National Asset Delivery
Technical Surveys and Testing

Works Information for HE607428 - A1 NB/SB Newark to Carlton on Trent – Pavement Development – Cores and DCP

CONTENTS AMENDMENT SHEET

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TABLE OF CONTENTS

1 Description of the works 4
2 Exisiting Information 7
3 Constraints on how the Contractor Provides the Works 8
4 Requirements for the programme 10
5 Services and other things provided by the *Employer* 11
6 Specification for the works 13

LIST OF ANNEXES

Appendix 1 Supplementary Constraints

1 DESCRIPTION OF THE WORKS

1.1 Project objectives

The principle objective of this project is to undertake Coring and Dynamic Cone Penetrometer (DCP), Pak marker testing and the potential for additional PAH testing, and ITSM testing at the locations stated in HE607428-KIER-HPV-A1-ML-A-SH-CH-01 & HE607428-KIER-HPV-A1-ML-B-SH-CH-01 schedules and plans and provide subsequent reports and testing in accordance with the requirements detailed in the specification.

Maximum of 20 (10no NB & 10no SB) Concrete compressive strength testing of cores at location of PQC. Location to be determined by the contractor. Results to be part of the pavement report.

All works are programmed to be carried out in 8no. shifts from 21/04/21 to 01/05/21 between 21:00-06:00.

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:

(1) Attendance at a pre-start meeting – date to be confirmed

(2) Coring and DCP

(3) Pak marker testing

(4) Reinstatement of core holes

(5) Subsequent potential testing for PAH or WAC Criteria

(6) Indirect tensile stiffness modulus *test* (ITSM) testing to binder course layer

(7) Storage of cores

(8) Disposal of cores

(9) Coring backfill requirements:

- Fully flexible – Cold asphalt
- Flexible composite – Quick set concrete with at least 180mm asphalt on top
- Rigid with no asphalt surfacing - Quick set concrete
- Rigid with asphalt surfacing - Quick set concrete at least 180mm asphalt on top

(10) Note all cold asphalt is to be compacted mechanically with a Kango.

1.3 Deliverables

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

Coring

(1) Core logs should at least contain following information:

(2) Core Number

(3) Core Location (chart section, section chainage, marker post, position of core, lane, traffic direction, GPS coordinates)

(4) Total core thickness

(5) Thickness of each individual layer

(6) Any missing layers

(7) Material description of each individual layer

(8) Condition of each individual layer (e.g. intact, voided, disintegrated, cracked, etc.)

(9) Condition of the bonding between layers

(10) Aggregate type of each individual layer

(11) PAK-marker result of each individual layer as a positive or negative reaction

(12) Nature of the material at the bottom of the core hole (e.g. crushed stone, gravel, etc.)

(13) Photographs from a minimum of two angles

(14) Photograph of the top of the core showing the surfacing

(15) Photograph of core hole

(16) All the cores should be kept for 12 months from the date of receipt of the core log for potential further required testing. They should be kept in the appropriate temperature and moisture content as per the standard laboratory practices.

(17) All details are to be provided within a month of undertaking the surveys and supplied in electronic format. And kept by the contractor for a period of 1 year from the date of the original submission.

PAH test requirements

(18) Following the Pak marker testing the designer may request subsequent testing for Tar bound materials PAH 17 (USEPA 16 + Coronene) + Leachable Phenol (in line with the Adepts guidance "Managing Reclaimed Asphalt - Highways and pavements).

ITSM Testing

(19) ITSM tests to be carried out to the Binder layer of the cores as indicated in HE607428-KIER-HPV-A1-ML-A-SH-CH-01 & HE607428-KIER-HPV-A1-ML-B-SH-CH-01 schedules and plans.

Dynamic Cone Penetrometer (DCP)

(20) DCP result should at least contain following information:

(21) DCP Number (same as the corresponding core number)

(22) Location (same as coring requirements)

(23) Hole depth below ground surface

(24) Thickness of disturbed material (where applicable)

(25) Layer thickness

(26) Accumulated No. of blows

(27) Strength (mm/blow)

(28) Calculated CBR

(29) CBR graph

Pavement report

(30) The report should contain the residual life of the concrete pavement (PQC) at sections 3000A1/146, 3000A1/147 on the A1 northbound, and sections 3000A1/148, 3000A1/139, 3000A1/137 on the A1 southbound.

(31) Treatment to allow a 5-year design and 20-year design with no required maintenance within these time frames. The design shall be an inlay proposal.

(32) Technical details and calculations to justify and support the treatments proposed for both 5 and 20 year life.

(33) The *Contractor* is to utilise the Core and DCP data, GPR data, FWD data, TSD data, concrete compressive strength test results, ITSM to include the interpretation of raw data to arrive at the required solutions.

(34) The required Data will be provided by Kier Highways, liaise with Adrian McGarry (Adrian.McGarry@kier.co.uk)

(35) The pavement report should be undertaken in accordance with CD 226

(36) The pavement Report should contain the results from the compressive concrete strength testing.

1.3.2 The *Contractor* shall provide the results of the surveys in the format as detailed in requirement 6.1.2 of this document.

2 EXISTING INFORMATION

2.1.1 The Drawings listed below apply to this contract.

2.1.2 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
HE607428-KIER-GEN-A1-ML-Z-DE-CH-0000-01	Location Plan	P1
HE607428-KIER-HPV-A1-ML-A-SH-CH-01 A1 Northbound Schedules and Plans	A1 NB/SB Newark to Carlton on Trent Pavement - Coring/DCP/GPR/FWD/Deflectograph Schedule and Plan	-
HE607428-KIER-HPV-A1-ML-B-SH-CH-01 A1 Southbound Schedules and Plans	A1 NB/SB Newark to Carlton on Trent Pavement - Coring/DCP/GPR/FWD/Deflectograph Schedule and Plan	-
HE607428-KIER-VUT-A1-ML-Z-DR-Z-2700-01 to 05	Existing Utilities Layout sheet	P1

Table 1: Scheme Drawings

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 21:00 to 06:00 Monday to Friday.

3.2.2 Refer to environmental assessment

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 constraint's 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 here HE607428-KIER-GHS-A1_ML_Z-HS-ZS-02 Pre-Construction Information.

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* (21/04/2021) and *completion date* (01/05/2021) and any post site works, reporting and review period

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

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
(iii) Key dates for co-ordination with Others

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:

Assumed traffic management for this is as follows;

- Full closure of the A1 northbound carriageway between A1/A46 Newark on Trent to A1/A57/A614 Apleyhead - dates on site NB 27/28/29/30 April.
- Full closure of the A1 southbound carriageway between A1/A57/A614 Apleyhead to A1/A46 Newark on Trent - dates on site SB 21/22/23/26 April.
- Full Closures of the slip roads

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

- Welfare facilities will be provided by the Principal Contractor (the TM provider).
- Desktop search for utility information (Type D) survey. This information will be provided to the contractor at the pricing stage. The contractor is not required to send out for this information again.

6 SPECIFICATION FOR THE WORKS

6.1.1 The *Contractor* shall undertake the works in accordance with National AD Technical Surveys & Testing contract documentation as well as the additional requirements:

6.1.2 Coring Surveys in accordance with CS229 section 6 and reinstatement in accordance with Series 900 of MCHW

6.1.3 Dynamic Cone penetrometer in accordance CS229 Section 6

6.1.4 PAH 17 (USEPA 16 + Coronene) + Leachable Phenol (in line with the Adepts guidance “Managing Reclaimed Asphalt - Highways and pavements).

6.1.5 The compressive strength testing (CST) of the concrete materials are to be determined in accordance with BS EN12504-1 and BS EN 12390-1, 3 and 7. Guidance on obtaining the compressive strength from cores is given in Series 1000 of MCHW.