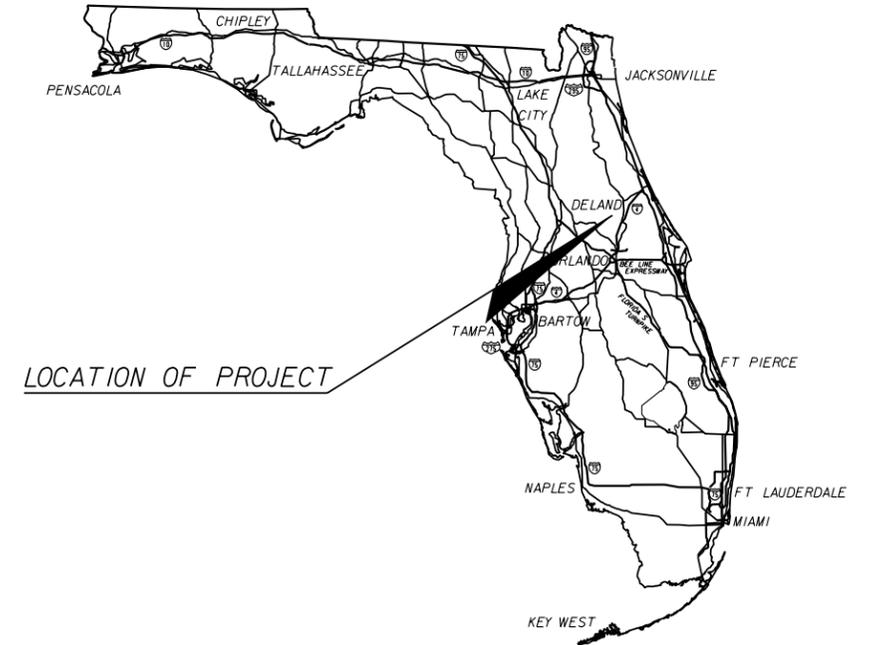


LAKE COUNTY

CONTRACT PLANS



INDEX OF SIGNALIZATION PLANS

SHEET NO.	SHEET DESCRIPTION
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SIGNALIZATION PLANS

WOLF BRANCH ROAD
AND
COUNTY ROAD 437

SIGNALIZATION SHOP DRAWINGS
TO BE SUBMITTED TO:

GMB Engineers & Planners, Inc.
2602 E. Livingston Street
Orlando, FL 32803
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,
DESIGN STANDARDS DATED JANUARY 2008, AND
STANDARDS SPECIFICATIONS FOR ROAD AND
BRIDGE CONSTRUCTION DATED 2007
AS AMENDED BY CONTRACT DOCUMENTS.

KEY SHEET REVISIONS	
DATE	DESCRIPTION

SIGNALIZATION PLANS
ENGINEER OF RECORD: KATHY L. LEE

P.E. NO.: 62420

SHEET
NO.

T-1

TABULATION OF QUANTITIES

SHEET NO.
T-2

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS																TOTAL THIS SHEET		GRAND TOTAL		REF. SHEET
			T-4																				
			PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL			
630-1-12	SIGNALS-CONDUIT (F&I)UNDERGROUND)	LF	898																898		898		
630-1-14	SIGNALS-CONDUIT (F&I)UNDERGROUND-JACKED)	LF	188																188		188		
632-7-1	SIGNALS-CABLE (F&I)	PI	1																1		1		
634-4-113	SIGNALS-SPAN WIRE ASSEMBLY (F&I)2-WIRE(X)BOX)	PI	1																1		1		
635-1-11	PULL & JUNCTION BOXES (F&I)(PULL BOX)	EA	15																15		15		
639-1-23	SIGNALS-ELECTRICAL POWER SERVICE (UNDERGROUND)	AS	1																1		1		
639-2-1	SIGNALS-ELECTRICAL SERVICE WIRE (F&I)	LF	20																20		20		
641-2-12	PRESTRESSED CONCRETE POLES (F&I)TYPE P-II SERVICE POLE)	EA	1																1		1		
641-2-17	PRESTRESSED CONCRETE POLES (F&I)TYPE P-VII)	EA	4																4		4		
650-51-311	TRAFFIC SIGNAL (F&I)3-SEC(X)-WAY(X)STANDARD LED)	AS	4																4		4		
650-51-511	TRAFFIC SIGNAL (F&I)5-SEC(X)-WAY(X)STANDARD LED)	AS	4																4		4		
653-191	PEDESTRIAN SIGNAL (F&I)LED-COUNTDOWN(X)-WAY)	AS	6																6		6		
653-192	PEDESTRIAN SIGNAL (F&I)LED-COUNTDOWN(X)2-WAY)	AS	1																1		1		
659-101	SIGNAL HEAD AUXILIARIES (F&I)BACK PLATES, 3-SEC)	EA	2																2		2		
659-107	SIGNAL HEAD AUXILIARIES (F&I)ALUMINUM PEDESTAL)	EA	1																1		1		
659-118	SIGNAL HEAD AUXILIARIES (F&I)BACK PLATES, 5-SEC)	EA	2																2		2		
660-1-109	LOOP DETECTOR, INDUCTIVE (F&I)TYPE 9, 2CH, SS, RM)	EA	3																3		3		
660-1-110	LOOP DETECTOR, INDUCTIVE (F&I)TYPE 9, 2CH, SS, RM, TD)	EA	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)	AS	10																10		10		
663-74-12	VEHICLE DETECTOR ASSEMBLIES (F&I)OPTICOM)	EA	4																4		4		
665-11	PEDESTRIAN DETECTOR (F&I)POLE MOUNTED)	EA	8																8		8		
670-5-111	TRAFFIC CONTROLLER ASSEMBLY (F&I)NEMAXI)PREEMPTION)	AS	1																1		1		
699-1-1	INTERNALLY ILLUMINATED STREET SIGN (F&I)	EA	4																4		4		
700-20-60	SINGLE POST SIGN (REMOVE)	EA	2																2		2		
700-21-11	MULTI POST SIGN (F&I)(LESS THAN 50)	EA	2																2		2		

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

DESIGNED BY	JNK	DATE		DRAWN BY	JNK	DATE	
CHECKED BY	KLL			CHECKED BY	KLL		
SUPERVISED BY: KATHRYN L. LEE, P.E. *64240							



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LAKE COUNTY

TABULATION OF QUANTITIES

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 CONTRACTORS RESPONSIBILITY TO EXAMINE THE JOB SITE CONDITIONS PRIOR TO SUBMITTING BID PROPOSALS.
 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING FDOT AND LAKE COUNTY TRAFFIC OPERATIONS AT 352-742-1766, AND FDOT DISTRICT FIVE TWO BUSINESS DAYS IN ADVANCE OF ALL PHASES OF CONSTRUCTION INCLUDING AND NOT LIMITED TO, INSTALLING SIGNAL POLES, GROUND RODS, UNDERGROUND CONDUIT, SIGNAL HEAD ASSEMBLIES, AND LOOP INSTALLATION.
 4. DURING CONSTRUCTION TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE FDOT TRAFFIC DESIGN STANDARDS.
 5. 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.
 6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY PROVIDING THE ELECTRICAL POWER, TO DETERMINE IF ANY ADDITIONAL FEES ARE REQUIRED TO CONNECT POWER. IF REQUIRED, THE FEE SHALL BE INCLUDED AS PART OF THE BID ITEM PAYMENT FOR ELECTRICAL SERVICE ASSEMBLY.
 7. THE EXACT LOCATIONS OF ALL UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR PRIOR TO BEGINNING OF CONSTRUCTION.
 8. THE CONTRACTOR SHALL STAKE ALL POLE LOCATIONS AND HAVE IT APPROVED BY LAKE COUNTY TRAFFIC OPERATIONS.
 9. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY DEPARTMENT AT LEAST TWO BUSINESS DAYS IN ADVANCE OF POLE SETTING OPERATIONS WHERE A CONFLICT WITH OVERHEAD ELECTRICAL CONDUCTORS IS EXPECTED AND WHEN JOINT USE POLES ARE TO BE USED.
 10. 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.
 11. ALL MATERIALS AND HARDWARE SHALL BE F.D.O.T. APPROVED, AND PRE-APPROVED BY LAKE COUNTY TRAFFIC OPERATIONS.
 12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TEMPORARY DETECTION DURING CONSTRUCTION. THE USE OF RECALL ON VEHICLE IS PROHIBITED.
 13. ANY STRIPING/PAVEMENT MARKINGS OR LANDSCAPING DESTROYED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED AT THE CONTRACTORS EXPENSE.
 14. THE COST FOR THE USE OF A "TRAFFIC CONTROL OFFICER" IN THE EVENT OF LANE CLOSURES SHALL BE INCIDENTAL TO THE WORK AND WILL NOT BE PAID SEPARATELY.
 15. 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 MAXIMUM RESPONSE TIME.
 16. ALL REMOVED EQUIPMENT SHALL BE DELIVERED TO LAKE COUNTY TRAFFIC OPERATIONS, 28127 C.R. 561, TAVARES, 352-742-1766.
NOTE: CARE SHALL BE TAKEN NOT TO DAMAGE THE EQUIPMENT IN THE REMOVAL PROCESS.
- LOOPS/PULL BOXES:
17. PULL BOXES AND COVERS SHALL BE FDOT APPROVED NON-METALLIC WITH RECESSED COVER LOGO "TRAFFIC SIGNAL" OR "FIBER OPTIC" AS APPROPRIATE.
 18. 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.

19. MULTIPLE CONDUITS IN THE SAME RUN SHALL BE PAID FOR AS DIRECTIONAL BORE OR JACK AND BORED FOR THE FIRST CONDUIT ONLY, ALL OTHERS WILL BE PAID FOR AS UNDERGROUND. ALL FIBER OR FUTURE USE CONDUIT SHALL HAVE A LOCATE WIRE INSTALLED.
 20. LOOP HOME RUNS SHALL NOT BE CUT INTO THE RADIUS. DURING CONSTRUCTION THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN TEMPORARY VEHICLE DETECTION.
 21. IF LOOPS ARE TO BE DESTROYED DURING CONSTRUCTION, THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN TEMPORARY VEHICLE DETECTION.
- CABINET/CONTROLLER:
22. THE CONTROLLER ASSEMBLY SHALL BE A "LAKE COUNTY" 16 CHANNEL DETECTOR RACK, NAZTEC REGIONAL TS2-1; WITH A TS2-2 CONTROLLER ETHERNET ENABLED FOR COUNTY CLOSED LOOPS SYSTEM, TO INCLUDE A GENERATOR SWITCH BOX PANEL.
 23. A GENERATOR PAD, 3'X3'X4" CONCRETE SHALL BE INSTALLED.
 24. THE CABINET CONCRETE BASE SHALL BE A MINIMUM OF 32"X48" TO ACCOMMODATE TYPE 6 CABINETS.
 25. GROUNDING FOR THE CONTROLLER ASSEMBLY SHALL MEASURE 25 OHMS. OR LESS.
 26. THE CABINET DOOR SHALL OPEN AWAY FROM THE INTERSECTION.
 27. THE MOUNTING OF THE ELECTRICAL SERVICE TO THE TRAFFIC SIGNAL CABINET SHALL BE PROHIBITED.
 28. A MANUAL PUSH BUTTON CORD SHALL BE FURNISHED IN ALL CONTROLLER CABINETS.
- SIGNAL/PEDESTRIAN HEADS:
29. SIGNAL HEADS SHALL BE WIRED DIRECTLY TO THE TERMINAL BLOCKS. THE USE OF "JONES" PLUGS IS PROHIBITED.
 30. VEHICLE SIGNAL HEAD ASSEMBLIES SHALL BE BLACK, CAST ALUMINUM, WITH TUNNEL VISORS, AND LED'S FOR ALL INDICATIONS, UNLESS OTHERWISE NOTED.
 31. PEDESTRIAN SIGNAL ASSEMBLIES SHALL BE CAST ALUMINUM WITH FULL HAND/PERSON LED'S WITH COUNT DOWN INDICATION.
 32. ALL PEDESTRIAN SIGNAL HEADS SHALL HAVE LOUVERS AND BE COUNTDOWN LED SIGNALS WITH THE PROPER COUNTDOWN PEDESTRIAN SIGNAGE. ALL PEDESTRIAN SIGNALS NOT MOUNTED ON SIGNAL POLES OR MAST ARM POLES SHALL BE BREAKAWAY TYPE COMMONLY REFERRED TO AS A "T-BASE". THIS T-BASE WILL HAVE ALN ACCESS DOOR FOR WIRING AND MAINTENANCE.
 33. SIGNAL CABLE SHALL BE ATTACHED TO MESSENGER WIRE USING PROPER SIZE SPIRAL WRAP.
- ILLUMINATED STREET NAME SIGNS
34. INTERNALLY ILLUMINATED STREET NAME SIGNS (LED), SHALL BE INSTALLED 1' BELOW THE MESSENGER CABLE WHERE POSSIBLE, POWERED BY A 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.
- OTHER:
35. THE CONTRACTOR SHALL FURNISH LAKE COUNTY TRAFFIC OPERATIONS, TWO COMPLETE SETS OF AS BUILT PLANS THAT INCLUDE CONDUIT AND PULL BOX LOCATIONS, AT FINAL INSPECTION.
 36. OPTICOM PREEMPTIONS OR EQUIVALENT SHALL BE USED WHEN EMERGENCY PREEMPTION IS REQUESTED.

REVISIONS						NAME	DATE	NAME	DATE
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DESIGNED BY	JNK	DRAWN BY	JNK
						CHECKED BY	KLL	CHECKED BY	KLL
						SUPERVISED BY: KATHRYN L. LEE, P.E. *64240			

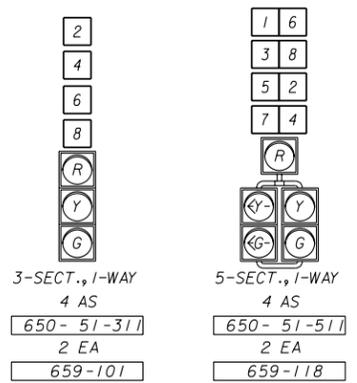


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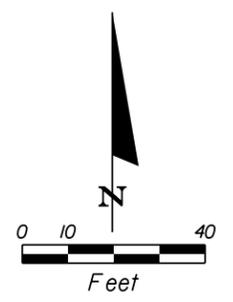
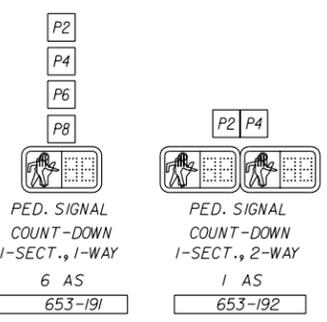
LAKE COUNTY

GENERAL NOTES

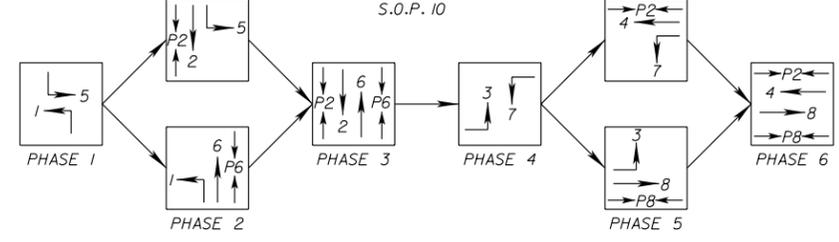
SIGNAL HEAD DETAILS



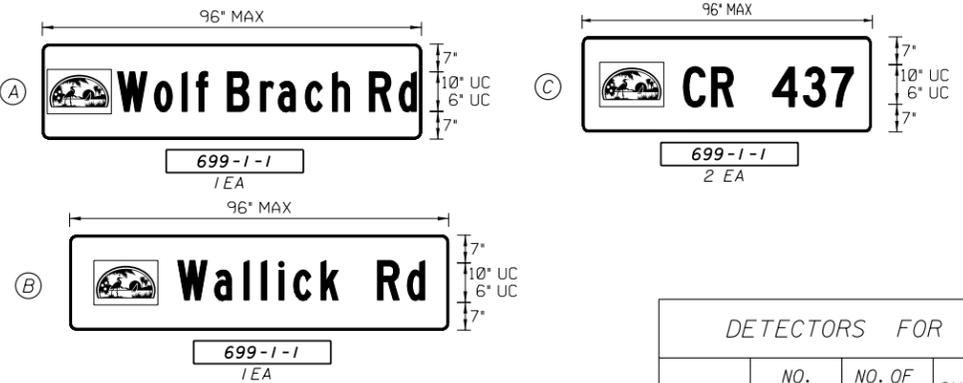
PEDESTRIAN SIGNAL HEAD DETAILS



MOVEMENT DIAGRAM
S.O.P. 10



INTERNALLY ILLUMINATED OVERHEAD SIGNS



DETECTORS FOR LOOPS

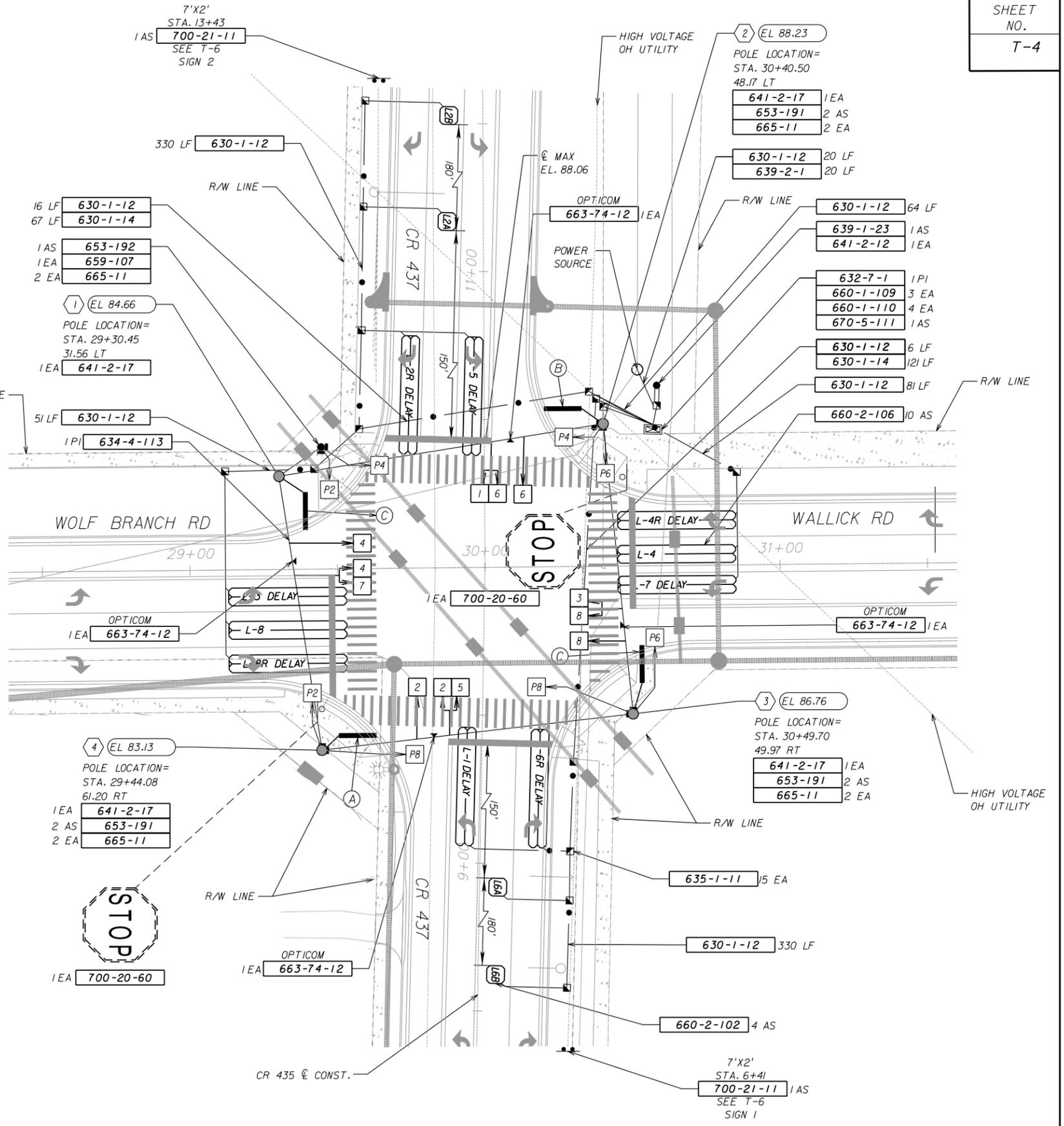
LOOP	NO. OF LOOPS	NO. OF NEW DETS.	CHANNEL NO.	DELAY TIME (SEC)
L-2A	1	1	1	-
L-2B	1	1	2	-
L-4	1	1	1	-
L-8	1	1	2	-
L-6A	1	1	1	-
L-6B	1	1	2	-
L-1	1	1	1	10
L-3	1	1	2	10
L-5	1	1	1	10
L-7	1	1	2	10
L-8R	1	1	1	10
L-4R	1	1	2	10
L-2R	1	1	1	10
L-6R	1	1	2	10

NOTE: SIGNS SHALL BE DOUBLE FACED AND CANTILEVER MOUNTED.

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	8	5	15	5	8
EXTENSION	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
MAXIMUM GREEN 1	25	50	20	20	20	50	20	20
MAXIMUM GREEN 2	-	-	-	-	-	-	-	-
YELLOW CLEARANCE	4	4	4	4	4	4	4	4
ALL RED	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
PEDESTRIAN WALK	-	7	-	7	-	7	-	7
PED. CLEARANCE	-	24	-	22	-	21	-	21
RECALL	-	MIN	-	-	-	MIN	-	-

- NOTES:
- ADVANCE LOOP SPACING BASED ON A SPEED LIMIT OF 45 MPH.
 - EAST-WEST FACING HEADS SHALL HAVE BACKPLATES.
 - MAJOR STREET IS CR 437 (2 & 6) AND MINOR STREET WOLF BRANCH RD AND WALLICK RD (4 & 8).
 - DURING FLASH OPERATION, SIGNAL HEADS 2 AND 6 SHALL FLASH YELLOW AND ALL OTHERS SHALL FLASH RED.



DATE		BY		DESCRIPTION		NAME		DATE	
						DESIGNED BY		JNK	
						CHECKED BY		KLL	
						SUPERVISED BY:		KATHRYN L. LEE, P.E. *64240	

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LAKE COUNTY

SIGNALIZATION PLAN

