

STATE OF FLORIDA
COUNTY OF MANATEE

CONTRACT PLAN COMPONENTS

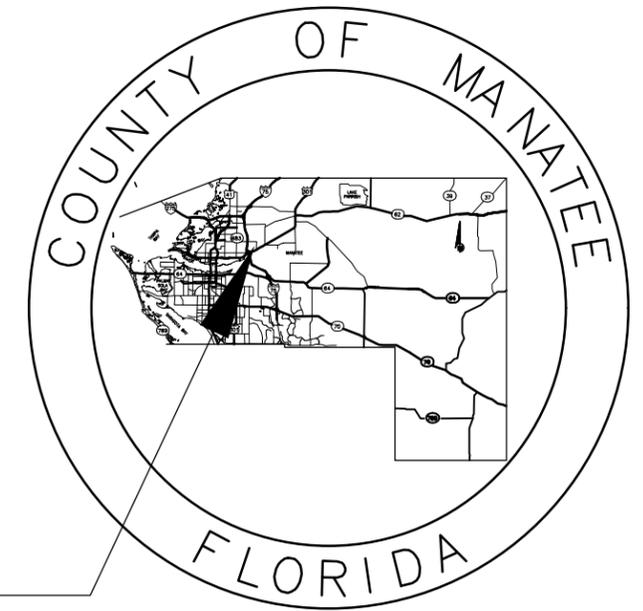
SIGNALIZATION PLANS

INDEX OF SIGNALIZATION PLANS

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*PROPOSED SIGNALIZATION PLANS FOR
 69TH STREET EAST INTERSECTION IMPROVEMENTS
 ELLENTON, FLORIDA*

MANATEE COUNTY PROJECT No: 6083160



LOCATION OF PROJECT

**CONSTRUCTION PLANS
 JANUARY 2023**



ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN ENLARGED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.



Know what's below
 Call before you dig

MANATEE COUNTY PROJECT MANAGER: JIM SHULER, P.E.

GOVERNING DESIGN STANDARDS:

FLORIDA DEPARTMENT OF TRANSPORTATION, FY 2022-23 DESIGN STANDARDS eBOOK (DSeB) AND APPLICABLE DESIGN STANDARDS REVISIONS (DSRs) AT THE FOLLOWING WEBSITE:

<https://www.fdot.gov/design/standardplans/current/default.shtm>

GOVERNING STANDARD SPECIFICATIONS:

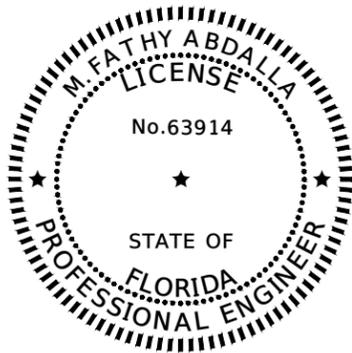
FLORIDA DEPARTMENT OF TRANSPORTATION, JULY 2022 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AT THE FOLLOWING WEBSITE:

<http://www.fdot.gov/programmanagement/Implemented/SpecBooks>

CONSTRUCTION CONTRACT NO.	FISCAL YEAR	SHEET NO.
N/A	23	T-1

M:\620160100_Manatee_County_Transportation_Services\WD 1 - 60th Ave\Segment 3\signal\KEYSSG02.dwg 11/9/2023 2:14 PM

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M. Fathy Abdalla 2023.01.11 15:57:22 -05'00'

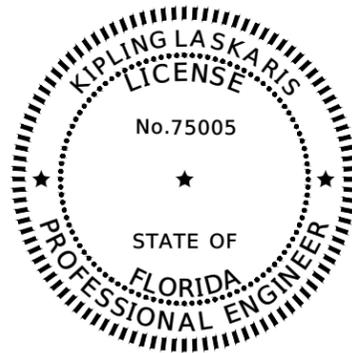
ON THE DATE ADJACENT TO THE SEAL

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KISINGER CAMPO & ASSOCIATES CORP.
201 N FRANKLIN ST, SUITE 400,
TAMPA, FL 33602
M. FATHY ABDALLA, P.E. NO. 63914

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

SHEET NO.	DESCRIPTION
T-1	KEY SHEET
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T-5	SIGNALIZATION PLAN (1)
T-6	GUIDE SIGN WORKSHEET
T-7	MAST ARM TABULATION
T-8	PROPOSED SIGNALIZATION PLAN (2) BID OPTION



THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY

Kipling Laskaris 2023.01.12 08:19:59 -05'00'

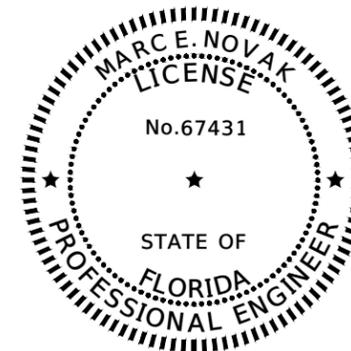
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KISINGER CAMPO & ASSOCIATES CORP.
201 N FRANKLIN ST, SUITE 400,
TAMPA, FL 33602
KIPLING LASKARIS, P.E. NO. 75005

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SHEET NO.	DESCRIPTION
T-2	SIGNATURE SHEET
T-9	STANDARD MAST ARM ASSEMBLIES DATA TABLE
T-10	SPECIAL MAST ARM ASSEMBLIES DATA TABLE



THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY

Marc E Novak Digitally signed by Marc E Novak Date: 2023.01.12 09:33:00-05'00'

ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

TIERRA
7351 TEMPLE TERRACE HIGHWAY
TAMPA, FLORIDA 33637
MARC E. NOVAK, P.E. NO. 67431

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

SHEET NO.	DESCRIPTION
T-2	SIGNATURE SHEET
T-11	SIGNAL REPORT OF CORE BORINGS

M:\20160100_Manatee_County_Transportation_Services\WD 1 - 60th Ave\Segment 3\signals\SIGNSG301.dwg [12/28/2022 10:38 AM]

NUMBER	DESCRIPTION	DATE	PROJECT #	6083160	SURVEYED	RPH	5/2018
			SURVEY #	N/A	DESIGNED	NSL	1/2023
			SEC./TWN./RGE	28/33S/18E	DRAWN	NSL	1/2023
			SCALE	N.T.S.	CHECKED	JR	1/2023

M. FATHY ABDALLA, P.E.
P.E. LICENSE NUMBER 63914
KISINGER CAMPO & ASSOCIATES CORP.
201 N. FRANKLIN STREET
SUITE 400
TAMPA, FL 33602



PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

SIGNATURE SHEET

SHEET NO.
T-2

GENERAL NOTES

1. THE CONTRACTOR SHALL CONTACT MANATEE COUNTY TRAFFIC ENGINEERING DIVISION BEFORE STARTING WORK.
2. AT LEAST (5) BUSINESS DAYS PRIOR TO BEGINNING THE TRAFFIC SIGNAL INSTALLATION, THE CONTRACTOR SHALL NOTIFY THE FOLLOWING DEPARTMENTS TO INFORM THEM OF CONSTRUCTION OPERATIONS:

MANATEE COUNTY TRAFFIC OPERATIONS DIVISION:
 MR. AARON BURKETT
 2904 12th STREET COURT EAST
 BRADENTON, FLORIDA 34208
 PHONE #: (941) 708-7450, EXT. 7509

MANATEE COUNTY TRAFFIC ENGINEERING DIVISION:
 MR. VISHAL KAKKAD, P.E. PTOE
 2101 47th TERRACE EAST
 BRADENTON, FLORIDA 34208
 PHONE #: (941) 708-7463, EXT. 7812

3. FORTY-EIGHT (48) HOURS PRIOR TO CONTRACT START DATE, THE CONTRACTOR SHALL NOTIFY THE FOLLOWING AGENCIES IN WRITING GIVING THE LOCATION, START DATE AND EMERGENCY NUMBERS FOR AFTER HOURS REPAIRS:

FLORIDA HIGHWAY PATROL:
 POST OFFICE BOX 20009
 BRADENTON, FLORIDA 34203
 PHONE #: (941) 751-7646

MANATEE SHERIFF'S OFFICE:
 515 11th STREET WEST
 BRADENTON, FLORIDA 34205
 PHONE #: (941) 747-3011

4. THE CONTRACTOR SHALL HAVE AN IMSA CERTIFIED LEVEL II (ELECTRONICS OR ELECTRICAL TECHNICIAN) AT THE JOB SITE AT ALL TIMES WHILE WORK IS BEING PERFORMED. ALL SIGNAL INSTALLATION TECHNICIANS SHALL HAVE MINIMUM OF IMSA LEVEL I CERTIFICATION.

5. DELIVER THREE (3) SETS OF AS-BUILT PLANS TO MR. MUKUNDA GOPALAKRISHNA, SR. PROJECT ENGINEER IN TRAFFIC ENGINEERING DIVISION AT 2101 47th TERRACE EAST, BRADENTON, FLORIDA 34208.

SR. PROJECT ENGINEER IN TRAFFIC ENGINEERING DIVISION:
 MR. MUKUNDA GOPALAKRISHNA, P.E. PTOE
 2101 47th TERRACE EAST
 BRADENTON, FLORIDA 34208
 PHONE #: (941) 749-3500. EXT. 7813

DELIVER THREE (3) SETS OF RECORD DRAWINGS, TWO (2) SETS OF IMSA FORMS AND ONE (1) COMPACT DISC OF RECORDING DRAWINGS TO MR. AARON BURKETT, AT 2904 12th STREET COURT EAST, BRADENTON, FLORIDA 34208. RECORD DRAWINGS MUST BE DELIVERED FIVE (5) BUSINESS DAYS PRIOR TO SCHEDULING THE FINAL INSPECTION.

6. PRIOR TO ORDERING MATERIALS, THE SIGNAL CONTRACTOR SHALL CONTACT THE TRAFFIC OPERATION DIVISION AND VERIFY CURRENT COLOR CODES TO BE USED FOR SIGNAL AND INTERCONNECT CABLE.
7. UPON PASSING THE FINAL INSPECTION, THE CONTRACTOR SHALL SEND A WRITTEN REQUEST TO THE MANATEE COUNTY TRAFFIC OPERATIONS DIVISION TO TRANSFER MAINTENANCE FROM THE CONTRACTOR TO MANATEE COUNTY.
8. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT THE LOCAL POWER COMPANY PROVIDING ELECTRICAL POWER TO DETERMINE IF A SERVICE PROCESSING IS FEE IS REQUIRED
9. THE LOCATION OF UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR, VIA SUNSHINE STATE ONE CALL OF FLORIDA, INC. AT 1-800-432-4770, IN COORDINATION WITH UNDERGROUND AND OVERHEAD UTILITY OWNERS. THE CONTRACTOR SHALL NOTIFY UTILITY OWNERS/AGENCIES LISTED WITHIN OR

IMPACTED BY THESE PLANS, NOT LESS THAN TWO (2) FULL BUSINESS DAYS IN ADVANCE OF BEGINNING CONSTRUCTION.

10. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS IN ADVANCE OF POLE SETTING OPERATIONS WHERE CONFLICT WITH OVERHEAD ELECTRICAL CONDUCTORS IS EXPECTED AND, IN ALL CASES WHERE JOINT USE POLES ARE CALLED FOR.

THE CONTRACTOR SHALL CONTACT THE LOCAL POWER COMPANY FOR THEIR ASSISTANCE IN PERFORMING ALL NECESSARY WORK UNDER POWER LINES AT SIGNAL POLES, SUCH AS INSTALLATION OF SIGNAL CABLE, FIBERGLASS INSULATORS, AND SIGNAL POLES.

ALL LOCATIONS WHERE THE REQUIRED VERTICAL CLEARANCE TO THE POWER LINE CANNOT BE MAINTAINED, A QUALIFIED REPRESENTATIVE FROM THE POWER COMPANY SHALL BE PRESENT DURING ALL WORK UNDER POWER LINES. ANY COST RELATED TO THIS SHALL BE INCLUDED IN THE RELATED PAY ITEMS.

11. THE CONTRACTOR SHALL HAND DIG THE FIRST 48 INCHES OF THE HOLE FOR THE POLE FOUNDATION OR THE CONDUIT RUN WHERE UTILITIES ARE IN CLOSE PROXIMITY.
12. ALL MATERIALS, EQUIPMENT, AND OTHER CONTRACTOR SUPPLIED ITEMS SHALL BE INSTALLED AND MAINTAINED ACCORDING TO THE MANUFACTURER'S RECOMMENDATION, UNLESS SPECIFICALLY DIRECTED OTHERWISE BY THE ENGINEER.
13. THE CONTRACTOR SHALL SUPPLY ALL MATERIAL SUBMITTALS TO THE ENGINEER, PRIOR TO CONSTRUCTION, FOR APPROVAL.
14. ELEVATION OF THE TOP OF MAST ARM FOUNDATION SHALL BE SIX (6) INCHES ABOVE EXISTING GRADE, UNLESS LOCATED DIRECTED AT THE BACK OF SIDEWALK. IF LOCATED AT BACK OF SIDEWALK, THE FOUNDATION ELEVATION SHALL MATCH SIDEWALK GRADE. SEE TOP OF FOUNDATION ELEVATION ON 'MAST ARM TABULATION SHEET'.

TRAFFIC CONTROLLER CABINET AND CONTROLLER ASSEMBLY

1. ALL TRAFFIC SIGNAL CONTROLLER CABINETS SHOULD BE TYPE VI.
2. ALL SIGNAL CONTROLLER CABINETS SHALL HAVE A FRONT AND BACK DOOR.
3. PROVIDE ONE (1) PHOTOCCELL OUTSIDE THE RESPECTIVE DISCONNECT BOX FOR INTERNALLY ILLUMINATED STREET NAME SIGNS.
4. CONTROLLER CABINET SHALL BE WIRED FOR SOP 10 REGARDLESS OF THE PROPOSED SIGNAL OPERATION AT THE PROJECT'S INTERSECTION. HOWEVER, THE CONTROLLER SHALL BE PROGRAMMED ACCORDING TO THE PROPOSED SOP AS SHOWN ON THE TRAFFIC SIGNAL PLAN.
5. THE MOUNTING SURFACE OF THE CONTROLLER CABINET SHOULD BE ORIENTED TO ENSURE THE MAIN CABINET DOOR WILL OPEN AWAY FROM ONCOMING TRAFFIC.
6. THE UPS SHALL BE MOUNTED TO THE SIDE OF THE TRAFFIC SIGNAL CONTROLLER CABINET IN A MANNER DOES NOT OBSTRUCT ACCESS TO NEARBY TRAFFIC SIGNAL EQUIPMENT.
7. THE PROJECT IS TO FURNISH AND INSTALL A COMPLETE UPS ASSEMBLY THAT INCLUDES A CABINET AND BATTERIES TO MEET COUNTY SPECIFICATIONS.
8. PROVIDE ONE (1) UNINTERRUPTIBLE POWER SUPPLE (UPS) MODEL No. ALPHA FXM 110 EQUIPPED WITH AN ETHERNET PORT. ALL UPS'S SHALL SUPPORT SNMP (PROTOCOL) FOR REMOTE MONITORING AND MANAGEMENT.
9. THE CONTROLLER CABINET SHALL BE NAZTEC 980 ATC, COMPATIBLE WITH MANATEE COUNTY ATMS.NOW SYSTEM. THE CONTROLLER SUPPLIED WITH THE CABINET SHALL COME EQUIPPED WITH FOUR (4) SERIES PORT, ONE (1) ETHERNET PORT AND ONE (1) USB PORT.

SIGNAL HEADS AND INTERNALLY ILLUMINATED SIGNS

1. USE ALUMINUM LOUVERED BACK PLATES ON ALL VEHICULAR SIGNAL HEADS. ALL BACK PLATES SHALL INCLUDE A 2" YELLOW REFLECTED (TYPE III REFLECTIVITY) OUTER EDGE BORDER. (FOR MAST ARMS).
 2. USE LOCKING COLLARDS FOR MOUNTING PEDESTRIAN SIGNAL HEADS TO PEDESTRIAN PEDESTALS.
 3. INTERNALLY ILLUMINATED SIGNS SHALL BE RIGIDLY ATTACHED TO THE MAST ARM AS SHOWN IN THE PLANS.
- DETECTION
1. STOP BAR VEHICLE DETECTION SHALL BE RADAR DETECTION USING WAVETRONIX MATRIX SENSOR.
 2. THE SYSTEM INSTALLER SHALL LEAVE A MINIMUM OF 30 INCHES OF SPACE CABLE AT EACH BRACKET. THE SLACK SHALL BE NEATLY FORMED INTO A LOOP AND SECURED TO THE SENSOR.
 3. A MINIMUM OF 10 FEET OF SENSOR CABLE SLACK SHALL BE NEATLY STORED AT EACH PULL BOX LOCATION WITH A CONDUIT RUN.
 4. IN ADDITION TO STOP BAR PRESENCE DETECTION. ADVANCE VEHICLE DETECTION SHALL BE PROVIDED FOR ALL MAJOR STREET APPROACHES. THE WAVETRONIX SMARTSENSOR ADVANCE SHALL BE USED FOR ADVANCE VEHICLE DETECTION, UNLESS OTHERWISE APPROVED BY TRAFFIC ENGINEERING DIVISION.
 5. ALL ACTUATED PHASES SHALL BE MAINTAINED DURING THE PROJECT WITH THE USE OF VIDEO OR MICROWAVE DETECTORS. THE CONTRACTOR SHALL MAINTAIN TEMPORARY VEHICLE DETECTION ON ALL APPROACHES THROUGHOUT CONSTRUCTION UNTIL MANATEE ACCEPTS THE PROJECT.

CONDUIT NOTES

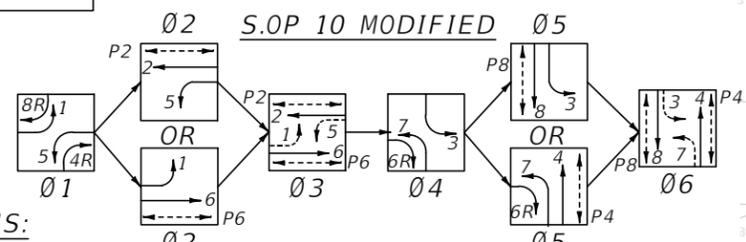
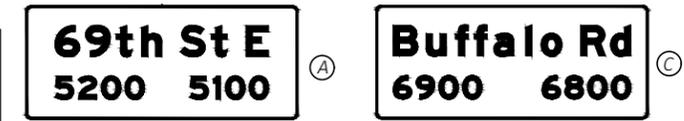
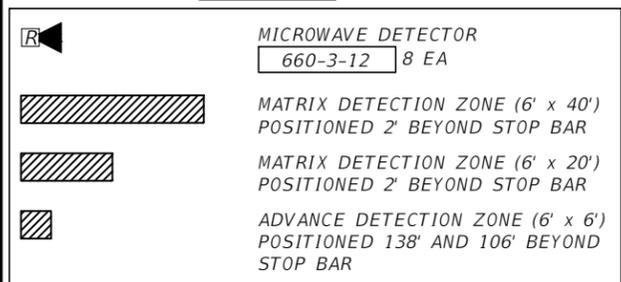
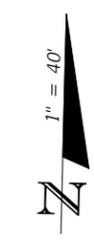
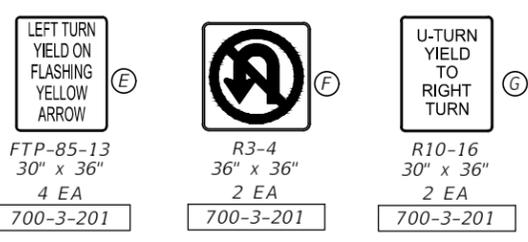
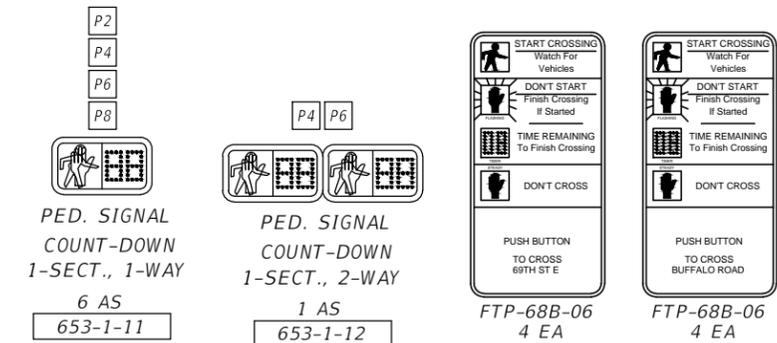
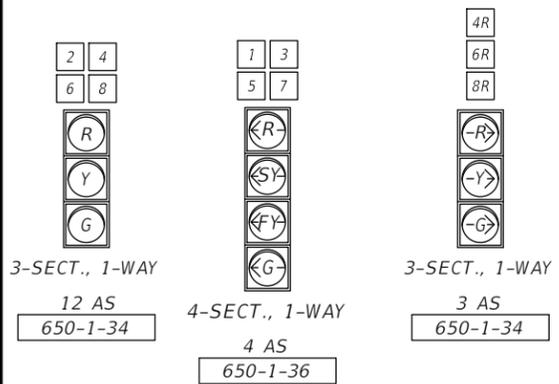
1. THE CONDUITS TO BE INSTALLED ARE TO BE PLACED SO AS TO TOTALLY AVOID ANY CONFLICT WITH EXISTING UTILITIES ALONG THE ROUTE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE NECESSARY INFORMATION REQUIRED TO PLAN THE WORK AHEAD FOR THE INSTALLATION OF THE REQUIRED CONDUITS WITHIN DESIGN OR SPECIFIED PARAMETERS AND HIS TIME FRAME. THE CONTRACTOR SHALL USE HAND EXCAVATION METHODS WHEN EXCAVATING NEAR EXISTING UTILITIES, NO SEPARATE PAYMENT SHALL BE MADE FOR THIS WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY UTILITY.
2. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL ABOVEGROUND AND UNDERGROUND CONFLICTS IN ADVANCE OF PLACEMENT OF ANY CONDUIT AND OTHER FACILITIES. NO PULL BOXES SHALL BE LOCATED IN DRAINAGE SWALES OR PAVED SHOULDERS.
3. THE CONDUIT DETAILS GIVEN ARE MEANT TO BE SCHEMATIC IN NATURE. DUE TO ACTUAL FIELD CONDITIONS AND/OR NEEDS, DEVIATIONS MAY BE NECESSARY. DIMENSIONAL DISTANCES FOR CONDUIT LOCATIONS ARE PROVIDED TO ASSIST THE CONTRACTOR WITH CONDUIT PLACEMENT. THE CONTRACTOR SHALL TAKE THIS INTO ACCOUNT WHEN PLACING CONDUIT. THE CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATION CONDUIT AROUND EXISTING UTILITIES AND OBSTRUCTIONS.
4. ALL NEW CONDUIT SHALL BE PLACED AT A MINIMUM DEPTH OF 30 INCHES IN AN AREA OF NEW FILL, IN WHICH CASE THE CONDUIT SHALL BE 48 INCHES. DIRECTIONALLY BORED CONDUIT SHALL BE AT A MINIMUM DEPTH OF 48 INCHES.

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NUMBER	DESCRIPTION	DATE	PROJECT #	15-0909JE	SURVEYED	RPH	5/2018	M. FATHY ABDALLA, P.E. P.E. LICENSE NUMBER 63914 KISINGER CAMPO & ASSOCIATES CORP. 201 N. FRANKLIN STREET SUITE 400 TAMPA, FL 33602	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208	GENERAL NOTES	SHEET NO. T-3
			SURVEY #	N/A	DESIGNED	NSL	5/9/22				
			SEC./TWN./RGE	28/33S/18E	DRAWN	NSL	5/9/22				
			SCALE	N.T.S.	CHECKED	JR	5/9/22				

SIGNAL HEAD DETAIL



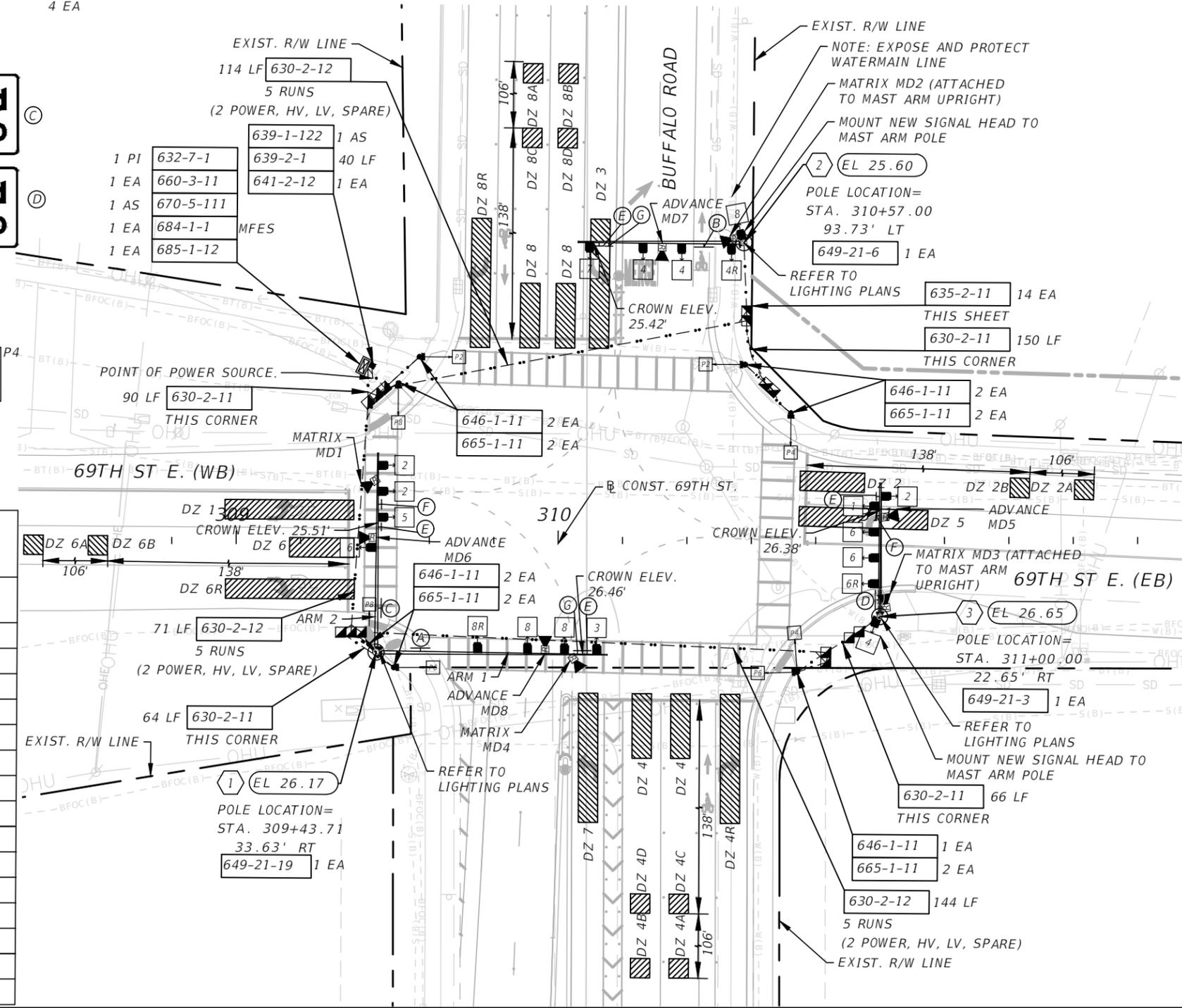
NOTES AND CONTROLLER OPERATIONS:

- BEFORE ORDERING, CONTRACTOR IS TO CONFIRM ALL SIGNALIZATION EQUIPMENT SPECIFICATIONS WITH MANATEE COUNTY SIGNAL SUPERVISOR.
- MAJOR STREET IS 69TH ST E AND MINOR STREET IS BUFFALO ROAD.
- FOR FLASHING OPERATIONS, MOVEMENTS 2 AND 6 SHALL FLASH YELLOW. ALL OTHER MOVEMENTS SHALL FLASH RED.
- SPEED LIMIT FOR ALL APPROACHES MAJOR STREET IS 40 MPH AND MINOR STREET IS 35 MPH.

CONTROLLER TIMINGS

TIMING FUNCTION	1	2	3	4	5	6	7	8
MINIMUM GREEN	7	20	7	10	7	20	7	10
EXTENSION	3	3	3	3	3	3	3	3
MAXIMUM GREEN 1	30	50	30	30	30	50	30	30
MAXIMUM GREEN 2								
YELLOW CLEARANCE	4.4	4.4	4.0	4.0	4.4	4.4	4.0	4.0
ALL RED	2.7	2.7	2.8	2.7	2.7	2.7	2.8	2.7
PEDESTRIAN WALK		7		7		7		7
PED. CLEARANCE		30		20		30		20
RECALL		MIN				MIN		

DETECTOR	DETECTION ZONE	DELAY TIME (SECS.)
MATRIX MD1	DZ 1	
	DZ 6	
	DZ 6R	8
MATRIX MD2	DZ 3	
	DZ 8	
MATRIX MD3	DZ 5	
	DZ 2	
MATRIX MD4	DZ 7	
	DZ 4	
	DZ 4R	8
ADV. MD5	DZ 2ABCD	
ADV. MD6	DZ 6ABCD	
ADV. MD7	DZ 4ABCD	
ADV. MD8	DZ 8ABCD	



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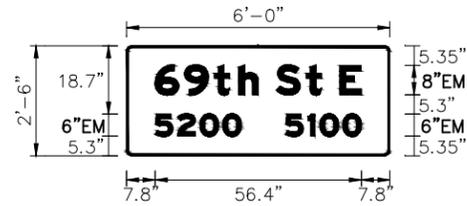
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			18-2238	DESIGNED	NSL	12/28/22
			4-345-18E	DRAWN	NSL	12/28/22
				CHECKED	JR	12/28/22

M. FATHY ABDALLA, P.E.
P.E. LICENSE NUMBER 63914
KISINGER CAMPO & ASSOCIATES CORP.
201 N. FRANKLIN STREET
SUITE 400
TAMPA, FL 33602

PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

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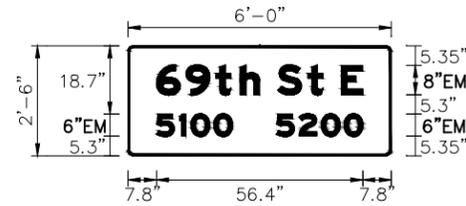
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HEIGHT	2'-6"	RADII	1.5"			
LEGEND	White	COLOR	White			
COLOR	Green					
SYMBOL(S)	ANGLE	X	Y	WID	HT	
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH	



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY	6	9	t	h	S	t	E	L											
SPACE	7.8	15.9	24	30.7	36	41	49.1	53.3	58.3	56.4									
COPY	5	2	0	0	L														
SPACE	7.8	14	20.1	26.3	23.6														
COPY	5	1	0	0	L														
SPACE	43.4	49.7	52.9	59.2	20.8														
COPY																			
SPACE																			
COPY																			
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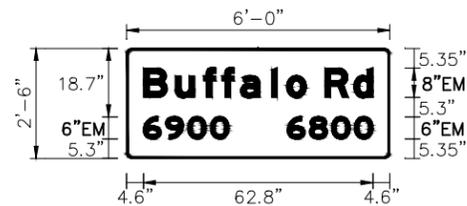
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PANEL	BORDER					none
WIDTH	6'-0"	WIDTH	0.5"			
HEIGHT	2'-6"	RADII	1.5"			
LEGEND	White	COLOR	White			
COLOR	Green					
SYMBOL(S)	ANGLE	X	Y	WID	HT	
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH	



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY	6	9	t	h	S	t	E	L											
SPACE	7.8	15.9	24	30.7	36	41	49.1	53.3	58.3	56.4									
COPY	5	1	0	0	L														
SPACE	7.8	14	17.3	23.5	20.8														
COPY	5	2	0	0	L														
SPACE	40.6	46.8	52.9	59.2	23.6														
COPY																			
SPACE																			
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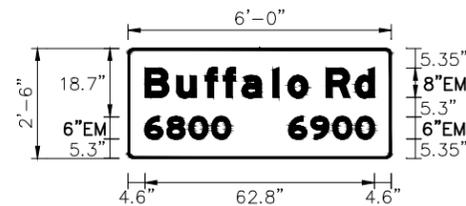
SIGN NAME	Sign C		QTY	/	SIGN NUMBER	STATION(S)
PANEL	BORDER					none
WIDTH	6'-0"	WIDTH	0.5"			
HEIGHT	2'-6"	RADII	1.5"			
LEGEND	White	COLOR	White			
COLOR	Green					
SYMBOL(S)	ANGLE	X	Y	WID	HT	
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH	



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY	B	u	f	f	a	l	o	R	d	L									
SPACE	4.6	13.3	21	26.1	31.2	39.7	43.7	49.2	54.2	62.1	62.8								
COPY	6	9	0	0	L														
SPACE	4.6	10.7	16.7	23	23.4														
COPY	6	8	0	0	L														
SPACE	44	50	56.1	62.3	23.4														
COPY																			
SPACE																			
COPY																			
SPACE																			

SIGN NAME	Sign D		QTY	/	SIGN NUMBER	STATION(S)
PANEL	BORDER					none
WIDTH	6'-0"	WIDTH	0.5"			
HEIGHT	2'-6"	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	B	u	f	f	a	l	o	R	d	L									
SPACE	4.6	13.3	21	26.1	31.2	39.7	43.7	49.2	54.2	62.1	62.8								
COPY	6	8	0	0	L														
SPACE	4.6	10.7	16.7	23	23.4														
COPY	6	9	0	0	L														
SPACE	44	50	56.1	62.3	23.4														
COPY																			
SPACE																			
COPY																			
SPACE																			

NUMBER	DESCRIPTION	DATE	PROJECT #	15-0909JE	SURVEYED	RPH	5/2018
			SURVEY #	N/A	DESIGNED	NSL	8/2022
			SEC./TWN./RGE	28/33S/18E	DRAWN	NSL	8/2022
			SCALE	N.T.S.	CHECKED	JR	8/2022

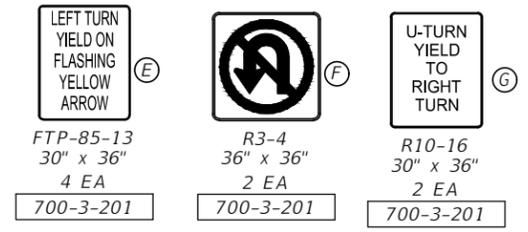
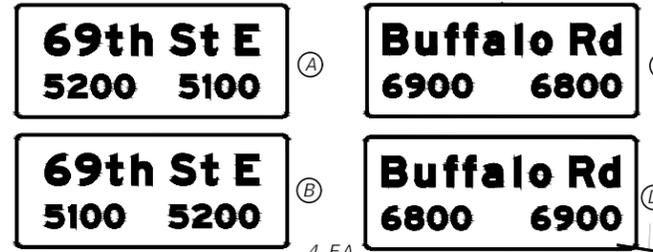
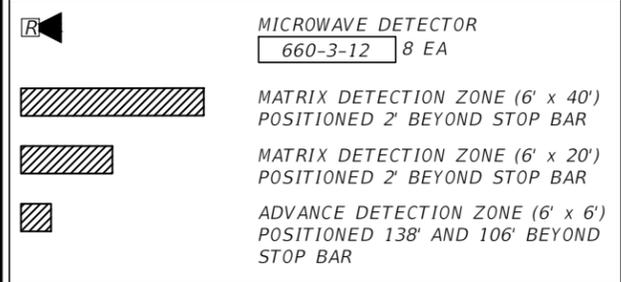
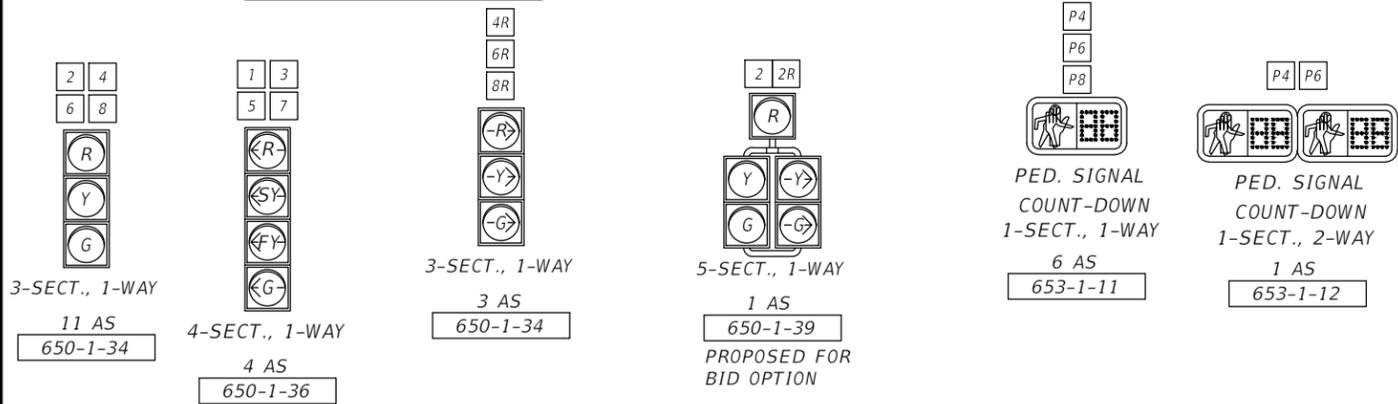
M. FATHY ABDALLA, P.E.
P.E. LICENSE NUMBER 63914
KISINGER CAMPO & ASSOCIATES CORP.
201 N. FRANKLIN STREET
SUITE 400
TAMPA, FL 33602



PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

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

SIGNAL HEAD DETAIL



NOTES AND CONTROLLER OPERATIONS:

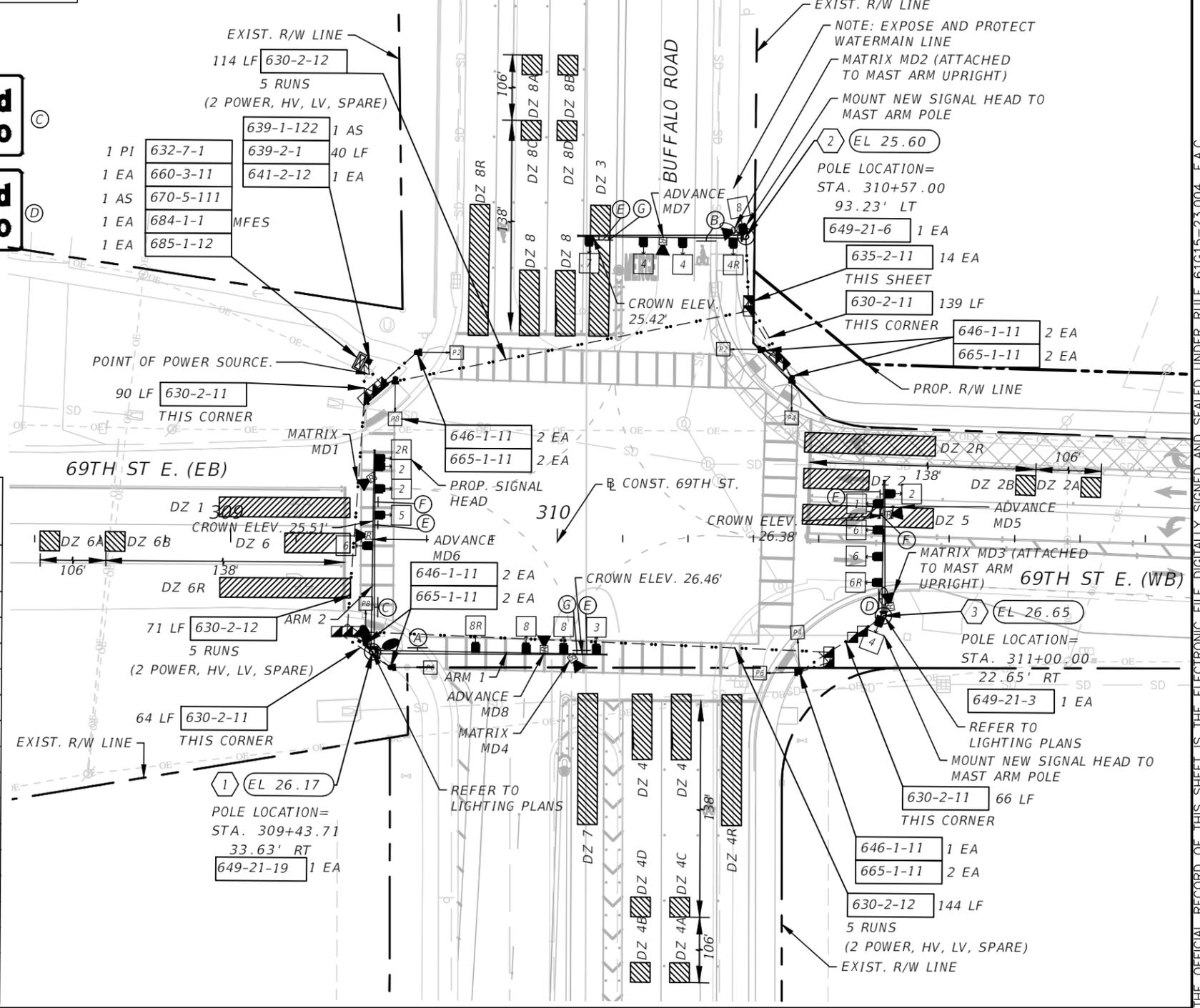
1. PLAN SHEET SHOWS ADDITIONAL WEST BOUND PROPOSED TURN LANE. SIGNAL HEAD 2/2R REPLACES SIGNAL HEAD 2 AS SHOWN ON T-3.
2. BEFORE ORDERING, CONTRACTOR IS TO CONFIRM ALL SIGNALIZATION EQUIPMENT SPECIFICATIONS WITH MANATEE COUNTY SIGNAL SUPERVISOR.
3. MAJOR STREET IS 69TH ST E AND MINOR STREET IS BUFFALO ROAD.
4. FOR FLASHING OPERATIONS, MOVEMENTS 2 AND 6 SHALL FLASH YELLOW. ALL OTHER MOVEMENTS SHALL FLASH RED.
5. SPEED LIMIT FOR ALL APPROACHES MAJOR STREET IS 40 MPH AND MINOR STREET IS 35 MPH.

CONTROLLER TIMINGS

TIMING FUNCTION	1	2	3	4	5	6	7	8
MINIMUM GREEN	7	20	7	10	7	20	7	10
EXTENSION	3	3	3	3	3	3	3	3
MAXIMUM GREEN 1	30	50	30	30	30	50	30	30
MAXIMUM GREEN 2								
YELLOW CLEARANCE	4.4	4.4	4.0	4.0	4.4	4.4	4.0	4.0
ALL RED	2.7	2.7	2.8	2.7	2.7	2.7	2.8	2.7
PEDESTRIAN WALK		7		7		7		7
PED. CLEARANCE		30		20		30		20
RECALL		MIN				MIN		

MATRIX & ADVANCE DETECTION MICROWAVE SMART SENSOR DETECTION CHART

DETECTOR	DETECTION ZONE	DELAY TIME (SECS.)
MATRIX MD1	DZ 1	
	DZ 6	
MATRIX MD2	DZ 3	
	DZ 8	8
MATRIX MD3	DZ 5	
	DZ 2R	
MATRIX MD4	DZ 7	
	DZ 4R	8
ADV. MD5	DZ 2AB	
ADV. MD6	DZ 6AB	
ADV. MD7	DZ 4AB	
ADV. MD8	DZ 8AB	



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NUMBER	DESCRIPTION	DATE	PROJECT #	SURVEYED	HYATT	5/2021
			15-0909JE			
			18-2238	DESIGNED	NSL	12/29/22
			4-345-18E	DRAWN	NSL	12/29/22
				CHECKED	JR	12/29/22

M. FATHY ABDALLA, P.E.
P.E. LICENSE NUMBER 63914
KISINGER CAMPO & ASSOCIATES CORP.
201 N. FRANKLIN STREET
SUITE 400
TAMPA, FL 33602

Manatee County
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

*PROPOSED SIGNALIZATION PLAN (2)
BID OPTION*

SHEET NO.
T-8

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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.)	
2	A60/S-P4/S/L	A60/S	25.5				335	P4/S/L		20.5	DS/18/5.0
3	A40/S/H-P2/S/L	A40/S/H					0	P2/S/L		20.5	DS/20/5.0

NOTES [Notes Date 11-01-16]:

- 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.
- 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.
- Arm mounting height UB must be between 18-22 feet.
- Pole types P2 and larger require a minimum 4.5 foot diameter drilled shaft. Pole types P5 and larger require a minimum 5.0 foot diameter drilled shaft.
- 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.
- Work with Index 649-030 and 649-031.
- UG dimension for Poles 2 and 3 = 37.0 ft.

FOUNDATION NOTES:

Assumptions and Values used in design:
 Design Water Table is 0.0 ft. below surface
 Soil Type = Cohesionless

	Pole 2	Pole 3
Soil Friction Angle (deg):	29	29
Soil Weight (saturated) (pcf):	43	43
N-Value (Blows/foot):	9	5

Temporary casing to elevation +7 feet, NAVD88 is required during the construction of the drilled shaft foundations for the signal poles.

Non-vibratory methods for temporary casing installation and extraction is required.

NUMBER	DESCRIPTION						DATE	KIPLING LASKARIS, P.E. P.E. LICENSE NUMBER 75005 KISINGER CAMPO & ASSOCIATES CORP. 201 N. FRANKLIN STREET SUITE 400 TAMPA, FL 33602				 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208	69TH STREET EAST INTERSECTION IMPROVEMENTS STANDARD MAST ARM ASSEMBLIES DATA TABLE		SHEET NO. T-9
	PROJECT #	15-0909JE	SURVEYED	RPH	5/2018										
	SURVEY #	N/A	DESIGNED	KL	1/9/23										
	SEC./TWN./RGE	28/33S/18E	DRAWN	ARF	1/9/23										
	SCALE	N.T.S.	CHECKED	JHJ	1/9/23										

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SPECIAL MAST ARM ASSEMBLIES DATA TABLE																								Table Date 01-01-12
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	31	10.7	15	0.25	42	14.1	20	0.375	35.5	8.03	13	0.25	28	12.1	16	0.375	34	21	18.6	24	0.5	90	32

SPECIAL MAST ARM ASSEMBLIES DATA TABLE (CONT.)																							Table Date 01-01-12
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	6	30	36	3	0.75	0.438	23.1	1.5	2	12	0.438	6	30	36	3	0.75	0.313	23.1	1.5	2	12	0.313	

SPECIAL MAST ARM ASSEMBLIES DATA TABLE (CONT.)																							Table Date 07-01-15		
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	8	40	2.5	2	40	30.0	5	11	18	10	6	10	9												

NOTES [Notes Date 07-01-13]:

1. Work with Index 649-031.
2. Design Wind Speed = 150 mph
3. Two luminaires are required for this assembly. Luminaires shall be Clamp-on style. Fabricator is to omit standard luminaire arm and connection. See lighting plans for luminaire orientation.

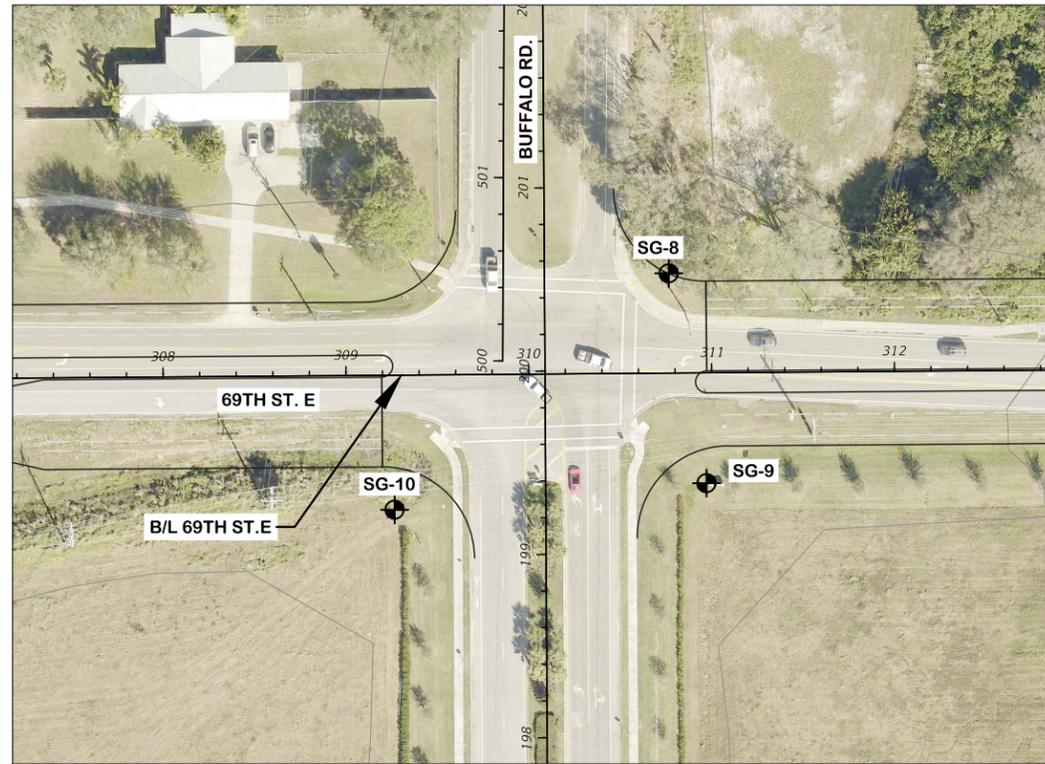
FOUNDATION NOTES [Notes Date 01-01-12]:

1. Design based on Borings taken 7/12/2022 sealed by Marc E. Novak, P.E.
2. Assumptions and Values used in design:
Soil Type Cohesionless
Soil Layer Thickness = 30 ft.
Soil Friction Angle = 29 deg.
Soil Weight = 43 pcf
N-Value = 6 (Blows/foot)
Design Water Table is 0 ft. below surface
3. Temporary casing to elevation +7 feet, NAVD88 is required during the construction of the drilled shaft foundations for the signal poles.
4. Non-vibratory methods for temporary casing installation and extraction is required.

NUMBER	DESCRIPTION	DATE	PROJECT #	15-0909JE	SURVEYED	RPH	5/2018	KIPLING LASKARIS, P.E. P.E. LICENSE NUMBER 75005 KISINGER CAMPO & ASSOCIATES CORP. 201 N. FRANKLIN STREET SUITE 400 TAMPA, FL 33602	 PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES 1022 26th Avenue East, Bradenton, FL 34208	69TH STREET EAST INTERSECTION IMPROVEMENTS SPECIAL MAST ARM ASSEMBLIES DATA TABLE	SHEET NO. T-10
			SURVEY #	N/A	DESIGNED	KL	9/1/22				
			SEC./TWN./RGE	28/33S/18E	DRAWN	ARF	9/1/22				
			SCALE	N.T.S.	CHECKED	JHJ	9/1/22				

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BORING LOCATION PLAN



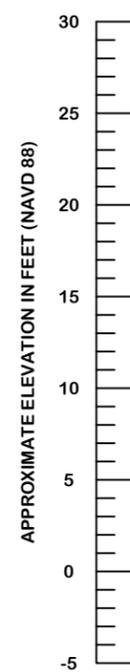
NOTE: BASE MAP PROVIDED BY KISINGER CAMPO & ASSOCIATES, CORP.

SOIL PROFILES

BOR # SG-8
STA. 310+77
REF. B/L 69TH ST
OFF. 54' LT.
ELEV. 25.0
DATE 7/12/2022
DRILLER I. POORAN
HAMMER AUTOMATIC
RIG D-25

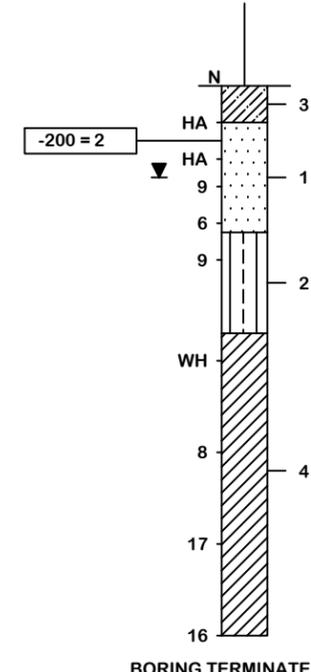
BOR # SG-9
STA. 310+97
REF. B/L 69TH ST
OFF. 60' RT.
ELEV. 26.5
DATE 7/12/2022
DRILLER I. POORAN
HAMMER AUTOMATIC
RIG D-25

BOR # SG-10
STA. 309+02
REF. B/L 69TH ST
OFF. 73' RT.
ELEV. 26.5
DATE 7/12/2022
DRILLER I. POORAN
HAMMER AUTOMATIC
RIG D-25



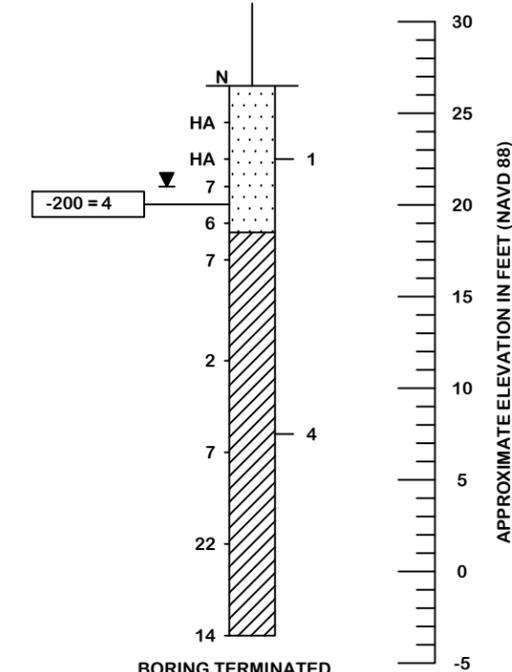
-200 = 93
 NMC = 47
 LL = 63
 PI = 39

BORING TERMINATED AT -5.0 FT (NAVD 88)



-200 = 2

BORING TERMINATED AT -3.5 FT (NAVD 88)



-200 = 4

BORING TERMINATED AT -3.5 FT (NAVD 88)

LEGEND

- 1 [Pattern] LIGHT GRAY TO BROWN FINE SAND (SP/SP-SM)
- 2 [Pattern] LIGHT GRAY TO BROWN NON-PLASTIC SILTY SAND (SM)
- 3 [Pattern] LIGHT GRAY TO GRAY PLASTIC SILTY SAND TO CLAYEY SAND (SC)
- 4 [Pattern] LIGHT GRAY SILT TO CLAY WITH SAND (CL/CH)
- 5 [Pattern] CALCAREOUS CLAY TO WEATHERED LIMESTONE
- [Symbol] APPROXIMATE LOCATION OF SPT BORING
- [Symbol] GROUNDWATER LEVEL ENCOUNTERED DURING INVESTIGATION
- NAVD 88 NORTH AMERICAN VERTICAL DATUM OF 1988
- NGVD 29 NATIONAL GEODETIC VERTICAL DATUM OF 1929

- N SPT N-VALUE IN BLOWS/FOOT FOR 12 INCHES OF PENETRATION (UNLESS OTHERWISE NOTED)
- SP UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2488) GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW AND LABORATORY TESTING ON SELECTED SAMPLES FOR CONFIRMATION OF VISUAL REVIEW
- HA HAND AUGERED TO VERIFY UTILITY CLEARANCES
- WH FELL UNDER WEIGHT OF ROD AND HAMMER
- B/L 69TH ST.E BASELINE SURVEY OF 69TH STREET E
- 200 PERCENT PASSING #200 SIEVE
- NMC NATURAL MOISTURE CONTENT (%)
- LL LIQUID LIMIT (%)
- PI PLASTICITY INDEX (%)

NOTES:

- THE BORINGS WERE LOCATED IN THE FIELD USING HAND-HELD, NON-SURVEY GRADE GPS EQUIPMENT WITH A MANUFACTURER'S REPORTED ACCURACY OF ±10 FEET AND SHOULD BE CONSIDERED APPROXIMATE.
- THE SPT BORINGS WERE PERFORMED UTILIZING AN AUTOMATIC HAMMER.
- BASED ON A REVIEW OF THE "POTENTIOMETRIC SURFACE ELEVATION OF THE UPPER FLORIDAN AQUIFER, WEST-CENTRAL FLORIDA" MAP PUBLISHED BY THE USGS, THE POTENTIOMETRIC SURFACE ELEVATION OF THE UPPER FLORIDAN AQUIFER IN THE PROJECT VICINITY IS REPORTED UP TO APPROXIMATELY +20 TO +25 FEET, NGVD 29. ARTESIAN FLOW CONDITIONS WERE NOT ENCOUNTERED DURING OUR FIELD EXPLORATION; HOWEVER, THE CONTRACTORS TOOLS AND CONSTRUCTION METHODS SHOULD ADDRESS AND HANDLE A POTENTIOMETRIC LEVEL UP TO +25 FEET, NGVD 29 AT NO ADDITIONAL COST TO THE COUNTY.
- TEMPORARY CASING TO A MINIMUM ELEVATION OF +7 FEET, NAVD 88 SHALL BE UTILIZED DURING THE INSTALLATION OF THE DRILLED SHAFT FOUNDATIONS FOR POLES 1, 2 AND 3.
- VERY STIFF SOIL WERE ENCOUNTERED WITHIN THE BORINGS. EXCAVATION INTO AND THROUGH SUCH MATERIALS MAY BE DIFFICULT. THE CONTRACTOR SHOULD BE PREPARED FOR EXCAVATIONS INTO AND THROUGH SUCH MATERIALS.

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

AUTOMATIC HAMMER	
GRANULAR MATERIALS-RELATIVE DENSITY	SPT (BLOWS/FT.)
VERY LOOSE	LESS THAN 3
LOOSE	3 TO 8
MEDIUM DENSE	8 TO 24
VERY DENSE	24 TO 40
GREATER THAN 40	GREATER THAN 40
SILTS AND CLAYS CONSISTENCY	SPT (BLOWS/FT.)
VERY SOFT	LESS THAN 2
SOFT	1 TO 3
FIRM	3 TO 6
STIFF	6 TO 12
VERY STIFF	12 TO 24
HARD	GREATER THAN 24

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NUMBER	DESCRIPTION	DATE	PROJECT #	6083160	SURVEYED	---	---
			SURVEY #	---	DESIGNED	SW	08/2022
			SEC./TWN./RGE	00/00/00	DRAWN	SW	08/2022
			SCALE	NOTED	CHECKED	MEN	08/2022



69TH STREET EAST
 INTERSECTION IMPROVEMENTS
 SIGNAL - SEG. 5

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