

Landscape Specifications

- 1) The landscape contractor shall be responsible for adhering to all requirements stated as outlined herein and on the landscape drawings.
- 2) The scope of the work for the landscape contractor for this project shall include the provision of all labor, materials and equipment required to complete all tasks associated with the landscape and irrigation installation as shown on the drawings or noted herein. The landscape contractor is responsible for coordinating with the general contractor reasonable access to power and potable water sources as required.
- 3) The landscape contractor shall be responsible for ensuring all work (including delivery, storage and disposal of their materials) is performed in compliance with applicable jurisdictional codes and UCF Standards.
- 4) The landscape contractor shall assign a qualified project manager and field supervisor to work directly with UCF Landscape and Natural Resources and supervise the work at all times through final owner acceptance. It is the contractor's responsibility to ensure that project manager has a complete current set of documents on-site at all times.
- 5) The landscape contractor for this project must be able to document a minimum of five (5) years of comparable experience in the installation of plant material for projects of similar scale, intensity and quality. General contractor must submit documentation to UCF Landscape and Natural Resources for approval prior to bid award.
- 6) The landscape contractor shall be responsible for familiarizing themselves with existing site conditions and notifying the UCF Project Manager and UCF Landscape and Natural Resources in writing of any concerns prior to commencement of work. This evaluation should include, but is not limited to, verification of surface and subsurface utilities, grades, dimensions and soil conditions.
- 7) The landscape contractor shall be responsible for familiarizing themselves with project plans and scopes of work related to associated trades to be performed by others in order to identify key coordination items including, but not limited to, site access, material storage, and scheduling and sequencing of work. The landscape contractor is responsible for coordinating all site issues with the general contractor.
- 8) The landscape contractor shall be responsible for the protection of all adjacent work, materials and equipment from damage due to their activities. The landscape contractor shall be solely responsible for any damage or injury to person or property that may occur as a result of the execution of their work.
- 9) The landscape contractor shall be responsible for maintaining the area, materials and equipment within the limits of work in a safe, neat and orderly manner. Excess materials and debris are to be removed from the work area no less than daily or as directed by the general contractor.
- 10) The landscape contractor shall be responsible for maintaining work activities within the limits of work and performing work at times, and in a manner, as prescribed by the general contractor. Delivery and installation of irrigation and landscape shall not occur on weekends or holidays.
- 11) The landscape contractor shall coordinate any excavation in the vicinity of pre-existing or newly

installed utilities with the general contractor. It is the responsibility of the landscape contractor to notify the UCF Project Manager a minimum of 48 hours prior to digging for field verification of all underground utilities and other elements. This notification shall include the contractor opening a ticket request with Sunshine 811. The contractor must coordinate with the general contractor prior to initiating operations emergency repair plans and any possible service interruption(s) on-site and off. The landscape contractor shall bear the sole responsibility of any damage to subsurface utilities caused by their work. Return of services to off-site areas (if any) must be immediate.

- 12) The landscape contractor must take precautions to protect all existing site roads, parking lots, curbs and utilities from damage. This applies not only to the area within the limits of work but also along any local access roads or roadways internal to the project.
- 13) The landscape contractor shall provide all necessary safety measures during construction operations to protect the public according to all applicable codes and recognized UCF practices.
- 14) The landscape contractor shall coordinate with general contractor to ensure that temporary erosion and sedimentation control measures (silt fence, geo fence and/or other measures) are installed prior to beginning excavation.
- 15) The landscape contractor shall be responsible for the maintenance of all plant materials and the planting areas until final acceptance by UCF Landscape and Natural Resources .
- 16) The landscape contractor is responsible for the agronomic evaluation of soil characteristics. Evaluation must include chemical analysis by a qualified agricultural soils testing laboratory. Soils sample should be taken immediately following completion of rough grading activities and should be collected at a rate of one sample for each 10,000 square feet of impacted area, or a total of six, whichever is greater. At a minimum the chemical analysis of the soil should consider the following:
 - A. Percentage of organic matter
 - B. Salinity
 - C. ph
 - D. Lime content
 - E. Mineral nutrients including concentrations of nitrogen, phosphorous, potassium, calcium, magnesium, iron, zinc, manganese, copper, sulfur and molybdenum.
 - F. Potential hazards or impediments for plant growth including salinity, sodium chloride, boron, impaired soil structure or drainage.
 - G. Sand fraction analysis as a percent passing through 1", 1-1/4" and no. 200 sieves.
 - H. Percolation rate in inches per hour. The analysis should also include specific recommendations to UCF Landscape and Natural Resources for any amendments and backfill mixes for optimal plant growth to be made to the soils prior to planting. The contractor should include the cost of this soil testing in their base bid as well as the basic backfill mixes specified herein but should include any anticipated cost for soil amendment. The contractor is to provide UCF Landscape and Natural Resources with copies of all soil testing results prior to any work commencing. Submittal documentation

must also contain a graphic site plan depicting locations and depth from which each sample was drawn.

- 17) Soil preparation is to include the following fertilizer with the understanding that soil mix design may need to be adjusted based on outcome of agronomic testing:
 - A. Trees, 100% site soil with 5 lb. triple super phosphates per cu. yd.
 - B. Shrubs, 100% site soil with Osmocote controlled release fertilizer (14-14-14) per manufacturer's recommendation or approved equal.
- 18) Should UCF Landscape and Natural Resources agree with the recommendation of the testing agency to further amend the soils the contractor's contract will be adjusted accordingly. The contractor shall be required to submit samples of amended soils to be re-tested to confirm compliance with recommendations following the same procedures as the original tests.
- 19) The landscape contractor is responsible for confirming the availability of all the specified plant materials within two (2) weeks of project award. All requests for substitution due to lack of availability must be made to UCF Landscape and Natural Resources in writing within this period. No substitution shall be permitted without prior written approval from UCF Landscape and Natural Resources. The contractor is responsible for exhausting all means possible to obtain the materials as specified prior to requesting substitution. In order to be considered by UCF Landscape and Natural Resources as viable alternates, plants must share the same general appearance/form, installation size, mature size, color, quality and growth habit. Materials must be offered at no additional costs to the owner.
- 20) The landscape contractor is responsible for confirming the quantities of each plant material required to adequately cover the area shown on the landscape plans at the prescribed spacing and notifying UCF Landscape and Natural Resources immediately of any perceived discrepancies for two (2) days prior to planting.
- 21) UCF Landscape and Natural Resources will not review any change order requests from the landscape contractor related to 'extra' work performed without prior written authorization from the UCF Project Manager and UCF Landscape and Natural Resources.
- 22) UCF Landscape and Natural Resources reserves the right to review and approve all plant materials, including sod, at their source nursery with the landscape contractor prior to delivery to the job site. It is the responsibility of the landscape contractor to coordinate and schedule all nursery trips with the landscape architect and UCF Landscape and Natural Resources a minimum of two weeks prior to the schedule date for material delivery for shipping. The landscape contractor is to provide a minimum of one week to UCF Landscape and Natural Resources for all trips. The owner also reserves the rights to have the nursery review of material or to provide approval through review of photographs or representative samples.
- 23) All plant material suppliers, including sod, for this project must be able to document a minimum of five (5) years of experience in the specialization of growing and cultivation of comparable materials as specified for this project. Contractor is responsible for providing documentation to UCF Landscape and Natural Resources for approval prior to procuring material.

- 24) In preparation for the delivery to the site the landscape contractor shall only prune branches or roots after notifying UCF Landscape and Natural Resources. Pruning should only be performed as required to assure safe loading, shipping and job site handling. In no case can any tree be topped. Prior to shipping all trees should be sprayed for insects and fungus as well as a foliar anti-desiccant.
- 25) Balled and burlap trees should be dug and prepared for shipment in a manner that will not damage roots, branches, shape and future development after planting. Trees should be root pruned 30 days prior to digging and hardened off at the nursery for a minimum of 30 days prior to shipping. In addition to rootball irrigation the nursery should provide overhead mist irrigation for the duration of this period. The product received on-site should have a firm ball with natural soils. Dried, cracked or broken rootballs will not be accepted. Rootballs should be sized at a minimum dia. ratio of 12" of rootball for each 1" of tree caliper. All field grown trees must be from a Roots Plus Growers nursery.
- 26) The landscape contractor is responsible for the preparation of soils within all planting areas inclusive of providing all imported soil materials, soil amendments, soil conditioners and fertilizers as required.
- 27) The landscape contractor is responsible for scheduling deliveries of sod so that all deliveries to site will be installed no more than 24 hours from the time it arrives on site. The amount of sod delivered to the site at any one time should not exceed the amount that can be laid under these time constraints.
- 28) The landscape contractor shall exercise care in the placement of sod. Sod should be laid with staggered rows running parallel to slope contours. In slope situations, begin sod at base of slope and work uphill, all sod should be rolled and fertilized with a granular 16-4-8 fertilizer five days after planting. Newly sodded areas shall be kept moist for the first week after planting after which a watering rate of 2" per week, including rainfall, should be sufficient.
- 29) All sod shall be rolled and seams shall be sanded after installation. There shall be no gaps greater than ½" between pieces of sod.
- 30) The landscape contractor is responsible for eradicating weeds within the limits of all planting areas prior to beginning landscape installation. Perennial weeds and grasses to be removed include, but are not limited to, nut grass, puncture vine, morning glory, dog fennel, torpedo grass, Bermuda grass, Bahia grass, kikuyu grass, crab grass, carpet grass, sedge and other noxious and/or invasive weeds. The site is to be maintained weed free throughout planting operations.
- 31) The landscape contractor is responsible for pre-tillage to scarify soils in all planting areas to a minimum depth of 4". Densely compacted areas between 85% and 90% are to be cross ripped to a minimum of 8" depth. In the process of tilling remove unacceptable materials including, but not limited to, foreign debris, construction waste, roots, concrete, asphalt and rocks greater than ½" diameter on average. In areas to receive sod till in fertilizer to a depth of 2" at a rate of 12 pounds per cubic ft.
- 32) All landscape beds including sod areas shall be leveled and raked smooth. Before any plantings

can begin the site must be inspected and approved by the UCF Landscape and Natural Resources.

- 33) The landscape contractor shall provide UCF Landscape and Natural Resources with one quart, sealed and labeled bag of soil from same location that test samples were drawn. The owner reserves the right to obtain secondary analysis to confirm test results at their expense.
- 34) The landscape contractor shall provide UCF Landscape and Natural Resources with one quart sealed and labeled bag of any imported soil material amendment or conditioner used in the preparation of the planting areas.
- 35) UCF Landscape and Natural Resources reserves the right to review and approve all plant material at the job site prior to installation to ensure that the delivered state of the materials is in compliance with the material specifications contained herein. In the advent that delivered material does not comply with the project requirements the owner reserves the right to reject such materials and require the landscape contractor to remove and replace rejected materials at no additional cost to the owner. The landscape contractor shall remove rejected plants and materials from the project area and replace with acceptable materials.
- 36) The landscape contractor shall provide the UCF Project Manager with record copies of all shipping receipts for all materials, including plants and sod, delivered to the project site. Delivery of all fertilizer and soil amendment materials must be in original, unopened containers bearing manufacturer's guaranteed chemical analysis, name, trade mark and conformance with state law.
- 37) The contractor shall store all materials in an area to be determined by the UCF Project Manager and UCF Landscape and Natural Resources. All excess stored materials must be removed prior to final acceptance from the owner.
- 38) The landscape contractor shall be responsible for painting all plant beds and staking all larger plant materials in the field in accordance with the landscape plans for approval by UCF Landscape and Natural Resources prior to excavation and installation. The landscape contractor shall provide stakes or flags to indicate locations of individual trees. All shrub and groundcover materials must be laid out in their containers with the appropriate spacing for UCF Landscape and Natural Resources review and approval. The owner reserves the right to make field adjustments to plant layout as part of this review. Failure by the landscape contractor to obtain layout approval from UCF Landscape and Natural Resources prior to installation may result in the removal and reinstallation of materials by the contractor at no additional costs to the owner.
- 39) All plant material shall meet or exceed the requirements for Florida No. 1 quality in accordance with the grades and standards for nursery plants published by the State of Florida, Department of Agriculture, current edition. All plant material is to be sourced from a nursery unless specifically noted to be collected.
- 40) All plant material sizes specified are minimum sizes at time of installation. All container and tree caliper sizes are minimum. Container or caliper size may be increased if necessary to provide overall plant size specified. Material height and width specified in landscape schedule is based

on branches in their normal position. Specified caliper is to be measured at a point 12" above the ground.

- 41) All plant material must be delivered to the project site and installed in good health, free of pest, pest eggs, fungus and disease. Root systems shall be vigorous and fibrous, filling the container but shall not be root bound or exhibit spiraling roots. Verification of the health and vigor of all plant material is the sole responsibility of the landscape contractor. Rootballs shall be massaged or broken up prior to planting.
- 42) The irrigation system is designed to maintain an established landscape. The contractor shall not rely on it as the new material's sole source of water. The landscape contractor shall be responsible for providing supplemental irrigation through hand watering or other means (including temporary drip, water wands and soaker hoses) to help establish the new and salvaged material. The contractor should continue to monitor the moisture content for all trees and shrubs. Use care to avoid creating large hole water jetting.
- 43) The landscape contractor shall refer to the following references in determining compliance with best practices:
 - A. Florida Nurserymen and Grower's Association (FNGA) standards.
 - B. Florida Turf Grass Association's (FTGA) standards.
 - C. Florida Department of Agriculture, Bureau of Plant Industry, "Trades and Standards for Nursery Plants," latest edition.
 - D. "Cabling, Bracing and Guying Standards for Shade Trees" as published by the National Arborist Association (NAA).
 - E. ANSI A300 1995 Standards as established by the Tree, Shrub and Other Woody Plant Maintenance Standard Practice.
 - F. ANSI, Z60.1-American Standard for Nursery Stock.
 - G. "Standard Plant Names" as established by Hortus III.
- 44) UCF Landscape and Natural Resources reserves the right to defer any and all review responsibilities related to the landscape to the project Landscape Architect or other authorized agent.
- 45) The contractor is responsible for protecting and maintaining all plant material to remain within the limits of construction as indicated on the plans. Existing trees to remain shall be undisturbed and protected by barricades erected per UCF standards. No vehicle shall traverse this area nor shall any storage of materials or equipment be permitted within this protected area. The contractor shall bear the sole responsibility of replacement for any damage to protected materials caused by construction activity without additional costs to the owner.
- 46) The landscape contractor shall be responsible for establishing and maintaining the stability and plumb condition of all installed plant materials until receiving final acceptance from UCF

Landscape and Natural Resources. The contractor shall be responsible for replacing any plant material which is damaged due to inadequate guying or staking, at no additional cost to the owner. The contractor shall remove all staking materials at the end of the warranty period and dispose of properly offsite.

- 47) The landscape contractor shall grant the owner the following warranty for a period of one year (365 days) from the date of final acceptance for all trees, shrubs and groundcovers. The warranty period for sod shall be six months (180 days). It is understood that the warranty is to be inclusive of all labor, materials and equipment necessary for the replacement of any plant materials required. Warranty is intended to cover defects and unsatisfactory growth caused by no fault of the owner. During the warranty period the landscape contractor shall make every reasonable effort to replace any dead, dying or diseased material with a period of 15 working days.
- 48) Should the landscape contractor be required to replace any damaged, diseased, dying or dead plant material it is understood that the replacement material is to be of the same species, size and quality as that originally specified and approved by UCF Landscape and Natural Resources. Replacement with alternate materials will be permitted only with prior written approval from UCF Landscape and Natural Resources. The contractor will be responsible for the removal of all materials and leaving the impacted area clean following any remedial action.
- 49) At the end of the warranty period the owner reserves the right to have the contractor replace any declining material or request an extension of up to ninety (90) days on any specific material.
- 50) The landscape contractor shall install plant materials using the best horticultural practices:
 - A. Protect plant material from damage during delivery, staging and installation.
 - B. Do not begin installation of shrub and groundcover materials prior to completion of irrigation installation and finish grading.
 - C. Do not install plant materials in winds in excess of 30 miles per hour.
 - D. Do not install plant material if deemed site conditions will impede the ability of plant material to thrive without notifying UCF Landscape and Natural Resources of concerns prior to installation.
 - E. Perform all work in accordance with all applicable laws, codes and regulations inclusive of all permits and inspections required by federal, state and local jurisdictions.
 - F. The use of cables and chains for the lifting of trees is prohibited. Trees are to be lifted using nylon straps a minimum of 4" in width. Wrap trunks to protect from scraping and scarring.
 - G. The 'choke' strapping method for lifting trees is prohibited.
 - H. Do not drop plant material.
 - I. Limit the amount of plants to be installed per day to those that can adequately be

watered in the same day.

- J. Carefully remove containerized plants from their cans to avoid breaking the rootball. Containers should only be removed immediately prior to installation and plants should be immediately watered after placement.
 - K. Remove burlap and cut steel baskets from at least the top third of the rootball for all B&B material. Remove wire baskets to a minimum depth of 18".
 - L. Plant material must be installed at correct elevation in relation to finish grade as indicated on the planting details after settling. Plants set at incorrect elevations will need to be raised or lowered accordingly at no additional cost to the owner.
 - M. Set fertilizer tablets on top of rootball for all trees laid out for planting to allow UCF Landscape and Natural Resources to confirm correct amount.
 - N. Planting pits for trees and shrubs must be excavated to the dimensions specified on the planting details. Following planting area immediately surrounding plant is to be tamped firm and use water jet technique to remove all air pockets repeating as required.
 - O. Apply re-wetting agent to the surface of all plant pits for trees and shrubs per manufacturer's recommendations.
 - P. Apply shredded hardwood mulch in even layer to a 3" depth. Do not place mulch without the approval of UCF Landscape and Natural Resources that weed removal and fine grading requirements have been met. Mulch must be pulled off the base of all plant material.
 - Q. Continuously monitor status of installed materials and make modifications, clean-ups and replacements as required.
- 51) All proposed trees shall be installed either entirely in or entirely out of planting beds. Planting bed outlines shall not be obstructed and shall be smooth and flowing. If trees are located outside planting beds in grass areas, maintain a minimum three feet 3' wide offset to allow for mowers to maneuver.
- 52) The plant quantities shown on the landscape contract documents are for the convenience of the landscape contractor. The landscape contractor is responsible for verifying all quantities and reporting any discrepancies to the landscape architect for clarification prior to contract award and at commencement of work.
- 53) The landscape contractor shall verify the extent of grassing work in the field. The contractor shall be responsible for providing grass in the areas shown on the plan in sufficient quantity to provide full coverage. Additional grass required will be adjusted based on a square footage unit price. Areas to be grassed shall be amended per soils report to provide required nutrients and soil ph of between 6.0 and 7.0.
- 54) The landscape contractor shall be responsible for providing plants, spaced as specified on the plant list. When installing shrubs in planting beds, spacing of material shall take precedence over

quantity of materials indicated for planting areas. Notify landscape architect immediately if such situations arise. Shrub and groundcover spacing is generally indicated on the plant list for all 'mass plantings'. Accent shrubs and trees that are not part of mass plantings shall be spaced as shown on the plans.