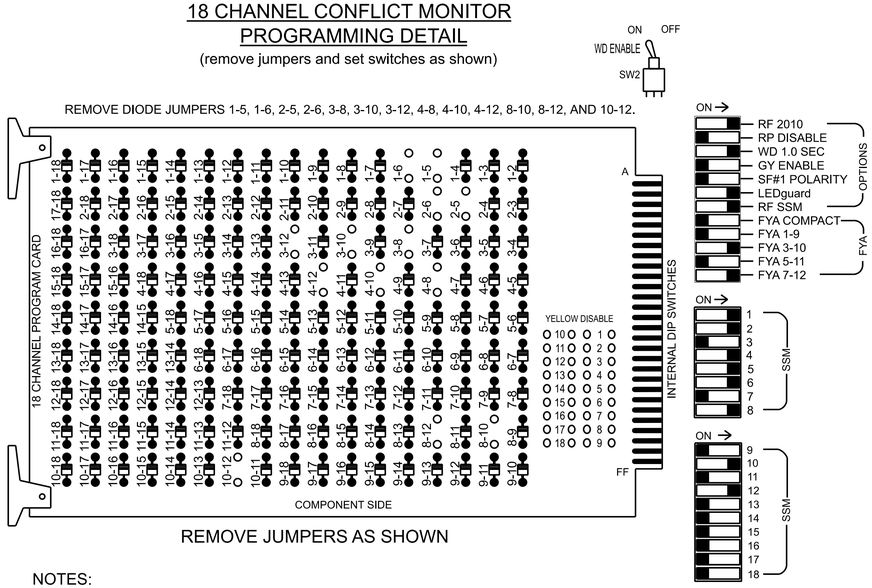
Docusign Envelope ID: 05876772-1DAF-4309-B21B-9789C5DB6FF4

PROJECT REFERENCE NO.	SHEET NO.
HL-0065	Sig. 10.1

18 CHANNEL CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



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.

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 plan.
2. Program phases 4 and 8 for Dual Entry.
3. Program controller to start up in phase 2 Green No Walk and 6 Green No Walk.
4. If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.
5. This cabinet and controller are part of the Signal System #: D13-24_Rutherfordton.

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, S11, AUX S2, AUX S5
Phases Used.....1, 2, 3, 4, 5, 6, 8
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	3	4	4 PED	5		6	6 PED	7	8	8 PED	OL1	OL2	SPARE	OL3	OL4	SPARE
SIGNAL HEAD NO.	11	21,22	NU	31★	42,43	NU	43	51	61,62	NU	NU	81,82	NU	NU	31★	NU	NU	41★	NU
RED		128			101				134			107							
YELLOW		129		*	102				135			108							
GREEN		130			103				136			109							
RED ARROW	125							131							A124			A101	
YELLOW ARROW	126						132	132							A125			A102	
FLASHING YELLOW ARROW															A126			A103	
GREEN ARROW	127			118			133	133											
✋																			
🚶																			

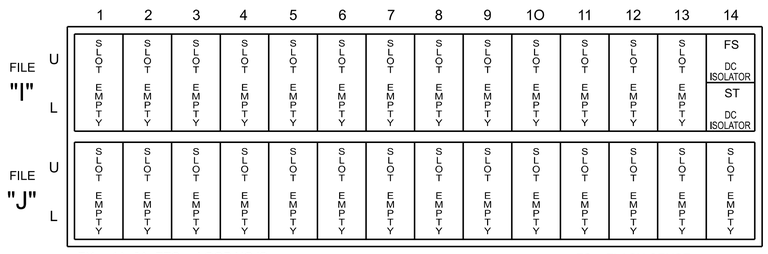
NU = Not Used

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

★See pictorial of head wiring in detail this sheet.

INPUT FILE POSITION LAYOUT

(front view)



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

FS = FLASH SENSE
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

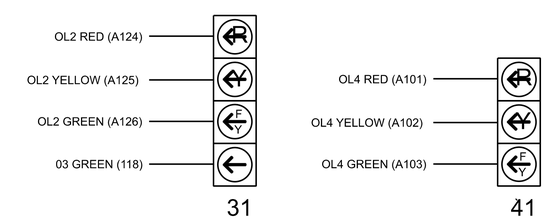
LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT POINT	DETECTOR NO.	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN
1A	-	-	-	*	33	1	3.0		X		X	
2A	-	-	-	*	38	2			X		X	
3A	-	-	-	*	34	3	15.0		X		X	
				-	126	8	3.0		X		X	
4A	-	-	-	*	44	4			X		X	
4B	-	-	-	*	45	4			X		X	
5A	-	-	-	*	35	5			X		X	
5B	-	-	-	*	51	5	15.0		X		X	
6A	-	-	-	*	54	6			X		X	
8A	-	-	-	*	60	8			X		X	
8B	-	-	-	*	61	8			X		X	

*For Input Point numbers, see SDLC Non-Intrusive Detection Chart this sheet.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



SPECIAL DETECTOR NOTE

Install a multizone 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.

SDLC NON-INTRUSIVE DETECTION CHART

	Detector Rack #3		Detector Rack #4	
Input Point	Det # (Index)	Detector Zone	Det # (Index)	Detector Zone
1	33	1A	49	NU
2	34	3A	50	NU
3	35	5A	51	5B
4	36	NU	52	NU
5	37	NU	53	NU
6	38	2A	54	6A
7	39	NU	55	NU
8	40	NU	56	NU
9	41	NU	57	NU
10	42	NU	58	NU
11	43	NU	59	NU
12	44	4A	60	8A
13	45	4B	61	8B
14	46	NU	62	NU
15	47	NU	63	NU
16	48	NU	64	NU

NU = Not Used

LOAD RESISTOR INSTALLATION DETAIL

(install resistor as shown)

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

HNTB NORTH CAROLINA, P.C.
4000 Center at North Hills St
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Raleigh, North Carolina 27609
NC License No: C-1554
(919) 546-8997

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 13-0184T2
DESIGNED: FEBRUARY 2026
SEALED: 05/12/2026
REVISED:

Signal Upgrade -
Eletrical Detail - Sheet 1 of 2
(Construction Phase 2)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:

Traffic Engineering Mobility and Safety Division
Traffic Signals Management Section
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

750 N. Greenfield Pkwy, Garner, NC 27529

US 74 Alt
(College Ave/Railroad Ave)
at
US 221 Alt-US 74 Bus (Charlotte Rd)

Division 13 | Rutherford County | Rutherfordton

PLAN DATE:	February 2026	REVIEWED BY:	N. K. Vlanich
PREPARED BY:	E.E. Tiller	REVIEWED BY:	N. R. Simmons

REVISIONS	INIT.	DATE

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 031464 ENGINEER NATASHA R. SIMMONS

DocuSigned by:
Natasha R. Simmons 5/12/2026
SIGNATURE DATE

SIG. INVENTORY NO. 13-0184T2