Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 07 61 00 - Sheet Metal Roofing.

.2 Section 07 62 00 - Sheet Metal Flashing and Trim.

.3 Section 26 41 13 - Lightning Protection for Structures.

1.2 REFERENCES

.1 American Society for Testing and Materials International (ASTM)

.1 ASTM C117, Standard Test Method for Material Finer than 0.075 mm (No.200) Sieve in Mineral Aggregates by Washing.

.2 ASTM C136, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.

.3 ASTM D422, Standard Test Method for Particle-Size Analysis of Soils.

.4 ASTM D698, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft

.5 ASTM D1557, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft

.6 ASTM D4318, Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

.2 Ministère des Transports du Québec

.1 CCDG (Cahier des charges et devis généraux du ministère des Transports du Québec), dernière édition.

1.3 DEFINITIONS

.1 Excavation classes: on class of excavation will be recognized; common excavation.

.1 Common excavation: excavation of materials of whatever nature, which are not included under definitions of rock excavation.

.2 Borrow material: material obtained from locations outside area to be graded, and required for construction of fill areas or for other portions of Work.

.3 Contaminated materials: common excavation materials that can be reused for backfilling excavations where indicated, but where in excess should be disposed of in appropriate locations based on the level and type of contamination.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

.1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 Quality Control: in accordance with Section 01 45 00 - Quality Control:

.1 Submit for review by Departmental Representative proposed dewatering and heave prevention methods as described in PART 3 of this Section.

.2 Submit to Departmental Representative written notice when bottom of excavation is reached.

.3 Preconstruction Submittals:

.1 Submit construction equipment list for major equipment to be used in this section prior to start of Work.

.2 Ask Info-Excavation to locate the existing underground utilities.

.1 Coordinate this exercise with Departmental Representative in order for him to obtain the additional information to be be provided by the occupants of the Citadel.

.3 Submit records of underground utility locates, indicating:

.1 Location plan of existing utilities as found in field;

.2 Clearance record from utility authority

.3 Location plan of relocated and abandoned services, as required.

.4 Samples:

.1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.

.1 Submit:

.1 One sample, in a one liter container, of the natural granite to be used for the new stone beds at the base of the downspouts;

.2 One sample, 300 x 300 mm, of the geotexile.

.3 Technical data sheets from the manufacturer of each of these product.

.2 Inform Departmental Representative at least 2 weeks prior to beginning Work, of proposed source of borrowed materials that will be used.

1.5 QUALITY ASSURANCE

.1 Health and Safety Requirements:

.1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

1.6 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.2 Divert excess aggregate materials from landfill to local quarry or recycling facility for reuse as directed by Departmental Representative.

.3 All the soil that was not reused will have to be piled and before its disposal characterized in accordance to the MDDELCC Policy (Policy of Soil Protection and Rehabilitation of Contaminated Land), by a specialised firm.

1.7 EXISTING CONDITIONS

.1 Buried services:

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

.2 Arrange with appropriate authority for relocation of buried services that interfere with execution of work: pay costs of relocating services.

.3 Remove obsolete buried services within 2 m of foundations: cap cut-offs.

.4 Size, depth and location of existing utilities and structures as indicated are for guidance only. Completeness and accuracy are not guaranteed.

.5 Prior to beginning excavation Work, establish location and state of use of buried utilities and structures, and notify applicable authorities having jurisdiction. Authorities having jurisdiction will have to clearly mark such locations to prevent disturbance during Work.

.6 Confirm locations of buried utilities by careful test excavations.

.7 Maintain and protect from damage, water, sewer, gas, electric, telephone and other utilities and structures encountered as indicated.

.8 Where utility lines or structures exist in area of excavation, obtain direction of Departmental Representative before removing or re-routing.

.9 Record location of maintained, re-routed and abandoned underground lines.

.10 Confirm locations of recent excavations adjacent to area of excavation.

.2 Existing buildings and surface features:

.1 Conduct, with Departmental Representative, condition survey of existing buildings which may be affected by Work.

.2 Protect existing buildings and surface features from damage while Work is in progress. In event of damage, immediately make repair as directed by Departmental Representative

Part 2 Products

2.1 MATERIALS

.1 New stone beds

.1 Clean stone in accordance with the following requirements:

.1 Natural granite, diameter of 40 to 50 mm, grey colour.

.2 Geotextiles: needlepunched nonwoven short staple fibers polypropylene membrane, having the following properties:

.1 Thickness: 1,1 mm minimum

.2 Grab tensile (ONGC 148.1 no. 7.3): 550 N

.3 Grab elongation (ONGC 148.1 no. 7.3): 45 - 105 %

.4 Trapezoid tear (ONGC 4.2 no. 12.2): 250 N

.5 Mullen burst (ONGC 4.2 no. 11.1): 1 585 kPa

.6 Permeability (ONGC 148.1 no. 4): 0.23 cm/s

.7 Filtration opening size, FOS (ONGC 148.1 no. 10): 180 µm

Part 3 Execution

3.1 SITE PREPARATION

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

3.2 PREPARATION/PROTECTION

.1 Protect existing features in accordance with Section 01 56 00 - Temporary Barriers and Enclosures and applicable local regulations.

.2 Keep excavations clean, free of standing water, and loose soil.

.3 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.

.4 Protect buried services that are required to remain undisturbed.

3.3 HISTORICAL/ARCHEAOLOGICAL CONTROL

.1 Excavation work will have to be perform under the surveillance of an archaeologist, in accordance with Section 01 11 01 - Work related general information.

.2 Notify Departmental Representative immediately of any archaeological discovery made during Work and await written instructions before resuming Work in the area of the discovery.

3.4 STRIPPING OF TOPSOIL

.1 Begin topsoil stripping of areas as indicated Departmental Representative after area has been cleared of brush, weeds and grasses and removed from site.

.2 Strip topsoil to depths [as indicated] [as directed by Departmental Representative.

.1 Do not mix topsoil with subsoil.

.3 Stockpile in locations as indicated by Departmental Representative.

.1 Stockpile height not to exceed 2 m and should be protected from erosion.

.4 Dispose of unused topsoil off site.

3.5 STOCKPILING

.1 Stockpile all common excavation materials for environmental characterization, by a specialized firm. The costs related to these characterization tests will be paid by the Departmental Representative.

.2 Stockpile fill materials in areas designated by Departmental Representative.

.1 Stockpile granular materials in manner to prevent segregation.

.3 Protect fill materials from contamination.

.4 Implement sufficient erosion and sediment control measures to prevent sediment release off construction boundaries and into water bodies.

3.6 EXCAVATION

.1 Advise Departmental Representative at least 2 weeks in advance of excavation operations for initial cross sections to be taken.

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

.3 Excavation and drilling work

- .1 Excavate in designated locations to allow for the installation of new stone beds under some water downspouts.
  - .1 Considering the small quantity of soil to be excavated, this work will be done manually.
- .2 Drill in designated locations to allow for the installation of new ground rods.
  - .1 Some borings will have to be made through a concrete sidewalk;
  - .2 Below the finished ground surface, the bedrock is outcropping.

.4 Remove concrete, masonry, paving, walks, demolished foundations and rubble and other obstructions encountered during excavation as well as any other obstacle.

.5 Keep excavated and stockpiled materials safe distance away from edge of trench as directed by Departmental Representative.

.6 Dispose of surplus and unsuitable excavated material off site.

.7 Earth bottoms of excavations to be undisturbed soil, level, free from loose, soft or organic matter.

.8 Notify Departmental Representative when bottom of excavation is reached.

.9 Obtain Departmental Representative approval of completed excavation.

.10 Remove unsuitable material from trench bottom including those that extend below required elevations to extent and depth as directed by Departmental Representative.

.11 Hand trim, make firm and remove loose material and debris from excavations.

- .1 Where material at bottom of excavation is disturbed, compact foundation soil to density at least equal to undisturbed soil.
- .2 Clean out rock seams and fill with concrete mortar or grout to approval of Departmental Representative.

.12 Install geotextiles in accordance with the manufacturer's instructions.

3.7 FILL TYPES AND COMPACTION

.1 Use types of new fill as indicated on architectural drawings.

3.8 BACKFILLING

.1 Do not proceed with backfilling operations until completion of following:

- .1 Departmental Representative has inspected and approved installations.
- .2 Departmental Representative has inspected and approved of construction below finish grade.

.3 Inspection, testing, approval, and recording location of underground utilities.

.4 Removal of shoring and bracing; backfilling of voids with satisfactory soil material.

.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 150 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.

3.9 RESTORATION

.1 Upon completion of Work, remove waste materials and debris in accordance to Section 01 74 21 - Construction/Demolition Waste Management and Disposal, trim slopes, and correct defects as directed by Departmental Representative.

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

.3 Protect newly graded areas from traffic and erosion and maintain free of trash or debris.

END OF SECTION