

Part 1 General

1.1 SUMMARY

- .1 Section Includes:
 - .1 Materials and installation for plant material, accessories, mulch, planting, mulching and maintenance.
- .2 Related Sections:
 - .1 Section 31 22 13 - Rough Grading.

1.2 REFERENCES

- .1 Agriculture and Agri-Food Canada (AAFC).
 - .1 Plant Hardiness Zones in Canada-2000.
- .2 Canadian Nursery Landscape Association (CNLA).
 - .1 Canadian Standards for Nursery Stock-2001.
- .3 Department of Justice Canada (Jus).
 - .1 Canadian Environmental Protection Act (CEPA), 1999, c. 33.
 - .2 Transportation of Dangerous Goods Act (TDGA), 1992, c.34.
- .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
 - .1 Material Safety Data Sheets (MSDS).

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 MEASUREMENT AND PAYMENT

- .1 Trees, Shrubs and Vines
 - .1 Supply and installation of trees and shrubs will be measured on a unit price basis for each tree, shrub and vine listed on the Plant List and paid for at the Contract Unit Price for each species and size shown on the Plant List. The number of trees and shrubs to be paid for will be the total number of trees and shrubs installed in accordance with this specification and accepted by the Contract Administrator, as computed by the Contract Administrator.
 - .2 Supply and installation of fertilizer for plant material will be included in payment for the plant material.
- .2 Planting Soil Mixture
 - .1 Construction of planting beds, and supply and installation of planting soil mixture shall be measured on an area basis for the number of square metres of 500 mm depth planting bed constructed, complete with 500 mm depth planting soil mixture, all in accordance with the Drawings and this specification, and

accepted by the Contract Administrator, as computed by the Contract Administrator.

- .2 There will be no separate measurement for planting soil mixture used in planting individual trees and shrubs that are not planted in beds.

- .3 Wood Chip Mulch

- .1 Supply and installation of wood chip mulch shall be measured on an area basis for the number of square metres of 100 mm wood chip mulch installed in planting beds in accordance with the Drawings and this specification, and accepted by the Contract Administrator, as computed by the Contract Administrator.

- .2 There will be no separate measurement for wood chip mulch used in individual trees saucers.

- .4 Plastic Edging

- .1 Plastic edging will be measured on a length basis for the number of linear metres of plastic edging installed in accordance with the Drawings and this specification, and accepted by the Contract Administrator, as computed by the Contract Administrator.

1.5 SUBMITTALS

- .1 Submit product data for:

- .1 Fertilizer
- .2 Anti-desiccant
- .3 Mulch

- .2 Submit samples for:

- .1 Mulch

1.6 STORAGE AND PROTECTION

- .1 Protect plant material from frost, excessive heat, wind and sun during delivery.

- .2 Immediately store and protect plant material which will not be installed within 2 hours after arrival at site in storage location approved by Contract Administrator.

- .3 Protect plant material from damage during transportation:

- .1 When 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 When 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.

- .4 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. Heel-in fibre pots.
- .3 For ball and burlap, and wire basket root balls, place to protect branches from damage. Maintain moisture level in root zones.
- .5 Waste Management and Disposal:
 - .1 Remove from site and dispose of packaging materials at appropriate recycling facilities.
 - .2 Place materials defined as hazardous or toxic in designated containers.
 - .3 Handle and dispose of hazardous materials in accordance with Provincial regulations.
 - .4 Dispose of unused fertilizer at official hazardous material collection site approved by Departmental Representative.
 - .5 Dispose of unused anti-desiccant at official hazardous material collections site approved by Departmental Representative.
 - .6 Divert unused wood and mulch materials from landfill to composting facility.

1.7 SCHEDULING

- .1 Obtain approval from Contract Administrator of schedule 7 days in advance of shipment of plant material.
- .2 Schedule to include:
 - .1 Quantity and type of plant material
 - .2 Shipping dates
 - .3 Arrival dates on site
 - .4 Planting dates

1.8 WARRANTY

- .1 Further to D24, Warranty shall be for one (1) year, commencing upon acceptance of installed plant material.
- .2 The Contractor hereby warrants that the plant material as itemized on the Plant Lists and on the Drawings will remain free of defects for the maintenance period indicated for each area of the Contract.
- .3 End-of-warranty inspection will be conducted by Contract Administrator. Contract Administrator reserves the right to extend the Contractor's warranty responsibilities for an additional year, at the end of the designated warranty period for the appropriate area, if at that time plant material leaf development and growth are not sufficient to ensure future survival
- .4 During the warranty period, remove from site any plant material that has died or failed to grow satisfactorily, as determined by the Contract Administrator and replace with healthy plant material of the same species and size.
- .5 Replace plant material in the following spring or fall as directed. Extend warranty on replacement plant material for an additional period until the end of the specified warranty period or for one full growing season, whichever is the longer period. Continue such replacement and warranty until plant material is acceptable.

- .6 Trees determined by the Contract Administrator to have been damaged by vandalism shall be replaced and such replacement trees will be paid for at the Contract Unit Prices for the species indicated on the Drawings.

Part 2 Products

2.1 PLANT MATERIAL

- .1 Type of root preparation, sizing, grading and quality: comply with Canadian Standards for Nursery Stock.
 - .1 Source of plant material: grown in Zones 2a or 3 in accordance with Plant Hardiness Zones in Canada.
 - .2 Plant material must be in location appropriate for the species.
- .2 Plant material: species and sizes as per the Plant List on the Construction Drawings, free of disease, insects, defects or injuries and structurally sound with strong fibrous root system.
- .3 Bare root stock: nursery grown, in dormant stage, not ball and burlap, or container grown.

2.2 WATER

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

2.3 MULCH

- .1 Wood chip: varying in size from 50 mm to 75 mm and 5 to 20 mm thick, free of bark, small branches and leaves

2.4 FERTILIZER

- .1 Synthetic commercial type as recommended by soil test report.

2.5 ANTI-DESICCANT

- .1 Wax-like emulsion

2.6 SOURCE QUALITY CONTROL

- .1 Obtain approval from Contract Administrator of plant material prior to planting.
- .2 Imported plant material must be accompanied with necessary permits and import licenses. Conform to Federal, Provincial or Territorial regulations.

Part 3 Execution

3.1 PRE-PLANTING PREPARATION

- .1 Ensure plant material acceptable to Contract Administrator.

- .2 Remove damaged roots and branches from plant material.
- .3 Apply anti-desiccant to deciduous trees in leaf in accordance with manufacturer's instructions.

3.2 EXCAVATION AND PREPARATION OF PLANTING BEDS

- .1 Preparation of planting beds is specified in CW 3540..
- .2 For individual planting holes:
 - .1 Stake out location and obtain approval from Contract Administrator prior to excavating.
 - .2 Excavate to depth and width as indicated.
 - .3 Remove 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 Contract Administrator if water source is ground water.

3.3 PLANTING

- .1 For bare root stock, place 50 mm backfill soil in bottom of hole. Plant trees and shrubs with roots placed straight out in hole.
- .2 For jute burlapped root balls, cut away top one third of wrapping and wire basket without damaging root ball. Do not pull burlap or rope from under root ball.
- .3 For container stock or root balls in non-degradable wrapping, remove entire container or wrapping without damaging root ball.
- .4 Plant vertically in locations as indicated. Orient plant material to give best appearance in relation to structure, roads and walks.
- .5 For trees and shrubs:
 - .1 Backfill soil in 150 mm lifts. Tamp each lift to eliminate air pockets. When two thirds of depth of planting pit has been backfilled, fill remaining space with water. After water has penetrated into soil, backfill to finish grade.
 - .2 Form watering saucer as indicated.
- .6 Water plant material thoroughly.
- .7 After soil settlement has occurred, fill with soil to finish grade.
- .8 Dispose of burlap, wire and container material off site.

3.4 MULCHING

- .1 Ensure soil settlement has been corrected prior to mulching.

- .2 Spread mulch as indicated.

3.5 MAINTENANCE DURING ESTABLISHMENT PERIOD

- .1 Perform following maintenance operations from time of planting to acceptance by Contract Administrator.
 - .1 Water to maintain soil moisture conditions for optimum establishment, growth and health of plant material without causing erosion.
 - .1 Remove weeds monthly.
 - .2 Replace or re-spread damaged, missing or disturbed mulch.
 - .3 For non-mulched areas, cultivate as required to keep top layer of soil friable.
 - .4 If required to control insects, fungus and disease, use appropriate control methods in accordance with Federal, Provincial and Municipal regulations.
 - .5 Remove dead or broken branches from plant material.
 - .6 Remove and replace dead plants and plants not in healthy growing condition. Make replacements in same manner as specified for original plantings.

3.6 MAINTENANCE DURING WARRANTY PERIOD

- .1 From time of acceptance by Contract Administrator to end of warranty period, perform following maintenance operations.
 - .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 re-spread damaged, missing or disturbed mulch.
 - .5 For non-mulched areas, cultivate monthly to keep top layer of soil friable.
 - .6 If required to control insects, fungus and disease, use appropriate control methods in accordance with Federal, Provincial and Municipal regulations.
 - .7 Apply fertilizer in early spring as indicated by soil test.
 - .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 Submit monthly written reports to Contract Administrator during the growing season identifying:
 - .1 Maintenance work carried out
 - .2 Development and condition of plant material
 - .3 Preventative or corrective measures required, which are outside Contractor's responsibility

END OF SECTION