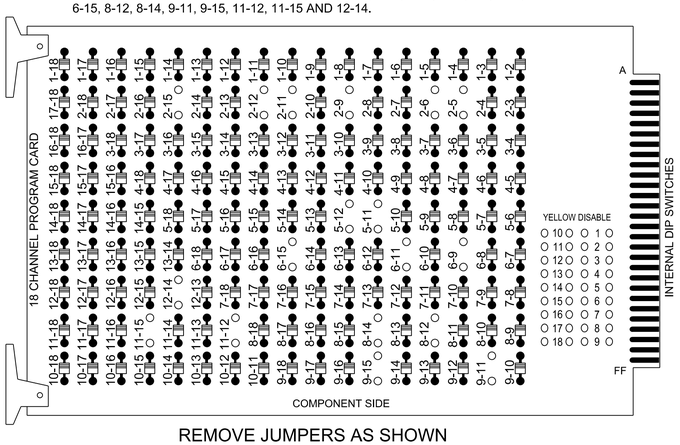
DocuSign Envelope ID: 8F366873-9B93-4429-91C2-7188E4B0B581

PROJECT REFERENCE NO.	SHEET NO.
I-2513 AA/AB	Sig. 4.2

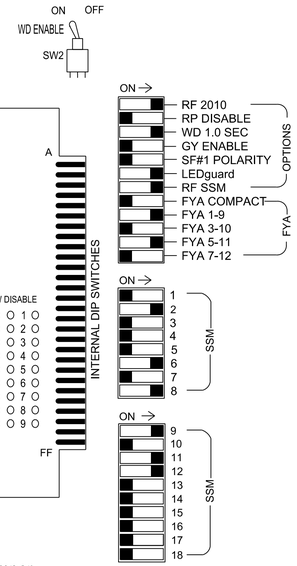
18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 2-5, 2-6, 2-9, 2-11, 2-12, 2-15, 5-11, 5-12, 6-9, 6-11, 6-15, 8-12, 8-14, 9-11, 9-15, 11-12, 11-15 AND 12-14.



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 phases 4 and 8 for Dual Entry.
3. Program controller to start up in phase 2 Green No Walk and 6 Green Walk.
4. The cabinet and controller are part of the Asheville 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.....S2, S6, S7, S8, S9, S11, AUX S1, AUX S4, AUX S5
Phases Used.....2, 4#, 4PED, 5, 6, 6PED,8
Overlap "1".....*
Overlap "2".....NOT USED
Overlap "3".....*
Overlap "4".....*

*See overlap programming detail on sheet 2
#Phase used for timing only.

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	BLANK-OUT SIGN	5	6	6 PED	7	8	8 PED	OL1	OL2	SPARE	OL3	OL4	SPARE
SIGNAL HEAD NO.	NU	21	22	NU	NU	NC	P41, P42	***	51★	61,62	P61, P62	NU	81,82 83	NU	63★	NU	NU	51★	41,42	NU
RED		128	128							134			107		A121				A101	
YELLOW		129	129						*	135										
GREEN		130								136										
RED ARROW																		A114		
YELLOW ARROW													108		A122			A115	A102	
FLASHING YELLOW ARROW															A123			A116		
GREEN ARROW			130						133				109						A103	
✋							104				119									
PED YELLOW								105												
🚶							106				121									

NC = Not Connected
NU = Not Used
* Denotes install load resistor. See load resistor installation detail this sheet.
★ See pictorial of head wiring in detail this sheet.
*** See Blankout Sign Notes on Sheet 2.

INPUT FILE POSITION LAYOUT

(front view)

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

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

FS = FLASH SENSE
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

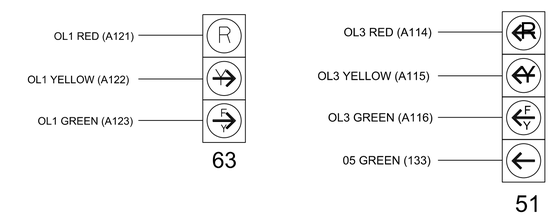
LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT POINT	DETECTOR NO.	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN
2A	TB2-5,6	I2U	39	1	2	2		1.3	X		X	
2B	TB2-7,8	I2L	43	5	3	2		1.3	X		X	
2C	TB2-9,10	I3U	63	29	4	2			X		X	
2D	TB2-11,12	I3L	76	42	5	2			X		X	
5A	TB3-1,2	J1U	55	17	15	5	15		X		X	
				-	31	2			X		X	
6A	TB3-5,6	J2U	40	2	16	6		1.3	X		X	
6B	TB3-7,8	J2L	44	6	17	6		1.3	X		X	
6C	TB3-9,10	J3U	64	30	18	6			X		X	
6D	TB3-11,12	J3L	77	43	19	6			X		X	
8A	TB5-9,10	J6U	42	4	22	8			X		X	
8B	TB5-11,12	J6L	46	8	23	8			X		X	
5B	TB7-9,10	J9U	59	21	27	5			X		X	
5C	TB7-11,12	J9L	61	23	28	5			X		X	
PED PUSH BUTTONS												
P41,P42	TB8-5,6	I12L	69	35	4	PED 4						
P61,P62	TB8-7,9	I13U	68	34	6	PED 6						

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

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



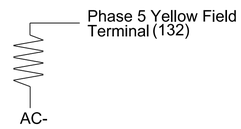
COUNTDOWN PEDESTRIAN SIGNAL OPERATION

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 resistor 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: 13-0468
DESIGNED: December 2023
SEALED: 12/5/2023
REVISED:

AECOM
NC Firm License No.: F-0342
5438 Wade Park Boulevard
Suite 200 Raleigh, NC 27607
Phone: 919-461-1100

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

US 19-23 (Smokey Park Highway)
at
I-40 WB Ramps

Division 13 Buncombe County Asheville

PLAN DATE: December 2023	REVIEWED BY: J O Deaton
PREPARED BY: M W Yalch	REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 07438 ENGINEER JAMES O. DEATON

DocuSigned by:
James O. Deaton 12/5/2023
SIGNATURE DATE
DOCUSIGNED BY
SIG. INVENTORY NO. 13-0468

12/5/2023
pw:\\aecom-na-pw.bentley.com:AECOM_DS21_NA_2020\Documents\60646756-I-2513A\900-CAD GIS\910_CAD\70_NCDOT_TIP\Signals\Design\AA_AB\Electrical Details_2023\100% Submittal\13-0468_sm_ele_20231205.dgn
TindoIM