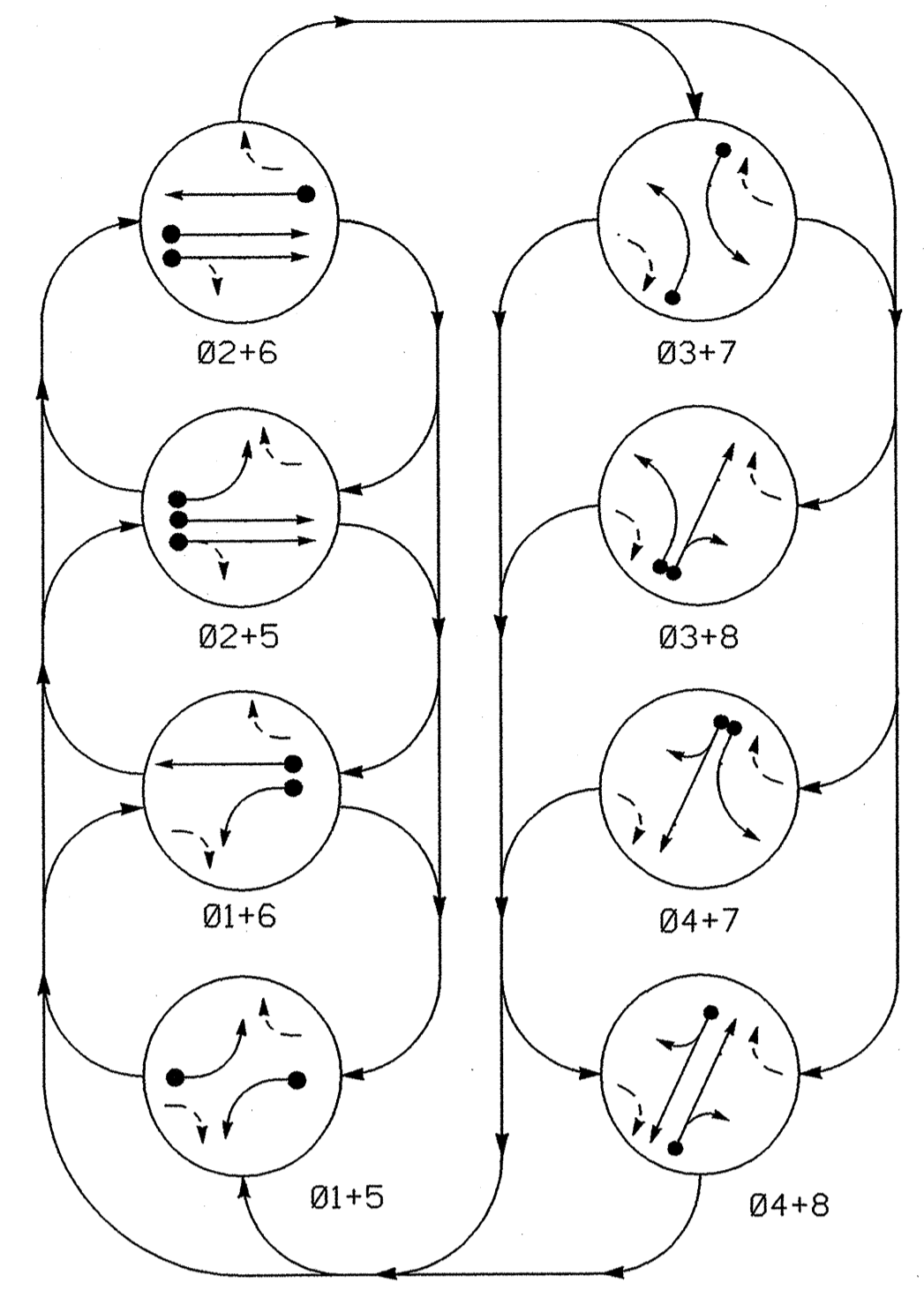


PHASING DIAGRAM



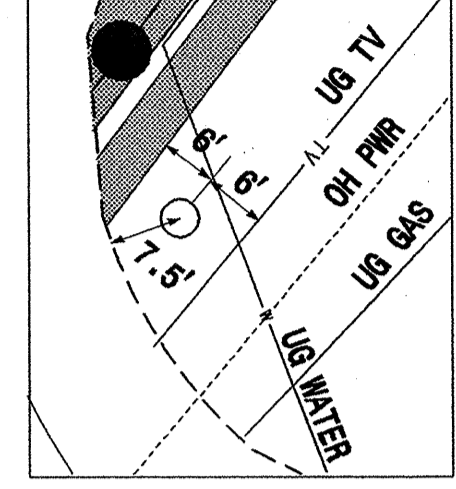
PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

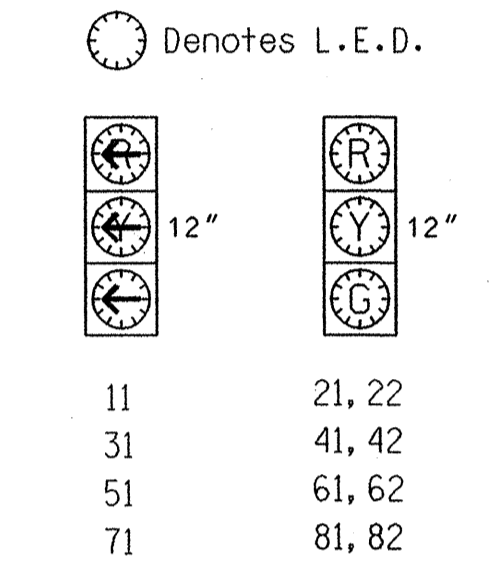
TABLE OF OPERATION

SIGNAL FACE	PHASE								FLASH
	01+5	01+6	02+5	02+6	03+7	03+8	04+7	04+8	
11	←	←	←	←	←	←	←	←	←
21, 22	R	R	G	G	R	R	R	R	Y
31	←	←	←	←	←	←	←	←	←
41, 42	R	R	R	R	R	R	G	G	R
51	←	←	←	←	←	←	←	←	←
61, 62	R	G	R	G	R	R	R	R	Y
71	←	←	←	←	←	←	←	←	←
81, 82	R	R	R	R	R	G	R	G	R

POLE LOCATION



SIGNAL FACE I.D.



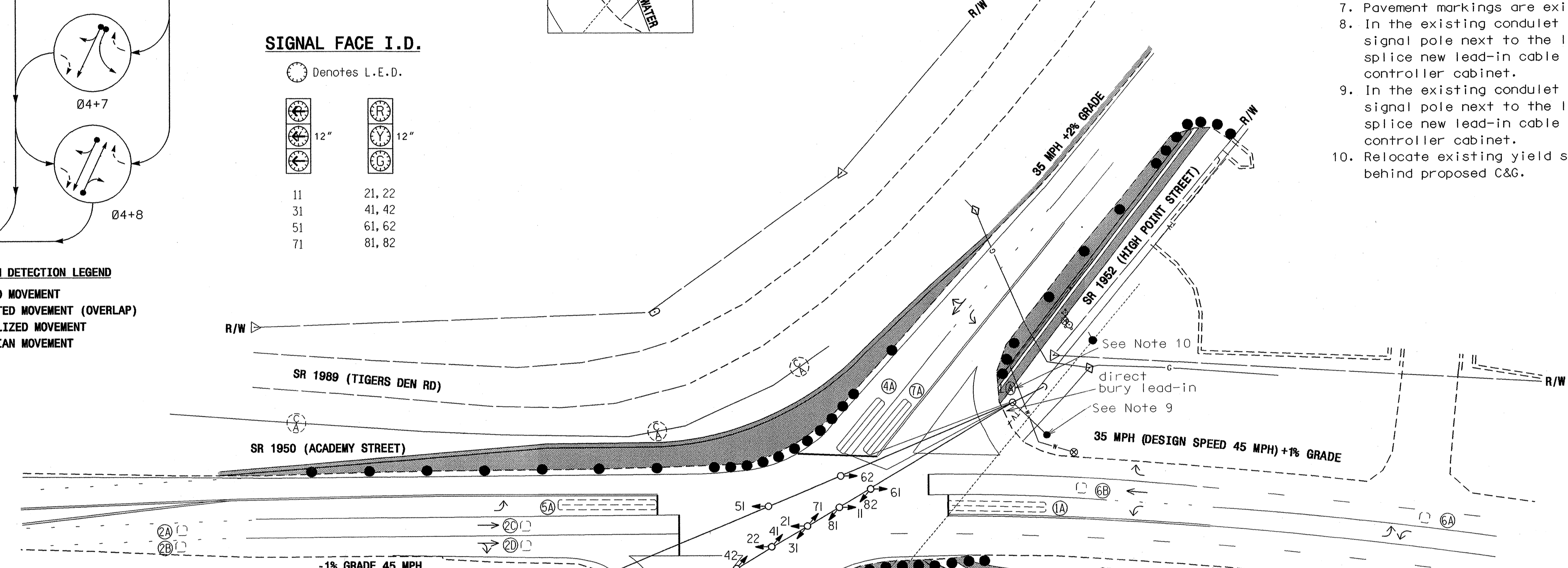
2070L LOOP & DETECTOR INSTALLATION

LOOP	INDUCTIVE LOOPS			DETECTOR PROGRAMMING								
	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X60	0	EXISTING	-	1	Y	Y	-	-	3	-	Y
2A, 2B	6X6	300	EXISTING	-	2	Y	Y	-	1.6	-	-	Y
2C, 2D	6X6	90	EXISTING	-	2	Y	Y	-	-	-	-	Y
3A	6X40	0	2-4-2	Y	3	Y	Y	-	-	3	-	Y
4A	6X40	0	2-4-2	Y	4	Y	Y	-	-	10	-	Y
5A	6X60	0	EXISTING	-	5	Y	Y	-	-	3	-	Y
6A	6X6	300	EXISTING	-	6	Y	Y	-	1.6	-	-	Y
6B	6X6	90	EXISTING	-	6	Y	Y	-	-	-	-	Y
7A	6X40	0	2-4-2	Y	7	Y	Y	-	-	3	-	Y
8A	6X40	0	2-4-2	Y	8	Y	Y	-	-	10	-	Y

8 Phase Fully Actuated (Isolated)

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated July 2006 and "Standard Specifications for Roads and Structures" dated July 2006.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 or phase 5 may be lagged.
- Phase 3 or phase 7 may be lagged.
- Set all detector units to presence mode.
- Pavement markings are existing.
- In the existing conduit on the existing signal pole next to the loops for phases 2 & 5, splice new lead-in cable and route to the new controller cabinet.
- In the existing conduit on the existing signal pole next to the loops for phases 1 & 6, splice new lead-in cable and route to the new controller cabinet.
- Relocate existing yield sign in NE quadrant behind proposed C&G.

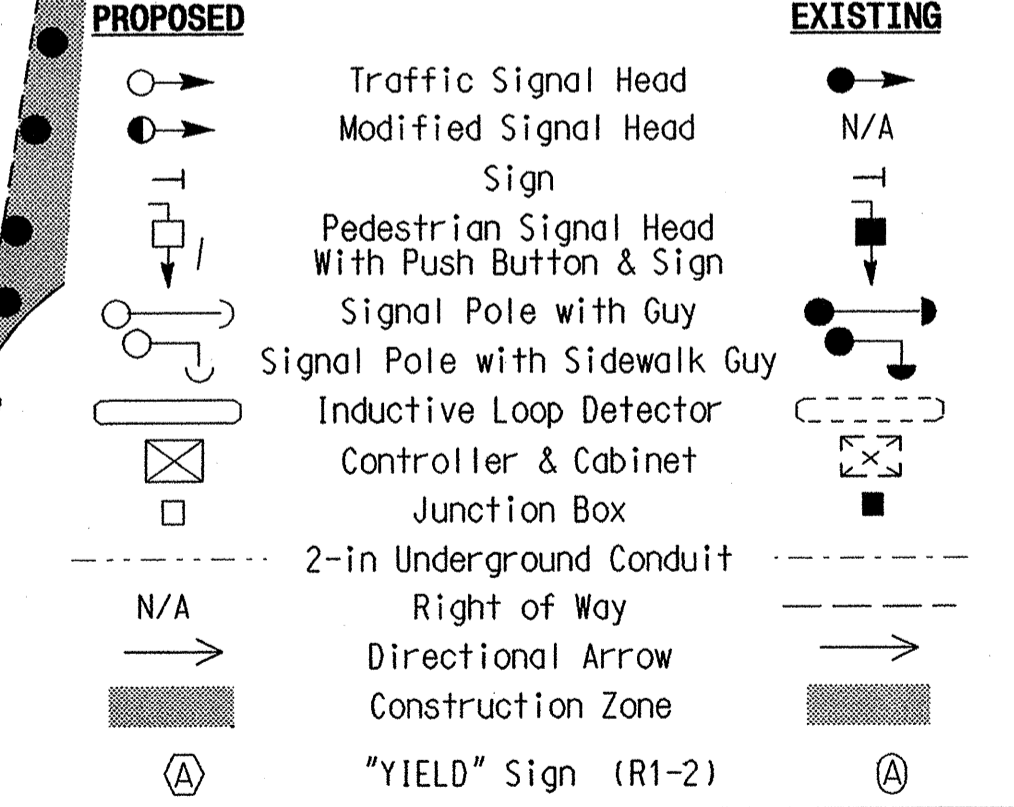


2070L TIMING CHART

FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Min Green 1*	7	12	7	7	7	12	7	7
Extension 1*	1.0	2.0	2.0	2.0	1.0	2.0	2.0	2.0
Max Green 1*	20	55	20	30	20	55	20	30
Yellow Clearance	3.0	4.6	3.0	3.7	3.0	4.4	3.0	4.1
Red Clearance	3.5	1.7	2.5	1.6	3.7	1.3	1.9	1.8
Walk 1*	-	-	-	-	-	-	-	-
Don't Walk 1	-	-	-	-	-	-	-	-
Seconds Per Actuation*	-	-	-	-	-	-	-	-
Max Variable Initial*	-	-	-	-	-	-	-	-
Time Before Reduction*	-	-	-	-	-	-	-	-
Time To Reduce*	-	-	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-	-	-
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL	-	-
Vehicle Call Memory	NONLOCK	LOCK	NONLOCK	NONLOCK	NONLOCK	LOCK	NONLOCK	NONLOCK
Dual Entry	-	-	-	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

LEGEND



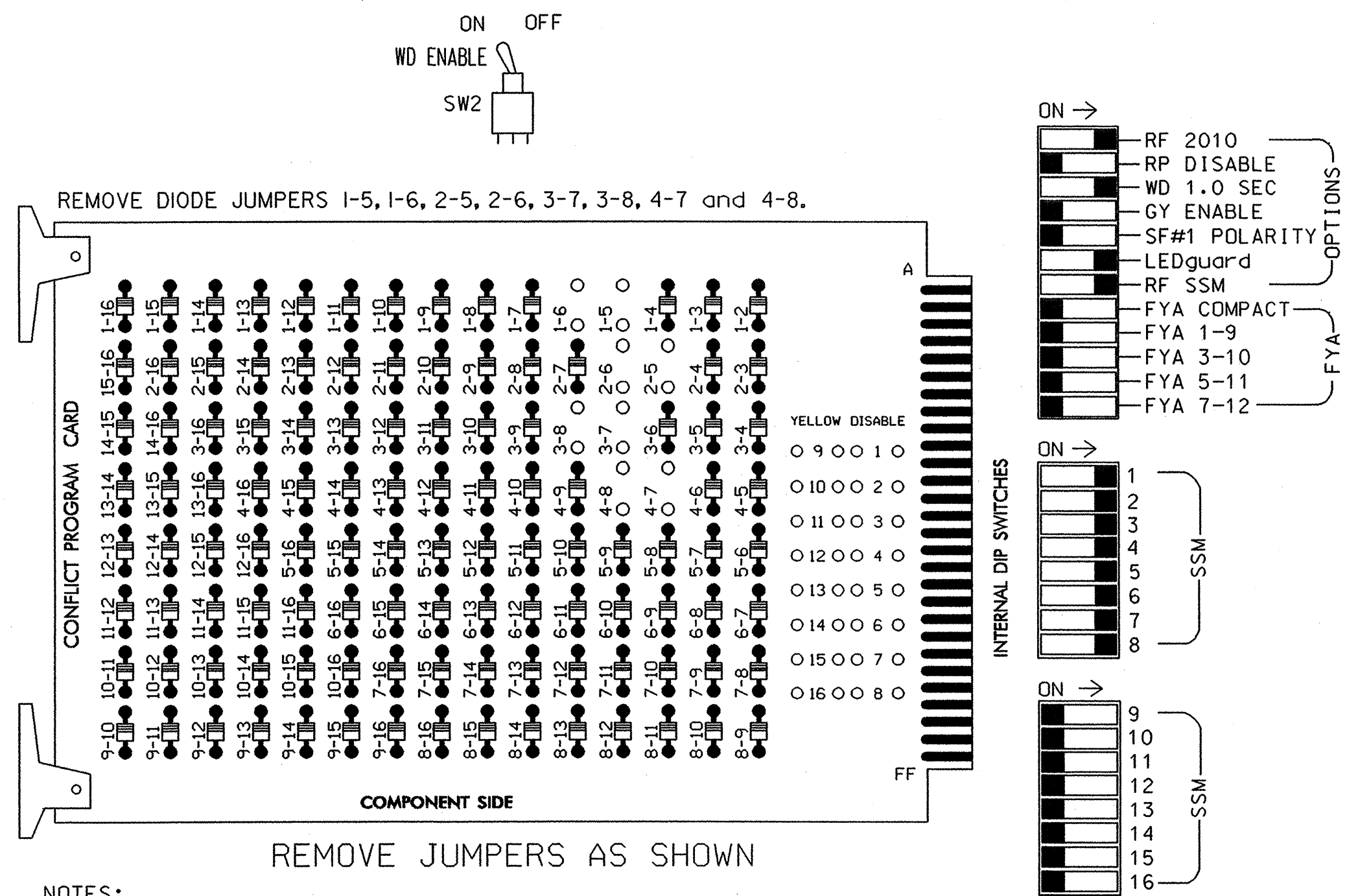
Temporary Design 1

Prepared for the Offices of:
SR 1950 (Academy Street) at SR 1952 (High Point Street)
 Division 8 Randolph County Randleman
 PLAN DATE: DECEMBER 2009 REVIEWED BY: MR Cooney
 PREPARED BY: LM Moon REVIEWED BY:
 SCALE: 1"=40'
 SIGNATURE: Lisa M. Moon 12-10-09
 SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER 022516
 SIG. INVENTORY NO. 08-03831

PBS&J 1616 EAST MILLBROOK ROAD, SUITE 310
 RALEIGH, NORTH CAROLINA 27609
 (919) 876-6888

EDI MODEL 2010ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



NOTES:

- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- Make sure jumpers SEL2-SEL5 are present on the monitor board.

NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Ensure that Red Enable is active at all times during normal operation. To prevent Red Failures on unused monitor channels, tie unused red monitor inputs 9,10, 11,12,13,14,15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
- Program phases 2 and 6, on the controller unit, for Start Up In Green.
- Enable Simultaneous Gap-Out, on the controller unit, for all phases.

EQUIPMENT INFORMATION

CONTROLLER.....2070L
 CABINET.....CONTRACTOR SUPPLIED 336
 SOFTWARE.....ECONOLITE OASIS
 CABINET MOUNT.....POLE
 OUTPUT FILE POSITIONS...12
 LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S6,S7,S8.
 PHASES USED.....1,2,3,4,5,6,7,8.
 OVERLAP "A".....NOT USED
 OVERLAP "B".....NOT USED
 OVERLAP "C".....NOT USED
 OVERLAP "D".....NOT USED

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S2P	S3	S4	S4P	S5	S6	S6P	S7	S8	S8P
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED
SIGNAL HEAD NO.	11	21,22	NU	31	41,42	NU	51	61,62	NU	71	81,82	NU
RED		128			101			134			107	
YELLOW		129			102			135			108	
GREEN		130			103			136			109	
RED ARROW	125			116			131			122		
YELLOW ARROW	126			117			132			123		
GREEN ARROW	127			118			133			124		

NU = Not Used

INPUT FILE POSITION LAYOUT

(front view)

FILE "I" L	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	∅ 1	∅ 2	∅ 3	∅ 4	∅ 5	∅ 6	∅ 7	∅ 8	STOP	STOP	STOP	STOP	STOP	FS
	1A	2A,2B	3A	4A	5A	6A	7A	8A	STOP	STOP	STOP	STOP	STOP	DC ISOLATOR
	NOT USED	∅ 2	NOT USED	NOT USED	NOT USED	∅ 6	NOT USED	NOT USED	STOP	STOP	STOP	STOP	STOP	ST
		2C,2D				6B			STOP	STOP	STOP	STOP	STOP	DC ISOLATOR

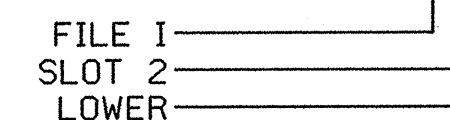
EX. : 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
 ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A	TB21-1,2	I1U	56	18	1	1	Y	Y			3
2A,2B	TB21-3,4	I2U	39	1	2	2	Y	Y		1.6	
2C,2D	TB23-3,4	I2L	43	5	12	2	Y	Y			
3A	TB21-5,6	I3U	58	20	3	3	Y	Y			3
4A	TB21-7,8	I4U	41	3	4	4	Y	Y			10
5A	TB21-9,10	I5U	55	17	5	5	Y	Y			3
6A	TB21-11,12	I6U	40	2	6	6	Y	Y		1.6	
6B	TB23-11,12	I6L	44	6	16	6	Y	Y			
7A	TB21-13,14	I7U	57	19	7	7	Y	Y			3
8A	TB22-1,2	I8U	42	4	8	8	Y	Y			10

INPUT FILE POSITION LEGEND: I2L



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 08-0383T1
 DESIGNED: December 2009
 SEALED: 12/10/09
 REVISED: N/A

Temporary Design 1

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:

SR 1950 (Academy Street) at SR 1952 (High Point Street)

Division 8 Randolph County Randleman

PLAN DATE: December 2009 REVIEWED BY: MR Cooney

PREPARED BY: LM Woon REVIEWED BY:

REVISIONS: INIT. DATE

750 N. Greenfield Place, Garner, NC 27529

SEAL

North Carolina Professional Engineer Seal
 025982
 M. R. COONEY

SIG. INVENTORY NO. 08-0383T1

PBS&J 1616 EAST MILLBROOK ROAD, SUITE 310
 RALEIGH, NORTH CAROLINA 27609
 (919) 876-6888

PHASING DIAGRAM

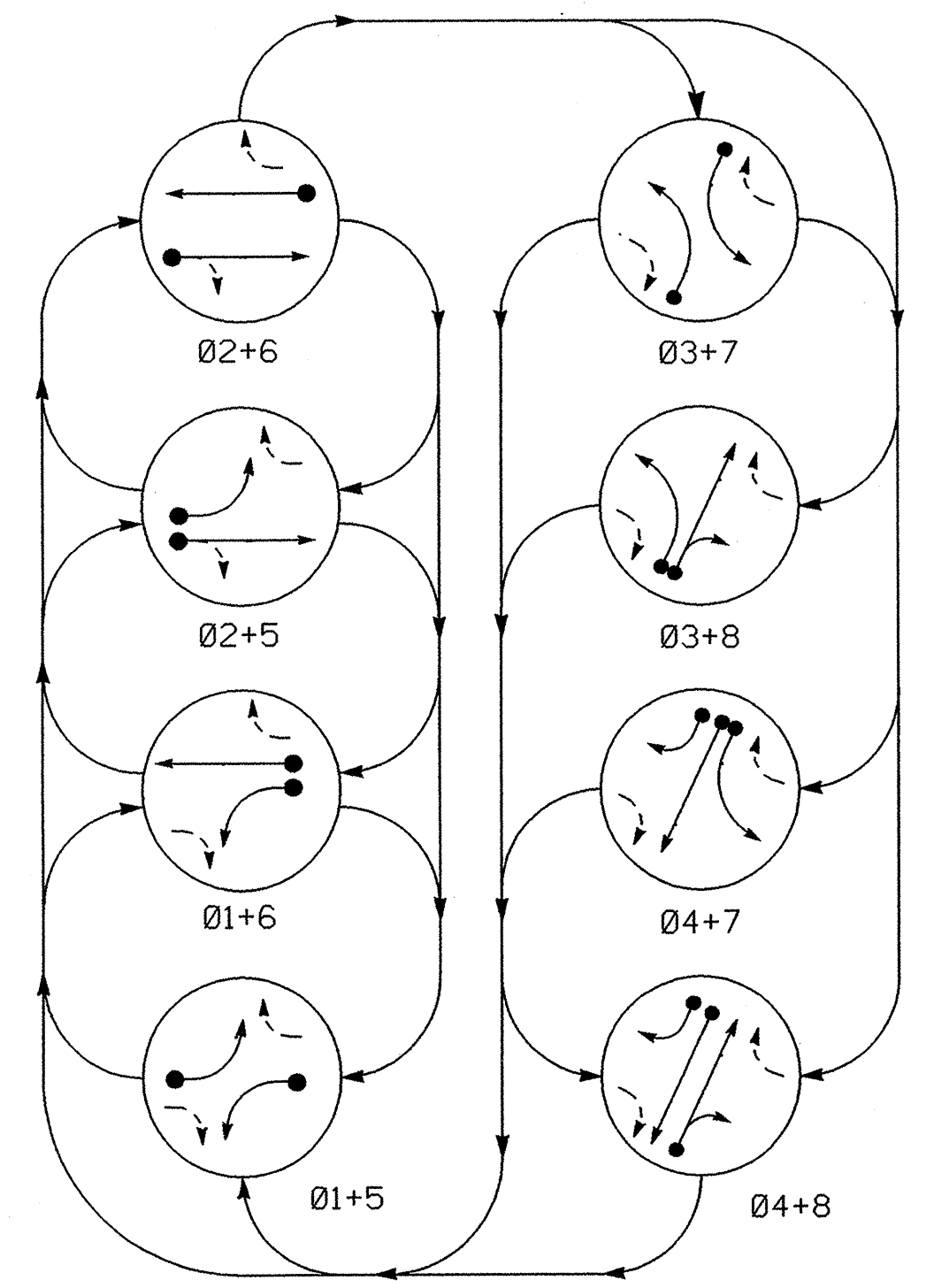
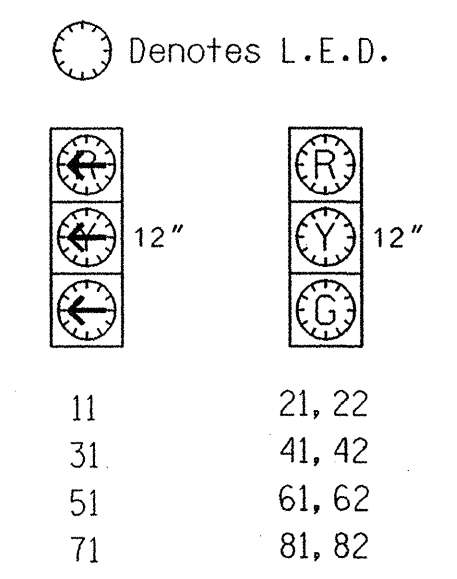


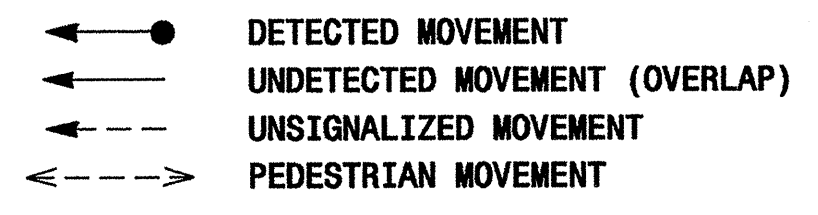
TABLE OF OPERATION

SIGNAL FACE	PHASE							
	01+5	01+6	02+5	02+6	03+7	03+8	04+7	04+8
11	←	←	←	←	←	←	←	←
21, 22	R	R	G	G	R	R	R	Y
31	←	←	←	←	←	←	←	←
41, 42	R	R	R	R	R	R	G	G
51	←	←	←	←	←	←	←	←
61, 62	R	G	R	G	R	R	R	Y
71	←	←	←	←	←	←	←	←
81, 82	R	R	R	R	R	G	R	G

SIGNAL FACE I.D.



PHASING DIAGRAM DETECTION LEGEND



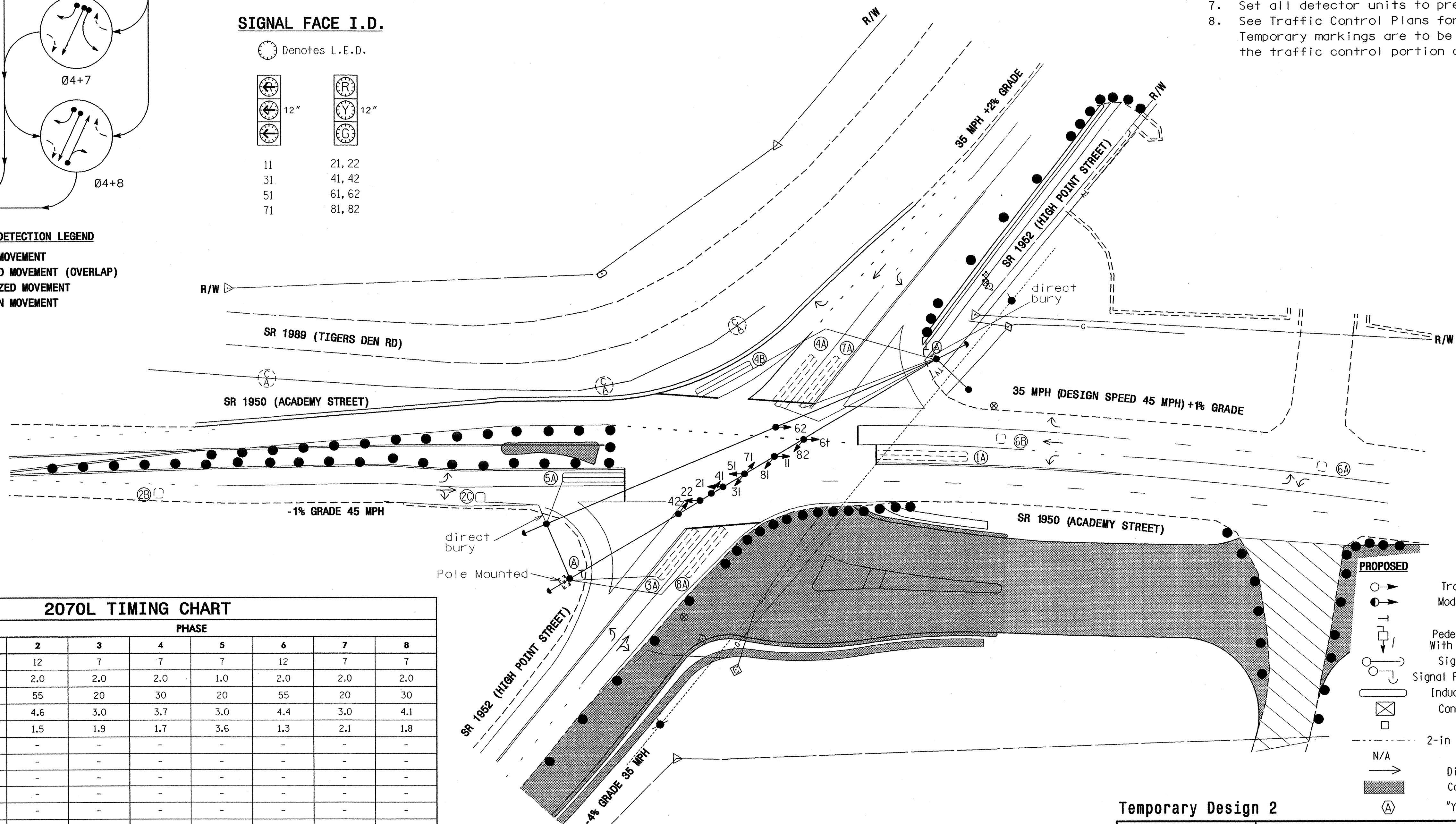
2070L LOOP & DETECTOR INSTALLATION

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING							
					PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X60	0	EXISTING	-	1	Y	Y	-	-	3	-	-
2B	6X6	300	EXISTING	-	2	Y	Y	-	1.6	-	-	-
2C	6X6	90	EXISTING	-	4	Y	2	Y	Y	-	-	-
3A	6X40	0	EXISTING	-	3	Y	Y	-	-	3	-	-
4A	6X40	0	EXISTING	-	4	Y	Y	-	-	-	-	-
4B	6X40	0	2-4-2	Y	4	Y	Y	-	-	10	-	-
5A	6X40	0	2-4-2	Y	5	Y	Y	-	-	-	-	-
6A	6X6	300	EXISTING	-	6	Y	Y	-	1.6	-	-	-
6B	6X6	90	EXISTING	-	6	Y	Y	-	-	-	-	-
7A	6X40	0	EXISTING	-	7	Y	Y	-	-	3	-	-
8A	6X40	0	EXISTING	-	8	Y	Y	-	-	10	-	-

8 Phase Fully Actuated (Isolated)

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated July 2006 and "Standard Specifications for Roads and Structures" dated July 2006.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Abandon existing loops numbered 2A, 2C, 2D and 5A.
4. Relocate signal heads numbered 21, 22 and 51.
5. Phase 1 or phase 5 may be lagged.
6. Phase 3 or phase 7 may be lagged.
7. Set all detector units to presence mode.
8. See Traffic Control Plans for pavement markings. Temporary markings are to be installed as part of the traffic control portion of work for this project.

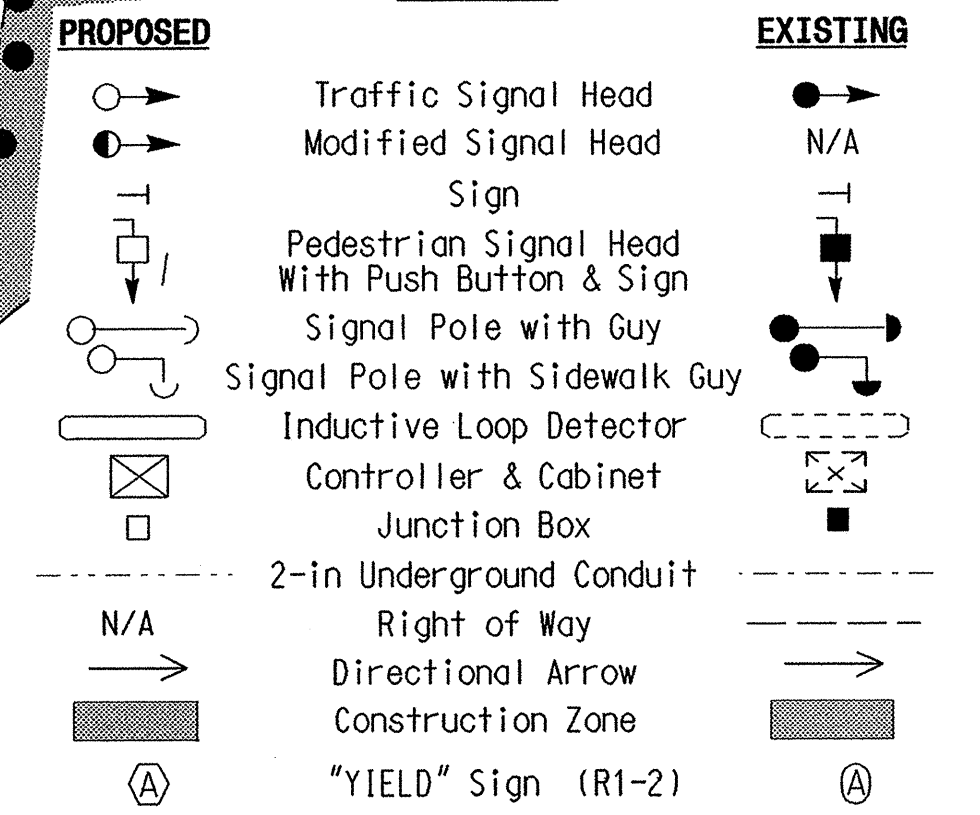


2070L TIMING CHART

FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Min Green 1*	7	12	7	7	7	12	7	7
Extension 1*	1.0	2.0	2.0	2.0	1.0	2.0	2.0	2.0
Max Green 1*	20	55	20	30	20	55	20	30
Yellow Clearance	3.0	4.6	3.0	3.7	3.0	4.4	3.0	4.1
Red Clearance	3.5	1.5	1.9	1.7	3.6	1.3	2.1	1.8
Walk 1*	-	-	-	-	-	-	-	-
Don't Walk 1	-	-	-	-	-	-	-	-
Seconds Per Actuation*	-	-	-	-	-	-	-	-
Max Variable Initial*	-	-	-	-	-	-	-	-
Time Before Reduction*	-	-	-	-	-	-	-	-
Time To Reduce*	-	-	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-	-	-
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL	-	-
Vehicle Call Memory	NONLOCK	LOCK	NONLOCK	NONLOCK	NONLOCK	LOCK	NONLOCK	NONLOCK
Dual Entry	-	-	-	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

LEGEND



Temporary Design 2

PBSJ 1616 EAST WILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888

SR 1950 (Academy Street) at SR 1952 (High Point Street)

Division 8 Randolph County Randleman

PLAN DATE: December 2009 REVIEWED BY: MR Cooney

PREPARED BY: LM Moon REVIEWED BY:

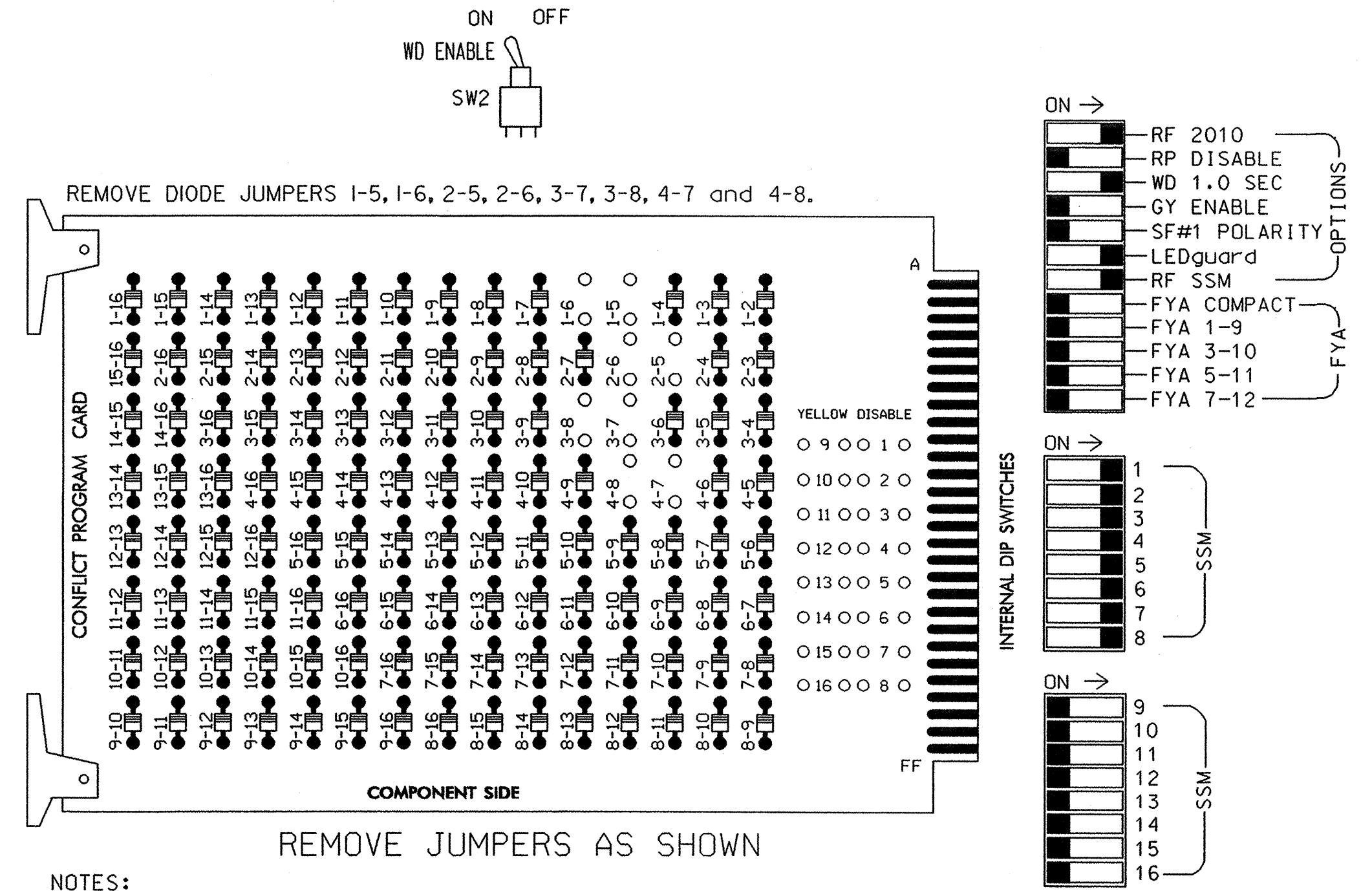
SEAL
NORTH CAROLINA
PROFESSIONAL
ENGINEER
LISA M. MOON

750 N. Greenfield Pkwy, Garner, NC 27529

SCALE: 0 40
1"=40'

EDI MODEL 2010ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Make sure jumpers SEL2-SEL5 are present on the monitor board.

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Ensure that Red Enable is active at all times during normal operation. To prevent Red Failures on unused monitor channels, tie unused red monitor inputs 9,10, 11,12,13,14,15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
3. Program phases 2 and 6, on the controller unit, for Start Up In Green.
4. Enable Simultaneous Gap-Out, on the controller unit, for all phases.

EQUIPMENT INFORMATION

CONTROLLER.....2070L
 CABINET.....CONTRACTOR SUPPLIED 336
 SOFTWARE.....ECONOLITE OASIS
 CABINET MOUNT.....POLE
 OUTPUT FILE POSITIONS...12
 LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S6,S7,S8.
 PHASES USED.....1,2,3,4,5,6,7,8.
 OVERLAP "A".....NOT USED
 OVERLAP "B".....NOT USED
 OVERLAP "C".....NOT USED
 OVERLAP "D".....NOT USED

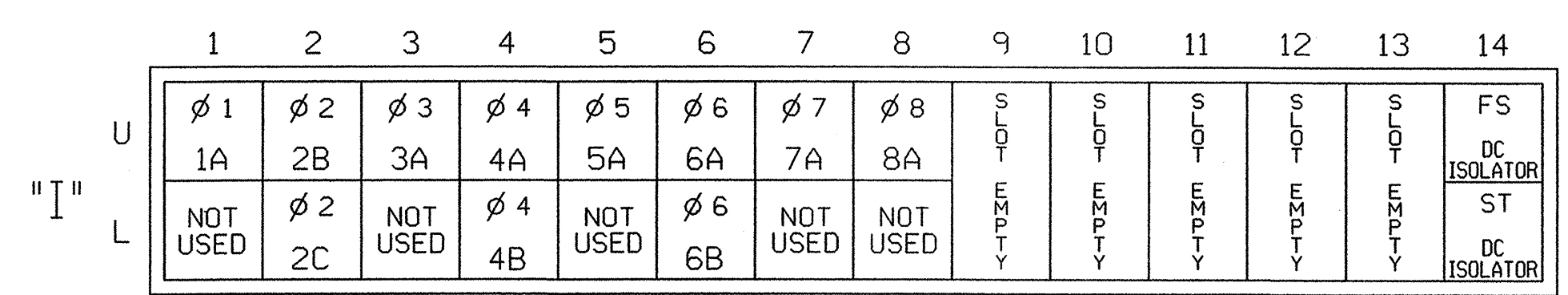
SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S2P	S3	S4	S4P	S5	S6	S6P	S7	S8	S8P
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED
SIGNAL HEAD NO.	11	21,22	NU	31	41,42	NU	51	61,62	NU	71	81,82	NU
RED		128			101			134			107	
YELLOW		129			102			135			108	
GREEN		130			103			136			109	
RED ARROW	125			116			131			122		
YELLOW ARROW	126			117			132			123		
GREEN ARROW	127			118			133			124		

NU = Not Used

INPUT FILE POSITION LAYOUT

(front view)



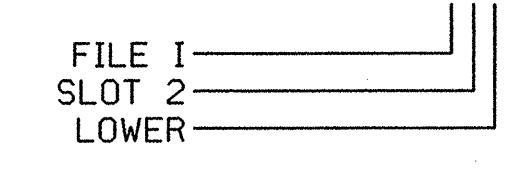
EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
 ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A	TB21-1,2	I1U	56	18	1	1	Y	Y			3
2B	TB21-3,4	I2U	39	1	2	2	Y	Y		1.6	
2C	TB23-3,4	I2L	43	5	12	2	Y	Y			
3A	TB21-5,6	I3U	58	20	3	3	Y	Y			3
4A	TB21-7,8	I4U	41	3	4	4	Y	Y			
4B	TB23-7,8	I4L	45	7	14	4	Y	Y			10
5A	TB21-9,10	I5U	55	17	5	5	Y	Y			
6A	TB21-11,12	I6U	40	2	6	6	Y	Y		1.6	
6B	TB23-11,12	I6L	44	6	16	6	Y	Y			
7A	TB21-13,14	I7U	57	19	7	7	Y	Y			3
8A	TB22-1,2	I8U	42	4	8	8	Y	Y			10

INPUT FILE POSITION LEGEND: I2L



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 08-0383T2
 DESIGNED: December 2009
 SEALED: 12/10/09
 REVISED: N/A

Temporary Design 2

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:

 750 N. Greenfield Plaza, Garner, NC 27529

SR 1950 (Academy Street) at SR 1952 (High Point Street)

Division 8 Randolph County Handleman
 PLAN DATE: December 2009 REVIEWED BY: MR Cooney
 PREPARED BY: LM Moon REVIEWED BY: MR Cooney

REVISIONS: _____ INIT. _____ DATE _____

SIGNATURE: *Melissa R. Cooney* DATE: 12-10-09
 SEAL: NORTH CAROLINA PROFESSIONAL SEAL 026882
 MELISSA R. COONEY

SIG. INVENTORY NO. 08-0383T2

PBS& 1616 EAST MILLBROOK ROAD, SUITE 310
 RALEIGH, NORTH CAROLINA 27609
 (919) 876-6888

10-DEC-2009 10:20 G:\TECH\JRT\100011526 - High Point Roads\Signal\080383T2_sml.dgn 1:3833 AT RALB\JVRH1