

SECTION 02950  
TREES, PLANTS, AND GROUND COVER

PART 1 GENERAL

1.1 SECTION INCLUDES:

- A. Preparation of subsoil and topsoil.
- B. Topsoil bedding.
- C. New and Relocation of trees, plants, and ground cover.
- D. Mulch and fertilizer.
- E. Maintenance.
- F. Tree Pruning.

1.2 SCOPE

- A. The work shall consist of all labor, supplies, equipment and materials necessary to complete the planting of all trees, palms, shrubs and ground covers in the locations shown on the drawings, and all other work associated with and incidental to the landscape planting work as shown on the drawings and specified under this section.
- B. All plant materials and references in this section are not necessarily required on this project; only that indicated or required by drawings and specifications, apply.
- C. All plant material shall be of the specific size and quality as indicated on the drawings. Install, maintain and water in strict accordance with good horticultural practices.
- D. The Contractor is responsible for the complete removal of all existing plant material necessary to implement the construction plans.
- E. Unless otherwise noted, the Contractor is responsible for the replacement of any existing lawn or other landscape area, damaged during the construction process to original or better condition.
- F. The Contractor is responsible for the contract growing of all plant materials indicated on the plans that the Contractor cannot guarantee to be available at the time of the project installation.
- G. The Contractor is responsible for the complete removal of all non-native vegetation from the site.
- H. Contractor submitting a proposal for this contract is responsible to inspect the site to acquaint themselves with the site conditions, including but not limited to existing and proposed utilities in area of work.

1.3 REFERENCES

- A. ANSI Z60.1 - Nursery Stock.
- B. NAA (National Arborist Association) - Pruning Standards for Shade Trees.
- C. State of Florida Standards - Nursery Stock.

1.4 DEFINITIONS

- A. Weeds: Include Crab Grass, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedges, Bindweed, Goose Grass, Crowfoot Grass, Torpedo Grass, Spurges, Spreading Dayflower, Guinea Grass, Bull Paspalum, Sandbur, Love Grass, Finger Grass, Paricum Grasses, Foxtail, Smut Grass, Amaranth, Chickweeds, Ragwood, Spanish Needles, Thistle, Horseweed,

Dogfennel, Cudweed, Hawksbeard, Dollarweed, Pepperweed, Beggarweeds, Sida, Oxalis, Pusley, Penneywort, Matchweed, and Punctureweed.

- B. Plants: Living trees, plants, and ground cover specified in this Section, and described in ANSI Z60.1.

### 1.5 SUBMITTALS

- A. Section 01700 - Contract Closeout: Procedures for submittals.
- B. Maintenance Data: Include cutting and trimming method; types, application frequency, and recommended coverage of fertilizer.
- C. Fertilizer
- D. Planting soil. Requests for substitutions from the specified product shall be accompanied by documentation from a qualified agricultural testing laboratory that indicates that the proposed planting soil meets the requirements of the specifications.
- E. Herbicides
- F. Water storing polymer
- G. Mulch
- H. Staking and guying materials.

### 1.6 QUALITY ASSURANCE

- A. Nursery Qualifications: Company specializing in growing and cultivating the plants with three years documented experience.
- B. Installer Qualifications: Company specializing in installing and planting the plants with five years documented experience.
- C. Tree Pruner Qualifications: Company specializing in pruning trees with proof of Arborist Certification.
- D. Tree Pruning: NAA - Pruning Standards for Shade Trees.
- E. Maintenance Services: Performed by installer.

### 1.7 CONTRACTOR SUPERVISION

- A. The Contractor shall provide a competent superintendent and any necessary assistants on the project when work is in progress.
- B. Do not change the superintendent during the project without the consent of the Architect unless the superintendent leaves the Contractor's employment.
- C. The superintendent shall represent the Contractor and in the Contractor's absence all directions given to him by the Architect shall be binding as if given to the Contractor.
- D. The Contractor's superintendent shall supervise the Contractor's employees on the job site and be responsible for their actions and conduct on the job site.

### 1.8 PROTECTION OF WORK AND PROPERTY

- A. The Contractor shall continuously maintain adequate protection of all his work from damage and shall protect the Owner's property from injury or loss arising in connection with his work.
- B. The Contractor is responsible for contacting the necessary entities to determine the locations of all underground utilities on the site.
- C. The Contractor shall take care to avoid damage to any existing buildings, equipment, piping, pipe coverings, electrical systems, sewers, sidewalks, landscaping, grounds, aboveground or

underground installations or structures of any kind, and shall be responsible for any damage that occurs as a result of his work.

- D. Contractor shall adequately protect his work and all adjacent property as provided and required by law.
- E. Utilities noted on the plans are anticipated locations only. The utilities shown may not include all underground utilities on the site, and the locations indicated may not be as installed.

#### 1.9 REGULATORY REQUIREMENTS

- A. Comply with regulatory agencies for fertilizer and herbicide composition.
- B. Plant Materials: Certified by State Department of Agriculture.

#### 1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01600.
- B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.
- C. Protect and maintain plant life until planted.
- D. Deliver plant life materials immediately prior to placement. Keep plants moist.

#### 1.11 ENVIRONMENTAL REQUIREMENTS

- A. Do not install plant life when ambient temperatures may drop below 35° F.
- B. Do not install plants when wind velocity exceeds 30 mph.

#### 1.12 COORDINATION

- A. Coordinate work under provisions of Section 01040.
- B. Install plant life after and coordinate with installation of underground irrigation system piping and watering heads.

#### 1.13 WARRANTY

- A. Provide one-year warranty under provisions of Section 01700.
- B. Warranty: Include coverage for one continuous growing season; replace dead or unhealthy plants.
- C. Replacements: Plants of same size and species as specified, planted in the next growing season, with a new warranty commencing on date of replacement.

#### 1.14 REQUIRED INSPECTIONS

- A. During the planting process, the Contractor shall request the following inspections. Work shall pass required inspections prior to beginning subsequent phases of the planting process.
- B. An inspection shall be requested to review:
  - 1. The quality grade of the trees, root system, and any damage to trunks or limbs caused during the installation process. Damage to trees will downgrade the materials in accordance with "Grades and Standards – Revised".
  - 2. The finished grade of the tree installation.
  - 3. Remove binding, bagging, and burlap materials on top of the tree ball in accordance with these specifications.

- C. Contractor shall request inspection and receive approval prior to any sodding or mulching work occurs. All of the above items will be reviewed at a single inspection.
- D. Installation of the pre and post emergence herbicides shall be verified prior to beginning the mulching operation.

## PART 2 PRODUCTS

### 2.1 NOMENCLATURE

- A. All plant material shall conform to the names given in Hortus Third, published by the Macmillian Publishing Co., Inc., copyright 1976. Names of varieties not included therein shall conform to names accepted in the trade.

### 2.2 GRADE STANDARDS:

- A. All plant material shall be nursery grown, except where specified as collected material, and shall comply with all required inspections, grading standards and plant regulations as set forth by the latest editions of the Florida Department of Agriculture's "Grades and Standards for Nursery Plants, 2nd Edition: February 1998.
- B. All plant material shall have a growth habit that is normal for that species and shall be sound, healthy, vigorous and free from insects, plant diseases and injuries.
- C. Unless otherwise specified, all plant material shall be Florida No. 1 or better until the expiration of the required maintenance period.
- D. Plant material showing signs of die-back or leaf-drop after planting will not be accepted.
- E. Plant material shall not have chlorosis in any foliage.

### 2.3 INSPECTION AND TRANSPORTING

- A. Movement of nursery stock shall comply with all Federal and State regulations.

### 2.4 MULCH

- A. Mulch shall be free of weeds, seeds, and any other organic or inorganic material other than as specified.

### 2.5 PLANTING SOIL

- A. All plant material, unless otherwise specified shall be planted with planting soil consisting of approximately 50% sand and 50% muck by volume.
- B. Planting soil shall be as manufactured by Atlas Peat and Soil, Inc. - Mix 5050 or other equivalent manufactured soil mixture.
- C. If a substitute is proposed, the Contractor shall provide sufficient analytical information from a qualified testing laboratory so that the 50/50 ratio of muck to sand can be ascertained.
- D. A water-storing polymer shall be uniformly mixed within the planting soil at the rates recommended by the polymer manufacturer.

### 2.6 PLANT REQUIREMENTS

- A. Balled and Burlapped Plants: The root ball shall be properly protected and kept moist until planted. Whenever possible, the plant shall be handled only by the earth ball and not by the

plant itself. The diameter of the ball must be sufficient to encompass all of the fibrous and feeding root system necessary for the development of the plant.

- B. Container-Grown Plants: Plants that have become "pot bound" will not be acceptable. A container cutter shall be used unless the root ball system slips easily and unbroken from the container. Plants shall not be removed from the can until immediately before planting. Containerized trees with circling roots shall not be accepted.
- C. Collected Plants: Plant material that has not been taken from active nursery operations shall be dug with a root ball spread at least 1/3 greater than nursery grown plants and shall not be planted before inspection and acceptance at the site.
- D. Palms: All palm species except Sabal palmetto shall have roots adequately wrapped before transporting. All Sabal palms shall be slicks. Sabal palms shall have a hurricane cut. Sabal palms shall be installed on site at the earliest opportunity in the construction process. Palm trees showing signs of dieback or dead fronds will not be accepted. Sabal palms will not be accepted with burn marks. Any damaged palm tree will be rejected. All Sabal palms shall be from sandy soils. All Sabal palms shall be Florida Fancy. The balls of all Sabal palms shall be sufficiently large to support the head of the palm. The Contractor shall treat all palms as required to prevent infestation by the palmetto weevil.

## 2.7 FERTILIZER

- A. All fertilizer shall be a 18-4-12 mix with the approximate following formulation:
 

1. Total nitrogen	18.00%
2. Ammonia cal nitrogen	2.75%
3. Water soluble organic nitrogen	11.25%
4. Water insoluble nitrogen	4.00%
5. Available phosphoric acid	4.00%
6. Water soluble potash	12.00%
7. Chlorine - not more than	2.00%
8. Total water soluble magnesium	1.32%
9. Manganese	0.07%
10. Copper	0.03%
11. Zinc	0.07%
12. Iron	1.58%
- B. Fertilizer shall be delivered in unopened bags, each carrying the name of the manufacturer and the chemical makeup of the contents, conforming to all applicable governmental regulations, and in dry condition.

## 2.8 HERBICIDES:

- A. Post-emergence herbicide: The post-emergence herbicide shall be a foliar applied herbicide which will control a broad range of annual and perennial grass and broad leafed weeds plus applicable woody brush and tree species. Herbicide shall kill the entire weeds species, including the below the ground root or rhizome system. The herbicide shall have no residual soil activity. All herbicide is to be applied according to the manufacturer's recommendations.
- B. Preemergence Herbicide: The preemergence herbicide shall be a selective preemergence herbicide used for the control of annual grasses and broad-leafed weeds in turf and ornamentals. Herbicide shall control weeds by killing the young weed seedlings as they come into contact with the herbicide during germination. The herbicide shall be in granular form.

## 2.9 WATER STORING POLYMER

- A. The polymer shall be a super absorbent sodium based polymer with chemically identical particle sizes of .5 mm to 2.8 mm. The polymer shall be non-toxic. The polymer shall be incorporated into all planting soil at the rate recommended by the polymer manufacturer.

## 2.10 WATER

- A. All water is to be supplied and applied by the Contractor. All watering shall be by water truck until such time as the irrigation system is in operation.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that prepared subsoil and planters are ready to receive work.
- B. Verify that required underground utilities are available, in proper location, and ready for use.

### 3.2 EXISTING VEGETATION REMOVAL

- A. The Contractor shall remove all existing vegetation necessary to implement the project construction plans.

### 3.3 REMOVAL OF ALL NON-NATIVE VEGETATION

- A. The Contractor shall remove all non-native vegetation from the project site. Non-native vegetation shall include, but not be limited to:
  1. Melaleuca
  2. Australian pine
  3. Brazilian Pepper
  4. Schefflera
  5. Acacia
  6. Downy rose myrtle
  7. Love vine
  8. Carrotwood

### 3.4 GRADING OF PLANTING AREAS

- A. Unless otherwise specified, all planting areas bordered by pavement, sidewalk or curb shall have a finished grade (not including mulch) 3" below the grade established by the adjacent pavement, sidewalk or curb.

### 3.5 EXCAVATION OF PLANT HOLES

- A. Tree Holes: Tree holes shall be roughly cylindrical in shape with the sides approximately vertical. All holes shall be deep enough to allow for a 6" layer of planting soil under the ball. Center the plants in the holes. Holes to accommodate tree ball sizes less than 24" in diameter shall be at least 18" in diameter greater than the diameter of the ball. Holes to accommodate balls 2' and larger in diameter must be at least 2' in diameter greater than the diameter of the ball. Holes to accommodate balls 5' and larger must be at least 36" in diameter greater than the diameter of the ball.

- B. Shrub Holes: Shrub holes shall be roughly cylindrical in shape with the sides approximately vertical. All holes shall be deep enough to allow for a 2" layer of planting soil under the ball. Center the plants in the holes. Holes to accommodate shrub balls shall be 8" greater in diameter than the size of the ball of the plant supplied.
- C. Removal of Subsoil: Dispose of excess subsoil removed from planting excavations.
- D. The Contractor shall be responsible for the complete removal of all shell rock or other road bases that encroach more than 12" into the planting areas. Remove or roto-till all compacted soils as required to provide for good soil percolation. Fill all voids resulting from such excavations with clean, well draining planting soil.
- E. Locate plant holes to maintain a clear line of site, after planting, between 3' and 7' above finished grade. Locate plant holes so the separation between the hole centerline and the nearest building or structure is at least equal to the mature height of the plant.

### 3.6 SETTING OF PLANTS

- A. Plants shall rest on the prepared hole bottom and final grade around the plant shall conform to the surrounding grade. Plants shall be set straight and plumb. Cover the balls of B&B or WB&B plants that cannot be planted immediately with moist soil, mulch or other protection to prevent drying. Water all plants as necessary before and after planting.
- B. The Contractor should note that there are not individual irrigation bubblers on most of the trees on this project. The Contractor will be responsible for providing hand watering to properly establish all trees and palms, and to maintain them in a healthy condition until the water provided by the irrigation system is sufficient for that purpose.
- C. Cut and remove all metal, wire, rope, nylon, twine or other materials (excluding burlap) from the tops of all root balls. Do not place mulch before an approved inspection verifying the removal of unwanted materials from the top of the root balls, and the installation of the trees at the proper grade.

### 3.7 BACKFILLING

- A. Use all backfill in planting comprised of the specified planting soil combined with the water-storing polymer. Firmly tamp and settle the backfill by watering to within 1/3 of the top of the planting hole and thoroughly puddle with water to eliminate all air pockets before bringing backfill up to the finished grade. There shall be a 6" high water basin, no smaller or larger than the plant hole, constructed around each plant for watering purposes. Hedge and mass shrub planting should have the dike encompassing the entire grouping of plants. The soil used to make the dike shall consist of planting soil. Remove the dike prior to beginning the mulching or sodding operation.

### 3.8 INSTALLATION OF GROUND COVERS

- A. Sub-grade all areas receiving ground covers to accept a 2" thick layer of clean, weed free, 100% organic pulverized muck. Roto-till or hand spade the muck into the existing soil to a depth of 4". Plant the ground cover as specified on the drawings.

### 3.9 FERTILIZING: Fertilize all plant materials at the following rates:

- A. Trees: Four (4) ounces of the specified fertilizer per tree.
- B. Shrubs: Three (3) gallon containers or larger: One ounce of the specified fertilizer per plant.

- C. One gallon sized plants or ground covers: 10 pounds of the specified fertilizer per 1,000 square feet
- D. Do not apply fertilizer until plants have been installed and watered for a minimum of three days.
- E. Do not apply fertilizer within 4" of the trunk of any plant material.
- F. Water all plant materials immediately following fertilization.
- G. All fertilizer shall be applied prior to beginning the mulching operation.

### 3.10 STAKING AND GUYING

- A. The Contractor shall stake all trees and palms. The Contractor is responsible for the replacement or adjustment of all trees, palms or shrubs that fall or lean during the guarantee period, regardless of the reason for the plant material's displacement. The Contractor is responsible for any damage caused by the falling or leaning of trees. Perform all tree staking in a neat and workmanlike manner.
- B. Securely anchor trees as per the tree installation detail on the drawings. Stakes shall be spaced evenly around the trunk of the trees. May use recommendations in Grades and Standards for Nursery Plants, current edition. Do not use wire guys to stabilize any plants, trees or shrubs, under any conditions. Use polyethylene rope, natural rope, or custom manufactured non-metallic guying and strapping materials.
- C. Stake Palms as specified in Grades and Standards for Nursery Plants current edition. Do not use spikes or nails in any Grade of Palm.

### 3.11 PRUNING

- A. All broken or damaged roots shall be cut off smoothly. The tops of all new or relocated trees shall be pruned in a manner complying with standard horticultural practices. All pruning will be accomplished as directed by the Owner or his designated representative. The Contractor shall be responsible for the initial pruning of all tree and shrubs as directed by the Owner or his designated representative. A certified Arborist shall make all pruning of limbs in excess of 2" in diameter.

### 3.12 HERBICIDE TREATMENT

- A. Prior to beginning the mulching operation, the Contractor shall apply post-emergence herbicide to all weeds that have appeared within the bed lines. The Contractor shall wait the period of time recommended by the manufacturer before beginning the clearing operation. Treat all planting and mulch beds with preemergence herbicide prior to beginning the mulching operation. All herbicides are to be applied in accordance with the manufacturer's recommendations. The Contractor shall be responsible for the removal of all weeds appearing on the site prior to the final acceptance of the work.

### 3.13 MULCHING

- A. Within one week after plant installation, apply melaleuca mulch material in a minimum 2" thick layer over all tree, shrub and ground cover planting areas, unless otherwise specified. All mulch layers shall be of the specified thickness at the time of the final acceptance of the work.
- B. Place a layer of melaleuca mulch at least 2" in depth in a circle around all trees located in lawn areas. The diameter of the circle shall be 18" in diameter larger than the ball of the plant provided. Pull the mulch away so that it is not in direct contact with the trunk of the tree



### 3.14 DISPOSAL OF SURPLUS MATERIALS AND SITE CLEANUP

- A. Surplus excavated materials from plant holes shall be properly disposed of off the site. All debris and other objectionable material created through planting operations and landscape construction shall be removed completely from the site.
- B. All preservation areas shall be cleared of trash and debris. The Contractor shall be responsible for the removal of trash and debris that was existing at the start of construction, as well as materials that have been deposited during the construction process.
- C. All rocks and other debris shall be removed from all planting and lawn areas.

### 3.15 CONDITIONS OF PLANTING

- A. Plant material shall be maintained by watering, removing dead branches, resetting plants to proper grade or upright position and any other operation necessary to assure good maintenance and compliance with the drawings and specifications. The Contractor shall keep all guy wires tight and all tree staking properly adjusted. All plants shall remain healthy, vigorous and undamaged throughout the establishment period.

### 3.16 ESTABLISHMENT PERIOD

- A. The Contractor will be responsible for the proper maintenance, survival and condition of all plantings from the time of installation until the final acceptance of the landscape and irrigation work by the Owner and the Architect. Final acceptance will not be granted prior to "substantial completion" of the entire project. Necessary replacement of plants during the guarantee period shall be the responsibility of the Contractor. All plantings shall be alive and in good growing condition at the time of final acceptance. The rating of each plant according to Florida Grades and Standards shall be equal to or better than that called for on the drawings and specified in this section at the time of final acceptance.

### 3.17 COMPLETION AND ACCEPTANCE

- A. Completion of the work shall mean full compliance and conformity with the provisions expressed or implied in the drawings and in the specifications, and acceptance of the work by the Owner and the Architect. Upon satisfactory completion of the work, the Architect will perform an inspection of the work to determine if the planting work is ready for acceptance.

### 3.18 GUARANTEE AND REPLACEMENT

- A. All plant material shall be guaranteed for a minimum of one year after "Substantial Completion" of project or final acceptance of the landscape and irrigation work by the Owner and the Architect, whichever is later. The guaranteeing of plant material shall be construed to mean complete replacement with plant material of the same species, size, quality and grade as that of the original material. The Contractor at his expense shall replace plant material not in healthy growing condition, or with questionable survival ability at the end of the guarantee period. During the guarantee period it shall be the Contractor's responsibility to immediately replace any dead material.

### 3.19 MAINTENANCE PROVISIONS

- A. The Contractor is responsible for complete maintenance of all landscaping until "Substantial Completion" of the project or final acceptance of the landscape and irrigation work by the Owner and the Architect, whichever is later. Maintenance shall include, but not be limited to:
1. Watering of all plant materials as required to provide good conditions for plant health and growth.
  2. Immediate eradication of all harmful plant insects (including ants) and diseases.
  3. Removal of all weeds from the planting beds within one week after their appearance.
  4. Pruning of all shrubs and trees as directed by the Owner or his designated representative.
  5. Fertilizing of all plant materials as required to provide good conditions for plant health and growth.
  6. Removal of all weeds from clay and warning track areas.

END OF SECTION