

MAIN PANEL:171-1081-504

| COBALT TS2                                                                                                                                                                                                                                                                                                                       | LEGEND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>■ CONFIGURATION:L3604</div> <div>■ SOFTWARE:32.65.30</div> <div>■ ETHERNET MODULE</div> <div><div>□ OVERLAPS</div><div>□ IN EEPROM</div><div>□ KEYBOARD ENTERED</div></div> <div>□ ANALOG TELEMETRY MOD.: 100-1005-501</div> <div>■ INTERNAL RS-232 TELEMETRY</div> <div>□ TEST INPUT A =</div> <div>□ TEST INPUT B =</div> | <div>BIU BUS INTERFACE UNIT</div> <div>BU() C/C, BIU ()</div> <div>CB() CIRCUIT BREAKER ()</div> <div>C/C CONNECTING CABLE</div> <div>CCA CONTROLLER CABLE "A"</div> <div>CDP C/C, DR POWER</div> <div>CMA MMU/CMU CABLE "A"</div> <div>CMB MMU/CMU CABLE "B"</div> <div>CPO C/C PRE-EMPT OUTPUTS</div> <div>CPP C/C PRE-EMPT POWER</div> <div>DR DETECTOR RACK</div> <div>DS() DOOR SWITCH ()</div> <div>FLO FLASHER ()</div> <div>FR() FLASH XFER. RELAY</div> <div>LS() LOAD SWITCH</div> <div>MC MERCURY CONTACTOR</div> <div>MP MAIN PANEL</div> <div>PAP POWER-AUX PANEL</div> <div>PSP CAB. PWR. SUPPLY</div> <div>SA SURGE ARRESTOR</div> <div>TB-() TERM. BLOCK ()</div> |

| 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.

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

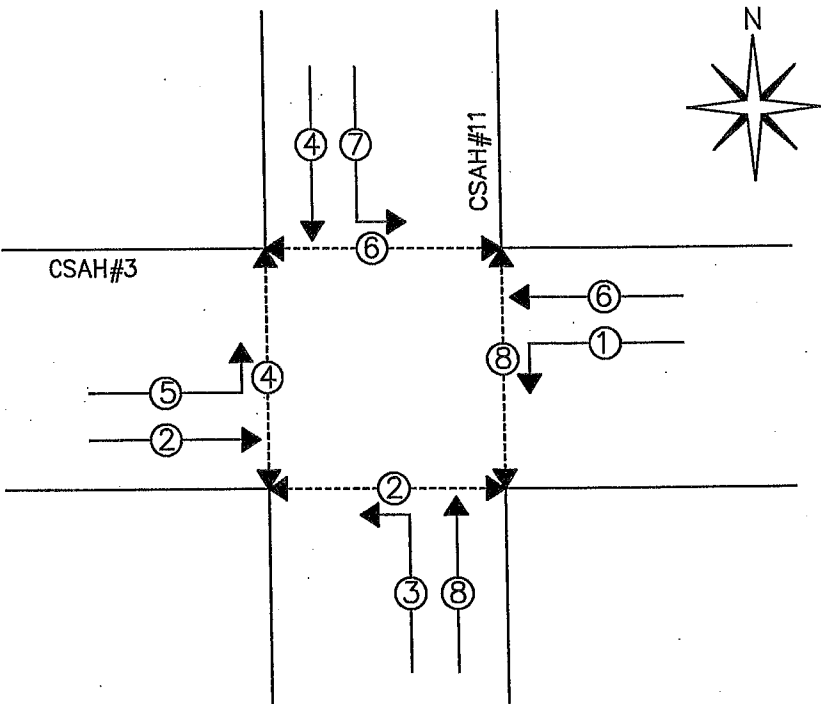
FLASH:

□ ø2&6 YELLOW, ALL OTHERS RED.

■ ALL RED.

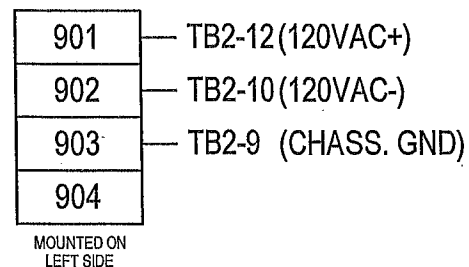
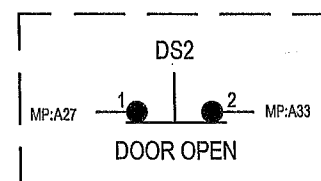
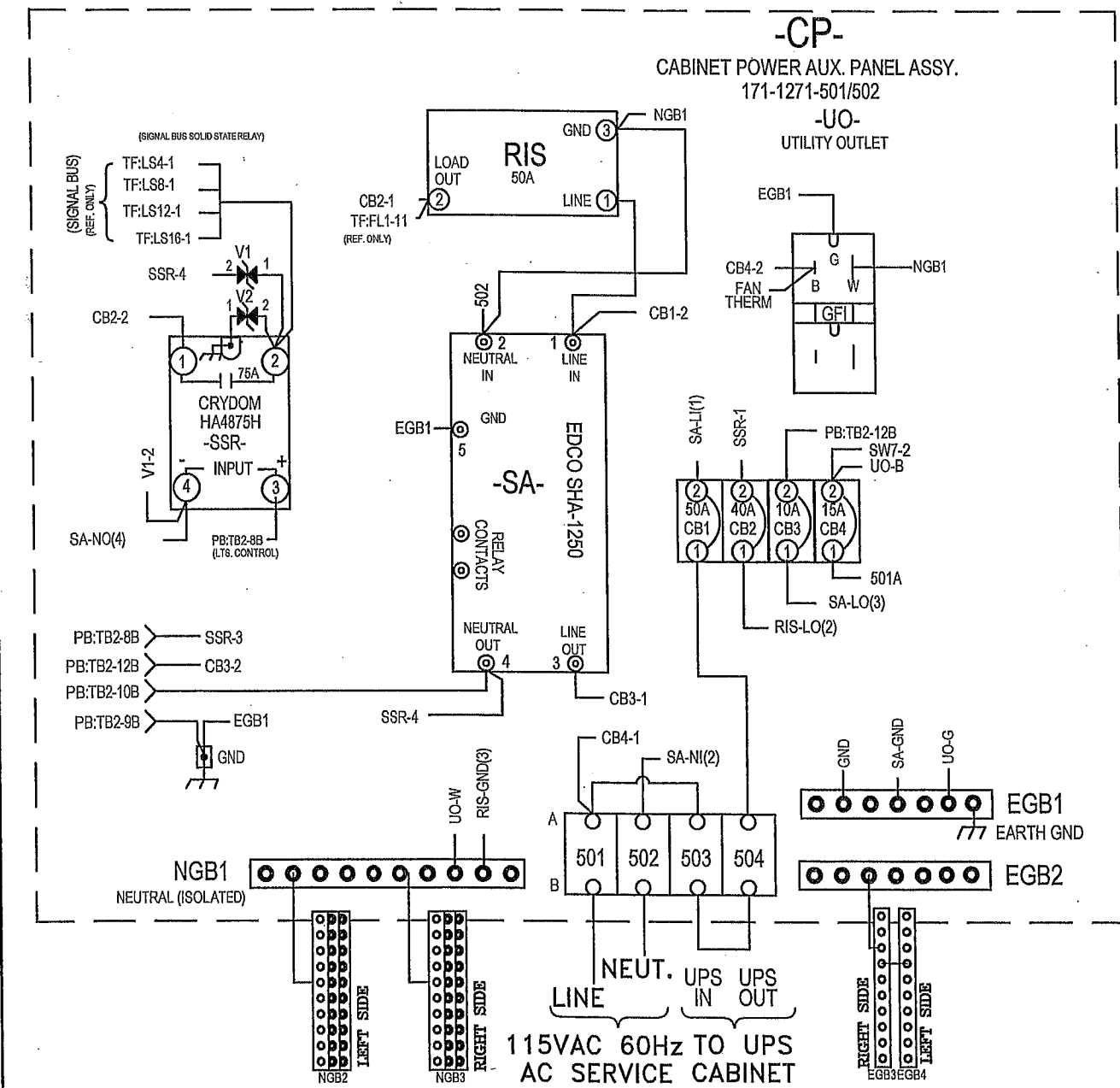
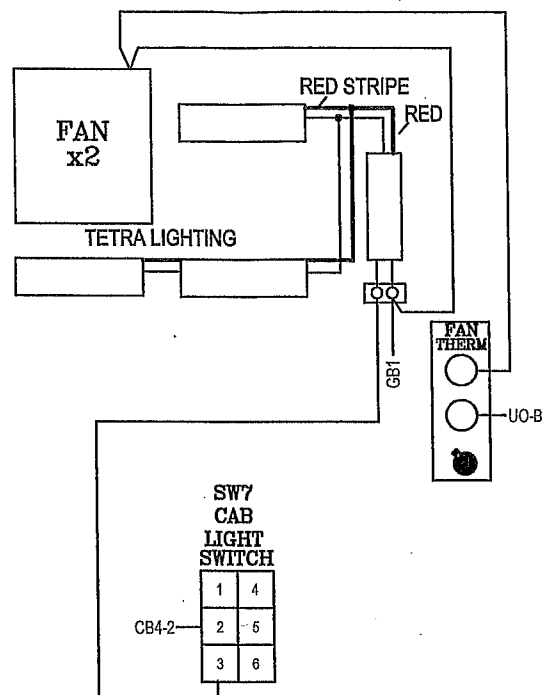
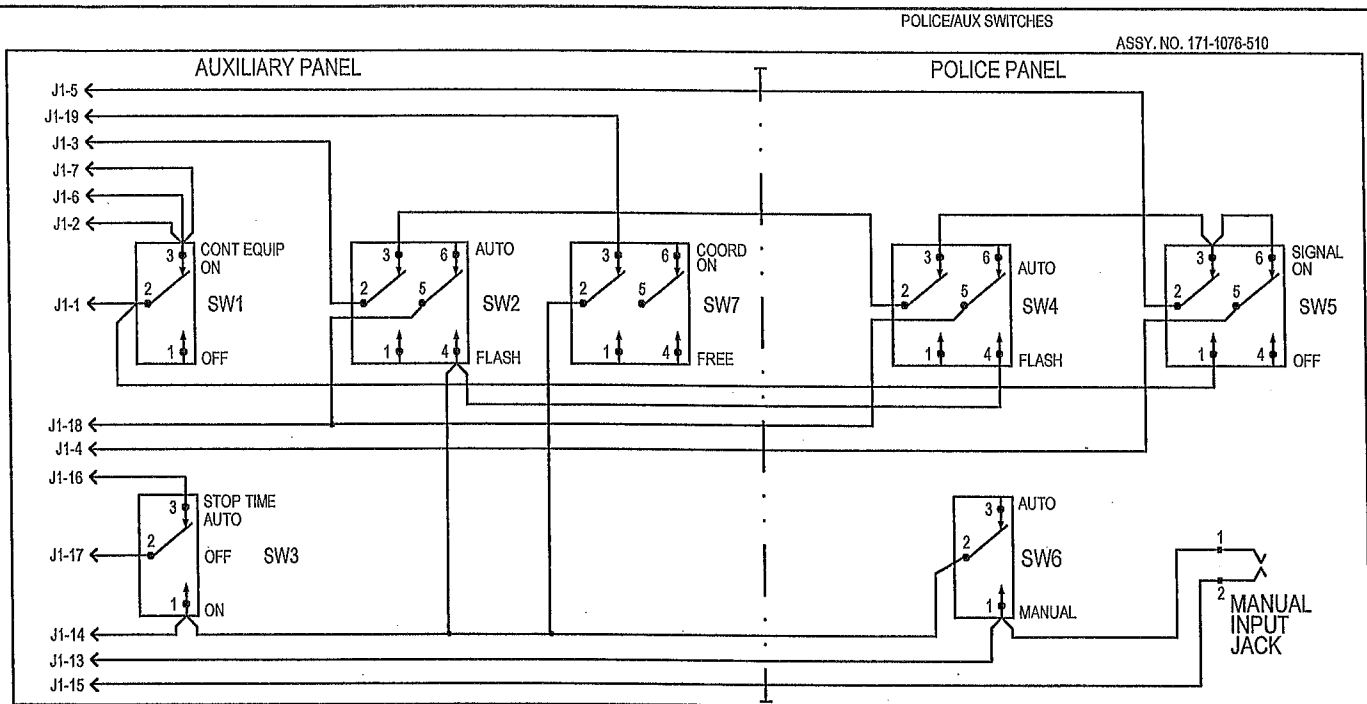
■ RELAYS DE-ENERGIZED FOR FLASH.

□ RELAYS ENERGIZED FOR FLASH.

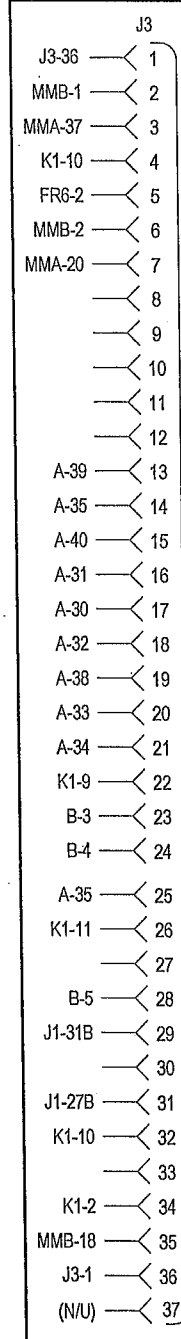


SHEET 1 OF 9

|                         |                    |                                                                                                                          |                 |                                                                                                                      |                     |                                            |            |
|-------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------|------------|
| DESIGNER<br>G.V. T.C.C. | DATE<br>02/22/2018 |  ECONOLITE<br>CONTROL PRODUCTS INC. |                 |  TRAFFIC CONTROL<br>CORPORATION |                     | 780 W. BELDEN SUITE D<br>ADDISON, IL 60101 |            |
| DRAWN<br>CM TCC         | 02/22/2018         | CABINET SPECIFICATION: TS2TYPE1 ANOKA COUNTY SPEC PLUG AND GO                                                            |                 |                                                                                                                      |                     |                                            |            |
| CABINET SIZE            | 77"                | CUSTOMER:                                                                                                                |                 |                                                                                                                      |                     |                                            | CONTROLLER |
| INSPECTED               |                    | INTERSECTION: CSAH#3 AT CSAH#11                                                                                          |                 |                                                                                                                      |                     |                                            | FLASHER    |
| APPROVED                |                    | LOCATION:                                                                                                                |                 |                                                                                                                      |                     |                                            | SW.PACKS   |
|                         |                    | SYSTEM:                                                                                                                  |                 |                                                                                                                      |                     |                                            |            |
| CUSTOMER P.O.           |                    | INSTALLED BY                                                                                                             | SALES ORDER NO. | SIZE<br>B                                                                                                            | DRAWING #TS2AC16PG- |                                            |            |



| AC POWER       |                      | C/C 171-1083-528/529 |
|----------------|----------------------|----------------------|
| POWER BUS -PB- | FUNCTION             | POWER PANEL -CP-     |
| TB2-12B        | FILTERED AC+LINE OUT | CB3-2                |
| TB2-10B        | AC NEUTRAL OUT       | SA-NO                |
| TB2-9B         | EARTH GND.           | GND                  |
| TB2-8B         | SIG BUS CNTRL        | SSR-3                |



(MAIN PANEL & C/C REFERENCES ONLY)

| TO/FROM POLICE-AUXILIARY SWITCH PANEL |                            |
|---------------------------------------|----------------------------|
| PIN                                   | FUNCTION                   |
| 1                                     | FILTER AC LINE (OUT)       |
| 2                                     | SWITCHED AC LINE (IN)      |
| 3                                     | FLASH CONTROL BUS (OUT)    |
| 4                                     | SIGNAL BUS CONTROL (IN)    |
| 5                                     | FLASH RELAY CONTROL (IN)   |
| 6                                     | START DELAY AC BUS (IN)    |
| 7                                     | MMU FLASH CONTROL BUS (IN) |
| 8                                     | SPARE                      |
| 9                                     | SPARE                      |
| 10                                    | SPARE                      |
| 11                                    | SPARE                      |
| 12                                    | SPARE                      |
| 13                                    | MANUAL CONT. ENABLE (IN)   |
| 14                                    | LOGIC GROUND               |
| 15                                    | OPT-INTERVAL ADVANCE (IN)  |
| 16                                    | MMU STOP TIME (OUT)        |
| 17                                    | CONTROLLER STOP TIME (IN)  |
| 18                                    | LOCAL FLASH STATUS (IN)    |
| 19                                    | OPT-COORD FREE (IN)        |
| 20                                    | OPT-ALARM 1 (IN)           |
| 21                                    | OPT-ALARM 2 (IN)           |
| 22                                    | OPT-LOADSWITCH TEST (IN)   |
| 23                                    | MMU 24 VOLT MON. 2 (IN)    |
| 24                                    | +24 VDC                    |
| 25                                    | +24 VDC                    |
| 26                                    | LOGIC GROUND               |
| 27                                    | +24 VDC (IN)               |
| 28                                    | MMU FAULT MONITOR (IN)     |
| 29                                    | LINE FREQ. REFERENCE (IN)  |
| 30                                    | ---                        |
| 31                                    | 12 VAC (IN)                |
| 32                                    | SIGNAL BUS CONTROL (IN)    |
| 33                                    | ---                        |
| 34                                    | FILTERED AC NEUTRAL (IN)   |
| 35                                    | CONT. EQUIP. AC LINE (OUT) |
| 36                                    | FILTERED AC LINE (IN)      |
| 37                                    | ---                        |

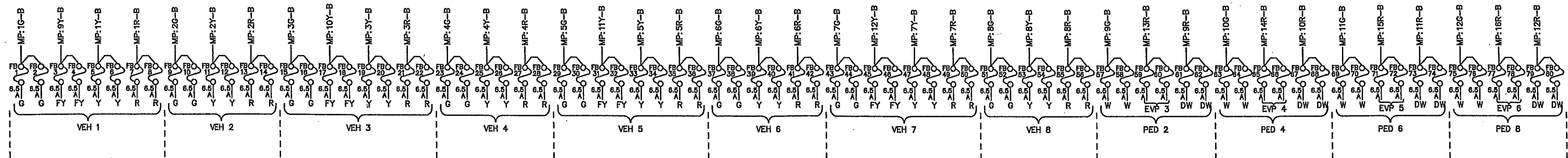
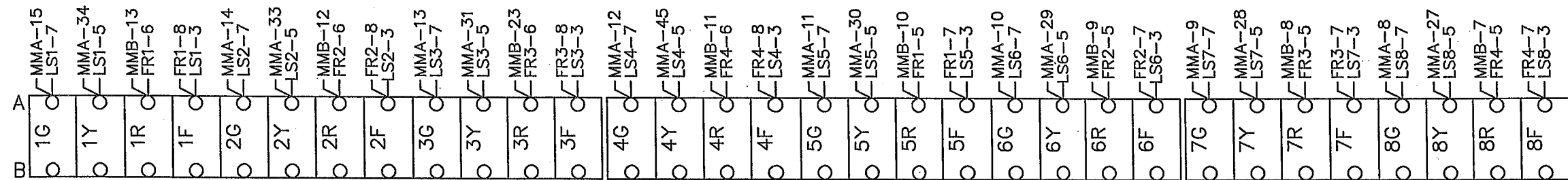
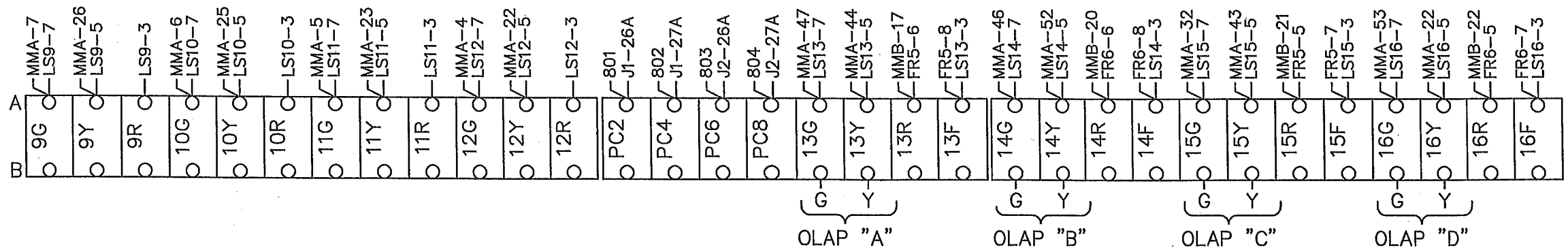
TO: POL/AUX ASSY.

TO: PBA

| MP P3                | MAIN PANEL/CONTROLLER PWR. C/C 171-1676-504 | TO POL/AUX P1 |
|----------------------|---------------------------------------------|---------------|
| PIN                  | FUNCTION                                    | PIN           |
| 1                    | FILTER AC LINE (OUT)                        | 1             |
| 2                    | SWITCHED AC LINE (IN)                       | 2             |
| 3                    | FLASH CONTROL BUS (OUT)                     | 3             |
| 4                    | SIGNAL BUS CONTROL (IN)                     | 4             |
| 5                    | FLASH RELAY CONTROL (IN)                    | 5             |
| 6                    | START DELAY AC BUS (IN)                     | 6             |
| 7                    | MMU FLASH CONTROL BUS (IN)                  | 7             |
| 8                    | SPARE                                       | 8             |
| 9                    | SPARE                                       | 9             |
| 10                   | SPARE                                       | 10            |
| 11                   | SPARE                                       | 11            |
| 12                   | SPARE                                       | 12            |
| 13                   | OPT-MANUAL CONT. ENABLE (IN)                | 13            |
| 14                   | LOGIC GROUND                                | 14            |
| 15                   | OPT-INTERVAL ADVANCE (IN)                   | 15            |
| 16                   | MMU STOP TIME (OUT)                         | 16            |
| 17                   | CONTROLLER STOP TIME (IN)                   | 17            |
| 18                   | LOCAL FLASH STATUS (IN)                     | 18            |
| 19                   | OPT-COORD FREE (IN)                         | 19            |
| 20                   | OPT-ALARM 1 (IN)                            | 20            |
| 21                   | OPT-ALARM 2 (IN)                            | 21            |
| 22                   | OPT-LOADSWITCH TEST (IN)                    | 22            |
| 23                   | MMU 24 VOLT MON. 2 (IN)                     | 23            |
| 24                   | +24 VDC                                     | 24            |
| PART OF 171-1076-504 |                                             | TO PB:(JX)    |
| 25                   | LOGIC GROUND                                | 1             |
| 26                   | +24 VDC (IN)                                | 2             |
| (N/U)                | ---                                         | 3             |
| 28                   | MMU FAULT MONITOR (IN)                      | 4             |
| 29                   | LINE FREQ. REFERENCE (IN)                   | 5             |
| (N/U)                | ---                                         | 6             |
| 31                   | 12 VAC (IN)                                 | 7             |
| 32                   | SIGNAL BUS CONTROL (IN)                     | 8             |
| (N/U)                | ---                                         | 9             |
| 34                   | FILTERED AC NEUTRAL (IN)                    | 10            |
| 35                   | CONT. EQUIP. AC LINE (OUT)                  | 11            |
| 36                   | FILTERED AC LINE (IN)                       | 12            |
| (N/U)                | ---                                         | 13            |
| (N/U)                | ---                                         | 14            |

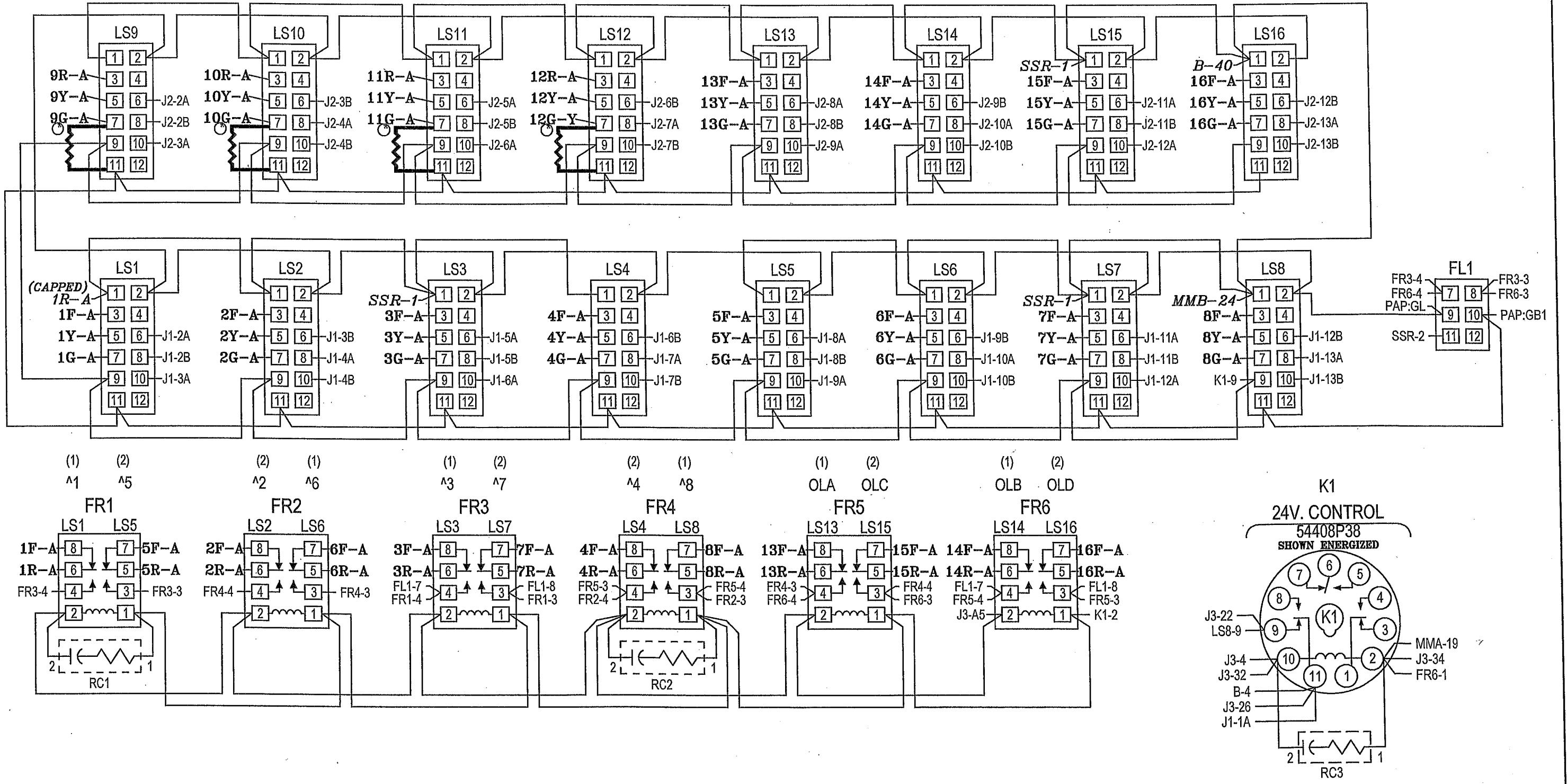
| POLICE/AUXILIARY SWITCH PANEL |                             |       |
|-------------------------------|-----------------------------|-------|
| J1 PIN                        | FUNCTION                    | TO    |
| 1                             | FILTER AC LINE (IN)         | SW1-2 |
| 2                             | SWITCHED AC LINE (OUT)      | SW1-3 |
| 3                             | FLASH CONTROL BUS (IN)      | SW2-2 |
| 4                             | SIGNAL BUS CONTROL (OUT)    | SW5-5 |
| 5                             | FLASH RELAY CONTROL (OUT)   | SW5-2 |
| 6                             | START DELAY BUS (OUT)       | SW1-3 |
| 7                             | MMU FLASH CONTROL BUS (OUT) | SW1-3 |
| 8                             | SPARE                       | ---   |
| 9                             | SPARE                       | ---   |
| 10                            | SPARE                       | ---   |
| 11                            | SPARE                       | ---   |
| 12                            | SPARE                       | ---   |
| 13                            | MANUAL CONT. ENABLE (OUT)   | SW6-1 |
| 14                            | LOGIC GROUND                | SW3-1 |
| 15                            | INTERVAL ADVANCE (OUT)      | MIJ-2 |
| 16                            | MMU STOP TIME (IN)          | SW3-3 |
| 17                            | CONTROLLER STOP TIME (OUT)  | SW3-2 |
| 18                            | LOCAL FLASH STATUS (OUT)    | SW2-5 |
| 19                            | COORD FREE (OUT)            | ---   |
| 20                            | ALARM 1 (OUT)               | ---   |
| 21                            | ALARM 2 (OUT)               | ---   |
| 22                            | LOADSWITCH TEST (OUT)       | ---   |
| 23                            | MMU 24 VOLT MON. 2 (OUT)    | ---   |
| 24                            | +24 VDC (IN)                | ---   |

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



SIGNAL FIELD TERMINALS

①  
2.2K  
10W



# LOADBAY AND FLASH RELAY'S

|   |    |                    |               |    |                   |
|---|----|--------------------|---------------|----|-------------------|
| B | 1  | MMU, RESET         | MMA-49J2-21B  | 1  | RG, 1 INHBT. MAX. |
|   | 2  | 24 V. MON. INHBT.  | MMA-36J2-22A  | 2  | RG, 2 INHBT. MAX. |
|   | 3  | MMU, +24 V. MON. 2 | J3-23         | 3  | RG, 1 FORCE OFF   |
|   | 4  | MMU, +24 V. MON. 1 | MMB-15        | 4  | RG, 2 FORCE OFF   |
|   | 5  | FAULT MON.         | K1-11         | 5  | RG, 1 MAX. 2 SEL. |
|   | 6  | PC1 PED. DET. 1    | J3-24         | 6  | RG, 2 MAX. 2 SEL. |
|   | 7  | PC3 PED. DET. 3    | J1-22B        | 7  | CALL NONACT 1     |
|   | 8  | PC5 PED. DET. 5    | MMA-35        | 8  | CALL NONACT 2     |
|   | 9  | PC7 PED. DET. 7    | J1-25B J1-23A | 9  | WALK REST MDR.    |
|   | 10 | DET. 61            | J2-25B J2-19A | 10 | EXT. MIN. RECALL  |
|   | 11 | DET. 62            | J2-26B J1-25A | 11 | EXT. START        |
|   | 12 | DET. 63            | J2-19B J1-20A | 12 | TEST INPUT A      |
|   | 13 | DET. 64            | J2-20A J1-20B | 13 | TEST INPUT B      |
|   | 14 | LOGIC GND.         | J2-20B J1-17A | 14 | TEST INPUT C      |
|   | 15 | PMT. CALL 1        | MMA-17        | 15 | T.B.C. ON LINE    |
|   | 16 | PMT. CALL 2        | J1-32A J2-25A | 16 | T.B.C. AUX. 1     |
|   | 17 | PMT. CALL 3        | A-20          | 17 | T.B.C. AUX. 2     |
|   | 18 | PMT. CALL 4        | J1-16A J1-21A | 18 | T.B.C. AUX. 3     |
|   | 19 | PMT. CALL 5        | J1-16B J1-14A | 19 | COORD. STATUS OUT |
|   | 20 | PMT. CALL 6        | J2-17A J1-14B | 20 | LOGIC GND.        |

J16-19

J16-20

J16-17

J16-18

|    |              |        |        |    |                      |
|----|--------------|--------|--------|----|----------------------|
| 21 | MMA AC+ I IN | MMA-1  | J1-15A | 21 | PMT. 1 ACTV.         |
| 22 | DIR1 OPEN    | MMA-2  | J1-15B | 22 | PMT. 2 ACTV.         |
| 23 | DIR2 OPEN    | MMA-3  | J2-15A | 23 | ALARM 3              |
| 24 | MMA SPR 1    | MMA-48 | J2-15B | 24 | ALARM 4              |
| 25 | CAB INTLK A  | MMA-50 | J2-16A | 25 | ALARM 5              |
| 26 | CAB INTLK B  | MMA-51 | J2-16B | 26 | ALARM 6              |
| 27 | MMA SPR 2    | MMA-54 | A-35   | 27 | LOGIC GND            |
| 28 | SDR OPEN     | MMB-3  | MMA-21 | 28 | LOGIC GND            |
| 29 | MMB SPR 1    | MMB-14 | A-20   | 29 | LOGIC GND            |
| 30 | MMB SPR 2    | MMB-16 | J1-21B | 30 | STOP TIMING 1 & 2    |
| 31 | MMB SPR 3    | MMB-25 | J1-22A | 31 | MMU STOP TIMING      |
| 32 |              | MMB-38 | J3-17  | 32 | LOCAL FLASH STATUS   |
| 33 |              | MMB-26 | J2-23B | 33 | ALARM 1              |
| 34 |              | J2-22B | J3-16  | 34 | ALARM 2              |
| 35 |              | J3-18  | J3-20  | 35 | LOGIC GND            |
| 36 |              | J2-23B | J2-24A | 36 | DIM. ENABLE          |
| 37 | SB AC+       | J1-18A | J3-21  | 37 | AUTO FLASH           |
| 38 | SB AC+       | J2-24B | A-27   | 38 | COORD. FREE          |
| 39 | SB AC+       | J3-19  | J3-25  | 39 | MANUAL COUNT. ENABLE |
| 40 | SB AC+       | J1-19A | J3-14  | 40 | INTRVL ADV.          |

# INTERFACE TERMINAL BLOCKS

| 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 | EXT. MIN. RECALL | 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 | SPARE 1         | B-10    |
| 20A | SPARE 2         | B-11    |
| 20B | SPARE 3         | B-12    |
| 21A | SPARE 4         | 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  |

| DETECTOR BIU |                     |
|--------------|---------------------|
| PIN          | FUNCTION            |
| 1A           | +24 VDC             |
| 1B           | +24 VDC             |
| 2A           | ---                 |
| 2B           | ---                 |
| 3A           | ---                 |
| 3B           | ---                 |
| 4A           | ---                 |
| 4B           | ---                 |
| 5A           | ---                 |
| 5B           | ---                 |
| 6A           | ---                 |
| 6B           | ---                 |
| 7A           | ---                 |
| 7B           | ---                 |
| 8A           | ---                 |
| 8B           | ---                 |
| 9A           | ---                 |
| 9B           | ---                 |
| 10A          | CH. 1 CALL          |
| 10B          | CH. 2 CALL          |
| 11A          | CH. 3 CALL          |
| 11B          | CH. 4 CALL          |
| 12A          | CH. 5 CALL          |
| 12B          | CH. 6 CALL          |
| 13A          | CH. 7 CALL          |
| 13B          | CH. 8 CALL          |
| 14A          | CH. 9 CALL          |
| 14B          | CH. 10 CALL         |
| 15A          | CH. 11 CALL         |
| 15B          | CH. 12 CALL         |
| 16A          | CH. 13 CALL         |
| 16B          | CH. 14 CALL         |
| 17A          | CH. 15 CALL         |
| 17B          | CH. 16 CALL         |
| 18A          | CH. 1 FAULT STATUS  |
| 18B          | CH. 2 FAULT STATUS  |
| 19A          | CH. 3 FAULT STATUS  |
| 19B          | CH. 4 FAULT STATUS  |
| 20A          | CH. 5 FAULT STATUS  |
| 20B          | CH. 6 FAULT STATUS  |
| 21A          | CH. 7 FAULT STATUS  |
| 21B          | CH. 8 FAULT STATUS  |
| 22A          | CH. 9 FAULT STATUS  |
| 22B          | CH. 10 FAULT STATUS |
| 23A          | CH. 11 FAULT STATUS |
| 23B          | CH. 12 FAULT STATUS |
| 24A          | CH. 13 FAULT STATUS |
| 24B          | CH. 14 FAULT STATUS |
| 25A          | CH. 15 FAULT STATUS |
| 25B          | CH. 16 FAULT STATUS |
| 26A          | ---                 |
| 26B          | ---                 |
| 27A          | ---                 |
| 27B          | ---                 |
| 28A          | ADDR. SEL. 0        |
| 28B          | ADDR. SEL. 1        |
| 29A          | ADDR. SEL. 2        |
| 29B          | ADDR. SEL. 3        |
| 30A          | ---                 |
| 30B          | ---                 |
| 31A          | EARTH GND.          |
| 31B          | LINE FREQ. REF.     |
| 32A          | LOGIC GND.          |
| 32B          | LOGIC GND.          |

| MAIN PANEL CONTROL POWER<br>C/C 171-1676-504 |                            |
|----------------------------------------------|----------------------------|
| PIN                                          | FUNCTION                   |
| 1                                            | LOGIC GROUND               |
| 2                                            | +24 VDC (IN)               |
| 3                                            | ---                        |
| 4                                            | MMU FAULT MONITOR (IN)     |
| 5                                            | LINE FREQ. REFERENCE (IN)  |
| 6                                            | ---                        |
| 7                                            | +12 VAC (IN)               |
| 8                                            | SIGNAL BUS CONTROL (IN)    |
| 9                                            | ---                        |
| 10                                           | FILTERED AC NEUTRAL (IN)   |
| 11                                           | CONT. EQUIP. AC LINE (OUT) |
| 12                                           | FILTERED AC LINE (IN)      |
| 13                                           | ---                        |
| 14                                           | ---                        |

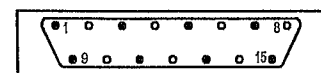
| CONTROLLER POWER (CCA2)<br>C/C 171-1676-503 |     |               |        |
|---------------------------------------------|-----|---------------|--------|
| WIRE                                        | PIN | SIGNAL        | TO     |
| 1                                           | A   | FAULT MONITOR | 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<br>C/C 171-1676-502 |            |       |
|---------------------------------------------|------------|-------|
| PIN                                         | FUNCTION   | TO    |
| A                                           | AC NEUTRAL | PB-10 |
| B                                           | ---        | ---   |
| C                                           | AC LINE    | PB-11 |
| D                                           | ---        | ---   |
| E                                           | ---        | ---   |
| F                                           | ---        | ---   |
| G                                           | FAULT MON. | PB-4  |
| H                                           | LOGIC GND. | PB-1  |
| I                                           | EARTH GND. | PB-9  |
| J                                           | ---        | ---   |
| SHL                                         | EARTH GND. | PB-6  |

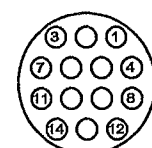
| CABINET POWER SUPPLY<br>C/C 171-1676-511 |                     |       |
|------------------------------------------|---------------------|-------|
| PIN                                      | FUNCTION            | TO    |
| A                                        | AC NEUTRAL          | PB-10 |
| 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- |

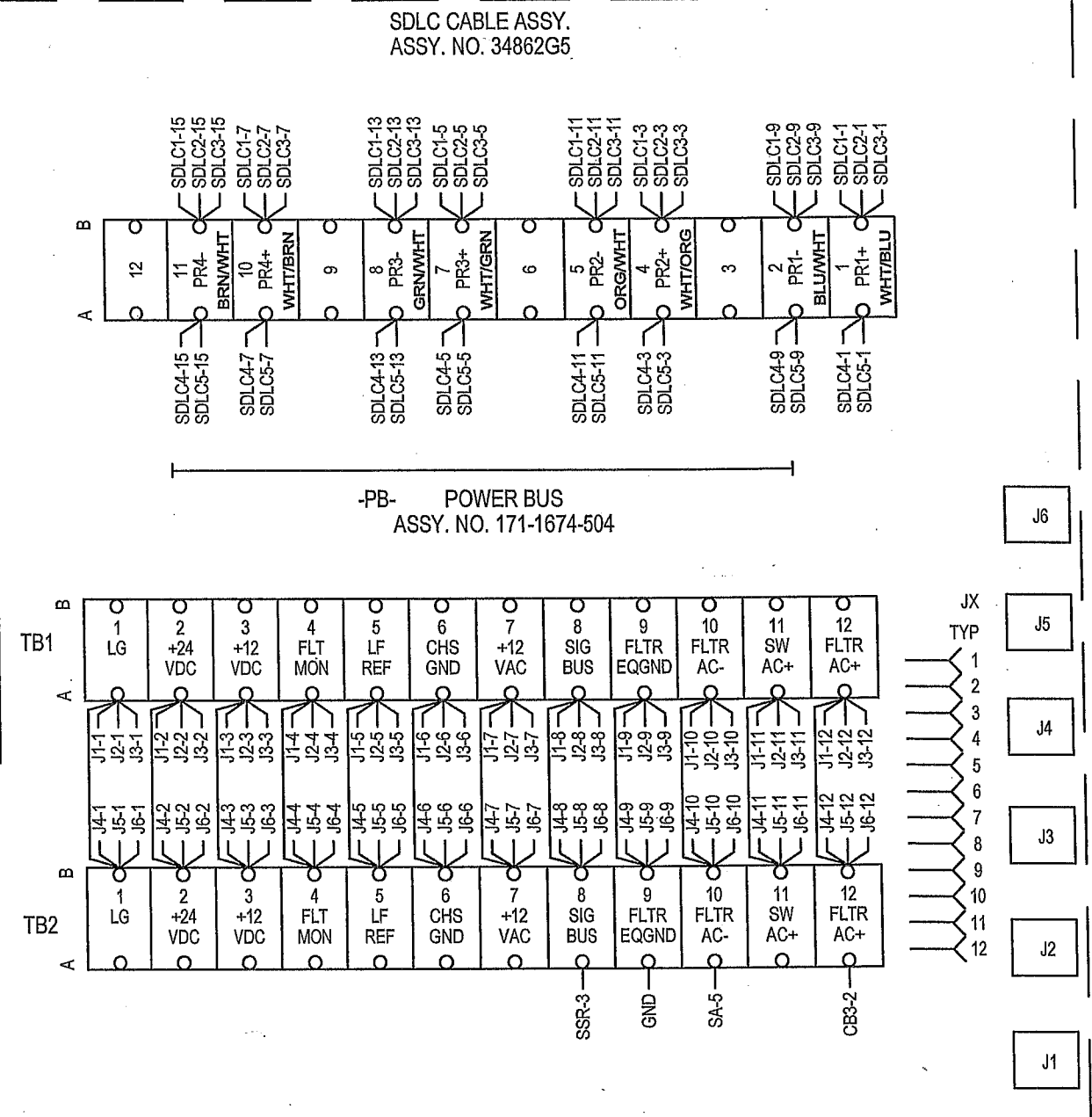
| MMU & BIU PORT 1 CONNECTOR |                 |             |          |
|----------------------------|-----------------|-------------|----------|
| PIN                        | SIGNAL          | TO          | FUNCTION |
| 1                          | TWISTED PAIR 1+ | SDLC-1      | BIU RXD+ |
| 2                          | 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



## BIU AND CONNECTING CABLES



| WIRE LIST FOR NEMA MALFUNCTION MANAGEMENT UNIT |      |                  |        |               |                     |      |                  |       |               |
|------------------------------------------------|------|------------------|--------|---------------|---------------------|------|------------------|-------|---------------|
| CONNECTOR "A" (MMA)                            |      |                  |        |               | CONNECTOR "B" (MMB) |      |                  |       |               |
| PIN                                            | WIRE | MON. FUNCTION    | TO     | SIG. FUNCTION | PIN                 | WIRE | MON. FUNCTION    | TO    | SIG. FUNCTION |
| A                                              | A-1  | AC+ I INPUT      | B21    |               | A                   | B-1  | AC+ II INPUT     | J3-A2 | MMU POWER     |
| B                                              | A-2  | OUT RLY 1 OPEN   | B22    |               | B                   | B-2  | S. DLY RLY COMM. | J3-A6 | MMU POWER     |
| C                                              | A-3  | OUT RLY 2 CLSD   | B23    |               | C                   | B-3  | S. DLY RLY OPEN  | B28   |               |
| D                                              | A-4  | CH. 12 GREEN     | 12G-A  | ^8 WLK        | D                   | B-4  | CH. 12 RED       | B40   |               |
| E                                              | A-5  | CH. 11 GREEN     | 11G-A  | ^6 WLK        | E                   | B-5  | CH. 11 RED       | B39   |               |
| F                                              | A-6  | CH. 10 GREEN     | 10G-A  | ^4 WLK        | F                   | B-6  | CH. 9 RED        | B37   |               |
| G                                              | A-7  | CH. 9 GREEN      | 9G-A   | ^2 WLK        | G                   | B-7  | CH. 8 RED        | 8R-A  | ^8 RED        |
| H                                              | A-8  | CH. 8 GREEN      | 8G-A   | ^8 GRN        | H                   | B-8  | CH. 7 RED        | 7R-A  | ^7 RED        |
| J                                              | A-9  | CH. 7 GREEN      | 7G-A   | ^7 GRN        | J                   | B-9  | CH. 6 RED        | 6R-A  | ^6 RED        |
| K                                              | A-10 | CH. 6 GREEN      | 6G-A   | ^6 GRN        | K                   | B-10 | CH. 5 RED        | 5R-A  | ^5 RED        |
| L                                              | A-11 | CH. 5 GREEN      | 5G-A   | ^5 GRN        | L                   | B-11 | CH. 4 RED        | 4R-A  | ^4 RED        |
| M                                              | A-12 | CH. 4 GREEN      | 4G-A   | ^4 GRN        | M                   | B-12 | CH. 2 RED        | 2R-A  | ^2 RED        |
| N                                              | A-13 | CH. 3 GREEN      | 3G-A   | ^3 GRN        | N                   | B-13 | CH. 1 RED        | 1R-A  | ^1 RED        |
| P                                              | A-14 | CH. 2 GREEN      | 2G-A   | ^2 GRN        | P                   | B-14 | (SPARE 1)        | B29   |               |
| R                                              | A-15 | CH. 1 GREEN      | 1G-A   | ^1 GRN        | R                   | B-15 | +24V MONITOR II  | B-3   | +24V MON. II  |
| S                                              | A-16 | +24V MON. I      | B-4    | LS +24V MON.  | S                   | B-16 | (SPARE 2)        | B30   |               |
| T                                              | A-17 | LOGIC GND        | B-14   | LOGIC GND     | T                   | B-17 | CH. 13 RED       | 13R-A | OLA RED       |
| U                                              | A-18 | CHASSIS GND      | LS7-2  | EARTH GND.    | U                   | B-18 | S. DLY RLY CLSD  | J3-D5 | CONT. POWER   |
| V                                              | A-19 | AC- (COMMON)     | K1-2   | AC NEUTRAL    | V                   | B-19 | CH. 10 RED       | B38   |               |
| W                                              | A-20 | OUT RLY 1 COM.   | J3-A7  | SIG BUS CONT  | W                   | B-20 | CH. 14 RED       | 14R-A | OLB RED       |
| X                                              | A-21 | OUT RLY 2 COM.   | A-27   | LOGIC GND     | X                   | B-21 | CH. 15 RED       | 15R-A | OLC RED       |
| Y                                              | A-22 | CH. 12 YELLOW    | 12Y-A  | VEH. 7 FYA    | Y                   | B-22 | CH. 16 RED       | 16R-A | OLD RED       |
| Z                                              | A-23 | CH. 11 YELLOW    | 11Y-A  | VEH. 5 FYA    | Z                   | B-23 | CH. 3 RED        | 3R-A  | ^3 RED        |
| a                                              | A-24 | CH. 10 WALK      | ---    |               | a                   | B-24 | RED ENABLE       | LS8-1 | SIG BUS CON.  |
| b                                              | A-25 | CH. 10 YELLOW    | 10Y-A  | VEH. 3 FYA    | b                   | B-25 | (SPARE 3)        | B31   |               |
| c                                              | A-26 | CH. 9 YELLOW     | 9Y-A   | VEH. 1 FYA    | c                   | B-26 | LOCAL FLASH IN   | A32   | POL/AX FLSH   |
| d                                              | A-27 | CH. 8 YELLOW     | 8Y-A   | ^8 YEL        |                     | B-27 | SHELL GROUND     | LS6-2 | EARTH GND.    |
| 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.    |                     |      |                  |       |               |

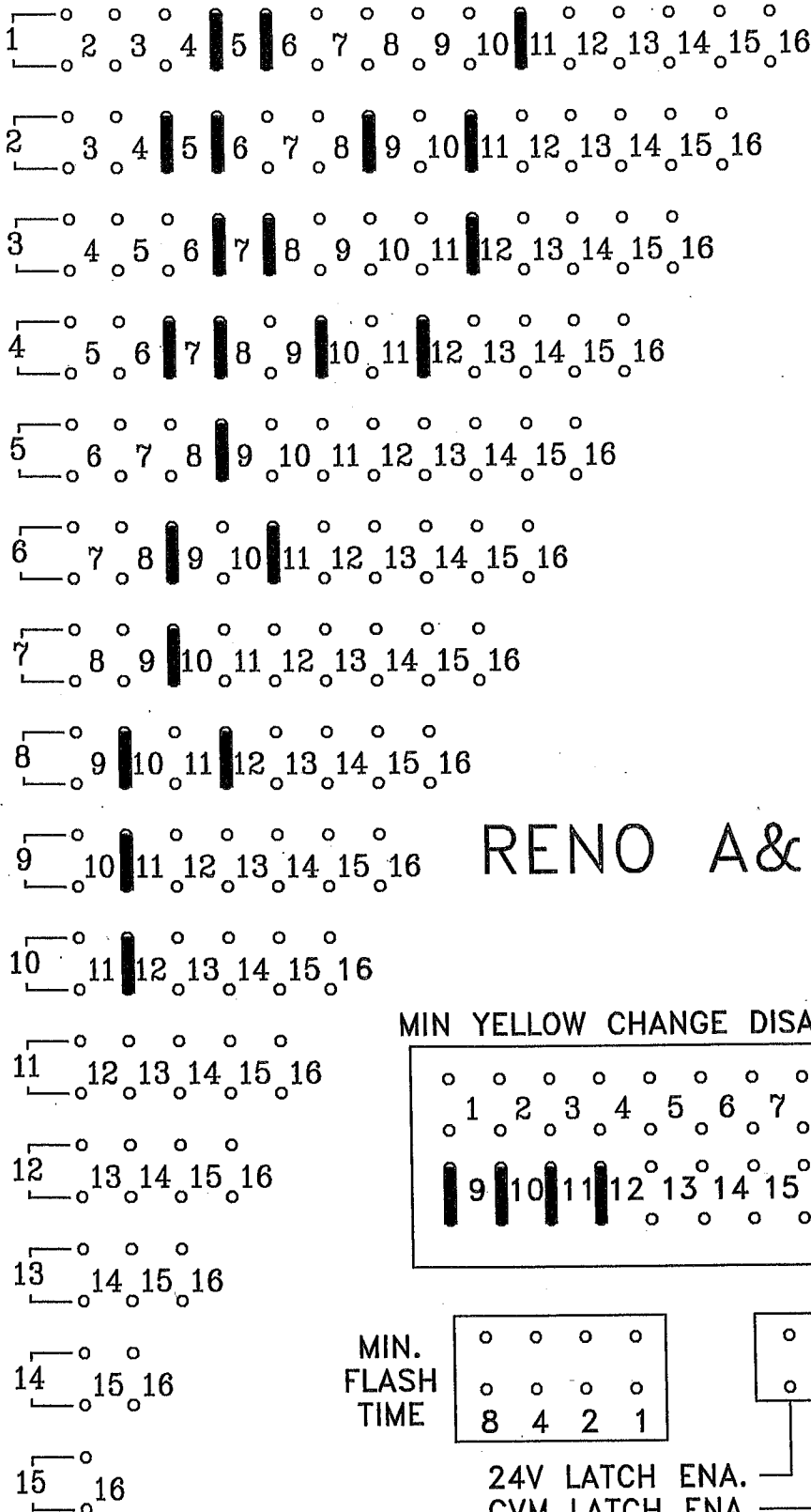
NOTES FOR 16 CHANNEL M.M.U.

- (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 34030G1 #1

|                                                                     |                                     |                                                                        |                                     |                                                                   |                                     |                                                                        |                                     |                                                                    |                                                                                 |                                                                                 |              |                                                           |  |
|---------------------------------------------------------------------|-------------------------------------|------------------------------------------------------------------------|-------------------------------------|-------------------------------------------------------------------|-------------------------------------|------------------------------------------------------------------------|-------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------|--------------|-----------------------------------------------------------|--|
| B.I.U.                                                              | L3                                  | L1                                                                     | L7                                  | L5                                                                | L11                                 | L9                                                                     | L15                                 | L13                                                                | PMT 5<br><br><input type="checkbox"/> 2CH<br>OPTICOM/<br>OPIC<br>CH. C<br>CH. D | PMT 3<br><br><input type="checkbox"/> 2CH<br>OPTICOM/<br>OPIC<br>CH. A<br>CH. B | PGM.<br>CARD |                                                           |  |
|                                                                     | 5-1<br><input type="checkbox"/> 2CH | 1-1<br><input type="checkbox"/> 2CH                                    | 6-1<br><input type="checkbox"/> 2CH | 2-1<br><input type="checkbox"/> 2CH                               | 3-3<br><input type="checkbox"/> 2CH | 3-1<br><input type="checkbox"/> 2CH                                    | 7-3<br><input type="checkbox"/> 2CH | 7-1<br><input type="checkbox"/> 2CH                                |                                                                                 |                                                                                 |              |                                                           |  |
|                                                                     | 5-2                                 | 1-2                                                                    | 6-2                                 | 2-2                                                               | 3-4                                 | 3-2                                                                    | 7-4                                 | 7-2                                                                |                                                                                 |                                                                                 |              |                                                           |  |
|                                                                     | L4                                  | L2                                                                     | L8                                  | L6                                                                | L12                                 | L10                                                                    | L16                                 | L14                                                                | PMT 6                                                                           | PMT 4                                                                           |              |                                                           |  |
| <input checked="" type="checkbox"/> J13<br>171-1676-515<br>DC POWER |                                     | <input checked="" type="checkbox"/> J16<br>C/C 33284G8<br>EXP. OUTPUTS |                                     | <input checked="" type="checkbox"/> J14<br>C/C 33284G2<br>LPS 1-8 |                                     | <input checked="" type="checkbox"/> J18<br>C/C 33284G9<br>SYS. OUTPUTS |                                     | <input checked="" type="checkbox"/> J15<br>C/C 33284G3<br>LPS 9-16 |                                                                                 | <input checked="" type="checkbox"/> J17<br>171-1676-515<br>AC POWER             |              | <input type="checkbox"/> J19<br>C/C 33284G17<br>PGM. CARD |  |

# DETECTOR RACK 34030G1 #2

|        |                              |                              |                              |                              |                              |                              |                              |                              |             |             |              |
|--------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|-------------|-------------|--------------|
| B.I.U. | L3                           | L1                           | L7                           | L5                           | L11                          | L9                           | L15                          | L13                          | NOT<br>USED | NOT<br>USED | PGM.<br>CARD |
|        | 4-3                          | 4-1                          |                              | 4-5                          | 8-3                          | 8-1                          |                              | 8-5                          |             |             |              |
|        | <input type="checkbox"/> 2CH | <input type="checkbox"/> 2CH | <input type="checkbox"/> 2CH | <input type="checkbox"/> 2CH | <input type="checkbox"/> 2CH | <input type="checkbox"/> 2CH | <input type="checkbox"/> 2CH | <input type="checkbox"/> 2CH |             |             |              |
|        | 4-4                          | 4-2                          |                              |                              | 8-4                          | 8-2                          |                              |                              |             |             |              |
|        | L4                           | L2                           | L8                           | L6                           | L12                          | L10                          | L16                          | L14                          |             |             |              |

|                                                                     |                                                             |                                                                   |                                                             |                                                                    |                                                                     |                                                           |
|---------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------|
| <input checked="" type="checkbox"/> J13<br>171-1676-515<br>DC POWER | <input type="checkbox"/> J16<br>C/C 33284G8<br>EXP. OUTPUTS | <input checked="" type="checkbox"/> J14<br>C/C 33284G2<br>LPS 1-8 | <input type="checkbox"/> J18<br>C/C 33284G9<br>SYS. OUTPUTS | <input checked="" type="checkbox"/> J15<br>C/C 33284G3<br>LPS 9-16 | <input checked="" type="checkbox"/> J17<br>171-1676-515<br>AC POWER | <input type="checkbox"/> J19<br>C/C 33284G17<br>PGM. CARD |
|---------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------|

## DETECTOR ASSIGNMENTS

| CONT. INPUT | PHASE ASGN. | DETECTOR TYPE |
|-------------|-------------|---------------|
| 1           | 1-1         | 1             |
| 2           | 1-2         | 1             |
| 3           | 5-1         | 1             |
| 4           | 5-2         | 1             |
| 5           | 2-1         | 1             |
| 6           | 2-2         | 1             |
| 7           | 6-1         | 1             |
| 8           | 6-2         | 1             |
| 9           | 3-1         | 1             |
| 10          | 3-2         | 1             |
| 11          | 3-3         | 1             |
| 12          | 3-4         | 1             |
| 13          | 7-1         | 1             |
| 14          | 7-2         | 1             |
| 15          | 7-3         | 1             |
| 16          | 7-4         | 1             |

RACK #1

## DETECTOR ASSIGNMENTS

| CONT. INPUT | PHASE ASGN. | DETECTOR TYPE |
|-------------|-------------|---------------|
| 17          | 4-1         | 3/8           |
| 18          | 4-2         | 3/8           |
| 19          | 4-3         | 7             |
| 20          | 4-4         | 1             |
| 21          | 4-5         | 1             |
| 22          |             |               |
| 23          |             |               |
| 24          |             |               |
| 25          | 8-1         | 3/8           |
| 26          | 8-2         | 3/8           |
| 27          | 8-3         | 7             |
| 28          | 8-4         | 1             |
| 29          | 8-5         | 1             |
| 30          |             |               |
| 31          |             |               |
| 32          |             |               |

RACK #2

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

## DETECTOR RACK PROGRAMMING JUMPERS

| DC POWER<br>① |      |      |      | DET. TYPE | CONFIGURATION ④<br>SLOT 1/2 |     |     |     |     |     |     |      | CONFIGURATION ④<br>SLOT 3/4 |      |      |      |      |      |      |      | CONFIGURATION ④<br>SLOT 5/6 |      |      |      |     |      |      |      | CONFIGURATION ④<br>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<br>262-FC           |     |     |     |     |     |     |      |                             |      |      |      |      |      |      |      |                             |      |      |      |     |      |      |      |                             |      |      |     |      |      | ②         |  |            |
|               |      |      |      | 4         | MAG.                        |     |     |     |     |     |     |      |                             |      |      |      |      |      |      |      |                             |      |      |      |     |      |      |      |                             |      |      |     |      |      | ②         |  |            |
|               |      |      |      | 5         | LM-642()<br>(TS-2)          |     |     |     |     |     |     |      |                             |      |      |      |      |      |      |      |                             |      |      |      |     |      |      |      |                             |      |      |     |      |      | ②         |  |            |

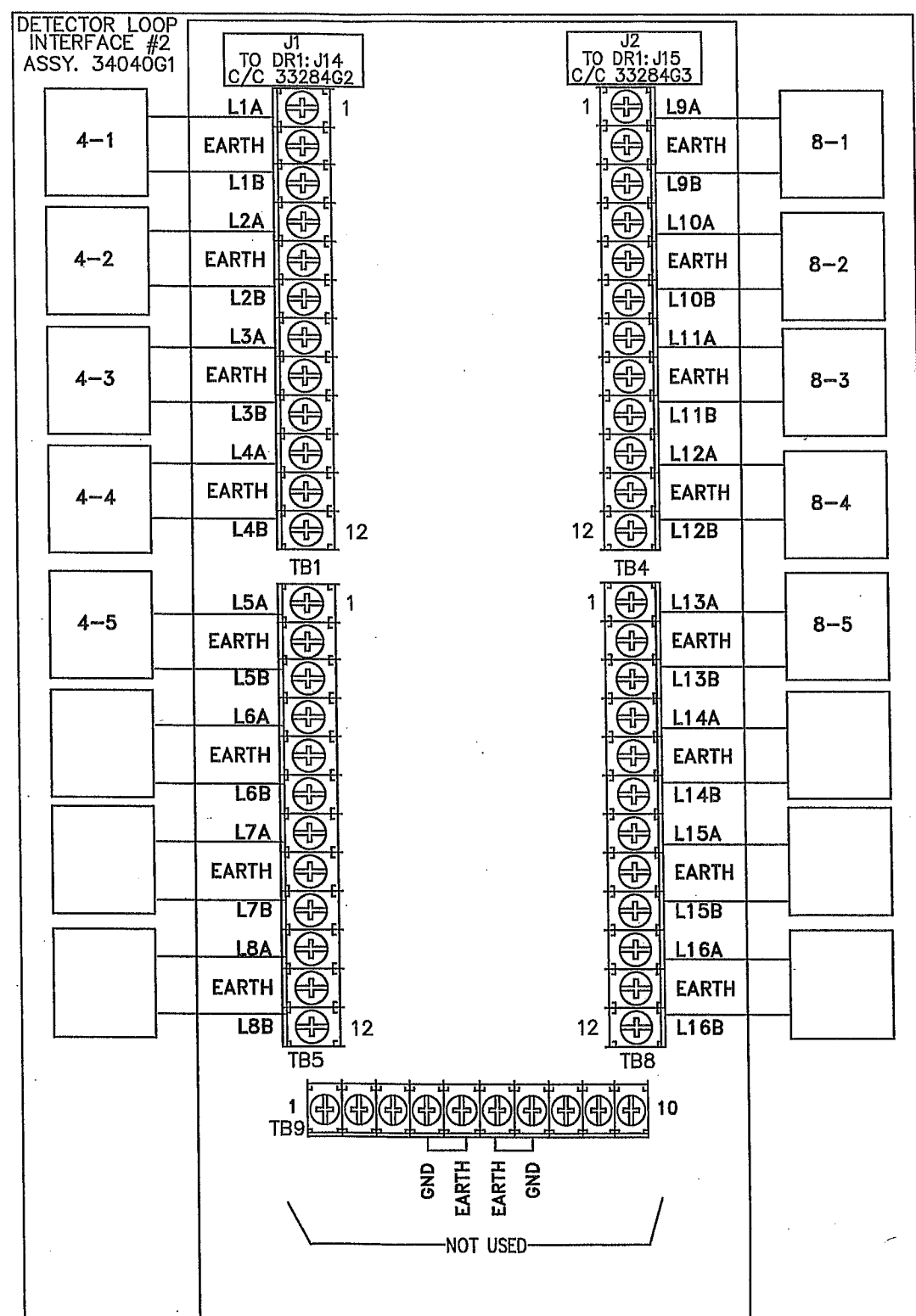
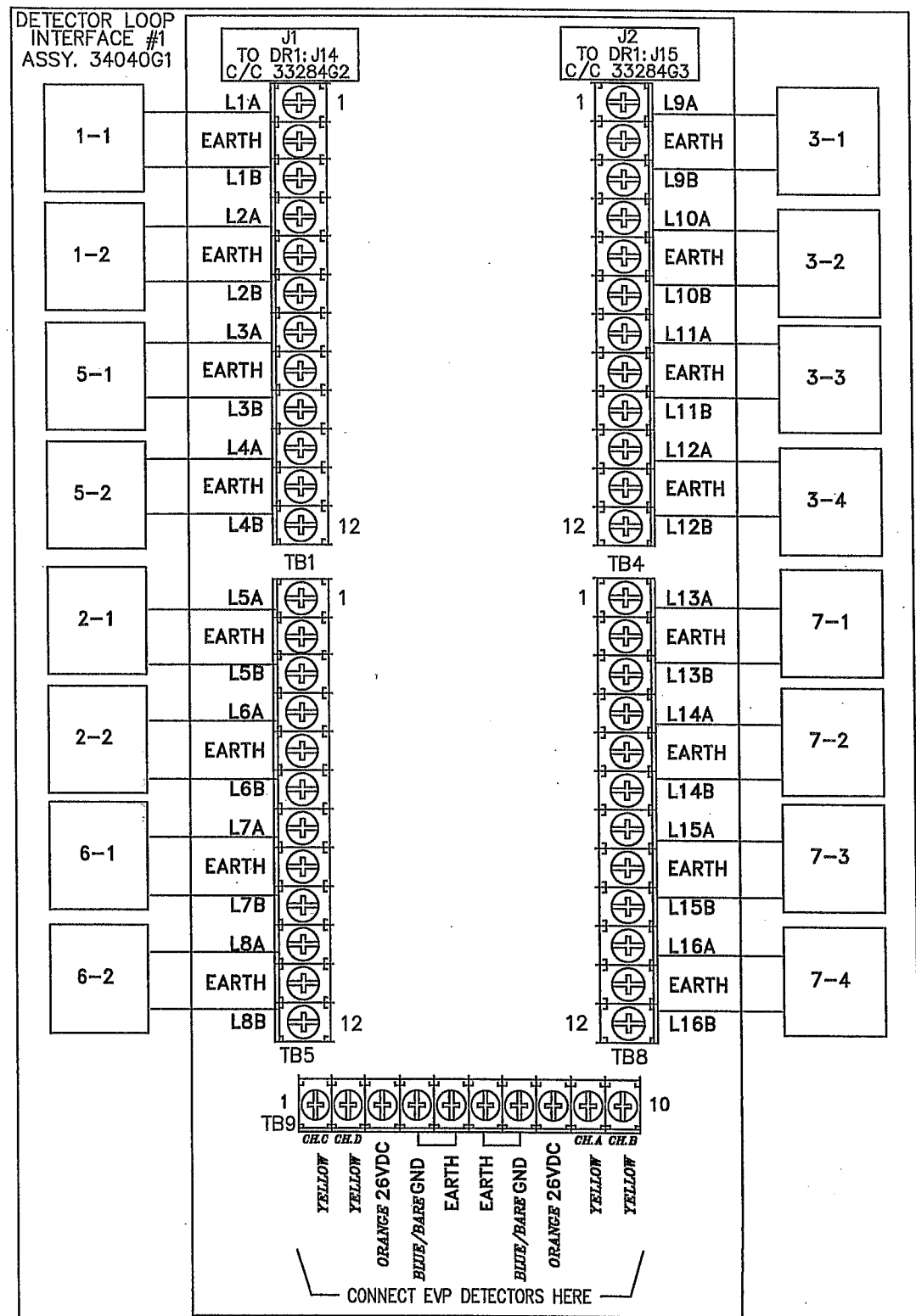
- ① INSTALL JUMPERS ON JP31 THRU JP34 WHEN A SHELF MOUNT POWER SUPPLY IS USED. WARNING - DO NOT INSTALL JUMPERS WHEN A PLUG-IN POWER SUPPLY IS USED.
- ② INSTALL JUMPERS ON JP38 - JP55 WHEN PGM. CARD IS NOT USED.
- ③ PROGRAM CARD AND PLUG-IN POWER SUPPLY ARE FOR TS-1 APPLICATIONS ONLY. REMOVE FOR TS-2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

SHEET 8 OF 9

SIZE  
B

#3 AT #11





| 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             | LPI1: TB9-3   |
| 20  | PMT. CH. C/D +26VDC | LPI1: TB9-4,7 |
| 21  | PMT. DC GROUND      | LPI1: TB9-8   |
| 22  | PMT. CH. A/B +26VDC | LPI1: TB9-9   |
| 23  | PMT. DET. CH. A     | LPI1: TB9-10  |
| 24  | PMT. DET. CH. B     | LPI1: TB9-10  |
| 25  | ---                 | ---           |
| 26  | ---                 | ---           |

| 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  | ---      | ---          |

| P1/<br>DR: J13 | P2/<br>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         | ---   |

| 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 |

RACK #1 ONLY

# DETECTOR LOOP INTERFACE

| EVP SENSORS |                 |        |       |              |       |     |
|-------------|-----------------|--------|-------|--------------|-------|-----|
| CABLE       | DISCR.<br>CHAN. | PHASES | POLE# | TERMINAL TB9 |       |     |
|             |                 |        |       | SIGNAL       | DC(+) | GND |
| 67          | 1               | 1-6    | 4     | A            | 26+   | GND |
| 18          | 2               | 2-5    | 2     | B            | 26+   | GND |
| 50          | 3               | 3-8    | 1     | C            | 26+   | GND |
| 37          | 4               | 4-7    | 3     | D            | 26+   | GND |
|             |                 |        |       |              |       |     |
|             |                 |        |       |              |       |     |

| EVP VERIFY LIGHTS |       |        |       |       |
|-------------------|-------|--------|-------|-------|
| CABLE             | CONTR | PHASES | POLE# | TERM. |
|                   | CHAN. |        |       |       |
| 66                | 3     | 1-6    | 4     | 59    |
| 19                | 4     | 2-5    | 2     | 65    |
| 49                | 5     | 3-8    | 1     | 71    |
| 38                | 6     | 4-7    | 3     | 77    |
|                   |       |        |       |       |
|                   |       |        |       |       |

| CABLE | SIGNAL  | TERMINAL |     |    |    |    |    |    |
|-------|---------|----------|-----|----|----|----|----|----|
|       |         | G←       | FLA | Y← | R← | G  | Y  | R  |
|       |         |          |     |    |    |    |    |    |
| 63    | 1-1     | 1        | 3   | 5  | 7  |    |    |    |
| 33    | 1-2     | 2        | 4   | 6  | 8  |    |    |    |
| 13,14 | 2-1,2-3 |          |     |    |    | 9  | 11 | 13 |
| 13    | 2-2     |          |     |    |    | 10 | 12 | 14 |
| 46,64 | 3-1,3-3 | 15       | 17  | 19 | 21 |    |    |    |
| 46    | 3-2     | 16       | 18  | 20 | 22 |    |    |    |
| 32,33 | 4-1,4-3 |          |     |    |    | 23 | 25 | 27 |
| 32    | 4-2     |          |     |    |    | 24 | 26 | 28 |
| 14    | 5-1     | 29       | 31  | 33 | 35 |    |    |    |
| 45    | 5-2     | 30       | 32  | 34 | 36 |    |    |    |
| 62,63 | 6-1,6-3 |          |     |    |    | 37 | 39 | 41 |
| 62    | 6-2     |          |     |    |    | 38 | 40 | 42 |
| 34,15 | 7-1,7-3 | 43       | 45  | 47 | 49 |    |    |    |
| 34    | 7-2     | 44       | 46  | 48 | 50 |    |    |    |
| 44,45 | 8-1,8-3 |          |     |    |    | 51 | 53 | 55 |
| 44    | 8-2     |          |     |    |    | 52 | 54 | 56 |

| CABLE | DET | SLOT | FUNC | RACK | TERMINAL |
|-------|-----|------|------|------|----------|
| 12    | 1-1 | 1    | 1    | 1    | L1       |
| 11    | 1-2 | 2    | 1    | 1    | L2       |
| 41    | 2-1 | 5    | 1    | 1    | L5       |
| 42    | 2-2 | 6    | 1    | 1    | L6       |
| 28    | 3-1 | 9    | 1    | 1    | L9       |
| 26    | 3-2 | 10   | 1    | 1    | L10      |
| 27    | 3-3 | 11   | 1    | 1    | L11      |
| 25    | 3-4 | 12   | 1    | 1    | L12      |
| 60    | 4-1 | 17   | 3/8  | 2    | L1       |
| 61    | 4-2 | 18   | 3/8  | 2    | L2       |
| 56    | 4-3 | 19   | 7    | 2    | L3       |
| 57    | 4-4 | 20   | 1    | 2    | L4       |
| 55    | 4-5 | 21   | 1    | 2    | L5       |
| 70    | 5-1 | 3    | 1    | 1    | L3       |
| 69    | 5-2 | 4    | 1    | 1    | L4       |
| 9     | 6-1 | 7    | 1    | 1    | L7       |
| 10    | 6-2 | 8    | 1    | 1    | L8       |
| 54    | 7-1 | 13   | 1    | 1    | L13      |
| 52    | 7-2 | 14   | 1    | 1    | L14      |
| 53    | 7-3 | 15   | 1    | 1    | L15      |
| 51    | 7-4 | 16   | 1    | 1    | L16      |
| 31    | 8-1 | 25   | 3/8  | 2    | L9       |
| 30    | 8-2 | 26   | 3/8  | 2    | L10      |
| 23    | 8-3 | 27   | 7    | 2    | L11      |
| 24    | 8-4 | 28   | 1    | 2    | L12      |
| 29    | 8-5 | 29   | 1    | 2    | L13      |

| CABLE | PPB | TERMINAL | RETURN |
|-------|-----|----------|--------|
| 39    | 2-1 | 801      | GB1    |
| 22    | 2-2 | 801      | GB1    |
| 68    | 4-1 | 802      | GB1    |
| 40    | 4-2 | 802      | GB1    |
| 43    | 6-1 | 803      | GB1    |
| 59    | 6-2 | 803      | GB1    |
| 21    | 8-1 | 804      | GB1    |
| 8     | 8-2 | 804      | GB1    |
|       |     |          |        |
|       |     |          |        |

| CABLE | SIGNAL | TERMINAL |    |
|-------|--------|----------|----|
|       |        | WK       | DW |
| 35    | 2-1    | 57       | 61 |
| 17    | 2-2    | 58       | 62 |
| 65    | 4-1    | 63       | 67 |
| 36    | 4-2    | 64       | 68 |
| 47    | 6-1    | 69       | 73 |
| 58    | 6-2    | 70       | 74 |
| 16    | 8-1    | 75       | 79 |
| 48    | 8-2    | 76       | 80 |
|       |        |          |    |
|       |        |          |    |

|       |       |    |     |     |     |     |       |    |   |     |     |     |       |    |     |     |     |     |       |    |   |     |     |     |      |     |        |           |  |
|-------|-------|----|-----|-----|-----|-----|-------|----|---|-----|-----|-----|-------|----|-----|-----|-----|-----|-------|----|---|-----|-----|-----|------|-----|--------|-----------|--|
| B.I.U | DET   | PH | F   | DET | DLY | EXT | DET   | PH | F | DET | DLY | EXT | DET   | PH | F   | DET | DLY | EXT | DET   | PH | F | DET | DLY | EXT | EVP  | PH  | POLE # | CONT CH # |  |
|       | CH 1  | 1  | 1   | 1-1 |     |     | CH 5  | 2  | 1 | 2-1 |     |     | CH 9  | 3  | 1   | 3-1 |     |     | CH 13 | 7  | 1 | 7-1 |     |     | CH 1 | 1-6 | 4      | 3         |  |
|       | CH 2  | 1  | 1   | 1-2 |     |     | CH 6  | 2  | 1 | 2-2 |     |     | CH 10 | 3  | 1   | 3-2 |     |     | CH 14 | 7  | 1 | 7-2 |     |     | CH 2 | 2-5 | 2      | 4         |  |
|       | CH 3  | 5  | 1   | 5-1 |     |     | CH 7  | 6  | 1 | 6-1 |     |     | CH 11 | 3  | 1   | 3-3 |     |     | CH 15 | 7  | 1 | 7-3 |     |     | CH 3 | 3-8 | 1      | 5         |  |
|       | CH 4  | 5  | 1   | 5-2 |     |     | CH 8  | 6  | 1 | 6-2 |     |     | CH 12 | 3  | 1   | 3-4 |     |     | CH 16 | 7  | 1 | 7-4 |     |     | CH 4 | 4-7 | 3      | 6         |  |
| B.I.U | DET   | PH | F   | DET | DLY | EXT | DET   | PH | F | DET | DLY | EXT | DET   | PH | F   | DET | DLY | EXT | DET   | PH | F | DET | DLY | EXT |      |     |        |           |  |
|       | CH 17 | 4  | 3/8 | 4-1 |     | 1.5 | CH 21 | 4  | 1 | 4-5 |     |     | CH 25 | 8  | 3/8 | 8-1 |     | 1.5 | CH 29 | 8  | 1 | 8-5 |     |     |      |     |        |           |  |
|       | CH 18 | 4  | 3/8 | 4-2 |     | 1.5 | CH 22 |    |   |     |     |     | CH 26 | 8  | 3/8 | 8-2 |     | 1.5 | CH 30 |    |   |     |     |     |      |     |        |           |  |
|       | CH 19 | 4  | 7   | 4-3 | 10  |     | CH 23 |    |   |     |     |     | CH 27 | 8  | 7   | 8-3 | 10  |     | CH 31 |    |   |     |     |     |      |     |        |           |  |
|       | CH 20 | 4  | 1   | 4-4 |     |     | CH 24 |    |   |     |     |     | CH 28 | 8  | 1   | 8-4 |     |     | CH 32 |    |   |     |     |     |      |     |        |           |  |