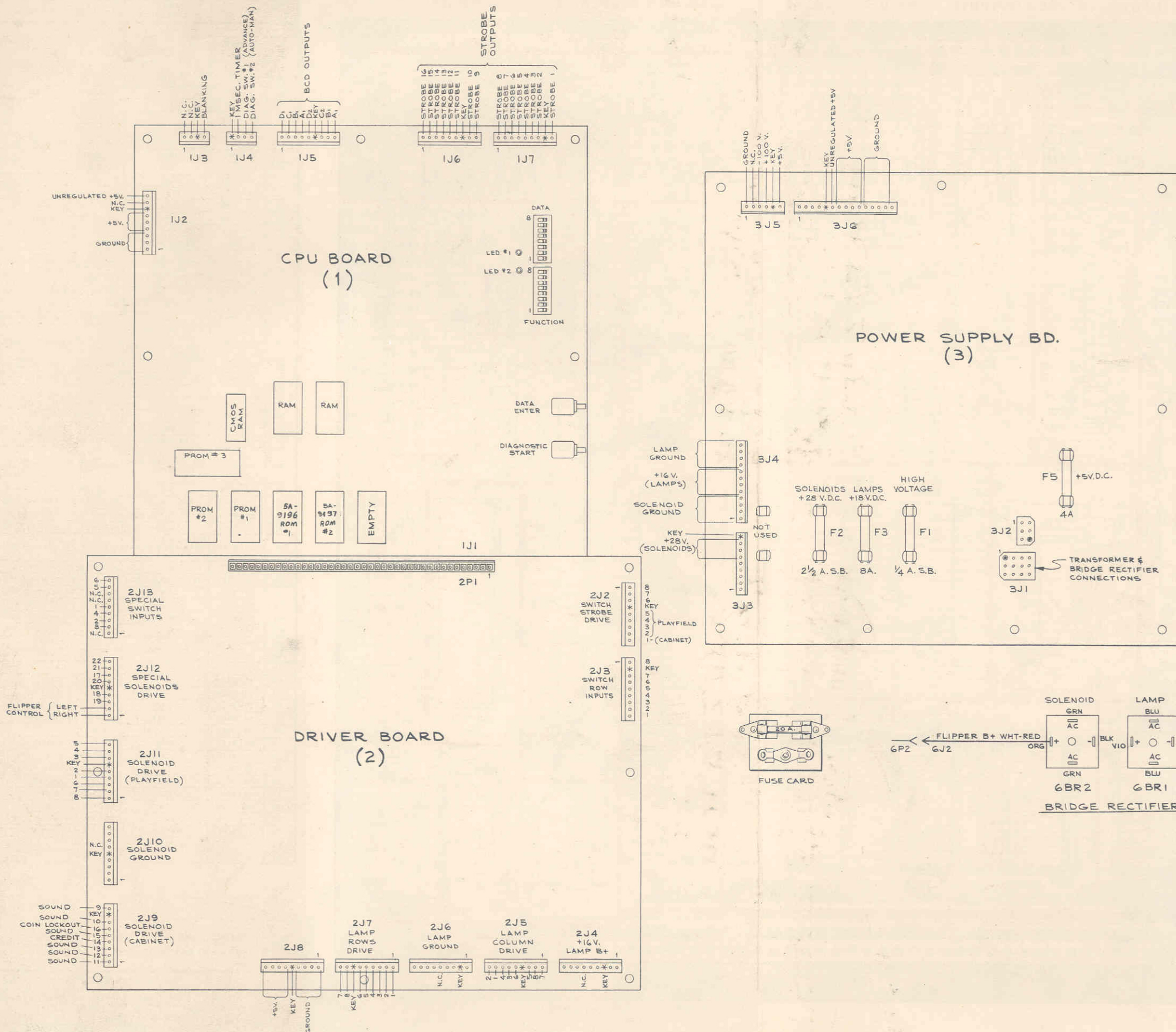
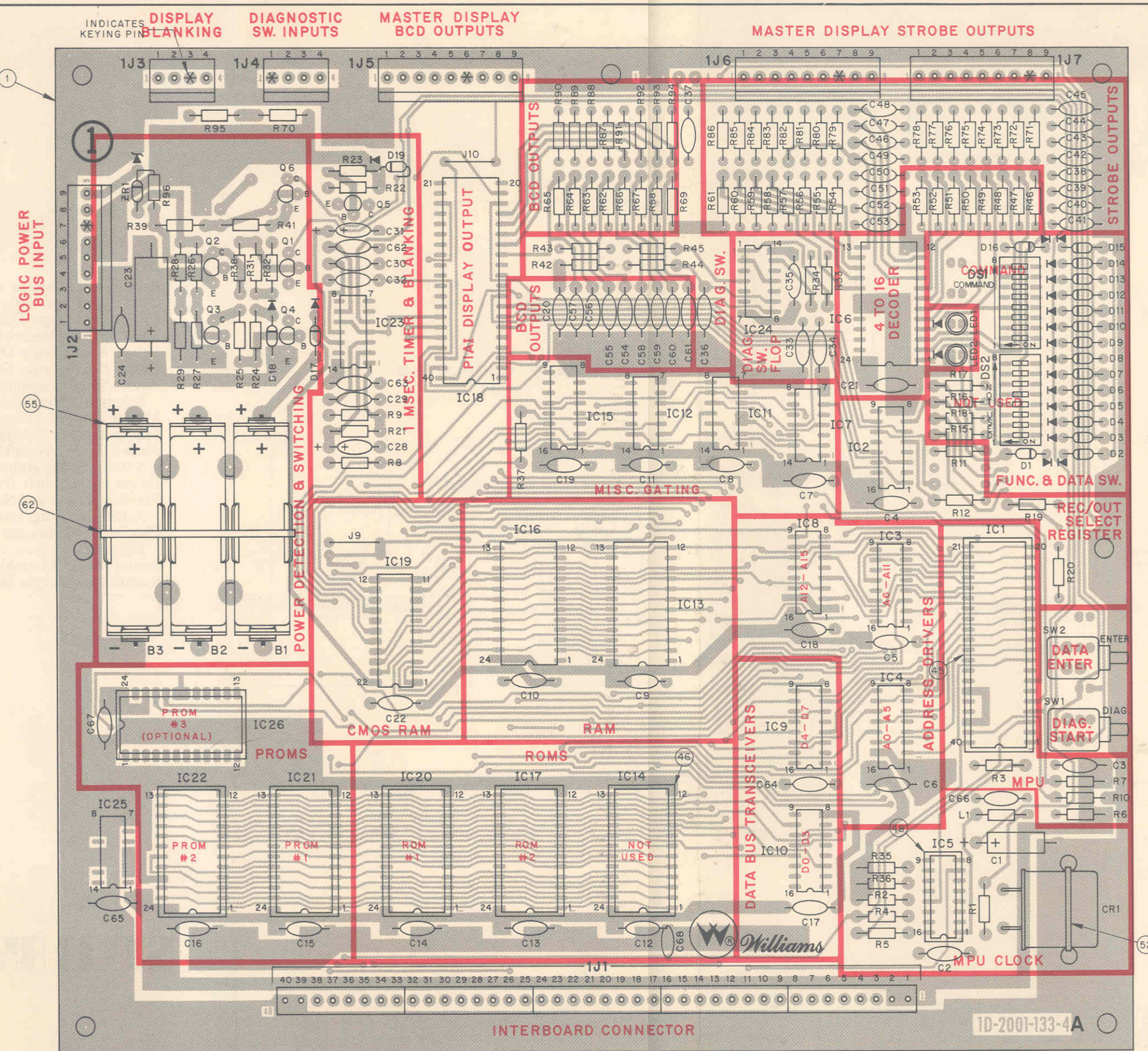




Drawing	Page
Back Box Connector Identification	1
CPU Board Assembly Drawing	2
CPU Board Logic Diagram	3
Driver Board Assembly Drawing	4
Driver Board Logic Diagram (Sheet 1 of 2) .	5
Driver Board Logic Diagram (Sheet 2 of 2) .	6
Power Supply Assembly and Schematic Diagrams	7
Master Display Assembly Drawing	8
Master Display Schematic Diagram	9
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Playfield Lamp and Solenoid Schematic Diagrams	12
Playfield Switches and Insert Board Diagrams	13
Sound Board Assembly Drawing	14
Sound Board Logic Diagram	15

STELLAR WARS

REVISION LETTER	REVISION
A	REVISED AND REDRAWN TO CONFORM TO ARTWORK NO. 18-2001-133 LATEST ISSUE NO. 4
B	ADDED D19, C68 & NOTE. R. GAY 5-2-78
C	IN ITEM NO. 40, ADDED R96, QTY. WAS 4, ITEM NO. 33, DELETED R30 & R40, QTY. WAS 35 & ITEM NO. 28, DELETED C27, PT. NO. 5A-9023, E.C.O. 4613 R. GAY 9-8-78
D	ITEM NO. 45, DELETED (1) SOCKET, QTY. WAS 2, ITEM NO. 46, DELETED (3) SOCKETS, QTY. WAS 9 & DELETED ITEM NO. 47, PT. NO. 5A-9005, E.C.O. 4620 R. GAY 9-11-78
E	ITEM NO. 25, DELETED C22, QTY. WAS 32 & ITEM NO. 27, ADDED C22, QTY. WAS 1, E.C.O. 4665 R. GAY 12-22-78

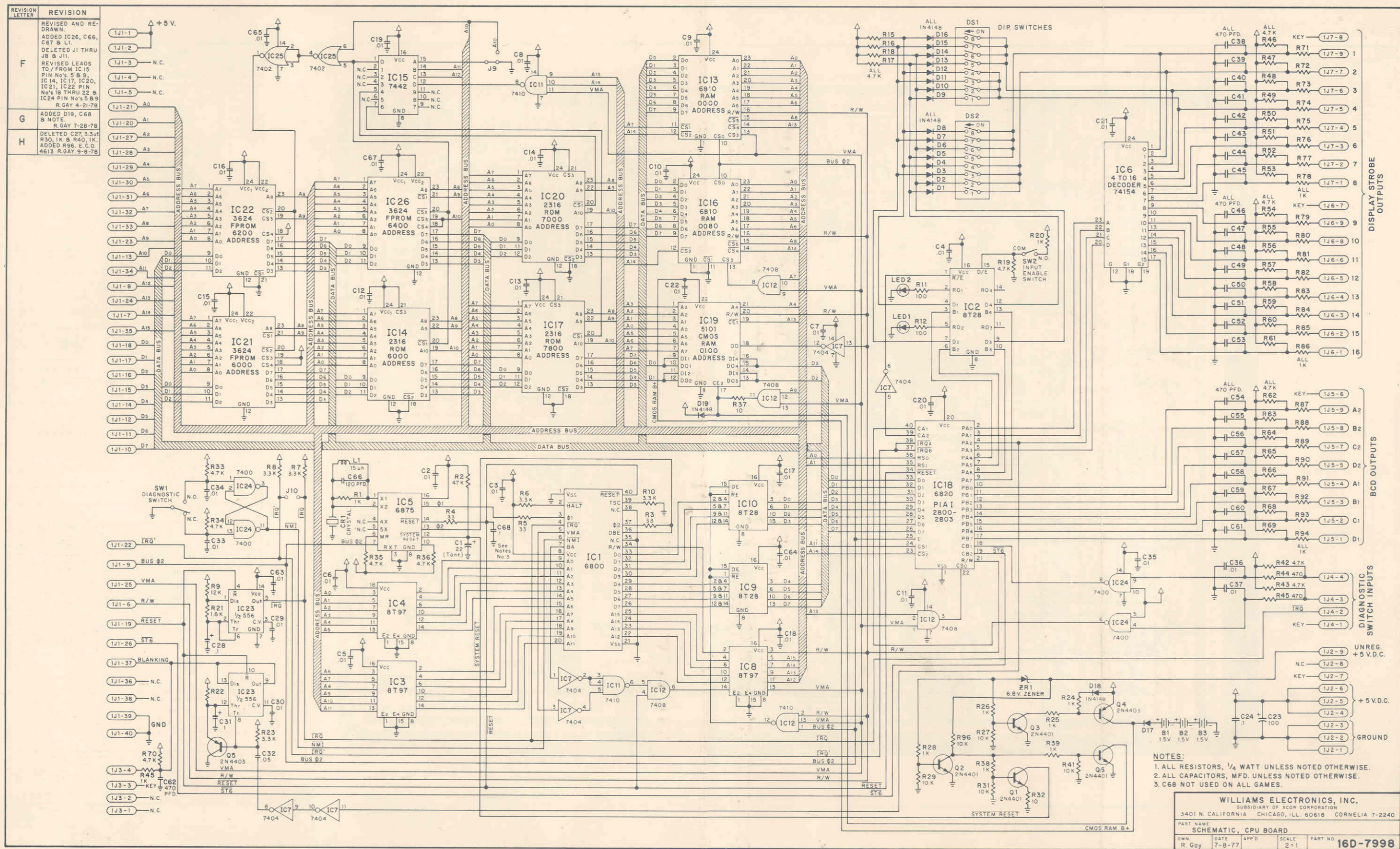


ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D. NO.
1	18-2001-133		BARE P.C. BOARD	1
2	5A-8990	IC2, IC9, IC10	8T28 QUAD BUFFER/RECEIVER	3
3	5A-8989	IC3, IC4, IC8	8T97 HEX. TS BUFFER	3
4	5A-9015	IC21, IC22, IC26	PROM 512 X 8 7641/6341	2/3
5	5A-9010	IC6	74154 4 TO 16 DECODER	1
6	5A-9013	IC7	7404 HEX. INVERTER	1
7	5A-9011	IC11	7410 TRIPLE 3 INPUT NAND	1
8	5A-8973	IC12	7408 QUAD AND	1
9	5A-9003	IC13, IC16	MC6810 RAM	2
10	5A-9012	IC15	7442 BCD-DEC DECODER	1
11	5A-8972	IC18	MC6820 PIA	1
12	5A-9017	IC19	CMOS RAM 5101	1
13	5C-9002	IC23	MC3456/556 DUAL TIMER	1
14	5A-9073	IC24	7400 QUAD 2 INPUT NAND	1
15	5A-8948	IC25	7402 QUAD 2 INPUT NOR	1
16	5A-9018	ZR1	IN5996 ZENER DIODE	1
17	5A-8919	D1 THRU D19	IN4148 DIODE, SILICON	18
18	5C-8938	Q1, Q2, Q3, Q6	2N4401 TRANSISTOR	4
19	5C-9016	Q4, Q5	2N4403 TRANSISTOR	2
20	5B-9025	DS1, DS2	8 STN DIP SWITCH	2
21	5A-9019	LED1, LED2	LED, RED	2
22	5A-9024	SW1, SW2	SWITCH, SPDT MOMENTARY	2
23	5A-9020	CR1	CRYSTAL, 3.58 MHE.	1
24	5A-9009	C1	CAPACITOR, TANT, 22 MFD. 10% 10V.	1
25	5A-8980	C2 THRU C24, C29, C30, C33 THRU C37, C63, C64, C65, C67	CAPACITOR, CERAMIC, .01 MFD. 50 V.	31
26	5A-8986	C23	CAPACITOR, ELECT., 100 MFD. 10 V.	1
27	5A-8996	C22, C24, C68*	CAPACITOR, CERAMIC, .1 MFD. 50 V.	2
28				
29	5A-9029	C28	CAPACITOR, TANT., .1 MFD. 10 V.	1
30	5A-9031	C31	CAPACITOR, TANT., .1 MFD. 25 V.	1
31	5A-9030	C32	CAPACITOR, CERAMIC, .047 MFD. 50V.	1
32	5A-9065	C38 THRU C62	CAPACITOR, CERAMIC, 470 PFD. 50V.	24
33	5B-8984	R1, R20, R24, R25, R26, R28, R38, R39, R71 THRU R95	RESISTOR, FC, 1 K OHM 10% 1/4 W	33
34	5B-9035	R2	RESISTOR, FC, 47 K OHM 10% 1/4 W	1
35	5B-9040	R3, R4, R5	RESISTOR, FC, 33 OHM 10% 1/4 W	3
36	5B-8983	R6, R7, R8, R10, R23	RESISTOR, FC, 3.3 K OHM 10% 1/4 W	4
37	5B-9036	R11, R12	RESISTOR, FC, 100 OHM 10% 1/4 W	2
38	5B-8991	R15 THRU R19, R33 THRU R36, R42, R43 R46 THRU R70	RESISTOR, FC, 4.7 K OHM 10% 1/4 W	36
39	5B-9117	R21	RESISTOR, FC, 1.8 K OHM 2% 1/4 W	1
40	5B-9034	R27, R29, R31, R41, R96	RESISTOR, FC, 10 K OHM 5% 1/4 W	5
41	5B-9032	R9	RESISTOR, FC, 12 K OHM 2% 1/4 W	1
42	5B-9039	R32, R37	RESISTOR, FC, 10 OHM 10% 1/4 W	2
43	5B-9083	R44, R45	RESISTOR, FC, 470 OHM 10% 1/4 W	2
44	5B-9113	R22	RESISTOR, FC, 33 K OHM 5% 1/4 W	1
45	5A-8985		40 PIN IC SOCKET	1
46	5A-9004		24 PIN IC SOCKET	6
47				
48	5A-9006		16 PIN IC SOCKET	1
49	5A-9026	1J1	HEADER 09-64-1083	5
50	5A-9027	1J3, 1J4	HEADER 09-65-1091	2
51	5A-9028	1J2, 1J5, 1J6, 1J7	HEADER 09-65-1041	4
52	3A-7520		TIE WRAP	1
53	5A-9137	C66	CAPACITOR, CERAMIC, 120 PFD. 100V.	1
54	5A-9136	L1	INDUCTOR, 15 uH. ±10%	1
55	5A-9021		BATTERY HOLDER #171	1
56	5A-9022	B1, B2, B3	BATTERY, ALKALINE, 1.5 V.	3
57	5A-8987	IC1	MC6800 MICROPROCESSOR	1
58	5A-8988	IC5	MC6875 CLOCK CHIP	1
59	5A-9197	IC17	ROM 2K X 8 UPPER	1
60	5A-9198	IC20	ROM 2K X 8 LOWER	1
61	5A-	IC14	NOT USED	0
62	3A-7520-1		TIE WRAP	1

* - C68 NOT USED ON ALL GAMES.

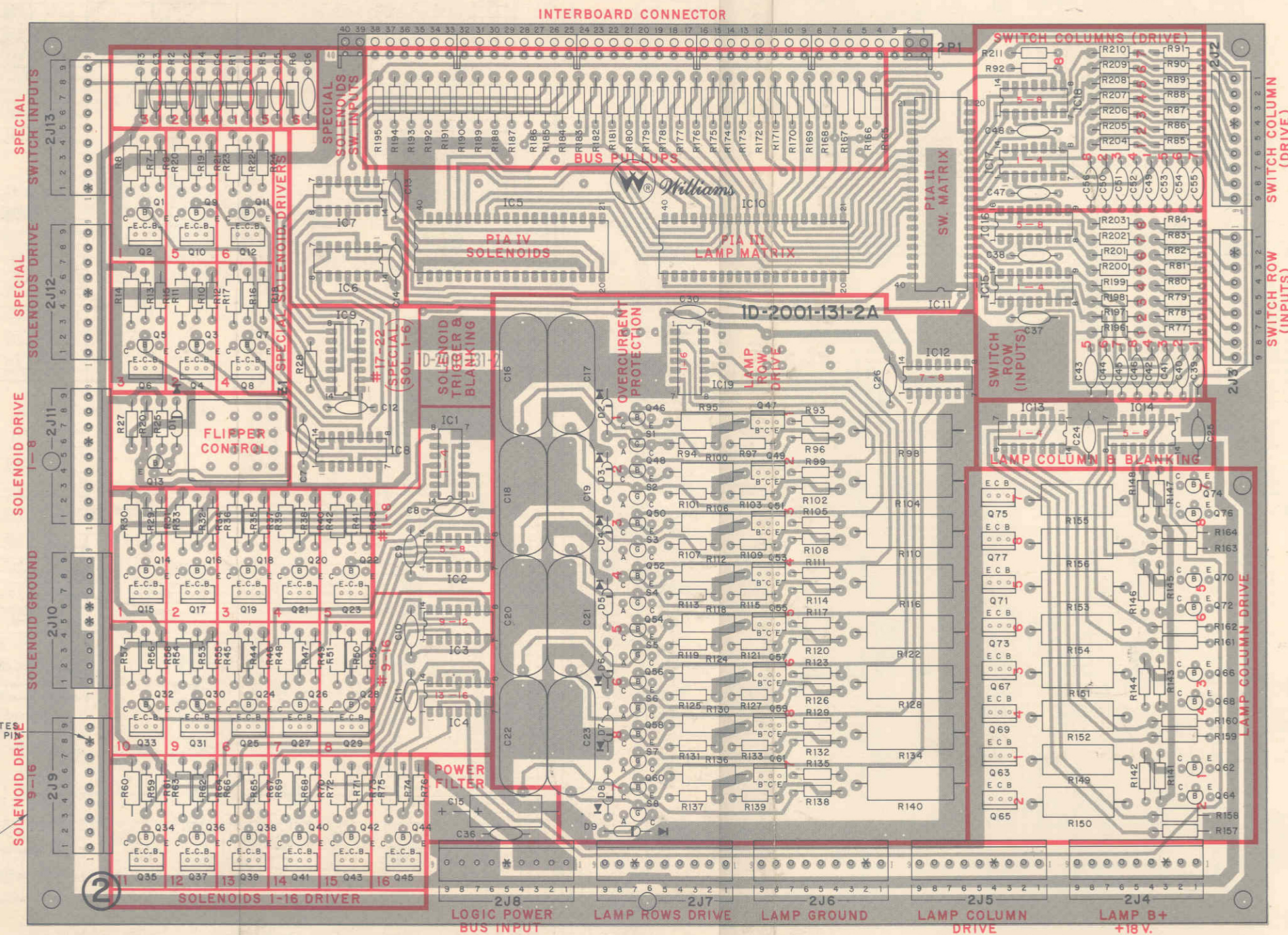
★ - FOR INFO ONLY NOT PART OF ASSEMBLY.

WILLIAMS ELECTRONICS, INC.				
SUBSIDIARY OF XCOR CORPORATION				
3401 N. CALIFORNIA CHICAGO, ILL. 60618 CORNELIA 7-2240				
PART NAME				
CPU BOARD ASSEMBLY				
DWN.	DATE	APP'D.	SCALE	PART NO.
R. Gay	9-16-77		2=1	D-8113



REVISION LETTER	REVISION
C	REVISED AND REDRAWN R. GAY 11-28-77
D	ITEM NO. 28, PT. NO. WAS 5A-8999 & ADDED MOUNT- ING NOTE FOR R149 THRU R156. R. GAY 4-11-78
E	DELETED ITEM NO. 36, PT. NO. 5A-8985, E.C.O. R. GAY 9-12-78
F	ADDED ITEM NO. 36 & ITEM NO. 22, DELETED (8) RESISTORS & QTY. WAS 32 E.C.O. 4624 R. GAY 10-4-78

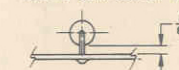
* INDICATES
KEYING PIN



BILL OF MATERIAL

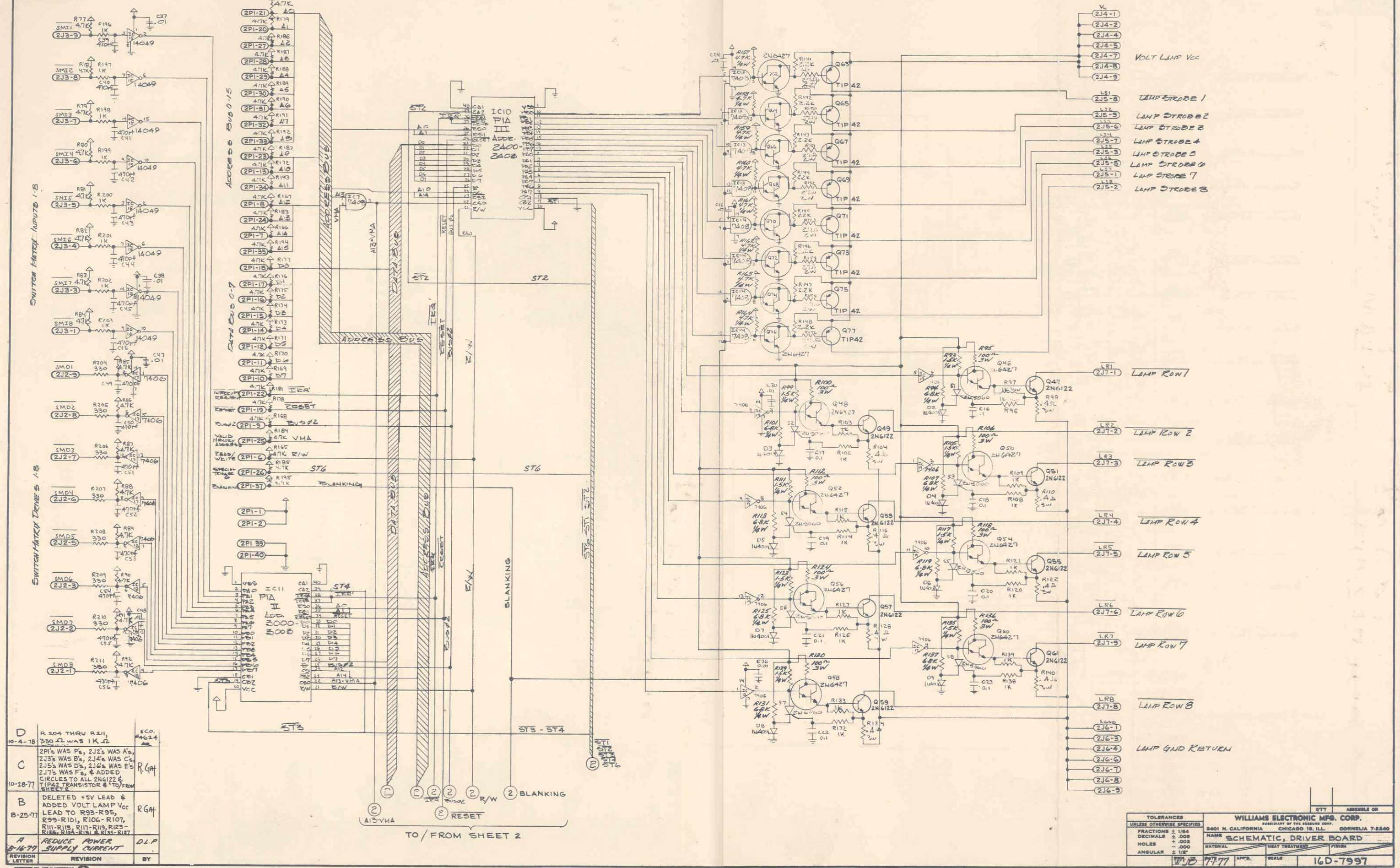
ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D. NO.
1	1B-2001-131		BARE P.C. BOARD	1
2	5A-8948	IC8, IC9	N7402 QUADRUPLE 2 INPUT POSITIVE NOR GATE	2
3	5A-8974	IC12, IC17, IC18, IC19	N7406 HEX. INVERTER BUFFER DRIVERS W/ OPEN COLLECTOR HIGH VOLTAGE OUTPUTS	4
4	5A-8973	IC1 THRU IC4, IC6, IC7, IC15, IC14	N7408 QUADRUPLE 2 INPUT POSITIVE NOR GATE	8
5	5A-8975	IC15, IC16	MC14049 INVERTING HEX. BUFFER	2
6	5A-8972	IC5, IC10, IC11	MC6820 PERIPHERAL INTERFACE ADAPTER	3
7	5A-8938		2N4401 NPN TRANSISTOR	23
8	5A-8976		2N6427 DARLINGTON NPN TRANSISTOR	16
9	5A-8977		TIP120 DARLINGTON NPN POWER TRANSISTOR	22
10	5A-8978		TIP42 PNP POWER TRANSISTOR	8
11	5A-8979		2N6122 NPN POWER TRANSISTOR	8
12	5A-6258	D1	1N4001 DIODE	1
13	5A-8919	D2 THRU D9	1N4148 DIODE	8
14	5A-9014	S1 THRU S8	2N5060 SCR	8
15	5A-8980	C1 THRU C14, C24, THRU C26, C30, C37, C38, C47, C48	CAPACITOR, CERAMIC, 0.1 MFD. +80-20% 50 V.	22
16	5A-8995	C16 THRU C23	CAPACITOR, POLYESTER FILM, 1 MFD. 10%	7
17	5A-9065	C37 THRU C46, C49 THRU C56	CAPACITOR, CERAMIC, 470 PFD. 20% 50 V.	16
18	5A-8986	C15	CAPACITOR, ELECT., 100 MFD. 10 V.	1
19	5A-8996	C36	CAPACITOR, CERAMIC, 1 MFD. +80-20% 50 V.	1
20	5A-8991	R1 THRU R6, R27, R77 THRU R92, R157 THRU R195	RESISTOR, FC, 4.7 K OHM 10% 1/4 W	62
21	5A-8983	R27	RESISTOR, FC, 3.3 K OHM 10% 1/4 W	1
22	5A-8984	R96, R97, R102, R103, R108, R109, R114, R115, R121, R122, R126, R127, R132, R133, R138, R139, R196 THRU R203	RESISTOR, FC, 1 K OHM 10% 1/4 W	24
23	5A-8992	R7, R10, R13, R16, R19, R22, R29, R32, R35, R38, R41, R44, R47, R50, R53, R56, R59, R62, R65, R68, R71, R74	RESISTOR, FC, 560 OHM 10% 1/4 W	22
24	5A-8993	R8, R11, R14, R17, R20, R23, R30, R33, R36, R39, R42, R45, R48, R51, R54, R57, R60, R63, R66, R69, R72, R75	RESISTOR, FC, 68 OHM 10% 1/4 W	22
25	5A-8997	R9, R12, R15, R18, R21, R24, R25, R31, R34, R37, R40, R43, R46, R49, R52, R55, R58, R61, R64, R67, R70, R73, R76	RESISTOR, FC, 2.7 K OHM 10% 1/4 W	23
26	5A-8917	R26	RESISTOR, FC, 10 K OHM 10% 1/4 W	1
27	5A-8998	R141 THRU R148	RESISTOR, FC, 2.2 K OHM 10% 1/4 W	8
28	5A-8999-1	R149 THRU R156	RESISTOR, FC, 27 OHM 10% 2 W	8
29	5A-9084	R95, R100, R106, R112, R118, R124, R130, R136	RESISTOR, FC, 100 OHM 10% 3 W	8
30	5A-9085	R93, R99, R105, R111, R117, R123, R129, R135	RESISTOR, FC, 1.5 K OHM 10% 1/4 W	8
31	5A-9086	R94, R101, R107, R113, R119, R125, R131, R137	RESISTOR, FC, 6.8 K OHM 10% 1/4 W	8
32	5A-9037	R98, R104, R110, R116, R122, R128, R134, R140	RESISTOR, WIREWOUND, .4 OHM 10% 3 WATT	8
33	5A-8994	Z1	RELAY - 4 POLE - 5 AMP. CONTACTS 40 OHM COIL 6 V.D.C.	1
34	5A-9066	2P1	8 PIN RECEPTACLE	5
35	5A-9027	2J2 THRU 2J13	9 PIN HEADER	12
36	5A-9001	R204 THRU R211	RESISTOR, FC, 330 OHM 10% 1/4 W	8

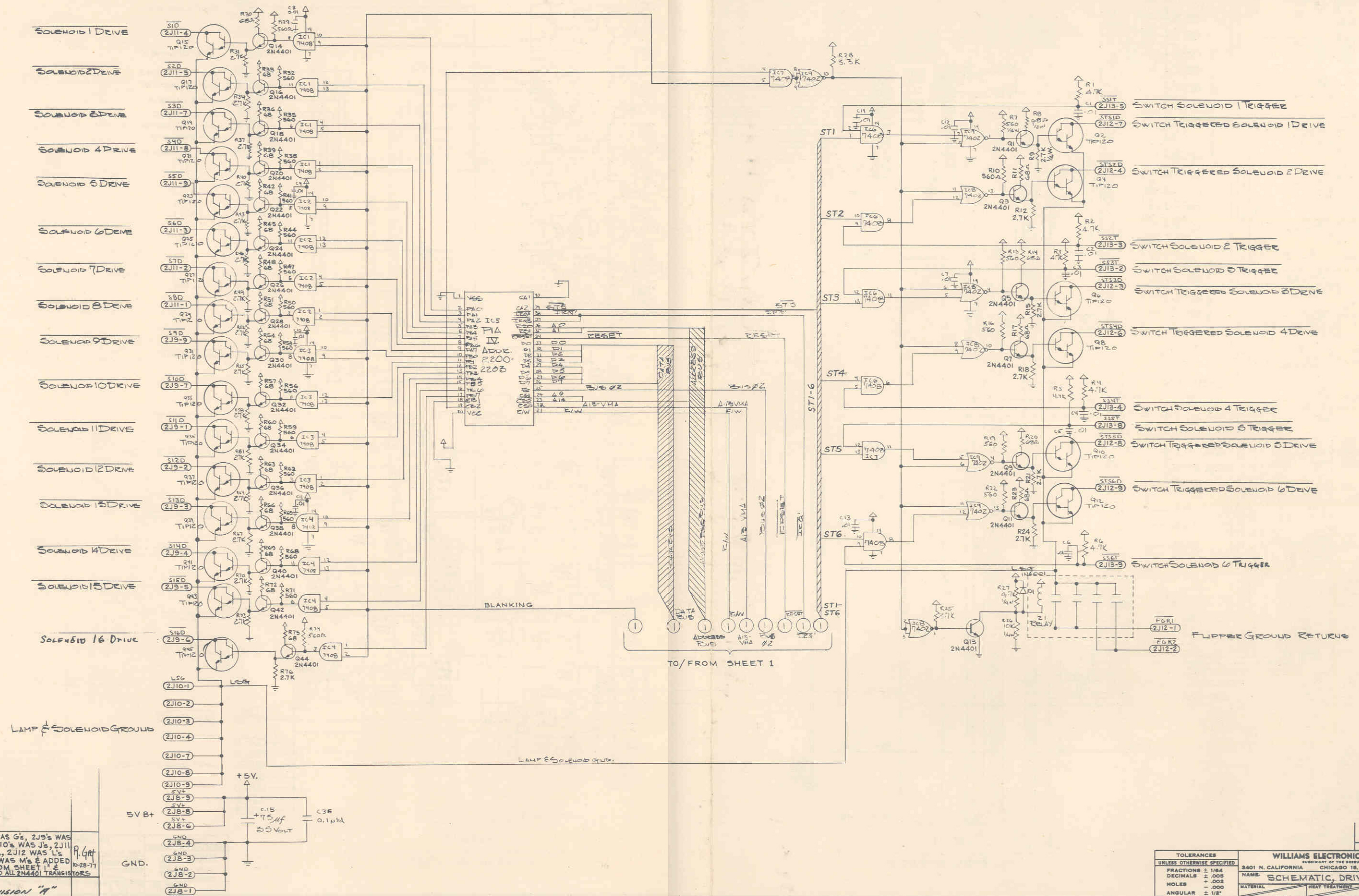
★ R149 THRU R156 MUST BE MOUNTED 1/8" ABOVE SURFACE OF BOARD.



WILLIAMS ELECTRONICS, INC. SUBSIDIARY OF XCOR CORPORATION 3401 N. CALIFORNIA CHICAGO, ILL. 60618 CORNELIA 7-2240			
PART NAME DRIVER BOARD ASSEMBLY			
DWN. R. Gay	DATE 8-16-77	APP'D. 2-1	PART NO. D-7997

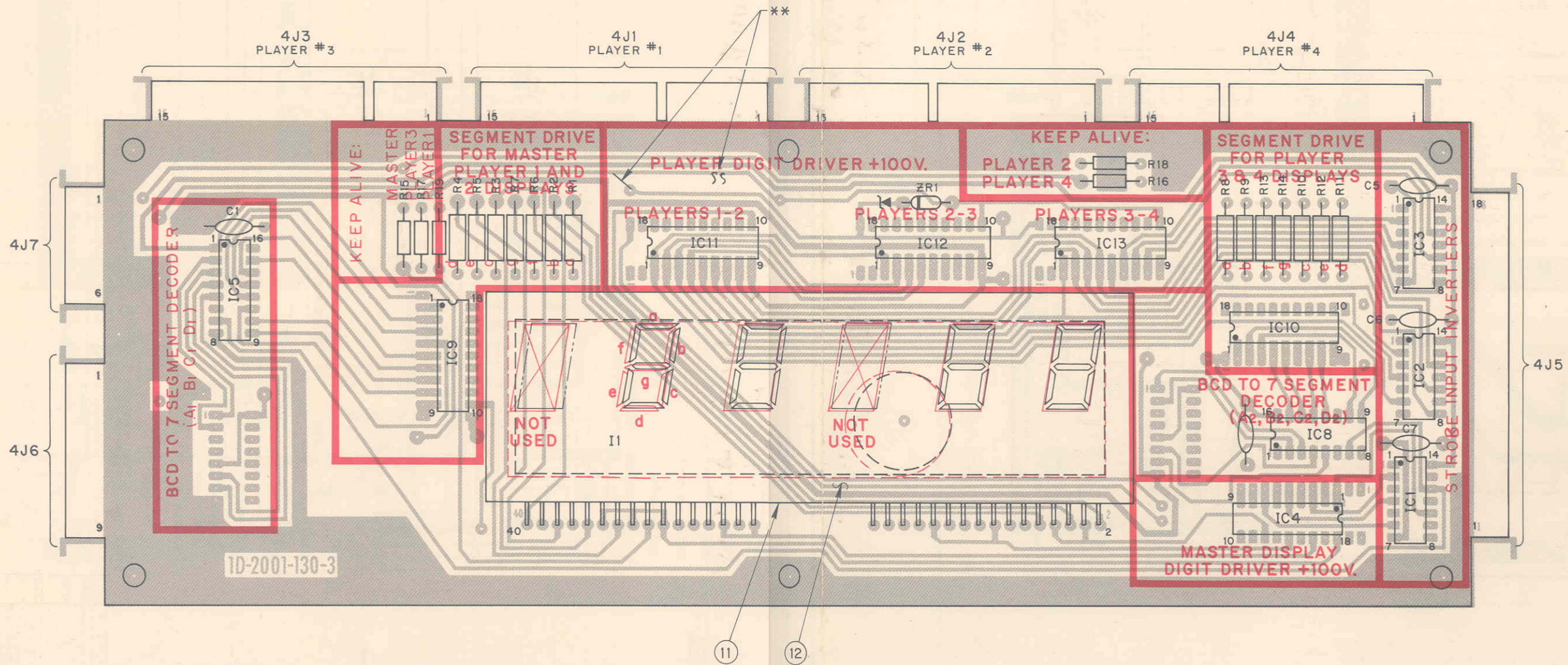
DOCUMENT #1





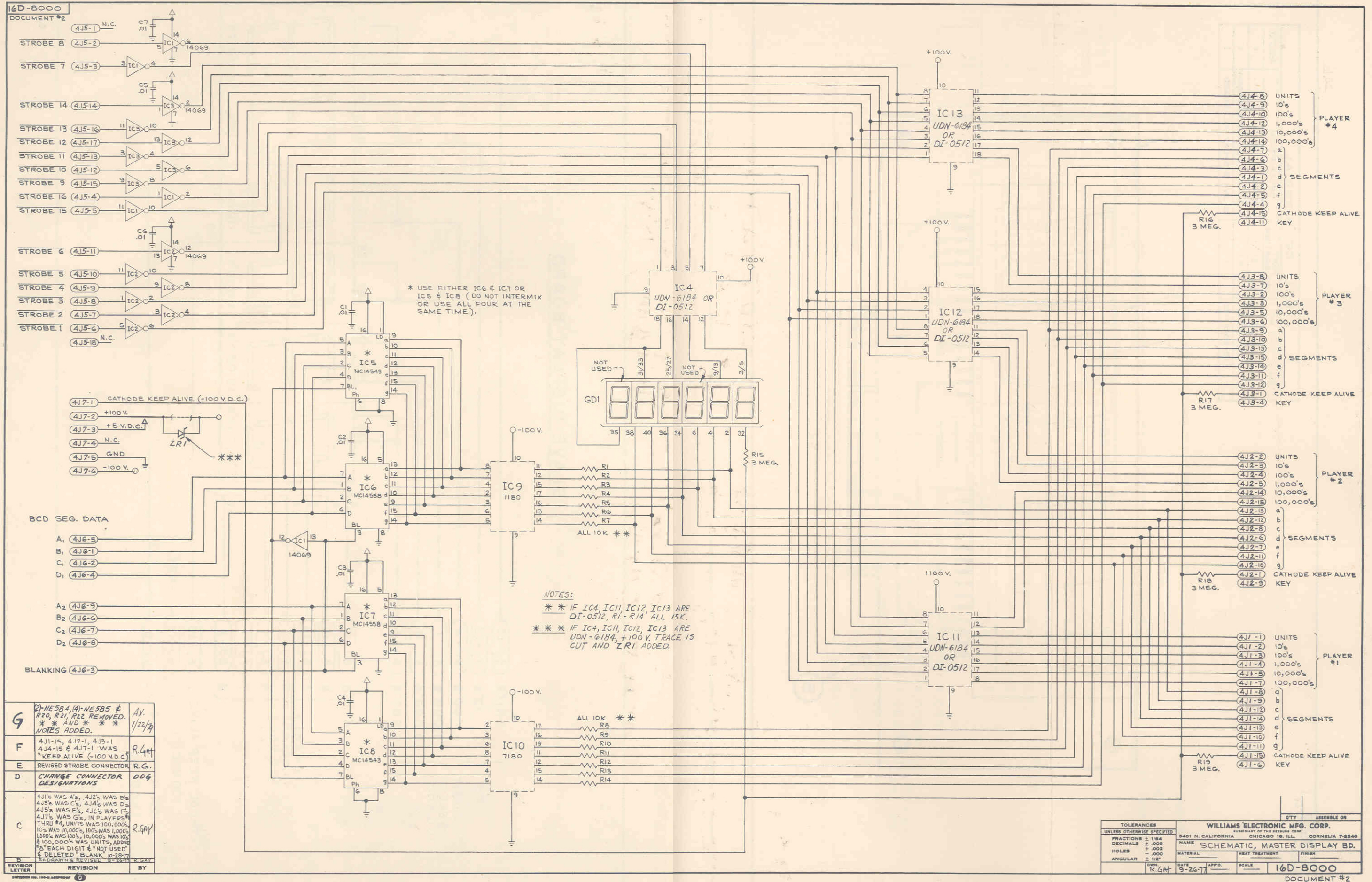
NOTES:
* - IF IC11, IC12, IC13 & IC14 ARE DIONICS-512 DRIVERS THEN R1 - R14 ARE 5A-9149 RES., F.C., 15K OHM $\pm 10\%$ $\frac{1}{2}$ W. ZR1 NOT USED.
** - CUT & JUMP ON +100V. NOT IMPLEMENTED.

BILL OF MATERIAL				
ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D. NO.
1	1D-2001-130-3		BARE P.C. BOARD	1
2	5A-8971	IC1, IC2, IC3	MC14069 HEX. INVERTER	3
3	5A-8970	IC5, IC8	MC14543 BCD TO SEVEN SEGMENT LATCH/DECODER/DRIVER	2
4	5A-8969	IC9, IC10	UDN-7180 GAS DISCHARGE DISPLAY SEGMENT DRIVER	2
*	5A-8968	IC4, IC11, IC12, IC13	UDN-6184 GAS DISCHARGE DISPLAY SEGMENT DRIVER	2
*	5B-8981	R1 THRU R14	RESISTOR, FC, 10K OHM 10% $\frac{1}{2}$ W	14
7	5B-8982	R15 THRU R19	RESISTOR, FC, 3 MEG OHM 10% $\frac{1}{4}$ W	5
8	5A-9135	ZR1	1N4740A ZENER DIODE, 10V. 5% 1W	1
9	5A-8980	C1, C4 THRU C7	CAPACITOR, CERAMIC, .01 MFD. 50V.	5
**			JUMPER, #22 GA. SOLID WIRE	1
11	5B-8966	I1	6 DIGIT DISPLAY	1
12	23A 6542		DISPLAY MTG. ADHESIVE FORM	1

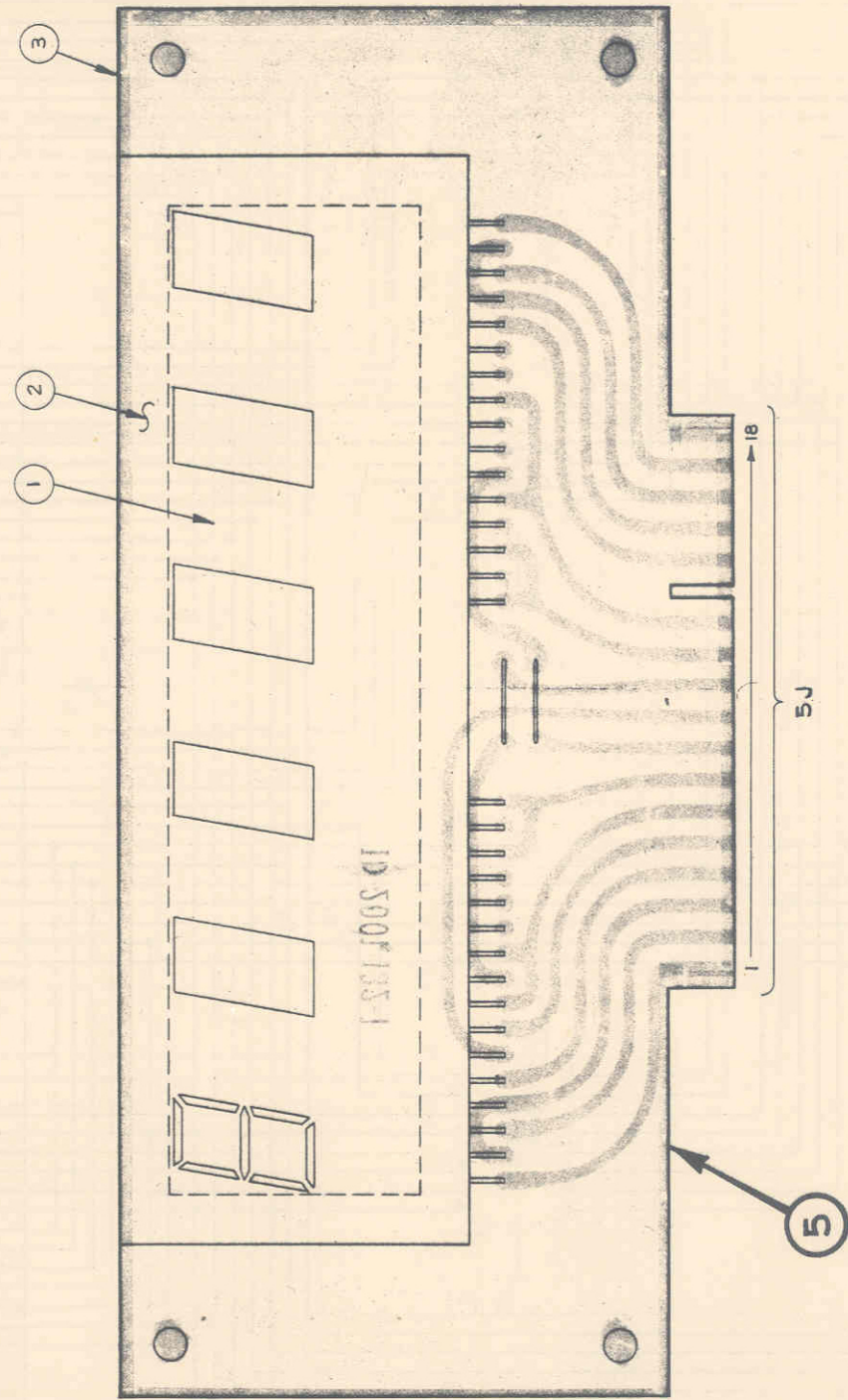


WILLIAMS ELECTRONICS, INC.
SUBSIDIARY OF XCOR CORPORATION
3401 N. CALIFORNIA CHICAGO, ILL 60618 CORNELIA 7-2240

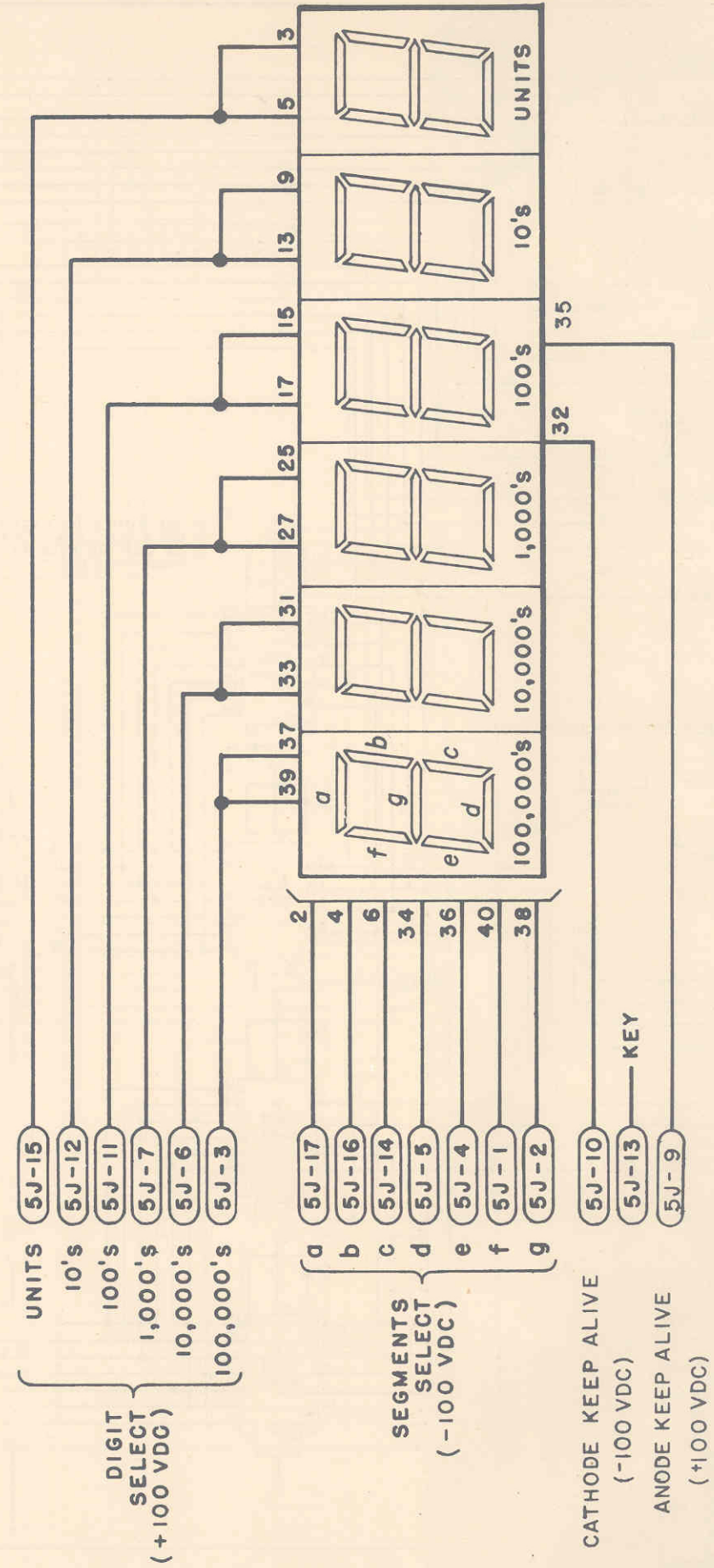
PART NAME MASTER DISPLAY ASSEMBLY			
DWN. R. Gay	DATE 1-30-79	APP'D.	SCALE 2=1
			PART NO. D-8000

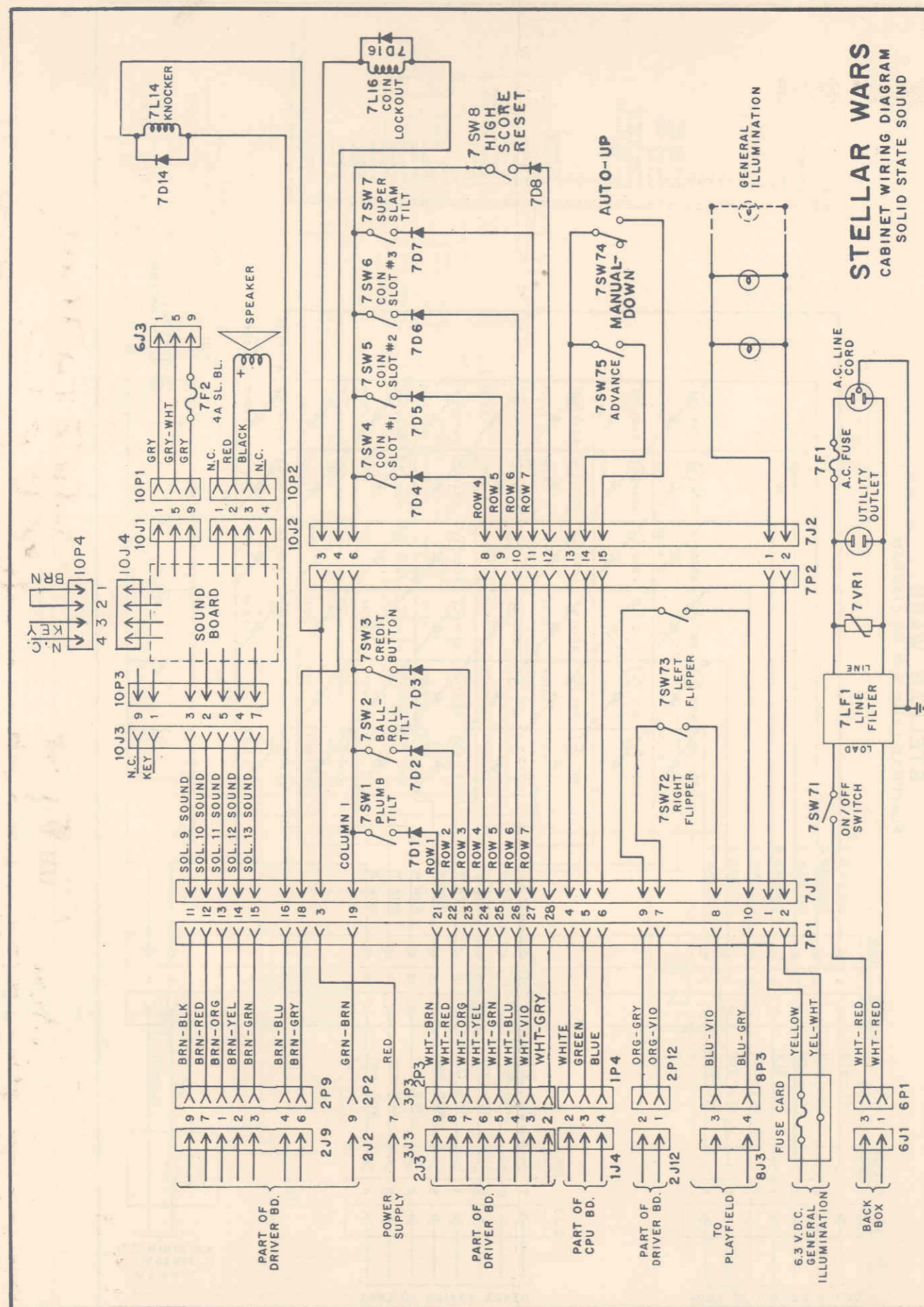
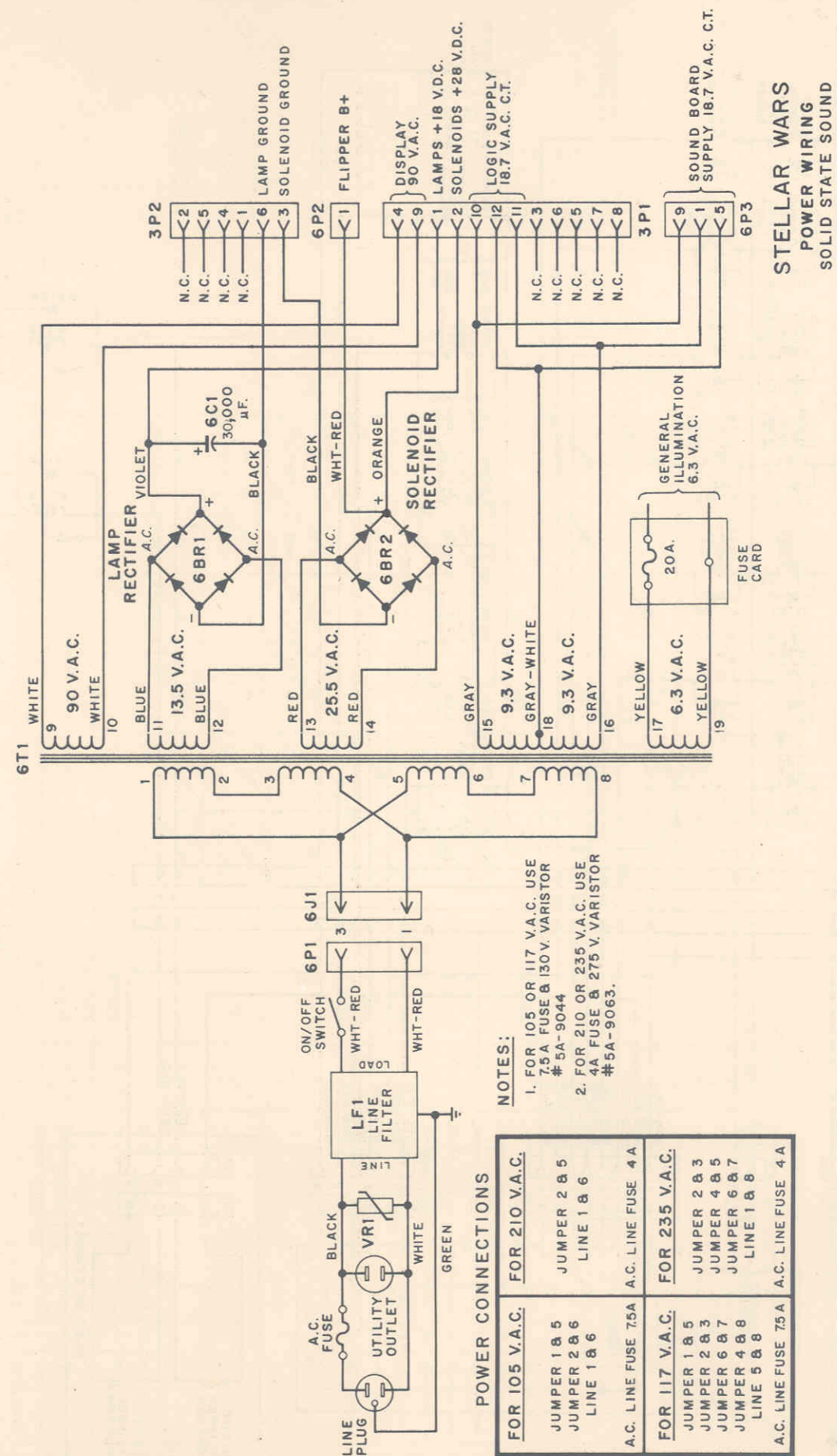


BILL OF MATERIAL				
ITEM	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D.
1	5A-8966	I1	6 DIGIT DISPLAY	1
2	2BA-6534	F1	DISPLAY MTG. ADHESIVE FOAM	1
3	ID-2001-132		SLAVE DISPLAY P.C. BOARD	1



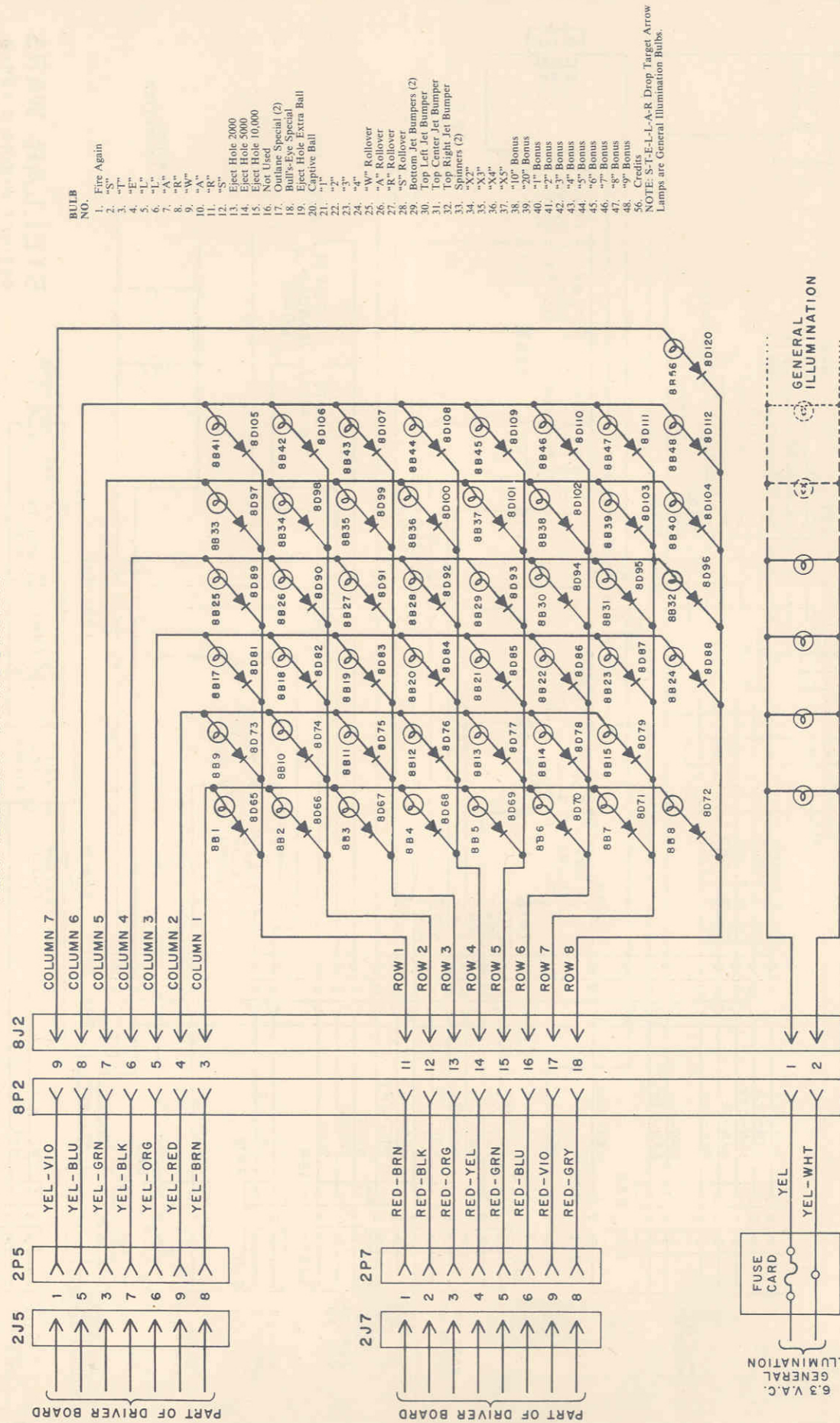
SLAVE DISPLAY BOARD

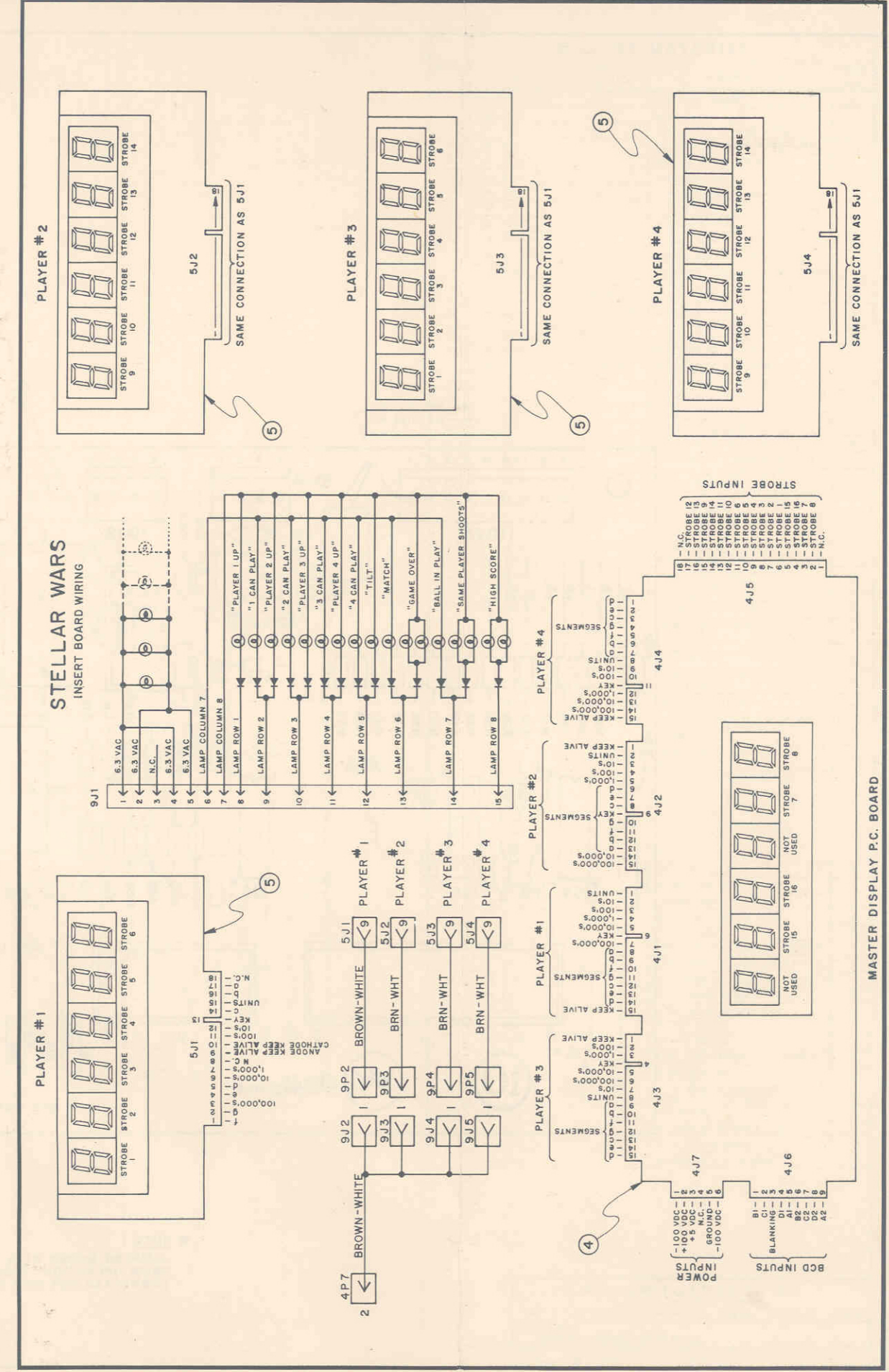
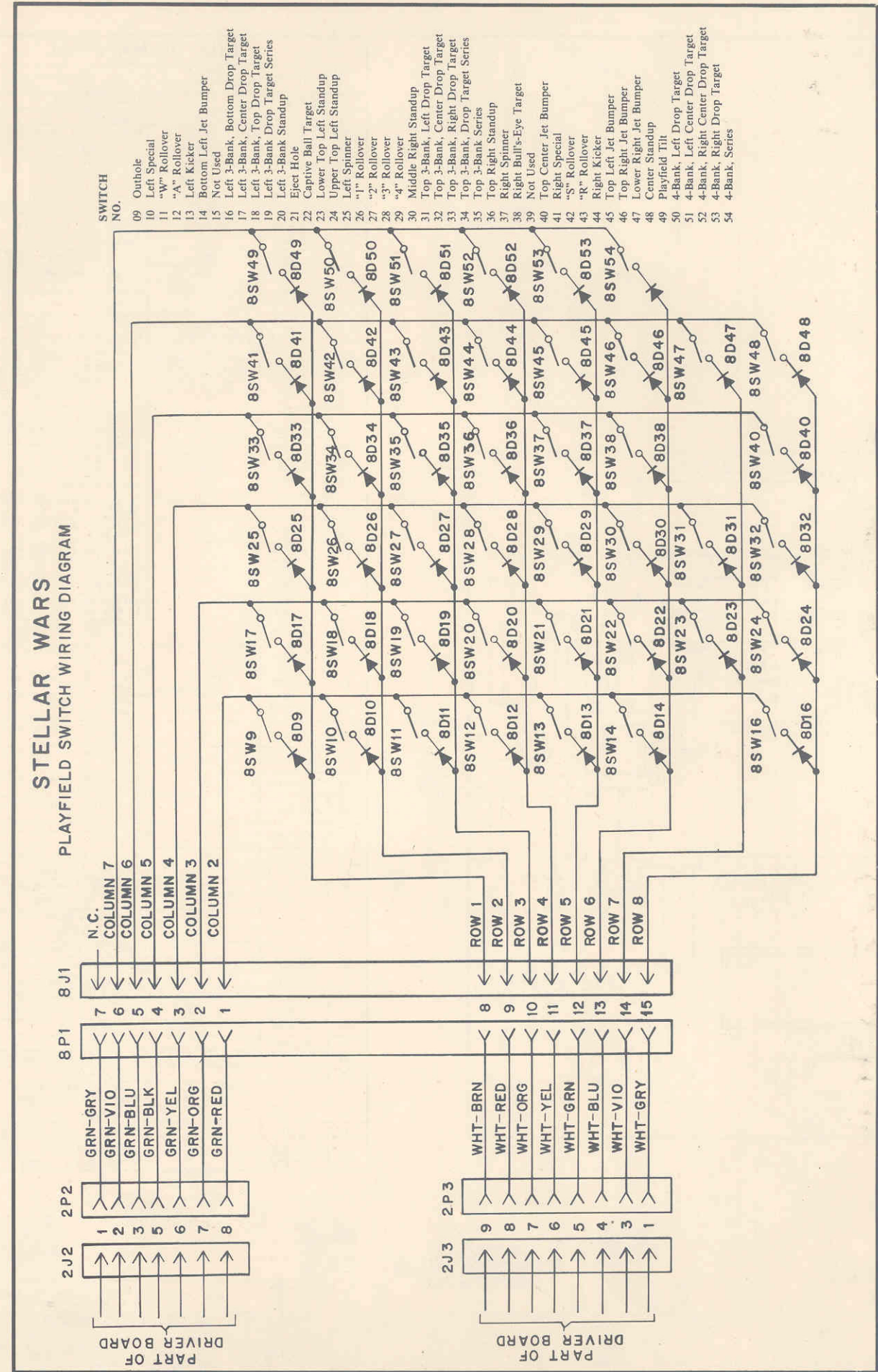


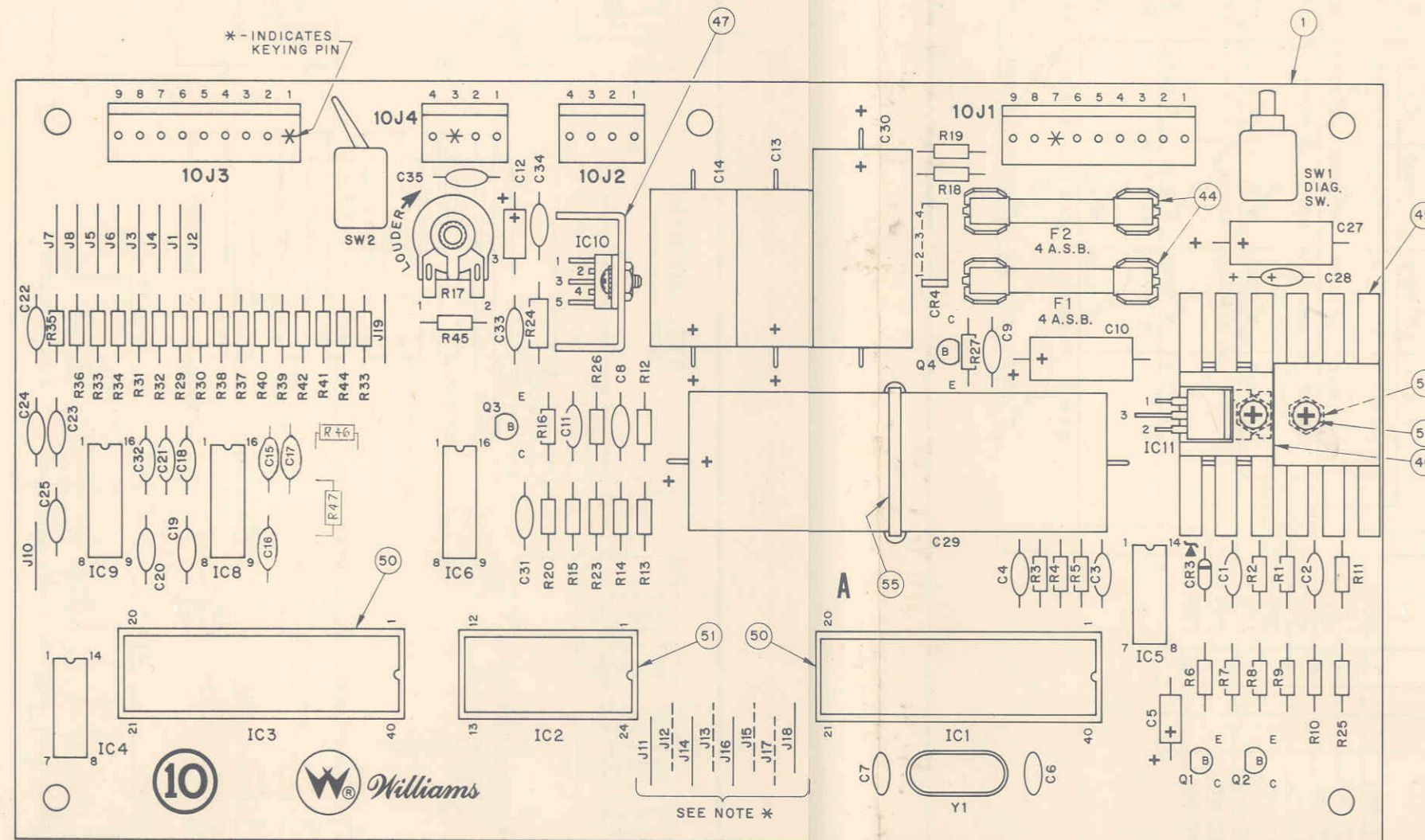


STELLAR WARS

PLAYFIELD LAMP WIRING DIAGRAM







* NOTE:

JUMPERS SHOWN WITH SOLID LINES CONNECTED FOR PROM OPERATION. THOSE SHOWN WITH DASHED LINES CONNECTED FOR ROM OPERATION.

BILL OF MATERIAL

ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D. NO.
1	1B-2001-137		BARE P.C. BOARD	1
2	5A-8972	IC3	MC6820 PIA	1
3	5A-9154	IC4	4068 8 INPUT NAND GATE	1
4	5A-9155	IC5	4011 QUAD 2 INPUT NAND GATE	1
5	5A-9152	IC6	MC1408 D/A CONVERTER	1
6	5A-9153	IC8, IC9	4050 BUFFER	2
7	5A-9156	IC10	TDA2002V AUDIO AMPLIFIER	1
8	5A-9157	IC11	7805 5 VOLT REG. W/T0220 CASE	1
9	5C-8938	Q1, Q2, Q3	2N4401 NPN TRANSISTOR	3
10	5A-8976	Q4	2N6427 NPN TRANSISTOR	1
11	5A-9018	CR3	1N5996 6.8 V ZENER DIODE	1
12	5A-9158	CR4	MDA200 / 3N253 BRIDGE RECTIFIER	1
13	5B-8991	R1, R2, R14, R23, R37 THRU R45	RESISTOR, FC, 4.7 K OHM 10% 1/4 W	13
14	5B-8983	R3, R4, R5, R15, R16, R20	RESISTOR, FC, 3.3 K OHM 10% 1/4 W	6
15	5A-8984	R9, R10, R25, R27	RESISTOR, FC, 1 K OHM 10% 1/4 W	5
16	5B-9039	R7	RESISTOR, FC, 10 OHM 10% 1/4 W	1
17	5B-8817	R8, R11, R46, R47	RESISTOR, FC, 10 K OHM 10% 1/4 W	4
18	5B-9035	R6, R12, R13	RESISTOR, FC, 47 K OHM 10% 1/4 W	3
19	5A-9160	R18	RESISTOR, FC, 220 OHM 10% 1/4 W	1
20	5A-9161	R19	RESISTOR, FC, 2.2 OHM 10% 1/4 W	1
21	5A-9179	R26	RESISTOR, FC, 3.3 M OHM 10% 1/4 W	1
22	5B-9036	R29 THRU R36	RESISTOR, FC, 100 OHM 10% 1/4 W	8
23	5A-9181	R24	RESISTOR, FC, 1 OHM 10% 1/2 W	1
24	5A-9046	C29	CAPACITOR, ELECTROLYTIC, 12,000 MFD. 16 V.	1
25	5A-8986	C27	CAPACITOR, ELECTROLYTIC, 100 MFD. 10 V.	1
26	5A-8893	C30	CAPACITOR, ELECTROLYTIC, 1,000 MFD. 25 V.	1
27	5A-9164 5A-9164-1	C13	CAPACITOR, ELECTROLYTIC, 500 MFD. 15 V. OR 470 MFD. 25 V.	1
28	5A-9165 5A-9165-1	C14	CAPACITOR, ELECTROLYTIC, 800 MFD. 16 V. OR 1,000 MFD. 15 V.	1
29	5A-9168 5A-9168-1	C10	CAPACITOR, ELECTROLYTIC, 25 MFD. 20 V. OR 33 MFD. 16 V.	1
30	5A-9031	C12	CAPACITOR, TANTALUM, 1 MFD. 25 V.	1
31	5A-9163	C5	CAPACITOR, TANTALUM, 2.2 MFD. 15 V.	1
32	5A-8980	C1 THRU C4, C15, C24, C25, C32, C35	CAPACITOR, CERAMIC, .01 MFD. 50 V.	9
33	5A-8996	C28, C31, C33, C34	CAPACITOR, CERAMIC, .1 MFD. 50 V.	4
34	5A-9169	C6, C7	CAPACITOR, CERAMIC DISC, 27 PFD. 1K V.	2
35	5A-9065	C16 THRU C23	CAPACITOR, CERAMIC DISC, 470 PFD. 50 V.	8
36	5A-9166	C9	CAPACITOR, CERAMIC DISC, .0015 MFD. 1K V.	1
37	5A-9167	C8	CAPACITOR, CERAMIC DISC, .003 MFD. 1K V.	1
38	5A-9180	C11	CAPACITOR, CERAMIC DISC, 47 PFD. 1K V.	1
39	5A-9185	R17	POTENTIOMETER, 5K OHM	1
40	5A-9020	Y1	CRYSTAL, 3.58 MHZ.	1
41	5A-9024	SW1	MOMENTARY SWITCH SPDT	1
42	5A-9171	SW2	TOGGLE SWITCH SPDT	1
43	5A-6314	F1, F2	4 AMP. SLOW BLOW FUSE	2
44	5A-9178		FUSEHOLDER	4
45	5A-9172		HEAT SINK THERMALLOY #6072B	1
46	5A-9173		HEAT SINK THERMALLOY #6071B	1
47	5A-9199		HEAT SINK THERMALLOY #8030	1
48	5A-9027	10J1, 10J3	9 PIN MALE CONNECTOR	2
49	5A-9028	10J2, 10J4	4 PIN MALE CONNECTOR	2
50	5A-8985		40 PIN SOCKET	2
51	5A-9004		24 PIN SOCKET	1
52			6-32 X 3/8 BINDER HEAD SCREW	2
53			6-32 HEX. NUT	2
54		J1 THRU J8, J10, THRU J19	WIRE JUMPER 22 GAUGE WIRE WITH INSULATION	18
55	3A-7520-1		TIE WRAP	1
56	5A-9150	IC1	MC6802 MICROPROCESSOR	1
57	5A-9015	IC2	7641 512 X 8 PROM	1
	5A-9198		MCM68312 2K X 8 ROM	

WILLIAMS ELECTRONICS, INC.

SUBSIDIARY OF XCOR CORPORATION

3401 N. CALIFORNIA CHICAGO, ILL. 60618 CORNELIA 7-2240

PART NAME

SOUND BOARD ASSEMBLY

OWN.

R. Gay

DATE

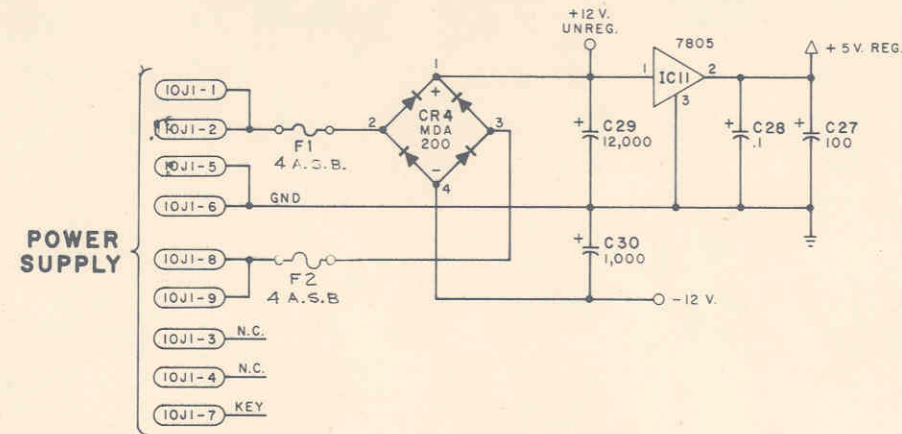
12-20-78

APP'D.

SCALE

2=1

PART NO.



NOTES:

- UNLESS OTHERWISE SPECIFIED
1. ALL RESISTOR VALUES IN OHMS AND $\frac{1}{4}$ WATT
 2. ALL CAPACITOR VALUES IN MICROFARADS.
 3. J11, J14, J16 AND J18 CONNECTED V.I.
WHEN IC2 IS A PROM (7641).
J12, J13, J15 AND J17 CONNECTED
WHEN IC2 IS A ROM (2316).

