STATE OF FLORIDA

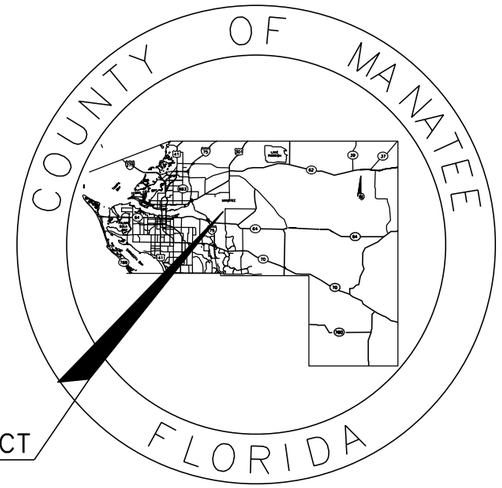
COUNTY OF MANATEE

PLANS OF PROPOSED

UPPER MANATEE RIVER ROAD AT PORT HARBOUR PARKWAY AND GREENFIELD BOULEVARD/ COPPERLEFE DRIVE

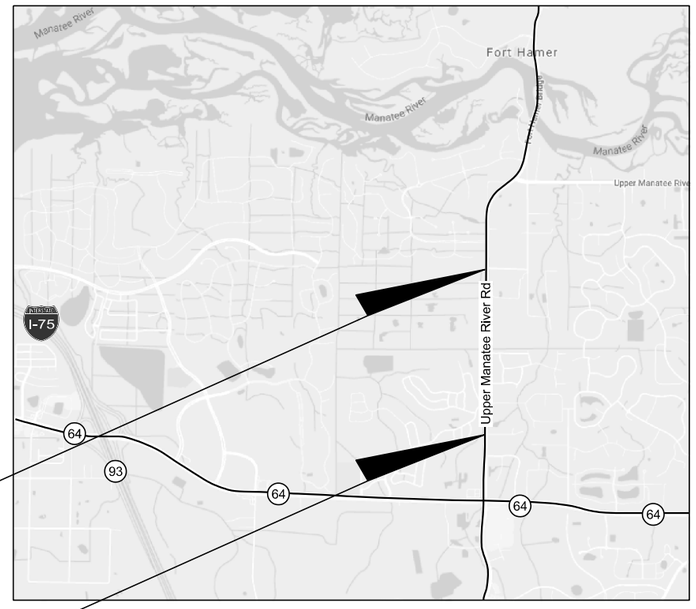
BRADENTON, FLORIDA

MC PROJECT No. 6099560



LOCATION OF PROJECT

INDEX OF SIGNALIZATION PLANS



LOCATION 1
UPPER MANATEE RIVER RD AT
PORT HARBOUR PARKWAY
STA. 96+27.00

LOCATION 2
UPPER MANATEE RIVER RD AT
GREENFIELD BLVD/COPPERLEFE DR SIGNAL
STA. 61+30.00

FINAL PLANS

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.

Manatee County FLORIDA

THE LATEST EDITION OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND THE LATEST EDITION OF THE FLORIDA DEPARTMENT OF TRANSPORTATION TRANSPORTATION STANDARD PLANS (ENGLISH UNITS) AND REVISIONS THERETO INCLUDED IN THIS CONTRACT PACKAGE SHALL GOVERN WORK PERFORMED UNDER THIS CONTRACT.
http://www.fdot.gov/roadway/DS/18/STDs.shtm

KEY SHEET REVISIONS	
DATE	DESCRIPTION

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

FLORIDA P.E. # 49282

SHEET NO.
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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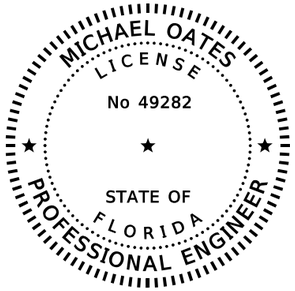

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY:

Michael J Oates

2020.03.10 11:11:04 -04'00'

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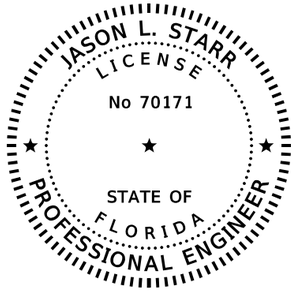
HDR ENGINEERING, INC.
2601 CATTLEMEN ROAD, SUITE 400
SARASOTA, FLORIDA 34232-6212
CERTIFICATE OF AUTHORIZATION NO. 4213
MICHAEL OATES, P.E. NO. 49282

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

SIGNALIZATION PLANS



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Jason L Starr

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HDR ENGINEERING, INC.
2601 CATTLEMEN ROAD, SUITE 400
SARASOTA, FLORIDA 34232-6212
CERTIFICATE OF AUTHORIZATION NO. 4213
CHESTER A. SMITH III, P.E. NO. 70756

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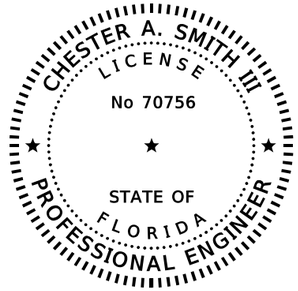
SIGNALIZATION PLANS



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Chester A Smith III

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HDR ENGINEERING, INC.
2601 CATTLEMEN ROAD, SUITE 400
SARASOTA, FLORIDA 34232-6212
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SIGNALIZATION PLANS

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MO
DRAWN BY: GS
CHECKED BY: IR

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6212
FBPR Certificate of
Authorization No. 4213

DATE: 01/2020
PROJECT NO.: 6099560

MANATEE COUNTY PUBLIC WORKS

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

SIGNATURE SHEET

SHEET NO.: T-2

2:25:34 PM 2/20/2020 P:\3658\10001573\10117633\6.0_CAD_BIM\6.2_WIP\12345615201\zzworking\PortHarbourPkwy Signal\SIGNSG01.dgn

TABULATION OF QUANTITIES

	PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS												TOTAL THIS SHEET		GRAND TOTAL	
				T-6		T-7		T-9		T-10		T-11		T-12					
				PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL
	630-2-11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH	LF	480		410												890		890	
	630-2-12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF	230		435												665		665	
	632-7-1	SIGNAL CABLE- NEW OR RECONSTRUCTED INTERSECTION, FURNISH & INSTALL	PI	1		1												2		2	
	633-1-121	FIBER OPTIC CABLE, F&I, UNDERGROUND,2-12 FIBERS	LF	525		520												1045		1045	
	633-2-31	FIBER OPTIC CONNECTION, INSTALL, SPLICE	EA	4		4												8		8	
	633-3-12	FIBER OPTIC CONNECTION HARDWARE, F&I, SPLICE TRAY	EA	1		1												2		2	
	633-3-15	FIBER OPTIC CONNECTION HARDWARE, F&I, PRETERMINATED PATCH PANEL	EA	1		1												2		2	
	633-3-51	FIBER OPTIC CONNECTION HARDWARE, ADJUST/MODIFY SPLICE ENCLOSURE	EA	1		1												2		2	
	633-8-1	MULTI-CONDUCTOR COMMUNICATION CABLE, FURNISH & INSTALL	LF	390		1200												1590		1590	
	635-2-11	PULL & SPLICE BOX, F&I, 17" x 30" COVER SIZE	EA	8		10												18		18	
	635-2-12	PULL & SPLICE BOX, F&I, 24" x 36" COVER SIZE	EA	1		3												4		4	
	639-1-122	ELECTRICAL POWER SERVICE, F&I, UNDERGROUND, METER PURCHASED BY CONTRACTOR	AS	1		1												2		2	
	639-2-1	ELECTRICAL SERVICE WIRE, FURNISH & INSTALL	LF	90		320												410		410	
	639-4-6	EMERGENCY GENERATOR - PORTABLE, INSTALL HOUSING ONLY	EA	1		1												2		2	
	641-2-12	PRESTRESSED CONCRETE POLE, F&I, TYPE P-II SERVICE POLE	EA	1		1												2		2	
	646-1-11	ALUMINUM SIGNALS POLE, FURNISH & INSTALL PEDESTAL	EA	4		8												12		12	
	649-21-19	STEEL MAST ARM ASSEMBLY, FURNISH & INSTALL, DOUBLE ARM 70'-60'	EA			1												1		1	
	649-21-21	STEEL MAST ARM ASSEMBLY, FURNISH & INSTALL, SINGLE ARM 78'	EA	2														2		2	
	649-21-25	STEEL MAST ARM ASSEMBLY, FURNISH & INSTALL, DOUBLE ARM 78'-60'	EA			1												1		1	
	650-1-14	TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 3 SECTION, 1 WAY	AS	6		10												16		16	
	650-1-16	TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 4 SECTION, 1 WAY	AS	1		4												5		5	
	650-1-19	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 5 SECTION CLUSTER, 1 WAY	AS	3														3		3	
	653-1-11	PEDESTRIAN SIGNAL, FURNISH & INSTALL LED COUNTDOWN, 1 WAY	AS	2		8												10		10	
	660-3-11	VEHICLE DETECTION SYSTEM- MICROWAVE, FURNISH & INSTALL CABINET EQUIPMENT	EA	1		1												2		2	
	660-3-12	VEHICLE DETECTION SYSTEM- MICROWAVE, FURNISH & INSTALL, ABOVE GROUND EQUIPMENT	EA	5		6												11		11	
	660-6-121	VEHICLE DETECTION SYSTEM- AVI, BLUETOOTH, FURNISH & INSTALL, CABINET EQUIPMENT	EA	1		1												2		2	
*	660-6-121	VEHICLE DETECTION SYSTEM- AVI, BLUETOOTH, FURNISH ONLY, CABINET EQUIPMENT	EA	2		2												4		4	
	660-6-122	VEHICLE DETECTION SYSTEM- AVI, BLUETOOTH, FURNISH & INSTALL, ABOVE GROUND EQUIPMENT	EA	1		1												2		2	
*	660-6-122	VEHICLE DETECTION SYSTEM- AVI, BLUETOOTH, FURNISH ONLY, ABOVE GROUND EQUIPMENT	EA	2		2												4		4	
	665-1-11	PEDESTRIAN DETECTOR, FURNISH & INSTALL, STANDARD	EA	2		8												10		10	
	670-5-111	TRAFFIC CONTROLLER ASSEMBLY, F&I, NEMA, 1 PREEMPTION	AS	1		1												2		2	
*	671-2-11	TRAFFIC CONTROLLER WITHOUT CABINET, FURNISH ONLY, NEMA	EA	2		2												4		4	
	682-1-113	ITS CCTV CAMERA, F&I, DOME ENCLOSURE, - PRESSURIZED, IP, HIGH DEFINITION	EA	1		1												2		2	
	684-1-1	MANAGED FIELD ETHERNET SWITCH, FURNISH & INSTALL	EA	1		1												2		2	
	685-1-12	UNINTERRUPTIBLE POWER SUPPLY, FURNISH AND INSTALL, ONLINE/DOUBLE CONVERSION	EA	1		1												2		2	
	700-1-11	SINGLE POST SIGN, F&I GROUND MOUNT, UP TO 12 SF	AS					1										1		1	
	700-1-12	SINGLE POST SIGN, F&I GROUND MOUNT, 12-20 SF	AS							1		2		1				4		4	
	700-1-60	SINGLE POST SIGN, REMOVE	AS					1		4		5		3				13		13	
	700-1-74	SINGLE POST SIGN, F&I CUSTOM, 31+ SF	AS					3		1				1				5		5	
	700-3-201	SIGN PANEL, FURNISH & INSTALL OVERHEAD MOUNT, UP TO 12 SF	EA	3		8												11		11	
	700-5-22	INTERNALLY ILLUMINATED SIGN, FURNISH & INSTALL, OVERHEAD MOUNT, 12-18 SF	EA	3		4												7		7	
	700-11-391	ELECTRONIC DISPLAY SIGN, FURNISH & INSTALL OVERHEAD MOUNT-	AS	2		4												6		6	
		AC POWERED, BLANK OUT SIGN, UP TO 12 SF																			
	700-13-15	RETROREFLECTIVE SIGN STRIP- FURNISH AND INSTALL, 5'	EA							1		2		1				4		4	
	706-1-11	RAISED PAVEMENT MARKER, TYPE B WITHOUT FINAL SURFACE MARKINGS	EA									5						5		5	
	711-11-123	THERMOPLASTIC, STANDARD, WHITE, SOLID, 12" FOR CROSSWALK AND ROUNDABOUT	LF									146						146		146	
	711-11-125	THERMOPLASTIC, STANDARD, WHITE, SOLID, 24" FOR STOP LINE	LF					55				78						133		133	
	711-11-170	THERMOPLASTIC, STANDARD, WHITE, ARROW	EA									3						3		3	
	711-11-241	THERMOPLASTIC, STANDARD, YELLOW, 2-4 DOTTED GUIDE LINE /6-10 DOTTED EXTENSION LINE, 6"	GM					0.026										0.026		0.026	
	711-14-125	THERMOPLASTIC, PREFORMED, WHITE, SOLID, 24" FOR CROSSWALK	LF					133				175						308		308	
	711-16-101	THERMOPLASTIC, STANDARD-OTHER SURFACES, WHITE, SOLID, 6"	GM									0.025						0.025		0.025	
	715-1-12	LIGHTING CONDUCTORS, F&I, INSULATED, NO.8 - 6	LF	980		1200												2180		2180	
	715-5-32	LUMINAIRE & BRACKET ARM- GALV STEEL, FURNISH & INSTALL	EA	2		2												4		4	
		NEW LUMINAIRE AND ARM ON NEW/EXISTING POLE																			

* SEE PAY ITEM NOTES 12 AND 15.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MO
DRAWN BY: GS
CHECKED BY: IR

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6212
FBPR Certificate of
Authorization No. 4213

DATE: 01/2020
PROJECT NO.: 6099560

MANATEE COUNTY PUBLIC WORKS

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

TABULATION OF QUANTITIES

SHEET NO.: T-3

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

GENERAL NOTES

1. THE CONTRACTOR SHALL CONTACT THE ENGINEER, IN CONJUNCTION WITH MANATEE COUNTY'S PROJECT MANAGEMENT DIVISION BEFORE STARTING WORK.

2. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, IN CONJUNCTION WITH MANATEE COUNTY'S TRAFFIC ENGINEERING DIVISION (941-749-3502 EXT. 7817), AT LEAST TWO WEEKS BEFORE ANY CABINET MODIFICATIONS ARE TO BE PERFORMED. THE ENGINEER, IN CONJUNCTION WITH MANATEE COUNTY ENGINEERING DIVISION PERSONNEL WILL REVIEW, ASSIST AND PROVIDE TECHNICAL SUPPORT RELEVANT TO ANY FIELD MODIFICATIONS THAT ARE NECESSARY.

3. AT LEAST TWO (2) FULL BUSINESS DAYS PRIOR TO BEGINNING THE TRAFFIC SIGNAL INSTALLATION, PERMITTEE TO CONTACT THE TRAFFIC SIGNAL INSPECTOR/LIAISON:

   MANATEE COUNTY PROJECT MANAGEMENT DIVISION
   DANIEL GARNER
   1022 26TH AVENUE EAST
   BRADENTON, FLORIDA 34208
   PHONE: 941-708-7450 EXT. 7236

4. ONE WEEK PRIOR TO THE BEGINNING OF THE TRAFFIC SIGNAL INSTALLATION OR TURN ON OF A NEW SIGNAL, THE CONTRACTOR SHALL NOTIFY THE ENGINEER:

   MANATEE COUNTY PROJECT MANAGEMENT DIVISION
   DANIEL GARNER
   1022 26TH AVENUE EAST
   BRADENTON, FLORIDA 34208
   PHONE: 941-708-7450 EXT. 7236

   MANATEE COUNTY TRAFFIC ENGINEERING DIVISION
   VISHAL KAKKAD
   2101 47TH TERRACE EAST
   BRADENTON, FLORIDA 34203
   PHONE: 941-749-3500 EXT. 7812

5. DELIVER THREE SETS OF RECORD DRAWINGS, TWO SETS OF IMSA INSPECTION FORMS AND ONE COMPACT DISC OF RECORD DRAWINGS TO MR. AARON BURKETT, THE MANATEE COUNTY TRAFFIC OPERATIONS DIVISION MANAGER AT 2904 12TH ST CT E, BRADENTON, FL 34208. RECORD DRAWINGS MUST BE DELIVERED TO THE COUNTY 5 BUSINESS DAYS PRIOR TO SCHEDULING THE FINAL INSPECTION.

6. UPON PASSING THE FINAL INSPECTION THE CONTRACTOR SHALL SEND A WRITTEN REQUEST TO THE PROJECT MANAGEMENT DIVISION AND THE TRANSPORTATION DIVISION TO TRANSFER MAINTENANCE FROM THE CONTRACTOR TO MANATEE COUNTY. MANATEE COUNTY WILL RESPOND WITHIN 5 WORKING DAYS TO ESTABLISH A TIME TABLE FOR THE TRANSFER OF MAINTENANCE RESPONSIBILITY.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE LOCAL POWER COMPANY PROVIDING ELECTRICAL POWER TO DETERMINE IF A SERVICE PROCESSING FEE IS REQUIRED. ANY FEE SHALL BE INCLUDED AS PART OF PAYMENT FOR THE ELECTRICAL POWER SERVICE ASSEMBLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS OF THE ELECTRICAL SERVICE. THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION, INSPECTION AND ENERGIZING OF THE NEW POWER SERVICE IN A TIMELY MANNER IN ORDER TO PROMOTE PROJECT COMPLETION WITHIN CONTRACT TIME.

8. THE LOCATION OF UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR, VIA SUNSHINE STATE ONE CALL OF FLORIDA, INC AT 811 OR 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.

9. 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 THE INSTALLATION OF SIGNAL CABLE, FIBERGLASS INSULATORS, AND SIGNAL POLES.

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

10. THE CONTRACTOR SHALL HAND DIG THE FIRST 48 INCHES OF THE HOLE FOR THE POLE FOUNDATION OR CONDUIT RUN WHERE UTILITIES ARE IN CLOSE PROXIMITY.

11. THE CONTRACTOR IS TO DE-WATER THE POLE FOUNDATION EXCAVATION IF THE ELEVATION OF WATER IS HIGHER THAN THE ELEVATION OF THE FOUNDATION BASE.

12. ALL MATERIALS, EQUIPMENT, AND OTHER CONTRACTOR SUPPLIED ITEMS SHALL BE INSTALLED AND MAINTAINED ACCORDING TO THE MANUFACTURERS RECOMMENDATIONS, UNLESS SPECIFICALLY DIRECTED OTHERWISE BY THE ENGINEER.

13. #14 XHHW PULL WIRE SHALL BE INSTALLED IN ALL CONDUITS. AT LEAST 2 FEET OF PULL WIRE SHALL BE ACCESSIBLE AT EACH CONDUIT TERMINATION AND SECURED IN THE PULL BOX OR PLACE OF TERMINATION.

14. ALL ELECTRICAL WIRING SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE PUBLISHED BY THE NATIONAL FIRE PROTECTION ASSOCIATION.

15. GROUNDING: ALL COSTS FOR GROUNDING SHALL BE INCLUDED IN THE COST OF THE ITEM BEING GROUNDED. ALL GROUND ROD ASSEMBLIES FOR POLES, SERVICES, CABINETS, AND OTHER RELATED EQUIPMENT SHALL BE BONDED TOGETHER TO FORM AN INTEGRATED GROUNDING SYSTEM USING #6 AWG THHN COPPER WIRE. THE UPPER END OF ALL GROUND RODS SHALL BE 18 INCHES BELOW GROUND ELEVATION. MARK GROUND ROD LOCATION WITH PERMANENT MARKER SUCH AS AN EPOXIED STICKER LOCATED ON THE NEAREST CURB, AND PROVIDE AS-BUILT DRAWINGS WITH THE LOCATION OF GROUND RODS MARKED. GROUNDING CONDUCTOR MUST BE #6 OR LARGER INSULATED COPPER.

   CONNECTING DEVICES SHALL BE NON-CORROSIVE SPLIT BOLTS, CLAMPS, PRESSURE CONNECTORS, OR OTHER APPROVED MEANS TO ENSURE A POSITIVE CONNECTION.

   GROUND RESISTANCE TESTER, OR OTHER APPROVED MEANS SHALL BE USED TO ACQUIRE THE GROUND ROD RESISTANCE. THE ENGINEER, OR A REPRESENTATIVE OF THE ENGINEER FROM THE TRAFFIC OPERATIONS DIVISION STAFF SHALL BE PRESENT DURING THE TEST.

16. ELEVATION OF THE TOP OF THE MAST ARM FOUNDATION SHALL BE SIX INCHES ABOVE EXISTING GRADE, UNLESS LOCATED DIRECTLY AT BACK OF SIDEWALK. IF LOCATED AT BACK OF SIDEWALK, THE FOUNDATION ELEVATION SHALL MATCH SIDEWALK GRADE. SEE FOUNDATION OUT OF GROUND (#) ON "MAST ARM TABULATION" SHEET.

17. IT SHOULD BE NOTED THAT NO TEST BORINGS WERE MADE WHERE CONDUIT RUNS ARE TO BE INSTALLED BY JACKING OR BORING.

18. CONTRACTOR SHALL SUPPLY ALL MATERIAL SUBMITTALS TO THE ENGINEER PRIOR TO CONSTRUCTION FOR APPROVAL.

19. THE TYPE OF EQUIPMENT USED IN THE INSTALLATION OF MAST ARMS/ FOUNDATIONS SHALL MEET THE FOLLOWING REQUIREMENTS:
    1) OVERHEAD LINES SHALL STAY IN PLACE BOTH VERTICALLY AND HORIZONTALLY; AND
    2) CONTRACTOR SHALL MEET ALL APPLICABLE OSHA REQUIREMENTS. ANY COST ASSOCIATED WITH THE TYPE OF EQUIPMENT REQUIRED FOR THIS INSTALLATION SHALL BE INCLUDED IN THE RELATED PAY ITEMS.

20. CONTRACTOR SHALL UTILIZE FDOT STANDARD PLANS INDEX 102-600, 102-615, 102-616, 102-617 AND 102-660 AS APPLICABLE DURING MAINTENANCE OF TRAFFIC OPERATIONS.

21. EXISTING SPEED LIMITS ARE AS FOLLOWS:
    45 MPH ON UPPER MANATEE RIVER RD
    30 MPH ON PORT HARBOUR PKWY
    25 MPH ON GREENFIELD BLVD/COPPERLEFE DR.

22. UNDER SUPERVISION OF THE COUNTY, THE CONTRACTOR SHALL PERFORM AN INITIAL OPERATION TEST TO ENSURE THE CCTV ASSEMBLY HAS BEEN INSTALLED CORRECTLY AS A COMPLETE AND FUNCTIONALLY ACCEPTABLE INSTALLATION.

23. SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW FOR ALL EQUIPMENT AND MATERIALS FURNISHED AND INSTALLED. THE CONTRACTOR SHALL FURNISH COPIES OF ALL DRAWINGS, SCHEDULES AND COMPLETE DESCRIPTIVE AND TECHNICAL DATA ON ALL ITEMS TO THE PROJECT MANAGER.

24. THE ACCEPTANCE OF ANY SUBMITTED DATA FOR MATERIALS, EQUIPMENT, APPARATUS, DEVICES, ARRANGEMENTS AND/OR LAYOUTS SHALL NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF PLACING SAME AND PROPER DIMENSIONS, CAPACITIES, SIZES, QUANTITY AND INSTALLATIONS DETAILS TO EFFICIENTLY PERFORM THE REQUIREMENTS AND INTENT OF THE CONTRACT. SUCH ACCEPTANCE SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS OF ANY SORT ON THE SUBMITTAL DATA.

25. CONTRACTOR TO CONTACT TRAFFIC ENGINEERING DIVISION: MUKUNDA GOPALAKRISHNA (941-749-3500 EXT. 7813) TO OBTAIN IP ADDRESSES FOR FIELD DEVICES AND ETHERNET SWITCH CONFIGURATION INFORMATION.

26. WHEN A CONTRACTOR IS WORKING ON A SIGNAL IN AN INTERSECTION (INSTALLING CONDUIT IN THE STREET, REMOVING EXISTING SIGNAL EQUIPMENT, LOOPS, HOMERUNS OR TURNING ON OF NEW SIGNAL) WHERE A LANE IS CLOSED, THE ENGINEER MAY REQUIRE AN OFF DUTY LAW ENFORCEMENT OFFICER TO DIRECT TRAFFIC. THE HOURLY RATE FOR AN OFF DUTY LAW ENFORCEMENT OFFICER CAN BE OBTAINED FROM THE LOCAL LAW ENFORCEMENT OFFICE. THE COST OF THE OFFICER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND INCLUDED IN PAY ITEM 102-1-104.

27. CONTRACTOR SHALL COORDINATE PAVEMENT MARKINGS AND SIGNAGE WORK WITH SCHEDULING OF SIGNAL ACTIVATION. THE SIGNAL SHALL NOT BE FULLY ACTIVATED UNTIL ALL PROPOSED STOP BARS, CROSSWALKS, RAMPS, AND PAVEMENT REMOVAL WORK IS COMPLETE. THE EXISTING STOP SIGNS SHALL BE REMOVED UPON FULL SIGNAL ACTIVATION.

28. THE CONTRACTOR SHALL CONTACT THE TRAFFIC ENGINEERING DIVISION FOR A LIST OF APPROVED ITS COMPONENTS FOR ALL ATMS MATERIAL PRIOR TO SUBMITTING SHOP DRAWINGS. THIS INCLUDES BUT NOT LIMITED TO ETHERNET SWITCH, FIBER PULL BOXES, SPLICE BOXES AND ROUTE MARKERS WITH CORRECT WORDING.

29. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TWO PORTABLE 4' x 8' VARIABLE-MESSAGE SIGNS (VMS) FOR A PERIOD OF TWO WEEKS. THE VMS WILL BE LOCATED AT AN APPROPRIATE DISTANCE IN ADVANCE OF EACH APPROACH TO THE NEW SIGNALIZED INTERSECTION AS SPECIFIED BY THE MAINTAINING AGENCY'S ENGINEER. THE VMS WILL BE PROVIDED (1) WEEK PRIOR TO THE SCHEDULED ACTIVATION TO FULL COLOR OPERATION AND SHALL REMAIN IN PLACE FOR ONE (1) WEEK FOLLOWING ACTIVATION. COST OF FURNISHING VMS TO BE INCLUDED UNDER THE ASSOCIATED PAY ITEM FOR MAINTENANCE OF TRAFFIC.

   PRIOR TO ACTIVATION, THE VMS SIGN SHALL BE:
   (PANEL ONE - LINE 1) "TRAFFIC"
   (PANEL ONE - LINE 2) "SIGNAL"
   (PANEL ONE - LINE 3) "WILL BE"
   (PANEL TWO - LINE 1) "ACTIVATED"
   (PANEL TWO - LINE 2) "ON DAY"
   (PANEL TWO - LINE 3) "MONTH XX"

   SUBSTITUTION FOR THE WORD "DAY" SHALL BE AS FOLLOWS:
   SUNDAY AS "SUN"
   MONDAY AS "MON"
   TUESDAY AS "TUES"
   WEDNESDAY AS "WED"
   THURSDAY AS "THUR"
   FRIDAY AS "FRI"
   SATURDAY AS "SAT"

   SUBSTITUTION FOR THE WORD "MONTH" SHALL BE AS FOLLOWS:
   JANUARY AS "JAN"
   FEBRUARY AS "FEB"
   MARCH AS "MAR"
   APRIL AS "APR"
   MAY AS "MAY"
   JUNE AS "JUN"
   JULY AS "JUL"
   AUGUST AS "AUG"
   SEPTEMBER AS "SEP"
   OCTOBER AS "OCT"
   NOVEMBER AS "NOV"
   DECEMBER AS "DEC"

   SUBSTITUTION FOR THE WORD "XX" SHALL BE AS FOLLOWS:
   THE NUMERICAL DAY OF THE MONTH, FROM ONE (1) TO THIRTY-ONE (31). DATES LESS THAN TEN (10) SHALL BE PRECEDED BY A ZERO (0); EXAMPLE: "JAN 03" FOR JANUARY 3RD. AFTER THE TURN-ON, THE VMS SHALL BE CHANGED TO

   (PANEL ONE - LINE 1) "TRAFFIC"
   (PANEL ONE - LINE 2) "SIGNAL"
   (PANEL TWO - LINE 1) "NOW"
   (PANEL TWO - LINE 2) "ACTIVE"

   PANEL TWO, LINE 1 AND LINE 2, SHALL FLASH THREE (3) TIMES BEFORE REVERTING TO PANEL ONE.

CONDUIT NOTES

1. ALL HDPE CONDUIT CONNECTIONS SHALL BE JOINED WITH A FUSION COUPLER OR FUSION SPLICE.

2. THE CONTRACTOR SHALL ADJUST THE CONDUIT RUNS, DEVICE POLES, BORES AND SERVICE POLE PLACEMENTS TO AVOID ANY UTILITY CONFLICT IDENTIFY BY THE LOCATES. ANY SIGNIFICANT CHANGE SHALL BE APPROVED BY THE ENGINEER.

3. THE CONDUITS TO BE INSTALLED ARE TO BE PLACED SO AS TO TOTALLY AVOID ANY CONFLICTS 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 ADJUST CONDUIT VERTICALLY OR HORIZONTALLY TO AVOID CONFLICT WITH UNDERGROUND UTILITIES. THE CONTRACTOR SHALL USE HAND EXCAVATION METHODS WHEN EXCAVATING NEAR EXISTING UTILITIES, NO SEPARATE PAYMENT SHALL BE MADE FOR THIS WORK. EXTREME CAUTION SHALL BE USED BY THE CONTRACTOR WHEN EXCAVATING, INSTALLING, BACK FILLING AND COMPACTING AROUND EXISTING UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY UTILITY.

4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD LOCATE ALL ABOVEGROUND AND UNDERGROUND CONFLICTS IN ADVANCE OF THE PLACEMENT OF ANY CONDUIT OR OTHER FACILITIES. THE CONTRACTOR SHALL FIELD MARK THE PROPOSED ALIGNMENT FOR REVIEW AND CONCURRENCE BY THE ENGINEER PRIOR TO TRENCHING AND/OR PLACEMENT. NO PULL BOXES SHALL BE LOCATED IN DRAINAGE SWALES, OR PAVED SHOULDERS.

5. WHEN TRENCHING FOR INSTALLATION, THE CONTRACTOR MAY RUN COMMUNICATIONS AND POWER SERVICE IN THE SAME TRENCH. THE POWER SERVICE SHALL HAVE SEPARATE PULL BOXES FOR ACCESS. THE CONTRACTOR SHALL NOT INSTALL COMMUNICATIONS AND POWER SERVICE IN THE SAME CONDUIT, PULL BOX OR MANHOLE.

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

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MO
DRAWN BY: GS
CHECKED BY: IR

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6212
FBPR Certificate of
Authorization No. 4213

DATE: 01/2020
PROJECT NO.: 6099560

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

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

GENERAL NOTES

SHEET NO.: T-4

2:26:08 PM 2/20/2020 P:\3658\10001573\10117633\6.0_CAD_BIM\6.2_WIP\12345615201\zzworking\PortHarbourPkwy Signal\GNNTSG01.DGN

6. THE CONTRACTOR SHALL PLACE ALL CONDUITS IN A MANNER THAT MINIMIZES DEFLECTION BOTH HORIZONTALLY AND VERTICALLY, THUS MINIMIZING STRESS ON CABLES DURING CABLE INSTALLATION. CONDUIT FOR FIBER OPTIC CABLE IN TRENCHES SHALL NOT DEFLECT MORE THAN 1-INCH PER FOOT VERTICALLY OR HORIZONTALLY. BENDS SHALL NOT BE PERMITTED EXCEPT AS SPECIFIED ON THE PLANS.

7. 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 LOCATING CONDUIT AROUND EXISTING UTILITIES AND OBSTRUCTIONS.

8. ALL CONDUIT TRENCHES SHALL BE BACKFILLED COMPLETELY TO PROVIDE SAFE CROSSING BY THE END OF THE WORKING DAY OR WHENEVER THE WORK ZONE BECOMES INACTIVE. DO NOT OPEN ANY AREA THAT CANNOT BE BACKFILLED IN THE SAME DAY/ NIGHT OPERATION.

   BRACKETS AND SPACERS WHICH ARE REQUIRED TO OFFSET THE RIGID METAL CONDUIT FROM THE MOUNTING, SHALL BE OF SIMILAR MATERIALS TO PREVENT CATHODIC REACTION.

9. ALL NEW CONDUIT SHALL BE PLACED AT A MINIMUM DEPTH OF 30" UNLESS PLACED IN AN AREA OF NEW FILL, IN WHICH CASE THE CONDUIT SHALL BE 48". DIRECTIONALLY BORED CONDUIT SHALL BE AT A MINIMUM DEPTH OF 48".

SIGNING AND PAVEMENT MARKING NOTES

1. PAVEMENT MARKINGS SHALL BE PLACED AS SHOWN IN THE PLANS AND THE APPROPRIATE F.D.O.T. STANDARD PLANS.

2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LENGTH OF SIGN COLUMN SUPPORTS IN THE FIELD PRIOR TO FABRICATION.

3. CAUTION SHALL BE EXERCISED WHILE RELOCATING EXISTING SIGNS SO AS TO PREVENT DAMAGE TO THE SIGNS. IF THE SIGNS ARE DAMAGED BEYOND USE, AS DETERMINED BY THE ENGINEER, THEY SHALL BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE.

4. THE SIGN LOCATIONS ARE APPROXIMATE AND MAY REQUIRE FIELD ADJUSTMENT AS DIRECTED BY THE ENGINEER.

5. AT LOCATIONS WHERE UNDERGROUND UTILITIES ARE IN CLOSE PROXIMITY TO SIGN FOUNDATIONS AS DETERMINED BY THE CONTRACTOR, THE CONTRACTOR SHALL HAND DIG THE FIRST FOUR FEET OF THE HOLE FOR THE MULTI POST FOUNDATIONS.

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.

   #14 XHHW PULL WIRE SHALL BE INSTALLED IN ALL CONDUITS. AT LEAST 2 FEET OF PULL WIRE SHALL BE ACCESSIBLE.

   ALL CONDUIT RUNS SHOWN ON THE PLANS ARE SCHEMATIC AND FIELD ADJUSTMENTS MAY BE NECESSARY. 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 & 635-2-12:
   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. STANDARD FIBER OPTIC COMMUNICATIONS PULL BOX DIMENSIONS SHALL BE 24" X 36" X 24" AND THE LID SHALL BE STAMPED "MANATEE COUNTY COMMUNICATIONS" 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 FPL 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 - ONE 15 AMP FOR INTERNALLY ILLUMINATED STREET NAME SIGNS. ONE 15 AMP FOR FUTURE USE AND ONE 60 AMP FOR CONTROLLER CABINET MAIN BREAKER. ONE 15 AMP BREAKER FOR INTERNALLY ILLUMINATED SIGNS MAY ALSO NEED STREET LIGHTING AS WELL AND BE APPROPRIATELY SIZED. ONE LIGHTING BREAKER, ONE SIGNAL BREAKER AND SURGE SUPPRESSION BREAKER (FUTURE USE) SHOULD BE INSTALLED.

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. 646-1-11:
   THIS PAY ITEM INCLUDES THE PEDESTAL MOUNTED SIGNALS FOR SIGNAL HEADS 4 AND 4R AT PORT HARBOUR PARKWAY.

7. 649-21-19, 649-21-21 & 649-21-25:
   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.

8. 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.

9. 653-1-11:
   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.

10. 660-3-11:
    SHALL INCLUDE ALL NECESSARY WAVETRONIX CLICKS UNITS FOR A COMPLETE AND OPERATIONAL SETUP.

11. 660-3-12:
    SHALL INCLUDE WAVETRONIX SMARTSENSOR MATRIX OR 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.

12. 660-6-121 & 660-6-122:
    THE CONTRACTOR SHALL FURNISH AND INSTALL 2 BLUETOOTH UNITS AS SHOWN IN THE PLANS. ADDITIONALLY, THE CONTRACTOR SHALL FURNISH FOUR (4) ADDITIONAL UNITS AND DELIVER TO VISHAL KAKKAD, TRAFFIC ENGINEERING, 2101 47TH TERRACE E, BRADENTON, FL 34203.

13. 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.

14. 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 ½ -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.
    - TRAFFIC CONTROLLER: NAZTEC TS2 TYPE 1 980 ATC.
    - TRAFFIC CONTROLLER CABINET: NAZTEC TS2 TYPE 1, SIZE: TYPE - VI WITH FRONT AND BACK DOOR ACCESS.
    - CCTV: BOSCH ITS 7000 STARLITE SERIES - 1080P 30x40
    - BLUETOAD: BLUETOAD SPECTRA WITH RSU, EVP (EMERGENCY VEHICLE PREEMPTION), OBU (ON-BOARD UNIT), POE UNIT (AT EACH INTERSECTION) ALONG WITH RELATED EMERGENCY VEHICLE PREEMPTION DEVICE IN THE CONTROLLER CABINET (COORDINATE WITH THE VENDOR). THE CONTRACTOR SHALL F&I 2 EA AND FURNISH ONLY 4 EA TO THE COUNTY, WHICH THE COUNTY WILL INSTALL THEMSELVES.
    - INCLUDES 3 SYCNHRO GREEN ADAPTIVE CONTROL LICENSES PER INTERSECTION (FOR A TOTAL OF 6) AS PART OF THIS PROJECT (FURNISH ONLY).
    - TRAFFIC NAZTEC 980 ATC TRAFFIC CONTROLLER TO INCLUDE CONNECTED VEHICLE MODULE KEY (COORDINATE WITH THE VENDOR). THE CONTRACTOR IS TO PROVIDE 5 LICENSE KEYS FOR THE NAZTEC CONNECTED VEHICLE MODULE TO PROVIDE TO THE COUNTY.

15. 671-2-11:
    SHALL INCLUDE FURNISHING FOUR (4) NAZTEC TS2 TYPE 1 980 ATC CONTROLLERS WITH SYNCHRO GREEN ADAPTIVE CONTROL LICENSES. THE CONTRACTOR SHALL FURNISH THE CONTROLLERS AND DELIVER TO VISHAL KAKKAD, TRAFFIC ENGINEERING, 2101 47TH TERRACE E, BRADENTON, FL 34203.

16. 684-1-1:
    THE ETHERNET SWITCH SHALL BE A RUGGEDCOM SWITCH MODEL NUMBER RSG920P, PART NUMBER 6GK6092-0PS23-0BA0-ZA05+B05+C02+D02.

17. 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.

18. 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 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 PHOTOCELL ON THE SERVICE POLE OR INSIDE SIGNAL CABINET. INTERNALLY ILLUMINATED STREET NAME SIGNS SHALL HAVE 120 VOLT LED BULBS. BULB TUBES LESS THAN 8 FEET SHALL HAVE 28.5 WATTS POWER CONSUMPTION AT 1900 LUMENS AND TUBES 8 FOOT OR GREATER SHALL HAVE 38 WATTS POWER CONSUMPTION AT 2600 LUMENS.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MO
DRAWN BY: GS
CHECKED BY: IR

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6212
FBPR Certificate of
Authorization No. 4213

DATE: 01/2020
PROJECT NO.: 6099560

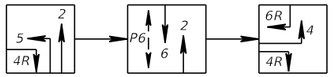
MANATEE COUNTY PUBLIC WORKS

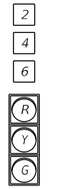
DESIGN ENGINEER: MICHAEL J. OATES
FL. LICENSE NO.: 49282

PAY ITEM NOTES

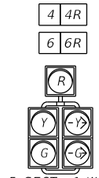
SHEET NO.: T-5

SPECIAL S.O.P.





3-SECT., 1-WAY
6 AS
650-1-14

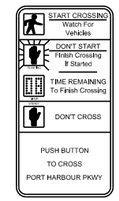


5-SECT., 1-WAY
3 AS
650-1-19

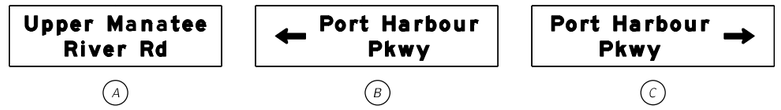
4-SECT., 1-WAY
1 AS
650-1-16

PED. SIGNAL
COUNT-DOWN
1-SECT., 1-WAY
2 AS
653-1-11

USE LOUVERED ALUMINUM SIGNAL HEAD BACK PLATES WITH A 2" YELLOW REFLECTORIZED (TYPE III REFLECTIVITY) OUTER EDGE BORDER.



2 EA
FTP-68B-06
9" X 18"



700-5-22 3 EA

FTP-85-13
30" x 36"

F

700-3-201 1 EA

R10-16
30" x 36"

G

700-3-201 1 EA

R3-4
30" x 30"

H

700-3-201 1 EA

BLANK OUT SIGN
R10-15R
30" x 30"

I

700-11-391 2 AS

CONTROLLER OPERATIONS:

1. MAJOR STREET IS UPPER MANATEE RIVER ROAD (MOVEMENTS 2, 5, 6 AND 6R) AND MINOR STREET IS PORT HARBOUR PARKWAY (MOVEMENTS 4 AND 4R).
2. WHILE IN FLASH MODE, MOVEMENTS 2 & 6 SHALL FLASH YELLOW. ALL OTHER MOVEMENTS SHALL FLASH RED.
3. CONTROLLER CABINET SHALL BE WIRED AND OPERATED WITH SPECIAL S.O.P. AS SHOWN WITH THE FOLLOWING: CONCURRENT/ACTUATED PEDESTRIANS FOR MOVEMENT 6 (P6).
4. BLANK OUT SIGN H SHALL BE PROGRAMMED TO DISPLAY R10-15L DURING PHASE 2 ONLY WHEN PEDESTRIAN MOVEMENT P6 IS ACTIVATED, R3-4 SHALL BE DISPLAYED AT ALL OTHER TIMES. BLANK OUT SIGNS I SHALL BE PROGRAMMED TO BE ACTIVE DURING PHASE 2 ONLY WHEN PEDESTRIAN MOVEMENT P6 IS ACTIVATED.

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. FLORIDA POWER AND LIGHT (FPL) EXISTING TRANSFORMER SHALL BE USED FOR POWER SERVICE. THE CONTRACTOR SHALL COORDINATE WITH MANATEE COUNTY AND THE POWER COMPANY REGARDING THE EXACT LOCATION AND TIMING OF INSTALLATION.
3. INTERNALLY ILLUMINATED SIGNS ON MAST ARM 1 SHALL BE RIGID MOUNTED. INTERNALLY ILLUMINATED SIGN ON MAST ARM 2 SHALL BE FREE-SWINGING MOUNTED ON A SIGN BRACKET ARM ATTACHED TO THE VERTICAL UPRIGHT.

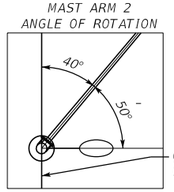
CONTROLLER TIMINGS

TIMING FUNCTION	MOVEMENT NUMBER	1	2	3	4	5	6	7	8
TIMING FUNCTION	MINIMUM GREEN	-	20	-	7	7	20	-	-
	EXTENSION	-	3	-	3	3	3	-	-
	MAXIMUM GREEN 1	-	50	-	30	25	50	-	-
	MAXIMUM GREEN 2	-	-	-	-	-	-	-	-
	YELLOW CLEARANCE	-	4.8	-	3.7	4.8	4.8	-	-
	ALL RED	-	2.0	-	2.0	2.0	2.0	-	-
	PEDESTRIAN WALK	-	-	-	-	-	10	-	-
	PED. CLEARANCE	-	-	-	-	-	33	-	-
	RECALL	-	MIN	-	-	-	MIN	-	-

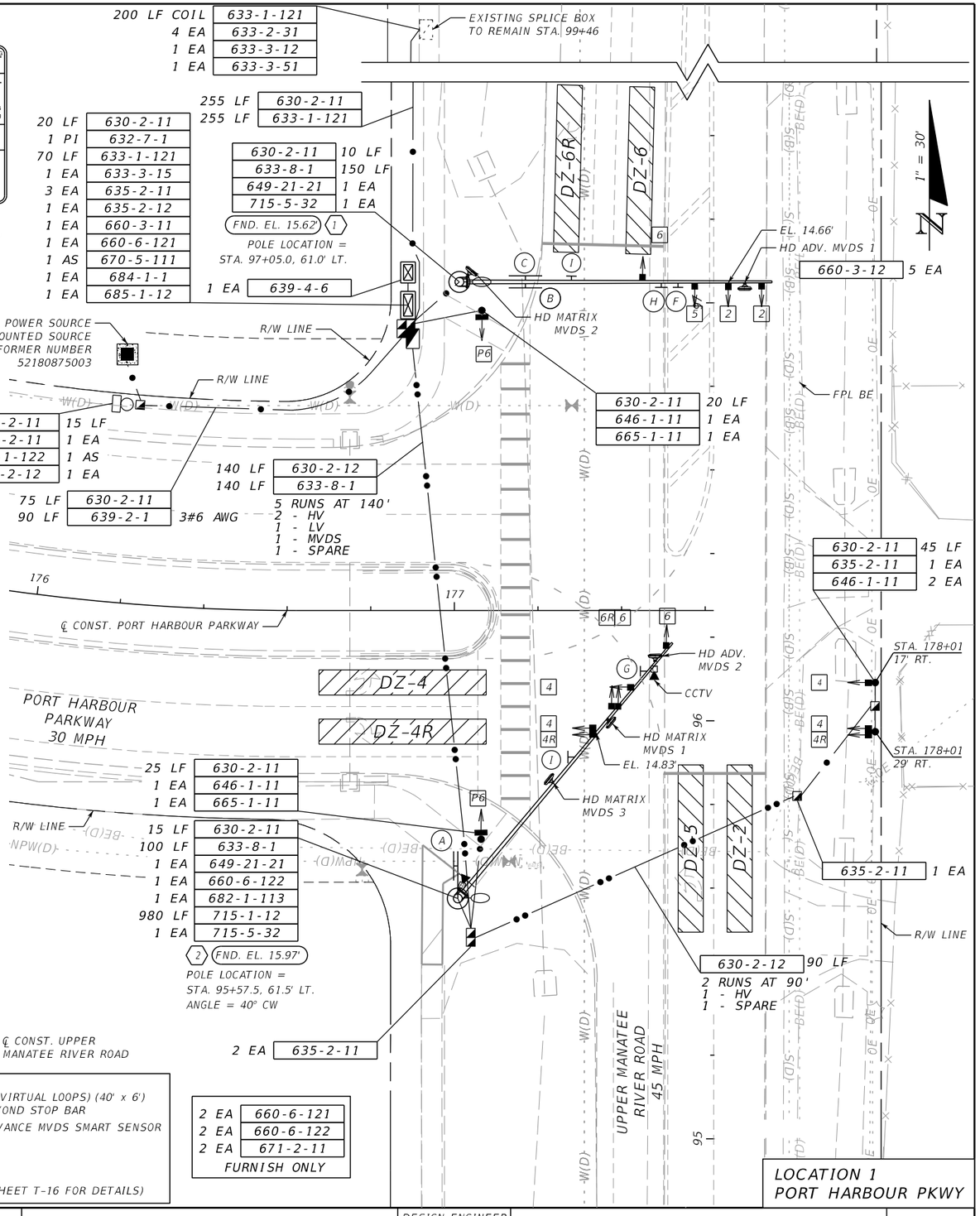
MICROWAVE VEHICLE DETECTION ASSIGNMENTS

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

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



LEGEND
- DETECTION ZONE (VIRTUAL LOOPS) (40' x 6') POSITIONED 2' BEYOND STOP BAR
- HD MATRIX OR ADVANCE MVDS SMART SENSOR
- BLUETOAD
- CCTV
- LUMINAIRE (SEE SHEET T-16 FOR DETAILS)



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

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MO
DRAWN BY: GS
CHECKED BY: IR

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6212
FBPR Certificate of
Authorization No. 4213

DATE: 01/2020
PROJECT NO.: 6099560

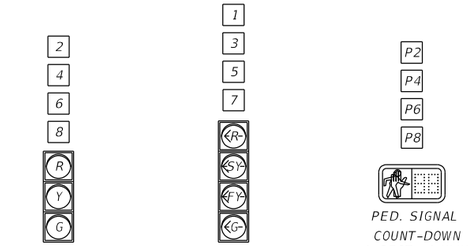
MANATEE COUNTY PUBLIC WORKS

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

SIGNALIZATION PLAN (1)

SHEET NO.: T-6

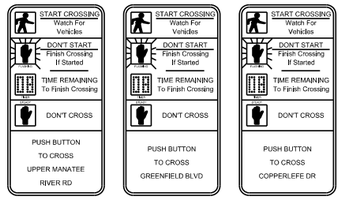
2:27:07 PM 2/20/2020 P:\0\3658\10001573\10117633\6.0_CAD_BIM\6.2_WIP\12345615201\zzworking\PortHarbourPkwy Signal\PLANSG01B.DGN



3-SECT., 1-WAY
10 AS
650-1-14

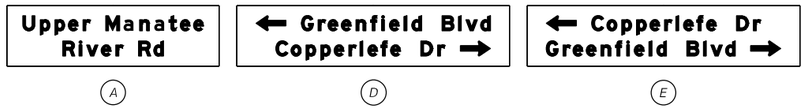
4-SECT., 1-WAY
4 AS
650-1-16

PED. SIGNAL
COUNT-DOWN
1-SECT., 1-WAY
8 AS
653-1-11

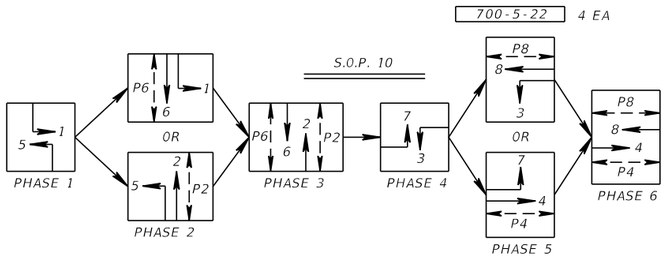


8 EA
FTP-68B-06
9" X 18"

USE LOUVERED ALUMINUM SIGNAL HEAD BACK PLATES WITH A 2" YELLOW REFLECTORIZED (TYPE III REFLECTIVITY) OUTER EDGE BORDER.



A D E



700-5-22 4 EA

FTP-85-13
30" x 36"

F

700-3-201 4 EA

R3-4
30" x 30"

G

700-3-201 4 EA

DUAL BLANK OUT SIGN
R3-1 / R10-15R
30" x 30"

H

700-11-391 4 AS

CONTROLLER OPERATIONS:
1. MAJOR STREET IS UPPER MANATEE RIVER ROAD (MOVEMENTS 1, 2, 5 AND 6) AND MINOR STREET IS GREENFIELD BLVD/COPPERLEFE DR (MOVEMENTS 3, 4, 7 AND 8).
2. WHILE IN FLASH MODE, MOVEMENTS 2 & 6 SHALL FLASH YELLOW. ALL OTHER MOVEMENTS SHALL FLASH RED.
3. CONTROLLER CABINET SHALL BE WIRED AND OPERATED AS AN SOP 10 AS SHOWN WITH THE FOLLOWING: CONCURRENT/ACTUATED PEDESTRIANS FOR MOVEMENTS 2 (P2), 4 (P4), 6 (P6) AND 8 (P8).
4. THE BLANK OUT SIGN H SHALL BE PROGRAMMED TO DISPLAY R3-1 FOLLOWED BY R10-15R WHEN THE ASSOCIATED PEDESTRIAN MOVEMENT IS ACTIVATED; 2 WITH P2, 4 WITH P4, 6 WITH P6, AND 8 WITH P8.

SIGNALIZATION NOTES:
1. COUNTY REPRESENTATIVE OR ENGINEER OF RECORD SHALL FIELD LOCATE PEDESTRIAN SIGNAL POLES.
2. 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.
3. FLORIDA POWER AND LIGHT (FPL) EXISTING TRANSFORMER SHALL BE USED FOR POWER SERVICE. THE CONTRACTOR SHALL COORDINATE WITH MANATEE COUNTY AND THE POWER COMPANY REGARDING THE EXACT LOCATION AND TIMING OF INSTALLATION.
4. INTERNALLY ILLUMINATED SIGNS SHALL BE RIGID MOUNTED TO MAST ARMS.

CONTROLLER TIMINGS

TIMING FUNCTION									
	MOVEMENT NUMBER	1	2	3	4	5	6	7	8
TIMING FUNCTION	MINIMUM GREEN	7	20	7	7	7	20	7	7
	EXTENSION	3	3	3	3	3	3	3	3
	MAXIMUM GREEN 1	25	50	25	30	25	50	25	30
	MAXIMUM GREEN 2	-	-	-	-	-	-	-	-
	YELLOW CLEARANCE	4.8	4.8	3.7	3.7	4.8	4.8	3.7	3.7
	ALL RED	2.0	2.0	3.0	3.0	2.0	2.0	3.0	3.0
	PEDESTRIAN WALK	-	10	-	10	-	10	-	10
	PED. CLEARANCE	-	23	-	22	-	26	-	21
	RECALL	-	MIN	-	-	-	MIN	-	-

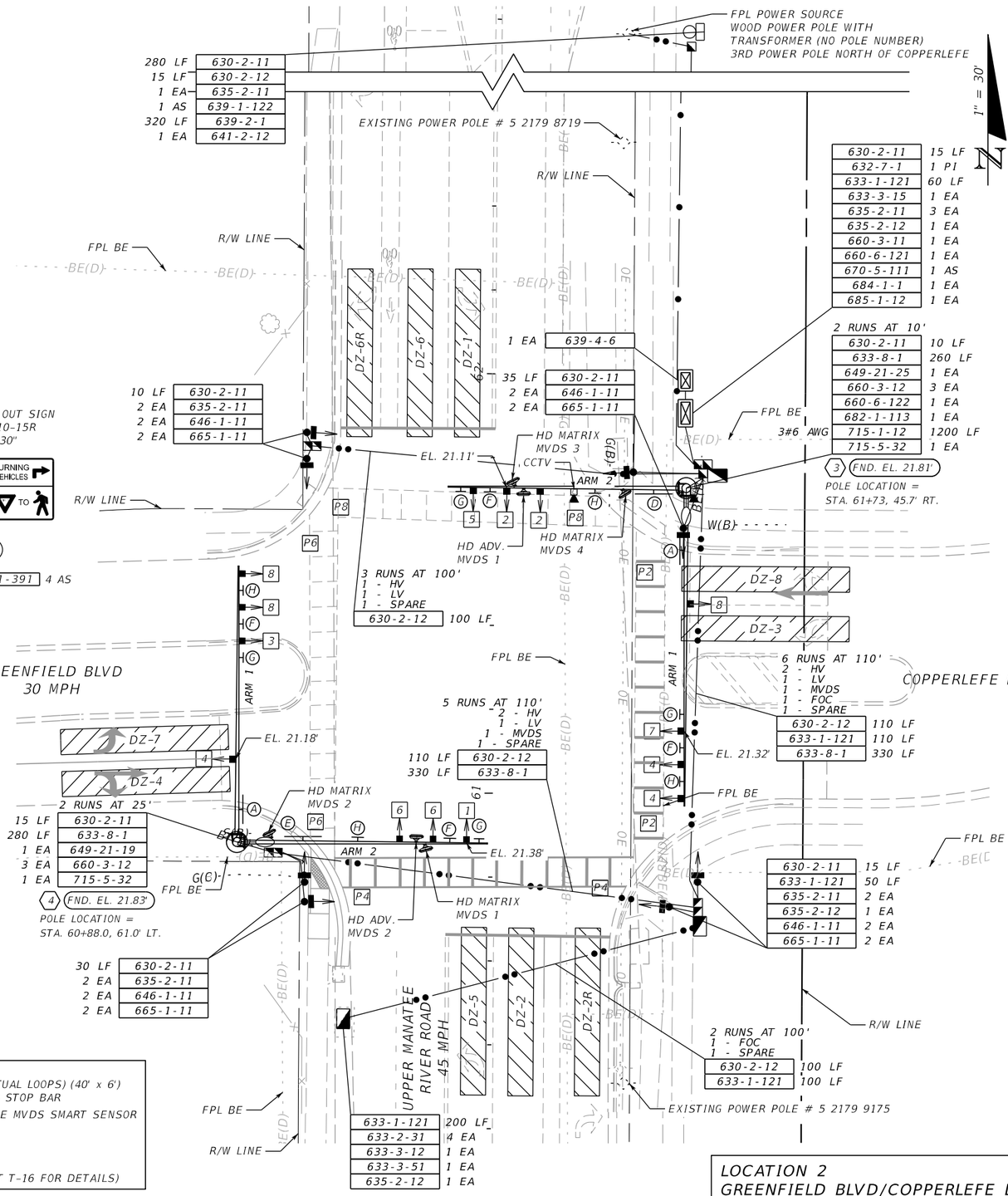
DELAY TIME IS INITIAL AND MAY REQUIRE FIELD ADJUSTING AS DIRECTED BY THE ENGINEER.

MICROWAVE VEHICLE DETECTION ASSIGNMENTS

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

2 EA 660-6-121
2 EA 660-6-122
2 EA 671-2-11
FURNISH ONLY

LEGEND
- DETECTION ZONE (VIRTUAL LOOPS) (40' x 6') POSITIONED 2' BEYOND STOP BAR
- HD MATRIX OR ADVANCE MVDS SMART SENSOR
- BLUETOAD
- CCTV
- LUMINAIRE (SEE SHEET T-16 FOR DETAILS)



LOCATION 2
GREENFIELD BLVD/COPPERLEFE DR

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MO
DRAWN BY: GS
CHECKED BY: IR

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6212
FBPR Certificate of
Authorization No. 4213

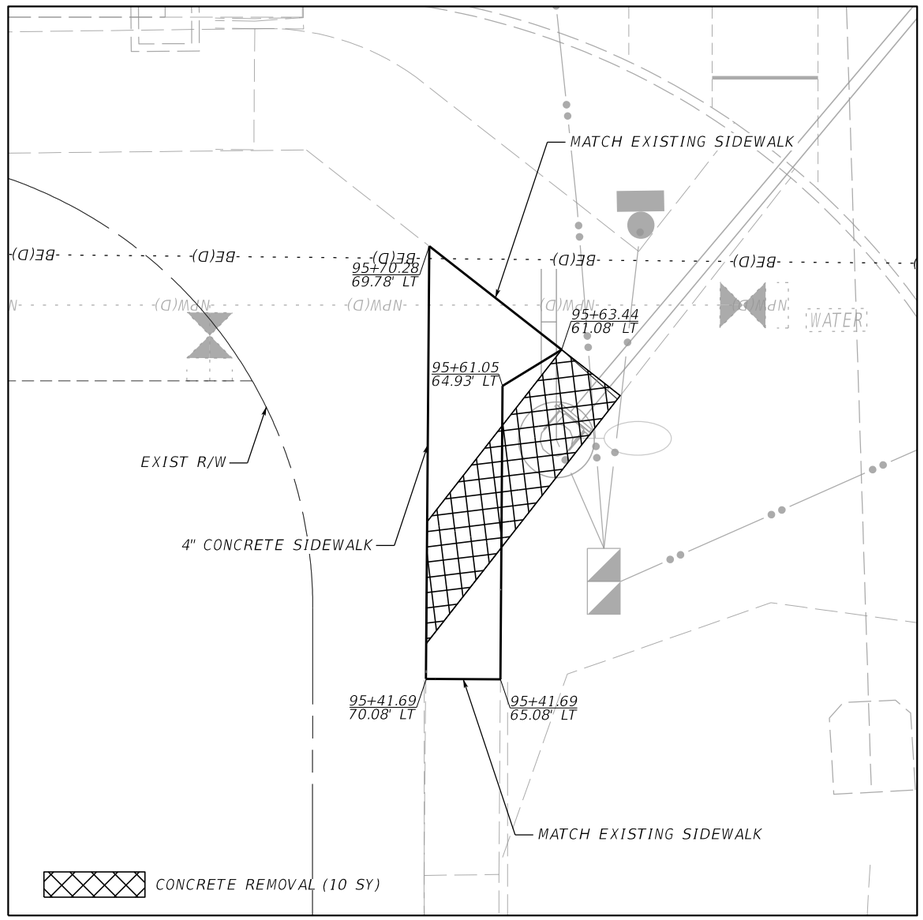
DATE 01/2020
PROJECT NO. 6099560

MANATEE COUNTY PUBLIC WORKS

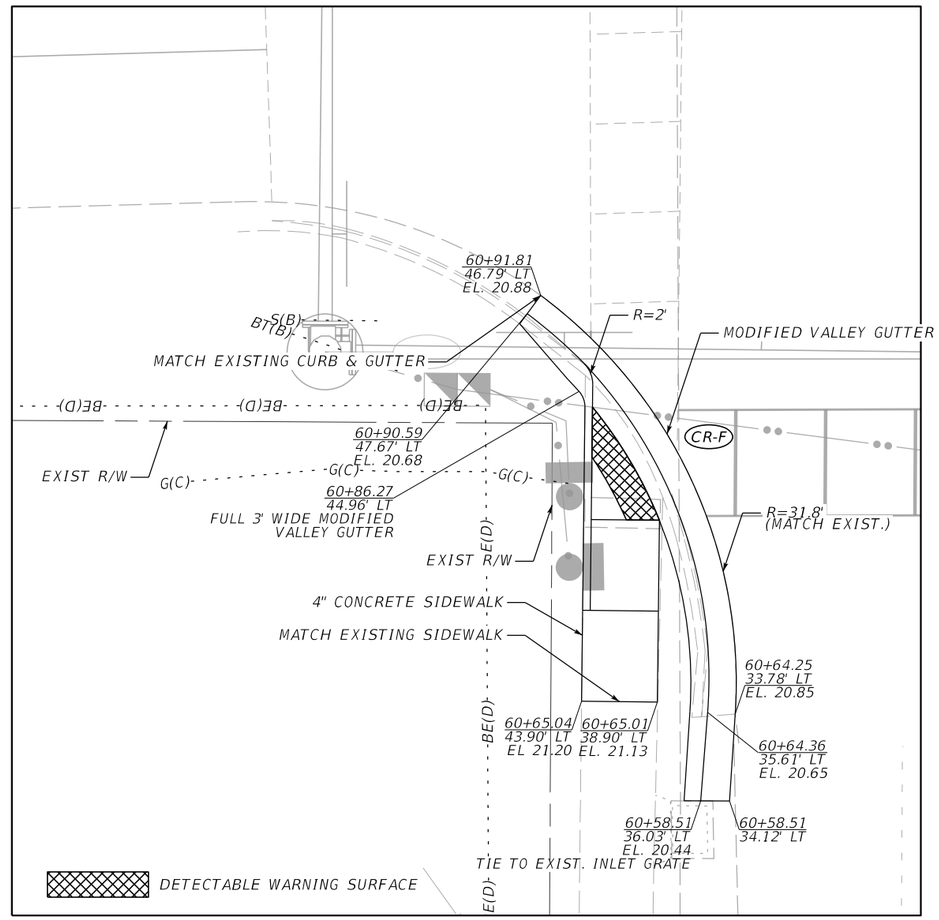
DESIGN ENGINEER: MICHAEL J. OATES
FL. LICENSE NO. 49282

SIGNALIZATION PLAN (2)

SHEET NO. T-7



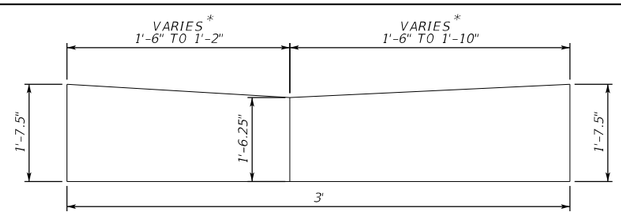
LOCATION 1
PORT HARBOUR PARKWAY



LOCATION 2
GREENFIELD BLVD/COPPERLEFE DR

NOTE: STATION AND OFFSET MEASURED FROM BASELINE OF CONSTRUCTION OF UPPER MANATEE RIVER ROAD.

* NOTE:
TRANSITION GUTTER LINE FOR FULL 3' WIDTH FOR DRAINAGE TO EXISTING DBI.



MODIFIED VALLEY GUTTER DETAIL

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JS
DRAWN BY: SS
CHECKED BY: DRH

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6212
FBPR Certificate of
Authorization No. 4213

DATE: 01/2020
PROJECT NO.: 6099560

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

SIDEWALK DETAIL

SHEET NO.: T-8

2:27:31 PM 2/20/2020 P:\3658\10001573\10117633\6.0_CAD_BIM\6.2_WIP\12345615201\zzworking\PortHarbourPkwy Signal\SSDTSG02.DGN

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PORT HARBOUR PARKWAY

Port Harbour Pkwy
NEXT SIGNAL

SIGN 1
8' x 4'
700-1-74 1 AS
STA. 177+10, 1025' LT.

1" = 40'

EXIST. R/W

EXIST. R/W

EXIST. R/W

EXIST. R/W

24" WHITE

177+50
87' RT.

STOP
RIGHT TURN ONLY

R1-1
30" x 30"
FTP-52-06
24" x 30"
700-1-11 1 AS
STA. 177+97

24" PREFORMED WHITE

R 50'

6" YELLOW (2'-4' SKIP)

R 50'

24" WHITE

177+50
39' RT.

172

175

176

177

97

96

95

EXIST. R/W

Upper Manatee River Rd
NEXT SIGNAL

SIGN 2
8' x 4'
700-1-74 1 AS
STA. 172+00

EXIST. R/W

STOP
700-1-60 1 AS

EXIST. R/W

UPPER MANATEE RIVER ROAD

Port Harbour Pkwy
NEXT SIGNAL

SIGN 1
8' x 4'
700-1-74 1 AS
STA. 177+95, 800' RT.

LOCATION 1
PORT HARBOUR PKWY

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MO
DRAWN BY: GS
CHECKED BY: IR

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6212
FBPR Certificate of
Authorization No. 4213

DATE: 01/2020
PROJECT NO.: 6099560

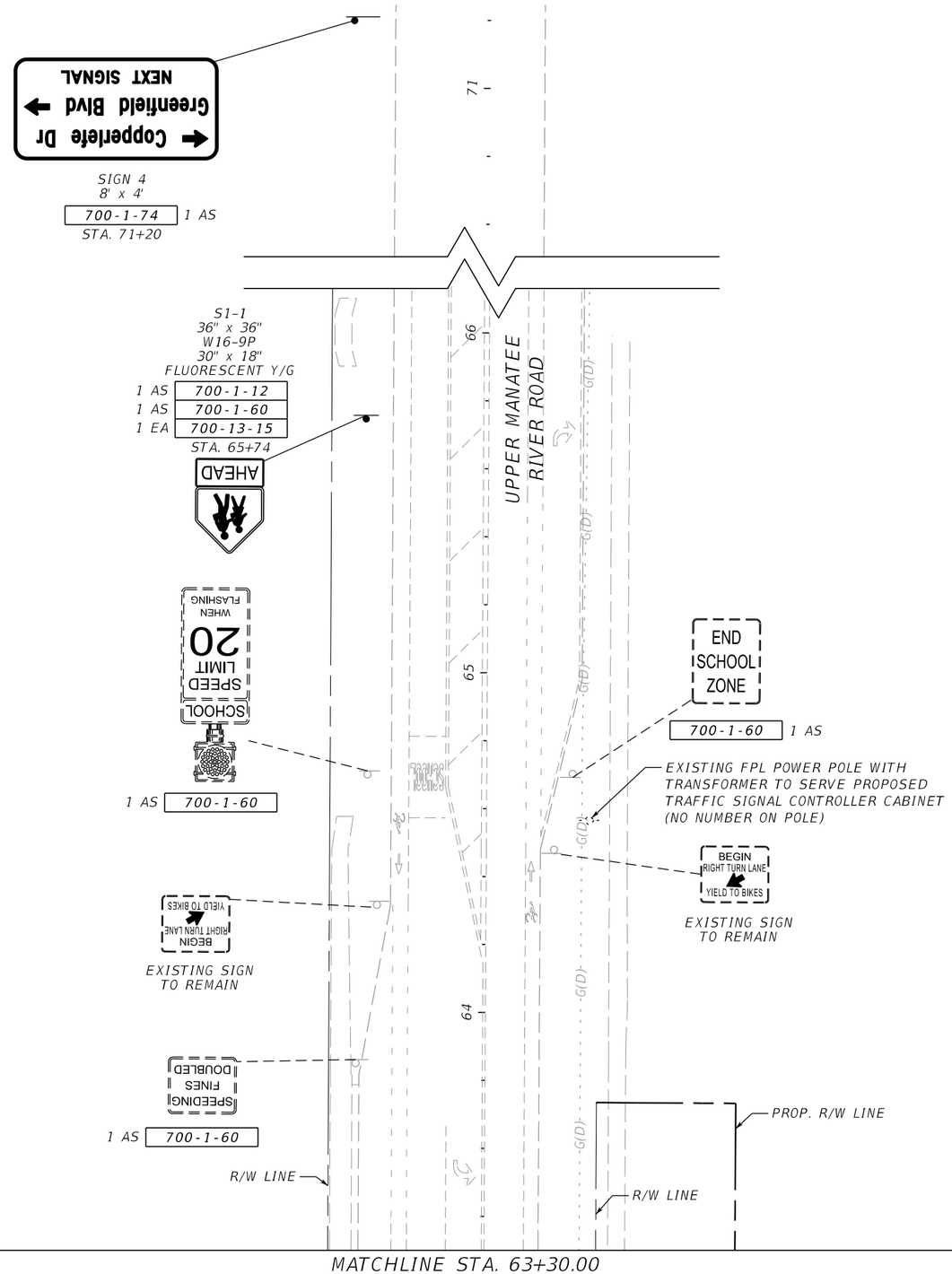
Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

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

SIGNING AND PAVEMENT MARKING PLAN (1)

SHEET NO.: T-9

2:27:52 PM 2/20/2020 W:\3658\10001573\10117633\6.0_CAD_BIM\6.2_WIP\12345615201\zzworking\PortHarbourPkwy SPM\PLANSP01.DGN



LOCATION 2
GREENFIELD BLVD/COPPERLEFE DR

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MO
DRAWN BY: GS
CHECKED BY: IR

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6212
FBPR Certificate of
Authorization No. 4213

DATE: 01/2020
PROJECT NO.: 6099560

MANATEE COUNTY PUBLIC WORKS

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

SIGNING AND PAVEMENT MARKING PLAN (2)

SHEET NO.: T-10

2:27:56 PM 2/20/2020 W:\3658\10001573\10117633\6.0_CAD_BIM\6.2_WIP\12345615201\zzworking\PortHarbourPkwy SPM\PLANSP01.DGN

MATCHLINE STA. 63+30.00

1" = 40'

N

R/W LINE

PROP. R/W LINE

S1-1
36" x 36"
W16-7PL
30" x 18"
FLUORESCENT Y/G

1 AS	700-1-12
1 AS	700-1-60
1 EA	700-13-15

STA. 61+89

24" WHITE

+87
00' RT.

S1-1
36" x 36"
W16-7PL
30" x 18"
FLUORESCENT Y/G

1 AS	700-1-12
1 AS	700-1-60
1 EA	700-13-15

STA. 61+80

1 AS 700-1-60

UPPER MANATEE RIVER RD
COPPERLEFE DR
STOP

ADD THRU DIRECTIONAL ARROW TO EXISTING RIGHT TURN DIRECTIONAL ARROW

R/W LINE

GREENFIELD BLVD

COPPERLEFE DR

100 LF OF 6" WHITE
WITH W/R RPMs AT 20'

12" WHITE

+84

+85

6'

24" PREFORMED WHITE

+66
11' LT.

12" WHITE

24" PREFORMED WHITE

24" WHITE

6" WHITE

UPPER MANATEE RIVER ROAD

UPPER MANATEE RIVER RD
GREENFIELD BLVD
STOP

1 AS 700-1-60

PROP. R/W LINE

R/W LINE

BIKE LANE

EXISTING SIGN
TO REMAIN

SPEEDING
FINES
DOUBLED

1 AS 700-1-60

MATCHLINE STA. 59+70.00

LOCATION 2
GREENFIELD BLVD/COPPERLEFE DR

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MO
DRAWN BY: GS
CHECKED BY: IR

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6212
FBPR Certificate of
Authorization No. 4213

DATE: 01/2020
PROJECT NO.: 6099560

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

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

SIGNING AND PAVEMENT MARKING PLAN (3)

SHEET NO.: T-11

2:28:00 PM 2/20/2020 W:\3658\10001573\10117633\6.0_CAD_BIM\6.2_WIP\12345615201\zzworking\PortHarbourPkwy SPM\PLANSP01.DGN

MATCHLINE STA. 59+70.00

1" = 40'

N

R/W LINE

59

58

57

UPPER MANATEE RIVER ROAD

G(D)

END SCHOOL ZONE

1 AS 700-1-60

SCHOOL SPEED LIMIT 20 WHEN FLASHING

1 AS 700-1-60

PROP. R/W LINE

S1-1
36" x 36"
W16-9P
30" x 18"
FLUORESCENT Y/G

1 AS 700-1-12
1 AS 700-1-60
1 EA 700-13-15

STA. 56+88

AHEAD

EXISTING FPL POWER POLE TO REMAIN
LOCATED APPROXIMATELY 75 FEET
SOUTH OF SIGN 3
(POLE NO. 5 2179 9163)

Greenfield Blvd
Copperlefe Dr
NEXT SIGNAL

SIGN 3
8' x 4'
700-1-74 1 AS
STA. 54+35

LOCATION 2
GREENFIELD BLVD/COPPERLEFE DR

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MO
DRAWN BY: GS
CHECKED BY: IR

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6212
FBPR Certificate of
Authorization No. 4213

DATE: 01/2020
PROJECT NO.: 6099560

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

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

SIGNING AND PAVEMENT MARKING PLAN (4)

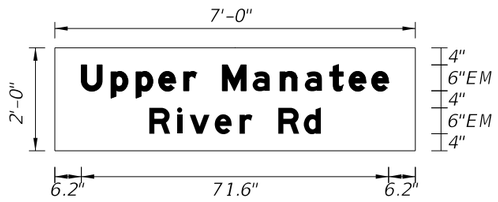
SHEET NO.: T-12

2:28:05 PM 2/20/2020 W:\3658\10001573\10117633\6.0_CAD_BIM\6.2_WIP\12345615201\zzworking\PortHarbourPkwy SPM\PLANSP01.DGN

SIGN NAME	A	QTY	3	SIGN NUMBER	STATION(S)
PANEL		BORDER			
WIDTH	7'-0"	WIDTH	0"		
HEIGHT	2'-0"	RADII	0"		
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



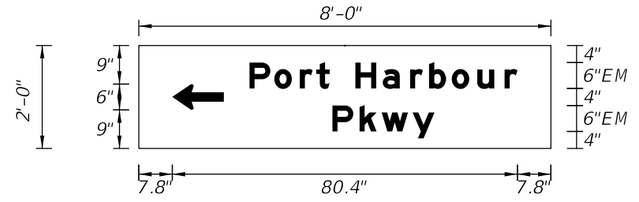
NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE

COPY		U	p	p	e	r		M	a	n	a	t	e	e		L							
SPACE	6.2	6.9	5.8	5.3	5.8	3	6	7.1	6.4	5.8	5.8	4.5	5.3	4	6.2	71.6							
COPY		R	i	v	e	r		R	d		L												
SPACE	22	6.5	2.9	5.8	5.8	3	6	5.9	4	22	40												
COPY																							
SPACE																							
COPY																							
SPACE																							
COPY																							
SPACE																							
COPY																							
SPACE																							

SIGN NAME	B	QTY	1	SIGN NUMBER	STATION(S)
PANEL		BORDER			
WIDTH	8'-0"	WIDTH	0"		
HEIGHT	2'-0"	RADII	0"		
LEGEND	White	COLOR	White		
COLOR	Green				

SYMBOL(S)	ANGLE	X	Y	WID	HT
AR_Type D	90	7.8	9	6	12

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH



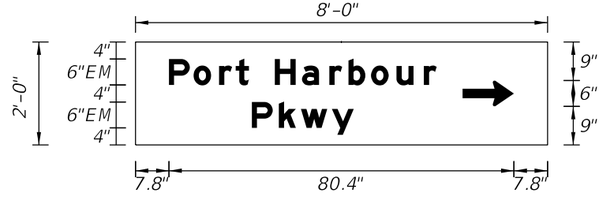
NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE

COPY		P	o	r	t		H	a	r	b	o	u	r		L								
SPACE	25.8	5.8	5.9	3.8	3.1	6	6.4	6.4	4.4	5.3	5.9	6.4	3	7.8	62.4								
COPY		P	k	w	y		L																
SPACE	45.1	6.3	5.2	7.2	5.1	27.1	23.8																
COPY																							
SPACE																							
COPY																							
SPACE																							
COPY																							
SPACE																							
COPY																							
SPACE																							

SIGN NAME	C	QTY	1	SIGN NUMBER	STATION(S)
PANEL		BORDER			
WIDTH	8'-0"	WIDTH	0"		
HEIGHT	2'-0"	RADII	0"		
LEGEND	White	COLOR	White		
COLOR	Green				

SYMBOL(S)	ANGLE	X	Y	WID	HT
AR_Type D	270	76.2	9	6	12

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH



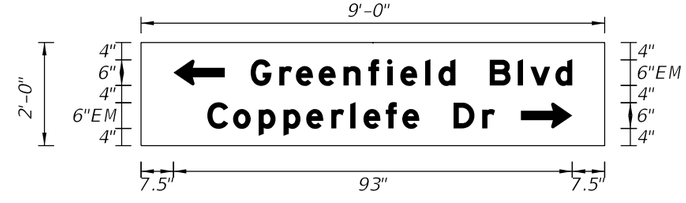
NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE

COPY		P	o	r	t		H	a	r	b	o	u	r		L								
SPACE	7.8	5.8	5.9	3.8	3.1	6	6.4	6.4	4.4	5.3	5.9	6.4	3	25.8	62.4								
COPY		P	k	w	y		L																
SPACE	27.1	6.3	5.2	7.2	5.1	45.1	23.8																
COPY																							
SPACE																							
COPY																							
SPACE																							
COPY																							
SPACE																							
COPY																							
SPACE																							

SIGN NAME	D	QTY	1	SIGN NUMBER	STATION(S)
PANEL		BORDER			
WIDTH	9'-0"	WIDTH	0"		
HEIGHT	2'-0"	RADII	0"		
LEGEND	White	COLOR	White		
COLOR	Green				

SYMBOL(S)	ANGLE	X	Y	WID	HT
AR_Type D	90	7.5	14	6	12
AR_Type D	270	88.5	4	6	12

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH



NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE

COPY		G	r	e	e	n	f	i	e	l	d		B	l	v	d		L					
SPACE	25.5	6.7	3.9	5.3	5.8	5.8	4.4	3.1	5.8	3.1	4	8	6.5	2.9	5.8	4	7.5	75					
COPY		C	o	p	p	e	r	l	e	f	e		D	r		L							
SPACE	15.4	6	5.9	5.8	5.3	5.8	4.4	3.1	5.2	3.8	4	8	6.7	3	25.5	67							
COPY																							
SPACE																							
COPY																							
SPACE																							
COPY																							
SPACE																							
COPY																							
SPACE																							

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MO
DRAWN BY: GS
CHECKED BY: IR

HDR Engineering, Inc.
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DATE: 01/2020
PROJECT NO.: 6099560

MANATEE COUNTY PUBLIC WORKS

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

GUIDE SIGN WORKSHEET (1)

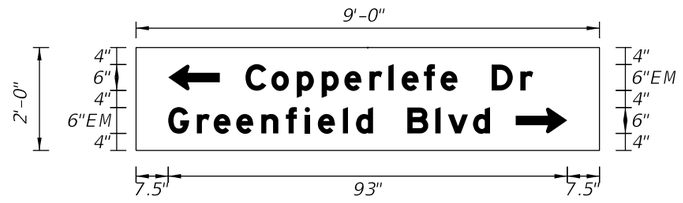
SHEET NO.: T-13

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

SIGN NAME	E	QTY	1	SIGN NUMBER	STATION(S)
PANEL		BORDER			
WIDTH	9'-0"	WIDTH	0"		
HEIGHT	2'-0"	RADII	0"		
LEGEND	White	COLOR	White		
COLOR	Green				

SYMBOL(S)	ANGLE	X	Y	WID	HT
AR_Type D	90	7.5	14	6	12
AR_Type D	270	88.5	4	6	12

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH



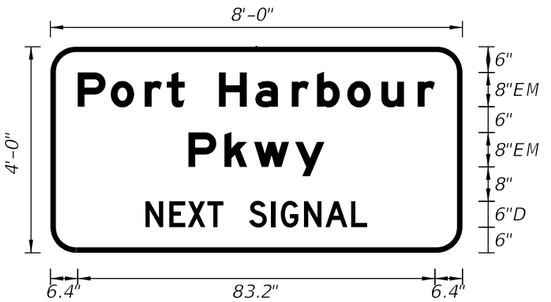
NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE

COPY		C	o	p	p	e	r	l	e	f	e		D	r		L											
SPACE	25.5	6	5.9	5.8	5.3	5.8	4.4	3.1	5.2	3.8	4	8	6.7	3	15.4	67											
COPY		G	r	e	e	n	f	i	e	l	d		B	l	v	d		L										
SPACE	7.5	6.7	3.9	5.3	5.8	5.8	4.4	3.1	5.8	3.1	4	8	6.5	2.9	5.8	4	25.5	75										
COPY																												
SPACE																												
COPY																												
SPACE																												
COPY																												
SPACE																												
COPY																												
SPACE																												

SIGN NAME	Sign 1	QTY	2	SIGN NUMBER	STATION(S)
PANEL		BORDER			
WIDTH	8'-0"	WIDTH	1.25"		
HEIGHT	4'-0"	RADII	6"		
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



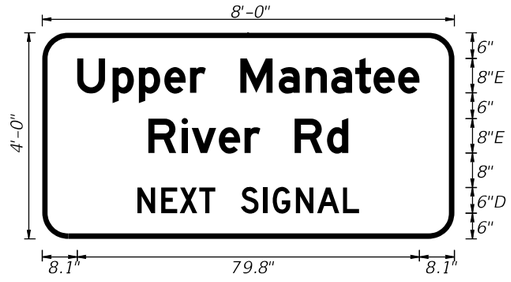
NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE

COPY		P	o	r	t		H	a	r	b	o	u	r		L												
SPACE	6.4	7.7	7.9	5.1	4.2	8	8.5	8.5	5.9	7	7.9	8.5	4	6.4	83.2												
COPY		P	k	w	y		L																				
SPACE	32.2	8.4	6.9	9.6	6.8	32.2	31.7																				
COPY		N	E	X	T		S	I	G	N	A	L		L													
SPACE	22.2	5.5	4.3	4.6	3.7	6	5.1	2.3	5.4	5	6	3.7	22.2	51.6													
COPY																											
SPACE																											
COPY																											
SPACE																											
COPY																											
SPACE																											

SIGN NAME	Sign 2	QTY	1	SIGN NUMBER	STATION(S)
PANEL		BORDER			
WIDTH	8'-0"	WIDTH	1.25"		
HEIGHT	4'-0"	RADII	6"		
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



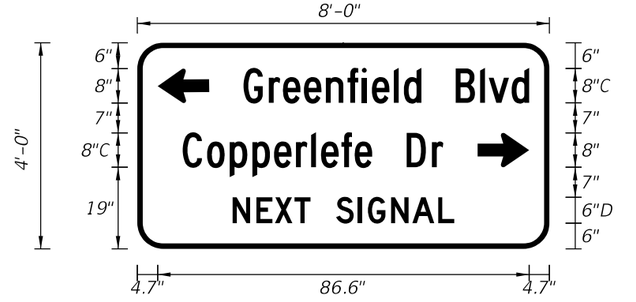
NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE

COPY		U	p	p	e	r		M	a	n	a	t	e	e		L											
SPACE	8.1	8.2	6.2	5.9	6	3.7	8	9	6.2	6	5.6	4.2	5.8	5	8.1	79.8											
COPY		R	i	v	e	r		R	d		L																
SPACE	24.7	7.8	2.3	6.3	6	3.7	8	7.5	5	24.7	46.6																
COPY		N	E	X	T		S	I	G	N	A	L		L													
SPACE	22.2	5.5	4.3	4.6	3.7	6	5.1	2.3	5.4	5	6	3.7	22.2	51.6													
COPY																											
SPACE																											
COPY																											
SPACE																											
COPY																											
SPACE																											

SIGN NAME	Sign 3	QTY	1	SIGN NUMBER	STATION(S)
PANEL		BORDER			
WIDTH	8'-0"	WIDTH	1.25"		
HEIGHT	4'-0"	RADII	6"		
LEGEND	White	COLOR	White		
COLOR	Green				

SYMBOL(S)	ANGLE	X	Y	WID	HT
AR_Type D	90.6	4.7	34	8	12
AR_Type D	270	79.3	19	8	12

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH



NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE

COPY		G	r	e	e	n	f	i	e	l	d		B	l	v	d		L										
SPACE	24.7	5.9	3.3	4.9	5.1	5	3.4	2.3	5.1	2.3	4.1	8	5.7	2	5.4	4.1	4.7	66.6										
COPY		C	o	p	p	e	r	l	e	f	e		D	r		L												
SPACE	10.6	5.7	5.3	5.3	5	5.1	3.5	2.3	4.7	3.1	4.1	8	5.9	2.6	24.7	60.7												
COPY		N	E	X	T		S	I	G	N	A	L		L														
SPACE	22.2	5.5	4.3	4.6	3.7	6	5.1	2.3	5.4	5	6	3.7	22.2	51.6														
COPY																												
SPACE																												
COPY																												
SPACE																												
COPY																												
SPACE																												

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MO
DRAWN BY: GS
CHECKED BY: IR

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6212
FBPR Certificate of
Authorization No. 4213

DATE: 01/2020
PROJECT NO.: 6099560

MANATEE COUNTY PUBLIC WORKS

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

GUIDE SIGN WORKSHEET (2)

SHEET NO.: T-14

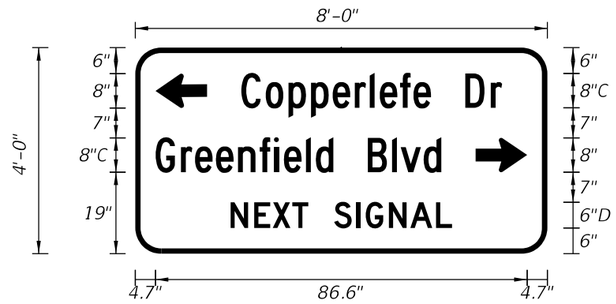
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

2:28:25 PM 2/20/2020 P:\3658\10001573\10117633\6.0_CAD_BIM\6.2_WIP\12345615201\zzworking\PortHarbourPkwy Signal\GSWKSG01.dgn

SIGN NAME	Sign 4	QTY	1	SIGN NUMBER	STATION(S)
PANEL		BORDER			
WIDTH	8'-0"	WIDTH	1.25"		
HEIGHT	4'-0"	RADII	6"		
LEGEND	White	COLOR	White		
COLOR	Green				

SYMBOL(S)	ANGLE	X	Y	WID	HT
AR_Type D	90.6	4.7	34	8	12
AR_Type D	270	79.3	19	8	12

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH



NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE

COPY		C	o	p	p	e	r	l	e	f	e		D	r		L							
SPACE	24.7	5.7	5.3	5.3	5	5.1	3.5	2.3	4.7	3.1	4.1	8	5.9	2.6	10.6	60.7							
COPY		G	r	e	e	n	f	i	e	l	d		B	l	v	d		L					
SPACE	4.7	5.9	3.3	4.9	5.1	5	3.4	2.3	5.1	2.3	4.1	8	5.7	2	5.4	4.1	24.7	66.6					
COPY		N	E	X	T		S	I	G	N	A	L		L									
SPACE	22.2	5.5	4.3	4.6	3.7	6	5.1	2.3	5.4	5	6	3.7	22.2	51.6									
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

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH

THIS SPACE
INTENTIONALLY
LEFT BLANK

NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE

COPY																							
SPACE																							
COPY																							
SPACE																							
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

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH

THIS SPACE
INTENTIONALLY
LEFT BLANK

NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE

COPY																							
SPACE																							
COPY																							
SPACE																							
COPY																							
SPACE																							
COPY																							
SPACE																							
COPY																							
SPACE																							

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MO
DRAWN BY: GS
CHECKED BY: IR

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6212
FBPR Certificate of
Authorization No. 4213

DATE: 01/2020
PROJECT NO.: 6099560

MANATEE COUNTY PUBLIC WORKS

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

GUIDE SIGN WORKSHEET (3)

SHEET NO.: T-15

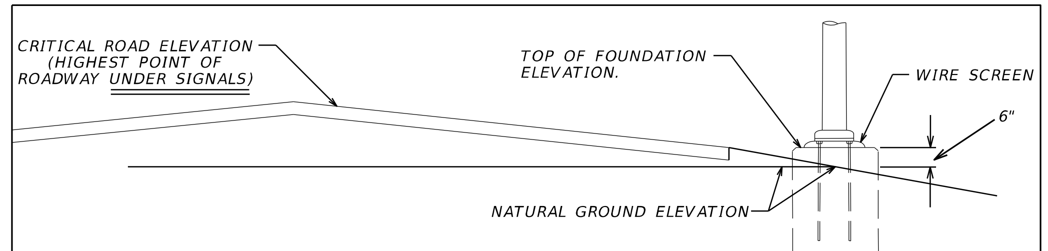
SPECIAL NOTES:

A. EACH POLE AND MAST ARM SHALL BE IDENTIFIED WITH A PERMANENT ONE INCH (1") HIGH ENGRAVED OR IMPRESSED MARK WHICH BEARS THE POLE IDENTIFICATION NUMBER SHOWN ON THE PLANS.

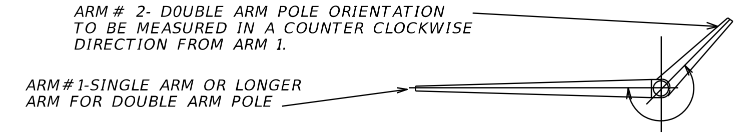
B. ANCHOR BOLT COVERS (ORNAMENTAL, NON-ORNAMENTAL, AND/OR PAINTED) SHALL BE GALVANIZED STEEL OR CAST ALUMINUM AND SHALL BE SECURED BY A MINIMUM OF TWO (2) THREADED FASTENERS. THE BOLT COVERS SHALL BE OF SUFFICIENT SIZE SO THAT THERE IS NO GAP BETWEEN ITSELF AND THE POLE SHAFT.

C. FIELD VERIFY ALL ELEVATIONS LISTED HEREIN.

D. MAST ARMS SHALL BE GALVANIZED, NON-PAINTED.



POLE FOUNDATION DETAIL



LIGHTING LEGEND

SYMBOLS | DESCRIPTION

133 WATT LED LUMINIARE ATTACHED ON MAST ARM. ANALYZED USING AMERICAN ELECTRIC LIGHTING LUMINAIRE, PHOTOMETRIC CURVE NUMBER ATB2_40BLEDE10_XXXXX_R3_4K_5K AT 16249 LUMENS. POLE MOUNTING HEIGHT IS 40 FT AND ARM LENGTH IS 8 FT. SYMBOL INCLUDES LUMINAIRE AND BRACKET ARM. THE LUMINAIRE IS A CUTOFF FIXTURE DESIGNED FOR MEDIUM TYPE III DISTRIBUTION.

CONVENTIONAL LIGHTING DESIGN CRITERIA FOR INTERSECTIONS

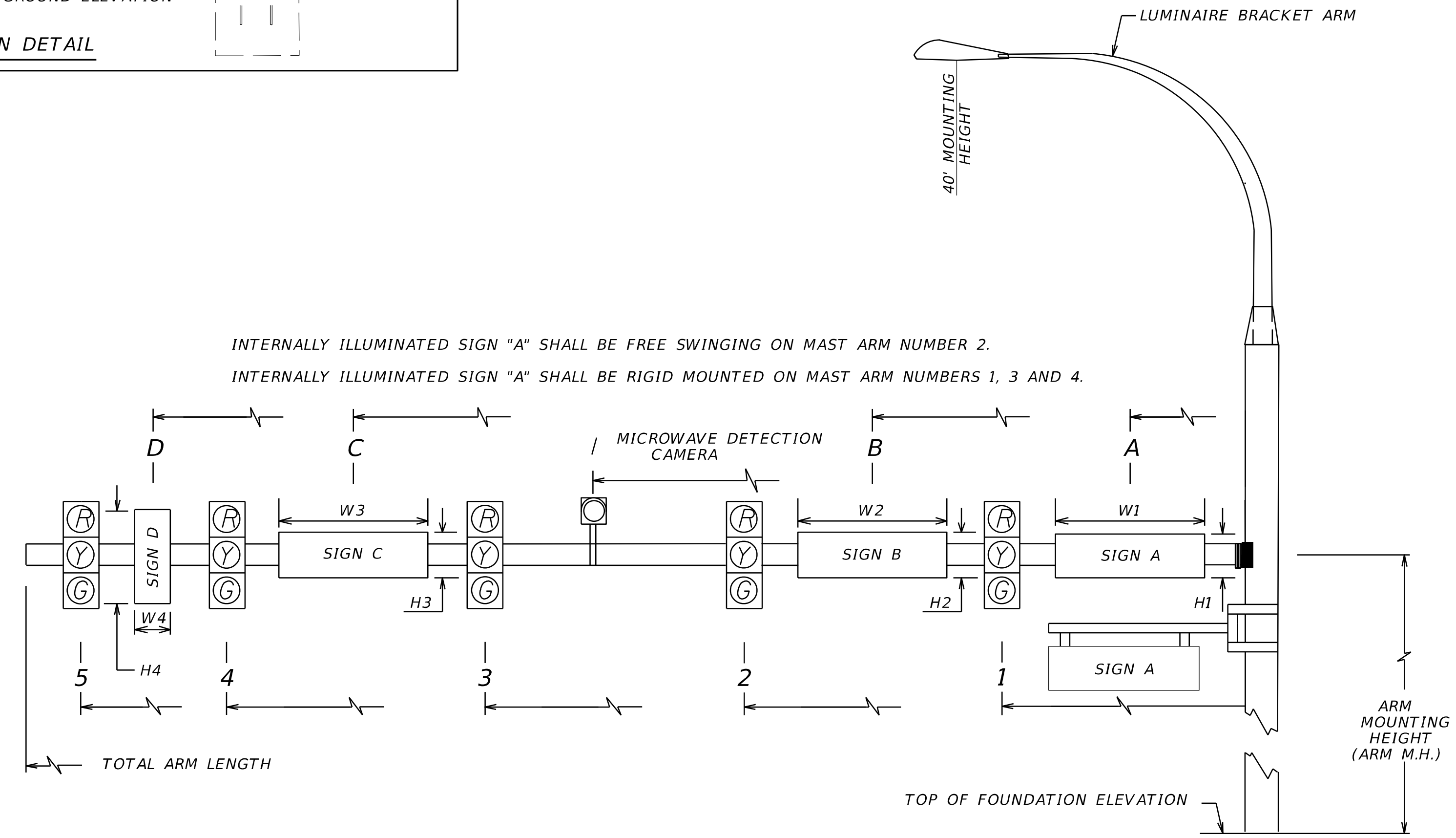
AVERAGE INITIAL ILLUMINATION	1.0 H.F.C
AVERAGE TO MIN.	4 : 1 OR LESS
MAX TO MIN.	10 : 1 OR LESS

LIGHTING NOTE:

IF THE LUMINAIRE USED IS DIFFERENT THAN DESIGNED, THE CONTRACTOR SHALL PROVIDE SUBMITTAL DATA WHICH INCLUDES A COMPUTER PRINTOUT SHOWING HORIZONTAL FOOTCANDLE LEVELS TO BE OBTAINED, USING THE SUBMITTED LUMINAIRES THAT ARE NOT THE BASIS OF DESIGN, ON THIS PROJECT. AT FINAL INSPECTION, VERIFY THE HORIZONTAL FOOTCANDLE LEVELS ON THE ROADWAY WITH AN APPROVED CURRENTLY CALIBRATED LIGHT METER.

INTERNALLY ILLUMINATED SIGN "A" SHALL BE FREE SWINGING ON MAST ARM NUMBER 2.

INTERNALLY ILLUMINATED SIGN "A" SHALL BE RIGID MOUNTED ON MAST ARM NUMBERS 1, 3 AND 4.



NOTE

-IN SIGN DATA TABLE, SIGN DESIGNATION (A, B, C, D, E) IS FOR POSITION REFERENCE ONLY. PLAN SHEETS AND SIGN DETAILS SHOULD BE REFERENCED FOR THE EXACT SIGNS TO BE INSTALLED ON MAST ARMS.

-LUMINAIRE ANGLE IS MEASURED COUNTERCLOCKWISE FROM MAST ARM 1.

* DENOTES NUMBER OF SECTIONS IN SIGNAL HEAD ASSEMBLY

** DENOTES FOUNDATION IS DESIGNED AS 0.5' ABOVE GRADE

STRUCT. ID NO.	POLE ID NO.	SHEET NO.	LOCATION BY STA.	TOP OF FOUNDATION ELEV.	CRITICAL ROAD ELEV.	RDWY ARM NO.	SIGNAL DATA: SIGNAL V/H	BACK PLATES Y/N	PED. SIGNAL Y/N	DISTANCE FROM POLE: 1	*	2	*	3	*	4	*	TOTAL ARM LENGTH	ARM M.H.	ANGLE BETWEEN DUAL ARMS 90/270
XX	1	T-6	97+05.0	**15.62'	14.66'	1	V	Y	N	42	3	54.5	4	62.5	3	70.5	3	73	19.25	NA
---	----	----	-------------	-------	------															-----
XX	2	T-6	95+57.5	**15.97	14.83'	1	V	Y	N	50	5	57	5	64	3	76	3	78	19.25	NA
---	----	----	-------------	-------	------															-----
XX	3	T-7	61+73	**21.81'	21.32'	1	V	Y	N	26	3	56	4	64	3	72.0	3	74	19.25	270
---	-----	----	-------------	------	21.11'	2	V	Y	N	33	3	41	3	49	4			55	19.25	-----
XX	4	T-7	60+88.0	**21.83'	21.18'	1	V	Y	N	18	3	46	4	54	3	62.0	3	64	19.75	270
---	-----	----	-------------	------	21.38'	2	V	Y	N	37	3	45	3	53	4			58	19.75	-----
																				NA
---	-----	----	-------------	------	------															-----
																				NA
---	-----	----	-------------	------	------															-----
																				NA
---	-----	----	-------------	------	------															-----

POLE ID NO.	SIGN DATA (DISTANCE FROM POLE / HEIGHT AND WIDTH OF SIGN): A	H1	W1	B	H2	W2	C	H3	W3	D	H4	W4	E	H5	W5	F	H6	W6	BLUE-TOAD	LUMINAIRE ANGLE FROM ARM 1	CCTV DIST. FROM POLE: 1	MVDS DISTANCE FROM POLE: 1	2	3	4
1	14	2	8	14	2	8	25	2.5	2.5	46.5	2.5	2.5	50.5	3	2.5					0		0	66		

2	0	2	7	42	2.5	2.5	69	3	2.5										0	310	71	34	54	72	

3	13	2	7	52	2.5	2.5	60	2.5	3	68	2.5	2.5							0	0					
-----	6	2	9	20	2.5	2.5	45	2.5	3	52	2.5	2.5									25	13	37	39	
4	6	2	7	42	2.5	2.5	50	2.5	3	58	2.5	2.5								270					
-----	14	2	9	27	2.5	2.5	49	2.5	3	56	2.5	2.5										6.5	41	43	

No.	REVISIONS	DATE	BY

SCALE AS NOTED | DESIGNED BY MO | DRAWN BY GS | CHECKED BY IR

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6212
FBPR Certificate of
Authorization No. 4213

DATE 01/2020

PROJECT NO. 6099560

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER MICHAEL J. OATES

FL. LICENSE NO. 49282

MAST ARM TABULATION

SHEET NO. T-16

2:28:48 PM 2/20/2020 \3658\10001573\10117633\6.0_CAD_BIM\6.2_WIP\12345615201\zzworking\PortHarbourPkwy Signal\MSSGSG01.DGN

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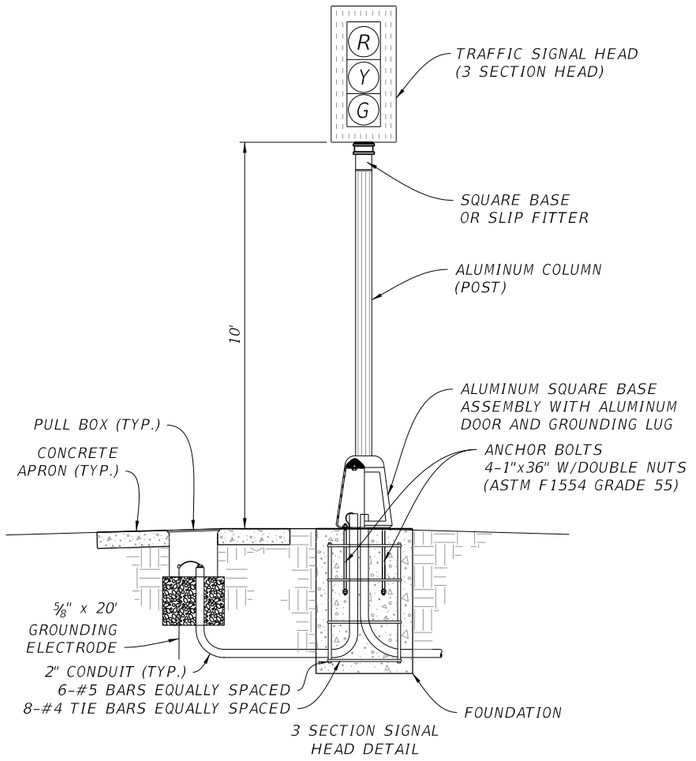
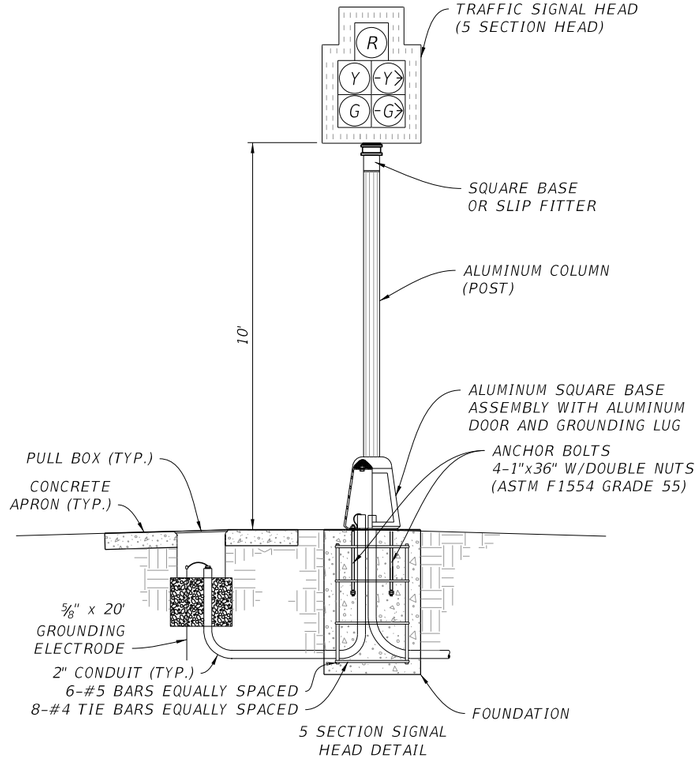


3 SECTION SIGNAL
HEAD DETAIL



5 SECTION SIGNAL
HEAD DETAIL

PEDESTAL MOUNTED SIGNAL COLUMN & FOUNDATION TABLE			
COLUMN (POST)		CONCRETE (CLASS I)	
DIA (NPS) (IN)	WALL THK (IN)	DIAMETER (FT)	EMBEDMENT (FT)
5	1/4	2	7

WORK THIS TABLE WITH STANDARD PLAN 653-001

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

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MO
DRAWN BY: GS
CHECKED BY: IR

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6212
FBPR Certificate of
Authorization No. 4213

DATE: 01/2020
PROJECT NO.: 6099560

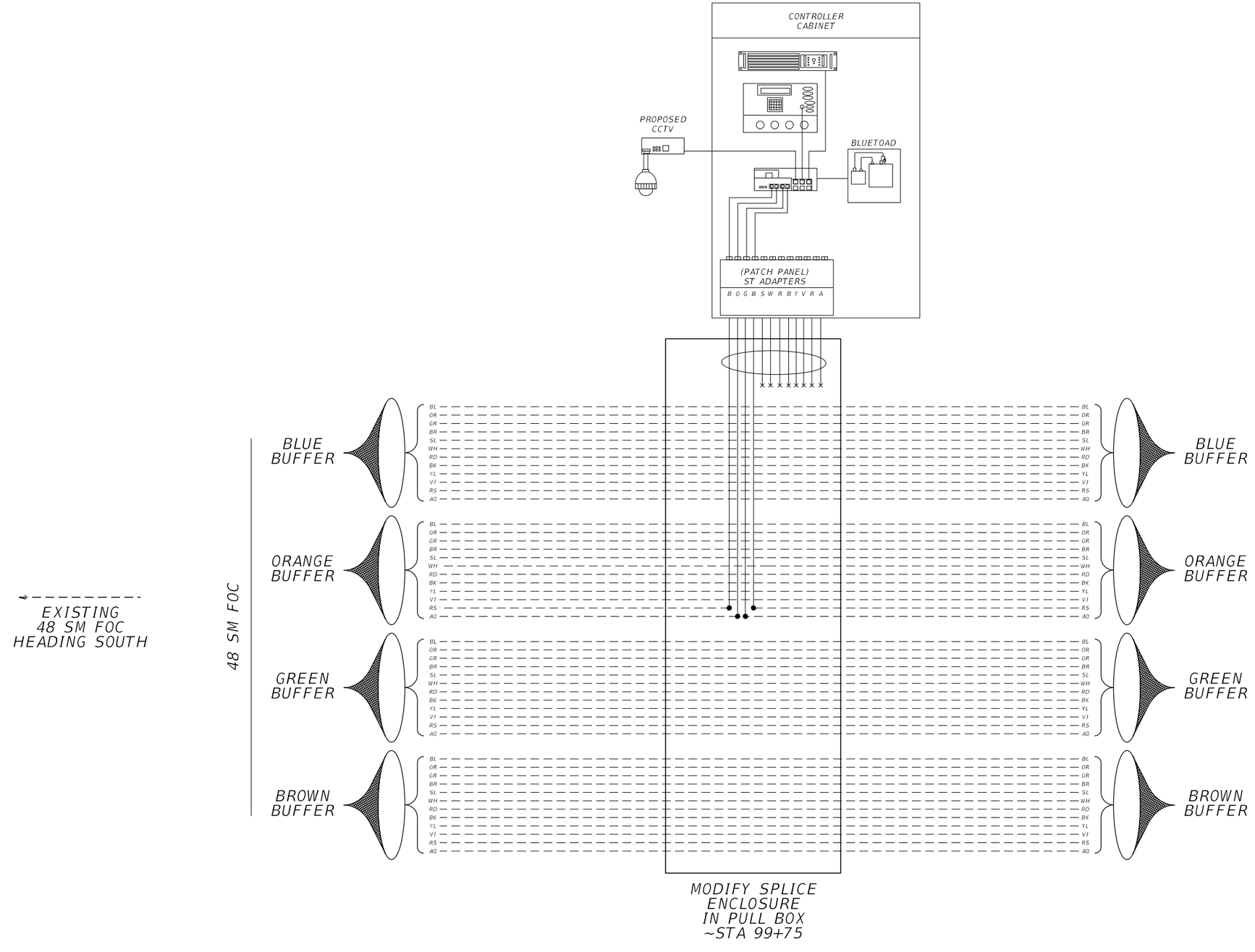
MANATEE COUNTY
PUBLIC WORKS

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

PEDESTAL MOUNTED SIGNAL DETAIL

SHEET NO.: T-17

UPPER MANATEE RIVER RD AT PORT HARBOUR PARKWAY



No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MO
DRAWN BY: GS
CHECKED BY: IR

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6212
FBPR Certificate of Authorization No. 4213

DATE: 01/2020
PROJECT NO.: 6099560

MANATEE COUNTY PUBLIC WORKS

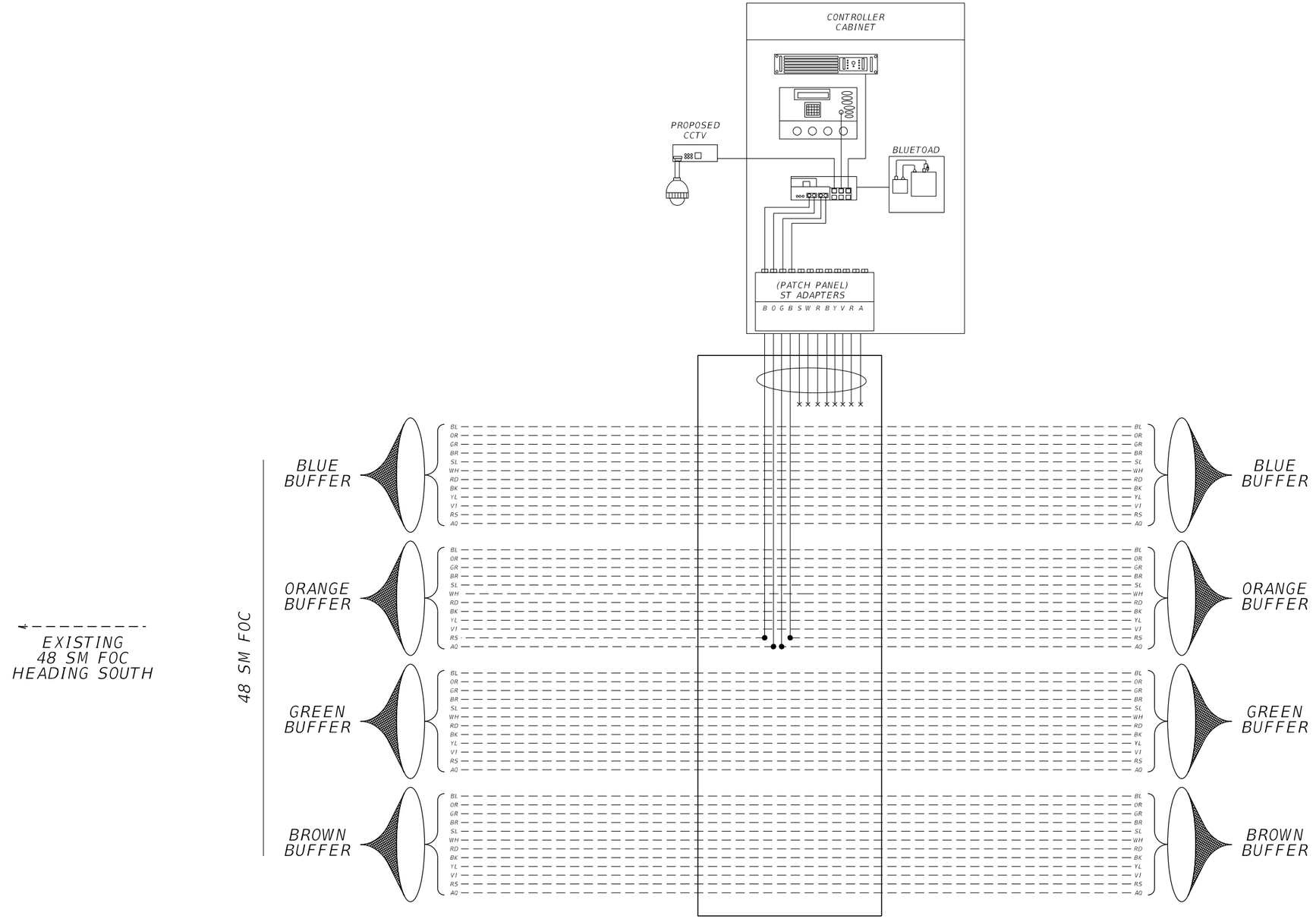
DESIGN ENGINEER: MICHAEL J. OATES
FL. LICENSE NO.: 49282

SPLICING DIAGRAM (1)

SHEET NO.: T-18

2:29:24 PM 2/20/2020 N:\3658\10001573\10117633\6.0_CAD_BIM\6.2_WIP\12345615201\zzworking\PortHarbourPkwy ITS\SSDTIT01.DGN

UPPER MANATEE RIVER RD AT GREENFIELD BLVD/COPPERLEFE DR



No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MO
DRAWN BY: GS
CHECKED BY: IR

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6212
FBPR Certificate of Authorization No. 4213

DATE: 01/2020
PROJECT NO.: 6099560

MANATEE COUNTY PUBLIC WORKS

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

SPLICING DIAGRAM (2)

SHEET NO.: T-19

2:29:25 PM 2/20/2020 DWN:\3658\10001573\10117633\6.0_CAD_BIM\6.2_WIP\12345615201\zzworking\PortHarbourPkwy ITS\SSDTIT01.DGN

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STANDARD MAST ARM ASSEMBLIES DATA TABLE

Table Date 11-01-16

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.)	
POLE 1	A78/S-P6/S/L	A78/S	34				0	P6/S/L		19.25	*
POLE 2	A78/S/H-P6/S/L	A78/S/H					310	P6/S/L		19.25	*
POLE 3	A78/D-A60/D-P6/D/L	A78/D	35	A60/D	30.5	270	0	P6/D/L		19.25	*
POLE 4	A70/D-A60/D-P6/D/L	A70/D	32	A60/D	33.5	270	270	P6/D/L		19.75	*

*SPECIAL FOUNDATION DATA TABLE

POLE ID NUMBERS	SHAFT AND REINFORCEMENT							
	DA (ft.)	DB (ft.)	RA	RB	RC	RD (in.)	RE	RF (in.)
POLE 1	27	5	11	18	10	6	10	9
POLE 2	27	5	11	18	10	6	10	9
POLE 3	29	5	11	18	10	6	10	9
POLE 4	29	5.5	11	22	10	8	–	–

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.

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)
POLE 1	30	29	43	SAND
POLE 2	30	30	43	SAND
POLE 3	30	26	43	SAND
POLE 4	30	26	38	SAND

(1) Design water table is 0 ft. below surface
(2) Soil type is sand (cohesionless) or clay (cohesive)

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: CAS
DRAWN BY: DRA
CHECKED BY: SK

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE: 01/2020
PROJECT NO.: 6099560

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER
CHESTER A.
SMITH III
FL. LICENSE NO.
70756

MAST ARM DATA TABLE

SHEET NO.
T-20

8:34:38 AM 3/10/2020 PW:\3658\10001573\10172616\6.0_CAD_BIM\6.2_WIP\12345615201\struct\StandardMastArmDataTable01_A.dgn