

East Midlands Asset Delivery

Drainage Surveys

Schedule of Requirements

A0 Introduction

1. The drainage survey shall be undertaken in accordance with the following documents, as supplemented or amended by this Schedule of Requirements:
 - CS 551 Drainage Surveys;
 - CD 535 Drainage asset data and risk management;
 - Asset Data Management Manual (ADMM).
2. These documents can be found at <http://www.standardsforhighways.co.uk/ha/standards/>
3. CS551 and CD535 are within Part 4 of Volume 4 of the Design Manual for Roads and Bridges (DMRB).
4. A drainage survey shall include all drainage assets within the survey or scheme extents:
 - sub-surface assets (pipework and chambers); and
 - surface items (e.g. combined kerb drainage, ditches, ponds).
5. The drainage survey extents shall include the outfall(s).
6. Survey data shall be uploaded to the Highways England Drainage Data Management System (DDMS) no later than 60 days after completion on site. This includes round tripping of data.

Note: The tenderers should all have access to HADDMS and be competent to interrogate the system and establish any historic or legacy information to aid their pricing. Appended are the relevant drawings for the highway within the scheme extents. They may not represent the current asset and are invalidated.

A1 General requirements

The contractor will provide site supervision trained to a minimum of SSSTS. Where the contractor is taking 'Principal Contractor' responsibilities, the supervisor provided will be SMSTS trained (or equivalent).

All drainage assets within the site extents are to be surveyed and must extend to outfall, unless otherwise stated.

1. State the survey type, to be one or more of the following:
 - ~~a. validation survey;~~
 - ~~b. priority asset survey;~~
 - ~~c. filter drain condition survey by GPR;~~
 - d. all assets condition and connectivity survey;**
 - e. pipework and chambers defect survey by CCTV;**
 - ~~f. pipework geometric survey by laser profiler.~~
2. The location of the survey is to be detailed by:

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- a. **Drawings will be appended to the supporting documents for each of the surveys**
 3. Detail any constraints on the works, including:
 - a. **Night time works 20.00 – 06.00**
 - b. **Traffic Management information will be supplied within the supporting documentation**
 - c. **An Environmental Scoping Proforma will be supplied with this document.**
 4. Define periods outside normal working hours.
Working times stated are ‘first cone on’ and ‘last cone off’ times. The installation of Traffic Management will be dependent on a number of constraints. IE. Traffic counts, weather, etc.
 5. Detail any variation in the scope of the survey works from that defined in this specification.
All attempts must be made to gain access to chambers, over which the lids have been bolted down, and any culverted pipe-work, which may be behind a trash screen. Bolts are to be removed prior to the survey, and to be replaced after the survey.
 6. Provide pre-construction information covering the works.
Any drainage related drawings that are available, within the site extents, will be supplied with this document
 7. State the classification of the site for the use of electrical equipment in potentially explosive atmospheres, in accordance with DSEAR S.I. No. 2776 [Ref 2.1], either:
 - a. **the site is classified as Zone 2,**
 - b. ~~the site is classified as Zone 1.~~

Contractors shall provide evidence that all electrical equipment to be used is in accordance with The Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016 (EPSIUPEAR) for the Zone classification indicated above.

8. State the responsibility for traffic management, either:
 - a. **by others arranged by the area management team;**
 - b. ~~by others arranged by the Overseeing Organisation's representative;~~
 - c. ~~arranged by the survey team.~~

Any site issues/delays must be reported, initially, to the site supervisor and highlighted within the daily site report. Following each night shift, the report should be sent to the Employer by 10am the next day.

A2 Survey requirements

A2.1 General

1. State the requirement for survey data round-tripping, either:

***Note: round tripping is always required, you must request the existing catchment shapefile from the Drainage Asset Manager / Team**

 - a. **some drainage inventory information in the catchment(s) to be surveyed is available on the DDMS and round-tripping of this data is required;**
 - ~~b. no drainage inventory information in the catchment(s) to be surveyed is available on the DDMS and round-tripping of this data is not required.~~

2. State the requirement for off-highway working not accessible by conventional two-wheel drive vehicles, either:
 - a. **off-road vehicles are not required;**
 - ~~b. off-road vehicles are required;~~
 - ~~c. off-road vehicles may be required.~~

Welfare facilities

The survey contractor is responsible for the welfare of their employees and will provide adequate, sufficient and clean site welfare facilities.

Welfare facilities must include;

- A flushing chemical toilet (including wipes/toilet rolls, etc.)
- Hand wash facilities (hot and cold running water)
 - Including soap, towels and sink for washing
- Seating / rest area which can be adequately heated (seating with backs, a means for heating water for drinks and warming up food (i.e. A microwave oven)

A2.2 Pipework and chambers defect survey by CCTV

1. State the requirement for pan and tilt CCTV camera, either:
 - a. **pan and tilt CCTV camera required;**
 - ~~b. fixed head panoramic view CCTV camera required.~~

A jack-up camera may be required for larger diameter pipes to ensure CS 551 item 7.8 (9) is met i.e. the camera is to be positioned centrally within the pipework to within a positioning tolerance of $\pm 10\%$ of the vertical pipework dimension.

Wincan V7.6 and Wincan VX, both of which are compatible with the DDMS must be utilised to carry out the survey (Wincan V8 is not compatible with the DDMS). If the contractor is using Wincan V8, evidence **must** be provided that the contractor can, and has, successfully converted the data to DDMS compliance. Survey Engineers are required to have 'OS19X pipe sewer condition classification' or 'OS30X pipe sewer condition conversion' qualifications, as stated in CS551.

2. State the requirement for forced ventilation of pipework and/or culverts, either:
 - a. **forced ventilation will not be required;**
 - ~~b. forced ventilation will be required;~~
 - ~~c. forced ventilation may be required.~~

3. State the requirement for pre-cleansing of the drainage system, either:

- a. ~~pre-cleansing not required;~~
- b. **pre-cleansing is required;**
- c. ~~pre-cleansing required in some locations.~~

Recyclers are to be used without deviation unless otherwise instructed.

Time spent on Jetting (15 minutes/3 passes)

On the understanding that this refers to a carrier run, approximately 90m long and up to 900mm diameter, 15 minutes should be allowed. Lateral gully connections should have 5 minutes allowed for.

Note: It is the contractor's responsibility to allow for time moving between locations and setting up/demobilising.

4. State the responsibility for clearing blockages, either:

- a. **survey the pipework run from the other direction, then proceed to remove the blockage by cleansing;**
- b. ~~do not attempt to remove the blockage, then survey the pipework run from the other direction;~~
- c. ~~move to another location whilst the blockage is cleared by others as arranged by the Overseeing Organisation's representative.~~

5. State the requirement for root cutting, either:

- a. ~~root cutting is required;~~
- b. ~~root cutting is not required;~~
- c. **root cutting may be required.**

Time to be spent on root cutting

In terms of root cutting it is dependent on amount of mass and length of obstruction. It should be priced as 30minutes per run

6. Waste Arrangements

Waste is to be included within the pricing for 'Item 1' (undertaking the works) and as such will not be treated as an additional cost.

Copies of Waste Transfer Notes to be sent to Highways England as proof of disposal, weights, etc.

A2.3 Ditch Surveying

Light site clearance

Light site clearance may be required for access to locations and at headwalls and outfalls. This should be priced as a two-operative team, with hedge trimmers and strimmer's, along with standard small hand tools IE Grafter, loppers, crowbars etc.

1. All ditches shall be surveyed using GPS equipment or alternatively using a 'total station' should canopy coverage restrict signal.
2. A ditch profile shall be taken at suitable longitudinal intervals along the length of the ditch. Intervals of between 20m to 50m are recommend however, the overall length of the ditch will dictate. The minimum intervals shall be: start of ditch; mid-point; and end of ditch.

3. Levels shall be taken at the following locations as a minimum, and any significant undulations:
 - a. the fence line;
 - b. top of ditch (inside);
 - c. bottom of ditch channel (inside);
 - d. bottom of ditch channel (outside);
 - e. top of ditch (outside);
 - f. back of verge;
 - g. top of kerb;
 - h. channel line.

4. Samples of the level of detritus within the ditches are to be taken at the locations of the cross sections using a manual hand auger and a photograph against a measuring tape taken. The same sample is then to be sent for Waste Acceptance Criteria (WAC) analysis.

***Note – Each area to be sampled will be CAT scanned prior to breaking ground with the hand auger (this also applies if stats drawings are supplied and show no stats in the immediate vicinity).**

Soil sampling will not be necessary in concrete lined ditches, although the ditch profile will be recorded as stated above.

A3 Reporting requirements

A3.1 General

1. Detail any variation in the scope of the reporting requirements from that defined in this specification.
N/A

A3.2 Pipework and chambers defect survey by CCTV

1. State the requirement for a summary report in PDF format in addition to digital data, either:
 - ~~a. summary report in PDF format is not required;~~
 - b. summary report in PDF format is required.**

2. State the requirement for CAD drawings in DWG, DXF and PDF formats in addition to digital data, either:
 - ~~a. CAD drawings in DWG, DXF and PDF formats are not required;~~
 - b. CAD drawings in DWG, DXF and PDF formats are required.**

***Note: CAD drawings shall confirm to IAN 184/16.**

3. State the requirement for the survey data to be packaged with a proprietary software viewer, in addition to the standard data deliverables, either:
 - a. survey data packaged with a proprietary viewer is required in addition to the standard data deliverables;**
 - ~~b. survey data packaged with a proprietary viewer is not required, only the standard data deliverables are required.~~

4. State the requirement for items of the survey report to be provided to the Overseeing Organisation's representative during the survey, either:

- a. **interim survey data is not required during the course of the survey; (detailed daily shift reports shall be issued following each shift)**
 - ~~b. interim survey data is required during the course of the survey (details of required deliverables, frequency and timing to be stated).~~
5. State the means of transferring the data deliverable, either:
- ~~a. by internet transfer;~~
 - b. by portable storage device;**
 - ~~c. by DVD.~~

A3.3 Ditch survey

1. State the requirement for the deliverables from the ditch survey
 - a. CAD drawings in DWG, DXF and PDF formats showing a plan of the ditch profiles locations;**
 - b. CAD drawings in DWG, DXF and PDF formats showing a series of cross sections denoting the ditch profiles;**
 - c. a photo indicating the depth of silt at each profile location;**
 - d. results of ditch soil characterisation testing at each profile location along with a SCR (Soil characterisation Report).**

Cancelled Shifts

Shifts maybe cancelled due to several reasons, such as weather, RTC, diversion route due to RTC on other carriageways, etc.

In this case each cancelled shift will be paid at a defined cost. These will be treated as a Compensation Event when we instruct the contractor to either 'not start the works' or 'stop the works' and are assessed in accordance with Clause 63 of the core contract documents.

Equipment Breakdown

The contractor is responsible for the maintenance and repair of their own equipment.

If a breakdown occurs prior to attending site, that the equipment cannot be used, the cost of the equipment for the shift will be deducted from the final payment.

Every effort must be made, by the contractor, to ensure the equipment is repaired/replaced ready for the following shift.

If a breakdown occurs during a shift, information regarding this shall be appended within the daily site report.

*Note – Highways England will not be held responsible for damage to site vehicles (IE. punctured tyres, chipped windscreens, etc.), or theft from site vehicles (vehicles must remain locked at all times when unattended).