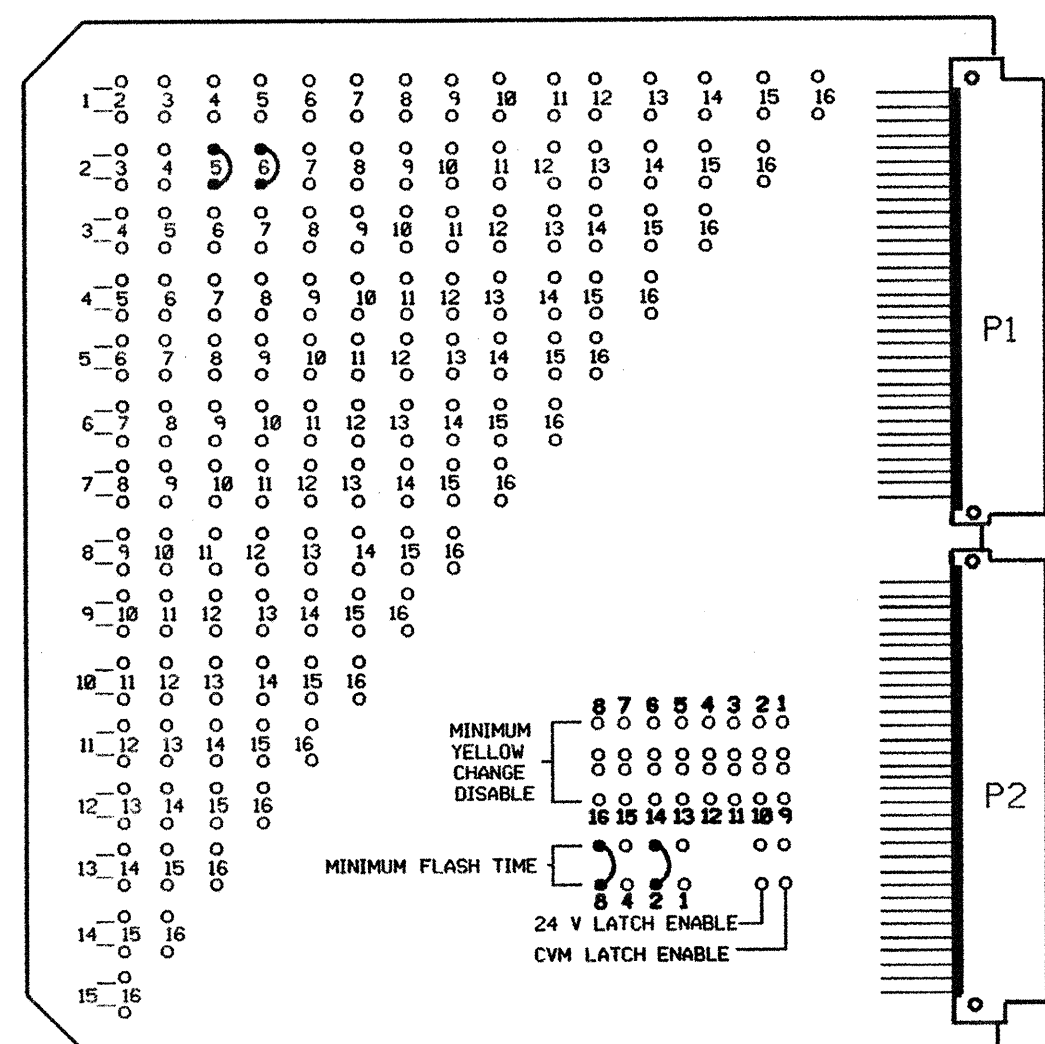


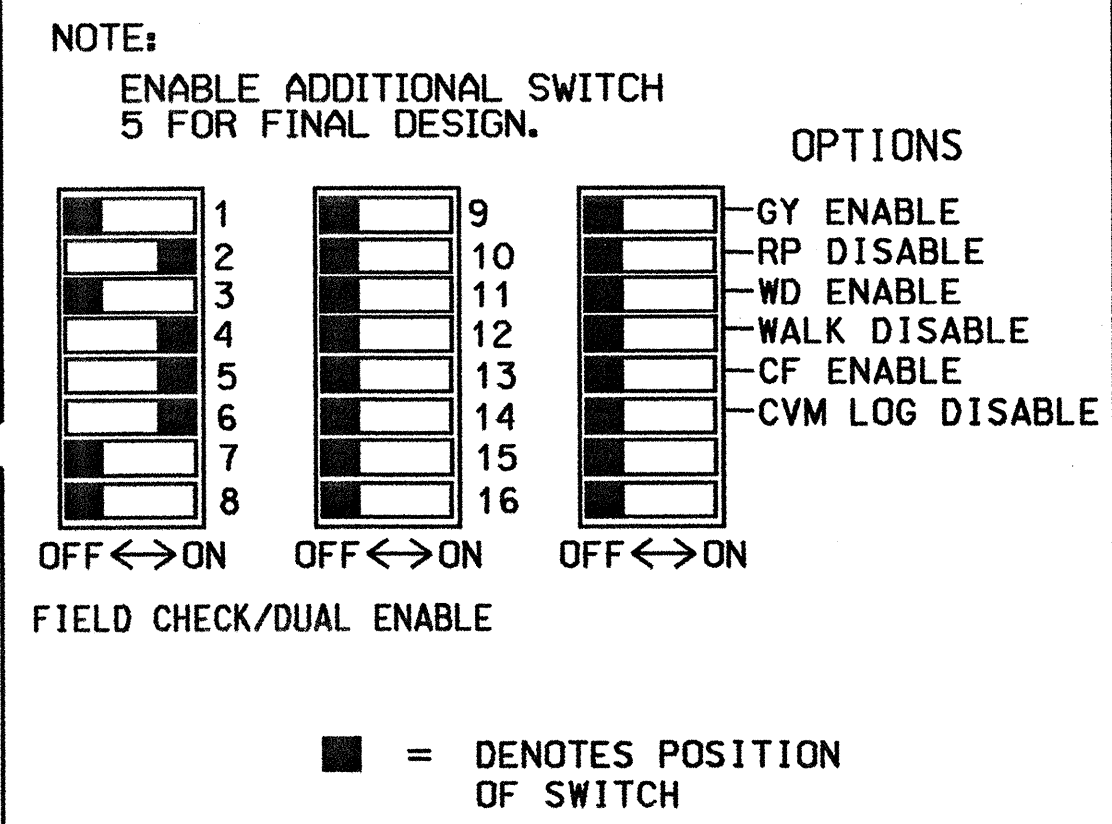
**EDI MODEL MMU-16E
MALFUNCTION MANAGEMENT UNIT
PROGRAMMING DETAIL**

(program card and set switches as shown below)

NOTE:
ADD JUMPER AT 2-5 FOR FINAL DESIGN.



MMU PROGRAMMING CARD



NOTES

1. TO PREVENT "FLASH-CONFLICT" PROBLEMS, WIRE ALL UNUSED LOAD SWITCHES TO FLASH RED. VERIFY THAT SIGNAL HEADS FLASH IN ACCORDANCE WITH THE SIGNAL PLANS.
2. TO PREVENT RED FAILURES ON UNUSED MONITOR CHANNELS, TIE UNUSED LOAD SWITCH RED OUTPUTS: 1, 3, 7, 8, 9, 10, 11, & 12 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.
3. PROGRAM THE CONTROLLER TO START UP IN PHASES 2 AND 6 GREEN.
4. SET POWER-UP FLASH TIME TO 10 SECONDS AND IMPLEMENT ON THE MALFUNCTION MANAGEMENT UNIT. SET CONTROLLER POWER-UP FLASH TIME TO 0 SECONDS.
5. ENABLE SIMULTANEOUS GAP-OUT FEATURE, ON CONTROLLER UNIT, FOR ALL PHASES.
6. SET ALL DETECTOR CARD UNITS TO 'PRESENCE' MODE.
7. PROGRAM DETECTOR CALL DELAY AND EXTENSION TIMING ON THE CONTROLLER UNLESS OTHERWISE SPECIFIED.

NOTE:
ADD NEW LOAD SWITCH IN LOAD BAY POSITION 5 FOR FINAL DESIGN.

FIELD CONNECTION HOOK-UP CHART

PHASE	1	2	3	4	5	6	7	8	2 PED	4 PED	6 PED	8 PED
SIGNAL HEAD NO.	NU	21,22	NU	41,42	63	21,42	61,62,63	NU	NU	NU	NU	NU
GREEN		2G		4G			6G					
YELLOW		2Y		4Y			6Y					
RED		2R		4R	*		6R					
RED ARROW												
YELLOW ARROW				4Y	5Y							
GREEN ARROW				4G	5G							

NU = NOT USED

* INSTALL LOAD RESISTOR ON LOAD SWITCH 5 RED FIELD TERMINAL. REFER TO LOAD RESISTOR INSTALLATION 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.

BIU	CH1	CH1	CH1	CH1	SLOT	CH1	SLOT	SLOT	SLOT	SLOT	SLOT
	L3 ø4	L1 ø2	L7 ø6	L5 ø5		L9 ø6					
					*						
	CH2	CH2	CH2	CH2	EMPTY	CH2	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY
	L4 ø4	L2 ø2	L8 ø6	L6 ø2		L10 ø2					

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

LOOP NO.	LOOP PANEL TERMINALS
2A,2B	L1A, L1B
2C,2D	L2A, L2B
4A	L3A, L3B
4B	L4A, L4B
5A	L5A, L5B L6A, L6B
6A,6B	L7A, L7B
6C,6D	L8A, L8B
6E	L9A, L9B
---	L10A, L10B
---	L11A, L11B
---	L12A, L12B
---	L13A, L13B
---	L14A, L14B
---	L15A, L15B
---	L16A, L16B

ADD JUMPERS FROM L5A TO L6A, AND L5B TO L6B

NOTE
BE SURE TO PROGRAM DETECTOR TYPES AND TIMERS (EXTEND AND DELAY) AS SHOWN ON THE SIGNAL PLANS.

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

CONTROLLER DETECTOR NO.	FUNCTION	TIMING	
		FEATURE	TIME (SEC)
1	ø2	EXTEND	2,3
2	ø2	---	---
3	ø4	---	---
4	ø4	DELAY	15
5	ø5	DELAY	15
6 *	ø2	DELAY	3
7	ø6	EXTEND	2,3
8	ø6	---	---
9 *	ø6	DELAY	3
10	---	---	---
11	---	---	---
12	---	---	---
13	---	---	---
14	---	---	---
15	---	---	---
16	---	---	---

* THIS DETECTOR IS EQUIPPED WITH DELAY AND EXTEND TIMER. PROGRAM THE TIMING REQUIRED FOR THIS DETECTOR CHANNEL ON THE DETECTOR UNIT, NOT THE CONTROLLER.

SPECIAL BACK-UP PROTECTION NOTES

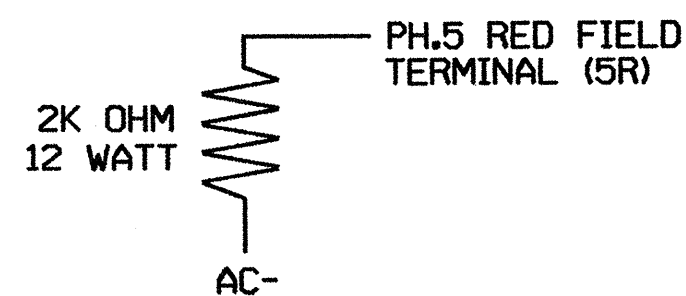
1. PROGRAM CONTROLLER TO OMIT PHASE 5 DURING PHASE 6 ON.
2. TO ACCOMPLISH BACK-UP FEATURE DESCRIBED IN NOTE 1, ENABLE 'BACK-UP PROTECTION GROUP 1' UNDER CONTROLLER SUBMENU 9: 'OPTION DATA'.

EQUIPMENT INFORMATION

* CONTROLLER.....CONTRACTOR SUPPLIED ECONOLITE ASC/2
 * CABINETCONTRACTOR SUPPLIED ECONOLITE NC-3
 CABINET MOUNT.....BASE
 LOADBAY POSITIONS.....12
 LOAD SWITCHES USED.....2, 4, 5, 6
 PHASES USED.....2, 4, 5, 6
 OL/A.....NOT USED
 OL/B.....NOT USED
 OL/C.....NOT USED
 OL/D.....NOT USED

EXISTING FROM TEMPORARY DESIGN*

**LOAD RESISTOR
INSTALLATION DETAIL**



NOTE: THE PURPOSE OF THIS RESISTOR IS TO LOAD THE CHANNEL RED MONITOR INPUT IN ORDER FOR THE MALFUNCTION MANAGEMENT UNIT TO USE THE FULL SIGNAL SEQUENCE MONITORING CAPABILITY ON THIS CHANNEL, WHICH DOES NOT USE THE RED DISPLAY IN THE FIELD.

LOAD SWITCH ASSIGNMENT DETAIL

(program controller according to schedule in chart below)

LOAD SWITCH NUMBER	FUNCTION
1	ø1
2	ø2
3	ø3
4	ø4
5	ø5
6	ø6
7	ø7
8	ø8
9	ø2 PED
10	ø4 PED
11	ø6 PED
12	ø8 PED

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 12-1691
 DESIGNED: AUGUST 2002*
 SEALED: 1-27-03*
 REVISED: N/A

* BY ARCADIS G & M OF NORTH CAROLINA, INC.
 801 CORPORATE CENTER DRIVE, SUITE 300
 RALEIGH, NC 27607-5073
 TEL: 919/854-1282 FAX: 919/854-5448

TS-2 TYPE 1 CABINET

FINAL DESIGN

ELECTRICAL AND PROGRAMMING DETAILS FOR:

US 70 at OLD US 70 (EASTERN INTERSECTION)	
DIVISION 12 IREDELL COUNTY E. of STATESVILLE	SEAL
PREPARED BY: F.E. RUSS	REVIEWED BY: T. Joyce
DATE: JANUARY 2003	DATE: 1/27/03
REVISIONS	INIT. DATE

SEAL

DATE: 1/27/03