



**SPECIAL PROVISIONS
FOR
PERENNIAL PLANTS**

**STORY County
STP-U-0155(688)--70-85**

**Effective Date
January 21, 2015**

THE STANDARD SPECIFICATIONS, SERIES 2012, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY 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 and edging; soil amendments; herbaceous perennial plants; plant procedures; mulching, initial maintenance of landscape materials; and warranty.
- C. Unit Price for each PERENNIAL PLANT will include all work, materials, maintenance, fertilizer, mulching, amended soil, watering, 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 described in 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. Names not listed shall conform to those most generally accepted by the Perennial Plant Association (PPA) and the production trade.

Provide stock true to name and legibly tagged.

- E. Specified pot sizes and plant grades should comply with the standards accepted by the PPA.
- F. 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).
- G. Inspection: The Engineer 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 Engineer 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 according to Iowa DOT Article 1105.03 of the Standard Specifications.
 - 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. 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:
 - i Field Potted or Container Grown Perennials: August 15 to November 15 and in the spring prior to June 1.
 - D. Maintenance Instructions: Typewritten instructions recommending procedures to be established by Contracting Authority for maintenance of landscape work. 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 held-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.

1.06 PLANT MATERIAL WARRANTY

- A. Warrant each plant to remain alive and be in healthy, vigorous condition for a period of one (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 Contracting Authority at the expiration of the one-year warranty period, and following a written request by the Contractor. Contractor shall request inspection a minimum of seven 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 Contracting Authority, 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 Contracting Authority prior to planting.
- E. Maintain replacement plants as specified for original plants until accepted by the Contracting Authority. Contractor shall notify the Contracting Authority when all replacements and repair are complete, and schedule the inspection 7 days prior to the proposed inspection date.

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. 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 in contract documents.
- 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 Contractor should immediately notify the Engineer if any beds do not drain properly.

2.03 SOIL AMENDMENT MATERIALS

- A. Commercial fertilizers: Commercial grade conforming to current requirements of the Iowa Department of Agriculture, uniform in composition, liquid or dry, and free flowing.
 - 1 Plant food ratio: 0.5:2:3.
- B. Organic Matter: A product of peat moss, compost, or locally available organic waste. Organic matter shall be free from debris, weed seeds, and insects or diseases which may be harmful to the intended plantings.
- C. Sand: Provide clean sand complying with Iowa DOT Section 4110 of the Standard Specifications, Gradation No. 1.
- D. Soil Amendment shall be the following mix: 70% topsoil, 25% organic matter, 5% Sand to the depth provided on contract documents.

2.04 EDGER

- A. Use a power edging tool and spade to crisply cut and form the edge of all perennial beds.

2.05 WATER

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

2.06 SHREDDED HARDWOOD MULCH

- A. As specified on the plans.

PART 3 EXECUTION

3.01 SOIL TESTING

- A. Agronomic Soil Tests: Collect five 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 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 as needed.
- B. Spade cut plant bed edge.
- C. Add amended soil as per Special Provision for Amended Soil
- 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 using a power edging tool and spade to form and shape clean, manageable earth edge.

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 three pounds of K20 per 1000 square feet (plant food ration 0.5:2:3 applied at three pounds K20 per 1000 square feet yields two pounds of P205 and one-half pounds of N per 1000 square feet)
- B. Till fertilizer into the top 6 inches 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 soils 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. 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 one 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. Minimum mulch depth per plans

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 plant maintenance period shall be the period of time from the beginning of the Contract to initial acceptance of the plant material. Maintenance shall consist of caring for the project as specified herein until the initial acceptance of the plant material. The Contractor shall care for all plants until initial acceptance as may be necessary to keep plants in a live, healthy growing condition.
 1. Prune, cultivate, and remove weeds from planting beds and mulch areas. Remove all weeds prior to review for initial acceptance.
 2. Water at the minimum rate of one inch per week or as needed to maintain plant health.
 3. Re-set settled plants to proper grades and position. Restore planting saucer and mulch; adding planting soil and mulch as may be required.

4. Apply appropriate insecticides and fungicides necessary to maintain plants free of insects and disease.
- B. All plants shall be in a live, healthy, and growing condition at the date of initial acceptance of the project by the Contracting Authority.
- C. Following initial acceptance of the planting, maintenance will become the responsibility of the Contracting Authority.
- D. Contractor shall submit written maintenance instructions to the Contracting Authority recommending procedures for plant maintenance.
- E. If the Contractor observes maintenance practices detrimental to plant health during the warranty period, the Contracting Authority should be notified immediately.
- F. The contractor shall replace any unacceptable plant materials, at the end of the warranty period, at no cost to the Contracting Authority if the Contracting Authority has followed the recommended maintenance program.

3.12 INITIAL INSPECTION AND ACCEPTANCE

- A. Review and initial acceptance of the plants and installation to determine completion of contract work will be made by Contracting Authority only after the completion of all work items.
- B. Contractor shall provide written notification at least seven days before requested review date by the Contracting Authority.
- 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.
- G. Replacement of rejected or missing plants before acceptance shall not be considered fulfillment of the warranty.
- H. Contact Contracting Authority 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.

3.13 INCIDENTAL MATERIALS FOR PLANT INSTALLATION.

- A. Topsoil
 - 1. High quality soil consisting of the top 6 inches of field or pasture loam containing a good supply of humus and a high degree of fertility. Do not use surface soils from ditch bottoms, drained ponds, and eroded areas, or soils which are supporting growth of noxious weeds or other undesirable vegetation.
 - 2. A pH value from 6.0 to 7.5.
 - 3. Free from hard clods, rocks, and other debris larger than 2 inches in diameter

- B. Fertilizer
 - 1. As specified in the contract documents

- C. Soil Amendments
 - 1. As specified in the contract documents

- D. Mulch
 - 1. As specified in the contract documents

- E. Water
 - 1. As specified in the contract documents