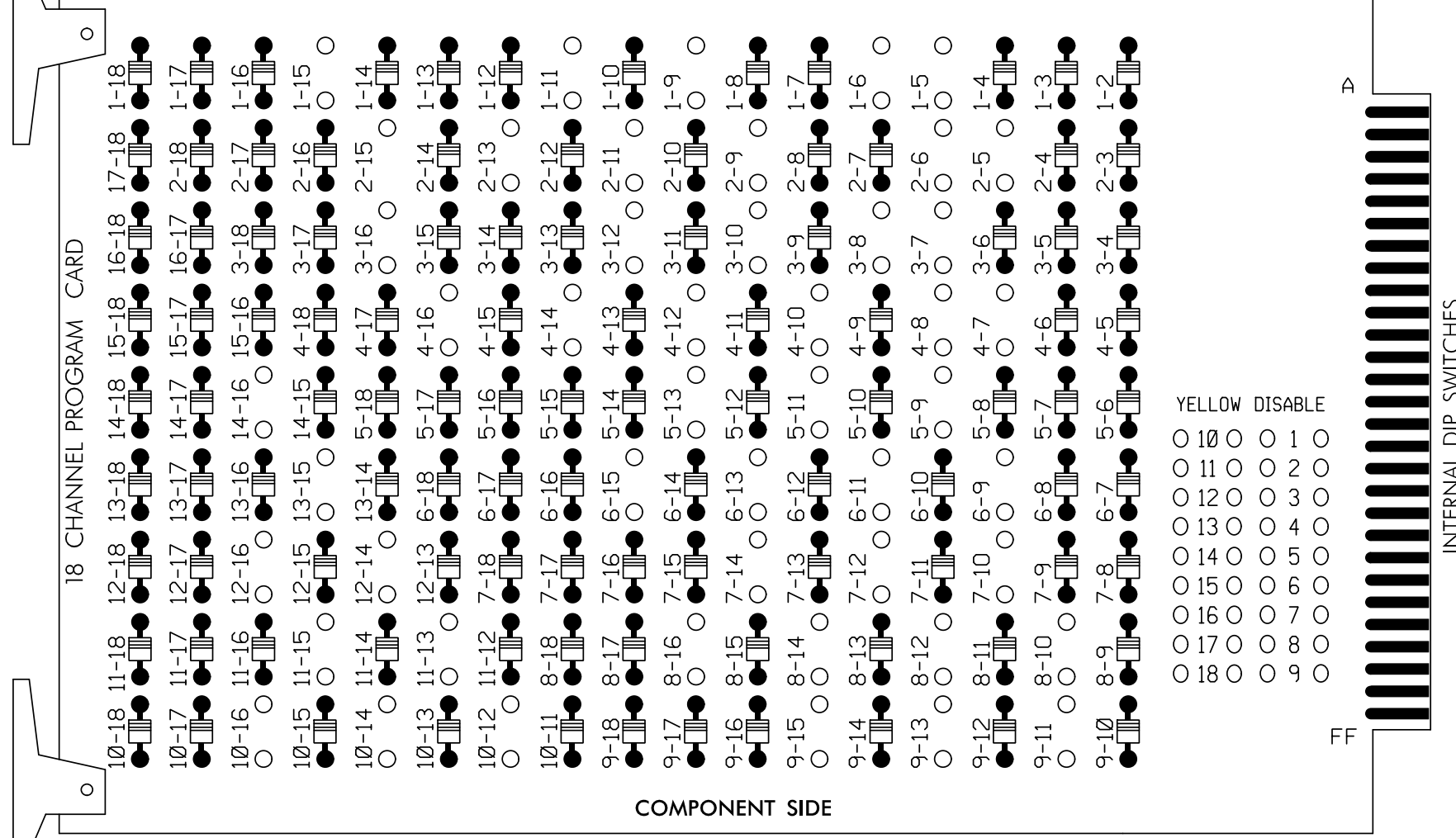


### EDI MODEL 2018ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

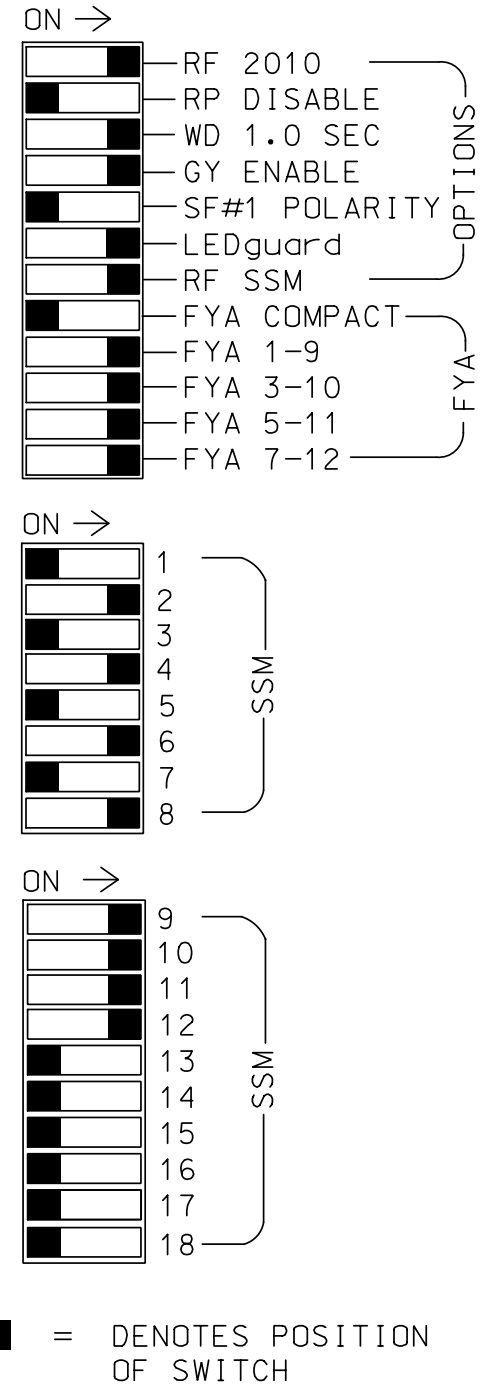
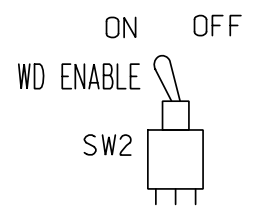
REMOVE DIODE JUMPERS 1-5,1-6,1-9,1-11,1-15,2-5,2-6,2-9,2-11,2-13,2-15,3-7,3-8,3-10, 3-12,3-16,4-7,4-8,4-10,4-12,4-14,4-16,5-9,5-11,5-13,6-9,6-11,6-13,6-15,7-10,7-12,7-14, 8-10,8-12,8-14,8-16,9-11,9-13,9-15,10-12,10-14,10-16,11-13,11-15,12-14,12-16,13-15 and 14-16



REMOVE JUMPERS AS SHOWN

**NOTES:**

- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
- Ensure that Red Enable is active at all times during normal operation.
- Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.



### NOTES

- 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.
- Program controller to Start Up in phases 2 and 6 green.
- Set power-up flash time to 0 seconds within the controller programming. The conflict monitor will govern startup flash. Ensure STARTUP "RED START" is set to 0 seconds.
- Enable Simultaneous Gap-Out feature for all phases.
- Program all timing information into phase banks 1, 2, and 3 unless otherwise noted.
- Set phase bank 3 maximum limit to 250 seconds for phases used.
- Program phases 4 and 8 for Double Entry.
- Ensure start up flash phases are coordinated with flash program block assignments.
- Program Startup Ped Calls for phases 2, 4, 6, and 8.
- Set the Red Revert interval on the controller to 1 second.

### EQUIPMENT INFORMATION

CONTROLLER.....2070E  
 CABINET.....332 W/ AUX  
 SOFTWARE.....McCAIN 2033  
 CABINET MOUNT.....BASE  
 OUTPUT FILE POSITIONS...18 WITH AUX FILE  
 LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S6,S7,S8,S9,S10,S11, S12,AUX S1,AUXS2,AUXS4,AUX S5  
 PHASES USED.....1,2,2PED,3,4,4PED,5,6,6PED,7,8,8PED  
 OVERLAP 1.....\*  
 OVERLAP 2.....\*  
 OVERLAP 3.....\*  
 OVERLAP 4.....\*  
 \* See FYA PPLT Programming Detail on sheet 2

PROJECT REFERENCE NO.	SHEET NO.
EB-4707B	SIG. 2

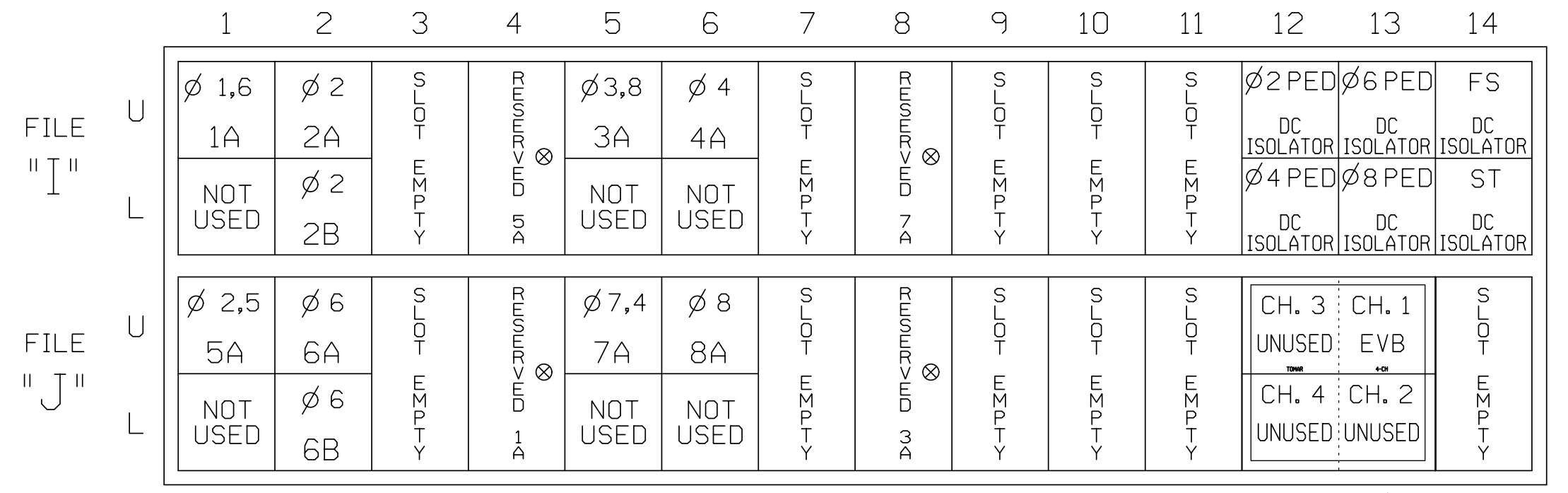
### SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6	
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18	
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.	11	21,22	P21, P22	31	41,42	P41, P42	51	61,62	P61, P62	62	71	81,82,83	P81, P82	11	31	NU	51	71	NU
RED	128			101				134			107								
YELLOW	*	129		*	102		*	135			108								
GREEN		130			103			136			109								
RED ARROW													A121	A124		A114	A101		
YELLOW ARROW										123			A122	A125		A115	A102		
FLASHING YELLOW ARROW													A123	A126		A116	A103		
GREEN ARROW	127			118			133			124	124								
Hand			113		104			119				110							
Person					106			121					112						

NU = Not Used  
 \* Denotes install load resistor. See load resistor installation detail this sheet.  
 \* See pictorial of head wiring in detail below.

### INPUT FILE POSITION LAYOUT

(front view)



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

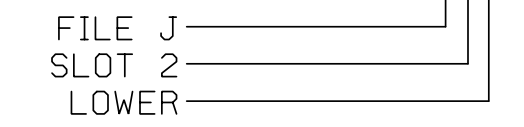
FS = FLASH SENSE  
 ST = STOP TIME  
 EV = EMERG. VEH. PREEMPT

### INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	DETECTOR NO.	PIN NO.	ATTRIBUTES	NEMA PHASE
1A	TB2-1,2	I1U	14	56	5 7	1
			10	56	5 7	6
2A	TB2-5,6	I2U	1	39	5 7	2
			5	43	5 7	2
3A	TB4-5,6	I5U	16	58	5 7	3
			12	58	5 7	8
4A	TB4-9,10	I6U	3	41	5 7	4
			13	55	5 7	5
5A	TB3-1,2	J1U	9	55	5 7	2
			2	40	5 7	6
6B	TB3-7,8	J2L	6	44	5 7	6
			15	57	5 7	7
7A	TB5-5,6	J5U	11	57	5 7	4
			4	42	5 7	8
PED PUSH BUTTONS	TB8-4,6	I2U	25	67	2	2 PED
			27	69	2	4 PED
P41, P42	TB8-5,6	I2L	26	68	2	6 PED
			28	70	2	8 PED

NOTE:  
 INSTALL DC ISOLATORS IN INPUT FILE SLOTS 112 AND 113.

INPUT FILE POSITION LEGEND: J2L



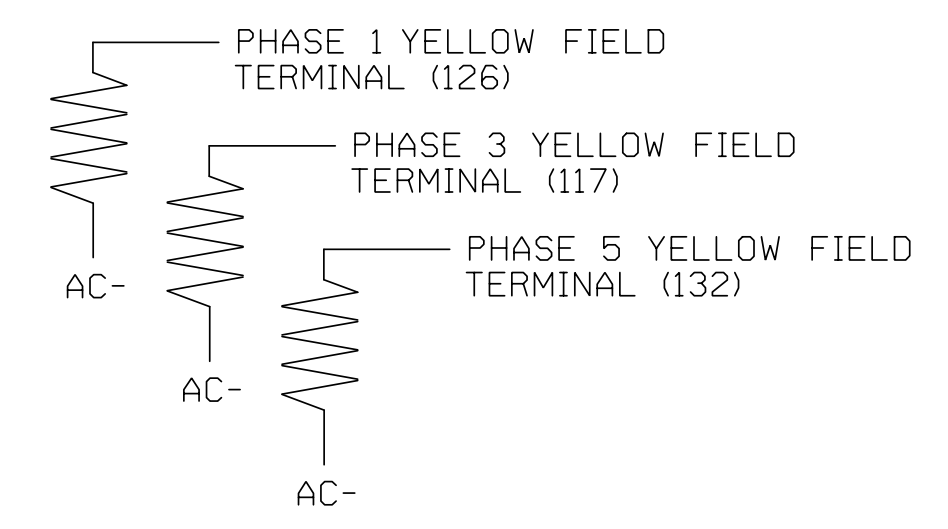
### DETECTOR ATTRIBUTES LEGEND:

- FULL TIME DELAY
- PED CALL
- RESERVED
- COUNTING
- EXTENSION
- TYPE 3
- CALLING
- ALTERNATE

### LOAD RESISTOR INSTALLATION DETAIL

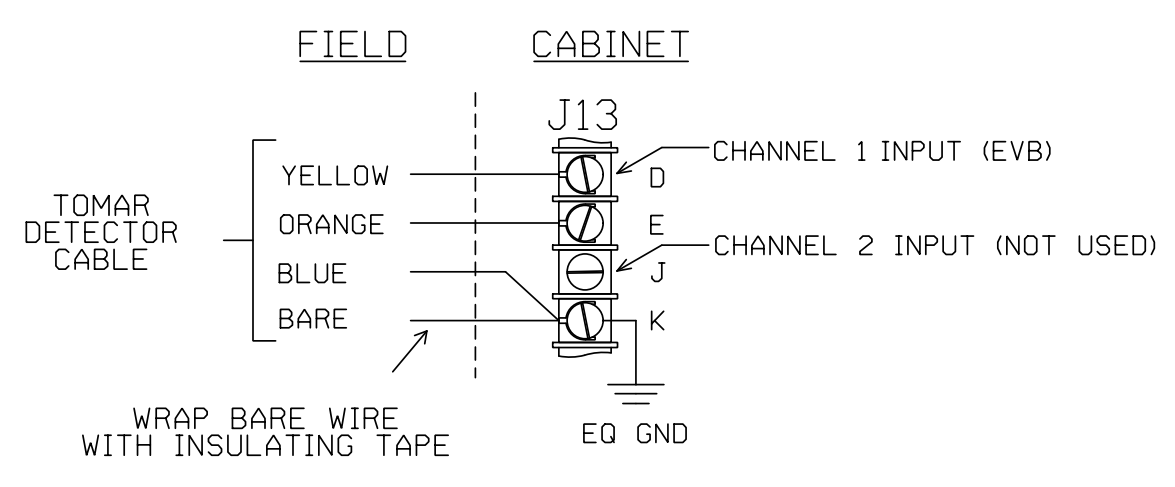
(install resistors as shown below)

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



### TYPICAL TOMAR FIELD WIRE DETAIL

(input file, rear view)



Signal Upgrade Sheet 1 of 2

**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**

ELECTRICAL AND PROGRAMMING DETAILS FOR: **SR 2220 (Old Chapel Hill Road) at SR 1110 (Farrington Road/SW Durham Drive)**

Division 5 Durham County Durham

PLAN DATE: MAY 2016 REVIEWED BY: SL PHILLIPS

PREPARED BY: SP PENNINGTON RFA PROJ. NO:

REVISIONS: INIT. DATE

6/29/2016 4:15:18 PM susan.pennington

PLANS PREPARED IN THE OFFICE OF: **Kimley-Horn**  
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750 N. Greenfield Pkwy, Garner, NC 27529

NC Dept of Transportation Division of Highways  
 Prepared Date: 6/30/2016  
 Signature: [Signature]  
 ITS & Signals Unit

SEAL NORTH CAROLINA PROFESSIONAL ENGINEER STATE OF N.C. L. PHILLIPS 032607 6/30/2016

SIG. INVENTORY NO. 05-1673

6/29/2016 4:15:18 PM susan.pennington \*\*\*:im:ey:horn.com:SE:RIL:RAL:Roadway:01105290 - EB-4707 Form:BNP:lanef:ca:ff:is:Signal:es:64 - Signal:Des:gn:ed:5-1673\_2016:el:cd:gn