# National Asset Delivery

# Technical Surveys and Testing

# Works Information for

# 605788-P-002

# Area 14 Coring and the Dynamic Cone Penetrometer Surveys

# CONTENTS AMENDMENT SHEET

| Amend. No. | Revision No. | Amendments | Initials | Date |
|---|---|---|---|---|
| 0 | 0 | Original version issued with tender | LY | 07/04/20 |
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# 1 DESCRIPTION OF THE WORKS

## 1.1 Project objectives

The principle objective of this project is assessing the condition of the existing pavement and to determine its construction to support the development of treatment options for scheme works. The survey work consists of pavement investigation across the 13 individual sites as detailed in the site information and as shown on the location plans provided with the contract documents.

1.1.1 The specification that applies to the *works* is included in Section 6

## 1.2 Scope of works

1.2.1 The *works* to be provided under this contract are:

| Category | Survey Description |
|---|---|
| Pavement | Pavement coring, test pits and material testing in accordance with HD 29/08 |
| Pavement | Dynamic Cone Penetrometer (DCP) pavement foundation test in accordance with HD 29/08 |



## 1.3 Deliverables

1.3.1 The *Contractor* is required to produce the following deliverables:

(1) A report inclusive of;

- stating date of survey, weather conditions, and testing procedures.
- A plan demarcated with the test point locations.
- A table showing a GIS location plan of road cores and table with the following column headings;
  - Core reference,
  - HAPMS chart section and chart section chainage,
  - Lane 1,2 etc. and offset from centre of lane, e.g. NS 0.2m, OS 0.1m
  - OSGR coordinates
  - Depth of bituminous material
  - Depth of hydraulically bound material
  - Depth of potential tar bound material
  - Interpreted foundation CBR from DCP survey data

(2) Records of road cores mapped against Highways England HAPMS chart sections and chainage, detailing materials and construction

depths including photographs of extracted cores as per the example in HD29/08 Figure 7.1.

(3) All cores to be GPS referenced and provided with OSGR Easting and Northing coordinates.

(4) Road core records to be supplemented with a general description of surface condition as per HD29/08 Table 3.1: HVS Carriageway Defects, and a photograph of the surface condition.

(5) Provide documentation DCP test records, logged with associated core. Interpreted of CBR value, and foundation classification based on HD 73/06.

## 2 EXISTING INFORMATION

2.1.1 Refer to the site information for details of existing site conditions including ground conditions, limitation on access, position of existing structures etc.



| Drawing Number | Title | Revision / Date |
|---|---|---|
| 605788-P-001-01 | A1 (M) J56-58 NB & SB | |
| 605788-P-001-02 | A1 (M) J60 Climb Ln - 61 (pavement) | |
| 605788-P-001-03 | A1 (M) Washington J64 NB entry | |
| 605788-P-001-05 | A1 East Ord - Scremerston | |
| 605788-P-001-06 | A1 Lobley Hill - Dunston | |
| 605788-P-001-07 | A1 Newton on the Moor - West Cawledge | |
| 605788-P-001-08 | A1 Purdy Lodge - Buckton | |
| 605788-P-001-09 | A1 Wandylaw - Purdy Lodge | |
| 605788-P-001-10 | A19 Holystone to Silverlink NB & SB | |
| 605788-P-001-11 | A19 Moor Farm – K'worth NB & SB | |
| 605788-P-001-13 | A66M EB & WB | |
| 605788-P-001-14 | J59 NB Exit slip | |
| 605788-P-001-15 | A1 Felton - Newton-on-the-Moor NB | |

## 3 CONSTRAINTS ON HOW THE CONTRACTOR PROVIDES THE WORKS

### 3.1 General

3.1.1 The *Contractor* Provides the Works in such manner as to minimise the risk of damage or disturbance to or destruction of third party property.

3.1.2 The *Contractor* complies with the constraints and meets with the requirements outlined in Appendix 1.

3.1.3 The *Contractor* submits information detailing how the *Contractor* will provide the Works to the *Employer* prior to the *works* commencing. This information will include any lifting plans, risk assessments, method statements, the *Contractor's* staff training information and any other relevant Health and Safety requirements.

## 3.2 Working hours & site specific constraints

3.2.1 The *Contractor's* working hours for site works shall be 20.00 - 06.00 hours.

(1) The temporary traffic management arrangements provided by the *Employer* for the use of the *Contractor* to Provide the Works, including timing and duration, as stated in Section 4.1.6.

(2) The traffic management working window is 20:00hrs for earliest start of installation and removal of last cone by 06:00hrs. Late or early removal of traffic management or alteration to the length of closure may occur subject to the recorded on-site traffic flow.

(3) The *starting date* is 01/06/2020 and *completion date* 31/12/2020 is as stated in the Contract Data.

(4) The sequencing of works is as per the table in Section 4.1.6.

(5) The programme duration has been estimated based upon an output of 30 collected road cores/shift for lane closure, and 15cores/shift for traffic light traffic management set ups in order to complete by the end date. The contractor is expected to increase plant and labour resource accordingly to meet the constraint.

(6) The Contractor should consider and increase resource where achievable to reduce programme and associated traffic management costs.



## 3.3 Health, Safety and Environment & Risk Management

Health and Safety requirements

3.3.1 In Providing the Works the *Contractor* meets the requirements of Annex 2 of the supplementary constraints in relation to health and safety duties.

3.3.2 The *Contractor* shall comply with the requirements of Highways England's safety passport scheme and ensure that all of his employees, and any of his subcontractor's, are registered in accordance with the implementation of the scheme. Details on the scheme can be found here: http://www.highwayssafetyhub.com/safety-passport.html

3.3.3 For details of the CDM duty holders, refer to the pre-construction information which can be found on Bravo with the filename CDM PCI - 605788-P-001_Area14-Coring&DCP.

3.3.4 Before commencing the construction phase of the *works*, the *Contractor* confirms to the *Employer* that adequate welfare facilities are in place. Where the facilities detailed in section 5 are not deemed adequate, the *Contractor* provides all necessary facilities to Provide the Works and to comply with the minimum requirements set out in HSE guidance document L153.

Environmental requirements

3.3.5 In Providing the Works the *Contractor* meets the requirements of Annex 2 of the supplementary constraints in relation to environmental duties.

Risk Management

3.3.6 The *Contractor* identifies, manages and mitigates risks in accordance with the principles of ISO31000.

3.3.7 The *Contractor* submits a risk register, which captures all risks associated with the delivery of the *works* including those identified by the *Employer*, with his tender and maintains it for the contract period.

## 4 REQUIREMENTS FOR THE PROGRAMME

4.1.1 The *Contractor* submits programme to the *Employer* with his tender.

4.1.2 The *Contractor* Provides the Works taking into account the following programme constraints:

(i) the *starting date* and *completion date* and any post site works, reporting and review period

(ii) The services and other things provided by *Employer* (see Section 5)

(iii) Weekly progress report to be submitted via e-mail to [redacted]

(iv) The traffic management is to be supplied by the M&R Contractor CHC. All works are to adhere to the programme and traffic management provided.

(v) The coring and DCP survey reports are to be returned to the Client within 15 days of the completion of the associated site activity.

(1) The laboratory test data is to be returned to the Client within 45 days of the completion of the associated site activity.

4.1.3 The programme should be in the form of an activity and time related bar chart, produced as a result of a critical path analysis.

4.1.4 The programme should preferably be provided in either a PDF or MS Excel format and cover the full contract period including post site activities. Activities should be clearly defined and named and the programme should detail the following:

(i) dates and times associated with the project, including the *starting date*, *completion date* & *Contractor's* planned completion, and any other dates or times that will specifically impact the delivery of the project
(ii) activities associated with delivering the project

4.1.5 The *Contractor* updates the programme every week. The *Contractor* submits an updated programme to the *Employer* upon request.

## 5 SERVICES AND OTHER THINGS PROVIDED BY THE EMPLOYER

5.1.1 The following temporary traffic management will be provided by the *Employer* to allow the *Contractor* to Provide the Works:

Temporary traffic management is to be provided by the Highways England M&R Contractor, CHC.

(1) TM shall not to be implemented prior to the hour of 20:00 nor removed later than 06:00hrs. Late or early removal of traffic management or alteration to the length of closure may occur subject to the recorded on-site traffic flow.

(2) Refer to the table below for proposed traffic management.

| Drawing Number | Location | Survey Length (m) | Proposed TM | Max TM Length | Priority |
|---|---|---|---|---|---|
| | **North Area** | | | | |
| **605788-P-001-07** | A1 Newton on the Moor - West Cawledge | 10200 | Lane closure | 4km | **1** |
| **605788-P-001-15** | A1 Felton – Newton on the Moor | 6100 | Lane closure | 4km | **2** |
| **605788-P-001-08** | A1 Purdy Lodge - Buckton | 19000 | Traffic lights | 500m | **3** |
| **605788-P-001-09** | A1 Wandylaw - Purdy Lodge | 13380 | Traffic lights | 500m | **4** |
| 605788-P-001-11 | A19 Moor Farm - K'worth NB & SB | 11200 | Lane closure | 4km | **5** |
| **605788-P-001-10** | A19 Holystone to Silverlink NB & SB | 9800 | Lane closure | 4km | **6** |
| **605788-P-001-06** | A1 Lobley Hill - Dunston | 3200 | Lane closure | 4km | **7** |
| **605788-P-001-05** | A1 East Ord - Scremerston | 3250 | Traffic lights | 500m | **8** |
| | | | | | |
| | **South Area** | | | | |
| **605788-P-001-01** | A1 (M) J56-58 NB & SB | 48800 | Lane closure | 4km | **1** |
| **605788-P-001-02** | A1 (M) J60 Climb Ln - 61 (pavement) | 19000 | Lane closure | 4km | **2** |
| **605788-P-001-13** | A66M EB & WB | 6540 | Lane closure | 4km | **3** |
| **605788-P-001-14** | A1 (M) J59 NB Exit slip | 440 | Road closure | 440m | **4** |
| **605788-P-001-03** | A1 (M) Washington J64 NB entry | 691 | Road closure | 691m | **5** |

5.1.2 The other things that will be provided by the *Employer* are as follows:

(1) Mobile welfare facilities (including water and electricity) are to be provided by the M&R Contractor, CHC. The facilities are to be provided for the entirety of the works.

## 6 SPECIFICATION FOR THE WORKS

6.1.1 The *Contractor* shall undertake the works in accordance with:

- Laboratory testing to be undertaken by organisations holding UKAS accreditation to ISO/IEC 17025:2005, General requirements for the competence of testing and calibration laboratories.
- Core logs are to be extracted by core cutting method in accordance with BS EN 12697-27:2001 and BS EN 12504-1:2009 and to be documented in accordance with the requirements of the DMRB HD 29/08.
- 150mm diameter coring of bituminous pavements at locations specified.
- Reinstatement of extracted core holes with a cold laid asphalt reinstatement material. A cold applied bitumen emulsion spray is to be applied to existing surfaces to provide a bond the to the reinstatement material. Compaction shall be achieved by placing material in layers no deeper than 200mm and utilising a heavy duty vibratory hammer with a 150mm compaction foot.
- All collected core samples are to be tested for the presence of PAH by the spray application of PAK marker.
- PAH testing to be undertaken on 1:10 samples that have been identified as having presence of tar by PAK marker.
- Lab testing for surface course to determine needle penetration at 25°C in accordance with BS EN 1426:2015, and softening point, to be ring and ball method in accordance with BS EN 1427:2015, is to be undertaken from 1:10 samples collected from road cores with a hot rolled asphalt surface material only.
- Lab testing for binder course material to determine needle penetration at 25°C in accordance with BS EN 1426:2015; and softening point, to be ring and ball method in accordance with BS EN 1427:2015, is to be undertaken from 1:10 samples
- Lab testing to determine stiffness of binder course material to be ITSM (IT-CY) to BS EN 12697-26:2018.
- Determination of Air Voids Content to be in accordance with BS EN 12697-8
- Additional cores should be taken through potential structural defects as identified on site by the surveyor. Cores to be taken through the defect area and the sound area carriageway adjacent to the defect for reference. Defect photographs to be provided with the additional core.
- All cold laid bituminous material for reinstatement to be BBA approved and hold current HAPAS certification and be approved for use on the Highways England Strategic Road Network.

- Dynamic cone penetrometer testing is to be undertaken at a frequency of 1 in every 5 cores, within each route.
- Determine of the foundation strength by dynamic cone penetrometer testing is to be undertaken and recorded as per the guidance laid out in HD 29/08 and IAN 73/06.
- Road coring is to be suspended over structures to avoid damage to waterproofing layer. The Contractor should ascertain of the location of all structures prior to commencement of coring activity. Highways England shall provide the OSGR location of all structures within the extent of works to the TS Contractor.
- Coring and DCP on highway pavements must always be carried out in accordance with Health and Safety legislation and with appropriate traffic management in accordance with the Traffic Signs Manual Chapter 8.
- Refer to the table below for Coring spacing and lab testing requirement.
- Lab testing schedule is subject to change following collection of cores and condition of samples. The requirement in the table below is indicative. Actual requirement to be agreed by Client in conjunction with the testing lab.



| Drawing Number | Location | Core Spacing (m) | ITSM | Voids | Pen+SP |
|---|---|---|---|---|---|
| 605788-P-001-01 | A1 (M) J56-58 NB & SB | 100 | 10 | | 50 |
| 605788-P-001-02 | A1 (M) J60 Climb Ln - 61 (pavement) | 100 | | | |
| 605788-P-001-03 | A1 (M) Washington J64 NB entry | 30 | | | |
| 605788-P-001-05 | A1 East Ord - Scremerston | 100 | | | |
| 605788-P-001-06 | A1 Lobley Hill - Dunston | 100 | | | 10 |
| 605788-P-001-07 | A1 Newton on the Moor - West Cawledge | 50 | | | |
| 605788-P-001-08 | A1 Purdy Lodge - Buckton | 50 | | | |
| 605788-P-001-09 | A1 Wandylaw - Purdy Lodge | 50 | | | |
| 605788-P-001-10 | A19 Holystone to Silverlink NB & SB | 100 | | | |
| 605788-P-001-11 | A19 Moor Farm – K'worth NB & SB | 100 | | | |
| 605788-P-001-13 | A66M EB & WB | 100 | 5 | 10 | |
| 605788-P-001-14 | J59 NB Exit slip | 20 | | | |
| 605788-P-001-15 | A1 Felton – Newton on the Moor | 100 | 10 | 20 | |