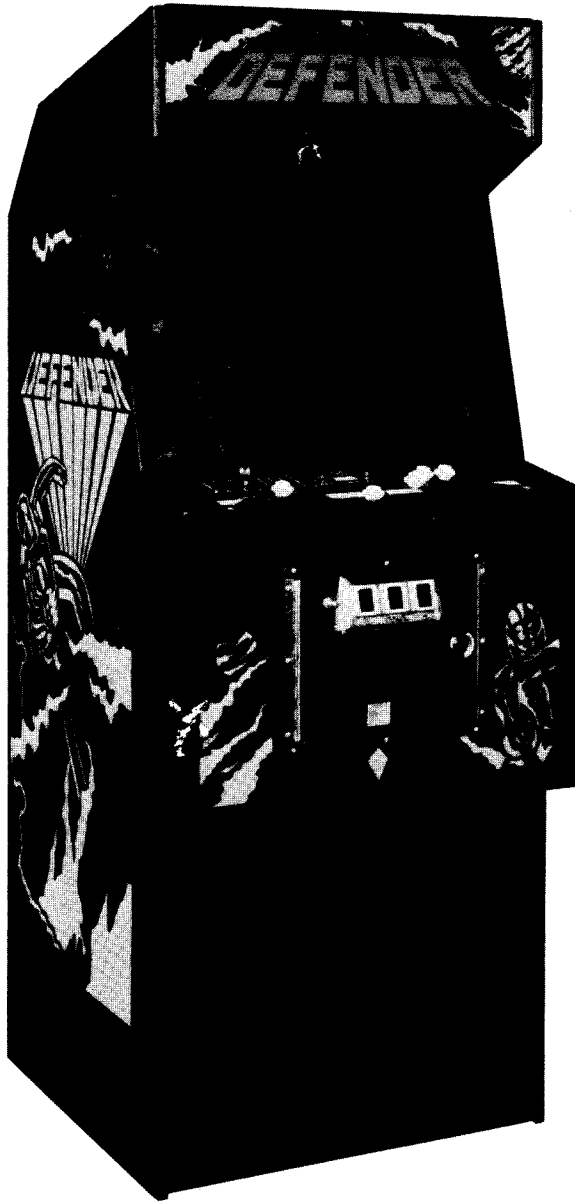


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SPECIAL NOTES

CPU/Video Board

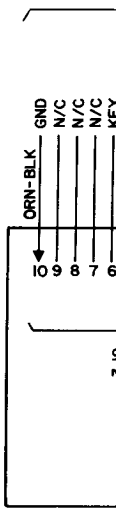
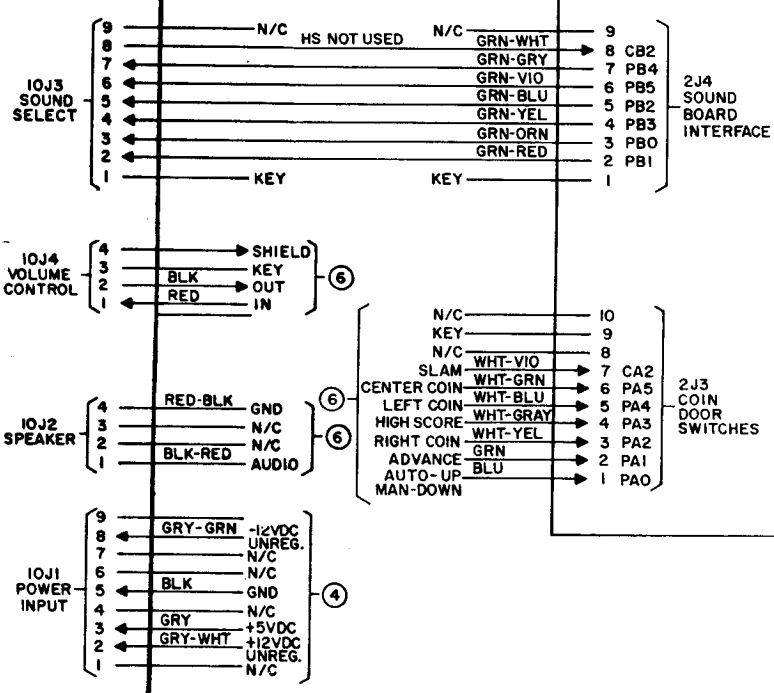
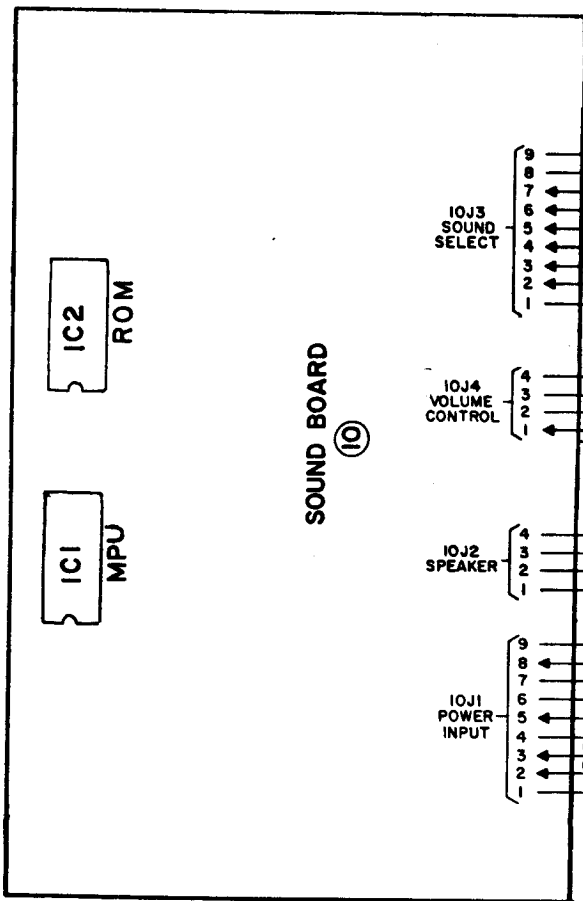
Requires Decoder ROM 2 at location 3K and Decoder ROM 3 at location 3E.

Interface Board

Jumper W1 must be installed. If red-labeled ROMS are not used, W2 must be removed.

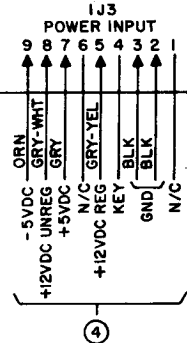
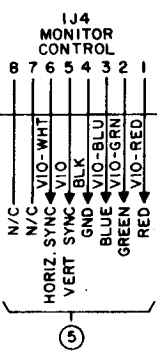
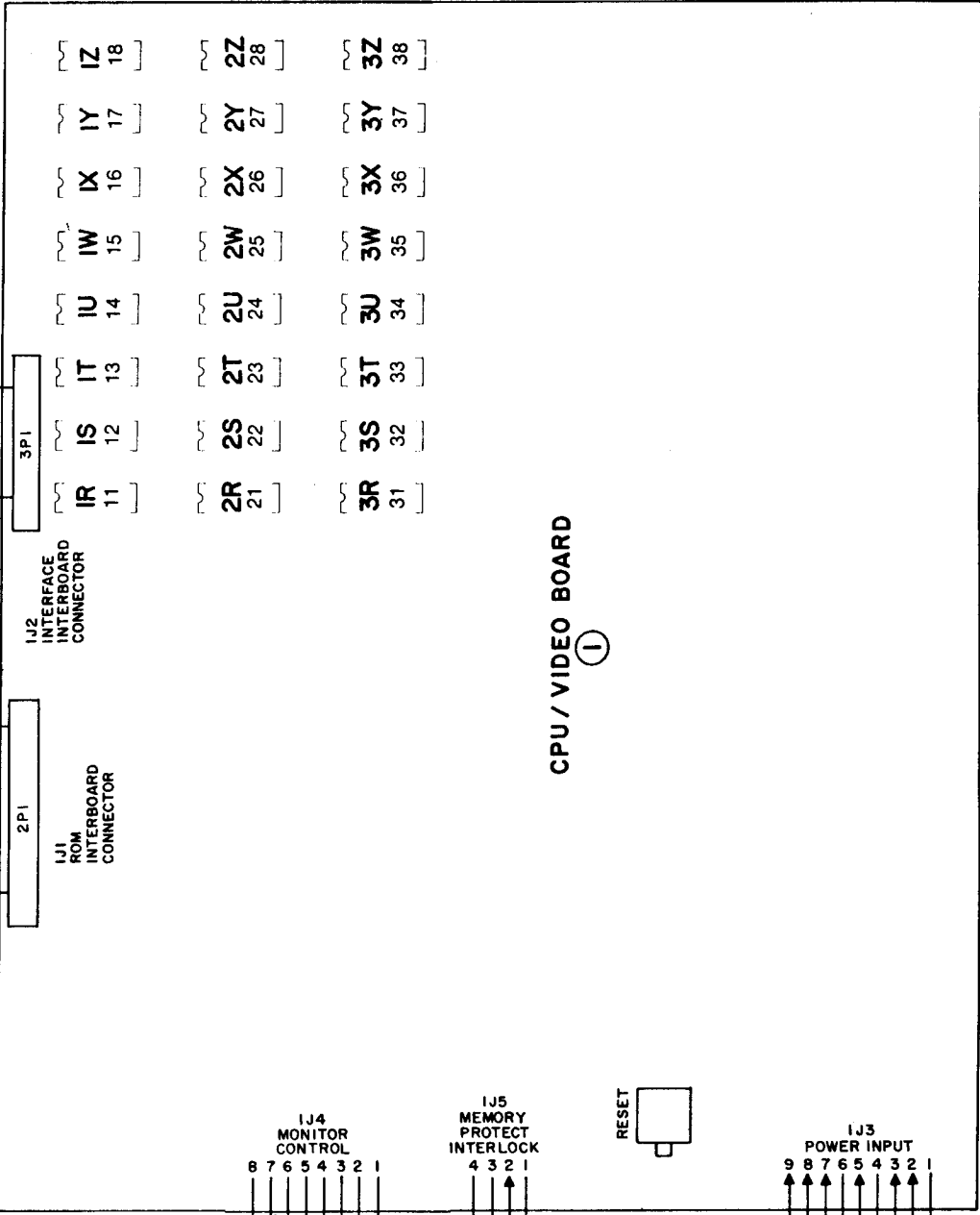
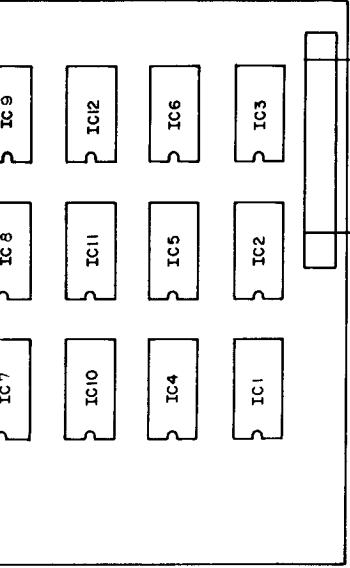
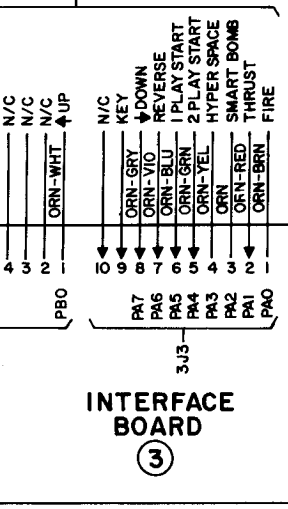
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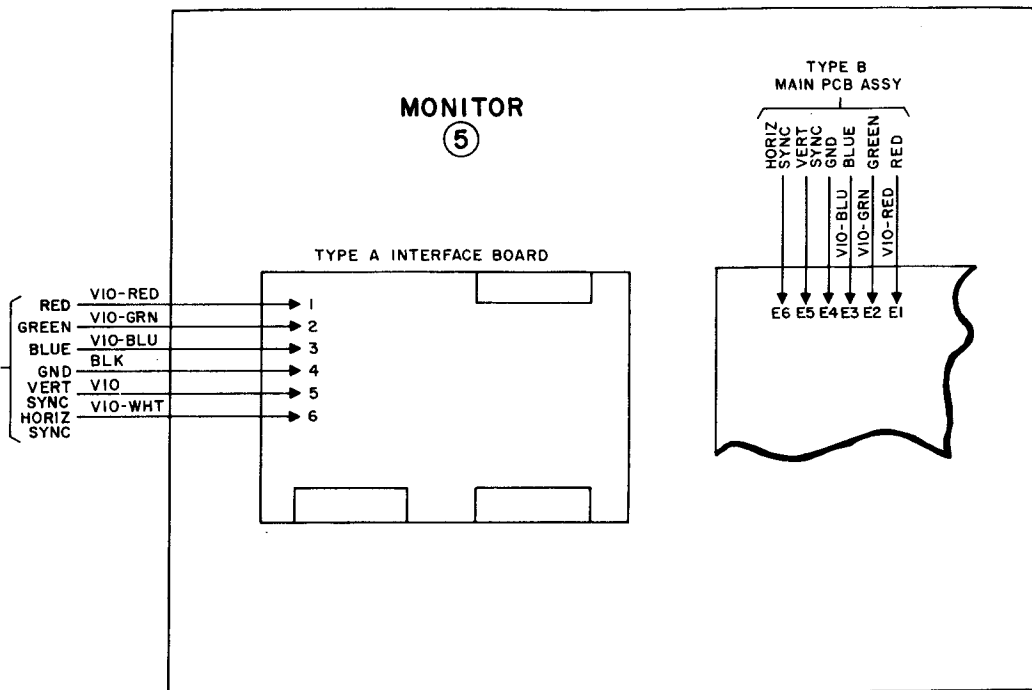
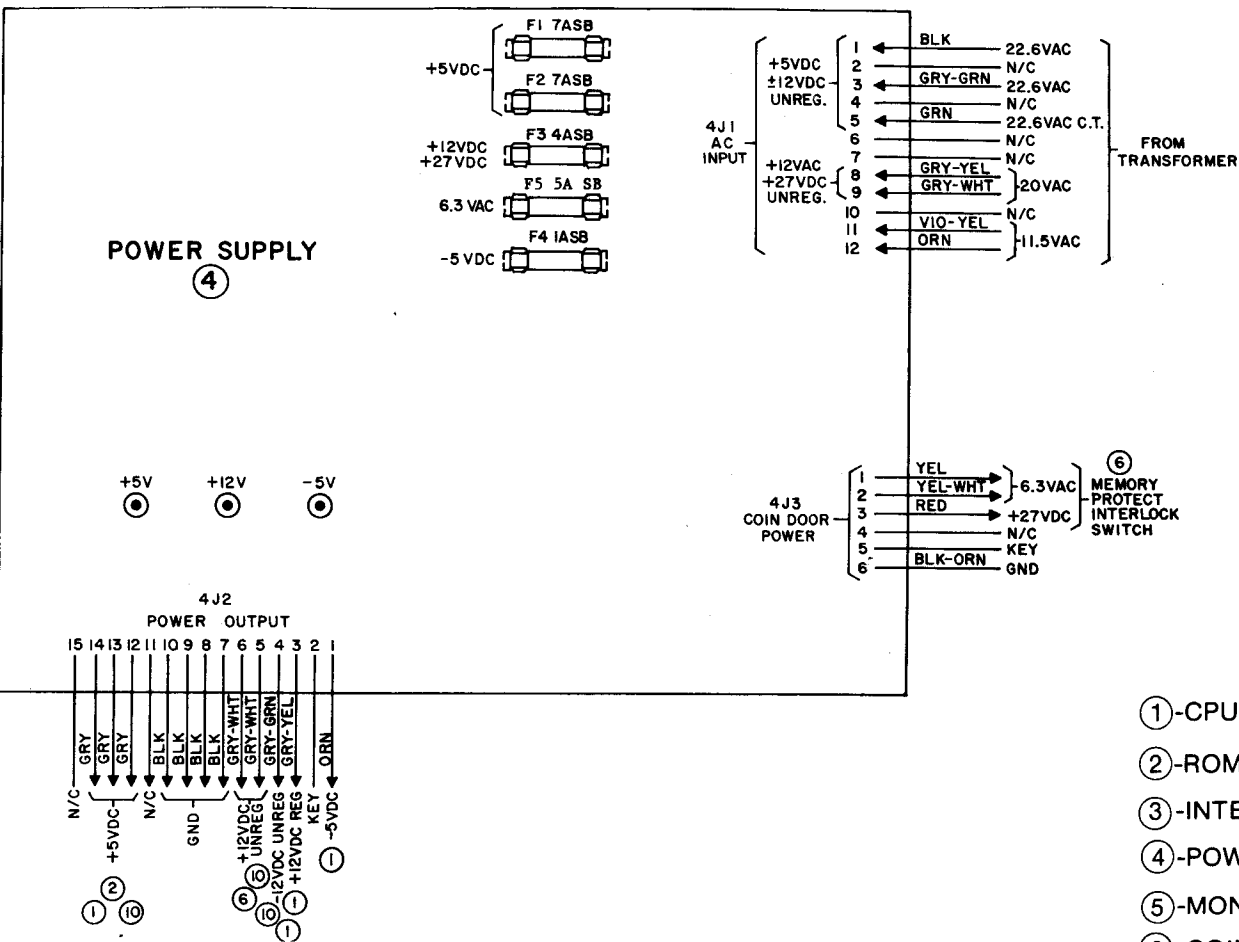
ROM BOARD (2)

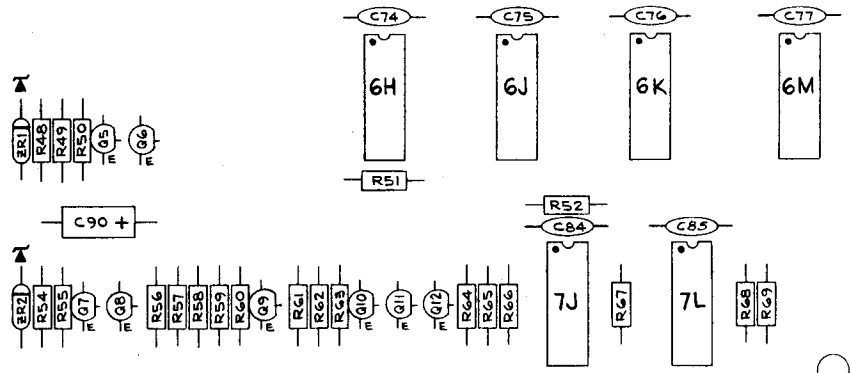
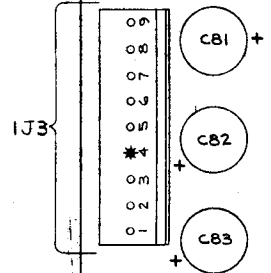
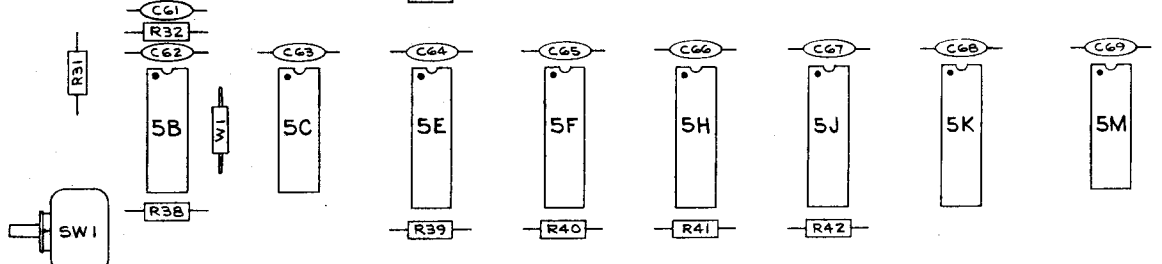
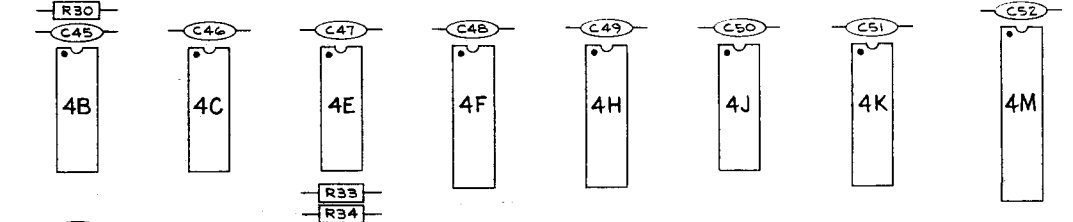
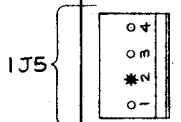
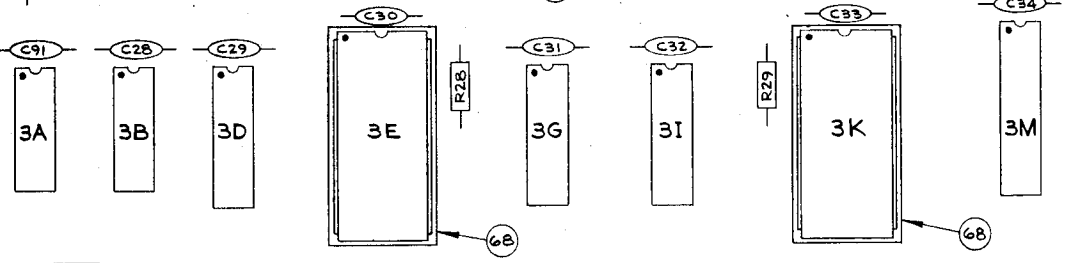
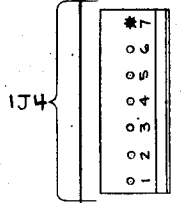
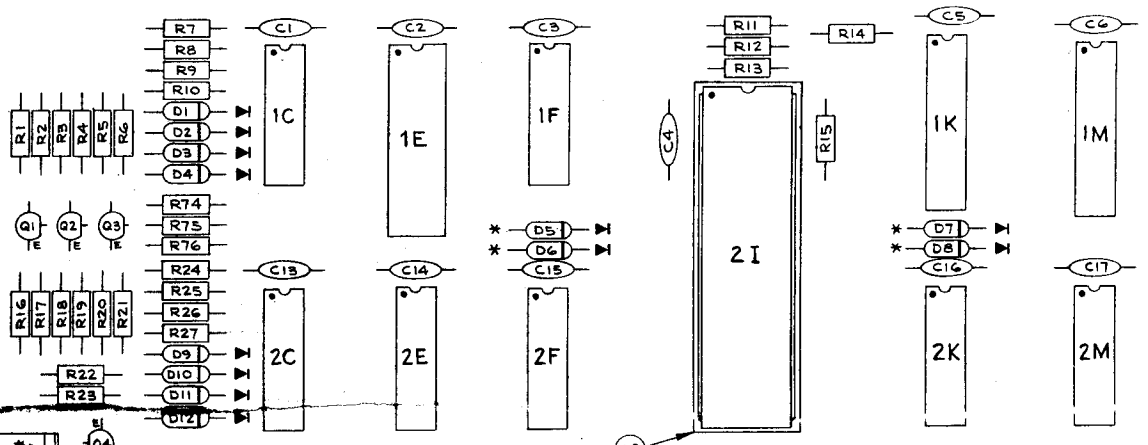
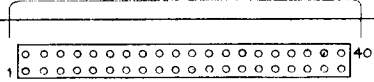
7
PLAYER PANEL

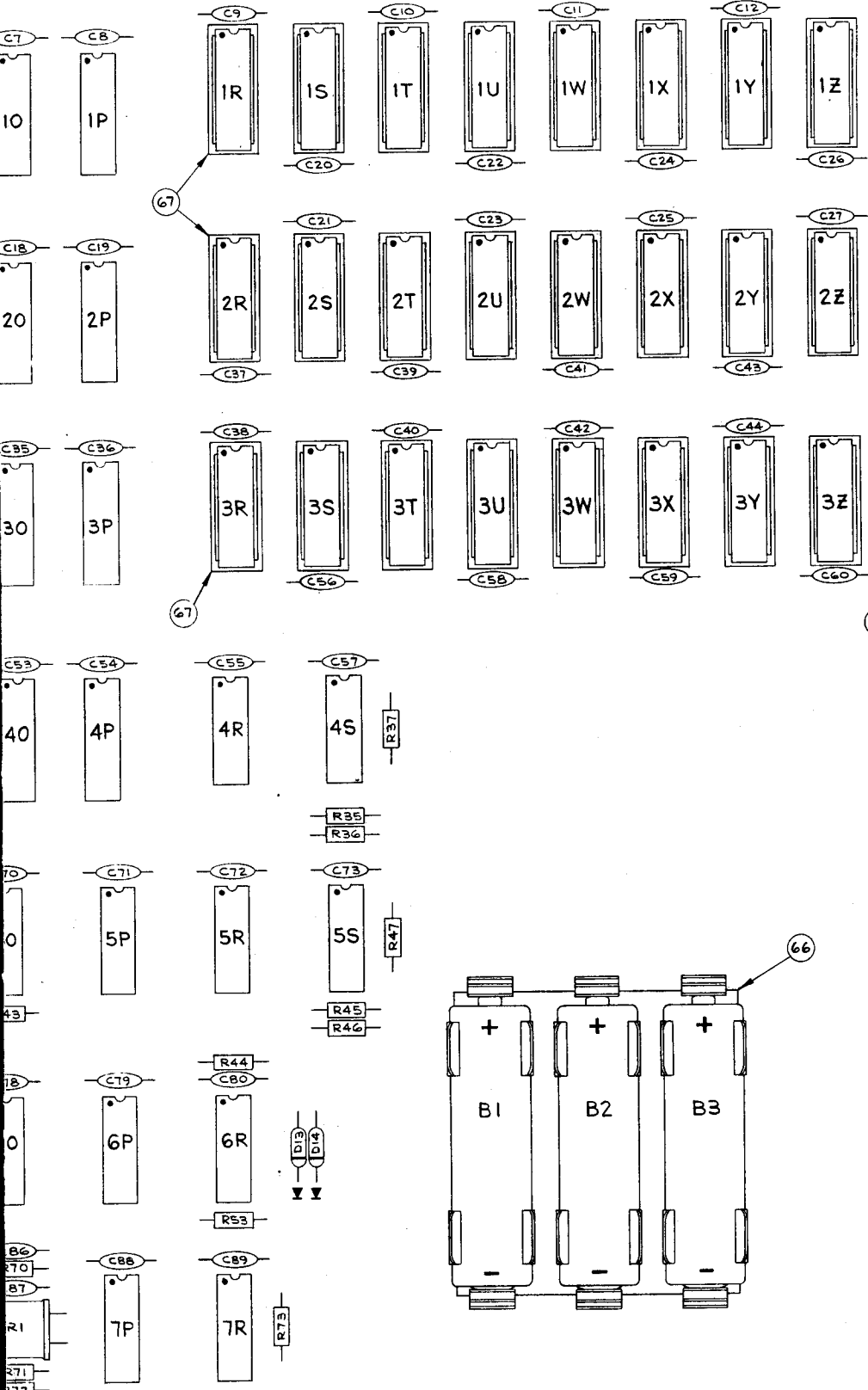
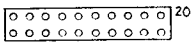


1
CPU / VIDEO BOARD

SIDE PANEL







Q

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2

3

4

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6

7

O P Q R S T U V W X Y Z

NOTES:

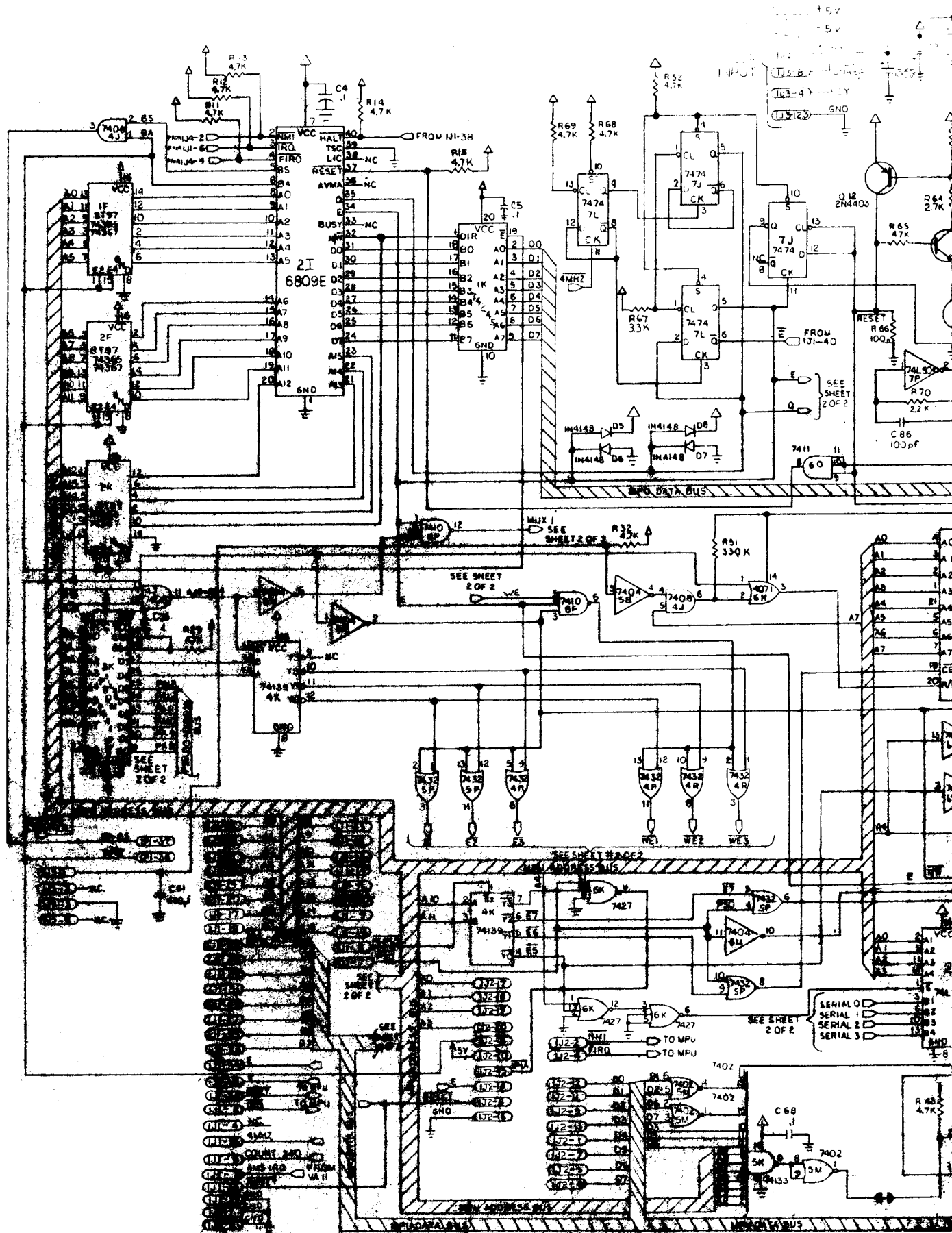
- 411C: 1R, 1S, 1T, 1U, 1V, 1X, 1Y, 1Z, 2R, 2S, 2T, 2U, 2V, 2X, 2Y, 2Z, 3R, 3S, 3T, 3U, 3V, 3X, 3Y, 3Z
- 4.7K RESISTOR:
R11, R12, R13, R14, R15, R25, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R40, R41, R42, R43, R45, R46, R47, R52, R53, R60, R69
- 1 MFD. CAPACITOR:
C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C84, C85, C88, C89, C91

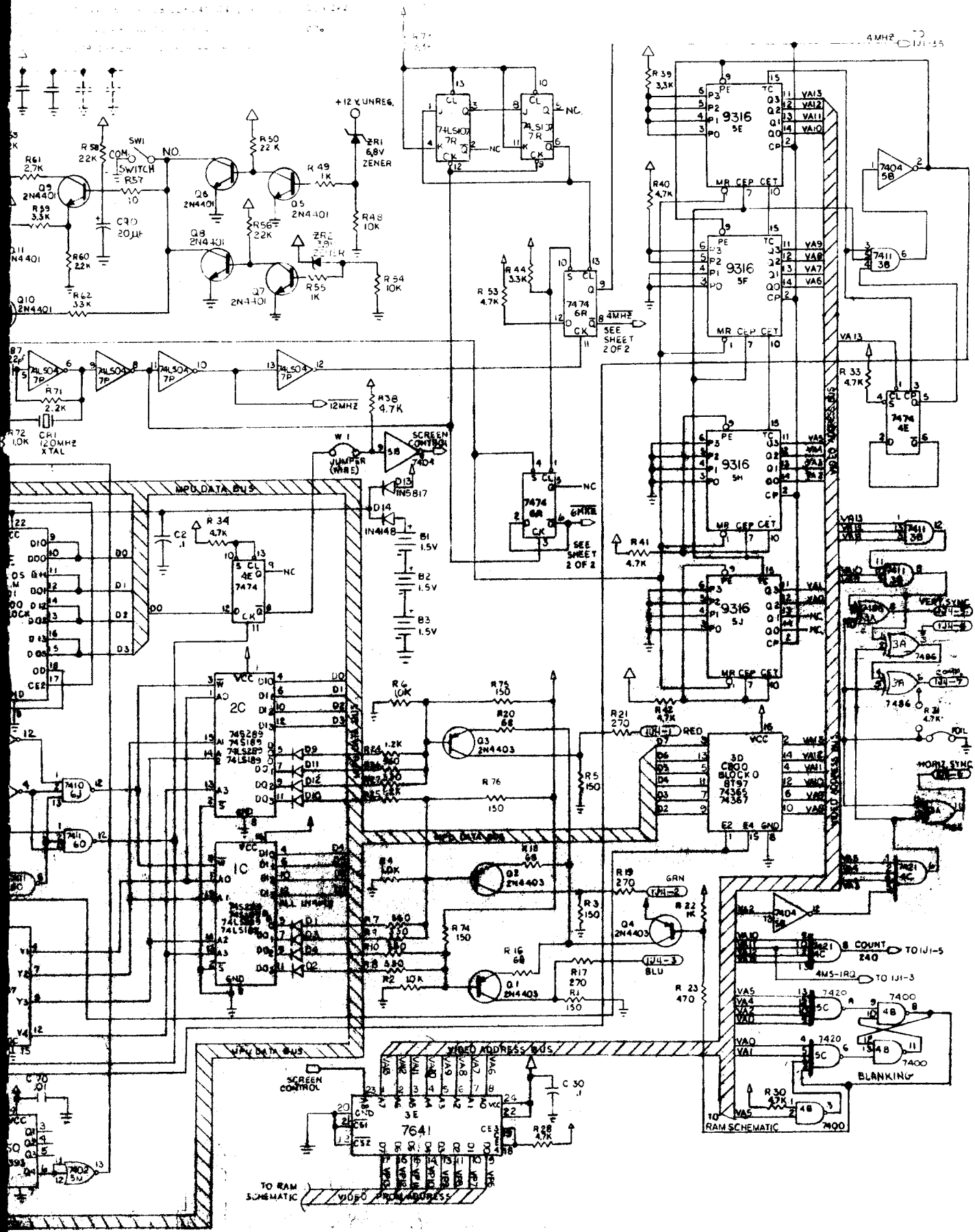
ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQD. NO.
76	5010-09508-00	R17, R19, R21	RESISTOR, C.F., 270 OHM 2% 1/4 W.	3
77	5010-09634-00	W1	RESISTOR, C.F., 0 OHM	1

- IN4148 DIODE:
D1, D2, D3, D4, D5, D6, D7, D8, D9, D10, D11, D12, D14
- * THESE COMPONENTS ARE NOT USED IN THIS GAME - DEFENDER.

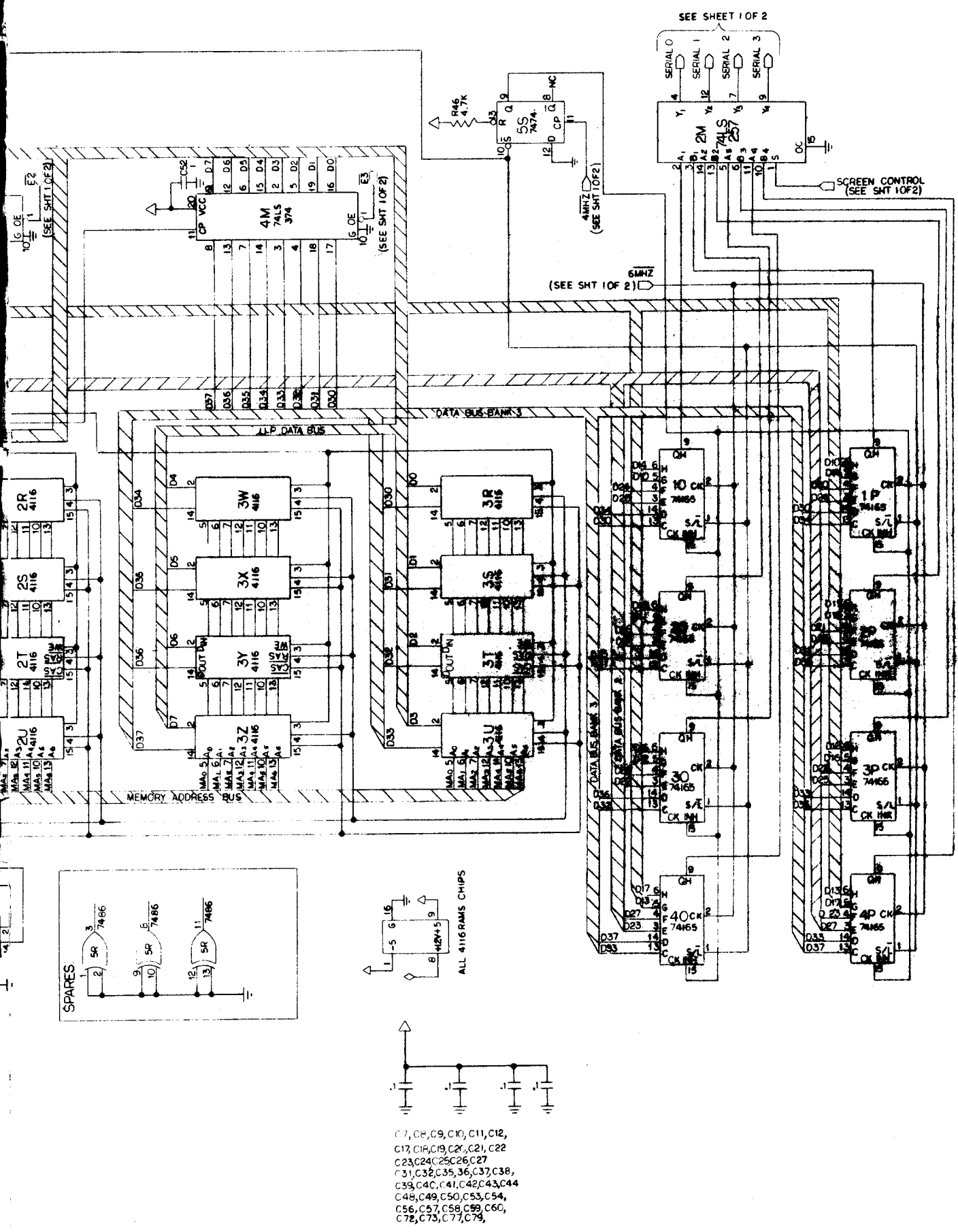
BILL OF MATERIAL

ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQD. NO.
1	5170-09618-00	—	BARE P.C. BOARD	1
2	5280-09073-00	4B	7400 QUAD 2-INPUT NAND	1
3	5280-08948-00	5M	7402 QUAD 2-INPUT NOR	1
4	5281-09215-00	7P	741304 HEX. INVERTER	1
5	5280-09015-00	58, 6M	7404 HEX INVERTER	2
6	5280-09475-00	4J	7408 QUAD AND	1
7	5280-09011-00	6J, 6P	7410 TRIPLE 3-INPUT NAND	2
8	5280-09475-00	58, 60	7408 TRIPLE 3-INPUT AND	2
9	5280-09530-00	5C	7420 DUAL 4-INPUT NAND	1
10	5280-09476-00	4C	7421 DUAL 4-INPUT AND	1
11	5280-09477-00	4R, 5P	7432 QUAD 2-INPUT OR	2
12	5280-09478-00	4E, 4R, 1J, 7L	7474 DUAL D-TYPE FLIP-FLOP	4
13	5280-09479-00	3A, 5R	7486 QUAD 2-INPUT EX-OR	2
14	5281-09480-00	7R	74LS107 DUAL JK FLIP-FLOP	1
15	5281-09532-00	5K	74LS133 13-INPUT NAND	1
16	5280-09481-00	4K	74LS159 DUAL 2-to-4 LINE DECODER	1
17	5280-09482-00	3G, 3I, 4F, 4H	74LS155 DUAL 4 to 1 DATA INVERT	4
18	5280-09482-00	10, 20, 30, 40, 1P, 2P, 3P, 4P	74LS165 8-BIT SHIFT REGISTER	8
19	5281-09483-00	1C, 2C	74LS189 OF 74LS189 OF 74LS289 16x4 RAM	2
20	5281-09508-00	1K	74LS245 OCTAL BUS TRANSCEIVER	1
21	5281-09485-00	2E, 2M	74LS257 QUAD DATA MULPLX.	2
22	5370-08989-00	1F, 2F	8T97 HEX. TS BUFFER	4
	5281-09385-00	2K, 3D	74LS367 HEX BUS DRIVER	2
23	5281-09486-00	1M, 3M, 4M	74LS374 OCTAL D-TYPE FLIP-FLOP	3
24	5281-09487-00	4S, 5S	74LS374 DUAL D-TYPE FLIP-FLOP	2
25	5281-09533-00	50	74LS393 DUAL 4-BIT BIN. COUNTER	1
26	5342-09015-00	3E, 3K	7641 1Kx8 PROM	2
27	5310-09237-00	6H	4071 CMOS QUAD 2-INPUT NOR	1
28	5340-09488-00	SEE NOTE #1	4116 (450 ns ACCESS) 16Kx1 DYNAMIC RAM	24
29	5340-09017-00	1E	5101 256 x 4 CMOS RAM	1
30	5280-09489-00	5E, 5F, 5H, 5J	9316 4-BIT BIN. COUNTER	4
31	5400-09490-00	2I	6805E MICROPROCESSOR	1
32	5280-09547-00	6K	7471 TRIPLE 3-INPUT MUX/DEMUX	1
33	5010-09548-00	R16, R18, R20	RESISTOR, C.F., 68 OHM 2% 1/4 W.	3
34	5010-09036-00	R66	RESISTOR, C.F., 100 OHM 5% 1/4 W.	1
35	5010-09181-00	R1, R3, R5, R4, R7, R7C	RESISTOR, C.F., 150 OHM 5% 1/4 W.	6
36	5010-09416-00	R23	RESISTOR, C.F., 470 OHM 5% 1/4 W.	1
37	5010-09092-00	R7, R10, R26	RESISTOR, C.F., 560 OHM 5% 1/4 W.	3
38	5010-09358-00	R2, R4, R6, R12, R19, R55, R72	RESISTOR, C.F., 1K OHM 5% 1/4 W.	7
39	5010-09316-00	R24, R25	RESISTOR, C.F., 1.2K OHM 5% 1/4 W.	2
40	5010-08998-00	R60, R70, R71	RESISTOR, C.F., 2.2K OHM 5% 1/4 W.	3
41	5010-08997-00	R61, R64	RESISTOR, C.F., 2.1K OHM 5% 1/4 W.	2
42	5010-08988-00	R39, R44, R59, R67, R73	RESISTOR, C.F., 3.3K OHM 5% 1/4 W.	5
43	5010-08991-00	SEE NOTE #2	RESISTOR, C.F., 4.7K OHM 5% 1/4 W.	27
	5010-09034-00	R48, R54	RESISTOR, C.F., 10K OHM 5% 1/4 W.	2
45	5010-08174-00	R50, R56, R58, R62	RESISTOR, C.F., 22K OHM 5% 1/4 W.	4
46	5010-09118-00	R62	RESISTOR, C.F., 33K OHM 5% 1/4 W.	1
47	5010-09359-00	R65	RESISTOR, C.F., 47K OHM 5% 1/4 W.	1
48	5010-09442-00	R51	RESISTOR, C.F., 330K OHM 5% 1/4 W.	1
49	5010-09001-00	R8, R9, R27	RESISTOR, C.F., 330 OHM 5% 1/4 W.	3
50	5010-09039-00	R87	RESISTOR, C.F., 10 OHM 5% 1/4 W.	1
51	5043-09491-00	CB7	CAPACITOR, AXIAL 22 PFD. 1K V. 10%	1
52	5043-09492-00	CB6	CAPACITOR, AXIAL 100 PFD. 50 V. 10%	1
53	5040-09545-00	C90	CAPACITOR, AXIAL 22 MFD. 10 V. 20%	1
54	5043-09565-00	CG1	CAPACITOR, AXIAL 470 PFD. 50 V. XTR	1
55	5043-08996-00	SEE NOTE #3	CAPACITOR, AXIAL .1 MFD. 50 V. 20%	84
56	5040-09421-00	CB1, CB2, CB3	CAPACITOR, RADIAL 100 PFD. 25 V. 10-10%	3
57	5075-09059-00	BR2	1N5990A 3.9 V. ZENER DIODE	1
58	5075-09018-00	BR1	1N5996A 6.8 V. ZENER DIODE	1
59	5070-08919-00	SEE NOTE #4	1N4148 DOIDE, SILICON	13
60	5070-09246-00	D1B	1N5817 DOIDE, SILICON	1
61	5160-08938-00	Q3, Q6, Q7, Q8, Q9, Q10, Q11	2N4401, TO-92 TRANSISTOR, NPN	7
62	5190-09016-00	Q1, Q2, Q3, Q4, Q12	2N4403, TO-92 TRANSISTOR, PNP	5
63	5520-09495-00	CR1	12 MHz CRYSTAL	1
64	5641-09871-00	SW1	PUSH BUTTON SW. (MOMENTARY ON)	1
65	5880-09021-00	B1, B2, B3	BATTERY ALKALINE 1.5V. (AA)	3
66	5881-09021-00	—	BATTERY HOLDER #171	1
67	5700-09006-00	—	16-PIN IC SOCKET	24
68	5700-09004-00	—	24-PIN IC SOCKET	2
69	5700-08988-00	—	40-PIN IC SOCKET	1
70	5791-09437-00	4PA	20 PIN RIBBON CABLE HEADER	1
71	5791-09449-00	4PI	40 PIN RIBBON CABLE HEADER	1
72				
73	5791-09428-00	4PS	4PIN HEADER 09-65-1041	1
74	5791-09497-00	4PT	7PIN HEADER 09-65-1071	1
75	5791-09497-00	4PS	9PIN HEADER 09-65-1091	1



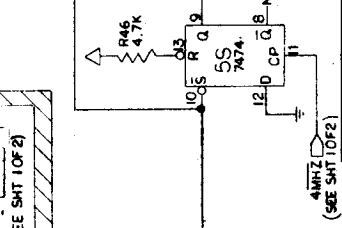


R8570 CPU/Video Board Logic Diagram
(Sheet 1 of 2)

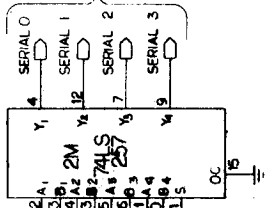


SEE SHEET 1 OF 2

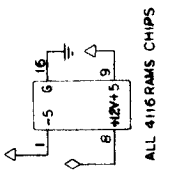
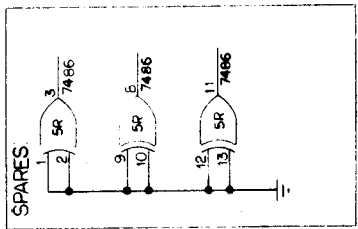
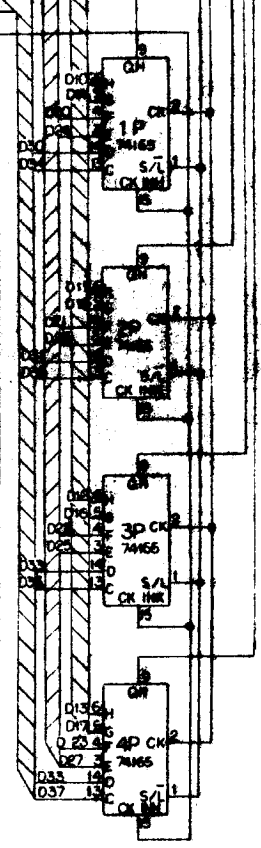
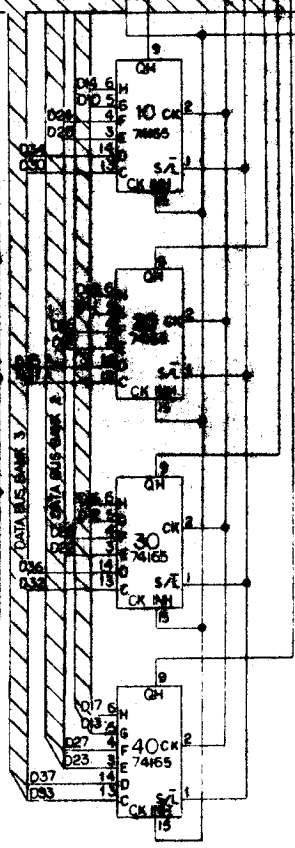
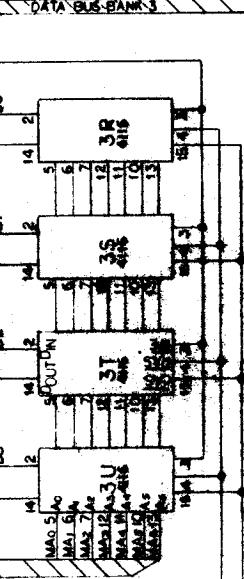
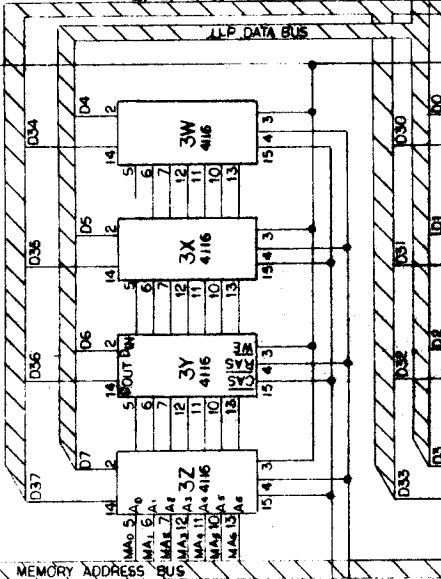
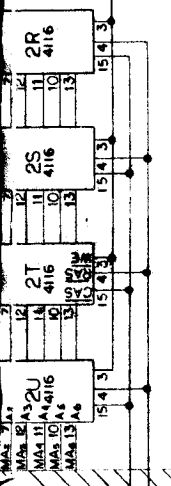
G OE
10
1
F2
(SEE SHT 1 OF 2)



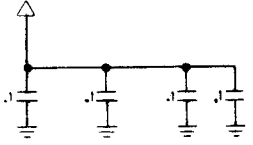
6MHz
(SEE SHT 1 OF 2)



SCREEN CONTROL
(SEE SHT 1 OF 2)



ALL 4116 RAM CHIPS

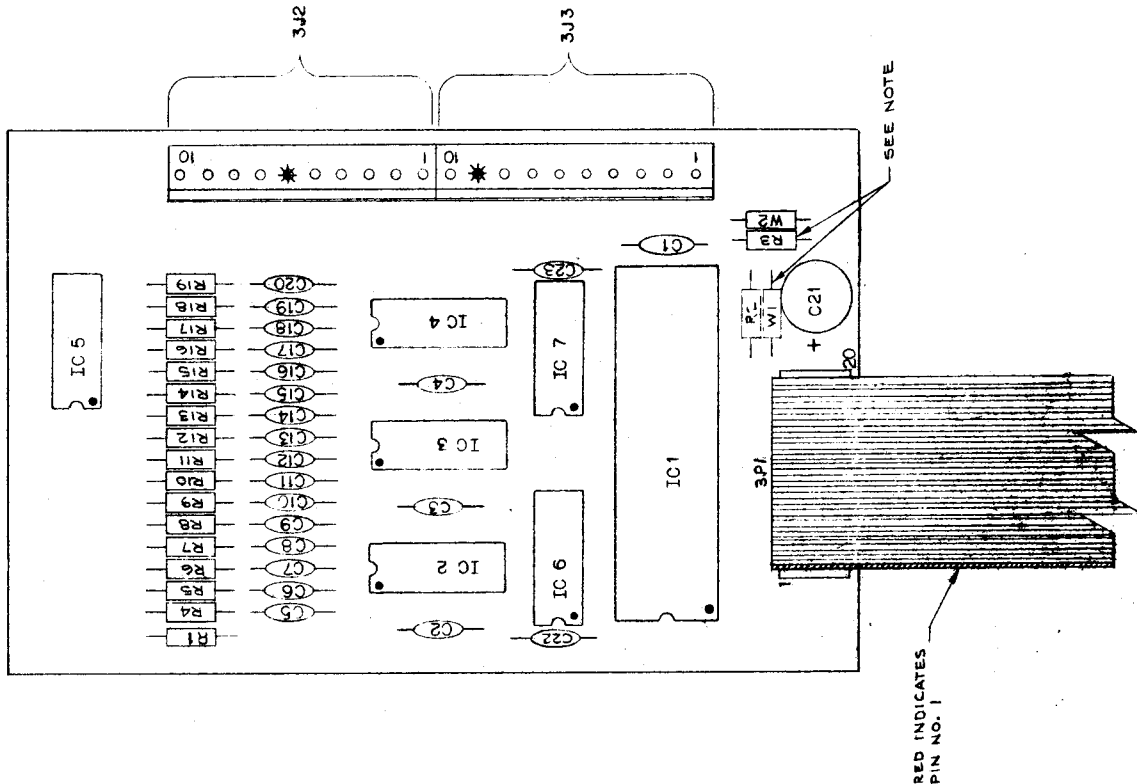


- C7, C8, C9, C10, C11, C12,
- C17, C18, C19, C21, C22
- C23, C24, C25, C26, C27
- C31, C32, C35, C36, C37, C38,
- C39, C40, C41, C42, C43, C44
- C48, C49, C50, C53, C54,
- C56, C57, C58, C59, C60,
- C72, C73, C77, C79,

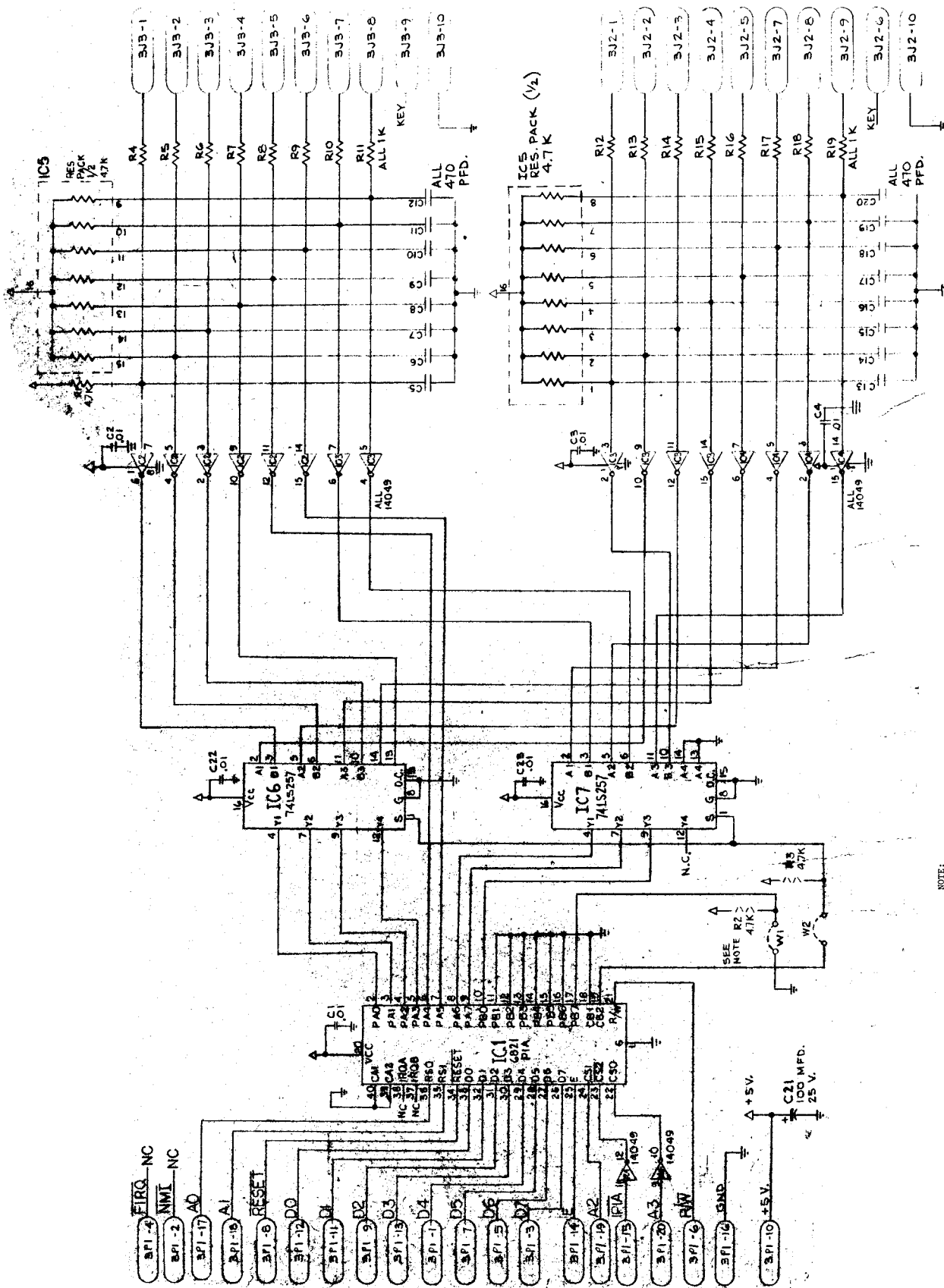
R8570 CPU/Video Board Logic Diagram
(Sheet 2 of 2)

BILL OF MATERIALS

ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	NO. REQ'D
1	50124-00		BARE P.C. BOARD	1
2	08975-00	IC2 IC3 IC4	4049 CMOS HEX INVERTER	3
3	5019-00	IC5	97KΩ 15 RES 16PIN DIP PACK	1
4	5261-00	IC6 IC7	74LS257 QUAD DATA MULTIPLEXER	2
5	08991-00	R1, R2, R3	RESISTOR, F.C., 1/4 WATT	3
6	5010-00	R4 THRU R9	RESISTOR, F.C., 1/4 WATT	16
7	09245-00	C5 THRU C20	100 PF, CERAMIC DISC, 5% TOL, 5% TOL	16
8	09421-00	C21	CAPACITOR, ELECTROLYTIC RAD., 100 MFD, 25 VOLT, ±50-10%	1
9	08980-00	C1, C2, C3	CAPACITOR, CERAMIC DISC, .01 MFD, 50 V, ±90-20%	6
10	09444-00	3J2, 3J3	10 PIN HEADER 09-65-1101	2
11	5795-00	3P1	20 PIN RIBBON CABLE Assy	1
12	5490-00	IC1	6821 PIM	1
13	08972-00	W1, W2	0 Ω RESISTOR	2

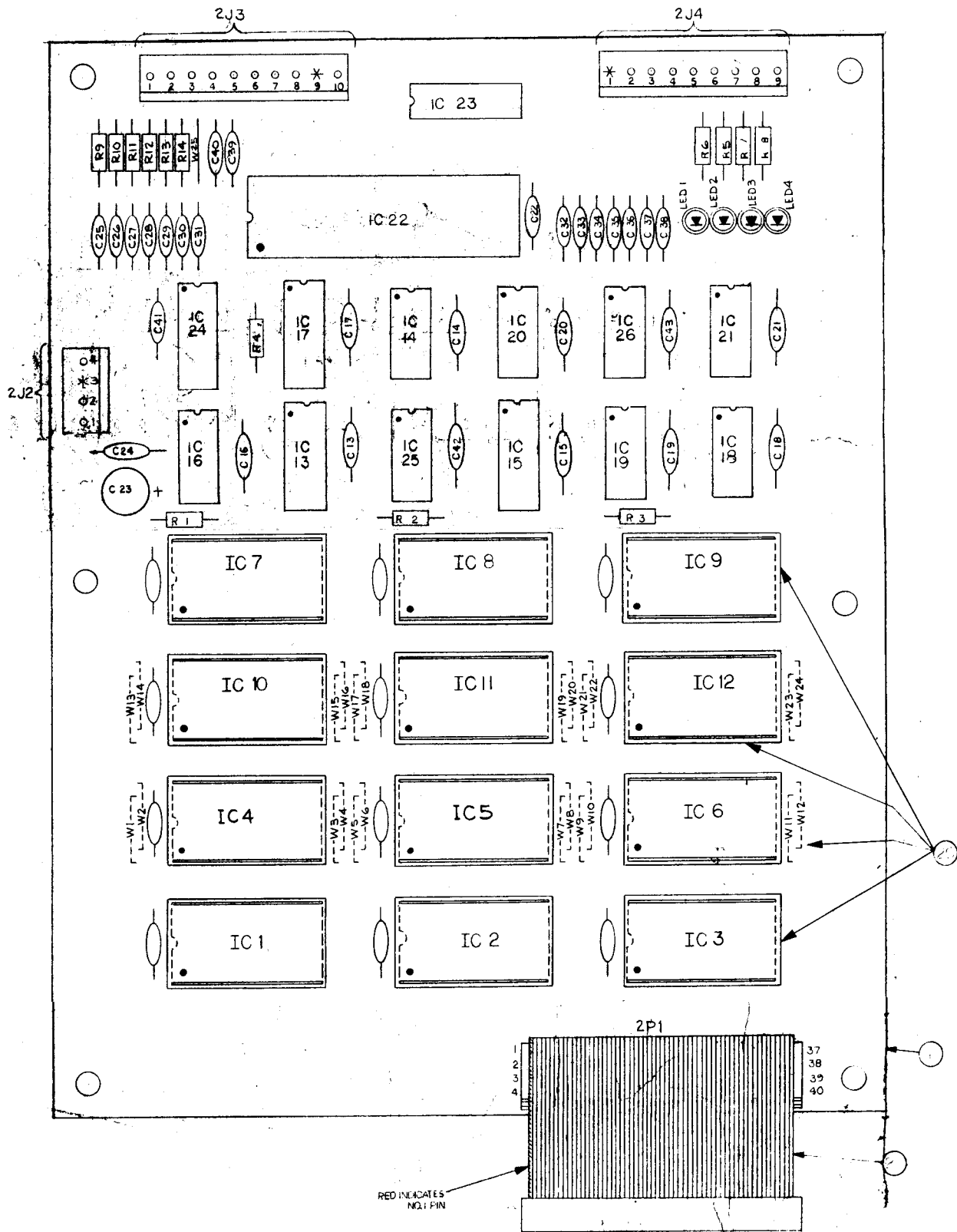


NOTE:
 FOR COCKTAIL TABLE GAMES, W2 MUST BE CONNECTED AND W1 MUST BE REMOVED.
 FOR UPRIGHT GAMES, W1 MUST BE CONNECTED, WITH RED-LABELLED RONS, W2 MAY BE CONNECTED OR REMOVED. WITH LABELS OF OTHER COLORS, W2 MUST BE REMOVED.



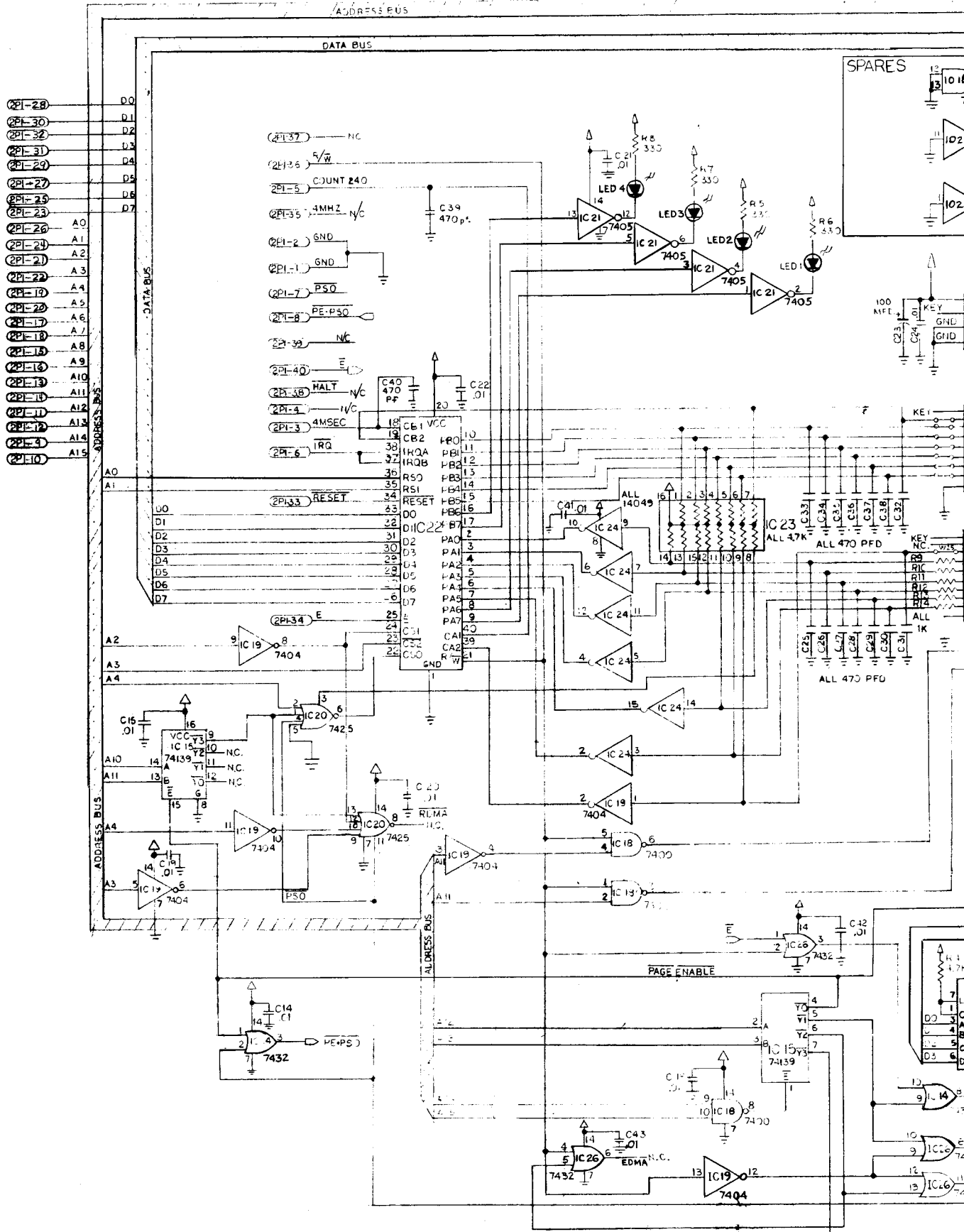
NOTE:
 FOR COCKTAIL TABLE GAMES, W2 MUST BE
 CONNECTED AND W1 MUST BE REMOVED.
 FOR UPRIGHT GAMES, W1 MUST BE CON-
 NECTED, WITH RED-LABELLED PINS, W2 MAY
 BE CONNECTED OR REMOVED, WITH LABELS OF
 OTHER COLORS, W2 MUST BE REMOVED.

C8573 Interface Board Assembly
 and Logic Diagram



BILL OF MATERIALS			
QTY	PART NO.	DESIGNATION	DESCRIPTION
1	5200-09013-00		BARE PCB BOARD
1	5200-09013-00	IC13	7442 BCD DECODER
1	5200-09471-00	IC14, IC16, IC25, IC26	7432 QUAD HALF 2 INPUT
1	5201-09246-00	IC15	74LS194 DUAL 2 TO 4 LINE DECODER
1	5201-09501-00	IC17	74LS393 3-BIT UNIVERSAL SHIFT REG.
1	5200-09013-00	IC18	7400 QUAD 2 INPUT NAND
1	5200-09013-00	IC19	7404 HEX INVERTERS
1	5200-09531-00	IC20	7402 NOR GATE WITH STRAIGHT
1	5200-09549-00	IC21	7495 OPEN COLLECTOR OUTPUTS
1	5430-09872-00	IC22	MC6821 PIA
1	5010-09337-00	IC23	5.7K 1/4W 1% PIN OFF PWR
1	5631-09018-00	LED1 THRU LED4	LED, RED
1	5010-09001-00	R9 THRU R14	RESISTOR, C.F., 300 OHM 1/4W
1	5010-09391-00	R4	RESISTOR, C.F., 47 OHM 1/4W
1	5045-09990-00	C1 THRU C15	CAP CERAMIC DINED 50V 1/4W
1	5040-09498-00	C23	CAP ELECT, 100UF 25V RAD
1	5045-09996-00	C24	CAP CERAMIC (NEED COV) 50V
1	5045-09049-00	C25 THRU C27	CAP CERAMIC 50V 1/4W
1	5700-09004-00		24 PIN IC SOCKET
1	5700-09611-00	ZP1	40 PIN RIBBON CABLE ASSEMBLY
1	5701-09028-00	ZJ2	4 PIN Jumper
1	5701-09044-00	ZJ3	10 PIN Jumper
1	5010-09378-00	IC24	7404 INVERTING HEX. INVT
1	5010-09338-00	R9 THRU R14	RESISTOR, C.F., 1K OHM 1/4W
1	5010-09534-00	W1 THRU W25	RESISTOR, C.F., 0 OHM
1	SEE CHART	IC1 THRU IC12 SEE CHART	SEE CHART

GAME NAME "DEFENDER" RED LABEL					
ASSEM. NO.	D-8572-3001				
IC1	A-5343-09636				
IC2	A-5343-09637				
IC3	A-5343-09638				
IC4	A-5343-09639				
IC5	NOT USED				
IC6	A-5343-09640				
IC7	A-5343-09641				
IC8	A-5343-09642				
IC9	A-5343-09643				
IC10	A-5343-09644				
IC11	A-5343-09645				
IC12	A-5343-09646				
JUMPERS	W2, W4, W6, W7, W9, W11, W13, W16, W17, W20, W21, W24				



- 2PI-28 D0
- 2PI-30 D1
- 2PI-32 D2
- 2PI-31 D3
- 2PI-29 D4
- 2PI-27 D5
- 2PI-25 D6
- 2PI-23 D7
- 2PI-26 A0
- 2PI-24 A1
- 2PI-21 A2
- 2PI-22 A3
- 2PI-19 A4
- 2PI-20 A5
- 2PI-17 A6
- 2PI-18 A7
- 2PI-15 A8
- 2PI-13 A9
- 2PI-13 A10
- 2PI-14 A11
- 2PI-12 A13
- 2PI-11 A14
- 2PI-10 A15

ADDRESS BUS
A0
A1
A2
A3
A4
A10
A11
A13
A14
A15

DATA BUS
D0
D1
D2
D3
D4
D5
D6
D7

2PI-37 NC
2PI-36 5V
COUNT 240
2PI-5
2PI-35 3MHZ
2PI-2 GND
2PI-1 GND
2PI-7 PS0
2PI-6 PE-PS0
2PI-39 NC
2PI-40 INT
2PI-38 HALT
2PI-4 1V
2PI-3 4MSEC
2PI-6 IRQ
2PI-33 RESET

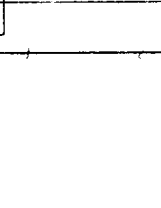
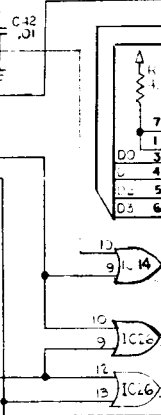
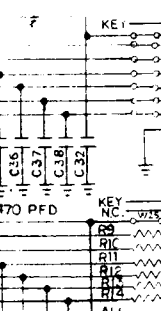
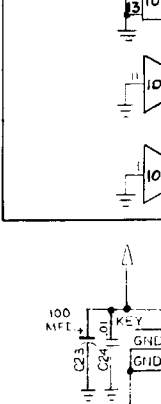
IC 2
CB1 VCC
CB2
IRQA
IRQB
R50
RS1
RESET
DO
DIIC2
PA0
PA1
PA2
PA3
PA4
PA5
PA6
PA7
CA1
CA2
CA0
GND

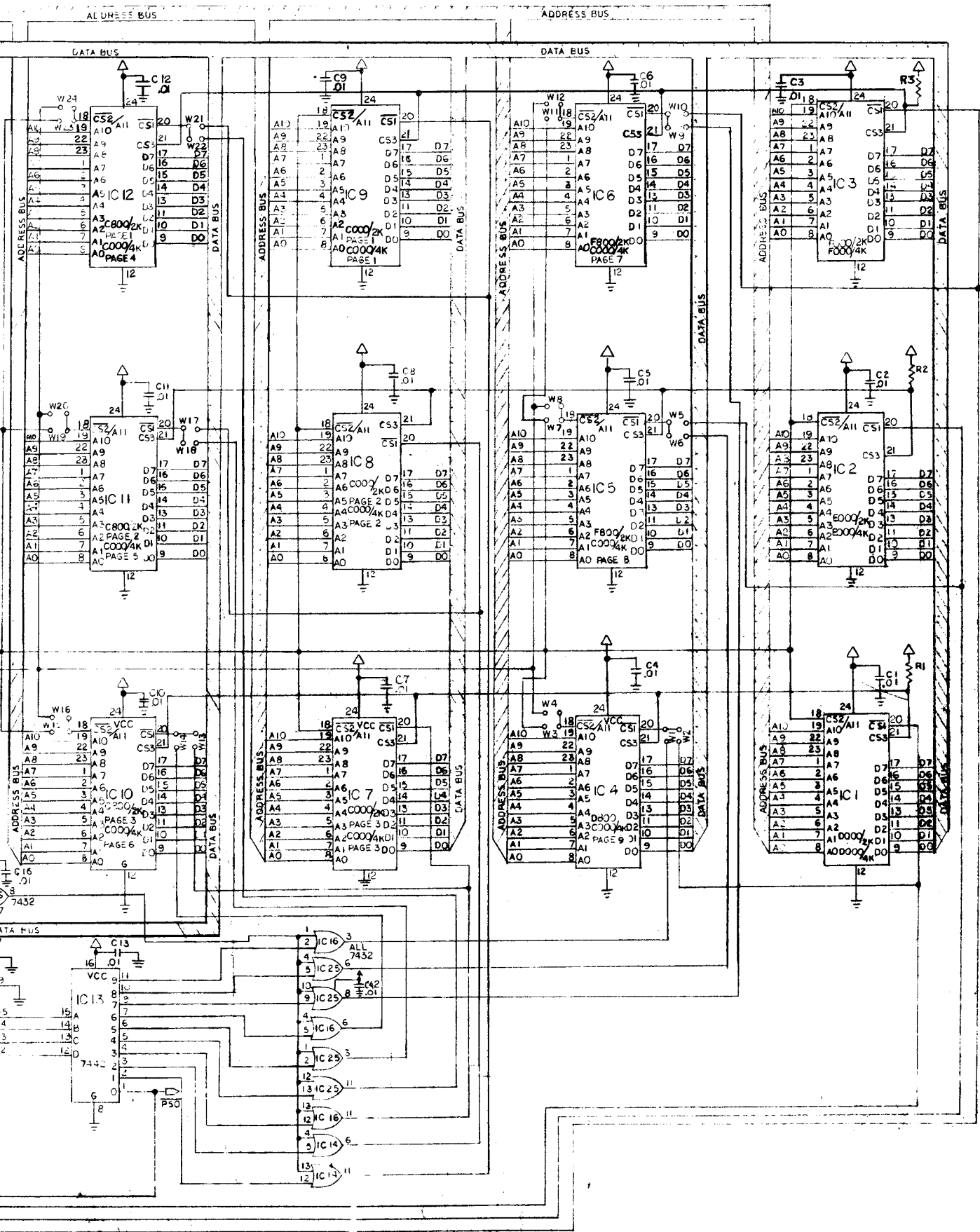
IC 19 7404
IC 20 7425
IC 18 7409
IC 17 7405
IC 16 7405
IC 15 7405
IC 14 7405
IC 13 7405
IC 12 7405
IC 11 7405
IC 10 7405
IC 9 7405
IC 8 7405
IC 7 7405
IC 6 7405
IC 5 7405
IC 4 7405
IC 3 7405
IC 2 7405
IC 1 7405

IC 26 7432
IC 25 7432
IC 24 7432
IC 23 7432
IC 22 7432
IC 21 7432
IC 20 7432
IC 19 7432
IC 18 7432
IC 17 7432
IC 16 7432
IC 15 7432
IC 14 7432
IC 13 7432
IC 12 7432
IC 11 7432
IC 10 7432
IC 9 7432
IC 8 7432
IC 7 7432
IC 6 7432
IC 5 7432
IC 4 7432
IC 3 7432
IC 2 7432
IC 1 7432

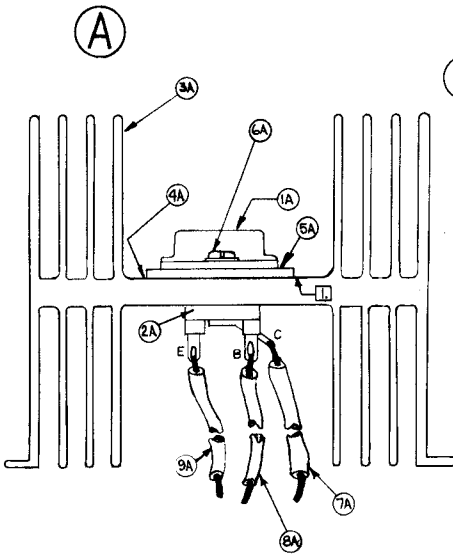
IC 23 74139
IC 22 74145
IC 21 74163
IC 20 74139
IC 19 74145
IC 18 74163
IC 17 74139
IC 16 74145
IC 15 74163
IC 14 74139
IC 13 74145
IC 12 74163
IC 11 74139
IC 10 74145
IC 9 74163
IC 8 74139
IC 7 74145
IC 6 74163
IC 5 74139
IC 4 74145
IC 3 74163
IC 2 74139
IC 1 74145

SPARES



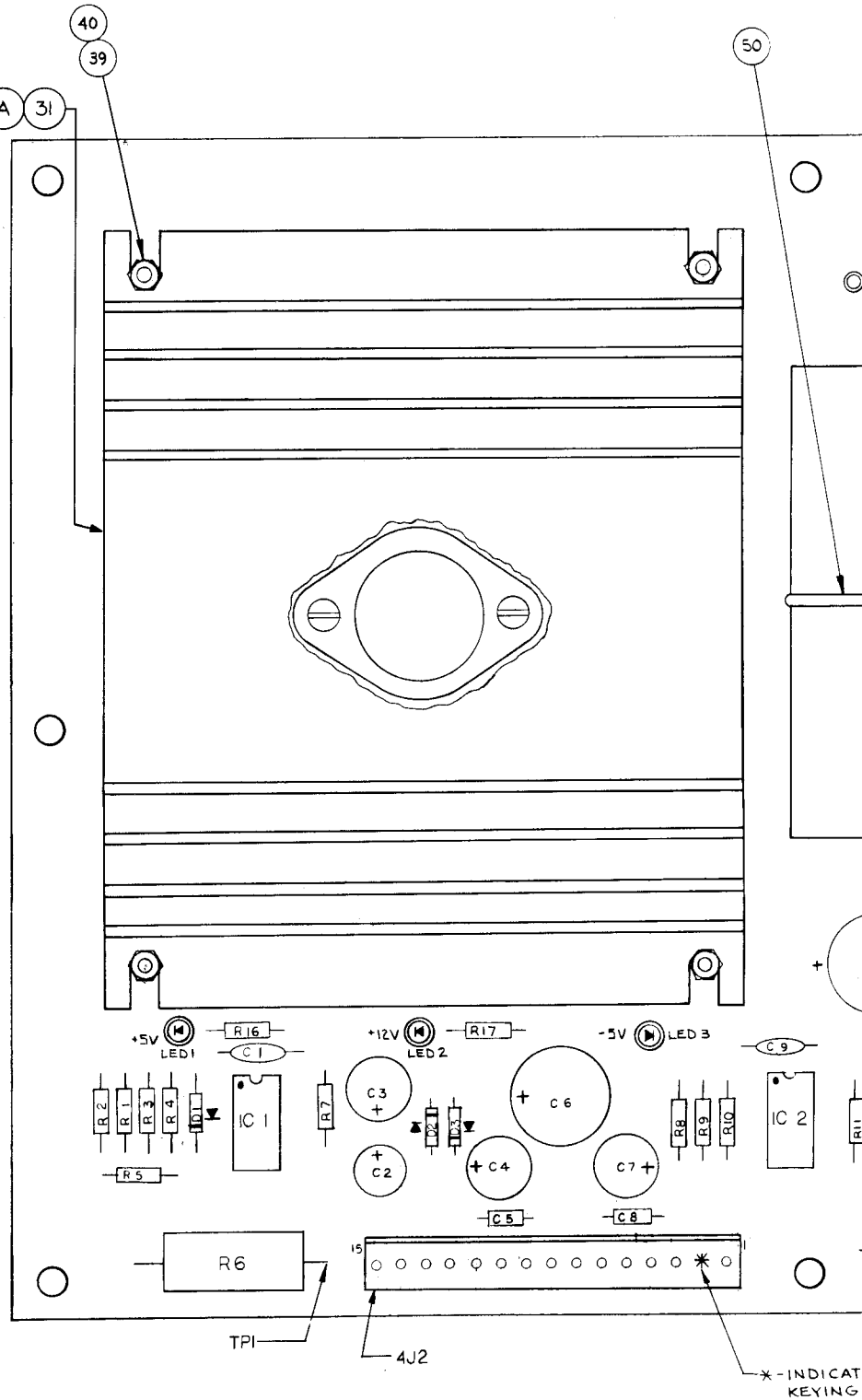


D8572 ROM Board Logic Diagram

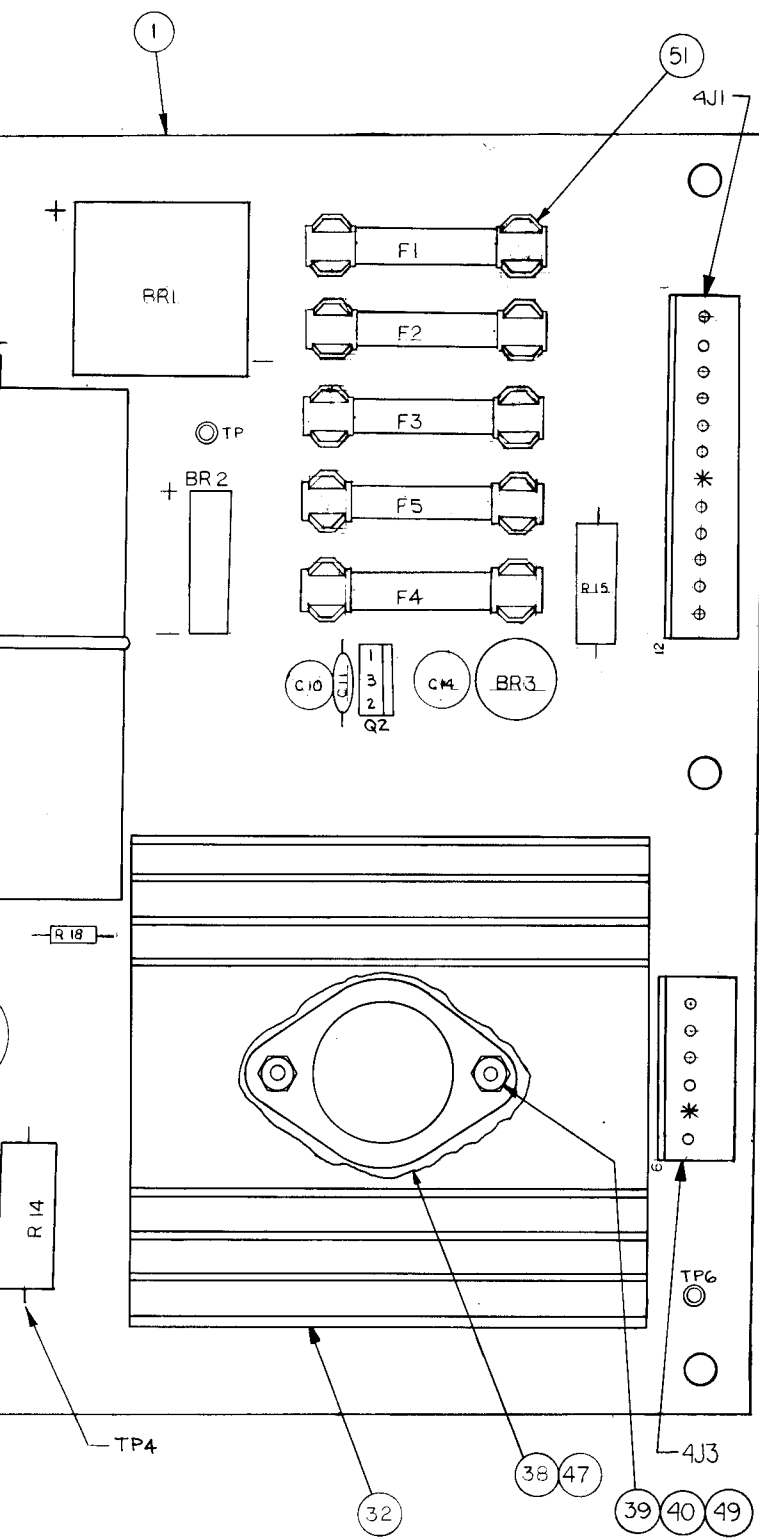


BILL OF MATERIAL			
ITEM NO	PART NO	DESCRIPTION	REQ'D NO.
1A	5162-09425-00	TRANSISTOR NPN 2N6057	1
2A	5700-09445-00	TRANSISTOR-SOCKET TO3	1
3A	5705-09431-00	HEAT SINK	1
4A	20-9229-00	THERMAL COMPOUND 1.5 OUNCE	1
5A	5701-09538-00	TO3 3 MIL MICA INSULATOR	1
6A	4006-01003-8	MS-6-22x1/2-P-PH	2
7A	5853-09591-00	LEAD WIRE #18AWG 4' 3/8 STRIPPED (GRN)	1
8A	5853-09592-00	LEAD WIRE #18 AWG-4' 3/8 STRIPPED (WHT)	1
9A	5853-09593-00	LEAD WIRE #18 AWG-4' 3/8 STRIPPED (YEL)	1

NOTES.
 1 HEAT SINK COMPOUND MUST BE APPLIED BETWEEN MICA INSULATOR AND HEAT SINK AND BETWEEN MICA INSULATOR AND TRANSISTOR.

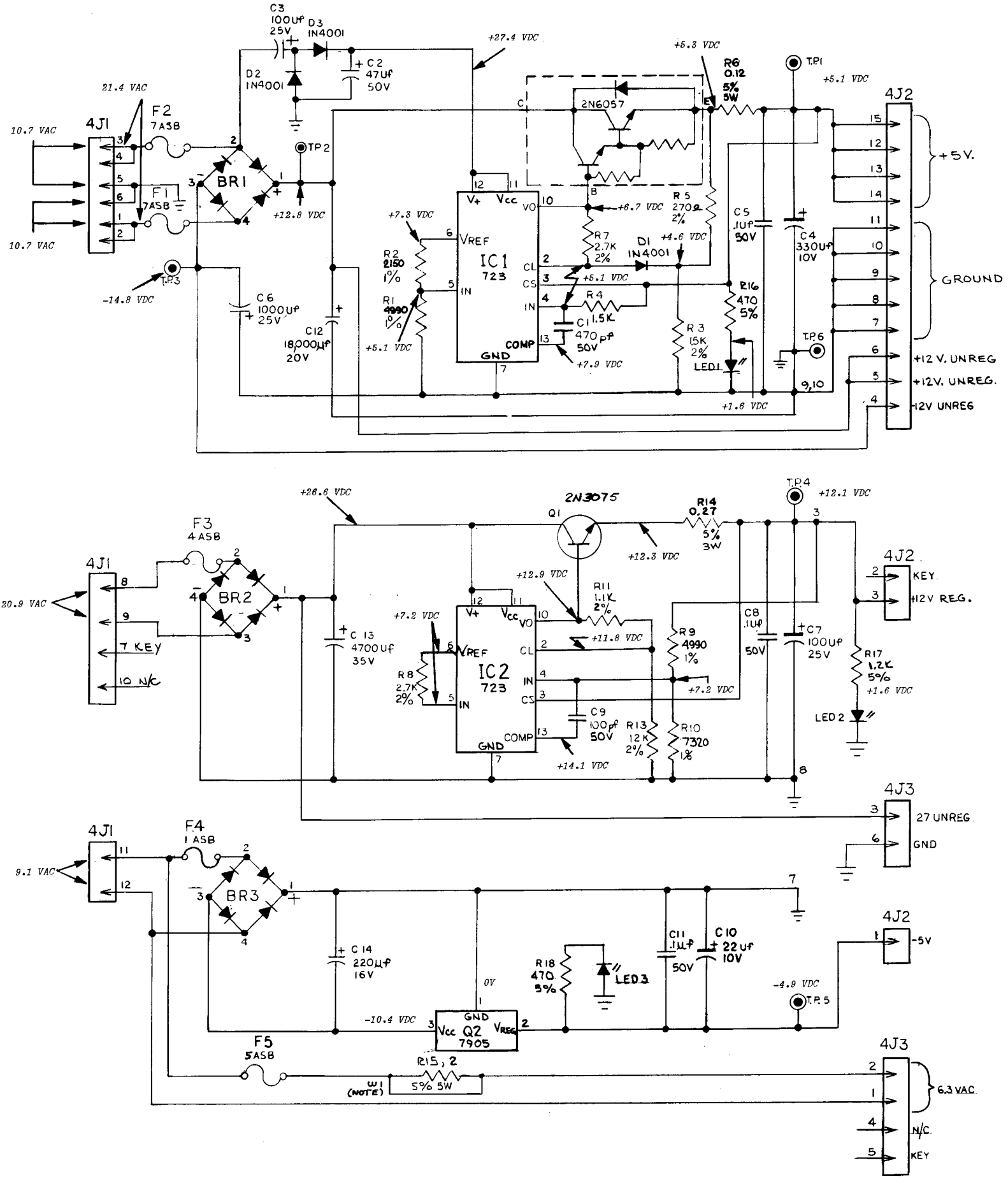


*-INDICAT KEYING



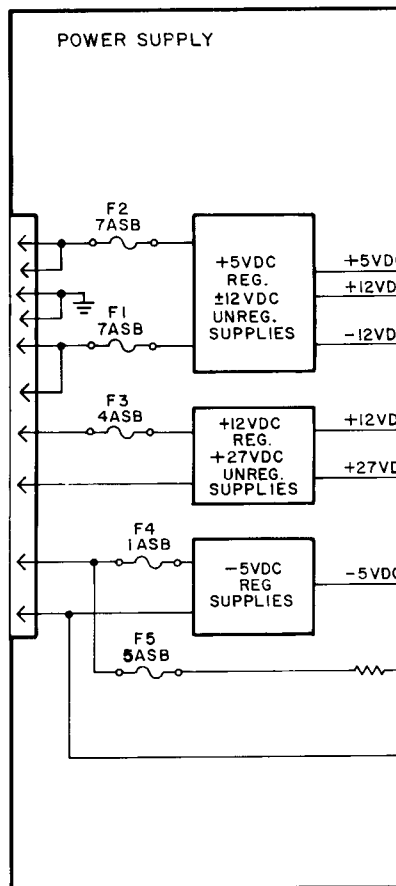
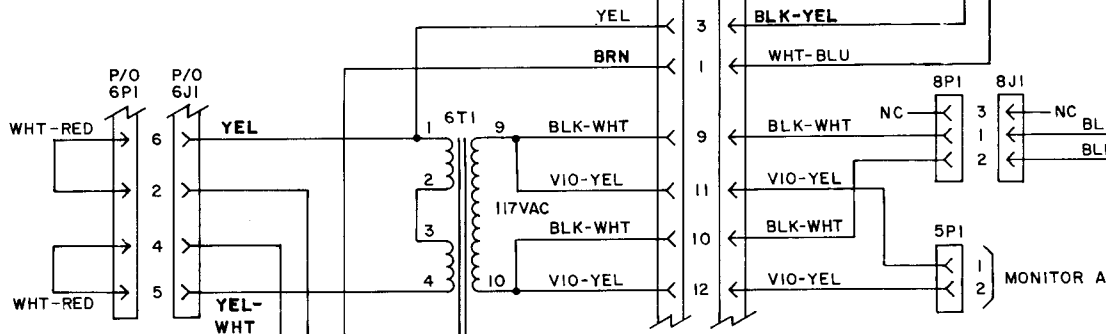
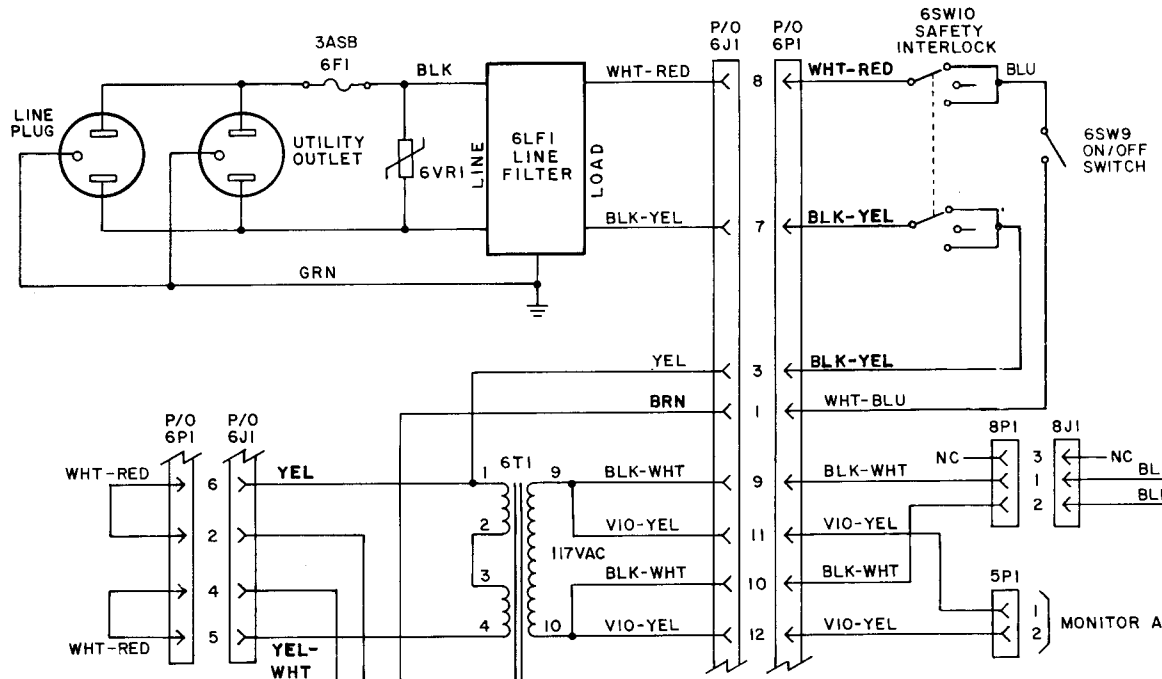
BILL OF MATERIAL

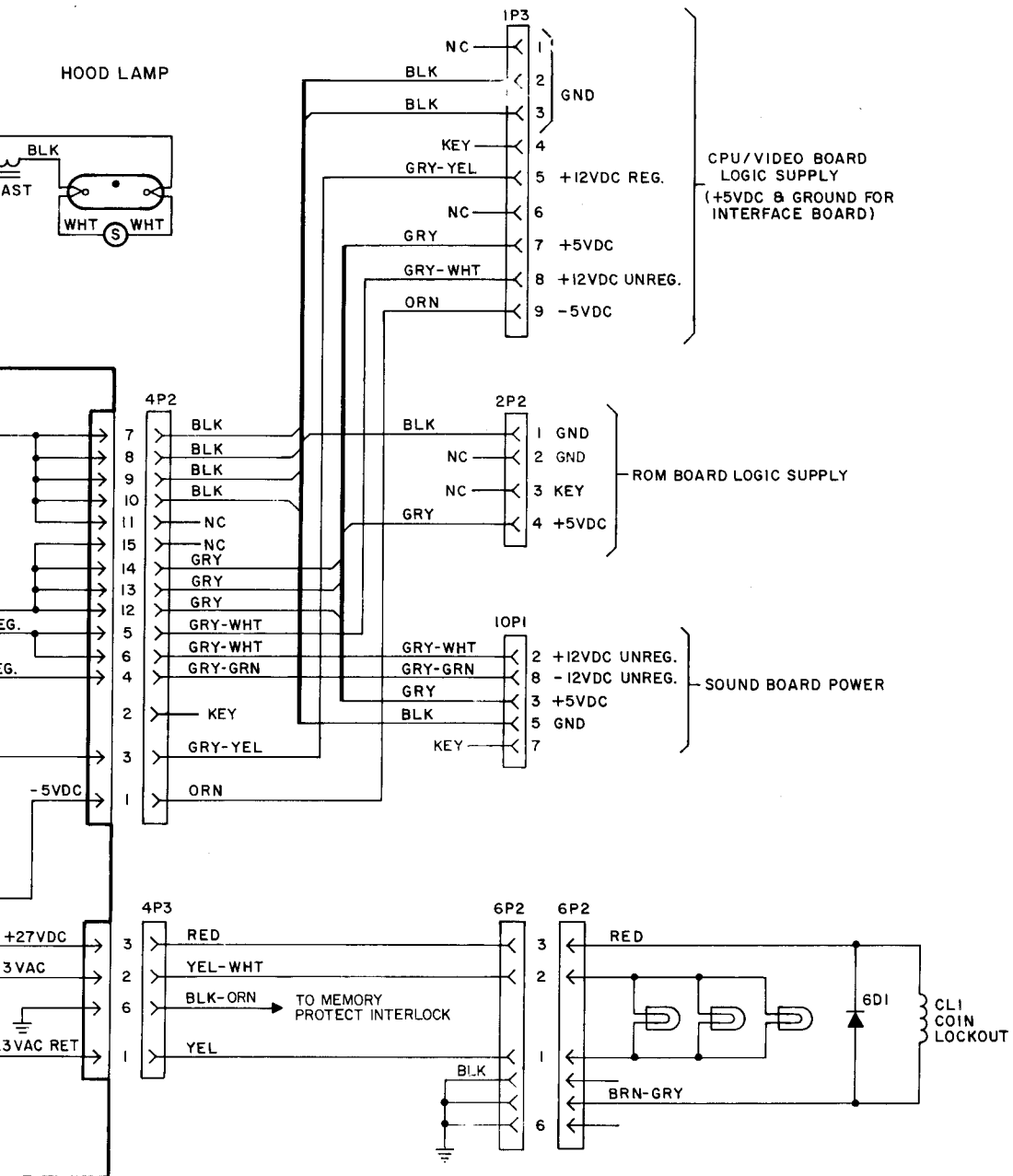
ITEM NO	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D NO.
1	5113-09414-00		P.C. BOARD	
2	5010-09085-00	R4	RESISTOR, 1.5K 5%, 1/4W	1
3	5010-09541-00	R8, R7	RESISTOR, 2.7K 2%, 1/4W	2
4	5010-09508-00	R5	RESISTOR, 270 2%, 1/4W	1
5	5010-09428-00	R3	RESISTOR, 1.5K 2%, 1/4W	1
6	5010-09509-00	R11	RESISTOR, 1.1K 2%, 1/4W	1
7	5010-09510-00	R13	RESISTOR, 12K 2%, 1/4W	1
8	5013-09542-00	R10	RESISTOR, 732K 1%, 1/4W	1
9	5013-09427-00	R1 & R9	RESISTOR, 499K 1%, 1/4W	2
10	5013-09426-00	R2	RESISTOR, 2.15K 1%, 1/4W	1
11	5012-08429-00	R6	RESISTOR, 12Ω, 5%, 5W	1
12	5012-09512-00	R14	RESISTOR, 27 5%, 5W	1
13	5040-09421-00	C3 & C7	CAPACITOR, 100MFD, 25V, RADIAL	2
14	5040-09422-00	C2	CAPACITOR, 47MFD, 50V, RADIAL	1
15	5040-09420-00	C6	CAPACITOR, 1000MFD, 25V, RADIAL	1
16	5040-09419-00	C12	CAPACITOR, 18,000MFD, 20V, RADIAL	1
17	5040-09423-00	C4	CAPACITOR, 330MFD, 10V, RADIAL	1
18	5040-09504-00	C13	CAPACITOR, 4700MFD, 35V, RADIAL	1
19	5043-08994-00	C5, C8, C11	CAPACITOR, 1MFD, 50V, AXIAL 25U	3
20	5043-09065-00	C1	CAPACITOR, 470 PFD, 50V, AXIAL X7R	1
21	5043-09492-00	C9	CAPACITOR, 100 PFD, 50V, AXIAL 52L	1
22	5040-09506-00	C14	CAPACITOR, 220MFD, 16V, RADIAL	1
23	5040-09493-00	C10	CAPACITOR, 22MFD, 10V, RADIAL	1
24	5070-06258-00	D1, D2, D3	DIODE, 1N4001	3
25	5100-09418-00	BR1	BRIDGE RECTIFIER, 35AMP, 100V	1
26	5100-09513-00	BR2	DIODE BRIDGE, 4.0A, 50V	1
27	5100-09514-00	BR3	DIODE BRIDGE, 1.0A, 50V	1
28	5731-09452-00	F1, F2	FUSE, 7A, 5B	2
29	5731-06314-00	F3	FUSE, 4A, 5B, 250 V.	1
30	5731-06569-00	F4	FUSE, 1A, 5B	1
31	B-8416-00		HEAT SINK ASSEMBLY (SEE A)	1
32	5705-09543-00		HEAT SINK	1
33	5791-09074-00	4J2	HEADER, 15 PIN, 09-65-1151	1
34	5791-09043-00	4J1	HEADER, 12 PIN, 09-65-1121	1
35	5250-09515-00	Q2	VOLTAGE REGULATOR 7905	1
36	5460-09424-00	IC1, IC2	VOLTAGE REGULATOR 783	2
37	5824-09248-00	TP2, TP3, TP5, TP6	TERMINAL #1502-1 (TEST POST)	4
38	20-9229-00		THERMAL COMPOUND .02 OUNCE	AR
39	4005-01051-07		5-40x7/16 RH. MECH. SCREW	6
40	4405-01112-00		5-40 HEX NUT	6
41	5161-09552-00	Q1	2N3055 TRANSISTOR NPN	1
42	5731-09651-00	F5	FUSE, 5A, 5B	1
43	5791-09038-00	4J3	HEADER, 6 PIN, 09-65-1061	1
44	5012-09544-00	R15	RESISTOR, 2.0Ω, 5%, 5W	1
45	5010-09416-00	R16, R18	RESISTOR, 470Ω, 5%, 1/4W	2
46	5010-09314-00	R17	RESISTOR, 1.2K, 5%, 1/4W	1
47	5701-09538-00		INSULATOR, MICA, 3mil	1
48	5671-09019-00	LED1, LED2, LED3	LED, RED	3
49	03-7598		INSULATOR, NYLON	2
50	03-7520		TIE WRAP	1
51	6732-09178-00		FUSEHOLDER	10

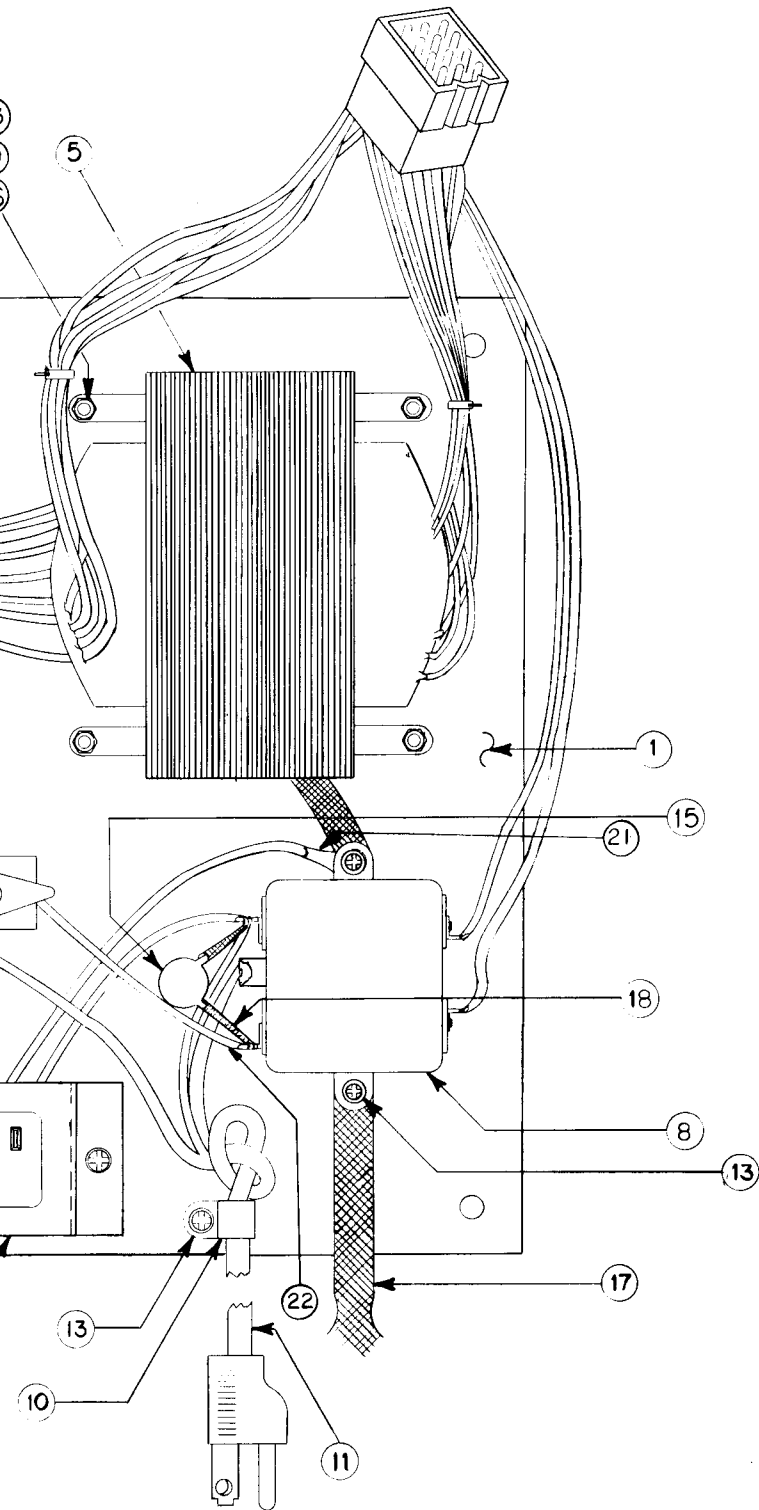


NOTE:
W1 CONNECTED ONLY FOR COCKTAIL
APPLICATIONS.

D8359 Power Supply Board
Schematic Diagram







BILL OF MATERIALS			
ITEM	PART N ^o	DESCRIPTION	QTY.
1	11-580	POWER SUPPLY MTG. BD.	1
2	01-7001	POWER SUPPLY GND PLATE	1
3	01-7002	POWER SUPPLY SUPPORT BRKT.	2
4	D-8359	POWER SUPPLY BOARD	1
5	C8529	VIDEO TRANSFORMER ASSY	1
6	B-6448-1	FUSE MOUNT ASS'Y.	1
7	5731-08633-00	LINE FUSE 3AMP 115V	1
8	5102-08895-00	LINE FILTER 5A	1
9	01-6948-	OUTLET MTG BRACKET	1
10	03-6048-6	CABLE CLAMP-3/8	2
11	SEE NOTE #2	LINE CORD	1
12	4006-01018-04	MS #6-32 x 1/4 P-RH	4
13	4108-01022-08	SMS #8-32 x 1/2 P-RWH-A	13
14	5851-09184-00	3WIRE SNAP-IN OUTLET	1
15	SEE NOTE #1	VARIATOR	1
16	4408-01117-00	NUT 8-32 HEX	4
17	20-9223-3	6INCH BRAIDED GROUND WIRE	1
18	20-9256	1 INCH SLEEVING INSULATION	2
19	4703-00006-00	NO#8 EXTERNAL LOCK WASHER	4
20			
21	5825-06523-00	TERMINAL LUG	1
22	5852-09575-00	BLACK-18'AWG JUMPER WIRE-25'L	1
23	4008-01005-22	MS 8-32 x 1 3/8 P-PH	4

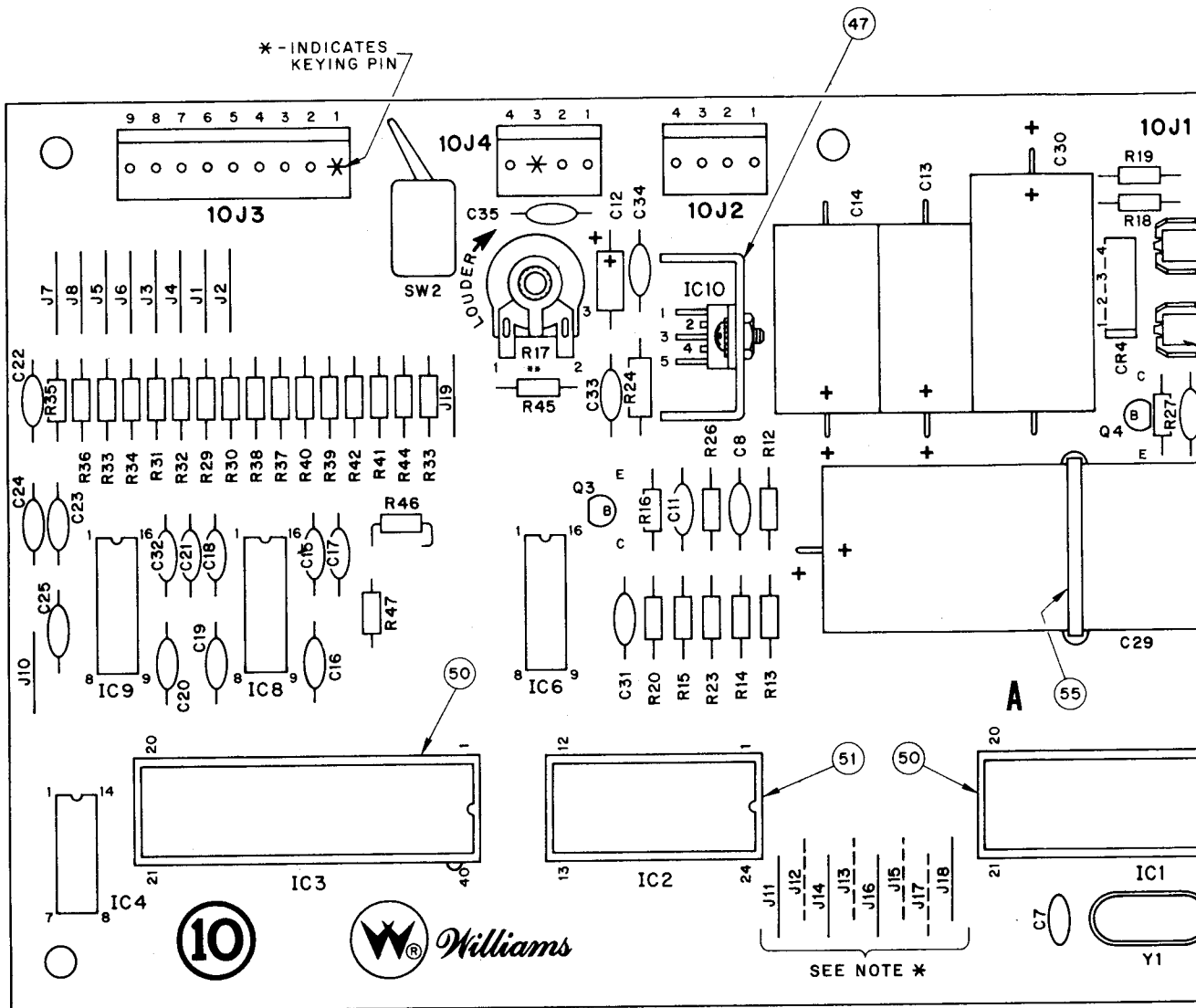
NOTES:

1. FOR 115V.A.C., 130V. VARIATOR # 5017-09044 IS USED.

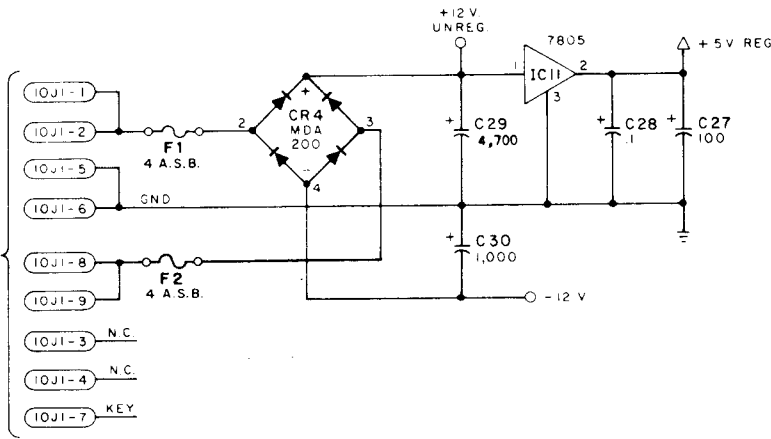
FOR 230V.A.C., A 275V VARIATOR #5017-09063 IS USED.

2. LINE CORD PART NUMBERS:

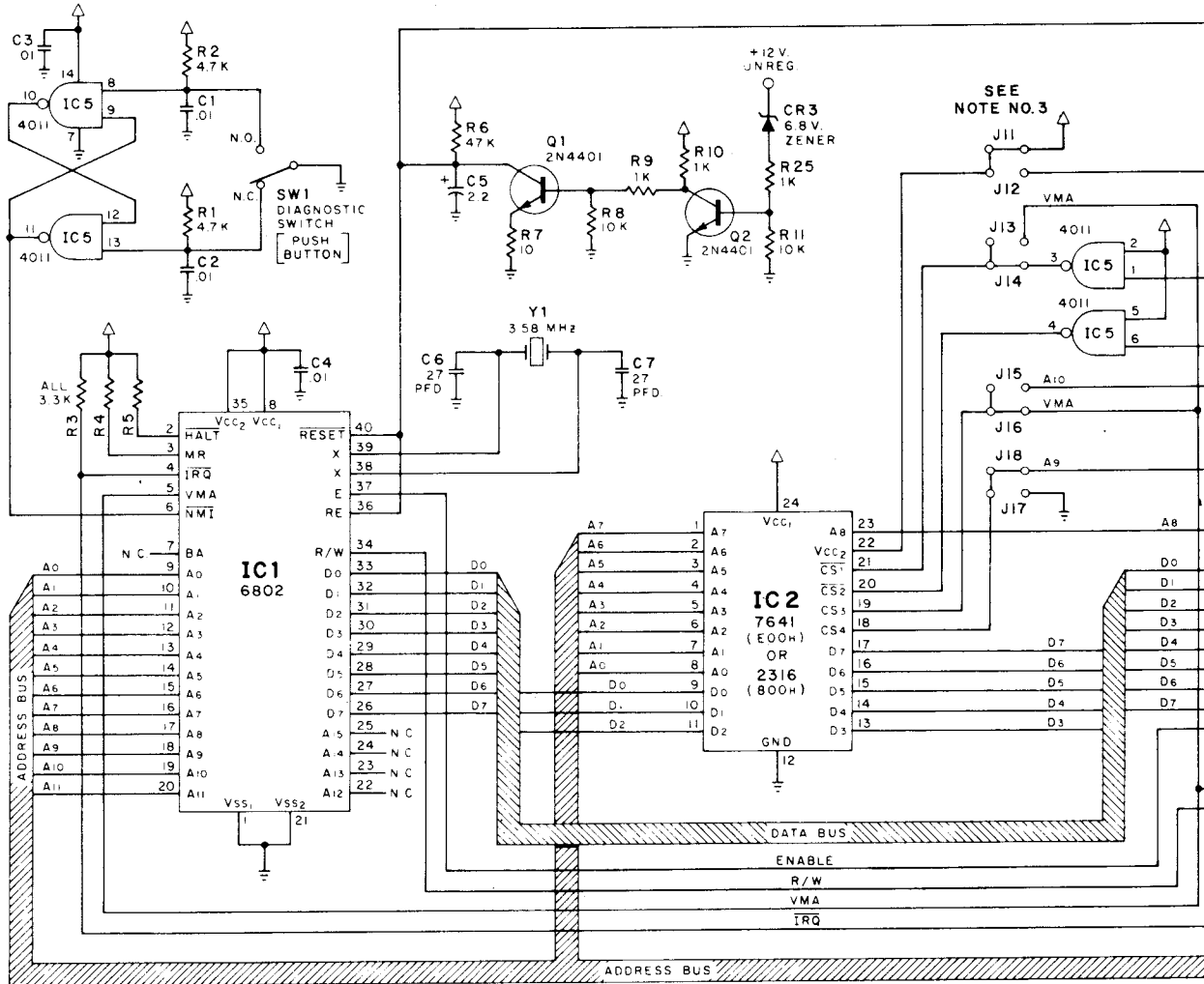
- 5850-06206-00 12 FT. EUROPE
- 5850-08728-00 U.S. DOM.
- 5850-08737-00 AUS.
- 5850-08743-00 U.S.L.A.
- 5850-09128-00 12 FT. FRANCE
- 5850-09131-00 AWG 18-12 JAPAN



POWER SUPPLY



- NOTES:**
 1. UNLESS OTHERWISE SPECIFIED, ALL RESISTORS ARE 1/4 WATT.
 2. UNLESS OTHERWISE SPECIFIED, ALL CAPACITORS ARE 50V.
 3. J11, J14, J16, J17 ARE CONNECTED TO THE BOARD.
 4. ON MOST BOARDS, A JUMPER IS CONNECTED TO IOJ4-2.



SEE NOTE NO. 3

ADDRESS BUS

ADDRESS BUS

DATA BUS

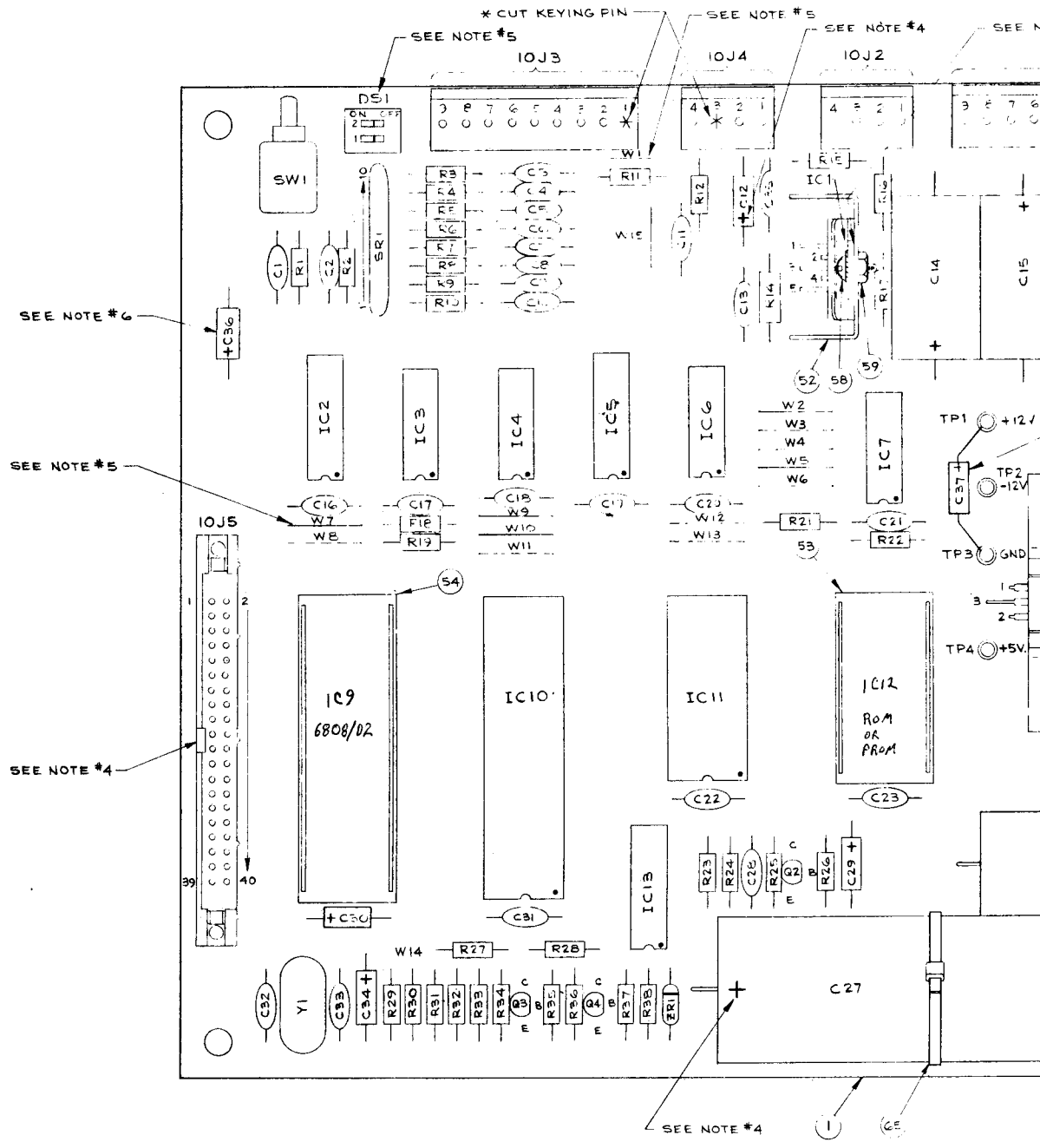
ENABLE

R/W

VMA

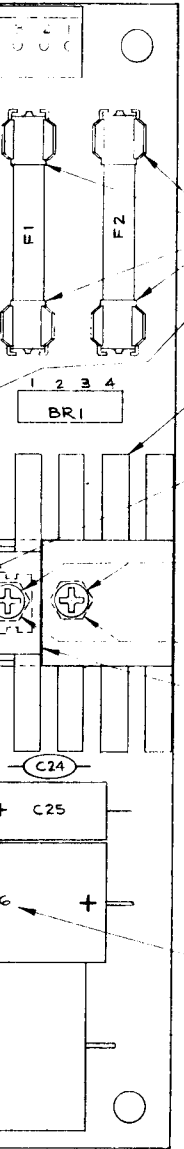
TRQ

ITEM NO.	PART NO.	PART DESIGNATION	DESCR
58			6-32 x 3/8" BIN
59			6-32 HEX N
60		W1, W2, W5, W7, W9, W10, W15	WIRE JUMPER WIRE WITH
61	PA-9248	TP1 THR TPA	TERMINAL
62	5A-9363	R11	RESISTOR, 5% 1/4 WA
64	5A-9362	SRI	RESISTOR, 10 PIN SI
65	3A-7520-1		TIE WRAP



REQ'D. NO.	ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D. NO.
3	48	5A-6314	F1, F2	4 AMP SLOW BLOW FUSE	2
3	49	5A-9178		FUSE HOLDER	4
7	50	5A-9172		HEAT SINK THERMALLOY #6072B	1
4	51	5A-9173		HEAT SINK THERMALLOY #6071B	1
1	52	5A-9199		HEAT SINK THERMALLOY #6030	1
1	53	5A-9004		24 PIN SOCKET	1
1	54	5A-8985		40 PIN SOCKET	1
1	55	5A-9027	10J1, 10J3	9 PIN MALE CONNECTOR	2
1	56	5A-9028	10J2, 10J4	4 PIN MALE CONNECTOR	2
1	57	5A-9349	10J5	40 PIN RIBBON HEADER	1

BILL OF MATERIAL				
ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D. NO.
1	1C-2001-146-3		BARE P.C. BOARD	1
2	5A-9156	IC1	TDA2002 V AUDIO AMPLIFIER	1
3	5A-9012	IC2	7442 BCD-DEC DECODER	1
4	5A-9073	IC3	7400 QUAD 2 INPUT NAND	1
5	5A-8973	IC4	7408 QUAD 2 INP. AND GATE	1
6	5A-9153	IC5	4050 BUFFER	1
7	5A-9154	IC6	4068 8 INPUT NAND GATE	1
8	5A-8971	IC7	14069 HEX INVERTER	1
9	5A-9157	IC8	7805 5 VOLT REG. W/TO220 CASE	1
10	5A-8972	IC10	6821 P.I.A.	1
11	5A-9003	IC11	6810 RAM	1
12	5A-9152	IC13	1408 D/A CONVERTER	1
13	5C-8938	Q2, Q3, Q4	2N4401 NPN TRANSISTOR	3
14				
15	5A-9018	ZR1	1N5996 6.8V. ZENER DIODE	1
16				
17	5A-9158 OR 5A-9357	BR1	MDA 200/3N253 BRIDGE RECTIFIER	1
18	5A-9020	Y1	3.58 MHZ CRYSTAL	1
19	5B-8991	R1, R19, R21, P22, R27, R30, R31, R32	RESISTOR, FC, 4.7K OHM 5% 1/4 WATT	9
20	5B-9036	R2 THRU R10	RESISTOR, FC, 100 OHM 10% 1/4 WATT	9
21	5A-8984	R12, R15, R28, R36, R38	RESISTOR, FC, 1K OHM 10% 1/4 WATT	5
22	5A-9181	R14	RESISTOR, FC, 1 OHM 10% 1/2 WATT	1
23	5A-9161	R16	RESISTOR, FC, 2.2 OHM 10% 1/4 WATT	1
24	5A-9361	R17	RESISTOR, FC, 220 OHM 10% 1/2 WATT	1
25				
26	5B-8983	R23, R24, R26	RESISTOR, FC, 3.3K OHM 10% 1/4 WATT	3
27	5A-9179	R25	RESISTOR, FC, 3.3M OHM 10% 1/4 WATT	1
28	5A-9359	R29	RESISTOR, FC, 47K OHM 5% 1/4 WATT	1
29	5B-8817	R33, R35, R37	RESISTOR, FC, 10K OHM 10% 1/4 WATT	3
30	5B-9039	R34	RESISTOR, FC, 10 OHM 10% 1/4 WATT	1
31	5A-8980	C1, C16 THRU C25, C31	CAPACITOR, CERAMIC, .01 MFD. 50 V. ±20%	11
32	5A-9065	C2 THRU C10	CAPACITOR, CERAMIC, 470 PFD. 50 V. ±20%	9
33	5A-9345	C11	CAPACITOR, CERAMIC, .001 MFD. 20% 100 V.	1
34	5A-9365	C12, C30, C36	CAPACITOR, ELECTROLYTIC 1 MFD. 6.3V. 10% ±50%	3
35	5A-8996	C13, C24, C35	CAPACITOR, CERAMIC, .1 MFD. 50 V. ±20%	3
36	5A-9165 OR 5A-9165-1	C14	CAPACITOR, ELECTROLYTIC, 800 MFD. 16 V. OR 1,000 MFD. 15 V. ±20%	1
37	5A-9164 OR 5A-9164-1	C15	CAPACITOR, ELECTROLYTIC, 500 MFD. 15 V. OR 470 MFD. 25 V. ±20%	1
38	5A-8986	C25	CAPACITOR, ELECTROLYTIC, 100 MFD. 10 V. ±20%	1
39	5A-8893	C26,	CAPACITOR, ELECTROLYTIC, 1,000 MFD. 25 V. ±20%	1
40	5A-9046	C27	CAPACITOR, ELECTROLYTIC, 12,000 MFD. 16 V. ±20%	1
41	5A-9180	C28	CAPACITOR, CERAMIC, 47 PFD. 1K V. ±20%	1
42	5A-9343	C29	CAPACITOR, ELECTROLYTIC, 10 MFD. 25 V. LOW LEAK ±20%	1
43	5A-9169	C32, C33	CAPACITOR, CERAMIC DISC, 27 PFD. 1K V. ±10%	2
44	5A-9163	C34	CAPACITOR, TANTALUM, 2.2 MFD. 15 V. ±20%	1
45	5A-9031	C37	CAPACITOR, TANTALUM, 1 MFD. 25 V. ±20%	1
46	5A-9024	SW1	MOMENTARY SWITCH SPDT	1
47	5A-9330	DS1	2 STD. DIP SWITCH	1

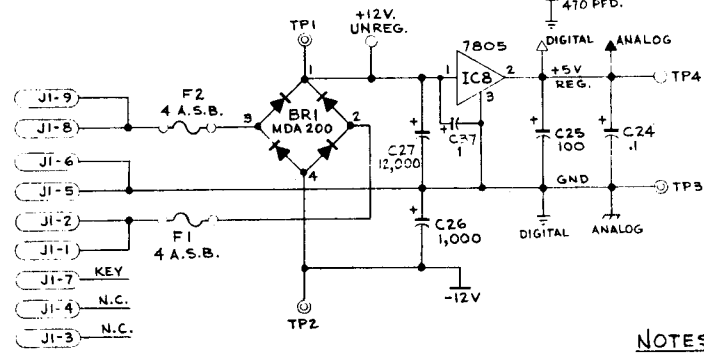
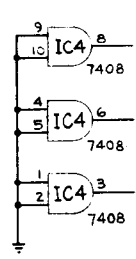
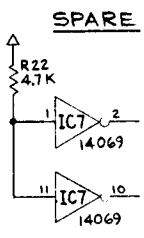
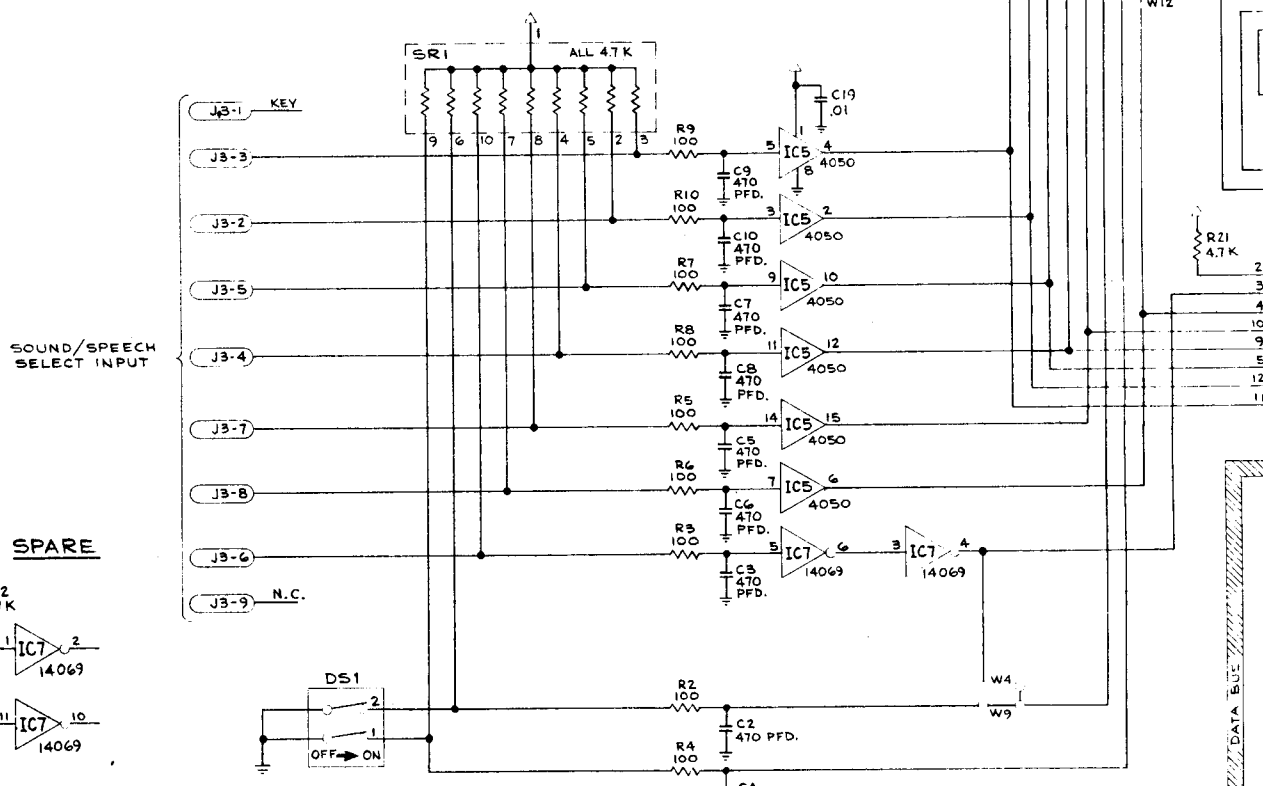
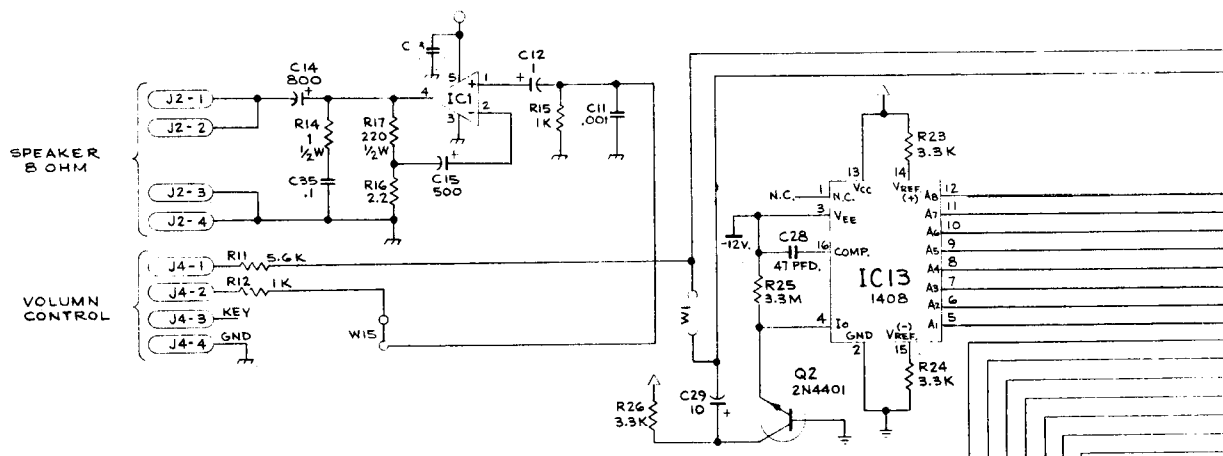


NOTES:

- USE THERMAL COMPOUND BETWEEN ICs AND HEAT SINK.
- CAUTION: AVOID STATIC DISCHARGE DAMAGE TO MOS LOGIC.
- SYMBOLS SHOWN ON COMPONENTS ARE FOR REFERENCE ONLY. DO NOT SCREEN OR STAMP.
- OBSERVE INDEX MARK OF ALL INTEGRATED CIRCUITS, DIODES, DI, D2, AND ZR1.
- CAPACITORS C12, C14, C15, C25, C27, C28, C27.
- CONNECTORS 10J1, 10J2, 10J3, 10J3, 10J3.
- POSITION OF TRANSISTORS Q2, Q3, Q3, Q4.
- DS1 - 1 SELECTS SOUNDS/NOTES
- 2 SELECTS SPEECH/NO SPEECH (W9/W1)
- W1 - SPEECH MODULE STATUS
- IN - SPEECH MODULE NOT ATTACHED
- OUT - SPEECH MODULE ATTACHED
- W14 - MPU INTERNAL RAM ENABLE
- W7 & W8 - MEMORY MAP CONTROL
- W12 & W13 - PB7 STATUS CONTROL (W13 NEVER USED)
- W4 & W9 - PB5 STATUS CONTROL
6. SOLDERED ON TOP OF BOARD
- INSTALL THESE JUMPERS FOR FOLLOWING GAMES:
- W15, W6, W12, W4, W1, W3, W6, W11 FOR:
 - WORLD CUP
 - DISCO FEVER
 - CONTACT
 - POKER/NO
 - PHOENIX
 - ARISTOCRAT SHUFFLE
 - POMPLI SHUFFLE
 - KING TUT SHUFFLE
 - TAGURUS SHUFFLE
- W15, W9, W12, W4, W1, W2, W3, W10, FOR:
 - FLASH
 - STELLAR WARS
 - TRI ZONE
 - TIME WARP
- W7, W15, W9, W1, (SEE NOTE #5) W2, W5, W10 FOR:
 - GORGAR
 - SOUND ROM 2
 - JT-4950
- NOTE SELECTION STRAPPING:

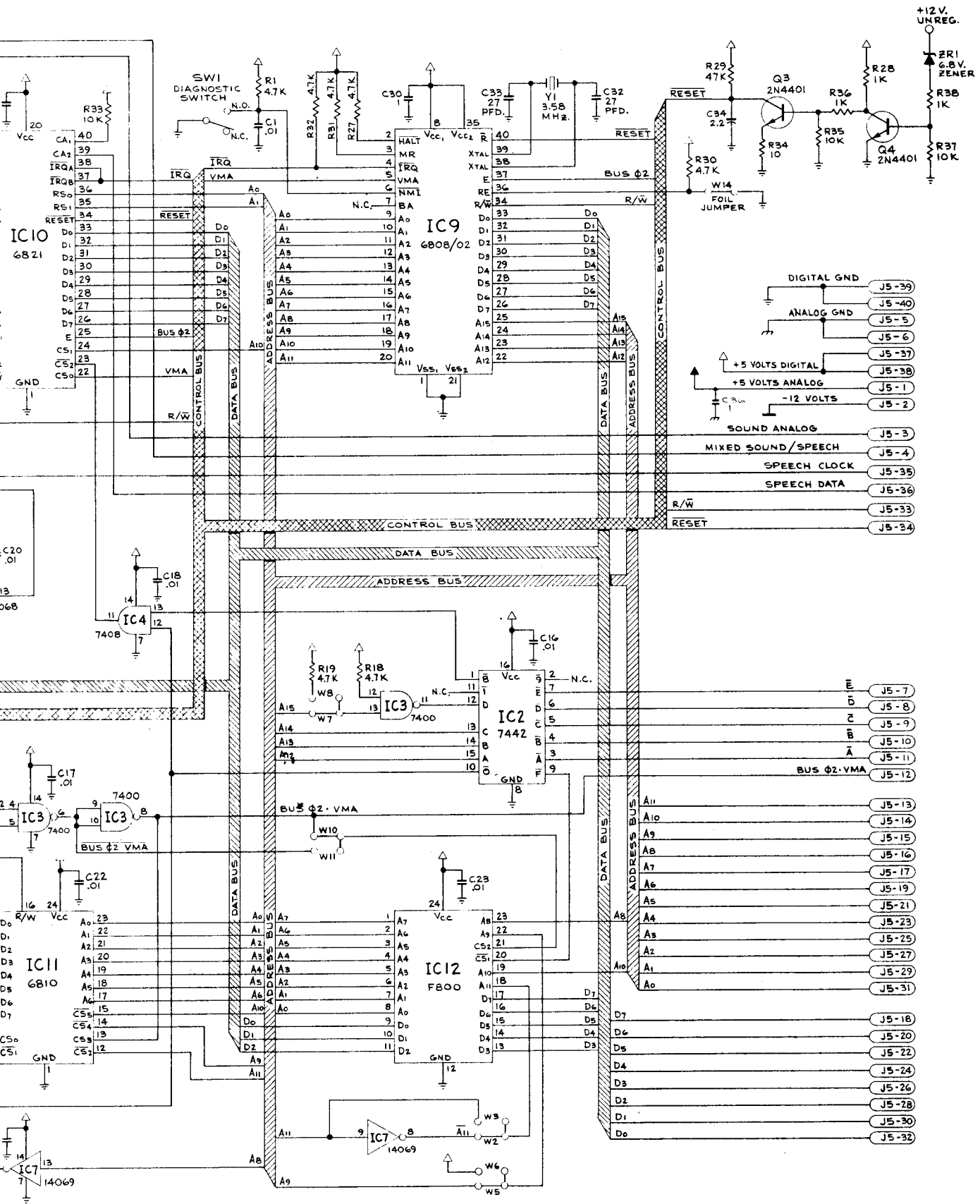
(2K x 8)	(1K x 8)	(512 x 8)
W2	W3	W3
W7	W3	W3
W7	W3	W3

TOLERANCES		QTY.	ASSEMBLE ON
UNLESS OTHERWISE SPECIFIED:	FRACTIONAL	±1/16"	
DECIMAL	±.005"		
HOLE DIA.	±.002 - .000"		
ANGULAR	±1/2°		
CONCENTRICITY	±.005"		
SCREW THREADS	CLASS 2		
MATERIAL		HEAT TREATMENT	FINISH
DATE	APP'D.	SCALE	
9-23-79	W/10/84	2:1	D-8223

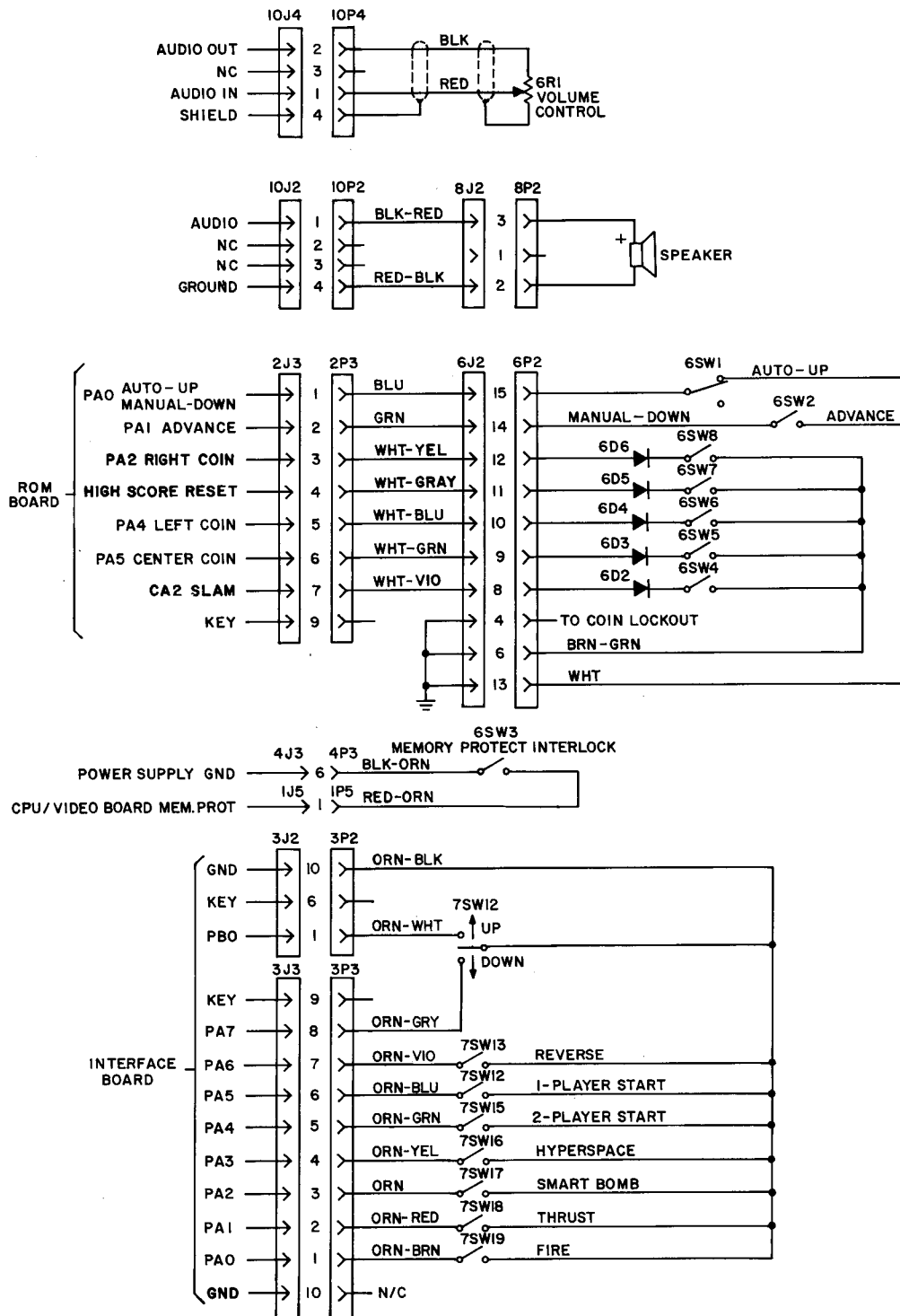


- NOTES:**
1. ALL RESISTORS, 1/4 WATT UNLESS OTHERWISE NOTED.
 2. ALL CAPACITORS, MFD. UNLESS OTHERWISE NOTED.





D8224 Sound Board Logic Diagram



Cabinet Wiring Diagram