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Hunter Water Corporation A.B.N. 46 228 513 446
Standard Technical Specification for:

WORK-AS-EXECUTED INFORMATION

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AMENDMENTS FROM THE PREVIOUS EDITION - AUGUST 2001

| New Clause | Old Clause | Amendment |
|--|-------------------|--|
| AMENDMENTS TO THE AUGUST 2001 VERSION | | |
| - | All | General formatting, rewording and referencing changes to improve clarity |
| 3.8 | - | Requirements for Electrical Works added |
| AMENDMENTS TO THE NOVEMBER 2002 VERSION | | |
| 4.0 | - | Requirements for Technical data for pipeworks added |
| Sched | - | Schedules of Technical Data added |

1. GENERAL

1.1 Scope

This Standard Technical Specification details requirements for the provision of information detailing work as it has been executed in the field. This information is of particular importance where the work as executed varies from the work as designed or specified.

This Standard Technical Specification is intended to cover all possible classes of work and as such includes some requirements in clause "Revision of Drawings" which may not apply to the specific work in hand. All other clauses apply to all classes of work. The application of each clause "Revision of Drawings" is defined in the clause.

1.2 Interpretation

Unless the context requires otherwise any expression such as "give notice", "submit", "approval", or "directed" means give notice to, submit to, approval by, or directed by the Superintendent of the Contract or other person nominated by the Principal.

"Construction Drawings" means all drawings issued or prepared to define the physical characteristics of the works to be constructed.

2. SURVEY

To determine any location coordinates required by this Standard Technical Specification, use either;

- a registered surveyor; or
- a surveyor working under an accredited quality system to AS9001 or AS9002.

State coordinates as either Integrated Survey Grid (ISG zone 56/1) or Map Grid of Australia (GDA94 zone 56).

State levels in Australian Height Datum (AHD).

| Feature | Level Accuracy | Coordinate Accuracy |
|--|-----------------|---------------------|
| Buried work located by prodding or electronic detector | ± 0.05m/m depth | ± 0.05m/m depth |
| Fencing | | ± 0.10m |
| All other features. | ± 0.005m | ± 0.05m |

3. REVISION OF DRAWINGS

3.1 General

This clause applies to all classes of work.

Revise the electronic versions of all Construction Drawings to accurately depict the work as executed. Check and revise as necessary all dimensions, coordinates, levels, materials and other drawing notations excepting those intended to depict features prior to construction such as surface profiles or contours.

Where a dimension or size on the Construction Drawings is nominal (eg; pipe diameter, thickness of brickwork) only correct the dimension if a different nominal size is used. For cast in-situ concrete work only correct dimensions where the work executed was outside the tolerances defined in AS3610 Formwork for concrete.

For any features which are noted on the Construction Drawings to be located, sized or otherwise determined during construction, amend the notation to indicate the actual location, size or characteristic (eg: a note on a drawing indicates that pipework can be either PVC or

DICL - amend the note to show what was actually used; a note on a drawing indicates concrete encasement of pipework is required wherever cover is less than 700mm – indicate the actual extent of encasement installed).

State the origin of all levels and coordinates on each drawing as well as any additional survey control marks.

Indicate the source accuracy of measurements (G.P.S., Measured/junction books, Survey quality – direct)

On each drawing state the date (month and year only) by which all work on the drawing was completed.

Add a “WAE” notation in the Revisions table of each drawing to indicate that it is a Work As Executed drawing even if no other changes had to be made to the Construction Drawing.

Prepare the drawings in the same format as the Construction Drawings such that they are fully legible when printed in A3 size. Comply with AS1100 Technical drawing, AS1101 Graphical symbols for general engineering, AS1102 Graphical symbols for electrotechnical documentation, and AS4383 Preparation of documents used in electrotechnology.

Submit the completed WAE drawings in electronic form on CD in “dwg” format suitable for read and write access with AutoCAD2000.

Use ISG zone 56/1 or Map Grid of Australia (GDA94 zone 56) coordinates on the “dwg” plans.

3.2 Coordinates of Sewer Fittings

This clause applies to the following sewer fitting types;

| | | |
|---------------------|--------------------|------------|
| Access hole | Flow meter | Scour |
| Access shaft | Gate valve | Sewer pit |
| Air valve | Inspection chamber | Stop valve |
| Dead end | Lamp hole | |
| Detention structure | Pump out scour pit | |

If not already provided under clause 3.1, determine easting and northing coordinates for each of the above sewer fittings and present them in electronic form on the Construction Drawing depicting the work it represents.

3.3 Location of Fittings in Gravity Sewer Mains

This clause applies to the following fitting types in gravity sewer mains;

| | | |
|----------------------------|------------------------|------------------------------|
| Cap | Horizontal & vert bend | Start of concrete encasement |
| Change point | Horizontal bend | Vertical bend |
| End of concrete encasement | Junction | Start of thrust bore |
| End of thrust bore | Line junction | |

Record the following information on Junction Sheets as the work progresses. See drawing SCP-207 of the Hunter Water Corporation “Standard Construction Practice – Water Supply and Sewerage” for an example of a completed junction sheet. Transfer the information to the electronic form of the Construction Drawing depicting the work it represents. Submit the hard copy junctions sheets with the electronic drawings.

- (a) Fitting type and, in the case of junctions, the orientation of the junction (J-Back, RJ-Left, RJ-Right, Sewer Inlet, YJ-Left, YJ-Right).
- (b) Material
- (c) Depth

- (d) Downstream manhole number
- (e) Distance to the centre of the downstream manhole
- (f) Distances to any convenient prominent features such as boundary fences.

3.4 Sewer Vents

This clause applies to all sewer vents. If not already provided under clause 3.1, determine the following information and present it in electronic form on the Construction Drawing depicting the work it represents.

- (a) Surface level
- (b) Easting coordinate
- (c) Northing coordinate
- (d) Invert level
- (e) Vent material
- (f) Vent diameter at base
- (g) Vent height

3.5 Sewer Flow Relief Structures

This clause applies to all pipework and structures associated with sewer flow relief structures. If not already provided under clause 3.1, determine the following information and present it in electronic form on the Construction Drawing depicting the work it represents.

- (a) Surface level
- (b) Easting coordinate
- (c) Northing coordinate
- (d) Invert levels of incoming and any outgoing pipework

3.6 Coordinates of Water Fittings

This clause applies to the following water fitting types;

| | | |
|-----------------------|--------------------------|------------------------|
| Air valve | Double air/control valve | Press reducing valve |
| Auto inlet valve | Hydrant | Pressure sustain valve |
| Ball valve | Hydrant bend | Reflux valve |
| Blank hydrant | Hydrant control valve | Scour |
| Booster control valve | Manhole | Stop valve |
| Borewell | Meter | Water pump |
| Butterfly valve | Pitot cock valve | Zone valve |
| Cluster box | | |

If not already provided under clause 3.1, determine easting and northing coordinates for each of the above water fittings and present them in electronic form on the Construction Drawing depicting the work it represents.

3.7 Location of Fittings in Water Mains and Sewer Rising Mains

This clause applies to the following fitting types;

| | | |
|--------------|---------------|---------|
| Bend | Gibault joint | Taper |
| Blank flange | Hydrant | Tapping |

| | | |
|----------------------------|------------------------------|-------|
| Cap | Manhole | Tee |
| Cross | Start of concrete encasement | Valve |
| End of concrete encasement | Start of thrust bore | |

Record the following information on a copy of the Construction Drawings as the work progresses. Transfer the information to the electronic form of the Construction Drawing depicting the work it represents.

- (a) Fitting type
- (b) Material
- (c) Chainage from the start of the water main
- (d) Distances to any convenient prominent features such as boundary fences.

3.8 Electrical Works

This clause applies to electrical work.

Notwithstanding who was responsible for installation of power to the site, confirm the size of incoming mains cables and the route of the cables and make any necessary amendments to the Construction Drawings.

Where motor details have been left incomplete on the Construction Drawing (for example, kW, rpm, amps), add details of the actual motors installed. Such details are often required on power circuit diagrams and motor label drawings and could be required elsewhere.

4. TECHNICAL DATA

This clause applies to work involving the construction of new or replacement water or sewer pipework or the rehabilitation of water or sewer pipelines.

Complete and submit copies of the following attached schedules of technical data:

- Schedule A - Water and Sewer Pipes
- Schedule B - Water and Sewer Pipe Rehabilitation
- Schedule C - Pipe Fittings and Miscellaneous

SCHEDULE C - PIPE FITTINGS AND MISCELLANEOUS

Contractor _____ Contract Number _____ Date Works Complete _____

| Item | Ref / Drawing | Materials | Pressure Class (PN) | Supplier | Manufacturer |
|-------------------------|---------------|-----------|---------------------|----------|--------------|
| Stop valves | | | | | |
| Hydrants | | | | | |
| Gibault Joints | | | | | |
| Bends | | | | | |
| Tapping Bands | | | | | |
| Services Valves | | | | | |
| SV Box | | | | | |
| Hydrant Box | | | | | |
| Junctions | | | | | |
| Reflux Valves | | | | | |
| Sluice Valves | | | | | |
| Gate Valves | | | | | |
| Air Valves | | | | | |
| Concrete | | | | | |
| Cement | | | | | |
| Stainless Steel Ladders | | | | | |
| Pre-cast Manholes | | | | | |
| Vent shafts | | | | | |

FOR HWC USE ONLY: HWC Rep _____ Project/Task No. _____ SWIMS Reference _____

[END OF STS903]