TREE TRANSPLANTING SPECIFICATIONS

1.01 Root pruning, Watering Before Transplanting

A. Root prune trees a minimum of eight (8) weeks prior to moving them. It is not necessary to root prune palms prior to transplanting unless specifically instructed to do so by the Landscape Architect. Prior to root pruning, thoroughly water the root zone with at least 2"-3" of water.

B. Root pruning shall be accomplished by digging a trench two-thirds (2/3) of the way around the tree at a minimum of twenty-four (24) inches deep. Root prune only with a mechanical root-pruning saw or a trencher with a maximum trench width of 8 inches. This trench shall form a rootball of the following sizes:

4"-5" caliper	3' diameter
6"-8" caliper	4'-6' diameter
9"-12" caliper	8' diameter
Over 12" caliper	10' diameter

C. All exposed roots shall be cut off smoothly, with sharp instruments. Backfill trenches with soil consisting of 30% silica sand and 70% mulch. Water them thoroughly after root pruning, and once weekly during the root regeneration period, with a soluble fertilizer that has a 20.20.20 analysis at manufacturer's recommended rate, dissolved in the water.

D. It may be necessary to re move curbing and/or paving to compete the root pruning operation. Where this is required the Contractor shall first cut cleanly with a concrete saw, any section of curb or pavement before cutting the roots.

E. This material shall be removed from the site by the Contractor and the area of pavement cut and removed by the root pruning shall be filled to flush with adjacent pavement. If required by the Landscape Architect for maintenance of traffic or pedestrian safety, the Contractor shall replace said curb or pavement.

F. Maintenance of Traffic safety requirements must be met where trees are close to travel lanes.

1.02 Top Pruning and Thinning

A. The amount of general pruning and thinning shall be limited to the minimum necessary to remove dead or injured twigs or branches and to compensate for the loss of roots as a result of transplanting operations. Approximately one third (1/3) of the mass of the canopy shall be removed unless otherwise instructed by the Landscape Architect. Pruning and thinning shall be done in such a manner as not to change the natural habit or shape of a plant. For very large trees that must be transported on public ROWs or where obstacles require it, additional pruning may be allowed at time of transport; cut back trees to the maximum size which can be transported after limbs are tied in as much as possible. The Landscape Architect shall be contacted prior to performing any major pruning or thinning. For palms, remove only fronds that are in decline or hanging lower than horizontal to the ground. Sabal palms may be "hurricane cut".

B. Bracing and Guying of Trees after Root Pruning
   a. Bracing and Guying shall be provided to assure the trees' stability during the root regeneration period; as per the applicable detail.

C. Balling and Burlappng
   a. Plant material which is in a soil of a loose texture, which does not readily adhere to the root system, especially in the case of large plants or trees, shall have the root ball wrapped in burlap and then wire, if directed by the Landscape Architect.

1.03 Transporting Plant Material

A. Movement of plants on public ROWs shall comply with all ordinances, codes and safety requirements, etc.

B. Before attaching slings to tree trunks for lifting, wrap the trunks with burlap tied tightly to avoid slippage and damage to the bark. To lift a large specimen, drill a two-inch diameter hole through the trunk and skewer it with a hardened steel pin. Attach the slings to the projecting ends. When the tree is planted, remove the pin and drive a hardwood dowel p lug into both ends of the hole, driven just below the level of the bark.

C. Transport materials on vehicles large enough to allow plants to not be crowded and damaged.

D. Protect plant material during transporting to prevent damage to the root system and desiccation of leaves. Trees shall be protected by tying in the branches and covering all exposed branches as necessary. Do not bend or bind-tie plant material in such a manner as to damage bark, break branches or alter the natural shape. Plants shall be covered to prevent wind damage during transit.

E. The Contractor shall exercise care in handling, loading, unloading, storing and transporting material to prevent damage. The Contractor shall assume full responsibility for protection and safekeeping of materials stored.

F. Transplanting must be done within 24 hours after being dug. Store plants in shade and keep the root ball and canopy moist.

1.04 Installation

A. Excavation of Holes: Plant holes shall be roughly cylindrical in shape with sides approximately vertical. The depth of the hole shall be equal to the rootball depth, unless further depth is required to provide adequate drainage. The diameter of the hole shall be a minimum of 24" larger than the rootball diameter.

B. Setting of Plants
   a. PLANT MATERIAL SHALL BE PLANTED AT THEIR NATURAL AND ORIGINAL PLANTING LEVEL PRIOR TO THEIR PLACE MENT ON THIS PROJECT OR JOB. 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 ABOVE THE LEVEL OF THE TOP OF THE HOLE. CREATE A SAUCER, APPROXIMATELY 6" DEEP TO HELP HOLD WATER. THE PRACTICE OF PLUNGING, BURYING OR PLANTING 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 SPECIFICATIONS. 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.

C. Backfilling
   a. Use planting soil consisting of 80% soil from site and 20% well-rotted compost derived from yard wastes. Remove any rocks 2" in diameter or larger before backfilling.
   b. Backfill the bottom two-thirds of the planting hole 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 one-third of the hole with planting soil, tamping and watering to eliminate air pockets.

1.05 Watering Transplanted Trees

A. Once trees have been relocated and well-watered-in during the transplanting, provide water for a minimum of 90 days or the length of time specified in the plans.

B. Rootball watering: Maintain a soil moisture in the root zone at an optimum level for growth by deep watering of the entire rootball area according to the following schedule (or extended schedule specified in plans):

When	Frequency	Amount
Week1	once daily	3 gallons water per inch caliper
Weeks 2-4	every other day	2 gallons water per inch caliper
Weeks 5-8	twice a week	1 ½ gallons water per inch caliper
Weeks 9-12	once per week	1 ½ gallons water per inch caliper

C. If there is no available water source at the project, such as a hose bib(s) or fire hydrant(s) if approved for use, then the Contractor shall be responsible for supplying water by means of a truck or tank. It is the Contractor's responsibility to pay any fees for water use.

1.06 Mulching of Plant Saucer

A. Spread a 3" thick layer for shredded Eucalyptus or Melaleuca mulch over entire area of the rootball.

1.07 Application of Fertilizer

A. At time of watering root-pruned trees prior to transplanting, drench rootball once per week during the course of watering with a soluble fertilizer that has a 20.20.20 analysis at manufacturer's recommended rate.

B. Three (3) weeks after transplanting, and after mulching, apply on the surface, evenly spread over the area of the entire rootball, FEC (Florida East Coast Fertilizer Co.) # 5231 (12-6-8) or equal at the rate of one (1) pound per inch of trunk diameter.

Fertilizer Analysis

Total Nitrogen 12.00%
Derived from activated sludge, urea-form, sulfur coated urea & potassium nitrate.

Nitrate	0.75%
Ammoniacal	0.00%
Water soluble	10.25%
Water insoluble	1.00%

Total Phosphoric Acid 6.00%
Derived from triple super phosphate

Total Water Soluble Potash 8.00%
Derived form Sulfate of Potash Magnesium, Potassium Nitrate, Sulfate of Potash, and activated sludge

Total Water Soluble Magnesium 2.41%
Derived from Sulfate of Potash Magnesium

Total Manganese 0.77%
Derived from Manganous Oxide

Total Boraon 0.02%
Derived from Sodium Borate

Total Copper 0.07%
Derived from Copper Oxide

Total Zinc 0.08%
Derived from Zinc Oxide

Total Iron 1.00%

1.08 Staking Trees

A. Stake all trees and palms at the new site with new timbers with a minimum 2" x 4" dimension as per the details enclosed, or in the case of obstacle, in another manner which will support the trees.

Stakes will remain according to the following schedule, after which stakes will be removed by the Contractor:

Trees up to 6" DBH	4 months
Trees 6"-12" DBH	6 months
Trees greater than 12" DBH	12 months, or as required by Landscape Architect

Contractor will replace damaged guys as necessary.

1.09 Clean-Up

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, fertilizer or other waste shall be thoroughly swept.

B. The Contractor shall remove and dispose of stakes and battens and untie any tied-up canopies when it is determined by the Landscape Architect that sufficient time has elapsed for the plants to root, stabilizing the plant. This shall be done even if the project has been completed and given final acceptance.

C. Backfilling of holes left after trees are transplanted shall be done immediately after tree removal, or suitable barricades shall be provided to prevent injuries. If the area is to be planted, backfill with a mix of 80% sand, 20% organic material. If the area is to be paved, consult with the Landscape Architect for proper backfill material.

1.10 Guarantee and Replacement

A. Plant material which is on the site and scheduled to be transplanted is not covered by the guarantee, except in the case of Contractor's negligence or work that has been done in an unworkmanlike manner. If it is determined by the Landscape Architect that the Contractor's negligence or unworkmanlike operations has severely damaged or poses a threat to the health of material to be transplanted or already transplanted, then the Contractor shall be required to replace the tree at a size equal to the transplanted tree, at his cost, and water it as per 1.07.

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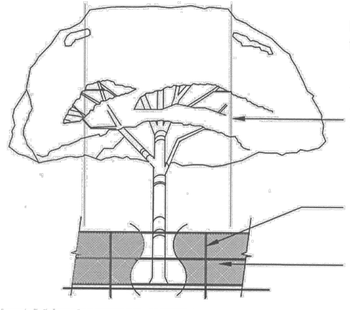
EXISTING TREE DISPOSITION LIST

KEY	BOTANICAL NAME	COMMON NAME	SIZE HT.(ft.)	SIZE SPD.(ft.)	SIZE DBH.(in.)	DISPOSITION REMAIN	DISPOSITION REMOVE	DISPOSITION TRANSPL.	MITIGATION DBH.(in.)	QUALITY
1	Bursera simaruba	Gumbo Limbo	18	20	7.5/11.4			X		good
2	Veitchia montgomeriana	Montgomery Palm	20	8	7	X				good
3	Veitchia montgomeriana	Montgomery Palm	20	8	7	X				good
4	Veitchia montgomeriana	Montgomery Palm	20	8	7	X				good
5	Veitchia montgomeriana	Montgomery Palm	20	8	7	X				good
6	Veitchia montgomeriana	Montgomery Palm	20	8	7	X				good
7	Veitchia montgomeriana	Montgomery Palm	20	8	7	X				good
8	Veitchia montgomeriana	Montgomery Palm	20	8	7	X				good
9	Veitchia montgomeriana	Montgomery Palm	20	8	7	X				good
10	Veitchia montgomeriana	Montgomery Palm	20	8	7	X				good
11	Veitchia montgomeriana	Montgomery Palm	20	8	7	X				good
12	Ptychosperma elegans	Solitaire Palm	14	6	3		X		not a tree	fair
13	Ptychosperma elegans	Solitaire Palm	18	6	3		X		not a tree	fair
14	Ptychosperma elegans	Solitaire Palm	18	6	3		X		not a tree	fair
15	Roystonea regia	Royal Palm	25	20	13	X				good
16	Veitchia montgomeriana	Montgomery Palm	20	8	7	X				good
17	Veitchia montgomeriana	Montgomery Palm	20	8	7	X				good
18	Veitchia montgomeriana	Montgomery Palm	20	8	7		X		dead	dead
19	Veitchia montgomeriana	Montgomery Palm	20	8	7	X				good
20	Veitchia montgomeriana	Montgomery Palm	20	8	7	X				good
21	Veitchia montgomeriana	Montgomery Palm	20	8	7		X		dead	dead
22	Veitchia montgomeriana	Montgomery Palm	20	8	7	X				good
23	Veitchia montgomeriana	Montgomery Palm	20	8	7		X		dead	dead
24	Veitchia montgomeriana	Montgomery Palm	20	8	7	X				good
25	Thrinax radiata	Green Thatch Palm	12	5	4.8	X				good
26	Conocarpus erectus	Green Buttonwood	25	15	6.7/2.7	X				good
27	Conocarpus erectus	Green Buttonwood	25	20	6.4/7.8/2.0	X				good
28	Bursera simaruba	Gumbo Limbo	16	16	5.2/4.5/6.8	X				good
								TOTAL DBH INCHES TO BE REMOVED	-	
								TOTAL DBH INCHES MITIGATION REQUIRED		
								TOTAL DBH INCHES MITIGATION PROVIDED		

TREE / PALM PROTECTION FENCES SHALL BE CONSTRUCTED PRIOR TO ANY CONSTRUCTION ACTIVITY INCLUDING GRUBBING FOR ALL TREES / PALMS THAT ARE 'TO REMAIN, BE PROTECTED, or BE RELOCATED'

NO ACTIVITY OR DISTURBANCE SHOULD OCCUR WITHIN THE FENCED AREAS, INCLUDING VEHICLE USE, STORAGE OF MATERIALS, DUMPING OF LIQUIDS OR MATERIALS, GRADE CHANGES, GRUBBING, AND MECHANICAL TRENCHING FOR IRRIGATION, ELECTRICAL, LIGHTING, ETC.



In no case shall the fence be installed less than ten feet from the trunk

Tree + Palm protection barriers to extend beyond the 'dripline' or to the 'critical root zone area' of all trees/palms to be protected. Extend where necessary to protect tree canopy roots

Barriers shall be a minimum of four feet high, and shall be constructed of continuous chain link fence with metal posts at eight-foot spacing, or of two-by-four-inch posts with three equally spaced two-by-four-inch rails. Posts may be shifted to avoid roots.

PROTECTION DETAIL NOTE
CONTRACTOR TO INSTALL 'TREE / PALM PROTECTION FENCE BARRIERS' AROUND ALL EXISTING TREES OR PALMS AT THE START OF THE PROJECT. BARRIERS TO REMAIN IN PLACE THROUGHOUT THE DURATION OF THE PROJECT AND SHOULD NOT BE REMOVED OR DROPPED FOR ANY REASON WITHOUT AUTHORIZATION FROM THE CITY OF MIAMI BEACH URBAN FORESTER + PLANNING + ZONING DEPARTMENT

C.M.B. TREE / PALM PROTEC. DETAIL

REGISTERED LANDSCAPE ARCHITECT
KENNETH ERIC GARDNER
LA 0001569
STATE OF FLORIDA

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies

Digitally signed by Kenneth Eric Gardner
Date: 2020.11.06 16:15:56 -05'00'

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EXISTING TREE DISP. LIST
TRANSPL. SPECS. & DETAILS
SCALE: N.T.S.

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DATE	REVISION

DWG. TITLE
PROPOSED SITE PLAN

SCALE
N.T.S.

PROJECT NO.
2020-15

DATE
11-06-20

SHEET NUMBER
L1.02