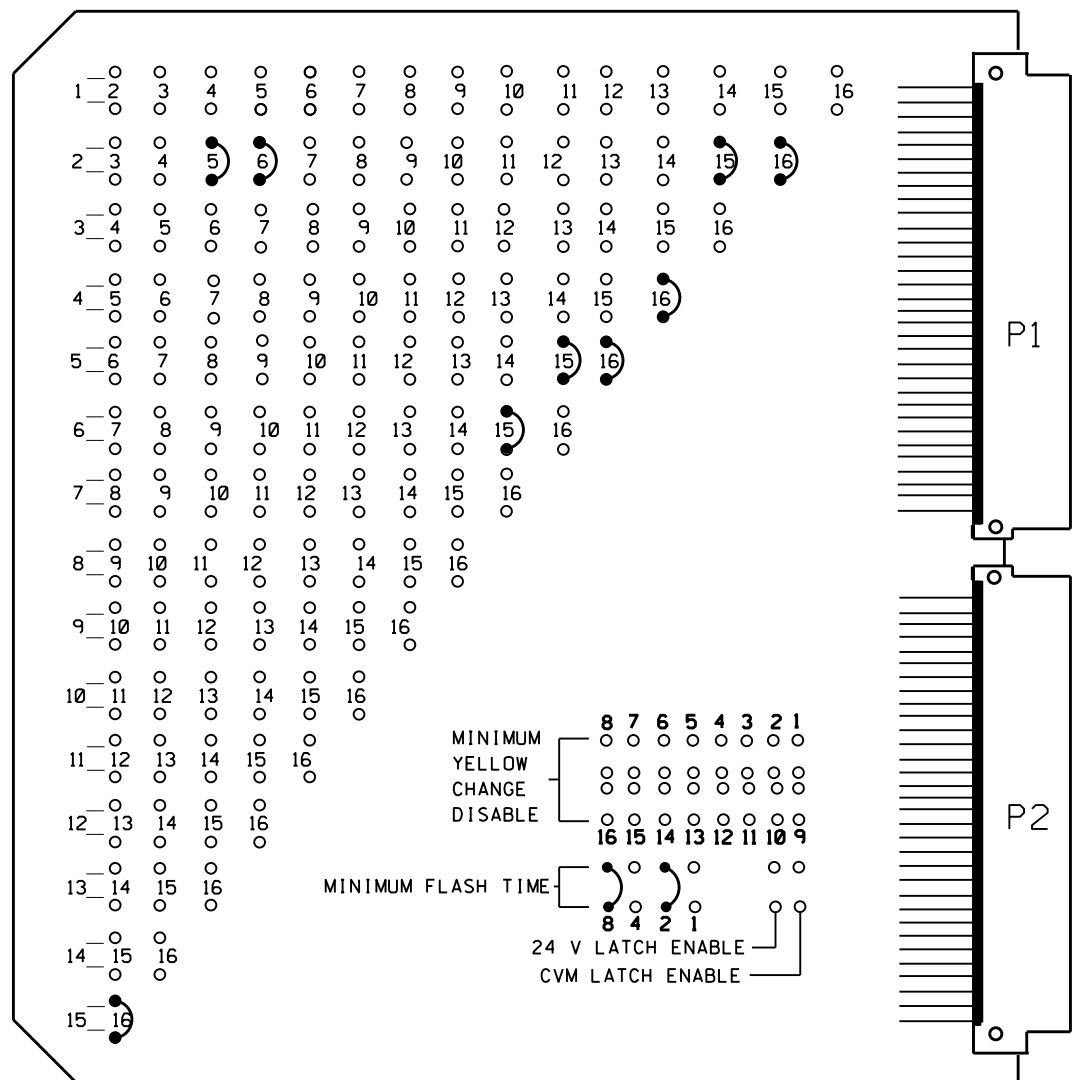


**EDI MODEL MMU2-16LEip
MALFUNCTION MANAGEMENT UNIT
PROGRAMMING DETAIL**

(program card and tables as shown below)



FIELD CHECK ENABLE

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

UNIT OPTIONS

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

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

MMU PROGRAMMING CARD

- 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 1,3,7,8,9,10,11,12,13, and 14 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 Green.
 - 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.

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.	NU	21,22	NU	41	51★	61,62 63	NU	NU	NU	NU	NU	NU	NU	NU	51★	42,43
RED		2R			*	6R										16R
YELLOW		2Y			*	6Y										
GREEN		2G				6G										
RED ARROW				4R												15R
YELLOW ARROW				4Y												15Y 16Y
FLASHING YELLOW ARROW																15G
GREEN ARROW				4G	5G											16G

NU = Not Used
★ See pictorial of head wiring detail this sheet.
* Denotes install load resistor. See load resistor installation detail on sheet 2.

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	CH1	CH1	CH1	CH1	SLOT	CH1	SLOT	SLOT	SLOT	SLOT	SLOT
	L3	L1	L7	L5		L9					
	∅ 4	∅ 2	∅ 5	∅ 5		∅ 5					
	**	**		*							
	CH2	CH2	CH2	CH2	EMPTY	CH2	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY
	L4	L2	L8	L6		L10					
	NOT USED	∅ 2	∅ 5	∅ 2		NOT USED					
	**	**		*							

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

LOOP NO.	LOOP PANEL TERMINALS
2A	L1A, L1B
2B	L2A, L2B
4A	L3A, L3B
NU	L4A, L4B
5A	L5A, L5B
5B	L6A, L6B
5C	L7A, L7B
5D	L8A, L8B
5E	L9A, L9B
NU	L10A, L10B
NU	L11A, L11B
NU	L12A, L12B
NU	L13A, L13B
NU	L14A, L14B
NU	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	∅ 2		
** 2	∅ 2		
3	∅ 4		
4			
5	∅ 5	DELAY	15
* 6	∅ 2	DELAY	3
7	∅ 5	DELAY	15
8	∅ 5	DELAY	15
9	∅ 5	DELAY	15
10			
11			
12			
13			
14			
15			
16			

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

SPECIAL DETECTOR NOTE

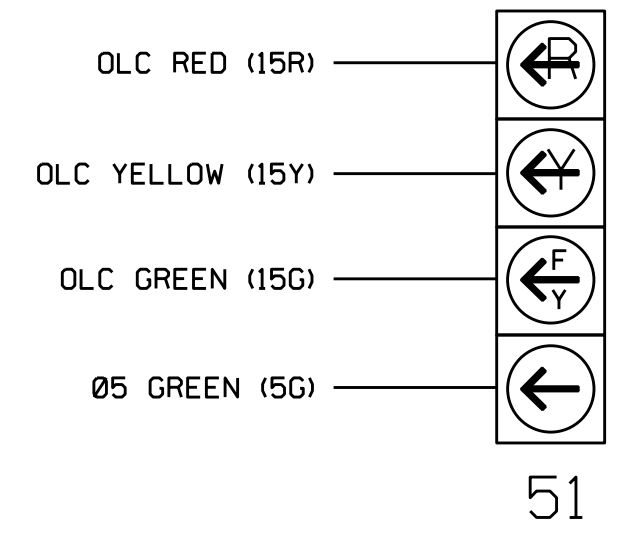
Install a video detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans for zones 6A, 6B, and 6C.

EQUIPMENT INFORMATION

CONTROLLER.....2070EN2
CABINETNC-8 [TS-2]
SOFTWAREECONOLITE ASC/3-2070
CABINET MOUNT.....BASE
LOADBAY POSITIONS.....16
LOAD SWITCHES USED.....2,4,5,6,15,16
PHASES USED.....2,4,5,6
OLA.....NOT USED
OLB.....NOT USED
OLC.....*
OLD.....4+5
* SEE OVERLAP PROGRAMMING DETAIL ON SHEET 2

FYA SIGNAL WIRING DETAIL

(wire signal head as shown)



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	∅ 8 PED
13	OLA
14	OLB
15	OLC
16	OLD

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 05-1906T4
DESIGNED: March 2019
SEALED: 7/24/2019
REVISED: N/A

Electrical Detail - Temp 4 (TMP Phase IV)
Sheet 1 of 2

SR 3015 (Airport Blvd.)
at
SR 1789
(Pleasant Grove Church Rd.)

Division 5 Wake County Cary

PLAN DATE: November 2015 REVIEWED BY:
PREPARED BY: S. Armstrong REVIEWED BY:

REVISIONS INIT. DATE

Prepared in the Office of:
North Carolina Department of Transportation
Division of Transportation Planning
Signal Management Section

DocuSigned by:
Ryan W. Hough
430320FAA268453

8/1/2019
DATE

SIG. INVENTORY NO. 05-1906T4

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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