

SECTION 329300 - PLANTING

PART 1- GENERAL

1.1 SECTION INCLUDES

- A. Furnish all labor, material, equipment, related services and supervision necessary for or incidental to the installation of the trees, plants and groundcovers as shown or indicated on the Drawings and/or as specified.
- B. Work Included:
 - 1. Trees.
 - 2. Shrubs.
 - 3. Turf and Grasses.
 - 4. Groundcovers & Vines.
 - 5. Steel Edging.
 - 6. Mulching.
 - 7. Bed Preparation.

1.2 REFERENCE STANDARDS

- A. American Standard for Nursery Stock, Edition approved May 12, 2004 – ANSI Z60. 1-2004
- B. (Florida) Grades and Standards for Nursery Plants – Florida Department of Agriculture and Consumer Services

1.3 SUBMITTALS

- A. Delivery Receipts and Invoices: Submit original delivery receipts and invoices for materials used.
- B. Product Data: Submit manufacturer's product data sheets for proprietary products in accordance with Section 013300.
- C. Unit Prices: Within 30 days of contract award, submit unit-installed cost for each plant listed on plant schedule. Unit costs shall be thus established for additions or deletions of quantities if directed by Owner.
- D. Samples:
 - 1. Submit representative photos of each specified tree shrub and groundcover for the Architect's approval. All photos should be of sufficient resolution and should include a measuring stick or ruler; each photo should be labeled with the plants container size, genus, species and cultivar. Include the grower/ supplier name, address, and contact information.
 - 2. Submit for approval sufficient representative quantities of sandy loam, composted organic material, mulch, composted organics, steel edging, filter fabric, and crushed rock. The Architect before use on project shall approve samples.
- E. Topsoil Fertility Test Reports:
 - 1. Refer to Topsoil – Section 329119.16

1.4 SELECTION, TAGGING AND ORDERING OF PLANT MATERIAL

- A. Plants may be subject to tagging, inspection and approval by Architect and or Owner at place of growth and upon delivery for conformity to specifications. Such approval shall not impair the right of inspection and rejection by the Owner during process of work.
- B. Submit written request for inspection of plant material at place of growth to architect. Written request shall state the place of growth and quantity of plants to be inspected. Architect reserves the right to refuse inspection at this time if, in his judgment, a sufficient quantity of plants is not available for inspection and tagging.
- C. Substitutions of plant materials will not be permitted unless authorized in writing by Architect. If proven that any specified plant is not obtainable, a proposal will be considered. These provisions shall not relieve the Contractor of the responsibility of obtaining specified materials in advance if special growing conditions or other arrangements must be made in order to supply specified materials.
- D. Contractor shall be responsible for all transportation related expenses for rejected or unapproved plant material.

1.5 DELIVERY, STORAGE AND HANDLING

- E. Deliver packaged materials in containers showing weight, analysis and name of manufacturer.
- F. Protect materials from deterioration during delivery and while stored at the site. Store materials in area covered with protective sheeting.

- G. If balled plants cannot be planted within 24 hours after delivery to site, protect root balls by heeling in with sawdust or other approved material.
- H. If container trees cannot be planted within 24 hours after delivery to site trees should be adequately staked until time of planting.
- I. All unplanted plants should be stored under shade cloth and should be kept watered.
- J. No plants should be stored on hot concrete or asphalt.
- K. All plants should be clearly marked with plant tags/ labels. Do not remove any plant tags/ labels until directed to by Architect.

1.6 PROJECT CONDITIONS

A. Site Inspection:

- 1. It is the bidding contractors' responsibility to review all site conditions, as they relate to the proposed project, prior to submission of a bid. Any issues or concerns will be submitted to the Architect prior to bidding. Submission of a bid will indicate that the bidding contractor has made a site inspection.

B. Utilities:

- 1. Determine locations of underground utilities and perform work in a manner, which will avoid possible damage. Do not permit heavy equipment such as trucks to damage utilities. Hand excavate, as required to minimize possibility of damage to underground utilities. Maintain grade stakes until removal is directed.
- 2. Coordinate with irrigation work to prevent damage to temporary risers of underground sprinkling system and obstruction of work located in landscape areas.

C. Protections:

- 1. Do not move equipment over existing or newly placed structures without the Architect's approval.
- 2. Provide board roading as required to protect paving and soft soil.
- 3. Protect other improvements from damage, with protection boards, ramps and protective sheeting as required.
- 4. Locate and stake irrigation heads, valve risers and equipment prior to beginning soil preparation work.
- 5. During work and maintenance period, maintain topsoil and prepared soil in place at established grades. Replace topsoil, prepared soil and mulch due to erosion.

1.7 SUBSTANTIAL COMPLETION & PROJECT CLOSEOUT

- A. A Certificate of Substantial Completion will be issued when the Work performed under the Contract has been reviewed and found, to the Architect's best knowledge, information and belief, to be substantially complete. Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended use. The date of Substantial Completion of the Project or portion thereof is also the date of commencement of applicable guarantees as specified.
- B. A list of items to be completed or corrected will be attached to the Certificate of Substantial Completion. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.
- C. The Contractor will complete or correct the Work on the list of items within a specific number of days as shown on the Certificate of Substantial Completion.
- D. Upon completion and re-inspection of all corrected items listed, the Architect will recommend to the Owner that the work of this Section is ready for final acceptance.

1.8 QUALITY ASSURANCE

- A. General: Comply with applicable Federal, state, county and local regulations governing landscape materials and work.
- B. Installer Qualifications: The bidding company will specialize in landscape installation with 5 years documented experience. The contractor will staff the project with a competent superintendent and the necessary assistants as approved by the Architect. The superintendent will not be changed except with the consent of the Architect and Owner. The superintendent must have a minimum 5 years' experience with similar projects.
- C. Personnel: Employ only experience personnel who are familiar with the required work. Provide adequate supervision by a qualified foreman.

1.9 WARANTEE

- A. Warrantee plants trees and turf for (1) year after date of Final Acceptance. Replace dead materials and materials not in vigorous, thriving condition as soon as weather permits and on notification by

the Architect. Replace plants, including trees, which have partially died thereby damaging shape, size or symmetry.

- B. Replace plants and trees with same sizes as originally planted, at no cost to the Owner. The Owner may consider alternate plant species for replacement plants. At direction of the Architect, trees may be replaced at start of next year's planting or digging season. In such cases, remove dead trees immediately. Protect irrigation system and other piping, conduit or other work during replacement. Repair damage immediately.

1.10 PROGRESS MEETINGS

- A. Contractor shall attend all progress meetings as requested by the Architect/Owner during installation.

1.11 QUANTITY VERIFICATION

- A. The bidding contractor is responsible for the inclusion of all materials, labor, and equipment as outlined in the plans and specification. The plant list is provided to the bidding contractor as a convenience and the quantities are approximate.
- B. VERIFICATION OF ALL QUANTITIES IS THE SOLE RESPONSIBILITY OF THE BIDDING CONTRACTOR. Any discrepancies must be reported to the Landscape Architect prior to submittal of bid.
- C. The Contractor is required to install the specified type and quantity of composted organic material purchased from the specified supplier. Soil Building Systems will e-mail the Architect, as orders are being placed, for verification that the specified material, quantity and supplier are being used.

PART 2 -PRODUCTS

2.1 PLANTS

- A. Trees shall conform to "Florida Fancy" as defined in Grades and Standards for Nursery Stock and are subject to the Architect's approval. Listed plant heights are from tops of plant balls to the nominal tops of plants.
- B. Roots: Plants shall have fully formed healthy root systems that fill the specified containers. Plants that have been recently "potted up" to larger containers will be rejected. Trees that have spiraling roots systems will be rejected.
- C. Shrubs and Groundcovers: Nursery grown, healthy, vigorous, bushy, well branched, of normal habit of growth for species, free from disease, insects, eggs and larvae. Specified sizes shall be before pruning, and plants shall be measured with their branches in normal position. The Architect prior to installation will approve all plants.
- D. Ornamental and Shade Trees: Healthy, vigorous, full branches, well shaped, trunk diameter and height requirements as specified. Balls shall be firm, neat, slightly tapered and well burlaped. Trees with loose or broken balls at time of planting shall be rejected. The Architect prior to installation will approve each tree. Balls shall be 10 inches in diameter for each 1 inch of caliper. All balled and burlaped trees and shrubs will be dug and stored for a minimum of 60 days prior to planting on this project. All trees shall have excess soil removed from the top of the root ball so the root flare is exposed.
- E. Trees that have spiraling roots systems will be rejected.
- F. Trees with no visible root flare will be rejected.
- G. Caliper: Trees 4 inches and less are measured 6 inches above top of root ball. Trees over 4 inches are measured 12 inches above top of root ball.
- H. Trees connected to stakes at the nursery are not acceptable and will be rejected.

2.2 SOIL PREPARATION MATERIALS

- A. Sandy Loam: Fertile, dark sandy loam free of rubble, stones, lumps, plant roots and reasonably free of weeds. Loam containing nut grass shall be rejected.
- B. Commercial Fertilizer: Complete fertilizer, uniform in composition, dry and free flowing. Deliver to site in original unopened containers, each bearing manufacturer's guaranteed statement of analysis. Lesco 14-14-14 landscape and ornamental fertilizer with micronutrients.
- C. Composted Organic Material: `Ph Balanced' Compost with a ph of 5.5 to 6.5 and shall be free of treated or used lumber, pine bark or mushroom compost waste. 97% Of the material shall pass through a ½" screen and 100% shall pass through a .75 inch screen.

2.3 MISCELLANEOUS MATERIALS

- A. Crushed Rock: Washed .75 inch to 1.5 inches in diameter.
- B. Tree Staking: Refer to Drawings

- C. Mulch: Super Fine Hardwood Mulch
 - 1. 100% organic materials
 - 2. Ph: 6.5-8.5
 - 3. Particle Size:
 - a. 99% + will pass through a 3/4" screen
 - b. 80% + will pass through a 3/8" screen
 - c. All material does not exceed 1.5" in length
 - d. Free of man-made foreign matter, treated lumber, pallets, trash, grass and/or leaves.
 - 4. Supplier: Soil Building Systems; www.soilbuildingsystems.com; (972) 831.8181
- D. Compost: pH Balanced Compost
 - 1. Ph: 5.5-7
 - 2. Particle Size:
 - a. 97% + will pass through a 1/2" screen
 - b. 99% + will pass through a 3/4" screen
 - c. All material does not exceed 1" in length
 - d. Free of man-made foreign matter, treated lumber, pallets, pine bark, raw manure or mushroom compost waste.
 - 3. Supplier: Soil Building Systems; www.soilbuildingsystems.com; (972) 831.8181
- E. Filter Fabric: Mirafi 140N by Celanese Fibers Marketing Co. or equal.
- F. Fertilizer Tablets: BioPlex Planting Tablets, 15 gram, 12-8-8. BioPlex @ 1-800-441-3573
- G. Steel Edging: As shown in the drawings
- H. 4 inch PVC pipe and cap CUA 55 200.
- I. Water: Provided by Owner.
- J. Technical Concentrate and Plant Enhancer: BioPlex @ 1-800-441-3573
- K. Pre-Emergent Herbicide: Barracade or Pre-M.

PART 3- EXECUTIONS

3.1 EXAMINATION AND PREPARATION

- A. Examine sub-grade and other related construction for defects that adversely affect Work.
- B. Do not proceed until unsatisfactory conditions have been corrected.
- C. Plant trees and shrubs during normal seasons for such work in the project location and only when weather conditions are suitable.
- D. Plant trees and shrubs after final grades are established and prior to planting of lawns.
- E. Additional soil amendments may be required per soil test results.

3.2 BED PREPARATION – (ON GRADE) when Existing Topsoil is present

- A. When grassy or broadleaf weeds are present, spray with Roundup, a non-selective systemic herbicide, for 100% control. When Nut Sedge is present, spray with Manage, a selective post emergent herbicide, for 100% control. Application of post emergent herbicides is to be performed by a licensed applicator.
- B. Layout and stake beds for Architect's approval prior to installation of steel edging and planting.
- C. Excavate existing soil from beds as needed to allow for installation of the specified organic compost and mulch. Excavated materials must be removed from the site unless approved by the Architect and Owner.
- D. Remove debris, building materials, rubbish, weeds, and stones larger than 3/4" inch in diameter.
- E. Use Rock Pick or other machinery to gather surface stones larger than 3/4" inch in diameter.
- F. Provide 4 inches of pH-balanced compost in shrub and groundcover beds.
- G. Till in pH-balanced compost to a depth of 8 inches.
- H. Add commercial fertilizer at 7 pounds per 1,000 square feet of bed area and apply prior to application of mulch.
 - 1. The fertilizer type and rate specified herein is applicable unless countermanded by the soil fertility test corrective recommendations, in which case they will be applicable.
- I. Grade beds to allow for free flow of surface water to the bed edge and away from buildings. Beds will be mounded 2 inches to 3 inches and tapered at the edges to meet existing grade.

3.3 SHRUB AND GROUND COVER SPACING

- A. Place plants in position on bed areas before containers have been removed. Obtain approval from Architect. Do not remove burlap from shrubs.

- B. Plant where located, setting plants with tops of balls even with tops of beds, and compact soil carefully around each plant ball.
- C. Remove binding materials (such as twine, nylon cord, and wire) from plant trunk.
- D. Water each plant thoroughly with hoses to eliminate air pockets.
- E. Carefully prune plants to remove dead or broken branches and hand-rake bed areas to smooth, uneven surfaces.
- F. Architect reserves the right to interchange or shift locations of plants prior to final acceptance.

3.4 PLANTING (on-grade where Existing Topsoil is present)

- A. Ornamental Trees and Large Shrubs:
 - 1. Plant trees and shrubs in pits 2 times greater in diameter than root ball. Top 1/3 of backfill will be 20% compost mixed with 80% native soil. Bottom 2/3 of backfill will be 100% native soil. Carefully settle by watering to prevent air pockets.
 - 2. Add fertilizer tablets at the rate of four (4) per 1-inch caliper for trees and four (4) per 24 inches of height for large shrubs. Follow label directions for placement of tablets.
 - 3. Carefully prune trees to remove dead and broken branches.
 - 4. Place root ball in the center of the hole. Do not handle tree by the trunk to place in hole. Scarify and roughen sides of hole where glazed by mechanical excavation.
 - 5. Make sure the root flare is 2 inches higher than the adjacent soil elevation. The top of the terminal roots at the outer edge of the root ball should be even with or slightly higher than the adjacent soil elevation. Set root ball on undisturbed soil.
- B. Shade Trees:
 - 1. Plant trees in pits 2 times greater in diameter than root ball. Top 1/3 of backfill will be 20% compost mixed with 80% native soil. Bottom 2/3 of backfill will be 100% native soil. Carefully settle by watering to prevent air pockets.
 - 2. Add four (4) fertilizer tablets per caliper inch. Follow label directions for placement of tablets.
 - 3. Carefully prune trees to remove dead and broken branches.
 - 4. Place root ball in the center of the hole. Do not handle tree by the trunk to place in hole. Scarify and roughen sides hole where glazed by mechanical excavation.
 - 5. Make sure the root flare is 2 inches higher than the adjacent soil elevation. The top of the terminal roots at the outer edge of the root ball should be even with or slightly higher than the adjacent soil elevation. Set root ball on undisturbed soil.
- C. Shrubs Outside Of Beds:
 - 1. Plant shrubs in pits as sized below. Backfill mix will be 50% existing soil and 50% compost. The Landscape Architect and Owner will remove excess excavated material from the site as required. Set root ball on undisturbed soil.

<u>Container Size</u>	<u>Pit Size</u>
1 Gallon	10" Diameter x 8" Depth
2 Gallon	14" Diameter x 10" Depth
3 Gallon	16" Diameter x 12" Depth
5 Gallon	20" Diameter x 14" Depth
7 Gallon	24" Diameter x 16" Depth

- 2. Add fertilizer tablets at the rate of four (4) tablets per 24 inches of plant height. Place tablets Follow label directions for placement of tablets.
- 3. Carefully prune plants to remove dead and broken branches.

3.5 PLANTING (on-structure where Imported Soils are present)

- A. Shade Trees, Ornamental Trees and Large Shrubs:
 - 1. Do not handle tree by the trunk to place in hole.
 - 2. Make sure the root flare is 2 inches higher than the adjacent soil elevation. The top of the terminal roots at the outer edge of the root ball should be even with or slightly higher than the adjacent soil elevation.
 - 3. Carefully prune trees to remove dead and broken branches.

3.6 SUMMER DIGGING & TRANSPLANTING

- A. To minimize transplant shock, plant decline, defoliation or loss to all balled and burlaped plants.

1. Apply Technical Concentrate and Plant Enhancer to plants 24 to 96 hours prior to digging or transplanting.
2. Apply with both a foliar and root drench at identical dilutions of 1.0 fl. oz. (low stress conditions) to 3.0 fl. oz. (high stress conditions) per inch of trunk diameter or each 24 inches of plant height. Mix into 5 to 10 gallons of water for each 1 inch of trunk diameter and 24 inches of plant height.
3. Re-apply in 15 to 30 days or sooner if extreme environmental stress requires Re-apply at either a rate of 1 to 3 fl. oz. per inch of trunk diameter or 5 to 7 fl. oz. per 5 to 10 gallons of water.

3.7 TREES SUMPS

- A. Tree sumps may be required. Perform percolation test for each tree pit by filling the entire pit with water. If the water does not fully drain within 24hours DO NOT PLANT TREES and notify architect. If the water does not fully drain install gravel sump, filter fabric and stand pipe.

3.8 STAKING TREES

- A. Stake trees immediately after planting as shown on planting details.
- B. It will be the Landscape Contractor's responsibility to maintain trees in a plumb position through the warranty period whether they are staked or not.
- C. The landscape contractor will remove and dispose of tree staking materials at the end of the one-year period.

3.9 MULCHING

- A. After planting has been completed and approved by Architect, cover all bare soil around plants. The depth shall vary depending on the plants being mulched. Large plants will receive a 3-inch depth and plants in 4-inch pots and smaller will receive a 1-inch depth. At no time will mulch come in contact with the stems of plants

3.10 STEEL EDGING

- A. Install steel edging. Anchor with steel stakes, 16 inches in length minimum, spaced not more than 30 inches on center and driven at least 1 inch below top of edging. The top of edging will be 1 inch above the adjacent elevation.

3.11 CLEANUP

- A. During work, keep premises neat and orderly including organization of storage areas. Trash, including debris resulting from removing weeds or rocks from planting areas, preparing beds, or planting plants, shall be removed from site daily as work progresses.
- B. Keep sidewalks, streets and courtyard areas clean by sweeping or hosing.

3.12 MAINTENANCE

- A. The Owner will provide water. Provide necessary hoses and other watering equipment required to complete work.
- B. Until Final Acceptance, maintain plantings and trees by watering, cultivating, weeding, spraying, cleaning and replacing as necessary to keep the landscape in a vigorous, healthy condition and rake bed areas as required.
- C. Follow landscape maintenance procedures outlined in Planting Maintenance – Section 329510.

3.13 PLANT SCHEDULE

- A. Refer to schedule on drawings.

END OF SECTION