CONTRACT PLANS

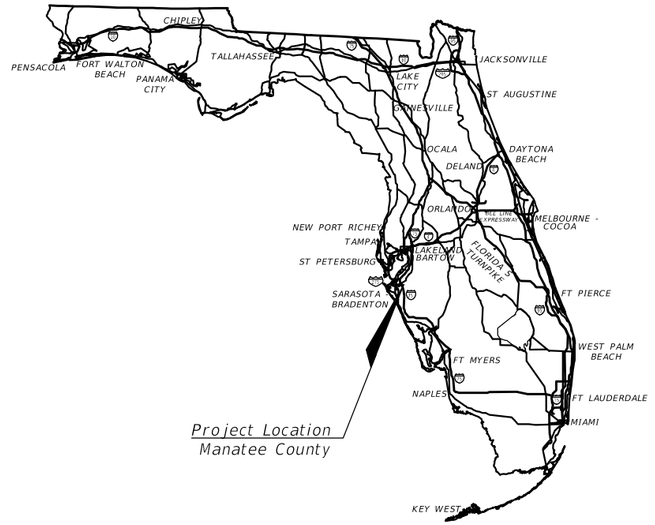
COUNTY PROJECT NUMBER 6086960

MANATEE COUNTY

44th AVENUE EAST – BRADEN RIVER SEGMENT
(45th STREET EAST TO 44th AVENUE PLAZA EAST)

FEBRUARY 2019

SIGNALIZATION PLANS



INDEX OF SIGNALIZATION PLANS

SIGNALIZATION SHOP DRAWINGS TO BE SUBMITTED TO:

AECOM
ATTN: PATRICK B. NEVAH, P.E. NO. 72369
7650 W COURTNEY CAMPBELL CAUSEWAY
TAMPA, FLORIDA 33607
(813) 286-1711

PLANS PREPARED BY:

AECOM TECHNICAL SERVICES, INC.
7650 W. COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711

VENDOR NO. F952661922
CERTIFICATE OF AUTHORIZATION NO. 00008115

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

FINAL SUBMITTAL

SIGNALIZATION

ENGINEER OF RECORD: PATRICK B. NEVAH, P.E.

P.E. NO.: 72369

FISCAL YEAR	SHEET NO.
18	T-1

MANATEE COUNTY PROJECT MANAGER: ERIC SHROYER, P.E.

PATRICK B. NEVAH
LICENSE
No 72369
STATE OF FLORIDA
PROFESSIONAL ENGINEER

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY:

Patrick B Nevah
2019.09.19
14:42:30 -04'00'

ON THE DATE ADJACENT TO THE SEAL

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

AECOM Technical Services, Inc.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
CERTIFICATE OF AUTHORIZATION: 8115
PATRICK B. NEVAH, P.E. NO. 72369

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

SIGNALIZATION PLANS

SHEET NO.	SHEET DESCRIPTION
T-1	KEY SHEET
T-2	SIGNATURE SHEET
T-3 - T-4	TABULATION OF QUANTITIES
T-5	GENERAL NOTES
T-6	PAY ITEM NOTES
T-7 - T-8	SIGNALIZATION PLANS
T-9 - T-23	INTERCONNECT PLANS
T-24	STREET NAME SIGN WORKSHEET
T-25	MAST ARM TABULATION SHEET

ALEXIS MOUSADI
LICENSE
No 50764
STATE OF FLORIDA
PROFESSIONAL ENGINEER

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY:

Alexis Mousadi
2019.09.19
15:38:52 -04'00'

ON THE DATE ADJACENT TO THE SEAL

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AECOM Technical Services, Inc.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
CERTIFICATE OF AUTHORIZATION: 8115
ALEXIS MOUSADI, P.E. NO. 50764

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

SIGNALIZATION PLANS

SHEET NO.	SHEET DESCRIPTION
T-2	SIGNATURE SHEET
T-28	COMMUNICATION OVERVIEW
T-29	FIBER OPTIC SPLICE DETAILS
T-30 - T-31	WIRING DIAGRAMS
T-32 - T-33	CABINET DETAILS
T-34 - T-35	SERVICE POINT DETAILS
T-36 - T-37	POLE INSTALLATION DETAILS

KEITH Q. GIANG
LICENSE
No 49510
STATE OF FLORIDA
PROFESSIONAL ENGINEER

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY:

Keith Q Giang
Digitally signed by Keith Q Giang
Date: 2019.09.19 11:38:36 -04'00'

ON THE DATE ADJACENT TO THE SEAL

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AECOM Technical Services, Inc.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
CERTIFICATE OF AUTHORIZATION: 8115
KEITH Q. GIANG, P.E. NO. 49510

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

SIGNALIZATION PLANS

SHEET NO.	SHEET DESCRIPTION
T-2	SIGNATURE SHEET
T-38	REPORT OF CORE BORINGS

GEORGE R. PAPADOPOULOS
LICENSE
No 55843
STATE OF FLORIDA
PROFESSIONAL ENGINEER

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY:

George Papadopoulos
Digitally signed by George Papadopoulos
Date: 2019.09.19 14:28:49 -04'00'

ON THE DATE ADJACENT TO THE SEAL

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

AECOM Technical Services, Inc.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
CERTIFICATE OF AUTHORIZATION: 8115
GEORGE R. PAPADOPOULOS, P.E. NO. 55843

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

SIGNALIZATION PLANS

SHEET NO.	SHEET DESCRIPTION
T-2	SIGNATURE SHEET
T-26	STANDARD MAST ARM DATA TABLE
T-27	ITS POLE SCHEDULE AND NOTES

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: P. NEVAH
DRAWN BY: D. POWELL
CHECKED BY: P. O'SHEA

PATRICK B. NEVAH, P.E.
P.E. No 72369
AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 02/16/2018
PROJECT NO.: 6086960

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

DESIGN ENGINEER: PATRICK B. NEVAH, P.E.
FL. LICENSE NO.: P.E. No 72369

SIGNATURE SHEET

SHEET NO.: T-2

10:28:50 AM 2/15/2019
S:\Projects_RDWY\ProjFdot\ProjFDOT\V8\6046023000\signals\SIGNIT01.DGN

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS																				TOTAL THIS SHEET		GRAND TOTAL		REF. SHEET
			T-7		T-8		T-9		T-10		T-11		T-12		T-13		T-14		T-15		T-16						
			PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	
630-2-11	CONDUIT (F&I) (OPEN TRENCH)	LF	115		500		20		540		600		145		645		230				270		3065				
630-2-12	CONDUIT (F&I) (DIRECTIONAL BORE)	LF	90		610		105		154		100		675		70								1804				
632-7-1	SIGNAL CABLE- NEW OR RECONSTRUCTED INTERSECTION (F&I)	PI	1		1																		2				
633-1-121	FIBER OPTIC CABLE (F&I) (UNDERGROUND) (2-12)	LF											70										70				
633-1-123	FIBER OPTIC CABLE (F&I) (UNDERGROUND) (49-96)	LF					205		794		750		910		815		730		700		740		5644				
633-2-31	FIBER OPTIC CONN (INSTALL) (SPLICE)	EA					4						16										20				
633-3-11	FIBER OPTIC CONN HDWR (F&I) (SPLICE ENCLOSURE)	EA											1										1				
633-3-12	FIBER OPTIC CONN HDWR (F&I) (SPLICE TRAY)	EA											2										2				
633-3-13	FIBER OPTIC CONN HDWR (F&I) (PRE-TERM CONN AS)	EA											12										12				
633-3-16	FIBER OPTIC CONN HDWR (F&I) (PATCH PNL, FIELD TERM)	EA											1										1				
633-3-17	FIBER OPTIC CONN HDWR (F&I)(CONNECTOR PANEL)	EA											1										1				
633-3-51	FIBER OPTIC CONN HDWR (ADJUST/MOD) (SPLICE ENCLOSURE)	EA					1																1				
633-3-52	FIBER OPTIC CONN HDWR (ADJUST/MOD) (SPLICE TRAY)	EA					1																1				
633-8-1	MULTI-CONDUCTOR COMMUNICATION CABLE (F&I)	LF					63						70										133				
635-2-11	PULL & SPLICE BOX (F&I) (17X30)	EA	4		30		1						3										38				
635-2-12	PULL & SPLICE BOX (F&I) (24X36)	EA							2		1		2		2		1				1		9				
635-2-13	PULL & SPLICE BOX (F&I) (30X60)	EA											1										1				
639-1-122	ELECTRICAL PWR SVC (F&I)(UNDERGND)(METER PURCH BY CONTR)	AS			1								1										2				
639-2-1	ELECTRICAL SERVICE WIRE (F&I)	LF			465								146										611				
639-3-11	ELECTRICAL SERVICE DISCONNECT, F&I, POLE MOUNT	EA			1		1						1										3				
641-2-12	PRESTRESSED CONCRETE POLE, F&I, TYPE P-II SERVICE POLE	EA			2								1										3				
641-2-13	PRESTRESSED CONCRETE POLE, F&I, TYPE P-III	EA					1						1										2				
646-1-11	ALUMINUM SIGNALS POLE (F&I) (PEDESTAL)	EA	4		8																		12				
649-31-203	STEEL MAST ARM(F&I)WIND SPEED-130,SINGLE ARM,W/0 LUM-60'	EA			1																		1				
649-31-204	STEEL MAST ARM(F&I)WIND SPEED-130,SINGLE ARM,W/0 LUM-70.5'	EA			1																		1				
649-31-205	STEEL MAST ARM(F&I)WIND SPEED-130,SINGLE ARM,W/0 LUM-78'	EA			1																		1				
649-31-207	STEEL MAST ARM(F&I)WIND SPEED-130,SINGLE ARM,WITH LUM-46'	EA			1																		1				
650-1-14	TRAFFIC SIGNAL, (F&I) (3 SECT) (1 WAY) (ALUMINUM)	AS	3		6																		9				
650-1-16	TRAFFIC SIGNAL, (F&I) (4 SECT) (1 WAY) (ALUMINUM)	AS	1		4																		5				
650-1-19	TRAFFIC SIGNAL, (F&I) (5 SECT CLUSTER) (1 WAY) (ALUMINUM)	AS	1		4																		5				
650-1-60	TRAFFIC SIGNAL, (REMOVE)	AS	3																				3				
650-1-70	TRAFFIC SIGNAL, (RELOCATE)	AS	2																				2				
653-1-11	PEDESTRIAN SIGNAL, FURNISH & INSTALL LED COUNTDOWN, 1 WAY	EA	4		8																		12				
660-3-11	VDS- MICROWAVE, FURNISH & INSTALL, CABINET EQUIPMENT	EA	1		1								1										3				
660-3-12	VDS- MICROWAVE, FURNISH & INSTALL, ABOVE GROUND EQUIPMENT	EA	2		2								1										5				
660-4-11	VEH DETECTION SYS-VIDEO (F&I) (CAB EQUIP)	EA			1																		1				
660-4-12	VEH DETECTION SYS-VIDEO (F&I)(ABOVE GRND EQUIP)	EA			4																		4				
660-4-52	VEH DETECTION SYS-VIDEO (ADJ/MOD)(ABOVE GRND EQUIP)	EA	1																				1				
660-6-121	VEH DETECTION SYS-AVI, BLUETOOTH (F&I) (CAB EQUIP)	EA	1		1																		2				
660-6-122	VEH DETECTION SYS-AVI, BLUETOOTH (F&I)(ABOVE GRND EQUIP)	EA	1		1																		2				
665-1-11	PEDESTRIAN DETECTOR (F&I) (STANDARD)	EA	4		8																		12				
670-5-112	TRAFFIC CONT AS (F&I) (NEMA) (TWO PRE-EMPTION)	AS			1																		1				
670-5-400	TRAFFIC CONT AS, (MODIFY)	EA	1																				1				
676-2-122	ITS CABINET, F&I, POLE MOUNT, 336S W/SS	EA					1						1										2				
682-1-113	CCTV CAMERA (F&I) (DOME,PTZ, PRESSURIZED) (IP, HD)	EA					1						1										2				
684-1-1	MANAGED FIELD ETHERNET SWITCH, FURNISH & INSTALL	EA											1										1				
684-2-1	DEVICE SERVER, FURNISH & INSTALL	EA											1										1				
685-1-12	UPS (F&I) ONLINE/DOUBLE CONVERSION	EA					1						1										2				
685-1-13	UPS (F&I) LINE INTERACTIVE WITH CABINET	EA			1																		1				
700-3-201	SIGN PANEL, F&I OVERHEAD MT, UP TO 12 SF	EA			2																		2				
700-5-22	INTERNALLY ILLUM SIGN (F&I OVERHEAD MT) (12-18 ft2)	EA			4																		4				
700-5-50	INTERNALLY ILLUM SIGN (RELOCATE)	EA	1																				1				

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: P. NEVAH
DRAWN BY: D. POWELL
CHECKED BY: P. O'SHEA

PATRICK B. NEVAH, P.E.
P.E. No 72369
AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 02/16/2018
PROJECT NO.: 6086960

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

DESIGN ENGINEER: PATRICK B. NEVAH, P.E.
FL. LICENSE NO.: P.E. No 72369

TABULATION OF QUANTITIES (1)

SHEET NO.: T-3

$TIME$ $DATE$ $FILE$

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS																				TOTAL THIS SHEET		GRAND TOTAL		REF. SHEET
			T-17		T-18		T-19		T-20		T-21		T-22		T-23												
			PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	
630-2-11	CONDUIT (F&I) (OPEN TRENCH)	LF	610		700		700		555		700		590		410								4265		7330		
630-2-12	CONDUIT (F&I) (DIRECTIONAL BORE)	LF	120						142		117		100										479		2283		
632-7-1	SIGNAL CABLE- NEW OR RECONSTRUCTED INTERSECTION (F&I)	LF																							2		
633-1-121	FIBER OPTIC CABLE (F&I) (UNDERGROUND) (2-12)	LF	70								70												140		210		
633-1-123	FIBER OPTIC CABLE (F&I) (UNDERGROUND) (49-96)	LF	835		700		700		847		800		790		610								5282		10926		
633-2-31	FIBER OPTIC CONN (INSTALL) (SPLICE)	EA	16								16				4								36		56		
633-3-11	FIBER OPTIC CONN HDWR (F&I) (SPLICE ENCLOSURE)	EA	1								1				1								3		4		
633-3-12	FIBER OPTIC CONN HDWR (F&I) (SPLICE TRAY)	EA	2								2				1								5		7		
633-3-13	FIBER OPTIC CONN HDWR (F&I) (PRE-TERM CONN AS)	EA	12								12												24		36		
633-3-16	FIBER OPTIC CONN HDWR (F&I) (PATCH PNL, FIELD TERM)	EA	1								1												2		3		
633-3-17	FIBER OPTIC CONN HDWR (F&I)(CONNECTOR PANEL)	EA	1								1												2		3		
633-3-51	FIBER OPTIC CONN HDWR (ADJUST/MOD) (SPLICE ENCLOSURE)	EA																							1		
633-3-52	FIBER OPTIC CONN HDWR (ADJUST/MOD) (SPLICE TRAY)	EA																							1		
633-8-1	MULTI-CONDUCTOR COMMUNICATION CABLE (F&I)	LF	211								70												281		414		
635-2-11	PULL & SPLICE BOX (F&I) (17X30)	EA	6								3												9		47		
635-2-12	PULL & SPLICE BOX (F&I) (24X36)	EA	1						1				2										4		13		
635-2-13	PULL & SPLICE BOX (F&I) (30X60)	EA	1						1		1				1								4		5		
639-1-122	ELECTRICAL PWR SVC (F&I)(UNDERGND)(METER PURCH BY CONTR)	AS									1												1		3		
639-2-1	ELECTRICAL SERVICE WIRE (F&I)	LF	216								153												369		980		
639-3-11	ELECTRICAL SERVICE DISCONNECT, F&I, POLE MOUNT	EA	1								1												2		5		
641-2-12	PRESTRESSED CONCRETE POLE, F&I, TYPE P-II SERVICE POLE	EA									1												1		4		
641-2-13	PRESTRESSED CONCRETE POLE, F&I, TYPE P-III	EA	1								1												2		4		
646-1-11	ALUMINUM SIGNALS POLE (F&I) (PEDESTAL)	EA																							12		
649-31-203	STEEL MAST ARM(F&I)WIND SPEED-130,SINGLE ARM,W/0 LUM-60'	EA																							1		
649-31-204	STEEL MAST ARM(F&I)WIND SPEED-130,SINGLE ARM,W/0 LUM-70.5'	EA																							1		
649-31-205	STEEL MAST ARM(F&I)WIND SPEED-130,SINGLE ARM,W/0 LUM-78'	EA																							1		
649-31-207	STEEL MAST ARM(F&I)WIND SPEED-130,SINGLE ARM,WITH LUM-46'	EA																							1		
650-1-14	TRAFFIC SIGNAL, (F&I) (3 SECT) (1 WAY) (ALUMINUM)	EA																							9		
650-1-16	TRAFFIC SIGNAL, (F&I) (4 SECT) (1 WAY) (ALUMINUM)	EA																							5		
650-1-19	TRAFFIC SIGNAL, (F&I) (5 SECT CLUSTER) (1 WAY) (ALUMINUM)	EA																							5		
650-1-60	TRAFFIC SIGNAL, (REMOVE)	EA																							3		
650-1-70	TRAFFIC SIGNAL, (RELOCATE)	EA																							2		
653-1-11	PEDESTRIAN SIGNAL, FURNISH & INSTALL LED COUNTDOWN, 1 WAY	EA																							12		
660-3-11	VDS- MICROWAVE, FURNISH & INSTALL, CABINET EQUIPMENT	EA									1												1		4		
660-3-12	VDS- MICROWAVE, FURNISH & INSTALL, ABOVE GROUND EQUIPMENT	EA									1												1		6		
660-4-11	VEH DETECTION SYS-VIDEO (F&I) (CAB EQUIP)	EA																							1		
660-4-12	VEH DETECTION SYS-VIDEO (F&I)(ABOVE GRND EQUIP)	EA																							4		
660-4-52	VEH DETECTION SYS-VIDEO (ADJ/MOD)(ABOVE GRND EQUIP)	EA																							1		
660-6-121	VEH DETECTION SYS-AVI, BLUETOOTH (F&I) (CAB EQUIP)	EA																							2		
660-6-122	VEH DETECTION SYS-AVI, BLUETOOTH (F&I)(ABOVE GRND EQUIP)	EA																							2		
665-1-11	PEDESTRIAN DETECTOR (F&I) (STANDARD)	EA																							12		
670-5-112	TRAFFIC CONT AS (F&I) (NEMA) (TWO PRE-EMPTION)	AS																							1		
670-5-400	TRAFFIC CONT AS, (MODIFY)	EA																							1		
676-2-122	ITS CABINET, F&I, POLE MOUNT, 336S W/SS	EA	1								1												2		4		
682-1-113	CCTV CAMERA (F&I) (DOME,PTZ, PRESSURIZED) (IP, HD)	EA	1								1												2		4		
684-1-1	MANAGED FIELD ETHERNET SWITCH, FURNISH & INSTALL	EA	1								1												2		3		
684-2-1	DEVICE SERVER, FURNISH & INSTALL	EA									1												1		2		
685-1-12	UPS (F&I) ONLINE/DOUBLE CONVERSION	EA	1								1												2		4		
685-1-13	UPS (F&I) LINE INTERACTIVE WITH CABINET	EA																							1		
700-3-201	SIGN PANEL, F&I OVERHEAD MT, UP TO 12 SF	EA																							2		
700-5-22	INTERNALLY ILLUM SIGN (F&I OVERHEAD MT) (12-18 ft2)	EA																							4		
700-5-50	INTERNALLY ILLUM SIGN (RELOCATE)	EA																							1		

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: P. NEVAH
DRAWN BY: D. POWELL
CHECKED BY: P. O'SHEA

PATRICK B. NEVAH, P.E.
P.E. No 72369
AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 02/16/2018
PROJECT NO.: 6086960

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

DESIGN ENGINEER: PATRICK B. NEVAH, P.E.
FL. LICENSE NO.: P.E. No 72369

TABULATION OF QUANTITIES (2)

SHEET NO.: T-4

$TIME$ $DATE$ $FILE$

GENERAL NOTES

1. THE CONTRACTOR SHALL CONTACT MANATEE COUNTY TRAFFIC DESIGN DIVISION BEFORE STARTING WORK. COUNTY STANDARD UPDATES OR OTHER INFORMATION SHALL BE OBTAINED. AT LEAST FIVE (5) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL CONTACT GERARDO TRAVERSO, P.E., PMP, OF THE MANATEE COUNTY TRAFFIC DESIGN DIVISION, AT (941) 749-3500, EXT. 7859 TO INFORM HIM OF CONSTRUCTION OPERATIONS.

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

   MANATEE COUNTY PROJECT MANAGEMENT DIVISION
   1026 26TH AVENUE EAST
   BRADENTON, FLORIDA 34208
   PHONE: 941-708-7420

   MANATEE COUNTY TRAFFIC DESIGN DIVISION
   2101 47TH TERRACE EAST
   BRADENTON, FLORIDA 34203
   PHONE: 941-708-7510, EXT. 7859

3. THE CONTRACTOR SHALL PERFORM ALL WORK AS PER LATEST F.D.O.T. SPECIFICATIONS AT TIME OF BID, INCLUDING THE LATEST DESIGN STANDARDS AND THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS WITH CURRENT SUPPLEMENTAL SPECIFICATIONS THERETO. F.D.O.T. SPECIFICATIONS SHALL BE FOLLOWED. WHEN F.D.O.T. AND MANATEE COUNTY SPECIFICATIONS DIFFER, THE MORE STRINGENT SPECIFICATIONS WILL TAKE PRECEDENCE. MANATEE COUNTY TRAFFIC SPECIFICATIONS SHALL BE OBTAINED BY THE CONTRACTOR FROM THE PROJECT MANAGEMENT DIVISION.

4. THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR THE SIGNAL MAINTENANCE, TIMING AND OPERATION OF ALL SIGNALS AND SIGNAGE FROM THE COMMENCEMENT OF WORK TO FINAL ACCEPTANCE OF THE PROJECT (I.E.: LANE OR PAVEMENT MODIFICATIONS, PEDESTRIAN MODIFICATIONS). MANATEE COUNTY WILL ASSIST IN PROVIDING EXISTING SYSTEM TIMING WHEN POSSIBLE.

5. THE CONTRACTOR SHALL HAVE AN I.M.S.A. CERTIFIED LEVEL II (ELECTRONICS OR ELECTRICAL TECHNICIAN) ON THE JOB SITE AT ALL TIMES WHILE WORK IS BEING PERFORMED. ALL SIGNAL INSTALLATION TECHNICIANS SHALL HAVE A MINIMUM OF I.M.S.A. LEVEL 1 CERTIFICATION. CERTIFICATIONS OF ALL TECHNICIANS SHALL BE PROVIDED TO THE COUNTY PRIOR TO BEGINNING WORK. UPON PROJECT COMMENCEMENT, THE SIGNAL SUBCONTRACTOR SHALL BE AVAILABLE TO RESPOND TO ALL SIGNAL RELATED MALFUNCTIONS AND POWER OUTAGES. THE CONTRACTOR SHALL MAINTAIN AN ADEQUATE REPAIR INVENTORY, EQUIPMENT, AND NEARBY PERSONNEL TO RESPOND AND CORRECT TRAFFIC SIGNAL MALFUNCTIONS AND MOT RELATED PHASING AND TIMING ISSUES FOR THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL PROVIDE A QUALIFIED SIGNAL TECHNICIAN WHO CAN RESPOND WITHIN A MINIMUM OF TWO HOURS, 24 HOURS A DAY, 7 DAYS A WEEK. FAILURE TO MEET THE TIME REQUIREMENTS SHALL GIVE THE COUNTY, AT ITS DISCRETION, THE RIGHT TO REQUEST ASSISTANCE FROM THE MANATEE COUNTY SHERIFF'S DEPARTMENT TO CONTROL TRAFFIC FOR THE PERIOD OF TIME UNTIL THE CONTRACTOR RESPONDS AND MAKES THE NEEDED REPAIRS. THE COST FOR THE MANATEE COUNTY SHERIFF'S OFFICE SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

6. PRIOR TO ORDERING MATERIALS, THE SIGNAL CONTRACTOR SHALL CONTACT THE TRAFFIC OPERATIONS DIVISION TO VERIFY CURRENT COLOR CODES FOR SIGNAL CABLE AND TO VERIFY THAT ALL EQUIPMENT TO BE ORDERED COMPLIES WITH MANATEE COUNTY EQUIPMENT AND DESIGN STANDARDS REQUIREMENTS.

7. WHEN A CONTRACTOR IS WORKING ON A SIGNAL IN AN INTERSECTION (INSTALLING CONDUIT IN THE STREET, REMOVING EXISTING SIGNAL EQUIPMENT, INSTALLING SIGNAL EQUIPMENT, LOOPS, HOMERUNS OR TURNING ON OF NEW SIGNAL) WHERE A LANE IS CLOSED, THE PROJECT MANAGER MAY REQUIRE AN OFF DUTY LAW ENFORCEMENT OFFICER TO DIRECT TRAFFIC. THE HOURLY RATE OF PAY 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.

8. FIVE WORKING DAYS PRIOR TO THE FINAL INSPECTION THE CONTRACTOR SHALL FURNISH THE INSPECTOR THREE COMPLETE SETS OF AS-BUILT PLANS AND I.M.S.A. INSPECTION FORMS TO THE MANATEE COUNTY TRAFFIC DESIGN DIVISION. ONE COMPLETE SET SHALL ALSO BE FURNISHED TO THE PROJECT MANAGEMENT DIVISION AND TRAFFIC DESIGN DIVISION MANAGER AT 2101 47TH TERRACE EAST, BRADENTON, FLORIDA 34201. THE AS-BUILT PLANS SHALL CLEARLY INDICATE THE LOCATION OF THE INSTALLED POLES, CONDUIT, PULL BOXES, GROUND RODS, VIRTUAL LOOPS, ETC. MEG READINGS FOR GROUND RODS SHALL ALSO BE INCLUDED.

9. UPON PASSING THE FINAL INSPECTION THE CONTRACTOR SHALL SEND A WRITTEN REQUEST TO THE MANATEE COUNTY TRAFFIC OPERATIONS DIVISION, 2904 12TH STREET COURT EAST, BRADENTON, FLORIDA 34208 (ATTN: MR. AARON BURKETT) 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.

10. 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.

11. 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., IN COORDINATION WITH UNDERGROUND AND OVERHEAD UTILITY OWNERS. A MINIMUM OF 2 FULL BUSINESS DAYS PRIOR TO DIGGING IS REQUIRED.

12. 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.

13. 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.

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

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

16. #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.

17. UNLESS OTHERWISE NOTED ALL REMOVED EQUIPMENT EXCEPT CONCRETE POLES SHALL BE TURNED OVER TO MANATEE COUNTY AND DELIVERED TO THE TRAFFIC OPERATIONS DIVISION LOCATED AT 2404 12TH STREET COURT EAST, BRADENTON, FLORIDA 34208, AS DIRECTED BY THE ENGINEER. CONCRETE POLES SHALL BE DISPOSED OF BY THE SIGNAL CONTRACTOR IN AREAS PROVIDED BY THE CONTRACTOR.

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

19. 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. COORDINATE DE-ENERGIZING OF POWER LINES AS REQUIRED WITH THE POWER COMPANY.

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

21. GROUNDING: ALL ITEMS SHALL BE GROUNDED IN ACCORDANCE WITH F.D.O.T. SPECIFICATION SECTION 620 AND THE CURRENT SUPPLEMENTS THERETO AT TIME OF BID. 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 6 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 BARE COPPER.

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

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

24. ELEVATION OF THE TOP OF THE MAST ARM FOUNDATION SHALL BE SIX INCHES ABOVE EXISTING GRADE. IF LOCATED DIRECTLY BACK OF SIDEWALK, THE FOUNDATION ELEVATION SHALL MATCH SIDEWALK GRADE.

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

26. CONTRACTOR SHALL SUPPLY ALL MATERIAL SUBMITTALS TO MANATEE COUNTY TRANSPORTATION MAINTENANCE PRIOR TO CONSTRUCTION FOR APPROVAL. CONTRACTOR SHALL SUPPLY INSPECTIONS AND AS BUILT DOCUMENTS TO MANATEE COUNTY FOR APPROVAL.

27. 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 2) CONTRACTOR SHALL MEET ALL APPLICABLE OSHA REQUIREMENTS (10 FOOT MINIMUM DISTANCE MAINTAINED BETWEEN THE EQUIPMENT AND THE ELECTRICAL OVERHEAD FACILITY). ANY COST ASSOCIATED WITH THE TYPE OF EQUIPMENT REQUIRED FOR THIS INSTALLATION IS INCLUDED IN THE RELATED PAY ITEMS.

28. THE CONTRACTOR SHALL COORDINATE WITH MANATEE COUNTY'S TRAFFIC DESIGN DIVISION (941-708-7510, EXT. 7859), AT LEAST TWO WEEKS, BEFORE ANY CABINET MODIFICATIONS ARE TO BE PERFORMED. MANATEE COUNTY ENGINEERING DIVISION PERSONNEL WILL REVIEW, ASSIST AND PROVIDE TECHNICAL SUPPORT RELEVANT TO ANY FIELD MODIFICATIONS THAT ARE NECESSARY. THE CONTRACTOR MAY OPTION OUT OF THIS PROPOSITION, IF THEY FEEL ASSISTANCE AND OVERSIGHT ARE NOT NECESSARY.

29. INSTALLATION OF COMMUNICATIONS CONDUIT, SPLICE BOXES, PULL BOXES, WARNING TAPE, LOCATE WIRE, AND ABOVE GROUND ROUTE MARKERS SHALL BE PER SECTION 630 AND 635 OF THE LATEST STANDARD FLORIDA ROAD AND BRIDGE SPECIFICATIONS. THIS REQUIREMENT SHALL APPLY TO TWISTED PAIR COMMUNICATIONS CABLES AS WELL AS FIBER OPTIC CABLES.

30. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING RIGHT-OF-WAY USE PERMITS WITH MATT MERUCCI, MANATEE COUNTY PUBLIC WORKS INFRASTRUCTURE INSPECTION OFFICER, AT (941) 708-7450, EXT. 7342.

31. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING BOND REQUIREMENTS WITH JANE OLIVER, MANTEE COUNTY PUBLIC WORKS SENIOR ADMINISTRATIVE SPECIALIST, AT (941) 708-7450, EXT. 7613.

32. THE CONTRACTOR SHALL COORDINATE ACTIVITIES WITH ALL OTHER CONTRACTORS OPERATING IN THE PROJECT AREA. THE CONTRACTOR SHALL COORDINATE WITH THE FOLLOWING ONGOING CONSTRUCTION PROJECTS INCLUDING BUT NOT LIMITED TO:
    45TH STREET EAST (FROM SR 70 TO 44TH AVENUE EAST) COUNTY PROJECT NUMBER 6025662.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: P. NEVAH
DRAWN BY: D. POWELL
CHECKED BY: P. O'SHEA

PATRICK B. NEVAH, P.E.
P.E. NO. 72369
AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813)286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 2/16/2018
PROJECT NO.: 6086960

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

DESIGN ENGINEER: PATRICK B. NEVAH, P.E.
FL. LICENSE NO.: P.E. No. 72369

GENERAL NOTES

SHEET NO.: T-5

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PAY ITEM NOTES

1. 630-2-11:
USE A MINIMUM 2" DIAMETER SCHEDULE 40 PVC CONDUIT FOR ALL SIGNAL, PEDESTRIAN, AND DETECTION FUNCTIONS. CONDUIT FOR POWER SERVICE WIRE INTO THE CONTROLLER ASSEMBLY SHALL BE 2-2" SCHEDULE 40 PVC. USE 2" CONDUIT FOR COMMUNICATIONS. POLYESTER MEASURING PULL WIRE SHALL BE INSTALLED IN ALL SPARE CONDUITS. AT LEAST 2 FEET OF PULL WIRE SHALL BE ACCESSIBLE. PAYMENT FOR CONDUIT PLACED UNDERGROUND WILL BE BASED ON THE HORIZONTAL LENGTH OF THE TRENCH MEASURED IN A STRAIGHT LINE BETWEEN THE CENTERS OF PULL BOXES, CABINETS, POLES, ETC., IN A LINEAR FEET REGARDLESS OF THE LENGTH OR NUMBER OF CONDUITS IN THE SAME TRENCH. NO ADDITIONAL PAYMENT WILL BE MADE FOR MULTIPLE RUNS OF CONDUIT WITHIN A TRENCH. MULTIPLE RUNS ARE LABELED ON THE PLANS.

   ALL FIBER OPTIC CABLE CONDUIT INSTALLED BY TRENCHING METHOD SHALL HAVE WARNING TAPE INSTALLED IN THE TRENCHLINE ONE FOOT BELOW FINISH GRADE DIRECTLY OVER ANY INSTALLED CABLE AND CONDUIT RUN. THE WARNING TAPE SHALL COMPLY WITH SECTION 630-2 OF THE FDOT STANDARD SPECIFICATIONS. COLOR SHALL BE ORANGE AS REQUIRED BY AMERICAN PUBLIC WORKS ASSOCIATION (APWA) UNIFORM COLOR CODE, AND HAVE "CAUTION: FIBER OPTIC CABLE BURIED BELOW" PERMANENTLY PRINTED ON THE TAPE'S SURFACE.

   THIS PAY ITEM INCLUDES A LOCATE WIRE SYSTEM FOR ALL FIBER OPTIC CONDUIT. THE LOCATE WIRE SYSTEM INCLUDES LOCATE WIRE, ROUTE MARKERS, WIRE GROUNDING UNITS (WGU), GROUND RODS, AND ALL MISCELLANEOUS ITEMS NEEDED FOR A COMPLETE AND ACCEPTED LOCATE SYSTEM.

   USED STANDARD INDEX 21210 FOR CONDUIT TRANSITION TO BRIDGE TRAFFIC RAILING.

2. 630-2-12:
USE MINIMUM 2" DIAMETER HDPE SDR 11 CONDUIT FOR ALL SIGNAL, PEDESTRIAN, AND DETECTION FUNCTIONS. USE 2-2" CONDUIT FOR COMMUNICATIONS. POLYESTER MEASURING PULL WIRE SHALL BE INSTALLED IN ALL CONDUITS. AT LEAST 2 FEET OF PULL WIRE SHALL BE ACCESSIBLE. PAYMENT FOR CONDUIT PLACED UNDERGROUND WILL BE BASED ON THE HORIZONTAL LENGTH OF THE BORE MEASURE IN A STRAIGHT LINE BETWEEN THE CENTERS OF PULL BOXES, CABINETS, POLES, ETC., IN A LINEAR FEET REGARDLESS OF THE LENGTH OR NUMBER OF CONDUITS INSTALLED. NO ADDITIONAL PAYMENT WILL BE MADE FOR MULTIPLE CONDUITS IN THE SAME BORE. MULTIPLE RUNS ARE LABELED ON THE PLANS.

   USE ABOVE GROUND ROUTE MARKERS FOR FIBER OPTIC CONDUIT RUNS.

   THIS PAY ITEM INCLUDES A LOCATE WIRE SYSTEM. THE LOCATE WIRE SYSTEM INCLUDES LOCATE WIRE, WIRE GROUNDING UNITS (WGU), GROUND RODS, AND ALL MISCELLANEOUS ITEMS NEEDED FOR A COMPLETE AND ACCEPTED LOCATE SYSTEM.

3. 632-7-1:
VERIFY THE COLOR CODE OF SIGNAL CABLE WITH MANATEE COUNTY PRIOR TO WIRING THE INTERSECTION. USE A MINIMUM OF IMSA CERTIFIED AWG #14, 7 CONDUCTOR STRANDED SIGNAL CABLE FOR SIGNAL HEADS. SIGNAL CABLE SHALL BE INSTALLED AS A CONTINUOUS RUN FROM THE SIGNAL CABINET TO THE VEHICLE SIGNAL HEAD. THE PEDESTRIAN HEAD SHALL USE AWG #14 SHIELDED, 5 CONDUCTOR WIRE FROM THE SIGNAL CABINET TO EACH PEDESTRIAN SIGNAL HEAD AND AWG #14 SHIELDED, 1 PAIR WITH GROUND WIRE FROM THE SIGNAL CABINET TO THE PEDESTRIAN BUTTON.

4. 633-1-121:
THE PROPOSED FIBER OPTIC DROP CABLE SHALL BE 12 COUNT SINGLE MODE.
633-1-123:
THE PROPOSED FIBER OPTIC BACKBONE SHALL BE 96 COUNT SINGLE MODE.

5. 633-3-16:
ALL FIELD TERMINATED PATCH PANELS SHALL COME WITH SC CONNECTORS.

6. 633-8-1:
THE CCTV MULTI-CONDUCTOR COMMUNICATION CABLE SHALL BE TYPE OSP FLOODED CORE CAT6 ETHERNET CABLE FOR VIDEO AND UPS DATA FROM THE CCTV CABINET TO THE MANAGED ETHERNET SWITCH IN THE TRAFFIC CABINET. THE CONTRACTOR SHALL TERMINATE THE CABLE UTILIZING PUNCH DOWN BLOCKS. IN-LINE SURGE SUPPRESSION SHALL BE INSTALLED ON THE ETHERNET CABLE IN BOTH CABINETS. THE CONTRACTOR SHALL COORDINATE WITH THE COUNTY FOR ALL MATERIALS AND CABINET EQUIPMENT LAYOUT PRIOR TO ORDERING. THE MDVS MULTI-CONDUCTOR COMMUNICATION CABLE SHALL BE THE ORION WIRE COMBO-2206-2002-PVCGY OR AN APPROVED EQUIVALENT CABLE CAPABLE OF RS-485 TWISTED PAIR COMMUNICATIONS.

7. 635-2-11, 635-2-12 AND 635-2-13:
ALL PULL BOXES AND LIDS SHALL BE OF TRAFFIC BEARING POLYMER TYPE (QUAZITE OR EQUIVALENT) CONCRETE CONSTRUCTION.

   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 FEET FROM EDGE OF PAVEMENT. THE TOP OF THE LID SHALL HAVE THE FOLLOWING IDENTIFICATION PERMANENTLY CAST INTO THE TOP SURFACE IN STAMPED RAISED LETTERS, ACCORDING TO THE APPLICATION FOR WHICH IT IS TO BE USED: "MANATEE COUNTY TRAFFIC SIGNAL" FOR SIGNALIZED INTERSECTION APPLICATIONS; "MANATEE COUNTY FIBER OPTIC SYSTEM" FOR COMMUNICATIONS; "ELECTRICAL" FOR OTHER ELECTRICAL APPLICATIONS.

   STANDARD PULL BOX DIMENSIONS SHALL BE 17"X30". FIBER OPTIC PULL BOX DIMENSIONS SHALL BE 24"X36"X36". FIBER OPTIC SPLICE BOX DIMENSIONS SHALL BE A MINIMUM OF 30"X60"X36".

8. 639-1-122:
THIS PAY ITEM INCLUDES THE COST OF ALL SPECIAL IMPACT CONNECTION FEES CHARGED BY LOCAL POWER COMPANIES FOR ELECTRICAL SERVICE CONNECTION. IT SHALL ALSO INCLUDE INSTALLATION OF THE PHOTOELECTRIC CONTROL ASSEMBLY. THE CONTRACTOR SHALL FURNISH & INSTALL A LEVER-TYPE METER SOCKET.

9. 639-2-1:
PAYMENT SHALL BE BASED ON THE COMPLETE LENGTH OF WIRE RUN (ALL CONDUCTORS INCLUDED). USE A BONDING WIRE FROM THE UTILITY COMPANY SERVICE POINT TO CONTROLLER CABINET. MATERIAL SHALL MEET REQUIREMENTS OF LATEST FDOT SPECIFICATIONS SECTION 639.

10. 646-1-11:
USE BREAKAWAY ALUMINUM SQUARE BASE ASSEMBLIES WITH ALUMINUM DOORS FOR PEDESTRIAN PEDESTALS. INSIDE DIAMETER OF PEDESTALS SHALL BE FOUR INCHES (4").

11. 649-31-203, 649-31-204, 649-31-205, 649-31-207:
ALL SIGNALS SHALL HAVE MAST ARM SUPPORTS; ALL MAST ARM POLES ARE TO BE GALVANIZED NON-PAINTED. MAST ARMS SHALL BE CONSTRUCTED OF ONE CONTINUOUS SECTION UP TO 50 FEET IN LENGTH OR OF A TWO SECTION CONSTRUCTION FROM 50 FEET TO 100 FEET IN LENGTH. USE THREE 2" AND ONE 3/4" CONDUITS STUBBED OUT THROUGH THE MAST ARM POLE FOUNDATION AND TEMPORARILY SEAL.

12. 650-1-14, 650-1-16, 650-1-19:
SIGNAL HEADS SHALL BE RIGIDLY MOUNTED TO MAST ARMS. USE SIGNAL HEAD SUPPORTING TUBE THAT IS CAPABLE OF ADJUSTING VERTICALLY A MINIMUM OF 1.5 FEET. DO NOT USE PLASTIC GARBAGE BAGS AS A COVERING FOR CONCEALING SIGNAL HEADS. PAY ITEMS INCLUDE THE COST OF TUNNEL VISORS AND BACK PLATES. BACKPLATES SHALL BE LOUVERED ALUMINUM WITH A 2 INCH YELLOW REFLECTORIZED (TYPE III REFLECTIVITY) OUTER EDGE BORDER.

13. 660-3-11, 660-3-12:
ADVANCE VEHICLE DETECTION FOR MAJOR STREET APPROACHES ON 44TH AVENUE EAST AT 45TH STREET AND 44TH AVENUE EAST AT 57TH STREET/CARUSO ROAD SHALL BE WAVETRONIX SMART SENSOR ADVANCE.

14. 660-4-11, 660-4-12:
THESE PAY ITEMS SHALL INCLUDE ALL CABINET AND OVERHEAD EQUIPMENT INCLUDING, BUT NOT LIMITED TO CAMERAS, CABLING, MOUNTING HARDWARE, VIDEO PROCESSORS, SUPPLEMENTAL INTERFACE HARDWARE, CABINET CABLING AND OTHER COMPONENTS FOR A COMPLETE AND ACCEPTABLE VIDEO DETECTION SYSTEM. THE CONTRACTOR SHALL COORDINATE WITH MANATEE COUNTY FOR AN ACCEPTABLE VIDEO DETECTION SYSTEM TO INSTALL PRIOR TO SHOP DRAWING SUBMITTAL. INSTALL THE ITERIS VANTAGE RZ4 ADVANCED WIDE DYNAMIC RANGE COLOR CAMERA MOUNTED ON PELCO MAST ARM CAMERA BRACKET. INSTALL ALL COMPONENTS OF THE DETECTION SYSTEM IN STRICT ACCORDANCE WITH THE INSTALLATION MANUALS. THE CONTRACTOR SHALL ONLY USE MANUFACTURER APPROVED CABLING, CONNECTORS, AND COMPONENTS FOR THE VIDEO DETECTION SYSTEM. THE CONTRACTOR SHALL CONSULT WITH THE MANUFACTURER'S TECHNICAL REPRESENTATIVES PRIOR TO INSTALLATION.

   USE A 72" LONG GUSSET TUBE FOR VIDEO DETECTION CAMERA ATTACHMENT BRACKET. THE CAMERAS SHALL BE ITERIS VANTAGE RZ4 ADVANCED WIDE DYNAMIC RANGE COLOR CAMERA OR EQUIVALENT. IN ADDITION TO THE CAMERAS AND OTHER RELATED EQUIPMENT, THE VIDEO DETECTION SYSTEM MUST INCLUDE THE FOLLOWING: ITERIS VANTAGE EDGE 2 PROCESSOR, ITERIS EDGE CONNECT MODULE, AND ITERIS VANTAGE EDGE 2 TS2 I/O MODULE.

   THE SYSTEM INSTALLER SHALL LEAVE A MINIMUM OF 30 INCHES OF SPARE CABLE AT EACH CAMERA BRACKET. THE SLACK SHALL BE NEATLY FORMED INTO A LOOP AND SECURED TO THE CAMERA. A MINIMUM OF 10 FEET OF VIDEO CABLE SLACK SHALL BE NEATLY STORED AT EACH PULL BOX LOCATION WITHIN A CONDUIT RUN. A MINIMUM OF 30 FEET OF SLACK SHALL BE AVAILABLE FOR EACH NEW VIDEO DETECTION CABLE RUN.

15. 639-2-1: THIS ITEM IS FOR ANY ADJUSTMENT OR MODIFICATION REQUIRED TO THE EXISTING VEHICLE DETECTION CAMERA 3 ON SIGNAL PLAN (1) TO PROVIDE DETECTION OF VEHICLES IN THE PROPOSED ADDITIONAL WESTBOUND 44TH AVENUE TRAFFIC LANES AT THE 45TH STREET INTERSECTION.

16. 660-6-121 & 660-6-122: SHALL BE BLUETOAD SPECTRA, POWER-OVER-ETHERNET BLUETOOTH TRAVEL-TIME MEASURING DEVICE EQUIPMENT.

17. 670-5-112:
USE NEMA TS2 TYPE I CONTROLLER IN A SIZE 6 CABINET COMPATIBLE WITH THE EXISTING SIGNAL SYSTEM. ALL CONTROLLER CABINETS SHALL HAVE FRONT AND BACK ACCESS DOORS. THE CONTROLLER ASSEMBLY SHALL BE EQUIPPED WITH ALL COMPONENTS NECESSARY TO RECONNECT ALL SYSTEM COMPONENTS INCLUDING THE EXISTING CCTV CABINET AT 45TH STREET. ALL CONTROLLER EQUIPMENT SHALL BE COMPATIBLE WITH MANATEE COUNTY'S EXISTING SYSTEM (NAZTEC'S ATMS.NOW). THE CONTROLLER SUPPLIED WITH THE CABINET SHALL BE A TRAFFICWARE 980 ATC. THE TRAFFICWARE CONTROLLER SHALL COME EQUIPPED WITH 4 SERIAL PORTS AND ONE ETHERNET PORT. THE CONTROLLER SHALL COME EQUIPPED WITH ALL NECESSARY SYSTEM COMPONENTS FOR INTEGRATION INTO THE EXISTING ETHERNET-BASED FIBER OPTIC NETWORK. CONTACT MANATEE COUNTY PRIOR TO ORDERING CONTROLLER ASSEMBLY TO CONFIRM EQUIPMENT COMPATIBILITY.

   THIS PAY ITEM SHALL INCLUDE THE COST OF AN EMERGENCY GENERATOR CABINET AND THE COST TO CONSTRUCT THE EMERGENCY GENERATOR CABINET (EGC) FOUNDATIONS. THE EGC FOUNDATIONS SHALL HAVE DIMENSIONS OF 48"X36" FOR CABINET MOUNTING WITH A FDOT STANDARD TECHNICIAN PAD OR STEPS. IT SHALL BE LOCATED ADJACENT TO THE PROPOSED SIDEWALK WITH (2) - 2 INCH CONDUITS AND (1) - 1/2 INCH CONDUIT INSTALLED DIRECTLY TO THE CONTROLLER BASE. THE EXISTING EGC AT 45TH STREET SHALL BE RELOCATED TO THE PROPOSED EGC BASE.

   ALL COSTS OF LABOR, CONCRETE AND OTHER MATERIALS FOR THE EGC BASE, TECHNICIAN PAD, STEPS AS REQUIRED, AND INSTALLATION OF THE GENERATOR CABINETS ARE INCLUDED IN THIS ITEM. TOP OF CONTROLLER AND EGC BASES SHALL BE THE SAME ELEVATION AS CROWN OF ROADWAY OR GREATER. THE MAXIMUM DISTANCE FROM THE TECHNICIAN PAD OR STEP TO THE FOUNDATION TOP IS 24 INCHES. THE CABINET DOORS SHALL OPEN TOWARD OR PARALLEL TO THE RIGHT-OF-WAY LINE AND AWAY FROM TRAFFIC.

   THE CONTROLLER ASSEMBLY FOUNDATIONS SHALL HAVE A MINIMUM OF (4) - 2" CONDUIT SPARES. TWO OF THE SPARES SHALL BE TERMINATED IN THE NEAREST FIBER OPTIC PULL BOX AND FITTED WITH A WEATHERPROOF CAP. THE OTHER TWO SPARES SHALL BE TERMINATED IN THE SIGNAL CABLE AND LOW VOLTAGE PULL BOXES.

18. ITEM 670-5-400:
THIS ITEM IS FOR ANY MODIFICATION REQUIRED TO THE EXISTING TRAFFIC SIGNAL CONTROLLER AT THE 44TH AVENUE/45TH STREET INTERSECTION TO ADD VEHICLE MOVEMENT 7 AND PEDESTRIAN MOVEMENTS P2 AND P4 TO THE CONTROLLER OPERATIONS.

19. 682-1-113:
THE CONTRACTOR SHALL PROVIDE AN IP CCTV CAMERA COMPATIBLE WITH THE MANATEE COUNTY ATMS SYSTEM. THE CCTV CAMERA SHALL BE BOSCH VG5-AUTODOME ITS1080P-30x4.

20. 684-1-1:
THE CONTRACTOR SHALL PROVIDE A MANAGED ETHERNET SWITCH COMPATIBLE WITH THE MANATEE COUNTY ATMS SYSTEM. THE ETHERNET SWITCH SHALL BE RUGGEDCOM RSG920P, MODEL# 6GK60920PS23-0BA0-Z-A05+B05+C02+D02. THIS ITEM SHALL INCLUDE A RUGGEDCOM MODEL RPS 1300 EXTERNAL POWER SUPPLY.

21. 685-1-12:
UNINTERRUPTIBLE POWER SUPPLY (UPS) FOR ITS CABINET SHALL MEET REQUIREMENTS OF LATEST FDOT SPECIFICATIONS SECTION 685.

22. 685-1-13:
INCLUDE AN UNINTERRUPTED POWER SUPPLY UNIT (UPS) WITH AN 4 HOUR RUN TIME AT 400 WATTS. THE UPS SHALL HAVE A NOMINAL OPERATING RANGE OF 850W TO 110W WITH A STANDARD RS232 ETHERNET PORT. THE UPS SHALL BE EQUIPPED WITH ETHERNET CONNECTION AND SNMP (PROTOCOL). THE UPS SHALL BE SIZED TO ACCOMMODATE THE MAXIMUM CONNECTED LOAD. ATTACH UPS UNIT TO THE OUTSIDE OF THE CONTROLLER CABINET. INSTALL UPS UNIT IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. THE TRAFFIC SIGNAL UPS SHALL BE ALPHA MODEL FXM 1100.

23. 700-5-22:
ALL OVERHEAD ILLUMINATED SIGNS SHALL BE FDOT APPROVED EDGE-LIT LED TYPE AND SHALL INCLUDE APPROPRIATE COMPATIBLE ADJUSTABLE HANGERS, BRACKETS, CLAMPS, AND MISCELLANEOUS HARDWARE FOR A COMPLETE AND ACCEPTABLE INSTALLATION. THE ILLUMINATED SIGNS SHALL BE RIGID-MOUNTED, SINGLE-PANEL AND MOUNTED ON MAST ARMS. USE ONE SIGN PER APPROACH, MOUNTED ON THE MAST ARM NEAR THE UPRIGHT. ELECTRICAL INFORMATION FOR THE ILLUMINATED SIGNS TO BE PROVIDED AS PART OF THE AS-BUILT PLANS.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: P. NEVAH
DRAWN BY: D. POWELL
CHECKED BY: P. O'SHEA

PATRICK B. NEVAH, P.E.
P.E. NO. 72369
AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813)286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 2/16/2018
PROJECT NO.: 6086960

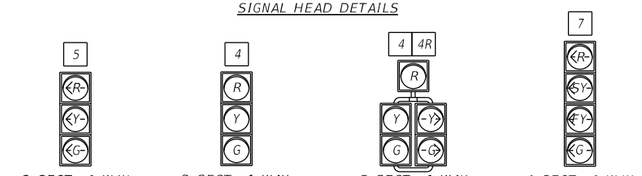
Manatee County FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

DESIGN ENGINEER: PATRICK B. NEVAH, P.E.
FL. LICENSE NO.: P.E. No. 72369

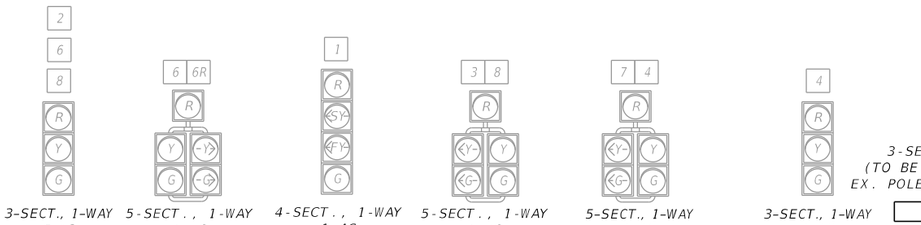
PAY ITEM NOTES

SHEET NO.: T-6

SIGNAL HEAD DETAILS



NOTE: ALL BACK PLATES SHALL HAVE A YELLOW REFLECTIVE BORDER.

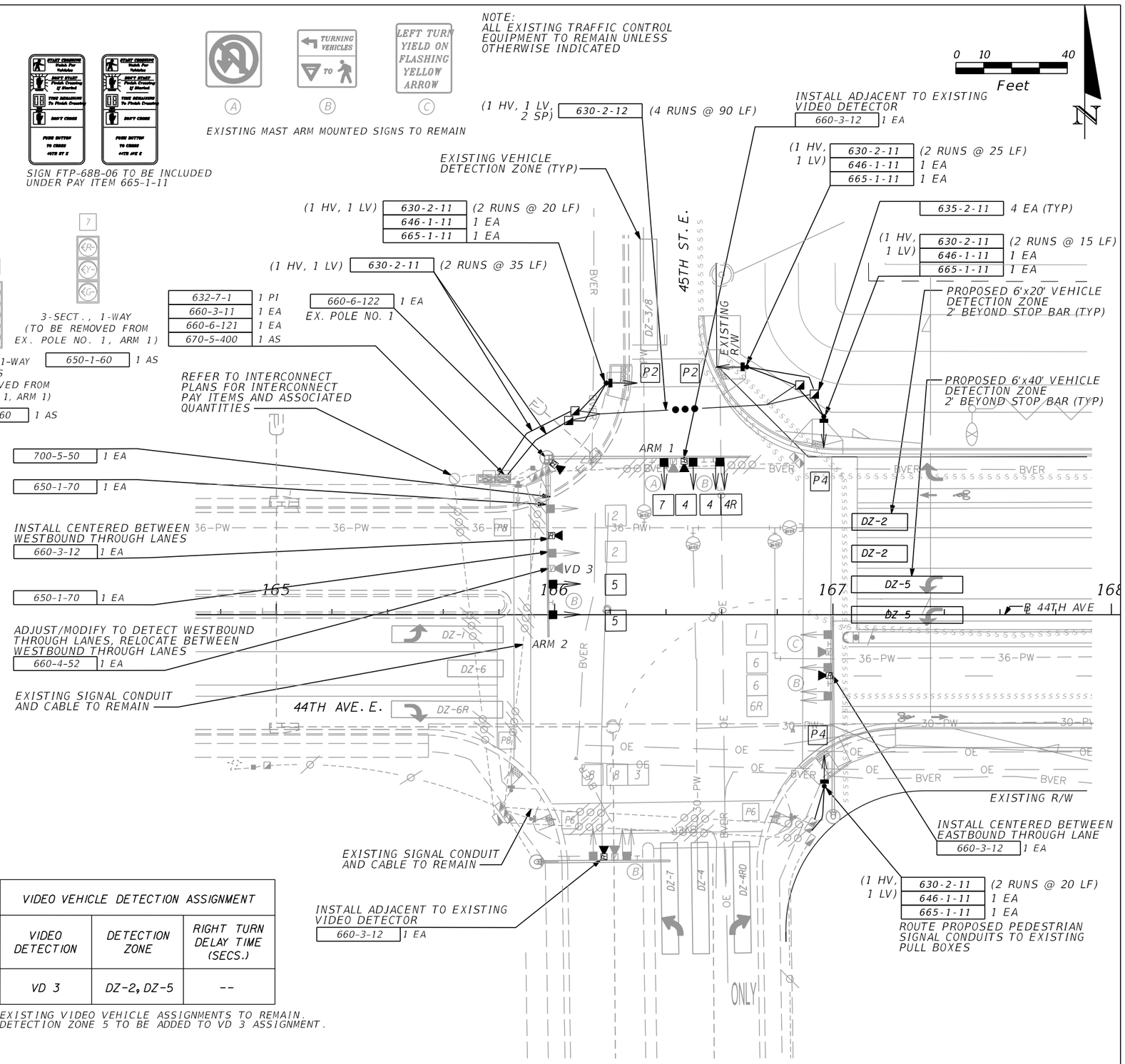


P2
P4
PED. SIGNAL COUNT-DOWN 1-SECT., 1-WAY
4 AS
653-1-11

SIGN FTP-68B-06 TO BE INCLUDED UNDER PAY ITEM 665-1-11

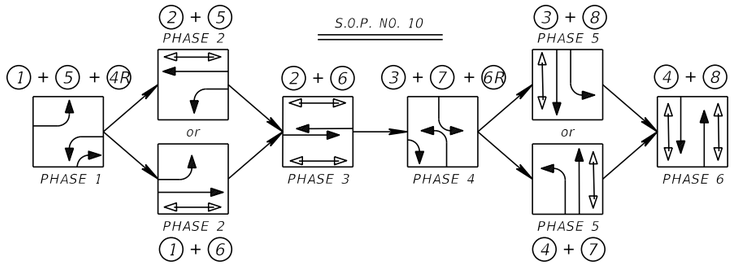
EXISTING MAST ARM MOUNTED SIGNS TO REMAIN

NOTE:
ALL EXISTING TRAFFIC CONTROL EQUIPMENT TO REMAIN UNLESS OTHERWISE INDICATED



CONTROLLER OPERATIONS:

1. THE MAJOR STREET IS 44TH AVENUE (MOVEMENTS 2 & 6).
2. THE MINOR STREET IS 45TH STREET EAST (MOVEMENTS 4 & 8).
3. SIGNAL OPERATING PLAN NO. 10 SHALL BE USED WITH: ACTUATED PEDESTRIAN TIMING FOR MOVEMENT 2 (P2), 4 (P4), 6 (P6) & 8 (P8).



EACH PHASE/MOVEMENT SHALL BE WIRED FROM THE SIGNAL DISPLAY TO THE CONTROLLER AS A SEPARATE PHASE/MOVEMENT. THIS INCLUDES LEFT TURN MOVEMENTS. EACH LEFT TURN MOVEMENT SHALL HAVE CONDUCTORS AVAILABLE FOR PROTECTED AND PROTECTIVE/PERMISSIVE OPERATION.

CONTROLLER TIMING PLAN								
TIMING INTERVAL								
MOVEMENT NUMBER	1	2	3	4	5	6	7	8
MINIMUM GREEN (INITIAL)	-	-	-	-	7	-	-	-
EXTENSION	-	-	-	-	3.0	-	-	-
MAXIMUM GREEN 1	-	-	-	-	20	-	-	-
MAXIMUM GREEN 2	-	-	-	-	-	-	-	-
YELLOW CLEARANCE	-	-	-	-	4.8	-	-	-
ALL RED	-	-	-	-	2.2	-	-	-
PEDESTRIAN WALK	-	7	-	7	-	-	-	-
PED CLEARANCE	-	15	-	27	-	-	-	-
RECALL	-	MIN	-	-	-	-	-	-

EXISTING TIMINGS TO REMAIN.
PROPOSED TIMINGS ARE INITIAL AND MAY REQUIRE FIELD ADJUSTING AS DIRECTED BY THE PROJECT ENGINEER.
POSTED SPEED LIMIT FOR 44TH AVENUE IS 45 MPH.
POSTED SPEED LIMIT FOR 45TH STREET IS 40 MPH.

VIDEO VEHICLE DETECTION ASSIGNMENT		
VIDEO DETECTION	DETECTION ZONE	RIGHT TURN DELAY TIME (SECS.)
VD 3	DZ-2, DZ-5	--

EXISTING VIDEO VEHICLE ASSIGNMENTS TO REMAIN.
DETECTION ZONE 5 TO BE ADDED TO VD 3 ASSIGNMENT.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: P. NEVAH
DRAWN BY: D. POWELL
CHECKED BY: P. O'SHEA

PATRICK B. NEVAH, P.E.
P.E. No 72369
AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 02/16/2018
PROJECT NO.: 6086960

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

DESIGN ENGINEER: PATRICK B. NEVAH, P.E.
FL. LICENSE NO.: P.E. No 72369

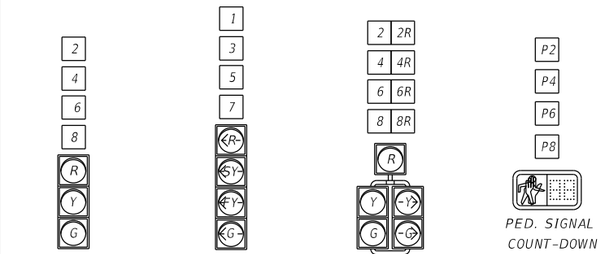
SIGNALIZATION PLAN (1)

SHEET NO.: T-7

1:37:30 PM 2/16/2018
S:\Projects_RDWY\ProjFdot\ProjFDOT\W8\6046021300\signals\PLANSG01.DGN

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

SIGNAL HEAD DETAILS



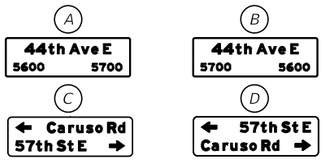
3-SECT., 1-WAY — 6 AS — 650-1-14

4-SECT., 1-WAY — 4 AS — 650-1-16

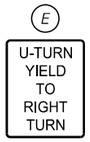
5-SECT., 1-WAY — 4 AS — 650-1-19

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

NOTE: ALL BACK PLATES SHALL HAVE A YELLOW REFLECTIVE BORDER.

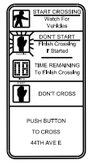


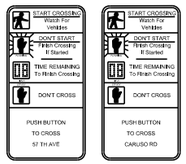
700-5-22 — 4 EA



700-3-201 — 2 EA

R10-6 (24"x30")





SIGN FTP-68B-06 TO BE INCLUDED UNDER PAY ITEM 665-1-11

2#2 CONDUCTORS	630-2-11	(1 RUN @ 10 LF)
	639-1-122	1 AS
	639-2-1	10 LF
	641-2-12	1 EA-12'

POWER SERVICE METER BASE AND DISCONNECT SHALL BE INSTALLED ON THE CONCRETE SERVICE POLE AS SHOWN ON THE PLANS AND PER INDEX NUMBERS 17504 AND 17736

NOTE: REFER TO SIGNING AND PAVEMENT MARKING PLAN (9), S-14 FOR FLASHING CHEVRON SIGNS REMOVAL

REFER TO INTERCONNECT PLANS FOR INTERCONNECT PAY ITEMS AND ASSOCIATED QUANTITIES

(1 HV)	630-2-11	(1 RUN @ 10 LF)
	685-1-13	1 EA

EMERGENCY GENERATOR CABINET

632-7-1	1 PI
660-3-11	1 EA
660-4-11	1 EA
660-6-121	1 EA
670-5-112	1 AS

POLE NO. 1
STA. 218+53.5, 56.30' LT.
GROUND EL 15.56,
CROWN EL.=15.51

(1 HV, 1 LV, 1 SP)	630-2-11	(3 RUNS @ 10 LF)
	649-31-203	1 EA
	660-3-12	1 EA
VD 1	660-4-12	1 EA
BLUETOOTH	660-6-122	1 EA

(1 HV, 1 LV)	630-2-11	(2 RUNS @ 25 LF)
	646-1-11	1 EA
	665-1-11	1 EA

REFER TO SIGNING AND PAVEMENT MARKING PLAN (9), S-14 FOR SIGN INSTALLATION

(1 POWER, 1 HV, 1 LV, 2 SP)	630-2-12	(5 RUNS @ 165 LF)
	639-2-1	165 LF
2#2 CONDUCTORS		

(1 HV, 1 LV)	630-2-11	(2 RUNS @ 40 LF)
	646-1-11	1 EA
	665-1-11	1 EA

(1 HV, 1 LV, 2 SP)	630-2-11	(4 RUNS @ 25 LF)

(1 HV, 1 LV)	630-2-11	(2 RUNS @ 20 LF)
	646-1-11	1 EA
	665-1-11	1 EA

(1 HV, 1 LV, 2 SP)	630-2-12	(4 RUNS @ 140 LF)

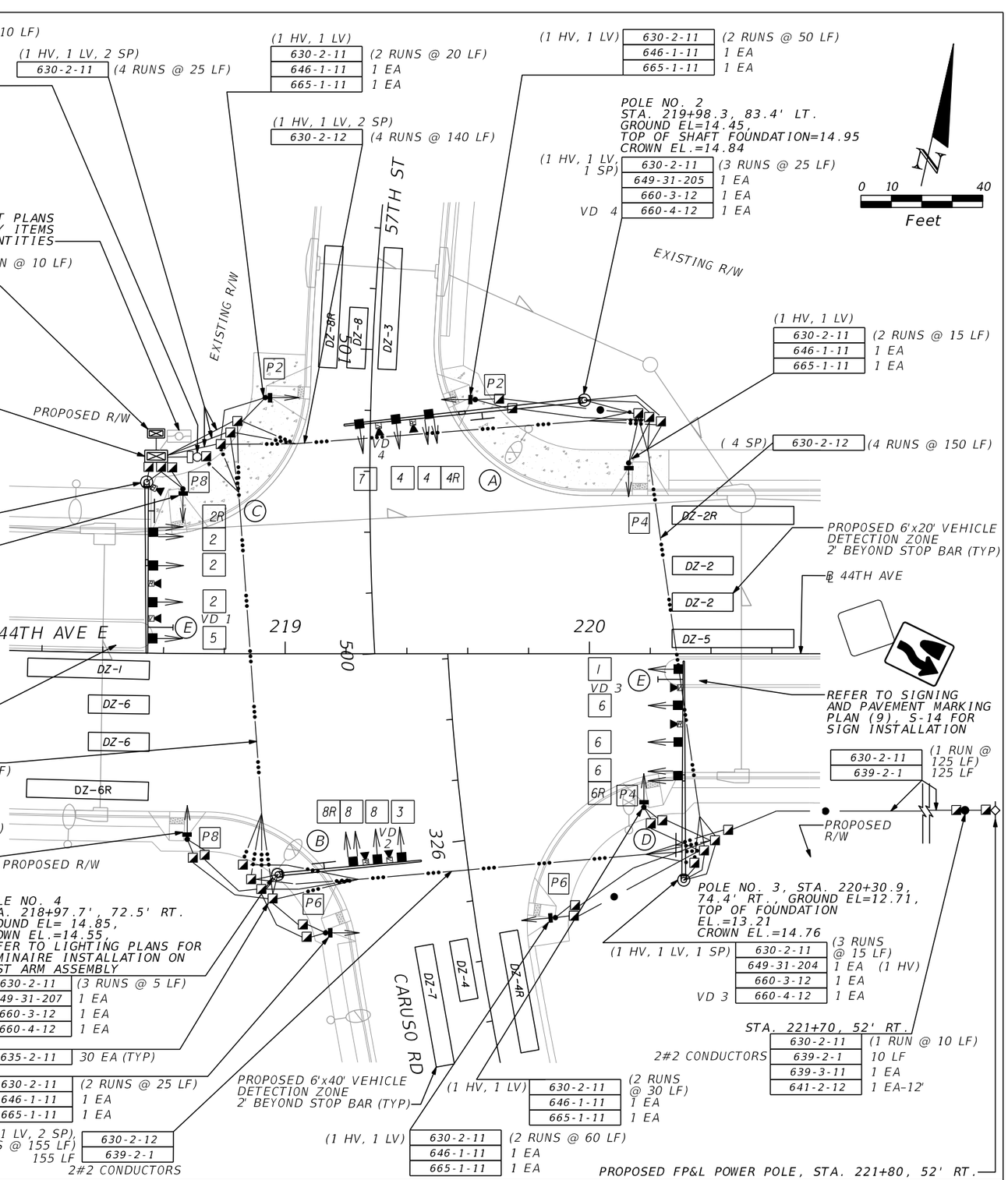
POLE NO. 2
STA. 219+98.3, 83.4' LT.
GROUND EL=14.45,
TOP OF SHAFT FOUNDATION=14.95
CROWN EL.=14.84

(1 HV, 1 LV, 1 SP)	630-2-11	(3 RUNS @ 25 LF)
	649-31-205	1 EA
	660-3-12	1 EA
VD 4	660-4-12	1 EA

(1 HV, 1 LV)	630-2-11	(2 RUNS @ 50 LF)
	646-1-11	1 EA
	665-1-11	1 EA

(1 HV, 1 LV)	630-2-11	(2 RUNS @ 15 LF)
	646-1-11	1 EA
	665-1-11	1 EA

(4 SP)	630-2-12	(4 RUNS @ 150 LF)



POLE NO. 4
STA. 218+97.7', 72.5' RT.
GROUND EL= 14.85,
CROWN EL.=14.55,
REFER TO LIGHTING PLANS FOR LUMINAIRE INSTALLATION ON MAST ARM ASSEMBLY

(1 HV, 1 LV, 1 SP)	630-2-11	(3 RUNS @ 5 LF)
	649-31-207	1 EA
	660-3-12	1 EA
VD 2	660-4-12	1 EA
	635-2-11	30 EA (TYP)

(1 HV, 1 LV)	630-2-11	(2 RUNS @ 25 LF)
	646-1-11	1 EA
	665-1-11	1 EA

(1 POWER, 1 HV, 1 LV, 2 SP), (5 RUNS @ 155 LF) 155 LF	630-2-12	
	639-2-1	
2#2 CONDUCTORS		

POLE NO. 3, STA. 220+30.9, 74.4' RT., GROUND EL=12.71, TOP OF FOUNDATION EL.=13.21 CROWN EL.=14.76

(1 HV, 1 LV, 1 SP)	630-2-11	(3 RUNS @ 15 LF)
	649-31-204	1 EA (1 HV)
	660-3-12	1 EA
VD 3	660-4-12	1 EA

STA. 221+70, 52' RT.

2#2 CONDUCTORS	630-2-11	(1 RUN @ 10 LF)
	639-2-1	10 LF
	639-3-11	1 EA
	641-2-12	1 EA-12'

(1 HV, 1 LV)	630-2-11	(2 RUNS @ 30 LF)
	646-1-11	1 EA
	665-1-11	1 EA

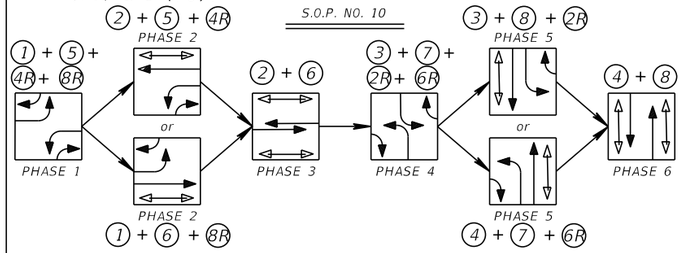
(1 HV, 1 LV)	630-2-11	(2 RUNS @ 60 LF)
	646-1-11	1 EA
	665-1-11	1 EA

(1 HV, 1 LV)	630-2-11	(1 RUN @ 125 LF)
	639-2-1	125 LF

PROPOSED R/W

CONTROLLER OPERATIONS:

1. THE MAJOR STREET IS 44TH AVENUE EAST (MOVEMENTS 2 & 6).
2. THE MINOR STREET IS CARUSO ROAD/57TH STREET EAST (MOVEMENTS 4&8).
3. SIGNAL OPERATING PLAN NO. 10 SHALL BE USED WITH:
   ACTUATED PEDESTRIAN TIMING FOR MOVEMENT 2 (P2), 4 (P4), 6 (P6) & 8 (P8).



EACH PHASE/MOVEMENT SHALL BE WIRED FROM THE SIGNAL DISPLAY TO THE CONTROLLER AS A SEPARATE PHASE/MOVEMENT. THIS INCLUDES LEFT TURN MOVEMENTS. EACH LEFT TURN MOVEMENT SHALL HAVE CONDUCTORS AVAILABLE FOR PROTECTED AND PROTECTIVE/PERMISSIVE OPERATION.

CONTROLLER TIMING PLAN								
TIMING INTERVAL								
MOVEMENT NUMBER	1	2	3	4	5	6	7	8
MINIMUM GREEN (INITIAL)	7	15	7	7	7	15	7	7
EXTENSION	3.0	5.0	3.0	4.0	3.0	5.0	3.0	4.0
MAXIMUM GREEN 1	20	45	20	30	20	45	20	30
MAXIMUM GREEN 2	-	-	-	-	-	-	-	-
YELLOW CLEARANCE	4.0	4.0	4.4	4.4	4.0	4.0	4.4	4.0
ALL RED	2.4	2.8	2.3	2.8	2.5	2.8	2.1	2.8
PEDESTRIAN WALK	-	7	-	7	-	7	-	7
PED CLEARANCE	-	14	-	27	-	17	-	27
RECALL	-	MIN	-	-	-	MIN	-	-

TIMINGS ARE INITIAL AND MAY REQUIRE FIELD ADJUSTING AS DIRECTED BY THE PROJECT ENGINEER.
POSTED SPEED LIMIT FOR 44TH AVENUE IS 35 MPH.
POSTED SPEED LIMIT FOR 57TH STREET/CARUSO ROAD IS 40 MPH.

VIDEO VEHICLE DETECTION ASSIGNMENTS		
VIDEO DETECTION	DETECTION ZONE	RIGHT TURN DELAY TIME (SECS.)
VD 1	DZ-2, DZ-2R, DZ-5	8
VD 2	DZ-3, DZ-8, DZ-8R	8
VD 3	DZ-1, DZ-6, DZ-6R	8
VD 4	DZ-4, DZ-4R, DZ-7	8

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

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: P. NEVAH
DRAWN BY: D. POWELL
CHECKED BY: P. O'SHEA

PATRICK B. NEVAH, P.E.
P.E. No 72369
AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 02/16/2018
PROJECT NO.: 6086960

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

DESIGN ENGINEER: PATRICK B. NEVAH, P.E.
FL. LICENSE NO.: P.E. No 72369

SIGNALIZATION PLAN (2)

SHEET NO.: T-8

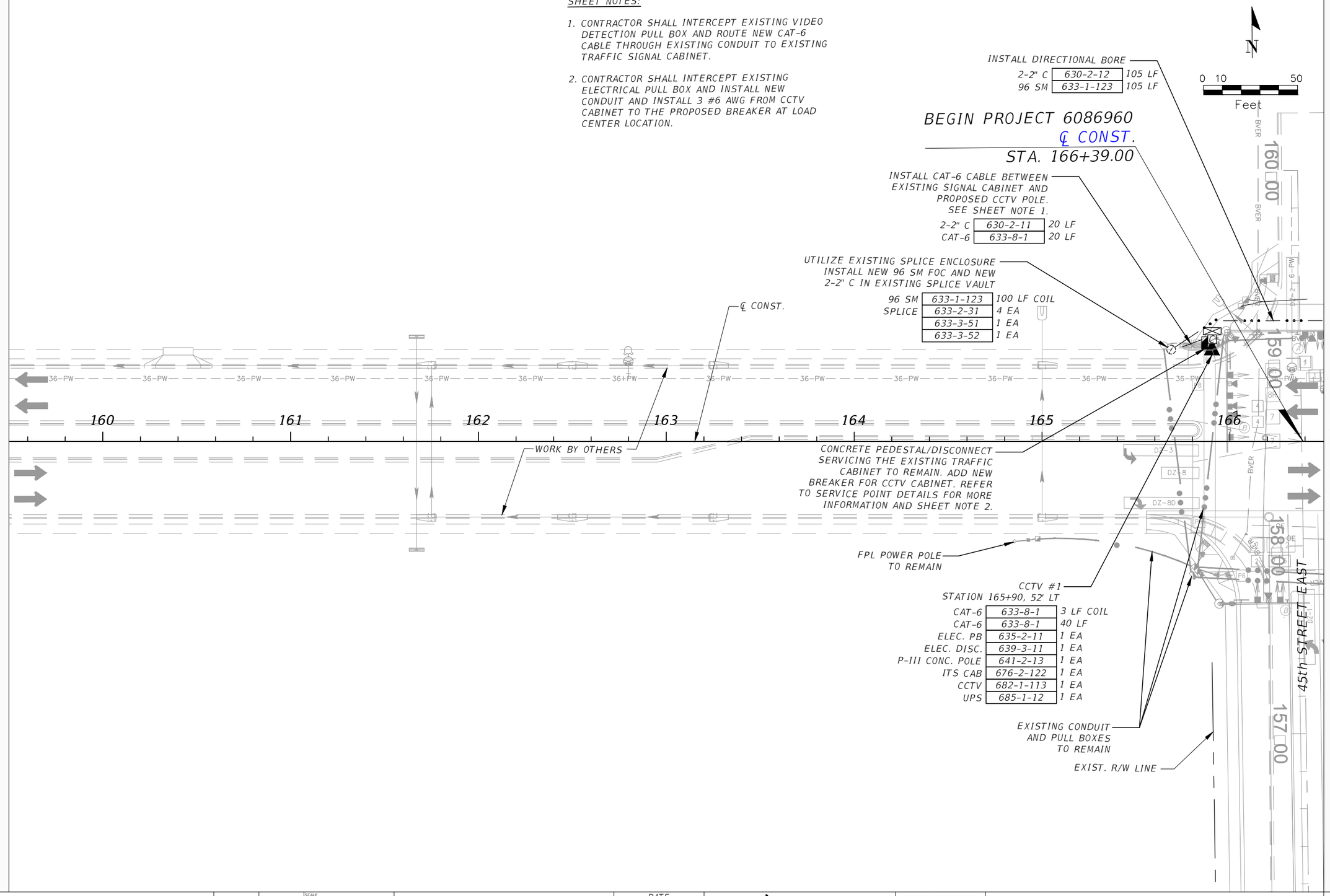
$TIME$ $DATE$ $FILE$

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

SHEET NOTES:

1. CONTRACTOR SHALL INTERCEPT EXISTING VIDEO DETECTION PULL BOX AND ROUTE NEW CAT-6 CABLE THROUGH EXISTING CONDUIT TO EXISTING TRAFFIC SIGNAL CABINET.

2. CONTRACTOR SHALL INTERCEPT EXISTING ELECTRICAL PULL BOX AND INSTALL NEW CONDUIT AND INSTALL 3 #6 AWG FROM CCTV CABINET TO THE PROPOSED BREAKER AT LOAD CENTER LOCATION.



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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: P. NEVAH
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7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 4/14/2017
PROJECT NO.: 6086960

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

DESIGN ENGINEER: PATRICK B. NEVAH, P.E
FL. LICENSE NO.: P.E. No. 72369

INTERCONNECT PLANS (1)

SHEET NO.: T-9

Cary, Emy
8/14/2017 12:29:15 PM
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MATCHLINE STA. 166+50.00

INSTALL DIRECTIONAL BORE
2-2" C | 630-2-12 | 50 LF
96 SM | 633-1-123 | 50 LF

EXIST. R/W LINE

96 SM | 633-1-123 | 50 LF COIL
FO PB | 635-2-12 | 1 EA

EXIST. R/W LINE

2-2" C | 630-2-11 | 540 LF
96 SM | 633-1-123 | 540 LF

PROP. R/W LINE

INSTALL DIRECTIONAL BORE
2-2" C | 630-2-12 | 104 LF
96 SM | 633-1-123 | 104 LF

96 SM | 633-1-123 | 50 LF
FO PB | 635-2-12 | 1 EA

10' MULTI-USE PATH

N

0 10 50
Feet

℄ CONST.

44th AVENUE EAST

167 168 169 170 171 172 173

5' CONC. SWK.

CONC WALL

CONC WALL

EXIST. R/W LINE

ONLY

MATCHLINE STA. 173+50.00

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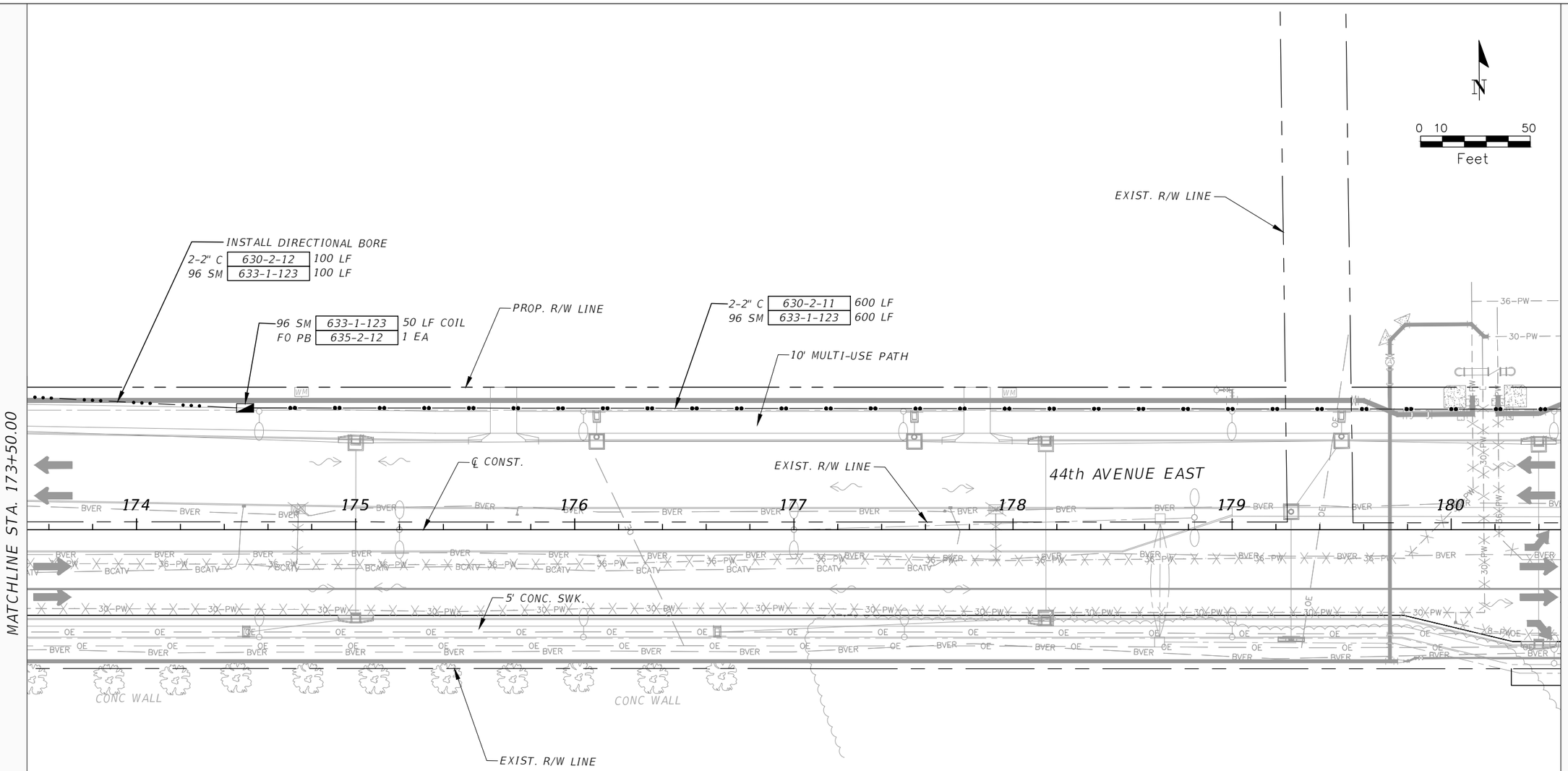
Manatee County FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

DESIGN ENGINEER
PATRICK B. NEVAH, P.E.
FL. LICENSE NO.
P.E. No. 72369

INTERCONNECT PLANS (2)

SHEET NO.
T-10

Cary, Emy 8/14/2017 12:30:44 PM S:\Projects_RDWY\ProjFdot\ProjFDOT\V8\60460213000\signals\PLANSG03.dwg



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No.	REVISIONS	DATE	BY

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DESIGNED BY: P. NEVAH
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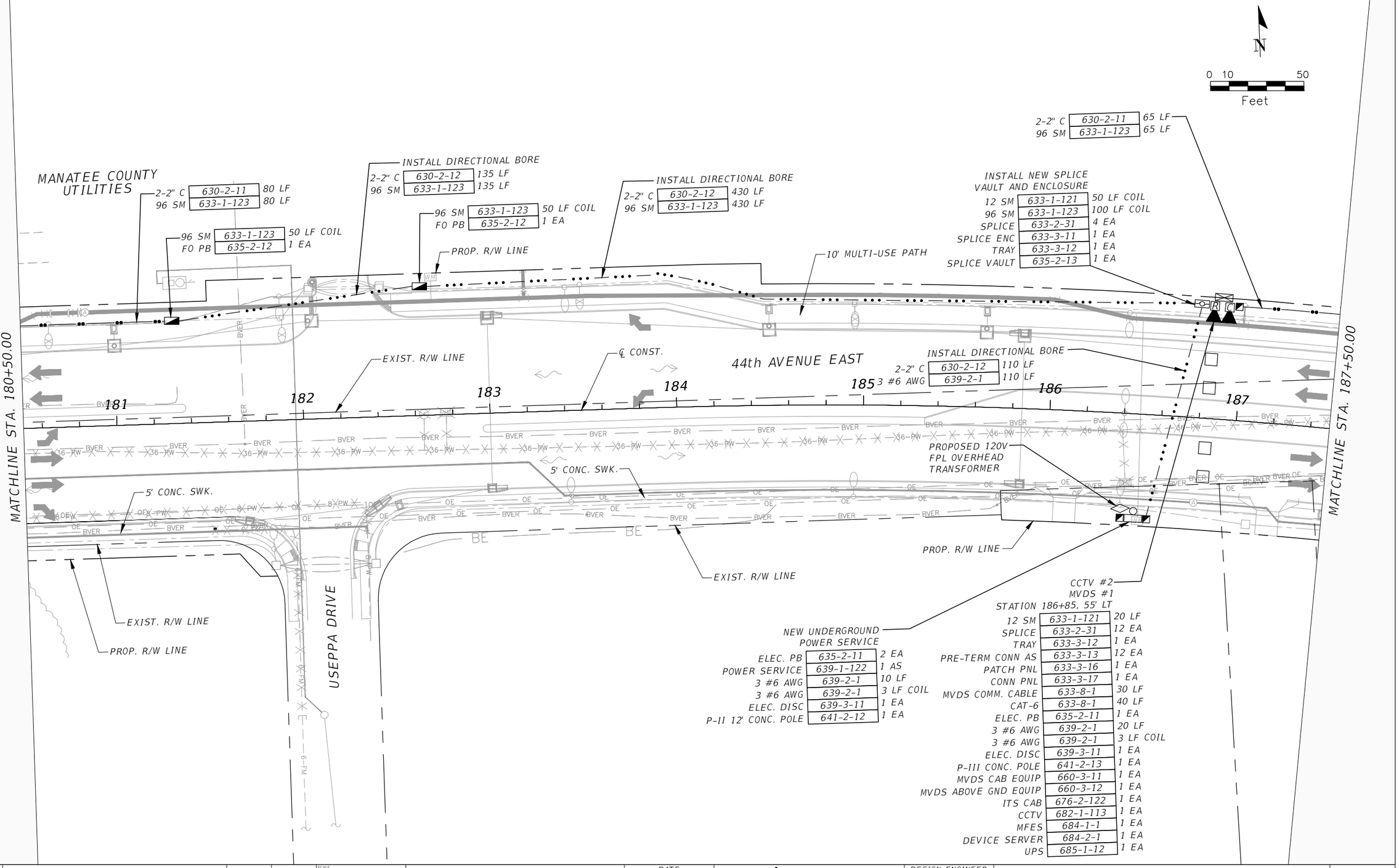
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

DESIGN ENGINEER
PATRICK B. NEVAH, P.E.
FL. LICENSE NO.
P.E. No. 72369

INTERCONNECT PLANS (3)

SHEET NO.: T-11

Cary, Emy 8/14/2017 12:32:12 PM S:\Projects_RDWY\ProjFdot\ProjFDOT\V8\60460213000\signals\PLANSG03.dwg



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DESIGN ENGINEER: PATRICK B. NEVAH, P.E.
FL. LICENSE NO.: P.E. No. 72369

INTERCONNECT PLANS (4)

SHEET NO.: T-12

Cary, Emy
8/14/2017 12:33:38 PM
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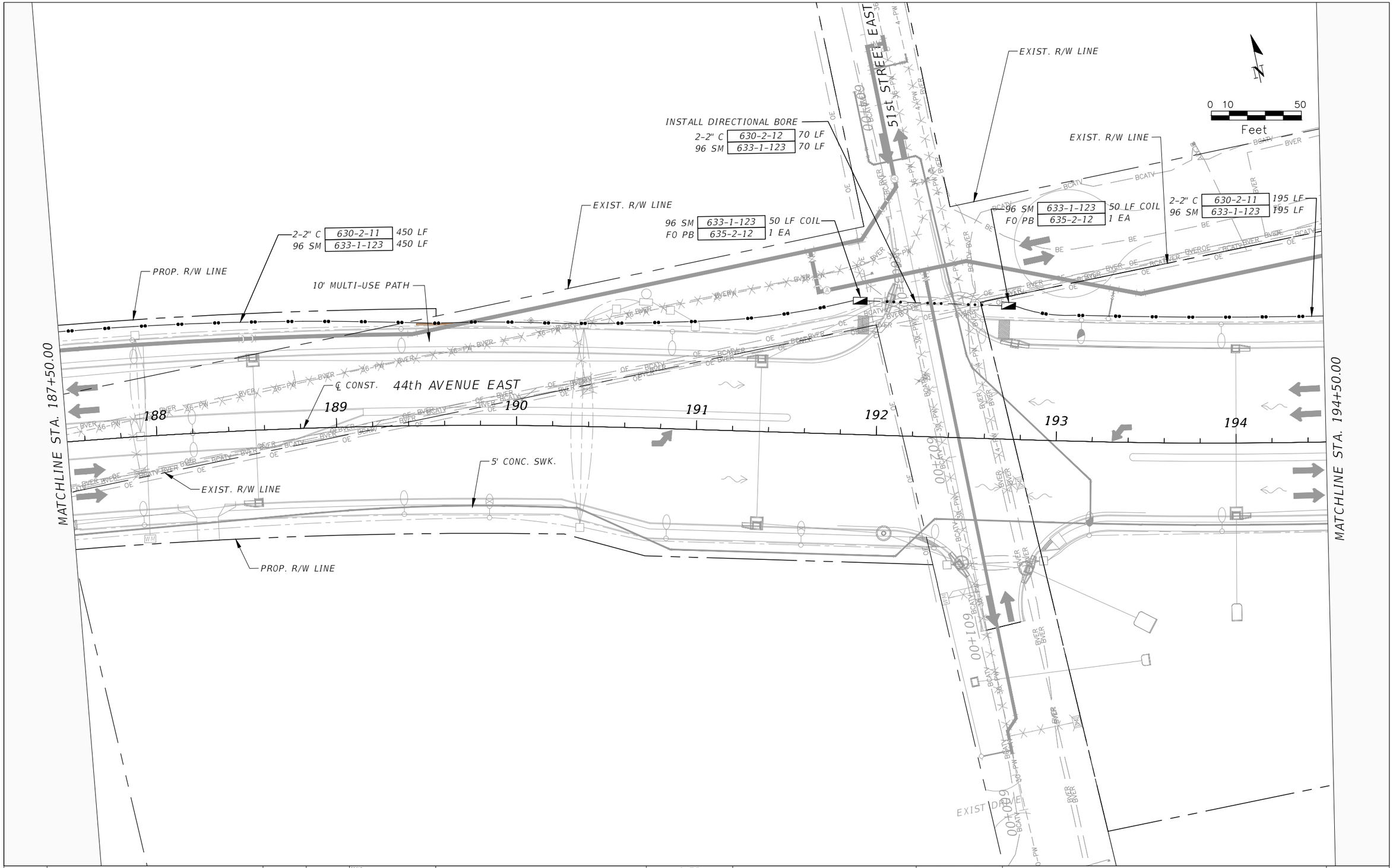

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: P. NEVAH
DRAWN BY: D. POWELL
CHECKED BY: P. O'SHEA

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CERTIFICATE OF AUTHORIZATION: 8115

DATE: 4/14/2017
PROJECT NO.: 6086960

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

DESIGN ENGINEER: PATRICK B. NEVAH, P.E.
FL. LICENSE NO.: P.E. No. 72369

INTERCONNECT PLANS (5)

SHEET NO.: T-13

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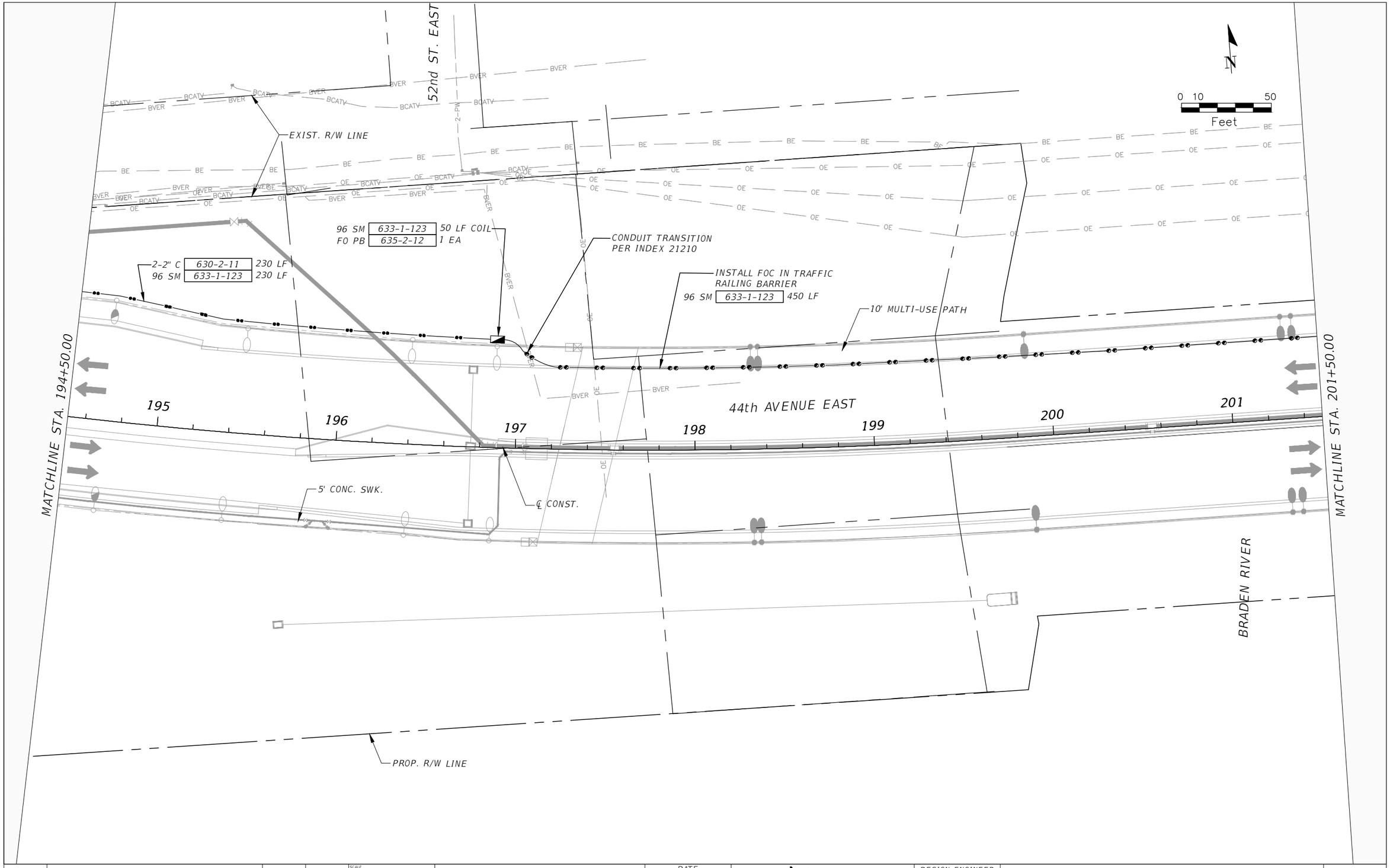


No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: P. NEVAH
DRAWN BY: D. POWELL
CHECKED BY: P. O'SHEA

AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 4/14/2017
PROJECT NO.: 6086960

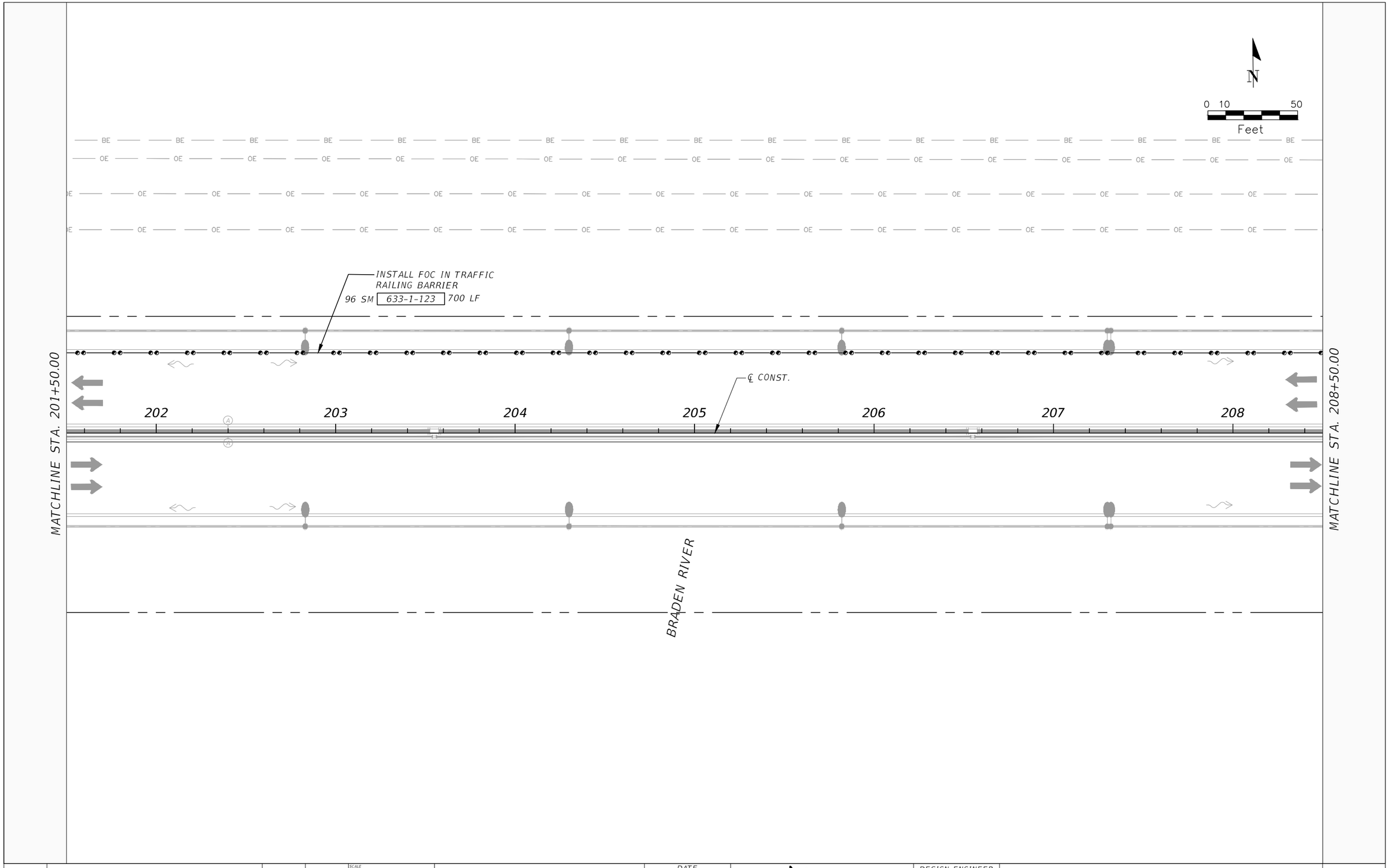
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

DESIGN ENGINEER
PATRICK B. NEVAH, P.E.
FL. LICENSE NO.
P.E. No. 72369

INTECONNECT PLANS (6)

SHEET NO.: T-14

Cary, Emy 8/14/2017 12:36:21 PM S:\Projects_RDWY\ProjFdot\ProjFDOT\V8\60460213000\signals\PLANSG03.dwg



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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: P. NEVAH
DRAWN BY: D. POWELL
CHECKED BY: P. O'SHEA

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

DESIGN ENGINEER: PATRICK B. NEVAH, P.E.
FL. LICENSE NO.: P.E. No. 72369

INTECONNECT PLANS (7)

SHEET NO.: T-15

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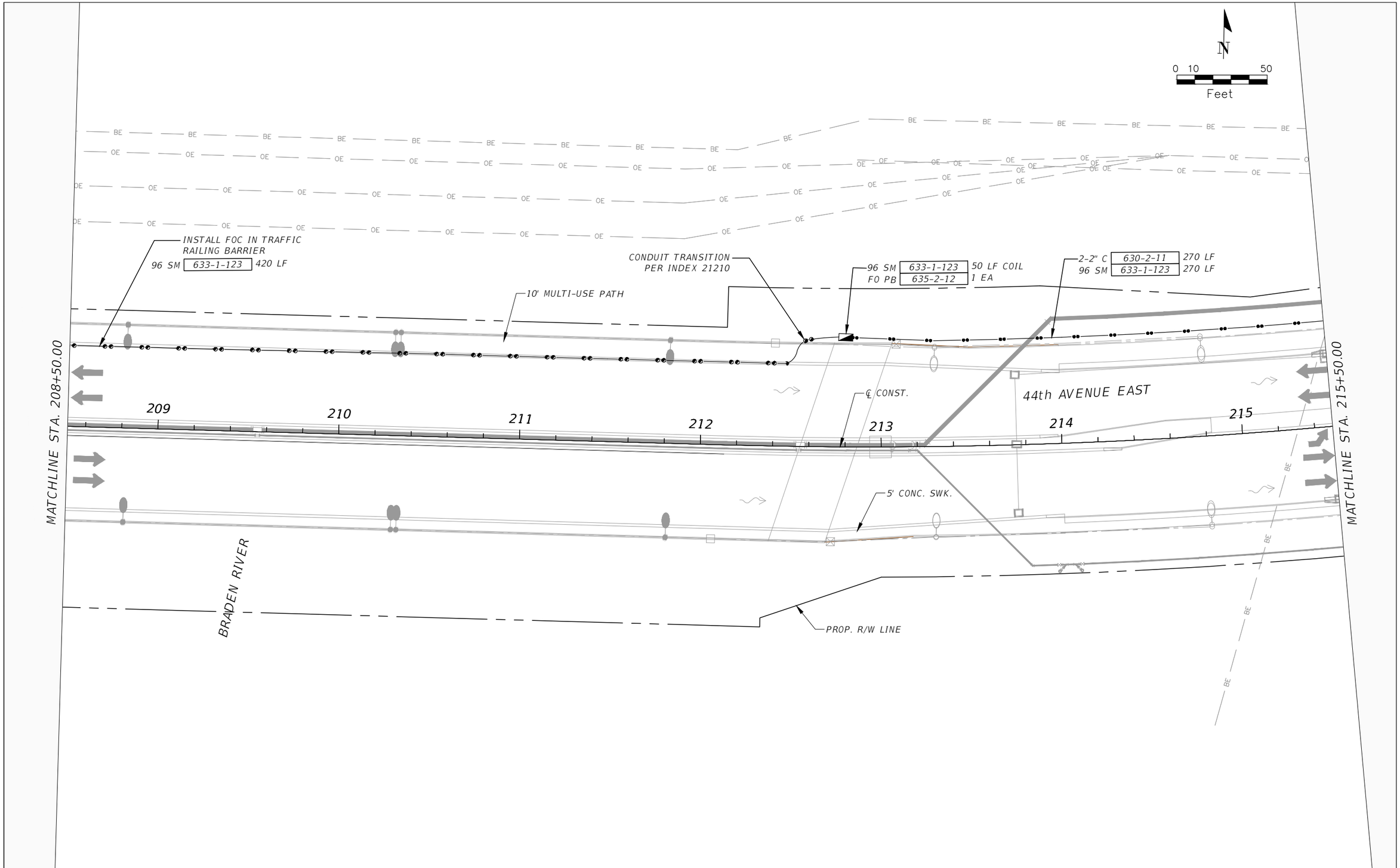

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: P. NEVAH
DRAWN BY: D. POWELL
CHECKED BY: P. O'SHEA

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(813) 286-1711
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PROJECT NO.: 6086960

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

DESIGN ENGINEER: PATRICK B. NEVAH, P.E.
FL. LICENSE NO.: P.E. No. 72369

INTERCONNECT PLANS (8)

SHEET NO.: T-16

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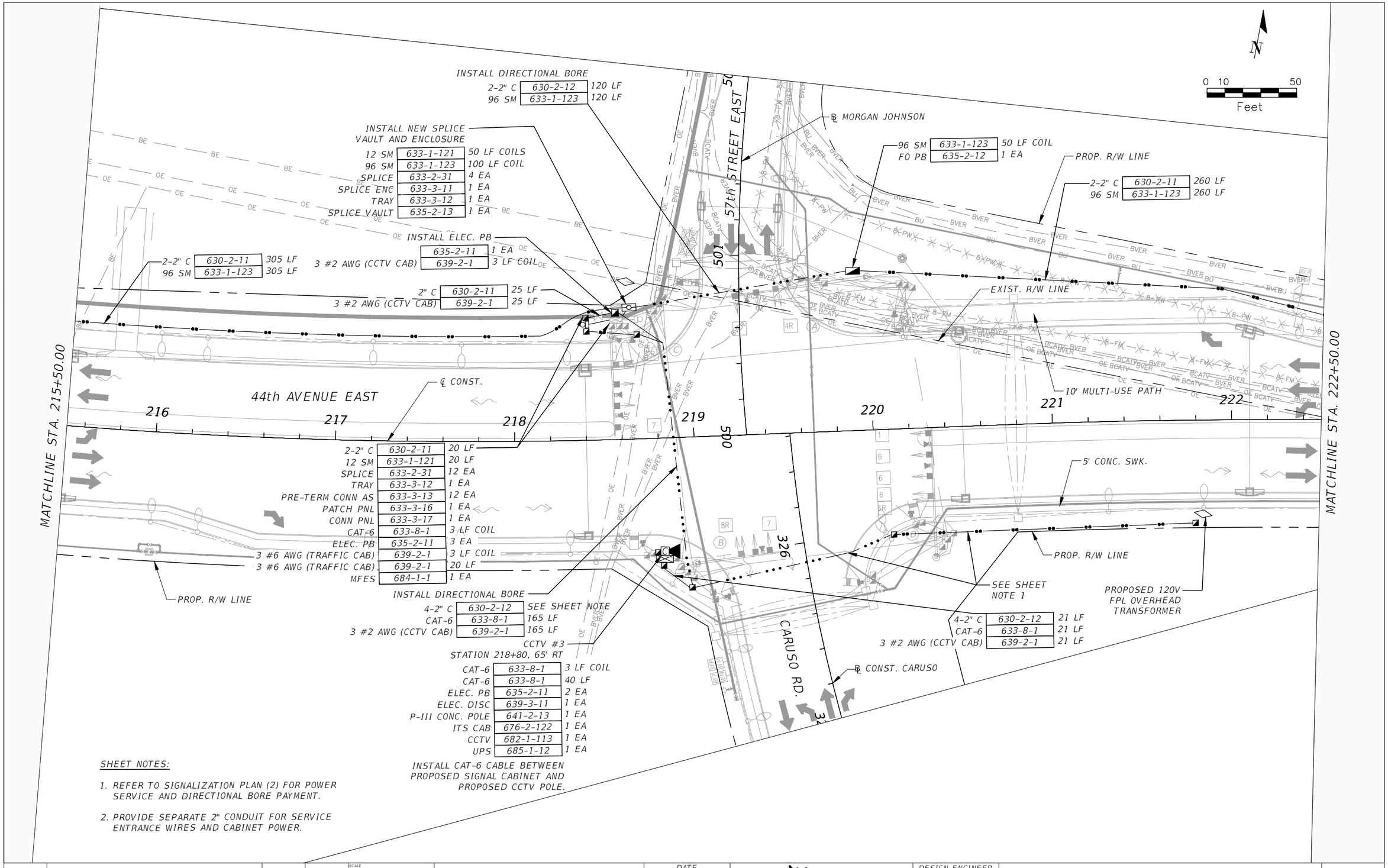

SHEET NOTES:

1. REFER TO SIGNALIZATION PLAN (2) FOR POWER SERVICE AND DIRECTIONAL BORE PAYMENT.
2. PROVIDE SEPARATE 2" CONDUIT FOR SERVICE ENTRANCE WIRES AND CABINET POWER.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
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DRAWN BY: D. POWELL
CHECKED BY: P. O'SHEA

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

DESIGN ENGINEER: PATRICK B. NEVAH, P.E.
FL. LICENSE NO.: P.E. No. 72369

INTERCONNECT PLANS (9)

SHEET NO.: T-17

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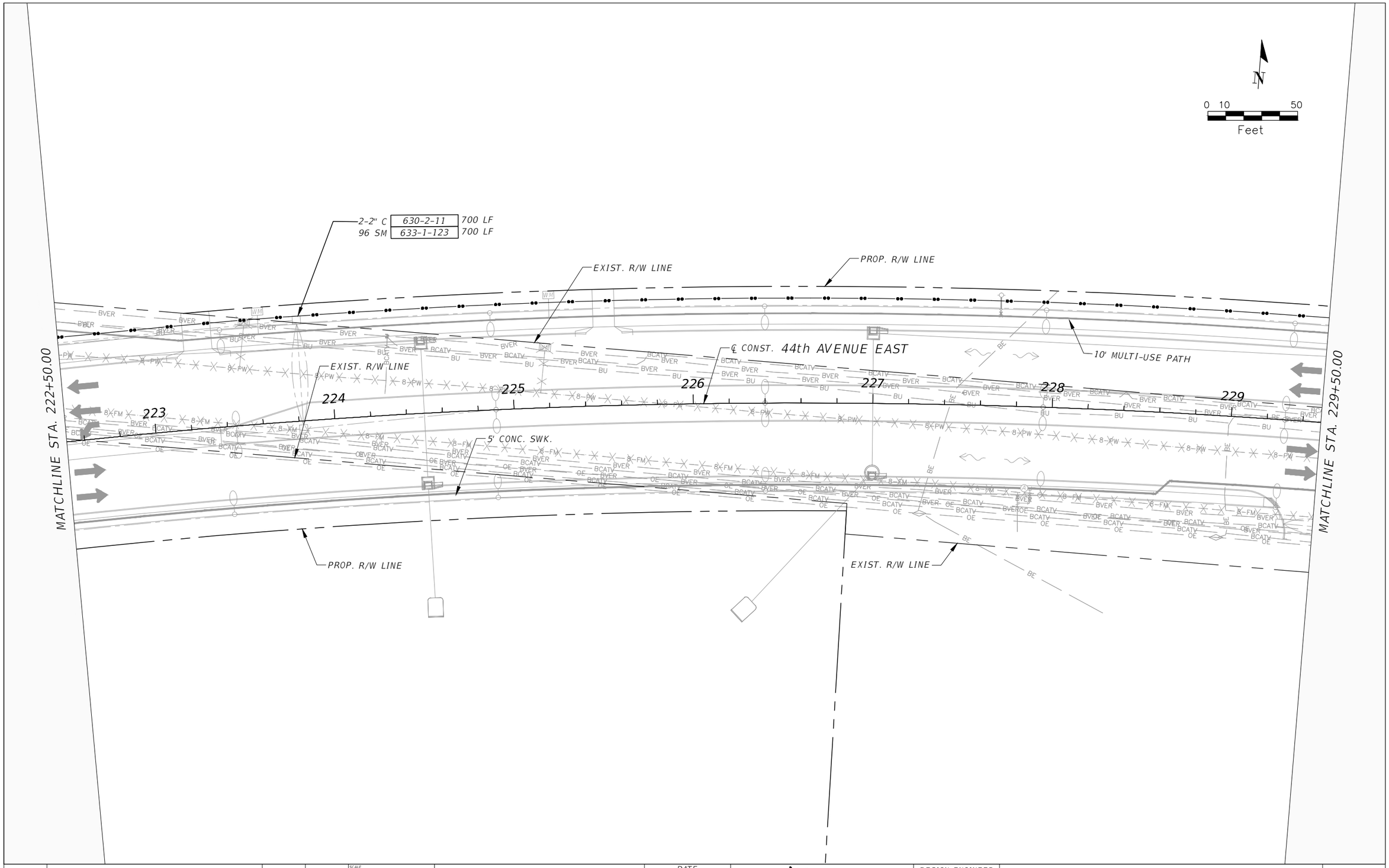

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Manatee County FLORIDA
PUBLIC WORKS DEPARTMENT
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1022 26th Avenue East, Bradenton, FL 34208

DESIGN ENGINEER: PATRICK B. NEVAH, P.E.
FL. LICENSE NO.: P.E. No. 72369

INTERCONNECT PLANS (10)

SHEET NO.: T-18

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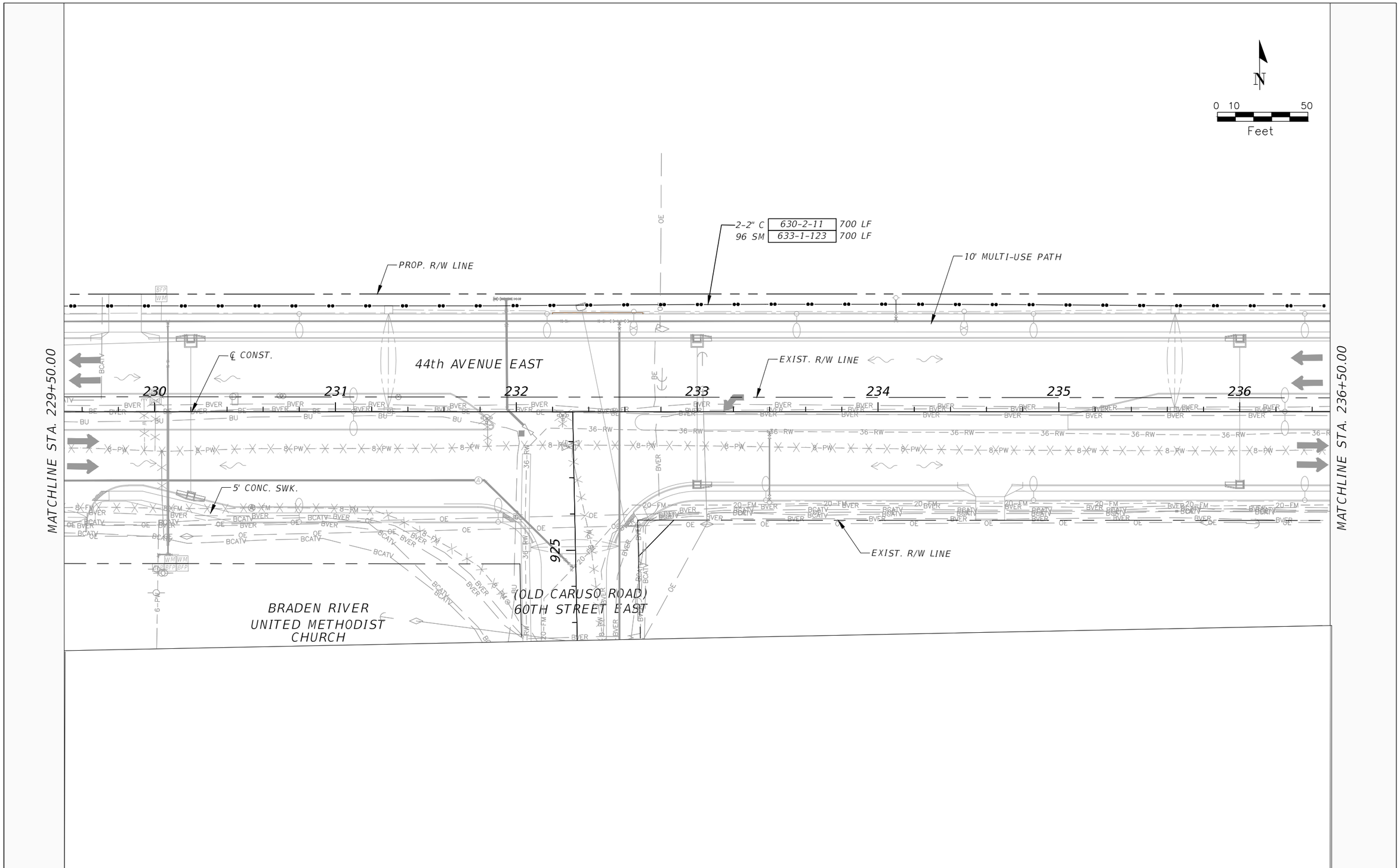

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Manatee County FLORIDA
PUBLIC WORKS DEPARTMENT
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1022 26th Avenue East, Bradenton, FL 34208

DESIGN ENGINEER: PATRICK B. NEVAH, P.E.
FL. LICENSE NO.: P.E. No. 72369

INTERCONNECT PLANS (11)

SHEET NO.: T-19

Cary, Emy 8/14/2017 12:43:27 PM S:\Projects_RDWY\ProjFdot\ProjFDOT\V8\60460213000\signals\PLANSG03.dwg

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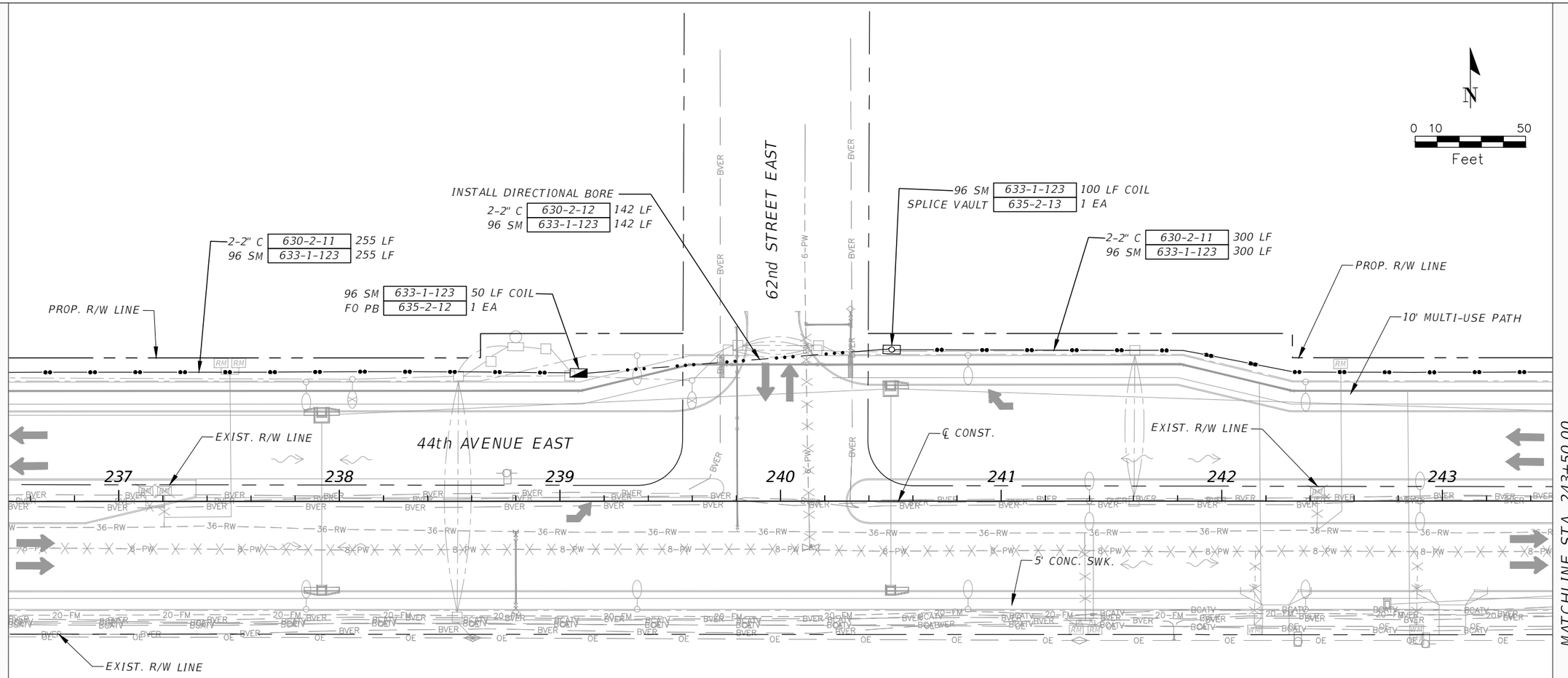
MATCHLINE STA. 236+50.00

MATCHLINE STA. 243+50.00



EXIST. R/W LINE

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Manatee County FLORIDA
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DESIGN ENGINEER: PATRICK B. NEVAH, P.E.
FL. LICENSE NO.: P.E. No. 72369

INTERCONNECT PLANS (12)

SHEET NO.: T-20

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MATCHLINE STA. 243+50.00

2-2" C | 630-2-11 | 50 LF
96 SM | 633-1-123 | 50 LF

CCTV #4
MVDS #2
STATION 244+00, 55' LT

12 SM	633-1-121	20 LF
SPLICE	633-2-31	12 EA
TRAY	633-3-12	1 EA
PRE-TERM CONN AS	633-3-13	12 EA
PATCH PNL	633-3-16	1 EA
CONN PNL	633-3-17	1 EA
MVDS COMM. CABLE	633-8-1	30 LF
CAT-6	633-8-1	40 LF
ELEC. PB	635-2-11	1 EA
3 #6 AWG	639-2-1	20 LF
3 #6 AWG	639-2-1	3 LF COIL
ELEC. DISC	639-3-11	1 EA
P-III CONC. POLE	641-2-13	1 EA
MVDS CAB EQUIP	660-3-11	1 EA
MVDS ABOVE GND EQUIP	660-3-12	1 EA
ITS CAB	676-2-122	1 EA
CCTV	682-1-113	1 EA
MFES	684-1-1	1 EA
DEVICE SERVER	684-2-1	1 EA
UPS	685-1-12	1 EA

INSTALL NEW SPLICE VAULT AND ENCLOSURE

12 SM	633-1-121	50 LF COIL
96 SM	633-1-123	100 LF COIL
SPLICE	633-2-31	4 EA
SPLICE ENC	633-3-11	1 EA
TRAY	633-3-12	1 EA
SPLICE VAULT	635-2-13	1 EA

INSTALL DIRECTIONAL BORE

2-2" C	630-2-12	117 LF
3 #6 AWG	639-2-1	117 LF

2-2" C | 630-2-11 | 650 LF
96 SM | 633-1-123 | 650 LF

10' MULTI-USE PATH

PROP. R/W LINE

℄ CONST.

44th AVENUE EAST

EXIST. R/W LINE

244 245 246 247 248 249 250

5' CONC. SWK.

PROPOSED 120V FPL OVERHEAD TRANSFORMER

EXIST. R/W LINE

NEW UNDERGROUND SERVICE

ELEC. PB	635-2-11	2 EA
POWER SERVICE	639-1-122	1 AS
3 #6 AWG	639-2-1	10 LF
3 #6 AWG	639-2-1	3 LF COIL
P-II 12' CONC. POLE	641-2-12	1 EA

N

0 10 50
Feet

MATCHLINE STA. 250+50.00

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SCALE: AS NOTED
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DRAWN BY: D. POWELL
CHECKED BY: P. O'SHEA

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

DESIGN ENGINEER: PATRICK B. NEVAH, P.E.
FL. LICENSE NO.: P.E. No. 72369

INTERCONNECT PLANS (13)

SHEET NO.: T-21

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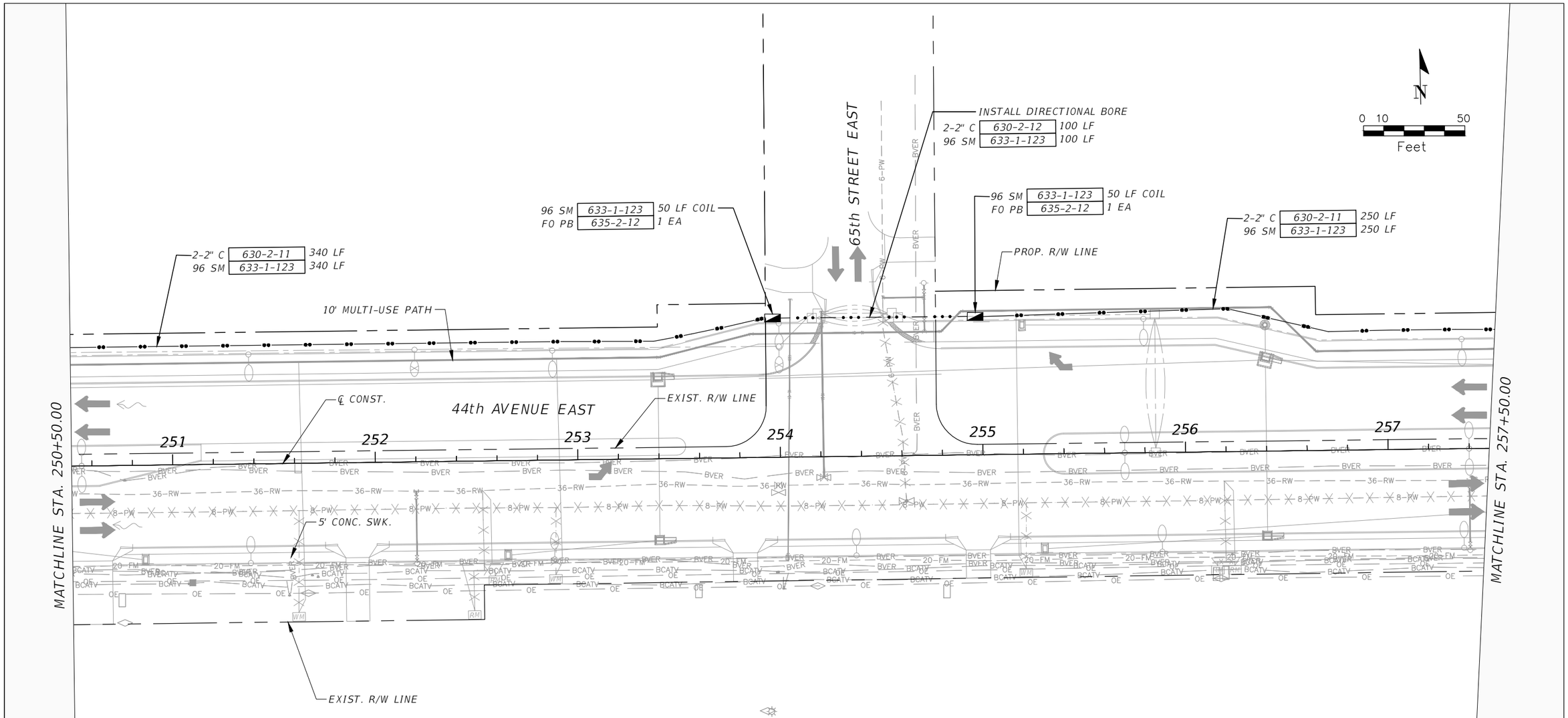

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DRAWN BY: D. POWELL
CHECKED BY: P. O'SHEA

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DESIGN ENGINEER: PATRICK B. NEVAH, P.E.
FL. LICENSE NO.: P.E. No. 72369

INTERCONNECT PLANS (14)

SHEET NO.: T-22

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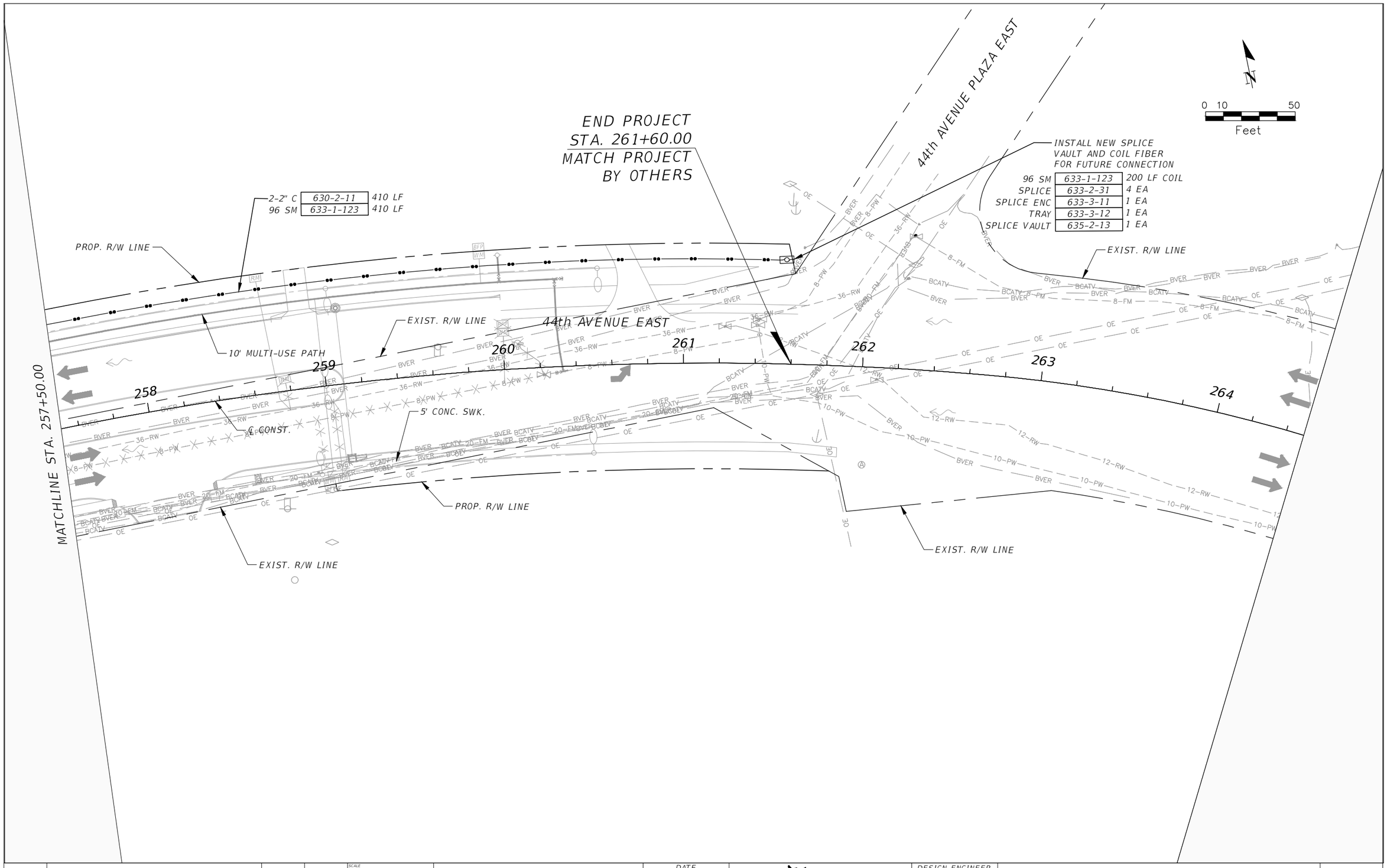

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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
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DRAWN BY: D. POWELL
CHECKED BY: P. O'SHEA

AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 4/14/2017
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Manatee County FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

DESIGN ENGINEER: PATRICK B. NEVAH, P.E.
FL. LICENSE NO.: P.E. No. 72369

INTERCONNECT PLANS (15)

SHEET NO.: T-23

Cary, Emy 8/14/2017 12:48:55 PM S:\Projects_RDWY\ProjFdot\ProjFDOT\V8\60460213000\signals\PLANSG03.dwg

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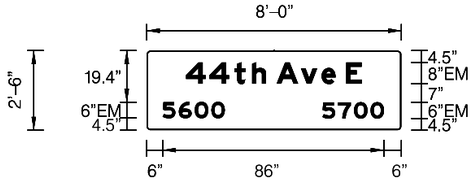
HEIGHT	2'-6"	RADII	1.5"			
LEGEND	White	COLOR	White			
COLOR	Green					

SYMBOL(S)	ANGLE	X	Y	WID	HT

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



NOTE:
ELECTRICAL INFORMATION (SIGN WATTAGE AND VOLTAGE) TO BE PROVIDED AS PART OF THE AS-BUILT PLANS.

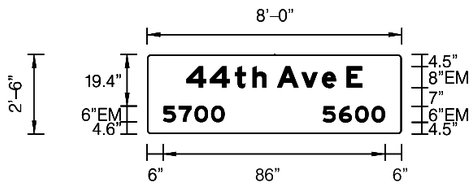
NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE

COPY		4	4	t	h		A	v	e		E		L												
SPACE	14.9	8.8	9.4	6.7	5.3	4	9.1	7.8	5.3	4	5.9	14.9	66.2												
COPY		5	6	0	0		L																		
SPACE	6	6.1	6.1	6.2	5	66.6	23.4																		
COPY		5	7	0	0		L																		
SPACE	66.8	5.9	6.1	6.2	5	6	23.2																		
COPY																									
SPACE																									
COPY																									
SPACE																									
COPY																									
SPACE																									

SIGN NAME	B		QTY	1	SIGN NUMBER	STATION(S)
PANEL		BORDER				none
WIDTH	8'-0"	WIDTH	0.5"			
HEIGHT	2'-6"	RADII	1.5"			
LEGEND	White	COLOR	White			
COLOR	Green					

SYMBOL(S)	ANGLE	X	Y	WID	HT

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



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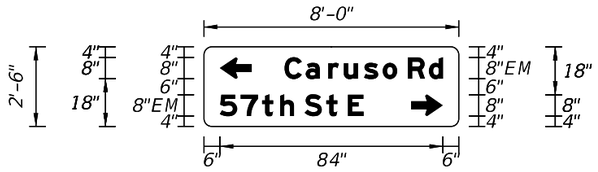
NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE

COPY		4	4	t	h		A	v	e		E		L												
SPACE	14.9	8.8	9.4	6.7	5.3	4	9.1	7.8	5.3	4	5.9	14.9	66.2												
COPY		5	7	0	0		L																		
SPACE	6	5.9	6.1	6.2	5	66.8	23.2																		
COPY		5	6	0	0		L																		
SPACE	66.6	6.1	6.1	6.2	5	6	23.4																		
COPY																									
SPACE																									
COPY																									
SPACE																									
COPY																									
SPACE																									

SIGN NAME	C		QTY	1	SIGN NUMBER	STATION(S)
PANEL		BORDER				none
WIDTH	8'-0"	WIDTH	0.5"			
HEIGHT	2'-6"	RADII	1.5"			
LEGEND	White	COLOR	Green			
COLOR	Green					

SYMBOL(S)	ANGLE	X	Y	WID	HT
AR_Type D	90	6	18	8	12
AR_Type D	270	78	4	8	12

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



NOTE:
ELECTRICAL INFORMATION (SIGN WATTAGE AND VOLTAGE) TO BE PROVIDED AS PART OF THE AS-BUILT PLANS.

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

COPY		C	a	r	u	s	o		R	d		L													
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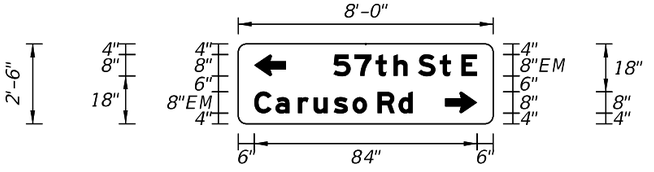
COPY		5	7	t	h		S	t		E		L													
SPACE	6	7.8	8.1	6.7	5.3	4	8.2	4.2	4	5.9	35.8	54.2													
COPY																									
SPACE																									
COPY																									
SPACE																									
COPY																									
SPACE																									
COPY																									
SPACE																									

SIGN NAME	D		QTY	1	SIGN NUMBER	STATION(S)
PANEL		BORDER				none
WIDTH	8'-0"	WIDTH	0.5"			
HEIGHT	2'-6"	RADII	1.5"			
LEGEND	White	COLOR	Green			
COLOR	Green					

SYMBOL(S)	ANGLE	X	Y	WID	HT
AR_Type D	90	6	18	8	12
AR_Type D	270	78	4	8	12

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



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

COPY		5	7	t	h		S	t		E		L													
SPACE	35.9	7.8	8.1	6.7	5.3	4	8.2	4.2	4	5.9	6	54.2													
COPY		C	a	r	u	s	o		R	d		L													
SPACE	6	8	8.5	5.9	7.6	7	5.4	4	7.9	5.3	30.3	59.7													
COPY																									
SPACE																									
COPY																									
SPACE																									
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COPY																									
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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: P. NEVAH
DRAWN BY: D. POWELL
CHECKED BY: P. O'SHEA

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CERTIFICATE OF AUTHORIZATION: 8115

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

DESIGN ENGINEER: PATRICK B. NEVAH
FL. LICENSE NO.: P.E. No 72369

STREET NAME SIGN WORKSHEET

SHEET NO.: T-24

6:42:41 PM 8/14/2017 S:\Projects_RDWY\ProjFdot\ProjFDOT\V8\6046021300O\signals\GSWKSG01.DGN

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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-ORNAMANERTAL, 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. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL ELEVATIONS LISTED HEREIN.

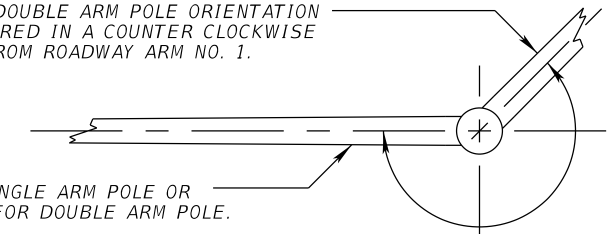
D. INFORMATION BELOW IS FOR DESIGN PURPOSES ONLY. FIELD ADJUSTMENTS MAY BE REQUIRED.

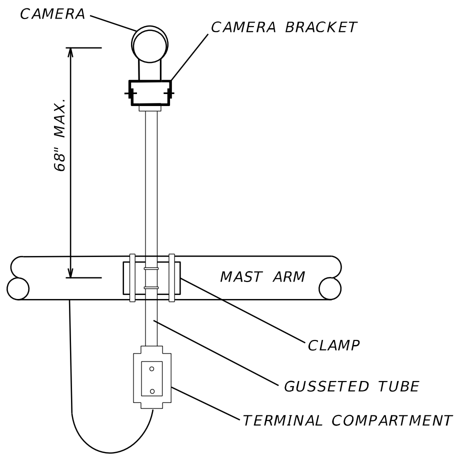
E. SEE APPROPRIATE PLAN SHEET FOR PROPOSED SIGNAL HEAD ALIGNMENTS AND SIGN CONFIGURATION/LOCATION.

F. BACKPLATES REQUIRED FOR ALL SIGNAL HEADS.

G. CONTRACTOR SHALL COORDINATE WITH MANATEE COUNTY FOR THE ACCEPTABLE AND COMPATIBLE VIDEO DETECTION BRACKET TO USE.

H. ALL POLES SHALL BE GALVANIZED, NON-PAINTED FINISH.





CAMERA MOUNTING DETAIL
(CONTACT MAINTAINING AGENCY FOR MOUNTING PREFERENCES.)

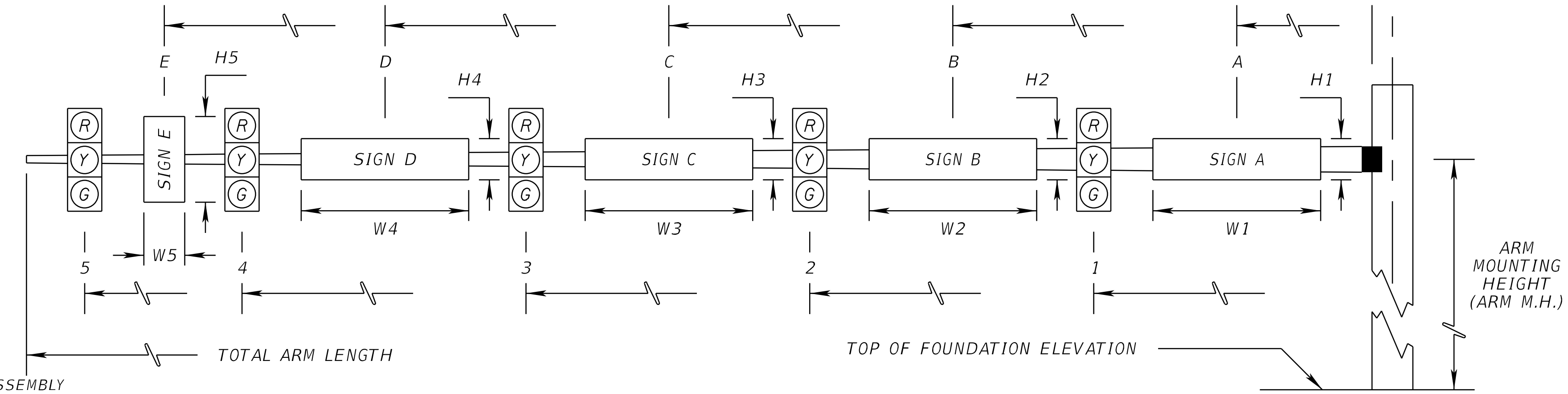
VEHICLE DETECTOR LOCATION NOTES:

SIGNAL POLE NO. 1:
VIDEO VEHICLE DETECTOR 44' FROM FACE OF POLE,
ADVANCE VEHICLE DETECTOR 32' FROM FACE OF POLE.

SIGNAL POLE NO. 2:
VIDEO VEHICLE DETECTOR 67' FROM FACE OF POLE,
ADVANCE VEHICLE DETECTOR 55' FROM FACE OF POLE.

SIGNAL POLE NO. 3:
VIDEO VEHICLE DETECTOR 62' FROM FACE OF POLE,
ADVANCE VEHICLE DETECTOR 50' FROM FACE OF POLE.

SIGNAL POLE NO. 4:
VIDEO VEHICLE DETECTOR 36' FROM FACE OF POLE,
ADVANCE VEHICLE DETECTOR 28' FROM FACE OF POLE.



* DENOTES NUMBER OF SECTIONS IN SIGNAL HEAD ASSEMBLY
** EXISTING RELOCATED TRAFFIC SIGNAL

SIGNAL DATA

POLE NO.	SHEET NO.	LOCATION BY STA.	TOP OF FOUNDATION ELEVATION	RDWY ARM NO.	CROWN ELEV.	SIGNAL V/H	BACK PLATES Y/N	PED. SIGNAL Y/N	DISTANCE FROM POLE 1	*	2	*	3	*	4	*	5	*	TOTAL ARM LENGTH	ARM M.H.	∠ BETWEEN DUAL ARMS 90/270
EX-1	T-7	165+97.2	---	1	---	V	Y	N	40.0	4	50.5	3	60.0	5					70.5	---	---
				2	---	V	Y	N	**20.0	3	**32.0	3	43.5	3	55.0	3			62.0	---	
1	T-8	218+53.5	15.56	1	15.51	V	Y	N	15.0	5	26.0	3	38.0	3	50.0	4			55.0	20.5	
				2																	
2	T-8	219+98.3	14.95	1	14.84	V	Y	N	50.0	5	61.0	3	73.0	4					78.0	20.5	
				2																	
3	T-8	220+30.9	13.21	1	14.76	V	Y	N	33.0	5	44.0	3	56.0	3	68.0	4			70.5	22.0	
				2																	
4	T-8	218+97.7	14.85	1	14.55	V	Y	N	24.0	5	32.0	3	40.0	4					46.0	20.5	
				2																	
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				2																	

SIGN DATA — DISTANCE FROM POLE / HEIGHT AND WIDTH OF SIGN

POLE NO.	RDWY ARM NO.	A	H1	W1	B	H2	W2	C	H3	W3	D	H4	W4	E	H5	W5	PAINT COLOR
EX-1	1																
	2																
1	1	8.0	2.5	8.0										46.0	3.0	2.5	NONE
	2																
2	1	32.0	2.5	8.0													NONE
	2																
3	1	10.0	2.5	8.0										64.0	3.0	2.5	NONE
	2																
4	1	14.0	2.5	8.0													NONE
	2																
	1																
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NOTE: SEE REFERENCE SHEETS R1, R2, R3 AND R4 FOR EXISTING SIGNAL POLE EX. 1 INFORMATION

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: P. NEVAH
DRAWN BY: D. POWELL
CHECKED BY: P. O'SHEA

AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 4/14/2017
PROJECT NO. 6086960

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

DESIGN ENGINEER: PATRICK B. NEVAH
FL. LICENSE NO. P.E. No 72369

MAST ARM TABULATION

SHEET NO. T-25

STANDARD MAST ARM ASSEMBLIES DATA TABLE

Table Date 01-01-12

STRUCTURE ID NUMBERS	ASSEMBLY NUMBERS (1)	FIRST ARM			SECOND ARM			UF (deg)	LL (deg)	POLE				SPECIAL DRILLED SHAFT (4)							
		ARM TYPE	FAA (2) (ft.)	FBA (2) (in.)	ARM TYPE	FAA (2) (ft.)	FBA (2) (in.)			POLE TYPE	UAA (3) (ft.)	UB (ft.)	UCA (3) (in.)	DA (ft.)	DB (ft.)	RA	RB	RC	RD (in.)	RE	RF (in.)
POLE 1	E5-T3	E5	29.8	6.83	N/A	N/A	N/A	N/A	N/A	T3	23.5	20.5	15.75	24.5	4.5	11	16	11	8	14	12
POLE 2	E7-T6	E7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	T6	23.5	20.5	18.75	24.5	4.5	11	16	11	8	14	12
POLE 3	E6-T4	E6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	T4	25.0	22.0	18.53	24.5	4.5	11	16	11	8	14	12
POLE 4	E3-T22 LUM	E3	N/A	N/A	N/A	N/A	N/A	N/A	45	T22 LUM	39.0	20.5	10.57	24.5	4.0	11	14	11	8	14	12

TABLE NOTES:

1. Assembly Number Legend

   Single Arm:
   Arm Type - Pole Type = D# - S#
   = E# - T#

   Double Arm:
   First Arm Type - Second Arm Type - Pole Type = D# - D# - S#
   = E# - E# - T#

2. If an entry appears in columns "FAA" and "FBA", a shorter arm is required. This is obtained by removing length from the arm tip. For these cases the mast arm length shall be shortened from "FA" to "FAA" and the tip diameter shall be increased from "FB" to "FBA".

3. If an entry appears in columns "UAA" and "UCA", a shorter or longer pole is required. This is obtained by keeping the pole base diameter as shown in Index No. 17743 and adjusting the length of the pole tip diameter.

4. Foundation Notes for Standard Mast Arm Assemblies:
   Foundation designs are based on the Soil borings included in these plans.

   Assumptions and Values used in design:

SOIL PARAMETERS FOR MAST ARM DESIGN

UPRIGHT POLE NUMBER	SOIL BORING	SOIL TYPE	SOIL LAYER DEPTH (ft)	SOIL SHEAR STRENGTH (psf)	SOIL FRICTION ANGLE (DEGREES)	AVERAGE SPT "N" VALUE	SUBMERGED SOIL WEIGHT (pcf)
1	MA-01	Sand	0-30	N/A	29	8	49.6
2	MA-02	Sand	0-30	N/A	29	15	49.6
3	MA-03	Sand	0-30	N/A	29	11	49.6
4	MA-04	Sand	0-30	N/A	29	8	49.6

Design Water Table is at Soil Surface.

Contractor is responsible for reviewing the soil bearings prior to installing foundations. Caving soils may be encountered during the excavations. Ensure that the minimum embedment depths are achieved, and the bottom of the shafts are free of drilling spoil and other loose material.

GENERAL NOTES:

1. 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.

2. Work with the Florida Department of Transportation FY 2016-17 Design Standards Index Nos. 17743 and 17745.

3. The design wind speed is 130 mph.

POLE 4 SHALL HAVE A LUMINAIRE. SEE LIGHTING PLANS FOR ADDITIONAL INFORMATION.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: GRP
DRAWN BY: EJC
CHECKED BY: VVW

GEORGE PAPADOPOULOS, P.E.
P.E. No. 55843
AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 02/16/18
PROJECT NO.: 6086960

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

DESIGN ENGINEER: GEORGE R. PAPADOPOULOS
FL. LICENSE NO.: 55843

STANDARD MAST ARM ASSEMBLIES DATA TABLE

SHEET NO.: T-26

MANATEE CO. ITS POLE SCHEDULE

POLE DEVICE DESIGNATION	STATION	OFFSET	PLAN SHEET	POLE TYPE	DEVICE TYPE	DEVICE MOUNTING HEIGHT (FT)	EXPOSED POLE HEIGHT (FT)	EMBEDMENT DEPTH (FT)
CCTV #1	165+90	52', LT	T-9	P-III	CCTV	39	40	15
CCTV #2/MVDS #1	186+85	55', LT	T-12	P-III	CCTV/MVDS	39/18	40	15
CCTV #3	218+80	65', RT	T-17	P-III	CCTV	39	40	15
CCTV #4/MVDS #2	244+00	55', LT	T-21	P-III	CCTV/MVDS	39/18	40	15

GENERAL NOTES:

1. CONCRETE POLES SHALL MEET THE REQUIREMENTS OF FDOT DESIGN STANDARDS INDEX NO. 17725.

2. FOUNDATIONS FOR POLES SHALL BE 3'6" IN DIAMETER AND SHALL MEET THE "INSTALLATION REQUIREMENTS" FOR FOOTINGS AS INDICATED IN FDOT SPECIFICATION SECTION 641.

3. CONSTRUCT THE FOOTINGS WITH CONCRETE AS SPECIFIED IN FDOT SPECIFICATION SECTION 347.

4. POLES SHALL BE INSTALLED PLUMB.

5. PROVIDE AN ALUMINUM IDENTIFICATION TAG FOR EACH POLE. INFORMATION SHALL INCLUDE: THE COUNTY PROJECT NUMBER, THE POLE MANUFACTURER, THE POLE TYPE NUMBER, AND THE POLE LENGTH.

6. SUBMIT SHOP DRAWINGS FOR ALL POLES.

7. PROVIDE A 2 1/2" THREADED FEMALE NIPPLE CAST IN POLE WITHIN A MAXIMUM OF 2' BELOW MVDS OR CCTV MOUNTING HEIGHT. PROVIDE A 2" WEATHER HEAD FOR CABLE DRIP LOOP.

8. IF THE CONTRACTOR WISHES TO USE TYPE P-IV POLES INSTEAD OF TYPE P-III POLES, PROVIDE SYMMETRICAL REINFORCING FOR THE CONCRETE POLE.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: GRP
DRAWN BY: EJC
CHECKED BY: VVW

GEORGE PAPADOPOULOS,
P.E. NO. 55843
AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 02/16/2018
PROJECT NO.: 6086960

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

DESIGN ENGINEER: GEORGE PAPADOPOULOS, P.E.
FL. LICENSE NO.: P.E. NO. 72369

ITS POLE SCHEDULE AND NOTES

SHEET NO.: T-27

$TIME$ $DATE$ $FILE$

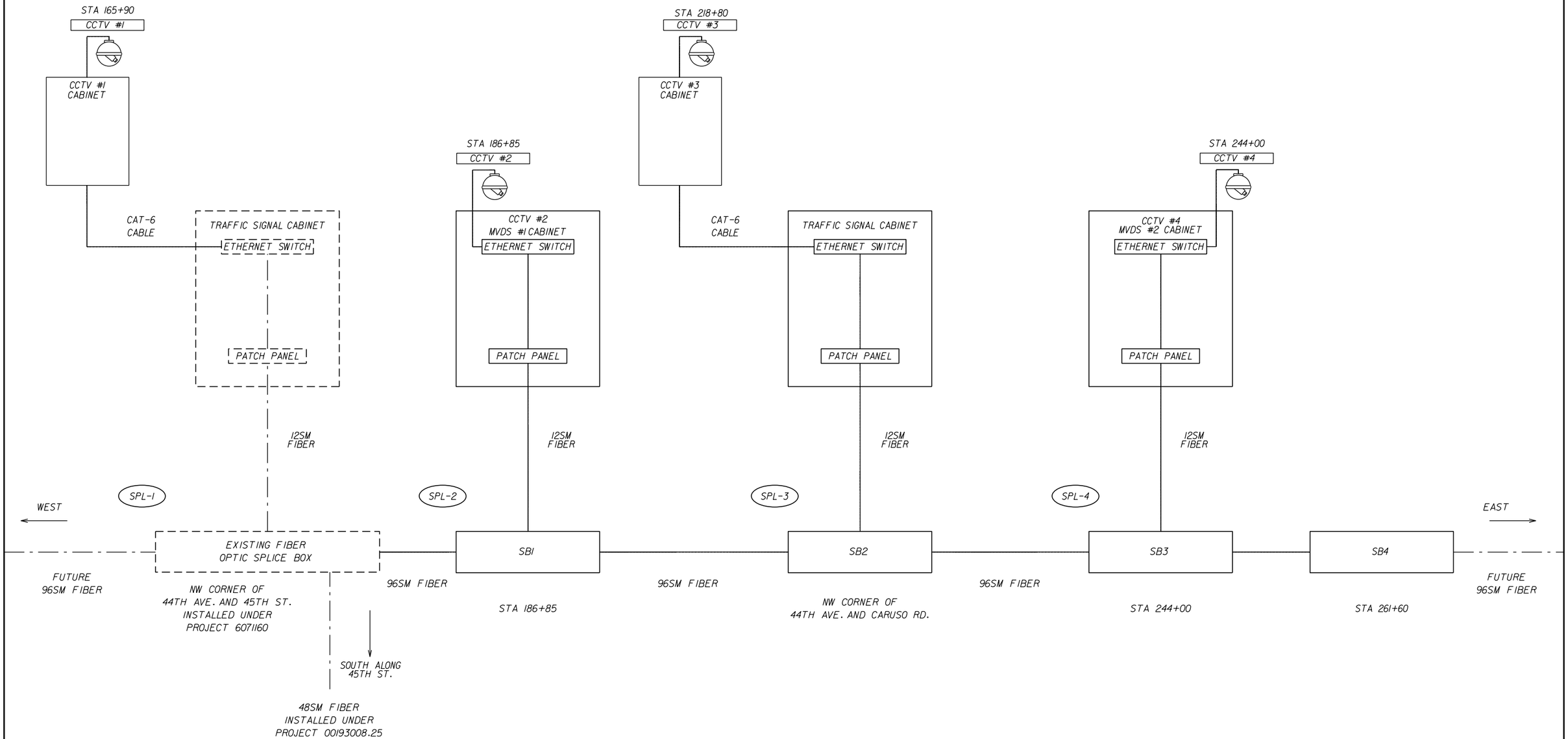
LEGEND:

SPL-X = SPLICE DETAIL NUMBER

SB# = UNDERGROUND SPLICE BOX

—— - —— = EXISTING FIBER

———— = PROPOSED FIBER



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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: A. MOUSADI
DRAWN BY: D. POWELL
CHECKED BY: P. NEVAH

AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 2/16/18
PROJECT NO.: 6086960

Manatee County FLORIDA

DESIGN ENGINEER: ALEXIS MOUSADI, P.E.
FL. LICENSE NO.: P.E. No 50764

COMMUNICATION OVERVIEW

SHEET NO.: T-28

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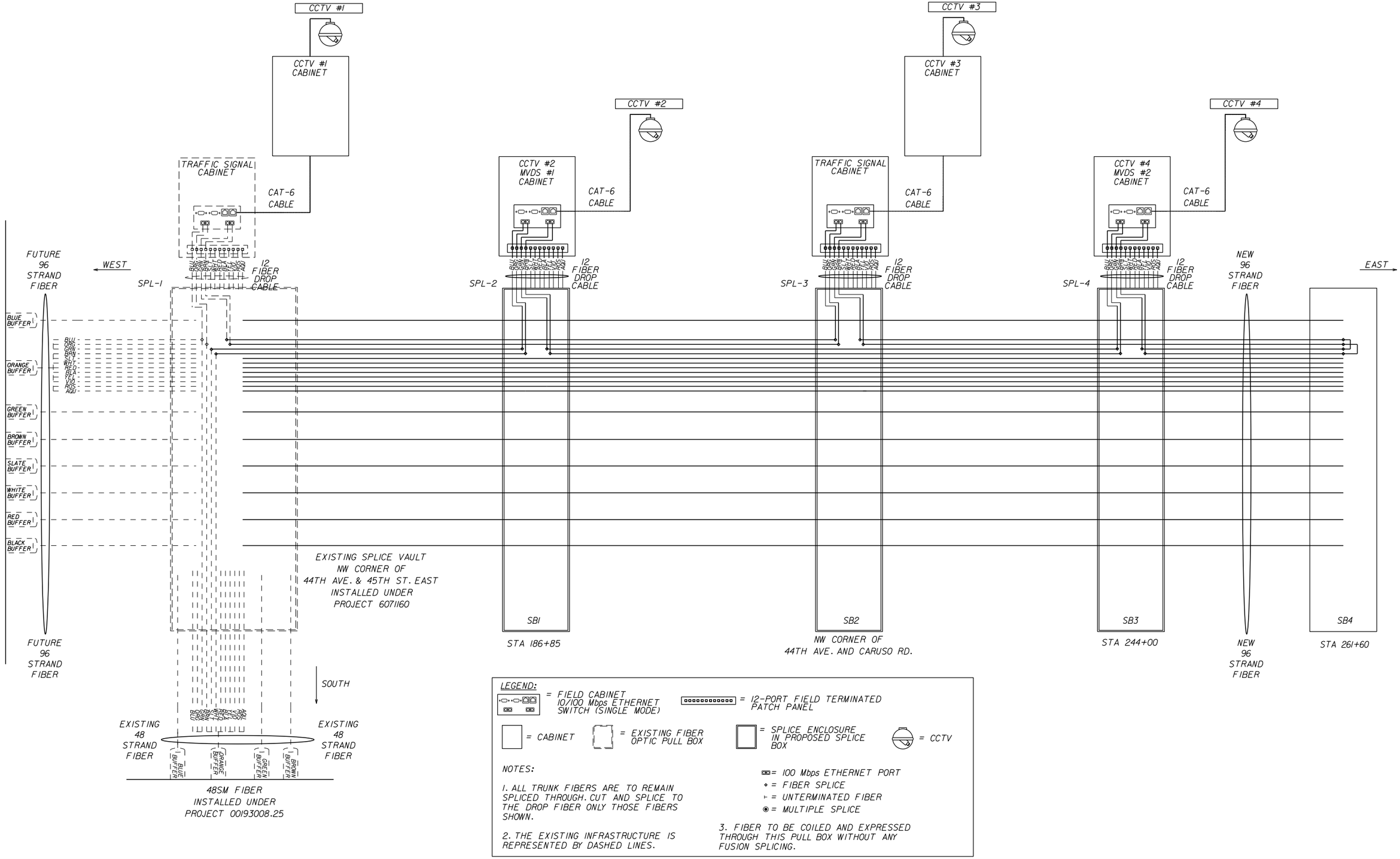

LEGEND:

= FIELD CABINET 10/100 Mbps ETHERNET SWITCH (SINGLE MODE)

= 12-PORT FIELD TERMINATED PATCH PANEL

= CABINET

= EXISTING FIBER OPTIC PULL BOX

= SPLICE ENCLOSURE IN PROPOSED SPLICE BOX

= CCTV

NOTES:

1. ALL TRUNK FIBERS ARE TO REMAIN SPLICED THROUGH. CUT AND SPLICE TO THE DROP FIBER ONLY THOSE FIBERS SHOWN.

2. THE EXISTING INFRASTRUCTURE IS REPRESENTED BY DASHED LINES.

= 100 Mbps ETHERNET PORT

= FIBER SPLICE

= UNTERMINATED FIBER

= MULTIPLE SPLICE

3. FIBER TO BE COILED AND EXPRESSED THROUGH THIS PULL BOX WITHOUT ANY FUSION SPLICING.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: A. MOUSADI
DRAWN BY: D. POWELL
CHECKED BY: P. NEVAH

AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 2/16/18

PROJECT NO.: 6086960

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

DESIGN ENGINEER: ALEXIS MOUSADI, P.E.

FL. LICENSE NO.: P.E. No 50764

FIBER OPTIC SPLICE DETAILS

SHEET NO.: T-29

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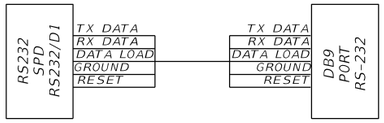
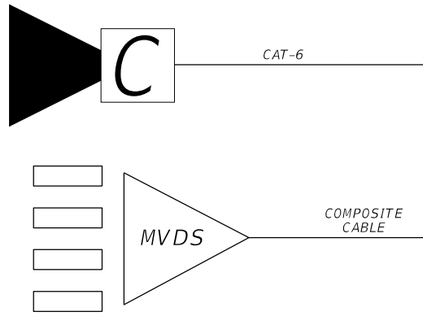
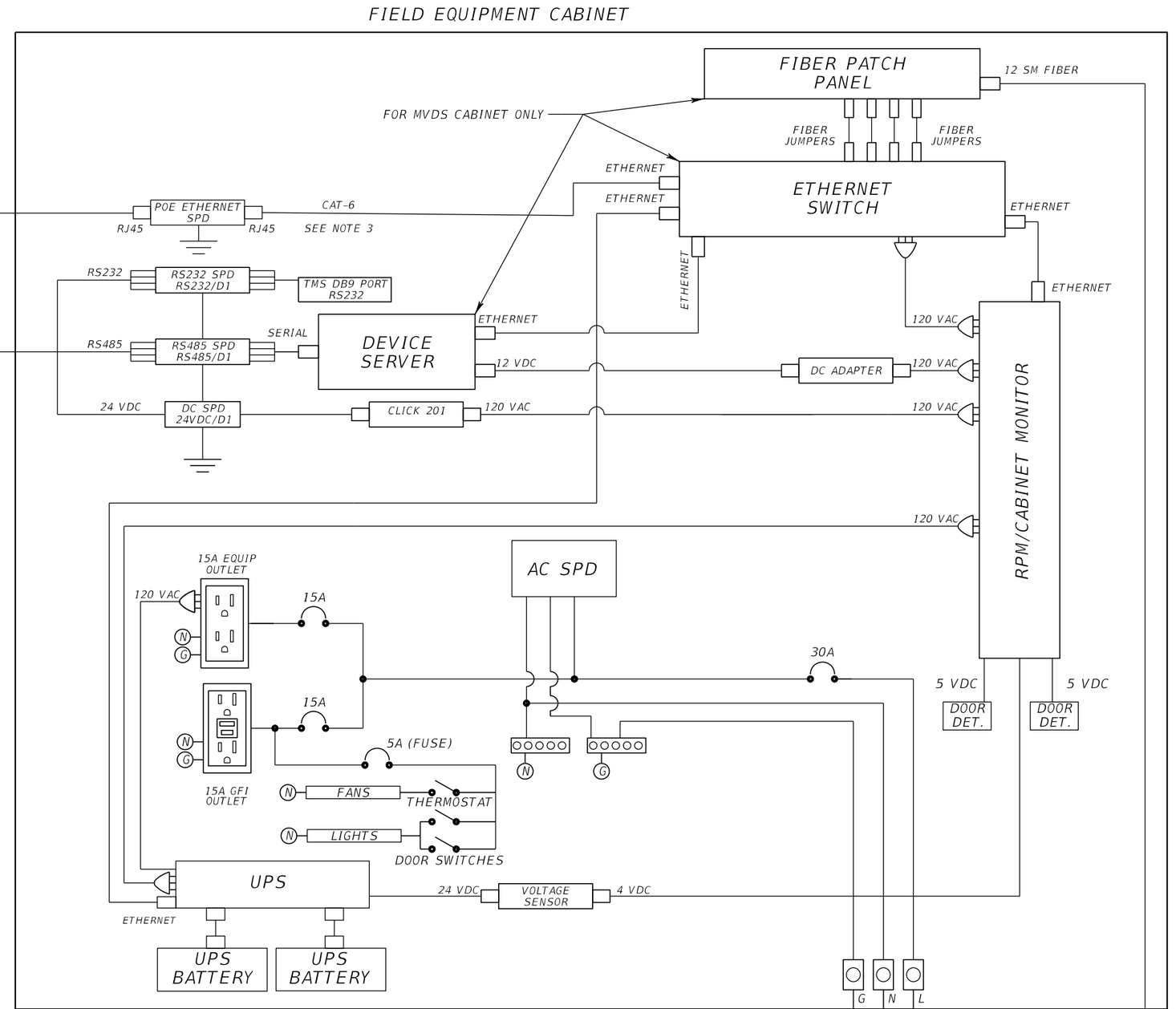
CCTV OR MVDS CONNECTION DIAGRAM



MAINTENANCE PORT WIRING DETAIL





NOTES:

1. ENSURE THAT THERE IS SUFFICIENT SLACK IN THE CABLE SO THAT THE BATTERY PLANT CAN BE PULLED OUT AND ACCESSED. STORE SENSOR CABLE SLACK INSIDE UPS BATTERY TRAY. COST FOR UPS BATTERY PLANT CABLE SLACK SHALL BE INCIDENTAL TO THE CABINET/ ENVIRONMENTAL MONITOR PAY ITEM.
2. INSTALL DRY CONTACT AND WIRING CAPABLE OF REMOTE SNMP COMMUNICATIONS AS DIRECTED IN PLANS.
3. CCTV CAT-6 CABLE SHALL BE ROUTED TO TRAFFIC SIGNAL CABINET FOR 45TH AVENUE AND CARUSO ROAD ONLY. REFER TO WIRING DIAGRAM (2) FOR MORE DETAILS.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: A. MOUSADI
DRAWN BY: D. POWELL
CHECKED BY: P. NEVAH

AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 2/16/18
PROJECT NO.: 6086960

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

DESIGN ENGINEER: ALEXIS MOUSADI, P.E.
FL. LICENSE NO.: P.E. No 50764

WIRING DIAGRAM (1)

SHEET NO.: T-30

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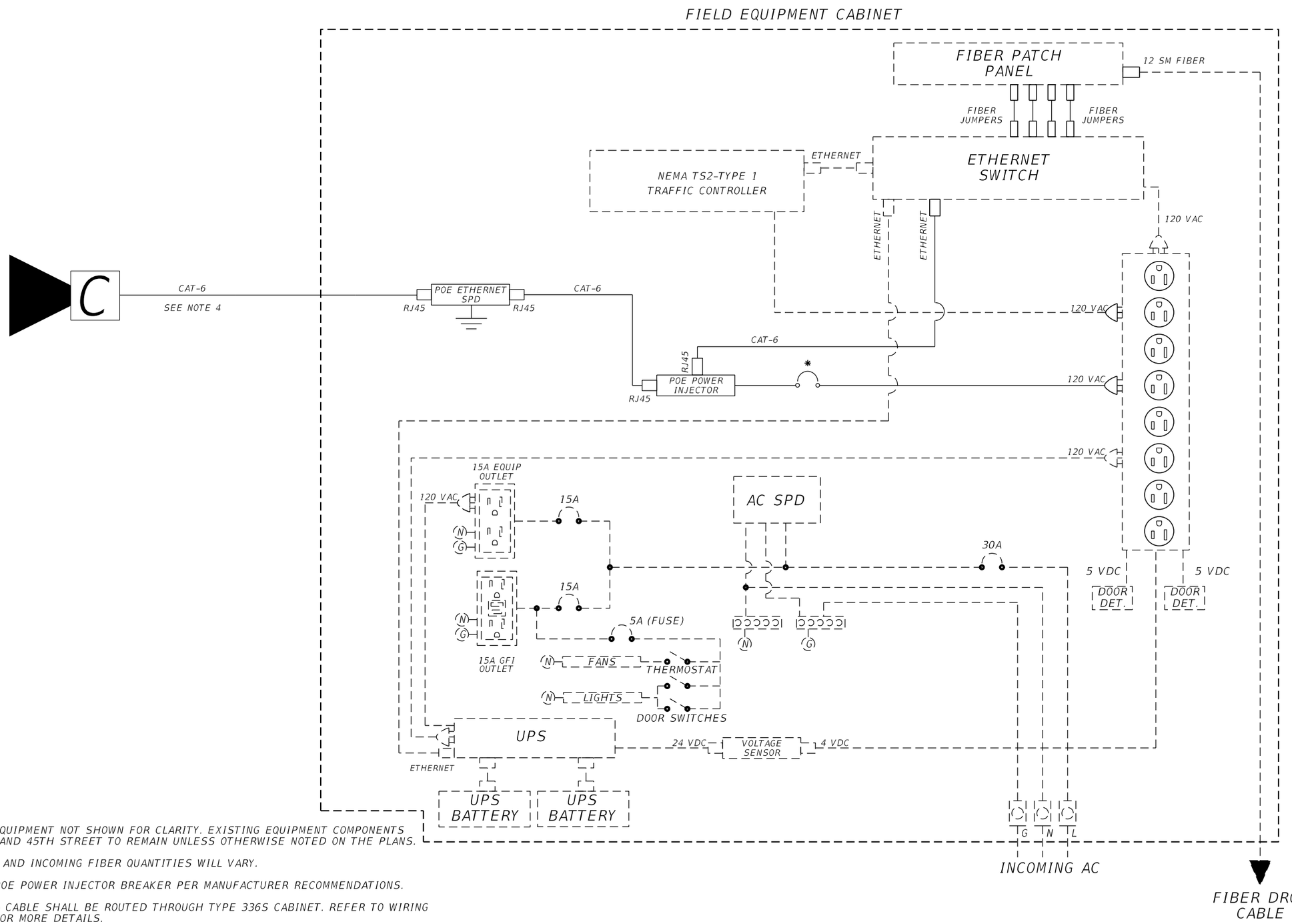
CCTV & TRAFFIC SIGNAL CONTROL CONNECTION DIAGRAM

N.T.S.



NOTES:

1. NOTE ALL EQUIPMENT NOT SHOWN FOR CLARITY. EXISTING EQUIPMENT COMPONENTS AT 44TH AVE AND 45TH STREET TO REMAIN UNLESS OTHERWISE NOTED ON THE PLANS.
2. EQUIPMENT AND INCOMING FIBER QUANTITIES WILL VARY.
3. * CAMERA POE POWER INJECTOR BREAKER PER MANUFACTURER RECOMMENDATIONS.
4. CCTV CAT-6 CABLE SHALL BE ROUTED THROUGH TYPE 336S CABINET. REFER TO WIRING DIAGRAM (1) FOR MORE DETAILS.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: A. MOUSADI
DRAWN BY: D. POWELL
CHECKED BY: P. NEVAH

AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 2/16/18

PROJECT NO.: 6086960

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

DESIGN ENGINEER: ALEXIS MOUSADI, P.E.

FL. LICENSE NO.: P.E. No 50764

WIRING DIAGRAM (2)

SHEET NO.: T-31

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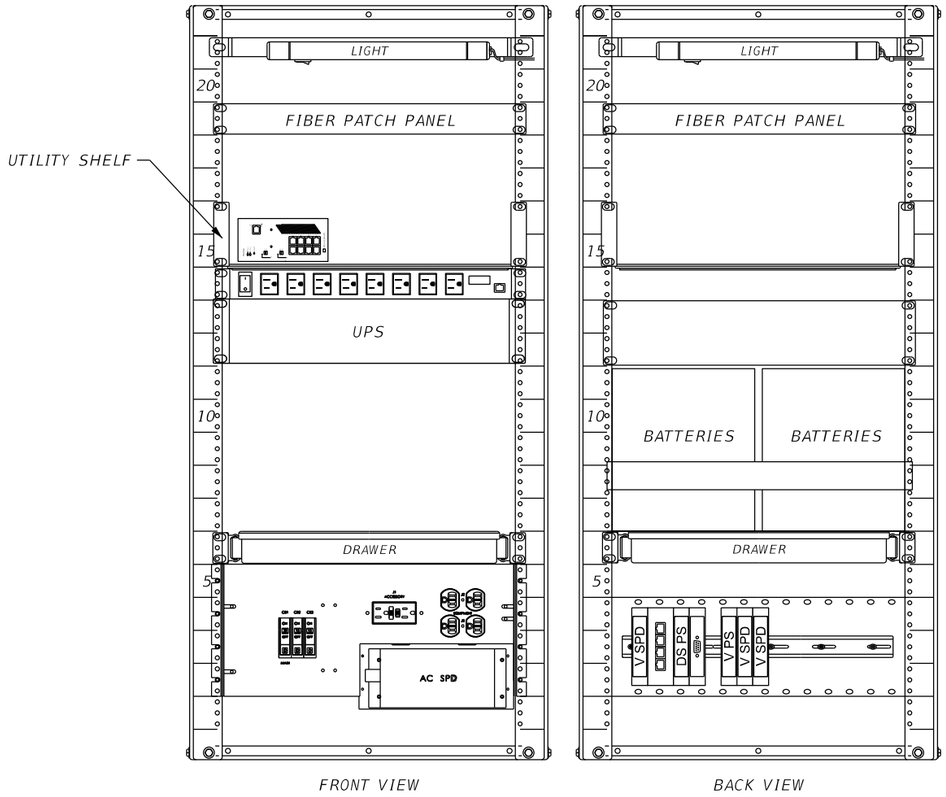
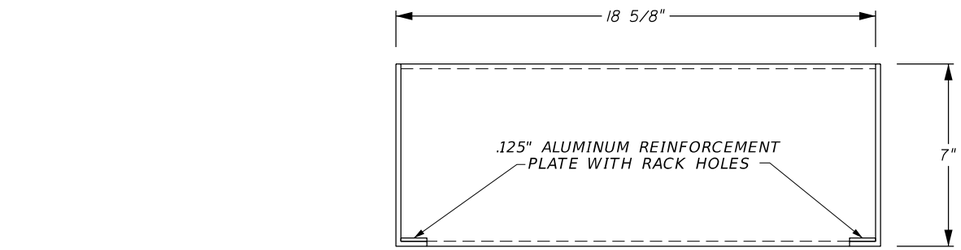


FRONT VIEW BACK VIEW

CCTV OR MVDS CABINET LAYOUT



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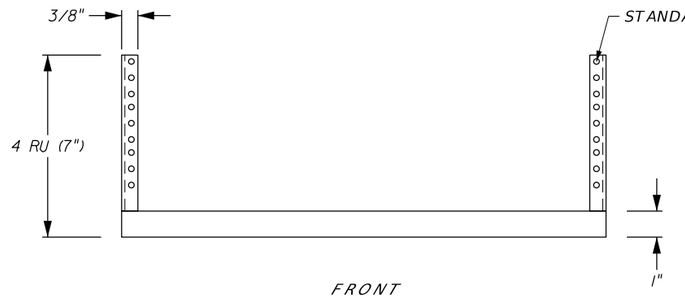

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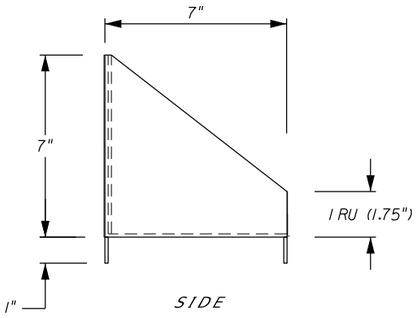

SIDE

BATTERY SHELF DETAIL

LEGEND:

- V PS — MVDS POWER SUPPLY
- MVDS DB-9 MAINTENANCE PORT
- V SPD — CCTV OR MVDS SPD
- DS PS — DEVICE SERVER POWER SUPPLY
- ETHERNET SWITCH
- DEVICE SERVER
- REMOTE POWER MANAGEMENT DEVICE

NOTES:

1. THE CABINET SHALL PROVIDE FOR RACK MOUNTING AND SHELVING OF ALL EQUIPMENT.
2. CABINETS SHALL BE TYPE 336S AND SHALL MEET FDOT SECTION 676.
3. CABINETS SHALL BE PLACED, AS SHOWN, 3' FROM BOTTOM OF CABINET TO GRADE.
4. CABINET SHALL NEVER BE MOUNTED ON THE APPROACHING SIDE OF TRAFFIC.
5. IT IS THE INTENT OF THE ENGINEER TO PROVIDE A SAFE WORKING SPACE FOR THE FIELD TECHNICIANS.
6. BATTERY SHELF SHALL BE OF .125" THICK 5052 ALUMINUM WITH FINE BRUSH FINISH. MOUNT SHELF BEHIND RACK RAIL. INSTALL RACK SCREWS FRONT TO BACK WITH LOCK WASHERS AND NUTS. INSTALL A MINIMUM OF SIX RACK SCREWS, 4 TOP HOLES, 2 BOTTOM HOLES.
7. REFER TO WIRING DIAGRAMS FOR MORE INFORMATION.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: A. MOUSADI
DRAWN BY: D. POWELL
CHECKED BY: P. NEVAH

AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 2/16/18
PROJECT NO.: 6086960

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

DESIGN ENGINEER: ALEXIS MOUSADI, P.E.
FL. LICENSE NO.: P.E. No 50764

CABINET DETAIL (1)

SHEET NO.: T-32

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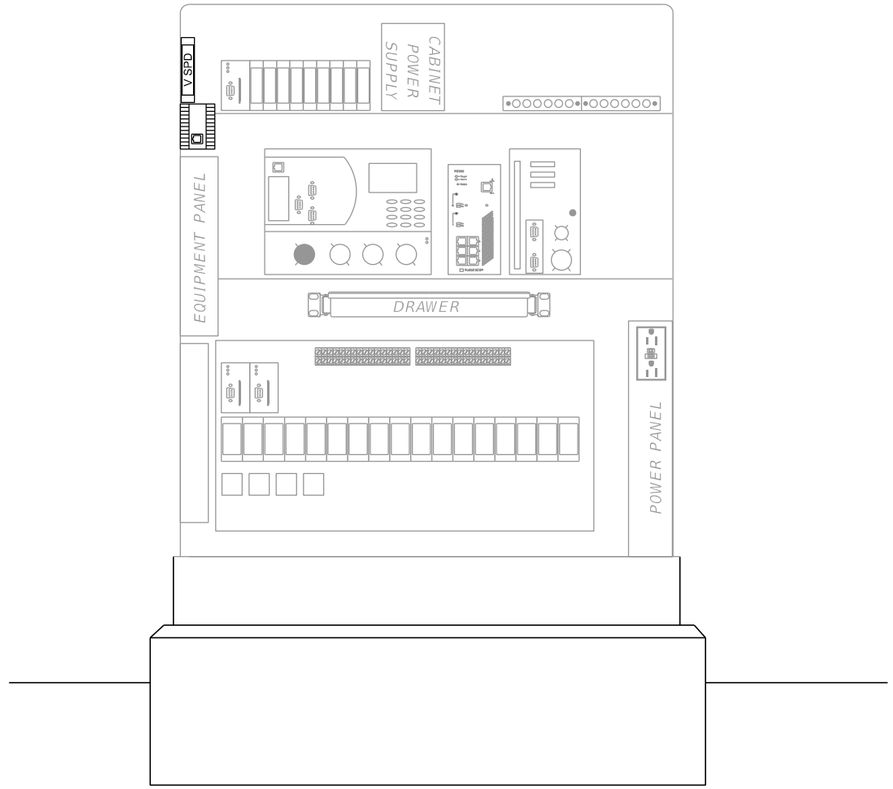
NOTES:

1. CONTRACTOR SHALL FURNISH AND INSTALL NEW EQUIPMENT AS SHOWN ON THE PLANS. CONTRACTOR TO REARRANGE THE EXISTING EQUIPMENT AND REWIRE THE CABINET AS NEEDED TO MATCH PROPOSE LAYOUT.

2. THE TYPE AND QUANTITY OF EXISTING EQUIPMENT WILL VARY AT EACH LOCATION. INTENT OF THIS DETAIL IS TO SHOW NEW CCTV EQUIPMENT.

3. THE EXISTING POWER PANEL AND POWER SPD EQUIPMENT WILL VARY IN HEIGHT.

3. CONTRACTOR SHALL NOTIFY MAINTENANCE AGENCY PRIOR TO REARRANGING THE EXISTING EQUIPMENT.



NEMA TRAFFIC SIGNAL CABINET

LEGEND:

- NEMA TS2 TYPE 1 TRAFFIC CONTROLLER
- ETHERNET SWITCH
- DETECTOR CARD RACK
- MMU
- PATCH PANEL
- POE POWER INJECTOR
- POE SPD

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: A. MOUSADI
DRAWN BY: D. POWELL
CHECKED BY: P. NEVAH

AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 2/16/18
PROJECT NO.: 6086960

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

DESIGN ENGINEER: ALEXIS MOUSADI, P.E.
FL. LICENSE NO.: P.E. No 50764

CABINET DETAIL (2)

SHEET NO.: T-33

2:09:13 PM 2/16/2018
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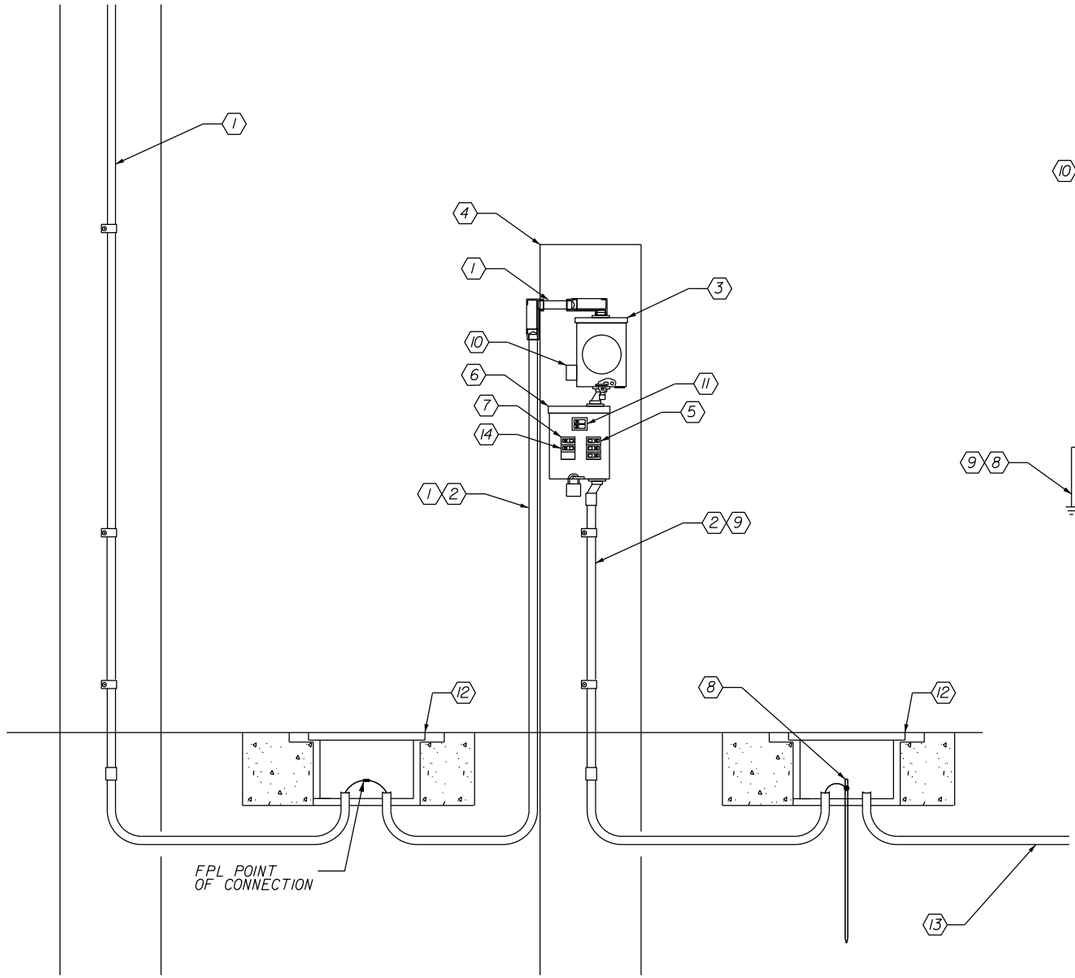
REFERENCE NOTES:

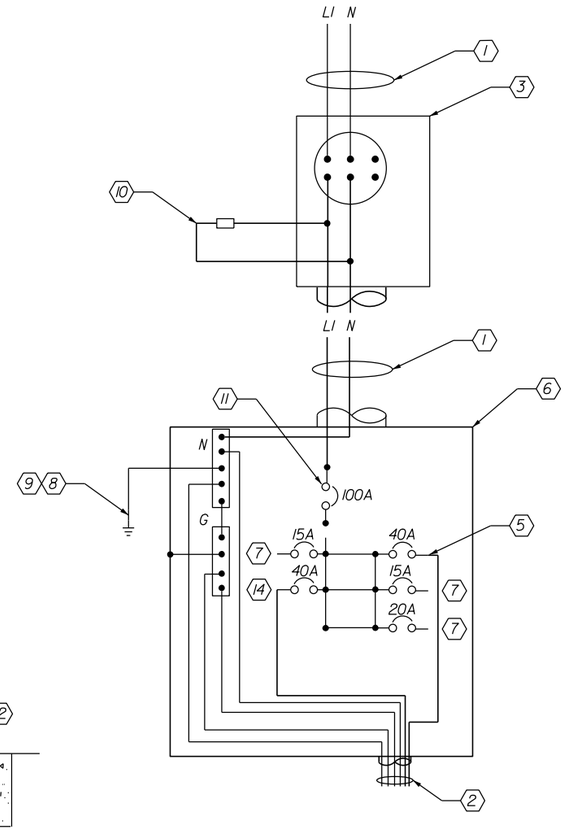
1. 120V, 2#2 AWG SINGLE PHASE SERVICE ENTRANCE CONDUCTORS, IN SIZE 2" RIGID GALVANIZED STEEL CONDUIT.
2. 2" RIGID GALVANIZED STEEL CONDUIT.
3. METER SOCKET WITH MANUAL BY-PASS DRAW BY CONTRACTOR. METER CAN WILL HAVE BLANK COVER IN LIEU OF METER PER FPL REQUIREMENTS.
4. CONCRETE POLE, PRETRESSED TYPE P-11, 12' LONG.
5. 40A/1P, BRANCH CIRCUIT BREAKER SERVICING NEW TRAFFIC SIGNAL CABINET.
6. 100A RATED, 120V, 1 PHASE, 6 CIRCUIT PANELBOARD WITH COPPER BUSSING, INCLUDING NEUTRAL BUS, GROUND BUS IN A NEMA 3R SURFACE-MOUNT ENCLOSURE.
7. SPARE CIRCUIT BREAKER.
8. FURNISH AND INSTALL UL APPROVED COPPER CLAD STEEL GROUND ROD WITH MINIMUM 5/8" IN DIA. 40' LONG IN COMPLIANCE WITH NATIONAL ELECTRIC CODE (NEC) INCLUDING MAXIMUM RESISTANCE CRITERIA. INSTALL 6" UNDER FINAL GRADE AND BONDED TOGETHER WITH #6 AWG SOLID COPPER INSULATED GROUND WIRE BY EXOTHERMIC WELD PROCESS.
9. #6 AWG SOLID COPPER INSULATED GROUNDING ELECTRODE CONDUCTOR WIRE.
10. TYPE 1 SPD (SURGE ARRESTER) TO BE MOUNTED TO OUTSIDE OF METER IN COMPLIANCE WITH THE CURRENT NEC AND UL 1449 LATEST EDITION LISTED WITH A SHORT CIRCUIT CURRENT RATING OF MINIMUM 14,000 AMPS. SURGE ARRESTER TO BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND POWER COMPANY'S LATEST REQUIREMENTS FOR ELECTRICAL SERVICE AND METER INSTALLATION.
11. MAIN CIRCUIT BREAKER INTEGRAL TO PANELBOARD, 120V, 100 AMP, SINGLE POLE, S/N 60HZ SERVICE ENTRANCE RATED. 10,000 A.I.C. IN A NEMA 3R ENCLOSURE.
12. POWER PULL BOXES FURNISHED AND INSTALLED BY CONTRACTOR.
13. 2" PVC SCH 40 POWER CONDUIT.
14. 40A/1P, BRANCH CIRCUIT BREAKER SERVICING NEW MVDS AND CCTV CABINET. FOR 44TH AVE AND 45TH ST INTERSECTION PLEASE PROVIDE 40A/1P BRANCH BREAKER TO EXISTING PANEL FOR NEW CCTV CABINET. PROVIDE NEW CONDUIT FROM EXISTING ELECTRICAL PULL BOX.

NOTES:

1. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROVIDE A COMPLETE SERVICE ASSEMBLY AS PER THE TRAFFIC INFRASTRUCTURE DESIGN GUIDE, PLANS AND SERVICE SPECIFICATIONS.
   THE SERVICE INSTALLATION SHALL MEET THE LATEST REQUIREMENTS OF THE NATIONAL ELECTRIC CODE, FPL STANDARD ELECTRICAL SERVICE REQUIREMENTS, FDOT STANDARDS AND SPECIFICATIONS, NESC, AND OSHA.
2. ALL ABOVEGROUND CONDUIT SHALL BE RIGID GALVANIZED STEEL.
3. BUSBAR TO BE COPPER COATED AND HAVE A MINIMUM RATING OF 100 AMPS.
4. THE ENCLOSURE SHALL BE RIGIDLY ATTACHED TO THE POLE FACE.
5. ALL SERVICE EQUIPMENT SHALL BE U.L. APPROVED.
6. ALL NEUTRAL WIRES TO HAVE WHITE INSULATION. DO NOT USE WHITE OR GREEN INSULATED WIRES FOR UNGROUNDED CONDUCTORS.
7. ALL METAL CONDUITS SHALL BE BONDED TO GROUND BY MEANS OF A GROUND BUSHING AND BONDING CONDUCTOR PER NEC.
8. SEE PLAN SHEETS FOR APPROXIMATE LOCATION OF THE POINT OF CONNECTION. COORDINATE WITH POWER COMPANY FOR THE SERVICE SOURCE AND POINT OF CONNECTION, EXACT LOCATIONS AND THE NECESSARY REQUIREMENTS FOR A COMPLETE AND OPERATIONAL ELECTRICAL POWER SERVICE.



POWER SERVICE POINT DETAIL



ONE LINE DIAGRAM FOR SERVICE POINT

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: A. MOUSADI
DRAWN BY: D. POWELL
CHECKED BY: P. NEVAH

AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 2/16/18
PROJECT NO.: 6086960

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

DESIGN ENGINEER: ALEXIS MOUSADI, P.E.
FL. LICENSE NO.: P.E. No 50764

SERVICE POINT DETAIL (1)

SHEET NO.: T-34

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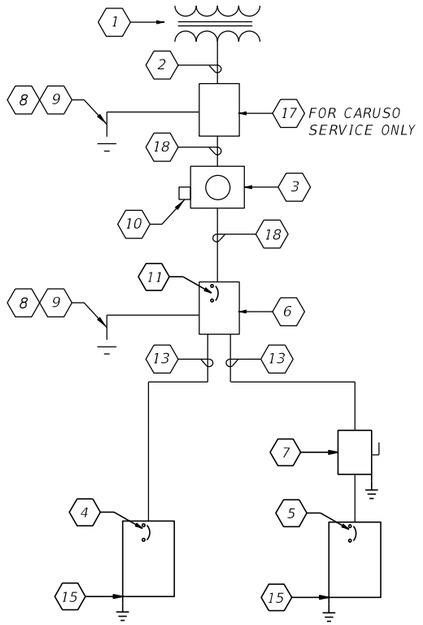
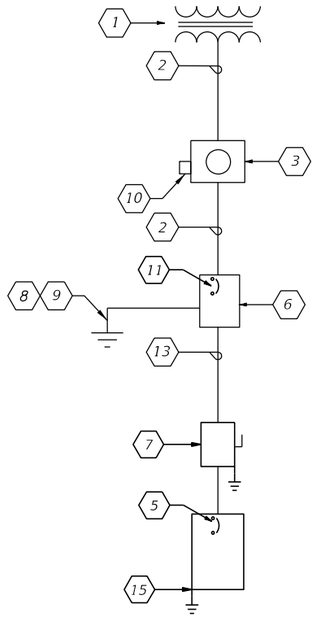


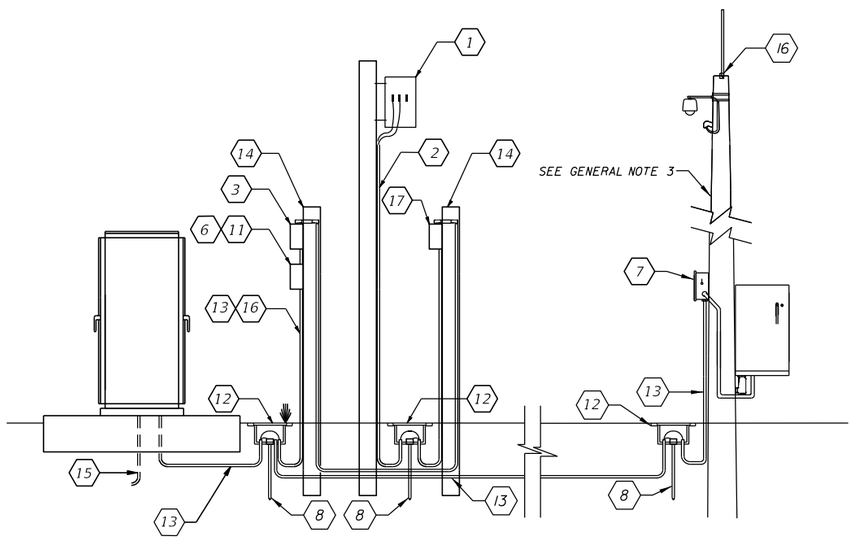
44TH AVE. & CARUSO RD. SIGNAL CABINET

CCTV CABINET #1 & CCTV CABINET #2



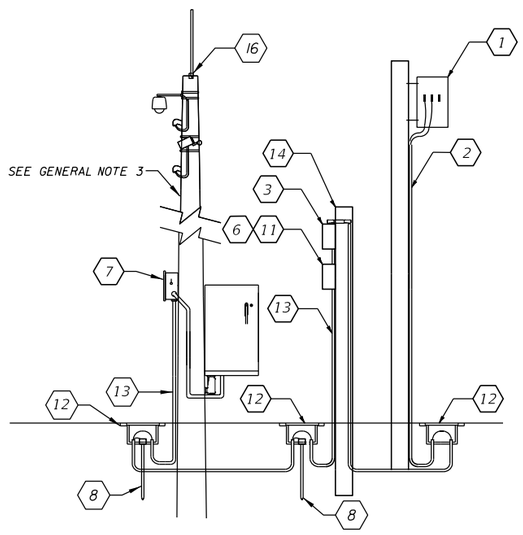
CCTV/MVDS CABINET #1 & CCTV/MVDS CABINET #2

ONE-LINE DIAGRAMS FOR SERVICE POINTS



44TH AVE. & CARUSO RD. SIGNAL CABINET

CCTV CABINET #1 & CCTV CABINET #2



CCTV/MVDS CABINET #1 & CCTV/MVDS CABINET #2

ELEVATION VIEWS FOR SERVICE POINTS

KEYED NOTES:

1. UTILITY COMPANY OVERHEAD TRANSFORMER, 120V, SINGLE PHASE SERVICE.
2. 120V, 2#2 AWG SINGLE PHASE SERVICE CONDUCTORS, IN SIZE 2" RIGID GALVANIZED STEEL CONDUIT,
3. METER SOCKET WITH MANUAL BY-PASS DRAW BY CONTRACTOR, METER CAN WILL HAVE BLANK COVER IN LIEU OF METER.
4. 40A/1P, MAIN CABINET CIRCUIT BREAKER FOR TRAFFIC CABINET.
5. 30A/1P, MAIN CABINET CIRCUIT BREAKER FOR ITS CABINET.
6. 100A MAIN BREAKER, 6 CIRCUIT PANELBOARD WITH COPPER BUSSING, INCLUDING NEUTRAL BUS, GROUND BUS IN A NEMA 3R SURFACE-MOUNT ENCLOSURE.
7. 30A, 240V RATED, 1-POLE, HEAVY DUTY, NEMA 3R NON-FUSED SAFETY SWITCH.
8. FURNISH AND INSTALL UL APPROVED COPPER CLAD STEEL GROUND ROD WITH MINIMUM 5/8" IN DIA. 40' LONG IN COMPLIANCE WITH NATIONAL ELECTRIC CODE (NEC) INCLUDING MAXIMUM RESISTANCE CRITERIA. INSTALL 6" UNDER FINAL GRADE AND BONDED TOGETHER WITH #6 AWG SOLID COPPER INSULATED GROUND WIRE BY EXOTHERMIC WELD PROCESS.
9. #6 AWG SOLID COPPER INSULATED GROUND WIRE IN 1/2" RGS.
10. TYPE 1 SPD (SURGE ARRESTER) TO BE MOUNTED TO OUTSIDE OF METER IN COMPLIANCE WITH THE CURRENT NEC AND UL 1449 LATEST EDITION LISTED WITH A SHORT CIRCUIT CURRENT RATING OF MINIMUM 14,000 AMPS. SURGE ARRESTER TO BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND POWER COMPANY'S LATEST REQUIREMENTS FOR ELECTRICAL SERVICE AND METER INSTALLATION.
11. MAIN CIRCUIT BREAKER INTEGRAL TO PANELBOARD, 120V, 100 AMP, 1P, S/N 60HZ SERVICE ENTRANCE RATED. 10,000 A.I.C. IN A NEMA 3R ENCLOSURE.
12. POWER PULL BOXES FURNISHED AND INSTALLED BY CONTRACTOR.
13. INSTALL CIRCUIT CONDUCTORS, SIZE PER PLANS IN 2" CONDUIT.
14. CONCRETE POLE, PRETRESSED TYPE P-II, 12' LONG.
15. CABINET GROUNDING PER FDOT SPECIFICATIONS AND STANDARDS. CONNECT CABINET GROUND TO MAIN GROUND ROD AND CREATE A SINGLE POINT GROUND SYSTEM.
16. LIGHTNING PROTECTION PER FDOT SPECIFICATIONS AND STANDARDS.
17. 240V RATED, 1-POLE, HEAVY DUTY, NEMA 3R, 100A FUSED SERVICE ENTRANCE RATED SAFETY SWITCH TO BE INSTALLED NEXT TO FPL SERVICE POLE ON CONCRETE PEDESTAL. REFER TO PLANS FOR MORE DETAILS.
18. 120V, 3#2 AWG SINGLE PHASE SERVICE CONDUCTORS, IN SIZE 2" RIGID GALVANIZED STEEL CONDUIT,

GENERAL NOTES:

1. PERFORM ALL ELECTRICAL WORK IN ACCORDANCE WITH POWER COMPANY STANDARD ELECTRICAL SERVICE REQUIREMENTS, FDOT STANDARDS AND SPECIFICATIONS, NEC, NESC, AND OSHA.
2. CCTV, MVDS, EQUIPMENT CABINET AND ELECTRICAL DISCONNECT MOUNTING LOCATIONS ON THIS SHEET ARE SCHEMATIC IN NATURE. SEE DEVICE INSTALLATION DETAILS FOR MORE INFORMATION.
3. SEE PLAN SHEETS FOR APPROXIMATE LOCATION OF THE POINT OF CONNECTION. COORDINATE WITH POWER COMPANY FOR THE SERVICE SOURCE AND POINT OF CONNECTION, EXACT LOCATIONS AND THE NECESSARY REQUIREMENTS FOR A COMPLETE AND OPERATIONAL ELECTRICAL POWER SERVICE.
4. CONTRACTOR TO COORDINATE WITH 45TH STREET EAST ROADWAY IMPROVEMENTS PROJECT FOR FINAL LOCATION OF TRAFFIC SIGNAL LOAD CENTER PANEL.
5. ALL EQUIPMENT INCLUDING METER, PANELBOARD AND TRAFFIC CABINET AT 44TH AVEAND 45TH ST ARE ASSUMED TO BE EXISTING.

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: A. MOUSADI
DRAWN BY: D. POWELL
CHECKED BY: P. NEVAH

AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 2/16/18
PROJECT NO.: 6086960

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

DESIGN ENGINEER: ALEXIS MOUSADI, P.E.
FL. LICENSE NO.: P.E. No 50764

SERVICE POINT DETAIL (2)

SHEET NO.: T-35

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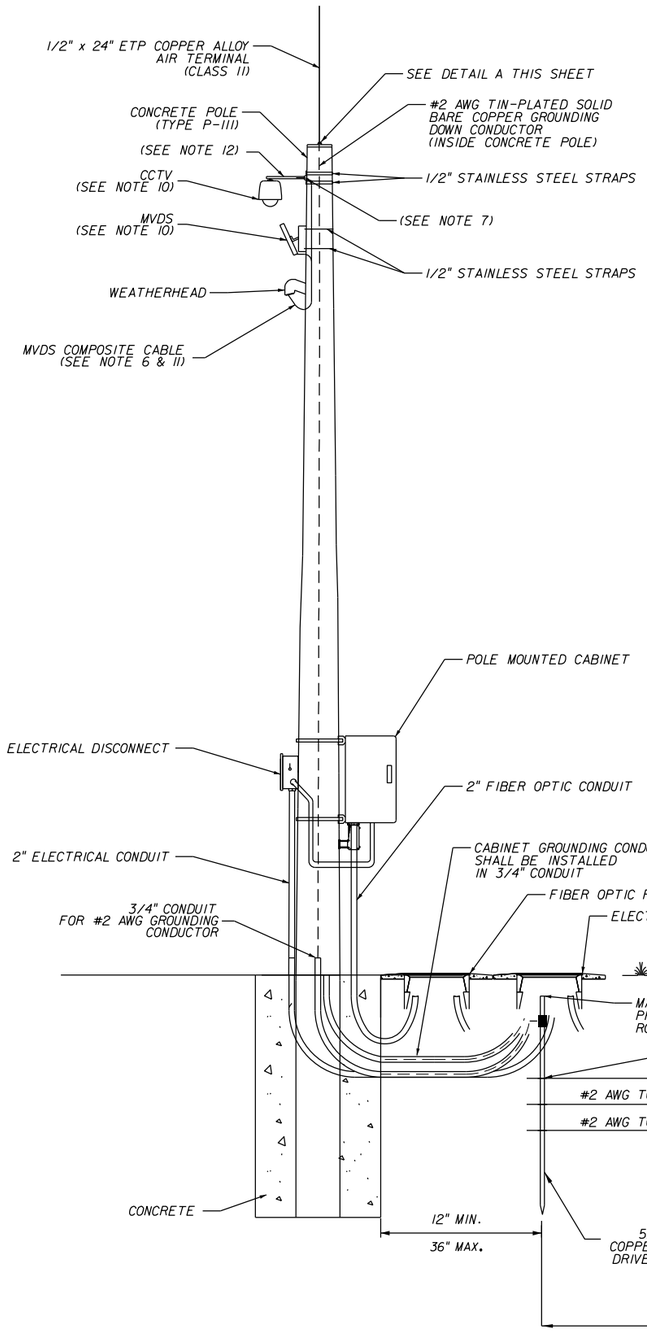

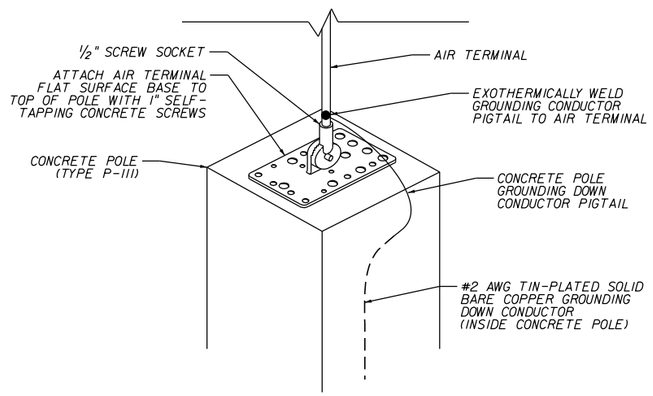

DETAIL A
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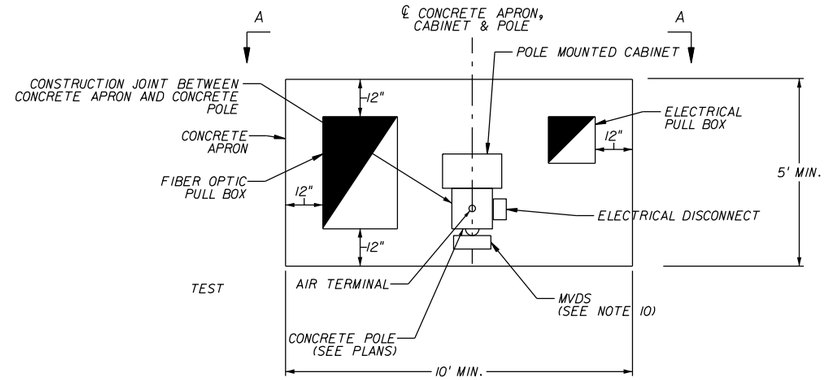

PLAN VIEW
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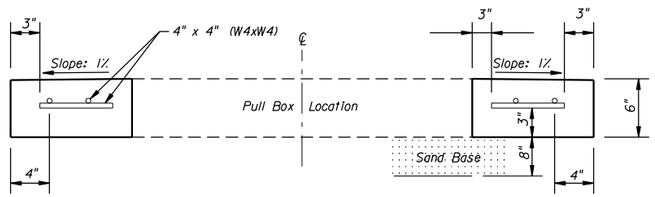

SECTION A-A

CONCRETE APRON NOTES:

1. USE CLEAN FREE DRAINING SAND < 5% PASSING NO.200 SIEVE FOR BASE.
2. WELDED WIRE FABRIC SHALL MEET THE REQUIREMENTS OF ASTM A185.
3. CONCRETE STRENGTH AT 28 DAYS SHALL BE f'c = 3 ksi.
4. OUTSIDE EDGES OF SLAB SHALL BE CAST AGAINST FORMWORK.
5. SLAB SUBGRADE PREPARATION PER SECTION 522-4 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
6. PROVIDE 1/2" EXPANSION MATERIAL AROUND SHAFT (BETWEEN CONCRETE POLE AND CONCRETE APRON).
7. LEVEL THE SURFACE GRADE IN THE VICINITY OF THE CONCRETE APRON.

NOTES:

1. ALL GROUNDING CONDUCTORS SHALL BE CONTINUOUS (UNBROKEN) BETWEEN DEVICE AND GROUND ROD. NO BEND OF GROUNDING CONDUCTOR SHALL FORM AN INCLUDED ANGLE OF LESS THAN 90 DEGREES, NOR SHALL IT HAVE A RADIUS BEND OF LESS THAN 8 INCHES.
2. GROUNDING MATERIALS AND INSTALLATION SHALL MEET THE REQUIREMENTS OF SECTION 620 OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND FDOT STANDARD INDEX 18102.
3. SECURE CABLES AND CONDUCTORS TO CONCRETE POLE EVERY 3' VERTICALLY WITH CABLE CLAMPS AND 1" CONCRETE SCREWS.
4. SECURE PVC CONDUIT SLEEVE TO CONCRETE POLE EVERY 3' VERTICALLY WITH CONDUIT CLAMPS AND 1" CONCRETE SCREWS.
5. CONCRETE SCREWS SHALL BE PLACED ALONG THE CENTERLINE OF THE CONCRETE POLE FACE TO AVOID CONTACT WITH THE PRESTRESSING CABLES INTERNAL TO THE POLE.
6. MVDS COMPOSITE CABLE ENTERING WEATHERHEAD ARE ROUTED DOWN THROUGH THE CONCRETE POLE AND INTO THE CABINET. THIS CABLE IS NOT SHOWN INSIDE THE POLE IN THIS DETAIL FOR GRAPHICAL CLARITY.
7. BOND #2 AWG TIN-PLATED BARE SOLID COPPER WIRE TO CCTV AND MVDS SUPPORT BASE WITH AN ALUMINUM TO COPPER LUG. ATTACH LUG TO CCTV AND MVDS SUPPORT BASE USING A STAINLESS STEEL SELF-TAPPING SCREW. REMOVE PAINT OR PROTECTIVE COATING WHERE ATTACHING LUG.
8. ELEVATION VIEW IS SCHEMATIC IN NATURE. SEE PLAN VIEW FOR CABINET, POLE, AND PULL BOX LOCATIONS. GUIDERAIL AND CONCRETE APRON NOT SHOWN IN THIS VIEW FOR GRAPHICAL CLARITY.
9. ALL COMMUNICATIONS CONDUITS AND DUCTS SHALL BE SEALED WITH APPROVED WATERPROOF DUCT PLUGS.
10. FOR CCTV AND MVDS MOUNTING AND POLE HEIGHTS, SEE ITS POLE SCHEDULE.
11. MVDS COMPOSITE CABLE SHALL BE SECURED BY AT LEAST ONE ATTACHMENT IN BETWEEN THE MVDS AND THE WEATHERHEAD.
12. CCTV PENDANT MOUNTING BRACKET SHALL BE COMPATIBLE WITH CAMERA MANUFACTURER.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: A. MOUSADI
DRAWN BY: D. POWELL
CHECKED BY: P. NEVAH

AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711
CERTIFICATE OF AUTHORIZATION: 8115

DATE: 2/16/18
PROJECT NO.: 6086960

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

DESIGN ENGINEER: ALEXIS MOUSADI, P.E.
FL. LICENSE NO.: P.E. No 50764

POLE INSTALLATION DETAIL (1)

SHEET NO.: T-36

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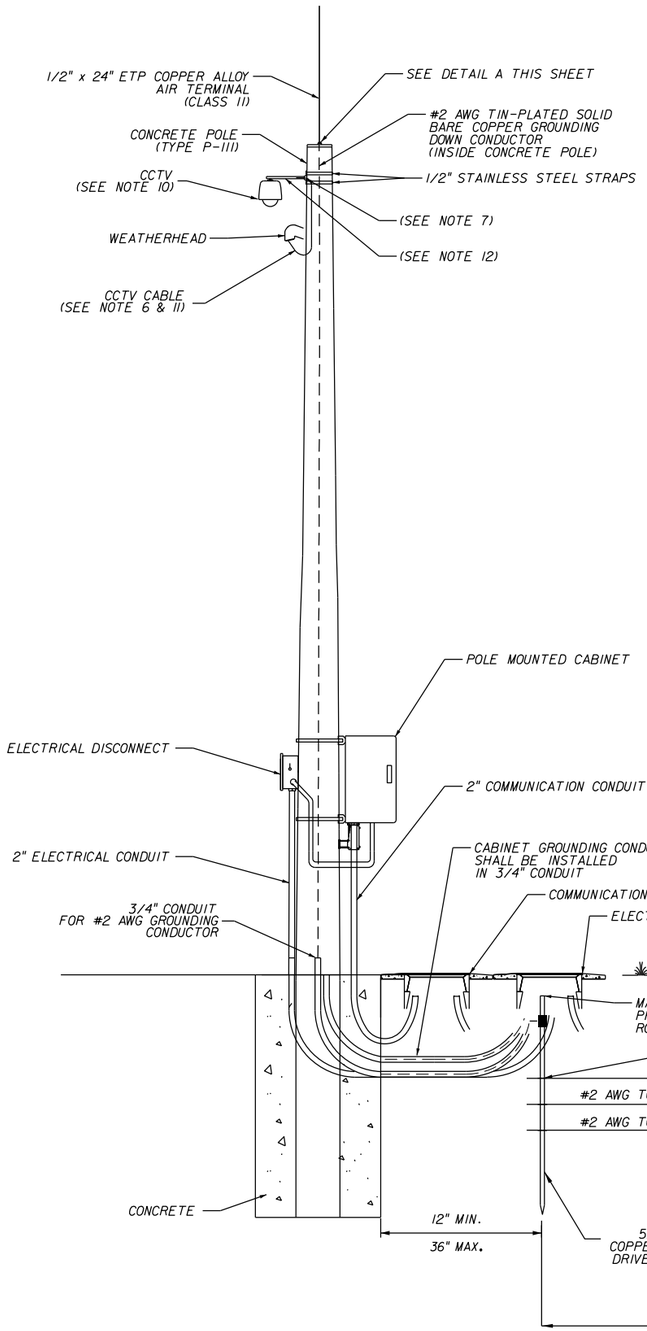
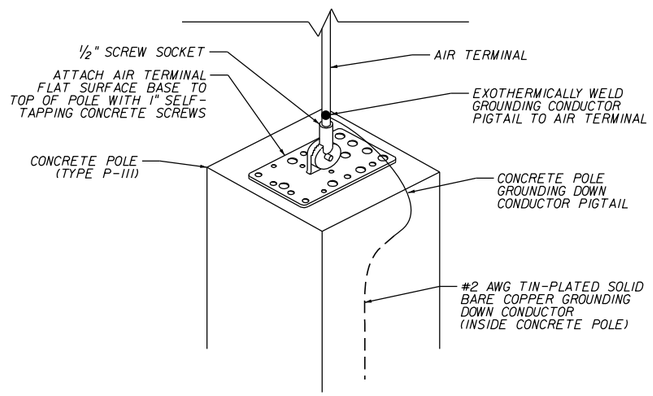
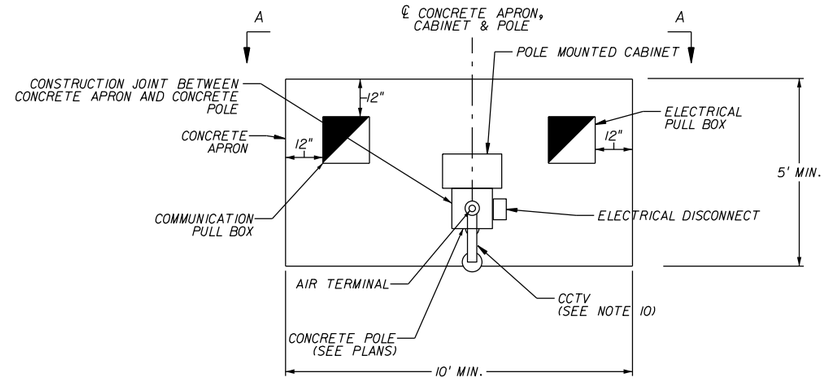
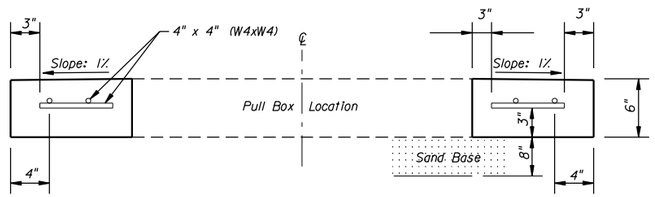




DETAIL A
N.T.S.



PLAN VIEW
N.T.S.



SECTION A-A

CONCRETE APRON NOTES:

1. USE CLEAN FREE DRAINING SAND < 5% PASSING NO.200 SIEVE FOR BASE.
2. WELDED WIRE FABRIC SHALL MEET THE REQUIREMENTS OF ASTM A185.
3. CONCRETE STRENGTH AT 28 DAYS SHALL BE f'c = 3 ksi.
4. OUTSIDE EDGES OF SLAB SHALL BE CAST AGAINST FORMWORK.
5. SLAB SUBGRADE PREPARATION PER SECTION 522-4 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
6. PROVIDE 1/2" EXPANSION MATERIAL AROUND SHAFT (BETWEEN CONCRETE POLE AND CONCRETE APRON).
7. LEVEL THE SURFACE GRADE IN THE VICINITY OF THE CONCRETE APRON.

NOTES:

1. ALL GROUNDING CONDUCTORS SHALL BE CONTINUOUS (UNBROKEN) BETWEEN DEVICE AND GROUND ROD. NO BEND OF GROUNDING CONDUCTOR SHALL FORM AN INCLUDED ANGLE OF LESS THAN 90 DEGREES, NOR SHALL IT HAVE A RADIUS BEND OF LESS THAN 8 INCHES.
2. GROUNDING MATERIALS AND INSTALLATION SHALL MEET THE REQUIREMENTS OF SECTION 620 OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND FDOT STANDARD INDEX 18102.
3. SECURE CABLES AND CONDUCTORS TO CONCRETE POLE EVERY 3' VERTICALLY WITH CABLE CLAMPS AND 1" CONCRETE SCREWS.
4. SECURE PVC CONDUIT SLEEVE TO CONCRETE POLE EVERY 3' VERTICALLY WITH CONDUIT CLAMPS AND 1" CONCRETE SCREWS.
5. CONCRETE SCREWS SHALL BE PLACED ALONG THE CENTERLINE OF THE CONCRETE POLE FACE TO AVOID CONTACT WITH THE PRE STRESSING CABLES INTERNAL TO THE POLE.
6. CCTV CABLE ENTERING WEATHERHEAD ARE ROUTED DOWN THROUGH THE CONCRETE POLE AND INTO THE CABINET. THIS CABLE IS NOT SHOWN INSIDE THE POLE IN THIS DETAIL FOR GRAPHICAL CLARITY.
7. BOND #2 AWG TIN-PLATED BARE SOLID COPPER WIRE TO MVDS SUPPORT BASE WITH AN ALUMINUM TO COPPER LUG. ATTACH LUG TO CCTV SUPPORT BASE USING A STAINLESS STEEL SELF-TAPPING SCREW. REMOVE PAINT OR PROTECTIVE COATING WHERE ATTACHING LUG.
8. ELEVATION VIEW IS SCHEMATIC IN NATURE. SEE PLAN VIEW FOR CABINET, POLE, AND PULL BOX LOCATIONS.
9. ALL COMMUNICATIONS CONDUITS AND DUCTS SHALL BE SEALED WITH APPROVED WATERPROOF DUCT PLUGS.
10. FOR CCTV MOUNTING AND POLE HEIGHTS, SEE ITS POLE SCHEDULE.
11. CCTV CABLE SHALL BE SECURED BY AT LEAST ONE ATTACHMENT IN BETWEEN THE CCTV AND THE WEATHERHEAD.
12. CCTV PENDANT MOUNTING BRACKET SHALL BE COMPATIBLE WITH CAMERA MANUFACTURER.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: A. MOUSADI
DRAWN BY: D. POWELL
CHECKED BY: P. NEVAH

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CERTIFICATE OF AUTHORIZATION: 8115

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

DESIGN ENGINEER: ALEXIS MOUSADI, P.E.
FL. LICENSE NO.: P.E. No 50764

POLE INSTALLATION DETAIL (2)

SHEET NO.: T-37

2:09:18 PM 2/16/2018
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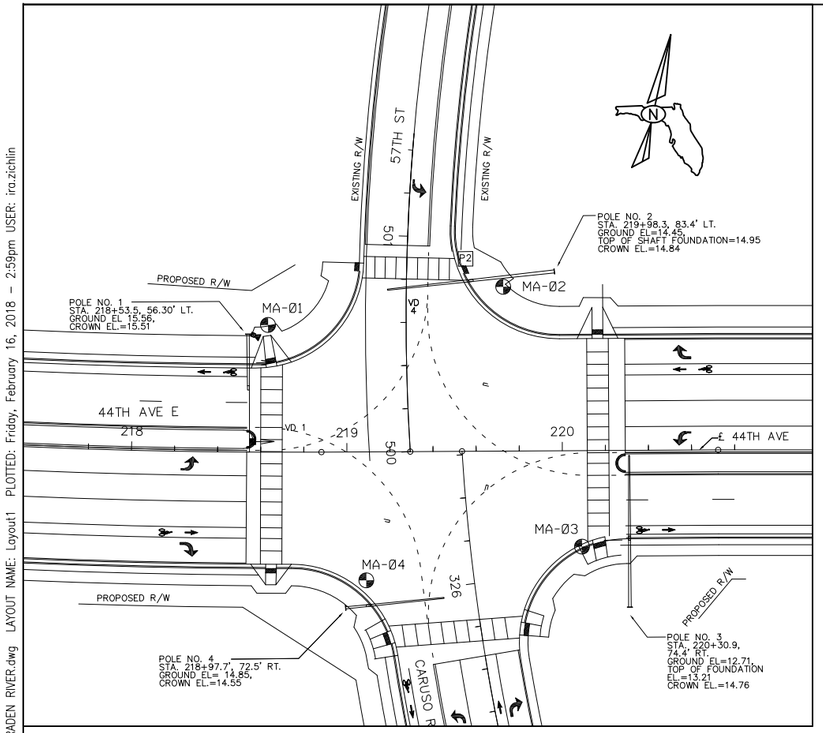

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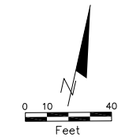
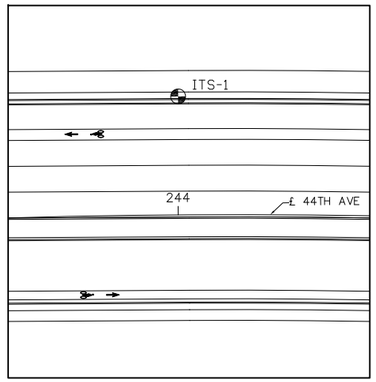
SCALE 1" = 40'





NOTES:

1. PLAN VIEW IS FOR SHOWING APPROXIMATE BORING LOCATIONS ONLY AND MAY NOT BE INDICATIVE OF FINAL PLANS.
2. LABORATORY TEST RESULTS HAVE BEEN ROUNDED TO THE NEAREST WHOLE NUMBER.
3. THE FOLLOWING APPLY TO ALL BORINGS:

DRILLER:	UNIVERSAL
HAMMER:	SAFETY
RIG:	CME 45

LEGEND

- SAND
- SILT
- CLAY
- SAND WITH SOME SILT
- CLAY WITH SOME SAND
- CLAYEY SAND
- SAND WITH SOME CLAY
- SANDY SILT
- SANDY CLAY
- SILTY SAND
- SILTY CLAY
- HARD LIMESTONE
- CEMENTED SILT

ENVIRONMENTAL CLASSIFICATION

SUBSTRUCTURE: EXTREMELY AGGRESSIVE (pH<5.0)

SUPERSTRUCTURE: SLIGHTLY AGGRESSIVE

(WATER SAMPLE FROM BRADEN RIVER)

CHLORIDE	48.7 - 50.2 PPM
SULFATE	45.3 - 56.0 PPM
RESISTIVITY	2500 OHM-CM
pH	7.4 - 7.6

LAND

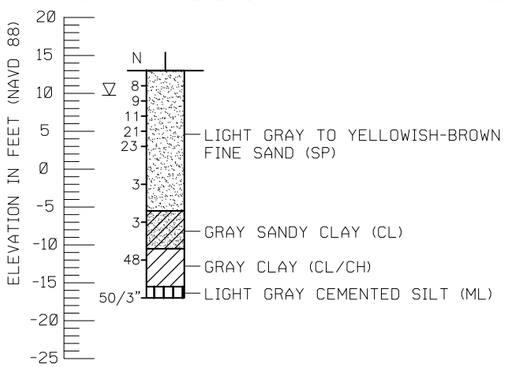
CHLORIDE	11.8 - 3.64 PPM
SULFATE	1717 - 3.49 PPM
RESISTIVITY	20,800 - 750 OHM-CM
pH	8.31 - 4.72

MAST ARM SIGNAL FOUDATION BORINGS

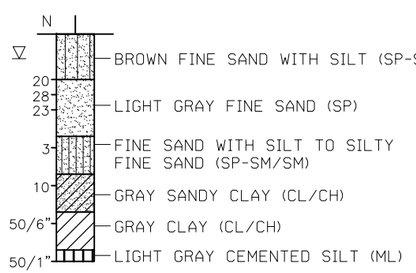
GRANULAR MATERIALS– RELATIVE DENSITY	SPT N–VALUE (BLOWS/FT.)
VERY LOOSE	LESS THAN 4
LOOSE	4 to 10
MEDIUM DENSE	10 to 30
DENSE	30 to 50
VERY DENSE	GREATER THAN 50
SILTS AND CLAYS CONSISTENCY	**SPT N–VALUE (BLOWS/FT.)**
VERY SOFT	LESS THAN 2
SOFT	2 to 4
FIRM	4 to 8
STIFF	8 to 15
VERY STIFF	16 to 30
HARD	GREATER THAN 30

SP	UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487) GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW AND/OR LABORATORY TESTING.
N	NUMBERS TO THE LEFT OF BORINGS INDICATE SPT VALUE FOR 12 INCHES OF PENETRATION (UNLESS OTHERWISE NOTED).
50/4	NUMBER OF BLOWS FOR 4 INCHES OF PENETRATION
WH	FELL UNDER WEIGHT OF ROD AND HAMMER
WR	FELL UNDER WEIGHT OF ROD
–200	PERCENT PASSING #200 SIEVE
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
WC	WATER CONTENT (%)
NGVD 88	NATIONAL GEODETIC VERTICAL DATUM OF 1988
⊕	APPROXIMATE SPT BORING LOCATION
▽	GROUNDWATER TABLE
NR	NO RECOVERY
‖	CASING
B/L	BASELINE

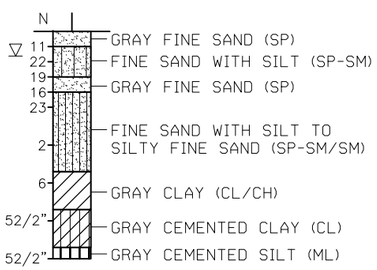
BOR # MA-Ø1
STATION 218+55.5
OFFSET 59.29' LT
ELEV. 13.0'
DATE 10/21/2016
DRILLER UNIVERSAL
HAMMER SAFETY
RIG CME 45



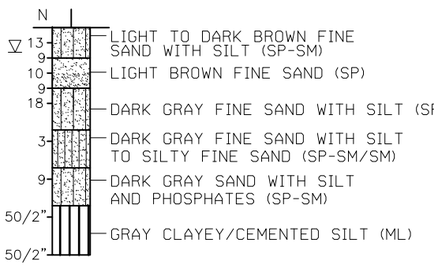
BOR # MA-Ø2
STATION 219+74.8
OFFSET 82.75' LT.
ELEV. 14.0'
DATE 10/21/2016
DRILLER UNIVERSAL
HAMMER SAFETY
RIG CME 45



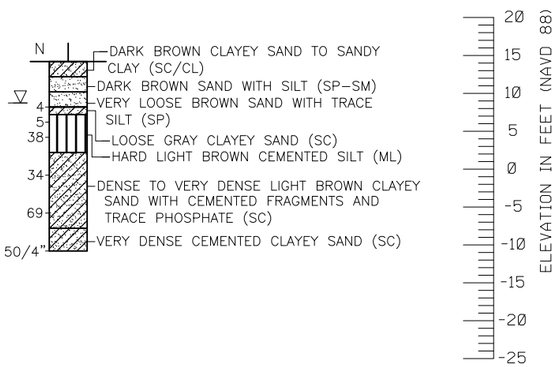
BOR # MA-Ø3
STATION 220+17.4
OFFSET 55.02' RT
ELEV. 12.5'
DATE 10/24/2016
DRILLER UNIVERSAL
HAMMER SAFETY
RIG CME 45



BOR # MA-Ø4
STATION 219+02.5
OFFSET 72.74' RT
ELEV. 13.0'
DATE 10/24/2016
DRILLER UNIVERSAL
HAMMER SAFETY
RIG CME 45



BOR # ITS-1
STATION 244+00
OFFSET 55' LT
ELEV. 14.2
DATE 4/18/17



No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: KEITH GIANG
DRAWN BY: IRA ZICHLIN
CHECKED BY: KEITH GIANG

AECOM Technical Services, Inc.
7650 West Courtney Campbell Causeway
Tampa, FL 33607–1462
C.A. No. 8115

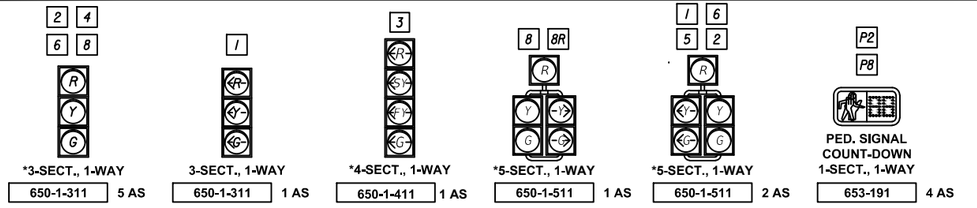
DATE: FEBRUARY 2018
PROJECT NO.: 6086960

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

DESIGN ENGINEER: KEITH Q. GIANG, PE
FL. LICENSE NO.: 49510

SHEET TITLE: REPORT OF SPT BORINGS
PROJECT NAME: 44th AVENUE BRIDGE OVER BRADEN RIVER

SHEET NO.: T–38

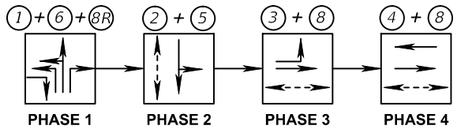


*USE LOUVERED ALUMINUM SIGNAL HEAD BACK PLATES WITH A 2 INCH REFLECTORIZED (TYPE III REFLECTIVITY) OUTER EDGE BORDER.

CONTROLLER NOTES:

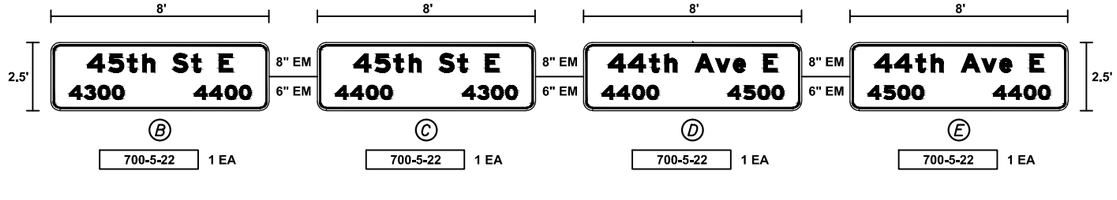
1. MAJOR STREET IS 45TH STREET EAST (MOVEMENTS 1, 2, AND 6). MINOR STREET IS 44TH AVENUE EAST (MOVEMENTS 3, 4, 8 AND 8R).
2. THE CONTROLLER CABINET SHALL BE WIRED AND OPERATE AS PER SPECIAL SOP BELOW.
3. FLASHING OPERATION IS YELLOW FOR MOVEMENTS 2 AND 6 AND RED FOR ALL OTHER MOVEMENTS.
4. CONCURRENT ACTUATED PEDESTRIAN TIMING FOR MOVEMENTS P2 AND P8.
5. EACH PHASE/ MOVEMENT SHALL BE WIRED FROM THE SIGNAL DISPLAY TO THE CONTROLLER AS A SEPARATE PHASE/ MOVEMENT. THIS INCLUDES LEFT TURN MOVEMENTS. EACH LEFT TURN MOVEMENT SHALL HAVE CONDUCTORS AVAILABLE FOR PROTECTED AND PERMISSIVE OPERATION.

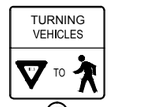
SPECIAL S.O.P.



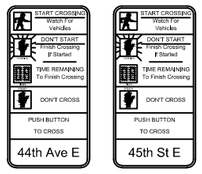
NOTES:

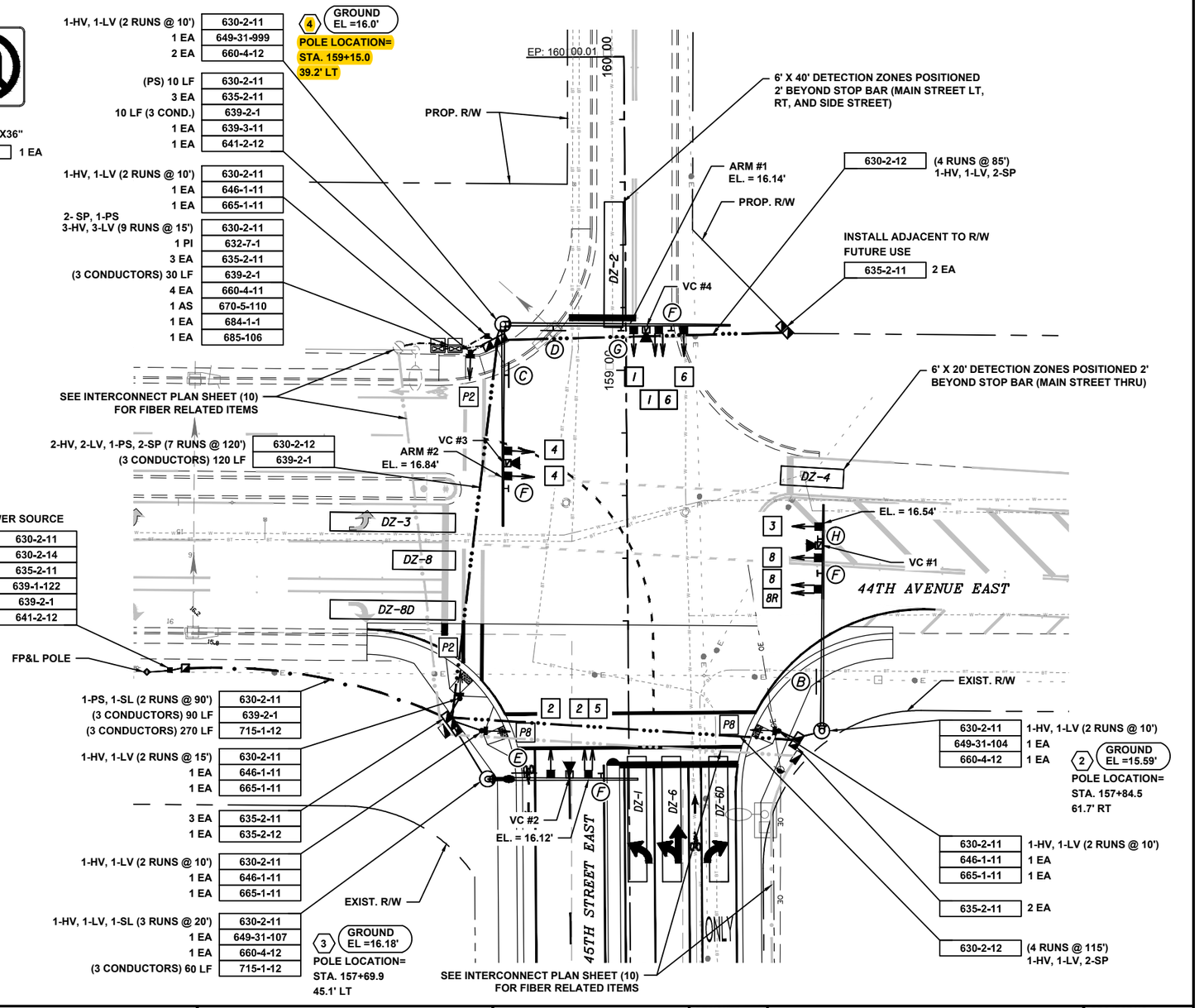
1. 45TH STREET EAST SPEED LIMIT IS 40 MPH AND 44TH AVE EAST IS 35 MPH.
2. EXISTING 44TH AVE ROADWAY FEATURES ARE FROM MANATEE COUNTY PROJECT 6071160.
3. POWER SERVICE LOCATION HAS BEEN COORDINATED WITH FP&L.





FTP-68B-06
9" X 18"





CONTROLLER TIMINGS

TIMING FUNCTION	MOVEMENT NUMBER	1	2	3	4		6		8
	MINIMUM GREEN	7	7	7	10		7		10
	EXTENSION	3.0	3.0	3.0	3.0		3.0		3.0
	MAXIMUM GREEN 1	35	20	40	40		35		40
	MAXIMUM GREEN 2								
	YELLOW CLEARANCE	4.4	4.4	4.0	4.0		4.4		4.0
	ALL RED	3.0	2.8	3.0	3.0		3.0		3.0
	PEDESTRIAN WALK		7						7
	PED. CLEARANCE		27						21
	RECALL		MIN				MIN		

TIMINGS ARE INITIAL AND MAY REQUIRE FIELD ADJUSTING AS DIRECTED BY THE ENGINEER.

VIDEO DETECTOR ZONES

ZONE LOCATION NO.	VIDEO CAMERA NO.	NO. OF DETECTION ZONES	DELAY TIME (SEC)
DZ-1	4	1	0
DZ-2	2	1	3
DZ-3	1	1	3
DZ-4	3	1	3
DZ-6	4	1	0
DZ-6D	4	1	8
DZ-8	1	1	0
DZ-8D	1	1	8

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

NO.	DESCRIPTION	BY	DATE

MANATEE COUNTY

45TH STREET EAST ROADWAY IMPROVEMENTS

Cardno
3905 Crescent Park Drive, Riverview, FL 33578
www.cardno.com · 813.664.4500
Certificate of Authorization No. 29915

SUSAN C. JOEL, PE LIC. NO.: 46018 DATE

DESIGNED SCJ
DRAWN HBH
Q.C.
APPROVED

45TH STREET E AND 44TH AVENUE E

PROJECT NO: 00193008.25
DATE: JUNE 2016
SHEET NO: T-12

FILE: J:\JOB\0193\00193-008-25\ACAD\dwg\Sheets\SG PLANSG03 019300825-1.dwg LAST SAVED: Thu, 06/30/16-2:06p PLOTTED: Thu, 06/30/16-3:28p BY: Howard.Holley

R1 (REFERENCE SHEET FOR POLE EX1) FOR INFOMATION ONLY

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.

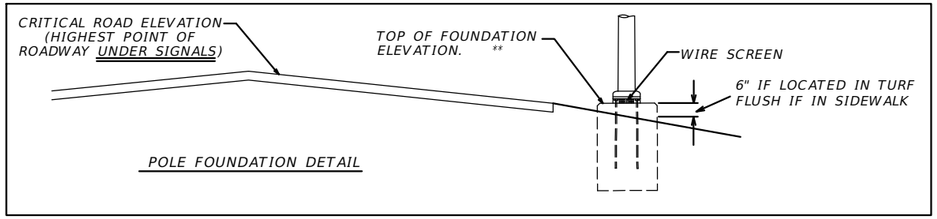
B. ANCHOR BOLT COVERS (ORNAMENTAL, NON-ORNAMANERTAL, AND/OR PAINTED) SHALL BE GALVANIZED STEEL OR CAST ALUMINUM AND SHALL BE SECURED BY A MINIMUM OF TWO (2) THREADED FASTENERS. THE BOLT COVERS SHALL BE OF SUFFICIENT SIZE SO THAT THERE IS NO GAP BETWEEN ITSELF AND THE POLE SHAFT.

C. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL ELEVATIONS LISTED HEREIN.

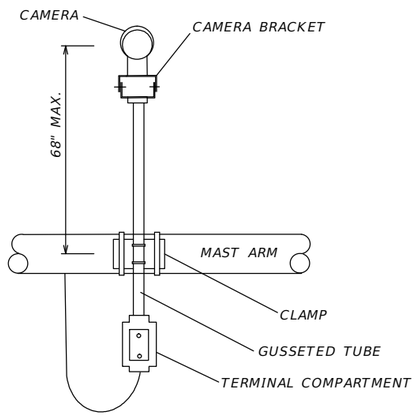
D. BACKPLATES REQUIRED FOR ALL SIGNAL HEADS.

E. CONTRACTOR SHALL COORDINATE WITH MANATEE COUNTY FOR THE ACCEPTABLE AND COMPATIBLE VIDEO DETECTION BRACKET TO USE.

F. ALL POLES SHALL BE GALVANIZED, NON-PAINTED FINISH.

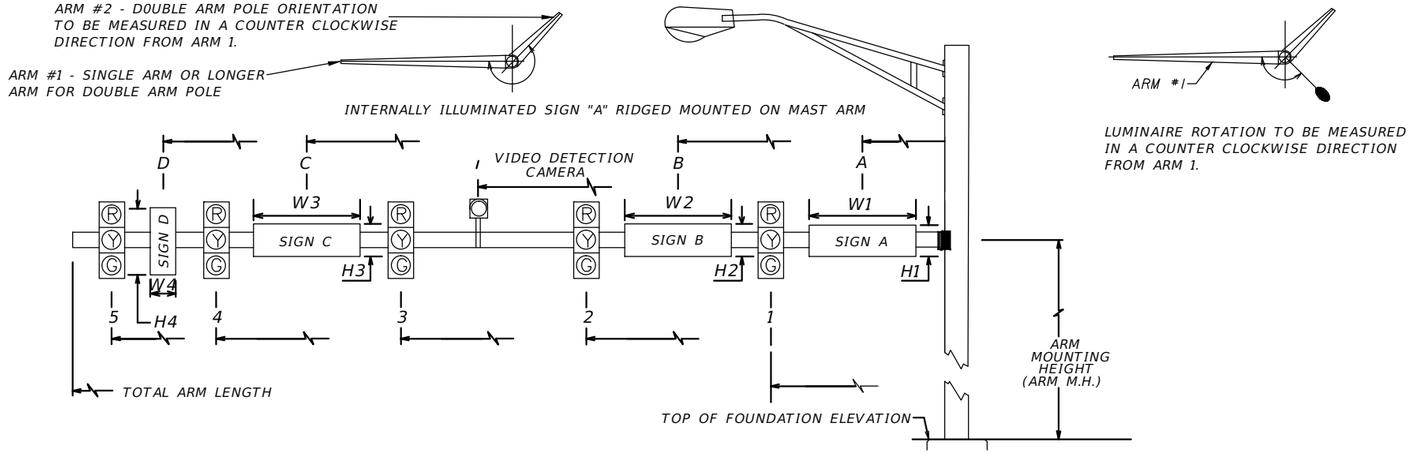


POLE FOUNDATION DETAIL



CAMERA MOUNTING DETAIL (CONTACT MAINTAINING AGENCY FOR MOUNTING PREFERENCES.)

SPECIAL INSTRUCTIONS					
ID NO.	PED. BUTTON		PED. SIGNALS		HANDHOLE LOCATION



LUMINAIRE ROTATION TO BE MEASURED IN A COUNTER CLOCKWISE DIRECTION FROM ARM 1.

* DENOTES NUMBER OF SECTIONS IN SIGNAL HEAD ASSEMBLY

	STRUCT. ID. NO.	POLE ID. NO.	SHEET NO.	LOCATION BY STA.	CRITICAL ROAD EL.	# FOUNDATION OUT OF GROUND	** TOP OF FOUNDATION ELEVATION	RDWY ARM NO.	SIGNAL DATA: SIGNAL V/H	BACK PLATES Y/N	PED. SIGNAL Y/N	DISTANCE FROM POLE: 1	*	2	*	3	*	4	*	5	*	6	*	7	*	8	*	TOTAL ARM LENGTH	ARM M.H.	/ BETWEEN DUAL ARMS 90/270	SIGN DATA: DISTANCE FROM POLE / HEIGHT AND WIDTH OF SIGN: A	H1	W1	B	H2	W2	C	H3	W3	D	H4	W4				VIDEO DISTANCE FROM POLE: 1	2	LUM Y/N	LUM ROTATION (DEG)	LUM WATTS	LUM ARM LGTH (FT)
SEE NOTE 1	13M046	1	T-7	102+27.1, 56.0' RT	---	---	---	1	V	Y	N	26.5	3	38.5	3	46.5	3	60	5									68	19.0		13	2.5	8	32.5	3	3									42.5		N			
						-																																										
EXISTING	13M046	2	T-7	100+78.0, 62.0' RT+/-	---	---	---	1	V	Y	N	32.5	3	42.6	3	58.8	3	71	3									72	19.5		POLE	2.5	9												62		N			
	13M046	3	T-7	100+68.2, 63.5' LT	12.94'	0.5	14.5'	1	V	Y	N	28.5	3	36.5	3	50	3	60	4									68	19.5		14	2.5	8							65	3	3				55		N			
						-																																										
SEE NOTE 1	13M046	4	T-7	102+21.5, 73.3' LT	---	---	---	1	V	Y	N	24	3	35	3	46	3	57	3	68	3							70.5	20.3		12.5	2.5	9	64	3	2.5									51.5		N			
	T-9-1	1	T-9	107+00.0, 47.0' RT	12.44'	0.5	12.68'	1	V	Y	N	17	3	28	3	51	3	62	3	73	3							78	19.5	90				22.5	2.5	3.5	56.5	2.5	3.5							N			
					12.18'			2	V	Y	N	18	3	30	3													36	19.5																			
SEE NOTE 2	T-12-2	2	T-12	157+84.5, 61.7 RT	16.54'	0.5	16.09'	1	V	Y	N	16	4	28	3	40	3	52	3	64	4							70.5	20.5		10	2.5	8	22	2.5	2.5	60	3	2.5	68.5	3	3				58		N			
	T-12-3	3	T-12	157+69.9, 45.1 LT	16.12'	0.5	16.68'	1	V	Y	N	18.5	3	30.5	3	42	4											46	19.5		10	2.5	8	34.5	2.5	2.5				44	3	3				24.5		Y	0	200	10
SEE NOTE 2	T-12-4	4	T-12	159+15.0, 39.2 LT	16.14'	0.5	16.5'	1	V	Y	N	40	4	48	5	58	3	66.5	4									70.5	20	270	14	2.5	8	36	3	3	52	2.5	2.5	68.5	3	3				44		N			
					16.84'			2	V	Y	N	26	3	38	3	46	3	56	4									62	20		14	2.5	8	50	2.5	2.5				60	3	3				42					

1. EXISTING MAST ARM DATA FOR 13M046-1 AS RECEIVED FROM LINCKS & ASSOCIATES, PLANS DATED 12/23/15 REVISION 2 (12/07/15) PRIOR TO CONSTRUCTION. SIGNAL HEAD AND SIGN MODIFICATIONS FOR 13M046 POLES 2 & 4 TO BE PERFORMED BY OTHERS PRIOR TO LETTING AND ARE SHOWN AS EXISTING.

2. ELEVATIONS ON 44TH AVENUE WERE OBTAINED FROM MANATEE COUNTY PROJECT 6071160. IT SHOULD BE NOTED PROJECT 6071160 SURVEY IS BASED ON A DIFFERENT DATUM THEREFORE ELEVATIONS DO NOT NUMERICALLY MATCH WITH THIS PROJECT. CONVERTED ELEVATIONS ARE SHOWN.

NO.	DESCRIPTION	BY	DATE

MANATEE COUNTY

45TH STREET EAST ROADWAY IMPROVEMENTS

Cardno
3905 Crescent Par□Drive, Riverview, FL 33578
www.cardno.co□ - 813.664.4500
Certificate of Authori□ation No. 29915

SUSAN C. JOEL, PE
LIC. NO.: 46018
DATE

DESIGNED SCJ
DRAWN HBH
Q.C.
APPROVED

MAST ARM TABULATION (DESIGN CALCULATION)

PROJECT NO: 00193008.25
DATE: JUNE 2016
SHEET NO: T-25

FILE: J:\JOB\0193\00193-008-25\ACAD\dwg\Sheets\SG: MASTTAB: 019300825-1.dwg LAST SAVED: Thu, 06/30/16-3:23p PLOTTED: Thu, 06/30/16-3:30p BY: Howard.Holley

R2 (REFERENCE SHEET FOR POLE EX1) FOR INFOMATION ONLY

STANDARD MAST ARM ASSEMBLIES DATA TABLE

Table Date 01-01-11

	STRUCTURE ID NUMBERS	ASSEMBLY NUMBERS (1)	FIRST ARM			SECOND ARM			UF (deg)	LL (deg)	POLE				SPECIAL DRILLED SHAFT (4)					
			ARM TYPE	FAA (2) (ft.)	FBA (2) (in.)	ARM TYPE	FAA (2) (ft.)	FBA (2) (in.)			POLE TYPE	UAA (3) (ft.)	UB (ft.)	UCA (3) (in.)	DA (ft.)	DB (ft.)	RA	RB	RC	RD (in.)
	13M046-3	D6-S4	D6	36.6	9.87	---	---	---	---	---	S4	22.5	19.5	22.85	20.5	5	11	19	15	8
	T-12-2	D6-S4	D6	31.6	10.58	---	---	---	---	---	S4	23.5	20.5	22.71	21.5	5	11	19	15	8
*	T-12-3	D3-S22	D3	**	**	---	---	---	---	0	S22	***	19.5	***	17.5	4.5	11	15	10	12

* MAST ARM T-12-3 REQUIRES 8 ANCHOR BOLTS INSTEAD OF 6. REFER TO INDEX 17745, SHEET 2, SECTION C-C FOR MORE DETAILS.
** STANDARD ARM LENGTH AND TIP DIAMETER.
*** STANDARD POLE HEIGHT AND TIP DIAMETER.

TABLE NOTES (Notes Date 07-01-14):

1. Assembly Number Legend

   Single Arm:
   Arm Type - Pole Type = D# - S#
   = E# - T#

   Double Arm:
   First Arm Type - Second Arm Type - Pole Type = D# - D# - S#
   = E# - E# - T#

2. If an entry appears in columns "FAA" and "FBA", a shorter arm is required. This is obtained by removing length from the arm tip. For these cases the mast arm length shall be shortened from "FA" to "FAA" and the tip diameter shall be increased from "FB" to "FBA".

3. If an entry appears in columns "UAA" and "UCA", a shorter pole is required. This is obtained by removing length from the pole tip. For these cases the pole height shall be shortened from "UA" to "UAA" and the pole tip diameter shall be increased from "UC" to "UCA".

4. The foundations for Standard Mast Arm Assemblies are based on the Report of Core Borings by Tierra dated 11/30/12. Responsible Engineer is Erick Frederick PE No. 63920.

   The following soil parameters were used in design.

   Loose soil conditions were encountered in the borings performed. The Contractor should anticipate the need for temporary casing to stabilize the excavation during construction.

   Limestone and "Rock-Like" material was encountered in the borings performed. The Contractor shall anticipate the need for special equipment and/or procedures to facilitate rock excavation.

   Classification = Cohesionless (Fine Sand)
   Friction Angle = 26 Degrees (26°)
   Unit Weight = 37.6 lbs. / cu. ft. (assumed saturated)
   N-blowcount = 9

GENERAL NOTES:

1. Work this sheet with the Signal Designer's "Mast Arm Tabulation". See "Mast Arm Tabulation" for special instructions that may include non-standard handhole location, paint color, terminal compartment requirement, and/or pedestrian features.

2. Work with Index Nos. 17743 and 17745.

3. Design wind speed is 130 mph.

4. Due to the loading the stronger D-S series mast arms are required instead of the E-T series mast arms for structures 13M046, T-12-2, and T-12-3.

5. Refer to the Table for Special Mast Arm Assemblies for information regarding mast arm T-9-1 and T-12-4.

6. The contractor shall anticipate the need to adjust the signal heights as needed to maintain the 17'-6" minimum and 19'-0" maximum FDOT vertical clearances, and shall provide mounting hardware as required to accomplish this task.

NO.	DESCRIPTION	BY	DATE

MANATEE COUNTY

45TH STREET EAST ROADWAY IMPROVEMENTS

Cardno
380 Par□Place Blvd, Suite 300, Clearwater, Fl 33759
www.cardno.co□ - 727.531.3505
Certificate of Authori□ation No. 29915

FRANCIS X. HAUNSTETTER, PE DATE
LIC. NO.: 56872

DESIGNED FXH
DRAWN FXH
Q.C.
APPROVED

MAST ARM TABLE OF VARIABLES (1)

PROJECT NO: 00193008.25
DATE: JUNE 2016
SHEET NO: T-26

FILE: J:\JOB\0193\00193-008-25\ACAD\dwg\Sheets\SG□TABVAR□019300825-1.dwg LAST SAVED: Thu, 06/30/16-9:50a PLOTTED: Thu, 06/30/16-3:30p BY: Howard.Holley

SPECIAL MAST ARM ASSEMBLIES DATA TABLE

Table Date 01-01-12

NUMBER OF LOCATIONS	STRUCTURE NUMBER	FIRST ARM				FIRST ARM EXTENSION				SECOND ARM				SECOND ARM EXTENSION				POLE						
		FA(ft)	FB(in)	FC(in)	FD(in)	FE(ft)	FF(in)	FG(in)	FH(in)	SA(ft)	SB(in)	SC(in)	SD(in)	SE(ft)	SF(in)	SG(in)	SH(in)	UA(ft)	UB(ft)	UC(in)	UD(in)	UE(in)	UF(deg)	UG(ft)
1	T-9-1	40	8.47	14.07	0.1793	40	13.44	19	0.375	36	8.96	14	0.1793	---	---	---	---	22.5	19.5	22.85	26	0.375	90	---
1	T-12-4	39.1	10.52	16	0.1793	33.4	15.36	20	0.375	30.6	9.52	15	0.1793	30.6	14.36	19	0.375	23.0	20.0	23.78	27	0.375	270	---

SPECIAL MAST ARM ASSEMBLIES DATA TABLE (CONT.)

Table Date 01-01-12

STRUCTURE NUMBER	FIRST ARM CONNECTION (in) First Arm Camber Angle = 2 Degrees											SECOND ARM CONNECTION (in) Second Arm Camber Angle = 2 Degrees										
	#Bolts	HT	FJ	FK	FL	FN	FO	FP	FR	FS	FT	#Bolts	HT	SJ	SK	SL	SN	SO	SP	SR	SS	ST
T-9-1	6	30	36	3	0.75	0.438	22	1.25	2	12.5	0.438	6	30	36	3	0.75	0.438	22	1.25	2	12.5	0.438
T-12-4	6	30	36	3	0.75	0.5	22	1.25	2	12.5	0.5	6	30	36	3	0.75	0.5	22	1.25	2	12.5	0.5

SPECIAL MAST ARM ASSEMBLIES DATA TABLE (CONT.)

Table Date 01-01-12

STRUCTURE NUMBER	POLE BASE CONNECTION (in)					SHAFT AND REINF.						LUMINAIRE AND LUMINAIRE CONNECTION										
	#Bolts	BA	BB	BC	BF	DA(ft)	DB(ft)	RA	RB	RC	RD(in)	LA(ft)	LB(ft)	LC(in)	LD(in)	LE	LF(ft)	LG(in)	LH(in)	LJ(in)	LK(in)	LL(deg)
T-9-1	6	42	2.5	2	40	22.5	5	11	19	15	8	---	---	---	---	---	---	---	---	---	---	---
T-12-4	6	45	2.5	2.25	45	25	5	11	19	20	6	---	---	---	---	---	---	---	---	---	---	---

NOTES (Notes Date 07-01-13):

1. Work with Index 17745.
2. Design Wind Speed = 130 mph
3. Work this sheet with the Signal Designer's "Mast Arm Tabulation". See "Mast Arm Tabulation" for special instructions that may include non-standard handhole location, paint color, terminal compartment requirement, and/or pedestrian features.
4. Refer to Standard Mast Arm Assemblies for structures 13M046, T-12-2, and T-12-3.
5. The contractor shall anticipate the need to adjust the signal heights as needed to maintain the 17'-6" minimum and 19'-0" maximum FDOT vertical clearances, and shall provide mounting hardware as required to accomplish this task.

FOUNDATION NOTES:

1. The foundations for Standard Mast Arm Assemblies are based on the Report of Core Borings by Tierra dated 11/30/12. Responsible Engineer is Erick Frederick PE No. 63920.
2. The following soil parameters were used in design.

   Loose soil conditions were encountered in the borings performed. The Contractor should anticipate the need for temporary casing to stabilize the excavation during construction.

   Limestone and "Rock-Like" material was encountered in the borings performed. The Contractor shall anticipate the need for special equipment and/or procedures to facilitate rock excavation.

   Classification = Cohesionless (Fine Sand)
   Friction Angle = 26 Degrees (26°)
   Unit Weight = 37.6 lbs. / cu. ft. (assumed saturated)
   N-blowcount = 9

NO.	DESCRIPTION	BY	DATE

MANATEE COUNTY

45TH STREET EAST ROADWAY IMPROVEMENTS

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FRANCIS X. HAUNSTETTER, PE DATE
LIC. NO.: 56872

DESIGNED FXH
DRAWN FXH
Q.C.
APPROVED

MAST ARM TABLE OF VARIABLES (2)

PROJECT NO: 00193008.25
DATE: JUNE 2016
SHEET NO: T-27

FILE: J:\JOB\0193\00193-008-25\ACAD\dwg\Sheets\SG□TABVAR□019300825-1.dwg LAST SAVED: Thu, 06/30/16-9:50a PLOTTED: Thu, 06/30/16-3:30p BY: Howard.Holley