PART 1 - GENERAL

1.1 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 74 21 - Construction/Demolition Waste Management And Disposal (short form).

.3 Section 01 50 00 - Temporary Facilities.

.4 Section 01 35 44 - Environmental Procedures.

.5 Section 02 41 13 – Selective Site Demolition.

.6 Section 31 32 19.01 – Geotextiles.

1.2 MEASUREMENT PROCEDURES

.1 Excavated materials will be measured in accordance with Section 01 10 10

.2 Shoring, bracing, cofferdams, underpinning and de-watering of excavation will not be measured separately for payment.

.3 Backfilling to authorized excavation limits will be measured in accordance with Section 01 10 10.

.4 Placing and spreading of gravel will be measured for payment in accordance with Section 01 10 10.

.5 Reshaping and knitting of existing armour stone into new work (as required) will be measured for payment in accordance with Section 01 10 10.

1.3 REFERENCES

.1 American Society for Testing and Materials (ASTM)

.1 ASTM C 117-[95], Standard Test Method

for Material Finer Than 0.075 mm (No.200) Sieve in Mineral Aggregates by Washing.
.2 ASTM C 136-[96a], Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
.3 ASTM D 422-[98], Standard Test Method for Particle-Size Analysis of Soils.
.4 ASTM D 698-[00a], Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft ^{3}) (600 kN-m/m ^{3}).
.5 ASTM D 1557-[00], Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft ^{3}) (2,700 kN-m/m ^{3}).
.6 ASTM D 4318-[00], Standard Test Methods 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 Canadian Standards Association (CSA)
.1 CAN/CSA-A3000-[98]-A5-[98], Portland Cement.
.2 CAN/CSA-A23.1-[00], Concrete Materials and Methods of Concrete Construction.

Sieve Designation	% Passing
2.00 mm	[100]
0.10 mm	[45 - 100]
0.02 mm	[10 - 80]
0.005 mm	[0 - 45]

.3 Coarse grained soils containing more than [20] % by mass passing 0.075 mm sieve.

1.4 SUBMITTALS

.1 Samples:
.1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
.2 Inform a Departmental Representative at least 4 weeks prior to commencing Work, of proposed source of fill materials and provide access for sampling.
.3 Upon Request, submit 70 kg samples of type of fill specified including representative samples of excavated material.
.4 Upon request, ship samples prepaid to a Departmental Representative in tightly closed containers to prevent contamination.

PART 2 - PRODUCTS

.1 Material: See Section 31 37 00 for material specifications.

.2 Geotextiles: See Section 31 32 19.01 for geotextile specifications.

PART 3 - EXECUTION

3.1 SITE PREPARATION

.1 Remove obstructions, ice and snow, from surfaces to be excavated within limits indicated.

3.2 STRIPPING OF TOPSOIL

Not Applicable

3.3 STOCKPILING

.1 Stockpile fill materials in areas designated by a Departmental Representative. Stockpile granular materials in a manned to prevent segregation.

.2 Protect fill materials from contamination.

3.4 COFFERDAMS, SHORING, BRACING AND UNDERPINNING

Not Applicable

3.5 DEWATERING AND HEAVE PREVENTION

Not Applicable

3.6 EXCAVATION

.1 Advise a Departmental Representative at least 7 days in advance of excavation operations for initial cross sections to be taken.

.2 Excavate to lines, grades, elevations and dimensions as directed by a Departmental Representative.

.3 Remove concrete and other obstructions encountered during excavation in accordance with Section 02 41 13 - Selective Site Demolition.

.4 Excavation must not interfere with bearing capacity of adjacent foundations.

.5 Dispose of surplus and unsuitable excavated material in approved location off site.

.6 Do not obstruct flow of surface drainage or natural watercourses.

.7 Install geotextiles in accordance with Section 31 32 19.01 – Geotextiles.

3.7 FILL TYPES AND COMPACTION

.1 All fill materials will be in accordance with Section 31 37 00 – Fills. Compaction densities are percentages of maximum densities obtained from ASTM D 698.

3.8 BACKFILLING

.1 Do not proceed with backfilling operations until a Departmental Representative has inspected and approved installations.

.2 Areas to be backfilled to be free from debris, snow, ice, water and frozen ground.

.3 Do not use backfill material which is frozen or contains ice, snow or debris.

.4 Place backfill material in uniform layers not exceeding 300 mm compacted thickness up to grades indicated. Compact each layer before placing succeeding layer.

.5 Backfilling around installations.

.1 Place bedding and surround material as specified elsewhere.
.2 Do not backfill around or over cast-in-place concrete within 48 hours after placing of concrete.
.3 Place layers simultaneously on both sides of installed Work to equalize loading. Difference not to exceed 0.25 m.
.4 Where temporary unbalanced earth pressures are liable to develop on walls or other structures:
.1 Permit concrete to cure for minimum 14 days or until it has sufficient strength to withstand earth and compaction pressure and approval obtained from a Departmental Representative.

.6 Install geotextiles in backfill in accordance with section 31 32 19.01 – Geotextiles as directed by a Departmental Representative.

END OF SECTION