

**PART 1. GENERAL**

**1.1 RELATED SECTIONS**

- .1 Section 01 10 10 - General Instructions
- .2 Section 01 35 43 - Environmental Procedures

**1.2 REGULATIONS**

- .1 Shore and brace excavations, protect slopes and banks and perform all work in accordance with Provincial and Municipal regulations whichever is more stringent.
- .2 Materials and workmanship must meet or exceed requirements of specified standards, codes and referenced documents.

**1.3 TESTING & REVIEWS**

- .1 Testing of materials and compaction of backfill will be carried out by a testing laboratory designated by the departmental Representative.
- .2 Not later than 48 h before backfilling or filling with approved material, notify the Consultant so that compaction tests can be carried out by designated testing agency.
- .3 Before commencing work, conduct, with the Departmental Representative, condition survey of existing buildings, trees and other plants, lawns, fencing, service poles, wires, rail tracks and paving, survey bench marks and monuments which may be affected by work.

**1.4 BURIED SERVICES**

- .1 Before commencing work, establish the location of all buried services on and adjacent to the site.
- .2 Arrange with appropriate authority for relocation of buried services that interfere with execution of work. Pay costs of relocating services.

### **1.5 INTERPRETATION OF DOCUMENTS**

- .1 Division 01 sections take precedence over the technical specification sections in other Divisions of the Specification Manual.

### **1.5 COST BREAKDOWN**

- .1 Before submitting first progress claim submit breakdown of Contract price in detail. Required forms will be provided for application of progress payment.
- .2 List items of work numerically following the same division/section number system of the specification manual and thereafter sub-divide into major work components and building systems.
- .3 Cost breakdowns will be used as basis for progress payment.

### **1.6 DOCUMENTS REQUIRED**

- .1 Maintain at job site, one copy each of the following:
  - .1 Project Drawings
  - .2 Project Specifications
  - .3 Addenda
  - .4 Reviewed Shop Drawings
  - .5 List of outstanding shop drawings
  - .6 Change Orders
  - .7 Other modifications to Contract
  - .8 Field Test Reports
  - .9 Copy of Accepted Work Schedule
  - .10 Health and Safety Plan and other safety related documents
  - .11 Other documents as stipulated elsewhere in the Contract Documents.

### **1.8 PERMITS**

- .1 In accordance with the General Conditions, obtain and pay for permits, certificates, licenses and other as required by municipal, provincial and federal authorities.
- .2 Provide appropriate notifications of project to municipal and provincial inspection authorities.
- .3 Obtain compliance certificates as prescribed by legislative and regulatory provisions of municipal, provincial and federal authorities as applicable to the performance of work.

- .4 Submit to Departmental Representative, a copy of application forms and approval documents received from above referenced authorities.

**1.5 PROTECTION**

- .1 Protect excavations from freezing.
- .2 Keep excavations clean, free of standing water, and loose soil.
- .3 Where soil is subject to significant volume change due to change in moisture content, cover and protect to Consultant's approval.
- .4 Protect natural and man-made features required to remain undisturbed. Unless otherwise indicated or located in an area to be occupied by new construction, protect existing trees from damage.
- .5 Protect buried services that are required to remain undisturbed.

**PART 2. PRODUCTS**

**2.1 GRAVELS**

- .1 Gravels: Pit run or manufactured sand and gravel consisting of hard durable particles free of deleterious materials such as weak rock, organics, mud, frozen ground, ice, snow, and foreign matter (such as asphalt or concrete, etc.); and shall meet the following gradation requirements when tested to ASTM C136 and ASTM C117:

Type-1		Type-2	
Sieve Size	% Passing	Sieve Size	% Passing
20,000	100	80,000	100
14,000	50 - 85	56,000	70 - 100
5,000	20 - 50	28,000	50 - 80
160	5 - 12	14,000	35 - 65
80	3 - 8	5,000	20 - 50
		160	5 - 12
		80	0 - 7

**2.2 SELECT FILL**

- .1 Select fill: approved, well-graded pit run or manufactured sand and gravel. Soil free of deleterious materials such as weak rock, organics, mud, frozen material, rock in excess of 150 mm on any dimension, and foreign matter (concrete, asphalt, etc.). Sandstone materials are considered acceptable.

- .2 Native till materials may be used as select fill if their in-situ water contents are maintained and they meet the specification as described above.

### 2.3 PIPE BEDDING

- .1 Sewer and water pipe bedding shall consist of approved well graded sand or granular material free of clay, frozen lumps, organic and deleterious material, and shall meet the following gradation requirements when tested to ASTM C136 and ASTM C117:

Sieve Size	% Passing
38 mm	100
25 mm	95 - 100
19 mm	90 - 100
9.5 mm	60 - 100
4.75 mm	35 - 80
2.36 mm	15 - 60
0.300 mm	0 - 30
0.075 mm	0-10

## PART 3. EXECUTION

### 3.1 CLEARING & GRUBBING

- .1 Remove trees, stumps, logs, brush, shrubs, bushes, vines, undergrowth, rotten wood, dead plant material, exposed boulders and debris within THE "Extent of Construction" areas designated on drawings.
- .2 Remove stumps and tree roots below footings, slabs, and paving, and to 600 mm below finished grade elsewhere.
- .3 Dispose of cleared and grubbed material off site daily to disposal areas acceptable to authority having jurisdiction.

### 3.2 EXCAVATION

- .1 Strip topsoil over areas to be covered by new construction, over areas where grade changes are required, and so that excavated material may be stockpiled without covering topsoil. Stockpile topsoil on site for later use.
- .2 Excavate as required to carry out work, in all materials met. Do not disturb soil or rock below bearing surfaces. Notify Consultant when excavations are complete. If bearings are unsatisfactory,

additional excavation will be authorized in writing and paid for as additional work. Excavation taken below depths shown without Consultant's written authorization to be filled with concrete of same strength as for footings at Contractor's expense.

- .3 Excavate trenches to provide uniform continuous bearing and support for 150 mm thickness of pipe bedding material on solid and undisturbed ground. Trench widths below point 150 mm above pipe not to exceed diameter of pipe plus 600 mm.
- .4 Excavate for trenching and roadways to subgrade levels. In addition, remove all topsoil, organic matter, debris and other loose and harmful matter encountered at subgrade level.

### **3.3 BACKFILLING**

- .1 Inspection: do not commence backfilling until fill material and spaces to be filled have been inspected and approved by Consultant.
- .2 Harmful matter: remove all snow and ice, construction debris, organic soil and free standing water from spaces to be filled.
- .3 Lateral support: maintain even levels of backfill around structures as work progresses, to equalize earth pressures.
- .4 Compaction of subgrade: compact existing subgrade under walks, paving, and slabs on grade, to same compaction as specified for fill. Fill excavated areas with select subgrade material compacted as specified for fill.
- .5 Place backfill, fill and base course material in maximum 300 mm lifts.
- .6 Compact each layer by rollers, mechanical tampers, or other suitable equipment to obtain a density of not less than 98% Standard Proctor Density, with the following exceptions:
  - .1 Gravel under paved surface to 100% Standard Proctor Density.
  - .2 Clear stone to 70% Standard Proctor Density.

**END OF SECTION**