

MANATEE COUNTY CONTRACT PLANS

FINANCIAL PROJECT ID 433592-4-58-01

(FEDERAL FUNDS)

MANATEE COUNTY (13010)

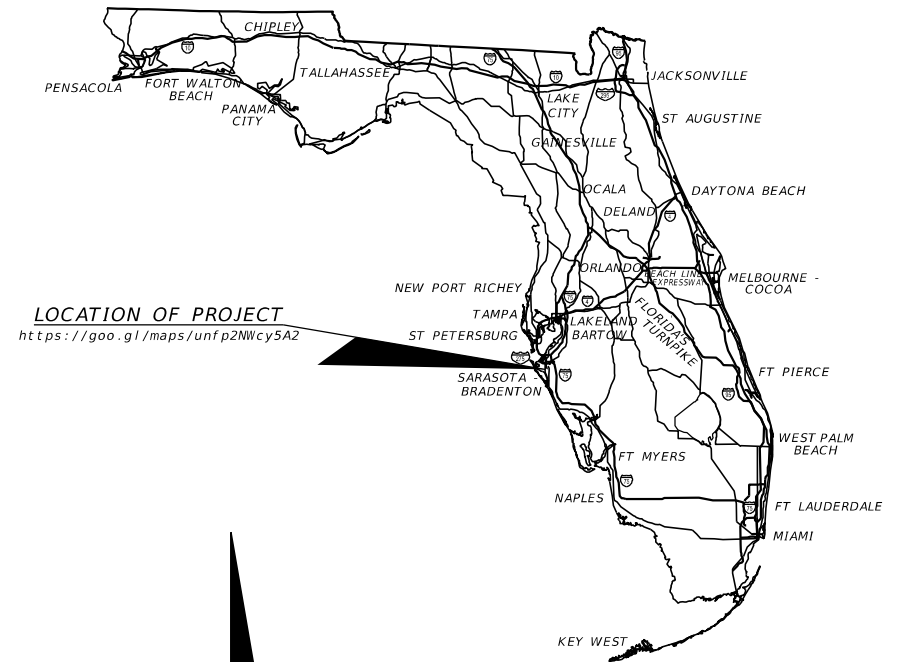
STATE ROAD NO. 45 (US 41)

FROM 69TH AVE (BAY DRIVE) TO CORTEZ ROAD

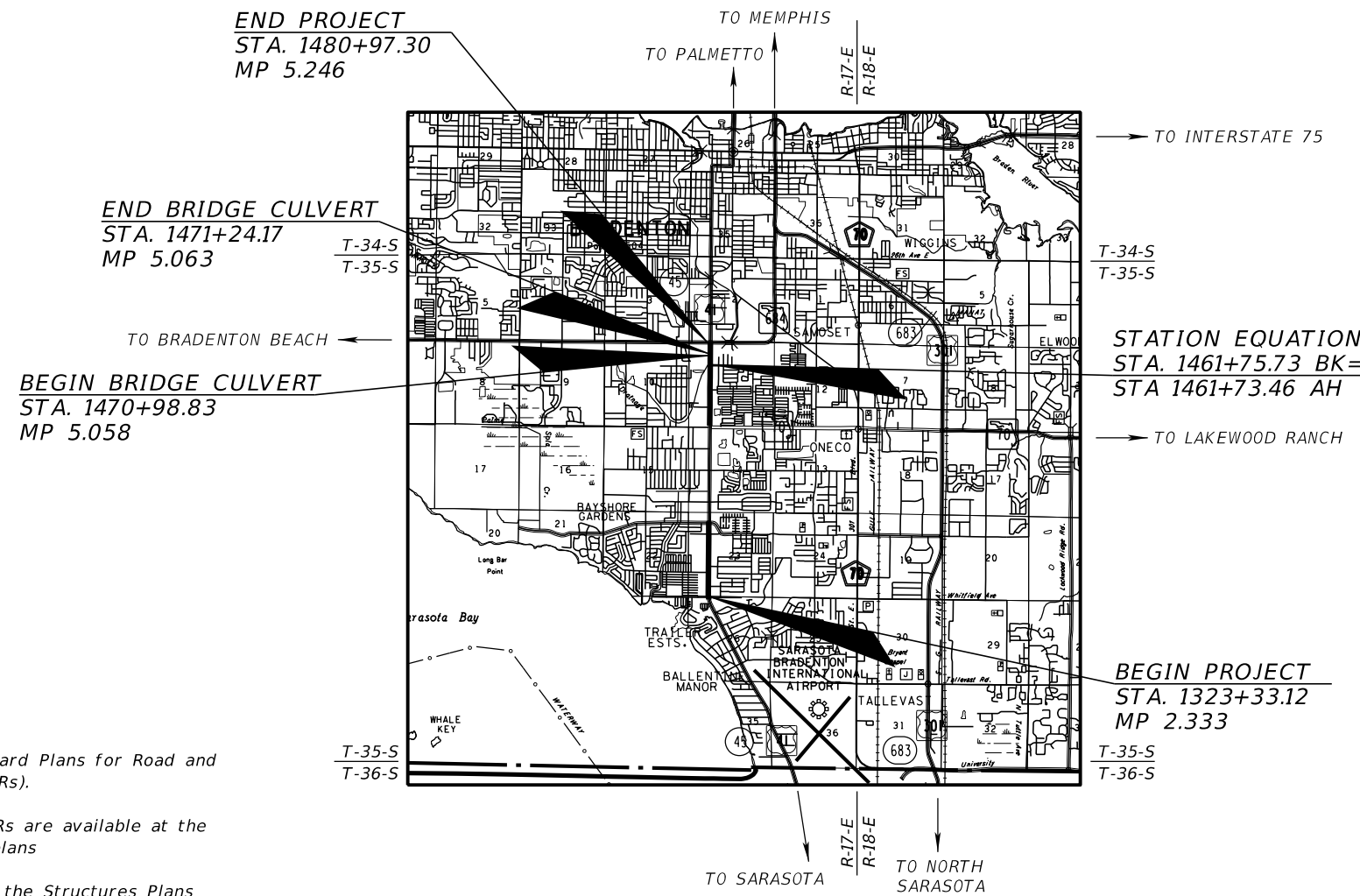
SIGNALIZATION PLANS

INDEX OF SIGNALIZATION PLANS

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LOCATION OF PROJECT
<https://goo.gl/maps/unfp2Nwcy5A2>



GOVERNING DESIGN STANDARDS:

Florida Department of Transportation, FY2022-23 Standard Plans for Road and Bridge Construction and Applicable Interim Revisions (IRs).

Standard Plans for Road Construction and associated IRs are available at the following website: <http://www.fdot.gov/design/standardplans>

Standard Plans for Bridge Construction are included in the Structures Plans Component.

GOVERNING STANDARD SPECIFICATIONS:

Florida Department of Transportation, July 2022 Standard Specifications for Road and Bridge Construction at the following website: <http://www.fdot.gov/programmanagement/Implemented/SpecBooks>

SIGNALIZATION PLANS ENGINEER OF RECORD:

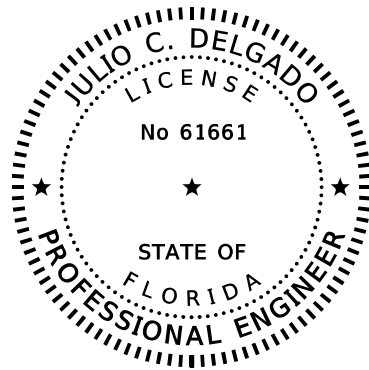
JULIO C. DELGADO, P.E. NO.: 61661
SCALAR CONSULTING GROUP INC.
8751 W. BROWARD BOULEVARD, SUITE 307
PLANTATION, FLORIDA 33324
CONTACT NO.: (954) 716-6624
CONTRACT NO.: C9N99
VENDOR NO.: 451909667

FDOT PROJECT MANAGER:

AMY BLAIR, P.E.

CONSTRUCTION CONTRACT NO.	FISCAL YEAR	SHEET NO.
22-TA004373DJ	23	T-1

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



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ON THE DATE ADJACENT TO THE SEAL

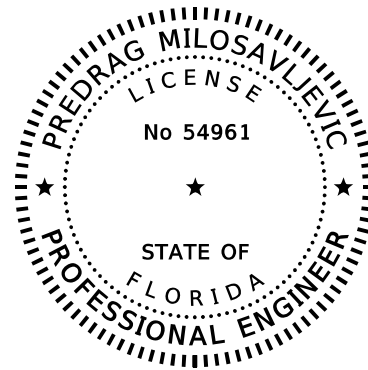
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SCALAR CONSULTING GROUP INC.
8751 W. BROWARD BOULEVARD, SUITE 307
PLANTATION, FLORIDA 33324
JULIO C. DELGADO, P.E. NO. 61661

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

SIGNALIZATION PLANS

SHEET NO.	SHEET DESCRIPTION
T-1	KEY SHEET
T-2	SIGNATURE SHEET
T-3	TABULATION OF QUANTITIES
T-4	GENERAL NOTES
T-5 - T-7	SIGNALIZATION PLANS
T-8	MAST ARM TABULATION SHEET
T-10 - T-12	GUIDE SIGN WORKSHEET



THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY:

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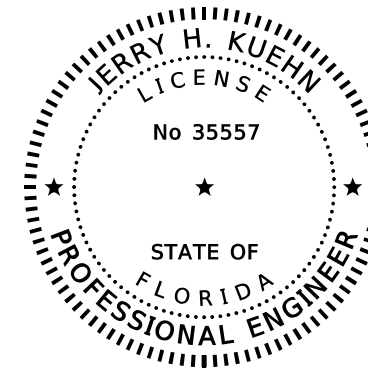
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SCALAR CONSULTING GROUP INC.
5713 CORPORATE WAY, SUITE 200
WEST PALM BEACH, FLORIDA 33407
PREDRAG MILOSAVLJEVIC, P.E. NO. 54961

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

SIGNALIZATION PLANS

SHEET NO.	SHEET DESCRIPTION
T-2	SIGNATURE SHEET
T-9	SPECIAL MAST ARM ASSEMBLIES DATA TABLE



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ON THE DATE ADJACENT TO THE SEAL

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ARDAMAN AND ASSOCIATES, INC.
1724 BARBER ROAD
SARASOTA, FLORIDA 34240
JERRY H. KUEN, P.E. NO. 35557

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

SIGNALIZATION PLANS

SHEET NO.	SHEET DESCRIPTION
T-2	SIGNATURE SHEET
T-13 - T-15	REPORT OF CORE BORINGS FOR SIGNALS

REVISIONS				JULIO C. DELGADO, P.E. P.E. LICENSE NUMBER 61661 SCALAR CONSULTING GROUP INC. 8751 W. BROWARD BOULEVARD, SUITE 307 PLANTATION, FLORIDA 33324	MANATEE COUNTY			SHEET NO. T-2
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					SR 45	MANATEE	433592-4-58-01	

SIGNATURE SHEET

TABULATION OF QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS										TOTAL THIS SHEET		GRAND TOTAL	
			T-5		T-6		T-7						PLAN	FINAL	PLAN	FINAL
			PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL						
630-2-11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH	LF	93		97		115						305		305	
630-2-12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF	467		256		477						1200		1200	
632-7-1	SIGNAL CABLE - NEW OR RECONSTRUCTED INTERSECTION, FURNISH & INSTALL	PI	1		1		1						3		3	
632-7-6	SIGNAL CABLE, REMOVE- INTERSECTION	PI	1		1		1						3		3	
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24" COVER SIZE	EA	19		19		21						59		59	
639-1-122	ELECTRICAL POWER SERVICE, FURNISH & INSTALL, UNDERGROUND, METER PURCHASED BY CONTRACTOR	AS	1		1		1						3		3	
639-2-1	ELECTRICAL SERVICE WIRE, FURNISH & INSTALL	LF	234		13		212						459		459	
641-2-11	PRESTRESSED CONCRETE POLE, FURNISH & INSTALL, TYPE P-11 PEDESTAL	EA	1		1		1						3		3	
641-2-70	PRESTRESSED CONCRETE POLE, SHALLOW POLE REMOVAL - POLE 30' AND GREATER	EA	2		2		2						6		6	
646-1-11	ALUMINUM SIGNALS POLE, PEDESTAL	EA	8		6		8						22		22	
646-1-60	ALUMINUM SIGNALS POLE, REMOVE	EA	2		3		4						9		9	
649-21-13	STEEL MAST ARM ASSEMBLY, FURNISH & INSTALL, DOUBLE ARM 60'-50'	EA	1		1		2						4		4	
649-21-14	STEEL MAST ARM ASSEMBLY, FURNISH & INSTALL, DOUBLE ARM 60'-60'	EA	1		1								2		2	
650-1-14	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 3 SECTION, 1 WAY	AS	12		12		12						36		36	
650-1-16	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 4 SECTION, 1 WAY	AS	2		2		2						6		6	
653-1-11	PEDESTRIAN SIGNAL, FURNISH & INSTALL LED COUNTDOWN, 1 WAY	AS	8		6		8						22		22	
660-3-11	VEHICLE DETECTION SYSTEM - MICROWAVE, FURNISH & INSTALL CABINET EQUIPMENT	EA	1		1		1						3		3	
660-3-12	VEHICLE DETECTION SYSTEM - MICROWAVE, FURNISH & INSTALL ABOVE GROUND EQUIPMENT	EA	4		4		4						12		12	
665-1-11	PEDESTRIAN DETECTOR, FURNISH & INSTALL, STANDARD	EA	8		6		8						22		22	
670-5-110	TRAFFIC CONROLLER ASSEMBLY, FURNISH & INSTALL, NEMA	AS	1		1		1						3		3	
670-5-600	TRAFFIC CONROLLER ASSEMBLY, REMOVE CONTROLLER WITH CABINET	AS	1		1		1						3		3	
676-1-500	TRAFFIC SIGNAL CONTROLLER CABINET, ADJUST/MODIFY	EA	1										1		1	
685-1-11	UNINTERRUPTIBLE POWER SUPPLY, FURNISH AND INSTALL, LINE INTERACTIVE	EA	1		1		1						3		3	
700-5-22	INTERNALLY ILLUMINATED SIGN, FURNISH & INSTALL, OVERHEAD MOUNT, 12-18 SF	EA	4		4		4						12		12	

PAY ITEM FOOTNOTES:

- 635-2-11 USE 17" X 30" COVER SIZE PULL & SLICE BOX.
- 649-21-13 THE AREA IN/AROUND DRILLED SHAFT SUPPORTING THE NEW MAST ARM NO. 6 IS KNOWN TO HAVE 18.3 CU. FT. MISCELLANEOUS CONCRETE DEBRIS WHICH MAY REQUIRE REMOVAL PRIOR TO CONSTRUCTING THE NEW DRILLED SHAFT. INCLUDES ALL COSTS ASSOCIATED WITH REMOVAL AND/OR DRILLING THROUGH SAID CONCRETE.
- 650-1-XX USE POLYCARBONATE SIGNAL HEADS.
- 653-1-11 MOUNT PEDESTRAIN SIGNAL HEADS 9'-6" ABOVE GRADE.
- 660-3-11& 660-3-12 USE WAVETRONIX MODEL SS225 SMART SENSOR MATRIX FOR VEHICLE DETECTION, AND USE WAVETRONIX MODEL SS-200V ADVANCE FOR DILEMMA ZONE DETECTION.
- 670-5-110 USE CUBIC MODEL 980 ATC TYPE 2, MODEL 70006-TS2/FL.
- 676-1-500 INCLUDES ALL COSTS ASSOCIATED WITH RELOCATING EXISTING GENERATOR CABINET.

REVISIONS				JULIO C. DELGADO, P.E. P.E. LICENSE NUMBER 61661 SCALAR CONSULTING GROUP INC. 8751 W. BROWARD BOULEVARD, SUITE 307 PLANTATION, FLORIDA 33324	MANATEE COUNTY			TABULATION OF QUANTITIES	SHEET NO. T-3
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 45	MANATEE	433592-4-58-01		

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SIGNALIZATION GENERAL NOTES

1. THE AGENCY RESPONSIBLE FOR MAINTENANCE OF THE TRAFFIC SIGNALS AND RELATED COMMUNICATIONS EQUIPMENT IS MANATEE COUNTY TRAFFIC OPERATIONS DIVISION (MCTOP).
2. PROVIDE SUBMITTAL DATA THAT IS COMPATIBLE WITH THE MAINTAINING AGENCY. PROVIDE THE MAINTAINING AGENCY'S REQUIRED EQUIPMENT AND VERIFY WITH THE MAINTAINING AGENCY PRIOR TO PURCHASING SUCH EQUIPMENT.
3. COORDINATE WITH MANATEE COUNTY TRAFFIC ENGINEERING DIVISION AT (941) 749-3502 TO BECOME FAMILIAR WITH AND COMPLY WITH MCTOP'S INSPECTION PROCEDURES.
4. AT THE COMPLETION OF THE PROJECT, PROVIDE AS-BUILT PLANS IN ELECTRONIC FORM (PDF) TO:

 FDOT TRAFFIC OPERATIONS
 RENJAN JOSEPH, P.E., TSM&O ENGINEER
 801 N. BROADWAY AVE.
 P.O. BOX 1249
 BARTOW, FL 33830-1249
 EMAIL: RENJAN.JOSEPH@DOT.STATE.FL.US
 PHONE: 863-519-2746
5. SEE THE ROADWAY COMPONENT'S UTILITY ADJUSTMENTS SHEETS FOR UTILITY AGENCY OWNERS AND THEIR CONTACT INFORMATION.
6. USE CAUTION WHEN INSTALLING PROPOSED SIGNALIZATION FACILITIES. RECOMMEND USING HAND DIGGING METHODS TO AVOID IMPACTING UNFORESEEN UTILITIES.
7. ALL REMOVED EQUIPMENT AND HARDWARE SHALL BE RETURNED TO THE MAINTAINING AGENCY:

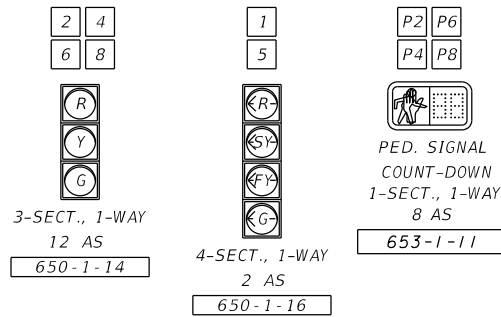
 MANATEE COUNTY TRAFFIC OPERATIONS DIVISION
 2904 12TH ST. CT. E.
 BRADENTON, FL 34208

REVISIONS				JULIO C. DELGADO, P.E. P.E. LICENSE NUMBER 61661 SCALAR CONSULTING GROUP INC. 8751 W. BROWARD BOULEVARD, SUITE 307 PLANTATION, FLORIDA 33324	MANATEE COUNTY			SHEET NO. T-4
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					SR 45	MANATEE	433592-4-58-01	

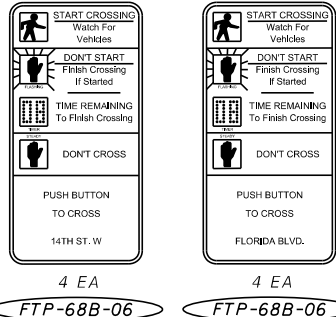
GENERAL NOTES

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SIGNAL HEAD DETAILS



PEDESTRIAN SIGNAL HEAD & SIGN DETAILS



RADAR DETECTOR CONFIGURATION CHART

RADAR DETECTOR	DETECTION ZONE	MOVEMENT	DELAY
RD-2	R-2	2	-
	R-5	5	3
RD-4	R-7	7	3
	R-4	4	8
RD-6	R-1	1	3
	R-6	6	-
RD-8	R-8	8	8
	R-3	3	3

CONTROLLER TIMINGS (SECONDS)

MOVEMENT #	1	2	3	4	5	6	7	8	NOTES
DIRECTION	NB LT	SB	EB LT	WB	SB LT	NB	WB LT	EB	
TURN TYPE	Prot. /Perm.				Prot. /Perm.				
MIN GREEN	5	15		7	5	15		7	
EXT	3.0	2.0		3.0	3.0	2.0		3.0	
YELLOW	4.8	4.8		3.4	4.8	4.8		3.4	
ALL RED	2.6	2.6		4.2	2.6	2.6		4.2	
MAX I	20	30		20	20	30		20	
MAX II	35	105		30	35	135		30	
MAX LIMIT									
ADJUST BY									
WALK		7		7		7		7	
FLASHING DON'T WALK		13		22		17		24	
DETECTOR MEMORY									
DET. CROSS SWITCH.	YES				YES				
DUAL ENTRY		ON		ON		ON		ON	
VEHICLE RECALL		MIN.				MIN.			

NOTES:

- MAJOR STREET IS SR 45 (US 41)
MINOR STREET IS FLORIDA BLVD.
- USE STANDARD SIGNAL OPERATING PLAN NO. 7.
- FLASHING OPERATION: YELLOW MOVEMENTS - 2, 6
RED MOVEMENTS - 1, 4, 5, 8
- POSTED SPEED ON SR 45 (US 41) - 45 MPH
POSTED SPEED ON FLORIDA BLVD. - 25 MPH
VEHICULAR DETECTION SHALL BE WAVETRONIX.
- REQUEST UPDATED SIGNAL TIMINGS FROM FDOT TSM&O ENGINEER - ARTERIALS (863-519-2216) WHEN ALL LANES, STRIPING, SIGNALS AND PEDESTRIAN FACILITIES ARE IN THEIR FINAL CONFIGURATION AND THE SIGNAL IS OPERATING AS DESIGNED. PROVIDE FDOT WITH ALL 'AS-BUILT' INFORMATION NECESSARY TO DEVELOP THE BASIC SIGNAL TIMING PARAMETERS AND ALLOW THREE (3) WEEKS FOLLOWING THE REQUEST FOR FDOT TO DEVELOP THE UPDATED TIMINGS. PROGRAM THE CONTROLLER PER THE TIMINGS PROVIDED BY FDOT.
- PROGRAM PHASE RESTRICTIONS TO OMIT MOVEMENT 1 AND REDIRECT CALLS FROM MOVEMENT 1 TO MOVEMENT 6, WHEN MOVEMENT 2 IS GREEN AND TO OMIT MOVEMENT 5 AND REDIRECT CALLS FROM MOVEMENT 5 TO MOVEMENT 2, WHEN MOVEMENT 6 IS GREEN.
- PROGRAM A START-UP DELAY OF 2 SECONDS FOR THE FLASHING YELLOW ARROW ON MOVEMENTS 1 AND 5 (RELATIVE TO THE OPPOSING THROUGH MOVEMENTS).

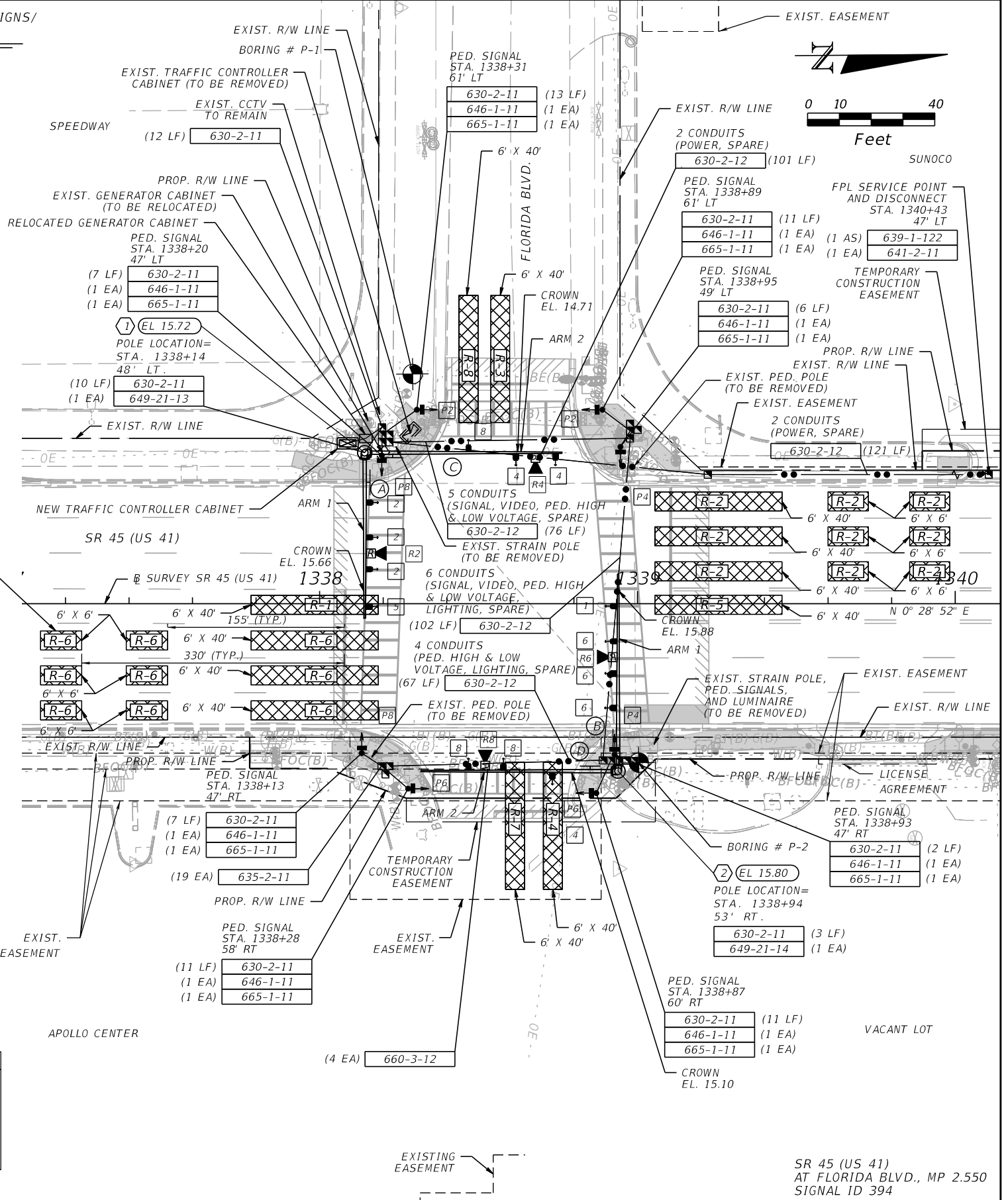
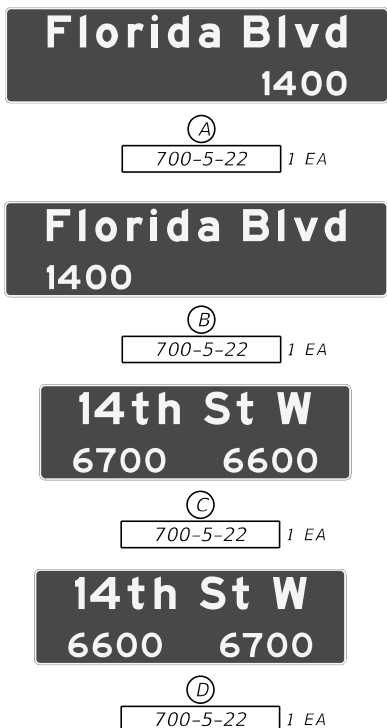
TRAFFIC CONTROLLER CABINET ITEMS

632-7-1	(1 PI)
639-2-1	(234 LF)
660-3-11	(1 EA)
670-5-110	(1 AS)
676-1-500	(1 AS)
685-1-11	(1 EA)

REMOVAL PAY ITEMS

632-7-6	(1 PI)
641-2-70	(2 EA)
646-1-60	(2 EA)
670-5-600	(1 AS)

INTERNALLY ILLUMINATED STREET NAME SIGNS/
OVERHEAD STREET SIGNS



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REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

JULIO C. DELGADO, P.E.
P.E. LICENSE NUMBER 61661
SCALAR CONSULTING GROUP INC.
8751 W. BROWARD BOULEVARD, SUITE 307
PLANTATION, FLORIDA 33324

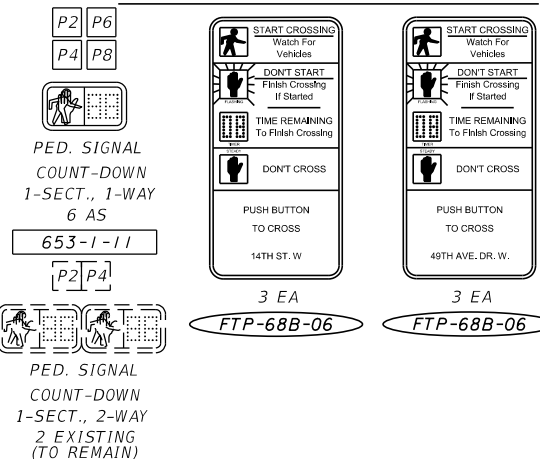
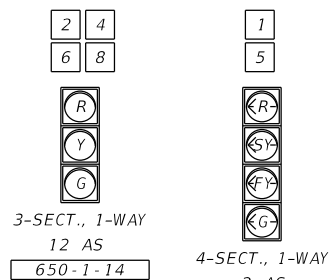
MANATEE COUNTY		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 45	MANATEE	433592-4-58-01

SIGNALIZATION PLANS		SHEET NO.
		T-5

SIGNAL HEAD DETAILS

PEDESTRIAN SIGNAL HEAD & SIGN DETAILS

INTERNALLY ILLUMINATED STREET NAME SIGNS/
OVERHEAD STREET SIGNS



RADAR DETECTOR CONFIGURATION CHART

RADAR DETECTOR	DETECTION ZONE	MOVEMENT	DELAY
RD-2	R-2	2	-
	R-5	5	3
RD-4	-	-	-
	R-4	4	8
RD-6	R-1	1	3
	R-6	6	-
RD-8	R-8	8	8
	R-3	3	3

CONTROLLER TIMINGS (SECONDS)

MOVEMENT #	1		2		3		4		5		6		7		8		NOTES
	NB	LT	SB	EB	LT	WB	SB	LT	NB	WB	LT	EB	NB	WB	LT	EB	
DIRECTION	NB LT		SB		EB LT		WB		SB LT		NB		WB LT		EB		
TURN TYPE	Prot. /Perm.								Prot. /Perm.								
MIN GREEN	5		15				7		5		15				7		
EXT	3.0		2.0		3.0		3.0		3.0		2.0		3.0		3.0		
YELLOW	4.8		4.8		3.7		4.8		4.8		3.7		4.8		3.7		
ALL RED	3.0		3.0		4.9		3.0		3.0		4.9		3.0		4.9		
MAX I	20		30		25		20		30		25		20		25		
MAX II			135		30		135		30		30				30		
MAX LIMIT																	
ADJUST BY																	
WALK			7		7		7		7		7		7		7		
FLASHING DON'T WALK			20		25		12		24								
DETECTOR MEMORY																	
DET. CROSS SWITCH.	YES						YES						ON		ON		
DUAL ENTRY			ON		ON		ON		ON		ON		ON		ON		
VEHICLE RECALL			MIN.				MIN.				MIN.				MIN.		

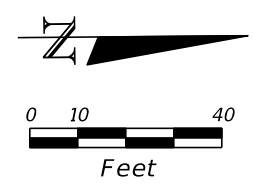
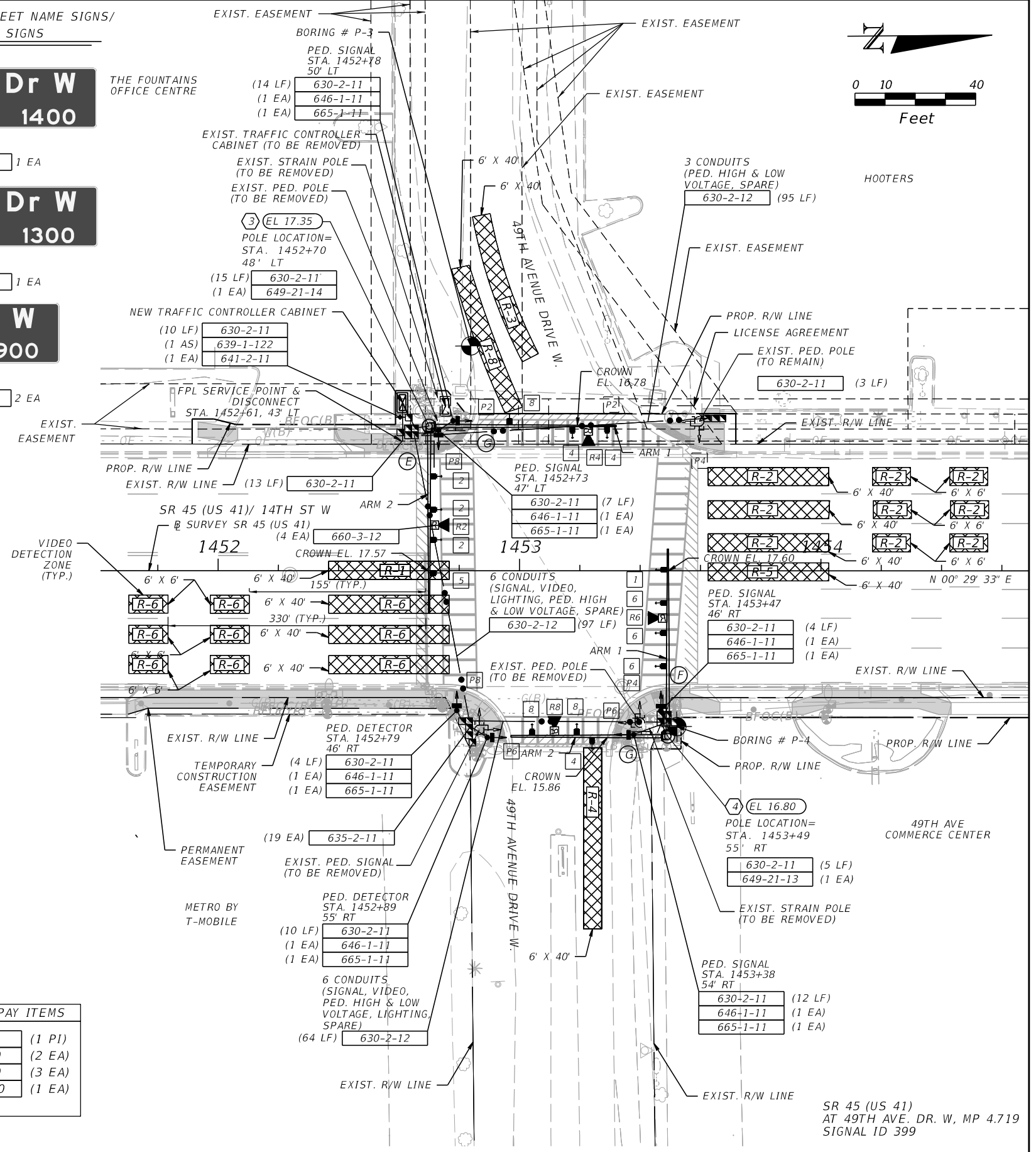
- NOTES:**
- MAJOR STREET IS SR 45 (US 41)
MINOR STREET IS 49TH AVENUE DRIVE W.
 - USE STANDARD SIGNAL OPERATING PLAN NO. 7.
 - FLASHING OPERATION: YELLOW MOVEMENTS - 2, 6
RED MOVEMENTS - 1, 4, 5, 8
 - POSTED SPEED ON SR 45 (US 41) - 45 MPH
POSTED SPEED ON 49TH AVENUE DRIVE W. - 25 MPH
VEHICULAR DETECTION SHALL BE WAVETRONIX.
 - REQUEST UPDATED SIGNAL TIMINGS FROM FDOT TSM&O ENGINEER - ARTERIALS (863-519-2216) WHEN ALL LANES, STRIPING, SIGNALS AND PEDESTRIAN FACILITIES ARE IN THEIR FINAL CONFIGURATION AND THE SIGNAL IS OPERATING AS DESIGNED. PROVIDE FDOT WITH ALL 'AS-BUILT' INFORMATION NECESSARY TO DEVELOP THE BASIC SIGNAL TIMING PARAMETERS AND ALLOW THREE (3) WEEKS FOLLOWING THE REQUEST FOR FDOT TO DEVELOP THE UPDATED TIMINGS. PROGRAM THE CONTROLLER PER THE TIMINGS PROVIDED BY FDOT.
 - PROGRAM PHASE RESTRICTIONS TO OMIT MOVEMENT 1 AND REDIRECT CALLS FROM MOVEMENT 1 TO MOVEMENT 6, WHEN MOVEMENT 2 IS GREEN AND TO OMIT MOVEMENT 5 AND REDIRECT CALLS FROM MOVEMENT 2, WHEN MOVEMENT 6 IS GREEN.
 - PROGRAM A START-UP DELAY OF 2 SECONDS FOR THE FLASHING YELLOW ARROW ON MOVEMENTS 1 AND 5 (RELATIVE TO THE OPPOSING THROUGH MOVEMENTS).

TRAFFIC CONTROLLER CABINET ITEMS

632-7-1	(1 PI)
639-2-1	(13 LF)
660-3-11	(1 EA)
670-5-110	(1 AS)
685-1-11	(1 EA)

REMOVAL PAY ITEMS

632-7-6	(1 PI)
641-2-70	(2 EA)
646-1-60	(3 EA)
670-5-600	(1 EA)



REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

JULIO C. DELGADO, P.E.
P.E. LICENSE NUMBER 61661
SCALAR CONSULTING GROUP INC.
8751 W. BROWARD BOULEVARD, SUITE 307
PLANTATION, FLORIDA 33324

MANATEE COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 45	MANATEE	433592-4-58-01

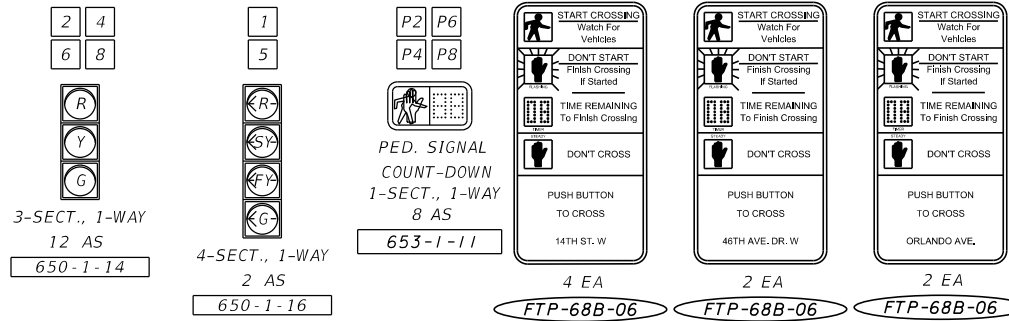
SIGNALIZATION PLANS

SHEET NO.
T-6

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SIGNAL HEAD DETAILS

PEDESTRIAN SIGNAL HEAD & SIGN DETAILS



← Orlando Ave
46th Ave Dr W →

← 46th Ave Dr W
Orlando Ave →

14th St W
4600 4500

14th St W
4500 4600

RADAR DETECTOR CONFIGURATION CHART

RADAR DETECTOR	DETECTION ZONE	MOVEMENT	DELAY
RD-2	R-2	2	-
	R-5	5	3
RD-4	R-7	7	3
	R-4	4	8
RD-6	R-1	1	3
	R-6	6	-
RD-8	R-8	8	8
	R-3	3	3

CONTROLLER TIMINGS (SECONDS)

MOVEMENT #	1	2	3	4	5	6	7	8	NOTES
DIRECTION	NB LT	SB	EB LT	WB	SB LT	NB	WB LT	EB	
TURN TYPE	Prot. /Perm.				Prot. /Perm.				
MIN GREEN	5	15			5	15			
EXT	3.0	2.0		3.0	3.0	2.0		3.0	
YELLOW	4.8	4.8		3.7	4.8	4.8		3.7	
ALL RED	2.6	2.6		4.6	2.6	2.6		4.6	
MAX I	15	30		20	15	30		20	
MAX II	20	130		45	20	115		45	
MAX LIMIT									
ADJUST BY									
WALK		7		7		7		7	
FLASHING DON'T WALK		13		22		11		23	
DETECTOR MEMORY									
DET. CROSS SWITCH.	YES				YES				
DUAL ENTRY		ON		ON		ON		ON	
VEHICLE RECALL		MIN.				MIN.			

NOTES:

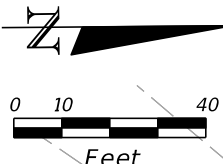
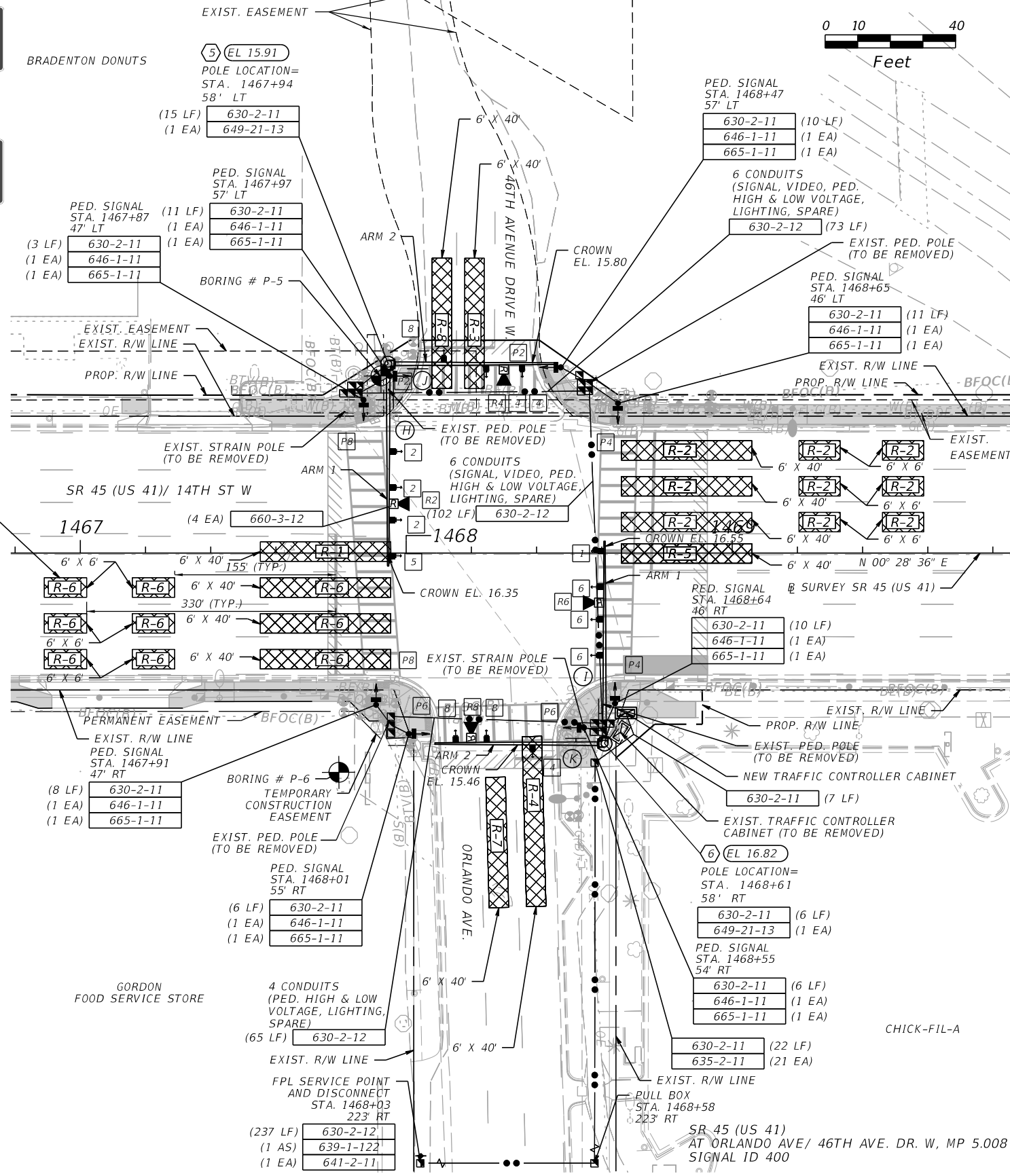
- MAJOR STREET IS SR 45 (US 41)
MINOR STREET IS 46TH AVENUE DRIVE W. / ORLANDO AVE.
- USE STANDARD SIGNAL OPERATING PLAN NO. 7.
- FLASHING OPERATION: YELLOW MOVEMENTS - 2, 6
RED MOVEMENTS - 1, 4, 5, 8
- POSTED SPEED ON SR 45 (US 41) - 45 MPH
POSTED SPEED ON 46TH AVENUE DRIVE W. / ORLANDO AVE. - 25 MPH
VEHICULAR DETECTION SHALL BE WAVETRONIX.
- REQUEST UPDATED SIGNAL TIMINGS FROM FDOT TSM&O ENGINEER - ARTERIALS (863-519-2216) WHEN ALL LANES, STRIPING, SIGNALS AND PEDESTRIAN FACILITIES ARE IN THEIR FINAL CONFIGURATION AND THE SIGNAL IS OPERATING AS DESIGNED. PROVIDE FDOT WITH ALL 'AS-BUILT' INFORMATION NECESSARY TO DEVELOP THE BASIC SIGNAL TIMING PARAMETERS AND ALLOW THREE (3) WEEKS FOLLOWING THE REQUEST FOR FDOT TO DEVELOP THE UPDATED TIMINGS. PROGRAM THE CONTROLLER PER THE TIMINGS PROVIDED BY FDOT.
- PROGRAM PHASE RESTRICTIONS TO OMIT MOVEMENT 1 AND REDIRECT CALLS FROM MOVEMENT 1 TO MOVEMENT 6, WHEN MOVEMENT 2 IS GREEN AND TO OMIT MOVEMENT 5 AND REDIRECT CALLS FROM MOVEMENT 5 TO MOVEMENT 2, WHEN MOVEMENT 6 IS GREEN.
- PROGRAM A START-UP DELAY OF 2 SECONDS FOR THE FLASHING YELLOW ARROW ON MOVEMENTS 1 AND 5 (RELATIVE TO THE OPPOSING THROUGH MOVEMENTS).

TRAFFIC CONTROLLER CABINET ITEMS

632-7-1	(1 PI)
639-2-1	(212 LF)
660-3-11	(1 EA)
670-5-110	(1 AS)
685-1-11	(1 EA)

REMOVAL PAY ITEMS

632-7-6	(1 PI)
641-2-70	(2 EA)
646-1-60	(4 EA)
670-5-600	(1 EA)



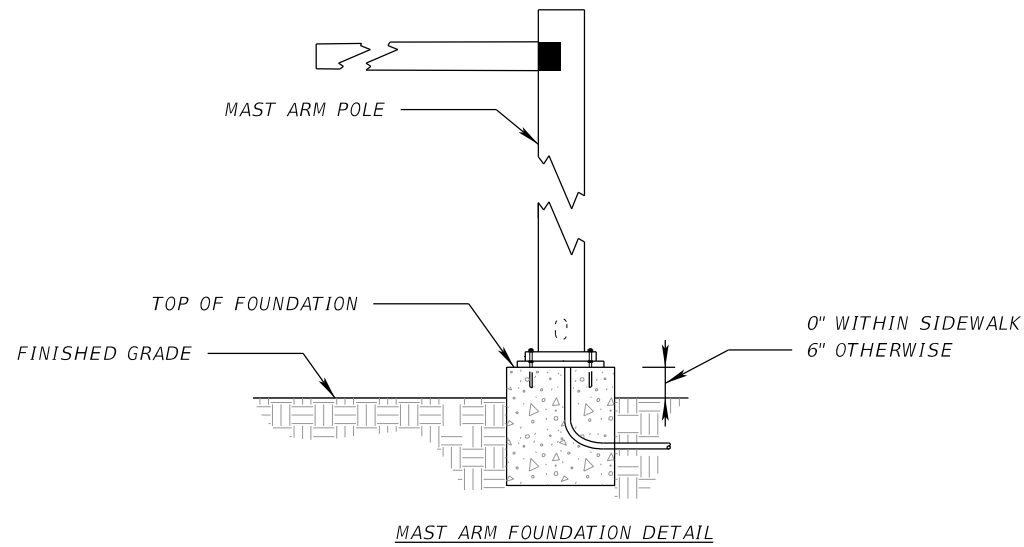
JULIO C. DELGADO, P.E.
P.E. LICENSE NUMBER 61661
SCALAR CONSULTING GROUP INC.
8751 W. BROWARD BOULEVARD, SUITE 307
PLANTATION, FLORIDA 33324

MANATEE COUNTY		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 45	MANATEE	433592-4-58-01

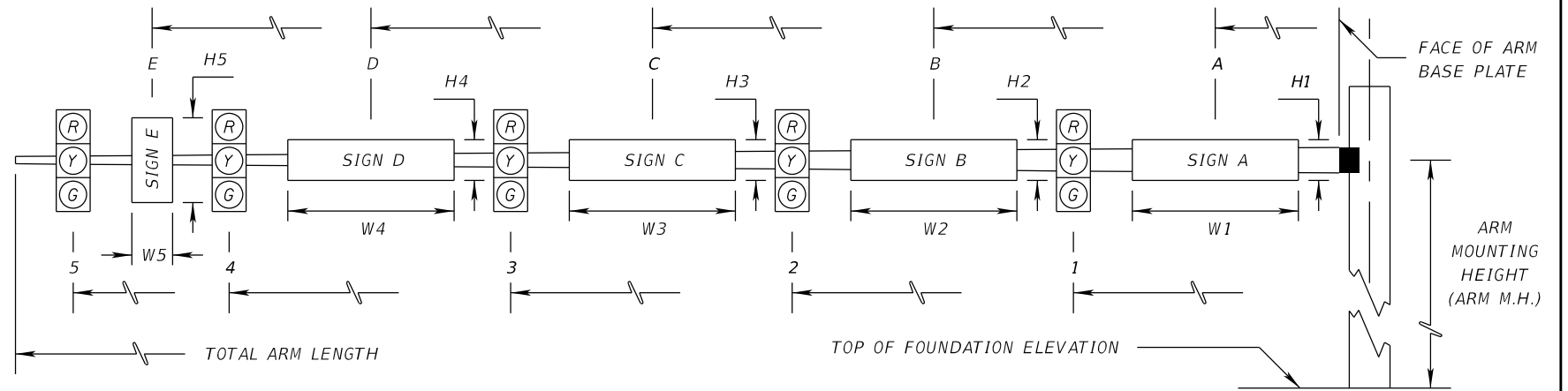
SIGNALIZATION PLANS

SHEET NO.
T-7

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



MAST ARM FOUNDATION DETAIL
 *** TOP OF FOUNDATION ELEVATION SHOULD BE VERIFIED PRIOR TO CONSTRUCTION OF FOUNDATION



* DENOTES NUMBER OF SECTIONS IN SIGNAL HEAD ASSEMBLY

**DENOTES ORIENTATION OF LUMINAIRE

ID NO.	SHEET NO.	LOCATION BY STA.	*** TOP OF FOUND. ELEVATION	RDWY ARM NO.	CROWN ELEV.	SIGNAL DATA												TOTAL ARM LENGTH	ARM M.H.	ANGLE BETWEEN DUAL ARMS 90 / 270	SIGN AND CAMERA DATA								PAINT COLOR	LUMINAIRE DATA				
						SIGNAL V/H	BACK PLATES Y/N	PED. SIGNAL Y/N	DISTANCE FROM ARM BASE PLATE												DISTANCE FROM POLE / HEIGHT AND WIDTH OF SIGN									LUMINAIRE Y/N	ARM LENGTH (FT)	MOUNT. HEIGHT (FT)	LUMINAIRE ANGLE**	
									1	*	2	*	3	*	4	*	5				*	A	H1	W1	B (VD)	H2	W2	C						
1	T-5	1338+14	16.76	1	15.66	V	Y	N	14.0	3	25.0	3	35.0	3	47.0	4			50	17.50	90	7.5	2.0	8.0	30.0	VD			GALVANIZED	N				
---	---	---	---	2	14.71	V	Y	N	31.0	3	46.0	3	58.0	3					60	---	---	7.0	2.0	6.5	52.0	VD			GALVANIZED	---				
2	T-5	1338+94	16.02	1	15.88	V	Y	N	18.0	3	29.0	3	39.0	3	50.0	4			60	18.92	90	7.5	2.0	8.0	34.0	VD			GALVANIZED	N				
---	---	---	---	2	15.10	V	Y	N	20.0	3	34.5	3	45.5	***3					60	---	---	7.0	2.0	6.5	40.0	VD			GALVANIZED	---				
3	T-6	1452+70	17.33	1	16.78	V	Y	N	25.0	3	45.5	3	57.5	***3					60	19.42	270	7.0	2.0	9.0	51.0	VD			GALVANIZED	N				
---	---	---	---	2	17.57	V	Y	N	15.0	3	26.0	3	36.0	3	47.0	4			60	---	---	7.5	2.0	6.5	31.0	VD			GALVANIZED	---				
4	T-6	1453+49	16.80	1	17.60	V	Y	N	21.5	3	32.5	3	42.5	3	53.5	4			60	20.00	90	7.5	2.0	9.0	37.5	VD			GALVANIZED	N				
---	---	---	---	2	15.86	V	Y	N	23.5	***3	28.5	***3	43.5	***3					50	---	---	7.0	2.0	6.5	36.0	VD			GALVANIZED	---				
5	T-7	1467+94	15.91	1	16.35	V	Y	N	25.0	3	36.0	3	46.0	3	57.0	4			60	19.50	90	7.5	2.0	9.0	41.0	VD			GALVANIZED	N				
---	---	---	---	2	15.80	V	Y	N	15.5	3	28.5	3	39.5	3					50	---	---	7.0	2.0	6.5	34.0	VD			GALVANIZED	---				
6	T-7	1468+61	16.82	1	16.55	V	Y	N	25.5	3	36.5	3	46.5	3	57.5	4			60	18.83	90	7.5	2.0	9.0	41.5	VD			GALVANIZED	N				
---	---	---	---	2	15.46	V	Y	N	20.5	3	34.5	***3	44.0	***3					50	---	---	7.0	2.0	6.5	39.0	VD			GALVANIZED	---				
---	---	---	---																	---	---													

*** SIGNAL HEAD POSITION EXCEEDS THE MAXIMUM 19 FEET ROADWAY CLEARANCE, FIELD ADJUST AND LOWER SIGNAL HEAD.

<table border="1"> <thead> <tr> <th colspan="4">REVISIONS</th> </tr> <tr> <th>DATE</th> <th>DESCRIPTION</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>				REVISIONS				DATE	DESCRIPTION	DATE	DESCRIPTION					JULIO C. DELGADO, P.E. P.E. LICENSE NUMBER 61661 SCALAR CONSULTING GROUP INC. 8751 W. BROWARD BOULEVARD, SUITE 307 PLANTATION, FLORIDA 33324			MANATEE COUNTY ROAD NO. SR 45 COUNTY MANATEE FINANCIAL PROJECT ID 433592-4-58-01			MAST ARM TABULATION SHEET				SHEET NO. T-8
REVISIONS																										
DATE	DESCRIPTION	DATE	DESCRIPTION																							

STANDARD MAST ARM ASSEMBLIES DATA TABLE											Table Date 11-01-16
STRUCTURE ID NUMBERS	DESIGNATION	FIRST ARM		SECOND ARM		UF (deg)	LL (deg)	POLE			DRILLED SHAFT ID
		ARM ID	FAA (ft.)	ARM ID	SAA (ft.)			POLE ID	UAA (ft.)	UB (ft.)	
1	A50D-A60/D-P5/D	A50D	N/A	A60D	N/A	90	N/A	P5/D	N/A	17' - 6"	DS/25/5.0
2	A60D-A60/D-P5/D	A60D	N/A	A60D	N/A	90	N/A	P5/D	N/A	18' - 11"	DS/25/5.0
3	A60D-A60/D-P5/D	A60D	N/A	A60D	N/A	270	N/A	P5/D	N/A	19' - 5"	DS/25/5.0
4	A60D-A50/D-P4/D	A60D	N/A	A50D	N/A	90	N/A	P4/D	N/A	20' - 0"	DS/18/5.0
5	A60D-A50/D-P4/D	A60D	N/A	A50D	N/A	90	N/A	P4/D	N/A	19' - 6"	DS/25/5.0
6	A60D-A50/D-P4/D	A60D	N/A	A50D	N/A	90	N/A	P4/D	N/A	18' - 10"	DS/20/5.0

NOTES [Notes Date 11-01-16]:

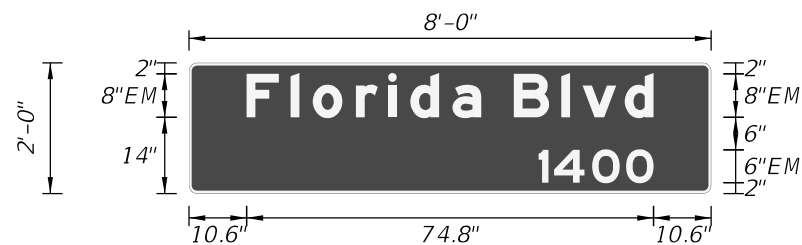
1. If an entry appears in column FAA, a shorter arm is required. This is obtained by removing length from the arm tip and the arm length shortened from FA to FAA. SAA Similar.
2. If an entry appears in column UAA, a shorter pole is required. This is obtained by removing length from the pole tip and the pole height shortened from UA to UAA.
3. Work this sheet with the Signal Designer's "Mast Arm Tabulation". See "Mast Arm Tabulation" for special instructions that include non-standard Handhole location, paint color, terminal compartment requirement, and pedestrian features.
4. Work with Index 649-030 and 649-031.
5. Design Wind Speed = 150 mph.

SOIL PROPERTIES			
Structure ID Number	N-Value	Effective Unit Weight (pcf)	Angle of Internal Friction (φ)
1	5	45.6	29
2	5	45.6	29
3	5	46.6	30
4	9	47.6	30
5	6	47.6	30
6	8	47.6	30

Design Water Table is at ground surface.

REVISIONS				DRAWN BY: HJS	MANATEE COUNTY			SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
				CHECKED BY: PZM/HNS	SR 45	MANATEE	433592-4-58-01	STANDARD MAST ARM ASSEMBLIES DATA TABLE T-9
				DESIGNED BY: HJS				
				CHECKED BY: PZM				

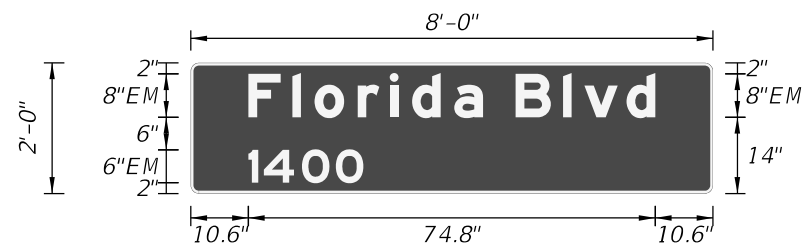
SIGN NAME A		QTY	I	SIGN NUMBER	STATION(S)
PANEL		BORDER		1338+14	
WIDTH	8'-0"	WIDTH	0.5"		
HEIGHT	2'-0"	RADII	1.5"		
LEGEND	White	COLOR	White		
COLOR	Green				
SYMBOL(S)	ANGLE	X	Y	WID	HT
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE	AVERAGE LENGTH	



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY	F	I	O	R	I	D	A	B	I	V	D	L				
SPACE	10.6	18.7	22.8	30.7	36.6	40.7	48.4	59.7	68.4	72.4	80.1	74.8				
COPY	1	4	0	0		L										
SPACE	64.3	67.1	74.1	80.4		21.1										
COPY																
SPACE																

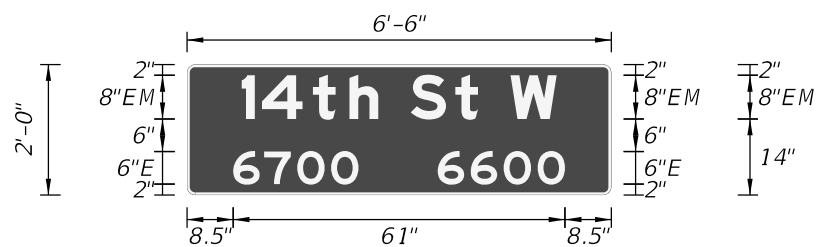
SIGN NAME B		QTY	I	SIGN NUMBER	STATION(S)
PANEL		BORDER		1338+94	
WIDTH	8'-0"	WIDTH	0.5"		
HEIGHT	2'-0"	RADII	1.5"		
LEGEND	White	COLOR	White		
COLOR	Green				
SYMBOL(S)	ANGLE	X	Y	WID	HT
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE	AVERAGE LENGTH	



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY	F	I	O	R	I	D	A	B	I	V	D	L				
SPACE	10.6	18.7	22.8	30.7	36.6	40.7	48.4	59.7	68.4	72.4	80.1	74.8				
COPY	1	4	0	0		L										
SPACE	10.6	13.4	20.4	26.7		21.1										
COPY																
SPACE																

SIGN NAME C		QTY	I	SIGN NUMBER	STATION(S)
PANEL		BORDER		1338+14	
WIDTH	6'-6"	WIDTH	0.5"		
HEIGHT	2'-0"	RADII	1.5"		
LEGEND	White	COLOR	White		
COLOR	Green				
SYMBOL(S)	ANGLE	X	Y	WID	HT
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE	AVERAGE LENGTH	



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY	1	4	t	h	S	t	W	L								
SPACE	10	13.8	23.2	29.9	41.2	49.3	59.5	57.9								
COPY	6	7	0	0		L										
SPACE	8.5	14.2	20.3	26.5		23										
COPY	6	6	0	0		L										
SPACE	46.1	52.2	58.2	64.5		23.4										
COPY																
SPACE																

SIGN NAME D		QTY	I	SIGN NUMBER	STATION(S)
PANEL		BORDER		1338+94	
WIDTH	6'-6"	WIDTH	0.5"		
HEIGHT	2'-0"	RADII	1.5"		
LEGEND	White	COLOR	White		
COLOR	Green				
SYMBOL(S)	ANGLE	X	Y	WID	HT
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE	AVERAGE LENGTH	



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY	1	4	t	h	S	t	W	L								
SPACE	10.2	14	23.3	30.1	41.3	49.5	59.7	57.9								
COPY	6	6	0	0		L										
SPACE	8.5	14.6	20.6	26.9		23.4										
COPY	6	7	0	0		L										
SPACE	46.5	52.2	58.2	64.5		23										
COPY																
SPACE																

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

JULIO C. DELGADO, P.E.
P.E. LICENSE NUMBER 61661
SCALAR CONSULTING GROUP INC.
8751 W. BROWARD BOULEVARD, SUITE 307
PLANTATION, FLORIDA 33324

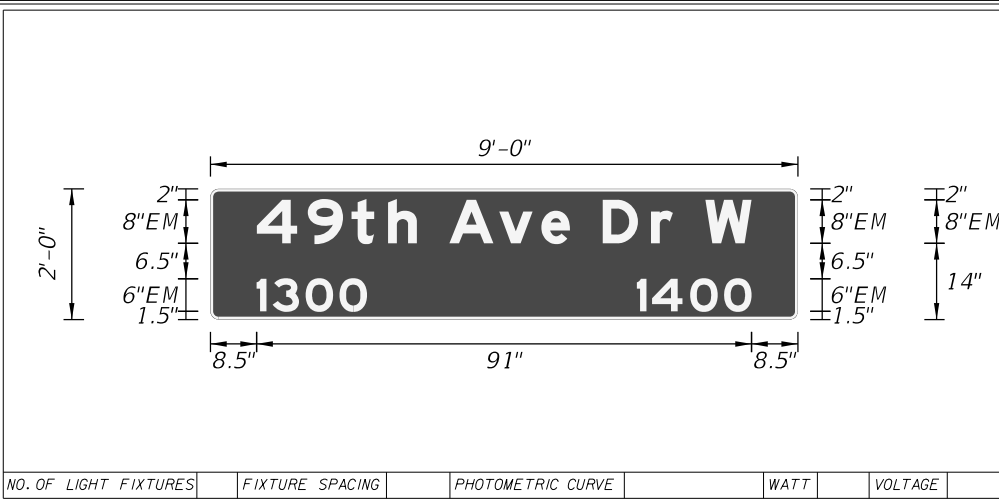
MANATEE COUNTY		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 45	MANATEE	433592-4-58-01

GUIDE SIGN WORKSHEET

SHEET NO.
T-10

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

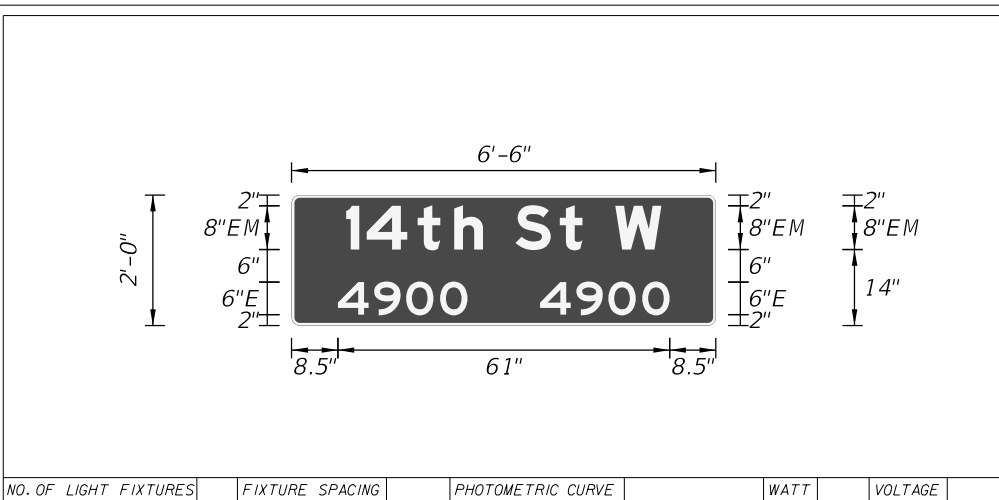
SIGN NAME	E	QTY	1	SIGN NUMBER	1452+70
PANEL	BORDER				
WIDTH	9'-0"	WIDTH	0.5"		
HEIGHT	2'-0"	RADII	1.5"		
LEGEND	White	COLOR	White		
COLOR	Green				
SYMBOL(S)	ANGLE	X	Y	WID	HT
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE	AVERAGE LENGTH	



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY		4	9	t	h	A	v	e	D	r	W	L								
SPACE	8.5	0	9.4	17.4	24.2	0	9.1	16.9	0	8.9	0	91								
COPY		1	3	0	0	L														
SPACE	8.5	0	2.9	9	15.2	20.3														
COPY		1	4	0	0	L														
SPACE	78.4	0	2.8	9.8	16.1	21.1														
COPY																				
SPACE																				
COPY																				
SPACE																				

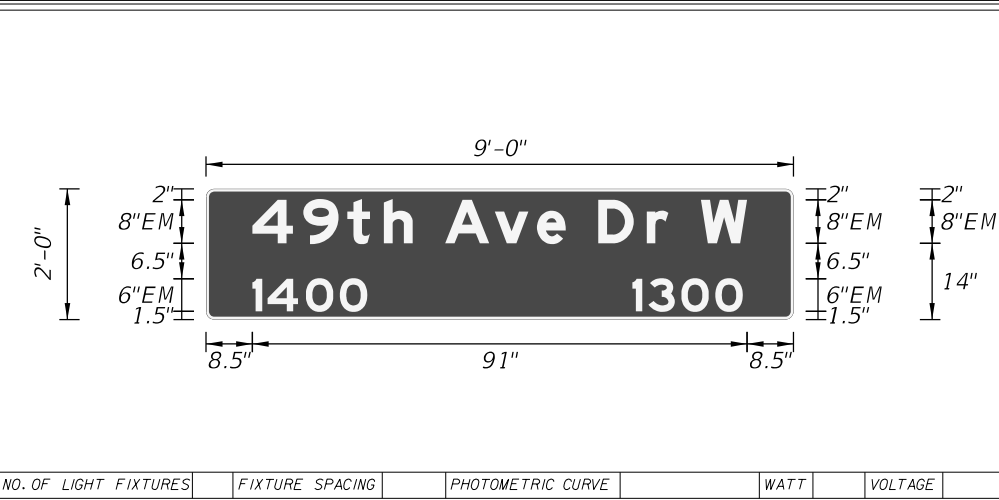
SIGN NAME	G	QTY	2	SIGN NUMBER	1452+70
PANEL	BORDER				
WIDTH	6'-6"	WIDTH	0.5"	1453+49	
HEIGHT	2'-0"	RADII	1.5"		
LEGEND	White	COLOR	White		
COLOR	Green				
SYMBOL(S)	ANGLE	X	Y	WID	HT
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE	AVERAGE LENGTH	



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY		1	4	t	h	S	t	W	L										
SPACE	10	3.8	9.4	6.7	5.3	6	8.2	4.2	6	8.5	10	57.9							
COPY		4	9	0	0	L													
SPACE	8.5	6.7	5.9	6.2	5	45.7	23.8												
COPY		4	9	0	0	L													
SPACE	45.7	6.7	5.9	6.2	5	8.5	23.8												
COPY																			
SPACE																			
COPY																			
SPACE																			

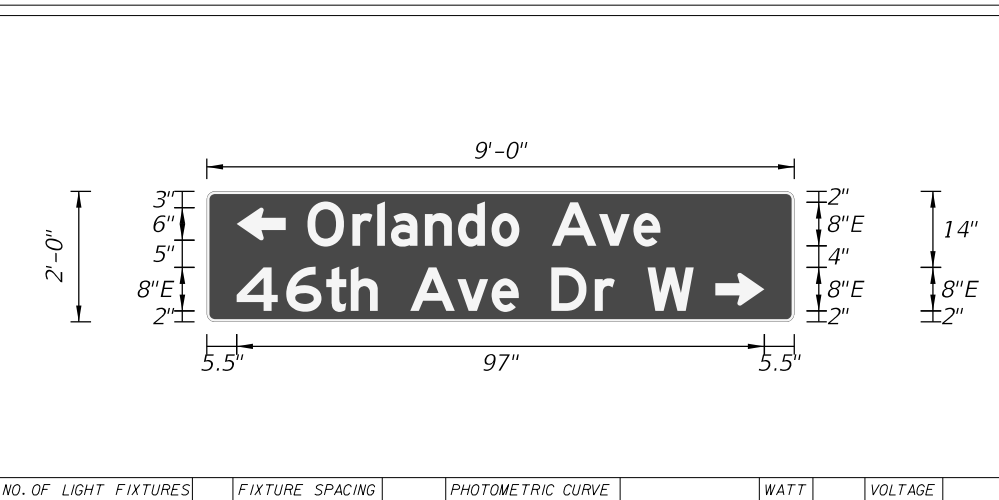
SIGN NAME	F	QTY	1	SIGN NUMBER	1453+49
PANEL	BORDER				
WIDTH	9'-0"	WIDTH	0.5"		
HEIGHT	2'-0"	RADII	1.5"		
LEGEND	White	COLOR	White		
COLOR	Green				
SYMBOL(S)	ANGLE	X	Y	WID	HT
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE	AVERAGE LENGTH	



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY		4	9	t	h	A	v	e	D	r	W	L							
SPACE	8.5	0	9.4	17.4	24.2	0	9.1	16.9	0	8.9	0	91							
COPY		1	4	0	0	L													
SPACE	8.5	0	2.8	9.8	16.1	21.1													
COPY		1	3	0	0	L													
SPACE	78.4	0	2.9	9	15.2	20.3													
COPY																			
SPACE																			
COPY																			
SPACE																			

SIGN NAME	H	QTY	1	SIGN NUMBER	1467+94
PANEL	BORDER				
WIDTH	9'-0"	WIDTH	0.5"		
HEIGHT	2'-0"	RADII	1.5"		
LEGEND	White	COLOR	White		
COLOR	Green				
SYMBOL(S)	ANGLE	X	Y	WID	HT
AR_Type D	90	5.5	15	6	9
AR_Type D	270	93.5	3	6	9
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE	AVERAGE LENGTH	



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY		O	r	l	a	n	d	o	A	v	e	L							
SPACE	18.5	0	8.2	12.8	15.4	21.6	27.7	33.8	0	8.6	15	64.9							
COPY		4	6	t	h	A	v	e	D	r	W	L							
SPACE	5.5	0	9.1	16.5	21	0	8.6	15	0	8	0	84							
COPY																			
SPACE																			
COPY																			
SPACE																			
COPY																			
SPACE																			

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

JULIO C. DELGADO, P.E.
P.E. LICENSE NUMBER 61661
SCALAR CONSULTING GROUP INC.
8751 W. BROWARD BOULEVARD, SUITE 307
PLANTATION, FLORIDA 33324

MANATEE COUNTY		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 45	MANATEE	433592-4-58-01

GUIDE SIGN WORKSHEET

SHEET NO.
T-11

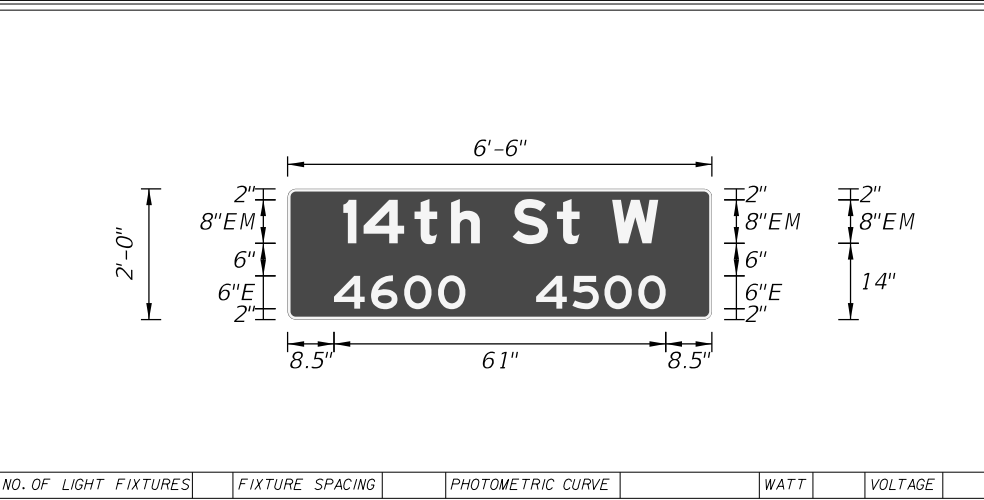
SIGN NAME I		QTY	SIGN NUMBER	STATION(S)
PANEL		BORDER		1468+61
WIDTH	9'-0"	WIDTH	0.5"	
HEIGHT	2'-0"	RADII	1.5"	
LEGEND	White	COLOR	White	
COLOR	Green			
SYMBOL(S)	ANGLE	X	Y	WID
AR_Type D	90	5.5	14	6
AR_Type D	270	93.5	2	6
HT				
HT				
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE	AVERAGE LENGTH



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY	4	6	t	h	A	v	e	D	r	W	L
SPACE	18.5	0	9.1	16.5	21	0	8.6	15	0	8	0
COPY	0	r	l	a	n	d	o	A	v	e	L
SPACE	24.6	0	8.2	12.8	15.4	21.6	27.7	33.8	0	8.6	15
COPY											
SPACE											
COPY											
SPACE											
COPY											
SPACE											
COPY											
SPACE											

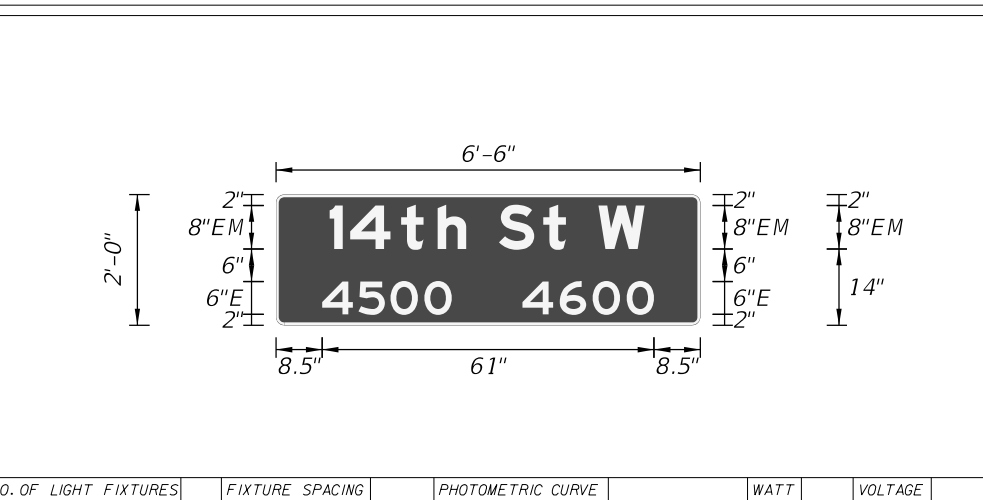
SIGN NAME J		QTY	SIGN NUMBER	STATION(S)
PANEL		BORDER		1467+94
WIDTH	6'-6"	WIDTH	0.5"	
HEIGHT	2'-0"	RADII	1.5"	
LEGEND	White	COLOR	White	
COLOR	Green			
SYMBOL(S)	ANGLE	X	Y	WID
HT				
HT				
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE	AVERAGE LENGTH



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY	1	4	t	h	S	t	W	L			
SPACE	10.2	0	3.8	13.1	19.8	0	8.2	0			
COPY	4	6	0	0	L						
SPACE	8.5	0	6.8	12.9	19.1	24.2					
COPY	4	5	0	0	L						
SPACE	45.7	0	6.7	12.5	18.8	23.8					
COPY											
SPACE											
COPY											
SPACE											
COPY											
SPACE											

SIGN NAME K		QTY	SIGN NUMBER	STATION(S)
PANEL		BORDER		1468+61
WIDTH	6'-6"	WIDTH	0.5"	
HEIGHT	2'-0"	RADII	1.5"	
LEGEND	White	COLOR	White	
COLOR	Green			
SYMBOL(S)	ANGLE	X	Y	WID
HT				
HT				
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE	AVERAGE LENGTH



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY	1	4	t	h	S	t	W	L			
SPACE	9.9	0	3.8	13.1	19.8	0	8.2	0			
COPY	4	5	0	0	L						
SPACE	8.5	0	6.7	12.5	18.8	23.8					
COPY	4	6	0	0	L						
SPACE	45.3	0	6.8	12.9	19.1	24.2					
COPY											
SPACE											
COPY											
SPACE											
COPY											
SPACE											

SIGN NAME		QTY	SIGN NUMBER	STATION(S)
PANEL		BORDER		
WIDTH		WIDTH		
HEIGHT		RADII		
LEGEND		COLOR		
COLOR				
SYMBOL(S)	ANGLE	X	Y	WID
HT				
HT				
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE	AVERAGE LENGTH

NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY											
SPACE											
COPY											
SPACE											
COPY											
SPACE											
COPY											
SPACE											
COPY											
SPACE											

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

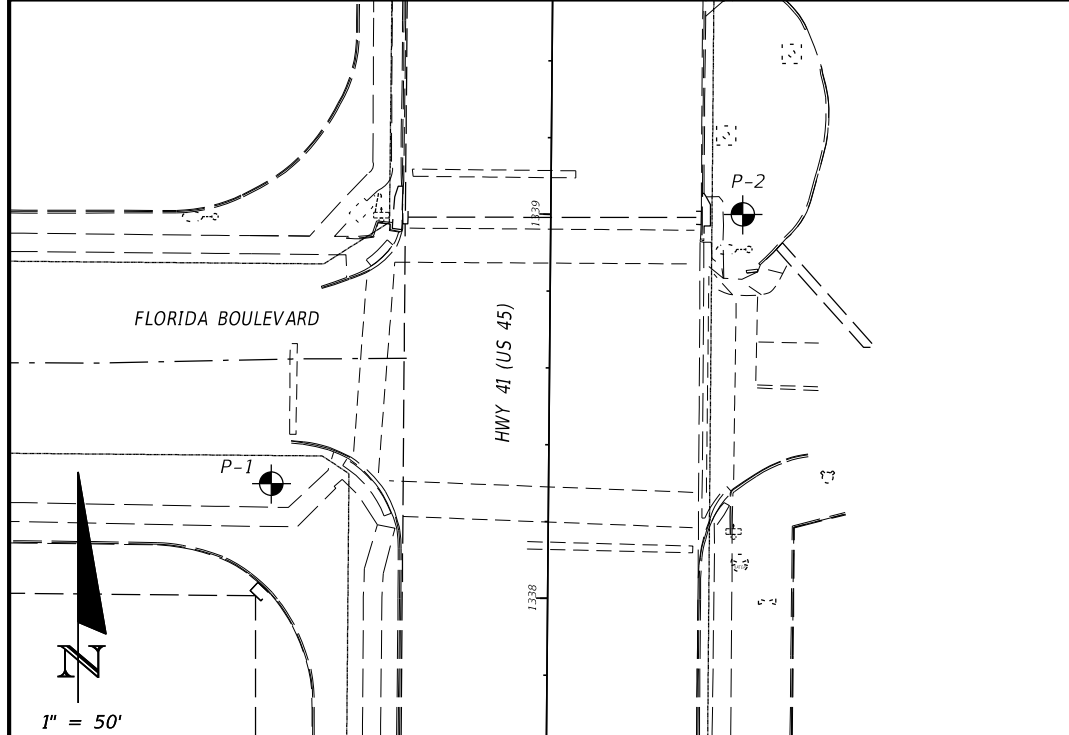
JULIO C. DELGADO, P.E.
P.E. LICENSE NUMBER 61661
SCALAR CONSULTING GROUP INC.
8751 W. BROWARD BOULEVARD, SUITE 307
PLANTATION, FLORIDA 33324

MANATEE COUNTY		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 45	MANATEE	433592-4-58-01

GUIDE SIGN WORKSHEET

SHEET NO.
T-12

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



SOIL PARAMETERS					
BORING	ELEVATION (FEET, NAVD 88)	TOTAL UNIT WT. (pcf)	SUBMERGED UNIT WT. (pcf)	ANGLE OF INTERNAL FRICTION (DEGREES)	COHESION (psf)
P-1	+11 TO -11.5	108	45.6	29	--
	-11.5 TO -19	128	65.6	35	--
P-2	+13 TO +5	108	45.6	29	--
	+5 TO -4.5	112	49.6	32	--
	-4.5 TO -9.5	110	47.6	30	--
	-9.5 TO -17	128	65.6	35	--

SUBMERGED UNIT WEIGHT SHOULD BE USED BELOW THE WATER TABLE.
 CEMENTED SOILS WERE ENCOUNTERED WITHIN THE BORINGS. THIS MATERIAL WILL BEHAVE AS ROCK AND IS LOCATED AT RELATIVELY SHALLOW DEPTHS. EXCAVATIONS INTO AND/OR THROUGH CEMENTED SOILS WILL BE DIFFICULT AND WILL REQUIRE NON CONVENTIONAL CONSTRUCTION TECHNIQUES AND SPECIALIZED EQUIPMENT.

- LEGEND:**
- SAND: Sand with ≤ 12% fines
 - Clayey Silty SAND: Sand with 12% to 50% Silt or Clay
 - Silty SAND: Sand with 12% to 50% Silt

Numbers to the left of borings indicate SPT values for 12" penetration (unless otherwise noted).

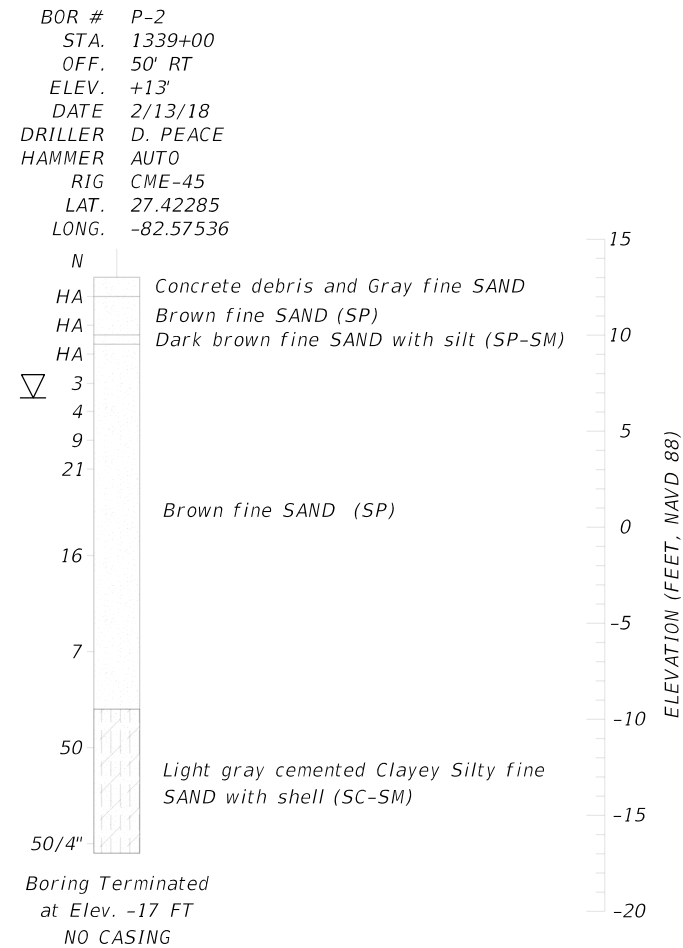
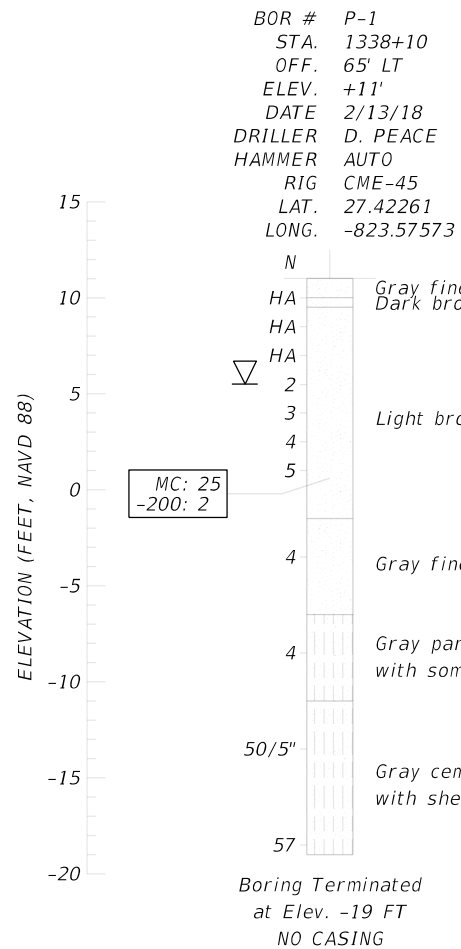
Elevations were estimated using Google Earth PRO. Geographical GPS coordinate locations were determined using estimations from existing site features and Google Earth PRO. The boring logs shown represent subsurface conditions within the borehole at time of drilling. No warranty as to the subsurface condition, strata depth of soil consistency between or outside boring locations is expressed or implied by this drawing

- Water Table existing at time of boring
- SPT Boring Location
- HA - Hand Augered to the depth of 4.5 feet below the existing ground surface
- 200 - Percent Passing the no. 200 Standard Sieve
- MC - Percent Moisture Content

ENVIRONMENTAL CLASSIFICATION
 Superstructure - Slightly Aggressive
 Substructure - Slightly Aggressive (Steel)
 Slightly Aggressive (Concrete)

CORROSION SERIES TEST RESULTS

RESISTIVITY	CHLORIDE	SULFATES	pH	
ohm-cm	ppm	ppm		(SOIL)
5,000-18,000	20	18-24	7.1-8.2	



GRANULAR MATERIALS

Relative Density	Safety Hammer	Automatic Hammer
	SPT N-Value Blows/Foot	SPT N-Value Blows/Foot
Very Loose	Less than 4	Less than 3
Loose	4 - 10	3 - 8
Medium Dense	10 - 30	8 - 24
Dense	30 - 50	24 - 40
Very Dense	Greater than 50	Greater than 40

SILTS AND CLAYS

Consistency	Safety Hammer	Automatic Hammer
	SPT N-Value Blows/Foot	SPT N-Value Blows/Foot
Very Soft	Less than 2	Less than 1
Soft	2 - 4	1 - 3
Firm	4 - 8	3 - 6
Stiff	8 - 15	6 - 12
Very Stiff	15 - 30	12 - 24
Hard	Greater than 30	Greater than 24

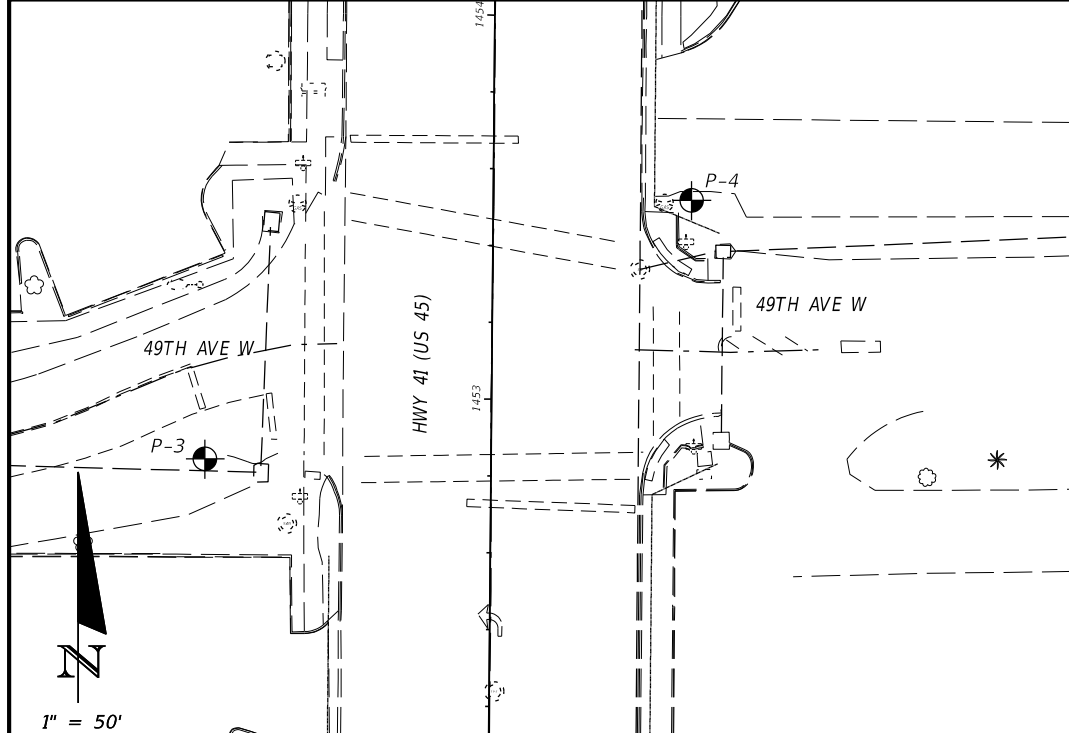
REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
 JERRY H. KUEHN, P.E. NO. 35557
 ARDAMAN AND ASSOCIATES, INC.
 1724 BARBER ROAD
 SARASOTA, FLORIDA 34240
 CERTIFICATE OF AUTHORIZATION NO. 5950

DRAWN BY: AJD	MANATEE COUNTY		
CHECKED BY: GS	ROAD NO.	COUNTY	FINANCIAL PROJECT ID
DESIGNED BY:	SR 45	MANATEE	433592-4-58-01
CHECKED BY:			

SHEET TITLE:	REPORT OF CORE BORINGS FOR SIGNALS	REF. DWG. NO.
PROJECT NAME:	SR 45 (US 41) MANATEE COUNTY	SHEET NO.
		T-13

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



SOIL PARAMETERS					
BORING	ELEVATION (FEET, NAVD 88)	TOTAL UNIT WT. (pcf)	SUBMERGED UNIT WT. (pcf)	ANGLE OF INTERNAL FRICTION (DEGREES)	COHESION (psf)
P-3	+15 TO +2.5	109	46.6	30	--
	+2.5 TO -2.5	118	55.6	35	--
	-2.5 TO -7.5	112	49.6	32	--
	-7.5 TO -15	128	65.6	35	--
P-4	+15 TO -8.5	110	47.6	30	--
	-8.5 TO -11	117	54.6	--	2200
	-11 TO -15	128	65.6	35	--

SUBMERGED UNIT WEIGHT SHOULD BE USED BELOW THE WATER TABLE. CEMENTED SOILS WERE ENCOUNTERED WITHIN THE BORINGS. THIS MATERIAL WILL BEHAVE AS ROCK AND IS LOCATED AT RELATIVELY SHALLOW DEPTHS. EXCAVATIONS INTO AND/OR THROUGH CEMENTED SOILS WILL BE DIFFICULT AND WILL REQUIRE NON CONVENTIONAL CONSTRUCTION TECHNIQUES AND SPECIALIZED EQUIPMENT.

- LEGEND:**
- SAND: Sand with ≤ 12% fines
 - Sandy CLAY: Clay with > 30% Sand
 - Silty SAND: Sand with 12% to 50% Silt
 - Fat Clay - Fat clay, high plasticity

Numbers to the left of borings indicate SPT values for 12" penetration (unless otherwise noted).

Elevations were estimated using Google Earth PRO. Geographical GPS coordinate locations were determined using a estimations from existing site features and Google Earth PRO. The boring logs shown represent subsurface conditions within the borehole at time of drilling. No warranty as to the subsurface condition., strata depth of soil consistency between or outside boring locations is expressed or implied by this drawing

- Water Table existing at time of boring
- SPT Boring Location
- HA - Hand Augered to the depth of 4.5 feet below the existing ground surface
- 200 - Percent Passing the no. 200 Standard Sieve
- MC - Percent Moisture Content

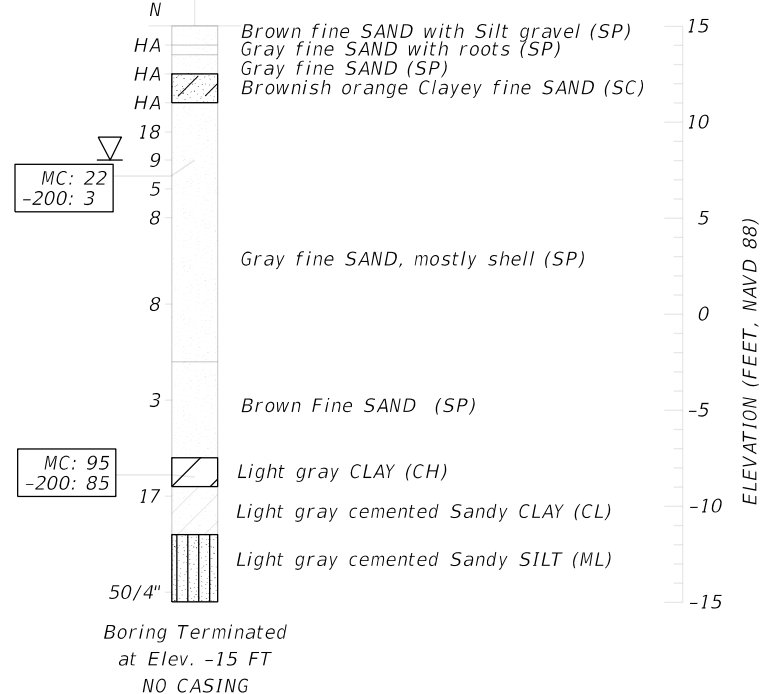
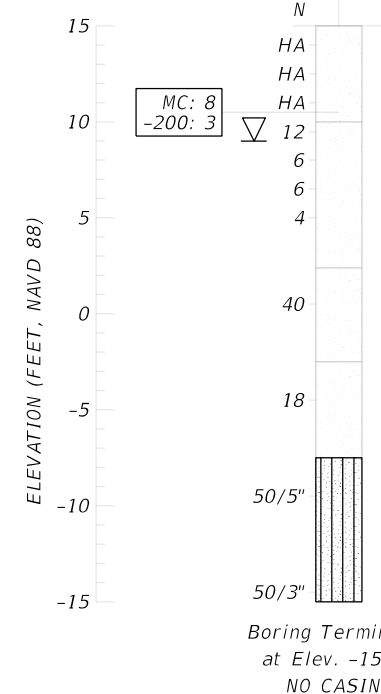
ENVIRONMENTAL CLASSIFICATION
 Superstructure - Slightly Aggressive
 Substructure - Slightly Aggressive (Steel)
 Slightly Aggressive (Concrete)

CORROSION SERIES TEST RESULTS

RESISTIVITY	CHLORIDE	SULFATES	pH	
ohm-cm	ppm	ppm		(SOIL)
5,000-18,000	20	18-24	7.1-8.2	

BOR # P-3
 STA. 1452+70
 OFF. 50' LT
 ELEV. +15'
 DATE 2/13/18
 DRILLER D. PEACE
 HAMMER AUTO
 RIG CME-45
 LAT. 27.45408
 LONG. -82.57566

BOR # P-4
 STA. 1453+40
 OFF. 60' RT
 ELEV. +15'
 DATE 2/13/18
 DRILLER D. PEACE
 HAMMER AUTO
 RIG CME-45
 LAT. 27.45426
 LONG. -82.57517



GRANULAR MATERIALS

Relative Density	Safety Hammer	Automatic Hammer
	SPT N-Value Blows/Foot	SPT N-Value Blows/Foot
Very Loose	Less than 4	Less than 3
Loose	4 - 10	3 - 8
Medium Dense	10 - 30	8 - 24
Dense	30 - 50	24 - 40
Very Dense	Greater than 50	Greater than 40

SILTS AND CLAYS

Consistency	Safety Hammer	Automatic Hammer
	SPT N-Value Blows/Foot	SPT N-Value Blows/Foot
Very Soft	Less than 2	Less than 1
Soft	2 - 4	1 - 3
Firm	4 - 8	3 - 6
Stiff	8 - 15	6 - 12
Very Stiff	15 - 30	12 - 24
Hard	Greater than 30	Greater than 24

REVISIONS

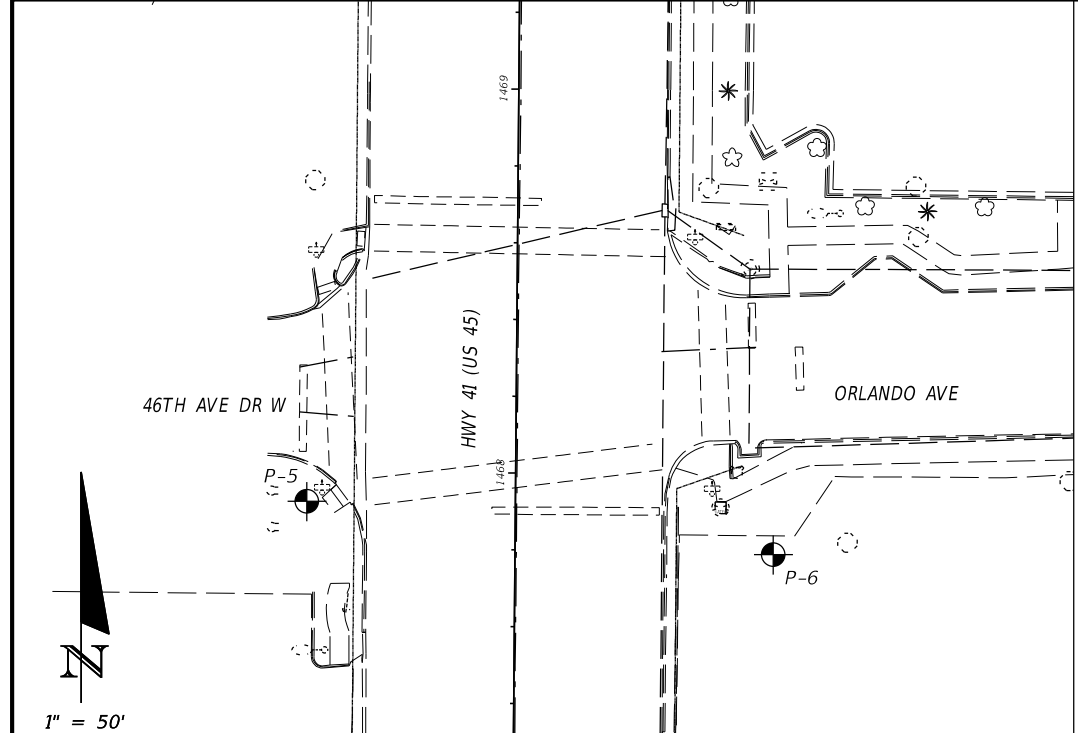
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
 JERRY H. KUEHN, P.E. NO. 35557
 ARDAMAN AND ASSOCIATES, INC.
 1724 BARBER ROAD
 SARASOTA, FLORIDA 34240
 CERTIFICATE OF AUTHORIZATION NO. 5950

DRAWN BY: AJD	MANATEE COUNTY		
CHECKED BY: GS	ROAD NO.	COUNTY	FINANCIAL PROJECT ID
DESIGNED BY:	SR 45	MANATEE	433592-4-58-01
CHECKED BY:			

SHEET TITLE:	REPORT OF CORE BORINGS FOR SIGNALS	REF. DWG. NO.
PROJECT NAME:	SR 45 (US 41) MANATEE COUNTY	SHEET NO.
		T-14

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



SOIL PARAMETERS

BORING	ELEVATION (FEET, NAVD 88)	TOTAL UNIT WT. (pcf)	SUBMERGED UNIT WT. (pcf)	ANGLE OF INTERNAL FRICTION (DEGREES)	COHESION (psf)
P-5	+13 TO -4.5	110	47.6	30	--
	-4.5 TO -9.5	109	46.6	--	500
	-9.5 TO -17	114	51.6	--	1700
P-6	+12 TO +4.5	110	47.6	30	--
	+4.5 TO -0.5	117	54.6	35	--
	-0.5 TO -5	110	47.6	30	--
	-5 TO -15	110	47.6	--	750
	-15 TO -18	128	65.6	35	--

SUBMERGED UNIT WEIGHT SHOULD BE USED BELOW THE WATER TABLE. CEMENTED SOILS WERE ENCOUNTERED WITHIN THE BORINGS. THIS MATERIAL WILL BEHAVE AS ROCK AND IS LOCATED AT RELATIVELY SHALLOW DEPTHS. EXCAVATIONS INTO AND/OR THROUGH CEMENTED SOILS WILL BE DIFFICULT AND WILL REQUIRE NON CONVENTIONAL CONSTRUCTION TECHNIQUES AND SPECIALIZED EQUIPMENT.

LEGEND:

- SAND: Sand with ≤ 12% fines
- Clayey SAND: Sand with 12% to 50% Clay
- Silty SAND: Sand with 12% to 50% Silt
- Clayey Silty SAND: Sand with 12% to 50% Silt or Clay
- Fat Clay - Fat clay, high plasticity

Numbers to the left of borings indicate SPT values for 12" penetration (unless otherwise noted).

Elevations were estimated using Google Earth PRO. Geographical GPS coordinate locations were determined using estimations from existing site features and Google Earth PRO. The boring logs shown represent subsurface conditions within the borehole at time of drilling. No warranty as to the subsurface condition, strata depth of soil consistency between or outside boring locations is expressed or implied by this drawing

- Water Table existing at time of boring
- SPT Boring Location

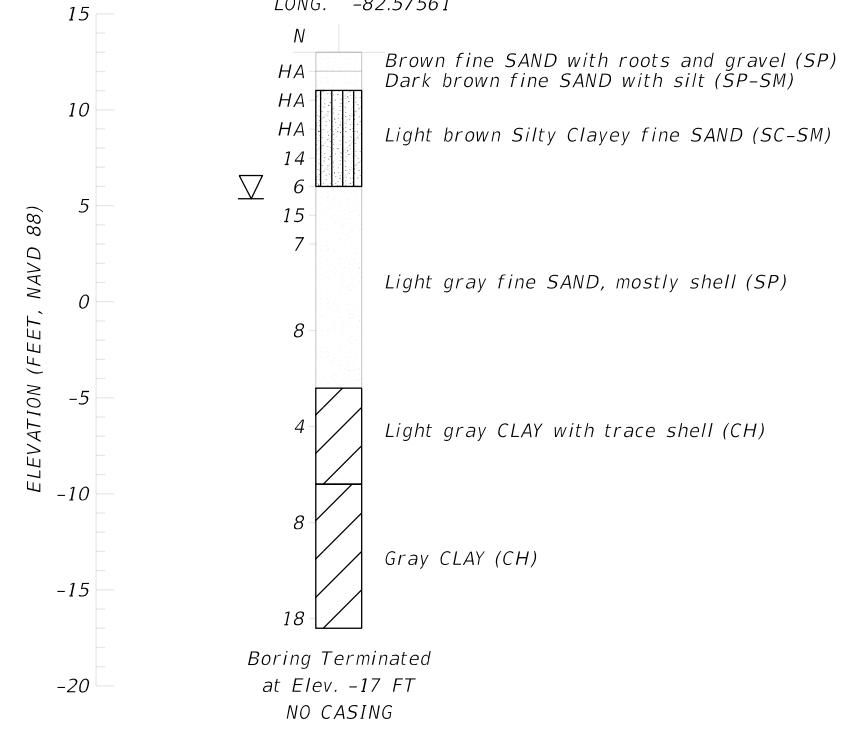
- HA - Hand Augered to the depth of 4.5 feet below the existing ground surface
- 200 - Percent Passing the no. 200 Standard Sieve
- MC - Percent Moisture Content

ENVIRONMENTAL CLASSIFICATION
 Superstructure - Slightly Aggressive
 Substructure - Slightly Aggressive (Steel)
 Slightly Aggressive (Concrete)

CORROSION SERIES TEST RESULTS

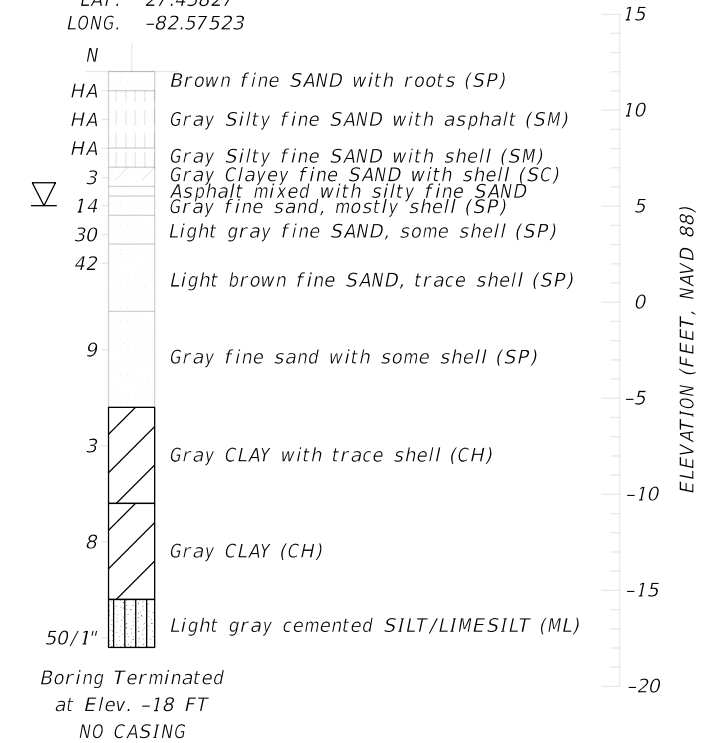
RESISTIVITY	CHLORIDE	SULFATES	pH	
ohm-cm	ppm	ppm		(SOIL)
5,000-18,000	20	18-24	7.1-8.2	

BOR # P-5
 STA. 1467+95
 OFF. 60' LT
 ELEV. +13'
 DATE 2/14/18
 DRILLER D. PEACE
 HAMMER AUTO
 RIG CME-45
 LAT. 27.45826
 LONG. -82.57561



Boring Terminated at Elev. -17 FT
 NO CASING

BOR # P-6
 STA. 1468+10
 OFF. 62' RT
 ELEV. +12'
 DATE 2/14/18
 DRILLER D. PEACE
 HAMMER AUTO
 RIG CME-45
 LAT. 27.45827
 LONG. -82.57523



Boring Terminated at Elev. -18 FT
 NO CASING

GRANULAR MATERIALS

Relative Density	Safety Hammer	Automatic Hammer
	SPT N-Value Blows/Foot	SPT N-Value Blows/Foot
Very Loose	Less than 4	Less than 3
Loose	4 - 10	3 - 8
Medium Dense	10 - 30	8 - 24
Dense	30 - 50	24 - 40
Very Dense	Greater than 50	Greater than 40

SILTS AND CLAYS

Consistency	Safety Hammer	Automatic Hammer
	SPT N-Value Blows/Foot	SPT N-Value Blows/Foot
Very Soft	Less than 2	Less than 1
Soft	2 - 4	1 - 3
Firm	4 - 8	3 - 6
Stiff	8 - 15	6 - 12
Very Stiff	15 - 30	12 - 24
Hard	Greater than 30	Greater than 24

REVISIONS						ENGINEER OF RECORD: JERRY H. KUEHN, P.E. NO. 35557 ARDAMAN AND ASSOCIATES, INC. 1724 BARBER ROAD SARASOTA, FLORIDA 34240 CERTIFICATE OF AUTHORIZATION NO. 5950	DRAWN BY: AJD	CHECKED BY: GS	DESIGNED BY:	CHECKED BY:	MANATEE COUNTY			SHEET TITLE: REPORT OF CORE BORINGS FOR SIGNALS	REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION						ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
											SR 45	MANATEE	433592-4-58-01	SR 45 (US 41) MANATEE COUNTY	T-15

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.