MAIN PANEL: 171-1081-504

ASC3-2100 CONTROLLER WITH:

- ■ CONFIGURATION: 3601
- ■ SOFTWARE: 2.44.30
- ■ ETHERNET MODULE

- □ OVERLAPS
  - □ IN EEPROM
  - □ KEYBOARD ENTERED

  A =
  B =
  C =
  D =

- □ ANALOG TELEMETRY MOD.: 100-1005-501
- ■ INTERNAL RS-232 TELEMETRY
- □ TEST INPUT A =
- □ TEST INPUT B =

LEGEND

BIU	BUS INTERFACE UNIT
BU()	C/C, BIU ()
CB()	CIRCUIT BREAKER ()
C/C	CONNECTING CABLE
CCA	CONTROLLER CABLE "A"
CDP	C/C, DR POWER
CMA	MMU/CMU CABLE "A"
CMB	MMU/CMU CABLE "B"
CPO	C/C PRE-EMPT OUTPUTS
CPP	C/C PRE-EMPT POWER
DR	DETECTOR RACK
DS()	DOOR SWITCH ()
FL()	FLASHER ()
FR()	FLASH XFER. RELAY
LS()	LOAD SWITCH
MC	MERCURY CONTACTOR
MP	MAIN PANEL
PAP	POWER-AUX PANEL
PSP	CAB. PWR. SUPPLY
SA	SURGE ARRESTOR
TB-()	TERM. BLOCK ()

FLASHER

PIN	FUNCTION
7	CIRCUIT #1
8	CIRCUIT #2
9	CHASSIS GND
10	AC COMMON
11	115 VAC
12	

LOAD SWITCH

PIN	FUNCTION
1	115 VAC
2	CHASSIS GND
3	RED/DW OUTPUT
4	
5	YEL OUTPUT
6	RED/DW INPUT
7	GRN/W OUTPUT
8	YEL INPUT
9	+24 VDC
10	GRN/W INPUT
11	AC COMMON
12	

① 2.2K 10W

3 USE ONLY COPPER CONDUCTORS FOR FIELD AND SERVICE CONNECTIONS.

2 CONNECT A.C. SERVICE TO TERMINAL BLOCK 501 (LINE), 502 (NEUTRAL) AND GB2 (EARTH) ON RIGHT SIDEWALL OF CABINET.

①INSTALL 2.2K, 10 WATT LOAD RESISTORS BETWEEN PINS 7 AND 11 ON LOAD SWITCHES 9, 10, 11 & 12.

NOTES: UNLESS SPECIFIED OTHERWISE

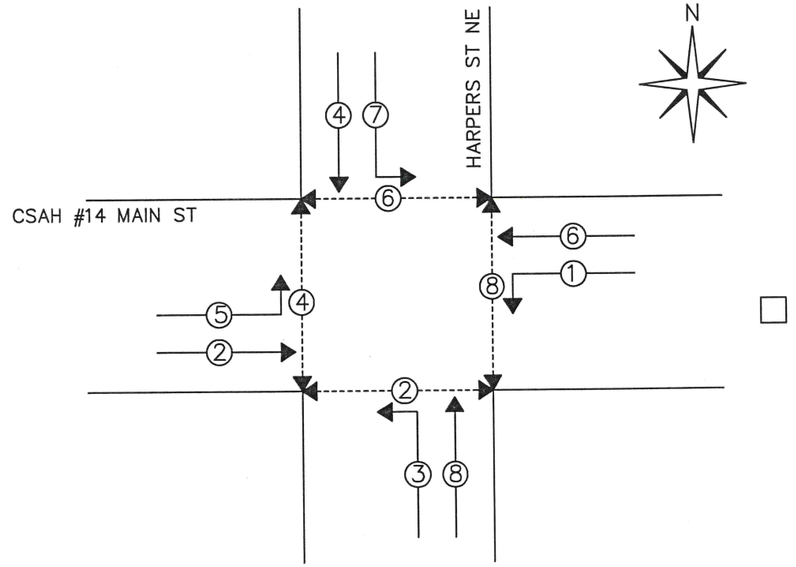
MAIN PANEL PLUG-IN REQUIREMENTS

■ BIU2 T&F	□ BIU3 T&F	■ LS9 PED 2 BEACONS	■ LS10 PED 4 BEACONS	■ LS11 PED 6 BEACONS	■ LS12 PED 8 BEACONS	■ LS13 OL"A"	■ LS14 OL"B"	■ LS15 OL"C"	■ LS16 OL"D"
■ BIU1 T&F	■ LS1 VEH 1	■ LS2 VEH 2	■ LS3 VEH 3	■ LS4 VEH 4	■ LS5 VEH 5	■ LS6 VEH 6	■ LS7 VEH 7	■ LS8 VEH 8	■ FL1 □ 1CKT ■ 2CKT
■ FR1 L|R V1|V5	■ FR2 L|R V2|V6	■ FR3 L|R V3|V7	■ FR4 L|R V4|V8	☒ FR5 L|R A|C	☒ FR6 L|R B|D	■ K1 LS 24V CONT.			

■ DENOTES TYPE OF OPERATION AND/OR WHERE PLUG-IN IS REQUIRED. L = LEFT, R = RIGHT.

☒ DENOTES WHERE "UNUSED RED" JUMPER PART NUMBER 32448G1 IS REQUIRED. INSTALL BETWEEN PINS 1 & 3 FOR LOAD SWITCH OR PINS 6 & 8 AND 5 & 7 FOR FLASH TRANSFER RELAY.

FLASH:
- □ ø2&6 YELLOW, ALL OTHERS RED.
- ■ ALL RED.
- ■ RELAYS DE-ENERGIZED FOR FLASH.
- □ RELAYS ENERGIZED FOR FLASH.



SHEET 1 OF 12

DESIGNER G.V. T.C.C.	DATE 02/03/97
DRAWN CM TCC	11/04/08
CABINET SIZE	77" HOFFMAN GRAY
INSPECTED	
APPROVED	

ECONOLITE CONTROL PRODUCTS INC.

TRAFFIC CONTROL CORPORATION
780 W. BELDEN SUITE D
ADDISON, IL 60101

CABINET SPECIFICATION: TS2TYPE1 ANOKA COUNTY SPEC PLUG AND GO

CUSTOMER:

INTERSECTION: CSAH #14 AT HARPERS

LOCATION:

SYSTEM:

CONTROLLER

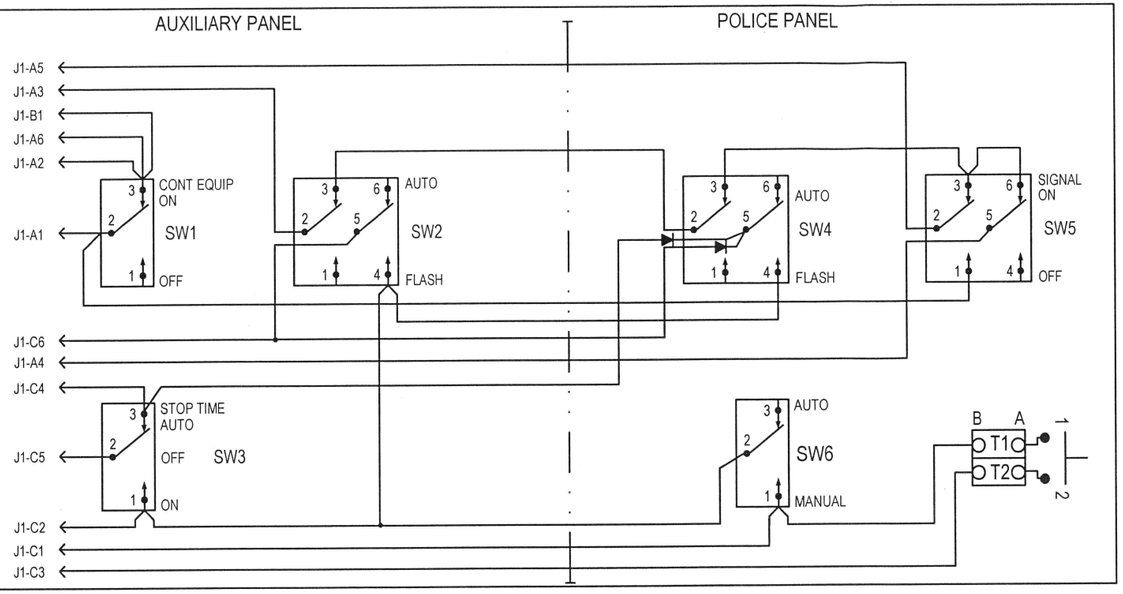
FLASHER

SW.PACKS

CUSTOMER P.O.	INSTALLED BY	SALES ORDER NO.	SIZE	DRAWING
SIG783-09-05			B	DRAWING #TS2AC16PG-

POLICE/AUX SWITCHES
ASSY. NO. 171-1076-510

J1	POLICE/AUXILIARY SWITCH PANEL	
PIN	FUNCTION	TO
A1	FILTER AC LINE (IN)	SW1-2
A2	SWITCHED AC LINE (OUT)	SW1-3
A3	FLASH CONTROL BUS (IN)	SW2-2
A4	SIGNAL BUS CONTROL (OUT)	SW5-5
A5	FLASH RELAY CONT. (OUT)	SW5-2
A6	START DELAY BUS (OUT)	SW1-3
B1	MMU FLSH CONT. BUS (OUT)	SW1-3
B2	SPARE	---
B3	SPARE	---
B4	SPARE	---
B5	SPARE	---
B6	SPARE	---
C1	MAN. CONT. ENABLE (OUT)	SW6-1
C2	LOGIC GROUND	SW3-1
C3	INTERVAL ADVANCE (OUT)	T2-B
C4	MMU STOP TIME (IN)	SW3-3
C5	CONT. STOP TIME (OUT)	SW3-2
C6	LOCAL FLASH STATUS (OUT)	SW2-5
D1	COORD FREE (OUT)	---
D2	ALARM 1 (OUT)	---
D3	ALARM 2 (OUT)	---
D4	LOADSWITCH TEST (OUT)	---
D5	MMU 24 VOLT MON. 2 (OUT)	---
D6	+24 VDC (IN)	---



J3

(MAIN PANEL & C/C REFERENCES ONLY)

J3-D6	A1
MMB-1	A2
MMA-37	A3
K1-10	A4
FR6-2	A5
MMB-2	A6
MMA-20	A7
	A8
	A9
	A10
	B1
	B2
A-39	B3
A-35	B4
A-40	B5
A-31	B6
A-30	B7
A-32	B8
A-38	B9
A-33	B10
A-34	C1
K1-9	C2
B-3	C3
B-4	C4
A-35	C5
K1-11	C6
	C7
B-5	C8
J1-31B	C9
	C10
J1-27B	D1
K1-10	D2
	D3
K1-2	D4
MMB-18	D5
J3-A1	D6

4

TO: POL/AUX ASSY.

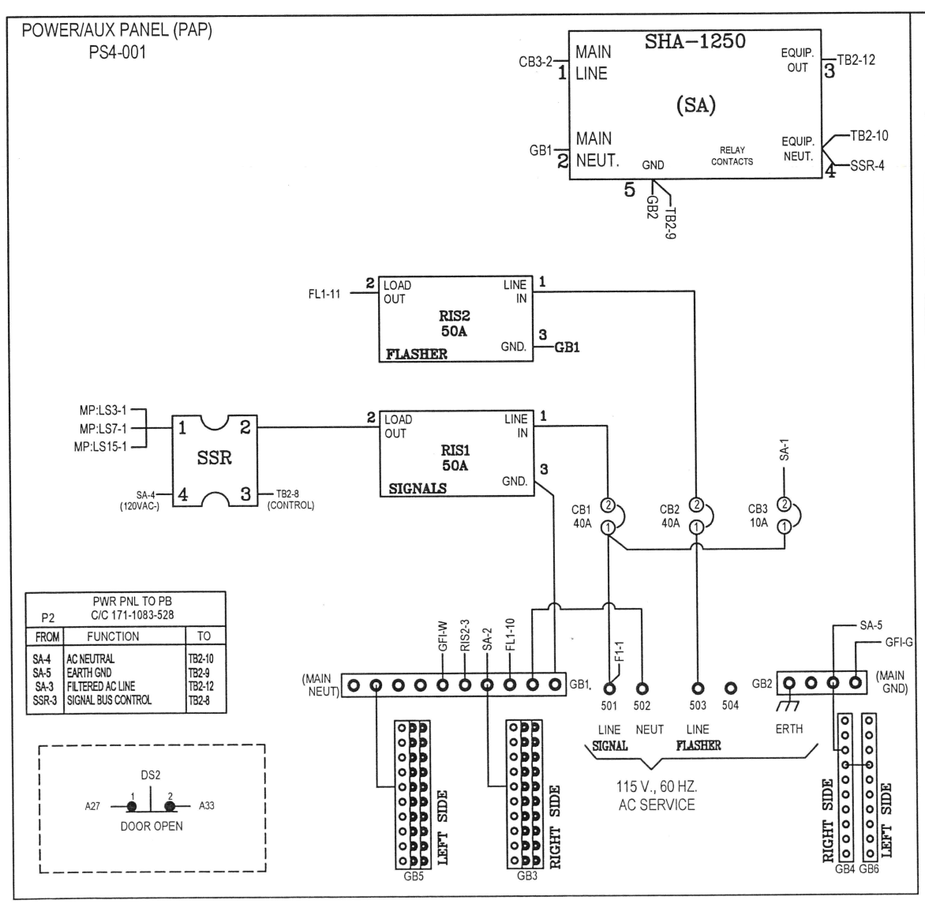
TO/FROM POLICE-AUXILLARY SWITCH PANEL	
PIN	FUNCTION
A1	FILTER AC LINE (OUT)
A2	SWITCHED AC LINE (IN)
A3	FLASH CONTROL BUS (OUT)
A4	SIGNAL BUS CONTROL (IN)
A5	FLASH RELAY CONTROL (IN)
A6	START DELAY AC BUS (IN)
A7	MMU FLASH CONTROL BUS (IN)
A8	SPARE
A9	SPARE
A10	SPARE
B1	SPARE
B2	SPARE
B3	MANUAL CONT. ENABLE (IN)
B4	LOGIC GROUND
B5	INTERVAL ADVANCE (IN)
B6	MMU STOP TIME (OUT)
B7	CONTROLLER STOP TIME (IN)
B8	LOCAL FLASH STATUS (IN)
B9	COORD FREE (IN)
B10	ALARM 1 (IN)
C1	ALARM 2 (IN)
C2	LOADSWITCH TEST (IN)
C3	MMU 24 VOLT MON. 2 (IN)
C4	+24 VDC
C5	LOGIC GROUND
C6	+24 VDC (IN)
C7	----
C8	MMU FAULT MONITOR (IN)
C9	LINE FREQ. REFERENCE (IN)
C10	----
D1	12 VAC (IN)
D2	SIGNAL BUS CONTROL (IN)
D3	----
D4	FILTERED AC NEUTRAL (IN)
D5	CONT. EQUIP. AC LINE (OUT)
D6	FILTERED AC LINE (IN)

TO: PBA

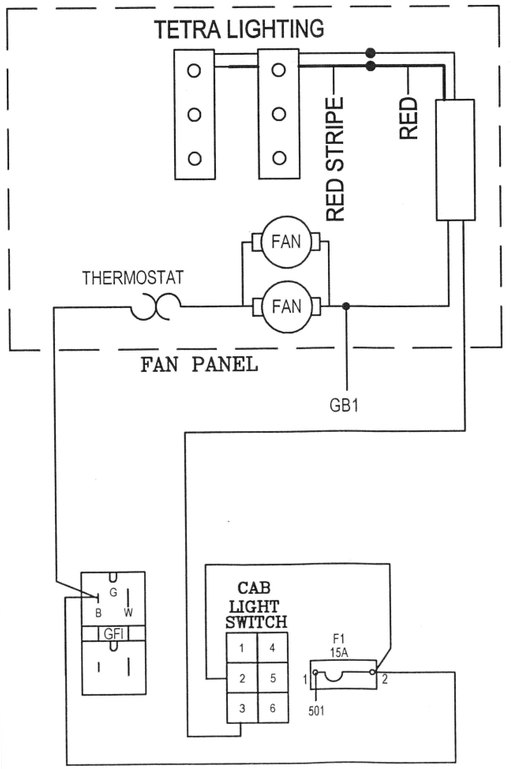
MP P3	MAIN PANEL/CONTROLLER PWR. C/C 171-1083-504/524	TO POL/AUX P1
PIN	FUNCTION	PIN
A1	FILTER AC LINE (OUT)	A1
A2	SWITCHED AC LINE (IN)	A2
A3	FLASH CONTROL BUS (OUT)	A3
A4	SIGNAL BUS CONTROL (IN)	A4
A5	FLASH RELAY CONTROL (IN)	A5
A6	START DELAY AC BUS (IN)	A6
A7	MMU FLASH CONTROL BUS (IN)	B1
A8	SPARE	B2
A9	SPARE	B3
A10	SPARE	B4
B1	SPARE	B5
B2	SPARE	B6
B3	OPT-MAN. CONT. ENABLE (IN)	C1
B4	LOGIC GROUND	C2
B5	OPT-INTERVAL ADVANCE (IN)	C3
B6	MMU STOP TIME (OUT)	C4
B7	CONTROLLER STOP TIME (IN)	C5
B8	LOCAL FLASH STATUS (IN)	C6
B9	OPT-COORD FREE (IN)	D1
B10	OPT-ALARM 1 (IN)	D2
C1	OPT-ALARM 2 (IN)	D3
C2	OPT-LOADSWITCH TEST (IN)	D4
C3	MMU 24 VOLT MON. 2 (IN)	D5
C4	+24 VDC	D6
		4

	PART OF 171-1083-504/524	TO PB:(JX)
C5	LOGIC GROUND	A1
C6	+24 VDC (IN)	A2
C7	----	A3
C8	MMU FAULT MONITOR (IN)	A4
C9	LINE FREQ. REFERENCE (IN)	B1
C10	----	B2
D1	12 VAC (IN)	B3
D2	SIGNAL BUS CONTROL (IN)	B4
D3	----	C1
D4	FILTERED AC NEUTRAL (IN)	C2
D5	CONT. EQUIP. AC LINE (OUT)	C3
D6	FILTERED AC LINE (IN)	C4

POWER/AUX PANEL (PAP)
PS4-001

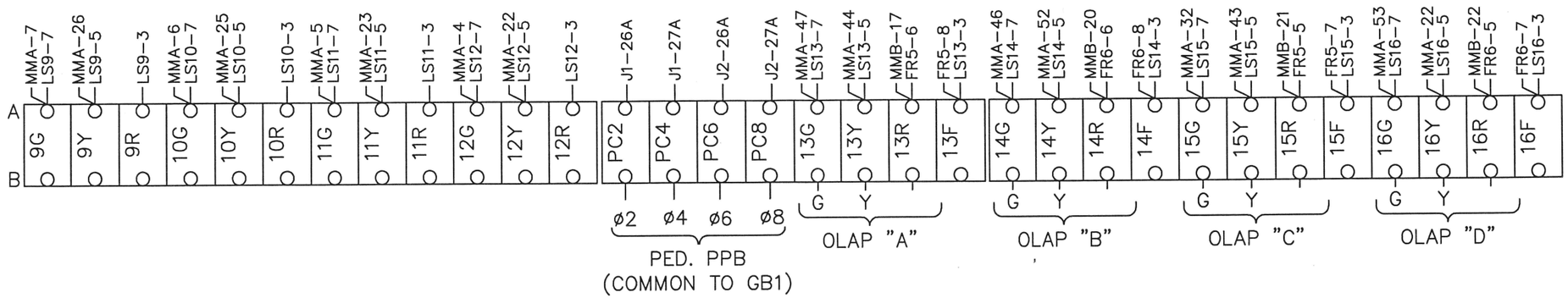


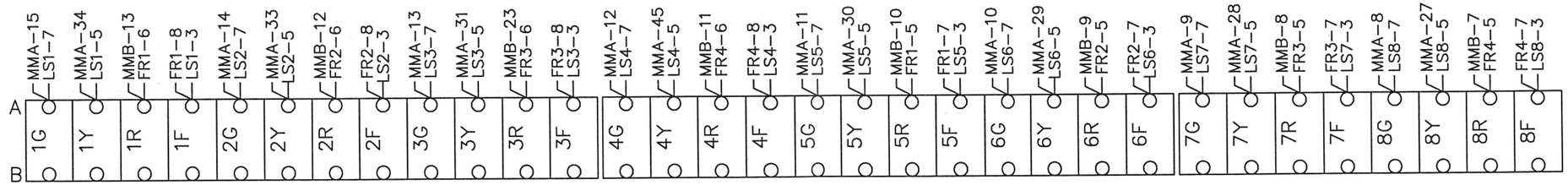
P2	PWR PNL TO PB C/C 171-1083-528	
FROM	FUNCTION	TO
SA-4	AC NEUTRAL	TB2-10
SA-5	EARTH GND	TB2-9
SA-3	FILTERED AC LINE	TB2-12
SSR-3	SIGNAL BUS CONTROL	TB2-8

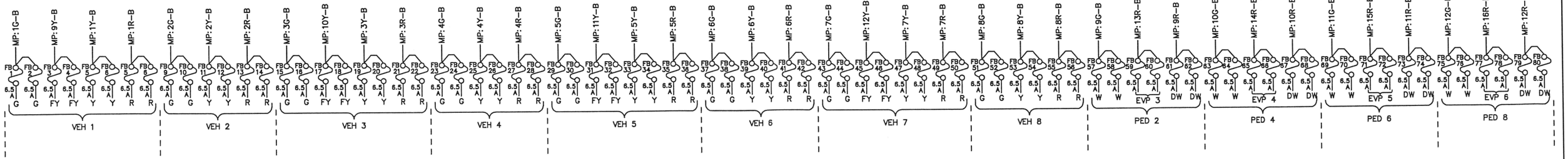


SHEET 2 OF 12 | SIZE B | CSAH#14 AT HARPERS ST NE

CONFIRMATION BEACONS
EVP 3 = 1-6
EVP 4 = 2-5
EVP 5 = 3-8
EVP 6 = 4-7

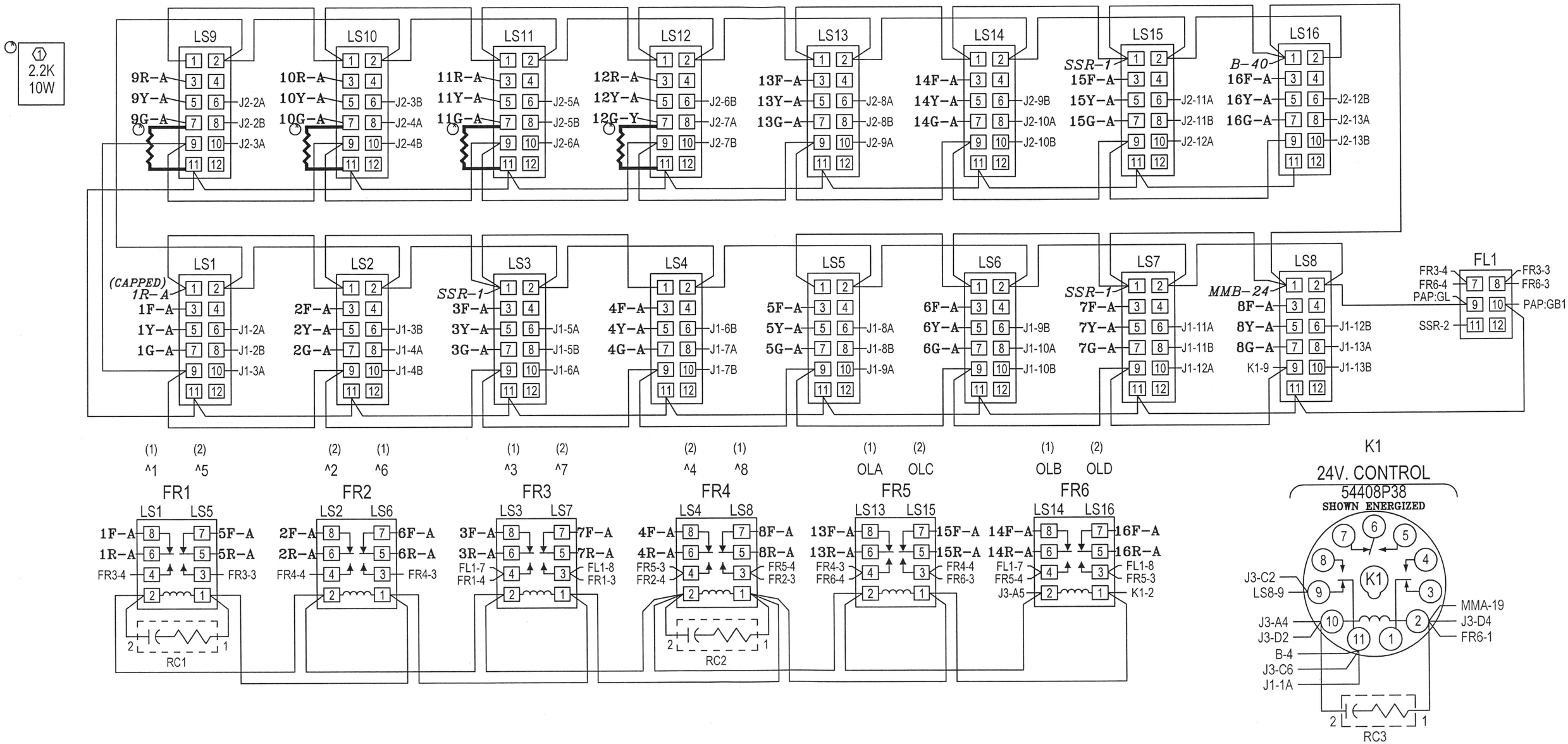






SIGNAL FIELD TERMINALS

SHEET 3 OF 12	SIZE B	CSAH#14 AT HARPERS



LOADBAY AND FLASH RELAY'S

SHEET 4 OF 12	SIZE B	CSAH#14 AT HARPERS ST NE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RG. 1 INHBT. MAX.	RG. 2 INHBT. MAX.	RG. 1 FORCE OFF	RG. 2 FORCE OFF	RG. 1 MAX. 2 SEL.	RG. 2 MAX. 2 SEL.	CALL NON.ACT 1	CALL NON.ACT 2	WALK REST MDFR.	PMT CMU INTLK	EXT. START	TEST INPUT A	TEST INPUT B	TEST INPUT C	T.B.C. ON LINE	T.B.C. AUX. 1	T.B.C. AUX. 2	T.B.C. AUX. 3	COORD. STATUS OUT	LOGIC GND.
MMA-49 J2-21B	MMA-36 J2-22A	J3-C3 J1-23B MMB-15	K1-11 J3-C4 MMA-16	J3-C8 MMA-35	J1-25B	J1-26B	J2-25B	J2-26B	J2-19B	J2-20A	J2-20B	J2-21A	MMA-17 J1-32A A-20	J1-16A	J1-16B	J2-17A	J2-17B	J2-18A	J2-18B MMA-55 A-27

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
M.M.U. RESET	24 V. MON. INHBT.	M.M.U. +24 V. MON. 2	M.M.U. +24 V. MON. 1	FAULT MON.	PC1 PED. DET. 1	PC3 PED. DET. 3	PC5 PED. DET. 5	PC7 PED. DET. 7	DET. 61	DET. 62	DET. 63	DET. 64	LOGIC GND.	PMT. CALL 1	PMT. CALL 2	PMT. CALL 3	PMT. CALL 4	PMT. CALL 5	PMT. CALL 6
																J16-19	J16-20	J16-17	J16-18

DS2-1

21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PMT. 1 ACTV.	PMT. 2 ACTV.	ALARM 3	ALARM 4	ALARM 5	ALARM 6	LOGIC GND	LOGIC GND	LOGIC GND	STOP TIMING 1 & 2	MMU STOP TIMING	LOCAL FLASH STATUS	ALARM 1	ALARM 2	LOGIC GND	DIM. ENABLE	AUTO FLASH	COORD. FREE	MANUAL CONT. ENABLE	INTRVL ADV.
MMA-1 J1-15A	MMA-2 J1-15B	MMA-3 J2-15A	MMA-48 J2-15B	MMA-50 J2-16A	MMA-51 J2-16B	MMA-54 A-20 A-35	MMB-3	MMB-14	MMB-16 J1-21B J1-22A J3-B7	MMB-25 J2-23A J3-B6	J2-22B	J3-B8	J2-23B J3-B10	J2-24A J3-C1	A-27 J3-C5 J3-B4	J1-18B	J1-18A	J2-24B J3-B9	J1-19A J3-B3	J1-19B J3-B5

DS2-2

21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
MMA AC+ I IN	DR1	OPEN	DR2	CLSD	MMA SPR 1	CAB INTLK A	CAB INTLK B	MMA SPR 2	SDR	OPEN	MMB SPR 1	MMB SPR 2	MMB SPR 3				AC+	AC+	AC+	AC+
																	MMB-6	MMB-19	MMB-5	MMB-4 LS16-1

INTERFACE TERMINAL BLOCKS

SHEET 5 OF 12	SIZE B	CSAH#14 AT HARPERS

J1	BIU #1	
PIN	FUNCTION	TO
1A	+24 VDC	K1-11
1B	+24 VDC	J2-1B
2A	LS1 RED	LS1-6
2B	LS1 YELLOW	LS1-8
3A	LS1 GREEN	LS1-10
3B	LS2 RED	LS2-6
4A	LS2 YELLOW	LS2-8
4B	LS2 GREEN	LS2-10
5A	LS3 RED	LS3-6
5B	LS3 YELLOW	LS3-8
6A	LS3 GREEN	LS3-10
6B	LS4 RED	LS4-6
7A	LS4 YELLOW	LS4-8
7B	LS4 GREEN	LS4-10
8A	LS5 RED	LS5-6
8B	LS5 YELLOW	LS5-8
9A	LS5 GREEN	LS5-10
9B	LS6 RED	LS6-6
10A	LS6 YELLOW	LS6-8
10B	LS6 GREEN	LS6-10
11A	LS7 RED	LS7-6
11B	LS7 YELLOW	LS7-8
12A	LS7 GREEN	LS7-10
12B	LS8 RED	LS8-6
13A	LS8 YELLOW	LS8-8
13B	LS8 GREEN	LS8-10
14A	TBC AUX 1	A-16
14B	TBC AUX 2	A-17
15A	PMT ACT 1	A-21
15B	PMT ACT 2	A-22
16A	PMT CALL 1	B-15
16B	PMT CALL 2	B-16
17A	TEST A	A-12
17B	TEST B	A-13
18A	AUTO FLASH	A-37
18B	DIM. ENABLE	A-36
19A	MANUAL CONT.	A-39
19B	INT. ADVANCE	A-40
20A	PMT CMU INTLK	A-10
20B	EXT. START	A-11
21A	TBC ONLINE	A-15
21B	STOP TIME (1)	A-30
22A	STOP TIME (2)	A-30
22B	MAX. 2 (1)	A-5
23A	MAX. 2 (2)	A-6
23B	FORCE OFF (1)	A-3
24A	FORCE OFF (2)	A-4
24B	CNA 1	A-7
25A	WALK REST MOD.	A-9
25B	PED. ISO. 1	B-6
26A	PED. ISO. 2	PC2-A
26B	PED. ISO. 3	B-7
27A	PED. ISO. 4	PC4-A
27B	PED. ISO. COMN.	J3-D1
28A	ADDR. SEL. 0	-----
28B	ADDR. SEL. 1	-----
29A	ADDR. SEL. 2	-----
29B	ADDR. SEL. 3	-----
30A	RESERVED	-----
30B	RESERVED	-----
31A	EARTH GND.	LS12-2
31B	LINE FREQ. REF.	J3-C9
32A	LOGIC GND.	B-14
32B	LOGIC GND.	J2-32A

J2	BIU #2	
PIN	FUNCTION	TO
1A	+24 VDC	J2-1B
1B	+24 VDC	J1-1B
2A	LS9 RED	LS9-6
2B	LS9 YELLOW	LS9-8
3A	LS9 GREEN	LS9-10
3B	LS10 RED	LS10-6
4A	LS10 YELLOW	LS10-8
4B	LS10 GREEN	LS10-10
5A	LS11 RED	LS11-6
5B	LS11 YELLOW	LS11-8
6A	LS11 GREEN	LS11-10
6B	LS12 RED	LS12-6
7A	LS12 YELLOW	LS12-8
7B	LS12 GREEN	LS12-10
8A	LS13 RED	LS13-6
8B	LS13 YELLOW	LS13-8
9A	LS13 GREEN	LS13-10
9B	LS14 RED	LS14-6
10A	LS14 YELLOW	LS14-8
10B	LS14 GREEN	LS14-10
11A	LS15 RED	LS15-6
11B	LS15 YELLOW	LS15-8
12A	LS15 GREEN	LS15-10
12B	LS16-RED	LS16-6
13A	LS16-YELLOW	LS16-8
13B	LS16-GREEN	LS16-10
14A	TBC AUX 3	A-18
14B	COORD. STATUS	A-19
15A	ALARM 3	A-23
15B	ALARM 4	A-24
16A	ALARM 5	A-25
16B	ALARM 6	A-26
17A	PMT CALL 3	B-17
17B	PMT CALL 4	B-18
18A	PMT CALL 5	B-19
18B	PMT CALL 6	B-20
19A	CNA 2	A-8
19B	VEH. DET. 61	B-10
20A	VEH. DET. 62	B-11
20B	VEH. DET. 63	B-12
21A	VEH. DET. 64	B-13
21B	INHIBIT MAX (1)	A-1
22A	INHIBIT MAX (2)	A-2
22B	LOCAL FLASH	A-32
23A	MMU FLASH	A-31
23B	ALARM 1	A-33
24A	ALARM 2	A-34
24B	COORD FREE IN	A-38
25A	TEST C	A-14
25B	PED. ISO. 5	B-8
26A	PED. ISO. 6	PC6-A
26B	PED. ISO. 7	B-9
27A	PED. ISO. 8	PC8-A
27B	PED. ISO. COMN.	J1-27B
28A	ADDR. SEL. 0	J2-32A
28B	ADDR. SEL. 1	-----
29A	ADDR. SEL. 2	-----
29B	ADDR. SEL. 3	-----
30A	RESERVED	-----
30B	RESERVED	-----
31A	EARTH GND.	J1-31A
31B	LINE FREQ. REF.	J1-31B
32A	LOGIC GND.	J1-32B
32B	LOGIC GND.	J2-32A

MAIN PANEL CONTROL POWER C/C 171-1083-504	
PIN	FUNCTION
A1	LOGIC GROUND
A2	+24 VDC (IN)
A3	----
A4	MMU FAULT MONITOR (IN)
B1	LINE FREQ. REFERENCE (IN)
B2	----
B3	+12 VAC (IN)
B4	SIGNAL BUS CONTROL (IN)
C1	----
C2	FILTERED AC NEUTRAL (IN)
C3	CONT. EQUIP. AC LINE (OUT)
C4	FILTERED AC LINE (IN)

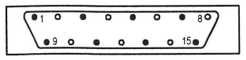
CONTROLLER POWER (CCA2) C/C 171-1083-503			
WIRE	PIN	SIGNAL	TO
1	A	FAULT MONITOR	PB-4
2	U	AC NEUTRAL	PB-10
3	V	EARTH GROUND	PB-9
4	W	LOGIC GROUND	PB-1
5	P	AC LINE	PB-11
6	SHL	EARTH GROUND	CCA2-V

TYPE 1 CONTROLLER POWER C/C 171-1083-502		
PIN	FUNCTION	TO
A	AC NEUTRAL	PB-10
B	----	
C	AC LINE	PB-11
D	----	
E	----	
F	FAULT MON.	PB-4
G	LOGIC GND.	PB-1
H	EARTH GND.	PB-9
I	----	
J	----	
SHL	EARTH GND.	PIN H

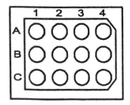
CABINET POWER SUPPLY C/C 171-1083-511		
PIN	FUNCTION	TO
A	AC NEUTRAL	PB-10
B	LINE FREQUENCY REF.	PB-5
C	AC LINE	PB-11
D	+12 VDC	PB-3
E	+24 VDC	PB-2
F	RESERVED	
G	LOGIC GND.	PB-1
H	EARTH GND.	PB-9
I	+12 VAC	PB-7
J	RESERVED	
SHL	EARTH GND.	PIN H

CONTROLLER PORT 1 CONNECTOR			
PIN	SIGNAL	TO	FUNCTION
1	TWISTED PAIR 1+	SDLC-1	CONT TXD+
2	LOGIC GND.	----	
3	TWISTED PAIR 2+	SDLC-4	CONT TXC+
4	LOGIC GND.	----	
5	TWISTED PAIR 3+	SDLC-7	CONT RXD+
6	LOGIC GND.	----	
7	TWISTED PAIR 4+	SDLC-10	CONT RXC+
8	LOGIC GND.	----	
9	TWISTED PAIR 1-	SDLC-2	CONT TXD-
10	PORT 1 DISABLE	----	
11	TWISTED PAIR 2-	SDLC-5	CONT TXC-
12	EARTH GND.	SHIELD WIRE	
13	TWISTED PAIR 3-	SDLC-8	CONT RXD-
14	RESERVED	----	
15	TWISTED PAIR 4-	SDLC-11	CONT RXC-

MMU & BIU PORT 1 CONNECTOR			
PIN	SIGNAL	TO	FUNCTION
1	TWISTED PAIR 1+	SDLC-1	BIU RXD+
2	LOGIC GND.	----	
3	TWISTED PAIR 2+	SDLC-4	BIU RXC+
4	LOGIC GND.	----	
5	TWISTED PAIR 3+	SDLC-7	BIU TXD+
6	LOGIC GND.	----	
7	TWISTED PAIR 4+	SDLC-10	BIU TXC+
8	LOGIC GND.	----	
9	TWISTED PAIR 1-	SDLC-2	BIU RXD-
10	PORT 1 DISABLE	----	
11	TWISTED PAIR 2-	SDLC-5	BIU RXC-
12	EARTH GND.	SHIELD WIRE	
13	TWISTED PAIR 3-	SDLC-8	BIU TXD-
14	RESERVED	----	
15	TWISTED PAIR 4-	SDLC-11	BIU TXC-

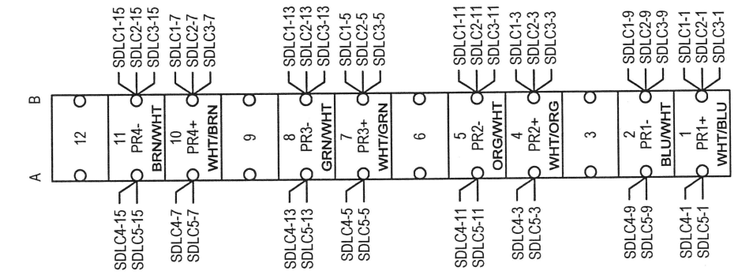


FRONT VIEW OF BU1 - BU5

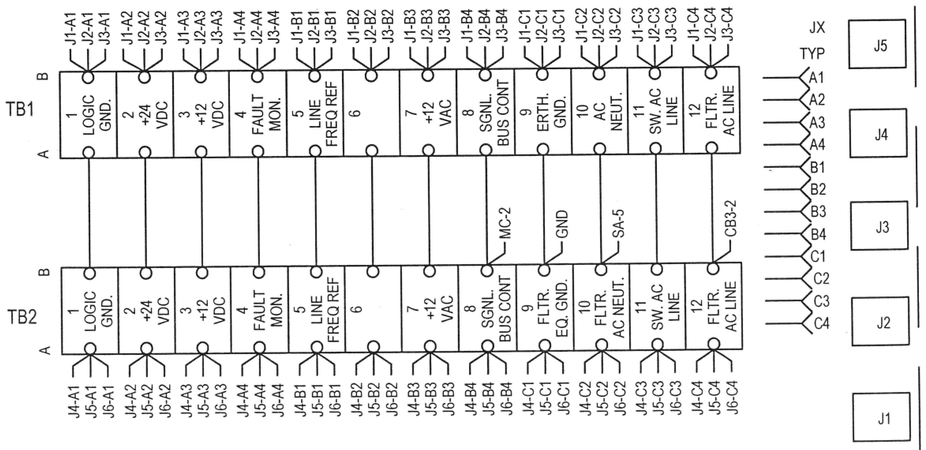


FRONT VIEW OF J1-J6

SDLC CABLE ASSY.
ASSY. NO. 34862G5



-PB- POWER BUS
ASSY. NO. 171-1078-504



BIU AND CONNECTING CABLES

SIZE B

CSAH#14 AT HARPERS ST NE

WIRE LIST FOR NEMA MALFUNCTION MANAGEMENT UNIT

CONNECTOR "A" (MMA)

PIN	WIRE	MON. FUNCTION	TO	SIG. FUNCTION
A	A-1	AC+ I INPUT	B21	
B	A-2	OUT RLY 1 OPEN	B22	
C	A-3	OUT RLY 2 CLSD	B23	
D	A-4	CH. 12 GREEN	12G-A	^8 WLK
E	A-5	CH. 11 GREEN	11G-A	^6 WLK
F	A-6	CH. 10 GREEN	10G-A	^4 WLK
G	A-7	CH. 9 GREEN	9G-A	^2 WLK
H	A-8	CH. 8 GREEN	8G-A	^8 GRN
J	A-9	CH. 7 GREEN	7G-A	^7 GRN
K	A-10	CH. 6 GREEN	6G-A	^6 GRN
L	A-11	CH. 5 GREEN	5G-A	^5 GRN
M	A-12	CH. 4 GREEN	4G-A	^4 GRN
N	A-13	CH. 3 GREEN	3G-A	^3 GRN
P	A-14	CH. 2 GREEN	2G-A	^2 GRN
R	A-15	CH. 1 GREEN	1G-A	^1 GRN
S	A-16	+24V MON. I	B-4	LS +24V MON.
T	A-17	LOGIC GND	B-14	LOGIC GND
U	A-18	CHASSIS GND	LS7-2	EARTH GND.
V	A-19	AC- (COMMON)	K1-2	AC NEUTRAL
W	A-20	OUT RLY 1 COM.	J3-A7	SIG BUS CONT
X	A-21	OUT RLY 2 COM.	A-27	LOGIC GND
Y	A-22	CH. 12 YELLOW	12Y-A	VEH. 7 FYA
Z	A-23	CH. 11 YELLOW	11Y-A	VEH. 5 FYA
a	A-24	CH. 10 WALK	----	
b	A-25	CH. 10 YELLOW	10Y-A	VEH. 3 FYA
c	A-26	CH. 9 YELLOW	9Y-A	VEH. 1 FYA
d	A-27	CH. 8 YELLOW	8Y-A	^8 YEL
e	A-28	CH. 7 YELLOW	7Y-A	^7 YEL
f	A-29	CH. 6 YELLOW	6Y-A	^6 YEL
g	A-30	CH. 5 YELLOW	5Y-A	^5 YEL
h	A-31	CH. 3 YELLOW	3Y-A	^3 YEL
i	A-32	CH. 15 GREEN	15G-A	OLC GRN
j	A-33	CH. 2 YELLOW	2Y-A	^2 YEL
k	A-34	CH. 1 YELLOW	1Y-A	^1 YEL
m	A-35	CONT. VOLT. MON.	B-5	VOLT. MON.
n	A-36	+24V MON. INH.	B-2	
p	A-37	OUT RLY 1 CLSD	J3-A3	
q	A-38	OUT RLY 2 OPEN	A-31	STOP TIME
r	A-39	CH. 12 WALK	----	
s	A-40	CH. 11 WALK	----	
t	A-41	CH. 9 WALK	----	
u	A-42	CH. 16 YELLOW	16Y-A	OLD YEL
v	A-43	CH. 15 YELLOW	15Y-A	OLC YEL
w	A-44	CH. 13 YELLOW	13Y-A	OLA YEL
x	A-45	CH. 4 YELLOW	4Y-A	^4 YEL
y	A-46	CH. 14 GREEN	14G-A	OLB GRN
z	A-47	CH. 13 GREEN	13G-A	OLA GRN
AA	A-48	(SPARE 1)	B24	
BB	A-49	RESET	B-1	
CC	A-50	CAB. INTLK A	B25	
DD	A-51	CAB. INTLK B	B26	
EE	A-52	CH. 14 YELLOW	14Y-A	OLB YRL
FF	A-53	CH. 16 GREEN	16G-A	OLD GRN
GG	A-54	(SPARE 2)	B27	
HH	A-55	TYPE SELECT	A-20	MMU/CMU SEL.
	A-56	SHELL GND	LS15-2	EARTH GND.

CONNECTOR "B" (MMB)

PIN	WIRE	MON. FUNCTION	TO	SIG. FUNCTION
A	B-1	AC+ II INPUT	J3-A2	MMU POWER
B	B-2	S. DLY RLY COMM.	J3-A6	MMU POWER
C	B-3	S. DLY RLY OPEN	B28	
D	B-4	CH. 12 RED	B40	
E	B-5	CH. 11 RED	B39	
F	B-6	CH. 9 RED	B37	
G	B-7	CH. 8 RED	8R-A	^8 RED
H	B-8	CH. 7 RED	7R-A	^7 RED
J	B-9	CH. 6 RED	6R-A	^6 RED
K	B-10	CH. 5 RED	5R-A	^5 RED
L	B-11	CH. 4 RED	4R-A	^4 RED
M	B-12	CH. 2 RED	2R-A	^2 RED
N	B-13	CH. 1 RED	1R-A	^1 RED
P	B-14	(SPARE 1)	B29	
R	B-15	+24V MONITOR II	B-3	+24V MON. II
S	B-16	(SPARE 2)	B30	
T	B-17	CH. 13 RED	13R-A	OLA RED
U	B-18	S. DLY RLY CLSD	J3-D5	CONT. POWER
V	B-19	CH. 10 RED	B38	
W	B-20	CH. 14 RED	14R-A	OLB RED
X	B-21	CH. 15 RED	15R-A	OLC RED
Y	B-22	CH. 16 RED	16R-A	OLD RED
Z	B-23	CH. 3 RED	3R-A	^3 RED
a	B-24	RED ENABLE	LS8-1	SIG BUS CON.
b	B-25	(SPARE 3)	B31	
c	B-26	LOCAL FLASH IN	-T-	POL/AX FLSH
	B-27	SHELL GROUND	LS6-2	EARTH GND.

NOTES FOR 16 CHANNEL M.M.U.

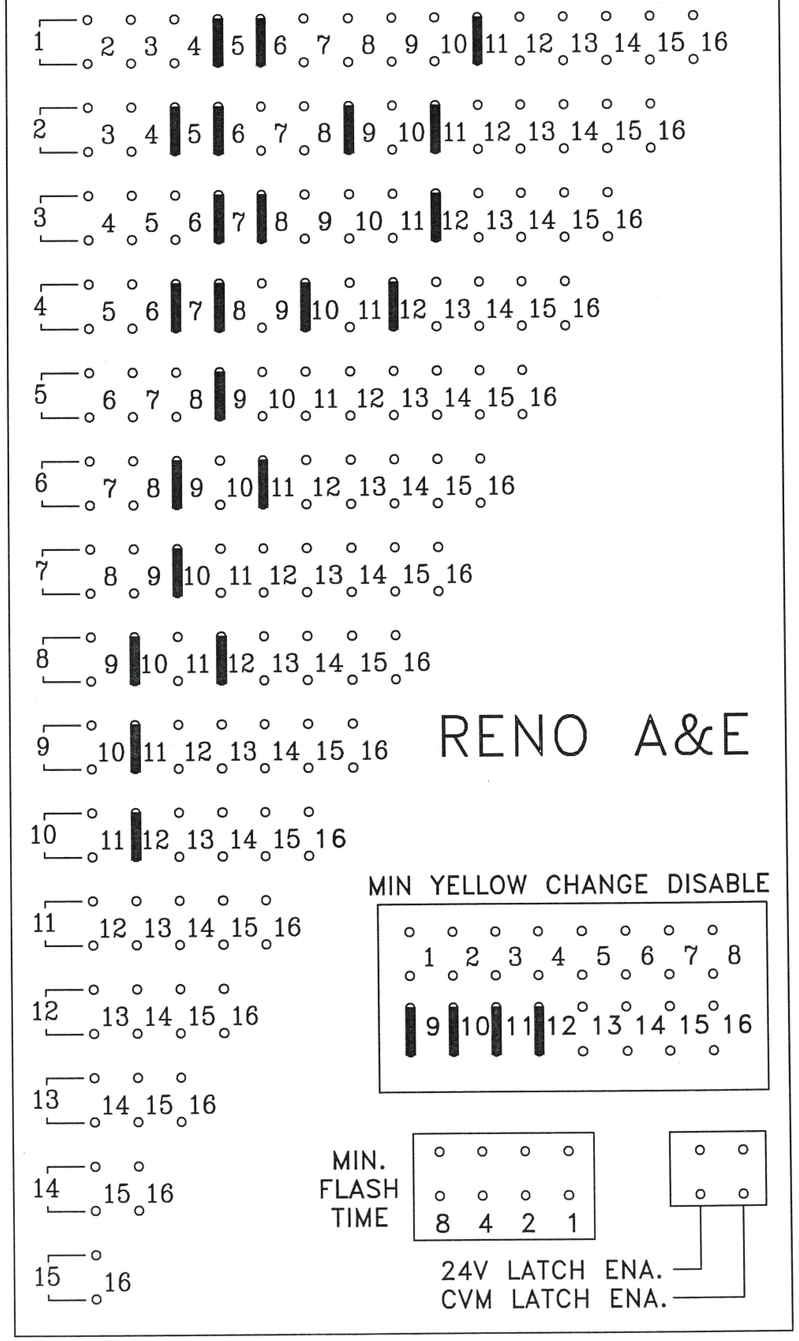
(1) RELAY CONTACT POSITIONS SPECIFIED ARE FOR NON-CONFLICT MODE.

(2) TO PROGRAM MMU, SOLDER JUMPERS IN PROGRAMMING CARD FOR ALL PERMISSABLE PHASE MOVEMENTS, MINIMUM CHANGE DISABLE FOR ALL PEDESTRIAN CHANNELS, AND MIN. FLASH, VOLTAGE MON., AND 24V. MON. LATCH OPTIONS AS DESIRED.

M.M.U. CHANNEL ASSIGNMENTS

CH. 1 =	L/S 1 =	^1 VEH.
CH. 2 =	L/S 2 =	^2 VEH.
CH. 3 =	L/S 3 =	^3 VEH.
CH. 4 =	L/S 4 =	^4 VEH.
CH. 5 =	L/S 5 =	^5 VEH.
CH. 6 =	L/S 6 =	^6 VEH.
CH. 7 =	L/S 7 =	^7 VEH.
CH. 8 =	L/S 8 =	^8 VEH.
CH. 9 =	L/S 9 =	^2 PED. / VEH. 1 FYA
CH. 10 =	L/S 10 =	^4 PED. / VEH. 3 FYA
CH. 11 =	L/S 11 =	^6 PED. / VEH. 5 FYA
CH. 12 =	L/S 12 =	^8 PED. / VEH. 7 FYA
CH. 13 =	L/S 13 =	O'LAP A VEH.
CH. 14 =	L/S 14 =	O'LAP B VEH.
CH. 15 =	L/S 15 =	O'LAP C VEH.
CH. 16 =	L/S 16 =	O'LAP D VEH.

MMU PROGRAM CARD



M.M.U. C/C'S AND PROGRAM CARD

DETECTOR RACK #1 34030G1

POWER SUPPLY OR B.I.U.	L3	L1	L7	L5	L11	L9	L15	L13	PMT 5	PMT 3	PGM. CARD
	5-1	1-1	6-1	2-1	7-1	3-1					
	☐ 2CH	☐ 2CH	☐ 2CH	☐ 2CH	☐ 2CH	☐ 2CH	☐ 2CH	☐ 2CH	☐2CH OPTICOM/ OPIC CH. C CH. D	☐4CH ☐2CH OPTICOM/ OPIC CH. A CH. B	
	5-2	1-2	6-2	2-2	7-2	3-2					
	L4	L2	L8	L6	L12	L10	L16	L14	PMT 6	PMT 4	

J13	J16	J14	J18	J15	J17	J19
C/C 171-1083-515 DC POWER	C/C 33284G8 EXP. OUTPUTS	C/C 33284G2 LPS 1-8	C/C 33284G9 SYS. OUTPUTS	C/C 33284G3 LPS 9-16	C/C 171-1083-515 AC POWER	C/C 33284G17 PGM. CARD

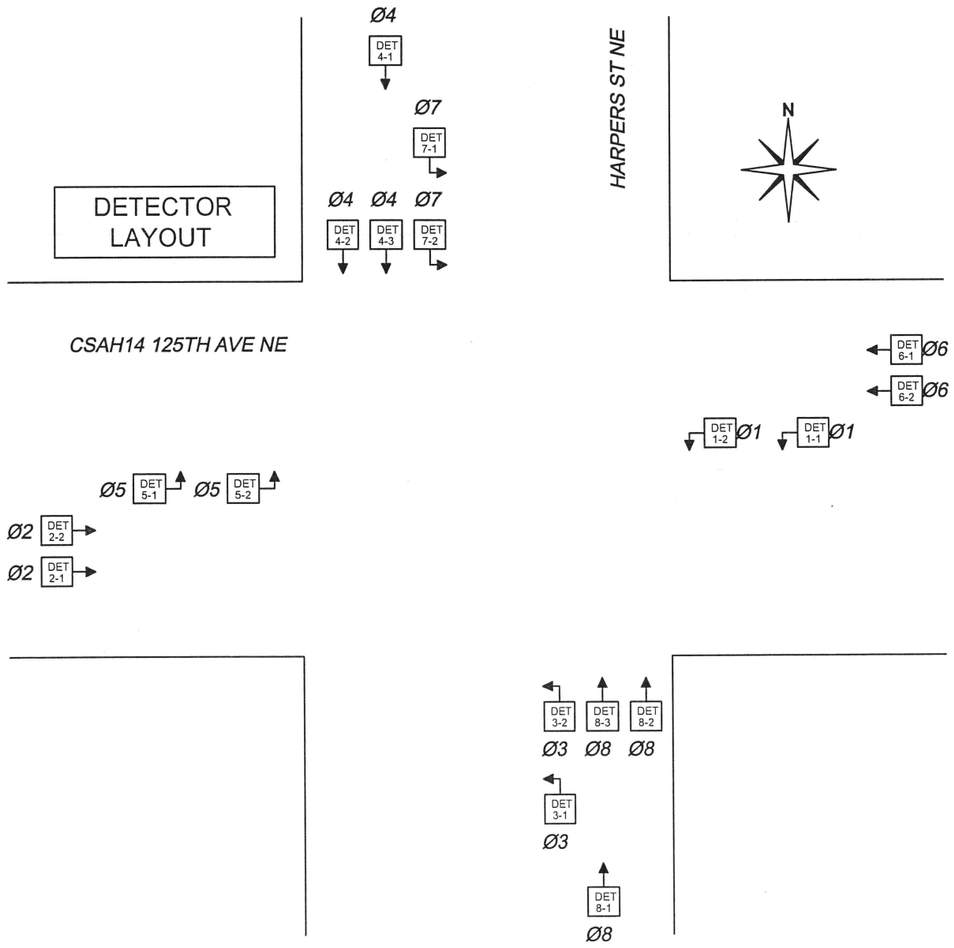
(1)

ADDRESS TABLE					
RACK #	JMPR	DET. #'S	RACK #	JMPR	DET. #'S
1		1-16	5		65-80
2		17-32	6		81-96
3		33-48	7		97-112
4		49-64	8		113-128

DETECTOR ASSIGNMENTS

CONT. INPUT	PHASE ASGN.	DETECTOR TYPE
1	1-1	
2	1-2	
3	5-1	
4	5-2	
5	2-1	
6	2-2	
7	6-1	
8	6-2	
9	3-1	
10	3-2	
11	7-1	
12	7-2	
13		
14		
15		
16		
17	4-1	
18	4-2	
19	4-3	
20		
21	8-1	
22	8-2	
23	8-3	
24		
25		
26		
26		
28		
29		
30		
31		
32		

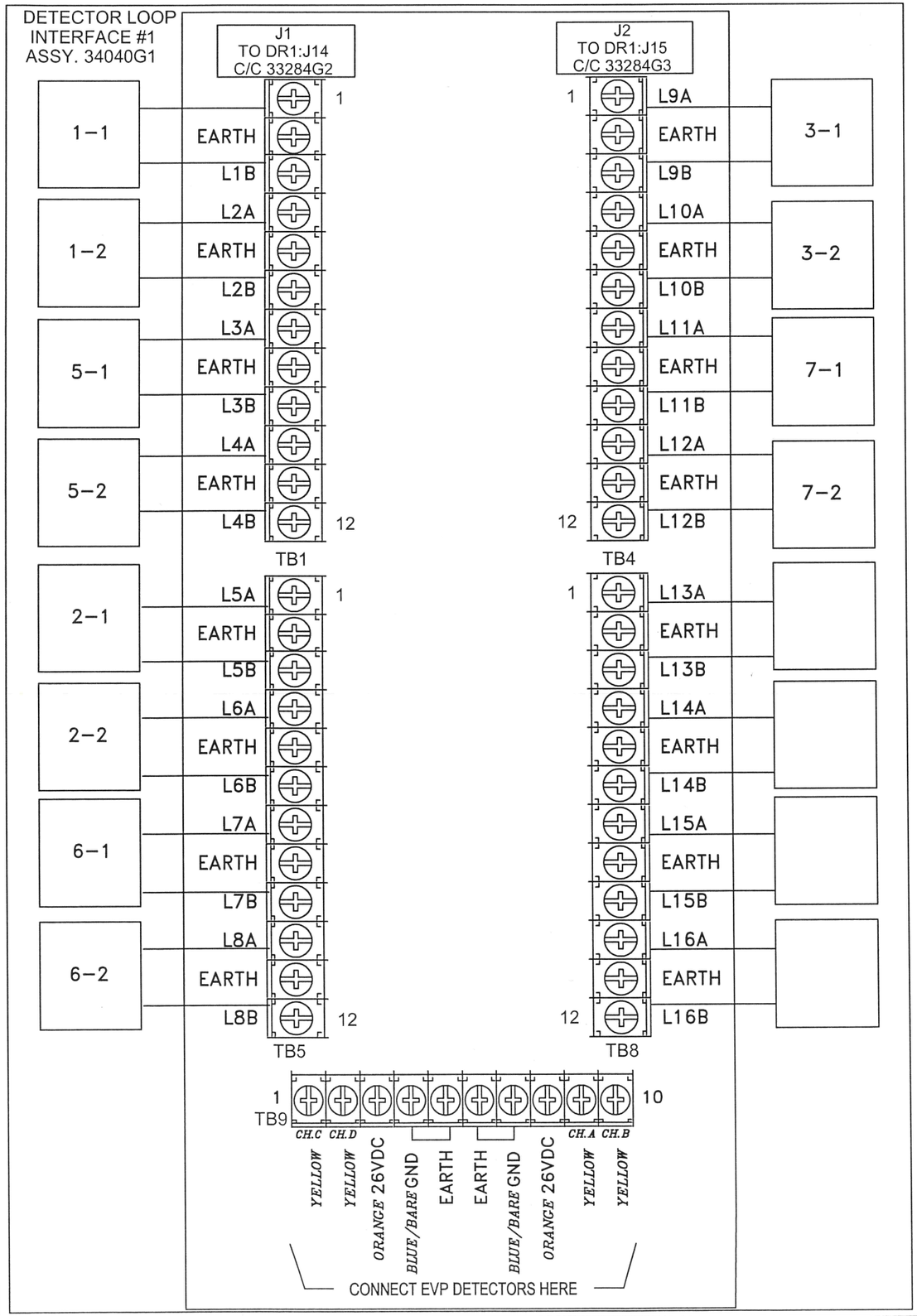
DETECTOR LAYOUT



DETECTOR RACK PROGRAMMING JUMPERS

DET. TYPE	JP1	JP2	SLOT 1/2 (1)							SLOT 3/4 (1)							SLOT 5/6 (1)							SLOT 7/8 (1)						
			JP3	JP4	JP5	JP6	JP7	JP8	JP9	JP10	JP11	JP12	JP13	JP14	JP15	JP16	JP17	JP18	JP19	JP20	JP21	JP22	JP23	JP24	JP25	JP26	JP27	JP28	JP29	JP30
(1) TS-1	NO	NO	● ○	● ○	● ○	● ○	● ○	● ○	● ○	● ○	● ○	● ○	● ○	● ○	● ○	● ○	● ○	● ○	● ○	● ○	● ○	● ○	● ○	● ○	● ○	● ○	● ○	● ○	● ○	● ○
(2) TS-2	YES	YES	○ ●	● ○	● ○	● ○	● ○	● ○	● ○	● ○	○ ●	● ○	● ○	○ ●	● ○	○ ●	○ ●	● ○	● ○	○ ●	○ ●	● ○	○ ●	○ ●	● ○	● ○	● ○	● ○	○ ●	○ ●
(3) LM-632T / 262-FC	NO	NO	● ○	○ ●	○ ●	○ ●	● ○	● ○	● ○	● ○	○ ●	○ ●	○ ●	● ○	● ○	● ○	● ○	● ○	○ ●	○ ●	● ○	● ○	● ○	● ○	○ ●	○ ●	● ○	● ○	● ○	● ○
(4) MAG.	NO	NO	○ ●	○ ●	● ○	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●	● ○	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●	● ○	○ ●	○ ●	○ ●	○ ●

SHEET 8 OF 12 | SIZE B | CSAH#14 AT HARPERS ST



DET. LOOPS 9–16 (J15) C/C 33284G3		
PIN	SIGNAL	TO
1	LOOP 9+	LPI2:TB4-1
2	LOOP 9–	LPI2: TB4-3
3	LOOP 10+	LPI2: TB4-4
4	LOOP 10–	LPI2: TB4-6
5	LOOP 11+	LPI2: TB4-7
6	LOOP 11–	LPI2: TB4-9
7	LOOP 12+	LPI2: TB4-10
8	LOOP 12–	LPI2: TB4-12
9	LOOP 13+	LPI2: TB8-1
10	LOOP 13–	LPI2: TB8-3
11	LOOP 14+	LPI2: TB8-4
12	LOOP 14–	LPI2: TB8-6
13	LOOP 15+	LPI2: TB8-7
14	LOOP 15–	LPI2: TB8-9
15	LOOP 16+	LPI2: TB8-10
16	LOOP 16–	LPI2: TB8-12
17	----	
18	----	
19	----	
20	----	

DET. RACK POWER C/C 171–1083–515			
P1/ DR:J13	P2/ DR:J17	FUNCTION	TO
1		+12 VDC (DET. POWER)	PB-3
2		+24 VDC (BIU POWER)	PB-2
3		LOGIC GROUND	PB-1
4		EARTH GROUND	PB-9
5		"KEY PIN"	
6		LINE FREQUENCY REF.	PB-5
	1	EARTH GROUND	----
	2	AC LINE	PB-12
	3	AC NEUTRAL	PB-10
	4	LOGIC GROUND	----

DET. LOOPS 1–8 (J14) C/C 33284G2		
PIN	SIGNAL	TO
1	LOOP 1+	LPI1:TB1-1
2	LOOP 1–	LPI1: TB1-3
3	LOOP 2+	LPI1: TB1-4
4	LOOP 2–	LPI1: TB1-6
5	LOOP 3+	LPI1: TB1-7
6	LOOP 3–	LPI1: TB1-9
7	LOOP 4+	LPI1: TB1-10
8	LOOP 4–	LPI1: TB1-12
9	LOOP 5+	LPI1: TB5-1
10	LOOP 5–	LPI1: TB5-3
11	LOOP 6+	LPI1: TB5-4
12	LOOP 6–	LPI1: TB5-6
13	LOOP 7+	LPI1: TB5-7
14	LOOP 7–	LPI1: TB5-9
15	LOOP 8+	LPI1: TB5-10
16	LOOP 8–	LPI1: TB5-12
17	PMT. DET. CH. C	LPI1: TB9-1
18	PMT. DET. CH. D	LPI1: TB9-2
19	KEY PIN	
20	PMT. CH. C/D +26VDC	LPI1: TB9-3
21	PMT. DC GROUND	LPI1: TB9-4,7
22	PMT. CH. A/B +26VDC	LPI1: TB9-8
23	PMT. DET. CH. A	LPI1: TB9-9
24	PMT. DET. CH. B	LPI1: TB9-10
25	----	
26	----	

EXPANSION OUTPUTS C/C 33284G8		
J16	FUNCTION	TO
17	DET. 17 / PMT. A OUT	MP:B19
18	DET. 18 / PMT. B OUT	MP:B20
19	PMT. C OUT	MP:B17
20	PMT. D OUT	MP:B18

DETECTOR LOOP INTERFACE

DETECTOR RACK #2 34030G1

POWER SUPPLY OR B.I.U.	L3	L1	L7	L5	L11	L9	L15	L13	NOT USED	NOT USED	PGM. CARD
	4–3 ☐ 2CH	4–1 ☐ 2CH 4–2	8–3 ☐ 2CH	8–1 ☐ 2CH 8–2	☐ 2CH	☐ 2CH	☐ 2CH	☐ 2CH			
	L4	L2	L8	L6	L12	L10	L16	L14			

J13	J16	J14	J18	J15	J17	J19
C/C 33284G10 DC POWER	C/C 33284G8 EXP. OUTPUTS	C/C 33284G2 LPS 1–8	C/C 33284G9 SYS. OUTPUTS	C/C 33284G3 LPS 9–16	C/C 33284G6 AC POWER	C/C 33284G17 PGM. CARD

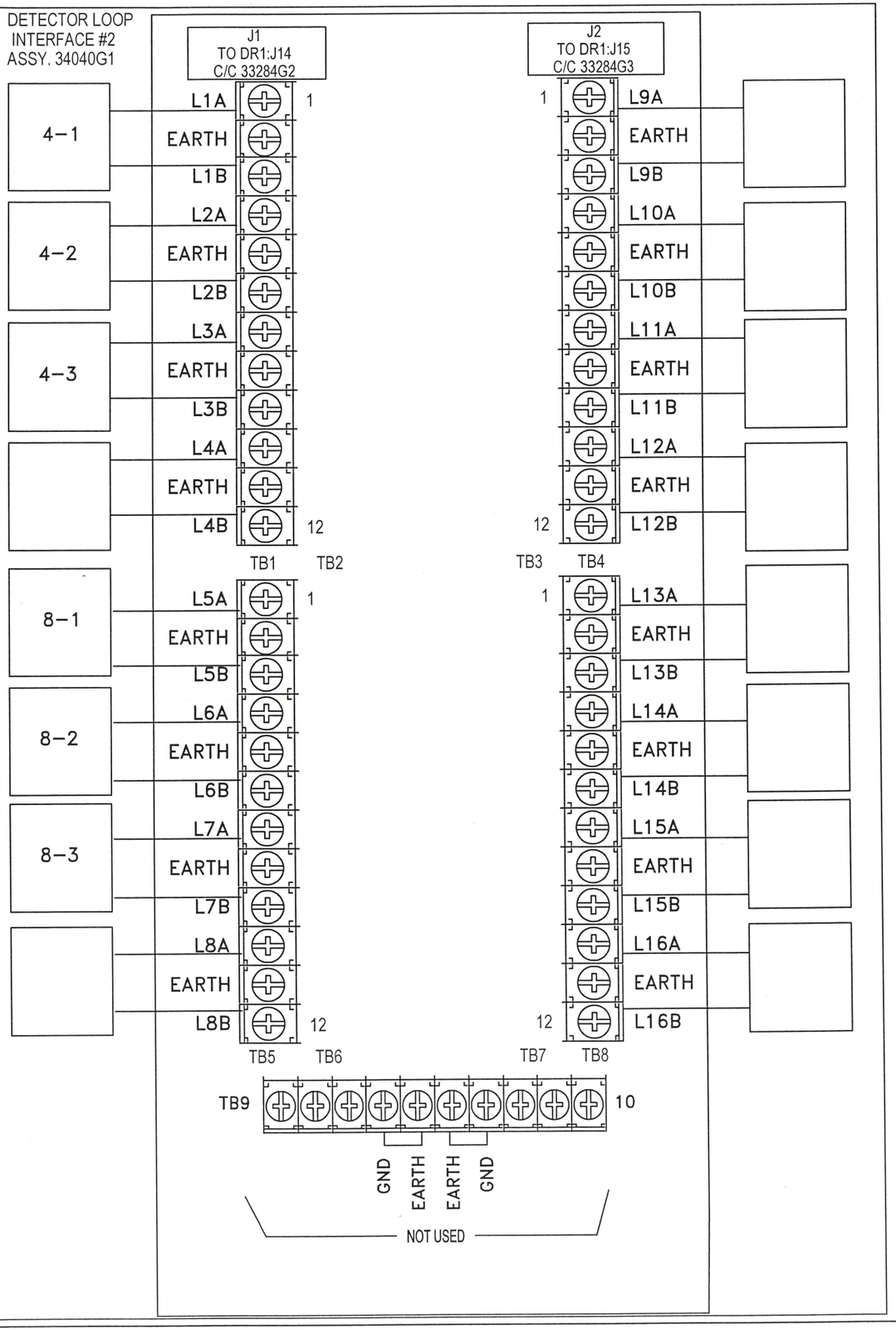
ADDRESS TABLE		
RACK #	JMPR	DET. #'S
1		1-16
2		17-32
3		33-48
4		49-64

1. INSTALL JUMPERS ON JP31 THRU JP34 WHEN A SHELF MOUNT POWER SUPPLY IS USED. WARNING - DO NOT INSTALL JUMPERS WHEN A PLUG-IN POWER SUPPLY IS USED.
2. INSTALL JUMPERS ON JP38 - JP55 WHEN PGM. CARD IS NOT USED.
3. PROGRAM CARD AND PLUG-IN POWER SUPPLY ARE FOR TS-1 APPLICATIONS ONLY. REMOVE FOR TS-2 APPLICATIONS.
4. PROGRAM JUMPERS USING CONFIGURATION NUMBER AS SHOWN BY ASTERISK.

DETECTOR RACK PROGRAMMING JUMPERS

DC POWER (1)					DET. TYPE	CONFIGURATION (4) SLOT 1/2							CONFIGURATION (4) SLOT 3/4							CONFIGURATION (4) SLOT 5/6								CONFIGURATION (4) SLOT 7/8								DET. CMNS.
JP31	JP32	JP33	JP34			JP3	JP4	JP5	JP6	JP7	JP8	JP9	JP10	JP11	JP12	JP13	JP14	JP15	JP16	JP17	JP18	JP19	JP20	JP21	JP22	TP1	JP23	JP24	JP25	JP26	JP27	JP28	TP2	JP29	JP30	JP38-JP55
				1	TS-1																															(2)
				2	* TS-2																																	(2)
				3	LM-632T 262-FC																																	(2)
				4	MAG.																																	(2)
				5	LM-642() (TS-2)																																	(2)

SHEET 10 OF 12	SIZE B	CSAH#14 AT HARPERS ST NE



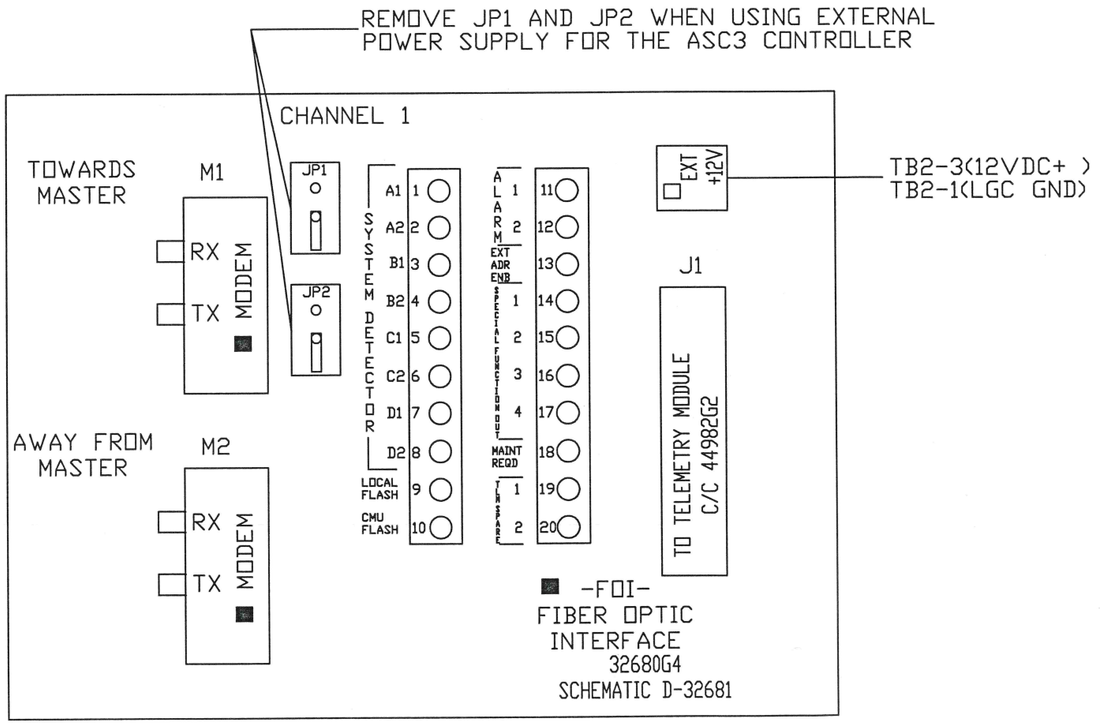
DET. LOOPS 9–16 (J15) C/C 33284G3		
PIN	SIGNAL	TO
1	LOOP 9+	LPI2:TB1-1
2	LOOP 9–	LPI2: TB1-3
3	LOOP 10+	LPI2: TB1-4
4	LOOP 10–	LPI2: TB1-6
5	LOOP 11+	LPI2: TB1-7
6	LOOP 11–	LPI2: TB1-9
7	LOOP 12+	LPI2: TB1-10
8	LOOP 12–	LPI2: TB1-12
9	LOOP 13+	LPI2: TB2-1
10	LOOP 13–	LPI2: TB2-3
11	LOOP 14+	LPI2: TB2-4
12	LOOP 14–	LPI2: TB2-6
13	LOOP 15+	LPI2: TB2-7
14	LOOP 15–	LPI2: TB2-9
15	LOOP 16+	LPI2: TB2-10
16	LOOP 16–	LPI2: TB2-12
17	----	
18	----	
19	----	
20	----	

DET. LOOPS 1–8 (J14) C/C 33284G2		
PIN	SIGNAL	TO
1	LOOP 1+	LPI1:TB1-1
2	LOOP 1–	LPI1: TB1-3
3	LOOP 2+	LPI1: TB1-4
4	LOOP 2–	LPI1: TB1-6
5	LOOP 3+	LPI1: TB1-7
6	LOOP 3–	LPI1: TB1-9
7	LOOP 4+	LPI1: TB1-10
8	LOOP 4–	LPI1: TB1-12
9	LOOP 5+	LPI1: TB2-1
10	LOOP 5–	LPI1: TB2-3
11	LOOP 6+	LPI1: TB2-4
12	LOOP 6–	LPI1: TB2-6
13	LOOP 7+	LPI1: TB2-7
14	LOOP 7–	LPI1: TB2-9
15	LOOP 8+	LPI1: TB2-10
16	LOOP 8–	LPI1: TB2-12
17	PMT. DET. CH. A	LPI1: TB3-1
18	PMT. DET. CH. B	LPI1: TB3-2
19	KEY PIN	
20	PMT. CH. A/B +26VDC	LPI1: TB3-3
21	PMT. DC GROUND	LPI1: TB3-4,7
22	PMT. CH. C/D +26VDC	LPI1: TB3-8
23	PMT. DET. CH. C	LPI1: TB3-9
24	PMT. DET. CH. D	LPI1: TB3-10
25	----	----
26	----	----

DET. RACK POWER C/C 171-1083-515			
P1/ DR:J13	P2/ DR:J17	FUNCTION	TO
1		+12 VDC (DET. POWER)	PB-3
2		+24 VDC (BIU POWER)	PB-2
3		LOGIC GROUND	PB-1
4		EARTH GROUND	PB-9
5		"KEY PIN"	
6		LINE FREQUENCY REF.	PB-5
	1	EARTH GROUND	----
	2	AC LINE	PB-12
	3	AC NEUTRAL	PB-10
	4	LOGIC GROUND	----

DETECTOR LOOP INTERFACE

SHEET 11 OF 12 | SIZE B | CSAH#14 AT HARPERS ST NE



CONT. TELM. PORT	FIBER OPTIC INTERF.	-LT- LOCAL TELEMETRY 32680G4	
J3	J1	COLOR	FUNCTION
3	A4	BLACK	TRANSMIT
2	A3	BLACK	RECEIVE
7	A5	RED	+12 VDC
5	A2	GRAY	SIG. GND.

LOCAL RS-232 TELEMETRY (FOI)

SHEET 12 OF 12	SIZE B	CSAH#14 AT HARPERS

EVP SENSORS

CABLE	DISCR. CHAN.	PHASES	POLE#	TERMINAL TB9		
				SIGNAL	DC(+)	GND
42	1	1-6	5	9	8	7
24	2	2-5	2	10	8	7
13,32	3	3-8	1	1	3	4
55	4	4-7	4	2	3	4

EVP VERIFY LIGHTS

CABLE	CONTR CHAN.	PHASES	POLE#	TERM.
41	3	1-6	5	59
23	4	2-5	2	65
12	5	3-8	1	71
54	6	4-7	4	77

VEHICLE SIGNALS

CABLE	SIGNAL	TERMINAL						
		G ←	FLA	Y ←	R ←	G	Y	R
36	1-1	1		5	7			
51	1-2	2		6	8			
21,20	2-1,2-3					9	11	13
19	2-2					10	12	14
7	3-1	15		19	21			
38	3-2	16		20	22			
49	4-1					23	25	27
50	4-2					24	26	28
19	5-1	29		33	35			
9	5-2	30		34	36			
38,37	6-1,6-3					37	39	41
36	6-2					38	40	42
49	7-1	43		47	49			
21	7-2	44		48	50			
7	8-1					51	53	55
8	8-2					52	54	56

VEH DETECTORS

CABLE	DET	SLOT	FUNC	RACK	TERMINAL
17	1-1	1	1	1	L1
18	1-2	2	1	1	L2
57	2-1	5	1	1	L5
58	2-2	6	1	1	L6
27	3-1	9	1	1	L9
28	3-2	10	1	1	L10
46	4-1	17	3/8	2	L1
44	4-2	18	7	2	L2
45	4-3	19	1	2	L3
47	5-1	3	1	1	L16
48	5-2	4	1	1	L7
15	6-1	7	1	1	L8
16	6-2	8	1	1	L6
34	7-1	11	1	1	L10
35	7-2	12	1	1	L11
31	8-1	21	3/8	2	L5
29	8-2	22	7	2	L6
30	8-3	23	1	2	L7

PED PUSHBUTTONS

CABLE	PPB	TERMINAL	RETURN
52	2-1	PC2	GB1
26	2-2	PC2	GB1
39	4-1	PC4	GB1
53	4-2	PC4	GB1
10	6-1	PC6	GB1
40	6-2	PC6	GB1
22	8-1	PC8	GB1
11	8-2	PC8	GB1

PED SIGNALS

CABLE	SIGNAL	TERMINAL	
		WK	DW
51	2-1	57	61
20	2-2	58	62
37	4-1	63	67
50	4-2	64	68
9	6-1	69	73
37	6-2	70	74
20	8-1	75	79
8	8-2	76	80

B.I.U

DET	PH	F	DET	DLY	EXT
CH 1	1	1	1-1		
CH 2	1	1	1-2		
CH 3	5	1	5-1		
CH 4	5	1	5-2		

DET	PH	F	DET	DLY	EXT
CH 5	2	1	2-1		
CH 6	2	1	2-2		
CH 7	6	1	6-1		
CH 8	6	1	6-2		

DET	PH	F	DET	DLY	EXT
CH 9	3	1	3-1		
CH 10	3	1	3-2		
CH 11	7	1	7-1		
CH 12	7	1	7-2		

DET	PH	F	DET	DLY	EXT
CH 13					
CH 14					
CH 15					
CH 16					

EVP	PH	POLE #	CONT CH #
CH 1	1-6	5	3
CH 2	2-5	2	4
CH 3	3-8	1	5
CH 4	4-7	4	6

B.I.U

DET	PH	F	DET	DLY	EXT
CH 17	4	3/8	4-1		
CH 18	4	7	4-2		
CH 19	4	1	4-3		
CH 20					

DET	PH	F	DET	DLY	EXT
CH 21	8	3/8	8-1		
CH 22	8	7	8-2		
CH 23	8	1	8-3		
CH 24					

DET	PH	F	DET	DLY	EXT
CH 25					
CH 26					
CH 27					
CH 28					

DET	PH	F	DET	DLY	EXT
CH 29					
CH 30					
CH 31					
CH 32					