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16-3007-103  
November, 1982

# *Moon Patrol*

**DRAWING SET**

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**ELECTRONICS, INC.**

3401 N. California Ave., Chicago, IL 60618

CONTENTS

Interboard Wiring Diagram . . . . . 1

Connector Identification and Block Diagram . . . . . 2

D-9454 CPU Board (M-52-A-C) Sheet 1 of 2 . . . . . 3

D-9454 CPU Board (M-52-A-C) Sheet 2 of 2 . . . . . 4

D-9455 Character Board (M-52-B-C) Sheet 1 of 2 . . . . . 5

D-9455 Character Board (M-52-B-C) Sheet 2 of 2 . . . . . 6

D-9456 Scrolling Video Board (M-52-E-C) Sheet 1 of 2 . . . . . 7

D-9456 Scrolling Video Board (M-52-E-C) Sheet 2 of 2 . . . . . 8

C-9457 Sound Board (M-52-SOUND-C) . . . . . 9

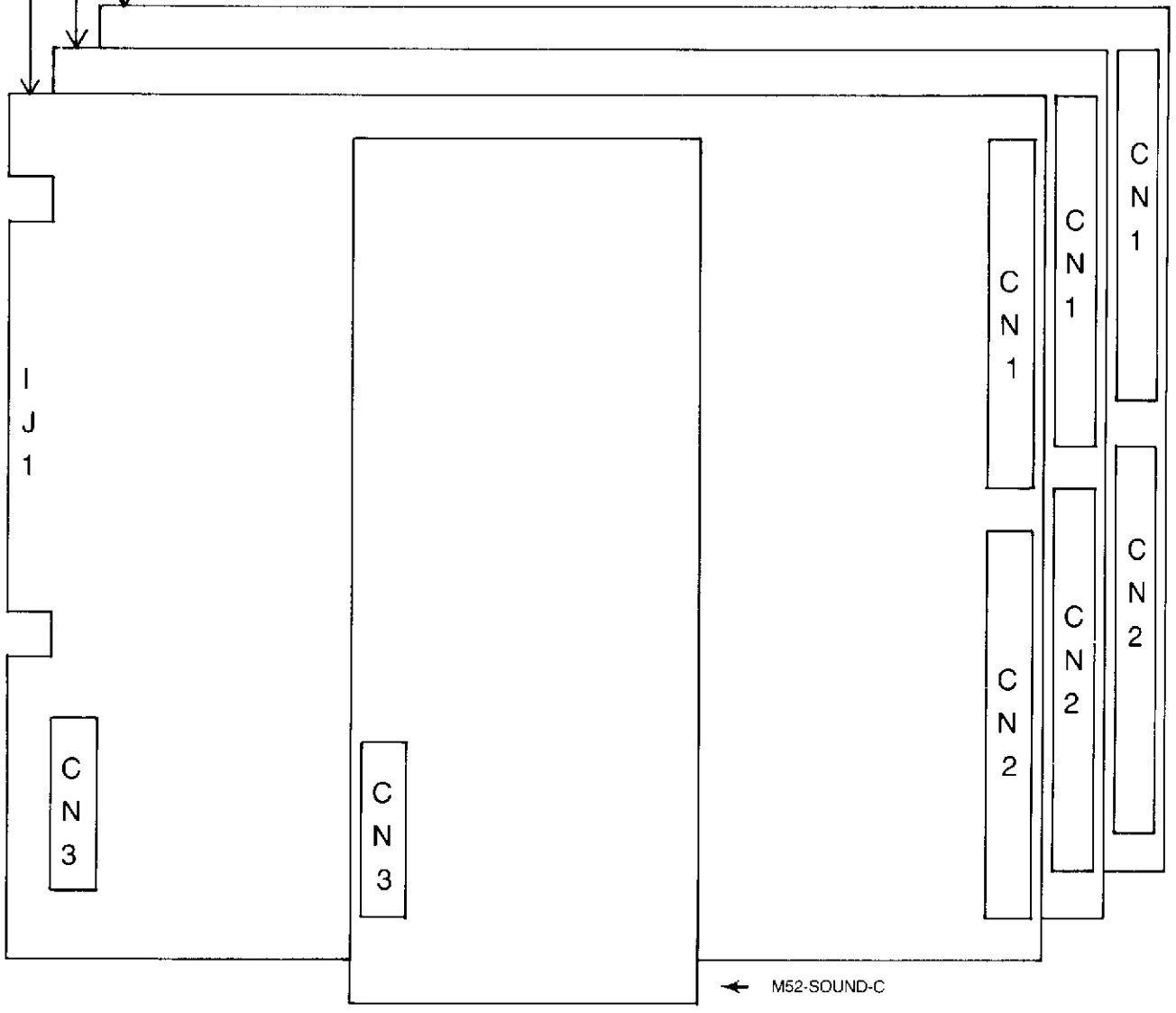
D-8784-3007 Power Supply Board Assembly Drawing . . . . . 10

D-8784-3007 Power Supply Board Schematic Diagram . . . . . 11

Power Wiring Diagram . . . . . 12

Cabinet Wiring Diagram . . . . . 13

- M52-A-C CPU BOARD
- M52-B-C CHARACTER BOARD
- M52-E-C SCROLLING VIDEO BOARD



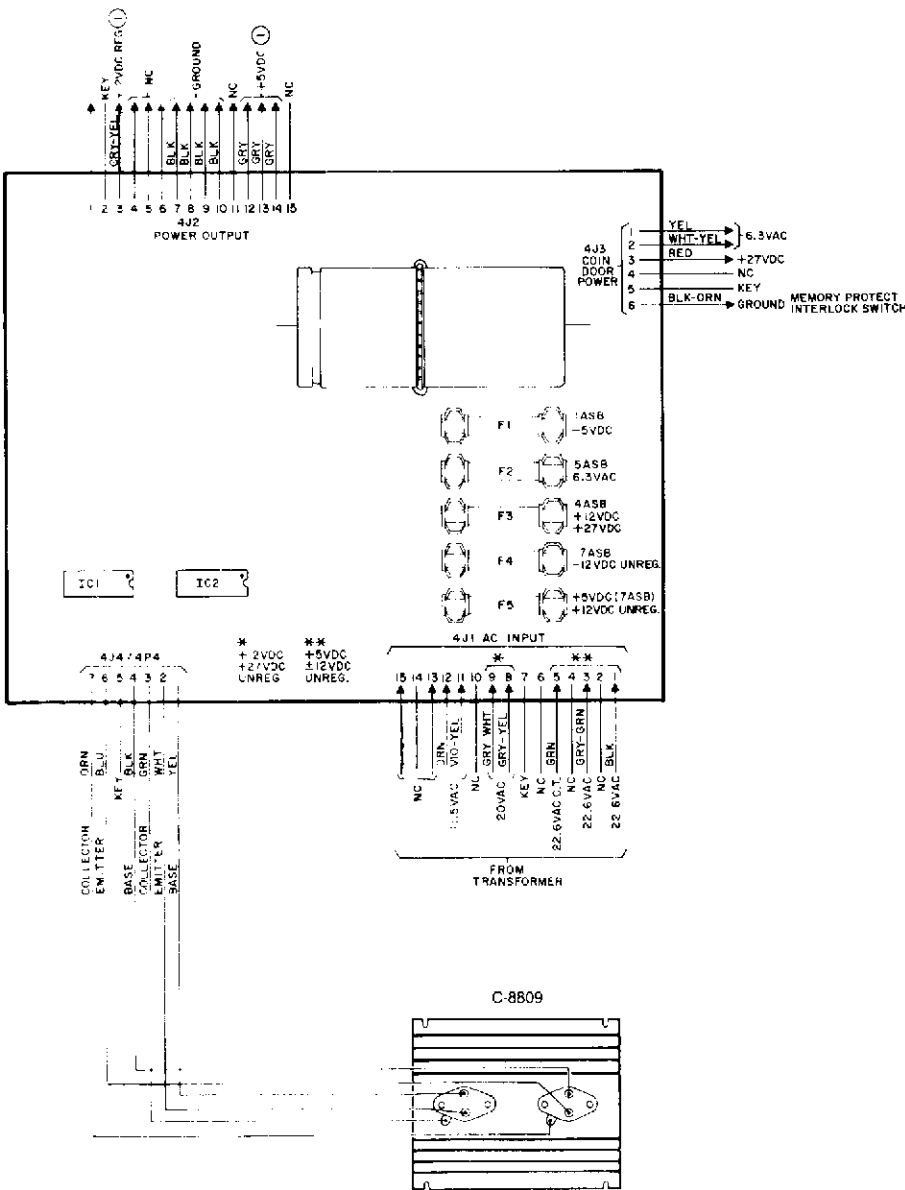
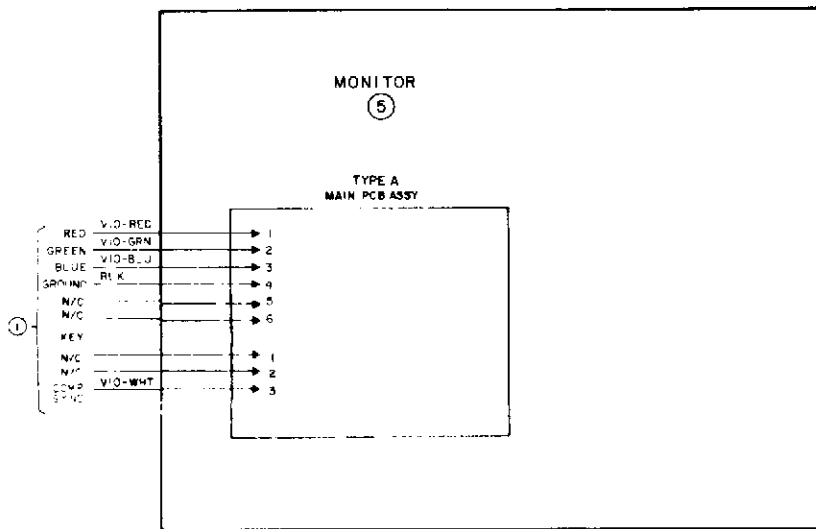
DIP SWITCH NO. 1

| ADJUSTMENT            | OPTIONS   | 1                      |
|-----------------------|---|------------------------|
|                       |   | ON                     |
| *RECOMMENDED SETTINGS |   | ON                     |
| †COIN MODE 1          | 2 PLAYS/1 COIN<br>3 PLAYS/1 COIN<br>4 PLAYS/1 COIN                                |                        |
|                       | 5 PLAYS/1 COIN<br>6 PLAYS/1 COIN<br>*1 PLAY/1 COIN                                |                        |
|                       | 1 PLAY/2 COINS<br>1 PLAY/3 COINS<br>1 PLAY/4 COINS                                |                        |
|                       | 1 PLAY/5 COINS<br>1 PLAY/6 COINS<br>FREE PLAY                                     |                        |
| †COIN MODE 2          | 1 PLAY/1 COIN<br>1 PLAY/2 COINS<br>1 PLAY/3 COINS                                 |                        |
|                       | FREE PLAY<br>2 PLAYS/1 COIN<br>3 PLAYS/1 COIN<br>5 PLAYS/1 COIN<br>6 PLAYS/1 COIN |                        |
| # PATROL CARS         | 5 PATROL CARS<br>*4 PATROL CARS<br>3 PATROL CARS<br>2 PATROL CARS                 | OFF<br>ON<br>OFF<br>ON |
| ADDITIONAL CAR AT:    | *10,000/30,000/50,000<br>20,000/40,000/60,000<br>10,000 ONLY<br>NO EXTENDED PLAY  |                        |

DIP SWITCH NO. 2

| ADJUSTMENT                          | OPTIONS                    | 1         |
|-------------------------------------|----------------------------|-----------|
|                                     |                            | OFF       |
| *RECOMMENDED SETTINGS               |                            | OFF       |
| FLIP PICTURE                        | NO<br>YES                  | OFF<br>ON |
| **CABINET TYPE                      | TABLE<br>UPRIGHT           |           |
| COIN MODE SETTINGS FOR DIP SWITCH 1 | COIN MODE 1<br>COIN MODE 2 |           |
| FREEZE SCREEN                       | *NO<br>YES                 |           |
| SECTOR-SELECTION FEATURE            | *NO<br>YES                 |           |
| DEMO MODE                           | *NO<br>YES                 |           |
| TEST MODE                           | *NO<br>YES                 |           |
| SWITCH 4 (not used)                 |                            |           |

\*recommended settings  
 \*\*For upright games, select ON for switch 2. Table games req  
 †For games with a single coin selector or 2 selectors of the same  
 turned on.



**C-8809 heat sink assembly**

| Part No.      | Description             |
|---------------|-------------------------|
| 5162-09425    | 2N6057, Transistor, NPN |
| 5161-09552    | 2N3055, Transistor, NPN |
| 5705-09684    | Heat Sink               |
| 5700-09445    | Socket, TO3             |
| 5701-09562    | Thermal Pad             |
| 4006-01003-10 | Machine Screw 6-32x5/8" |

## DIP SWITCH SETTINGS

DIP SWITCH NO. 1

| ADJUSTMENT            | OPTIONS               | SWITCH NUMBER |     |     |     |     |     |     |     |
|-----------------------|-----------------------|---------------|-----|-----|-----|-----|-----|-----|-----|
|                       |                       | 1             | 2   | 3   | 4   | 5   | 6   | 7   | 8   |
| *RECOMMENDED SETTINGS |                       | ON            | OFF | OFF | OFF | OFF | OFF | OFF | OFF |
| †COIN MODE 1          | 2 PLAYS/1 COIN        |               |     |     |     | OFF | OFF | OFF | ON  |
|                       | 3 PLAYS/1 COIN        |               |     |     |     | ON  | OFF | OFF | ON  |
|                       | 4 PLAYS/1 COIN        |               |     |     |     | OFF | ON  | OFF | ON  |
|                       | 5 PLAYS/1 COIN        |               |     |     |     | ON  | ON  | OFF | ON  |
| †COIN MODE 2          | 6 PLAYS/1 COIN        |               |     |     |     | OFF | OFF | ON  | ON  |
|                       | *1 PLAY/1 COIN        |               |     |     |     | OFF | OFF | OFF | OFF |
|                       | 1 PLAY/2 COINS        |               |     |     |     | ON  | OFF | OFF | OFF |
|                       | 1 PLAY/3 COINS        |               |     |     |     | OFF | ON  | OFF | OFF |
| # PATROL CARS         | 1 PLAY/4 COINS        |               |     |     |     | ON  | ON  | OFF | OFF |
|                       | 1 PLAY/5 COINS        |               |     |     |     | OFF | OFF | ON  | OFF |
|                       | 1 PLAY/6 COINS        |               |     |     |     | ON  | OFF | ON  | OFF |
|                       | FREE PLAY             |               |     |     |     | ON  | ON  | ON  | ON  |
| *COIN MODE 2          | 1 PLAY/1 COIN         |               |     |     |     | OFF | OFF |     |     |
|                       | 1 PLAY/2 COINS        |               |     |     |     | ON  | OFF |     |     |
|                       | 1 PLAY/3 COINS        |               |     |     |     | OFF | ON  |     |     |
| # PATROL CARS         | FREE PLAY             |               |     |     |     | ON  | ON  |     |     |
|                       | 2 PLAYS/1 COIN        |               |     |     |     |     |     | OFF | OFF |
|                       | 3 PLAYS/1 COIN        |               |     |     |     |     |     | ON  | ON  |
| ADDITIONAL CAR AT:    | 5 PATROL CARS         | OFF           | OFF |     |     |     |     |     |     |
|                       | *4 PATROL CARS        | ON            | OFF |     |     |     |     |     |     |
|                       | 3 PATROL CARS         | OFF           | ON  |     |     |     |     |     |     |
|                       | 2 PATROL CARS         | ON            | ON  |     |     |     |     |     |     |
| ADDITIONAL CAR AT:    | *10,000/30,000/50,000 |               |     | OFF | OFF |     |     |     |     |
|                       | 20,000/40,000/60,000  |               |     | ON  | OFF |     |     |     |     |
|                       | 10,000 ONLY           |               |     | OFF | ON  |     |     |     |     |
|                       | NO EXTENDED PLAY      |               |     | ON  | ON  |     |     |     |     |

DIP SWITCH NO. 2

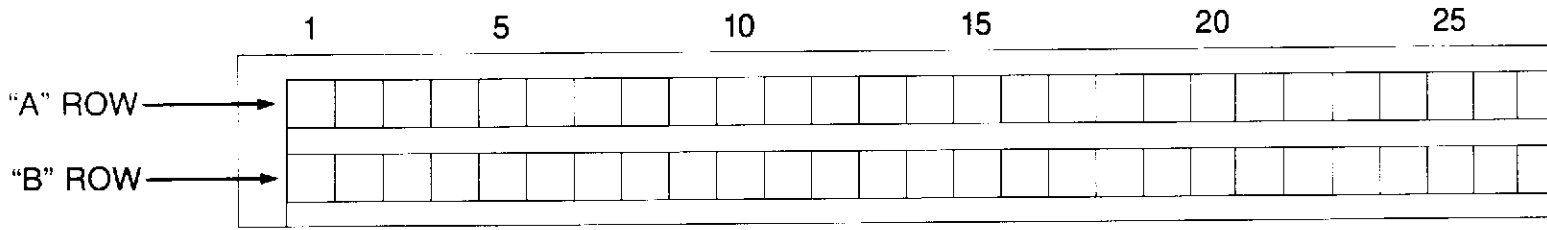
| ADJUSTMENT                          | OPTIONS                    | SWITCH NUMBER |           |           |     |           |           |           |           |
|-------------------------------------|----------------------------|---------------|-----------|-----------|-----|-----------|-----------|-----------|-----------|
|                                     |                            | 1             | 2         | 3         | 4   | 5         | 6         | 7         | 8         |
| *RECOMMENDED SETTINGS               |                            | OFF           | ON        | †         | OFF | OFF       | OFF       | OFF       | OFF       |
| FLIP PICTURE                        | NO<br>YES                  | OFF<br>ON     |           |           |     |           |           |           |           |
| **CABINET TYPE                      | TABLE<br>UPRIGHT           |               | OFF<br>ON |           |     |           |           |           |           |
| COIN MODE SETTINGS FOR DIP SWITCH 1 | COIN MODE 1<br>COIN MODE 2 |               |           | OFF<br>ON |     |           |           |           |           |
| FREEZE SCREEN                       | *NO<br>YES                 |               |           |           |     | OFF<br>ON |           |           |           |
| SECTOR-SELECTION FEATURE            | *NO<br>YES                 |               |           |           |     |           | OFF<br>ON |           |           |
| DEMO MODE                           | *NO<br>YES                 |               |           |           |     |           |           | OFF<br>ON |           |
| TEST MODE                           | *NO<br>YES                 |               |           |           |     |           |           |           | OFF<br>ON |
| SWITCH 4 (not used)                 |                            |               |           |           | OFF |           |           |           |           |

\*recommended settings

\*\*For upright games, select ON for switch 2. Table games require OFF for switch 2.

†For games with a single coin selector or 2 selectors of the same value, S3 must be turned off. For games with selectors for 2 different coin values, S3 must be turned on.

## CONNECTORS CN1 & CN2

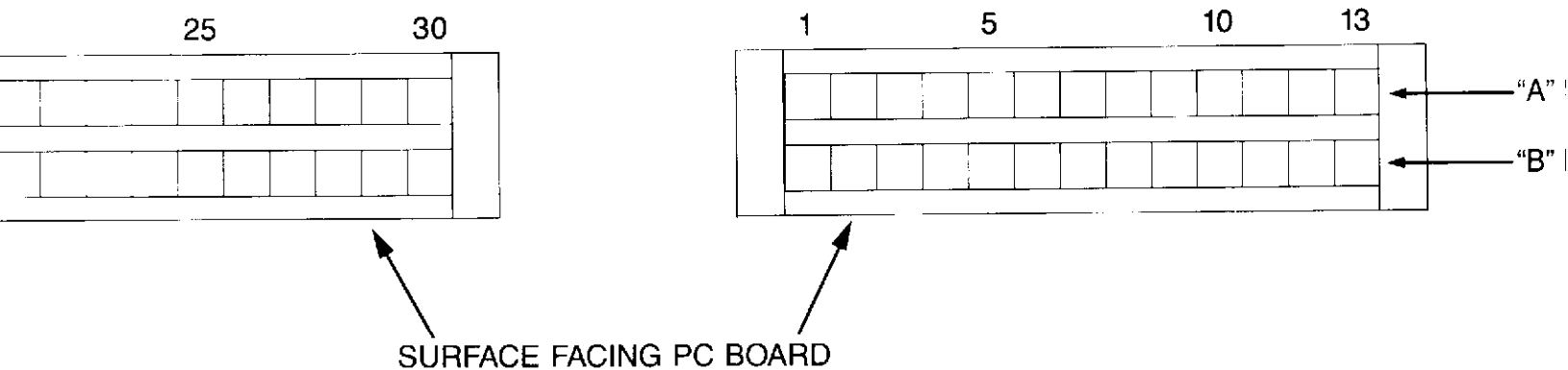


| Connector CN1 |             |         |       | Connector CN2 |             |
|---------------|-------------|---------|-------|---------------|-------------|
| PIN NO.       | DESCRIPTION | PIN NO. | DESC. | PIN NO.       | DESCRIPTION |
| 1A            | 6 MHz       | 16A     | VE2   | 1A            | HB1         |
| 1B            | †ANPR       | 16B     | GND   | 1B            | AB14        |
| 2A            | 6 MHz       | 17A     | VE4   | 2A            | HB2         |
| 2B            | N.C.        | 17B     | GND   | 2B            | AB13        |
| 3A            | 7 HB        | 18A     | VE8   | 3A            | HB4         |
| 3B            | N.C.        | 18B     | GND   | 3B            | AB11        |
| 4A            | 7 HB        | 19A     | VE16  | 4A            | HB8         |
| 4B            | †CPR        | 19B     | GND   | 4B            | AB10        |
| 5A            | HBLB        | 20A     | VE32  | 5A            | HB16        |
| 5B            | BLUE        | 20B     | GND   | 5B            | AB12        |
| 6A            | HBLB        | 21A     | VE64  | 6A            | HB32        |
| 6B            | RED         | 21B     | GND   | 6B            | AB15        |
| 7A            | VBLB        | 22A     | VE128 | 7A            | HB64        |
| 7B            | GND         | 22B     | GND   | 7B            | +5V         |
| 8A            | VBLB        | 23A     | DB0   | 8A            | HB128       |
| 8B            | GND         | 23B     | HE1   | 8B            | +5V         |
| 9A            | VB1         | 24A     | DB1   | 9A            | HB256       |
| 9B            | GND         | 24B     | HE2   | 9B            | +5V         |
| 10A           | VB128       | 25A     | DB2   | 10A           | WAIT        |
| 10B           | GND         | 25B     | HE4   | 10B           | +5V         |
| 11A           | GREEN       | 26A     | DB3   | 11A           | AB0         |
| 11B           | GND         | 26B     | HE8   | 11B           | +5V         |
| 12A           | C-FLIP 1    | 27A     | DB4   | 12A           | AB1         |
| 12B           | GND         | 27B     | HE16  | 12B           | +5V         |
| 13A           | C-FLIP 2    | 28A     | DB5   | 13A           | AB2         |
| 13B           | GND         | 28B     | HE32  | 13B           | +5V         |
| 14A           | FLIP        | 29A     | DB6   | 14A           | AB3         |
| 14B           | GND         | 29B     | HE64  | 14B           | +5V         |
| 15A           | VE1         | 30A     | DB7   | 15A           | AB4         |
| 15B           | GND         | 30B     | HE128 | 15B           | +5V         |

†ANPR = ALPHA NUMERIC PRIORITY  
 †CPR = CHARACTER PRIORITY

†CPR\* = CHARACTER PRIORITY\*

### CONNECTOR CN3



TIM  
COU

#### Connector CN2

| NO. | DESCRIPTION | PIN NO. | DESC.    |
|-----|-------------|---------|----------|
|     | HB1         | 16A     | AB5      |
|     | AB14        | 16B     | +5V      |
|     | HB2         | 17A     | AB6      |
|     | AB13        | 17B     | +5V      |
|     | HB4         | 18A     | AB7      |
|     | AB11        | 18B     | +5V      |
|     | HB8         | 19A     | AB8      |
|     | AB10        | 19B     | +5V      |
|     | HB16        | 20A     | AB9      |
|     | AB12        | 20B     | +5V      |
|     | HB32        | 21A     | C8WT     |
|     | AB15        | 21B     | +5V      |
|     | HB64        | 22A     | C000RD   |
|     | +5V         | 22B     | +5V      |
|     | HB128       | 23A     | C000CS   |
|     | +5V         | 23B     | V256     |
|     | HB256       | 24A     | RESET    |
|     | +5V         | 24B     | D0WT     |
|     | WAIT        | 25A     | WRB      |
|     | +5V         | 25B     | H30      |
|     | AB0         | 26A     | 1ORQB    |
|     | +5V         | 26B     | +CPR*    |
|     | AB1         | 27A     | RFSHB    |
|     | +5V         | 27B     | 3DIM     |
|     | AB2         | 28A     | RDB      |
|     | +5V         | 28B     | NOT USED |
|     | AB3         | 29A     | M1B      |
|     | +5V         | 29B     | NOT USED |
|     | AB4         | 30A     | MREQB    |
|     | +5V         | 30B     | NOT USED |

#### Connector CN3

| PIN NO. | DESCRIPTION |
|---------|-------------|
| 1A      | SP+         |
| 1B      | SP+         |
| 2A      | SP-         |
| 2B      | SP-         |
| 3A      | +12V        |
| 3B      | +12V        |
| 4A      | +5V         |
| 4B      | GND         |
| 5A      | +5V         |
| 5B      | GND         |
| 6A      | +5V         |
| 6B      | GND         |
| 7A      | NOT USED    |
| 7B      | NOT USED    |
| 8A      | NOT USED    |
| 8B      | NOT USED    |
| 9A      | D0          |
| 9B      | D1          |
| 10A     | D2          |
| 10B     | D3          |
| 11A     | D4          |
| 11B     | D5          |
| 12A     | D6          |
| 12B     | D7          |
| 13A     | NOT USED    |
| 13B     | NOT USED    |

M52-A

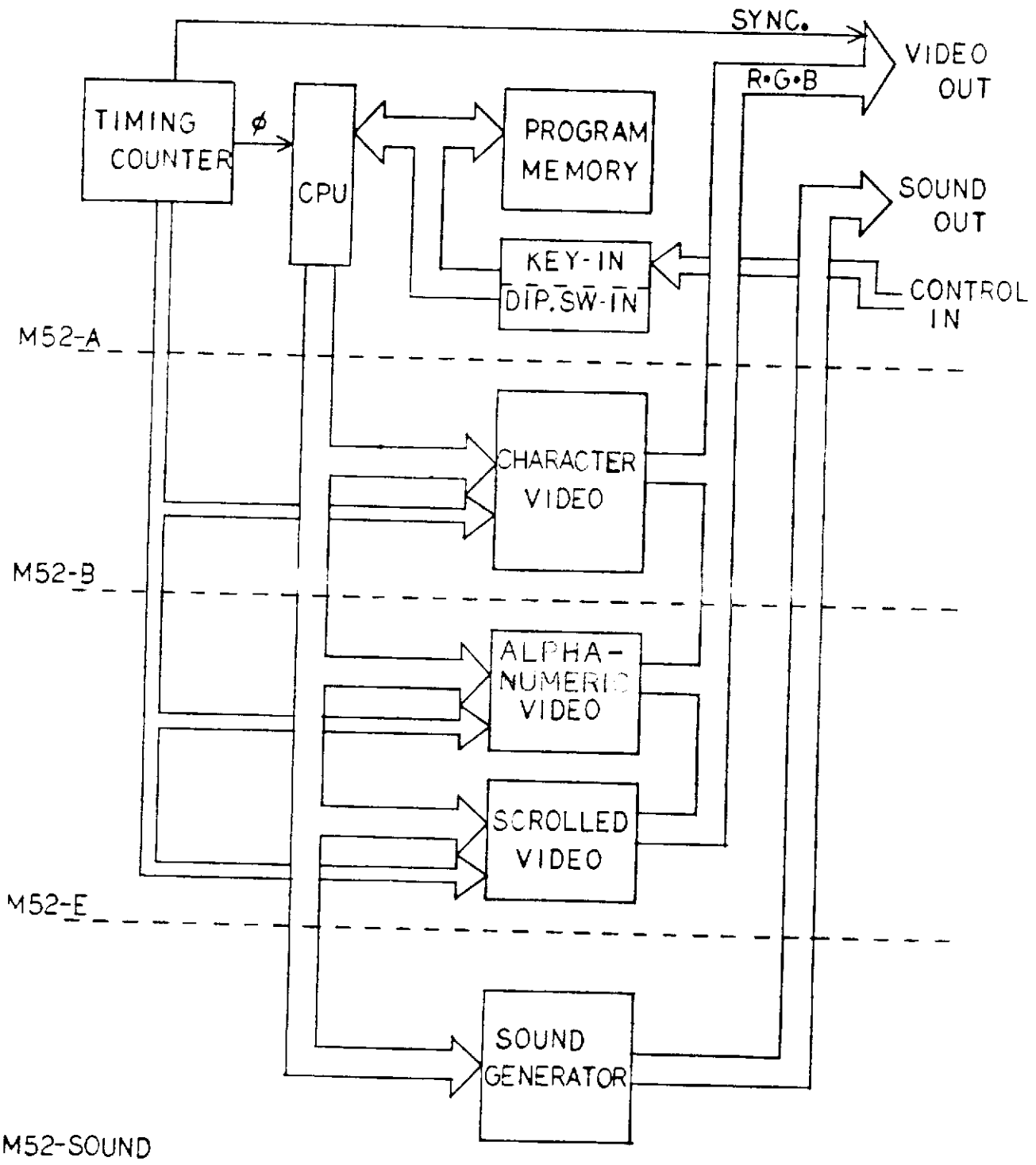
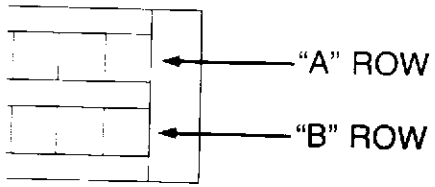
M52-B

M52-E

ACTER PRIORITY\*

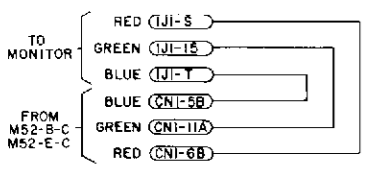
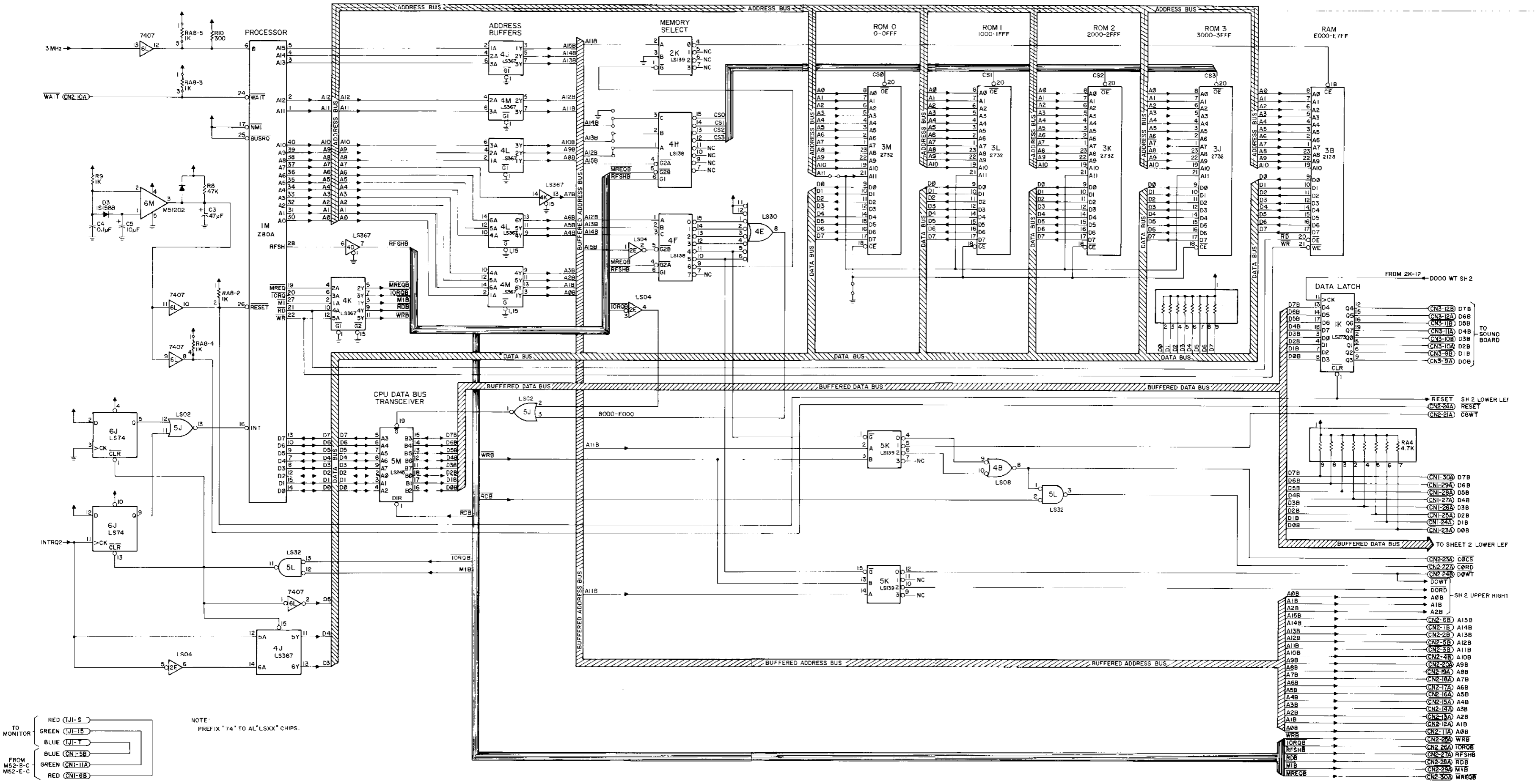
M52-SOU

13

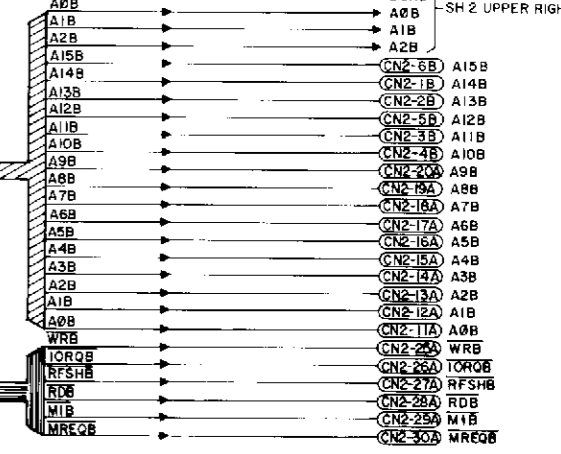
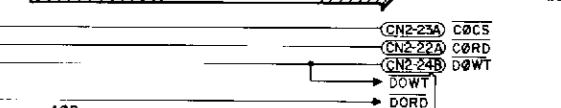
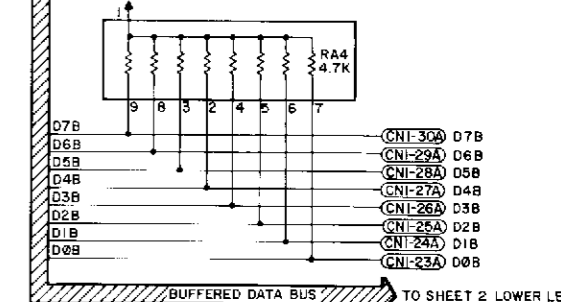
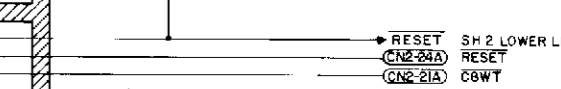
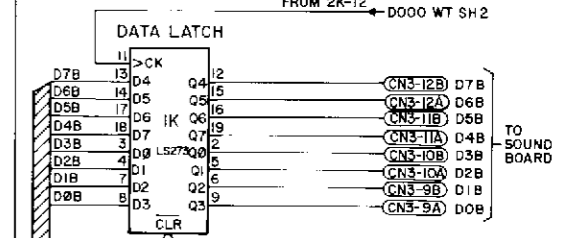


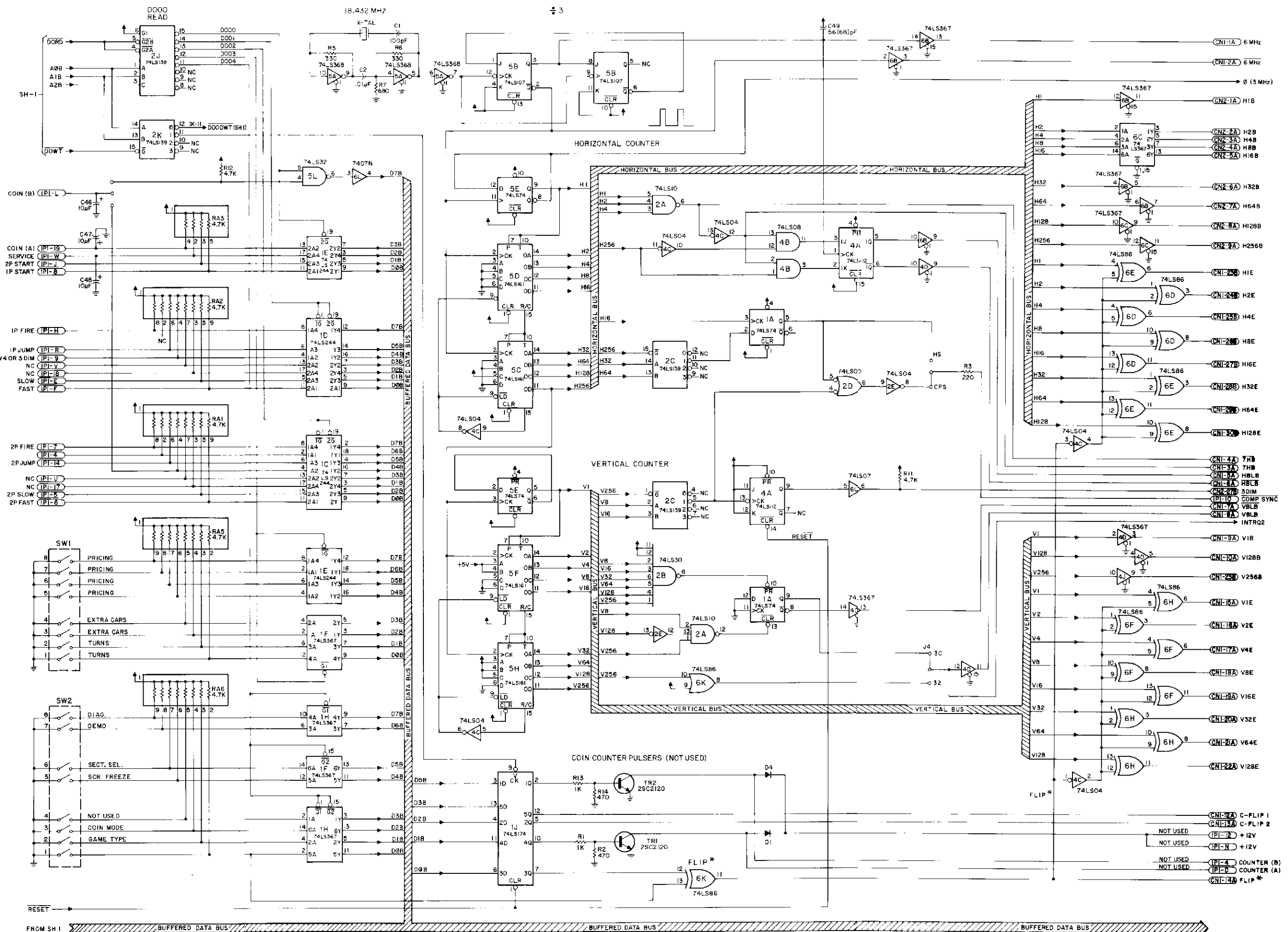
Connector Identification and Block Diagram

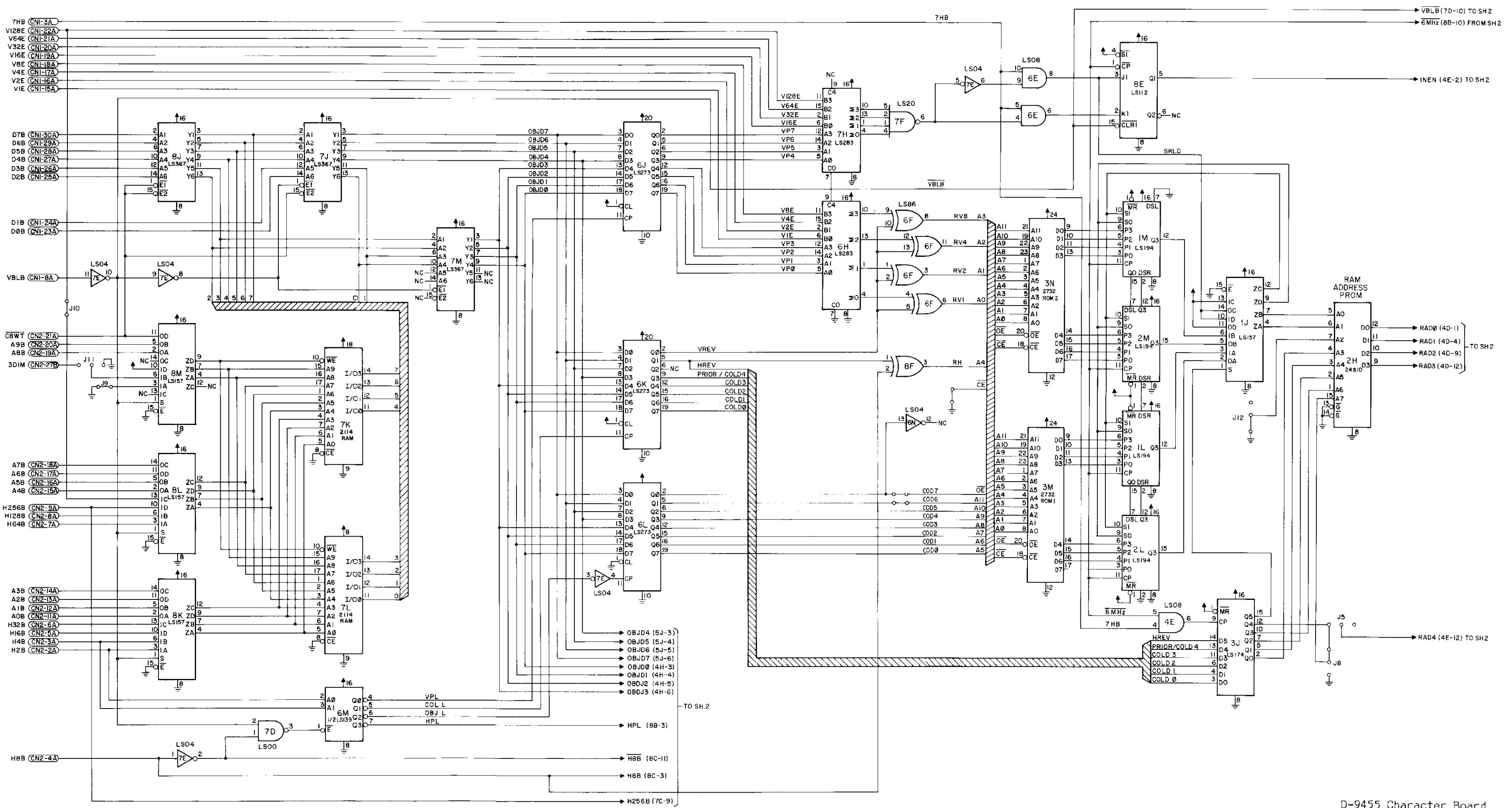


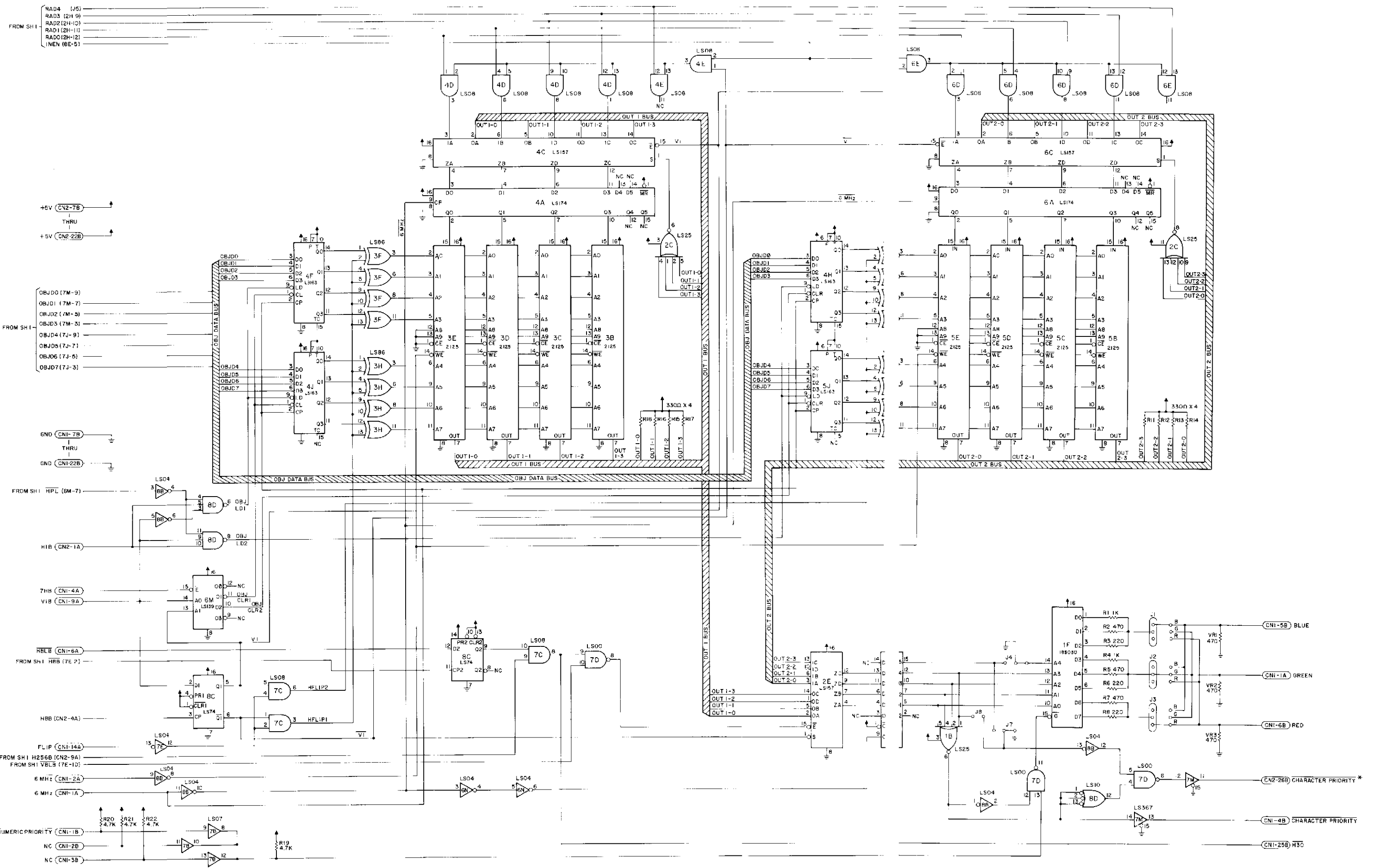


NOTE:  
PREFIX "74" TO ALL "LSXX" CHIPS.

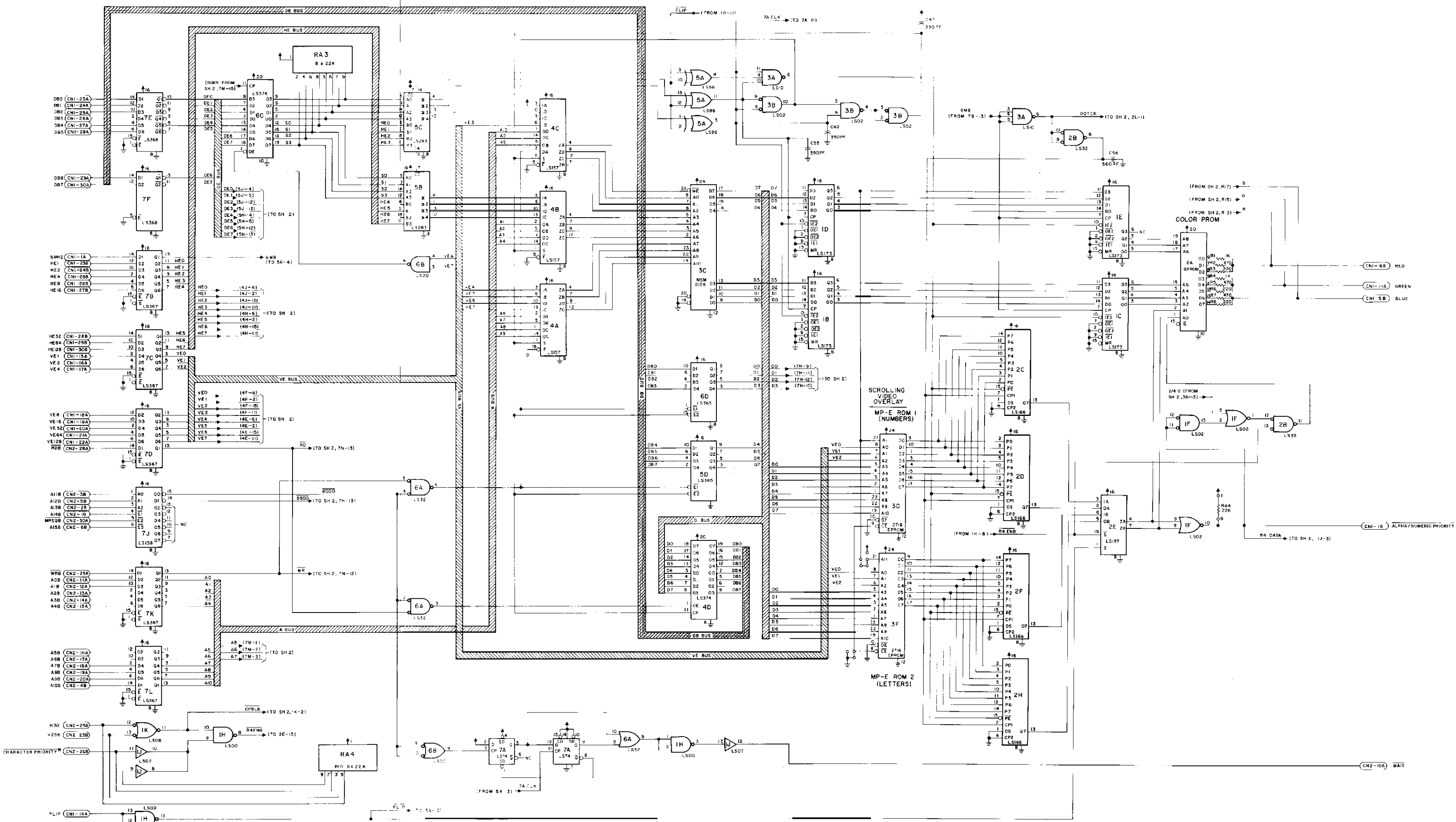








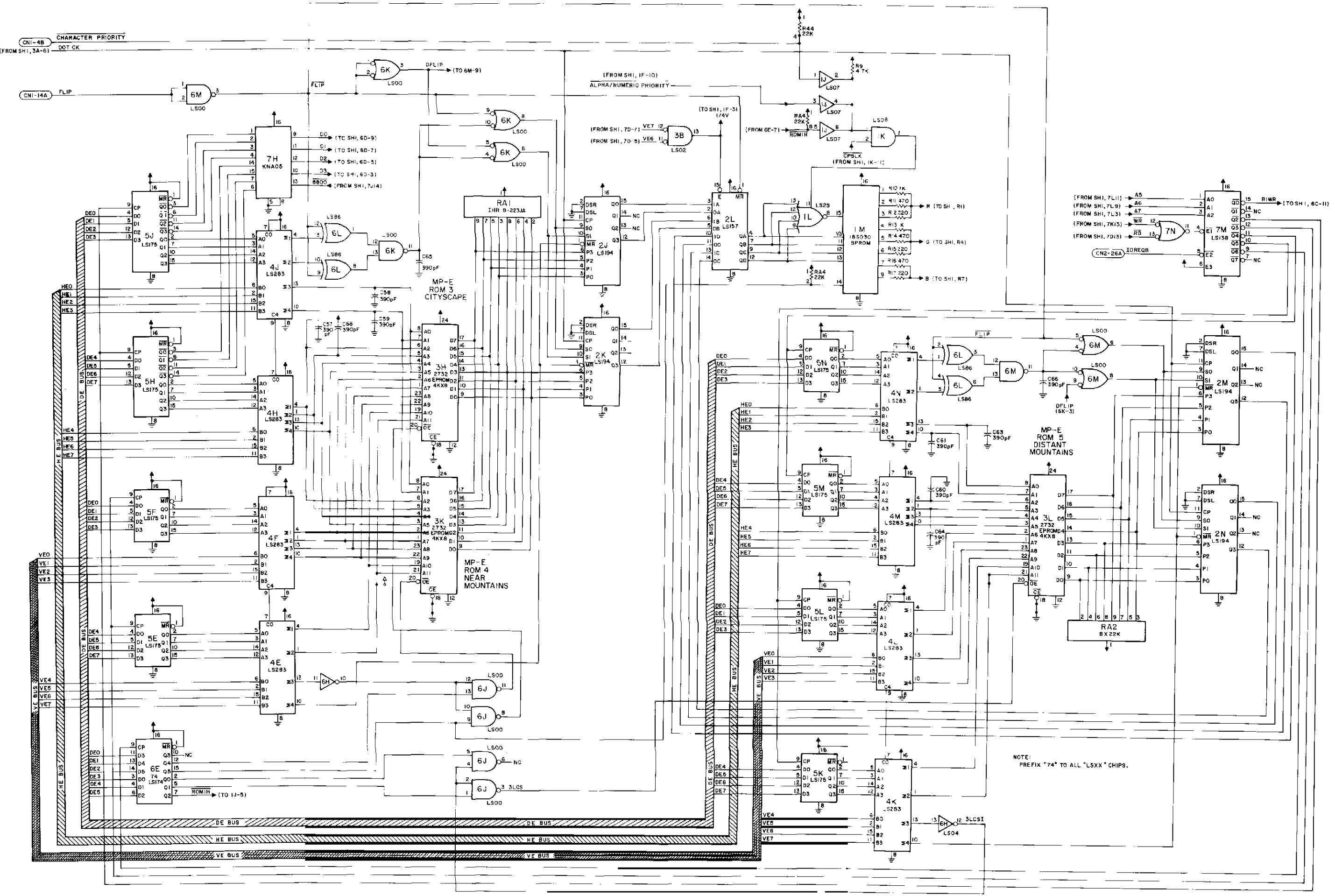
D-9455 Character Board  
(M-52-B-C) Sheet 2 of 2



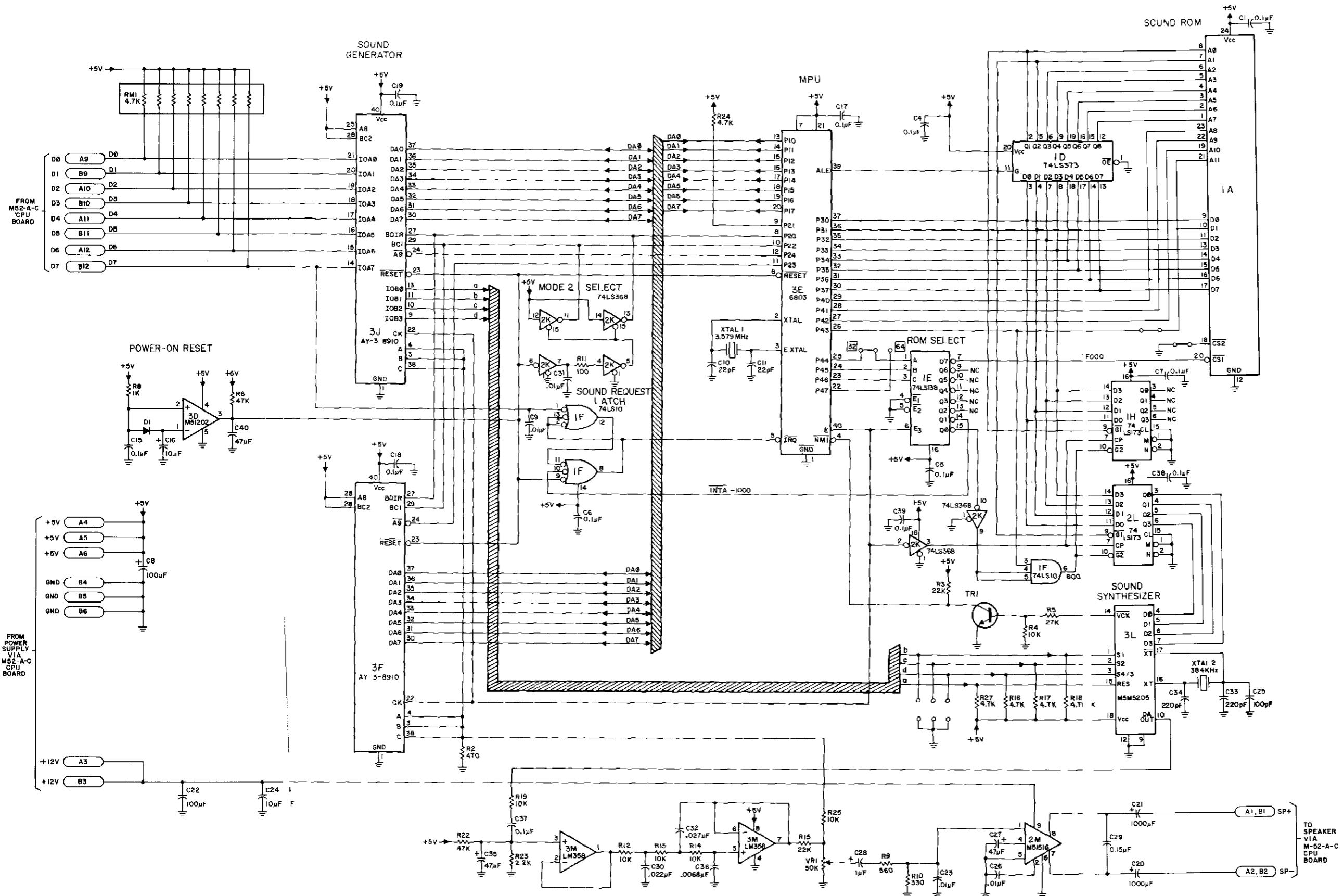
D-9456 Scrolling Video Board  
(M-52-E-C) Sheet 1 of 2

CN1-4B CHARACTER PRIORITY  
(FROM SH1, 3A-6)

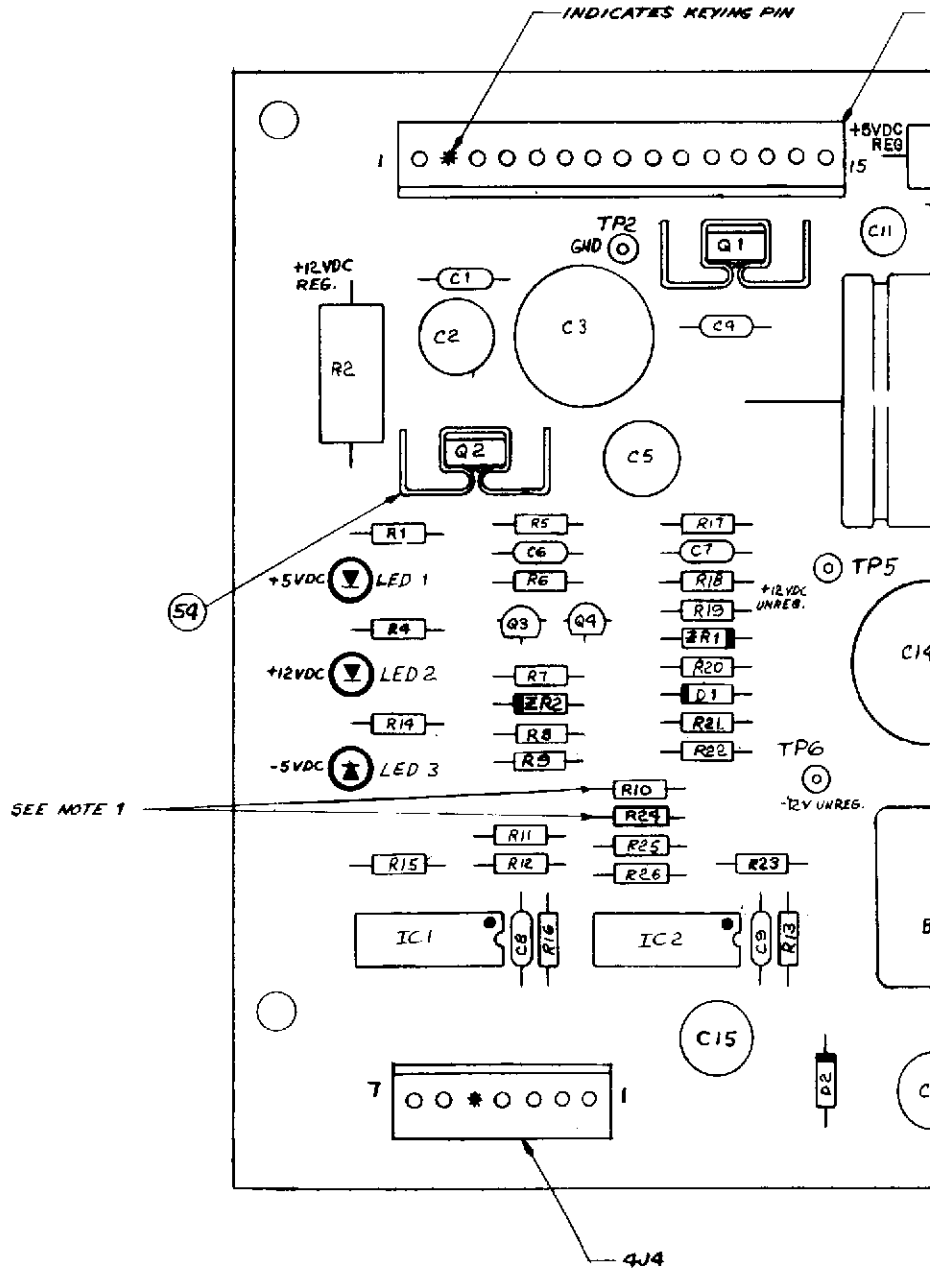
CN1-14A FLIP



NOTE:  
PREFIX "74" TO ALL "LSXX" CHIPS.



C-9457 Sound Board  
(M-52-SOUND-C)

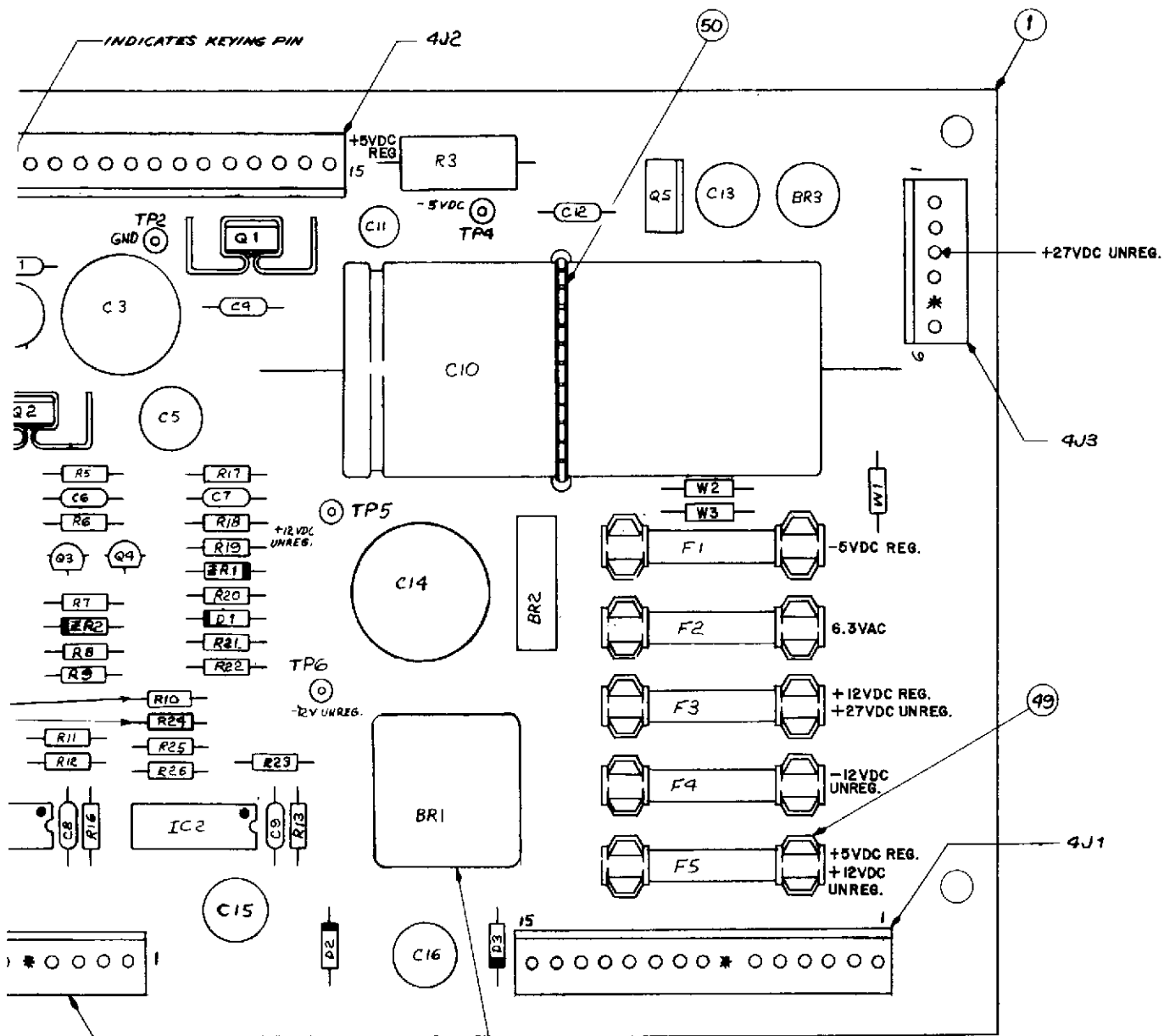


**NOTES:**

1. REMOVE R24 IF +5VDC IS GREATER THEN 5.25 VDC, REMOVE R10 IF +5VDC IS LESS THAN 4.75 VDC.
2. BR1 MUST BE MOUNTED 1/8" ABOVE SURFACE OF BOARD.
3. FOR SCHEMATIC REFER TO 16-8811.

|          |               |
|----------|---------------|
| 55       | 5010-02682-00 |
| 56       | 5010-09324-00 |
| ITEM NO. | PART NO.      |





F +5VDC IS GREATER THEN 5.25 VDC,  
 F +5VDC IS LESS THAN 4.75 VDC.  
 MOUNTED 1/8" ABOVE SURFACE OF  
 REFER TO 16-8811.

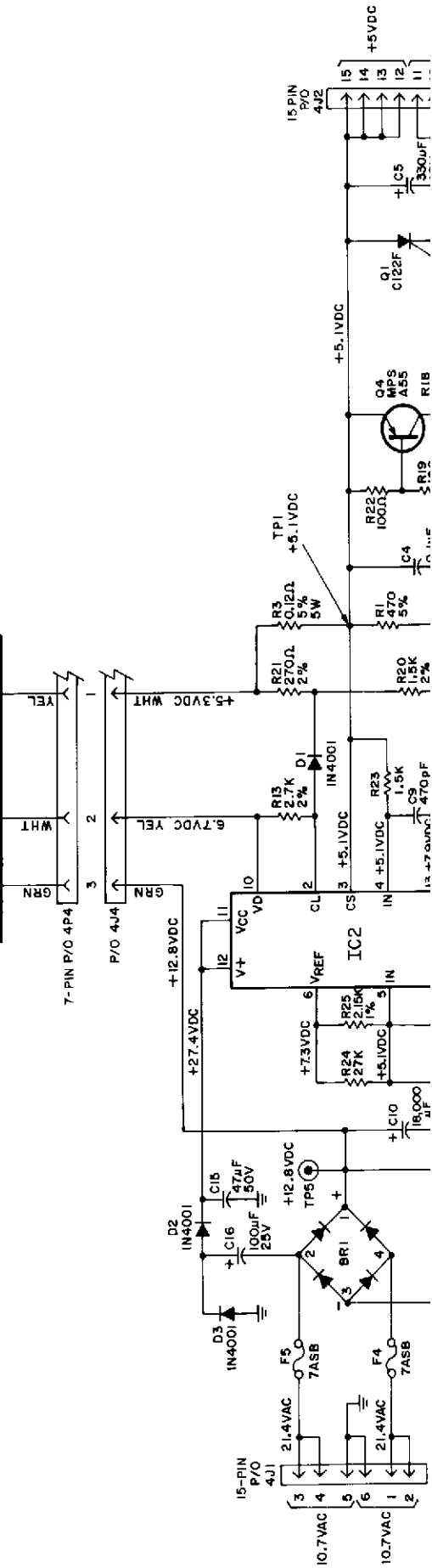
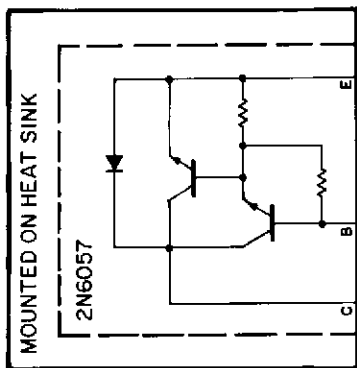
SEE NOTE 2

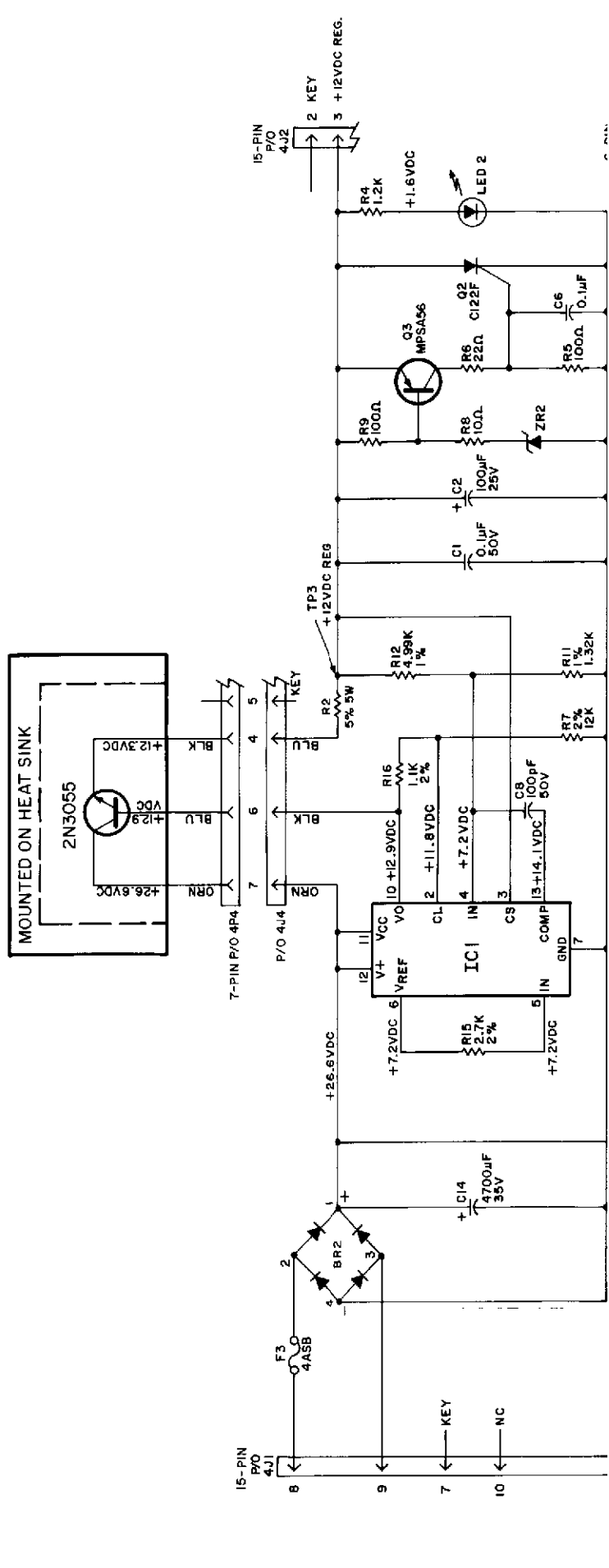
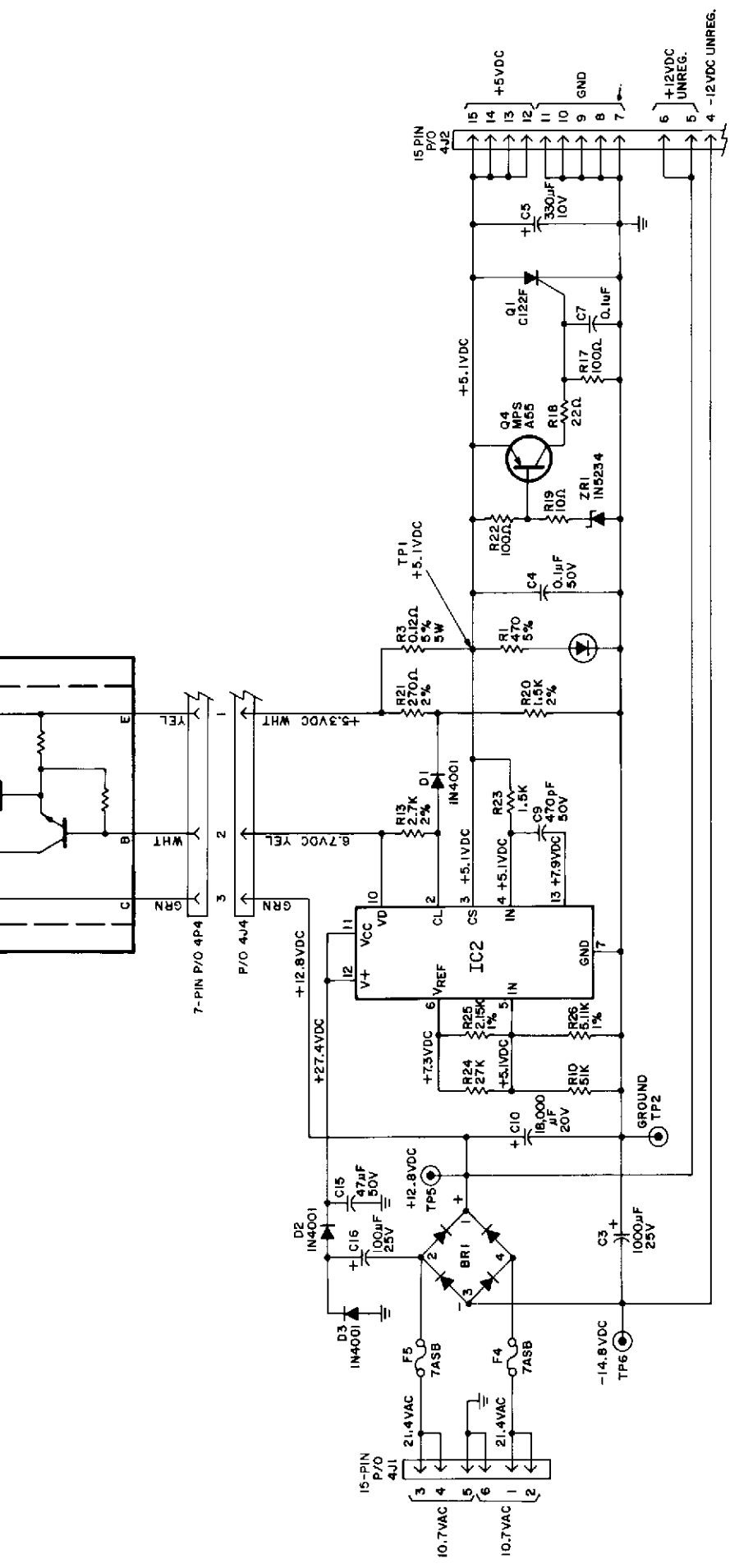
|          |               |                  |                              |          |
|----------|---------------|------------------|------------------------------|----------|
| 45       | 5731-09432-00 | F4 & F5          | FUSE, TA.S.B.                |          |
| 46       | 5731-06314-00 | F3               | FUSE, 4A, S.B., 250V         |          |
| 47       | 5731-06569-00 | F1               | FUSE, 1A, S.B. 250V          |          |
| 48       | 5731-09651-00 | F2               | FUSE, 5A, S.B. 250V          |          |
| 49       | 5732-09178-00 |                  | FUSEHOLDER,                  |          |
| 50       | 03-7520       |                  | TIE WRAP                     |          |
| 51       | 5731-09074-00 | 4J1 & 4J2        | HEADER, 15 PIN 09-65-1051    |          |
| 52       | 5731-09038-00 | 4J3              | HEADER, 6 PIN 09-65-1061     |          |
| 53       | 5731-09497-00 | 4J4              | HEADER, 7 PIN 09-65-1071     |          |
| 54       | 5705-09663-00 |                  | HEAT SINK                    |          |
|          | 5705-09688-00 |                  | HEAT SINK                    |          |
| 55       | 5010-09682-00 | R10              | RESISTOR, C.F. 51K ± 5% 1/4W |          |
| 56       | 5010-09324-00 | R24              | RESISTOR, C.F. 27K ± 5% 1/4W |          |
| ITEM NO. | PART NO.      | PART DESIGNATION | DESCRIPTION                  | REQ'D NO |

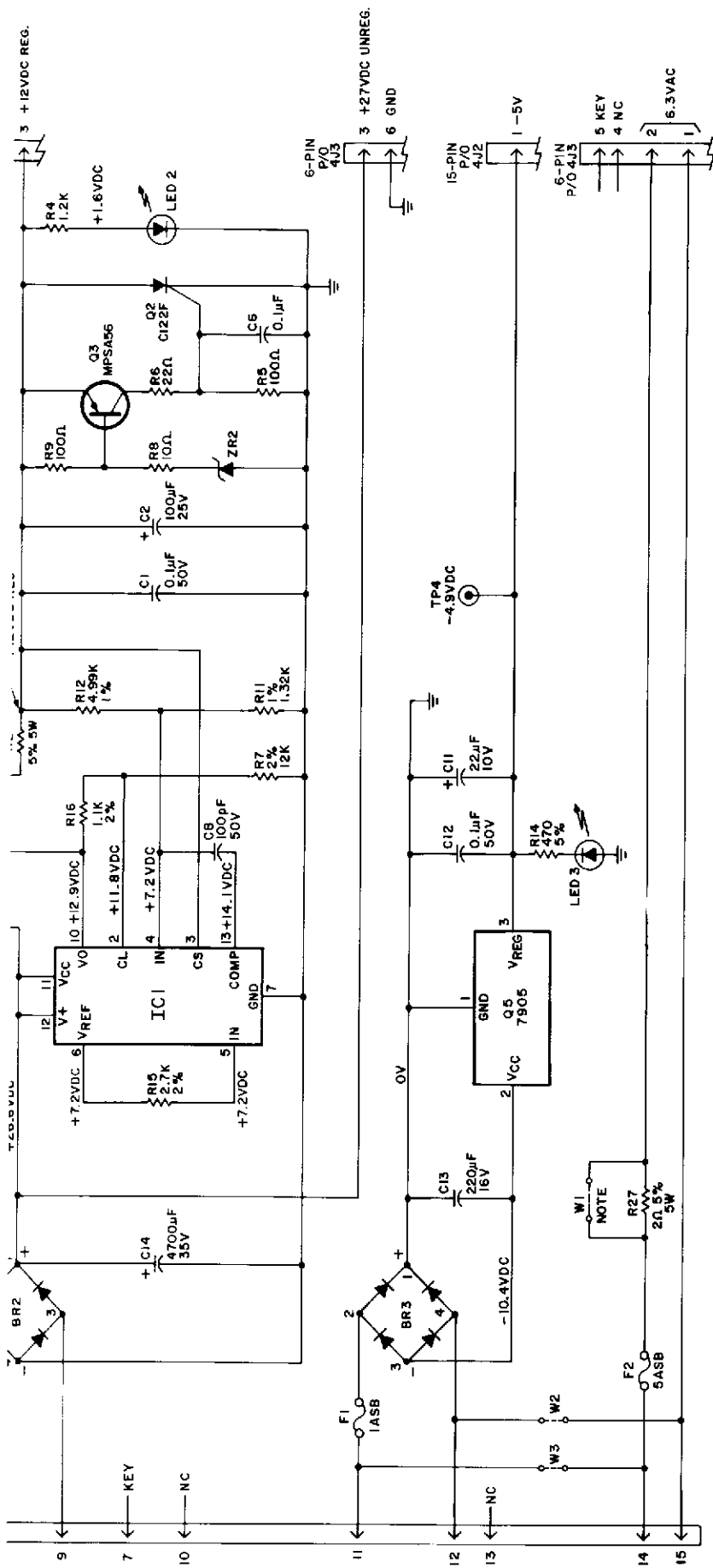
## BILL OF MATERIAL

| ITEM NO. | PART NO.      | PART DESIGNATION | DESCRIPTION                              | REQ'D NO. |
|----------|---------------|------------------|--|-----------|
| 1        | 5773-09679-00 |                  | BARE P.C. BOARD                          | 1         |
| 2        | 5010-09085-00 | R23              | RESISTOR, 1.5K 5%, 1/4W                  | 1         |
| 3        | 5010-09441-00 | R13, R15         | RESISTOR, 2.7K 2%, 1/4W                  | 2         |
| 4        | 5010-09508-00 | R21              | RESISTOR, 270Ω 2%, 1/4W                  | 1         |
| 5        | 5010-09428-00 | R20              | RESISTOR, 1.5K 2%, 1/4W                  | 1         |
| 6        | 5010-09509-00 | R16              | RESISTOR, 1.1K 2%, 1/4W                  | 1         |
| 7        | 5010-09510-00 | R7               | RESISTOR, 12K 2%, 1/4W                   | 1         |
| 8        | 5010-09314-00 | R4               | RESISTOR, 1.2K 5%, 1/4W                  | 1         |
| 9        | 5010-09416-00 | R1, R14          | RESISTOR, 470Ω 5%, 1/4W                  | 2         |
| 10       | 5013-09542-00 | R11              | RESISTOR, 7.32K 1%, 1/4W                 | 1         |
| 11       | 5013-09427-00 | R12              | RESISTOR, 9.99K 1%, 1/4W                 | 1         |
| 12       | 5013-09426-00 | R25              | RESISTOR, 2.15K 1%, 1/4W                 | 1         |
| 13       | 5012-09429-00 | R3               | RESISTOR, .12Ω 5%, 5W                    | 1         |
| 14       | 5012-09512-00 | R2               | RESISTOR, .27Ω 5%, 5W                    | 1         |
| 15       |               |                  |  |           |
| 16       | 5013-09665-00 | R26              | RESISTOR, 5.11K 1%, 1/4W                 | 1         |
| 17       | 5010-09434-00 | R6, R18          | RESISTOR, CR 22Ω ±5%, 1/4W               | 2         |
| 18       | 5010-09036-00 | R5, R9, R17, R22 | RESISTOR, C.F. 100Ω ±5%, 1/4W            | 4         |
| 19       | 5010-09039-00 | R8, R19          | RESISTOR, C.F. 10Ω ±5%, 1/4W             | 2         |
| 20       | 5010-09534-00 | W1               | RESISTOR, 0Ω                             | 1         |
| 21       | 5043-08986-00 | C6, C7           | CAPACITOR, 0.1μF CERAMIC +80% -20% 50V   | 2         |
| 22       | 5040-09421-00 | C2, C16          | CAPACITOR, 100MFD, 25V RADIAL +50% -10%  | 2         |
| 23       | 5040-09422-00 | C15              | CAPACITOR, 47MFD, 50V RADIAL +50% -10%   | 1         |
| 24       | 5040-09420-00 | C3               | CAPACITOR, 1000MFD, 25V RADIAL +75% -10% | 1         |
| 25       | 5040-09419-00 | C10              | CAPACITOR, 18,000MFD 20V AXIAL +75% -10% | 1         |
| 26       | 5040-09423-00 | C5               | CAPACITOR, 330MFD 10V RADIAL +50% -10%   | 1         |
| 27       | 5040-09504-00 | C14              | CAPACITOR 4700MFD 35V RADIAL +50% -10%   | 1         |
| 28       | 5043-09446-00 | C1, C4 & C12     | CAPACITOR .1MFD, 50V AXIAL 25V -20 +80%  | 3         |
| 29       | 5043-08065-00 | C9               | CAPACITOR 470PFD 50V AXIAL XTR ±10%      | 1         |
| 30       | 5043-09492-00 | C8               | CAPACITOR 100PFD 50V AXIAL 52L ±5%       | 1         |
| 31       | 5040-09506-00 | C13              | CAPACITOR 220MFD 16V RADIAL +50% -10%    | 1         |
| 32       | 5040-09493-00 | C11              | CAPACITOR 22MFD 10V RADIAL +50% -10%     | 1         |
| 33       | 5070-06258-00 | D1, D2 & D3      | DIODE, 1N4001                            | 3         |
| 34       | 5075-09406-00 | ZR1              | ZENER, 1N5234 ±5% (6.2V)                 | 1         |
| 35       | 5075-09662-00 | ZR2              | ZENER 1N5244 ±5% (14V)                   | 1         |
| 36       | 5190-09430-00 | Q3, Q4           | TRANSISTOR, MPS A55                      | 2         |
| 37       | 5130-09661-00 | Q1, Q2           | SCR 8 AMP, 100V                          | 2         |
| 38       | 5250-09515-00 | Q5               | VOLTAGE REGULATOR, 7905                  | 1         |
| 39       | 5440-09424-00 | IC1, IC2         | VOLTAGE REGULATOR, 723                   | 2         |
| 40       | 5700-09400-00 | BR1              | BRIDGE RECTIFIER, 35 AMP, 200V           | 1         |
| 41       | 5100-09513-00 | BR2              | BRIDGE RECTIFIER, 4.0A, 50V              | 1         |
| 42       | 5100-09514-00 | BR3              | BRIDGE RECTIFIER, 1.0A, 50V              | 1         |
| 43       | 5671-09018-00 | LED1, LED2, LED3 | LED, RED                                 | 3         |
| 44       | 5824-09298-00 | TP1 - TP6        | TERMINAL # 1502-1 (TEST POINT)           | 4         |

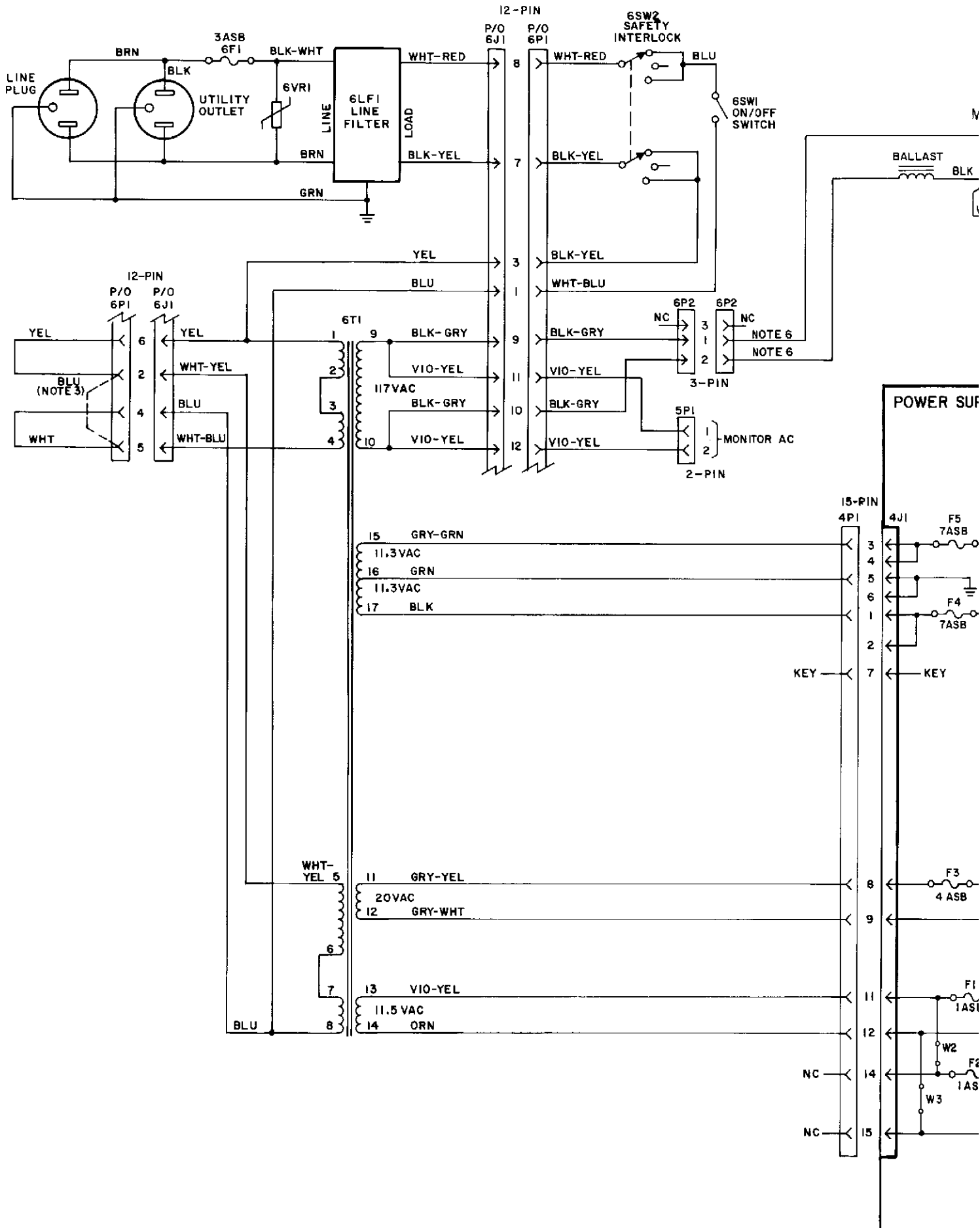
(A)





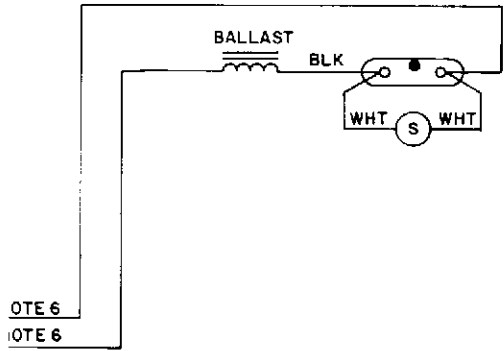


D-8784-3007 Power Supply Board Schematic Diagram



OFF  
CH

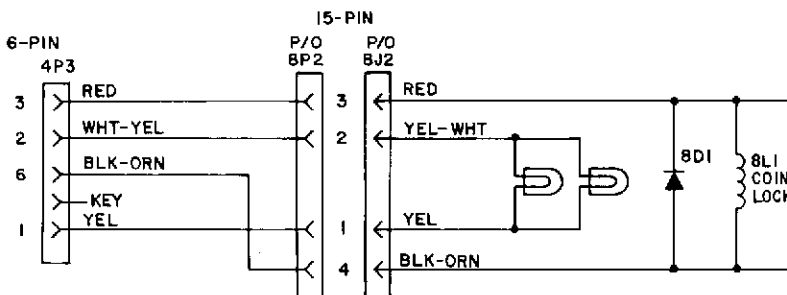
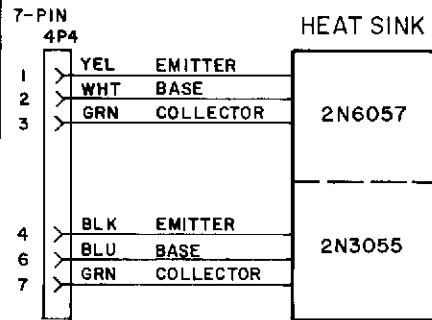
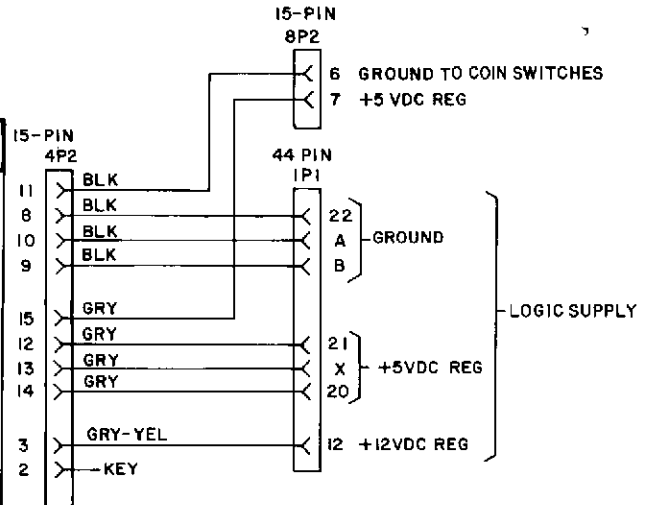
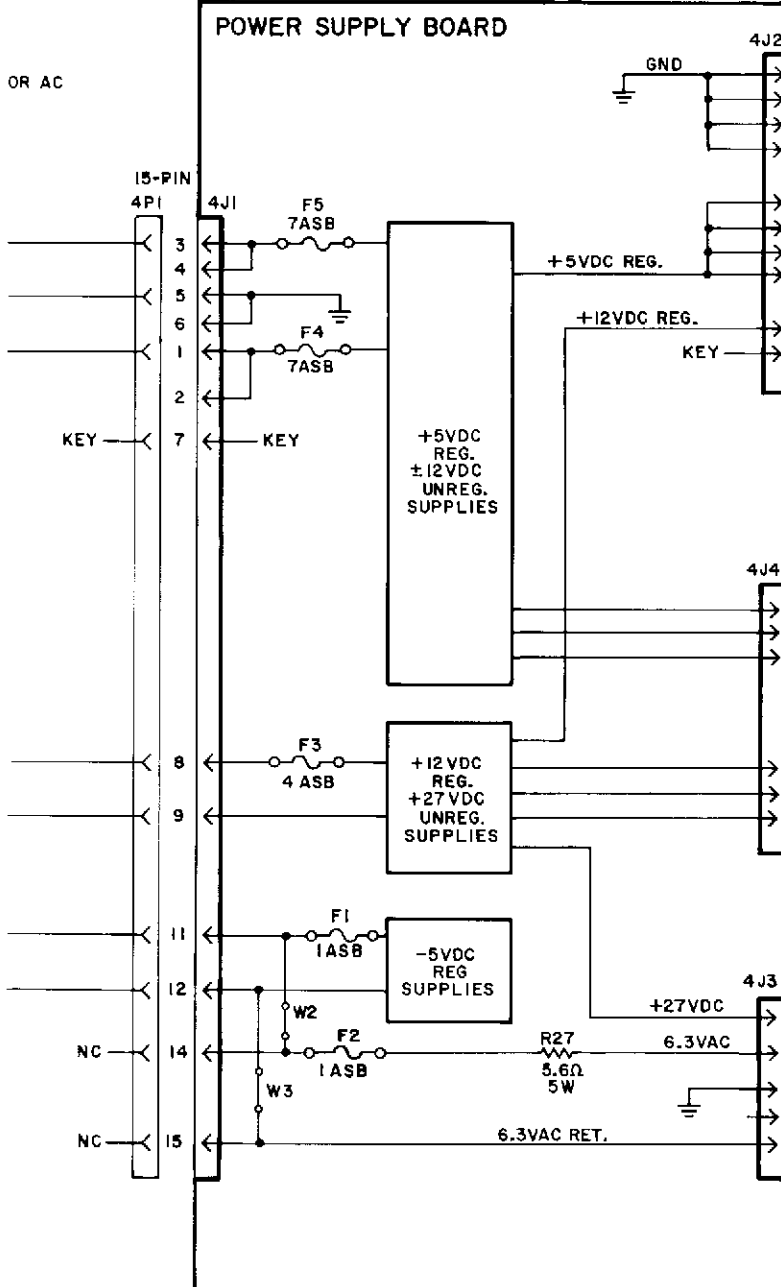
MARQUEE LAMP

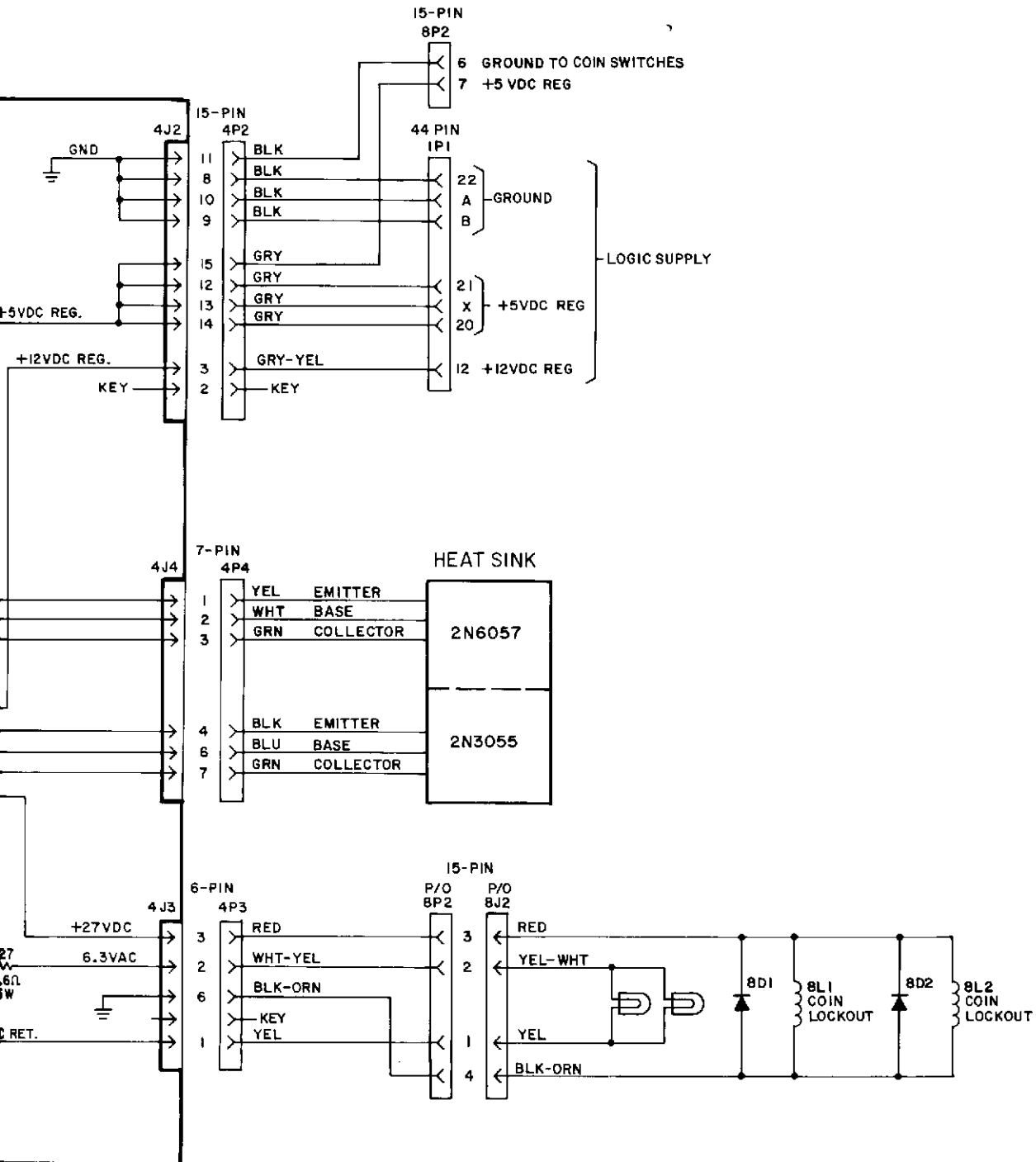


NOTE 6  
NOTE 6

OR AC

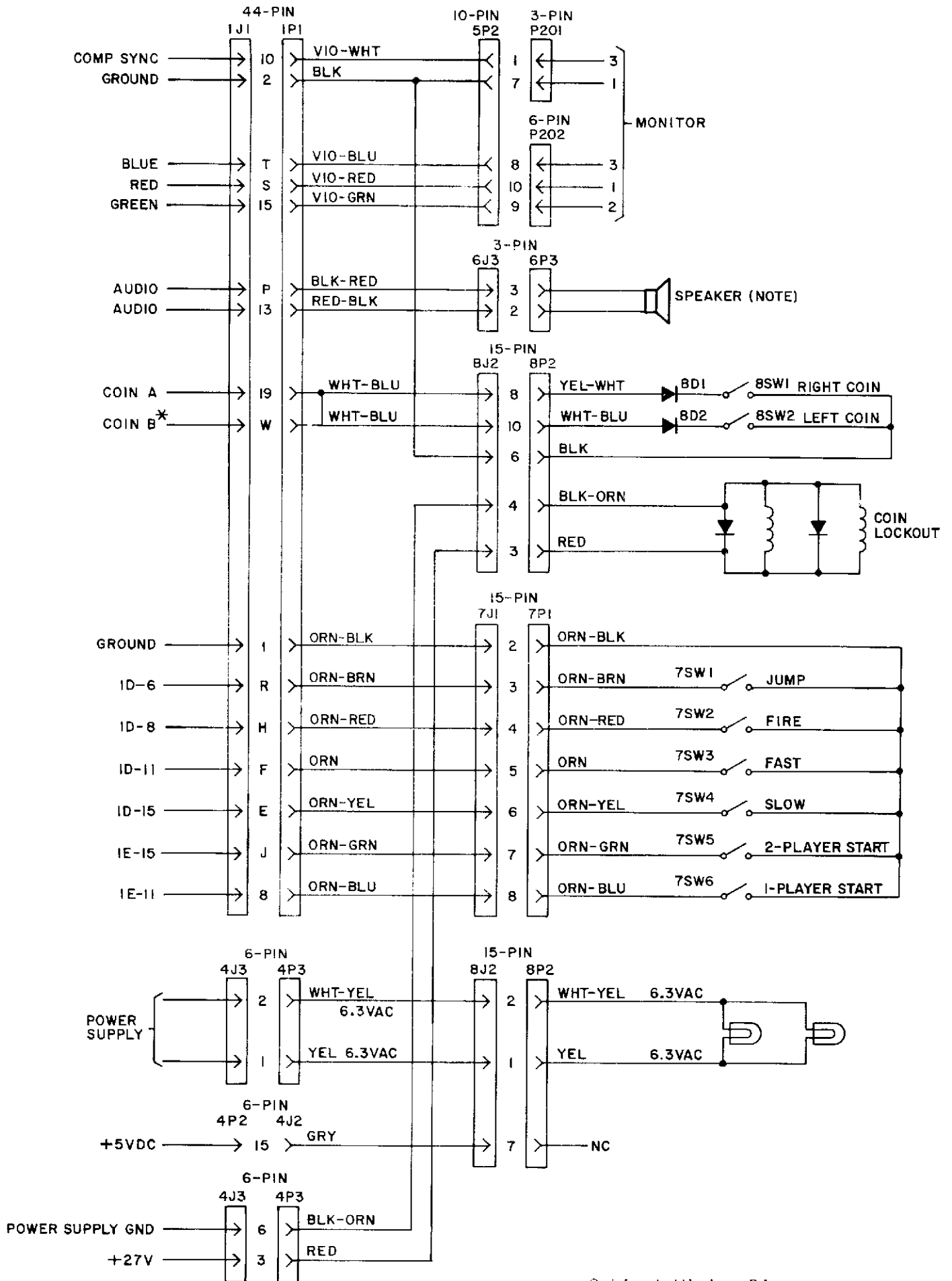
### POWER SUPPLY BOARD





Power Wiring Diagram





Cabinet Wiring Diagram