

PART 1 - GENERAL

- 1.1 Work Included .1 This section specifies requirements for preparation of subgrade, provision, placement, and fine grading of topsoil for seeded and sodded lawn areas, planting beds, and individual planting pits. Work includes supply and placement of materials, complete with all related components and accessories.
- 1.2 Related Sections .1 Environmental Protection Section 01002  
.2 Protection of Existing Trees Section 02010  
.3 Clearing and Grubbing Section 02100  
.4 Earthwork Section 02200  
.5 Seeding and Sodding Section 02650  
.6 Planting of Trees, Shrubs and Groundcover Section 02950
- 1.3 Reference Standards .1 Canadian Nursery Landscape Association - Canadian Standards for Nursery Stock - latest edition.  
.2 Soil and Compost Guidelines 1<sup>st</sup> Edition Landscape Nova Scotia 2003.
- 1.4 Source Quality Control .1 Inform Engineer of proposed source of topsoil to be supplied and provide access for sampling.  
.2 Arrange to have testing of topsoil. Testing to be carried out by N.S. Dept. of Agriculture laboratory or other approved laboratory.  
.3 Test topsoil from source prior to stripping and stockpiling for clay, sand and silt, coarse fragments, particle size, N, P, K, Mg, and organic matter.  
.4 Perform pH test to determine required treatment to bring pH value of soil to 5.5 - 7.0 level. Test stockpiled soil after it has been spread in place.

- .5 Submit two copies of soil analysis and recommendations for corrections to Engineer.
- .6 Implement recommendations.
- 1.5 Delivery, Storage and Protection
- .1 Schedule deliveries to minimize storage at job site without causing delays.
- .2 Protect newly graded and filled areas from washouts and settlements caused by rain and water damage. Fill and grade settled or washed out areas to required levels and slopes as specified.
- 1.6 Scheduling
- .1 Schedule topsoiling and finish grading operations to coincide with seeding, sodding, and planting operations.
- 1.7 Samples
- .1 Submit samples in accordance with Section 01001 for items listed in Supplementary Specifications.
- PART 2 - PRODUCTS
- 2.1 Landscape Fill
- .1 Site excavated material, or selected material from excavation or other sources, unfrozen, free from rocks, roots larger than 75 maximum dimension, sods, debris, or other deleterious materials, as approved by Engineer.
- 2.2 Topsoil
- .1 Imported, manufactured or site prepared: friable loam, neither heavy clay nor of very light sandy nature containing minimum of 4% organic matter for clay loams and 2% for sandy loams to maximum of 20% by volume; free from subsoil, debris, vegetation, toxic materials, and stones and roots over 50 mm max. dimension.
- .2 Topsoil to be rated to Landscape Nova Scotia Standard Topsoil Triangle, 1990, or latest revision, minimum rating B or as specified in the Project Documents. Manufacture topsoil or topsoil derived from site sources is to be improved as necessary to meet topsoil qualifications above.

.3 Topsoil Suitability - Standard Topsoil Triangle:

.1 This rating indicates the kind and severity of limitations if the soil is used without corrective measures to grow "normal" landscaping stock (i.e., excluded rhododendrons, blueberries, and other plants with special soil requirements). It does not account for socio-economic factors such as markets or accessibility that make some materials desirable for development regardless of related development costs.

.2 The degree of limitation or soil suitability is determined by the most restrictive (least suitable) rating assigned to any of the listed soil properties. The cumulative effect of individual soil properties may act to further downgrade a soil.

Soil Factor	Rating			
	A	B	C	D
pH	6-7	5-6	4-5	4
Organic Matter	4-10	2-4	1-2	1
Coarse Fragments	5	5-10	10-20	-
Particle Size	Col	S, Fni FnZ, Coz	C	-

Definitions:

- pH: as measured in water.
- Organic Matter: Walkley Black method or equivalent (% by weight)
- Coarse Fragments: Particles over 2mm in diameter (% by volume)
- Particle Size: Relative amounts of sand, silt and clay in the fraction 2mm or smaller (% by weight)

- 2.3 Manure .1 Well rotted, unleached cattle manure, not less than eight months or more than two years old, free of harmful chemicals and substances, containing no more than 25% straw, leaves or other materials unsuitable for planting use.
- 2.4 Peat Moss .1 Derived from partially decomposed fibrous or cellular stems and leaves of species of sphagnum mosses.
- .2 Elastic and homogeneous; brown in colour.
- .3 Free of wood and deleterious material which could inhibit growth.
- .4 Shredded particle minimum size 5 mm.
- 2.5 Bone Meal .1 Raw bone meal, finely ground with a minimum analysis of 2% nitrogen and 20% phosphoric acid.
- 2.6 Fertilizer .1 Complete non-toxic, no-burning, slow release fertilizer.
- .2 Fertilizer analysis for hydroseeding areas, sodding areas and planting areas as determined from soil sample test.
- 2.7 Limestone .1 Ground agricultural limestone containing minimum 85% of total carbonates.
- .2 Gradation requirements: percentage passing by weight, 90% passing 1.0 mm sieve, 50% passing 0.125 mm sieve.
- 2.8 Planting Soil Mixture .1 Mechanically mix: 9 parts topsoil with 1 part well-rotted manure, compost or peat moss.
- .1 Incorporate bone meal at rate of 3 kg bone meal per cu. m.
- .2 Incorporate fertilizer at rate determined by soil sample test.
- 2.9 Compost .1 Mixture of soil and decomposing organic matter containing 40% or more organic matter as determined by the LOI test or its equivalent under the Walkley-Black test.

- .2 Product must be sufficiently decomposed (i.e., stable) so that any further decomposition does not adversely affect plant growth (C:N ratio below (25) (50), and contain no toxic or growth inhibiting contaminants.
- .3 Composed bio-solids must meet the requirements of the guidelines for Compost Quality, Category (A) (B) produced by the Canadian Council of the Ministers of the Environment (CCME), January 1996.

PART 3 - EXECUTION

3.1 General

- .1 The Contractor shall be a member in good standing of Landscape Nova Scotia Horticultural Trades Association.
- .2 Where required, raise subgrade to rough grade levels with landscape fill, deposit in layers not exceeding 200 mm. Consolidate each layer to minimum 93% Standard Proctor Density.

3.2 Preparation of Existing Grade for Seeding, Sodding and Planting

- .1 Verify that subgrade elevations are correct.
- .2 Grade soil. Eliminate uneven areas and low spots to ensure positive drainage. Remove soil contaminated with toxic materials from site as required by the N.S. Department of Environment.
- .3 Cultivate entire area which is to receive topsoil to a depth of 100 mm where practical. Repeat cultivation in those areas where equipment used for hauling and spreading has compacted the soil.
- .4 Remove surface debris, roots, vegetation, branches, and stones in excess of 50 mm in diameter.

3.3 Preparation of Lawn Areas and Planting Beds

- .1 Establish subgrade for lawn areas, planting beds and planting pits.
- .2 Excavate or fill, and rough grade to the following depths below finished grades:
  - .1 100-150 mm for sodded areas after compaction.
  - .2 150 mm for seeded areas after

compaction.

.3 500 mm minimum for planting beds.

.4 500 mm minimum deep and 1000 mm minimum diameter for individual tree planting pits to ensure minimum 300 mm planting soil around rootball as specified in Section 02950.

### 3.4 Placing Topsoil

.1 Do not spread approved topsoil until subgrade has been approved by Engineer.

.2 Spread topsoil/planting soil mix with adequate moisture in uniform layers over approved, unfrozen subgrade where planting is indicated.

.3 Place topsoil to the depths indicated in 3.3.2.

.1 As per Section 02950, Planting of Trees, Shrubs, and Groundcover for individual plant pits.

.4 Topsoil is to be lightly compacted. Keep topsoil 15 mm below finished grade for sodded areas. For seeded areas, bring topsoil to finished grade.

### 3.5 Soil Amendments

.1 Apply lime or other soil amendments at specified rate as determined by soil sample test.

.2 Mix soil amendment well into full depth of topsoil prior to fertilizer application.

### 3.6 Fertilizer

.1 Fertilizer type and rate of application to be determined from soil test and approved by Engineer.

.2 Spread fertilizer uniformly over entire area of topsoil.

### 3.7 Finish Grading

.1 Fine grade entire topsoil area to contours and elevations as indicated or directed. Eliminate rough spots and low areas to ensure positive drainage.

.2 Prepare loose friable bed by means of raking prior to sodding.

- .3 Leave surface smooth, uniform, and firm against deep foot printing, with a fine loose texture using approved equipment.
- 3.8 Acceptance .1 Engineer will inspect and test topsoil in place and determine acceptance of material, depth, and finish grading.
- 3.9 Clean Up .1 Remove surplus materials at no additional cost to the contract.