





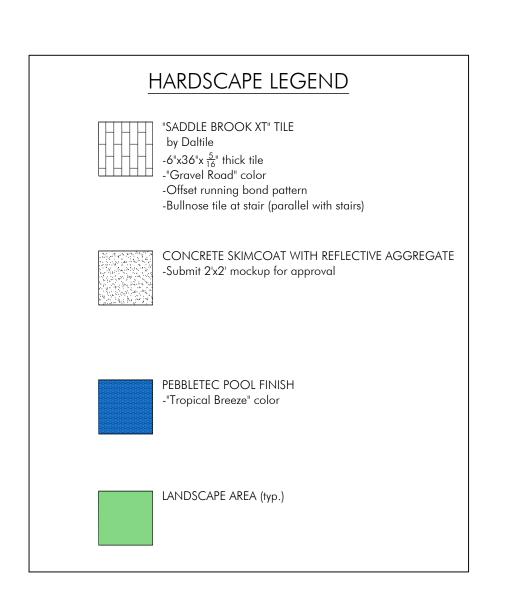
Ken Gardner FL LA #1569
Kiehl Semler FL LA #6667205

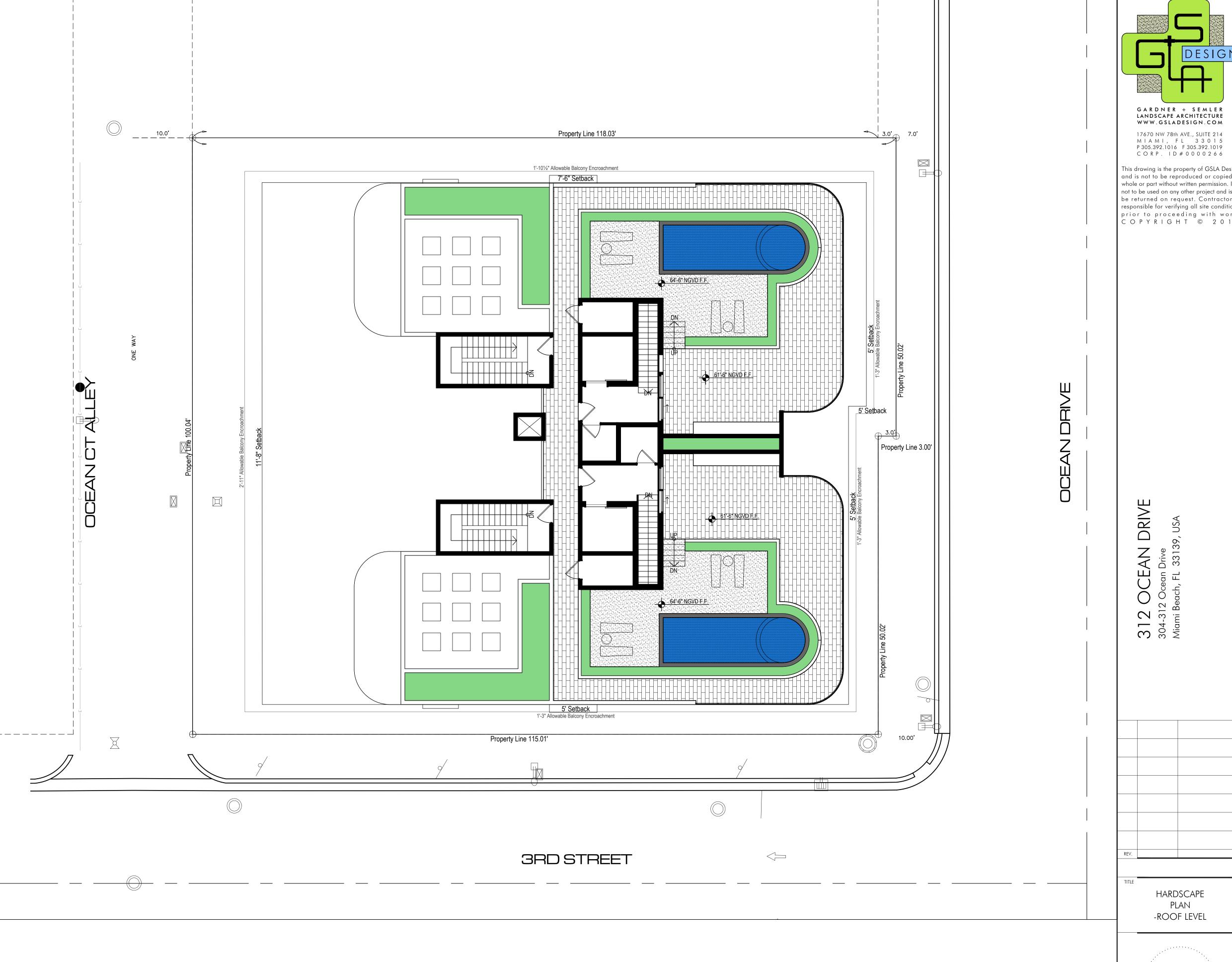
DATE 12.07.2018

SCALE

as noted

LA2.02







GARDNER + SEMLER LANDSCAPE ARCHITECTURE WWW.GSLADESIGN.COM

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312 (304-312 Miami Bed

HARDSCAPE PLAN -ROOF LEVEL

12.07.2018 as noted

LA2.03

HARDSCAPE DETAILS WILL BE PROVIDED ON PLANS SUBMITTED FOR PERMIT

DESIGN

GARDNER + SEMLER

GARDNER + SEMLER LANDSCAPE ARCHITECTURE WWW.GSLADESIGN.COM

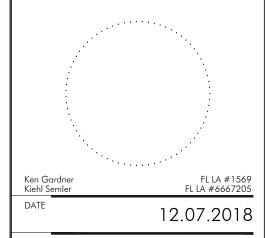
17670 NW 78th AVE., SUITE 214 M I A M I , F L 3 3 0 1 5 P 305.392.1016 F 305.392.1019 C O R P . I D # 0 0 0 0 2 6 6

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312 OCEAN DRIVE 304-312 Ocean Drive Miami Beach, FL 33139, USA

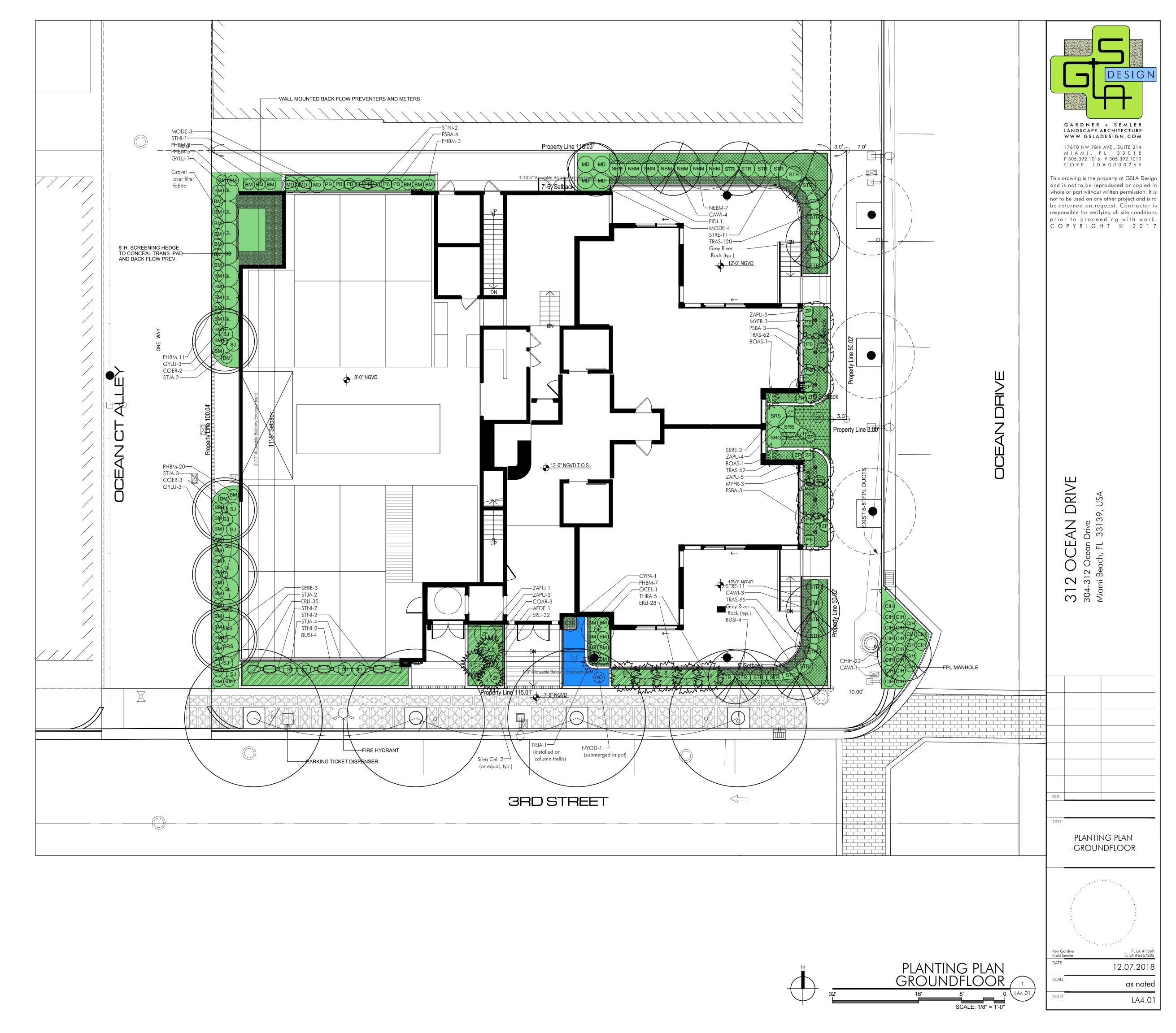
V.

HARDSCAPE SPECIFICATIONS AND DETAILS

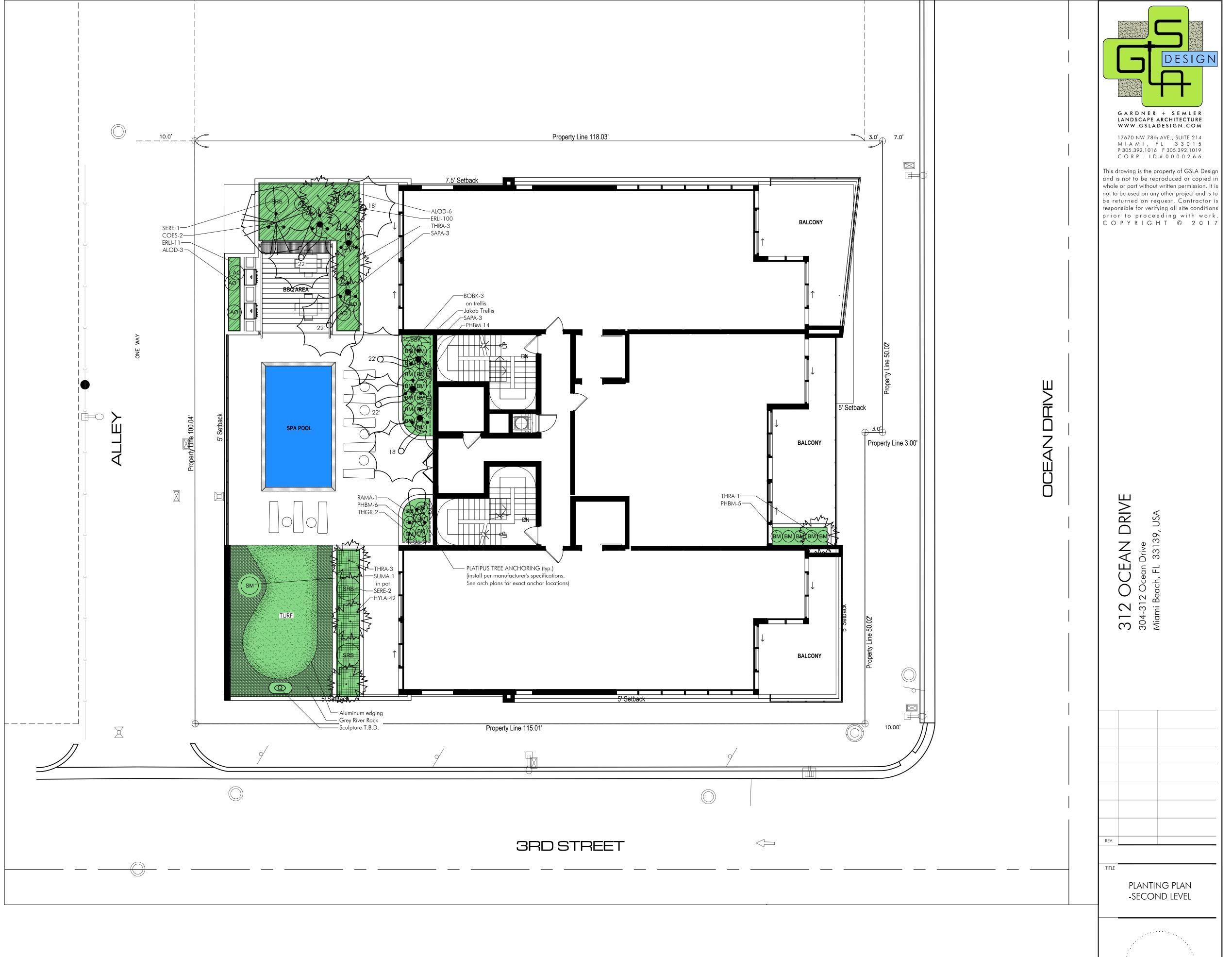


LA3.01

TREES	PLAN ⁻	LIJI		
KEY	PLANT NAME	QTY.	LIT	SIZE
BUSI	Bursera simaruba	4	ea.	12' tall x 5' spread, 3" DBH
CAWI	Gumbo Limbo Canella winterana	8	ea.	12' tall x 5' spread, 3" DBH
COER	Cinnamon Bark Conocarpus erectus	4	ea.	12' tall x 5' spread, 3" DBH
MYFR	Green Buttonwood Myrcianthes fragransSimpson Stopper	6	ea.	10' tall x 5' spread, multi-trunk lifted to treeform, (totalling 2"
PIDI	Pimenta dioica Allspice Tree	1	ea.	min. DBH) 12' tall x 5' spread, 3" DBH mi
PALMS				1
KEY	PLANT NAME	QTY.	UT.	SIZE
COAR	Coccothrinax argentataFlorida Silver Palm	3	ea.	6' tall overall
THRA	Thrinax radiataFlorida Thatch Palm	5	ea.	6' tall OA
SHRUBS	AND GROUNDCOVERS			1
KEY	PLANT NAME	QTY.	UT.	SIZE
AEDE	Aechmea 'dean'	1	ea.	36"x24"
BOAS	Bromeliad	2		
	Bougainvillea spp "Alabama Sunset"Bougainvillea		ea.	30" tall, install against lattice
CHIH	Chrysobalanus icaco "Horizontalis"Horizontal Cocoplum	22	ea.	18"x18"
CYPA	Cyperus papyrus Dwarf Papyrus	1	ea.	48" tall OA, full can
ERLI	Ernodea littoralis Golden Creeper	95	ea.	3 gal cans, full, install 18" o.c
GYLU	Gymnanthes lucida Crabwood	10	ea.	6' tall, full to ground
MODE	Monstera deliciosa Monstera	7	ea.	24"x24", mature leaves
NEBM	Nephrolepis biserrata "Macho" Macho Fern	7	ea.	24"x24"
NYOD	Nymphaea odorata Fragrant Waterlily	1	ea.	3 gal can submerged in water 1" layer of pea gravel as mulc in can
OCEL	Ochrosia elliptica Kopsia	1	ea.	6'x6', multi-trunk, lifted to tree form
РНВМ	Philodendron "Burle Marx"Burle Marx Philodendron	52	ea.	18"x18"
PSBA	Psychotria bahamensis Wild Coffee	12	ea.	24" x 24"
SERE(G)	Serenoa repens Green Saw Palmetto	1	ea.	24" x 24", green form
SERE(S)	Serenoa repensSilver Saw Palmetto	5	ea.	24" x 24", silver form
STJA	Stachytarpheta jamaicensisBlue Porterweed	11	ea.	24"x24"
STNI	Strelitzia nicolai	9	ea.	6' tall OA
STRE	White Bird of Paradise Strelitzia reginaeBird of Paradise	22	ea.	42"x42", full
TRAS	Trachelospermum asiaticumAsiatic Jasmine	309	ea.	1 gallon cans, full, install 12" o.c.
ZAFU	Zamia furfuracea	1	ea.	36"x36", full
ZAPU	Cardboard palm Zamia pumila	17	ea.	24"x24", full
	Coontie			
MISCELL	aneous	1		
	Planting Soil	130	c.y.	Mix from Atlas Peat and Soil
	70% Silica Sand 30% Florida Peat			excavate and backfill 24" middepth in all planters, install in 12" lifts and lightly compact we lawn roller prior to planting
		I		I dwill folier prior to planning



	PLAN	Γ LIST				
TREES						
KEY	PLANT NAME	QTY.	UT.	SIZE		
COES	Conocarpus erectus 'sericeus' Silver Buttonwood	1	ea.	12' tall x 6' spread, multi-trunk (totalling 2" DBH min.), lifted to tree form		
PALMS						
KEY	PLANT NAME	QTY.	UT	SIZE		
SAPA	Sabal palmetto	6	ea.	2@18' tall OA, smooth. 4@22'		
	Sabal Palm			tall OA, smooth curved/character trunks, hurricane cut		
RAMA	Ravenala madagascariensis Traveler's Palm	1	ea.	16' tall overall, align as shown on plan		
THRA						
	S AND GROUNDCOVERS		2.0	1		
KEY	PLANT NAME	QTY.		SIZE		
ALDO	Alcantarea odorata Alcantarea	9	ea.	18"x18"		
BOBK	Bougainvillea var "Barbara Karst" Bougainvillea	3	ea.	36" tall, install against trellis		
ERLI	Ernodea littoralis Golden Creeper	111	ea.	3 gal cans, full, install 18" o.c.		
HYLA	Hymenocallis latifolia Spider Lily	42	ea.	3 gallon cans, full, install 18"		
РНВМ	Philodendron "Burle Marx"Burle Marx Philodendron	25	ea.	18"x18"		
SERE(S)	Serenoa repensSilver Saw Palmetto	3	ea.	24" x 24", silver form		
SUMA	Suriana maritima Bay Cedar	1	ea.	36"x36", sculptural/character form, in pot, RED river rocks as mulch		
THGR	Thunbergia grandiflora Sky Vine	2	ea.	36" tall, install against trellis		
MISCE	LLANEOUS					
Turf	Synthetic turf "Select EL" by Foreverlawn	250	s.f.	install per manufacturer's spec.		
	Aluminum Landscape edging	60	l.f.	Aluminum Edging by Permaloc. Install between turf and river rock areas		
	Grey River Rock	2	c.y.	2" dia. smooth stones, grey color + 50ea. 5" dia. Stones intermixed in bed		
	Roof Planter Soil Mix 25% Coarse Sand 25% Medium Sand 20% Pine Bark 20% Florida Peat 8% Rice Rock 2% Marl	54	c.y.	From Atlas Peat and Soil, install in 12" lifts and lightly compact with lawn roller prior to planting		
	Pinebark Mulch (shredded)	3	c.y.	2" layer in all shrub beds		





 Ken Gardner Kiehl Semler
 FL LA #1569 FL LA #6667205

 DATE
 12.07.2018

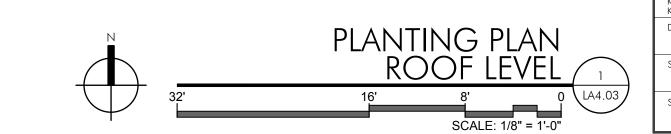
 SCALE
 as noted

LA4.02

	PLAN'	T LIST				
TREES						
KEY	PLANT NAME	QTY. UT.		SIZE		
ACSE	Acacia seyal	4	ea.	10' tall x 5' spread, 1 1/2" DBH		
	Red Acacia			î .		
PALMS		•				
KEY	PLANT NAME	QTY.	UT.	SIZE		
CONG	Cocos nucifera "Maypan"	6	ea.	20' tall OA, smooth trunk,		
	Coconut Palm			curved trunk, leaning 5° as		
				shown, hurricane cut		
SHRUBS	AND GROUNDCOVERS	,				
KEY	PLANT NAME	QTY.	UT.	SIZE		
AGAT	Agave attenuata	18	ea.	18"x18"		
	Foxtail Agave					
BOAS	Bougainvillea spp "Alabama Sunset"	2	ea.	30" tall, install against fence		
	Bougainvillea					
BUFR	Bulbine frutescens "Hallmark"	90	ea.	1 gal cans, full, install 9" o.c.		
	Bulbine					
EQHY	Equisetium hyemale	9	ea.	36"x36"		
	Spikerush					
ERLI	Ernodea littoralis	82	ea.	3 gal cans, full, install 18" o.c.		
	Golden Creeper					
IPPC	lpomea pes caprae	160	ea.	1 gal cans, install 18" o.c.		
	Railroad Vine					
SERE(G)	Serenoa repens	2	ea.	24" x 24"		
	Green Saw Palmetto					
SERE(S)	Serenoa repens	2	ea.	24" x 24"		
	Silver Saw Palmetto					
SPBA	Spartina bakerii	8	ea.	24" tall, install 30" o.c.		
CLIVA	Sand Cordgrass					
SUMA	Suriana maritima	2	ea.	30"x30"		
	Bay Cedar	ļ		<u> </u>		
MISCELI	LANEOUS	1	1	1		
	Roof Planter Soil Mix	75	c.y.	From Atlas Peat and Soil,		
	25% Coarse Sand			install in 12" lifts and lightly		
	25% Medium Sand			compact with lawn roller prior to		
	20% Pine Bark			planting		
	20% Florida Peat					
	8% Rice Rock					
	2% Marl					
	Pinebark Mulch (shredded)	4	c.y.	2" layer in all shrub beds		

	CITY OF MIAMI BEACH		
	LANDSCAPE LEGEND		
	INFORMATION REQUIRED TO BE PERMANENTLY AFFIXED TO PLANS		
	Zoning DistrictRPS-3 Lot Area11,657 s.f	Acres	_
		REQUIRED/	
	<u>OPEN SPACE</u>	ALLOWED	PROVIDED
Α.	Square feet of required Open Space as indicated on site plan:		
	Lot Area =11,657 s.f.x % = s.f.		3,503
В.	Square feet of parking lot open space required as indicated on site		
	Number of parking spaces0 x 10 s.f. parking space =	0	0
C.	Total square feet of landscaped open space required: A+B=		3,503
	LAWN AREA CALCULATION		
Α.	Square feet of landscaped open space required		
В.	Maximum lawn area (sod) permitted=20 % x _3,503_ s.f.	701	0
	TREES		
Α.	Number of trees required per lot or net lot acre, less existing		
	number of trees meeting minimum requirements=		
	22 trees x27 net lot acres - number of existing trees=		6
	% Natives required: Number of trees provided x 30% =	2	17
C.	% Low maintenance / drought and salt tolerant required:	2	21
_	Number of trees provided x 50%= Street Trees (maximum average spacing of 20' a.c.)	3	21
υ.	Street Trees (maximum average spacing of 20' o.c.)115 linear feet along street divided by 20'=	11	11
F	Street tree species allowed directly beneath power lines:	11	11
L.	(maximum average spacing of 20' o.c.):		
	0 linear feet along street divided by 20'=		
	oinlear feet along street divided by 20 =	0	0
	<u>SHRUBS</u>		
Α.	Number of shrubs req: Sum of lot and street trees required x 12=	204	287
В.	% Native shrubs required: Number of shrubs provided x 50%=	102	148
			140
	LARGE SHRUBS OR SMALL TREES		
Α.	Number of large shrubs or small trees required: Number of required		
_	shrubs x 10%=	21	39
В.	% Native large shrubs or small trees required: Number of large	11	10
	shrubs or small trees provided x 50%=	11	16





12.07.2018

as noted

LA4.03

PART 1 - GENERAL

1.1 SCOPE A. Contractor shall provide all labor, materials, equipment, supervision, and related work necessary to complete the landscape work in accordance with the intent of the landscape plans, schedules and these specifications. The extent of work is shown on the drawings which are a part of this document.

1.2 CONTRACTOR QUALIFICATIONS

A. Landscape installation work to be performed by a Contractor Certified by the Florida Nurserymen, Growers and Landscape Association (FNGLA) as a Certified Landscape Contractor. Any pruning to be supervised by an Arborist, certified by the International Society of Arboriculture (ISA) and licensed in Miami-Dade County.

1.3 INVESTIGATION OF UTILITIES

A. Prior to beginning work, the Contractor shall be responsible to locate existing underground utilities. Check with all utility companies and Sunshine State, call (811).

1.4 SUBSTITUTIONS

A. Only materials specified will be accepted, unless approved in writing by the Landscape Architect in advance.

1.5 PLANT SIZES A. All plant sizes shall equal or exceed the minimum sizes as specified in the plant list. When plant sizes are specified as a range of size, installed materials shall average the mean of the range specified. Plants shall be measured following pruning, with branches in normal position. All necessary pruning shall be done at the time of planting.

A. All plant material shall be equal to or better than Florida No. 1 as classified by "Grades and Standards for Nursery Plants" by the Division of Plant Industry, Florida Department of Agriculture. They shall have a growth habit that is normal for the species; healthy, vigorous, free from insects, disease and injury.

B. The Owner or Landscape Architect reserves the right to refuse any plant material which does not conform to the intent of the written specifications or design.

C. CIRCLING ROOTS FOUND ON CONTAINER-GROWN MATERIAL WILL NOT BE ACCEPTED UNLESS REMEDIAL ROOT PRUNING, APPROVED BY THE LANDSCAPE ARCHITECT IS DONE BEFORE PLANTING.

1.7 PLANT QUANTITY

A. The plant quantities shown on the plant list are to be used only as an aid to bidders. In the case of discrepancy between the plant list and the plan, the quantity on the plan shall override the plant list.

1.8 UNIT PRICES

A. The successful bidder shall furnish to the Owner and the Landscape Architect, a unit price breakdown for all materials. The Owner may, at his discretion, add to or delete from the materials utilizing the unit price breakdown submitted to and accepted by the Owner.

1.9 SUBMITTALS

A. Fertilizer: The Contractor shall submit to the Owner and Landscape Architect documentation that all the fertilizer used for the project is of the analysis specified and placed at the rates specified in section 2.2 FERTILIZER.

B. Planting soil: The Contractor shall submit a sample of the planting soil (approximately 1 cu. Ft.) for approval by the Landscape Architect prior to delivery to the site.

1.10 CLEAN-UP & MAINTENANCE OF TRAFFIC A. Follow procedures in FDOT Index 600 for maintenance of traffic during construction.

B. At the end of each work day, the Contractor shall remove debris and shall barricade the

C. Upon completion of the work or any major portion of the work or as directed by the Landscape Architect, all debris and surplus material from his work shall be removed from the

un-filled holes in a manner appropriate in the path of pedestrians and motorists.

1.11 MAINTENANCE PRIOR TO ACCEPTANCE A. The Contractor is responsible to maintain the plantings until they are accepted under the provisions of 1.12 "ACCEPTANCE OF INSTALLATION".

1. Plants: Begin maintenance immediately following the final plant installation operation for each plant and continue until all plant installation is complete and accepted. Maintenance shall include watering all plants, weeding, mulching, pest and disease control, tightening and repairing of guys, repair of braces, removal of dead growth, resetting of plants to proper grade or up-right position, restoration of plant saucer, litter pick-up in plant beds and other necessary operations to assure specified minimum grade of Florida No. 1

2. Turf Areas: Begin maintenance of turf immediately following the placement of sod and be limited to, watering, leveling, mowing, weed and pest control, fungus and disease control and other necessary operations as determined by the Landscape Architect and good nursery

3. Re-setting or straightening trees and palms: The Contractor shall re-set and/or straighten trees and palms as required at no additional cost to the Owner unless caused by sustained winds of 75 mph or more. Then, the costs of the operations may be charged to the owner. Re-set trees within 48 hours.

1.12 ACCEPTANCE OF INSTALLATION

A. Inspection: Inspection of the work, to determine completion of contract work, exclusive of the possible replacement of plants and turf, will be made by the Landscape Architect at the conclusion of the maintenance period. Written notice requesting such an inspection and submitted by the Contractor at least ten (10) days prior to the anticipated date.

1.13 GUARANTEE

A. Guarantee all plants for a period of one year (CCD). Guarantee shall commence from the date of written acceptance. Plant material which is on the site and scheduled to be relocated is not covered by the guarantee except in the case of Contractor's negligence or work that has been done in an unworkman-like manner. The Contractor is not responsible for loss due to acts of god, (i.e.) sustained winds of 75 mph or more, floods, frost, lightning, vandalism or theft.

1.14 REPLACEMENT

A. Replacement shall be made during the guarantee period as directed by the Landscape Architect within ten (10) days from time of notification. For all replacement plant material the guarantee period shall extend for an additional forty-five (45) days beyond the original auarantee period. The Contractor shall be responsible to provide water to the replacement plants in sufficient quantity to aid in their establishment. At the end of the guarantee period, inspection will be made by the Landscape Architect, upon written notice requesting such inspection and submitted by the Contractor at least five (5) days before the anticipated date. Replacement plants must meet the requirements of Florida No. 1 at time of inspection. Remove from the site all plants that are dead or in a state of unsatisfactory growth, as determined by the Landscape Architect. Replace these and any plants missing due to the Contractor's negligence as soon as conditions permit.

1. Materials and Operations: All replacement plants shall be of the same kind and size as indicated on the plant list. The Contractor shall supply and plant the plants as specified under planting operations.

2. Cost of Replacements: A sum sufficient to cover the estimated cost of possible replacements, including material and labor will be retained by the Owner and paid to the Contractor after all replacements have been satisfactorily made and approved by the Landscape Architect.

PART 2 - MATERIALS

2.1 PLANTING SOIL

A. Planting soil for trees, shrubs and ground covers shall be of the composition noted on the plans, measured by volume.

B. Soil for Sodded Areas: shall be coarse lawn sand.

A. Fertilizer for trees, palms, shrubs, and groundcovers shall be as follows: LESCO Palm Special 13-3-13 or equal, Sulfur coated with iron and other minor elements and maximum of 2% chlorine, or brand with equal analysis. The fertilizer shall be uniform in composition, dry and free flowing and shall be delivered to the site in the original unopened containers, bearing the manufacturer's guaranteed analysis. Fertilizer for sod and seeded areas shall be 8-6-8, 50% organically derived nitrogen, or equal.

A. The Contractor shall provide potable water on site, available from the start of planting. The Contractor is responsible to ascertain the location and accessibility of the water source. The Contractor is responsible to provide the means of distribution (i.e. water truck, hoses, etc.) for distribution of water to the planting areas.

A. Mulch shall be shredded Melaleuca mulch (Florimulch) as manufactured by Forestry Resources, Inc., or equal.

2.5 ROOT BARRIER MATERIAL A. Root barrier material shall be 24" deep polypropolylene panels by DeepRoot or approved **PART 3 - INSTALLATION PROCEDURES**

3.1 LAYOUT A. Verify location of all underground utilities and obstructions prior to excavation.

3.2 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 it has been established where work will be done, the systemic herbicide shall be applied in accordance with manufacturer's labeling to kill all noxious growth. Contractor shall schedule his work to allow more than one application to obtain at least 95% kill of undesirable growth. If necessary, 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.

3.3 PLANT PIT EXCAVATION AND BACKFILLING A. Trees: See the Planting and Bracing Details and notes.

B. All planting holes shall be hand dug where machine dug holes may adversely affect

C. Shrubs and Groundcover: Shrubs and groundcover shall be planted in a soil bed as described in the notes and details. Space shrubs and provide setback from curb and pavements as shown in the plans.

D. Watering of field-grown plants: Thoroughly puddle in water to remove any air pockets in

3.4 WATERING A. The Contractor is responsible to provide the water for all new plants and transplants and means of distribution (i.e. hand watering or water truck) during the maintenance period and extending into the period after acceptance until the full schedule as listed below is complete. Water for trees and other large field grown plants shall be supplemented by hand or water truck, in addition to the irrigation system, (if one is provided). Contractor can adjust watering schedule during heavy rain season upon approval of the Landscape Architect.

AMOUNT OF WATER PER APPLICATION For trees up to 5 inch caliper - 5 gallons From 5 to 8 inch caliper - 25 gallons

FREQUENCY OF WATER Daily for the first week

3 times per week for weeks 2 - 5 2 times per week for weeks 6 - 8 time per week for weeks 9 - 12

9 inch and up caliper - 50 gallons

B. Water in plants by thoroughly soaking of the entire root ball immediately after planting. For large trees and shrubs, add water while backfilling hole to eliminate any air pockets in the soil around the root ball.

C. Water shrubs, sod and groundcover a minimum of once daily for a week or until an irrigation system is fully operational. If no irrigation system is to be installed, the Contractor shall be responsible for watering the shrub, sod, and groundcover for the time specified above, after installation of each section of the planting installed.

3.5 FERTILIZING

A. Add fertilizer on top of the surface of shrubs beds and tree and palms root balls two (2) months after installation. Fertilize sod within two (2) days after installing after planting of each segment of the job. Fertilizer shall be applied after soil has been well moistened. Fertilizer shall be washed off of plant leaves and stems immediately after application. Apply at the

1. Trees and Large Shrubs: One (1) pound per inch of trunk diameter, spread evenly over

2. Shrubs: One half (1/2) handful per shrub, spread evenly over the root ball area.

3. Groundcover: Twelve (12) pounds per 100 sq. ft. of bed area.

4. Sod: Twelve (12) pounds per 1,000 sq. ft. Wash fertilizer off blades immediately after

A. Spread mulch two (2) inches thick uniformly over the entire surface of shrubs and groundcover beds, depth measured after settling, unless otherwise specified in the plans. Provide 36" diameter bed of mulch, measured from outer edge of the trunk, for all trees and palms planted in sod areas. Keep mulch away from contact with the trunk. Create a 6" high ring of mulch at the outer edge of tree and palm holes.

3.7 GUYING AND BRACING

A. See the details bound herewith or made part of the plans.

3.8 SODDING

A. Provide a blanket of lawn sand as described in the notes in these plans. Prior to planting, remove stones, sticks, etc. from the sub-soil surface. Excavate existing non-conforming soil as required so that the finish grade of sod is flush with adjacent pavement or top of curb as well as adjacent sod in the case of sod patching.

B. Place sod on moistened soil, with edges tightly butted, in staggered rows at right angles to slopes. The sod shall be rolled with a 500 pound hand roller immediately after placing.

E. Keep edge of sod bed a minimum of 18" away from groundcover beds and 24" away from edge of shrub beds and 36" from trees, measured from the edge of plant or tree trunk.

D. Sod shall be watered immediately after installation to uniformly wet the soil to at least two inches below the bottom of sod strips.

E. Apply fertilizer to the sod as specified in Section 3.5.

F. Excavate and remove excess soil so top of sod is flush w/top of curb or adjacent pavement, or adjacent existing sod.

PLANT BED PREPARATION NOTES

1. In all areas where new sod and shrub and groundcover masses are to be planted, kill all existing weeds by treating with Round-up prior to beginning soil preparation.

2. In all shrub and groundcover beds, prepare soil as described for either condition, over the entire area to be planted:

If any compacted road base or asphalt or rocky soil is encountered, remove compacted material entirely to allow an 18" depth of planting soil. Backfill the entire area of the shrub and groundcover beds with 18" planting soil (as specified in Plans) to within 2 inches of the adjacent pavement or top of curb. Remove all debris and

rocks and pebbles larger than 2 inches in size and level the grade before planting.

Condition B:

Where no compacted soil is encountered, thoroughly mix 6 inches of planting soil into the existing soil to a depth of 18 inches. If required, excavate and remove the existing soil to lower the grade, so that the prepared mix is finished to a minimum of 2 inches below top of curb or adjacent walkway. Remove all debris and rocks and pebbles larger than 2 inches in size and level the grade before planting.

For all sod areas, spread a 2" deep layer of lawn sand prior to sodding. Remove all debris and rocks and pebbles larger than 2 inchs in size and level the grade before sodding. Remove, if required, existing soil so that top of sod is flush with and adjacent top of curb or pavement.

For Trees and shrubs larger than 7 gallon, Add Diehard" transplant innoculant supplied by Horticultural Alliance, Inc. (800-628-6373) or equal. Mix into top 8-10 inches of planting hole, making sure it is contact with the root ball. Add at a rate specified by manufacturer (typically 4oz. per 1 inches of trunk caliper or 7 gallon

SPACING OF PLANTS (SEE PLANT SPACING DETAIL)

1. Plants shall be planted sufficiently away from edges of pavements or curbs, to allow for growth toward the edges of the bed.

PROTECTION OF PLANTS

1. The Contractor shall be responsible to protect existing trees and shrubs in and adjacent to the area of work. Erect barriers as necessary to keep equipment and materials, any toxic material, away from the canopy drip line of trees and shrubs. DO NOT PILE SOIL OR DEBRIS AGAINST TREE TRUNKS OR DEPOSIT NOXIOUS BUILDING SUPPLIES OR CHEMICALS WITHIN THE DRIP LINE.

CLEAN LINE

☐ 1/8" X 51/2" (3.2MM X 140MM), 0.072" (1.82MM) THICK w/ 0.135" (3.43MM) EXPOSED TOP LIP

FINISH LEGEND: (MF) MILL FINISH-NATURAL ALUMINUM

1. INSTALL PER MANUFACTURER'S "INSTALLATION GUIDELINES" 8'-0" (2.44 M) SECTIONS TO INCLUDE (3) 12" (305 MM) ALUMINUM STAKES.

16'-0" (4.88 M) SECTIONS TO INCLUDE (5) 12" (305 MM) 3. ALUMINUM STAKES. CORNERS - CUT BASE EDGING UP HALFWAY AND

4. FORM A CONTINUOUS CORNER. PERMALOC CLEANLINE AS MANUFACTURED BY 5. PERMALOC CORPORATION, HOLLAND MI. (800) 356-9660.

CONTRACTOR'S NOTE: FOR PRODUCT AND 6. PURCHASING INFORMATION VISIT: WWW.PERMALOC.COM

(616) 399-9600

TOP OF EDGING TO BE MAXIMUM OF ½" (12.7MM) ABOVE SURFACE MATERIAL BED MEDIA OR AGGREGATE COMPACT GRADES ADJACENT TO EDGING TO AVOID SETTLING 12" (305MM) ALUMINUM STAKES — TO LOCK INTO PREFORMED LOOPS ON THE EDGING

NTS

PERMALOC

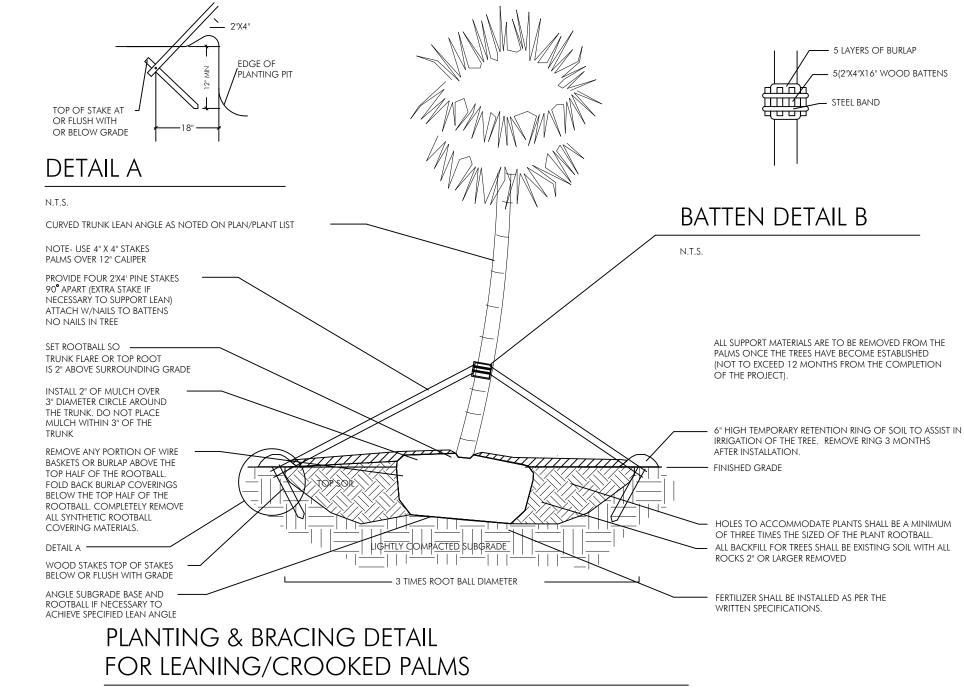
CLEANLINE

ALUMINUM EDGING

ISOMETRIC VIEW

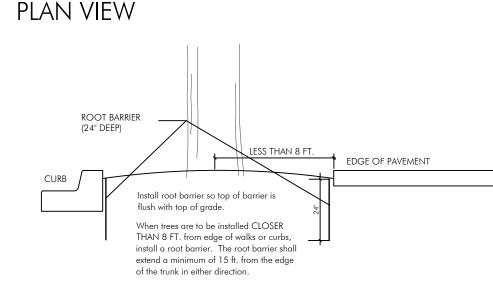
ALUMINUM EDGING DETAIL

N.T.S.

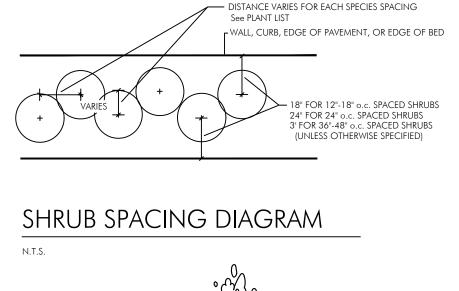


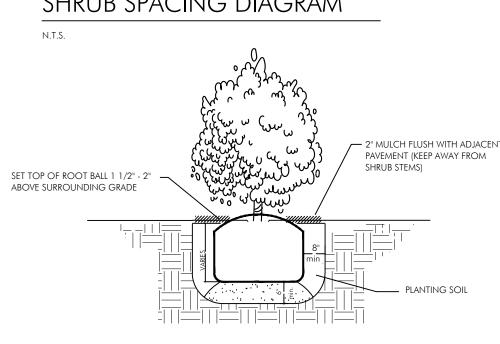
N.T.S.

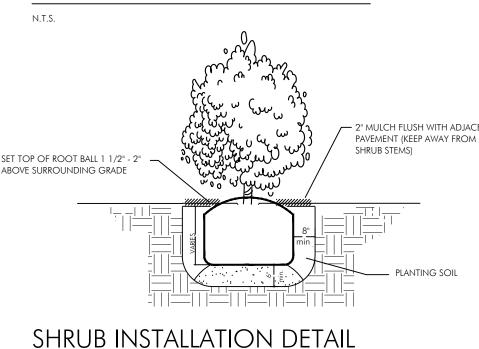
-EDGE OF PAVEMENT PLAN VIEW



ROOT BARRIER INSTALLATION DETAIL





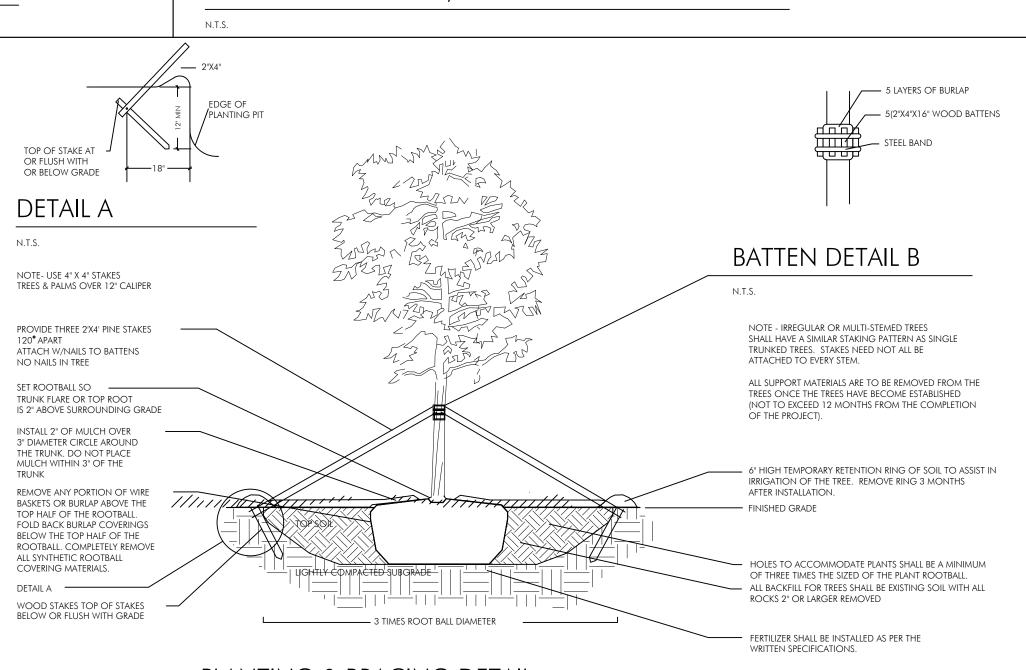


REMOVE ANY PORTION OF WIRE ASKETS ABOVE THE TOP HALF OF THE ROOTBALL. REMOVE BURLAP COVERINGS BELOW THE TOP HALF OF THE ROOTBALL. COMPLETE REMOVE ALL SYNTHETIC ROOTBALL COVERING MATERIALS (4)2" DIA. 8' LONG WOOD DOWELS — AT CORNERS DRIVEN TO BOTTOM OF PLANTER PLANTING SOIL

ALL BE ATTACHED TO EVERY STEM ALL SUPPORT MATERIALS ARE TO BE REMOVED FROM THE TREES ONCE THE TREES HAVE BECOME ESTABLISHED(NOT TO EXCEED 12 MONTHS FROM THE COMPLETION OF THE 5/8" DIAMETER NYLON STRAPS WRAPPED WOOD DOWELS. FINISHED GRADE #11111 PLANTING SOIL MULTI-TRUNKED TREE/PALM BRACING DETAIL

NOTE - IRREGULAR OR MULTI-STEMED TREES Shall have a Similar Staking Pattern as SINGLE TRUNKED TREES. STAKES NEED NOT ALL BE ATTACHED TO EVERY STEM ALL SUPPORT MATERIALS ARE TO BE REMOVED FROM THE TREES ONCE THE TREES HAVE BECOME ESTABLISHED (NOT TO EXCEED 12 MONTHS FROM THE COMPLETION OF THE SET ROOTBALL SO —— TRUNK FLARE OR TOP ROOT IS 2" ABOVE SURROUNDING GRADE INSTALL 2" OF MULCH OVER -3" DIAMETER CIRCLE AROUND THE TRUNK. DO NOT PLACE MULCH WITHIN 3" OF THE REMOVE ANY PORTION OF WIRE — 5/8" DIAMETER NYLON STRAPS WRAPPED BASKETS ABOVE THE TOP HALF OF AROUND TRUNK & PULLED TAUT, TIED TO THE ROOTBALL. REMOVE BURLAP COVERINGS BELOW THE OP HALF OF THE ROOTBALL. 6" HIGH TEMPORARY RETENTION RING OF SOIL COMPLETE REMOVE ALL SYNTHETIC TO ASSIST IN IRRIGATION OF THE TREE. REMOVE ROOTBALL COVERING MATERIALS RING 3 MONTHS AFTER INSTALLATION. (2)2" DIA. 8' LONG WOOD DOWELS 4 FINISHED GRADE 20°APART DRIVEN THROUGH BOTTOM OF PLANTING PIT holes to accommodate plants shall BE A MINIMUM OF THREE TIMES THE SIZED OF THE PLANT BALL. ALL BACKFILL FOR TREES SHALL BE AS EXISTING SOIL WITH ALL ROCKS 2" OR LARGER REMOVED - 3 TIMES ROOT BALL DIAMETER FERTILIZER SHALL BE INSTALLED AS PER THE

PLANTING & BRACING DETAIL UNDER 3 1/2" CALIPER



PLANTING & BRACING DETAIL OVER 3 1/2" CALIPER

12.07.2018 as noted

B. Install per details in the plans

S |S

DRIV

NOTE - IRREGULAR OR MULTI-STEMED TREES

SINGLE TRUNKED TREES. STAKES NEED NOT

SHALL HAVE A SIMILAR STAKING PATTERN AS

GARDNER + SEMLER

LANDSCAPE ARCHITECTURE

WWW.GSLADESIGN.COM

17670 NW 78th AVE., SUITE 214

MIAMI, FL 33015

P 305.392.1016 F 305.392.1019

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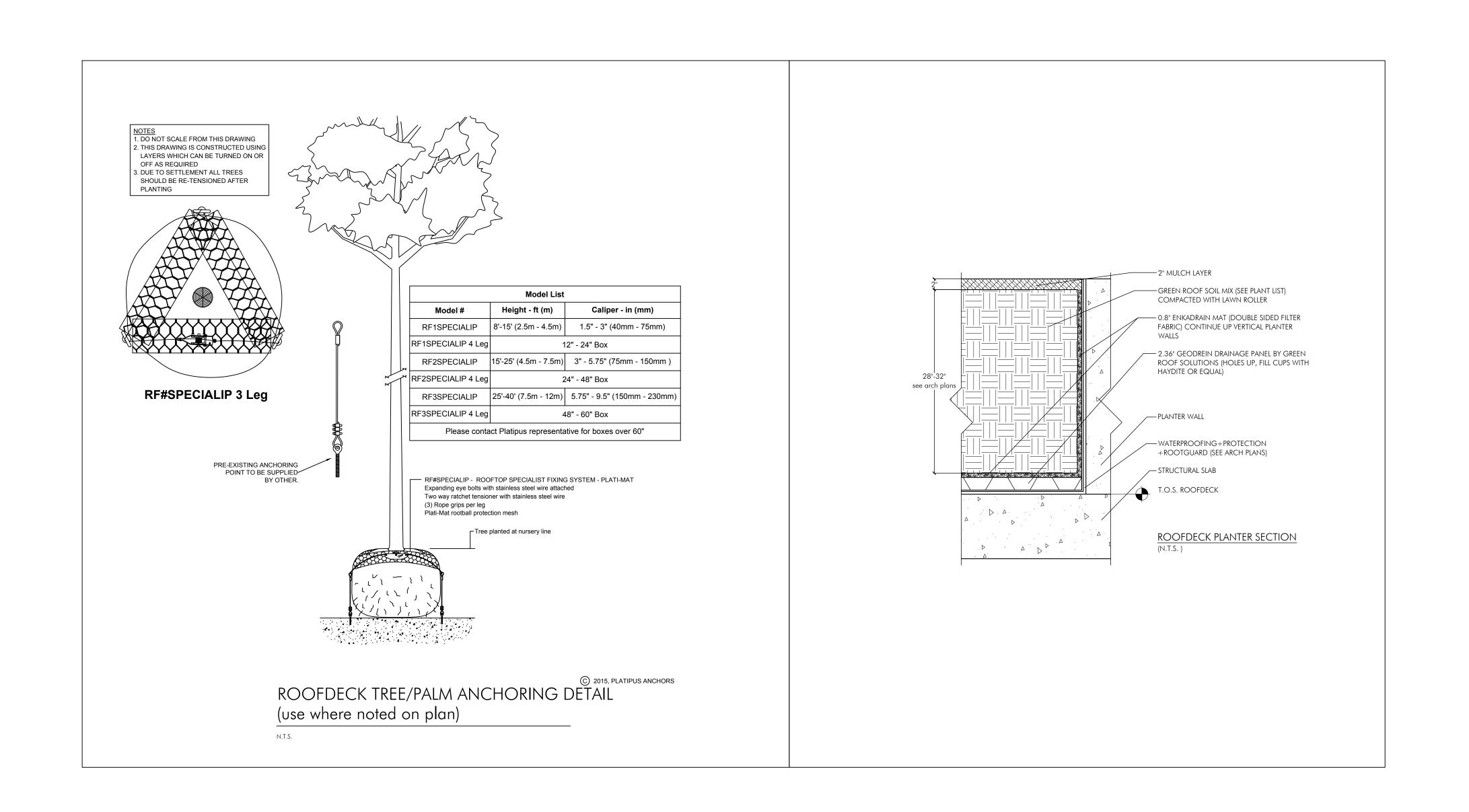
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PLANTING SPECS and details

LA5.01





GARDNER + SEMLER LANDSCAPE ARCHITECTURE WWW.GSLADESIGN.COM

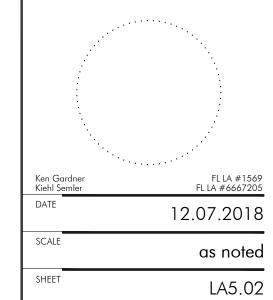
17670 NW 78th AVE., SUITE 214 M | A M | , F L 3 3 0 1 5 P 305.392.1016 F 305.392.1019 C O R P . | D # 0 0 0 0 2 6 6

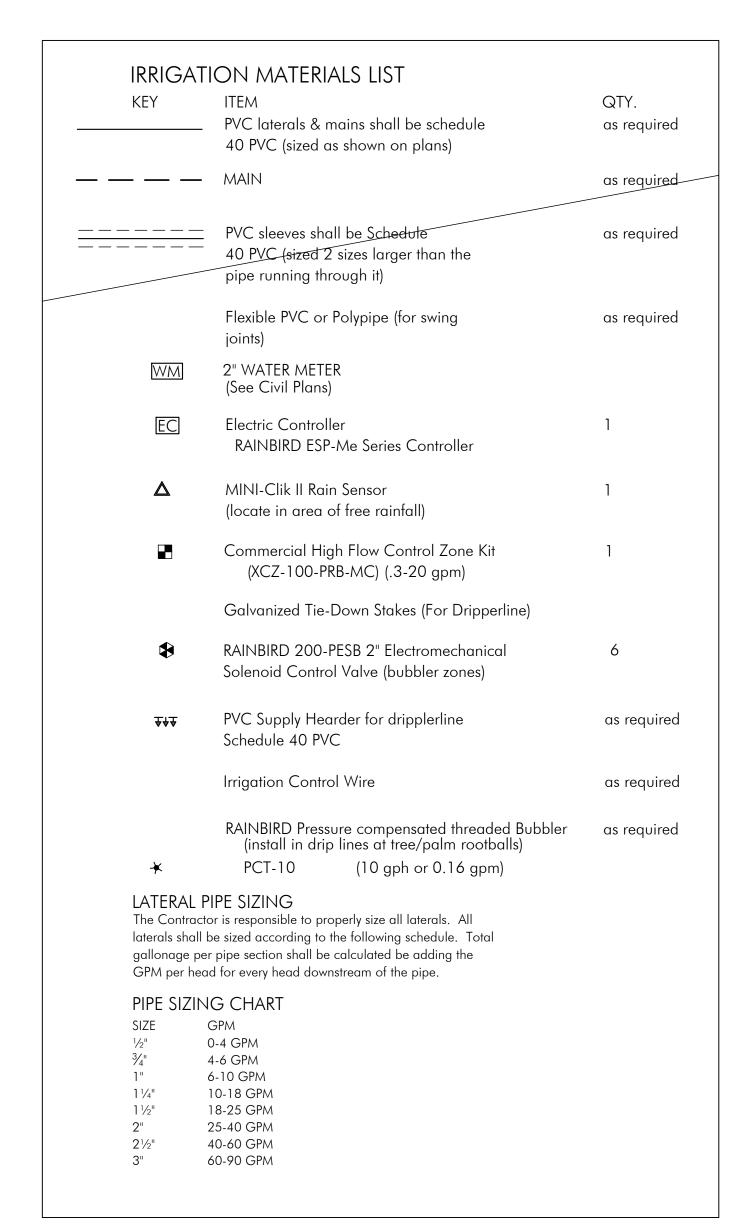
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312 OCEAN DRIVE 304-312 Ocean Drive Miami Beach, FL 33139, USA

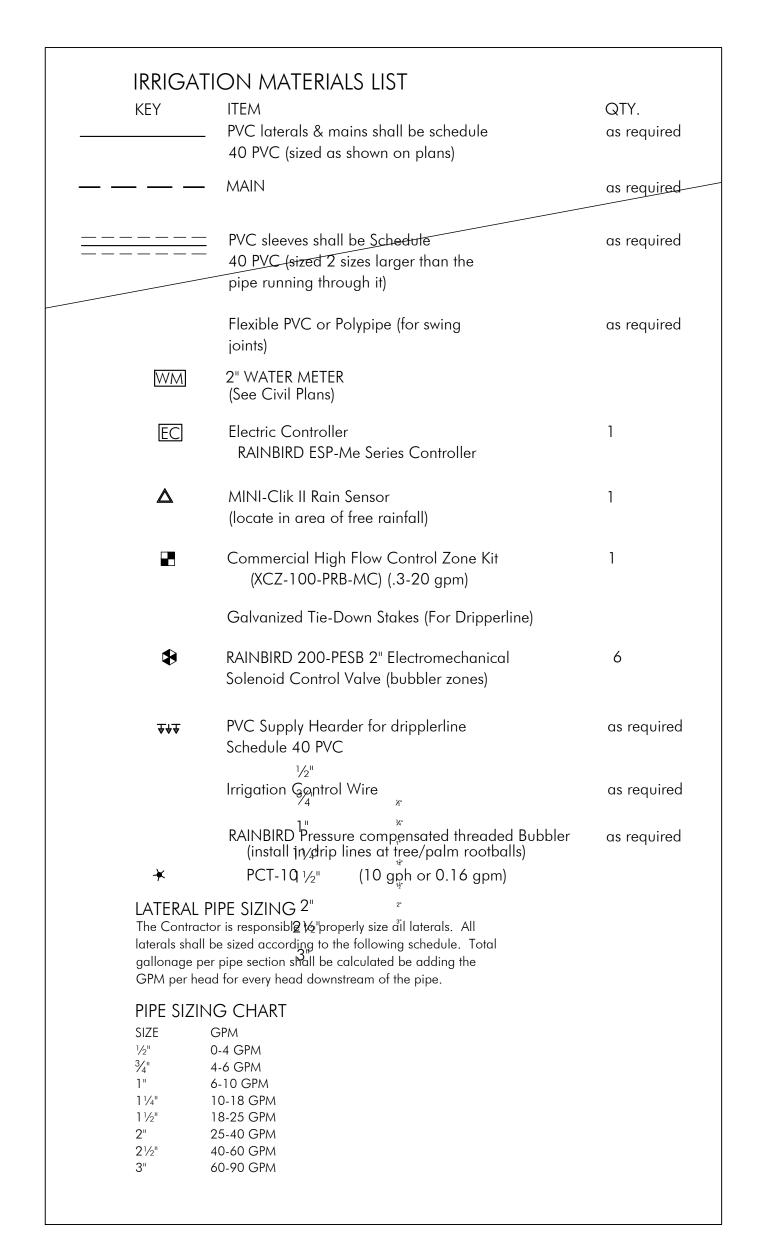
REV.

PLANTING SPECS AND DETAILS







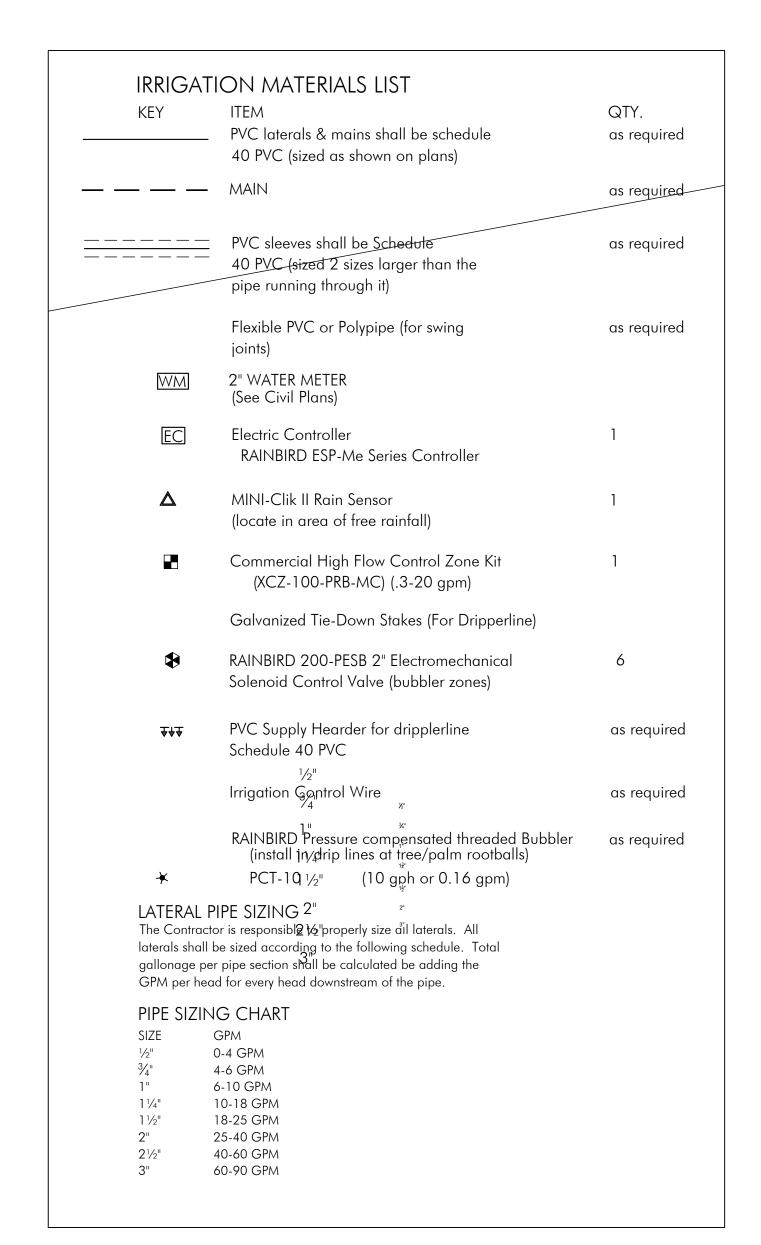


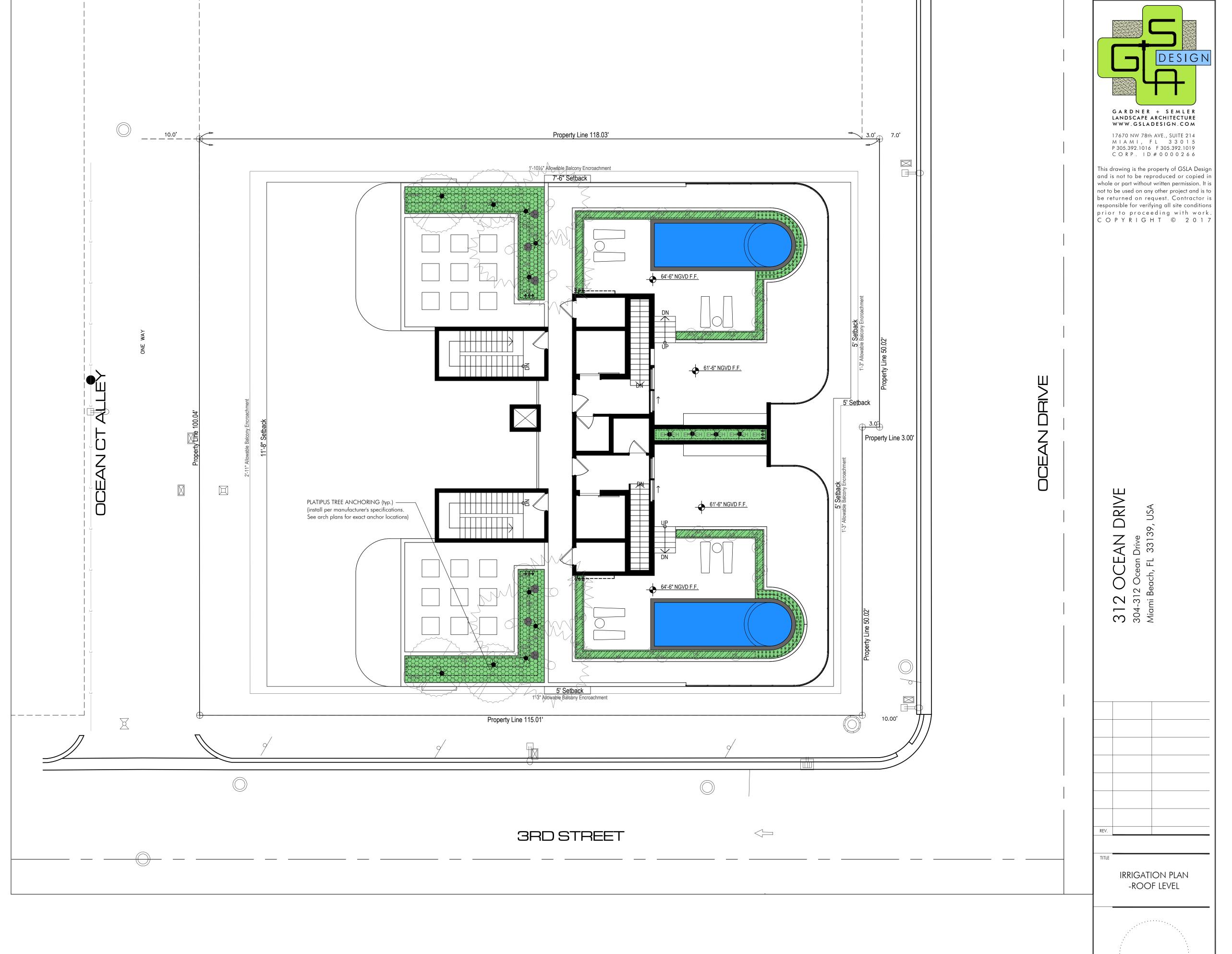


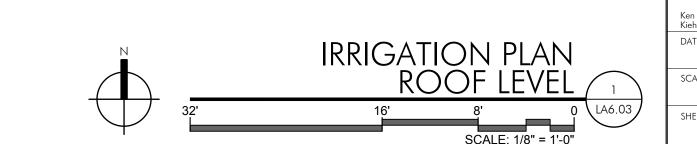


12.07.2018

as noted LA6.02







12.07.2018

as noted

LA6.03

1. SCOPE OF WORK: The Contractor shall furnish all labor, machinery, tools, supplies, and equipment as necessary to construct and provide an operating system, as indicated in the Plans. The work shall include, but not be limited to, furnishing materials (pipe, valves, sprinkler heads, fittings, controllers, electrical, wire and fittings, primer, glue, etc.), layout, protection to the public, excavation, assembly, installation, backfilling, compaction, repair of road or pavement surfaces, controller and low voltage feed to the valves, clean-up, maintenance and guarantee, and as-built plans.

2. Contractor shall coordinate with General Contractor or other pertinent Contractors on the job to insure that sleeves are provided and installed under hard surfaces to allow access to all areas to be irrigated. All sleeves shall be constructed of Schedule 40 PVC. Bury all sleeves a minimum of 24" below the surface. Sleeve to be 2 times the size if the pipe running through it. Sleeve shall extend 24" past the edge of pavement into the area to be irrigated.

3. GUARANTEE: The irrigation system shall be guaranteed for a minimum of one calendar year from the time of final acceptance.

4. REPAIR UTILITIES: The Contractor shall be responsible to verify the location of all utilities by hand excavation or other appropriate measures before performing any work that may result in damage to utilities structures, or property. The Contractor shall take immediate steps to repair, replace, or restore all services to any utilities which are disrupted due to his operations. All costs involved in disruption of service and repairs due to negligence on part of the Contractor shall be his responsibility.

5. AS-BUILT DRAWINGS: Prints of the plans will be supplied to the Contractor for recording "as-built" information. Immediately upon installation of any work which deviates from what is shown on the Plans, the Contractor shall clearly indicate such changes in red pencil on the prints. Such changes shall include, but not be limited to, changes in (1) materials; (2) sizes of material; (3) location; and (4)

6. The entire installation shall fully comply with all applicable local and state codes and ordinances. The Contractor shall take out all required plumbing and electrical applications and permits, arrange for all necessary inspections and shall pay all fees and expenses in connection with same as part of work under

7. UNIT PRICES: The successful bidder shall furnish, to the Owner, a unit price breakdown for all materials. The Owner may at his own discretion, add to or delete from the materials, using the unit price breakdown submitted to and accepted by the Owner.

8. MAINTENANCE PERIOD: The irrigation system shall be maintained for a period of 90 days after final acceptance of installation. Maintenance shall include checking of the system 2 times per week. Contractor shall be responsible to replace/repair any broken or malfunctioning parts of the system including those damaged by accidents or vandalism. Repairs shall be made immediately at the time of inspection or when notified by the Landscape Architect.

9. The irrigation system shall provide 100% coverage with a minimum of 90% overlap of water spray.

10. The system is design to provide sprinkler precipitation rates that are nearly equal in each zone. Mixing of sprinklers with widely varying precipitation rates in a zone will not be accepted.

11. All pipe shall be made of Schedule 40 PVC, except flexible PVC (or Toro funny pipe) for flexible swing joint and Schedule 80 galvanized steel pipe for all above ground fittings. Pipe locations shall be adjusted in the field. When laying out mains and laterals, locate pipe near edges of pavement or against buildings wherever possible, to allow space for plant rootballs. Coordinate pipe locations with plantings. Bury all mains 18" below surface and laterals 12". Depth shall be measured to top of pipe.

12. Keep pop-up sprinkler heads a minimum of 8" from edges of pavement and curbing, and heads on risers a minimum of 18", or as indicated in the pans.

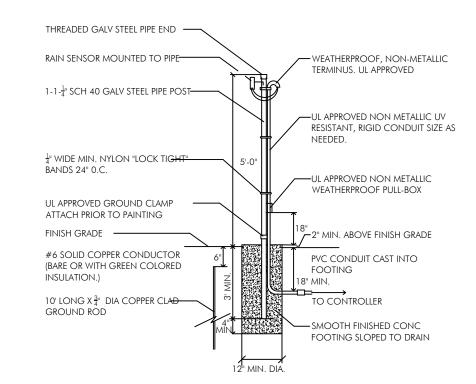
13. All heads located in shrub or groundcover beds shall be installed on a riser as per details in the plans. All other heads shall be installed on a swing joint as per details in the plans.

14. Place irrigation control wire in conduit in the same trench as mains and under the main. ASI wire shall be #14 or larger solid copper U.L. approved underground direct burial cable and shall be continuous with no splices from controller to solenoid valve.

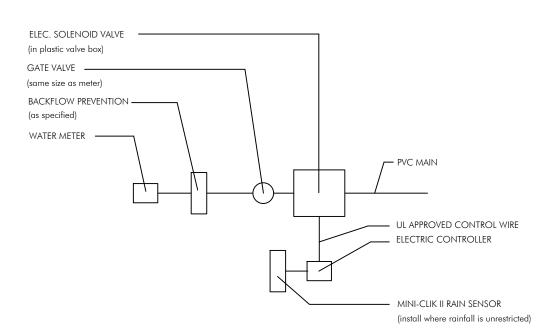
15. Valve locations are schematic and shall be adjusted in the field. Each valve shall be in a separate valve box (10" x 16") min.). When grouping valve boxes in grass or groundcover areas, set boxes a minimum of 12" apart to allow grass or groundcover to grow between them. When possible, hide valve boxes in shrub beds, a minimum of 12" from edge of beds. Set all valve boxes, concrete or plastic, in ground with cover flush with finish grade, and level, with a minimum of 6" of pea gravel at the bottom of the box, with at least 2" of clearance from the bottom of the valve to the top of the gravel.

16. TESTING: Notify the Landscape Architect in writing when testing will be conducted. Conduct test in the presence of the Landscape Architect. After all PVC assembly is completed the lines shall be flushed to insure that no rocks, sand, or other foreign debris remains in the lines. The mains shall be filled with water and all outlets shall be capped and plugged. The main shall be pressurized to 100 PSI for a minimum of one hour. No section of the main will be approved if the pressure drops more than 5 PSI at the end of the one hour period. Leaks shall be repaired immediately and the system shall be re-tested until found satisfactory by the Landscape Architect.

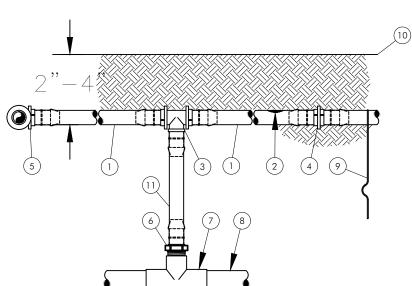
ALL WIRE CONNECTIONS SHALL BE APPROVED WATERTIGHT CONNECTIONS. FINISH ENTIRE ASSEMBLY, EXCEPT FOR EQUIPMENT, WITH FLAT BLACK ACRYLIC ENAMEL PAINT. PRIME METALLIC SURFACES WITH ZINC CHROMATE PRIOR TO FINISHING



RAIN SENSOR DETAIL



CONNECTION TO METER DETAIL



1. PLACE TIE DOWN STAKES EVERY THREE FEET IN SAND, FOUR FEET IN LOAM, AND FIVE 2. AT FITTINGS WHERE THERE IS A CHANGE OF DIRECTION SUCH AS TEES OR ELBOWS, USE TIE-DOWN STAKES ON EACH LEG OF THE CHANGE OF DIRECTION. 3. SAVE YOUR HANDS. USE THE RAIN BIRD FITTINS-TOOL XF INSERTION TOOL FOR

1 ON-SURFACE DRIPLINE: RAIN BIRD XF SERIES DRIPLINE POTABLE: XFS DRIPLINE NON-POTABLE: XFSP DRIPLINE

(2) INLINE DRIP EMITTER OUTLET, SEE PLANS FOR DRIPLINE OUTLET SPACING.

(3) BARB TEE 17x17x17mm RAIN BIRD XFF-TEE

RAIN BIRD XFF-COUP (5) BARB ELBOW 17x17mm RAIN BIRD XFF-ELBOW (6) BARB MALE ADAPTER 17mm X 1/2" MPT

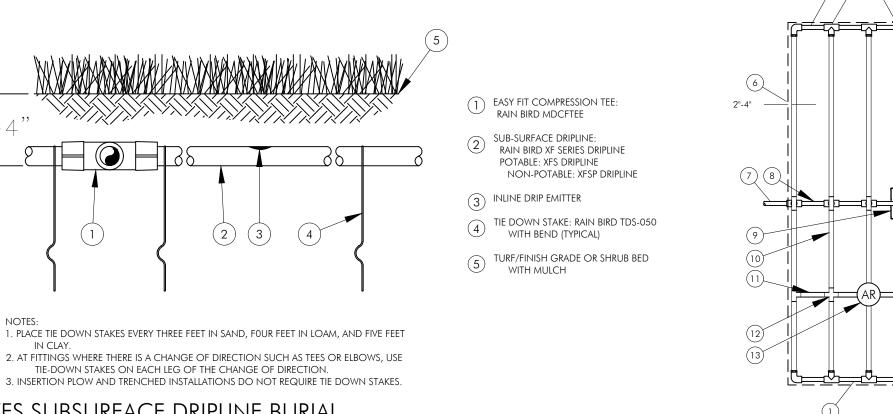
7 PVC TEE SxSxT

TIE DOWN STAKE: RAIN BIRD TDS-050 WITH BEND (TYPICAL)

10) FINISH GRADE RAIN BIRD XF SERIES BLANK TUBING LENGTH AS

XFS SUBSURFACE DRIPLINE BURIAL

N.T.S.



SUB-SURFACE DRIPLINE: rain bird XF Series Dripline POTABLE: XFS DRIPLINE NON-POTABLE: XFSP DRIPLINE

(7) INLINE DRIP EMITTER OUTLET

TIE DOWN STAKE: RAIN BIRD TDS-050 WITH BEND (TYPICAL) TURF/FINISH GRADE OR SHRUB BED WITH MULCH

RATCHET CLAMP (INCLUDED WITH ADAPTER)

1. PLACE TIE DOWN STAKES EVERY THREE FEET IN SAND, FOUR FEET INSERT ADAPTER FOR PVC PIPE:

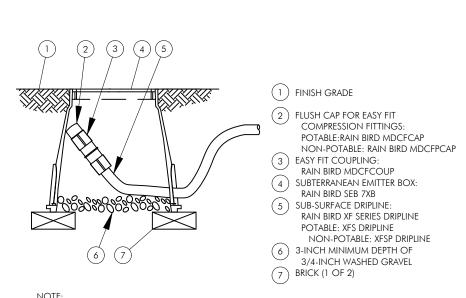
2. AT FITTINGS WHERE THERE IS A CHANGE OF DIRECTION SUCH AS TEES OR ELBOWS, USE TIE-DOWN STAKES ON EACH LEG OF THE CHANGE OF DIRECTION

3. INSERTION PLOW AND TRENCHED INSTALLATIONS DO NOT REQUIRE TIE DOWN STAKE

DEPTH PER SPECIFICATION

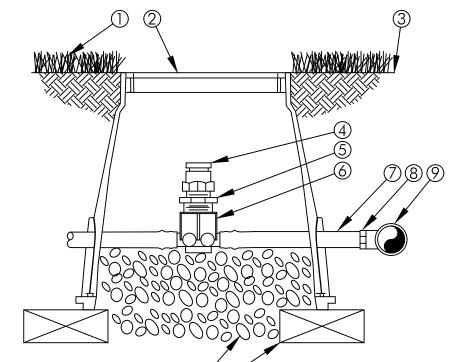
XFS SUBSURFACE DRIPLINE ADAPTER FOR PVC

N.T.S.



1. ALLOW A MINIMUM OF 6-INCHES OF DRIPLINE TUBING IN VALVE BOX IN ORDER TO DIRECT FLUSHED WATER OUTSIDE VALVE BOX.

XFS DRIPLINE FLUSHPOINT WITH COMPRESSION FITTINGS



1 TURF GRASS (2) SUBTERRANEAN EMITTER BOX: RAIN BIRD SEB 7XB (3) FINISH GRADE

4) ½" AIR RELIEF VALVE: RAIN BIRD ARV050 TO BE INSTALLED AT HIGH POINTS IN DRIP ZONE

BARB X FEMALE THREAD CONNECTOR RAIN BIRD XFD-TFA FITTING 7 1/2" BLANK DRIPLINE TUBING:

5 ½" X¾" PVC REDUCER BUSHING

8 BARB X MALE THREAD CONNECTOR: RAIN BIRD XFF-MA FITTING 9 PVC TEE CONNECTED TO PVC HEADER

 10 3" MINIMUM DEPTH OF 3 4" WASHED GRAVEL 11 BRICK (1 OF 2)

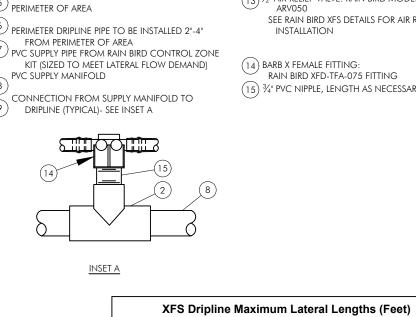
XFS AIR/VACUUM RELIEF

(1) PVC EXHAUST HEADER 2 PVC SCH 40 TEE OR EL (TYPICAL) BARB X MALE FITTING: RAIN BIRD XFF-MA FITTING (TYPICAL) FLUSH POINT (TYPICAL)

SEE RAIN BIRD DETAIL "XFS FLUSH POINT" OR "XFS FLUSH POINT WITH BALL VALVE"

5) PERIMETER OF AREA 6) PERIMETER DRIPLINE PIPE TO BE INSTALLED 2"-4" FROM PERIMETER OF AREA) pvc supply pipe from rain bird control zone KIT (SIZED TO MEET LATERAL FLOW DEMAND)

CONNECTION FROM SUPPLY MANIFOLD TO (9) DRIPLINE (TYPICAL)- SEE INSET A



(10) SUB-SURFACE DRIPLINE:
RAIN BIRD XF SERIES DRIPLINE (TYPICAL) POTABLE: XFS DRIPLINE NON-POTABLE: XFSP DRIPLINE (11) RAIN BIRD XF SERIES BLANK TUBING

12) BARB X BARB INSERT TEE OR CROSS: RAIN BIRD XFF-TEE OR RAIN BIRD XFD-CROSS (TYPICAL) (13) ½" AIR RELIEF VALVE: RAIN BIRD MODEL: SEE RAIN BIRD XFS DETAILS FOR AIR RELIEF INSTALLATION

(14) BARB X FEMALE FITTING: RAIN BIRD XFD-TFA-075 FITTING (15) 3/4" PVC NIPPLE, LENGTH AS NECESSARY

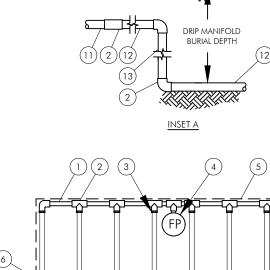
1. DISTANCE BETWEEN LATERAL ROWS AND EMITTER SPACING TO BE BASED ON SOIL TYPE, PLANT MATERIALS AND CHANGES IN ELEVATION. SEE RAIN BIRD XF-SDI DRIPLINE INSTALLATION GUIDE FOR SUGGESTED 2. LENGTH OF LONGEST DRIPLINE LATERAL SHOULD NOT EXCEED THE MAXIMUM LENGTH SHOWN IN THE 3. AIR RELIEF VALVE TO BE INSTALLED AT HIGH POINT OF AREA.

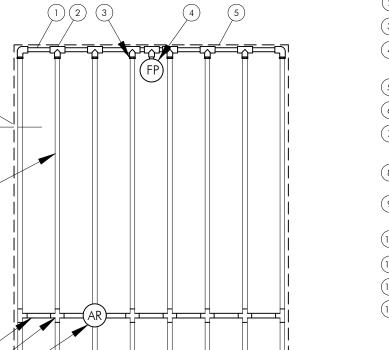
	12" Spacing Nominal Flow (gph)		18" Sp	pacing	24" Spacing Nominal Flow (gph)	
Inlet Pressure psi			Nominal F	low (gph)		
	0.6	0.9	0.6	0.9	0.6	0.9
15	273	155	314	250	424	322
20	318	169	353	294	508	368
30	360	230	413	350	586	414
40	395	255	465	402	652	474
50	417	285	528	420	720	488
60	460	290	596	455	780	514

XFS SUBSURFACE DRIPLINE CENTERFEED LAYOUT

4. WHEN USING 17MM INSERT FITTINGS WITH DESIGN PRESSURE OVER 50PSI, IT IS RECOMMENDED THAT

STAINLESS STEEL CLAMPS BE INSTALLED ON EACH FITTING.





1. DISTANCE BETWEEN LATERAL ROWS AND EMITTER SPACING TO BE BASED ON SOIL TYPE, PLANT MATERIALS AND CHANGES IN ELEVATION. SEE RAIN BIRD XFS DRIPLINE INSTALLATION GUIDE FOR SUGGESTED SPACINGS. 2. LENGTH OF LONGEST DRIPLINE LATERAL SHOULD NOT EXCEED THE MAXIMUM LENGTH SHOWN IN THE ACCOMPANYING TABLE. 3. AIR RELIEF VALVE TO BE INSTALLED AT HIGH POINT OF AREA. 4. WHEN USING 17MM INSERT FITTINGS WITH DESIGN PRESSURE OVER 50PSI, IT IS RECOMMENDED THAT STAINLESS STEEL CLAMPS BE INSTALLED ON EACH FITTING.

2 PVC SCH 40 TEE OR EL (TYPICAL) 3 BARB X MALE FITTING: RAIN BIRD XFF-MA FITTING (TYPICAL) FLUSH POINT (TYPICAL) WITH BALL VALVE"

(1) PVC EXHAUST HEADER

SEE RAIN BIRD DETAIL "XFS FLUSH POINT" OR "XFS FLUSH POINT PERIMETER OF AREA

PERIMETER DRIPLINE PIPE TO BE INSTALLED 2"-4" FROM PERIMETER OF AREA SUB-SURFACE DRIPLINE RAIN BIRD XF SERIES DRIPLINE (TYPICAL)

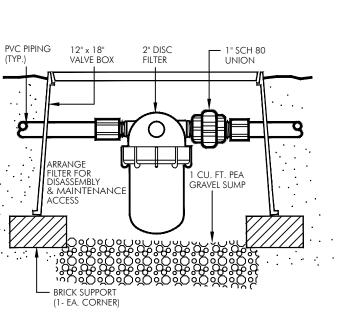
POTABLE: XFS DRIPLINE NON-POTABLE: XFSP DRIPLINE 8 RAIN BIRD XF SERIES BLANK TUBING BARB X BARB INSERT TEE OR CROSS:

(9) RAIN BIRD XFF-TEE OR RAIN BIRD XFD-CROSS (TYPICAL) ½" AIR RELIEF VALVE: RAIN BIRD MODEL: ARV050 (10) SEE RAIN BIRD XFS DETAILS FOR AIR RELIEF INSTALLATION 11) PVC SUPPLY HEADER

12) PVC DRIP MANIFOLD FROM RAIN BIRD CONTROL ZONE VALVE KIT (SIZED TO MEET LATERAL FLOW DEMAND) 13) PVC SCH 40 RISER PIPE

XFS Dripline Maximum Lateral Lengths (Feet)								
	12" Spacing		18" Sp	oacing	24" Spacing			
Inlet Pressure psi	Nominal F	low (gph)	Nominal F	low (gph)	Nominal Flow (gph)			
	0.6	0.9	0.6	0.9	0.6	0.9		
15	273	155	314	250	424	322		
20	318	169	353	294	508	368		
30	360	230	413	350	586	414		
40	395	255	465	402	652	474		
50	417	285	528	420	720	488		
60	460	290	596	455	780	514		

XFS SUBSURFACE DRIPLINE END FEED LAYOUT



2" DISC FILTER

N.T.S.



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DRIV Z ري. اين- ايد

IRRIGATION SPECS AND DETAILS

12.07.2018 as noted

N.T.S.

TYPICAL SOLENOID VALVE ASSEMBLY

GATE VALVE

1/2" SCH. 40 STREET "L"

FLEXIBLE P.V.C. OR TORO -FUNNY PIPE (MIN. 18" LONG)

(4) BARB COUPLING 17x17mm

RAIN BIRD XFF-MA-050

RAIN BIRD XFF-MA-075

) PVC LATERAL SUPPLY HEADER

XFS SUBSURFACE DRIPLINE RISER ASSEMBLY

(1) FINISH GRADE/TURF 2 OPERATION INDICATOR RAIN BIRD MODEL: OPERIND 3 SUB-SURFACE DRIPLINE: RAIN BIRD XF SERIES DRIPLINE POTABLE: XFS DRIPLINE NON-POTABLE: XFSP DRIPLINE

THE NOZZLE, 0.3 GPM, SHOULD BE ACCOUNTED FOR IN THE SYSTEM

XFS SUBSURFACE DRIPLINE OPERATION INDICATOR

AMETEK VALVE BOX OR EQUAL —

FLEXIBLE SWING JOINT DETAIL

1. INSERT BARB TRANSFER FITTING DIRECTLY INTO DRIPLINE TUBING.

2. VAN NOZZLE MAY BE SET TO CLOSED, OR IF IT IS DESIRED TO SEE SPRAY

FROM THE NOZZLE, SET THE ARC TO 1/4 PATTERN. THE FLOW FROM

SOLENIOD VALVE

— 6" PEA GRAVEL

N.T.S.

LA7.01