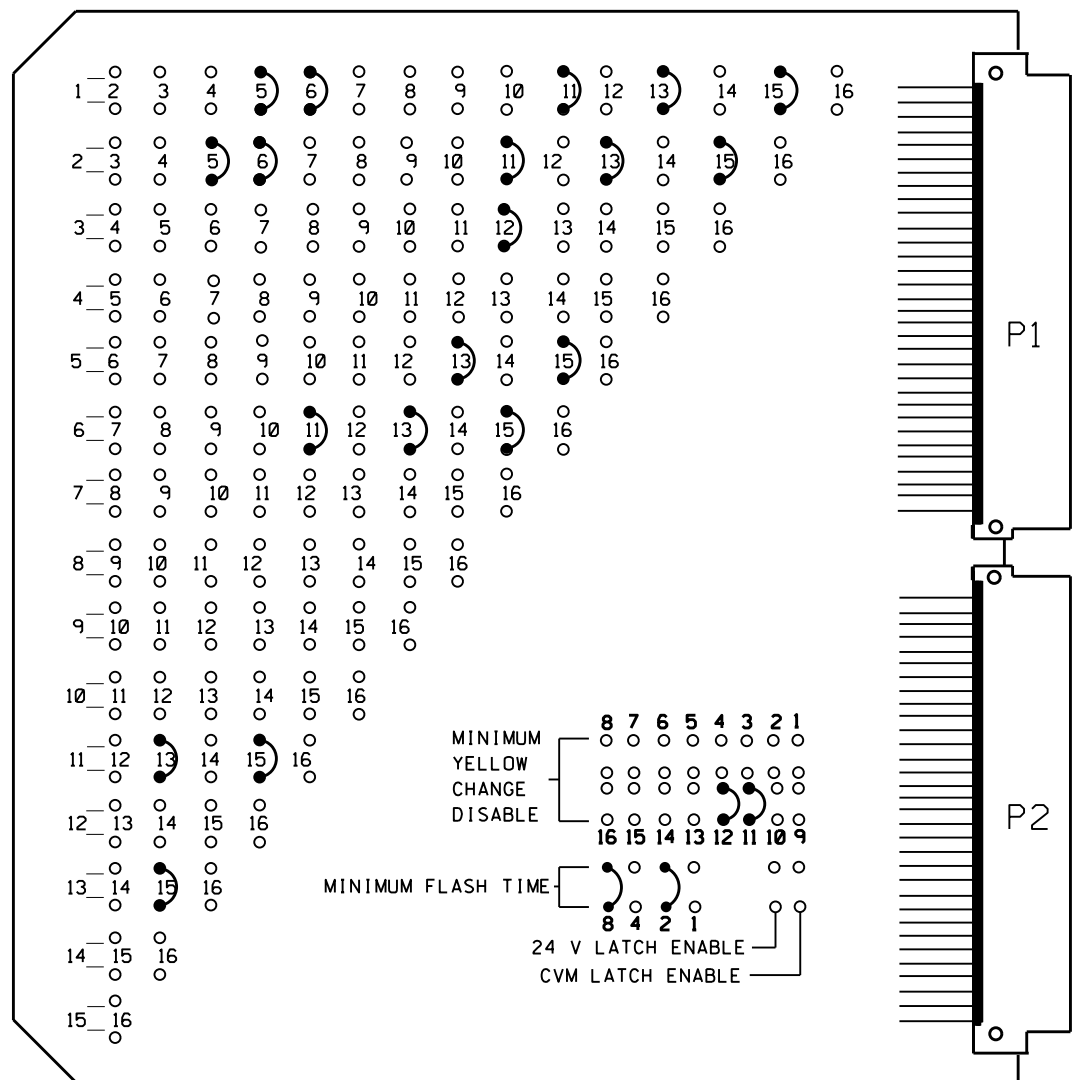


### EDI MODEL MMU2-16LEip MALFUNCTION MANAGEMENT UNIT PROGRAMMING DETAIL

(program card and tables as shown below)



CHANNEL NUMBER	ENABLE/DISABLE
1	ENABLE
2	ENABLE
3	ENABLE
4	ENABLE
5	DISABLE
6	ENABLE
7	DISABLE
8	DISABLE
9	DISABLE
10	DISABLE
11	ENABLE
12	ENABLE
13	ENABLE
14	DISABLE
15	ENABLE
16	DISABLE

OPTION	SETTING
RECURRENT PULSE	ON
WALK DISABLE	OFF
LOG CVM FAULTS	ON
EXTERN WATCHDOG	OFF
24V-2=12VDC	OFF
PGM CARD MEMORY	ON
LEDguard	ON
FORCE TYPE 16	OFF
TYPE12-SDLC	OFF
VM 3x/Day Latch	ON

FLASHING YELLOW ARROW	
CONFIG MODE	B
ENABLE CHANNEL PAIR, FYA	
CH 1-13	ON
CH 3-14	OFF
CH 5-15	ON
CH 7-16	OFF
RED/YEL INPUT ENABLE	
CH 1	ON
CH 3	OFF
CH 5	ON
CH 7	OFF
FLASH RATE FAULT	ON
FYA TRAP DETECT	ON

#### MMU PROGRAMMING CARD

**MMU PROGRAMMING NOTE**  
ENSURE YELLOW CHANGE PLUS RED CLEARANCE MONITORING IS ENABLED FOR ALL CHANNELS.

SIGNAL HEAD HOOK-UP CHART																
PHASE	1	2	3	4	5	6	7	8	2 PED	4 PED	6 PED	8 PED	OLA	OLB	OLC	OLD
SIGNAL HEAD NO.	11★	42	21,22	32	33,34 35	22	41	42,43	51★	61,62 63	NU	NU	NU	NU	51★	NU
RED	*	2R	3R	4R	4R	*	6R									
YELLOW		2Y	3Y	4Y	4Y	*	6Y									
GREEN		2G	3G	4G	4G		6G									
RED ARROW			3R										13R	15R		
YELLOW ARROW		1Y	3Y	4Y									13Y	15Y		
FLASHING YELLOW ARROW													13G	15G		
GREEN ARROW	1G	1G	3G	4G	4G		5G									
Hand icon													11R	12R		
Person icon													11G	12G		

NU = Not Used  
\* Denotes install load resistor. See Load Resistor Installation Detail on sheet 3.  
★ See pictorial of head wiring detail this sheet.  
NOTE: Signal head 31 has been disconnected and bagged but still hangs on the span.

#### DETECTOR RACK SET-UP DETAIL

INSERT DETECTOR CARDS IN RACK ACCORDING TO THE DETAIL SHOWN BELOW. PARTICULAR DETECTOR CHANNELS WILL CALL PHASES INDICATED.

RACK #1	BIU	SLOT	CH1	SLOT	CH1	SLOT	CH1	SLOT	SLOT	SLOT	SLOT	SLOT
		L1	∅ 1	NOT USED	L5	∅ 5	L15	∅ 3				
		L2	∅ 6		L6	∅ 3	L10	∅ 2				
		L3			L9		L16					
		L4			L12							
		L5			L13							
		L6			L14							
		L7			L15							
		L8			L16							
		L9										
		L10										
		L11										
		L12										
		L13										
		L14										
		L15										
		L16										

WIRE LOOPS TO TERMINALS ON LOOP PANEL AS SHOWN IN THE CHART BELOW

LOOP NO.	LOOP PANEL TERMINALS
1A	L1A, L1B
	L2A, L2B
NU	L3A, L3B
NU	L4A, L4B
NU	L5A, L5B
3C	L6A, L6B
NU	L7A, L7B
NU	L8A, L8B
5A	L9A, L9B
	L10A, L10B
NU	L11A, L11B
NU	L12A, L12B
NU	L13A, L13B
NU	L14A, L14B
7B	L15A, L15B
NU	L16A, L16B

PROGRAM CONTROLLER DETECTORS ACCORDING TO THE SCHEDULE SHOWN IN THE CHART BELOW

CONTROLLER DETECTOR NO.	FUNCTION	TIMING	
		FEATURE	TIME (SEC)
1	∅ 1	DELAY	15
* 2	∅ 6	DELAY	3
3			
4			
5			
6	∅ 3	DELAY	10
7			
8			
9	∅ 5	DELAY	15
* 10	∅ 2	DELAY	3
11			
12			
13			
14			
15	∅ 3		
16			

\* Detector Type - G (remove delay from existing detector card)

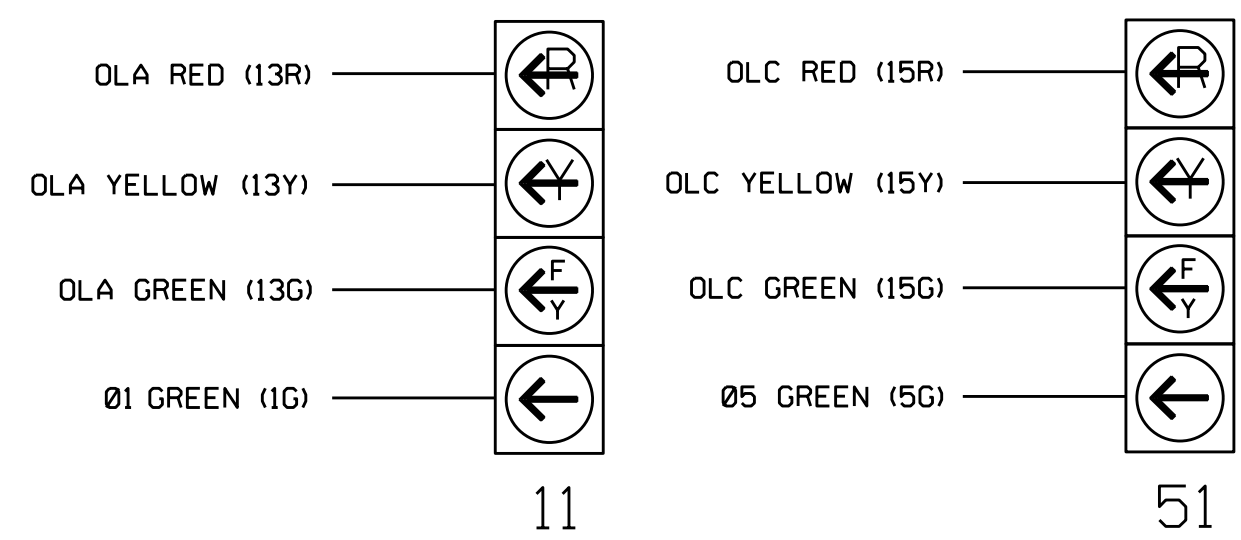
#### SPECIAL DETECTOR NOTE

Install a video 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 for zones 1A, 1B, 1C, 2A, 2B, 4A, 5A, 6A, and 6B.

For Detection Zones 1A and 5A, the equipment placement and slots reserved for wired inputs are typical for a NCDOT installation.

#### FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 05-1726T3  
DESIGNED: March 2019  
SEALED: 7/24/2019  
REVISED: N/A

#### EQUIPMENT INFORMATION

CONTROLLER.....2070EN2  
CABINET .....NC-8 [TS-2]  
SOFTWARE .....ECONOLITE ASC/3-2070  
CABINET MOUNT.....BASE  
LOADBAY POSITIONS.....16  
LOAD SWITCHES USED.....1,2,3,4,5,6,11,12,13,15  
PHASES USED.....1,2,3,3PED,4,5,6,6PED  
OLA.....\*  
OLB.....NOT USED  
OLC.....\*  
OLD.....NOT USED  
\* SEE OVERLAP PROGRAMMING DETAIL ON SHEET 2

#### LOAD SWITCH ASSIGNMENT DETAIL

(program controller according to schedule in chart below)

LOAD SWITCH NUMBER	FUNCTION
1	∅ 1
2	∅ 2
3	∅ 3
4	∅ 4
5	∅ 5
6	∅ 6
7	∅ 7
8	∅ 8
9	∅ 2 PED
10	∅ 4 PED
11	∅ 6 PED
12	∅ 3 PED
13	OLA
14	OLB
15	OLC
16	OLD

#### NOTES

- To prevent "flash-conflict" problems, wire all unused load switches to flash red. Verify that signal heads flash in accordance with the signal plans.
- To prevent red failures on unused monitor channels, tie unused load switch red outputs 7,8,9,10,14, and 16 to load switch AC+ by inserting a jumper plug in the unused load switch socket from pin 1 (LS AC+) to pin 3 (RED out). Make sure all flash transfer relays are in place.
- Program controller to start up in phase 2 Green and 6 Walk.
- Set power-up flash time to 10 seconds and implement on the Malfunction Management Unit. Set controller power-up flash time to 0 seconds.
- Enable simultaneous gap-out feature for all phases.
- Program detectors in accordance with the manufacturer's instructions to accomplish the detection schemes shown on the signal design plans.
- Program detector call delay and extension timing on the controller, unless otherwise specified.
- Set all detector card unit channels to "presence" mode.
- Program phases 2 and 6 for volume density operation.
- The cabinet and controller are a part of the Cary Signal System.

Electrical Detail - Temp 3 (TMP Phase III, Step A)  
Sheet 1 of 3

Prepared In the Offices of:  
N.C. TRANSPORTATION TRUST  
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Signal Management Section  
750 N. Greenfield Pkwy, Garner, NC 27529

SR 3015 (Airport Blvd.)  
at  
Factory Shops Road/  
Aerial Center Parkway  
Division 5 Wake County Morrisville  
PLAN DATE: May 2019 REVIEWED BY:  
PREPARED BY: S. Armstrong REVIEWED BY:  
REVISIONS INIT. DATE  
DocuSigned by:  
Ryan W. Hough 8/1/2019  
430320FAA2654C3 DATE  
SIG. INVENTORY NO. 05-1726T3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED  
SEAL  
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036833  
8/1/2019