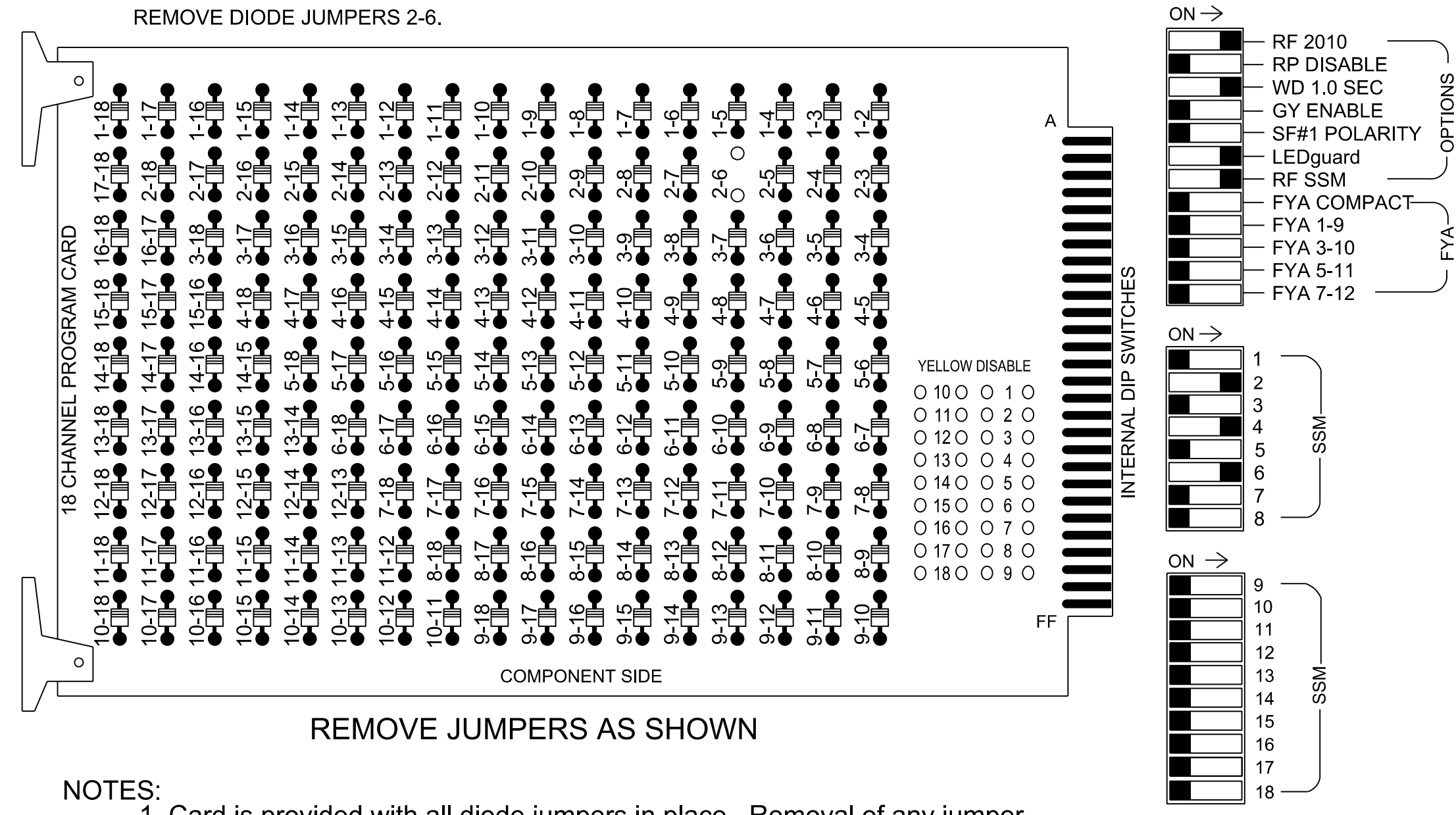


**18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL**

(remove jumpers and set switches 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 the Red Enable is active at all times during normal operation.
  - Integrate monitor with Ethernet network in cabinet.

**NOTES**

- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the signal plan.
- Install 332\_NCDOT\_HAWK\_Default database onto controller.
- Program controller to start up in phase 2 Green No Walk and 6 Green No Walk.
- Program phase 4 for No Startup Veh Call and No Startup Ped Call.
- Program phase 4 for Ped Clear During Red Clear.

**EQUIPMENT INFORMATION**

Controller.....2070LX  
 Cabinet.....332 w/ Aux  
 Software.....Q-Free MAXTIME  
 Cabinet Mount.....Base  
 Output File Positions.....18 With Aux. Output File  
 Load Switches Used.....S2, S3, S5, S8  
 Phases Used.....2, 4, 4PED\*\*, 6  
 Overlap "1".....Not Used  
 Overlap "2".....Not Used  
 Overlap "3".....Not Used  
 Overlap "4".....Not Used

\*\* Phase used for timing purposes only.

**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	EVP 2	3	4	4 PED	5	6	6 PED	7	8	8 PED	OL1	OL2	SPARE	OL3	OL4	SPARE
SIGNAL HEAD NO.	NU	21,22 23,24	NU	FIRE PILOT LAMP	NU	41	NC	NU	21,22 23,24	NU	NU	NU	NU	NU	NU	NU	NU	NU	NU
RED		128			*				134										
YELLOW		129			*			*											
GREEN		*			103			*											
RED ARROW																			
YELLOW ARROW																			
FLASHING YELLOW ARROW																			
GREEN ARROW																			
PED YELLOW					*	114													

NU = Not Used  
 NC = No Connection  
 \* Denotes install load resistor. See load resistor installation detail this sheet.  
 Note: Load Switch S3 Yellow is used to drive the fire station pilot lamp. See Sheet 3 for wiring details.

**INPUT FILE POSITION LAYOUT**

(front view)

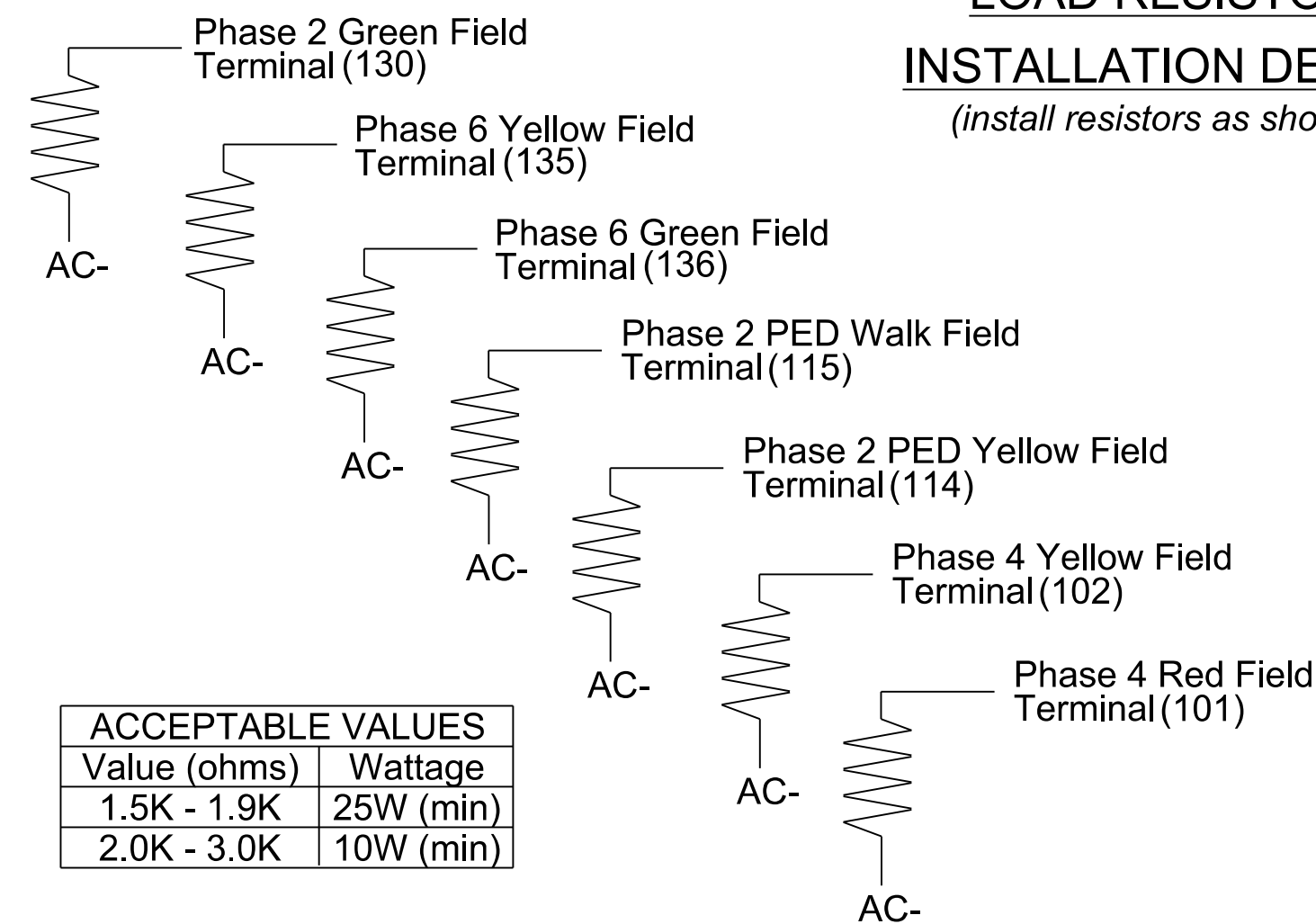
FILE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
U	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
L	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR
U	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED
L	PRE2	PRE2	PRE2	PRE2	PRE2	PRE2	PRE2	PRE2	PRE2	PRE2	PRE2	PRE2	PRE2	PRE2	PRE2

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

FS = FLASH SENSE  
 ST = STOP TIME  
 PRE = PREEMPT

**LOAD RESISTOR INSTALLATION DETAIL**

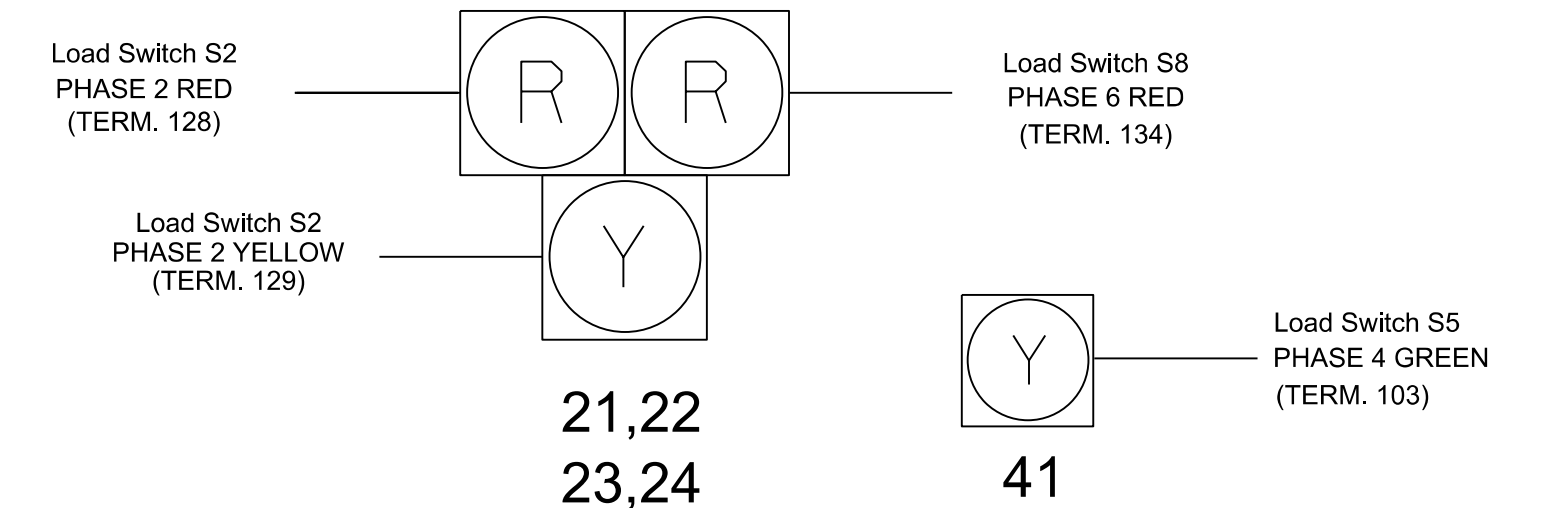
(install resistors as shown)



Value (ohms)	Wattage
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)

**SIGNAL HEAD WIRING DETAIL**

(wire signal heads as shown)

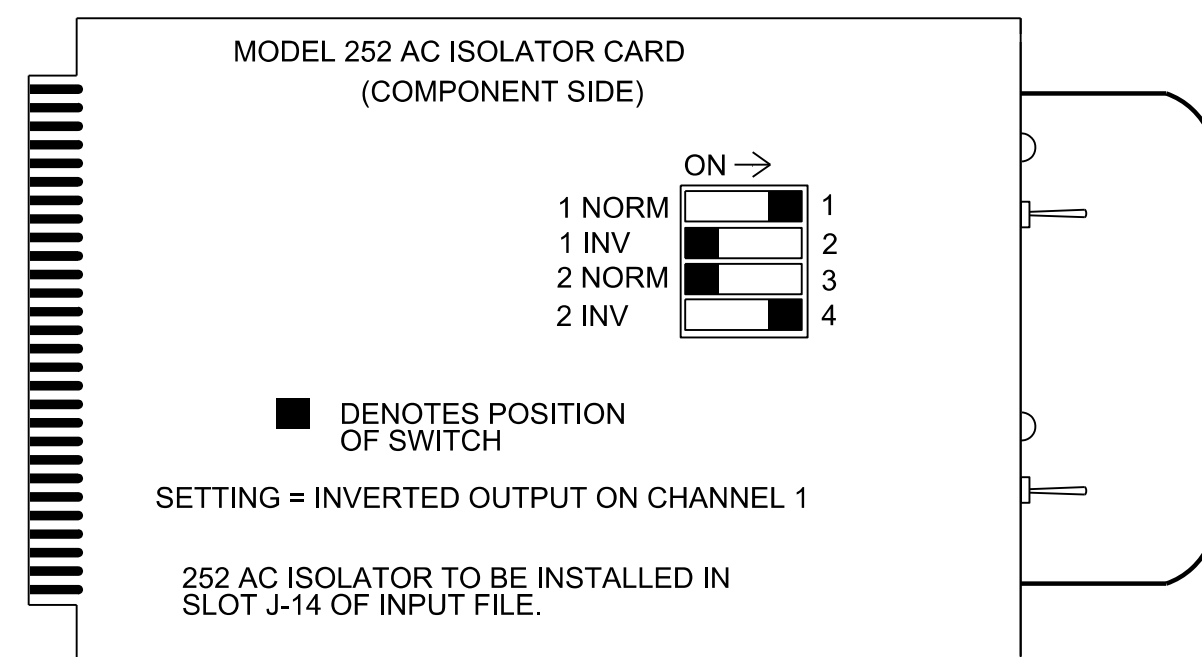


**TIMING INTERVAL**

- PHASE 2+6 GREEN = Dark Display
- PHASE 2+6 PRE CLEARANCE = Flashing Yellow Time
- PHASE 2+6 YELLOW CHANGE = Solid Yellow Time
- PHASE 2+6 RED CLEAR = Steady Red Display
- PHASE 4 PED CLEAR = Alternating Flashing Red Display
- PHASE 4 YELLOW CHANGE = Alternating Flashing Red Display
- PHASE 4 RED CLEAR = Alternating Flashing Red Display

**PREEMPT 2 AC ISOLATOR (MODEL 252) OUTPUT PROGRAMMING DETAIL**

(set DIP switches as shown below)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-1304  
 DESIGNED: October 2023  
 SEALED: 4/1/2024  
 REVISED: NA

**Mattern & Craig**  
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Electrical Detail - Sheet 1 of 3

Prepared for the Offices of:  
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 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL  
 SEAL 022599  
 JAMES B. VOSO  
 ENGINEER  
 4/1/2024  
 140FD00378E041F  
 DATE

US 64 (Brevard Road) at Valley Hill Fire & Rescue

Division 14 Henderson County Laurel Park  
 PLAN DATE: October 2023 REVIEWED BY: JB Voso  
 PREPARED BY: KG Eudy REVIEWED BY:  
 REVISIONS INIT. DATE

SIG. INVENTORY NO. 14-1304