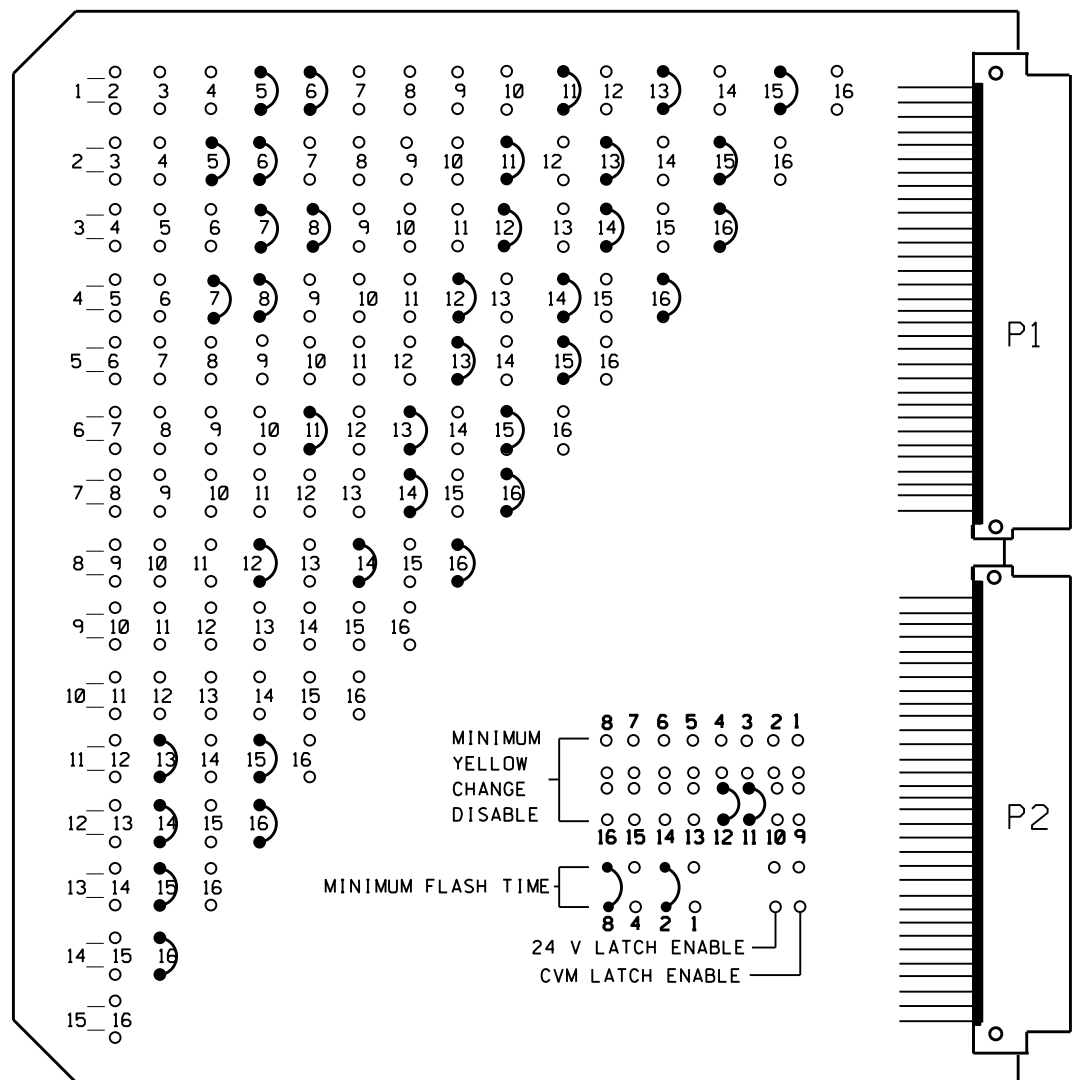


**EDI MODEL MMU2-16LEip
MALFUNCTION MANAGEMENT UNIT
PROGRAMMING DETAIL**

(program card and tables as shown below)



MMU PROGRAMMING CARD

**FIELD CHECK ENABLE
DUAL IND ENABLE
RED FAIL ENABLE**

CHANNEL NUMBER	ENABLE/DISABLE
1	ENABLE
2	ENABLE
3	DISABLE
4	ENABLE
5	DISABLE
6	ENABLE
7	DISABLE
8	ENABLE
9	DISABLE
10	DISABLE
11	ENABLE
12	ENABLE
13	ENABLE
14	ENABLE
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-SDLCL	OFF
VM 3x/Day Latch	ON

FLASHING YELLOW ARROW

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

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

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 9 and 10 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.
- Program phases 4 and 8 for dual entry.
- 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.	11★	82	21,22	31★	41,42,43	51★	61,62,63	71★	81,82,83	NU	NU	P61, P62	P81, P82	11★	31★	51★	71★
RED	*	2R	*	4R	*	6R	*	8R									
YELLOW		2Y	*	4Y	*	6Y	*	8Y									
GREEN		2G		4G		6G		8G									
RED ARROW														13R	14R	15R	16R
YELLOW ARROW		1Y												13Y	14Y	15Y	16Y
FLASHING YELLOW ARROW														13G	14G	15G	16G
GREEN ARROW	1G	1G		3G		5G		7G									
Hand														11R	12R		
Person														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.

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	CH1	CH1	SLOT	CH1	CH1	SLOT	SLOT	SLOT	SLOT
	EMPTY	L1	L7	L5	EMPTY	L9	L15	EMPTY	EMPTY	EMPTY	EMPTY
		∅ 1	∅ 3	NOT USED		∅ 5	∅ 3				
	EMPTY	CH2	CH2	CH2	EMPTY	CH2	CH2	EMPTY	EMPTY	EMPTY	EMPTY
		∅ 6	∅ 8	∅ 4		L10	L16				
		*					NOT USED				

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
4A	L6A, L6B
3A	L7A, L7B 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	∅ 4	DELAY	10
7	∅ 3	DELAY	15
8	∅ 8	DELAY	3
9	∅ 5	DELAY	15
* 10	∅ 2	DELAY	3
11			
12			
13			
14			
15	∅ 7		
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, 2A, 2B, 3A, 5A, 6A, 6B, and 8A.

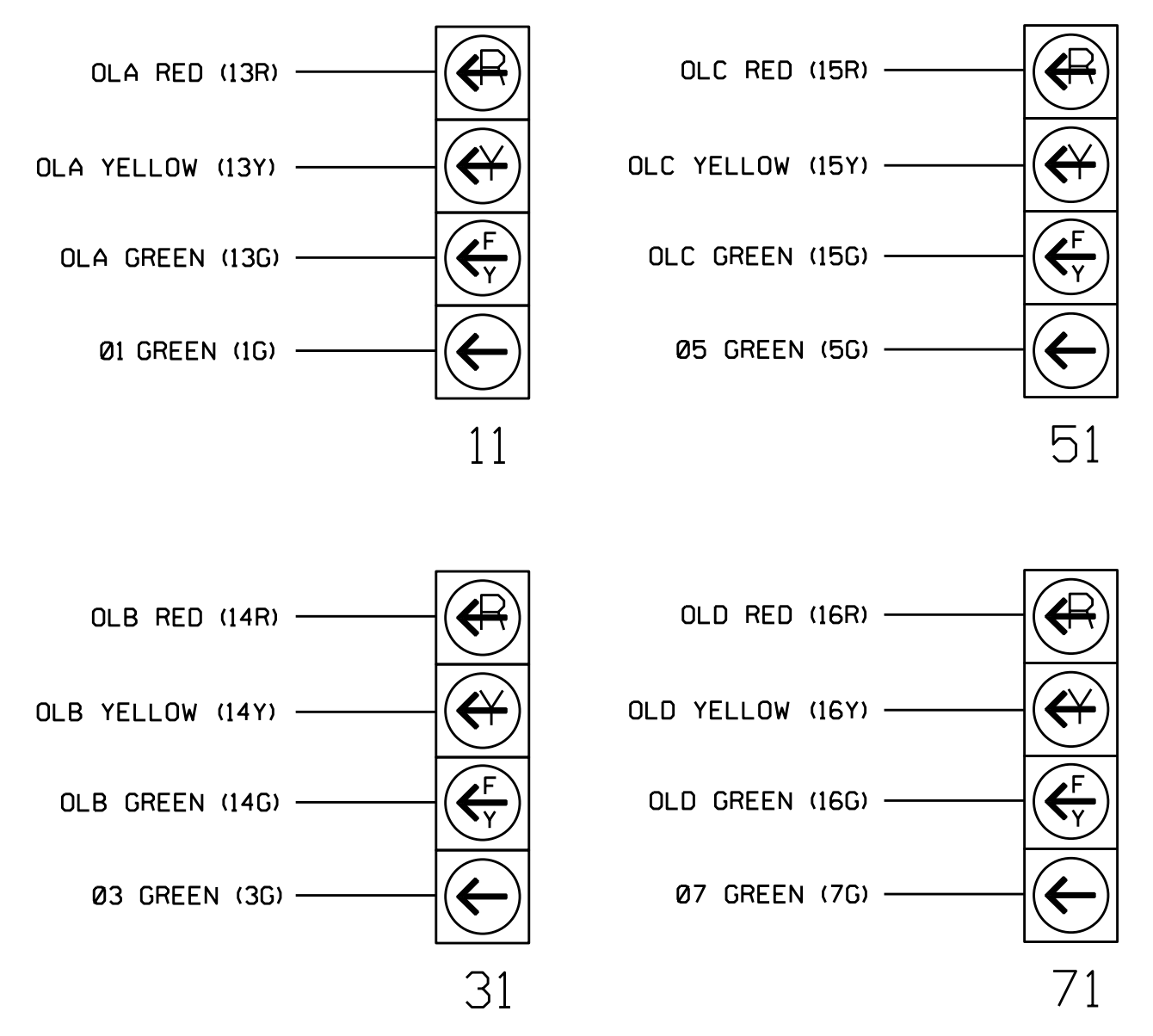
For Detection Zones 1A, 3A, and 5A, the equipment placement and slots reserved for wired inputs are typical for a NCDOT installation.

EQUIPMENT INFORMATION

CONTROLLER.....2070EN2
CABINETNC-8 [TS-2]
SOFTWAREECONOLITE ASC/3-2070
CABINET MOUNT.....BASE
LOADBAY POSITIONS.....16
LOAD SWITCHES USED.....1,2,3,4,5,6,7,8,11,12,13,14,15,16
PHASES USED.....1,2,3,4,5,6,6PED,7,8,8PED
OLA.....*
OLB.....*
OLC.....*
OLD.....*
* SEE OVERLAP PROGRAMMING DETAIL ON SHEET 2

FYA SIGNAL WIRING DETAIL

(wire signal heads 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: 05-1726T4
DESIGNED: March 2019
SEALED: 7/24/2019
REVISED: N/A

Electrical Detail - Temp 4 (TMP Phase III, Step B)
Sheet 1 of 3

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

750 N. Greenfield Pkwy, Garner, NC 27529

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
RYAN W. HOUGH
ENGINEER
036833

DocuSigned by: Ryan W. Hough 8/1/2019
430320FA2854C3 DATE

SIG. INVENTORY NO. 05-1726T4

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