National Asset Delivery
Technical Surveys and Testing

Works Information for 603636 – M5 Bathpool Canal MP 205/5 - Deck Refurbishment Scheme – Trial holes

CONTENTS AMENDMENT SHEET

Amend. No.	Revision No.	Amendments	Initials	Date
0	0	Original version issued with tender	ET	27/01/21

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1 DESCRIPTION OF THE WORKS

1.1 Project objectives

1.1.1 The principle objective of this project is to undertake trial holes on the structure at locations shown on drawing HE603636-KIER-VGN-M5_BR_1852-SK-CB-0101. The purpose of the trial holes is to confirm the following:

i. The detail at the end of the deck ends to confirm there is no metal plate and no real requirement for a bridge joint as shown on the as-built drawings.

ii. Construction depths in the carriageway and central reservation. The slot trenches in the CR are being completed to confirm the location of the service ducts. Note, no trial holes should be completed in the concrete verges as this is constructed with structural concrete which makes up part of the structures edge beam/deck.

iii. Location, type, number and size of buried services in the central reservation. This should include taking measurements to allow ducts/cables to be located during the main works and confirm depth of cover above the duct.

iv. Provide comments on the condition of the existing waterproofing material and whether or not it is still bonded to the bridge deck.

v. Carry out PAK testing on the surfacing material on each carriageway at both ends of the structure. If PAK tests return positive for tar bound material then further samples should be taken so a PAH analysis can be carried out as stated in the specification (section 6).

vi. PAK tests should also be completed on the bitumen based waterproofing material located on the southbound carriageway bridge deck. If PAK tests show positive for tar bound material then further samples should be taken so a PAH analysis can be carried out as stated in the specification (section 6).

1.1.2 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) The objectives of the survey are to be achieved by excavating a number of trial holes in the northbound and southbound carriageway and central reservation.

(2) Depth measurements should also be taken in each of the trial holes and measurements to a fixed reference point (e.g. joint, kerb, parapet edge beam, etc.) should be taken so the trial hole locations can be accurately mapped on scheme drawings transversally and longitudinally.

(3) Currently there is TM in place on the hard shoulders with 3 ‘narrow’ lanes running in each direction as part of the M5 Queue detection

scheme. If survey works happen whilst this TM is in place, the survey contractors may need to coordinate with the Principal Contractor for the scheme.

(4) There are a number of services in the area including:

i. Motorway communication cables located in the southbound carriageway verge.

Note, the successful survey contractor should consult with the Principal Contractor of the M5 Queue Detection Scheme during mobilisation to determine if any new services have been installed or existing STATS slewed/relocated as part of the works but not yet noted on the STATS returns.

For details of current services refer to drawing HE603636-KIER-SBR-M5_BR_1852-DR-CB-010003

(5) PAK testing should be completed as per the details in Section 6 – Specification for works and section 1.1.1.

(6) As the proposed trial holes are being completed in the carriageway, the contractor is to ensure that on completion of the investigation works all trial holes are reinstated with suitable material before the TM is removed. Trial holes should be infilled with Hot HRA material brought to site in a hot box as the reinstated areas will be trafficked. The trial holes in the Central reservation shall be reinstated with cold lay material or concrete on completion.

1.3 Deliverables

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

(1) The contractor is to provide detailed description and geometrical dimensions of the trial pits and the location to a suitable fixed reference point (barrier, parapet edge beam, bridge joint etc.) as detailed in section 6 – specification

(2) A general comment on the condition of the waterproofing should be logged including the depth of surfacing.

(3) The exact location of the duct/stats in the CR should be identified including:

i. Diameter
ii. Colour
iii. Number of ducts
iv. Depth
v. Distance from parapet edge beam or other fixed reference point.
vi. Photos (File to be named with location of taken photograph)
vii. Sketches
viii. Type of material excavated (concrete, surfacing material etc.)

(4) The contractor should complete PAK tests on a minimum of 4 surfacing samples on both carriageways. If positive, additional samples should be taken so a PAH analysis can be carried out in a laboratory.

(5) The contractor should complete PAK tests on a minimum of 4 waterproofing samples on the southbound carriageway. If positive, additional samples should be taken so a PAH analysis can be carried out.

2 EXISTING INFORMATION

2.1.1 Expected depths of excavation

(1) There are no existing trial hole logs for this structure. However, as-builts show that carriageway surfacing is approximately 100 - 120mm depth. The concrete infill in the central reservation is approximately 195mm depth with approximately 95mm of cover over the duct

2.1.2 Anticipated existing services

(1) Motorway Communication cables located in the Southbound carriageway verge

Note, the successful survey contractor should consult with the Principal Contractor of the M5 Queue Detection scheme during mobilisation to determine if any new services have been installed as part of the works but not noted on the STATS returns yet.

See drawing HE603636-KIER-SBR-M5_BR_1852-DR-CB-010003 for more information on the existing STATS

The STATS return for the central reservation duct does not show the presence of any cable. However, care should be taken during excavation and the contractor should still operate a permit to dig.

2.1.3 Asbestos

The waterproofing material on the deck has not been tested for asbestos. Records show that the waterproofing was replaced with a Stirling Lloyd product in 2001 on the Northbound carriageway only as part of a maintenance scheme. As-built drawings show that the southbound waterproofing system may still be the original Servi-deck waterproofing system with Servi-Pak protection layer.

Whilst the sealant on the abutment wingwall was sampled as part of a testing regime to complete the 2010 AAP, there is no evidence to suggest that the sealant in the parapet edge beams or running across the concrete footways in the verges have been inspected and/or sampled.

The existing Asbestos information has been made available as part of this TST pack. During excavations if any Asbestos Containing Materials that have

not previously been identified are found, all works shall stop immediately, and the area is to be isolated from the workforce. The contractor must implement the necessary emergency response procedures in line with the company policy.

2.1.4 **Tar**

No PAK testing has been completed previously on the structure. As part of the works, samples should be taken, and PAK tested. If this test shows positive further samples shall be taken for a PAH laboratory analysis

Please note that additional samples shall be taken if different types of material are identified across the carriageway during the survey works.

2.1.5 The Drawings listed below apply to this contract. 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**
HE603636-KIER-SBR-M5_BR_1852-DR-CB-010001	Location Plan	**C1**
HE603636-KIER-SBR-M5_BR_1852-DR-CB-010003	STATS PLAN	C1
HE603636-KIER-VGN-M5_BR_1852-SK-CB-0101	TRIAL HOLE LOCATIONS AND ASBESTOS TESTING	C1

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 are anticipated to be 21:00-05:00, working under a series of lane closures with a temporary speed limit of 50mph. The anticipated working hours are dependent on the carriageway traffic counts.

3.2.2 **Work Constraints**

(1) There is no evidence of the waterproofing material being tested previously for Asbestos. However, evidence suggests that the waterproofing was replaced with a Stirling Lloyd product in 2001 as part of a maintenance scheme on the Northbound Carriageway Only. As-built drawings show that the southbound waterproofing system may still be the original Servi-deck waterproofing system with Servi-Pak protection layer.

(2) The proposed trial holes also involve exposing the steel duct in the central reservation. Whilst the STATS return does not highlight any cables in the central reservation care should still be taken whilst the trial holes are completed, and the area should be CAT scanned and a permit to dig issued prior to the excavation works being completed.

(3) No trial holes should be completed in the concrete verges as this is actually constructed using structural concrete and makes up part of the structures edge beam/deck.

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 When implemented, 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.

3.3.3 For details of the CDM duty holders, refer to the pre-construction information which is included as part of the TST package.

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.

(1) Vegetation within the footprint of the surveys has the potential to support dormice and nesting birds (depending on the time of year the survey works are carried out). Highways England to consult with Kier Ecologist on possible restrictions/constraints once a date is confirmed and clearance levels have been specified.

(2) The area beneath the bridge is likely to be used as a foraging area and commuting route by bat species. Any task lighting used for night working should be focused on the works area only and not allowed to spill onto the surrounding habitat, in particular the canal corridor beneath the bridge.

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. The contractor should refer to the Pre-construction Information and Design Hazard Checklist and Risk Reduction Schedule provided as part of the TST package.

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)

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:

- Adjacent site activities
- When information will be provided back to Highways England

(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 *Contactor* 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:

(1) The Contractor's working hours for site works are anticipated to be 21:00-05:00, working under a series of lane closures with a temporary speed limit of 50mph. The anticipated working hours are dependent on the carriageway traffic counts.

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

(1) Welfare facilities will be provided by the principle contractor.

6 SPECIFICATION FOR THE WORKS

6.1.1 The *Contractor* shall undertake the works in accordance with: MCHW Volume 5, Section 3, Part 4, Chapter 6 'Contract Documents for specialist activities – Ground Investigation – Specification – Pits and Trenches.

6.1.2 Trial Pits - The report should show the following information:

(1) The dates and location of where the trial pits were taken;

(2) Depth and type of material for each layers of material above waterproofing level;

(3) Details of existing buried Statutory Services as detailed in paragraph 1.3.1

(4) Comment on the weather conditions including ambient temperature

(5) Comment on waterproofing condition

(6) Where waterproofing is removed or debonded from the structural deck. The contractor should provide a comment on the condition of the concrete below and highlight any defects.

(7) Photographs should also be provided supporting everything specified above.

(8) Contractor to produce a survey report to clarify the findings of the trial holes, including suitable cross section drawings/sketches to reference for the design and construction. Photos taken during the survey works should be included in this report.

6.1.3 Trial Pit Reinstatement

(1) As the proposed trial holes are to be completed in the northbound and southbound carriageway, all reinstatement must be completed using HRA material. In the Central reservation the contractor should reinstate with concrete. If that is not possible a cold lay material can be used.

(2) Prior to reinstatement the base and sides of the trial pit should be clean of debris and a bitumen based sealant should be applied to all surfaces.

6.1.4 Tar Testing

(1) The contractor is to complete a PAK testing on 4no surfacing samples removed from both carriageways (2no at each end of the deck on each carriageway). If the PAK tests are positive, then further samples should be taken for a PAH analysis to be completed. Results of the PAK and PAH test should be provided on completion

(2) The contractor is to complete a PAK testing on 4no waterproofing samples on the southbound carriageway (2no at each end of the deck). If the PAK tests are positive, then further samples should be taken for a PAH analysis to be completed. Results of the PAK and PAH test should be provided on completion