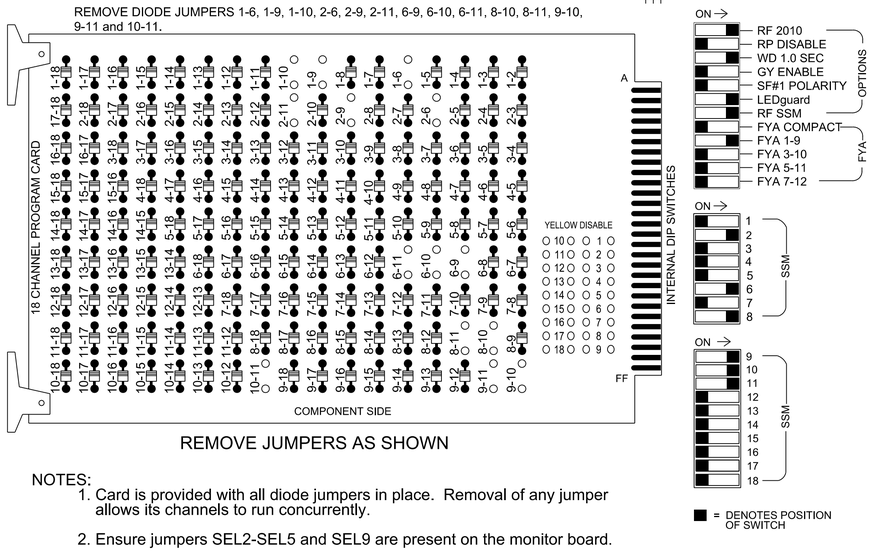
PROJECT REFERENCE NO.	SHEET NO.
U-5810	Sig. 5.1

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.
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. Program controller to start up in phase 2 Green No Walk and phase 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.
4. This cabinet and controller are part of the D11-03_Boone Signal 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, S8, S11, AUX S1, AUX S2, AUX S4
Phases Used.....1, 2, 6, 8
Overlap "1".....*
Overlap "2".....*
Overlap "3".....*
Overlap "4".....NOT USED

*See overlap programming detail on sheet 2

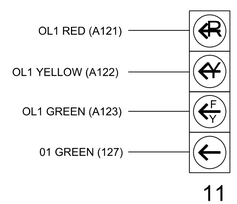
SIGNAL HEAD HOOK-UP CHART

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★	21,22	NU	NU	NU	NU	NU	61,62	NU	NU	81,82	NU	11★	83,84	NU	23	NU	NU
RED		128						134						A124		A114		
YELLOW	*	129						135										
GREEN		130						136										
RED ARROW											107		A121					
YELLOW ARROW											108		A122	A125		A115		
FLASHING YELLOW ARROW													A123					
GREEN ARROW	127										109			A126		A116		
✋																		
🚶																		

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)

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

For loop 1A, detector card placement is typical for a NCDOT Installation. Detectors associated with these slots are compatible with the Detector Programming Detail located on Sheet 2 of this electrical detail.

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	

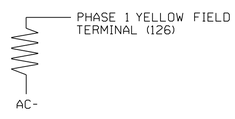
★For the detectors to work as shown on the signal design plan, see the Detector Programming Detail for Alternate Phasing on sheet 2.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

LOAD RESISTOR INSTALLATION DETAIL

(install resistor as shown below)

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 zones 1A, 2A, 6A, 8A, 8B, 8C, and 8D. Perform installation according to manufacturer's directions and NCDOT engineer -approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 11-1055
DESIGNED: April 2026
SEALED: 04/23/2026
REVISED:

Signal Upgrade - Final Design
Electrical Detail - Sheet 1 of 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Transportation Mobility and Safety Division
Department of North Carolina Transportation
Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 421
at
SR 1514 (Bamboo Road)

Division 11 Watauga County near Boone

PLAN DATE: April 2026	REVIEWED BY: DT Sears
PREPARED BY: WP Erickson-Jones	REVIEWED BY: C Silver

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 056142 ENGINEER W. PORTER JONES
Docusigned by: Porter Jones
DOBF13F3A0F04D8...
SIGNATURE 4/23/2026 DATE
SIG. INVENTORY NO. 11-1055

4/23/2026
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