

# MAIN PANEL 33535G1

- ASC/2S-1000 CONTROLLER WITH:
- CONFIGURATION EEPROM 32790C1040
  - SPECIAL SOFTWARE: FUNCTION
  - OVERLAPS
    - IN EEPROM
    - KEYBOARD ENTERED
  - ANALOG TELEMETRY MODULE: 32825G1
  - F/O TELEMETRY MODULE: 33525G1
  - 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 ()       |

## MAIN PANEL PLUG-IN REQUIREMENTS

|                                                         |                                                         |                                                             |                                                              |                                                              |                                                              |                                         |                                          |                                                  |                                         |
|---------------------------------------------------------|---------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------|------------------------------------------|--------------------------------------------------|-----------------------------------------|
| <input checked="" type="checkbox"/> BIU2<br>T&F         | <input type="checkbox"/> BIU3<br>T&F                    | <input checked="" type="checkbox"/> LS9<br>PED 2<br>BEACONS | <input checked="" type="checkbox"/> LS10<br>PED 4<br>BEACONS | <input checked="" type="checkbox"/> LS11<br>PED 6<br>BEACONS | <input checked="" type="checkbox"/> LS12<br>PED 8<br>BEACONS | <input type="checkbox"/> LS13<br>OL "A" | <input type="checkbox"/> LS14<br>OL "B"  | <input type="checkbox"/> LS15<br>OL "C"          | <input type="checkbox"/> LS16<br>OL "D" |
| <input checked="" type="checkbox"/> BIU1<br>T&F         | <input type="checkbox"/> LS1<br>VEH 1                   | <input checked="" type="checkbox"/> LS2<br>VEH 2            | <input type="checkbox"/> LS3<br>VEH 3                        | <input checked="" type="checkbox"/> LS4<br>VEH 4             | <input checked="" type="checkbox"/> LS5<br>VEH 5             | <input type="checkbox"/> LS6<br>VEH 6   | <input type="checkbox"/> LS7<br>VEH 7    | <input checked="" type="checkbox"/> LS8<br>VEH 8 | <input type="checkbox"/> FL1            |
| <input checked="" type="checkbox"/> FR1<br>L R<br>V1 V5 | <input checked="" type="checkbox"/> FR2<br>L R<br>V2 V6 | <input checked="" type="checkbox"/> FR3<br>L R<br>V3 V7     | <input checked="" type="checkbox"/> FR4<br>L R<br>V4 V8      | <input checked="" type="checkbox"/> FR5<br>L R<br>A C        | <input checked="" type="checkbox"/> FR6<br>L R<br>B D        | <input checked="" type="checkbox"/> K1  | <input type="checkbox"/> 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.



| 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          | -----         |

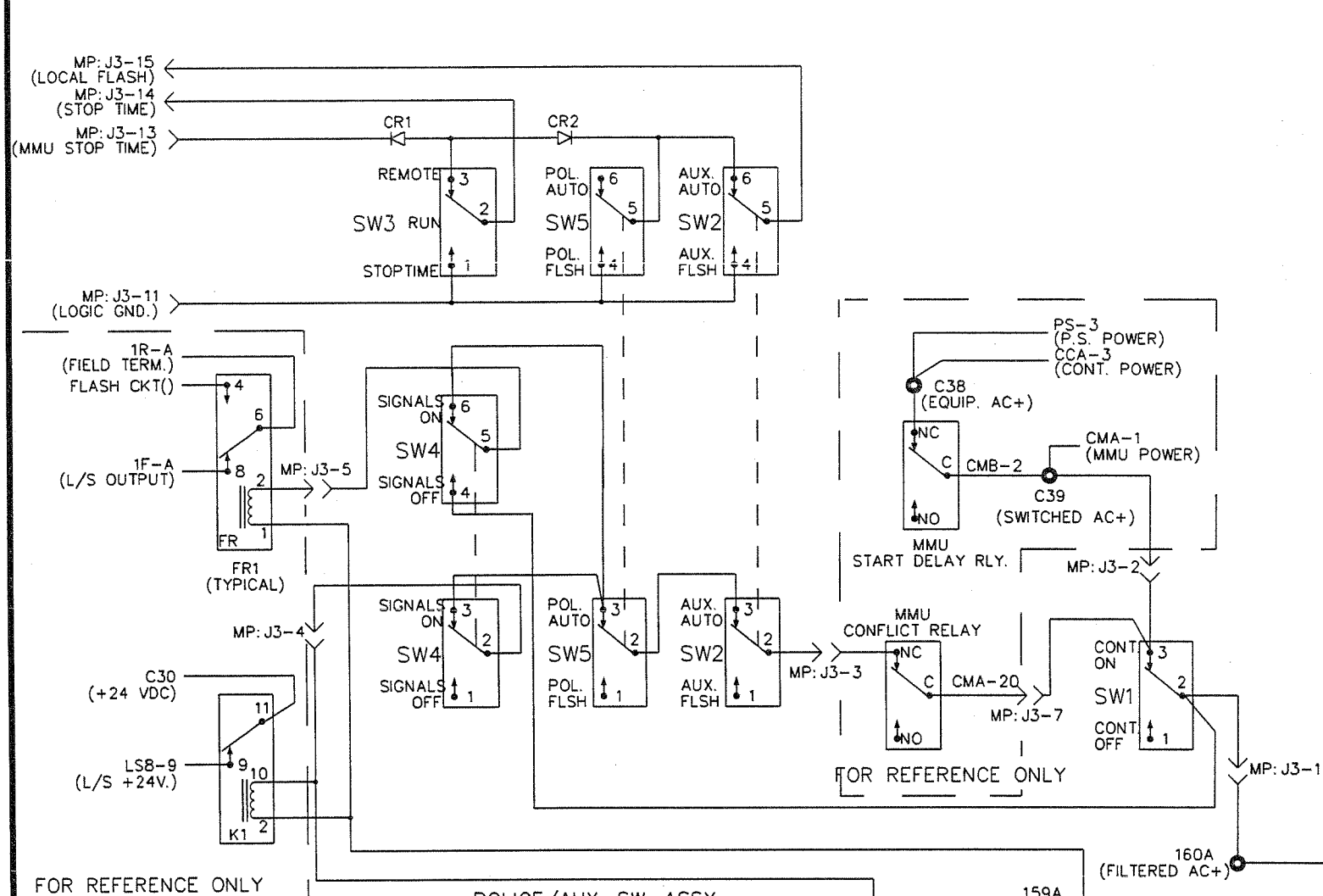
①  
2.2K  
10W

- 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

SHEET 1 OF 11

|                         |                |                                                                                                                                 |                                                                                                                          |                                            |
|-------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| DESIGNER<br>G.V. T.C.C. | DATE<br>2-3-97 |  <b>ECONOLITE</b><br>CONTROL PRODUCTS INC. |  <b>TRAFFIC CONTROL CORPORATION</b> | 780 W. BELDEN SUITE D<br>ADDISON, IL 60101 |
| DRAWN<br>CM TCC         | 11/24/03       |                                                                                                                                 |                                                                                                                          |                                            |
| CHECKED                 |                | CABINET SPECIFICATION: TS2TYPE1 97 SPEC                                                                                         |                                                                                                                          |                                            |
| INSPECTED               |                | CUSTOMER: IDOT DIST. 1                                                                                                          |                                                                                                                          |                                            |
| APPROVED                |                | INTERSECTION: BUTTERFIELD @ N. HUNTINGTON                                                                                       |                                                                                                                          |                                            |
| CONTRACT NO.<br>---     |                | INSTALLED BY<br>HECKER                                                                                                          | SALES ORDER NO.<br>73324-C-IL6108                                                                                        | SIZE<br>B                                  |
|                         |                | TS29716-IL6108C<br>BUTTERFIELD @ N. HUNTINGTON                                                                                  |                                                                                                                          |                                            |

|            |
|------------|
| CONTROLLER |
| FLASHER    |
| SW.PACKS   |



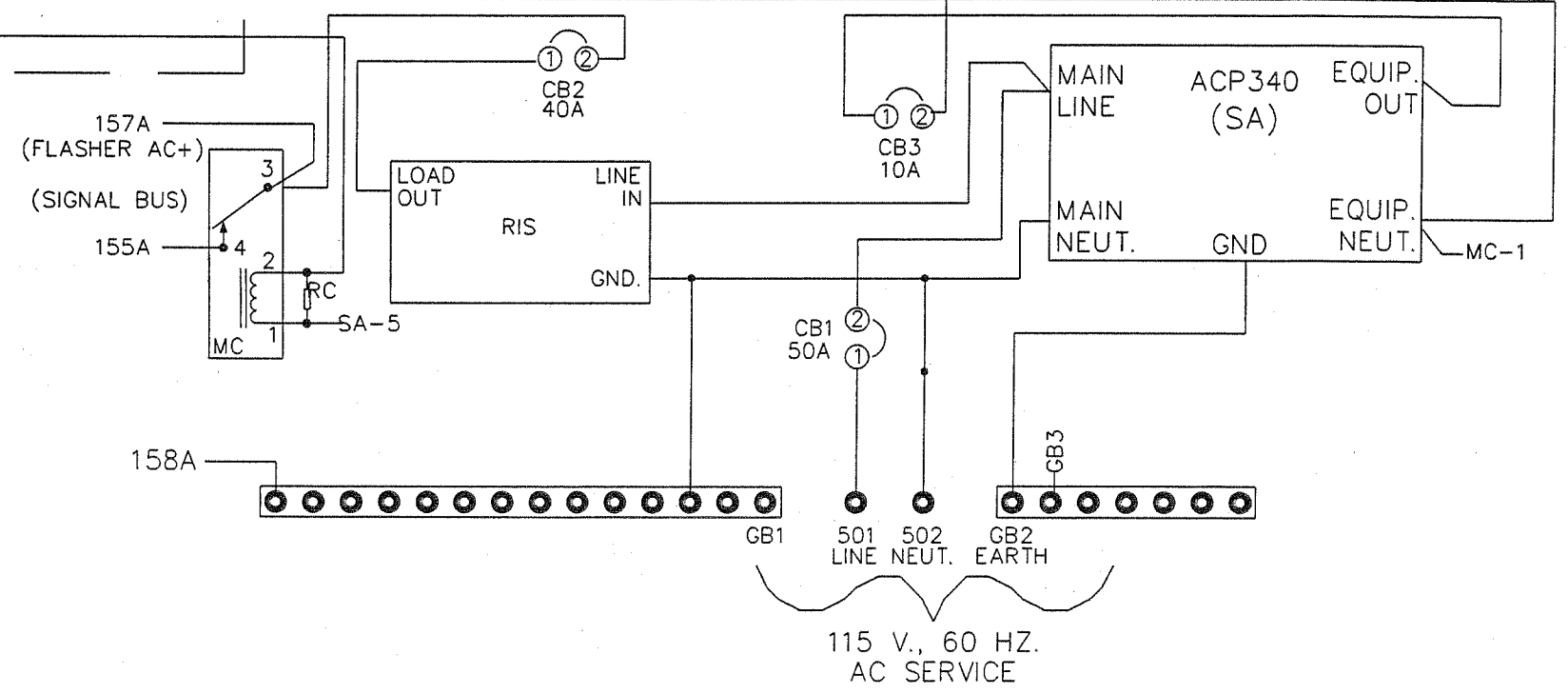
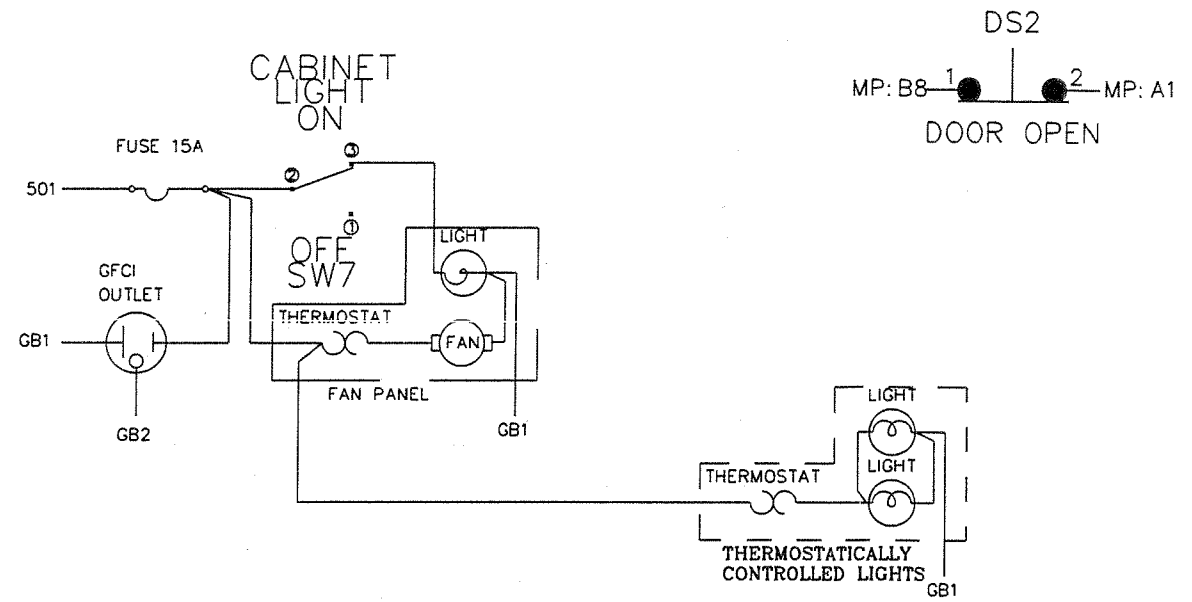
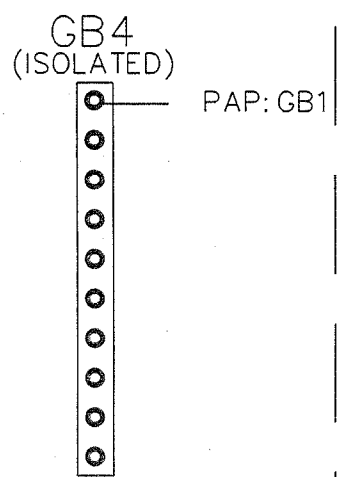
FOR REFERENCE ONLY

POLICE/AUX. SW. ASSY.  
33555G1

NOTE: RELAYS AND SWITCHES ARE SHOWN IN THE NORMAL, NON-CONFLICT, OPERATIONAL POSITION.

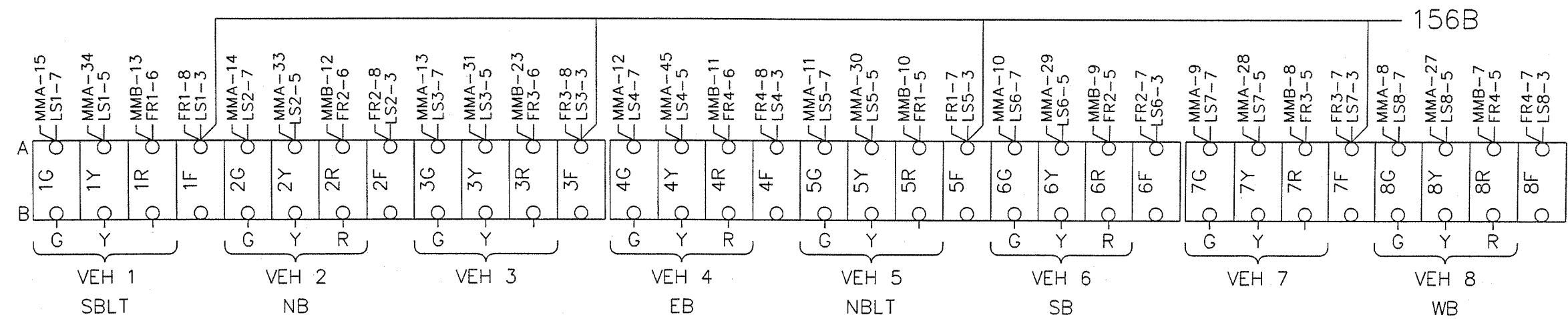
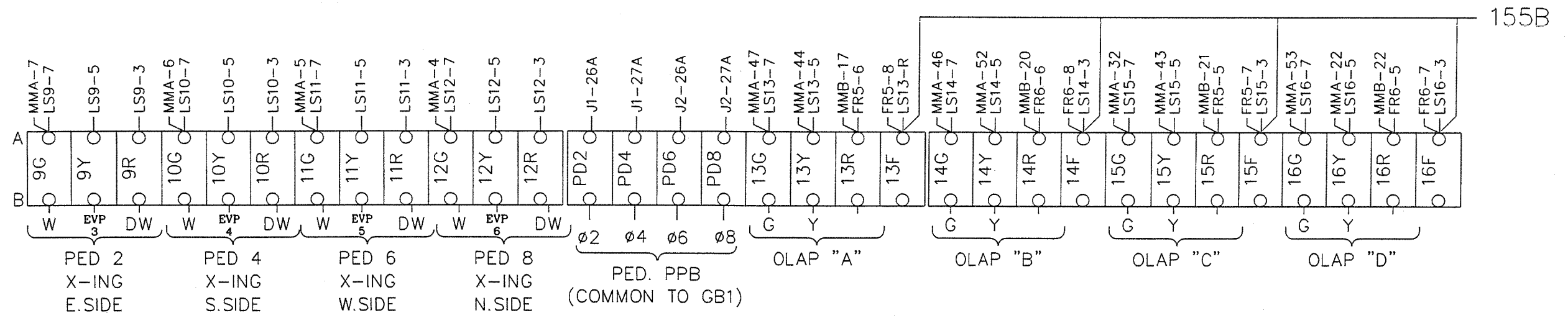
| TO POLICE/AUXILIARY SWITCH PANEL |                          |
|----------------------------------|--------------------------|
| PIN                              | FUNCTION                 |
| 1                                | FILTER AC LINE OUT       |
| 2                                | SWITCHED AC LINE         |
| 3                                | FLASH CONTROL AC LINE IN |
| 4                                | SIGNAL BUS CONTROL IN    |
| 5                                | FLASH RELAY CONTROL IN   |
| 6                                | SPARE                    |
| 7                                | MMU FLASH CONTROL OUT    |
| 8                                | +24 VDC                  |
| 9                                | MMU 24V MONITOR #2       |
| 10                               | MANUAL CONTROL ENABLE IN |
| 11                               | LOGIC GROUND             |
| 12                               | INTERVAL ADVANCE IN      |
| 13                               | MMU STOP TIME OUT        |
| 14                               | CONTROLLER STOP TIME IN  |
| 15                               | LOCAL FLASH STATUS       |

| CONNECTOR P1 SWITCH PANEL CONNECTOR |                   |       |
|-------------------------------------|-------------------|-------|
| P1 PIN                              | FUNCTION          | TO    |
| 1                                   | FILT AC HOT       | SW1-2 |
| 2                                   | SWTCHD AC HOT     | SW1-3 |
| 3                                   | CMA-37 (OUT RLY)  | SW2-2 |
| 4                                   | SIGNAL BUS        | SW4-2 |
| 5                                   | FLSH RLY AC+      | SW4-5 |
| 6                                   | ---               | ---   |
| 7                                   | MMA-20 (OUT RLY)  | SW1-3 |
| 8                                   | ---               | ---   |
| 9                                   | EXT. START        | ---   |
| 10                                  | MAN. CONT. ENABLE | ---   |
| 11                                  | LOGIC GROUND      | SW2-4 |
| 12                                  | INTERVAL ADVANCE  | ---   |
| 13                                  | MMU STOP TIME     | CR1-C |
| 14                                  | STOP TIME         | SW3-2 |
| 15                                  | LOCAL FLASH       | SW2-5 |

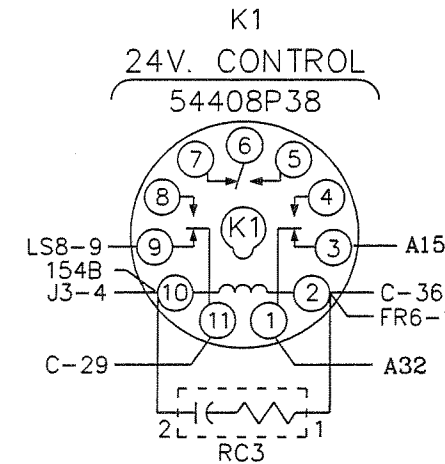
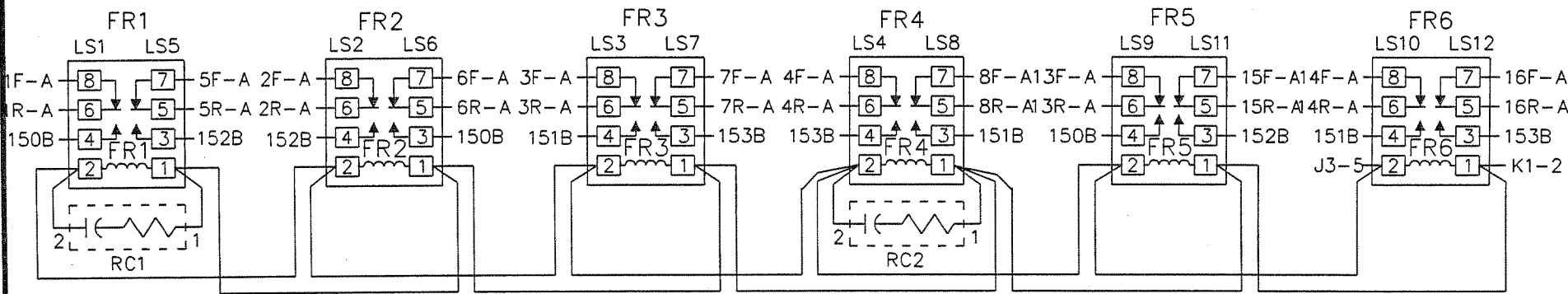
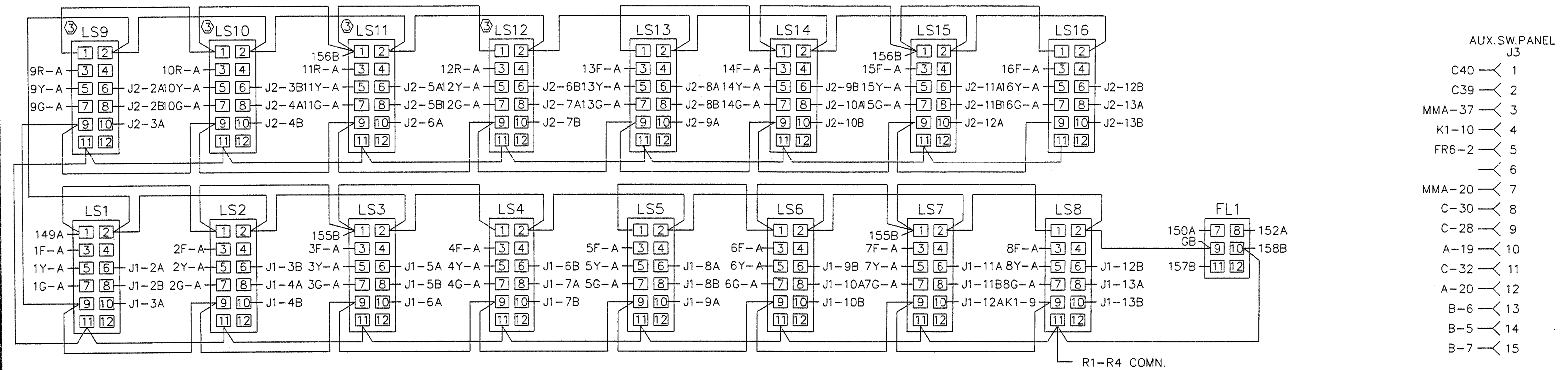


**CONFIRMATION BEACONS**

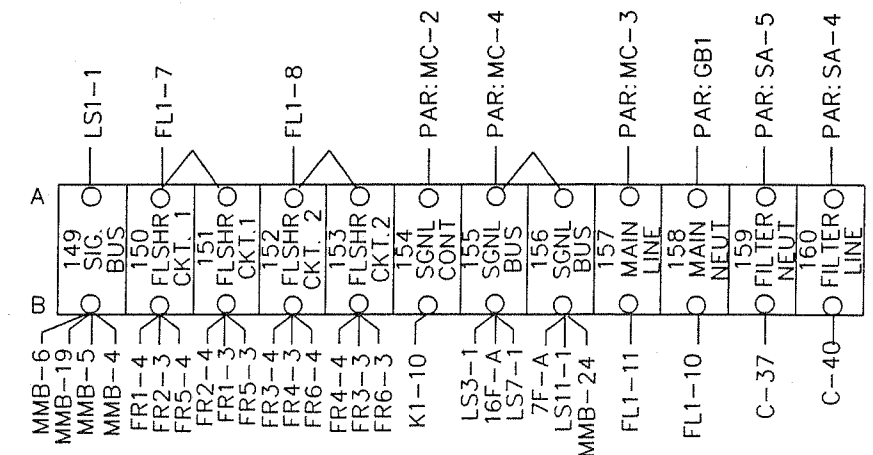
EVP 3 = N-SB  
 EVP 4 = E-WB  
 EVP 5 =  
 EVP 6 =



SIGNAL FIELD TERMINALS



4. K1 AND FR1 THRU FR6 ARE SHOWN ENERGIZED.
- ③ 2.2 OHM, 10 WATT RESISTORS ARE LOADS FOR PED. LOADSWITCH GREENS
- ② REMOVE WIRE JUMPERS BETWEEN 150A-151A AND 152A-153A WHEN FL2 IS USED.
- 1 P13, P17 AND OPTIONAL CCA2 CABLES ARE WIRED TO THE FRONT SIDE OF PANEL
- NOTES: UNLESS SPECIFIED OTHERWISE



## LOADBAY AND FLASH RELAY'S

|    |                    |                            |        |                     |    |
|----|--------------------|----------------------------|--------|---------------------|----|
| 1  | T.B.C. ON LINE     | J1-21A J1-32A A-31         | MMA-17 | LOGIC GND           | 1  |
| 2  | T.B.C. AUX. 1      | J1-14A J1-18B              |        | DIM. ENABLE         | 2  |
| 3  | T.B.C. AUX. 2      | J1-14B J1-18A              |        | AUTO FLASH          | 3  |
| 4  | T.B.C. AUX. 3      | J2-14A J2-14B              |        | COORD. STATUS       | 4  |
| 5  | STOP TIME 1 & 2    | J1-21B J1-22A J2-21B J3-14 |        | RG. 1 INHBT. MAX.   | 5  |
| 6  | M.M.U. STOP TIME   | MMA-38 J2-23AJ2-22A J3-13  |        | RG. 2 INHBT. MAX.   | 6  |
| 7  | LOCAL FLASH STATUS | J2-22B J1-23B J3-15        |        | RG. 1 FORCE OFF     | 7  |
| 8  | ALARM 1            | J2-23BJ1-24A               |        | RG. 2 FORCE OFF     | 8  |
| 9  | ALARM 2            | J2-24AJ1-22B               |        | RG. 1 MAX. 2 SEL.   | 9  |
| 10 | FREE               | J2-24BJ1-23A               |        | RG. 2 MAX. 2 SEL.   | 10 |
| 11 | TEST INPUT C       | J2-25AJ1-24B               |        | CALL NON. AC 1      | 11 |
| 12 |                    | J2-19A                     |        | CALL NON. AC 2      | 12 |
| 13 | B.I.U. SPR. 1      | J2-19BJ1-25A               |        | WALK REST MDR.      | 13 |
| 14 | B.I.U. SPR. 2      | J2-20AJ1-20A               |        | EXT. MIN. RECALL    | 14 |
| 15 | B.I.U. SPR. 3      | J2-20B K1-3                |        | RE-START PULSE      | 15 |
| 16 | B.I.U. SPR. 4      | J2-21AJ1-20B               |        | EXT. START          | 16 |
| 17 | PC1 PED. DET. 1    | J1-25B J1-17A              |        | TEST INPUT A        | 17 |
| 18 | PC3 PED. DET. 3    | J1-26B J1-17B              |        | TEST INPUT B        | 18 |
| 19 | PC5 PED. DET. 5    | J2-25B J3-10               |        | MANUAL CONT. ENABLE | 19 |
| 20 | PC7 PED. DET. 7    | J2-26B J1-19B J3-12        |        | INTRVL. ADV.        | 20 |

DS2-2

|    |              |               |  |              |    |
|----|--------------|---------------|--|--------------|----|
| 21 |              |               |  |              | 21 |
| 22 |              |               |  |              | 22 |
| 23 | PMT. 1 ACTV. | J1-15A J1-16A |  | PMT. 1 CALL  | 23 |
| 24 | PMT. 2 ACTV. | J1-15B J1-16B |  | PMT. 2 CALL  | 24 |
| 25 | PMT. 3 ACTV. | J2-15AJ2-17A  |  | PMT. 3 CALL  | 25 |
| 26 | PMT. 4 ACTV. | J2-15BJ2-17B  |  | PMT. 4 CALL  | 26 |
| 27 | PMT. 5 ACTV. | J2-16AJ2-18A  |  | PMT. 5 CALL  | 27 |
| 28 | PMT. 6 ACTV. | J2-16BJ2-18B  |  | PMT. 6 CALL  | 28 |
| 29 | SDLC PAIR 1+ | BU3-1 BU1-1   |  | SDLC PAIR 1+ | 29 |
| 30 | SDLC PAIR 1- | BU4-1 BU2-1   |  | SDLC PAIR 1- | 30 |
| 31 | LOGIC GND    | MMA-21 A-1    |  | LOGIC GND    | 31 |
| 32 | LOGIC GND    | MMA-55 C-32   |  | LOGIC GND    | 32 |
| 33 | SDLC PAIR 2+ | B-37 K1-1     |  | SDLC PAIR 2+ | 33 |
| 34 | SDLC PAIR 2- | BU3-3 BU1-3   |  | SDLC PAIR 2- | 34 |
| 35 | SDLC PAIR 3+ | BU4-3 BU2-3   |  | SDLC PAIR 3+ | 35 |
| 36 | SDLC PAIR 3- | BU3-11 BU1-11 |  | SDLC PAIR 3- | 36 |
| 37 | LOGIC GND    | BU4-11 BU2-11 |  | LOGIC GND    | 37 |
| 38 | LOGIC GND    | BU3-5 BU1-5   |  | LOGIC GND    | 38 |
| 39 | SDLC PAIR 4+ | BU4-5 BU2-5   |  | SDLC PAIR 4+ | 39 |
| 40 | SDLC PAIR 4- | BU3-13 BU1-13 |  | SDLC PAIR 4- | 40 |

|    |                      |                 |        |    |
|----|----------------------|-----------------|--------|----|
| 21 | OUTPUT RLY. 1 OPEN   | MMA-2           |        | 21 |
| 22 | OUTPUT RLY. 2 CLOSED | MMA-3           |        | 22 |
| 23 | CABINET INT.LK. A    | MMA-50          |        | 23 |
| 24 | CABINET INT.LK. B    | MMA-51          |        | 24 |
| 25 | FAULT MON.           | CCA-F           |        | 25 |
| 26 | M.M.U. RESET         | MMA-35          | CCA2-A | 26 |
| 27 | 24 V. MON. INHBT.    | MMA-49          |        | 27 |
| 28 | M.M.U. +24 V. MON. 2 | MMA-36          |        | 28 |
| 29 | M.M.U. +24 V. MON. 1 | J3-9            |        | 29 |
| 30 | +24 VDC              | MMB-15          |        | 30 |
| 31 | +12 VDC              | K1-11           |        | 31 |
| 32 | LOGIC GND            | MMA-16          |        | 32 |
| 33 | LOGIC GND            | J1-1A J3-8 PS-E |        | 33 |
| 34 | EQUIP. AC LINE       | PS-D            |        | 34 |
| 35 | FILTER AC NEUT.      | B-32 J3-11      |        | 35 |
| 36 | FILTER AC NEUT.      | DS2-1           |        | 36 |
| 37 | EQUIP. AC LINE       | CCA-G PS-G      |        | 37 |
| 38 | SWTCHD AC LINE       | J1-31B          |        | 38 |
| 39 | FILTER AC LINE       | PS-B            |        | 39 |
| 40 | FILTER AC LINE       | J1-27B          |        | 40 |

# INTERFACE TERMINAL BLOCKS

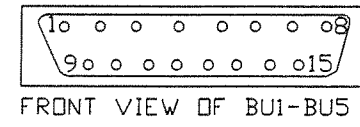
| J1 BIU #1 |                  |        | J2 BIU #2 |                 |         |
|-----------|------------------|--------|-----------|-----------------|---------|
| PIN       | FUNCTION         | TO     | PIN       | FUNCTION        | TO      |
| 1A        | +24 VDC          | C-30   | 1A        | +24 VDC         | J2-1B   |
| 1B        | +24 VDC          | J2-1B  | 1B        | +24 VDC         | J1-1B   |
| 2A        | LS1 RED          | LS1-6  | 2A        | LS9 RED         | LS9-6   |
| 2B        | LS1 YELLOW       | LS1-8  | 2B        | PMT ACT. 3      | LS9-8   |
| 3A        | LS1 GREEN        | LS1-10 | 3A        | LS9 GREEN       | LS9-10  |
| 3B        | LS2 RED          | LS2-6  | 3B        | LS10 RED        | LS10-6  |
| 4A        | LS2 YELLOW       | LS2-8  | 4A        | PMT ACT. 4      | LS10-8  |
| 4B        | LS2 GREEN        | LS2-10 | 4B        | LS10 GREEN      | LS10-10 |
| 5A        | LS3 RED          | LS3-6  | 5A        | LS11 RED        | LS11-6  |
| 5B        | LS3 YELLOW       | LS3-8  | 5B        | PMT ACT. 5      | LS11-8  |
| 6A        | LS3 GREEN        | LS3-10 | 6A        | LS11 GREEN      | LS11-10 |
| 6B        | LS4 RED          | LS4-6  | 6B        | LS12 RED        | LS12-6  |
| 7A        | LS4 YELLOW       | LS4-8  | 7A        | PMT ACT. 6      | LS12-8  |
| 7B        | LS4 GREEN        | LS4-10 | 7B        | LS12 GREEN      | LS12-10 |
| 8A        | LS5 RED          | LS5-6  | 8A        | LS13 RED        | LS13-6  |
| 8B        | LS5 YELLOW       | LS5-8  | 8B        | LS13 YELLOW     | LS13-8  |
| 9A        | LS5 GREEN        | LS5-10 | 9A        | LS13 GREEN      | LS13-10 |
| 9B        | LS6 RED          | LS6-6  | 9B        | LS14 RED        | LS14-6  |
| 10A       | LS6 YELLOW       | LS6-8  | 10A       | LS14 YELLOW     | LS14-8  |
| 10B       | LS6 GREEN        | LS6-10 | 10B       | LS14 GREEN      | LS14-10 |
| 11A       | LS7 RED          | LS7-6  | 11A       | LS15 RED        | LS15-6  |
| 11B       | LS7 YELLOW       | LS7-8  | 11B       | LS15 YELLOW     | LS15-8  |
| 12A       | LS7 GREEN        | LS7-10 | 12A       | LS15 GREEN      | LS15-10 |
| 12B       | LS8 RED          | LS8-6  | 12B       | LS16-RED        | LS16-6  |
| 13A       | LS8 YELLOW       | LS8-8  | 13A       | LS16-YELLOW     | LS16-8  |
| 13B       | LS8 GREEN        | LS8-10 | 13B       | LS16-GREEN      | LS16-10 |
| 14A       | TBC AUX 1        | B-2    | 14A       | TBC AUX 3       | B-4     |
| 14B       | TBC AUX 2        | B-3    | 14B       | COORD. STATUS   | A-4     |
| 15A       | PMT ACT 1        | B-23   | 15A       | PMT ACT 3       | B-25    |
| 15B       | PMT ACT 2        | B-24   | 15B       | PMT ACT 4       | B-26    |
| 16A       | PMT CALL 1       | A-23   | 16A       | PMT ACT 5       | B-27    |
| 16B       | PMT CALL 2       | A-24   | 16B       | PMT ACT 6       | B-28    |
| 17A       | TEST A           | A-17   | 17A       | PMT CALL 3      | A-25    |
| 17B       | TEST B           | A-18   | 17B       | PMT CALL 4      | A-26    |
| 18A       | AUTO FLASH       | A-3    | 18A       | PMT CALL 5      | A-27    |
| 18B       | DIM. ENABLE      | A-2    | 18B       | PMT CALL 6      | A-28    |
| 19A       | MANUAL CONT.     | A-19   | 19A       | CNA 2           | A-12    |
| 19B       | INT. ADVANCE     | A-20   | 19B       | SPARE 1         | B-13    |
| 20A       | EXT. MIN. RECALL | A-14   | 20A       | SPARE 2         | B-14    |
| 20B       | EXT. START       | A-16   | 20B       | SPARE 3         | B-15    |
| 21A       | TBC ONLINE       | B-1    | 21A       | SPARE 4         | B-16    |
| 21B       | STOP TIME (1)    | B-5    | 21B       | INHIBIT MAX (1) | A-5     |
| 22A       | STOP TIME (2)    | B-5    | 22A       | INHIBIT MAX (2) | A-6     |
| 22B       | MAX. 2 (1)       | A-9    | 22B       | LOCAL FLASH     | B-7     |
| 23A       | MAX. 2 (2)       | A-10   | 23A       | MMU FLASH       | B-6     |
| 23B       | FORCE OFF (1)    | A-7    | 23B       | ALARM 1         | B-8     |
| 24A       | FORCE OFF (2)    | A-8    | 24A       | ALARM 2         | B-9     |
| 24B       | CNA 1            | A-11   | 24B       | RESERVED        | ----    |
| 25A       | WALK REST MOD.   | A-13   | 25A       | RESERVED        | ----    |
| 25B       | PED. ISD. 1      | B-17   | 25B       | PED. ISD. 5     | B-19    |
| 26A       | PED. ISD. 2      | PC2-A  | 26A       | PED. ISD. 6     | PC6-A   |
| 26B       | PED. ISD. 3      | B-18   | 26B       | PED. ISD. 7     | B-20    |
| 27A       | PED. ISD. 4      | PC4-A  | 27A       | PED. ISD. 8     | PC8-A   |
| 27B       | PED. ISD. COMM.  | C-35   | 27B       | PED. ISD. COMM. | J1-27B  |
| 28A       | ADDR. SEL. 0     | ----   | 28A       | ADDR. SEL. 0    | J2-32A  |
| 28B       | ADDR. SEL. 1     | ----   | 28B       | ADDR. SEL. 1    | ----    |
| 29A       | ADDR. SEL. 2     | ----   | 29A       | ADDR. SEL. 2    | ----    |
| 29B       | ADDR. SEL. 3     | ----   | 29B       | ADDR. SEL. 3    | ----    |
| 30A       | RESERVED         | ----   | 30A       | RESERVED        | ----    |
| 30B       | RESERVED         | ----   | 30B       | RESERVED        | ----    |
| 31A       | EARTH GND.       | GB     | 31A       | EARTH GND.      | J1-31A  |
| 31B       | LINE FREQ. REF.  | C-34   | 31B       | LINE FREQ. REF. | J1-31B  |
| 32A       | LOGIC GND.       | A-1    | 32A       | LOGIC GND.      | J1-32B  |
| 32B       | LOGIC GND.       | J2-32A | 32B       | LOGIC GND.      | J2-32A  |

| CONTROLLER PORT 1 (BU1) |     |                 |      |            |
|-------------------------|-----|-----------------|------|------------|
|                         | PIN | SIGNAL          | TO   | FUNCTION   |
| W/BL                    | 1   | TWISTED PAIR 1+ | A-29 | CONT. TXD+ |
|                         | 2   | NOT USED        | ---- | ----       |
| W/D                     | 3   | TWISTED PAIR 2+ | A-33 | CONT. TXC+ |
|                         | 4   | NOT USED        | ---- | ----       |
| W/G                     | 5   | TWISTED PAIR 3+ | A-35 | CONT. RXD+ |
|                         | 6   | NOT USED        | ---- | ----       |
| W/BR                    | 7   | TWISTED PAIR 4+ | A-39 | CONT. RXC+ |
|                         | 8   | NOT USED        | ---- | ----       |
| BL/W                    | 9   | TWISTED PAIR 1- | A-30 | CONT. TXD- |
|                         | 10  | NOT USED        | ---- | ----       |
| D/W                     | 11  | TWISTED PAIR 2- | A-34 | CONT. TXC- |
|                         | 12  | CABLE SHIELD    | ---- | LOGIC GND. |
| G/W                     | 13  | TWISTED PAIR 3- | A-36 | CONT. RXD- |
|                         | 14  | NOT USED        | ---- | ----       |
| BR/W                    | 15  | TWISTED PAIR 4- | A-40 | CONT. RXC- |
|                         |     |                 | A-37 |            |

| BIU PORT (BU2 - BU5) |     |                 |      |            |
|----------------------|-----|-----------------|------|------------|
|                      | PIN | SIGNAL          | TO   | FUNCTION   |
| W/BL                 | 1   | TWISTED PAIR 1+ | B-29 | BIU RXD+   |
|                      | 2   | NOT USED        | ---- | ----       |
| W/D                  | 3   | TWISTED PAIR 2+ | B-33 | BIU RXC+   |
|                      | 4   | NOT USED        | ---- | ----       |
| W/G                  | 5   | TWISTED PAIR 3+ | B-35 | BIU TXD+   |
|                      | 6   | NOT USED        | ---- | ----       |
| W/BR                 | 7   | TWISTED PAIR 4+ | B-39 | BIU TXC+   |
|                      | 8   | NOT USED        | ---- | ----       |
| BL/W                 | 9   | TWISTED PAIR 1- | B-30 | BIU RXD-   |
|                      | 10  | NOT USED        | ---- | ----       |
| D/W                  | 11  | TWISTED PAIR 2- | B-34 | BIU RXC-   |
|                      | 12  | CABLE SHIELD    | ---- | LOGIC GND. |
| G/W                  | 13  | TWISTED PAIR 3- | B-36 | BIU TXD-   |
|                      | 14  | NOT USED        | ---- | ----       |
| BR/W                 | 15  | TWISTED PAIR 4- | B-40 | BIU TXC-   |

| CONTROLLER POWER (CCA) |               |       |
|------------------------|---------------|-------|
| CCA C/C 32864G2        |               |       |
| PIN                    | FUNCTION      | TO    |
| A                      | AC NEUTRAL    | C-36  |
| B                      | NOT USED      | ----  |
| C                      | AC LINE       | C-38  |
| D                      | NOT USED      | ----  |
| E                      | NOT USED      | ----  |
| F                      | FAULT MONITOR | C-25  |
| G                      | LOGIC GROUND  | C-33  |
| H                      | EARTH GROUND  | GB    |
| I                      | NOT USED      | ----  |
| J                      | NOT USED      | ----  |
| SHL                    | EARTH GND.    | CCA-H |

| CAB. PWR. SUPPLY (PS) |                 |      |
|-----------------------|-----------------|------|
| PS C/C 32864G2        |                 |      |
| PIN                   | SIGNAL          | TO   |
| A                     | AC NEUTRAL      | C-37 |
| B                     | LINE FREQ. REF. | C-34 |
| C                     | AC LINE         | C-38 |
| D                     | +12 VDC.        | C-31 |
| E                     | +24 VDC.        | C-30 |
| F                     | RESERVED        | ---- |
| G                     | LOGIC GROUND    | C-33 |
| H                     | EARTH GROUND    | GB   |
| I                     | +12 VAC.        | C-35 |
| J                     | RESERVED        | ---- |
|                       | EARTH GND.      | PS-H |



| WIRE LIST FOR NEMA MALFUNCTION MANAGEMENT UNIT |      |      |                  |       |                     |     |      |      |                  |       |               |
|------------------------------------------------|------|------|------------------|-------|---------------------|-----|------|------|------------------|-------|---------------|
| CONNECTOR "A" (CMA)                            |      |      |                  |       | CONNECTOR "B" (CMB) |     |      |      |                  |       |               |
| PIN                                            | WIRE | MON. | FUNCTION         | TO    | SIG. FUNCTION       | PIN | WIRE | MON. | FUNCTION         | TO    | SIG. FUNCTION |
| A                                              | A-1  |      | AC+ I INPUT      | ---   |                     | A   | B-1  |      | AC+ II INPUT     | C-39  | MMU POWER     |
| B                                              | A-2  |      | OUT RLY 1 OPEN   | C-21  |                     | B   | B-2  |      | S. DLY RLY COMM. | C-39  | MMU POWER     |
| C                                              | A-3  |      | OUT RLY 2 CLSD   | C-22  |                     | C   | B-3  |      | S. DLY RLY OPEN  | ---   |               |
| D                                              | A-4  |      | CH. 12 GREEN     | 12G-A | Ø8 WLK              | D   | B-4  |      | CH. 12 RED       | 149B  | SIG. BUS      |
| E                                              | A-5  |      | CH. 11 GREEN     | 11G-A | Ø6 WLK              | E   | B-5  |      | CH. 11 RED       | 149B  | SIG. BUS      |
| F                                              | A-6  |      | CH. 10 GREEN     | 10G-A | Ø4 WLK              | F   | B-6  |      | CH. 9 RED        | 149B  | SIG. BUS      |
| G                                              | A-7  |      | CH. 9 GREEN      | 9G-A  | Ø2 WLK              | G   | B-7  |      | CH. 8 RED        | 8R-A  | Ø8 RED        |
| H                                              | A-8  |      | CH. 8 GREEN      | 8G-A  | Ø8 GRN              | H   | B-8  |      | CH. 7 RED        | 7R-A  | Ø7 RED        |
| J                                              | A-9  |      | CH. 7 GREEN      | 7G-A  | Ø7 GRN              | J   | B-9  |      | CH. 6 RED        | 6R-A  | Ø6 RED        |
| K                                              | A-10 |      | CH. 6 GREEN      | 6G-A  | Ø6 GRN              | K   | B-10 |      | CH. 5 RED        | 5R-A  | Ø5 RED        |
| L                                              | A-11 |      | CH. 5 GREEN      | 5G-A  | Ø5 GRN              | L   | B-11 |      | CH. 4 RED        | 4R-A  | Ø4 RED        |
| M                                              | A-12 |      | CH. 4 GREEN      | 4G-A  | Ø4 GRN              | M   | B-12 |      | CH. 2 RED        | 2R-A  | Ø2 RED        |
| N                                              | A-13 |      | CH. 3 GREEN      | 3G-A  | Ø3 GRN              | N   | B-13 |      | CH. 1 RED        | 1R-A  | Ø1 RED        |
| P                                              | A-14 |      | CH. 2 GREEN      | 2G-A  | Ø2 GRN              | P   | B-14 |      | (SPARE 1)        | ---   |               |
| R                                              | A-15 |      | CH. 1 GREEN      | 1G-A  | Ø1 GRN              | R   | B-15 |      | +24V MONITOR II  | C-28  | +24V MON. II  |
| S                                              | A-16 |      | +24V MON. I      | C-29  | LS +24V MON.        | S   | B-16 |      | (SPARE 2)        | ---   |               |
| T                                              | A-17 |      | LOGIC GND        | A-1   | LOGIC GND           | T   | B-17 |      | CH. 13 RED       | 13F-A | OL"A" RED     |
| U                                              | A-18 |      | CHASSIS GND      | GB3   | EARTH GND.          | U   | B-18 |      | S. DLY RLY CLSD  | C-38  | CONT. POWER   |
| V                                              | A-19 |      | AC- (COMMON)     | C-36  | AC NEUTRAL          | V   | B-19 |      | CH. 10 RED       | 149B  | SIG. BUS      |
| W                                              | A-20 |      | OUT RLY 1 COM.   | J3-7  | SIG BUS CONT        | W   | B-20 |      | CH. 14 RED       | 14F-A | OL"B" RED     |
| X                                              | A-21 |      | OUT RLY 2 COM.   | B-31  | LOGIC GND           | X   | B-21 |      | CH. 15 RED       | 15F-A | OL"C" RED     |
| Y                                              | A-22 |      | CH. 12 YELLOW    | -T-   |                     | Y   | B-22 |      | CH. 16 RED       | 16F-A | OL"D" RED     |
| Z                                              | A-23 |      | CH. 11 YELLOW    | -T-   |                     | Z   | B-23 |      | CH. 3 RED        | 3R-A  | Ø3 RED        |
| a                                              | A-24 |      | CH. 10 WALK      | ---   |                     | a   | B-24 |      | RED ENABLE       | 156B  | SIG. CONTROL  |
| b                                              | A-25 |      | CH. 10 YELLOW    | -T-   |                     | b   | B-25 |      | (SPARE 3)        | ---   |               |
| c                                              | A-26 |      | CH. 9 YELLOW     | -T-   |                     | c   | B-26 |      | LOCAL FLASH      | ---   | LOCAL FLASH   |
| d                                              | A-27 |      | CH. 8 YELLOW     | 8Y-A  | Ø8 YEL              |     | B-27 |      | SHELL GROUND     | GB3   | EARTH GND.    |
| e                                              | A-28 |      | CH. 7 YELLOW     | 7Y-A  | Ø7 YEL              |     |      |      |                  |       |               |
| f                                              | A-29 |      | CH. 6 YELLOW     | 6Y-A  | Ø6 YEL              |     |      |      |                  |       |               |
| g                                              | A-30 |      | CH. 5 YELLOW     | 5Y-A  | Ø5 YEL              |     |      |      |                  |       |               |
| h                                              | A-31 |      | CH. 3 YELLOW     | 3Y-A  | Ø3 YEL              |     |      |      |                  |       |               |
| i                                              | A-32 |      | CH. 15 GREEN     | 15G-A | OL"C" GRN           |     |      |      |                  |       |               |
| j                                              | A-33 |      | CH. 2 YELLOW     | 2Y-A  | Ø2 YEL              |     |      |      |                  |       |               |
| k                                              | A-34 |      | CH. 1 YELLOW     | 1Y-A  | Ø1 YEL              |     |      |      |                  |       |               |
| m                                              | A-35 |      | CONT. VOLT. MON. | C-25  | VOLT. MON.          |     |      |      |                  |       |               |
| n                                              | A-36 |      | +24V MON. INH.   | C-27  |                     |     |      |      |                  |       |               |
| p                                              | A-37 |      | OUT RLY 1 CLSD   | J3-3  |                     |     |      |      |                  |       |               |
| q                                              | A-38 |      | OUT RLY 2 OPEN   | B-6   | 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 | OL"D" YEL           |     |      |      |                  |       |               |
| v                                              | A-43 |      | CH. 15 YELLOW    | 15Y-A | OL"C" YEL           |     |      |      |                  |       |               |
| w                                              | A-44 |      | CH. 13 YELLOW    | 13Y-A | OL"A" YEL           |     |      |      |                  |       |               |
| x                                              | A-45 |      | CH. 4 YELLOW     | 4Y-A  | Ø4 YEL              |     |      |      |                  |       |               |
| y                                              | A-46 |      | CH. 14 GREEN     | 14G-A | OL"B" GRN           |     |      |      |                  |       |               |
| z                                              | A-47 |      | CH. 13 GREEN     | 13G-A | OL"A" GRN           |     |      |      |                  |       |               |
| AA                                             | A-48 |      | (SPARE 1)        | ---   |                     |     |      |      |                  |       |               |
| BB                                             | A-49 |      | RESET            | C-26  |                     |     |      |      |                  |       |               |
| CC                                             | A-50 |      | CAB. INTLK A     | C-23  |                     |     |      |      |                  |       |               |
| DD                                             | A-51 |      | CAB. INTLK B     | C-24  |                     |     |      |      |                  |       |               |
| EE                                             | A-52 |      | CH. 14 YELLOW    | 14Y-A | OL"B" YEL           |     |      |      |                  |       |               |
| FF                                             | A-53 |      | CH. 16 GREEN     | 16G-A | OL"D" GRN           |     |      |      |                  |       |               |
| GG                                             | A-54 |      | (SPARE 2)        | ---   |                     |     |      |      |                  |       |               |
| HH                                             | A-55 |      | TYPE SELECT      | B-31  | MMU/CMU SEL.        |     |      |      |                  |       |               |
|                                                | A-56 |      | SHELL GND        | GB3   | EARTH GND.          |     |      |      |                  |       |               |

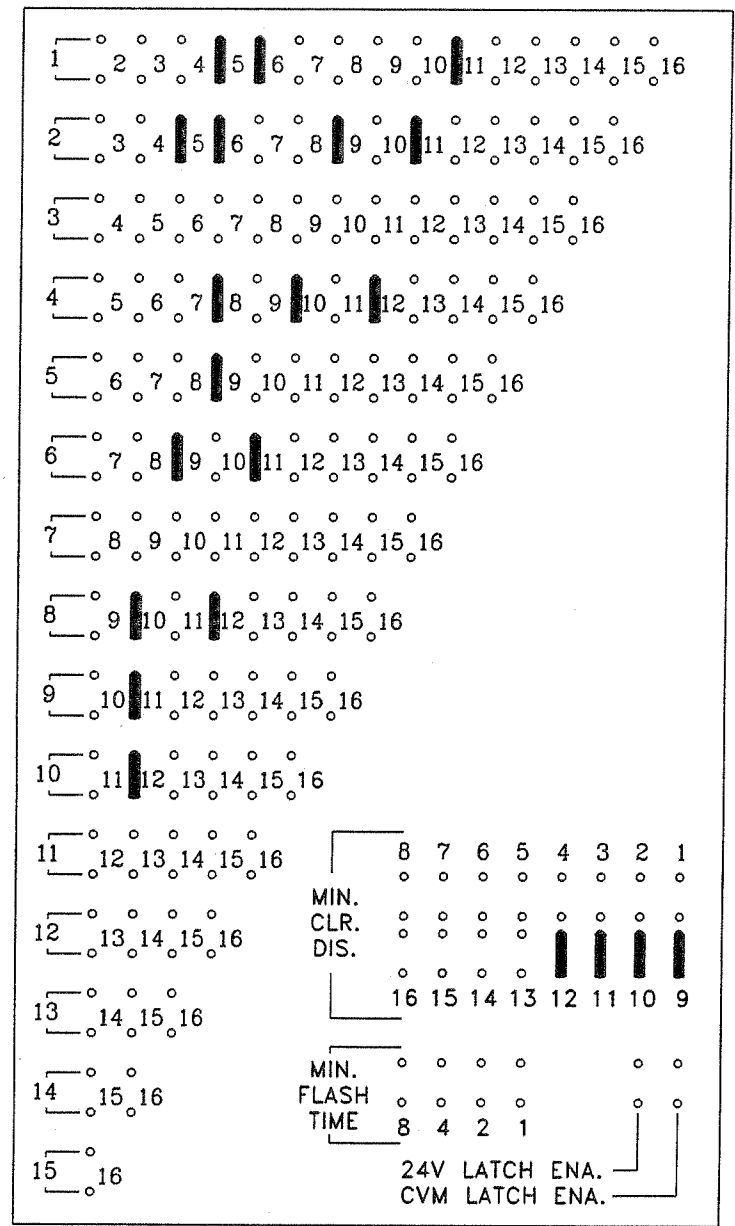
NOTES FOR 16 CHANNEL M.M.U.

- (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 = Ø1 VEH.
- CH. 2 = L/S 2 = Ø2 VEH.
- CH. 3 = L/S 3 = Ø3 VEH.
- CH. 4 = L/S 4 = Ø4 VEH.
- CH. 5 = L/S 5 = Ø5 VEH.
- CH. 6 = L/S 6 = Ø6 VEH.
- CH. 7 = L/S 7 = Ø7 VEH.
- CH. 8 = L/S 8 = Ø8 VEH.
- CH. 9 = L/S 9 = Ø2 PED.
- CH. 10 = L/S 10 = Ø4 PED.
- CH. 11 = L/S 11 = Ø6 PED.
- CH. 12 = L/S 12 = Ø8 PED.
- CH. 13 = L/S 13 = OLAP "A"
- CH. 14 = L/S 14 = OLAP "B"
- CH. 15 = L/S 15 = OLAP "C"
- CH. 16 = L/S 16 = OLAP "D"

MMU PROGRAM CARD



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

# DETECTOR RACK 34030G1

|                        |                                                            |                                                       |                                                         |                                                         |                                                            |     |     |     |                                                                                 |                                                                                                                                                            |              |                              |                              |                              |
|------------------------|------------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------------|-----|-----|-----|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------------------------|------------------------------|------------------------------|
| POWER SUPPLY OR 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>ø2-6<br>N-SB<br><br><input type="checkbox"/> 4CH<br><input checked="" type="checkbox"/> 2CH<br>OPTICOM/<br>OPIC<br>CH. A<br>CH. B<br>ø4-8<br>E-WB | PGM.<br>CARD |                              |                              |                              |
|                        | ø2/A1<br>NBR.L.                                            | ø1<br>SBLT                                            | ø4<br>EBL.L.                                            | ø8<br>WBL.L.                                            | ø6/B1<br>SBR.L.                                            |     |     |     |                                                                                 |                                                                                                                                                            |              | <input type="checkbox"/> 2CH | <input type="checkbox"/> 2CH | <input type="checkbox"/> 2CH |
|                        | <input checked="" type="checkbox"/> 2CH<br>ø2/A2<br>NBL.L. | <input checked="" type="checkbox"/> 2CH<br>ø5<br>NBLT | <input checked="" type="checkbox"/> 2CH<br>ø4<br>EBR.L. | <input checked="" type="checkbox"/> 2CH<br>ø8<br>WBR.L. | <input checked="" type="checkbox"/> 2CH<br>ø6/B2<br>SBL.L. |     |     |     |                                                                                 |                                                                                                                                                            |              | <input type="checkbox"/> 2CH | <input type="checkbox"/> 2CH | <input type="checkbox"/> 2CH |
|                        | L4                                                         | L2                                                    | L8                                                      | L6                                                      | L12                                                        | L10 | L16 | L14 | PMT 6                                                                           | PMT 4                                                                                                                                                      |              |                              |                              |                              |

|                                                                     |                                                                        |                                                                   |                                                             |                                                                    |                                                                    |                                                                      |
|---------------------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------------|
| <input checked="" type="checkbox"/> J13<br>C/C 33284G10<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 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>C/C 33284G6<br>AC POWER | <input checked="" type="checkbox"/> J19<br>C/C 33284G17<br>PGM. CARD |
|---------------------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------------|

①

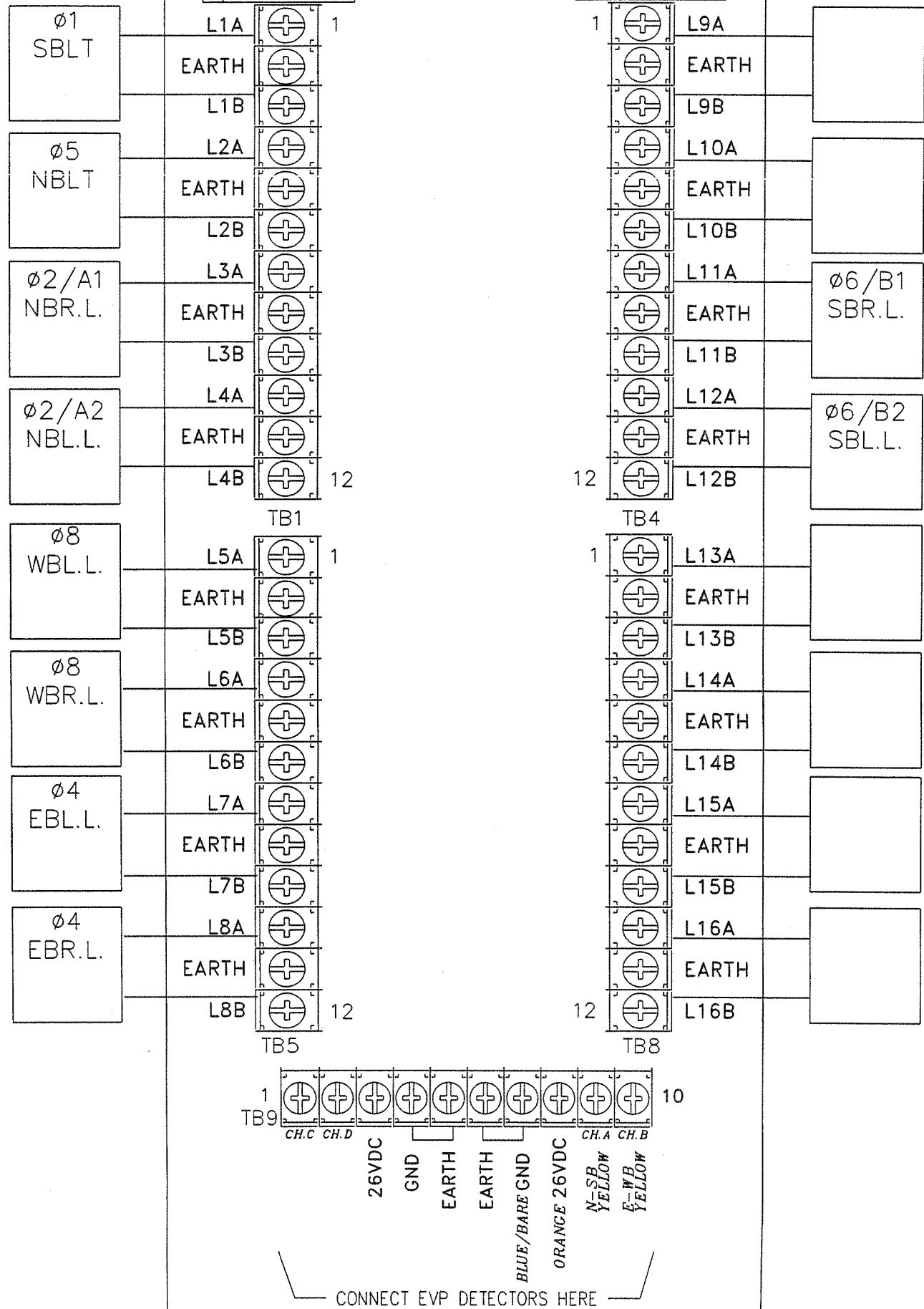
| ADDRESS TABLE |      |          |        |      |          |
|---------------|------|----------|--------|------|----------|
| RACK #        | JMPR | DET. #'S | RACK # | JMPR | DET. #'S |
| 1             |      | 1-16     | 5      |      | 65-80    |
| 2             |      | 17-32    | 6      |    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

| DETECTOR ASSIGNMENTS |                   |               |
|----------------------|-------------------|---------------|
| CONT. INPUT          | PHASE/SYST. ASGN. | DETECTOR TYPE |
| 1                    | 1                 | 1             |
| 2                    | 5                 | 1             |
| 3                    | 2/A1              | 1             |
| 4                    | 2/A2              | 1             |
| 5                    | 8                 | 1             |
| 6                    | 8                 | 1             |
| 7                    | 4                 | 1             |
| 8                    | 4                 | 1             |
| 9                    |                   |               |
| 10                   |                   |               |
| 11                   | 6/B1              | 1             |
| 12                   | 6/B2              | 1             |
| 13                   |                   |               |
| 14                   |                   |               |
| 15                   |                   |               |
| 16                   |                   |               |
| 17                   |                   |               |
| 18                   |                   |               |
| 19                   |                   |               |
| 20                   |                   |               |
| 21                   |                   |               |
| 22                   |                   |               |
| 23                   |                   |               |
| 24                   |                   |               |
| 25                   |                   |               |
| 26                   |                   |               |
| 26                   |                   |               |
| 28                   |                   |               |
| 29                   |                   |               |
| 30                   |                   |               |
| 31                   |                   |               |
| 32                   |                   |               |
| 33                   |                   |               |
| 34                   |                   |               |
| 35                   |                   |               |
| 36                   |                   |               |

| 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<br>262-FC               | NO  | NO  |            |     |     |     |     |            |     |      |      |      |            |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |      |
| ④ MAG.                            | NO  | NO  |            |     |     |     |     |            |     |      |      |      |            |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |      |



DETECTOR LOOP  
INTERFACE  
ASSY. 34040G1



| 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. 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                   | ----                |               |

DETECTOR LOOP INTERFACE

| DC POWER<br>C/C 33284G10 |                 |      |
|--------------------------|-----------------|------|
| J13                      | FUNCTION        | TO   |
| 1                        | DET. POWER      | C-31 |
| 2                        | BIU POWER       | C-30 |
| 3                        | LOGIC GND.      | C-32 |
| 4                        | EARTH GND.      | GB   |
| 5                        | -----           |      |
| 6                        | LINE FREQ. REF. | C-34 |

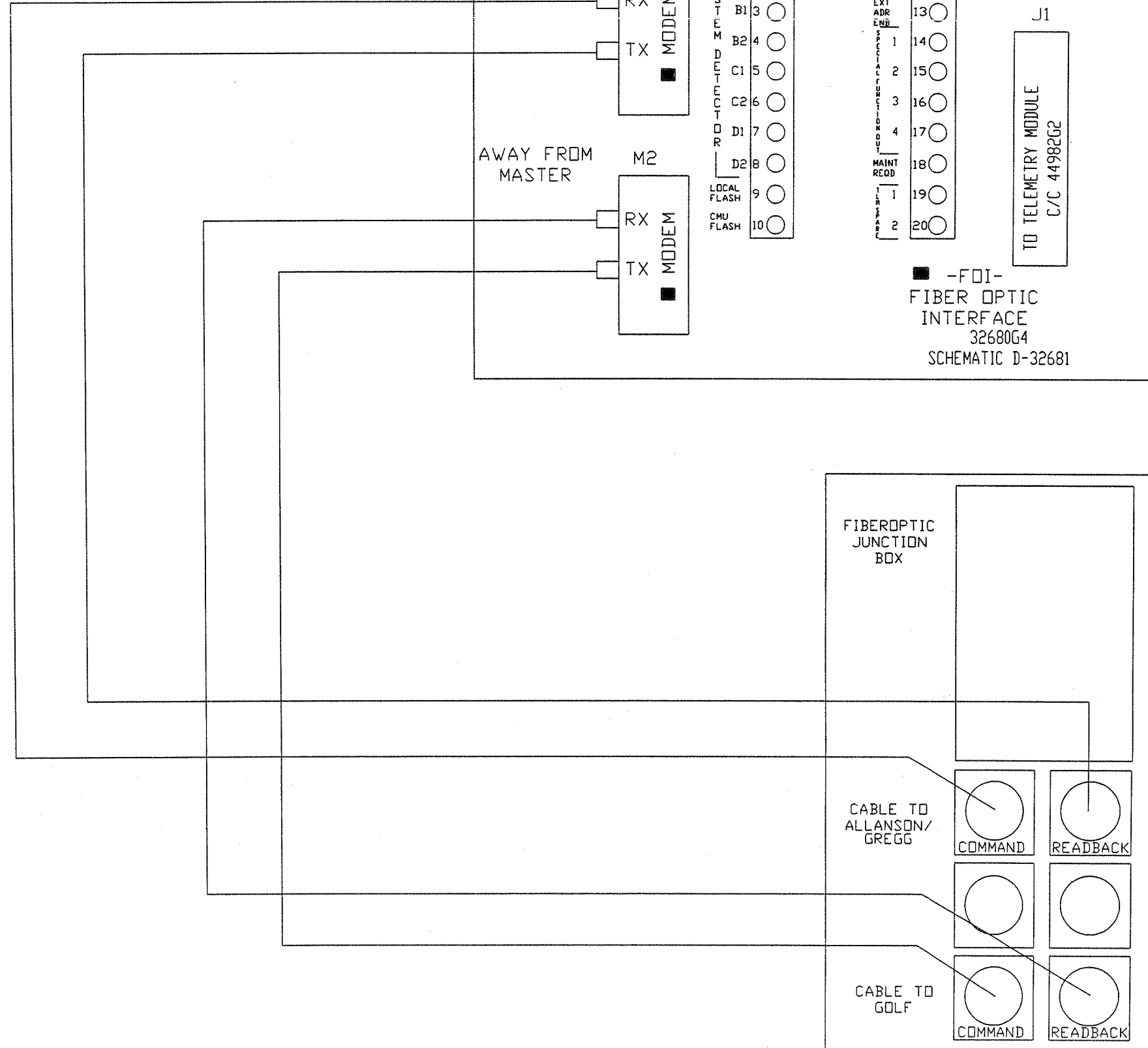
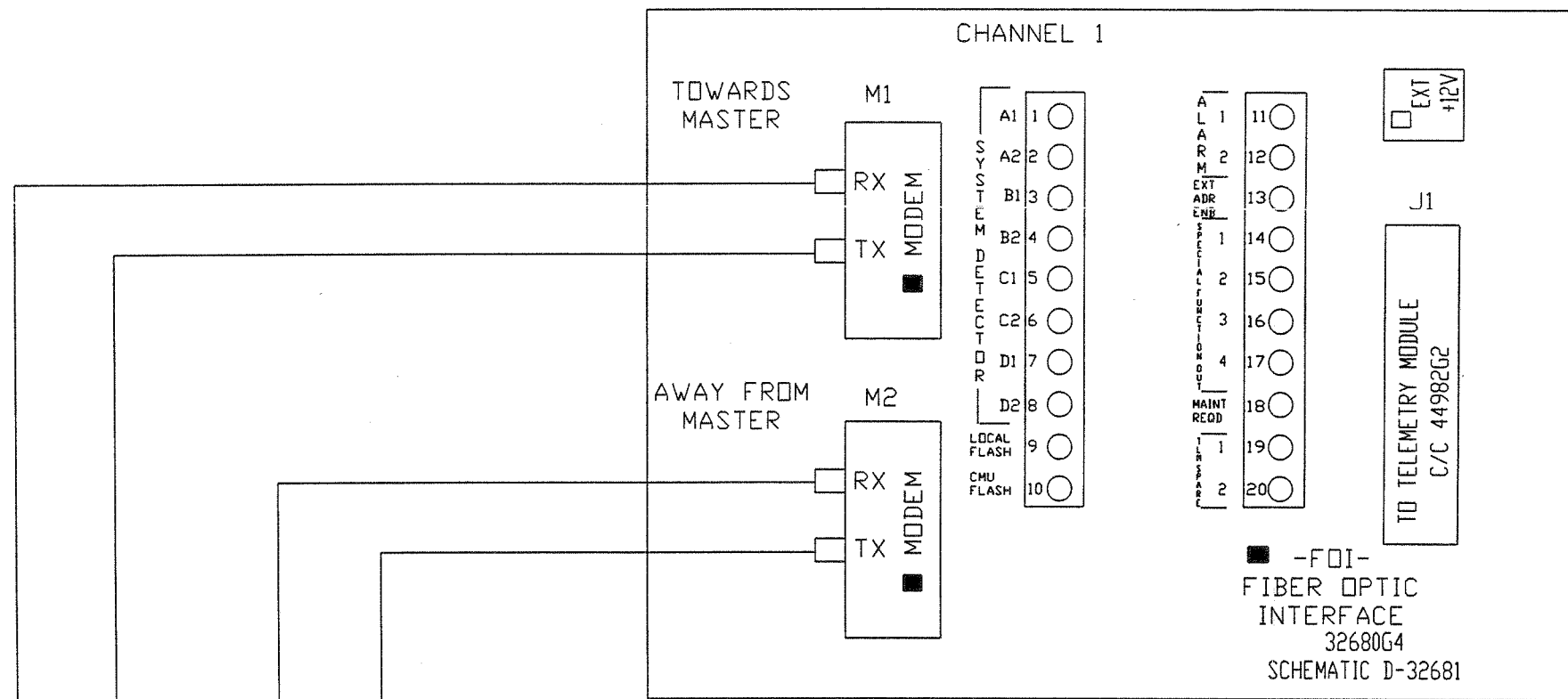
| EXPANSION OUTPUTS<br>C/C 33284G8 |                      |         |
|----------------------------------|----------------------|---------|
| J16                              | FUNCTION             | TO      |
| 1                                | DET. 1 OUT           | TIEBACK |
| 2                                | DET. 2 OUT           | TIEBACK |
| 3                                | DET. 3 OUT           | TIEBACK |
| 4                                | DET. 4 OUT           | TIEBACK |
| 5                                | DET. 5 OUT           | TIEBACK |
| 6                                | DET. 6 OUT           | TIEBACK |
| 7                                | DET. 7 OUT           | TIEBACK |
| 8                                | DET. 8 OUT           | TIEBACK |
| 9                                | DET. 9 OUT           | TIEBACK |
| 10                               | DET. 10 OUT          | TIEBACK |
| 11                               | DET. 11 OUT          | TIEBACK |
| 12                               | DET. 12 OUT          | TIEBACK |
| 13                               | DET. 13 OUT          | TIEBACK |
| 14                               | DET. 14 OUT          | TIEBACK |
| 15                               | DET. 15 OUT          | TIEBACK |
| 16                               | DET. 16 OUT          | TIEBACK |
| 17                               | DET. 17 / PMT. A OUT | MP: A27 |
| 18                               | DET. 18 / PMT. B OUT | MP: A28 |
| 19                               | PMT. C OUT           | MP: A25 |
| 20                               | PMT. D OUT           | MP: A26 |
| 21                               | -----                |         |
| 22                               | -----                |         |
| 23                               | -----                |         |
| 24                               | -----                |         |
| 25                               | -----                |         |
| 26                               | -----                |         |

| SYSTEM OUTPUTS<br>C/C 33284G9 |               |    |
|-------------------------------|---------------|----|
| J18                           | FUNCTION      | TO |
| 1                             | SYS. 1 OUT    |    |
| 2                             | SYS. 2 OUT    |    |
| 3                             | SYS. 3 OUT    |    |
| 4                             | SYS. 4 OUT    |    |
| 5                             | SYS. 5 OUT    |    |
| 6                             | SYS. 6 OUT    |    |
| 7                             | SYS. 7 OUT    |    |
| 8                             | SYS. 8 OUT    |    |
| 9                             | SYS. 9 OUT    |    |
| 10                            | SYS. 10 OUT   |    |
| 11                            | SYS. 11 OUT   |    |
| 12                            | SYS. 12 OUT   |    |
| 13                            | SYS. 13 OUT   |    |
| 14                            | SYS. 14 OUT   |    |
| 15                            | SYS. 15 OUT   |    |
| 16                            | SYS. 16 OUT   |    |
| 17                            | SYS. 17 OUT   |    |
| 18                            | SYS. 18 OUT   |    |
| 19                            | -----         |    |
| 20                            | DET. FAIL OUT |    |

| AC POWER<br>C/C 33284G6 |            |      |
|-------------------------|------------|------|
| J17                     | FUNCTION   | TO   |
| 1                       | EARTH GND. | G.B. |
| 2                       | AC LINE    | 161A |
| 3                       | AC NEUTRAL | C-37 |
| 4                       | LOGIC GND. | TB85 |

| PROGRAM CARD<br>C/C 33284G17 |               |                |
|------------------------------|---------------|----------------|
| P2/<br>J19                   | FUNCTION      | P1/<br>MPNL J1 |
| 1                            | VEH. DET. 1   |                |
| 2                            | VEH. DET. 2   |                |
| 3                            | VEH. DET. 3   |                |
| 4                            | VEH. DET. 4   |                |
| 5                            | VEH. DET. 5   |                |
| 6                            | VEH. DET. 6   |                |
| 7                            | VEH. DET. 7   |                |
| 8                            | VEH. DET. 8   |                |
| 9                            | PHASE 1 RED   |                |
| 10                           | PHASE 2 RED   |                |
| 11                           | PHASE 3 RED   |                |
| 12                           | PHASE 4 RED   |                |
| 13                           | PHASE 5 RED   |                |
| 14                           | PHASE 6 RED   |                |
| 15                           | PHASE 7 RED   |                |
| 16                           | PHASE 8 RED   |                |
| 17                           | -----         |                |
| 18                           | PHASE 1 GREEN |                |
| 19                           | PHASE 2 GREEN |                |
| 20                           | PHASE 3 GREEN |                |
| 21                           | PHASE 4 GREEN |                |
| 22                           | PHASE 5 GREEN |                |
| 23                           | PHASE 6 GREEN |                |
| 24                           | PHASE 7 GREEN |                |
| 25                           | PHASE 8 GREEN |                |
| 26                           | -----         |                |

## DETECTOR CONNECTING CABLES



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

LOCAL RS-232 TELEMETRY (FOI)