<2	-				µg/kg	2	A-T-006s
1,2,4-Trimethylbenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
sec-Butylbenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
4-Isopropyltoluene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,3-Dichlorobenzene$_{A}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,4-Dichlorobenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
n-Butylbenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,2-Dichlorobenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,2-Dibromo-3-chloropropane (DCBP)$_{A}$	<2	<2	<2	-				µg/kg	2	A-T-006s
1,2,4-Trichlorobenzene$_{A}$	<3	<3	<3	-				µg/kg	3	A-T-006s
Hexachlorobutadiene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,2,3-Trichlorobenzene$_{A}$	<3	<3	<3	-				µg/kg	3	A-T-006s

Envirolab Job Number: 23/04406

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04406/1	23/04406/5	23/04406/9	23/04406/12				Units	Limit of Detection	Method ref
Client Sample No	101	102	102	102						
Client Sample ID	BH-PTS113	BH-PTS106	GS-PTS105	WS-PTS105						
Depth to Top	0.20	0.50	0.30	0.50						
Depth To Bottom										
Date Sampled	03-May-23	03-May-23	04-May-23	04-May-23						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4AE	1A	4A	1AB						
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	3	2	1				mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	9	17	16	4				mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	9	21	18	6				mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1	<1	<1				mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	3	<1	7				mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	1	21	<1	28				mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	9	85	<1	61				mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	30	193	3	90				mg/kg	1	A-T-055s
Total Aromatics$_{A}$	40	302	4	186				mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	50	323	22	192				mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/04406
		Date Received:	09/05/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	19.0,19.3,10.3,12.3,11.8

Clients Project No: 765633

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/04406/1	23/04406/5	23/04406/9	23/04406/12
Client Sample No	101	102	102	102
Client Sample ID/Depth	BH-PTS113 0.20m	BH-PTS106 0.50m	GS-PTS105 0.30m	WS-PTS105 0.50m
Date Sampled	03/05/23	03/05/23	04/05/23	04/05/23
A-T-006s	16/05/2023	18/05/2023	16/05/2023	
A-T-019s	16/05/2023	18/05/2023	16/05/2023	16/05/2023
A-T-022s	16/05/2023	18/05/2023	16/05/2023	16/05/2023
A-T-024s	22/05/2023	23/05/2023	22/05/2023	22/05/2023
A-T-025w	17/05/2023	22/05/2023	17/05/2023	17/05/2023
A-T-026s	19/05/2023	22/05/2023	19/05/2023	19/05/2023
A-T-027s	19/05/2023	22/05/2023	19/05/2023	19/05/2023
A-T-031s	19/05/2023	22/05/2023	19/05/2023	19/05/2023
A-T-031w	16/05/2023	17/05/2023	16/05/2023	16/05/2023
A-T-032s	22/05/2023	24/05/2023	22/05/2023	22/05/2023
A-T-042sTCN	17/05/2023	19/05/2023	17/05/2023	17/05/2023
A-T-042wTCN	16/05/2023	17/05/2023	16/05/2023	16/05/2023
A-T-044	17/05/2023	25/05/2023	17/05/2023	17/05/2023
A-T-045	11/05/2023	17/05/2023	11/05/2023	11/05/2023
A-T-050s	22/05/2023	23/05/2023	22/05/2023	22/05/2023
A-T-050w	22/05/2023	23/05/2023	22/05/2023	23/05/2023
A-T-052s	17/05/2023	22/05/2023	17/05/2023	
A-T-055s	16/05/2023	22/05/2023	16/05/2023	16/05/2023
Calc-As Recd	16/05/2023	22/05/2023	16/05/2023	16/05/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/04688
Issue Number: 1 **Date:** 31 May, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 16/05/23
Date Instructions Received: 16/05/23
Date Analysis Completed: 31/05/23

Approved by:

Gemma Berrisford
Client Manager

1247

envirolab

Envirolab Job Number: 23/04688

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04688/1	23/04688/7	23/04688/9					Units	Limit of Detection	Method ref
Client Sample No	101	101	103							
Client Sample ID	WS-PTS127A	WS-PTS110	WS-PTS110							
Depth to Top	0.20	0.10	1.00							
Depth To Bottom										
Date Sampled	11-May-23	12-May-23	12-May-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	1AE	4AE	4AE							
% Stones >10mm$_{A}$	4.0	13.7	19.3					% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.55	8.07	8.58					pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01	0.02					g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	0.9	1.9	0.8					% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	4	9	6					mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	0.6	<0.5					mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	3	23	11					mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	10	21	15					mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	7	37	14					mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	5	12	10					mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	14	47	30					mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (1 no)$_{A}$	-	*	-							A-T-001
pH (leachable)$_{A}^{\#}$	-	7.76	-					pH	0.01	A-T-031w
Cyanide (total) (leachable)$_{A}^{\#}$	-	<0.005	-					mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_{A}$	-	<0.01	-					mg/l	0.01	A-T-050w
Arsenic (leachable)$_{A}$	-	2	-					µg/l	1	A-T-025w
Boron (leachable)$_{A}$	-	11	-					µg/l	10	A-T-025w
Cadmium (leachable)$_{A}$	-	<1	-					µg/l	1	A-T-025w
Copper (leachable)$_{A}$	-	6	-					µg/l	4	A-T-025w
Chromium (leachable)$_{A}$	-	<1	-					µg/l	1	A-T-025w
Lead (leachable)$_{A}$	-	2	-					µg/l	1	A-T-025w
Mercury (leachable)$_{A}$	-	<0.1	-					µg/l	0.1	A-T-025w
Nickel (leachable)$_{A}$	-	<2	-					µg/l	2	A-T-025w
Selenium (leachable)$_{A}$	-	<1	-					µg/l	1	A-T-025w
Zinc (leachable)$_{A}$	-	3	-					µg/l	2	A-T-025w

Envirolab Job Number: 23/04688

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04688/1	23/04688/7	23/04688/9					Units	Limit of Detection	Method ref
Client Sample No	101	101	103							
Client Sample ID	WS-PTS127A	WS-PTS110	WS-PTS110							
Depth to Top	0.20	0.10	1.00							
Depth To Bottom										
Date Sampled	11-May-23	12-May-23	12-May-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	1AE	4AE	4AE							
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD							A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-							A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A							A-T-045

Envirolab Job Number: 23/04688

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04688/1	23/04688/7	23/04688/9					Units	Limit of Detection	Method ref
Client Sample No	101	101	103							
Client Sample ID	WS-PTS127A	WS-PTS110	WS-PTS110							
Depth to Top	0.20	0.10	1.00							
Depth To Bottom										
Date Sampled	11-May-23	12-May-23	12-May-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	1AE	4AE	4AE							
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	0.05	0.05					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	0.33	0.13					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	0.34	0.14					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	0.41	0.18					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	0.22	0.09					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	0.27	0.11					mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	0.32	0.17					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	0.60	0.28					mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03	0.27	0.11					mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	0.17	0.10					mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	0.48	0.23					mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	3.46	1.59					mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/04688

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04688/1	23/04688/7	23/04688/9					Units	Limit of Detection	Method ref
Client Sample No	101	101	103							
Client Sample ID	WS-PTS127A	WS-PTS110	WS-PTS110							
Depth to Top	0.20	0.10	1.00							
Depth To Bottom										
Date Sampled	11-May-23	12-May-23	12-May-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	1AE	4AE	4AE							
SVOC excluding PAH-16										
4-Bromophenyl phenyl ether$_A$	-	<100	-					µg/kg	100	A-T-052s
Hexachlorobenzene$_A$	-	<100	-					µg/kg	100	A-T-052s
Diethyl phthalate$_A$	-	<100	-					µg/kg	100	A-T-052s
Dimethyl phthalate$_A$	-	<100	-					µg/kg	100	A-T-052s
Dibenzofuran$_A$	-	<100	-					µg/kg	100	A-T-052s
Carbazole$_A$	-	<100	-					µg/kg	100	A-T-052s
Butylbenzyl phthalate$_A$	-	<100	-					µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate$_A$	-	<500	-					µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane$_A$	-	<100	-					µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether$_A$	-	<100	-					µg/kg	100	A-T-052s
4-Nitrophenol$_A$	-	<100	-					µg/kg	100	A-T-052s
3+4-Methylphenol$_A$	-	<100	-					µg/kg	100	A-T-052s
4-Chloro-3-methylphenol$_A$	-	<100	-					µg/kg	100	A-T-052s
2-Nitrophenol$_A$	-	<100	-					µg/kg	100	A-T-052s
2-Methylphenol$_A$	-	<100	-					µg/kg	100	A-T-052s
1,2,4-Trichlorobenzene$_A$	-	<100	-					µg/kg	100	A-T-052s
2-Chlorophenol$_A$	-	<100	-					µg/kg	100	A-T-052s
2,6-Dinitrotoluene$_A$	-	<100	-					µg/kg	100	A-T-052s
2,4-Dinitrotoluene$_A$	-	<100	-					µg/kg	100	A-T-052s
2,4-Dimethylphenol$_A$	-	<100	-					µg/kg	100	A-T-052s
2,4-Dichlorophenol$_A$	-	<100	-					µg/kg	100	A-T-052s
2,4,6-Trichlorophenol$_A$	-	<100	-					µg/kg	100	A-T-052s
2,4,5-Trichlorophenol$_A$	-	<100	-					µg/kg	100	A-T-052s
1,4-Dichlorobenzene$_A$	-	<100	-					µg/kg	100	A-T-052s
1,3-Dichlorobenzene$_A$	-	<100	-					µg/kg	100	A-T-052s
1,2-Dichlorobenzene$_A$	-	<100	-					µg/kg	100	A-T-052s
2-Chloronaphthalene$_A$	-	<100	-					µg/kg	100	A-T-052s
2-Methylnaphthalene$_A$	-	<100	-					µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether$_A$	-	<100	-					µg/kg	100	A-T-052s
Phenol$_A$	-	<100	-					µg/kg	100	A-T-052s
Pentachlorophenol$_A$	-	<100	-					µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine$_A$	-	<100	-					µg/kg	100	A-T-052s

Envirolab Job Number: 23/04688

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04688/1	23/04688/7	23/04688/9					Units	Limit of Detection	Method ref
Client Sample No	101	101	103							
Client Sample ID	WS-PTS127A	WS-PTS110	WS-PTS110							
Depth to Top	0.20	0.10	1.00							
Depth To Bottom										
Date Sampled	11-May-23	12-May-23	12-May-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	1AE	4AE	4AE							
n-Dioctylphthalate$_A$	-	<500	-					µg/kg	500	A-T-052s
n-Dibutylphthalate$_A$	-	<100	-					µg/kg	100	A-T-052s
Nitrobenzene$_A$	-	<100	-					µg/kg	100	A-T-052s
Isophorone$_A$	-	<100	-					µg/kg	100	A-T-052s
Hexachloroethane$_A$	-	<100	-					µg/kg	100	A-T-052s
Hexachlorobutadiene$_A$	-	<100	-					µg/kg	100	A-T-052s
Perylene$_A$	-	113	-					µg/kg	100	A-T-052s

Envirolab Job Number: 23/04688

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04688/1	23/04688/7	23/04688/9					Units	Limit of Detection	Method ref
Client Sample No	101	101	103							
Client Sample ID	WS-PTS127A	WS-PTS110	WS-PTS110							
Depth to Top	0.20	0.10	1.00							
Depth To Bottom										
Date Sampled	11-May-23	12-May-23	12-May-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	1AE	4AE	4AE							
VOC										
Dichlorodifluoromethane$_{A}$	-	<1	-					µg/kg	1	A-T-006s
Chloromethane$_{A}$	-	<10	-					µg/kg	10	A-T-006s
Vinyl Chloride (Chloroethene)$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Bromomethane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Chloroethane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Trichlorofluoromethane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,1-Dichloroethene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Carbon Disulphide$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Dichloromethane$_{A}$	-	<5	-					µg/kg	5	A-T-006s
trans 1,2-Dichloroethene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,1-Dichloroethane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
cis 1,2-Dichloroethene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
2,2-Dichloropropane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Bromochloromethane$_{A}^{\#}$	-	<5	-					µg/kg	5	A-T-006s
Chloroform$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,1,1-Trichloroethane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,1-Dichloropropene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Carbon Tetrachloride$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,2-Dichloroethane$_{A}^{\#}$	-	<2	-					µg/kg	2	A-T-006s
Benzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Trichloroethene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,2-Dichloropropane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Dibromomethane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Bromodichloromethane$_{A}^{\#}$	-	<10	-					µg/kg	10	A-T-006s
cis 1,3-Dichloropropene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Toluene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
trans 1,3-Dichloropropene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,1,2-Trichloroethane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,3-Dichloropropane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Tetrachloroethene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Dibromochloromethane$_{A}^{\#}$	-	<3	-					µg/kg	3	A-T-006s
1,2-Dibromoethane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s

Envirolab Job Number: 23/04688

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04688/1	23/04688/7	23/04688/9					Units	Limit of Detection	Method ref
Client Sample No	101	101	103							
Client Sample ID	WS-PTS127A	WS-PTS110	WS-PTS110							
Depth to Top	0.20	0.10	1.00							
Depth To Bottom										
Date Sampled	11-May-23	12-May-23	12-May-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	1AE	4AE	4AE							
Chlorobenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,1,1,2-Tetrachloroethane$_{A}$	-	<1	-					µg/kg	1	A-T-006s
Ethylbenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
m & p Xylene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
o-Xylene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Styrene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Bromoform$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Isopropylbenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,1,2,2-Tetrachloroethane$_{A}$	-	<1	-					µg/kg	1	A-T-006s
1,2,3-Trichloropropane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Bromobenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
n-Propylbenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
2-Chlorotoluene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
4-Chlorotoluene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
tert-Butylbenzene$_{A}^{\#}$	-	<2	-					µg/kg	2	A-T-006s
1,2,4-Trimethylbenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
sec-Butylbenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
4-Isopropyltoluene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,3-Dichlorobenzene$_{A}$	-	<1	-					µg/kg	1	A-T-006s
1,4-Dichlorobenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
n-Butylbenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,2-Dichlorobenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,2-Dibromo-3-chloropropane (DCBP)$_{A}$	-	<2	-					µg/kg	2	A-T-006s
1,2,4-Trichlorobenzene$_{A}$	-	<3	-					µg/kg	3	A-T-006s
Hexachlorobutadiene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,2,3-Trichlorobenzene$_{A}$	-	<3	-					µg/kg	3	A-T-006s

Envirolab Job Number: 23/04688

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04688/1	23/04688/7	23/04688/9					Units	Limit of Detection	Method ref
Client Sample No	101	101	103							
Client Sample ID	WS-PTS127A	WS-PTS110	WS-PTS110							
Depth to Top	0.20	0.10	1.00							
Depth To Bottom										
Date Sampled	11-May-23	12-May-23	12-May-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	1AE	4AE	4AE							
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	2	14	3					mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	2	14	3					mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<2	<2	<2					mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	12	2					mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1	44	9					mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<2	57	10					mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	2	70	14					mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/04688
		Date Received:	16/05/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	13.4
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/04688/1	23/04688/7	23/04688/9
Client Sample No	101	101	103
Client Sample ID/Depth	WS-PTS127A 0.20m	WS-PTS110 0.10m	WS-PTS110 1.00m
Date Sampled	11/05/23	12/05/23	12/05/23
A-T-006s		25/05/2023	
A-T-019s	23/05/2023	26/05/2023	26/05/2023
A-T-022s	19/05/2023	26/05/2023	26/05/2023
A-T-024s	30/05/2023	30/05/2023	30/05/2023
A-T-025w		24/05/2023	
A-T-026s	30/05/2023	30/05/2023	30/05/2023
A-T-027s	27/05/2023	27/05/2023	27/05/2023
A-T-031s	27/05/2023	27/05/2023	27/05/2023
A-T-031w		24/05/2023	
A-T-032s	30/05/2023	31/05/2023	31/05/2023
A-T-042sTCN	19/05/2023	25/05/2023	25/05/2023
A-T-042wTCN		24/05/2023	
A-T-044	30/05/2023	30/05/2023	30/05/2023
A-T-045	19/05/2023	19/05/2023	19/05/2023
A-T-050s	26/05/2023	26/05/2023	26/05/2023
A-T-050w		26/05/2023	
A-T-052s		30/05/2023	
A-T-055s	22/05/2023	25/05/2023	25/05/2023
Calc-As Recd	22/05/2023	26/05/2023	26/05/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/04907
Issue Number: 1 **Date:** 02 June, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 19/05/23
Date Instructions Received: 19/05/23
Date Analysis Completed: 02/06/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/04907

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04907/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	WS-PTS108									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	16-May-23									
Sample Type	SOIL - ES									
Sample Matrix Code	1A									
% Stones >10mm$_{A}$	<0.1							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	7.24							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.0							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	6							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	9							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	12							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	14							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	7							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	19							mg/kg	5	A-T-024s

Envirolab Job Number: 23/04907

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04907/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	WS-PTS108									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	16-May-23									
Sample Type	SOIL - ES									
Sample Matrix Code	1A									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/04907

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04907/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	WS-PTS108									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	16-May-23									
Sample Type	SOIL - ES									
Sample Matrix Code	1A									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	0.04							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.06							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.06							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.13							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.03							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	0.10							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.10							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	0.58							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/04907

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04907/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	WS-PTS108									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	16-May-23									
Sample Type	SOIL - ES									
Sample Matrix Code	1A									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	1							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	1							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	1							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	2							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	3							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	4							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

Report Notes

General
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The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/04907
		Date Received:	19/05/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	14.1
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/04907/2
Client Sample No	102
Client Sample ID/Depth	WS-PTS108 0.50m
Date Sampled	16/05/23
A-T-019s	30/05/2023
A-T-022s	30/05/2023
A-T-024s	31/05/2023
A-T-026s	31/05/2023
A-T-027s	31/05/2023
A-T-031s	31/05/2023
A-T-032s	31/05/2023
A-T-042sTCN	26/05/2023
A-T-044	01/06/2023
A-T-045	26/05/2023
A-T-050s	30/05/2023
A-T-055s	02/06/2023
Calc-As Recd	02/06/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/05113
Issue Number: 1 **Date:** 08 June, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 24/05/23
Date Instructions Received: 25/05/23
Date Analysis Completed: 08/06/23

Approved by:

Gemma Berrisford
Client Manager

1247

envirolab

Envirolab Job Number: 23/05113

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05113/2	23/05113/3						Units	Limit of Detection	Method ref
Client Sample No	102	101								
Client Sample ID	BH-PTS104	TP-PTS206								
Depth to Top	0.50	0.20								
Depth To Bottom										
Date Sampled	19-May-23	19-May-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4AE	4AE								
% Stones >10mm$_{A}$	14.9	16.7						% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.05	5.71						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	0.03	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	2.0	1.2						% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	3	3						mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0						mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	0.6	<0.5						mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	13	8						mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	15	12						mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	22	17						mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17						mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	9	9						mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	37	27						mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (1 no)$_{A}$	*	-								A-T-001
pH (leachable)$_{A}^{\#}$	5.90	-						pH	0.01	A-T-031w
Cyanide (total) (leachable)$_{A}^{\#}$	<0.005	-						mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_{A}$	<0.01	-						mg/l	0.01	A-T-050w
Arsenic (leachable)$_{A}$	<1	-						µg/l	1	A-T-025w
Boron (leachable)$_{A}$	14	-						µg/l	10	A-T-025w
Cadmium (leachable)$_{A}$	<1	-						µg/l	1	A-T-025w
Copper (leachable)$_{A}$	16	-						µg/l	4	A-T-025w
Chromium (leachable)$_{A}$	<1	-						µg/l	1	A-T-025w
Lead (leachable)$_{A}$	7	-						µg/l	1	A-T-025w
Mercury (leachable)$_{A}$	<0.1	-						µg/l	0.1	A-T-025w
Nickel (leachable)$_{A}$	3	-						µg/l	2	A-T-025w
Selenium (leachable)$_{A}$	<1	-						µg/l	1	A-T-025w
Zinc (leachable)$_{A}$	14	-						µg/l	2	A-T-025w

Envirolab Job Number: 23/05113

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05113/2	23/05113/3						Units	Limit of Detection	Method ref
Client Sample No	102	101								
Client Sample ID	BH-PTS104	TP-PTS206								
Depth to Top	0.50	0.20								
Depth To Bottom										
Date Sampled	19-May-23	19-May-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4AE	4AE								
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 23/05113

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05113/2	23/05113/3						Units	Limit of Detection	Method ref
Client Sample No	102	101								
Client Sample ID	BH-PTS104	TP-PTS206								
Depth to Top	0.50	0.20								
Depth To Bottom										
Date Sampled	19-May-23	19-May-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4AE	4AE								
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	0.07						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	0.09						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	0.10						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	<0.05						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07						mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	0.08						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	0.14						mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03	0.06						mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	0.05						mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	0.11						mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	0.70						mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/05113

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05113/2	23/05113/3						Units	Limit of Detection	Method ref
Client Sample No	102	101								
Client Sample ID	BH-PTS104	TP-PTS206								
Depth to Top	0.50	0.20								
Depth To Bottom										
Date Sampled	19-May-23	19-May-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4AE	4AE								
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	4	5						mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	4	5						mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	2	5						mg/kg	1	A-T-055s
Total Aromatics$_{A}$	2	5						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	6	11						mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/05113
		Date Received:	25/05/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	13.1
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/05113/2	23/05113/3
Client Sample No	102	101
Client Sample ID/Depth	BH-PTS104 0.50m	TP-PTS206 0.20m
Date Sampled	19/05/23	19/05/23
A-T-019s	02/06/2023	02/06/2023
A-T-022s	01/06/2023	01/06/2023
A-T-024s	08/06/2023	08/06/2023
A-T-025w	08/06/2023	
A-T-026s	06/06/2023	06/06/2023
A-T-027s	06/06/2023	06/06/2023
A-T-031s	07/06/2023	07/06/2023
A-T-031w	05/06/2023	
A-T-032s	08/06/2023	08/06/2023
A-T-042sTCN	30/05/2023	30/05/2023
A-T-042wTCN	06/06/2023	
A-T-044	08/06/2023	08/06/2023
A-T-045	02/06/2023	02/06/2023
A-T-050s	06/06/2023	06/06/2023
A-T-050w	06/06/2023	
A-T-055s	07/06/2023	07/06/2023
Calc-As Recd	07/06/2023	07/06/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/05185
Issue Number: 1 **Date:** 13 June, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 25/05/23
Date Instructions Received: 26/05/23
Date Analysis Completed: 13/06/23

Approved by:

Gemma Berrisford
Client Manager

1247

Envirolab Job Number: 23/05185

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05185/2	23/05185/5						Units	Limit of Detection	Method ref
Client Sample No	102	102								
Client Sample ID	BH-PTS107	BH-PTS111								
Depth to Top	0.60	0.50								
Depth To Bottom										
Date Sampled	23-May-23	23-May-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4A	1A								
% Stones >10mm$_{A}$	36.4	19.9						% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	8.33	7.97						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	0.4	0.4						% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	4	2						mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0						mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5						mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	6	2						mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	9	3						mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	8	3						mg/kg	1	A-T-024s
Mercury$_{D}$	1.83	0.64						mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	6	2						mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	17	7						mg/kg	5	A-T-024s

Envirolab Job Number: 23/05185

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05185/2	23/05185/5						Units	Limit of Detection	Method ref
Client Sample No	102	102								
Client Sample ID	BH-PTS107	BH-PTS111								
Depth to Top	0.60	0.50								
Depth To Bottom										
Date Sampled	23-May-23	23-May-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4A	1A								
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 23/05185

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05185/2	23/05185/5						Units	Limit of Detection	Method ref
Client Sample No	102	102								
Client Sample ID	BH-PTS107	BH-PTS111								
Depth to Top	0.60	0.50								
Depth To Bottom										
Date Sampled	23-May-23	23-May-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4A	1A								
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	<0.05						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	<0.05						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07						mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	<0.06						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	<0.08						mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	<0.07						mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	<0.08						mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/05185

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05185/2	23/05185/5						Units	Limit of Detection	Method ref
Client Sample No	102	102								
Client Sample ID	BH-PTS107	BH-PTS111								
Depth to Top	0.60	0.50								
Depth To Bottom										
Date Sampled	23-May-23	23-May-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4A	1A								
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	1	2						mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	1	2						mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	1	<1						mg/kg	1	A-T-055s
Total Aromatics$_{A}$	1	<1						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	3	2						mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s

Report Notes

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The results reported herein relate only to the material supplied to the laboratory.
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Analytical results reflect the quality of the sample at the time of analysis only.
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The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
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Key

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None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/05185
		Date Received:	26/05/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	15.5
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/05185/2	23/05185/5
Client Sample No	102	102
Client Sample ID/Depth	BH-PTS107 0.60m	BH-PTS111 0.50m
Date Sampled	23/05/23	23/05/23
A-T-019s	06/06/2023	08/06/2023
A-T-022s	07/06/2023	07/06/2023
A-T-024s	12/06/2023	12/06/2023
A-T-026s	12/06/2023	12/06/2023
A-T-027s	09/06/2023	09/06/2023
A-T-031s	09/06/2023	09/06/2023
A-T-032s	13/06/2023	12/06/2023
A-T-042sTCN	02/06/2023	06/06/2023
A-T-044	08/06/2023	08/06/2023
A-T-045	07/06/2023	07/06/2023
A-T-050s	06/06/2023	09/06/2023
A-T-055s	09/06/2023	08/06/2023
Calc-As Recd	09/06/2023	08/06/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/05485
Issue Number: 1 **Date:** 20 June, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 30/05/23
Date Instructions Received: 06/06/23
Date Analysis Completed: 20/06/23

Approved by:

Richard Wong
Client Manager

1247

envirolab

Envirolab Job Number: 23/05485

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05485/3							Units	Limit of Detection	Method ref
Client Sample No	103									
Client Sample ID	BH-PTS107B									
Depth to Top	1.30									
Depth To Bottom										
Date Sampled	26-May-23									
Sample Type	SOIL - ES									
Sample Matrix Code	5AE									
% Stones >10mm$_{A}$	12.6							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	8.14							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	0.02							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	0.8							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	5							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	11							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	20							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	16							mg/kg	1	A-T-024s
Mercury$_{D}$	0.26							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	15							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	37							mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (1 no)$_{A}$	*									A-T-001
pH (leachable)$_{A}^{\#}$	7.74							pH	0.01	A-T-031w
Cyanide (total) (leachable)$_{A}^{\#}$	<0.005							mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_{A}$	<0.01							mg/l	0.01	A-T-050w
Arsenic (leachable)$_{A}$	<1							µg/l	1	A-T-025w
Boron (leachable)$_{A}$	<10							µg/l	10	A-T-025w
Cadmium (leachable)$_{A}$	<1							µg/l	1	A-T-025w
Copper (leachable)$_{A}$	<4							µg/l	4	A-T-025w
Chromium (leachable)$_{A}$	2							µg/l	1	A-T-025w
Lead (leachable)$_{A}$	<1							µg/l	1	A-T-025w
Mercury (leachable)$_{A}$	<0.1							µg/l	0.1	A-T-025w
Nickel (leachable)$_{A}$	<2							µg/l	2	A-T-025w
Selenium (leachable)$_{A}$	<1							µg/l	1	A-T-025w
Zinc (leachable)$_{A}$	3							µg/l	2	A-T-025w

Envirolab Job Number: 23/05485

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05485/3							Units	Limit of Detection	Method ref
Client Sample No	103									
Client Sample ID	BH-PTS107B									
Depth to Top	1.30									
Depth To Bottom										
Date Sampled	26-May-23									
Sample Type	SOIL - ES									
Sample Matrix Code	5AE									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/05485

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05485/3							Units	Limit of Detection	Method ref
Client Sample No	103									
Client Sample ID	BH-PTS107B									
Depth to Top	1.30									
Depth To Bottom										
Date Sampled	26-May-23									
Sample Type	SOIL - ES									
Sample Matrix Code	5AE									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/05485

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05485/3							Units	Limit of Detection	Method ref
Client Sample No	103									
Client Sample ID	BH-PTS107B									
Depth to Top	1.30									
Depth To Bottom										
Date Sampled	26-May-23									
Sample Type	SOIL - ES									
Sample Matrix Code	5AE									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	3							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	3							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	1							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	1							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	4							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB

Project: A66 NTP - Scheme S03A

Clients Project No: 765633

Project No: 23/05485

Date Received: 06/06/2023 (am)

Cool Box Temperatures (°C): 14.4, 15.1

Lab Sample ID	23/05485/3
Client Sample No	103
Client Sample ID/Depth	BH-PTS107B 1.30m
Date Sampled	26/05/23
Deviation Code	
F	✓

Key

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/05485/3
Client Sample No	103
Client Sample ID/Depth	BH-PTS107B 1.30m
Date Sampled	26/05/23
PAH-16MS	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/05485/3
Client Sample No	103
Client Sample ID/Depth	BH-PTS107B 1.30m
Date Sampled	26/05/23
A-T-019s	19/06/2023
A-T-022s	08/06/2023
A-T-024s	20/06/2023
A-T-025w	19/06/2023
A-T-026s	20/06/2023
A-T-027s	20/06/2023
A-T-031s	20/06/2023
A-T-031w	19/06/2023
A-T-032s	20/06/2023
A-T-042sTCN	07/06/2023
A-T-042wTCN	19/06/2023
A-T-044	19/06/2023
A-T-045	16/06/2023
A-T-050s	19/06/2023
A-T-050w	19/06/2023
A-T-055s	14/06/2023
Calc-As Recd	14/06/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/05708
Issue Number: 1 **Date:** 27 June, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 06/06/23
Date Instructions Received: 09/06/23
Date Analysis Completed: 27/06/23

Approved by:

Gemma Berrisford
Client Manager

1247

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Envirolab Job Number: 23/05708

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05708/1	23/05708/2	23/05708/3	23/05708/4	23/05708/5	23/05708/6	23/05708/7	Units	Limit of Detection	Method ref
Client Sample No	601	601	601	601	601	101	601			
Client Sample ID	BH-PTS115	BH-PTS123	BH-PTS127	BH-PTS129	TP-PTS207	TP-PTS207	TP-PTS209			
Depth to Top	0.30	0.50	0.20	0.40	0.10	1.50	0.10			
Depth To Bottom										
Date Sampled	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	1A	1A	1AE	4AE	1A	4AE			
% Stones >10mm$_{A}$	40.9	1.0	14.7	18.0	5.3	29.0	19.0	% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	5.81	6.50	6.19	6.10	5.20	6.18	5.26	pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.3	0.3	1.6	1.2	2.4	0.5	2.8	% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	9	6	8	8	9	3	7	mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	0.8	<0.5	0.6	0.7	0.9	<0.5	0.6	mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	12	5	13	10	16	6	13	mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	18	11	20	23	39	13	19	mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	19	7	33	12	37	14	35	mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17	<0.17	<0.17	0.26	<0.17	<0.17	mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	12	8	9	17	15	6	7	mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	37	11	44	43	57	26	41	mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (1 no)$_{A}$	*	-	*	-	-	*	-			A-T-001
pH (leachable)$_{A}^{\#}$	6.64	-	6.79	-	-	6.65	-	pH	0.01	A-T-031w
Cyanide (total) (leachable)$_{A}^{\#}$	<0.005	-	<0.005	-	-	<0.005	-	mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_{A}$	<0.01	-	<0.01	-	-	<0.01	-	mg/l	0.01	A-T-050w
Arsenic (leachable)$_{A}$	2	-	2	-	-	<1	-	µg/l	1	A-T-025w
Boron (leachable)$_{A}$	13	-	27	-	-	<10	-	µg/l	10	A-T-025w
Cadmium (leachable)$_{A}$	<1	-	<1	-	-	<1	-	µg/l	1	A-T-025w
Copper (leachable)$_{A}$	14	-	8	-	-	11	-	µg/l	4	A-T-025w
Chromium (leachable)$_{A}$	<1	-	<1	-	-	<1	-	µg/l	1	A-T-025w
Lead (leachable)$_{A}$	3	-	20	-	-	2	-	µg/l	1	A-T-025w
Mercury (leachable)$_{A}$	<0.1	-	<0.1	-	-	<0.1	-	µg/l	0.1	A-T-025w
Nickel (leachable)$_{A}$	<2	-	<2	-	-	<2	-	µg/l	2	A-T-025w
Selenium (leachable)$_{A}$	<1	-	<1	-	-	<1	-	µg/l	1	A-T-025w
Zinc (leachable)$_{A}$	7	-	8	-	-	4	-	µg/l	2	A-T-025w

Envirolab Job Number: 23/05708

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05708/1	23/05708/2	23/05708/3	23/05708/4	23/05708/5	23/05708/6	23/05708/7	Units	Limit of Detection	Method ref
Client Sample No	601	601	601	601	601	101	601			
Client Sample ID	BH-PTS115	BH-PTS123	BH-PTS127	BH-PTS129	TP-PTS207	TP-PTS207	TP-PTS209			
Depth to Top	0.30	0.50	0.20	0.40	0.10	1.50	0.10			
Depth To Bottom										
Date Sampled	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	1A	1A	1AE	4AE	1A	4AE			
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD	NAD	NAD	NAD	NAD			A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A	N/A	N/A	N/A	N/A			A-T-045

Envirolab Job Number: 23/05708

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05708/1	23/05708/2	23/05708/3	23/05708/4	23/05708/5	23/05708/6	23/05708/7	Units	Limit of Detection	Method ref
Client Sample No	601	601	601	601	601	101	601			
Client Sample ID	BH-PTS115	BH-PTS123	BH-PTS127	BH-PTS129	TP-PTS207	TP-PTS207	TP-PTS209			
Depth to Top	0.30	0.50	0.20	0.40	0.10	1.50	0.10			
Depth To Bottom										
Date Sampled	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	1A	1A	1AE	4AE	1A	4AE			
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04	<0.04	0.06	<0.04	0.04	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	<0.04	<0.04	<0.04	0.06	<0.04	0.06	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	<0.05	<0.05	<0.05	0.08	<0.05	0.09	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	<0.06	<0.06	<0.06	0.08	<0.06	0.08	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	<0.08	<0.08	<0.08	0.14	<0.08	0.14	mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03	<0.03	<0.03	<0.03	0.04	<0.03	0.05	mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	<0.03	<0.03	<0.03	0.04	<0.03	0.04	mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	<0.07	<0.07	<0.07	0.12	<0.07	0.11	mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	<0.08	<0.08	<0.08	0.62	<0.08	0.67	mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/05708

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05708/1	23/05708/2	23/05708/3	23/05708/4	23/05708/5	23/05708/6	23/05708/7	Units	Limit of Detection	Method ref
Client Sample No	601	601	601	601	601	101	601			
Client Sample ID	BH-PTS115	BH-PTS123	BH-PTS127	BH-PTS129	TP-PTS207	TP-PTS207	TP-PTS209			
Depth to Top	0.30	0.50	0.20	0.40	0.10	1.50	0.10			
Depth To Bottom										
Date Sampled	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	1A	1A	1AE	4AE	1A	4AE			
SVOC excluding PAH-16										
4-Bromophenyl phenyl ether$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Hexachlorobenzene$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Diethyl phthalate$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Dimethyl phthalate$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Dibenzofuran$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Carbazole$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Butylbenzyl phthalate$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate$_A$	-	-	-	-	-	<500	-	µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
4-Nitrophenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
3+4-Methylphenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
4-Chloro-3-methylphenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Nitrophenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Methylphenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
1,2,4-Trichlorobenzene$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Chlorophenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2,6-Dinitrotoluene$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4-Dinitrotoluene$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4-Dimethylphenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4-Dichlorophenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4,6-Trichlorophenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4,5-Trichlorophenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
1,4-Dichlorobenzene$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
1,3-Dichlorobenzene$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
1,2-Dichlorobenzene$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Chloronaphthalene$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Methylnaphthalene$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Phenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Pentachlorophenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s

Envirolab Job Number: 23/05708

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05708/1	23/05708/2	23/05708/3	23/05708/4	23/05708/5	23/05708/6	23/05708/7	Units	Limit of Detection	Method ref
Client Sample No	601	601	601	601	601	101	601			
Client Sample ID	BH-PTS115	BH-PTS123	BH-PTS127	BH-PTS129	TP-PTS207	TP-PTS207	TP-PTS209			
Depth to Top	0.30	0.50	0.20	0.40	0.10	1.50	0.10			
Depth To Bottom										
Date Sampled	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	1A	1A	1AE	4AE	1A	4AE			
n-Dioctylphthalate$_{A}$	-	-	-	-	-	<500	-	µg/kg	500	A-T-052s
n-Dibutylphthalate$_{A}$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Nitrobenzene$_{A}$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Isophorone$_{A}$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Hexachloroethane$_{A}$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Hexachlorobutadiene$_{A}$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Perylene$_{A}$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
TPH Total with ID										
TPH total (>C6-C40)$_{A}^{M\#}$	-	-	-	-	-	<10	-	mg/kg	10	A-T-007s
TPH ID Interpretation$_{A}$	-	-	-	-	-	Concentration too low to identify	-			A-T-007s

Envirolab Job Number: 23/05708

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05708/1	23/05708/2	23/05708/3	23/05708/4	23/05708/5	23/05708/6	23/05708/7	Units	Limit of Detection	Method ref
Client Sample No	601	601	601	601	601	101	601			
Client Sample ID	BH-PTS115	BH-PTS123	BH-PTS127	BH-PTS129	TP-PTS207	TP-PTS207	TP-PTS209			
Depth to Top	0.30	0.50	0.20	0.40	0.10	1.50	0.10			
Depth To Bottom										
Date Sampled	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	1A	1A	1AE	4AE	1A	4AE			
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	0.01	0.02	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	1	<1	6	<1	12	<1	20	mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	1	<1	6	<1	12	<1	20	mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1	<1	<1	2	<1	2	mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	<1	<1	<1	1	<1	3	mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1	<1	2	<1	3	<1	7	mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1	<1	3	<1	6	<1	12	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	2	<1	9	<1	18	<1	32	mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s

Envirolab Job Number: 23/05708

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05708/8	23/05708/9	23/05708/10	23/05708/11	23/05708/12	23/05708/13	23/05708/14	Units	Limit of Detection	Method ref
Client Sample No	601	601	601	601	601	601	601			
Client Sample ID	TP-PTS210	TP-PTS212	TP-PTS214	TP-PTS233-LC	TP-PTS235	WS-PTS120	WS-PTS130			
Depth to Top	0.50	0.10	0.50	0.10	0.50	0.20	1.20			
Depth To Bottom										
Date Sampled	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	6AE	1A	1A	1A	4AE	1A			
% Stones >10mm$_{A}$	12.1	1.3	<0.1	4.7	<0.1	<0.1	20.8	% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	5.20	5.86	5.59	5.40	6.22	4.82	6.51	pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	0.05	<0.01	0.02	<0.01	<0.01	<0.01	g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.7	5.7	0.7	2.3	1.0	3.3	0.2	% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	4	15	<1	4	3	8	3	mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	1.5	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	30	21	2	5	5	6	5	mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	33	31	6	10	10	11	10	mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	47	31	6	13	10	22	6	mg/kg	1	A-T-024s
Mercury$_{D}$	1.49	<0.17	<0.17	<0.17	<0.17	0.18	<0.17	mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	28	21	3	6	6	5	6	mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	227	61	8	19	14	27	10	mg/kg	5	A-T-024s

Envirolab Job Number: 23/05708

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05708/8	23/05708/9	23/05708/10	23/05708/11	23/05708/12	23/05708/13	23/05708/14	Units	Limit of Detection	Method ref
Client Sample No	601	601	601	601	601	601	601			
Client Sample ID	TP-PTS210	TP-PTS212	TP-PTS214	TP-PTS233-LC	TP-PTS235	WS-PTS120	WS-PTS130			
Depth to Top	0.50	0.10	0.50	0.10	0.50	0.20	1.20			
Depth To Bottom										
Date Sampled	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	6AE	1A	1A	1A	4AE	1A			
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD	NAD	NAD	NAD	NAD			A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A	N/A	N/A	N/A	N/A			A-T-045

Envirolab Job Number: 23/05708

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05708/8	23/05708/9	23/05708/10	23/05708/11	23/05708/12	23/05708/13	23/05708/14	Units	Limit of Detection	Method ref
Client Sample No	601	601	601	601	601	601	601			
Client Sample ID	TP-PTS210	TP-PTS212	TP-PTS214	TP-PTS233-LC	TP-PTS235	WS-PTS120	WS-PTS130			
Depth to Top	0.50	0.10	0.50	0.10	0.50	0.20	1.20			
Depth To Bottom										
Date Sampled	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	6AE	1A	1A	1A	4AE	1A			
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04	0.04	<0.04	0.27	<0.04	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	<0.04	<0.04	0.06	<0.04	0.36	<0.04	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	<0.05	<0.05	0.06	<0.05	0.43	<0.05	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	<0.05	<0.05	0.05	<0.05	0.25	<0.05	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07	<0.07	<0.07	<0.07	0.21	<0.07	mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	<0.06	<0.06	0.07	<0.06	0.39	<0.06	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	<0.08	<0.08	0.14	<0.08	0.81	<0.08	mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03	<0.03	<0.03	0.05	<0.03	0.28	<0.03	mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	<0.03	<0.03	0.05	<0.03	0.23	<0.03	mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	<0.07	<0.07	0.10	<0.07	0.63	<0.07	mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	<0.08	<0.08	0.62	<0.08	3.93	<0.08	mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/05708

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05708/8	23/05708/9	23/05708/10	23/05708/11	23/05708/12	23/05708/13	23/05708/14	Units	Limit of Detection	Method ref
Client Sample No	601	601	601	601	601	601	601			
Client Sample ID	TP-PTS210	TP-PTS212	TP-PTS214	TP-PTS233-LC	TP-PTS235	WS-PTS120	WS-PTS130			
Depth to Top	0.50	0.10	0.50	0.10	0.50	0.20	1.20			
Depth To Bottom										
Date Sampled	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	6AE	1A	1A	1A	4AE	1A			
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	7	44	<1	8	4	15	<1	mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	7	44	<1	8	4	15	<1	mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	2	<1	1	1	2	<1	mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	1	<1	<1	<1	1	<1	mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	3	<1	1	<1	4	<1	mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	2	6	<1	3	1	12	<1	mg/kg	1	A-T-055s
Total Aromatics$_{A}$	4	13	<1	5	2	19	<1	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	11	57	<1	14	7	34	<1	mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s

Report Notes

General
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The results reported herein relate only to the material supplied to the laboratory.
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Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
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Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB

Project: A66 NTP - Scheme S03A

Clients Project No: 765633

Project No: 23/05708

Date Received: 09/06/2023 (pm)

Cool Box Temperatures (°C): 14.1,13.7,14.4

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/05708/1	23/05708/2	23/05708/3	23/05708/4	23/05708/5	23/05708/6	23/05708/7	23/05708/8	23/05708/9	23/05708/10	23/05708/11	23/05708/12
Client Sample No	601	601	601	601	601	101	601	601	601	601	601	601
Client Sample ID/Depth	BH-PTS115 0.30m	BH-PTS123 0.50m	BH-PTS127 0.20m	BH-PTS129 0.40m	TP-PTS207 0.10m	TP-PTS207 1.50m	TP-PTS209 0.10m	TP-PTS210 0.50m	TP-PTS212 0.10m	TP-PTS214 0.50m	TP-PTS233-LC 0.10m	TP-PTS235 0.50m
Date Sampled	03/06/23	03/06/23	03/06/23	03/06/23	03/06/23	03/06/23	03/06/23	03/06/23	03/06/23	03/06/23	03/06/23	03/06/23
A-T-007s						22/06/2023						
A-T-019s	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023
A-T-022s	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023
A-T-024s	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023
A-T-025w	23/06/2023		23/06/2023			23/06/2023						
A-T-026s	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023
A-T-027s	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023
A-T-031s	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023
A-T-031w	19/06/2023		19/06/2023			19/06/2023						
A-T-032s	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023
A-T-042sTCN	14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023
A-T-042wTCN	19/06/2023		19/06/2023			19/06/2023						
A-T-044	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023
A-T-045	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023
A-T-050s	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023
A-T-050w	20/06/2023		20/06/2023			20/06/2023						
A-T-052s						19/06/2023						
A-T-055s	13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023
Calc-As Recd	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023

Lab Sample ID	23/05708/13	23/05708/14
Client Sample No	601	601
Client Sample ID/Depth	WS-PTS120 0.20m	WS-PTS130 1.20m
Date Sampled	03/06/23	03/06/23
A-T-007s		
A-T-019s	21/06/2023	21/06/2023
A-T-022s	15/06/2023	15/06/2023
A-T-024s	27/06/2023	27/06/2023
A-T-025w		
A-T-026s	27/06/2023	27/06/2023
A-T-027s	27/06/2023	27/06/2023
A-T-031s	27/06/2023	27/06/2023
A-T-031w		
A-T-032s	26/06/2023	26/06/2023
A-T-042sTCN	14/06/2023	14/06/2023
A-T-042wTCN		
A-T-044	23/06/2023	23/06/2023
A-T-045	21/06/2023	21/06/2023
A-T-050s	21/06/2023	21/06/2023
A-T-050w		
A-T-052s		
A-T-055s	13/06/2023	13/06/2023
Calc-As Recd	15/06/2023	15/06/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/06040
Issue Number: 1 **Date:** 03 July, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 16/06/23
Date Instructions Received: 19/06/23
Date Analysis Completed: 03/07/23

Approved by:

Danielle Brierley
Deputy Client Services Supervisor

1247

Envirolab Job Number: 23/06040

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/06040/1	23/06040/2						Units	Limit of Detection	Method ref
Client Sample No	601	601								
Client Sample ID	BH-PTS122	BH-PTS124								
Depth to Top	0.50	1.00								
Depth To Bottom										
Date Sampled	14-Jun-23	14-Jun-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	1A	5A								
% Stones >10mm$_{A}$	11.7	<0.1						% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	5.90	6.93						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	0.9	0.3						% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	6	2						mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0						mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5						mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	5	10						mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	10	21						mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	7	6						mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17						mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	7	15						mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	14	14						mg/kg	5	A-T-024s

Envirolab Job Number: 23/06040

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/06040/1	23/06040/2						Units	Limit of Detection	Method ref
Client Sample No	601	601								
Client Sample ID	BH-PTS122	BH-PTS124								
Depth to Top	0.50	1.00								
Depth To Bottom										
Date Sampled	14-Jun-23	14-Jun-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	1A	5A								
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 23/06040

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/06040/1	23/06040/2						Units	Limit of Detection	Method ref
Client Sample No	601	601								
Client Sample ID	BH-PTS122	BH-PTS124								
Depth to Top	0.50	1.00								
Depth To Bottom										
Date Sampled	14-Jun-23	14-Jun-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	1A	5A								
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	<0.05						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	<0.05						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07						mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	<0.06						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	<0.08						mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	<0.07						mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	<0.08						mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/06040

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/06040/1	23/06040/2						Units	Limit of Detection	Method ref
Client Sample No	601	601								
Client Sample ID	BH-PTS122	BH-PTS124								
Depth to Top	0.50	1.00								
Depth To Bottom										
Date Sampled	14-Jun-23	14-Jun-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	1A	5A								
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	<1	<1						mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1	<1						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	<1	<1						mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s

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Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
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IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
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Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/06040
		Date Received:	19/06/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	22.1
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/06040/1	23/06040/2
Client Sample No	601	601
Client Sample ID/Depth	BH-PTS122 0.50m	BH-PTS124 1.00m
Date Sampled	14/06/23	14/06/23
A-T-019s	30/06/2023	30/06/2023
A-T-022s	22/06/2023	22/06/2023
A-T-024s	03/07/2023	03/07/2023
A-T-026s	03/07/2023	03/07/2023
A-T-027s	03/07/2023	03/07/2023
A-T-031s	03/07/2023	03/07/2023
A-T-032s	03/07/2023	03/07/2023
A-T-042sTCN	22/06/2023	22/06/2023
A-T-044	30/06/2023	30/06/2023
A-T-045	27/06/2023	27/06/2023
A-T-050s	26/06/2023	26/06/2023
A-T-055s	27/06/2023	27/06/2023
Calc-As Recd	27/06/2023	27/06/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/02201
Issue Number: 1 **Date:** 22 March, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 09/03/23
Date Instructions Received: 09/03/23
Date Analysis Completed: 22/03/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/02201

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02201/1	23/02201/5						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	BH-PTS-100	BH-PTS-101								
Depth to Top	0.30	0.10								
Depth To Bottom										
Date Sampled	03-Mar-23	02-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4ABE								
% Stones >10mm$_{A}$	31.8	23.2						% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	5.68	4.81						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	2.1	2.0						% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	5	3						mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0						mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	0.5	0.5						mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	21	25						mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	15	15						mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	44	65						mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17						mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	8	8						mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	42	45						mg/kg	5	A-T-024s

Envirolab Job Number: 23/02201

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02201/1	23/02201/5						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	BH-PTS-100	BH-PTS-101								
Depth to Top	0.30	0.10								
Depth To Bottom										
Date Sampled	03-Mar-23	02-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4ABE								
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 23/02201

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02201/1	23/02201/5						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	BH-PTS-100	BH-PTS-101								
Depth to Top	0.30	0.10								
Depth To Bottom										
Date Sampled	03-Mar-23	02-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4ABE								
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.13	<0.04						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.15	<0.04						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.19	<0.05						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	0.11	<0.05						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	0.08	<0.07						mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	0.16	<0.06						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.29	<0.08						mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.12	<0.03						mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	0.09	<0.03						mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.22	<0.07						mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	1.54	<0.08						mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/02201

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02201/1	23/02201/5						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	BH-PTS-100	BH-PTS-101								
Depth to Top	0.30	0.10								
Depth To Bottom										
Date Sampled	03-Mar-23	02-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4ABE								
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	5	4						mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	5	4						mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	5	<1						mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	22	3						mg/kg	1	A-T-055s
Total Aromatics$_{A}$	27	4						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	32	7						mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/02201
		Date Received:	09/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	4.1
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02201/1	23/02201/5
Client Sample No	101	101
Client Sample ID/Depth	BH-PTS-100 0.30m	BH-PTS-101 0.10m
Date Sampled	03/03/23	02/03/23
A-T-019s	15/03/2023	15/03/2023
A-T-022s	14/03/2023	14/03/2023
A-T-024s	17/03/2023	17/03/2023
A-T-026s	17/03/2023	17/03/2023
A-T-027s	17/03/2023	17/03/2023
A-T-031s	21/03/2023	21/03/2023
A-T-032s	22/03/2023	22/03/2023
A-T-042sTCN	13/03/2023	13/03/2023
A-T-044	16/03/2023	16/03/2023
A-T-045	10/03/2023	10/03/2023
A-T-050s	20/03/2023	20/03/2023
A-T-055s	20/03/2023	20/03/2023
Calc-As Recd	20/03/2023	20/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/02266
Issue Number: 1 **Date:** 24 March, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 10/03/23
Date Instructions Received: 10/03/23
Date Analysis Completed: 24/03/23

Approved by:

Gemma Berrisford
Client Manager

1247

Envirolab Job Number: 23/02266

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02266/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-220									
Depth to Top	0.10									
Depth To Bottom										
Date Sampled	08-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
% Stones >10mm$_{A}$	<0.1							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.27							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	0.2							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	4							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	5							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	10							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	5							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	6							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	11							mg/kg	5	A-T-024s

Envirolab Job Number: 23/02266

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02266/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-220									
Depth to Top	0.10									
Depth To Bottom										
Date Sampled	08-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/02266

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02266/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-220									
Depth to Top	0.10									
Depth To Bottom										
Date Sampled	08-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/02266

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02266/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-220									
Depth to Top	0.10									
Depth To Bottom										
Date Sampled	08-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	4							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	4							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	4							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/02266
		Date Received:	10/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	2.3
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02266/1
Client Sample No	101
Client Sample ID/Depth	TP-PTS-220 0.10m
Date Sampled	08/03/23
A-T-019s	20/03/2023
A-T-022s	20/03/2023
A-T-024s	20/03/2023
A-T-026s	20/03/2023
A-T-027s	20/03/2023
A-T-031s	21/03/2023
A-T-032s	24/03/2023
A-T-042sTCN	16/03/2023
A-T-044	16/03/2023
A-T-045	13/03/2023
A-T-050s	20/03/2023
A-T-055s	20/03/2023
Calc-As Recd	20/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/02317
Issue Number: 1 **Date:** 27 March, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 13/03/23
Date Instructions Received: 13/03/23
Date Analysis Completed: 27/03/23

Approved by:

Gemma Berrisford
Client Manager

1247

Envirolab Job Number: 23/02317

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02317/5							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	GS-PTS-108A									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	08-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
% Stones >10mm$_{A}$	<0.1							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	7.32							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	0.02							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	0.5							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	4							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	0.8							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	10							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	23							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	8							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	16							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	30							mg/kg	5	A-T-024s

Envirolab Job Number: 23/02317

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02317/5							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	GS-PTS-108A									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	08-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/02317

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02317/5							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	GS-PTS-108A									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	08-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/02317

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02317/5							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	GS-PTS-108A									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	08-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	<1							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	<1							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

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A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/02317
		Date Received:	13/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	7.1
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02317/5
Client Sample No	102
Client Sample ID/Depth	GS-PTS-108A 0.50m
Date Sampled	08/03/23
A-T-019s	20/03/2023
A-T-022s	20/03/2023
A-T-024s	21/03/2023
A-T-026s	21/03/2023
A-T-027s	21/03/2023
A-T-031s	22/03/2023
A-T-032s	27/03/2023
A-T-042sTCN	20/03/2023
A-T-044	16/03/2023
A-T-045	15/03/2023
A-T-050s	21/03/2023
A-T-055s	20/03/2023
Calc-As Recd	20/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/02362
Issue Number: 1 **Date:** 28 March, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 13/03/23
Date Instructions Received: 14/03/23
Date Analysis Completed: 28/03/23

Approved by:

Gemma Berrisford
Client Manager

1247

Envirolab Job Number: 23/02362

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02362/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-225									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	09-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
% Stones >10mm$_{A}$	<0.1							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	5.67							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	0.3							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	3							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	3							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	9							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	4							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	6							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	11							mg/kg	5	A-T-024s

Envirolab Job Number: 23/02362

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02362/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-225									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	09-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/02362

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02362/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-225									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	09-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	*<0.03*							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/02362

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02362/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-225									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	09-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	<1							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	<1							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/02362
		Date Received:	14/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	11.1
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02362/2
Client Sample No	102
Client Sample ID/Depth	TP-PTS-225 0.50m
Date Sampled	09/03/23
A-T-019s	24/03/2023
A-T-022s	20/03/2023
A-T-024s	22/03/2023
A-T-026s	21/03/2023
A-T-027s	22/03/2023
A-T-031s	23/03/2023
A-T-032s	28/03/2023
A-T-042sTCN	17/03/2023
A-T-044	21/03/2023
A-T-045	16/03/2023
A-T-050s	20/03/2023
A-T-055s	24/03/2023
Calc-As Recd	24/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/02425
Issue Number: 1 **Date:** 28 March, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 14/03/23
Date Instructions Received: 15/03/23
Date Analysis Completed: 28/03/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/02425

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02425/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-229									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	10-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
% Stones >10mm$_{A}$	<0.1							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	4.99							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	2.0							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	2							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	6							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	13							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	19							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	7							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	18							mg/kg	5	A-T-024s

Envirolab Job Number: 23/02425

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02425/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-229									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	10-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/02425

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02425/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-229									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	10-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.07							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.07							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.10							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	0.08							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	*<0.04*							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.14							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.05							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	0.06							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.10							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	0.67							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/02425

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02425/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-229									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	10-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	6							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	6							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	1							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	6							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	7							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	13							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General

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The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/02425
		Date Received:	15/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	8.0
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02425/1
Client Sample No	101
Client Sample ID/Depth	TP-PTS-229 0.20m
Date Sampled	10/03/23
A-T-019s	22/03/2023
A-T-022s	22/03/2023
A-T-024s	23/03/2023
A-T-026s	22/03/2023
A-T-027s	22/03/2023
A-T-031s	22/03/2023
A-T-032s	28/03/2023
A-T-042sTCN	17/03/2023
A-T-044	21/03/2023
A-T-045	16/03/2023
A-T-050s	23/03/2023
A-T-055s	21/03/2023
Calc-As Recd	22/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/02571
Issue Number: 1 **Date:** 30 March, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 17/03/23
Date Instructions Received: 17/03/23
Date Analysis Completed: 30/03/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/02571

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02571/2	23/02571/5	23/02571/7					Units	Limit of Detection	Method ref
Client Sample No	102	102	101							
Client Sample ID	TP-PTS226	TP-PTS231	GS PTS 109							
Depth to Top	0.50	0.50	0.30							
Depth To Bottom										
Date Sampled	14-Mar-23	14-Mar-23	14-Mar-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4	1	1E							
% Stones >10mm$_{A}$	<0.1	<0.1	<0.1					% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	7.54	7.03	6.30					pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	0.01	<0.01					g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	0.2	0.3	2.2					% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	<1	<1	1					mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5	<0.5					mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	6	3	5					mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	13	9	8					mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	5	4	24					mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	8	6	4					mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	12	12	20					mg/kg	5	A-T-024s

Envirolab Job Number: 23/02571

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02571/2	23/02571/5	23/02571/7					Units	Limit of Detection	Method ref
Client Sample No	102	102	101							
Client Sample ID	TP-PTS226	TP-PTS231	GS PTS 109							
Depth to Top	0.50	0.50	0.30							
Depth To Bottom										
Date Sampled	14-Mar-23	14-Mar-23	14-Mar-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4	1	1E							
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD							A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-							A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A							A-T-045

envirolab

Envirolab Job Number: 23/02571

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02571/2	23/02571/5	23/02571/7					Units	Limit of Detection	Method ref
Client Sample No	102	102	101							
Client Sample ID	TP-PTS226	TP-PTS231	GS PTS 109							
Depth to Top	0.50	0.50	0.30							
Depth To Bottom										
Date Sampled	14-Mar-23	14-Mar-23	14-Mar-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4	1	1E							
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	<0.04	0.06					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	<0.04	0.06					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	<0.05	0.08					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	<0.06	<0.06					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	<0.08	0.13					mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	*<0.03*	*<0.03*	*0.05*					mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	<0.03	0.05					mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	<0.07	0.11					mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	<0.08	0.54					mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/02571

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02571/2	23/02571/5	23/02571/7					Units	Limit of Detection	Method ref
Client Sample No	102	102	101							
Client Sample ID	TP-PTS226	TP-PTS231	GS PTS 109							
Depth to Top	0.50	0.50	0.30							
Depth To Bottom										
Date Sampled	14-Mar-23	14-Mar-23	14-Mar-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4	1	1E							
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	<1	<1	4					mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	<1	<1	4					mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1	<1	2					mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1	<1	2					mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	<1	<1	6					mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/02571
		Date Received:	17/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	11.3 & 12.0
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02571/2	23/02571/5	23/02571/7
Client Sample No	102	102	101
Client Sample ID/Depth	TP-PTS226 0.50m	TP-PTS231 0.50m	GS PTS 109 0.30m
Date Sampled	14/03/23	14/03/23	14/03/23
A-T-019s	24/03/2023	24/03/2023	24/03/2023
A-T-022s	22/03/2023	22/03/2023	22/03/2023
A-T-024s	27/03/2023	27/03/2023	27/03/2023
A-T-026s	24/03/2023	24/03/2023	24/03/2023
A-T-027s	24/03/2023	24/03/2023	24/03/2023
A-T-031s	24/03/2023	24/03/2023	24/03/2023
A-T-032s	30/03/2023	30/03/2023	30/03/2023
A-T-042sTCN	22/03/2023	22/03/2023	22/03/2023
A-T-044	23/03/2023	23/03/2023	23/03/2023
A-T-045	20/03/2023	20/03/2023	20/03/2023
A-T-050s	27/03/2023	27/03/2023	27/03/2023
A-T-055s	29/03/2023	29/03/2023	29/03/2023
Calc-As Recd	29/03/2023	29/03/2023	29/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/02684
Issue Number: 1 **Date:** 03 April, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 20/03/23
Date Instructions Received: 21/03/23
Date Analysis Completed: 03/04/23

Approved by:

Gemma Berrisford
Client Manager

Envirolab Job Number: 23/02684

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02684/1	23/02684/5	23/02684/6					Units	Limit of Detection	Method ref
Client Sample No	101	102	101							
Client Sample ID	BH-PTS128	TP-PTS221	TP-PTS224							
Depth to Top	0.30	0.50	0.20							
Depth To Bottom										
Date Sampled	15-Mar-23	15-Mar-23	15-Mar-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4AE	1	1E							
% Stones >10mm$_{A}$	<0.1	2.0	7.2					% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.95	6.05	7.63					pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01	<0.01					g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	2.1	1.1	2.6					% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	5	2	2					mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5	<0.5					mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	6	3	3					mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	8	9	8					mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	19	8	11					mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	4	5	5					mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	22	12	14					mg/kg	5	A-T-024s

Envirolab Job Number: 23/02684

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02684/1	23/02684/5	23/02684/6					Units	Limit of Detection	Method ref
Client Sample No	101	102	101							
Client Sample ID	BH-PTS128	TP-PTS221	TP-PTS224							
Depth to Top	0.30	0.50	0.20							
Depth To Bottom										
Date Sampled	15-Mar-23	15-Mar-23	15-Mar-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4AE	1	1E							
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD							A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-							A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A							A-T-045

Envirolab Job Number: 23/02684

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02684/1	23/02684/5	23/02684/6					Units	Limit of Detection	Method ref
Client Sample No	101	102	101							
Client Sample ID	BH-PTS128	TP-PTS221	TP-PTS224							
Depth to Top	0.30	0.50	0.20							
Depth To Bottom										
Date Sampled	15-Mar-23	15-Mar-23	15-Mar-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4AE	1	1E							
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.08	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.07	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.09	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	0.09	<0.06	<0.06					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.17	<0.08	<0.08					mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.05	<0.03	<0.03					mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	0.09	<0.03	<0.03					mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.14	<0.07	<0.07					mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	0.78	<0.08	<0.08					mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/02684

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02684/1	23/02684/5	23/02684/6					Units	Limit of Detection	Method ref
Client Sample No	101	102	101							
Client Sample ID	BH-PTS128	TP-PTS221	TP-PTS224							
Depth to Top	0.30	0.50	0.20							
Depth To Bottom										
Date Sampled	15-Mar-23	15-Mar-23	15-Mar-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4AE	1	1E							
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	8	<1	4					mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	8	<1	4					mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	2	<1	1					mg/kg	1	A-T-055s
Total Aromatics$_{A}$	2	<1	1					mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	10	<1	5					mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

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Soil chemical analysis:

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For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

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Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

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Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/02684
		Date Received:	21/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	10.1
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02684/1	23/02684/5	23/02684/6
Client Sample No	101	102	101
Client Sample ID/Depth	BH-PTS128 0.30m	TP-PTS221 0.50m	TP-PTS224 0.20m
Date Sampled	15/03/23	15/03/23	15/03/23
A-T-019s	27/03/2023	27/03/2023	27/03/2023
A-T-022s	27/03/2023	27/03/2023	27/03/2023
A-T-024s	28/03/2023	28/03/2023	28/03/2023
A-T-026s	28/03/2023	28/03/2023	28/03/2023
A-T-027s	28/03/2023	28/03/2023	28/03/2023
A-T-031s	27/03/2023	27/03/2023	27/03/2023
A-T-032s	03/04/2023	03/04/2023	03/04/2023
A-T-042sTCN	23/03/2023	23/03/2023	23/03/2023
A-T-044	28/03/2023	28/03/2023	28/03/2023
A-T-045	23/03/2023	23/03/2023	23/03/2023
A-T-050s	29/03/2023	29/03/2023	29/03/2023
A-T-055s	03/04/2023	03/04/2023	03/04/2023
Calc-As Recd	03/04/2023	03/04/2023	03/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/02685
Issue Number: 1 **Date:** 03 April, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 20/03/23
Date Instructions Received: 21/03/23
Date Analysis Completed: 03/04/23

Approved by:

Gemma Berrisford
Client Manager

1247

Envirolab Job Number: 23/02685

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02685/1	23/02685/5						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	TP-PTS228	BH-PTS116								
Depth to Top	0.20	0.30								
Depth To Bottom										
Date Sampled	16-Mar-23	14-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
% Stones >10mm$_{A}$	<0.1	13.2						% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	9.31	4.40						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	3.0	1.7						% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	3	4						mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0						mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5						mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	7	6						mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	16	14						mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	25	16						mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17						mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	8	8						mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	36	20						mg/kg	5	A-T-024s

Envirolab Job Number: 23/02685

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02685/1	23/02685/5						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	TP-PTS228	BH-PTS116								
Depth to Top	0.20	0.30								
Depth To Bottom										
Date Sampled	16-Mar-23	14-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 23/02685

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02685/1	23/02685/5						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	TP-PTS228	BH-PTS116								
Depth to Top	0.20	0.30								
Depth To Bottom										
Date Sampled	16-Mar-23	14-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	0.03	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	0.06	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.56	0.05						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.75	0.05						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.99	0.06						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	0.58	<0.05						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	0.38	<0.07						mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	0.65	<0.06						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	0.13	*<0.04*						mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.85	0.12						mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.59	<0.03						mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	0.19	0.06						mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.75	0.10						mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	6.51	0.44						mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/02685

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02685/1	23/02685/5						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	TP-PTS228	BH-PTS116								
Depth to Top	0.20	0.30								
Depth To Bottom										
Date Sampled	16-Mar-23	14-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	8	3						mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	8	3						mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<2	<1						mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	1	<1						mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	6	<1						mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	45	2						mg/kg	1	A-T-055s
Total Aromatics$_{A}$	53	2						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	60	5						mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/02685
		Date Received:	21/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	9.8
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02685/1	23/02685/5
Client Sample No	101	101
Client Sample ID/Depth	TP-PTS228 0.20m	BH-PTS116 0.30m
Date Sampled	16/03/23	14/03/23
A-T-019s	28/03/2023	29/03/2023
A-T-022s	24/03/2023	29/03/2023
A-T-024s	27/03/2023	31/03/2023
A-T-026s	27/03/2023	31/03/2023
A-T-027s	28/03/2023	31/03/2023
A-T-031s	27/03/2023	30/03/2023
A-T-032s	03/04/2023	03/04/2023
A-T-042sTCN	23/03/2023	29/03/2023
A-T-044	28/03/2023	28/03/2023
A-T-045	23/03/2023	27/03/2023
A-T-050s	29/03/2023	31/03/2023
A-T-055s	31/03/2023	03/04/2023
Calc-As Recd	31/03/2023	03/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/02790
Issue Number: 1 **Date:** 05 April, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 21/03/23
Date Instructions Received: 23/03/23
Date Analysis Completed: 04/04/23

Approved by:

Danielle Brierley
Deputy Client Services Supervisor

1247

Envirolab Job Number: 23/02790

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02790/3	23/02790/4						Units	Limit of Detection	Method ref
Client Sample No	103	101								
Client Sample ID	GS-PTS107	BH-PTS119								
Depth to Top	1.00	0.10								
Depth To Bottom										
Date Sampled	20-Mar-23	17-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	1A	4AE								
% Stones >10mm$_{A}$	3.3	2.7						% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	7.78	6.52						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	0.2	1.5						% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	4	2						mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0						mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5						mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	4	3						mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	8	6						mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	5	8						mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17						mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	5	3						mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	10	13						mg/kg	5	A-T-024s

Envirolab Job Number: 23/02790

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02790/3	23/02790/4						Units	Limit of Detection	Method ref
Client Sample No	103	101								
Client Sample ID	GS-PTS107	BH-PTS119								
Depth to Top	1.00	0.10								
Depth To Bottom										
Date Sampled	20-Mar-23	17-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	1A	4AE								
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 23/02790

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02790/3	23/02790/4						Units	Limit of Detection	Method ref
Client Sample No	103	101								
Client Sample ID	GS-PTS107	BH-PTS119								
Depth to Top	1.00	0.10								
Depth To Bottom										
Date Sampled	20-Mar-23	17-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	1A	4AE								
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	<0.05						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	<0.05						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07						mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	<0.06						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	*<0.04*	*<0.04*						mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	<0.08						mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	<0.07						mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	<0.08						mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/02790

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/02790/3	23/02790/4						Units	Limit of Detection	Method ref
Client Sample No	103	101								
Client Sample ID	GS-PTS107	BH-PTS119								
Depth to Top	1.00	0.10								
Depth To Bottom										
Date Sampled	20-Mar-23	17-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	1A	4AE								
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	<1	2						mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	<1	2						mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1	1						mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1	1						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	<1	3						mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/02790
		Date Received:	23/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	11.7, 10.4
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02790/3	23/02790/4
Client Sample No	103	101
Client Sample ID/Depth	GS-PTS107 1.00m	BH-PTS119 0.10m
Date Sampled	20/03/23	17/03/23
A-T-019s	29/03/2023	29/03/2023
A-T-022s	29/03/2023	29/03/2023
A-T-024s	31/03/2023	31/03/2023
A-T-026s	31/03/2023	31/03/2023
A-T-027s	31/03/2023	31/03/2023
A-T-031s	30/03/2023	30/03/2023
A-T-032s	04/04/2023	04/04/2023
A-T-042sTCN	30/03/2023	30/03/2023
A-T-044	28/03/2023	28/03/2023
A-T-045	27/03/2023	27/03/2023
A-T-050s	30/03/2023	30/03/2023
A-T-055s	31/03/2023	31/03/2023
Calc-As Recd	31/03/2023	31/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03021
Issue Number: 1 **Date:** 13 April, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 24/03/23
Date Instructions Received: 29/03/23
Date Analysis Completed: 13/04/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/03021

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03021/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	WS-PTS129									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	21-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
% Stones >10mm$_{A}$	1.8							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	5.29							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.5							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	4							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	7							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	12							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	18							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	6							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	25							mg/kg	5	A-T-024s

Envirolab Job Number: 23/03021

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03021/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	WS-PTS129									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	21-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/03021

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03021/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	WS-PTS129									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	21-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.06							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.06							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.07							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	0.07							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.12							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.05							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	0.05							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.09							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	0.57							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03021

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03021/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	WS-PTS129									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	21-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	8							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	8							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	2							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	6							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	8							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	16							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

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Analytical results reflect the quality of the sample at the time of analysis only.
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If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB

Project: A66 NTP - Scheme S03A

Clients Project No: 765633

Project No: 23/03021

Date Received: 29/03/2023 (am)

Cool Box Temperatures (°C): 8.4

Lab Sample ID	23/03021/1
Client Sample No	101
Client Sample ID/Depth	WS-PTS129 0.20m
Date Sampled	21/03/23
Deviation Code	
F	✓

Key

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/03021/1
Client Sample No	101
Client Sample ID/Depth	WS-PTS129 0.20m
Date Sampled	21/03/23
PAH-16MS	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03021/1
Client Sample No	101
Client Sample ID/Depth	WS-PTS129 0.20m
Date Sampled	21/03/23
A-T-019s	10/04/2023
A-T-022s	04/04/2023
A-T-024s	12/04/2023
A-T-026s	12/04/2023
A-T-027s	12/04/2023
A-T-031s	12/04/2023
A-T-032s	13/04/2023
A-T-042sTCN	04/04/2023
A-T-044	12/04/2023
A-T-045	04/04/2023
A-T-050s	11/04/2023
A-T-055s	05/04/2023
Calc-As Recd	05/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT
SUPPLEMENT TO TEST REPORT 23/03088/1

Amendments: Re-issue following query/investigation

Envirolab Job Number: 23/03088
Issue Number: 2 **Date:** 15 August, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 27/03/23
Date Instructions Received: 31/03/23
Date Analysis Completed: 17/04/23

Approved by:

Sophie France
Client Manager

1247

envirolab

Envirolab Job Number: 23/03088

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03088/1	23/03088/6						Units	Limit of Detection	Method ref
Client Sample No	101	103								
Client Sample ID	BH-PTS121	BH-PTS120								
Depth to Top	0.30	1.00								
Depth To Bottom										
Date Sampled	22-Mar-23	22-Mar-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	1A	1A								
% Stones >10mm$_{A}$	<0.1	12.3						% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.73	7.64						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	2.5	0.2						% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	4	2						mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	1.1						mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5						mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	5	3						mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	10	7						mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	14	2						mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17						mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	5	4						mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	22	11						mg/kg	5	A-T-024s

Envirolab Job Number: 23/03088

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03088/1	23/03088/6						Units	Limit of Detection	Method ref
Client Sample No	101	103								
Client Sample ID	BH-PTS121	BH-PTS120								
Depth to Top	0.30	1.00								
Depth To Bottom										
Date Sampled	22-Mar-23	22-Mar-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	1A	1A								
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 23/03088

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03088/1	23/03088/6						Units	Limit of Detection	Method ref
Client Sample No	101	103								
Client Sample ID	BH-PTS121	BH-PTS120								
Depth to Top	0.30	1.00								
Depth To Bottom										
Date Sampled	22-Mar-23	22-Mar-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	1A	1A								
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.15	<0.04						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.19	<0.04						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.23	<0.05						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	0.11	<0.05						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	0.09	<0.07						mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	0.18	<0.06						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.26	<0.08						mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.13	<0.03						mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	0.07	<0.03						mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.21	<0.07						mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	1.62	<0.08						mg/kg	0.01	A-T-019s

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Envirolab Job Number: 23/03088

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03088/1	23/03088/6						Units	Limit of Detection	Method ref
Client Sample No	101	103								
Client Sample ID	BH-PTS121	BH-PTS120								
Depth to Top	0.30	1.00								
Depth To Bottom										
Date Sampled	22-Mar-23	22-Mar-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	1A	1A								
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	6	<1						mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	6	<1						mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	1	<1						mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	8	<1						mg/kg	1	A-T-055s
Total Aromatics$_{A}$	9	<1						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	15	<1						mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/03088
		Date Received:	31/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	8.8 & 9.1
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03088/1	23/03088/6
Client Sample No	101	103
Client Sample ID/Depth	BH-PTS121 0.30m	BH-PTS120 1.00m
Date Sampled	22/03/23	22/03/23
A-T-019s	10/04/2023	10/04/2023
A-T-022s	06/04/2023	06/04/2023
A-T-024s	17/04/2023	17/04/2023
A-T-026s	14/04/2023	14/04/2023
A-T-027s	17/04/2023	17/04/2023
A-T-031s	14/04/2023	14/04/2023
A-T-032s	17/04/2023	17/04/2023
A-T-042sTCN	05/04/2023	05/04/2023
A-T-044	12/04/2023	12/04/2023
A-T-045	05/04/2023	05/04/2023
A-T-050s	11/04/2023	11/04/2023
A-T-055s	11/04/2023	11/04/2023
Calc-As Recd	11/04/2023	11/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03090
Issue Number: 1 **Date:** 17 April, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 30/03/23
Date Instructions Received: 31/03/23
Date Analysis Completed: 17/04/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/03090

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03090/1	23/03090/4						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	TP-PTS230	TP-PTS232								
Depth to Top	0.10	0.10								
Depth To Bottom										
Date Sampled	28-Mar-23	28-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
% Stones >10mm$_{A}$	5.6	1.3						% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.94	6.79						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	2.6	2.5						% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	5	6						mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0						mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5						mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	5	5						mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	8	10						mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	12	12						mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	0.25						mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	5	4						mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	18	17						mg/kg	5	A-T-024s

Envirolab Job Number: 23/03090

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03090/1	23/03090/4						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	TP-PTS230	TP-PTS232								
Depth to Top	0.10	0.10								
Depth To Bottom										
Date Sampled	28-Mar-23	28-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 23/03090

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03090/1	23/03090/4						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	TP-PTS230	TP-PTS232								
Depth to Top	0.10	0.10								
Depth To Bottom										
Date Sampled	28-Mar-23	28-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	0.13						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	0.16						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	0.21						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	0.09						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07						mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	0.17						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	0.21						mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03	0.10						mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	0.05						mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	0.17						mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	1.29						mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03090

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03090/1	23/03090/4						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	TP-PTS230	TP-PTS232								
Depth to Top	0.10	0.10								
Depth To Bottom										
Date Sampled	28-Mar-23	28-Mar-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	8	7						mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	8	7						mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	2						mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	3	13						mg/kg	1	A-T-055s
Total Aromatics$_{A}$	3	15						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	12	22						mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/03090
		Date Received:	31/03/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	12.1 & 12.4
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03090/1	23/03090/4
Client Sample No	101	101
Client Sample ID/Depth	TP-PTS230 0.10m	TP-PTS232 0.10m
Date Sampled	28/03/23	28/03/23
A-T-019s	10/04/2023	10/04/2023
A-T-022s	06/04/2023	06/04/2023
A-T-024s	17/04/2023	17/04/2023
A-T-026s	14/04/2023	14/04/2023
A-T-027s	17/04/2023	17/04/2023
A-T-031s	14/04/2023	14/04/2023
A-T-032s	14/04/2023	17/04/2023
A-T-042sTCN	05/04/2023	05/04/2023
A-T-044	12/04/2023	12/04/2023
A-T-045	05/04/2023	05/04/2023
A-T-050s	11/04/2023	11/04/2023
A-T-055s	11/04/2023	11/04/2023
Calc-As Recd	11/04/2023	11/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03091
Issue Number: 1 **Date:** 17 April, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 30/03/23
Date Instructions Received: 31/03/23
Date Analysis Completed: 17/04/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/03091

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03091/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS234									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
% Stones >10mm$_{A}$	<0.1							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.64							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.9							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	3							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	3							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	7							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	9							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	3							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	14							mg/kg	5	A-T-024s

Envirolab Job Number: 23/03091

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03091/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS234									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/03091

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03091/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS234									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03091

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03091/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS234									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	4							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	4							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	4							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB

Project: A66 NTP - Scheme S03A

Clients Project No: 765633

Project No: 23/03091

Date Received: 31/03/2023 (am)

Cool Box Temperatures (°C): 12.4

Lab Sample ID	23/03091/1
Client Sample No	101
Client Sample ID/Depth	TP-PTS234 0.20m
Date Sampled	24/03/23
Deviation Code	
B1 (no VPH)	✓
D (no glass)	✓

Key

B1 (no VPH)	*Separate container not supplied for VPH/BTEX analysis*
D (no glass)	*Glass container not provided for extractable organics analysis*

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03091/1
Client Sample No	101
Client Sample ID/Depth	TP-PTS234 0.20m
Date Sampled	24/03/23
A-T-019s	10/04/2023
A-T-022s	06/04/2023
A-T-024s	17/04/2023
A-T-026s	14/04/2023
A-T-027s	17/04/2023
A-T-031s	14/04/2023
A-T-032s	14/04/2023
A-T-042sTCN	05/04/2023
A-T-044	12/04/2023
A-T-045	05/04/2023
A-T-050s	13/04/2023
A-T-055s	11/04/2023
Calc-As Recd	11/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03397
Issue Number: 1 **Date:** 24 April, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 06/04/23
Date Instructions Received: 11/04/23
Date Analysis Completed: 24/04/23

Approved by:

Gemma Berrisford
Client Manager

envirolab

Envirolab Job Number: 23/03397

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03397/1	23/03397/3	23/03397/6	23/03397/9	23/03397/12	23/03397/17	23/03397/18	Units	Limit of Detection	Method ref
Client Sample No	101	101	101	101	101	101	101			
Client Sample ID	BH-PTS118	TP-PTS215	TP-PTS217	BH-PTS114	TP-PTS211	WS-PTS114	WS-PTS116			
Depth to Top	0.50	0.10	0.10	0.30	0.10	1.00	0.10			
Depth To Bottom					0.10					
Date Sampled	05-Apr-23	05-Apr-23	03-Apr-23	04-Apr-23	04-Apr-23	03-Apr-23	03-Apr-23			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	1A	1A	4AE	1A	4AE	4A	4AE			
% Stones >10mm$_{A}$	<0.1	<0.1	14.0	6.7	<0.1	14.1	11.0	% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	7.11	6.03	6.95	7.91	7.24	6.76	6.36	pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.1	2.4	3.1	1.0	2.3	0.5	2.1	% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	8	8	2	12	6	<1	4	mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	7	14	9	9	18	3	9	mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	12	48	26	16	23	17	15	mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	16	22	23	18	38	9	19	mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	8	17	11	11	16	9	7	mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	27	35	41	31	63	16	36	mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (1 no)$_{A}$	-	-	-	-	-	-	*			A-T-001
pH (leachable)$_{A}^{\#}$	-	-	-	-	-	-	7.70	pH	0.01	A-T-031w
Cyanide (total) (leachable)$_{A}^{\#}$	-	-	-	-	-	-	<0.005	mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_{A}$	-	-	-	-	-	-	<0.01	mg/l	0.01	A-T-050w
Arsenic (leachable)$_{A}$	-	-	-	-	-	-	2	µg/l	1	A-T-025w
Boron (leachable)$_{A}$	-	-	-	-	-	-	18	µg/l	10	A-T-025w
Cadmium (leachable)$_{A}$	-	-	-	-	-	-	<1	µg/l	1	A-T-025w
Copper (leachable)$_{A}$	-	-	-	-	-	-	9	µg/l	4	A-T-025w
Chromium (leachable)$_{A}$	-	-	-	-	-	-	<1	µg/l	1	A-T-025w
Lead (leachable)$_{A}$	-	-	-	-	-	-	3	µg/l	1	A-T-025w
Mercury (leachable)$_{A}$	-	-	-	-	-	-	<0.1	µg/l	0.1	A-T-025w
Nickel (leachable)$_{A}$	-	-	-	-	-	-	<2	µg/l	2	A-T-025w
Selenium (leachable)$_{A}$	-	-	-	-	-	-	<1	µg/l	1	A-T-025w
Zinc (leachable)$_{A}$	-	-	-	-	-	-	8	µg/l	2	A-T-025w

Envirolab Job Number: 23/03397

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03397/1	23/03397/3	23/03397/6	23/03397/9	23/03397/12	23/03397/17	23/03397/18	Units	Limit of Detection	Method ref
Client Sample No	101	101	101	101	101	101	101			
Client Sample ID	BH-PTS118	TP-PTS215	TP-PTS217	BH-PTS114	TP-PTS211	WS-PTS114	WS-PTS116			
Depth to Top	0.50	0.10	0.10	0.30	0.10	1.00	0.10			
Depth To Bottom					0.10					
Date Sampled	05-Apr-23	05-Apr-23	03-Apr-23	04-Apr-23	04-Apr-23	03-Apr-23	03-Apr-23			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	1A	1A	4AE	1A	4AE	4A	4AE			
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD	NAD	NAD	NAD	NAD			A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A	N/A	N/A	N/A	N/A			A-T-045

Envirolab Job Number: 23/03397

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03397/1	23/03397/3	23/03397/6	23/03397/9	23/03397/12	23/03397/17	23/03397/18	Units	Limit of Detection	Method ref
Client Sample No	101	101	101	101	101	101	101			
Client Sample ID	BH-PTS118	TP-PTS215	TP-PTS217	BH-PTS114	TP-PTS211	WS-PTS114	WS-PTS116			
Depth to Top	0.50	0.10	0.10	0.30	0.10	1.00	0.10			
Depth To Bottom					0.10					
Date Sampled	05-Apr-23	05-Apr-23	03-Apr-23	04-Apr-23	04-Apr-23	03-Apr-23	03-Apr-23			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	1A	1A	4AE	1A	4AE	4A	4AE			
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04	<0.04	0.05	0.07	0.07	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	<0.04	0.05	<0.04	0.07	0.08	0.10	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	0.06	0.06	<0.05	0.08	0.09	0.11	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	<0.06	<0.06	<0.06	0.07	0.07	0.08	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	<0.08	0.09	<0.08	0.13	0.12	0.17	mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03	<0.03	0.04	<0.03	0.04	0.04	0.06	mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	<0.03	<0.03	<0.03	0.04	0.03	0.06	mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	<0.07	<0.07	<0.07	0.11	0.10	0.14	mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	<0.08	0.24	<0.08	0.59	0.60	0.85	mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03397

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03397/1	23/03397/3	23/03397/6	23/03397/9	23/03397/12	23/03397/17	23/03397/18	Units	Limit of Detection	Method ref
Client Sample No	101	101	101	101	101	101	101			
Client Sample ID	BH-PTS118	TP-PTS215	TP-PTS217	BH-PTS114	TP-PTS211	WS-PTS114	WS-PTS116			
Depth to Top	0.50	0.10	0.10	0.30	0.10	1.00	0.10			
Depth To Bottom					0.10					
Date Sampled	05-Apr-23	05-Apr-23	03-Apr-23	04-Apr-23	04-Apr-23	03-Apr-23	03-Apr-23			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	1A	1A	4AE	1A	4AE	4A	4AE			
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	2	6	9	3	7	<1	7	mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	2	6	9	3	7	<1	7	mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	1	mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1	2	2	2	2	<1	4	mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1	2	2	2	2	<1	5	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	2	8	11	5	9	<1	12	mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/03397
		Date Received:	11/04/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	9.8 - 14.0
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03397/1	23/03397/3	23/03397/6	23/03397/9	23/03397/12	23/03397/17	23/03397/18
Client Sample No	101	101	101	101	101	101	101
Client Sample ID/Depth	BH-PTS118 0.50m	TP-PTS215 0.10m	TP-PTS217 0.10m	BH-PTS114 0.30m	TP-PTS211 0.10-0.10m	WS-PTS114 1.00m	WS-PTS116 0.10m
Date Sampled	05/04/23	05/04/23	03/04/23	04/04/23	04/04/23	03/04/23	03/04/23
A-T-019s	18/04/2023	18/04/2023	18/04/2023	18/04/2023	18/04/2023	18/04/2023	18/04/2023
A-T-022s	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023
A-T-024s	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023
A-T-025w							17/04/2023
A-T-026s	24/04/2023	24/04/2023	24/04/2023	24/04/2023	24/04/2023	24/04/2023	24/04/2023
A-T-027s	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023
A-T-031s	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023
A-T-031w							21/04/2023
A-T-032s	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023
A-T-042sTCN	18/04/2023	18/04/2023	18/04/2023	18/04/2023	18/04/2023	18/04/2023	18/04/2023
A-T-042wTCN							18/04/2023
A-T-044	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023
A-T-045	13/04/2023	13/04/2023	13/04/2023	13/04/2023	13/04/2023	13/04/2023	13/04/2023
A-T-050s	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023
A-T-050w							20/04/2023
A-T-055s	17/04/2023	17/04/2023	17/04/2023	17/04/2023	17/04/2023	17/04/2023	17/04/2023
Calc-As Recd	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03512
Issue Number: 1 **Date:** 26 April, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 12/04/23
Date Instructions Received: 13/04/23
Date Analysis Completed: 26/04/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/03512

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03512/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	BH-PTS117									
Depth to Top	0.30									
Depth To Bottom										
Date Sampled	06-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1AE									
% Stones >10mm$_{A}$	16.0							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	7.28							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.2							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	4							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	7							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	14							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	8							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	9							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	30							mg/kg	5	A-T-024s

Envirolab Job Number: 23/03512

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03512/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	BH-PTS117									
Depth to Top	0.30									
Depth To Bottom										
Date Sampled	06-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1AE									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/03512

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03512/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	BH-PTS117									
Depth to Top	0.30									
Depth To Bottom										
Date Sampled	06-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1AE									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	*<0.04*							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03512

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03512/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	BH-PTS117									
Depth to Top	0.30									
Depth To Bottom										
Date Sampled	06-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1AE									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	2							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	2							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
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Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
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Total Aromatics$_{A}$	<1							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	2							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

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All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

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Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

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IS indicates Insufficient Sample for analysis.
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Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/03512
		Date Received:	13/04/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	6.4
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03512/1
Client Sample No	101
Client Sample ID/Depth	BH-PTS117 0.30m
Date Sampled	06/04/23
A-T-019s	19/04/2023
A-T-022s	19/04/2023
A-T-024s	26/04/2023
A-T-026s	26/04/2023
A-T-027s	25/04/2023
A-T-031s	25/04/2023
A-T-032s	25/04/2023
A-T-042sTCN	19/04/2023
A-T-044	19/04/2023
A-T-045	14/04/2023
A-T-050s	24/04/2023
A-T-055s	19/04/2023
Calc-As Recd	19/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03609
Issue Number: 1 **Date:** 28 April, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 11/04/23
Date Instructions Received: 17/04/23
Date Analysis Completed: 28/04/23

Approved by:

Danielle Brierley
Deputy Client Services Supervisor

1247

Envirolab Job Number: 23/03609

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03609/1	23/03609/7						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	WS-PTS107	WS-PTS113								
Depth to Top	0.20	0.20								
Depth To Bottom										
Date Sampled	05-Apr-23	04-Apr-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
% Stones >10mm$_{A}$	12.6	4.7						% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.09	5.82						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	2.4	2.9						% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	9	6						mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0						mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5						mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	12	9						mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	14	11						mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	25	24						mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17						mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	6	4						mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	40	34						mg/kg	5	A-T-024s

Envirolab Job Number: 23/03609

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03609/1	23/03609/7						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	WS-PTS107	WS-PTS113								
Depth to Top	0.20	0.20								
Depth To Bottom										
Date Sampled	05-Apr-23	04-Apr-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 23/03609

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03609/1	23/03609/7						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	WS-PTS107	WS-PTS113								
Depth to Top	0.20	0.20								
Depth To Bottom										
Date Sampled	05-Apr-23	04-Apr-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	0.02	0.08						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.09	0.37						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.09	0.30						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.10	0.36						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	0.12						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	0.17						mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	0.10	0.36						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.21	0.79						mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.06	0.17						mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	0.10	0.27						mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.16	0.61						mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	0.93	3.62						mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03609

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03609/1	23/03609/7						Units	Limit of Detection	Method ref
Client Sample No	101	101								
Client Sample ID	WS-PTS107	WS-PTS113								
Depth to Top	0.20	0.20								
Depth To Bottom										
Date Sampled	05-Apr-23	04-Apr-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4AE	4AE								
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	4	8						mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	4	8						mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	1						mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	1						mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	2						mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	3	8						mg/kg	1	A-T-055s
Total Aromatics$_{A}$	3	12						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	7	20						mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/03609
		Date Received:	17/04/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	11.9, 11.3
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03609/1	23/03609/7
Client Sample No	101	101
Client Sample ID/Depth	WS-PTS107 0.20m	WS-PTS113 0.20m
Date Sampled	05/04/23	04/04/23
A-T-019s	24/04/2023	24/04/2023
A-T-022s	20/04/2023	20/04/2023
A-T-024s	27/04/2023	27/04/2023
A-T-026s	28/04/2023	28/04/2023
A-T-027s	27/04/2023	27/04/2023
A-T-031s	25/04/2023	25/04/2023
A-T-032s	25/04/2023	25/04/2023
A-T-042sTCN	20/04/2023	20/04/2023
A-T-044	28/04/2023	28/04/2023
A-T-045	19/04/2023	19/04/2023
A-T-050s	26/04/2023	26/04/2023
A-T-055s	19/04/2023	19/04/2023
Calc-As Recd	20/04/2023	20/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03620
Issue Number: 1 **Date:** 28 April, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 17/04/23
Date Instructions Received: 17/04/23
Date Analysis Completed: 28/04/23

Approved by:

Danielle Brierley
Deputy Client Services Supervisor

1247

Envirolab Job Number: 23/03620

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03620/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	WS-PTS117									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	04-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
% Stones >10mm$_{A}$	11.0							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	7.96							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.0							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	<1							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	4							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	9							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	6							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	4							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	12							mg/kg	5	A-T-024s

Envirolab Job Number: 23/03620

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03620/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	WS-PTS117									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	04-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/03620

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03620/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	WS-PTS117									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	04-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03620

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03620/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	WS-PTS117									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	04-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	2							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	12							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	15							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	8							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	3							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	12							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	27							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

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Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/03620
		Date Received:	17/04/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	9.0
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03620/2
Client Sample No	102
Client Sample ID/Depth	WS-PTS117 0.50m
Date Sampled	04/04/23
A-T-019s	24/04/2023
A-T-022s	20/04/2023
A-T-024s	27/04/2023
A-T-026s	28/04/2023
A-T-027s	27/04/2023
A-T-031s	26/04/2023
A-T-032s	26/04/2023
A-T-042sTCN	19/04/2023
A-T-044	28/04/2023
A-T-045	19/04/2023
A-T-050s	25/04/2023
A-T-055s	20/04/2023
Calc-As Recd	20/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03655
Issue Number: 1 **Date:** 03 May, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 24/03/23
Date Instructions Received: 18/04/23
Date Analysis Completed: 02/05/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/03655

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03655/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-236									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
% Stones >10mm$_{A}$	13.9							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	7.92							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.1							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	3							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	3							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	7							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	8							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	3							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	13							mg/kg	5	A-T-024s

Envirolab Job Number: 23/03655

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03655/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-236									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/03655

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03655/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-236									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03655

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03655/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-236									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	<1							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	<1							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB

Project: A66 NTP - Scheme S03A

Clients Project No: 765633

Project No: 23/03655

Date Received: 18/04/2023 (am)

Cool Box Temperatures (°C): 11.2 & 11.9

Lab Sample ID	23/03655/2
Client Sample No	102
Client Sample ID/Depth	TP-PTS-236 0.50m
Date Sampled	22/03/23
Deviation Code	
F	✓

Key

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/03655/2
Client Sample No	102
Client Sample ID/Depth	TP-PTS-236 0.50m
Date Sampled	22/03/23
Sulphate (water sol 2:1)	✓
Organic Matter	✓
PAH-16MS	✓
Cyanide (total)	✓
VPHCWG	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03655/2
Client Sample No	102
Client Sample ID/Depth	TP-PTS-236 0.50m
Date Sampled	22/03/23
A-T-019s	21/04/2023
A-T-022s	21/04/2023
A-T-024s	29/04/2023
A-T-026s	02/05/2023
A-T-027s	28/04/2023
A-T-031s	27/04/2023
A-T-032s	27/04/2023
A-T-042sTCN	20/04/2023
A-T-044	02/05/2023
A-T-045	19/04/2023
A-T-050s	26/04/2023
A-T-055s	21/04/2023
Calc-As Recd	21/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03676
Issue Number: 1 **Date:** 04 May, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 18/04/23
Date Instructions Received: 19/04/23
Date Analysis Completed: 04/05/23

Approved by:

Danielle Brierley
Deputy Client Services Supervisor

1247

Envirolab Job Number: 23/03676

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03676/1	23/03676/5						Units	Limit of Detection	Method ref
Client Sample No	101	102								
Client Sample ID	BH-PTS102	BH-PTS112								
Depth to Top	0.30	0.70								
Depth To Bottom										
Date Sampled	13-Apr-23	13-Apr-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4A	1A								
% Stones >10mm$_{A}$	6.7	10.6						% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	8.06	6.38						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	0.02	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.7	0.9						% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	9	4						mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0						mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	0.8	<0.5						mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	16	7						mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	25	12						mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	22	10						mg/kg	1	A-T-024s
Mercury$_{D}$	0.77	<0.17						mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	18	9						mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	49	26						mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (1 no)$_{A}$	-	*								A-T-001
pH (leachable)$_{A}^{\#}$	-	6.47						pH	0.01	A-T-031w
Cyanide (total) (leachable)$_{A}^{\#}$	-	<0.005						mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_{A}$	-	<0.01						mg/l	0.01	A-T-050w
Arsenic (leachable)$_{A}$	-	<1						µg/l	1	A-T-025w
Boron (leachable)$_{A}$	-	<10						µg/l	10	A-T-025w
Cadmium (leachable)$_{A}$	-	<1						µg/l	1	A-T-025w
Copper (leachable)$_{A}$	-	<4						µg/l	4	A-T-025w
Chromium (leachable)$_{A}$	-	<1						µg/l	1	A-T-025w
Lead (leachable)$_{A}$	-	1						µg/l	1	A-T-025w
Mercury (leachable)$_{A}$	-	<0.1						µg/l	0.1	A-T-025w
Nickel (leachable)$_{A}$	-	<2						µg/l	2	A-T-025w
Selenium (leachable)$_{A}$	-	<1						µg/l	1	A-T-025w
Zinc (leachable)$_{A}$	-	3						µg/l	2	A-T-025w

Envirolab Job Number: 23/03676

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03676/1	23/03676/5						Units	Limit of Detection	Method ref
Client Sample No	101	102								
Client Sample ID	BH-PTS102	BH-PTS112								
Depth to Top	0.30	0.70								
Depth To Bottom										
Date Sampled	13-Apr-23	13-Apr-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4A	1A								
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}$ #	NAD	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 23/03676

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03676/1	23/03676/5						Units	Limit of Detection	Method ref
Client Sample No	101	102								
Client Sample ID	BH-PTS102	BH-PTS112								
Depth to Top	0.30	0.70								
Depth To Bottom										
Date Sampled	13-Apr-23	13-Apr-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4A	1A								
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	0.69	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	0.04	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	0.22	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.57	<0.04						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.54	<0.04						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.76	<0.05						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	0.34	<0.05						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	*0.40*	*<0.07*						mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	0.45	<0.06						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	0.06	<0.04						mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	1.37	<0.08						mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	0.15	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.32	<0.03						mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	0.27	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	1.08	<0.03						mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.95	<0.07						mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	8.21	<0.08						mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03676

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03676/1	23/03676/5						Units	Limit of Detection	Method ref
Client Sample No	101	102								
Client Sample ID	BH-PTS102	BH-PTS112								
Depth to Top	0.30	0.70								
Depth To Bottom										
Date Sampled	13-Apr-23	13-Apr-23								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	4A	1A								
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	12	2						mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	12	2						mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	2	<1						mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	5	<1						mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	24	<1						mg/kg	1	A-T-055s
Total Aromatics$_{A}$	32	<1						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	43	2						mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/03676
		Date Received:	19/04/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	8.6 & 8.9
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03676/1	23/03676/5	23/03676/9
Client Sample No	101	102	102
Client Sample ID/Depth	BH-PTS102 0.30m	BH-PTS112 0.70m	TP-PTS-213 0.50m
Date Sampled	13/04/23	13/04/23	14/04/23
A-T-019s	24/04/2023	24/04/2023	26/04/2023
A-T-022s	24/04/2023	24/04/2023	26/04/2023
A-T-024s	03/05/2023	03/05/2023	03/05/2023
A-T-025w		02/05/2023	
A-T-026s	02/05/2023	02/05/2023	02/05/2023
A-T-027s	29/04/2023	29/04/2023	03/05/2023
A-T-031s	03/05/2023	03/05/2023	04/05/2023
A-T-031w		02/05/2023	
A-T-032s	28/04/2023	02/05/2023	02/05/2023
A-T-042sTCN	24/04/2023	24/04/2023	26/04/2023
A-T-042wTCN		03/05/2023	
A-T-044	03/05/2023	03/05/2023	03/05/2023
A-T-045	20/04/2023	20/04/2023	21/04/2023
A-T-050s	02/05/2023	02/05/2023	02/05/2023
A-T-050w		03/05/2023	
A-T-055s	24/04/2023	24/04/2023	26/04/2023
Calc-As Recd	24/04/2023	24/04/2023	26/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03676
Issue Number: 1 **Date:** 04 May, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 18/04/23
Date Instructions Received: 19/04/23
Date Analysis Completed: 04/05/23

Approved by:

Danielle Brierley
Deputy Client Services Supervisor

1247

Envirolab Job Number: 23/03676

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03676/9							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-213									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	14-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1AE									
% Stones >10mm$_{A}$	8.9							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	5.95							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	0.7							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	5							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	7							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	14							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	11							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	8							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	27							mg/kg	5	A-T-024s

Envirolab Job Number: 23/03676

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03676/9							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-213									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	14-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1AE									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/03676

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03676/9							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-213									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	14-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1AE									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	*<0.07*							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03676

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03676/9							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	TP-PTS-213									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	14-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	1AE									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	<1							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	<1							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General

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Analytical results reflect the quality of the sample at the time of analysis only.
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If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/03676
		Date Received:	19/04/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	8.6 & 8.9
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03676/1	23/03676/5	23/03676/9
Client Sample No	101	102	102
Client Sample ID/Depth	BH-PTS102 0.30m	BH-PTS112 0.70m	TP-PTS-213 0.50m
Date Sampled	13/04/23	13/04/23	14/04/23
A-T-019s	24/04/2023	24/04/2023	26/04/2023
A-T-022s	24/04/2023	24/04/2023	26/04/2023
A-T-024s	03/05/2023	03/05/2023	03/05/2023
A-T-025w		02/05/2023	
A-T-026s	02/05/2023	02/05/2023	02/05/2023
A-T-027s	29/04/2023	29/04/2023	03/05/2023
A-T-031s	03/05/2023	03/05/2023	04/05/2023
A-T-031w		02/05/2023	
A-T-032s	28/04/2023	02/05/2023	02/05/2023
A-T-042sTCN	24/04/2023	24/04/2023	26/04/2023
A-T-042wTCN		03/05/2023	
A-T-044	03/05/2023	03/05/2023	03/05/2023
A-T-045	20/04/2023	20/04/2023	21/04/2023
A-T-050s	02/05/2023	02/05/2023	02/05/2023
A-T-050w		03/05/2023	
A-T-055s	24/04/2023	24/04/2023	26/04/2023
Calc-As Recd	24/04/2023	24/04/2023	26/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03747
Issue Number: 1 **Date:** 04 May, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 19/04/23
Date Instructions Received: 20/04/23
Date Analysis Completed: 04/05/23

Approved by:

Danielle Brierley
Deputy Client Services Supervisor

1247

Envirolab Job Number: 23/03747

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03747/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-208									
Depth to Top	0.10									
Depth To Bottom										
Date Sampled	17-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
% Stones >10mm$_{A}$	14.6							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.15							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	3.7							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	3							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	9							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	21							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	26							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	9							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	38							mg/kg	5	A-T-024s

Envirolab Job Number: 23/03747

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03747/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-208									
Depth to Top	0.10									
Depth To Bottom										
Date Sampled	17-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/03747

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03747/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-208									
Depth to Top	0.10									
Depth To Bottom										
Date Sampled	17-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.06							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.07							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.10							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	0.08							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.14							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.05							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	0.05							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.11							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	0.66							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03747

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03747/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	TP-PTS-208									
Depth to Top	0.10									
Depth To Bottom										
Date Sampled	17-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	7							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	7							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	1							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	4							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	5							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	12							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/03747
		Date Received:	20/04/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	12.9
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03747/1
Client Sample No	101
Client Sample ID/Depth	TP-PTS-208 0.10m
Date Sampled	17/04/23
A-T-019s	02/05/2023
A-T-022s	28/04/2023
A-T-024s	03/05/2023
A-T-026s	02/05/2023
A-T-027s	03/05/2023
A-T-031s	04/05/2023
A-T-032s	02/05/2023
A-T-042sTCN	27/04/2023
A-T-044	04/05/2023
A-T-045	24/04/2023
A-T-050s	02/05/2023
A-T-055s	28/04/2023
Calc-As Recd	28/04/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03983
Issue Number: 1 **Date:** 18 May, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 24/04/23
Date Instructions Received: 27/04/23
Date Analysis Completed: 18/05/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/03983

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03983/2	23/03983/5	23/03983/8					Units	Limit of Detection	Method ref
Client Sample No	102	101	101							
Client Sample ID	BH-PTS108	TP-PTS205	BH-PTS126							
Depth to Top	0.50	0.10	0.30							
Depth To Bottom										
Date Sampled	19-Apr-23	13-Apr-23	20-Apr-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	1A	1A	1A							
% Stones >10mm$_{A}$	2.5	1.6	<0.1					% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.04	5.78	8.63					pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01	<0.01					g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.3	1.8	2.5					% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	2	6	1					mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5	0.8					mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	10	15	4					mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	11	12	11					mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	14	19	5					mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17	3.18					mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	5	7	6					mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	21	28	9					mg/kg	5	A-T-024s

Envirolab Job Number: 23/03983

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03983/2	23/03983/5	23/03983/8					Units	Limit of Detection	Method ref
Client Sample No	102	101	101							
Client Sample ID	BH-PTS108	TP-PTS205	BH-PTS126							
Depth to Top	0.50	0.10	0.30							
Depth To Bottom										
Date Sampled	19-Apr-23	13-Apr-23	20-Apr-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	1A	1A	1A							
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD							A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-							A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A							A-T-045

Envirolab Job Number: 23/03983

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03983/2	23/03983/5	23/03983/8					Units	Limit of Detection	Method ref
Client Sample No	102	101	101							
Client Sample ID	BH-PTS108	TP-PTS205	BH-PTS126							
Depth to Top	0.50	0.10	0.30							
Depth To Bottom										
Date Sampled	19-Apr-23	13-Apr-23	20-Apr-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	1A	1A	1A							
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	<0.06	<0.06					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	<0.08	<0.08					mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	<0.08	<0.08					mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03983

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/03983/2	23/03983/5	23/03983/8					Units	Limit of Detection	Method ref
Client Sample No	102	101	101							
Client Sample ID	BH-PTS108	TP-PTS205	BH-PTS126							
Depth to Top	0.50	0.10	0.30							
Depth To Bottom										
Date Sampled	19-Apr-23	13-Apr-23	20-Apr-23							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	1A	1A	1A							
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	<1	2	<1					mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	<1	2	<1					mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1	<1	<1					mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	<1	2	<1					mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

REPORT NOTES

General

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Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
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The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB

Project: A66 NTP - Scheme S03A

Clients Project No: 765633

Project No: 23/03983

Date Received: 27/04/2023 (am)

Cool Box Temperatures (°C): 12.4

Lab Sample ID	23/03983/5	23/03983/8
Client Sample No	101	101
Client Sample ID/Depth	TP-PTS205 0.10m	BH-PTS126 0.30m
Date Sampled	13/04/23	20/04/23
Deviation Code		
F	✓	✓

Key

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/03983/5	23/03983/8
Client Sample No	101	101
Client Sample ID/Depth	TP-PTS205 0.10m	BH-PTS126 0.30m
Date Sampled	13/04/23	20/04/23
PAH-16MS	✓	✓
Cyanide (total)	✓	✓
VPHCWG	✓	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03983/2	23/03983/5	23/03983/8
Client Sample No	102	101	101
Client Sample ID/Depth	BH-PTS108 0.50m	TP-PTS205 0.10m	BH-PTS126 0.30m
Date Sampled	19/04/23	13/04/23	20/04/23
A-T-019s	04/05/2023	04/05/2023	15/05/2023
A-T-022s	05/05/2023	05/05/2023	12/05/2023
A-T-024s	11/05/2023	11/05/2023	17/05/2023
A-T-026s	10/05/2023	10/05/2023	16/05/2023
A-T-027s	10/05/2023	10/05/2023	16/05/2023
A-T-031s	12/05/2023	12/05/2023	18/05/2023
A-T-032s	12/05/2023	12/05/2023	18/05/2023
A-T-042sTCN	05/05/2023	05/05/2023	12/05/2023
A-T-044	12/05/2023	12/05/2023	12/05/2023
A-T-045	04/05/2023	04/05/2023	09/05/2023
A-T-050s	09/05/2023	09/05/2023	17/05/2023
A-T-055s	04/05/2023	04/05/2023	15/05/2023
Calc-As Recd	05/05/2023	05/05/2023	15/05/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/04065
Issue Number: 1 **Date:** 15 May, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 26/04/23
Date Instructions Received: 28/04/23
Date Analysis Completed: 15/05/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/04065

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04065/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	GS-PTS102									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
% Stones >10mm$_{A}$	10.5							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.14							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	3.1							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	5							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	15							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	17							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	33							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	6							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	33							mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (1 no)$_{A}$	*									A-T-001
pH (leachable)$_{A}^{\#}$	6.92							pH	0.01	A-T-031w
Cyanide (total) (leachable)$_{A}^{\#}$	<0.005							mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_{A}$	<0.01							mg/l	0.01	A-T-050w
Arsenic (leachable)$_{A}$	2							µg/l	1	A-T-025w
Boron (leachable)$_{A}$	35							µg/l	10	A-T-025w
Cadmium (leachable)$_{A}$	<1							µg/l	1	A-T-025w
Copper (leachable)$_{A}$	19							µg/l	4	A-T-025w
Chromium (leachable)$_{A}$	1							µg/l	1	A-T-025w
Lead (leachable)$_{A}$	16							µg/l	1	A-T-025w
Mercury (leachable)$_{A}$	<0.1							µg/l	0.1	A-T-025w
Nickel (leachable)$_{A}$	<2							µg/l	2	A-T-025w
Selenium (leachable)$_{A}$	<1							µg/l	1	A-T-025w
Zinc (leachable)$_{A}$	8							µg/l	2	A-T-025w

Envirolab Job Number: 23/04065

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04065/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	GS-PTS102									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/04065

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04065/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	GS-PTS102									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.10							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.11							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.14							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	0.07							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	0.12							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.21							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.08							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	0.07							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.17							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	1.07							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/04065

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04065/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	GS-PTS102									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
SVOC excluding PAH-16										
4-Bromophenyl phenyl ether$_A$	<100							µg/kg	100	A-T-052s
Hexachlorobenzene$_A$	<100							µg/kg	100	A-T-052s
Diethyl phthalate$_A$	<100							µg/kg	100	A-T-052s
Dimethyl phthalate$_A$	<100							µg/kg	100	A-T-052s
Dibenzofuran$_A$	<100							µg/kg	100	A-T-052s
Carbazole$_A$	<100							µg/kg	100	A-T-052s
Butylbenzyl phthalate$_A$	<100							µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate$_A$	<500							µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane$_A$	<100							µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether$_A$	<100							µg/kg	100	A-T-052s
4-Nitrophenol$_A$	<100							µg/kg	100	A-T-052s
3+4-Methylphenol$_A$	<100							µg/kg	100	A-T-052s
4-Chloro-3-methylphenol$_A$	<100							µg/kg	100	A-T-052s
2-Nitrophenol$_A$	<100							µg/kg	100	A-T-052s
2-Methylphenol$_A$	<100							µg/kg	100	A-T-052s
1,2,4-Trichlorobenzene$_A$	<100							µg/kg	100	A-T-052s
2-Chlorophenol$_A$	<100							µg/kg	100	A-T-052s
2,6-Dinitrotoluene$_A$	<100							µg/kg	100	A-T-052s
2,4-Dinitrotoluene$_A$	<100							µg/kg	100	A-T-052s
2,4-Dimethylphenol$_A$	<100							µg/kg	100	A-T-052s
2,4-Dichlorophenol$_A$	<100							µg/kg	100	A-T-052s
2,4,6-Trichlorophenol$_A$	<100							µg/kg	100	A-T-052s
2,4,5-Trichlorophenol$_A$	<100							µg/kg	100	A-T-052s
1,4-Dichlorobenzene$_A$	<100							µg/kg	100	A-T-052s
1,3-Dichlorobenzene$_A$	<100							µg/kg	100	A-T-052s
1,2-Dichlorobenzene$_A$	<100							µg/kg	100	A-T-052s
2-Chloronaphthalene$_A$	<100							µg/kg	100	A-T-052s
2-Methylnaphthalene$_A$	<100							µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether$_A$	<100							µg/kg	100	A-T-052s
Phenol$_A$	<100							µg/kg	100	A-T-052s
Pentachlorophenol$_A$	<100							µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine$_A$	<100							µg/kg	100	A-T-052s

Envirolab Job Number: 23/04065

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04065/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	GS-PTS102									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
n-Dioctylphthalate$_A$	<500							µg/kg	500	A-T-052s
n-Dibutylphthalate$_A$	<100							µg/kg	100	A-T-052s
Nitrobenzene$_A$	<100							µg/kg	100	A-T-052s
Isophorone$_A$	<100							µg/kg	100	A-T-052s
Hexachloroethane$_A$	<100							µg/kg	100	A-T-052s
Hexachlorobutadiene$_A$	<100							µg/kg	100	A-T-052s
Perylene$_A$	<100							µg/kg	100	A-T-052s

Envirolab Job Number: 23/04065

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04065/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	GS-PTS102									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
VOC										
Dichlorodifluoromethane$_{A}$	<1							µg/kg	1	A-T-006s
Chloromethane$_{A}$	<10							µg/kg	10	A-T-006s
Vinyl Chloride (Chloroethene)$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Bromomethane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Chloroethane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Trichlorofluoromethane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,1-Dichloroethene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Carbon Disulphide$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Dichloromethane$_{A}$	<5							µg/kg	5	A-T-006s
trans 1,2-Dichloroethene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,1-Dichloroethane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
cis 1,2-Dichloroethene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
2,2-Dichloropropane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Bromochloromethane$_{A}^{\#}$	<5							µg/kg	5	A-T-006s
Chloroform$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,1,1-Trichloroethane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,1-Dichloropropene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Carbon Tetrachloride$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,2-Dichloroethane$_{A}^{\#}$	<2							µg/kg	2	A-T-006s
Benzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Trichloroethene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,2-Dichloropropane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Dibromomethane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Bromodichloromethane$_{A}^{\#}$	<10							µg/kg	10	A-T-006s
cis 1,3-Dichloropropene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Toluene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
trans 1,3-Dichloropropene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,1,2-Trichloroethane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,3-Dichloropropane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Tetrachloroethene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Dibromochloromethane$_{A}^{\#}$	<3							µg/kg	3	A-T-006s
1,2-Dibromoethane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s

Envirolab Job Number: 23/04065

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04065/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	GS-PTS102									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
Chlorobenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,1,1,2-Tetrachloroethane$_{A}$	<1							µg/kg	1	A-T-006s
Ethylbenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
m & p Xylene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
o-Xylene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Styrene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Bromoform$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Isopropylbenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,1,2,2-Tetrachloroethane$_{A}$	<1							µg/kg	1	A-T-006s
1,2,3-Trichloropropane$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
Bromobenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
n-Propylbenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
2-Chlorotoluene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
4-Chlorotoluene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
tert-Butylbenzene$_{A}^{\#}$	<2							µg/kg	2	A-T-006s
1,2,4-Trimethylbenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
sec-Butylbenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
4-Isopropyltoluene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,3-Dichlorobenzene$_{A}$	<1							µg/kg	1	A-T-006s
1,4-Dichlorobenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
n-Butylbenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,2-Dichlorobenzene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,2-Dibromo-3-chloropropane (DCBP)$_{A}$	<2							µg/kg	2	A-T-006s
1,2,4-Trichlorobenzene$_{A}$	<3							µg/kg	3	A-T-006s
Hexachlorobutadiene$_{A}^{\#}$	<1							µg/kg	1	A-T-006s
1,2,3-Trichlorobenzene$_{A}$	<3							µg/kg	3	A-T-006s

Envirolab Job Number: 23/04065

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04065/1							Units	Limit of Detection	Method ref
Client Sample No	101									
Client Sample ID	GS-PTS102									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	24-Apr-23									
Sample Type	Soil - ES									
Sample Matrix Code	4AE									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	6							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	6							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	2							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	7							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	9							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	15							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/04065
		Date Received:	28/04/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	10.2
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/04065/1
Client Sample No	101
Client Sample ID/Depth	GS-PTS102 0.20m
Date Sampled	24/04/23
A-T-006s	09/05/2023
A-T-019s	10/05/2023
A-T-022s	09/05/2023
A-T-024s	12/05/2023
A-T-025w	10/05/2023
A-T-026s	11/05/2023
A-T-027s	11/05/2023
A-T-031s	15/05/2023
A-T-031w	11/05/2023
A-T-032s	12/05/2023
A-T-042sTCN	09/05/2023
A-T-042wTCN	11/05/2023
A-T-044	12/05/2023
A-T-045	04/05/2023
A-T-050s	09/05/2023
A-T-050w	15/05/2023
A-T-052s	09/05/2023
A-T-055s	09/05/2023
Calc-As Recd	09/05/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/04406
Issue Number: 1 **Date:** 25 May, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 28/04/23
Date Instructions Received: 09/05/23
Date Analysis Completed: 25/05/23

Approved by:

Danielle Brierley
Deputy Client Services Supervisor

UKAS TESTING 1247

Envirolab Job Number: 23/04406

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04406/1	23/04406/5	23/04406/9	23/04406/12				Units	Limit of Detection	Method ref
Client Sample No	101	102	102	102						
Client Sample ID	BH-PTS113	BH-PTS106	GS-PTS105	WS-PTS105						
Depth to Top	0.20	0.50	0.30	0.50						
Depth To Bottom										
Date Sampled	03-May-23	03-May-23	04-May-23	04-May-23						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4AE	1A	4A	1AB						
% Stones >10mm$_{A}$	34.5	15.1	14.6	33.6				% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	7.96	8.05	8.41	7.70				pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01	0.06	0.03				g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1	<1	<1				mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2	<0.2	<0.2				mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	2.1	0.4	0.3	0.4				% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	3	<1	2	1				mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0	<1.0	<1.0				mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5	0.5	<0.5				mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	13	5	9	5				mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	14	25	18	8				mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	22	4	8	7				mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	2.85	0.27	<0.17				mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	9	18	15	5				mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	29	18	20	15				mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (1 no)$_{A}$	*	*	*	*						A-T-001
pH (leachable)$_{A}^{\#}$	7.79	7.35	7.61	7.26				pH	0.01	A-T-031w
Cyanide (total) (leachable)$_{A}^{\#}$	<0.005	<0.005	<0.005	<0.005				mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_{A}$	<0.01	<0.01	<0.01	<0.01				mg/l	0.01	A-T-050w
Arsenic (leachable)$_{A}$	2	3	1	3				µg/l	1	A-T-025w
Boron (leachable)$_{A}$	<10	<10	<10	<10				µg/l	10	A-T-025w
Cadmium (leachable)$_{A}$	<1	<1	<1	<1				µg/l	1	A-T-025w
Copper (leachable)$_{A}$	6	7	<4	7				µg/l	4	A-T-025w
Chromium (leachable)$_{A}$	<1	2	<1	<1				µg/l	1	A-T-025w
Lead (leachable)$_{A}$	1	9	<1	9				µg/l	1	A-T-025w
Mercury (leachable)$_{A}$	<0.1	<0.1	<0.1	<0.1				µg/l	0.1	A-T-025w
Nickel (leachable)$_{A}$	<2	<2	<2	<2				µg/l	2	A-T-025w
Selenium (leachable)$_{A}$	<1	<1	<1	<1				µg/l	1	A-T-025w
Zinc (leachable)$_{A}$	2	8	<2	2				µg/l	2	A-T-025w

Envirolab Job Number: 23/04406

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04406/1	23/04406/5	23/04406/9	23/04406/12				Units	Limit of Detection	Method ref
Client Sample No	101	102	102	102						
Client Sample ID	BH-PTS113	BH-PTS106	GS-PTS105	WS-PTS105						
Depth to Top	0.20	0.50	0.30	0.50						
Depth To Bottom										
Date Sampled	03-May-23	03-May-23	04-May-23	04-May-23						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4AE	1A	4A	1AB						
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD	NAD						A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-						A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-						A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A	N/A						A-T-045

Envirolab Job Number: 23/04406

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04406/1	23/04406/5	23/04406/9	23/04406/12				Units	Limit of Detection	Method ref
Client Sample No	101	102	102	102						
Client Sample ID	BH-PTS113	BH-PTS106	GS-PTS105	WS-PTS105						
Depth to Top	0.20	0.50	0.30	0.50						
Depth To Bottom										
Date Sampled	03-May-23	03-May-23	04-May-23	04-May-23						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4AE	1A	4A	1AB						
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	0.14	0.73	<0.01	0.48				mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	0.09	0.06	<0.01	0.19				mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	0.83	1.45	<0.02	0.77				mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	5.18	1.51	0.06	0.61				mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	5.37	1.10	0.08	0.50				mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	5.64	1.41	0.09	0.53				mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	2.35	0.51	0.05	0.23				mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	2.06	0.63	<0.07	0.27				mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	4.28	1.37	0.07	0.56				mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	0.61	0.09	<0.04	0.06				mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	8.03	4.50	0.12	1.63				mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	0.12	0.81	<0.01	0.83				mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	3.25	0.62	0.07	0.29				mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	0.17	<0.03	1.29				mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	1.68	4.86	0.05	2.70				mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	7.41	3.50	0.09	1.11				mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	47	23.3	0.68	12.1				mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/04406

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04406/1	23/04406/5	23/04406/9	23/04406/12				Units	Limit of Detection	Method ref
Client Sample No	101	102	102	102						
Client Sample ID	BH-PTS113	BH-PTS106	GS-PTS105	WS-PTS105						
Depth to Top	0.20	0.50	0.30	0.50						
Depth To Bottom										
Date Sampled	03-May-23	03-May-23	04-May-23	04-May-23						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4AE	1A	4A	1AB						
SVOC excluding PAH-16										
4-Bromophenyl phenyl ether$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Hexachlorobenzene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Diethyl phthalate$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Dimethyl phthalate$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Dibenzofuran$_A$	105	105	<100	-				µg/kg	100	A-T-052s
Carbazole$_A$	121	158	<100	-				µg/kg	100	A-T-052s
Butylbenzyl phthalate$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate$_A$	<500	<500	<500	-				µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
4-Nitrophenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
3+4-Methylphenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
4-Chloro-3-methylphenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2-Nitrophenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2-Methylphenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
1,2,4-Trichlorobenzene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2-Chlorophenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2,6-Dinitrotoluene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2,4-Dinitrotoluene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2,4-Dimethylphenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2,4-Dichlorophenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2,4,6-Trichlorophenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2,4,5-Trichlorophenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
1,4-Dichlorobenzene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
1,3-Dichlorobenzene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
1,2-Dichlorobenzene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2-Chloronaphthalene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
2-Methylnaphthalene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Phenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Pentachlorophenol$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s

Envirolab Job Number: 23/04406

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04406/1	23/04406/5	23/04406/9	23/04406/12				Units	Limit of Detection	Method ref
Client Sample No	101	102	102	102						
Client Sample ID	BH-PTS113	BH-PTS106	GS-PTS105	WS-PTS105						
Depth to Top	0.20	0.50	0.30	0.50						
Depth To Bottom										
Date Sampled	03-May-23	03-May-23	04-May-23	04-May-23						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4AE	1A	4A	1AB						
n-Dioctylphthalate$_A$	<500	<500	<500	-				µg/kg	500	A-T-052s
n-Dibutylphthalate$_A$	<200	<100	<200	-				µg/kg	100	A-T-052s
Nitrobenzene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Isophorone$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Hexachloroethane$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Hexachlorobutadiene$_A$	<100	<100	<100	-				µg/kg	100	A-T-052s
Perylene$_A$	319	132	<100	-				µg/kg	100	A-T-052s

Envirolab Job Number: 23/04406

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04406/1	23/04406/5	23/04406/9	23/04406/12				Units	Limit of Detection	Method ref
Client Sample No	101	102	102	102						
Client Sample ID	BH-PTS113	BH-PTS106	GS-PTS105	WS-PTS105						
Depth to Top	0.20	0.50	0.30	0.50						
Depth To Bottom										
Date Sampled	03-May-23	03-May-23	04-May-23	04-May-23						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4AE	1A	4A	1AB						
VOC										
Dichlorodifluoromethane$_{A}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Chloromethane$_{A}$	<10	<10	<10	-				µg/kg	10	A-T-006s
Vinyl Chloride (Chloroethene)$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Bromomethane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Chloroethane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Trichlorofluoromethane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,1-Dichloroethene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Carbon Disulphide$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Dichloromethane$_{A}$	<5	<5	<5	-				µg/kg	5	A-T-006s
trans 1,2-Dichloroethene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,1-Dichloroethane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
cis 1,2-Dichloroethene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
2,2-Dichloropropane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Bromochloromethane$_{A}^{\#}$	<5	<5	<5	-				µg/kg	5	A-T-006s
Chloroform$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,1,1-Trichloroethane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,1-Dichloropropene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Carbon Tetrachloride$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,2-Dichloroethane$_{A}^{\#}$	<2	<2	<2	-				µg/kg	2	A-T-006s
Benzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Trichloroethene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,2-Dichloropropane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Dibromomethane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Bromodichloromethane$_{A}^{\#}$	<10	<10	<10	-				µg/kg	10	A-T-006s
cis 1,3-Dichloropropene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Toluene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
trans 1,3-Dichloropropene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,1,2-Trichloroethane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,3-Dichloropropane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Tetrachloroethene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Dibromochloromethane$_{A}^{\#}$	<3	<3	<3	-				µg/kg	3	A-T-006s
1,2-Dibromoethane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s

Envirolab Job Number: 23/04406

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04406/1	23/04406/5	23/04406/9	23/04406/12				Units	Limit of Detection	Method ref
Client Sample No	101	102	102	102						
Client Sample ID	BH-PTS113	BH-PTS106	GS-PTS105	WS-PTS105						
Depth to Top	0.20	0.50	0.30	0.50						
Depth To Bottom										
Date Sampled	03-May-23	03-May-23	04-May-23	04-May-23						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4AE	1A	4A	1AB						
Chlorobenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,1,1,2-Tetrachloroethane$_{A}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Ethylbenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
m & p Xylene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
o-Xylene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Styrene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Bromoform$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Isopropylbenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,1,2,2-Tetrachloroethane$_{A}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,2,3-Trichloropropane$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
Bromobenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
n-Propylbenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
2-Chlorotoluene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
4-Chlorotoluene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
tert-Butylbenzene$_{A}^{\#}$	<2	<2	<2	-				µg/kg	2	A-T-006s
1,2,4-Trimethylbenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
sec-Butylbenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
4-Isopropyltoluene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,3-Dichlorobenzene$_{A}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,4-Dichlorobenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
n-Butylbenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,2-Dichlorobenzene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,2-Dibromo-3-chloropropane (DCBP)$_{A}$	<2	<2	<2	-				µg/kg	2	A-T-006s
1,2,4-Trichlorobenzene$_{A}$	<3	<3	<3	-				µg/kg	3	A-T-006s
Hexachlorobutadiene$_{A}^{\#}$	<1	<1	<1	-				µg/kg	1	A-T-006s
1,2,3-Trichlorobenzene$_{A}$	<3	<3	<3	-				µg/kg	3	A-T-006s

Envirolab Job Number: 23/04406

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04406/1	23/04406/5	23/04406/9	23/04406/12				Units	Limit of Detection	Method ref
Client Sample No	101	102	102	102						
Client Sample ID	BH-PTS113	BH-PTS106	GS-PTS105	WS-PTS105						
Depth to Top	0.20	0.50	0.30	0.50						
Depth To Bottom										
Date Sampled	03-May-23	03-May-23	04-May-23	04-May-23						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4AE	1A	4A	1AB						
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	3	2	1				mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	9	17	16	4				mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	9	21	18	6				mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1	<1	<1				mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	3	<1	7				mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	1	21	<1	28				mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	9	85	<1	61				mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	30	193	3	90				mg/kg	1	A-T-055s
Total Aromatics$_{A}$	40	302	4	186				mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	50	323	22	192				mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/04406
		Date Received:	09/05/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	19.0,19.3,10.3,12.3,11.8

Clients Project No: 765633

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/04406/1	23/04406/5	23/04406/9	23/04406/12
Client Sample No	101	102	102	102
Client Sample ID/Depth	BH-PTS113 0.20m	BH-PTS106 0.50m	GS-PTS105 0.30m	WS-PTS105 0.50m
Date Sampled	03/05/23	03/05/23	04/05/23	04/05/23
A-T-006s	16/05/2023	18/05/2023	16/05/2023	
A-T-019s	16/05/2023	18/05/2023	16/05/2023	16/05/2023
A-T-022s	16/05/2023	18/05/2023	16/05/2023	16/05/2023
A-T-024s	22/05/2023	23/05/2023	22/05/2023	22/05/2023
A-T-025w	17/05/2023	22/05/2023	17/05/2023	17/05/2023
A-T-026s	19/05/2023	22/05/2023	19/05/2023	19/05/2023
A-T-027s	19/05/2023	22/05/2023	19/05/2023	19/05/2023
A-T-031s	19/05/2023	22/05/2023	19/05/2023	19/05/2023
A-T-031w	16/05/2023	17/05/2023	16/05/2023	16/05/2023
A-T-032s	22/05/2023	24/05/2023	22/05/2023	22/05/2023
A-T-042sTCN	17/05/2023	19/05/2023	17/05/2023	17/05/2023
A-T-042wTCN	16/05/2023	17/05/2023	16/05/2023	16/05/2023
A-T-044	17/05/2023	25/05/2023	17/05/2023	17/05/2023
A-T-045	11/05/2023	17/05/2023	11/05/2023	11/05/2023
A-T-050s	22/05/2023	23/05/2023	22/05/2023	22/05/2023
A-T-050w	22/05/2023	23/05/2023	22/05/2023	23/05/2023
A-T-052s	17/05/2023	22/05/2023	17/05/2023	
A-T-055s	16/05/2023	22/05/2023	16/05/2023	16/05/2023
Calc-As Recd	16/05/2023	22/05/2023	16/05/2023	16/05/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/04688
Issue Number: 1 **Date:** 31 May, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 16/05/23
Date Instructions Received: 16/05/23
Date Analysis Completed: 31/05/23

Approved by:

Gemma Berrisford
Client Manager

1247

envirolab

Envirolab Job Number: 23/04688

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04688/1	23/04688/7	23/04688/9					Units	Limit of Detection	Method ref
Client Sample No	101	101	103							
Client Sample ID	WS-PTS127A	WS-PTS110	WS-PTS110							
Depth to Top	0.20	0.10	1.00							
Depth To Bottom										
Date Sampled	11-May-23	12-May-23	12-May-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	1AE	4AE	4AE							
% Stones >10mm$_{A}$	4.0	13.7	19.3					% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.55	8.07	8.58					pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01	0.02					g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	0.9	1.9	0.8					% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	4	9	6					mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	0.6	<0.5					mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	3	23	11					mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	10	21	15					mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	7	37	14					mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	5	12	10					mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	14	47	30					mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (1 no)$_{A}$	-	*	-							A-T-001
pH (leachable)$_{A}^{\#}$	-	7.76	-					pH	0.01	A-T-031w
Cyanide (total) (leachable)$_{A}^{\#}$	-	<0.005	-					mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_{A}$	-	<0.01	-					mg/l	0.01	A-T-050w
Arsenic (leachable)$_{A}$	-	2	-					µg/l	1	A-T-025w
Boron (leachable)$_{A}$	-	11	-					µg/l	10	A-T-025w
Cadmium (leachable)$_{A}$	-	<1	-					µg/l	1	A-T-025w
Copper (leachable)$_{A}$	-	6	-					µg/l	4	A-T-025w
Chromium (leachable)$_{A}$	-	<1	-					µg/l	1	A-T-025w
Lead (leachable)$_{A}$	-	2	-					µg/l	1	A-T-025w
Mercury (leachable)$_{A}$	-	<0.1	-					µg/l	0.1	A-T-025w
Nickel (leachable)$_{A}$	-	<2	-					µg/l	2	A-T-025w
Selenium (leachable)$_{A}$	-	<1	-					µg/l	1	A-T-025w
Zinc (leachable)$_{A}$	-	3	-					µg/l	2	A-T-025w

Envirolab Job Number: 23/04688

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04688/1	23/04688/7	23/04688/9					Units	Limit of Detection	Method ref
Client Sample No	101	101	103							
Client Sample ID	WS-PTS127A	WS-PTS110	WS-PTS110							
Depth to Top	0.20	0.10	1.00							
Depth To Bottom										
Date Sampled	11-May-23	12-May-23	12-May-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	1AE	4AE	4AE							
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD							A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-							A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A							A-T-045

Envirolab Job Number: 23/04688

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04688/1	23/04688/7	23/04688/9					Units	Limit of Detection	Method ref
Client Sample No	101	101	103							
Client Sample ID	WS-PTS127A	WS-PTS110	WS-PTS110							
Depth to Top	0.20	0.10	1.00							
Depth To Bottom										
Date Sampled	11-May-23	12-May-23	12-May-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	1AE	4AE	4AE							
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	0.05	0.05					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	0.33	0.13					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	0.34	0.14					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	0.41	0.18					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	0.22	0.09					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	0.27	0.11					mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	0.32	0.17					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	0.60	0.28					mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03	0.27	0.11					mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	0.17	0.10					mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	0.48	0.23					mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	3.46	1.59					mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/04688

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04688/1	23/04688/7	23/04688/9					Units	Limit of Detection	Method ref
Client Sample No	101	101	103							
Client Sample ID	WS-PTS127A	WS-PTS110	WS-PTS110							
Depth to Top	0.20	0.10	1.00							
Depth To Bottom										
Date Sampled	11-May-23	12-May-23	12-May-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	1AE	4AE	4AE							
SVOC excluding PAH-16										
4-Bromophenyl phenyl ether$_A$	-	<100	-					µg/kg	100	A-T-052s
Hexachlorobenzene$_A$	-	<100	-					µg/kg	100	A-T-052s
Diethyl phthalate$_A$	-	<100	-					µg/kg	100	A-T-052s
Dimethyl phthalate$_A$	-	<100	-					µg/kg	100	A-T-052s
Dibenzofuran$_A$	-	<100	-					µg/kg	100	A-T-052s
Carbazole$_A$	-	<100	-					µg/kg	100	A-T-052s
Butylbenzyl phthalate$_A$	-	<100	-					µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate$_A$	-	<500	-					µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane$_A$	-	<100	-					µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether$_A$	-	<100	-					µg/kg	100	A-T-052s
4-Nitrophenol$_A$	-	<100	-					µg/kg	100	A-T-052s
3+4-Methylphenol$_A$	-	<100	-					µg/kg	100	A-T-052s
4-Chloro-3-methylphenol$_A$	-	<100	-					µg/kg	100	A-T-052s
2-Nitrophenol$_A$	-	<100	-					µg/kg	100	A-T-052s
2-Methylphenol$_A$	-	<100	-					µg/kg	100	A-T-052s
1,2,4-Trichlorobenzene$_A$	-	<100	-					µg/kg	100	A-T-052s
2-Chlorophenol$_A$	-	<100	-					µg/kg	100	A-T-052s
2,6-Dinitrotoluene$_A$	-	<100	-					µg/kg	100	A-T-052s
2,4-Dinitrotoluene$_A$	-	<100	-					µg/kg	100	A-T-052s
2,4-Dimethylphenol$_A$	-	<100	-					µg/kg	100	A-T-052s
2,4-Dichlorophenol$_A$	-	<100	-					µg/kg	100	A-T-052s
2,4,6-Trichlorophenol$_A$	-	<100	-					µg/kg	100	A-T-052s
2,4,5-Trichlorophenol$_A$	-	<100	-					µg/kg	100	A-T-052s
1,4-Dichlorobenzene$_A$	-	<100	-					µg/kg	100	A-T-052s
1,3-Dichlorobenzene$_A$	-	<100	-					µg/kg	100	A-T-052s
1,2-Dichlorobenzene$_A$	-	<100	-					µg/kg	100	A-T-052s
2-Chloronaphthalene$_A$	-	<100	-					µg/kg	100	A-T-052s
2-Methylnaphthalene$_A$	-	<100	-					µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether$_A$	-	<100	-					µg/kg	100	A-T-052s
Phenol$_A$	-	<100	-					µg/kg	100	A-T-052s
Pentachlorophenol$_A$	-	<100	-					µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine$_A$	-	<100	-					µg/kg	100	A-T-052s

Envirolab Job Number: 23/04688

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04688/1	23/04688/7	23/04688/9					Units	Limit of Detection	Method ref
Client Sample No	101	101	103							
Client Sample ID	WS-PTS127A	WS-PTS110	WS-PTS110							
Depth to Top	0.20	0.10	1.00							
Depth To Bottom										
Date Sampled	11-May-23	12-May-23	12-May-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	1AE	4AE	4AE							
n-Dioctylphthalate$_A$	-	<500	-					µg/kg	500	A-T-052s
n-Dibutylphthalate$_A$	-	<100	-					µg/kg	100	A-T-052s
Nitrobenzene$_A$	-	<100	-					µg/kg	100	A-T-052s
Isophorone$_A$	-	<100	-					µg/kg	100	A-T-052s
Hexachloroethane$_A$	-	<100	-					µg/kg	100	A-T-052s
Hexachlorobutadiene$_A$	-	<100	-					µg/kg	100	A-T-052s
Perylene$_A$	-	113	-					µg/kg	100	A-T-052s

Envirolab Job Number: 23/04688

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04688/1	23/04688/7	23/04688/9					Units	Limit of Detection	Method ref
Client Sample No	101	101	103							
Client Sample ID	WS-PTS127A	WS-PTS110	WS-PTS110							
Depth to Top	0.20	0.10	1.00							
Depth To Bottom										
Date Sampled	11-May-23	12-May-23	12-May-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	1AE	4AE	4AE							
VOC										
Dichlorodifluoromethane$_{A}$	-	<1	-					µg/kg	1	A-T-006s
Chloromethane$_{A}$	-	<10	-					µg/kg	10	A-T-006s
Vinyl Chloride (Chloroethene)$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Bromomethane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Chloroethane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Trichlorofluoromethane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,1-Dichloroethene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Carbon Disulphide$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Dichloromethane$_{A}$	-	<5	-					µg/kg	5	A-T-006s
trans 1,2-Dichloroethene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,1-Dichloroethane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
cis 1,2-Dichloroethene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
2,2-Dichloropropane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Bromochloromethane$_{A}^{\#}$	-	<5	-					µg/kg	5	A-T-006s
Chloroform$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,1,1-Trichloroethane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,1-Dichloropropene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Carbon Tetrachloride$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,2-Dichloroethane$_{A}^{\#}$	-	<2	-					µg/kg	2	A-T-006s
Benzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Trichloroethene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,2-Dichloropropane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Dibromomethane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Bromodichloromethane$_{A}^{\#}$	-	<10	-					µg/kg	10	A-T-006s
cis 1,3-Dichloropropene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Toluene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
trans 1,3-Dichloropropene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,1,2-Trichloroethane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,3-Dichloropropane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Tetrachloroethene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Dibromochloromethane$_{A}^{\#}$	-	<3	-					µg/kg	3	A-T-006s
1,2-Dibromoethane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s

Envirolab Job Number: 23/04688

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04688/1	23/04688/7	23/04688/9					Units	Limit of Detection	Method ref
Client Sample No	101	101	103							
Client Sample ID	WS-PTS127A	WS-PTS110	WS-PTS110							
Depth to Top	0.20	0.10	1.00							
Depth To Bottom										
Date Sampled	11-May-23	12-May-23	12-May-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	1AE	4AE	4AE							
Chlorobenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,1,1,2-Tetrachloroethane$_{A}$	-	<1	-					µg/kg	1	A-T-006s
Ethylbenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
m & p Xylene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
o-Xylene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Styrene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Bromoform$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Isopropylbenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,1,2,2-Tetrachloroethane$_{A}$	-	<1	-					µg/kg	1	A-T-006s
1,2,3-Trichloropropane$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
Bromobenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
n-Propylbenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
2-Chlorotoluene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
4-Chlorotoluene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
tert-Butylbenzene$_{A}^{\#}$	-	<2	-					µg/kg	2	A-T-006s
1,2,4-Trimethylbenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
sec-Butylbenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
4-Isopropyltoluene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,3-Dichlorobenzene$_{A}$	-	<1	-					µg/kg	1	A-T-006s
1,4-Dichlorobenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
n-Butylbenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,2-Dichlorobenzene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,2-Dibromo-3-chloropropane (DCBP)$_{A}$	-	<2	-					µg/kg	2	A-T-006s
1,2,4-Trichlorobenzene$_{A}$	-	<3	-					µg/kg	3	A-T-006s
Hexachlorobutadiene$_{A}^{\#}$	-	<1	-					µg/kg	1	A-T-006s
1,2,3-Trichlorobenzene$_{A}$	-	<3	-					µg/kg	3	A-T-006s

Envirolab Job Number: 23/04688

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04688/1	23/04688/7	23/04688/9					Units	Limit of Detection	Method ref
Client Sample No	101	101	103							
Client Sample ID	WS-PTS127A	WS-PTS110	WS-PTS110							
Depth to Top	0.20	0.10	1.00							
Depth To Bottom										
Date Sampled	11-May-23	12-May-23	12-May-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	1AE	4AE	4AE							
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	2	14	3					mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	2	14	3					mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<2	<2	<2					mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	12	2					mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1	44	9					mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<2	57	10					mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	2	70	14					mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/04688
		Date Received:	16/05/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	13.4
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/04688/1	23/04688/7	23/04688/9
Client Sample No	101	101	103
Client Sample ID/Depth	WS-PTS127A 0.20m	WS-PTS110 0.10m	WS-PTS110 1.00m
Date Sampled	11/05/23	12/05/23	12/05/23
A-T-006s		25/05/2023	
A-T-019s	23/05/2023	26/05/2023	26/05/2023
A-T-022s	19/05/2023	26/05/2023	26/05/2023
A-T-024s	30/05/2023	30/05/2023	30/05/2023
A-T-025w		24/05/2023	
A-T-026s	30/05/2023	30/05/2023	30/05/2023
A-T-027s	27/05/2023	27/05/2023	27/05/2023
A-T-031s	27/05/2023	27/05/2023	27/05/2023
A-T-031w		24/05/2023	
A-T-032s	30/05/2023	31/05/2023	31/05/2023
A-T-042sTCN	19/05/2023	25/05/2023	25/05/2023
A-T-042wTCN		24/05/2023	
A-T-044	30/05/2023	30/05/2023	30/05/2023
A-T-045	19/05/2023	19/05/2023	19/05/2023
A-T-050s	26/05/2023	26/05/2023	26/05/2023
A-T-050w		26/05/2023	
A-T-052s		30/05/2023	
A-T-055s	22/05/2023	25/05/2023	25/05/2023
Calc-As Recd	22/05/2023	26/05/2023	26/05/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/04907
Issue Number: 1 **Date:** 02 June, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 19/05/23
Date Instructions Received: 19/05/23
Date Analysis Completed: 02/06/23

Approved by:

Richard Wong
Client Manager

1247

Envirolab Job Number: 23/04907

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04907/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	WS-PTS108									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	16-May-23									
Sample Type	SOIL - ES									
Sample Matrix Code	1A									
% Stones >10mm$_{A}$	<0.1							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	7.24							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.0							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	6							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	9							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	12							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	14							mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	7							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	19							mg/kg	5	A-T-024s

Envirolab Job Number: 23/04907

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04907/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	WS-PTS108									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	16-May-23									
Sample Type	SOIL - ES									
Sample Matrix Code	1A									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/04907

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04907/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	WS-PTS108									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	16-May-23									
Sample Type	SOIL - ES									
Sample Matrix Code	1A									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	0.04							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	0.06							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	0.06							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.13							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	0.03							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	0.10							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	0.10							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	0.58							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/04907

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/04907/2							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	WS-PTS108									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	16-May-23									
Sample Type	SOIL - ES									
Sample Matrix Code	1A									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	1							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	1							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	1							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	2							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	3							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	4							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/04907
		Date Received:	19/05/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	14.1
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/04907/2
Client Sample No	102
Client Sample ID/Depth	WS-PTS108 0.50m
Date Sampled	16/05/23
A-T-019s	30/05/2023
A-T-022s	30/05/2023
A-T-024s	31/05/2023
A-T-026s	31/05/2023
A-T-027s	31/05/2023
A-T-031s	31/05/2023
A-T-032s	31/05/2023
A-T-042sTCN	26/05/2023
A-T-044	01/06/2023
A-T-045	26/05/2023
A-T-050s	30/05/2023
A-T-055s	02/06/2023
Calc-As Recd	02/06/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/05113
Issue Number: 1 **Date:** 08 June, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 24/05/23
Date Instructions Received: 25/05/23
Date Analysis Completed: 08/06/23

Approved by:

Gemma Berrisford
Client Manager

1247

envirolab

Envirolab Job Number: 23/05113

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05113/2	23/05113/3						Units	Limit of Detection	Method ref
Client Sample No	102	101								
Client Sample ID	BH-PTS104	TP-PTS206								
Depth to Top	0.50	0.20								
Depth To Bottom										
Date Sampled	19-May-23	19-May-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4AE	4AE								
% Stones >10mm$_{A}$	14.9	16.7						% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	6.05	5.71						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	0.03	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	2.0	1.2						% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	3	3						mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0						mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	0.6	<0.5						mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	13	8						mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	15	12						mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	22	17						mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17						mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	9	9						mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	37	27						mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (1 no)$_{A}$	*	-								A-T-001
pH (leachable)$_{A}^{\#}$	5.90	-						pH	0.01	A-T-031w
Cyanide (total) (leachable)$_{A}^{\#}$	<0.005	-						mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_{A}$	<0.01	-						mg/l	0.01	A-T-050w
Arsenic (leachable)$_{A}$	<1	-						µg/l	1	A-T-025w
Boron (leachable)$_{A}$	14	-						µg/l	10	A-T-025w
Cadmium (leachable)$_{A}$	<1	-						µg/l	1	A-T-025w
Copper (leachable)$_{A}$	16	-						µg/l	4	A-T-025w
Chromium (leachable)$_{A}$	<1	-						µg/l	1	A-T-025w
Lead (leachable)$_{A}$	7	-						µg/l	1	A-T-025w
Mercury (leachable)$_{A}$	<0.1	-						µg/l	0.1	A-T-025w
Nickel (leachable)$_{A}$	3	-						µg/l	2	A-T-025w
Selenium (leachable)$_{A}$	<1	-						µg/l	1	A-T-025w
Zinc (leachable)$_{A}$	14	-						µg/l	2	A-T-025w

Envirolab Job Number: 23/05113

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05113/2	23/05113/3						Units	Limit of Detection	Method ref
Client Sample No	102	101								
Client Sample ID	BH-PTS104	TP-PTS206								
Depth to Top	0.50	0.20								
Depth To Bottom										
Date Sampled	19-May-23	19-May-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4AE	4AE								
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 23/05113

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05113/2	23/05113/3						Units	Limit of Detection	Method ref
Client Sample No	102	101								
Client Sample ID	BH-PTS104	TP-PTS206								
Depth to Top	0.50	0.20								
Depth To Bottom										
Date Sampled	19-May-23	19-May-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4AE	4AE								
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	0.07						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	0.09						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	0.10						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	<0.05						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07						mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	0.08						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	0.14						mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03	0.06						mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	0.05						mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	0.11						mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	0.70						mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/05113

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05113/2	23/05113/3						Units	Limit of Detection	Method ref
Client Sample No	102	101								
Client Sample ID	BH-PTS104	TP-PTS206								
Depth to Top	0.50	0.20								
Depth To Bottom										
Date Sampled	19-May-23	19-May-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4AE	4AE								
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	4	5						mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	4	5						mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	2	5						mg/kg	1	A-T-055s
Total Aromatics$_{A}$	2	5						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	6	11						mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s

Report Notes

General
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The results reported herein relate only to the material supplied to the laboratory.
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Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

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None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/05113
		Date Received:	25/05/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	13.1
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/05113/2	23/05113/3
Client Sample No	102	101
Client Sample ID/Depth	BH-PTS104 0.50m	TP-PTS206 0.20m
Date Sampled	19/05/23	19/05/23
A-T-019s	02/06/2023	02/06/2023
A-T-022s	01/06/2023	01/06/2023
A-T-024s	08/06/2023	08/06/2023
A-T-025w	08/06/2023	
A-T-026s	06/06/2023	06/06/2023
A-T-027s	06/06/2023	06/06/2023
A-T-031s	07/06/2023	07/06/2023
A-T-031w	05/06/2023	
A-T-032s	08/06/2023	08/06/2023
A-T-042sTCN	30/05/2023	30/05/2023
A-T-042wTCN	06/06/2023	
A-T-044	08/06/2023	08/06/2023
A-T-045	02/06/2023	02/06/2023
A-T-050s	06/06/2023	06/06/2023
A-T-050w	06/06/2023	
A-T-055s	07/06/2023	07/06/2023
Calc-As Recd	07/06/2023	07/06/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/05185
Issue Number: 1 **Date:** 13 June, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 25/05/23
Date Instructions Received: 26/05/23
Date Analysis Completed: 13/06/23

Approved by:

Gemma Berrisford
Client Manager

1247

Envirolab Job Number: 23/05185

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05185/2	23/05185/5						Units	Limit of Detection	Method ref
Client Sample No	102	102								
Client Sample ID	BH-PTS107	BH-PTS111								
Depth to Top	0.60	0.50								
Depth To Bottom										
Date Sampled	23-May-23	23-May-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4A	1A								
% Stones >10mm$_{A}$	36.4	19.9						% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	8.33	7.97						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	0.4	0.4						% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	4	2						mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0						mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5						mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	6	2						mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	9	3						mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	8	3						mg/kg	1	A-T-024s
Mercury$_{D}$	1.83	0.64						mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	6	2						mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	17	7						mg/kg	5	A-T-024s

Envirolab Job Number: 23/05185

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05185/2	23/05185/5						Units	Limit of Detection	Method ref
Client Sample No	102	102								
Client Sample ID	BH-PTS107	BH-PTS111								
Depth to Top	0.60	0.50								
Depth To Bottom										
Date Sampled	23-May-23	23-May-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4A	1A								
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 23/05185

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05185/2	23/05185/5						Units	Limit of Detection	Method ref
Client Sample No	102	102								
Client Sample ID	BH-PTS107	BH-PTS111								
Depth to Top	0.60	0.50								
Depth To Bottom										
Date Sampled	23-May-23	23-May-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4A	1A								
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	<0.05						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	<0.05						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07						mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	<0.06						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	<0.08						mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	<0.07						mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	<0.08						mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/05185

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05185/2	23/05185/5						Units	Limit of Detection	Method ref
Client Sample No	102	102								
Client Sample ID	BH-PTS107	BH-PTS111								
Depth to Top	0.60	0.50								
Depth To Bottom										
Date Sampled	23-May-23	23-May-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4A	1A								
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	1	2						mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	1	2						mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	1	<1						mg/kg	1	A-T-055s
Total Aromatics$_{A}$	1	<1						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	3	2						mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/05185
		Date Received:	26/05/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	15.5
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/05185/2	23/05185/5
Client Sample No	102	102
Client Sample ID/Depth	BH-PTS107 0.60m	BH-PTS111 0.50m
Date Sampled	23/05/23	23/05/23
A-T-019s	06/06/2023	08/06/2023
A-T-022s	07/06/2023	07/06/2023
A-T-024s	12/06/2023	12/06/2023
A-T-026s	12/06/2023	12/06/2023
A-T-027s	09/06/2023	09/06/2023
A-T-031s	09/06/2023	09/06/2023
A-T-032s	13/06/2023	12/06/2023
A-T-042sTCN	02/06/2023	06/06/2023
A-T-044	08/06/2023	08/06/2023
A-T-045	07/06/2023	07/06/2023
A-T-050s	06/06/2023	09/06/2023
A-T-055s	09/06/2023	08/06/2023
Calc-As Recd	09/06/2023	08/06/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/05485
Issue Number: 1 **Date:** 20 June, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 30/05/23
Date Instructions Received: 06/06/23
Date Analysis Completed: 20/06/23

Approved by:

Richard Wong
Client Manager

1247

envirolab

Envirolab Job Number: 23/05485

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05485/3							Units	Limit of Detection	Method ref
Client Sample No	103									
Client Sample ID	BH-PTS107B									
Depth to Top	1.30									
Depth To Bottom										
Date Sampled	26-May-23									
Sample Type	SOIL - ES									
Sample Matrix Code	5AE									
% Stones >10mm$_{A}$	12.6							% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	8.14							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	0.02							g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2							mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	0.8							% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	5							mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0							mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5							mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	11							mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	20							mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	16							mg/kg	1	A-T-024s
Mercury$_{D}$	0.26							mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	15							mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	37							mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (1 no)$_{A}$	*									A-T-001
pH (leachable)$_{A}^{\#}$	7.74							pH	0.01	A-T-031w
Cyanide (total) (leachable)$_{A}^{\#}$	<0.005							mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_{A}$	<0.01							mg/l	0.01	A-T-050w
Arsenic (leachable)$_{A}$	<1							µg/l	1	A-T-025w
Boron (leachable)$_{A}$	<10							µg/l	10	A-T-025w
Cadmium (leachable)$_{A}$	<1							µg/l	1	A-T-025w
Copper (leachable)$_{A}$	<4							µg/l	4	A-T-025w
Chromium (leachable)$_{A}$	2							µg/l	1	A-T-025w
Lead (leachable)$_{A}$	<1							µg/l	1	A-T-025w
Mercury (leachable)$_{A}$	<0.1							µg/l	0.1	A-T-025w
Nickel (leachable)$_{A}$	<2							µg/l	2	A-T-025w
Selenium (leachable)$_{A}$	<1							µg/l	1	A-T-025w
Zinc (leachable)$_{A}$	3							µg/l	2	A-T-025w

Envirolab Job Number: 23/05485

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05485/3							Units	Limit of Detection	Method ref
Client Sample No	103									
Client Sample ID	BH-PTS107B									
Depth to Top	1.30									
Depth To Bottom										
Date Sampled	26-May-23									
Sample Type	SOIL - ES									
Sample Matrix Code	5AE									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_{D}$	-									A-T-045
Asbestos Matrix (microscope)$_{D}$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A									A-T-045

Envirolab Job Number: 23/05485

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05485/3							Units	Limit of Detection	Method ref
Client Sample No	103									
Client Sample ID	BH-PTS107B									
Depth to Top	1.30									
Depth To Bottom										
Date Sampled	26-May-23									
Sample Type	SOIL - ES									
Sample Matrix Code	5AE									
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08							mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07							mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08							mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/05485

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05485/3							Units	Limit of Detection	Method ref
Client Sample No	103									
Client Sample ID	BH-PTS107B									
Depth to Top	1.30									
Depth To Bottom										
Date Sampled	26-May-23									
Sample Type	SOIL - ES									
Sample Matrix Code	5AE									
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	3							mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	3							mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1							mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	1							mg/kg	1	A-T-055s
Total Aromatics$_{A}$	1							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	4							mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01							mg/kg	0.01	A-T-022s

Report Notes

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Key

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None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
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IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB

Project: A66 NTP - Scheme S03A

Clients Project No: 765633

Project No: 23/05485

Date Received: 06/06/2023 (am)

Cool Box Temperatures (°C): 14.4, 15.1

Lab Sample ID	23/05485/3
Client Sample No	103
Client Sample ID/Depth	BH-PTS107B 1.30m
Date Sampled	26/05/23
Deviation Code	
F	✓

Key

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/05485/3
Client Sample No	103
Client Sample ID/Depth	BH-PTS107B 1.30m
Date Sampled	26/05/23
PAH-16MS	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/05485/3
Client Sample No	103
Client Sample ID/Depth	BH-PTS107B 1.30m
Date Sampled	26/05/23
A-T-019s	19/06/2023
A-T-022s	08/06/2023
A-T-024s	20/06/2023
A-T-025w	19/06/2023
A-T-026s	20/06/2023
A-T-027s	20/06/2023
A-T-031s	20/06/2023
A-T-031w	19/06/2023
A-T-032s	20/06/2023
A-T-042sTCN	07/06/2023
A-T-042wTCN	19/06/2023
A-T-044	19/06/2023
A-T-045	16/06/2023
A-T-050s	19/06/2023
A-T-050w	19/06/2023
A-T-055s	14/06/2023
Calc-As Recd	14/06/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/05708
Issue Number: 1 **Date:** 27 June, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 06/06/23
Date Instructions Received: 09/06/23
Date Analysis Completed: 27/06/23

Approved by:

Gemma Berrisford
Client Manager

1247

envirolab

Envirolab Job Number: 23/05708

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05708/1	23/05708/2	23/05708/3	23/05708/4	23/05708/5	23/05708/6	23/05708/7	Units	Limit of Detection	Method ref
Client Sample No	601	601	601	601	601	101	601			
Client Sample ID	BH-PTS115	BH-PTS123	BH-PTS127	BH-PTS129	TP-PTS207	TP-PTS207	TP-PTS209			
Depth to Top	0.30	0.50	0.20	0.40	0.10	1.50	0.10			
Depth To Bottom										
Date Sampled	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	1A	1A	1AE	4AE	1A	4AE			
% Stones >10mm$_{A}$	40.9	1.0	14.7	18.0	5.3	29.0	19.0	% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	5.81	6.50	6.19	6.10	5.20	6.18	5.26	pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.3	0.3	1.6	1.2	2.4	0.5	2.8	% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	9	6	8	8	9	3	7	mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	0.8	<0.5	0.6	0.7	0.9	<0.5	0.6	mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	12	5	13	10	16	6	13	mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	18	11	20	23	39	13	19	mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	19	7	33	12	37	14	35	mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17	<0.17	<0.17	0.26	<0.17	<0.17	mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	12	8	9	17	15	6	7	mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	37	11	44	43	57	26	41	mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (1 no)$_{A}$	*	-	*	-	-	*	-			A-T-001
pH (leachable)$_{A}^{\#}$	6.64	-	6.79	-	-	6.65	-	pH	0.01	A-T-031w
Cyanide (total) (leachable)$_{A}^{\#}$	<0.005	-	<0.005	-	-	<0.005	-	mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_{A}$	<0.01	-	<0.01	-	-	<0.01	-	mg/l	0.01	A-T-050w
Arsenic (leachable)$_{A}$	2	-	2	-	-	<1	-	µg/l	1	A-T-025w
Boron (leachable)$_{A}$	13	-	27	-	-	<10	-	µg/l	10	A-T-025w
Cadmium (leachable)$_{A}$	<1	-	<1	-	-	<1	-	µg/l	1	A-T-025w
Copper (leachable)$_{A}$	14	-	8	-	-	11	-	µg/l	4	A-T-025w
Chromium (leachable)$_{A}$	<1	-	<1	-	-	<1	-	µg/l	1	A-T-025w
Lead (leachable)$_{A}$	3	-	20	-	-	2	-	µg/l	1	A-T-025w
Mercury (leachable)$_{A}$	<0.1	-	<0.1	-	-	<0.1	-	µg/l	0.1	A-T-025w
Nickel (leachable)$_{A}$	<2	-	<2	-	-	<2	-	µg/l	2	A-T-025w
Selenium (leachable)$_{A}$	<1	-	<1	-	-	<1	-	µg/l	1	A-T-025w
Zinc (leachable)$_{A}$	7	-	8	-	-	4	-	µg/l	2	A-T-025w

Envirolab Job Number: 23/05708

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05708/1	23/05708/2	23/05708/3	23/05708/4	23/05708/5	23/05708/6	23/05708/7	Units	Limit of Detection	Method ref
Client Sample No	601	601	601	601	601	101	601			
Client Sample ID	BH-PTS115	BH-PTS123	BH-PTS127	BH-PTS129	TP-PTS207	TP-PTS207	TP-PTS209			
Depth to Top	0.30	0.50	0.20	0.40	0.10	1.50	0.10			
Depth To Bottom										
Date Sampled	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	1A	1A	1AE	4AE	1A	4AE			
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD	NAD	NAD	NAD	NAD			A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A	N/A	N/A	N/A	N/A			A-T-045

Envirolab Job Number: 23/05708

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05708/1	23/05708/2	23/05708/3	23/05708/4	23/05708/5	23/05708/6	23/05708/7	Units	Limit of Detection	Method ref
Client Sample No	601	601	601	601	601	101	601			
Client Sample ID	BH-PTS115	BH-PTS123	BH-PTS127	BH-PTS129	TP-PTS207	TP-PTS207	TP-PTS209			
Depth to Top	0.30	0.50	0.20	0.40	0.10	1.50	0.10			
Depth To Bottom										
Date Sampled	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	1A	1A	1AE	4AE	1A	4AE			
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04	<0.04	0.06	<0.04	0.04	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	<0.04	<0.04	<0.04	0.06	<0.04	0.06	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	<0.05	<0.05	<0.05	0.08	<0.05	0.09	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	<0.06	<0.06	<0.06	0.08	<0.06	0.08	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	<0.08	<0.08	<0.08	0.14	<0.08	0.14	mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03	<0.03	<0.03	<0.03	0.04	<0.03	0.05	mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	<0.03	<0.03	<0.03	0.04	<0.03	0.04	mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	<0.07	<0.07	<0.07	0.12	<0.07	0.11	mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	<0.08	<0.08	<0.08	0.62	<0.08	0.67	mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/05708

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05708/1	23/05708/2	23/05708/3	23/05708/4	23/05708/5	23/05708/6	23/05708/7	Units	Limit of Detection	Method ref
Client Sample No	601	601	601	601	601	101	601			
Client Sample ID	BH-PTS115	BH-PTS123	BH-PTS127	BH-PTS129	TP-PTS207	TP-PTS207	TP-PTS209			
Depth to Top	0.30	0.50	0.20	0.40	0.10	1.50	0.10			
Depth To Bottom										
Date Sampled	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	1A	1A	1AE	4AE	1A	4AE			
SVOC excluding PAH-16										
4-Bromophenyl phenyl ether$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Hexachlorobenzene$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Diethyl phthalate$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Dimethyl phthalate$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Dibenzofuran$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Carbazole$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Butylbenzyl phthalate$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate$_A$	-	-	-	-	-	<500	-	µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
4-Nitrophenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
3+4-Methylphenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
4-Chloro-3-methylphenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Nitrophenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Methylphenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
1,2,4-Trichlorobenzene$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Chlorophenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2,6-Dinitrotoluene$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4-Dinitrotoluene$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4-Dimethylphenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4-Dichlorophenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4,6-Trichlorophenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4,5-Trichlorophenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
1,4-Dichlorobenzene$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
1,3-Dichlorobenzene$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
1,2-Dichlorobenzene$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Chloronaphthalene$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Methylnaphthalene$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Phenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Pentachlorophenol$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine$_A$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s

Envirolab Job Number: 23/05708

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05708/1	23/05708/2	23/05708/3	23/05708/4	23/05708/5	23/05708/6	23/05708/7	Units	Limit of Detection	Method ref
Client Sample No	601	601	601	601	601	101	601			
Client Sample ID	BH-PTS115	BH-PTS123	BH-PTS127	BH-PTS129	TP-PTS207	TP-PTS207	TP-PTS209			
Depth to Top	0.30	0.50	0.20	0.40	0.10	1.50	0.10			
Depth To Bottom										
Date Sampled	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	1A	1A	1AE	4AE	1A	4AE			
n-Dioctylphthalate$_{A}$	-	-	-	-	-	<500	-	µg/kg	500	A-T-052s
n-Dibutylphthalate$_{A}$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Nitrobenzene$_{A}$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Isophorone$_{A}$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Hexachloroethane$_{A}$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Hexachlorobutadiene$_{A}$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Perylene$_{A}$	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
TPH Total with ID										
TPH total (>C6-C40)$_{A}^{M\#}$	-	-	-	-	-	<10	-	mg/kg	10	A-T-007s
TPH ID Interpretation$_{A}$	-	-	-	-	-	Concentration too low to identify	-			A-T-007s

Envirolab Job Number: 23/05708

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05708/1	23/05708/2	23/05708/3	23/05708/4	23/05708/5	23/05708/6	23/05708/7	Units	Limit of Detection	Method ref
Client Sample No	601	601	601	601	601	101	601			
Client Sample ID	BH-PTS115	BH-PTS123	BH-PTS127	BH-PTS129	TP-PTS207	TP-PTS207	TP-PTS209			
Depth to Top	0.30	0.50	0.20	0.40	0.10	1.50	0.10			
Depth To Bottom										
Date Sampled	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	1A	1A	1AE	4AE	1A	4AE			
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	0.01	0.02	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	1	<1	6	<1	12	<1	20	mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	1	<1	6	<1	12	<1	20	mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1	<1	<1	2	<1	2	mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	<1	<1	<1	1	<1	3	mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1	<1	2	<1	3	<1	7	mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1	<1	3	<1	6	<1	12	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	2	<1	9	<1	18	<1	32	mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s

Envirolab Job Number: 23/05708

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05708/8	23/05708/9	23/05708/10	23/05708/11	23/05708/12	23/05708/13	23/05708/14	Units	Limit of Detection	Method ref
Client Sample No	601	601	601	601	601	601	601			
Client Sample ID	TP-PTS210	TP-PTS212	TP-PTS214	TP-PTS233-LC	TP-PTS235	WS-PTS120	WS-PTS130			
Depth to Top	0.50	0.10	0.50	0.10	0.50	0.20	1.20			
Depth To Bottom										
Date Sampled	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	6AE	1A	1A	1A	4AE	1A			
% Stones >10mm$_{A}$	12.1	1.3	<0.1	4.7	<0.1	<0.1	20.8	% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	5.20	5.86	5.59	5.40	6.22	4.82	6.51	pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	0.05	<0.01	0.02	<0.01	<0.01	<0.01	g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	1.7	5.7	0.7	2.3	1.0	3.3	0.2	% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	4	15	<1	4	3	8	3	mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	1.5	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	30	21	2	5	5	6	5	mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	33	31	6	10	10	11	10	mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	47	31	6	13	10	22	6	mg/kg	1	A-T-024s
Mercury$_{D}$	1.49	<0.17	<0.17	<0.17	<0.17	0.18	<0.17	mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	28	21	3	6	6	5	6	mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	227	61	8	19	14	27	10	mg/kg	5	A-T-024s

Envirolab Job Number: 23/05708

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05708/8	23/05708/9	23/05708/10	23/05708/11	23/05708/12	23/05708/13	23/05708/14	Units	Limit of Detection	Method ref
Client Sample No	601	601	601	601	601	601	601			
Client Sample ID	TP-PTS210	TP-PTS212	TP-PTS214	TP-PTS233-LC	TP-PTS235	WS-PTS120	WS-PTS130			
Depth to Top	0.50	0.10	0.50	0.10	0.50	0.20	1.20			
Depth To Bottom										
Date Sampled	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	6AE	1A	1A	1A	4AE	1A			
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD	NAD	NAD	NAD	NAD			A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A	N/A	N/A	N/A	N/A			A-T-045

Envirolab Job Number: 23/05708

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05708/8	23/05708/9	23/05708/10	23/05708/11	23/05708/12	23/05708/13	23/05708/14	Units	Limit of Detection	Method ref
Client Sample No	601	601	601	601	601	601	601			
Client Sample ID	TP-PTS210	TP-PTS212	TP-PTS214	TP-PTS233-LC	TP-PTS235	WS-PTS120	WS-PTS130			
Depth to Top	0.50	0.10	0.50	0.10	0.50	0.20	1.20			
Depth To Bottom										
Date Sampled	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	6AE	1A	1A	1A	4AE	1A			
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04	0.04	<0.04	0.27	<0.04	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	<0.04	<0.04	0.06	<0.04	0.36	<0.04	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	<0.05	<0.05	0.06	<0.05	0.43	<0.05	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	<0.05	<0.05	0.05	<0.05	0.25	<0.05	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07	<0.07	<0.07	<0.07	0.21	<0.07	mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	<0.06	<0.06	0.07	<0.06	0.39	<0.06	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	<0.08	<0.08	0.14	<0.08	0.81	<0.08	mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03	<0.03	<0.03	0.05	<0.03	0.28	<0.03	mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	<0.03	<0.03	0.05	<0.03	0.23	<0.03	mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	<0.07	<0.07	0.10	<0.07	0.63	<0.07	mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	<0.08	<0.08	0.62	<0.08	3.93	<0.08	mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/05708

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/05708/8	23/05708/9	23/05708/10	23/05708/11	23/05708/12	23/05708/13	23/05708/14	Units	Limit of Detection	Method ref
Client Sample No	601	601	601	601	601	601	601			
Client Sample ID	TP-PTS210	TP-PTS212	TP-PTS214	TP-PTS233-LC	TP-PTS235	WS-PTS120	WS-PTS130			
Depth to Top	0.50	0.10	0.50	0.10	0.50	0.20	1.20			
Depth To Bottom										
Date Sampled	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23	03-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	6AE	1A	1A	1A	4AE	1A			
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	7	44	<1	8	4	15	<1	mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	7	44	<1	8	4	15	<1	mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	2	<1	1	1	2	<1	mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	1	<1	<1	<1	1	<1	mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	3	<1	1	<1	4	<1	mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	2	6	<1	3	1	12	<1	mg/kg	1	A-T-055s
Total Aromatics$_{A}$	4	13	<1	5	2	19	<1	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	11	57	<1	14	7	34	<1	mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB

Project: A66 NTP - Scheme S03A

Clients Project No: 765633

Project No: 23/05708

Date Received: 09/06/2023 (pm)

Cool Box Temperatures (°C): 14.1,13.7,14.4

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/05708/1	23/05708/2	23/05708/3	23/05708/4	23/05708/5	23/05708/6	23/05708/7	23/05708/8	23/05708/9	23/05708/10	23/05708/11	23/05708/12
Client Sample No	601	601	601	601	601	101	601	601	601	601	601	601
Client Sample ID/Depth	BH-PTS115 0.30m	BH-PTS123 0.50m	BH-PTS127 0.20m	BH-PTS129 0.40m	TP-PTS207 0.10m	TP-PTS207 1.50m	TP-PTS209 0.10m	TP-PTS210 0.50m	TP-PTS212 0.10m	TP-PTS214 0.50m	TP-PTS233-LC 0.10m	TP-PTS235 0.50m
Date Sampled	03/06/23	03/06/23	03/06/23	03/06/23	03/06/23	03/06/23	03/06/23	03/06/23	03/06/23	03/06/23	03/06/23	03/06/23
A-T-007s						22/06/2023						
A-T-019s	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023
A-T-022s	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023
A-T-024s	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023
A-T-025w	23/06/2023		23/06/2023			23/06/2023						
A-T-026s	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023
A-T-027s	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023
A-T-031s	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	27/06/2023	27/06/2023	27/06/2023	27/06/2023
A-T-031w	19/06/2023		19/06/2023			19/06/2023						
A-T-032s	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023
A-T-042sTCN	14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023
A-T-042wTCN	19/06/2023		19/06/2023			19/06/2023						
A-T-044	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023
A-T-045	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023
A-T-050s	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023
A-T-050w	20/06/2023		20/06/2023			20/06/2023						
A-T-052s						19/06/2023						
A-T-055s	13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023
Calc-As Recd	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023

Lab Sample ID	23/05708/13	23/05708/14
Client Sample No	601	601
Client Sample ID/Depth	WS-PTS120 0.20m	WS-PTS130 1.20m
Date Sampled	03/06/23	03/06/23
A-T-007s		
A-T-019s	21/06/2023	21/06/2023
A-T-022s	15/06/2023	15/06/2023
A-T-024s	27/06/2023	27/06/2023
A-T-025w		
A-T-026s	27/06/2023	27/06/2023
A-T-027s	27/06/2023	27/06/2023
A-T-031s	27/06/2023	27/06/2023
A-T-031w		
A-T-032s	26/06/2023	26/06/2023
A-T-042sTCN	14/06/2023	14/06/2023
A-T-042wTCN		
A-T-044	23/06/2023	23/06/2023
A-T-045	21/06/2023	21/06/2023
A-T-050s	21/06/2023	21/06/2023
A-T-050w		
A-T-052s		
A-T-055s	13/06/2023	13/06/2023
Calc-As Recd	15/06/2023	15/06/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/06040
Issue Number: 1 **Date:** 03 July, 2023

Client: Structural Soils Limited (Bristol)
The Old School
Stillhouse Lane
Bedminster
Bristol
UK
BS3 4EB

Project Manager: Christopher White/Timothy Nichols/Tom Payne
Project Name: A66 NTP - Scheme S03A
Project Ref: 765633
Order No: N/A
Date Samples Received: 16/06/23
Date Instructions Received: 19/06/23
Date Analysis Completed: 03/07/23

Approved by:

Danielle Brierley
Deputy Client Services Supervisor

1247

Envirolab Job Number: 23/06040

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/06040/1	23/06040/2						Units	Limit of Detection	Method ref
Client Sample No	601	601								
Client Sample ID	BH-PTS122	BH-PTS124								
Depth to Top	0.50	1.00								
Depth To Bottom										
Date Sampled	14-Jun-23	14-Jun-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	1A	5A								
% Stones >10mm$_{A}$	11.7	<0.1						% w/w	0.1	A-T-044
pH$_{D}^{M\#}$	5.90	6.93						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_{D}^{M\#}$	<0.01	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_{A}$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_{D}^{M\#}$	0.9	0.3						% w/w	0.1	A-T-032s
Arsenic$_{D}^{M\#}$	6	2						mg/kg	1	A-T-024s
Boron (water soluble)$_{D}^{M\#}$	<1.0	<1.0						mg/kg	1	A-T-027s
Cadmium$_{D}^{M\#}$	<0.5	<0.5						mg/kg	0.5	A-T-024s
Copper$_{D}^{M\#}$	5	10						mg/kg	1	A-T-024s
Chromium$_{D}^{M\#}$	10	21						mg/kg	1	A-T-024s
Lead$_{D}^{M\#}$	7	6						mg/kg	1	A-T-024s
Mercury$_{D}$	<0.17	<0.17						mg/kg	0.17	A-T-024s
Nickel$_{D}^{M\#}$	7	15						mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	14	14						mg/kg	5	A-T-024s

Envirolab Job Number: 23/06040

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/06040/1	23/06040/2						Units	Limit of Detection	Method ref
Client Sample No	601	601								
Client Sample ID	BH-PTS122	BH-PTS124								
Depth to Top	0.50	1.00								
Depth To Bottom										
Date Sampled	14-Jun-23	14-Jun-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	1A	5A								
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 23/06040

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/06040/1	23/06040/2						Units	Limit of Detection	Method ref
Client Sample No	601	601								
Client Sample ID	BH-PTS122	BH-PTS124								
Depth to Top	0.50	1.00								
Depth To Bottom										
Date Sampled	14-Jun-23	14-Jun-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	1A	5A								
PAH-16MS										
Acenaphthene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_{A}^{M\#}$	<0.02	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	<0.05	<0.05						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	<0.05	<0.05						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	<0.07	<0.07						mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	<0.06	<0.06						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	<0.04	<0.04						mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	<0.08						mg/kg	0.08	A-T-019s
Fluorene$_{A}^{M\#}$	<0.01	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	<0.03	<0.03						mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	<0.07	<0.07						mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	<0.08	<0.08						mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/06040

Client Project Name: A66 NTP - Scheme S03A

Client Project Ref: 765633

Lab Sample ID	23/06040/1	23/06040/2						Units	Limit of Detection	Method ref
Client Sample No	601	601								
Client Sample ID	BH-PTS122	BH-PTS124								
Depth to Top	0.50	1.00								
Depth To Bottom										
Date Sampled	14-Jun-23	14-Jun-23								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	1A	5A								
TPH CWG with Clean Up										
Ali >C5-C6$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_{A}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Total Aliphatics$_{A}$	<1	<1						mg/kg	1	Calc-As Recd
Aro >C5-C7$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C10-C12$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_{A}$	<1	<1						mg/kg	1	A-T-055s
Aro >C16-C21$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Aro >C21-C35$_{A}^{M\#}$	<1	<1						mg/kg	1	A-T-055s
Total Aromatics$_{A}$	<1	<1						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_{A}$	<1	<1						mg/kg	1	Calc-As Recd
BTEX - Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE$_{A}^{\#}$	<0.01	<0.01						mg/kg	0.01	A-T-022s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Structural Soils Limited (Bristol), The Old School , Stillhouse Lane, Bedminster, Bristol, UK, BS3 4EB	**Project No:**	23/06040
		Date Received:	19/06/2023 (am)
Project:	A66 NTP - Scheme S03A	**Cool Box Temperatures (°C):**	22.1
Clients Project No:	765633		

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/06040/1	23/06040/2
Client Sample No	601	601
Client Sample ID/Depth	BH-PTS122 0.50m	BH-PTS124 1.00m
Date Sampled	14/06/23	14/06/23
A-T-019s	30/06/2023	30/06/2023
A-T-022s	22/06/2023	22/06/2023
A-T-024s	03/07/2023	03/07/2023
A-T-026s	03/07/2023	03/07/2023
A-T-027s	03/07/2023	03/07/2023
A-T-031s	03/07/2023	03/07/2023
A-T-032s	03/07/2023	03/07/2023
A-T-042sTCN	22/06/2023	22/06/2023
A-T-044	30/06/2023	30/06/2023
A-T-045	27/06/2023	27/06/2023
A-T-050s	26/06/2023	26/06/2023
A-T-055s	27/06/2023	27/06/2023
Calc-As Recd	27/06/2023	27/06/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

APPENDIX I - CALIBRATION CERTIFICATES

(I01) Standard Penetration Test Calibration Certificates

(I02) Water Level Data Logger Calibration Certificates

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

JB Site Investigations Ltd
Ramparts Business Park
Berwick upon Tweed
TD15 1TB
Tel: 01289 304646

SPT Hammer Ref:	JB01
Test Date:	06/01/2023
Report Date:	12/01/2023
File Name:	JB01.spt
Test Operator:	JB

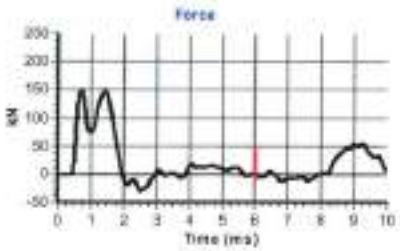
Instrumented Rod Data

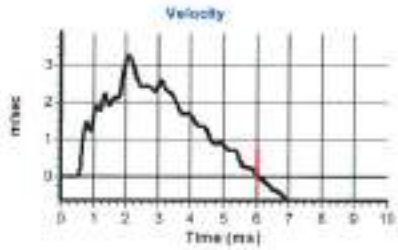
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.0
Assumed Modulus E_a (GPa):	200
Accelerometer No.1:	6178
Accelerometer No.2:	5843

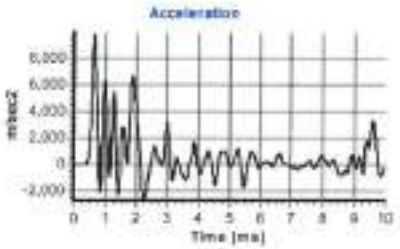
SPT Hammer Information

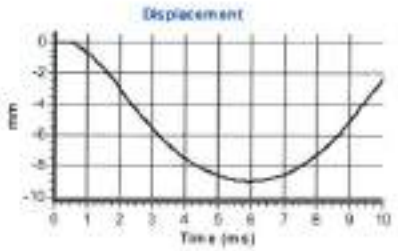
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	11.0

Comments / Location









Calculations

Area of Rod A (mm2):	905
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	291

Energy Ratio E_r (%): 61

Signed: Neil Redfern
Title: Operations Director

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SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Southern Testing
Unit 11
Charlwoods Road
East Grinstead
West Sussex
RH19 2HU

SPT Hammer Ref:	AR2670
Test Date:	27/03/2023
Report Date:	27/03/2023
File Name:	AR2670.spt
Test Operator:	BOB

Instrumented Rod Data

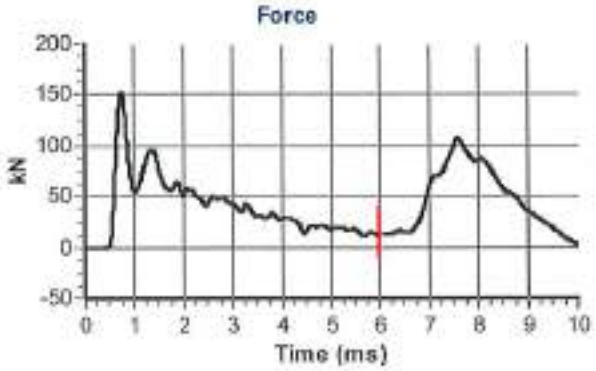
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.7
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	64786
Accelerometer No.2:	64789

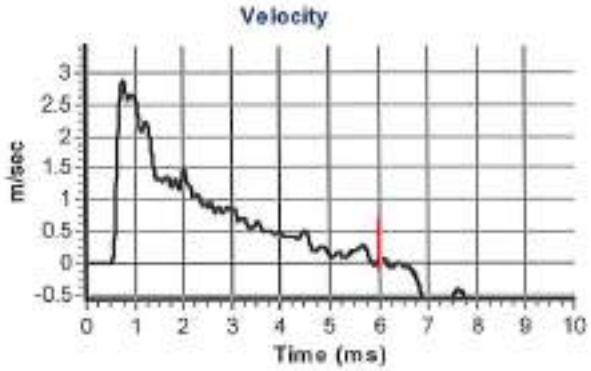
SPT Hammer Information

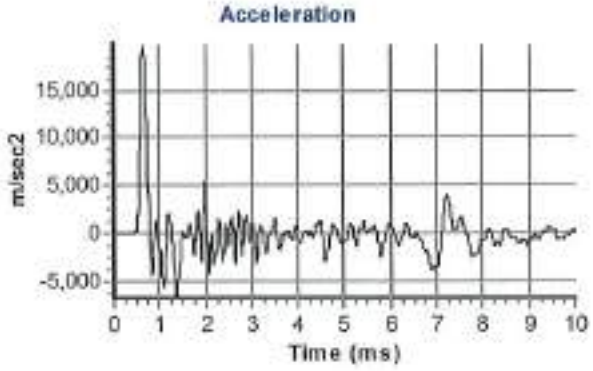
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	14.7

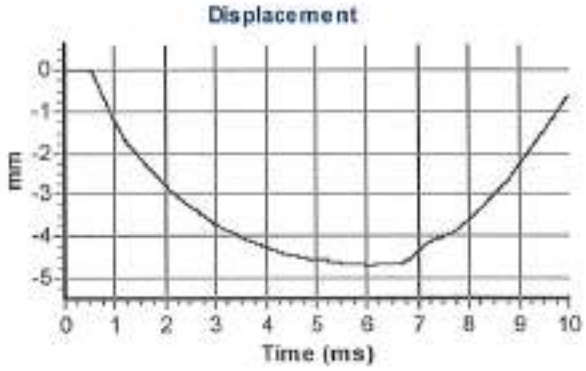
Comments / Location

CHARLSWOOD









Calculations

Area of Rod A (mm2):	996
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	300

Energy Ratio E_r (%): **64**

Signed: Bob

Title: Field Operations Manager

The recommended calibration interval is 12 months

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SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

JB Site Investigations Ltd
Ramparts Business Park
Berwick upon Tweed
TD15 1TB
Tel: 01289 304646

SPT Hammer Ref:	JB05
Test Date:	06/01/2023
Report Date:	20/01/2023
File Name:	JB05.spt
Test Operator:	JB

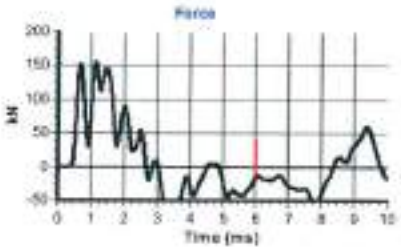
Instrumented Rod Data

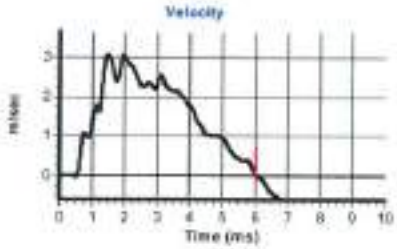
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.0
Assumed Modulus E_a (GPa):	200
Accelerometer No.1:	6178
Accelerometer No.2:	5843

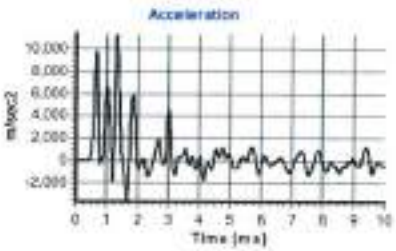
SPT Hammer Information

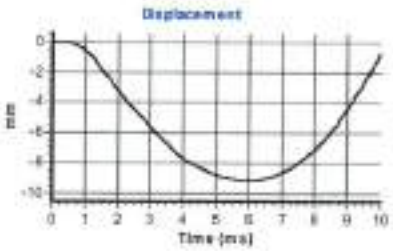
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	11.0

Comments / Location









Calculations

Area of Rod A (mm2):	905
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	285

Energy Ratio E_r (%): **60**

Signed: Neil Redfern
Title: Managing Director

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SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING UK LTD
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX5 9JP

SPT Hammer Ref:	DART384
Test Date:	15/07/2022
Report Date:	15/07/2022
File Name:	DART384.spt
Test Operator:	JL

Instrumented Rod Data

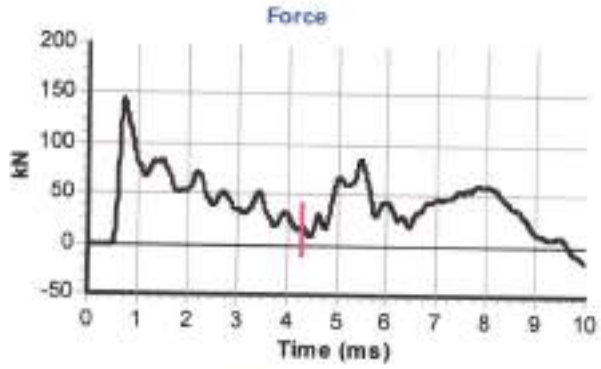
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.5
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	72572
Accelerometer No.2:	72757

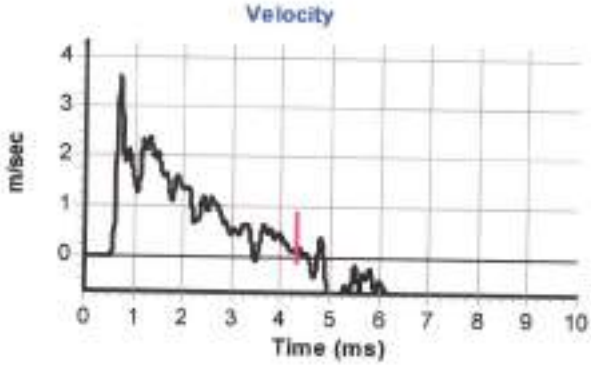
SPT Hammer Information

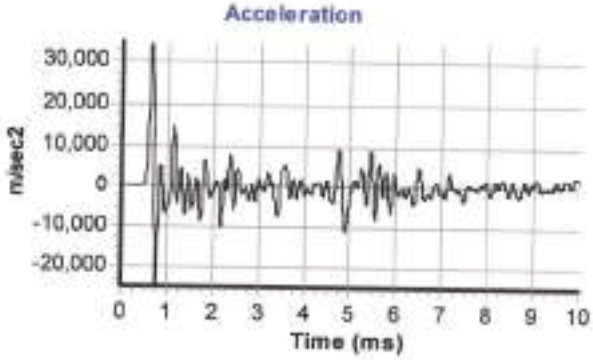
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	10.0

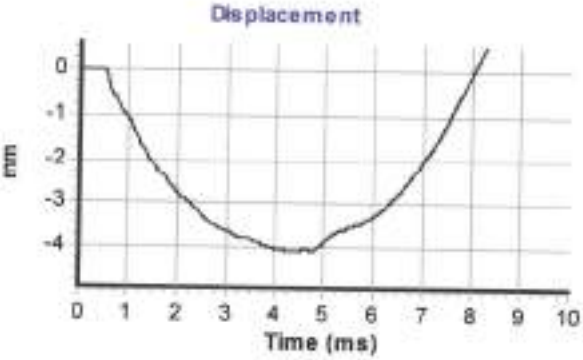
Comments / Location

STRUCTURAL SOILS - 81055









Calculations

Area of Rod A (mm2):	970
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	319

Energy Ratio E_r (%): 67

Signed: J.LOCK

Title: FITTER

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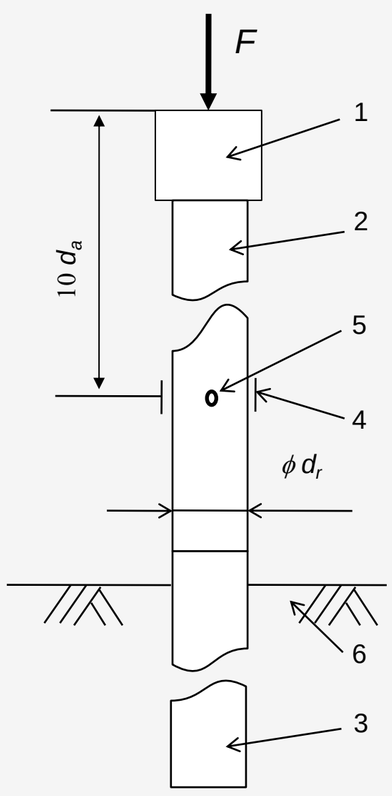
SPT Calibration Report

Hammer Energy Measurement Report

Type of Hammer	SPT HAMMER
Test No	EQU2022_215
Client	Structural Soils
Test Depth (m)	15.80
Mass of hammer	m = 63.5kg
Falling height	h = 0.76m
E_{theor} =	$m \times g \times h$ = 473J

Characteristics of the instrumented rod

Diameter	d_r = 0.052 m
Length of instrumented rod	0.558 m
Area	A = 11.61 cm²
Modulus	E_a = 206843 MPa



Key

1 Anvil
2 Part of instrumented rod
3 Drive Rod
4 Strain Gauge
5 Accelerometer
6 Ground

F Force
d_r Diameter of rod

Fig. B.1 and B.2
BS EN ISO 22476-3 : 2005 + A1 : 2011

DATE OF TEST	VALID UNTIL	HAMMER ID
15/07/2022	15/07/2023	AR1240

E_{meas} = **0.319** kN-m

E_{theor} = **0.473** kN-m

Comments

Energy Ratio (Er) = $\frac{E_{meas}}{E_{theor}}$ **67.48%**

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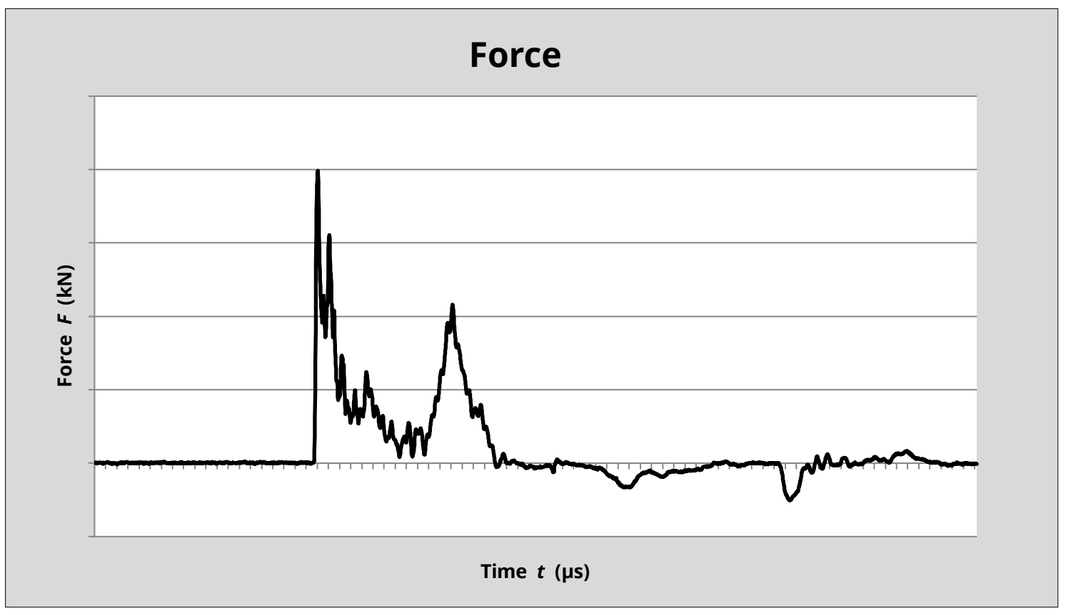
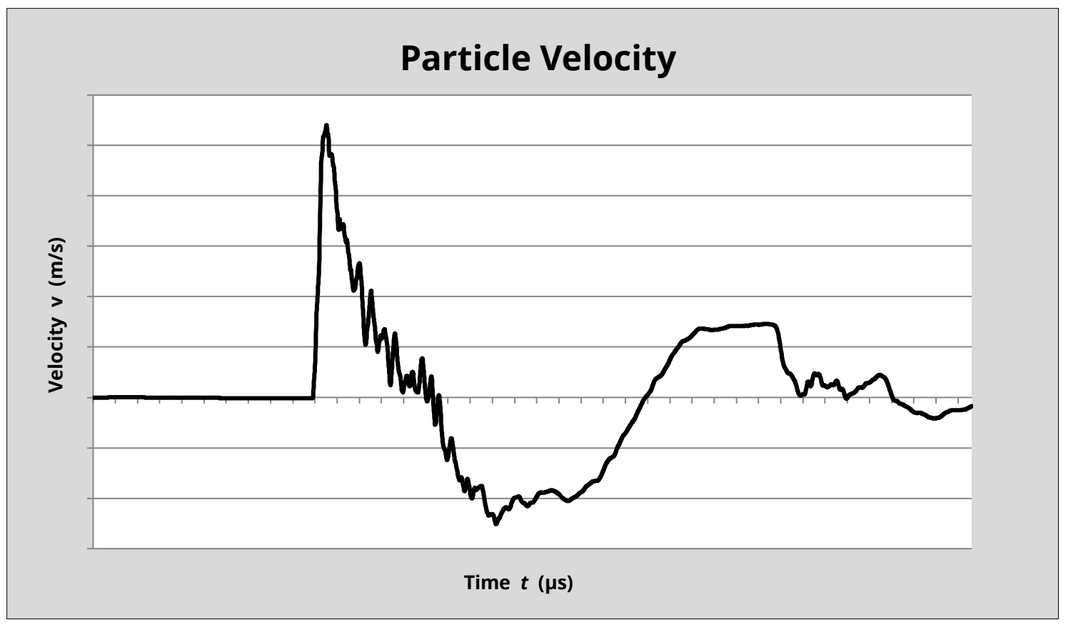
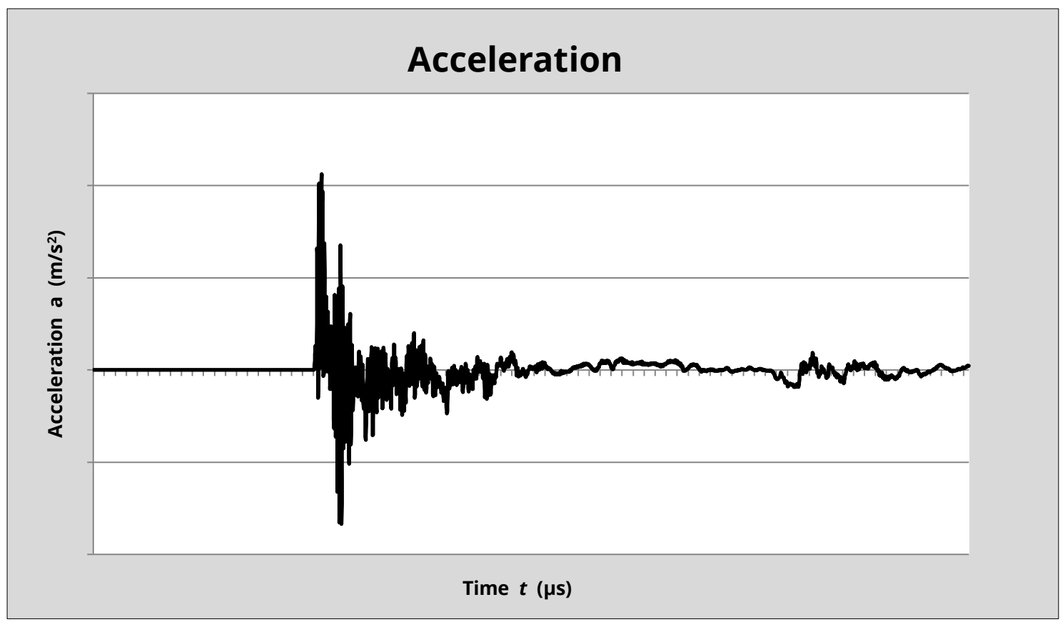
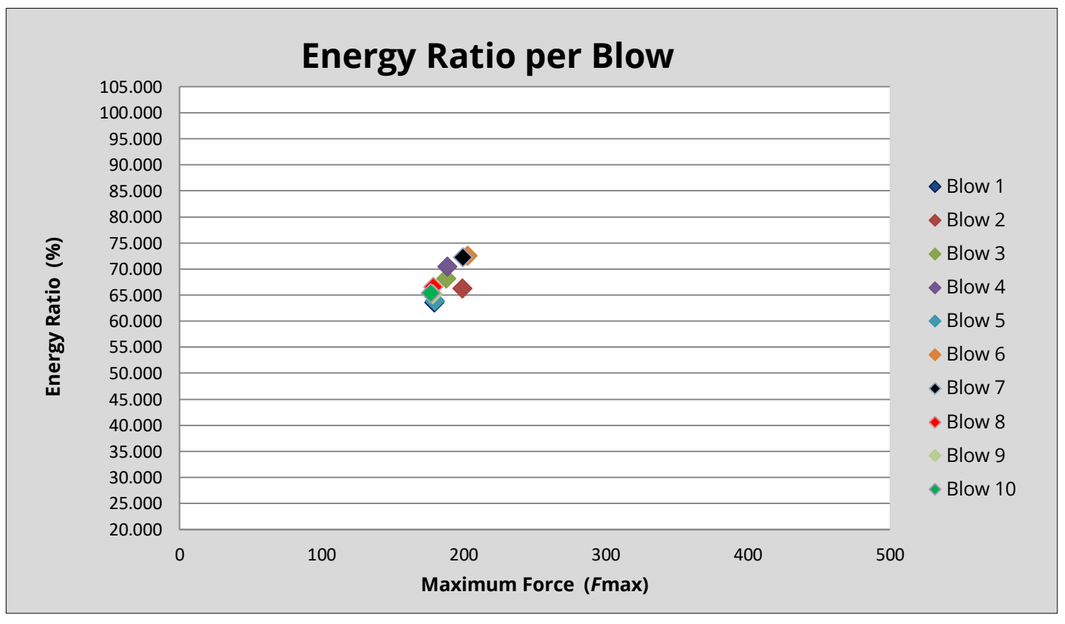








Equipe SPT Analyzer Operator	Certificate prepared by	Certificate checked by	Certificate date
JL	21/07/2022	21/07/2022	21/07/2022

© Copyright 2022 **Equipe Group**, The Paddocks, Home Farm Offices, The Upton Estate, Banbury, Oxfordshire, OX15 6HU
Tel: +44 (0)1295 670990 Fax: +44 (0)1295 678232 Email: info@equipegroup.com

Allied Exploration & Geotechnics Ltd.

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Unit 25 Stella Gill Industrial Estate
Pelton Fell
Chester-le-Street
DH2 2RG

SPT Hammer Ref:	CD 9.2.03
Test Date:	09/03/2023
Report Date:	09/03/2023
File Name:	CD 9.2.03.spt
Test Operator:	SW

Instrumented Rod Data

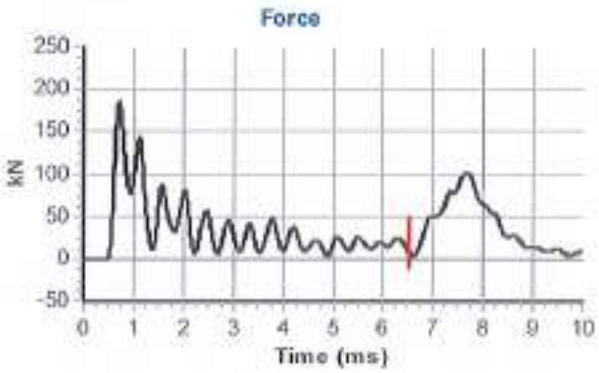
Diameter d_r (mm):	67
Wall Thickness t_r (mm):	8.7
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	65939
Accelerometer No.2:	66286

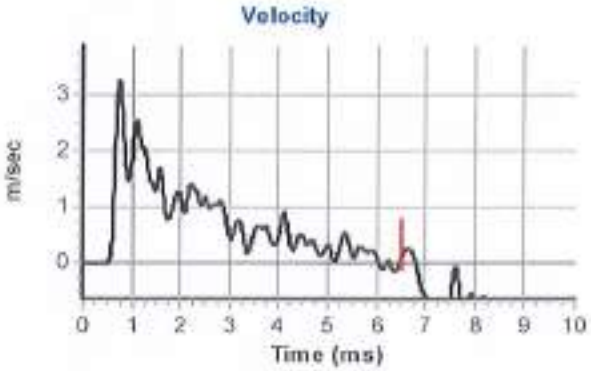
SPT Hammer Information

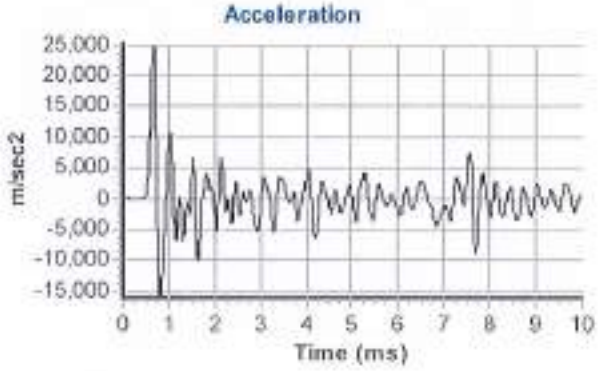
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	14.1

Comments / Location

Mass and drop provided by client.







Calculations

Area of Rod A (mm2):	1593
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	298

Energy Ratio E_r (%): 63

Signed: Steven Wakely

Title: Laboratory Technichian

The recommended calibration interval is 12 months

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SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING UK LTD
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX5 9JP

SPT Hammer Ref:	DART176
Test Date:	13/07/2022
Report Date:	13/07/2022
File Name:	DART176.spt
Test Operator:	JL

Instrumented Rod Data

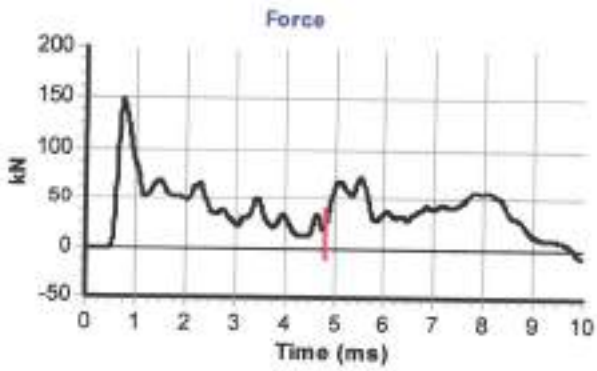
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.5
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	72572
Accelerometer No.2:	72757

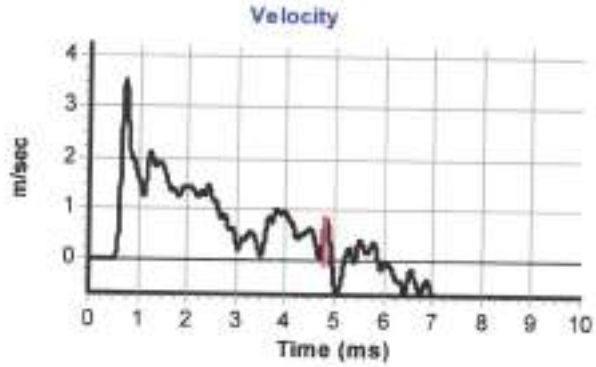
SPT Hammer Information

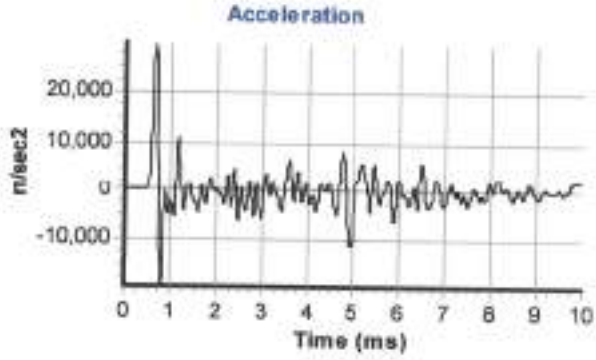
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	10.0

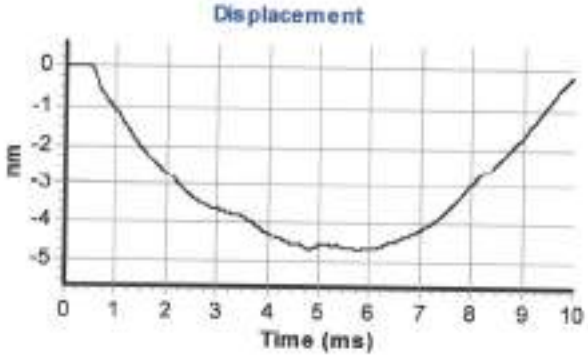
Comments / Location

STRUCTURAL SOILS LTD - 81054









Calculations

Area of Rod A (mm2):	970
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	309

Energy Ratio E_r (%): 65

Signed: J.LOCK
Title: FITTER

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BH-PT5101

Calibration Report

Report Number: 20230203164950-998837

221 East Lincoln Avenue, Fort Collins, CO 80524 USA
1-970-498-1500, 1-800-446-7488, FAX: 1-970-498-1598
Visit us at www.in-situ.com

Instrument Details:

Instrument Model:	**Rugged TROLL 100**
Full Scale Depth Range:	**0 to 30 Ft (0 to 9 m)**
Serial Number:	**998837**
Hardware Version:	0
Firmware Version:	1.06

Calibration Details:

Calibration Result:	**PASS**
Calibration Date:	2023-02-03 16:49:50 (UTC)
Nominal Range of Applied Temperature:	0 C to +50 C
Temperature Accuracy Specification:	+/- 0.3 C From 0 C to +50 C
Nominal Range of Applied Pressure:	7 PSI to 30 PSI Absolute
Pressure Accuracy Specification:	+/- 0.05% FS From -5 C to +50 C

Post-Calibration Check:

Parameter	Applied	Reported	Deviation	Unit
Depth	35.7448	35.7400	-0.0048	FT
Depth	18.0591	18.0617	0.0026	FT
Depth	0.3763	0.3768	0.0005	FT
Temperature	19.8615	19.8794	0.0179	C

Calibration Procedures and Equipment Used:

Manu Agilent Model 53131A-010 SerialNo MY40016413
Manu Instrulab Model 406X-0031-01 SerialNo 2-31139
Manu Fluke Model 1504 SerialNo B91241
Manu Mensor Model CPC6000 SerialNo 610450

Notes:

1. Standards used in this calibration are traceable to the National Institute of Standards and Technology.
2. This calibration report shall not be reproduced, except in full, without the written approval of In-Situ, Inc.
3. Pressure calibration is conducted in units of PSI Absolute.
4. The total range of applied pressure includes pressure due to both the water column and 1 bar of atmosphere.
5. The pressure accuracy specification is in terms of the full-scale capability of the pressure sensor (i.e. maximum water depth + 1 bar atmosphere).
6. The Post-Calibration data is expressed, for convenience, in terms of water depth. An ambient barometric pressure of 1 bar is assumed.
7. Conversion factors: 2.30666 FT/PSI, 14.50377 PSI/bar.

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Jen B

Performed By: CR

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BK-PTS106

Calibration Report

Report Number: 2023021205843-1004479

221 East Lincoln Avenue, Fort Collins, CO 80524 USA
1-970-498-1500, 1-800-446-7488, FAX: 1-970-498-1598
Visit us at www.in-situ.com

Instrument Details:

Instrument Model:	**Rugged TROLL 100**
Full Scale Depth Range:	**0 to 30 Ft (0 to 9 m)**
Serial Number:	**1004479**
Hardware Version:	0
Firmware Version:	1.06

Calibration Details:

Calibration Result:	**PASS**
Calibration Date:	2023-02-12 05:08:43 (UTC)
Nominal Range of Applied Temperature:	0 C to +50 C
Temperature Accuracy Specification:	+/- 0.3 C From 0 C to +50 C
Nominal Range of Applied Pressure:	7 PSI to 30 PSI Absolute
Pressure Accuracy Specification:	+/- 0.05% FS From -5 C to +50 C

Post-Calibration Check:

Parameter	Applied	Reported	Deviation	Unit
Depth	35.7448	35.7465	0.0017	FT
Depth	18.0591	18.0564	-0.0027	FT
Depth	0.3758	0.3781	0.0023	FT
Temperature	19.9436	19.9587	0.0151	C

Calibration Procedures and Equipment Used:

Manu Agilent Model 53131A-010 SerialNo MY47000169
Manu Instrulab Model 406X-031-05 SerialNo 21271-1
Manu Fluke Model 1504 SerialNo B91242
Manu Mensor Model CPC6000 SerialNo 610145

Notes:

1. Standards used in this calibration are traceable to the National Institute of Standards and Technology.
2. This calibration report shall not be reproduced, except in full, without the written approval of In-Situ, Inc.
3. Pressure calibration is conducted in units of PSI Absolute.
4. The total range of applied pressure includes pressure due to both the water column and 1 bar of atmosphere.
5. The pressure accuracy specification is in terms of the full-scale capability of the pressure sensor (i.e. maximum water depth + 1 bar atmosphere).
6. The Post-Calibration data is expressed, for convenience, in terms of water depth. An ambient barometric pressure of 1 bar is assumed.
7. Conversion factors: 2.30666 FT/PSI, 14.50377 PSI/bar.

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Jen B

Performed By: DK

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BIT- PTS108

Calibration Report

Report Number: 2023021403291-1004110

221 East Lincoln Avenue, Fort Collins, CO 80524 USA
1-970-498-1500, 1-800-446-7488, FAX: 1-970-498-1598
Visit us at www.in-situ.com

Instrument Details:

Instrument Model:	**Rugged TROLL 100**
Full Scale Depth Range:	**0 to 30 Ft (0 to 9 m)**
Serial Number:	**1004110**
Hardware Version:	0
Firmware Version:	1.06

Calibration Details:

Calibration Result:	**PASS**
Calibration Date:	2023-02-14 03:29:01 (UTC)
Nominal Range of Applied Temperature:	0 C to +50 C
Temperature Accuracy Specification:	+/- 0.3 C From 0 C to +50 C
Nominal Range of Applied Pressure:	7 PSI to 30 PSI Absolute
Pressure Accuracy Specification:	+/- 0.05% FS From -5 C to +50 C

Post-Calibration Check:

Parameter	Applied	Reported	Deviation	Unit
Depth	35.7450	35.7453	0.0003	FT
Depth	18.0591	18.0662	0.0071	FT
Depth	0.3763	0.3820	0.0057	FT
Temperature	19.9459	19.9895	0.0436	C

Calibration Procedures and Equipment Used:

Manu Agilent Model 53131A-010 SerialNo MY47000169
Manu Instrulab Model 406X-031-05 SerialNo 21271-1
Manu Fluke Model 1504 SerialNo B91242
Manu Mensor Model CPC6000 SerialNo 610145

Notes:

1. Standards used in this calibration are traceable to the National Institute of Standards and Technology.
2. This calibration report shall not be reproduced, except in full, without the written approval of In-Situ, Inc.
3. Pressure calibration is conducted in units of PSI Absolute.
4. The total range of applied pressure includes pressure due to both the water column and 1 bar of atmosphere.
5. The pressure accuracy specification is in terms of the full-scale capability of the pressure sensor (i.e. maximum water depth + 1 bar atmosphere).
6. The Post-Calibration data is expressed, for convenience, in terms of water depth. An ambient barometric pressure of 1 bar is assumed.
7. Conversion factors: 2.30666 FT/PSI, 14.50377 PSI/bar.

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Performed By: KB

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BH-PTS112

Calibration Report

Report Number: 2023013106433-1001477

221 East Lincoln Avenue, Fort Collins, CO 80524 USA
1-970-498-1500, 1-800-446-7488, FAX: 1-970-498-1598
Visit us at www.in-situ.com

Instrument Details:

Instrument Model:	**Rugged TROLL 100**
Full Scale Depth Range:	**0 to 30 Ft (0 to 9 m)**
Serial Number:	**1001477**
Hardware Version:	0
Firmware Version:	1.06

Calibration Details:

Calibration Result:	**PASS**
Calibration Date:	2023-01-31 06:04:33 (UTC)
Nominal Range of Applied Temperature:	0 C to +50 C
Temperature Accuracy Specification:	+/- 0.3 C From 0 C to +50 C
Nominal Range of Applied Pressure:	7 PSI to 30 PSI Absolute
Pressure Accuracy Specification:	+/- 0.05% FS From -5 C to +50 C

Post-Calibration Check:

Parameter	Applied	Reported	Deviation	Unit
Depth	35.7471	35.7483	0.0012	FT
Depth	18.0591	18.0690	0.0098	FT
Depth	0.3765	0.3898	0.0133	FT
Temperature	19.7226	19.7357	0.0131	C

Calibration Procedures and Equipment Used:

Manu Agilent Model 53131A-010 SerialNo MY47002282
Manu Instrulab Model 406X-031-01 SerialNo 31128-1
Manu Fluke Model 1504 SerialNo C14477
Manu Mensor Model CPC6000 SerialNo 610206

Notes:

1. Standards used in this calibration are traceable to the National Institute of Standards and Technology.
2. This calibration report shall not be reproduced, except in full, without the written approval of In-Situ, Inc.
3. Pressure calibration is conducted in units of PSI Absolute.
4. The total range of applied pressure includes pressure due to both the water column and 1 bar of atmosphere.
5. The pressure accuracy specification is in terms of the full-scale capability of the pressure sensor (i.e. maximum water depth + 1 bar atmosphere).
6. The Post-Calibration data is expressed, for convenience, in terms of water depth. An ambient barometric pressure of 1 bar is assumed.
7. Conversion factors: 2.30666 FT/PSI, 14.50377 PSI/bar.

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Performed By: KB

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BH-PT5114

Calibration Report

Report Number: 20230211201222-1004504

221 East Lincoln Avenue, Fort Collins, CO 80524 USA
1-970-498-1500, 1-800-446-7488, FAX: 1-970-498-1598
Visit us at www.in-situ.com

Instrument Details:

Instrument Model:	**Rugged TROLL 100**
Full Scale Depth Range:	**0 to 30 Ft (0 to 9 m)**
Serial Number:	**1004504**
Hardware Version:	0
Firmware Version:	1.06

Calibration Details:

Calibration Result:	**PASS**
Calibration Date:	2023-02-11 20:12:22 (UTC)
Nominal Range of Applied Temperature:	0 C to +50 C
Temperature Accuracy Specification:	+/- 0.3 C From 0 C to +50 C
Nominal Range of Applied Pressure:	7 PSI to 30 PSI Absolute
Pressure Accuracy Specification:	+/- 0.05% FS From -5 C to +50 C

Post-Calibration Check:

Parameter	Applied	Reported	Deviation	Unit
Depth	35.7445	35.7398	-0.0047	FT
Depth	18.0589	18.0638	0.0049	FT
Depth	0.3758	0.3824	0.0066	FT
Temperature	19.8627	19.8668	0.0041	C

Calibration Procedures and Equipment Used:

Manu Agilent Model 53131A-010 SerialNo MY40016413
Manu Instrulab Model 406X-0031-01 SerialNo 2-31139
Manu Fluke Model 1504 SerialNo B91241
Manu Mensor Model CPC6000 SerialNo 610450

Notes:

1. Standards used in this calibration are traceable to the National Institute of Standards and Technology.
2. This calibration report shall not be reproduced, except in full, without the written approval of In-Situ, Inc.
3. Pressure calibration is conducted in units of PSI Absolute.
4. The total range of applied pressure includes pressure due to both the water column and 1 bar of atmosphere.
5. The pressure accuracy specification is in terms of the full-scale capability of the pressure sensor (i.e. maximum water depth + 1 bar atmosphere).
6. The Post-Calibration data is expressed, for convenience, in terms of water depth. An ambient barometric pressure of 1 bar is assumed.
7. Conversion factors: 2.30666 FT/PSI, 14.50377 PSI/bar.

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Jen B

Performed By: DK

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BH-PTS115

Calibration Report

Report Number: 20230213121416-1004244

221 East Lincoln Avenue, Fort Collins, CO 80524 USA
1-970-498-1500, 1-800-446-7488, FAX: 1-970-498-1598
Visit us at www.in-situ.com

Instrument Details:

Instrument Model:	**Rugged TROLL 100**
Full Scale Depth Range:	**0 to 30 Ft (0 to 9 m)**
Serial Number:	**1004244**
Hardware Version:	0
Firmware Version:	1.06

Calibration Details:

Calibration Result:	**PASS**
Calibration Date:	2023-02-13 12:14:16 (UTC)
Nominal Range of Applied Temperature:	0 C to +50 C
Temperature Accuracy Specification:	+/- 0.3 C From 0 C to +50 C
Nominal Range of Applied Pressure:	7 PSI to 30 PSI Absolute
Pressure Accuracy Specification:	+/- 0.05% FS From -5 C to +50 C

Post-Calibration Check:

Parameter	Applied	Reported	Deviation	Unit
Depth	35.7448	35.7468	0.0021	FT
Depth	18.0594	18.0616	0.0023	FT
Depth	0.3760	0.3794	0.0034	FT
Temperature	19.9565	19.9507	-0.0058	C

Calibration Procedures and Equipment Used:

Manu Agilent Model 53131A-010 SerialNo MY47000169
Manu Instrulab Model 406X-031-05 SerialNo 21271-1
Manu Fluke Model 1504 SerialNo B91242
Manu Mensor Model CPC6000 SerialNo 610145

Notes:

1. Standards used in this calibration are traceable to the National Institute of Standards and Technology.
2. This calibration report shall not be reproduced, except in full, without the written approval of In-Situ, Inc.
3. Pressure calibration is conducted in units of PSI Absolute.
4. The total range of applied pressure includes pressure due to both the water column and 1 bar of atmosphere.
5. The pressure accuracy specification is in terms of the full-scale capability of the pressure sensor (i.e. maximum water depth + 1 bar atmosphere).
6. The Post-Calibration data is expressed, for convenience, in terms of water depth. An ambient barometric pressure of 1 bar is assumed.
7. Conversion factors: 2.30666 FT/PSI, 14.50377 PSI/bar.

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BH-PT511

Calibration Report

Report Number: 20230211034842-1004524

221 East Lincoln Avenue, Fort Collins, CO 80524 USA
1-970-498-1500, 1-800-446-7488, FAX: 1-970-498-1598
Visit us at www.in-situ.com

Instrument Details:

Instrument Model:	**Rugged TROLL 100**
Full Scale Depth Range:	**0 to 30 Ft (0 to 9 m)**
Serial Number:	**1004524**
Hardware Version:	0
Firmware Version:	1.06

Calibration Details:

Calibration Result:	**PASS**
Calibration Date:	2023-02-11 03:48:42 (UTC)
Nominal Range of Applied Temperature:	0 C to +50 C
Temperature Accuracy Specification:	+/- 0.3 C From 0 C to +50 C
Nominal Range of Applied Pressure:	7 PSI to 30 PSI Absolute
Pressure Accuracy Specification:	+/- 0.05% FS From -5 C to +50 C

Post-Calibration Check:

Parameter	Applied	Reported	Deviation	Unit
Depth	35.7445	35.7418	-0.0027	FT
Depth	18.0589	18.0624	0.0035	FT
Depth	0.3760	0.3789	0.0028	FT
Temperature	19.8680	19.8630	-0.0050	C

Calibration Procedures and Equipment Used:

Manu Agilent Model 53131A-010 SerialNo MY40016413
Manu Instrulab Model 406X-0031-01 SerialNo 2-31139
Manu Fluke Model 1504 SerialNo B91241
Manu Mensor Model CPC6000 SerialNo 610450

Notes:

1. Standards used in this calibration are traceable to the National Institute of Standards and Technology.
2. This calibration report shall not be reproduced, except in full, without the written approval of In-Situ, Inc.
3. Pressure calibration is conducted in units of PSI Absolute.
4. The total range of applied pressure includes pressure due to both the water column and 1 bar of atmosphere.
5. The pressure accuracy specification is in terms of the full-scale capability of the pressure sensor (i.e. maximum water depth + 1 bar atmosphere).
6. The Post-Calibration data is expressed, for convenience, in terms of water depth. An ambient barometric pressure of 1 bar is assumed.
7. Conversion factors: 2.30666 FT/PSI, 14.50377 PSI/bar.

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Performed By: DES

Report generated: 2023-02-13 20:46:29 UTC

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BH-PTS120A

Calibration Report

Report Number: 2023021122650-1004513

221 East Lincoln Avenue, Fort Collins, CO 80524 USA
1-970-498-1500, 1-800-446-7488, FAX: 1-970-498-1598
Visit us at www.in-situ.com

Instrument Details:

Instrument Model:	**Rugged TROLL 100**
Full Scale Depth Range:	**0 to 30 Ft (0 to 9 m)**
Serial Number:	**1004513**
Hardware Version:	0
Firmware Version:	1.06

Calibration Details:

Calibration Result:	**PASS**
Calibration Date:	2023-02-11 22:06:50 (UTC)
Nominal Range of Applied Temperature:	0 C to +50 C
Temperature Accuracy Specification:	+/- 0.3 C From 0 C to +50 C
Nominal Range of Applied Pressure:	7 PSI to 30 PSI Absolute
Pressure Accuracy Specification:	+/- 0.05% FS From -5 C to +50 C

Post-Calibration Check:

Parameter	Applied	Reported	Deviation	Unit
Depth	35.7471	35.7424	-0.0047	FT
Depth	18.0568	18.0615	0.0047	FT
Depth	0.3802	0.3897	0.0095	FT
Temperature	19.7242	19.7218	-0.0024	C

Calibration Procedures and Equipment Used:

Manu Agilent Model 53131A-010 SerialNo MY47002282
Manu Instrulab Model 406X-031-01 SerialNo 31128-1
Manu Fluke Model 1504 SerialNo C14477
Manu Mensor Model CPC6000 SerialNo 610206

Notes:

1. Standards used in this calibration are traceable to the National Institute of Standards and Technology.
2. This calibration report shall not be reproduced, except in full, without the written approval of In-Situ, Inc.
3. Pressure calibration is conducted in units of PSI Absolute.
4. The total range of applied pressure includes pressure due to both the water column and 1 bar of atmosphere.
5. The pressure accuracy specification is in terms of the full-scale capability of the pressure sensor (i.e. maximum water depth + 1 bar atmosphere).
6. The Post-Calibration data is expressed, for convenience, in terms of water depth. An ambient barometric pressure of 1 bar is assumed.
7. Conversion factors: 2.30666 FT/PSI, 14.50377 PSI/bar.

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BH-PT5,2

Calibration Report

Report Number: 20230213164725-1004088

221 East Lincoln Avenue, Fort Collins, CO 80524 USA
1-970-498-1500, 1-800-446-7488, FAX: 1-970-498-1598
Visit us at www.in-situ.com

Instrument Details:

Instrument Model:	**Rugged TROLL 100**
Full Scale Depth Range:	**0 to 30 Ft (0 to 9 m)**
Serial Number:	**1004088**
Hardware Version:	0
Firmware Version:	1.06

Calibration Details:

Calibration Result:	**PASS**
Calibration Date:	2023-02-13 16:47:25 (UTC)
Nominal Range of Applied Temperature:	0 C to +50 C
Temperature Accuracy Specification:	+/- 0.3 C From 0 C to +50 C
Nominal Range of Applied Pressure:	7 PSI to 30 PSI Absolute
Pressure Accuracy Specification:	+/- 0.05% FS From -5 C to +50 C

Post-Calibration Check:

Parameter	Applied	Reported	Deviation	Unit
Depth	35.7473	35.7393	-0.0080	FT
Depth	18.0587	18.0648	0.0061	FT
Depth	0.3813	0.3947	0.0134	FT
Temperature	19.7129	19.7390	0.0261	C

Calibration Procedures and Equipment Used:

Manu Agilent Model 53131A-010 SerialNo MY47002282
Manu Instrulab Model 406X-031-01 SerialNo 31128-1
Manu Fluke Model 1504 SerialNo C14477
Manu Mensor Model CPC6000 SerialNo 610206

Notes:

1. Standards used in this calibration are traceable to the National Institute of Standards and Technology.
2. This calibration report shall not be reproduced, except in full, without the written approval of In-Situ, Inc.
3. Pressure calibration is conducted in units of PSI Absolute.
4. The total range of applied pressure includes pressure due to both the water column and 1 bar of atmosphere.
5. The pressure accuracy specification is in terms of the full-scale capability of the pressure sensor (i.e. maximum water depth + 1 bar atmosphere).
6. The Post-Calibration data is expressed, for convenience, in terms of water depth. An ambient barometric pressure of 1 bar is assumed.
7. Conversion factors: 2.30666 FT/PSI, 14.50377 PSI/bar.

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BH-PT5123

Calibration Report

Report Number: 20230202154559-1001336

221 East Lincoln Avenue, Fort Collins, CO 80524 USA
1-970-498-1500, 1-800-446-7488, FAX: 1-970-498-1598
Visit us at www.in-situ.com

Instrument Details:

Instrument Model:	**Rugged TROLL 100**
Full Scale Depth Range:	**0 to 30 Ft (0 to 9 m)**
Serial Number:	**1001336**
Hardware Version:	0
Firmware Version:	1.06

Calibration Details:

Calibration Result:	**PASS**
Calibration Date:	2023-02-02 15:45:59 (UTC)
Nominal Range of Applied Temperature:	0 C to +50 C
Temperature Accuracy Specification:	+/- 0.3 C From 0 C to +50 C
Nominal Range of Applied Pressure:	7 PSI to 30 PSI Absolute
Pressure Accuracy Specification:	+/- 0.05% FS From -5 C to +50 C

Post-Calibration Check:

Parameter	Applied	Reported	Deviation	Unit
Depth	35.7448	35.7460	0.0013	FT
Depth	18.0587	18.0660	0.0073	FT
Depth	0.3760	0.3816	0.0056	FT
Temperature	19.8260	19.8747	0.0487	C

Calibration Procedures and Equipment Used:

Manu Agilent Model 53131A-010 SerialNo MY47000169
Manu Instrulab Model 406X-031-05 SerialNo 21271-1
Manu Fluke Model 1504 SerialNo B91242
Manu Mensor Model CPC6000 SerialNo 610145

Notes:

1. Standards used in this calibration are traceable to the National Institute of Standards and Technology.
2. This calibration report shall not be reproduced, except in full, without the written approval of In-Situ, Inc.
3. Pressure calibration is conducted in units of PSI Absolute.
4. The total range of applied pressure includes pressure due to both the water column and 1 bar of atmosphere.
5. The pressure accuracy specification is in terms of the full-scale capability of the pressure sensor (i.e. maximum water depth + 1 bar atmosphere).
6. The Post-Calibration data is expressed, for convenience, in terms of water depth. An ambient barometric pressure of 1 bar is assumed.
7. Conversion factors: 2.30666 FT/PSI, 14.50377 PSI/bar.

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BH-PTS127

Calibration Report

Report Number: 20230214024416-1004604

221 East Lincoln Avenue, Fort Collins, CO 80524 USA
1-970-498-1500, 1-800-446-7488, FAX: 1-970-498-1598
Visit us at www.in-situ.com

Instrument Details:

Instrument Model:	**Rugged TROLL 100**
Full Scale Depth Range:	**0 to 30 Ft (0 to 9 m)**
Serial Number:	**1004604**
Hardware Version:	0
Firmware Version:	1.06

Calibration Details:

Calibration Result:	**PASS**
Calibration Date:	2023-02-14 02:44:16 (UTC)
Nominal Range of Applied Temperature:	0 C to +50 C
Temperature Accuracy Specification:	+/- 0.3 C From 0 C to +50 C
Nominal Range of Applied Pressure:	7 PSI to 30 PSI Absolute
Pressure Accuracy Specification:	+/- 0.05% FS From -5 C to +50 C

Post-Calibration Check:

Parameter	Applied	Reported	Deviation	Unit
Depth	35.7471	35.7406	-0.0065	FT
Depth	18.0584	18.0686	0.0101	FT
Depth	0.3807	0.3883	0.0077	FT
Temperature	19.7132	19.7524	0.0392	C

Calibration Procedures and Equipment Used:

Manu Agilent Model 53131A-010 SerialNo MY47002282
Manu Instrulab Model 406X-031-01 SerialNo 31128-1
Manu Fluke Model 1504 SerialNo C14477
Manu Mensor Model CPC6000 SerialNo 610206

Notes:

1. Standards used in this calibration are traceable to the National Institute of Standards and Technology.
2. This calibration report shall not be reproduced, except in full, without the written approval of In-Situ, Inc.
3. Pressure calibration is conducted in units of PSI Absolute.
4. The total range of applied pressure includes pressure due to both the water column and 1 bar of atmosphere.
5. The pressure accuracy specification is in terms of the full-scale capability of the pressure sensor (i.e. maximum water depth + 1 bar atmosphere).
6. The Post-Calibration data is expressed, for convenience, in terms of water depth. An ambient barometric pressure of 1 bar is assumed.
7. Conversion factors: 2.30666 FT/PSI, 14.50377 PSI/bar.

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BH-PT5129

Calibration Report

Report Number: 20230210154123-1004555

221 East Lincoln Avenue, Fort Collins, CO 80524 USA
1-970-498-1500, 1-800-446-7488, FAX: 1-970-498-1598
Visit us at www.in-situ.com

Instrument Details:

Instrument Model:	**Rugged TROLL 100**
Full Scale Depth Range:	**0 to 30 Ft (0 to 9 m)**
Serial Number:	**1004555**
Hardware Version:	0
Firmware Version:	1.06

Calibration Details:

Calibration Result:	**PASS**
Calibration Date:	2023-02-10 15:41:23 (UTC)
Nominal Range of Applied Temperature:	0 C to +50 C
Temperature Accuracy Specification:	+/- 0.3 C From 0 C to +50 C
Nominal Range of Applied Pressure:	7 PSI to 30 PSI Absolute
Pressure Accuracy Specification:	+/- 0.05% FS From -5 C to +50 C

Post-Calibration Check:

Parameter	Applied	Reported	Deviation	Unit
Depth	35.7448	35.7542	0.0094	FT
Depth	18.0589	18.0672	0.0083	FT
Depth	0.3760	0.3863	0.0102	FT
Temperature	19.8672	19.9190	0.0518	C

Calibration Procedures and Equipment Used:

Manu Agilent Model 53131A-010 SerialNo MY40016413
Manu Instrulab Model 406X-0031-01 SerialNo 2-31139
Manu Fluke Model 1504 SerialNo B91241
Manu Mensor Model CPC6000 SerialNo 610450

Notes:

1. Standards used in this calibration are traceable to the National Institute of Standards and Technology.
2. This calibration report shall not be reproduced, except in full, without the written approval of In-Situ, Inc.
3. Pressure calibration is conducted in units of PSI Absolute.
4. The total range of applied pressure includes pressure due to both the water column and 1 bar of atmosphere.
5. The pressure accuracy specification is in terms of the full-scale capability of the pressure sensor (i.e. maximum water depth + 1 bar atmosphere).
6. The Post-Calibration data is expressed, for convenience, in terms of water depth. An ambient barometric pressure of 1 bar is assumed.
7. Conversion factors: 2.30666 FT/PSI, 14.50377 PSI/bar.

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GS - PTS105

Calibration Report

Report Number: 2023021405551-1004097

221 East Lincoln Avenue, Fort Collins, CO 80524 USA
1-970-498-1500, 1-800-446-7488, FAX: 1-970-498-1598
Visit us at www.in-situ.com

Instrument Details:

Instrument Model:	**Rugged TROLL 100**
Full Scale Depth Range:	**0 to 30 Ft (0 to 9 m)**
Serial Number:	**1004097**
Hardware Version:	0
Firmware Version:	1.06

Calibration Details:

Calibration Result:	**PASS**
Calibration Date:	2023-02-14 05:05:51 (UTC)
Nominal Range of Applied Temperature:	0 C to +50 C
Temperature Accuracy Specification:	+/- 0.3 C From 0 C to +50 C
Nominal Range of Applied Pressure:	7 PSI to 30 PSI Absolute
Pressure Accuracy Specification:	+/- 0.05% FS From -5 C to +50 C

Post-Calibration Check:

Parameter	Applied	Reported	Deviation	Unit
Depth	35.7443	35.7309	-0.0134	FT
Depth	18.0557	18.0640	0.0083	FT
Depth	0.3687	0.3795	0.0108	FT
Temperature	20.1830	20.1817	-0.0013	C

Calibration Procedures and Equipment Used:

Manu Agilent Model 53131A-010 SerialNo MY47001576
Manu Instrulab Model 406X-0031-01 SerialNo 21489-1
Manu Instrulab Model 3312A-14-15-24 SerialNo 31139
Manu Mensor Model CPC6000 SerialNo 610913

Notes:

1. Standards used in this calibration are traceable to the National Institute of Standards and Technology.
2. This calibration report shall not be reproduced, except in full, without the written approval of In-Situ, Inc.
3. Pressure calibration is conducted in units of PSI Absolute.
4. The total range of applied pressure includes pressure due to both the water column and 1 bar of atmosphere.
5. The pressure accuracy specification is in terms of the full-scale capability of the pressure sensor (i.e. maximum water depth + 1 bar atmosphere).
6. The Post-Calibration data is expressed, for convenience, in terms of water depth. An ambient barometric pressure of 1 bar is assumed.
7. Conversion factors: 2.30666 FT/PSI, 14.50377 PSI/bar.

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GS-PTS109

Calibration Report

Report Number: 2022021121180-897831

221 East Lincoln Avenue, Fort Collins, CO 80524 USA
1-970-498-1500, 1-800-446-7488, FAX: 1-970-498-1598
Visit us at www.in-situ.com

Instrument Details:

Instrument Model:	**Rugged TROLL 100**
Full Scale Depth Range:	**0 to 30 Ft (0 to 9 m)**
Serial Number:	**897831**
Hardware Version:	0
Firmware Version:	1.06

Calibration Details:

Calibration Result:	PASS
Calibration Date:	2022-02-11 21:18:00 (UTC)
Nominal Range of Applied Temperature:	0 C to +50 C
Temperature Accuracy Specification:	+/- 0.3 C From 0 C to +50 C
Nominal Range of Applied Pressure:	7 PSI to 30 PSI Absolute
Pressure Accuracy Specification:	+/- 0.05% FS From -5 C to +50 C

Post-Calibration Check:

Parameter	Applied	Reported	Deviation	Unit
Depth	35.7457	35.7432	-0.0025	FT
Depth	18.0587	18.0712	0.0126	FT
Depth	0.3770	0.3838	0.0068	FT
Temperature	19.7014	19.6977	-0.0037	C

Calibration Procedures and Equipment Used:

Manu Agilent Model 53131A-010 SerialNo MY47002282
Manu Instrulab Model 406X-031-01 SerialNo 21335-1
Manu Fluke Model 1504 SerialNo C14477
Manu Mensor Model CPC6000 SerialNo 610915

Notes:

1. Standards used in this calibration are traceable to the National Institute of Standards and Technology.
2. This calibration report shall not be reproduced, except in full, without the written approval of In-Situ, Inc.
3. Pressure calibration is conducted in units of PSI Absolute.
4. The total range of applied pressure includes pressure due to both the water column and 1 bar of atmosphere.
5. The pressure accuracy specification is in terms of the full-scale capability of the pressure sensor (i.e. maximum water depth + 1 bar atmosphere).
6. The Post-Calibration data is expressed, for convenience, in terms of water depth. An ambient barometric pressure of 1 bar is assumed.
7. Conversion factors: 2.30666 FT/PSI, 14.50377 PSI/bar.

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APPENDIX J -
NON AGS DIGITAL DATA

(J01) Groundwater Monitoring Results (.xlsx format)

(J02) Geoenvironmental Test Results - Soil (.xlsx crosstab format)

(J03) Rotary Core and Window Sample Photographs

(J04) Trial Pit Photographs

(J05) Inspection Pit Photographs

(J06) Diver Data Logger Data (.wsl, .csv and .xlsx format)