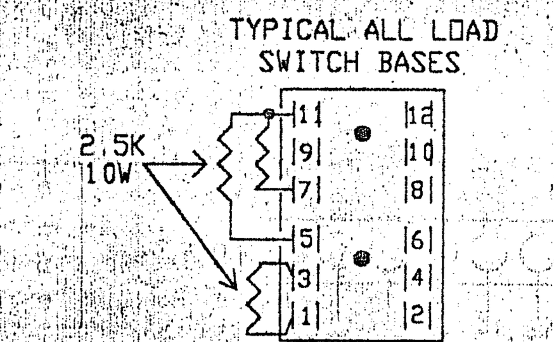
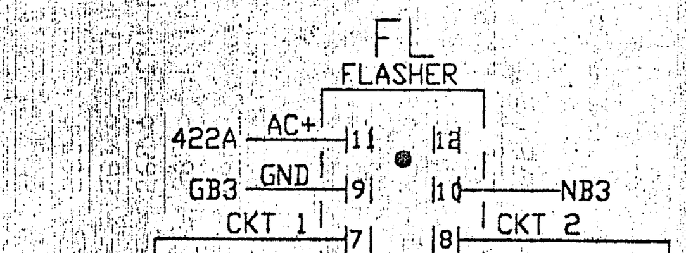
LOAD SWITCH PANEL ASSEMBLY (REAR VIEW)

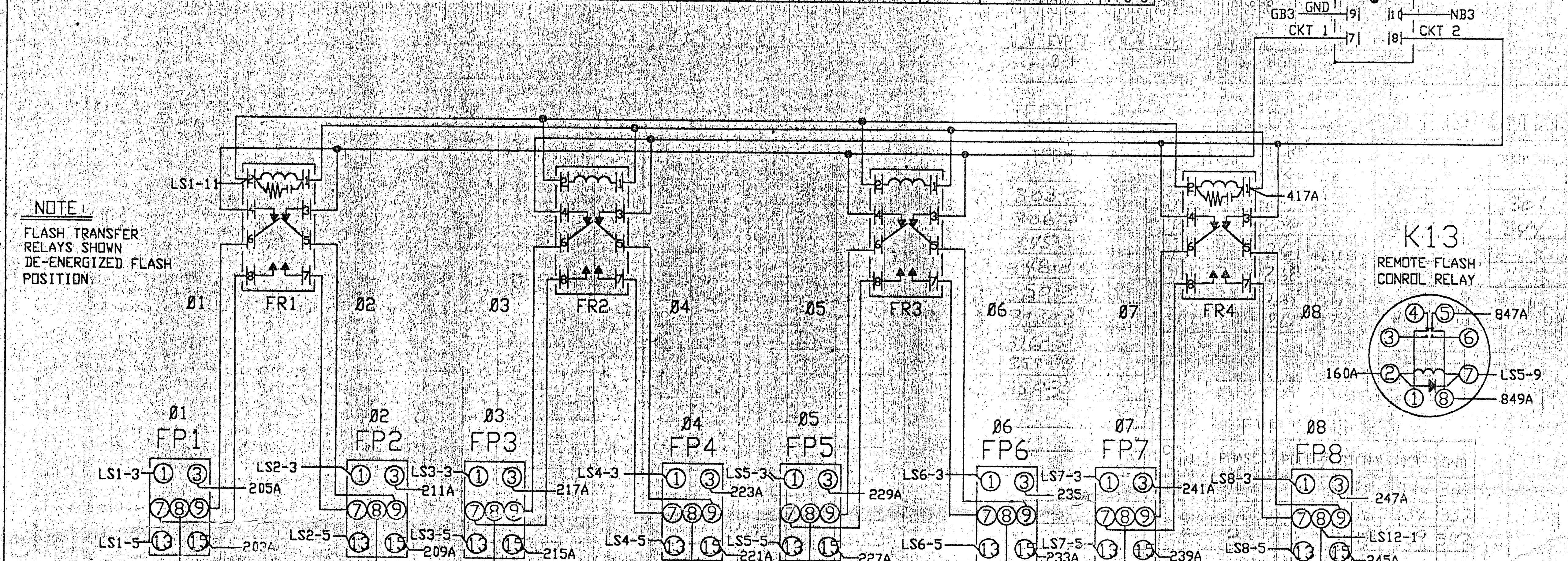
			1	2	3	4	5	6	7	8	9	10	11	12
	LS		1	2	3	4	5	6	7	8	9	10	11	12
	CONT Ø		1	2	3	4	5	6	7	8	2P	4P	6P	8P
	PLAN Ø													
INPUT	GREEN / WALK	10	62A	69A	76A	82A	102A	109A	116A	122A	72A	85A	112A	125A
INPUT	YELLOW/PED CLR	8	63A	70A	77A	83A	103A	110A	117A	123A	142B	144B	146B	148B
INPUT	RED/DON'T WALK	6	64A	71A	78A	84A	104A	111A	118A	124A	73A	86A	113A	126A
OUTPUT	GREEN / WALK	7	201A	207A	213A	219A	225A	231A	237A	243A	249A	255A	261A	267A
OUTPUT	YELLOW	5	FP1-13	FP2-13	FP3-13	FP4-13	FP5-13	FP6-13	FP7-13	FP8-13	251A	257A	263A	269A
OUTPUT	RED/DON'T WALK	3	FP1-1	FP2-1	FP3-1	FP4-1	FP5-1	FP6-1	FP7-1	FP8-1	253A	259A	265A	271A
POWER	+24 VDC	9	LS2-9	LS1-9 LS3-9	LS2-9 LS4-9	LS3-9 LS5-9	LS4-9 LS6-9 K13-7	LS5-9 LS7-9	LS6-9 LS8-9	LS7-9 LS9-9	LS8-9 LS10-9	LS9-9 LS11-9	LS10-9 LS12-9	LS11-9 60B
POWER	CHASSIS GROUND	2	LS2-2	LS1-2 LS3-2	LS2-2 LS4-2	LS3-2 LS5-2	LS4-2 LS6-2	LS5-2 LS7-2	LS6-2 LS8-2	LS7-2 LS9-2	LS8-2 LS10-2	LS9-2 LS11-2	LS10-2 LS12-2	LS11-2 GB3
POWER	AC COMMON	11	NB3 FR1-2	NB3	NB3	NB3	NB3	NB3	NB3	NB3	NB3	NB3	NB3	NB3
POWER	115 VAC	1	SB1	SB1	SB1	SB1	SB1	SB1	SB1	SB1	SB1	SB1	SB1	SB1 FP8-8

TYPICAL ALL LOAD SWITCH BASES



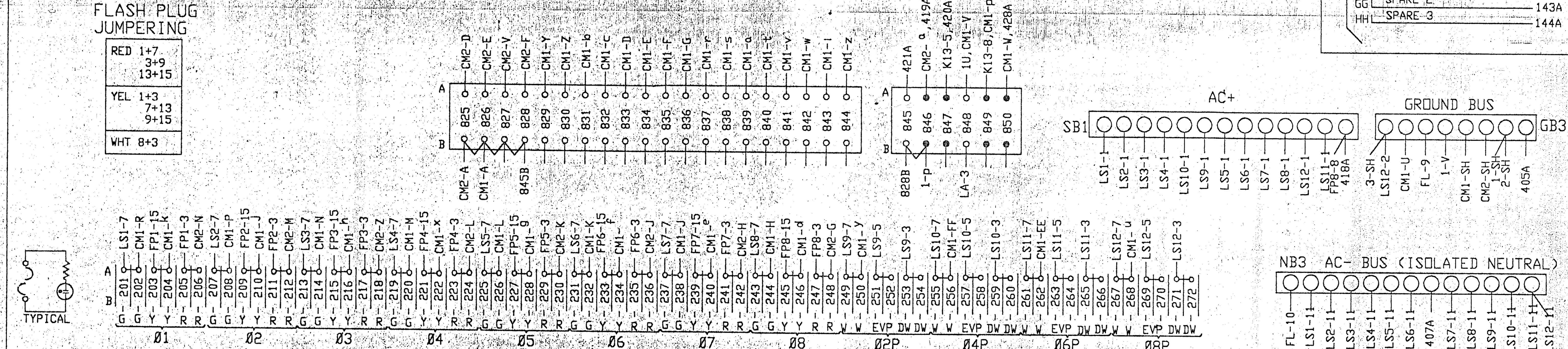


NOTE:
FLASH TRANSFER RELAYS SHOWN DE-ENERGIZED FLASH POSITION.



FLASH PLUG JUMPERING

RED	1+7, 3+9, 13+15
YEL	1+3, 7+13, 9+15
WHT	8+3



NEMA+ 12CH CONFLICT MONITOR

CM1

Pin	Function	Wire
SH	SHELL GROUND	GB3
A	AC +1	826B
B	RELAY 1 NO	148A
C	RELAY 2 NC	141A
D	CH 12 GRN	833A
E	CH 11 GRN	834A
F	CH 10 GRN	835A
G	CH 9 GRN	836A
H	CH 8 GRN 08	244A
J	CH 7 GRN 07	238A
K	CH 6 GRN 06	232A
L	CH 5 GRN 05	226A
M	CH 4 GRN 04	220A
N	CH 3 GRN 03	214A
P	CH 2 GRN 02	208A
R	CH 1 GRN Ø1	202A
S	+24 MONITOR	59B
T	LOGIC GROUND	53B
U	CHASSIS GROUND	SHELL
V	AC-	848A
W	RELAY 1 COMMON (AC+)	850A
X	RELAY 2 COMMON (LG)	54B
Y	CH 12 YEL	829A
Z	CH 11 YEL	830A
a	CH 10 WK	839A
b	CH 10 YEL	831A
c	CH 9 YEL	832A
d	CH 8 YEL 08	246A
e	CH 7 YEL 07	240A
f	CH 6 YEL 06	234A
g	CH 5 YEL 05	228A
h	CH 3 YEL 03	216A
i	CH 3 WK	843A
j	CH 2 YEL 02	210A
k	CH 1 YEL Ø1	204A
m	CONT. VOLT. MON.	52B
n	+24V MONITOR INHIBIT	1001B
p	RELAY 1 NC	849A
q	RELAY 2 NO	157A
r	CH 12 WK	837A
s	CH 11 WK	838A
t	CH 9 WK	840A
u	CH 8 WK 08	268A
v	CH 7 WK	841A
w	CH 5 WK	842A
x	CH 4 YEL 04	222A
y	CH 2 WK 02	250A
z	CH 1 WK	844A
AA	SPARE 1	142A
BB	RESET	1004B
CC	CAB INTERLOCK A	1003B
DD	CAB INTERLOCK B	1002B
EE	CH 6 WK 06	262A
FF	CH 4 WK 04	256A
GG	SPARE 2	143A
HH	SPARE 3	144A

CM2

Pin	Function	Wire
SH	SHELL GROUND	GB3
A	AC+ 11	825B
B	DELAY RELAY COMM	55B
C	DELAY RELAY NO	6A
D	CH 12 RED	825A
E	CH 11 RED	826A
F	CH 9 RED	828A
G	CH 8 RED 08	248A
H	CH 7 RED 07	242A
J	CH 6 RED 06	236A
K	CH 5 RED 05	230A
L	CH 4 RED 04	224A
M	CH 2 RED 02	212A
N	CH 1 RED Ø1	206A
P	SPARE 1	145A
R	+24 V MONITOR 11	58B
S	SPARE 2	146A
T	SPARE 3	147A
U	DELAY RELAY NC	1005B
V	CH 10 RED	827A
W	SPARE 4	1006B
X	SPARE 5	1007B
Y	SPARE 6	1008B
Z	CH 3 RED 03	218A
a	RED ENABLE	846A
b	SPARE 7	1009B
c	SPARE 8	1010B

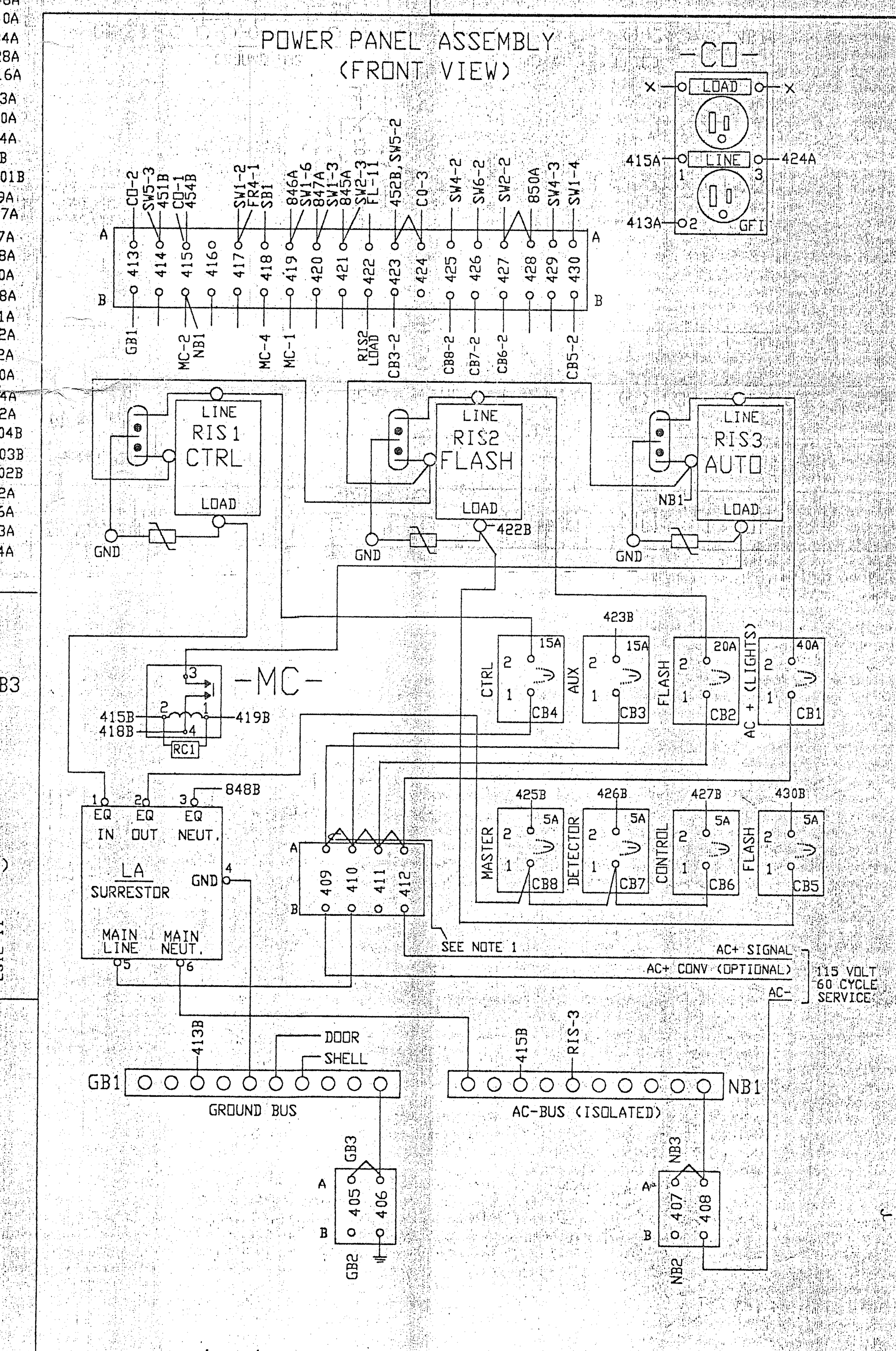
CONFLICT MONITOR MATRIX PROGRAMMING INSTRUCTIONS

1-2 2-3 3-4 4-5 5-6 6-7 7-8 8-9 9-10 10-11 11-12
1-3 2-4 3-5 4-6 5-7 6-8 7-9 8-10 9-11 10-12
1-4 2-5 3-6 4-7 5-8 6-9 7-10 8-11 9-12
1-5 2-6 3-7 4-8 5-9 6-10 7-11 8-12
1-6 2-7 3-8 4-9 5-10 6-11 7-12
1-7 2-8 3-9 4-10 5-11 6-12
1-8 2-9 3-10 4-11 5-12
1-9 2-10 3-11 4-12
1-10 2-11 3-12
1-11 2-12
1-12

CH1- Ø 1 CH2- Ø 2 CH3- Ø 3 CH4- Ø 4
CH5- Ø 5 CH6- Ø 6 CH7- Ø 7 CH8- Ø 8
CH9- Ø ___ CH10- Ø ___ CH11- Ø ___ CH12- Ø ___

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.

POWER PANEL ASSEMBLY (FRONT VIEW)



TIGHTENING TORQUE SPECIFICATIONS

SCREW SIZE	6-32	8-32	10-32
POUND INCHES	12	16	25.9

REV	DESCRIPTION

VEHICLE SIGNALS

SIGNAL	TERMINAL G←	TERMINAL Y←	G	Y	R
2-1			207	209	211
2-2			208	210	212
2-3			207	209	211
6-1			231	233	235
6-2			232	234	236
6-3	201	203	231	233	235
6-4	202	204	232	234	236
8-1			243	245	247
8-2			244	246	248
8-3			243	245	247

VEH DETECTORS

DET	TERMINAL
D1-1	303-304
D1-2	306-307
D2-1	345-346
D2-2	348-349
D6-1	350-351
D8-1	313-314
D8-2	316-317
P8-3	355-356
D8-4	358-359

PED SIGNALS

SIGNAL	TERMINAL WK	DW
P2-1	249	253
P2-2	250	254
P8-1	267	271
P8-2	268	272
P8-3	267	271
P8-4	268	272

PED PUSHBUTTONS

PPB	TERMINAL
PB2-1, 2	301
PB8-1, 2, 3, 4	344

EVP TYPICAL SENSOR WIRE COLORS

SIGNAL	DC(+)	GND
YEL	ORG	BLU
CLR	RED	BLK
WHT	RED	BLK

EVP SENSORS

CONTR. CHAN.	PHASES	POLE #	SIGNAL	DC(+)	GND
1	2-6	1-3	333	334	337
2	8	2	336	334	337

NOTES

1) IF A SIGNAL SERVICE CABINET IS USED REMOVE JUMPER 409A, 410A, CONV AC+.

2) IF EVP HEADS ARE INSTALLED JUMPER 363A TO 365A AND / OR 375A TO 377A

EVP CONFIRMATORY LIGHTS

CONTR. CHAN.	PHASES	POLE #	TERM
1	2-6	1-3	251
2	8	2	257

#18/Coon Creek Blvd at 133rd

ACT ELECTRONICS

REV. STATUS OF SHEETS			
SHEET	1	2	3
REV	F	F	F

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

1992

DRAWN BY-Mike Olsen
CHECKED BY-
REV-F
DRAWING NO.

SHEET NO. 1 OF 3

CONTROLLER INTERFACE PANEL

1 (A)

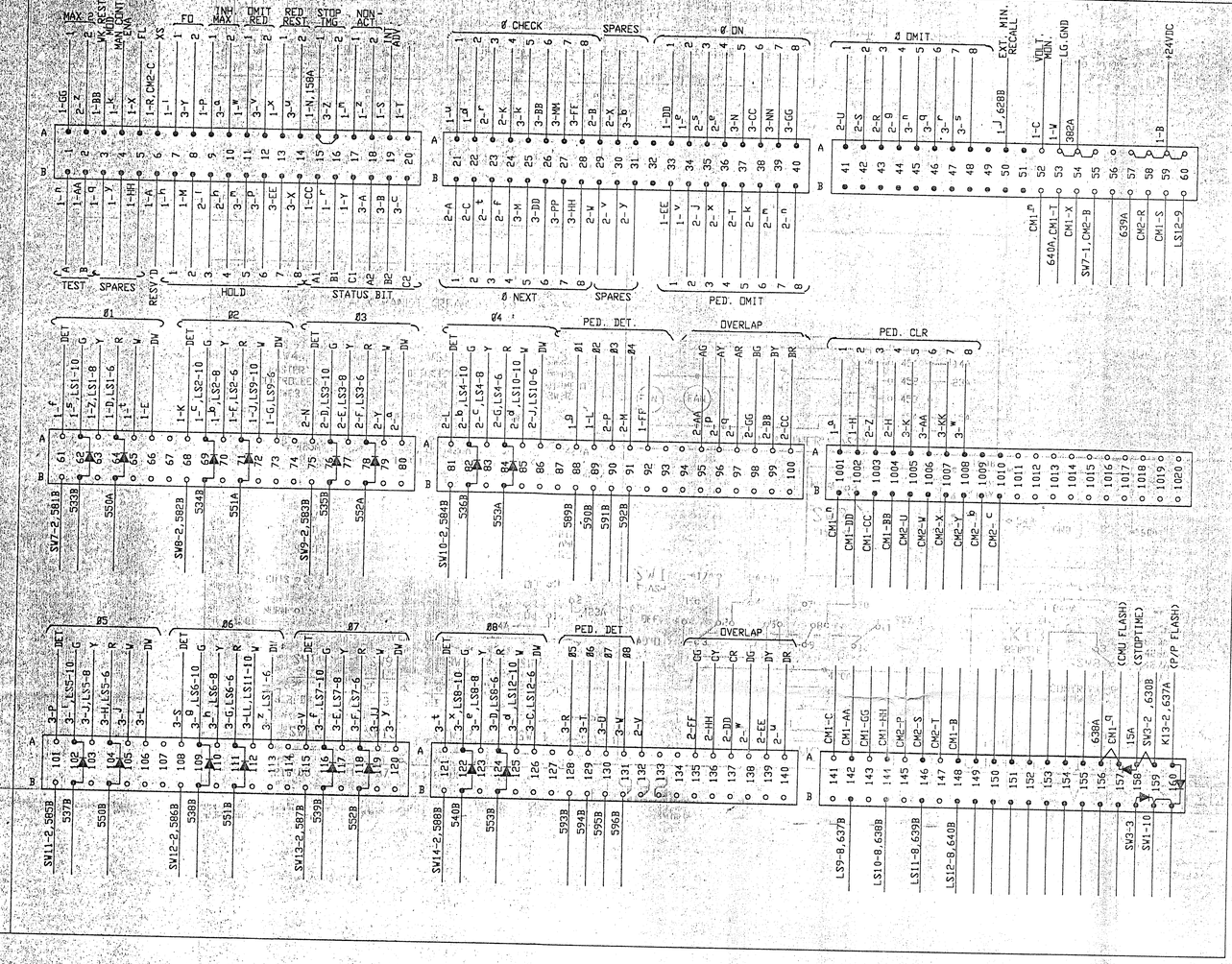
SH	SHELL GROUND	GB3
A	RESV	6B
B	24VDC+	59A
C	VOLTAGE MONITOR	52A
D	Ø1 RED	64A
E	Ø1 DWK	66A
F	Ø2 RED	71A
G	Ø2 DWK	73A
H	Ø2 PCL	100Z
J	Ø2 WK	72A
K	Ø2 VEH DET	68A
L	Ø2 PED DET	89A
M	Ø2 HOLD	8B
N	STOP TIMING 1	15A
P	INHIBIT MAX TERM 1	9A
R	EXTERNAL START	6A
S	INTERVAL ADVANCE	19A
T	INDICATOR LAMP CONT	20A
U	AC- COMMON	84BA
V	CHASSIS GROUND	GB3
W	LOGIC GROUND	GB3
X	FLASH LOGIC OUT	53A
Y	STATUS BIT C1	5A
Z	Ø1 YEL	17B
a	Ø1 PCL	63A
b	Ø2 YEL	1001A
c	Ø2 GRN	70A
d	Ø2 CHECK	69A
e	Ø2 PHASE ON	22A
f	Ø1 VEH DET	34A
g	Ø1 PED DET	61A
h	Ø1 HOLD	88A
j	FORCE OFF 1	7B
k	EXT MIN RECALL ALL Ø	7A
m	MAN. CONTROL ENABLE	50A
n	CALL TO NON-ACT 1	4A
p	TEST INPUT A	17A
q	AC+ CONTROL	1B
r	SPARE 1	84GB
s	STATUS BIT B1	3B
t	Ø1 GRN	16B
u	Ø1 WK	62A
v	Ø1 CHECK	65A
w	Ø2 PED OMIT	21A
x	OMIT RED CLR	34B
y	RED REST MODE 1	11A
z	SPARE 2	13A
AA	CALL TO NON-ACT II	4B
BB	TEST INPUT B	18A
CC	WALK REST MODIFIER	2B
DD	STATUS BIT A1	3A
EE	Ø1 PHASE ON	15B
FF	Ø1 PED OMIT	33A
GG	PED RECYCLE 1	33B
HH	MAX 2 SELECT	92A
	SPARE 3	1A
		5B

2 (B)

SH	SHELL GROUND	GB3
A	Ø1 PHASE NEXT	21B
B	SPARE 1	29A
C	Ø2 PHASE NEXT	22B
D	Ø3 GRN	76A
E	Ø3 YEL	77A
F	Ø3 RED	78A
G	Ø4 RED	84A
H	Ø4 PCL	1004A
J	Ø4 DWK	86A
K	Ø4 CHECK	24A
L	Ø4 VEH DET	81A
M	Ø4 PED DET	91A
N	Ø3 VEH DET	75A
P	Ø3 PED DET	90A
R	Ø3 PHASE OMIT	43A
S	Ø2 PHASE OMIT	42A
T	Ø5 PED OMIT	37B
U	Ø1 PHASE OMIT	41A
V	PED RECYCLE 2	132A
W	SPARE 2	29B
X	SPARE 3	30A
Y	Ø3 WK	79A
Z	Ø3 PCL	1003A
a	Ø3 DWK	80A
b	Ø4 GRN	82A
c	Ø4 YEL	83A
d	Ø4 WALK	85A
e	Ø4 PHASE ON	36A
f	Ø4 PHASE NEXT	123A
g	Ø4 PHASE OMIT	44A
h	Ø4 HOLD	10B
j	Ø3 HOLD	9B
k	Ø3 PED OMIT	35B
m	Ø6 PED OMIT	38B
n	Ø7 PED OMIT	39B
p	Ø8 PED OMIT	40B
q	OL A YEL	96A
r	OL A RED	97A
s	Ø3 CHECK	23A
t	Ø3 PHASE ON	35A
u	Ø3 PHASE NEXT	23B
v	OL B RED	140A
w	SPARE 4	30B
x	OL D GRN	138A
y	Ø4 PED OMIT	36B
z	SPARE 5	31B
AA	MAX 2 SELECT 2	2A
BB	OL A GRN	95A
CC	OL B YEL	99A
DD	OL B RED	100A
EE	OL C RED	137A
FF	OL D YEL	139A
GG	OL C GRN	135A
HH	OL B GRN	98A
	OL C YEL	136A

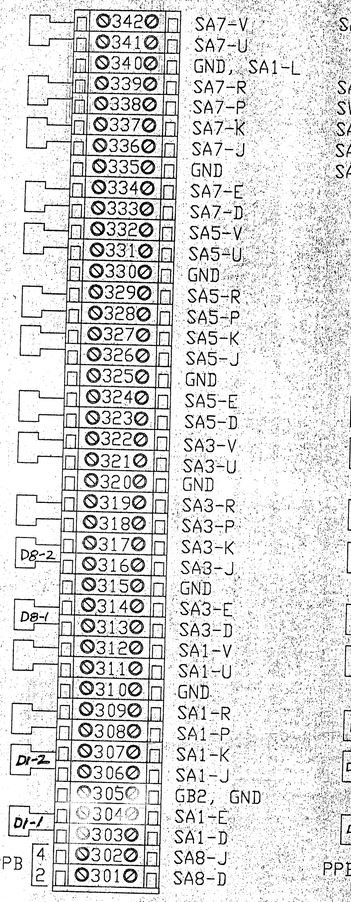
3 (C)

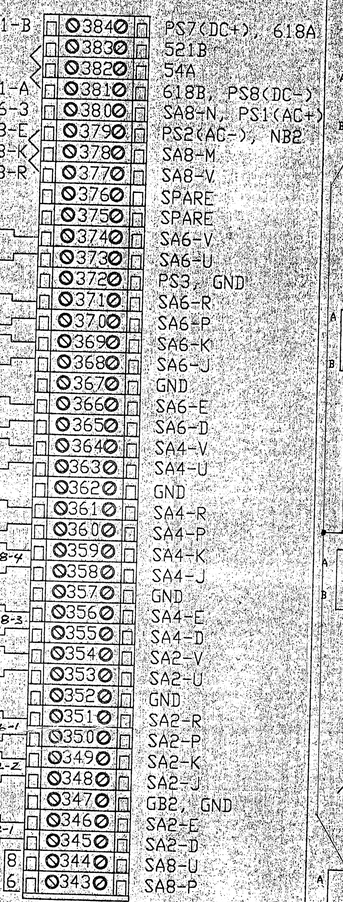
SH	SHELL GROUND	GB3
A	STATUS BIT A2	18B
B	STATUS BIT B2	19B
C	Ø8 DWK	126A
D	Ø8 RED	124A
E	Ø7 YEL	117A
F	Ø7 RED	118A
G	Ø6 RED	111A
H	Ø5 RED	104A
J	Ø5 YEL	103A
K	Ø5 PCL	1005A
L	Ø5 DWK	106A
M	Ø5 PHASE NEXT	25B
N	Ø5 PHASE ON	37A
P	Ø5 VEH DET	101A
R	Ø5 PED DET	128A
S	Ø6 VEH DET	108A
T	Ø6 PED DET	129A
U	Ø7 PED DET	130A
V	Ø7 VEH DET	115A
W	Ø8 PED DET	131A
X	Ø8 HOLD	14B
Y	FORCE OFF 2	8A
Z	STOP TIME 2	16A
a	INHIBIT MAX TERM 2	10A
b	SPARE 1	31A
c	STATUS BIT C2	20B
d	Ø8 WK	125A
e	Ø8 YEL	123A
f	Ø7 GRN	116A
g	Ø6 GRN	109A
h	Ø6 YEL	110A
j	Ø5 GRN	102A
k	Ø5 WK	105A
m	Ø5 CHECK	25A
n	Ø5 HOLD	11B
p	Ø5 PHASE OMIT	45A
q	Ø6 HOLD	12B
r	Ø6 PHASE OMIT	46A
s	Ø7 PHASE OMIT	47A
t	Ø8 PHASE OMIT	48A
u	Ø8 VEH DET	121A
v	RED REST MODE 2	14A
w	OMIT RED CLR 2	12A
x	Ø8 PCL	1008A
y	Ø8 GRN	122A
z	Ø7 DWK	120A
AA	Ø6 DWK	113A
BB	Ø6 PCL	1006A
CC	Ø6 CHECK	26A
DD	Ø6 PHASE ON	38A
EE	Ø6 PHASE NEXT	26B
FF	Ø7 HOLD	13B
GG	Ø8 PHASE ON	28A
HH	Ø8 PHASE NEXT	40A
JJ	Ø7 WK	28B
KK	Ø7 PCL	119A
LL	Ø6 WK	1007A
MM	Ø7 CHECK	112A
NN	Ø7 PHASE ON	27A
PP	Ø7 PHASE NEXT	39A
		27B



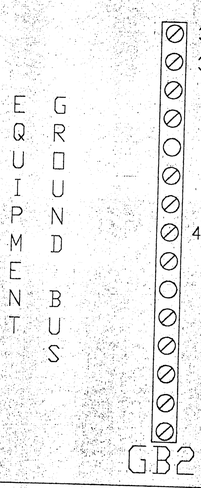
1992

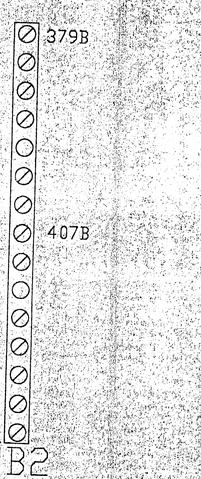
ACT REV-F SHEET 2 OF 3

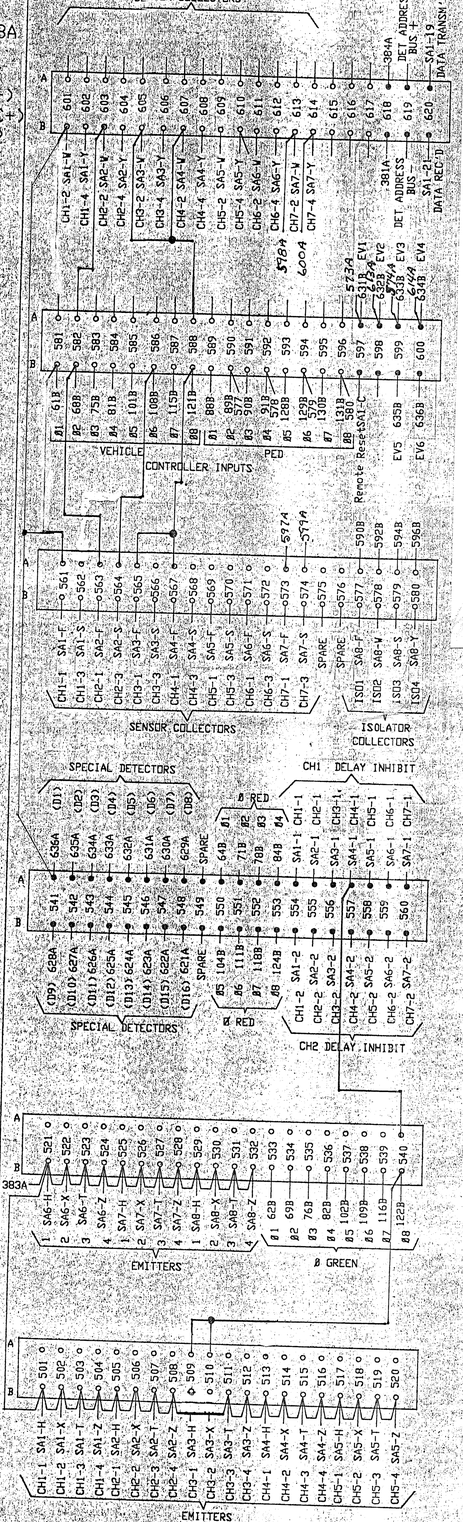




NOTE: 305, 310, 315, 320, 325, 330, 335, 340, 347, 352, 357, 362 AND 372 ARE INTERCONNECTED THROUGH THE TS35x7.5 RAIL.



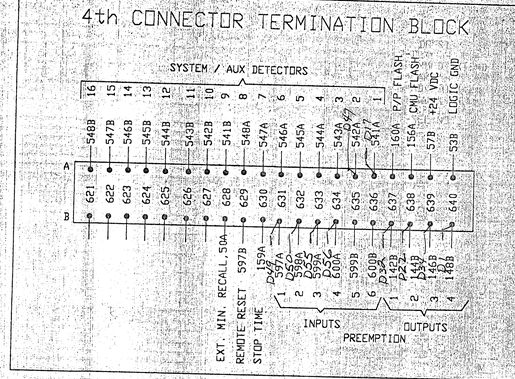


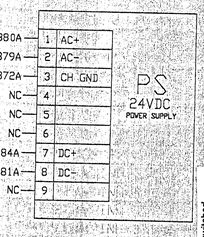


"D"

SPECIAL FUNCTION CONNECTOR PIN ASSIGNMENT

PIN	FUNCTION	I/O
1	Emergency Preempt 4 Out	O 640B
2	Offset 3 Out	O
3	Offset 4 In (Add Bit 3)	I
4	On LINE	I
5	Spare	
6	Dial 4 In	I
7	Dial 6 In	I
8	Special Function 2 Out	O
9	Split 3 In	I
10	Offset 2 In (Add Bit 1)	I
11	Flash Out	O
12	Offset 1 In (Add Bit 0)	I
13	System Detector 8	I
14	Dial 5 In	I
15	Special Function 3 Out	O
16	Split 2 In	I
17	System Detector 1 (Seq #1)	I 635A
18	System Detector 4 (Seq #4)	I
19	System Enable	I
20	Dimming On	O
21	Split 2 Out	O
22	Emergency Preempt 2 Out	O 638B
23	Railroad Preempt Out	O
24	Spare	
25	Dial 2 In (Special Function 2)	I
26	Coordination On (Special Function 1)	I
27	Coordination Out	O
28	Special Function 1 Out	O
29	Dial 4 Out	O
30	System Detector 5 In	I
31	System Detector 3 (Seq #3)	I
32	Emergency Preempt 1 Out	O 637B
33	Offset 1 Out	O
34	Emergency Preempt 3 Out	O 639B
35	Dial 3 In (Special Function 3)	I
36	Offset 3 In (Add Bit 2)	I
37	Flash Status In	I
38	Offset 5 In (Add Bit 4)	I
39	System Detector 6 In	I
40	System Detector 7 In	I
41	Offset 4 Out	O
42	Offset 2 Out	O
43	Dial 2 Out	O
44	Dial 3 Out	O
45	Offset 5 Out	O
46	Split 3 Out	O 635A
47	System Detector 2 (Seq #2)	I
48	Logic Ground	640A
49	Emergency Preempt 1 In	I 631B
50	Emergency Preempt 2 In	I 632B
51	Dial 5 Out	O
52	Dial 6 Out	O
53	Logic Ground	
54	Logic Ground	
55	Emergency Preempt 3 In	I 633B
56	Emergency Preempt 4 In	I 634B
57	Railroad Preempt In	I
58	Conflict Status In	I
59	Reserved	
60	Flash Command In	I
61	Reserved	
62	Reserved	
63	Chassis Ground	





SA

DETECTORS AND PPB ISOLATION

MAIN I/O BLOCK	WIRE COLOR	SA I/O BLOCK	EDGE CONN. SA-PIN	⊕SA1 THROUG SA7 ARE WIRED TO ACCEPT VEH DET. OR EVP DISCRIMINATOR OR PPB ISOLATOR. STATUS OUT	⊕SA1 PHASE	⊕SA1 FUNC	⊕SA1 DET	⊕SA2 PHASE	⊕SA2 FUNC	⊕SA2 DET	⊕SA3 PHASE	⊕SA3 FUNC	⊕SA3 DET	⊕SA4 PHASE	⊕SA4 FUNC	⊕SA4 DET	⊕SA5 PHASE	⊕SA5 FUNC	⊕SA5 DET	⊕SA6 PHASE	⊕SA6 FUNC	⊕SA6 DET	⊕SA7 PHASE	⊕SA7 FUNC	⊕SA7 DET	SA8 PPB ISOLATION PHASE	FUNCTIONS
				Pin 10 of the edge conn. can be jumpered for use as CH4 delay inhibit. Jumpering will disable addressing.																							1=CALL&EXTEND 2=CALL ONLY 3=EXTEND ONLY 4=CALL ONLY DENS 5=DLY CALL ONLY 6=DLY CALL ONLY DENSITY 7=DLY CALL IMMED-EXTEND 8=CARRY OVER 9=ADVISORY 10=SAMPLING 11=SPECIAL DET
				CH 1	1	11	1-1	2	1	2-1	8	3	8-1	8	7	8-3											
				CH 2	1	11	1-2	2	1	2-2	8	3	8-2	8	1	8-4											
				CH 3				6		6-1																	
				CH 4		222			224			222T			222T												
				MODEL																						244	MODEL
1	BLK/YEL		A	DC GROUND	381B ←																					NC	SPARE A
2	RED		B	24V DC+	384B ←																					NC	SPARE B
3	BLK/BLU		C	REMOTE RESET	597B ←																					NC	SPARE C
	BRN	3	D-4	CH 1 LOOP	303A		345A		313A		355A			323A		365A		333A		301A	INPUT CH 1 D
	WHT/BRN	4	E-5	CH 1 LOOP	304A		346A		314A		356A			324A		366A		334A		379B	INPUT COMMON E
5	ORANGE		6	ADDRESS BIT #0	619B		SA1-15		SA2-10		SA3-15			SA4-15		SA5-10		SA6-15		NC	
	WHT/BLU	5	F	CH 1 OUTPUT (+)	561B		563B		565B		567B			569B		571B		573B		577B	OUTPUT CH 1 (+) F
	BLUE	6	H	CH 1 OUTPUT (-)	501B		505B		509B		513B			517B		521B		525B		529B	OUTPUT CH 1 (-) H
	BLK/RED	7	J-8	CH 2 LOOP	306A		348A		316A		358A			326A		368A		336A		302A	INPUT CH 2 J
	BLK/WHT	8	K-9	CH 2 LOOP	307A		349A		317A		359A			327A		369A		337A		378B	INPUT COMMON K
6	YELLOW		10	ADDRESS BIT #1	619A		SA1-6		SA3-6		SA4-6			SA4-10		SA5-15		SA7-6		NC	
12	GREEN		L	CHASSIS GROUND	340A ←																CHASSIS GROUND L
15	WHITE		M	AC-	378A ←																AC- M
13	BLACK		N	115V AC+	380A ←																115V AC+ N
	ORANGE	9	P-13	CH 3 LOOP	308A		350A		318A		360A			328A		370A		338A		343A	INPUT CH 3 P
	WHT/OR	10	R-14	CH 3 LOOP	309A		351A		319A		361A			329A		371A		339A		377B	INPUT COMMON R
			15	ADDRESS BIT #2	SA1-10		SA2-6		SA2-15		SA3-10			SA5-6		SA6-10		SA7-10		NC	
	WHT/GRY	11	S	CH 3 OUTPUT (+)	562B		564B		566B		568B			570B		572B		574B		579B	OUTPUT CH 3 (+) S
	GREY	12	T	CH 3 OUTPUT (-)	503B		507B		511B		515B			519B		523B		527B		531B	OUTPUT CH 3 (-) T
	YELLOW	13	U-17	CH 4 LOOP	311A		353A		321A		363A			331A		373A		341A		344A	INPUT CH 4 U
	WHT/YEL	14	V-18	CH 4 LOOP	312A		354A		322A		364A			332A		374A		342A		377A	INPUT COMMON V
	WHT/VIO	15	W	CH 2 OUTPUT (+)	601B		603B		605B		607B			609B		611B		613B		578B	OUTPUT CH 2 (+) W
	VIOLET	16	X	CH 2 OUTPUT (-)	502B		506B		510B		514B			518B		522B		526B		530B	OUTPUT CH 2 (-) X
	WHT/GRN	17	Y	CH 4 OUTPUT (+)	602B		604B		606B		608B			610B		612B		614B		580B	OUTPUT CH 4 (+) Y
	WHT/BLK	18	Z	CH 4 OUTPUT (-)	504B		508B		512B		516B			520B		524B		528B		532B	OUTPUT CH 4 (-) Z
	WHT/RED	1	1	CH 1 GREEN	554A		555A		556A		557A			558A		559A		560A		——	CH1 DELAY INHIBIT
	RED	2	2	CH 2 GREEN	554B		555B		556B		557B			558B		559B		560B		——	CH2 DELAY INHIBIT
	YEL/RED	A	3	CH 3 GREEN	521A		522A		523A		524A			525A		526A		527A		——	CH3 DELAY INHIBIT
	OR/RED	B	10	CH 4 GREEN	521B		522B		523B		524B			525B		526B		527B		——	CH4 DELAY INHIBIT
8	GREY		19	DATA TRANSMIT	620A ←															NC	
10	VIOLET		21	DATA RECEIVE	620B ←															NC	
4	WHT/BLU		7	CH 1 STATUS OUT	→															NC	
9	WHT/VIO		20	CH 2 STATUS OUT	→															NC	
7	WHT/GRY		16	CH 3 STATUS OUT	→															NC	
11	WHT/GRN		22	CH 4 STATUS OUT	→															NC	

* = Detector Switching, after termination of turning movement, turn phase detectors are switched to extend the concurrent thru movement.