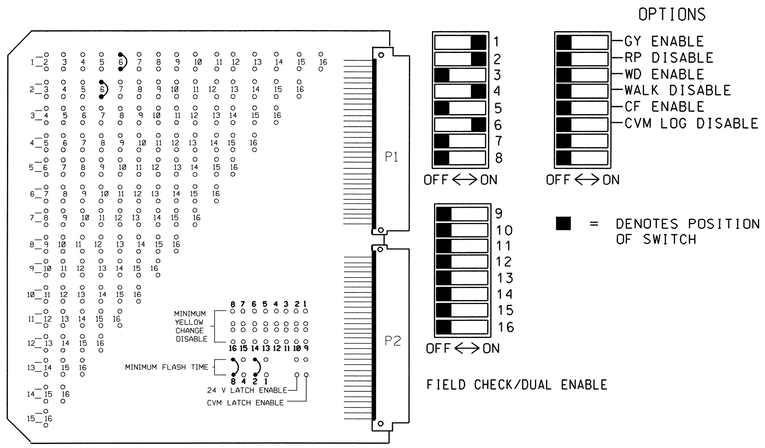
PROJECT REFERENCE NO.	SHEET NO.
U-2717	SIG.30

EDI MODEL MMU-16E
MALFUNCTION MANAGEMENT UNIT
PROGRAMMING DETAIL

(program card and set switches as shown below)



MMU PROGRAMMING CARD

DETECTOR RACK SET-UP DETAIL

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

	CH1 L3 ø2	CH1 L1 ø1	*** SLOT EMPTY	CH1 L5 ø4	SLOT EMPTY	CH1 L9 ø6	SLOT EMPTY	SLOT EMPTY	
BIU	CH2 L4 ø2	CH2 L2 ø6 *		CH2 L6 ø4		CH2 L10 NOT USED			POWER SUPPLY AREA

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

	LOOP NO.	LOOP PANEL TERMINALS
ADD JUMPERS FROM: L1A TO L2A, AND L1B TO L2B	1A	L1A, L1B
	1A	L2A, L2B
	2A,2B	L3A, L3B
	2C,2D	L4A, L4B
	4A	L5A, L5B
	4B	L6A, L6B
***	—	L7A, L7B
	—	L8A, L8B
	6B,6C	L9A, L9B
	NU	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.

ASSIGN CONTROLLER SYSTEM DETECTORS TO LOCAL CONT. DET. NUMBERS AS SHOWN IN CHART BELOW

CONTROLLER SYS. DET. NO.	LOCAL CONT. DETECTOR NO.
1	
2	
3	
4	
5	
6	
7	
8	

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

CONTROLLER DETECTOR NO.	FUNCTION	TIMING	
		FEATURE	TIME (SEC)
1	ø1	DELAY	15
2*	ø6	DELAY	3
3	ø2	EXTEND	1.8
4	ø2	—	—
5	ø4	—	—
6	ø4	DELAY	15
7	ø6	EXTEND	1.8
8	—	—	—
9	ø6	—	—
10	NU	—	—
11	—	—	—
12	—	—	—
13	—	—	—
14	—	—	—
15	—	—	—
16	—	—	—

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

*** DETECTOR RACK OUTPUTS 1-16 SHALL BE WIRED TO A TERMINAL BLOCK. THE OUTPUT FROM THE MICROWAVE DETECTOR SHALL BE TIED TO THE TERMINAL CONNECTED TO DETECTOR 'L8'. THE FAULT STATUS FOR THIS CHANNEL SHALL BE TIED TO LOGIC GROUND.

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 3,5,7,8,9,10,11,12,13,14, 15 & 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.
3. PROGRAM 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 DETECTORS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS TO ACCOMPLISH THE DETECTION SCHEMES SHOWN ON THE SIGNAL DESIGN PLANS.
7. PROGRAM DETECTOR CALL DELAY AND EXTENSION TIMING ON THE CONTROLLER, UNLESS OTHERWISE SPECIFIED.
8. SET ALL DETECTOR CARD UNIT CHANNELS TO "PRESENCE" MODE.
9. PROGRAM AND WIRE THIS CONTROLLER AND CABINET TO BE PART OF THE HIGH POINT CITY SIGNAL SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER INTERCONNECTION AND OPERATION OF THIS SIGNAL WITHIN THE SYSTEM.
10. A MICROWAVE SENSOR SHALL BE INSTALLED FOR VEHICLE DETECTION ON PHASE 6 AT LOCATION SHOWN ON SIGNAL DESIGN PLAN (AREA OF DETECTION LABELED '6A'). INSTALLATION SHALL BE PERFORMED PER MANUFACTURER'S INSTRUCTIONS. SENSOR SHALL BE FIELD ADJUSTED AT THE DIRECTION OF THE D.T.E. SENSOR SHALL BE WIRED SUCH THAT INPUT INTERFACE TO THE CONTROLLER IS ACHIEVED THROUGH ISOLATION CIRCUITRY.

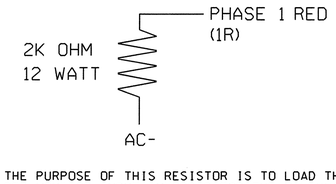
FIELD CONNECTION HOOK-UP CHART

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

NU = NOT USED

* A LOAD RESISTOR SHALL BE INSTALLED ON LOAD SWITCH 1 RED FIELD TERMINAL. REFER TO LOAD RESISTOR INSTALLATION DETAIL THIS SHEET.

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 PHASES THAT DO 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	OLA
10	OLB
11	OLC
12	OLD
13	ø2PED
14	ø4PED
15	ø6PED
16	ø8PED

EQUIPMENT INFORMATION

CONTROLLER.....PEEK TRAFFIC 3000
CABINET .....PEEK TRAFFIC NC-6 TS2-1
CABINET MOUNT.....BASE
LOADBAY POSITIONS.....16
LOAD SWITCHES USED.....1, 2, 4, 6
PHASES USED.....1, 2, 4, 6
OL/A.....NOT USED
OL/B.....NOT USED
OL/C.....NOT USED
OL/D.....NOT USED

HIGH POINT CITY SIGNAL SYSTEM
INTERSECTION I.D.712

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 07-1578
DESIGNED: 03/19/2004
SEALED: 06/15/2004
REVISED:

NEW INSTALLATION

PLANS PREPARED BY :
RUMMEL KLEPPER & KAHL, LLP
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FOR
DIVISION OF HIGHWAYS

ELECTRICAL AND PROGRAMMING DETAILS FOR:
Traffic Engineering and Safety Systems Branch
DEPARTMENT OF TRANSPORTATION · STATE OF NORTH CAROLINA
Signals Management Section
122 N. McDowell St., Raleigh, NC 27603

SR 1113 (KIVETT DRIVE)
AT
US 29-70, I-85 BUS.
RAMP 'A' & RAMP 'B'

DIVISION 07 GUILFORD COUNTY HIGH POINT

PLAN DATE:	MAY 2004	REVIEWED BY:	J O DEATON
PREPARED BY:	M W YALCH	REVIEWED BY:	

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 07438 ENGINEER JAMES O. DEATON
SIGNATURE DATE 6/15/04
SIG. INVENTORY NO. 07-1578