

PICK EVERARD

Project Specification
for
Alterations to Carpark and Footpath
Between D and E Blocks
at
CRCE Chilton, Didcot, Oxon,
OX11 0RQ
Public Health England



Public Health
England

Issue 002 - Tender
27 January 2020

Document History

Issue	Date	Comment	Author	Chk'd
001	22.01.20	Draft Issue for Client Comment	RJ	MBH
002	27.01.20	Tender Issue	RJ	MBH



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Pre-Construction Information Pack



1.0 Activity Schedule

1.1 General

1.1.1 Include for all work shown on the drawings or which may reasonably be inferred from the drawings though not specifically mentioned in the specification.
Information included within the drawings but not within the activity schedule will be deemed to have been included and any claim for extra costs will not be accepted.

1.1.2 A fully priced Activity Schedule must be submitted with the tender return.
All items are to be priced separately and page totals carried forward to the collection page (including provisional and contingency items).
Items which are not individually priced will be deemed to be included within your tender.

1.1.4 Contractor to ensure all site waste arising from the works is segregated for recycling and disposed to a suitable waste tip by preparing a site waste minimisation plan detailing measures to minimise site generated waste.
Waste transfer notes to be supplied to PM.

1.1.5 All Contractors are required to visit site to familiarise themselves with the site, access / egress arrangement etc. prior to submitting their tender.

Site visits will be held on an agreed date, and through prior agreement as advised in the ITT.

Contractors will be allocated a 1-hour slot and will be limited to no more than 3 people.

Depending on the number of tendering contractors there may be a requirement for joint inspections to be carried out with other contractors.

No further visits will be considered after the date indicated in the ITT.

To arrange a site visit please contact the personnel indicated in the ITT before the cut-off date.

Tenders will not be considered from any contractor who has not visited site.

£

P

Sub-total carried to Collection £

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	£	P
1.2 Alterations (Refer to Drawing 032-PEV-XX-00-DR-B-1000 & 1200 for Locations)		
1.2.1 Yard Area		
1.2.1.1 Alter existing kerbs along pavement in front of C Block to form a new drop kerb.		
1.2.1.2 Carefully remove stone infill between the existing kerb line and double row of concrete blocks, and dispose off site.		
1.2.1.3 Carefully remove double row of concrete blocks, including cross rows, and concrete infill between rows, and dispose off site.		
1.2.1.4 Carefully remove concrete ramp to end of double row of concrete blocks, and dispose off site.		
1.2.1.5 Carefully remove concrete ramp between sections of double rows of concrete blocks, and dispose off site.		
1.2.1.6 Following removal of Items 1.2.1 – 1.2.6 make good yard surface with Tarmac to finish flush with surrounding surfaces.		
1.2.2 Path & Steps Outside Flammable & Corrosive Stores		
1.2.2.1 Take up area of existing concrete slab including step and ramped section extending up to kerb line.		
1.2.2.2 Excavate to formation and dispose of arisings.		
1.2.2.3 Level and compact bottom of excavation.		
1.2.2.4 Import and compact Type 1 sub-base 225mm thick.		
1.2.2.5 Supply and lay approved 125 micrometer thick polythene sheet separation layer, with edges lapped 300mm to BS 6075.		
1.2.2.6 Supply and lay PAV 2 Concrete mix to BS 8500-2 to form new steps as drawings: 032-PEV-XX-00-DR-B-1201.		
1.2.2.7 Supply and lay 150mm PAV 2 Concrete mix to BS 8500-2 to form new path. <ul style="list-style-type: none"> • Concrete surface to have tamped non-slip finish. • Concrete surface to be laid to falls to existing kerb line. 		
1.2.2.8 Supply and install new KeeKlamp guard rail to sides of new steps as drawings: 032-PEV-XX-00-DR-B-1201.		
1.2.3 RHS of Entrance to Yard Area		
1.2.3.1 Carefully remove and set aside for re-use 2nr flexible bollards to RHS of vehicle entrance.		
1.2.3.2 Carefully remove curved kerbs including sufficient existing concrete slab and concrete paving slabs to rear of kerb to allow installation of new straight kerbs as indicated. Dispose of arisings off site.		
1.2.3.3 Excavate to formation level and supply and lay new straight concrete kerbs to finish flush with existing.		
Sub-total carried to Collection	£	

	£	P
Include for new 915mm wide dropped kerb in centre.		
1.2.3.4 To excavated path area to rear of new kerb line level and compact bottom of excavation.		
1.2.3.5 Import and compact Type 1 sub-base 225mm thick.		
1.2.3.6 Supply and lay approved 125 micrometer thick polythene sheet separation layer, with edges lapped 300mm to BS 6075.		
1.2.3.7 Supply and lay 150mm PAV 2 Concrete mix to BS 8500-2. <ul style="list-style-type: none"> • Concrete surface to have tamped non-slip finish. • Concrete surface to be laid flush with existing surfaces, and laid to falls to new kerb line. 		
1.2.3.8 Refix previously set aside flexible bollards in position indicated.		
1.2.3.9 To new section of roadway in front of new kerbs, excavate down to formation level, and dispose of arisings.		
1.2.3.10 Extend existing road surface up to line of new kerbs as follows: <ul style="list-style-type: none"> • Lay new sub -base: 300mm thick Type 1 granular material. • Lay new base: 100mm thick asphalt concrete to BS EN 13108-1. Material designations AC32 dense base 100/150. • Lay new binder course: 60mm thick asphalt concrete to BS EN 13108-1:2007. Material designation AC 20 dense bin 100/150. • Lay new surface course: 40mm thick stone mastic asphalt to BS EN 13108-5:2007. Material designation: AC 10 Close Surf 40/60 PSV 60. <p>Include for joint between new and existing roadway as indicated on drawing: 032-PEV-XX-00-DR-B-1201.</p>		
1.2.4 LHS of Entrance to Yard Area		
1.2.4.1 Carefully remove curved kerbs including sufficient existing concrete slab to rear of kerb to allow installation of new straight kerbs as indicated. Dispose of arisings off site.		
1.2.4.2 Excavate to formation level and supply and lay new straight concrete kerbs to finish flush with existing. Include for new 920mm wide dropped kerb in centre.		
1.2.4.3 To excavated path area to rear of new kerb line level and compact bottom of excavation.		
1.2.4.4 Import and compact Type 1 sub-base 225mm thick.		
1.2.4.5 Supply and lay approved 125 micrometer thick polythene sheet separation layer, with edges lapped 300mm to BS 6075.		
1.2.4.6 Supply and lay 150mm PAV 2 Concrete mix to BS 8500-2. Concrete surface to have tamped non-slip finish. <ul style="list-style-type: none"> • Concrete surface to be laid flush with existing surfaces, and laid to falls to new kerb line. 		
1.2.4.7 To new section of roadway in front of new kerbs, excavate down to formation level, and dispose of arisings.		
Sub-total carried to Collection	£	

	£	P
<p>1.2.4.8 Extend existing road surface up to line of new kerbs as follows:</p> <ul style="list-style-type: none"> • Lay new sub -base: 300mm thick Type I granular material. • Lay new base: 100mm thick asphalt concrete to BS EN 13108-1. Material designations AC32 dense base 100/150. • Lay new binder course: 60mm thick asphalt concrete to BS EN 13108-1:2007. Material designation AC 20 dense bin 100/150. • Lay new surface course: 40mm thick stone mastic asphalt to BS EN 13108-5:2007. Material designation: AC10 Close Surf 40/60 PSV 60. <p>Include for joint between new and existing roadway as indicated on drawing 032-PEV-XX-00-DR-B-1201.</p>		
<p>1.2.5 White Lining</p>		
<p>1.2.5.1 Lay new yellow chevroned road markings to carpark entrance as indicated on drawing 032-PEV-XX-00-DR-B-1200.</p>		
<p>1.2.5.2 Refresh existing white line to carpark entrance, including wording as indicated on drawing 032-PEV-XX-00-DR-B-1200.</p>		
<p>1.2.5.3 Refresh existing white line forming zebra crossing as indicated on drawing 032-PEV-XX-00-DR-B-1200.</p>		
<p>1.2.5.4 Refresh existing yellow lines outside F Block as indicated on drawing 032-PEV-XX-00-DR-B-1200.</p>		
<p>1.2.6 Miscellaneous Items</p> <p>Any other items described in the documents and drawings not included in the activity schedule. Tenderers may insert further items below:</p> <ul style="list-style-type: none"> • • • 		

Sub-total carried to Collection £

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3.0 Final Summary

- Section I – Activity Schedule
- Appendix A – Drawings
- Appendix B – Preliminaries
- Appendix C – Materials and Workmanship

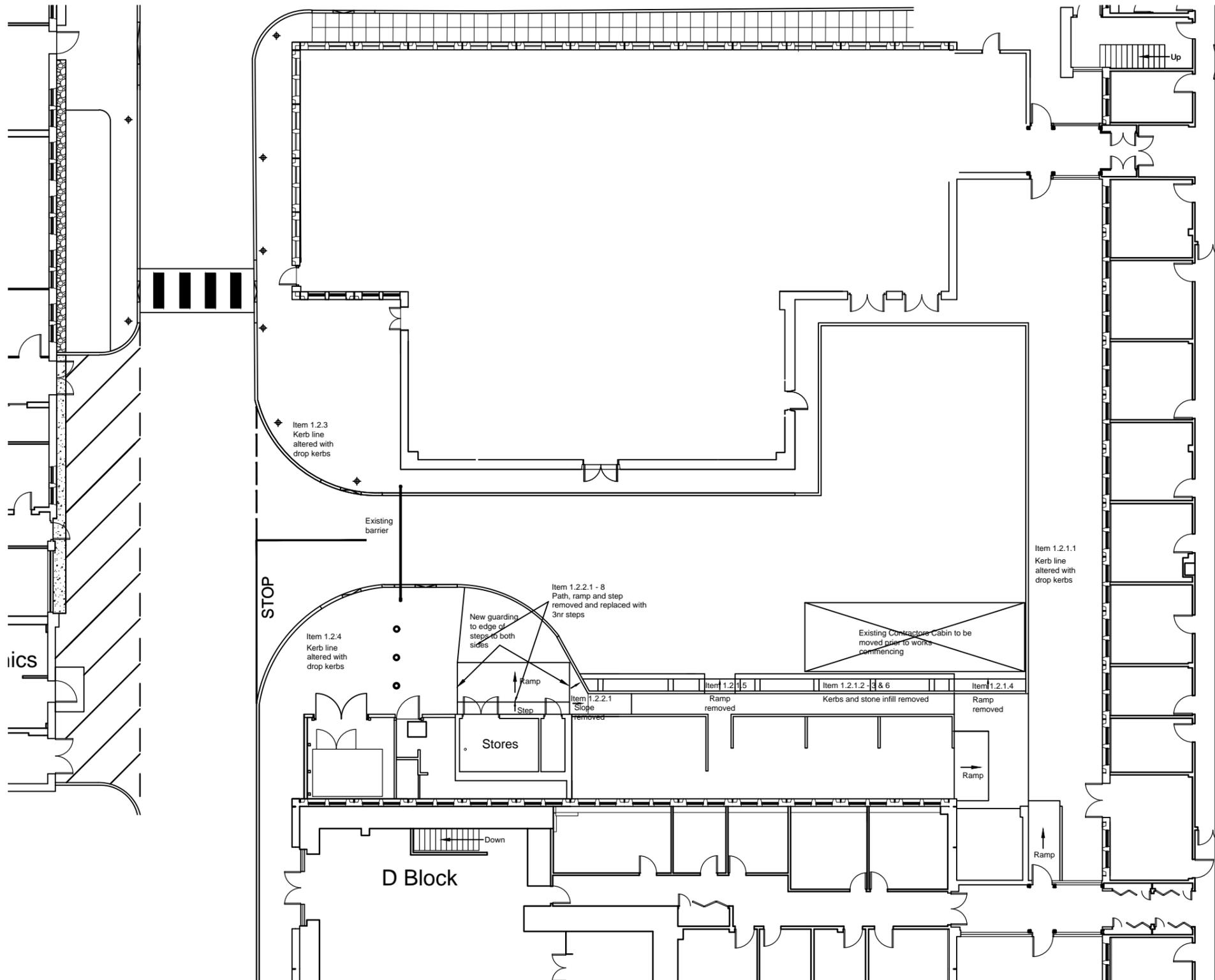
	£	P
Total Tendered Sum	£	

Appendix A

Drawings

- 200032-PEV-XX-00-DR-B-1000 – P02 – Existing Car Park
- 200032-PEV-XX-00-DR-B-1000 – P02 – Proposed Car Park
- 200032-PEV-XX-00-DR-B-1000 – P02 – Proposed Car Park Pavement Details





Revision	Date	Drn	Chk
P01	27.01.20	RIJ	MBH
P01	20.01.20	RIJ	MBH

Client

Public Health England

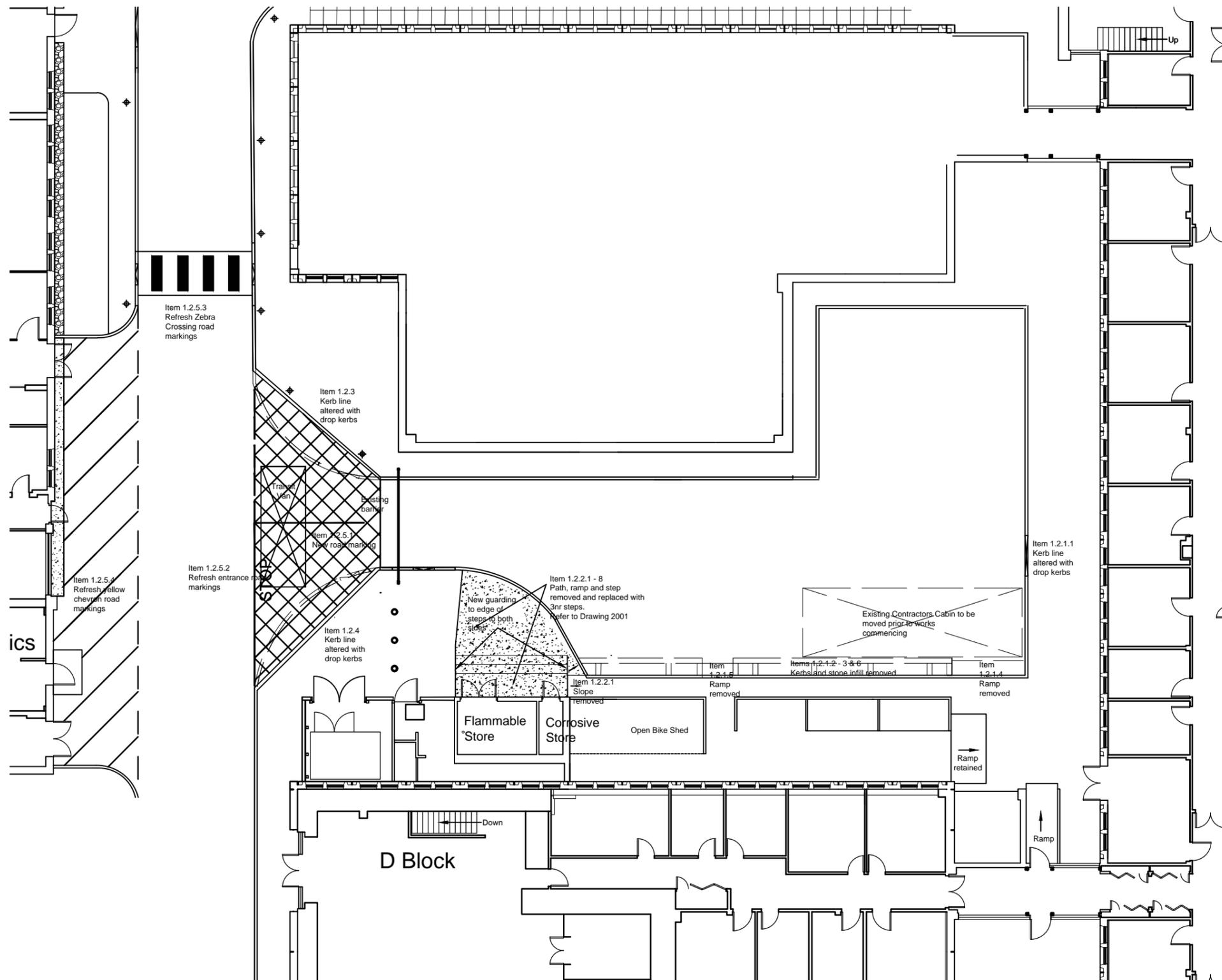
Project
PHE Chilton
New Stores Cabin
 Drawing Title
Existing Car Park

Suitability Status
D2 - Suitable for Tender

Job No.	Scale	Size	Rev
200032	1:200	@ A3	P02

Drawing Number
200032-PEV-XX-00-DR-B-1000
 Project Code - Originator - Zone - Level - Type - Role - Number





ITEMS 1.2.3 & 1.2.4 ROADWAY REPAIRS:

SURFACE COURSE:
40mm THICK STONE MASTIC ASPHALT TO BS EN 13108-5:2007.
MATERIAL DESIGNATION: SMA 10 SURF 40/60 PSV60.

BINDER COURSE:
60mm THICK ASPHALT CONCRETE TO BS EN 13108-1:2007.
MATERIAL DESIGNATION AC 20 DENSE BIN 100/150.

Base:
100mm THICK ASPHALT CONCRETE TO BS EN 13108-1.
MATERIAL DESIGNATIONS AC32 DENSE BASE. 100/150.

SUB-BASE:
300mm THICK TYPE 1 GRANULAR MATERIAL

PO2	Tender Issue	27.01.20	RIJ	MBH
PO1	Draft Issue for Comment	20.01.20	RIJ	MBH
Revision		Date	Drn	Chk

Client
Public Health England

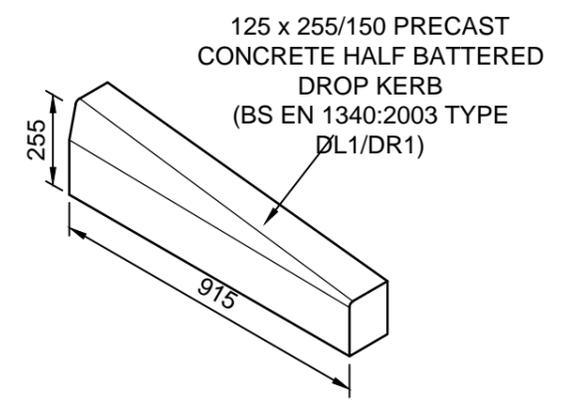
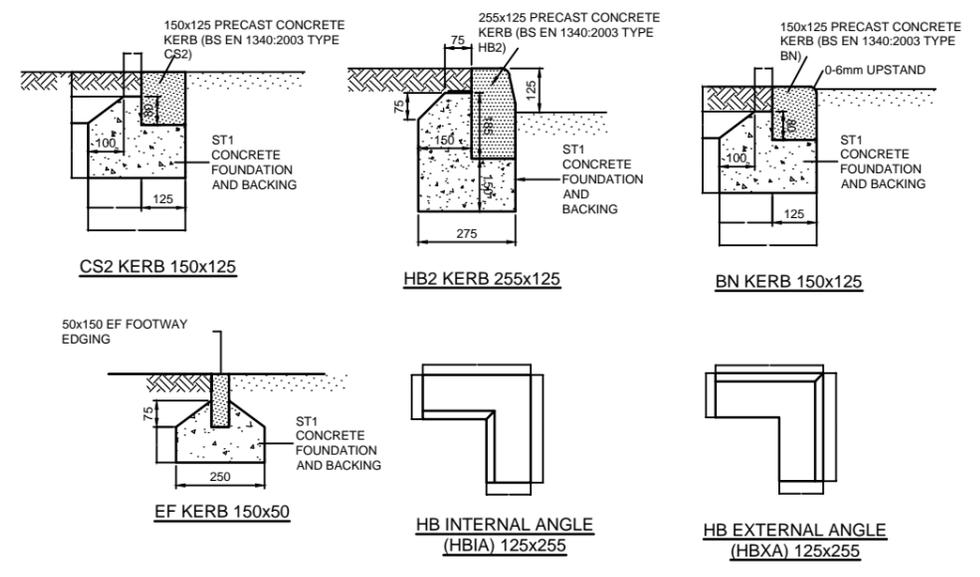
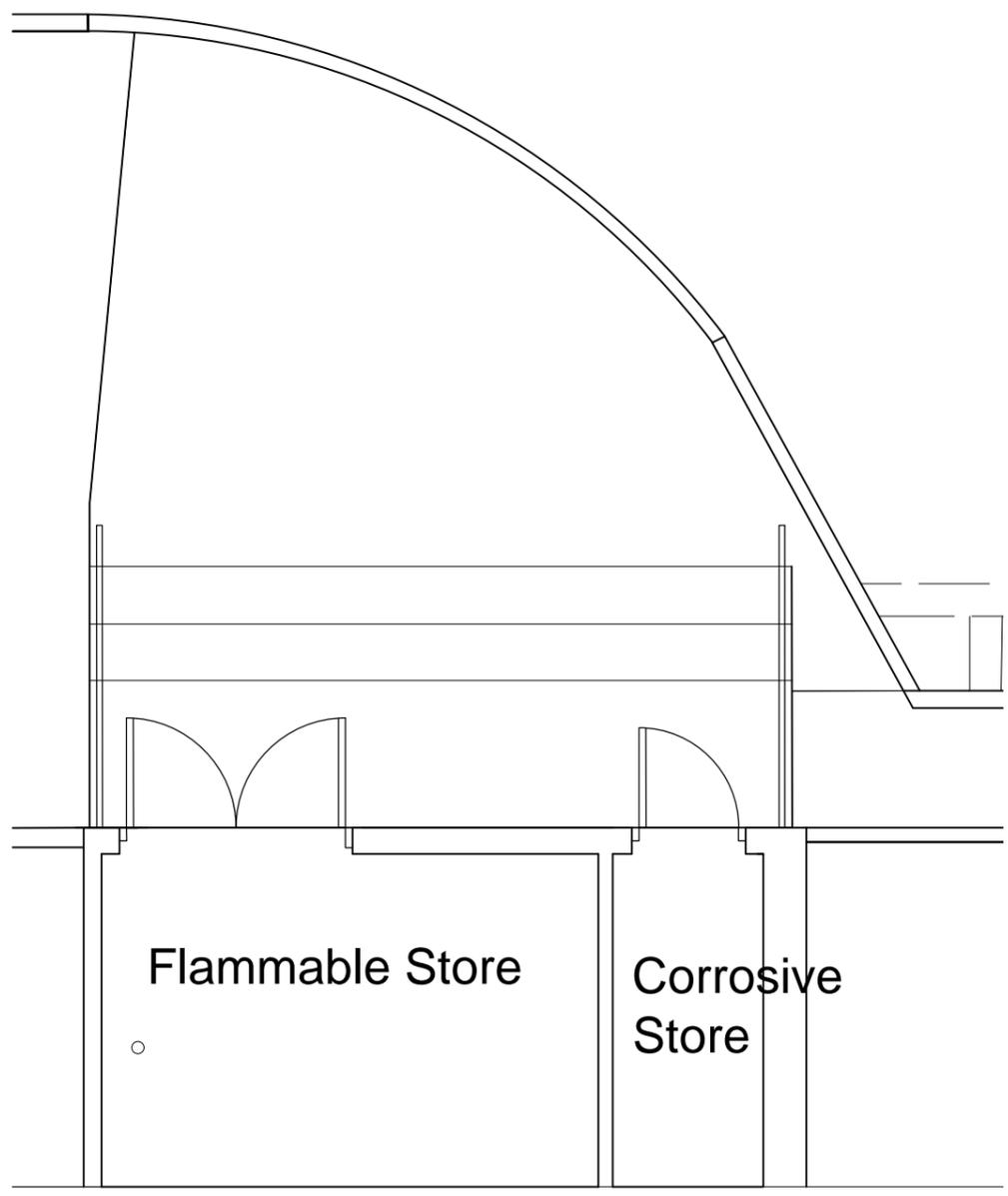
Project
PHE Chilton
New Stores Cabin
Drawing Title
Proposed Car Park

Suitability Status
D2 - Suitable for Tender

Job No.	Scale	Size	Rev
200032	1:200	@ A3	P02

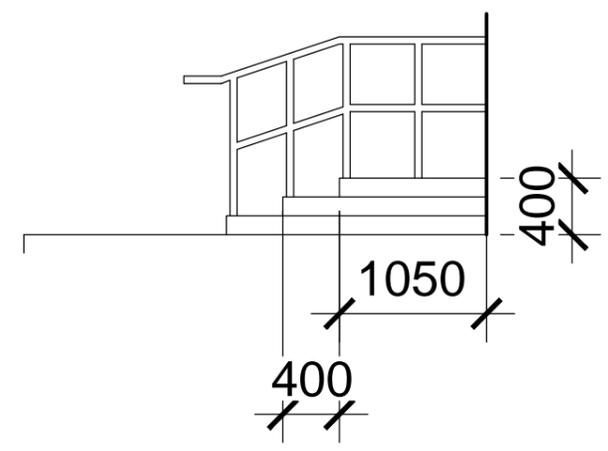
Drawing Number
200032-PEV-XX-00-DR-B-1200
Project Code - Originator - Zone - Level - Type - Role - Number





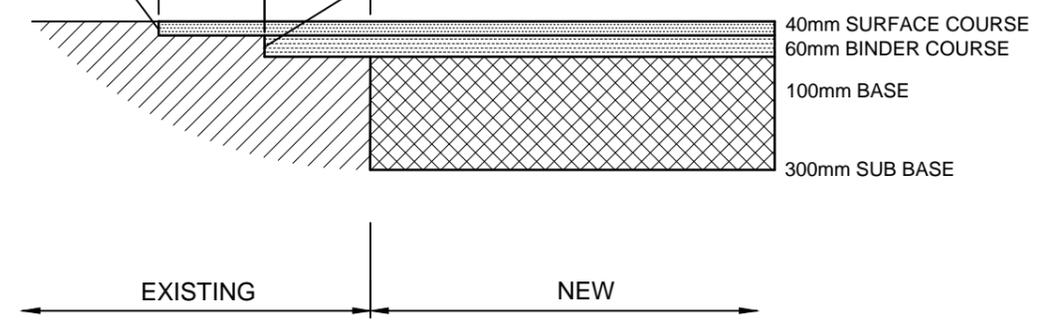
TYPICAL DROP KERB DETAIL

New Steps to Stores



VERTICAL SAW CUT TO EXISTING SURFACE COURSE JOINT TO BE 300 PAINTED WITH HOT BITUMEN

VERTICAL SAW CUT TO EXISTING BINDER COURSE



TIE-IN DETAIL BETWEEN NEW AND EXISTING ROADWAY

Revision	Date	Drn	Chk
P02	27.01.20	RIJ	MBH
P01	20.01.20	RIJ	MBH

Client: Public Health England

Project: PHE Chilton
 New Stores Cabin
 Drawing Title: Proposed Car Park Pavement Details

Suitability Status: D2 - Suitable for Tender

Job No. 200032 Scale 1:50 & 20 Size @ A3 Rev P02

Drawing Number: 200032-PEV-XX-00-DR-B-1201

Project Code - Originator - Zone - Level - Type - Role - Number



Appendix B

Preliminaries



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A10 PROJECT PARTICULARS

I10 THE PROJECT

- Name: CRCE Chilton - Car Park External Works.
- Nature: External Works.
- Location: CRCE Chilton, Didcot Oxon OX11 0RQ.
- Timescale for construction work: 3 weeks.

I20 EMPLOYER (CLIENT)

- Name: Public Health England (PHE).
- Address: Centre for Radiation, Chemical and Environmental Hazards (CRCE), Chilton, Didcot Oxon, OX11 0RQ.
- Contact: Paul Steventon.
- Telephone: 01235 825219.
- E-mail: Paul.Steventon@phe.gov.uk .

I30 PRINCIPAL CONTRACTOR (CDM)

- Name: TBA.
- Address: .
- Contact: .
- Telephone: .
- E-mail: .

I40 PROJECT MANAGER (HEREIN REFERRED TO AS 'PM')

- Name: Pick Everard.
- Address: Halford House, Charles Street, Leicester, LE1 1HA.
- Contact: Robert Ingman-Jones.
- Telephone: 0345 045 0050.
- Email: robertingman-jones@pickeverard.co.uk.

I50 PRINCIPAL DESIGNER

- Name: Pick Everard.
- Address: Halford House, Charles Street, Leicester, LE1 1HA.
- Contact: Robert Ingman-Jones.
- Telephone: 0345 045 0050.
- E-mail: robertingman-jones@pickeverard.co.uk.

A11 TENDER AND CONTRACT DOCUMENTS

110 TENDER DOCUMENTS

- The tender documents are:
 - The Specification, comprising preliminaries, reference specification, contract data and activity schedule.
 - Drawings numbered:
 - 032-PEV-XX-00-DR-B-1000 - Existing Layout.
 - 032-PEV-XX-00-DR-B-1200 - Proposed Layout.
 - 032-PEV-XX-00-DR-B-1201 - Proposed Pavement Details.
 - Additional documents:
 - Appendix C - Materials and Workmanship.
 - Appendix D - Pre-Construction Information Pack.

120 CONTRACT DRAWINGS

- The Contract Drawings: The same as the tender drawings.

160A PRECONSTRUCTION INFORMATION

- Format: The Preconstruction information is included at Appendix D. It also refers to information given elsewhere in the preliminaries and other tender documents.

180 OTHER DOCUMENTS

- Inspection: Drawings and other documents relating to the Contract but not included in the tender documents may be seen by appointment during normal office hours at the office of CRCE Chilton, Didcot.
- The documents include: Site Asbestos Register.

A12 THE SITE/ EXISTING BUILDINGS

110 THE SITE

- Description: Alterations to existing yard area as indicated on drawing:
032-PEV-XX-00-DR-B-1000.- Existing Layout.
032-PEV-XX-00-DR-B-1200.- Proposed Layout.

120 EXISTING BUILDINGS ON/ ADJACENT TO THE SITE

- Description: Workshop / offices. Adjacent areas will remain occupied and operational during the works.

180 HEALTH AND SAFETY FILE

- Availability for inspection: The Health and Safety File for the site/ building may be seen by appointment during normal office hours at: CRCE Chilton.
- Other documents: .
- Arrangements for inspection: Available during contractor site visits.

200 ACCESS TO THE SITE

- Description: To be via main entrance from Fermi Avenue.
- Limitations: All deliveries and waste disposal are to enter and leave the building via the designated access routes to be agreed locally. All movements must be carried out before 08:00. All access routes to be kept clear at all times.
- Access for inspections: Provide access at reasonable times for both on-site and off-site work.

210 PARKING

- Restrictions on parking of the Contractor's and employees' vehicles: On-site parking will be available to the contractor within the identified contractors compound area. The number of contractors vehicles should be limited as far as reasonably practical. Additional parking on site (if available) to be agreed locally.

220 USE OF THE SITE

- General: Do not use the site for any purpose other than carrying out the Works.
- Limitations: Client activities to take priority at all times.

230 SURROUNDING LAND/ BUILDING USES

- General: Adjacent or nearby uses or activities are as follows:
- Industrial Science Park.

240 HEALTH AND SAFETY HAZARDS

- General: The nature and condition of the site/ building cannot be fully and certainly ascertained before it is opened up. However, the following hazards are or may be present:
- Asbestos containing Materials - Refer to Asbestos Refurbishment Survey contained in the Pre-Construction Information Pack.
- Information: The accuracy and sufficiency of this information is not guaranteed. Ascertain if any additional information is required to ensure the safety of all persons and the Works.
- Site staff: Draw to the attention of all personnel working on the site the nature of any possible contamination and the need to take appropriate precautionary measures.

250 SITE VISIT

- Assessment: Ascertain the nature of the site, access thereto and all local conditions and restrictions likely to affect the execution of the Works.
- Arrangements for visit: To be arranged via. Pick Everard **ONLY**.
Please contact Robert Ingman-Jones 0345 045 0050 / robertingman-jones@pickeverard.co.uk
Arrangements and date for site visits as indicated in ITT.

A13 DESCRIPTION OF THE WORK

120 THE WORKS

- Description:

The project works comprise alterations to the existing "Contractors Yard" to the rear of C Block generally as follows:

- " Removal of kerbs and concrete ramps.
- " Alterations to kerb lines.
- " Formation of new concrete steps .

A30 TENDERING/ SUBLETTING/ SUPPLY

MAIN CONTRACT TENDERING

110 SCOPE

- General: These conditions are supplementary to those stated in the Invitation to Tender and on the form of tender.

145 TENDERING PROCEDURE

- General: In accordance with NBS Guide to Tendering for Construction Projects.
- Errors: Alternative 2 - *(The Tenderer will be given an opportunity of confirming their offer or amending it to correct genuine errors. If correction means that the Tender is no longer eligible for acceptance under the selected assessment criteria, then it will be disqualified from that process.)* is to apply.

160 EXCLUSIONS

- Inability to tender: Immediately inform if any parts of the work as defined in the tender documents cannot be tendered.
- Relevant parts of the work: Define those parts, stating reasons for the inability to tender.

170 ACCEPTANCE OF TENDER

- Acceptance: No guarantee is offered that any tender will be recommended for acceptance or be accepted, or that reasons for non acceptance will be given.
- Costs: No liability is accepted for any cost incurred in the preparation of any tender.

190 PERIOD OF VALIDITY

- Period: After submission or lodgement, keep tender open for consideration (unless previously withdrawn) for not less than 90 days.
- Date for possession/ commencement: See section A20.

PRICING/ SUBMISSION OF DOCUMENTS

210 PRELIMINARIES IN THE SPECIFICATION

- The Preliminaries/ General conditions sections (A10-A56 inclusive) must not be relied on as complying with SMM7/ NRM2.

215 TENDER DOCUMENTS

- Alterations and qualifications: Do not alter or qualify tender documents without written consent. Tenders containing unauthorised alterations or qualifications may be rejected.

220 PRICING OF PRELIMINARIES

- Charges: When pricing Preliminaries, identify separately for each item where, for the purpose of valuing the work, the charge for that item is considered to be:
 - Fixed: (i.e. where the charge for the item does not depend on duration).
 - Time related: (i.e. where the charge for the item is dependent on duration).

240 PRICING OF PERFORMANCE SPECIFIED WORK

- Scope: Tenders must include for all associated and ancillary work shown or clearly apparent as being necessary to meet the requirements for the performance specified work and its completion and proper integration with the works generally.
- Quantities: Where provided, these are indicative only.
- Price: Deemed to include for all costs. Errors in measurement or calculation will be the Contractor's responsibility.

- 250 PRICED DOCUMENTS
- Alterations: Do not alter or qualify the priced documents without written consent. Tenders containing unauthorised alterations or qualifications may be rejected.
 - Measurements: Where not stated, ascertain from the drawings.
 - Deemed included: Costs relating to items, which are not priced, will be deemed to have been included elsewhere in the tender.
 - Submit: With tender.
- 310 TENDER
- General: Tenders must include for all work shown or described in the tender documents as a whole or clearly apparent as being necessary for the complete and proper execution of the Works.
- 360 PRICED ACTIVITY SCHEDULE
- Submit: With tender.
- 480 PROGRAMME
- First programme of work: prepare a summary showing the sequence and timing of the principal parts of the works, periods for planning and design, and itemising any work which is excluded.
 - Submit: with the tender.
- 490 INFORMATION RELEASE SCHEDULE
- Compatibility with programme: At the same time as submitting the proposed programme or summary, confirm that it is compatible with the Information Release Schedule.
 - Alternative proposals: If any part of the programme is not compatible with the Schedule submit alternative proposals and reasons for varying the times for release of information.
- 510 ALTERNATIVE METHOD TENDERS
- General: In addition to and at the same time as tendering for the Works as defined in the tender documents, alternative methods of construction/ installation may be submitted for consideration. Alternatives, which would involve significant changes to other work, may not be considered.
 - Alternative tenders: Such alternatives will be deemed to be alternative tenders and each must include a complete and precise statement of the effects on cost and programme.
 - Safety method statement: Carry out a health and safety risk assessment for each alternative and where appropriate provide a safety method statement suitable for incorporation in the Health and Safety Plan.
 - Full technical data: Submit for each alternative together with details of any consequential amendments to the design and/ or construction of other parts of the Works.
 - Submit: With tender.
- 515 ALTERNATIVE TIME TENDERS
- General: In addition to and at the same time as tendering based upon the date or period specified in section A20, an alternative tender based upon a different date for completion or period may be submitted.
 - Date for completion: If any such tender is accepted the date for completion inserted in the Contract will be the date stated in the alternative tender or determined from the period stated in the alternative tender.
- 530 SUBSTITUTE PRODUCTS
- Details: If products of different manufacture to those specified are proposed, submit details with the tender giving reasons for each proposed substitution. Substitutions, which have not been notified at tender stage, may not be considered.
 - Compliance: Substitutions accepted will be subject to the verification requirements of clause A31/200.

599 FREEDOM OF INFORMATION

- Records: Retain, make available for inspection and supply on request information reasonably required to allow response to requests made under the provisions of the Freedom of Information Act.
- Determination: Submit requests received. Do not supply information to anyone other than the project participants without express written permission.
- Confidentiality: Maintain at all times.

SUBLETTING/ SUPPLY

630 DOMESTIC SUBCONTRACTS

- General: Comply with the Construction Industry Board 'Code of Practice for the selection of subcontractors'.
- Details: Provide details of all subcontractors and the work for which they will be responsible.
- Submit: within one week of request.

645 'LISTED' DOMESTIC SUBCONTRACTORS

- General: In respect of certain works which must be carried out by a subcontractor/ supplier of the Contractor's choice selected from a list of not less than three persons given in clause A30/640:
 - Shortage of names: If at any time prior to execution of a binding subcontract/ supply agreement, less than three persons named in the list are able and willing to carry out the relevant work, give notice without delay. The Employer will then forthwith add the names of other persons as provided above so that the list comprises not less than three such persons, or confirm that no names will be added. If the Employer fails to do either within one week of the Contractor's notification the Contractor, who may subcontract in accordance with the Contract, must carry out the work
 - Agreement: Before the start of work to which the list relates, enter into a binding subcontract/ supply agreement and submit confirmation that this has been done, giving the name of the selected subcontractor/ supplier.

A31 PROVISION, CONTENT AND USE OF DOCUMENTS

DEFINITIONS AND INTERPRETATIONS

I 10 DEFINITIONS

- Meaning: Terms, derived terms and synonyms used in the preliminaries/ general conditions and specification are as stated here or in the appropriate referenced document.

I 20 COMMUNICATION

- Definition: Includes advise, inform, submit, give notice, instruct, agree, confirm, seek or obtain information, consent or instructions, or make arrangements.
- Format: In writing to the person named in clause A10/140 unless specified otherwise.
- Response: Do not proceed until response has been received.

I 30 PRODUCTS

- Definition: Materials, both manufactured and naturally occurring, and goods, including components, equipment and accessories, intended for the permanent incorporation in the Works.
- Includes: Goods, plant, materials, site materials and things for incorporation into the Works.

I 35 SITE EQUIPMENT

- Definition: Apparatus, appliances, machinery, vehicles or things of whatsoever nature required in or about the construction for the execution and completion of the Works but not materials or other things intended to form or forming part of the Permanent Works.
- Includes: Construction appliances, vehicles, consumables, tools, temporary works, scaffolding, cabins and other site facilities.
- Excludes: Products and equipment or anything intended to form or forming part of the permanent works.

I 40 DRAWINGS

- Definitions: To BSRIA BG 6, 'A design framework for building services: Design activities and drawing definitions'.
- CAD data: In accordance with ISO 19650.

I 45 CONTRACTOR'S CHOICE

- Meaning: Selection delegated to the Contractor, but liability to remain with the specifier.

I 50 CONTRACTOR'S DESIGN

- Meaning: Design to be carried out or completed by the Contractor and supported by appropriate contractual arrangements, to correspond with specified requirements.

I 55 SUBMIT PROPOSALS

- Meaning: Submit information in response to specified requirements.

160 TERMS USED IN SPECIFICATION

- Remove: Disconnect, dismantle as necessary and take out the designated products or work and associated accessories, fixings, supports, linings and bedding materials. Dispose of unwanted materials. Excludes removal and disposal of associated pipework, wiring, ductwork or other services.
- Remediate: Action or measures taken to lessen, clean up, remove or mitigate the existence of hazardous materials; in accordance with standards, or requirements as may be set out by statutes, rules, regulations or specification.
- Fix: Receive, unload, handle, store, protect, place and fasten in position; dispose of waste and surplus packaging; to include all labour, materials and site equipment for that purpose.
- Supply and fix: As above, but including supply of products, components or systems to be fixed, together with everything necessary for their fixing. All products, components or systems are to be supplied and fixed unless stated otherwise.
- Keep for reuse: Do not damage designated products or work. Clean off bedding and jointing materials. Stack neatly, adequately protect and store until required by the employer/ purchaser, or until required for use in the Works as instructed.
- Keep for recycling: As 'keep for reuse', but relates to a naturally occurring material rather than a manufactured product.
- Make good: Execute local remedial work to designated work. Make secure, sound and neat. Excludes redecoration and/ or replacement.
- Replace: Supply and fix new products matching those removed. Execute work to match original new state of that removed.
- Repair: Execute remedial work to designated products. Make secure, sound and neat. Excludes redecoration and/ or replacement.
- Refix: Fix removed products.
- Ease: Adjust moving parts of designated products, or work to achieve free movement and good fit in open and closed positions.
- Match existing: Provide products and work of the same appearance and features as the original, excluding ageing and weathering. Make joints between existing and new work as inconspicuous as possible.
- System: Equipment, accessories, controls, supports and ancillary items (including installation) necessary for that section of the work to function.

170 MANUFACTURER AND PRODUCT REFERENCE

- Definition: When used in this combination:
 - Manufacturer: the person or legal entity under whose name or trademark the particular product, component or system is marketed
 - Product reference: the proprietary brand name and/ or identifier by which the particular product, component or system is described.
- Currency: References are to the particular product as specified in the manufacturer's technical literature current on the date of the invitation to tender.

200 SUBSTITUTION OF PRODUCTS

- Products: If an alternative product to that specified is proposed, obtain approval before ordering the product.
- Reasons: Submit reasons for the proposed substitution.
- Documentation: Submit relevant information, including:
 - manufacturer and product reference;
 - cost;
 - availability;
 - relevant standards;
 - performance;
 - function;
 - compatibility of accessories;
 - proposed revisions to drawings and specification;
 - compatibility with adjacent work;
 - appearance;
 - copy of warranty/ guarantee.
- Alterations to adjacent work: If needed, advise scope, nature and cost.
- Manufacturers' guarantees: If substitution is accepted, submit before ordering products.

210 CROSS REFERENCES

- Accuracy: Check remainder of the annotation or item description against the terminology used in the section or clause referred to.
- Related terminology: Where a numerical cross-reference is not given the relevant sections and clauses of the specification will apply.
- Relevant clauses: Clauses in the referred to specification section dealing with general matters, ancillary products and execution also apply.
- Discrepancy or ambiguity: Before proceeding, obtain clarification or instructions.

220 REFERENCED DOCUMENTS

- Conflicts: Specification prevails over referenced documents.

230 EQUIVALENT PRODUCTS

- Inadvertent omission: Wherever products are specified by proprietary name the phrase 'or equivalent' is to be deemed included.

240 SUBSTITUTION OF STANDARDS

- Specification to British Standard or European Standard: Substitution may be proposed complying with a grade or category within a national standard of another Member State of the European Community or an international standard recognised in the UK.
- Before ordering: Submit notification of all such substitutions.
- Documentary evidence: Submit for verification when requested as detailed in clause A31/200. Any submitted foreign language documents must be accompanied by certified translations into English.

250 CURRENCY OF DOCUMENTS AND INFORMATION

- Currency: References to published documents are to the editions, including amendments and revisions, current on the date of the Invitation to Tender.

260 SIZES

- General dimensions: Products are specified by their co-ordinating sizes.
- Timber: Cross section dimensions shown on drawings are:
 - Target sizes as defined in BS EN 336 for structural softwood and hardwood sections.
 - Finished sizes for non-structural softwood or hardwood sawn and further processed sections.

DOCUMENTS PROVIDED ON BEHALF OF EMPLOYER

410A ADDITIONAL COPIES OF DRAWINGS/ DOCUMENTS

- Two copies of each contract drawing and contract documents will be issued to the contractor free of charge.
- Additional copies: Issued on request and charged to the Contractor.

440 DIMENSIONS

- Scaled dimensions: Do not rely on.

460 THE SPECIFICATION

- Coordination: All sections must be read in conjunction with Main Contract Preliminaries/ General conditions.

DOCUMENTS PROVIDED BY CONTRACTOR/ SUBCONTRACTORS/ SUPPLIERS

510 DESIGN AND PRODUCTION INFORMATION

- Master programme: Make reasonable allowance for completing design/ production information, submission, (including information relevant to the CDM Regulations), comment, inspection, amendment, resubmission and reinspection.
- Design/ production information: Submit two copies, one can be returned with comments. Ensure that any necessary amendments are made without delay
- Contractor's changes to Employer's requirements: Support any request for substitution with relevant information.
- Employer's amendments to Employer's requirements: If considered to involve a change which has not already been acknowledged, notify without delay (maximum period 7 days) and do not proceed until instructed. Claims for extra cost, if made after it has been carried out, may not be allowed.
- Final version of design/ production information:
 - Format: Two paper and electronic copies.
 - Submit: within one week of request.

610 PRODUCTION INFORMATION

- Contractor/ Domestic subcontractor provide: Manufactures installation drawings.
- Submit:
 - For comment and make any necessary amendments.
 - Sufficient copies of final version for distribution to all affected parties.

630 TECHNICAL LITERATURE

- Information: Keep on site for reference by all supervisory personnel:
 - Manufacturers' current literature relating to all products to be used in the Works.
 - Relevant British, EN or ISO Standards.

640 MAINTENANCE INSTRUCTIONS AND GUARANTEES

- Components and equipment: Obtain or retain copies, register with manufacturer and hand over on or before completion of the Works.
- Information location: In Building Manual.
- Emergency call out services: Provide telephone numbers for use after completion. Extent of cover: office hours only.

A32 MANAGEMENT OF THE WORKS

GENERALLY

I 10 SUPERVISION

- General: Accept responsibility for coordination, supervision and administration of the Works, including subcontracts.
- Coordination: Arrange and monitor a programme with each subcontractor, supplier, local authority and statutory undertaker, and obtain and supply information as necessary for coordination of the work.

I 15 CONSIDERATE CONSTRUCTORS SCHEME

- Registration: Before starting work, register the site and pay the appropriate fee:
- Contact:
 - Address: Considerate Constructors Scheme Office, PO Box 75, Great Amwell, Ware, Hertfordshire, SG12 0YX.
 - Tel. 01920 485959.
 - Fax. 01920 485958.
 - Free phone 0800 7831423
 - Web. www.ccscheme.org.uk
 - E mail. enquiries@ccscheme.org.uk
- Standard: Comply with the Scheme's Code of Considerate Practice.
 - Minimum compliance level: Very good.

I 18A VEHICLE SAFETY REQUIREMENTS

- Vehicle equipment: Ensure that all vehicles have the following:
 - Audible alert to other road users to the planned movement of the vehicle when the vehicle's indicators are in operation.
 - Prominent signage at the rear of the vehicle to warn cyclists of the dangers of passing the vehicle on the inside.
 - Properly adjusted class VI mirror/s or Fresnel lens to eliminate the near side blind spot.
 - Side under run guards.
- Driver training:
 - Drivers must be trained on vulnerable road user safety through an approved course and hold a current valid Certificate of Competence.
 - Drivers must have a valid driving licence and be legally able to drive the vehicle.

I 20 INSURANCE

- Documentary evidence: Before starting work on site submit details, and/ or policies and receipts for the insurances required by the Conditions of Contract.

I 30 INSURANCE CLAIMS

- Notice: If any event occurs which may give rise to any claim or proceeding in respect of loss or damage to the Works or injury or damage to persons or property arising out of the Works, immediately give notice to the employer/ client, the person administering the Contract on their behalf and the Insurers.
- Failure to notify: Indemnify the employer/ client against any loss, which may be caused by failure to give such notice.

140 CLIMATIC CONDITIONS

- Information: Record accurately and retain:
 - Daily maximum and minimum air temperatures (including overnight)
 - Delays due to adverse weather including description of the weather, types of work affected and number of hours lost.

150 OWNERSHIP

- Alteration/ clearance work: Materials arising become the property of the Contractor except where otherwise stated. Remove from site as work proceeds.

PROGRAMME/ PROGRESS

210 PROGRAMME

- Master programme: Immediately when requested and before starting work on site submit in an approved form a master programme for the Works, which must include details of:
 - Design, production information and proposals provided by the Contractor/ Subcontractors/ Suppliers, including inspection and checking (see section A31).
 - Planning and mobilisation by the Contractor.
 - Earliest and latest start and finish dates for each activity and identify all critical activities.
 - Running in, adjustment, commissioning and testing of all engineering services and installations
 - Work resulting from instructions issued in regard to the expenditure of provisional sums (see section A54)
 - Work by or on behalf of the Employer and concurrent with the Contract (see section A50) the nature and scope of which, the relationship with preceding and following work and any relevant limitations are suitably defined in the Contract Documents.
- Exclusions: Where and to the extent that the programme implications for work which is not so defined are impossible to assess the Contractor should exclude it and confirm this when submitting the programme.
- Further information: Submission of programme will not relieve the Contractor of responsibility to advise of the need for further drawings or details or instructions in accordance with the contract.
- Submit one copy.

215 REVISED PROGRAMME

- Format and content: Compatible with master programme.
- Revised programme interval: Described in the contract data part one.
- Number of copies: one.
- Special requirements: .

230 SUBMISSION OF PROGRAMME

- Further information: Submission of the programme will not relieve the Contractor of the responsibility to advise of the need for further drawings or details or instructions in accordance with the Contract.

255 NOTIFICATION OF COMPENSATION EVENT

- Content: Notwithstanding the Contractor's obligations under the Contract written notice must also be given of all other causes which apply concurrently.

- 260 SITE MEETINGS
- General: Site meetings will be held to review progress and other matters arising from administration of the Contract.
 - Frequency: Every month.
 - Location: On site.
 - Accommodation: Ensure availability at the time of such meetings.
 - Attendees: Attend meetings and inform subcontractors and suppliers when their presence is required.
 - Chairperson (who will also take and distribute minutes): PM.
- 265 CONTRACTOR'S PROGRESS REPORT
- Content: Notwithstanding the Contractor's obligations under the Contract the report must include:
 - A progress statement by reference to the master programme for the Works.
 - Details of any matters materially affecting the regular progress of the Works.
 - Subcontractors' and suppliers' progress reports.
 - Any requirements for further drawings or details or instructions.
- 270 CONTRACTOR'S SITE MEETINGS
- General: Hold meetings with appropriate subcontractors and suppliers shortly before main site meetings to facilitate accurate reporting of progress.
- 285 EARLY TAKE OVER
- Take over of parts of the works: As completed, provided all necessary access, services, and other associated facilities are also complete.
- 290 NOTICE OF COMPLETION
- Requirement: Give notice of the anticipated dates of completion of the whole or parts of the Works.
 - Associated works: Ensure necessary access, services and facilities are complete.
 - Period of notice (minimum): Two weeks.

CONTROL OF COST

- 410 CASH FLOW FORECAST
- Submission: Before starting work on site, submit a forecast showing the gross valuation of the Works at the date of each Interim Certificate throughout the Contract period. Base on the programme for the Works.
- 420 REMOVAL/ REPLACEMENT OF EXISTING WORK
- Extent and location: Agree before commencement.
 - Execution: Carry out in ways that minimize the extent of work.
- 430 QUOTATIONS FOR PROPOSED INSTRUCTIONS OR COMPENSATION EVENTS
- Include:
 - A detailed breakdown of the cost including any allowance for direct loss and expense.
 - Details of any additional resources required.
 - Details of any adjustments to be made to the programme for the Works.
 - Any other information as is reasonably necessary to fully assess the implications of issuing such an instruction.
 - Inability to comply: Inform immediately if it is not possible to comply with any of the above requirements.

440 MEASUREMENT

- Covered work: Give notice before covering work required to be measured.

460 PAYMENT ASSESSMENTS

- Application by Contractor: if made under clause 50 include details of amounts considered due, together with the following supporting information:
 - As requested.

470 PRODUCTS NOT INCORPORATED INTO THE WORKS

- Ownership: At the time of each valuation, supply details of those products not incorporated into the Works which are subject to any reservation of title inconsistent with passing of property as required by the Conditions of Contract, together with their respective values.
- Evidence: When requested, provide evidence of freedom of reservation of title.

A33 QUALITY STANDARDS/ CONTROL

STANDARDS OF PRODUCTS AND EXECUTIONS

110 INCOMPLETE DOCUMENTATION

- General: Where and to the extent that products or work are not fully documented, they are to be:
 - Of a kind and standard appropriate to the nature and character of that part of the Works where they will be used.
 - Suitable for the purposes stated or reasonably to be inferred from the project documents.
Contract documents: Omissions or errors in description and/ or quantity shall not vitiate the Contract nor release the Contractor from any obligations or liabilities under the Contract.

120 WORKMANSHIP SKILLS

- Operatives: Appropriately skilled and experienced for the type and quality of work.
- Registration: With Construction Skills Certification Scheme.
- Evidence: Operatives must produce evidence of skills/ qualifications when requested.

130 QUALITY OF PRODUCTS

- Generally: New. (Proposals for recycled products may be considered).
- Supply of each product: From the same source or manufacturer.
- Whole quantity of each product required to complete the Works: Consistent kind, size, quality and overall appearance.
- Tolerances: Where critical, measure a sufficient quantity to determine compliance.
- Deterioration: Prevent. Order in suitable quantities to a programme and use in appropriate sequence.

135 QUALITY OF EXECUTION

- Generally: Fix, apply, install or lay products securely, accurately, plumb, neatly and in alignment.
- Colour batching: Do not use different colour batches where they can be seen together.
- Dimensions: Check on-site dimensions.
- Finished work: Not defective, e.g. not damaged, disfigured, dirty, faulty, or out of tolerance.
- Location and fixing of products: Adjust joints open to view so they are even and regular.

140 EVIDENCE OF COMPLIANCE

- Proprietary products: Retain on site evidence that the proprietary product specified has been supplied.
- Performance specification: Submit evidence of compliance, including test reports indicating:
 - Properties tested.
 - Pass/ fail criteria.
 - Test methods and procedures.
 - Test results.
 - Identity of testing agency.
 - Test dates and times.
 - Identities of witnesses.
 - Analysis of results.

150 INSPECTIONS

- Products and executions: Inspection or any other action must not be taken as approval unless confirmed in writing referring to:
 - Date of inspection.
 - Part of the work inspected.
 - Respects or characteristics which are approved.
 - Extent and purpose of the approval.
 - Any associated conditions.

160 RELATED WORK

- Details: Provide all trades with necessary details of related types of work. Before starting each new type or section of work ensure previous related work is:
 - Appropriately complete.
 - In accordance with the project documents.
 - To a suitable standard.
 - In a suitable condition to receive the new work.
- Preparatory work: Ensure all necessary preparatory work has been carried out.

170 MANUFACTURER'S RECOMMENDATIONS/ INSTRUCTIONS

- General: Comply with manufacturer's printed recommendations and instructions current on the date of the Invitation to tender.
- Exceptions: Submit details of changes to recommendations or instructions.
- Execution: Use ancillary products and accessories supplied or recommended by main product manufacturer.
- Products: Comply with limitations, recommendations and requirements of relevant valid certificates.

180 WATER FOR THE WORKS

- Mains supply: Clean and uncontaminated.
- Other: Do not use until:
 - Evidence of suitability is provided.
 - Tested to BS EN 1008 if instructed.

SAMPLES/ APPROVALS

210 SAMPLES

- Products or executions: Comply with all other specification requirements and in respect of the stated or implied characteristics either:
 - To an express approval.
 - To match a sample expressly approved as a standard for the purpose.

220 APPROVAL OF PRODUCTS

- Submissions, samples, inspections and tests: Undertake or arrange to suit the Works programme.
- Approval: Relates to a sample of the product and not to the product as used in the Works. Do not confirm orders or use the product until approval of the sample has been obtained.
- Complying sample: Retain in good, clean condition on site. Remove when no longer required.

230 APPROVAL OF EXECUTION

- Submissions, samples, inspections and tests: Undertake or arrange to suit the Works programme.
- Approval: Relates to the stated characteristics of the sample. (If approval of the finished work as a whole is required this is specified separately). Do not conceal, or proceed with affected work until compliance with requirements is confirmed.
- Complying sample: Retain in good, clean condition on site. Remove when no longer required.

ACCURACY/ SETTING OUT GENERALLY

330 APPEARANCE AND FIT

- Tolerances and dimensions: If likely to be critical to execution or difficult to achieve, as early as possible either:
 - Submit proposals; or
 - Arrange for inspection of appearance of relevant aspects of partially finished work.
- General tolerances (maximum): To BS 5606, tables 1 and 2.

340 CRITICAL DIMENSIONS

- Critical dimensions: Set out and construct the Works to ensure compliance with the tolerances stated.
- Location: Detailed on drawings .

SERVICES GENERALLY

410 SERVICES REGULATIONS

- New or existing services: Comply with the Byelaws or Regulations of the relevant Statutory Authority.

420 WATER REGULATIONS/ BYELAWS NOTIFICATION

- Requirements: Notify Water Undertaker of any work carried out to (or which affects) new or existing services and submit any required plans, diagrams and details.
- Consent: Allow adequate time to receive Undertaker's consent before starting work. Inform immediately if consent is withheld or is granted subject to significant conditions.

430 WATER REGULATIONS/ BYELAWS CONTRACTOR'S CERTIFICATE

- On completion of the work: Submit (copy where also required to the Water Undertaker) a certificate including:
 - The address of the premises.
 - A brief description of the new installation and/ or work carried out to an existing installation.
 - The Contractor's name and address.
 - A statement that the installation complies with the relevant Water Regulations or Byelaws.
 - The name and signature of the individual responsible for checking compliance.
 - The date on which the installation was checked.

435 ELECTRICAL INSTALLATION CERTIFICATE

- Submit: When relevant electrical work is completed.
- Original certificate: To be lodged in the Building Manual.

445 SERVICE RUNS

- General: Provide adequate space and support for services, including unobstructed routes and fixings.
- Ducts, chases and holes: Form during construction rather than cut.
- Coordination with other works: Submit details of locations, types/ methods of fixing of services to fabric and identification of runs and fittings.

450 MECHANICAL AND ELECTRICAL SERVICES

- Final tests and commissioning: Carry out so that services are in full working order at completion of the Works.
- Building Regulations notice: Copy to be lodged in the Building Manual.

SUPERVISION/ INSPECTION/ DEFECTIVE WORK

510 SUPERVISION

- General: In addition to the constant management and supervision of the Works provided by the Contractor's person in charge, all significant types of work must be under the close control of competent trade supervisors to ensure maintenance of satisfactory quality and progress.
- Evidence: Submit, including details of the person proposed, their relevant skills training and knowledge; practical experience; qualifications; membership or registration with professional bodies; employment history, work related assessments and management structure.
- Submittal date: Within one week of request.
- Replacement: Give maximum possible notice before changing person in charge or site agent.

530 OVERTIME WORKING

- Notice: Prior to overtime being worked, submit details of times, types and locations of work to be done.
 - Minimum period of notice: Two days.
- Concealed work: If executed during overtime for which notice has not been given, it may be required to be opened up for inspection and reinstated at the Contractor's expense.

540 DEFECTS IN EXISTING WORK

- Undocumented defects: When discovered, immediately give notice. Do not proceed with affected related work until response has been received.
- Documented remedial work: Do not execute work which may:
 - Hinder access to defective products or work; or
 - Be rendered abortive by remedial work.

550 ACCESS FOR INSPECTION

- Removal: Before removing scaffolding or other facilities for access, give notice of not less than one week.

560 TESTS AND INSPECTIONS

- Timing: Agree and record dates and times of tests and inspections to enable all affected parties to be represented.
- Confirmation: One working day prior to each such test or inspection. If sample or test is not ready, agree a new date and time.
- Records: Submit a copy of test certificates and retain copies on site.

610 PROPOSALS FOR RECTIFICATION OF DEFECTIVE PRODUCTS/ EXECUTIONS

- Proposals: Immediately any execution or product is known, or appears, to be not in accordance with the Contract, submit proposals for opening up, inspection, testing, making good, adjustment of the Contract Sum, or removal and re-execution.
- Acceptability: Such proposals may be unacceptable and contrary instructions may be issued.

620 MEASURES TO ESTABLISH ACCEPTABILITY

- General: Wherever inspection or testing shows that the work, materials or goods are not in accordance with the contract and measures (e.g. testing, opening up, experimental making good) are taken to help in establishing whether or not the work is acceptable, such measures:
 - Will be at the expense of the Contractor.
 - Will not be considered as grounds for revision of the completion date.

630 QUALITY CONTROL

- Procedures: Establish and maintain to ensure that the Works, including the work of subcontractors, comply with specified requirements.
- Records: Maintain full records, keep copies on site for inspection, and submit copies on request.
- Content of records:
 - Identification of the element, item, batch or lot including location in the Works.
 - Nature and dates of inspections, tests and approvals.
 - Nature and extent of nonconforming work found.
 - Details of corrective action.

WORK AT OR AFTER COMPLETION

710 WORK BEFORE COMPLETION

- General: Make good all damage consequent upon the Works.
Temporary markings, coverings and protective wrappings: Remove unless otherwise instructed.
- Cleaning: Clean the Works thoroughly inside and out, including all accessible ducts and voids. Remove all splashes, deposits, efflorescence, rubbish and surplus materials.
- Cleaning materials and methods: As recommended by manufacturers of products being cleaned, and must not damage or disfigure other materials or construction.
- COSHH dated data sheets: Obtain for all materials used for cleaning and ensure they are used only as recommended by their manufacturers.
- Minor faults: Touch up in newly painted work, carefully matching colour and brushing out edges. Repaint badly marked areas back to suitable breaks or junctions.
- Moving parts of new work: Adjust, ease and lubricate as necessary to ensure easy and efficient operation, including doors, windows, drawers, ironmongery, appliances, valves and controls.

720 SECURITY AT COMPLETION

- General: Leave the Works secure with, where appropriate, all accesses closed and locked.
- Keys: Account for and adequately label all keys, and hand over together with an itemized schedule, retaining duplicate schedule signed as a receipt.

730 MAKING GOOD DEFECTS

- Remedial work: Arrange access with Project Manager.
- Rectification: Give reasonable notice for access to the various parts of the Works.
- Completion: Notify when remedial works have been completed.

A34 SECURITY/ SAFETY/ PROTECTION

SECURITY, HEALTH AND SAFETY

I 10A PRECONSTRUCTION INFORMATION

- Location: Included at Appendix E.
To be read with Preliminaries/General conditions.

I 20 EXECUTION HAZARDS

- Common hazards: Not listed. Control by good management and site practice.
- Significant hazards: The design of the project includes the following:
 - Hazard: .
 - Precautions assumed: .
 - Specification reference: .
 - Drawing reference: .

I 30 PRODUCT HAZARDS

- Hazardous substances: Site personnel levels must not exceed occupational exposure standards and maximum exposure limits stated in the current version of HSE document EH40: Workplace Exposure Limits.
- Common hazards: Not listed. Control by good management and site practice.
- Significant hazards: Specified construction materials include the following:
 - Hazard: .
 - Material: .
 - Specification reference: .

I 40 CONSTRUCTION PHASE HEALTH AND SAFETY PLAN

- Submission: Present to the Employer/ Client no later than Two weeks prior to commencement.
- Confirmation: Do not start construction work until the Employer has confirmed in writing that the Construction Phase Health and Safety Plan includes the procedures and arrangements required by the CDM Regulations.
- Content: Develop the plan from and draw on the Outline Construction Phase Health and Safety Plan, clause A30/570, and the Pre-tender Health and Safety Plan/ Preconstruction information.

I 50 SECURITY

- Protection: Safeguard the site, the Works, products, materials, and any existing buildings affected by the Works from damage and theft.
- Access: Take all reasonable precautions to prevent unauthorized access to the site, the Works and adjoining property.
- Special requirements: None.

I 60 STABILITY

- Responsibility: Maintain the stability and structural integrity of the Works and adjacent structures during the Contract.
- Design loads: Obtain details, support as necessary and prevent overloading.

170 OCCUPIED PREMISES

- Extent: Existing buildings will be occupied and/ or used during the Contract as follows: Existing Workshop and Office areas adjacent to the work areas.
- Works: Carry out without undue inconvenience and nuisance and without danger to occupants and users.
- Overtime: If compliance with this clause requires certain operations to be carried out during overtime, and such overtime is not required for any other reason, the extra cost will be allowed, provided that such overtime is authorized in advance.

180 ACCESS CONTROL

- Controlled areas: All entrances to main building.
- Control type: Key fob with reader.
- Authorised persons: Submit a list of the names of all persons requiring access together with any other related information reasonably required.
- Return of credentials: When requested or on completion of the work to which the controlled area relates.

190 OCCUPIER'S RULES AND REGULATIONS

- Compliance: Conform to the occupier's rules and regulations affecting the site.
- Copies:
 - Location: Copies included with the PCI at Appendix D .
 - Arrangements for inspection: N/A .

200 MOBILE TELEPHONES AND PORTABLE ELECTRONIC EQUIPMENT

- Restrictions on use:
 - Only within the contractors compound area. Not in the main building.

210 SAFETY PROVISIONS FOR SITE VISITS

- Safety: Submit details in advance of safety provisions and procedures (including those relating to materials, which may be deleterious), which will require their compliance when visiting the site.
- Protective clothing and/ or equipment: Provide and maintain on site for visitors to the site.

220 WORKING PRECAUTIONS/ RESTRICTIONS

- Hazardous areas: Operatives must take precautions as follows:
 - Work area: .
 - Precautions: .
- Permit to work: Operatives must comply with procedures in the following areas:
 - Work area: Works within the existing building.
 - Procedures: PHE Job Registration Form.

PROTECT AGAINST THE FOLLOWING

310 EXPLOSIVES

- Use: Not permitted.

330A NOISE AND VIBRATION

- Standard: Comply with the recommendations of BS 5228-1, in particular clause 7.3, to minimize noise levels during the execution of the Works.
- Equipment: Fit compressors, percussion tools and vehicles with effective silencers of a type recommended by manufacturers of the compressors, tools or vehicles.
- Restrictions: Do not use:
 - Percussion tools and other noisy appliances without consent during the hours of 6:00pm until 8:00am.
 - Radios or other audio equipment or permit employees to use in ways or at times that may cause nuisance.

- 340 POLLUTION
- Prevention: Protect the site, the Works and the general environment including the atmosphere, land, streams and waterways against pollution.
 - Contamination: If pollution occurs inform immediately, including to the appropriate Authorities and provide relevant information.
- 350 PESTICIDES
- Use: Not permitted.
- 360 NUISANCE
- Duty: Prevent nuisance from smoke, dust, rubbish, vermin and other causes.
 - Surface water: Prevent hazardous build-up on site, in excavations and to surrounding areas and roads.
- 370 ASBESTOS CONTAINING MATERIALS
- Duty: Report immediately any suspected materials discovered during execution of the Works.
 - Do not disturb.
 - Agree methods for safe removal or encapsulation.
- 371 DANGEROUS OR HAZARDOUS SUBSTANCES
- Duty: Report immediately suspected materials discovered during execution of the Works.
 - Do not disturb.
 - Agree methods for safe removal or remediation.
- 380 FIRE PREVENTION
- Duty: Prevent personal injury or death, and damage to the Works or other property from fire.
 - Standard: Comply with Joint Code of Practice 'Fire Prevention on Construction Sites', published by Construction Industry Publications and The Fire Protection Association (The 'Joint Fire Code').
- 390 SMOKING ON SITE
- Smoking on site: Not permitted.
- 400 BURNING ON SITE
- Burning on site: Not permitted.
- 410 MOISTURE
- Wetness or dampness: Prevent, where this may cause damage to the Works.
 - Drying out: Control humidity and the application of heat to prevent:
 - Blistering and failure of adhesion.
 - Damage due to trapped moisture.
 - Excessive movement.
- 420 INFECTED TIMBER/ CONTAMINATED MATERIALS
- Removal: Where instructed to remove material affected by fungal/ insect attack from the building, minimize the risk of infecting other parts of the building.
 - Testing: carry out and keep records of appropriate tests to demonstrate that hazards presented by concentrations of airborne particles, toxins and other micro organisms are within acceptable levels.

430 WASTE

- Includes: Rubbish, debris, spoil, surplus material, containers and packaging.
- General: Minimize production. Prevent accumulations. Keep the site and Works clean and tidy.
- Handling: Collect and store in suitable containers. Remove frequently and dispose of off-site in a safe and competent manner:
 - Non-hazardous material: In a manner approved by the Waste Regulation Authority.
 - Hazardous material: As directed by the Waste Regulation Authority and in accordance with relevant regulations.
- Recyclable material: Sort and dispose at a Materials Recycling Facility approved by the Waste Regulation Authority.
- Voids and cavities in the construction: Remove rubbish, dirt and residues before closing in.
- Waste transfer documentation: Retain on site.

440 ELECTROMAGNETIC INTERFERENCE

- Duty: Prevent excessive electromagnetic disturbance to apparatus outside the site.

450 LASER EQUIPMENT

- Construction laser equipment: Install, use and store in accordance with BS EN 60825-1 and the manufacturer's instructions.
- Class 1 or Class 2 laser equipment: Ensure laser beam is not set at eye level and is terminated at the end of its useful path.
- Class 3A and Class 3B laser equipment: Do not use without approval and subject to submission of a method statement on its safe use.

460 POWDER ACTUATED FIXING SYSTEMS

- Use: Not permitted.

PROTECT THE FOLLOWING

510 EXISTING SERVICES

- Confirmation: Notify all service authorities, statutory undertakers and/ or adjacent owners of proposed works not less than one week before commencing site operations.
- Identification: Before starting work, check and mark positions of utilities/ services. Where positions are not shown on drawings obtain relevant details from service authorities, statutory undertakers or other owners.
- Work adjacent to services:
 - Comply with service authority's/ statutory undertaker's recommendations.
 - Adequately protect, and prevent damage to services: Do not interfere with their operation without consent of service authorities/ statutory undertakers or other owners.
- Identifying services:
 - Below ground: Use signboards, giving type and depth;
 - Overhead: Use headroom markers.
- Damage to services: If any results from execution of the Works:
 - Immediately give notice and notify appropriate service authority/ statutory undertaker.
 - Make arrangements for the work to be made good without delay to the satisfaction of service authority/ statutory undertaker or other owner as appropriate.
 - Any measures taken to deal with an emergency will not affect the extent of the Contractor's liability.
- Marker tapes or protective covers: Replace, if disturbed during site operations, to service authority's/ statutory undertakers recommendations.

- 520 ROADS AND FOOTPATHS
- Duty: Maintain roads and footpaths within and adjacent to the site and keep clear of mud and debris.
 - Damage caused by site traffic or otherwise consequent upon the Works: Make good to the satisfaction of the Employer, Local Authority or other owner.
- 530 EXISTING TOPSOIL/ SUBSOIL
- Duty: Prevent over compaction of existing topsoil and subsoil in those areas which may be damaged by construction traffic, parking of vehicles, temporary site accommodation or storage of materials and which will require reinstatement prior to completion of the Works.
 - Protection: Before starting work submit proposals for protective measures.
- 540 RETAINED TREES/ SHRUBS/ GRASSED AREAS
- Protection: Preserve and prevent damage, except those not required.
 - Replacement: Mature trees and shrubs if uprooted, destroyed, or damaged beyond reasonable chance of survival in their original shape, as a consequence of the Contractor's negligence, must be replaced with those of a similar type and age at the Contractor's expense.
- 550 RETAINED TREES
- Protected area: Unless agreed otherwise do not:
 - Dump spoil or rubbish, excavate or disturb topsoil, park vehicles or plant, store materials or place temporary accommodation within an area which is the larger of the branch spread of the tree or an area with a radius of half the tree's height, measured from the trunk.
 - Sever roots exceeding 25 mm in diameter. If unintentionally severed give notice and seek advice.
 - Change level of ground within an area 3 m beyond branch spread.
- 555 WILDLIFE SPECIES AND HABITATS
- General: Safeguard the following: .
 - Protected habitats and species: Upon discovery immediately advise. Do not proceed until instruction is received.
 - Education: Ensure employees and visitors to the site receive suitable instruction and awareness training.
- 560 EXISTING FEATURES
- Protection: Prevent damage to existing buildings, fences, gates, walls, roads, paved areas and other site features, which are to remain in position during execution of the Works.
 - Special requirements: .
- 570 EXISTING WORK
- Protection: Prevent damage to existing work, structures or other property during the course of the work.
 - Removal: Minimum amount necessary.
 - Replacement work: To match existing.
- 580 BUILDING INTERIORS
- Protection: Prevent damage from exposure to the environment, including weather, flora, fauna, and other causes of material degradation during the course of the work.
- 625 ADJOINING PROPERTY RESTRICTIONS
- Precautions:
 - Prevent trespass of workpeople and take precautions to prevent damage to adjoining property.
 - Pay all charges.
 - Remove and make good on completion or when directed.
 - Damage: Bear cost of repairing damage arising from execution of the Works.

630 EXISTING STRUCTURES

- Duty: Check proposed methods of work for effects on adjacent structures inside and outside the site boundary.
- Supports: During execution of the Works:
 - Provide and maintain all incidental shoring, strutting, needling and other supports as may be necessary to preserve stability of existing structures on the site or adjoining that may be endangered or affected by the Works.
 - Do not remove until new work is strong enough to support existing structure.
 - Prevent overstressing of completed work when removing supports.
- Adjacent structures: Monitor and immediately report excessive movement.
- Standard: Comply with BS 5975 and BS EN 12812.

640 MATERIALS FOR RECYCLING/ REUSE

- Duty: Sort and prevent damage to stated products or materials, clean off bedding and jointing materials and other contaminants.
- Storage: Stack neatly and protect until required by the Employer or for use in the Works as instructed.

A35 SPECIFIC LIMITATIONS ON METHOD/ SEQUENCE/ TIMING

I 10 SCOPE

- General: The limitations described in this section are supplementary to limitations described or implicit in information given in other sections or on the drawings.

I 60 USE OR DISPOSAL OF MATERIALS

- Specific limitations: Before 9:00am or after 5:00pm, unless agreed with PHE Site Supervisor.

I 70 WORKING HOURS

- Specific limitations: Any out of hours works, i.e. after 5:00pm on week days or at weekends will require prior agreement with PHE Site Supervisor and PM..

I 80 COMPLETION IN SECTIONS OR IN PARTS

- General: Where the Employer is to take over any Section or part of the Works and such Section or part will, after its Completion, depend for its adequate functioning on work located elsewhere on the site: Complete such other work in time to permit such take over to occur.
- Remainder of the Works: During execution, ensure that completed Sections or parts of the Works have continuous and adequate provision of services, fire precautions, means of escape and safe access.

A36 FACILITIES/ TEMPORARY WORK/ SERVICES

GENERALLY

110 SPOIL HEAPS, TEMPORARY WORKS AND SERVICES

- Location: Give notice and details of intended siting.
- Maintenance: Alter, adapt and move as necessary. Remove when no longer required and make good.

ACCOMMODATION

230A TEMPORARY ACCOMMODATION

- Accommodation made available by the Employer: The following may be used for the duration of the Contract without charge provided that:
 - It is used solely for the purposes of carrying out the Works.
 - The use to which it is put does not involve undue risk of damage.
 - Any temporary adaptations are approved by or on behalf of the Employer before being carried out.
 - It is vacated on completion of the Works or determination of the Contract.
 - When vacated, its condition is at least equivalent to its condition at the start of the Contract.
- Description: Existing metal cabin.
- Available services and facilities: Office and storage facilities including teapoint.
- **Existing sanitary accommodation is not available - Contractor is to provide their own.**

340 NAME BOARDS/ ADVERTISEMENTS

- Name boards/ advertisements: Not permitted.

SERVICES AND FACILITIES

410 LIGHTING

- Finishing work and inspection: Provide temporary lighting, the intensity and direction of which closely resembles that delivered by the permanent installation.

420 LIGHTING AND POWER

- Supply: Electricity from the existing mains may be used for the Works as follows:
 - Metering: Free of charge.
 - Point of supply: TBA.
 - Available capacity: TBA.
 - Frequency: 50 Hz.
 - Phase: TBA.
 - Current: Alternating.
- Continuity: No responsibility will be accepted for the consequences of failure or restriction in supply.

430 WATER

- Supply: The existing mains may be used for the Works as follows:
 - Metering: Free of charge.
 - Source: TBA.
 - Location of supply point: TBA.
 - Conditions/ Restrictions: TBA.
- Continuity: No responsibility will be accepted for the consequences of failure or restriction in supply.

440 MOBILE TELEPHONES

- Direct communication: As soon as practicable after the start on site:
 - provide the Contractor's person in charge with a mobile telephone.
 - pay all charges reasonably incurred.

470 E-MAIL AND INTERNET FACILITY

- General: As soon as practicable after the start on site provide a suitable e-mail facility on site, with a separate dedicated telephone line, for the use of the Contractor, Subcontractors and other members of the project team.
- Use on behalf of Employer: Allow for the cost of a reasonable number of transmissions made by other members of the project team.
- Peripherals: N/A.

520 USE OF PERMANENT HEATING SYSTEM

- Permanent heating installation: May be used for drying out the Works/ services and controlling temperature and humidity levels.
- Installation: If used:
 - Take responsibility for operation, maintenance and remedial work.
 - Arrange supervision by and indemnification of the appropriate Subcontractors.
 - Pay costs arising.

530 BENEFICIAL USE OF INSTALLED SYSTEMS

- Permanent systems: Unless specific permission is given by the Employer and installer, do not use for any purpose other than running in, testing and commissioning.
- Other uses: If permission is given for any other use of a system before the Works are accepted as complete, enter into a separate written agreement recording details of the terms and conditions of use.

540 METER READINGS

- Charges for service supplies: Where to be apportioned ensure that:
 - Meter readings are taken by relevant authority at possession and/ or completion as appropriate.
 - Copies of readings are supplied to interested parties.

A37 OPERATION/ MAINTENANCE OF THE FINISHED WORKS

GENERALLY

I 10A THE BUILDING MANUAL

- Details regarding the preparation and content as indicated within the pre-construction information at Appendix E .

I 15 THE HEALTH AND SAFETY FILE

- Responsibility: the contractor.
- Content: Obtain and provide the following information: as identified withing the Pre-construction Information at Appendix E .
- Format: One paper and two electronic
- Delivery to: Principal Designer By (date): Handover.

I 15A THE HEALTH AND SAFETY FILE

- Details regarding the preparation and content as indicated within the pre-construction information at Appendix E.

I 60A PRESENTATION OF BUILDING MANUAL

- Presentation as indicated within the pre-construction information at Appendix E.

210 INFORMATION FOR COMMISSIONING OF SERVICES

- General: Submit relevant drawings and preliminary performance data to enable the building user's staff to familiarise themselves with the installation.
- Time of submission: At commencement of commissioning.

220 TRAINING

- Objective: Before Completion, explain and demonstrate to designated maintenance staff the purpose, function and operation of the installations including items and procedures listed in the Building Manual.
- Level of training Overview of new systems.
- Time allowance: Include a minimum of two days.

250 TOOLS

- General: Provide tools and portable indicating instruments for the operation and maintenance of all services plant and equipment (except any installed under Named Subcontracts) together with suitable means of identifying, storing and securing.
- Quantity: Two complete sets.
- Time of submission: At completion.

A40 CONTRACTOR'S GENERAL COST ITEMS: MANAGEMENT AND STAFF

- 110 MANAGEMENT AND STAFF
 - Cost significant items: .

A41 CONTRACTOR'S GENERAL COST ITEMS: SITE ACCOMMODATION

I10 SITE ACCOMMODATION

- Details: Site accommodation required or made/ not made available by the Employer: See section A36.
- Cost significant items: .

A42 CONTRACTOR'S GENERAL COST ITEMS: SERVICES AND FACILITIES

- 110 POWER
 - Cost significant items: .
- 120 LIGHTING
 - Cost significant items: .
- 130 FUELS
 - Cost significant items: .
- 140 WATER
 - Cost significant items: .
- 150 TELEPHONE AND ADMINISTRATION
 - Cost significant items: .
- 160 SAFETY, HEALTH AND WELFARE
 - See clause A34/210.
 - Cost significant items: .
- 170 STORAGE OF MATERIALS
 - Cost significant items: .
- 180 RUBBISH DISPOSAL
 - See clause A34/430.
 - Cost significant items: .
- 190 CLEANING
 - See clause A33/710.
 - Cost significant items: .
- 210 PROTECTION OF WORK IN ALL SECTIONS
 - Cost significant items: .
- 230 MAINTAIN PUBLIC AND PRIVATE ROADS
 - See clause A34/520.
 - Cost significant items: .
- 240 SMALL PLANT AND TOOLS
 - Cost significant items: .
- 310 ADDITIONAL SERVICES AND FACILITIES ITEMS
 - Heading: _____.
 - Cost significant items: .

A43 CONTRACTOR'S GENERAL COST ITEMS: MECHANICAL PLANT

130 PERSONNEL TRANSPORT

- Cost significant items: .

140 TRANSPORT

- Cost significant items: .

200 ADDITIONAL MECHANICAL PLANT

- Cost significant items: _____.

A44 CONTRACTOR'S GENERAL COST ITEMS: TEMPORARY WORKS

130 ACCESS SCAFFOLDING

- Cost significant items: .

140 SUPPORT SCAFFOLDING AND PROPPING

- Cost significant items: .

150 HOARDINGS, FANS, FENCING, ETC.

- Cost significant items: .

160 HARDSTANDING

- Cost significant items: .

170 TRAFFIC REGULATIONS

- Cost significant items: .

200 ADDITIONAL TEMPORARY WORKS

- Cost significant items: _____.

A50 WORK/ PRODUCTS BY/ ON BEHALF OF THE EMPLOYER

I20 PRODUCTS PROVIDED BY/ ON BEHALF OF EMPLOYER

- General: Details of such products are given in the work sections, for fixing as part of the contract. Use for no other purpose than the Works.
- Handling: Accept delivery, check against receipts and take into appropriate storage.
- Surplus products: Keep safe and obtain instructions.

Appendix C

Materials & Workmanship



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D
Groundwork

D20
Excavating and filling

D20 Excavating and filling

To be read with Preliminaries/General conditions

GENERALLY/THE SITE

CLEARANCE/EXCAVATING

DISPOSAL OF MATERIALS

450 WATER

- Generally: Keep all excavations free from water until:
 - Formations are covered.
 - Below ground constructions are completed.
 - Basement structures and retaining walls are able to resist leakage, water pressure and flotation.
- Drainage: Form surfaces of excavations and fill to provide adequate falls.
- Removal of water: Provide temporary drains, sumps and pumping as necessary. Do not pollute watercourses with silt laden water.

FILLING

510 HAZARDOUS, AGGRESSIVE OR UNSTABLE MATERIALS

- General: Do not use fill materials which would, either in themselves or in combination with other materials or ground water, give rise to a health hazard, damage to building structures or instability in the filling, including material that is:
 - Frozen or containing ice.
 - Organic.
 - Contaminated or noxious.
 - Susceptible to spontaneous combustion.
 - Likely to erode or decay and cause voids.
 - With excessive moisture content, slurry, mud or from marshes or bogs.
 - Clay of liquid limit exceeding 80 and/or plasticity index exceeding 55.
 - Unacceptable, class U2 as defined in the 'Specification for highway works', clause 601.

520 FROST SUSCEPTIBILITY

- General: Except as allowed below, fill must be non frost-susceptible as defined in the 'Specification for highway works', clause 801.8.
- Test reports: If the following fill materials are proposed, submit a laboratory report confirming they are non frost- susceptible:
 - Fine grained soil with a plasticity index less than 20%.
 - Coarse grained soil or crushed granite with more than 10% retained on a 0.063 mm sieve.
 - Crushed chalk.
 - Crushed limestone fill with average saturation moisture content in excess of 3%.
 - Burnt colliery shale.
- Frost-susceptible fill: May only be used:
 - At depths below the finished ground surface greater than: 450 mm.
 - Within the external walls of buildings below spaces that will be heated. Protect from frost during construction.
 - Where frost heave will not affect structural elements.

535 COMPACTION GENERALLY

- General: Compact fill not specified to be left loose as soon as possible after placing.
- After compaction: Surface of each layer must be well closed, showing no movement under compaction plant, and without cracks, holes, ridges, loose material and the like.
- Defective areas: Remove and recompact to full thickness of layer using new material.

550 GEOTEXTILE SHEET

- Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
- Type: Contractor's choice.
- Polymer type: Contractor's choice.
- Recycled content: None permitted.
- Jointing: 300 mm overlap.
- Preparation of subgrade: Before laying sheet, remove humps and sharp projections. Fill hollows.
- Protect from:
 - Exposure to light.
 - Contaminants.
 - Materials listed as potentially deleterious by geotextile manufacturer.
 - Wind uplift.

610 COMPACTED FILLING FOR LANDSCAPE AREAS

- Fill: Material capable of compaction by light earthmoving plant.
- Filling: Layers not more than 200 mm thick. Lightly compact each layer to produce a stable soil structure.

617 TYPE 1 UNBOUND MIXTURE

- Fill: To 'Specification for highway works', clauses 801 and 803:
 - Crushed rock (other than argillaceous rock).
 - Coarse crushed concrete aggregate.
 - Recycled aggregates.
 - Crushed non-expansive slag to clause 801.2.
 - Well-burned non-plastic colliery shale.
- Amendments to requirements in the 'Specification for highway works': None.
- Filling: To 'Specification for highway works', clause 802.

620 SUBGRADE IMPROVEMENT LAYER (CAPPING)

- Fill: To 'Specification for highway works', Table 6/1, Class 6F1 or 6F2.
- Filling: Place and compact to MCHW Volume 1: 'Specification for highway works' (SHW), Table 6/1, clause 612 and clause 613.3, 613.9 and 613.10.

730 BLINDING

- Surfaces to receive sheet overlays or concrete:
Blind with:
 - Concrete where shown on drawings; or
 - Sand, fine gravel, or other approved fine material applied to fill interstices.
Moisten as necessary before final rolling to provide a flat, closed, smooth surface.
- Sand for blinding: To BS EN 12620, grade 0/4 or 0/2 (MP).
- Permissible deviations on surface level: +0/-25 mm..

E

In situ concrete/Large precast concrete

E30
Reinforcement for in situ concrete

E30 Reinforcement for in situ concrete

- 30 FABRIC REINFORCEMENT FOR TANK BASE SLAB & PATHWAYS
- Standard: To BS 4483.
 - Strength grade: B500B.
- 40 CONDITION OF REINFORCEMENT
- At time of placing concrete: Free from corrosive pitting, loose mill scale, loose rust and contaminants which may adversely affect the reinforcement, concrete, or bond between the two.
- 70 FIXING REINFORCEMENT
- Standard: To BS 7973-1 and -2.
 - Installation: Provide adequate support, tie securely and maintain the specified cover.
 - Tying wire: 16 gauge black annealed. Prevent intrusion into the concrete cover.

Q

Paving/Planting/Fencing/Site furniture

Q10

Kerbs/ edgings/ channels/ paving accessories

Q10 Kerbs/ edgings/ channels/ paving accessories

To be read with Preliminaries/General conditions.

TYPES OF KERBS/EDGINGS AND CHANNELS

- 110 PROPRIETARY PRECAST CONCRETE KERBS, EDGINGS, CHANNELS
- Standard: To BS EN 1340.
 - Manufacturer: Contractor's choice.
 - - Product reference: Contractor's choice.
 - Recycled content: Submit proposals.
 - Designations:
 - CS2 Channel, square;
 - EF Edging, flat top;
 - BN Kerb, bullnosed; and
 - HB2 Kerb, half battered.
 - Size (width x height x length): 50 x 150 x 915 mm, 125 x 150 x 915 mm, 150 x 125 x 915 mm, 255 x 1125 x 915 mm .
 - Special shapes:
 - Dropper kerbs DL1 and DR1 to footway crossings;
 - Internal angle BNIA;
 - Internal angle HBIA;
 - External angle BNXA; and
 - External angle HBXA.
 - Finish: As cast.
 - Colour: Grey.
 - Bedding: As Drawing 032-PEV-XX-00-DR-B-1201 .
 - Joints generally: Dry, 2-3 mm gap.
 - Sealant movement joints: -.
 - Accessories: None.

ROADS/PAVING ACCESSORIES/MARKING

- 390 ROAD MARKING (LIGHT DUTY)
- Manufacturer: Contractor's choice .
 - Product reference: Contractor's choice .
 - Colour: As Shown on Drawing 032-PEV-XX-00-DR-B-1200 .
 - Surfaces to receive markings: Clean and dry, loose material removed.
 - Application: Uniform, with no streaks or ragged edges.

LAYING

510 LAYING KERBS, EDGINGS AND CHANNELS

- Cutting: Neat, accurate and without spalling. Form neat junctions.
 - Long units (450 mm and over) minimum length after cutting: 300 mm.
 - Short units minimum length after cutting: The lower of one third of their original length or 50 mm.
- Bedding of units: Positioned true to line and levelled along top and front faces, in a mortar bed on accurately cast foundations or on a race of fresh concrete.
- Securing of units: After bedding has set, secured with a continuous haunching of concrete or on a race of fresh concrete with backing concrete cast monolithically.

520 ADVERSE WEATHER

- Conditions: Do not construct if the temperature is below 3°C on a falling thermometer or 1°C on a rising thermometer. Adequately protect foundations, bedding and haunching against frost and rapid drying by sun and wind.

530 CONCRETE FOR FOUNDATIONS, RACES AND HAUNCHING

- Standard: To BS 8500-2.
- Designated mix: Not less than GEN0 or Standard mix ST1.
- Workability: Very low.

600 RADIUS KERBS/CHANNELS

- Usage: Radii of 15 m or less.

610 ANGLE KERBS

- Usage: Internal and external 90° changes of direction.
- Cutting of mitres: Not permitted.

620 ACCURACY

- Deviations (maximum):
 - Level: ± 6 mm.
 - Horizontal and vertical alignment: 3 mm in 3 m.

625 REGULARITY OF PAVED SURFACES

- Maximum undulation of (non-tactile) paving surface: 3 mm.
 - Method of measurement: Under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface).
- Difference in level between adjacent units (maximum):
 - Joints flush with the surface: Twice the joint width (with 5 mm max difference in level).
 - Recessed, filled joints: 2 mm.
 - Recess depth (maximum): 5 mm.
 - Unfilled joints: 2 mm.
- Sudden irregularities: Not permitted.

Q20
Granular sub-bases to roads/ pavings

Q20 Granular sub-bases to roads/ pavings

To be read with Preliminaries/ General conditions.

- 145 PREPARATION AND COMPACTION OF SUBGRADES
- Timing: Immediately before placing sub-base.
 - Soft or damaged areas: Excavate and replace with sub-base material, compacted in layers 300 mm (maximum) thick.
 - Compaction: Thoroughly, by roller or other suitable means, adequate to resist subsidence or deformation of the subgrade during construction and of the completed roads/ pavings when in use. Take particular care to compact fully at intrusions, perimeters and where local excavation and backfilling has taken place.
- 150 SUBGRADES FOR VEHICULAR AREAS
- Preparation and treatment: To Highways Agency 'Specification for highway works', clauses 616 and 617.
- 170 GEOTEXTILE FILTER/ SEPARATOR MEMBRANE BENEATH CAPPING/SUB-BASE
- Manufacturer: Terram.
 - Product reference: Terram 1000.
 - Jointing: 300 mm overlap.
 - Protect from:
 - Exposure to light, except during laying (maximum five hours).
 - Contaminants.
 - Materials listed as potentially deleterious by geotextile manufacturer.
 - Damage, until fully covered by fill.
 - Wind uplift, by laying not more than 15 m before covering with fill.
 - Preparation: Remove humps and sharp projections and fill hollows before laying.
- 200 SUBGRADE IMPROVEMENT LAYER (CAPPING)
- Material: To Highways Agency 'Specification for highway works', table 6/1, Class 6F 5.
 - Standard: Placed and compacted to Highways Agency 'Specification for highway works', table 6/1, clauses 612 and 613.3, 613.8, 613.9, 613.10 and 613.13.
- 210 HIGHWAYS AGENCY TYPE 1 UNBOUND MIXTURE FOR SUB-BASE
- Material: Type 1 unbound mixture to Highways Agency 'Specification for highway works', clauses 801 and 803.
 - Recycled aggregate: Permitted.

211 GRANULAR MATERIAL

- Quality: Of a known suitability for use in sub-bases, free from excessive dust, well graded, all pieces less than 75 mm in any direction, minimum 10% fines value of 50 kN when tested in a soaked condition to BS 812-111 or a resistance to fragmentation of LA50 for the Los Angeles test to BS EN 1097-2, and in any one layer only one of the following:
 - Crushed rock (other than argillaceous rock) or quarry waste with not more binding material than is required to help hold the stone together.
 - Crushed concrete, crushed brick or tile, free from plaster, timber and metal.
 - Gravel or hoggin with not more clay content than is required to bind the material together, and with no large lumps of clay.
 - Natural gravel.
 - Natural sand.
- Filling: Spread and levelled in 150 mm maximum layers, each layer thoroughly compacted.

220 FROST SUSCEPTIBLE GRANULAR MATERIAL

- Definition (non frost susceptible material): To Highways Agency 'Specification for highway works' clause 801.8.
- Depth of frost susceptible material below final surface of paving (minimum): 450 mm.
- Testing: Test materials used if required and supply certificates.

230 PLACING GRANULAR MATERIAL GENERALLY

- Preparation: Loose soil, rubbish and standing water removed.
- Structures, membranes and buried services: Ensure stability and avoid damage.

240 LAYING GRANULAR SUB-BASES FOR VEHICULAR AREAS

- General: Spread and levelled in layers. As soon as possible thereafter compact each layer.
- Standard: To Highways Agency 'Specification for highway works' clause 802.
- At drainage fittings, inspection covers, perimeters and where local excavation and backfilling has taken place: Take particular care to compact fully.

250 LAYING GRANULAR SUB-BASES FOR VEHICULAR AREAS

- General: Spread and levelled.
- Compaction:
 - Timing: As soon as possible after laying.
 - Method: By roller or other suitable means, adequate to resist subsidence or deformation of the sub-base during construction and of the completed paving when in use. Take particular care to compact fully at intrusions, perimeters and where local excavation and backfilling has taken place.

310 ACCURACY

- Permissible deviation from required levels, falls and cambers (maximum):
 - Subgrades:
 - Roads and parking areas: +20 -30 mm.
 - Footways and recreation areas: \pm 20 mm.
 - Sub-bases:
 - Roads and parking areas: \pm 20 mm.
 - Footways and recreation areas: +20 -15 mm.

330 COLD WEATHER WORKING

- Frozen materials: Do not use.
- Freezing conditions: Do not place fill on frozen surfaces. Remove material affected by frost. Replace and recompact if not damaged after thawing.

340 PROTECTION

- Sub-bases: As soon as practicable, cover with subsequent layers, specified elsewhere.
- Subgrades and sub-bases: Prevent degradation by construction traffic, construction operations and inclement weather.

Q21

In situ concrete roads/ pavings/ bases

Q21 In situ concrete roads/ pavings/ bases

To be read with Preliminaries/ General conditions.

TYPES OF PAVING

- 110A UNREINFORCED PAVING (DESIGNATED CONCRETE) FOOTPATHS.
- Subgrade improvement layer: Not required.
 - Compacted thickness: Not applicable.
 - Geotextile filter: Not required.
 - Granular sub-base: Highways Agency Type 1 unbound mixture, as section Q20.
 - Compacted thickness: 150 mm.
 - Concrete: To BS 8500-2.
 - Designation: PAV1.
 - Fibres: Not required.
 - Aggregate:
 - Size (maximum): Contractor's choice.
 - Coarse recycled concrete aggregate: Not permitted.
 - Additional aggregate requirements: None.
 - Consistence class: Contractor's choice.
 - Additional mix requirements: None.
 - Slab thickness (minimum): 150 mm.
 - Finish: Brushed.

GENERAL/ PREPARATION

- 140 READY-MIXED CONCRETE
- Production plant: Currently certified by a body accredited by UKAS to BS EN ISO/IEC 17065 for product conformity certification.
 - Source of ready-mixed concrete: Obtain from one source if possible. Otherwise, submit proposals.
 - Name and address of depot: Submit before any concrete is delivered.
 - Delivery notes: Retain for inspection.
 - Declarations of nonconformity from concrete producer: Notify immediately.
- 145 ADMIXTURES
- Calcium chloride and admixtures containing calcium chloride: Do not use.
- 240 SUB-BASE PREPARATION
- Surface: Sound, free of debris, mud and soft spots, and suitably close textured.
 - Levels and falls: Within specified tolerances:
 - Vehicular areas: ± 20 mm.
 - Pedestrian areas: ± 12 mm.
 - Drainage outlets: +0 to -10 mm of required finished level.
 - Kerbs and edgings: Complete, adequately bedded and haunched, and to required levels.

LAYING CONCRETE

310 TRANSPORTING CONCRETE

- General: Avoid contamination, segregation, loss of ingredients, excessive evaporation and loss of workability. Protect from heavy rain.
- Entrained air: Anticipate effects of transport and placing methods in order to achieve specified air content.
- Placing: Use suitable walkways and barrow runs for traffic over reinforcement and freshly placed concrete.

320 LAYING CONCRETE GENERALLY

- Timing: Place as soon as practicable after mixing and while sufficiently plastic for full compaction. After discharge from the mixer do not add water or retemper.
- Temperature of concrete at point of delivery:
 - In hot weather (maximum): 30°C.
 - In cold weather (minimum): 5°C.
- Cold weather:
 - Do not use frozen materials.
 - Do not place concrete against frozen or frost covered surfaces.
 - Do not place concrete when air temperature is below 3°C on a falling thermometer. Do not resume placing until rising air temperature has reached 3°C.
- Surfaces on which concrete is to be placed: Free from debris and standing water.
- Placing in final position: Place in one continuous operation up to construction joints.
 - Do not place concrete simultaneously on both sides of movement joints.
- Spreading: Spread and strike off with surcharge sufficient to obtain required compacted thickness.
- Adjacent work: Form neat junctions and prevent damage. Keep clean all channels, kerbs, inspection covers, etc.

330 COMPACTING

- General: Fully compact concrete to full depth (until air bubbles cease to appear on the surface) especially around reinforcement, cast-in accessories, into corners and at joints.
- Poker vibrators: Do not use to make concrete flow into position. Do not allow to come into contact with fabric reinforcement.
- Wet formed joint grooves: Rectify any irregularities by means of a vibrating float.
- Finish: A dense, even textured surface free from laitance or excessive water.
 - Excess concrete: Remove from top of groove formers.

340 MANHOLE COVER AND GULLY GRATING FRAMES

- General: Set frames in independent concrete slabs placed over, but slightly larger than, exterior of manhole shaft or gully pot and any concrete surround.
- Positioning of joints in main slab: Set out so that manhole/ gully slabs are adjacent to a main transverse joint, wherever possible.
- Joints: Separate the independent slabs from main slabs with 25 mm thick joint filler board. Set board 20 mm below top of slab to form a sealing groove.

350 LEVELS

- Lines and levels of finished surface: Smooth and even, with regular falls to prevent ponding.
- Finished surfaces: Within ± 6 mm of required levels (+6 or -0 mm adjacent to gullies and manholes).

360 SURFACE REGULARITY

- General: Where appropriate in relation to the geometry of the surface, the variation in gap under a 3 m straightedge (with feet) placed anywhere on the surface to be not more than 5 mm.
- Sudden irregularities: Not permitted.

JOINTS

410 JOINTS GENERALLY

- Layout: All joints to be accurately located, straight and well aligned.
- Construction joints made at end of working day: Form as contraction joints.
- Modifications to joint design or location: Submit proposals.
- Temporary support: Prior to concreting, set formwork, dowel bars, tie bars, joint filler boards, sealing groove fillets and the like rigidly in position and support to prevent displacement. Maintain support until concrete has set.
- Keep clean:
 - Do not allow concrete to enter gaps or voids in formwork or to render movement joints ineffective.
 - Do not allow concrete to impregnate or penetrate materials used as compressible joint fillers.

440 LONGITUDINAL CONSTRUCTION JOINTS

- Definition: Longitudinal joints are those parallel to the main axis of the paving.
- Standard: To Concrete Society Technical Report 28.
- Formed groove:
 - Size (minimum width x depth): 15 x 13 mm.
 - Preparation: Repair damaged edges of initially cast slab prior to forming groove.
 - Method: Fix preformed fillet against top edge of the initially cast slab before placing the adjacent slab. Remove when concrete is fully cured.
- Completion: Round upper edges of slabs at joints to 5 mm radius. Do not overwork concrete.

450 CONTRACTION JOINTS WITH SAWN GROOVE

- Standard: To Concrete Society Technical Report 28.
- Temperature: Do not start sawing if temperature is falling.
- Sawn groove:
 - Timing: Cut as early as possible after the slab has been placed but without causing edges of groove to spall.
 - Width (minimum): 3 mm.
 - Depth: 3 mm per 10 mm depth of slab or 50 mm, whichever is the greater.
- Upper portion of joint: Enlarge by sawing a groove:
 - Width (minimum): 13 mm.
 - Depth: 20 mm.

SURFACE FINISH

530 BRUSHED FINISH

- Direction: At right angles to longitudinal direction of the slab..
- Texture depth: Approximately 1 mm with finished surface having an overall even texture.

CURING/ PROTECTION/ FINISHING

610 CURING

- General: Immediately after completion of surface treatment prevent evaporation from surface and exposed edges of slabs for a minimum period of seven days.
- Early curing:
 - Cover with waterproof sheeting held clear of surface. Seal against draughts at edges and junctions.
 - Do not apply sprayed compounds or sheets in direct contact until surface is in a suitable state and will not be marked.
- Coverings for curing: Contractor's choice of:
 - Impervious sheet material.
 - Resin based aluminized curing compound containing a fugitive dye and with an efficiency index of 90% when tested to BS 7542.
 - Sprayed plastics film.

650 COLD JOINT SEALING

- Sealant:
 - Either: To BS 5212-1, type N/A.
 - Or: To BS EN 14188-2, class: C.
 - Provide a manufacturer's certificate of compliance.
- Application: Prepare joints and apply sealant in accordance with BS 5212-2.

660 PROTECTION

- Prevent damage to concrete:
 - From rain, indentation, physical damage, dirt, staining, rust marks and other disfiguration.
 - From thermal shock.
 - In cold weather, from freezing expansion of water trapped in pockets, etc.
 - By use as a building platform or for storing, mixing or preparing materials.

Q22
Asphalt roads/ pavings

Q22 Asphalt roads/ pavings

To be read with Preliminaries/ General conditions.

TYPES OF PAVING

- 110 ASPHALT CONCRETE PAVING TO CAR PARK
- Standard: To BS EN 13108-1.
 - Subgrade improvement layer: Not required.
 - Compacted thickness: Not applicable.
 - Granular sub-base: Highways Agency Type 1 unbound mixture, as section Q20.
 - Compacted thickness: 300mm.
 - Geotextile: Not required.
 - Manufacturer: Not applicable.
 - Product reference: Not required.
 - Base: AC 32 dense base.
 - Paving grade: 100/150.
 - Compacted thickness: 100 mm, nominal.
 - Binder course: AC 20 dense bin.
 - Paving grade: 100/150.
 - Compacted thickness: 60 mm, nominal .
 - Surface course: AC 10 close surf.
 - Paving grade: 100/150.
 - Slip/ Skid resistance: PTV to BS 7976-2 of 49 (water) wet.
 - Compacted thickness: 40 mm, nominal.
 - Reclaimed content:
 - Standard: To BS EN 13108-8.
 - Value (maximum): Surface course 10%, other courses 20%.
 - Surface treatment: Not required.
 - Other requirements: As drawing 032-PEV-XX-00-DR-B-1201.

LAYING

- 310 LAYING GENERALLY
- Preparation: Remove all loose material, rubbish and standing water.
 - Adjacent work: Form neat junctions. Do not damage.
 - Channels, kerbs, inspection covers etc: Keep clean.
 - New paving:
 - Keep traffic free until it has cooled to prevailing atmospheric temperature.
 - Do not allow rollers to stand at any time.
 - Prevent damage.
 - Lines and levels: With regular falls to prevent ponding.
 - Overall texture: Smooth, even and free from dragging, tearing or segregation.
 - State on completion: Clean.
- 330 LEVELS
- Permissible deviation from the required levels, falls and cambers (maximum): In accordance with BS 594987, clause 5.2.

COMPLETION

- 390 DOCUMENTATION
- Standard: BS EN 13108-1.
 - Declaration of conformity: Submit.
 - Number of copies: 1.
Submission: Two weeks after request.

Q41 Barriers/ guardrails

To be read with Preliminaries/ General conditions.

TYPES OF BARRIERS/ GUARDRAILS

- 240 HANDRAIL SYSTEMS TO STEPS TO STORES
- System manufacturer: Kee Kamp Systems.
 - Material: Cast iron.
 - Cross-section: 42.4mm OD.
 - Finish: Galvanised.
 - Height above ground surface (to upper surface of handrail):
 - Upper handrail: Between 900 mm and 1000 mm .
 - Lower handrail: 600 mm .
 - Accessories: None.

PERFORMANCE/ INSPECTION/ TESTING

INSTALLATION

- 420 ALIGNMENT
- Erection: Fences/ barriers to present a flowing alignment. Tops of posts to follow ground profile.
 - Tolerance: ± 30 mm of prescribed alignment and, within any 10 m length, ± 15 mm from the straight or required radius.
- 430 ERECTION GENERALLY
- Protection: Coat all internal and external surfaces of aluminium and steel posts below and up to 150 mm above ground level, with two coats of bituminous paint to BS 6949 type 2, unless other applied surface finish is specified.
 - Prevention of electrolytic corrosion: Isolate dissimilar metals.
 - Steel components: Do not drill, cut or weld after galvanizing.
- 490 DAMAGE REPAIR TO GALVANIZED SURFACES
- Areas of repair: Minor damage, including fixings and fittings.
 - Total area of repair not to exceed 0.5% of total surface area.
 - Each area not to exceed 1000 mm².
 - Renovation: Use low melting point zinc alloy repair rods or powders or at least two coats of zinc-rich paint to BS 4652.

COMPLETION

- 900 DOCUMENTATION
- Contents:
 - General product information.
 - Installation information.
 - Inspection and maintenance reports.
 - Number of copies: 1.
 - Submission: Two weeks after request by contract administrator.

Appendix D

Pre-Construction Information Pack

See Separate Document

