

STATE OF FLORIDA  
DEPARTMENT OF TRANSPORTATION

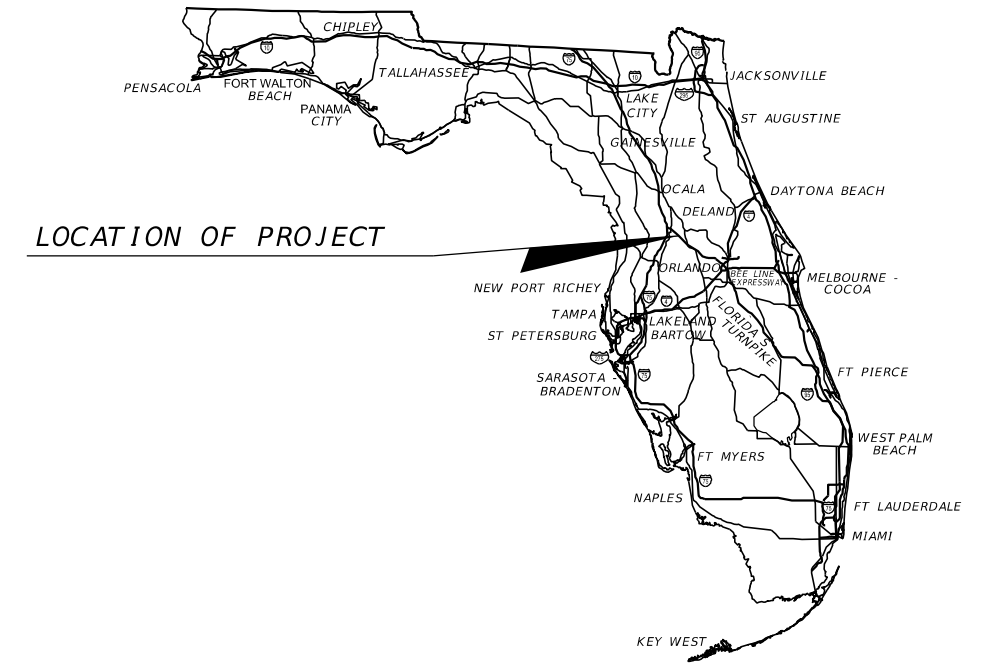
CONTRACT PLANS

FINANCIAL PROJECT ID 238275-8-52-01  
(FEDERAL FUNDS)  
LAKE COUNTY (11580)  
COUNTY ROAD NO. 46A

SIGNALIZATION PLANS

INDEX OF SIGNALIZATION PLANS

SHEET NO.	SHEET DESCRIPTION
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T-9	STRAIN POLE SCHEDULE
T-10 THRU T-16	INTERCONNECT CONDUIT PLAN
GR-1	STRAIN POLE SPT BORING RESULTS



LOCATION OF PROJECT

SIGNALIZATION SHOP DRAWINGS  
TO BE SUBMITTED TO:  
PAUL Q. SNEAD, P.E.  
2301 MAITLAND CENTER PARKWAY,  
SUITE 300  
MAITLAND, FL 32751  
PHONE: (407) 660-2552

PLANS PREPARED BY:  
CDM SMITH  
2301 MAITLAND CENTER PARKWAY,  
SUITE 300  
MAITLAND, FL 32751  
CONTRACT NUMBER: C-9968  
VENDOR NUMBER: F-042-473-650  
CERTIFICATE OF AUTHORIZATION NUMBER: 406

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

**PHASE IV PLANS UPDATE SUBMITTAL  
NOVEMBER, 2015  
(NOT FOR CONSTRUCTION)**

KEY SHEET REVISIONS	
DATE	DESCRIPTION

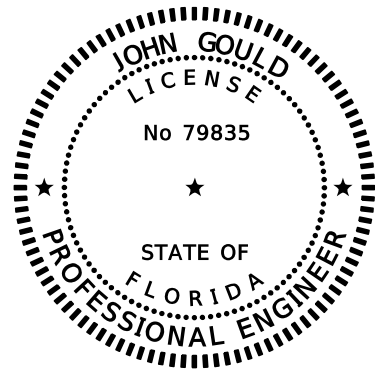
SIGNING AND PAVEMENT MARKING PLANS  
ENGINEER OF RECORD: JOHN GOULD, P.E.

P.E. NO.: 79835

FISCAL YEAR	SHEET NO.
17	T-1

FDOT PROJECT MANAGER: MEDHAT HASSAN, P.E.

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.

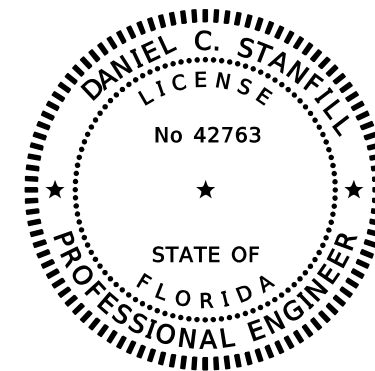


CDM Smith  
 2301 MAITLAND CENTER PARKWAY, SUITE 300  
 MAITLAND, FL 32751  
 CERTIFICATE OF AUTHORIZATION: 406  
 JOHN GOULD, P.E. No. 79835

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.003, F.A.C.

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T-10 THRU T-16	INTERCONNECT CONDUIT PLAN



GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS, INC. (GEC)  
 919 LAKE BALDWIN LANE  
 ORLANDO, FL 32814  
 CERTIFICATE OF AUTHORIZATION: 5882  
 DANIEL C. STANFILL, P.E. No. 42763

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.003, F.A.C.

SIGNALIZATION PLANS

SHEET NO.	SHEET DESCRIPTION
T-2	SIGNATURE SHEET
GR-1	STRAIN POLE SPT BORING RESULTS

REVISIONS				PREPARED BY: CDM Smith 2301 MAITLAND CENTER PARKWAY, SUITE 300 MAITLAND, FL 32751 - PHONE: (407) 660-2552 ENGINEER OF RECORD JOHN GOULD, P.E. P.E. NUMBER: 79835	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET NO.  T-2
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					CR 46A	LAKE	238275-8-52-01	

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**TABULATION OF QUANTITIES**

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS																				TOTAL THIS SHEET		GRAND TOTAL		REF. SHEET
			T-5		T-6		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							
630-2-11	Conduit, Furnish & Install, Underground - Open Trench or Contractor's Option	LF	2100				2460		2805		2800		3140		1825		2440		700				18270	18270			
630-2-14	Conduit, Furnish & Install, Aboveground	LF	75																			75	75				
632-7-1	Signal Cable, New or Reconstruction, F&I	PI	1																			1	1				
634-4-153	Span Wire Assembly, F&I, Two Point, Box	PI	1																			1	1				
635-2-11	Pull and Splice Boxes, F&I, 13"x24" Cover Size	EA	18																			18	18				
635-2-12	Pull and Splice Boxes, F&I, 24"x36" Cover Size	EA	0**				5		7		6		6		7		5		2			38	38				
635-2-13	Pull and Splice Boxes, F&I, 30"x60" Rectangular or 36" Round Cover Size	EA	0**										1									1	1				
639-1-III	Electrical Power Service, Overhead, Furnished by Power Co.	AS	1																			1	1				
639-2-1	Electrical Service Wire	LF	210																			210	210				
641-2-18	Prestressed Concrete Pole, F&I, Type P-VIII	EA	4																			4	4				
646-1-11	Aluminum Signals Pole, Pedestal	EA	2																			2	2				
650-1-14	Traffic Signal, F&I, 3 Section, 1 way, Aluminum	AS	7																			7	7				
650-1-16	Traffic Signal, F&I, 4 Section, 1 way, Aluminum	AS	1																			1	1				
650-1-18	Traffic Signal, F&I, 5 Section, 1 way, Aluminum	AS	1																			1	1				
653-1-11	Signal Pedestrian, F&I, LED - Count Down, 1 Way	AS	2																			2	2				
654-2-21	Rectangular Rapid Flashing Beacon, F&I, Solar Powered Complete Assembly, Single Direction	AS			4																	4	4				
660-2-102	Loop Assembly, F&I, Type B	AS	4																			4	4				
660-2-106	Loop Assembly, F&I, Type F (40')	AS	4																			4	4				
665-1-11	Pedestrian Detector, F&I, Standard	EA	2																			2	2				
670-5-110	Traffic Controller Assembly, F&I, NEMA	AS	1																			1	1				
700-5-22	Internally Illuminated Sign	EA	4																			4	4				

\*\* Fiber optic pull and splice boxes at the signalized intersection included on sheet T-13

<table border="1"> <thead> <tr> <th colspan="4">REVISIONS</th> </tr> <tr> <th>DATE</th> <th>DESCRIPTION</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>				REVISIONS				DATE	DESCRIPTION	DATE	DESCRIPTION					PREPARED BY: CDM Smith 2301 MAITLAND CENTER PARKWAY, SUITE 300 MAITLAND, FL 32751 - PHONE: (407) 660-2552 ENGINEER OF RECORD JOHN GOULD, P.E. P.E. NUMBER: 79835			STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			<b>TABULATION OF QUANTITIES</b>			SHEET NO. T-3
REVISIONS																									
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ROAD NO.		COUNTY	FINANCIAL PROJECT ID		CR 46A	LAKE	238275-8-52-01																		

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SIGNALIZATION NOTES  
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GENERAL NOTES

1. A PRE-CONSTRUCTION MEETING SHALL BE SCHEDULED WITH LAKE COUNTY TRAFFIC OPERATIONS, (352) 742-1766, PRIOR TO ANY CONSTRUCTION.
2. IT SHALL BE NOTED THAT NO TEST BORINGS BE MADE WHERE CONDUIT RUNS ARE TO BE INSTALLED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE THE JOB SITE CONDITIONS PRIOR TO SUBMITTING BID PROPOSALS.
3. THE CONTRACTOR SHALL HAND DIG THE FIRST 4 FEET AT EACH POLE LOCATION AND THE FIRST 2 FEET AT EACH PEDESTAL LOCATION TO VERIFY NO UTILITY CONFLICTS.
4. THE CONTRACTOR SHALL VERIFY COLOR CODES FOR BOTH SIGNAL CABLE WITH LAKE COUNTY TRAFFIC OPERATIONS (THE MAINTAINING AGENCY) BEFORE ORDERING.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING LAKE COUNTY TRAFFIC OPERATIONS, (352) 742-1766, 48 HOURS IN ADVANCE OF ALL PHASES OF CONSTRUCTION INCLUDING AND NOT LIMITED TO, INSTALLING SIGNAL POLES, GROUND RODS, UNDERGROUND CONDUIT, SIGNAL HEAD ASSEMBLIES, AND LOOP INSTALLATIONS.
6. THE CONTRACTOR IS REQUIRED TO INSPECT THE INSTALLATION OF THE TRAFFIC SIGNALS IN ACCORDANCE WITH FDOT SPECIFICATIONS 105-8.10. THE CONTRACTOR SHALL COORDINATE FINAL ACCEPTANCE INSPECTION IN ACCORDANCE WITH FDOT SPECIFICATION 611-2.2 WITH THE ENGINEER AT LEAST TEN DAYS IN ADVANCE. LAKE COUNTY TRAFFIC OPERATIONS AND FDOT TRAFFIC OPERATIONS AT 386-943-5318 SHOULD ALSO BE CONTACTED TEN DAYS BEFORE THE INSPECTION IS TO BE PERFORMED SO THEY MAY BE PRESENT.
7. IN ADDITION TO WHAT IS REQUIRED BY FDOT SPECIFICATIONS, THE CONTRACTOR SHALL FURNISH LAKE COUNTY TRAFFIC OPERATIONS WITH TWO COMPLETE SETS OF AS-BUILT PLANS THAT INCLUDE CONDUIT AND PULL BOX LOCATIONS, AT FINAL INSPECTION.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL NECESSARY PERMITS INCLUDING THE ELECTRIC PERMIT. THE APPLICATION FOR POWER SHOULD BE COORDINATED WITH LAKE COUNTY TRAFFIC OPERATIONS.
9. DURING CONSTRUCTION TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE FDOT TRAFFIC DESIGN STANDARDS, SERIES 600 INDEX.
10. THE EXACT LOCATION OF ALL UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR PRIOR TO BEGINNING CONSTRUCTION.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY PROVIDING THE ELECTRIC POWER, TO DETERMINE IF ANY ADDITIONAL FEES ARE REQUIRED TO CONNECT POWER. IF REQUIRED, THE FEE SHALL BE INCLUDED AS PART OF BID ITEM PAYMENT FOR ELECTRICAL SERVICE ASSEMBLY.
12. ALL MATERIALS AND HARDWARE SHALL BE FDOT APPROVED, AND PRE-APPROVED BY LAKE COUNTY TRAFFIC OPERATIONS
13. THE CONTRACTOR SHALL FURNISH LAKE COUNTY TRAFFIC OPERATIONS WITH EMERGENCY CONTACTS AND PHONE NUMBERS AND HAVE AN IMSA LEVEL II CERTIFIED SIGNAL TECHNICIAN ON CALL WITHIN A TWO HOUR MINIMUM RESPONSE TIME.
14. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY DEPARTMENT AT LEAST 48 HOURS IN ADVANCE OF POLE SETTING OPERATIONS WHERE A CONFLICT WITH OVERHEAD ELECTRICAL CONDUCTORS IS EXPECTED AND WHEN JOINT USE POLES ARE TO BE USED.
15. THE CONTRACTOR SHALL STAKE ALL POLE LOCATIONS AND HAVE IT APPROVED BY LAKE COUNTY TRAFFIC OPERATIONS.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING THE PROPER AMOUNT OF RAKE WITH RESPECT TO LOADING TO BE USED ON POLES AT THE TIME OF INSTALLATION.
17. ANY STRIPING/PAVEMENT MARKINGS OR LANDSCAPING DESTROYED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE.
18. THE COST FOR THE USE OF "TRAFFIC CONTROL OFFICER" IN THE EVENT OF LANE CLOSURES SHALL BE INCIDENTAL TO THE WORK AND WILL NOT BE PAID SEPARATELY.

CONTROLLER

1. THE CONTRACTOR SHALL CONTACT LAKE COUNTY TRAFFIC OPERATIONS (352) 742-1766 FOR INFORMATION ON LAKE-COUNTY PREFERRED SIGNAL CONTROL EQUIPMENT FOR SIGNAL SYSTEM SYNCHRONIZATION, COMMUNICATION AND MAINTENANCE PRIOR TO BIDDING ON THE PLANS.
2. A MANUAL PUSH BUTTON CORD SHALL BE FURNISHED IN THE CONTROLLER CABINET.
3. THE CABINET DOOR SHALL OPEN AWAY FROM THE INTERSECTION WHEN POSSIBLE.
4. GROUNDING FOR THE CONTROLLER ASSEMBLY SHALL MEASURE 25 OHMS OR LESS
5. A GENERATOR PAD, 3'x3'x4" CONCRETE SHALL BE INSTALLED WITH A 5/8" EYEBOLT INSTALLED IN THE PAD ADJACENT TO CABINET BASE.
6. THE CABINET CONCRETE BASE SHALL BE A MINIMUM OF 32"x48" TO ACCOMODATE TYPE 6 CABINETS.
7. THE MOUNTING OF THE ELECTRICAL SERVICE TO THE TRAFFIC SIGNAL CABINET SHALL BE PROHIBITED.
8. THE INSIDE LANE DISCONNECT SHALL BE WIRED FOR FUTURE 4- SECTION HEADS.

SIGNALIZATION NOTES  
=====

PED FEATURES

1. THREE (3) SPARE CONDUCTORS ARE TO BE RUN TO THE FURTHEST PEDESTRIAN SIGNAL HEAD.
2. CONTRACTOR TO ENSURE THAT A 4'x4' FLAT LANDING AREA IS ADJACENT TO ALL DETECTORS FOR PEDESTRIAN ACCESS.
3. PEDESTRIAN SIGNAL ASSEMBLIES SHALL BE CAST ALUMINUM WITH FULL HAND/PERSON LED'S WITH COUNTDOWN INDICATION.
4. ALL PEDESTRIAN SIGNAL HEADS SHALL HAVE LOUVERS AND BE COUNTDOWN LED SIGNALS WITH THE PROPER COUNTDOWN PEDSTRIAN SIGNAGE. ALL PEDESTRIAN SIGNALS NOT MOUNTED ON SIGNAL POLES OR MAST ARM POLES SHALL BE THE BREAKAWAY TYPE COMMONLY REFERRED TO AS "T-BASE". THIS T-BASE WILL HAVE ALN ACCESS DOOR FOR WIRING AND MAINTENANCE.

SIGNAL CABLE/LOOPS/CONDUIT/PULL BOXES

1. SIGNAL CABLE AND LOOP WIRES TO BE IN SEPARATE PULL BOXES.
2. TYPE 'F' LOOPS SHALL BE 40'x6' AND EXTEND 5' BEYOND THE STOP BAR.
3. DELAY TIME FOR LOOPS MARKED "DELAY" SHALL BE SET TO 5 SECONDS. ALL OTHERS SHALL BE SET TO ZERO.
4. PULL BOX COVERS SHALL BE FDOT APPROVED NON-METALLIC WITH RECESSED COVER LOGO "TRAFFIC SIGNAL".
5. WHENEVER POSSIBLE, ALL LOOPS AND SYSTEM SENSORS SHALL BE CUT INTO THE ASPHALTIC CONCRETE STRUCTURAL COURSE PRIOR TO PLACEMENT OF THE FRICTION COURSE. ALL LOOP LEAD-IN CABLES SHALL BE PLACED IN CONDUIT.
6. PULL BOXES SHALL BE LOCATED AWAY FROM EDGE OF PAVEMENT OR BEHIND A CURB WHEN POSSIBLE, ATTEMPTING TO KEEP FROM THE BOTTOM OF A DITCH OR RETENTION AREA, AND WHERE LARGE VEHICLES PARK.
7. LOOP HOME RUNS SHALL NOT BE CUT INTO THE RADIUS.

SIGNAL HEADS

1. ALL VEHICULAR SIGNAL HEAD ASSEMBLIES SHALL BE BLACK, CAST ALUMINUM WITH TUNNEL VISORS AND LED'S FOR ALL INDICATIONS. UNLESS OTHERWISE NOTED.
2. SIGNAL HEADS SHALL BE WIRED DIRECTLY TO THE TERMINAL BLOCKS. THE USE OF "JONES" PLUGS IS PROHIBITED.
3. ALL TRAFFIC SIGNAL HEADS ON ALL APPROACHES SHALL HAVE BACKPLATES.
4. SIGNAL CABLE SHALL BE ATTACHED TO MESSENGER WIRE USING PROPER SIZE SPIRAL WRAP.
5. DISCONNECTS SHALL OPEN FROM THE SIGNAL FACE.
6. SIGNAL HEADS SHALL BE WIRED PER IMSA NEMA PHASING, PHASE 2 AND 6 ARE TYPICALLY ASSIGNED TO MAJOR STREET WITH PHASE 2 BEING SOUTH OR WESTBOUND THRU MOVEMENTS. THE USUAL CONVENTION IS FOR THROUGH PHASES TO BE NUMBERED IN THE CLOCKWISE DIRECTION STARTING WITH PHASE 2, AND THE LEFT-TURN PHASES TO BE NUMBERED IN THE CLOCKWISE DIRECTION, WITH PHASE 1 BEING ACCOMPANYING LEFT-TURN TO PHASE 6.
7. FDOT OPTION OF PIVOTAL ADJUSTABLE HANGERS ASSEMBLY WITH FLAT EXTENSION BARS SHALL BE USED INSTEAD OF DROP PIPES FOR DUAL POINT ATTACHMENTS.

SIGNS

1. INTERNALLY ILLUMINATED STREET NAME SIGNS SHALL BE DOUBLE SIDED.
2. INTERNALLY ILLUMINATED STREET NAME SIGNS (LED), SHALL BE INSTALLED 1' BELOW THE MESSENGER CABLE WHERE POSSIBLE, POWERED BY A SEPARATE CIRCUIT BREAKER, AND BE DESIGNED AND INSTALLED IN ACCORDANCE WITH LAKE COUNTY PUBLIC WORKS INTERNALLY ILLUMINATED STREET NAME SIGN DETAIL. A PHOTOCCELL SHALL BE INSTALLED NEAR THE ELECTRIC SERVICE WITHIN REACH OF A LIFT TRUCK. CARE TO BE GIVEN TO INSTALL WHERE STREET LIGHTING DOES NOT AFFECT OPERATION.

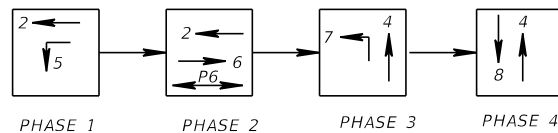
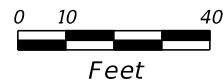
PAY ITEM NOTES

1. PAY ITEM NO. 639-1-111 TO INCLUDE ALL FEES BY THE POWER COMPANY FOR ENERGIZING THE POWER SERVICE. THE CONTRACTOR SHALL VERIFY THE POWER SERVICE REQUIREMENTS WITH LAKE COUNTY TRAFFIC OPERATIONS AND THE POWER COMPANY PRIOR TO BIDDING THE PROJECT.
2. PAY ITEM NO 665-1-11 INCLUDES FTP-68B-06.
3. PAY ITEM NO. 700-5-22 SHALL INCLUDE A MASTER PHOTOCCELL MOUNTED EITHER INSIDE THE CABINET WITH A 2" PLEXIGLASS WINDOW, OR NEAR THE ELECTRIC SERVICE WITHIN REACH OF A LIFT TRUCK. PHOTOCCELL SHALL BE INSTALLED WHERE STREETLIGHTS DO NOT AFFECT OPERATION.

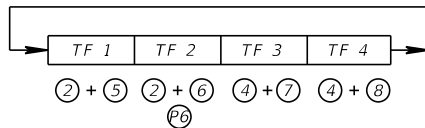
REVISIONS				PREPARED BY: CDM Smith 2301 MAITLAND CENTER PARKWAY, SUITE 300 MAITLAND, FL 32751 - PHONE: (407) 660-2552 ENGINEER OF RECORD JOHN GOULD, P.E. P.E. NUMBER: 79835	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET NO.  T-4
DATE	DESCRIPTION	DATE	ROAD NO.		COUNTY	FINANCIAL PROJECT ID		
					CR 46A	LAKE	238275-8-52-01	

**GENERAL NOTES**

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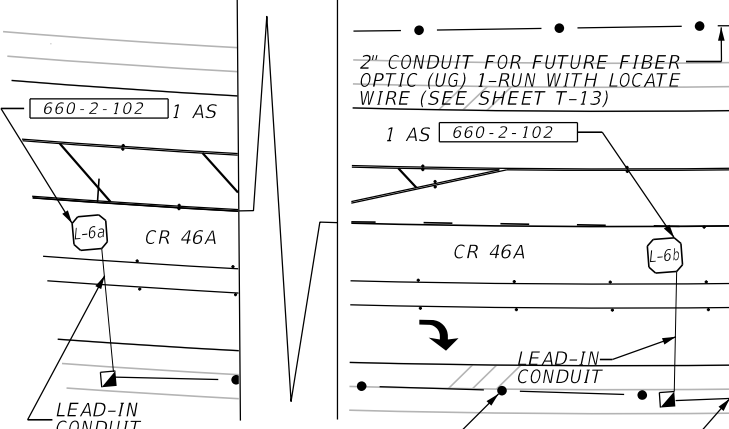
634-4-153 1 PI  
635-2-11 18 EA



**CONTROLLER TIMINGS\***

TIMING FUNCTION	1	2	3	4	5	6	7	8
MINIMUM GREEN	-	17	-	8	5	17	5	8
EXTENSION	-	3	-	3	3	3	3	3
MAXIMUM GREEN 1	-	95	-	40	40	55	25	15
MAXIMUM GREEN 2	-	-	-	-	-	-	-	-
YELLOW CLEARANCE	-	4.8	-	4.8	4.8	4.8	4.8	4.8
ALL RED	-	2	-	2	2	2	2	2
PEDESTRIAN WALK	-	-	-	-	-	7	-	-
PED. CLEARANCE	-	-	-	-	-	20	-	-
RECALL	-	MIN	-	-	-	MIN	-	-

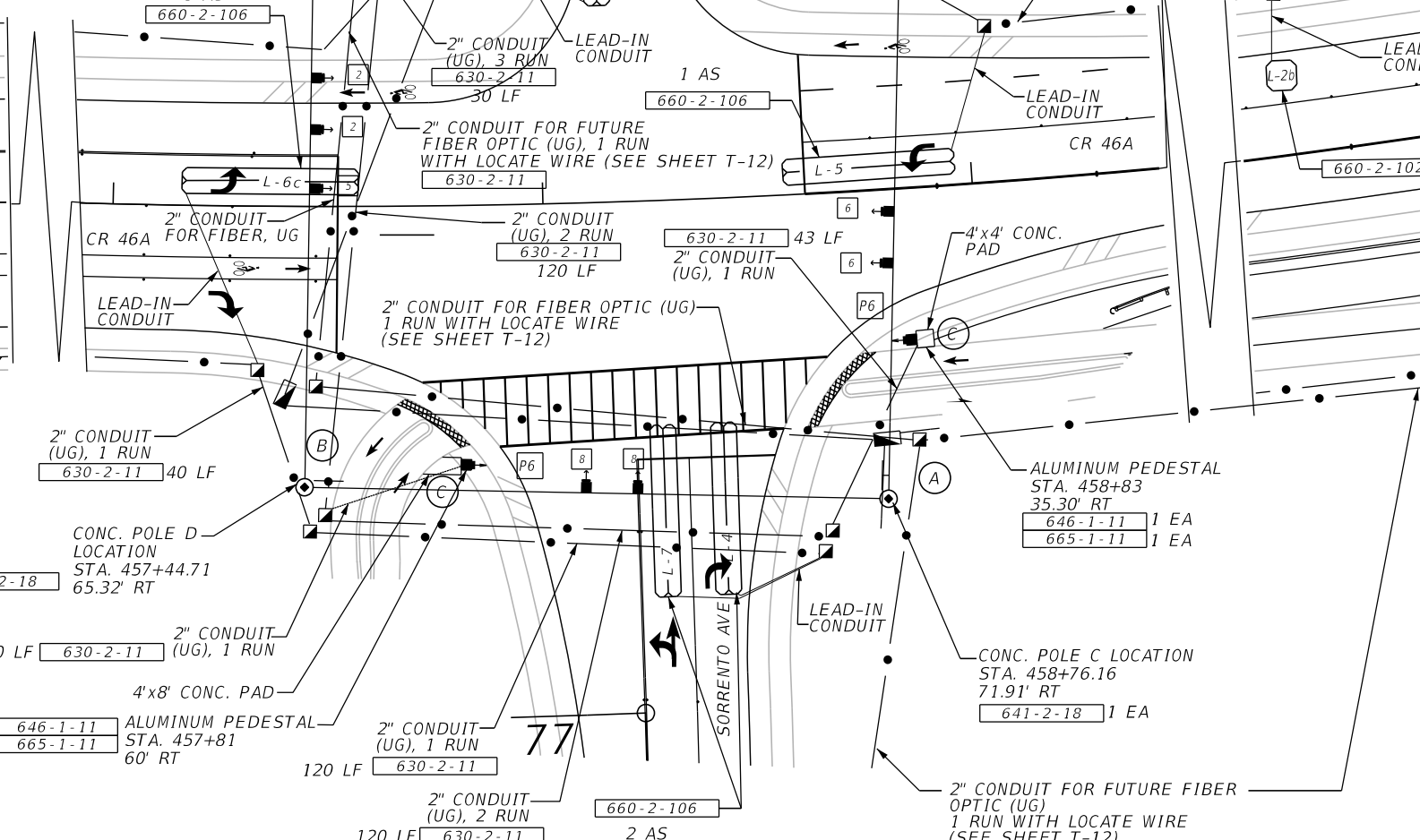
\* Timings are initial and may require field adjustment as directed by the project engineer.



CONC. POLE A LOCATION  
STA. 457+46.09  
63.82' LT

641-2-18 1 EA  
639-1-111 1 AS  
632-7-1 1 PI  
670-5-110 1 AS

PROP. CONTROLLER LOCATION  
1 AS



- CONTROLLER OPERATIONS:**
1. MAJOR STREET: CR 46A  
MINOR STREET: SORRENTO AVENUE
  2. SOP: 16 (MOD)
  3. FLASHING OPERATION:  
MOVEMENTS 2 & 6 TO FLASH YELLOW  
MOVEMENTS 5, 4 & 8 TO FLASH RED
  4. POSTED SPEED LIMIT: C.R. 46A = 45 MPH  
SORRENTO AV = 45 MPH

1 EA 641-2-18

1 EA 646-1-11  
1 EA 665-1-11

CONC. POLE D LOCATION  
STA. 457+44.71  
65.32' RT

ALUMINUM PEDESTAL  
STA. 458+83  
35.30' RT

646-1-11 1 EA  
665-1-11 1 EA

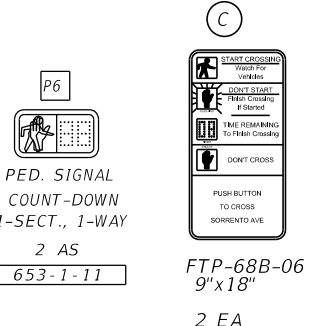
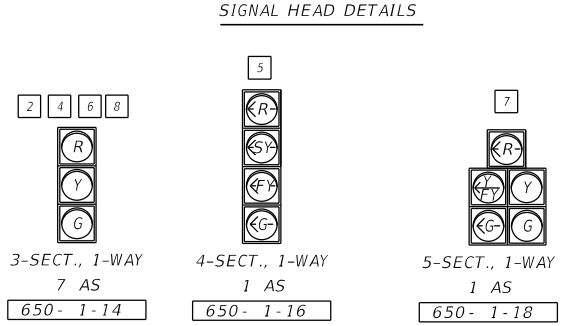
CONC. POLE C LOCATION  
STA. 458+76.16  
71.91' RT

641-2-18 1 EA

**DETECTORS FOR LOOPS**

LOOP	NO. OF LOOPS	DISTANCE FROM STOP BAR	NO. OF NEW DETS.	NO. OF EXIST. DETS.	DELAY TIME (SEC)
L-2a	2	410	2	0	0
L-2b	2	205	2	0	0
L-4	1	-	1	0	15
L-5	1	-	1	0	15
L-6a	2	410	2	0	0
L-6b	2	205	2	0	0
L-7	1	-	1	0	5
L-8	1	-	1	0	10

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



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

PREPARED BY:  
CDM Smith  
2301 MAITLAND CENTER PARKWAY, SUITE 300  
MAITLAND, FL 32751 - PHONE: (407) 660-2552  
ENGINEER OF RECORD  
JOHN GOULD, P.E.  
P.E. NUMBER: 79835

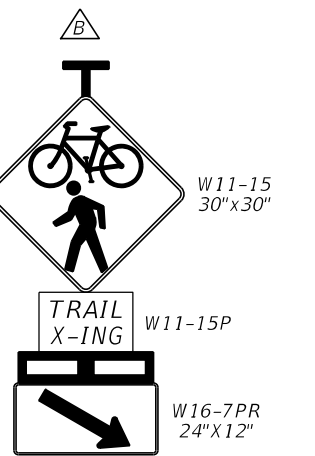
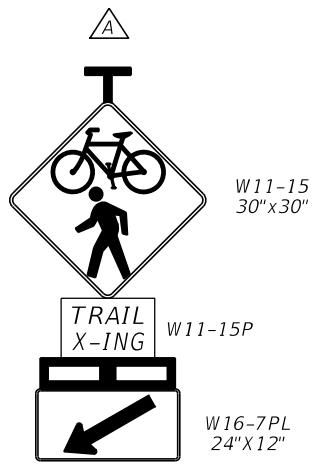
**STATE OF FLORIDA  
DEPARTMENT OF TRANSPORTATION**

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
CR 46A	LAKE	238275-8-52-01

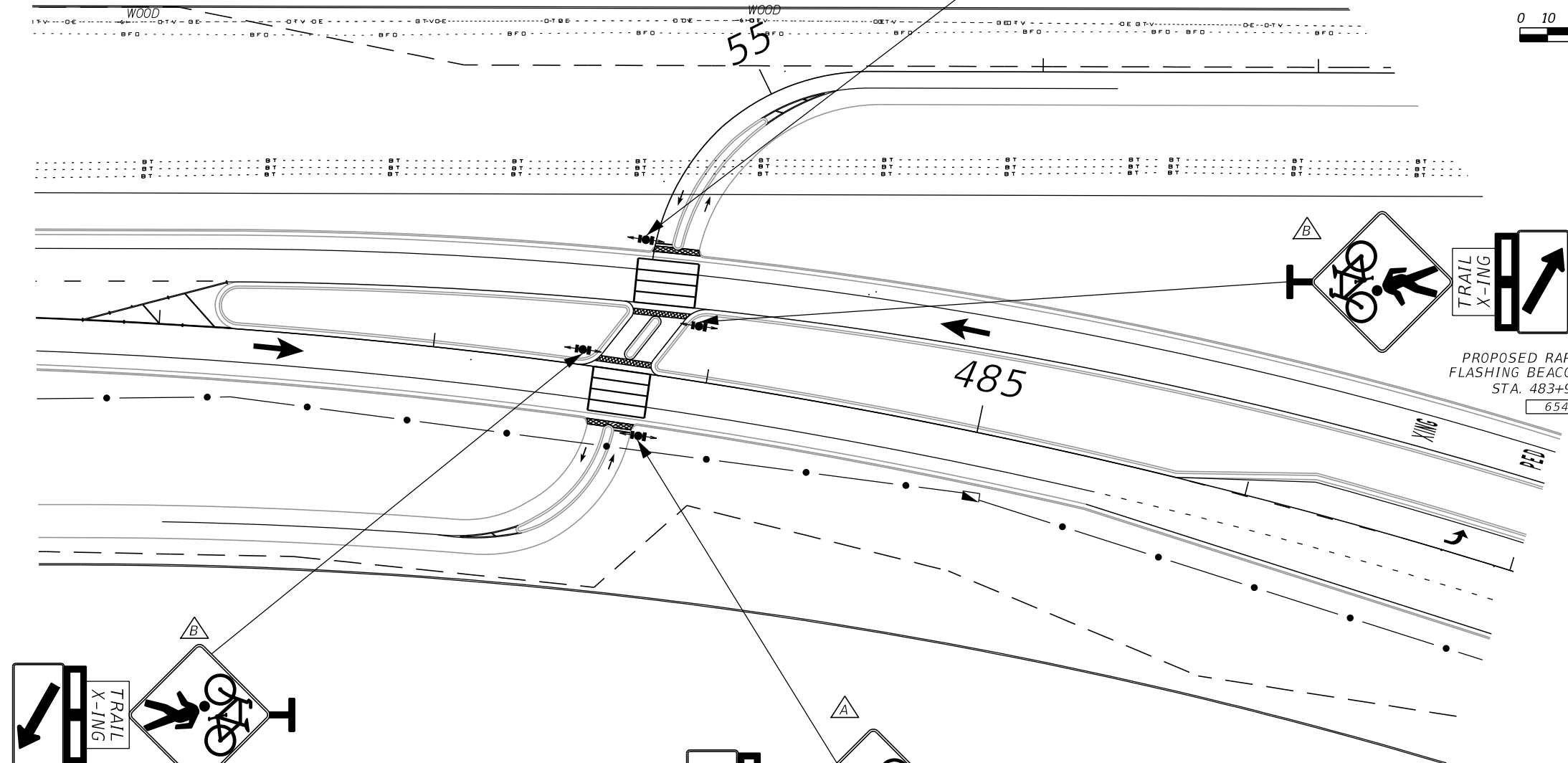
**SIGNALIZATION  
PLAN SHEET**

SHEET NO.  
**T-5**

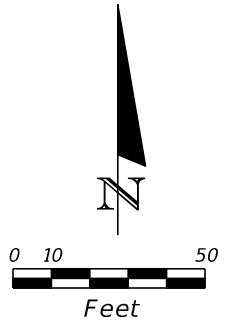
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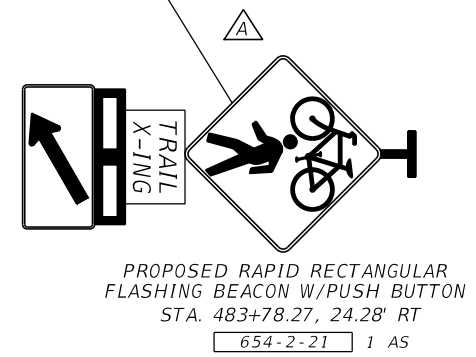
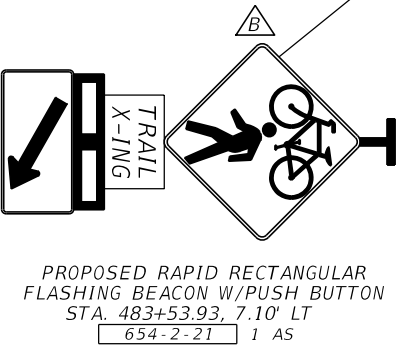
(SEE DETAIL ON SHEET T-7)



PROPOSED RAPID RECTANGULAR  
FLASHING BEACON W/PUSH BUTTON  
STA. 483+70.91, 49.73' LT  
654-2-21 1 AS



PROPOSED RAPID RECTANGULAR  
FLASHING BEACON W/PUSH BUTTON  
STA. 483+94.22, 18.36' LT  
654-2-21 1 AS



SIGNAL OPERATION NOTES

1. MAJOR STREET IS CR46 A  
MINOR STREET IS WEKIVA TRAIL
2. PEDESTRIAN FLASHER UPON ACTUATION ONLY.

REVISIONS				PREPARED BY: CDM Smith 2301 MAITLAND CENTER PARKWAY, SUITE 300 MAITLAND, FL 32751 - PHONE: (407) 660-2552 ENGINEER OF RECORD JOHN GOULD, P.E. P.E. NUMBER: 79835	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			PEDESTRIAN FLASHING BEACON PLAN	SHEET NO.  T-6
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					CR 46A	LAKE	238275-8-52-01		

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.

**RECTANGULAR RAPID FLASHING BEACON (RRFB)**

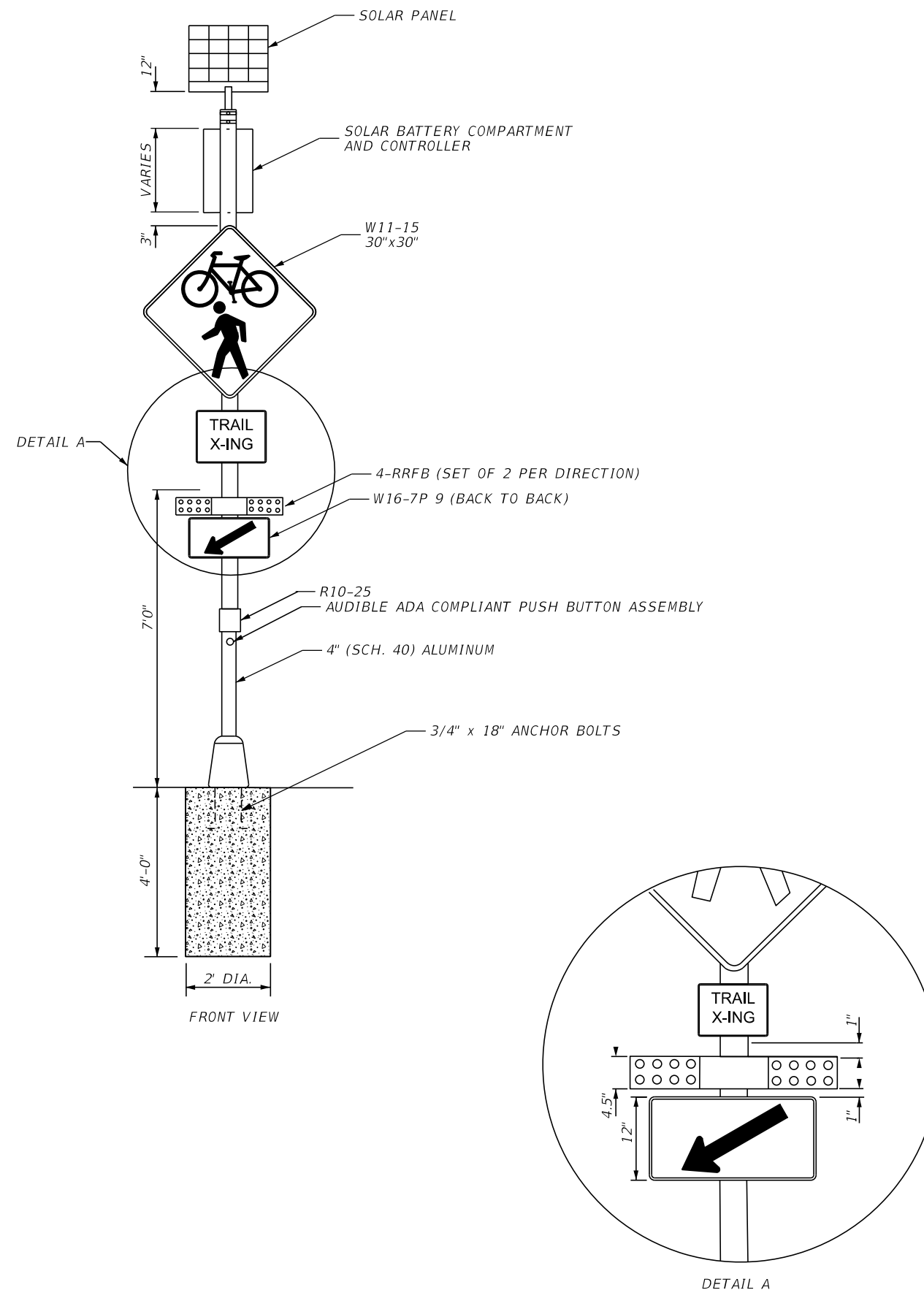
**GENERAL NOTES:**

THE RRFB SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

1. RECTANGULAR RAPID FLASHING BEACON (RRFB) SHALL ALWAYS BE INSTALLED IN PAIRS, ONE ON EITHER SIDE OF APPROACH TRAFFIC.
2. CONTROLLER SHALL BE INSTALLED ON THE BACKSIDE OF POST FROM APPROACH TRAFFIC.
3. ALL RRFB EQUIPMENT AND HARDWARE SHALL BE LISTED ON THE APPROVED PRODUCTS LIST (APL).
4. EACH INSTALLATION OF THE SYSTEM SHALL INCLUDE THE STANDARD W11-15 AND W16-7P AS SHOWN IN THE DETAILS.
5. THE W11-15 SIGN SHALL BE 30"x30" FOR SINGLE LANE FACILITIES.
6. SIGNAGE SHALL CONSIST OF A HIGH REFLECTIVE SHEETING.
7. EACH RRFB SHALL BE A SELF-CONTAINED SYSTEM, INCLUDING A SOLAR POWER SUPPLY AND A DIGITAL RADIO COMMUNICATION SYSTEM.
8. EACH SYSTEM SHALL HAVE SUPER BRIGHT LED'S WITH THE CAPABILITY OF ILLUMINATING THE PEDESTRIAN PAD AREA AS WELL AS THE ROADWAY AREA.
9. SYSTEM SHALL CONSIST OF AN AUTOMATIC PEDESTRIAN DETECTOR WHICH WILL AUTOMATICALLY ACTIVATE AND PROVIDE VERBAL GUIDANCE ON HOW TO ACTIVATE THE SYSTEM AND WHAT TO DO TO CROSS THE ROADWAY.
10. SYSTEM SHALL PROVIDE VERBAL GUIDANCE ON CROSSING THE ROADWAY AFTER THE SYSTEM IS ACTIVATED. THIS REQUIREMENT SHALL HAVE THE ABILITY TO FIELD ADJUST THE VOLUME LEVELS OR EVEN TURN THIS OFF IF REQUIRED.
11. SYSTEM SHALL INCLUDE A LED ILLUMINATION OF THE PRIMARY SIGN DURING LOW LIGHT CONDITIONS.
12. SYSTEM LED ENCLOSURES SHALL BE POWDER COATED ALUMINUM ENCLOSURES FOR PROTECTION FROM THE ENVIRONMENT.
13. SYSTEM LED ENCLOSURE SHALL HAVE TWO (2) LARGE LED'S PER SIDE.
14. SYSTEM ENCLOSURE'S 4 LARGE LED'S MUST MEET SOCIETY OF AUTOMATIVE ENGINEERS (SAE) STANDARD, J595 (DIRECTIONAL FLASHING OPTICAL WARNING DEVICES FOR AUTHORIZED EMERGENCY, MAINTENANCE, AND SERVICE VEHICLES DATED JANUARY 2005.) THE LED MANUFACTURER'S COPY MUST BE SUBMITTED TO THE ENGINEER.

**PAY ITEM NOTE:**

654-2-21 INCLUDES ALL COST FOR THE COMPLETE RECTANGULAR RAPID FLASHING BEACON (RRFB) ASSEMBLY INCLUDING BUT NOT LIMITED TO:  
 SOLAR PANEL, BATTERY, CONTROLLER, ANTENNA, SIGN LIGHTS, RRFBs, PAD LIGHTING, PUSH BUTTON, POLE, FOUNDATION WITH ANCHOR BOLTS, WITH ALL APPURTENANT AND MISCELLANEOUS ITEMS AND WORK NEEDED TO PROVIDE A COMPLETE, FUNCTIONAL AND SATISFACTORY INSTALLATION.



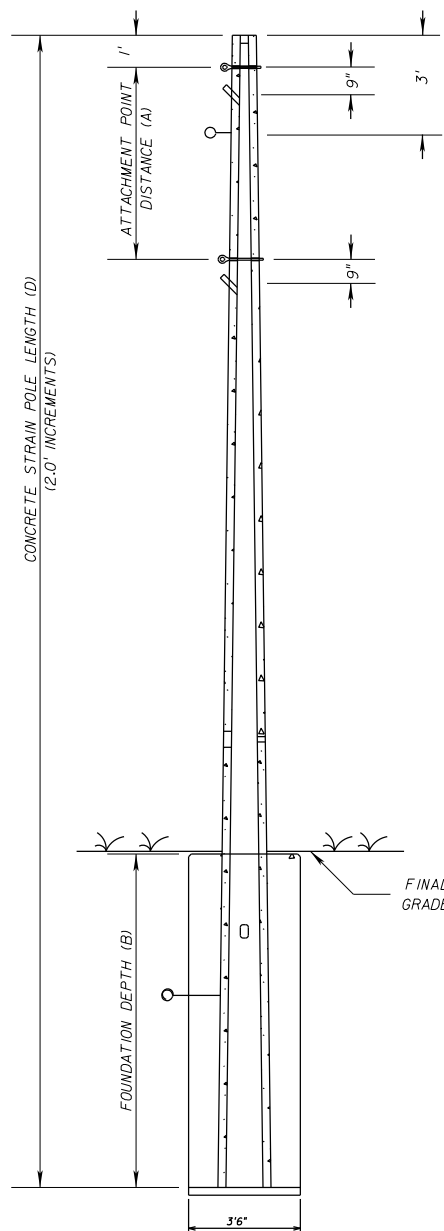
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REVISIONS				PREPARED BY: CDM Smith 2301 MAITLAND CENTER PARKWAY, SUITE 300 MAITLAND, FL 32751 - PHONE: (407) 660-2552 ENGINEER OF RECORD JOHN GOULD, P.E. P.E. NUMBER: 79835	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			RECTANGULAR RAPID FLASHING BEACON DETAIL	SHEET NO.  T-7
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					CR 46A	LAKE	238275-8-52-01		





# STRAIN POLE SCHEDULE

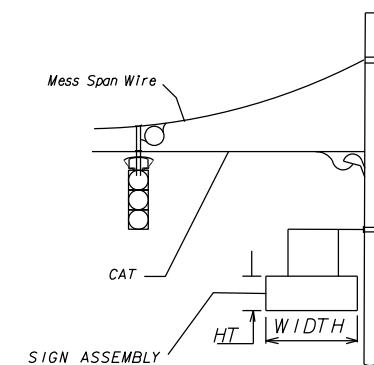
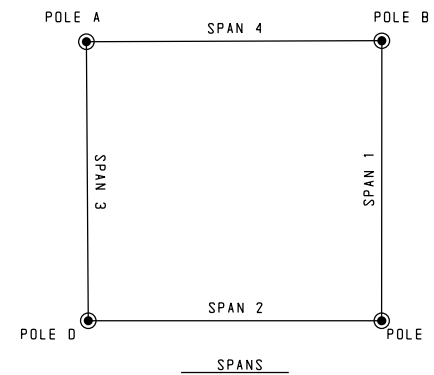


**CONCRETE STRAIN POLE SECTION**

TYPES P-III through P-VIII REFER TO INDEX I7725 FOR OTHER SPECIFICATIONS

ID NO.	SHEET NO.	POLE LOCATION		FINAL GRADE ELEVATION	CROWN ELEVATION	POLE TYPE	POLE LENGTH (D)	FOUNDATION DEPTH (B)	ATTACHMENT POINT DIST. (A)	CATENARY WIRE DIA.(IN.)/GRADE	EFFECTIVE SOIL UNIT WT.(PCF)	ANGLE OF INTERNAL FRICTION (DEG.)	PAY ITEM NUMBER
		STATION	OFFSET										
A	T-4	457+46.09	63.82' LT	76.29	77.4	P-VIII	47'	11'	7'-10"	3/8"	100	28	64I-2-18
B	T-4	458+86.81	57.29' LT	73.02	77.4	P-VIII	46'	10'	7'-10"		100	28	64I-2-18
C	T-4	458+76.16	71.9' RT	73.77	77.4	P-VIII	44'	10'	7'-10"		100	28	64I-2-18
D	T-4	457+44.71	65.32' RT	75.37	77.4	P-VIII	43'	10'	7'-10"		100	28	64I-2-18

**NOTES:**  
 1. FOR ADDITIONAL DETAILS NOT SHOWN ON THIS SHEET, REFER TO STANDARD INDEX I7725.  
 2. DESIGN WIND SPEED: 110 MPH  
 3. FOR REPORT OF SIGNAL POLE BORINGS, SEE SHEET GR-1



MOUNT SIGNS 21' ABOVE GROUND.  
 SIGN MOUNTING DETAIL

SHEET NO.	POLE	STRUC. ID NO.	CRIT. ELEV. DIF.	CONCRETE OR STEEL	COLOR IF STEEL	SPAN	SPAN LENGTH	BACK-PLATES (Y/N)	SIGNAL DATA																SIGN DATA																	
									DISTANCE FROM POLE (FT)/NUMBER OF SECTIONS																DISTANCE FROM POLE(*)/HEIGHT & WIDTH																	
									DIST.	SEC.	DIST.	SEC.	DIST.	SEC.	DIST.	SEC.	DIST.	SEC.	DIST.	SEC.	DIST.	SEC.	DIST.	SEC.	DIST.	SEC.	DIST.	HT.	WIDTH	DIST.	HT.	WIDTH	DIST.	HT.								
	A			CONCRETE		4	136.8	Y	72	5	84	3																132	2'	8'												
	B			CONCRETE		1	129.6	Y	63	3	75	3																	124	2'	8'											
	C			CONCRETE		2	135.9	Y	58	3	70	3																	130	2'	8'											
	D			CONCRETE		3	129.1	Y	70	4	83	3	95	3															123	2'	8'											

**REVISIONS**

DATE	DESCRIPTION	DATE	DESCRIPTION

PREPARED BY:  
 CDM Smith  
 2301 MAITLAND CENTER PARKWAY, SUITE 300  
 MAITLAND, FL 32751 - PHONE: (407) 660-2552  
 ENGINEER OF RECORD  
 JOHN GOULD, P.E.  
 P.E. NUMBER: 79835

**STATE OF FLORIDA  
 DEPARTMENT OF TRANSPORTATION**

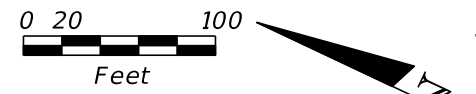
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
CR 46A	LAKE	238275-8-52-01

## STRAIN POLE SCHEDULE

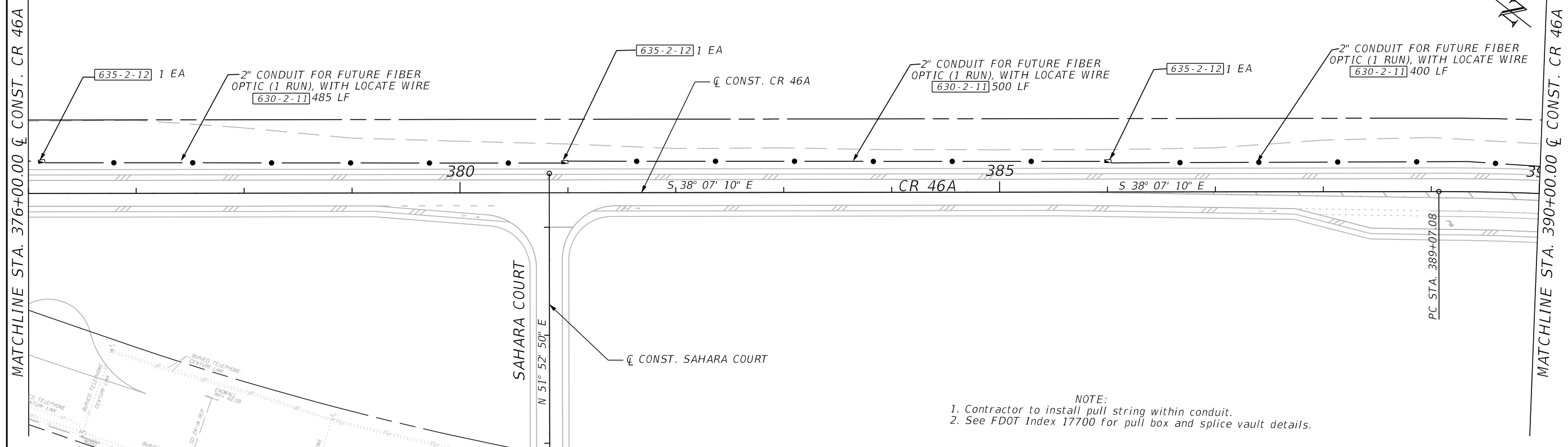
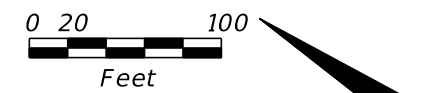
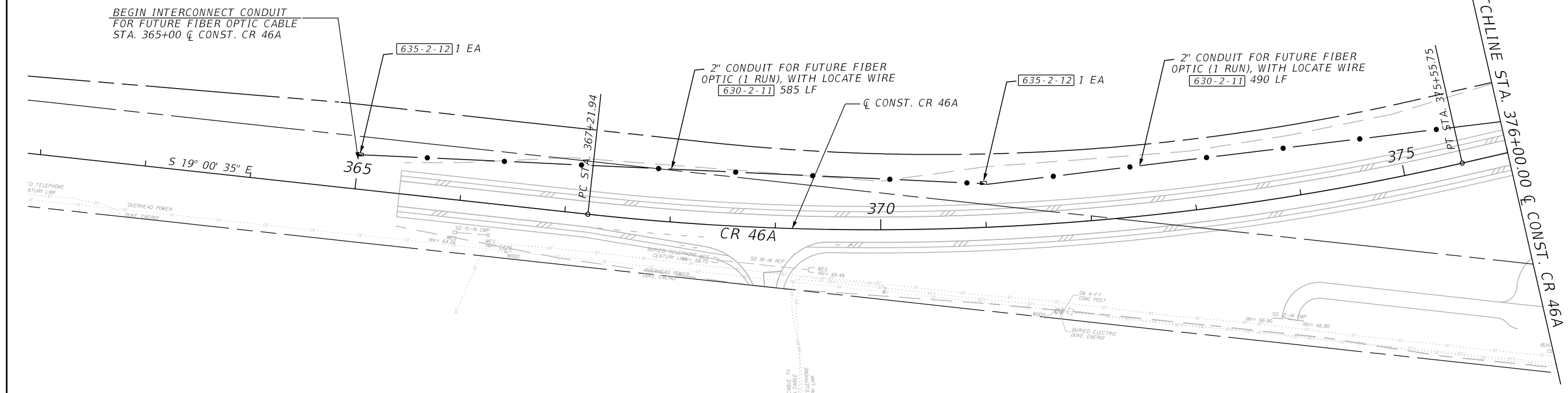
SHEET NO.

T-9

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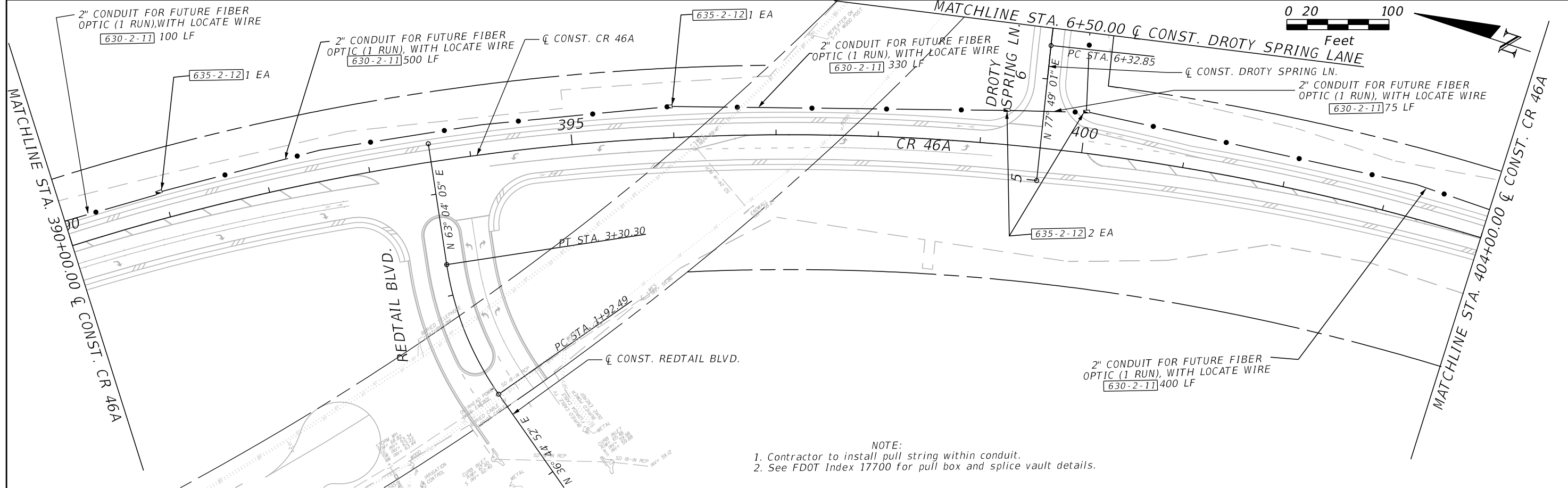
NOTE:  
 1. Contractor to install pull string within conduit.  
 2. See FDOT Index 17700 for pull box and splice vault details.



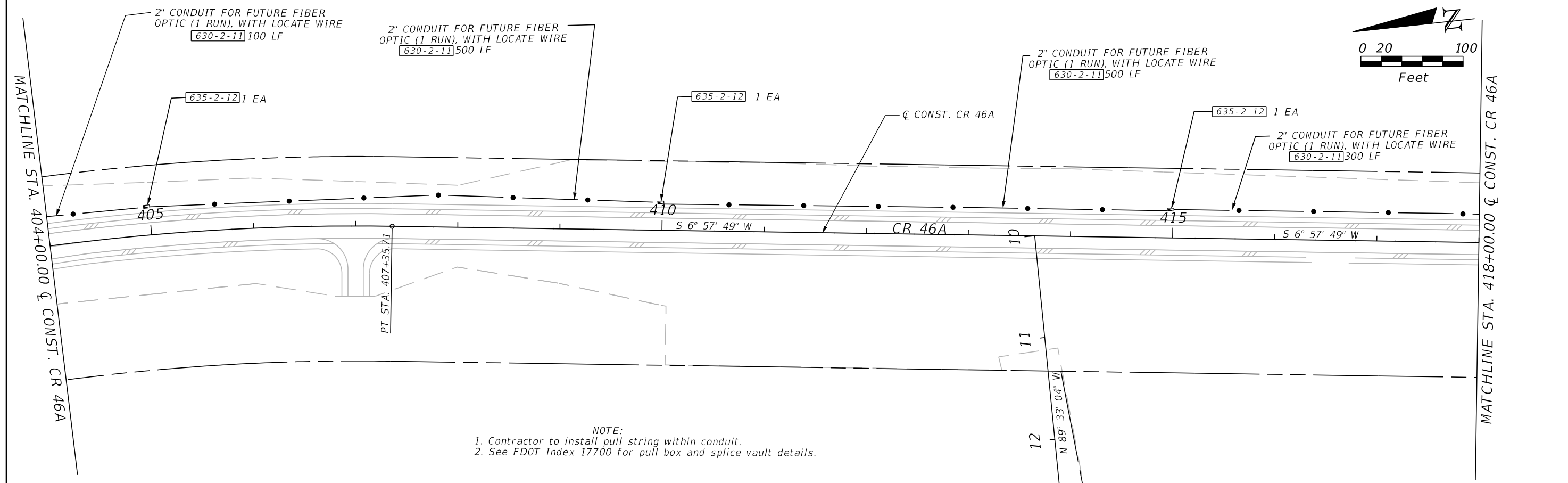
NOTE:  
 1. Contractor to install pull string within conduit.  
 2. See FDOT Index 17700 for pull box and splice vault details.

REVISIONS				PREPARED BY: CDM Smith 2301 MAITLAND CENTER PARKWAY, SUITE 300 MAITLAND, FL 32751 - PHONE: (407) 660-2552 ENGINEER OF RECORD JOHN GOULD, P.E. P.E. NUMBER: 79835	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			INTERCONNECT CONDUIT PLAN	SHEET NO. T-10
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					CR 46A	LAKE	238275-8-52-01		

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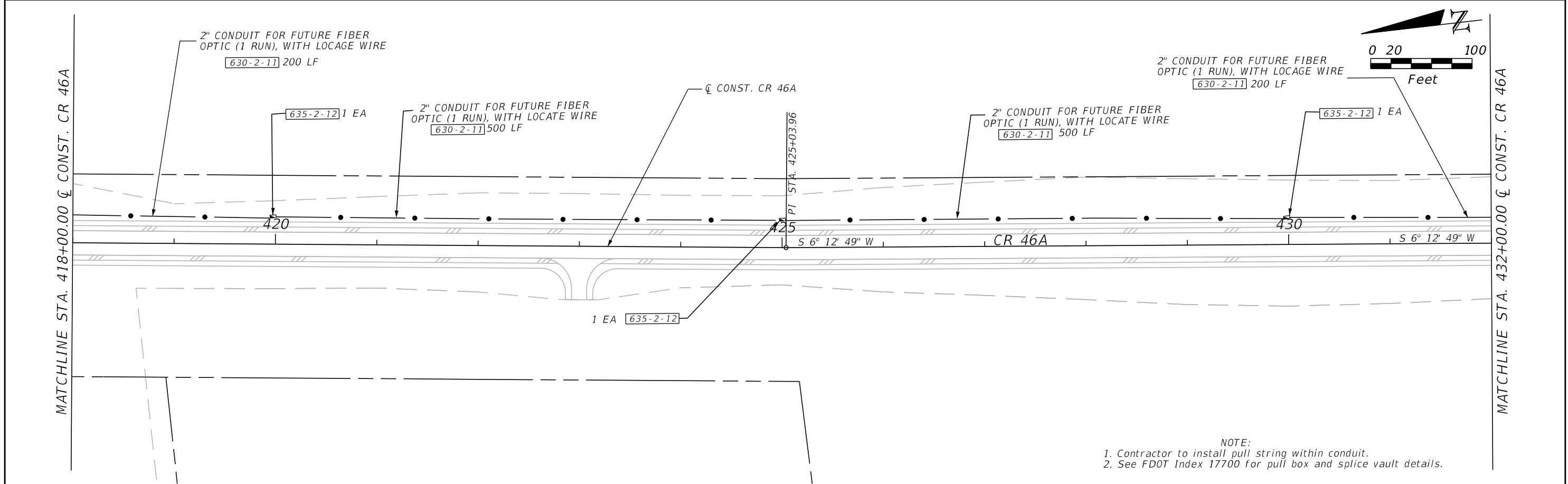
NOTE:  
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 2. See FDOT Index 17700 for pull box and splice vault details.



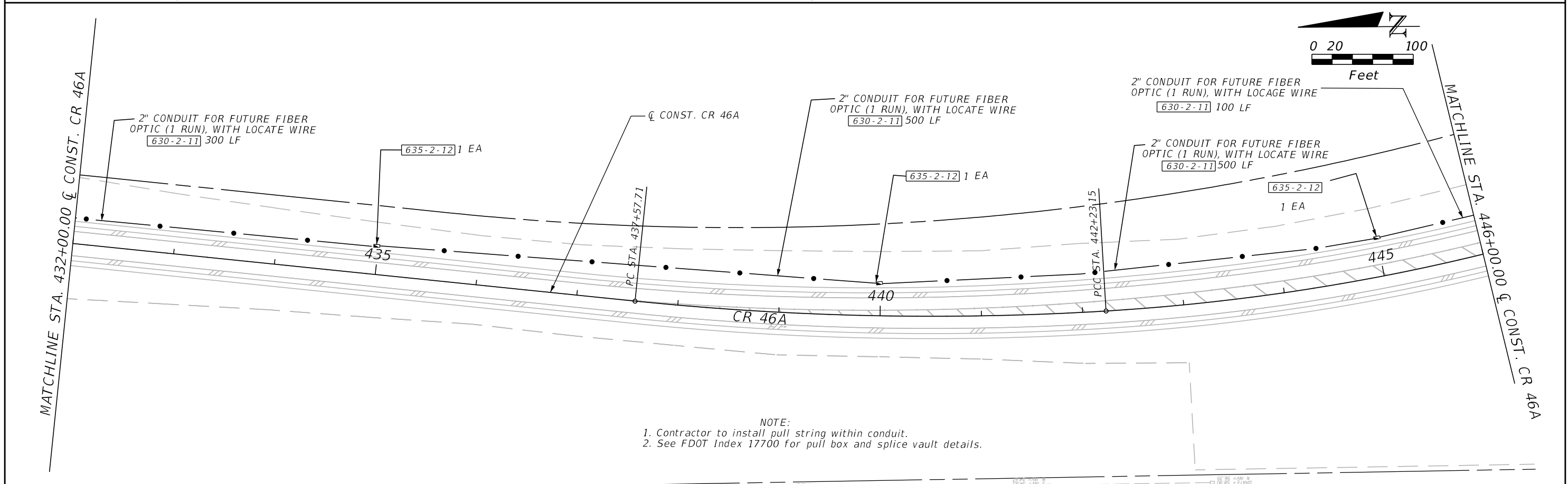
NOTE:  
 1. Contractor to install pull string within conduit.  
 2. See FDOT Index 17700 for pull box and splice vault details.

REVISIONS				PREPARED BY: CDM Smith 2301 MAITLAND CENTER PARKWAY, SUITE 300 MAITLAND, FL 32751 - PHONE: (407) 660-2552 ENGINEER OF RECORD JOHN GOULD, P.E. P.E. NUMBER: 79835	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			INTERCONNECT CONDUIT PLAN	SHEET NO. T-11
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
				CR 46A	LAKE	238275-8-52-01			

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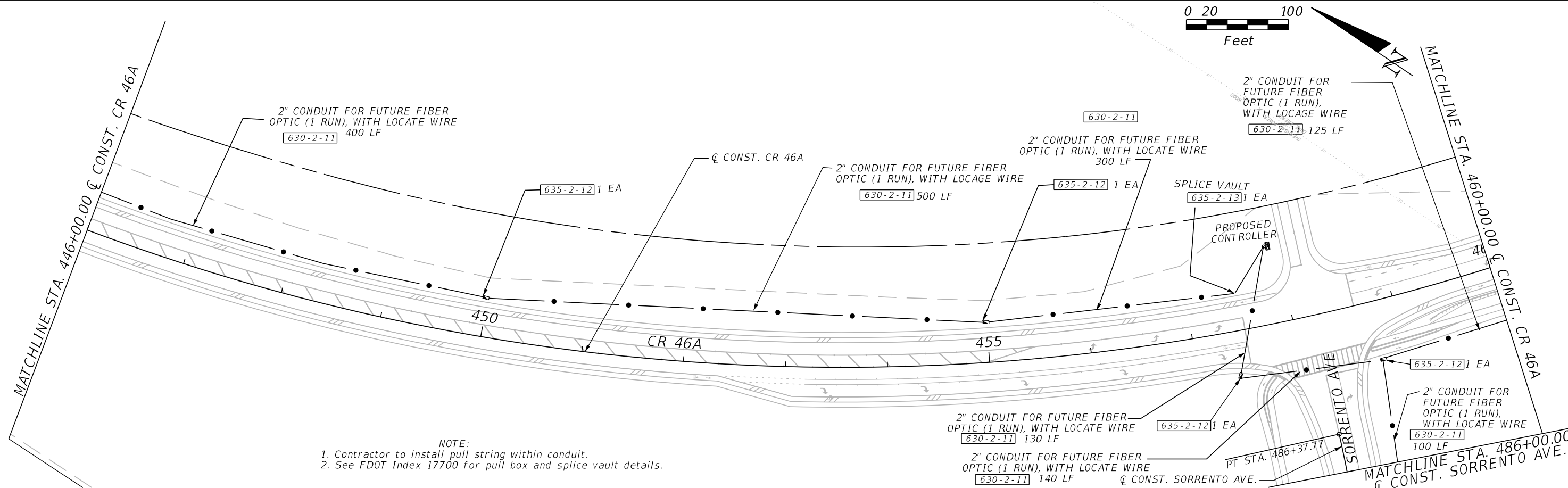
NOTE:  
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 2. See FDOT Index 17700 for pull box and splice vault details.



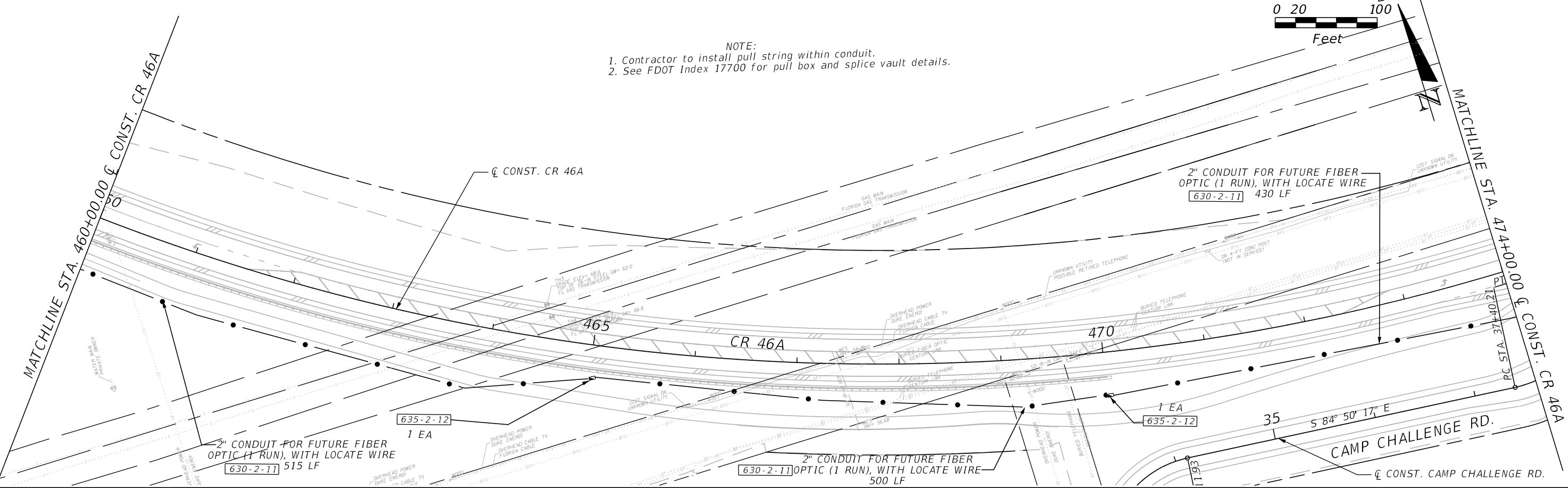
NOTE:  
 1. Contractor to install pull string within conduit.  
 2. See FDOT Index 17700 for pull box and splice vault details.

REVISIONS				PREPARED BY: CDM Smith 2301 MAITLAND CENTER PARKWAY, SUITE 300 MAITLAND, FL 32751 - PHONE: (407) 660-2552 ENGINEER OF RECORD JOHN GOULD, P.E. P.E. NUMBER: 79835	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			INTERCONNECT CONDUIT PLAN	SHEET NO. T-12
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					CR 46A	LAKE	238275-8-52-01		

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NOTE:  
 1. Contractor to install pull string within conduit.  
 2. See FDOT Index 17700 for pull box and splice vault details.



NOTE:  
 1. Contractor to install pull string within conduit.  
 2. See FDOT Index 17700 for pull box and splice vault details.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

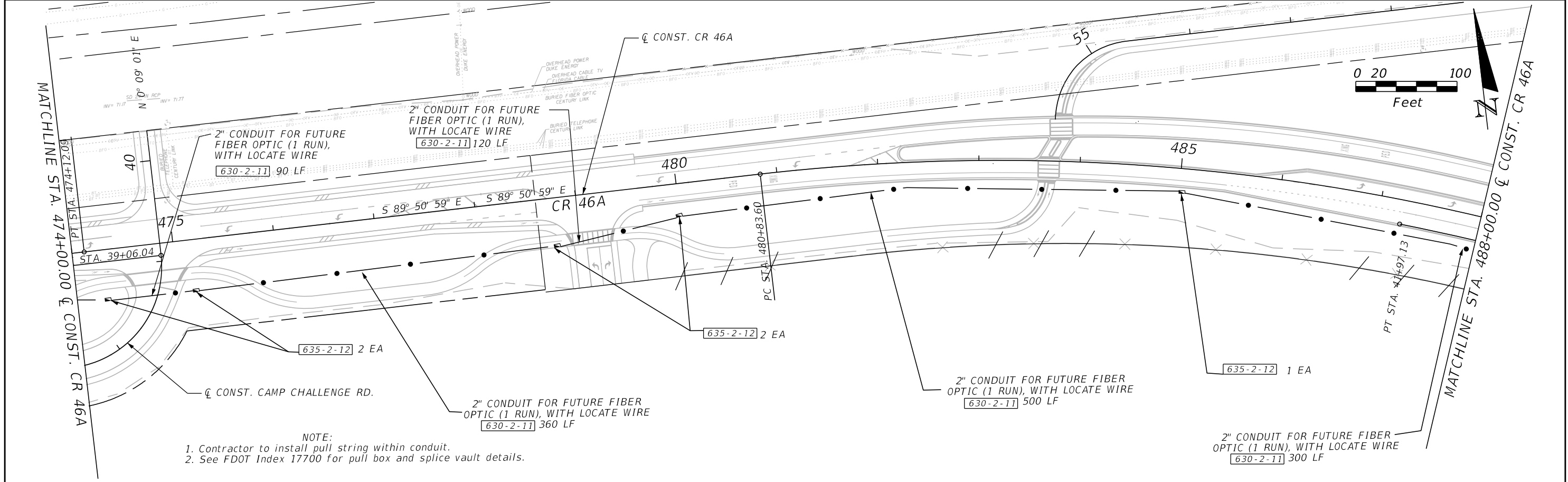
PREPARED BY:  
 CDM Smith  
 2301 MAITLAND CENTER PARKWAY, SUITE 300  
 MAITLAND, FL 32751 - PHONE: (407) 660-2552  
 ENGINEER OF RECORD  
 JOHN GOULD, P.E.  
 P.E. NUMBER: 79835

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
CR 46A	LAKE	238275-8-52-01

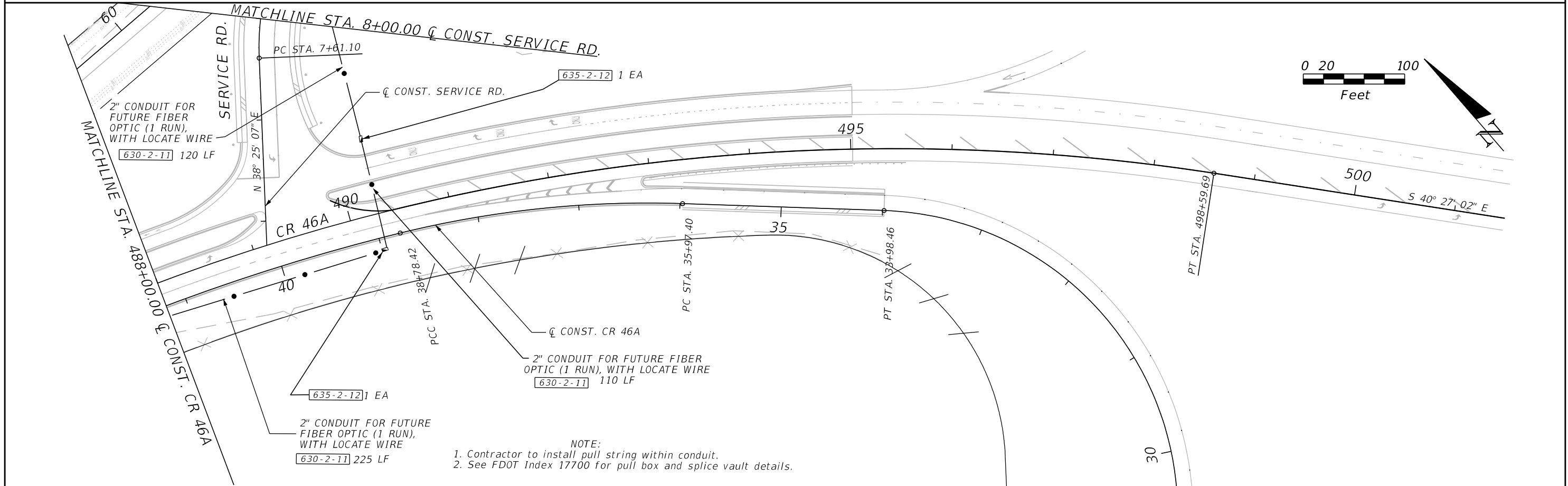
**INTERCONNECT CONDUIT  
 PLAN**

SHEET NO.  
 T-13

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.



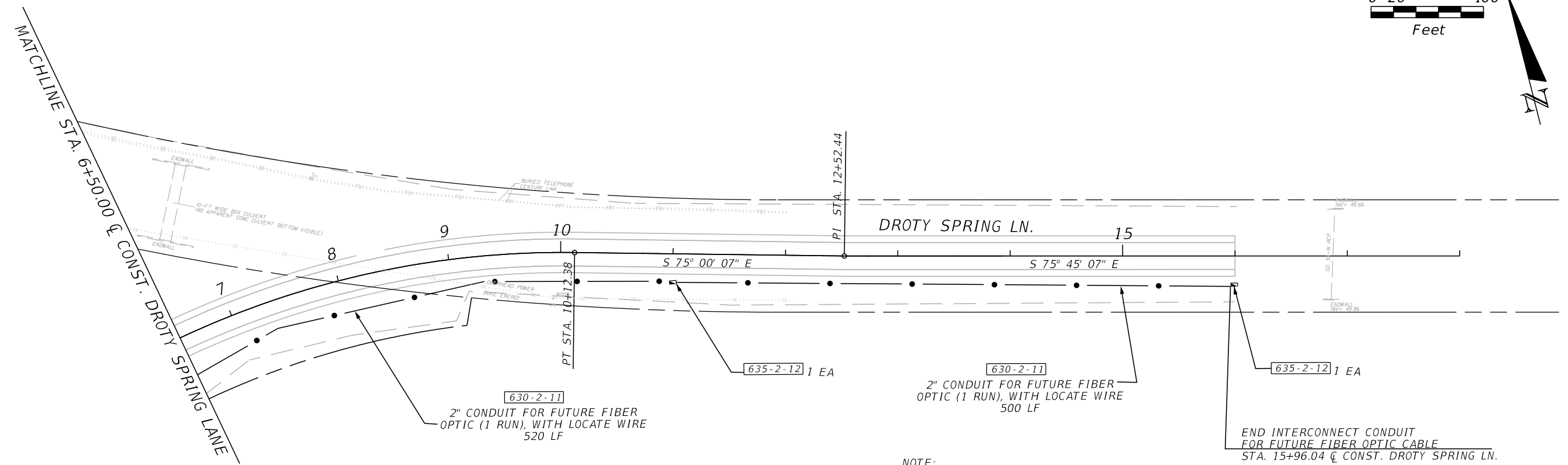
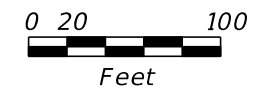
NOTE:  
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 2. See FDOT Index 17700 for pull box and splice vault details.



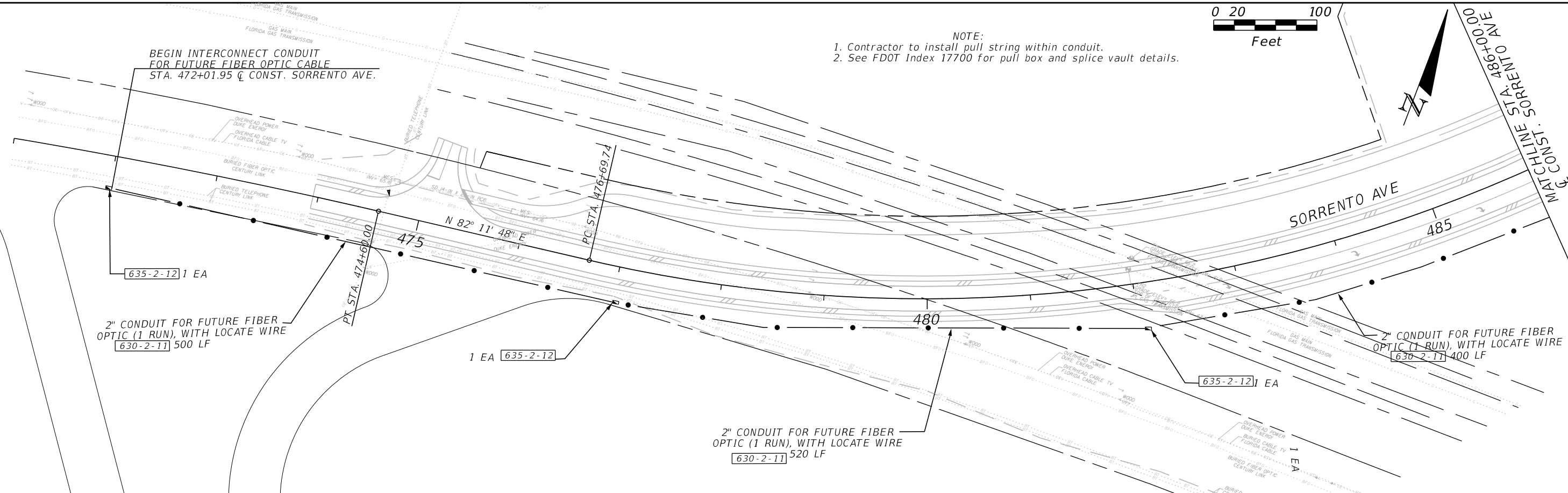
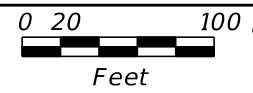
NOTE:  
 1. Contractor to install pull string within conduit.  
 2. See FDOT Index 17700 for pull box and splice vault details.

REVISIONS				PREPARED BY: CDM Smith 2301 MAITLAND CENTER PARKWAY, SUITE 300 MAITLAND, FL 32751 - PHONE: (407) 660-2552 ENGINEER OF RECORD JOHN GOULD, P.E. P.E. NUMBER: 79835	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			INTERCONNECT CONDUIT PLAN	SHEET NO. T-14
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					CR 46A	LAKE	238275-8-52-01		

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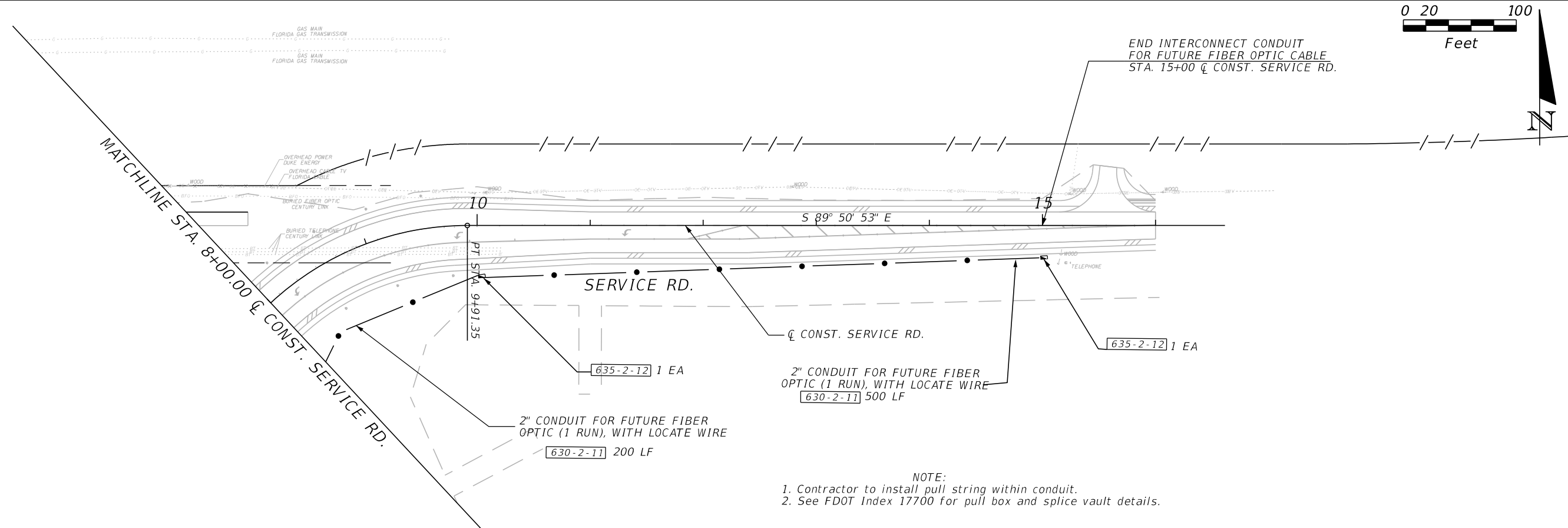
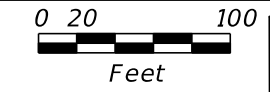
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 2. See FDOT Index 17700 for pull box and splice vault details.



NOTE:  
 1. Contractor to install pull string within conduit.  
 2. See FDOT Index 17700 for pull box and splice vault details.

REVISIONS				PREPARED BY: CDM Smith 2301 MAITLAND CENTER PARKWAY, SUITE 300 MAITLAND, FL 32751 - PHONE: (407) 660-2552 ENGINEER OF RECORD JOHN GOULD, P.E. P.E. NUMBER: 79835	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			INTERCONNECT CONDUIT PLAN	SHEET NO. T-15
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					CR 46A	LAKE	238275-8-52-01		

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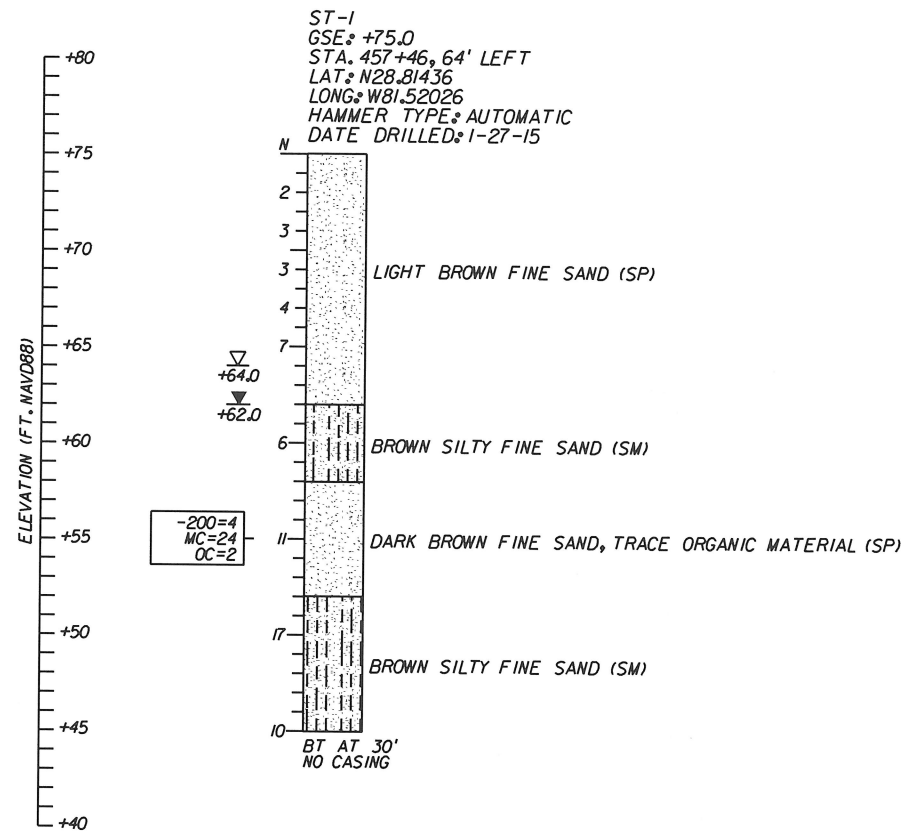
NOTE:  
 1. Contractor to install pull string within conduit.  
 2. See FDOT Index 17700 for pull box and splice vault details.

REVISIONS				PREPARED BY: CDM Smith 2301 MAITLAND CENTER PARKWAY, SUITE 300 MAITLAND, FL 32751 - PHONE: (407) 660-2552 ENGINEER OF RECORD JOHN GOULD, P.E. P.E. NUMBER: 79835	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			<b>INTERCONNECT CONDUIT          PLAN</b>	SHEET NO.  T-16
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
				CR 46A	LAKE	238275-8-52-01			

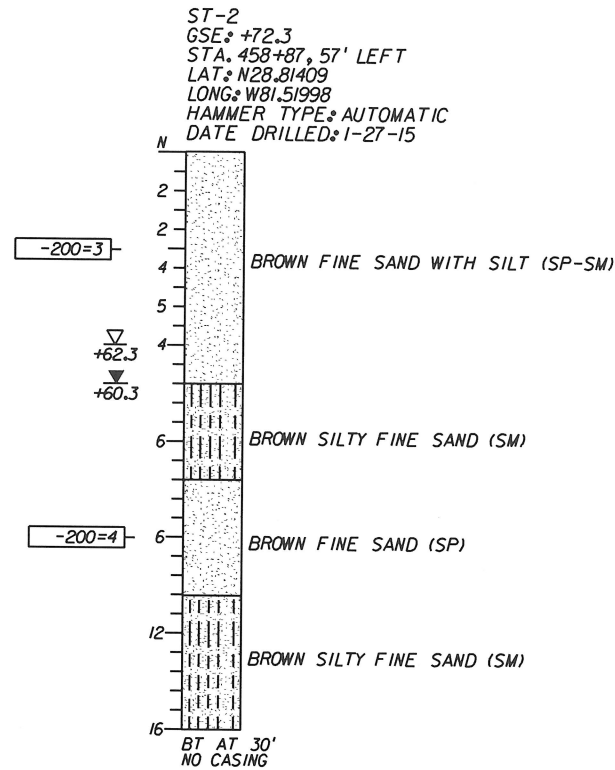
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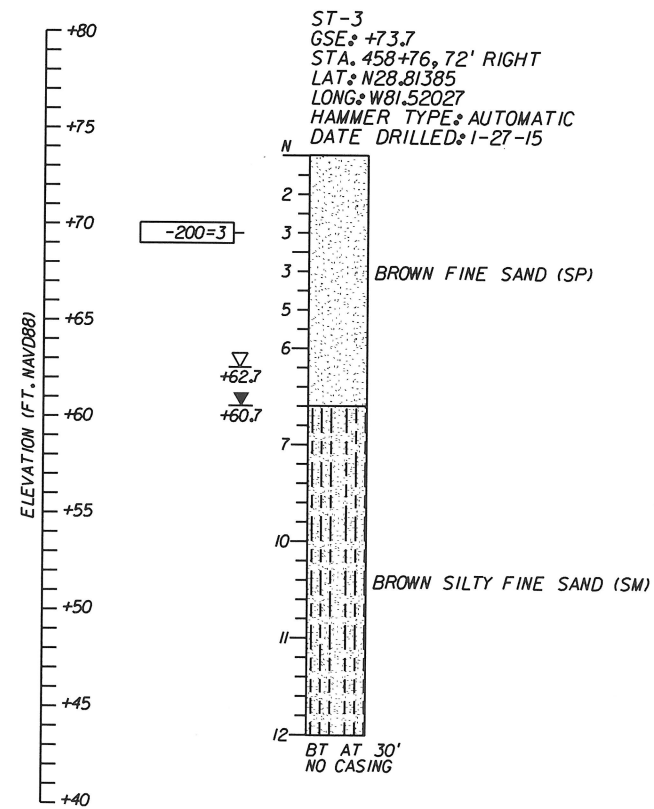
STRAIN POLE 1



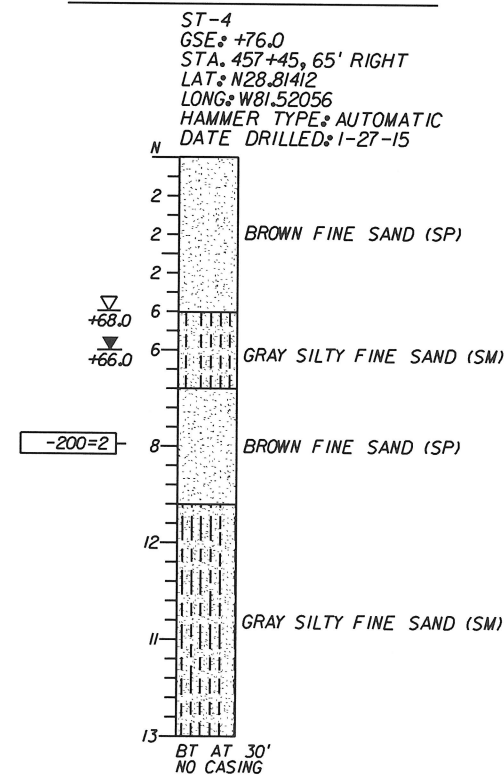
STRAIN POLE 2



STRAIN POLE 3



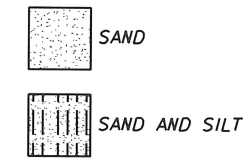
STRAIN POLE 4



LEGEND

- ▽ ESTIMATED SEASONAL HIGH GROUNDWATER LEVEL ABOVE GROUND SURFACE
- ▽ ENCOUNTERED STANDING GROUNDWATER ELEVATION (FT. NAVD88) 24 HRS. AFTER DRILLING BORING
- GSE GROUND SURFACE ELEVATION (FT. NAVD88)
- N STANDARD PENETRATION RESISTANCE, BLOWS PER FOOT
- (SP) UNIFIED SOIL CLASSIFICATION SYMBOL
- BT BORING TERMINATED AT SPECIFIED DEPTH (FEET) INDICATED
- 200= PERCENT PASSING NO. 200 U.S. STANDARD SIEVE (FM 1-T 088)
- MC= PERCENT NATURAL MOISTURE CONTENT (FM 1-T 265)
- OC= PERCENT ORGANIC CONTENT (FM 1-T 267)

SOILS LEGEND



GENERAL NOTES

STANDARD PENETRATION TEST BORINGS WERE PERFORMED IN ACCORDANCE WITH ASTM D-1586. STANDARD PENETRATION RESISTANCES ARE SHOWN ON THE BORINGS AT THE TEST DEPTHS IN BLOWS PER FOOT UNLESS OTHERWISE NOTED.

SUBSURFACE CONDITIONS SHOWN ON THE BORINGS REPRESENT THE CONDITIONS ENCOUNTERED AT THE BORING LOCATIONS. ACTUAL CONDITIONS BETWEEN BORINGS MAY VARY FROM THOSE SHOWN. UNIFIED SOIL CLASSIFICATIONS SHOWN ON THE BORINGS ARE BASED ON VISUAL EXAMINATION AND THE LABORATORY TESTING SHOWN.

THE BORING LOCATIONS WERE NOT SURVEYED. BORING LOCATIONS WERE ESTABLISHED IN THE FIELD USING A SUBMETER ACCURACY GPS UNIT (TRIMBLE GEOXH) FOR HORIZONTAL CONTROL. GROUND SURFACE ELEVATIONS ESTIMATED FROM PROJECT CROSS SECTIONS. BORING LOCATIONS REFERENCE THE CR 46A CENTERLINE.

BASED ON REVIEW OF THE U.S. GEOLOGICAL SURVEY MAP ENTITLED "POTENTIOMETRIC SURFACE OF THE UPPER FLORIDAN AQUIFER IN THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT AND VICINITY, FLORIDA, SEPTEMBER 2008" FOR THE PROJECT AREA, THE ELEVATION OF THE ARTESIAN HEAD IS ESTIMATED TO BE APPROXIMATELY +48 FT. NGVD. THE CONTRACTOR SHALL BE PREPARED TO HANDLE ARTESIAN HEAD LEVELS UP TO +48 FT. NGVD.

SPLIT SPOON SAMPLER: AVERAGE HAMMER DROP: 30 IN.  
INSIDE DIAMETER: 1.375 IN. HAMMER WEIGHT: 140 LBS.  
OUTSIDE DIAMETER: 2.0 IN. HAMMER TYPE: AUTOMATIC

CORRELATION OF STANDARD PENETRATION RESISTANCE WITH RELATIVE DENSITY AND CONSISTENCY OF SOIL

GRANULAR SOILS	N VALUE (blows per foot)	RELATIVE DENSITY
SANDS	0-3	VERY LOOSE
	3-8	LOOSE
	8-24	MEDIUM DENSE
	24-40	DENSE
	OVER 40	VERY DENSE
NON-GRANULAR SOILS	N VALUE (blows per foot)	CONSISTENCY
SILTS, CLAYS, MUCK, PEAT	0-1	VERY SOFT
	1-3	SOFT
	3-6	FIRM
	6-12	STIFF
	12-24	VERY STIFF
	OVER 24	HARD

SECTION: 21  
TOWNSHIP: 19 SOUTH  
RANGE: 28 EAST

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS, INC. (GEC)  
919 Lake Baldwin Lane  
Orlando, FL. 32814  
T 407-898-1818 F 407-898-1837  
Certificate of Authorization No. 5882  
DANIEL C. STANFILL PE NO. 42763

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
CR 46A	LAKE	238275-8-52-01

**STRAIN POLE  
SPT BORING RESULTS**

FIGURE 36  
SHEET NO.  
GR-1