

PART 1 - GENERAL

- 1.1 Description of Work
- .1 This Section specifies requirements for furnishing all materials, labour, tools and equipment and performing all operations necessary to strip and remove over burden from areas designated, complete excavation of all types of material encountered, placing of excavated material as backfill in trenches and embankments, disposal of unsuitable or frozen material, disposal of surplus material, furnishing and placing backfill material as specified below, all as shown on the Project Drawings and as specified.
- .2 The work generally includes, but is not necessarily limited to, the following items:
- .1 Preparing ground for excavation.
- .2 Excavation and backfilling.
- .3 Structure excavation and backfilling.
- .4 Control of water by dewatering.
- .5 Providing borrow material when required.
- .6 Removal and disposal of frozen or unsuitable material.
- .7 Removing surplus material.
- .8 Sheet piling, shoring and bracing to support sides of excavations, existing structures or utilities.
- .9 Stripping, and replacing asphalt and granular surfaces.
- 1.2 Related Sections
- .1 Section 03 30 00 - Cast in Place Concrete.
- .2 Section 32 98 00 - Reinstatement.
- 1.3 References
- .1 ASTM C117-13. Test Method for Material Finer Than 0.075 mm (No. 200) Sieve in Mineral Aggregates by Washing.
- .2 ASTM C136/C136M-14, Method for Sieve Analysis of Fine and Coarse Aggregates.

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- .3 ASTM D698-12e2, Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12400 ft-lbf/ft<sup>2</sup>(600 kN-m/m<sup>3</sup>)).
- .4 Prince Edward Island Department of Transportation and Infrastructure Renewal Standard Specifications.
- 1.4 Definitions
- .1 Excavation: excavation of materials of whatever nature including dense tills, hardpan, frozen materials, boulders, bedrock, debris and all other materials encountered on the site.
- .2 Selected Backfill: excavated on-site material suitable for grading work.
- 1.5 Protection of Existing Features
- .1 Existing buried utilities and structures:  
.1 Size, depth and location of existing utilities and structures as indicated are for guidance only. Completeness and accuracy are not guaranteed. Carry out test digs as required to locate services, etc.
- 1.6 Shoring and Bracing
- .1 Comply with Section 01 35 29 Health and Safety Requirements and applicable local regulations.
- .2 Provide shoring and bracing as required to prevent movement, failure or settlement, to safeguard and maintain integrity of structures, utilities, earth, benchmarks, services and adjacent grades.
- .3 Engage services of qualified Professional Engineer registered in the Province of Prince Edward Island to inspect and approve shoring equipment required for work.
- 1.7 Samples
- .1 When requested submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 At least two (2) weeks prior to commencing
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work, inform Departmental Representative of proposed source of bedding, backfill or cover materials and provide access for sampling.

## PART 2 - PRODUCTS

### 2.1 Materials

- .1 Select Backfill Material: approved material from site excavation or borrow pits. Such material must be free from stumps, trees, roots, sod, muck or other deleterious material. The material shall be free from frost, and shall not be placed on frozen ground or in water. It must have a moisture content that will allow compaction to the specified densities.
- .2 Structural Fill: native excavated material in accordance with PEI TIR General Specifications for Select Borrow.

## PART 3 - EXECUTION

### 3.1 Site Preparation

- .1 Remove obstructions from surfaces to be excavated within limits indicated.

### 3.2 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.

### 3.3 Excavation

- .1 Carry out excavations and removals. Excavate to lines, grades, elevations and dimensions as indicated.
- .2 Remove rubble and other obstructions encountered during excavation.

- .3 Dispose of surplus and unsuitable excavated material in approved location off site in accordance with PEI Department of Environment regulations.
- .4 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 not less than undisturbed soil.
- .5 Obtain excavation permit prior to starting any on-site excavations.

#### 3.4 Backfilling

- .1 Generally, the backfill will be sourced from the excavated material on-site. If additional backfill is required to replace unsuitable material, provide backfill from offsite source that matches the description provided herein. If additional engineered structural fill is required, provide in accordance with the specifications provided herein.
- .2 Do not proceed with backfilling operations until the Departmental Representative has inspected and approved installation.
- .3 Backfill areas that are free from debris, snow, ice, water and frozen ground.
- .4 Do not use backfill material which is frozen or contains ice, snow or debris.
- .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 24 hours after placing of concrete.
- .6 Where earth pressures are liable to develop permit concrete to cure for minimum 28 days

to withstand earth and compaction pressures. Do not install earth or backfill until concrete has cured completely.

.7 Place protective material layer under, around and over minor installations until 600 mm of cover is provided. Dumping material directly on installations will not be permitted.

.8 Place backfill materials of earth fill around structure in uniform layers not exceeding 200 mm compacted thickness up to finish grade. Compact each layer replacing succeeded layer.

### 3.5 Restoration

.1 Upon completion of work, remove surplus materials and debris, trim slopes, and correct defects noted by Departmental Representative.

.2 Clean and reinstate areas affected by work as directed by Departmental Representative.

.3 Restore site to its normal state prior to excavation.