

Part 1 General

1.1 SOURCE QUALITY

- .1 Acceptance of topsoil subject to inspection and/or soil analysis test results. Do not commence work until topsoil accepted by Departmental Representative.
- .2 Test topsoil from source prior to stripping and stockpiling, for clay, sand and silt, NPK (nitrogen, phosphorous, potassium), Mg, soluble salt content, pH value, growth inhibitors and soil sterilants.
 - .1 Use 25-mm diameter sampling tube or spade and in presence of Departmental Representative take 25 samples per hectare to full depth of topsoil at random across entire area to be stripped. Mix samples together thoroughly before submitting for testing.
 - .2 Submit 0.5-kg sample of topsoil to testing laboratory and indicate present use, intended use, type of subsoil and quality of drainage. Prepare and ship sample in accordance with provincial regulations and testing laboratory requirements.
 - .3 Determine required limestone treatment to bring pH value of soil to between 5.5 and 7.5 level.
 - .4 Submit two copies of soil analysis and recommendations for corrections to Departmental Representative.
 - .5 Restore areas requiring temporary removals with appropriate indigenous species.
 - .6 Re-vegetate with native species. Do not import growing medium that may contain invasives.

1.2 ENVIRONMENTAL CHOICE PROGRAM

- .1 Provide products bearing the 'Ecologo' of the Environmental Choice Program, Department of the Environment, Canadian Environmental Protection Act, Environmental Choice Product Guidelines ECP/PCE-69-94 Polyethylene Film Products.
- .2 Submit two copies of the licensing criteria statements and the verification of compliance with Sections 3(a) and 3(b) of the ECP to the Departmental Representative in accordance with Section 01 33 00 - Submittal Procedures, Section 01 45 00 - Quality Control, and Section 01 78 00 - Closeout Submittals. Alternatively, material in original containers bearing the 'Ecologo' or products bearing the 'Ecologo' will satisfy this requirement.

Part 2 Products

2.1 MATERIALS

- .1 Topsoil: horticultural loam, pH value 5.5 to 7.5.
- .2 Peatmoss: decomposed plant material, 60% organic matter by weight, maximum 15% moisture content, maximum 6-mm particle size, pH value 4.5 to 6.0, brown colour.
- .3 Bonemeal: finely ground, raw, 4% nitrogen, 20% phosphoric acid.
- .4 Lime: ground, agricultural type, 85% carbonates.

- .5 Fertilizer: 10-6-4, 50% from organic source.
- .6 Water: potable.
- .7 Mulch: 3 to 6 mm; red cedar bark.
- .8 Weed Retardant: 0.152-mm perforated polyethylene film to CAN/CGSB-51.33-M89, bearing Ecologo to ECP/PCE-69-94.
- .9 Nursery Sod: to CNTA to "Canadian Standards for Nursery Stock 2006"
www.canadanursery.com, Canadian Nursery Landscape Association, C17.0, Ontario Sod Association, Specifications for Turfgrass Sod in Ontario, classification Number One Grade Turfgrass Nursery Sod, cultivated turfgrass sod from Merion Blueseed, maximum 1% native grasses, maximum 1 broadleaf in 40 m², maximum 25 mm thick, sod soil not visible with 30 to 70-mm grass height.
- .10 Grass Seed: Certified Canada No. 1 Grade to Government of Canada, Seeds Regulations, 50% Kentucky Blue grass, 45% Creeping Red Fescue, 5% Norlea perennial rye; 75% germination, 97% purity.
- .11 Plant Material: to "Canadian Standards for Nursery Stock 2006", Canadian Nursery Landscape Association, www.canadanursery.com.
- .12 Wire Mesh on Slopes: steel wire, 37-mm mesh.
- .13 Wooden Pegs on Slopes: 25 x 25 x 300 mm.
- .14 Turf Establishment Blanket on Slopes: uniform open weave jute matting.
 - .1 Staples: 25 x 12 x 4-mm steel wire.
- .15 Stakes: 40 x 40 x 5-mm iron tee coated with zinc-rich paint.
- .16 Cables and Accessories: zinc coated, strength to withstand wind pressure, turnbuckles with 10-mm diameter threaded opening for adjustment.
- .17 Guy Wires: 4-mm galvanized malleable wire.
- .18 Tree Rings: 3.5-mm galvanized wire encased in 2-ply, reinforced, 25-mm diameter, rubber hose.
- .19 Tree Wrapping Material: 150-mm wide burlap, 2.5 kg/m².
- .20 Spray: appropriate to combat pests and disease, not prohibited by Agriculture Canada.

Part 3 Execution

3.1 PREPARATION

- .1 Sodding and Seeding:
 - .1 Cultivate existing soil to 75-mm depth.
 - .2 Apply 150-mm topsoil.
 - .3 Spread and mix lime required to bring pH value to between 5.5 and 7.5 level into top 150 mm of soil in accordance with soil analysis recommendations.
 - .4 Spread and mix fertilizer into top 50-mm soil in accordance with results and recommendations of soil analysis tests.

- .2 Plants: mix 3 parts topsoil, 1 part peatmoss, 3-kg/m³ bonemeal for plant beds.

3.2 INSTALLATION

.1 Sodding:

- .1 Sod over frost-free ground, before July or after first two weeks in August.
- .2 Sod in rows with end joints staggered.
- .3 Surface flush with adjoining areas.
- .4 On slopes greater than 3:1, lay wire mesh over soil, secure with wooden pegs 900 mm on center.
- .5 Sod at right angles to slope, secure with 1 wooden peg per 0.20 m², drive pegs flush with soil.
- .6 Roll surface with light roller.
- .7 Water to achieve 100-mm moisture penetration into soil.

.2 Seeding:

- .1 Seed in frost-free ground before July or after first two weeks in August.
- .2 Seed during calm winds.
- .3 Sow 1.22 kg/100 m² in one direction and 1.22 kg/m² at right angles to first direction.
- .4 Rake seed into soil.
- .5 Roll surface with light roller.
- .6 Water to achieve 50-mm moisture penetration into soil.
- .7 On slopes greater than 3:1, cover surface with turf establishment blanket, bury top end in 150-mm trench, overlap ends 100 mm and edges 300 mm, uphill section on top, staple overlap 900 mm on center, lightly cover establishment blanket with topsoil.
- .8 Unroll turf establishment blanket in direction of flow, overlap ends 150 mm, upstream section on top, staple overlap 900 mm on center, lightly cover with topsoil.

.3 Planting:

- .1 Excavate as required to carry out work.
- .2 Minimum 600-mm deep planting beds.
- .3 Planting holes dependent on size of root ball. Holes shall be minimum 150 mm deeper and minimum 150 mm wider than root ball.
- .4 Keep excavations dry and frost free.
- .5 Loosen 150-mm depth of soil in excavation bottom.
- .6 Place 150-mm planting soil mix.
- .7 Install plants vertically plumb.
- .8 Cut and remove burlap from top of root ball only, without disturbing root ball.
- .9 Place planting soil mix in 150-mm tamped layers.
- .10 Fill 2/3 of hole with planting soil mix.
- .11 Fill remainder of hole with water.

- .12 Fill remainder of hole with planting soil mix after water penetrates soil.
- .13 Install stakes in excavation.
- .14 Build 100-mm lip around hole perimeter.
- .15 Cover planting soil mix with 50 mm thickness of mulch.
- .4 Tree Supports:
 - .1 Use three guy wires and anchors.
 - .1 Use guy wires with clamps.
 - .2 Install tree rings above branch to prevent slipping at approximately 2/3 height for evergreens and 1/2 height for deciduous trees. Collar mounting height not to exceed 2.5 m above grade.
 - .3 Tree rings to be of sufficient length to encircle tree plus 50-mm space for trunk clearance. Thread guy wire through treering. Spread lead wires equally proportioned about trunk at 120 degrees.
 - .4 Install anchors at equal intervals about tree and away from trunk so that guy wire will form 45° to 30° angle with ground. Install anchor at angle to achieve maximum resistance for guy wire.
 - .5 Attach guy wire to anchors. Tension wire and secure.
 - .6 Install wire tightener ensuring that guys are secure and leave room for slight movement of tree.
 - .7 Saw tops off wooden anchors which extend in excess of 100 mm above grade or as directed by Departmental Representative.
 - .8 After tree supports have been installed, remove broken branches with clean, sharp tools.

3.3 MAINTENANCE

- .1 Sod and Seed: maintain sod and seed for 12 months from date of sodding and seeding.
 - .1 Water to maintain 75-mm continuous moisture penetration into soil.
 - .2 Cut grass to maintain height between 40 and 60 mm.
 - .3 Control weeds by mechanical means.
 - .4 Immediately remove areas which fail to survive and replace with new sod to match existing adjoining surface.
- .2 Plants:
 - .1 Maintain plants for 12 months from date of planting.
 - .2 Water once a week.
 - .3 Cultivate and weed soil around plants once a week. Control weeds by mechanical means.
 - .4 Spray at appropriate time to combat pests and disease.
 - .5 Immediately remove plants which fail to survive and replace in next planting season with new plants to match existing.
 - .6 Extend warranty on replaced material for a period equal to original warranty period and continue replacement and extend warranty until work is acceptable.

- .7 Remove guy wires, stakes and wrapping material at end of warranty period.

END OF SECTION