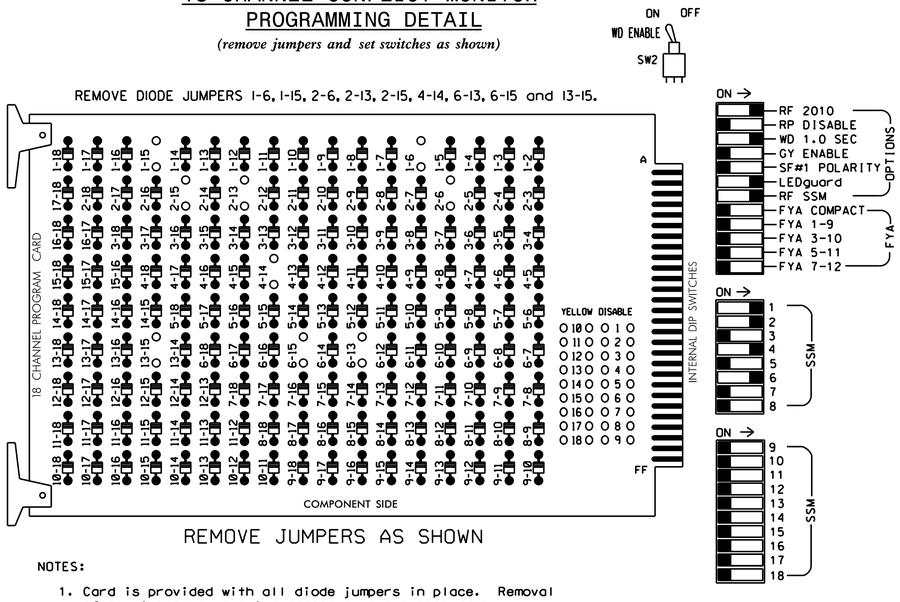
Docusign Envelope ID: EFF8A1FE-DDBC-4645-B7E4-7BBB1FE0CB7F

PROJECT REFERENCE NO.	SHEET NO.
U-5777	Sig. 7.1

18 CHANNEL CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



■ = DENOTES POSITION OF SWITCH

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 Red Enable is active at all times during normal operation.
4. Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

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 Plans.
2. Return controller to Factory Defaults before programming per this electrical detail.
3. Program controller to start up in phases 2 and 6 Green/Don't Walk.
4. Enable Simultaneous Gap-Out feature for all phases.
5. Program phases 2 and 6 for volume density operation.
6. The cabinet and controller are part of the Hickory City Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070LX
CABINET.....332 W/ AUX
SOFTWARE.....SE-PAC2070 VER. 5.4
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S1,S2,S3,S5,S6,S8,S9
PHASES USED.....1,2,2 PED,4,4 PED,6,6 PED
OVERLAP "A".....NOT USED
OVERLAP "B".....NOT USED
OVERLAP "C".....NOT USED
OVERLAP "D".....NOT USED

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	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11,12	21	22	P21, P22	NU	41,42	P41, P42, P43, P44	NU	61	62	P61, P62	NU	NU	NU	NU	NU	NU	NU	NU	NU
RED		128	128			101			134	134										
YELLOW		129	129			102			135	135										
GREEN			130			103			136											
RED ARROW	125																			
YELLOW ARROW	126																			
FLASHING YELLOW ARROW																				
GREEN ARROW	127	130								136										
✋				113			104				119									
🚶				115			106				121									

NU = Not Used

INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	Ø1 1A	Ø1 1B	Ø2 2A	SLOT EMPTY	SLOT EMPTY	Ø4 4A	Ø4 4C	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	Ø2 PED DC ISOLATOR	Ø6 PED DC ISOLATOR	FS DC ISOLATOR
	L	NOT USED	NOT USED	Ø2 2B			Ø4 4B	NOT USED					Ø4 PED DC ISOLATOR	NOT USED	ST DC ISOLATOR
FILE "J"	U	SLOT EMPTY	Ø6 6A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	CH. 3 PRE-3	CH. 1 PRE-4	SLOT EMPTY
	L		Ø6 6B										CH. 4 PRE-5	CH. 2 UNUSED	

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

FS = FLASH SENSE
ST = STOP TIME
PRE = PREEMPT

4 CHANNEL EV OSP CARD INSERT CARD INTO SLOT J13

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	NEMA PHASE	DELAY TIME	EXTEND (STRETCH) TIME
1A	TB2-1,2	I1U	56	1	1	__	___
1B	TB2-5,6	I2U	39	3	1	__	___
2A	TB2-9,10	I3U	63	5	2	__	___
2B	TB2-11,12	I3L	76	6	2	__	___
4A	TB4-9,10	I6U	41	11	4	__	___
4B	TB4-11,12	I6L	45	12	4	10	___
4C	TB6-1,2	I7U	65	13	4	15	___
6A	TB3-5,6	J2U	40	21	6	__	___
6B	TB3-7,8	J2L	44	22	6	__	___
PED PUSH BUTTONS							
P21,P22	TB8-4,6	I12U	67	PED 2	2 PED		
P41,P42, P43,P44, PB45,PB46	TB8-5,6	I12L	69	PED 4	4 PED		
P61,P62	TB8-7,9	I13U	68	PED 6	6 PED		

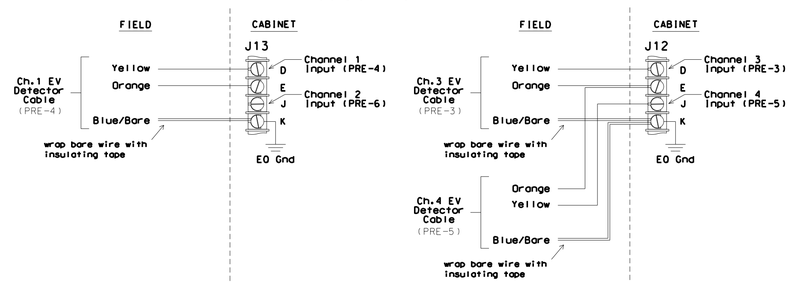
NOTE:
INSTALL DC ISOLATORS IN INPUT FILE SLOTS I12 AND I13.

ACCESSIBLE PEDESTRIAN SIGNAL (APS) INSTALLATION NOTES

1. Provide a dedicated pair of wires from the cabinet to each push button.
2. Mount Fail-Safe Interconnect Terminal Board on right rear side of cabinet (above service panel).
3. Wire push buttons and Central Control Unit (CCU) per APS Installation Manual Instructions.
4. Use Controller Receptacle to power CCU. Do Not use Equipment Receptacle which is a GCFI outlet.
5. Never attempt to operate a standard contact closure push button with the APS system unless cabinet is re-wired for standard button operation.
6. An APS push button station that is designed to work without the need for interfacing with a pedestrian signal head shall be installed for applications where a push button is installed in a median without a pedestrian signal head.
7. A push button with a single tactile arrow that points in both directions of travel shall be installed if the median separates two parallel crosswalks.

TYPICAL EV FIELD WIRE DETAIL

(input file, rear view)



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.

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

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 12-0945
DESIGNED: October 2023
SEALED: 09/06/2024
REVISED: N/A

Signal Upgrade-
Electrical Detail - Sheet 1 of 3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ITS & Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

NC 127 SE
at
SR 2231 (2nd Ave SE)

Division 12 Catawba County Hickory

PLAN DATE:	January 2024	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 9/6/2024
SIGNATURE DATE

SIG. INVENTORY NO. 12-0945

$$$$$SYSTIME$$$$$
$$$$$SYSDATE$$$$$
$$$$$USERDOC$$$$$
$$$$$USERNAME$$$$$