

**CITY OF WHITEHORSE SERVICING STANDARDS MANUAL**  
**PART 3 - SPECIFICATIONS**  
**SECTION 3.9 - SEWER SERVICE CONNECTIONS**

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## **SECTION 3.9 – SEWER SERVICE CONNECTIONS**

### **3.9.1 SCOPE**

The work described in this sub-section pertains to the supply and installation of sewer service piping and appurtenances.

### **3.9.2 MATERIALS**

All work described in this section is to be carried out in strict accordance with manufacturer's recommendations unless otherwise noted.

#### **3.9.2.1 SEWER PIPE**

Pipe for the sanitary sewer service connection is to conform to Section 2.6.2.

#### **3.9.2.2 INSULATION**

Sanitary sewer service connections are to be insulated as specified in Section 2.6.1.4 of this manual.

#### **3.9.2.3 BEDDING SAND**

The bedding sand, free from organic material, is to meet the grading requirements specified in 3.5.2.1.

#### **3.9.2.4 BEDDING STONE**

Bedding stone is to be used when wet trenching conditions exist.

The bedding stone, free from organic material, is to meet the grading requirements specified in 3.5.2.2.

#### **3.9.2.5 TESTING OF MATERIALS**

The Engineer may at any time require the Developer to produce certification by an independent testing authority that the materials currently used conform to the specified standards.

### **3.9.3 INSTALLATION**

#### **3.9.3.1 BEDDING AND INITIAL BACKFILL**

Bedding sand or stone is to be placed over the full width of the trench and tamped in 150 mm layers up to a level of 300 mm above the crown of the highest service in the trench. Bedding and initial backfill is to be compacted to a minimum of 95% Standard Proctor Density at optimum moisture content.

#### **3.9.3.2 SEWER MAIN CONNECTIONS**

Service connections are to be made in accordance with Section 2.6 and the standard drawings in Section 4 of this Manual.

Service connections to all mains are to be by means of tee or approved saddles with drilled hole and approved Robar clamp or approved equivalent for the pipe type being connected to. The connection is

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to be watertight. Service connections are not to protrude into the sewer main line. The branch tube is to be designed to accommodate the pipe dimension and pipe material as specified on the plans or in the specifications.

Where multiple service connections are to be made to the Sanitary main a center of pipe to center of pipe separation of 600 mm is required.

Where multiple service connections enter a manhole as is the case in a cul-de-sac, the services must tie to the manhole such that they enter at an angle equal to or greater than 90 degrees as measured from the direction of flow in the sanitary sewer main, see Section 4.

When tapping is required, the sewer main is to be tapped in the upper half. Care is to be taken while tapping to ensure that the sewer main is not fractured, and any broken pipe is to be removed from inside the sewer main. The tapping is to be only of sufficient size to permit the saddle insert to fit snugly into the hole. In no case is the building sewer pipe to protrude into the sewer main. Where directed by the Consultant, a riser is to be constructed.

#### **3.9.3.3 DEPTH OF COVER**

The depth of cover on the sanitary service at property line is to be a minimum of 2.4m and a maximum of 3.5m above pipe obvert elevation.

#### **3.9.3.4 GRADE**

Minimum grade of the sewer pipe is to be 2%.

#### **3.9.3.5 BENDS**

Where horizontal bends are installed along sanitary service pipes, the maximum bend is to be 45 degrees using a long radius-type bend, or a combination of 22.5-degree bends and straight pipe.

#### **3.9.3.6 MARKER STAKES**

The Developer is to place a 50 mm x 100 mm wood marker stake, protruding 500 mm above the ground, located at the property line as shown on the standard drawings in Section 4. The stake is to be painted red. The stake is to extend to the end of the service pipe invert.

#### **3.9.3.7 JOINTS**

Wherever possible, the HDPE pipe should be joined by the method of thermal butt-fusion, as outlined in ASTM-D3261, Heat Joining Polyethylene Pipe and Fittings. Butt-fusion joining of pipe and fittings is to be performed in accordance with the procedures recommended by the manufacturer.

DI or PVC pipe is to be joined in accordance with the manufacturer's specifications.

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**3.9.3.8 BACKFILL**

The backfill is to be machine placed and is to contain no rock, stones or boulders larger than 200 mm in their greatest dimensions. It is to be free from brush or any other perishable or objectionable matter, which would prevent proper consolidation or cause subsequent settlement. Wherever a service is under any portion of an existing or proposed roadway, lane, or walkway, the balance of backfill is to be as specified in Section 3.4.

**3.9.4 REGULATIONS**

All building services installed are to conform to regulations governing plumbing and drainage issued by the authority having jurisdiction and municipal bylaws in effect at the time of the work.

**3.9.5 TESTING**

Before final backfilling has started, the Developer is to test the building sewer pipe for obstructions by rodding or snaking the entire length.

**3.9.6 DAMAGE TO PROPERTY**

The Developer is to obtain permission from the registered landowner before removing any fences, trees, hedges, shrubs, private walks, or other private property. Where necessary, the Developer is to remove fences and re-erect them immediately after backfilling and cleaning up, but he will not be required to replace fence material which is unsound. Where the Developer believes the fence material is unsound, he and the registered landowner must reach written agreement as to the method of removing and relocating it.

Where trees, hedges, and shrubs must be removed, such removal is to be done in an approved manner, removing only a sufficient amount to make space for the Developer's excavating equipment. All trees, hedges and shrubs that have been dug up, and all surplus earth, are to be removed from the site of the work and disposed of as approved by the Engineer.

Written permission from the Engineer is to be obtained before removing trees, hedges, shrubs, or sidewalks within street limits.

The Developer is to repair all damaged sidewalk, curb, and gutter and replace all trees, hedges, or shrubs removed from City of Whitehorse or private property.