Part 1 General

1.1 SECTION INCLUDES

.1 Materials and installation for foundation and underslab drainage.

1.2 RELATED SECTIONS

.1 Section 01 74 19 - Construction/Demolition Waste Management And Disposal.

.2 Section 31 23 10 - Excavating, Trenching and Backfilling.

.3 Section 31 05 17 - Aggregate Materials.

1.3 REFERENCES

.1 American Society for Testing and Materials International, (ASTM)

.1 ASTM D698-00a, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3 (600 kN-m/m^3)).

.2 Canadian Standards Association (CSA International)

.1 CSA-A23.1/A23.2-00(June 2001), Concrete Materials and Methods of Concrete Construction/Methods of Test for Concrete.

.2 CSA B1800-02, Plastic Non-pressure Pipe Compendium - B1800 Series B182.7, B182.8 and B182.11).

.1 CSA B182.2-02, PVC Sewer Pipe and Fittings (PSM Type).

1.4 SITE CONDITIONS

.1 Examine sub-surface investigation report which is available for inspection at UMA Engineering Ltd., 1479 Buffalo Place, Winnipeg, MB.

.2 Known underground utility lines and buried objects are as indicated on plans.

Part 2 Products

2.1 BEDDING AND SURROUND MATERIALS

.1 Coarse filter aggregate: to CSA-A23.1/A23.2, Group 1 20-5 mm in accordance with Section 31 05 17 - Aggregate Materials.

.2 Fine filter aggregate: to CSA-A23.1/A23.2 in accordance with Section 31 05 17 - Aggregate Materials.

.3 Rigid plastic pipe and fittings: to CSA-B182.1, size NPS 4, complete with fittings.

.4 Geotextile filter: see Section 31 32 21 - Geotextiles.

.5 Cleanouts: .

2.2 BACKFILL MATERIAL

.1 Type 2, in accordance with Section 31 23 10 - Excavating, Trenching and Backfilling.

.2 Excavated or graded material existing on site may be suitable to use if approved by Contract Administrator.

Part 3 Execution

3.1 EXAMINATION

.1 Ensure graded base conforms with required drainage pattern before placing bedding material.

.2 Ensure improper slopes, unstable areas, areas requiring additional compaction or other unsatisfactory conditions are corrected to approval of Contract Administrator.

.3 Ensure foundation wall and dampproofing have been installed and accepted by Contract Administrator before placing bedding material.

3.2 BEDDING PREPARATION

.1 Cut trenches in base and place bedding materials in uniform layers not exceeding 150 mm compacted thickness to depth of 300 mm.

.2 Shape bed true to grade and to provide continuous, uniform bearing surface for pipe.

.3 Fill excavation below design elevation of bottom of specified bedding with compacted bedding material.

3.3 PIPE OR TUBING INSTALLATION

.1 Ensure pipe interior and coupling surfaces are clean before laying.

.2 Lay perforated pipe minimum to slope of 1:100. For pipe face perforations and coupling slots downward.

.3 Lay non-perforated pipe to slope of 1:50 from perforated pipe to disposal area. Make joints watertight.

.4 Grade bedding to establish pipe slope.

.5 Install end plugs at ends of collector drains to protect pipe ends from damage and ingress of foreign material.

.6 Connect non-perforated pipe to sump pit by appropriate adapters manufactured for this purpose.

.7 Provide cleanouts on non-perforated pipe at changes of pipe direction and in runs greater than 15 m.

3.4 PIPE OR TUBING SURROUND MATERIAL

.1 Upon completion of pipe laying and after Contract Administrator has inspected Work in place, surround and cover pipe and install geotextile filter as indicated.

.2 Hand place surround material in uniform layers not exceeding 150 mm compacted thickness, as indicated. Do not drop material within 1 m of pipe.

.3 Place layers uniformly and simultaneously on each side of pipe.

.4 Compact each layer from pipe tubing invert to mid-height of pipe to at least 95% maximum density to ASTM D698.

.5 Compact each layer from mid-height of pipe to underside of backfill to at least 90% maximum density to ASTM D698.

3.5 BACKFILL MATERIAL

.1 Place backfill material above pipe tubing surround in uniform layers not exceeding 150 mm compacted thickness up to grades as indicated.

END OF SECTION