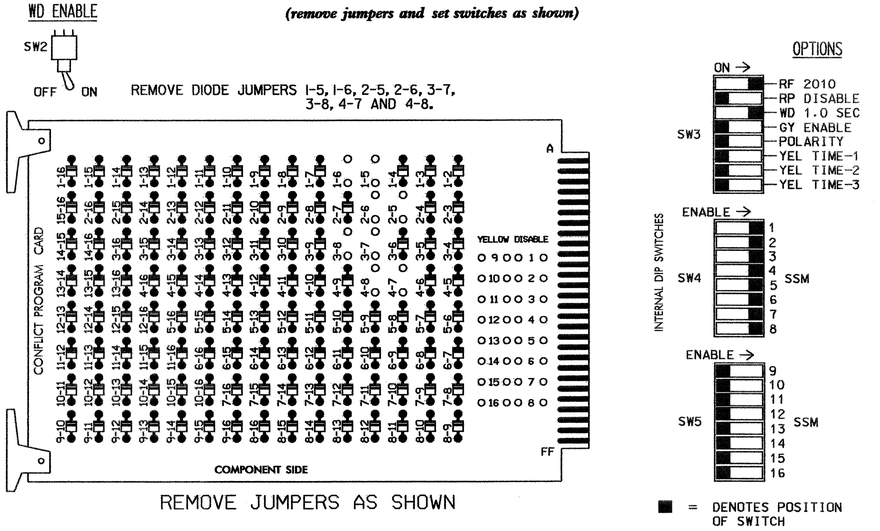
PROJECT REFERENCE NO.	SHEET NO.
37652	Sig. 17

EDI MODEL 2010ECL CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



REMOVE JUMPERS AS SHOWN

■ = DENOTES POSITION OF SWITCH

NOTES:

1. CARD IS PROVIDED WITH ALL DIODE JUMPERS IN PLACE. REMOVAL OF ANY JUMPER ALLOWS ITS CHANNELS TO RUN CONCURRENTLY.
2. MAKE SURE JUMPERS SEL1-SEL5 ARE PRESENT ON THE MONITOR BOARD.

NOTES

1. TO PREVENT "FLASH-CONFLICT" PROBLEMS, INSERT RED FLASH PROGRAM BLOCKS FOR ALL UNUSED VEHICLE LOAD SWITCHES IN THE OUTPUT FILE. VERIFY THAT SIGNAL HEADS FLASH IN ACCORDANCE WITH THE SIGNAL PLANS.
2. ENSURE THAT RED ENABLE IS ACTIVE AT ALL TIMES DURING NORMAL OPERATION. TO PREVENT RED FAILURES ON UNUSED MONITOR CHANNELS, TIE UNUSED RED MONITOR INPUTS: 9,10, 11,12,13,14,15 AND 16 TO LOAD SWITCH AC+ PER CABINET MANUFACTURER'S INSTRUCTIONS.
3. PROGRAM CONTROLLER TO START UP IN PHASES 2 AND 6 GREEN.
4. SET POWER-UP FLASH TIME TO 10 SECONDS AND IMPLEMENT WITHIN THE CONTROLLER PROGRAMMING.
5. ENABLE SIMULTANEOUS GAP-OUT FEATURE, ON CONTROLLER UNIT, FOR ALL PHASES.
6. PROGRAM PHASES 4 AND 8, ON CONTROLLER UNIT, FOR DOUBLE ENTRY.
7. PROGRAM PHASES 2 AND 6, ON CONTROLLER UNIT, FOR VOLUME DENSITY OPERATION.
8. THIS SIGNAL IS WITHIN THE CITY OF DURHAM SIGNAL SYSTEM.

EQUIPMENT INFORMATION

*CONTROLLER.....McCAIN TRAFFIC TYPE 170E
*CABINET .....McCAIN TRAFFIC MODEL 332
*SOFTWARE .....BI TRANS 233NC2
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...12
LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S6,S7,S8
PHASES USED.....1,2,3,4,5,6,7,8
OVERLAPS.....NONE

EXISTING TO REMAIN IN USE*

FIELD CONNECTION HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S2P	S3	S4	S4P	S5	S6	S6P	S7	S8	S8P
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED
SIGNAL HEAD NO.	61	21,22, 23	NU	23,81	41,42	NU	21,42	61,62	NU	41	81,82	NU
GREEN		130			103			136			109	
YELLOW		129			102			135			108	
RED	*	128		*	101		*	134		*	107	
RED ARROW												
YELLOW ARROW	126			117			132			123		
GREEN ARROW	127			118			133			124		

NU = NOT USED

* DENOTES INSTALL LOAD RESISTOR. SEE LOAD RESISTOR INSTALLATION DETAIL THIS SHEET.

BACK-UP PROTECTION NOTES

TO ENSURE THAT THE CONTROLLER WILL NOT SEQUENCE FROM PHASE 2 DIRECTLY TO PHASE 1; FROM PHASE 4 DIRECTLY TO PHASE 3; FROM PHASE 6 DIRECTLY TO PHASE 5; OR FROM PHASE 8 DIRECTLY TO PHASE 7, SPECIAL PROGRAMMING HAS TO BE ENABLED IN THE BI TRANS 233NC2 SOFTWARE. PROGRAM 170E CONTROLLER AS FOLLOWS:

1. PROGRAM PHASES 1,3,5 AND 7 AS PROTECTED/PERMITTED AT KEYPAD INPUT E/125+E+4=Ø1,3,5,7
2. LOOPS 1A AND 5A WILL HAVE TO BE PROGRAMMED TO CALL PHASE 4 (WITH APPROPRIATE DELAY TIME) TO ALLOW THE CONTROLLER TO SEQUENCE THRU PHASE 4 BEFORE PROCEEDING TO PHASES 1 AND/OR 5. (SEE INPUT FILE PROGRAMMING ON THIS SHEET).

INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	SLOT EMPTY	Ø2 2A	Ø1,6,4 1A	SLOT EMPTY	SLOT EMPTY	Ø4 4A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	FS DC ISOLATOR
	L		Ø2 2B	Ø3,8 3A			Ø4 4B								ST DC ISOLATOR
FILE "J"	U	SLOT EMPTY	Ø6 6A	Ø5,2,4 5A	SLOT EMPTY	SLOT EMPTY	Ø8 8A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L		Ø6 6B	Ø7,4 7A			NOT USED								

EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

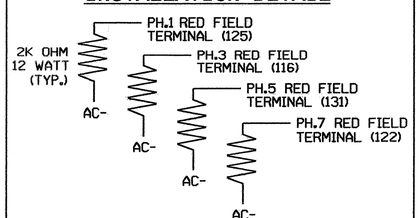
LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	DETECTOR NO.	PIN NO.	ATTRIBUTES	NEMA PHASE
2A	TB2-5,6	I2U	1	39	4 5 7	2
2B	TB2-7,8	I2L	2	43	4 5 7	2
1A	TB2-9,10	I3U	3	63	5 7	1
			4	63	1 5 7	6
			5	63	7	4
3A	TB2-11,12	I3L	6	76	5 7	3
			7	76	5 7	8
4A	TB4-9,10	I6U	8	41	5 7	4
4B	TB4-11,12	I6L	9	45	5 7	4
6A	TB3-5,6	J2U	10	40	4 5 7	6
6B	TB3-7,8	J2L	11	44	4 5 7	6
5A	TB3-9,10	J3U	12	64	5 7	5
			13	64	1 5 7	2
			14	64	7	4
7A	TB3-11,12	J3L	15	77	5 7	7
			16	77	5 7	4
8A	TB5-9,10	J6U	17	42	5 7	8

NOTE: PROGRAM DETECTOR DELAY AND CARRYOVER TIMES AS SPECIFIED ON SIGNAL DESIGN PLANS.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

DETECTOR ATTRIBUTES LEGEND:
1-FULL TIME DELAY
2-PED CALL
3-RESERVED
4-COUNTING
5-EXTENSION
6-TYPE 3
7-CALLING
8-ALTERNATE

LOAD RESISTOR INSTALLATION DETAIL



NOTE: THE PURPOSE OF THESE RESISTORS IS TO LOAD THE CHANNEL RED MONITOR INPUTS IN ORDER FOR THE SIGNAL SEQUENCE MONITOR TO USE THE FULL SIGNAL SEQUENCE MONITORING CAPABILITY ON CHANNELS THAT DO NOT USE THE RED DISPLAY IN THE FIELD.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 05-0704
DESIGNED: NOVEMBER 2004
SEALED: 3/2/05
REVISED: N/A

TYPE 170 CONTROLLER & 332 CABINET

SIGNAL UPGRADE

ELECTRICAL AND PROGRAMMING DETAILS FOR:

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

SR 1959 (MIAMI BOULEVARD) at SR 1121 (CORNWALLIS ROAD) and IBM LAB ENTRANCE

DIVISION 05 DURHAM COUNTY DURHAM

PLAN DATE:	MARCH 2005	REVIEWED BY:	T Joyce
PREPARED BY:	F.E. RUSS	REVIEWED BY:	

REVISIONS	INIT.	DATE

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022013 ENGINEER GEORGE C BROWN

George C Brown 4/4/05
SIGNATURE DATE

SIG. INVENTORY NO. 05-0704