

## SECTION 7100 - TREES AND SHRUBS

### PART 1 - GENERAL

- 1.01 SCOPE:** This Section covers tree and shrub planting. Topics include seasonal limits, guarantee period, soil preparation, planting, fertilizing, mulching, and establishment.
- 1.02 INSTALLER'S QUALIFICATION:** The senior member of each independently working planting crew shall have a minimum one year's experience in the installation and establishment of landscape plantings.
- 1.03 REFERENCE STANDARDS:** In this Section, the following abbreviations stand for the indicated documents:
- A. "ASNS" shall mean the American Standards for Nursery Stock adopted by the American Association of Nurserymen.
- 1.04 SUBMITTALS:** Submit the following for review:
- A. Supplier's certification that nursery stock meet the requirements of Part 2.
- 1.05 SEASONAL LIMITS:** Planting shall coincide with annual growth cycles, specifically:
- A. Planting shall occur between October 1 and November 15 and between the time the ground thaws in spring and May 1. Engineer may vary placement dates due to weather or soil conditions.
  - B. Planting shall be suspended during exceptionally wet weather and when frost is in the ground.
- 1.06 HANDLING AND ON-SITE STORAGE:** Balled and burlapped plants shall be handled by the ball only and shall not be rolled or dropped. Plants should normally be planted the same day they are delivered. Plants stored on site longer than 8 hours shall be thoroughly wetted twice a day. Plants stored on site longer than 48 hours shall be embedded in damp sand or wood mulch to the top of the root ball.
- 1.07 VIABILITY GUARANTEE PERIOD:** Deciduous planted material planted in a dormant state shall be guaranteed to come out of winter dormancy and into full vigorous leaf growth. Evergreen plants and deciduous plants planted during growing season shall be guaranteed live and vigorous for 90 days after landscape is accepted.

The guarantee period of planted areas against settlement, erosion, or compaction due to traffic and construction activity or the toppling of trees shall be the same as for the work as a whole.

### PART 2 - PRODUCTS

- 2.01 NURSERY GROWN PLANTS:** Nursery grown stock shall meet the grading requirements of ASNS. Nursery stock shall be grown under climatic conditions similar to Kansas City for at least two years. Trees shall be balled and burlapped; shrubs and bedding shall be container grown. Unless otherwise specified, trees shall be 2-inch to 2-1/2-inch caliber. Container grown trees may be substituted for balled and burlapped when approved by Engineer.
- 2.02 ESTABLISHED MATERIAL:** Material to be transplanted shall be balled and burlapped if dug by hand or shall remain in tree spade until planting if dug by tree spade.
- 2.03 FERTILIZER:** Fertilizers shall conform to the requirements of KDOT Standard Specifications Subsection 2106. Suppliers shall be registered by the Kansas State Board of Agriculture. Fertilizer analysis shall be 12-12-12 (Nitrogen, Phosphorus, Potassium).
- 2.04 PLANTING SOIL:**
- A. For Planting Beds: Planting soil for mass plantings shall be a friable, loamy soil with a good supply of humus and high degree of fertility, subject to approval of Engineer based on visual and tactile inspection. Normally, the top 6 inches of field or pasture loam will meet this requirement. On-site subsoils mixed with 20 percent organic compost or other organic amendment by volume and spaded to eliminate clumps over 3 inches may be substituted as planting soil.
  - B. For Tree and Shrubs Planted in Individual Holes: Planting soil shall be excavated soil, tilled or pulverized to a texture resembling coarse sand. Organic compost may be added up to 5 percent. No other textural amendment shall be made.
- 2.05 MULCH:** Mulch for tree pits and shrub beds shall be chipped wood mulch, 1-inch maximum chip size, or pole peelings. Mulch shall be free from noxious weeds as declared by the Kansas State Board of Agriculture.
- 2.06 GUYS AND STAKES:** Guy and tie wires shall be galvanized, 9-gage, soft iron wire. Where wires contact trees, they shall be encased in new fabric lined rubber hose. Stakes shall be green painted, metal "T" fence posts. Commercial guying systems giving improved performance may be substituted with Engineer's approval.
- 2.07 ANTIDESICANT:** A polyvinylchloride complex liquid manufactured for application by spraying or dripping.
- 2.08 WEED CONTROL FABRIC:** Fabric shall be minimum 99 percent opaque to prevent photosynthesis and seed germination from occurring, yet allow air, water, and nutrients to pass through to the roots. Provide weed control fabric conforming to one of the following:
- A. Roll Type Polypropylene or Polyester Mats: Fabric shall be woven, needle-punched, and treated for protection against deterioration due to ultraviolet radiation. Minimum weight shall be 3.5 ounces per square yard with a minimum thickness of 20 mils.

- B. Non-Woven Landscape Blanket: 100 percent polyester, non-woven, needle-punched fabric manufactured specifically for weed control purposes, treated for protections against deterioration due to ultraviolet radiation. Minimum 0.04-inch thickness.

### **PART 3 - EXECUTION**

- 3.01 VERIFICATION:** Verify that fine grading is complete and accepted.
- 3.02 PLANTING HOLE:** Holes shall be three times the width and the same depth as the root ball. If excavation method glazes the soil on the sides of the pit, the sides shall be thoroughly scratched to remove glaze. Engineer shall approve locations of pits; minimum 24-hour notification is required.
- 3.03 SHRUB BED PREPARATION:** Shrub beds shall consist of planting soil a minimum of 12 inches deep. Shrub bed preparation shall extend a minimum of 2-1/2 feet beyond the last row of shrubs. Fertilizer shall be mixed into the bed at a rate of 10 pounds for 1,000 square feet.
- 3.04 PREPLANTING INSPECTION:** Engineer will conduct preplanting inspection. Inspection will cover hole location and preparation, prepared shrub bed, plant material vitality and quality, and planting soil.
- 3.05 PLANTING:** Plants shall be spaced according to growth requirements and instructions on the drawings.
  - A. Balled plants and established trees transplanted by tree spade: Remove the soil at the top of the rootball to expose the root flare (the enlarged or swollen area where the large lateral roots emerge.) Plant with the root flare level with the surrounding soil. If planting hole is too deep fill and tamp excavated soil in the bottom of the planting hole; do not set root ball on uncompacted soil or a mound. Remove all wire and burlap. Set tree plumb. Backfill with pulverized excavated soil. Fill half way and thoroughly soak; complete backfill, tamp lightly, and soak again. Build watering well at edge of planting hole. Place three inch layer of mulch over planting hole; taper mulch to zero depth at the tree trunk. Top dress with 1/2 pound fertilizer.
  - B. Container grown shrubs: Remove plant from the container. If root bound, the root mass shall be split approximately half of the way up; the root mass shall be fanned and set over a cone of tamped soil in the planting hole. Backfill shall be lightly tamped to support plant from toppling. After the day's planting is complete, the shrub bed shall be thoroughly wetted. Two inches of mulch shall be placed over the shrub bed.
  - C. Evergreen plants and deciduous plants in leaf shall be treated with antidesicant. Application shall follow manufacturer's recommendations.
- 3.06 GUYING AND STAKING:** Plants shall be secured from toppling as follows:
  - A. Trees up to 4-inch caliber shall be secured with a minimum of 2 stakes and guy wires. Guys shall be attached to the trunk at approximately two-thirds the height of the tree.

B. Shrubs and bedding plants need no additional staking or guying.

**3.07 ESTABLISHMENT PERIOD:** Plants shall be irrigated during the viability guarantee period specified in Part 1. Contractor shall maintain optimum soil moisture for growth. Plants shall be hardened by deep, infrequent watering during the last two weeks of the viability guarantee period. Plants shall be protected from traffic, construction activities, settlement, and erosion. Planted areas shall be kept free of weeds. Plants found to be dead during the viability guarantee period shall be replaced immediately; the replacement shall be guaranteed as if it were original planting.

**3.08 WEED CONTROL FABRIC:** Install per manufacturer's written instructions.

**STANDARD DETAILS RELATED TO THE WORK OF THIS SECTION:**

UG 7100-A TREE PLANTING

END OF SECTION 7100