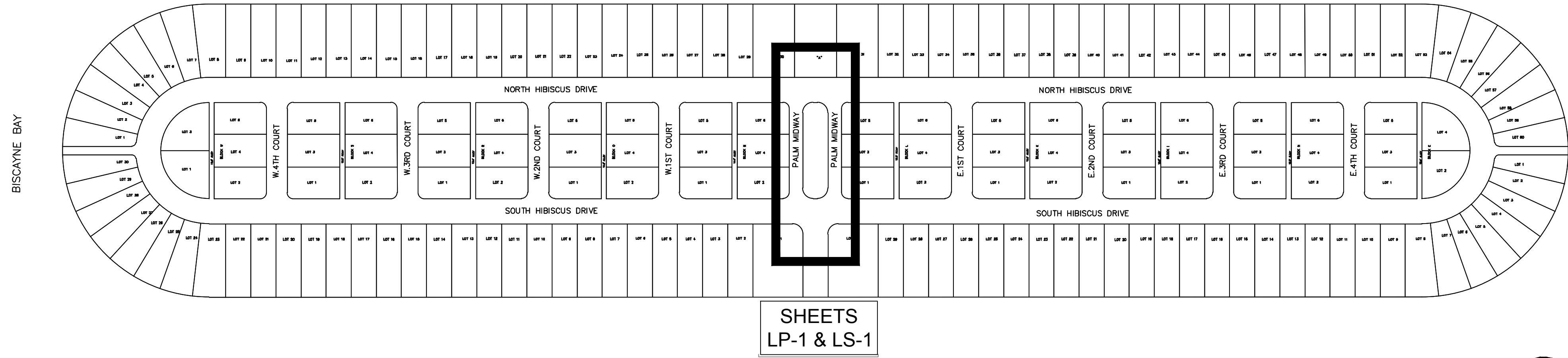
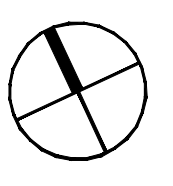


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SHEETS
LP-1 & LS-1

LANDSCAPE PLAN- KEY MAP:
LP SHEETS - TREE & PALM PLANTING
LS SHEETS - SHRUB & GROUNDCOVER PLANTING



TREE & PALM LEGEND					
TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SPECIFICATIONS
	CG	2	Caesalpinia granadillo	Bridal Veil Tree	12'-14" HT O.A.
	EX-CG	13	Caesalpinia granadillo	Bridal Veil Tree	EXISTING TREE
	CC	6	Cassia surattensis	Cassia	2-2.5' Cal., 10-12' Ht x 5-6' SPRD
	CR	12	Clusia rosea	Autograph Tree	3" DBH., 12' HT. X 6' SPRD.
	DR	1	Delonix regia	Royal Poinciana	3" DBH, 14'-16" HT. X 6' SPRD.
	EX-PU	2	Pandanus utilis	Existing Screw Pine	12' OA HT. MATCH HEIGHT
PALM TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SPECIFICATIONS
	EX-PDX	6	Phoenix dactylifera 'Medjool'	Existing Date Palm	EXISTING PALM
	EX-ROX	18	Roystonea elata	Existing Royal Palm	EXISTING PALM
	RRX	3	Roystonea regia	Royal Palm	28' OA. -TO MATCH

- NOTES:**
- SEE LS SHEETS FOR SHRUB & GROUNDCOVER PLANTING
 - ALL SOD AREAS TO BE ST. AUGUSTINE - *Stenotaphrum secundatum*

SHRUB PLANTING SCHEDULE						
SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SPECIFICATIONS	
	ALP	58	Alpinia purpurata	Red Ginger	2.5' HT x 3' SPRD	
	COR	96	Cordyline fruticosa 'Red Sister'	Red Sister Ti	3' HT X 2' SPRD	
	CRA	40	Crinum augustum 'Queen Emma'	'Queen Emma' Crinum	4' HT x 4' SPRD	
	ELD	7	Elaeocarpus decipiens TM	Japanese Blueberry Tree	5' HT x 4' SPRD	
	HEL	31	Heliconia rostrata	Lobster Claw Heliconia	5' HT. FULL	
	PHS	70	Philodendron bipinnatifidum-selloum	Split Leaf Philodendron	24" HT X 24" SPRD.	
	PHR	88	Philodendron x 'Rojo Congo'	Rojo Congo Philodendron	2.5' HT x 2.5' SPR	
	STN	26	Strelitzia nicolai	Giant Bird of Paradise	6' HT. FULL	
SHRUB AREAS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SPECIFICATIONS	SPACING
	ALZ	472	Alpinia zerumbet 'Variegata'	Variegated Shell Ginger	24" HT X 24" SPRD.	30" o.c.
	CHI	897	Chrysobalanus icaco 'Red Tip'	Red Tip Cocoplum	24" HT X 24" SPRD.	24" o.c.
	COS	707	Conocarpus erectus 'Sericeus'	Silver Buttonwood	24" HT x 24" SPRD	24" o.c.
	FIM	2,249	Ficus microcarpa 'Green Island'	Green Island Ficus	12" HT x 12" SPRD	16" o.c.
	HAN	66	Hamelia nodosa	Dwarf Firebush	18" HT x 18" SPRD	18" o.c.
	HIB	274	Hibiscus rosa-sinensis 'Seminole Pink'	Hibiscus	24" HT X 24" SPRD.	30" o.c.
	JAM	706	Jasminum multiflorum	Downey Jasmine	16" HT. X 16" SPRD.	24" o.c.
	LIM	1,932	Liriope muscari 'Evergreen Giant'	Evergreen Giant Border Grass	12" HT x 12" SPRD	16" o.c.
	MUC	578	Muhlenbergia capillaris	Pink Muhly	18" HT	24" o.c.
	NEM	447	Nephrolepis biserrata 'Macho Fern'	Macho Fern	24" HT X 24" SPRD.	24" o.c.
	NEE	370	Nephrolepis exaltata	Boston Fern	12" Ht. x 12" Sprd.	12" o.c.
	OPI	2,053	Ophiopogon intermedius 'Argenteomarginatus'	Variegated Aztec Grass	12" HT x 12" SPRD	14" o.c.
	PHB	1,542	Philodendron 'Burle Marx'	Burle Marx Philodendron	12" HT x 12" SPRD	18" o.c.
	PHX	716	Philodendron x 'Xanadu'	Xanadu	18" HT x 18" SPRD	18" o.c.
	SER	94	Serenoa repens 'Cinerea'	Silver Saw Palmetto	18" HT x 18" SPRD	30" o.c.
	TRF	1,859	Tripsacum floridanum	Florida Gamagrass	2'-2.5' HT	24" o.c.
	ZAM	337	Zamia pumila	Coontie	18" HT x 18" SPRD	24" o.c.
GROUND COVERS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SPECIFICATIONS	SPACING
	ANN	1,680	Annuals	Annuals	4"	10" o.c.

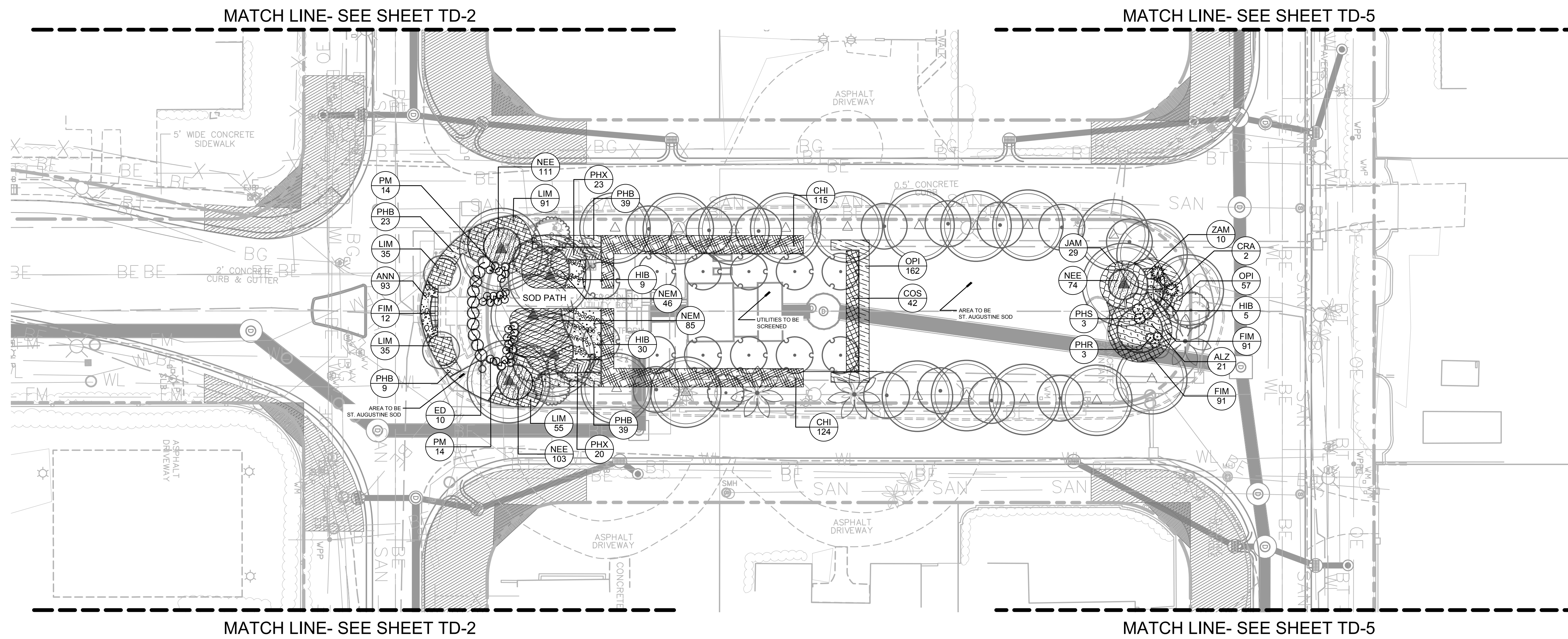
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DRAWN BY:	SWP
CHECKED BY:	JDH
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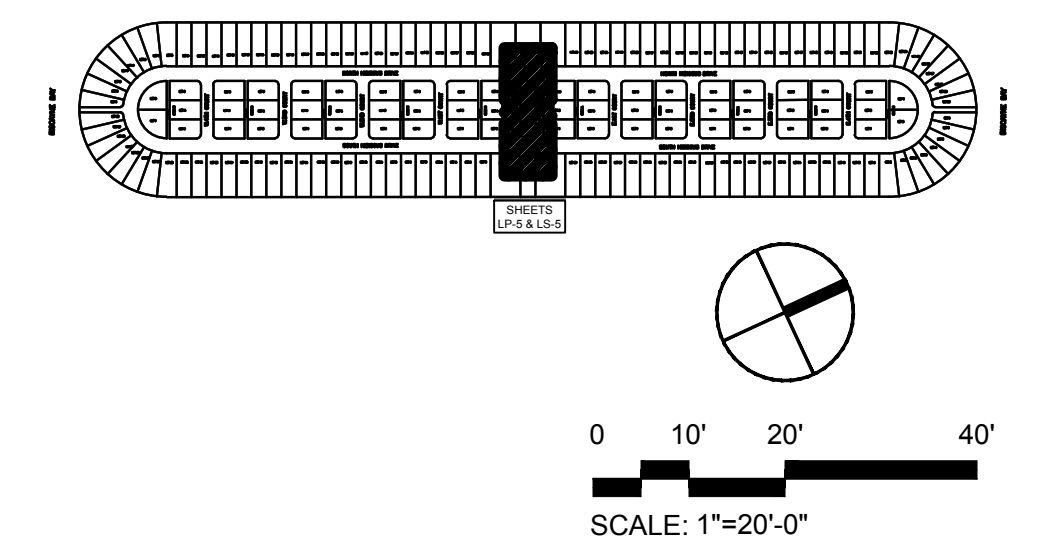
HIBISCUS ISLAND
CITY OF MIAMI BEACH, FLORIDA
PREPARED FOR:
CITY OF MIAMI BEACH
LANDSCAPE PLAN- KEY MAP

Scott W. Peavler, R.L.A.
Florida R.L.A. No. 6666976
PROJECT NO.
17-0027-001-01
LP-0
SHEET ___ OF ___

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SHRUB PLAN LEGEND		
SHRUBS	CODE	COMMON / BOTANICAL NAME
	CRA	"Queen Emma" Crinum Crinum augustum 'Queen Emma'
	ED	Japanese Blueberry Tree Elaeocarpus decipiens TM
	PHS	Split Leaf Philodendron Philodendron bipinnatifidum-selloum
	PHR	Rojo Congo Philodendron Philodendron x 'Rojo Congo'
	PM	Yew Pine Podocarpus macrophyllus
SHRUB AREAS	CODE	COMMON / BOTANICAL NAME
	ALZ	Variegated Shell Ginger Alpinia zerumbet 'Variegata'
	CHI	Red Tip Cocoplum Chrysobalanus icaco 'Red Tip'
	COS	Silver Buttonwood Conocarpus erectus 'Sericeus'
	FIM	Green Island Ficus Ficus microcarpa 'Green Island'
	HIB	Hibiscus Hibiscus rosa-sinensis 'Seminole Pink'
	JAM	Downey Jasmine Jasminum multiflorum
	LIM	Evergreen Giant Border Grass Liriope muscari 'Evergreen Giant'
	NEM	Macho Fern Nephrolepis biserrata 'Macho Fern'
	NEE	Boston Fern Nephrolepis exaltata
	OPI	Varigated Aztec Grass Ophiopogon intermedius 'Argenteomarginatus'
	PHB	Burle Marx Philodendron Philodendron 'Burle Marx'
	PHX	Xanadu Philodendron x 'Xanadu'
	ZAM	Coontie Zamia pumila
GROUND COVERS	CODE	COMMON / BOTANICAL NAME
	ANN	Annuals Annuals



DATE:	04/XX/18
SCALE:	1"-20"
DESIGN BY:	SWP
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HIBISCUS ISLAND
CITY OF MIAMI BEACH, FLORIDA
 PREPARED FOR:
CITY OF MIAMI BEACH
 SHRUB PLANTING PLAN

Scott W. Peaver, R.L.A.
 Florida R.L.A. No. 6666976
 PROJECT NO.
17-0027-001-01

LS-1
 SHEET ___ OF ___

Always call 811 two full business days before you dig to have underground utilities located and marked.



DATE:	04/XX/18
SCALE:	1"=20'
DESIGN BY:	SMP
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GENERAL

Tree relocation work shall be performed in compliance with the CONTRACTOR'S progress, schedule as approved by the CITY. However, relocation work shall start no sooner than the beginning of the construction contract and shall be completed by the completion date of the contract. No relocation work shall start before the date approved nor continue without the knowledge of the CITY.

REFERENCES

- A. Where referenced standards conflict with other specified requirements, the more restrictive or stringent requirements shall govern. Comply with applicable requirements of the following standards:
 1. American National Standards Institute (ANSI): Z60.1 American National Standards for Nursery Stock (Sponsor: American Association of Nurserymen, Inc.).
 2. National Arborist Association, ~537 Stratford Rd., Wantagh, NY 11793 (NAA): Ref. 1 Transplanting of Trees and Shrubs in the Southeastern United States.
 3. Florida Department of Agriculture and Consumer Services: Grades and Standards for Nursery Plants.

DESCRIPTION

- A. Plant materials to be relocated on site are indicated on the Drawings. Those not shown will be relocated as directed by the CITY.
- B. The person (foreman or superintendent) in charge of and responsible for the CONTRACTOR'S tree relocation crews shall have a minimum 10 years experience in transplanting of plant materials and shall be recognized by the American Association of Nurserymen.
- C. Existing trees to remain shall be protected during all construction phases. Protective barriers shall be provided for those existing trees adjacent to construction operations. Replacement of any trees that are damaged or destroyed due to the CONTRACTOR'S operations shall be the CONTRACTOR'S responsibility and shall be replaced at the CONTRACTOR'S expense. Any existing tree that dies within one year after final acceptance shall be replaced with a number of trees of the same species to equal the caliper DBH of the existing tree lost. Replacement trees shall be Florida No. 1 and have a caliper DBH of no smaller than 3".
- D. Remove other vegetation as necessary and as directed by the LANDSCAPE ARCHITECT to accommodate new plantings.
- E. Tree pits or holes remaining after relocation of plant material shall be backfilled with clean fill and brought back flush with surrounding grade, unless the pits are to be immediately replanted. Pits that are to be quickly replanted shall be surrounded by safety barricades to prevent accidental falls into pits. In areas where new plant material will replace relocated plant material, appropriate soil mix shall be used as backfill.

QUALITY ASSURANCE

- A. Unless otherwise specified herein, tree transplanting shall conform to NAA Ref. 1.
- B. CONTRACTOR shall comply with NAA standards for pruning and shall remove branches from trees that are to remain as necessary to clear new construction.
- C. CONTRACTOR shall recommend procedures to compensate for loss of roots (if any) and shall perform initial pruning of branches and stimulation of root growth where removed to accommodate new construction.
- D. Tree repair work shall be performed for damage incurred by construction.
- E. Routine progress evaluation reports shall be provided on relocated trees until the end of the maintenance period.
- F. Evaluate existing trees prior to transplanting and verify that trees are free from disease and sufficiently strong to survive relocation from the site to their new location. Notify the LANDSCAPE ARCHITECT in writing of any trees that the CONTRACTOR considers insufficiently strong to survive relocation.

SUBMITTAL

- A. CONTRACTOR shall submit for approval by OWNER a list of equipment, procedures, and labor force anticipated for use in tree relocation. CONTRACTOR shall include start date, completion date, and schedule of relocation as part of the approved progress schedule and, in addition, shall submit a more detailed daily schedule for the transplanting period, showing the schedule for root pruning and the number of units to be dug and relocated to specified areas.

For those materials that require root pruning, the relocation schedule will begin at the end of the specified root pruning period.

- C. CONTRACTOR shall apply for and pay all costs associated with tree removal/relocation permits. The permit shall be obtained from the CITY.
- D. Prior to start of relocation work, the CONTRACTOR shall submit for approval details of the tree protection system to be utilized. All trees indicated to remain during construction shall be protected in accordance with recognized standards of the industry and protection shall be removed once construction is complete. CONTRACTOR shall also certify that where damage occurred, trees were promptly and properly treated, and shall indicate which damaged trees (if any) are incapable of retaining full growth potential and are recommended to be replaced.
- E. The CONTRACTOR, in order to guarantee his work, may use methods, sequence and schedule for effecting tree relocations and plant protection methods different from what is described in these specifications. However, if different, the CONTRACTOR must submit for approval a full description of all proposed methods, sequence of events and schedule for effecting tree relocations and plant protection.
- F. CONTRACTOR shall coordinate tree relocation with road construction and other related operations and such coordination shall be clearly evidenced in the schedule submittal.
- G. CONTRACTOR must submit procedures to be utilized for maintenance of all relocated trees.

GUARANTEE

- A. Relocated plant material shall fall under the standard 12 month guarantee.
- B. Damage to other plants, lawn or construction work occurring within the work area during tree relocation shall be repaired at no cost to the CITY. This also includes, but is not limited to, damage of curbs, walks, roads, fences, site furnishings, etc. Replacing and replanting of damaged trees, shrubs or turf shall be performed in accordance with this specification.
- C. Existing tree canopy shall not have more than 25% loss after relocation procedures are completed. CONTRACTOR shall be responsible for replacing any canopy loss due to lack of care and/or inadequate methods of transplanting the trees and palms that would cause the death of said plant material. Any transplanted tree that dies within one year after final acceptance shall be replaced with a number of trees of the same species to equal the caliper DBH of the transplanted tree lost. Replacement trees shall be Florida No. 1 having a caliper DBH no smaller than 3". Replacement shall be the CONTRACTOR'S responsibility.

TRANSPLANTING - GENERAL

- A. Transplanting shall consist of on_site transplanting of existing trees. Trees shall be transplanted only once from existing location to permanent positions as shown on Drawings.
- B. Digging, Wrapping and Handling: Plants shall be dug and prepared for moving in a manner that will not cause damage to branches, shape, root system, and development.
- C. Balled and Burlapped Plants: Balls shall be firmly wrapped with burlap or approved cloth substitute. No balled plant will be acceptable if the ball is cracked and broken, or if the stem or trunk is loose in the ball, either before or during transplanting. Balled plants shall be lifted and handled from the bottom of the ball, properly protected and delivered to the replanting site, to be planted immediately and watered thoroughly. Ball sizes shall be as recommended in ANSI Z60.1

TAGGING

- A. Trees within the designated areas for relocation shall be clearly marked by means of yellow plastic surveyors' ribbons and coordinated with the LANDSCAPE ARCHITECT and CITY prior to root pruning and/or digging.

ROOT PREPARATION

- A. Trees to be relocated shall be root pruned at least 60 days prior to digging with clean, sharp equipment. The specific requirements for root ball size shall be in accordance with the table below. CONTRACTOR shall maintain root pruned materials by watering, weeding, mowing, spraying, fertilizing, and other horticulture practices. After root pruning, backfill with good rooting medium, fertilize with organic fertilizer to promote root growth, mulch to reduce weeds, discourage foot traffic and its compacting effect, conserve moisture and minimize temperature fluctuation.
- B. Root Ball Size Chart: Root ball sizes shall be in accordance with minimum standards set forth in Grades and Standards for Nursery Plants Part 11, Palms and Trees, Florida Department of Agriculture, as follows:

1. Caliper	Minimum Ball Diameter
3 1/2 - 4:	28"
4 - 4 1/2"	30"
4 1/2 - 5"	32"
5 - 5 1/2"	34"
Larger Sizes	Increase proportionally
2. Ball Diameter	Medium Ball Diameter
Less than 20"	Not less than 75% of diameter
20" to 30"	Not less than 65% of diameter
30" to 48"	Not less than 60% of diameter

CROWN PREPARATION

- A. Shade Trees:
 1. Shade Trees: Selectively prune and thin crown to remove approximately one third of the branches. In so doing, preserve the basic shape and form of the tree, eliminate cross branching and dead or diseased branches.
 2. Hand strip selected species of all leaves following pruning and prior to moving.

HAND DIGGING

- A. Burlapping will be required. Trees that are burlapped for relocation shall comply with and be handled in same manner as new plant material specified in Section 02900-Landscape Work.

HANDLING AND TRANSPORTATION

- A. Trees shall be properly handled during moving so trunks will not be scarred or damaged and to avoid broken limbs. Broken limbs which do not cause the tree to be rejected shall be repaired under the following guidelines:
 1. Properly prune dead, dying, or damaged branches with clean, sharp equipment.
 2. Remove injured bark and wood of a tree with a clean, sharp knife to a point where healthy bark and wood make contact at their margins.
 3. Inspect and treat wound for insect and disease.
 4. Seal wounds with bituminous base wound paint for all limbs greater than 3" diameter.
- B. Transport trees on vehicles of adequate size to prevent overcrowding, broken limbs, foliage damage or root ball damage.
- C. Root ball should be kept moist during all phases of relocation.
- D. Tree crowns shall be protected with shade cloth to prevent desiccation and wind burn. Crowns shall be periodically sprayed with water to help ensure against desiccation.
- E. Plant material shall be handled only in ways and means accepted by the industry and acceptable to the LANDSCAPE ARCHITECT.
- F. Plant material shall be planted the same day it is dug. Preparation of planting pits or beds shall be coordinated to ensure this schedule.

PLANTING

- A. Relocated Material
 1. Relocated trees shall be planted according to procedures described for new material, Section 02900-Landscape Work. Verify that final grades have been established prior to planting operations. Ensure that proposed planting pits drain by test filling with water prior to transplantaion.
 5. CONTRACTOR shall continue watering and caring for relocated material as described in paragraph 3.09.
 6. Mulch tree pit areas to reduce weeds, discourage foot traffic and its compacting effect, conserve moisture and minimize temperature fluctuations.
 7. Brace trunk and leave in place until trees/ palms are wind firm. (1± year)
 8. Wrap trunks and structural branches of thin barked trees to protect against sun scald and dehydration. Retain through at least one growing season, and through cold season.
 9. Feed with a diluted solution of N_P_K in solution form with a soil needle, providing water, air, and nutrients.
 10. Where foliage is retarded, spray with one of the soluble types of foliage feeders.
 11. At time of planting, use soil needles for watering new transplant to fill air pockets and to keep roots (especially feeder roots) moist, live, and healthy. Direct fine spray at foliage to help harden_off new leaves.
 12. **Planting design is not intended to have a permanent underground irrigation and as such the CONTRACTOR is responsible to establish planting with temporary irrigation or hand watering. CONTRACTOR is responsible for plant material for a warranty period of 1 year from the time of substantial completion.**

STAKING AND GUYING

Designated material shall be staked and guyed according to planting details.

WATERING

- A. CONTRACTOR shall be responsible for the manual watering of relocated plant materials for 90 days. If utilized, all temporary watering system installations shall be completely removed by the CONTRACTOR after the watering period.

Following transplating, CONTRACTOR shall water trees daily for the first two weeks, every other day for the next two weeks. Soaking then shall continue on a twice weekly basis for another period of eight (8) weeks. Such watering shall thoroughly saturate the root ball to its full depth.

MAINTENANCE

- A. All relocated plant materials shall be maintained immediately after each item is planted and continued until 90 day watering period is completed or until final acceptance whichever is latest, at which time the Property Owner, will assume responsibility for maintenance of the landscaping materials, following the procedures and recommendations of the CONTRACTOR.
- B. During this maintenance period, all relocated plant materials shall be maintained in accordance with the procedures described in Section 02900-Landscape Work.

CLEAN UP

- A. Upon completion of the work, the CONTRACTOR shall thoroughly clean the landscaped area, removing all equipment, unused materials, rubbish and surplus excavated material, and shall fine grade all disturbed areas, including areas adjacent to the transplanted materials, to provide a neat and uniform site. All damaged or altered existing structures, as a result of the landscape work, shall be corrected.

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HIBISCUS ISLAND
CITY OF MIAMI BEACH, FLORIDA
 PREPARED FOR:
CITY OF MIAMI BEACH
PLANTING NOTES

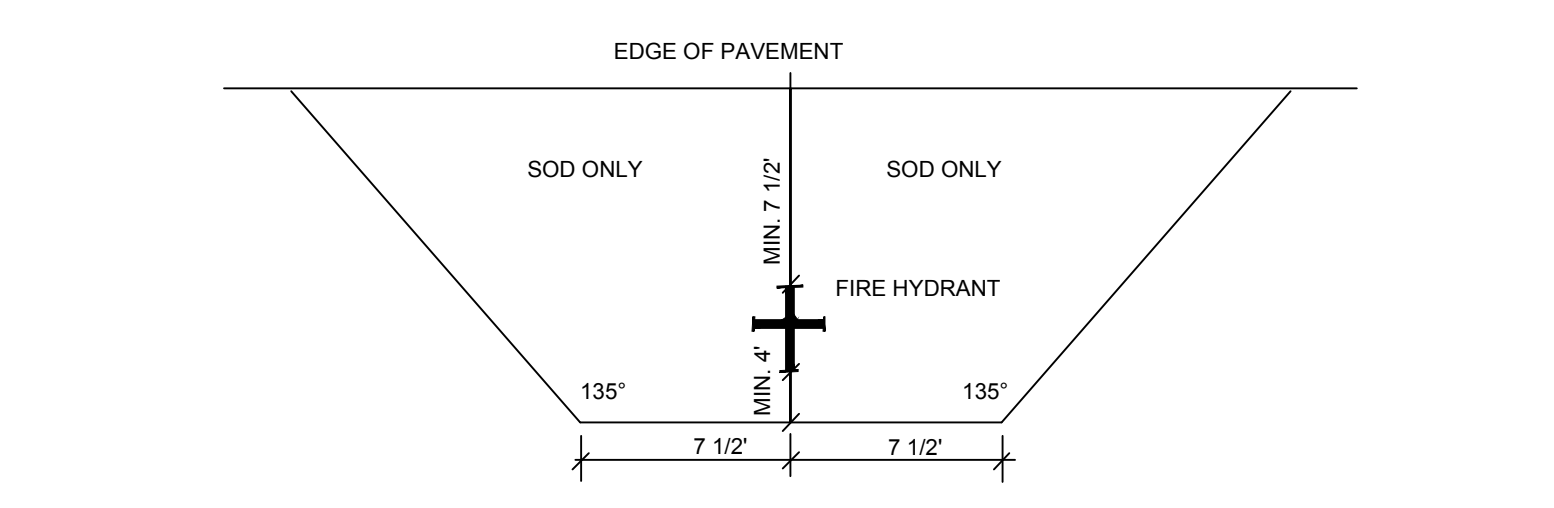
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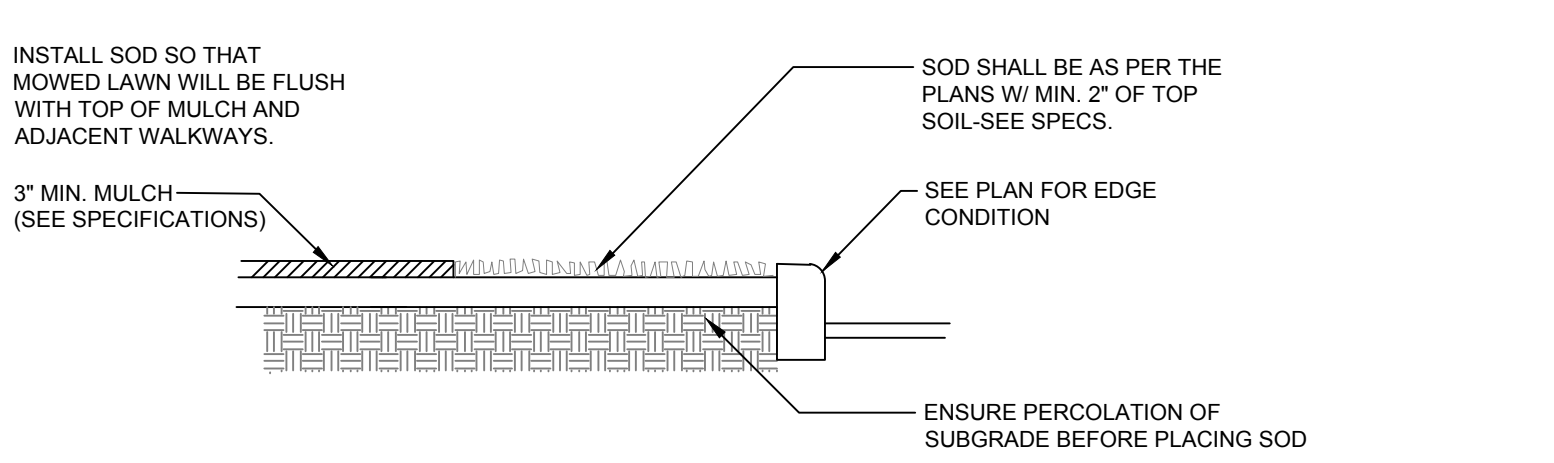
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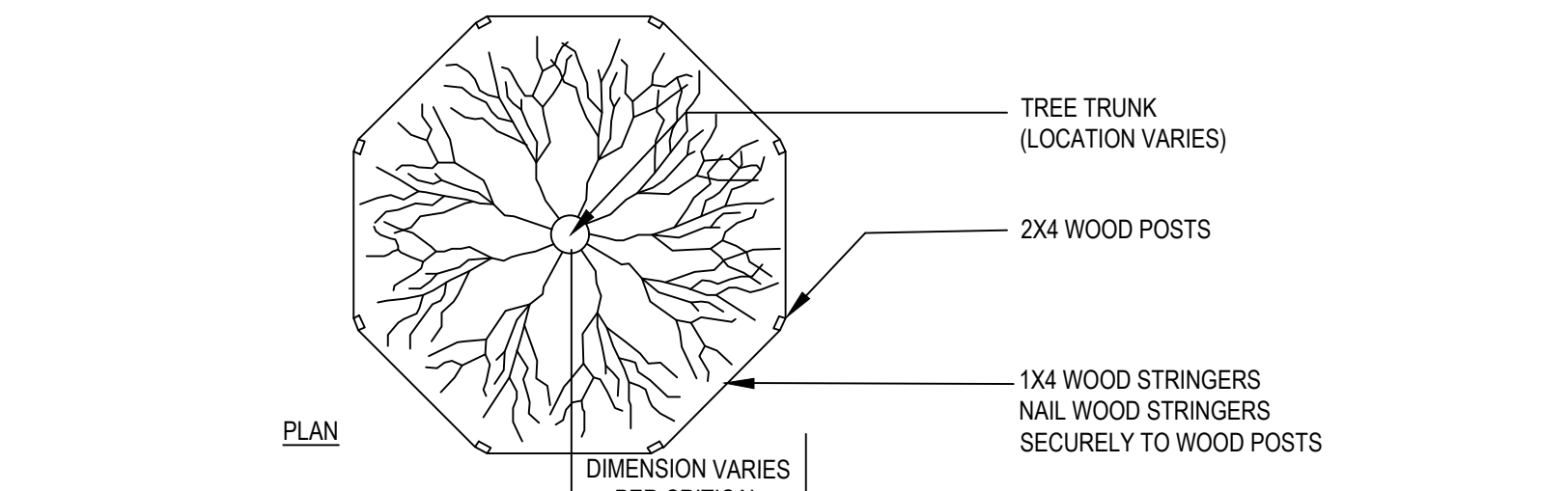
1 FIRE HYDRANT CLEAR ZONE
SECTION NTS



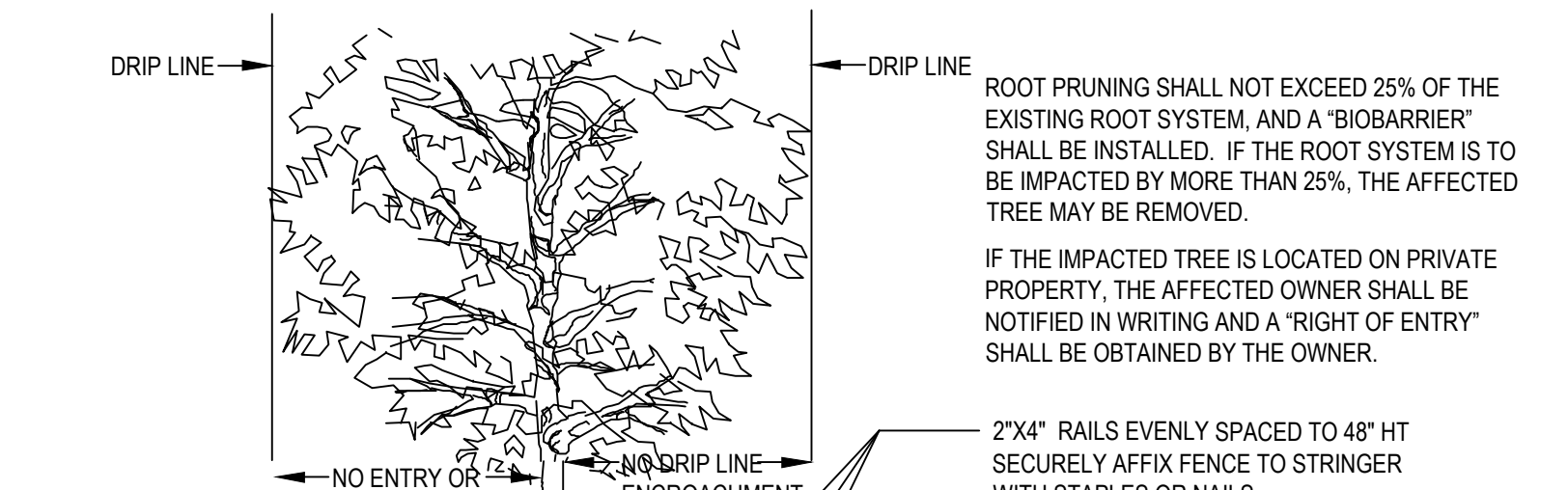
2 SOD PLANTING
SECTION NTS



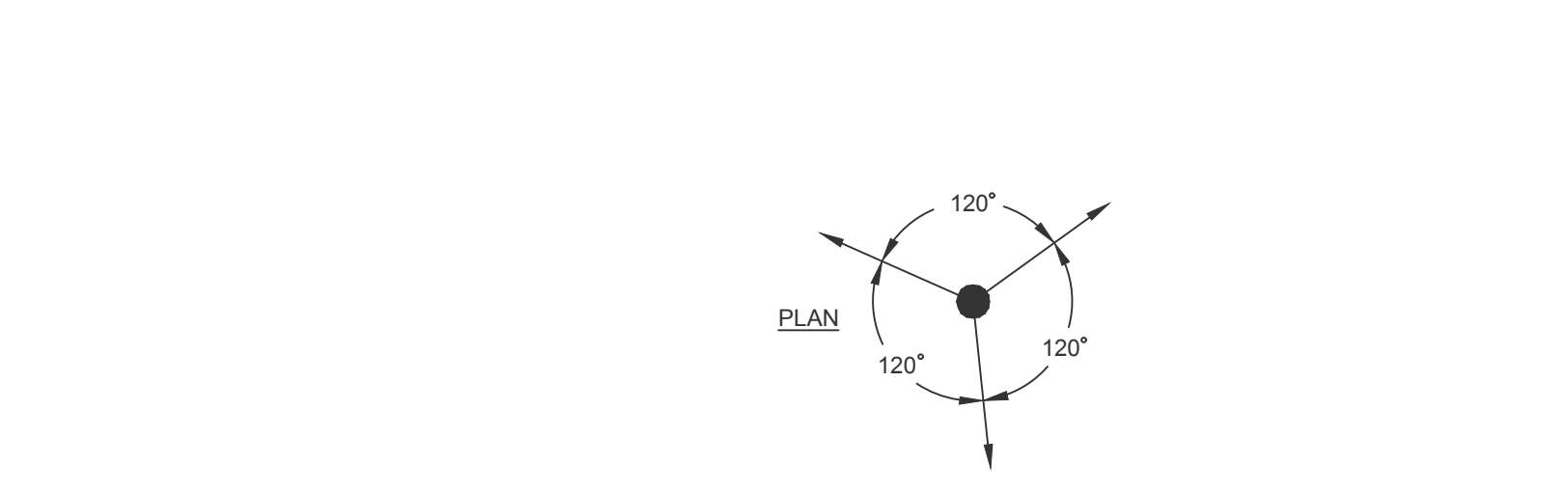
3 SHRUB PLANTING
SECTION NTS



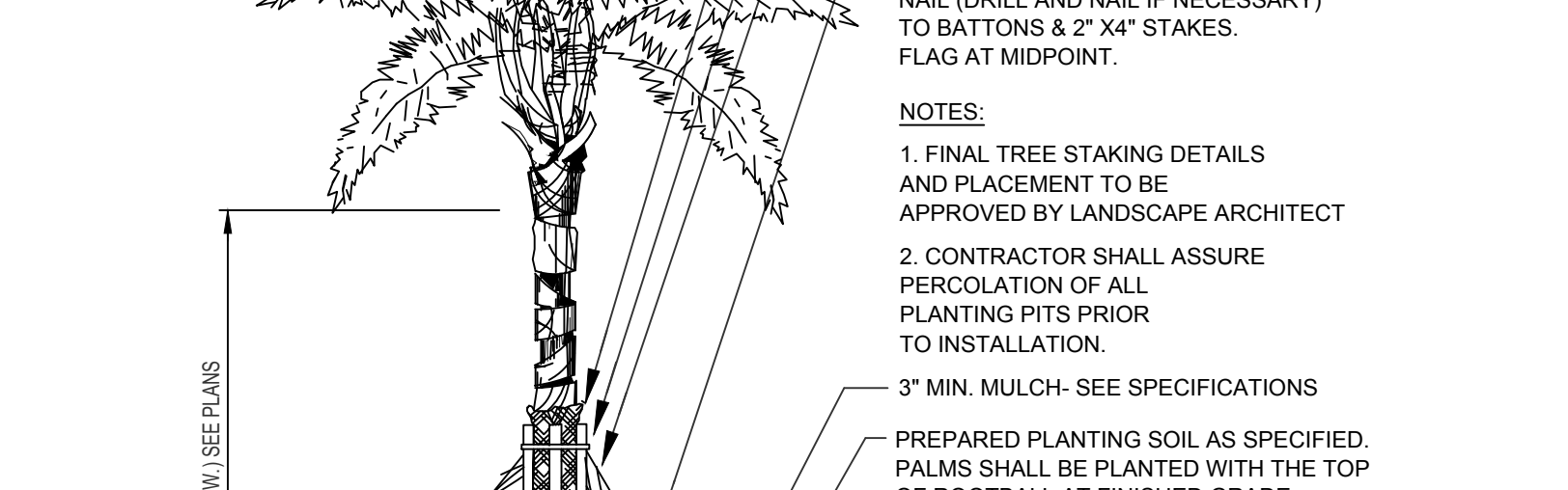
4 TREE BARRICADE
SECTION NTS



5 CANOPY TREE
SECTION NTS



6 PALM (TYPICAL)
SECTION NTS



7 SMALL TREE
SECTION NTS

NOTES: CRITICAL PROTECTION ZONE: THE AREA SURROUNDING A TREE WITHIN A CIRCLE DESCRIBED BY A RADIUS OF ONE FOOT FOR EACH INCH OF THE TREE TRUNK DIAMETER AT 54" ABOVE FINISHED GRADE. FOR GROUPS OF TREES, PLACE BARRICADES BETWEEN TREES AND CONSTRUCTION ACTIVITY. ANY CONSTRUCTION ACTIVITY WITHIN THE 'CRITICAL PROTECTION ZONE' SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT IMMEDIATELY!
DO NOT PLACE ANY TREE BARRICADE ON PRIVATE PROPERTY BEGIN ALL TREE BARRICADES AT THE ROW LINE.
*TREE PROTECTION BARRICADES SHALL BE LOCATED TO PROTECT A MINIMUM OF 75% OF THE CRITICAL PROTECTION ZONE.

ROOT PRUNING SHALL NOT EXCEED 25% OF THE EXISTING ROOT SYSTEM, AND A "BIOBARRIER" SHALL BE INSTALLED. IF THE ROOT SYSTEM IS TO BE IMPACTED BY MORE THAN 25%, THE AFFECTED TREE MAY BE REMOVED.
IF THE IMPACTED TREE IS LOCATED ON PRIVATE PROPERTY, THE AFFECTED OWNER SHALL BE NOTIFIED IN WRITING AND A "RIGHT OF ENTRY" SHALL BE OBTAINED BY THE OWNER.

NOTES:
1. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY LANDSCAPE ARCHITECT
2. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.
3. MIN. MULCH- SEE SPECIFICATIONS
PREPARED PLANTING SOIL AS SPECIFIED. PALMS SHALL BE PLANTED WITH THE TOP OF ROOTBALL AT FINISHED GRADE.
BERM SOIL TO HOLD WATER
2" X 4" X 3" WOOD STAKES
FINISH GRADE

NOTE
1. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.
2. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

PROTECT TREE TRUNK WITH BLACK RUBBER HOSE
2 LAYERS OF SISAL OR OTHER BIODEGRADABLE MATERIAL
NYLON STRAPS
FOUR 2"x4"x8" STAKES SPACE EVENLY AROUND TREE PAINTED BROWN.
SOIL BERM TO HOLD WATER
3" MULCH AS SPECIFIED
FINISHED GRADE - SEE PLAN FOR EDGE CONDITION
B&B OR CONTAINERIZED (SEE SPECIFICATIONS FOR ROOT BALL REQUIREMENTS).
PREPARED PLANTING SOIL AS SPECIFIED

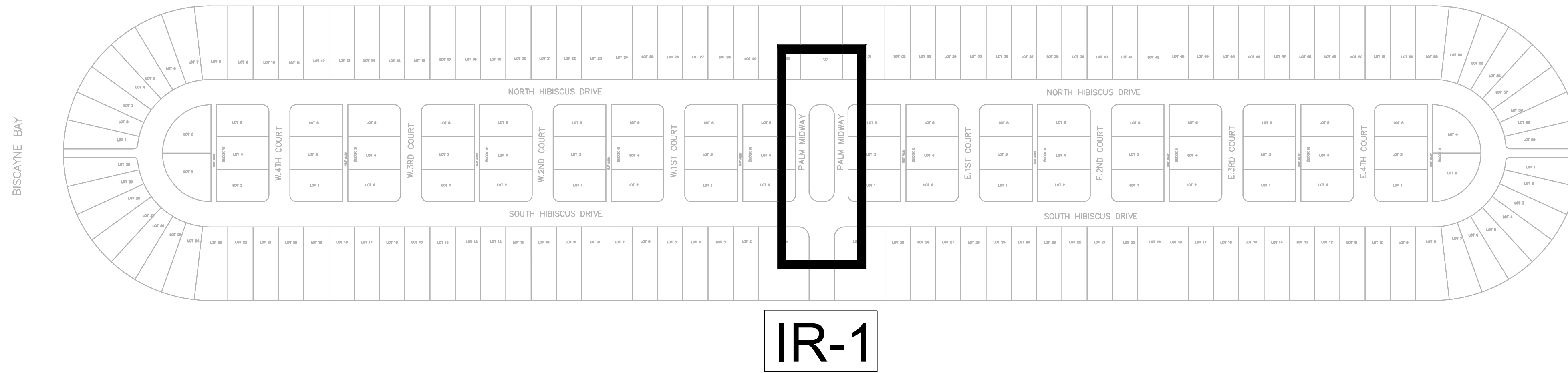
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CITY OF MIAMI BEACH, FLORIDA
PREPARED FOR:
CITY OF MIAMI BEACH
PLANTING DETAILS

Scott W. Peaver, R.L.A.
Florida R.L.A. No. 6666976

PROJECT NO.
17-0027-001-01

LPD
SHEET ___ OF ___



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 IRRIGATION PLAN- KEY MAP

Scott W. Peavler, R.L.A.
 Florida R.L.A. No. 6666976

PROJECT NO.
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IR-0
 SHEET **1** OF **4**


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DATE:	05/16/19
SCALE:	NTS
DESIGN BY:	TFP
DRAWN BY:	TFP
CHECKED BY:	JMJ/MAW
APPROVED BY:	JMJ
DESCRIPTION:	

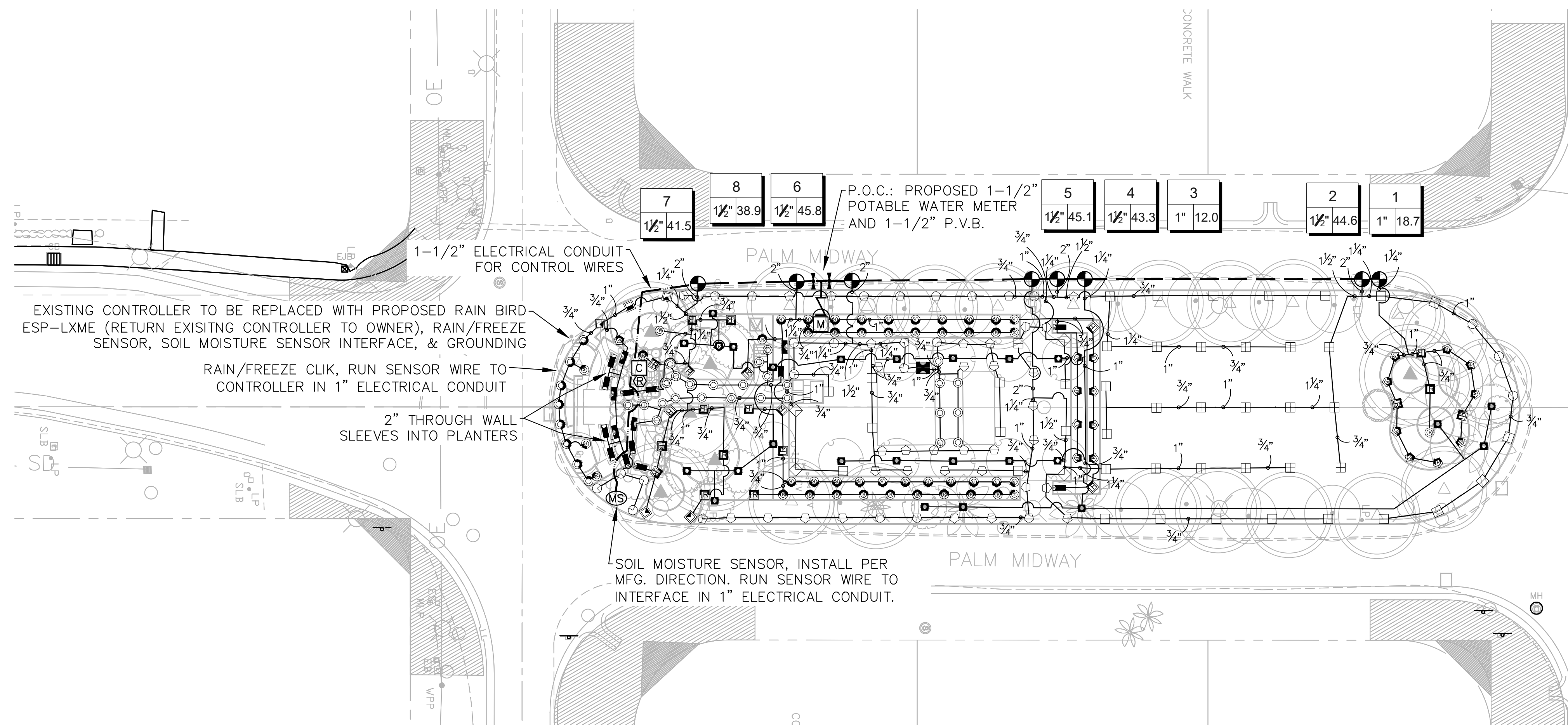
IRRIGATION LEGEND

QTY	SYM	DESCRIPTION	DET.
	1	STATION NUMBER	
	18.7	GALLONS PER MINUTE-CATALOG FLOW	
	1"	VALVE SIZE	
1	M	LINE SIZE BY 2" TAP, MAXIMUM 10' OF 2" POLYETHYLENE SERVICE LINE AND A PROPOSED 1-1/2" POTABLE WATER METER	A
1	[Symbol]	PROPOSED 1-1/2" FEBCO 765 PRESSURE VACUUM BREAKER BACKFLOW ASSEMBLY	A
8	[Symbol]	RAIN BIRD PEB SERIES RCV (SIZED PER PLAN) WITH A NIBCO T-113 GATE VALVE IN A CARSON 1220 JUMBO VALVE BOX WITH BOLT DOWN LID	B1
1	C	PROPOSED RAIN BIRD ESP-LXME WALL MOUNT 12 STATION CONTROLLER, GROUNDING GRID AND BASELINE WATERTEC S100 SOIL MOISTURE SENSOR INTERFACE MOUNTED ADJACENT TO CONTROLLER	C1
1	R	POLE MOUNTED HUNTER RAIN FREEZE CLIK SENSOR MODEL RFC, WIRE TO BE CONNECTED TO CONTROLLER VIA 1" CONDUIT	C2
1	MS	BASELINE WATERTEC S100 SOIL MOISTURE SENSOR bSENSOR INSTALLED ON SITE PER MANUFACTURER'S RECOMMENDATIONS. COMMUNICATION WIRE TO BE CONNECTED TO SMS INTERFACE AT CONTROLLER VIA 1" CONDUIT	C3
2	[Symbol]	NIBCO T-113 BRONZE MAINLINE ISOLATION VALVE (LINE SIZE) IN A CARSON 1419 VALVE BOX.	D
		SCH 40 PVC LATERAL LINE WITH SCH 40 SOLVENT WELD PVC FITTINGS (SIZE PER PLAN, MINIMUM PIPE SIZE SHALL BE 3/4", NO 1/2" PIPES PERMITTED)	L
		2" SCHEDULE 40 SOLVENT-WELD PVC MAINLINE W/SCH 40 SOLVENT-WELD PVC FITTINGS	L
		SCH 40 GRAY PVC CONDUIT W/SCH 40 SOLVENT-WELD PVC FITTINGS, SHOWN WHERE NOT WITH MAINLINE (SIZE PER PLAN)	L
		SCHEDULE 80 PVC PVC SLEEVES W/SCH 40 SOLVENT-WELD PVC FITTINGS (SIZE PER PLAN, DIRECTIONALLY BORED WHERE SHOWN)	O

QUANTITIES GIVEN ARE FOR CONTRACTOR CONVENIENCE ONLY. THE ACCURACY IS NOT GUARANTEED. ALL QUANTITIES SHALL BE VERIFIED.
 *DET (ON THE LEGEND) - THE LETTER IN THIS COLUMN DENOTES THE CORRESPONDING DETAIL SHOWN ON THE DETAIL SHEET.

IRRIGATION HEAD LEGEND

SYMBOL QUANTITY	SYMBOL	DESCRIPTION	DETAIL DESIGN	PSY	DESIGN GPM PER	SYMBOL
24	[Symbol]	EACH SYMBOL DENOTES TWO (2) RAIN BIRD 1401 FLOOD BUBBLERS ON FUNNY PIPE	Q	30	0.50	
7	[Symbol]	RAIN BIRD 1806-SAM-PRS-8Q	R	30	0.26	
19	[Symbol]	RAIN BIRD 1806-SAM-PRS-8H	R	30	0.52	
1	[Symbol]	RAIN BIRD 1812-SAM-PRS-8Q	S	30	0.26	
7	[Symbol]	RAIN BIRD 1812-SAM-PRS-8H	S	30	0.52	
7	[Symbol]	RAIN BIRD 1812-SAM-PRS-8Q ON SCH 40 RISER	T	30	0.26	
38	[Symbol]	RAIN BIRD 1812-SAM-PRS-8H ON SCH 40 RISER	T	30	0.52	
4	[Symbol]	RAIN BIRD 1806-SAM-PRS-10Q	R	30	0.39	
39	[Symbol]	RAIN BIRD 1806-SAM-PRS-10H	R	30	0.79	
3	[Symbol]	RAIN BIRD 1806-SAM-PRS-10F	R	30	1.58	
18	[Symbol]	RAIN BIRD 1812-SAM-PRS-10H ON SCH 40 RISER	T	30	0.79	
1	[Symbol]	RAIN BIRD 1812-SAM-PRS-10F ON SCH 40 RISER	T	30	1.58	
7	[Symbol]	RAIN BIRD 1806-SAM-PRS-12Q	R	30	0.65	
5	[Symbol]	RAIN BIRD 1806-SAM-PRS-12H	R	30	1.30	
2	[Symbol]	RAIN BIRD 1812-SAM-PRS-12F ON SCH 40 RISER	T	30	2.60	
4	[Symbol]	RAIN BIRD 1806-SAM-PRS-15Q	R	30	0.92	
30	[Symbol]	RAIN BIRD 1806-SAM-PRS-15H	R	30	1.85	
15	[Symbol]	RAIN BIRD 1806-SAM-PRS-15F	R	30	3.70	
3	[Symbol]	RAIN BIRD 1812-SAM-PRS-15Q	S	30	0.92	
1	[Symbol]	RAIN BIRD 1812-SAM-PRS-15H	S	30	1.85	
8	[Symbol]	RAIN BIRD 1812-SAM-PRS-15Q ON SCH 40 RISER	T	30	0.92	
12	[Symbol]	RAIN BIRD 1812-SAM-PRS-15H ON SCH 40 RISER	T	30	1.85	
2	[Symbol]	RAIN BIRD 1812-SAM-PRS-15F ON SCH 40 RISER	T	30	3.70	
5	[Symbol]	RAIN BIRD 1812-SAM-PRS-15EST	S	30	0.61	
3	[Symbol]	RAIN BIRD 1812-SAM-PRS-15SST	S	30	1.21	
7	[Symbol]	RAIN BIRD 1812-SAM-PRS-15EST ON SCH 40 RISER	T	30	0.61	
4	[Symbol]	RAIN BIRD 1812-SAM-PRS-15SST ON SCH 40 RISER	T	30	1.21	



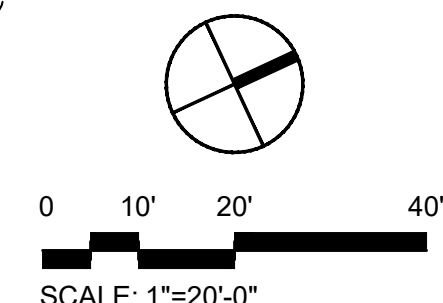
MAINLINE LOCATION, WHERE SHOWN, IS FOR GRAPHIC CLARITY PURPOSES ONLY. INSTALL AT THE BACK OF CURB, FRONT OF WALK, BACK OF WALK, OR ADJACENT TO OTHER HARDSCAPES TO FACILITATE FUTURE LOCATION AND TO PROTECT FROM DAMAGE. ENSURE MAINLINE IS INSTALLED ACCORDING TO THE IRRIGATION SPECIFICATIONS AND DETAILS.



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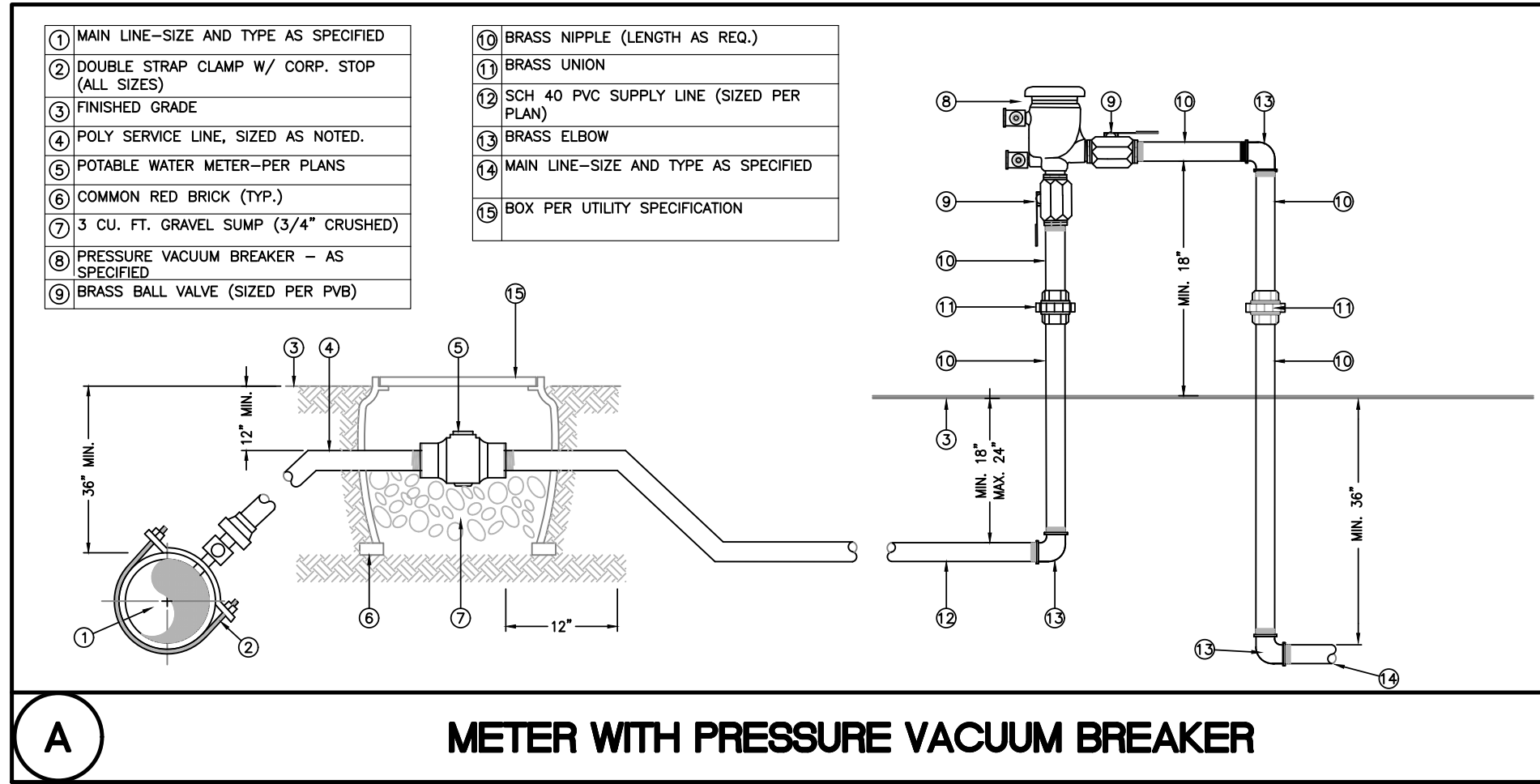
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CITY OF MIAMI BEACH, FLORIDA
 PREPARED FOR:
CITY OF MIAMI BEACH
 IRRIGATION PLAN

Scott W. Peavler, R.L.A.
 Florida R.L.A. No. 6666976

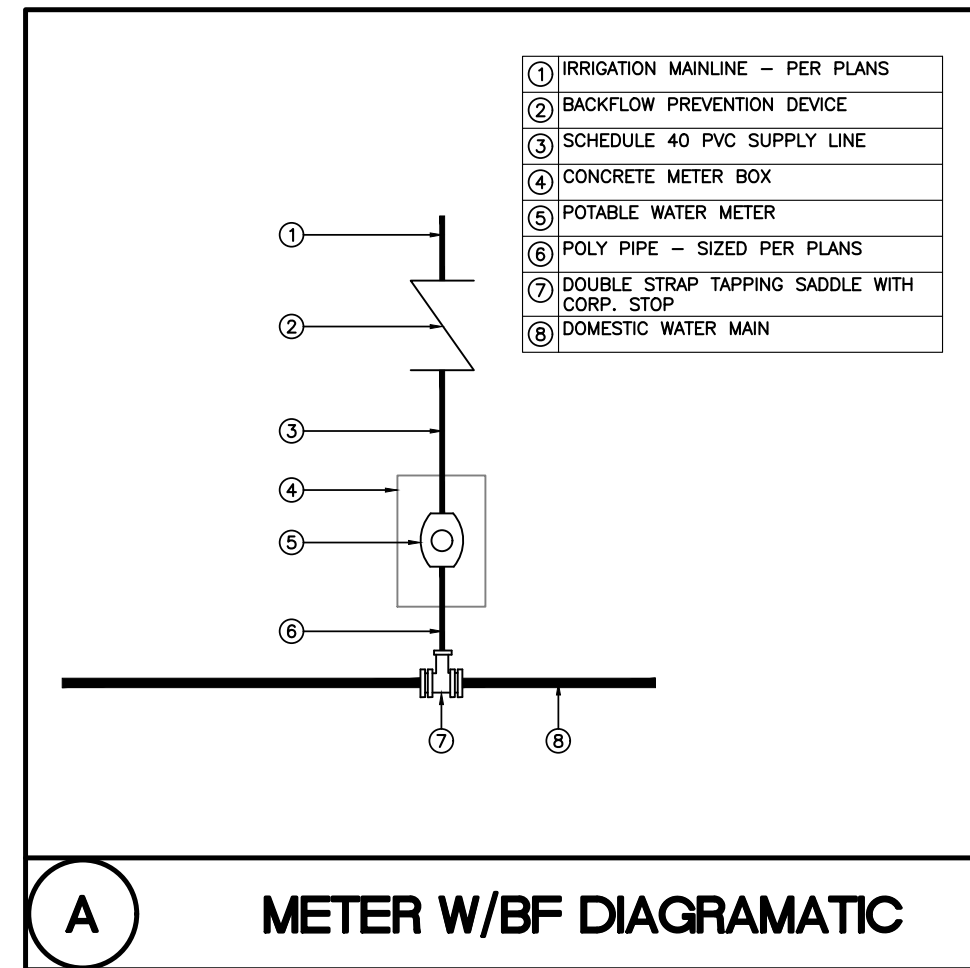
PROJECT NO.
17-0027-001-01

IR-1

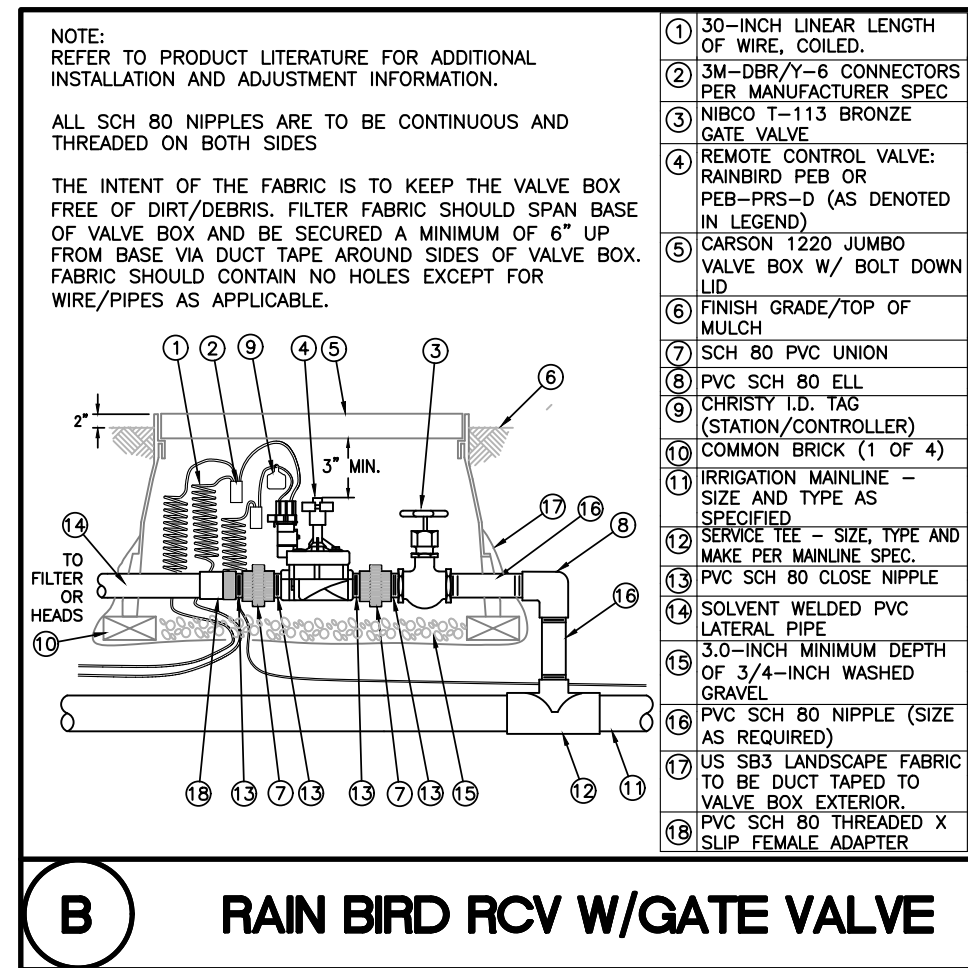
SHEET 2 OF 4



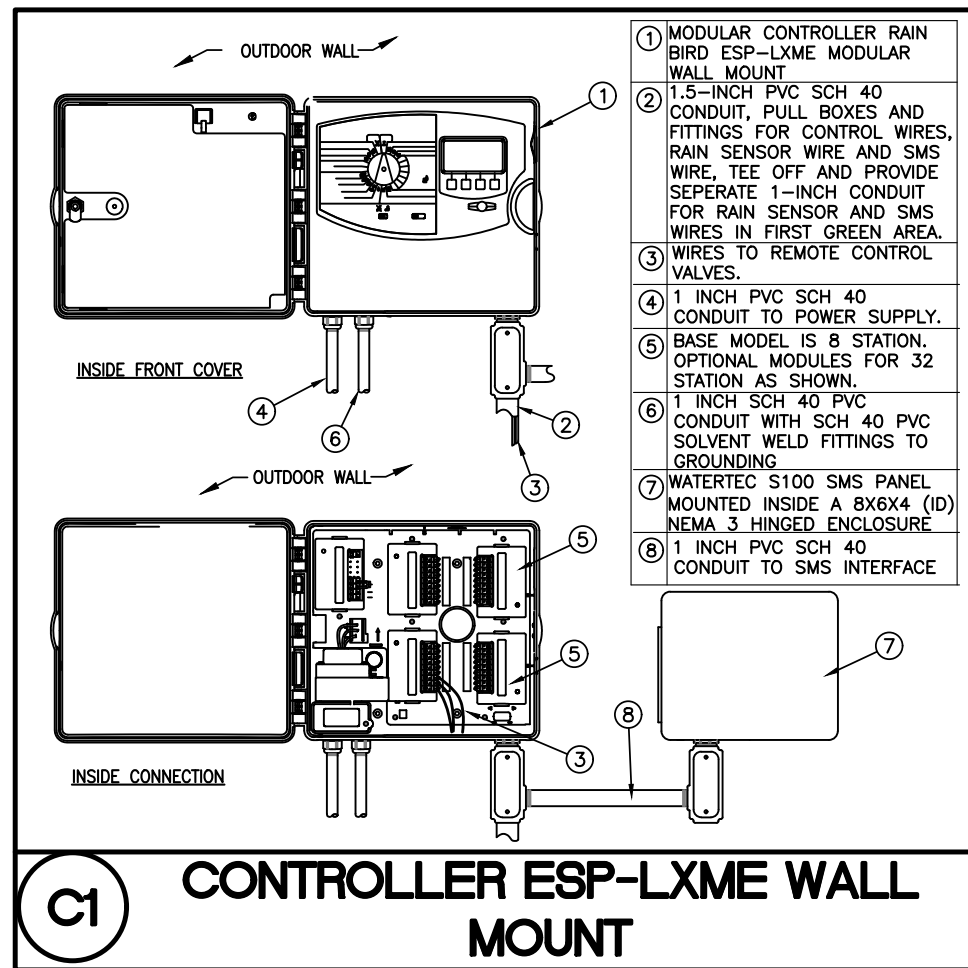
A METER WITH PRESSURE VACUUM BREAKER



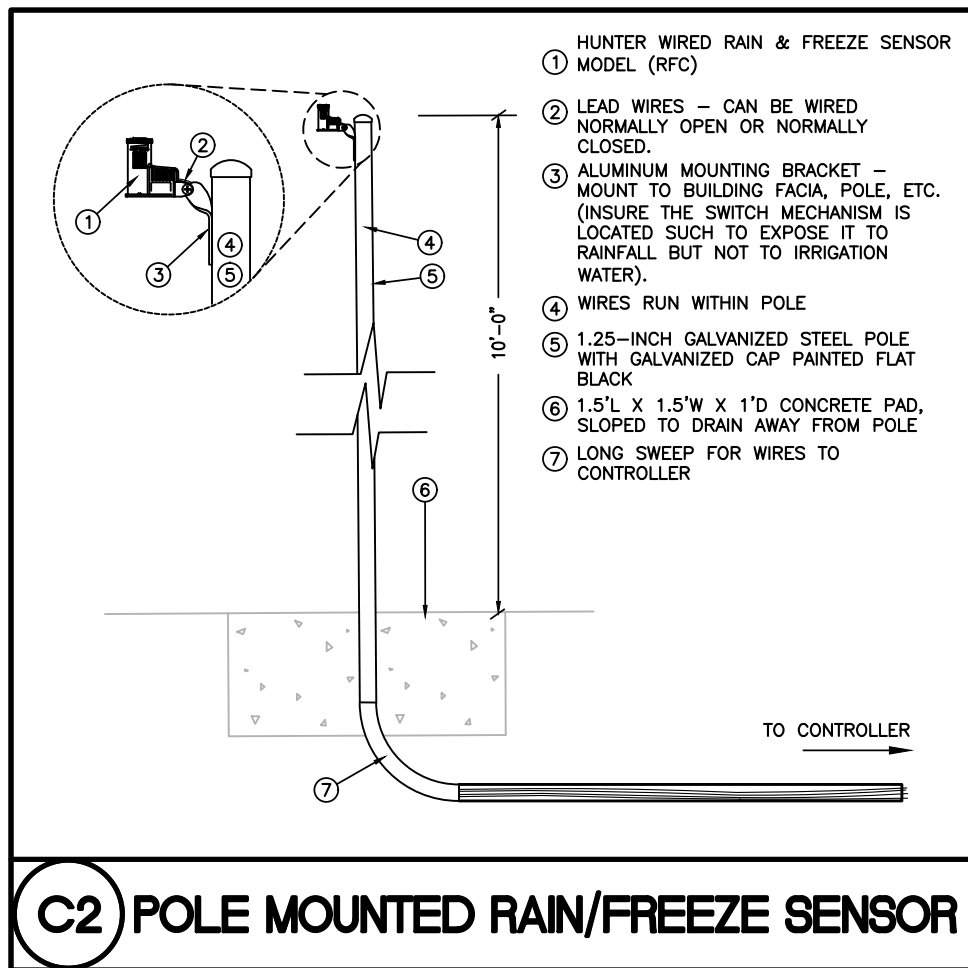
A METER W/BF DIAGRAMATIC



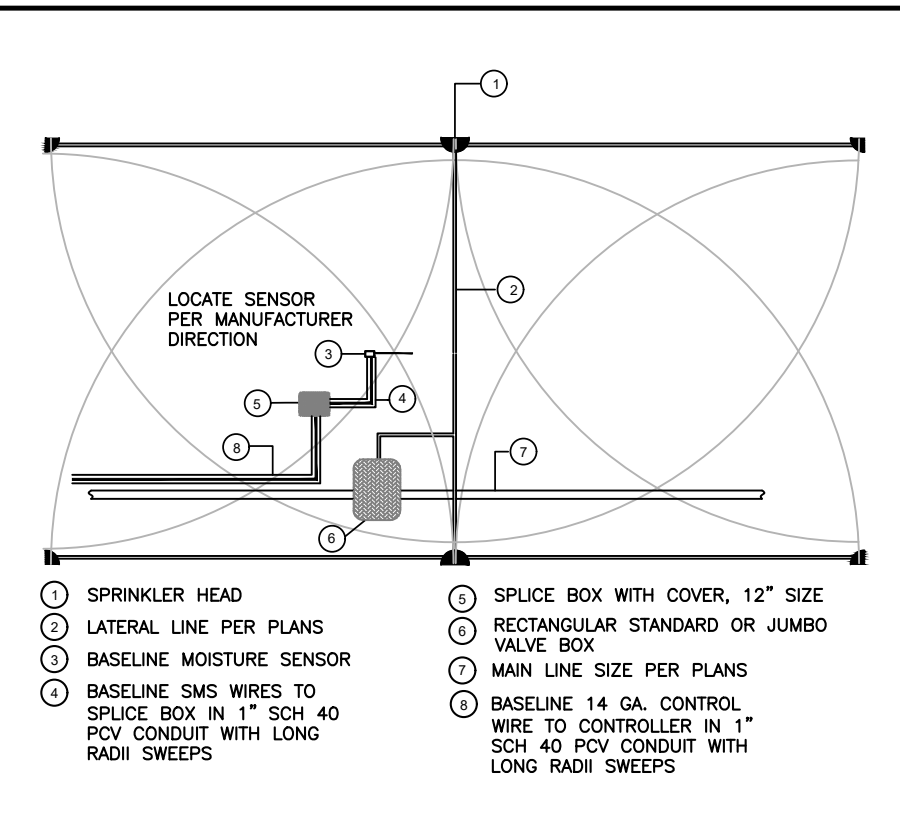
B RAIN BIRD RCV W/GATE VALVE



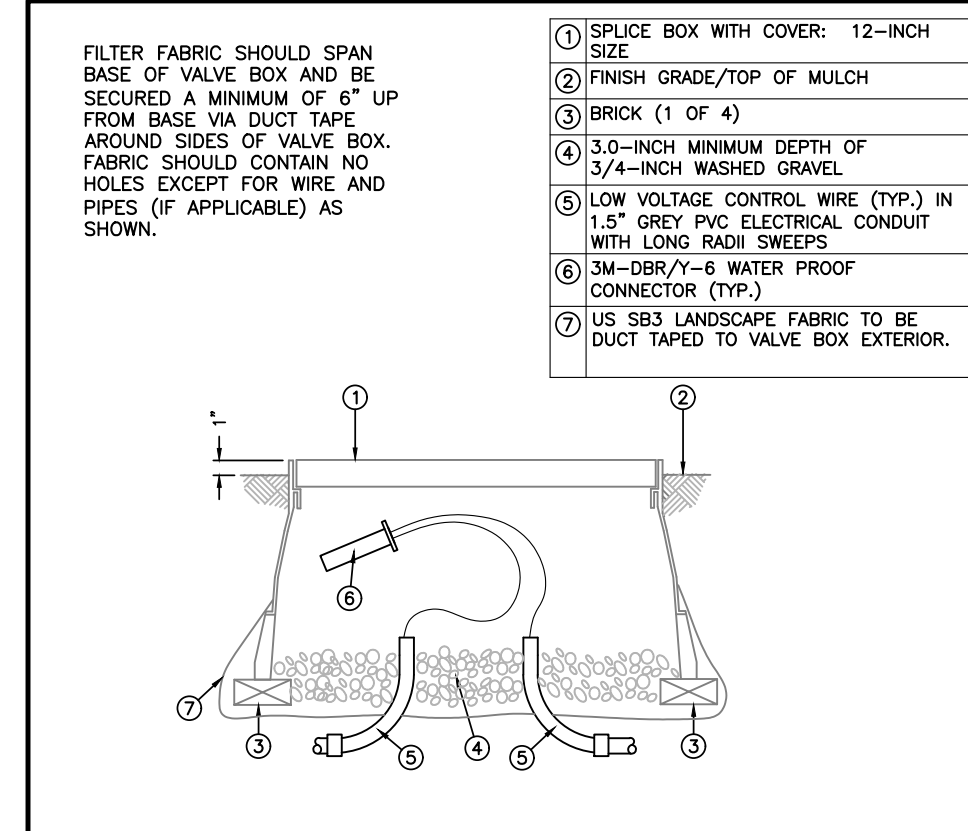
C1 CONTROLLER ESP-LXME WALL MOUNT



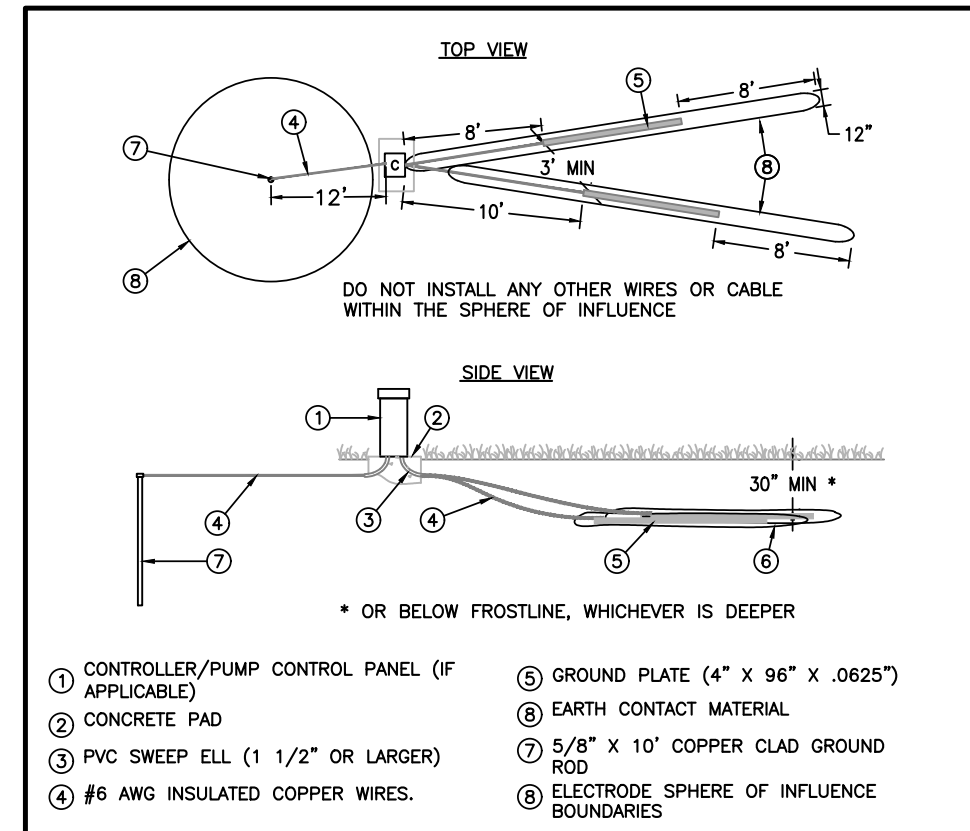
C2 POLE MOUNTED RAIN/FREEZE SENSOR



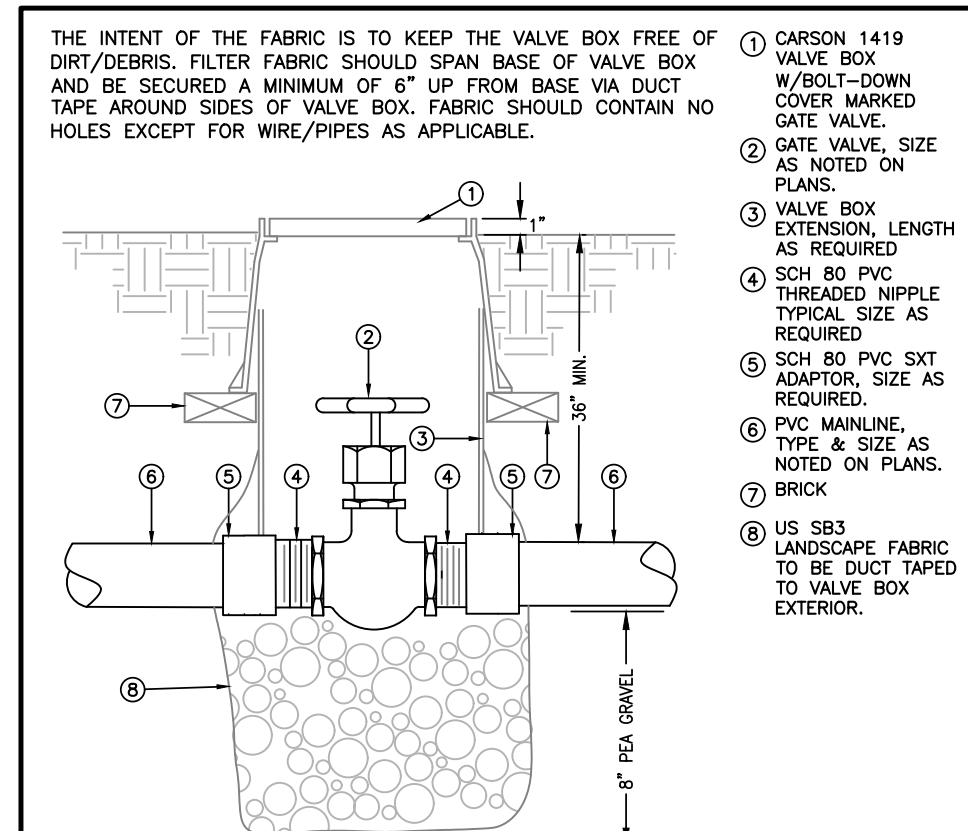
C3 SOIL MOISTURE SENSOR



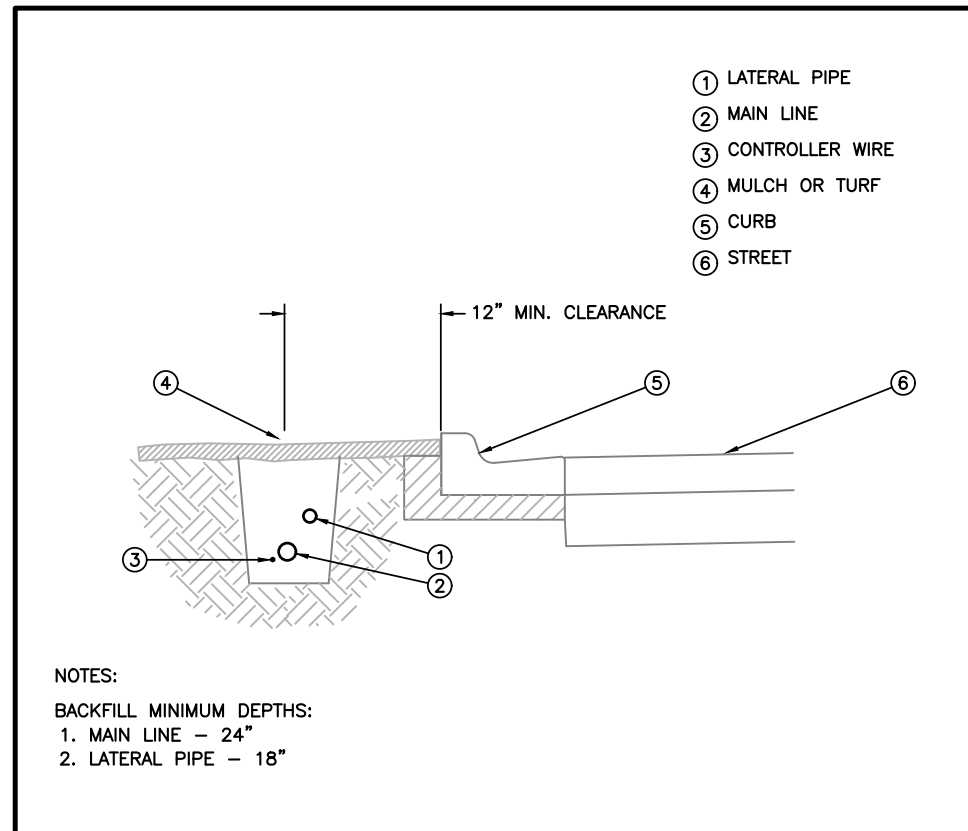
C WIRE SPICE



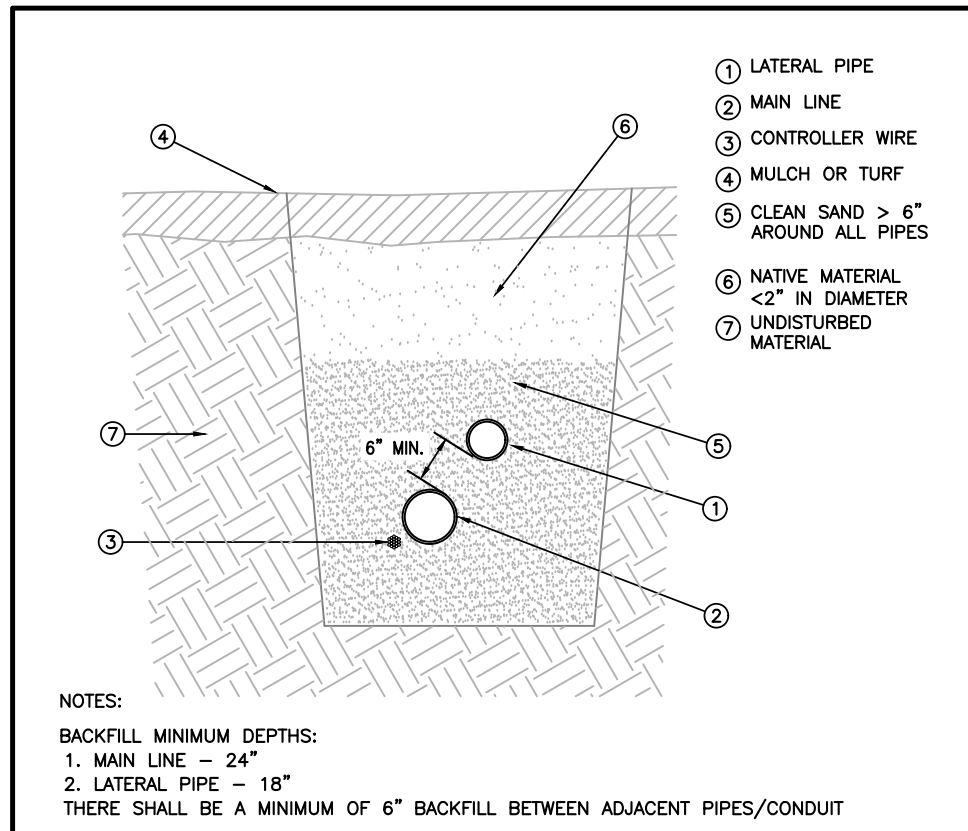
C GROUNDING DETAIL



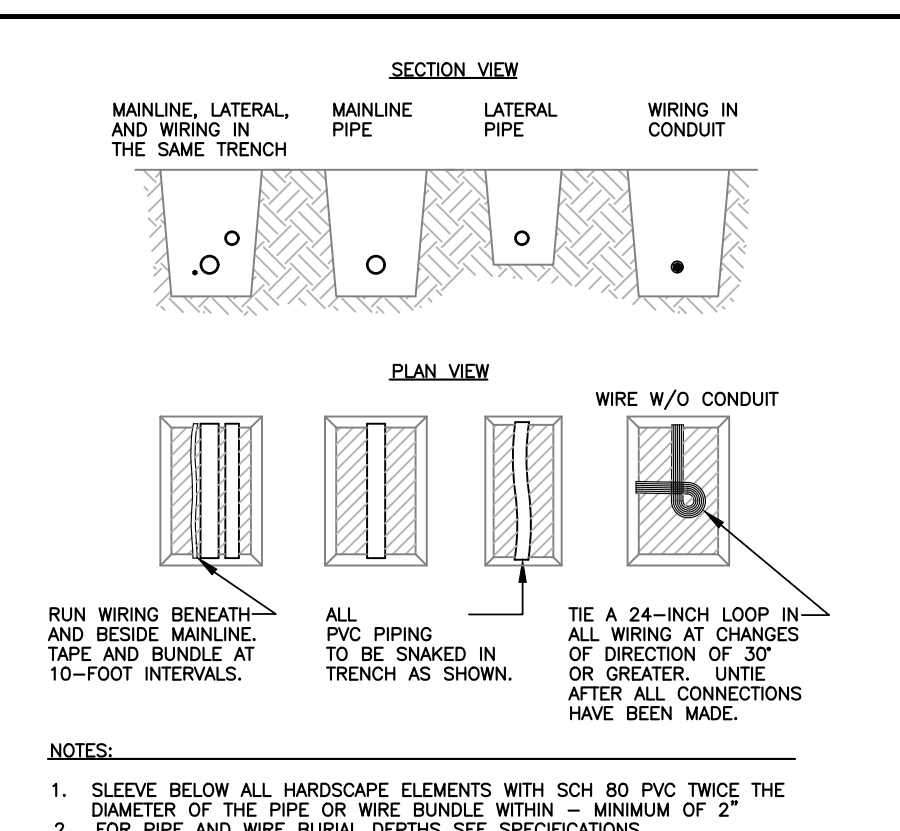
D T-8 GATE VALVE



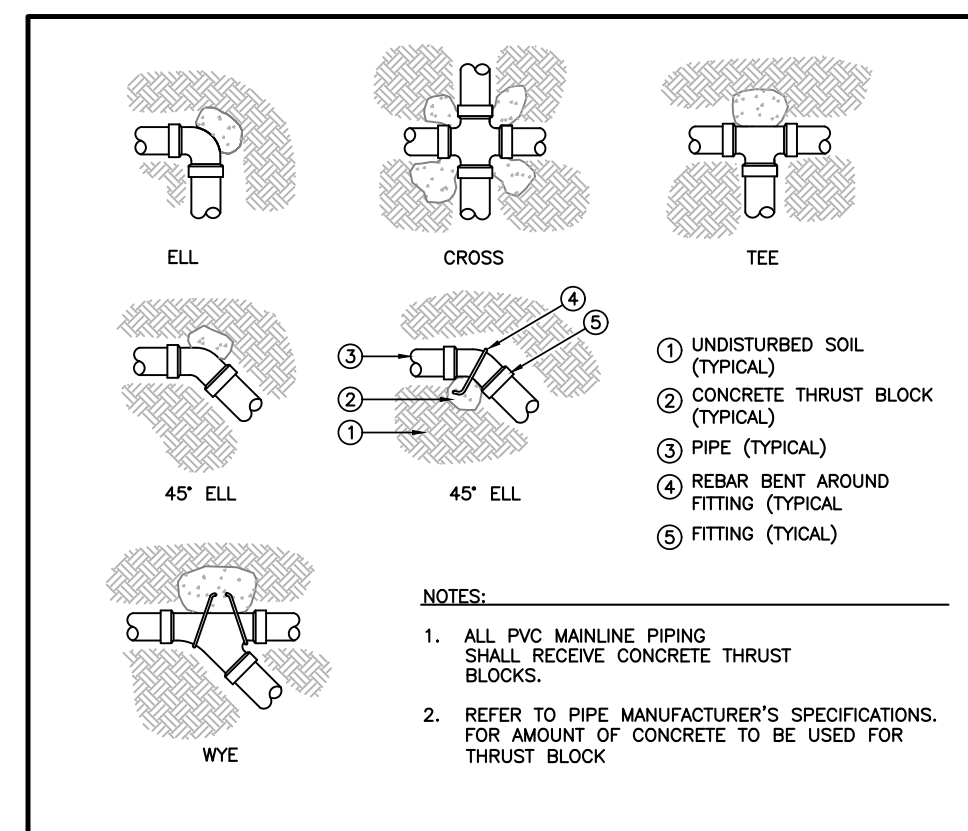
L MAINLINE AND LATERAL PIPING DETAIL



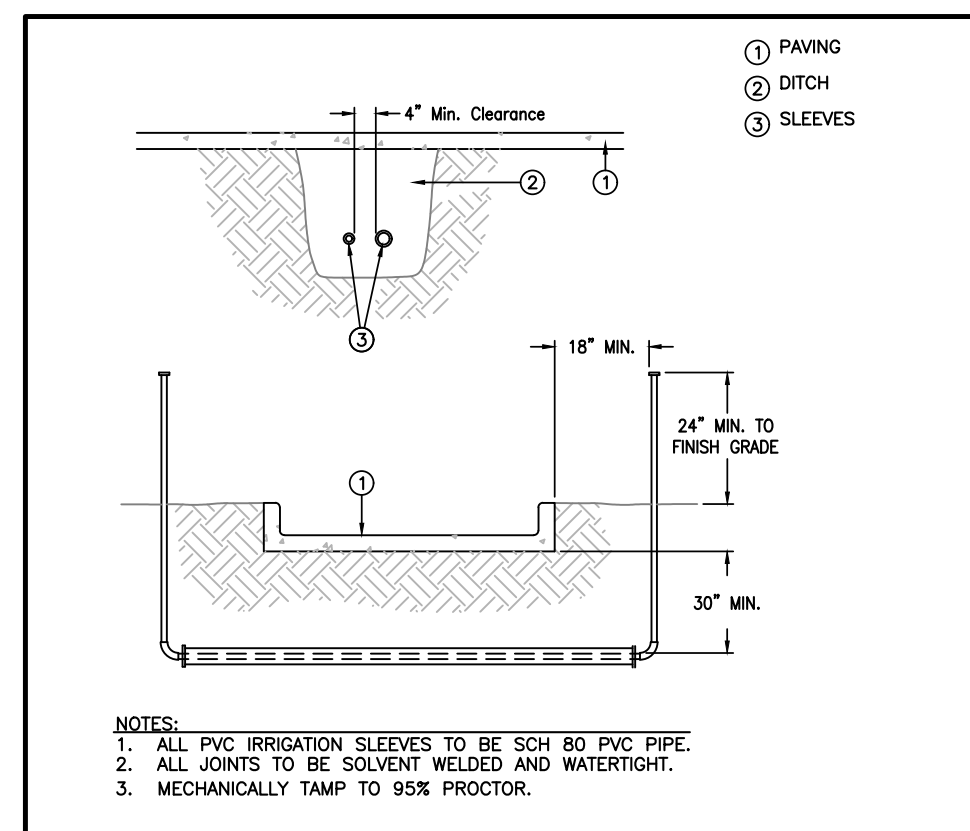
L MAINLINE AND LATERAL BACKFILL DETAIL



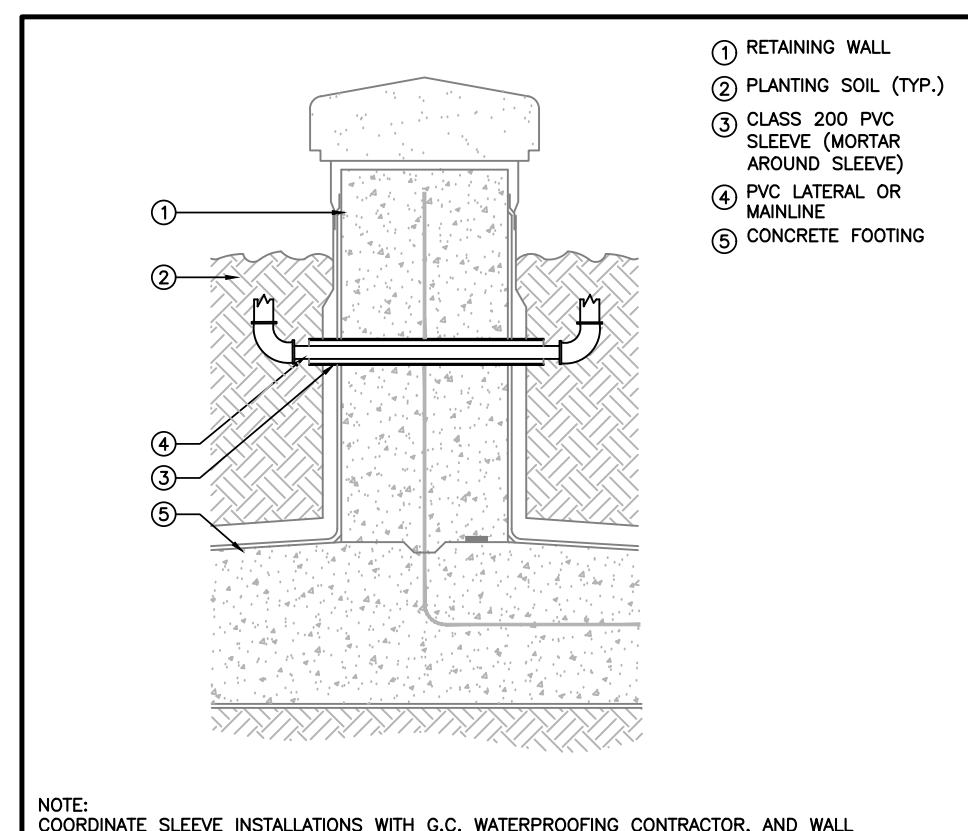
L PIPE AND WIRE TRENCHING



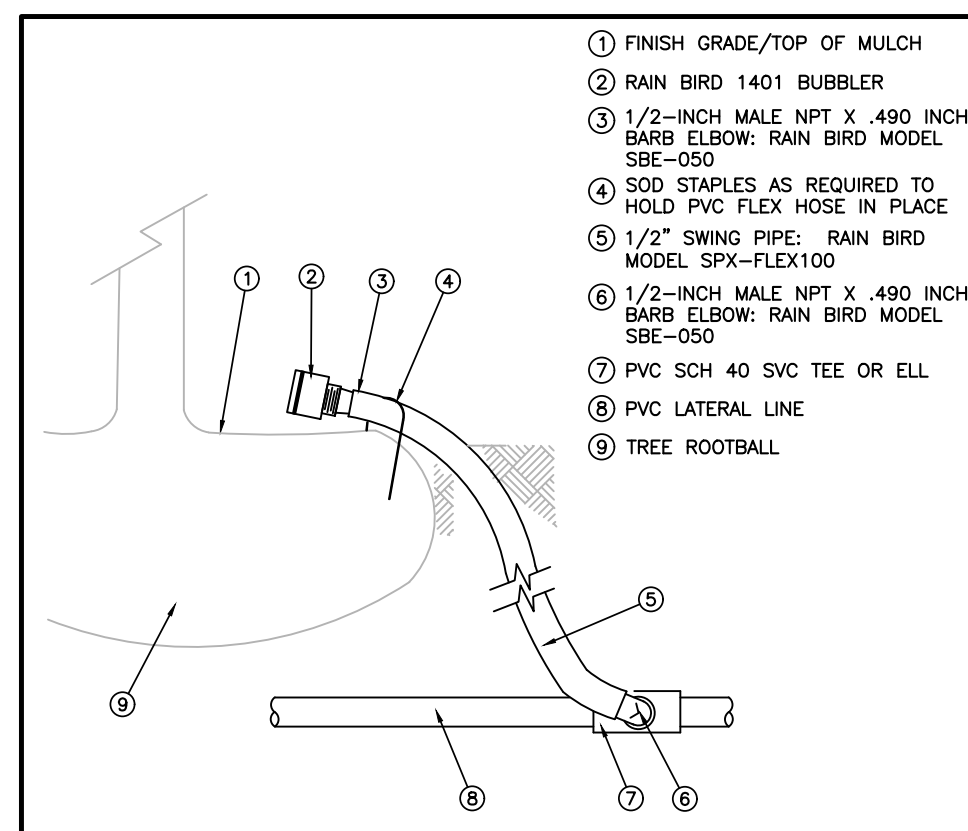
L THRUST BLOCK



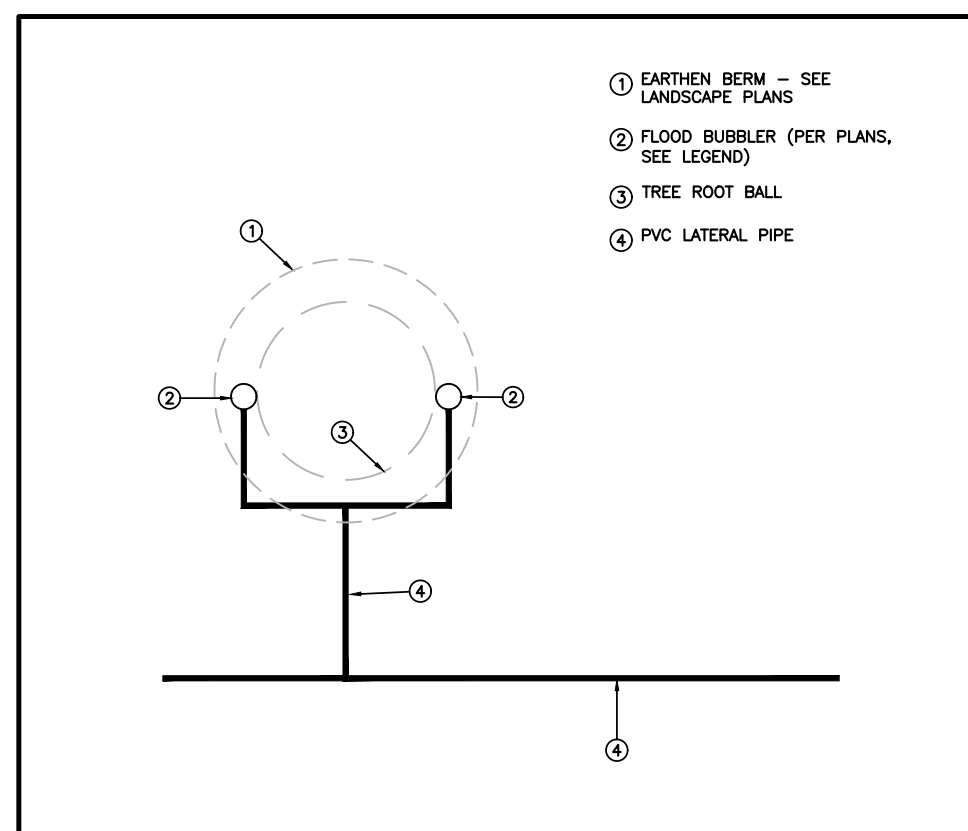
O SLEEVING



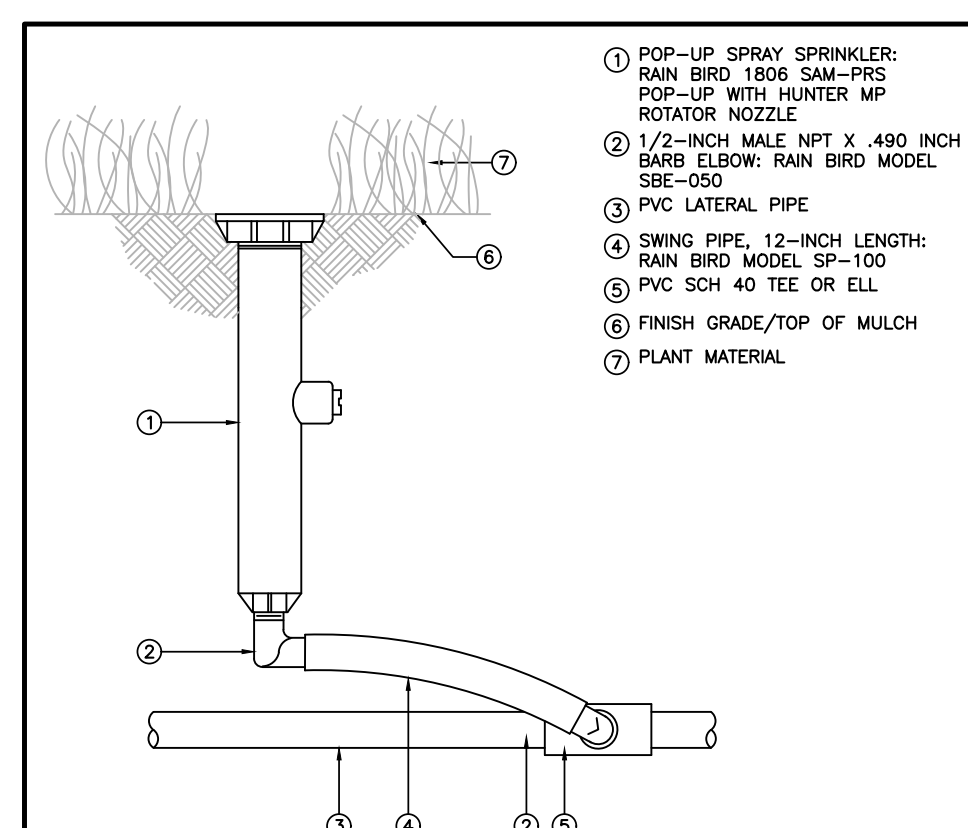
O WALL SLEEVING



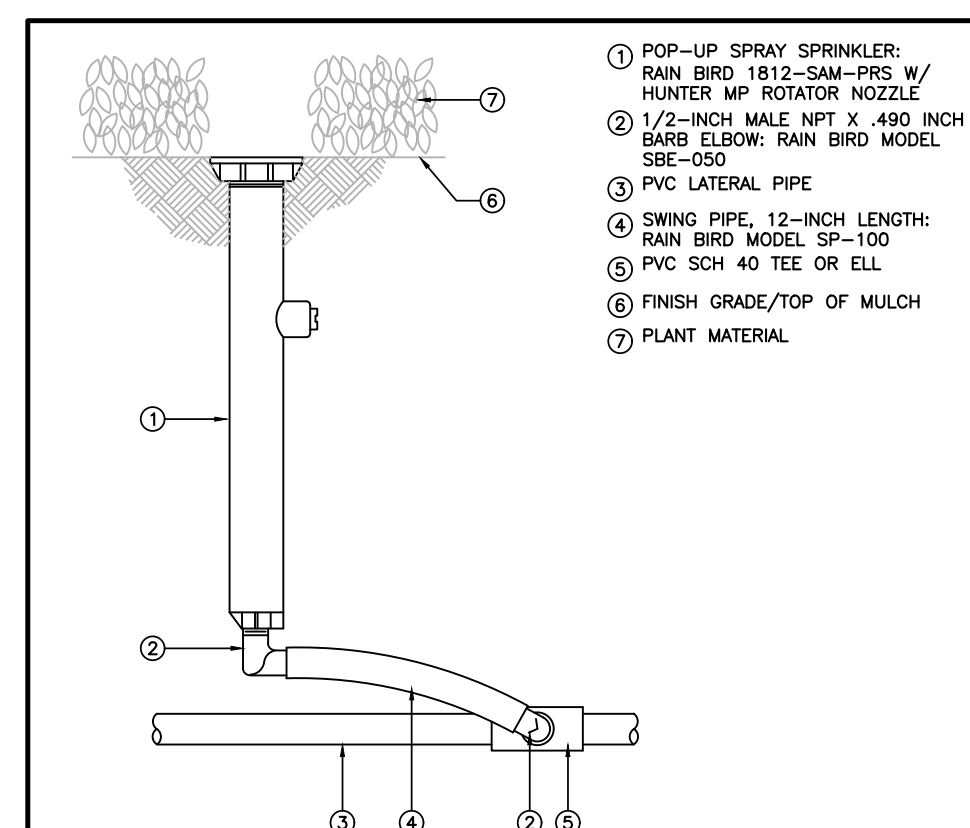
Q RAIN BIRD 1804 BUBBLER ON POLY PIPE



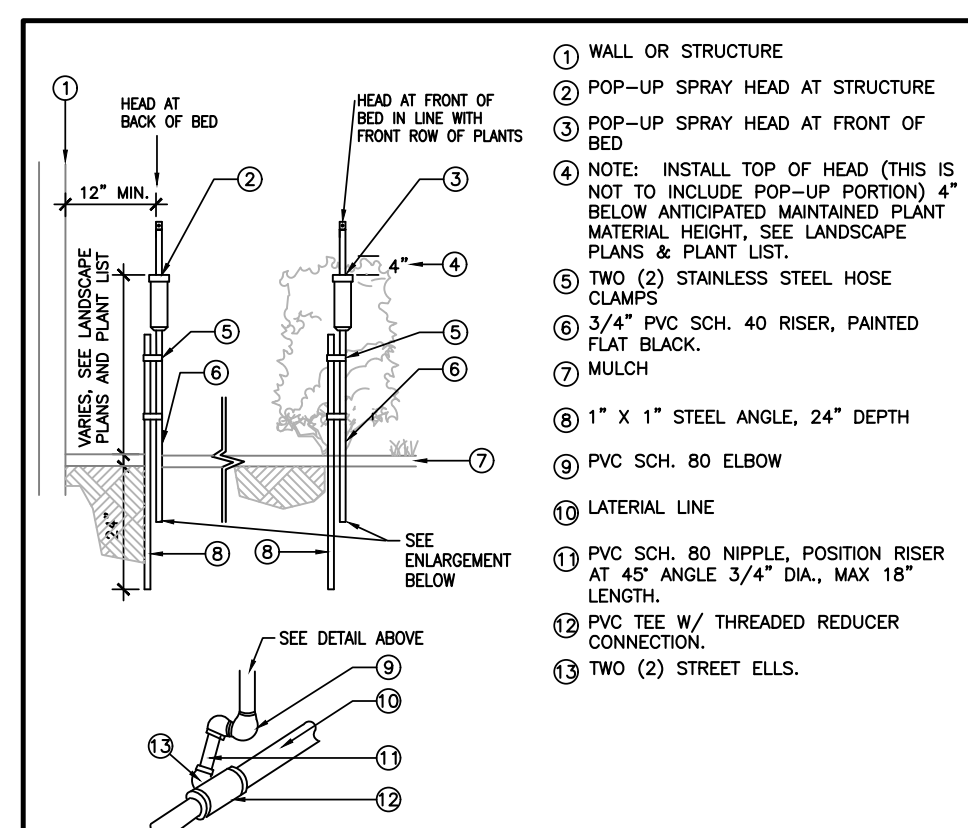
Q BUBBLER PLACEMENT



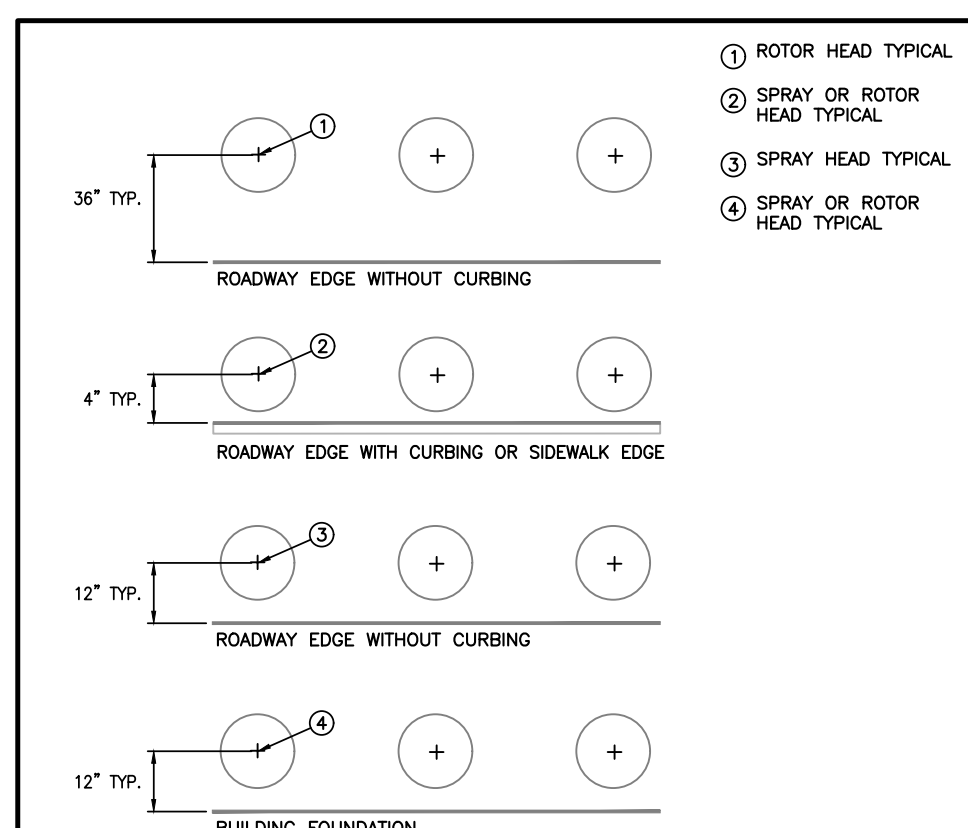
R RAIN BIRD 1806 SAM-PRS SPRAY



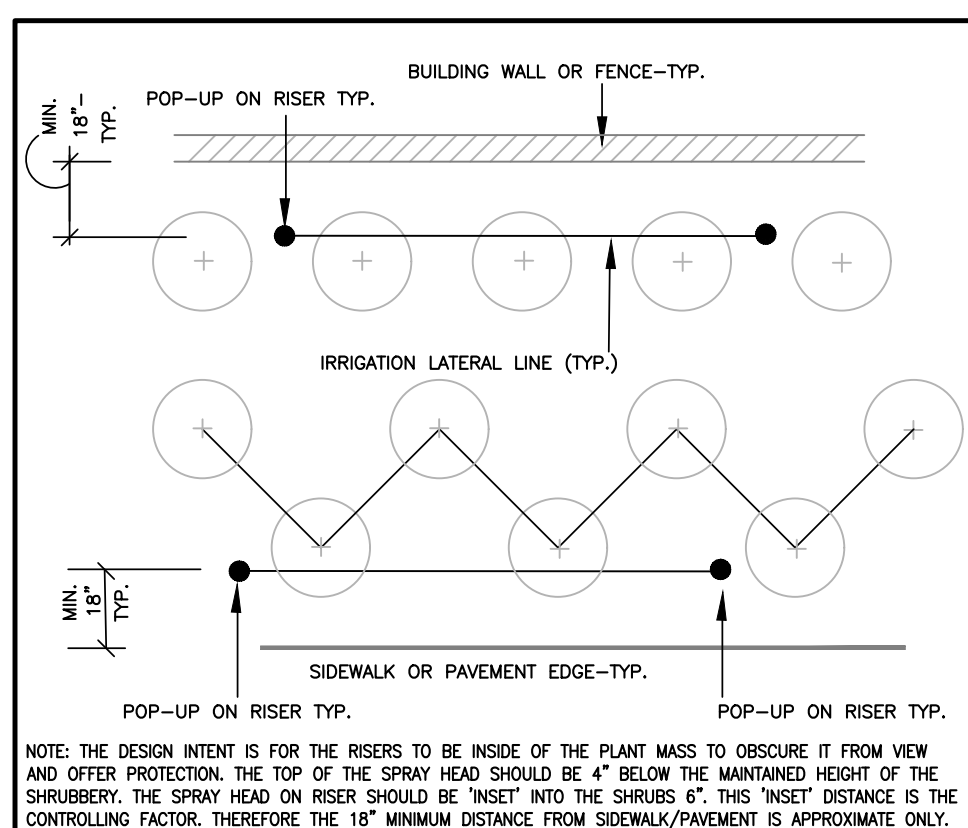
S RAIN BIRD 1812 SAM-PRS SPRAY



T POP-UP HEAD ON RISER



T POP-UP HEAD TO HARDSCAPE LOCATION DETAIL-A



T POP-UP HEAD ON RISER LOCATION DETAIL-B

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DATE: 05/16/19
SCALE: N.T.S.
DESIGN BY: TFP
DRAWN BY: TFP
CHECKED BY: JMJ/MAW
APPROVED BY: JMJ

DESCRIPTION:

DATE: _____ BY: _____

HIBISCUS ISLAND
CITY OF MIAMI BEACH, FLORIDA

PREPARED FOR:
CITY OF MIAMI BEACH

IRRIGATION DETAILS

Scott W. Peavler, R.L.A.
Florida R.L.A. No. 6666976

PROJECT NO.
17-0027-001-01

IR-2
SHEET 3 OF 4

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IRRIGATION NOTES & SPECIFICATIONS

Irrigation design based on the Craven Thompson & Associates Landscape Plan dated 1/4/19. Contractor shall refer to these plans to coordinate sprinkler and pipe locations.

The system has been designed to conform with the requirements of all applicable codes, laws, ordinances, rules, regulations and conventions. Should any conflict exist, the requirements of the codes shall prevail. It is the responsibility of the owner/installation contractor to ensure the entire system is installed as designed. Irrigation contractor responsible for obtaining all required permits according to federal, state and local laws.

The scope of work is shown on the plans, notes and details. The Irrigation Contractor shall be certified as a CERTIFIED IRRIGATION CONTRACTOR by the Irrigation Association. The certification shall be current and in good standing.

THE WORK

The work specified in this section consists of furnishing all components necessary for the installation, testing, and delivery of a complete, fully functional automatic landscape irrigation system that complies with the irrigation plans, specifications, notes, and details. This work shall include, but not be limited to, the providing of all required material if applicable (pump(s), backflows, pipes, valves, fittings, controllers, wire, primer, glue, etc.), layout, protection to the public, excavation, assembly, installation, back filling, compacting, repair of road surfaces, controller and low voltage feeds to valves, cleanup, maintenance, guarantee and as-built plans.

All irrigated areas shall provide 100% head-to-head coverage from a fully automatic irrigation system with a rain/freeze shut off device. The shut off device shall be installed to prevent activation by adjacent heads and in a visually unobtrusive location approved by owner. Zones are prioritized first by public safety and then by hydraulic concerns. This sequencing will be a mandatory punch list item.

These plans have been designed to satisfy/exceed the Florida Building Code (FBC) Appendix F and the Florida Irrigation Society Standards and Specifications for Turf and Landscape Irrigation Systems, fourth edition. All products should be installed per manufacturer's recommendation. Contractor shall verify all underground utilities 72 hours prior to commencement of work.

It is the responsibility of the irrigation contractor to familiarize themselves with all grade differences, location of walls, retaining walls, structures and utilities. Do not willfully install the sprinkler system as shown on the drawings when it is obvious in the field that unknown obstruction, grade differences or differences in the area dimensions exist that might not have been considered in the engineering. Such obstructions, or differences, should be brought to the attention of the owner's authorized representative. In the event this notification is not performed, the irrigation contractor shall assume full responsibility for any revisions necessary.

Irrigation contractor shall repair or replace all items damaged by their work. Irrigation contractor shall coordinate their work with other contractors for the location and installation of pipe sleeves and laterals through walls, under roadways and paving, etc.

The contractor shall take immediate steps to repair, replace, or restore all services to any utilities which are disrupted due to their operations. All costs involved in disruption of service and repairs due to negligence on the part of the contractor shall be their responsibility.

POINT OF CONNECTION (P.O.C.)

The P.O.C. a new line size X 2" tap, maximum of 10' of 2" polyethylene service line, a proposed 1/1-2" potable water meter and 1-1/2" pressure vacuum breaker assembly. The P.O.C. must be capable of delivering a minimum of 50 GPM at 50 PSI downstream of the water meter.

Contractor to verify these minimum conditions can be met prior to ordering of materials and the beginning of installation. If the conditions can not be met, the contractor must notify the designer prior to proceeding with the work. If the contractor does not do so, the contractor proceeds at their own risk and becomes responsible for any future work required to make the system perform as required.

THE PIPE

Pipe locations shown on the plan are schematic and shall be adjusted in the field. When laying out mainlines place a minimum of 18" away from either the back of curb, front of walk, back of walk, or other hardscape to allow for ease in locating and protection from physical damage. Install all lateral pipe near edges of pavement or against buildings whenever possible to allow space for plant root balls. Always install piping inside project's property boundary.

All pipes are to be placed in planting beds. If it is necessary to have piping under hardscapes, such as roads, walks, and patios, the pipes must be sleeved using SCH 80 PVC with the sleeve diameter being twice the size of the pipe it is carrying with a minimum sleeve size of 2". No sleeve shall have turns or fittings that prevent a pipe from being manually pushed/pulled through after it is installed.

Pipe sizes shall conform to those shown on the drawings. No substitutions of smaller pipe sizes shall be permitted, but substitutions of larger sizes may be approved. All damaged and rejected pipe shall be removed from the site at the time of said rejection.

Mainline shall be 2" Sch 40 solvent-weld PVC with Sch 40 PVC solvent-weld fittings.

Contractor to ensure all mainline piping is properly restrained using mechanical joint fittings, restraining collars, threaded rods, thrust blocks, etc., as and where required. Contractor shall refer to pipe manufacturers recommended installation practices for further direction.

PVC pipe joint compound and primer: The PVC cement shall be Weld-On 711 (grey, slow-drying, heavy duty) and the primer shall be Weld-On P70 (purple tinted, compatible with cement), or approved equals.

ELECTRICAL POWER SUPPLY

Electrical supply for irrigation controllers & sensors to be provided by irrigation contractor. Contractor to coordinate with local utilities for the installation of, and connection to, site available power supplies for required electrical components as set forth in the irrigation plans.

All electrical work is to comply with the National Electrical Code and any, and all, other applicable electrical codes, laws and regulations. A licensed electrician shall perform all electrical hook-ups. Power for each controller shall be a dedicated 120 volt, 20 amp circuit unless otherwise specified in the plans.

WIRING

Irrigation control wire shall be thermoplastic solid copper, single conductor, low voltage irrigation controller wire; suitable for direct burial and continuous operation at rated voltages.

Tape and bundle control wires every 10' and run alongside the mainline. At all turns in direction make a 2' coil of wire. At all valve boxes coil wire around a 3/4" piece of PVC pipe to make a coil using 30 linear inches of wire. Make electrical connections with 3M DBR/Y-6 connectors.

Number all wires, using an electrical book of numbers, according to the plans. Number wires in all valve boxes, junction boxes and at the controller.

Wire sized, numbered and colored as follows:

- #14 white for common
#14 spare black common
#14 individual color coded hot wire
#14 spare yellow hot wire

SPARE WIRES

Leaving the controller, run three spare wires: install as one (1) common spare and two (2) hot wires. Loop these wires into each RCV along their path and terminate in the last valve box controlled by the wires respective controller. The loop into each valve box shall extend up into the valve box a minimum of 6" and be readily accessible by opening the valve box lid. These wires must be all numbered and color coded as required in these plans.

CONTROLLER GROUNDING

Contractor to utilize 4"x96"x0.0625" copper grounding plates, 5/8"x10' copper clad grounding rods, 'One Strike' CAD welds at all connection points, #6 insulated copper wire, and earth contact material. Install these and other required components as outlined in the detail. Contractor to verify that the earth to ground resistance does not exceed 10 ohms. Contractor shall provide a written certification, on a licensed electrical contractors letter head, showing the date of the test, controller location, and test results.

SOIL MOISTURE SENSOR

Place all soil moisture sensor wiring in 1" SCH 40 PVC conduit. Soil moisture sensor should be placed in the middle of a spray or drip area as per manufacturer's recommendations. Controller shall be set to the Florida Automated Weather Network's urban scheduler settings using the SMS as a moisture cut off device (like a rain switch) per manufacturer directions.

LAYOUT

Lay out irrigation system mainlines and lateral lines. Make the necessary adjustments as required to take into account all site obstructions and limitations prior to excavating trenches.

Stake all sprinkler head locations. Adjust location and make the necessary modifications to nozzle types, etc. required to ensure 100% head to head coverage. Refer to the Edge of Pavement Detail on the Irrigation Detail Sheet.

Spray heads shall be installed 4" from sidewalks or curbed roadways and 12" from uncurbed roadways and building foundations.

Shrub heads shall be installed on 3/4" Sch 40 PVC risers. The risers shall be set at a minimum of 18" off sidewalks, roadway curbing, building foundations, and/or any other hardscaped areas. Shrub heads shall be installed to a standard height of 4" below maintained grade of plants and shall be installed a minimum of 6" within planted masses to be less visible and offer protection. Paint all shrub risers with flat black or forest green paint, unless irrigation system will utilize reuse water; in this case the risers shall be purple PVC and shall not be painted.

Locate valves prior to excavation. Ensure that their location provides for easy access and that there is no interference with physical structures, plants, trees, poles, etc. Valve boxes must be placed a minimum of 12" and a maximum of 15" from the edge of pavement, curbs, etc. and the top of the box must be 2" above finish grade. No valve boxes shall be installed in turf areas without approval by the irrigation designer - only in shrub beds. Never install in sport field areas.

VALVES

Sequence all valves so that the farthest valve from the P.O.C. operates first and the closest to the P.O.C. operates last. The closest valve to the P.O.C. should be the last valve in the programmed sequence.

Adjust the flow control on each RCV to ensure shut off in 10 seconds after deactivation by the irrigation controller.

Using an electric branding iron, brand the valve I.D. letter/number on the lid of each valve box. This brand must be 2"-3" tall and easily legible.

EQUIPMENT

All pop-up heads and shrub risers shall be pressure compensating. All pop-up heads shall be mounted on flex-type swing joints.

All sprinkler equipment, not otherwise detailed or specified on these plans, shall be installed as per manufacturer's recommendations and specifications, and according to local and state laws.

TRENCHING

Excavate straight and vertical trenches with smooth, flat or sloping bottoms. Trench width and depth should be sufficient to allow for the proper vertical and horizontal separation between piping as shown in the pipe installation detail on the detail sheet.

Protect existing landscaped areas. Remove and replant any damaged plant material upon job completion. The replacement material shall be of the same genus and species, and of the same size as the material it is replacing. The final determination as to what needs to be replaced and the acceptability of the replacement material shall be solely up to the owner or owner's representative.

INSTALLATION

Solvent Weld Pipe: Cut all pipe square and deburr. Clean pipe and fittings of foreign material; then apply a small amount of primer while ensuring that any excess is wiped off immediately. Primer should not puddle or drip from pipe or fittings. Next apply a thin coat of PVC cement; first apply a thin layer to the pipe, next a thin layer inside the fitting, and finally another very thin layer on the pipe. Insert the pipe into the fitting. Insure that the pipe is inserted to the bottom of the fitting, then turn the pipe a 1/4 turn and hold for 10 seconds. Make sure that the pipe doesn't recede from the fitting. If the pipe isn't at the bottom of the fitting upon completion, the glue joint is unacceptable and must be discarded.

Pipes must cure a minimum of 30 minutes prior to handling and placing into trenches. A longer curing time may be required; refer to the manufacturer's specifications. The pipe must cure a minimum of 24 hours prior to filling with water.

BACK FILL

The Back fill 6" below, 6" above, and around all piping shall be of clean sand and anything beyond that in the trench can be of native material but nothing larger than 2" in diameter. In all planting beds backfill all trenches to 85% Proctor and all trenches under hardscapes to be backfilled and compacted to 95% Proctor.

Main line pipe depth measured to the top of pipe shall be:

- 30" minimum for 3" & 4" PVC with a 36" minimum at vehicular crossings.
36" minimum for 6" PVC with a 36" minimum at vehicular crossings.

Lateral line depths measured to top of pipe shall be:

- 18" minimum for 3/4"-3" PVC with a 30" minimum at vehicular crossings.

Contractor shall backfill all piping, both mainline and laterals, prior to performing any pressure tests. The pipe shall be backfilled with the exception of 2' on each side of every joint (bell fittings, 90's, tees, 45's, etc.). These joints shall not be backfilled until all piping has satisfactorily passed its appropriate pressure test as outlined below.

FLUSHING

Prior to the placement of valves, flush all mainlines for a minimum of 10 minutes or until lines are completely clean of debris, whichever is longer.

Prior to the placement of heads, flush all lateral lines for a minimum of 10 minutes or until lines are completely clean of debris, whichever is longer.

Use screens in heads and adjust heads for proper coverage avoiding excess water on walls, walks and paving.

TESTING

Soil: At a minimum of 2 locations on the site, soil tests for infiltration and texture shall be performed according to the USDA Soil Quality Test Kit Guide. The tests shall be documented in a USDA Soil Worksheet.

All of the above is available at: https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/health/assessment/?cid=nrcs142p2_053873

The completed worksheet shall be submitted to the owners representative for review/approval. Do not proceed without written direction from the owner/owner's representative.

Schedule testing with Owner's Representative a minimum of three (3) days in advance of testing.

Contractor to utilize soil test data to inform the irrigation scheduling at the project, using BMP's issued by the Irrigation Association which can be download on line at: https://irrigation.org/IA/Advocacy/Standards-Best-Practices/Landscape-Irrigation-BMPs/IA/Advocacy/Landscape-Irrigation-BMPs.aspx?key=93b546ad-c87a-41b8-bf70-8c4fd2c6f931 (link at bottom of the page).

Read pages 47-52 in Appendix C for how to create irrigation schedules.

Mainline: Remove all remote control valves and cap using a threaded cap on SCH 80 nipple. Hose bibs and gate valves shall not be tested against during a pressure test unless authorized by written permission from the owner. Fill mainline with water and pressurize the system to 125 PSI using a hydrostatic pump. Monitor the system pressure at two gauge locations; the gauge locations must be at opposite ends of the mainline. With the same respective pressures, monitor the gauges for two hours. There can be no loss in pressure at either gauge for solvent-welded pipe.

If these parameters are exceeded, locate the problem; repair it; wait 24 hours and retry the test. This procedure must be followed until the mainline passes the test.

Lateral Lines: The lateral lines must be fully filled to operational pressure and visually checked for leaks. Any leaks detected must be repaired.

Operational Testing -Once the mainline and lateral lines have passed their respective tests, and the system is completely operational, a coverage test and demonstration of the system is required. The irrigation contractor must demonstrate to the owner, or his/her representative, that proper coverage is obtained and the system works automatically from the controller. This demonstration requires each zone to be turned on, in the proper sequence as shown on the plans, from the controller. Each zone will be inspected for proper coverage and function. The determination of proper coverage and function is at the sole discretion of the owner or owner's representative.

Upon completion of the operational test, run each zone until water begins to puddle or run off. This will allow you to determine the number of irrigation start times necessary to meet the weekly evapotranspiration requirements of the planting material in each zone. In fine sandy soils, it is possible no puddling will occur. If this is experienced, then theoretical calculations for run times will be required for controller programming.

SUBMITTALS

Pre-Construction: Deliver five (5) copies of submittals to Owner's Representative within ten (10) working days from date of Notice to Proceed. Furnish information in 3-ring binder with table of contents and index sheet. Index sections for different components and label with specification section number and name of component. Furnish submittals for components on material list. Indicate which items are being supplied on catalog cut sheets when multiple items are shown on one sheet. Incomplete submittals will be returned without review. In lieu of hardcopies, an electronic package in PDF format can be submitted.

After project completion:

As a condition of final acceptance, the irrigation contractor shall provide the owner with:

- Irrigations As-builts - shall be provided utilizing a sub-foot Global Navigation Satellite System (GNSS) to accurately locate all mainlines, sleeves, remote control valves, gate valves, independent wire runs, wire splice boxes, controllers, high voltage supply sources/conduit path, control mechanisms, sensors, wells and water source connections in Florida East State Plane, NAD 83, and CORS 96 format. The data collected shall be in POINT format and include an ID for each data point with Manufacturer, Type, Size, and Depth. All mainline and independent runs of wire shall be located every 30' for straight runs and at every change of direction. Sleeves will be located at end points and every 20' of length. All underground items shall include depth in inch format. These POINTS once collected shall be imported into an AutoCAD DWG geo-referenced base file to be labeled accordingly. The completed AS-Built shall be a Geo-Referenced DWF file and delivered to the owner on a compact disk (CD).
Controller charts - Upon completion of "as-built" prepare controller charts; one per controller. Indicate on each chart the area controlled by a remote control valve (using a different color for each zone). This chart shall be reduced to a size that will fit inside of

the controller door. The reduction shall be hermetically sealed inside two 2ml pieces of clear plastic.

- Grounding Certification - Provide ground certification results for each controller and pump panel grounding grid installed. This must be on a licensed electrician letter head indicating location tested (using IR plan symbols), date, time, test method, and testing results.

INSPECTIONS AND COORDINATION MEETINGS REQUIRED - Contractor is required to schedule, perform, and attend the following, and demonstrate to the owner and/or owners representative to their satisfaction, as follows:

- Pre-construction meeting - Designer and contractor to review entire install process and schedule with owner/general contractor.
Mainline installation inspection(s) - all mainline must be inspected for proper pipe, fittings, depth of coverage, backfill, and installation method
Mainline pressure test - All mainline shall be pressure tested according to this design's requirements
Flow Meter calibration - All flow meters must be calibrated, provide certified calibration report for all flow meters.
Backflow Device Testing (if applicable) - all newly installed back flow devices must be tested and the test results provided (in writing) to the owner/owners representative verifying that State of Florida requirements have been met.
USDA Soil Quality Tests for infiltration/texture
Coverage and operational test
Final inspection
Punch list inspection

FINAL ACCEPTANCE

Final acceptance of the irrigation system will be given after the following documents and conditions have been completed and approved. Final payment will not be released until these conditions are satisfied.

- All above inspections are completed, documented, and approved by owner.
Completion and acceptance of "as-built" drawings.
Acceptance of required controller charts and placement inside of controllers.
All other submittals have been made to the satisfaction of the owner.

GUARANTEE

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

MINIMUM RECOMMENDED IRRIGATION MAINTENANCE PROCEDURES

- Every irrigation zone should be checked monthly and written reports generated describing the date(s) each zone was inspected, problems identified, date problems repaired, and a list of materials used in the repair. At minimum, these inspections should include the following tasks:
Turn on each zone from the controller to verify automatic operation.
Check schedules to ensure they are appropriate for the season, plant and soil type, and irrigation method. Consult an I.A. certified auditor for methods used in determining proper irrigation scheduling requirements.
Check remote control valve to ensure proper operation.
Check setting on pressure regulator to verify proper setting, if present.
Check flow control and adjust as needed; ensure valve closure within 10-15 seconds after deactivation by controller.
Check for leaks - mainline, lateral lines, valves, heads, etc.
Check all heads as follows:
a. Proper set height (top of sprinkler is 1" below mow height)
b. Verify head pop-up height - 6" in turf, 12" in ground cover, and pop-up on riser in shrub beds.
c. Check wiper seal for leaks - if leaking, clean head and re-inspect.
d. If still leaking, replace head with the appropriate head with pressure regulator and built-in check valve.
e. All nozzles checked for proper pattern, clogging, leaks, correct make & model, etc. - replace as needed
f. Check for proper alignment - perfectly vertical; coverage area is correct; minimize over spray onto hardscapes.
g. Riser height raised/lowered to accommodate plant growth patterns and ensure proper coverage.
h. Verify the pop-up riser retracts after operation. If not, repair/replace as needed.
Check controller grounds for resistance (10 ohms or less) once per year. Submit written reports.
Check rain shut-off device monthly to ensure it functions properly.
Inspect all filters monthly and clean/repair/replace as needed.
Inspect backflow devices by utilizing a properly licensed backflow inspector. This should be done annually, at minimum.
Inspect all valve boxes to ensure they are in good condition, lids are in place and locked.
Winterize, if applicable, as weather in your area dictates. Follow manufacturer recommendations and blow out all lines and equipment using compressed air. Perform seasonal startup of system as per manufacturer recommendations.
Conduct additional inspections, maintenance tasks, etc. that are particular for your site.

Table with columns: DATE, SCALE, DESIGN BY, DRAWN BY, CHECKED BY, APPROVED BY

Table with columns: DATE, BY, DESCRIPTION

CRAVEN - THOMPSON AND ASSOCIATES, INC. ENGINEERS • PLANNERS • SURVEYORS 3563 N.W. 53RD STREET, FORT LAUDERDALE, FLORIDA 33309 TEL.: (954) 739-6400 FAX: (954) 739-6409 FLORIDA LICENSED ENGINEERS, SURVEYORS & MAPPING BUSINESS NO. 271 FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS NO. C000114



HIBISCUS ISLAND CITY OF MIAMI BEACH, FLORIDA PREPARED FOR: CITY OF MIAMI BEACH IRRIGATION NOTES Scott W. Peavler, R.L.A. Florida R.L.A. No. 6666976 PROJECT NO. 17-0027-001-01 IR-3 SHEET 4 OF 4 Masuen Consulting LLC Water Resource Consultants 642 Yates Road Newport, WA 99156 Telephone (866) 928-1533 Fax (800) 928-1534 PROUDLY DESIGNED AND PRODUCED IN THE USA

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