

## SECTION 32 90 00

### PLANTINGS

#### PART 1 GENERAL

##### 1.01 QUALITY ASSURANCE

- A. Crew Qualifications: Landscape crews shall be supervised by an on-site superintendent or foreman holding a Certified Landscape Technician (CLT) certificate as provided by the Associated Landscape Contractors of Colorado (ALCC).

##### 1.02 WARRANTY

- A. Refer to DPS Standards 32 91 00 for more information on warranty and 24 month landscape maintenance.
- B. All work will have an 24 month warranty with landscape maintenance.

#### PART 2 PRODUCTS

##### 2.01 PLANT MATERIALS

- A. Quality: Provide trees, shrubs, and other plants of size, genus, species, and variety indicated for landscape work and complying with recommendations and requirements of ANSI Z60.1 "American Standard of Nursery Stock" and Colorado Nursery Act as revised.
- B. Deciduous trees:
  - 1. Indicate height and caliper.
    - a) Minimum 2" caliper, measured 6" above the root ball.
  - 2. Branching configuration recommended by ANSI Z60.1 for type and species.
  - 3. Single-stem tree form trees, except where special forms are allowed.
  - 4. Balled and burlapped (B&B).
    - a) Container grown deciduous trees will be acceptable in lieu of balled and burlapped deciduous trees subject to specified limitations of ANSI Z60.1 for container stock.
  - 5. Field dug (tree spaded) deciduous trees may be acceptable based on prior approval by A/E.
- C. Coniferous and Broadleafed Evergreens:
  - 1. Indicate minimum height for upright trees, such as globe, dwarf, cone, pyramidal, broad upright and columnar.
  - 2. Balled and burlapped (B&B).
    - a) Container grown deciduous trees will be acceptable in lieu of balled and burlapped deciduous trees subject to specified limitations of ANSI Z60.1 for container stock.
  - 3. Field dug (tree spaded) deciduous trees may be acceptable based on prior approval by A/E.
- D. Deciduous and evergreen shrubs:
  - 1. Indicate container size.
  - 2. Minimum number of canes or spread required by ANSI Z60.1 for type and height of shrub.
  - 3. Container grown (or established as required by Colorado Nursery Act) in the sizes indicated on the plans.
- E. Groundcovers, perennials:
  - 1. Indicate container size. Minimum size is one gallon.
  - 2. Indicate minimum number of runners or blooming size.
  - 3. Select plants that have seasonal interest in the spring, fall and winter.

## **2.02 PLANTING MIXES**

- A. Turf: Minimum requirements for acceptable topsoil or amended soil used for topsoil.
  - 1. Organic matter content: Above 3%.
  - 2. PH: 6.5 – 7.6.
  - 3. Conductivity: Less than 2 mmhos/cm.
  - 4. Nutrients: N, above 15 ppm; P, above 10 ppm; K above 80 ppm.
  - 5. Soil texture: Sandy/clay, clay, silty clay loams; loam; or silty, sandy loams.
- B. Tree and shrub planting backfill:
  - 1. Seventy percent (70%) topsoil by volume; soil may be taken from the plant pit or imported soil of a quality acceptable by the DPS meeting or exceeding the quality of specified topsoil.
  - 2. 15% soil amendment humus by volume and 15% clean concrete sand.
  - 3. The specified backfill materials shall be evenly pre-mixed using appropriate equipment, then turned to produce a uniform, evenly blended consistency, free of all pockets of unblended material and any clods or stones greater than 2" in diameter. Backfill mix shall be delivered to each planting pit after mixing has occurred. Pre-mixed backfill mix shall be inspected and approved prior to use.
- C. Bedding mix (groundcovers, perennials): Topsoil or amended soil with two percent (2%) more organic matter than indicated by topsoil test (5% minimum).
- D. Groundcover and perennial areas:
  - 1. Prepare as above for turf areas at the following rates for amendments:
    - a) Fertilizer: One (1) pound per 100 sq. ft. of diammonium phosphate fertilizer (18-46-0).
    - b) Soil amendment humus: One (1) cubic yard per 100 sq. ft.

## **2.03 TOP SOIL**

- A. Topsoil for planting backfill or other use shall be from stripped on site stock pile. Strip from "A" horizon in source area.
- B. Contractor shall mix, scarify and pulverize soil to break up or remove clods, rocks, debris, and non decomposed organic matter. No clods, rocks, or organic matter larger than 2" in the greatest dimension will be allowed for use in planting operations.
- C. Specified qualities must exist in the top 6" of soil.

## **2.04 SOIL AMENDMENTS**

- A. Humus: Mushroom compost or aspen rich compost or organic compost.
  - 1. From local source such as A-1 Compost, Eaton, Colorado, or BOSS compost, Denver, Colorado.
- B. Weed free, 40% minimum organic matter.
- C. Amendment to be 4 cubic yards per 1,000 square feet for all lanting areas including sod.

## **2.05 FERTILIZERS**

- A. Soil preparation fertilizer: Diammonium phosphate, soluble mixture in granular form of treated minerals with eighteen percent (18%) nitrogen and forty-six percent (46%) minimum available phosphoric acid (18-46-0).
- B. Booster fertilizer:
  - 1. Inorganic base (12-12-4) analysis with 2% iron and 8% sulfur.
  - 2. Require manufacturer's guaranteed analysis. Guaranteed analysis shall be designed to conform with amendment requirements.

## **2.06 MULCHES**

- A. Shredded wood mulch must be applied at a depth of 6 inches with no weed barrier fabric.
  - 1. Shredded wood (cedar): Natural cedar, shredded, of medium texture.
  - 2. Natural tree mulch, shredded and mixed to create a blend of coarse, fibrous material which will intertwine and mat when placed.
  - 3. Mulch shall form a circle, 2'-6" diameter, around single trees.

**2.07 EDGING**

- A. 14 gauge rolled top galvanized edging or green powdercoated rolled top edging.

**2.08 TREE ESTABLISHMENT**

- A. Tree wrap: 4" wide layered tree wrap with interior layer of asphaltic material. Material shall be specifically manufactured as horticultural tree wrap.
- B. Stakes are to be lodge poles; metal stakes are not allowed. Ties are to be canvas or other; bare wire is not allowed.

**2.09 CRUSHER FINES**

- A. 4" of crushed granite aggregate (3/8"-1/4") screenings with stabilizer at a rate of 15 lbs per ton. Use CDOT basecourse in areas where drainage or standing water may be an issue.

**PART 3 EXECUTION**

**3.01 SITE AND SOIL PREPARATION**

- A. Site preparation shall be completed prior to bringing plants, seed, sod, etc., to the site for installation. No storage of live material permitted on-site overnight unless given prior approval by DPS.
- B. No planting or seeding shall take place until the following have been accepted by the A/E and DPS.
  - 1. Irrigation.
  - 2. Plant materials.
  - 3. Weed control, debris removal.
  - 4. Soil amendments.
  - 5. Grades.
    - a) Regardless of grading tolerances, intended drainage flows shall be maintained without ponding.
  - 6. Tree and shrub locations.

**3.02 WATER**

- A. Contractor is responsible for ensuring that plant materials are watered.

**END OF SECTION 32 90 00**