

City of Miami Beach Landscape Installation and Specification Standards

Part I – GENERAL

1.01 SCOPE OF WORK

- A. The work to be done under this Section of the Technical Special Provisions (TSP) consists of furnishing all labor, machinery, tools, apparatus, means of transportation, supplies, equipment, materials, services and incidentals necessary to construct and complete the work as indicated on the Plans and in the TSP, as well as all other related responsibilities, including all changes and repairs incident thereto.
- B. The work shall include, but not be limited to, furnishing material, root pruning and tree/palm relocations where required, layout, protection to the public, excavation, installation, backfilling, fertilizing, mulching, staking and guying where required, watering, pruning, sodding, weeding, mowing, cleanup, maintenance and guarantee.
- C. Quantities and Locations: The City landscape inspector reserves the right to adjust the number and locations of the designated types and species to be used at any of the locations shown in order to provide for any modifications which might become desirable to the City.
- D. Investigation of Subsurface Conditions: The Contractor shall be responsible for making on-site surface and subsurface investigations and examinations as he or she chooses in order to become familiar with the character of the existing material and the construction conditions. These investigations and examinations shall be included in the bid. The Contractor shall not receive separate, additional compensation for this work.
- E. Excavation Related to Inadequate Drainage: Some or all work areas may contain existing materials such as but not limited to, peat, clay, lime rock and possibly compacted material which could interfere with adequate vertical drainage and/or proper plant survival and growth. Removal of this material, in order to have adequate vertical drainage, is part of the scope of work for the project. Therefore, subsurface investigations and examinations are necessary in order to determine the extent of removal and excavation required above and beyond the minimum requirements indicated in these TSP, under the heading of "Excavation of Plant Holes", which is in PART 3 Section 3.04 (E). Compensation for removal and excavation required above and beyond the minimum requirements indicated, including any additional planting soil needed in order to fill the larger excavated area, shall be include in the proposal. The Contractor shall not receive separate, additional compensation for this.

- F. No separate, additional compensation will be granted because of any unusual difficulties which may be encountered in the execution of any portion of the work, including traffic control and maintenance of traffic.
- G. The Plans are not complete unless accompanied by the TSP.

1.02 QUALITY ASSURANCE

A. The City Landscape Inspector shall have the right, during any phase of the work operations, to reject any and all work and materials which do not meet the requirements of the plans and TSP. Rejected work and materials shall be immediately removed from the project area and replaced with acceptable work and material within seven (7) calendar days or as approved by the City Landscape Inspector.

B. STANDARDS:

1. Authority for Nomenclature, Species, Etc.:

a. All plant material shall conform to the names given in Standardized Plant Names, 1942 Edition, prepared by the American Joint Committee on Horticultural Nomenclature and (subsequent updates). Names of varieties not included therein conform generally with names accepted in the South Florida nursery trade.

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 in the latest edition of the Florida Department of Agriculture's "Grades and Standards for Nursery Plants, Part 1 and Part 2", or with any superseding specifications that may be called for on the Plans or in the TSP and as established by the Turfgrass Producers Association of Florida, Inc. ALL PLANTS NOT LISTED IN THE GRADES AND STANDARDS FOR NURSERY PLANTS, shall conform to a Florida No. 1 as to: (1) health and vitality, (2) condition of foliage, (3) root system, (4) freedom from pest or mechanical

damage and (5) heavily branched and densely foliated according to the accepted normal shape of the species or sport.

- b. Exception to "Grades and Standards": Any section of Florida Department of Agriculture's Grades and Standards "": Any section of Florida Department of Agriculture's "Grades and Standards" which allows nails or spikes in the trunks of trees or palms shall be EXCLUDED from these TSP.
- c. All plant material shall be free of noxious weeds both above and below ground, including nut grass.
- d. All plant material shall be free of insects and disease at the time of installation.

C. Requirements for Various Plant Designations:

1. Balled and Burlapped (B&B) and Wire Balled and Burlapped (WB&B) Plants:

- a. Only burlap and other wrapping materials made of natural, biodegradable materials shall be used.
- b. These plants shall be properly protected until they are planted. The plant shall be handled only by both the trunk and rootball at the same time and not by the trunk only. Any (B&B) or (WB&B) plant which shows evidence of having been handled by a method other than the method outlined above, and resulting in damage to the plant such as a cracked or broken rootball or the roots that have been loosened within the ball, shall be rejected.
- c. For plants grown in soil of a loose texture, which does not readily adhere to the root system, especially in the case of large plant material, WB&B plants shall be used. For WB&B plants, before the plant is removed from the hole, hog wire with approximately 1 to 1½ inch openings or a Kerr's wire basket (Vermeer standard, caretree standard, caretree truncated or clegg) shall be placed around the burlapped ball and looped and tensioned until the burlapped ball is substantially packaged by the tightened wire netting, such as to prevent disturbing the loose soil around the roots during handling.

2. Container Grown Plants (CG):

- a. Any Container Grown (CG) plants which have become "pot bound" or "root bound" for which the top system is out of proportion (larger) to the size of the container, will not be acceptable.
- b. CG plants shall not be removed from the container until immediately before planting, and with all due care to prevent damage to the root system.
- c. The outer 10% of the root ball shall be shaved at the time of installation with a power saw. Four vertical sides spaced evenly around the root ball shall be made at half the depth of the radius.
- d. All tree support poles shall be removed at the time of installation, to verify adequate taper.

3. Collected Plants

- a. When collected plants are specified, the City Landscape Inspector shall be given at least two days written notice before the digging. Collected plants shall be dug with a root spread at least 10% greater than nursery grown plants of the same species and size. No collected plant shall be planted before the City Landscape Inspector's inspection and acceptance of the project.

4. Specimen Plants (Florida Fancy):

- a. When specimen or Florida Fancy plants are called for, they will be labeled as such on the Plans.

D. Inspections:

1. Inspection at the growing site does not preclude the right of rejection at the project site.
2. Inspections shall be requested in writing 48 hours in advance by the Contractor.
3. The fact that the City Landscape Inspector has not made an early inspection and discovery of faulty work or of work omitted, or of work performed which is not in

accordance with the contract requirements, shall not bar the City Landscape Inspector from subsequently rejecting such work.

4. The City Landscape Inspector's on site observations or inspections shall be only for the purpose of verifying that Plans and TSP are being implemented properly. The City Landscape Inspector's on-site observations or inspections are not for safety on or off the job site. Also, these on-site observations or inspections are not intended to take charge, direct, run or manage the implementation of the plans and TSP or take charge, organize or manage the Contractor while performing the scope of work indicated in the Plans and TSP.

1.03 DELIVERY, HANDLING AND STORAGE & SUBMITTALS

A. Delivery and Handling:

1. Movement of nursery stock shall comply with all Federal, State, and local laws, regulations, ordinances, codes, etc.
2. The Contractor shall be responsible for protecting plant material from adverse environmental conditions during all phases of delivery and storage. Further, the Contractor shall be responsible for protecting plant material from any and all damage, theft, or deterioration of health or appearance during all phases of delivery and storage.
3. Transport materials on vehicles large enough to allow plants to not be crowded and damaged. **PLANTS SHALL BE COVERED TO PREVENT WIND DAMAGE DURING TRANSIT.**

B. Submittals:

1. Written request for approval to substitute a material's plant designation (B&B, WB&B, CG, etc.), type, grade, quality, size quantity, etc. due to the not availability of the material specified shall be submitted within 14 calendar days after the preconstruction conference. Approval shall be given by the City Landscape Inspector before the material is delivered and installed on the project.
2. Any request for the approval of "or equal" shall be in writing. Request shall be submitted within 14 calendar days after the preconstruction conference. Approval shall be

given by the City Landscape Inspector before the material is delivered and installed on the project.

3. Submit prints of landscaping plans for any special conditions not covered in the details indicated. This shall be for approval by the City Landscape Inspector before they are installed on the project.
4. If requested by the Department or City Landscape Inspector, submit a written schedule of sources or suppliers of all materials for inspection and approval by the City Landscape Inspector before they are delivered and installed on the project.
5. Submit a letter from the approved sources or suppliers GUARANTEEING AND CERTIFYING that all *Cocos nucifera* "Maypan" or *Cocos nucifera* "Malayan" is true to their species.
6. Submit a sample and analysis of all planting soil types for approval by the City Landscape Inspector before the material is delivered and installed on the project.
7. Submit a sample certification and analysis of mulch for approval by the City Landscape Inspector before the material is delivered and installed on the project.
8. Submit copies of the manufacturer's specifications or analysis for all fertilizer including data substantiating the proposed materials comply with specified requirements. This shall be for approval by the City Landscape Inspector before the material is delivered and installed on the project.
9. Submit prints of shop drawings for all staking and guying methods to be used if the ones indicated in the Plans, TSP or other referenced documents are not to be implanted. The City Landscape Inspector will approve all shop drawings of staking and guying methods before they are implemented in the project.
10. Submit on an as needed basis, a schedule of spraying and dusting materials to be used to control pests and disease infestation, the reason for their use and the method to be used to apply the materials and the method of application before it is delivered and used to apply the materials and the method of application before it is delivered and used on the project. Also, if requested by the Department or City Landscape Inspector, furnish documentation that the implementation of these control measures for pests and disease infestation is in strict compliance with all federal and local regulations including the manufacturer's labeling.

1.04 SUBSTITUTIONS

- A. When the specified type, grade, quality, size, quantity, etc. of a material is not available, the Contractor shall submit a written request, to the City Landscape Inspector, or a substitution along with written, documented proof that the specified (B&B, WB&B, CG, etc.), type, grade, quality, size, quantity, etc. of a material is not available. The City Landscape Inspector shall approve all substitutions before they are delivered and installed. **Do not deliver and install any material, which is anticipated to be a substitute, before it has been submitted in writing and approved as a substitute by the City landscape inspector. If any changes to the contract amount occur due to an approved substitute, this shall be established in writing by the Department and the contractor before the material substitute is delivered and installed on the project.**

1.05 GUARANTEE

- A. The guarantee shall not begin until the day of the final acceptance of installation is given.
- B. All landscape elements and plant material shall be guaranteed for 365 days from the time of final acceptance.
- C. The guarantee shall be null and void for plant material which is damaged or dies as a result of "Acts of God" limited to hail, freeze, lightning, sustained winds that reach hurricane force (75 MPH) measured loft above the ground, and lethal yellowing, providing the plants was in healthy growing condition prior to these "Acts of God".
- D. An inspection may be made at the end of, but prior to the last day of the guarantee period.
- E. Amerigrow pine bark color brown mulch or an approved equivalent shall be utilized.

1.06 REPLACEMENT

- A. The guaranteeing of plant material shall be construed to mean the complete and immediate replacement of plant material within ten (10) calendar days if the following occurs:
1. Not in a healthy growing condition rendering it below the minimum quality indicated in the TSP.

2. There is a question of its ability to survive at the end of the guarantee period that would render it below the minimum quality indicated in the TSP.
3. It is dead.

B. The ten (10) calendar days may be extended due to seasonal conditions, availability, preparation time such as root pruning, etc., only if approved by the City Landscape Inspector in advance. The extended time shall be negotiated between all parties concerned, but must received final approval by the City Landscape Inspector.

C. Size, Quality and Grade:

1. Replacement plant material shall be of the same species, quality and grade as that of the original specifications of the plant to be replaced. The size of the replacement shall not be necessarily the same size as the original specified plant at its initial planting. If the plants of like species, size, and grade are larger than originally planted, then the replacement shall match this larger size. In no case, shall replacements be smaller than the original size.
2. Replacements shall be guaranteed for a period equal to the originally specified guarantee. This guarantee period shall begin on the day the replacement material is installed and officially accepted in writing by the City Landscape Inspector.
3. The contractor shall be responsible for watering the replacement(s) until establishment.

1.07 PLANT AND SPECIFICATION INTERPRETATION

A. On the Plans, figured dimensions shall govern over scaled dimensions. If any error or discrepancy is found in the Plans and TSP, the Contractor shall refer the same to the City Landscape Inspector for an interpretation and decision. The City Landscape Inspector shall have the right to correct apparent errors or omissions in the Plans and TSP and to make such interpretations as he or she may deem necessary for the proper fulfillment of the intent of the Plans and TSP.

1.08 UNIT PRICES

- A. Bidder shall furnish to the Department and the City Landscape Inspector, a unit price breakdown for all materials as itemized in the bid sheets. The City Landscape Inspector or the City may, at their discretion, add to or delete from the materials utilizing the unit price breakdown submitted to an accepted by the City. Unit prices shall be valid for one year from approval of contract or for the duration of the project, whichever is greater.

PART 2 – MATERIALS

2.01 PLANT MATERIAL

- A. All plant material shall be Florida No. 1, or better, at the time of installation and final acceptance.
- B. Growth Habit: All plant material shall have a growth habit that is normal for that species and shall be sound, healthy, and vigorous and free from insects, plant diseases and injuries.
- C. Measurement of Trees, Palms, Shrubs & Ground Cover:

1. Measurement of Trees, Palms, Shrubs, & Ground Cover:

- a. Rootball: Requirements for the measurement of rootball diameter and depth shall comply with requirements as set forth in the latest edition of the Florida Department of Agriculture’s “Grades and Standards for Nursery Plants, Part 1 and Part 2” and as listed herein.

CALIPER	MIN BALL DIAMETER	MIN BALL DEPTH
1 – 1.5"	16"	75% of diameter
1.5 – 1.75"	20"	65% of diameter
1.75" – 2"	22"	65% of diameter
2" – 2.5"	24"	65% of diameter
2.5" – 3.5"	26"	65% of diameter
3.5" – 4"	28"	65% of diameter
4" – 4.5"	30"	60% of diameter
4.5" – 5"	32"	60% of diameter
5" – 5.5"	34"	60% of diameter
5.5" or more	Increase in proportion	Up to 48", then decrease in proportion for larger size diameter

- b. Height: The height of plant material shall be measured from finish grade and continue up to where the main mass of

the plant uniformly ends. The height shall not include any singular or isolated parts of the plant, such as leaves, shoots, branches, limbs or fronds, which extend out beyond the main mass of the plant.

- c. Width: The width of plant material shall be measured from one side of where the main mass uniformly ends and continue to the other side of where the main mass of the plant uniformly ends. The width shall not include any singular or isolated parts of the plant, such as leaves, shoots, branches, limbs or fronds, which extend out beyond the main mass of the plant.
- d. Caliper: The caliper of tree trunks shall be measured 3' above the ground.
- e. Palms: Requirements for the measurement of clear trunk, clear wood, graywood, rootball diameter and depth shall comply with requirements as set forth in the latest edition of the Florida Department of Agriculture's "Grades and Standards for Nursery Plants, Part 2".

D. All sizes shown for plant material on the Plans are to be **CONSIDERED MINIMUMS**. All plant material must meet or exceed these minimum requirements for height, spread, etc. as indicated on the Plans. When plant sizes are specified as a range of size, installed material shall average the mean of the range specified.

E. Die-Back and Leaf-Drop: Plant material showing signs of die-back or leaf-drop will not be accepted and must be removed from the project immediately if so directed by the City Landscape Inspector. Therefore, any plant material with tendencies toward leaf-drop or die-back must be root pruned early enough to provide a sound network of hair roots prior to relocation.

F. Mechanical Destruction of Foliage: Mechanical destruction of foliage resulting from root pruning shall not affect more than 10% of the total foliage prior to planting on the project. Loss of foliage caused by seasonal change will be accepted.

G. Palms:

1. Before Transporting: See "Delivery and Handling" for requirements related to wrapping of root balls.
2. Remove a minimum of fronds from the crown of the palms to facilitate transporting and handling. Tying of palms shall be at the option of the Contractor.
3. To reduce head volume, Palm fronds may be trimmed by not more than one-third.

4. Palms with burn marks and frond boots on trunk will not be accepted. Frond boots shall be removed unless specified to remain.
 5. For sabal palms, remove all fronds to the base including the terminal frond, prior to removing from the truck carrying the palms from the field where they were collected.
 6. Palms showing cable or chain marks and equipment scars shall be rejected.
- H. Plant material shall not be accepted when the ball of earth surrounding its roots has been cracked, broken or otherwise damaged.
- I. Root pruning of plant material, when required by the Landscape Architect, shall be done a minimum of four (4) weeks or for a period as determined by the City Landscape Inspector, prior to planting at the project. Prior to root pruning, the Contractor shall give 48 hours advance written notice to the City Landscape Inspector advising of the date to root prune any plant material. This shall allow for any inspections during or after the root pruning period, as necessary.

2.02 SOD

- A. Sod shall be the species shown on the plan. The quality grade shall be STANDARD. NOTE: Quality grade shall be based on the standards of sod quality grades as established by the TURFGRASS PRODUCERS OF FLORIDA, INC. The sod shall be well matted with roots and of firm, tough texture having a compact top growth and heavy root development. The allowable weed content shall be as follows:

Standard No casually visible broadleaf weeds, no obvious patches of weeds and no more than 2% of any other grass or weed in the total canopy.

Sod sections shall be strong enough to support their own weight and retain their size and shape when suspended vertically from a firm grasp on the upper 10% of the section. Sod shall be relatively free of thatch, up to one half inch allowable (uncompressed). The soil embedded in the sod shall be a clean earth free of stones and debris.

- B. Mowing: The sod shall have been mowed at least three times with a lawn mover with final mowing not more than seven days prior to the sod being cut for placement.

- C. Cutting: Sod shall not be harvested when moisture content (excessively dry or wet) may adversely affect its survival. After approval of source, mow and rake as necessary to remove excessive top growth and debris. Cut sod with sod cutters, retaining native soil mat of sufficient thickness to withstand handling. The sod shall be provided in commercial pad sizes measuring not less than 12: by 24" and planting. It shall be machine cut at a uniform sort thickness of 1¼ inches to 1½ inches, plus or minus ¼ inch, at time of cutting. Measurement for thickness shall exclude top growth and thatch. The sod shall be live, fresh and uninjured at the time of planting.
- D. Delivery: Deliver sod on pallets with root system protected from exposure to wind and sun. Deliver sod in quantities capable of being planted within 48 hours of cutting. It shall be planted within 48 hours after being cut and shall be shaded and kept moist from the time it is cut until it is planted.
- E. Handling: Handle sod in a manner to prevent dislodging native soil mat. Tearing of sod shall be prohibited.

2.03 WATER

- A. The Contractor is responsible to ascertain the location and accessibility of a potable water source. The Contractor is responsible for distribution of water to the areas of planting. If there is no source of potable water available at the job site approved for use, then the Contractor shall be responsible for bringing in a water truck or tank for hand watering. If during the planting, water availability previously agreed to, is curtailed, the Contractor shall notify, in writing within 24 hours, the Department of the condition and, if the Contractor deems necessary, his intent to cease work until water is restored. For plants already installed prior to cut-off of water availability, the Contractor shall continue to be responsible for providing water as required by specifications.

2.04 FERTILIZER

- A. Submit copies of the manufacturer's specifications or analysis of all fertilizer for approval, and/or the labeling required by the Florida Department of Agriculture.
- B. Fertilizer with phosphorus is not allowed. Fertilizer containing phosphorus cannot be applied unless the soil is proven phosphorus deficient with a soil test
- C. Fertilizer with nitrogen should be no less than to 65% slow release/timed release/controlled release (no greater) and application

should not exceed more than four (4) pounds of nitrogen per one thousand (1,000) square feet.

D. Type of Fertilizer:

1. Palms: Lesco 13-0-13 Palm Special or equal.
2. Trees, Shrub, Groundcover & Sod: Shall be a granular fertilizer having an analysis or 6-0-6 derived from the following sources:

Total Nitrogen	6%
Derived from activated sludge Urea-form, sulphur coated urea & potassium nitrate	
Nitrate	.75
Ammoniacal	0.00%
Water soluble	5.00%
Water insoluble	0.25%
 Water Soluble Potash	 6%
Derived from Sulphate of Potash Magnesium, Potassium Nitrate, Sulphate of Potash, and activated sludge	
 Total Magnesium	 2.41%
Water Soluble	2.41%
Derived from Sulphate of Potash Magnesium	
 Total Manganese	 .77%
Derived Manganous Oxide	
 Total Boron	 .02%
Derived from Sodium Borate	
 Total Copper	 .07%
Derived from Copper Oxide	
 Total Zinc	 .08%
Derived from Zinc Oxide	
 Total Iron	 1.00%
Derived from Iron Oxide and Ferrous Sulphate	

Total Chlorine

2.00%

- C. Composition and Quality: All fertilizer shall be uniform in composition and dry. All fertilizer shall be in slow release form. Granular fertilizer shall be free flowing and delivered in unopened bags. All bags, containers or boxes shall be fully labeled with the manufacturer's analysis.
- D. All shall comply with the State of Florida fertilizer laws.

2.05 STAKING AND GUYING

- A. Staking and guying shall not be attached to the plant material with nails. Any method of staking and guying, other than those indicated in the details, shall receive approval from the City Landscape Inspector prior to their installation. Refer to the heading "Setting of Plants", which is in PART 3 of these TSP, for additional information.
- B. The Contractor is responsible for performing all staking and guying in accordance with all applicable regulation, ordinances and code requirements from the appropriate local jurisdiction the project is located in.
- C. All staking and guying for trees and palms shall be removed within ten (10) months of installation by the Contractor.

PART 3 EXECUTIONS

3.01 INSPECTION

- A. Prior to the work, carefully inspect the site conditions and verify that all such work and site conditions are suitable for this installation to properly commence.
- B. Start of work shall imply acceptance of the site conditions.
- C. Utilities (Overhead and Underground)
 - 1. The work area may have existing utilities, such as, but not limited to, irrigation, phone, water and sewer, CTV, traffic signalization, electrical and storm sewer. The locations of some of these existing utilities have been indicated on the Plans. However, no guarantee is implied that the Plans are

accurate or complete. It shall be the responsibility of the Contractor to locate all utilities, structures, etc., by hand excavation or other appropriate measures before performing any work that could result in damage or injury to persons, utilities, structures or property. The Contractor shall make a thorough search of the site for utilities, structures, etc., before work is commenced in any particular location. The Contractor is responsible for any and all claims resulting from the damage caused by him.

2. Should utilities, structures, etc., be encountered which interfere with the work, the City Landscape Inspector shall be consulted immediately in order for a decision to be made on the relocation of the work so it will clear the obstruction.
3. The Contractor shall not purposefully disrupt or disconnect any type of utility whatsoever without first obtaining the written permission of the City Landscape Inspector. Request for disconnection must be in writing and received by the City Landscape Inspector at least seventy two (72) hours prior to the time of the requested interruption.

3.02 GRADES

- A. It shall be the responsibility of the Contractor to provide the final grading so the final level for planting areas conforms to surrounding grades and is at the proper elevation with relation to walks, paving, drain structures and other site conditions, unless indicated otherwise on the Plans.
- B. Plant Areas Next to Pavement: All planting areas next to or in pavement areas, such as, but not limited to, curbs, roads drives, walks, terraces, decks and slabs shall be set so that the top of the mulch is 1" below the top of the pavement area or as indicated otherwise on the Plans, and the top of sod is one inch below top of pavement area, measured from the top of pavement to the top of grass blades after mowing.

3.03 HERBICIDE TREATMENT

- A. In all areas infected with weed and/or grass growth, a systemic herbicide, such as "Roundup", shall be applied per manufacturer's rates. When the work location has been identified the systemic herbicide shall be applied in accordance with manufacturer's labeling to kill all noxious growth. Contractor shall schedule work to allow more than one application to obtain

at least 95% kill of undesirable growth. If necessary, the Contractor shall conduct a test to establish suitability of product and applicator to be used on this project, prior to execution of the full application.

- B. Pre-emergent herbicide shall be applied utilizing Ronstar® or a City approved equivalent.

3.04 PREPARATION

- A. Staking Tree and Palm Locations: Stake or mark plant material locations prior to plant hole excavation, based on information from the Plans,
- B. Spacing of Ground Cover and Shrubs: The locations of a planting bed, walkway, structure, etc., shall have the plants along the perimeter spaced so that the plants can mature properly without growing into the other bed, walkway, structure, etc.
- C. Subsurface Conditions: Some or all work areas may be compacted and/or contain existing material such as limerock which may interfere with adequate vertical drainage and/or proper plant survival and growth and therefore removal of this material is part of the scope of work for the project. The Contractor shall be responsible for insuring adequate drainage in these areas and shall remove this existing material, as required, by such means as auguring, drilling or rototilling. This additional excavation shall be to a depth beyond the required excavation depth indicated below for the holes, in order to insure proper vertical drainage necessary for plant survival and growth. For this required additional excavation, refer to the detail on the Plans entitled "Drainage Hole Detail for All Palms and Trees".
- D. The Contractor shall remove all existing concrete, asphalt concrete and rocks over one inch diameter, above and below grade in planting pits, from areas to be landscaped unless indicated other wise on the Plans.
- E. Excavation of Plant Holes:
 - 1. General:
 - a. Excavation of plant holes shall be roughly cylindrical in shape with the sides approximately vertical. The City Landscape Inspector reserves the right to adjust the size and shape of the plant hole and the location of the plant in the hole to compensate for unanticipated structures or unanticipated factors which are a conflict.
 - b. The excess excavated material from the plan holes shall not be used to backfill around the plant material. Such material shall be disposed of off site to a location on Miami Beach as directed by the City Landscape Inspector.

2. Trees and Palms:
 - a. Depth of hole shall be equal to the rootball depth plus 8 inches, if necessary to provide adequate drainage as per 3.04 C. Otherwise install at existing soil grade.
 - b. Diameter of hole shall be as following:

<u>ROOTBALL DIAMETER</u>	<u>HOLE DIAMETER</u>
12" or less	ball dia + 12"
13" to 24"	ball dia + 18"
25" to 60"	ball dia + 24"
61" or greater	ball dia + 36"

3. Shrubs:
 - a. Singular Plants:
 - (1) Depth shall be equal to the rootball depth plus 8 inches, if necessary to provide adequate drainage per Section 3.04 C. Otherwise install at existing soil grade.
 - (2) Diameter: Diameter of hole shall be as following equal to the rootball plus 6-inches.
 - b. Mass Planting (2 or more together) Planted 24-Inches on Center or Less:
 - (1) Depth shall be equal to the rootball depth plus 8 inches.
 - c. Mass Planting (2 or more together) Planted 30-Inches on Center or More:
 - (1) Depth and diameter of hole shall be the same as for singular plants as indicated in item a, above.

4. Ground Cover Masses:
 - a. Container Material:
 - (1) Depth shall be equal to the rootball depth plus 3-inches.
 - b. Rooted Cuttings:
 - (1) Depth of prepared soil bed shall be 6-inches.

5. Sod:
 - a. Excavation, Backfilling, and Final Grading:

Areas where sod is to be planted shall have three (3) inch blanket of prepared 70-30 mix top soil placed prior to planting. Remove stones, sticks, rubbish, and other extraneous matter. All rough areas and voids shall be eliminated during final grading in order to have a

smooth and even grade.

3.05 INSTALLATION

A. Setting of Plants:

1. Plant material shall be planted at their natural and original planting level prior to their placement on this project. When lowered into the hole, the plants shall rest on the prepared hole bottom such that the surface roots at the top of the rootball are level or slightly below the level of the surrounding final grade after settlement. the practice of plunging, burying or planting any plant material such that the surface roots at the top of the rootball are below the level of the surrounding final grade, will not be permitted unless it is indicated otherwise in these trp. details or it is approved in writing by the landscape architect prior to such action being taken. The plants shall be set straight or plumb or normal to the relationship of their growth prior to transplanting. The Landscape Architect reserves the right to realign any plant material after it has been set.
2. Sabal palmetto Roystonia sp. and Cocos. Sp. If approved by the Landscape Architect, may be set deeper than the depth of their original growing condition in order to lessen the necessity for support or bracing. For such deeper planting, however, it will be required that the underlying soil be friable. The clear trunk requirements set forth in the plant list shall be maintained from the finished grade and NOT from the previous grade of the palm tree before it was planted.
3. Plant material too large for hand handling, if moved by winch or crane, must be thoroughly protected from chain, rope or cable marks, girdling, bark slippage, limb breakage and any other damage that might occur by improper handling or negligence.

B. Backfilling:

Use native soil unless soil analysis indicates a need for amended soil prepared as described in the plans. Backfill the bottom two thirds of the planting holes and firmly tamp and settle by watering as backfilling progresses. After having tamped and settled the

bottom two thirds of the hole, thoroughly puddle with water and fill remaining on third of the hole with planting soil, tamping and watering to eliminate air pockets.

C. Installation of Sod:

1. Placement of Sod: The sod shall be moist and shall be placed on a moist bed of top soil. Pitch forks shall not be

utilized for handling sod and dumping from vehicles shall not be permitted. The sod shall be carefully placed by hand, edge to edge (no gaps) in rows at right angles to the slope, commencing at the base of the area to put sod and working upward. The edges of the area that has sod shall be staggered in a corresponding manner providing the offset along the edge does not exceed 6 inches.

2. On slopes having a ratio greater than one in three, peg the installed sod into place with not less than two stakes per square yard.
3. Sanding: If needed in the opinion of the City Landscape Inspector, the Contractor shall immediately perform this function at no additional cost.

D. Application of Fertilizer:

1. Royal Palms: 10 pounds per palm
2. Medjool Date Palms: 5 pounds per palm
3. Coconut Palms: 10 pounds per palm
4. Groundcovers: 10 pounds per 1,000 square feet of bed spread evenly throughout the bed.
5. Sod: 10 pounds per 1,000 square feet of sod area.
6. Existing trees to be transplanted: At time of watering root-prune trees prior to transplanting, drench root ball once per week during the course of watering with a soluble fertilizer having a 20:20:20 analysis at manufacturer's recommended rate. One month after transplanting, add one pound of 6-6-6 fertilizer per inch of trunk caliper to trees, and one pound of LESCO 13-3-13 fertilizer per inch of trunk for palms.
7. The practice of placing fertilizer rings around trees and palms is strictly prohibited.

E. Apply fertilizer to sod one (1) week after planting. Apply fertilizer to shrub, groundcover beds, palms and trees three (3) weeks after planting.

F. Water plants and sod thoroughly two days prior to applying fertilizer, and wash fertilizer off plant leaves immediately after fertilizing.

G. Mulch: Within 24 hours after planting, planted areas must be mulched as called for in the TSP. The mulch shall be uniformly applied to a depth of approximately two-inches, or other depth as indicated otherwise, over all shrub and ground cover areas, (except wedelia and purple queen)

around trees and palms in sod areas and any other areas indicated on the Plans. Keep mulch back one inch from trunks or stems.

H. Staking and Guying:

1. As indicated per Section 2.05 A, B and C.

J. Watering After Planting:

1. Initially, water the plant material to develop uniform coverage and deep water penetration of at least six inches. Avoid erosion, puddles, and washing soil away from plant roots.
2. Provide continuous watering of plant material and sod after installation to achieve optimum growth conditions and establishment. Water shall be applied as necessary and the amount of water and frequency of watering shall be based on the specific needs of each plant type, the time of year, amount of rainfall and other environmental conditions it is exposed to. This watering shall begin after installation and continue until final acceptance or for a minimum of sixty (60) consecutive calendar days, whichever is greater in time. **All trees and palms shall be hand watered during this period.** Shrubs and ground cover may be watered using the irrigation system otherwise hand watering will be required during this period. New sod shall be hand-watered immediately after installation.
3. If there is no source for water available at the project, then the Contractor shall be responsible for hand watering by means of a truck or tank.
4. Canopy watering of existing, transplanted trees may be required at the discretion of the City Landscape Inspector, using misting heads on PVC risers to cover entire canopy. Operate by hand or utilize a timer to irrigate as required to prevent oversaturation of the rootball.

K. Pruning and Thinning:

1. Refer to the Tree Preservation and Protection Specifications Sec. 4 Tree Pruning.

L. Weeding:

1. Turf and plant beds shall be maintained free of weeds. This condition shall apply during the construction, maintenance and guarantee periods.
2. If necessary, the plant material, mulch, sand and/or planting soil shall be replaced as needed to eliminate weeds or undesirable vegetation at the expense of the Contractor.

M. Removal of Plant Material: All plant material to be removed shall be removed completely, including the root ball, from the job or as directed by the City Landscape Inspector. The remaining hole shall be filled with suitable material or planting soil as directed by the City Landscape Inspector.

N. Existing Plant Material To be Relocated:

1. Refer to the Tree Preservation and Protection Specifications Sec. 3 Tree Relocations.

3.06 CLEANUP

- A. Disposal of Waste: All waste and other objectionable material created through planting operations and landscape construction shall be removed completely on a daily basis from the job or as directed by the Landscape Architect. Any paved areas including curbs and sidewalks which have been strewn with soil, sod waste, fertilizer or other waste shall be thoroughly swept. The Department is not required to supply areas or facilities for storage or removal of waste on-site.
- B. Excess Fill: All excess fill shall be removed and disposed of from the project at no additional cost to the Department. Excess fill shall be disposed of as directed.

3.07 COMPLETION AND FINAL ACCEPTANCE OF PLANTING AND IRRIGATION (IF IRRIGATION IS PART OF CONTRACT)

- A. Upon written notice from the contractor of the presumptive completion, as defined below, of the entire project, the City Landscape Inspector, along with other appropriate parties, will make an inspection within 48 hours after the written notice. If all construction provided for and contemplated by the Plans and TSP, is found to be completed in accordance with the Plans and TSP, such inspection shall constitute the final inspection. The Contractor shall be notified in writing of final acceptance as of the date of the final inspection.
- B. If, however, the inspection mentioned in paragraph A, above discloses any work, in whole or in part, as being unsatisfactory, final acceptance shall not be given to the Contractor. The Department and/or the City Landscape Inspector will provide the Contractor with the necessary instructions or "punch lists" for correction of same, and the Contractor shall have up to 10 calendar days from the date such instructions or "punch lists" to correct the work are delivered.
- C. Upon correction of work, another inspection will be made which shall constitute the final inspection, provided the work has been satisfactorily completed. In such event, the Department or their representative shall make the final acceptance and notify the contractor in writing of this final acceptance as of the date of this final inspection. At completion of the punch list, contractor shall certify that all work above and below ground has been completed in accordance with the plans, addenda and TSP and that the City

Landscape Inspector can rely on this document as being a true and accurate statement to the best of the contractor's knowledge.

- D. Completion of the work shall mean the full and exact compliance and conformity with the provisions expressed or implied in the Plans and TSP including any and all "punch lists" which may be issued outlining certain items of work which were found unsatisfactory or require completion or corrective action.
- E. Final acceptance shall not be given until all construction provided for and indicated in the Plans and TSP is inspected by the Department and City Landscape Inspector and found to be completed in accordance with the Plans and TSP.
- F. Final acceptance shall not be official until acknowledge in writing by the Department or their representative.
- G. The guarantee shall not begin until the day final acceptance is given.

3.08 RESPONSIBILITY PRIOR TO FINAL ACCEPTANCE

A. Certain responsibilities prior to final acceptance: The following is a partial list of certain responsibilities. The lack of listing a responsibility on the following list does not relieve the Contractor of the responsibility if it is indicated elsewhere in the Plans and TSP.

- 1. The Contractor is responsible for the entire project prior to final acceptance.
- 2. The Contractor is responsible for safety on and off the job site.

B. Maintenance Prior to Final Acceptance:

- 1. Maintenance shall begin immediately after each plant is installed and shall continue until final acceptance, except for the watering indicated in the paragraph below. Watering shall begin as indicted and shall continue until completed, even if the indicated period goes beyond the time of final acceptance.
- 2. Plant maintenance shall include watering, pruning, weeding, cultivating, repair of erosion, mulching, tightening and repairing of guys, stakes, braces, etc., replacement of sick or dead plants, resetting plants to proper grades or upright position, maintenance of the watering saucer, litter removal, and all other care needed for proper growth of the plants. Mowing and edging shall be completed at least every fourteen (14) days and the irrigation system shall be checked at each mowing cycle. Contractor shall provide a written report to the Department of all deficiencies and any required repairs.
- 3. Immediately after installation, each plant shall be watered and the watering period shall continue until final acceptance or

for a minimum of 42 consecutive calendar days, whichever is greater in time. Refer to Sec. 3.05 J.

4. All plant material shall be weeded in accordance with Sec. 3.05 L.
5. Insecticides and Fungicides:
 - a. Contractor shall apply all insecticides and fungicides as needed, for complete control of pests and diseases. The materials and methods shall be in accordance with highest standard horticultural practices and as recommended by the County Agent, and approved by the City Landscape Inspector, prior to implementation.
 - b. When a chemical is being applied, the person using it shall have in their possession, a specimen label and the Material Safety Data Sheet. Also, the chemical shall be applied as indicated on the said labeling. Only products approved by the Federal Environmental Protection Agency shall be used. NO PRODUCTS CONTAINING 2-4D SHALL BE USED.
 - c. The spraying of insecticides and other such chemicals are to be confined to the individual plant. Spraying techniques which may introduce the material being sprayed beyond the immediate area of the individual plant is strictly prohibited.
 - d. The implementation of control measures for pest and disease infestations shall be in strict compliance with all federal and local regulations. Upon request the Contractor shall furnish documentation of such compliance.
 - e. All insecticides shall be applied by an operator licensed pursuant to Chapter 487 of Florida Statutes. The operator shall have the license certification in their possession when insecticides are being applied.
 - f. A written record of all pesticide and fungicide applications shall be provided to the Department.
6. Sod: After the sod has been laid and top dressed, all areas and parts of areas which fail to show uniform growth and health shall be re-sodded until all sod areas achieve adequate coverage. Damage resulting from erosion, gullies, washouts, or other causes shall be repaired by filling with topsoil and re-sodding by the Contractor at their expense.
7. Protection: Installed trees, palms shrubs and sod shall be protected against trespassing and damage unless otherwise noted. If any plants become damaged or injured they shall be treated or replaced as directed and in compliance with the TSP at no additional cost to the Department. No work shall be performed within or over planting areas or adjacent to plants without proper safeguards and protection.

8. Keep sidewalks, curbs and gutters, drainage structures, driveways, parking areas, streets, terraces, decks and pavers free of plant cuttings, debris and stains.
9. Material rejected during the course of construction shall be removed with ten (10) working days and replaced before an inspection for completion will be scheduled.
10. Failure to comply with written specifications (TSP) may result in a back charge to the Contractor for any costs incurred by the City to address any deficiencies.

- C. Survival and Conditions: The Contractor shall be responsible for the proper maintenance, survival and condition of all landscape items from the time a landscape item is installed until final acceptance.
- D. Replacement: Replacement of plant material shall be the responsibility of the Contractor. Contractor shall be responsible for any replacement required due to theft or vandalism attributed solely to Contractor negligence. All plant material shall be alive and in good growing condition for each specific kind of plant at the time of final acceptance.
- E. Rating: The rating of plant material according to Florida Grades and Standards shall be equal to or better than that called for on the plans and in this TSP at the time of final acceptance.