## LANDSCAPE INSTALLATION FOR LAP (OFF-SYSTEM).

(REV 4-5-11) (FA 4-15-11)

SECTION 580
LANDSCAPE INSTALLATION FOR LAP (OFF-SYSTEM)

580-1 Description.

 Plant trees and shrubs of the species, size, and quality indicated in the plans.

 The Engineer reserves the right to adjust the number and location of any of the designated types and species to be used at any of the locations shown, in order to provide for any unanticipated effects which might become apparent after the substantial completion of other phases of the project, or for other causes.

580-2 Materials.

 **580-2.1 Plants:**

 **580-2.1.1 Authority for Nomenclature; Species, etc.:** For the designated authority in the identification of all plant material, refer to two publications of L.H. Bailey: “Hortus III” and “Manual of Cultivated Plants,” and ensure that all specimens are true to type, name, etc., as described therein. For the standard nomenclature, refer to the publication of the American Joint Committee on Horticultural Nomenclature, “Standardized Plant Names.”

 **580-2.1.2 Grade Standards and Conformity with Type and Species:** Only use nursery grown plant material except where specified as Collected Material. Use nursery grown plant material that complies with all required inspection, grading standards, and plant regulations in accordance with the latest edition of the Florida Department of Agriculture’s “Grades and Standards for Nursery Plants”.

 Except where a lesser grade might be specifically specified in the plans, ensure that the minimum grade for all trees and shrubs is Florida No. 1. Ensure that all plants are the proper size and grade at the time of delivery to the site, throughout the project construction period and during any designated plant establishment period.

 Ensure that plant materials are true to type and species and that any plant materials not specifically covered in Florida Department of Agriculture’s “Grades and Standards for Nursery Plants” conform in type and species with the standards and designations in general acceptance by Florida nurseries.

 Ensure that plant materials are shipped with tags stating the botanical and common name of the plant.

 **580-2.1.3 Inspection and Transporting:** Move nursery stock in accordance with all Federal and State regulations therefor, and accompany each shipment with the required inspection certificates for filing with the Engineer.

 **580-2.2 Water:** Water used in landscaping operations may be obtained from any approved source. Ensure that water is free of any substance which might be detrimental to plant growth. The use of effluent water is subject to approval and must meet all Federal, State and Local requirements.

580-3 Specific Requirements for the Various Plant Designations.

 **580-3.1 Balled-and-Burlapped Plants (B&B), and Wired Balled-and-Burlapped (WB & B):**

 **580-3.1.1 General:** Properly protect the root ball of these plants until planting them. The Engineer may reject any plant which shows evidence of having been mishandled.

 Set the B&B and WB&B plants then remove the top 2/3 of all wire, rope, and binding surrounding the plant. Remove the burlap from the top 4 inches of the root ball. Do not disturb the root ball in any way. Bare root material is not allowed for substitution.

 At least 90 days before digging out B & B and WB & B plants, root-prune those 1 1/2 inches or greater in diameter and certify such fact on accompanying invoices.

 **580-3.1.2 Provisions for Wiring:** For plants grown in soil of a loose texture, which does not readily adhere to the root system (and especially in the case of large plants or trees), the Engineer may require WB & B plants. For WB & B plants, before removing the plant from the excavated hole, place sound hog wire around the burlapped ball, and loop and tension it until the tightened wire netting substantially packages the burlapped ball such as to prevent disturbing of the loose soil around the roots during handling.

 **580-3.2 Container-Grown Plants (CG):** The Engineer will not accept any CG plants with roots which have become pot-bound or for which the top system is too large for the size of the container. Fully cut and open all containers in a manner that will not damage the root system. Do not remove CG plants from the container until immediately before planting to prevent damage to the root system.

 **580-3.3 Collected Plants (Trees and Shrubs) (C):** Use C plants which have a root ball according to “Florida Grades and Standards for Nursery Plants”. Do not plant any C plant before the Engineer’s inspection and acceptance at the planting site.

 **580-3.4 Collected Plants (Herbaceous) (HC):** The root mass and vegetative portions of collected herbaceous plants shall be as large as the specified container-grown equivalent. Do not plant any collected plant before inspection and acceptance by the Engineer.

 **580-3.5 Specimen Plants (Special Grade):** When Specimen (or Special Grade) plants are required, label them as such on the plant list, and tag the plant to be furnished.

 **580-3.6 Palms:** Wrap the roots of all plants of the palm species before transporting, except if they are CG plants and ensure that they have an adequate root ball structure and mass for healthy transplantation as defined in “Florida Grades and Standards for Nursery Plants”.

 The Engineer will not require burlapping if the palm is carefully dug from marl or heavy soil that adheres to the roots and retains its shape without crumbling. During transporting and after arrival, carefully protect root balls of palms from wind and exposure to the sun. Muck grown palms are not allowed. After delivery to the job site, if not planting the palm within 24 hours, cover the root ball with a moist material. Plant all palms within 48 hours of delivery to the site.

 Move sabal and coconut palms in accordance with the “Florida Grades and Standards for Nursery Plants.”

 **580-3.7 Substitution of Container-Grown (CG) Plants:** With the Engineer’s approval, the Contractor may substitute CG plants for any other root classification types, if he has met all other requirements of the Contract Documents.

580-4 Planting Requirements.

 **580-4.1 Layout:** Prior to any excavation or planting, mark all planting beds and individual locations of palms, trees, large shrubs and proposed art and architectural structures, as shown in the plans, on the ground with a common bright orange colored spray paint, or with other approved methods, within the project limits. Obtain the Engineer’s approval and make necessary utility clearance requests.

 **580-4.2 Excavation of Plant Holes:** Excavate plant holes after an area around the plant three times the size of the root ball has been tilled to a depth of the root ball. Ensure that the plant hole is made in the center of the tilled area only to the depth of the plant root ball.

 Where excess material has been excavated from the plant hole, use the excavated material to backfill to proper level.

 **580-4.3 Setting of Plants:** Center plants in the hole. Lower the plant into the hole so that it rests on a prepared hole bottom such that the roots are level with, or slightly above, the level of their previous growth and so oriented such as to present the best appearance.

 Backfill with native soil, unless otherwise specified on the plans. Firmly rod and water-in the backfill so that no air pockets remain. Apply a sufficient quantity of water immediately upon planting to thoroughly moisten all of the backfilled earth. Keep plants in a moistened condition for the duration of the planting period.

 When so directed, form a water ring 6 inches in width to make a water collecting basin with an inside diameter equal to the diameter of the excavated hole. Maintain the water ring in an acceptable condition.

 **580-4.4 Special Bed Preparation:** Where multiple or mass plantings are to be made in extended bedding areas, and the plans specify Special Bed Preparation, prepare the planting beds as follows:

 Remove all vegetation from within the area of the planting bed and excavate the surface soil to a depth of 6 inches. Backfill the excavated area with peat, sand, finish soil layer material or other material to the elevation of the original surface. Till the entire area to provide a loose, friable mixture to a depth of at least 8 inches. Level the bed only slightly above the adjacent ground level. Then mulch the entire bedding area, in accordance with 580‑8.

580-5 Staking and Guying.

 **580-5.1 General:** When specified in the plans, or as directed by the Engineer, stake plants in accordance with the following.

 Use wide plastic, rubber or other flexible strapping materials to support the tree to stakes or ground anchors that will give as the tree moves in any direction up to 30 degrees. Do not use rope or wire through a hose. Use guy chords, hose or any other thin bracing or anchorage material which has a minimum 12 inches length of high visibility flagging tape secured to guys, midway between the tree and stakes for safety.

 Stake trees larger than 1 inch diameter and smaller than 2 inches diameter with a 2 by 2 inch stake, set at least 2 feet in the ground and extending to the crown of the plant. Firmly fasten the plant to the stake with flexible strapping materials as noted above.

 **580-5.2 Trees of 2 to 3 1/2 inches [50 to 90 mm] Caliper:** Stake all trees, other than palm trees, larger than 2 inches caliper and smaller than 3 1/2 inches caliper with two 2 by 4 inch stakes, 8 feet long, set 2 feet in the ground. Place the tree midway between the stakes and hold it firmly in place by flexible strapping materials as noted above.

 **580-5.3 Large Trees:** Guy all trees, other than palm trees, larger than 3 1/2 inches caliper, from at least three points, with flexible strapping materials as noted above.

 Anchor flexible strapping to 2 by 4 by 24 inch stakes, driven into the ground such that the top of the stake is at least 3 inches below the finished ground.

 **580-5.4 Special Requirements for Palm Trees:** Brace palms which are to be staked with three 2 by 4 inch wood braces, toe-nailed to cleats which are securely banded at two points to the palm, at a point one third the height of the trunk. Pad the trunk with five layers of burlap under the cleats. Place braces approximately 120 degrees apart and secure them underground by 2 by 4 by 12 inch stake pads.

580-6 Tree Protection and Root Barriers.

 Install tree barricades when called for in the Contract Documents or by the Engineer to protect existing trees from damage during project construction. Place barricades at the drip line of the tree foliage or as far from the base of the tree trunk as possible. Barricades shall be able to withstand bumps by heavy equipment and trucks. Maintain barricades in good condition.

 When called for in the Contract Documents, install root barriers or fabrics in accordance with the details shown.

580-7 Pruning.

 Prune all broken or damaged roots and limbs in accordance with established arboriculture practices. When pruning is completed ensure that all remaining wood is alive. Do not reduce the size or quality of the plant below the minimum specified.

580-8 Mulching.

 Uniformly apply mulch material, consisting of wood chips (no Cypress Mulch is allowed), pine straw, compost, or other suitable material approved by the Engineer, to a minimum loose thickness of 3 inches over the entire area of the backfilled hole or bed within two days after the planting. Maintain the mulch continuously in place until the time of final inspection.

580-9 Disposal of Surplus Materials and Debris.

 Dispose of surplus excavated material from plant holes by scattering or otherwise as might be directed so that it is not readily visible or conspicuous to the passing motorist or pedestrian. Remove all debris and other objectionable material from the site and clean up the entire area and leave it in neat condition.

580-10 Contractor’s Responsibility for Condition of the Plantings.

 Ensure that the plants are kept watered, that the staking and guying is kept adjusted as necessary, that all planting areas and beds are kept free of weeds and undesirable plant growth and that the plants are maintained so that they are healthy, vigorous, and undamaged at the time of acceptance.

580-11 Plant Establishment Period.

 If the Contract Documents designate a Plant Establishment Period, assume responsibility for the proper maintenance, survival and condition of all landscape items during such period at no additional cost.

580-12 Method of Measurement.

 The quantities to be paid for will be the items shown in the plans, completed and accepted.

580-13 Basis of Payment.

 Prices and payments will be full compensation for all work specified in this Section.