Landscape Nova Scotia Horticultural Trades Association

TOPSOIL Specifications

PART 1 – GENERAL

1.1 Work Included and Contractor Qualifications

1) To complete topsoil and finish grading necessary as shown, specified or required, and summarized but not restricted to:
   I. Preparation of subgrade, provision, placement and fine grading of topsoil for hydroseeded lawn areas and embankment lawn areas.
   II. Preparation of subgrade, provision, placement and fine grading of topsoil for sodded lawn areas.
   III. Preparation of subgrade, provision and placement of planting soil mixture for planting beds and individual planting pits.

2) The Contractor should be a member in Good Standing of Landscape Nova Scotia Horticultural Trades Association and have a CCHT Certified Supervisor (foreman) on staff.

1.2 Related Work

1) Site Grading: Section ( )

2) Sodding: Section ( )

3) Seeding: Section ( )

4) Planting of Trees, Shrubs and Ground covers:
   Bed Preparation: Section ( )

1.3 Source Quality Control

1) 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.

2) Inspection and testing of topsoil will be carried out by N.S. Dept. of Agriculture laboratory or other approved laboratory.

3) 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.

4) Submit two copies of soil analysis and recommendations for corrections to (Consultant) (Engineer).

5) Contractor to implement recommendations as per 1.3.4.

1.4 Scheduling

1) Schedule placing of topsoil and finish grading to permit seeding and sodding operations under optimum conditions.

1.5 Protection

1) Prevent damage to trees, landscaping, natural features, bench marks, existing building, windows, existing pavement, culverts, and utility lines which are to remain.

2) Protect newly graded and filled areas from washouts and settlements caused by rain and water drainage. Fill and grade settled or washed out areas to required levels and slopes under work of this Section.

PART 2 – PRODUCTS

2.1 Materials

1) Landscape fill: site excavated material, or selected material from excavation of other sources, for use intended, unfrozen and free from rocks and roots larger than 75mm maximum dimension, sods, debris, or other deleterious materials, approved by (Consultant) (Engineer).

2) Topsoil – 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 maximum dimension. Topsoil to be rated to **Landscape Nova Scotia Horticultural Trades Association Standard Topsoil Triangle, 1990**, or latest revision, rating B. Manufactured topsoil or topsoil derived from site sources is to be improved as necessary to meet topsoil qualifications above.

3) Manure: Well rotted, unbleached 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.

4) Peat moss:
   I. Derived from partially decomposed fibrous or cellular stems and leaves of species of sphagnum mosses.
   II. Elastic and homogeneous; brown in color.
   III. Free of wood and deleterious material which could inhibit growth.
   IV. Shredded particle minimum size 5 mm.

5) Bone meal: Raw bone meal, finely ground with a minimum analysis of 2% nitrogen and 20% phosphoric acid.

6) Fertilizer:
   I. Complete non-toxic, no-burning, slow release fertilizer.
   II. Fertilizer analysis for hydroseeding areas, sodding areas and planting areas as determined from soil sample test.

7) Limestone:
   I. Ground agricultural limestone containing minimum 85% of total carbonates.
   II. Gradation requirements: percentage passing by weight, 90% passing 1.0 mm sieve, 50% passing 0.125 mm sieve.

8) Planting Soil Mixture for trees, shrubs and ground covers: Mechanically mix: 9 parts topsoil, with 1 part well-rotted manure, compost or peat moss.
   I. Incorporate bone meal at rate of 3 kg bone meal per cu. m.
   II. Incorporate fertilizer at rate determined by soil sample test.

9) Compost: A mixture of soil and decomposing organic matter used as a fertilizer, mulch, or soil conditioner. Compost is processed organic matter containing 40% or more organic matter as determined by the LOI test, or its equivalent under the Walkley-Black test. 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 contaminates. 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) Where required, raise sub-grade 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 Operations

1) Verify that sub-grades are correct. If discrepancies occur, notify (Consultant) (Engineer) and do not commence work until instructed by (Consultant) (Engineer). Discrepancies to be corrected under site grading or extra work.

2) Grade soil, eliminating uneven areas and low spots, ensuring positive drainage. Remove soil contaminated with toxic materials. Dispose of removed materials from site as required by the N.S. Dept. of Environment.

3) Cultivate entire area, which is to receive topsoil to depth of 100 mm. Repeat cultivation in those areas where equipment used for hauling and spreading has compacted soil.

4) Remove surface debris, roots, vegetation, branches, and stones in excess of 50 mm maximum dimension.

3.3 Excavation and Preparation of Lawn Areas and Planting Beds

1) Establish sub-grade for lawn areas, planting beds and planting pits.

2) Excavate or fill and rough grade to following depths below finish grades:
    I. 100 – 150 mm for sodded areas, as determined by (Consultant) (Engineer).
    II. 150 mm for seeded areas
    III. 500 mm minimum for planting beds
    IV. 500 mm deep and 1000 mm minimum diameter for individual tree planting pits to ensure minimum 300 mm planting soil around rootball as specified in Section 02590.

3.4 Spreading of Topsoil

1) Spread topsoil after (Consultant) (Engineer) has inspected and approved sub grade.

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

3) For hydroseeded and sodded areas:
    I. Apply topsoil to a minimum 100 mm – 150mm (as determined by (Consultant) (Engineer) compacted depth for sodded areas.
    II. Apply topsoil to a minimum 150 mm compacted depth for seeded areas.
4) Apply planting soil mixture to following minimum depths:
    I. 500 mm for shrub beds.
    II. For individual plant pits, refer to Section 02950, Planting of Trees, Shrubs and Ground cover.

3.5 Soil Amendments

1) Apply lime or other soil amendment as specified at rate determined from soil sample test.

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

3.6 Fertilizer

1) Fertilizer type to be determined from soil sample test and approved by (Consultant) (Engineer).

2) Spread fertilizer required by soil sample test uniformly over entire area of topsoil at rate determined on basis of soil sample test.

3.7 Finish Grading

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

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

3) Leave surface smooth, uniform, firm against deep foot printing with a fine loose texture using equipment approved by (Consultant) (Engineer).

3.8 Acceptance

1) (Consultant) (Engineer) will inspect and test topsoil in place and determine acceptance of material, depth and finish grading.

3.9 Surplus of Materials

1) Dispose of surplus topsoil not required for fine grading and landscaping off-site or as directed by (Consultant) (Engineer).

4.0 Measurement for Payment

SPEC NOTE: Use these paragraphs for unit price contracts.

1) Preparation of sub-grade for placing of topsoil (will not be measured for payment) (will be measured in square metres of area prepared).
2) Topsoil stripping will (not be measured) (be measured) by (Consultant) (Engineer) in cubic metres of stockpiled topsoil and volume will be determined by the average end area method.

SPEC NOTE: Delete 3. and 4. if contractor is to supply topsoil.

3) Placing of topsoil will be measured in cubic metres removed from stockpile. (Consultant) (Engineer) will measure stockpiles and volume of topsoil removed calculated by the average end area method.
4) Supply and application of soil amendments, including fertilizer, will be measured in (Standard Commercial units of weight/volume) (and) (square metres of area treated) as determined by (Consultant) (Engineer).

SPEC NOTE: Repeat the following paragraph for each required soil amendment and variance in existing soil application.

(_____) applied to (_____) will be measured in (tons) (kilograms) (cubic meters) (square metres of area treated).

SPEC NOTE: Use 5 or 6 if contractor is required to supply topsoil.

5) Supplying, placing and spreading topsoil will be measured in cubic metres determined by truck box measurement as loaded. (Consultant) (Engineer) will determine truck box capacity.
6) Supplying, placing and spreading topsoil will be measured in cubic metres as determined from actual surface area covered and depth of topsoil specified. Specified depth of topsoil shall be measured and approved by (Consultant) (Engineer) after settlement and consolidation as specified.
7) Finish grading will be measured in (hectares) (square metres) from actual surface measurements as determined by (Consultant) (Engineer).

LANDSCAPE NOVA SCOTIA HORTICULTURAL TRADES ASSOCIATION STANDARD TOPSOIL TRIANGLE TOPSOIL SUITABILITY

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.

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. This is left to the discretion of the interpreter.

	Rating			
Soil Factor	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, Fnl 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).

STANDARD TOPSOIL TRIANGLE

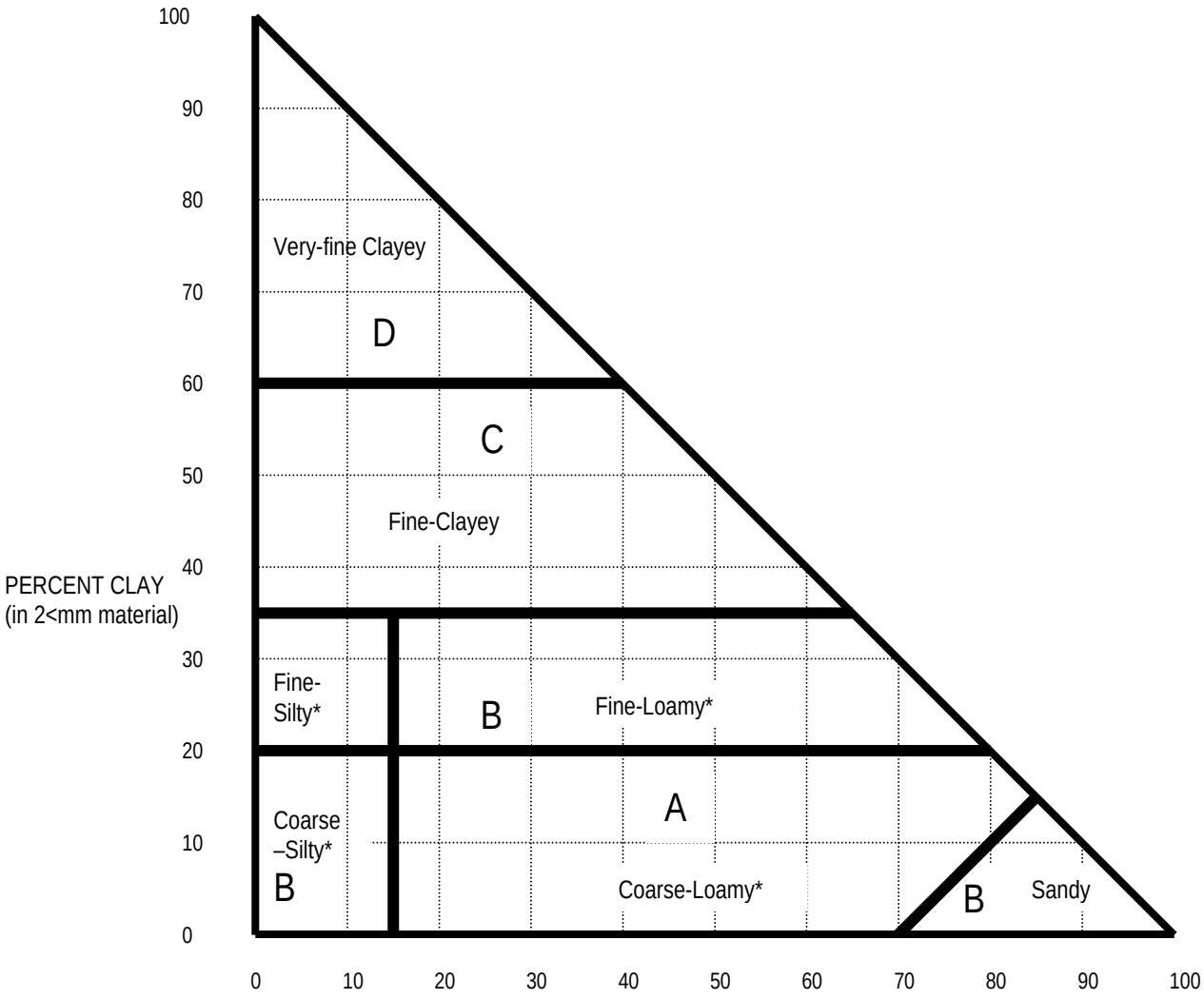

Figure 36. Family particle-size classes and texture classes.