

**Part 1 General****1.1 RELATED REQUIREMENTS**

- .1 Section 33 31 16 – Public Sanitary Utility Sewerage Piping.
- .2 Section 01 61 00 - Common Product Requirements.
- .3 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .4 Section 31 32 19 – Geotextiles.
- .5 Section 33 36 00 - Utility Septic Tanks.
- .6 Section 01 74 11 – Cleaning.
- .7 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

**1.2 REFERENCES**

- .1 ASTM International
  - .1 ASTM D422-63(2007)e2, Standard Test Method for Particle-Size Analysis of Soils.
  - .2 ASTM D4318-10e1, Standard Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils.
- .2 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-8.1-88, Sieves, Testing, Woven Wire, Inch Series.
  - .2 CAN/CGSB-8.2-M88, Sieves, Testing, Woven Wire, Metric.
- .3 CSA International
  - .1 CAN/CSA-B137 Series-13, Thermoplastic Pressure Piping Compendium. (Consists of B137.0, B137.1, B137.2, B137.3, B137.4, B137.4.1, B137.5, B137.6, B137.8, B137.9, B137.10, B137.11 and B137.12).
  - .2 CAN/CSA-B1800-11, Thermoplastic Non-Pressure Piping Compendium. (Consists of B181.1, B181.2, B181.3, B181.5, B182.1, B182.2, B182.4, B182.6, B182.7, B182.8 and B182.11).
    - .1 CAN/CSA-B182.2-11, PVC Sewer Pipe and Fittings (PSM Type).

**1.3 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for drainage field materials and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Samples:
  - .1 Submit 20 kg sample of each granular materials 2 weeks minimum before beginning Work.
- .4 Certificates:
  - .1 Submit copy of certification or licence of approved installers.

- .5 Test Reports:
  - .1 Submit 2 certified copies of factory tests of pipe material.

#### 1.4 QUALITY ASSURANCE

- .1 Use certified and licensed installers who comply with local authority having jurisdiction.

#### 1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
  - .1 Store materials off ground and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Store and protect drainage field materials from nicks, scratches, and blemishes.
  - .3 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse of pallets, crates, padding, and packaging materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

### Part 2 Products

#### 2.1 GRANULAR MATERIALS

- .1 Septic Stone material in accordance with the following requirements:
  - .1 Table

Sieve Designation	% Passing
	Septic Stone
53 mm	100
19 mm	0-5
0.075 mm	0-1

#### 2.2 IMPORTED FILTER MATERIAL

- .1 Sand conforming to requirements of local authority having jurisdiction.
- .2 Imported sand shall have a percolation time (T) of 4 -6 min/cm with not more than 5% fines passing through a 0.074mm (#200) sieve.

#### 2.3 GEOTEXTILE COVER

- .1 Geotextile cover: to Section 31 32 19 - Geotextiles.
  - .1 Permeable geotextile fabric.
  - .2 As indicated.

#### 2.4 PIPE FOR DISPOSAL FIELDS

- .1 Straight PVC pipe and fittings to CAN/CSA-B182.2, perforated or unperforated as indicated.

- .2 Straight PE pipe and fittings, to CAN/CSA-B137.1, perforated or unperforated as indicated.

## **2.5 DISTRIBUTION BOX**

- .1 Concrete: as indicated and to Section 33 36 00 - Utility Septic Tanks.

## **Part 3 Execution**

### **3.1 EXAMINATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for drainage field installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate in presence of Departmental Representative.
  - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

### **3.2 AREA BED TYPE DISPOSAL FIELD INSTALLATION**

- .1 Rough grade to depths as indicated.
- .2 Place sand material in unfrozen condition as indicated.
- .3 Leaching bed fill material (imported filter material) to have percolation rate of 4-6 min/cm and be pre-approved in writing by Departmental Representative before delivering to site.
- .4 After placement of leaching bed fill, Departmental Representative will conduct 3 on site percolation tests in sand mound before bed construction.
- .5 Operate construction equipment across disposal only after receipt of written approval from Departmental Representative.
- .6 Place 150 mm minimum deep septic stone material under each distribution pipe.
- .7 Install distribution box between pump chamber and leaching bed. Installation to be of water-tight construction.
- .8 Set distribution box level as indicated.
  - .1 Include access with removable cover for inspection of distribution box.
- .9 Connect lengths and place distribution pipe on stone material as indicated and cover with 75 mm minimum septic stone material.
- .10 Place permeable geotextile fabric over stone as indicated, ensuring that septic stone layer is protected as to prevent soil or leaching bed fill from entering the stone layer..
- .11 Connect each distribution pipe individually to header.
- .12 Connect free ends of distribution lines.
- .13 Maintain pipe elevations within 5 mm of inverts indicated.

- .14 Backfill and align trenches until pipe grade only after receipt of written approved from Departmental Representative.
- .15 Cover disposal field as indicated.
  - .1 Use only material approved in writing by Departmental Representative.
  - .2 Do not compact.
  - .3 Overfill to allow for settlement.
- .16 Grade areas surrounding disposal field bed as indicated, to provide for diversion of surface run off waters.

### **3.3 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

**END OF SECTION**