

PART - 1 GENERAL

1.1 SUMMARY

- .1 Provide labour, materials, products, equipment, and services to complete the work specified in this Section in accordance with the Contract requirements including, but not limited to:
 - .1 Topsoil installation.
 - .2 Finished grading.

1.2 RELATED REQUIREMENTS

- .1 The requirements of the Articles of Agreement, Conditions of the Contract, Division 01 Specification Sections, and the Contract Drawings apply to this Section.
- .2 Related Sections:
 - .1 Section 32 93 10 Trees, Shrubs & Groundcover Planting: Planting in topsoil and finish grading.

1.3 SITE EXAMINATION

- .1 Verify all site conditions which may affect the performance of this Section.
- .2 Report in writing all conditions which may adversely affect the work of this Section.
- .3 Failure to do so will imply acceptance by the Contractor of surfaces and site conditions and no claim, made thereafter, for damages or extras, resulting from such discrepancies, will be accepted, unless such damages or extras are the result of sub-surface conditions which could not be ascertained before commencement of work.

1.4 TESTING

- .1 Have topsoil from source tested by testing laboratory in accordance with provincial regulations for NPK, Mg, soluble salt content, % clay, % silt, % sand, % organic matter, pH value and the presence of any contaminants which may be deleterious to plant or user health. Submit two copies of soil analysis and recommendations for corrections to Landscape Architect.
- .2 Determine required treatment to bring pH value of soil within acceptable range of 5.5 to 7.5.
- .3 It shall be the responsibility of the Contractor to pay for costs of all testing and re-testing as required.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit product data, reports, shop drawings, and samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Inspection Company Reports

- .3 Provide reports for:
 - .1 Topsoil as specified for source quality control.
- .4 Provide affidavits for:
 - .1 Submit affidavits to certify that manufactured or processed materials supplied in bulk meet specified requirements, if requested.
 - .2 Submit letter, on corporate letterhead, guaranteeing that the topsoil tested and reported in the submitted Soil Test Report(s) is the topsoil used on the site.

1.6 PROTECTION

- .1 Prevent damage to fencing, gateposts, trees, landscaping, bench marks, existing buildings, existing pavement and surface or underground utility lines which are to remain. Make good any damage.

1.7 LAYOUT

- .1 Set out grade stakes, clearly marked with existing and proposed grade elevations and the height by which existing levels are to be raised or levelled.
- .2 All layout work is to be inspected to the Landscape Architect's approval.

1.8 INSPECTIONS

- .1 Ensure sub-grade levels are inspected before materials are placed thereon.
- .2 Give timely notice when fine grading has been completed and grade levels are ready for inspection.

PART - 2 PRODUCTS

2.1 TOPSOIL

- .1 Shredded, friable natural sandy loam. Free of contaminants including gas, oil, residual long-term herbicides, construction debris, subsoil, roots and stones larger than 25 mm in diameter. Free of noxious weeds including crabgrass and couch grass or weed seeds. Acidity level (ph) between 5.5 and 7.1.

2.2 ORGANIC MATTER

- .1 Decomposed plant material, fairly elastic and homogeneous, free of decomposed colloidal residue, wood, sulphur, and iron; containing minimum 60% organic matter by weight and moisture content not exceeding 15%. Shredded particles may not exceed 12 mm in size. Minimum ph value of peat 4.5 maximum 6.0.

2.3 BONEMEAL

- .1 Raw bonemeal, finely ground within minimum analysis of 3% nitrogen and 20% phosphoric acid.

2.4 MANURE

- .1 Rotted, unleached, stable manure, free from contaminants including sawdust, wood shavings and harmful chemicals. Manure content 25% straw and shall not be less than eight months old nor older than two years old.

2.5 FERTILIZERS

- .1 Complete, commercial fertilizers with minimum 50% of elements derived from organic sources. Containing minimum 60% urea formaldehyde. Fertilizers have percentages by weight of nitrogen, phosphoric acid and potash as required to make up any chemical deficiencies in soil mixtures and as dictated by growth needs of plants. Application types and rates for trees, shrubs and groundcover as indicated by soil tests.

2.6 LIME (HYDRATED LIME)

- .1 Based on recommendations of topsoil test analysis, ground agricultural limestone containing maximum 85% of total carbonates. Gradation requirements: percentage passing by weight, 90% passing 1.0 mm sieve and 50% passing 0.125 mm sieve.

2.7 SOIL MIXTURE

- .1 Prepared soil mixture for tree pits and planting beds shall be tested by OMAFRA accredited soil testing agency and to consist of the following, or an equivalent approved mix that would achieve a growing medium mix for:
- .2 Grass Areas: Friable natural sandy loam, loam or silt loam with a pH range from 5.5 to 7.5; containing between 4%-8% organic matter, a maximum of 15% clay, a maximum of 40% silt and a maximum of 52% sand; less than 0.46 mmhos/cm (millisiemens/cm) total salts;
- .3 Tree Pits and General Planting Areas: Friable natural sandy loam with a pH range from 5.5 to 7.5; containing between 8%-15% organic matter, a maximum of 7% clay, a maximum of 35% silt and a maximum of 52% sand.
- .4 Six parts sandy loam free of clay lumps, debris, and toxic substances, free of stones and woody material, free of weed seeds and grass roots.
- .5 One part of well-rotted farm manure.
- .6 Add bonemeal and fertilizer to mixture at manufacturer's recommended rate of application after first mix of soil mixture in soil shredder.
- .7 Topsoil not meeting the minimum specification must be amended and retested. Fertilizer and mineral amendments must be made as per soil testing agency recommendations.
- .8 Adjust fertilizer requirements and rates as well as addition of other additives, to conform to soil testing recommendation, at no extra cost to the Contract.
- .9 Topsoil shall not be moved, delivered, or worked on while in a frozen, wet or muddy state or condition.

PART - 3 EXECUTION

3.1 QUALITY ASSURANCE

- .1 Obtain topsoil test analysis, for topsoil, from recognized independent testing lab. Test analysis to make specific reference to whether or not 'atrazine' is present in soil sample. Test analysis to include recommendations for fertilizer program to be followed in proposed planting areas. Submit analysis results to Landscape Architect prior to any placing of topsoil.

3.2 PREPARATION OF SUBGRADE

- .1 Grade soil, eliminating uneven areas and low spots, ensuring positive drainage. Remove soil contaminated with toxic materials.
- .2 Ensure that subgrade density requirements for paved areas are met and ready to accept base courses and finish pavements.
- .3 Remove surface debris, all roots, vegetation and branches, and stones in excess of 50mm diameter.

3.3 FINISH GRADING OF PLANTED AREAS

- .1 Scarify, to a minimum depth of 200mm, areas of native soil or which have been subjected to travel by heavy equipment.
- .2 Place topsoil in loose layers not exceeding 225mm in depth. Allow for settlement and ensure that finished grades are as specified.
- .3 Do not place or grade soil when it is wet or frozen, or subgrade is frozen.
- .4 For sodded areas keep topsoil 15mm below final finished grade to allow for sod placement.
- .5 Apply topsoil to following minimum depths:
 - .1 200mm for all grass areas
 - .2 600mm for all planting beds
 - .3 1000mm for all small and large tree planting
- .6 Note that existing grades and contours, where shown on drawings, are approximate only and may require interpretation and adjustment to suit site conditions.
- .7 Fine grade and loosen topsoil. Eliminate rough spots and low areas to ensure positive drainage. Prepare loose friable bed by means of cultivation and subsequent raking.
- .8 Roll to consolidate topsoil for areas to be sodded leaving surface smooth, uniform, firm against deep foot printing, and with a fine loose texture to approval of Landscape Architect.

3.4 SURPLUS MATERIAL AND CLEANING

- .1 Remove surplus material from site as directed.
- .2 Clean all surfaces of materials related to the work of this section.

END OF SECTION