

## **632 Furnishing and Planting Plant Materials**

### **632.1 Description**

- (1) This section describes furnishing and planting plants of the species, varieties and sizes specified, and includes furnishing necessary materials, excavating plant holes, salvaging topsoil, transplanting, backfilling, pruning, mulching, watering, heeling in, fertilizing, wrapping, guying and bracing, protecting against rodents and applying anti-desiccant, disposing of surplus and waste materials, and necessary care and required replacements pending acceptance.

### **632.2 Materials**

#### **632.2.1 General**

- (1) Unless specified otherwise, or the engineer approves, use materials conforming to the requirements below.

#### **632.2.2 Plant Materials**

##### **632.2.2.1 General**

- (1) Unless specified otherwise, use nursery grown stock, transplanted or root-trimmed 2 or more times according to the kind and size of plant.
- (2) Ensure plants are typical of their species, have well formed tops and root systems, and are free from injurious insects, plant diseases, or other plant pests. Use plants hardy under the climatic conditions at the work site. Furnish plants free from the following defects:
  1. Damage to top, branches, trunk, bark, or roots.
  2. Dried out roots.
  3. Prematurely opened buds.
  4. Thin or poor tops or root systems.
  5. Evidence of mold.
  6. Dry, loose, or broken ball of earth in B&B stock.
  7. Dried out or damaged soil mass in B&P or CG stock.

##### **632.2.2.2 Collected and Plantation Grown Stock**

- (1) Collected and plantation grown stock must conform to the current edition of the American Standard for Nursery Stock recommended for general use and adoption by the American Association of Nurserymen, Inc.
- (2) Furnish collected and plantation grown plant stock only if specified. If the contract allows collected plant stock, notify the engineer of the source of supply or growing site at least 10 days before digging the plants. Dig collected plants with a root spread, or ball of earth, at least 1/3 greater than that required for nursery-grown plants of the same species, variety, and size.
- (3) If collected stock is furnished, leave at least 50 percent of the species undisturbed at the collection site unless the engineer approves otherwise.

##### **632.2.2.3 Lining Out Stock**

- (1) Lining out stock and seedling trees must conform to the current edition of the American Standard for Nursery Stock.

##### **632.2.2.4 Substitution**

- (1) If the contractor submits written documentation that a specified plant is not obtainable it may make substitution, only with the engineer's approval. The engineer may approve the use of larger plants than those specified. The ball or container size or the root spread of the larger size must be increased proportionally, relative to the specified size.

##### **632.2.2.5 Grading Standards**

- (1) Plant stock must conform to the current edition of the American Standard for Nursery Stock.

##### **632.2.2.6 Plant Inspection and Legal Requirements**

- (1) Plant material shipments and deliveries must comply with State and Federal laws and regulations including Wisconsin administrative code, chapter ATCP 21 governing the inspection, shipping, selling, and handling of plant stock. Attach a tag or label bearing the name and address of the licensed dealer or nurseryman and a certification that the material is from an officially inspected source to each shipment or delivery of plant material. File it with the engineer upon arrival of the plant material at the project site.

### **632.2.2.7 Plant Names and Labels**

- (1) The names and labels used in the plans and specifications conforms, with few exceptions, to the current edition of Standardized Plant Names as adopted by the American Joint Committee on Horticultural Nomenclature.
- (2) Ensure plants are true to name, and secure a legible label to each bundle or plant indicating the name and size of the plant material.

### **632.2.2.8 Plant Approval**

- (1) Furnish a written list of proposed plant material sources to the engineer within 15 days of the award of the contract. Do not alter this list without engineer approval.
- (2) The engineer must approve all plants. The engineer may inspect plants at the grower's nursery or at the place of collection, or at the collector's holding site. The engineer may tag representative plants at the grower's nursery. Although the engineer may approve plants at the source, they may still reject plants at the project site.
- (3) Replace rejected plants with acceptable plants of the same species, variety, and size, unless the engineer directs otherwise.

### **632.2.2.9 Digging, Handling, and Packing Plant Stock**

#### **632.2.2.9.1 General**

- (1) Dig plant stock and handle with care to prevent injury to the trunk, branches, and roots. Pack in an engineer-approved manner to ensure plants arrive at the project site undamaged.
- (2) Transport the plant stock in enclosed vehicles or in a way that protects the plant tops from drying.
- (3) Handle plants furnished with earth balls or in containers by the ball or container.

#### **632.2.2.9.2 Bare Root Stock (BR)**

- (1) If furnishing plant stock BR protect the roots against drying out during moving by using moist sphagnum moss, straw, or other suitable material, and cover with canvas or other suitable covering in an engineer-approved manner.

#### **632.2.2.9.3 Balled and Burlapped Stock (B&B)**

- (1) If furnishing plant stock B&B, move the plant with a freshly dug ball of earth so firmly wrapped in burlap that on delivery the soil ball is still firm and compact around the small feeding roots. Ensure each ball is large enough to encompass the fibrous feeding roots necessary to ensure successful recovery and development of the plant. The minimum sizes of balls, ball depth, and diameters, and increased ball sizes for collected stock must conform to recommended balling and burlapping specifications, in the current edition of the American Standard for Nursery.

#### **632.2.2.9.4 Balled and Potted Stock (B&P)**

- (1) If furnishing plant stock B&P, furnish plants dug from the growing site with the roots contained in a compact unbroken ball of earth and placed in a plantable fiber container. The size and shape of the earth ball must conform to the approximate size and shape of the container. Place the stock in the container so that the plant root collar is approximately one inch below the top of the container. Fill voids at potting time with native soil. The minimum ball size must equal the ball size for B&B stock in the current American Standard for Nursery Stock for the plant specified.

#### **632.2.2.9.5 Container Grown Stock (CG)**

- (1) If furnishing plant stock CG, furnish well-rooted stock established in containers. This means that when the container is removed the root soil mass must retain its shape but must not have grown in the container long enough to become container bound. Use sufficiently rigid containers that retain their shape and protect the plant root system during shipping and handling. For container size, conform to the specifications for CG stock as stated in the current edition of the American Standard for Nursery Stock.

#### **632.2.2.9.6 Machine Transplanted Stock (MT)**

- (1) For plants furnished or transplanted as MT stock, move plants from the growing site to selected sites within the right-of-way using a tree-transplanting machine. Use a machine capable of digging and removing from the ground an unbroken mass of earth of the specified size and shape. It must also lift and transport the mass of earth supporting the specified size plant and containing its roots in an undisturbed condition. The machine must hold the soil mass and roots in the undisturbed condition until the tree is lowered into position in a planting hole pre-dug by the same machine.

**632.2.3 Backfill Material**

**632.2.3.1 Compost**

- (1) Provide an engineer-approved standard commercial compost of cattle, sheep, or poultry manure or other organic material.

**632.2.3.2 Peat Moss**

- (1) Peat moss must consist of at least 75 percent of partially decomposed stems and leaves of sphagnum, hypnum, polytrichum, and other mosses in which the fibrous and cellular structure is still recognizable. Provide peat moss that is brown to black in color and nearly free of decomposed colloidal residue, wood, and other foreign matter. The engineer will not accept humus peat. Peat moss must have the following characteristics:

- 1. Moisture content must not exceed 60 percent by weight.
- 2. Ash content must not exceed 20 percent, based on the oven dry weight of the material.
- 3. The pH value must not exceed 7.0 or be less than 3.2 at 77 F.
- 4. Water holding capacity must at least equal 400 percent, by weight, on an oven dry basis.

- (2) Upon request, furnish the engineer with a representative sample of peat moss for testing according to the Federal specification Q-P-166e for peat moss, peat humus, and peat reed-sedge.

- (3) Furnish the engineer with a certificate stating the type of peat moss, the brand name and the country or place of origin. If packed in bales and if using bale size to determine quantities for mixing, the certificate must also contain the cubic feet of compressed bale size, the compression ratio, and the approximate weight of the bales. The engineer will not require a certificate if this information is marked on the bales.

**632.2.3.3 Topsoil**

- (1) For topsoil, conform to the topsoil specified in [625.2](#) and to the gradation requirements specified in [625.3.3](#).
- (2) Salvage topsoil from the plant hole excavation if it conforms to the above requirements. The contractor may use the sod from the plant hole excavation for backfill, together with topsoil, provided it is thoroughly broken into small pieces and used in limited quantities near the bottom of the plant hole in a way that does not place it in contact with the small feeder roots.

**632.2.3.4 Planting Mixture**

- (1) The planting mixture consists of a blend of peat moss, topsoil, and sand in a ratio of 1:1:1 by volume. Blend fertilizer into the mixture at the rate of 4 pounds of fertilizer to each cubic yard of mixture.
- (2) The peat moss must conform to [632.2.3.2](#) and topsoil to [632.2.3.3](#) and have 100 percent passing a 3/8-inch sieve. Obtain the engineer's approval for the sand.

**632.2.4 Fertilizer**

- (1) Fertilizer must conform to [629](#) and to the following:

**632.2.4.1 Fertilizer for Planting Mixtures**

- (1) Unless specified otherwise, use a superphosphate fertilizer conforming to the following minimum requirements:

|                      |     |
|----------------------|-----|
| Nitrogen .....       | 0%  |
| Phosphoric Acid..... | 20% |
| Potash .....         | 0%  |

**632.2.4.2 Fertilizer for Plant Holes**

- (1) For fertilizer used in plant holes, provide water soluble fertilizer contained in a micropore slow release polyethylene packet. Each packet must contain a minimum of one ounce of fertilizer.
- (2) The fertilizer must conform to the following minimum requirements:

|                                      |     |
|--------------------------------------|-----|
| Nitrogen, not less than.....         | 16% |
| Phosphoric Acid, not less than ..... | 8%  |
| Potash, not less than .....          | 16% |

**632.2.4.3 Fertilizer for Wood Chip Mulch**

- (1) If using fertilizer on areas receiving wood chip mulch, use a slow release ureaform fertilizer having at least 38 percent nitrogen.

**632.2.5 Water**

- (1) Provide water that is free from impurities or substances that might injure the plant.

### 632.2.6 Mulch

- (1) Mulch, if specified, consists of shredded bark, wood chips, peat moss, or other suitable material, that is substantially free of noxious weed seeds and objectionable foreign material. Wood chips are the type obtained from any standard wood or brush-chipping machine. Obtain the engineer's approval for the type of mulch used.

### 632.2.7 Wrapping

- (1) Wrapping, if specified, consists of a 2-ply waterproofed crepe tree wrapping paper, laminated with a layer of pliable asphaltic material.

### 632.2.8 Wound Dressing

- (1) Wound dressing, if required, consists of asphalt base tree paint or other acceptable material suitable for applying by brushing, or spraying on bruised or cut surfaces of plants.

### 632.2.9 Rodent Protection

- (1) Rodent protection consists of aluminum or other metal commercial window screening material.

### 632.2.10 Bracing and Guying Materials

- (1) If specified, these materials consist of the wood or steel stakes, wire, soft rope or straps, turnbuckles, and other material needed to perform the work. Provide stakes of solid durable wood approximately 2 inches by 2 inches and of the required length, except that the contractor may use engineer-approved steel posts of the required length for bracing stakes.
- (2) For trees of 4 inches or less in diameter use a good quality 11 or 12 gauge diameter steel wire and 9 or 10 gauge diameter steel wire for trees over 4 inches in diameter. Use a suitable turnbuckle for adjusting the wire tension with the larger wire.

### 632.2.11 Anti-Desiccant

- (1) Anti-desiccant, if specified, must consist of an engineer-approved emulsion that provides a film over plant surfaces permeable enough to allow transpiration.

### 632.2.12 Vegetation Control Herbicide

- (1) Vegetation control herbicide, if specified, consists of a post-emergence herbicide that, if applied to leaves and stems of vegetation, is absorbed and translocated to all parts of the plant including roots and underground stems and is by this means capable of killing the entire plant. Provide a water-soluble herbicide that deactivates on contact with soil, and leaves no harmful residue.

### 632.2.13 Selective Pre-emergence Herbicide

- (1) The selective pre-emergence herbicide, if specified, must control plants emerging from seed, but have no harmful effect on established plants if applied at recommended rates. The material must resist leaching and remain effective throughout one growing season. Provide the selective pre-emergence herbicide in liquid or wettable powder form.

### 632.2.14 Weed Barrier Fabric

- (1) Furnish geotextile for weed barrier conforming to the following:

| TEST                                  | METHOD                     | VALUE                    |
|---------------------------------------|----------------------------|--------------------------|
| Minimum weight                        | <a href="#">ASTM D3776</a> | 0.328 oz/ft <sup>2</sup> |
| Minimum grab tensile strength         | <a href="#">ASTM D4632</a> | 80 lb                    |
| Minimum apparent breaking elongation  | <a href="#">ASTM D4632</a> | 45%                      |
| Minimum puncture strength             | <a href="#">ASTM D4833</a> | 35 lb                    |
| Minimum trapezoid tear strength       | <a href="#">ASTM D4533</a> | 27 lb                    |
| Maximum apparent opening size         | <a href="#">ASTM D4751</a> | No. 40 sieve             |
| Minimum permittivity, s <sup>-1</sup> | <a href="#">ASTM D4491</a> | 1.97                     |

- (2) The geotextile, if specified, consists of a material that allows moisture and air permeability, but prevents the growth of weeds and grasses. The fabric must consist of non-woven polyester, polypropylene, stabilized nylon, polyethylene, or polyvinylidene chloride. All must have the minimum strength values in the weakest principal direction.

- (3) Do not use a needle punched non-woven geotextile.

### 632.2.15 Equipment

- (1) Provide sufficient watering equipment, including tanks, pumps, hoses, and accessories to fully perform the watering required for care in [632.3.19](#). Determine the capacity and adequacy of this equipment based on supplying approximately 20 gallons of water per large tree, 10 gallons per small tree, 5

gallons per shrub, and 2 1/2 gallons per vine or sumac plant for each required watering. Provide a source of water capable of supplying the required volume of water.

### **632.3 Construction**

#### **632.3.1 General**

- (1) The normal spring planting season for all plants must extend to June 1. The normal fall planting season for all plants except evergreens begins on October 1. Perform fall evergreen planting between September 1 and October 1. Unless approved otherwise, do not plant if the ground is frozen or if the soil is unsatisfactory for planting. Do not plant if the temperature is below freezing unless protecting the plant roots to prevent damage.
- (2) Do not drag, lift, or pull balled and burlapped plants by the trunk, branches, or foliage. Do not drop or handle in any manner that damages the ball or the plant.

#### **632.3.2 Delivery and Temporary Storage**

- (1) Notify the engineer at least 3 days before each plant material delivery to the holding or project site.
- (2) If possible, plant the plants on the day of delivery at the project site. If this is not possible, temporarily store the plant stock by heeling-in or by placing in a well-ventilated, cool, moist storage place and adequately protect against drying by using moist sphagnum moss, straw, or other suitable covering around the roots of BR stock and the balls of B&B stock.
- (3) Space plants growing in pots or containers to provide for air circulation and reasonably unrestricted top spread. Water and otherwise care for potted and container-grown plants as necessary to keep them in a healthy growing condition while in storage.
- (4) If heeling-in, place bare root plants in a spade depth trench, fully cover their roots with damp topsoil, and protect from the sun and wind. Properly care for heeled-in plants. Plants must not remain heeled-in from one planting season until the next.

#### **632.3.3 Layout of Planting**

- (1) Unless specified otherwise, the engineer will stake out the location of plant holes or beds.

#### **632.3.4 Excavation of Plant Holes**

- (1) Center the plant holes at the location stake, unless the engineer allows otherwise.
- (2) Excavate the plant hole, except for MT stock, to at least the minimum dimensions the plant data chart included in the plans show or as the engineer directs. However, the minimum diameter of the plant hole must be at least twenty-four inches greater than the diameter of the ball, container, or roots, for the full depth of the plant hole. The depth of hole must equal the height of the ball, pot, or container, so that the plant root collar is at ground level when the plant is in its final position and resting on undisturbed ground. Except, if placing the plant in heavy soils, then make the hole deep enough so that the plant root collar is 2 inches above the ground level after planting.
- (3) Unless soil conditions make it impossible, dig the planting holes for MT plants by the tree-moving machine and make them approximately the same size and shape as the soil mass containing the root system of the machine moved plant.
- (4) Keep the sod and topsoil suitable for backfilling separate from the excavated subsoil.
- (5) If planting on a slope, measure the minimum depth of the plant hole from the downward side of the slope at the hole.
- (6) If it is necessary to suspend planting operations until the following planting season, backfill any open plant holes before suspending the work.

#### **632.3.5 Pruning**

- (1) Perform pruning according to ANSI A300 standard practices for tree care operations-tree, shrub, and other woody plant maintenance. Prune so that the plant retains its natural form. Make all cuts immediately above the bark ridge and branch collar to leave the ridge and collar intact for healing. Do not prune evergreen plants except to remove dead or broken branches, or multiple leaders. Treat cut surfaces on oak trees as specified for cut surfaces and abrasions in [201.3](#).
- (2) Cut off smoothly the bruised or broken parts of large or fleshy roots and branches dead, broken, or damaged otherwise, before planting. Perform other pruning near the end of the plant establishment period in mid-to-late August, but before the final inspection. Unless specified otherwise, or the engineer directs, prune deciduous trees by removing branches that compete with the dominant central leader, and thin deciduous plants as necessary to improve the branch structure of the plant.

### **632.3.6 Anti-Desiccant**

- (1) If specified, apply anti-desiccant to evergreen plants before or at the time of planting, and to BRP plants before shipping from the storage place. Apply it to plants being transplanted before they are transplanted. Apply the emulsion at the rate and method the manufacturer recommends.

### **632.3.7 Planting**

- (1) Plant BR, B&B, BRP, B&P, CG, and MT plants, unless directed otherwise, according to the method specified below. If possible, protect BR plants against drying by keeping the roots covered with a canvas or other suitable covering until planted.
- (2) Place the plant in the plant hole with its most desirable face towards the most prominent view and hold it in a vertical position. Spread the roots of BR plants to their approximate natural position and prune as required. Place B&B plants while in their wrapped ball. Move and handle only by the ball. Set the plant so that, after settling, the plant root collar is at or 2 inches above the surrounding ground level, as specified above in [632.3.4](#).
- (3) Unless specified otherwise, backfill the plant hole with topsoil composed of 6 parts soil to one part compost by volume. Place this soil compost mixture in layers around the roots or ball. Carefully tamp each layer in place in a way that avoids injuring the roots or ball or disturbing the plant position. Remove the burlap and other wrapping materials from the top one-half of B&B plants. Once approximately 2/3 of the plant hole is backfilled, fill the hole with water and allow the soil to settle around the roots. After the water is absorbed, fill the plant hole with topsoil and tamp lightly to grade. Bring any settlement to grade with the topsoil.
- (4) Fill holes made for MT plants to about 1/2 the hole depth with slurry made from a 1:1 mixture of water and compost by volume. Place the slurry in the hole just before placing the tree in the hole. After removing the machine, backfill any voids remaining with topsoil. To facilitate watering, auger vertical holes around the periphery of the tree just inside the ball limits. Space the holes equally a maximum of 4 feet apart. Make each hole deep enough and large enough to accept a perforated pipe 42 inches long with a 2 inch inside diameter. Insert the perforated pipes into the holes immediately after augering. Make the top of the pipe flush with the top of the mulch once in its final position. Leave the pipes in place after the tree is established.
- (5) After the plantings are in place at least 2 days, but not more than 5, inspect the plantings. Adjust plant depth and plumb as necessary, and place additional required backfill. During the inspection period, thoroughly water inspected plants and remove twine or rope and labels attached to trunks or branches.

### **632.3.8 Fertilizing**

- (1) Use fertilizer, if specified, as follows:

#### **632.3.8.1 Fertilizer for Planting Mixtures**

- (1) Add fertilizer to the planting mixtures in a way that uniformly incorporates it at the rate of 4 pounds of fertilizer per cubic yard of mixture.

#### **632.3.8.2 Fertilizer for Plant Holes**

- (1) Uniformly space the number of packets specified on the plans in each plant hole around the outside of the plant hole during backfilling. Place the packets as the planting detail sheet shows after partially completing the backfilling. Place them at least 6 inches below the final grade of the backfill material.
- (2) If specified for MT plants, equally space the packets around the hole in niches dug into the plant hole wall between 9 and 18 inches below the soil surface.

#### **632.3.8.3 Fertilizer for Wood Chip Mulch**

- (1) If specified, uniformly spread fertilizer for wood chip mulch over the mulch, or soil surfaces to be mulched, at the rate of 4 pounds per 1000 square feet.

### **632.3.9 Mulching**

- (1) Place approximately 3 inches of mulch, if specified, over the backfilled plant hole or plant bed within the specified area after performing necessary backfilling and adjustment, unless specified otherwise. Pull mulch back 3 to 6 inches from tree trunk. Place mulching material within 5 days of the second watering required for planting under [632.3.7](#). Ensure areas receiving mulch are free of living weeds and grasses before applying mulch.

### **632.3.10 Vegetation Control Herbicide**

- (1) If specified, apply vegetation control herbicide according to manufacturer's instructions to unwanted weeds and grasses and in plant bed areas as the plans designate. Allow a minimum of 10 days between the application and seeding or digging. The engineer may require mowing the areas before

treating, or may vary the above requirements to obtain the best results if in the engineer's judgment temperature, rainfall, and other conditions warrant this action. The contractor may use the herbicide to control or destroy weeds and grasses in other mulched areas at the contractor's discretion with the engineer's approval.

#### **632.3.11 Selective Pre-Emergence Herbicide**

- (1) Apply selective pre-emergence herbicide, if specified, according to manufacturer's instructions for surface application to plant bed areas the plans show just before applying the mulch.

#### **632.3.12 Wrapping**

- (1) If wrapping is specified, wrap the tree trunks with wrapping material overlapping 1 1/2 inches, wound from the ground line to the lowest main branches. Secure the wrapping in at least 3 places, including the top, middle, and bottom, with a biodegradable tie or tape. Wrapping plants as soon as practicable after planting.

#### **632.3.13 Rodent Protection**

- (1) If required, apply the materials specified in [632.2.8](#) for rodent protection to the plants. Place rodent protection material around each tree trunk, with the bottom of the material resting on the soil surface, and the top a minimum of 4 feet above the surrounding earth surface, or up to the lowest branches on small trees. Wrap the rodent protection loosely around the tree trunk and staple to itself with 3 rows of staples. Space the staples within each row at maximum 6 inch intervals along the seam.

#### **632.3.14 Bracing**

- (1) If specified, brace trees with a stake driven into the ground near the base of the tree to a depth of 2 or 3 feet, or until sufficiently solid to support the tree. Stakes must extend upward to about 6 inches below the lowest main branches. Fasten the tree to the stake using a soft rope or strap in a way that avoids injuring the tree. Allow 1 to 3 inches of movement by the trunk.

#### **632.3.15 Guying**

- (1) If specified, guy the trees with 3 wires whose upper ends are attached to soft ropes or straps that encircle the tree trunk, just above the lowest main branches of deciduous trees and at a point above the ground line of 2/3 the height of evergreen trees. Anchor the lower ends to stakes set in the ground around the tree, equal distance apart and at a distance from the tree of approximately 3/4 the distance from the ground to the upper point of fastening. Notch the anchor stakes to prevent the wire from slipping and drive them into the ground, at a slight angle away from the tree, to a depth of 18 inches or more until solid. Stakes must extend 3 inches above the ground.
- (2) Draw the wires taut to equal tension by twisting or using turnbuckles, and fasten securely, with the trunk of the tree remaining in a vertical position. Allow 1 to 3 inches of movement by the trunk.

#### **632.3.16 Disposal of Excess and Waste Material**

- (1) Remove and dispose of excess excavation, waste materials, or other debris.

#### **632.3.17 Weed Barrier Fabric**

- (1) Place geotextile on areas the plans show or the engineer designates before placing the mulch. Lay the fabric flat on the smoothed soil and fit as close to the plants as possible. Provide a 4-inch overlap at adjoining sheets. On slopes, secure the fabric with T-shaped steel pin anchors sufficiently long to prevent the fabric from moving.

#### **632.3.18 Plant Establishment Period**

##### **632.3.18.1 General**

- (1) A plant establishment period of 2 years must follow the completion of planting, unless the special provisions specify a one-year period.

##### **632.3.18.2 Two Growing Season Plant Establishment Period**

- (1) The plant establishment period must extend until October 15 of the second full growing season.

##### **632.3.18.3 One Growing Season Plant Establishment Period**

- (1) The plant establishment period for material planted in the spring must extend until October 15 of the same year. If planting in the fall, extend this period until October 15 of the succeeding year.

#### **632.3.19 Landscape Planting Surveillance and Care**

##### **632.3.19.1 General**

- (1) Properly care for plants from the time of planting until final acceptance of the work.
- (2) Proper care of plants consists of watering, weeding, cultivating, pruning, spraying, tightening braces and guys, retying wrapping, re-mulching, and other work necessary to keep the plants in a neat



appearance and healthy growing condition. Between May 15 and October 15, in addition to watering required for planting under [632.3.7](#), water completely at a 10-day to 14-day interval defined as a care cycle. Care cycle length can be extended beyond 14 days if weather and soil moisture conditions allow. The engineer may order additional watering at any time during the plant establishment period if conditions require.

- (3) Water each plant hole sufficiently at each watering to keep the topsoil backfill material in a moist condition and to keep the plant in a healthy growing condition.
- (4) Remove and dispose of evergreens and deciduous trees that die during the course of the plant establishment period as their dead condition becomes evident.
- (5) Keep mulched areas free of all vegetation, except the specified plants, by hoeing, hand weeding, or by using herbicides if the engineer approves.
- (6) String vines to fences and direct runners toward retaining walls or structures during the plant establishment period.
- (7) Apply pesticides as required to control insects and diseases and to keep the plants in a healthy condition.
- (8) Replace plants that die or show evidence of dying during the plant establishment period at the earliest appropriate planting time after this condition becomes apparent. The engineer will allow replacements until June 1 of the year in which making the final inspection.
- (9) Remove and dispose of bracing and guying materials after the final inspection of the plantings.
- (10) Provide one person, called the care specialist, responsible for inspecting and performing the required care. Also provide other personnel, vehicles, equipment, tools, and materials needed to accomplish the inspection and care. Have the care specialist do the following:
  1. Perform care requirements to the satisfaction of the engineer a minimum of once every two weeks.
  2. Notify the engineer at least two days before the beginning of each care cycle.
  3. Submit a written report to the engineer after each care cycle. Ensure that the report documents the work performed during the care cycle; the number, type, and location of each plant that was removed or marginal; and other information the engineer or the specialist deems appropriate.

#### **632.3.19.2 Damages for Failing to Perform**

- (1) If the care specialist fails to perform any of the required care cycles as specified [632.3.19.1](#), the department will assess daily damages in an amount, specified in a required Landscape Planting Surveillance and Care Cycles contract special provision, to cover the cost of performing the work with other forces. The department will assess these damages for each day the requirements of the care cycle remain incomplete, except when the engineer extends the required time period.

#### **632.3.20 Acceptance or Replacement of Plant Material**

- (1) Near the end of the applicable plant establishment period, but not later than September 15, the engineer will make final inspection of the planting and approve only those plants in a healthy growing condition and conforming to the following minimum requirements:
  - Plant sizes and standards must adhere to the American Standards for Nursery Stock.
  - Plants are the species specified unless the engineer approves changes. Conform to [632.3.19](#), for proper care of plants.
  - Deciduous trees must exceed the minimum size of the specified size range and must have fully matured, average-sized, healthy leaves distributed throughout the branch system as is typical of the species.
  - Deciduous shrubs must exceed the requirements of the specified size range and have mature, average-sized leaves typically distributed throughout the branch system.
  - Deciduous vines must have the required number of runners, each exceeding the minimum required length.
  - Evergreens must exceed the minimum size of the specified size range and coniferous types must have fully developed, mature needles, and average-sized buds on current season's growth.
- (2) Remove and replace plants not conforming to the above requirements with satisfactory plants during the current fall planting season or, the engineer may allow them to remain in place. Use the same materials and method of replacement planting specified for the original planting.
- (3) Replacing plant materials does not extend the plant establishment period.

#### **632.3.21 Contract Time**

- (1) The department will not charge contract time during the plant establishment period or when making replacements, unless other contract operations are in progress during the same period.



#### **632.4 Measurement**

- (1) The department will measure the Trees, Shrubs, and Vines bid items by the number of plants of each species, variety, and size acceptably completed.
- (2) The department will measure Landscape Planting Surveillance and Care Cycles as each individual care cycle acceptably completed.

#### **632.5 Payment**

##### **632.5.1 General**

- (1) The department will pay for measured quantities at the contract unit price under the following bid items:

| <u>ITEM NUMBER</u> | <u>DESCRIPTION</u>                              | <u>UNIT</u> |
|--------------------|-------------------------------------------------|-------------|
| 632.0101           | Trees (species, root, size)                     | EACH        |
| 632.0201           | Shrubs (species, root, size)                    | EACH        |
| 632.0301           | Vines (species, root, size)                     | EACH        |
| 632.9101           | Landscape Planting Surveillance and Care Cycles | EACH        |

- (2) Payment for the Trees, Shrubs, and Vines bid items is full compensation for providing, transporting, handling, storing, pruning, placing, and replacing plant materials; for excavating plant holes, salvaging topsoil, mixing, and backfilling; for providing and applying required fertilizer, weed barrier fabric, mulch, water, wrapping, guys and braces, rodent protection, herbicides and anti-desiccant spray; and for removing guys and braces. Payment for the Topsoil bid item used in planting will be as specified in [625](#). The department will pay for substituting larger plants, if allowed under [632.2.2.4](#), at the contract price for the specified size.
- (3) Payment for Landscape Planting Surveillance and Care Cycles is full compensation for the work required under this bid item. The department will assess damages under the Failing to Perform Landscape Surveillance administrative item for failing to perform the required surveillance and care as specified in [632.3.19.2](#).

##### **632.5.2 Payment Schedule**

- (1) The department will pay the contract value of the work to the contractor according to the following schedule:
  1. Each time an item or portion of an item is acceptably completed, except for care as specified in [632.3.19](#), the department will pay 65 percent of the contract value of the work for contracts containing a 2 growing season plant establishment period; and the department will pay for 80 percent of the contract value of the work for contracts containing a one growing season plant establishment period.
  2. For contracts with a 2 growing season establishment period, each time an item or portion of an item acceptably completes one growing season, including care, and is satisfactory otherwise, the department will pay an additional 15 percent of the contract value of the work. If an item or portion of an item completes the second growing season, including care, and is satisfactory otherwise, the department will pay the final 20 percent of the contract value of this work.
  3. For contracts with a one growing season establishment period, each time an item or portion of an item completes the growing season, including care, and is satisfactory otherwise, the department will pay the final 20 percent of the contract value of this work.
- (2) The department will make final payments upon final acceptance and completion of all work required under the contract.

##### **632.5.3 Reduced Payment**

- (1) The department will pay for plants that do not conform to [632.3.20](#) but that the engineer allows to remain in place, at 65 percent of the contract unit price for contracts containing a 2 growing season plant establishment period, and at 80 percent of the contract unit price for contracts containing a one growing season plant establishment period.