



**SPECIAL PROVISIONS
FOR
LANDSCAPE PLANTINGS**

**Johnson County
STP-U-1557(639)--70-52**

**Effective Date
January 17, 2018**

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

156072.01 DESCRIPTION.

1.01 Summary

This section of specifications shall include all equipment, materials, and labor necessary for the furnishing and installation of plant materials, and protection, maintenance, guarantee, and replacement of plants for completed planting work as specified in the contract documents.

1.02 Protection of Property

Contractor shall protect existing conditions at the site against damage.

- A. Take precautions to insure that equipment, vehicles, and planting operations do not disturb or damage existing grades, berms, walls, drives, pavement, utilities, plants, lawns, lawn irrigation systems, and other facilities. Keep all pavement and work areas clean and orderly during construction, removing all excess materials and trash from site during and following project completion.
- B. Verify locations and depths of all underground utilities prior to excavation and report conflicts with new plantings. Contractor shall hand excavate, as required, to avoid conflicts with utilities.
- C. Maintain grade and utility stakes set by others until all involved parties are in acceptance of their removal.
- D. Any damage to existing trees or shrubs including branches and root systems shall be repaired and/or pruned by an approved, experienced tree surgeon or arborist.
- E. Repair, replace, and/or return to original condition any damaged item, without additional compensation.

1.03 Submittals

Contractor shall submit the following items in a format and on a schedule that complies with the Contract.

- A. Prior to starting work, Contractor shall submit copy of current certification that the landscape contractor is an Iowa Certified Nursery Dealer, Grower or approved equivalent specializing in landscape installation.
- B. Submit manufacturer's certification of the inoculants, root stimulator, and/or soil amendment analysis.
- C. All plant materials shall comply with State and Federal laws with respect to inspection for plant disease infestation. Inspection certificates and permits required by law to this effect shall accompany each shipment, invoice, or order of stock. File each certificate or permit, upon arrival with Engineer. All permits and fees shall be provided by the Contractor at no cost to the Contracting Authority.
- D. Contractor shall submit plant labels or tags for all plant materials, verifying the materials meet the requirements of the contract documents.
- E. Provide certification to Engineer stating that container grown material has been grown in the container for not less than 1 year.
- F. Upon Engineer's request, the Contractor will provide Material Certifications for all materials.
- G. Contractor shall submit a sample of the mulch proposed for this project for approval prior to installation.
- H. Contractor shall submit a sample of the staking straps and the staking design proposed for this project.
- I. Prior to beginning work, the Contractor shall submit a proposed planting schedule in compliance with the specified planting dates. Any revisions to this schedule must be approved by the Engineer.
- J. Contractor to submit content, analysis, and sample of compost and material test reports for imported topsoil used in planting soil mix.

1.04 Quality Assurance

- A. Contractor shall not make substitutions. Contractor shall verify availability of specified plant material prior to submitting their bid. If materials are unavailable, Contractor must submit proof of inability to locate materials and a proposed equivalent for review prior to bidding the project. Failure to locate material prior to bidding without notifying the Contracting Authority shall not result in any additional cost to the Contracting Authority in order to locate and furnish the material.
- B. All plant material shall meet the minimum requirements of size and grade in the latest edition of American Standard for Nursery Stock, ANSI Z60.1.
- C. In addition, all plant materials will meet the requirements of size, quantity, and variety as required in the contract documents and Master Plant Schedule. When a variance occurs between these two requirements, the most restrictive will apply.
- D. Plant names indicated comply with the latest edition of "Standardized Plant Names" as adopted by the American Joint Committee of Horticultural Nomenclature. Names of varieties not listed conform generally with names accepted by the nursery trade. All plants shall be true to name and tagged legibly as to name in accordance with nursery standards of practice as recommended by the

American Association of Nurserymen. All plants previously approved which begin showing characteristics not true to name during warranty period shall be replaced at no cost to the Contracting Authority.

- E. All plants shall be nursery grown under similar climatic conditions as this project for a minimum of 2 years, and shall have been transplanted or root pruned in accordance to size and type of plant, ANSI 260.1-2014.
- F. One-sided branching plants from tightly planted nursery rows will be rejected.
- G. All plants shall be normal specimens without objectionable deformities, voids, and open spaces, with well-developed branch and root systems; true to height, shape, and character of growth of the species or varieties. Plants shall show appearance of good health and vigor.
- H. All plants shall be free of injurious insects, insect eggs, bores, and all forms of infestation, plant diseases, moldy or dried roots, or damage to trunk, bark, branches, leaders or root systems, or cut-leaders. All plants shall be free of defects, disfiguring knots, sunscald injuries, and frost cracks. All plants to be free of rodent damage to bark and buds.
- I. Plants may be inspected and approved at the place of growth by the Engineer for compliance with specification requirements for quality, size, and variety. Travel, time, accommodations, and expenses shall be at the expense of the Contractor. Such approval does not waive the right to reject any plant material after it has been delivered to the site and/or installed.
- J. All plants shall be inspected by the Engineer prior to planting. All rejected plant materials shall be removed from the site immediately.
- K. A planting list of all plants including a schedule with sizes, quantities, and other requirements is shown on the plans. In the event that quantity requirements or material omissions occur in the planting material list, the planting plan shall govern.
- L. All plant materials shall bear waterproof tags indicating both common and botanical names and tags shall remain on plants until removal is approved by Engineer.
- M. All plant materials designated in the planting schedule as matched shall be of uniform size, color, branching height, form, etc. Plants which do not match will be rejected.
- N. Landscape work for this project shall be subcontracted to, or completed by a single landscape firm.

1.05 Delivery, Handling, and Storage

- A. Deliver inoculants, soil amendments, and all other packaged materials to site in original, unopened, and undamaged containers showing weight, analysis, and name of manufacturer. Store in manner to prevent damage and deterioration.
- B. Take all precautions customary in good trade practice in preparing plants for delivery to the site to insure arrival of the plants at their destination in good condition for successful growth. Plants with trunk damage, multiple broken branches, damaged central leaders, or excessive, recent pruning will not be accepted.
- C. Dig, pack, transport, and handle plants with care to insure protection against injury.
- D. Plants shall be handled in such a manner as to ensure adequate protection from any damage such as climatic, seasonal, wind damage, or other damage during transportation or temporary storage. Balled and burlapped plant material shall be handled to insure it is not dropped during transport or planting.

- E. Plant root systems of balled and burlapped plant material shall be protected with wet straw, moss, or other suitable material which will assure arrival at destination, and during temporary storage with root systems in a moist, healthy condition. Bare root plant material is not acceptable for this project.
- F. All trees and shrubs shall be fresh and in excellent condition. Plant material should be delivered to the site only after all preparations for planting are completed. All containerized plants shall remain in containers until they are ready to be planted.
- G. If planting is delayed more than 6 hours following the arrival of plant material at the site, contractor shall heel-in plants and maintain during temporary storage by providing moist straw, moss, or other suitable material to protect root systems, watering, and protection from excessive sun, wind, and inclement weather conditions; providing a healthy vigorous plant when planted.
- H. Temporary Storage: When approved by Engineer, temporary storage of plants on the project site may be permitted. When temporary on-site storage is not approved, the Contractor shall provide such facilities and location without additional compensation.

1.06 Plant Material Warranty

- A. Warrant each plant to remain alive and be in healthy, vigorous condition for a period of 1 year after completion and initial acceptance of the plant material and installation.
- B. Warranty shall not include damage or loss of plant material caused by fires, acts of God, acts of vandalism, or negligence on the part of the Contracting Authority.

1.07 Warranty Inspection

- A. Inspection of plants will be made by the Engineer at the expiration of the 1 year warranty period, and following a written request by the Contractor. Contractor shall request inspection a minimum of 7 days prior to proposed inspection date.
- B. All plants that are missing or not in a live, healthy growing condition shall be removed from the site by the Contractor. Missing and rejected plant material shall be replaced by the contractor once after the warranty period at no expense to the Contracting Authority and as soon as possible during the specified planting season.
- C. Upon notice from the Engineer, the removal from site of rejected plants and the replacement of plant material of the same species and size and installed as originally specified shall be completed by the Contractor with no additional compensation.
- D. All replacement plants shall be inspected by the Engineer prior to planting.
- E. Maintain replacement plants as specified for original plants until accepted by the Engineer. Contractor shall notify the Engineer when all replacements and repair are complete, and schedule the inspection 7 days prior to the proposed inspection date.

156072.02 MATERIALS.

2.01 Plant Materials

- A. Provide plants typical of their species and variety in a good healthy condition in accordance with Article 1.04, Quality Assurance.
- B. Plants shall meet the requirements for spread, height, and caliper indicated on the plans. Plants shall have the branching habit and number of canes corresponding with the recommendations of the current American Standards for Nursery Stock for the specified type, species, and size.

- C. Plants larger than those specified in the plant list, with corresponding root system, may be used upon approval of the Engineer.
- D. Plants with broken or cut back terminal leaders will be rejected.
- E. Plants planted in rows or specified as matched shall be uniform in form, size, branching, height, and color unless specified or indicated otherwise on the plans.
- F. Tree caliper for trees 4 inch caliper or less shall be measured 6 inch above ground. Trees larger than 4 inch caliper will be measured 1 foot 0 inches above ground. Shrub height and spread will be measured prior to pruning, with branches in a normal position. Measurement of height and spread apply to the main body of the plants.
- G. All plants which fail to comply with these specifications in any way will be rejected by the Engineer and shall be removed immediately from the project site by the Contractor.
- H. Bare Root and Park Grade materials are not acceptable.
- I. Root balls of balled and burlapped plants shall be firm and unbroken, moist, and of the specified size. Broken or loose root balls will be rejected. No manufactured or artificially produced or mudded-in-root balls will be accepted.
- J. A container grown plant, in lieu of "B&B" root ball, may be accepted provided it meets specified sizes, complies with current "American Standard for Nursery Stock" (ANSI Z60.1-2014), and meets criteria for container grown plants.
- K. Container grown plants shall have been grown in sufficiently sized containers for a minimum of 1 year with a root system to have developed to hold its soil together, firm, whole, and moist when taken from the container. No loose root systems in the container nor root bound nor circling of the root system will be accepted.

2.02 Organic Soil Amendments

Mycorrhizal Fungus Inoculants shall comply with the rules of the Iowa Department of Agriculture.

- A. The contents of the mycorrhizal fungus inoculant shall be identified as to percentage and type of endo- and ectomycorrhizal fungus, hydrogel, soil conditioners, etc.
- B. All inoculant shall be furnished from an established manufacturer and guaranteed percentage analysis shall be provided by the inoculant supplier on each container with the proper scale weight records.
- C. Inoculant shall be a granular or pellet form, uniform in composition, dry and free-flowing without caking or other damage not suitable for use.
- D. Upon request of the Engineer, the Contractor shall provide a test of the inoculant for conformance with the required analysis; at no additional compensation.

2.03 Planting Soil

- A. Refer to Special Provisions for Landscape Grading for detailed information on planting soil.
- B. Do not use frozen or muddy mixtures for backfilling.

2.04 Mulch

- A. Provide sample for approval by Engineer.

- B. Mulch shall consist of premium finely shredded or processed hardwood bark graded to 1/4 inch to 1/2 inch diameter and maximum of 3 inches in length. Green or freshly chipped or shredded mulch will be rejected. Mulch to be free of weeds, weed seed, chaff, diseases, or other foreign material.

2.05 Staking Materials

- A. Stakes required for staking plants shall be steel posts, "T" or "U" shaped of minimum 7 foot length. All stakes shall be uniform in shape, size and color. Color shall be black, dark green, or grey.
- B. Staking straps shall be 3/4 inch or larger mesh or woven material designed specifically for tree staking. Gromets, where applicable to receive wire, shall be metal.
- C. Staking wire, when applicable as part of the staking detail, shall be No. 9 gauge pliable galvanized wire.

2.06 Tree Trunk Wrapping Material

Tree Trunk Wrapping Material shall be 4 inch rolls of bituminous impregnated tape, corrugated or crepe paper, specifically manufactured for tree trunk wrapping, having qualities to resist insect infestation and sun scald damage, or similar material approved by the Engineer.

2.07 Water

- A. Water shall be free of substances harmful to plant growth. Contractor to provide water, equipment, methods of transportation, water tanker, hoses, sprinklers, and the application of water.
- B. Water plants immediately after planting with at least 10 gallons of water.

2.08 VERTICAL SPADE CUT EDGE

Vertical spade cut shrub bed and tree pit edges as shown in the construction documents.

156072.03 CONSTRUCTION.

3.01 Planting Seasons

- A. Evergreen Plants (B&B and Container): Planting period shall be from September 1 to October 15 and from April 1 to June 1.
- B. Deciduous plants (B&B and Container): Planting period shall be from August 15 to November 15 and from April 1 to June 1.
- C. At the option and on the full responsibility of the Contractor, planting may be conducted under unseasonable conditions, except in weather below 32°F or above 90°F; without additional compensation nor variance from plant survival guarantee. However, plants will not be initially inspected outside the defined planting seasons.

3.02 Preparation

- A. Provide notice and obtain approval from Engineer 3 days prior to planting operations.
- B. Provide barriers or fencing as approved by Engineer to protect the general public from injury when planting installation is within street right-of-way.

3.03 Location of Plants

- A. Contractor shall mark with flags or lathe the location of all plants in accordance with the plans. Trees are to be marked individually. Stake the outline of bedded plants or shrub groups and the individual plant locations for the quantity on the plans.
- B. The Engineer shall be notified to approve plant location markings by the Contractor, prior to excavation of planting wells. Contractor shall notify Engineer 7 days prior to proposed planting date.
- C. Make field adjustments in plant locations where underground or overhead obstruction is encountered, or where changes have been made in construction, as approved by the Engineer.

3.04 Excavation of Planting Pit

- A. Excavate the plant pit, centered at the location marks, with 45 degree angled side slopes and a diameter two times larger than ball or root condition, with a minimum of 6 inches on each side of base of root ball. Pit shall have a flat or saucer-shaped bottom, with high point in the center of the pit. Excavate plant pit to a depth to match the nursery grade of the root crown for all balled and container root systems. Scarify sides of excavated pit.
- B. Following excavation of planting pits for trees and shrubs, randomly select planting pits and fill selected pits full of water; allow to stand (without adding water) for an 18 hour period to determine porosity of the soil. Report drainage time to the Engineer prior to proceeding with planting.
- C. If determined by the Engineer the soils are too impervious, a planting well is to be provided as an additional work item.
 - 1. Locate the drainage well at the edge of the excavated planting pit.
 - 2. Auger an 8 inch to 12 inch diameter hole to existing pervious soil or to a maximum depth of 10 feet. If pervious soil is encountered, extend hole a minimum of 12 inches into the pervious layer
 - 3. Fill the excavated hole with porous backfill material and cover the aggregated with engineering fabric. Comply with Section 4131 and Article 4196.01 of the Standard Specifications.
 - 4. Following the completion of drainage well, fill the pit full of water; allow to stand for an 18 hour period to verify sufficient drainage exists. The engineer will determine if the drainage is sufficient.

3.05 Planting

- A. Bare root plants will not be accepted for use on this project.
- B. Remove any plants, rocks, sod clumps, etc. or other hazardous items from the planting soil. Remove any unacceptable soil and debris from the project site.
- C. All container and balled root systems to be moist at time of planting. Remove plant root system carefully from container prior to planting without disturbance to root systems. Place plants centered, erect, and with desired orientation in planting pit with the root crown matching existing grade. After plant placement, cut twine, wire, wire mesh, and burlap and fold from sides of ball and remove from pit. Remove all ties and wrap from branch system, except plant identification.
- D. Carefully compact planting soil backfill in layers, filling all voids until two-thirds of plant pit is complete; apply water to fill pit and allow soil to settle. Compact lightly the settled topsoil. Incorporate mycorrhizal fungal inoculant as directed by manufacturer. Continue backfilling and form a 3 inch depth saucer around plant, as detailed on plans. Water plant and surrounding area until backfill is thoroughly moist.

- E. When planting on slopes place the top of the root crown at or slightly above the finish grade at the center of the planting pit. For all plants planted on significant slope, form a saucer as a dam or shoulder on the downhill side to catch and hold water and to avoid erosion.

3.06 Mulching

- A. Prior to mulching, grade all shrub beds to drain to edge of bed, and construct saucers around all trees and shrubs as shown on plans.
- B. Mulch all trees and shrubs with 3 inch depth mulch as shown on details. Provide a continuous mulch area around plant groupings.
- C. Clear mulch away from direct contact with tree and shrub trunks.
- D. Thoroughly water mulched areas. Rake to a smooth finish surface.

3.07 Wrapping

- A. Contractor shall provide trunk wrapping to the Contracting Authority for all deciduous trees. Contractor shall only wrap trees in the fall season.
- B. Inspect trunk for injuries and evidence of insect infestations. Repair and treat as approved by the Engineer.
- C. Wrap trunks spirally from ground line by overlapping one-half of the tree wrap strip and completely cover trunk to the height of the first branch. Secure wrap at top and bottom.
- D. Contractor shall provide written instructions to the Contracting Authority on maintenance, installation, and dates for removal of wrap.

3.08 Staking

- A. The Contractor is required to maintain all plants in an upright, plumb condition. Staking shall be completed by end of the planting day for all single stem plants over 1 inch caliper. Clump form plants will not be staked.
- B. Locate stakes uniformly from trunk. Set posts vertically into unexcavated soil at a minimum 2 foot depth or until firm providing a required post height above grade. Stake trees with the number of stakes and in the locations shown on the plans.
- C. Secure staking straps a minimum of 4 feet above grade or between one-half to two-thirds distance from grade to tree top below the first set of branches. Straps shall go around the trunk from each stake. Secure the straps to the stakes with a slight tension, allowing the trunk to move 2 inches in each direction.
- D. Contractor shall remove all staking and strap assembly material from all plants at the end of the warranty period and remove from site.

3.09 Pruning

- A. Deciduous Trees:
 - 1. Prune broken, damaged, or otherwise defective branches. All branches which may not develop properly shall be removed. Narrow crotches or competing leaders shall also be eliminated.
 - 2. Prune to develop an upright leader which will promote the symmetry of the tree. Flowering or specimen trees shall be pruned to develop their natural form.

3. Prune all trees in Class "A" walks or other paved pedestrian areas to provide a 7 foot height clearance, unless otherwise directed by the Engineer.
- B. Trees and shrubs should be pruned prior to final inspection, only to remove any dead or injured branches.
- C. Contractor to provide proper and sharp pruning tools to provide a clean cut.
- D. Plant materials incorrectly pruned will be rejected.
- E. All pruning shall be done to retain the natural shape of the plant. Do not prune terminal leader of a plant.
- F. All cuts shall be made so as not to injure the branch collar. Leave no protruding stubs or prune to the closest outward growing bud.
- G. Make all cuts flush, leave no stubs or prune to closest outward growing bud. All cuts over 3/4 inch diameter should be treated with an approved antiseptic tree paint.

3.10 Maintenance

- A. The plant maintenance period shall be for 2 years after initial acceptance by the Engineer. Maintenance shall consist of caring for the project as specified herein until the end of the 1 year maintenance period. The Contractor shall care for all plants until the end of the 1 year maintenance period as may be necessary to keep plants in a live, healthy growing condition.
 1. In the Spring of each year during the 1 year maintenance period, the Contractor shall maintain tree plantings by pruning, fertilizing, restoring planting saucers, topdressing mulch, adjusting and repairing stakes and guy supports, and resetting to proper grades of vertical position, as required to establish healthy, viable plantings. Spray or treat as required to keep trees and shrubs free of insects and disease. Restore or replace damaged tree wrappings.
 2. The Contractor shall pull weeds in the mulched area around the trees/shrubs three times a year as follows:
 - a. On or around May 31.
 - b. Mid Summer as warranted by weed growth.
 - c. On or around August 31.
 3. During the 1 year maintenance period, the Contractor shall water plants often enough to prevent wilting and to maintain plants in a healthy condition.
- B. All plants shall be in a live, healthy, and growing condition at the date of initial acceptance of the project by the Engineer and through the 1 year maintenance period.
- C. Contractor will be responsible for all plant maintenance during installation and for a duration of 1 years following initial acceptance of the projet.
- D. Contractor shall submit written maintenance instructions to the Contracting Authority recommending procedures for plant maintenance.
- E. If the Contractor observes practices detrimental to plant health during the 1 year maintenance period, the Contracting Authority should be notified immediately.
- E. The Contractor shall replace any unacceptable plant materials, at the end of the maintenance period, at no cost to the Contracting Authority.

3.11 CLEANUP

- A. Perform cleaning during installation of work and upon completion of work.

- B. Contractor shall keep the work site clean during installation of work and shall leave the worksite clean upon completion of work.
- C. Remove from site all excess materials, trimmings, branches, soils, debris, and equipment. Remove all tags and labels from plants following acceptance.
- D. Repair any damage resulting from planting operations. Broom clean all paved areas.
- E. Remove all tags and labels from plants following acceptance.

3.12 Review and Initial Acceptance

- A. Review and initial acceptance of the plants and installation to determine completion of contract work will be made by Engineer only after the completion of all work items.
- B. Contractor shall provide written notification at least 7 days before requested review date by the Engineer.
- C. All plants shall be in a live and healthy condition, of the specified variety and size, and all requirements and maintenance have been complied with. Any plant that is dead or not in a vigorous, thriving condition shall be removed and replaced. Plants that are missing are to be installed during the specified planting season. Mulched areas are to be free of weeds and grasses.
- D. After the plant and installation review, a listing of acceptance, deficiencies, incomplete work, and requirements for completion of work will be provided to the Contractor.
- E. Plantings will not be initially accepted until deficiencies are corrected and inspected.
- F. Contractor shall maintain plants, mulch areas, staking, and guying as specified until corrections or completion of work is approved for initial acceptance and throughout the warranty period.
- G. Replacement of rejected or missing plants before acceptance shall not be considered fulfillment of the warranty.
- H. Contact Engineer prior to planting replacement plants for inspection and approval of plants and to verify location
- I. The warranty period for all plants shall begin upon date of initial acceptance for completed installations.

156072.04 METHOD OF MEASUREMENT AND BASIS OF PAYMENT.

- A. Method of Measurement: The Engineer will measure the number each tree, shrub, grass, and perennial plant furnished and installed, complete.
- B. Basis of Payment: The contractor will be paid the contract unit price per each tree, shrub, grass, and perennial plant. All mulch, staking, tree wraps, fertilizer, backfill, and watering shall be incidental to the unit price. This payment shall be full compensation for furnishing, transporting, and placing the plant material in accordance with the contract documents. A 1 year warranty and maintenance during the warranty period, as specified, is incidental to this item.