

Part 1 - General

1.01 Description

- .1 This Section specifies requirements for relocating shrubs and trees that are to be preserved.

1.02 Related Specification

- .1 Canadian Standards for Nursery Stock, latest edition, published by the Canadian Nursery Landscape Association.
- .2 OPSS.MUNI 492 - Construction Specification for Site Restoration Following Installation of Pipelines, Utilities and Associated Structures in Open Cut

1.03 Qualifications of Contractor

- .1 All work required under this Section shall be performed by a qualified landscape/horticultural contractor using workers experienced in this work. Trees and shrubs shall be planted by a contractor who is a member of Landscape Ontario Horticultural Trades Association.

1.04 Interim Maintenance

- .1 The Contractor shall be responsible for interim maintenance of relocated plant material immediately following planting and shall continue until preliminary acceptance has been granted, and such maintenance shall be considered part of the installation work.
- .2 The Contractor must immediately replace all dead or dying plants during the warranty period as required by Contract Administrator. Replacement of plants only at the end of the warranty period will not be acceptable.
- .3 This interim maintenance in regard to new planting shall consist of:
 - .1 Pruning, watering, fertilizing, cultivating, weeding, mulching, tightening and repairing of supports, resetting plants to proper grades or upright position, restoration of planting saucer and furnishing and application of such sprays as are necessary to keep plants free of insects;

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- .2 Keeping soil within confines of planting saucer around trees, and keeping planting beds shallowly cultivated and free of weeds,
 - .3 Adding commercial fertilizer 10-10-10 at the rate of 10 kg/100 m² according to the manufacturer's instructions at the end of the interim maintenance period.

1.05 Acceptance

- .1 “Preliminary Acceptance” shall be given to all relocated plant material showing healthy growth and bud formation at the time of completion inspection. This acceptance shall include mulch, tree supports, wooden stakes and the planting mixture.
- .2 Final Acceptance shall be given to all plant material meeting all conditions as specified above for Preliminary Acceptance, at one year after Preliminary Acceptance has been granted.

1.06 Maintenance After Preliminary Acceptance

- .1 Tree and Shrub Maintenance:
 - .1 The Contractor shall provide maintenance following Preliminary Acceptance and continue throughout the period of warranty until Final Acceptance as specified in 1.05.2 above. Maintenance requirements shall include all procedures consistent with proper horticultural practices to ensure normal, vigorous and healthy growth. This includes adequate watering, pruning, cultivation and weed control as required, disease and insect pest control, re-staking and attention to supports.
 - .2 The Contractor shall restore the site to original conditions from damage arising out of the maintenance operations.
 - .3 This work shall be performed to the satisfaction of the Contract Administrator and compensation shall be deemed to be included in the prices bid for various tender items.
- .2 Weed and Grass Control:
 - .1 All wood chip mulched areas shall be kept free of grass for the duration of the warranty period.

1.07 Warranty

- .1 The Contractor shall be required to warranty all work and materials specified for 2 years from the date of written Preliminary Acceptance of the work by the Contract Administrator or as specified otherwise.
- .2 An end of warranty period inspection will be conducted by Contract Administrator.
- .3 Plants shall be in a healthy growing condition at the end of the warranty period. A plant shall be assumed to be acceptable when it is structurally sound, when it is well furnished with living foliage, when it has normal colour, when it shows adequate annual growth and formation of buds and when it is free from blight of any description.
- .4 Replacements required at the end of the warranty period shall be plants of the same species and size as shown in the plant list and on the Contract Drawings, furnished and planted as specified in the Contract Documents. The cost of replacement shall be the responsibility of the Contractor.
- .5 Tree supports shall be removed at the end of the warranty period provided that the plant material is showing well developed foliage, healthy growth, good bud formation and well anchored in the planting soil. Tree wrap shall be removed in the first spring after planting.
- .6 The Contract Administrator reserves the right to extend Contractor's warranty responsibilities for an additional one year period if, at the end of the initial warranty period, leaf development and growth is not sufficient to ensure future survival.

1.08 Job Conditions

- .1 Work of this Section shall be performed during suitable weather conditions and growth season for each specified material.

Part 2 - Products

2.01 Topsoil

- .1 Topsoil shall be fertile, friable natural loam containing not less than 4% of organic matter for clay loams and not less than 2% for sandy loams with an acidity value ranging from pH 6.5 to 7.5 and capable of sustaining vigorous plant growth.
- .2 Topsoil shall be free of roots, vegetation or other debris that prevents proper placement, and free of stones and clods over 20 mm in any dimension. Imported topsoil shall be screened prior to delivery to the job site.

2.02 Fertilizer

- .1 Complete commercial slow release fertilizer with a maximum 35% water soluble nitrogen with the following percentages by weight of nitrogen, phosphorus, and potassium, in that order: 10-10-10, or as determined by soil tests.

2.03 Mulch

- .1 Shall be a shredded pine bark mulch varying in size between 25mm and 125mm in length or clean hardwood chips ranging in size from 20-50mm and installed to a depth of 150mm. Mulch shall be free of contaminants and shall be wetted within 24 hours of installation.

2.04 Ties

- .1 Biodegradable ties shall be used to secure trees to stakes. No wire or garden hose will be permitted.

2.05 Wooden Stakes

- .1 For tree supports, use new wooden stakes 50 mm x 50 mm x 2400 mm long. Steel t-bars will not be permitted.
- .2 Staking and guying will be completed immediately after planting. Stakes are to be driven beside and 300mm below the base of the root ball. Stakes are to be driven into ground at 90 degrees, and outside of Tree pit.

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- .3 Stakes are to be removed after the warranty period has ended.

2.06 Planting Mixture

- .1 The planting medium shall be an approved screened Triple Mix. This medium will be mixed with existing native material so as not to exceed 50% new soil within the tree pit. The retained native material shall be free of stones, refuse or other extraneous material. Clod size is not to exceed 2 cm.
- .2 The planting medium shall be shredded and screened sandy loam whose organic content is not less than 10% and the clod size is not to exceed 2cm. This soil shall be free of stones, subsoil, refuse, or other extraneous material and be capable of sustaining healthy plant growth. This medium will be mixed with existing native material so as not to exceed 25% sandy loam.
- .3 Planting mixture shall contain 6 parts topsoil, 2 parts well rotted cow or horse manure.

Part 3 - Execution

3.01 Protection

- .1 Examine route of work to determine location and size of existing trees and shrubs to remain.
- .2 Mark shrubs and trees to remain.
- .3 Protect trees with slatting around trunks and erect snow fencing around drip line.
- .4 Store trees and shrubs, which cannot be planted immediately in a satisfactory manner.
- .5 Protect trees from damage and drying out from time of digging until planting.

3.02 Workmanship

- .1 Co-ordinate operations. Keep site clean and planting holes drained. Immediately remove soil or debris spilled onto pavement.

3.03 Preparation

- .1 Location of Trees:
 - .1 Stake out all tree and shrub locations and obtain the Contract Administrator's approval before excavating. Cooperate with the Contract Administrator where minor adjustments to such locations are necessary. The proposed new location of trees and plants shown on Contract Drawings is approximate only and may require adjustment due to site conditions.
 - .2 The Contractor shall be responsible for locating all underground utilities and services prior to digging.
- .2 Subgrade for Planting Beds and Tree Pits:
 - .1 Scarify to a depth of 150 mm below bottom of planting pit/bed.

3.04 Planting Time

- .1 Provide the Contract Administrator with plant relocation schedule.
- .2 Trees and shrubs shall be re-planted immediately after being excavated.
- .3 Ensure that watering facilities are available.
- .4 Plant only under conditions that are conducive to the health and best physical condition of plant material.

3.05 Installation

- .1 Plants and Trees:
 - .1 Plant during suitable weather conditions, according to locally accepted practice and with the Contract Administrator's approval. Set plumb in the centre of the pit and at the same relation to grade as originally shown, after settlement has taken place.
 - .2 Plant trees and shrubs vertically and faced to give best appearance in relation to structures, roads, and walks.

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- .3 Excavate planting holes in planting areas. Ensure that hole is wider and deeper than rootball, allowing at least 150 mm of planting mixture under each plant. Set plants so that their roots lie in their natural position. Constantly tamp planting mixture around rootball 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 leaving a shallow saucer directly over the rootball, and slightly smaller in diameter than the excavation. Apply fertilizer at a rate of 10 kg/100 m². Water trees and planting beds thoroughly immediately after planting.
 - .4 Trees will be set at the same relationship to finished grade as they were to the ground from which they were dug. In heavy clay soils, the tree will be set with the root callus positioned 75mm to 100mm above the finished grade. They will be set plumb and braced in position until soil has been placed around the root ball. The trunk of the tree is not to be used as a lever in positioning or moving the tree in the planting hole.
 - .5 All burlap, twine or ropes over the top of the root ball, or wrapped around the tree stem are to be removed.
 - .6 All planting sites will be left in a clean, tidy and safe condition with all surplus materials, soil, debris etc. removed. Caution will be taken not to damage turf, sidewalks, curbs, roads, etc. Any damage will be the responsibility of the Company to repair. No planting sites will be left incomplete at the end of a workday.
 - .2 Tree Support:
 - .1 After planting, stake all trees with biodegradable arbour ties and two wooden stakes. Tie trees without subjecting tree to undue strain.
 - .3 Pruning:
 - .1 Prune only as necessary to remove dead and broken branches and to compensate for the loss of roots as a result of digging operations. Preserve the natural form and character of plants and do not remove small twigs along tree trunks.

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- .2 Pruning shall be performed in accordance with good arboricultural practices. Use only sharp, clean tools and make cuts flush without leaving stubs. Trace back to living tissue all cuts, bruises, and scars on the bark.
 - .4 Mulching:
 - .1 Obtain the Contract Administrator's approval of planting before mulching material is applied. Loosen soil in planting beds and pits and remove all debris and weeds. Spread mulch to minimum acceptable thickness of 100 mm. Mulch material susceptible to blowing must be moistened and mixed with small amount of topsoil before applying. When mulch is applied in the fall, place immediately after planting. When mulch is applied in spring, wait until soil has warmed up.

END OF SECTION