

LEE COUNTY
DEPARTMENT OF TRANSPORTATION

CONTRACT PLANS

PROJECT NO. 5075
LEE COUNTY (NO. 208549)
ALICO ROAD WIDENING

FROM BEN HILL GRIFFIN PARKWAY TO AIRPORT HAUL ROAD

SIGNALIZATION PLANS

INDEX OF SIGNALIZATION PLANS

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T-9 - T-10	SPECIAL MAST ARM ASSEMBLIES
GT-1	REPORT OF CORE BORINGS

SIGNAL LOCATION NO. 1
ALICO ROAD AT
BEN HILL GRIFFIN PARKWAY

BEGIN PROJECT
STA. 84+18.30

END PROJECT
STA. 197+93.71

GOVERNING STANDARDS AND SPECIFICATIONS:
Florida Department of Transportation, 2017-2018 Design Standards and revised Index Drawings as appended herein, and 2017-2018 Standard Specifications for Road and Bridge Construction, as amended by Contract Documents.

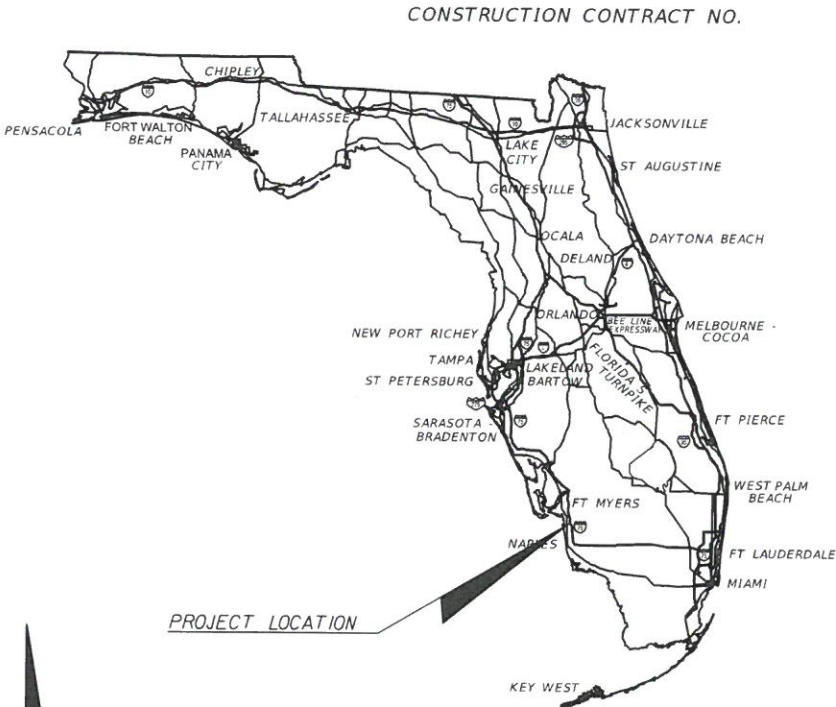
For Design Standards click on the "Design Standards" link at the following web site:
<http://www.fdot.gov/roadway/DesignStandards>

For the Standard Specifications for Road and Bridge Construction click on the "Standard Specifications" link at the following web site:
<http://www.fdot.gov/programmanagement/StandardSpecifications>

LEE COUNTY BOARD OF COMMISSIONERS

DISTRICT 1: JOHN E. MANNING
DISTRICT 2: CECIL L. PENDERGRASS
DISTRICT 3: LARRY KIKER
DISTRICT 4: BRIAN HAMMAN
DISTRICT 5: FRANK MANN

REVISIONS:



SIGNALIZATION SHOP DRAWINGS
TO BE SUBMITTED TO:

PAUL J. MANNIX, P.E.
ATKINS NORTH AMERICA
482 SOUTH KELLER RD.
ORLANDO, FL 32810
(407) 647-7275

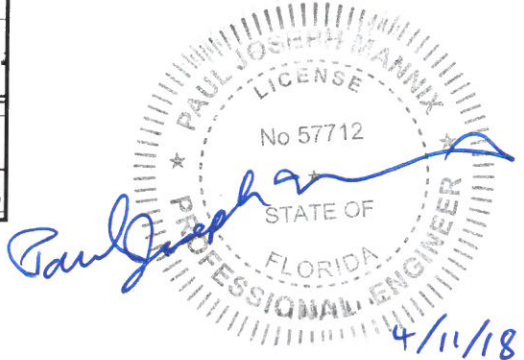
PLANS PREPARED BY:

ATKINS

ATKINS NORTH AMERICA, INC.
482 SOUTH KELLER ROAD
ORLANDO, FLORIDA 32810
(407) 647-7275
FBPE CERTIFICATE OF AUTHORIZATION NO. 24

FINAL PLANS
APRIL 2018

NOTE: THE SCALE OF THESE PLANS MAY
HAVE CHANGED DUE TO REPRODUCTION.



KEY SHEET REVISIONS	
DATE	DESCRIPTION

SIGNALIZATION PLANS
ENGINEER OF RECORD: PAUL J. MANNIX, PTOE

P.E. NO.: 57712

FISCAL YEAR	SHEET NO.
18	T-1

[illegible]

REVISIONS				ATKINS NORTH AMERICA, INC. 482 SOUTH KELLER ROAD ORLANDO, FLORIDA 32810 (407) 647-7275 FBPE CERTIFICATE OF AUTHORIZATION NO. 24 PAUL J. MANNIX, P.E. 57712	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			TABULATION OF QUANTITIES	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		T-2
						LEE	5075		

GENERAL NOTES:

1. THE MAINTAINING AGENCY IS LEE COUNTY DEPARTMENT OF TRANSPORTATION. CONTRACTOR SHALL CONTACT LEE COUNTY DEPARTMENT OF TRANSPORTATION, TRAFFIC SECTION SEVEN (7) DAYS PRIOR TO BEGINNING WORK.
2. EXISTING SIGNAL EQUIPMENT REMOVED FROM THE PROJECT SHALL BECOME PROPERTY OF LEE COUNTY. "
3. THE INTENT OF THESE PLANS IS TO PROVIDE A COMPLETE ACCEPTABLE WORKING INSTALLATION. ANY INCIDENTAL ITEMS REQUIRED TO COMPLETE THIS INSTALLATION SHALL BE INCLUDED IN THE PAY ITEMS ESTABLISHED.
4. CONTRACTOR SHALL COORDINATE UTILITY LOCATES AND ANY RELOCATIONS AS REQUIRED.
5. THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE EXACT LOCATION OF UTILITIES SHALL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION.
6. THE CONTRACTOR SHALL NOTIFY UTILITY OWNERS THROUGH SUNSHINE ONE CALL OF FLORIDA, INC. AT (800) 432-4770, AND UTILITY OWNERS LISTED BELOW TWO (2) FULL BUSINESS DAYS IN ADVANCE OF BEGINNING CONSTRUCTION ON THE JOB SITE.

UTILITY OWNERS:

COMPANY	CONTACT	TELEPHONE
CENTURY LINK - FT. MYERS	JIM NOTTINGHAM	239-336-2035
COMCAST	MARK COOK	239-432-1805
FP&L	TRACY STERN	800-868-9554
FP&L FIBERNET	DANNY HASKETT	305-552-2931
FP&L RELOCATION COORDINATOR	JAMEL J. BAKER	239-947-7356
LEE COUNTY SIGNAL DEPARTMENT	JAMES FENCIL	239-533-9500
LEE COUNTY UTILITIES	TALYA MAYER	239-533-8504
TECO GAS	MARILYN D. ALOI	239-690-5517

7. THE CONTRACTOR SHALL FURNISH LEE COUNTY WITH TWO (2) SETS OF "AS-BUILT" PLANS, ONE IN PDF FORMAT, AT THE TIME OF FINAL ACCEPTANCE INSPECTION TO:
- LEE COUNTY DEPARTMENT OF TRANSPORTATION
TRAFFIC SECTION
5650 ENTERPRISE PARKWAY
FORT MYERS, FL 33905
(239) 533-9500
8. WHERE TRAFFIC SIGNALS AND/OR PEDESTRIAN SIGNALS ARE INSTALLED AND NOT PUT INTO IMMEDIATE SERVICE, THE ENTIRE SIGNAL HEAD SHALL BE CONCEALED WITH A WEATHER RESISTANT COVERING OF NON-TRANSPARENT MATERIAL, OPEN AT THE BOTTOM TO PREVENT CONDENSATION BUILD-UP. GARBAGE BAGS SHALL NOT BE USED.
9. BASE OF CONTROLLER CABINET TO BE AT THE SAME ELEVATION AS THE CROWN OF THE ROADWAY OR GREATER.
10. THE CONTRACTOR SHALL NOTIFY LEE COUNTY DEPARTMENT OF TRANSPORTATION, TRAFFIC SECTION IN WRITING PRIOR TO CONSTRUCTION WITH DATE AND TIMES OF START OF SIGNAL AND FLASH OPERATION, AND COMPLETION OF CONSTRUCTION PROJECT.

GENERAL NOTES (CONTINUED):

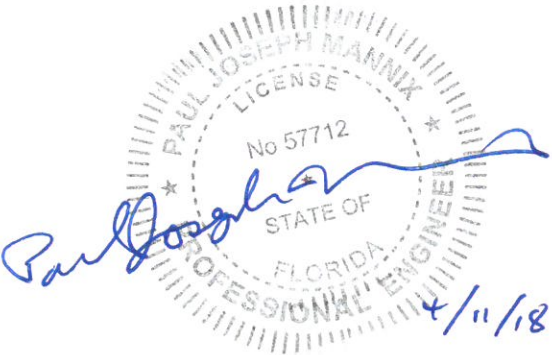
12. THE CONTRACTOR SHALL MAINTAIN EXISTING TRAFFIC SIGNALS DURING CONSTRUCTION, WHERE APPLICABLE, BEGINNING ON DAY ONE, SHALL LOCATE ALL EQUIPMENT AND FACILITIES RELATING TO THE TRAFFIC SIGNAL UNTIL SUCH TIME AS LEE COUNTY ASSUMES MAINTENANCE RESPONSIBILITY AT THE END OF NINETY (90) DAYS BURN IN PERIOD.
13. THE COORDINATION TIMINGS WILL BE SUPPLIED TO THE PROJECT ENGINEER UPON REQUEST FROM THE CONTRACTOR. REQUESTS SHOULD BE MADE TO MR. GREG COGGINS, LEE COUNTY TRANSPORTATION AT (239) 533-9500.
14. MODIFY EXISTING CONTROLLER AND PERFORM ANY CABINET AND FIELD WIRING NECESSARY TO CONNECT ALL SIGNAL FUNCTION.
15. ALL RIGHT TURN SIGNAL HEADS SHALL FLASH ON THE SAME FLASH CIRCUIT AS THEIR ADJACENT SIGNALS.

PAY ITEM NOTES:

1. 630-2-11, 630-2-12:
- A. USE A MINIMUM OF 2" DIAMETER CONDUIT FOR ALL SIGNALIZATION CONDUIT.
- B. TWO (2) CONDUIT RUNS SHALL BE PROVIDED FOR ALL THE PROVISION OF SEPARATING HIGH AND LOW VOLTAGE WIRING FOR PEDESTRIAN ASSEMBLIES.
2. 632-7-1, 632-7-2:
- A. SPLICE SIGNAL CABLE TO A SEPARATE CABLE (FOR EACH SIGNAL HEAD) IN THE BASE OF MAST ARM STRUCTURES.
- B. EACH SEPARATE CABLE SHALL HAVE A MINIMUM OF 1/2" DIAMETER LOOP FOR FUTURE SPLICING.
- C. A PERMANENT MARKING IS TO BE PLACED ON THE WIRE DESIGNATING THE PHASE USED.
- D. SPARE CONDUCTORS TO BE GROUNDED TO GROUND BAR IN SIGNAL CABINET.
- E. VERIFY THE COLOR CODE OF SIGNAL CABLE WITH THE MAINTAINING AGENCY PRIOR TO WIRING INTERSECTION.
3. 635-2-11:
- A. USE POLYMER CONCRETE CONSTRUCTION PULL BOXES (STANDARD).
- B. A PULL BOX WITH A MINIMUM COVER MEASUREMENT OF 17" X 30" X 12" SHALL BE USED ON TRAFFIC SIGNALS.
- C. COVER SHALL BE MARKED "TRAFFIC SIGNAL" TWO PULL BOXES SHALL BE PROVIDED FOR THE PROVISION OF SEPARATING HIGH AND LOW VOLTAGE WIRING FOR PEDESTRIAN ASSEMBLIES.
4. 635-2-12:
- A. USE POLYMER CONCRETE CONSTRUCTION PULL BOXES (STANDARD) TO BE A MINIMUM OF 24" X 36" X 12".

PAY ITEM NOTES:

- B. PULL BOX COVER LOGOS TO SPECIFY FUNCTION.
- C. TWO PULL BOXES SHALL BE PROVIDED FOR THE PROVISION OF SEPARATING HIGH AND LOW VOLTAGE WIRING FOR PEDESTRIAN ASSEMBLIES.
5. 646-1-1, 646-1-12:
- A. USE LOCKING COLLARS WHEN MOUNTING PEDESTRIAN SIGNAL HEADS TO PEDESTALS.
- B. USE LOCKING COLLARS WHEN MOUNTING ALUMINUM PEDESTRIAN POLES TO PEDESTRIAN PEDESTAL BASES.
- C. USE BREAKAWAY ALUMINUM SQUARE BASE ASSEMBLIES WITH ALUMINUM DOORS FOR PEDESTRIAN PEDESTALS.
- D. SPLICE SIGNAL CABLE IN BASE OF PEDESTAL (NOT IN PEDESTRIAN HEADS).
- E. INSIDE DIAMETER OF PEDESTALS SHALL BE FOUR INCHES (4").
6. 649-31-103, 649-31-104, 649-31-105:
- A. USE THREE 2" AND ONE 3/4" CONDUITS STUBBED OUT THROUGH THE MAST ARM POLE FOUNDATION AND TEMPORARILY SEAL.
7. 650-1-14, 650-1-19:
- A. USE LOUVERED ALUMINUM SIGNAL HEAD BACK PLATES WITH A 2" YELLOW REFLECTORIZED (TYPE III REFLECTIVITY) OUTER EDGE BORDER.
- B. BACK PLATES TO BE ONE-PIECE ALUMINUM.
8. 653-1-11:
- A. MOUNT PEDESTRIAN SIGNAL HEADS 9'-6" ABOVE GRADE.
- B. PEDESTRIAN SIGNAL HEADS TO BE 16" INTERNATIONAL SYMBOL, LED COUNTDOWN TYPE.



REVISIONS				ATKINS NORTH AMERICA, INC. 482 SOUTH KELLER ROAD ORLANDO, FLORIDA 32810 (407) 647-7275 FBPE CERTIFICATE OF AUTHORIZATION NO. 24 PAUL J. MANNIX, P.E. 57712	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			GENERAL NOTES	SHEET NO. T-3
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
						LEE	5075		

PAY ITEM NOTES:

10. 660-4-11, 660-4-12:

- A. USE A 72" LONG GUSSET TUBE FOR VIDEO DETECTION CAMERA ATTACHMENT BRACKET, WITH GUSSET TUBE CAPS.
- B. VIDEO DETECTION TO BE COMPATIBLE WITH MAINTAINING AGENCY'S EXISTING VIDEO DETECTION SYSTEM (AUTOSCOPE ENCORE).
- C. AT A MINIMUM, USE #14 AWG IMSA 19-1 STRANDED CU WIRE 3 CONDUCTOR (SIZED TO NEC REQUIREMENTS) FROM SIGNAL CABINET TO UPRIGHTS AND #18/3 SO CORD FROM BASE OF UPRIGHTS TO CAMERA.

11. 665-1-11:

- A. PEDESTRIAN BUTTONS ARE TO BE MOUNTED 42" OFF CENTER.
- B. USE PEDESTRIAN BUTTON SIGNAL SIGN FTP-68B-06.
- C. STREET NAME SHALL BE IN ACCORDANCE WITH THE STREET NAMES SHOWN ON THE SIGNALIZATION PLAN SHEETS.

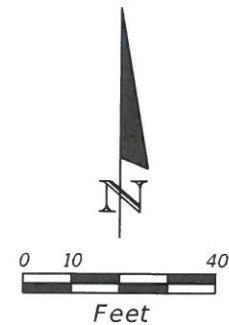
12. 700-5-21, 700-5-22:

- A. ALL INTERNALLY ILLUMINATED STREET NAME SIGNS TO BE MOUNTED RIGIDLY ON MAST ARM.
- B. USE LED INTERNALLY ILLUMINATED STREET NAME SIGNS.
- C. STREET NAME SHALL BE IN ACCORDANCE WITH THE STREET NAMES SHOWN ON THE SIGNALIZATION PLAN SHEETS.



REVISIONS				ATKINS NORTH AMERICA, INC. 482 SOUTH KELLER ROAD ORLANDO, FLORIDA 32810 (407) 647-7275 FBPE CERTIFICATE OF AUTHORIZATION NO. 24 PATRICK B. NEVAH, P.E. #72369	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			GENERAL NOTES	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
						LEE	5075		T-4

* TO BE INSTALLED INITIALLY TO MAINTAIN EXISTING SIGNAL FUNCTIONING DURING CONSTRUCTION



3 RUNS @ 28 LF
630-2-11
3-CONDUITS
1-SIGNAL
1-VIDEO DETECTION
1-SPARE

7 RUNS @ 207 LF
207 LF
630-2-12
632-7-2
7-CONDUITS
2-PEDESTRIAN
2-SIGNAL
1-VIDEO DETECTION
2-SPARES

Sta. 83+93.88
67.18' (LT), ELEV. = 22.31'
1-7
3 RUNS @ 5 LF
630-2-11
2 EA 635-2-11
1 EA 649-31-104

ALICO RD
2 EA 660-4-12

Sta. 84+29.29
78.90' (RT)
1 EA 650-1-70

Sta. 84+54.64
95.03' (RT)
5 EA 650-1-70

UTILIZE EXISTING CONDUIT

2 EA 660-4-12

2 EA 660-4-12
1 EA 660-4-60

BEN HILL
GRIFFIN PKWY

BEN HILL
GRIFFIN PKWY

Sta. 86+05.57
83.82' (LT), ELEV. = 22.31'
630-2-11 3 RUNS @ 10 LF
635-2-11 2 EA
649-31-105 1 EA

PED. POLE 1-A
STA. 86+00.3, 78.9' (LT)
630-2-11 2 RUNS @ 16 LF
646-1-12 1 EA
665-1-11 1 EA

630-2-11 3 RUNS @ 20 LF
632-7-2 153 LF
3-CONDUITS
2-SIGNAL
1-VIDEO DETECTION

630-2-11 3 RUNS @ 37 LF
3-CONDUITS
1-SIGNAL
1-VIDEO DETECTION
1-SPARE

Sta. 86+16.04
70.08' (LT)
1-2
630-2-11 3 RUNS @ 9 LF
650-1-70 1 EA

630-2-12 7 RUNS @ 153 LF
632-7-2 153 LF
7-CONDUITS
2-PEDESTRIAN
2-SIGNAL
1-VIDEO DETECTION
2-SPARES

660-4-12 2 EA
ALICO RD

Sta. 86+40.57
67.60' (RT), ELEV. = 22.20'
630-2-11 3 RUNS @ 10 LF
635-2-11 3 EA
649-31-103 1 EA

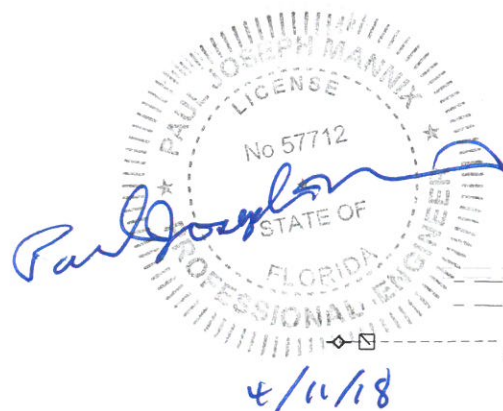
PED. POLE 1-B
STA. 86+30.3, 68.3' (RT)
630-2-11 2 RUNS @ 3 LF
646-1-11 1 EA
665-1-11 1 EA

630-2-11 5 RUNS @ 17 LF
5-CONDUITS
2-PEDESTRIAN
1-SIGNAL
1-VIDEO DETECTION
1-SPARE

Sta. 86+25.33
77.59' (RT), ELEV. = 23.32'
1-4
630-2-11 3 RUNS @ 15 LF
649-31-104 1 EA
682-1-40 1 EA

PED. POLE 1-C
STA. 86+09.5, 87.6' (RT)
630-2-11 2 RUNS @ 7 LF
646-1-11 1 EA
665-1-11 1 EA

632-7-1 1 PI
635-2-12 1 EA
660-4-11 1 EA
670-5-400 1 AS
684-1-1 1 EA
684-1-6 1 EA



REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

ATKINS NORTH AMERICA, INC.
482 SOUTH KELLER ROAD
ORLANDO, FLORIDA 32810
(407) 647-7275
FBPE CERTIFICATE OF AUTHORIZATION NO. 24
PAUL J. MANNIX, P.E. 57712

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

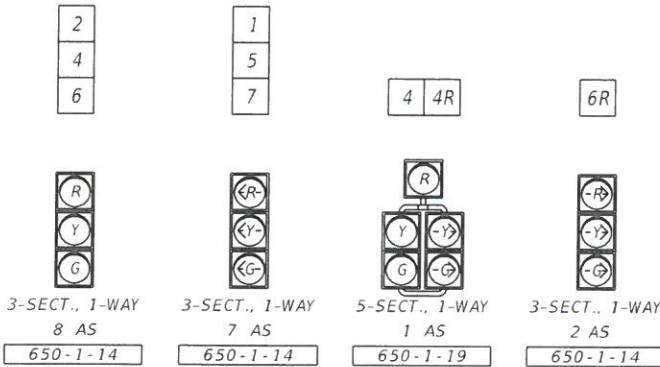
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	LEE	5075

SIGNALIZATION PLAN SHEET

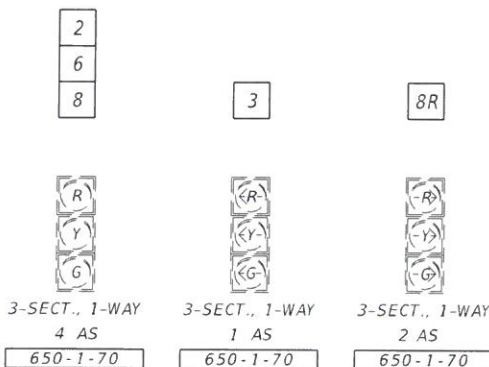
SHEET
NO.

T-5

NEW TRAFFIC SIGNAL HEAD DETAIL



RELOCATED TRAFFIC SIGNAL HEAD DETAIL

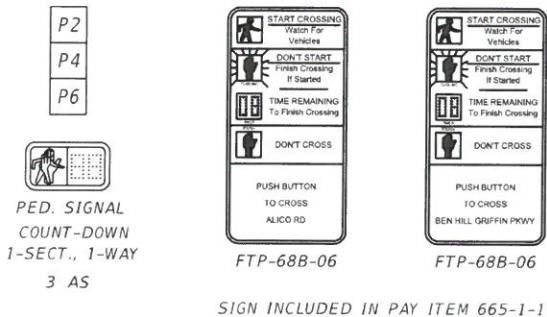


VIDEO DETECTOR CHART		
CAMERA	MOVEMENT	DELAY (Sec)
V1	6, 6R	5
V2	1	0
V3	4, 4R	5
V4	7	0
V5	2	5
V6	5	0
V7	8, 8R	5
V8	3	0

CONTROLLER TIMINGS								
TIMING FUNCTION								
MOVEMENT NUMBER	1	2	3	4	5	6	7	8
MINIMUM GREEN	--	--	--	--	--	--	--	--
EXTENSION	--	--	--	--	--	--	--	--
MAXIMUM GREEN 1	--	--	--	--	--	--	--	--
MAXIMUM GREEN 2	--	--	--	--	--	--	--	--
YELLOW CLEARANCE	--	--	--	--	--	--	--	--
ALL RED	--	--	--	--	--	--	--	--
PEDESTRIAN WALK	--	7	--	7	--	7	--	7
PED. CLEARANCE	--	44	--	38	--	44	--	38
RECALL	--	--	--	--	--	--	--	--

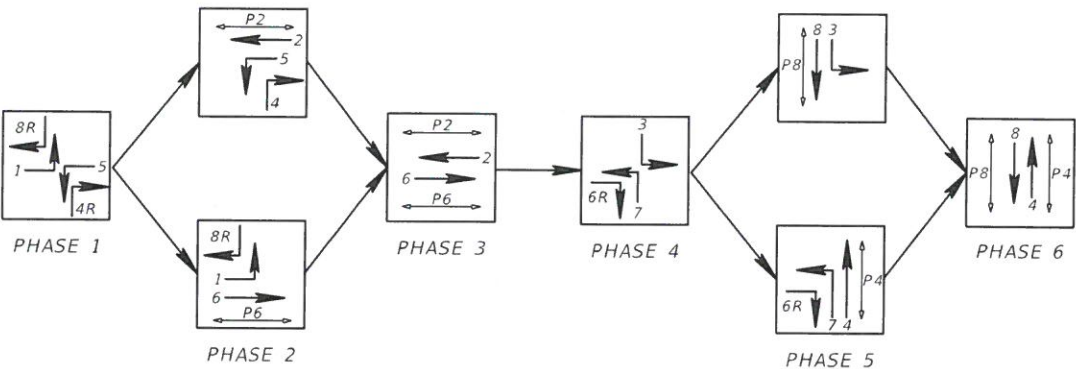
EXISTING TIMINGS TO REMAIN, UNLESS OTHERWISE NOTED.

PEDESTRIAN SIGNAL HEAD DETAIL



SIGN INCLUDED IN PAY ITEM 665-1-11

S.O.P. 10



INTERNALLY ILLUMINATED SIGNS



700-5-22 2 EA
SIGN A



700-5-21 2 EA
SIGN B

OVERHEAD SIGN



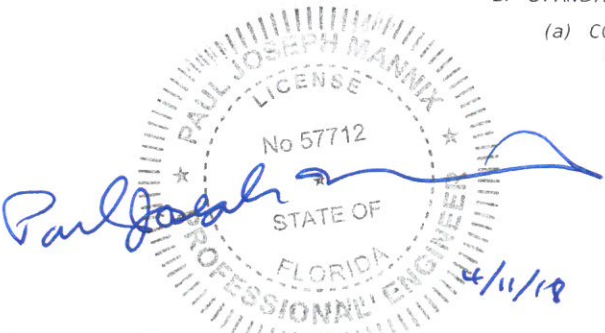
R3-4
24" X 24"
700-3-201 3 EA
SIGN C

REMOVAL PAY ITEMS

646-1-60 3 EA
649-36-500 3 EA

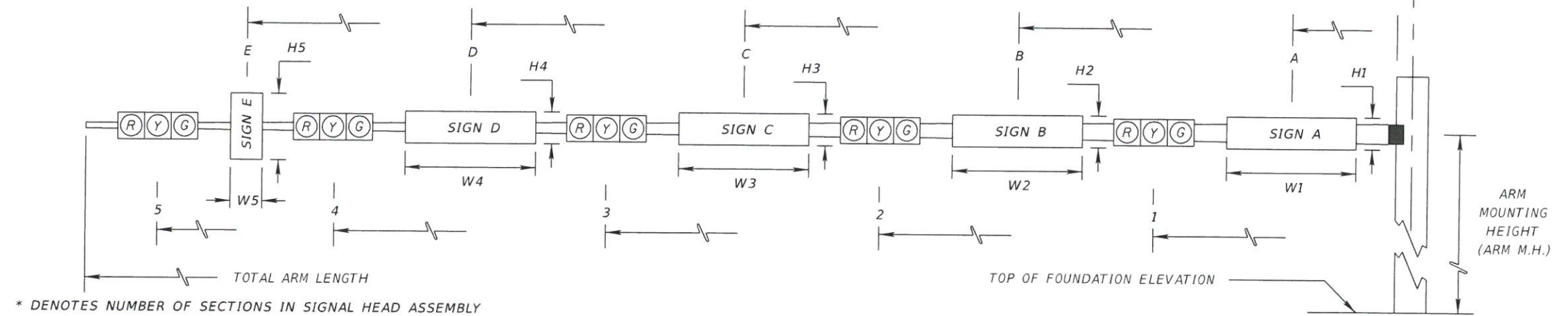
CONTROLLER OPERATIONS NOTES:

- MAJOR STREET IS ALICO ROAD, PHASES 1-3 (MOVEMENTS 2 AND 6), AND MINOR STREET IS BEN HILL GRIFFIN PARKWAY, PHASES 4-6 (MOVEMENTS 4 AND 8).
- STANDARD SIGNAL OPERATING PLAN NO. 10 WITH THE FOLLOWING:
 - CONCURRENT/ACTUATED PEDESTRIANS FOR MOVEMENTS 2 (P2), 4 (P4), 6 (P6), AND 8 (P8).



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DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
						LEE	5075		

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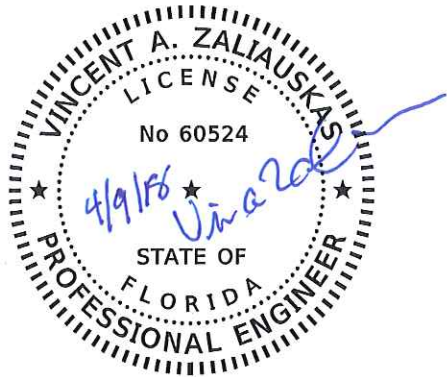
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(r) *RELOCATED SIGNAL ON EXISTING ARM*

REVISIONS				ATKINS NORTH AMERICA, INC. 482 SOUTH KELLER ROAD ORLANDO, FLORIDA 32810 (407) 647-7275 FBPE CERTIFICATE OF AUTHORIZATION NO. 24 PAUL J. MANNIX, P.E. 57712	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			MAST ARM TABULATION	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		T-8
						LEE	5075		

SPECIAL MAST ARM ASSEMBLIES DATA TABLE																								
NUMBER OF LOCATIONS	STRUCTURE NUMBER	FIRST ARM				FIRST ARM EXTENSION				SECOND ARM				SECOND ARM EXTENSION				POLE						
		FA(ft)	FB(in)	FC(in)	FD(in)	FE(ft)	FF(in)	FG(in)	FH(in)	SA(ft)	SB(in)	SC(in)	SD(in)	SE(ft)	SF(in)	SG(in)	SH(in)	UA(ft)	UB(ft)	UC(in)	UD(in)	UE(in)	UF(deg)	UG(ft)
	1-1	40	14.47	20.07	0.1793	40	19.44	25	0.375	--	--	--	--	--	--	--	--	25	20.5	26.5	30	0.375	--	--
	1-2 (EXISTING)																							
	1-3	39.1	10.52	16	0.1793	33.4	15.36	20	0.375	--	--	--	--	--	--	--	--	25	20.5	22.53	26	0.375	--	--
	1-4	39.1	9.52	15	0.1793	33.4	14.36	19	0.375	--	--	--	--	--	--	--	--	25	20.5	22.53	26	0.375	--	--
	1-5 (EXISTING)																							
	1-6 (EXISTING)																							

SPECIAL MAST ARM ASSEMBLIES DATA TABLE (CONT.)																					Table Date 05-23-16	
STRUCTURE NUMBER	FIRST ARM CONNECTION (in)					First Arm Camber Angle = 2 Degrees						SECOND ARM CONNECTION (in)					Second Arm Camber Angle = 2 Degrees					
	#Bolts	HT	FJ	FK	FL	FN	FO	FP	FR	FS	FT	#Bolts	HT	SJ	SK	SL	SN	SO	SP	SR	SS	ST
1-1	6	34	41	3	0.75	0.5	19	1.5	2.13	14	0.5	--	--	--	--	--	--	--	--	--	--	--
1-2 (EXISTING)																						
1-3	6	30	36	3	0.75	0.5	22	1.25	2.0	12.5	0.5	--	--	--	--	--	--	--	--	--	--	--
1-4	6	30	36	3	0.75	0.438	22	1.25	2.0	12.5	0.438	--	--	--	--	--	--	--	--	--	--	--
1-5 (EXISTING)																						
1-6 (EXISTING)																						



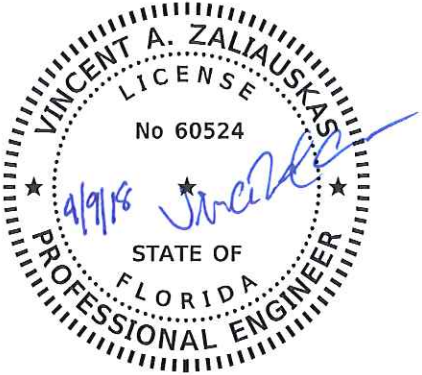
SPECIAL MAST ARM ASSEMBLIES DATA TABLE (CONT.)																							Table Date 05-23-16		
STRUCTURE NUMBER	POLE BASE CONNECTION (in)					SHAFT AND REINF.								LUMINAIRE AND LUMINAIRE CONNECTION											
	#Bolts	BA	BB	BC	BF	DA(ft)	DB(ft)	RA	RB	RC	RD(in)	RE	RF(in)	LA(ft)	LB(ft)	LC(in)	LD(in)	LE	LF(ft)	LG(in)	LH(in)	LJ(in)	LK(in)	LL(deg)	
1-1	6	46	2.5	2.0	40	18	5.5	11	22	10	12	--	--	--	--	--	--	--	--	--	--	--	--	--	
1-2 (EXISTING)																									
1-3	6	42	2.5	2.0	40	17	5.0	11	19	10	12	--	--	--	--	--	--	--	--	--	--	--	--	--	
1-4	6	42	2.5	2.0	40	17	5.0	11	19	10	12	--	--	--	--	--	--	--	--	--	--	--	--	--	
1-5 (EXISTING)																									
1-6 (EXISTING)																									

- NOTES [Notes Date 10-06-17]:
1. Work with Index 17745.
 2. Design Wind Speed = 130 mph
Per FDOT SDG Table 2.4.1-1
- FOUNDATION NOTES [Notes Date 10-06-17]:
1. Design based on Borings taken
sealed by: Michael T. Jordan P.E.
P.E. License Number 56102
Tierra, Inc.
Dated 09-28-16
 2. Assumptions and Values used in design:
Soil Type = Sand
Soil Layer Thickness = 35 ft.
Soil Friction Angle = 30 deg.
Soil Weight = 50 pcf (submerged)
Design Water Table is 2 ft. below surface

REVISIONS						VINCENT ZALIAUSKAS, P.E. P.E. LICENSE NUMBER 60524 HIGHSPANS ENGINEERING, INC. 1500 JACKSON STREET SUITE 201 FORT MYERS, FL 33901 CERTIFICATE OF AUTHORIZATION NO. 27559	DRAWN BY: SDS	LEE COUNTY DEPARTMENT OF TRANSPORTATION			SHEET TITLE:	SPECIAL MAST ARM ASSEMBLIES (1 OF 2)	REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION		CHECKED BY: CLH	ROAD NO. N/A	COUNTY LEE	PROJECT NO. 5075	PROJECT NAME: ALICO ROAD WIDENING		
							DESIGNED BY: VAZ						
							CHECKED BY: MAN						
												SHEET NO.	
												T-9	

SPECIAL MAST ARM ASSEMBLIES DATA TABLE																								
NUMBER OF LOCATIONS	STRUCTURE NUMBER	FIRST ARM				FIRST ARM EXTENSION				SECOND ARM				SECOND ARM EXTENSION				POLE						
		FA(ft)	FB(in)	FC(in)	FD(in)	FE(ft)	FF(in)	FG(in)	FH(in)	SA(ft)	SB(in)	SC(in)	SD(in)	SE(ft)	SF(in)	SG(in)	SH(in)	UA(ft)	UB(ft)	UC(in)	UD(in)	UE(in)	UF(deg)	UG(ft)
	1-7	39.1	10.5	16	0.1793	33.4	15.36	20	0.375	--	--	--	--	--	--	--	--	25	20.5	22.53	26	0.375	--	--
	2-1	35.8	14	19	0.1793	26.2	18.37	22	0.375	35.8	8.0	13	0.1793	26.2	12.37	16	0.375	25	20.5	22.53	26	0.375	90	--
	2-2	35.8	9.0	14	0.1793	26.2	13.37	17	0.375	--	--	--	--	--	--	--	--	25	20.5	18.53	22	0.375	--	--
	2-3	35.8	8.0	13	0.1793	26.2	12.37	16	0.375	--	--	--	--	--	--	--	--	25	20.5	17.53	21	0.375	--	--
	2-4	39.1	9.52	15	0.1793	33.4	14.36	19	0.375	35.8	8.0	13	0.1793	26.2	12.37	16	0.375	25	20.5	22.53	26	0.375	90	--
	2-5	39.1	9.52	15	0.1793	33.4	14.36	19	0.375	39.1	9.52	15	0.1793	33.4	14.36	19	0.375	25	20.5	23.53	27	0.375	90	--

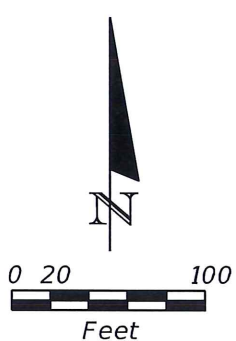
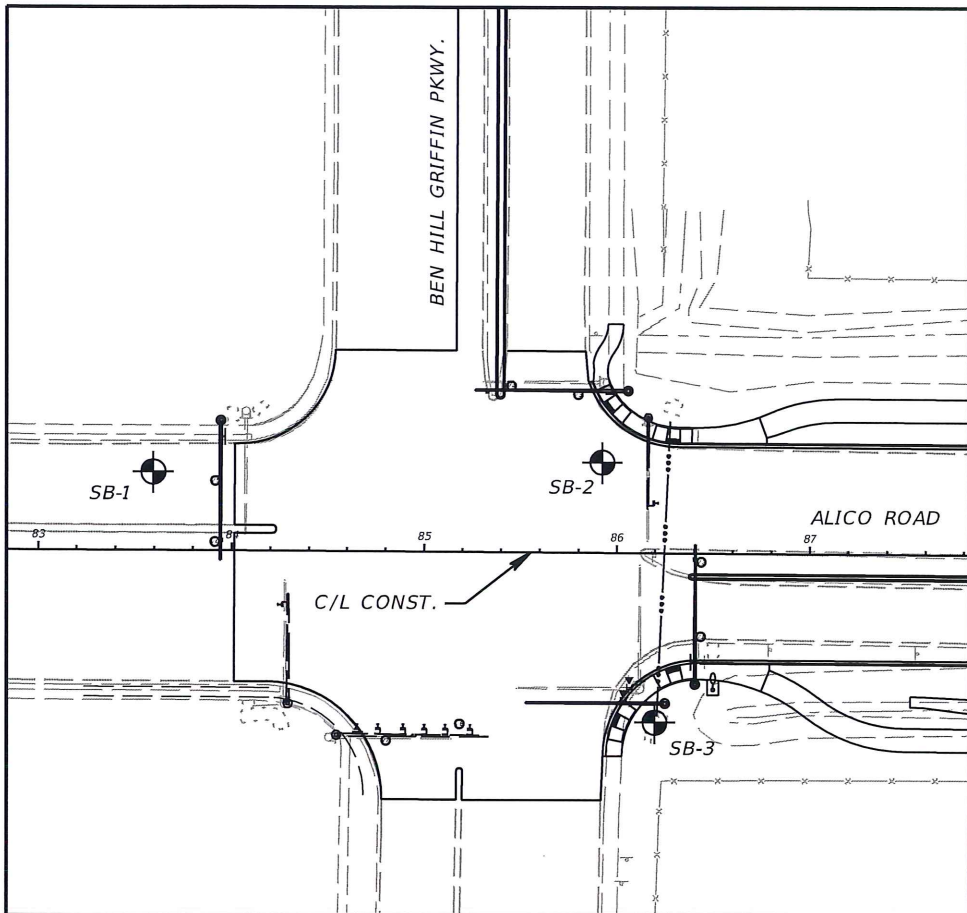
SPECIAL MAST ARM ASSEMBLIES DATA TABLE (CONT.)																					Table Date 05-23-16	
STRUCTURE NUMBER	FIRST ARM CONNECTION (in)					First Arm Camber Angle = 2 Degrees						SECOND ARM CONNECTION (in)					Second Arm Camber Angle = 2 Degrees					
	#Bolts	HT	FJ	FK	FL	FN	FO	FP	FR	FS	FT	#Bolts	HT	SJ	SK	SL	SN	SO	SP	SR	SS	ST
1-7	6	30	36	3	0.75	0.438	22	1.25	2.0	12.5	0.5	--	--	--	--	--	--	--	--	--	--	--
2-1	6	30	36	3	0.75	0.438	22	1.25	2.0	12.5	0.438	6	30	36	3	0.75	0.438	22	1.25	2.0	12.5	0.438
2-2	6	30	36	3	0.75	0.438	22.48	1.25	2.5	12.5	0.438	--	--	--	--	--	--	--	--	--	--	--
2-3	6	30	36	3	0.75	0.438	22	1.25	2.5	12.5	0.438	--	--	--	--	--	--	--	--	--	--	--
2-4	6	30	36	3	0.75	0.438	22	1.25	2.0	12.5	0.438	6	30	36	3	0.75	0.438	22	1.25	2.0	12.5	0.438
2-5	6	30	36	3	0.75	0.438	22	1.25	2.0	12.5	0.438	6	30	36	3	0.75	0.438	22	1.25	2.0	12.5	0.438



SPECIAL MAST ARM ASSEMBLIES DATA TABLE (CONT.)																							Table Date 05-23-16		
STRUCTURE NUMBER	POLE BASE CONNECTION (in)					SHAFT AND REINF.								LUMINAIRE AND LUMINAIRE CONNECTION											
	#Bolts	BA	BB	BC	BF	DA(ft)	DB(ft)	RA	RB	RC	RD(in)	RE	RF(in)	LA(ft)	LB(ft)	LC(in)	LD(in)	LE	LF(ft)	LG(in)	LH(in)	LJ(in)	LK(in)	LL(deg)	
1-7	6	42	2.5	2.0	40	18	5	11	19	10	12	--	--	--	--	--	--	--	--	--	--	--	--	--	
2-1	6	42	2.5	2.0	40	17	5	11	19	10	12	--	--	--	--	--	--	--	--	--	--	--	--	--	
2-2	6	38	2.5	2.0	40	16	4.5	11	16	10	12	--	--	--	--	--	--	--	--	--	--	--	--	--	
2-3	6	37	2.5	2.0	40	15	4.5	11	16	10	12	--	--	--	--	--	--	--	--	--	--	--	--	--	
2-4	6	42	2.5	2.0	40	17	5	11	19	10	12	--	--	--	--	--	--	--	--	--	--	--	--	--	
2-5	6	45	2.5	2.25	45	18	5	11	19	10	12	--	--	--	--	--	--	--	--	--	--	--	--	--	

- NOTES [Notes Date 10-06-17]:
- Work with Index 17745.
 - Design Wind Speed = 130 mph
Per FDOT SDG Table 2.4.1-1
- FOUNDATION NOTES [Notes Date 10-06-17]:
- Design based on Borings taken
sealed by: Michael T. Jordan P.E.
P.E. License Number 56102
Tierra, Inc.
Dated 09-28-16
 - Assumptions and Values used in design:
Soil Type = Sand
Soil Layer Thickness = 35 ft.
Soil Friction Angle = 30 deg.
Soil Weight = 50 pcf (submerged)
Design Water Table is 2 ft. below surface

REVISIONS						VINCENT ZALIAUSKAS, P.E. P.E. LICENSE NUMBER 60524 HIGHSPANS ENGINEERING, INC. 1500 JACKSON STREET SUITE 201 FORT MYERS, FL 33901 CERTIFICATE OF AUTHORIZATION NO. 27559	DRAWN BY: SDS CHECKED BY: CLH DESIGNED BY: VAZ CHECKED BY: MAN	LEE COUNTY DEPARTMENT OF TRANSPORTATION			SHEET TITLE:		REF. DWG. NO.		
DATE	BY	DESCRIPTION		DATE	BY						DESCRIPTION			SPECIAL MAST ARM ASSEMBLIES (2 OF 2)	
										ROAD NO.	COUNTY	PROJECT NO.		PROJECT NAME:	SHEET NO.
										N/A	LEE	5075		ALICO ROAD WIDENING	T - 10



NOTES:

1. TEMPORARY CASING METHODS FOR SHAFT INSTALLATION SHOULD BE ANTICIPATED IN ORDER TO PREVENT THE COLLAPSE OF THE IN-SITU SANDY SOILS AND/OR GROUNDWATER INTRUSION DURING THE SHAFT EXCAVATION.
2. DUE TO THE LOOSE/SOFT SOIL CONDITIONS ENCOUNTERED IN SOME BORINGS, THE CONTRACTOR SHALL ANTICIPATE THAT CONCRETE VOLUME OVERRUNS MAY OCCUR DURING THE SHAFT INSTALLATION PROCESS AND SHALL PREPARE THE BID ACCORDINGLY.
3. THE LOCATIONS AND ELEVATIONS OF THE BORINGS WERE DETERMINED USING GPS COORDINATES OBTAINED IN THE FIELD BY TIERRA, INC. IN CONJUNCTION WITH PROJECT DESIGN FILES. THEREFORE, THE LOCATIONS AND ELEVATIONS OF THE BORINGS SHOULD BE CONSIDERED APPROXIMATE.
4. WEATHERED LIMESTONE IS ROCK AND WAS ENCOUNTERED WITHIN THE BORING DEPTHS. THE LIMESTONE MATERIAL CAN BE VERY HARD AND DIFFICULT TO EXCAVATE. THE CONTRACTOR SHOULD BE PREPARED FOR DIFFICULT DRILLING CONDITIONS TO EXCAVATE INTO AND/OR THROUGH THE LIMESTONE MATERIAL. SPECIALIZED EQUIPMENT AND CONSTRUCTION METHODS MAY BE REQUIRED TO PENETRATE THE LIMESTONE MATERIAL.

LEGEND

- GRAY TO PALE BROWN TO BROWN FINE SAND TO SAND WITH SILT (SP/SP-SM)
- LIGHT GRAY TO GRAY TO LIGHT BROWN SILTY SAND (SM)
- LIGHT GRAY TO GRAY TO LIGHT BROWN SANDY CLAY (CL)
- CALCAREOUS CLAY TO WEATHERED LIMESTONE

- SP UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487) GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW AND LABORATORY TESTING ON SELECTED SAMPLES FOR CONFIRMATION OF VISUAL REVIEW.
- N NUMBERS TO THE LEFT OF BORINGS INDICATE SPT VALUE FOR 12 INCHES OF PENETRATION (UNLESS OTHERWISE NOTED).
- HA HAND AUGERED TO VERIFY UTILITY CLEARANCE
- NAVD 88 NORTH AMERICAN VERTICAL DATUM OF 1988
- 50/4 NUMBER OF BLOWS FOR 4 INCHES OF PENETRATION
- APPROXIMATE SPT BORING LOCATION
- GROUNDWATER LEVEL ENCOUNTERED DURING FIELD EXPLORATIONS
- 200 PERCENT PASSING #200 SIEVE
- NMC NATURAL MOISTURE CONTENT (%)
- LL LIQUID LIMIT (%)
- PI PLASTICITY INDEX (%)

- C/L CONST. CENTERLINE OF CONSTRUCTION ALICO ROAD
- LOSS OF CIRCULATION OF DRILLING FLUID (%)
- CASING

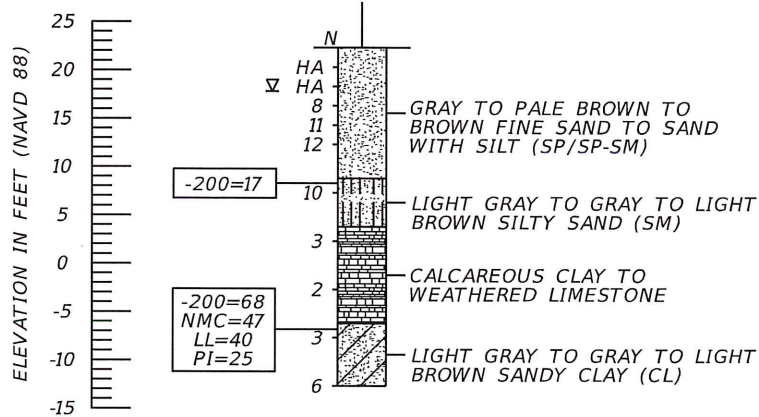
RECOMMENDED SOIL PARAMETERS									
BORING NUMBER	DEPTH (FT)	N	SOIL CLASSIFICATION	SOIL UNIT WEIGHT (PCF)		SOIL ANGLE OF FRICTION (DEGREES)	COHESION/ ULTIMATE SHEAR STRENGTH (PSF)	EARTH PRESSURE COEFFICIENT	
				γ SAT	γ SUB			ACTIVE (Ka)	PASSIVE (Kp)
SB-1	0 to 18.5	HA to 12	SP/SP-SM/SM	110	47.6	30	0	0.333	3.00
	18.5 to 28.5	2 to 3	LIMESTONE	100	37.6	28	0	0.361	2.77
	28.5 to 35	3 to 6	CL	115	52.6	0	650	1.000	1.00
SB-2	0 to 18.5	HA to 14	SP/SP-SM/SM	110	47.6	30	0	0.333	3.00
	18.5 to 28.5	2 to 3	LIMESTONE	100	37.6	28	0	0.361	2.77
	28.5 to 35	3 to 5	SM	105	42.6	29	0	0.347	2.88
SB-3	0 to 13.5	HA to 32	SP/SP-SM/SM	115	52.6	32	0	0.307	3.25
	13.5 to 35	4 to 8	SM/LIMESTONE	105	42.6	29	0	0.347	2.88

*ULTIMATE SHEAR STRENGTH

BOR # SB-1
STA. 83+90
REF. C/L CONST.
OFF. 79' LT.
ELEV. 22.3
DATE 10/8/2015
DRILLER I. POORAN
HAMMER AUTOMATIC
RIG D-25

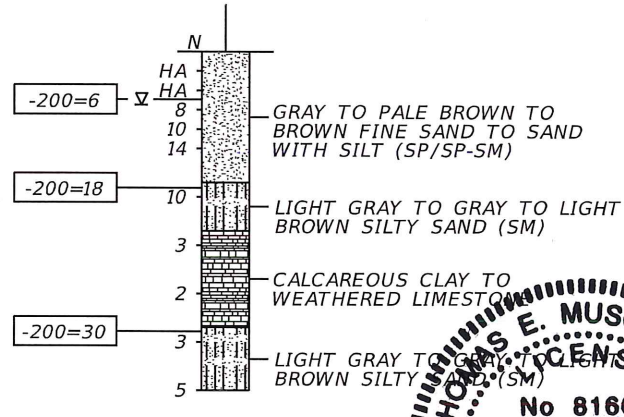
BOR # SB-2
STA. 86+23
REF. C/L CONST.
OFF. 85' LT.
ELEV. 22.1
DATE 10/8/2015
DRILLER I. POORAN
HAMMER AUTOMATIC
RIG D-25

BOR # SB-3
STA. 86+51
REF. C/L CONST.
OFF. 49' RT.
ELEV. 22.9
DATE 10/8/2015
DRILLER I. POORAN
HAMMER AUTOMATIC
RIG D-25



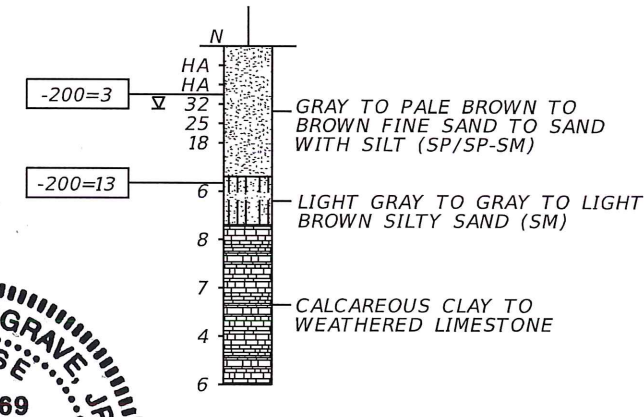
BORING TERMINATED AT ELEVATION -12.7 FT (NAVD 88)

LATITUDE: N 26.49313
LONGITUDE: W 81.78405



BORING TERMINATED AT ELEVATION -12.9 FT (NAVD 88)

LATITUDE: N 26.49314
LONGITUDE: W 81.78334



BORING TERMINATED AT ELEVATION -12.1 FT (NAVD 88)

LATITUDE: N 26.49277
LONGITUDE: W 81.78326

RECOMMENDED ENVIRONMENTAL CLASSIFICATION:
SUBSTRUCTURE CONCRETE: EXTREMELY AGGRESSIVE
SUBSTRUCTURE STEEL: EXTREMELY AGGRESSIVE
SUPERSTRUCTURE SLIGHTLY AGGRESSIVE

	SAFETY HAMMER	AUTOMATIC HAMMER
GRANULAR MATERIALS- RELATIVE DENSITY	SPT N-VALUE (BLOWS/FT.)	SPT N-VALUE (BLOWS/FT.)
VERY LOOSE	LESS THAN 4	LESS THAN 3
LOOSE	4 to 10	3 to 8
MEDIUM DENSE	10 to 30	8 to 24
DENSE	30 to 50	24 to 40
VERY DENSE	GREATER THAN 50	GREATER THAN 40
SILTS AND CLAYS CONSISTENCY	SPT N-VALUE (BLOWS/FT.)	SPT N-VALUE (BLOWS/FT.)
VERY SOFT	LESS THAN 2	LESS THAN 1
SOFT	2 to 4	1 to 3
FIRM	4 to 8	3 to 6
STIFF	8 to 15	6 to 12
VERY STIFF	15 to 30	12 to 24
HARD	GREATER THAN 30	GREATER THAN 24

MAST-ARM SIGNAL POLE FOUNDATIONS

REVISIONS				THOMAS E. MUSGRAVE, JR. P.E. LICENSE NUMBER 81669 TIERRA, INC. 7351 TEMPLE TERRACE HIGHWAY TAMPA, FLORIDA 33637 CERTIFICATE OF AUTHORIZATION NO. 6486	LEE COUNTY DEPARTMENT OF TRANSPORTATION			REPORT OF CORE BORINGS (1)	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
						LEE			GT-1