

**PROJECT CALCULATION TABLE:**

- I. **Sec. 30-439 - Minimum landscaping required for vehicular use areas.**  
 Vehicular use area, existing and proposed:  $[38,332.8 \times 10\% = 3,833.28 \text{ s.f. of landscape area} / 250 = \text{with 16 trees; 5,794.99 provided with 16 trees}]$ ; labeled as "VUA"  
 (1) At least 50 percent of the trees and 50 percent of the shrubs used to fulfill these requirements shall be native or naturalized Southern Floridian species [PROVIDED]  
 (2) In addition, for all sites, at least 50 percent of the trees and shrubs used to fulfill these requirements shall be drought-tolerant species as listed in the South Florida Water Management District's Plants for Your Florida-Friendly Landscape  
 Trees and palms. All required new individual trees shall be species having an average mature spread or crown of greater than 20 feet and having trunk(s), which can be maintained in a clean condition with over ten feet of clear wood. Trees adjacent to walkways, bike paths and rights-of-way shall be maintained in a clean condition with over ten feet of clear wood. Trees having an average mature spread or crown less than 20 feet may be substituted by grouping the same so as to create the equivalent of a 20-foot crown spread. For code-required trees, at least 50 percent of the trees shall be canopy type trees and 50 percent may be palms.  
 All other single story structures (multifamily, commercial, and institutional).  
 Canopy trees: (50 percent) Twelve to 24 feet on average height, six-foot spread, three-inch caliper, six- to seven-foot clear trunk, 65 gallon minimum. Container or ball and burlaped (B&B). [PROVIDED WITH EXISTING THAT EXCEED THIS SPECIFICATION]  
 Palms: (50 percent) Twelve feet clear trunk height minimum with 15-foot minimum mature clear trunk height. [PROVIDED WITH EXISTING THAT EXCEED THIS SPECIFICATION]  
 A grouping of three palm trees will be equivalent to one canopy tree. Exceptions will be made for Roystonea spp. (Florida Royal Palm) and Phoenix spp. (Canary Island Date Palm not including Roebelenii) which shall count one palm tree. In side and rear yard locations, palms can only be substituted for 50 percent of the canopy tree requirement.  
 Required Species Mix  
 Required Number of Trees Minimum Number of Species 2-10; 2 / 11-20; 3 / 21-30; 4 / 31+; 5 [PROVIDED WITH EXISTING TREES]  
 Screening/buffering. Where screening is required (refer to Table 2) it shall be accomplished by the use of or combination of hedges, shrubs, ground covers, berming, and decorative fences or walls in combination with shrubs, vines and ground covers covering 50 percent or more of the fence or wall. The screening/buffering shall be designed to create within 12 months a 100 percent opaque visual screen/buffer, to be maintained in perpetuity, except for visibility requirements at vehicular access points, street intersections, and pedestrian access points.  
 (1) Minimum shrub sizes for opaque hedges at time of installation. Ten-gallon container, 48-inch height, 36-inch spread minimum, with the 48-inch height measured from the top of the root ball to the extent of the upper most foliage planted four feet on center. [PROVIDED]  
 (2) Minimum shrub sizes at time of installation adjacent to right-of-way and vehicular use areas. Three-gallon container minimum planted 36 inches on center with a minimum height of 24 inches and spread consistent to the species of plant, but meeting a Florida No. 1 or better nursery grown grade. The 24-inch height is measured from the top of the root ball to the extent of the upper most foliage. [PROVIDED]
- III. **Sec. 30-440. Minimum landscaping requirements.**  
 (3.) Commercial: One canopy tree per 3,000 square feet of pervious site area excluding preserves. This is in addition to other landscaping requirements.  $[32,470 \text{ s.f.} / 3,000 = 11 \text{ TREES REQUIRED} / \text{PROVIDED}]$ ; labeled as "COM"  
 (4.) Building perimeter plantings. All commercial, institutional, and multifamily developments inclusive of accessory uses shall provide building perimeter plantings in the amount of 100 square feet per 1,000 square feet of proposed (Some improvements will damage existing landscaping) building ground level floor area, located adjacent to the building and shall consist of landscape areas, raised planters, or planter boxes that are a minimum of five feet wide.  $[4970.3 \text{ s.f.} / 497 \text{ s.f. required} = +/- 500 \text{ s.f. PROVIDED}]$ ; labeled as "BP"
- IV. **Sec. 30-441. Minimum landscape buffering and screening between uses.**  
 (g) Types of buffers. Within a required buffer area, the following alternative shall be used based on the matrix in Table 2.  
 Alternative A: Ten-foot-wide landscape buffer with trees spaced no more than 30 feet on center. [EAST: 233' / 30 = 8 TREES REQUIRED / PROVIDED; WEST 264' / 30 = 9 TREES REQUIRED / PROVIDED]; labeled as "BUFFER"  
 Alternative C: A landscape buffer shall be required adjacent to any road right-of-way external to the development project. Said landscape buffer shall be consistent with the provisions of the city master plan, which is incorporated by reference herein. The minimum width of the perimeter landscape buffer shall vary according to the ultimate width of the abutting right-of-way. Where the ultimate width of the right-of-way is zero to 99 feet, the corresponding landscape buffer shall measure at least ten feet in width. Where the ultimate width of the right-of-way is 100 or more feet, the corresponding landscape buffer shall measure at least 15 feet in width. Trees shall be provided in an amount equivalent of one tree per 30 feet of buffer length abutting the right-of-way. Trees shall be spaced so to provide for an unimpeded proper and mature growth of the trees being used. Trees with less than a 20 foot crown spread shall not be used within this buffer unless under overhead utilities or are trees above the number required of this code. A double hedge row of at least 24 inches in height at the time of planting and attaining a minimum of three feet height within one year shall be required in the landscape buffer where vehicular areas and parking spaces are adjacent to the road right-of-way. [NORTH: 279' / 30 = 10 TREES REQUIRED / PROVIDED, DOUBLE HEDGE PROVIDED WITH ADDITIONAL SHRUBS; EXISTING WITH PROPOSED 6' WALL | SOUTH: 332' / 30 = 12 TREES REQUIRED / PROVIDED, DOUBLE HEDGE PROVIDED]; labeled as "BUFFER"

SITE / LAND USE SUMMARY		
USE	ACRES	% OF SITE
IMPERVIOUS AREA		
ROOF	0.10 ACRES	5.8%
PAVEMENT/SIDEWALKS/PAVERS	0.88 ACRES	50.9%
TOTAL IMPERVIOUS AREA	0.98 ACRES	56.6%
PERVIOUS AREA		
OPEN SPACE	0.75 ACRES	43.4%
TOTAL PERVIOUS AREA	0.75 ACRES	43.4%
TOTAL SITE AREA	1.73 ACRES	100.0%

- GENERAL NOTES**
1. MULCH: Max. 3" layer (after watering in) required, Extending min. 12" ring from trunk in all directions.
  2. STAKING. Re-staked within 24 hours of a blow over / staking failure. Remove between 6 and 12 months after planting.
  3. LIGHT POLES. Contractor shall ensure placement of all trees maintain a minimum 12.5' horizontal clearance between the trunk and face of street light poles.
  4. EASEMENTS. Written permission must be obtained for any planting.
  5. LIMEROCK. Shall be excavated from planting holes / planting areas in parking lots.
  6. SIGNAGE. Coordinate final locations on-site to reduce conflicts.
  7. MAINTENANCE. Shall abide by all Codes. Removals shall be verified with pertinent Codes, Surveys, Permits, etc. prior to action.
  8. IRRIGATION. 100% coverage required, timers with automatic overrides for rain, separate zoning is required for different water use areas, and watering within guidelines established by the SFWMD and/or City.
  9. PLANTINGS. Plantings must be a minimum of 24" from the back of curb.

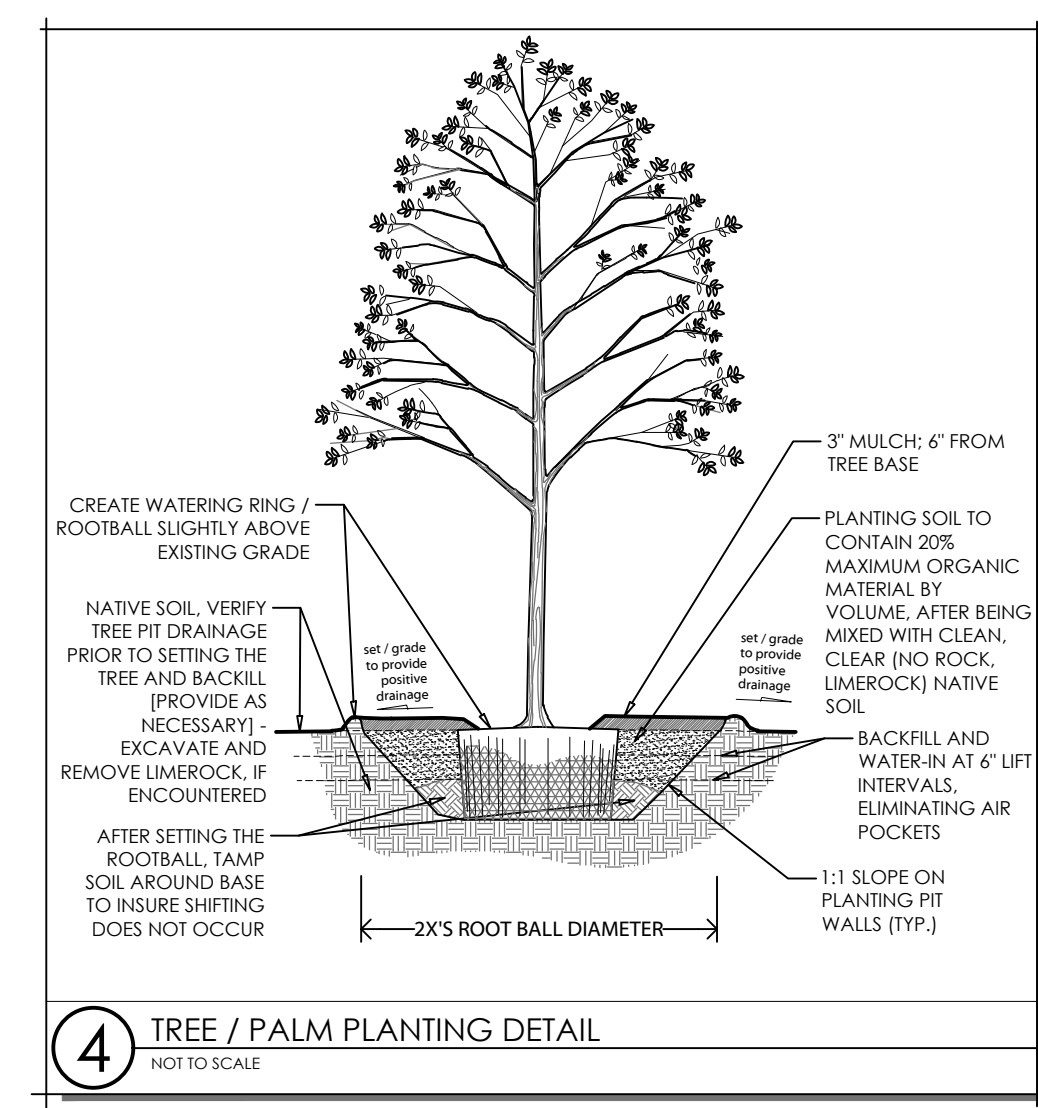
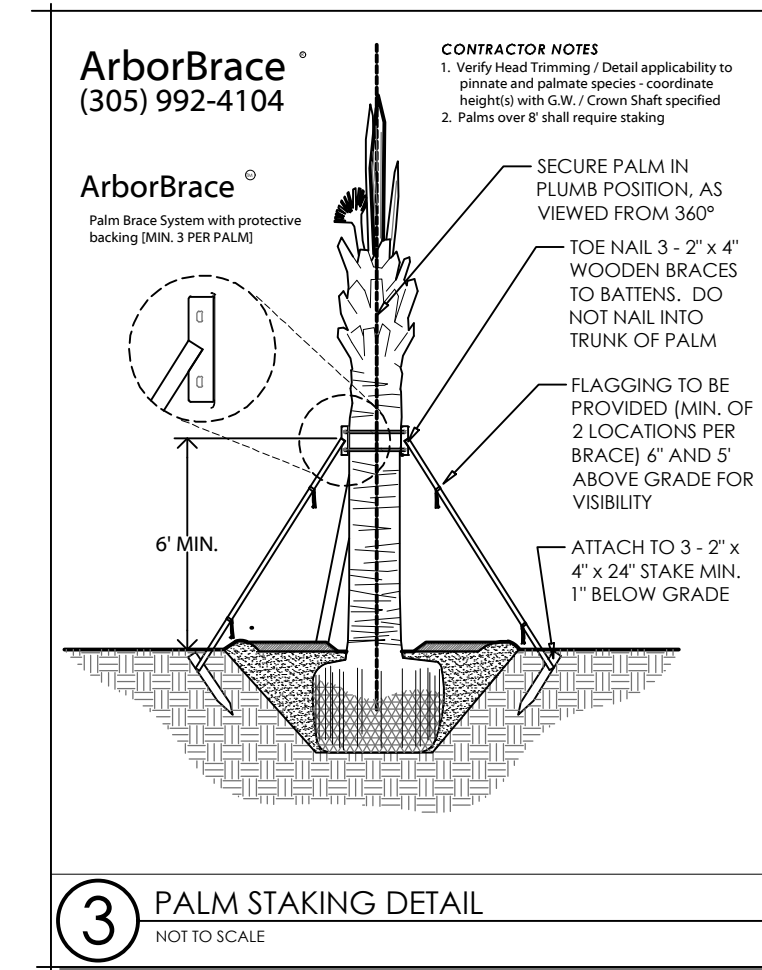
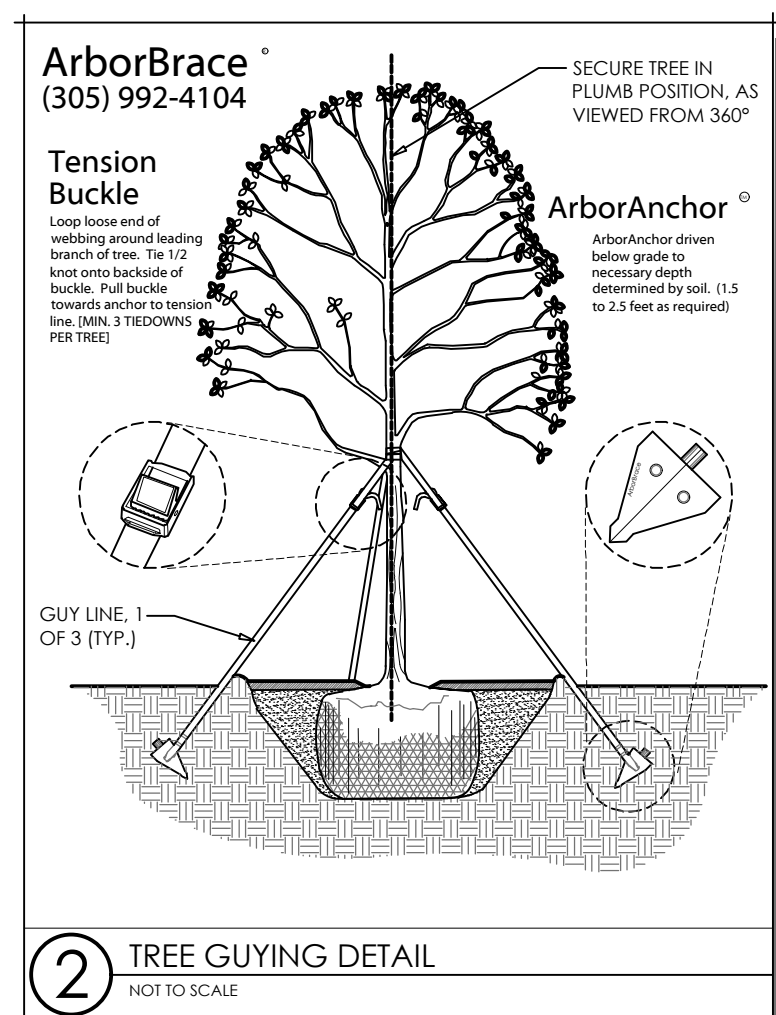
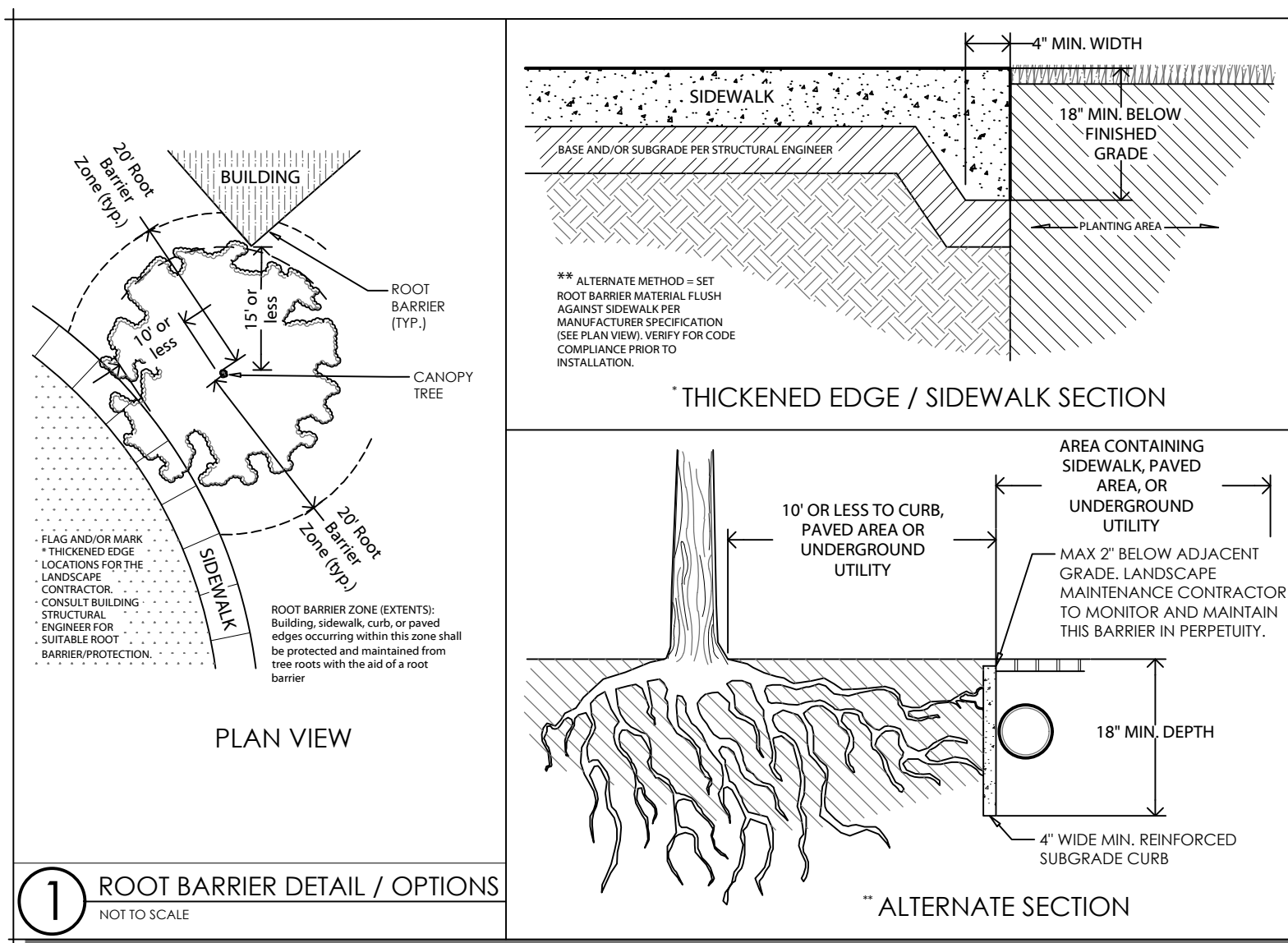
IRRIGATION ZONES SHALL BE ADJUSTED FOR TURF AND GROUPED ACCORDING TO WATER DEMAND / MICROCLIMATE. VALVE LOCATIONS SHALL BE FIELD VERIFIED, GROUPED, AND MARKED PER NOTES.

WATERING SCHEDULE SHALL BE MODIFIED DURING IRRIGATION DROUGHT RESTRICTIONS TO ACHIEVE A 1" APPLICATION PER WEEK (APPLIED TWICE). OPERATION TIMES FROM MIDNIGHT TO 8:00 A.M.

- IRRIGATION NOTES:**
1. Sleeving indicated shall be coordinated with existing structures, sized according to lateral piping (or group of laterals) to be contained, and adjusted to final field conditions. Coordinate with other trades, such as electrical, to group sleeving in the same trench.
  2. No pressurized piping shall be run under roadways, drives, or other structures without sleeving.
  3. Valve locations / scale indicated are graphic representations of approximate locations and angles. Field location will be necessary according to the final coverage, circuiting, and area to be irrigated.
  4. The calculations are based upon Manufacturer guidelines for PGV valves, MP Rotator heads, and other equipment by Hunter Industries.
  5. Sod shall be zoned SEPARATELY from remaining landscape materials. Irrigation within the R.O.W. is not shown and shall be permitted separately.

**EXISTING PLANT MATERIAL LEGEND**

Name	Quantity	Native
Green Buttonwood	1	Yes
Gumbo Limbo	4	Yes
Black Olive	4	No
Royal Palm	9	Yes

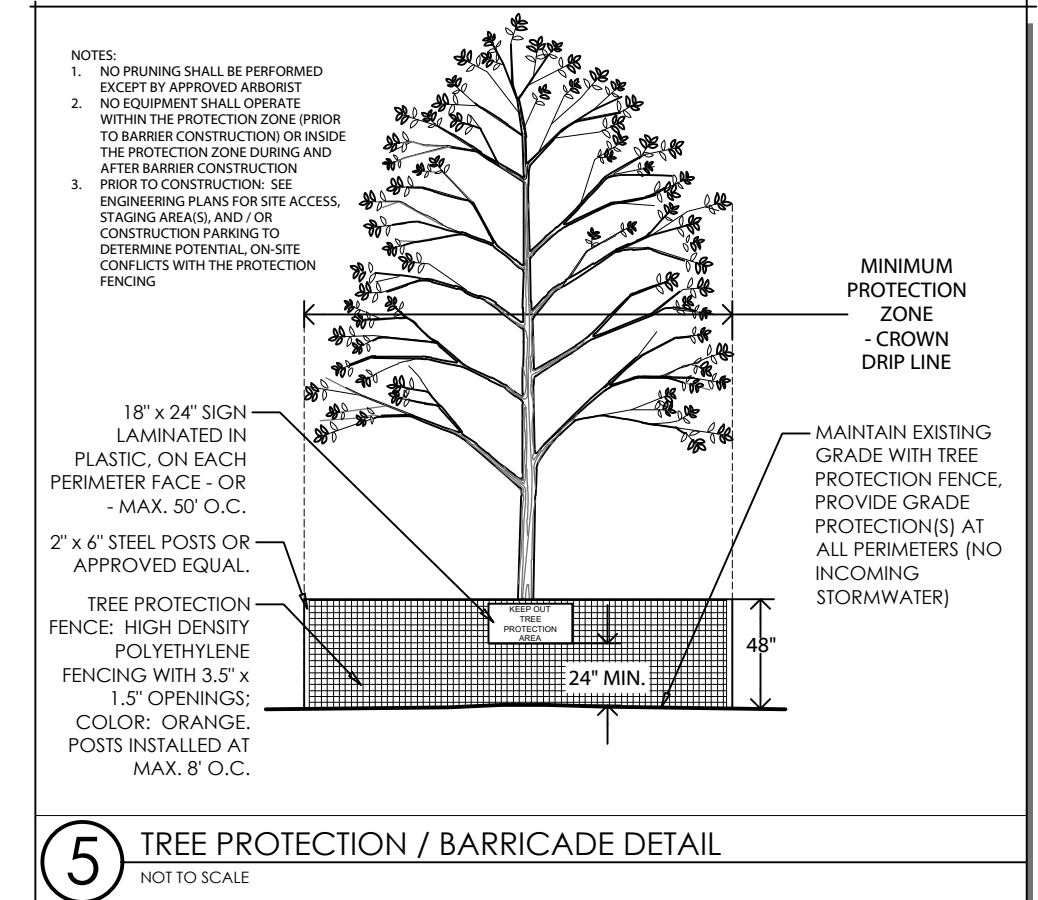


**EXISTING PLANT MATERIAL SCHEDULE**

Name	Quantity	Native
Green Buttonwood	1	Yes
Gumbo Limbo	4	Yes
Black Olive	4	No
Royal Palm	9	Yes

**PLANT SCHEDULE**

CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL	SIZE	zone / native
<b>TREES</b>						
BUC LAB	4	Bucida buceras 'Shady Lady' / Shady Lady Black Olive	100 gal. min.	4"	18" OA., 7' SPR., 7' C.T.	10 / N
BUR SIM	4	Bursera simaruba / Gumbo Limbo	65 gal. min.	3"	12'-14" OA., 6' SPR., 7' C.T.	10 / Y
CON ERE	7	Conocarpus erectus / Buttonwood	65 gal. min.	3"	12'-14" OA., 6' SPR., 7' C.T.	10 / Y
CON SER	19	Conocarpus erectus sericeus / Silver Buttonwood	65 gal. min.	3"	12'-14" OA., 6' SPR., 7' C.T.	10 / Y
TAX DIS	12	Taxodium distichum / Bald Cypress	25 Gal.	2" Min.	10'-12" OA., HT.	7 / Y
<b>PALM TREES</b>						
ROY ELA	2	Roystonea elata / Florida Royal Palm	8 & B		15" C.T.; 18" MIN. CT. (maintained)	10 / Y
<b>SHRUBS</b>						
CHR RED	177	Chrysobalanus icaco 'Red Tip' / Red Tip Cocoplum	7 gal.		24" OA., 36" O.C.	10 / Y
COD PET	28	Codiaeum variegatum 'Petra' / Petra Croton	3 gal.		12" OA., 24" O.C.	10 / N
PSY NER	18	Psychotria nervosa / Wild Coffee	7 gal.		18" OA., 36" O.C.	10 / Y
SCH LLO	74	Schefflera arborescens 'Emerald Green' / Emerald Green Schefflera	10 gal.		48" OA., 4" O.C.	10 / N
<b>GRASSES</b>						
TRI FAK	23	Tripsacum dactyloides / Fakahatchee Grass	3 gal.		24" O.A.	10 / Y
<b>MISCELLANEOUS</b>						
SOD		Stenotaphrum secundatum 'Floratam'			SET ON FINAL GRADE DEVOID OF ROCKS, TIGHT JOINT (NO GAPS ALLOWED)	
BAH		Paspalum notatum 'Argentine'			DETENTION AREAS / SET ON FINAL GRADE DEVOID OF ROCKS, TIGHT JOINT (NO GAPS ALLOWED)	
MULCH		COCOBROWN			3" DEPTH, AFTER WATERING IN	
PINE STRAW		Slopes over 4:1			3" DEPTH, AFTER WATERING IN	



**LANDSCAPE INSTALLATION NOTES AND SPECIFICATIONS:**

- A set of Construction Documents and/or Approved Code-required Plans shall be on site at all times.
- All utilities, easements, right-of-way, Ownership, and/or other survey data shall be verified by the General Contractor, Sitework Contractor, and/or Landscape Contractor prior to the Commencement of Work.
- Compliance / Permit acquisition and/or display is required for Code-relevant requirements (such as, but not limited to: removals, trimming, replacement, etc.).
- Verify Plant Quantities and Specifications with the Landscape Architect (also referenced as "L.A." hereafter). Notify the Landscape Architect immediately if discrepancies are noted. Planting Plan shall take precedence over "Plant List Quantities." The L.A. reserves the right for material rejection if the installation does not correspond to the Plant List "Specification / Remark".
- Plant material is to be Florida Grade #1 minimum and Florida Fancy for plant material specified as "Specimen." Trees are to be considered single trunk and meet the minimum standard for Code within the applicable jurisdiction.
- Sizes/specifications are considered minimum. Installation material is to meet or exceed these requirements - verify any discrepancy prior to material purchase, delivery, and/or installation.
- The Landscape Contractor shall verify the location of plant material with the L.A. prior to installation - contact the L.A. for specific guidelines. If a site conflict / potential is noted, notify the Landscape Architect prior to material installation. The L.A. reserves the right for material rejection if the installation does not correspond to the Planting Plan.
- The Landscape Contractor and/or Irrigation Contractor shall be responsible for damaged site utilities, infrastructure, etc. Repair / Replace shall be a requirement.
- Verify site removals, relocations, and/or protected items prior to Bid Preparation. This may include but not be limited to: sod, soil, plant material, stumps, etc. The Landscape Contractor shall be required to complete work as outlined with the Planting Plan(s), Specifications, and Notes.
- Quantities and specification are subject to adjustment, relocation, and/or removal during or after the installation and subsequent approval process by the L.A.
- Exotic(s) or Nuisance Plants as defined by the local agency(ies) shall supercede State requirements; however, the Florida Invasive Species Council (FISC) and/or UF-IFAS Standards shall be used as a database to justify removals if no local ordinance/code requirement exists.
- The Landscape Contractor shall execute pruning via a Certified Arborist using standards as established by the International Society of Arboriculture. All pruning, upon request, shall be advised by the L.A.
- Trees and palms over 8' in height shall be staked.
- The Landscape Contractor and/or Irrigation Contractor shall be responsible for: 1) plant warranties and replacements, as specified within their respective agreement(s) 2) plant material maintenance until "Substantial Completion" 3) plant material protection adequacy 4) Scope of Work verification and execution 5) coordination of all subcontractor(s)
- The Owner / General Contractor shall be responsible for: 1) Providing Final Grade, Site Access, Security of the site 2) Contract review and acceptance of terms 3) Plant / Irrigation Maintenance coordination 4) Payment milestones

**IRRIGATION INSTALLATION NOTES AND SPECIFICATIONS:**

- The site is to contain 100% Irrigation Coverage via an efficient system utilizing standards common to the industry.
- The Irrigation system is to be controlled by a rain sensor switch connected to the System controller. The location of the System controller is to be verified and coordinated as necessary to provide access and electrical connection(s).
- Coordinate separation, electrical, and other requirements when determining the final meter location. Also, see note #5 for additional equipment to be installed.
- Irrigation sleeving locations indicated are diagrammatic and serve only as a guide for installation purposes. Irrigation sleeving is to be a minimum of Schedule 40 PVC. This work is to be coordinated by the General Contractor. The Irrigation Contractor/Subcontractor shall not be responsible for sleeving installation unless this work is in the Irrigation Scope of Work. Sleeving shall be clearly marked, flagged, or otherwise delineated above grade to avoid damage and provide ease of location for future use. Sleeving shall be installed in areas where piping must cross a greater than 5' width, such as roads and walks.
- Backflow Preventer shall be required per Industry standards and City of Marco Island Codes.
- Avoid overspray on pavement, buildings, etc. Utilize pressure-compensating heads for elimination of aerosol spray (This is a standard feature of MP Rotator, Hunter spray heads).
- Verify pressure and flow rate after the Meter/Backflow assembly prior to bid submission. The design is based upon the following operating parameters: 60 GPM Max. and 40 PSI Min.-60 PSI Max.
- Pipe sizing shall be determined by the Friction Loss Method and water velocity shall not exceed 5 cubic feet per second.
- Constant pressure piping shall be SCH 40 PVC.
- The Irrigation Contractor shall supply As-built drawings and material cut sheets upon installation completion and as a term of Final Acceptance. This cost shall be accommodated in the bid.
- Zones shall be marked in the controller box and corresponding valves shall have affixed to the Valve Cover a waterproof, fade-resistant tag.
- Verify installation and parts warranty prior to Contract execution.
- Irrigation heads in planting beds shall be 12" pop-up minimum and 6" pop-up minimum in sod areas. Risers, if installed, shall be black pvc consistent with later piping. Substitution(s) shall not be accepted unless the L.A. is notified prior to installation. If substituted without notification, a CREDIT shall be issued to the client for comparable pop-up sprays. Verify remaining type(s), if necessary. Install quick couplers as required or as noted.
- This system shall be automated, provide a moisture sensing device, and will avoid the application (or indirect runoff of irrigation water) of water to impervious areas.

**LATERAL SIZING CHART**

PVC Class 200 40 IPS Plastic Pipe  
 (1200, 1200, 1200 2' Cx 100, PSI 1000 per 100 feet of tube (PSI/100 FT.), Sizes 1/2" through 6", Flow DPM 1 through 600

Flow (DPM)	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"
1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
5	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
6	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**MAINLINE SIZING CHART**

PVC Schedule 40 IPS Plastic Pipe  
 (1200, 1200, 1200 2' Cx 100, PSI 1000 per 100 feet of tube (PSI/100 FT.), Sizes 1" through 6", Flow DPM 1 through 600

Flow (DPM)	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"
1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
5	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
6	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

