National Asset Delivery
Technical Surveys and Testing

Works Information for
609248-D3
AD14 Drainage Surveys Phase 3

CONTENTS AMENDMENT SHEET

Amend. No.	Revision No.	Amendments	Initials	Date
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LIST OF ANNEXES

Appendix 1 Supplementary Constraints

1 DESCRIPTION OF THE WORKS

1.1 Project objectives

1.1.1 The principle objective of this project is to undertake Pipework and Chambers Defect Survey by CCTV in accordance with CS 551 and CD 535 of the Design Manual for Roads and Bridges and subsequent reporting in accordance with the requirements detailed in the specification to support the development of the forward programme of drainage asset renewals / remediation.

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:

General scope of the works to be provided	
Category	**Survey Description**
Drainage	• CS 551 Drainage Survey • CD 535 Drainage asset data and risk management (rev 1) • Guidance Note for Round-Tripping Drainage Data (rev 1) • Asset Data Management Manual (Part 3 Data Dictionary)

(1) For clarity, the drainage survey must be in accordance with CS 551 Drainage Survey, Chapter 7 Pipework and chambers defect survey by CCTV, paragraphs 7.1 to 7.73 inclusive.

(2) Some drainage inventory information in the catchment(s) to be surveyed is available on the DDMS and round-tripping of this data is required.

(3) The Contractor is responsible for ensuring that the survey shall round-trip this data in accordance with specific procedures and formats detailed by the Overseeing Organisations in the NAAs to CD 535 [Ref 1.N] by:

a) downloading the available information;

b) confirming or updating the inventory, condition and connectivity of all the drainage assets that constitute the drainage catchment, this includes:

- Sub-surface assets (pipework, gravity drain, culvert, etc)
- Surface assets (ditch, channel, v channel, etc.)
- Combined surface and sub-surface (filter drain,

- Point assets (manhole, catchpit, interceptor, gully, etc.)
- Regional Assets (detention basin, detention pond, etc.)

c) All optional and mandatory data attributes are required to be captured in accordance with the ADDM Part 3 Data Dictionary.

d) retaining as part of the data, without change, any inventory and condition information on any non-surveyed assets; and

e) the submission for uploading of this information to the DDMS.

(4) The Contractor may be required to provide other services such as undertaking trials of new technology and providing technical support and advice e.g. editing of exiting HADDMS data.

1.3 Deliverables

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

(1) The Contractor shall submit daily shift reports to the Client during the survey, and by no later than 11am the following morning.

(2) The Contractor shall provide a summary report in accordance with CS 551, paragraphs 7.73 to 7.74 inclusive in PDF format in addition to digital data.

(3) The Contractor shall provide CAD drawings to a scale of 1:500 in DXF and PDF in accordance with GG 184 specification for the use of Computer Aided Design, the drawings must show the following;

a) the extent of the completed survey;

b) the location and unique reference number of each drainage asset surveyed (point, continuous and regional);

c) pipework showing type, size, material, and flow direction;

d) all surface assets to include ditch, channels, filter drain, combined kerb drainage;

e) the overall service and structural condition grade of each asset with accompanying note;

f) Survey abandoned location with accompanying note;

g) any errors in any provided drawings or layout data noted during the survey;

h) overlaid on available base mapping showing the highway, highway boundary, structures and other reference features of the surveyed corridor and the national grid.

(4) Asset Condition drawing should include all points, continuous, and regional assets, with unique references, pipework showing type, size, material, and flow direction. And includes all 3, 4, 5 service and

structural condition grades with notes, and survey abandoned locations with note.

(5) The Contractor shall produce a HADDMS compliant survey report and contain the following information:

a) Survey inspection sheets for point, continuous and regional items in line with CD 535, chapter 3 Asset Condition Data, paragraph 3.1 to 3.5 inclusive.

b) Defect reports including defect grades, survey abandons, remediation proposals for point, continuous and regional items in line with CD 535, chapter 3 Asset Condition Data, paragraph 3.1 to 3.5 inclusive.

c) Condition survey (wincan VX report and survey including CCTV .mpeg files, still photos and shapefiles).

d) All outfalls within the survey extents must be captured. This consists of a visual inspection and completion of “Outfall Record Form”. This data shall be incorporated into the shape file.

(6) The survey data is to be packaged with a proprietary software viewer in addition to the standard data deliverables.

(7) The survey data is to deliverable by internet transfer program, being as Sharepoint or OneDrive.

2 EXISTING INFORMATION

2.1.1 The Contractor reviews any existing information, including previous shapefiles, prior to undertaking survey works.

2.1.2 The Contractor recognises that the primary purpose of the survey is to identify and confirm the location and condition of assets. As such the level of existing information relevant to the site being surveyed may be limited to simple general details on the location.

2.1.3 Refer to the Site Information for details of existing site conditions including ground conditions, limitation on access, position of existing structures etc.

2.1.4 The location of the survey is as per the location and overhead cable plans listed below in Table 1 showing the extent of the survey and summary of existing asset inventory.

Table 1 Existing Records and Plans

Drawing Number	Title	Revision/Date
Location & OHC Plans		

Appendix A – OH Plan (1)	A66 Scotch corner Holiday Inn	
Appendix A – OH Plan (2)	A19 Holystone – Killingworth	
Appendix A – OH Plan (3)	A1 Fenfrother	
Appendix A – OH Plan (4)	A1 Eshott – Causey Park Bridge	
Appendix A – OH Plan (5)	A66W Smallways – West Layton + Ravensworth	
Appendix A – OH Plan (6)	A1M J60-61	
Appendix A – OH Plan (7)	A1M J62-63 Gullies	
Environmental Rag Plans		
Appendix B – Rag Plans (1)	A66 Scotch corner Holiday Inn	
Appendix B – Rag Plans (2)	A19 Holystone – Killingworth	
Appendix B – Rag Plans (3)	A1 Fenfrother	
Appendix B – Rag Plans (4)	A1 Eshott – Causey Park Bridge	
Appendix B – Rag Plans (5)	A66W Smallways – West Layton + Ravensworth	
Appendix B – Rag Plans (6)	A1M J60-61	
Appendix B – Rag Plans (7)	A1M J62-63 Gullies	
Public Access Map		
Appendix C – Public Access Maps (1)	A66 Scotch corner Holiday Inn	
Appendix C – Public Access Maps (2)	A19 Holystone – Killingworth	
Appendix C – Public Access Maps (3)	A1 Fenfrother	
Appendix C – Public Access Maps (4)	A1 Eshott – Causey Park Bridge	
Appendix C – Public Access Maps (5)	A66W Smallways – West Layton + Ravensworth	
Appendix C – Public Access Maps (6)	A1M J60-61	
Appendix C – Public Access Maps (7)	A1M J62-63 Gullies	
Scheme Overview		
Appendix D – Scheme Overview (1)	A66 Scotch corner Holiday Inn	
Appendix D – Scheme Overview (2)	A19 Holystone – Killingworth	
Appendix D – Scheme Overview (3)	A1 Fenfrother	
Appendix D – Scheme Overview (4)	A1 Eshott – Causey Park Bridge	
Appendix D – Scheme Overview (5)	A66W Smallways – West Layton + Ravensworth	
Appendix D – Scheme Overview (6)	A1M J60-61	
Appendix D – Scheme Overview (7)	A1M J62-63 Gullies	
Phase 3 Combined Programme	Programme of works	

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 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.

3.2.2 The Contractor's working hours for site works shall be Monday – Friday 21:00 to 05:00 hrs for night time works. The working window will be subject to the installation and removal of TM and this may constrain the Consultant's shift length. No minimum working window is guaranteed. (See 3.2.5. for road space).

3.2.3 The Client shall provide traffic management through the M&R contractor CHC as per the site constraints in Table 2 below and the survey programme provided as an appendix. The dates are to be adhered to unless agreed with the Highways England Project Manager.

3.2.4 The *Contractor* shall deliver the works in the most efficient manner. There is no restriction on the number of gangs/resources he proposes to use to provide the Works, so long as his proposed method of working is safe to do so. The Consultant shall provide details of his proposed method of working and number of resources in the tender.

Table 2 Site Specific Constraints

Plan. Ref.	Site Ref.	Traffic Management	Estimated No. of Shifts	Start Date	End Date
Appendix A – OH Plan (4)	A1 Eshott – Causey Park Bridge	Traffic signals	10	12/07/21	23/07/21
Appendix A – OH Plan (3)	A1 Fenfrother	Traffic signals	4	26/07/21	29/07/21
Appendix A – OH Plan (2)	A19 Holystone - Killingworth	Lane 1 closure	3	02/08/21	04/08/21
Appendix A – OH Plan (7)	A1M J62-63 Gullies	Lane 1 closure	2	05/08/21	06/08/21
Appendix A – OH Plan (6)	A1M J60-61	Lane 1 closure	7	09/08/21	17/08/21

Appendix A – OH Plan (5)	A66W Smallways – West Layton + Ravensworth	Traffic signals and lane closure on dual	5	18/08/21	24/08/21
Appendix A – OH Plan (1)	A66 Scotch corner Holiday Inn	Lane closures	3	25/08/21	31/08/21

3.2.5 For traffic signal working, the maximum distance between signal heads is between 500-600m. Switching TM closure to opposing lane is achievable within a single shift, i.e. expected output to be a survey length of 1km/shift.

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 within the package of Tender documents uploaded to Bravo.

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, to be 12th July 2021,* and the *completion date for site work and reporting 18th October 2021.***

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

(iii) Weather and other factors that may affect the quality and efficiency of the survey

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:

(1) The traffic management requirements shall be provided by Highways England's M&R Contractor, CHC.

(2) See Table 3 below for site specific constraints on methods and or conduct of the work:

Table 3 Traffic Management and Constraints

Plan. Ref.	Site Ref.	Traffic Management
Appendix A – OH Plan (4)	A1 Eshott – Causey Park Bridge	Traffic signals
Appendix A – OH Plan (3)	A1 Fenfrother	Traffic signals
Appendix A – OH Plan (2)	A19 Holystone - Killingworth	Lane 1 closure
Appendix A – OH Plan (7)	A1M J62-63 Gullies	Lane 1 closure
Appendix A – OH Plan (6)	A1M J60-61	Lane 1 closure
Appendix A – OH Plan (5)	A66W Smallways – West Layton + Ravensworth	Traffic signals and lane closure on dual
Appendix A – OH Plan (1)	A66 Scotch corner Holiday Inn	Lane closures

(3) For traffic signal working, the maximum distance between signal heads is 500-600m. Switching TM closure to opposing lane is achievable within a single shift, i.e. expected output to be a survey length of 1km/shift.

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

(1) The contractor will be working under a CDM principle contractor, Highways England's M&R Contractor, CHC.

(2) The welfare provisions shall be provided by the PC, being Highways England's M&R Contractor, CHC.

6 SPECIFICATION FOR THE WORKS

6.1.1 The survey is to be undertaken in accordance with the DMRB document CS 551 section 7 Pipework and chambers defect survey by CCTV.

Pre-Cleansing of Existing Drains

6.1.2 Pre-cleansing/jetting is to be carried out on all pipework and concentrated where survey work highlights debris/detritus is present within pipe work. Pre-cleansing shall be allowed for within the Contractor's rates and is not measured separately.

6.1.3 Initial attempts to clear blocked drains prior to jetting, shall be undertaken by hand rodding and any debris and silt removed by the operation shall be removed off Site. The Contractor shall attempt to clear any blockages in accordance with the Table 3 below. The Contractor shall record all blockages in his survey report.

6.1.4 All environmental controls are the responsibility of the Contractor and the Contractor's attention is particularly drawn to the Water Resources Act 1995 and the Environmental Protection Act 1995.

6.1.5 Any solids/deposits classified as hazardous waste removed during jetting/cleaning of manholes/gullies etc. shall be taken from site and disposed in accordance with the Landfill (England and Wales) Regulations 2002 at a suitable landfill site. Liquid hazardous waste removed from the site shall be dried/filtered and the resulting solid waste disposed of to an appropriately licensed landfill site.

6.1.6 The location and depths of silt removed by pre-cleansing shall be recorded and reported.

Table 3. CLEARING OF BLOCKAGES BY JETTING OR OTHER MEANS

Blockage	Treatment
Roots	Attempt to remove if causing cross sectional area loss of 15% or greater or blocking passage of survey equipment. Continue the attempt until no progress has been made during 10 minutes of attempting to clear or remove the blockage
Attached Deposits	
Settled Deposits	
Ingress of Soil	
Infiltration	Notify the *Employer's* representative if associated with joint displacements causing cross sectional area loss of 50% or greater
Exfiltration	
Vermin	Notify the *Employer's* representative. DO NOT ATTEMPT TO REMOVE.
Intruding Utilities	

Blockage	Treatment
Other Obstacles (excluding Intruding Utilities)	Attempt to remove. Continue the attempt until no progress has been made during of attempting to clear or remove the blockage
Other (not listed above)	Notify the *Employer's* representative

Low Pressure High Volume Jetting of Highway Drainage Systems

6.1.7 All pipes shall be regarded as being of unknown material unless otherwise verified by one of the methods described in clause 521.3 or taken from previous survey information.

6.1.8 A jetting machine capable of recycling water on-site shall be used to jet drainage systems at all times and the Contractor shall also carry such equipment that he will require to clear blockages.

6.1.9 All outfalls are to be bunged during the cleansing of the system in order to prevent wash through of pollutants and no water resulting from the jetting operation shall be allowed to enter the drainage system. All waste shall be captured and disposed of at suitably licensed facilities.

Surveying

6.1.10 When carrying out surveys all reasonable efforts are to be made to locate all chambers within the survey extents and chase pipe runs to outfall

6.1.11 Abandonment of the survey of any drain length shall be considered for reasons stated in sub-Clause 9009.8. Where a pipe survey is abandoned, the Contractor shall make suitable records, photograph the situation causing the abandonment and attempt to survey the same pipe from the opposing end.

6.1.12 Where connectivity to another point asset cannot be reasonably assumed, the orientation of the connecting asset shall be indicated by use of a ghost node.

6.1.13 Ghost and phantom nodes will not be acceptable due to loss of traction, a practical means of proving connectivity is to be implemented, such as push rodding, whilst this may reduce quality, it will aid model certainty.

6.1.14 The Contractor shall ensure they record all fields information specified in the MCDHW Volume 5, Section 9, Part 5

6.1.15 Each drainage asset shall be assessed for both structural and service condition like a detailed defect survey however, where several defects of

differing type or severity are encountered within an asset, then the most severe defect determines the structural or service grade of the asset.

6.1.16 Pipework is to be surveyed using current digital/analogue technology capable of surveying the complete length of pipe if no obstructions are encountered.

6.1.17 Each pipe run between chambers is to be surveyed in one direction only.

6.1.18 Where the survey of a pipe has to be abandoned before a distance of 5m has been achieved, it shall be surveyed from the opposite end.

6.1.19 Regardless of which chambers are used for survey access, all located chamber covers will be removed and all pipe routes found within a chamber will be surveyed.

6.1.20 If a chamber requires a confined spaces entry to carry out a survey the survey shall be abandoned for that section of pipe and a grade 9, with appropriate comments, shall be assigned.

6.1.21 A category 5 defect will be assigned to any pipe containing asbestos (asbestos cement, pitch fibre).

6.1.22 GPS laser survey of drainage chambers and its internal pipework ends enables the capture of asset data information (both geometric and possible defect) in an accurate, safe and intelligent way.

6.1.23 GPS laser scanning can be utilised for asset data collection of chambers.

6.1.24 The Contractor shall provide the data in accordance with the requirements of CD 535 and a completed 'Chamber Survey Record' sheet that provides the information specified in Annex A.

Data Round Tripping

6.1.25 For all surveys inclusive of re-surveys the 'catchment' shapefile(s) of the location being surveyed shall be requested from the Drainage Asset Manager. The newly captured data shall be consolidated into the existing data on HADDMS ensuring no duplication of assets occurs. Consolidation is to be undertaken in line with the ADMM v11 and the following details;

Shapefile Consolidation Outline Process Stages

Drainage Data Round Tripping Outline Process Stages

1. Contractor requests the latest DDMS drainage catchment shapefiles from the Area/Region
2. Contractor updates the catchment shapefiles, ensuring any non-surveyed assets in the catchment are retained
3. Contractor returns the catchment shapefiles to the Area/Region for reupload to DDMS

6.1.26 The contractor is responsible for ensuring the survey data adheres to the data round tripping upload and checking process detailed in CS 551 and the Data Roundtripping Guidance on the HADDMS download pages.

6.1.27 Surveys are to be in a format viewable with WinCan® VX software.