

1 GENERAL

1.01 RELATED SECTIONS

- .1 Section 02 41 23 - Demolition.

1.02 REFERENCES

- .1 American Society for Testing and Materials International (ASTM)
 - .1 ASTM C 117-04, Standard Test Method for Material Finer than 0.075 mm (No.200) Sieve in Mineral Aggregates by Washing.
 - .2 ASTM C 136-05, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
 - .3 ASTM D 422-63 2002, Standard Test Method for Particle-Size Analysis of Soils.
 - .4 ASTM D 698-00a1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft) (600 kN-m/m).
 - .5 ASTM D 4318-[05], Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

1.03 DEFINITIONS

- .1 Excavation classes: one class of excavation will be recognized; common excavation.
 - .1 Common excavation: excavation of materials of whatever nature.
- .2 Topsoil:
 - .1 Material capable of supporting good vegetative growth and suitable for use in top dressing, landscaping and seeding.
 - .2 Material reasonably free from subsoil, clay lumps, brush, objectionable weeds, and other litter, and free from cobbles, stumps, roots, and other objectionable material larger than 25 millimeters (1 inch) in any dimension.
- .3 Waste material: excavated material unsuitable for use in Work or surplus to requirements. Waste material becomes the property of the Contractor.
- .4 Borrow material: material obtained from locations outside area to be graded, and required for construction of fill areas or for other portions of Work.

1.04 SAMPLES

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Inform Departmental Representative at least 2 weeks prior to beginning Work, of proposed source of fill materials and provide access for sampling.

1.05 PROTECTION OF EXISTING CONDITIONS

- .1 Buried services:
 - .1 Before commencing work verify location of buried services on and adjacent to site.

- .2 Remove obsolete buried services to 3.0 metres beyond limits of existing building footprint or as otherwise directed by Departmental Representative: cap cut-offs.
 - .3 Size, depth and location of existing utilities and structures as indicated are for guidance only. Completeness and accuracy are not guaranteed.
 - .4 Prior to beginning excavation Work, notify Departmental Representative having jurisdiction, establish location and state of use of buried utilities and structures. Owner or authorities having jurisdiction to clearly mark such locations to prevent disturbance during Work.
 - .5 Confirm locations of buried utilities by careful test excavations.
 - .6 Maintain and protect from damage, water, sewer, electric, telephone and other utilities and structures encountered as indicated.
 - .7 Where utility lines or structures exist in area of excavation, obtain direction of Departmental Representative before removing or re-routing.
 - .8 Record location of maintained, re-routed and abandoned underground lines.
- .2 Existing building and surface features:
- .1 Conduct, with Departmental Representative, condition survey of adjacent existing building, roadways, signage, trees and other plants, service poles, wires, pavement, survey bench marks and monuments which may be affected by Work.
 - .2 Protect existing building and surface features from damage while Work is in progress. In event of damage, immediately make repair as directed by Departmental Representative.

2 PRODUCTS

2.01 MATERIALS

- .1 Type 1 and Type 2 fill:
 - .1 Crushed, pit run or screened stone, gravel or sand.
 - .2 Gradations to be within limits specified when tested to ASTM C 136 and ASTM C 117. Sieve sizes to CAN/CGSB-8.1 CAN/CGSB-8.2.

.3 Table:

Sieve Designation	% Passing	
	Type 1	Type 2
75 mm	-	100
50 mm	-	-
37.5 mm	100	-
31.5 mm	90-100	-
19 mm	75-100	-
12.5 mm	-	-
9.5 mm	55-85	-
4.75 mm	35-65	22-85
2.00 mm	-	-
0.425 mm	-	5-30
0.300 mm	5-20	-
0.075 mm	0-7	0-10

- .2 Type 3 fill: selected material from excavation or other sources, approved by Departmental Representative for use intended, unfrozen and free from rocks larger than 75 mm, cinders, ashes, sods, refuse or other deleterious materials.

3 EXECUTION

3.01 SITE PREPARATION

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

3.02 PREPARATION / PROTECTION

- .1 Keep excavations clean, free of standing water, and loose soil.
- .2 Protect natural and man-made features required to remain undisturbed.
- .3 Protect buried services that are required to remain undisturbed.

3.03 STOCKPILING

- .1 Stockpile fill materials in areas designated by Departmental Representative. Stockpile granular materials in manner to prevent segregation.
- .2 Protect fill materials from contamination.
- .3 Implement sufficient erosion and sediment control measures to prevent sediment release off construction boundaries and into water bodies.

3.04 DEWATERING

- .1 Keep excavations free of water while Work is in progress.
- .2 Dispose of water in manner not detrimental to public and private property, or portion of Work completed or under construction.

3.05 EXCAVATION

- .1 Excavate as required for demolition of existing ramp and entrance landing structures and installation of new work.
- .2 Remove concrete, masonry, paving, slabs-on-grade, demolished foundations and rubble, and other obstructions encountered during excavation in accordance with Section 02 41 23 - Demolition and as indicated.
- .3 Do not disturb soil within branch spread of trees or shrubs that are to remain. If excavating through roots, excavate by hand and cut roots with sharp axe or saw.
- .4 Restrict vehicle operations directly adjacent to open excavations.
- .5 Dispose of surplus and unsuitable excavated material off site and transport to a suitable disposal site. The material to be disposed of becomes the

property of the Contractor. The Contractor will be responsible for the disposal site and its proper use.

- .6 Do not obstruct flow of surface drainage or natural watercourses.
- .7 Earth bottoms of excavations to be undisturbed soil, level, free from construction debris and loose, soft or organic matter.
- .8 Notify Departmental Representative when bottom of excavation is reached.
- .9 Obtain Departmental Representative's approval of completed excavation.
- .10 Remove unsuitable material from bottom of excavation to extent and depth as directed by Departmental Representative.
- .11 Hand trim, make firm and remove loose material and debris from excavations. Where material at bottom of excavation is disturbed, compact foundation soil to density at least equal to undisturbed soil.

3.06 FILL TYPES AND COMPACTION

- .1 Use types of fill as indicated or specified below. Compaction densities are obtained from ASTM D1557. Place all material in maximum 200 mm thick lifts and compact to specified value of Standard Proctor Modified Dry Density, (SPMDD).
 - .1 Under Footings:
 - .1 Use Type 1 Fill.
 - .2 Compact to 98%.
 - .2 Within 100 mm under foundation insulation below ramps:
 - .1 Use Type 1 Fill.
 - .2 Compact to 98%.
 - .3 Backfill against foundations at main entrance slab/stair and ramp.
 - .1 Use Type 2 or approved Type 3 Fill.
 - .2 Compact to 98% at interior and under concrete slabs, 95% at other exterior areas, unless otherwise indicated.
 - .4 Fill-to-subgrade, (under paved surfaces):
 - .1 Use Type 2 Fill or approved Type 3 Fill.
 - .2 Compact to 95%.
 - .5 Fill to correct over-excavation:
 - .1 Use Type 1 Fill.
 - .2 Compact to 98%.

3.07 BACKFILLING

- .1 Do not proceed with backfilling operations until Departmental Representative has inspected and confirmed complete removal of items to be demolished.
- .2 Reinstate all areas affected by site demolition to elevation of top of floor of existing building.
- .3 Areas to be backfilled to be free from debris, snow, ice, water and frozen ground.
- .4 Backfill areas excavated for demolition and removal of existing entrance ramp foundations with Type 2 Fill.

- .5 Do not use backfill material which is frozen or contains ice, snow or debris.
- .6 Place backfill material in uniform layers not exceeding 300 mm uncompacted thickness up to grades indicated. Compact each layer before placing succeeding layer.

3.08 RESTORATION

- .1 Upon completion of Work, remove waste materials and debris, trim slopes, and correct defects as directed by Departmental Representative.
- .2 Replace topsoil as directed by the Departmental Representative.
- .3 Reinstate lawns to elevation which existed before excavation.
- .4 Reinstate pavements and sidewalks disturbed by excavation to thickness, structure and elevation which existed before excavation.
- .5 Clean and reinstate areas affected by Work as directed by Departmental Representative.

END OF SECTION