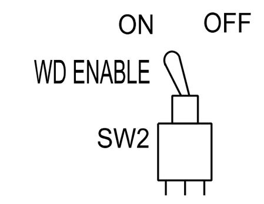
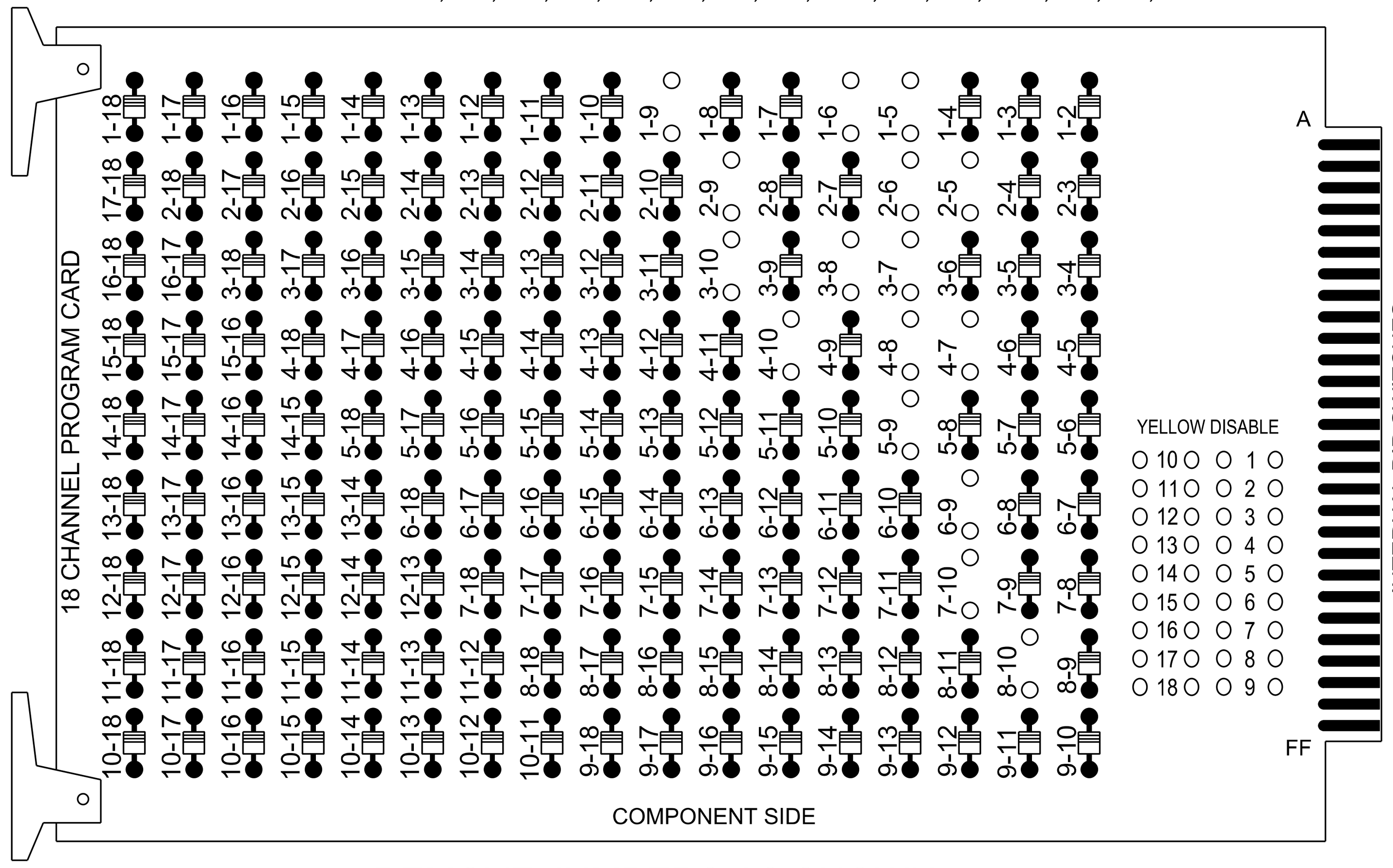
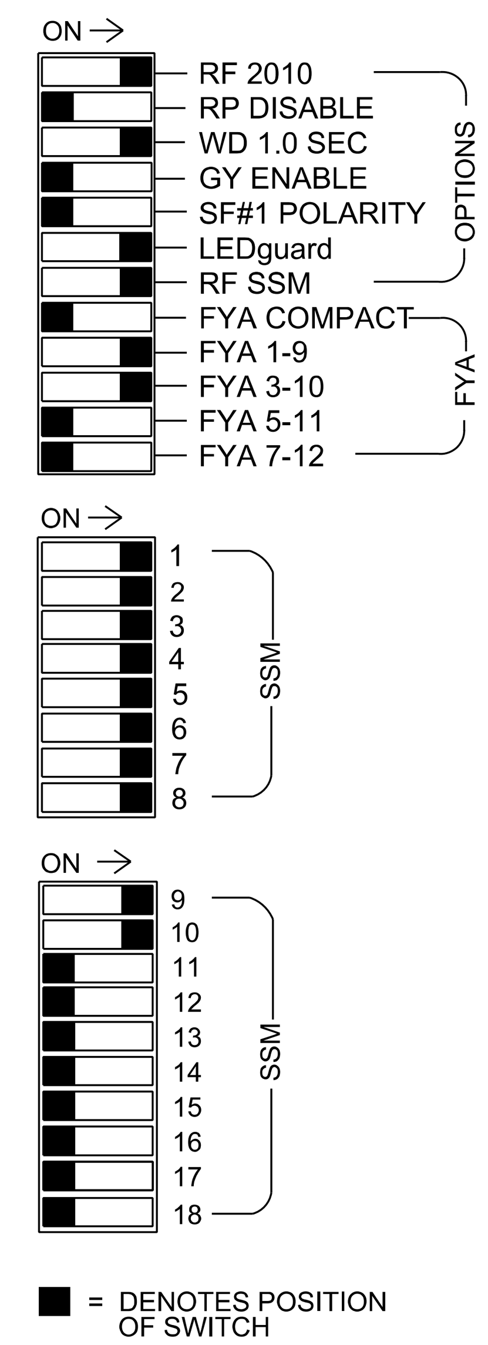
18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



REMOVE DIODE JUMPERS 1-5, 1-6, 1-9, 2-5, 2-6, 2-9, 3-7, 3-8, 3-10, 4-7, 4-8, 4-10, 5-9, 6-9, 7-10 and 8-10.





REMOVE JUMPERS AS SHOWN

NOTES:
1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that the Red Enable is active at all times during normal operation.
4. Integrate monitor with Ethernet network in cabinet.

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 plan.
2. Return controller to Factory Defaults before programming per this electrical detail.
3. Program phases 4 and 8 for Dual Entry.
4. Program controller to start up in phase 2 Green No Walk and 6 Green No Walk.
5. If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.
6. The cabinet and controller are part of the US 158 Signal System, Signal System : D09-11_Winston-Salem System.

EQUIPMENT INFORMATION

Controller..2070LX
Cabinet..332 w/ Aux
Software..Q-Free MAXTIME
Cabinet Mount.......................................Base
Output File Positions..............................18 With Aux. Output File
Load Switches Used...............................S1, S2, S4, S5, S7, S8, S10, S11, AUX S1, AUX S2
Phases Used..1, 2, 3, 4, 5, 6, 7, 8
Overlap "1"...*
Overlap "2"...*
Overlap "3"...NOT USED
Overlap "4"...NOT USED

*See overlap programming detail on sheet 2.

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1		S2	S3	S4		S5	S6	S7	S8	S9	S10		S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1		2	13	3		4	14	5	6	15	7		8	16	9	10	17	11	12	18
PHASE	1		2	2 PED	3		4	4 PED	5	6	6 PED	7		8	8 PED	OL1	OL2	SPARE	OL3	OL4	SPARE
SIGNAL HEAD NO.	11,12★	82	21,22	NU	22	31★	41,42	NU	51,52	61,62	NU	62	71,72	81,82	NU	11,12★	31★	NU	NU	NU	NU
RED		*	128		*		101			134				107							
YELLOW			129				102			135				108							
GREEN			130				103			136				109							
RED ARROW									131				122			A121	A124				
YELLOW ARROW		126			117				132			123	123			A122	A125				
FLASHING YELLOW ARROW																A123	A126				
GREEN ARROW	127	127			118	118			133			124	124								

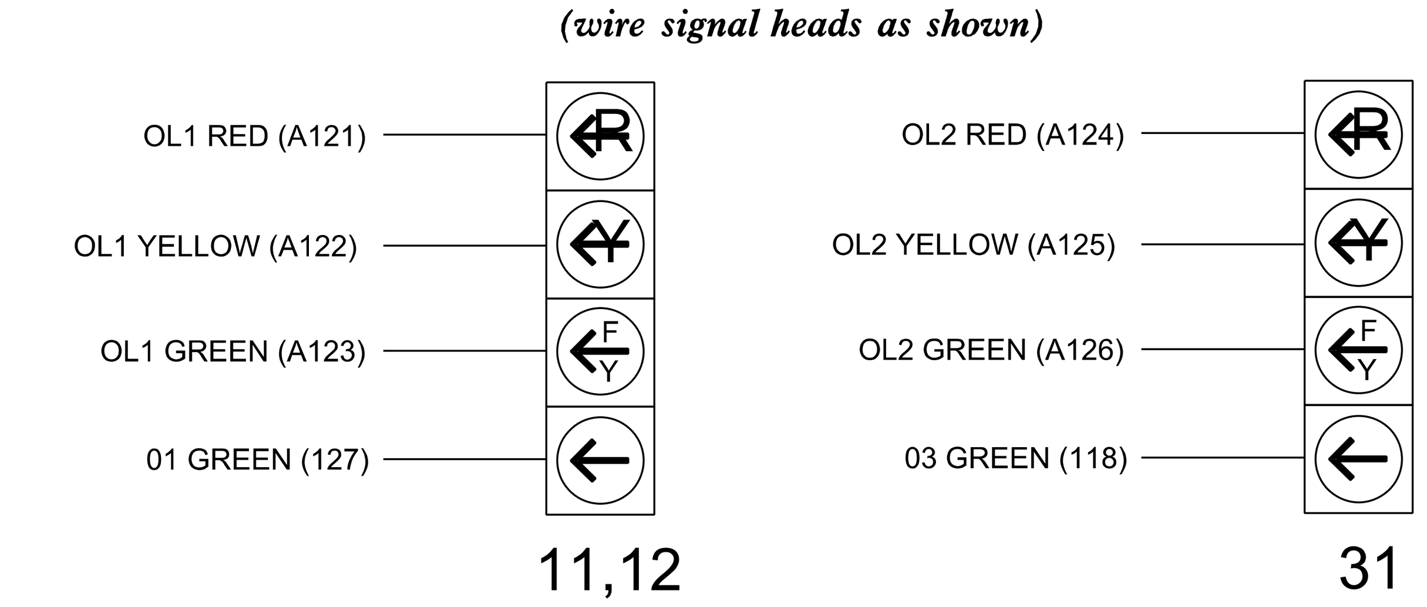
NU = Not Used

* Denotes install load resistor. See load resistor installation detail this sheet.

★ See pictorial of head wiring in detail this sheet.

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



INPUT FILE POSITION LAYOUT

(front view)

FILE		1	2	3	4	5	6	7	8	9	1O	11	12	13	14
FILE "I"	U	Ø 1 1A	Ø 1 1B	Ø 2 2A	SLOT EMPTY	Ø 3 3A	Ø 4 4A	Ø 4 4C	Ø 4 4E	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	FS DC ISOLATOR
	L	NOT USED	Ø 1 1C	Ø 2 2B		NOT USED	Ø 4 4B	Ø 4 4D	NOT USED						ST DC ISOLATOR
FILE "J"	U	Ø 5 5A	Ø 6 6A	SLOT EMPTY	SLOT EMPTY	Ø 7 7A	Ø 8 8A	Ø 8 8C	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L	Ø 5 5B	Ø 6 6B			Ø 7 7B	Ø 8 8B	Ø 8 8D							

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 POINT	DETECTOR NO.	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN
1A	TB2-1,2	I1U	56	18	1 ★	1	15		X		X	
				-	29 ★	6			X		X	X
1B	TB2-5,6	I2U	39	1	2	1	15		X		X	
1C	TB2-7,8	I2L	43	5	3	1	15		X		X	
2A	TB2-9,10	I3U	63	29	4	2			X	X	X	
2B	TB2-11,12	I3L	76	42	5	2			X	X	X	
3A	TB4-5,6	I5U	58	20	7 ★	3	15		X		X	
				-	30 ★	8			X		X	
4A	TB4-9,10	I6U	41	3	8	4			X	X		
4B	TB4-11,12	I6L	45	7	9	4			X	X		
4C	TB6-1,2	I7U	65	31	10	4	5	2.0	X		X	X
4D	TB6-3,4	I7L	78	44	11	4	5	2.0	X		X	X
4E	TB6-5,6	I8U	49	11	12	4	15		X		X	
5A	TB3-1,2	J1U	55	17	15	5			X		X	
5B	TB3-1,2	J1U	55	17	15	5			X		X	
6A	TB3-5,6	J2U	40	2	16	6			X	X	X	
6B	TB3-7,8	J2L	44	6	17	6			X	X	X	
7A	TB5-5,6	J5U	57	19	21	7			X		X	
7B	TB5-5,6	J5U	57	19	21	7			X		X	
8A	TB5-9,10	J6U	42	4	22	8			X	X		
8B	TB5-11,12	J6L	46	8	23	8			X	X		
8C	TB7-1,2	J7U	66	32	24	8	5	2.0	X		X	X
8D	TB7-3,4	J7L	79	45	25	8	5	2.0	X		X	X

★ For the detector to work as shown on the signal design plan, see the vehicle detector setup programming detail for alternate phasing on sheet 2.

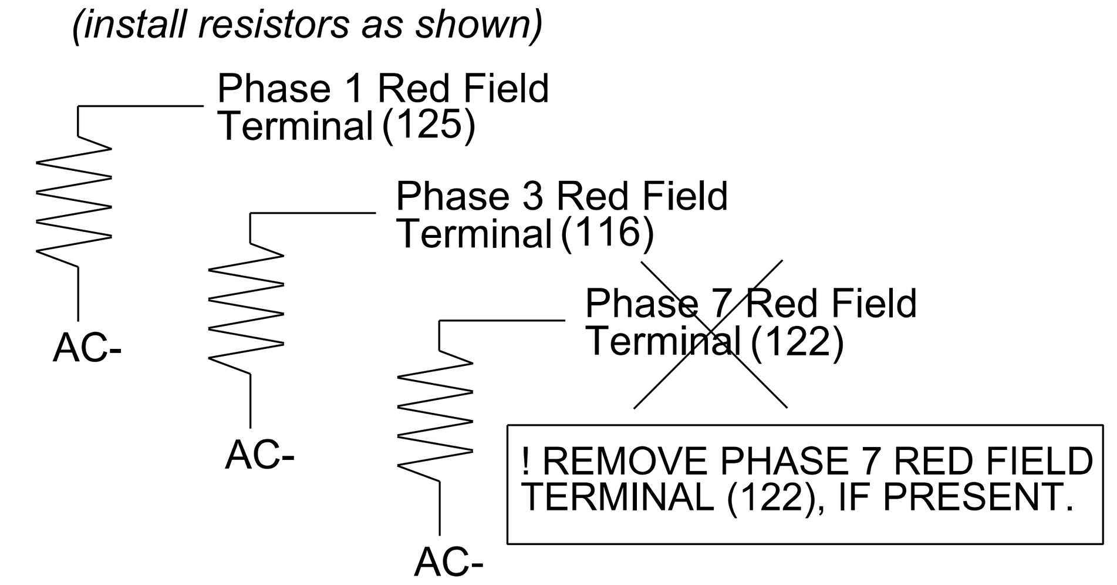
INPUT FILE POSITION LEGEND: J2L

FILE J
SLOT 2
LOWER

LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown)

ACCEPTABLE VALUES	
Value (ohms)	Wattage
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



FLASHER CIRCUIT MODIFICATION DETAIL

IN ORDER TO INSURE THAT SIGNALS FLASH CONCURRENTLY ON THE SAME APPROACH, MAKE THE FOLLOWING FLASHER CIRCUIT CHANGES:

1. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
2. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
3. REMOVE FLASHER UNIT 2.

THE CHANGES LISTED ABOVE TIES ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 09-0264
DESIGNED: February 2024
SEALED: February 12, 2024
REVISED:

RK&K
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Signal Upgrade - Final Design - Electrical Detail - Sheet 1 of 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Electrical and Programming Details For:

Prepared for the Offices of:

Transportation Mobility and Safety Division
ITS & Signals Management Section

750 N. Greenfield Pkwy, Garner, NC 27529

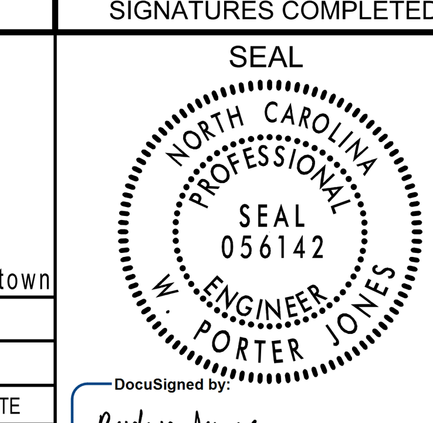
US 158 (Reidsville Rd.) at NC 66 (Old Hollow Rd.)

Division 9 | Forsyth County | Walkertown

PLAN DATE: February 2024	REVIEWED BY: DT Sears
PREPARED BY: WP Erickson-Jones	REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL



DocuSigned by: Porter Jones
D06E13E3A0E0498...
2/12/2024
DATE

SIG. INVENTORY NO. 09-0264