

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 Supply and installation of tree planting.
 - .2 Supply and installation of shrub planting.
 - .3 Supply and installation of groundcover planting.

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 91 19.13 Topsoil & Finish Grading: Topsoil requirements for planting.

1.3 STANDARDS

- .1 Trees, shrubs, and ground covers are to be supplied and installed in accordance with the Metric Guide Specification for Nursery Stock, latest edition from the Canadian Nursery Trades Association except where specified otherwise.
- .2 Canadian Nursery Landscape Association (CNLA) – Canadian Standards for Nursery Stock - 8th Edition.
- .3 International Society of Arboriculture (ISA) – Ontario Chapter.

1.4 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 Commencement of work implies acceptance of surfaces and conditions. Claims for damages or extras resulting from such conditions will be rejected, unless due to conditions which could not be determined prior to or during construction.

1.5 SOURCE QUALITY CONTROL

- .1 Obtain approval from the Landscape Architect that plant material at source is acceptable prior to digging operations.
- .2 Plant material must be from local sources within 100km of site. Imported plant material must be accompanied by necessary permits and import licenses. Conform to federal and provincial regulations.

1.6 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit product data, shop drawings, and samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data
 - .1 Provide product data for:
 - .1 Fertilizer.
 - .2 Mulch.
- .3 Samples
 - .1 Provide (1) sample for:
 - .1 Mulch.
 - .2 Planting medium.
 - .3 Landscape fabric.
 - .2 As indicated on the plans, notify the Landscape Architect so they can tag the trees at nursery.

1.7 DELIVERY, 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 one (1) hour after arrival at site in storage location approved by Landscape Architect.
- .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.
- .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 sand or 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 balled-and-burlapped and wire basket root balls, place to protect branches from damage.
- .5 Maintain moisture level in root zones of all stored plants through use of a temporary irrigation system.

1.8 SCHEDULING

- .1 Schedule of planting program to include:

- .1 Date for selection of specified plant material at source.
- .2 Quantity and type of plant material.
- .3 Shipping dates.
- .4 Arrival dates on site.
- .5 Planting dates.
- .2 Obtain approval of planting program schedule from the Landscape Architect 7 days prior to shipment of plant material.

1.9 WARRANTY

- .1 The Contractor shall warrant all plants for TWO (2) FULL GROWING SEASONS from date of Substantial Performance.
- .2 Landscape Architect reserves the right to extend Contractor's warranty responsibilities for an additional one year if, at end of initial warranty period, plant development and growth is not sufficient to ensure future survival or if the Contractor has failed to meet related requirements tied to plant supply and growth.

PART - 2 PRODUCTS

2.1 MATERIALS

- .1 General:
 - .1 Type of root preparation, sizing grading and quality: comply with Metric Guide Specification for Nursery Stock, latest Edition of Canadian Nursery Trades Association.
- .2 Plant Materials:
 - .1 Use trees, shrubs and groundcovers of No. 1 grade complying with "Canadian Standard for Nursery Stock", Canadian Nursery Trades Association, latest edition.
 - .2 Plant materials shall be as per Plant List shown on landscape drawings. If substitutions are required, preference shall be given for plant materials that are drought tolerant, low maintenance, non-toxic, free of thorns, and native species. All substitutions shall be approved by the Landscape Architect.
 - .3 Free of disease, insects, defects, or injuries and structurally sound with strong fibrous root system.
 - .4 Root pruned regularly, but not later than one growing season prior to arrival on site.
 - .5 Trees: with straight trunks, with no bark damage or wounds, well and characteristically branched for species except where specified otherwise. Heavily pruned or shaped trees will be rejected at the discretion of the Landscape Architect.
 - .6 No collected stock shall be allowed.

- .3 Water:
 - .1 Supplied by Owner at designated source.
 - .2 Potable and free of minerals which may be detrimental to plant growth.
- .4 Accessories
 - .1 Wooden stakes, biodegradable webbing, plastic tree guard and flagging tape as per applicable detail.
- .5 Trunk Protection
 - .1 Perforated flexible PVC pipe (45mm Cal or larger). Height of guard shall be 850mm above mulch level.
 - .2 Bottom of guard to meet flush with rootball. Check and adjust guards every fall to ensure they are free of gaps, trash and not interfering with root or trunk development.
- .6 Mulch
 - .1 Shredded pine bark: varying in size from 25 to 75 mm in length. 100mm depth.
- .7 Fertilizer
 - .1 Synthetic commercial type as recommended by soil test report/manufacturer
- .8 Peatmoss
 - .1 Derived from partially decomposed species of Sphagnum Mosses.
 - .2 Elastic and homogeneous, brown in colour.
 - .3 Free of wood and deleterious material which could prohibit growth
 - .4 Shredded particle minimum size: 5 mm.
- .9 Filter Cloth:
 - .1 Non-woven geotextile 270R – Terrafix, or approved equivalent.
- .10 Fertilizer:
 - .1 Slow-release type, NPK ratio 5:3:2. Mix with planting soil backfill. Do not apply to soil surfaces to reduce nutrient runoff.

PART - 3 EXECUTION

3.1 QUALITY ASSURANCE

- .1 Planting operations shall be undertaken only under conditions conducive to the positive health and physical conditions of plants.
- .2 Stake out location of trees and shrub beds, as per planting plan. Obtain Landscape Architect approval prior to excavating and planting.
- .3 Plant, mulch, stake, protect and maintain all plant material utilizing best arboricultural practices in accordance with Canadian Nursery Trades Association and Landscape Ontario.

3.2 PRE-PLANTING OPERATIONS

- .1 Ensure plant material on site is acceptable to Landscape Architect.
- .2 Deliver all materials in their original containers with all labels intact and legible. Containers with additives shall clearly indicate the contents, weight, analysis and manufacturer's name.
- .3 Remove damaged roots and branches from plant material. Note that overly pruned plant material will be rejected.

3.3 EXCAVATION AND PREPARATION OF PLANTING BEDS

- .1 Stake out location of tree pits and shrub beds and obtain approval from the Landscape Architect prior to excavating.
- .2 Establish sub-grade and prepare planting beds as specified.
- .3 Excavate to depth and width as per applicable detail.
- .4 Remove rocks, roots, debris and toxic material from material that will be used as planting soil for trees and individual shrubs. Dispose of excess material as directed by Landscape Architect.
- .5 Scarify sides and bottom of tree pits and shrub beds.
- .6 Remove water which enters planting pits and beds prior to planting. Notify Landscape Architect if water source is ground water.

3.4 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 rootballs, cut away top one third of wrapping and wire basket without damaging root ball. Do not pull burlap or rope from under root ball. Cut and remove all ties and rope around tree trunks and all visible rope around rootballs.
- .3 For all container stock, remove entire container or wrapping without damaging root ball.
- .4 Plant vertically in locations staked and approved. Orient plant material to give best appearance in relation to structure, roads, and walks.
- .5 For trees:
 - .1 Backfill approved soil in 150 mm lifts. Tamp each lift to eliminate air pockets. When two thirds of the depth of the planting pit have been backfilled, fill the remaining space with water. After water has fully penetrated soil, backfill to finish grade.
 - .2 Install all trees 50-75mm high relative to finish grades to allow for natural settlement.
 - .3 Form watering saucer as indicated in the detail.
- .6 For shrubs:
 - .1 Backfill soil evenly to finish grade and tamp to eliminate air pockets.

- .2 Install filter fabric over entire planting bed and cut slits to accommodate shrub root balls prior to mulching.
- .7 For ground covers:
 - .1 Backfill soil evenly to finish grade and gently tamp to eliminate air pockets.
- .8 Water plant material thoroughly.
- .9 After soil settlement has occurred, fill with soil to finish grade.
- .10 Dispose of burlap, wire, and container material off site.

3.5 INSTALLATION OF ACCESSORIES & TRUNK PROTECTION

- .1 Install tree supports, accessories, and trunk protection as per applicable detail, after trees have been inspected and accepted by Landscape Architect.
- .2 Install trunk protection prior to installation of tree supports when used.
- .3 After tree supports have been installed, remove broken branches with clean, sharp tools

3.6 MULCHING

- .1 Ensure soil settlement has been corrected prior to mulching.
- .2 Apply and spread mulch as per applicable detail.

3.7 MAINTENANCE DURING ESTABLISHMENT PERIOD

- .1 Perform following maintenance operations from time of planting to Substantial Performance:
 - .1 Water to maintain soil moisture conditions for optimum establishment, growth and health of plant material without causing erosion.
 - .2 For evergreen plant material, water thoroughly in late fall prior to freeze- up to saturate soil around root system.
 - .3 Remove weeds monthly.
 - .4 Replace or respread damaged, missing or disturbed mulch.
 - .5 For non-mulched areas, cultivate as required to keep top layer of soil friable.
 - .6 Remove dead or broken branches from plant material.
 - .7 Keep trunk protection and guy wires in proper repair and adjustment.
 - .8 Remove and replace dead plants and plants not in healthy growing condition. Make replacements in same manner as specified for original plants.

3.8 MAINTENANCE DURING WARRANTY PERIOD

- .1 Perform following maintenance operations from time of Substantial Performance to the end of warranty period:
- .2 Submit quarterly written reports to the Landscape Architect identifying:

- .1 Maintenance work carried out.
- .2 Maintenance requirements
- .3 Development and condition of plant material.
- .4 Preventative or corrective measures required which are outside Contractor's responsibility.
- .3 Water to maintain soil moisture conditions for optimum growth and health of plant material without causing erosion.
- .4 Prune dead, broken or hazardous branches from plant material.
- .5 Keep trunk protection and tree supports in proper repair and adjustment.

3.9 ACCEPTANCE

- .1 All plant material will be accepted by the Landscape Architect after the entire project has received Substantial Performance and the planting operation is completed, if in the sole discretion of the Landscape Architect, the plant material exhibits healthy vigorous growth and is free from disease, insects and fungal organisms.
- .2 All Plant material installed less than 90 days prior to frost will be accepted in following spring, 30 days after the start of the growing season if acceptance conditions are fulfilled.

3.10 ADJUSTMENT AND CLEANING

- .1 Replacement of Defective Work
 - .1 Be responsible for the repair of all damages until inspected and approved by the Landscape Architect.

END OF SECTION