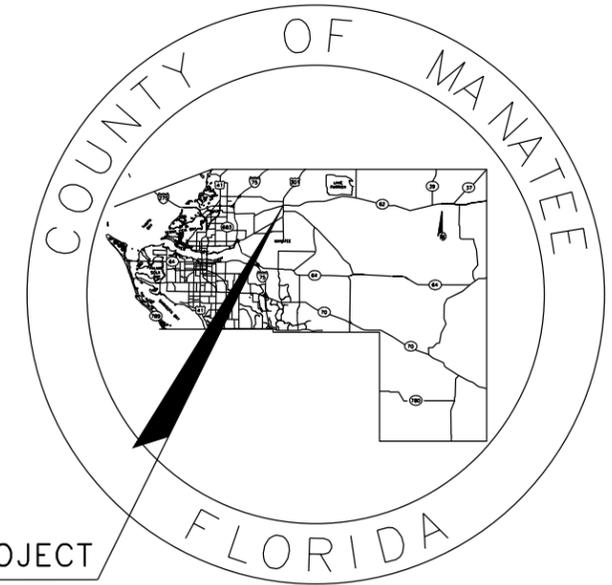


# STATE OF FLORIDA COUNTY OF MANATEE



INDEX OF SIGNALIZATION PLANS

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T-9	STANDARD MAST ARM DATA TABLES

## PLANS OF PROPOSED ERIE RD. AND SR 62 IMPROVEMENTS PARRISH, FLORIDA

MC PROJECT No. 850-6094060  
FDOT JPA 445308-1-58-01  
FDOT MILE POST 11.175

LOCATION OF PROJECT



ERIE RD & SR 62 SIGNAL  
STA. 107+31.00

NGVD 29 DATUM

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

PLANS PREPARED BY:

HDR ENGINEERING, INC.  
4830 W KENNEDY BLVD, SUITE 400  
TAMPA, FL 33609-2548  
(813) 282-2300  
VENDOR NO. VF-470680568

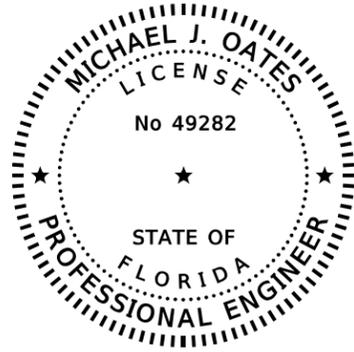


SIGNALIZATION PLANS  
PROFESSIONAL OF RECORD: MICHAEL J. OATES, P.E.

FLORIDA P.E. # 49282

SHEET NO.

T-1



THIS ITEM HAS BEEN DIGITALLY  
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ON THE DATE ADJACENT TO THE SEAL

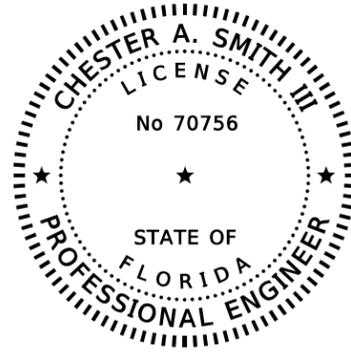
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HDR ENGINEERING, INC.  
4830 W. KENNEDY BLVD., SUITE 400  
TAMPA, FL 33609-2548  
MICHAEL J. OATES, PE NO. 49282

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
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HDR ENGINEERING, INC.  
2601 CATTLEMEN ROAD., SUITE 400  
SARASOTA, FL 34232-6212  
CHESTER A. SMITH III, PE NO. 70756

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	STANDARD MAST ARM DATA TABLES

	SCALE	AS NOTED
	DESIGNED BY	MO
	DRAWN BY	GS
	CHECKED BY	IR
No.	REVISIONS	DATE BY



HDR Engineering, Inc.  
4830 W Kennedy Blvd,  
Suite 400  
Tampa, FL 33609-2548

DATE  
10/2021

PROJECT NO.  
850-6094060



MANATEE COUNTY  
PUBLIC WORKS

DESIGN ENGINEER  
MICHAEL J.  
OATES  
FL. LICENSE NO.  
49282

SIGNATURE SHEET

SHEET  
NO.  
T-2

TABULATION OF QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS														TOTAL THIS SHEET		GRAND TOTAL	
			T-6		PLAN	FINAL	PLAN	FINAL	PLAN	FINAL										
			PLAN	FINAL																
630-2-11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH	LF	170															170	170	
630-2-12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF	355															355	355	
632-7-1	SIGNAL CABLE- NEW OR RECONSTRUCTED INTERSECTION, FURNISH & INSTALL	PI	1															1	1	
635-2-11	PULL & SPLICE BOX, F&I, 17" x 30" COVER SIZE	EA	13															13	13	
635-2-12	PULL & SPLICE BOX, F&I, 24" x 36" COVER SIZE	EA	1															1	1	
639-1-122	ELECTRICAL POWER SERVICE, F&I, UNDERGROUND, METER PURCHASED BY CONTRACTOR	AS	1															1	1	
639-2-1	ELECTRICAL SERVICE WIRE, FURNISH & INSTALL	LF	400															400	400	
639-4-6	EMERGENCY GENERATOR - PORTABLE, INSTALL HOUSING ONLY	EA	1															1	1	
641-2-12	PRESTRESSED CONCRETE POLE, F&I, TYPE P-II SERVICE POLE	EA	1															1	1	
646-1-11	ALUMINUM SIGNALS POLE, FURNISH & INSTALL PEDESTAL	EA	7															7	7	
649-21-6	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 50'	EA	1															1	1	
649-21-10	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 60'	EA	1															1	1	
649-21-19	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, DOUBLE ARM 70' -60'	EA	1															1	1	
650-1-14	TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 3 SECTION, 1 WAY	AS	10															10	10	
650-1-16	TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 4 SECTION, 1 WAY	AS	4															4	4	
650-1-19	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 5 SECTION CLUSTER, 1 WAY	AS	2															2	2	
653-1-11	PEDESTRIAN SIGNAL, FURNISH & INSTALL LED COUNTDOWN, 1 WAY	AS	6															6	6	
653-1-12	PEDESTRIAN SIGNAL, FURNISH & INSTALL LED COUNTDOWN, 2 WAYS	AS	1															1	1	
660-3-11	VEHICLE DETECTION SYSTEM- MICROWAVE, FURNISH & INSTALL CABINET EQUIPMENT	EA	1															1	1	
660-3-12	VEHICLE DETECTION SYSTEM- MICROWAVE, FURNISH & INSTALL, ABOVE GROUND EQUIPMENT	EA	6															6	6	
665-1-11	PEDESTRIAN DETECTOR, FURNISH & INSTALL, STANDARD	EA	8															8	8	
670-5-111	TRAFFIC CONTROLLER ASSEMBLY, F&I, NEMA, 1 PREEMPTION	AS	1															1	1	
682-1-113	ITS CCTV CAMERA, F&I, DOME PTZ ENCLOSURE - PRESSURIZED, IP, HIGH DEFINITION	EA	1															1	1	
684-1-1	MANAGED FIELD ETHERNET SWITCH, FURNISH & INSTALL	EA	1															1	1	
684-6-12	WIRELESS COMMUNICATION DEVICE, FURNISH & INSTALL ETHERNET SUBSCRIBER UNIT	EA	1															1	1	
685-1-12	UNINTERRUPTIBLE POWER SUPPLY, FURNISH AND INSTALL, ONLINE/DOUBLE CONVERSION	EA	1															1	1	
700-3-201	SIGN PANEL, FURNISH & INSTALL OVERHEAD MOUNT, UP TO 12 SF	EA	4															4	4	
700-5-22	INTERNALLY ILLUMINATED SIGN, FURNISH & INSTALL OVERHEAD MOUNT, 12-18 SF	EA	4															4	4	

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

SCALE AS NOTED DESIGNED BY MO DRAWN BY GS CHECKED BY IR		 HDR Engineering, Inc. 4830 W Kennedy Blvd, Suite 400 Tampa, FL 33609-2548	DATE 10/2021	 MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER MICHAEL J. OATES FL. LICENSE NO. 49282	TABULATION OF QUANTITIES	SHEET NO. T-3
No. REVISIONS DATE BY			PROJECT NO. 850-6094060		PW		



PAY ITEM NOTES

1. 630-2-11 & 630-2-12:  
CONDUITS INSTALLED WITH THE DIRECTIONAL BORE METHOD SHALL BE HDPE WITH A MINIMUM SIZE OF 2" UNLESS OTHERWISE NOTED IN THE PLANS. COST OF PULL WIRE SHALL BE INCLUDED UNDER THIS PAY ITEM.

WITH THE EXCEPTION OF ELECTRICAL POWER SERVICE DUCTS, JACK & BORE SLEEVES, AND DIRECTIONAL BORE CONDUITS, ALL UNDERGROUND AND UNDER PAVEMENT CONDUITS SHALL BE SCHEDULE 40 PVC WITH A MINIMUM SIZE OF 2" UNLESS OTHERWISE SPECIFIED IN THE PLANS. COST OF PULL WIRE SHALL BE INCLUDED UNDER THIS PAY ITEM.

TWO SEPARATE UNDERGROUND CONDUIT RUNS LOCATED 180 DEGREES APART ARE REQUIRED FOR ALL MAST ARMS. THE SPARE CONDUIT SHALL BE CAPPED IN THE NEAREST PULL BOX. THERE SHALL BE A MINIMUM OF TWO RUNS OF 2" CONDUIT BETWEEN THE LAST LOW VOLTAGE PULL BOX LOCATED NEAR THE CONTROLLER CABINET & THE CONTROLLER CABINET, ITSELF.

2. 632-7-1:  
USE A MINIMUM OF 7 CONDUCTOR SIGNAL CABLES FOR SIGNAL HEADS AND PEDESTRIAN HEADS.

EACH PHASE/MOVEMENT SHALL BE WIRED FROM THE SIGNAL DISPLAY TO THE CONTROLLER AS A SEPARATE PHASE/MOVEMENT. THIS INCLUDES THE LEFT TURN MOVEMENT WHICH SHALL HAVE CONDUCTORS AVAILABLE FOR EITHER PROTECTED OR PERMISSIVE MOVEMENTS. THE CONTRACTOR SHALL VERIFY COLOR CODES FOR SIGNAL CABLE WITH THE MANATEE COUNTY BEFORE ORDERING, AND WIRE THE SIGNAL IN ACCORDANCE WITH THAT COLOR CODE AND F.D.O.T. SPECIFICATIONS. THERE SHALL BE ONE NEUTRAL PER APPROACH. THIS PAY ITEM INCLUDES FURNISHING AND INSTALLING THE REQUIRED CABLING FOR THE PROPOSED PEDESTRIAN SIGNAL ASSEMBLIES. ALL PEDESTRIAN DETECTORS SHALL BE WIRED USING SEPARATE CABLE UTILIZING LOW VOLTAGE CONDUIT AND PULL BOXES.

3. 635-2-11:  
PULL BOXES SHALL BE TRAFFIC BEARING, ALL POLYMER CONSTRUCTION (NOT CONCRETE), PULL BOXES AND LIDS. (QUAZITE OR ANOTHER EQUIVALENT FDOT APPROVED MANUFACTURER). PULL BOXES ARE TO BE PLACED BEHIND CURB AND GUTTER. IF THERE IS NO CURB AND GUTTER, PULL BOXES SHALL BE PLACED A MINIMUM OF 7' FROM THE EDGE OF PAVEMENT.

STANDARD PULL BOX DIMENSIONS SHALL BE 17" x 30" x 12" AND THE LID SHALL BE STAMPED "MANATEE COUNTY TRAFFIC SIGNAL" ON THE COVER.

4. 639-1-122:  
THIS PAY ITEM SHALL INCLUDE THE COST OF ALL SPECIAL IMPACT CONNECTION FEES CHARGED BY LOCAL POWER COMPANIES FOR ELECTRICAL SERVICE CONNECTION. ANY CHARGES BY FPL (FLORIDA POWER AND LIGHT) TO BE ON SITE TO DE-ENERGIZE ELECTRIC SERVICE LINES AND MONITOR WORK WHILE LINES ARE REROUTED ONTO THE NEW SERVICE POLE WILL BE INCLUDED UNDER THIS PAYMENT ITEM.

IT SHALL ALSO INCLUDE THE COST OF INSTALLING SERVICE RISER ON FP&L SERVICE POLE. THE SERVICE RISER MUST HAVE A WEATHERHEAD TERMINATING AT A POINT 40" MINIMUM BELOW THE BOTTOM OF PRECO TRANSFORMER.

THIS PAY ITEM INCLUDES METER BASE AND SERVICE DISCONNECT.

ELECTRICAL SERVICE DISCONNECT SHALL BE COMPRISED OF SIX (6) CIRCUIT DISCONNECT BOX WITH THREE CIRCUIT BREAKERS (LIGHTING, SURGE, CONTROLLER) SIZED APPROPRIATELY PER NEC.

5. 639-4-6:  
MANATEE COUNTY WILL NOT FURNISH THIS ITEM. THE CONTRACTOR SHALL FURNISH AND INSTALL THE HOUSING AND FOUNDATION / PAD. ALL COSTS FOR THE HOUSING FOUNDATION / PAD IS INCLUDED IN THE COST OF THIS PAY ITEM. THE CONTRACTOR SHALL COORDINATE WITH MANATEE COUNTY TO OBTAIN THE DESIRED HOUSING DIMENSIONS.

6. 649-21-6, 649-21-10, & 649-21-19:  
THE CONTRACTOR SHALL FIELD VERIFY ALL CRITICAL ELEVATIONS PRIOR TO ORDERING MAST ARM ASSEMBLIES. USE THREE 2" AND ONE 3/4" CONDUIT STUBBED OUT THROUGH THE MAST ARM POLE FOUNDATION AND TEMPORARILY SEALED.

THE CONTRACTOR SHALL CONTACT THE LOCAL POWER COMPANY FOR THEIR ASSISTANCE IN PERFORMING ALL NECESSARY WORK UNDER POWER LINES AT SIGNAL POLES. SUCH WORK SHALL INCLUDE, BUT IS NOT LIMITED TO THE INSTALLATION OF SIGNAL CABLE, INSTALLATION OF MAST ARM FOUNDATIONS OR POLES.

7. 650-1-14, 650-1-16, & 650-1-19:  
USE SIGNAL HEAD SUPPORTING HANGER THAT IS CAPABLE OF ADJUSTING VERTICALLY A MINIMUM OF 1.5'.

ALL SIGNAL HEADS SHALL HAVE ALUMINUM LOUVERED BACK PLATES INSTALLED. BACKPLATES SHALL BE MANUFACTURED FOR THE SIGNAL HEADS USED & INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS. THE BACK PLATE SHALL HAVE A 2" YELLOW REFLECTORIZED (TYPE III REFLECTIVITY) OUTER EDGE BORDER UNLESS SPECIFIED OTHERWISE IN THE PLANS.

THE EXTERNAL COLOR OF SIGNAL HOUSING SHALL BE BLACK. ALL TRAFFIC SIGNAL HEAD INDICATIONS SHALL BE 12" LED. ALL SIGNAL HEADS SHALL HAVE TUNNEL VISORS. THE COST FOR THE TUNNEL VISORS SHALL BE INCLUDED UNDER THIS PAY ITEM.

8. 653-1-11 & 653-1-12:  
PEDESTRIAN SIGNAL HEADS TO BE 16" INTERNATIONAL SYMBOL, LED COUNTDOWN TYPE. USE LOCKING COLLARS FOR MOUNTING PEDESTRIAN SIGNAL HEADS TO PEDESTRIAN PEDESTALS. USE BREAKAWAY ALUMINUM SQUARE BASE WITH ALUMINUM DOORS FOR PEDESTRIAN PEDESTALS.

9. 660-3-11:  
SHALL INCLUDE ALL NECESSARY WAVETRONIX CLICKS UNITS FOR A COMPLETE AND OPERATIONAL SETUP.

10. 660-3-12:  
SHALL INCLUDE WAVETRONIX SMARTSENSOR ADVANCE AS NOTED IN PLANS. THIS PAY ITEM WILL INCLUDE ALL NECESSARY MOUNTING BRACKETS AND CLAMPING EQUIPMENT. SHALL INCLUDE ANY COST ASSOCIATED WITH PHYSICAL INSTALLATION OF SENSOR AND ANY SOFTWARE NECESSARY TO PROGRAM THE SENSOR.

11. 665-1-11:  
SHALL INCLUDE ADDITIONAL COST OF LABOR AND MATERIALS REQUIRED FOR INSTALLATION OF PEDESTRIAN SIGNAL SIGN FTP-68B-06. THIS SIGN SHALL BE MOUNTED ABOVE EACH PEDESTRIAN DETECTOR. ALL PEDESTRIAN PUSH BUTTONS SHALL BE A.D.A. COMPLIANT. STREET NAMES SHALL BE IN ACCORDANCE WITH THE STREET NAMES ON THE PLAN SHEETS.

12. 670-5-111:  
USE A NEMA TS2 TYPE 1 CONTROLLER, P-44 CABINET ASSEMBLY 7006-TS2/FL TYPE 6 ENCLOSURE AS SHOWN IN TABLE 7-1 OF THE 2003 NEMA STANDARD TS2. THE NAZTEC ATC CONTROLLER SHALL COME EQUIPPED WITH 6 SERIAL PORTS AND ONE ETHERNET PORT. ALL CONTROLLER EQUIPMENT TO BE COMPATIBLE WITH MANATEE COUNTY'S EXISTING ATMS SYSTEM (NAZTEC'S ATMS.NOW). THE CABINET SHALL COME EQUIPPED WITH A ETHERNET SWITCH PAID UNDER A SEPARATE PAY ITEM NUMBER AND ALL THE NECESSARY SYSTEM COMPONENTS FOR INTEGRATION INTO AN ETHERNET-BASED FIBER OPTIC NETWORK. CONTACT MANATEE COUNTY PRIOR TO ORDERING CONTROLLER ASSEMBLY TO CONFIRM EQUIPMENT COMPATIBILITY.

TRAFFIC SIGNAL CONTROLLER BASE:

THIS ITEM SHALL INCLUDE THE INSTALLATION OF A CONCRETE BASE FOR THE CONTROLLER ASSEMBLY. THE CONTROLLER ASSEMBLY FOUNDATION SHALL HAVE A MINIMUM OF FOUR (4) - 2" CONDUIT SPARES. TWO (2) OF THE SPARES SHALL BE TERMINATED IN THE NEAREST PULL BOX AND FITTED WITH A WEATHERPROOF CAP. THE OTHER TWO (2) SPARES SHALL BE TERMINATED IN THE SIGNAL CABLE AND LOW VOLTAGE PULL BOXES. THE CABINET BASE WHEN SECURED TO THE CONCRETE SLAB WITH CONTROLLER CABINET ATTACHED MUST WITHSTAND A MINIMUM WIND LOAD OF 130 MPH OR A 850 LB FORCE APPLIED AT 49" ABOVE THE BOTTOM OF THE BASE WITHOUT CAUSING THE BASE OR CABINET TO COME OUT OF THEIR ANCHORED POSITION OR CAUSE ANY PERMANENT DEFORMATION.

ALL COSTS OF LABOR, CONCRETE, AND OTHER MATERIALS FOR THE CONTROLLER ASSEMBLY, TECHNICIAN PADS, STEPS AS REQUIRED, ARE INCLUDED IN THIS ITEM.

INSTALL A PVC SLEEVE TO PREVENT THE GROUND ROD FROM DIRECT EMBEDMENT IN THE SLAB. EXTEND CONDUITS FOR FUTURE USE AT LEAST 18-INCHES FROM THE EDGE OF THE SLAB. TERMINATE UNDERGROUND WITH A COUPLING AND CAP AND SEAL SO THAT THE SEAL CAN BE REMOVED WITHOUT DAMAGING THE COUPLING. ANCHOR THE CONTROLLER CABINET TO THE BASE USING FOUR STAINLESS STEEL 1/2" -13 NC BOLTS.

THE CONTROLLER BASE SHALL BE AT LEAST 2' HIGH OR THE SAME ELEVATION AS THE CROWN OF THE ROADWAY, WHICHEVER IS GREATER. THE MAXIMUM DISTANCE FROM THE TECHNICIAN PAD OR STEP TO THE FOUNDATION TOP IS 24". THE CABINET DOORS SHALL OPEN TOWARDS OR PARALLEL TO THE RIGHT-OF-WAY LINE AND AWAY FROM TRAFFIC.

13. 682-1-113:  
THE CCTV CAMERA UNIT SHALL BE BOSCH ITS 7000 STARLITE SERIES - 1080 30 X 40

14. 684-1-1:  
THE ETHERNET SWITCH SHALL BE A RUGGEDCOM SWITCH MODEL NUMBER RSG920P, PART NUMBER 6GK6092-OPS23-0BA0-Z A05+B05+C02+D02.

15. 685-1-12:  
SHALL INCLUDE AN UNINTERRUPTED POWER SUPPLY UNIT (UPS) MODEL NO. ALPHA FXM 1100 EQUIPPED WITH AN ETHERNET PORT. ALL UNINTERRUPTIBLE POWER SUPPLIES SHALL SUPPORT SNMP (PROTOCOL) FOR REMOTE MONITORING AND MANAGEMENT. THE UPS SHALL BE SIZED TO ACCOMMODATE THE MAXIMUM CONNECTED LOAD. THE BATTERY BANK SHALL BE SIZED TO PROVIDE A MINIMUM 8 HOURS RUN TIME UNDER FULL LOAD.

16. 700-5-22:  
ALL INTERNALLY ILLUMINATED STREET NAME SIGNS SHALL BE EDGE LIT LED TYPE AND SHALL BE LISTED IN THE FDOT APPROVED PRODUCT LIST. THE COST OF THIS ITEM SHALL INCLUDE PROPERLY DESIGNED AND SIZED ADJUSTABLE HANGERS, BRACKETS, CLAMPS, AND ALL MISCELLANEOUS HARDWARE NECESSARY TO RIGID MOUNT THE SIGNS AS SHOWN IN THE PLANS. THE SIGNS SHALL BE POWERED USING IMSA 50-2 CABLE. THIS ITEM SHALL ALSO INCLUDE INSTALLATION OF THE PHOTOCCELL ON THE SERVICE POLE OR INSIDE SIGNAL CABINET.

INTERNALLY ILLUMINATED STREET NAME SIGNS SHALL HAVE 120 VOLT LED BULBS. THE WATTAGE AND VOLTAGE SHALL BE NOTED ON THE AS-BUILT PLANS FOR EACH SIGN.

CONTACTS:

MANATEE COUNTY PUBLIC WORKS DEPARTMENT  
INFRASTRUCTURE ENGINEERING  
CHRIS MOWBRAY, P.E.  
1022 26TH AVENUE EAST  
BRADENTON, FL 34208  
(941) 708-7450  
FAX: (941) 708-7431

MANATEE COUNTY HEALTH DEPARTMENT  
HARRY MESSICK  
410 6TH AVENUE EAST  
BRADENTON, FL 34208  
(941) 748-0747 EXT. 1355  
FAX: (941) 750-9364

FRONTIER COMMUNICATIONS  
DENISE HUTTON  
1701 RINGLING BLVD  
SARASOTA, FL 34236  
(941) 906-6722  
denise.hutton@ftr.com

FLORIDA GAS TRANSMISSION SAFETY HARBOR TEAM  
7804 ANDERSON ROAD  
TAMPA, FL 33634  
JOSEPH SANCHEZ  
(813) 466-3327  
CELL: (727) 639-7512  
joseph.e.sanchez@sug.com

FLORIDA POWER & LIGHT  
GREG COKER  
1253 12TH AVENUE EAST  
PALMETTO, FL 34221  
(941) 723-4430  
FAX: (941) 723-4430  
EMERGENCY:  
1-800-4-OUTAGE  
Greg\_Coker@fpl.com

MANATEE COUNTY PUBLIC WORKS DEPARTMENT  
UTILITY ENGINEERING  
SCOTT MAY, P.E.  
1022 26TH AVENUE EAST  
BRADENTON, FL 34208  
(941) 708-7450 EXT. 7650  
FAX: (941) 708-7415

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT  
SARASOTA SERVICE OFFICE  
STEVE LOPES, P.E.  
6750 FRUITVILLE ROAD  
SARASOTA, FL 34240  
(941) 377-3722  
FAX: (941) 373-7660

CHARTER COMMUNICATIONS  
JAMES CRUZAN  
5413 E. STATE ROAD 64  
BRADENTON, FL 34208-5535  
(727) 329-2846  
James.Cruzan@charter.com

TECO/PEOPLE GAS CO.  
DAN SHANAHAN  
8261 VICO COURT  
SARASOTA, FL 34240  
(813) 645-2700  
FAX: (941) 342-4011  
EMERGENCY:  
1-877-832-6911  
dshanahan@tecoenergy.com

PEACE RIVER ELECTRIC COOPERATIVE, INC.  
P.O. BOX 1310  
WACHULA, FL 33873  
DAVID McCLINTOCK  
(863) 767-4621  
David.McClintock@preco.coop

MANATEE COUNTY PUBLIC WORKS DEPARTMENT  
TRAFFIC ENGINEERING  
VISHAL KAKKAD, P.E.  
(941) 749-3500 EXT. 7812  
FAX: (941) 749-3517

DEPT OF ENVIRONMENTAL PROTECTION  
STEPHANIE BARIOS  
13051 N. TELECOM PKWY  
TEMPLE TERRACE, FL 33637  
(813) 632-7600, EXT. 408  
FAX: (813) 632-7662

CENTURYLINK  
MARK MATHIS  
(813) 245-6645  
(720) 888-1089

SUNSHINE STATE ONE CALL OF FLORIDA  
1 (800) 432-4770

			SCALE	AS NOTED
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No.	REVISIONS	DATE	BY	



HDR Engineering, Inc.  
4830 W. Kennedy Blvd.  
Suite 400  
Tampa, FL 33609-2548

DATE

10/2021

PROJECT NO.

850-6094060



MANATEE COUNTY  
PUBLIC WORKS

DESIGN ENGINEER

MICHAEL J. OATES

FL. LICENSE NO.

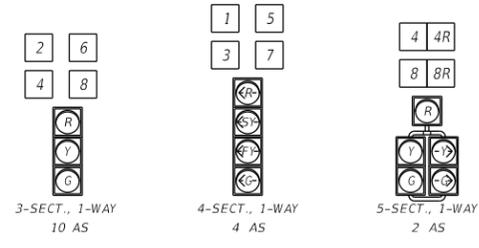
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PAY ITEM NOTES

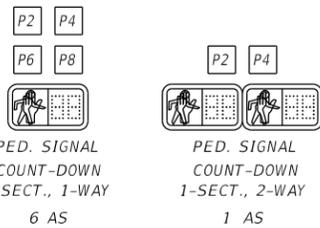
SHEET NO.

T-5

**SIGNAL HEAD DETAILS**



**PEDESTRIAN SIGNAL HEAD DETAILS**



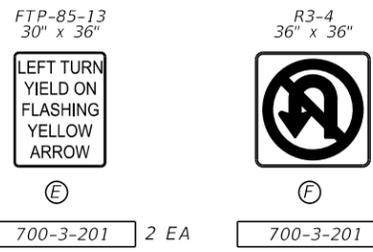
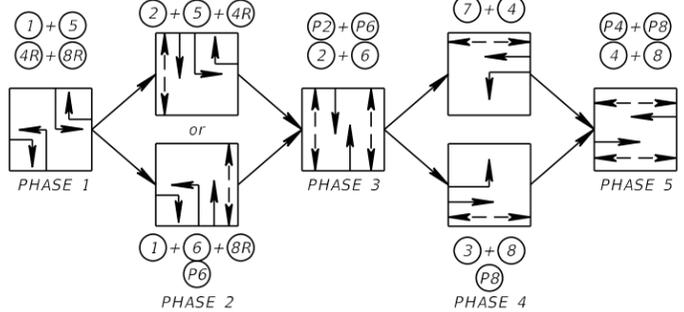
**US 301**  
12330 12334

**US 301**  
12334 12330

**← Erie Rd**  
**SR 62 →**

**← SR 62**  
**Erie Rd →**

**S.O.P. 10 MODIFIED**



- CONTROLLER OPERATIONS:**
1. MAJOR STREET IS US 301 (MOVEMENTS 1, 2, 5, 6 AND 6R) AND MINOR STREET IS ERIE RD & SR 62 (MOVEMENTS 3, 4, 4R, 7, 8 AND 8R).
  2. WHILE IN FLASH MODE, MOVEMENTS 2 & 6 SHALL FLASH YELLOW. ALL OTHER MOVEMENTS SHALL FLASH RED.
  3. CONTROLLER CABINET SHALL BE WIRED AS AN S.O.P. 10 AND OPERATED WITH S.O.P. 10 MODIFIED (WITH RIGHT TURN OVERLAPS) AS SHOWN WITH THE FOLLOWING: CONCURRENT/ACTUATED PEDESTRIANS FOR MOVEMENT 2 (P2), 4 (P4), 6 (P6) AND 8 (P8).
  4. 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.
  5. 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.
  6. OVERLAP PHASES AND NOTES:  
4R = 1 WITH MINIMUM GREEN = 7 SEC., YELLOW = 4.4 SEC., ALL RED = 2.1 SEC.  
8R = 5 WITH MINIMUM GREEN = 7 SEC., YELLOW = 4.4 SEC., ALL RED = 2.1 SEC.  
-OVERLAP 4R SHALL BE OMITTED WHEN P4 IS ACTIVE.  
-OVERLAP 8R SHALL BE OMITTED WHEN P8 IS ACTIVE.
  7. PROGRAM A START-UP DELAY OF 2 SECONDS FOR THE FLASHING YELLOW ARROW ON MOVEMENTS 1, 3, 5 AND 7 (RELATIVE TO THE OPPOSING THROUGH MOVEMENTS).
- SIGNALIZATION NOTES:**
1. POWER SERVICE METER BASE AND DISCONNECT SHALL BE INSTALLED ON THE CONCRETE SERVICE POLE AS SHOWN ON THE PLANS AND PER STANDARD PLANS INDEX NUMBERS 639-001 AND 639-002.
  2. THE CONTRACTOR SHALL COORDINATE WITH MANATEE COUNTY AND THE POWER COMPANY REGARDING THE EXACT LOCATION AND TIMING OF INSTALLATION.
  3. SEE LIGHTING PLANS FOR INTERSECTION LIGHTING DETAILS.

**CONTROLLER TIMINGS (SECONDS)**

MOVEMENT # (CONTROLLER PHASE)	1	2	3	4	5	6	7	8	NOTES
DIRECTION	NBL	SB	EBL	WB	SBL	NB	WBL	EB	
TURN TYPE	PROT/PERM								
MIN GREEN	7	20	7	10	7	20	7	10	
EXT	3	2	3	4	3	2	3	4	
YELLOW	4.8	4.8	4.4	4.4	4.8	4.8	4.4	4.4	
ALL RED	5.2	5.2	5.0	5.0	5.2	5.2	5.0	5.0	
MAX I	30	50	30	30	30	50	30	30	
MAX II	-	-	-	-	-	-	-	-	
WALK	-	7	-	7	-	7	-	7	
FLASHING DON'T WALK	-	28	-	30	-	23	-	24	
DETECTOR MEMORY	-	-	-	-	-	-	-	-	
DET. CROSS SWITCH	YES	-	YES	-	YES	-	YES	-	
DUAL ENTRY	-	ON	-	ON	-	ON	-	ON	
VEHICLE RECALL	-	MIN	-	MIN	-	MIN	-	MIN	

**HD MATRIX AND ADVANCE MVDS SMART SENSOR DETECTION ASSIGNMENTS**

HD MVDS DETECTION	DETECTION ZONE	DELAY TIME (SECS.)
HD MATRIX MVDS 1	DZ-1	3
	DZ-6	
	DZ-6R	
HD MATRIX MVDS 2	DZ-3	3
	DZ-8	
HD MATRIX MVDS 3	DZ-5	3
	DZ-4	
HD MATRIX MVDS 4	DZ-4R	8
	DZ-7	3
HD ADV MVDS 5	DZ-2	
HD ADV MVDS 6	DZ-6	

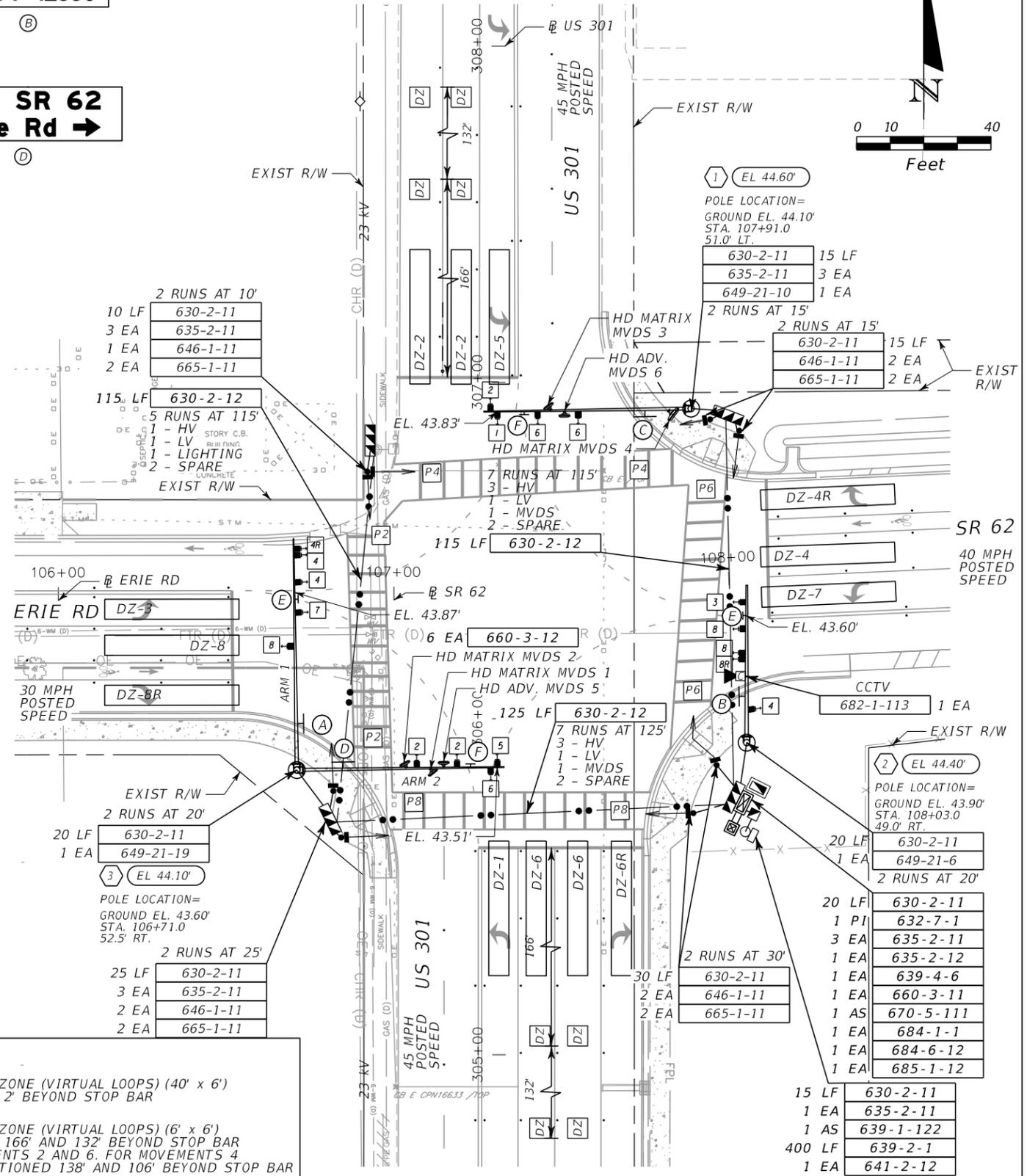
DELAY TIME IS INITIAL AND MAY REQUIRE FIELD ADJUSTING AS DIRECTED BY THE ENGINEER.

**LEGEND**

**DZ** DETECTION ZONE (VIRTUAL LOOPS) (40' x 6') POSITIONED 2' BEYOND STOP BAR

**DZ** DETECTION ZONE (VIRTUAL LOOPS) (6' x 6') POSITIONED 166' AND 132' BEYOND STOP BAR FOR MOVEMENTS 2 AND 6. FOR MOVEMENTS 4 AND 8, POSITIONED 138' AND 106' BEYOND STOP BAR

**HD MVDS**

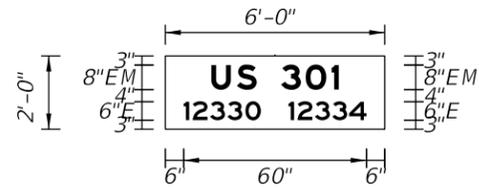


**US 301 & ERIE RD / SR 62**

<p>SCALE: AS NOTED</p> <p>DESIGNED BY: MO</p> <p>DRAWN BY: GS</p> <p>CHECKED BY: IR</p>	<p>HDR Engineering, Inc. 4830 W Kennedy Blvd, Suite 400 Tampa, FL 33609-2548</p>	<p>DATE: 10/2021</p> <p>PROJECT NO.: 850-6094060</p>	<p>Manatee County Florida</p> <p>MANATEE COUNTY PUBLIC WORKS</p>	<p>DESIGN ENGINEER: MICHAEL J. OATES</p> <p>FL. LICENSE NO.: 49282</p>	<p>SHEET NO.: T-6</p> <p><b>SIGNALIZATION PLAN</b></p>
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THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

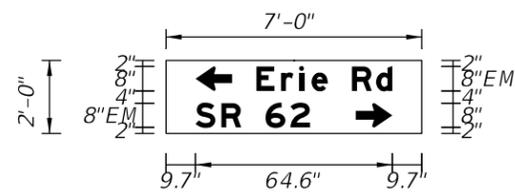
SIGN NAME A		QTY	SIGN NO.	STATION(S)
PANEL	BORDER			
WIDTH	6'-0"	WIDTH	0"	
HEIGHT	2'-0"	RADII	0"	
LEGEND	White	COLOR	Green	
COLOR	Green			
SYMBOL(S)	ANGLE	X	Y	WID HT
SIGN NO.	NO. OF POSTS	EDGE OF LANE CLEARANCE	COLUMN SIZE	AVERAGE LENGTH



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY		U	S		3	0	1		L										
SPACE	15	8.5	6.5	8	8.1	8.5	2.4	15	41.9										
COPY		1	2	3	3	0		1	2	3	3	4		L					
SPACE	6	3	5.7	5.7	5.9	5	9.1	3	5.7	5.7	5.5	5.6	6	60					
COPY																			
SPACE																			
COPY																			
SPACE																			
COPY																			
SPACE																			
COPY																			
SPACE																			

SIGN NAME C		QTY	SIGN NO.	STATION(S)
PANEL	BORDER			
WIDTH	7'-0"	WIDTH	0"	
HEIGHT	2'-0"	RADII	0"	
LEGEND	White	COLOR	Green	
COLOR	Green			
SYMBOL(S)	ANGLE	X	Y	WID HT
AR_Type D	90	9.7	14	8 12
AR_Type D	270	62.3	2	8 12
SIGN NO.	NO. OF POSTS	EDGE OF LANE CLEARANCE	COLUMN SIZE	AVERAGE LENGTH



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY		E	r	i	e	R	d	L											
SPACE	29.7	8.1	5.9	4.1	5.3	8	7.9	5.3	9.7	44.6									
COPY		S	R		6	2		L											
SPACE	9.7	8.5	6.5	8	8.2	6.5	36.7	37.6											
COPY																			
SPACE																			
COPY																			
SPACE																			
COPY																			
SPACE																			

SCALE	AS NOTED		
DESIGNED BY	MO		
DRAWN BY	GS		
CHECKED BY	IR		
No.	REVISIONS	DATE	BY

**HDR** HDR Engineering, Inc.  
4830 W Kennedy Blvd,  
Suite 400  
Tampa, FL 33609-2548

DATE  
10/2021

PROJECT NO.  
850-6094060

**Manatee County** MANATEE COUNTY PUBLIC WORKS  
FLORIDA

DESIGN ENGINEER  
MICHAEL J. OATES  
FL. LICENSE NO.  
49282

**GUIDE SIGN WORKSHEET**

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.



**STANDARD MAST ARM ASSEMBLIES DATA TABLE**

STRUCTURE ID NUMBERS	POLE 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.)	
13M178	POLE 1	A70/S/H-P5/S	A70/S/H	28					P5/S	22.75	19.75	**
	POLE 2	A50/S/H-P3/S	A50/S/H	27.5					P3/S	22.75	19.75	**
	POLE 3	A70/D-A70/D-P6/D	A70/D	35	A70/D	28	270		P6/D	23.25	20.25	**

**\*\*SPECIAL FOUNDATION DATA TABLE**

POLE ID NUMBERS	SHAFT AND REINFORCEMENT							
	DA (ft.)	DB (ft.)	RA	RB	RC	RD (in.)	RE	RF (in.)
POLE 1	22	5	11	18	10	8	-	-
POLE 2	22	4.5	11	16	10	8	-	-
POLE 3	22	5	11	18	10	8	-	-

**NOTES:**

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. Due to the proposed loading for Pole 1 - Arm 1 the A70/S/H arm is specified to be used for satisfying design requirements with FAA = 28 ft. resulting in 60 ft. arm length. Similarly Pole 3 - Arm 2 is specified as A70/D arm with SAA = 28 ft. to satisfy design requirements.

**FOUNDATION NOTE:**

Assumptions and Values used in design:

**FOUNDATION DESIGN PARAMETERS**

POLE ID NUMBERS	SOIL LAYER THICKNESS (ft.)	SOIL FRICTION ANGLE (deg)	SOIL WEIGHT (pcf) (1)	SOIL TYPE (2)	WEIGHTED AVERAGE N-VALUE (3)
POLE 1	30	28	43	SAND	9
POLE 2	30	29	43	SAND	6
POLE 3	30	29	43	SAND	12

- (1) Design water table is 0 ft. below surface
- (2) Soil type is sand (cohesionless) or clay (cohesive)
- (3) This value is determined over the length of the drilled shaft 'DA'

SCALE AS NOTED		 HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233	DATE 10/2021	 <b>MANATEE COUNTY PUBLIC WORKS</b>	DESIGN ENGINEER CHESTER A. SMITH III	<b>STANDARD MAST ARM DATA TABLES</b>	SHEET NO.	
DESIGNED BY RT			PROJECT NO. 850-6094060		FL. LICENSE NO. 70756		T-9	
DRAWN BY KE								
CHECKED BY CAS								
No.	REVISIONS	DATE	BY					