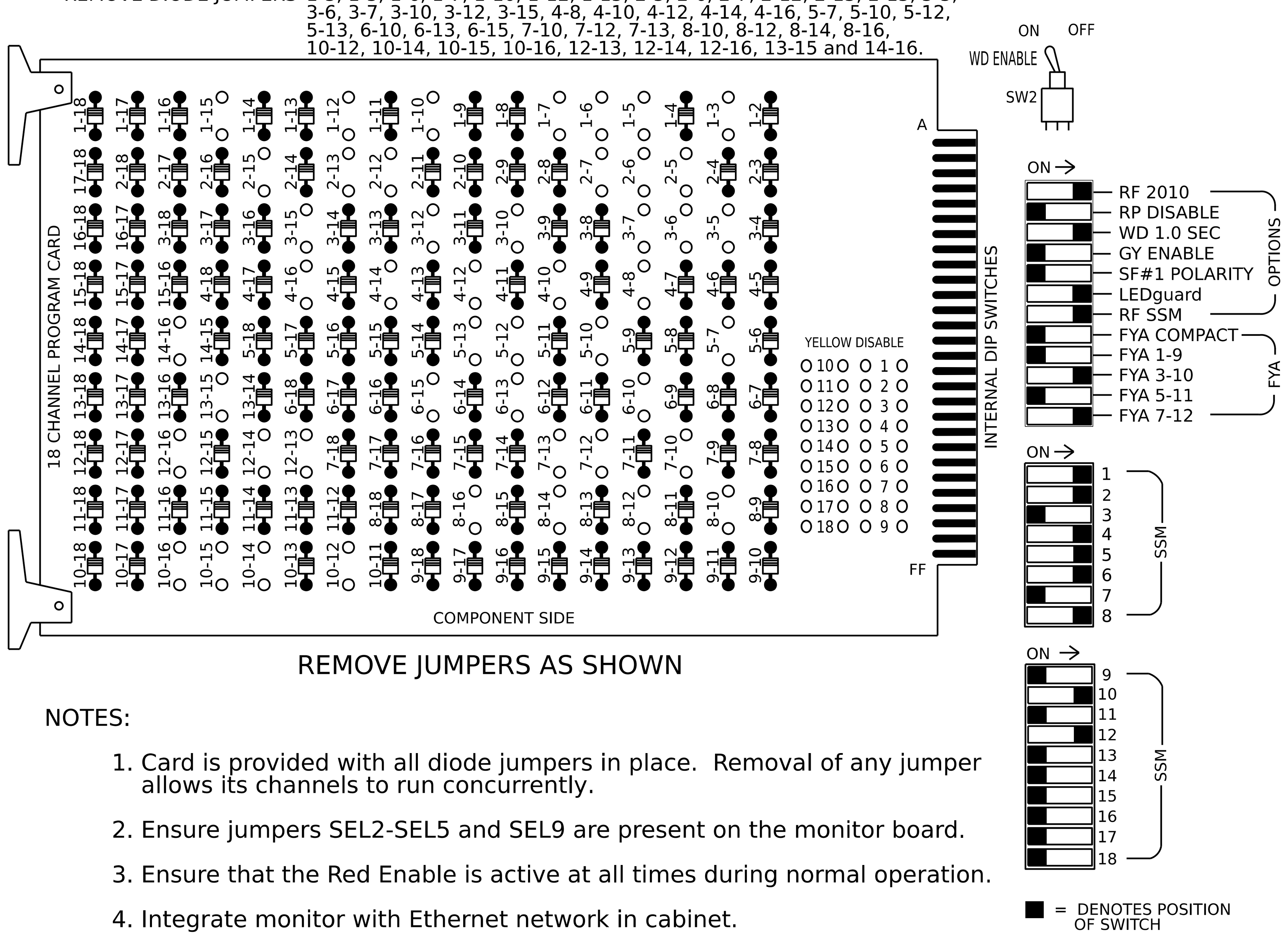
18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 1-3, 1-5, 1-6, 1-7, 1-10, 1-12, 1-15, 2-5, 2-6, 2-7, 2-12, 2-13, 2-15, 3-5, 3-6, 3-7, 3-10, 3-12, 3-15, 4-8, 4-10, 4-12, 4-14, 4-16, 5-7, 5-10, 5-12, 5-13, 6-10, 6-13, 6-15, 7-10, 7-12, 7-13, 8-10, 8-12, 8-14, 8-16, 10-12, 10-14, 10-15, 10-16, 12-13, 12-14, 12-16, 13-15 and 14-16.



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 vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Program controller to start up in phases 2 and 6 Green/Don't Walk.
3. Enable simultaneous gap-out feature for all phases.
4. Program phases 4 and 8 for dual entry.
5. The cabinet and controller are part of the Hickory City System.

EQUIPMENT INFORMATION

Controller....................................... 2070
Cabinet.. 332 w/ Aux
Software...SE-PAC2070
Cabinet Mount...............................Base
Output File Positions..................... 18 With Aux. Output File
Load Switches Used....................... S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12, AUX S2, AUX S5
Phases Used..................................1, 2, 2PED, 4, 4PED, 5, 6, 6PED, 8, 8PED
Overlap "1".................................... Not Used
Overlap "2".................................... *
Overlap "3".................................... Not Used
Overlap "4".................................... *

*See overlap programming detail on sheet 2

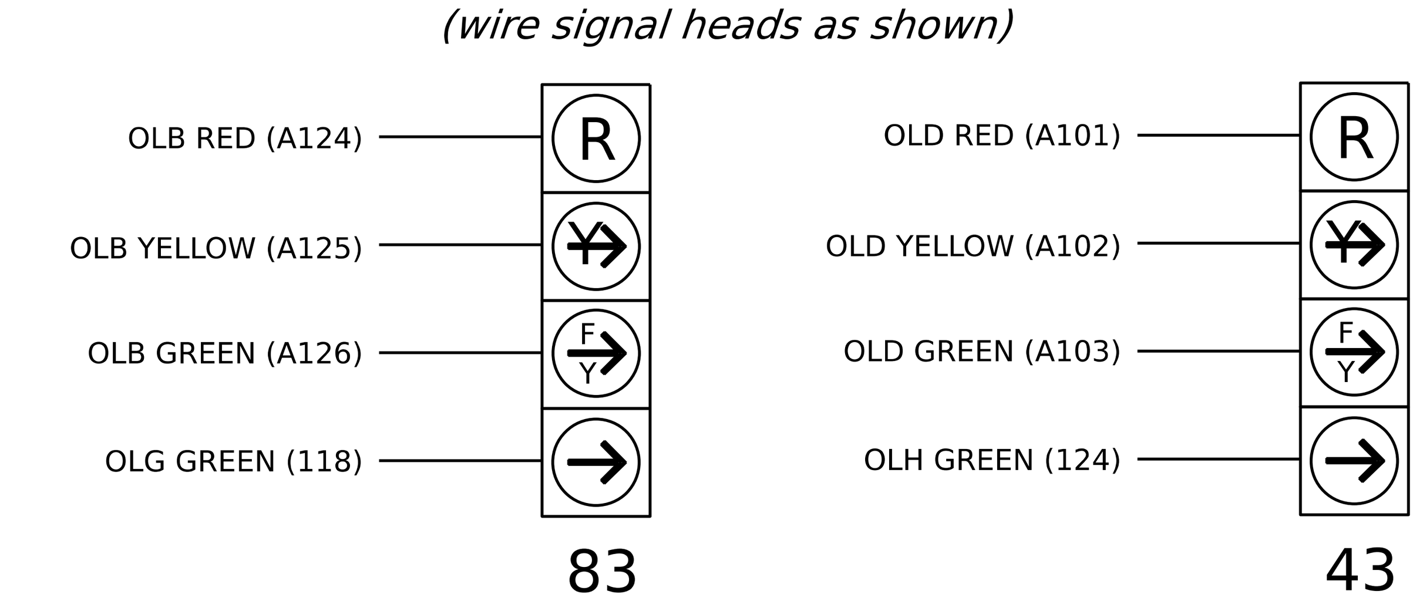
SIGNAL HEAD HOOK-UP CHART

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	OLG #	4	4 PED	5	6	6 PED	OLH #	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11	21,22 23	P21, P22	83 ★	41,42	P41, P42	51	61,62	P61, P62	43 ★	81,82	P81, P82	NU	83 ★	NU	NU	43 ★	NU
RED		128			101			134			107			A124			A101	
YELLOW		129		*	102			135		*	108							
GREEN		130			103			136			109							
RED ARROW	125						131											
YELLOW ARROW	126						132							A125			A102	
FLASHING YELLOW ARROW														A126			A103	
GREEN ARROW	127			118			133			124								
(Don't Walk hand symbol)			113			104			119			110						
(Walk pedestrian symbol)			115			106			121			112						

NU = Not Used
*Denotes install load resistor. See LOAD RESISTOR INSTALLATION DETAIL this sheet.
★See pictorial of head wiring in detail this sheet.
#Load switches reassigned. See LOAD SWICH MAPPING DETAIL on sheet 2.

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	Ø2 PED DC ISOLATOR	Ø6 PED DC ISOLATOR	FS DC ISOLATOR
	L												Ø4 PED DC ISOLATOR	Ø8 PED DC ISOLATOR	ST DC ISOLATOR
FILE "J"	U	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L														

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.	DETECTOR NO.	NEMA PHASE	DELAY TIME	EXTEND (STRETCH) TIME
PED PUSH BUTTONS							
P21,P22	TB8-4,6	I12U	67	PED 2	2 PED		
P41,P42	TB8-5,6	I12L	69	PED 4	4 PED		
P61,P62	TB8-7,9	I13U	68	PED 6	6 PED		
P81,P82	TB8-8,9	I13L	70	PED 8	8 PED		

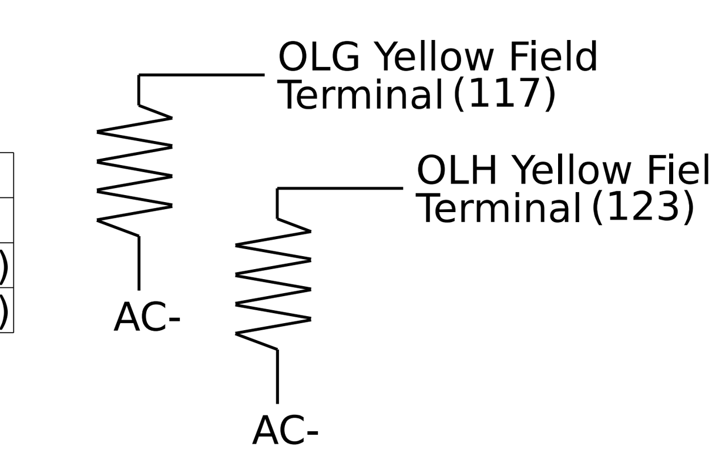
NOTE:
INSTALL DC ISOLATORS IN INPUT FILE SLOTS I12 AND I13.

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)



SPECIAL DETECTOR NOTE

Install a multi-zone microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

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: 12-1218
DESIGNED: January 2026
SEALED: 04/09/2026
REVISED: N/A

Electrical Detail - Sheet 1 of 3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Electrical and Programming Details For:

SR 1007 (Lenoir-Rhyne Blvd)
at
SR 2267 (13th Avenue Drive SE)

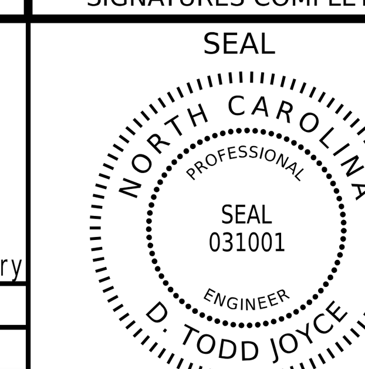
Division 12 Catawba County Hickory

Prepared in the Offices of:
Transportation Mobility and Safety Division
ITS & Signals Management Section
750 N. Greenfield Pkwy, Garner, NC 27529

PLAN DATE: March 2026	REVIEWED BY:
PREPARED BY: Tim Langston	REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL



DocuSigned by: D. Todd Joyce 04/10/2026
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DATE

SIG. INVENTORY NO. 12-1218

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