

PART 1 - GENERAL

- 1.1 Description .1 This section specify requirements for supplying, producing, placing, pre-cast reinforced concrete pipe including bedding, backfilling, and tension bars.
- 1.2 References .1 Reinforced concrete pipe to CAN/CSA A257.2 and CAN/CSA A257.3.
- .2 ASTM C478, Specification for Precast Reinforced Concrete Manhole Sections.
- .3 CAN/CSA A5, Portland Cement.
- .4 CAN/CSA A23.1, Concrete Materials and Methods for Concrete Construction.
- .5 CAN/CSA G30.18, Billet Steel Bars for Concrete Reinforcement.
- 1.3 Shop Drawing .1 Submit shop drawings in accordance with Section 01 33 00 Submittal Procedures.
- 1.4 Measurement for Payment .1 Reinforced Concrete Pipe: Supply and installation of reinforced concrete pipe with superseal joint gaskets and stainless steel tension bars as shown will be measured in linear meters. Geotextile will not be measured separately but considered incidental to the work.
- .2 Granular bedding and surround material will be measured for payment under section 31 23 10.
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## PART 2 - PRODUCTS

- 2.1 MATERIALS
- .1 Reinforced Concrete Pipe: 1050mm diameter to CAN/CSA A257.2. Class 65-D.
  - .2 Joints: flush bell with flexible superseal gaskets to CAN/CSA A257.3 or approved equal.
  - .3 Concrete: C-XL type.
  - .4 Bedding and surround material to section 31 2310.
  - .5 Geotextile to section 31 32 21.
  - .6 Stainless steel Tension bars: to CSA G40.12 300W.

## PART 3 - EXECUTION

- 3.1 Preparation
- .1 Clean pipes and fittings of debris and water before installation and remove defective materials from site to approval of Departmental Representative.
- 3.2 Pipe Laying
- .1 Granular Bedding
    - .1 Place bedding in unfrozen condition.
    - .2 Place granular bedding material in uniform layers not exceeding 200 mm compacted thickness to depth as indicated.
    - .3 Shape bed true to grade and to provide continuous, uniform bearing surface for pipe. Do not use blocks when bedding pipes.
    - .4 Shape transverse depressions as required to suit joints.
    - .5 Compact each layer full width of bed to at least 95% maximum density to ASTM D 698.
  - .2 Installation
    - .1 Lay and join pipe in accordance with manufacturer's recommendations and to approval of Departmental Representative.
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3.2 Pipe Laying  
(Cont'd)

- .2 (Cont'd)
- .2 Handle pipe using methods approved by Standard Industry method.
  - .3 Lay pipes on prepared bed, true to line and grade with pipe inverts smooth and free of sags or high points. Ensure barrel of each pipe is in contact with shaped bed throughout its full length.
  - .4 Install joint gasket as per Manufacturer's instructions.
  - .5 Do not exceed maximum joint gap recommended by pipe manufacturer.
- .3 When any stoppage of work occurs, restrain pipes as directed by Departmental Representative, to prevent "creep" during down time.
- .4 Contractor shall use a laser to set horizontal and vertical alignments of piping. Any section having more than 3 mm in deviation shall be removed and reinstalled.
- .5 Place surround material in unfrozen condition.

PART 1 - GENERAL

- 1.1 References
- .1 CSA B137.5 Cross-linked Polyethylene (PEX) Tubing for Pressure Applications.
  - .2 ASTM F876, F877 and F2023.
  - .3 AWWA C904 and to SDR9 copper tube sizes (CTS).
- 1.2 Submittals
- .1 Submit shop drawings in accordance with Section 01 33 00, Submittal Procedures.
- 1.3 Measurement Procedures
- .1 The supply and installation of the new fresh water line as shown including all fittings, connections, valve outlets and fasteners, protection bent plates/shroud, end cap, etc. will be measured as a fixed priced item. Supply and placement of restraint thrust blocks as required will not be measured for payment but considered incidental to the work.

PART 2 - PRODUCTS

- 2.1 Materials
- .1 Municipex 32mm nominal diameter, type A, potable tubing and stainless steel connections.
  - .2 Ball Valves; 2 piece full port stainless steel solid ball valves, teflon seats, stainless steel handle and nut.
- 2.2 Restraint Thrust Block
- .1 Place restraining thrust blocks between valves, tees, bends, reducers as required by code.
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PART 3 - EXECUTION

- 3.1 Installation
- .1 Install piping as indicated and as per manufacture's instructions.
  - .2 Pipe to be installed, allowing for drainage of all lines for winter. All piping to be sized as shown on plans.
- 3.2 Leakage Test
- .1 A leakage test shall be conducted concurrently with the pressure test. The Contractor shall supply all equipment necessary for the conducting of this test.
- 3.3 Pressure Test
- .1 All pipes shall be pressurized to 690Kpa and visually inspected. All faulty or leaking connections shall be corrected. Test to be witnessed by Departmental Representative.