

## **Section 2611. Furnish and Install Shrubs and Trees with Warranty**

### **2611.01 DESCRIPTION.**

- A.** Furnish and install tree and shrub materials of the type, class, species, grade, and size specified in the contract documents. The requirements in [Section 2610](#) do not apply to this work unless stated otherwise in this specification.
- B.** The contract period for this work is two growing seasons for all plants.

### **2611.02 MATERIALS.**

Meet the requirements of [Section 4170](#).

### **2611.03 CONSTRUCTION.**

#### **A. Location of Plantings.**

- 1.** Notify the Engineer when utility locates are complete. After utility locates have been completed, the Contracting Authority will stake plant locations with coded flags. Location adjustments may be necessary.
- 2.** Preserve coded flags adjacent to proposed plants until after final fall inspection. Remove material used for flagging, including tags and flagging tape, from the right of way according to [Article 1104.08](#) immediately after final fall inspection is completed.

#### **B. Planting.**

- 1.** Plant trees and shrubs and first year replacements between March 1 and May 15. Plant second year replacements between September 1 and September 30 for evergreens and between October 1 and November 30 for deciduous plants.
- 2.** Contractor may use [Articles 2610.03, A; 2610.03, D; or 2610.03, E](#) as guidance for planting techniques to enhance survivability of plant materials, at no additional cost to the Contracting Authority.
- 3.** Dig planting wells for single plants 3 feet (1 meter) toward the mainline highway from the flag location unless otherwise directed by the Engineer.
- 4.** Excavate to a minimum diameter of 24 inches (600 mm) for trees and 18 inches (450 mm) for shrubs. Remove plants from containers (plantable and nonplantable) in a manner that does not disturb the roots. Remove twine, wire, and burlap around the stem of the plant. Remove containers, twine, wire and burlap from the project.
- 5.** Install plants in a straight, upright manner. Ensure plants remain plumb throughout the contract period.

6. Install plants such that the root collar is at soil grade upon completion of installation of backfill, and the root collar remains at soil grade.

**C. Staking and Guying.**

1. The Contractor may use [Article 2610.03, F](#) as guidance for staking and guying to enhance survivability of plant materials. However, deciduous trees 6 feet (1.8 meters) or taller in height require staking and guying according to [Article 2610.03, F](#).
2. Repair stakes and guys broken or damaged during the contract period. Remove stakes and guys according to Article 1104.08 in the fall of the second year.
3. Installation, repair, and removal of stakes and guys are incidental to planting and will not be paid for separately.

**D. Mulching.**

1. Furnish and apply mulch to all of the proposed trees and shrubs. Place mulch as shown in the contract documents to a depth of 3 inches (75 mm). Maintain an air space at the base of tree trunks and shrub canes.
2. Furnish and apply 2 inches (50 mm) of mulch in the fall of the second year to replenish the mulched areas of proposed plants after final plant replacement is complete. Ensure mulch bed is weed free prior to application of additional mulch.
3. Furnishing and applying mulch, as well as replacing mulch displaced or disturbed by the Contractor during the contract period, are incidental to planting and will not be paid for separately.

**E. Filter Fabric.**

1. Install filter fabric as follows:
  - a. In areas to be mulched for proposed plants:
    - 1) Rototill and hand rake the area to a loose condition that:
      - Is friable and free of debris, clods and rock, and
      - Has a smooth surface with a uniform appearance.
    - 2) Place filter fabric flush with the ground.
  - b. Secure fabric using staples complying with [Article 4169.10, A](#).
2. Furnishing and installing filter fabric is incidental to planting and will not be paid for separately.

**F. Plant Establishment Period and Replacement.**

1. The plant establishment period will be the first two growing seasons. The establishment period will begin when the last plant of the initial installation is planted and incidental work related to the plantings is complete.

2. Use chemical methods to control competing vegetation in the entire mulched area throughout the contract period. Chemical methods to remove vegetation shall be applied by a Certified Pesticide Applicator - Category 6 (Right of Way).
3. Obtain the Engineer's approval prior to applying pesticides and herbicides used for competing vegetation, insect, or disease control. Use pesticides and herbicides according to product label directions.
4. Replace all plants that are not in a live, healthy, growing condition at the end of each of the first two growing seasons. Plant the replacement plants for the first growing season the following spring. Plant the replacement plants for the second growing season in the fall of that year. Ensure replacement plants are of the variety and size originally specified in the contract documents.
5. The Contractor may salvage and reuse the original mulch for replacement plants. If the original mulch is not available, suitable, or salvageable for reuse, place new mulch around the replacement plants. The Contractor is responsible for replacement costs.

#### **G. Inspection of Plant Materials.**

1. Verify correct species have been planted. Also verify compliance with ANSI Z60.1, American Standard for Nursery Stock.
2. The Engineer will inspect the plant materials, staking and guying, and mulch after the initial installation or on May 16, whichever comes first. This includes the inspection for:
  - Size, number, location, alignment, and viability of plant materials,
  - Correct depth and area of mulch, and
  - Installation of stakes and guys as specified in the contract documents.
3. In August of each year of the establishment period, identify all dead plants using tie-on plastic flagging, all of one color, in a location that is easily seen.
4. By August 30 of each year, submit to the Engineer marked copies of the plant location plan sheets showing the number and species of replacement plants required for each location for that year. Submit tabulations of the total number of replacement plants of each species on each plan sheet. Indicate the total number of replacement plants for the project.
5. The Contracting Authority will inspect the plant materials in the fall of each growing season. The Contracting Authority will verify, during this inspection, the number of living plants and determine if the correct species of plants were used.
6. The Contracting Authority will also inspect and verify any replacement plant materials after installation.

## **H. Pruning.**

Prune according to [Article 2610.03, C.](#)

### **2611.04 METHOD OF MEASUREMENT.**

Measurement will be as follows:

- A. Shrubs with the specified mulch: by count of live shrubs installed.
- B. Trees with the specified mulch: by count of live trees installed.

### **2611.05 BASIS OF PAYMENT.**

- A. Payment will be the contract unit price for each Tree, Furnished and Installed according to the contract documents.
- B. Payment will be the contract unit price for each Shrub, Furnished and Installed according to the contract documents.
- C. For each time each species is requested for substitution, a \$250.00 price reduction will be charged. When substitutions are made, the Engineer will price adjust downward. No participation in price increases will be incurred.
- D. Payments will be made in increments according to the following schedule:
  - 1. **After Initial Installation is Complete.**  
Sixty-five percent of the placed quantity will be paid for all live plants of each size and variety installed with the specified mulch, and meeting the staking and guying requirements. This payment will be made after the initial inspection by the Engineer.
  - 2. **End of the First Growing Season.**
    - a. Payment will be based on the total project's first year survival rate. Plants not in compliance with the contract documents will be considered dead.
    - b. A percent of the placed quantity will be paid for each tree and shrub correctly installed according to the schedule in Table 2611.05-1:

**Table 2611.05-1: Payment, End of First Growing Season**

<b>Total Project Survival Rate</b>	<b>% of Placed Quantity</b>
85 - 100%	10%
60 - 84%	5%
Below 60%	0%

- 3. **After First Year Replacement Installation.**  
After replacement plants have been installed, 5% of the placed quantity will be paid for all plants considered alive at the end of the previous growing season including all plants replaced.

**4. End of the Second Growing Season.**

- a. Payment will be based on the total project's second year survival rate. Plants not in compliance with the contract documents will be considered dead.
- b. A percent of the placed quantity will be paid for each tree and shrub correctly installed according to the following schedule. Payment for plants requiring replacement will be after replacement is complete. Payment will be according to the schedule in Table 2611.05-2:

**Table 2611.05-2: Payment, End of Second Growing Season**

<b>Total Project Survival Rate</b>	<b>% of Placed Quantity</b>
85 - 100%	20%
60 - 84%	10%
Below 60%	0%

- E. Payments are full compensation for:
  - Furnishing all materials, equipment, and labor,
  - Performing all work necessary according to the contract documents including excavating, placing backfill, mulching, pruning of trees and shrubs, replacements, and
  - Methods used to ensure the survivability of the planted trees and shrubs.
- F. When excavation is made in impervious soils or the excavation of a new planting well is directed by the Engineer, the Contractor will be paid for this extra work according to [Article 1109.03, B](#).