

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 32 91 19.13 – Topsoil Placement and Grading

1.2 REFERENCE STANDARDS

- .1 Agriculture and Agri-Food Canada (AAFC).
 - .1 Plant Hardiness Zones in Canada - last edition.
- .2 Canadian Nursery Landscape Association (CNLA)
 - .1 Canadian Standards for Nursery Stock - last edition.
- .3 *Bureau de Normalisation du Québec* (BNQ).
 - .1 Normes NQ 0605-100 et NQ 0605-300 – last editions.
- .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .5 U.S. Environmental Protection Agency (EPA) / Office of Water
 - .1 EPA 832/R-92-005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

1.3 DEFINITIONS

- .1 Mycorrhiza: association between fungus and roots of plants. This symbiosis, enhances plant establishment in newly landscaped and imported soils.

1.4 ADMINISTRATIVE REQUIREMENTS

- .1 Scheduling: obtain approval from Departmental Representative before begin the work prescribed in this section.
- .2 Submit detailed delivery and planting schedule, coordinated with supplier, to Departmental Representative for approval. Method and planting times must be submitted for approval and integrated into other site activities.
- .3 Schedule to include:
 - .1 Quantity and type of plant material.
 - .2 Shipping dates.
 - .3 Arrival dates on site.
 - .4 Planting Dates.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product Data:

- .1 Submit manufacturer's instructions, printed product literature and data sheets for fertilizer, mycorrhiza, and mulch. Include product characteristics, performance criteria, physical size, finish and limitations.
- .2 Submit 2 copies of WHMIS MSDS in accordance with 01 35 29.06- Health and Safety Requirements and Section 01 35 43- Environmental Procedures.
- .3 Samples:
 - .1 Submit sample of mulch (1 liter bag).

1.6 QUALITY ASSURANCE

- .1 Qualifications:
 - .1 Landscape Contractor: to be a Member in Good Standing of the Association of Professional Landscapers of Quebec (APPQ).
 - .2 Landscape Planting Supervisor: Landscape Industry Certified Technician with Softscape Installation designation.
 - .3 Landscape Maintenance Supervisor: Landscape Industry Certified Technician with Ornamental Maintenance designation.

1.7 DELIVERY, STORAGE AND HANDLING

- .1 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
 - .1 Protect plant material from frost, excessive heat, wind and sun during delivery.
 - .2 Protect plant material from damage during transportation:
 - .1 Delivery distance is less than 30 km and vehicle travels at speeds under 80 km/h, tie tarpaulins around plants or over vehicle box.
 - .2 Delivery distance exceeds 30 km or vehicle travels at speeds over 80 km/h, use enclosed vehicle where practical.
 - .3 Protect foliage and root balls using anti-desiccants and tarpaulins, where use of enclosed vehicle is impractical due to size and weight of plant material.
 - .3 All plants must be protected from solar radiation, wind and the danger of sudden temperature changes during the delivery and storage.
 - .4 The Contractor is responsible for unloading plants and for damage to plants.
 - .5 The Contractor also coordinate all delivery and planting operations to minimize time between excavation and planting.
 - .6 Plants damaged due to transportation and handling may be rejected before, during and after planting.
- .2 Storage and Handling Requirements:
 - .1 If plants can not be planted immediately or within a reasonable time, they must be stored in a protected and shaded area. Rootballs and containers should be covered with mulch (gauged) and kept humid until planting.
 - .2 Protect stored plant material from frost, wind and sun and as follows:
 - .1 For bare root plant material, preserve moisture around roots by heeling-in or burying roots in topsoil and watering to full depth of root zone.

- .2 For pots and containers, maintain moisture level in containers.
- .3 Maintain moisture level in root zones.
- .3 Store and manage hazardous materials in accordance with manufacturer's written instructions.
- .3 Waste Management and Disposal
 - .1 Remove for reuse and dispose of waste in accordance with Section 01 74 21-Construction/Demolition Waste Management and Disposal.

1.8 WARRANTY

- .1 The Contractor must guarantee all plants for a period of twelve (12) months, as of the provisional acceptance of the Work.
- .2 The Contractor must replace dead, deteriorated or defective plants at own expense and according to drawing and plan specifications at his own cost. Replacement plants must be of the same species, size, quality and guarantee as the original plant.
- .3 End-of-warranty inspection will be conducted by Departmental Representative.
- .4 Departmental Representative reserves the right to extend Contractor's warranty responsibilities for an additional one year if, at end of initial warranty period, leaf development and growth is not sufficient to ensure future survival.

Part 2 Products

2.1 PLANT MATERIAL

- .1 Type of root preparation, sizing, grading and quality: comply to Canadian Standards for Nursery Stock.
 - .1 Source of plant material: grown in Zone 3, in accordance with Plant Hardiness Zones in Canada.
- .2 Plants will be nursery grown and typical of their species. Sizes and species are as shown on the planting list.
- .3 The Departmental Representative must approve the plants at the nursery or on delivery to the site prior to planting. If the Contractor does not do so, the plants may be rejected prior to planting.
- .4 Substitutes must receive prior authorization from the Departmental Representative.
- .5 All plants and planting material must be first quality and correspond to BNQ Standard, NQ 0605-300.
- .6 Plant material: free of disease, insects, defects or injuries and structurally sound with strong fibrous root system.
- .7 Bare root stock: nursery grown, in dormant stage, not balled and burlapped or container grown.
- .8 Native plants: maximum 40 mm in caliper, with well developed crowns and characteristically branched. The height must not exceed 40% of the total height of plant.

- .1 During collection, ensure 10% maximum seed crop (or plants) are collected from healthy population of many individuals, and from several plants of same species.
- .2 Leave remainder for natural dispersal and as food for dependent organisms.
- .9 Shrubs:
 - .1 Provide shrubs with ball of earth (rootball), container grown unless otherwise indicated.
 - .2 Plants must be grown for at least one complete active growing season in containers and must have a sufficiently developed root system to keep the ball of earth intact upon removal from containers.
- .10 Herbaceous plants, native/maritime plants:
 - .1 Specifications regarding container size are provided in the planting table. Plant development must be proportional to container size.

2.2 PLANTING SOIL

- .1 Planting soil in accordance with Section 32 91 19.13 – Topsoil Placement and Grading.

2.3 WATER

- .1 Free of impurities that would inhibit plant growth.

2.4 MULCH

- .1 RCW mulch composed of hardwood chips, maximum 20% softwood chips. Mulch must be uniform in size not exceeding 50 X 50 X 5 mm. A layer of 80 mm mulch should cover the entire surface of planting beds.

2.5 FERTILIZER

- .1 Synthetic commercial type as recommended by soil test report and manufacturer's recommendations according to period and season.
- .2 Bonemeal, 100% natural, 2-11-0 ratio.
- .3 Mycorrhizae
 - .1 Ensure new roots are in contact with the mycorrhizae (growing medium).
 - .2 Use mycorrhizae according to manufacturer's written recommendations.

2.6 SOURCE QUALITY CONTROL

- .1 Obtain approval from Departmental Representative of plant material prior to planting.
- .2 Provide necessary import licenses and permits, incompliance with federal, provincial and local regulations.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrate previously installed under other Sections or Contracts are acceptable for planting installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 PRE-PLANTING PREPARATION

- .1 Proceed only after receipt of written acceptability of plant material from Departmental Representative.
- .2 Remove damaged roots and branches from plant material.
- .3 Locate and protect utility lines (underground pipes and cables).
- .4 Notify and acquire written acknowledgement from utility authorities before beginning excavation of planting pits for shrubs.
- .5 Temporary Erosion and Sedimentation Control:
 - .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 sediment and erosion control plan or requirements of authorities having jurisdiction.
 - .2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
 - .3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.3 PLANTING SEASON

- .1 Usual planting periods are spring and fall, even if plants are container grown. Special care must be given to plants planted during the growing season to ensure they acclimatize; avoid hot days or lengthy periods of sun. Water abundantly and regularly.

3.4 IMPLANTATION

- .1 Use wood stakes to indicate position of shrubs, native/maritime plants, and herbaceous plants as indicated on drawings, and have stake locations approved by Departmental Representative before digging.
- .2 Notify Departmental Representative of discrepancies with the drawings (location, quantity, etc.).

3.5 EXCAVATION AND PREPARATION OF PLANTING BEDS

- .1 Establishment of sub-grade for planting beds in accordance with Section 32 91 19.13 - Topsoil Placement and Grading
- .2 For individual planting holes:
 - .1 Stake out location and obtain approval from Departmental Representative prior to excavating.
 - .2 Excavate to depth and width as indicated.
 - .3 Remove subsoil, rocks, roots, debris and toxic material from excavated material that will be used as planting soil for trees and individual shrubs. Dispose of excess material.
 - .4 Scarify sides of planting hole.
 - .5 Remove water which enters excavations prior to planting. Notify Departmental Representative if water source is ground water.

3.6 PLANTING

- .1 For container stock or root balls in non-degradable wrapping, remove entire container or wrapping without damaging root ball.
- .2 Plant vertically in locations as indicated.
 - .1 Orient plant material to give best appearance in relation to structure, roads and walks.
- .3 For shrubs and native/maritime plants:
 - .1 Backfill soil in 150 mm lifts.
 - .1 Tamp each lift to eliminate air pockets.
 - .2 When two thirds of depth of planting pit has been backfilled, fill remaining space with water.
 - .3 After water has penetrated into soil, backfill to finish grade.
 - .2 Form watering saucer as indicated.
- .4 For herbaceous plants and ground covers, backfill soil evenly to finish grade and tamp to eliminate air pockets.
- .5 Water plant material thoroughly.
- .6 After soil settlement has occurred, fill with soil to finish grade.
- .7 Evacuate burlap and containers from site.

3.7 FERTILIZATION AND MULCHING

- .1 Shrubs, mix in the following with soil:
 - .1 100 grams 2-11-0 fertilizer (bonemeal)/shrub;
 - .2 100 ml Mycorise Pro Végétalisation/shrub.
- .2 Native/maritime plants:
 - .1 Organic base slow-release granular fertilizer, 10-25-20, 3.8 kg/100 m² / plant;
 - .2 30 ml Mycorise Pro Végétalisation/plant.

- .3 Herbaceous plants:
 - .1 Organic base slow-release granular fertilizer, 10-25-20.
- .4 Ensure soil settlement has been corrected prior to mulching.
- .5 Spread mulch on the surface of planting beds, as indicated.
- .6 Spread mulch evenly 80 mm thick. If mulch is likely to blown away, wet and mix with a little soil. Thin at base of plantings and avoid placing too close to shrubs and plants.

3.8 MAINTENANCE DURING ESTABLISHMENT AND WARRANTY PERIODS

- .1 Perform following maintenance operations from time of planting to acceptance by Departmental Representative, and during the warranty period.
 - .1 Water to maintain soil moisture conditions for optimum growth and health of plant material without causing erosion.
 - .2 Reform damaged watering saucers.
 - .3 Remove weeds monthly.
 - .4 Replace or respread damaged, missing or disturbed mulch.
 - .5 For non-mulched areas, cultivate to keep top layer of soil friable.
 - .6 Apply fertilizer in early spring as indicated by soil test.
 - .7 If required to control insects, fungus and disease, use appropriate control methods in accordance with Federal, Provincial and Municipal regulations. Obtain product approval from Departmental Representative prior to application.
 - .8 Remove dead, broken or hazardous branches from plant material.
 - .9 Remove and replace dead plants and plants not in healthy growing condition. Make replacements in same manner as specified for original plantings.
 - .10 Remove trunk protection, tree supports and level watering saucers at end of warranty period.

3.9 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11- Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11- Cleaning.

END OF SECTION