

SECTION 32 93 00 – TREES, SHRUBS, AND GROUNDCOVERS

PART 1 GENERAL

1.01 REFER TO SECTION 01000 FOR GENERAL REQUIREMENTS

1.02 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.
- B. American National Standards Institute (ANSI) Publication:
 - 1. Z60.1, American Standard for Nursery Stock, latest edition.

1.03 WORK SPECIFIED HEREIN:

- A. This section describes the labor, materials and installation requirements necessary to complete the tree, shrub, and groundcover planting and related items as indicated or specified.

1.04 SUBMITTALS

- A. Written guarantee warranting the plant material to be in healthy condition one (1) year from the date of project acceptance; and that material that is not shall be replaced at no cost to the University within 5 days of date stated in written notice. Warranty-replacement planting shall be warranted for one (1) year from the date of completion of all planting. See 1.06, WARRANTY.
- B. Planting Schedule: Submit planting schedule showing dates for planting in each area of site.
- C. Maintenance Instructions: Submit typewritten instructions recommending procedures for maintenance of landscape work for one full year 60 days prior to expiration of establishment.
- D. Topsoil: Before delivery of topsoil, furnish Project Manager with written statement giving location of properties from which topsoil is to be obtained, names and addresses of owners, depth to be stripped, and crops grown during past 2 years.

1.05 WORK SITE CONDITIONS

- A. Proceed with and complete landscape work as rapidly as portions of site become available, working with seasonal limitations for each kind of landscape work required.
- B. Utilities: Determine location of underground utilities and perform work in a manner which will avoid possible damage. Hand excavate, as required. Maintain grade stakes set by others until removal is mutually agreed upon by parties concerned.
- C. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify the Project Manager before planting.
- D. Protection of turfed areas: Plant trees and shrubs after final grades are established and prior to planting of turf grass or seed unless otherwise specified. If planting of trees and shrubs occurs after turf work, protect turf areas and promptly repair damage to turf areas resulting from planting operations.

1.06 WARRANTY

A. Warranty plants for a period of one year after date of project acceptance against defects, disease, death, and unsatisfactory growth, except for defects resulting from neglect by University, abuse or damage by others, or unusual phenomena or incidents which are beyond Contractor's control.

B. Inspections:

1. A preliminary inspection will be held sixty days from the the beginning of the 120 day establishment period or six months from the beginning of the one year establishment period to determine plant health and overall acceptability. Plants not in healthy growing condition will be noted and shall be removed from the site and replaced with plants of the same species and size as originally specified. Replacement plants shall be warranted until the end of the existing one year period as described above. If highly unsatisfactory conditions exists, the Project Manager may extend the warranty period for replacement plants for a period of one full year after acceptance of the replacement planting.

2. A final inspection of the replacement plants will be conducted at end of extended warranty period, if any, to determine acceptance or rejection. This will be the final replacement.

1.07 DELIVERY, STORAGE AND HANDLING

A. All plant material shall be inspected by the Project Manager at the job site upon delivery. Only plants approved for planting by the Project Manager shall be stored or planted. Project Manager reserves the right to refuse any plant material he deems unacceptable. Any and all rejected plant materials shall be removed from the job site on the day of rejection.

B. Each tree, shrub, groundcover flat, container of fertilizer, or other construction material shall be labeled by grower or manufacturer as separate items.

C. Plant identification labels shall be durable, using waterproof labels and weather-resistant ink. Labels shall be securely attached to plants, bundles, or containers of plants and shall state the correct botanical plant name and size.

D. Bulk deliveries of mulch, topsoil, and inert material shall be accompanied with delivery tickets showing weight, origin, and composition.

E. Plant Storage: Plants not installed on the day of arrival at the site shall be stored and protected. Outside storage locations shall be continually shaded and protected from the wind. Bare root plants shall be heeled-in. Plants stored on the project shall be protected from any drying at all times covering the balls or roots with moist sawdust, wood chips, shredded bark, peat moss, or other similar mulching material. All plants, including those in containers, shall be kept in a moist condition until planted.

F. Handling: Care shall be taken to avoid drying or damaging plants being moved from the nursery or storage area to the planting site. Balled and burlapped plants shall be handled carefully to avoid cracking or breaking the earth ball. Plants shall not be handled by the trunk or stems. Bare root plants shall be "puddled" when removed from the heeling-in bed to protect the roots from drying out. Plants shall be protected from freezing or drying by a covering of burlap, tarpaulin, or mulching material during transportation from the heeling-in bed to the planting site. Damaged plants will be rejected and shall be removed from the site.

1.08 JOB CONDITIONS

A. The Contractor shall receive the site with the planting areas free of waste or debris developed by other trades. Any discrepancy from such conditions shall be reported to the Project Manager before beginning construction.

PART 2 PRODUCTS

2.01 COMMERCIAL FERTILIZERS

A. Ground ferrous sulfate containing not less than 20% iron and not less than 30% sulphur as manufactured by Duvall or an approved equal.

- B. Agricultural grade gypsum.
- C. Ammonium phosphate 16-20-0.
- D. Super phosphate.
- E. Sulfate of Ammonia 21-0-0.
- F. Vitamin B-1 root stimulator.

2.02 ORGANIC AMENDMENTS

- A. Mulch shall be approved nitrogenized cypress or fir bark mulch with no color additive.

2.03 TREE STAKING

- A. Tree stakes shall be as detailed in drawings and shall be free of knots and cracks.
- B. Tree ties shall be pliable galvanized wire of #10 gauge; provide a minimum of two (2) per tree.
- C. Hose covering shall be two ply, reinforced, black or green rubber garden hose of at least 1/2" diameter.

2.04 HERBICIDE

- A. Pre-emergent herbicide shall be Surflan 75W as manufactured by Elanco Chemical Company, or approved equal.
- B. Non-selective contact herbicide shall be Round-Up as manufactured by Monsanto, or approved equal.

2.05 PLANT MATERIAL

- A. Trees, shrubs, and groundcovers shall be grown in pots, tubs, cans, boxes, or flats as scheduled and shall conform to ANSI Z60.1. Plants shall have sufficient roots to hold earth intact after rootball is removed from the container without being rootbound.
- B. Plants shall be approved or rejected at the Project Manager's discretion for damage, health, form, and size at any time before planting. Plant materials that are poor in health or damaged prior to substantial completion or during the the warrantee period will be identified by the Project Manager and shall be replaced by the Contractor within five (5) days of written notice.
- C. Planting stock shall be well-branched and well-formed, sound, vigorous, healthy, and free from disease, sun-scald, windburn, abrasion, and harmful insects or insect eggs and shall have healthy, normal, and unbroken root systems. Plants shall have been grown under climatic conditions similar to those in the locality of the project.
- D. Plants designated "collected", if any, shall be obtained from native stands or established plantings. To be acceptable, collected plants shall have been growing in favorable locations in a soil which ensured good fibrous root development and a vigorous growing condition. The minimum root spread for collected bare root plant materials shall be one-third greater than minimum root spread of bare root, nursery-grown stock; minimum ball sizes for collected plant materials obtained balled and burlapped shall be the next larger ball size than for nursery-grown stock sized in accordance with ANSI Z60.1.

2.06 MULCH

- A. A. Mulch shall be free from deleterious materials and shall be stored so as to prevent inclusion of foreign materials.

PART 3 EXECUTION

3.01 Planting bed Preparation

- A. Prepare planting beds by applying Round-Up as per label directions to weed or grass growth in planting areas on site. Allowing sufficient time for herbicide to take effect, scarify planting areas to a minimum depth of six (6) inches. Bring beds to grade and rake to remove weeds, clods, or rocks one inch in diameter or greater. Thoroughly water-settle all soil.
- B. B. Stake plant material locations prior to planting for approval by the Contracting Officer.

3.02 PROTECTION OF EXISTING VEGETATION

- A. If turf areas have been established prior to planting operations, the surrounding turf shall be covered before excavations are made in a manner that will protect turf areas. Existing trees, shrubbery, and beds that are to be preserved shall be barricaded in a manner that will effectively protect them during planting operations.

3.03 UNDERGROUND OBSTRUCTIONS TO PLANTING

- A. If underground utilities, construction, or solid rock ledges are encountered, other locations for planting may be selected by the Project Manager.
- B. Planting beds being prepared for groundcover or annual plantings shall have three (3) cubic yards of mulch, twenty (20) pounds of ammonium phosphate, and one hundred fifty (150) pounds of gypsum per one thousand square feet (1000 SF), incorporated into the top six inches of the bed.

3.04 PLANT PITS

- A. Plant pits for container grown plant material shall be excavated twice the size of the container diameter of the plant being planted, or as shown in the drawings.
- B. Plant pits shall be dug to produce vertical sides and flat, uncompacted bottoms. When pits are dug with an auger and the sides of the pits become glazed, the glazed surface shall be scarified. The size of plant pits shall be as shown on planting details.
- C. Remove plants from containers without disturbing the rootball. Set plants in pit, cradling and supporting the rootball. Position plant for the "best side" view and for minimum obstruction to traffic on adjacent pavement, if applicable.
- D. Bare-root stock, if any, shall be planted so that the roots are arranged in a natural position. Damaged roots shall be removed with a clean cut. Planting soil mixture shall be carefully worked in among the roots. Remainder of backfill of planting soil mixture shall be tamped and watered. Water basins shall then be formed around isolated plants as specified on drawings below the final grade of the surrounding area to facilitate the passive harvesting of normal rainfall.
- E. Backfill pit with a blended mixture containing one part mulch, three parts native soil, one-eighth part gypsum, and one-eighth cup of ground ferrous sulfate per cubic yard of backfill. When the plant is set and the backfill has been water-settled, the top of the rootball shall be at finish grade or as shown.
- F. Apply Vitamin B-1 Root Stimulator at the rate of one tablespoon per gallon to all bare root stock plant materials. Thoroughly water each plant with a minimum of 5 gallons of the mixed B-1 solution.

G. Raised planter mix, if any, shall contain 40% sandy loam, 60% approved ground mulch, 10 pounds of superphosphate, 20 pounds of ammonium sulfate and 5 pounds of ground ferrous sulfate per 10 cubic yards of planter mix.

H. Mulch all plant pits, shrub beds, and groundcover beds with a two (2) inch depth of approved ground mulch immediately after planting.

3.05 TREE STAKING

A. Stake trees as per detail.

3.06 PRUNING

A. Prune each tree and shrub to preserve the natural character of the plant per ANSI Z60.1. Prune to remove all suckers, deadwood, and broken or badly bruised branches.

B. Deciduous trees and shrubs shall be pruned to reduce total amount of anticipated foliage by one-fourth. Typical growth habit of individual plants shall be retained with as much height and spread as is practicable. Cuts shall be made with sharp instruments, and shall be flush with trunk or adjacent branch to ensure elimination of stubs. "Headback" cuts at right angles to line of growth shall not be permitted. Trees shall not be poled or the leader removed, nor shall the leader be pruned or "topped off." Trimmings shall be removed from the site.

3.07 EXISTING TURF AREAS

A. Existing turf areas, if any, that have been damaged or scarred during planting operations shall be restored to their original condition.

END OF SECTION 32 93 00