



CITY OF
MARGATE
Together We Make It Great

CITY OF MARGATE

5790 MARGATE BOULEVARD
MARGATE, FLORIDA 33063

MAYOR
JOANNE SIMONE

VICE MAYOR
TOMMY RUZZANO

COMMISSIONER 1
JOYCE WILLIAMS BRYAN

COMMISSIONER 2
LESA PEERMAN

COMMISSIONER 3
FRANK B. TALERICO

CITY MANAGER
DOUGLAS SMITH

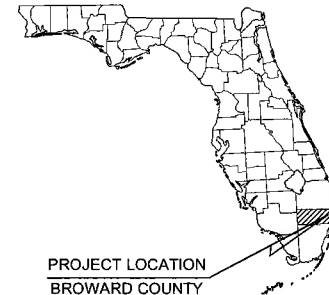
Kimley»Horn

LANDSCAPE ARCHITECT
GEORGE PUNG, P.L.A.
KIMLEY-HORN AND ASSOCIATES, INC.
1221 BRIDGELL AVENUE, SUITE 400
MIAMI, FLORIDA 33134
(305) 875-2009
FAX (305) 535-7760

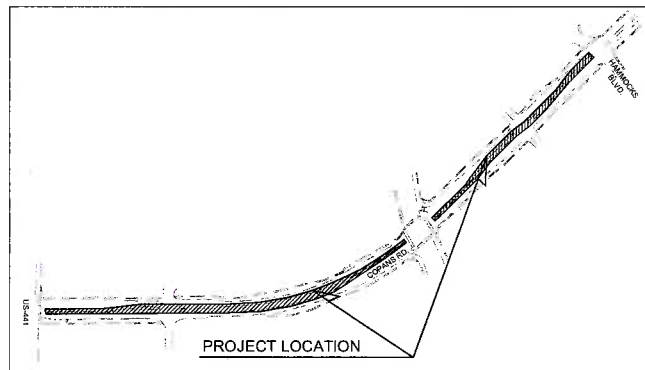
CRA / CITY OF MARGATE COPANS ROAD

US-441 TO HAMMOCKS BLVD.

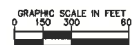
May, 2015



PROJECT LOCATION
BROWARD COUNTY



VICINITY MAP



SCALE: 1" = 300'



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L3.06	IRRIGATION SPECIFICATIONS
L3.07	IRRIGATION SPECIFICATIONS

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NOTE: THE SCALE OF THESE PLANS MAY
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WWW.KIMLEY-HORN.COM CA 0000866

LICENSED PROFESSIONAL

CLIPSE PUNG, P.L.A.

FLORIDA LICENSE NUMBER
P.L.A. #001706

KIMLEY-HORN

CLIPSE PUNG, P.L.A.

FLORIDA LICENSE NUMBER
P.L.A. #001706

COVER SHEET

COPANS ROAD

PREPARED FOR

CITY OF MARGATE

SHEET NUMBER

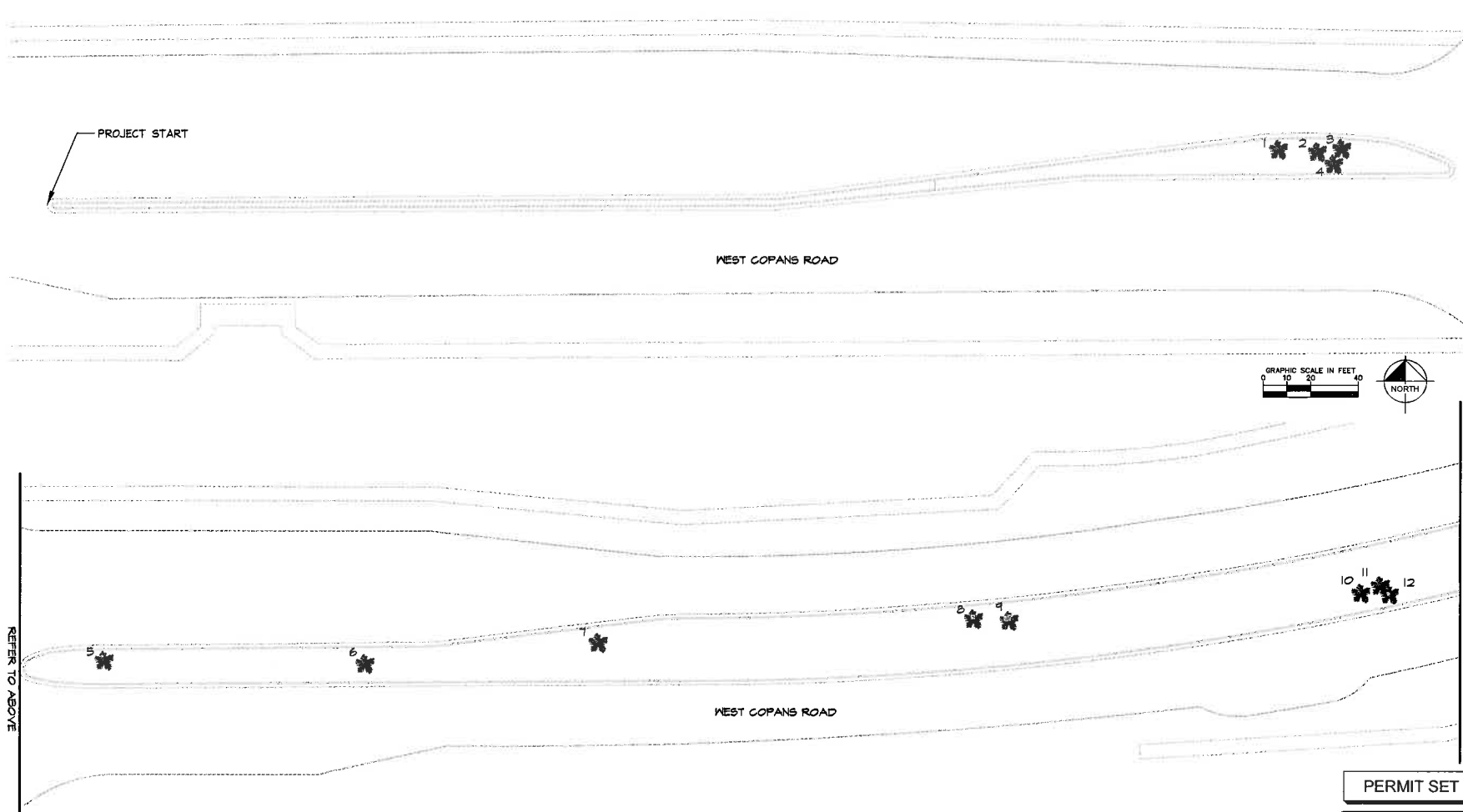
L0.00

DATE

BY

TREE INVENTORY

No.	DIA COMMON NAME		SUBSTRATE NAME	HEIGHT	GROWTH CONDITION
1	12"	SABAL PALM	SABAL PALM-ETTO	27'	1' HEALTHY
2	12"	SABAL PALM	SABAL PALM-ETTO	50'	1' HEALTHY
3	12"	SABAL PALM	SABAL PALM-ETTO	50'	1' HEALTHY
4	12"	SABAL PALM	SABAL PALM-ETTO	50'	1' HEALTHY
5	12"	SABAL PALM	SABAL PALM-ETTO	50'	0' HEALTHY
6	12"	SABAL PALM	SABAL PALM-ETTO	59'	1' HEALTHY
7	12"	SABAL PALM	SABAL PALM-ETTO	27'	1' HEALTHY
8	12"	SABAL PALM	SABAL PALM-ETTO	59'	0' HEALTHY
9	12"	SABAL PALM	SABAL PALM-ETTO	50'	1' HEALTHY
10	15"	SABAL PALM	SABAL PALM-ETTO	29'	1' HEALTHY
11	12"	SABAL PALM	SABAL PALM-ETTO	29'	1' HEALTHY
12	8"	SABAL PALM	SABAL PALM-ETTO	29'	1' HEALTHY



REFER TO BELOW

REF ID: A66666

Kimley»Horn

043813000	DATE	GEORGE PUIG, PLA	FLORIDA LICENSE NUMBER
	FEBRUARY 2015		PLA #001706
	SCALE AS SHOWN		
	DESIGNED BY	BU	
	DRAWN BY	BU	
	CHECKED BY	KAM	DATE:

TREE SURVEY

COPANS ROAD
PREPARED FOR
CITY OF MARGATE

SHEET NUMBER
L0.02

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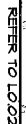
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Florida's 811
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K:\MID\JRO\043613000_Copans Road Marginal LANDSCAPE CAD\7-fig Sheets\TREE SURVEY.dwg



811
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SUNSHINE STATE ONE CALL OF FLORIDA, INC.

FLORIDA STATE UNIVERSITY

LICENSED PROFESSIONAL

GEORGE DUNCAN DIA

FLORIDA LICENSE NUMBER
DL # 00000000

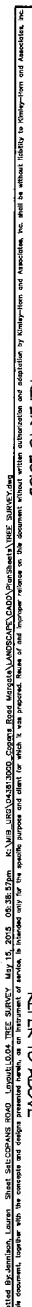
CREATED BY	BJ
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PHONE: 305-673-7025
WWW.KIMLEY-HORN.COM CA 00000695

[illegible]

titled by Jamison, Lauren Street 361 COPAINS ROAD, LYNBOLT 00004 TREE SURVEY May 15, 2015 05:38:37pm N:\B1\UNCL\04381000_Copains Road Mangrove LANDSCAPE CAD\04381000\Tree\04381000 TREE SURVEY.dwg
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[illegible]

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[illegible]

	FLORIDA
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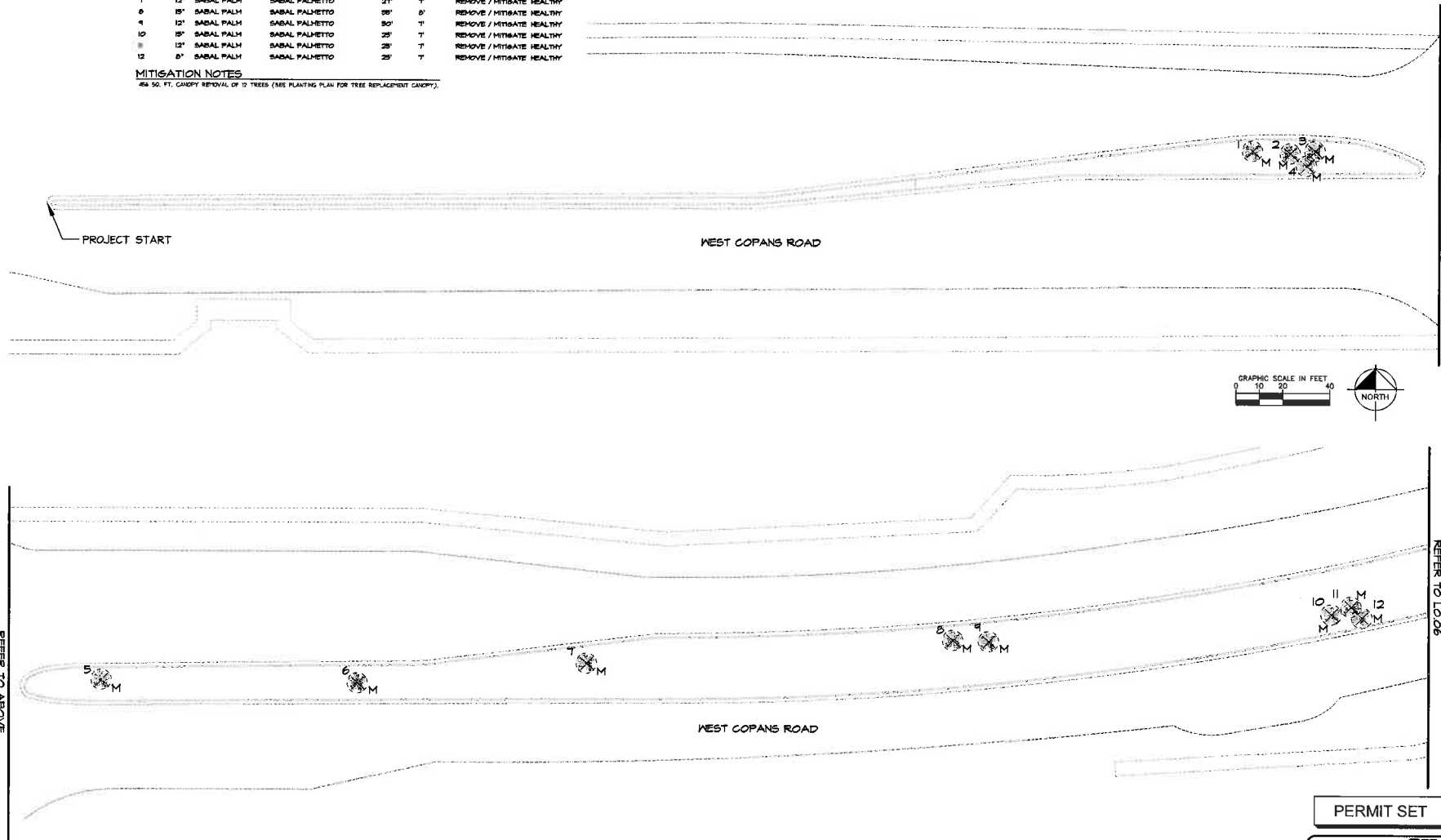
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TREE INVENTORY						
NO.	DIA. @ 4.5 FT. ABOVE GROUND	SPECIES NAME	HEIGHT	CANOPY	DISPOSITION	REMARKS
1	12"	SABAL PALM	27'	T	REMOVE / MITIGATE	HEALTHY
2	12"	SABAL PALM	50'	T	REMOVE / MITIGATE	HEALTHY
3	12"	SABAL PALM	50'	T	REMOVE / MITIGATE	HEALTHY
4	12"	SABAL PALM	50'	T	REMOVE / MITIGATE	HEALTHY
5	12"	SABAL PALM	50'	B	REMOVE / MITIGATE	HEALTHY
6	15"	SABAL PALM	50'	T	REMOVE / MITIGATE	HEALTHY
7	12"	SABAL PALM	27'	T	REMOVE / MITIGATE	HEALTHY
8	15"	SABAL PALM	50'	B	REMOVE / MITIGATE	HEALTHY
9	12"	SABAL PALM	50'	T	REMOVE / MITIGATE	HEALTHY
10	15"	SABAL PALM	25'	T	REMOVE / MITIGATE	HEALTHY
11	12"	SABAL PALM	25'	T	REMOVE / MITIGATE	HEALTHY
12	8"	SABAL PALM	25'	T	REMOVE / MITIGATE	HEALTHY

MITIGATION NOTES
454 50. FT. CANOPY REMOVAL OF 12 TREES (SEE PLANTING PLAN FOR TREE REPLACEMENT CANOPY).



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SHEET NUMBER L0.05		COPANS ROAD PREPARED FOR CITY OF MARGATE FLORIDA		TREE MITIGATION		Kimley»Horn © 2010 KIMLEY-HORN AND ASSOCIATES, INC. 1221 BRICKELL AVENUE, SUITE 1700 MIAMI, FLORIDA 33131 WWW.KIMLEY-HORN.COM CA 00000898		REVISIONS NO. DESCRIPTION DATE	
DATE PROJECT 04-18-2010		DATE FEBRUARY 2010		SCALE AS SHOWN BY: DJ		LICENCED PROFESSIONAL GEORGE RUC, P.E. KIMLEY-HORN AND ASSOCIATES, INC. P.E. #001706		BY	

REFER TO LO.05



TREE INVENTORY

NO.	DIA. COMMON NAME	SCIENTIFIC NAME	HEIGHT	CANOPY	CONDITION
14	12" SABAL PALM	SABAL PALMETTO	80'	8'	REMOVE / MITIGATE HEALTHY
15	13" SABAL PALM	SABAL PALMETTO	21'	7'	REMOVE / MITIGATE HEALTHY
16	8" SABAL PALM	SABAL PALMETTO	80'	8'	REMOVE / MITIGATE HEALTHY
16	8" GRAPE VITIS	LACINIASTRUM INDICA	12'	8'	REMOVE / MITIGATE HEALTHY
17	8" SABAL PALM	SABAL PALMETTO	50'	6'	REMOVE / MITIGATE HEALTHY
18	10" SABAL PALM	SABAL PALMETTO	88'	7'	REMOVE / MITIGATE HEALTHY

MITIGATION NOTES

367 SQ. FT. CANOPY REMOVAL OF 6 TREES (SEE PLANTING PLAN FOR TREE REPLACEMENT CANOPY).

WEST COPANS ROAD

181X

GRAPHIC SCALE IN FEET
0 10 20



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COPANS ROAD
PREPARED FOR
CITY OF MARGATE

MARGATE FLORIDA

TREE MITIGATION

K-1A PROJECT 043613000	LICENSED PROFESSIONAL
DATE FEBRUARY 2019	GEORGE PUIG, PLA
SCALE AS SHOWN	FLORIDA LICENSE NUMBER PLA #001706
DESIGNED BY BU	DATE:
DRAWN BY BU	
CHECKED BY KAM	

Kimley-Horn

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PHONE: 305-873-2025
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No.	REVISIONS
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DATE	BY
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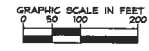
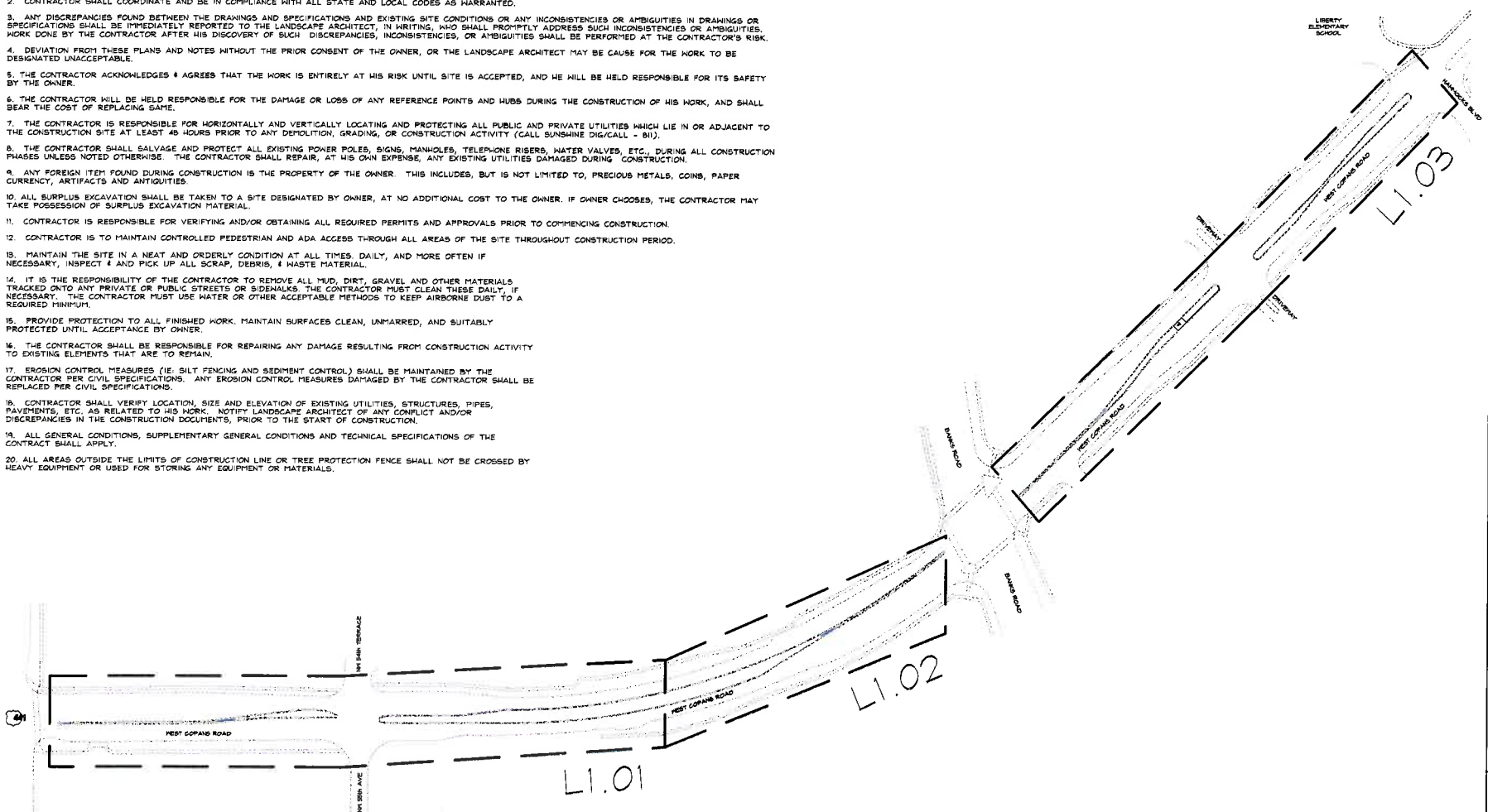


SHEET NUMBER L0.07		COPANS ROAD PREPARED FOR CITY OF MARGATE FLORIDA		TREE MITIGATION		KIM PROJECT 04/01/2020 DATE FEBRUARY 2015 SCALE AS SHOWN FLORIDA LICENSE NUMBER 00000000 DRAWN BY BJ CHECKED BY BJ DATE		LICENSED PROFESSIONAL GEORGE RIND, P.E. FLORIDA LICENSE NUMBER 00000000 P.L.A. #007706		REFER TO BELOW Kimley»Horn 3210 KALEY-HORN AND ASSOCIATES, INC. 1221 BROOKELL AVENUE, SUITE 400, MIAMI, FL 33131 WWW.KIMLEY-HORN.COM CA 00009598 No. _____ REVISIONS _____ DATE _____ BY _____	
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GENERAL NOTES:

1. ALL WORK SHALL BE CONFINED TO LIMITS OF CONSTRUCTION AS SHOWN ON PLANS.
2. CONTRACTOR SHALL COORDINATE AND BE IN COMPLIANCE WITH ALL STATE AND LOCAL CODES AS WARRANTED.
3. ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS AND SPECIFICATIONS AND EXISTING SITE CONDITIONS OR ANY INCONSISTENCIES OR AMBIGUITIES IN DRAWINGS OR SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE LANDSCAPE ARCHITECT, IN WRITING, WHO SHALL PROMPTLY ADDRESS SUCH INCONSISTENCIES OR AMBIGUITIES. WORK DONE BY THE CONTRACTOR AFTER HIS DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES, OR AMBIGUITIES SHALL BE PERFORMED AT THE CONTRACTOR'S RISK.
4. DEVIATION FROM THESE PLANS AND NOTES WITHOUT THE PRIOR CONSENT OF THE OWNER, OR THE LANDSCAPE ARCHITECT MAY BE CAUSE FOR THE WORK TO BE DESIGNATED UNACCEPTABLE.
5. THE CONTRACTOR ACKNOWLEDGES & AGREES THAT THE WORK IS ENTIRELY AT HIS RISK UNTIL SITE IS ACCEPTED, AND HE WILL BE HELD RESPONSIBLE FOR ITS SAFETY BY THE OWNER.
6. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE DAMAGE OR LOSS OF ANY REFERENCE POINTS AND HUBS DURING THE CONSTRUCTION OF HIS WORK, AND SHALL BEAR THE COST OF REPLACING SAME.
7. THE CONTRACTOR IS RESPONSIBLE FOR HORIZONTALLY AND VERTICALLY LOCATING AND PROTECTING ALL PUBLIC AND PRIVATE UTILITIES WHICH LIE IN OR ADJACENT TO THE CONSTRUCTION SITE AT LEAST 48 HOURS PRIOR TO ANY DEMOLITION, GRADING, OR CONSTRUCTION ACTIVITY (CALL SUNSHINE DIG/CALL - 811).
8. THE CONTRACTOR SHALL SALVAGE AND PROTECT ALL EXISTING POWER POLES, SIGNS, MANHOLES, TELEPHONE RISERS, WATER VALVES, ETC., DURING ALL CONSTRUCTION PHASES UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL REPAIR, AT HIS OWN EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
9. ANY FOREIGN ITEM FOUND DURING CONSTRUCTION IS THE PROPERTY OF THE OWNER. THIS INCLUDES, BUT IS NOT LIMITED TO, PRECIOUS METALS, COINS, PAPER CURRENCY, ARTIFACTS AND ANTIQUITIES.
10. ALL SURPLUS EXCAVATION SHALL BE TAKEN TO A SITE DESIGNATED BY OWNER, AT NO ADDITIONAL COST TO THE OWNER. IF OWNER CHOOSES, THE CONTRACTOR MAY TAKE POSSESSION OF SURPLUS EXCAVATION MATERIAL.
11. CONTRACTOR IS RESPONSIBLE FOR VERIFYING AND/OR OBTAINING ALL REQUIRED PERMITS AND APPROVALS PRIOR TO COMMENCING CONSTRUCTION.
12. CONTRACTOR IS TO MAINTAIN CONTROLLED PEDESTRIAN AND ADA ACCESS THROUGH ALL AREAS OF THE SITE THROUGHOUT CONSTRUCTION PERIOD.
13. MAINTAIN THE SITE IN A NEAT AND ORDERLY CONDITION AT ALL TIMES. DAILY, AND MORE OFTEN IF NECESSARY, INSPECT & AND PICK UP ALL SCRAP, DEBRIS, & WASTE MATERIAL.
14. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE ALL MUD, DIRT, GRAVEL AND OTHER MATERIALS TRACKED ONTO ANY PRIVATE OR PUBLIC STREETS OR SIDEWALKS. THE CONTRACTOR MUST CLEAN THESE DAILY IF NECESSARY. THE CONTRACTOR MUST USE WATER OR OTHER ACCEPTABLE METHODS TO KEEP AIRBORNE DUST TO A REQUIRED MINIMUM.
15. PROVIDE PROTECTION TO ALL FINISHED WORK. MAINTAIN SURFACES CLEAN, UNHARRED, AND SUITABLY PROTECTED UNTIL ACCEPTANCE BY OWNER.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE RESULTING FROM CONSTRUCTION ACTIVITY TO EXISTING ELEMENTS THAT ARE TO REMAIN.
17. EROSION CONTROL MEASURES (IE. SILT FENCING AND SEDIMENT CONTROL) SHALL BE MAINTAINED BY THE CONTRACTOR PER CIVIL SPECIFICATIONS. ANY EROSION CONTROL MEASURES DAMAGED BY THE CONTRACTOR SHALL BE REPLACED PER CIVIL SPECIFICATIONS.
18. CONTRACTOR SHALL VERIFY LOCATION, SIZE AND ELEVATION OF EXISTING UTILITIES, STRUCTURES, PIPES, PAVEMENTS, ETC., AS RELATED TO HIS WORK. NOTIFY LANDSCAPE ARCHITECT OF ANY CONFLICT AND/OR DISCREPANCIES IN THE CONSTRUCTION DOCUMENTS, PRIOR TO THE START OF CONSTRUCTION.
19. ALL GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS AND TECHNICAL SPECIFICATIONS OF THE CONTRACT SHALL APPLY.
20. ALL AREAS OUTSIDE THE LIMITS OF CONSTRUCTION LINE OR TREE PROTECTION FENCE SHALL NOT BE CROSSED BY HEAVY EQUIPMENT OR USED FOR STORING ANY EQUIPMENT OR MATERIALS.

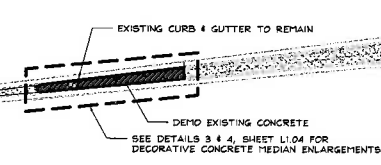
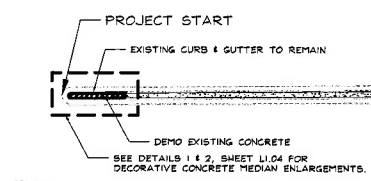


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OVERALL HARDSCAPE PLAN				
COPANS ROAD PREPARED FOR CITY OF MARGATE				
SHEET NUMBER L1.00				

REFER TO ABOVE
NW 55th AVE NW 34th TERRACE



WEST COPANS ROAD

BUS STOP

WEST COPANS ROAD

BUS STOP



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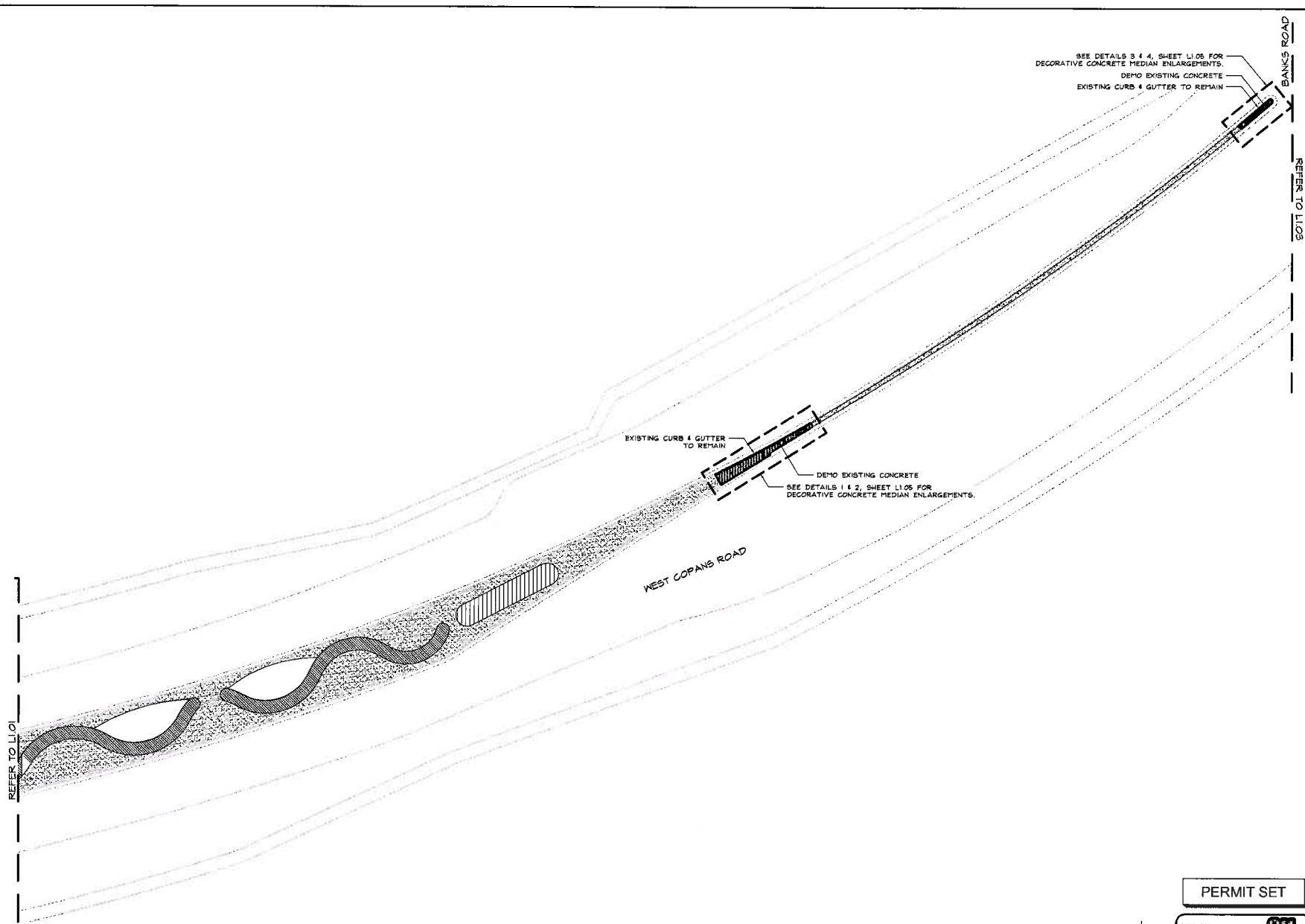
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BURN-ONE STATE ONE CALL OF FLORIDA, INC.

 FLORIDA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	SHEET NUMBER L1.01	COPANS ROAD PREPARED FOR CITY OF MARGATE	FLORIDA	HARDSCAPE PLAN	PLAN PROJECT 04-381-0000	LICENSED PROFESSIONAL GEORGE RUIE, P.L.A. 1200 N.W. 10TH AND ASSOCIATES, P.L.A. 1200 N.W. 10TH AVE., SUITE 101 MIAMI, FL 33136 PHONE: 305-477-2925 WWW.GRUIE-FLORIDA.COM CA 00000888	Kimley»Horn	SEEKS TO BE ON	REFERENCE TO L1.02	
					PERMIT DATE FEBRUARY 2015	EXPIRATION DATE AS SHOWN	EXPIRATION DATE AS SHOWN			EXPIRATION DATE AS SHOWN
					DRAWN BY DLJ	CHECKED BY KAM	DATE 01/10/08	REVISIONS	DATE	BY

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COPANS ROAD PREPARED FOR CITY OF MARGATE FLORIDA		HARDSCAPE PLAN		Kimley-Horn © 2010 KIMLEY-HORN AND ASSOCIATES, INC. 1221 BRICKELL AVENUE, SUITE 1700 MIAMI, FL 33131 WWW.KIMLEY-HORN.COM CA 00000986		REVISIONS No. DATE	
SHEET NUMBER L1.02		DESIGNED BY GEORGE PUC PL		CHECKED BY KIM DATE		DATE	
PROJECT 04-0513000		DATE FEBRUARY 2015		SCALE AS SHOWN		DRAWN BY DJ	
PROJECT 04-0513000		DATE FEBRUARY 2015		SCALE AS SHOWN		DRAWN BY DJ	

BANKS ROAD

REFER TO L102

EXISTING CURB & GUTTER TO REMAIN

DEMO EXISTING CONCRETE

SEE DETAILS 1 & 2, SHEET L106 FOR DECORATIVE CONCRETE MEDIAN ENLARGEMENTS.

EXISTING CURB & GUTTER TO REMAIN

DEMO EXISTING CONCRETE

SEE DETAILS 3 & 4, SHEET L106 FOR DECORATIVE CONCRETE MEDIAN ENLARGEMENTS.

WEST COPANS ROAD

PROPOSED RELOCATION OF EXISTING SOLAR PANEL

PROPOSED RELOCATION OF EXISTING SIGN

PROPOSED RELOCATION OF EXISTING UP-LIGHT

GRAPHIC SCALE IN FEET

0 10 20 40

NORTH

LIBERTY ELEMENTARY SCHOOL

WEST COPANS ROAD

PROJECT END

HANNOCKS BLVD

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11

<div style="display: flex; justify-content: space-between;"> <div> <p>COPANS ROAD PREPARED FOR CITY OF MARGATE</p> </div> <div> <p>HARDSCAPE PLAN</p> </div> <div> <p>FLORIDA</p> </div> </div>	SHEET NUMBER <div style="border: 1px solid black; padding: 2px; display: inline-block;">1103</div>	BHA PROJECT DATE FEBRUARY 2015 SCALE AS SHOWN DESIGNED BY DRAWN BY CHECKED BY	LICENSED PROFESSIONAL GEORGE PUELL, P.E. FLORIDA LICENSE NUMBER 1221 P.E. NO. 1007708 P.L.A. #001708	Kimley»Horn 1221 DORSETT AVENUE, SUITE 400, WILMINGTON, DE 19801 PHONE: 302-647-3025 FAX: 302-647-3026 WWW.KIMLEY-HORN.COM	NO. REVISIONS DATE BY
	REFER TO BELOW				

SHEET NUMBER
L1.04

SHEET NUMBER
L1.05

C-1		GREEN GLASS AGGREGATE
C-2		LIGHT GREEN GLASS AGGREGATE
C-3		LIGHT BLUE GLASS AGGREGATE
C-4		BLUE GLASS AGGREGATE

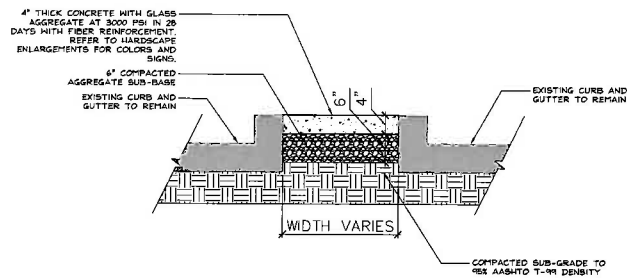
1. COLORS BASED ON CONCRETE COLORS, AND PATTERN TO BE CARRIED THROUGH THE MEDIANS WITHIN THE PROJECT LIMITS SHOWN BELOW.
2. A 10' X 10' MOCKUP MUST BE PROVIDED BY THE CONTRACTOR TO BE APPROVED BY THE LANDSCAPE ARCHITECT, SHOWING GLASS AGGREGATE COLORS C-1, C-2, C-3, & C-4, ALONG WITH EXPANSION AND CONTROL JOINTS.
3. ALL CONCRETE MUST BE BATCHED FROM SAME LOCATION.
4. SUBMITTAL CONTRACTORS TO LANDSCAPE ARCHITECT WITH CONCRETE MIX DESIGNS.
5. MIXTURE: CEMENT, PORTLAND, AND GRAY CEMENT
FLY ASH: ASTM C618, CLASS F
WATER: ASTM C94
6. GLASS AGGREGATE SIZE 1"-1 1/4"



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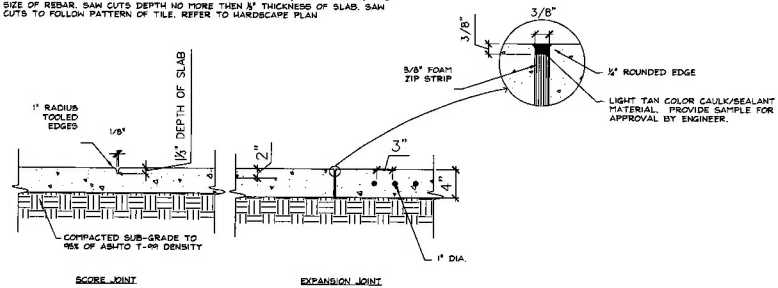
SHEET NUMBER
L1.06



1 DECORATIVE CONCRETE MEDIAN PAVEMENT
SCALE: 1"=1'-0"

NOTES:
JOINTS LOCATION SHALL BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. CONSTRUCTION JOINTS SHALL BE KEY JOINTED WITH REINFORCING ACROSS JOINT.

STRUCTURAL ENGINEER TO PROVIDE LOCATION OF SAW CUTS, AND SPACING AND SIZE OF REBAR. SAW CUTS DEPTH NO MORE THAN 1/4" THICKNESS OF SLAB. SAW CUTS TO FOLLOW PATTERN OF TILE. REFER TO HARDSCAPE PLAN.



2 EXPANSION/SCORE JOINTS ON GRADE
SCALE: 1"=1'-0"

PERMIT SET



COPANS ROAD
PREPARED FOR
CITY OF MARGATE
FLORIDA

SHEET NUMBER
L1.50

Kimley»Horn
1221 BRICKELL AVENUE, SUITE 400, MIAMI, FL 33131
PH: 305-442-2000
WWW.KIMLEY-HORN.COM

PROJECT
COPANS ROAD
FEBRUARY 2015
SCALE AS SHOWN
DESIGNED BY
DRAWN BY
CHECKED BY

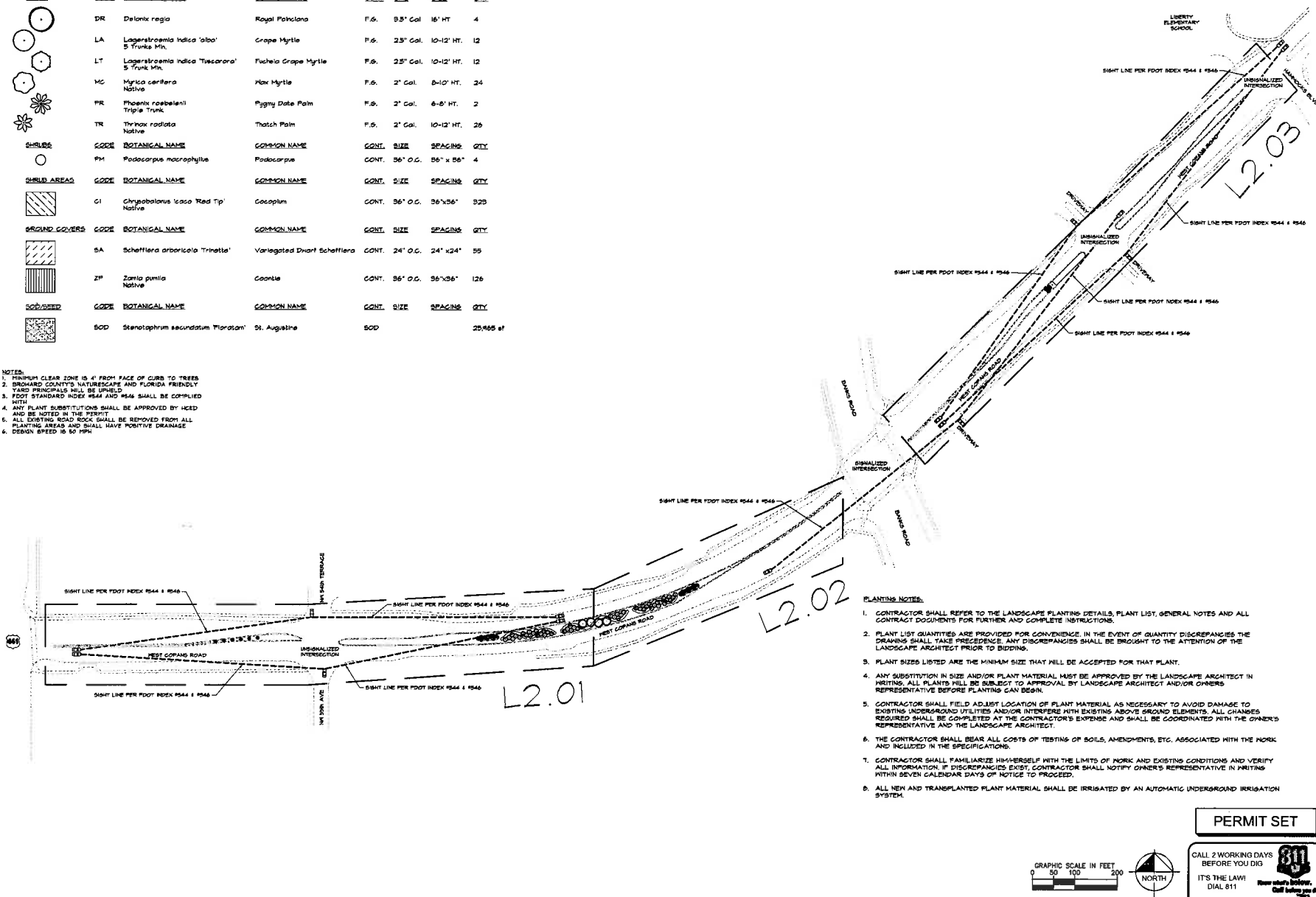
LEADER PROFESSIONAL
GEORGE HUG, P.E.
FLORIDA LICENSE NUMBER
PLA #001106

DATE
REVISED
BY

PLANT SCHEDULE OVERALL

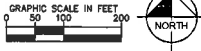
TREES	CODE	BOTANICAL NAME	COMMON NAME	CONT.	GAL.	SIZE	QTY
DR	DR	Delonix regia	Royal Poinciana	F.S.	9.5" Gal.	16' HT.	4
LA	LA	Lagerstroemia indica 'alba'	Grape Myrtle	F.S.	2.5" Gal.	10-12' HT.	12
LT	LT	Lagerstroemia indica 'Tuscany'	Fuchsia Grape Myrtle	F.S.	2.5" Gal.	10-12' HT.	12
MC	MC	Myrica cerifera	Wax Myrtle	F.S.	2" Gal.	8-10' HT.	24
PR	PR	Phoenix roebelenii	Pygmy Date Palm	F.S.	2" Gal.	6-8' HT.	2
TR	TR	Thrinax radiata	Thatch Palm	F.S.	2" Gal.	10-12' HT.	26
SHRUBS	CODE	BOTANICAL NAME	COMMON NAME	CONT.	SIZE	SPACING	QTY
PH	PH	Podocarpus macrophylla	Podocarpus	CONT.	36" O.C.	36" x 36"	4
GROUND COVERS	CODE	BOTANICAL NAME	COMMON NAME	CONT.	SIZE	SPACING	QTY
G1	G1	Chrysanthemum 'Red Tip'	Geranium	CONT.	36" O.C.	36" x 36"	325
SA	SA	Schefflera arboricola 'Triostar'	Variegated Dwarf Schefflera	CONT.	24" O.C.	24" x 24"	55
ZP	ZP	Zamia pumila	Coontie	CONT.	36" O.C.	36" x 36"	126
SOD/SEED	CODE	BOTANICAL NAME	COMMON NAME	CONT.	SIZE	SPACING	QTY
SOD	SOD	Stenotaphrum secundatum 'Floridan'	St. Augustine	SOD			25,985 sf

- NOTES:
1. MINIMUM CLEAR ZONE IS 4' FROM FACE OF CURB TO TREES
 2. BROWARD COUNTY'S NATURESCAPE AND FLORIDA FRIENDLY YARD PRINCIPLES WILL BE UPHELD
 3. FOOT STANDARD INDEX #544 AND #546 SHALL BE COMPLIED WITH
 4. ANY PLANT SUBSTITUTIONS SHALL BE APPROVED BY HCD AND BE NOTED IN THE PERMIT
 5. ALL EXISTING SOIL ROCK SHALL BE REMOVED FROM ALL PLANTING AREAS AND SHALL HAVE POSITIVE DRAINAGE
 6. DESIGN SPEED IS 50 MPH



PLANTING NOTES:

1. CONTRACTOR SHALL REFER TO THE LANDSCAPE PLANTING DETAILS, PLANT LIST, GENERAL NOTES AND ALL CONTRACT DOCUMENTS FOR FURTHER AND COMPLETE INSTRUCTIONS.
2. PLANT LIST QUANTITIES ARE PROVIDED FOR CONVENIENCE. IN THE EVENT OF QUANTITY DISCREPANCIES THE DRAWING SHALL TAKE PRECEDENCE. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT PRIOR TO BIDDING.
3. PLANT SIZES LISTED ARE THE MINIMUM SIZE THAT WILL BE ACCEPTED FOR THAT PLANT.
4. ANY SUBSTITUTION IN SIZE AND/OR PLANT MATERIAL MUST BE APPROVED BY THE LANDSCAPE ARCHITECT IN WRITING. ALL PLANTS WILL BE SUBJECT TO APPROVAL BY LANDSCAPE ARCHITECT AND/OR OWNERS REPRESENTATIVE BEFORE PLANTING CAN BEGIN.
5. CONTRACTOR SHALL FIELD ADJUST LOCATION OF PLANT MATERIAL AS NECESSARY TO AVOID DAMAGE TO EXISTING UNDERGROUND UTILITIES AND/OR INTERFERE WITH EXISTING ABOVE GROUND ELEMENTS. ALL CHANGES REQUIRED SHALL BE COMPLETED AT THE CONTRACTOR'S EXPENSE AND SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE AND THE LANDSCAPE ARCHITECT.
6. THE CONTRACTOR SHALL BEAR ALL COSTS OF TESTING OF SOILS, AMENDMENTS, ETC. ASSOCIATED WITH THE WORK AND INCLUDED IN THE SPECIFICATIONS.
7. CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE LIMITS OF WORK AND EXISTING CONDITIONS AND VERIFY ALL INFORMATION. IF DISCREPANCIES EXIST, CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE IN WRITING WITHIN SEVEN CALENDAR DAYS OF NOTICE TO PROCEED.
8. ALL NEW AND TRANSPLANTED PLANT MATERIAL SHALL BE IRRIGATED BY AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM.



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FLORIDA
BROWARD COUNTY ONE CALL OF FLORIDA, INC.

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MIAMI, FL 33131
PHONE: 305-437-2000
WWW.KIMLEY-HORN.COM

UNDESIGNED PROFESSIONAL
DATE: 04/25/2009
FEBRUARY 2015
SCALE: AS SHOWN
DESIGNED BY: [Signature]
CHECKED BY: [Signature]
DATE: [Signature]

OVERALL PLANTING PLAN

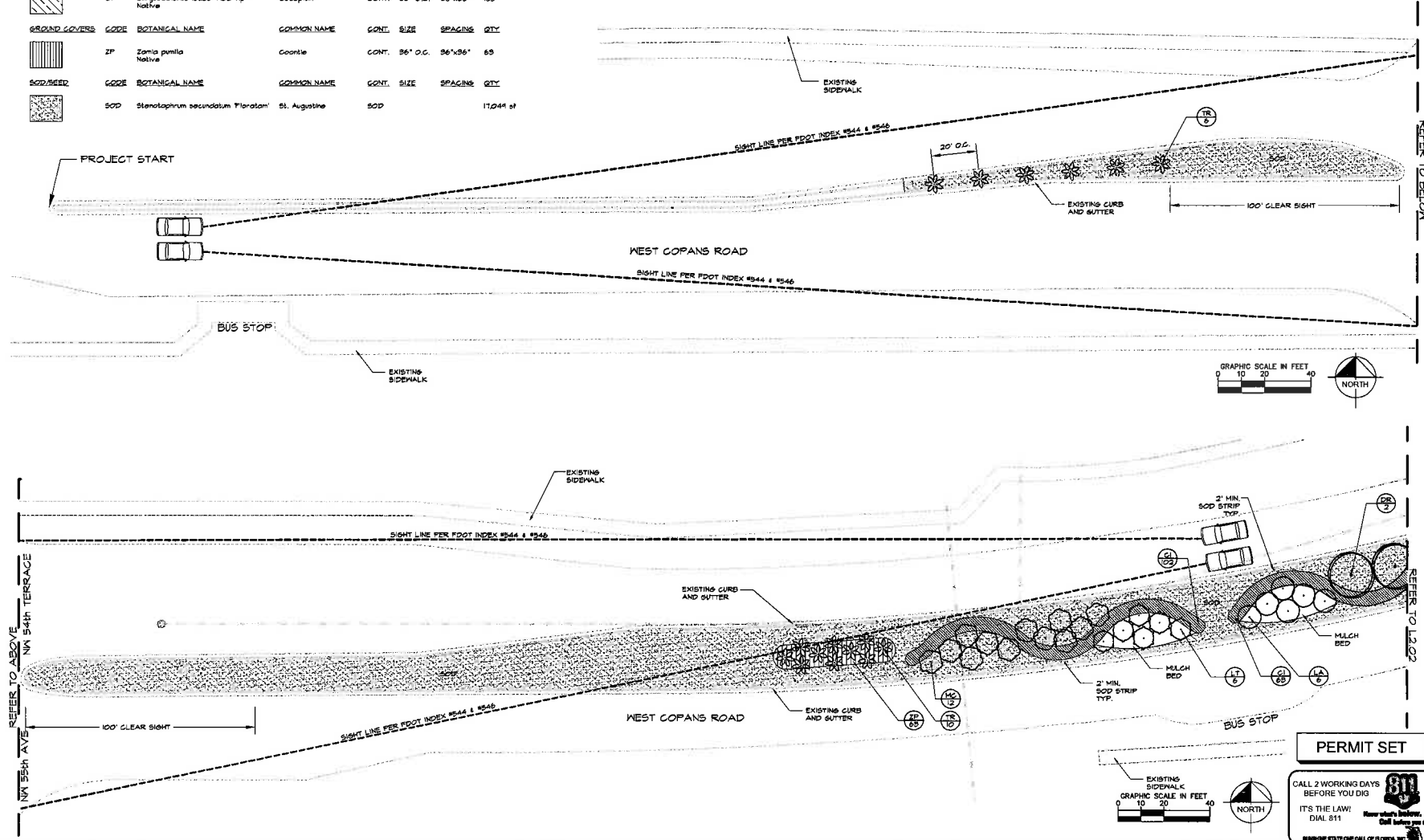
COPANS ROAD
PREPARED FOR
CITY OF MARGATE

SHEET NUMBER
L2.00

PLANT SCHEDULE I

TREES	CODE	BOTANICAL NAME	COMMON NAME	CONT.	GAL.	SIZE	QTY
DR		Delonix regia	Royal Poinciana	F.S.	9.5"	Cal. 16' HT.	2
LA		Lagerstroemia indica 'alba'	Grape Myrtle	F.S.	2.5"	Cal. 10-12' HT.	6
LT		Lagerstroemia indica 'Tuscarora'	Tuscarora Grape Myrtle	F.S.	2.5"	Cal. 10-12' HT.	6
MG		Myrica caribaea	Max Myrtle	F.S.	2"	Cal. 8-10' HT.	12
TR		Thrinax radiata	Thatch Palm	F.S.	2"	Cal. 10-12' HT.	16
SHRUB AREAS	CODE	BOTANICAL NAME	COMMON NAME	CONT.	SIZE	SPACING	QTY
CI		Chrysobalanus icaco 'Red Tip'	Cocoplum	CONT.	36" O.C.	36"x36"	165
GROUND COVERS	CODE	BOTANICAL NAME	COMMON NAME	CONT.	SIZE	SPACING	QTY
ZP		Zamia pumila	Coontie	CONT.	36" O.C.	36"x36"	65
SOD/SEED	CODE	BOTANICAL NAME	COMMON NAME	CONT.	SIZE	SPACING	QTY
SOD		Stenotaphrum secundatum 'Floridan'	St. Augustine	SOD			17,044 sf

- NOTES:
1. MINIMUM CLEAR ZONE IS 4' FROM FACE OF CURB TO TREES
 2. BROWARD COUNTY'S NATURESCAPE AND FLORIDA FRIENDLY YARD PRINCIPLES SHALL BE UNIFIED
 3. FOOT STANDARDS INDEX #544 AND #546 SHALL BE COMPLIED WITH
 4. ANY PLANT SUBSTITUTIONS SHALL BE APPROVED BY HCD AND BE NOTED IN THE PERMIT
 5. ALL EXISTING ROAD ROCK SHALL BE REMOVED FROM ALL PLANTING AREAS AND SHALL HAVE POSITIVE DRAINAGE



Kimley»Horn

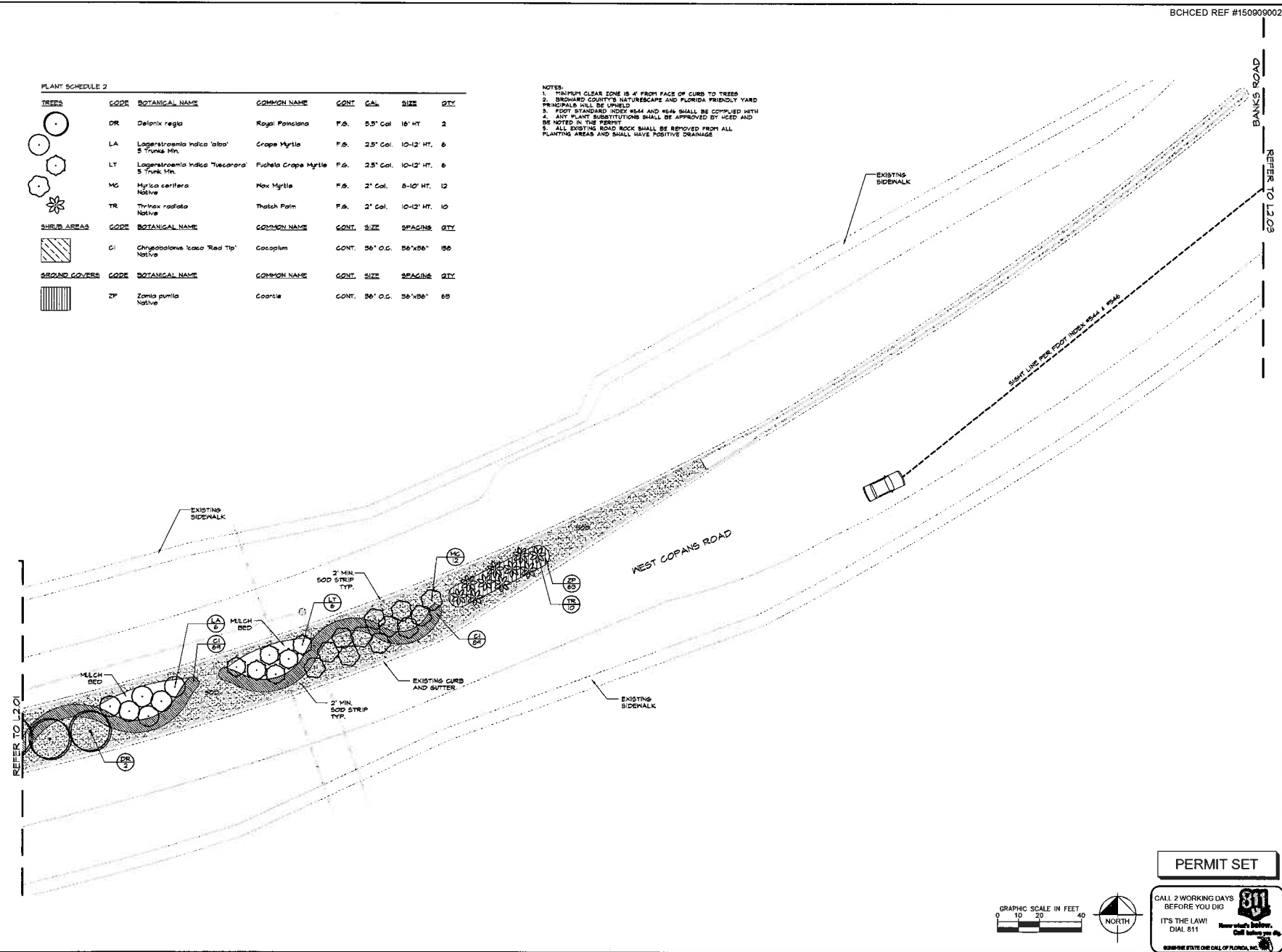
LICENSED PROFESSIONAL
DATE 04/26/2020
FEBRUARY 2015
SCALE AS SHOWN
DESIGNED BY: [Signature]
DRAWN BY: [Signature]
CHECKED BY: [Signature]

PLANTING PLAN

COPANS ROAD
PREPARED FOR
CITY OF MARGATE

SHEET NUMBER
L2.01

NOTES: 1. TRUNK CLEAR ZONE IS 4' FROM FACE OF CURB TO TREES. 2. BROWARD COUNTY'S NATURESCAPE AND FLORIDA FRIENDLY YARD PRINCIPLES SHALL BE OBSERVED. 3. FOOT STANDARD INDEX REAR AND REAR SHALL BE COMPLIED WITH. 4. ANY PLANT SUBSTITUTIONS SHALL BE APPROVED BY UICD AND BE NOTED IN THE PERMIT. 5. ALL EXISTING ROAD ROCK SHALL BE REMOVED FROM ALL PLANTING AREAS AND SHALL HAVE POSITIVE DRAINAGE.



NOTES:

1. MINIMUM CLEAR ZONE IS 4' FROM FACE OF CURB TO TREES
2. BROWARD COUNTY'S NATURESCAPE AND FLORIDA FRIENDLY YARD PRINCIPLES WILL BE UPHELD
3. FOOT STANDARD INDEX #844 AND #846 SHALL BE COMPLIED WITH
4. ALTERNATE SUBSTITUTIONS SHALL BE APPROVED BY WCD AND BE NOTED IN THE PERMIT
5. ALL EXISTING ROAD ROCK SHALL BE REMOVED FROM ALL PLANTING AREAS AND SHALL HAVE POSITIVE DRAINAGE



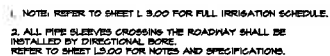
KHA PROJECT 043613000	LICENSED PROFESSIONAL
DATE FEBRUARY 2015	GEORGE PUIG, P.L.A.
SCALE AS SHOWN	FLORIDA LICENSE NUMBER P.L.A. #001706
DESIGNED BY BJ	DATE:
DRAWN BY BJ	
CHECKED BY KAM	

COPANS ROAD
PREPARED FOR
CITY OF MARGATE

MARGATE
FLORIDA

SHEET NUMBER
L2.03

MARGATE



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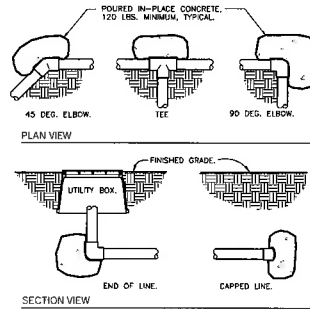
811

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FLORIDA 811

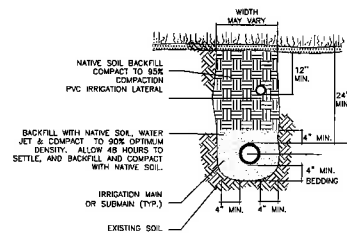
SEMI-ANNUAL STATE ONE CALL OF FLORIDA, INC.

COPANS ROAD PREPARED FOR CITY OF MARGATE	FLORIDA	MARGATE	IRRIGATION PLAN		N/A PROJECT DATE ISSUED DATE FEBRUARY 2015 SCALE AS SHOWN DESIGNED BY B-J DRAWN BY B-J CHECKED BY KAMI DATE	Kimley»Horn © 2010 KIMLEY-HORN AND ASSOCIATES, INC. 1227 BRIDGELL AVENUE, SUITE 402, MIAMI, FL 33131 WWW.KIMLEY-HORN.COM CA 00008986	WORKED PROFESSIONAL GEORGE PURL, P.E. FLORIDA LICENSE NUMBER PLA #001706	No REVISIONS DATE BY



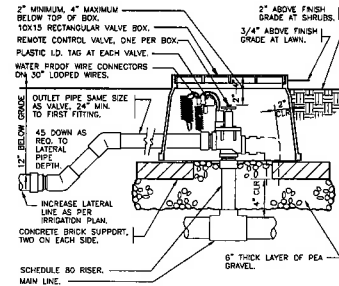
1 THRUST BLOCKING
3/4" = 1'-0"

DETAIL-FILE



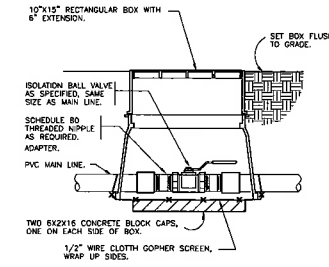
2 TRENCHING DETAIL
NOT TO SCALE

32 8409.78-03



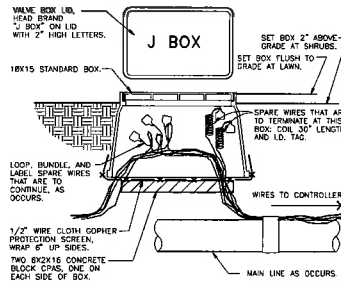
3 ELECTRIC REMOTE CONTROL VALVE
1 1/2" = 1'-0"

DETAIL-FILE



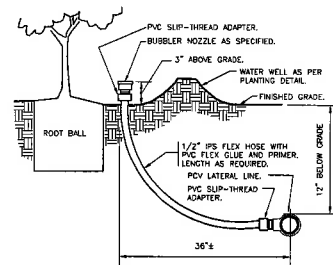
4 BRASS BALL ISOLATION VALVE
1 1/2" = 1'-0"

DETAIL-FILE



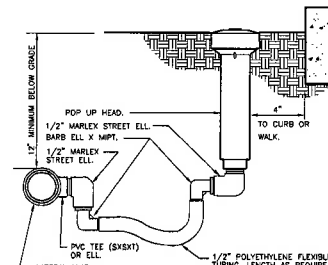
5 WIRE BUNDLE JUNCTION BOX
1 1/2" = 1'-0"

DETAIL-FILE



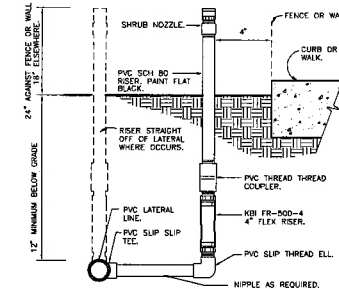
6 BUBBLER ON FLEX HOSE RISER
3" = 1'-0"

DETAIL-FILE



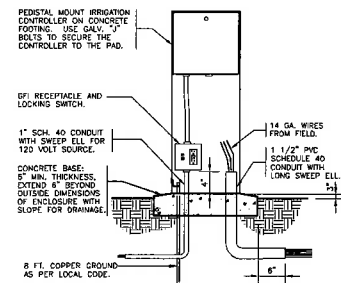
7 POP-UP SPRAY FLEX ASSEMBLY
3" = 1'-0"

32 8403.13-02



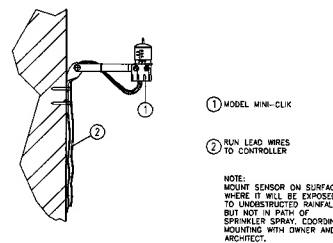
8 SHRUB SPRAY FIXED RISER
3" = 1'-0"

32 8403.23-01

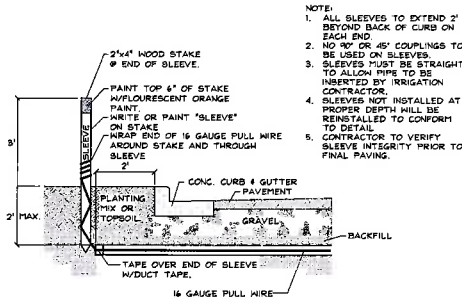


9 PEDESTAL MOUNT CONTROLLER
1" = 1'-0"

DETAIL-FILE



10 RAIN SENSOR
3" = 1'-0"



11 IRRIGATION SLEEVING

PERMIT SET

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MARGATE

SHEET NUMBER
L3.50

Kimley»Horn

1221 BRICKELL AVENUE, SUITE 400, MIAMI, FL 33131
PH: 305.371.7373
WWW.KIMLEY-HORN.COM CA 00000888

PROJECT
04-50-1000
FEBRUARY 2015
SCALE AS SHOWN
DESIGNED BY: BJ
DRAWN BY: BJ
CHECKED BY: KAH

IRRIGATION DETAILS

DATE

REVISIONS

NO.

This document, together with the schedule and design presented herein, is an instrument of service, to be used only for the specific project and site for which it was prepared. Reuse of any portion of this document without written authorization and signature of Kimley-Horn and Associates, Inc. will be without liability to Kimley-Horn and Associates, Inc.

Irrigation Pump Station Specification

PLACEHOLDER
Dade County, Florida
October 23, 2014

1. Manufacturer and Model
The pump control station for this project will be manufactured by Irrigation Craft (FL Lauderdale, Florida 954-771-9353), model numbers #ICE-S5CD-ASV3-CS. The pump control station shall be listed under two Underwriters Laboratories sections as follows:

- A. UL5 - Enclosed Industrial Control Panel - File Number E200160.
- B. UL5 - Packaged Pumping System - File Number E124649.

II. General Description

This document describes a UL-listed skid mounted pumping system with electrical controls, pipe manifolds, valves, and all accessories described herein. The pump station shall be assembled in a workman like manner with consideration given to convenience of use, maintenance, and future repairs. All intended features shall work properly and reliably. All materials exposed to the weather shall be corrosion resistant and shall not be harmed by spraying water. All components mounting shall be sturdy and solid, with sufficient clearance to safely access, operate, and repair without significant disassembly of other components. The station shall be manufactured, tested, then shipped to the site.

III. Components

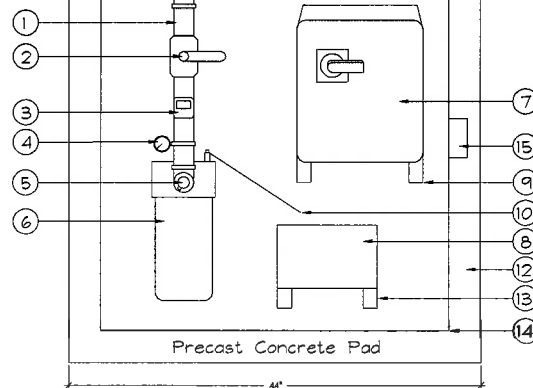
1. **ELECTRICAL REQUIREMENTS:** The control panel shall be designed to operate on available 60 Hertz site power. The entire load presented to the electrical service by the pump station shall be: 7 amperes @ 460 Volts/3 Phase or 14 amperes @ 208/230 Volts/3 Phase or 25 amperes @ 230 Volts/1 Phase.
2. **ELECTRICAL ENCLOSURE & MOUNTING:** The control panel enclosure shall be fiberglass, NEMA 4X, with stainless steel hardware. All panel penetrations shall maintain the NEMA 4X rating. This enclosure shall be mounted on the outer wall of the station enclosure.
3. **DISCONNECT:** The control panel will have a door interlock disconnect preventing the enclosure door from being opened unless the power is first turned off. This disconnect shall be a molded case circuit breaker with a minimum AIR rating of 18,000 amps @ 480 volts AC.
4. **CLOCK DEMAND:** The pump shall be turned on and off by the irrigation controller.
5. **PILLOTS:** All inoperative and inoperative pilot lights shall be mounted on the outside of the control panel door, and shall be engraved labels, 1 per device.
6. **FUSES:** No fuses shall be used anywhere in the pump station unless part of customer-requested equipment such as irrigation controllers.
7. **VOLUTE:** When the pump volute reaches a temperature of 110 degrees F continuously for 30 seconds while the pump is running, the pump shall be turned off. The pump shall not restart until the RESET button is depressed. A labeled pilot light mounted on the outside of the control panel door shall indicate that a VOLUTE alarm has occurred.
8. **OVERLOAD:** The pump motor shall be protected against overload per NEC and UL, section 430. When an overload condition is detected, the pump motor will be turned off. The pump motor shall not restart until the reset button on the Overload Module is depressed. A labeled pilot light mounted on the outside of the control panel door shall indicate that an OVERLOAD alarm has occurred.
9. **HAND-OFF-AUTO (HOA) SWITCH:**
10. **HAZARD - Pump ON:** flow safeties are by-passed except VOLUTE alarm.
11. **OFF - Pump OFF:** Pump control start.
12. **AUTO - Pump starts automatically** all safeties are active.
13. **RESET PUSHBUTTON:** The RESET PUSHBUTTON shall reset the VOLUTE alarm condition.
14. **LOW VOLTAGE CONTROLS, LED LAMPS:** All sensors inside and outside the control panel, all pilot lights and all door mounted hardware shall be powered with less than 30 volts. All pilot lamps shall be mounted on the control panel door exterior and shall utilize LED lamps. Incandescent lamps shall not be used.
15. **CONTROL, CIRCUIT PROTECTION:** All controls shall receive power from an isolation transformer mounted in the control panel. This transformer shall be protected on both primary and secondary sides against short circuit, ground fault, and overload by means of properly sized and trip curve designed circuit breakers. Both primary and secondary sides of the transformer shall include properly sized metal oxide varistors installed 90° to line.
16. **VOLUTE HEAT SENSOR:** The heat sensor body shall be machined as one piece from brass stock. The sensor shall provide a single non-adjustable set-point of 110°F with 5% accuracy. The sensor shall insert directly into the pump volute.
17. **Station Enclosure and Equipment Pedestals:**
18. **Enclosure:** The enclosure shall be enclosed by a pre-fabricated fiberglass enclosure. The enclosure lid shall be hinged and shall provide convenient access to equipment for repairs and maintenance. The enclosure shall be vented to provide cooling and shall include a hose type pad lockable latch. The control panel and irrigation controller shall be mounted on an angled aluminum and HDPE pedestals attached to the station base.
19. **Pump & Motor:**
20. **Flow Meter:**
21. **Optional - Flow Meter:**
22. **Manifold:**
23. **Irrigation Controller & Rain Switch:**
24. **Concrete Pad, Delivery & Installation:**
25. **Station Manufacturer:**
26. **Operation Manual:**
27. **Warranty:**

Fiberglass Enclosed Econo Pump Station

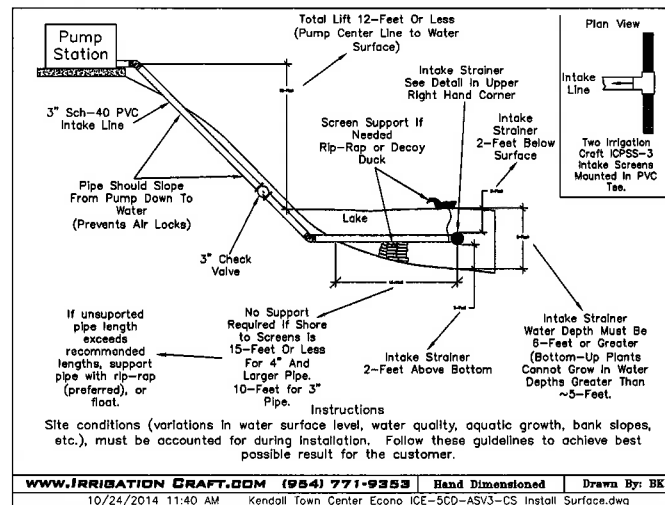
Model: ICE-S5CD-ASV3-CS

Self Priming 5hp ODP

70gpm @ 55psi Discharge



1 IRRIGATION PUMP STATION
PLAN VIEW



2 INTAKE DETAIL

- NOTE:
1. PUMP EQUIPMENT IS TO BE SECURED TO THE CONCRETE PAD BY STAINLESS STEEL EXPANSION BOLTS OR AS REQUIRED BY FLORIDA BUILDING CODE.
 2. ALL MOUNTING STRUTS, PANELS, AND FASTENERS TO BE CORROSION RESISTANT.
 3. THIS SCHEMATIC DETAIL WAS PROVIDED BY IRRIGATION CRAFT (954) 771-9353.

SCALE: NTS

Kimley-Horn

1221 BRICKELL AVENUE, SUITE 400, MIAMI, FL 33131
PHONE: 305-437-2003
WWW.KIMLEY-HORN.COM

IRRIGATION DETAILS

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CITY OF MARGATE

SHEET NUMBER
L3.51

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BURNING STATE OR CALL OF FLORIDA, INC.

SCALE: NTS

WWW.IRRIGATIONCRAFT.COM (954) 771-9353 Hand Dimensioned Drawn By: BK
10/24/2014 11:40 AM Kendall Town Center Econo ICE-S5CD-ASV3-CS Install Surface.dwg

UNDERGROUND IRRIGATION SYSTEM

PART I: GENERAL 1.01 SCOPE

- A. The work covered by this specification shall include the furnishing of all labor, materials, tools and equipment necessary to perform and complete the installation of an automatic irrigation system as specified herein and as shown on the drawings and any incidental work not shown or specified which can reasonably be determined to be part of the work and necessary to provide a complete and functional system.
- B. The work covered by this specification also includes all permits, federal, state and local taxes and all other costs, both foreseeable and unforeseeable at the time of construction.
- C. No deviation from these specifications, the accompanying drawings, or agreement is authorized or shall be made without prior written authorization signed by the Owner or his duly appointed representative.

1.02 QUALITY ASSURANCE

- D. Installer Qualifications: A firm specializing in irrigation work with not less than five (5) years of experience in installing irrigation systems similar to those required for this project.
- E. Coordination: Coordinate and cooperate with other contractors to enable the work to proceed as rapidly and efficiently as possible.
- F. Inspection of Sites: The Contractor shall acquaint himself with all site conditions, including underground utilities before construction is to begin. Contractor shall coordinate placement of underground materials with contractors previously working underground in the vicinity or those scheduled to do underground work in the vicinity. Contractor is responsible for minor adjustments in the layout of the work to accommodate existing facilities.
- G. Protection of Existing Plants and Site Conditions: The Contractor shall take necessary precautions to protect site conditions to remain. Should damages be incurred, the Contractor shall repair the damage to its original condition at his own expense. Any disruption, destruction, or disturbance of any existing plant, tree, shrub, or turf, or any structure shall be completely restored to the satisfaction of the Owner and his representatives, solely at the Contractor's expense.
- H. Protection of Work and Property: The Contractor shall be liable for and shall take the following actions as required with regard to damage to any of the Owner's property:

- Any existing building, equipment, piping, pipe coverings, electrical systems, sewers, sidewalks, roads, grounds, landscaping or structure of any kind (including without limitation, damage from leaks in the piping system installed or having been installed by Contractor) damaged by the Contractor, or by his agents, employees, or subcontractors, during the course of his work, whether through negligence or otherwise, shall be repaired or replaced by Contractor at his own expense. In a manner satisfactory to the Owner, which repair or replacement shall be a condition precedent to Owner's obligation to make final payment under the Contract.

- Contractor shall also be responsible for damage to any work covered by these specifications before final acceptance of the work. He shall securely cover all openings into the systems and cover all apparatus, equipment and appliances, both before and after being set in place to prevent obstructions on the pipes and the breakage, misuse or disfigurement of the apparatus, equipment or appliances.

- All trenching or other work under the leaf canopy of any and all trees shall be done by hand or by other methods so that no branches are damaged in any way.

- Buildings, walks, walls, and other property shall be protected from damage. Open ditches left exposed shall be flagged and protected by the Contractor by approved means. The Contractor shall restore disturbed areas to their original condition.

- The Contractor shall be responsible for requesting the proper utility company to stake the exact location of any underground lines including but not limited to electric, gas, telephone service, water, and cable.

- The Contractor shall take whatever precautions are necessary to protect these underground lines from damage. In the event damage does occur, all damage shall be completely repaired to its original condition, at no additional cost to the Owner.

- The Contractor shall request the Owner, in writing, to locate any private utilities (i.e., electrical service to outside lighting) before proceeding with any excavation. If, after such requests and necessary staking, private utilities which were not staked are encountered and damaged by the Contractor, they shall be repaired by the Owner at no cost to the Contractor. If the Contractor damages staked or located utilities, they shall be repaired at the Contractor's expense.

- Codes and Inspections: The entire installation shall comply fully with all local and state laws and ordinances and with all established codes and standards for all necessary inspections and shall pay all fees and expenses in connection with same, as part of the work under this Contract. Upon completion of the work, he shall furnish to the "Owner" all inspection certificates customarily issued in connection with the class of work involved.

- The Contractor shall keep on his work, during its progress, a competent superintendent and any necessary assistants, all satisfactory to the Owner, or Owner's representative.

- The superintendent shall represent the Contractor in his absence and all directions given to him shall be as binding as if given to the Contractor.

- The Owner's Landscape Architect or designated individual shall have full authority to approve or reject work performed by the Contractor. The Owner's Authorized Representative shall also have full authority to make field changes that are deemed necessary.

- Final Acceptance: Final acceptance of the work may be obtained from the Owner upon the satisfactory completion of all work. Acceptance by the Landscape Architect and/or Owner in no way removes the Contractor of his responsibility to make further repairs, corrections and adjustments to eliminate any deficiencies which may later be discovered.

- Guarantee: All work shall be guaranteed for one year from date of final acceptance against all defects in material, equipment and workmanship to the satisfaction of the Owner. Repairs, if required, shall be done promptly at no cost to the Owner.

- The guarantee shall also cover repair of damage to any part of the premises resulting from leaks or workmanship, to the satisfaction of the Owner. The Contractor shall not be responsible for work damaged by others. Repairs, if required, shall be done promptly. The guarantee shall state the name of the Owner, provide full guarantee terms, effective and termination date, name and license number of Contractor providing guarantee, address, and telephone number. It shall be signed by the chief executive officer of the Contractor or his liability under the guarantee. Such warranties shall only supplement the guarantee.

- If, within ten (10) days after mailing of written notice by the Owner to the Contractor requesting repairs or replacement resulting from a breach of warranty, the Contractor shall request to make or undertake with due diligence to make the same, the Owner may make such repairs at the Contractor's expense; provided, however, that in the case of emergency where, in the judgment of the Owner, delay would cause serious loss or damage, repairs or replacement may be made without notice being sent to the Contractor, and Contractor shall pay the cost thereof.

- P. The Contractor shall provide full, 100% irrigation coverage in all areas designed with proposed plantings, in accordance with the site's governing permitting requirements and as designed.

- Q. On-site Observation: At any time during the installation of the irrigation system by the Contractor, the Owner or Landscape Architect may visit the site to observe work underway. Upon request, the Contractor shall be required to uncover specified work as directed by the Owner or material, workmanship or method of installation not meet the standards specified herein, the Contractor shall replace the work at his own expense.

- R. Workmanship: All work shall be installed by qualified, skilled personnel, proficient in the trades required, in a neat, orderly, and responsible manner with recognized standards of workmanship. The Contractor shall have had considerable experience and demonstrated ability in the installation of sprinkler irrigation systems of this type.

1.04 SUBMITTALS

All materials shall be those specified and/or approved by the Landscape Architect.

- A. Product Data: After the award of the Contract and prior to beginning work, the Contractor shall submit for approval by the Owner and Landscape Architect, two copies of the complete list of materials, manufacturer's technical data, and installation instructions which he proposes to install.

- B. Commence no work before approval of material list and descriptive material by the Landscape Architect.

- C. Record Drawings: The Contractor shall record on reproducible, all changes that may be made during actual installation of the system. Provide controller sequencing and control valve location.

- Immediately upon installation of any piping, valves, wiring, sprinklers, etc., in locations other than shown on the original drawings or of sizes other than indicated, the Contractor shall clearly indicate such changes on a set of blue-line prints. Records shall be made on a daily basis. All records shall be neat and subject to the approval of the Owner.

- The Contractor shall also indicate on the record prints the location of all wire splices, original or due to repair, that are installed underground in a location other than the controller pedestal, remote control valve box, power source or connection to a valve-in-head sprinkler.

- These drawings shall also serve as work progress sheets. The Contractor shall make neat and legible notation whenever daily as the work progresses, showing the work as actually installed. These drawings shall be available at all times for review and shall be kept in a location designated by the Owner's Representative.

- Progress payment request and record drawing information must be approved by Landscape Architect before payment is made.

- If, in the opinion of the Owner or his representative, the record drawing information is not being properly or promptly recorded, construction payment may be stopped until the proper information has been recorded and submitted.

- Before the date of the final site observation and approval, the Contractor shall deliver one set (copies) of reproducible record drawing plans and notes to the Landscape Architect. Record drawing information shall be approved by the Landscape Architect prior to submittal to the Owner for final payments, including retainages.

- W. Operations and Maintenance Manuals: The Contractor shall prepare and deliver to the Owner, or his designated representative within ten (10) calendar days prior to completion of construction, a hard cover binder with three rings containing the following information:

- Index sheet stating the Contractor's address and business telephone number, list of equipment with name(s) and address(es) of local manufacturer's representative(s).

- Catalog and parts sheets on every material and equipment installed under this Contract.

- Complete operating and maintenance instruction on all major equipment. Include initial controller schedule and recommended schedule after establishment period.

- Demonstrate to and provide the Owner's maintenance personnel with instructions for major equipment and show evidence in writing to the Owner, or his designated representative at the conclusion of the project that this service has been rendered.

1.05 EXPLANATION OF DRAWINGS

- A. Due to the scale of the drawings, it is not possible to indicate all offsets, fittings and sleeves which may be required. The Contractor shall carefully investigate the structural and finished conditions affecting all of the work and plan his work accordingly, furnishing such offsets, fittings and sleeves as may be required to meet such conditions.

- B. The drawings are generally diagrammatic and indicative of the work to be installed. The work shall be installed in such a manner as to avoid conflicts between irrigation systems, planting and architectural features. Deviations shall be brought to the Landscape Architects attention.

- C. All work called for on the drawings by notes or details shall be furnished and installed whether or not specifically mentioned in the specifications.

- D. The Contractor shall not willfully install the irrigation system as shown on the drawings when it is obvious in the field that obstructions, grade differences or discrepancies in area dimensions exist that might not have been known in engineering. Such obstructions or differences should be brought to the attention of the Landscape Architect. In the event that notification is not performed, the Contractor shall assume full responsibility for any revision necessary.

- E. If, in the opinion of the Landscape Architect, the labor furnished by the Contractor is incompetent, unskilled, or unreliable, his equipment inadequate, improper or unsafe, or if the Contractor shall fail to continuously and diligently execute the construction, the Landscape Architect or Owner shall, in writing, instruct the Contractor to remove all such causes of noncompliance and the Contractor shall promptly comply.

- F. The Contractor shall be responsible for full and complete coverage of all irrigation areas. The Landscape Architect shall be notified of any necessary adjustments at no additional cost to the Owner. Any revisions to the irrigation system must be submitted and measured in written form, along with any change in Contract price. Layout may be modified, if necessary to obtain coverage. Spacing not to exceed 60% of the diameter.

PART II: PRODUCTS

2.01 MATERIALS

Material and equipment shall be supplied by the Contractor. No substitutions shall be allowed without the prior written approval of the Owner/Landscape Architect. The Contractor shall inspect all materials and equipment prior to installation, and defective materials shall be replaced with the proper materials and equipment. Those items used in the installation found to be defective, improperly installed or not as specified, shall be removed and the proper materials and equipment installed in the proper manner, as recommended by the Owner/Landscape Architect. The Contractor shall remove all damaged and defective pipe and equipment from the site.

2.02 PIPING

- A. General Provisions: All materials throughout the system shall be new and in perfect condition unless otherwise directed by the Landscape Architect.

- B. Polyvinyl Chloride Pipe (PVC): (Where indicated on plan, use non-potable purple piping.)

- Lateral: PVC shall conform to the requirements of ASTM Designation D 2241, Class 1120 or 1220. All lateral piping less than 3" in diameter shall be Class 200 SDR-21.

- Main Line Under Pressure: PVC shall conform to the requirements of ASTM Designation D 2241, Class 1120 or 1220, Schedule 40 with bell end for solvent weld connection.

3. Pipe Markings: All PVC pipe shall bear the following markings:

- Manufacturer's Name
- Nominal Pipe Size
- Schedule or Class
- Pressure Rating of PSI
- NSF (National Sanitation Foundation) Approval
- Date of Extrusion

2.04 PVC JOINTS

Joints in PVC pipe smaller than 3" shall be solvent welded in accordance with the recommendations of the pipe manufacturer; the solvent cleaner and welding compound furnished with the pipe.

2.06 THREADED CONNECTIONS

- Threaded PVC connections shall be made up using Teflon tape only.

- Connection between mainline pipe fittings and automatic or manual control valves shall be made using Schedule 80 threaded fittings and nipples.

2.06 SOLVENT CEMENT

- A. General: Provide solvent cement and primer for PVC solvent weld pipe and fittings recommended by the manufacturer. Pipe joints for solvent weld pipe to be bell end. Pipe joints for galvanized pipe to be critical ring type. Insert gaskets will not be accepted.

- B. Thrust Blocks: Main line piping 3" or greater in diameter shall have thrust blocks sized and placed in accordance with the pipe manufacturer's recommendations or, in the absence of specified recommendations by the pipe manufacturer, 3000 PSI concrete thrusts shall be properly installed at tees, elbows, 45's, crosses, reducers, plugs, caps and valves.

2.07 PIPE AND WIRE SLEEVES

- A. Sleeves to be installed:

- The Contractor shall install irrigation system pipe and wire sleeves conforming to the following:

- All pipe sleeves shall extend a minimum of 36" beyond the edges of pavement.

- All pipe sleeves to be installed beneath future/existing road surfaces shall be PVC pipe Schedule 40 or jack and bore steel pipe as per FDOT specifications, and as shown on plans.

- All irrigation system wires shall be sleeved separately from main or lateral lines.

- All pipe sleeves shall be installed at the minimum depth specified for main lines, lateral lines, and electric wire.

- Contractor shall coordinate all pipe sleeve locations and depths prior to initiating installation of the irrigation system.

2.08 SPRINKLER HEADS

- A. Spray Sprinklers: The sprinkler shall be a fixed spray type designed for in-ground installation. The nozzle shall elevate 6' (or as designated on plan) when in operation. The body of the sprinkler shall be constructed of non-corrosive heavy duty Cytolac. A filter screen shall be in the nozzle piston. All sprinkler parts shall be removable through the tip of the unit by removal of a threaded cap.

Riser mounted spray shall be as indicated on the plans. The sprinkler shall consist of a nozzle and body. The body of the riser-mount sprinkler shall be constructed of non-corrosive materials. A cone strainer shall be a separate part with the nozzle assembly to allow for easy flushing of the sprinkler. Maximum working pressure at the base of the sprinkler shall be 40 PSI.

(continued...)

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IRRIGATION
SPECIFICATIONS

COPANS ROAD
PREPARED FOR
CITY OF MARGATE

SHEET NUMBER
L3.52

MARGATE
FLORIDA

NOVA PROJECT
UNIVERSITY
FEBRUARY 2015
SCALE AS SHOWN
DESIGNED BY
DRAWN BY
CHECKED BY
DATE

UNIVERSITY PROFESSIONAL
GEORGE PUG, P.E.
FLORIDA LICENSE NUMBER
FLA #001708

Kimley-Horn
1221 BRICKELL AVENUE, SUITE 400, MIAMI, FL 33131
PH: 305-447-7333
WWW.KIMLEY-HORN.COM CA 0000066

REVISIONS
DATE

This document, together with the materials and things represented hereby, is submitted only for the record and does not constitute a contract. It is the responsibility of the user to ensure that the materials and things represented hereby are in accordance with the requirements of the project. The user shall be responsible for the accuracy of the information provided and for the accuracy of the information received. The user shall be responsible for the accuracy of the information provided and for the accuracy of the information received.

2.09 AUTOMATIC CONTROL VALVE

The automatic remote control valves shall be as specified on the plans, or approved equal.

2.10 GATE VALVES

- A. Gate valves for 3/4" through 2-1/2" shall be of brass or bronze construction, solid wedge, IPS threads, non-rising stem with hand operating handle, for a continuous working pressure of 150 PSI.
- B. Gate valves for 3" and larger: iron body, brass or bronze mounted AWWA gate valves, with a clear waterway equal to the full nominal diameter of the valve, rubber gasket for a continuous working pressure of 150 PSI. Valve shall be equipped with a square operating nut.

2.11 VALVE BOXES

- A. For gate valves, use AMETEK #10-181-014 box with #10-181-015 locking lid, or as per the drawings.
- B. For control valves 3/4" through 2", the drip valve assemblies, use AMETEK #10-181-014 box with #10-181-015 locking lid, or sized as necessary to effectively house the equipment.
- C. For control wiring splices, use AMETEK #10-181-014 box with #10-181-015 locking lid, or as per the drawings.

2.12 IRRIGATION WIRING

- A. Wiring used for connecting the electric control valves to the controllers shall be Type UF, 600 volt, single strand, solid copper with PVC insulation 4/64" thick. Size shall be 14 gauge, red for "hot" or lead wires, and common wire to be 14 gauge, white in color.
- B. Contractor shall perform an ohm test on ground to assure adequate protection against surges and indirect lightning strikes.

2.13 MISCELLANEOUS MATERIALS

- A. Drainage Backfill: Cleaned gravel or crushed stone, graded from 1" maximum to 3/4" minimum.
- B. Metalized Underground Tape: The detectable, underground utility marking tape shall consist of a minimum 5 mil (0.005") overall thickness; heavily composition ultra-high molecular weight, 100% virgin polyethylene; acid, alkaline and corrosion resistant; with no less than 150 pounds of tensile break strength per 6" width; color-code impregnated with color stable, lead-free, organic pigments suitable for direct burial. Tapes utilizing reprocessed plastics or resins shall not be acceptable. The detectable, underground utility marking tape shall have a 35 gauge (0.0035") solid aluminum foil, core encapsulated within a 2.55 mil (0.00255") polyethylene backing and a 0.6 mil (0.0006") PET cover coating. The laminate on each side shall consist of a 0.75 mil (0.00075") layer of net LPDE, poly-fusing the "sandwich" without use of adhesives.

2.14 AUTOMATIC CONTROL SYSTEM

An Independent Station Controller: Furnish a solid state controller, as specified on the plans. Each station shall be capable of timing from zero (0) minute to 99 minutes per station in one (1) minute increments.

Each station shall be capable of operating two (2) TVA electric valve-in-head solenoids.

The stand-alone controller shall have two (2) possible programs.

The stand-alone controller shall provide global percentage increase/decrease (water budget) for all stations simultaneously, from ten (10) to two hundred (200) percent, in ten (10) percent increments.

All stations shall be able to be turned on/off manually by operating timing mechanism or by manual switch at station output.

The stand-alone controller shall incorporate an integral MOV surge protection into the terminal block for each of its 24 VAC field wire outputs. Controller power input wires will also incorporate surge protection.

The control panel shall provide continuous display time. It shall have alphanumeric displays of descriptive English menus and legend identifiers with cursor selection of function and precision value adjustment by rotary dial input.

The stand-alone controller shall be UL listed and FCC approved.

The stand-alone controller shall have 117 VAC, 60 Hz input, 26.5 VAC, 60 Hz output for operating 24 VAC solenoids.

The stand-alone controller cabinet shall be a lockable and weather-resistant outdoor cabinet. Mount as noted on plans.

The controller shall be equipped with lightning protection, by the Contractor, on both the primary (120v) and each secondary (24v) circuit. The controller circuits shall be grounded to a copper clad grounding rod located at each controller.

The controller shall be equipped for a water conservation device, as specified.

PART III: EXECUTION

3.01 INSPECTION

The Contractor shall examine the areas and conditions under which landscape irrigation system is to be installed and notify the Landscape Architect in writing of conditions detrimental to the proper and timely completion of the work. The Contractor shall proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Landscape Architect.

3.02 PREPARATION

The Contractor shall provide sleeves to accommodate piping under walks or paving. The Contractor shall coordinate with other trades and install to accurate levels prior to paving work. Cutting and patching of paving and concrete will not be permitted. The Contractor shall maintain all warning signs, shoring, barricades, flares and red lanterns, as required by any local codes, ordinances or permits.

3.05 TRENCHING AND BACKFILLING

- A. Excavation: The Contractor shall stake out the location of each run of pipe, sprinkler heads, sprinkler valves and isolation valves prior to trenching. Excavation shall be open vertical construction sufficiently wide to provide free working space around the work installed and to provide ample space or backfilling and tamping. Trenches for pipe shall be cut to required grade lines, and compacted to provide accurate grade and uniform bearing for the full length of the line. The bottom of the trenches shall be free of rock or other sharp edged objects. Minimum cover shall be as follows:

Pipe and Niche Depth

Pressure Mainline	18" at top of pipe from Finish Grade
Lateral Main (water)	12" at top of pipe from Finish Grade
Lateral Main (sewer)	12" at top of pipe from Finish Grade
Control Wiring	Side of main Line

- B. Minimum Clearances: All pipelines shall have a minimum clearance of six inches from each other and from lines of other crafts. Parallel lines shall not be installed directly over one another. No lateral line shall be installed in the main-line trench.

3.04 INSTALLATION OF PIPING

- A. PVC Pipe and Joints: The Contractor shall not install solvent weld pipe when air temperature is below 40° F. Installation shall be in accordance with the manufacturer's instructions.

1. Only the solvent recommended by the pipe manufacturer shall be used. All PVC pipe and fittings shall be installed as outlined and instructed by the pipe manufacturer, and it shall be the Contractor's full responsibility to make arrangements with the pipe manufacturer for any field alterations that may be necessary. The Contractor shall assume full responsibility for the correct installation.

3.05 BACKFILLING PROCEDURES

Initial Backfill on PVC lines shall be pulverized native soil, free of foreign matter. Within radius of 4' of the pipe shall be clean soil or sand. Plant locations shall take precedence over sprinkler and pipe locations. The Contractor shall coordinate the location of trees and shrubs with the routing of lines and final head locations.

- A. Backfill and Compaction: The Contractor shall leave trenches slightly mounded to allow for settlement after the backfilling is completed. The Contractor shall clean the site of the work continuously of excess waste materials as the backfilling progresses, and leave in a neat condition. No trenches shall be left open for a period of more than 48 hours. Protect open trenches as required.

The Contractor shall carefully backfill excavated materials approved for backfilling, consisting of earth, loam, sand, and other approved materials, free of rock and debris over 1" in size. Backfill shall be compacted to original density of surrounding soil without dips, sunken areas, or irregularities.

The Contractor shall conform to DOT requirements for methods and required compaction percentages, for roads and paving.

The Contractor shall hand place the first 6" of backfill (or to top of pipe) and have it walked on so as to secure the position of the pipe and wire.

No wheel rolling will be allowed. The Contractor shall remove rock or debris extracted from backfill materials and dispose of offsite. The Contractor shall fill any voids left in backfill with approved backfill materials.

- B. Existing Lawns: Where trenching is required across existing lawns, uniformly cut strips of sod 6' wider than trench. The Contractor shall remove sod in rolls of suitable size for handling and keep moistened until replanted. The Contractor shall replace sod within 48 hours after removal, roll and water generously. The Contractor shall reseed any areas not in healthy condition equal to adjoining lawn 10 days after replanting.

- C. Seeded Area Trenching will be required across existing seeded areas, primarily roadway edging. The Contractor shall conform to the requirements of seeding, Section 02930 for the reseeding of the disturbed trench areas.

- D. Pavements: Jack and bore or directional bore piping under paving materials as per local regulatory codes. No cutting and patching of pavement will be permitted.

3.06 VALVES

- A. Isolation Valves: Shall be sized corresponding to adjacent pipe size. Specified valve boxes shall be installed flush with a finish grade so that the surface faces applied to their exposed areas will not be transmitted to the piping in which the valve is installed nor any other piping, wiring or other lines in the vicinity of said valves.

- B. Gate Valves: Install where shown, in valve boxes.

- C. Electric Control Valves: Shall be installed in specified valve boxes. The valve shall have 6" of 3/4" pea gravel installed below the bottom of the valve. If the valve box does not extend to the base of the valve, a valve box extension shall be installed. Electric control valves shall be installed where shown and grouped together where practical. The Contractor shall place no closer than 24" to walk edges, driveway edges, buildings and walls. The Contractor shall adjust the valve to provide flow rate or rated operating pressure required for each sprinkler circuit.

3.07 CONDUIT AND SLEEVES

- A. Conduit and Sleeves for Control Wiring and Main/Lateral Pipe: The Contractor shall provide and install where necessary. Contractor shall coordinate locations of previously installed sleeving with the General Site Contractor.

The Contractor shall coordinate installation of sleeves with work of other disciplines.

3.08 CONTROLS

- A. The Contractor shall connect electric control valves to controllers in a clockwise sequence to correspond with station settings beginning with Stations 1, 2, 3, etc. Automatic controllers shall be provided and installed by the Contractor as noted on the drawings. All zones will be labeled on the controller.

- B. Controllers shall be equipped with lightning protection and grounded to a standard 5/8" copper clad steel ground rod driven a minimum of 8' into the ground and clamped.

- C. The electrical service to the controllers shall be performed by an electrical subcontractor in compliance with NEC requirements.

3.09 CONTROL WIRE

- A. Control wiring between the controller and electric valves shall be buried in main line trenches or in separate trenches. Electrical connection at valve will allow for pigtail so solenoid can be removed from valve with sufficient slack to allow ends to be pulled 12" above ground for examination and cleaning.

- B. An expansion loop shall be provided at every valve at 100' o.c. Expansion loop shall be formed by wrapping wire at least eight times around a 3/4" pipe and withdrawing pipe.

- C. The wire shall be bundled and taped every ten feet. The wire shall be laid in the trench prior to installing the pipe being careful to install wire beneath and 6" to the side of the main pipe line.

- D. Electrical connections to electric control valves shall be made with Rainbird Pen-Tite or Tschudi GT-3-GEL - Tite connectors or equal.

Power Connections: Electrical connections to power and signal wires shall be made using 3M 82-A2 power cable splice kits.

3.10 SPRINKLER HEADS

- A. General Provisions:

1. Sprinkler heads shall be installed as designated on the shop drawings. Heads shall be installed on flexible PVC. Top to be flush with finish grade or top of curb.

2. Spacing of heads shall not exceed the maximum indicated on the shop drawings (unless directed by the Landscape Architect). In no case shall the spacing exceed the maximum recommended by the manufacturer.

- B. Head Types:

1. Pop-up Rotary Sprinkler Heads: Shall be installed on flex joint and be set with top of head flush with finish grade. Heads installed at curb shall have 6" to 10" between perimeter of head and concrete. Heads placed at edge of pavement having no curb shall be installed 24" from edge of pavement.
2. Spray Pop-up Sprinkler Heads: Shall be installed on flexible PVC and be set with top of head flush with finished grade. Sprinkler heads placed adjacent to curbs will be installed 94" from concrete. Sprinkler heads placed adjacent to pavement having no curb shall be installed 24" from the edge of pavement.

3.11 COMPLETION

- A. Flushing: Before sprinkler heads are set, the Contractor shall flush the lines thoroughly to make sure there is no foreign matter in the lines.

The Contractor shall flush the main lines from dead end fittings for a minimum of five minutes under a full head of pressure.

- B. Testing: The Contractor shall notify Landscape Architect and Owner forty-eight (48) hours in advance of testing.

Prior to backfilling of main line fittings, Contractor shall fill the main line piping with water, in the presence of the Owner/Landscape Architect, taking care to purge the air from it by opening all the sprinkler control valves one or more times and/or such other means as may be necessary. A small, high pressure pump or other means of maintaining a continuous water supply shall be connected to the main line and set so as to maintain 100 PSI in the main line system for two (2) hours without interruption. When this has been accomplished and while the pressure in the system is still 100 PSI, leakage testing shall be performed in accordance with AWWA Standard C-600. Pressure readings shall be noted and make up water usage shall be recorded. Should the rate of make up water usage indicate significant leakage, the source of such leakage shall be found and corrected and the system then retested until the Owner/Landscape Architect is satisfied that the system is reasonably sound. Lateral line testing shall be conducted during the operating testing of the system by checking visually the ground surface until no leaks in this portion of the system are noted. Leaks shall be repaired or sold for by the Contractor at any time they appear during the warranty period.

- C. Adjustment and Coverage of System: Coordinates pressure testing with adjustments and coverage test of system so both may occur at the same time. The Contractor shall balance and adjust the various components of the system so that the overall operation of the system is most efficient. This includes a synchronization of the controllers, adjustments to pressure regulators, pressure relief valves, port circle sprinkler heads, and individual station adjustments on the controllers.

3.12 WARRANTY

- A. The Contractor shall fully warrant the landscape irrigation system for a period of one (1) year after the written final acceptance and will receive a written confirmation from the Landscape Architect that the warranty period is in effect.

- B. During the warranty period, the Contractor will enforce all manufacturer's and supplier's warranties as if made by the Contractor himself. Any malfunctions, deficiencies, breaks, damages, dispenser, or other disorder due to materials, workmanship, or installation by the Contractor and his suppliers shall be immediately and properly corrected to the proper order as directed by the Owner and/or Landscape Architect.

- C. Any damages caused by system malfunction shall be the responsibility of the Contractor who shall make full and immediate restoration for said damages.

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FLORIDA
DIVISION OF HIGHWAY SAFETY
STATE OF FLORIDA

Kinley»Horn

PROJECT NO. 20000
DATE: FEBRUARY 2015
SCALE: AS SHOWN
DESIGNED BY: BJ
DRAWN BY: BJ
CHECKED BY: KAM
PROJECT LOCATION: COPANS ROAD, CITY OF MARGATE, FLORIDA

IRRIGATION
SPECIFICATIONS

COPANS ROAD
PREPARED FOR
CITY OF MARGATE

SHEET NUMBER
L3.53

NO.	REVISIONS	DATE	BY

1221 BRICKELL AVENUE, SUITE 402, MIAMI, FL 33131
PHONE: 305-437-2033
WWW.KINLEY-HORN.COM CA 00000696