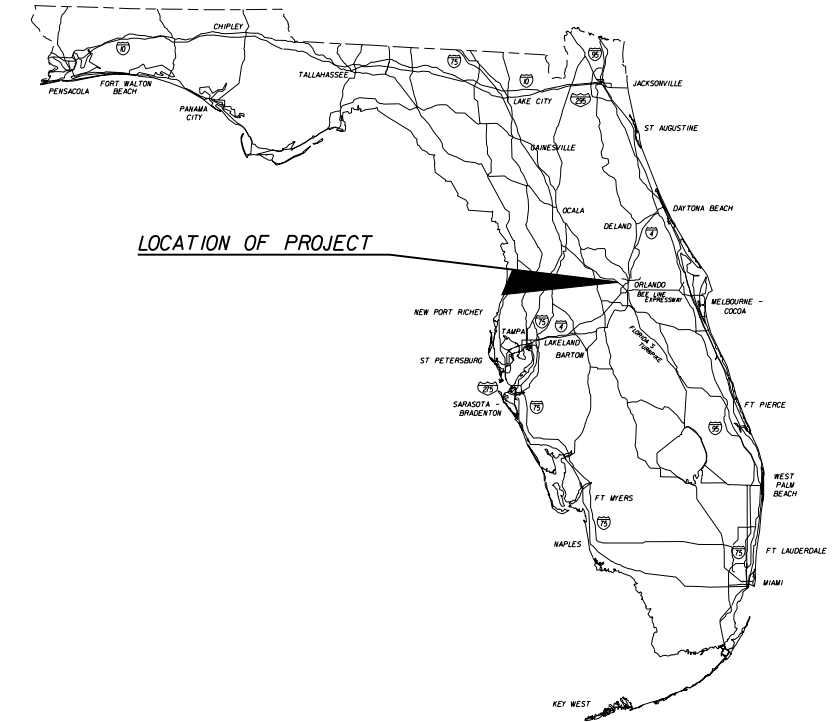


LAKE COUNTY CONTRACT PLANS

SIGNALIZATION PLANS

SR 50 AND OAKLEY SEAVER DR.



INDEX OF SIGNALIZATION PLANS

SHEET NO.	SHEET DESCRIPTION
T-1	KEY SHEET
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T-7	SIGNING & PAVEMENT MARKING PLAN
T-8	CONCRETE STRAIN POLE SCHEDULE
T-9	GUIDE SIGN WORKSHEET

SIGNALIZATION SHOP DRAWINGS
TO BE SUBMITTED TO:

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Phone: 407-898-5424 Fax: 407-898-5425

PLANS PREPARED BY:



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

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION,
ROADWAY AND TRAFFIC DESIGN STANDARDS
DATED JANUARY 2004, AND
STANDARDS SPECIFICATIONS FOR ROAD AND BRIDGE
CONSTRUCTION DATED 2004
AS AMENDED BY CONTRACT DOCUMENTS.

KEY SHEET REVISIONS		
DATE	BY	DESCRIPTION

SIGNALIZATION PLANS
ENGINEER OF RECORD: ANDREW J. AMES, P.E.

P.E. NO. # 52570

SHEET
NO.

T-1

TABULATION OF QUANTITIES


PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS														GRAND TOTAL		REF. SHEET
			T-4		T-5		T-6		T-7										
			PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL			
102-1	MAINTENANCE OF TRAFFIC	LS	1														1		
102-99	SIGN, VARIABLE MESSAGE (TEMPORARY)	ED	28														28		
555-1-1	DIRECTIONAL BORE (DIA. LESS THAN 6")	LF	225		210		100										535		
630-1-12	CONDUIT (F & I) (UNDERGROUND)	LF	990		650		400										2040		
632-7-1	CABLE (SIGNAL) (F & I)	PI	1														1		
632-8-212	CABLE (INTERCONNECT) (1-25) (F&I) (UNDERGROUND)	LF			946		550										1496		
634-4-112	SPAN WIRE ASSEMBLY (F & I) (2 WIRE) (DIAGONAL)	PI	1														1		
634-5-1	FIBERGLASS INSULATOR (F & I)	LF	20														20		
635-1-11	PULL AND JUNCTION BOXES (F & I) (PULL BOX)	EA	11														11		
635-1-15	PULL AND JUNCTION BOXES (F&I) (FIBER OPTICS)	EA			7		3										10		
639-1-22	ELECTRICAL POWER SERVICE (UNDERGROUND)	AS	1														1		
639-2-1	ELECTRICAL SERVICE WIRE (F & I)	LF	150														150		
641-16-144	PRESTRESSED CONCRETE POLES (F & I - WITH FOUNDATION) (TYPE N-VII) (44')	EA	2														2		
650-51-311	TRAFFIC SIGNAL, STANDARD (F & I) (3 SECTION, 1 WAY)	AS	10														10		
659-101	SIGNAL HEAD AUXILIARIES (F & I) (BACK PLATES, 3-SECTION)	EA	6														6		
660-1-109	INDUCTIVE LOOP DETECTOR (F & I) (TYPE 9, 2 CH, SS, RM)	EA	7														7		
660-1-110	INDUCTIVE LOOP DETECTOR (F & I) (TYPE 10, 2 CH, SS, RM, TD)	EA	2														2		
660-2-102	LOOP ASSEMBLY (F & I) (TYPE B) (6' X 6')	AS	8														8		
660-2-106	LOOP ASSEMBLY (F & I) (TYPE F) (6' X 40')	AS	5														5		
663-74-11	VEHICLE DETECTOR ASSEMBLIES (F & I) (OPTICAL TYPE)	EA	2														2		
670-5-111	ACTUATED SOLID STATE CONTROLLER ASSEMBLY (F & I) (NEMA) (1 Pre-empt)	AS	1														1		
670-5-410	ACTUATED SOLID STATE CONTROLLER ASSEMBLY (MODIFY) (NEMA)	AS					1										1		
699-1-1	SIGN, INTERNALLY ILLUMINATED	EA	4														4		
700-40-1	SIGN SINGLE POST (LESS THAN 12)	AS							2								2		
700-46-11	SIGN EXISTING (REMOVE) (SINGLE POST)	AS							3								3		
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	EA							12								12		
711-4	DIRECTIONAL ARROWS (THERMOPLASTIC)	EA							4								4		
711-7	REMOVE EXISTING PAVEMENT MARKINGS (THERMOPLASTIC)	SF							132								132		
711-35-61	SOLID TRAFFIC STRIPE (THERMOPLASTIC) (6" WHITE)	LF							205.5								205.5		
711-35-241	SOLID TRAFFIC STRIPE (THERMOPLASTIC) (24" WHITE)	LF							139								139		

PAY ITEM NOTES:

1. LUMP SUM MAINTENANCE OF TRAFFIC SHALL INCLUDE ALL COSTS ASSOCIATED WITH THE MAINTENANCE OF TRAFFIC IN THE WORK ZONE. THIS INCLUDES SIGNS, WARNING DEVICES AND ALL OTHER ITEMS REQUIRED FOR THE INSTALLATION OF THE TRAFFIC SIGNAL.

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION


DESIGNED BY	CNC	7/04	DRAWN BY	CNC	7/04
CHECKED BY	AJA	7/04	CHECKED BY	AJA	7/04
SUPERVISED BY: ANDREW J. AMES, P.E.					

 <p>GMB Engineers & Planners, Inc. 3751 Maguire Boulevard, Suite 111 Orlando, FL 32803 Phone: 407-898-5424 Fax: 407-898-5425</p>	LAKE COUNTY	TABULATION OF QUANTITIES
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GENERAL NOTES

1. IT SHOULD BE NOTED THAT NO TEST BORINGS WERE MADE WHERE CONDUIT RUNS ARE TO BE INSTALLED BY JACKING AND TRENCHING AND/OR WHERE POLE INSTALLATIONS ARE LOCATED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE JOB SITE CONDITIONS BEFORE SUBMITTING BID PROPOSALS IN ACCORDANCE WITH SECTION 2-4 OF THE SPECIFICATIONS. THE CONTRACTOR SHALL HAND DIG THE FIRST 4' AT EACH POLE LOCATION TO VERIFY NO UTILITY CONFLICT.
2. ALL CONDUIT EXCEPT ELECTRICAL POWER SERVICE CONDUIT SHALL BE 2 INCH MINIMUM UNLESS OTHERWISE SPECIFIED IN THE PLANS.
3. PULL BOXES SHALL BE PLACED BEHIND CURB AND GUTTER. IF THERE IS NO CURB AND GUTTER THEN PULL BOXES SHALL BE PLACED AT LEAST 10 FEET FROM THE EDGE OF PAVEMENT.
4. THE BASE OF THE CONTROLLER CABINETS SHALL BE EQUAL TO OR GREATER THAN THE ELEVATION OF THE ROADWAY.
5. THE CABINET DOOR SHALL OPEN AWAY FROM THE INTERSECTION.
6. THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AT LEAST 48 HOURS IN ADVANCE OF LOOP CUTTING. THE PROJECT ENGINEER WILL CONTACT THE COUNTY TRAFFIC ENGINEER WHO MAY CHALK THE LOOPS AND OBSERVE THEIR INSTALLATION IF HE SO DESIRES.
7. ALL LOOPS TO HAVE INDIVIDUAL LEAD-INS TO CABINET. LOOP SPLICES TO BE CRIMPED, SOLDERED AND SHRINK WRAPPED TO FDOT SPECIFICATIONS.
8. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY DEPARTMENT, MAINTAINING AGENCY AND THE FDOT AT LEAST 48 HOURS IN ADVANCE OF POLE SETTING OPERATIONS WHERE A CONFLICT WITH OVERHEAD ELECTRICAL CONDUCTORS IS EXPECTED AND IN ALL CASES WHERE JOINT USE POLES ARE TO BE USED.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING THE PROPER AMOUNT OF RAKE WITH RESPECT TO LOADING TO BE USED ON POLES AT TIME OF INSTALLATION. THIS INFORMATION IS AVAILABLE FROM THE POLE MANUFACTURER.
10. THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AT LEAST 48 HOURS IN ADVANCE OF ANY LANE CLOSURES ON SR 50. NO LANE CLOSURES FROM 6:00 AM - 8:00 PM EASTBOUND AND WESTBOUND. THE TIMES MAY BE ADJUSTED BY THE PROJECT ENGINEER IF NECESSARY TO MEET FIELD CONDITIONS. LANE CLOSURES ARE REQUIRED FOR OVERHEAD SIGNAL WORK AND LOOP INSTALLATION AND SHALL FOLLOW THE FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS (2004).
11. WHEN THE CONTRACTOR IS PERFORMING SIGNAL WORK IN AN INTERSECTION (INSTALLING CONDUIT IN THE STREET, REMOVING EXISTING SIGNAL EQUIPMENT, INSTALLING NEW SIGNAL EQUIPMENT, INSTALLING LOOPS AND RUNS, AND TURNING ON OF NEW SIGNALS) WHERE A LANE IS CLOSED AN OFF-DUTY LAW ENFORCEMENT OFFICER IS INCIDENTAL TO THE COST OF THE PROJECT.
12. ALL CABLE SHALL BE PULLED IN THE CONDUIT WITH A CABLE GRIP DESIGNED TO PROVIDE A FIRM HOLD ON THE EXTERIOR COVERING OF THE CABLE. A WINCH WITH A SLIP CLUTCH SHALL BE USED TO ENSURE THAT THE ALLOWABLE TENSION LIMIT IS NOT EXCEEDED. AN APPROVED LUBRICANT SHALL BE USED TO FACILITATE THE PULLING OF THE CABLE.
13. AS DIRECTED BY THE PROJECT ENGINEER, THE CONTRACTOR SHALL ADJUST CONDUIT VERTICALLY TO AVOID ANY POSSIBLE CONFLICTS WITH UNDERGROUND UTILITIES.
14. ALL PULL BOX COVERS SHALL BE FDOT APPROVED OF NON METALLIC CONSTRUCTION WITH RECESSED COVER LOGO "TRAFFIC SIGNAL" OR "FIBER OPTIC" AS APPROPRIATE.
15. THE LOCATION OF THE UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE ONLY. THE EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE EXACT LOCATIONS OF UNDERGROUND UTILITIES PRIOR TO DIGGING.
16. SIGNAL CABLE AND SPAN WIRE INSTALLATION SHALL BE A TWO POINT ATTACHMENT.
17. TYPE F LOOPS SHALL BE 6'X40' AND EXTEND 5' BEYOND THE STOP BAR.
18. FOR MULTIPLE RUNS OF UNDER PAVEMENT CONDUIT, ONLY ONE RUN WILL BE PAID FOR AS UNDER PAVEMENT AND ADDITIONAL RUNS WILL BE PAID FOR AS UNDERGROUND.
19. TRAFFIC SIGNAL MAINTAINING AGENCY IS LAKE COUNTY TRAFFIC DEPARTMENT LOCATED AT:
123 N. SINCLAIR AVENUE
TAVARES, FL. 32778
PHONE (352) 253-4944
20. SIGNAL DISCONNECT SHALL BE 12"w x 6"h x 4 1/2"d, WITH HINGED DOOR AND 18 POSITION TERMINAL STRIP. NO CINCH JONES PLUGS WILL BE ACCEPTED.
21. THE CONTRACTOR SHALL VERIFY SIGNAL CABLE COLOR CODES WITH LAKE COUNTY BEFORE ORDERING.
22. THE CONTROLLER CABINET ASSEMBLY SHALL BE A MAZTEC TS 2, TYPE 2 AND HAVE ALL NECESSARY HARDWARE TO COMMUNICATE WITH LAKE COUNTY CLOSED LOOP SYSTEM AND SHALL USE THE APPROPRIATE COMMUNICATION PROTOCOL TO CONFORM TO THE RCSS REQUIREMENTS. THE ADDITIONAL EQUIPMENT AND ACCESSORIES FOR THE FIBER OPTIC CABLE INTERCONNECT SHALL BE FURNISHED AND INSTALLED AS PART OF THE CONTROLLER ASSEMBLY.
23. THE TRAFFIC SIGNAL SHALL FLASH NO LESS THAN 7 DAYS AND NO MORE THAN 14 DAYS PRIOR TO THE TURN-ON INSPECTION. THE CONTRACTOR SHALL CONTACT THE PERMIT ENGINEER 48 HOURS PRIOR TO TURNING THE SIGNAL ON FLASH.
24. SIGNAL CABLE AND LOOP WIRES TO BE IN SEPARATE PULL BOXES.
25. DELAY DETECTORS SHALL BE SET TO 5 SECONDS.
26. A SIGNAL INSPECTION IS TO BE SCHEDULED WITH MR. RAY MARLIN AT (386) 943-5318, OF TRAFFIC OPERATIONS, 10 DAYS PRIOR TO THE SIGNAL BEING PLACED INTO OPERATION.
27. ANY NEW OR EXISTING STRIPING CUT BECAUSE OF LOOP PLACEMENT SHALL BE RESTRIPE PRIOR TO ACCEPTANCE.
28. PRE-EMPTION SYSTEM SHALL BE COMPATIBLE WITH MAINTAINING AGENCY'S EXISTING SYSTEM.
29. OVERHEAD BELDON TO BE UV RATED.
30. VEHICLE SIGNAL HEAD ASSEMBLIES SHALL BE BLACK, CAST ALUMINUM, WITH TUNNEL VISORS, AND LED'S FOR ALL INDICATIONS, UNLESS OTHERWISE NOTED.
31. A MANUAL PUSH BUTTON CORD SHALL BE FURNISHED IN ALL CONTROLLER CABINETS.
32. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING THE ELECTRIC PERMIT AND TO COORDINATE APPLICATION FOR POWER, WITH LAKE COUNTY TRAFFIC OPERATIONS AT (352) 742-1766.
33. INTERNALLY ILLUMINATED STREET NAME SIGNS SHALL HAVE A SEPARATE CIRCUIT BREAKER, PHOTOCCELL, AND BYPASS SWITCH, INSIDE THE CABINET.
34. THE CONTRACTOR SHALL NOTIFY LAKE COUNTY TRAFFIC OPERATIONS (352) 742-1766 AT LEAST 24 HOURS IN ADVANCE OF INSTALLING SIGNAL POLES, GROUND RODS, UNDERGROUND CONDUIT, AND SEALING SIGNAL HEAD ASSEMBLIES SO THAT THESE OPERATIONS CAN BE OBSERVED.

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	NAME	DATE	NAME	DATE		
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SUPERVISED BY: ANDREW J. AMES, P.E.														

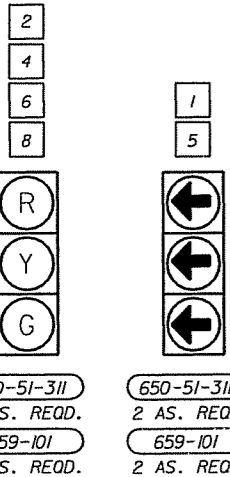


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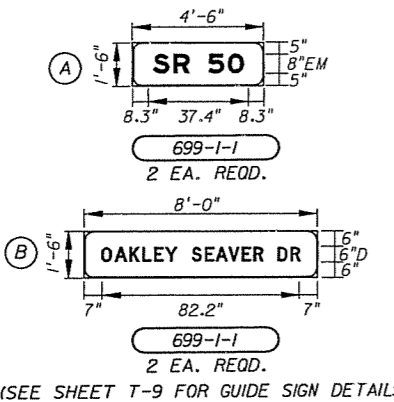
LAKE COUNTY

GENERAL NOTES

SIGNAL HEAD DETAILS



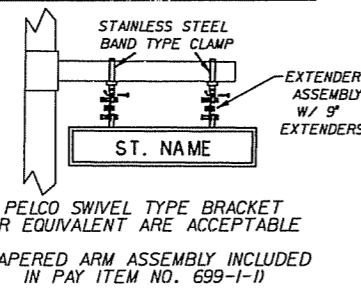
OVERHEAD SIGNS



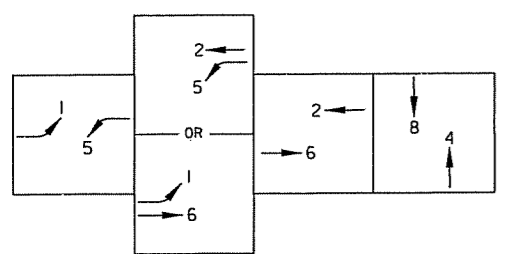
DETECTORS FOR LOOPS

NO. OF LOOPS	NO. OF DETS.	LOOPS ON DETECTOR CHANNEL	DELAY TIME (SECS.)
1	1	L-1	-
2	1	L2A, L2B	-
2	1	L2C, L2D	-
1	1	L-4	5
1	1	L-5	-
2	1	L6A, L6B	-
2	1	L6C, L6D	-
1	1	L-8R	5
1	1	L-8	-

TWO POINT TAPERED ARM SIGN MOUNTING ASSEMBLY DETAIL



MOVEMENT DIAGRAM SOP 7



CONTROLLER TIMING PLAN

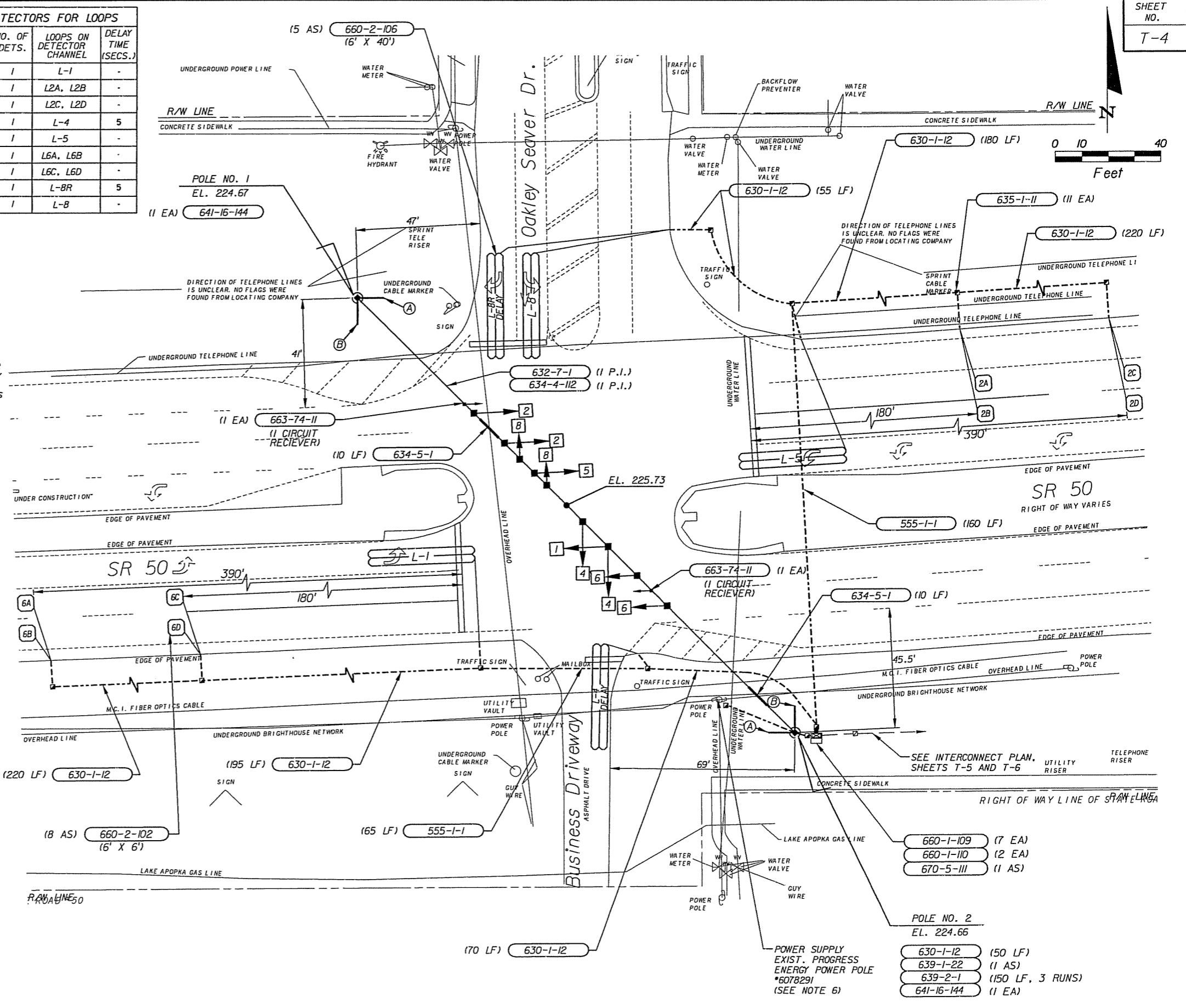
TIMING INTERVAL	TIMING FUNCTION							
	1	2	3	4	5	6	7	8
MINIMUM GREEN (INITIAL)	5	17	-	5	5	17	-	5
EXTENSION (PASSAGE)	3	3	-	3	3	3	-	3
MAXIMUM GREEN I	20	50	-	30	20	50	-	30
MAXIMUM GREEN II	-	-	-	-	-	-	-	-
YELLOW	4.0	5.0	-	4.0	4.0	5.0	-	4.0
ALL RED	2	2	-	2	2	2	-	2
PEDESTRIAN WALK	-	-	-	-	-	-	-	-
PEDESTRIAN CLEAR	-	-	-	-	-	-	-	-
RECALL	-	MIN	-	-	-	MIN	-	-
DETECTOR FUNCTION	NL	L	-	NL	NL	L	-	NL
FLASH OPERATION	R	Y	-	R	R	Y	-	R

CONTROLLER OPERATIONS:

- THE MAJOR STREET IS SR 50 AND THE MINOR STREET IS OAKLEY SEAVER DR.
- DURING FLASHING OPERATION, MOVEMENTS 2 & 6 SHALL FLASH YELLOW AND MOVEMENTS 1, 4, 5 AND 8 SHALL FLASH RED.
- THE SIGNAL CABINET AND CONTROLLER SHALL BE WIRED AND PROGRAMMED FOR CONCURRENT TIMING OF THE INITIAL AND PASSAGE INTERVALS. THE CABINET SHALL BE WIRED TO ACCOMMODATE SOP 10.

NOTES:

- SPEED LIMIT ON SR 50 - 55 MPH AND OAKLEY SEAVER DR. - 30 MPH.
- CONTRACTOR IS TO ENSURE THAT LOOP WINDOWS ARE LOCATED OFF THE RADII.
- ALL SIGNALS ARE TO BE LED'S.
- REMOVE ALL STRIPING BETWEEN THE STOP BARS.
- TWO VARIABLE MESSAGE SIGNS SHALL BE UTILIZED TO INDICATE TO MOTORISTS THE OPERATION OF THE NEW SIGNAL. THE MESSAGES SHALL BE APPROVED BY FDOT ENGINEERS. THE VMS BOARDS SHALL BE UTILIZED FOR THE FIRST 2 WEEKS THE SIGNAL IS IN OPERATION.
- LEAVE AT LEAST 2.5 FEET OF SPACE BETWEEN PULL BOX AND POWER POLE.



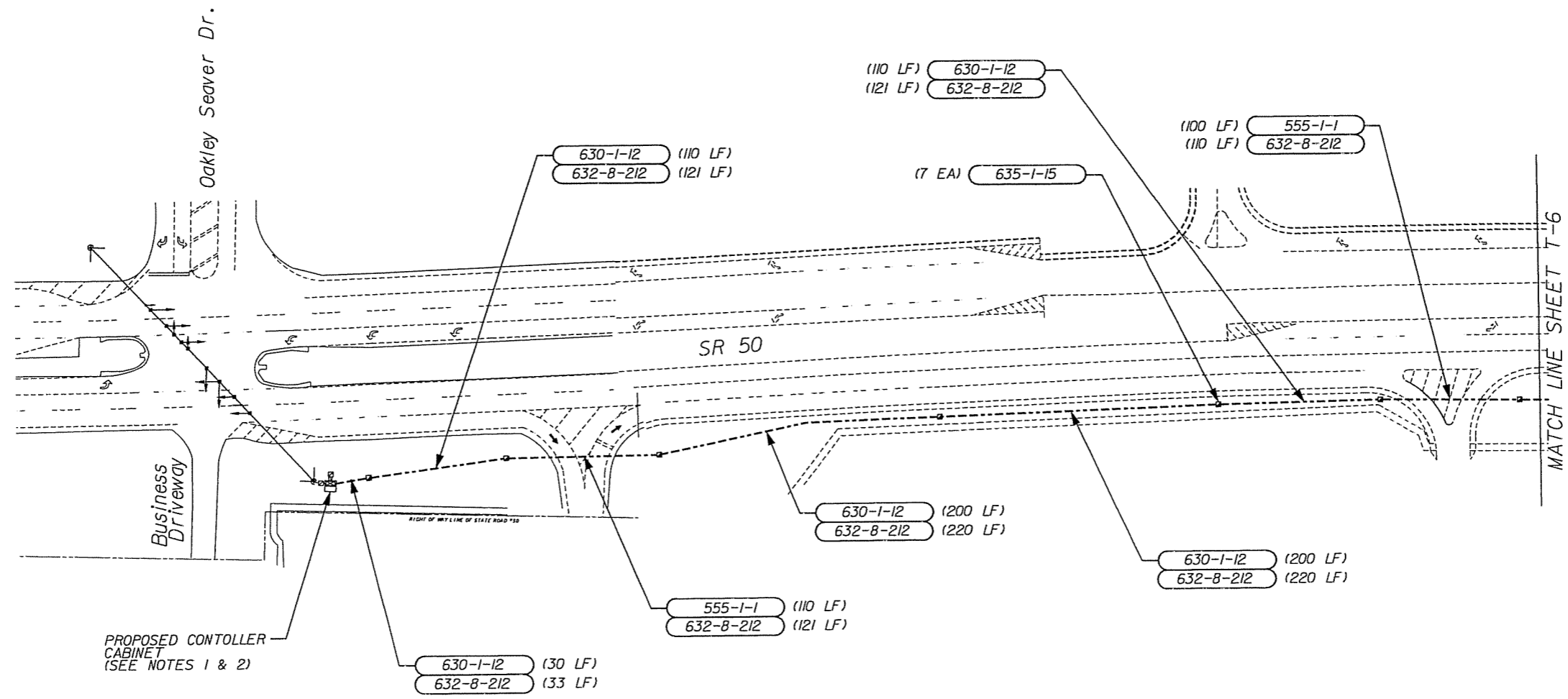
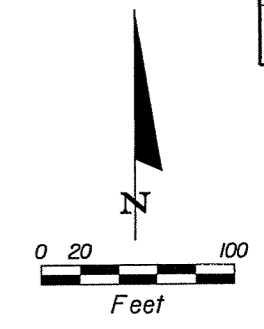
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SUPERVISED BY: ANDREW J. AMES, P.E.														

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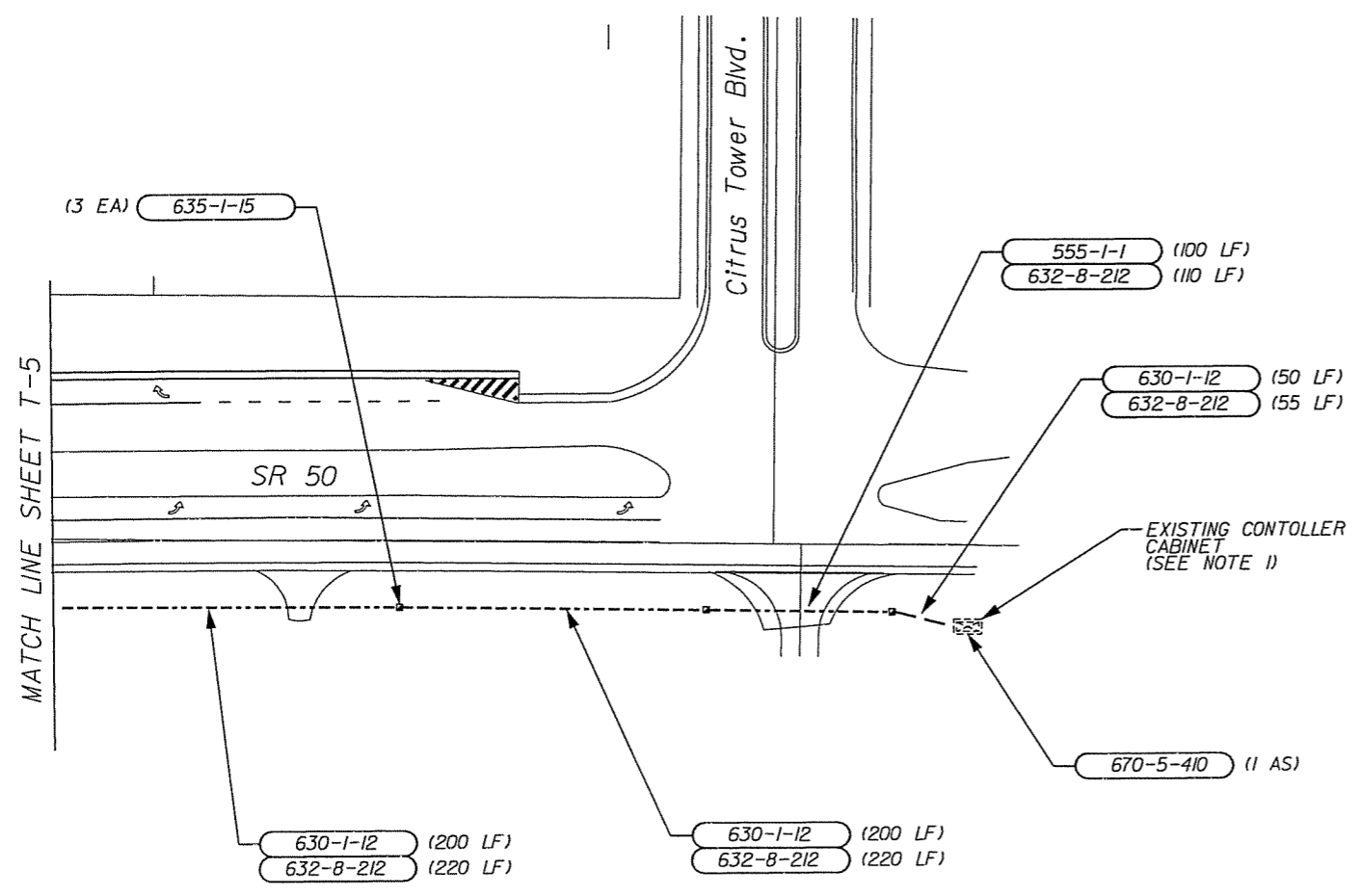
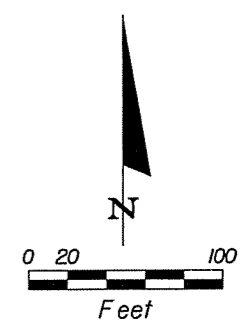
LAKE COUNTY

SIGNALIZATION PLAN



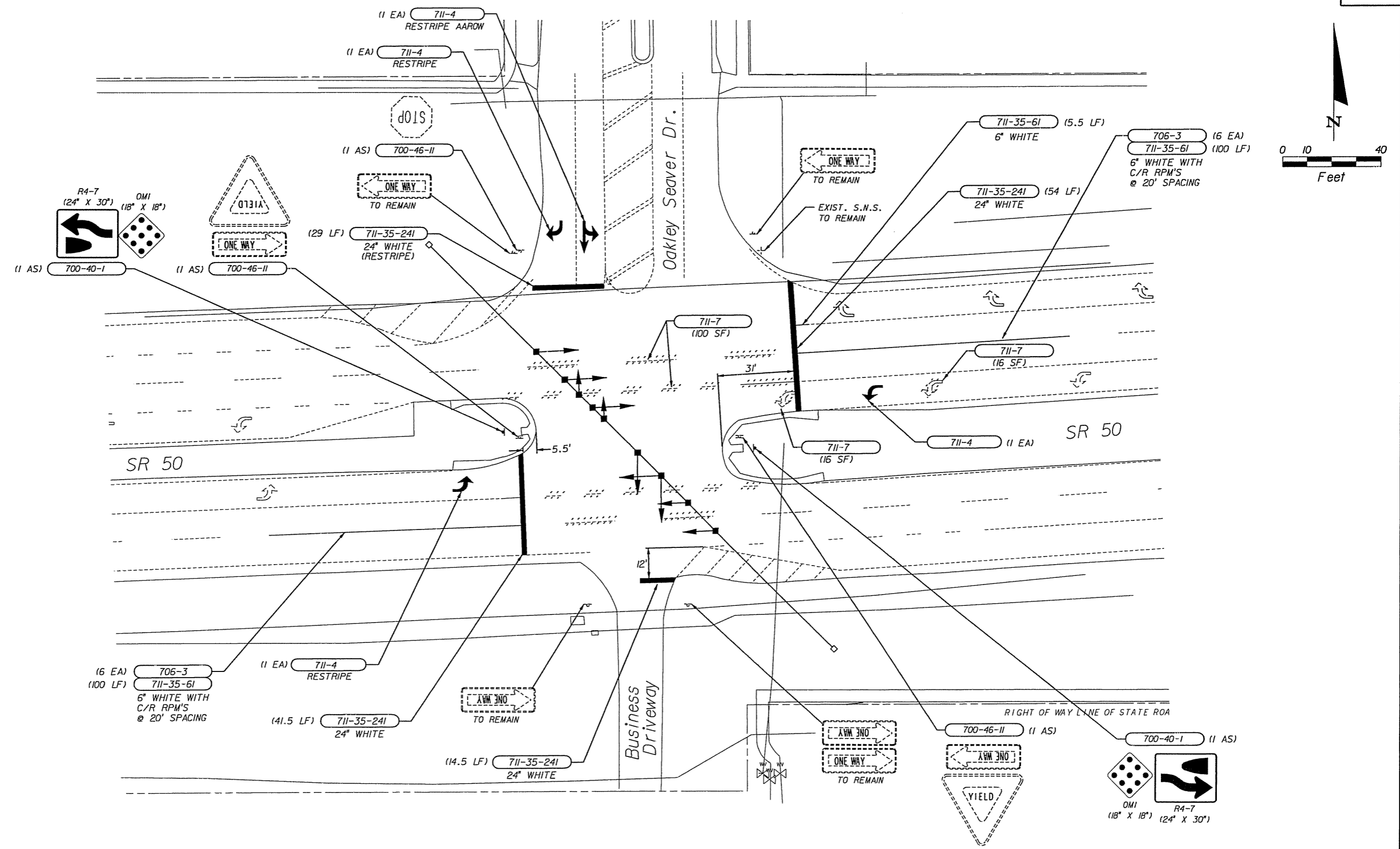
- NOTES:**
- PULL INTERCONNECT FROM EXISTING FIBER OPTIC PULL BOX INTO THE CONTROLLER CABINET AT THE INTERSECTION OF OAKLEY SEAVER DRIVE AND SR 50.
 - THE LOCATION OF THE PROPOSED CONTROLLER CABINET IS SHOWN ON SHEET T-4.

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	NAME	DATE	NAME	DATE		GMB Engineers & Planners, Inc. 3751 Maguire Boulevard, Suite # Orlando, FL 32803 Phone: 407-898-5424 Fax: 407-898-5425	LAKE COUNTY	<i>INTERCONNECT PLAN</i>		
									DESIGNED BY	CNC	7/04	DRAWN BY					CNC	7/04
									CHECKED BY	AJA	7/04	CHECKED BY					AJA	7/04
SUPERVISED BY: ANDREW J. AMES, P.E.																		



1. PULL INTERCONNECT FROM PROPOSED FIBER OPTIC PULL BOX INTO THE CONTROLLER CABINET AT THE INTERSECTION OF CITRUS TOWER BLVD. AND SR 50.

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	NAME	DATE	NAME	DATE					
									CNC	7/04	CNC	7/04					
									AJA	7/04	AJA	7/04					
									SUPERVISED BY: ANDREW J. AMES, P.E.								
												GMB Engineers & Planners, Inc. 3751 Maguire Boulevard, Suite 111 Orlando, FL 32803 Phone: 407-898-5424 Fax: 407-898-5425		LAKE COUNTY		INTERCONNECT PLAN	



DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

DESIGNED BY	NAME	DATE	DRAWN BY	NAME	DATE
CNC	CNC	7/04	CNC	CNC	7/04
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LAKE COUNTY

SIGNING & PAVEMENT MARKING PLAN

