



**Iowa Department of Transportation**

**SPECIAL PROVISION  
FOR  
PERENNIAL PLANTS**

**Johnson County**

**STP-U-5557(615)--70-52**

**Effective Date**

**April 20, 2010**

**THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, SERIES OF 2009, ARE AMENDED BY THE FOLLOWING MODIFICATIONS. THESE ARE SPECIAL PROVISIONS AND SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.**

## **PART 1 GENERAL**

### **1.01 SUMMARY**

#### **A. SECTION INCLUDES**

1. This part of the Specifications includes all labor, materials, equipment, and supervision required to provide furnish and install perennial plants.
2. This section include the specifications for plant bed preparation and edging; soil amendments; perennial plants; plant procedures; initial maintenance of landscape materials; and warranty.

### **1.02 MEASUREMENT AND PAYMENT**

- A. Method of Measurement: The Engineer will count EACH installed PERENNIAL PLANT.
- B. Basis of Payment: Payment for PERENNIAL PLANTS includes all labor, materials, equipment, and supervision required for plant bed preparation; soil amendments; herbaceous perennial plants; plant procedures; initial maintenance of landscape materials; and warranty.
- C. Unit Price for each PERENNIAL PLANT will include all work, materials, maintenance and warranty as specified to complete the installation of each specified plant.

### **1.03 QUALITY ASSURANCE**

- A. Subcontract landscape work to a single firm specializing in landscape work.
- B. Source Quality Control:
  1. 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.
  2. Do not make substitutions. If specified landscape materials are not obtainable, submit proof of non-availability, together with proposal for use of equivalent material. Availability shall be determined prior to bid submittal as describe din part 2 - Products of this section.
  3. 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.
- C. Perennial Plants: Provide plants of quantity, size, genus, species, and variety shown and scheduled for landscape work and complying with recommendations and requirements of Perennial Plant Association Standards. Provide healthy, vigorous stock, grown in recognized nursery in accordance with good horticultural practice and free of disease, insects, eggs, larvae, and defects.
- D. Botanical (scientific) plant names shall comply with:
  1. Index Hortensis Volume 1 Perennials.
  2. Naamlijst Van Vaste Planten.
  3. Name der Stauden - ISU.
  4. Hortus III.
- E. Names not listed shall conform with those most generally accepted by the Perennial Plan Association (PPA) and the production trade.
- F. Provide stock true to name and legibly tagged.

- G. Specified pot sizes and plant grades should comply with the standards accepted by the PPA.
- H. Plant Labels: Each separately containerized plant brought to the site shall be labeled. Flats of the same plants may have one label per flat. Each bundle of bare root plants shall be labeled. These labels must show the botanical name of the plant(s).
- I. Inspection: The Landscape Architect may inspect plants either at place of growth or at the site before planting, for compliance with requirements for genus, species, variety, size, and quality. The Architect retains the right to further inspect plants for size and condition of root systems, insects, injuries and latent defects, and to reject unsatisfactory or defective material at any time during progress of work. Remove rejected plants immediately from project site.

#### **1.04 SUBMITTALS**

- A. General: Submit the following in accordance with conditions of Contract and Division 1. Specification Sections.
- B. Plant and Material Certifications:
  - 1. Certificates of inspection as required by governmental authorities.
  - 2. Manufacturer's or vendor's certified analysis for soil amendments and fertilizer materials.
  - 3. Label data substantiating that planting materials comply with specified requirements.
  - 4. Shredded hardwood mulch samples.
- C. Agronomic Soil Analysis Reports, as specified.
- D. Planting Schedule: Proposed planting schedule, indicating dates for each type of landscape work during normal seasons for such work in area of site. Correlate with specified maintenance periods to provide maintenance from date of substantial completion. Once accepted, revise dates only as approved in writing, after documentation of reasons for delays.
  - 1. Normal seasons for this work as follows:
    - a. Bare Root Perennials (not permitted on this project): April 15 to May 30.
    - b. Field Potted or Container Grown Perennials: April 15 to Oct. 15.
- E. Maintenance Instructions: Typewritten instructions recommending procedures to be established by Contracting Authority for maintenance of landscape work during the one year warranty period. Submit prior to expiration of required contractor maintenance period.

#### **1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Packaged Materials: Deliver packaged materials in containers showing weight, analysis, and name of manufacturer. Protect materials from deterioration during delivery, and while stored at site.
- B. Pre-planting: Plants shall be brought to the site the day they are to be installed, if possible. If situations arise where earlier delivery cannot be avoided or if planting is delayed after the plants have been delivered, they shall be stored where they can be properly watered, sheltered from direct sunlight, 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. Bare root plants which must be held shall be heeled-in where they can be watered as needed.
  - 1. All plants shall be watered thoroughly and allowed to drain prior to planting.
  - 2. While planting, bare root plants must be protected from hot sun and drying wind by shading them with burlap, landscape fabric, straw, or other breathable material. Plastic is unacceptable.

3. Containerized plants must 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.
4. Any dead or damaged plant parts shall be removed from the plants upon planting.

## **PART 2 PRODUCTS**

### **2.01 HERBACEOUS PERENNIAL PLANTS**

- A. As specified and listed on the plans.
  1. Container-grown plants -- grown to a specified size in a container.
  2. Bare root plants -- purchased free of any growing medium regardless of growing method.
    - a. Bare root plants will not be accepted as substitutes for specified container grown plants.
  3. Field-potted plants -- field-grown plants where are potted for delivery as they are dug from the field.

### **2.02 PLANT BED SOIL**

- A. Soil for herbaceous perennials should be prepared 12 inches deep, unless otherwise noted.
- B. Top soil should be dry, loose, and free of debris. Where hardpan exists beneath the prepared bed, deeper preparation may be required. Additionally, drainage tile may be required. These or other modifications to be paid for in accordance with an adjustment of the Contract Sum by an appropriate Contract modification.
- C. The landscape contractor should immediately notify the Engineer if any beds do not drain properly.

### **2.03 SOIL AMENDMENT MATERIALS**

- A. As listed in supplemental specification for Amended Soil.

### **2.04 EDGER**

- A. Limestone edging as listed in the plans.

### **2.05 WATER**

- A. The Contractor will furnish all equipment and labor required to obtain and apply water.

### **2.06 SHREDDED HARDWOOD MULCH**

- A. As specified on the plans.

**PART 3 EXECUTION****3.01 SOIL TESTING**

- A. Agronomic Soil Tests: Collect 20 samples from the top 12 inches of the soil surface. Take soil samples which are representative of the landscape and soil conditions where perennials will be planted. Remove surface vegetation from surface of sample sites prior to sampling.
- B. Test representative samples for pH, organic matter content, pounds per acre available P205 (phosphate), and pounds per acre available K20 (potash).
- C. Submit soil analysis reports to Engineer seven (7) days prior to plant bed preparation.

**3.02 PLANT BED LAYOUT**

- A. Layout plant beds and obtain approval of Engineer prior to excavation and bed preparation.

**3.03 PLANT BED PREPARATION**

- A. Strip and remove surface vegetation from plant bed areas.
- B. Install plant bed edger as shown on plans.
- D. Shape plant bed to drain as shown on plans.

**3.04 EDGING**

- A. Layout and obtain approval of plant beds prior to edging. Edge all perennial beds as shown on drawings. Form edging with smooth arcs and straight and true lines.

**3.05 FERTILIZATION**

- A. Add commercial grade fertilizer and other plant bed amendments to each plant bed as follows:
  - 1. Commercial grade fertilizer at a rate of 3 lbs. of K20 per 1000 sq. ft. (plant food ration 0.5:2:3 applied at 3 lbs. K20 per 1000 sq. ft. yields 2 lbs. of P205 and 0.5 lbs. of N per 1000 sq. ft.)
  - 2. Agricultural limestone at a rate to be determined by soil test. Lime will be applied to adjust bedding soil pH range to 5.5 0 6.5. Payment for labor and material based on unit price bid.
- B. Till fertilizer and lime into the top six inches (6") of the planting bed.
- C. After fertilization, rake plant beds smooth, shape plant bed contour to drain, and prepare the bed surface for planting.

**3.06 PLANT BED DRAINAGE**

- A. Following the recommended soil preparation, perform a percolation test in each bed to assure proper drainage. This test shall be performed by digging a flat-bottomed hole 12 inches in diameter the depth of the prepared soil and filling it with water. After the water has drained from the hole, it shall be filled again and the drainage recorded. If the second draining takes an excess of one hour, additional soil preparation or drainage tile may be required.

**3.07 PLANTING**

- A. Prior to planting, the Engineer will inspect the site. Any unsatisfactory conditions shall be corrected prior to planting. No weeds should be present in the beds at planting time.
  - 1. Herbaceous perennials may be planted according to specified schedule.
  - 2. Planting shall be done by experienced employees under the supervision of a qualified supervisor.
  - 3. Plants shall be located as designated on the plan.
  
- B. Nursery Stock:
  - 1. Container-grown stock shall be left in its container until the soil has been prepared and approved by the Engineer. Upon removal from its container, the root system of each plant shall be inspected by the contractor for any sign of root decay or harmful soil insects. Affected plants should be brought to the attention of the Engineer and the installation stopped until healthy plants can be procured. If the roots appear healthy, the root ball should be scored from top to bottom on four sides and across the bottom in an "X". These cuts shall then be pulled open, the plant set into the planting hole, and the soil firmed around the root ball. Set plants at the same depth they occupied in their containers.
  - 2. Field-grown and potted stock shall be set into the planting bed at the same depth as it has been growing in the field.
  - 3. Bare root stock should be planted at a depth correct for its genus and species, according to PPA Standards.
  - 4. Plant Spacing: As specified on the plans and in the plant schedule.

**3.08 WATERING**

- A. Water each plant as planted to settle soil and prevent wilting.
  
- B. After a bed or section of a large bed has been planted, the soil immediately surrounding each plant shall be watered to its saturation point to ensure the collapse of any air pockets which would be harmful to the plants. When the entire bed has been planted, it shall be watered with the equivalent of a 1 inch rainfall to prevent dry soil from soaking water away from the newly set plants.

**3.09 MULCHING**

- A. Mulch entire plant bed; pull mulch away from plant stems and crowns of plants to minimize risk of rot and rodent damage.
  
- B. Mulch depth -- three inches (3").

**3.10 WILT PROTECTION**

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

**3.11 MAINTENANCE**

- A. The landscape contractor is responsible for the maintenance of the herbaceous perennials from the time they are brought onto the job site until they are planted and accepted. Contractor is responsible for watering as indicated in the plans.
  - 1. Plants shall be watered often enough to prevent wilting prior to planting. After planting, they shall be watered initially to settle the soil, then to prevent wilting and to allow them to become established on the site.

2. The beds shall be free of weeds at planting time and shall be maintained weed free by the contractor until the planting is accepted.
  3. Make periodic visits to project site to review plant conditions and maintenance operations being performed by Contracting Authority. Contractor to notify Contracting Authority in writing of any observed deficiencies affecting the health of the plants.
  4. Should insects or diseases attack the plants after installation and prior to acceptance of the planting, appropriate pesticides shall be properly applied to correct the situation.
  5. The beds should be checked regularly for soil settling which may expose the rootballs or otherwise endanger the health of the planting. Should this occur, the contractor shall correct the settling problems.
  6. Newly planted herbaceous perennials may be heaved out of the ground by alternate freezes and thaws. Should this occur prior to acceptance of the planting, the contractor shall re-set those affected plants.
  7. Any noted defects, such as reversions, errant growth or color not typical for the species or cultivar, shall be brought to the attention of the Engineer. The recommendations of the Engineer shall be followed to correct the situation. Recommendations may include removal of the entire plant.
- B. The Contracting Authority becomes responsible for the maintenance of the plants after the planting has been initially accepted by the Engineer. Failure to properly maintain the planting during the one year warranty period shall void any warranty.
1. The Contracting Authority shall properly pinch, prune, and deadhead the herbaceous perennials as needed and as required to meet the aesthetic goal of the planting.
  2. The Contracting Authority shall maintain the planting free from competing weeds.
  3. The Contracting Authority shall regularly inspect the planting for insects and diseases, notifying the Engineer of any noted occurrences. If pesticides are deemed necessary, they shall be applied according to the manufacturer's recommendations.
  4. After the acceptance of the planting, the Contracting Authority is responsible for correcting any settling of the planting beds.
  5. After acceptance, the Contracting Authority is responsible for setting any plants which are heaved out of the ground in whole or in part by climate changes.
  6. Unsatisfactory performance of the herbaceous perennials noted by the Contracting Authority after acceptance of the planting should immediately be brought to the attention of the Engineer.

### **3.12 INITIAL INSPECTION AND ACCEPTANCE**

- A. Initial inspection of the planting to determine completion of the contract work, exclusive of possible replacement of the plants, will be made by the Engineer.
1. Initial inspection will not be conducted unless all items of work as outlined in Part 3 - Execution have been completed.
  2. Submit written notice requesting such inspection at least five (5) days prior to the anticipated date.
  3. After inspection, the Contractor will be notified in writing by the Contracting Authority of initial acceptance of the work inspected, exclusive of the possible replacement of plants subject to guarantee, or if there are any deficiencies, of the requirement for completion of the work.
  4. Maintenance areas are not acceptable as specified until corrections are completed and reinspection is conducted.
  5. All perennial plants shall be planted before an initial inspection will be conducted.
  6. All plants shall be in a live and healthy condition at the time of initial acceptance.
- B. Replacement of dead or rejected plants before initial acceptance shall not be considered a part of the warranty and replacement requirement of the section.

**3.13 WARRANTY, REPLACEMENT, AND FINAL INSPECTION**

- A. All plants will be guaranteed to be true to name as labeled and free from insects, diseases, and mechanical damages when delivered to the site. All plants will be guaranteed to resume active growth in the appropriate season and to survive for the duration of one (1) full year after initial acceptance by the Engineer, provided the recommended maintenance procedures are followed by the Contracting Authority.
  - 1. At the end of the warranty period, final inspection will be made by the Engineer upon written notice requesting such inspection; submit notice to the Engineer at least then (10) days before the anticipated date of inspection.
  - 2. Any plant required under this Contract that is dead or not in a vigorous, thriving condition, as determined by the Engineer at the time of final inspection, shall be removed from the site. These and any missing plants, due to the negligence, shall be replaced as soon as conditions permit, but during the normal planting season.
  
- B. Replace plants that are observed to be dead or in a badly injured condition after initial acceptance at no cost to the Contracting Authority once during or at the end of the warranty period.
  - 1. One replacement after initial acceptance shall constitute fulfillment of the warranty for the particular plant replaced.
  - 2. All replacements shall be plants of the same kind and size as specified in the Plant Schedule. They shall be furnished and planted as specified herein.
  - 3. Plant shall be replaced, mulched, and fertilized at no cost to Contracting Authority.
  
- C. 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.
  
- D. Plant replacement cost shall be borne by Contractor except for possible replacements resulting from removal, loss, or damage due to occupancy of project in any part, vandalism, civil disobedience, or acts of neglect on the part of others, physical damage by animals, vehicles, fire, etc., or losses due to curtailment of water by local authority, or the "Acts of God". Floods, tornadoes, wind of hurricane force, and hail are not normal and the damage they do cannot be calculated in a bid.