National Asset Delivery

Technical Surveys and Testing

PIN - 617569

Works Information for - A1 Berwick Electrical Asset & Sign Retroreflectivity Survey

CONTENTS AMENDMENT SHEET

Amend. No.	Revision No.	Amendments	Initials	Date
0	0	Original version issued with tender	JD	12/07/2023

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LIST OF ANNEXES

1 DESCRIPTION OF THE WORKS

1.1 Project objectives

1.1.1 The principle objective of this project is to undertake a full electrical asset survey with the addition of a sign retro reflectivity survey in accordance with CS125 within the site extents shown on drawing 617569 – A1 Berwick TST Electrical & Signs and provide a subsequent report in accordance with the requirements in the specification.

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) To carry out a survey of electrical assets, above and below ground (using cable location tools) and plot their locations using GPS recording devices. Accuracy of underground cable network at carriageway crossings is essential.

(2) To carry out undertake traffic signs retro reflectivity survey in accordance with CS125 as detailed on drawing 617569 – A1 Berwick TST Electrical & Signs

(3) Electrical testing to BS7671

(4) Column visual inspection using GN22 guidance.

1.3 Deliverables

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

(1) An appropriate individual to attend a pre-commencement site inspection and client meeting.

(2) Propose temporary traffic management requirements. Once agreed the client will provide temporary traffic management.

(3) A method statement, programme of works, risk assessment and safety plan for the survey shall be submitted to the client prior to commencement on site

(4) The contractor shall provide all the necessary plant equipment, materials, and labour to carry out all the work.

(5) Provide CAD drawings, PDF copy, & detailed reports within 2 weeks of works being completed on site.

(6) Produce an electrical schematic drawing for feeder pillar 1XR618, 1XR618A, 1XR619 and 1XR619A.

2 EXISTING INFORMATION

2.1.1 The assets are identified on the contract drawing listed in 2.1.2 below.

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
	617569 - A1 Berwick TST Electrical & Signs	-

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 to 06:00 Monday to Friday or as agreed with the traffic management supplier and National Highways.

3.2.2 No specific constraints

3.2.3 TM will be provided with a start date to be agreed on contract award, however September/October are provisional dependant on available road space.

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 National Highways' 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 **Not Used**

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)

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* 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 Traffic management will comprise of verge works and inner and outer ring closure on the roundabout. The TM layouts are not available at tender stage and will be discussed with the contractor at the prestart meeting.

6 SPECIFICATION FOR THE WORKS

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

Underground Lighting Asset Location Survey

The contractor shall use a high precision cable location device with features such as Current Direction and iLOC on the cable locator combined with the versatile Tx Transmitter range to deliver high-precision locations. In addition to the cable location equipment the locations will be recorded using GPS recording equipment capable of accuracy under 30cm.

Sign Retro Reflectivity – CS125

The Contractor shall Provide the Services in accordance with:

Traffic signs retro reflectivity survey in accordance with CS125. All signs to be tested as shown in the provided drawing.

Testing shall be carried out as described in CS125 Para 2.5 to 2.11. The detailed method of measurement as detailed in Appendix A – Measuring the coefficient of retro reflectivity.

6.1.4 The output of the survey should allow to identify the performance classes for each sign tested, as per provided drawing, and it should allow to determine whether part of any sign measured is to be less or more that the relevant intervention level stated in Annex C of CS125.

Electrical Testing

Electrical Testing shall include for Highway Electrical Assets, assets mounted on Structures. Where feeder pillars are shared with the adjoining authority then all circuits require testing.

The testing and inspection of network cables shall be carried out by an electrician who has completed the City and Guilds 2391-50 Initial Verification, Inspection, Testing and Certification of Electrical Installations or equivalent.

The electrical installation shall be tested and inspected in accordance with BS7671 The IET Wiring Regulations and an Electrical Installation Condition Report shall be provided. Additionally, the contractor shall verify the electrical circuits are as described in the drawings.

In addition to the tests outlined in BS7671 The IET Wiring Regulations, the Contractor shall note all visual defects on an inspection sheet and submit a hand-written copy to the employer immediately after test. The Contractor shall retain a copy of the sheet and have it typed before formal submission to the employer. The test sheet shall also be submitted on electronic format compatible with the Maintenance Management System.

For all test results the asset reference number for both the origin and destination of the cable / circuit being tested shall be used for each length being tested.

The Contractor shall record the actual individual insulation results between each combination of the phase, neutral, SWA and CPC conductors. The lowest reading shall not be used as the test result for all of the combinations.

Where temporary surface links are in use, these need to be temporarily disconnected from the circuit so that the condition of the existing cable can be tested to verify the condition. On completion of the testing the temporary links shall be re-connected.

Test and record the Insulation resistance of all complete existing circuits if a reading of less than 2MΩ is recorded then the circuit shall be broken down and testing carried out on each of the individual cable lengths and the results recorded.

Should the contractor identify any deviation(s) from the circuit(s) described on the drawings then the contractor shall provide drawings in AutoCAD format detailing their findings using the same drawing style layout as that used on the provided drawings.

The results shall be presented as follows.

- All results are to be enclosed within a suitable ring binder or lever arch file clearly labelled identifying the location of the testing.
- The Inspectors Qualification Certificate, Statement of Equipment used, and calibration certificates enclosed at the front of the file.

Each feeder pillar test certificate shall be followed by an individual circuit test sheet with the associated columns and sign test certificates associated with that circuit. The second circuit shall follow the first with its column and illuminated signs test sheets, this will continue until the final circuit associated with the first feeder pillar has been tested. A divider is then labelled identifying the second feeder pillar followed by the second feeder pillar test sheet and each circuit as identified above and so on.

The locations requiring electrical survey and testing are as indicated on the above-mentioned drawing and in the relevant table for each location in the appendices.

Asset Condition Inspection

The contractor will also carry out a visual Asset condition Inspection in line with GN22. All findings shall be reported in electronic format with a copy of results enclosed within the ring binder detailed above.