



**SPECIAL PROVISIONS  
FOR  
LANDSCAPE PLANTS**

**Butler County  
HDP-014-7(036)--3C-12**

**Effective Date  
May 15, 2012**

**THE STANDARD SPECIFICATIONS, SERIES 2009, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.**

**090211.01 DESCRIPTION.**

**A. Description of Work.**

1. This work includes all labor, materials, tools, equipment, transportation, protection, and supervision necessary and required to furnish, install and establish plants of the type, class, species, quality, grade, and size specified in the contract documents, as well as their protection, guarantee and replacement.
  - a. Plants covered in this section are Trees, Shrubs and Perennials which also include ornamental grasses.
  - b. This section does not include native plant plugs used for the bio-retention and bio-swale areas. Refer to Sheet O.22 in the plans for information on native plant plugs.
2. Protection of existing features. During construction and establishment activities, protect all existing trees, shrubs and other vegetation, site features and improvements, structures, and utilities on and adjacent to project site. Removal or destruction of existing plantings is prohibited unless specifically authorized by the Engineer.

**B. Definitions.**

1. Backfill: The earth used to replace or the act of replacing earth in an excavation.
2. Balled and Burlapped Stock: Plants dug with firm, natural balls of earth in which they were grown, with a ball size not less than diameter and depth recommended by ANSI Z60.1 for type and size of plant required; wrapped with burlap, tied, rigidly supported, and drum laced with twine with the root flare visible at the surface of the ball as recommended by ANSI Z60.1.

3. **Bare-Root Stock:** Plants with a well-branched, fibrous-root system developed by transplanting or root pruning, with soil or growing medium removed, and with not less than the minimum root spread according to ANSI Z60.1 for type and size of plant required.
4. **Container-Grown Stock:** Healthy, vigorous, well-rooted plants grown in a container, with a well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for type and size of plant required.

**Establishment Period:** The establishment period begins when the last plant of the initial installation is planted and incidental work related to the plantings are complete and acceptable, as determined by Engineer (Initial Acceptance), and continues for a period of two growing seasons as defined elsewhere in this specification.

5. **Finish Grade:** Elevation of finished surface of planting soil.
6. **Pesticide:** A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant. Some sources classify herbicides separately from pesticides.
7. **Pests:** Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
8. **Planting Area:** Areas to be planted.
9. **Plant; Plants; Plant Material:** These terms refer to vegetation in general, including trees, shrubs, vines, ground covers, ornamental grasses, bulbs, corms, tubers, or herbaceous vegetation that is to be installed along the road right of way and in the planting beds as noted in the contract documents. This term does not include the plugs (native plants) that are to be installed in the bioswale(s) or bioretention area.
10. **Root Flare:** Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.

**C. Coordination.**

Contractor shall be responsible for coordinating work under this section with other trades and disciplines impacting this work.

1. Plant plants after finish grades are established and adjacent work has been completed and will not be adversely impacted by planting operations.
2. Plant before planting turf areas unless otherwise directed. When planting after turf areas have been planted protect turf areas, and promptly repair damage caused by planting operations.

**D. Submittals.**

1. Submit copy of current certification for each supplier of plants that supplier is an Iowa Department of Agriculture and Land Stewardship Certified Nursery Dealer or Grower prior to starting work.

**2. Action Submittals.**

- a. Nursery Source: Submit a list of all nurseries that will supply plants, along with a list of the plants they will provide and the address of the nursery. List shall include botanical name and common name of plant, quantities, and sizes.
- b. Shredded Hardwood Mulch Samples for Verification: Samples shall weigh 2 pounds and be packaged in plastic bags. Samples shall be typical of the lot of material to be delivered to the site and provide an accurate indication of color, texture, and organic makeup of the material.
- c. Planting Schedule: Proposed planting schedule, indicating dates for each type of landscape work during normal seasons for such work in area of Project site. Once accepted, revise dates only as approved in writing, after documentation of reason for delays.

**3. Informational Submittals.**

- a. Plant and Material Certifications:
  - 1) Certificates of inspection as required by governmental authorities.
  - 2) Manufacturer's or vendor's certified analysis for fertilizer materials and other standard products.
  - 3) Label data substantiating that planting materials comply with specified requirements.
- b. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to Project.

**4. Closeout Submittals.**

Maintenance Instructions: Typewritten instructions recommending procedures to be established by Contracting Authority for maintenance of landscape work during the warranty period. Submit prior to expiration of required contractor maintenance period.

**E. Quality Assurance.**

- 1. Subcontract landscape work to a single firm specializing in landscape work.
- 2. Landscape Installer Qualifications: A qualified landscape installer whose work has resulted in successful establishment of plants.
  - a. Experience: Five years' experience in landscape installation.
  - b. Installer's Field Supervisor: Installer to maintain an experienced and knowledgeable full-time supervisor on Project site when work is in progress.
  - c. Pesticide Applicator: State licensed, commercial. Shall be a Certified Pesticide Applicator – Category 6 (Right of Way).
- 3. Source Quality Control.
  - a. General: Ship landscape materials with certificates of inspection required by governing authorities. Comply with regulations applicable to landscape materials. Obtain any necessary permits for this work and pay any fees required for permits.
  - b. Do not make substitutions. If specified landscape materials are not obtainable, submit proof of non-availability, together with proposal for use of equivalent material.
  - c. Availability shall be determined prior to bid submittal.
  - d. Analysis and Standards: Package standard products with manufacturer's certified analysis. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists, wherever applicable.
- 4. Plants: Provide plants of quantity, quality, size, genus, species, and variety shown and scheduled in the contract documents and complying with applicable requirements in ANSI Z60.1 and the following:
  - a. Provide healthy, vigorous stock, grown in recognized nursery in accordance with good horticultural practice and free of disease, pests, and defects.



9. Apply antidesiccant to trees and shrubs using power spray to provide an adequate film over trunks (before wrapping), branches, stems, twigs, and foliage to protect during digging, handling, and transportation. If deciduous trees or shrubs are moved in full leaf, spray with antidesiccant at nursery before moving and again two weeks after planting.
10. Wrap trees and shrubs with burlap fabric over trunks, branches, stems, twigs, and foliage to protect from wind and other damage during digging, handling, and transportation.
11. Deliver plants after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after delivery, set plants in their appropriate aspect (sun, filtered sun, or shade), and store where they can be properly watered, sheltered from weather and protected from mechanical damage by construction equipment, animals, etc. If storage needs to be more than two days, the plants shall be separated far enough from each other to provide good air circulation to their tops, reducing the risk of fungus. Keep roots moist.
  - a. Heel-in bare-root stock. Soak roots that are in less than moist condition in water for two hours. Reject plants with dry roots.
  - b. Set balled stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
  - c. Containerized plants shall be left in their containers until each is planted. They shall not be removed from the containers to be laid out on the bed where sun and wind will damage the roots prior to planting.
  - d. Water root systems of plants stored on-site deeply and thoroughly with a fine-mist spray. Water as often as necessary to maintain root systems in a moist, but not overly wet condition.
  - e. While planting, bare root plants shall be protected from hot sun and drying wind by shading them with burlap, landscape fabric, straw, or other breathable material. Plastic is unacceptable.
  - f. Any dead or damaged parts shall be removed from the plants upon planting.
  - g. All plants shall be watered thoroughly and allowed to drain prior to planting.

#### **G. Field Conditions.**

1. Field Measurements: Verify actual grade elevations, service and utility locations, and dimensions of plantings and construction contiguous with new plantings by field measurements before proceeding with planting work.
2. Planting Restrictions: Plant during one of the following periods.
  - a. Plant initial plantings during one of the following periods:
    - 1) Bare Root Perennials: April 15 to May 30
    - 2) Field Potted or Container Grown Perennials: April 15 to Oct. 15
    - 3) Deciduous Trees and Shrubs:
      - a) Spring Planting: March 1 and May 15
      - b) Fall Planting: October 1 and November 30
    - 4) Evergreen Trees and Shrubs:
      - a) Spring Planting: March 1 and April 30
      - b) Fall Planting: September 1 and September 30
  - b. Plant first year replacements as follows
    - 1) Perennials: Between April 15 and May 30
    - 2) Trees and Shrubs (Deciduous and Evergreen): Between March 1 and May 15
  - c. Plant second year replacements as follows
    - 1) Perennials: Between April 15 and May 30
    - 2) Evergreen Trees and Shrubs: Between September 1 and September 30
    - 3) Deciduous Trees and Shrubs: Between October 1 and November 30

Variance: If special conditions exist that warrant a variance in the above planting dates, a written request shall be submitted to the Engineer stating the special conditions and the proposed variance. Permission for the variance will be given if warranted in the opinion of the Engineer. The establishment period may be increased, depending upon the variance, if deemed necessary by the Engineer.

3. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.

#### **H. Utility Verification.**

The Contractor shall contact the local utility companies for verification for the location of all underground utility lines in the area of the work. The Contractor shall be responsible for all damage resulting from neglect or failure to comply with this requirement.

#### **I. Plant Establishment and Replacement.**

1. The plant establishment period for all plants will be two growing seasons.
2. 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.
3. 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.
4. Inspection of plant materials will be in accordance with Article 2611.03, G of the Standard Specifications.

### **090211.02 MATERIALS.**

#### **A. Plant Materials.**

1. General: Comply with Section 4170 of the Standard Specifications.
  - a. Ensure plant material meets the minimum requirements of size and grade as stated in the latest edition of the American Standard for Nursery Stock, ANSI Z60.1.
  - b. Provide nursery-grown plants true to genus, species, variety, cultivar, and tagged legibly as to name according to nursery standard of the American Nursery and Landscape Association.
  - c. Plants of a larger size may be used if acceptable to Engineer, with a proportionate increase in size of roots. Use of larger plants shall not increase the contract price.
  - d. Tagging: Labels shall be a waterproof tag bearing legible designation of common name and full scientific name, including genus and species, size, and caliper. Include nomenclature for hybrid, variety, or cultivar, if applicable for the plant. Labels shall be securely attached to the plant.
  - e. If formal arrangements or consecutive order of plants is indicated on Contract documents, select stock for uniform height and spread, and number the labels to assure symmetry in planting.

**2. Plant Material Quality.**

- a. Provide a uniform, well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement. One sided branching plants from tightly planted nursery rows will be rejected. All plants shall be of specimen quality.
- b. Provide nursery grown plants grown in the same climatic zone as the project.
- c. Trees with damaged, crooked, or multiple leaders; tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); crossing trunks; cut-off limbs more than 3/4 inch in diameter; or with stem girdling roots are unacceptable. Park grade material is not acceptable.
- d. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery unless otherwise indicated.
- e. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which begins at root flare according to ANSI Z60.1. Root flare shall be visible before planting.

**3. Balled and Burlapped Plants (B&B).**

- a. Provide firm, moist, unbroken root balls of the specified size.
- b. Broken or loose root balls will be rejected.
- c. No manufactured or artificially produced or mudded-in root balls will be accepted.
- d. A container grown plant, in lieu of a balled and burlapped root ball, will be accepted provided it meets the specified size, complies with American Standard for Nursery Stock (ANSI Z60.1), and meets criteria for container grown plants.

**4. Container Grown Plants.**

- a. Grow plants in sufficiently sized container for a minimum of 1 year, with a root system developed to hold its soil together, firm, whole, and moist when taken from the container.
- b. No loose root systems in the container, root-bound, or circling of the root system will be accepted.

**5. Bare Root Plants (BR).**

- a. Only use where specified in the contract documents or as approved by Engineer.
- b. Ensure plants have substantially all of the root system intact, with clean cuts on roots. Root system is to be packed in moisture-retaining material and bagged to protect the root system from drying out.
- c. Prior to planting, properly prune and sweat according to the nursery source instructions.
- d. Ensure plants are dormant or breaking bud if sweated at the time of planting.
- e. Do not plant later than May 15.

**B. Fertilizers.**

All fertilizers shall comply with the Iowa Department of Agriculture rules, Article 4169.03 of the Standard Specifications.

**C. Backfill Material.**

- 1. Trees: Backfill material for tree plantings shall be amended planting soil as specified in supplemental specification for Amended Soil.
- 2. Shrubs & Perennials: Backfill material for shrub and perennial plantings shall be the amended soil that was placed in the planting beds and is excavated for the planting of the shrubs and perennials.

**D. Water.**

The Contractor shall furnish all equipment and labor required to obtain and apply water. Water shall be potable and free of substances harmful to plant growth.

**E. Shredded Hardwood Mulch.**

Free of weeds, weed seed, chaff, diseases, dirt, or any other foreign or deleterious materials and any vegetative growth inhibiting qualities. Mulch shall be suitable as a top dressing for trees, shrubs, and perennials, and shall meet the following:

1. Type: Double shredded hardwood mulch.
2. Size Range: 1/4 inch to 1 /2 inch diameter and maximum 2 inches in length.
3. Color: Natural (brown).
4. Green or freshly shredded mulch will be rejected.

**F. Weed-Control Barriers.**

1. Nonwoven Geotextile Filter Fabric: Polypropylene or polyester fabric, 3 ounces per square yard minimum, composed of fibers formed into a stable network so that fibers retain their relative position. Fabric shall be inert to biological degradation and resist naturally encountered chemicals, alkalis, and acids.
2. Composite Fabric: Woven, needle-punched polypropylene substrate bonded to a nonwoven polypropylene fabric, 4.8 ounces per square yard.
3. Staples: Secure fabric using staples complying with Article 4169.10, A. of the Standard Specifications.

**G. Pesticides.**

1. Pesticide: Pesticide registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.
2. Pre-Emergent Herbicide (Selective and Nonselective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.
3. Post-Emergent Herbicide (Selective and Nonselective): Effective for controlling weed growth that has already germinated.

**H. Tree Stabilization Materials.**

Tree Stabilization Materials: Provide staking and guying in accordance with contract documents and Section 2611, Furnish and Install Shrubs and Trees with Warranty, of the Standard Specifications.

**I. Miscellaneous Products.**

1. Antidesiccant: Water-insoluble emulsion, permeable moisture retarder, film forming, for trees and shrubs. Deliver in original, sealed, and fully labeled containers and mix according to manufacturer's written instructions.
2. Burlap: Non-synthetic, biodegradable.



**090211.03 CONSTRUCTION.****A. Examination.**

1. Examine areas to receive plants, with Installer present, for compliance with requirements and conditions affecting installation and performance of the Work.
  - a. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
  - b. Verify that plants and vehicles loaded with plants can travel to planting locations with adequate overhead clearance.
  - c. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
  - d. Uniformly moisten excessively dry soil that is not workable or which is dusty.
  - e. Verify that the planting bed areas have received the amended soil and been brought up to the correct grades and are in accordance with the contract documents and ready to be final graded and receive plantings.
  - f. Verify that planting beds are of the dimensions and size indicated in the contract documents, and that the amended planting soil has been placed to the required depths; if not, notify Engineer immediately.
2. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by the Engineer and replace with new planting soil.
3. Proceed with final grading of planting areas only after unsatisfactory conditions have been corrected.

**B. Preparation.**

1. Provide notice to the Engineer 3 days prior to planting.
2. Protect structures, utilities, sidewalks, pavements, and other facilities and turf areas and existing plants from damage caused by planting operations. Provide barriers or fencing as approved by Engineer to protect the public from injury when planting installation is within the right-of-way.
3. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
4. Rake plant beds and planting areas smooth, shape contour to drainage and prepare surface for planting. Obtain the Engineer's acceptance prior to planting. Any unsatisfactory conditions shall be corrected prior to planting. No weeds shall be present in the beds at planting time and vegetation shall be removed from the area to be excavated for trees plantings in the lawn area.

**C. Location of Plants.**

1. Lay out individual plant locations as designated in the contract documents. Stake location with flag, adjust locations when requested, and obtain the Engineer's acceptance of layout before excavating for planting. Make minor adjustments as required.
  - a. Flags shall be labeled with name of plant or other identification
  - b. The Engineer shall approve the locations marked prior to excavating of planting pits.

2. Make field adjustments in plant locations where underground or overhead obstruction is encountered, or where changes have been made as approved by the Engineer.

**D. Excavation of Planting Pits.**

1. Prepare excavation area and excavate planting pits in accordance with Section 2610.03, E, 1 of the Standard Specifications and the contract documents.
  - a. Maintain supervision of excavations during working hours.
  - b. Keep excavations covered or otherwise protected after working hours and when unattended by Installer's personnel.
2. Backfill Soil:
  - a. Tree planting pit excavations: Backfill tree planting excavation with amended planting soil.
  - b. Shrub planting pit excavations: Soil excavated for shrub planting shall be used as backfill for shrub planting excavation. Note: excavated material shall be the amended soil that was installed in the planter.
  - c. Perennial planting pit excavations: Soil excavated for perennial planting shall be used as backfill for perennial planting excavation. Note: excavated material shall be the amended soil that was installed in the planter.
3. Obstructions: Notify the Engineer if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.
4. Drainage: Notify the Engineer if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.
5. Fill excavations with water and allow to percolate away before positioning trees and shrubs.

**E. Tree and Shrub Pruning.**

Comply with Section 2610, Furnish and Install Shrubs, Trees, and Vines, and the following:

1. Prune, thin, and shape trees and shrubs as directed by the Engineer.
2. Prune, thin, and shape trees and shrubs according to standard professional horticultural and arboricultural practices. Unless otherwise indicated by the Engineer, do not cut tree leaders; remove only injured, dying, or dead branches from trees and shrubs; and prune to retain natural character.
3. Do not apply pruning paint to wounds.

**F. Tree Stabilization.**

1. Comply with contract documents and applicable portions of Section 2611, Furnish and Install Shrubs and Trees with Warranty, of the Standard Specifications.
2. Maintain all plants in an upright and plumb condition.
3. Remove all staking and anchoring material from all plants at the end of the establishment period.
4. Use steel stakes; wood stakes not allowed.

**G. Root Barrier Installation.**

1. Install root barrier where trees are planted within 48 inches of paving or other hardscape elements, such as walls, curbs, and walkways, unless otherwise indicated in contract documents.
2. Align root barrier vertically, and run it linearly along and adjacent to the paving or other hardscape elements to be protected from invasive roots.
3. Install root barrier continuously for a distance of 60 inches in each direction from the tree trunk, for a total distance of 10 feet per tree. If trees are spaced closer, use a single continuous piece of root barrier.
  - a. Position top of root barrier 1/2 inch according to manufacturer's written recommendations.
  - b. Overlap root barrier a minimum of 12 inches at joints.
  - c. Do not distort or bend root barrier during construction activities.
  - d. Do not install root barrier surrounding the root ball of tree.

**H. Mulching.**

1. Trees in Turf Areas:
  - a. After trees are planted, treat area to be mulched with pre-emergent herbicide before placing weed-control barrier; place herbicide in accordance with manufacturer's written instructions.
  - b. Install weed-control barriers before mulching in accordance with manufacturer's written instructions. Completely cover area to be mulched, overlapping edges a minimum of 12 inches and secure seams with staples.
  - c. Apply shredded hardwood mulch ring of 3 inch average thickness, with 2 foot radius around trunks or stems. Following mulch placement, pull mulch back 1 to 2 inches from base of all trees to allow air circulation. Refer to contract documents.
2. Planting Beds:
  - a. After all trees, shrubs and perennial plants are planted in planting bed, treat area to be mulched with pre-emergent herbicide; place herbicide in accordance with manufacturer's written instructions, taking care to prevent herbicide from getting on plants and causing foliar burn.
  - b. Apply shredded hardwood mulch to entire plant bed. Following mulch placement, pull mulch back 1 to 2 inches from base of shrubs and stems and crowns of perennials to allow air circulation and minimize risk of rot and rodent damage. Refer to contract documents.
  - c. Mulch depth: Average 3 inches.

**I. Wilt Protection.**

Herbaceous perennials planted during the active growing season shall be protected from hot midday sun with proper shading. Shading may be removed after three days, but shall be replaced if wilting occurs.

**J. Plant Establishment Period and Replacement.**

1. The plant establishment period will begin when the last plant of the initial installation is planted and all incidental work related to the plantings are complete and acceptable to the Engineer. This will be considered the "Initial Acceptance". The length of the establishment period will be for two growing seasons, defined as follows:
  - a. Trees and Shrubs (both Evergreen and Deciduous):
    - 1) Fall Plantings: first two full growing seasons (2 years from the date of Initial Acceptance). Note: First growing season shall mean the first full growing season after

the tree or shrub was planted, and not the current growing season in which the tree or shrub was planted.

- 2) Spring Plantings: first two growing seasons (end of the growing season of the 1 year anniversary of the Initial Acceptance). Note: First growing season shall mean the current growing season in which the tree or shrub was planted.
- b. Perennials:
  - 1) Spring Plantings: first two growing seasons (end of growing season of the 1 year anniversary of the Initial Acceptance). Note: First growing season shall mean the current growing season in which the perennial was planted.
  - 2) Summer & Fall Plantings: first two full growing seasons (end of growing season of the 2 year anniversary of the Initial Acceptance). Note: First growing season shall mean the first full growing season after the tree or shrub was planted, and not the current growing season in which the perennial was planted.
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 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 end of each of the first two growing seasons. Plant the replacement plants for the first growing season the following spring. Plant the replacement trees and shrubs for the second growing season in the fall of that year and the replacement perennials for the second growing season in the following spring. 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 as well as all costs associated with the removal and disposal of the rejected and/or replaced plants.

#### **K. Initial Acceptance.**

1. Verify correct species have been planted. Also verify compliance with ANSI Z60.1, American Standard for Nursery Stock.
2. Upon completing all of the initial planting and associated incidental work, Contractor shall notify Engineer for inspection for Initial Acceptance which will document the start of the Establishment Period
  - a. Contractor shall submit written notice requesting such inspection at least five (5) days prior to the anticipated date.
    - 1) All plants shall be planted before an initial inspection will be conducted.
    - 2) All mulch shall be placed and all stakes and guys shall be installed.
    - 3) All root barriers shall be in place.
    - 4) All plants shall be in a live and healthy condition at the time of initial acceptance.
  - b. Engineer will inspect the plant materials, staking and guying, and mulch. This includes the inspection for:
    - 1) Size, number, location, alignment, and viability of plant materials.
    - 2) Correct depth and area of mulch.
    - 3) Installation of stakes and guys as specified in the contract documents.
    - 4) Installation of root barriers as specified in the contract documents.
  - c. After inspection, the Contractor shall be notified in writing by the Engineer of initial Acceptance of the work inspected. All dead or rejected plants shall be replaced or

corrected before Initial Acceptance will be given. Replacement of dead or rejected plants before Initial Acceptance shall not be considered part of the replacement requirements of this section.

3. Upon initial acceptance by the Engineer and documentation of the date, the "Establishment Period" begins.

**L. INSPECTIONS OF PLANT MATERIAL DURING ESTABLISHMENT PERIOD.**

1. In August of each year of the establishment period, identify all dead or dying plants using tie-on plastic flagging, all of one color, in a location that is easily seen.
2. 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 plant sheet. Indicate the total number of replacement plants for the project.
3. 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.
4. The Contracting Authority will also inspect and verify any replacement plant materials after installation.
5. Make all necessary repairs to grades, lawns, and paving required because of plant replacements. Such repairs shall be done at no extra cost to the Contracting Authority.

**M. Pesticide Application.**

1. Apply pesticides and other chemical products and biological control agents according to authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Contracting authority's operations and others in proximity to the Work. Notify Contracting authority before each application is performed.
2. Pre-Emergent Herbicides (Selective and Nonselective): Apply to tree, shrub, and ground-cover areas according to manufacturer's written recommendations. Do not apply to seeded areas.
3. Post-Emergent Herbicides (Selective and Nonselective): Apply only as necessary to treat already-germinated weeds and according to manufacturer's written recommendations.

**N. Cleaning and Protection.**

1. During planting, keep adjacent paving and construction clean and work area in an orderly condition. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
2. Remove surplus soil and waste material including excess excavated material, unsuitable soil, trash, and debris and legally dispose of them off site.
3. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and establishment period. Treat, repair, or replace damaged plantings.
4. After installation and before Initial Acceptance, remove nursery tags, nursery stakes, tie tape, labels, wire, burlap, and other debris from plant material, planting areas, and Project site.

**090211.04 METHOD OF MEASUREMENT.**

- A. Trees: The Engineer will count EACH installed live and healthy TREE species.
- B. Shrubs: The Engineer will count EACH installed live and healthy SHRUB. The mulch will be measured separately for payment and will be calculated based on the area of the planting beds.
- C. Perennials: The Engineer will count EACH installed live and healthy PERENNIAL by type. The mulch will be measured separately for payment and will be calculated based on the area of the planting beds.

**090211.05 BASIS OF PAYMENT.**

- A. Trees: Payment will be at the contract unit price for EACH Tree Species, Furnished and Installed (With Warranty) according to the contract documents. This payment shall be full compensation for all transportation, material, tools, equipment, supervision and labor to furnish and install trees in accordance with the contract documents.
- B. Shrubs: Payment will be at the contract unit price for EACH Shrub, Furnished and Installed (With Warranty) according to the contract documents. This payment shall be full compensation for all transportation, material, tools, equipment, supervision and labor to furnish and install shrubs in accordance with the contract documents. Mulch will be paid for separately.
- C. Perennials: Payment will be at the contract unit price for each Perennial type, Furnished and Installed (With Warranty) according to the contract documents. This payment shall be full compensation for all transportation, materials, tools, equipment, supervision and labor to furnish and install perennials in accordance with the contract documents. Mulch will be paid for separately.
- 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 in accordance with the construction documents (i.e.: trees shall have the required mulch, meet the staking and guying requirements and the root barrier requirements, etc.). This payment will be made after the Initial Acceptance is issued 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 plant correctly installed according to the schedule in Table 090211.05-1:

**Table 090211.05-1: Payment, End of First Growing Season**

<b>Total Project Survival Rate</b>	<b>% of Placed Quantity</b>
90 -100%	10%
60% -89%	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 plant 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 090211.05-2:

**Table 090211.05-2: Payment, End of Second Growing Season**

<b>Total Project Survival Rate</b>	<b>% of Placed Quantity</b>
90 -100%	15%
60% -89%	5 %
Below 60%	0%

- c. After replacement plans have been installed, the remaining 5% of the placed quantity will be paid.
- E. Payment shall be considered full compensation for:
  - 1. Furnishing all materials, equipment, and labor.
  - 2. Performing all work necessary according to the contract documents, including excavating, placing backfill, pruning and shaping, replacements, pest control, finish grading.
  - 3. Methods used to ensure the survivability of the planted trees, shrubs and perennials.
  - 4. Furnishing and installing root barriers, mulch, and amended backfill for tree plantings.