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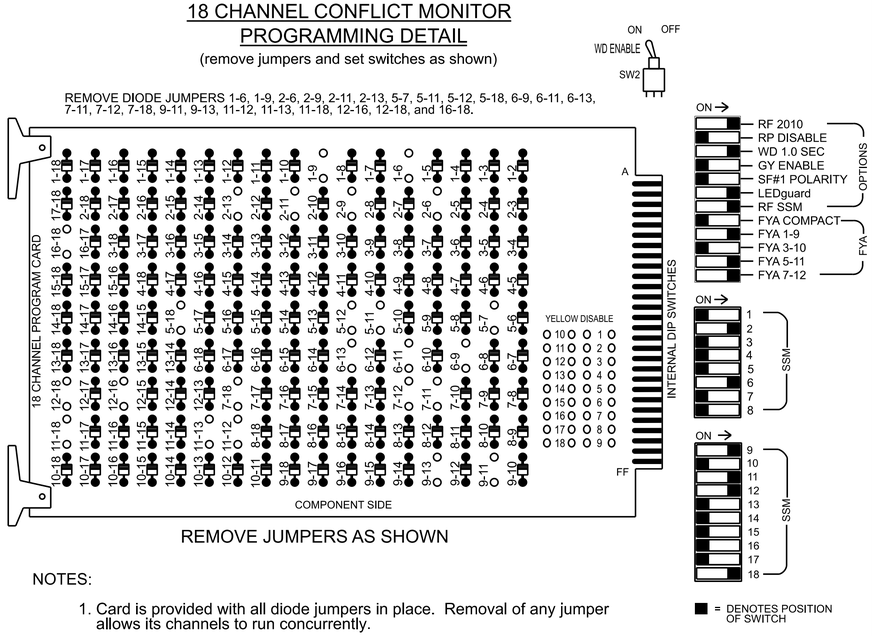
PROJECT REFERENCE NO.	SHEET NO.
HL-0065	Sig. 15.1

18 CHANNEL CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 1-6, 1-9, 2-6, 2-9, 2-11, 2-13, 5-7, 5-11, 5-12, 5-18, 6-9, 6-11, 6-13, 7-11, 7-12, 7-18, 9-11, 9-13, 11-12, 11-13, 11-18, 12-16, 12-18, and 16-18.



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 controller to start up in phase 2 Green No Walk and 6 Green No Walk.
3. If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.

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, S3, S7, S8, S10, S12, AUX S1, AUX S4, AUX S5, AUX S6
Phases Used.....1, 2, 2PED, 3*, 3 PED, 4*, 6
Overlap "1".....**
Overlap "2".....Not Used
Overlap "3".....**
Overlap "4".....**
Overlap "5".....Not Used
Overlap "6".....**
Overlap "7".....**
Overlap "8".....**

*Timing purposes only
**See overlap programming detail on sheet 2

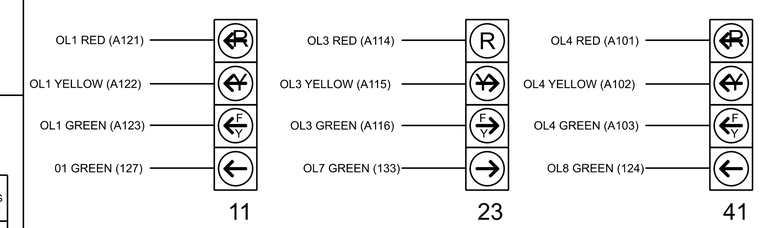
SIGNAL HEAD HOOK-UP CHART

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	OL7	6	6 PED	OL8	8	3 PED	OL1	OL2	OL5	OL3	OL4	OL6
SIGNAL HEAD NO.	11★	21,22	P21, P22	NC	NC	NU	23★	61,62	NU	41★	NU	P31, P32	11★	NU	NU	23★	41★	42
RED		128						134								A114		A104
YELLOW	*	129					*	135		*								
GREEN		130						136										
RED ARROW													A121				A101	
YELLOW ARROW													A122			A115	A102	A105
FLASHING YELLOW ARROW													A123			A116	A103	
GREEN ARROW	127						133			124								A106
✋			113									110						
🚶			115									112						

NU = Not Used
NC = Not Connected
* 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)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	Ø 1 1A	Ø 2 2A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	Ø 4 4A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	Ø 2 PED DC ISOLATOR	NOT USED	FS DC ISOLATOR
	L	NOT USED	NOT USED				Ø 4 4B						NOT USED	Ø 3 PED DC ISOLATOR	ST DC ISOLATOR
FILE "J"	U	SLOT EMPTY	Ø 6 6A	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		NOT USED												

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	15.0		X		X	
					29	6	-		X		X	
2A	TB2-5,6	I2U	39	1	2	2			X		X	
4A	TB4-9,10	I6U	41	3	8	4	3.0		X		X	
4B	TB4-11,12	I6L	45	7	9	4	10.0		X		X	
6A	TB3-5,6	J2U	40	2	16	6			X		X	
PED PUSH BUTTONS												
P21;P22	TB8-4,6	I12U	67	33	2	PED 2						
P31;P32	TB8-8,9	I13L	70	36	8	PED 3						

NOTE:
INSTALL DC ISOLATORS IN INPUT FILE SLOT I12.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

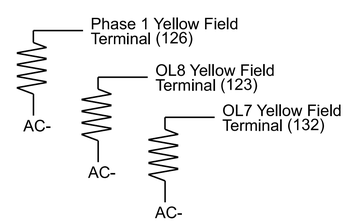
COUNTDOWN PEDESTRIAN SIGNAL OPERATION

Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.

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)



THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 13-0173
DESIGNED: FEBRUARY 2026
SEALED: 05/12/2026
REVISED:

HNTB
HNTB NORTH CAROLINA, P.C.
4000 Center at North Hills St
Suite 500
Raleigh, North Carolina 27609
NC License No: C-1554
(919) 546-8997

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:
Traffic Engineering, Mobility and Safety Division
Traffic Control & Signals Management Section
750 N. Greenfield Pkwy, Garner, NC 27529

US 221 Alt-US 74 Bus (Main St)
at
SR 2169 (Oakland Rd)/
Kentucky Street

Division 13 Rutherford County Spindale

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. 13-0173