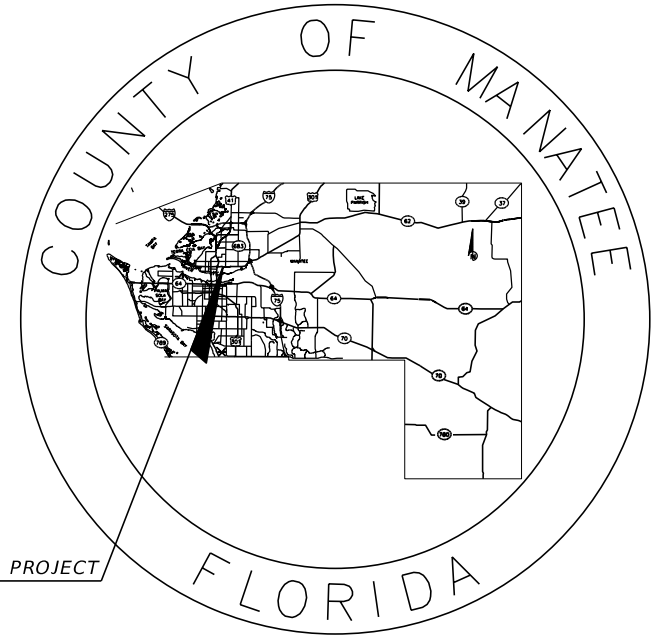


EXHIBIT 5

**MANATEE COUNTY
PUBLIC WORKS DEPARTMENT**

CONTRACT PLANS

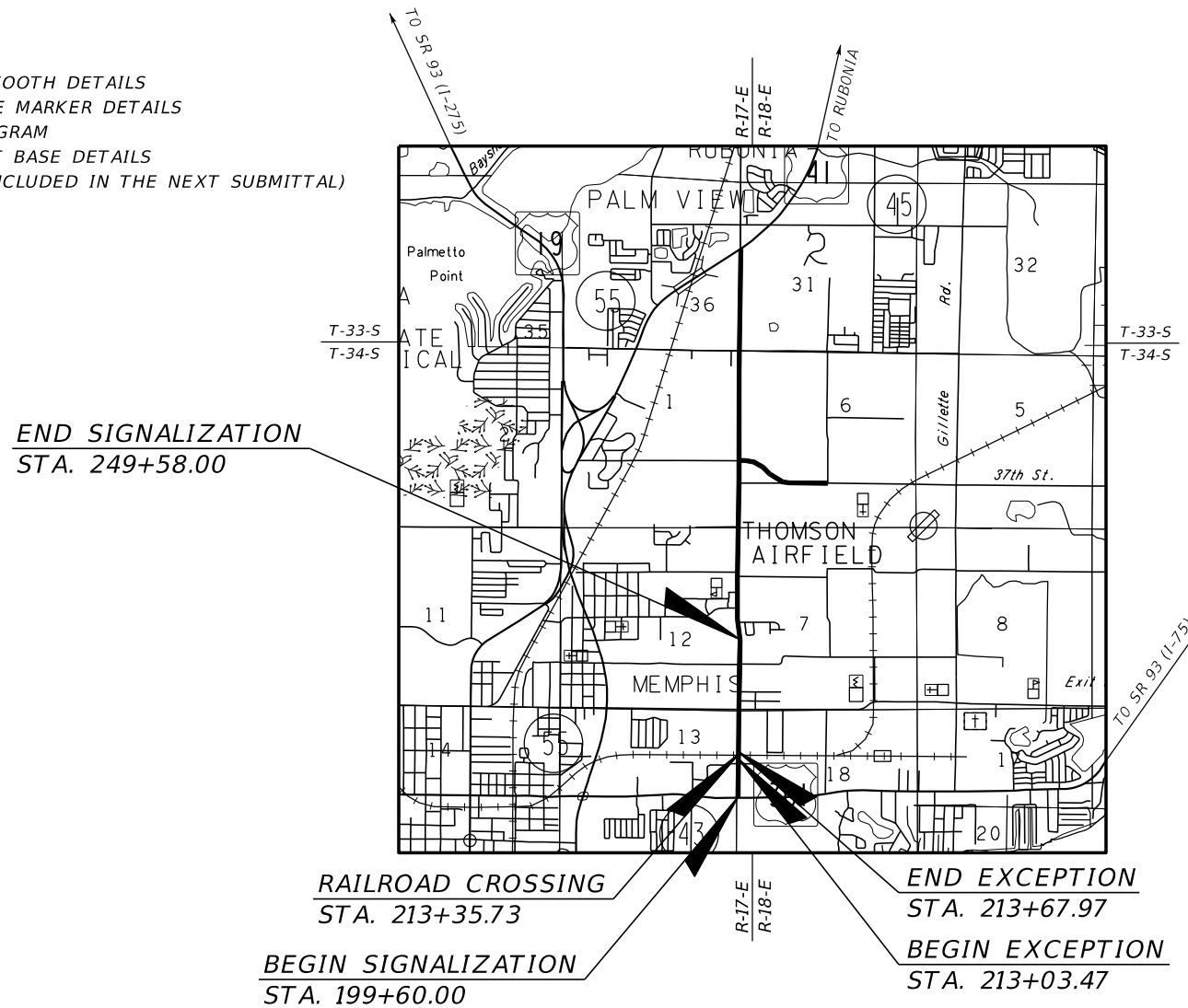
**MANATEE COUNTY
PROJECT NUMBER 6094360
CANAL ROAD (16TH AVENUE EAST)
SEGMENT 1 - US 301 TO 17TH STREET EAST
SIGNALIZATION PLANS**



LOCATION OF PROJECT

INDEX OF SIGNALIZATION PLANS

SHEET NO.	SHEET DESCRIPTION
T-1	KEY SHEET
T-2	SIGNATURE SHEET
T-3 - T-4	TABULATION OF QUANTITIES
T-5	GENERAL NOTES
T-6	PAY ITEM NOTES
T-7 - T-9	SIGNALIZATION PLAN
T-10 - T-17	INTERCONNECT PLAN
T-18 - T-19	GUIDE SIGN WORKSHEET
T-20 - T-21	MAST ARM TABULATION
T-22 - T-23	SPLICING DIAGRAM
T-24	CABINET, CCTV, MVDS AND BLUETOOTH DETAILS
T-25	CONCRETE APRON & CABLE ROUTE MARKER DETAILS
T-26	GENERATOR CABINET WIRING DIAGRAM
T-27	PEDESTRIAN SIGNAL AND CABINET BASE DETAILS
T-28	MAST ARM DATA TABLE (TO BE INCLUDED IN THE NEXT SUBMITTAL)



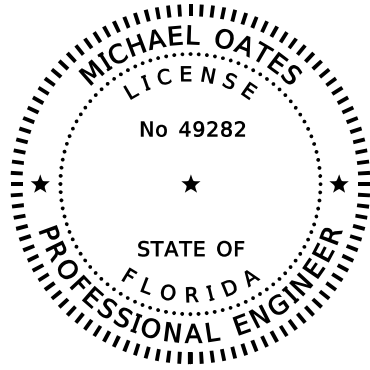
**SIGNALIZATION PLANS
ENGINEER OF RECORD:**

MICHAEL J. OATES, P.E.
P.E. NO.: 49282
HDR ENGINEERING, INC.
2601 CATTLEMEN ROAD, SUITE 400
SARASOTA, FLORIDA 34232
VENDOR NO. 47-0680568

MANATEE CO. PROJECT MANAGER:
MICHAEL L. STURM, P.E.

FISCAL YEAR	SHEET NO.
21	T-1

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



THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY:

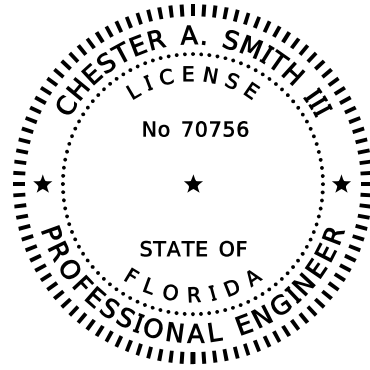
ON THE DATE ADJACENT TO THE SEAL

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

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

SHEET NO.	SHEET DESCRIPTION
T-1	KEY SHEET
T-2	SIGNATURE SHEET
T-3 - T-4	TABULATION OF QUANTITIES
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T-18 - T-19	GUIDE SIGN WORKSHEET
T-20 - T-21	MAST ARM TABULATION
T-22 - T-23	SPLICING DIAGRAM
T-24	CABINET, CCTV, MVDS AND BLUETOOTH DETAILS
T-25	CONCRETE APRON & CABLE ROUTE MARKER DETAILS
T-26	GENERATOR CABINET WIRING DIAGRAM



THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY:

ON THE DATE ADJACENT TO THE SEAL

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

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

SHEET NO.	SHEET DESCRIPTION
T-2	SIGNATURE SHEET
T-27	PEDESTRIAN SIGNAL AND CABINET BASE DETAILS
T-28	MAST ARM DATA TABLE (TO BE INCLUDED IN THE NEXT SUBMITTAL)

SCALE	AS NOTED		
DESIGNED BY	MO		
DRAWN BY	SM		
CHECKED BY	IR		
No.	REVISIONS	DATE	BY
		12/9/2021	PW:\



HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE

12/2021

PROJECT NO.

6094360



MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER

MICHAEL J. OATES

FL. LICENSE NO.

49282

SHEET NO.



T-2

SIGNATURE SHEET

TABULATION OF QUANTITIES



PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS												TOTAL THIS SHEET		GRAND TOTAL			
			T-7		T-8		T-9		T-10		T-11		T-12		T-13		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	190				325		360		605		600		695		2775			
630-2-12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF	240				305				110		120				775			
632-7-1	SIGNAL CABLE- NEW OR RECONSTRUCTED INTERSECTION, FURNISH & INSTALL	PI	1				1										2			
633-1-121	FIBER OPTIC CABLE, F&I, UNDERGROUND, 2-12 FIBERS	LF							540								540			
633-1-123	FIBER OPTIC CABLE, F&I, UNDERGROUND, 49-96 FIBERS	LF																		
633-1-420	FIBER OPTIC CABLE, RELOCATE, UNDERGROUND	LF																		
633-2-31	FIBER OPTIC CONNECTION, INSTALL, SPLICE	EA							4								4			
633-3-11	FIBER OPTIC CONNECTION HARDWARE, F&I, SPLICE ENCLOSURE	EA							1								1			
633-3-12	FIBER OPTIC CONNECTION HARDWARE, F&I, SPLICE TRAY	EA							1								1			
633-3-15	FIBER OPTIC CONNECTION HARDWARE, F&I, PRETERMINATED PATCH PANEL	EA	1				1										2			
635-2-11	PULL & SPLICE BOX, F&I, 17" x 30" COVER SIZE	EA	12				25										37			
635-2-12	PULL & SPLICE BOX, F&I, 24" x 36" COVER SIZE	EA							2		1				1		4			
635-2-13	PULL & SPLICE BOX, F&I, 30" X 60" RECTANGULAR OR 36" ROUND COVER SIZE	EA							2								2			
639-1-122	ELECTRICAL POWER SERVICE, F&I, UNDERGROUND, METER PURCHASED BY CONTRACTOR	AS	1				1										2			
639-1-620	ELECTRICAL POWER SERVICE, REMOVE UNDERGROUND	AS					1										1			
639-2-1	ELECTRICAL SERVICE WIRE, FURNISH & INSTALL	LF	65				65										130			
639-4-6	EMERGENCY GENERATOR - PORTABLE, INSTALL HOUSING ONLY	EA	1				1										2			
641-2-12	PRESTRESSED CONCRETE POLE, F&I, TYPE P-II SERVICE POLE	EA	1				1										2			
641-2-60	PRESTRESSED CONCRETE POLE, COMPLETE POLE REMOVAL- PEDESTAL/SERVICE POLE	EA					1										1			
646-1-11	ALUMINUM SIGNALS POLE, FURNISH & INSTALL PEDESTAL	EA	4				8										12			
646-1-60	ALUMINUM SIGNALS POLE, REMOVE	EA					4										4			
649-21-3	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 40'	EA	1														1			
649-21-6	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 50'	EA					1										1			
649-21-10	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 60'	EA					3										3			
649-21-13	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, DOUBLE ARM 60'-50'	EA	1														1			
649-21-21	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 78'	EA	1														1			
649-26-5	STEEL MAST ARM ASSEMBLY, REMOVE, DEEP FOUNDATION- BOLT ON ATTACHMENT	EA					4										4			
650-1-14	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 3 SECTION, 1 WAY	AS			5		7										12			
650-1-16	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 4 SECTION, 1 WAY	AS			4		6										10			
650-1-19	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 5 SECTION CLUSTER, 1 WAY	AS			3		3										6			
653-1-11	PEDESTRIAN SIGNAL, FURNISH & INSTALL LED COUNTDOWN, 1 WAY	AS			4		8										12			
660-3-11	VEHICLE DETECTION SYSTEM- MICROWAVE, FURNISH & INSTALL CABINET EQUIPMENT	EA	1				1										2			
660-3-12	VEHICLE DETECTION SYSTEM- MICROWAVE, FURNISH & INSTALL, ABOVE GROUND EQUIPMENT	EA	8				6										14			
660-6-121	VEHICLE DETECTION SYSTEM- AVI, BLUETOOTH, FURNISH & INSTALL, CABINET EQUIPMENT	EA	1				1										2			
660-6-122	VEHICLE DETECTION SYSTEM- AVI, BLUETOOTH, FURNISH & INSTALL, ABOVE GROUND EQUIPMENT	EA	1				1										2			
665-1-11	PEDESTRIAN DETECTOR, FURNISH & INSTALL, STANDARD	EA	4				8										12			
670-5-111	TRAFFIC CONTROLLER ASSEMBLY, F&I, NEMA, 1 PREEMPTION	AS	1				1										2			
670-5-600	TRAFFIC CONTROLLER ASSEMBLY, REMOVE CONTROLLER WITH CABINET	AS					1										1			
682-1-113	ITS CCTV CAMERA, F&I, DOME PTZ ENCLOSURE - PRESSURIZED, 1P, HIGH DEFINITION	EA	1				1										2			
684-1-1	MANAGED FIELD ETHERNET SWITCH, FURNISH & INSTALL	EA	1				1										2			
685-1-12	UNINTERRUPTIBLE POWER SUPPLY, FURNISH AND INSTALL, ONLINE/DOUBLE CONVERSION	EA	1				1										2			
700-3-201	SIGN PANEL, FURNISH & INSTALL OVERHEAD MOUNT, UP TO 12 SF	EA			5		4										9			
700-5-22	INTERNALLY ILLUMINATED SIGN, FURNISH & INSTALL, OVERHEAD MOUNT, 12-18 SF	EA			4		4										8			
700-11-391	ELECTRONIC DISPLAY SIGN, FURNISH & INSTALL OVERHEAD MOUNT - AC POWERED, BLANK OUT SIGN, UP TO 12 SF	AS			1		3										4			

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

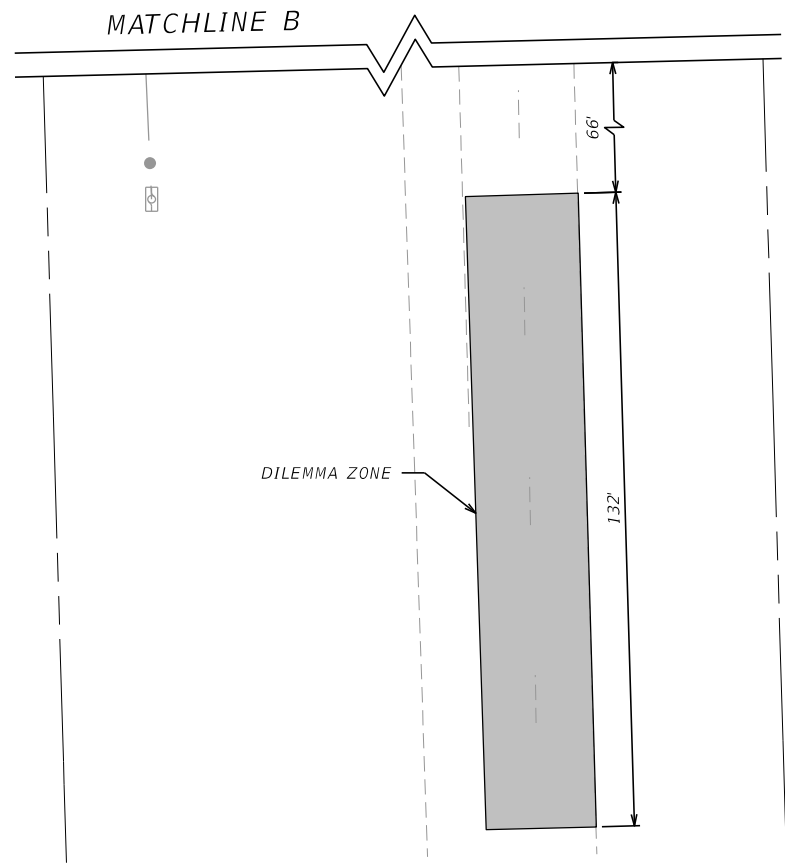
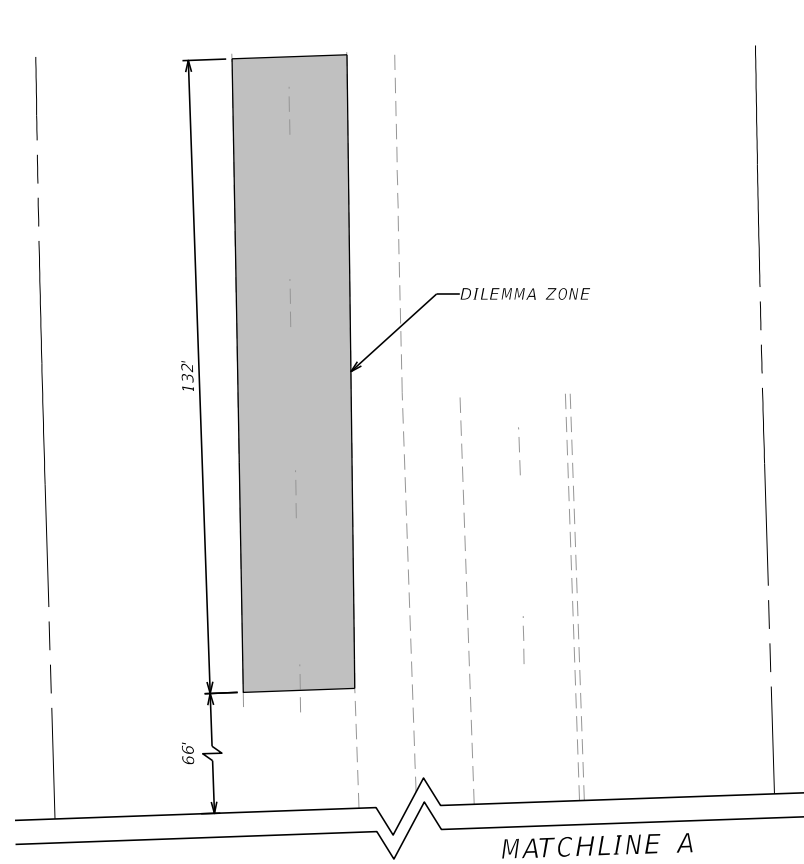
SCALE AS NOTED		 HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233	DATE	 MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER	MICHAEL J. OATES FL. LICENSE NO. 49282	SHEET NO. T-3
DESIGNED BY MO			12/2021		PROJECT NO.		
DRAWN BY SM			6094360				
CHECKED BY IR							
No.	REVISIONS	DATE	BY				

TABULATION OF QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS												TOTAL THIS SHEET		GRAND TOTAL	
			T-14		T-15		T-16		T-17									
			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	592		701		595		417								2305	5080
630-2-12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF					87		88								175	950
632-7-1	SIGNAL CABLE- NEW OR RECONSTRUCTED INTERSECTION, FURNISH & INSTALL	PI																2
633-1-121	FIBER OPTIC CABLE, F&I, UNDERGROUND, 2-12 FIBERS	LF	270														270	810
633-1-123	FIBER OPTIC CABLE, F&I, UNDERGROUND, 49-96 FIBERS	LF	200														200	200
633-1-420	FIBER OPTIC CABLE, RELOCATE, UNDERGROUND	LF	357		751		732		555								2395	2395
633-2-31	FIBER OPTIC CONNECTION, INSTALL, SPLICE	EA	16														16	20
633-3-11	FIBER OPTIC CONNECTION HARDWARE, F&I, SPLICE ENCLOSURE	EA	1														1	2
633-3-12	FIBER OPTIC CONNECTION HARDWARE, F&I, SPLICE TRAY	EA	1														1	2
633-3-15	FIBER OPTIC CONNECTION HARDWARE, F&I, PRETERMINATED PATCH PANEL	EA																2
635-2-11	PULL & SPLICE BOX, F&I, 17" x 30" COVER SIZE	EA																37
635-2-12	PULL & SPLICE BOX, F&I, 24" x 36" COVER SIZE	EA	2		1		1		1								5	9
635-2-13	PULL & SPLICE BOX, F&I, 30" X 60" RECTANGULAR OR 36" ROUND COVER SIZE	EA	1														1	3
639-1-122	ELECTRICAL POWER SERVICE, F&I, UNDERGROUND, METER PURCHASED BY CONTRACTOR	AS																2
639-1-620	ELECTRICAL POWER SERVICE, REMOVE UNDERGROUND	AS																1
639-2-1	ELECTRICAL SERVICE WIRE, FURNISH & INSTALL	LF																130
639-4-6	EMERGENCY GENERATOR - PORTABLE, INSTALL HOUSING ONLY	EA																2
641-2-12	PRESTRESSED CONCRETE POLE, F&I, TYPE P-II SERVICE POLE	EA																2
641-2-60	PRESTRESSED CONCRETE POLE, COMPLETE POLE REMOVAL- PEDESTAL/SERVICE POLE	EA																1
646-1-11	ALUMINUM SIGNALS POLE, FURNISH & INSTALL PEDESTAL	EA																12
646-1-60	ALUMINUM SIGNALS POLE, REMOVE	EA																4
649-21-3	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 40'	EA																1
649-21-6	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 50'	EA																1
649-21-10	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 60'	EA																3
649-21-13	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, DOUBLE ARM 60'-50'	EA																1
649-21-21	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 78'	EA																1
649-26-5	STEEL MAST ARM ASSEMBLY, REMOVE, DEEP FOUNDATION- BOLT ON ATTACHMENT	EA																4
650-1-14	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 3 SECTION, 1 WAY	AS																12
650-1-16	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 4 SECTION, 1 WAY	AS																10
650-1-19	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 5 SECTION CLUSTER, 1 WAY	AS																6
653-1-11	PEDESTRIAN SIGNAL, FURNISH & INSTALL LED COUNTDOWN, 1 WAY	AS																12
660-3-11	VEHICLE DETECTION SYSTEM- MICROWAVE, FURNISH & INSTALL CABINET EQUIPMENT	EA																2
660-3-12	VEHICLE DETECTION SYSTEM- MICROWAVE, FURNISH & INSTALL, ABOVE GROUND EQUIPMENT	EA																14
660-6-121	VEHICLE DETECTION SYSTEM- AVI, BLUETOOTH, FURNISH & INSTALL, CABINET EQUIPMENT	EA																2
660-6-122	VEHICLE DETECTION SYSTEM- AVI, BLUETOOTH, FURNISH & INSTALL, ABOVE GROUND EQUIPMENT	EA																2
665-1-11	PEDESTRIAN DETECTOR, FURNISH & INSTALL, STANDARD	EA																12
670-5-111	TRAFFIC CONTROLLER ASSEMBLY, F&I, NEMA, 1 PREEMPTION	AS																2
670-5-600	TRAFFIC CONTROLLER ASSEMBLY, REMOVE CONTROLLER WITH CABINET	AS																1
682-1-113	ITS CCTV CAMERA, F&I, DOME PTZ ENCLOSURE - PRESSURIZED, 1P, HIGH DEFINITION	EA																2
684-1-1	MANAGED FIELD ETHERNET SWITCH, FURNISH & INSTALL	EA																2
685-1-12	UNINTERRUPTIBLE POWER SUPPLY, FURNISH AND INSTALL, ONLINE/DOUBLE CONVERSION	EA																2
700-3-201	SIGN PANEL, FURNISH & INSTALL OVERHEAD MOUNT, UP TO 12 SF	EA																9
700-5-22	INTERNALLY ILLUMINATED SIGN, FURNISH & INSTALL, OVERHEAD MOUNT, 12-18 SF	EA																8
700-11-391	ELECTRONIC DISPLAY SIGN, FURNISH & INSTALL OVERHEAD MOUNT - AC POWERED, BLANK OUT SIGN, UP TO 12 SF	AS																4

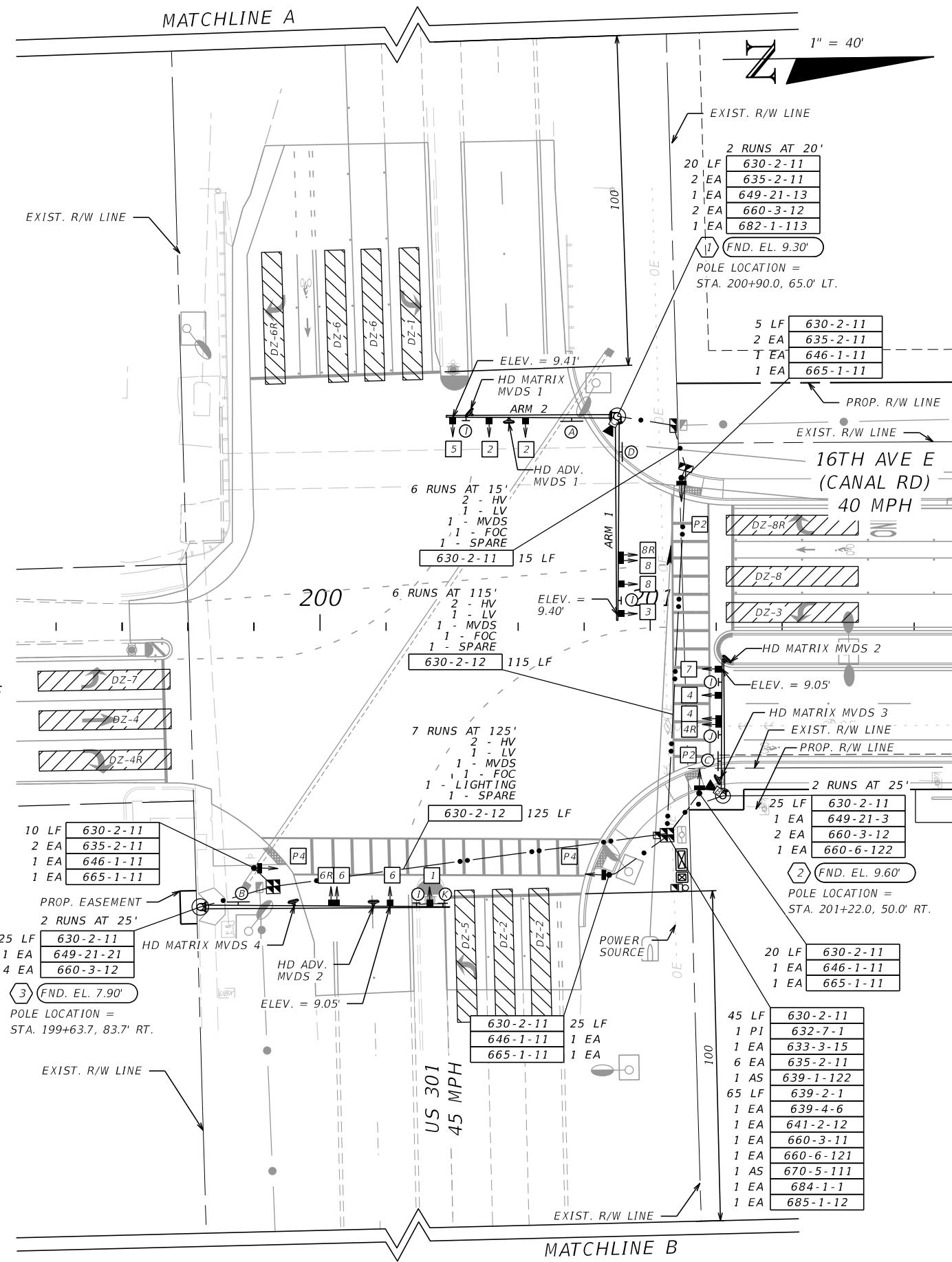
SCALE AS NOTED		 HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233	DATE 12/2021	 MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER MICHAEL J. OATES	TABULATION OF QUANTITIES (2)	SHEET NO.
DESIGNED BY MO			PROJECT NO. 6094360		FL. LICENSE NO. 49282		T-4
DRAWN BY SM							
CHECKED BY IR							
No.	REVISIONS	DATE	BY				

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



LEGEND

- PROPOSED DETECTION ZONE (VIRTUAL LOOPS) (40' x 6') POSITIONED 2' BEYOND STOP BAR
- PROPOSED HD MATRIX OR ADVANCE MVDS SMART SENSOR
- PROPOSED BLUETOAD
- PROPOSED CCTV



SCALE	AS NOTED		
DESIGNED BY	MO		
DRAWN BY	SM		
CHECKED BY	IR		
No.	REVISIONS	DATE	BY
		12/9/2021	PW:\

HDR HDR Engineering, Inc.
 2601 Cattlemen Road
 Suite 400
 Sarasota, FL 34232-6233

DATE
12/2021

PROJECT NO.
6094360

Manatee County MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER
MICHAEL J. OATES

FL. LICENSE NO.
49282

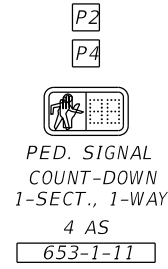
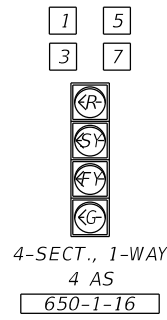
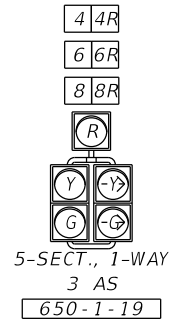
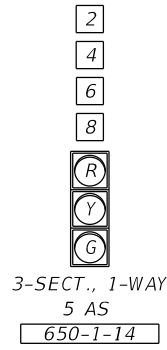
SIGNALIZATION PLAN (1)

SHEET NO.
T-7

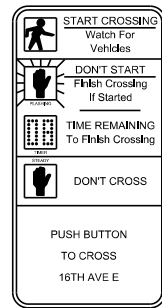
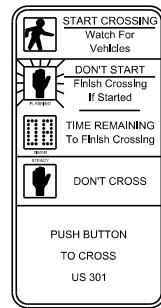
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SIGNAL HEAD DETAILS

PEDESTRIAN HEAD DETAILS



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



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



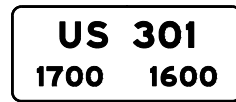
A



B



C



D

700-5-22 4 EA

FTP-85-13
30" x 36"



I

700-3-201 4 EA

BLANK OUT SIGN
R3-1
30" x 30"



J

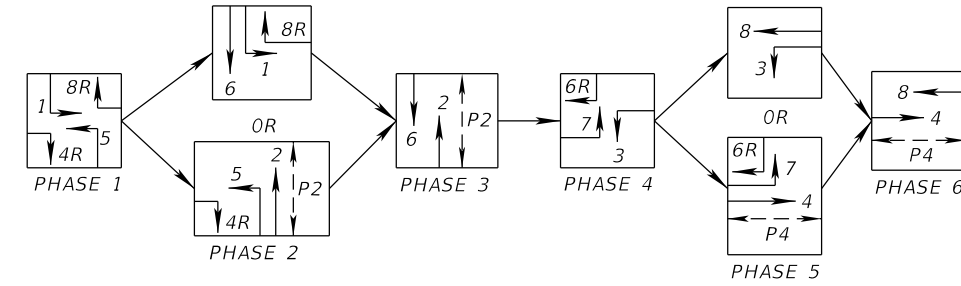
700-11-391 1 AS

R3-4
36" x 36"



K

700-3-201 1 EA



CONTROLLER OPERATIONS:

- MAJOR STREET IS US 301 (MOVEMENTS 1, 2, 5 AND 6) AND MINOR STREET IS 16TH AVE E (CANAL RD) (MOVEMENTS 3, 4, 7 AND 8).
- WHILE IN FLASH MODE, MOVEMENTS 2 & 6 SHALL FLASH YELLOW. ALL OTHER MOVEMENTS SHALL FLASH RED.
- CONTROLLER CABINET SHALL BE WIRED AS AN SOP 10 (WITH RIGHT TURN OVERLAPS) WITH THE FOLLOWING: CONCURRENT/ACTUATED PEDESTRIANS FOR MOVEMENTS 2 (P2) AND 4 (P4).
- REQUEST UPDATED SIGNAL TIMINGS FROM FDOT TSM&O ENGINEER - ARTERIALS (863-519-2216) WHEN ALL LANES, STRIPING, SIGNALS AND PEDESTRIAN FACILITIES ARE IN THEIR FINAL CONFIGURATION AND THE SIGNAL IS OPERATING AS DESIGNED. PROVIDE FDOT WITH ALL 'AS-BUILT' INFORMATION NECESSARY TO DEVELOP THE BASIC SIGNAL TIMING PARAMETERS AND ALLOW THREE (3) WEEKS FOLLOWING THE REQUEST FOR FDOT TO DEVELOP THE UPDATED TIMINGS. PROGRAM THE CONTROLLER PER THE TIMINGS PROVIDED BY FDOT.
- PROGRAM PHASE RESTRICTIONS TO OMIT MOVEMENT 1 AND REDIRECT CALLS FROM MOVEMENT 1 TO MOVEMENT 6, WHEN MOVEMENT 2 IS GREEN, AND TO OMIT MOVEMENT 5 AND REDIRECT CALLS FROM MOVEMENT 5 TO MOVEMENT 2, WHEN MOVEMENT 6 IS GREEN.
- OVERLAP PHASES AND NOTES:
4R = 5 WITH MINIMUM GREEN = 7 SEC., YELLOW = 4.8 SEC., ALL RED = 2.0 SEC.
6R = 7 WITH MINIMUM GREEN = 7 SEC., YELLOW = 4.4 SEC., ALL RED = 3.1 SEC.
8R = 1 WITH MINIMUM GREEN = 7 SEC., YELLOW = 4.8 SEC., ALL RED = 2.0 SEC.
- 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:

- COUNTY REPRESENTATIVE OR ENGINEER OF RECORD SHALL FIELD LOCATE PEDESTRIAN SIGNAL POLES.
- 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.
- 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.
- INTERNALLY ILLUMINATED SIGNS SHALL BE RIGID MOUNTED TO MAST ARMS.

CONTROLLER TIMINGS (SECONDS)									
MOVEMENT # (CONTROLLER PHASE C)	1	2	3	4	5	6	7	8	NOTES
DIRECTION	EBL	WB	SBL	NB	WBL	EB	NBL	SB	
TURN TYPE	PROT/ PERM		PROT/ PERM		PROT/ PERM		PROT/ PERM		
MIN GREEN	7	20	7	10	7	20	7	10	
EXT	3	3	3	3	3	3	3	3	
YELLOW	4.8	4.8	4.4	4.4	4.8	4.8	4.4	4.4	
ALL RED	2.0	2.0	3.1	3.1	2.0	2.0	3.1	3.1	
MAX I	25	50	25	30	25	50	25	30	
MAX II	-	-	-	-	-	-	-	-	
WALK	-	7	-	7	-	-	-	-	
FLASHING DON'T WALK	-	23	-	28	-	-	-	-	
DETECTOR MEMORY									
DET. CROSS SWITCH									
DUAL ENTRY		ON		ON		ON		ON	
VEHICLE RECALL	-	MIN	-	-	-	MIN	-	-	
CNA									
REST IN WALK									

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-1	
	DZ-6R	8
HD MATRIX 2	DZ-3	
	DZ-8R	8
HD MATRIX 3	DZ-2	
	DZ-5	
HD MATRIX 4	DZ-4R	8
	DZ-7	
HD ADV. 1	DZ-2	
HD ADV. 2	DZ-6	

SCALE	AS NOTED		
DESIGNED BY	MO		
DRAWN BY	SM		
CHECKED BY	IR		
No.	REVISIONS	DATE	BY
		12/9/2021	PW:\



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2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE
12/2021
PROJECT NO.
6094360

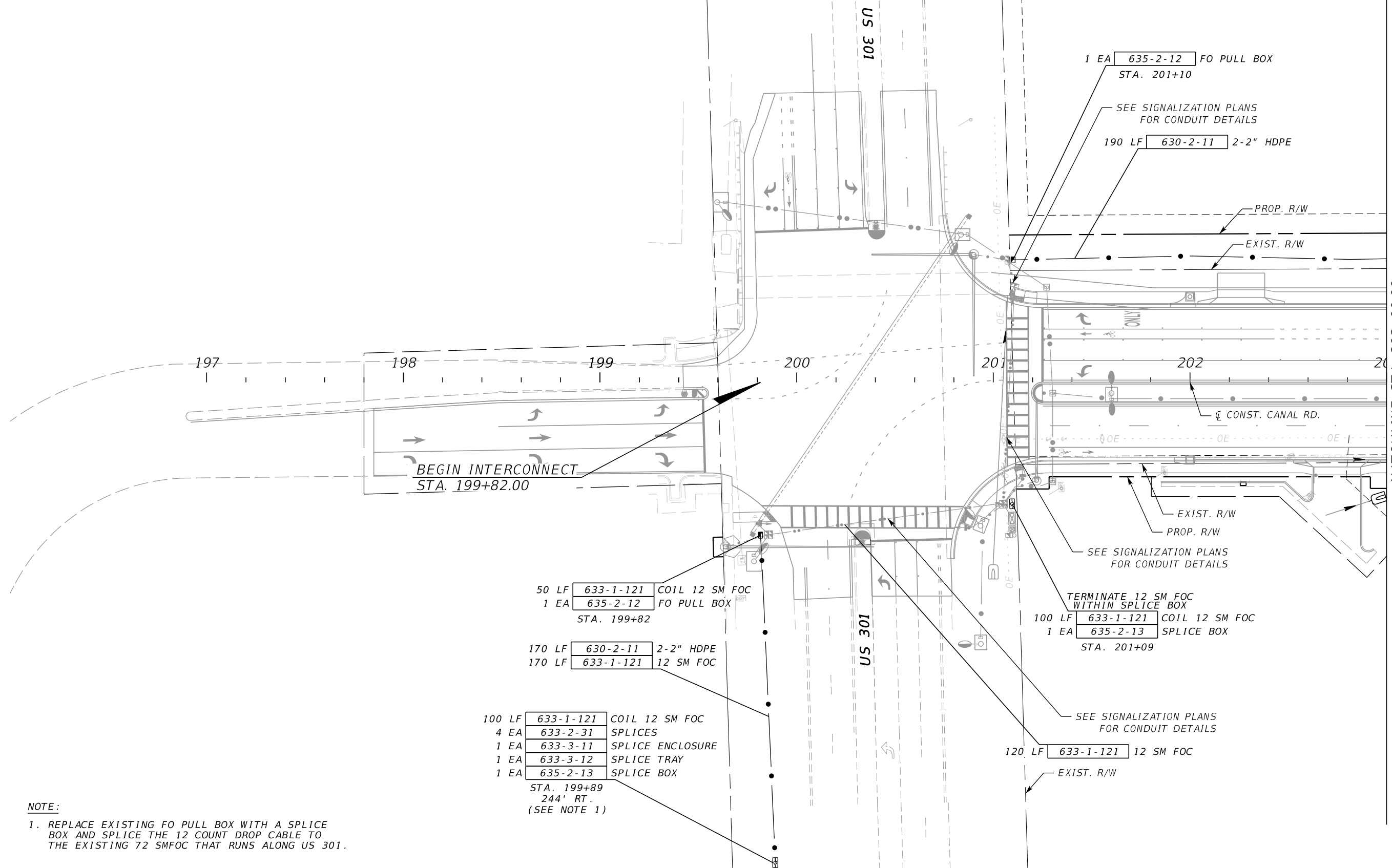


MANATEE COUNTY
PUBLIC WORKS

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

SIGNALIZATION PLAN (1A)

SHEET NO.
T-8



MATCHLINE STA. 203+00.00

NOTE:

1. REPLACE EXISTING FO PULL BOX WITH A SPLICE BOX AND SPLICE THE 12 COUNT DROP CABLE TO THE EXISTING 72 SMFOC THAT RUNS ALONG US 301.

50 LF 633-1-121 COIL 12 SM FOC
 1 EA 635-2-12 FO PULL BOX
 STA. 199+82

170 LF 630-2-11 2-2" HDPE
 170 LF 633-1-121 12 SM FOC

100 LF 633-1-121 COIL 12 SM FOC
 4 EA 633-2-31 SPLICES
 1 EA 633-3-11 SPLICE ENCLOSURE
 1 EA 633-3-12 SPLICE TRAY
 1 EA 635-2-13 SPLICE BOX
 STA. 199+89
 244' RT.
 (SEE NOTE 1)

100 LF 633-1-121 COIL 12 SM FOC
 1 EA 635-2-13 SPLICE BOX
 STA. 201+09

120 LF 633-1-121 12 SM FOC

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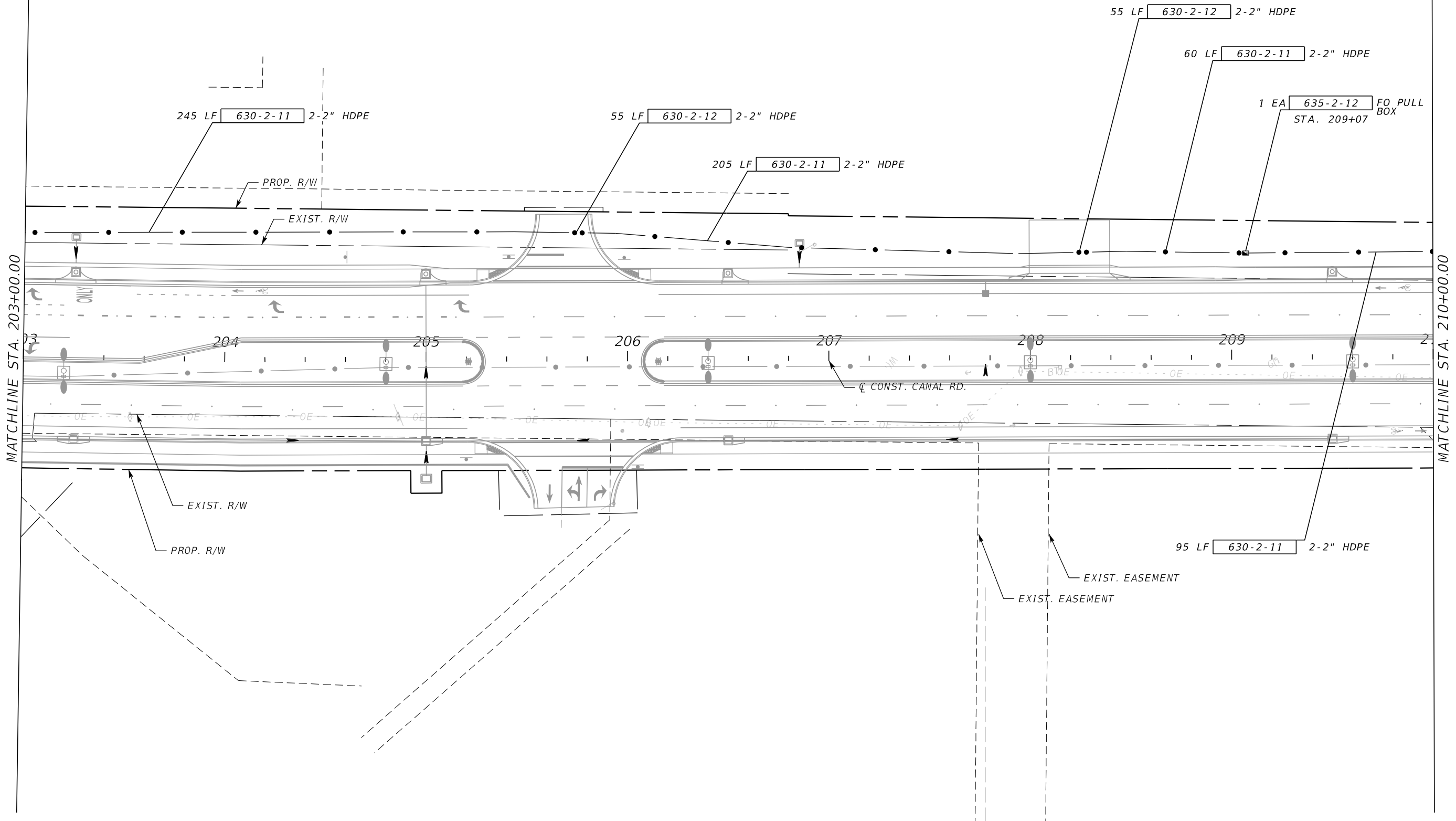
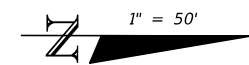
MANATEE COUNTY
 PUBLIC WORKS

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

INTERCONNECT PLAN (1)

SHEET NO.
 T-10

16TH AVE E (CANAL RD.)



MATCHLINE STA. 203+00.00

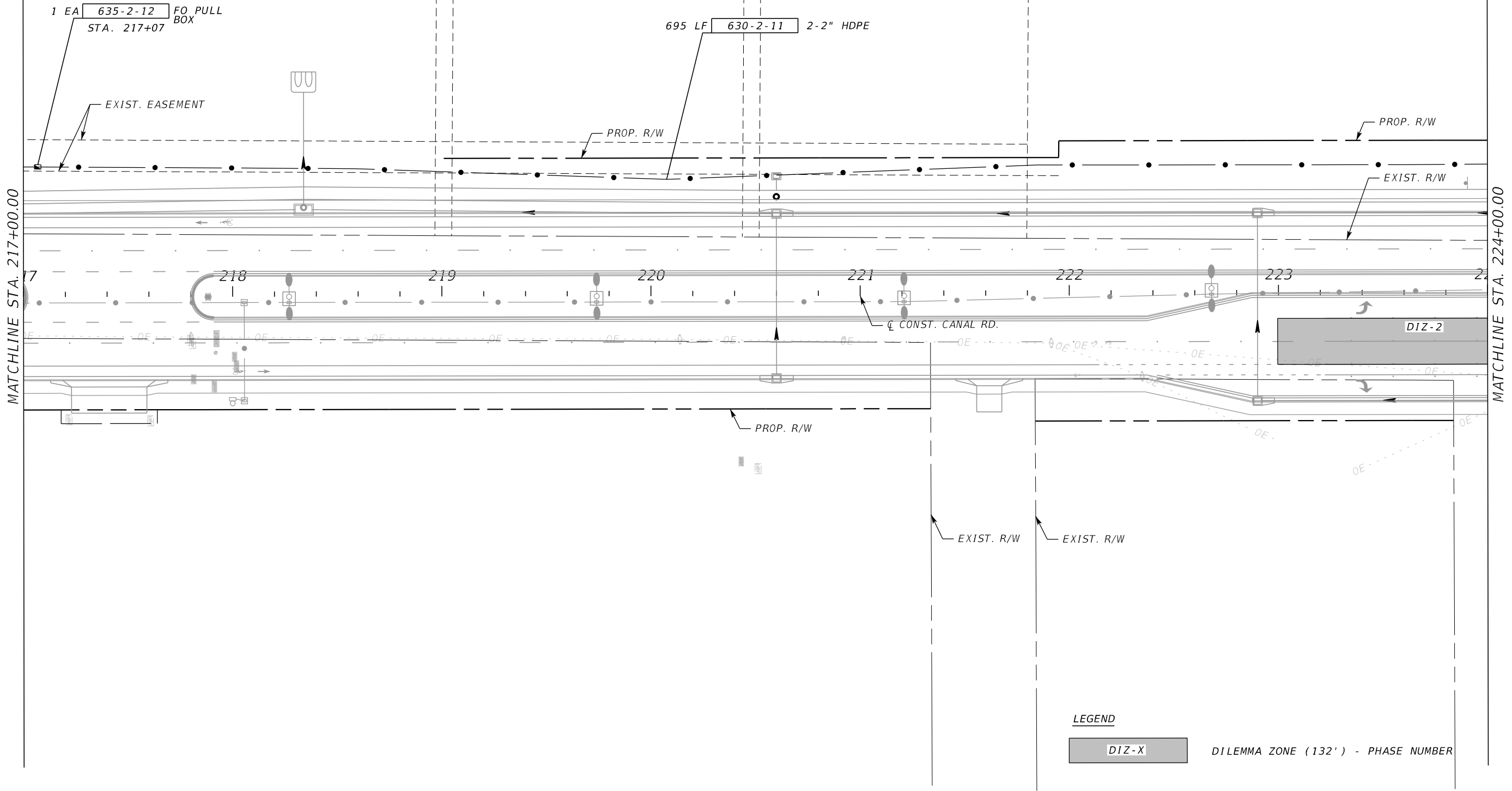
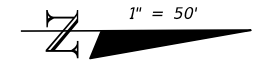
MATCHLINE STA. 210+00.00

No.	REVISIONS	DATE	BY	PW:\	HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233	DATE 12/2021 PROJECT NO. 6094360	MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER	INTERCONNECT PLAN (2)	SHEET NO. T-11
								MICHAEL J. OATES		
								FL. LICENSE NO.		
								49282		

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16TH AVE E (CANAL RD.)



LEGEND

DIZ-X DILEMMA ZONE (132') - PHASE NUMBER

No.	REVISIONS	DATE	BY



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FL. LICENSE NO.
49282

INTERCONNECT PLAN (A)

SHEET NO.
T-13

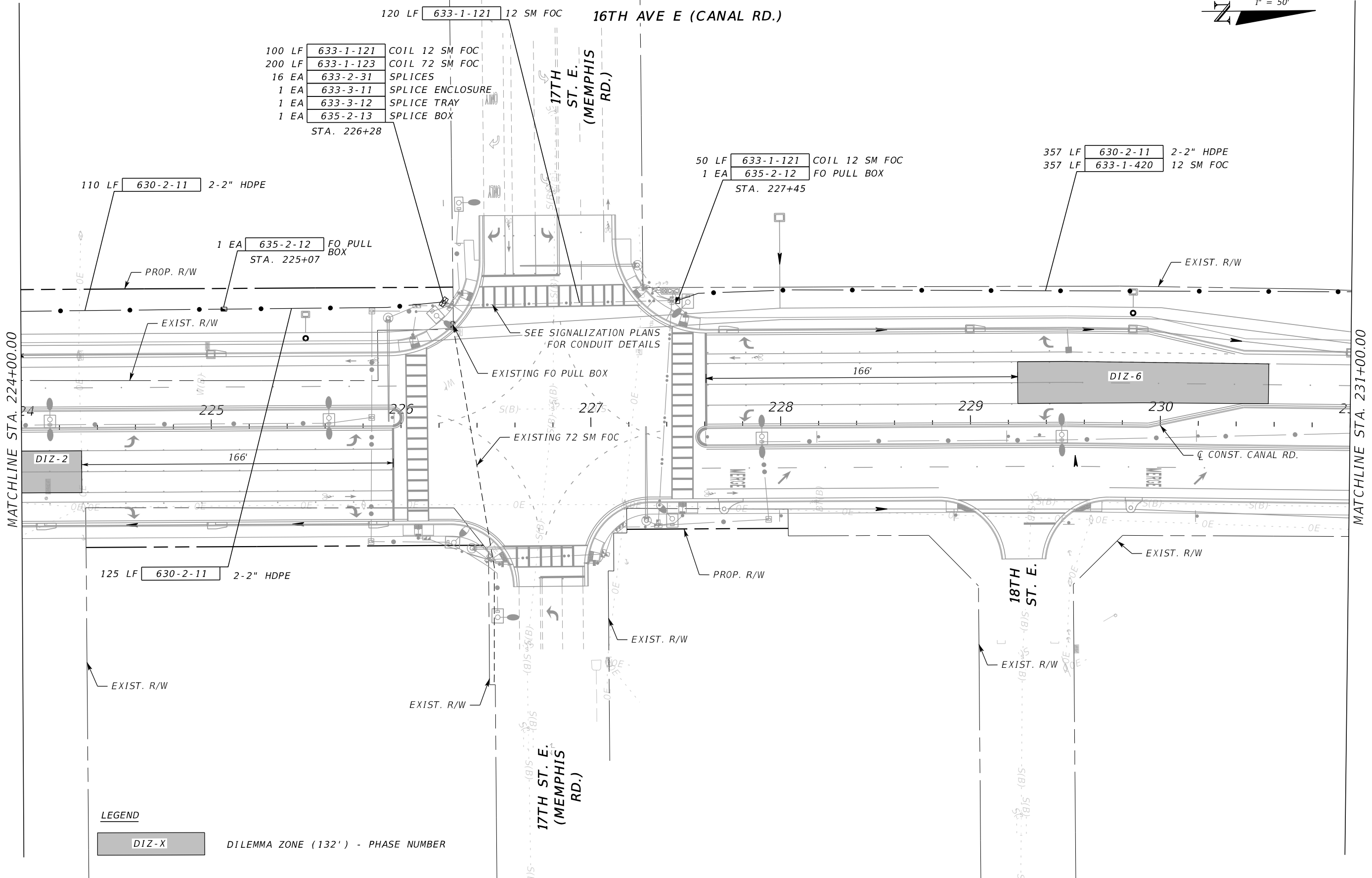
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1" = 50'

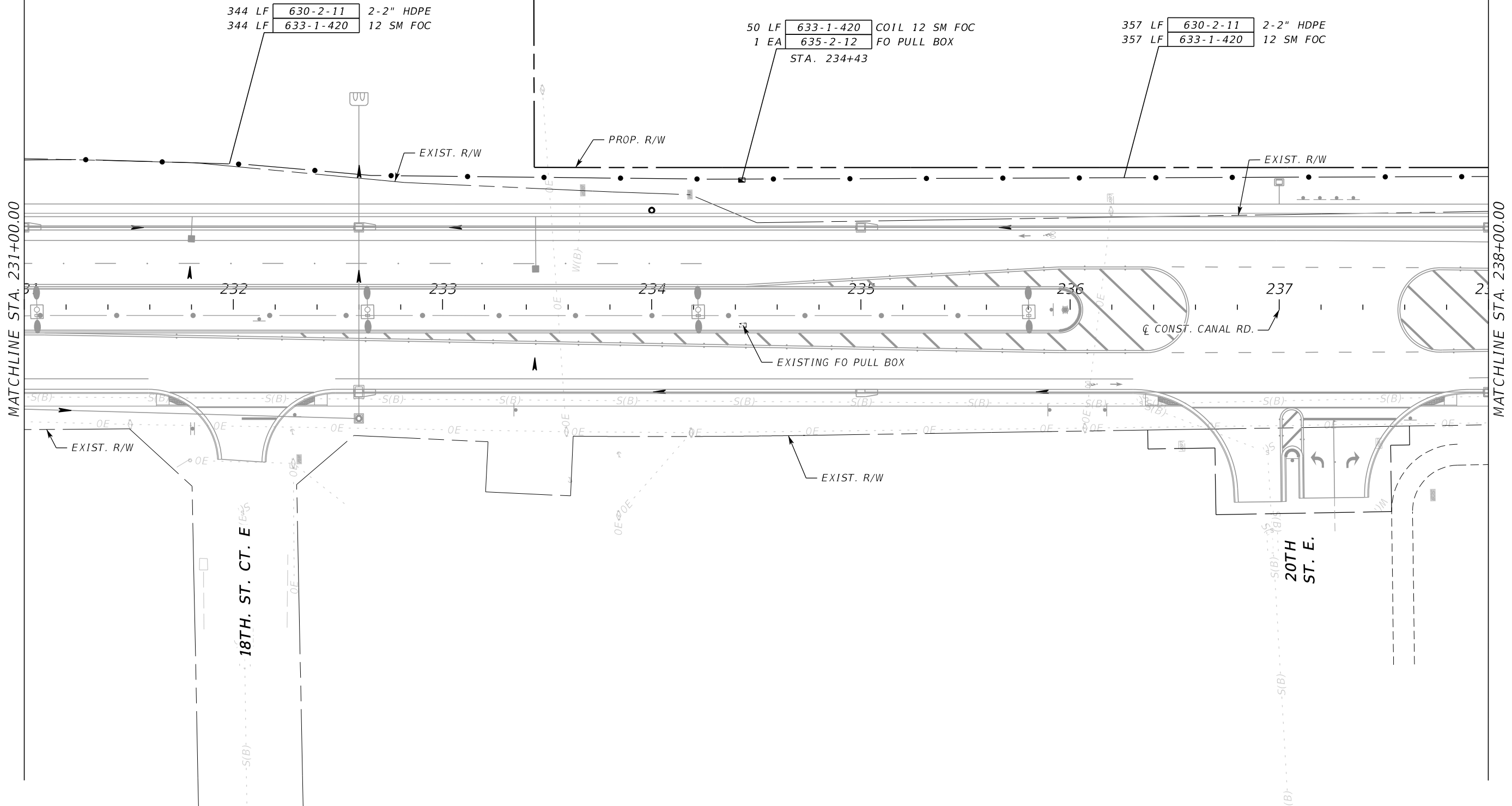
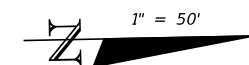


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SCALE	AS NOTED																
DESIGNED BY	MO																
DRAWN BY	SM																
CHECKED BY	IR																
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No.	REVISIONS	DATE	BY														
		12/9/2021	PW:\														

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16TH AVE E (CANAL RD.)



No.	REVISIONS	DATE	BY
		12/9/2021	IR

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DESIGNED BY MO

DRAWN BY SM

CHECKED BY IR

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DATE	12/2021
PROJECT NO.	6094360

MANATEE COUNTY
PUBLIC WORKS

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

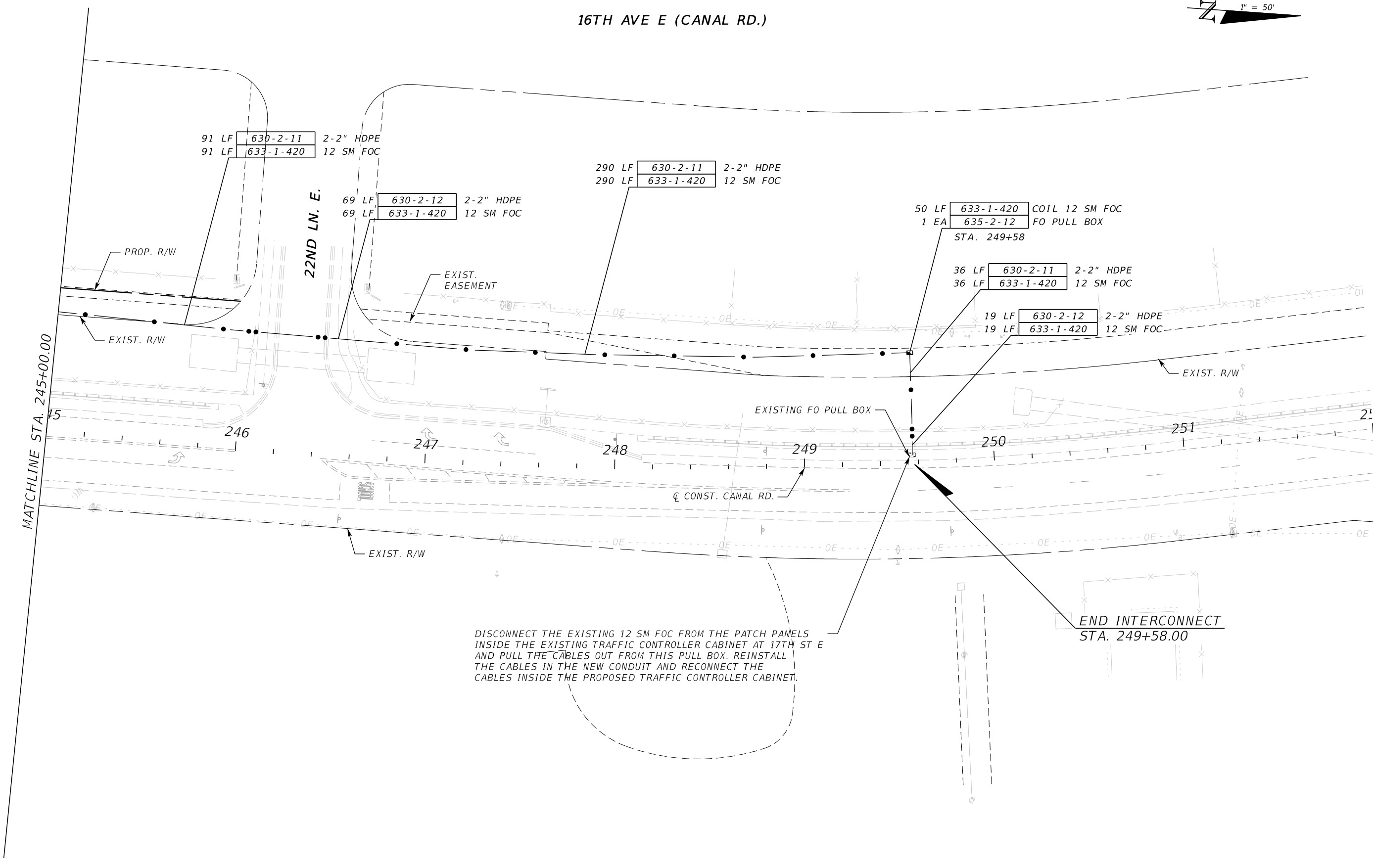
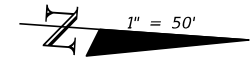
INTERCONNECT PLAN (6)

SHEET NO.	T-15
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16TH AVE E (CANAL RD.)



DISCONNECT THE EXISTING 12 SM FOC FROM THE PATCH PANELS INSIDE THE EXISTING TRAFFIC CONTROLLER CABINET AT 17TH ST E AND PULL THE CABLES OUT FROM THIS PULL BOX. REINSTALL THE CABLES IN THE NEW CONDUIT AND RECONNECT THE CABLES INSIDE THE PROPOSED TRAFFIC CONTROLLER CABINET.

END INTERCONNECT
STA. 249+58.00

<table border="1"> <tr> <td>No.</td> <td>REVISIONS</td> <td>DATE</td> <td>BY</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>				No.	REVISIONS	DATE	BY					SCALE AS NOTED DESIGNED BY MO DRAWN BY SM CHECKED BY IR	 HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233	DATE 12/2021 PROJECT NO. 6094360	 MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER MICHAEL J. OATES FL. LICENSE NO. 49282	SHEET NO. T-17
No.	REVISIONS	DATE	BY														

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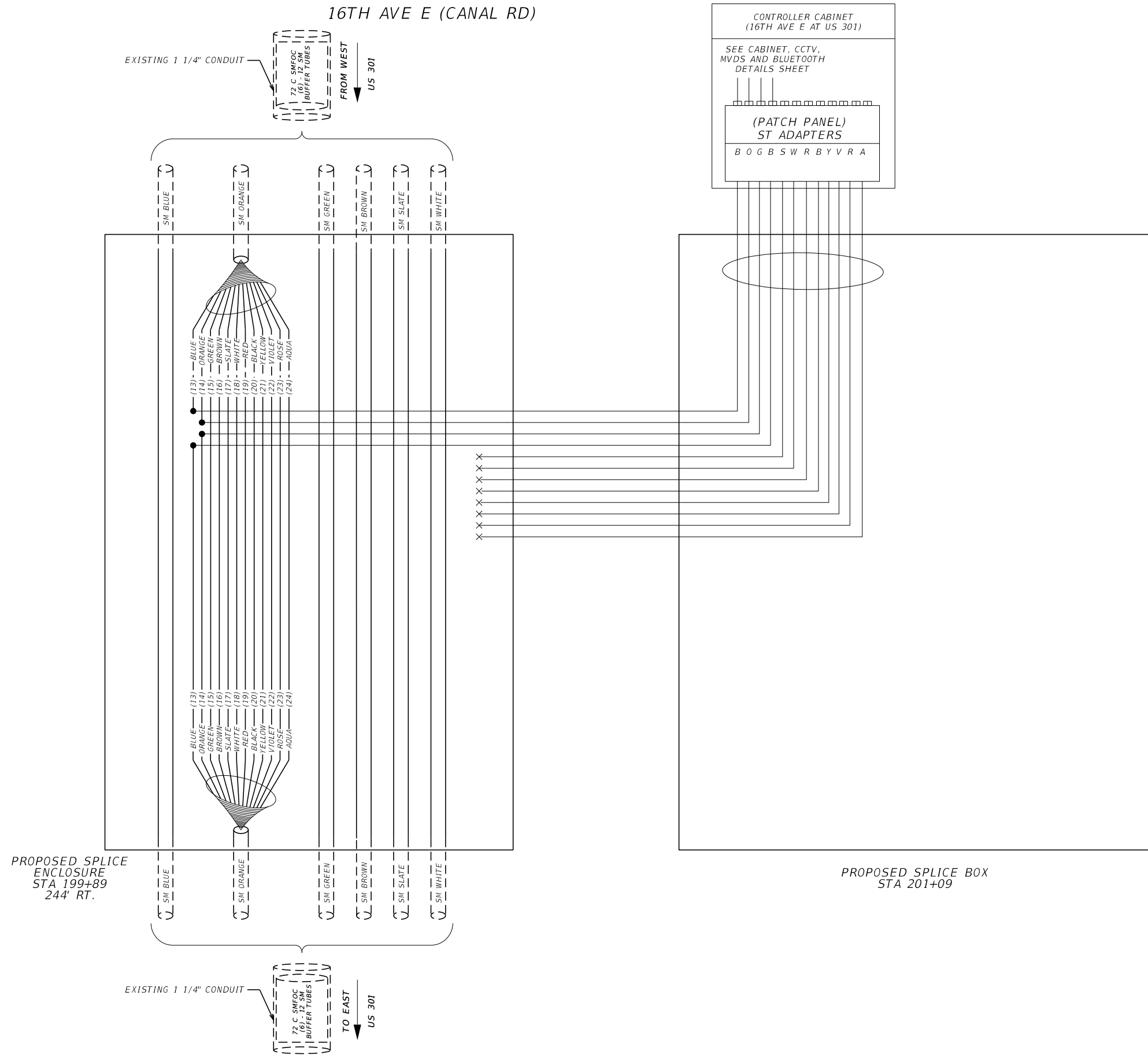
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LEGEND	DESCRIPTION
●	FUSION SPLICE
—	PROPOSED SECTION OF FIBER
- - -	EXISTING SECTION OF FIBER

- NOTES:
- UNUSED FIBERS SHALL BE LEFT COILED, CAPPED, AND STORED IN SPLICE TRAY.
 - UNUSED BUFFER TUBES SHALL BE LEFT COILED AND STORED IN SPLICE TRAY.

COLOR CODE TIA/EIA 598A	
(1) BLUE	(7) RED
(2) ORANGE	(8) BLACK
(3) GREEN	(9) YELLOW
(4) BROWN	(10) VIOLET
(5) SLATE	(11) ROSE
(6) WHITE	(12) AQUA



No.	REVISIONS	DATE	BY

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DRAWN BY	SM
CHECKED BY	IR



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

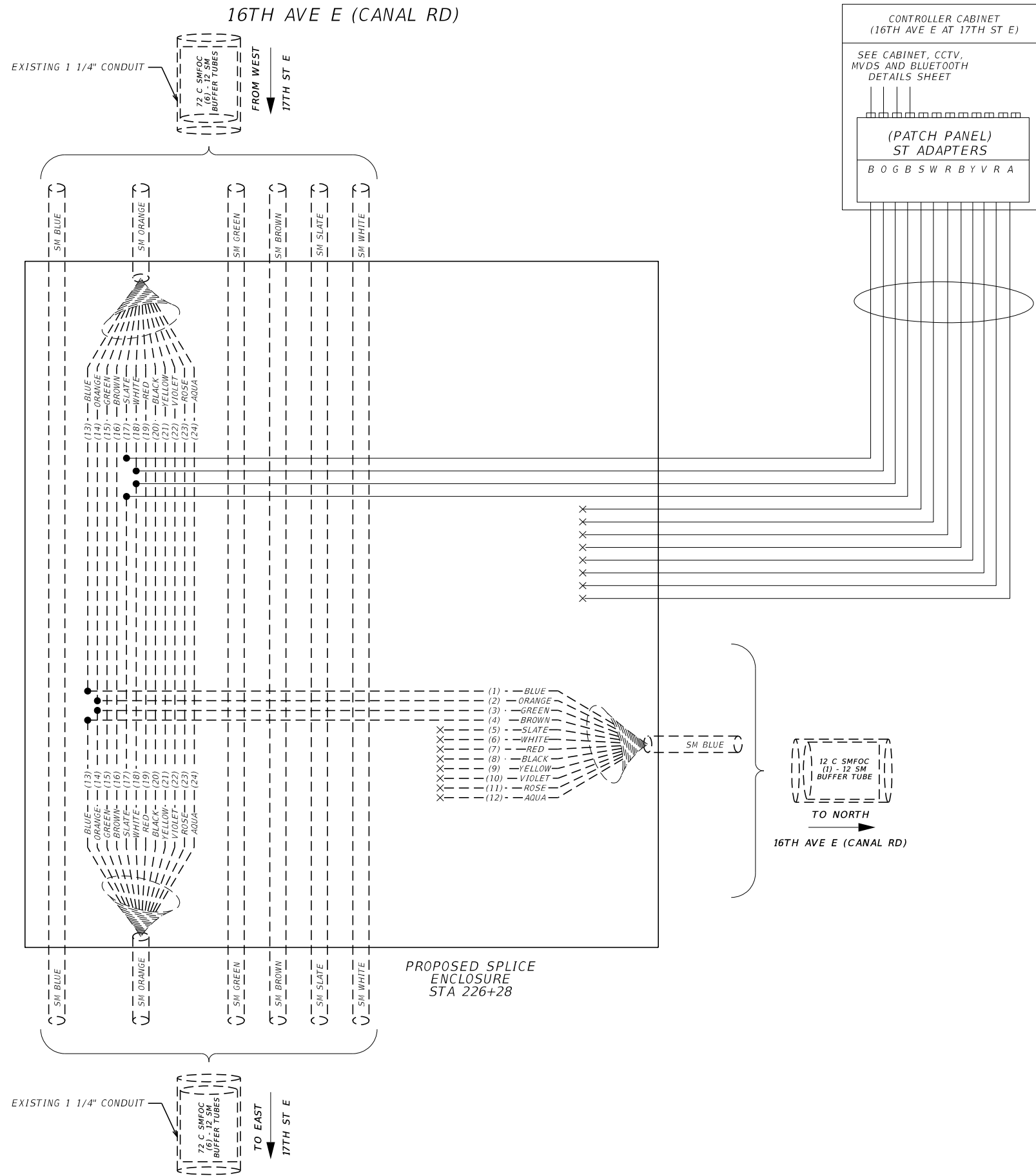
SPLICING DIAGRAM (1)



SHEET NO.	T-22
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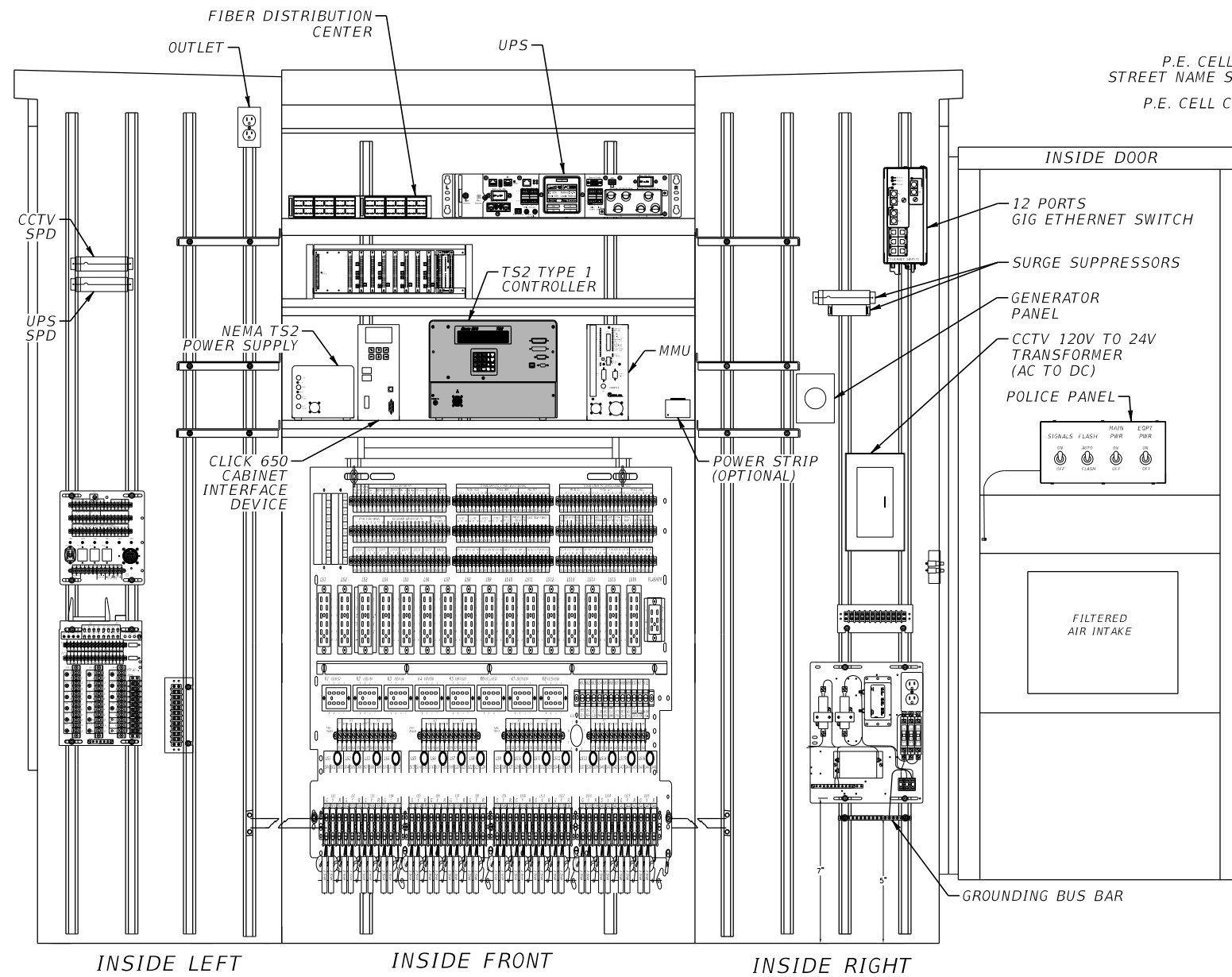
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- - -	EXISTING SECTION OF FIBER

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				CHECKED BY IR		PROJECT NO. 6094360		FL. LICENSE NO. 49282		



TWO DOOR TRAFFICWARE TYPE VI CABINET

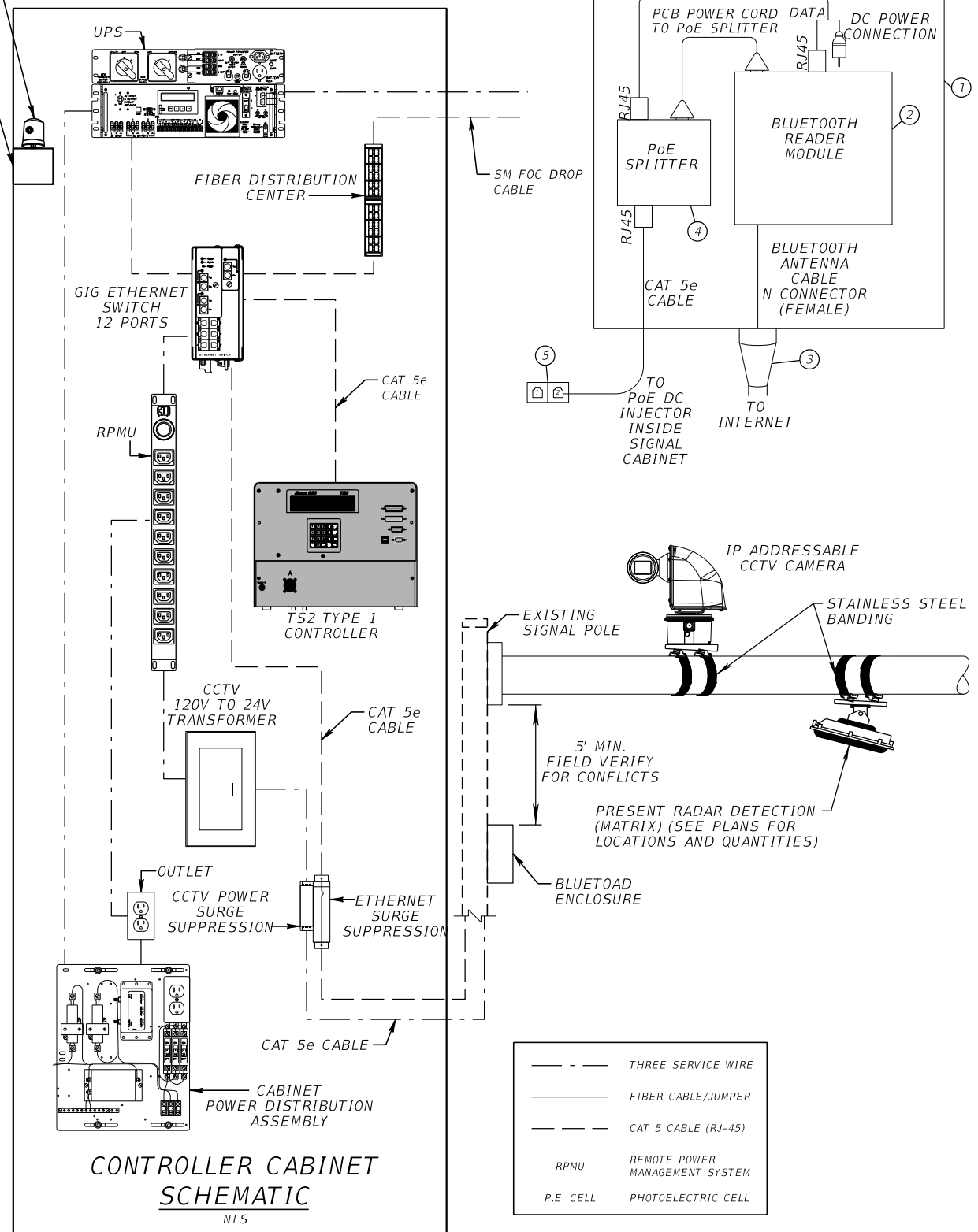
NTS

ETHERNET BASED BLUETOAD SYSTEM - COMPONENTS DETAIL

ITEM ID	DESCRIPTION	NOTE
1	FIBERGLASS ENCLOSURE	SEE NOTE 1
2	BLUETOOTH READER MODULE	ETHERNET BASED
3	BLUETOOTH ANTENNA	OMNI DIRECTIONAL
4	POWER OVER ETHERNET SPLITTER	
5	POWER OVER ETHERNET DC INJECTOR	POWERED BY AC IN TRAFFIC CONTROL CABINET

NOTE 1: FIBERGLASS NEMA 3R RATED ENCLOSURE WITH RAISED SNAP LATCH HINGED COVER 10" X 8" X 5.75". ENCLOSURE SHALL BE ATTACHED TO A POLE USING TWO GALVANNEALED STEEL AM BRACKETS.

CCTV AND ETHERNET-BASED BLUETOOTH CONNECTION DIAGRAM



CONTROLLER CABINET SCHEMATIC

NTS

---	THREE SERVICE WIRE
---	FIBER CABLE/JUMPER
---	CAT 5 CABLE (RJ-45)
RPMU	REMOTE POWER MANAGEMENT SYSTEM
P.E. CELL	PHOTOELECTRIC CELL

No.	REVISIONS	DATE	BY

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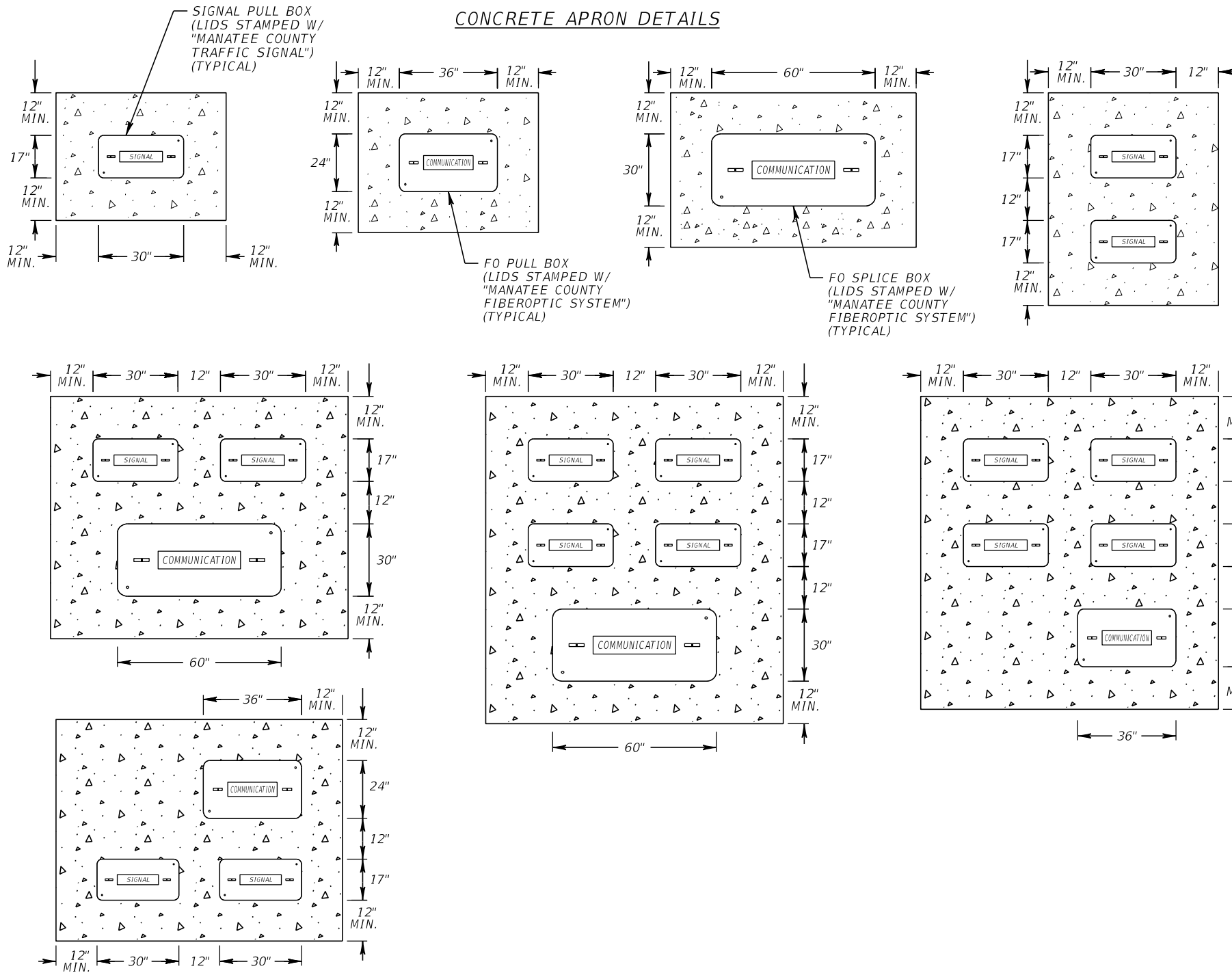
MANATEE COUNTY PUBLIC WORKS

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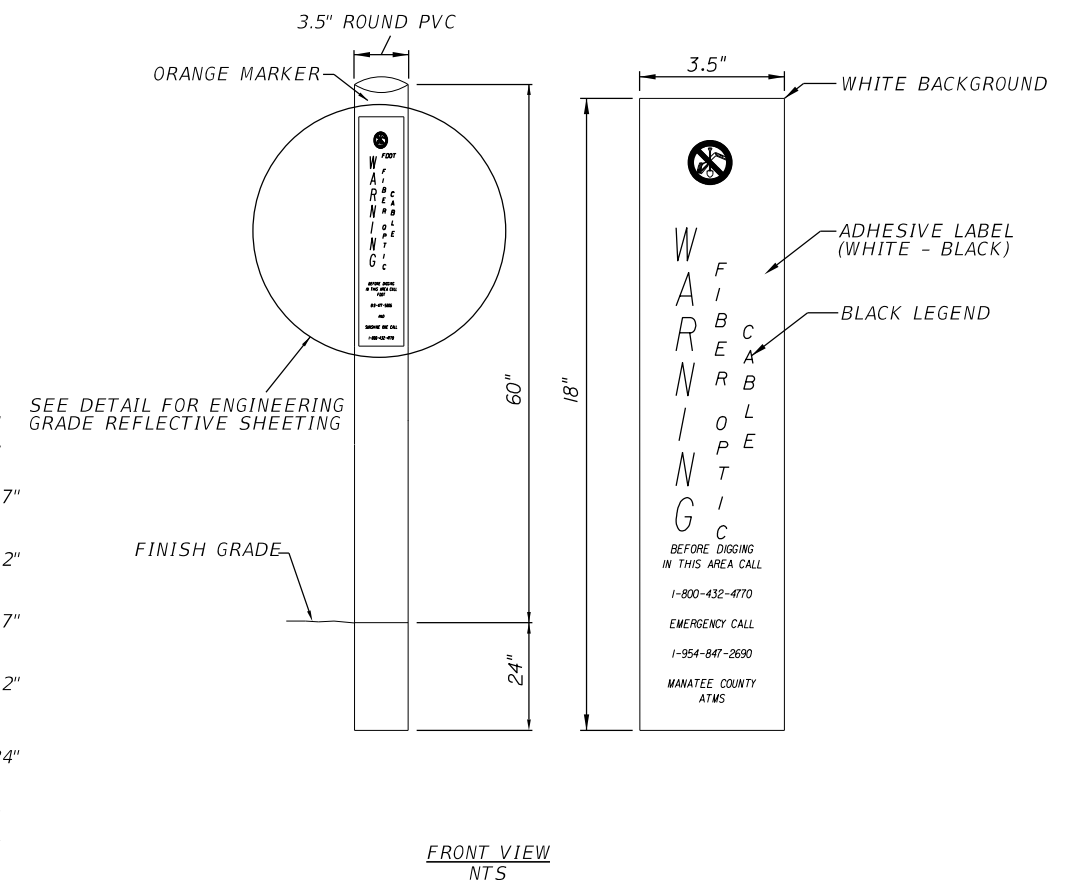
CABINET, CCTV, MVDS AND BLUETOOTH DETAILS

SHEET NO.	T-24
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CONCRETE APRON DETAILS



FIBER OPTIC CABLE ROUTE MARKER



NOTES:

1. FOR TRENCH LINES WITH BOTH FIBER OPTIC CABLE AND POWER SERVICE WIRE, INSTALL POWER MARKER ALTERNATING WITH FIBER MARKER.
2. INSTALL FIBER OPTIC CABLE MARKER AT EVERY FIBER PULL BOX AND EVERY CHANGE IN DIRECTION NOT TO EXCEED 500 FEET.
3. TUBULAR MARKER TO BE PLACED OVER A V-CHANNEL METALLIC FENCE POST.
4. NO SEPARATE PAYMENT FOR ROUTE MARKERS. SHALL BE INCIDENTAL TO CONDUIT INSTALLATION.
5. A POLYDOME TOP SHALL BE INSTALLED ON EACH MARKER ORANGE, FOR FIBER AND RED FOR POWER.
6. ALL ROUTE MARKERS SHALL MEET SECTION 630 OF STANDARD SPECIFICATIONS.

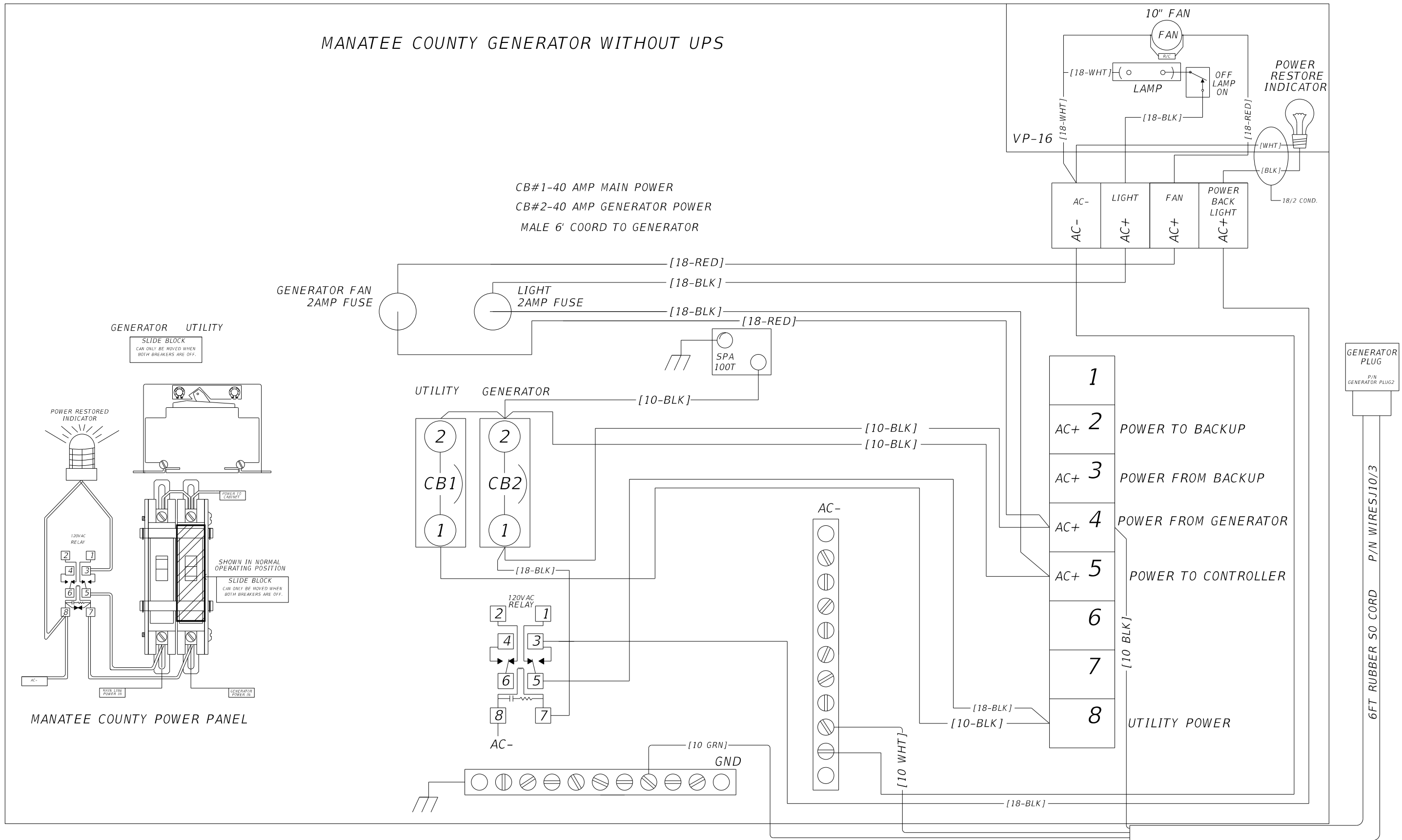
NOTES:

1. CONCRETE REINFORCEMENT AND INSTALLATION REQUIREMENTS TO BE PER STANDARD PLANS INDEX 715-001.
2. WHEN MULTIPLE CONFIGURATIONS OF PULL BOXES ARE ADJACENT TO ONE ANOTHER, THEY SHALL BE FORMED TOGETHER WITH AN EXPANSION JOINT BETWEEN THE APRONS UTILIZED TO AVOID CRACKING.
3. THE ORIENTATION OF CONCRETE APRONS WITH MULTIPLE PULL & JUNCTION BOXES SHALL BE DETERMINED IN THE FIELD.

<p>SCALE AS NOTED</p> <p>DESIGNED BY MO</p> <p>DRAWN BY SM</p> <p>CHECKED BY IR</p>				<p>HDR</p> <p>HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233</p>		<p>DATE 12/2021</p> <p>PROJECT NO. 6094360</p>		<p>DESIGN ENGINEER MICHAEL J. OATES</p> <p>FL. LICENSE NO. 49282</p>		<p>MANATEE COUNTY PUBLIC WORKS</p> <p>CONCRETE APRON & CABLE ROUTE MARKER DETAILS</p>		<p>SHEET NO. T-25</p>
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MANATEE COUNTY GENERATOR WITHOUT UPS



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HDR
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 Sarasota, FL 34232-6233

DATE
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Manatee County
 FLORIDA

**MANATEE COUNTY
 PUBLIC WORKS**

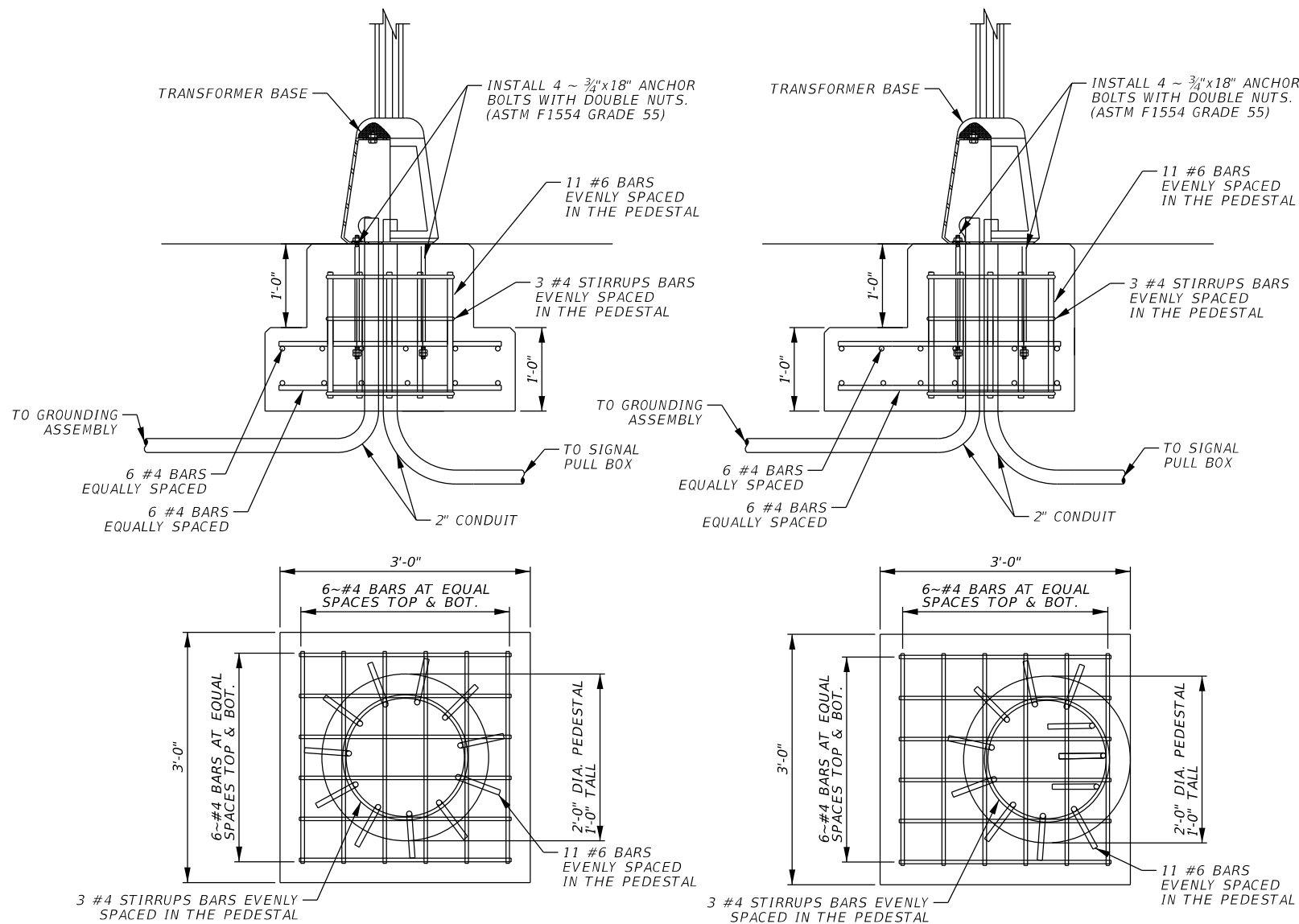
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 49282

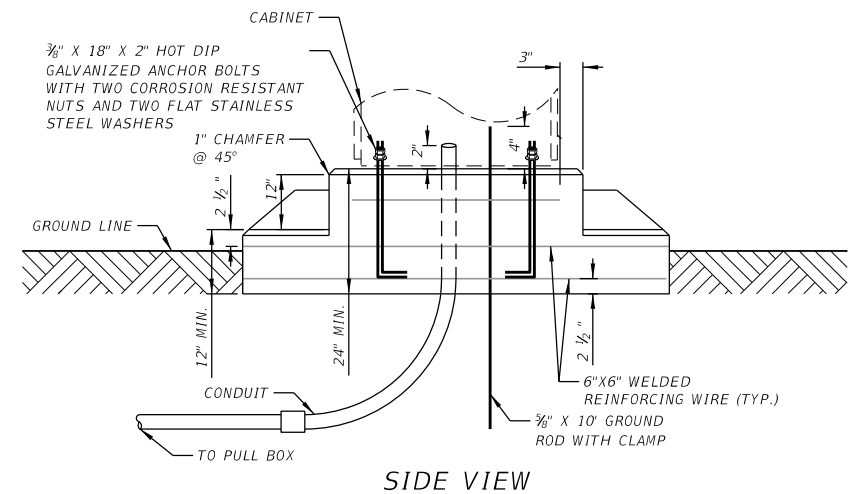
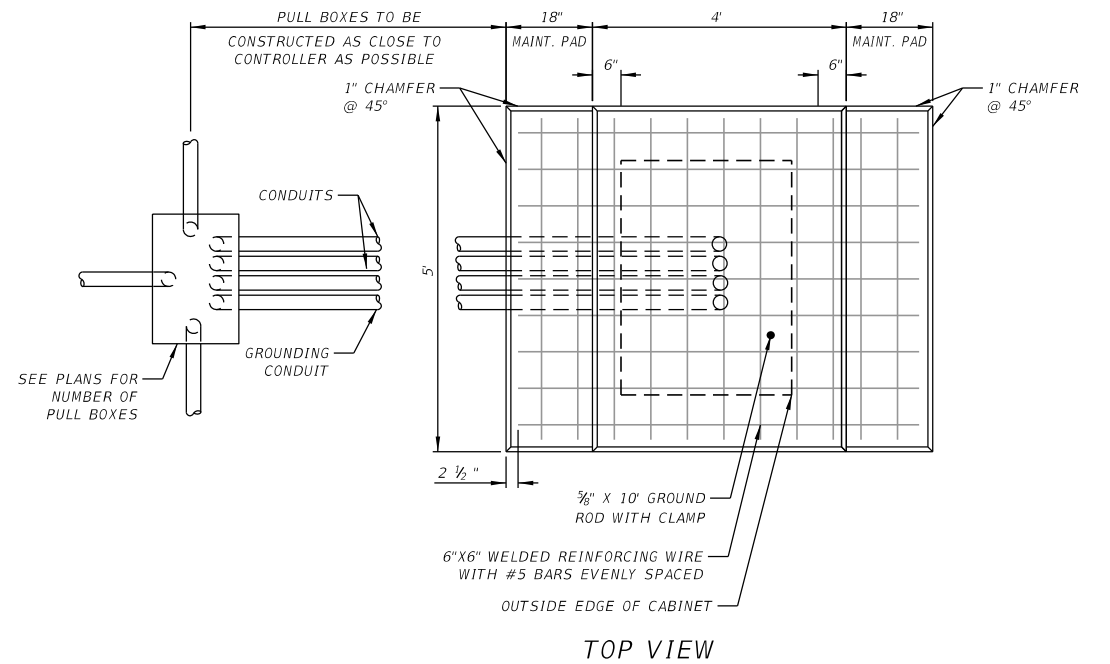
**GENERATOR CABINET
 WIRING DIAGRAM**

SHEET NO.
 T-26

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PEDESTRIAN PEDESTAL ALTERNATE FOUNDATION DETAILS
WHEN APPROVED BY ENGINEER



CONCRETE PAD DETAIL FOR TWO DOOR CONTROLLER CABINET

NTS

NOTE:

THE CABINET FOUNDATION WILL HAVE 13-2" PVC CONDUITS (4-HIGH VOLTAGE, 4-LOW VOLTAGE, 3-SPARE, 2-COMM) ALONG WITH 2-1" PVC CONDUITS (1-GROUND, 1-POWER). THE CONTRACTOR SHALL CONTACT MANATEE COUNTY FOR THE PROPER LAYOUT OF THE CONDUITS IN THE CONTROLLER FOUNDATION PRIOR TO POURING THE FOUNDATION.

TYPICAL CONTROLLER CABINET INSTALLATION

NTS

MATERIAL SPECIFICATIONS

- A. MATERIALS REQUIRED FOR THE CONTROLLER CABINET FOUNDATION, AND ALL PERTINENT EQUIPMENT AND ASSEMBLY IS INCLUDED IN THE PRICE BID FOR THE CONTROLLER.
- B. THE CONTROLLER CABINET FOUNDATION SHALL BE CLASS "I" CONCRETE & 6" X 6" WELDED REINFORCING WIRE WITH 3 #5 BARS EVENLY SPACED.
- C. A MINIMUM OF 4 EXPANSION BOLTS ARE REQUIRED. STAINLESS STEEL KWIK BOLT WITH A MIN. EMBEDMENT OF 18", SHALL BE USED TO MOUNT THE CONTROLLER CABINET TO THE CONCRETE PAD.

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MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER

CHESTER A. SMITH
III

FL. LICENSE NO.

70756

PEDESTRIAN SIGNAL AND
CABINET BASE DETAILS

SHEET NO.

T-27