ACCEPTANCE CCTV TESTING -
CCTV INSPECTION SPECIFICATION OF DEVELOPER CONSTRUCTED SEWER PIPES

Contents

1 GENERAL

1.1 Interpretation & Precedence

This Specification is intended to outline Wannon Water's requirements for the CCTV, Inclination testing, Laser profiling and Reporting of all sewers constructed by developers over 50m in length or as required by Wannon Water. The CCTV acceptance testing is additional to pressure testing of sewers and manholes.

Where CCTV is to be undertaken without laser profiling, ovality ball tests are required to be completed prior to engaging the CCTV contractor.

1.2 Pre Handover Survey Schedule/Timing

When a gifted asset is surveyed as part of a pre-handover programme, the CCTV surveys shall take place after ALL works have come to practical completion on site, inclusive of road works and reinstatement works. The only exception to this requirement is that the final surface seal of the road pavement may be undertaken after the CCTV inspection.

New sewers (including all maintenance structures and property branches) shall meet all of Wannon Waters construction standards, be clean and free of foreign matter and debris prior to arranging CCTV inspection. This requirement is mandatory unless otherwise instructed by an authorised Wannon Water officer in writing.

If the CCTV contractor discovers new sewers contain foreign matter or debris, the CCTV contractor shall use his discretion to undertake/arrange flushing and eduction of those items as necessary, at the developer's expense.

Wannon Water will not accept assets surveyed during the construction phase. Reports or video from any asset surveyed during this period will not be considered to be surveyed within the context of this document.

The CCTV reports must be forwarded by the CCTV contractor directly to Wannon Water's Development Services Department and the Consulting Engineer shall be notified when this has been done.

The CCTV contractor shall be a separate independent entity to the engineering consultancy and the construction contractor performing the civil construction works.

For a listing of current Wannon Water approved CCTV contractors contact Patrick Greene, Asset Condition & Performance, on 1300 926 666.

2 ENGAGEMENT OF CCTV CONTRACTOR

2.1 Consulting Engineer Responsibilities

The Consulting Engineer is responsible to verify that <u>all</u> site construction works are complete in accordance with requirements of Clause 1.2 prior to engaging the CCTV contractor.

The CCTV contractor shall only be engaged by the engineering consultancy on behalf of the developer.

The request for CCTV inspection by the consulting engineer shall be submitted to the CCTV contractor in writing and shall reference the Wannon Water drawing number. A copy of the request shall also be submitted by the consulting engineer to Wannon Water via email (info@wannonwater.com.au).

So there is no confusion as to the purpose of the CCTV inspection, the request shall advise the CCTV contractor that the works are to be undertaken for developer works in accordance with the version of this specification which is current at the time of the inspection.

2.2 CCTV Inspection Contractors Responsibility

Upon engagement by the engineering consultancy, the CCTV contractor shall give Wannon Water Development Services 7 clear working days' notice via email (info@wannonwater.com.au) of the date that the inspection works will commence. The Wannon Water Drawing number shall be referenced in this notice.

2.3 Site Inspection by Wannon Water

Wannon Water will arrange for a representative to attend site within 5 days of the proposed CCTV date to observe the site conditions. This allows Wannon Water to give a minimum 2 days cancellation notice to the CCTV inspection contractor and the consulting engineer where it has been identified that the construction works are not complete.

2.4 Incomplete Site Works

The engagement of the CCTV contractor will be postponed by Wannon Water until the site/construction works are complete. The consulting engineer is responsible to shall re-engage the CCTV contractor in accordance with the previous Clauses of this specification.

3 ENTRY TO NEIGHBOURING PROPERTIES UNDER OTHER OWNERSHIP

Where it is anticipated that the CCTV contractor will have to enter land other than that owned by the developer to undertake inspection works, the Consulting Engineer shall have arranged access on the CCTV contractor's behalf using Form 15 (from LDM website). Completed forms are to be emailed to info@wannonwater.com.au.

4 OPERATIONAL DUE DILIGENCE

The CCTV contractor shall take into account all due diligence to ensure that when jetting of sewer conduit is undertaken that damage does not occur to the conduit or maintenance holes.

If jetting of new sewers is required measures to ensure debris is not washed into downstream sewers must be in place.

5 PROJECT REQUIREMENTS

The following is required to be provided / undertaken by the CCTV contractor where it is feasible to do so, any deviation from this works practice should be noted and discussed with a Wannon Water Development Services Officer:

5.1 Obtaining Water for Jetting Trucks

Wannon water shall provide the contractor a metered standpipe in line with its' metered hydrant terms and conditions.
Whilst in the possession of the contractor it is his/her responsibility to:

(a) Ensure that every time the jetting truck is filled the metered standpipe is used.
(b) Ensure that you meet Wannon Water's metered hydrant terms and conditions.
(c) The jet truck has acceptable backflow prevention device fitted and maintained as per AS3500 (i.e. testable double check).

5.2 Required Data / Camera Screen

The opening screen shall be formatted as follows:

Construction Contractor Name
Wannon Water
Street name, Lot Number and Plan of Subdivision Number
Town name
*Design Maintenance Hole Number – Camera Direction (***US** *or* **DS***) – Design Maintenance Hole Number*
Design Line number of sewer being surveyed
Sewer Diameter and Material (i.e. 225 PVC etc)
Jointing Type
Maintenance Hole Depth To Invert: *(x.x m)*
Operator: (*camera operators name***)**
Weather: (*Dry, Light Rain, Heavy Rain***)**
Cleaned:(*Yes/No***)**

Example of Required Data / Camera Screen:

Jo Blogs Constructions.
Wannon Water
12 Gibbs Street
Warrnambool
SB17-31-1 US SB17-31-2
Line 2
150mm UPVC
Maintenance Hole Depths To Invert: 3.6 m & 3.1m
Operator: Billy Blog
Weather: Light Rain
Cleaned: No

During the survey it is required at all times to display the chainage, current time and date, *Design Maintenance Hole Number – Camera Direction (***US** *or* **DS***) – Design Maintenance Hole Number* and *sewer diameter and material. Where Depth to Invert can't be measured provide depth to table instead.*

6 INSPECTION PRACTICES - REQUIREMENTS

6.1 General Project Requirements

- WSAA trained Crews (If possible, or overseen by an operator who has had WSAA training in CCTV)
- Reports to be delivered in digital format (inclusive of Access Database that is created by WinCan), grouped by date, i.e. One Access file per day of works. All work to be presented on DVD. Any still pictures taken with hand held cameras to be put on a separate DVD and clearly named with GID of MH or note of defect.
- Reports to be submitted no later than 2 weeks after the CCTV survey work finishes.
- For any major issues, immediately notify Wannon Water (i.e. collapsed conduit, Badly Broken conduit, broken lids etc).
- All confined space entry's to be conducted in accordance with OH&S and confined space regulations
- Any manhole faults (damage, collapsed drop pipes, invert issues, infiltration, water retention) to be photographed and a Manhole fault report forwarded.
- Five minutes prior to commencing the CCTV inspection of each individual pipe section, stained water shall be poured into nearest upstream maintenance structure of the pipe section to be inspected. The volume of stained water required is to be either twenty litres per 100m run of pipe or twenty litres per two manholes. In pipe where there is significant gradient problems a greater volume of stained water may be required; In this instance the CCTV operator shall use his judgement accordingly. The water shall be stained with green vegetable dye sufficient to give strong colour.

6.2 General Project Requirements - CCTV

- WSAA code for camera standards (Pan and tilt cameras only; no fish eye lens).
- If survey abandoned, then equipment is to be cleaned and Re-camera'd from zero.
- All footage taken to be encoded and delivered as per specification.
- CCTV as per current WSAA standards i.e. WSAA 05 – 2006 V2.1
- CCTV reports to be done in WinCan 8 Format
- All Junctions & Connections to have still photography (1 long shot, 1 shot of internal) and be noted in report.
- All faults to have accompanying still pictures in report.(1 long shot & 1 close up of the worst area of the defect)
- All grades to be appropriately altered by Inspection reporting staff – No baseline Wincan grades will be accepted unless appropriate to the defect at hand.
- Camera work to be done by camera operators and the reporting should be done by appropriately trained office personnel , Two separate processes to evaluate the conduit before Wannon Water receives the report.(No Encoding is to be on site unless agreed by Wannon Water)
- Reporting to detail all defects, intrusions etc.
- A full pan of the start node and finish node with accompanying General comments noting any defects is required with accompanying still pictures of the defects where possible.
- If the survey is abandoned then the closing screen shall display a reason for the abandonment *(i.e.* Survey Abandoned – Deformed conduit*)*

6.3 General Project Requirements – Gradient Profiling

- Results to be presented in WinCan format
- Profiling to be conducted within the specifications set out by manufacture of the equipment / software.
- All equipment is to be calibrated prior to gradient profile as per manufactures recommendations and documentation to this effect is to be provided before survey is to begin.
- Gradient reports to be done in WinCan 8 Format, with gradient module.
- WSAA code for camera standards (Pan and tilt cameras only, no fish eye lens).
- Before starting the survey the sewer must be clean and free from all debris / silt that may affect the survey. Live sewer lines to be gas plugged by Wannon Water staff prior to works commencing.

6.4 General Project Requirements – Laser Profiling

- WSAA code for camera standards (Pan and tilt cameras only, no fish eye lens).
- Profiling to be conducted within the specifications set out by manufacture of the equipment.
- Any specialist viewer software is to be provided at time of evaluation survey.
- Before starting the survey the conduit must be thoroughly cleaned and free from all debris / silt that may affect the survey.

AMENDMENT HISTORY

4/08/11	Initial release
16/04/12	Altered Section numbering Altered Interpretation & Precedence Altered Pre Handover Survey Schedule/Timing
5/06/14	Added of Engagement Of CCTV Contractor Specified engineers responsibilities Added “Entry To Neighbouring Properties Under Other Ownership”
10/06/14	Modified Section 6.2 adding new requirements for start/finish node Defects Modified Section 5.2 adding new requirements for recording depth of manhole to invert