

**SECTION 9.49**  
**FURNISHING, PLANTING and MULCHING**  
**TREES, SHRUBS, VINES and GROUND COVER**  
**PLANTS**

**9.49.01--Description:** The work under these items shall consist of furnishing, planting and mulching trees, shrubs, vines and ground cover plants of the type and size indicated on the plans or special provisions. It shall also include all incidental operations, such as the care of the living plants and the replacement of dead and unsatisfactory plants or unsatisfactory materials before final acceptance of the contract.

**9.49.02--Materials:** The material for this work shall conform to the requirements of Section M.13.

**9.49.03--Construction Methods:** Construction methods shall be performed in accordance with these specifications.

The Contractor is cautioned that within the limits of any project, buried cable for illumination or utilities, which may be energized, may be present.

**1--Planting Season:** Unless otherwise shown on the plans or directed by the Engineer, the planting seasons shall be those indicated below. No planting shall be done in frozen ground or when snow covers the ground, or the soil is otherwise in an unsatisfactory condition for planting.

**Deciduous Material**

**Spring:** March 1st to May 1st (inclusive) except for balled and burlapped material, the planting of which will terminate on May 15th.

**Fall:** From October 15th until the ground freezes. Such plant items, as may be designated elsewhere in the contract documents, shall be planted in the spring planting season only.

**Evergreen Material**

**Spring:** March 1st to June 1st (inclusive).

**Fall:** August 15th to October 1st (inclusive).

**2--Protection:** Plants received by the Contractor shall be kept moist, fresh and protected against exposure to sun, wind and freezing temperatures whether in the receiving yard, in transit, while being handled or in temporary storage on the job site awaiting planting. Bare-root plants, which are not planted immediately upon receipt, shall be heeled-in in trenches with the bundles opened, the plants separated and all roots covered so as to leave no air spaces. Balled and burlapped plants shall have their earth balls covered by earth, wood chips, cloth, straw or other suitable material which shall be kept moist.

**3--Layout:** Plant material locations and bed outlines will be staked on the project site by the Engineer-Designer or his designee in the presence of the Contractor, or his representative, before any plant pits or beds are excavated. Request by the Contractor for the staking of the plant layout shall be at least 48 hours, excluding weekends and holidays, prior to the date he wishes to have the layout staked. Labor, equipment and new, smooth stakes of approved quality are to be furnished by the Contractor for this purpose.

**4--Excavation:** Excavation for planting beds and pits shall conform to the approved staked locations and outlines. The latter shall be neatly formed by means of spades or other approved tools. All sod, weeds, roots and other objectionable material excavated from the plant beds or pit sites which are unsuitable for backfill shall be removed from the site immediately and disposed of by the Contractor in a manner satisfactory to the Engineer.

The Contractor at his option may apply, prior to excavating plant pits in designated planting bed locations, at no expense to the State, a post-emergent aqueous spray treatment of Glyphosate (isopropylamine salt of glyphosate) 41 percent acid equivalent (ae) to the existing bed vegetation in accordance with the manufacturer's recommendations for perennial vegetation control, instead of excavating the planting bed.

A minimum of fourteen (14) days post application, or when the perennial species shows the visible effects of the treatment, the Contractor shall mow, at no expense to the State, all treated bed areas to a maximum height of 100 mm.

Plant pits may then be excavated, and the excavated soil and vegetative debris shall then be immediately removed from the project site.

In planting bed areas following the excavation of the pits, but before the installation of plant material, the remaining turf grasses and unwanted vegetation shall be sprayed, unless otherwise directed by the Engineer, with Glyphosate at the manufacturer's recommended rate.

**5--Pits:** Size of pits, in earth excavation, shall bear the following relation to the spread of the roots (or the diameter of balls) of the plants to be planted in them:

Pit diameters shall be twice the rootspread up to and including a 600 mm rootspread.

Pit diameters shall be 600 mm greater than that for rootspreads of 600 mm to 1200 mm.

Pit diameters shall be one and one-half times the rootspread diameter for rootspreads of over 1200 mm.

The depth of all pits shall be adequate to permit a minimum of 300 mm of soil backfill under all roots or balls. Pits for vines shall be at least 250 mm in diameter and 250 mm in depth.

Any excavation in excess of that required shall be replaced with planting soil.

**6--Obstructions Below Ground:** Any rock or underground obstruction shall be removed to the depth necessary for planting as specified, unless other locations for the planting are approved by the Engineer.

**7--Preparation of Backfill:** The planting soil shall be delivered to the project site and stockpiled. The peat shall be delivered to the project site in containers conforming to Subarticle M.13.07-13. The planting soil and peat shall be thoroughly mixed on the project site, in the presence of the inspector, at the rate of one part of peat to two parts of planting soil.

**8--Setting Plants:** All plants shall be set plumb and at such a level that after settlement they bear the same relation to the surrounding ground as they bore to the ground from which they were dug. Backfill material for all plants shall be thoroughly and properly settled by firming or tamping. Thorough watering shall accompany backfilling unless otherwise approved. Saucers capable of holding water shall be formed about individual plants (exclusive of plant beds) by placing ridges of planting soil around each, or as directed by the Engineer.

Balled or burlapped plants shall be carefully placed in the prepared pits so that the balls rest on the backfill material. Planting soil and peat backfill shall then be filled in around the plant ball and thoroughly tamped. The remaining burlap around the ball shall then be loosened and spread out away from the plants or cut away and removed. Such roots as may have been wrapped around the ball and contained within the burlap shall be straightened and the remainder of the pit filled with tamped planting soil and peat mixture, making certain that no air pockets remain. The bare roots plants shall be properly spread out in a natural position and planting soil and peat backfill carefully worked in among them. All broken or frayed roots shall be cleanly cut off.

**9--Fertilizing:** Shrub beds shall be fertilized at the rate of 1.3 kg per 9 m<sup>2</sup> of surface area (broadcast). The fertilizer shall be uniformly applied to the surface of the beds and worked into the upper 50 mm of soil. Individual trees shall be fertilized at the rate of 1 kg per 25 mm of trunk diameter, and the fertilizer shall be mixed into the upper 50 mm of soil.

A second application of fertilizer shall be applied to all plant items at the same specified rates over the wood-chip mulch at the end of the period of establishment.

**10--Watering:** All plants shall be watered within 48 hours after planting if conditions warrant, and as many times thereafter as ordered by the Engineer. At each watering, the soil around each plant shall be thoroughly saturated. All plants shall be watered at least once a week from April 1st to October 1st, inclusive, or as directed by the Engineer.

**11--Guying and Staking:** Immediately after planting, trees shall be guyed or staked as shown on the planting detail sheet of the plans, or as directed by the Engineer. Guy wires, hose and tree support stakes shall be removed after the initial establishment period.

**12--Wrapping:** Wrapping shall be placed around all trunks of deciduous trees 50 mm or more in caliper or as directed by the Engineer. The wrapping shall start at the base of trees, shall cover the entire trunk surfaces, and shall terminate at the first branches. The wrapping shall be tied at top, bottom, and at intervals of not more than 600 mm. Wrapping shall be done at the time of planting but not before inspection of the plant.

**13--Pruning:** As directed by the Engineer, plants shall be pruned at the project site before or immediately after planting in accordance with the best horticultural practice. No leader shall be cut unless directed by the Engineer. Broken, or badly bruised branches, sucker growth, etc., shall be removed with clean cuts. Cuts over 20 mm in diameter shall be painted with tree wound paint.

**14--Spraying:** Spraying with antidesiccant shall be at the Contractor's discretion and as approved by the Engineer at no additional cost to the State.

**15--Mulching:** Following the plant material installations woodchip mulch (or gravel mulch when specifically called for on the plans or in the special provisions) shall be hand placed and spread to a depth of 100 mm and raked to an even surface over all saucer areas for individual trees and shrubs and over the entire area of shrub beds and elsewhere as directed.

**16--Repair:** Repair of existing grass areas damaged by the Contractor in the progress of his work shall be the responsibility of the Contractor, who shall restore the disturbed areas to their original condition at no additional expense to the State.

**17--Establishment Period:** The acceptability of the plant material furnished and planted shall be determined at the end of a period of establishment during which period the Contractor shall, as necessary, employ all possible means to preserve the plants in a healthy and vigorously growing condition to insure their successful establishment.

During this period, the Contractor shall water, cultivate, prune the plants, and repair, replace or readjust guy wires, stakes, posts and flagging, as may be required or as ordered by the Engineer. He shall reshape plant saucers, repair washouts and gullies, replace lost wood-chip mulch, keep all planting sites free from weeds, and do other work necessary to maintain the plants in a healthy growing condition. This shall include seasonal spraying with approved insecticides or fungicides as may be required.

All dead or rejected plants shall be promptly removed from the project during the period of establishment, and shall be replaced by the Contractor in kind, quantity and size with live, healthy specimens planted during the stipulated planting season.

The establishment period does not begin until all plant materials stipulated in the contract have been planted. When the plant establishment period begins at the end of the spring planting season, an inspection to determine the acceptability of plant establishment will be held by the Contractor and the Engineer no later than November 1st in the same year. When the plant establishment period begins at the end of the fall planting season an inspection to determine the acceptability of plant establishment will be held by the Contractor and the Engineer

by August 1st of the following year. During the plant establishment inspection, an inventory of losses and rejected materials will be made and corrective and necessary clean up measures will be determined.

Replaced plant material shall be subject to all the requirements specified for the original material.

A final inspection will be held in accordance with Article 1.08.12. Any further work to be done will be in accordance with Article 1.08.13 before the project can be accepted.

**9.49.04--Method of Measurement:**

**1--Planting:** The quantity for which payment will be made will be the number of each size and kind of plants counted in place, planted and accepted.

**2--Mulching:** This work will be measured for payment by the number of square meters surface measurement of the specified thickness for the area on which woodchip mulch (or gravel mulch) has been completed and accepted.

**9.49.05--Basis of Payment:**

**1--Planting:** Payment for this work will be made at the contract unit price each for the kind and size of plant and method of planting, as the case may be, completed and accepted in place, except that when approved, partial payment for work satisfactorily performed in the excavation of plant pits and for furnishing and placing planting soil and peat humus admixture may be made in amounts not to exceed twenty (20) percent of the unit bid price for the respective plant.

**2--Mulching:** This work will be paid for at the contract unit price per square meter for wood chip mulch (or gravel mulch) complete in place.

**3--The unit prices** shall include all materials, equipment, tools, labor, transportation, operations and all work incidental thereto, including the removal of guy wires, hose and tree support stakes after the initial establishment period, except that payment for excavation of solid ledge rock, concrete pavement and boulders 0.5 m<sup>3</sup> in volume or greater will be made under item for "Rock Excavation for Planting."

Pay Item	Pay Unit
(Caliper) (Deciduous Tree Name)	EA.
(Height) (Evergreen Tree Name)	EA.
(Size) (Shrub Name)	EA.
(Size) (Broad-leaved Evergreen Name)	EA.
Vines (Name)	EA.
Groundcover (Name)	EA.
Wood Chip Mulch	m <sup>2</sup>
Gravel Mulch	m <sup>2</sup>
Spraying Glyphosate	m <sup>2</sup>