

1. General

1.1 Section Includes

- 1.1.1 This section specifies topsoil, topsoil amendments, the stripping of topsoil, the preparation of existing grades, the placement of topsoil and finished grading.

1.2 Related Sections

- 1.2.1 Section 01 33 00 – Submittal Procedures.
- 1.2.2 Section 32 92 19 – Hydraulic Seeding and Sodding.
- 1.2.3 Section 01 74 11 – Cleaning.
- 1.2.4 Section 31 00 00 – Earthwork and Related Work.
- 1.2.5 Section 31 23 33 – Excavation, Trenching and Backfilling.

1.3 References

- 1.3.1 Agriculture and Agri-Food Canada:
- The Canadian System of Soil Classification, Third Edition, 1998.

1.4 Submittals

- 1.4.1 Provide submittals in accordance with Section 01 33 00 – Submittal Procedures.
- 1.4.2 Quality control submittals :
- Soil testing: submit certified test reports showing compliance with specified performance characteristics and physical properties as described in PART 2 - SOURCE QUALITY CONTROL.
 - Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.5 Waste Management and Disposal

- 1.5.1 Separate waste materials for reuse and recycling.

2. Products

2.1 Topsoil

- 2.1.1 Topsoil for seeded and sod areas: mixture of particulates, micro organisms and organic matter which provides suitable medium for supporting intended plant growth:

- Soil texture based on The Canadian System of Soil Classification, to consist of 20 to 70 % sand, minimum 7% clay, and contain 2 to 10% organic matter by weight.
- Contain no toxic elements or growth inhibiting materials.
- Finished surface free from:
 - ♦ Debris and stones over 50 mm diameter.
 - ♦ Course vegetative material, 10 mm diameter and 100 mm length, occupying more than 2% of soil volume.
- Consistence: friable when moist.
- Ph value: 6.5 to 8.0.

2.2 Soil Amendments

2.2.1 Fertilizer shall be in accordance with Section 32 92 19.16, Hydraulic Seeding and Sodding.

- Fertilizer: industry accepted standard medium 6-12-12 grade, uniform in composition, free flowing and suitable for application with approved equipment and shall be shipped to the site in bags or other convenient containers, each fully labelled, conforming to applicable local, Provincial and Federal regulations, and bearing the name, trademark or trade name and warranty of the manufacturer.

2.2.2 Sand: washed coarse silica sand, medium to course textured.

2.2.3 Limestone shall be ground limestone containing not less than 85% of total carbonates and shall be ground to such fineness that at least 50 % will pass through a 100 mesh sieve and at least 90% will pass through a 20 mesh sieve. Coarser materials will be acceptable provided the specified rates of application are increased proportionally on the basis of quantities passing the 100 mesh sieve, but no additional payment will be made for the increased quantity used.

2.3 Source Quality Control

2.3.1 The Contractor shall utilize materials saved and previously stockpiled for this purpose during site development prior to importing material.

2.3.2 The Contractor shall inform the Departmental Representative of the proposed source of imported topsoil and manufactured topsoil material to be supplied if applicable, and provide access for sampling. Acceptance of imported topsoil subject to inspection and/or soil analysis test results.

2.3.3 Contractor is responsible for amendments to supply topsoil as specified.

2.3.4 Testing of topsoil will be carried out by testing laboratory designated by Departmental Representative.

- Soil sampling, testing and analysis to be in accordance with Province of Newfoundland and Labrador standards.

3. Execution

3.1 Temporary Erosion and Sedimentation Control

- 3.1.1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction and the sediment and erosion control plan, specific to site, whichever is more stringent.
- 3.1.2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- 3.1.3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.2 Stripping of Topsoil

- 3.2.1 Begin topsoil stripping of areas as indicated after area has been cleared of brush, weeds and grasses and removed from site.
- 3.2.2 If, in the opinion of the Departmental Representative, any on-site subsoil material falls within or close to the specified textural range parameters, it shall be amended cost-effectively to provide an effective growing medium, thus conserving topsoil supply.
- 3.2.3 Strip topsoil to depths as indicated or as otherwise as directed by Departmental Representative:
 - Avoid mixing topsoil with subsoil where textural quality will be moved outside acceptable range of intended application.
- 3.2.4 Stockpile in locations as directed by the Departmental Representative or as otherwise indicated:
 - Stockpile height not to exceed 2 m.
- 3.2.5 Disposal of unused topsoil is to be in an environmentally responsible manner but not used as landfill.
- 3.2.6 Protect stockpiles from contamination and compaction.

3.3 Preparation of Existing Grade

- 3.3.1 Verify that grades are correct:

- If discrepancies occur, notify Departmental Representative and do not commence work until instructed by Departmental Representative.

3.3.2 Grade soil, eliminating uneven areas and low spots, ensuring positive drainage.

3.3.3 Remove debris, roots, branches, stones in excess of 50 mm diameter and other deleterious materials:

- Remove soil contaminated with calcium chloride, toxic materials and petroleum products.
- Remove debris which protrudes more than 25 mm above surface.

3.3.4 Cultivate entire area which is to receive topsoil to minimum depth of 150 mm:

- Cross cultivate those areas where equipment used for hauling and spreading has compacted soil.

3.4 Placing and Spreading of Topsoil

3.4.1 Place topsoil after Departmental Representative has accepted subgrade.

3.4.2 Spread topsoil in uniform layers not exceeding 150 mm.

3.4.3 Spread topsoil as indicated to following minimum depths after settlement:

- 150 mm for seeded areas.

3.4.4 Manually spread topsoil/planting soil around trees, shrubs and obstacles.

3.5 Soil Amendments

3.5.1 Shall be placed in accordance with Section 32 92 19 – Hydraulic Seeding and Sodding.

3.6 Finish Grading

3.6.1 Grade to eliminate rough spots and low areas and ensure positive drainage:

- Prepare loose friable bed by means of cultivation and subsequent raking.

3.6.2 Consolidate topsoil to required bulk density using equipment approved by Departmental Representative:

- Leave surfaces smooth, uniform and firm against deep footprinting.

3.7 Acceptance

3.7.1 Departmental Representative will inspect and test topsoil in place and determine acceptance of material, depth of topsoil and finish grading.

3.8 Surplus Material

- 3.8.1 Dispose of or stockpile excess materials at a location approved or designated by the Departmental Representative.

3.9 Cleaning

- 3.9.1 Proceed in accordance with Section 01 74 11 – Cleaning.
- 3.9.2 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

4. Measurement and Basis for Payment

4.1 Measurement for Payment

- 4.1.1 Preparation of the sub-grade for the placement of topsoil will not be measured for payment.
- 4.1.2 Placement of topsoil will be measured in square metres to the thickness specified in the Contract Documents.
- 4.1.3 Supply and application of agricultural limestone will be measured in square metres of area treated.
- 4.1.4 Supply and application of fertilizer will be measured in square metres of area treated.

4.2 Basis for Payment

- 4.2.1 All costs associated with work in this Section shall be deemed to be included in the appropriate unit and lump sum prices quoted in the Schedule of Quantities and Prices.