

SIGNALIZATION PLANS

FOR

LENA ROAD

FROM NORTH OF 44TH AVENUE EAST TO SR 64
MANATEE COUNTY, FLORIDA

MANATEE COUNTY PROJECT # 6107560



PROJECT TEAM:

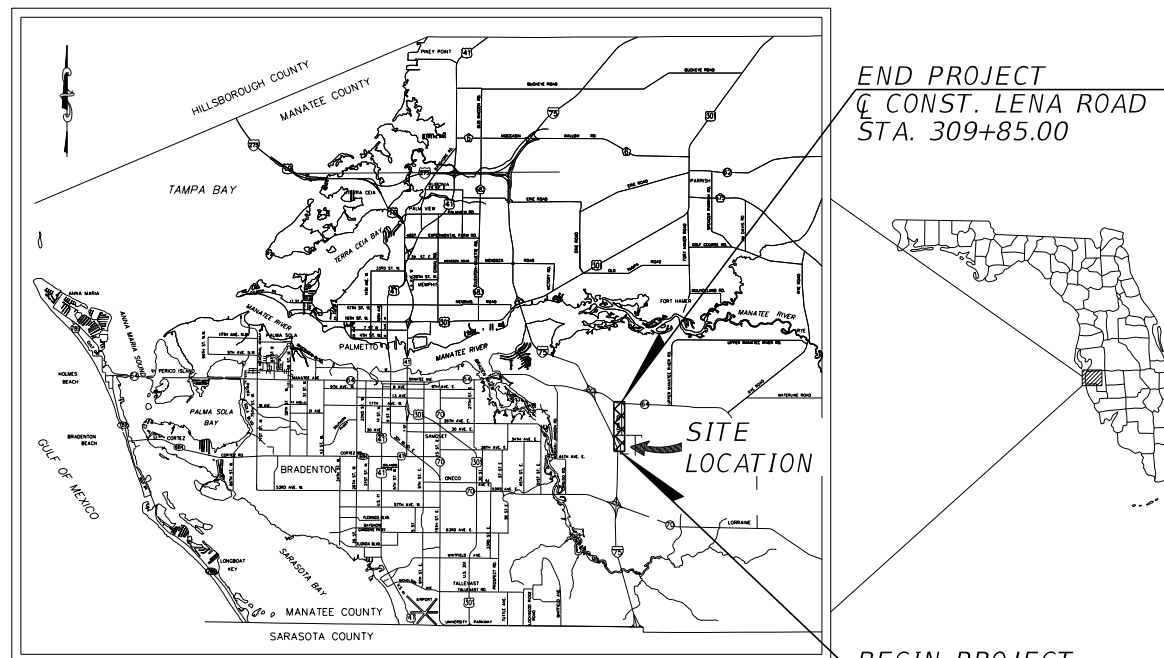
OWNER:
MANATEE COUNTY
1022 26TH AVE. E.
BRADENTON, FL 34206
CONTACT: TONY RUSSO, P.E.
(941) 708-7450 ext. 7349

ENGINEER:
KIMLEY-HORN AND ASSOCIATES, INC.
201 NORTH FRANKLIN STREET, SUITE 1400
TAMPA, FL 33602
CONTACT: SHARI K. BARNWELL, P.E.
(813) 620-1460

SURVEYOR:
HYATT SURVEYING SERVICES INC.
2012 LENA ROAD
BRADENTON, FL 34211
CONTACT: JOHN MATTHEWS
(941) 748-4693

INDEX OF SIGNALIZATION PLANS

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PROJECT VICINITY MAP

N.T.S.

90% Plans Submittal
AUGUST 2023

PREPARED BY

Kimley»Horn

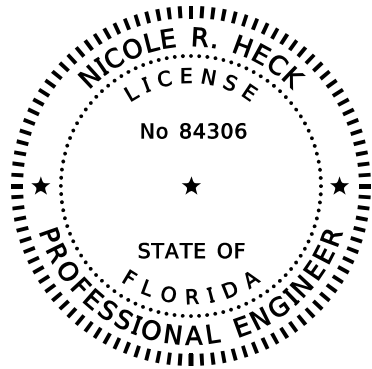
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201 NORTH FRANKLIN ST., SUITE 1400
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No.	REVISIONS	DATE	BY

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NICOLE R. HECK, P.E. FLORIDA LICENSE NUMBER: 84306	CIP NO. 6107560
	SHEET NUMBER T-1

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



THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY

ON THE DATE ADJACENT TO THE SEAL

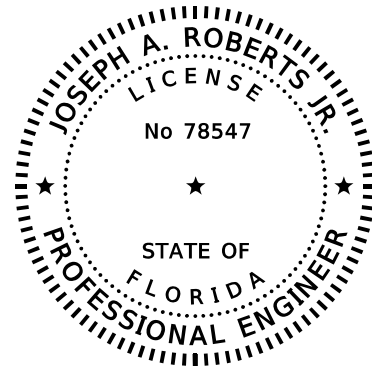
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KIMLEY-HORN AND ASSOCIATES, INC.
189 SOUTH ORANGE AVENUE, SUITE 1000
ORLANDO, FLORIDA 32801
NICOLE R. HECK, P.E. NUMBER 84306

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

SIGNALIZATION PLANS

SHEET NO.	SHEET DESCRIPTION
T-1	KEY SHEET
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T-3 - T-4	TABULATION OF QUANTITIES
T-5 - T-6	GENERAL NOTES
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T-8	STANDARD MAST ARM TABULATION
T-10 - T-16	ITS PLAN
T-17 - T-19	SPLICE DETAIL A - C
T-20	ITS DEVICE WIRING DIAGRAM
T-21	ITS DEVICE MOUNTING DETAIL
T-22 - T-23	ITS CROSS SECTIONS



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ON THE DATE ADJACENT TO THE SEAL

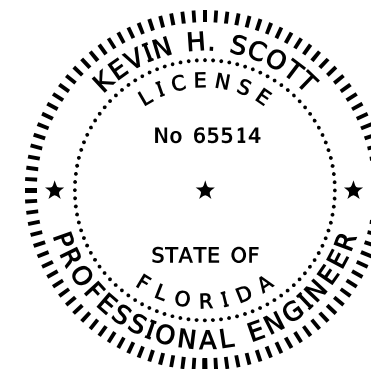
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KIMLEY-HORN AND ASSOCIATES, INC.
189 SOUTH ORANGE AVENUE, SUITE 1000
ORLANDO, FLORIDA 32801
JOSEPH A. ROBERTS JR., P.E. NUMBER 78547

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

SIGNALIZATION PLANS

SHEET NO.	SHEET DESCRIPTION
T-2	SIGNATURE SHEET
T-9	STANDARD MAST ARM ASSEMBLES DATA TABLE



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ON THE DATE ADJACENT TO THE SEAL

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TIERRA, INC.
7351 TEMPLE TERRACE HIGHWAY
TAMPA, FLORIDA 33637
KEVIN H. SCOTT, P.E. NO 65514

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-24	REPORT OF CORE BORINGS

				KHA PROJECT 148400100				LICENSED PROFESSIONAL		<i>SIGNATURE SHEET</i>		SHEET NUMBER	
				© 2023 KIMLEY-HORN AND ASSOCIATES, INC. 201 NORTH FRANKLIN STREET, SUITE 1400, TAMPA, FL 33602 PHONE: (813) 635-5514 WWW.KIMLEY-HORN.COM				DATE JULY 2023				NICOLE R. HECK, P.E. FL LICENSE NUMBER 84306	
				SCALE AS SHOWN									
				DESIGNED BY YL									
				DRAWN BY EMB									
				CHECKED BY NRH		MANATEE COUNTY							
No. REVISIONS		DATE BY				LENA ROAD							
						FL							

TABULATION OF QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS														TOTAL THIS SHEET		GRAND TOTAL	
			T-6		T-9		T-10		T-11		T-12		T-13		T-14		PLAN	FINAL	PLAN	FINAL
			PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL						
611-1-1	ITSFM SUBSURFACE DOCUMENTATION - PROJECT LENGTH	MI																		
611-2-2	ITSFM LOCATION DOCUMENTATION - ITS SITE	EA																		
630-2-11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH	LF	175		1,190		1,255		395		800		1,415		925		6,155			
630-2-12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF	480		400		75		1,040		800				495		3,290			
630-2-14	CONDUIT, FURNISH & INSTALL, ABOVEGROUND	LF			10									10		20				
633-6	FIBER OPTIC CABLE LOCATOR	DA			30											30				
632-7-1	SIGNAL CABLE, FURNISH & INSTALL-NEW OR RECONSTRUCTED INTERSECTION	PI	1													1				
632-7-6	SIGNAL CABLE, REMOVE-INTERSECTION	PI	1													1				
633-1-122	FIBER OPTIC CABLE, F&I, UNDERGROUND, 13-48 FIBERS	LF			2,130		1,380		1,635		1,610		1,415		1,560		9,730			
633-1-123	FIBER OPTIC CABLE, F&I, UNDERGROUND, 49-96 FIBERS	LF									1,455		1,415		1,560		4,430			
633-1-620	FIBER OPTIC CABLE, REMOVE, UNDERGROUND	LF									4,860						4,860			
633-2-31	FIBER OPTIC CONNECTION, INSTALL, SPLICE	EA			52						72					124				
633-3-11	FIBER OPTIC CONNECTION HARDWARE, FURNISH & INSTALL, SPLICE ENCLOSURE	EA			2						1					3				
633-3-12	FIBER OPTIC CONNECTION HARDWARE, F&I, SPLICE TRAY	EA			2						1					3				
633-3-15	FIBER OPTIC CONNECTION HARDWARE, F&I, PRETERMINATED PATCH PANEL	EA			1											1				
633-8-1	MULTI-CONDUCTOR COMMUNICATION CABLE, FURNISH & INSTALL	LF												420		420				
633-8-6	MULTI-CONDUCTOR COMMUNICATION CABLE, REMOVE	LF																		
635-2-11	PULL & SPLICE BOX, FURNISH & INSTALL, 13" x 24" COVER SIZE	EA	16		3											19				
635-2-12	PULL & SPLICE BOX, FURNISH & INSTALL, 24" x 36" COVER SIZE	EA			5		1		4		5			3		18				
635-2-13	PULL & SPLICE BOX, F&I, 30" X 60" RECTANGULAR OR 36" ROUND COVER SIZE	EA			1						1					2				
639-1-122	ELECTRICAL POWER SERVICE, FURNISH & INSTALL, UNDERGROUND, METER PURCHASED BY CONTRACTOR	AS	1		1											2				
639-2-1	ELECTRICAL SERVICE WIRE, FURNISH & INSTALL	LF	35		345											380				
639-3-11	ELECTRICAL SERVICE DISCONNECT, F&I, POLE MOUNT	EA	1		1											2				
641-2-12	PRESTRESSED CONCRETE POLE, FURNISH & INSTALL, TYPE P-11 SERVICE POLE	EA	1													1				
641-2-13	PRESTRESSED CONCRETE POLE, F&I, TYPE P-111	EA			1									1		2				
646-1-11	ALUMINUM SIGNALS POLE, FURNISH & INSTALL, PEDESTAL	EA	5													5				
646-1-60	ALUMINUM SIGNALS POLE, REMOVE	EA	5													5				
649-21-3	STEEL MAST ARM ASSEMBLY, FURNISH & INSTALL, SINGLE ARM 40'	EA	1													1				
649-21-10	STEEL MAST ARM ASSEMBLY, FURNISH & INSTALL, SINGLE ARM 60'	EA	1													1				
649-21-25	STEEL MAST ARM ASSEMBLY, FURNISH & INSTALL, DOUBLE ARM 78' -60'	EA	1													1				
649-26-5	STEEL MAST ARM ASSEMBLY, REMOVE, DEEP FOUNDATION-BOLT ON ATTACHMENT	EA	3													3				
650-1-14	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL-ALUMINUM, 3 SECTION, 1 WAY	AS	14													14				
653-1-11	PEDESTRIAN SIGNAL, FURNISH & INSTALL-LED COUNTDOWN, 1 WAY	AS	5													5				
660-3-41	VEHICLE DETECTION SYSTEM-MICROWAVE, RELOCATE, CABINET EQUIPMENT	EA	1													1				
660-3-42	VEHICLE DETECTION SYSTEM-MICROWAVE, RELOCATE, ABOVE GROUND EQUIPMENT	EA	4													4				
660-3-52	VEHICLE DETECTION SYSTEM-MICROWAVE, ADJUST & MODIFY, ABOVE GROUND EQUIPMENT	EA	2													2				
660-6-121	VEHICLE DETECTION SYSTEM-AVI, BLUETOOTH, FURNISH & INSTALL, CABINET EQUIPMENT	EA	1													1				
660-6-122	VEHICLE DETECTION SYSTEM-AVI, BLUETOOTH, FURNISH & INSTALL, ABOVE GROUND EQUIPMENT	EA	1													1				
660-8-11	TRAFFIC DATA DETECTION SYSTEM - MICROWAVE, FURNISH AND INSTALL, CABINET EQUIPMENT	EA			1									1		2				
660-8-12	TRAFFIC DATA DETECTION SYSTEM - MICROWAVE, FURNISH AND INSTALL, ABOVE GROUND EQUIPMENT	EA			1									1		2				
663-1-121	SIGNAL PRIORITY AND PREEMPTION SYSTEM, FURNISH AND INSTALL, GPS, REPLACE CABINET ELECTRONICS	EA	1													1				
663-1-122	SIGNAL PRIORITY AND PREEMPTION SYSTEM, FURNISH AND INSTALL, GPS, DETECTOR	EA	1													1				
665-1-11	PEDESTRIAN DETECTOR, FURNISH & INSTALL, STANDARD	EA	5													5				
670-5-110	TRAFFIC CONTROLLER ASSEMBLY, FURNISH & INSTALL, NEMA	AS	1													1				
670-5-600	TRAFFIC CONTROLLER ASSEMBLY, REMOVE CONTROLLER WITH CABINET	AS	1													1				
676-2-111	ITS CABINET, FURNISH & INSTALL, POLE MOUNT, 336, 24" W X 36" H X 20" D	EA			1											1				
682-1-133	ITS CCTV CAMERA, F&I, DOME ENCLOSURE - NON-PRESSURIZED, IP, HIGH DEFINITION	EA	1		1											2				
684-1-1	MANAGED FIELD ETHERNET SWITCH, FURNISH & INSTALL	EA	1		1											2				
684-2-1	DEVICE SERVER, FURNISH & INSTALL	EA			1											1				
685-1-11	UNINTERRUPTIBLE POWER SUPPLY, FURNISH AND INSTALL, LINE INTERACTIVE	EA			1											1				
685-2-1	REMOTE POWER MANAGEMENT UNIT- RPMU, FURNISH AND INSTALL	EA			1											1				
700-5-50	INTERNALLY ILLUMINATED SIGN, RELOCATE	EA	3													3				

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

		KHA PROJECT 148400100 DATE JULY 2023 SCALE AS SHOWN DESIGNED BY YL DRAWN BY EMB CHECKED BY NRH				LICENSED PROFESSIONAL NICOLE R. HECK, P.E. FL LICENSE NUMBER 84306		SHEET NUMBER T-3	
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REVISIONS DATE BY		7/26/2023 5:11:00 PM Default		\\sarf\p01\FL_SAR\SAR_Roadway\TAM_Lena_Road\12345615201\signals\TABQSG01.dgn					

TABULATION OF QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS														TOTAL THIS SHEET		GRAND TOTAL	
			T-15														PLAN	FINAL	PLAN	FINAL
			PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL				
611-1-1	ITSFM SUBSURFACE DOCUMENTATION - PROJECT LENGTH	MI	1.8														1.8		1.8	
611-2-2	ITSFM LOCATION DOCUMENTATION - ITS SITE	EA	3														3		3	
630-2-11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH	LF	685														685		6,840	
630-2-12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF	495														495		3,785	
630-2-14	CONDUIT, FURNISH & INSTALL, ABOVEGROUND	LF																	20	
633-6	FIBER OPTIC CABLE LOCATOR	DA																	30	
632-7-1	SIGNAL CABLE, FURNISH & INSTALL-NEW OR RECONSTRUCTED INTERSECTION	PI																	1	
632-7-6	SIGNAL CABLE, REMOVE-INTERSECTION	PI																	1	
633-1-122	FIBER OPTIC CABLE, F&I, UNDERGROUND, 13-48 FIBERS	LF	1,580														1580		11,310	
633-1-123	FIBER OPTIC CABLE, F&I, UNDERGROUND,49-96 FIBERS	LF	1,580														1580		6,010	
633-1-620	FIBER OPTIC CABLE, REMOVE, UNDERGROUND	LF																	4,860	
633-2-31	FIBER OPTIC CONNECTION, INSTALL, SPLICE	EA																	124	
633-3-11	FIBER OPTIC CONNECTION HARDWARE, FURNISH & INSTALL, SPLICE ENCLOSURE	EA																	3	
633-3-12	FIBER OPTIC CONNECTION HARDWARE, F&I, SPLICE TRAY	EA																	3	
633-3-15	FIBER OPTIC CONNECTION HARDWARE, F&I, PRETERMINATED PATCH PANEL	EA	1														1		2	
633-8-1	MULTI-CONDUCTOR COMMUNICATION CABLE, FURNISH & INSTALL	LF	2,150														2150		2,570	
633-8-6	MULTI-CONDUCTOR COMMUNICATION CABLE, REMOVE	LF	570														570		570	
635-2-11	PULL & SPLICE BOX, FURNISH & INSTALL, 13" x 24" COVER SIZE	EA																	19	
635-2-12	PULL & SPLICE BOX, FURNISH & INSTALL, 24" x 36" COVER SIZE	EA	8														8		26	
635-2-13	PULL & SPLICE BOX, F&I, 30" X 60" RECTANGULAR OR 36" ROUND COVER SIZE	EA																	2	
639-1-122	ELECTRICAL POWER SERVICE, FURNISH & INSTALL, UNDERGROUND, METER PURCHASED BY CONTRACTOR	AS																	2	
639-2-1	ELECTRICAL SERVICE WIRE, FURNISH & INSTALL	LF																	380	
639-3-11	ELECTRICAL SERVICE DISCONNECT, F&I, POLE MOUNT	EA																	2	
641-2-12	PRESTRESSED CONCRETE POLE, FURNISH & INSTALL, TYPE P-II SERVICE POLE	EA																	1	
641-2-13	PRESTRESSED CONCRETE POLE, F&I, TYPE P-III	EA																	2	
646-1-11	ALUMINUM SIGNALS POLE, FURNISH & INSTALL, PEDESTAL	EA																	5	
646-1-60	ALUMINUM SIGNALS POLE, REMOVE	EA																	5	
649-21-3	STEEL MAST ARM ASSEMBLY, FURNISH & INSTALL, SINGLE ARM 40'	EA																	1	
649-21-10	STEEL MAST ARM ASSEMBLY, FURNISH & INSTALL, SINGLE ARM 60'	EA																	1	
649-21-25	STEEL MAST ARM ASSEMBLY, FURNISH & INSTALL, DOUBLE ARM 78'-60'	EA																	1	
649-26-5	STEEL MAST ARM ASSEMBLY, REMOVE, DEEP FOUNDATION-BOLT ON ATTACHMENT	EA																	3	
650-1-14	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL-ALUMINUM, 3 SECTION, 1 WAY	AS																	14	
653-1-11	PEDESTRIAN SIGNAL, FURNISH & INSTALL-LED COUNTDOWN, 1 WAY	AS																	5	
660-3-41	VEHICLE DETECTION SYSTEM-MICROWAVE, RELOCATE, CABINET EQUIPMENT	EA																	1	
660-3-42	VEHICLE DETECTION SYSTEM-MICROWAVE, RELOCATE, ABOVE GROUND EQUIPMENT	EA																	4	
660-3-52	VEHICLE DETECTION SYSTEM-MICROWAVE, ADJUST & MODIFY, ABOVE GROUND EQUIPMENT	EA																	2	
660-6-121	VEHICLE DETECTION SYSTEM-AVI, BLUETOOTH, FURNISH & INSTALL, CABINET EQUIPMENT	EA																	1	
660-6-122	VEHICLE DETECTION SYSTEM-AVI, BLUETOOTH, FURNISH & INSTALL, ABOVE GROUND EQUIPMENT	EA																	1	
660-8-11	TRAFFIC DATA DETECTION SYSTEM - MICROWAVE, FURNISH AND INSTALL, CABINET EQUIPMENT	EA																	2	
660-8-12	TRAFFIC DATA DETECTION SYSTEM - MICROWAVE, FURNISH AND INSTALL, ABOVE GROUND EQUIPMENT	EA																	2	
663-1-121	SIGNAL PRIORITY AND PREEMPTION SYSTEM, FURNISH AND INSTALL, GPS, REPLACE CABINET ELECTRONICS	EA																	1	
663-1-122	SIGNAL PRIORITY AND PREEMPTION SYSTEM, FURNISH AND INSTALL, GPS, DETECTOR	EA																	1	
665-1-11	PEDESTRIAN DETECTOR, FURNISH & INSTALL, STANDARD	EA																	5	
670-5-110	TRAFFIC CONTROLLER ASSEMBLY, FURNISH & INSTALL, NEMA	AS																	1	
670-5-600	TRAFFIC CONTROLLER ASSEMBLY, REMOVE CONTROLLER WITH CABINET	AS																	1	
676-2-111	ITS CABINET, FURNISH & INSTALL, POLE MOUNT, 336, 24" W X 36" H X 20" D	EA																	1	
682-1-133	ITS CCTV CAMERA, F&I, DOME ENCLOSURE - NON-PRESSURIZED, IP, HIGH DEFINITION	EA																	2	
684-1-1	MANAGED FIELD ETHERNET SWITCH, FURNISH & INSTALL	EA																	2	
684-2-1	DEVICE SERVER, FURNISH & INSTALL	EA	1														1		2	
685-1-11	UNINTERRUPTIBLE POWER SUPPLY, FURNISH AND INSTALL, LINE INTERACTIVE	EA																	1	
685-2-1	REMOTE POWER MANAGEMENT UNIT- RPMU, FURNISH AND INSTALL	EA																	1	
700-5-50	INTERNALLY ILLUMINATED SIGN, RELOCATE	EA																	3	

No.	REVISIONS	DATE	BY

Kimley»Horn

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 WWW.KIMLEY-HORN.COM

KHA PROJECT
148400100
DATE
JULY 2023
SCALE AS SHOWN
DESIGNED BY YL
DRAWN BY EMB
CHECKED BY NRH

MANATEE COUNTY
LENA ROAD
FL



LICENSED PROFESSIONAL
NICOLE R. HECK, P.E.
FL LICENSE NUMBER 84306

TABULATION OF QUANTITIES



SHEET NUMBER
T-4

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

SIGNALIZATION NOTES:

1. THE MAINTAINING AGENCY IS MANATEE COUNTY. THE CONTRACTOR SHALL NOTIFY THE MAINTAINING AGENCY SEVEN DAYS PRIOR TO BEGINNING WORK. THE CONTRACTOR IS RESPONSIBLE TO CONTACT THE MAINTAINING AGENCY FOR THE PHYSICAL ADDRESS ONCE THE SERVICE DROP LOCATION HAS BEEN ESTABLISHED.
2. THE CONTRACTOR IS TO NOTIFY UTILITY OWNERS THROUGH SUNSHINE ONE CALL OF FLORIDA, INC. (1-800-432-4770) TWO (2) FULL BUSINESS DAYS IN ADVANCE OF BEGINNING CONSTRUCTION ON THE JOB SITE. ALL UTILITY CONFLICTS SHALL BE RESOLVED PRIOR TO SETTLING OF THE SIGNAL POLES OR THE LAYING OF CONDUIT.
3. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANY AT LEAST TWO WORKING DAYS IN ADVANCE OF POLE SETTING OPERATIONS WHERE CONFLICT WITH OVERHEAD ELECTRICAL CONDUCTORS IS EXPECTED. ALL SAFETY CLEARANCES TO PRIMARY ELECTRICAL LINES SHALL BE STRICTLY ADHERED TO.
4. THE CONTRACTOR SHALL MEET ALL CRITERIA OUTLINED IN "THE MINIMUM SPECIFICATIONS FOR TRAFFIC CONTROL SIGNALS AND DEVICES" AND ALL STANDARDS AND SPECIFICATIONS UTILIZED BY THE MAINTAINING AGENCY.
5. IT SHOULD BE NOTED THAT NO TEST BORINGS WERE MADE WHERE CONDUIT RUNS ARE TO BE INSTALLED BY DIRECTIONAL DRILLING OR TRENCHING.
6. INSTALL ONE SPARE 2" CONDUIT FOR FUTURE USE AT ALL INTERSECTION CROSSINGS. CONDUIT SHALL TERMINATE AT A PULL BOX AND BE STUBBED AND PROPERLY CAPPED.
7. A #14 AWF INSULATED PULL WIRE SHALL BE INSTALLED IN ALL SPARE CONDUITS. AT LEAST TWO FEET OF PULL WIRE SHALL BE ACCESSIBLE AT EACH CONDUIT TERMINATION AND BE SECURED WITHIN THE PULL BOX. PAYMENT OF THE PULL WIRE SHALL BE INCIDENTAL TO THE CONDUIT.
8. ALL UNDERGROUND CONDUIT ENTRY HOLES ON SIGNAL POLES SHALL BE STUBBED OUT AND CAPPED IN A PROPOSED PULL BOX.
9. AT LOCATIONS WHERE UNDERGROUND UTILITIES ARE IN CLOSE PROXIMITY TO THE SIGNAL POLE FOUNDATION OR CONDUIT RUN AS DETERMINED BY THE ENGINEER, THE CONTRACTOR SHALL HAND-DIG THE FIRST 48 INCHES OF DEPTH FOR THE POLE FOUNDATION OR THE CONDUIT RUN.
10. PULL BOXES SHALL BE POLYMER CONCRETE TYPE MATERIAL AND BE TRAFFIC BEARING.
11. A MANUAL PUSH BUTTON CORD SHALL BE INSTALLED IN THE CONTROLLER CABINET.
12. CONTROLLER CABINET DOOR SHALL OPEN TOWARD THE RIGHT OF WAY LINE AND AWAY FROM TRAFFIC.
13. WHEN INSTALLING GROUND WIRE IN THE CONTROLLER CABINETS, THE COPPER GROUND WIRE SHALL NOT COME INTO CONTACT WITH THE ALUMINUM CABINET, EXCEPT AT THE TERMINATION POINT.
14. ALL FIELD WIRING, INCLUDING SIGNAL HEAD WIRING AND LOOP LEAD-INS SHALL BE IDENTIFIED WITH CLEARLY MARKED WEATHERPROOF TAGS. THE PROPOSED TAGGING SYSTEM SHALL BE IN ACCORDANCE WITH THE FDOT AND THE MAINTAINING AGENCIES STANDARD SPECIFICATIONS.
15. THE SIGNAL CONTRACTOR IS RESPONSIBLE TO SIZE ALL SIGNAL CABLES TO ENSURE NO MORE THAN A 5% VOLTAGE DROP AT THE END OF ANY CIRCUIT OCCURS. VOLTAGE DROP IS REFERENCED TO THE LINE SIDE OF THE METER.
16. TRAFFIC CONTROL FOR THE PROJECT SHALL COMPLY WITH THE LATEST EDITION OF THE FDOT DESIGN STANDARDS, THE MUTCD AND THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. THE CONTRACTOR MAY BE DIRECTED BY THE ENGINEER TO DEVELOP AND IMPLEMENT MODIFICATIONS TO THE TRAFFIC SIGNAL OPERATIONS (I.E. TIMING AND PHASING) FOR ANY SIGNAL LOCATED WITHIN THE PROJECT LIMITS. THE CONTRACTOR'S RESPONSE TIME TO ALL REPORTED MALFUNCTIONS OF A TRAFFIC SIGNAL SHALL BE NO MORE THAN 2 HOURS AND SHALL RESTORE ALL MALFUNCTIONS OF THE SIGNAL EQUIPMENT TO ITS LEVEL OF OPERATION PRIOR TO THE MALFUNCTION WITHIN 24 HOURS. DURING THIS TIME, THE CONTRACTORS SHALL PROVIDE AT HIS EXPENSE, TEMPORARY TRAFFIC CONTROL DEVICES, FLAGGER PERSONNEL, AND LAW ENFORCEMENT PERSONNEL AS NECESSARY TO MAINTAIN A SAFE AND EFFICIENT FLOW OF TRAFFIC AT THE EFFECTED SIGNALIZED AND UNSIGNALIZED INTERSECTIONS. THE ENGINEER SHALL APPROVE ALL MODIFICATIONS PRIOR TO THEIR IMPLEMENTATION.
17. ALL SIGNAL EQUIPMENT TO REMAIN UNLESS OTHERWISE NOTED.
18. PAVEMENT MARKINGS ARE SHOWN FOR REFERENCE PURPOSES ONLY. FOR PAVEMENT MARKING DESIGN INFORMATION, SEE PAVEMENT MARKING PLANS.
19. DELIVER THREE SETS OF RECORD DRAWINGS, TWO SETS OF IMSA INSPECTION FORMS AND ONE COMPACT DISC OF RECORD DRAWINGS TO MR. AARON BURKETT, THE MANATEE COUNTY TRAFFIC OPERATIONS DIVISION MANAGER AT 2904 12TH ST CT E, BRADENTON, FL 34208. RECORD DRAWINGS MUST BE DELIVERED TO THE COUNTY 5 BUSINESS DAYS PRIOR TO SCHEDULING THE FINAL INSPECTION.
20. UPON PASSING THE FINAL INSPECTION THE CONTRACTOR SHALL SEND A WRITTEN REQUEST TO THE PROJECT MANAGEMENT DIVISION AND THE TRANSPORTATION DIVISION TO TRANSFER MAINTENANCE FROM THE CONTRACTOR TO MANATEE COUNTY. MANATEE COUNTY WILL RESPOND WITHIN 5 WORKING DAYS TO ESTABLISH A TIME TABLE FOR THE TRANSFER OF MAINTENANCE RESPONSIBILITY.
21. AT LEAST TWO (2) FULL BUSINESS DAYS PRIOR TO BEGINNING THE TRAFFIC SIGNAL INSTALLATION, CONTRACTOR SHALL CONTACT THE TRAFFIC SIGNAL INSPECTORS/LIAISONS:
 FDOT SARASOTA/MANATEE OPERATIONS CENTER
 MR. JAMES NICHOLS
 1400 FL-64
 BRADENTON, FL 34212
 PHONE: 941-359-7333

 MANATEE COUNTY PROJECT MANAGEMENT DIVISION
 DANIEL GARNER
 1022 26TH AVENUE EAST
 BRADENTON, FL 34208
 PHONE: 941-708-7450
22. UPON RECEIPT OF AN APPROVAL BY E-MAIL FROM MANATEE COUNTY TRAFFIC DESIGN DIVISION STAFF, SUBMIT THREE (3) 24"X36" SIGNED AND SEALED COPIES OF TRAFFIC INFRASTRUCTURE PLANS, SPECIFICATIONS, ESTIMATES, AND CLEARANCE CALCULATIONS TO:
 MANATEE COUNTY TRAFFIC DESIGN DIVISION
 (ATTN. MR. VISHAL S. KAKKAD, P.E., PTOE)
 2101 47TH TERRACE EAST
 BRADENTON, FLORIDA 34203
23. AT THE COMPLETION OF THE PROJECT, PROVIDE AS-BUILT PLANS IN ELECTRONIC FORM (PDF) TO:
 FDOT TRAFFIC OPERATIONS
 RENJAN JOSEPH, P.E., TSM&O ENGINEER
 801 NORTH BROADWAY AVENUE
 P.O. BOX 1249
 BARTOW, FL 33830-1249
 EMAIL: RENJAN.JOSEPH@DOT.STATE.FL.US
 PHONE: 863-519-2746
24. THE LOCATIONS OF THE UTILITIES SHOWN IN THE PLANS ARE BASED ON LIMITED INVESTIGATION TECHNIQUES AND SHOULD BE CONSIDERED APPROXIMATE ONLY.
25. EXISTING UTILITIES ARE TO REMAIN IN PLACE UNLESS OTHERWISE NOTED.
26. REQUEST UPDATED SIGNAL TIMINGS, FROM FDOT TSM&O ENGINEER ARTERIALS (863-519-2216) WHEN ALL LANES, STRIPING, SIGNALS AND PEDESTRIAN FACILITIES ARE IN THEIR FINAL CONFIGURATION AND THE SIGNAL IS OPERATING AS DESIGNED. PROVIDE FDOT WITH ALL 'AS-BUILT' INFORMATION NECESSARY TO DEVELOP THE BASIC SIGNAL TIMING PARAMETERS AND ALLOW THREE (3) WEEKS FOLLOWING THE REQUEST FOR FDOT TO DEVELOP THE UPDATED TIMINGS. PROGRAM THE CONTROLLER PER THE TIMINGS PROVIDED BY FDOT.
27. THE CONTRACTOR SHALL INSTALL AND MAINTAIN TEMPORARY VEHICLE DETECTION FOR ALL APPROACHES AND PHASES THROUGHOUT THE CONSTRUCTION PROJECT. THE DETECTION DEVICES SHALL BE PROPERLY INSTALLED, PROGRAMMED, AND TUNED TO ENSURE PROPER OPERATION. THE CONTRACTOR SHALL MAKE ALL ADJUSTMENTS AND REPAIRS AS NEEDED TO ENSURE THE DETECTION IS PROPERLY FUNCTIONING THROUGHOUT THE PROJECT OR UNTIL THE PERMANENT DETECTION IS INSTALLED AND UNTIL MANATEE COUNTY ACCEPTS THE PROJECT. ANY DAMAGE TO THE EXISTING DETECTION SYSTEM AT AN INTERSECTION MUST BE RESTORED WITH TWENTY-FOUR (24) HOURS AT NO ADDITIONAL COST TO THE COUNTY.

					KHA PROJECT 148400100 DATE JULY 2023 SCALE AS SHOWN DESIGNED BY YL DRAWN BY EMB CHECKED BY NRH				LICENSED PROFESSIONAL NICOLE R. HECK, P.E. FL LICENSE NUMBER 84306		GENERAL NOTES		SHEET NUMBER T-5		
© 2023 KIMLEY-HORN AND ASSOCIATES, INC. 201 NORTH FRANKLIN STREET, SUITE 1400, TAMPA, FL 33602 PHONE: (813) 635-5514 WWW.KIMLEY-HORN.COM			MANATEE COUNTY		LENA ROAD		FL								
No.	REVISIONS	DATE	BY												

PAY ITEM NOTES:

PAY ITEM 635-2-13
 COUNTY PREFERS 30" X 60" RECTANGULAR COVER SIZE.

PAY ITEM 649-26-5
 THE CONTRACTOR SHALL COORDINATE WITH LOCAL FDOT MAINTENANCE FOR THE DELIVERY OF ANY SALVAGEABLE MAST ARMS.

PAY ITEM 660-3-11 AND 660-3-12
 PROVIDE WAVETRONIX CLICK 656 CABINET INTERFACE DEVICE, SMART SENSOR ADVANCED, AND SMART SENSOR MATRIX.

PAY ITEM 660-8-11 AND 660-8-12
 PROVIDE WAVETRONIX SMART SENSOR HD

PAY ITEM 670-5-110
 PROVIDE TRAFFICWARE 980 ATC TRAFFIC CONTROLLER AND TYPE 6 CABINET WITH DOUBLE DOORS PER MANATEE COUNTY SPEC.

PAY ITEM 682-1-133
 PROVIDE BOSCH 7000 STARLITE SERIES 1080 30X40 FULLY COMPATIBLE WITH THE EXISTING ADVANCED TRAFFIC MANAGEMENT SYSTEM. SHALL BE MOUNTED ON THE MAST ARM 2 FEET OUTSIDE OF THE VEHICULAR TRAVEL LANE.

PAY ITEM 684-1-1
 THE CABINETS SHALL COME EQUIPPED WITH A RUGGEDCOM SWITCH MODEL NUMBER RSG920P (6GK6092-OPS23-0BA0-Z A05+B05+C02+D02). THIS SWITCH NEEDS AN EXTERNAL POWER SUPPLY MODEL NUMBER RUGGEDCOM RPS 1300 TO POWER THE POWER-OVER-ETHERNET (POE) PORTS.














LIST OF ABBREVIATIONS:

COMM	COMMUNICATIONS
CCTV	CLOSED CIRCUIT TELEVISION
EPB	ELECTRIC PULL BOX
FOC	FIBER OPTIC CABLE
FOPB	FIBER OPTIC PULL BOX
FOSV	FIBER OPTIC SPLICE VAULT
HDPE	HIGH-DENSITY POLYETHYLENE
ITS	INTELLIGENT TRANSPORTATION SYSTEMS
MANCO	MANATEE COUNTY
MVDS	MICROWAVE VEHICLE DETECTION SYSTEM
PTZ	PAN, TILT, ZOOM (FOR CCTV OPERATION)
SM	SINGLE MODE
SWRF	SOUTHEAST WATER RECLAMATION FACILITY
UPS	UNINTERRUPTIBLE POWER SERVICE

SIGNAL LEGEND:

	RADAR DETECTION
	BLUETOOTH
	RADAR DETECTION ZONE
	CCTV CAMERA
	EMERGENCY PREEMPTION

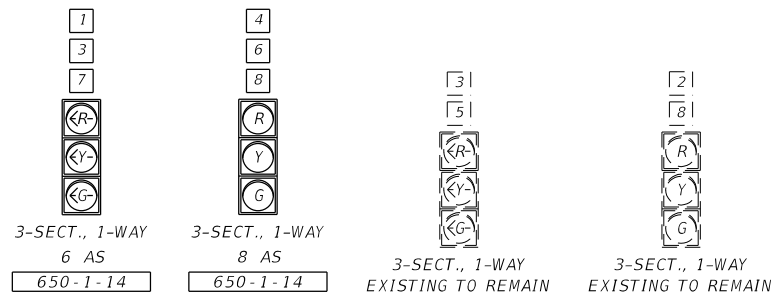
ITS LEGEND:

	CCTV CAMERA
	MVDS
	MVDS DETECTION ZONE
	ELECTRICAL PULL BOX
	FIBER OPTIC PULL BOX
	EXISTING PULL BOX
	FIBER OPTIC SPLICE VAULT
	CABINET (POLE MOUNTED)
	CONCRETE POLE
	PROPOSED R/W
	DIRECTIONAL BORE CONDUIT
	OPEN TRENCH CONDUIT
	EXISTING BURIED FOC CONDUIT

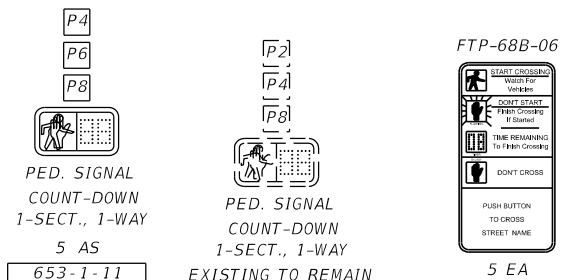
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				KHA PROJECT 148400100 DATE JULY 2023 SCALE AS SHOWN DESIGNED BY YL DRAWN BY EMB CHECKED BY NRH	 LENA ROAD FL	LICENSED PROFESSIONAL NICOLE R. HECK, P.E. FL LICENSE NUMBER 84306	GENERAL NOTES	SHEET NUMBER T-6
No.	REVISIONS	DATE	BY	7/25/2023 6:21:19 PM Default				\\sarfp02\FL_SAR2\SAR_Roadway\TAM_Lena_Road\1234561520\signals\GNNT5G01.dgn

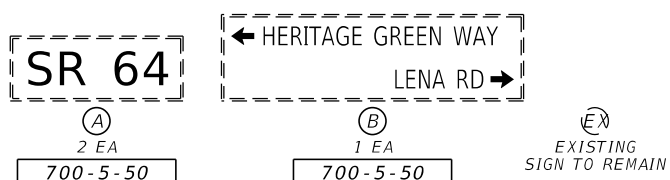
SIGNAL DISPLAY DETAILS



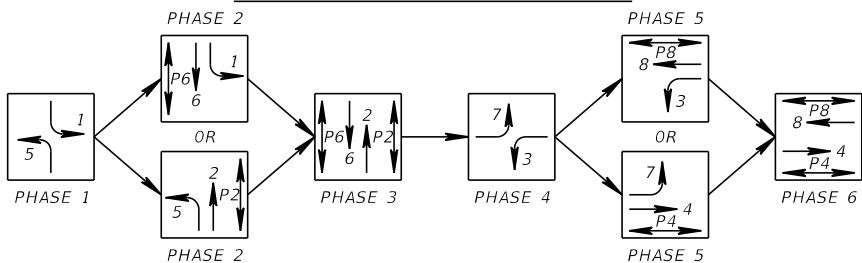
PEDESTRIAN DISPLAY DETAILS



EXISTING INTERNALLY ILLUMINATED OVERHEAD STREET NAME SIGN DETAILS



STANDARD SIGNAL OPERATING PLAN 10



CONTROLLER TIMINGS

TIMING FUNCTION	1	2	3	4	5	6	7	8
MOVEMENT NUMBER	1	2	3	4	5	6	7	8
MINIMUM GREEN	5	15	5	7	5	15	5	7
EXTENSION	3	5	3	3	3	5	3	3
MAXIMUM GREEN 1	25	60	15	20	25	60	25	20
MAXIMUM GREEN 2	20	90	25	25	30	90	25	45
YELLOW CLEARANCE	5.1	5.1	3.7	3.7	5.1	5.1	3.7	3.7
ALL RED	2.2	2.0	3.1	4.0	2.5	2.0	2.2	4.5
PEDESTRIAN WALK	-	7	-	7	-	7	-	7
PED. CLEARANCE	-	23	-	38	-	31	-	37
RECALL	-	MIN	-	-	-	MIN	-	-

RADAR DETECTION ZONES

DETECTION ZONE	SIZE	NO. OF LANES	DELAY TIME (SEC)
ZONE 1	6' x 40'	1	0
ZONE 2D-F	6' x 6'	3	0
ZONE 3A-B	6' x 40'	2	3
ZONE 4A	6' x 40'	1	0
ZONE 4R	6' x 40'	1	8
ZONE 5	6' x 40'	1	0
ZONE 6D-F	6' x 6'	3	0
ZONE 7A-B	6' x 40'	2	3
ZONE 8	6' x 40'	1	0

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

NOTE: POLE FOUNDATION TO BE FLUSH AT SIDEWALK

POLE LOCATION= STA. 309+24.08 OFF. 39.74' LT 2 RUNS @ 10 LF

(1) SIGNAL
(1) DETECTION
(1) ELECTRIC
(2) PEDESTRIAN
(1) SPARE

TEMP. EASEMENT

EXIST. R/W

EXIST. R/W

EXIST. R/W

EXIST. R/W

EXIST. R/W

EXIST. R/W

EXIST. R/W

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- 5 LF 630-2-11
- 1 PI 632-7-1
- 4 EA 635-2-11
- 1 AS 639-1-122
- 5 LF 639-2-1
- 1 EA 639-3-11
- 1 EA 641-2-12
- 1 EA 660-3-41
- 1 EA 660-6-121
- 1 EA 663-1-121
- 1 EA 663-1-122
- 1 AS 670-5-110
- 1 EA 684-1-1

- 2 RUNS @ 20 LF 630-2-12
- 20 LF 635-2-11
- 2 EA 646-1-11
- 1 EA 665-1-11
- (2) PEDESTRIAN

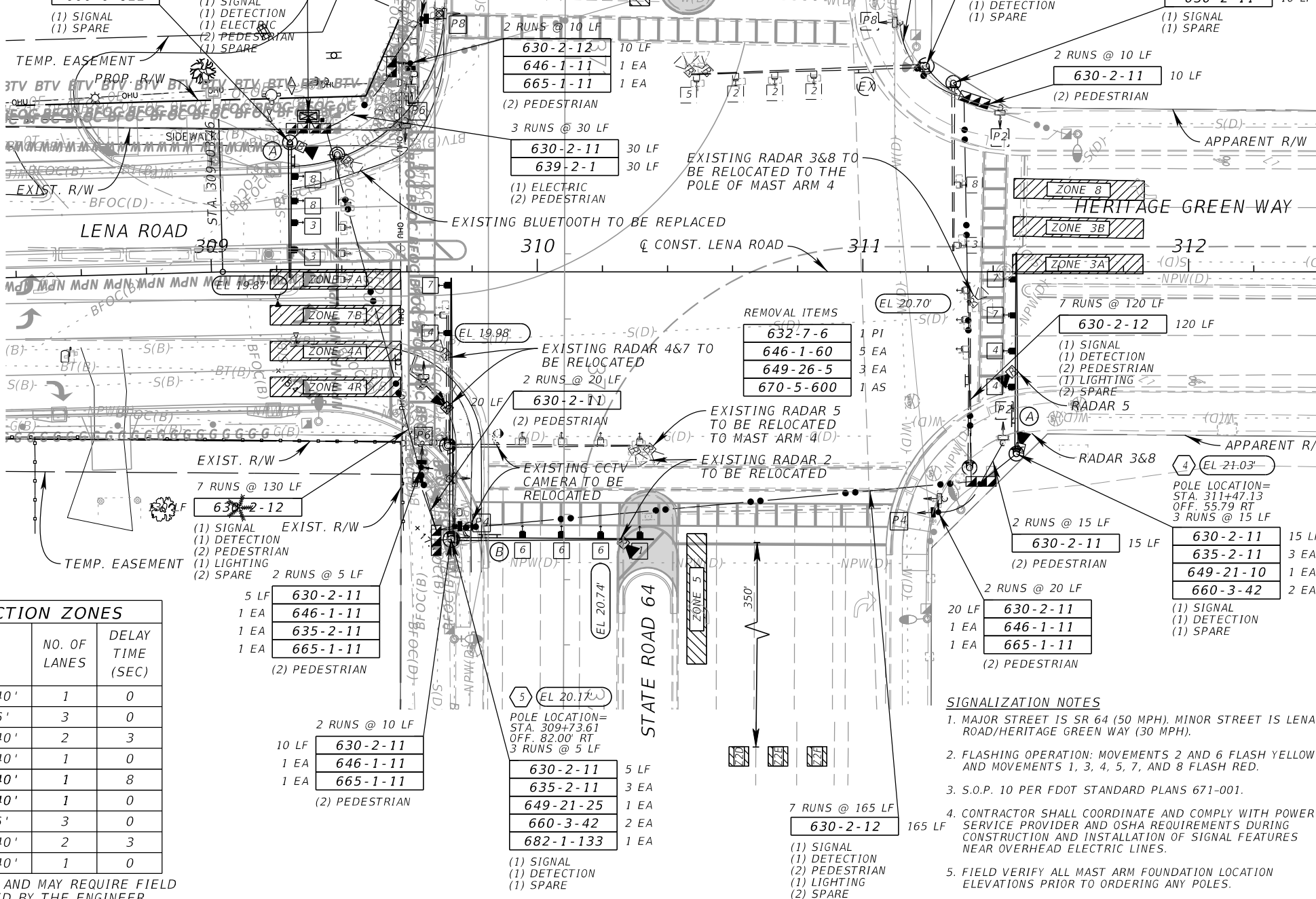
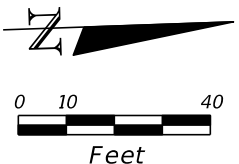
- 2 RUNS @ 10 LF 630-2-12
- 10 LF 646-1-11
- 1 EA 665-1-11
- (2) PEDESTRIAN

- 3 RUNS @ 30 LF 630-2-11
- 30 LF 639-2-1
- (1) ELECTRIC
- (2) PEDESTRIAN

- 2 RUNS @ 10 LF 630-2-11
- 10 LF 630-2-11
- (2) PEDESTRIAN

- 2 RUNS @ 35 LF 630-2-12
- 35 LF (2) PEDESTRIAN

- EXISTING 630-2-11 20 LF
- EXISTING 635-2-11 3 EA
- EXISTING 660-3-52 2 EA
- (1) SIGNAL
- (1) DETECTION
- (1) SPARE



- REMOVAL ITEMS
- 632-7-6 1 PI
 - 646-1-60 5 EA
 - 649-26-5 3 EA
 - 670-5-600 1 AS

SIGNALIZATION NOTES

- MAJOR STREET IS SR 64 (50 MPH). MINOR STREET IS LENA ROAD/HERITAGE GREEN WAY (30 MPH).
- FLASHING OPERATION: MOVEMENTS 2 AND 6 FLASH YELLOW AND MOVEMENTS 1, 3, 4, 5, 7, AND 8 FLASH RED.
- S.O.P. 10 PER FDOT STANDARD PLANS 671-001.
- CONTRACTOR SHALL COORDINATE AND COMPLY WITH POWER SERVICE PROVIDER AND OSHA REQUIREMENTS DURING CONSTRUCTION AND INSTALLATION OF SIGNAL FEATURES NEAR OVERHEAD ELECTRIC LINES.
- FIELD VERIFY ALL MAST ARM FOUNDATION LOCATION ELEVATIONS PRIOR TO ORDERING ANY POLES.

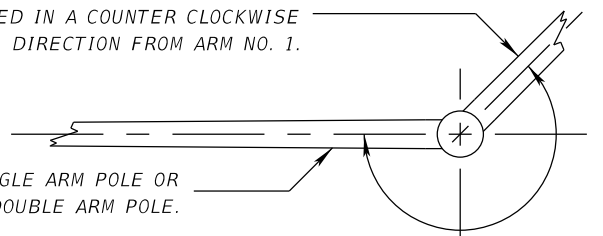
INTERSECTION 13M082

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	<p>SIGNALIZATION PLAN</p>			

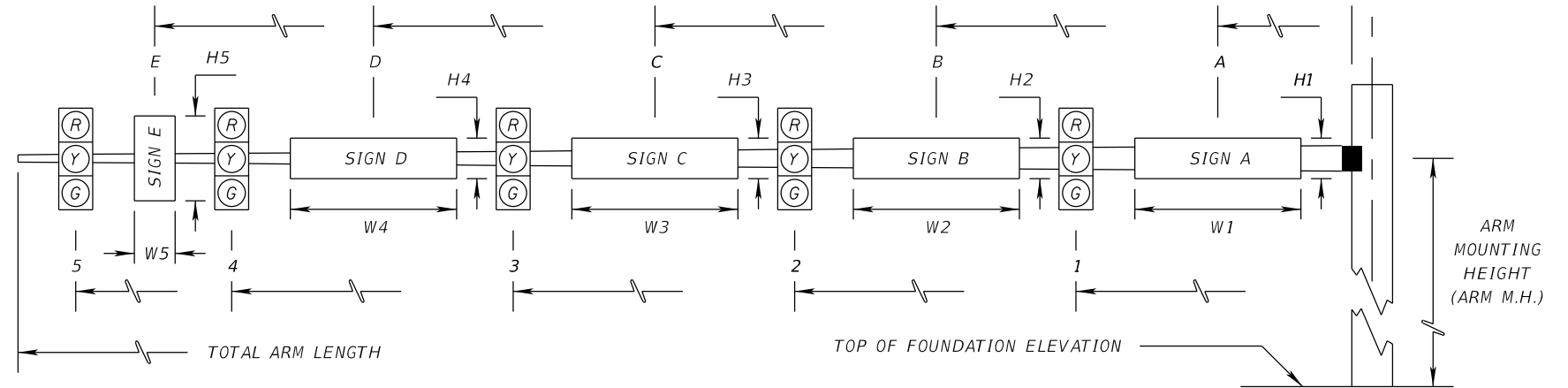
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SPECIAL INSTRUCTIONS			
ID NO.	PED. BUTTON	PED. SIGNALS	HANDHOLE LOCATION

ARM NO. 2 - DOUBLE ARM POLE ORIENTATION TO BE MEASURED IN A COUNTER CLOCKWISE DIRECTION FROM ARM NO. 1.



ARM NO. 1 - SINGLE ARM POLE OR LONGEST ARM FOR DOUBLE ARM POLE.



ID NO.	SHEET NO.	LOCATION BY STA.	TOP OF FOUND. ELEVATION	RDWY ARM NO.	CROWN ELEV.	LUMI-NAIRE YIN	TERM. COMP. YIN	* DENOTES NUMBER OF SECTIONS IN SIGNAL HEAD ASSEMBLY											TOTAL ARM LENGTH	ARM M.H.	ANGLE BETWEEN DUAL ARMS	SIGN DATA						DETECTION	PAINT COLOR
								SIGNAL DATA														SIGN DATA							
								SIGNAL VEH	BACK PLATES YIN	PED. SIGNAL YIN	DISTANCE FROM POLE											DISTANCE FROM POLE/HEIGHT & WIDTH OF SIGN							
1	*	2	*	3	*	4	*	5	*	A	H1	W1	B	H2	W2														
PROPOSED LOADING																													
1	T-6	309+24.08 39.74' LT	19.74'	1	19.87'	N	Y	V	Y	N	9.5'	3	17.0'	3	23.5'	3	32.0'	3	40.0'	21'		5.0'	1.5'	4.0'			0' (BT)	GALVANIZED	
2	T-6	EXISTING (NWC)	EXIST.	1	EXIST.	N	Y	V	Y	N	+	3	+	3	+	3	+	3	+	EXIST.							+ (RD), + (RD)	EXIST.	
3	T-6	EXISTING (NWC)	EXIST.	1	EXIST.	N	Y	V	Y	N	+	3	+	3					+	EXIST.								EXIST.	
4	T-6	311+47.13 55.79 RT	21.03'	1	20.70'	N	Y	V	Y	N	19.5'	3	30.5'	3	41.5'	3	52.5'	3	60.0'	21'		10.5'	1.5'	4.0'			0' (RD), 25.0' (RD)	GALVANIZED	
5	T-6	309+73.61 82.00' RT	20.17'	1	19.98'	N	Y	V	Y	N	61.5'	3	76.0'	3					78.0'	21'	270					37.5' (RD)	GALVANIZED		
				2	20.74'			V	Y		20.0'	3	32.0'	3	44.0'	3	56.0'	3	60.0'			10.0'	2.8'	7.0'			3.0' (CC), 50.0' (RD)	GALVANIZED	
FUTURE (DESIGN) LOADING																													
1	T-6	309+24.08 39.74' LT	19.74'	1	19.87'	N	Y	V	Y	N	9.5'	5	17.0'	3	23.5'	3	32.0'	3	40.0'	21'		5.0'	1.5'	4.0'			0' (BT)	GALVANIZED	

+ = EXISTING SIGNAL HEAD, EXISTING SIGN, OR EXISTING RADAR DETECTOR TO REMAIN IN PLACE
RD = RADAR DETECTOR
CC = CLOSED-CIRCUIT TELEVISION (CCTV) CAMERA
BT = BLUETOOTH

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No.	REVISIONS	DATE	BY	Kimley»Horn © 2023 KIMLEY-HORN AND ASSOCIATES, INC. 201 NORTH FRANKLIN STREET, SUITE 1400, TAMPA, FL 33602 PHONE: (813) 635-5514 WWW.KIMLEY-HORN.COM	KHA PROJECT 148400100 DATE JULY 2023 SCALE AS SHOWN DESIGNED BY YL DRAWN BY EMB CHECKED BY NRH	 MANATEE COUNTY LENA ROAD	LICENSED PROFESSIONAL NICOLE R. HECK, P.E. FL LICENSE NUMBER 84306	STANDARD MAST ARM TABULATION	SHEET NUMBER T-8

STANDARD MAST ARM ASSEMBLIES DATA TABLE																			
STRUCTURE ID NUMBERS	DESIGNATION	FIRST ARM		SECOND ARM		UF (deg)	LL (deg)	POLE			DRILLED SHAFT ID	SHAFT AND REINF.							
		ARM ID	FAA (ft.)	ARM ID	SAA (ft.)			POLE ID	UAA (ft.)	UB (ft.)		DA(ft)	DB(ft)	RA	RB	RC	RD(in)	RE	RF(in)
POLE 1	A40/S-P2/S	A40/S	-	-	-	-	-	P2/S	24	21	DS/12/4.5	-	-	-	-	-	-	-	
POLE 4	A60/S-P4/S	A60/S	-	-	-	-	-	P4/S	24	21	DS/22/4.5	22	4.5	11	16	8	12	-	-
POLE 5	A78/D-A60/D-P6/D	A78/D	-	A60/D	-	-	-	P6/D	24	21	DS/16/5.0	-	-	-	-	-	-	-	-

NOTES:

- IF AN ENTRY APPEARS IN COLUMN FAA, A SHORTER ARM IS REQUIRED. THIS IS OBTAINED BY REMOVING LENGTH FROM THE ARM TIP AND THE ARM LENGTH SHORTENED FROM FA TO FAA. SAA SIMILAR.
- IF AN ENTRY APPEARS IN COLUMN UAA, A SHORTER POLE IS REQUIRED. THIS IS OBTAINED BY REMOVING LENGTH FROM THE POLE TIP AND THE POLE HEIGHT SHORTENED FROM UA TO UAA.
- WORK THIS SHEET WITH THE SIGNAL DESIGNER'S "MAST ARM TABULATION". SEE "MAST ARM TABULATION" FOR SPECIAL INSTRUCTIONS THAT INCLUDE NON-STANDARD HANDHOLE LOCATION, PAINT COLOR, TERMINAL COMPARTMENT REQUIREMENT, AND PEDESTRIAN FEATURES.
- WORK WITH INDEX 649-030 AND 649-031 (FY 2023-24).
- DESIGN WIND SPEED = 150 MPH (MANATEE COUNTY)

FOUNDATION NOTES:



- DESIGN BASED ON BORINGS PROVIDED BY TIERRA, INC., DATED JUNE 29, 2023.
- DRILLED SHAFTS "4" AND "5" ARE NOT LOCATED IN SIDEWALKS. "1" HAS BEEN LENGTHENED 6" PER STANDARD, AND "D" HAS BEEN LENGTHENED 1' TO MEET VERTICAL CLEARANCE. SEE "STANDARD MAST ARM TABULATION" SHEET FOR TOP OF SHAFT ELEVATIONS.
- GROUNDWATER SHOULD BE EXPECTED WITHIN 8.5 FEET OF THE EXISTING GROUND. THE CONTRACTOR SHOULD ANTICIPATE THE POTENTIAL NEED FOR WET CONSTRUCTION METHODS.
- SPECIAL UNDERWATER CONCRETE PLACEMENT TECHNIQUES MAY BE REQUIRED IF THE BOTTOM OF THE SHAFT EXTENDS BELOW THE GROUNDWATER TABLE.
- IF EXISTING SOILS VARY FROM THE CRITERIA PRESENTED ABOVE, CONTACT THE ENGINEER PRIOR TO CONSTRUCTION OF THE DRILLED SHAFT.
- VERY DENSE SAND AND INDURATED CLAY WAS ENCOUNTERED WITHIN THE BORINGS. DRILLING INTO AND/OR THROUGH THESE MATERIALS MAY BE DIFFICULT AND WILL REQUIRE NON-CONVENTIONAL CONSTRUCTION TECHNIQUES AND SPECIALIZED EQUIPMENT. THE DEPTH AND CONSISTENCY OF THESE MATERIALS CAN VARY.
- TEMPORARY CASING METHODS FOR SHAFT INSTALLATION BEYOND WHAT IS REQUIRED IN THE FDOT SPECIFICATIONS MAY BE REQUIRED IN ORDER TO PREVENT THE COLLAPSE OF SANDY SOILS AND/OR GROUNDWATER INTRUSION DURING SHAFT CONSTRUCTION.

FOUNDATION ASSUMPTIONS:

POLE 1:
 BORING: SG-11
 CLASSIFICATION: COHESIONLESS SOIL (SAND)
 FRICTION ANGLE: 30 DEG
 UNIT WEIGHT: 50 PCF
 N-SPT #: 11
 SOIL LAYER THICKNESS: 12 FT
 DESIGN WATER TABLE: 0' BELOW SURFACE (ASSUMED)

POLE 5:
 BORING: SG-12
 CLASSIFICATION: COHESIONLESS SOIL (SAND)
 FRICTION ANGLE: 30 DEG
 UNIT WEIGHT: 50 PCF
 N-SPT #: 19
 SOIL LAYER THICKNESS: 16 FT
 DESIGN WATER TABLE: 0' BELOW SURFACE (ASSUMED)

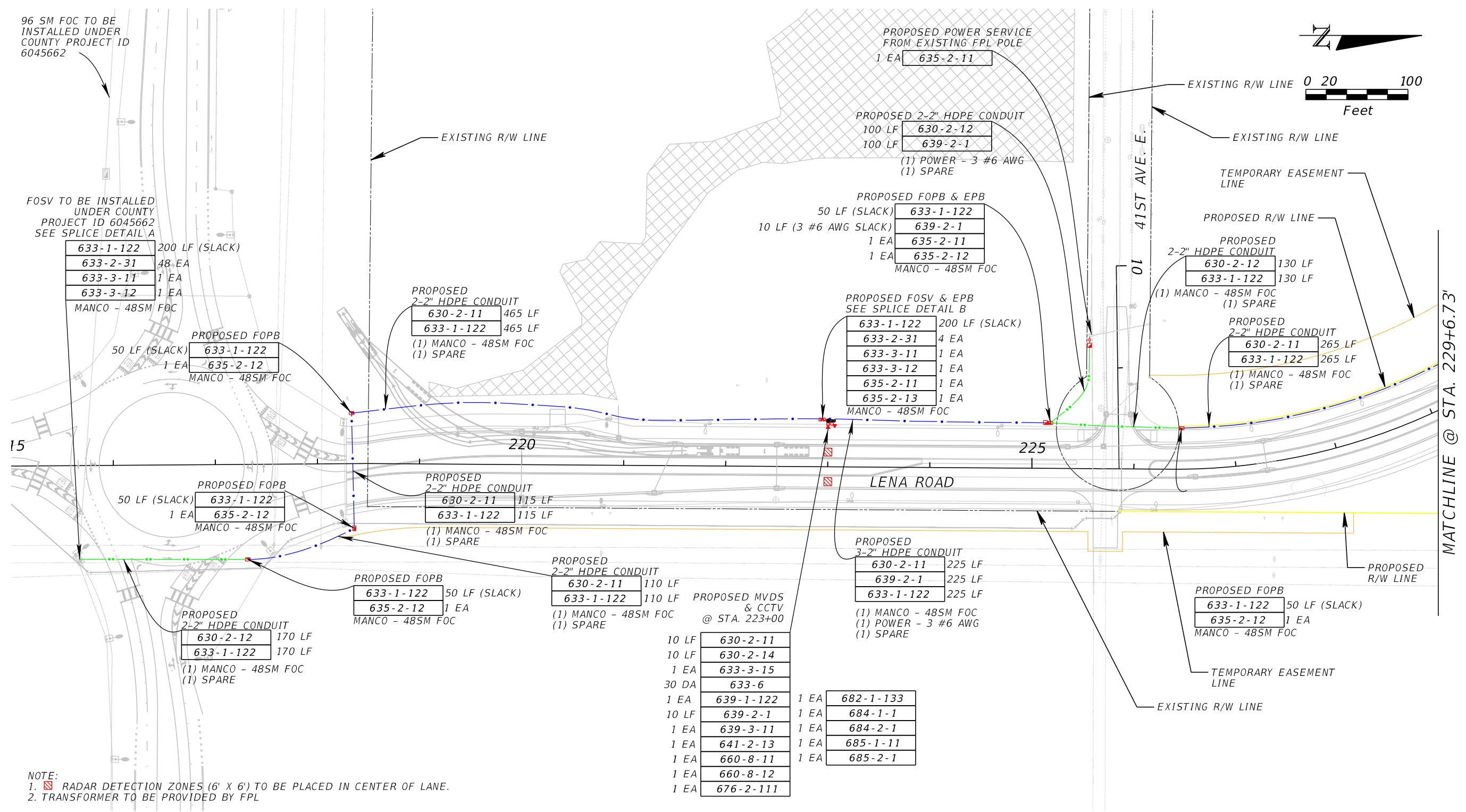
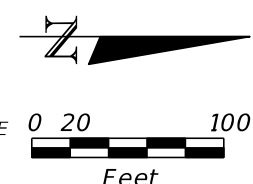
POLE 4:
 BORING: SG-13
 CLASSIFICATION: COHESIONLESS SOIL (SAND)
 FRICTION ANGLE: 29 DEG
 UNIT WEIGHT: 43 PCF
 N-SPT #: 6
 SOIL LAYER THICKNESS: 19 FT
 DESIGN WATER TABLE: 0' BELOW SURFACE (ASSUMED)

				KHA PROJECT 148400100				LICENSED PROFESSIONAL		MAST ARM ASSEMBLIES DATA TABLE		SHEET NUMBER	
				© 2023 KIMLEY-HORN AND ASSOCIATES, INC. 201 NORTH FRANKLIN STREET, SUITE 1400, TAMPA, FL 33602 PHONE: (813) 635-5514 WWW.KIMLEY-HORN.COM				DATE JULY 2023				JOSEPH A. ROBERTS JR., P.E. FL LICENSE NUMBER 78547	
No.	REVISIONS	DATE	BY	SCALE AS SHOWN DESIGNED BY KD DRAWN BY KD CHECKED BY JAR		MANATEE COUNTY							

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

96 SM FOC TO BE INSTALLED UNDER COUNTY PROJECT ID 6045662

FOSV TO BE INSTALLED UNDER COUNTY PROJECT ID 6045662 SEE SPLICE DETAIL A



633-1-122	200 LF (SLACK)
633-2-31	48 EA
633-3-11	1 EA
633-3-12	1 EA
MANCO - 48SM FOC	

PROPOSED FOPB	
50 LF (SLACK)	633-1-122
1 EA	635-2-12
MANCO - 48SM FOC	

PROPOSED 2-2" HDPE CONDUIT	
465 LF	630-2-11
465 LF	633-1-122
(1) MANCO - 48SM FOC	
(1) SPARE	

PROPOSED FOPB & EPB	
50 LF (SLACK)	633-1-122
10 LF (3 #6 AWG SLACK)	639-2-1
1 EA	635-2-11
1 EA	635-2-12
MANCO - 48SM FOC	

PROPOSED FOSV & EPB SEE SPLICE DETAIL B	
200 LF (SLACK)	633-1-122
4 EA	633-2-31
1 EA	633-3-11
1 EA	633-3-12
1 EA	635-2-11
1 EA	635-2-13
MANCO - 48SM FOC	

PROPOSED 2-2" HDPE CONDUIT	
130 LF	630-2-12
130 LF	633-1-122
(1) MANCO - 48SM FOC	
(1) SPARE	

PROPOSED 2-2" HDPE CONDUIT	
265 LF	630-2-11
265 LF	633-1-122
(1) MANCO - 48SM FOC	
(1) SPARE	

PROPOSED FOPB	
50 LF (SLACK)	633-1-122
1 EA	635-2-12
MANCO - 48SM FOC	

PROPOSED 2-2" HDPE CONDUIT	
115 LF	630-2-11
115 LF	633-1-122
(1) MANCO - 48SM FOC	
(1) SPARE	

PROPOSED FOPB	
50 LF (SLACK)	633-1-122
1 EA	635-2-12
MANCO - 48SM FOC	

PROPOSED 2-2" HDPE CONDUIT	
110 LF	630-2-11
110 LF	633-1-122
(1) MANCO - 48SM FOC	
(1) SPARE	

PROPOSED MVDS & CCTV @ STA. 223+00	
10 LF	630-2-11
10 LF	630-2-14
1 EA	633-3-15
30 DA	633-6
1 EA	639-1-122
10 LF	639-2-1
1 EA	639-3-11
1 EA	641-2-13
1 EA	660-8-11
1 EA	660-8-12
1 EA	676-2-111

PROPOSED 3-2" HDPE CONDUIT	
225 LF	630-2-11
225 LF	639-2-1
225 LF	633-1-122
(1) MANCO - 48SM FOC	
(1) POWER - 3 #6 AWG	
(1) SPARE	

PROPOSED FOPB	
50 LF (SLACK)	633-1-122
1 EA	635-2-12
MANCO - 48SM FOC	

NOTE:
 1. [Symbol] RADAR DETECTION ZONES (6' X 6') TO BE PLACED IN CENTER OF LANE.
 2. TRANSFORMER TO BE PROVIDED BY FPL



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KHA PROJECT	148400100
DATE	JULY 2023
SCALE	AS SHOWN
DESIGNED BY	YL
DRAWN BY	KCH
CHECKED BY	NRH



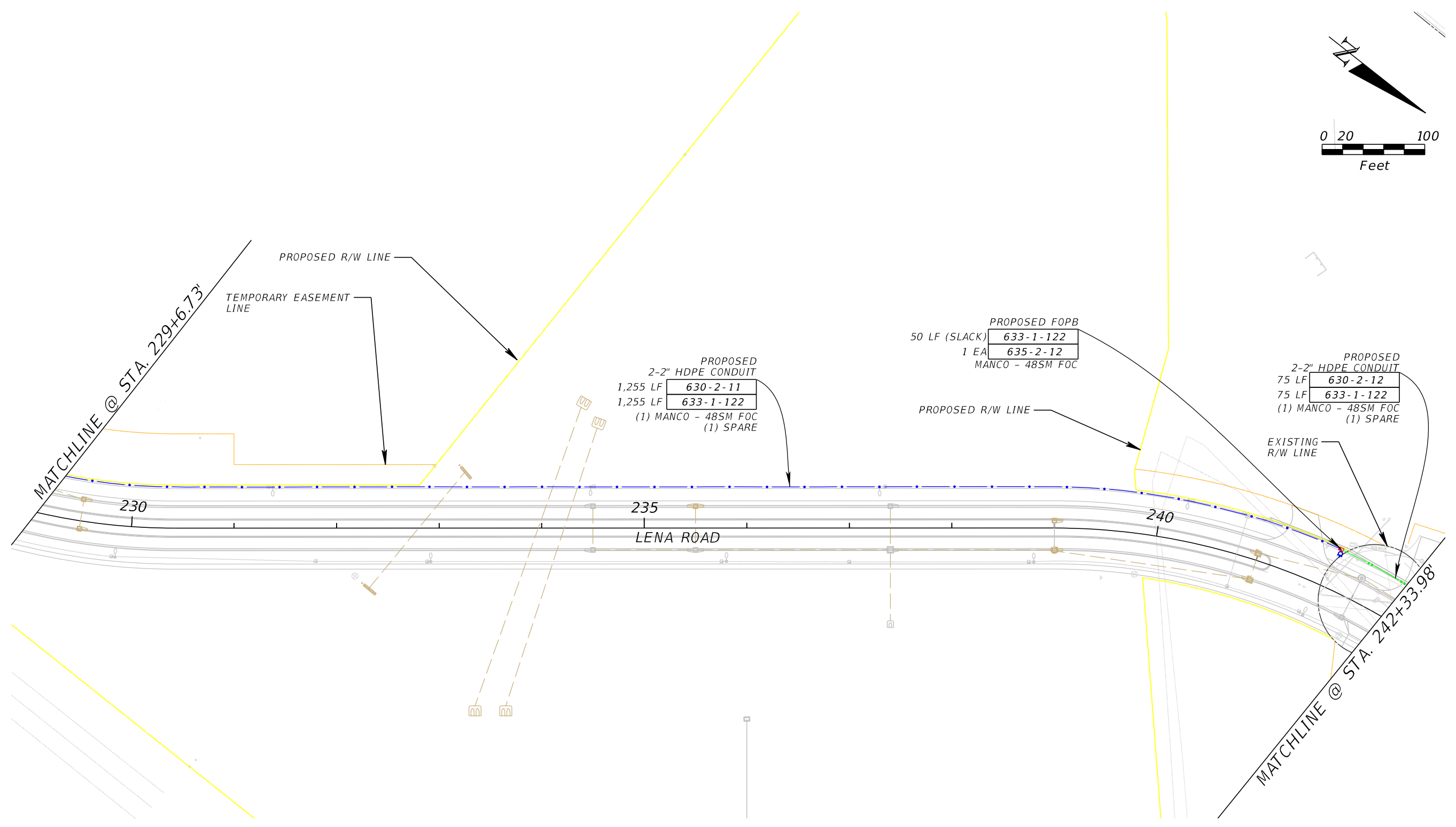
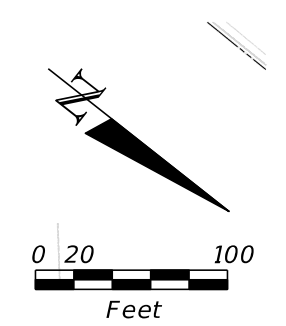
LENA ROAD

LICENSED PROFESSIONAL
 NICOLE R. HECK, P.E.
 FL LICENSE NUMBER 84306
 FL DATE:

ITS PLAN (1)

SHEET NUMBER
 T-10

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No.	REVISIONS	DATE	BY

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KHA PROJECT 148400100
DATE JULY 2023
SCALE AS SHOWN
DESIGNED BY YL
DRAWN BY KCH
CHECKED BY NRH

MANATEE COUNTY
 LENA ROAD
 FL

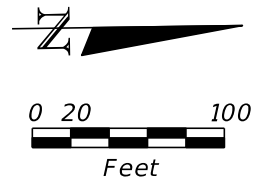
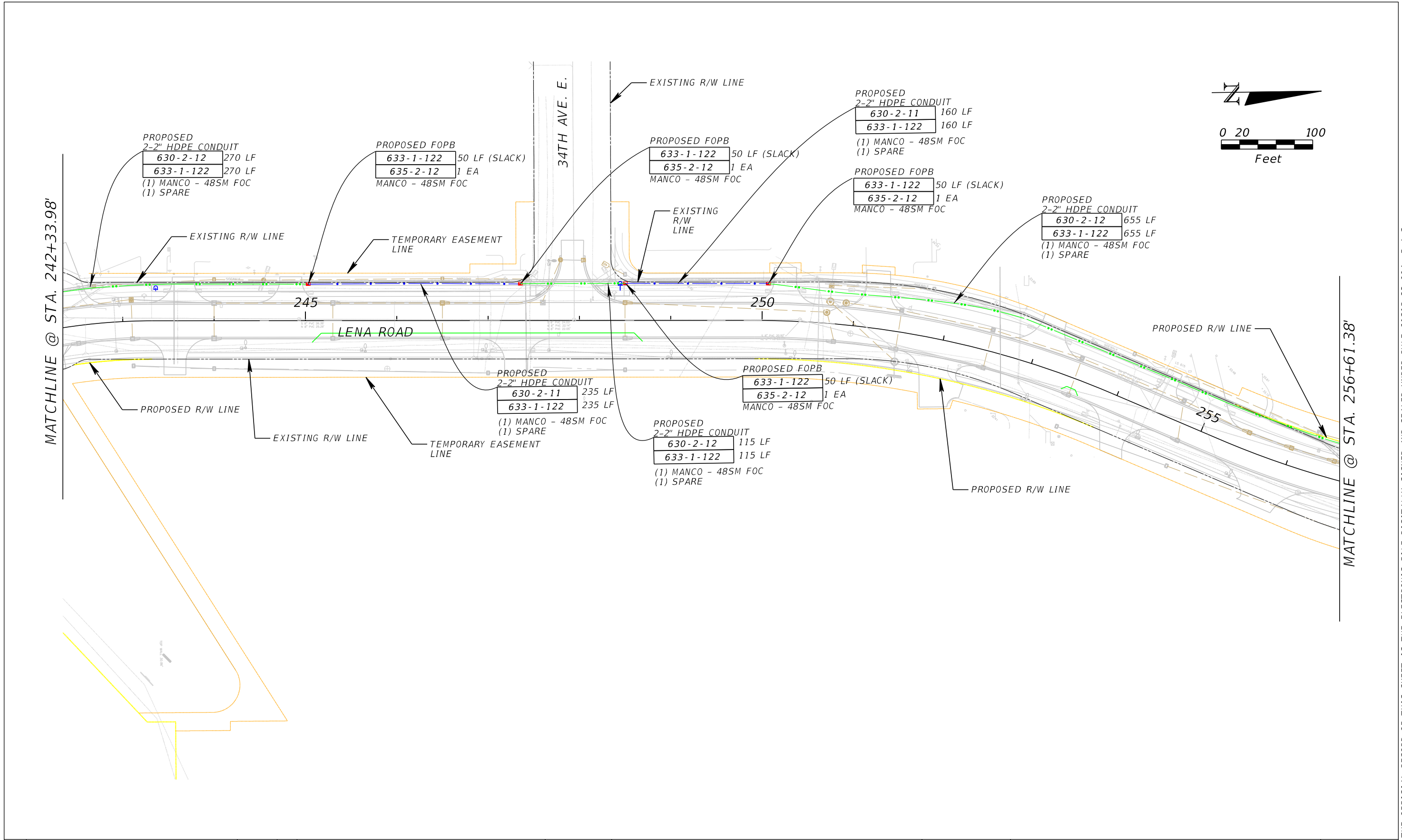


LICENSED PROFESSIONAL
 NICOLE R. HECK, P.E.
 FL LICENSE NUMBER
 84306

ITS PLAN (2)

SHEET NUMBER
T-11

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MATCHLINE @ STA. 242+33.98'

MATCHLINE @ STA. 256+61.38'

No.	REVISIONS	DATE	BY

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KHA PROJECT 148400100
DATE JULY 2023
SCALE AS SHOWN
DESIGNED BY YL
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MANATEE COUNTY
 LENA ROAD

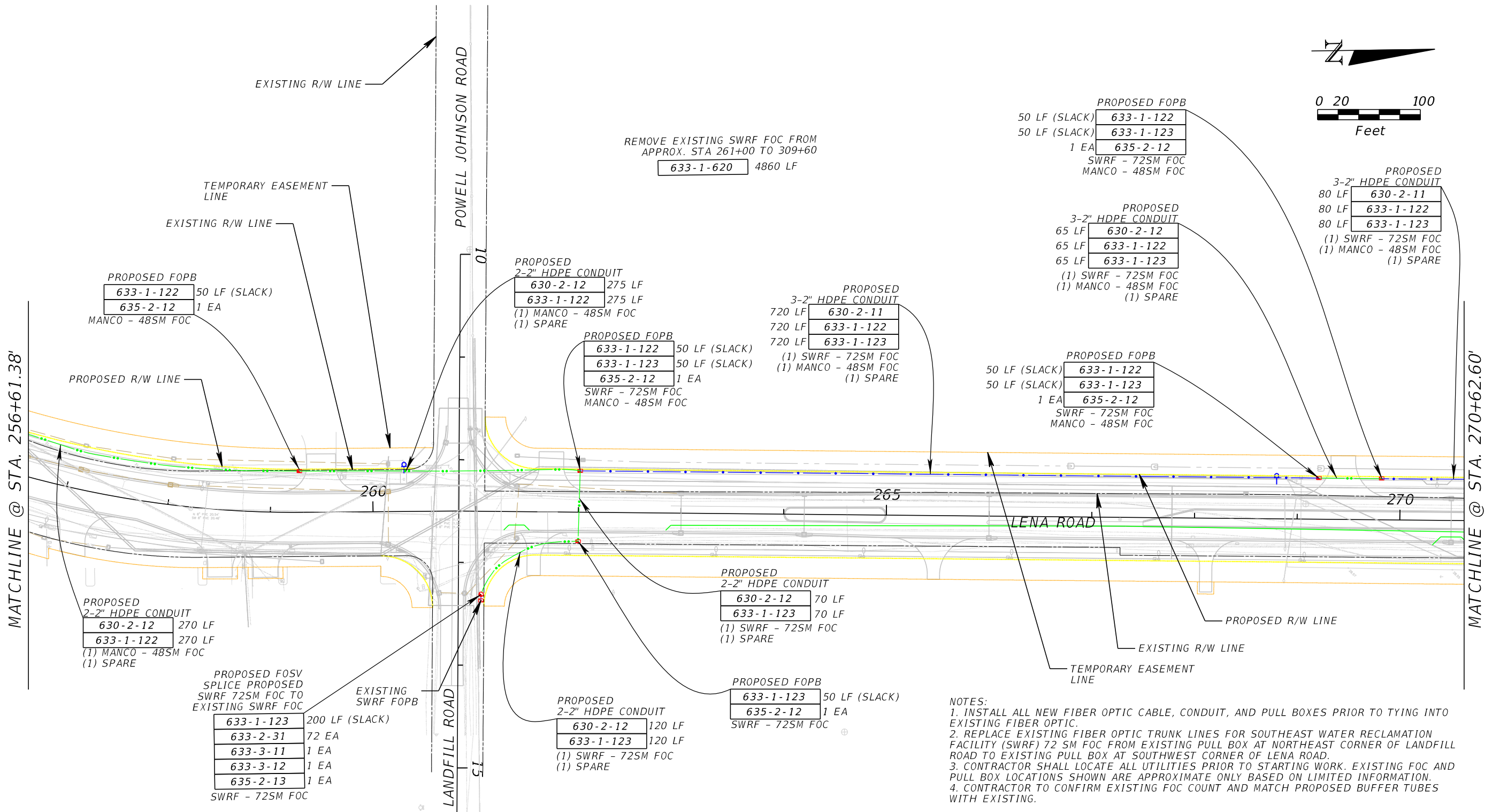
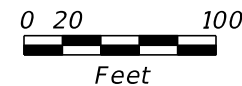


LICENSED PROFESSIONAL
 NICOLE R. HECK, P.E.
 FL LICENSE NUMBER 84306

ITS PLAN (3)

SHEET NUMBER
T-12

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MATCHLINE @ STA. 256+61.38'

MATCHLINE @ STA. 270+62.60'

REMOVE EXISTING SWRF FOC FROM APPROX. STA 261+00 TO 309+60
633-1-620 4860 LF

PROPOSED FOPB
633-1-122 50 LF (SLACK)
635-2-12 1 EA
MANCO - 48SM FOC

PROPOSED 2-2" HDPE CONDUIT
630-2-12 275 LF
633-1-122 275 LF
(1) MANCO - 48SM FOC
(1) SPARE

PROPOSED FOPB
633-1-122 50 LF (SLACK)
633-1-123 50 LF (SLACK)
635-2-12 1 EA
SWRF - 72SM FOC
MANCO - 48SM FOC

PROPOSED 3-2" HDPE CONDUIT
720 LF 630-2-11
720 LF 633-1-122
720 LF 633-1-123
(1) SWRF - 72SM FOC
(1) MANCO - 48SM FOC
(1) SPARE

PROPOSED FOPB
50 LF (SLACK) 633-1-122
50 LF (SLACK) 633-1-123
1 EA 635-2-12
SWRF - 72SM FOC
MANCO - 48SM FOC

PROPOSED 3-2" HDPE CONDUIT
65 LF 630-2-12
65 LF 633-1-122
65 LF 633-1-123
(1) SWRF - 72SM FOC
(1) MANCO - 48SM FOC
(1) SPARE

PROPOSED 3-2" HDPE CONDUIT
80 LF 630-2-11
80 LF 633-1-122
80 LF 633-1-123
(1) SWRF - 72SM FOC
(1) MANCO - 48SM FOC
(1) SPARE

PROPOSED FOPB
50 LF (SLACK) 633-1-122
50 LF (SLACK) 633-1-123
1 EA 635-2-12
SWRF - 72SM FOC
MANCO - 48SM FOC

PROPOSED 2-2" HDPE CONDUIT
630-2-12 270 LF
633-1-122 270 LF
(1) MANCO - 48SM FOC
(1) SPARE

PROPOSED FOSV SPLICE PROPOSED SWRF 72SM FOC TO EXISTING SWRF FOC
633-1-123 200 LF (SLACK)
633-2-31 72 EA
633-3-11 1 EA
633-3-12 1 EA
635-2-13 1 EA
SWRF - 72SM FOC

EXISTING SWRF FOPB

PROPOSED 2-2" HDPE CONDUIT
630-2-12 70 LF
633-1-123 70 LF
(1) SWRF - 72SM FOC
(1) SPARE

PROPOSED 2-2" HDPE CONDUIT
630-2-12 120 LF
633-1-123 120 LF
(1) SWRF - 72SM FOC
(1) SPARE

PROPOSED FOPB
633-1-123 50 LF (SLACK)
635-2-12 1 EA
SWRF - 72SM FOC

- NOTES:
1. INSTALL ALL NEW FIBER OPTIC CABLE, CONDUIT, AND PULL BOXES PRIOR TO TYING INTO EXISTING FIBER OPTIC.
 2. REPLACE EXISTING FIBER OPTIC TRUNK LINES FOR SOUTHEAST WATER RECLAMATION FACILITY (SWRF) 72 SM FOC FROM EXISTING PULL BOX AT NORTHEAST CORNER OF LANDFILL ROAD TO EXISTING PULL BOX AT SOUTHWEST CORNER OF LENA ROAD.
 3. CONTRACTOR SHALL LOCATE ALL UTILITIES PRIOR TO STARTING WORK. EXISTING FOC AND PULL BOX LOCATIONS SHOWN ARE APPROXIMATE ONLY BASED ON LIMITED INFORMATION.
 4. CONTRACTOR TO CONFIRM EXISTING FOC COUNT AND MATCH PROPOSED BUFFER TUBES WITH EXISTING.

No.	REVISIONS	DATE	BY

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PHONE: (813) 635-5514
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KHA PROJECT 148400100
DATE JULY 2023
SCALE AS SHOWN
DESIGNED BY YL
DRAWN BY KCH
CHECKED BY NRH

MANATEE COUNTY



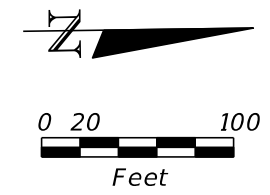
LENA ROAD

LICENSED PROFESSIONAL
NICOLE R. HECK, P.E.
FL LICENSE NUMBER 84306

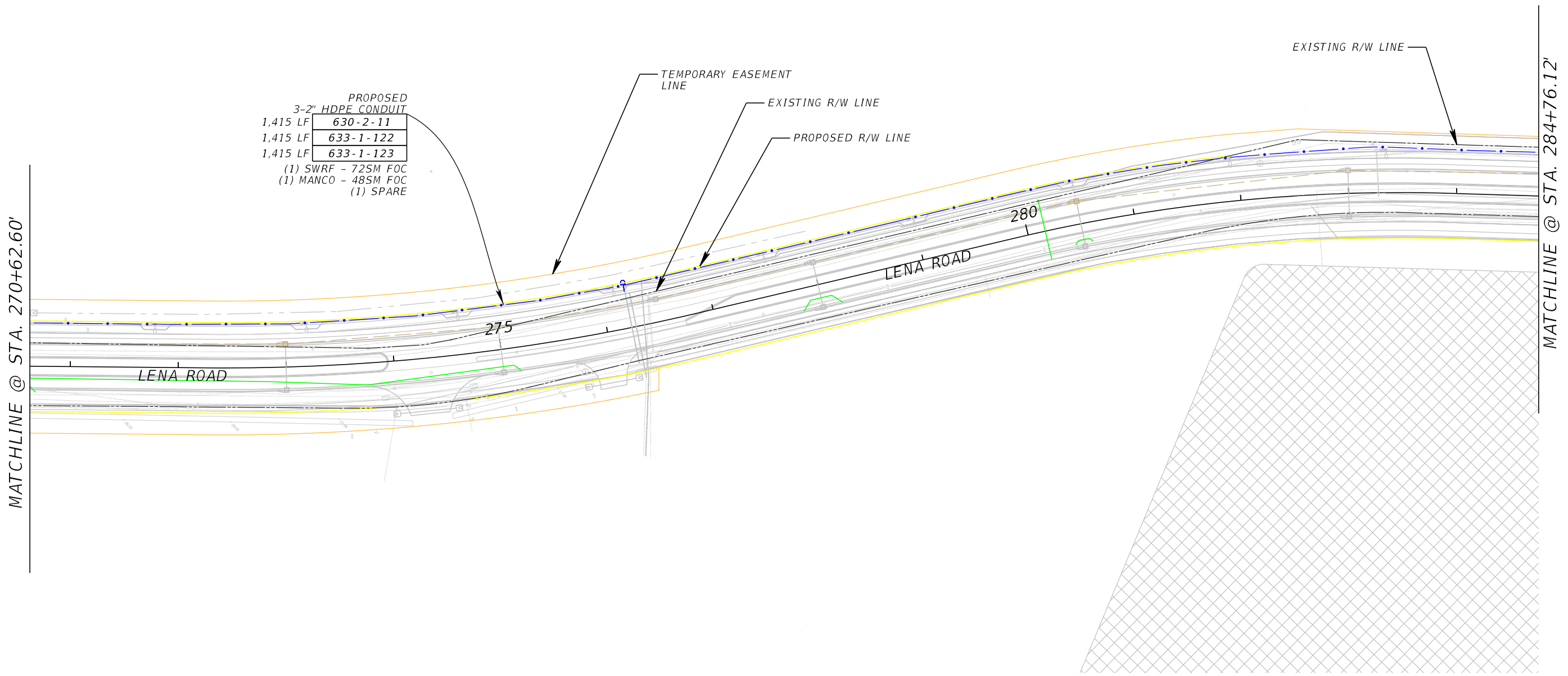
ITS PLAN (4)

SHEET NUMBER
T-13

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PROPOSED 3-2" HDPE CONDUIT	
1,415 LF	630-2-11
1,415 LF	633-1-122
1,415 LF	633-1-123
(1) SWRF - 72SM FOC	
(1) MANCO - 48SM FOC	
(1) SPARE	



No.	REVISIONS	DATE	BY

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KHA PROJECT 148400100
DATE JULY 2023
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DESIGNED BY YL
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MANATEE COUNTY
Default



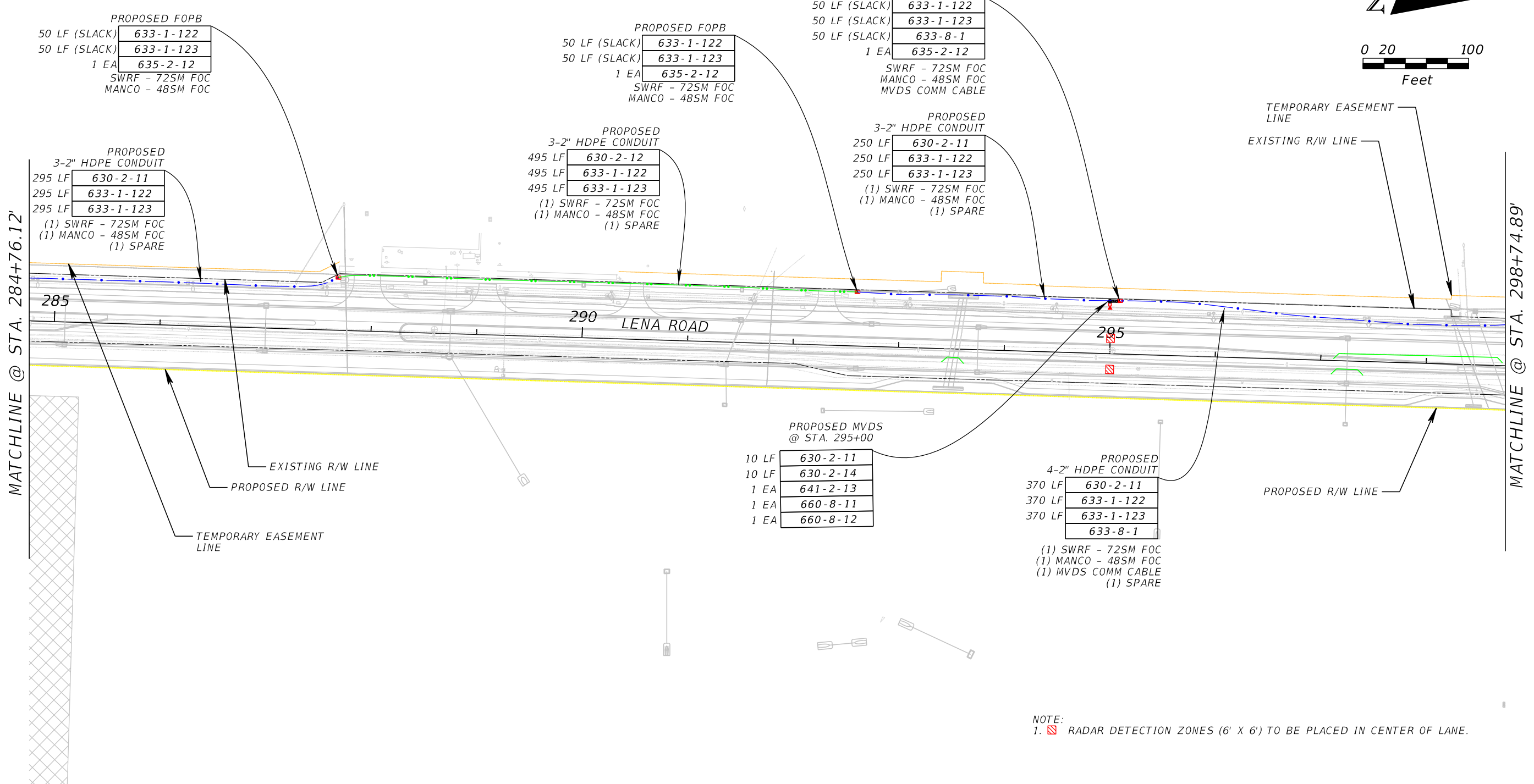
LICENSED PROFESSIONAL

NICOLE R. HECK, P.E.
FL LICENSE NUMBER 84306

ITS PLAN (5)

SHEET NUMBER
T-14

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MATCHLINE @ STA. 284+76.12

MATCHLINE @ STA. 298+74.89

PROPOSED FOPB

50 LF (SLACK)	633-1-122
50 LF (SLACK)	633-1-123
1 EA	635-2-12

SWRF - 72SM FOC
MANCO - 48SM FOC

PROPOSED FOPB

50 LF (SLACK)	633-1-122
50 LF (SLACK)	633-1-123
1 EA	635-2-12

SWRF - 72SM FOC
MANCO - 48SM FOC

PROPOSED FOPB

50 LF (SLACK)	633-1-122
50 LF (SLACK)	633-1-123
50 LF (SLACK)	633-8-1
1 EA	635-2-12

SWRF - 72SM FOC
MANCO - 48SM FOC
MVDS COMM CABLE

PROPOSED 3-2" HDPE CONDUIT

295 LF	630-2-11
295 LF	633-1-122
295 LF	633-1-123

(1) SWRF - 72SM FOC
(1) MANCO - 48SM FOC
(1) SPARE

PROPOSED 3-2" HDPE CONDUIT

495 LF	630-2-12
495 LF	633-1-122
495 LF	633-1-123

(1) SWRF - 72SM FOC
(1) MANCO - 48SM FOC
(1) SPARE

PROPOSED 3-2" HDPE CONDUIT

250 LF	630-2-11
250 LF	633-1-122
250 LF	633-1-123

(1) SWRF - 72SM FOC
(1) MANCO - 48SM FOC
(1) SPARE

PROPOSED MVDS @ STA. 295+00

10 LF	630-2-11
10 LF	630-2-14
1 EA	641-2-13
1 EA	660-8-11
1 EA	660-8-12

PROPOSED 4-2" HDPE CONDUIT

370 LF	630-2-11
370 LF	633-1-122
370 LF	633-1-123
	633-8-1

(1) SWRF - 72SM FOC
(1) MANCO - 48SM FOC
(1) MVDS COMM CABLE
(1) SPARE

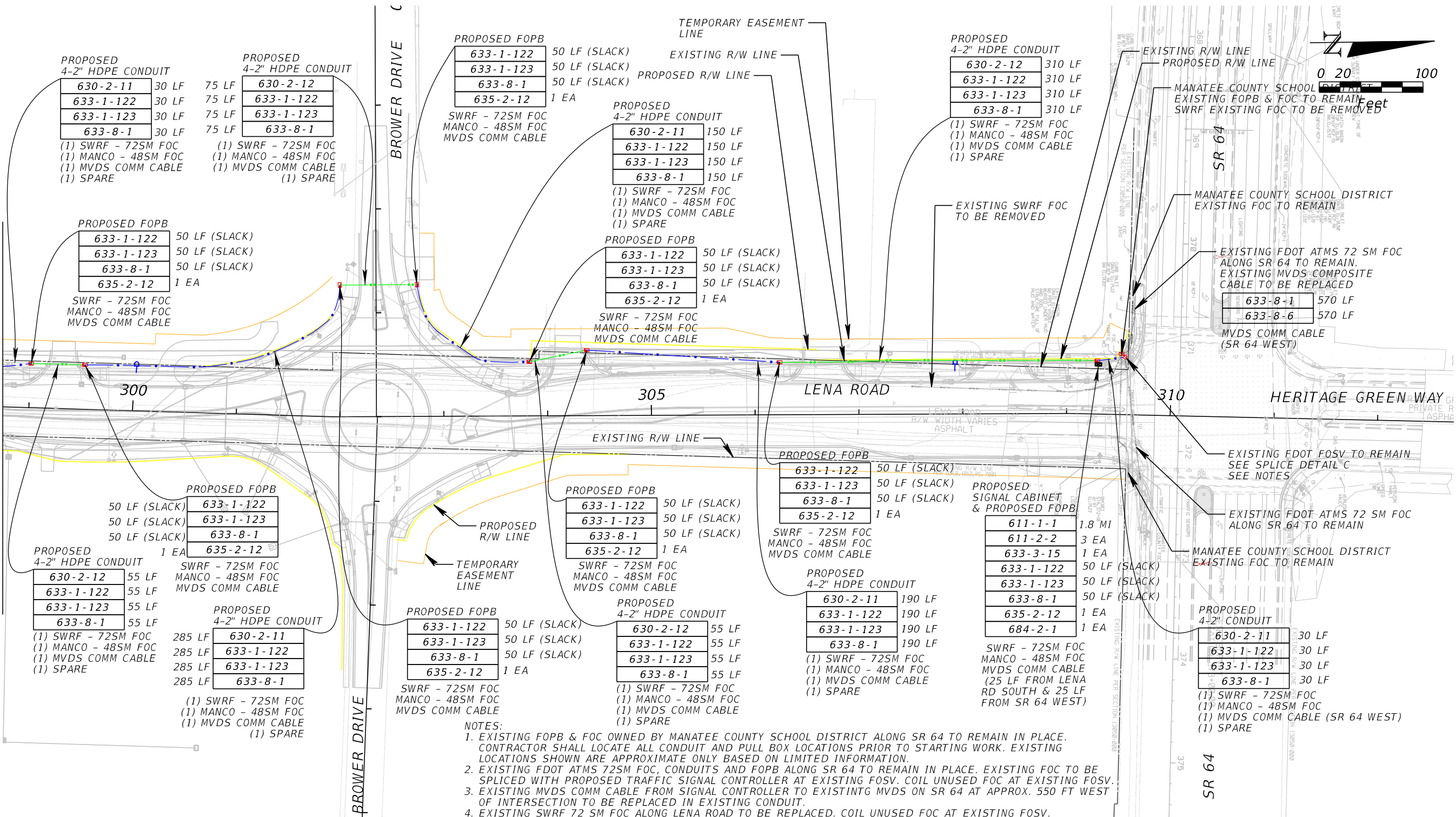
NOTE:
1. RADAR DETECTION ZONES (6' X 6') TO BE PLACED IN CENTER OF LANE.

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No.	REVISIONS	DATE	BY	DATE:		

Yue.Liu 7/26/2023 1:56:51 PM Default K:\SAR_Roadway\TAM_Lena_Road\I234561520\ITS\PLANIT06.dgn

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MATCHLINE @ STA. 298+74.89



- NOTES:
1. EXISTING FOPB & FOC OWNED BY MANATEE COUNTY SCHOOL DISTRICT ALONG SR 64 TO REMAIN IN PLACE. CONTRACTOR SHALL LOCATE ALL CONDUIT AND PULL BOX LOCATIONS PRIOR TO STARTING WORK. EXISTING LOCATIONS SHOWN ARE APPROXIMATE ONLY BASED ON LIMITED INFORMATION.
 2. EXISTING FDOT ATMS 72SM FOC, CONDUITS AND FOPB ALONG SR 64 TO REMAIN IN PLACE. EXISTING FOC TO BE SPLICED WITH PROPOSED TRAFFIC SIGNAL CONTROLLER AT EXISTING FOSV. COIL UNUSED FOC AT EXISTING FOSV.
 3. EXISTING MVDS COMM CABLE FROM SIGNAL CONTROLLER TO EXISTING MVDS ON SR 64 AT APPROX. 550 FT WEST OF INTERSECTION TO BE REPLACED IN EXISTING CONDUIT.
 4. EXISTING SWRF 72 SM FOC ALONG LENA ROAD TO BE REPLACED. COIL UNUSED FOC AT EXISTING FOSV.

No.	REVISIONS	DATE	BY

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KHA PROJECT
148400100

DATE
JULY 2023

SCALE AS SHOWN

DESIGNED BY YL

DRAWN BY KCH

CHECKED BY NRH

MANATEE COUNTY

LENA ROAD

LICENSED PROFESSIONAL

NICOLE R. HECK, P.E.
 FL LICENSE NUMBER 84306

ITS PLAN (7)

SHEET NUMBER
T-16

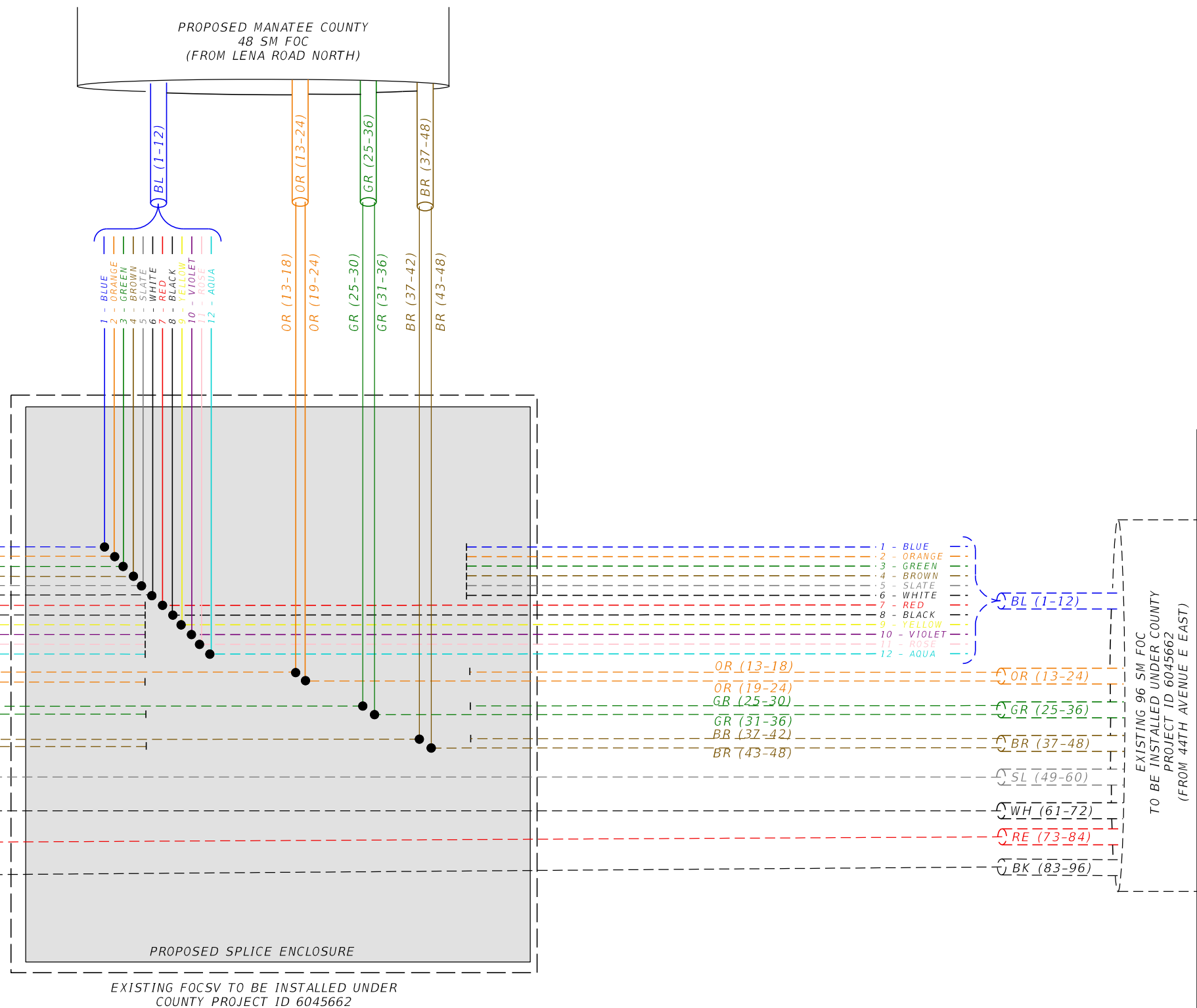
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PROPOSED MANATEE COUNTY
48 SM FOC
(FROM LENA ROAD NORTH)

LEGEND

SIGNAL CABINET CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING AND ENSURING PROPER EQUIPMENT AND TERMINATION.

- FUSION SPLICE (PROPOSED)
- FUSION SPLICE (EXISTING)
- ⊗ FUSION SPLICE (BREAK)
- TERMINATION (PROPOSED)
- TERMINATION (EXISTING)
- ┌ CAP AND SEAL FIBER
- FIBER (PROPOSED)
- - - FIBER (EXISTING)
- BL (X-X) ○ BUFFER TUBE (PROPOSED)
- BL (X-X) ○ BUFFER TUBE (EXISTING)



EXISTING FOC SV TO BE INSTALLED UNDER COUNTY PROJECT ID 6045662

PROPOSED SPLICE ENCLOSURE

EXISTING 96 SM FOC
TO BE INSTALLED UNDER COUNTY
PROJECT ID 6045662
(FROM 44TH AVENUE E WEST)

EXISTING 96 SM FOC
TO BE INSTALLED UNDER COUNTY
PROJECT ID 6045662
(FROM 44TH AVENUE E EAST)

MATCHLINE A

No.	REVISIONS	DATE	BY

Kimley»Horn

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KHA PROJECT 148400100
DATE JULY 2023
SCALE AS SHOWN
DESIGNED BY EMB
DRAWN BY EMB
CHECKED BY NRH

MANATEE COUNTY



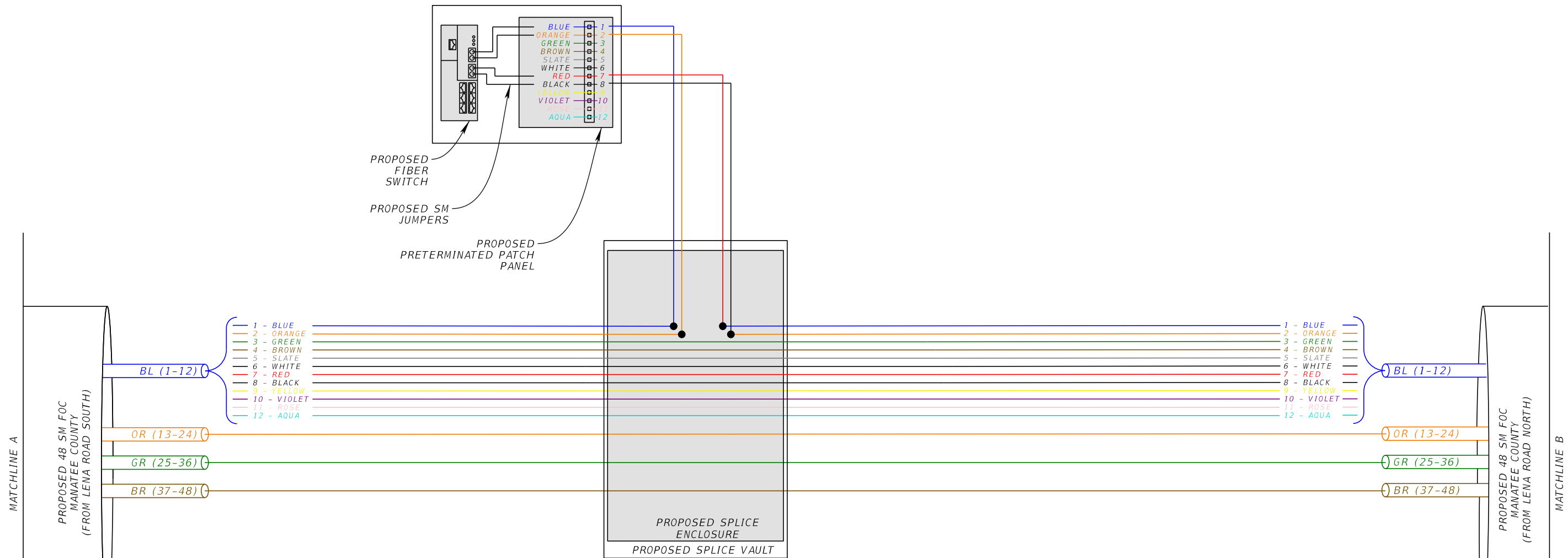
LENA ROAD

LICENSED PROFESSIONAL
NICOLE R. HECK, P.E.
FL LICENSE NUMBER 84306

SPLICE DETAIL A

SHEET NUMBER
T-17

PROPOSED MVDS & CCTV CABINET (POLE MOUNT)
STA. 223+00



LEGEND
 SIGNAL CABINET CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING AND ENSURING PROPER EQUIPMENT AND TERMINATION.

- FUSION SPLICE (PROPOSED)
- ⊗ FUSION SPLICE (BREAK)
- TERMINATION (PROPOSED)
- TERMINATION (EXISTING)
- └ CAP AND SEAL FIBER
- FIBER (PROPOSED)
- - - FIBER (EXISTING)
- BL (X-X) ○ BUFFER TUBE (PROPOSED)
- BL (X-X) ○ BUFFER TUBE (EXISTING)

No.	REVISIONS	DATE	BY

Kimley»Horn

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 PHONE: (813) 635-5514
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KHA PROJECT
 148400100
 DATE
 JULY 2023
 SCALE AS SHOWN
 DESIGNED BY EMB
 DRAWN BY EMB
 CHECKED BY NRH

MANATEE COUNTY

Manatee County
 FLORIDA

LENA ROAD

LICENSED PROFESSIONAL
 NICOLE R. HECK, P.E.
 FL LICENSE NUMBER
 84306

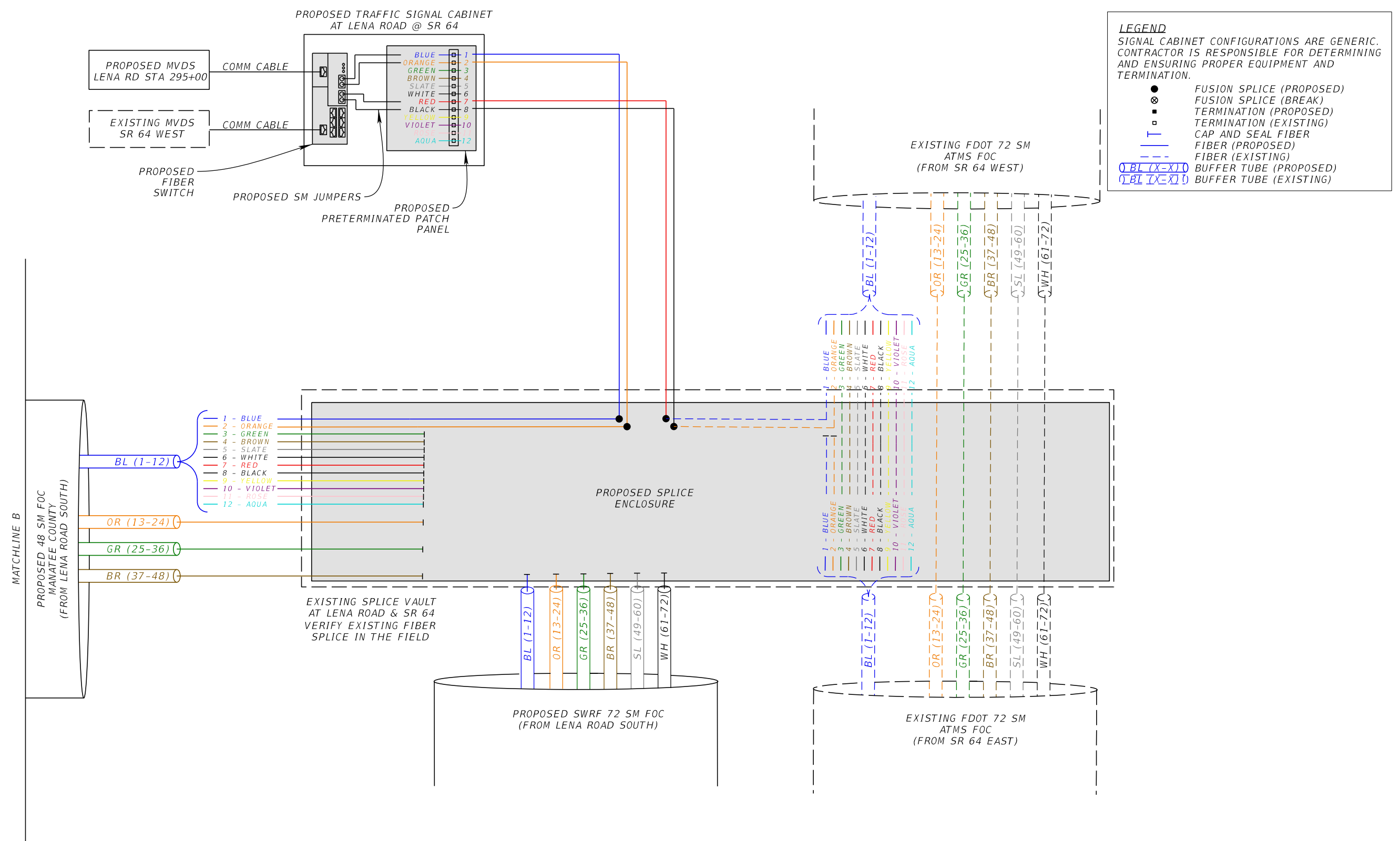
FL DATE:

SHEET NUMBER

SPLICE DETAIL B

T-18

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LEGEND
 SIGNAL CABINET CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING AND ENSURING PROPER EQUIPMENT AND TERMINATION.

- FUSION SPLICE (PROPOSED)
- ⊗ FUSION SPLICE (BREAK)
- TERMINATION (PROPOSED)
- TERMINATION (EXISTING)
- ⊥ CAP AND SEAL FIBER
- FIBER (PROPOSED)
- - - FIBER (EXISTING)
- BL (X-X) ○ BUFFER TUBE (PROPOSED)
- BL (X-X) ○ BUFFER TUBE (EXISTING)

No.	REVISIONS	DATE	BY

Kimley»Horn

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KHA PROJECT 148400100
 DATE JULY 2023
 SCALE AS SHOWN
 DESIGNED BY YL
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 CHECKED BY NRH

MANATEE COUNTY



LICENSED PROFESSIONAL

NICOLE R. HECK, P.E.
 FL LICENSE NUMBER 84306

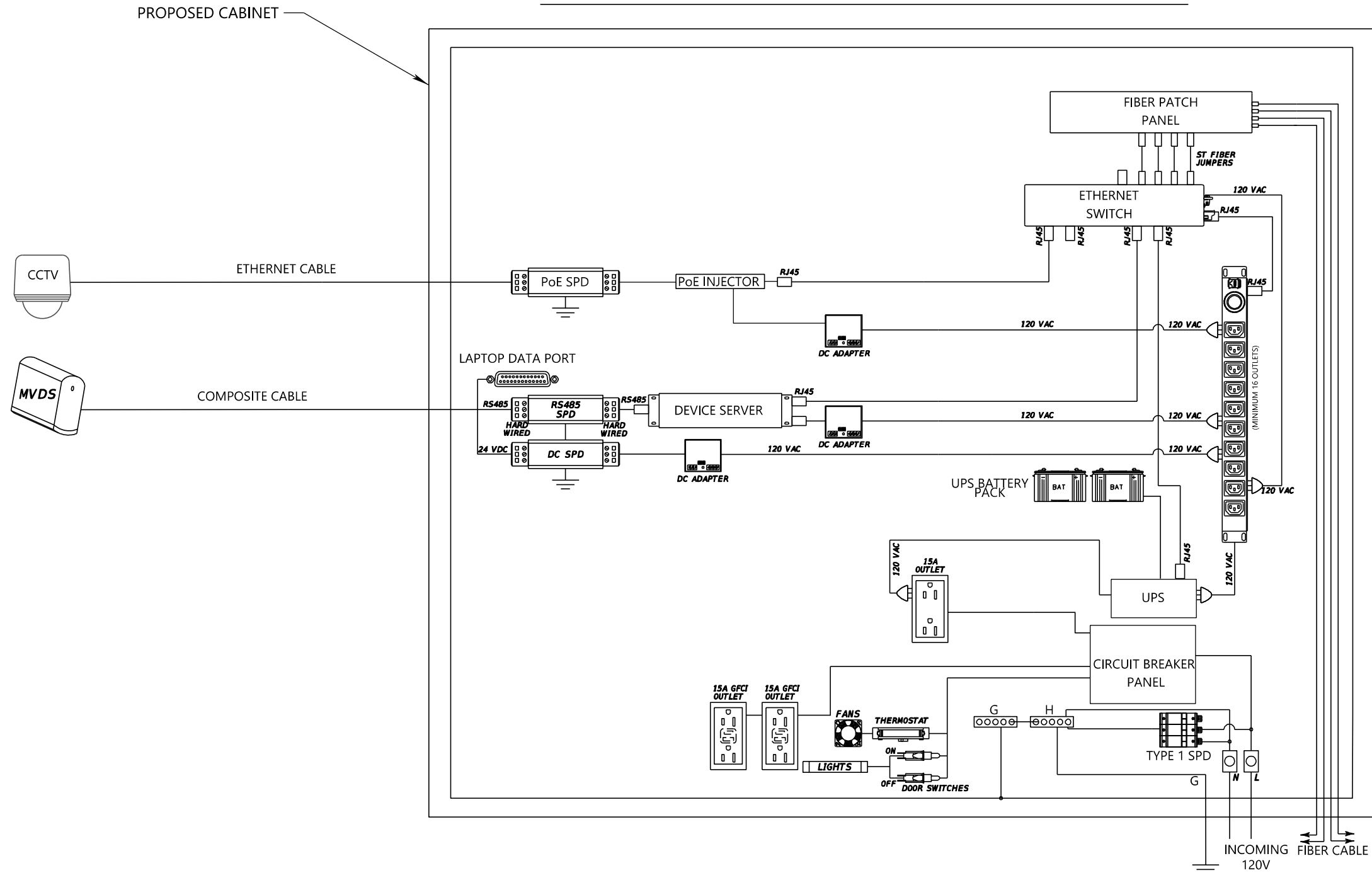
SPLICE DETAIL C

SHEET NUMBER

T-19

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MVDS & CCTV AT STA 223+00



No.	REVISIONS	DATE	BY

Kimley»Horn

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KHA PROJECT 148400100
DATE JULY 2023
SCALE AS SHOWN
DESIGNED BY YL
DRAWN BY KCH
CHECKED BY NRH

MANATEE COUNTY
 LENA ROAD



LENA ROAD

LICENSED PROFESSIONAL
 NICOLE R. HECK, P.E.
 FL LICENSE NUMBER 84306

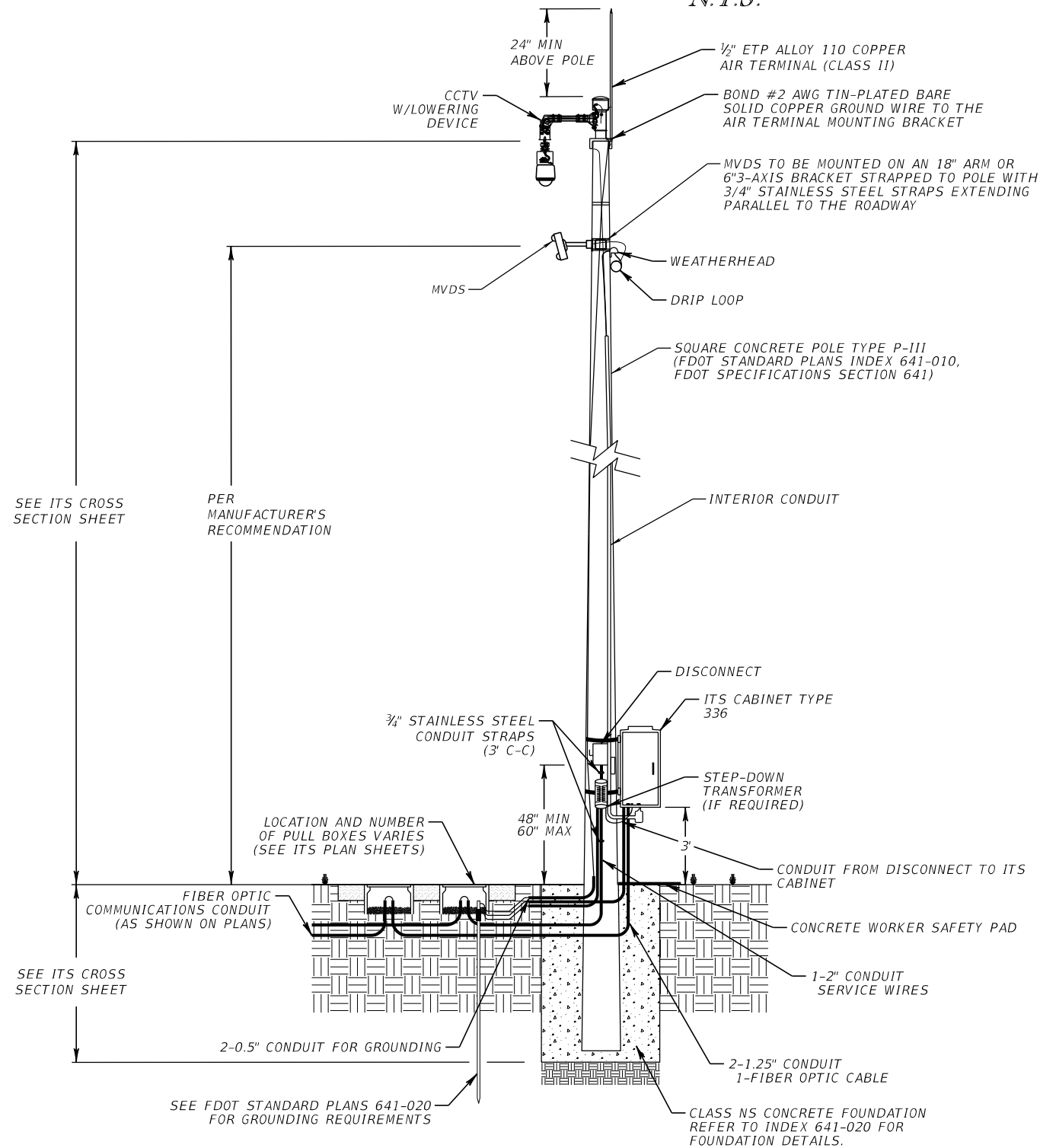
ITS DEVICE WIRING DIAGRAM

SHEET NUMBER
T-20

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

TYPICAL CCTV AND MVDS INSTALLATION DETAILS

N.T.S.



NOTES:

1. POWER CABLE SHALL BE 120 VAC, SINGLE PHASE SERVICE.
2. MOUNT CCTV CAMERA ON THE SIDE OF POLE NEAREST INTENDED FIELD OF VIEW AND AVOID OCCLUDING THE VIEW WITH THE POLE.
3. POLE CABINET TO BE MOUNTED DOWNSTREAM SIDE OF TRAFFIC, AND CABINET DOOR ORIENTED TO OPEN AWAY FROM TRAFFIC.
4. SET UP VIRTUAL SPEED PAIRS ACCORDING TO THE REQUIREMENTS OF THE MVDS USERS MANUAL.

No.	REVISIONS	DATE	BY

Kimley»Horn

© 2023 KIMLEY-HORN AND ASSOCIATES, INC.
 201 NORTH FRANKLIN STREET, SUITE 1400, TAMPA, FL 33602
 PHONE: (813) 635-5514
 WWW.KIMLEY-HORN.COM

KHA PROJECT 148400100
DATE JULY 2023
SCALE AS SHOWN
DESIGNED BY EMB
DRAWN BY EMB
CHECKED BY NRH

MANATEE COUNTY



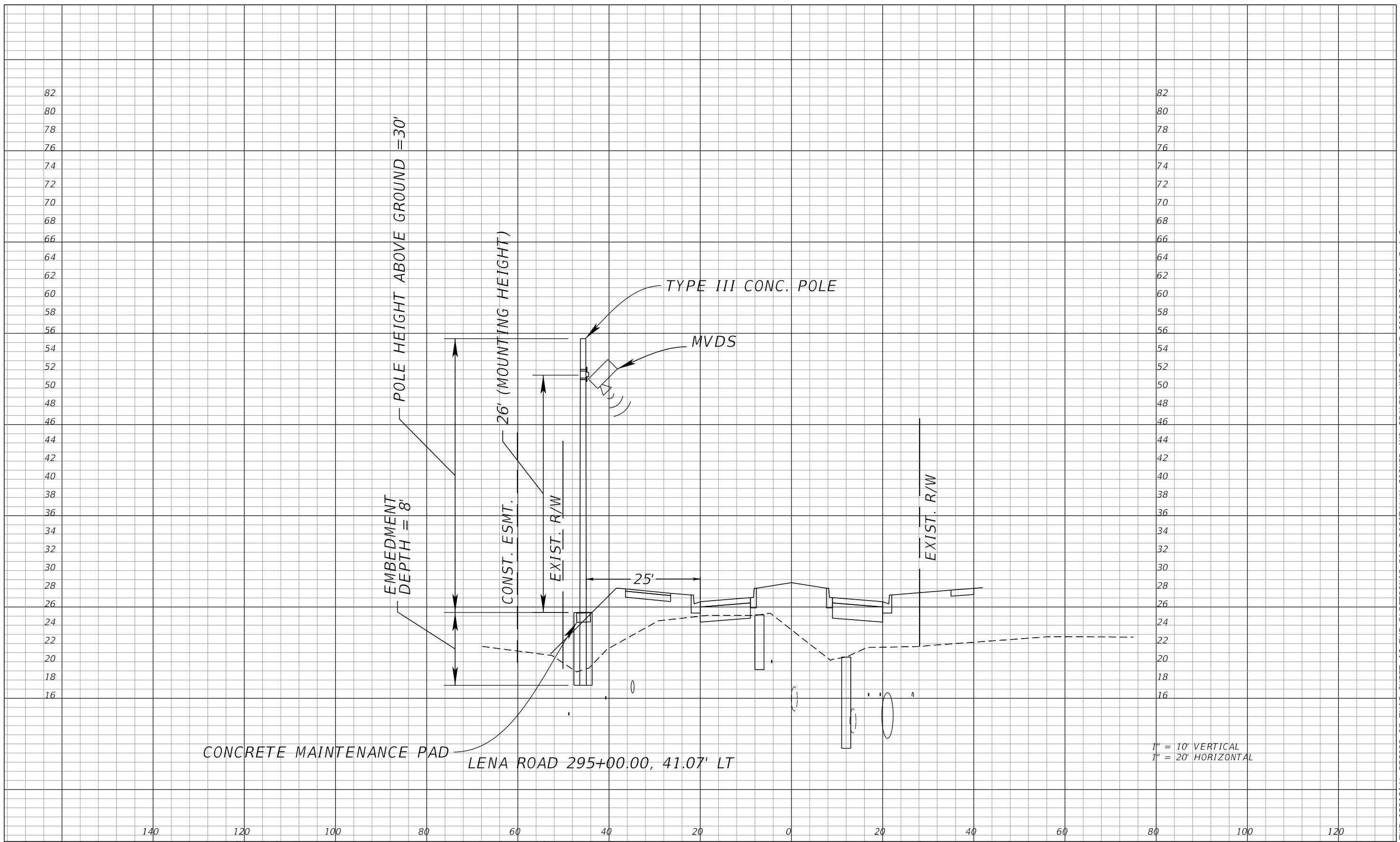
LICENSED PROFESSIONAL

NICOLE R. HECK, P.E.
 FL LICENSE NUMBER 84306

ITS DEVICE MOUNTING DETAIL

SHEET NUMBER
T-21

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CONCRETE MAINTENANCE PAD LENA ROAD 295+00.00, 41.07' LT

1" = 10' VERTICAL
1" = 20' HORIZONTAL

No.	REVISIONS	DATE	BY

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KHA PROJECT
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MANATEE COUNTY
LENA ROAD



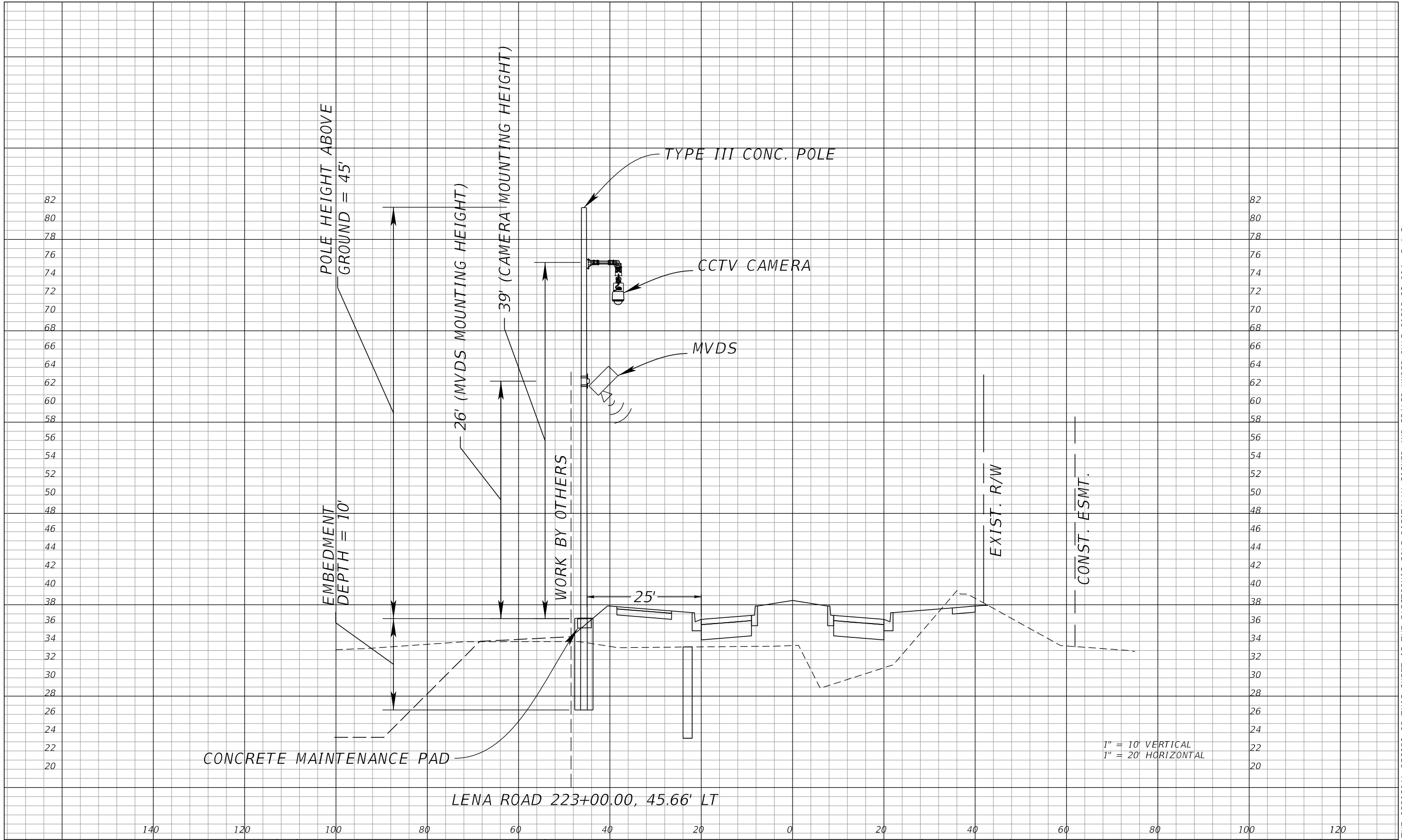
LENA ROAD

LICENSED PROFESSIONAL
 NICOLE R. HECK, P.E.
 FL LICENSE NUMBER 84306

ITS CROSS SECTIONS

SHEET NUMBER
T-22

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LENA ROAD 223+00.00, 45.66' LT

No.	REVISIONS	DATE	BY

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KHA PROJECT
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MANATEE COUNTY
 LENA ROAD
 FL DATE:



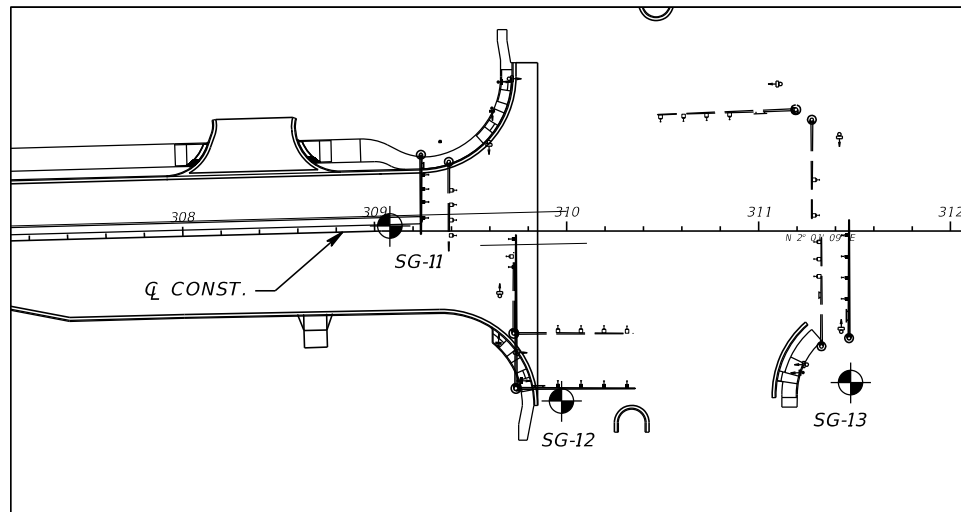
LENA ROAD

LICENSED PROFESSIONAL
 NICOLE R. HECK, P.E.
 FL LICENSE NUMBER 84306

ITS CROSS SECTIONS

SHEET NUMBER
T-23

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BORING LOCATION PLAN

NOTES:

1. THE BORINGS WERE LOCATED IN THE FIELD USING A HAND-HELD GARMIN ETREX NON-SURVEY GRADE GLOBAL POSITIONING SYSTEM (GPS) DEVICE WITH A REPORTED ACCURACY OF ±10 FEET. THE BORING LOCATION STATION, OFFSET AND ELEVATION WERE DETERMINED USING THE GPS COORDINATES IN CONJUNCTION WITH THE DESIGN FILES PROVIDED BY KIMLEY-HORN. THE BORING LOCATIONS AND ELEVATIONS SHOULD BE CONSIDERED APPROXIMATE.
2. TEMPORARY CASING METHODS BEYOND WHAT IS REQUIRED IN THE PROJECT SPECIFICATIONS FOR THE SHAFT INSTALLATION MAY BE REQUIRED IN ORDER TO PREVENT THE COLLAPSE OF THE SANDY SOILS AND/OR GROUNDWATER INTRUSION DURING THE SHAFT INSTALLATION.
3. BASED ON THE REVIEW OF THE "UPPER FLORIDAN AQUIFER POTENTIOMETRIC SURFACE" MAPS PUBLISHED BY THE USGS, THE POTENTIOMETRIC SURFACE ELEVATION IN THE PROJECT VICINITY IS REPORTED UP TO APPROXIMATELY +30 FEET, NGVD 29. ARTESIAN FLOW CONDITIONS WERE NOT ENCOUNTERED WITHIN THE BORINGS PERFORMED AT THE TIME OF THE FIELD ACTIVITIES; HOWEVER, THE CONTRACTOR SHOULD BE PREPARED TO ADDRESS ARTESIAN LEVELS UP TO A HEAD OF +30 FEET, NGVD 29.
4. VERY DENSE SAND AND INDURATED CLAY WAS ENCOUNTERED WITHIN THE BORINGS. DRILLING INTO AND/OR THROUGH THESE MATERIALS MAY BE DIFFICULT AND WILL REQUIRE NON-CONVENTIONAL CONSTRUCTION TECHNIQUES AND SPECIALIZED EQUIPMENT. THE DEPTH AND CONSISTENCY OF THESE MATERIALS CAN VARY.

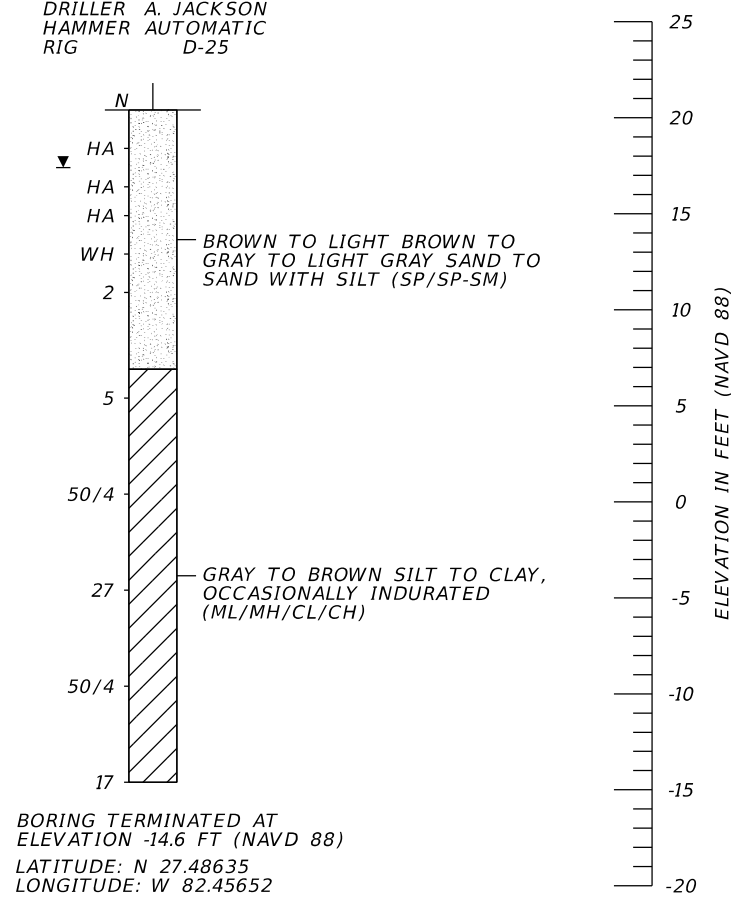
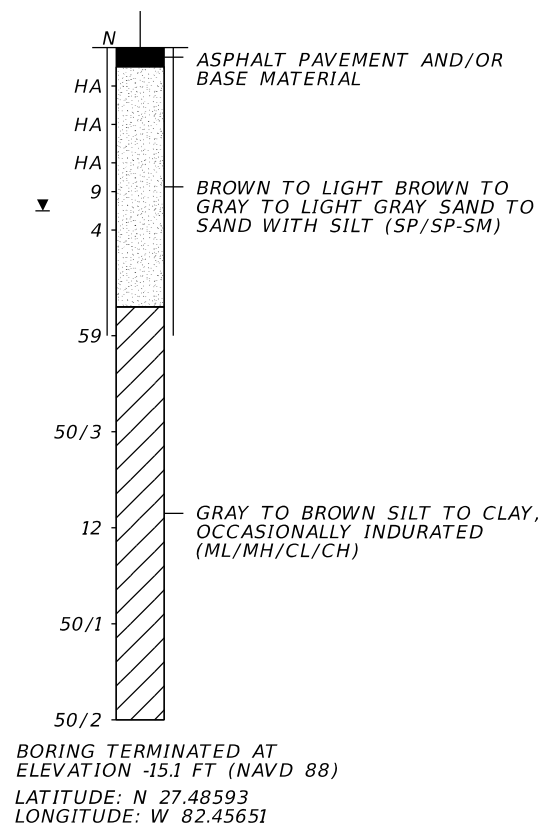
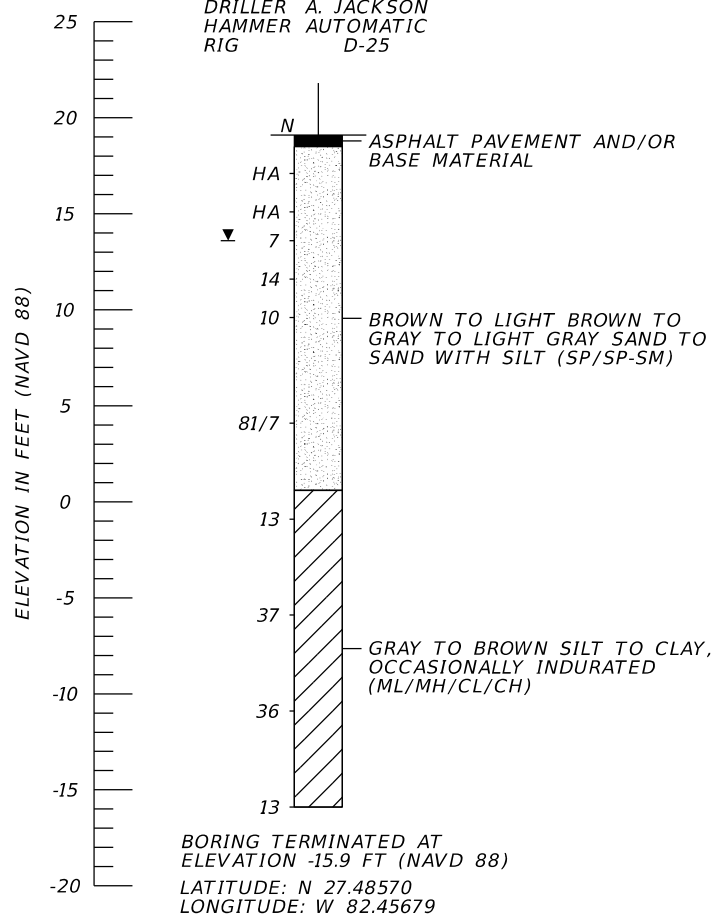
LEGEND

- BROWN TO LIGHT BROWN TO GRAY TO LIGHT GRAY SAND TO SAND WITH SILT (SP/SP-SM)
- GRAY TO BROWN SILT TO CLAY, OCCASIONALLY INDURATED (ML/MH/CL/CH)
- ASPHALT PAVEMENT AND/OR BASE MATERIAL
- SP UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487) GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW.
- 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
- HA HAND AUGERED TO VERIFY UTILITY CLEARANCE
- WH SPLIT-SPOON SAMPLER ADVANCED UNDER WEIGHT OF ROD AND HAMMER
- NAVD 88 NORTH AMERICAN VERTICAL DATUM OF 1988
- APPROXIMATE SPT BORING LOCATION
- CASING
- GROUNDWATER LEVEL ENCOUNTERED DURING FIELD EXPLORATIONS

BOR # SG-11
 STA. 309+08
 REF. C/L CONST.
 OFF. 3' LT.
 ELEV. 19.1
 DATE 5/25/2023
 DRILLER A. JACKSON
 HAMMER AUTOMATIC
 RIG D-25

BOR # SG-12
 STA. 309+97
 REF. Q CONST.
 OFF. 89' RT.
 ELEV. 19.9
 DATE 5/9/2023
 DRILLER J. SHAW
 HAMMER AUTOMATIC
 RIG D-25

BOR # SG-13
 STA. 311+48
 REF. Q CONST.
 OFF. 79' RT.
 ELEV. 20.4
 DATE 6/27/2023
 DRILLER A. JACKSON
 HAMMER AUTOMATIC
 RIG D-25



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

No.	REVISIONS	DATE	BY

KEVIN H. SCOTT, P.E.
 P.E. LICENSE NUMBER 65514
 TIERRA, INC.
 7351 TEMPLE TERRACE HIGHWAY
 TAMPA, FLORIDA 33637

KHA PROJECT 148400100
 DATE 5/2023
 SCALE AS SHOWN
 DESIGNED BY BJS
 DRAWN BY BJS
 CHECKED BY TB
 MANATEE COUNTY

MANATEE COUNTY
 LENA ROAD
 LICENSED PROFESSIONAL
 KEVIN H. SCOTT, P.E.
 FL LICENSE NUMBER 65514

REPORT OF CORE BORINGS

SHEET NUMBER
T-24

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