SECTION 32 93 00 - PLANTS

PART 1 – GENERAL

RELATED DOCUMENTS

Drawings and general provisions of the contract, including general and supplementary conditions and Division – 1 Specification sections, apply to the work of this section.

DESCRIPTION OF WORK

The work embraced under this contract includes supplying and placing of all materials as listed in the specifications and on the plans in accordance with sound industry practice. All labor, equipment, tools, plant material and miscellaneous items called for herein or required for satisfactory completion of the work, shall be furnished and installed by the Landscape Contractor.

Sub-contractors shall be responsible for securing all necessary licenses and permits, and shall comply in all ways with Federal, State and Local codes.

INVESTIGATION OF SITE

All bidders shall PERSONALLY examine the site and fully acquaint themselves with all existing conditions in order that no misunderstanding may arise as to the character or as to the extent of the work to be done; and likewise, in order to advise and acquaint themselves with all precautions to be taken in order to avoid injury to persons and property.

QUALITY ASSURANCE

Source Quality Control

General: Ship landscape materials with certificates of inspection as required by governmental authorities. Comply with governing regulations applicable to landscape materials.

Grades and Standards: All plant material furnished by the Contractor unless otherwise specified shall be Florida No 1 or better in accordance with the most recent edition; ”Grades and Standards for Nursery Plants”, pars 1 and 2, published by Florida Department of Agriculture, division of Plant Industry, Gainesville, Florida. Provide healthy, vigorous stock, grown in recognized nursery standards in accordance with good horticultural practice and free of disease, insects, eggs, larvae and defects such as knots, sun-scald, injuries, abrasions or disfigurement. Specimen or accent plant material as noted on the drawings or in the plant list shall be Florida Fancy as defined by said standards.

Analysis and Standards: Package standard products with manufacturer’s certified analysis. For other materials, provide analysis by recognized laboratory mad in accordance with methods established by the Association of Official Agriculture Chemists, wherever applicable or as further specified.

Verification: The Contractor shall provide photographic evidence or video cassette of a representative example of all material specified on this project. Other specialty plant material may require individual and specific photographs as noted on the drawings.

Trees and Shrubs: Provide trees and shrubs grown in a recognized nursery in accordance with good horticultural practice. Provide healthy, vigorous stock grown under climatic conditions similar to conditions in the locality of the project and free of disease, insects, eggs, larvae and defects such as knots, sunscald, injuries, abrasions or disfigurement. B&B materials shall be grown in soils comparable to those typical of the proposed planting areas.

Sizes: Provide trees and shrubs of the sizes or specified in the landscape plan. Trees and shrubs of larger size ma be used in acceptable to the Landscape Architects, and if sizes of root balls are increased proportionately.

Source: The Contractor will provide the name, address and phone number of all nursery stock dealers or plant materials sources providing for the project. The Contractor shall submit certification or verification of source of purchase prior to delivery to the site. Approved equals will only be considered prior to bid opening and notified via addenda.

The Owner's Landscape Architect or designated individual, herein referred to as the Owner's Representative or Landscape Architects shall have full authority to approve or reject work performed by the Contractor. The Owner's Authorized Representative shall also have full authority to make field changes that are deemed necessary.

SUBMITTALS

Certification, Landscape Work

The Landscape Contactor shall keep on file copies of certificates of inspection as required by governmental authorities, and manufacturer's or vendor's certified analysis for soil amendments, fertilizer materials and all other quality control documentation required in these specifications. These files shall be submitted to the Landscape Architect for review upon request.

Planting Schedule, Landscape Work

Submit a planting schedule indicating the dates of installation anticipated for this project. Once accepted, revise dates only as approved in writing by the Landscape Architect, after documentation of reasons for delay.

Maintenance Instructions, Landscape Work

Begin maintenance of plants upon delivery to the site. All plants will be maintained b the Contactor until final acceptance or by special maintenance agreement as specified or indicated in the Contract Documents. Maintenance by the Contractor through Final Acceptance shall include all measures necessary to assure a clean appearance and survivability of the plant material.

Maintain trees, palms, shrubs and other plants by watering, pruning, cultivating and weeding as required for healthy growth. Contractor will be responsible for all landscape maintenance activities during this period including, weeding, fertilizing, mowing and watering. Contractor will be responsible for all costs associated with maintenance activities (including watering) during the maintenance period. Contractor will be responsible for the maintenance of "weed free" planting areas, beds and planters through final acceptance. All planting areas must be weed-free at the time of final acceptance. Restore planting saucers. Tighten and repair stake and guy supports and reset trees and shrubs to proper grades of vertical position as required. Spray as required to keep trees and shrubs free of insects and disease.

At no time shall required maintenance applications by the Contractor to exceed a period of fifteen (15) days, Maintenance by the Contractor shall be required through Final Acceptance.

Cleanup: The Contractor shall at all times keep the premises free from accumulation of waste material, soil, and/or rubbish caused by his employees or work. Contractor shall clean behind his work immediately and shall take necessary precautions to keep concrete, brick and other paving material clean of soil. This shall include the use of drop-cloths, etc. Damage to grades or lawns shall be repaired immediately and all debris and excess soil removed. Should the Contractor fail to keep the premises in clean satisfactory condition, the Owner reserves the right to hire appropriate personnel to perform clean-up work and back charge the Contractor for all costs incurred.

COMPLETION AND ACCEPTANCE

Completion of the work shall be in compliance and conformity with the provisions expressed or implied in the drawings and specifications, associated change orders and field orders.

The Acceptability of all materials, workmanship, labor and compliance with the specifications, grades and standards will be solely determined by the Landscape Architect.

Right to Reject: The Landscape Architect will have the right, at any stage of the work, to reject any and all work and materials which, in his opinion, does not meet the requirements of the plans and specifications. Rejected material will be immediately removed from the site and acceptable material substituted in its place.

Substantial Completion site observation will be performed by the Landscape Architect, at the request of the Contractor to observe if the Contractor has completed the work in substantial compliance with the plans and specifications. All requirements of the specifications will apply until Final Acceptance of the work by the Landscape Architect. The request by the Contractor must be made at least three working days before the anticipated substantial completion site observation.

PRODUCT DELIVERY, STORAGE AND HANDLING

Packaged Materials

Deliver packaged materials in containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during and while stored at the site.

Plant Materials

In the event of a discrepancy between the quantities and types of materials designated in the plant materials list and the landscape plans, the plans shall control.

Trees and Shrubs: Provide B&B trees and shrubs only which have been properly root-pruned and held at the nursery to ensure viability. Do not prune the tree's canopy prior to delivery. Trees with central leaders cut will no be accepted by the Landscape Architect. Do not bend, bind-tie, or handle trees or shrubs in such a manner as to damage bark, break branches o destroy natural shape. Do not drop B&B material or loosen the roots within the root ball. Provide protective covering during delivery.

Deliver trees and shrubs after preparation for planting has been completed and plant immediately. If planting is delayed more than six hours after delivery, protect from weather and mechanical damage and keep roots moist.

Do not remove container grown stock from containers until planting time.

All sod shall be placed within 24 hours after stripping. Protect sod against drying and breaking

JOB CONDITIONS

The Landscape Contractor must examine the subgrade, verify the elevations, observe the conditions under which work is to be performed and notify the Landscape Architect and Owner's Representative of unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected.

Proceed with and complete the landscape work as rapidly as portions of the site become available.

Utilities: Call SUNSHINE or otherwise determine location of underground utilities and perform work I a manner which will avoid possible damage. Hand excavated, as required, to minimize possibility of damage to underground utilities. Maintain grade stakes set by others until removal is mutually agreed upon by all parties concerned.

The Landscape Contractor shall be responsible for any repairs necessary of the damage.

Excavation: When conditions detrimental to pant growth are encountered, such as rubble fill, adverse drainage conditions, compacted soil or obstruction, notify Landscape Architect before planting.

Sequencing and Coordination: Coordinate the work of this Section with related work of other disciplines and inform the Owner's Representative of any scheduling or other discrepancies relating to work to be performed.

Prior to the starting of planting, verify that the underground sprinkler system and finish grading have been approved. Unless specified otherwise, do not commence planting until:

Site grading, soil import, and preparation has been completed and approved.

Substantial provision for irrigation has been provided to maintain plant materials.

Proceed with and complete the landscape planting work as rapidly as portions of the site become available or as otherwise directed.

Coordination with Lawns: Plant trees and shrubs after lawn work, protect lawn areas and promptly repair damage to lawns resulting form planting operations.

WARRANTY

All plant materials (trees, palms, shrubs, ground covers, etc.) landscape accessories (i.e., edging, etc.) and workmanship will be warranted for a period of not less than one year from the date of Final Acceptance of the landscape installation. Turf (sodding, seeding, sprigging) will be warranted for a period of not less than ninety (90) days, unless otherwise specified.

Landscape which was installed in accordance with the drawings and specifications and is damaged or destroyed through vandalism, theft, traffic or by phenomena considered an Act of God, will be replaced by the Contractor at the Contractor's expense through the construction period and until Final Acceptance.

After Final Acceptance by the Landscape Architect and Owner, the Owner will be responsible for the maintenance of the landscape. It will be understood that in accordance with the terms of the warranty that the Contractor must promptly inform the Owner if proper maintenance is not given to the installation. Such notice will be in writing outlining corrective measures to be taken with a copy tot the Landscape Architect.

Inspections by the Contractor of the job will be made during the warranty period to determine and assure proper maintenance. No claim shall be made by the Contractor that invalidates the warranty based on the Owner's lack of or improper maintenance of the landscape without written documentation by the Contractor to the Owner, with a cop to the Landscape Architect that identifies said maintenance concerns.

At the end of the warranty period, inspections will be made jointly by the Owner, Landscape Architect, and Contractor. All plants not in a healthy growing condition will be removed and replaced with plants of a like kind and size, except for defects resulting form neglect by Owner, abuse or damage by others, or unusual phenomena or incidents which are beyond Contractor's control.

All replacement plants will be guaranteed for an addition period of one (1) year. Replacement turf will be guaranteed for an additional period of ninety (90) days unless otherwise specified.

PART 2 – PRODUCTS

TOPSOIL

Topsoil and secondary cut soil may be stockpiled for reuse in landscape berm work. If quantity or quality of stockpiled soil material is insufficient, provide additional topsoil or clean fill as specified in the landscape plan required to complete landscape work.

Provide new topsoil or clean fill as specified in the landscape plan which is friable, reasonably free of clay lumps, brush, weeds and other litter and free of roots, stumps, stones larger than 2" in any dimension, and other soil characteristics to that found at project site.

> Obtain soil only form natural well-drained sites; do not obtain from bogs or marshes. Provide soils with a documented pH between 5.5 and 6.8, or amend soil as necessary to bring the soil pH to the specified range.

PLANTING SOIL

Planting soil is soil prepared on site or formulated commercially for backfilling either indoor or outdoor planters and pots or to be used as backfill for plant pits.

Commercially formulated bed mix or clean Florida peat, if required, is specified in the General Notes in the landscape plan.

PREPARATION OF PLANTING SOIL FOR PITS

Before mixing, clean excavated native soil from plant pits of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful or toxic to plant growth. Particular care shall be taken to remove pieces of mortar, cement, wood and other construction debris from all planting areas.

Mix organic soil amendments, if specified in the landscape plan, and fertilizers with native soil at the rate specified below. Mix thoroughly with excavated native soil before backfilling plant pit.

Fertilizer

Trees: Provide three (3) pounds Milorganite and organic oil amendments if required in the landscape plan. If organic amendments are specified, mix clean Florida peat or approved commercial bed mix thoroughly in to the backfill at the rate of 1 part peat to 2 part native soil.

Shrubs and Groundcover: Provide one quarter (1/4) pound of Milorganite and organic solid amendments per plant if specified in the landscape plan. See Trees above for type and volume of organic soil amendments if required.

Palms: Provide three (3) pounds of Milorganite; use no organic soil amendments in backfill.

Annuals and Rooted Cuttings: For beds of 25 plants or less borders 2' wide or less, use one (1) quart of clean Florida peat or approved commercial bed mix per plant mixed thoroughly with the native soil for backfill; for larger plantings, spread a 2" layer of clean Florida peat or approved commercial bed mix over the planting area and mix thoroughly into the top 4" of native soil.

Azaleas: Backfill shall be 50% clean Florida peat and 50% native soil excavated for plant pit; mix ¼ pound Milorganite into prepared backfill for each plant.

SOIL AMENDMENTS

Milorganite: Commercial natural organic fertilizer produced by the Sewage Commission, Milwaukee, Wisconsin or approved equivalent.

Florida Peat: Natural decomposed plant material mined in Florida with no substantial identifiable fibers and with pH range suitable for the intended use; clean and free of twigs and stones. Peat shall consist of 90% organic peat suitable for horticultural purposes.

Controlled-Release Fertilizer: Resin coated fertilizer, Osmocote 18-6-12 or equivalent, designed for constant, balanced release of nutrients for an 8-9 month period. Apply in backfill or as top-dressing according tot eh manufacturer's guidelines for newly planted plants.

Commercial Lawn Fertilizer: Complete fertilizer of neutral character, with a ration of 2 parts nitrogen to 1 part each of phosphorus and potassium and contain a full compliment of essential trace elements .50% or more of the nitrogen shall be obtained for natural organic sources. Apply during the growing season to lawns a the rate of 4-6 pounds of available nitrogen per 1000 square feet.

PLANT MATERIALS

Name and Variety: Provide plant materials true to name and variety established by the American Joint Committee on Horticulture Nomenclature "Standardized Plant Names".

Quality: Provide trees, shrubs and other plants complying with the recommendations and requirements of ANSI Z60.1 "Standard for Nursery Stock" and as further specified.

Trees and Palms: Provide trees and palms of height, spread and caliper listed or shown and with the configuration recommended by "Grades and Standards for Nursery Plants" Florida Department of Agricultural for type and species required. Provide single stem trees except where special forms are shown or listed.

> Container-grown trees will be acceptable in lieu of balled and burlapped trees subject to specified limitations of above quality control.

Shrubs: Provide container-gown shrubs of height and spread shown or listed and with not less than the minimum number of caned required by the above quality control for the type and height of shrub required.

> Balled and burlapped shrubs will be acceptable if specified in the landscape plan o approved by the Landscape Architect before installation.

Sod: Provide strongly rooted sod, 95% free of weeds and undesirable native grasses. Provide sod species and variety specified in the landscape plan.

Groundcover and Annuals: Provide established and well-rooted plants in removable containers with height and spread specified in the landscape plan. All plants shall be free of insect pests and diseases.

MISCELLANEOUS LANDSCAPE MATERIALS

Mulch: Provide mulch in bags not bulk unless otherwise specified. Type and Grade of mulch shall be noted on the drawings.

Anti-Desiccant: Emulsion type, film-forming agent similar to Dowax by Dow Chemical Co., or Wilt-Prof by Nursery Specialty Products, Inc., designed to permit transpiration but retard excessive less of moisture form plants Deliver in manufacturer's fully identified containers and mix in accordance with manufacturer's instructions.

Stakes and Guys: Provide stakes and deadmen of sound new hardwood, or treated softwood, at contractor's option, free of knot holes and other defects. Stake sizes shall be as specified in planting details shown in the landscape plan. Provide wire ties and guys of #14 gauge pliable, galvanized twisted wire, with zinc-coated turnbuckles. Provide new 2-ply garden hose not less than ½" hose size, cut to required lengths to protect tree trunks from damage by wires.

PART 3 – EXECUTION

PREPARATION

Before preparing areas for planting or sodding, inspect the job site and determine if the grades meet specifications. Inspect the planting and sodding areas and determine if construction activities have produced compacted and poorly drained subsoil conditions unsuitable for the plant materials specified in the landscape plan. Pay special attention to planting islands in paved areas. Look for over-runs in paving base materials and evaluate the impact on the landscape plan and unsuitability of soil modifications for healthy plant growth that these over-runs may produce. Call the Landscape Architect and the Owner's Representative, if unsuitable conditions are found.

Preparation of Planting Beds

Remove weeds, grass, stones, roots and other debris form planting area. Level high and low areas to create a smooth surface for planting.

Layout individual tree and shrub locations and areas for mass plantings, unless otherwise stipulated, plant materials shall be approximately located per the plans by scale measurements using established building, columns, curbs, screen and walls, as reference points. Stake locations and outline areas. The Landscape Architect may require an inspection of the layout before plant materials are installed. Revise the layout as directed by the Landscape Architects. Make minor adjustments as may be required due to unknown field conditions.

Preparation for Planting Lawns

Evaluate areas to be sodded to determine if the Site Contractor has provided the proper grade. Do not begin work until the proper grade has been established. Loosen subgrade of lawn areas to a minimum depth of 4" where compacted soils will to provide an acceptable growing medium for sod. Remove weeds, grasses, stones, roots and other debris. Hand rake to level high and low areas to provide a smooth solid surface. Allow for sod thickness and properly maintained grass height in areas to be sodded adjacent to all paving and curbs. Promptly plant prepared area. Elevation of finish grade shall be 2" below grade of existing pavement. Restore areas to specified condition if eroded or otherwise disturbed after fine grading and prior to laying sod.

Irrigate prior to laying sod to settle the soil and provide adequate soil moisture.

Preparation of Unchanged Grades: Where lawn area to be planted in areas that have not been altered or disturbed by excavating, grading or stripping operations, prepare soil for lawn planting as follows: Till to depth of not less than 6"; apply soil amendments and initial fertilizers as specified; remove high areas and fill in depressions; till soil to a homogenous mixture of fine texture, free of vegetation, lumps, clods, stones, roots, and other extraneous matter.

> Prior to preparation of unchanged areas, remove existing grass, vegetation and turf. Dispose of such material outside of Owner's property; do not turn over into soil being prepared for lawns.

PLANTING

Excavate plant pits with vertical sides and with bottom of excavation slightly raised at center to provide proper drainage. Loosen hard subsoil in bottom of excavation.

> For balled and burlapped (B&B) trees and shrubs, make excavations at least twice as wide as the ball diameter and equal to the ball depth, plus a 3" allowance for settling of ball on a layer of compacted backfill.
>
> For container grown stock, excavate as specified for balled and burlapped stock, adjusted to size of container width and depth.

Fill all tree pits with water to test proper drainage percolation prior to planting. Excavate pits which are found to be inadequately drained to a sufficient depth for proper drainage and backfill with coarse sand.

Planting Trees and Shrubs

Set balled and burlapped (B&B) stock on layer of compacted soil mixture, plumb and in center of pit or trench with top of ball at same elevation as adjacent finished landscape grades. Use due care so as not to damage root balls. When set, place additional backfill around base of call and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill. Remove burlap form sides and tops of balls; retain on bottoms. Set container grown stock as specified for balled and burlapped stock.

Provide additional backfill berm (4” high) around edge of excavations for trees and palms and free-standing shrubs in lawns or mulched areas to form a shallow saucer to collect water. Rake all basins around trees away form root ball before sodding or mulching.

Mulch all planted areas. Provide not less than 3” thickness of mulch and finish level with adjacent finish grades.

Prune, thin out and shape trees and shrubs in accordance with standard horticultural practice. Prune trees to retain required height and spread. Unless otherwise directed by the Architect do not cut tree leaders and remove only injured or dead branches form flowering trees, if any. Prune shrubs to retain natural character and accomplish their use in the landscape design. Required shrub sizes are the size after any necessary pruning.

Remove and replace excessively pruned or misformed stock resulting from improper pruning.

Contractor shall be responsible for supplemental hand watering of trees and shrubs irrigated by rotor irrigation heads and trees irrigated by spray heads on an as-needed basis, but not less than three (3) times weekly, until Substantial Completion. Each time plants are watered, they shall be watered completely saturating the root ball to its full depth.

Guy and stake trees immediately after planting, as indicated in the Planting Details in the Landscape Plan.

Sodding Lawns

Lay sod within 24 hours form time of stripping. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod strips tightly, do not overlap. Stagger strips to offset joints in adjacent courses. Work sifter soil into minor cracks between pieces of sod; remove excess to avoid smothering of adjacent grass.

Roll sod with a lawn roller to insure a smooth lawn surface. Water sod thoroughly with a fine spray immediately after planting.

Planting Ground Cover

Space plants as specified in drawings. Moisten ground cover areas prior to planting.

Dig holes at least 12” greater in diameter than their root ball to allow for spreading of 3” thick.

The relative position of each tree and plant is subject to approval by the Owner’s Representative and shall, if necessary to achieve project design objectives, be relocated as directed.

END OF SECTION