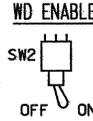
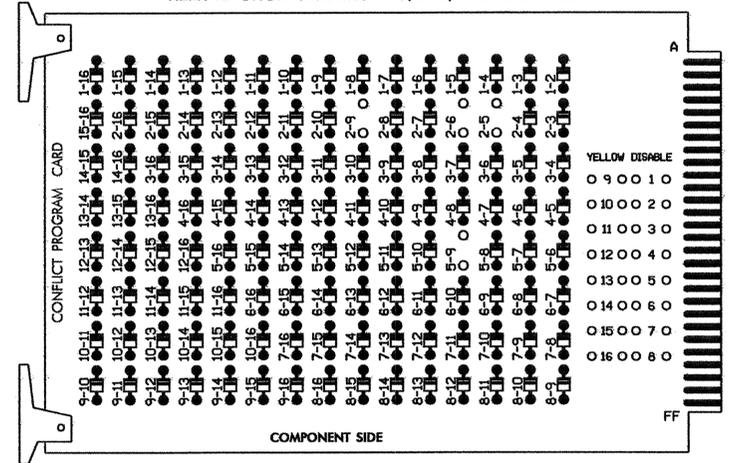


**EDI MODEL 2010ECL CONFLICT MONITOR PROGRAMMING DETAIL**

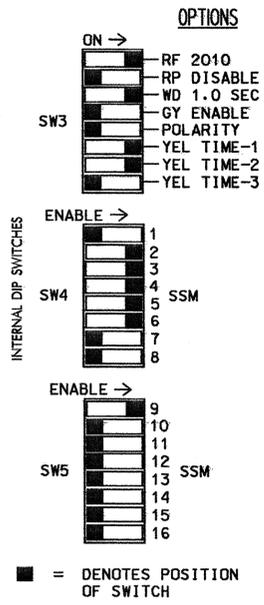


(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 2-5, 2-6, 2-9 AND 5-9.



REMOVE JUMPERS AS SHOWN

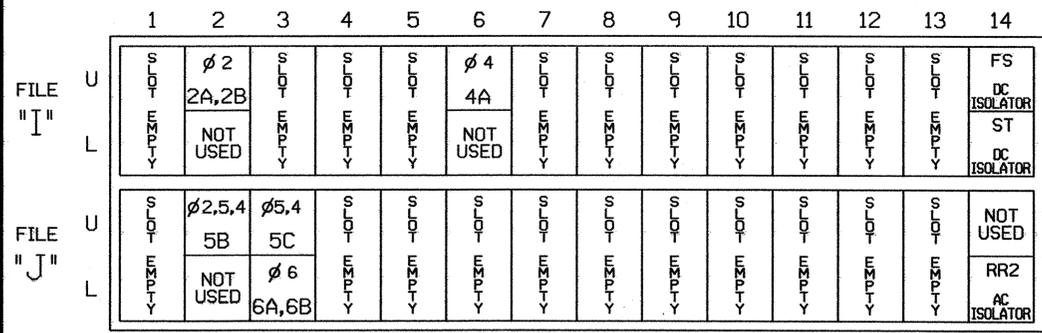


**NOTES:**

- CARD IS PROVIDED WITH ALL DIODE JUMPERS IN PLACE. REMOVAL OF ANY JUMPER ALLOWS ITS CHANNELS TO RUN CONCURRENTLY.
- MAKE SURE JUMPERS SEL1-SEL5 ARE PRESENT ON THE MONITOR BOARD.
- ENSURE THAT RED ENABLE IS ACTIVE AT ALL TIMES DURING NORMAL OPERATION.

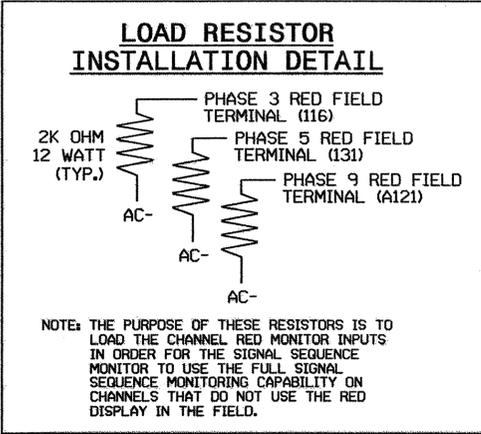
**INPUT FILE POSITION LAYOUT**

(front view)



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

FS = FLASH SENSE  
ST = STOP TIME  
RR = RAILROAD PREEMPT



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.

**NOTES**

- TO PREVENT "FLASH-CONFLICT" PROBLEMS, INSERT RED FLASH PROGRAM BLOCKS FOR ALL UNUSED VEHICLE LOAD SWITCHES IN OUTPUT FILE. VERIFY THAT SIGNAL HEADS FLASH IN ACCORDANCE WITH THE SIGNAL PLANS.
- TO PREVENT RED FAILURES ON UNUSED MONITOR CHANNELS 1,7,8, 10,11, 12, 13, 14, 15 & 16, TIE UNUSED LOAD SWITCH RED OUTPUTS TO LOAD SWITCH AC+ PER CABINET MANUFACTURER'S INSTRUCTIONS.
- PROGRAM THE CONTROLLER TO START UP IN PHASES 2 AND 6 GREEN.
- SET POWER-UP FLASH TIME TO 10 SECONDS AND IMPLEMENT WITHIN THE CONTROLLER PROGRAMMING.
- ENABLE SIMULTANEOUS GAP-OUT FEATURE, ON CONTROLLER UNIT, FOR ALL PHASES.
- THE CABINET AND CONTROLLER ARE A PART OF THE DURHAM SIGNAL SYSTEM.

**POWER-UP / RESTART PROGRAMMING NOTE**

IN ORDER FOR PHASES USED ONLY IN NORMAL OPERATION TO BE SERVED AFTER A POWER-UP OR RESTART, PROGRAM "START VEHICLE CALL" AND "START PED CALL" ON 170E CONTROLLER AS FOLLOWS:

VEH - F/2+F+E=Ø2, 4, 5, 6  
PED - F/2+F+F= NO ACTIVE PEDS

**OVERLAP PROGRAMMING NOTES**

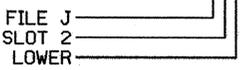
TO ASSURE THAT LOADSWITCH S9 IS ASSIGNED AS OVERLAP 1, PROGRAM CONTROLLER AT KEYPAD INPUT E/29+1+0=9  
TO SET THE PARENT PHASE FOR OVERLAP 1 (VEH. SET 1) AS PHASE 5, PROGRAM CONTROLLER AT KEYPAD INPUT E/29+1+1=Ø5  
TO SET THE PARENT PHASE FOR OVERLAP 1 (VEH. SET 2) AS NONE, NO PROGRAMMING IS REQUIRED.  
PROGRAM TIMING FOR OVERLAP 1 AS FOLLOWS:  
YELLOW CHANGE INTERVAL - E/29+1+E=4.0 (SEC.)  
RED CLEARANCE - E/29+1+F=1.0 (SEC.)

**INPUT FILE CONNECTION & PROGRAMMING CHART**

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	DETECTOR NO.	PIN NO.	ATTRIBUTES	NEMA PHASE
2A,2B	TB2-5,6	I2U	1	39	5 7	2
4A	TB4-9,10	I6U	2	41	5 7	4
5B	TB3-5,6	J2U	3	40	1 5 7	2
			4	40	5 7	5
			5	40	7	4
5C	TB3-9,10	J3U	6	64	5 7	5
			7	64	7	4
6A,6B	TB3-11,12	J3L	8	77	5 7	6

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

INPUT FILE POSITION LEGEND: J2L



DETECTOR ATTRIBUTES LEGEND:

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

**FIELD CONNECTION HOOK-UP CHART**

LOAD SWITCH NO.	S1	S2	S2P	S3	S4	S4P	S5	S6	S6P	S7	S8	S8P	S9	S10	S11	S12	S13	S14
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OL1	OL2	SPARE	OL3	OL4	SPARE
SIGNAL HEAD NO.	NU	21,22	NU	41	41,42	NU	21	61,62	NU	NU	NU	NU	42	NU	NU	NU	NU	NU
GREEN		130			1Ø3			136										
YELLOW		129			1Ø2			135										
RED		128		*	1Ø1		*	134					*					
RED ARROW																		
YELLOW ARROW					117			132						A122				
GREEN ARROW					118			133						A123				

NU = NOT USED  
\* DENOTES INSTALL LOAD RESISTOR. SEE LOAD RESISTOR INSTALLATION DETAIL THIS PAGE.

**HEAD 42 ARROW (OL1) OPERATION DURING PREEMPTION**

IN ORDER FOR RR PREEMPTION TO OPERATE AS PHASES 2 AND 5 WITHOUT SIGNAL HEAD 42 RIGHT-TURN ARROW (OVERLAP 'OL1'), THE FOLLOWING PROGRAMMING MUST BE IN PLACE:

ASSIGN RR PREEMPT RR2 OUTPUT AT E/127+D+D= 200  
ASSIGN O/L VEH. SET 2 INPUT AT E/126+D+C=200  
200 = ASSIGNABLE PSEUDO-PIN (SOFTWARE)

**BACK-UP PROTECTION NOTE**

TO INSURE THAT THE CONTROLLER WILL NOT SEQUENCE FROM PHASE 2+6 DIRECTLY TO PHASE 5, SPECIAL PROGRAMMING HAS TO BE ENABLED IN THE BI TRANS 233NC SOFTWARE. PROGRAM 170E CONTROLLER AS FOLLOWS:

- PROGRAM PHASE 5 AS PROTECTED/PERMITTED AT KEYPAD INPUT E/125+E+4= Ø5.
- LOOPS 5B AND 5C WILL HAVE TO BE PROGRAMMED TO CALL PHASE 4 (WITH APPROPRIATE DELAY TIME) TO ALLOW CONTROLLER TO SEQUENCE THRU PHASE 4 BEFORE PROCEEDING TO PHASE 5. SEE INPUT FILE PROGRAMMING ON THIS SHEET.

**IGNORE PROTECTED/PERMISSIVE DURING PREEMPTION**

IN ORDER FOR CONTROLLER TO IGNORE PROTECTED/PERMISSIVE "ANTI-BACKUP PROTECTION" WHEN CYCLING TO TRACK CLEARANCE THE FOLLOWING PROGRAMMING MUST BE IN PLACE: SET BIT 5 IN EXTRA 2 AT E/125+F+F=5.

**EQUIPMENT INFORMATION**

CONTROLLER.....CONTRACTOR SUPPLIED 170E  
CABINET .....CONTRACTOR SUPPLIED 332  
SOFTWARE .....BI TRANS 233NC2  
CABINET MOUNT.....BASE  
OUTPUT FILE POSITIONS...18 (12-STD, 6-AUX)  
LOAD SWITCHES USED.....S2,S3,S4,S5,S6,S9  
PHASES USED.....2,\*3,4,5,6  
OVERLAP 1:.....5  
\*USED DURING RR PREEMPTION ONLY.

**TEMPORARY DESIGN 1 & 2**

ELECTRICAL AND PROGRAMMING DETAILS FOR:  
Prepared in the Office of:  
Durham County Signal Management System  
122 N. McDowell St., Raleigh, NC 27603

NC 98 (HOLLOWAY STREET) AT SR 1838 (JUNCTION ROAD)  
DIVISION 05 DURHAM COUNTY DURHAM  
PLAN DATE: MARCH 2004 REVIEWED BY:  
PREPARED BY: JAMES PETERSON REVIEWED BY:  
REVISIONS INIT. DATE

SEAL  
NORTH CAROLINA PROFESSIONAL ENGINEER  
SEAL 022013  
GEORGE C. BROWN  
DATE 4/21/04  
SIG. INVENTORY NO. 05-0138T

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 05-0138T1 AND: 05-0138T2  
DESIGNED: JANUARY 2004  
SEALED: 02-17-04  
REVISED: