



# Landscape Nova Scotia Horticultural Trades Association

## TREES AND SHRUBS Specifications

### PART 1 – GENERAL

#### 1.1 Work Included and Contractor Qualifications

- 1) To complete planting of trees, shrubs, and groundcover as shown, specified, or required, and summarized, but not restricted to:
  - I. Supply and placement of planting soil mix.
  - II. Supply and planting of trees, shrubs, and ground cover, complete with all related components and accessories.
- 2) The Contractor shall be a member in Good Standing of Landscape Nova Scotia Horticultural Trades Association and have a CCHT Certified Supervisor (foreman) on staff.

#### 1.2 Related Work

- 1) Preparation of planting beds: Topsoil and Finish Grading: Section ( )

#### 1.3 Reference Standards

- 1) Perform planting of trees, shrubs and ground covers work in accordance with the Canadian Nursery Landscape Association – Canadian Standards for Nursery Stock – latest edition, except where specified otherwise.

#### 1.4 Source Quality Control

- 1) Obtain approval from (Consultant) (Engineer) of plant material prior to planting.
- 2) Acceptance of plant material does not prevent rejection after planting operations as a result of damage during planting operations, or failure of growth.
- 3) Imported plant material must be accompanied by necessary permits and import licenses and must conform to federal and provincial regulations.

## **1.5 Delivery, Storage and Protection**

- 1) Protect plant material from damage during transportation. Use enclosed vehicle or other method approved by (Consultant) (Engineer).
- 2) Immediately store and protect plant material that will not be installed within 1 hour after arrival at site in storage location approved by (Consultant) (Engineer).
- 3) Protect plant material from frost, excessive heat, wind and sun during and after delivery as follows:
  - I. For pots and containers maintain moisture level in containers.
  - II. For balled and burlapped (BB) and wire basket (WB) root balls, place to protect branches from damage. Maintain moisture level in root zones.
  - III. For bare-root (BR) plant material preserve moisture around roots by heeling-in or burying roots in approved moisture retaining medium and watering to full depth of root zone.

## **1.6 Warranty**

- 1) The contractor hereby warrants that plant material as itemized on plant list will be maintained to remain healthy and free of defects for 1 full growing season from final acceptance by (Consultant) (Engineer) subject to **3.9.2.** and **3.9.3.11.**
- 2) End-of-warranty inspection will be conducted by (Consultant) (Engineer).
- 3) (Consultant) (Engineer) reserves the right to extend Contractor's warranty responsibilities for an additional one year if, at the end of initial warranty period, leaf development and growth is not sufficient to ensure future survival.

## **1.7 Replacements**

- 1) During warranty period remove from site any plant material that has died or failed to grow satisfactorily as determined by (Consultant) (Engineer).
- 2) Replace plant material at the beginning of the next planting season if balled and burlapped or wire basket material. Container grown plants of equal size can be replaced during suitable growing conditions.
- 3) Extend warranty on replacement plant material for a period equal to the original warranty period.

## **PART 2 – PRODUCTS**

### **2.1 Plant Material**

- 1) Type of root preparation, sizing, grading and quality: comply with Canadian Nursery Landscape Association, Canadian Standards for Nursery Stock – latest edition.
- 2) Plant material: free of disease, insects, defects or injuries and structurally sound with strong fibrous root system.
- 3) Plant material: root pruned regularly.
- 4) Trees: to Canadian Nursery Landscape Association, Canadian Standards for Nursery Stock – latest edition, with straight trunks, well and characteristically branched for species except where specified otherwise.
- 5) Bare-root stock: Nursery grown, in dormant stage, not balled and burlapped or container grown.
- 6) Collected (native) stock: Not acceptable unless otherwise specified and approved by (Consultant) (Engineer).
- 7) Substitutions to plant material indicated on planting plan is not permitted unless written permission has been obtained as to size, type, variety, and quantity. Substitutions must be of similar species as originally specified.
- 8) Plant materials must be of appropriate zone and location for its species.

### **2.2 Water**

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

### **2.3 Tree Stakes**

- 1) Wood, 25 x 40 x 2400 mm long or steel T-bar, 2400mm long or as detailed in project documents.

### **2.4 Turnbuckle**

- 1) Galvanized steel, 9 mm diameter with 250 mm open length. Painted fluorescent orange.

### **2.5 Guying Wire**

- 1) Galvanized steel, 3 mm wire or 3 mm diameter multi-wire steel cable.

## 2.6 Anchors

- 1) Wood: 50 mm x 50 mm x 600 mm
- 2) Steel: T-bar, 600 mm

## 2.7 Guying Collar

- 1) Tube: plastic, 13 mm diameter, nylon reinforced, rubber hose or approved, commercial equivalent or as detailed in project documents.

## 2.8 Flagging Tape

- 1) Fluorescent ( ) colors.

## 2.9 Fertilizer

- 1) Complete slow release commercial type ratio as determined by soil test. Organic product acceptable substitute provided it will supply the nutrient requirements determined by soil sample test. Fertilizer not to contain a herbicide.

## 2.10 Anti-desiccant

- 1) Wax-like emulsion.

## 2.11 Mulch

- 1) Organic:
  - I. Shredded bark: varying in size from (25) mm to (100) mm in length, from coniferous trees.
  - II. Bark chip: varying in size from (25) to (50) mm in diameter, from bark of coniferous trees.
  - III. Wood chip: Varying in size from (50) to (75) mm and (5) to (20) mm thick, free of bark, small branches and leaves.
  - IV. Approved commercial bark nugget
- 2) Inorganic:
  - I. Well rounded beach stone, lava rock, brick or marble chips or other acceptable products.

## **PART 3 – EXECUTION**

### **3.1 Pre-Planting Operations**

- 1) Ensure plant material acceptable to (Consultant) (Engineer).
- 2) Remove damaged roots and branches from plant material.
- 3) Apply anti-desiccant in accordance with manufacturer's instructions, when plant material is dug out of the recommended season for protection, during extreme temperatures and such other conditions deemed necessary by (Consultant) (Engineer).

### **3.2 Excavation and Preparation of Planting Beds**

- 1) Ensure sub-grade for planting beds meets requirements as outlined in this specification, and is approved by (Consultant) (Engineer).
- 2) Preparation of planting beds is specified in Section ( ). Topsoil and Finish Grading.
- 3) For individual planting holes:
  - V. Stake out location and obtain approval from (Consultant) (Engineer) prior to excavating.
  - VI. Excavate to depth and width indicated.
  - VII. Remove subsoil, rocks, roots debris and toxic materials from excavated material that will not be used as planting soil. Dispose of excess material.
  - VIII. Scarify sides of planting hole.
  - IX. Remove water, which enters excavations prior to planting. Notify (Consultant) (Engineer) if water source is ground water.
  - X. Place trees in pits. Place stakes on either side of root all as specified in sub-section 3.5 and drive into undisturbed soil.

### **3.3 Planting**

- 1) For bareroot stock, place 50 mm planting mixture in bottom of pit. Plant trees and shrubs with roots placed straight in pit.
- 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, water plants, then 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:
  - I. Backfill soil in 150 mm lifts. Lightly tamp each lift and water 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.
  - II. Form watering saucer as indicated.
- 6) Water plant material thoroughly after planting operations are complete.
- 7) After soil settlement has occurred fill with soil to finish grade.
- 8) Dispose of burlap, wire, and container material off site.

### 3.4 Tree Supports

- 1) Install tree supports as indicated in project documents.
- 2) Use double stake tree support for deciduous trees 50 mm and over.
  - I. Place one stake on the prevailing wind side of tree and second opposite or as directed by (Consultant) (Engineer). Both stakes should be 800 mm minimum for trunk and should be placed on either side of root ball. Where trees are planted next to driveways or walkways, place one stake between tree trunk and driveway or walkway.
  - II. Drive stakes minimum 300 mm into undisturbed soil beneath root ball. Ensure stakes are secure, vertical and unsplit.
  - III. Install 2 guying collars above lowest branch crotch a minimum 1500 mm above grade.
  - IV. Thread guying wire through collar tube. Twist wire to form collar and secure firmly to stake. Cut off excess wire. Ensure collar is minimum 1" diameter larger than tree.
- 3) Use 3 guy wires and anchors for evergreens.
  - I. Install guying collars above branch to prevent slipping at approximately 2/3 height for evergreens. Collar mounting height not to exceed 1000 mm above grade.
  - II. Guying collars to be of sufficient length to encircle tree plus 500 mm space for trunk clearance. Thread guy wire through collar encircling tree trunk and secure to lead wire by clamp or multi-wraps; cut wire ends close to wrap. Spread lead wires equally proportioned about trunk at 120 degrees.
  - III. Install anchors at equal intervals about tree and away from trunk so that guy wire will form 45-degree angle with ground. Install anchor at angle to achieve maximum resistance for guy wire.
  - IV. Attach guy wire to anchors. Tension wire and secure by multi-wraps.
  - V. Install wire tightener ensuring that guys are secure and leave room for slight movements of tree.
  - VI. Saw tops off anchors, which extend in excess of 100 mm above grade or as directed.
- 4) After tree supports have been installed pruned and remove broken branches with clean, sharp tools.

### 3.5 Mulching

- 1) Ensure soil settlement has been corrected and weeds removed prior to mulching.
- 2) Water plant material thoroughly prior to mulching spread mulch as indicted.
- 3) Spread mulch to a minimum depth of 50 mm or as specified in project documents.

### 3.6 Maintenance during Establishment Period

- 1) Perform following maintenance operations from time of planting to acceptance by (Consultant) (Engineer).
  - I. Water to maintain soil moisture conditions for optimum establishment, growth and health of plant material without causing erosion.
  - II. For evergreen plant material: water thoroughly in late fall prior to freeze-up to saturate soil around root system.
  - III. Remove weeds monthly.
  - IV. Replace or re-spread damaged, missing or disturbed mulch.
  - V. Apply pesticides in accordance with Federal, Provincial, and Municipal regulations as and when required to control insects, fungus, and disease.
  - VI. Prune and remove dead or broken branches from plant material using proper pruning cuts (techniques).
  - VII. Keep stakes and guy wires in proper repair and adjustment.
  - VIII. Apply fertilizer in early spring at manufacturer's suggested rate and as required by plant material.
  - IX. Remove and replace dead plants and plants not in healthy growing condition. Make replacements in same manner as specified for original plantings.
  - X. *Note: Where Municipal (By-laws) Regulations prohibit the use of Federally and/or Provincially approved pesticides, **and** the available (alternative) non-pesticide controls are **not acceptable** to the contractor; the **(3.7.5)Apply pesticides to control insects, fungus and disease** shall be deemed to be removed from **3.7 Maintenance during Establishment Period.***

### 3.9 Maintenance during Warranty Period

- 1) Commence maintenance immediately following installation of Work and continue it for 1 year (the guarantee period) following final acceptance at Project completion.
- 2) This maintenance will be the sole source of maintenance of the work during this period and is wholly the Contractor's responsibility. Should maintenance of the work be removed from the contract or carried out by "others", warranty will cease following final acceptance at project completion.
- 3) From time of acceptance by (Consultant) (Engineer) to end of warranty period of 1 full growing season, perform following maintenance operations:

- I. Water to maintain soil moisture conditions for optimum growth and health of plant material without causing erosion
- II. For evergreen plant material: water thoroughly in late fall prior to freeze-up to saturate soil around root system.
- III. Reform damaged watering saucers.
- IV. Remove weeds monthly.
- V. Replace or re-spread damaged, missing or disturbed mulch.
- VI. Apply pesticides in accordance with Federal, Provincial, and Municipal regulations as and when required to control insects, fungus, and disease
- VII. Apply fertilizer in early spring at manufacturer's suggested rate and as required by plant material.
- VIII. Remove dead, broken or hazardous branches from plant material.
- IX. Keep stakes and guy wires in proper repair and adjustment.
- X. Remove and replace dead plants and plants not in healthy growing condition. Make replacements in same manner as specified for original plantings.
- XI. *Note: Where Municipal (By-laws) Regulations prohibit the use of Federally and/or Provincially approved pesticides, **and** the available (alternative) non-pesticide controls are **not acceptable** to the contractor; the **(3.9.3.6)Apply pesticides to control insects, fungus and disease** shall be deemed to be removed from **3.9 Maintenance during Warranty Period** and the warranty of the plant material specifically due to damage from insects, fungus and disease, shall not apply.*

- 4) Notify (Consultant) (Engineer) when maintenance period is completed to arrange inspection and transfer of maintenance responsibility to Owner.

### 3.10 Acceptance

- 1) Plant material will be acceptable after planting operation is completed provided that plant material exhibits healthy growing conditions and is free from disease, insects and fungal organisms.
- 2) Plant material installed in the fall will be accepted in the following spring, one month after start of growing season, provided acceptance conditions outlined in 3.9.1 are fulfilled. The acceptance date, for material planted in the fall and accepted in the spring are deemed to be the date of the completion of the fall planting operations.

### 3.11 Clean-up

- 1) Remove materials, which have spilled onto adjacent surfaces during Work of this Contract.