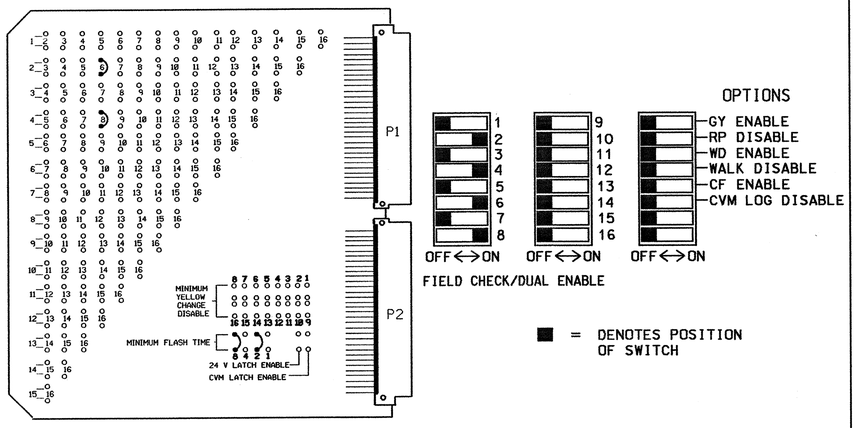
PROJECT REFERENCE NO.	SHEET NO.
R-2911A	SIG. 11

EDI MODEL MMU-16E
MALFUNCTION MANAGEMENT UNIT
PROGRAMMING DETAIL

(program card and set switches as shown below)



■ = DENOTES POSITION OF SWITCH

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, 5, 7, 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. PROGRAM PHASES 4 AND 8, ON CONTROLLER UNIT, FOR DUAL ENTRY.
7. SET ALL DETECTOR CARD UNITS TO 'PRESENCE' MODE.
8. PROGRAM DETECTOR CALL DELAY AND EXTENSION TIMING ON THE CONTROLLER UNLESS OTHERWISE SPECIFIED.

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	NU	61,62	NU	81,82	NU	NU	NU	NU
GREEN		2G		4G		6G		8G				
YELLOW		2Y		4Y		6Y		8Y				
RED		2R		4R		6R		8R				
RED ARROW												
YELLOW ARROW												
GREEN ARROW												

NU = NOT USED

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 L3 ø4	CH1 L1 ø2	CH1 L7 ø8	CH1 L5 ø6	CH1 L11 FUTURE USE	CH1 L9 FUTURE USE	SLOT EMPTY	CH1 L13 FUTURE USE	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	CH2 L4 ø4	CH2 L2 ø2	CH2 L8 FUTURE USE	CH2 L6 ø6 *	CH2 L12 FUTURE USE	CH2 L10 NOT USED		CH2 L14 FUTURE USE			

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
4B	L4A, L4B
6A	L5A, L5B
6B	L6A, L6B
8A	L7A, L7B
—	L8A, L8B
—	L9A, L9B
—	L10A, L10B
—	L11A, L11B
—	L12A, L12B
—	L13A, L13B
—	L14A, L14B
—	L15A, L15B
—	L16A, L16B

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	2.7
2	ø2	—	—
3	ø4	DELAY	3
4	ø4	DELAY	15
5	ø6	EXTEND	2.3
6	ø6	—	—
7	ø8	DELAY	10
8	FUTURE	—	—
9	FUTURE	—	—
10	—	—	—
11	FUTURE	—	—
12	FUTURE	—	—
13	FUTURE	—	—
14	FUTURE	—	—
15	—	—	—
16	—	—	—

* THIS DETECTOR IS EQUIPPED WITH DELAY AND EXTEND TIMER, WHICH WILL BE REQUIRED FOR USE ONLY ON THE FINAL DESIGN.

EQUIPMENT INFORMATION

CONTROLLER.....CONTRACTOR SUPPLIED ECONOLITE ASC/2
CABINET .....CONTRACTOR SUPPLIED ECONOLITE NC-3
CABINET MOUNT.....BASE
LOADBAY POSITIONS.....12
LOAD SWITCHES USED.....2, 4, 6, 8
PHASES USED.....2, 4, 6, 8
OL/A.....NOT USED
OL/B.....NOT USED
OL/C.....NOT USED
OL/D.....NOT USED

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 TEMPORARY SIGNAL DESIGN: 12-1680T2
DESIGNED: AUGUST 2002*
SEALED: 1-27-03*
REVISED: N/A

TS-2 TYPE 1 CABINET

*BY ARCADIS G & M OF NORTH CAROLINA, INC.
801 CORPORATE CENTER DRIVE, SUITE 300
RALEIGH, NC 27607-5073
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TEMPORARY DESIGN 2 - (New Installation)

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:
Traffic Engineering and Safety Systems Branch
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Management Section
122 N. McDowell St., Raleigh, NC 27603

US 70 at OLD US 70 & SR 2357 (NABORS ROAD)

DIVISION 12 IREDELL COUNTY E. of STATESVILLE

PLAN DATE:	JANUARY 2003	REVIEWED BY:	
PREPARED BY:	F.E. RUSS	REVIEWED BY:	

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022013 ENGINEER GEORGE C. BROWN

George C. Brown 1/13/04
SIGNATURE DATE

SIG. INVENTORY NO. 12-1680T2