PREAMBLE


This supplementary document must be read in conjunction with the Code and GVW’s Product Catalogue.

INNOVATION

The Code and this supporting documentation essentially provides "deemed-to comply" solutions for the creation of Corporation reticulation sewer assets.

Alternative solutions, practices, equipment and methodologies will continue to evolve and offer opportunities to improve the creation of these assets. The Corporation encourages employment of any innovation that offers enhanced productivity and serviceability.

Corporation input should be sought if an innovative opportunity is being considered.

Part 0: GLOSSARY OF TERMS AND ABBREVIATIONS

I. GLOSSARY OF TERMS

Add

**Controlling Line** - A controlling line is a sewer MH length that, if deepened, would necessitate extra depth for sewers two or more MH lengths downstream. Grades shown for controlling lines should be used only where significant savings can be achieved.

**Feasibility Report** – Same as a concept plan

**Water Agency** – Goulburn Valley Water

**The Corporation** – Goulburn Valley Water

‘agreement conditions’ - means any conditions and requirements specified in the “Developer Construct Agreement”, the “Agency Construct Agreement”, the “Final Feasibility Report” and any “Enclosed Drawings”.

**Product Catalogue** – A combination of City West Water Products Catalogue (3 off) and the GVW corresponding supplements (2 off), comprising:

1. City West Water – Products Catalogue for Pressure Pipeline Systems
2. GVW Supplement - City West Water – Products Catalogue for Pressure Pipeline Systems
3. City West Water – Products Catalogue for Non Pressure Pipeline Systems
4. GVW Supplement - City West Water – Products Catalogue for Non Pressure Pipeline Systems
Part 1: PLANNING AND DESIGN

1. GENERAL
The Corporation has no supplementary requirements in this section.

2. SYSTEM PLANNING
The Corporation has no supplementary requirements in this section.

3. FLOW ESTIMATION
The Corporation has no supplementary requirements in this section.

4. DETAILED DESIGN

4.2.5 Easements
The minimum easement width is to be 2.5m with a minimum lateral clearance of 1.0 metre from outside of the pipe to easement/title boundary. All MHs are to be located within the easement.

4.3.2 Roads, reserves and open space
It is preferred that in industrial and commercial areas sewers are located within the road reserve or at the front of the property. Sewers are permitted to be constructed within easements in industrial and commercial land, only after approval from the Corporation.

4.3.7 Horizontal curves in sewers
Vertical curves shall not be used unless specifically authorised by GVW.

4.5.4 Minimum pipe sizes for maintenance purposes
The minimum diameter for reticulation sewers is 150mm, including commercial properties with a lot area less 20m x 40m. Each flat, unit or shop must be separately counted as one household for this purpose.

When referring to Table 4.3 of the Code and Table 4.3 (a) of this Supplement, the number of Units or Lots is taken at the upstream end of the line.

Sewers serving industrial lots and large commercial lots must have a minimum diameter of 225mm and a minimum grade, as shown in Table 4.3 (a).
Table 4.3(a) Minimum Grades for 225mm Industrial and Commercial Sewers

<table>
<thead>
<tr>
<th>Lots</th>
<th>Controlling Lines</th>
<th>Non-Controlling Lines</th>
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<tbody>
<tr>
<td>1 to 4</td>
<td>225 at 1 in 100</td>
<td>225 at 1 in 80</td>
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<tr>
<td>5 to 15</td>
<td>225 at 1 in 150</td>
<td>225 at 1 in 120</td>
</tr>
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<td>15 to 30 units</td>
<td>225 at 1 in 300</td>
<td>225 at 1 in 250</td>
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5. PROPERTY CONNECTION

5.4 MAXIMUM DEPTH OF PROPERTY CONNECTIONS

The threaded access coupling is to be installed on a vertical stack to between 600mm and 1000mm of the finished surface level. See SEW-1155-M Type 2B branch.

5.7 Y - PROPERTY CONNECTIONS

Only permitted after approval from GVW and shall be provided with maintenance access.

5.8 LENGTH OF PROPERTY CONNECTION SEWERS

To ensure the correct arrangement is applied, this section must be read in conjunction with section 6.8 of the Code.

6. MAINTENANCE STRUCTURES

6.1 TYPES OF MAINTENANCE STRUCTURES

(b) Maintenance Shafts (MSs) – these are not permitted for use by GVW.

(c) Terminal Maintenance Shafts (TMSs) – these are not permitted for use by GVW.

6.2 LOCATIONS OF MAINTENANCE STRUCTURES

(k) Changes in horizontal radius where horizontal curves are used.

6.3 SPACING OF MAINTENANCE SHAFTS

Table 6.1 – MS and TMS are not permitted for use by GVW.

6.3.2 Maintenance structure spacing – Reticulation sewers

For reticulation sewers, the maximum spacing between any two consecutive maintenance structures shall be 100m.

Figure 6.1 and 6.2

- MS and TMS are not permitted for use by GVW.
- The maximum distance between maintenance structures GVW is:
  - 100m between successive MHs;
  - 50m between a MH and IS; and
  - 25m between a MH and DE, with a minimum grade of 1 in 60.

6.6.2 Types of MH Construction

GVW will only accept cast in-situ concrete and pre-cast concrete MHs. Construction of MHs from alternative materials, such as PE or other plastic materials, is not permitted without prior approval from GVW.

6.6.3 Design parameters for MHs

Precast concrete MHs are approved for use in all areas, as long as they are designed and selected to suit the local conditions and are no greater than 6m in depth.
6.6.8 Ladders, step irons and landings
The minimum distance between the top of the manhole and the first step iron is to be 500mm.

6.7 MAINTENANCE SHAFTS
Maintenance Shafts are not permitted for use by GVW.

6.7.4 Inspection Shafts (ISs)
GVW permits the use of Inspection Shafts only when the distance to the downstream MH is less than 50m.

7. ANCILLIARY STRUCTURES

7.10 FLOW MEASURING REQUIREMENTS
These devices are not required by GVW.

8. STRUCTURAL DESIGN
The Corporation has no supplementary requirements in this section.

9. DESIGN REVIEW AND DRAWINGS
9.2.1 General
Design drawings shall also include the following information:

(e) GVW signature title block for endorsing design plans.
(f) Identification of GVW as the Water Corporation.

Part 2: PRODUCTS AND MATERIALS

10. PRODUCTS AND MATERIALS OVERVIEW
10.1 PURPOSE
Refer to GVW’s Product Catalogue which is a combination of CWW’s Product Catalogue and GVW corresponding supplements, which is available from GVW Web Page.

10.6 SELECTION GUIDE FOR PIPELINE SYSTEMS, TABLE 10.1 AND 10.3
Please refer to GVW’s Product Catalogue which is a combination of CWW’s Product Catalogue and GVW corresponding supplements on GVW’s Web page and comprises:

The guidelines for selecting suitable material for gravity sewer reticulation pipelines are:

- VC pipe can be used in all situations;
- For industrial and commercial areas VC pipe material, SewerMAX or SewerPro is to be used in 225mm diameter or above;
- VC pipe is to be used for all trunk mains; and
- Alternative materials, (which will be listed in the GVW Sewer Reticulation product list) can only be used within residential areas.

Residential areas are defined as those zoned Residential 1 or similar on local Council planning schemes. The consultant is to demonstrate that the area in the development is zoned residential and that no industrial or commercial discharges will pass through the sewers in the development in the future.
All trunk mains and pipework in the vicinity of sewage pump station and the upstream MH are to be either VC, DIEL, DICL (high alumina cement), SewerMAX or SewerPro. This will enable industrial and commercial discharges to be made into the sewer system via suitable pipework in the future.

uPVC must not be used in areas where there is not adequate dilution of industrial flows or trade wastes, including discharges from service stations.

**Rubber Ring Jointing for Gravity Sewer Pipe**

GVW requires all gravity sewer pipe to be rubber ring joint (RRJ) using a socket and spigot design.

Where solvent cement pipes (SCJ) or welded pipes (PE or MSCL) are proposed to be installed, prior approval from GVW is required.

The only exception to this rule is that all gravity sewer mains 225mm diameter and smaller within the gravity sewer reticulation system for the township of Marysville is to be solvent cement pipes only.

**Ribbed or Profile Wall Pipe**

GVW only permits the installation of ribbed or profile pipe for gravity sewer reticulation works for relining or in commercial/industrial applications. This includes both PVC and PE materials and all ribbed pipe fittings and transition pieces.

Ribbed wall pipe is only permitted for the following

- Relining works (RibLock) for the rehabilitation of existing gravity sewer reticulation pipelines; and
- SewerMAX and SewerPro are permitted to be used as an alternative pipe material for VC or Earthenware sewer pipe in 225mm diameters and above for commercial and industrial applications.

**Table 10.1 Principal Gravity Sewer Pipeline Systems**

DIEL pipe is suitable for use by GVW as an alternative to DICL (High alumina cement). It is to be used on the inlet pipework of all SPSs.

**Table 10.2 and 10.3**

DICL with high alumina cement can be used on sewer rising mains only when the pipe will always remain full. If the pipe can drain regularly and therefore suffer from gas attack, then DICL pipe is not to be used.

**Table 10.4 Principal Sewerage Pressure Pipeline Systems**

General precautions – A sewer marking tape with tracing wire is to be placed 300mm above the pipeline on all pressure sewer pipelines, including sewer rising mains.
Part 3: Construction

11. GENERAL
The Corporation has no supplementary requirements in this section.

12. QUALITY
The Corporation has no supplementary requirements in this section.

13. GENERAL CONSTRUCTION
The Corporation has no supplementary requirements in this section.

14. PRODUCTS AND MATERIALS
Unless otherwise specifically agreed, only products endorsed in the MRWA approved products list shall be used.

Please refer to GVW’s Product Catalogue which is a combination of CWW’s Product Catalogue and GVW corresponding supplements on GVW’s Web page and comprises:

1. City West Water – Products Catalogue for Pressure Pipeline Systems
2. GVW Supplement - City West Water – Products Catalogue for Pressure Pipeline Systems
3. City West Water – Products Catalogue for Non Pressure Pipeline Systems
4. GVW Supplement - City West Water – Products Catalogue for Non Pressure Pipeline Systems
5. City West Water – Pre-mixed Concrete and Quarry Products Catalogue
6. GVW – “Pressure Sewer Preferred Equipment”
7. GVW - “Products Catalogue – Document Improvement Request”

Glossary
Product Catalogue – A combination of City West Water Products Catalogue (3 off) and the GVW corresponding supplements (2 off)

15. EXCAVATION
15.9 SURPLUS EXCAVATED MATERIAL
The consultant and constructor are responsible for the lawful disposal of surplus excavated material. This is to be undertaken with written approval from the local Council and property owner, where the material is being disposed.

16. BEDDING FOR PIPES AND MAINTENANCE STRUCTURES
Refer to City West Water – Pre-mixed Concrete and Quarry Products Catalogue

17. PIPE LAYING AND JOINTING

17.2 HORIZONTAL AND VERTICAL DEFLECTION OF SEWERS
Vertical curves shall not be used unless specifically authorised by GVW.

17.11.2 Detectable marking tape
(f) all sewer rising mains.
18. MAINTENANCE HOLES

18.11 MH Drops
All MH drops are to be internal as per drawing SEW-1306-V.
Lids / Keyholes – no concrete in keyholes.
All keyholes to be susceptible – location of lug to be marked on manhole lid in concrete.

19. MAINTENANCE SHAFTS (MS AND TMS) AND INSPECTION SHAFTS (IS)

19.1 GENERAL
MS and TMS are not permitted for use by GVW.

20. PIPE EMBEDMENT AND SUPPORT
The Corporation has no supplementary requirements in this section.

21. FILL
Flooding compaction is not permitted as a method of compaction of backfill material.
See GVW Trench Fill Specification - Sewer

22. ACCEPTANCE TESTING
Table 22.6 Delete

22.7 CCTV INSPECTION
CCTV inspection is to be undertaken for all new sewers.
See GVW CCTV Sewer Inspection Procedure

23. TOLERANCES ON AS-CONSTRUCTED WORK
The Corporation has no supplementary requirements in this section.

24. CONNECTION TO EXISTING SEWERS
The Corporation has no supplementary requirements in this section.

25. RESTORATION
The Corporation has no supplementary requirements in this section.

26. WORK AS CONSTRUCTED
The Corporation has no supplementary requirements in this section.
Part 4: Standard Drawings

29.9 SEW-1153-M, SEW-1154-M AND SEW-1155-M–PROPERTY CONNECTION DETAILS

Modifications required by GVW include;

- A 200mm x 200mm chase is to be recessed into the trench wall to support the jump up stack.
- A 12mm dia x 450mm long mild steel staple is to be provided every length of EW pipe, or at 1.20 metre intervals for uPVC.
- Marker tape is to be attached to the top of the sewer riser or cap.

Note: 20MPa concrete may be used in lieu of 6% stabilised backfill.

31.5 SEW-1303-V – MH CHANGE IN LEVEL ARRANGEMENTS

Replace the table titled FALL ACROSS MH (INLET TO OUTLET INVERT) on standard drawing SEW – 1303 - V with the following table:

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<td>&gt; 90°</td>
<td>80</td>
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31.12 SEW-1314-V, SEW-1315-V, SEW-1316-MAINTENANCE SHAFTS

MS are not permitted for use by GVW.

31.13 SEW-1317-TYPICAL MS COVER ARRANGEMENTS

MS are not permitted for use by GVW.

33.4 SEW-1502-CONSTRUCTION OF MHS AND MSS OVER EXISTING SEWERS

MS are not permitted for use by GVW.

Additional Drawings

The following standard drawings have been included:

SEW-1306-G-(a) – Standard Drawing Sewer Rising Main – PVC Detail of Turn Up at Point of Discharge
SEW-1306-G-(b) – Standard Drawing Sewer Rising Main – PE Detail of Turn Up at Point of Discharge
S-19 – Sewer Rising Main Non-Return Pit
STD/2 – Standard Detail Drawing for Sewerage Contracts
SEW-1450-G-(a) – Standard Drawing Pressure Pipelines - Sewer Indicator Post
SEW-1450-G-(b) – Standard Drawing Pressure Pipelines - Sewer Indicator Post and Location Markers
S/1 – Standard Details of Sewer Rising Main Air Valve Assembly
S/2 – Standard Details of Sewer Rising Main Scour Valve Assembly

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