

**PART 1 GENERAL**

**PART 1: GENERAL**

**1.1 GENERAL REQUIREMENTS**

- .1 Comply with the General Conditions, Supplementary Conditions, the requirements of Division 1, and any supplements and/or addenda.

**1.2 WORK INCLUDED**

- .1 Provide all plant, labour, equipment and materials to Complete the excavating, backfilling, rough grading, and granular mat.

**1.3 RELATED WORK SPECIFIED ELSEWHERE**

- .1 Cast-In-Place Concrete Section 03000

**1.4 REQUIREMENTS OF REGULATORY AGENCIES**

- .1 Ontario Building Code, as currently amended.
- .2 The Occupational Health & Safety Act, and Regulations or Construction Projects, local by-laws and all other regulations of the Ontario Ministry of Labour relating to the work of this section.
- .3 M.T.C. Form 1010, Specification for Selected Granular Base Course.

**1.5 DRAWINGS**

- .1 Examine the drawings forming a part of this Contract and conform to the requirements of all such drawings.

**1.6 CO-ORDINATION & CO-OPERATION**

- .1 Co-ordinate the work of this Section with the work of all other Sections in accordance with the General Instructions.
- .2 Co-ordination and co-operation is particularly important with the following Section: Cast-In-Place Concrete, Excavation.

### 1.7 EXAMINATION

- .1 Examine the site for the purpose of determining the conditions prevailing there, which may affect the work of this Section, including available access to the site, site contours, existing services, etc.

### 1.8 EXAMINATION

- .2 Determine the nature and location of all existing services below and above ground, which may affect the work of this Section. Spray surface to identify all underground locations of utilities.

### 1.9 UNIT PRICES

- .1 Provide in the Form of Tender all requested unit prices.
- .2 Include all labour, equipment, materials, and applicable taxes in the unit prices so that each unit price represents the total cost for the completion of the work including hauling where applicable, excluding overhead and profit. See GC item#22 for overhead and profit.

## PART 2: PRODUCTS

### 2.1 MATERIALS

- .1 Concrete - in accordance with Divisions 3 of this Specification as follows:  
- lean concrete fill - f'c =10 MPa., slump =125mm.
- .2 Granular Fills - Class 'A' & Class 'B' - imported, in accordance with current O.P.S.S. From 1010 for Granular 'A' and Granular 'B'.
- .3 Loose Sand Granular 'C'.
- .4 Crushed Stone - clean and screened crushed stone. Graded in size between 3/8" and 1" with sufficient angular particles rather than round to ensure proper compaction
- .5 Granular materials shall be free draining and not

susceptible to frost action as determined by current M.T.C. standards.

- .6 Submit representative samples of each class of proposed material to the inspection company for testing and approval for use on this project. Mark samples as to source of supply, including pit locations.
- .7 Supply only those materials approved for use on this project by the inspection company.

## 2.2 FABRICATION

- .1 Mixing, transporting, placing, curing and protection of concrete in accordance with Division 3.

## 2.3 SOURCE QUALITY CONTROL

- .1 All materials shall be subject to test and inspection by a testing and inspection company appointed by the Consultant.
- .2 Cost of testing will be paid by the Owner, in accordance with Division 1.
- .3 Provide representative samples of materials as may be required by the inspection company at no additional cost to the Owner.

## PART 3: EXECUTION

### 3.1 EXCAVATION

- .1 Found footings on undisturbed native soil stratum at the elevations and locations shown on the drawings.
- .2 Footings are designed for a maximum safe allowable bearing pressure under service loads of 2,000 psf for footings on undisturbed native soil.
- .3 Notify the Consultant of any unusual soil conditions encountered during excavation so that corrective action may be taken if necessary.
- .4 Where excavations for footings are accidentally over-excavated, fill the over-excavated portion with

lean concrete fill to the founding elevation shown on the plans, at no additional cost to the Owner.

- .5 Provide excavations for footings of sufficient width for the construction and inspection of formwork and the satisfactory and safe execution of the work. In general, provide not less than 18" clear of all construction.
- .6 Trim the bottom of all excavations to elevations as shown on the drawings or approved by the Consultant.
- .7 Step footings from one elevation to another as shown on the drawings or approved by the Consultant.
- .8 Install footings at lower elevations prior to installing adjacent footings at higher elevations to ensure that bearing capacity of upper levels is not adversely disturbed.
- .9 Stockpile all excavated soil materials on site at locations approved by the Consultant for later use on the project. Excess material to be removed from site at the Contractor's expense at completion of construction ( assumed for landscaping ).
- .10 For materials to be used as controlled fills, protect the stockpiles from rain, snow and melt water.
- .11 Notify the testing company when each phase of the excavation is completed so that bearing surfaces may be inspected.

### 3.3 EXCAVATION

- .12 Arrange to have footings poured within 24 hours of reaching founding elevation.

### 3.4 PUMPING & DEWATERING

- .1 Keep all excavations, pits, and trenches free from

accumulations of water from all sources, including ground water, rain, and surface water at all times by pumping of other methods satisfactory to the Consultant.

- .2 Conduct dewatering operations, when required, in such a manner as to avoid damage to work under construction or the strength of bearing soils or to endanger the stability of banks or slopes.

### 3.5 **PROTECTION OF EXCAVATIONS**

- .1 Protect all excavations against penetration of frost and damage from moisture before, during and after the placement of concrete.
- .2 Protect adjacent construction and underground services from damage resulting from the excavation operations and from frost penetration.

### 3.6 **BACKFILL & COMPACTION** (Outside the structure)

- .1 After the construction of footings, pits, walls or piers and the approval of the work by the Consultant, backfill and compact with 8" minimum layer of granular 'B' material below roadways and 6" minimum layer of granular 'B' material below sidewalks.
- .2 All backfill materials are to be compacted.
- .3 Backfill and compact in equal lifts on each side of walls below grade.
- .4 Deposit and spread granular materials in uniform layers not exceeding 8" (loose measurements) in depth.
- .5 Compact all granular materials underneath roadways and sidewalks adjacent to building to not less than 98% of Standard Proctor Density. Maintain optimum water content for proper compaction by the addition of water as required. Do not use frozen materials in the backfill.
- .6 Compact using approved vibratory plate tampers or vibratory rollers, except when working close to silt or other materials which may be adversely affected by

vibration in which case, use approved non-vibratory rollers to avoid disturbance of the sub-grade.

- .7 Do not compact adjacent to walls with earth on one side any closer than 6 feet with heavy equipment. Use hand controlled compaction equipment within this zone.

### **3.7 SUB FLOOR GRANULAR FILL**

- .1 Prior to placing granular fill, remove all soft and loose materials, sub-excavated any soft spots and replace with compacted granular 'B'. Proof-roll sub-grade to 98% of Standard Proctor Density.
- .2 Provide a minimum of 6" of compacted granular 'A' under the slab-on-grade as show on the drawings.
- .3 Compact using mechanical vibrating plate tampers to 100% of Standard Proctor Density.
- .4 Take care not to damage any underfloor mechanical/ electrical systems. All mechanical and electrical conduits are to be recessed below the underside of slab on grade.
- .5 Remove clay, silt, dirt and construction debris from the granular layers and replace any contaminated material before the vapour barrier is placed.

### **3.8 ROUGH GRADING**

- .1 Rough grade all areas around the building in accordance with the site plan with due allowance for the existing and required grade shown, and as directed by the Consultant.
- .2 Slope ground so that water will be directed away from the building. Rough graded areas shall be cleanly raked free of course material and left ready for final grade.

### **3.9 CLEAN-UP**

- .1 At the completion of the work of this Section, remove from the site any excess materials, debris and

equipment, including stockpiled materials not required for backfill, landscaping, road or parking lot construction.

### 3.10 FIELD QUALITY CONTROL

- .1 All materials and workmanship shall be subject to test and inspection by a testing and inspection company appointed by the Consultant.
- .2 The cost of testing except will paid for out of the  
Cash Allowance Section  
01020, in accordance with  
Division 1.
- .3 Material or workmanship which fails to achieve the specified standards shall be recompacted or replaced as directed by the Consultant ad additional tests made. The cost of such additional testing and the cost of remedial action shall be at no additional cost to the Owner.
- .4 The compaction tests are performed on behalf of the Owner to satisfy the Consultant that the requirements of the Contract have been met. They are **not** intended as a substitute for the Sub-Contractor's quality control program.

END OF SECTION