

## **SECTION 5.0 TRENCHING, BEDDING & BACKFILLING**

### **5.1 Trench Width**

5.1.1 Widths of trenches shall be such that pipes can be laid and jointed properly and backfill placed and compacted properly.

### **5.2 Trench Wall**

5.2.1 Trench walls shall be vertical to 300 mm above the top of the pipe and the width at this location shall not exceed the maximum in accordance to Occupational Health and Safety regulations.

### **5.3 Maximum Width**

5.3.1 Maximum width - single pipe:

- .1 For 750 mm diameter or less, the outside diameter of pipe plus 450 mm.
- .2 For pipe larger than 750 mm diameter, the outside diameter of pipe plus 600 mm.

5.3.2 Maximum width - multiple pipes.

- .1 Details for proposed multiple pipe trenches must be submitted to the Town for approval.

### **5.4 Pipe Bedding**

5.4.1 Bedding for pipes shall be in accordance to the details as indicated on the standard drawing in Appendix B. The bedding is to be properly designed to suit the pipe, ground conditions and depth of trench in order to obtain an adequate support for the pipe.

### **5.5 Backfill**

5.5.1 Backfill in the pipe zone shall be in accordance with the class of pipe bedding as detailed on the drawings.

5.5.2 The balance of the backfill 300 mm above the pipe top may be machine placed and shall contain no rocks or masonry larger than 200 mm in its greatest dimension and shall be free from brush or any other perishable matter that will prevent proper consolidation. Wherever a main or service is under a proposed carriageway or walkway, the balance of backfill shall be compacted as specified in Section 7.7, Subgrade Construction.

5.5.3 The use of engineering fabrics or geotextiles may be considered as alternatives in backfill methods and require the proper engineering design by the Developer's Engineer to be submitted to the Town for approval.

### **5.6 Safety Requirements**

- 5.6.1 All trenching and backfilling methods must be in accordance to and meet the approval of Alberta Occupational Health and Safety Standards and Regulations.

5.7 **Auguring or Tunneling**

- 5.7.1 Auguring or tunneling with steel encasement pipe is preferred when crossing under major collector or arterial roadways, major utility structures or when conditions warrant.
- 5.7.2 All work is to be designed and carried out properly in accordance to accepted practices and with approvals of the applicable governing agencies, taking the utmost care for safety of the workers and general public.

5.8 **Frost Protection Measures for Pipes or Structures**

- 5.8.1 Where adequate cover to pipes or structures cannot be maintained as specified, the Developer's Engineer may submit designs to indicate alternate method of equivalent frost protection to the Town for review and approval.