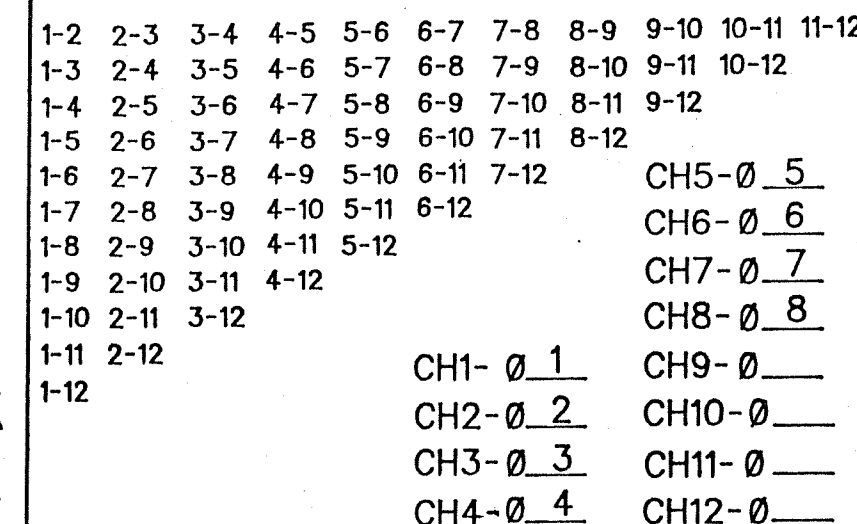
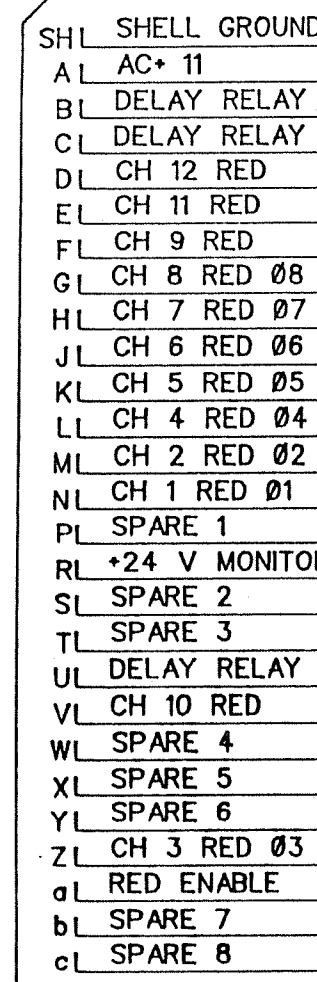
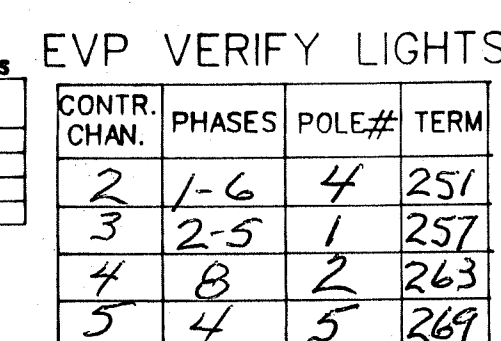
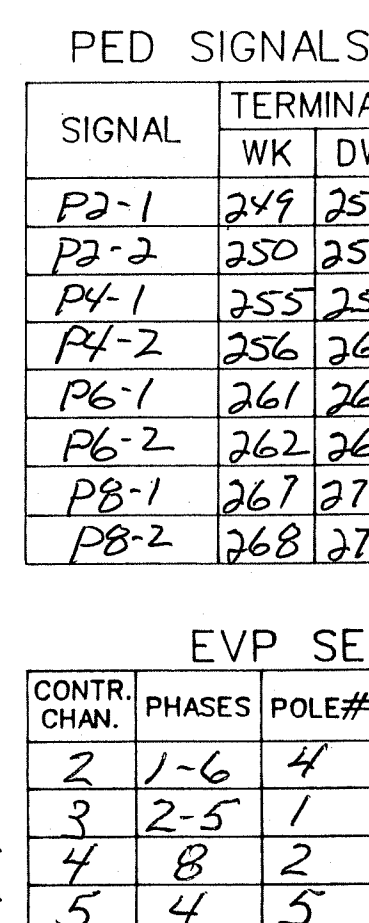
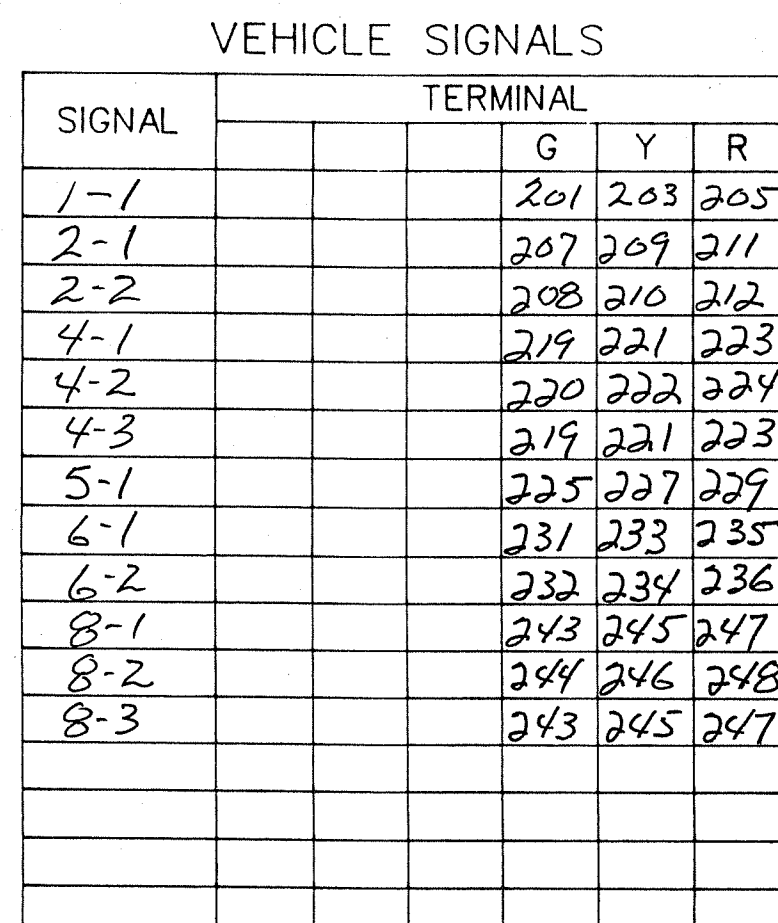
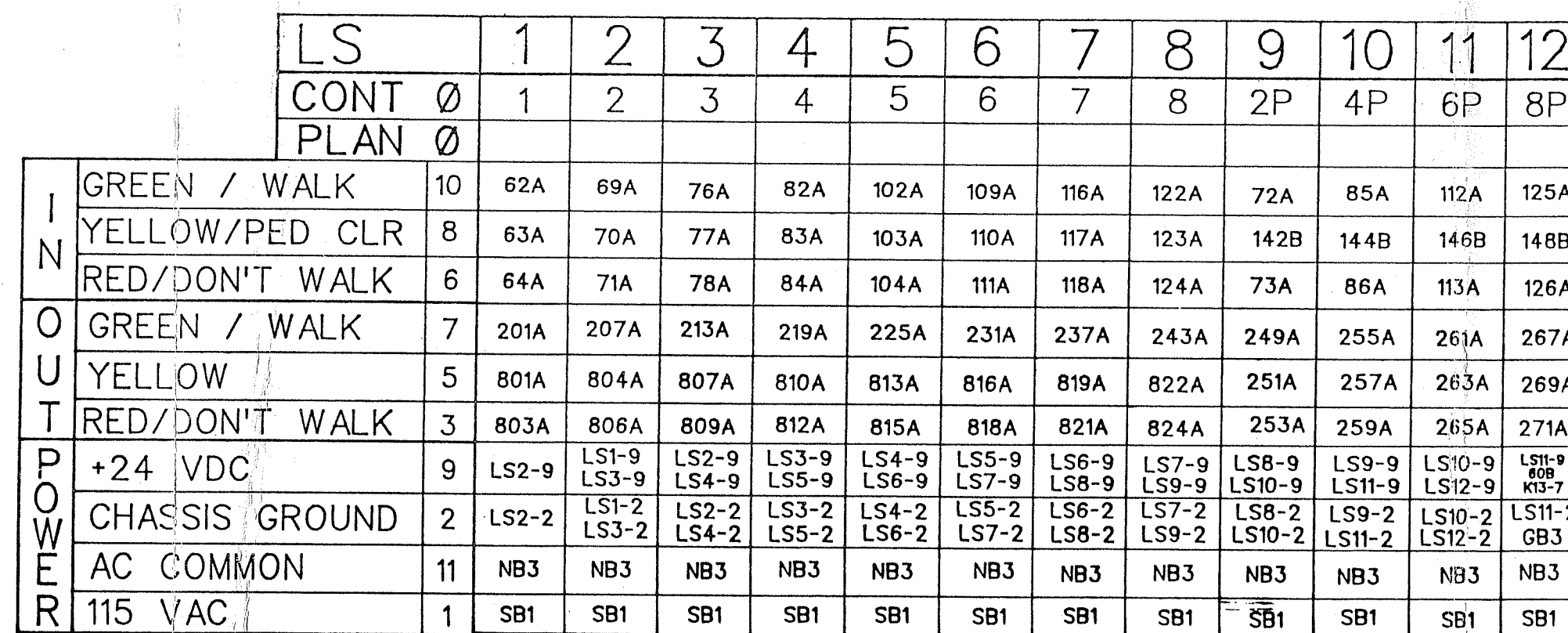
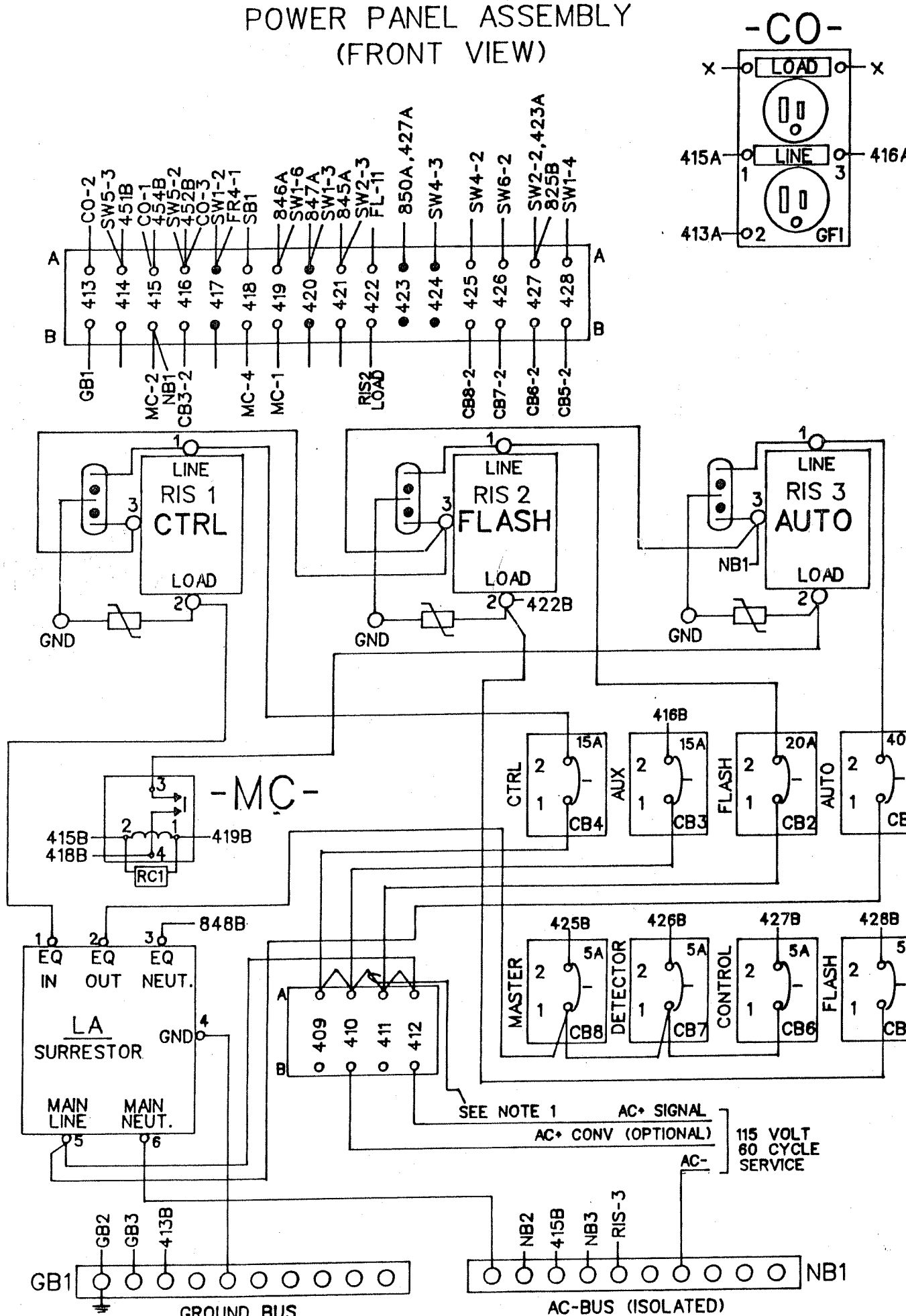




CHANNEL-Ø COMBINATIONS NOT PINNED WITH MATRIX JUMPERS CONSTITUTE CONFLICTING MOVEMENTS. TO PROGRAM, CIRCLE PERMISSIVE COMBINATIONS AND INSTALL JUMPERS ON CORRESPONDING PINS ON THE PROGRAM CARD



701k

MINNESOTA DEPARTMENT OF TRANSPORTATION

CONT () LOAD RELAY, NEMA+ CONFLICT MONITOR, () LOOP DETECTORS

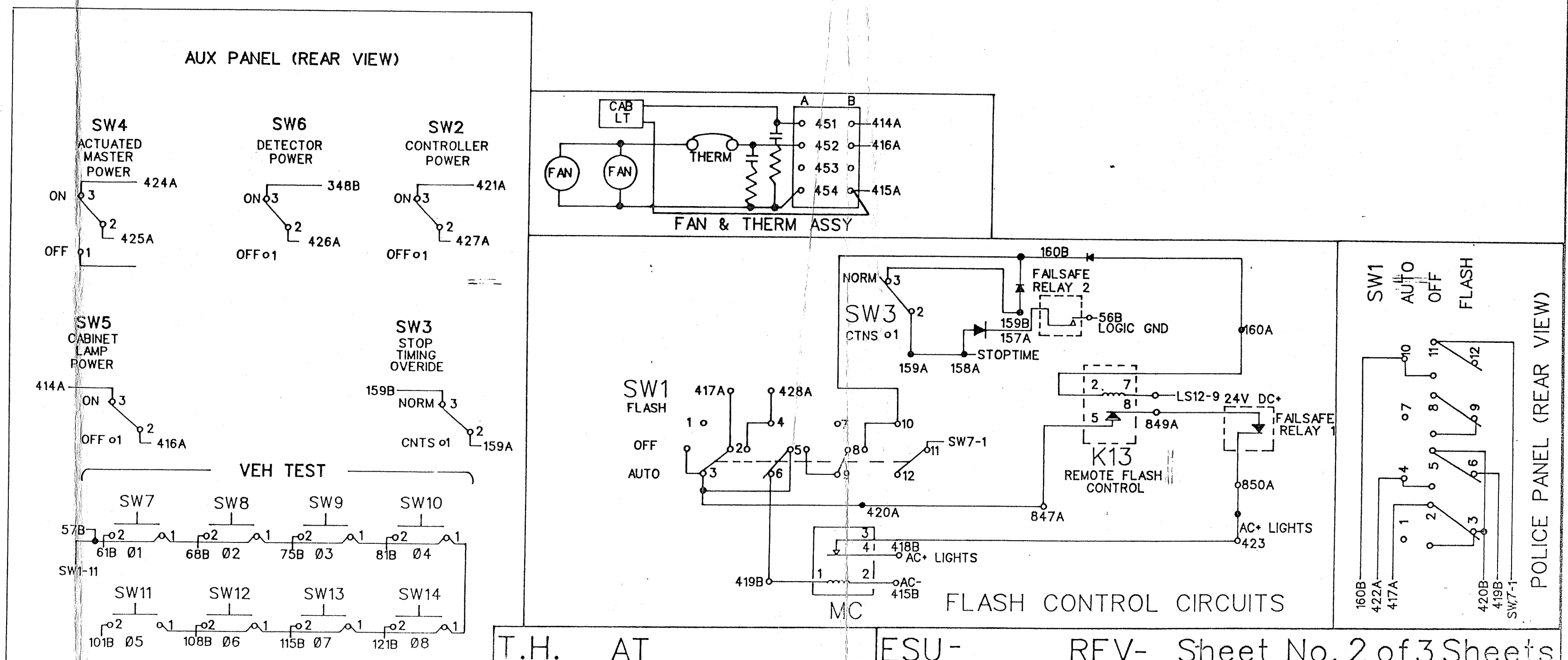
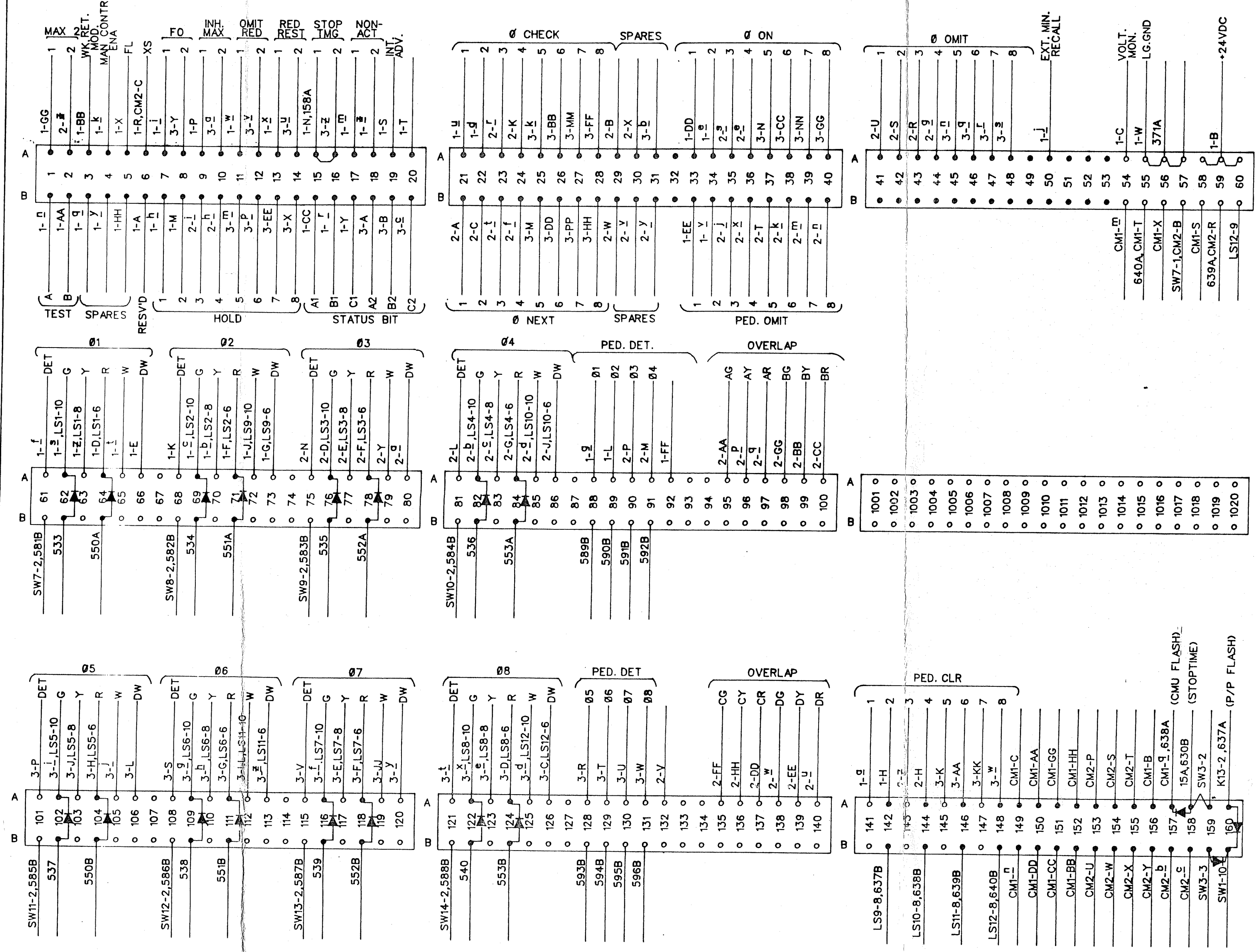
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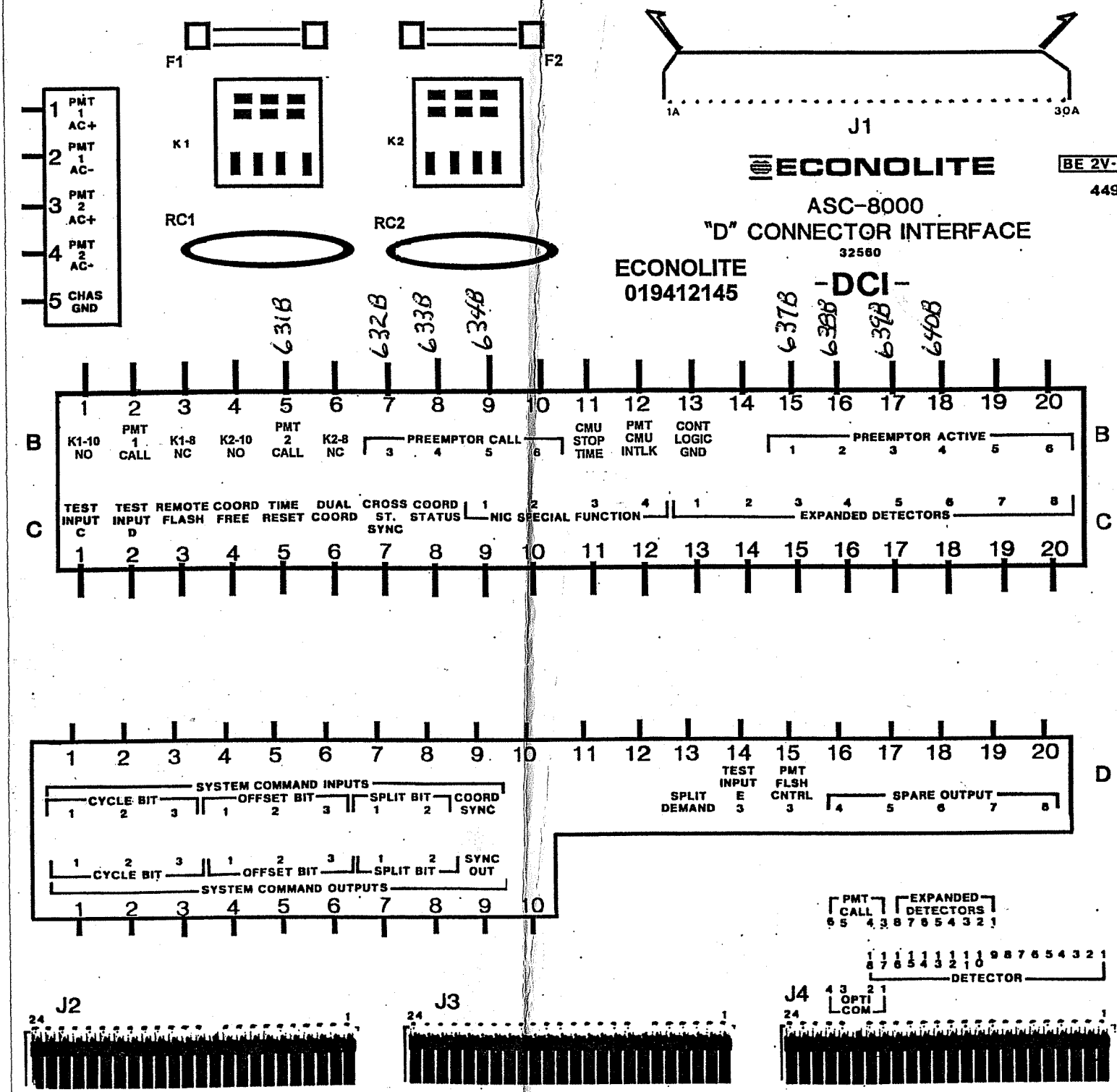
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Sheet No. 1 of 3 Sheets

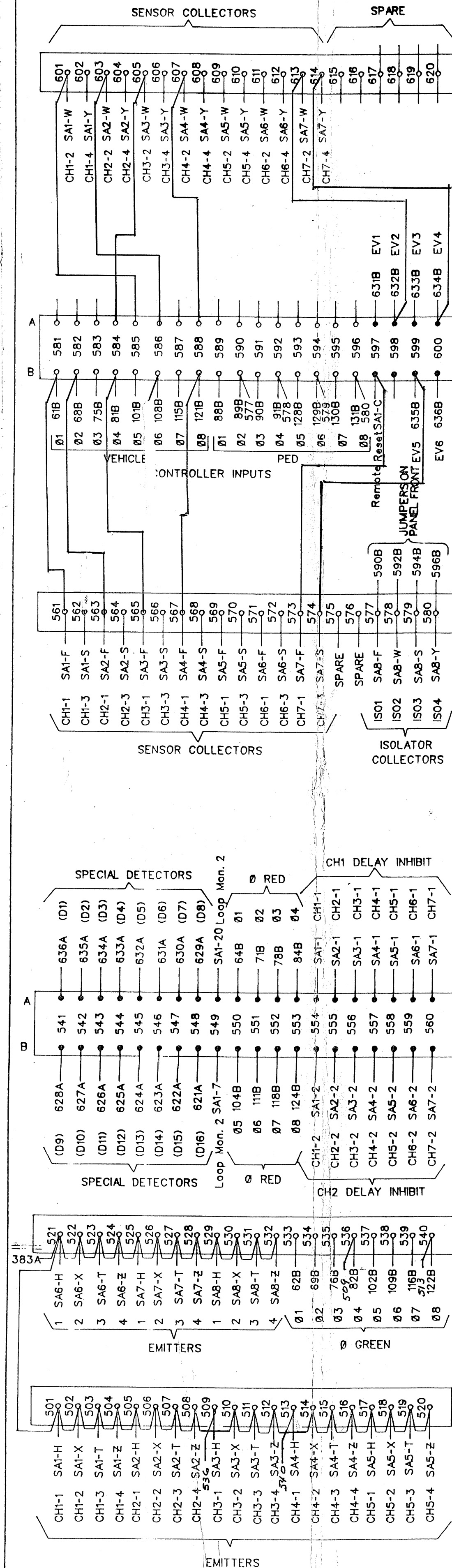
CONTROLLER INTERFACE PANEL

1	2	3
SHL SHELL GROUND GB3	SHL SHELL GROUND GB3	SHL SHELL GROUND GB3
A RESV 6B	A1 PHASE NEXT 21B	A1 STATUS BIT A2 18B
B 24VDC 59A	B SPARE 1 29A	B1 STATUS BIT B2 19B
C VOLTAGE MONITOR 54A	C 02 PHASE NEXT 22B	C 08 DWK 126A
D 01 RED 64A	D 03 GRN 76A	D 08 RED 124A
E 01 DWK 66A	E 03 YEL 77A	E 07 YEL 117A
F 02 RED 71A	F 03 RED 78A	F 07 RED 118A
G 02 DWK 73A	G 04 RED 84A	G 06 RED 119A
H 02 PCL 142A	H 04 PCL 144A	H 05 RED 104A
J 02 WK 72A	J 04 DWK 86A	J 05 YEL 103A
K 02 VEH DET 68A	K 04 CHECK 24A	K 05 PCL 103A
L 02 PED DET 89A	L 04 VEH DET 81A	L 05 DWK 145A
M 02 HOLD 89A	M 04 PED DET 81A	M 05 PHASE NEXT 106A
N STOP TIMING 1 8B	N 03 VEH DET 91A	N 05 PHASE ON 25B
P INHIBIT MAX TERM 1 15A	P 03 PED DET 75A	P 05 VEH DET 37A
R EXTERNAL START 9A	R 03 PHASE OMIT 90A	P 05 PED DET 101A
S INTERVAL ADVANCE 19A	S 02 PHASE OMIT 43A	R 06 VEH DET 128A
T INDICATOR LAMP CONT 19A	T 05 PED OMIT 42A	R 06 PED DET 108A
U AC- COMMON 20A	U 01 PHASE OMIT 37B	T 06 PED DET 129A
V CHASSIS GROUND 848A	V PED RECYCLE 2 41A	U 07 PED DET 130A
W LOGIC GROUND 6B3	W SPARE 2 132A	V 07 VEH DET 115A
X FLASH LOGIC OUT 55A	X SPARE 3 29B	W 08 PED DET 131A
Y STATUS BIT C1 5A	Y 03 WK 30A	X 08 HOLD 14B
Z 01 YEL 17B	Z 03 PCL 79A	Y 03 WK 8A
a 01 PCL 63A	a 03 DWK 143A	Z 03 PCL 16A
b 02 YEL 141A	b 04 GRN 80A	a 03 DWK 10A
c 02 GRN 70A	c 04 YEL 82A	b SPARE 1 31A
d 02 CHECK 69A	d 04 WALK 83A	c STATUS BIT C2 20B
e 02 PHASE ON 22A	e 04 PHASE ON 85A	d 08 WK 125A
f 01 VEH DET 34A	f 04 PHASE NEXT 36A	e 08 YEL 123A
g 01 PED DET 61A	g 04 PHASE OMIT 24B	f 07 GRN 116A
h 01 HOLD 88A	h 04 HOLD 44A	g 06 GRN 109A
i FORCE OFF 1 7B	i 03 HOLD 10B	h 06 YEL 109A
j EXT MIN RECALL ALL 0 7A	j 03 PED OMIT 9B	i 05 GRN 102A
k MAN. CONTROL ENABLE 50A	k 06 PED OMIT 35B	j 05 WK 105A
l CALL TO NON-ACT 1 4A	l 07 PED OMIT 38B	k 05 CHECK 25A
m TEST INPUT A 17A	m 08 PED OMIT 39B	l 05 HOLD 11B
n AC- CONTROL 1B	n 05 PHASE OMIT 45A	m 05 PHASE OMIT 45A
o SPARE 1 846B	o 06 HOLD 12B	n 06 HOLD 12B
p STATUS BIT B1 3B	p 03 CHECK 97A	o 06 PHASE OMIT 46A
q 01 GRN 16B	q 03 PHASE ON 23A	p 07 PHASE OMIT 47A
r 01 WK 62A	r 03 PHASE NEXT 35A	q 08 PHASE OMIT 48A
s 01 CHECK 65A	s 04 PHASE NEXT 23B	r 08 VEH DET 121A
t 02 PED OMIT 21A	t 04 D RED 140A	s RED REST MODE 2 14A
u 02 PED OMIT 34B	u SPARE 4 30B	t OMIT RED CLR 2 14A
v OMIT RED CLR 11A	v 04 D GRN 138A	u 08 PCL 148A
w RED REST MODE 1 13A	w 04 PED OMIT 36B	x 08 GRN 148A
x SPARE 2 4B	x 04 PED OMIT 36B	y 07 DWK 122A
y CALL TO NON-ACT II 18A	y MAX 2 SELECT 2 31B	z 06 DWK 120A
AA TEST INPUT B 2B	AA 06 PCL 113A	z 06 DWK 120A
BB WALK REST MODIFIER 2B	BB 06 CHECK 146A	AA 06 PCL 113A
CC STATUS BIT A1 3A	CC 06 PHASE ON 26A	BB 06 CHECK 146A
DD 01 PHASE ON 15B	CC 06 PHASE NEXT 38A	CC 06 PHASE ON 26A
EE 01 PED OMIT 33A	DD 06 PHASE NEXT 26B	CC 06 PHASE NEXT 38A
FF PED RECYCLE 1 33B	EE 07 HOLD 13B	DD 06 PHASE NEXT 26B
GG MAX 2 SELECT 92A	FF 08 CHECK 28A	EE 07 HOLD 13B
HH SPARE 3 5B	GG 08 PHASE ON 40A	FF 08 CHECK 28A
	HH 08 PHASE NEXT 28B	GG 08 PHASE ON 40A
	JJ 07 WK 119A	HH 08 PHASE NEXT 28B
	KK 07 PCL 147A	JJ 07 WK 119A
	LL 06 WK 112A	KK 07 PCL 147A
	MM 07 CHECK 27A	LL 06 WK 112A
	NN 07 PHASE ON 39A	MM 07 CHECK 27A
	PP 07 PHASE NEXT 27B	NN 07 PHASE ON 39A



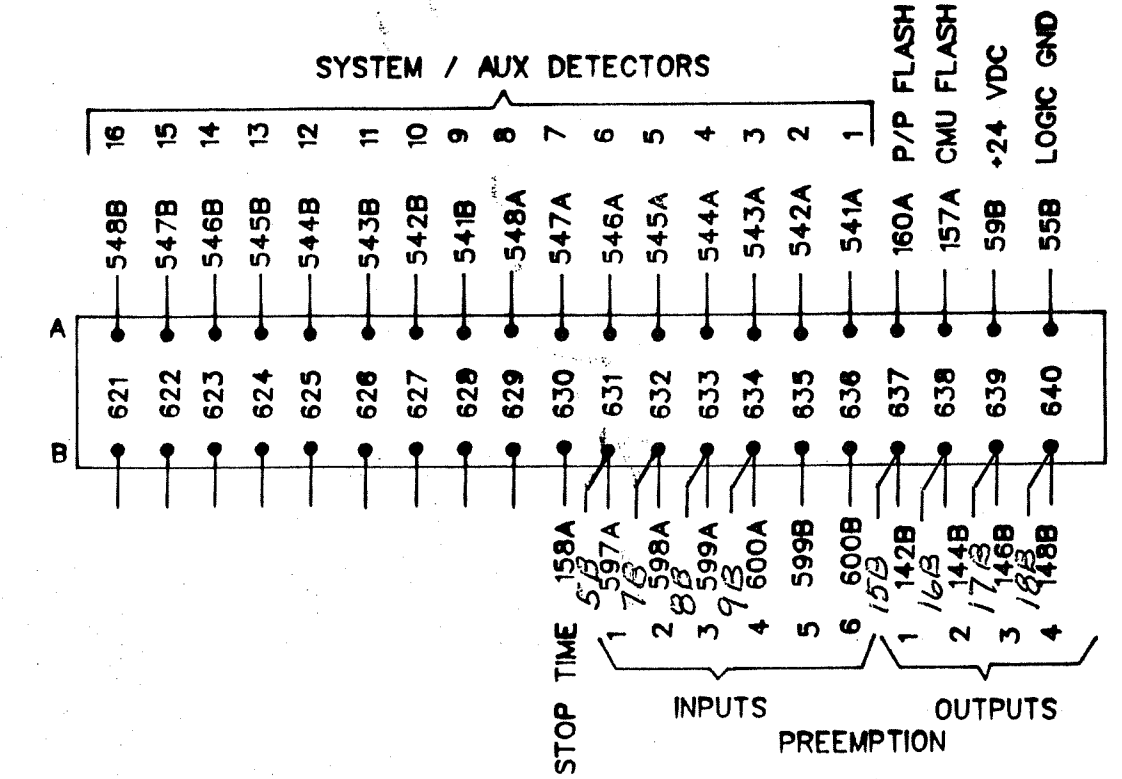


SENSOR PROGRAM PANEL



ASC 8000 "D" CONNECTOR INTERFACE PANEL	
PIN	FUNCTION
1	PREEMPT #5 ACTIVE
2	SYSTEM COMMAND OFFSET BIT 3 OUTPUT
3	SPLIT DEMAND
4	SYSTEM COMMAND COORD SYNC INPUT
5	CROSS STREET SYNC
6	SYSTEM COMMAND CYCLE BIT 3 INPUT
7	NOT USED
8	NC SPECIAL FUNCTION 2
9	SYSTEM COMMAND OFFSET BIT 2 INPUT/EXTERNAL ADDRESS BIT 4
10	SYSTEM COMMAND OFFSET BIT 2 INPUT/EXTERNAL ADDRESS BIT 1
11	NC SPECIAL FUNCTION 4/SPLIT DEMAND OUTPUT 2
12	SYSTEM COMMAND OFFSET BIT 1 INPUT/EXTERNAL ADDRESS BIT 0
13	EXPANDED DETECTOR #6
14	TIME RESET
15	PREEMPTOR FLASH CONTROL
16	SYSTEM COMMAND OFFSET BIT 1 INPUT/EXTERNAL ADDRESS BIT 3
17	EXPANDED DETECTOR #1
18	EXPANDED DETECTOR #4
19	TEST INPUT E
20	TEST INPUT C
21	SYSTEM COMMAND SPLIT BIT 1 OUTPUT
22	PREEMPTOR #3 ACTIVE
23	PREEMPTOR #1 ACTIVE
24	NC SPECIAL FUNCTION 3/SPLIT DEMAND OUTPUT 1
25	SYSTEM COMMAND CYCLE BIT 1 INPUT
26	COORD FREE
27	COORD STATUS
28	NC SPECIAL FUNCTION 1
29	SYSTEM COMMAND CYCLE BIT 3 OUTPUT
30	EXPANDED DETECTOR #5
31	EXPANDED DETECTOR #3
32	PREEMPTOR #2 ACTIVE
33	SYSTEM COMMAND OFFSET BIT 1 OUTPUT
34	PREEMPTOR #4 ACTIVE
35	SYSTEM COMMAND CYCLE BIT 2 INPUT
36	SYSTEM COMMAND OFFSET BIT 3 INPUT/EXTERNAL ADDRESS BIT 2
37	TEST INPUT D
38	DUAL COORD
39	EXPANDED DETECTOR #6
40	EXPANDED DETECTOR #7
41	SPARE OUTPUT 4
42	SYSTEM COMMAND OFFSET BIT 2 OUTPUT
43	SYSTEM COMMAND CYCLE BIT 1 OUTPUT
44	SYSTEM COMMAND CYCLE BIT 2 OUTPUT
45	SPARE OUTPUT 5
46	SYSTEM COMMAND SPLIT BIT 2 OUTPUT
47	EXPANDED DETECTOR #2
48	PREEMPTOR #6 ACTIVE
49	PREEMPTOR CALL #2
50	PREEMPTOR CALL #3
51	SPARE OUTPUT 6
52	SPARE OUTPUT 7
53	SYSTEM COMMAND SYNC OUT
54	SPARE OUTPUT 8
55	PREEMPTOR CALL #4
56	PREEMPTOR CALL #5
57	NOT USED
58	CMU STOP TIME (CONFLICT FLASH)
59	PREEMPT CMU INTERLOCK (IK PULL UP)
60	REMOTE FLASH

4th CONNECTOR TERMINATION BLOCK



348A	1	AC+
347A	2	AC-
368A	3	CH GND
NC	4	
NC	5	
NC	6	
360A	7	DC+
359B	8	DC-
356A	9	CH GND

PS
24VDC
POWER SUPPLY

SA

DETECTORS AND PPB ISOLATION

⊕ SA6 AND SA7 ARE WIRED TO ACCEPT VEH DET. OR EVP DISCRIMINATOR.		SA1	SA2	SA3	SA4	SA5	⊕SA6	⊕SA7	SA8	FUNCTIONS	
PIN	SA-PIN	PHASE	FUNC	DET	PHASE	FUNC	DET	PHASE	FUNC	DET	PHASE
1	A	DC GROUND	359A	4							CH 1
2	B	24V DC+	360A	4							CH 2
3	C	REMOTE RESET	597B	4							CH 3
4	D-4	CH 1 LOOP	301A	313A	325A	337A	349A	361A	373A	311A	INPUT CH 1
5	E-5	CH 1 LOOP	302A	314A	326A	338A	350A	362A	374A	335B	INPUT COMMON
6	F	CH 1 OUTPUT (+)	561	563	565	567	569	571	573	577	OUTPUT CH 1 (+)
7	H	CH 1 OUTPUT (-)	501	505	509	513	517	521	525	529	OUTPUT CH 1 (-)
8	J-8	CH 2 LOOP	304A	316A	328A	340A	352A	364A	376A	312A	INPUT CH 2
9	K-9	CH 2 LOOP	305A	317A	329A	341A	353A	365A	377A	347B	INPUT COMMON
10	L	CHASSIS GROUND	380A	4							CHASSIS GROUND
11	M	SPARE	NC	NC	NC	NC	NC	SA7/SA8	SA6/SA8	SA7/347A	AC-
12	N	SPARE	NC	NC	NC	NC	NC	SA7/SA8	SA6/SA8	SA7/348A	115V AC+
13	P-13	LOOP CH 3	306A	318A	330A	342A	354A	366A	378A	323A	INPUT CH 3
14	R-14	LOOP CH 3	307A	319A	331A	343A	355A	367A	379A	336B	INPUT COMMON
15	S	CH 3 OUTPUT (+)	562	564	566	568	570	572	574	579	OUTPUT CH 3 (+)
16	T	CH 3 OUTPUT (-)	503	507	511	515	519	523	527	531	OUTPUT CH 3 (-)
17	U-17	CH 4 LOOP	309A	321A	333A	345A	357A	369A	381A	324A	INPUT CH 4
18	V-18	CH 4 LOOP	310A	322A	334A	346A	358A	370A	382A	336A	INPUT COMMON
19	W	CH 2 OUTPUT (+)	601	603	605	607	609	611	613	578	OUTPUT CH 2 (+)
20	X	CH 2 OUTPUT (-)	502	506	510	514	518	522	526	530	OUTPUT CH 2 (-)
21	Y	CH 4 OUTPUT (+)	602	604	606	608	610	612	614	580	OUTPUT CH 4 (+)
22	Z	CH 4 OUTPUT (-)	504	508	512	516	520	524	528	532	OUTPUT CH 4 (-)
23	1	CH 1 GREEN	554A	555A	556A	557A	558A	559A	560A		SPARE
24	2	CH 2 GREEN	554B	555B	556B	557B	558B	559B	560B		SPARE
25	7	LOOP MONITOR 1	549B	4							SPARE
26	20	LOOP MONITOR 2	549A	4							SPARE

T.H. AT

ESU-

REV- Sheet No.3 of 3 Sheets