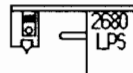


2608S LINE PRINTER PARTS AND DIAGRAMS MANUAL

Manual P/N 02608-90912
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First EditionAUG 1982

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SECTION I

GENERAL INFORMATION



1-1. INTRODUCTION

This manual contains schematic diagrams, parts location diagrams, illustrated parts breakdowns (IPBs), and replaceable parts lists for standard configurations of the HP 2608S Line Printer.

1-2. USING THIS MANUAL

Parts location diagrams, parts lists, and IPBs are located on the same or following page(s) of the schematic which they accompany.

It is important to properly match the diagrams and parts lists with the unit needing repair. Each printed circuit assembly (PCA) is etched or labeled with an assembly number and code. Both these numbers must match the assembly number and series code of the schematic diagram being used, or there will be differences between the assembly and the schematic diagram in this manual.

1-3. DESCRIPTION OF PARTS LIST

The heading for each parts list contains all assembly part numbers (with applicable series codes) covered by that list. The model or assembly number indicates the assembly on which the list is based.

The columns in the parts lists provide the following information:

- a. **REFERENCE DESIGNATOR.** This column lists the reference designator which identifies each part in the appropriate schematic diagram, location diagram, or IPB. Entries are arranged alphanumerically by reference designator.
- b. **PART DESCRIPTION.** This column gives the name and a brief description of the part.
- c. **HP PART NUMBER.** This column lists the Hewlett-Packard part number for each item. (Items with eight-digit part numbers are purchased parts, and items with ten-digit part numbers are manufactured by Hewlett-Packard.)

1-4. PARTS ORDERING PROCEDURE

To order parts from Hewlett-Packard or obtain further information, call the nearest Hewlett-Packard Sales and Service Office (listed in the back of this manual) and provide the following information:

- a. Printer model and serial number
- b. Hewlett-Packard part number
- c. Description of the part
- d. Circuit reference designation or index number, if applicable
- e. The series code which is stamped or etched on a PCA (for component level repair)



A vertical dashed line runs down the left side of the page. It consists of a series of small squares. Three larger solid black circles are positioned to the right of the dashed line at approximately one-third, one-half, and three-quarters of the way down the page.

SECTION I I

SCHEMATICS, DIAGRAMS AND PARTS LISTS



2-1. INTRODUCTION

The following drawings and schematics are included in this section. The -1 drawings indicate assembly or board drawings; the -S drawings indicate schematics.

Description	(Series)	Drawing No.
2608S Line Printer (Top Level)	(2226)...	02608-90110-1
2608S Cabling Diagram.....		02608-90140-1
Backplane Signal List		Table 2-1
AC Power Diagram		02608-90070-1
Top Cover Assembly.....		02608-60001-1
Stand Assembly (Open).....		02608-60188-1
Stand Assembly (Enclosed).....		02608-60040-1
Paper Stacker (Upper Assembly)		02608-60234-1
Paper Stacker (for Enclosed Stand).....		02608-90146-1
Paper Stacker (for Open Stand)		02608-90147-1
Sound Cover		02608-60075-1
Print Mechanism Assembly.....		02608-60127-1
Platen Assembly.....		02608-60133-1
Ribbon Motor Assembly.....		02608-60139-1
Line Transformer PCA (Schematic).....		02608-60154-S
Line Transformer Assembly	(2151)...	02608-60175-1
Pulse Transformer Assembly (Schematic).....		02608-60009-S
Detector Assembly (Schematic).....	(2212)...	02608-60194-S
Rear Panel Assembly		02608-90009-1
Front Panel PCA (Schematic).....		02608-60105-S
Front Panel PCA.....	(2150)...	02608-60105-1
Backplane Assembly (Schematic).....		02608-60106-S
Backplane Assembly.....	(2209)...	02608-60106-1
	and	02608-60106-2
Control PCA (Schematic).....		02608-60100-S
Control PCA.....	(2209)...	02608-60100-1
Dot Generation PCA (Schematic).....		02608-60116-S
Dot Generation PCA.....	(2151)...	02608-60116-1
Servo/Motor Driver PCA (Schematic).....		02608-60110-S
Servo/Motor Driver PCA.....	(2212)...	02608-60110-1
Hammer Driver PCA (Schematic).....		02608-60153-S
Hammer Driver PCA.....	(2225)...	02608-60153-1
High Voltage Assembly (Schematic)		02608-60250-S
High Voltage PCA.....	(2222)...	02608-60250-1
	and	02608-60250-2
HPIB Interface PCA (Schematic).....		02608-60108-S
HPIB Interface PCA.....	(2209)...	02608-60108-1
HPIB Interface Adapter PCA (Schematic).....		02608-60115-S
HPIB Interface Adapter PCA.....	(2151)...	02608-60115-1
Multipoint Serial I/O PCA (Schematic).....		02608-60101-S
Multipoint Serial I/O PCA.....	(2209)...	02608-60101-1
Multipoint Serial I/O Adapter PCA (Schematic).....		02608-60102-S
Multipoint Serial I/O Adapter PCA.....	(2151)...	02608-60102-1

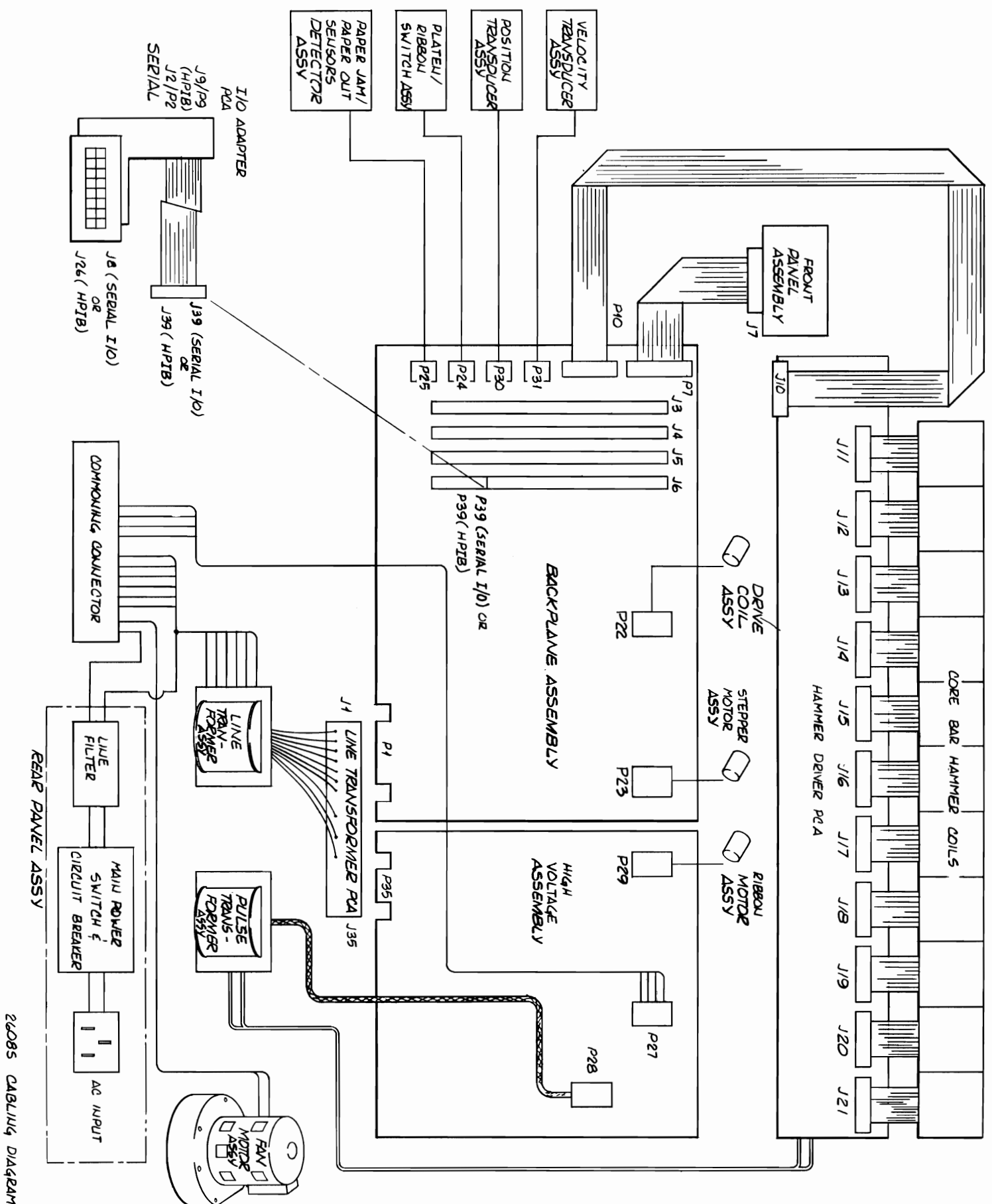
**Table 2-1: PARTS LISTS FOR
HP 2608S LINE PRINTER - TOP LEVEL**
(Drawing No. 02608-90110) - Series 2226

Reference Designator	Part Description	HP Part No.
121	TAPE:DBLSTICK	0460-1243
122	TAPE:POLYU FOAM	0460-1315
123	SCR:M5X16PAN POZ	0515-0051
124	SCR:M5X10PAN POZ	0515-0052
125	SCR:M4X10PAN POZ	0515-0053
126	SCR:M3X10PAN POZ	0515-0054
127	SCR:M5X60PAN POZ	0515-0060
128	SCR:M5X25PAN POZ	0515-0073
129	SCR:M3X8PAN POZ	0515-0104
130	SCR:M3X16 SHCS	0515-0485
131	SCR:M4X10 PAN TT	0515-0745
132	SCR:M5X12PAN SEM	0515-0758
133	NUT:M5 HEX	0535-0040
134	SCR:6-19 PLASTITE	0624-0411
135	TUBING:VINYL	0890-0225
136	CONN:COMMONING	1251-5097
137	SCR:M5X19 CPTV	1390-0518
138	TIE:CBL SMALL	1400-0249
139	CLMP:CBL .38 DIA	1400-0293
140	CLMP:CBL .5 DIA	1400-0294
141	TIE:CBL LRG	1400-0493
142	MOUNT:SHOCK	1520-0203
143	WSHR:#10 EXT LK	2190-0012
144	WSHR:1/4 SPL LOCK	2190-0431
145	WSHR:M3 SPL LOCK	2190-0584
146	WSHR:M4 SPL LOCK	2190-0586
147	WSHR:M5 SPL LOCK	2190-0587
148	WSHR:M4 STAR LCK	2190-0599
149	WSHR:M5 STAR LCK	2190-0660
150	NUT:1/4-20 HEX	2950-0004
151	WSHR:M3 FLAT	3050-0891
152	WSHR:M4 FLAT	3050-0893
153	FOOT:BUMPER	4320-0303
154	LBL:MODL #/SERL#	7120-7366
155	LBL:UL/CSA	7120-7367
156	ASSY:HV PWR CBL	8120-3482
157	KEYCAP:PLAIN	5041-0368
158	KEYCAP:MODE	5041-1950
159	SHEET:CLR MYLAR	02608-00011
160	COVER:BOTTOM	02608-00030
161	PLATE:AIR SENS	02608-00129
162	BRKT:FRONT PANEL	02608-00144
163	OVERLAY:FRNT PNL	02608-00145
164	LOCK:SHIPPING	02608-00161
165	NAMEPLATE:2608S	02608-00221
166	STANDOFF:HEX	02608-20075
167	BASE:PAINTED	02608-40021
168	ASSY:COVER	02608-60001
169	ASSY:REAR PNL	02608-60005

170	ASSY:PULSE TRANS	02608-60009
171	ASSY:FAN MOTOR	02608-60077
172	ASSY:CST GND STP	02608-60093
173	PCA:CONTROL	02608-60100
174	PCA:FRONT PANEL	02608-60105
175	ASSY:BACKPLANE	02608-60106
176	PCA:HPIB INTFC	02608-60108
177	PCA:SERV MTR DR	02608-60110
178	PCA:HPIB I/O ADT	02608-60115
179	PCA:DOT GEN	02608-60116
180	ASSY:PRINT MECH	02608-60127
181	ASSY:HI VOLTAGE	02608-60250
182	ASSY:RETAINER	02608-60152
183	ASSY:LINE TRANS	02608-60175
184	ASSY:STAND	02608-60188
185	ASSY:PULSE CBL	02608-60239
186	ASSY:RESISTOR BKT	02608-60248
	CORD:120V PWR	8120-2371
	CATCHER:PPR	02608-00111
	ASSY:RBN CRTG	02608-60038
	PACKING LIST BKDN	02608-90077
	USER SURVEY CARD	02608-90078
	UNPACKING INSTR	02608-90114
	MANUAL:TECH REF	02608-90910
	MANUAL:OPERATORS	02608-90911
	MANUAL:CONDENSED OPERATORS	02608-90913
	MANUAL:POCKET GUIDE	02608-90918

OPTIONS:

#001	LANGUAGES 1-4
#002	SUBSTITUTE LANGUAGES
#003	LANGUAGES 5-6
#015	220V POWER OPT
#016	100V POWER
#017	240V POWER
#055	I/O MULTPT 3000
#068	RIBBON 6 PAK
#110	SOUND COVER
#113	ENCLOSED STAND
#115	ENCL PPRSTACKER
#116	OPEN PPRSTACKER
#210	HP 1000 M-E-F SS
#214	HP 1000 A SERIES SS
#333	HP 3000 30/33 SS
#340	HP 3000 40 SS
#344	HP 3000 44 SS
#364	HP 3000 64 SS
#715	SERVICE MANUAL
#900	CORD:UK POWER
#901	CORD:AUSTR PWR
#902	CORD:GER/SWE PWR
#912	CORD:DENMK PWR



26085 CABLING DIAGRAM

Figure 2-2. Cabling Diagram

TABLE 2-2

BACKPLANE SIGNAL LIST

L ON	1	2	L OFF
R ON	3	4	R OFF
	5	6	
+25V	7	8	+25V
-25V	9	10	-25V
GND	11	12	GND
GND	13	14	GND
GND	15	16	GND
+5V	17	18	+5V
+5V	19	20	+5V
+12V	21	22	+12V
-12V	23	24	-12V
*POR	25	26	LAFB
	27	28	
*Servo Int	29	30	*Gen Int
*I/O Int	31	32	*Spare Int
*Pwr Fail	33	34	*Buf Wr
CPU D0	35	36	Buf D0
CPU D1	37	38	Buf D1
CPU D2	39	40	Buf D2
CPU D3	41	42	Buf D3
CPU D4	43	44	Buf D4
CPU D5	45	46	Buf D5
CPU D6	47	48	Buf D6
CPU D7	49	50	Buf D7
*P40	51	52	Add 0
*P50	53	54	Add 1
*P60	55	56	Add 2
*P70	57	58	Add 3
*IORQ	59	60	Clk 1 (4 MHz)
*DB Buf Wr	61	62	Clk 2 (1.25 Mhz)
HD Clk	63	64	*Rib En
*Dot Data	65	66	*Fire!
*Rtn Dots	67	68	*HV Fire
*TMD	69	70	Left Ctr
(5MHz) Clk3	71	72	T Osc
*DG Buf Rd	73	74	*TMD Clr
	75	76	
	77	78	
	79	80	
Vel Guard	81	82	*HVFB
Vel	83	84	*Plt Err
Vel Rtn	85	86	*Pap Out
Vel Shield	87	88	Pos
P J LED	89	90	PJ Sensor1
*OVCNT	91	92	PJ Sensor2
Stpr Pwr	93	94	Stpr Pwr
*SOD1	95	96	*SOD2
SPh1	97	98	SPh2
SPh3	99	100	SPh4

* => NEGATIVE TRUE

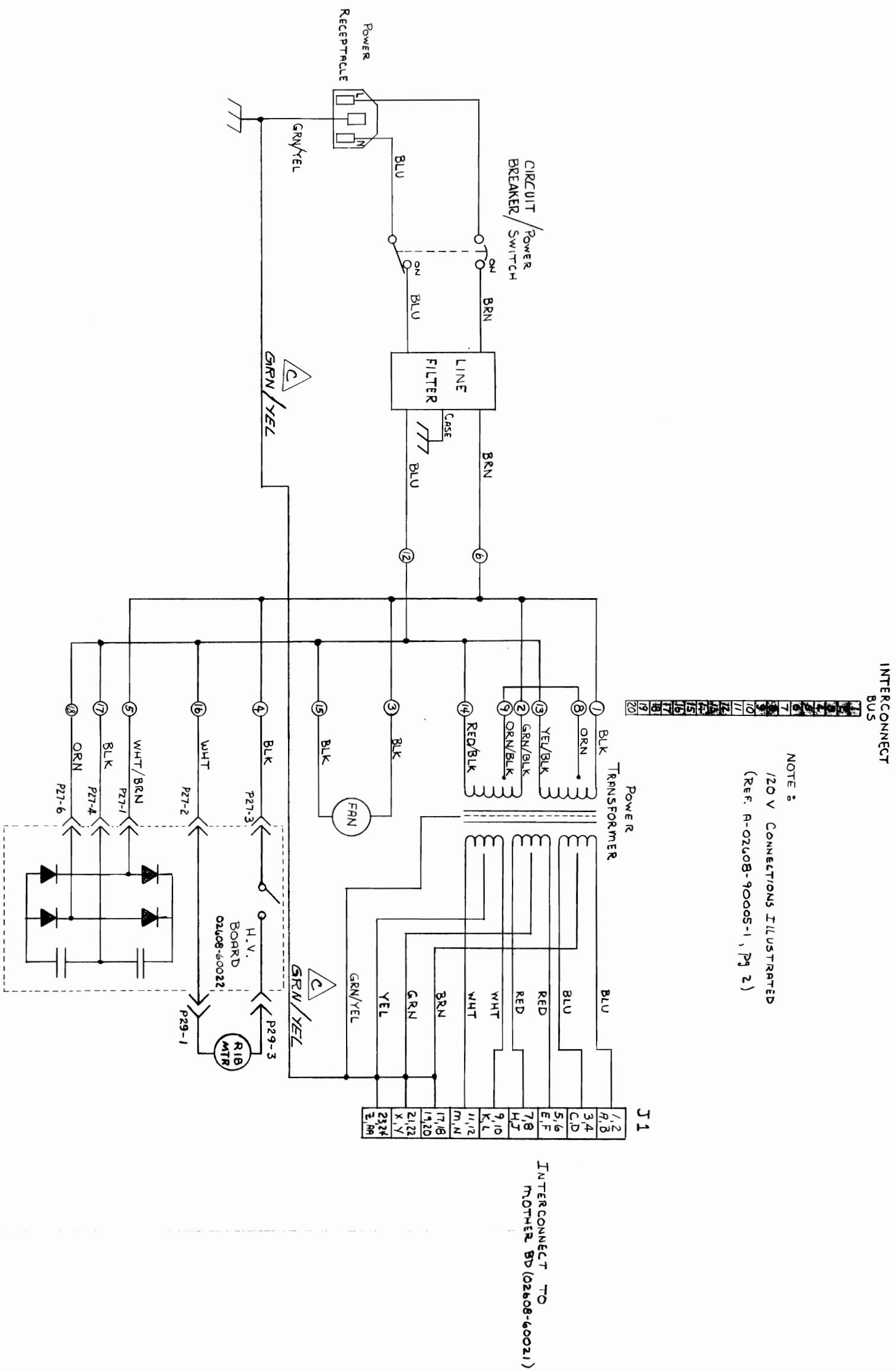


Figure 2-3. AC Power Diagram

**Table 2-3: PARTS LIST FOR
TOP COVER ASSEMBLY**
(Part No. 02608-60001)

Reference Designator	Part Description	HP Part No.
1	CVR:PTD REAR	02608-40022
2	CVR:PTD ACCESS	02608-40023
3	ADH:LOCT222	0470-0573
4	WSHR:M3 FLAT	3050-0891
5	WSHR:M3 SPL LOCK	2190-0584
6	WINDOW	02608-40006
7	BRKT:WINDOW	02608-00039
8	FOAM:SM ACC CVR	02608-00079
9	FM:ACC CVR (BOT)	02608-00098
10	FM:ACC CVR (TOP)	02608-00099
11	SCR:M3X8PAN POZ	0515-0104
12	ASSY:HINGE	02608-60252
13	TAPE:INDL.25"W	0460-0950
14	SEAL:RUB ACC CVR	02608-00050
15	TAPE:INDL.25"W	0460-1286
16	LBL:CSO	5953-2480
17	LBL:PAPER UNLOAD	02608-00219

**Table 2-4: PARTS LIST FOR
STAND ASSEMBLY - Open Stand**
(Part No. 02608-60188)

Reference Designator	Part Description	HP Part No.
(NOTE: Reference items 1 through 10 are included in the Stand Sub-Assembly, Part No. 02608-60042)		
1	STIFFNER PANEL	02608-00035
2	PPR INL GUIDE	02608-00193
3	PPR GUIDE FORM	02608-00196
4	FOOT PEDESTAL	02608-20068
5	SUPPORT BRACKET	02608-60035
6	ADAPTER PAN ASSY	02608-60180
7	LEG ASSEMBLY	02608-60186
8	SKIRT ASSEMBLY	02608-60187
9	LEVELING PAD	0403-0412
10	CASTER-SWVL STEM	1492-0045
11	TERM:CRP LUG #8	0362-0065
12	TAPE:INDL.25"W	0460-1287
13	SCR-CAP: M6X30LG	0515-0042
14	SCR:M4X10 PAN POZ	0515-0053
15	SCR:6X12 HX CAP	0515-0644
16	SCR:CAP M6X1 HEX	0515-0645
17	NUT:HX M4X3.2THK	0535-0006
18	WSHR-LK HLCL.313	2190-0570
19	WSHR:M4 STAR LCK	2190-0599
20	WSHR:LK EXT 6MM	2190-0657
21	SCR:SKT5/16X.75L	3030-0579
22	WIRE ASSY:GRND	8150-3284

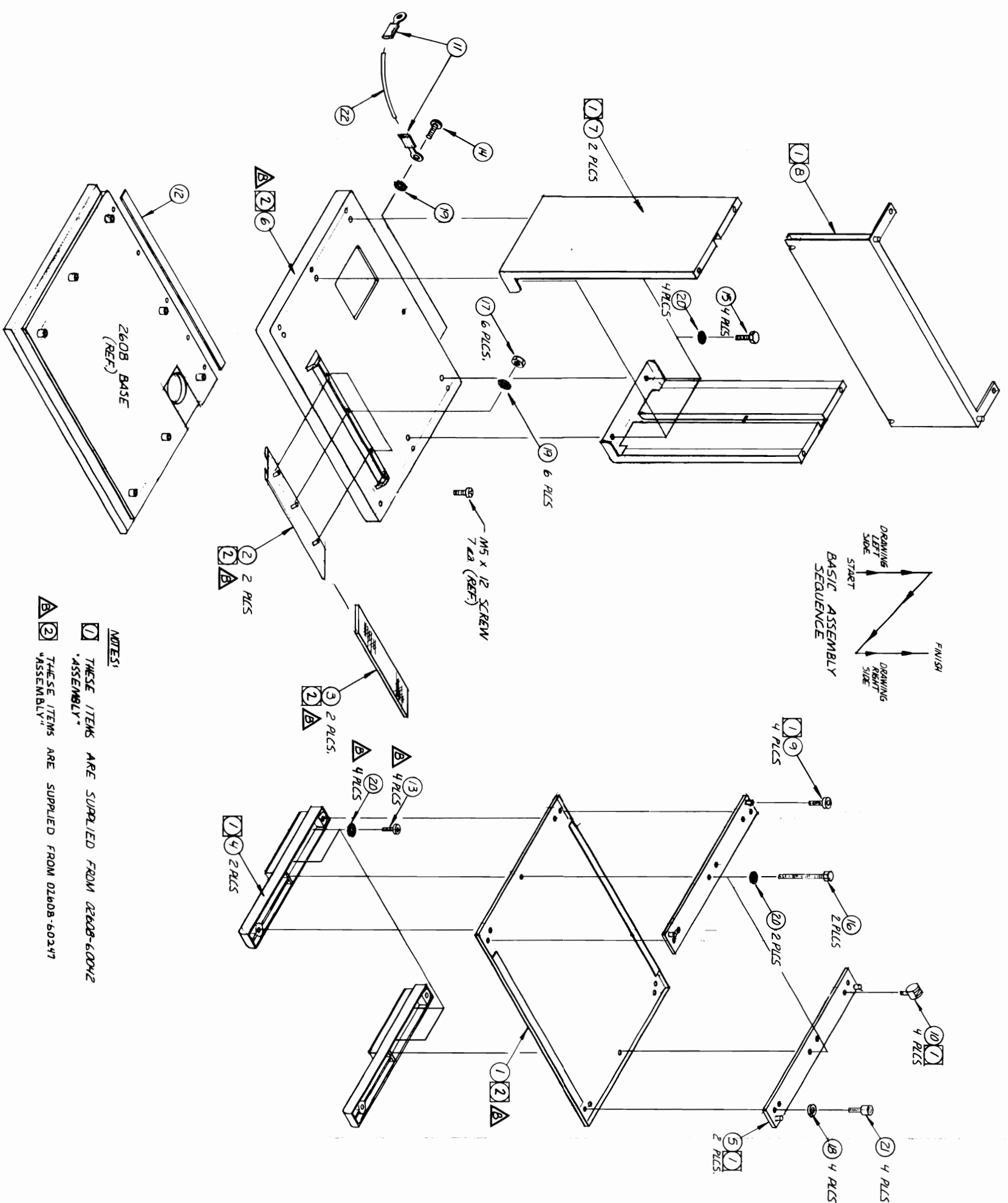


Figure 2-5. Open Stand Assembly Diagram

**Table 2-5: PARTS LIST FOR
STAND ASSEMBLY - Enclosed Stand**
(Part No. 02608-60040)

Reference Designator	Part Description	HP Part No.
1	ASSY:FRAME WLDMT	02608-60055
2	ASSY:FRT DOOR	02608-60025
3	ASSY:SIDE PNL	02608-60010
4	ASSY:PNL BACK	02608-60023
5	HINGE, DOOR	02608-00062
12	CSTR:SWVL 2.5X18	1492-0081

**Table 2-6: PARTS LIST FOR
PAPER STACKER - Upper Assembly**
(Part No. 02608-90234)

Reference Designator	Part Description	HP Part No.
1	PLATE:GUIDE	02608-00223
2	PLATE:MOUNTING	02608-00224
3	PGE FLDR:BOTTOM	02608-00213
4	PAGE FOLDER:TOP	02608-00212
5	ASSY:BALL CHAIN	02608-60173
6	RVT:123DX.250	0361-0011
7	CNN:CHAIN	02608-40071
8	WIRE FORM	02608-00222

- NOTES: UNLESS OTHERWISE SPECIFIED
1. ATTACH RIVET AS SHOWN IN DETAIL 'D' 4 PLCS USING ITEMS ③ OR ④, ⑤ AND ⑥.
 2. ATTACH RIVET AS SHOWN IN DETAIL 'C' 4 PLCS USING ITEMS ⑤, ⑥ AND ⑦

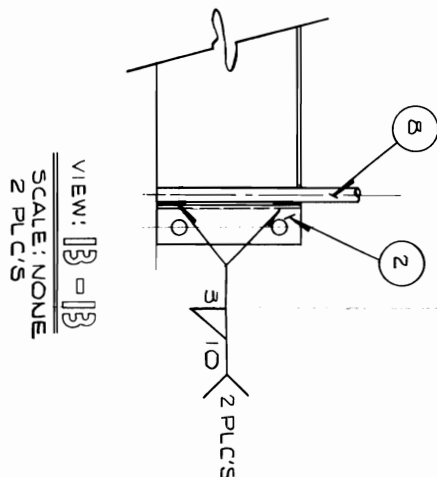
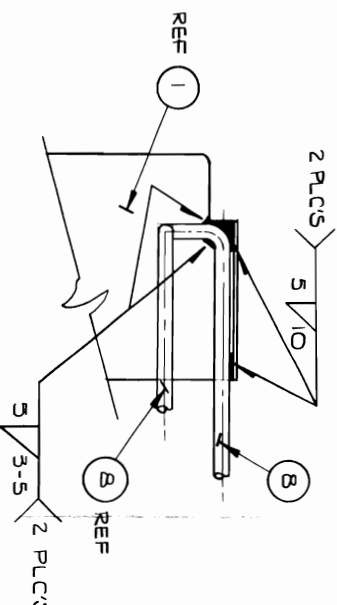
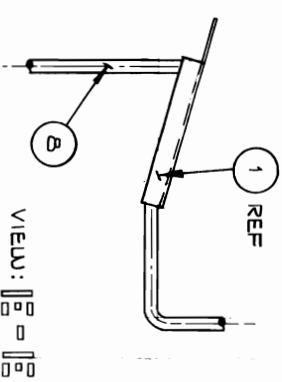
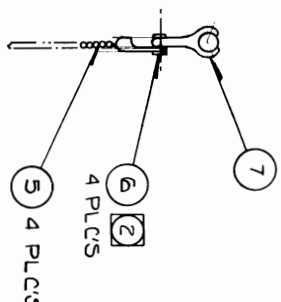
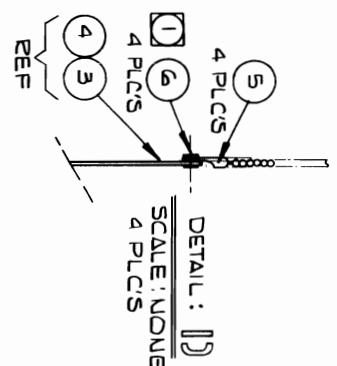
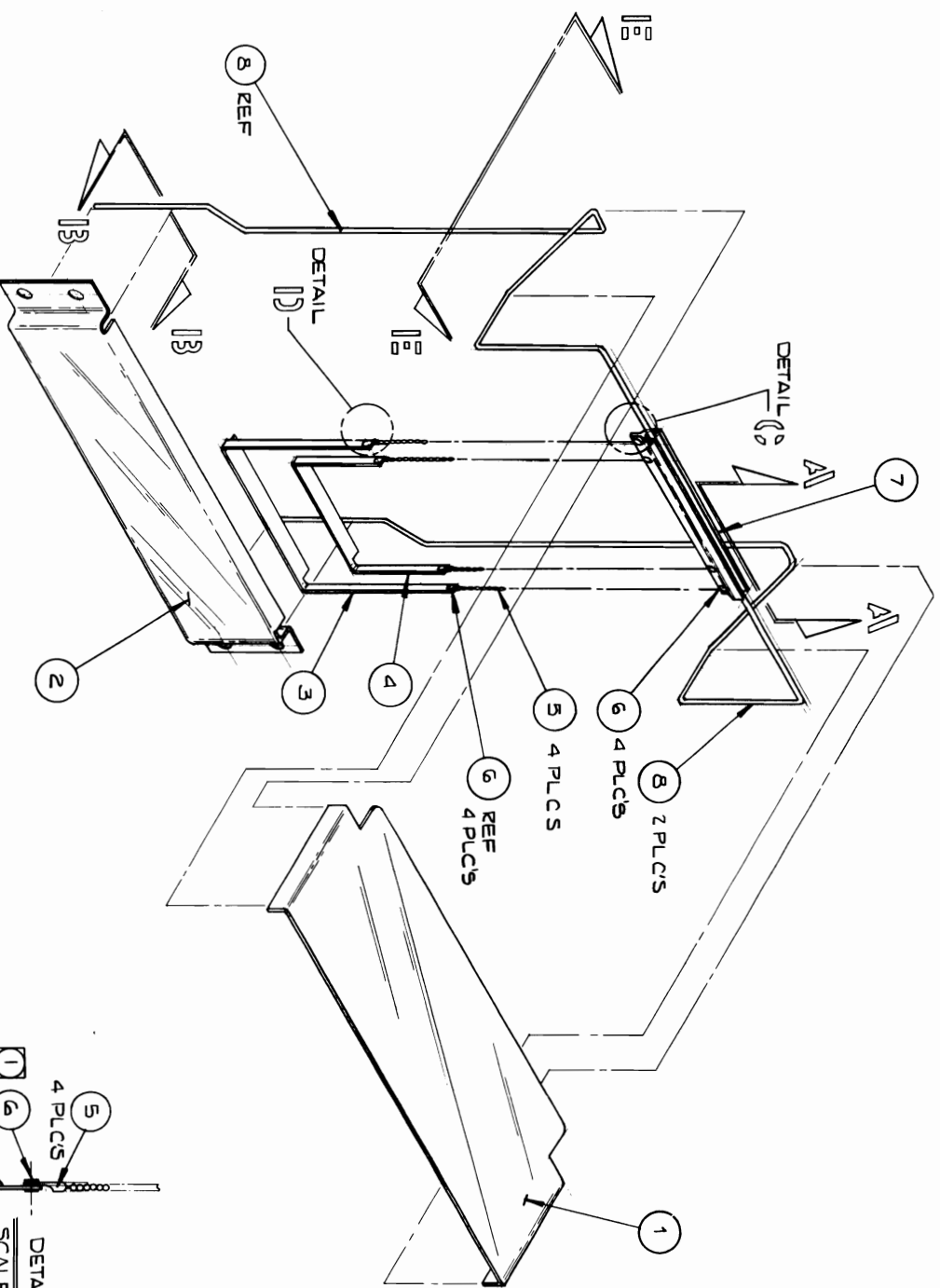


Figure 2-7. Paper Stacker Diagram (Upper Assembly)

**Table 2-7: PARTS LIST FOR
PAPER STACKER - for Enclosed Stand**
(Part No. 02608-90146)

Reference Designator	Part Description	HP Part No.
1	SUPPORT:BASE	02608-00210
2	SCR:M5X12 SHCS	0515-0495
3	WSHR:FL#10 .5"D	3050-0019

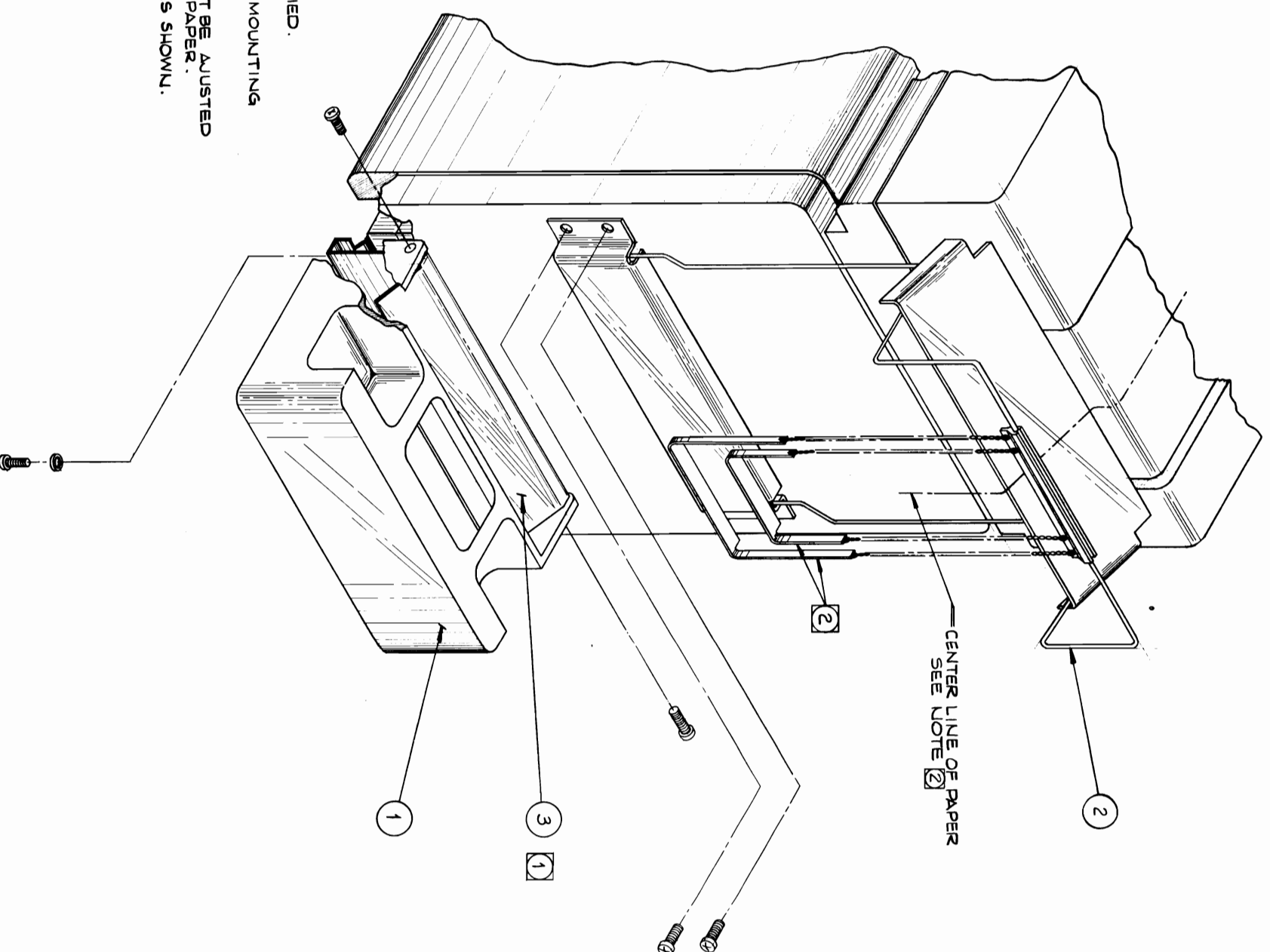
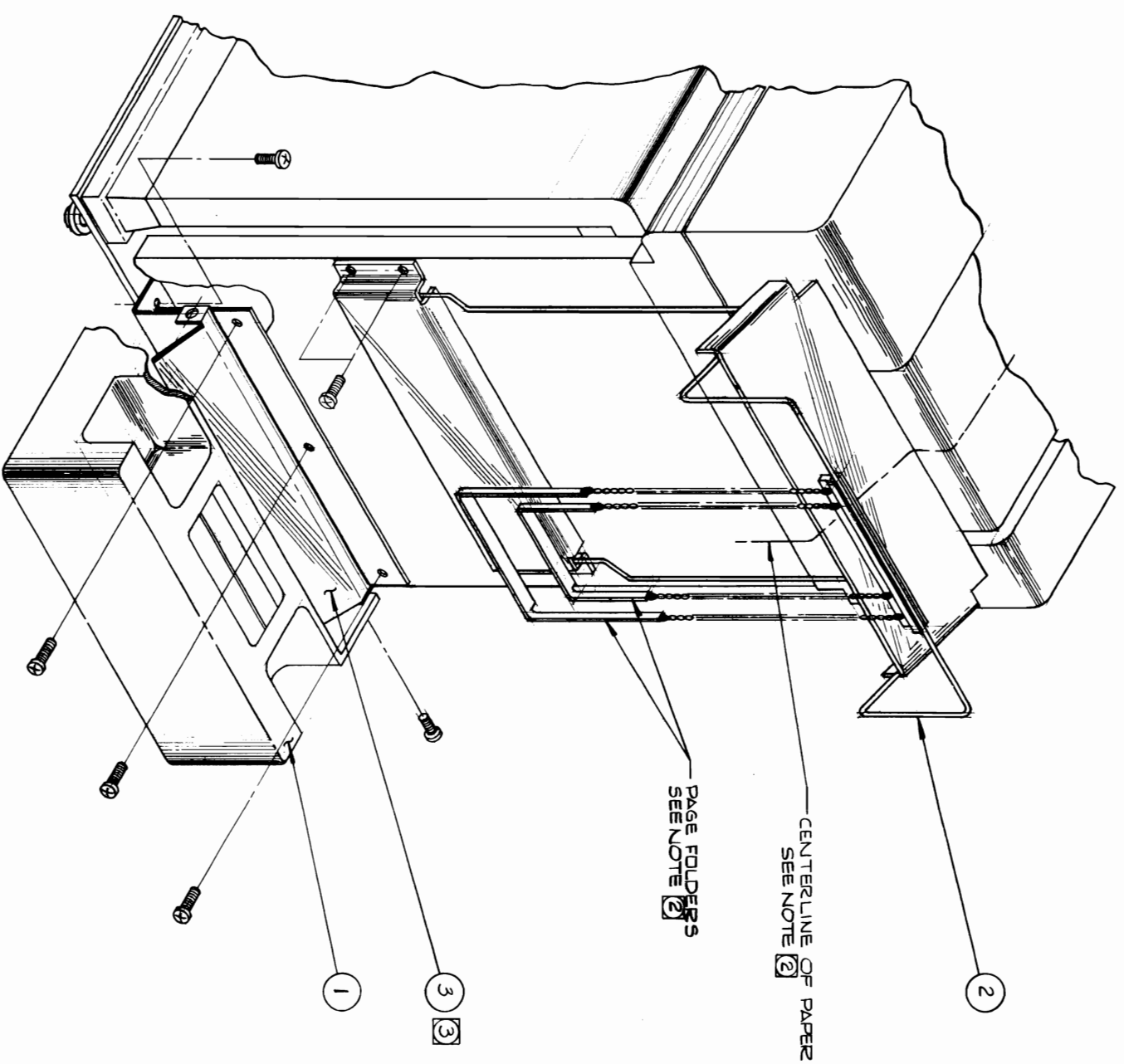


Figure 2-8. Paper Stacker Diagram
(Enclosed Stand Option 115)

**Table 2-8: PARTS LIST FOR
PAPER STACKER - for Open Stand**
(Part No. 02608-60147)

Reference Designator	Part Description	HP Part No.
1	ASSY:MOUNT	02608-60041
2	BKT:P-R SWITCH	02608-00215
3	ADPTER:UPPER	02608-60240



NOTES : UNLESS OTHERWISE SPECIFIED.

1. ALL HARDWARE COMES WITH ITEMS SHOWN.

2 MOUNT ITEM 2 TO FRAME BEFORE MOUNTING ITEM 1 TO BRACKET.

3 PAGE FOLDER TOP & BOTTOM MUST BE ADJUSTED TO LINE UP WITH CENTERLINE OF PAPER.

Figure 2-9. Paper Stacker Diagram
(Open Stand Option 116)

**Table 2-9: PARTS LIST FOR
SOUND COVER ASSEMBLY**
(Part No. 02608-60075)

Reference Designator	Part Description	HP Part No.
1	CVR:SOUND	02608-40032
2	BRKT:STATIC BAR	02608-00081
3	PIN:PIVOT	02608-20050
4	ASSY,STATIC BRSH	02608-60089
5	FOAM STRP:OUTSIDE	02608-00072
6	FOAM STRP:INSIDE	02608-00073
7	BRKT:BRUSH MTG	02608-00128
8	ASSY,STATIC BRSH	02608-60086
9	ASSY,STATIC BRSH	02608-60087
10	CLMP-CBL,37X.49L	1400-0877
11	WIRE-24GA/BLACK	8150-0447
12	LUB-CRP RED #6	0362-0452
13	SCR:M3X10PAN POZ	0515-0054
14	WSHR:M3 SPL LOCK	2190-0584
15	ERM:CRP LUG #8	0362-0065

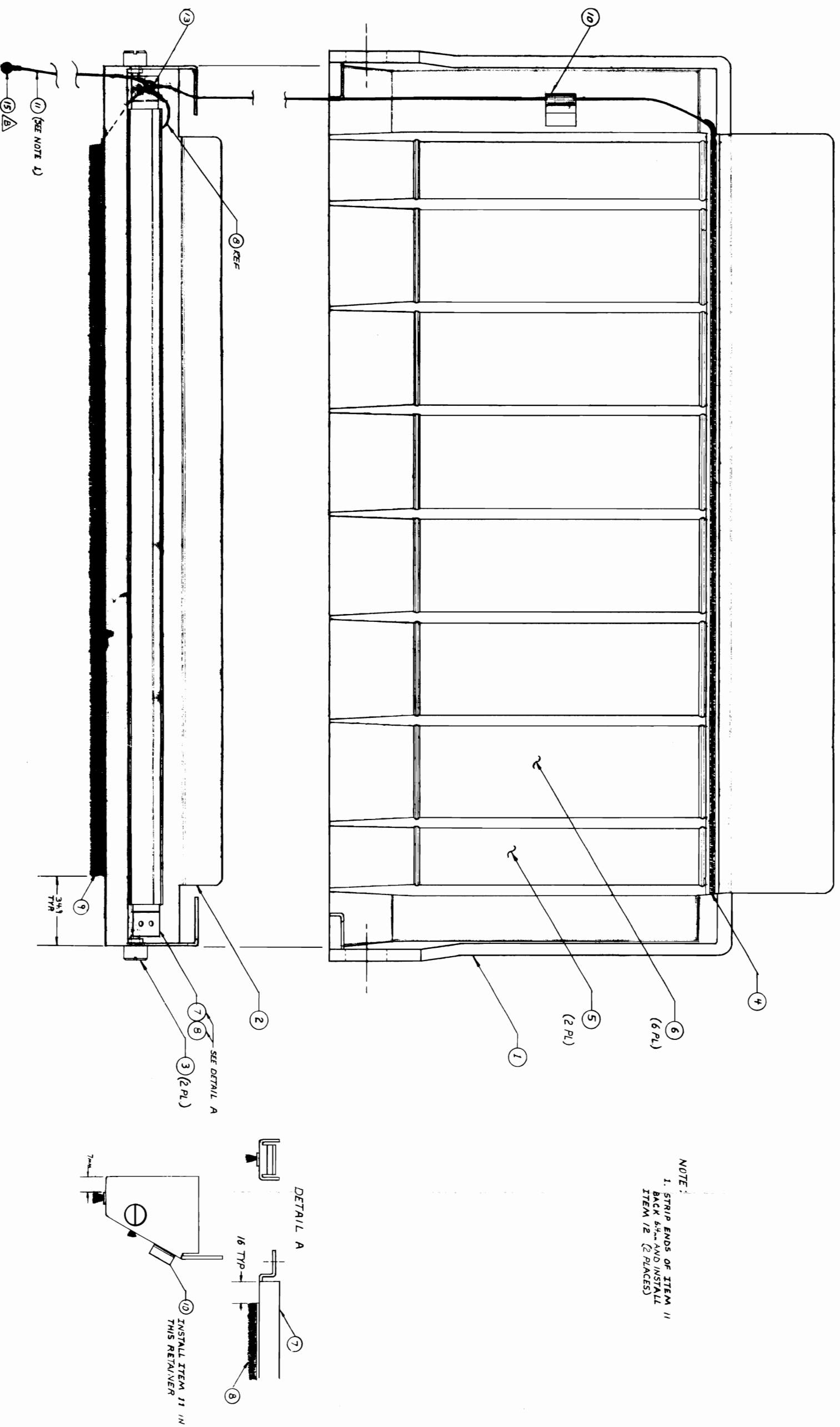


Figure 2-10. Sound Cover Diagram

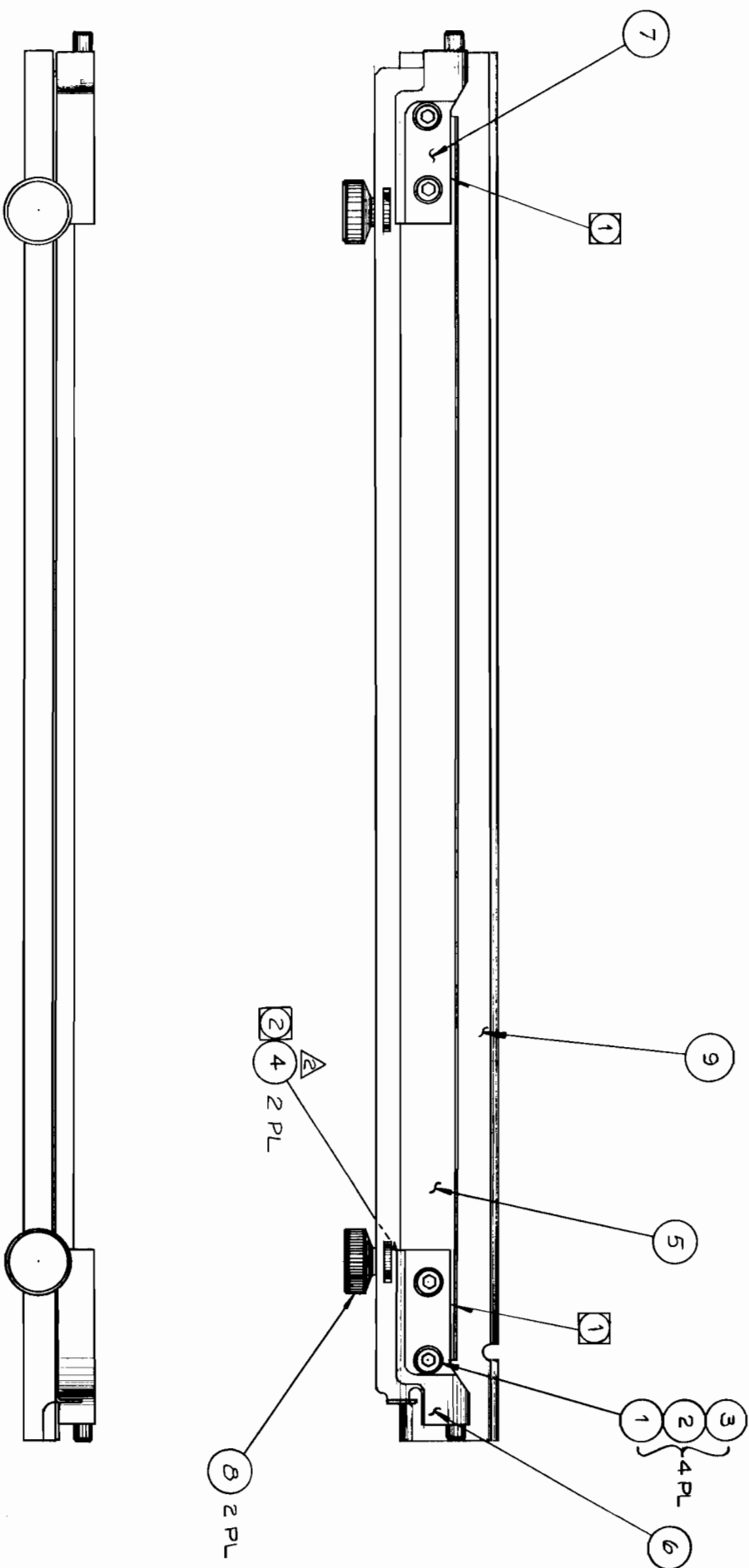
**Table 2-10: PARTS LIST FOR
PRINT MECHANISM ASSEMBLY**
(Part No. 02608-60127)

Reference Designator	Part Description	HP Part No.
2	SPCR:RD .5IN	0380-0008
3	GROM:CHAN.052"	0400-0018
4	ADH:RTV SIL RBR	0470-0251
5	ADH:LOC PRIM T	0470-0415
7	ADH:LOCT 601	0470-0535
8	ADH:LOCT 222	0470-0573
9	E-RING:EXT 4MM	0510-0625
10	E-RING:EXT 7MM	0510-0626
11	E-RING:EX5 8MM	0510-0653
12	SCR:M4X10 PAN POZ	0515-0053
13	SCR:M3X10 PAN POZ	0515-0054
14	SCR:M5X18 SHCS	0515-0129
15	SCR:M4X12 SHCS	0515-0136
16	SCR:M2X6 PAN SLOT	0515-0214
17	SCR:M3X6 SHCS	0515-0481
18	SCR:M3X10 SHCS	0515-0483
19	SCR:M5X12 SHCS	0515-0495
20	SCR:M5X16 SHCS	0515-0496
21	SCR:M5X35 SHCS	0515-0508
22	SCR:M4X10 PAN TT	0515-0745
23	SCR:M4X25 PAN TT	0515-0746
24	SCR:M5X12 PAN SEM	0515-0758
25	SCR:M6X20 HEX	0515-0759
26	NUT:M6 HEX	0535-0014
27	NUT:M2 HEX	0535-0018
28	PLUNGER: M6 SPR	0570-0636
30	SCR:6-19 PLASTITE	0624-0411
31	CLMP:CBL SMALL	1400-0292
32	CLMP:CBL .38 DIA	1400-0293
33	CLIP:CABLE	1400-0611
34	STRAP:NYLON 5/8"W	1400-0998
35	CLIP:SPRING	1400-1002
36	BRG:SLV .252-ID	1410-0159
37	BRG:FLG BALL	1410-0632
38	SPRING:COMP .5"L	1460-1638
39	SPRING:EXT .75"L	1460-1639
40	TRACTOR:LH	1530-0360
41	TRACTOR:RH	1530-0361
43	WSHR:M3 SPL LOCK	2190-0584
44	WSHR:M4 SPL LOCK	2190-0586
45	WSHR:M5 SPL LOCK	2190-0587
46	WSHR:M6 SPL LOCK	2190-0592
47	WSHR:M2 SPL LOCK	2190-0654
48	WSHR:M3 FLAT	3050-0891
49	WSHR:M4 FLAT	3050-0893
50	WSHR:M4 RIB	3050-0925
51	WSHR:M2 FLAT	3050-1066
52	LUBRICANT:WAX	6040-0353

53	LUB:MOLY GREASE	6040-0464
54	LBL:BLNK .37X.75L	7120-6260
55	LBL:PLATEN KNOB	7120-7134
56	CLIP:RBN CBL	02608-00006
57	COVER:CAST BOTT	02608-00007
58	FLAG:HOME POS	02608-00027
59	PLATE:COIL NUT	02608-00028
61	SHIM:XDCR.25MM	02608-00051
61	SHIM:XDCR.20MM	02608-00065
61	SHIM:XDCR.10MM	02608-00094
62	DUCT:TOP AIR	02608-00198
63	FOAM:UPPER SND	02608-00201
64	FOAM:LOWER SND	02608-00202
65	SPRING:DETECTOR	02608-00209
66	SHFT:TRACTOR GDE	02608-20015
67	MNT:POS XDCR	02608-20018
68	ADPTR:COIL	02608-20019
70	SCR:PLATEN MTG	02608-20036
71	STUD:CAM	02608-20037
73	STUD:PLATEN HDLE	02608-20039
75	EXT COREBAR	02608-20065
76	CASTG:PRINT MECH	02608-20076
77	CAP:CORE BAR	02608-40005
78	KNOB:PLATEN	02608-40009
80	CLAMP:POS XDUCER	02608-40024
81	CLAMP:VEL XDUCER	02608-40059
82	ASSY:CORE BAR	02608-60003
83	ASSY:STEPPER MTR	02608-60013
84	ASSY:VEL XDUCER	02608-60030
85	ASSY:POS XDUCER	02608-60031
86	ASSY:RH FLEXURE	02608-60049
87	ASSY:LH FLEXURE	02608-60050
88	CBL ASY:HMR DRVR	02608-60098
89	ASSY: SPRING	02608-60114
90	ASSY:PLATEN	02608-60133
91	ASSY:RBN MOTOR	02608-60139
92	ASSY:AIR DUCT	02608-60146
93	PCA:HAMMER DR BD	02608-60153
94	ASSY:DETECTOR	02608-60194
95	ASSY:MAGNET	02608-60200
96	ASSY:DRIVE COIL	02608-60231
97	ASSY:P/R SWITCH	02608-60237
98	ASSY:PLATEN LVR	02608-60241
	RIBBON SHIELD	02608-00220

**Table 2-11: PARTS LIST FOR
PLATEN ASSEMBLY**
(Part No. 02608-60133)

Reference Designator	Part Description	HP Part No.
1	SCR:M5X16 SHCS	0515-0496
2	WSHR:M5 SPL LOCK	2190-0587
3	WSHR:M5 FLAT	3050-0894
4	BKT:PLATEN	02608-00153
5	BLOCK:LH PIVOT	02608-20025
6	BLOCK:R.H.PIVOT	02608-20026
7	SCR:PLATEN ADJ	02608-20058
8	PLATEN	02608-20063
	LUBRICANT: WAX	6040-0353



NOTES: UNLESS OTHERWISE SPECIFIED.

- ⚠ ① ENSURE PIVOT BLOCKS, ITEMS ⑥ AND ⑦, DO NOT CONTACT BEND RADIUS OF PLATEN BRACKET, ITEM ⑤.
- ⚠ ② APPLY WAX LUBRICANT, ITEM ④, TO SCREW THREADS OF, ITEM ⑧, BEFORE ASSEMBLY

Figure 2-12. Platen Assembly Diagram

**Table 2-12: PARTS LIST FOR
RIBBON MOTOR ASSEMBLY**
(Part No. 02608-60139)

Reference Designator	Part Description	HP Part No.
1	SCR:M5X25 FH POZ	0515-0090
2	CONT: CONN MALE	1251-2263
3	BODY:3 PIN CONN	1251-2508
4	CONT: CONN FEM	1251-2527
5	TIE:CBL SMALL	1400-0249
6	CLIP:CABLE	1400-0611
7	MOTOR: RBN DR	3140-0578
8	LBL: IMPRINTABLE	9320-4863
9	BKT:RBN CRTG	02608-00160
10	LBL:RBN CART	02608-00173
11	STANDOFF: RBN MTR	02608-20042

- NOTES: UNLESS OTHERWISE SPECIFIED.**
1. LOOSELY TWIST RIBBON MOTOR LEADS TOGETHER OVER ENTIRE LENGTH (APPROXIMATELY 1 TURN PER 100 MM OF LEAD LENGTH), APPLY 12 CABLE TIES ITEM 5 TO THE LEADS AT APPROXIMATELY 110 MM INTERVALS. CUT LEADS TO SAME LENGTH AND STRIP 3 ± 1 MM OF INSULATION FROM END OF EACH LEAD. CRIMP CONTACTS ITEM 2 AND ITEM 4 ONTO WIRES AND INSERT INTO CONNECTOR BODY ITEM 3 AS SHOWN.
 2. MOUNT RIBBON MOTOR ITEM 7 TO BRACKET ITEM 9 USING HARDWARE SHOWN. USE LOCATING TOOL T-114536 TO APPLY LABEL ITEM 10.
 3. MOUNT CLIPS ITEM 6 IN TWO LOCATIONS SHOWN AND SLIDE MOTOR LEADS INTO CLIPS. APPLY LABEL ITEM 8 AS SHOWN.

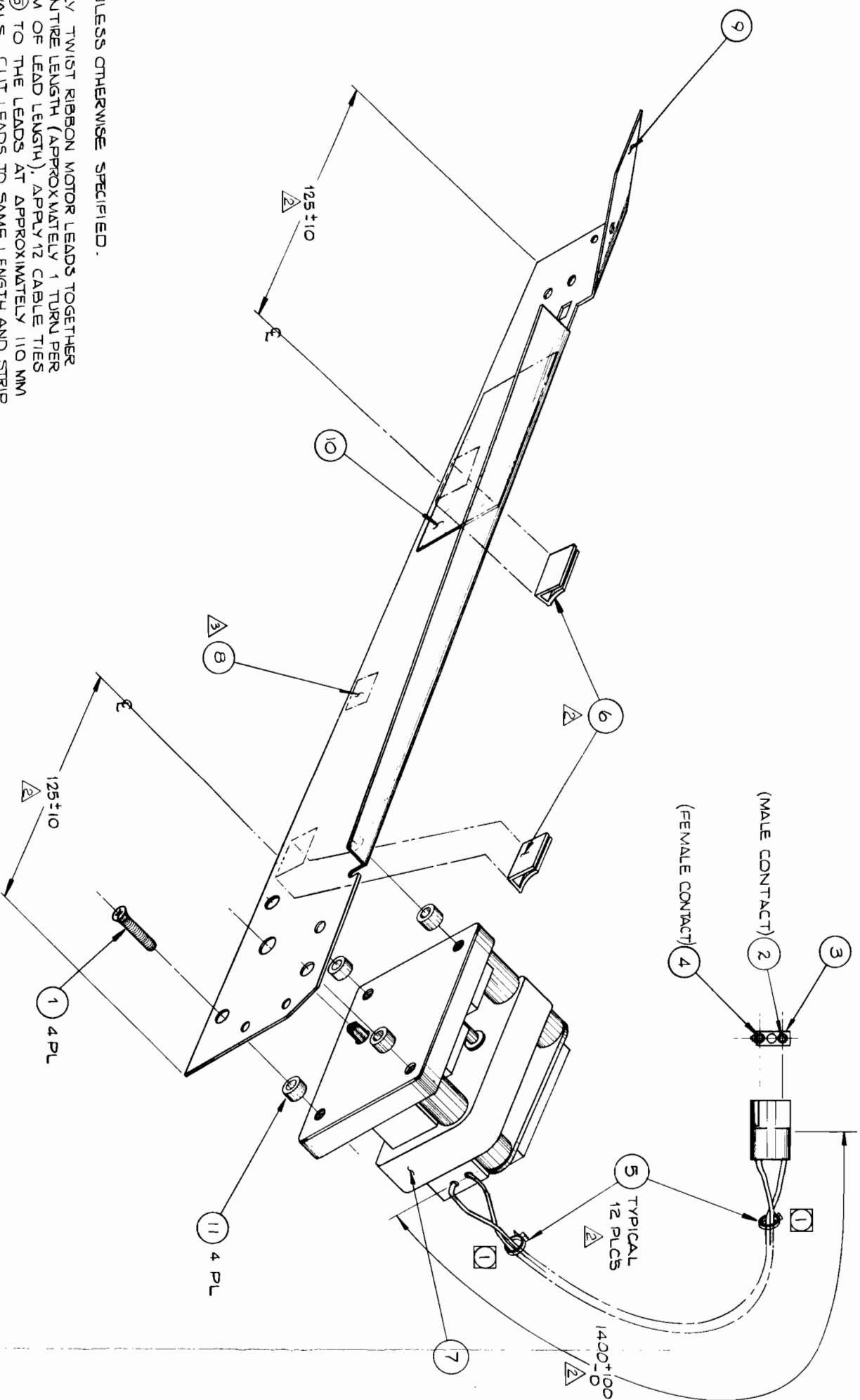


Figure 2-13. Ribbon Motor Assembly
Diagram

**Table 2-13: PARTS LIST FOR
LINE TRANSFORMER PCA**
(Part No. 02608-60154) - Series 2151

Reference Designator	Part Description	HP Part No.
1	LBL:IMPRINTABLE	9320-4863
2	PCB:LINE XFMR	02608-80154
J1	CONN-PC2X25	1251-2414
J35	CONN-PC2X6 6-CT	1251-0478

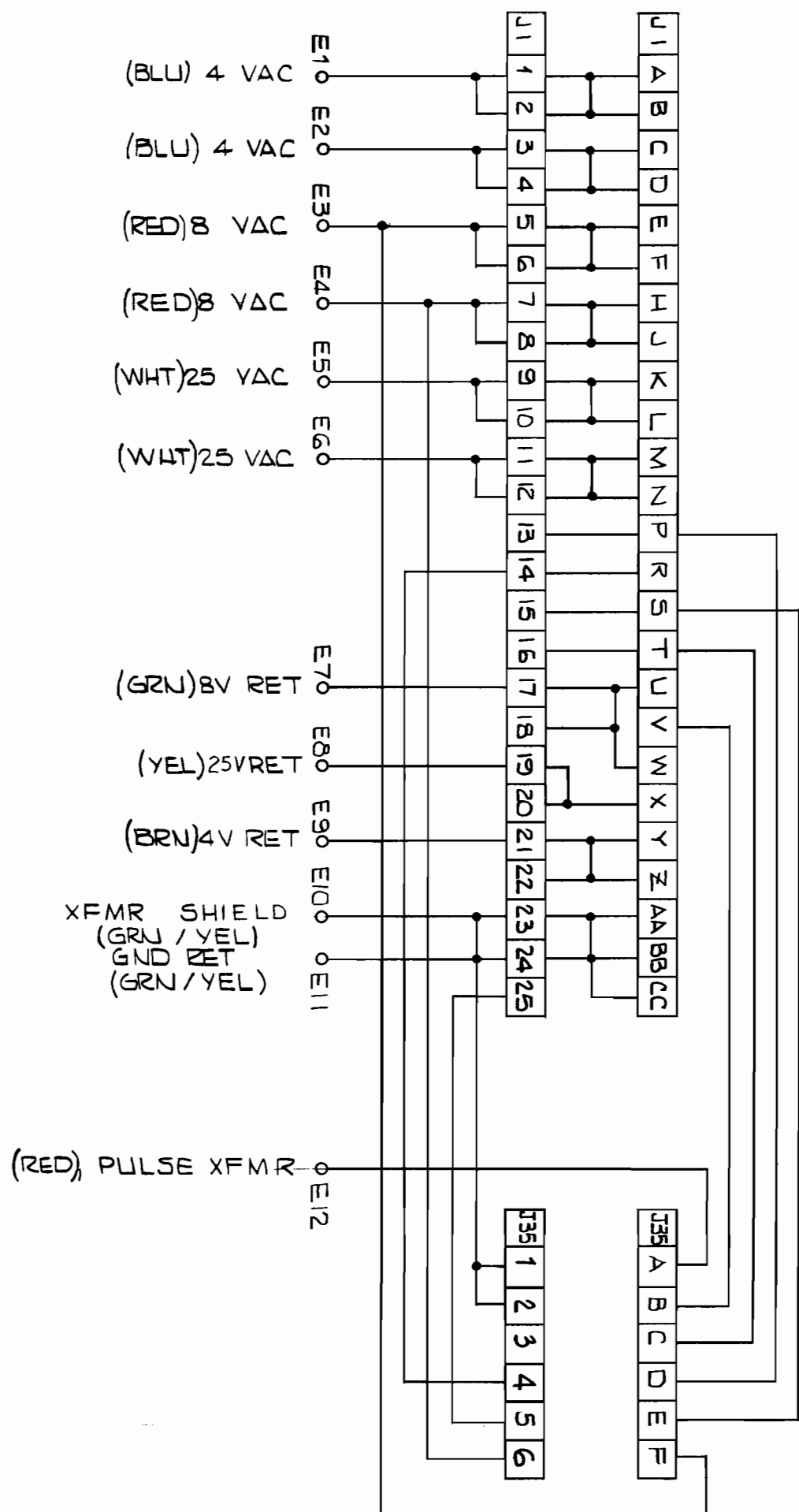


Figure 2-14. Line Transformer PCA
Schematic Diagram

**Table 2-14: PARTS LIST FOR
LINE TRANSFORMER ASSEMBLY**
(Part No. 02608-60175) - Series 2151

Reference Designator	Part Description	HP Part No.
1	LUG-CRP RED #10	0362-0453
2	WIRE 22A WG RED	8150-1542
3	WR:18 AWG GRN/YEL	8150-3284
4	TRANSFORMER,PWR	9100-4076
5	LBL:IMPRINTABLE	9320-4863
6	XFMR CORE LABEL	02608-00134
7	PCA:LINE XFMR	02608-60154

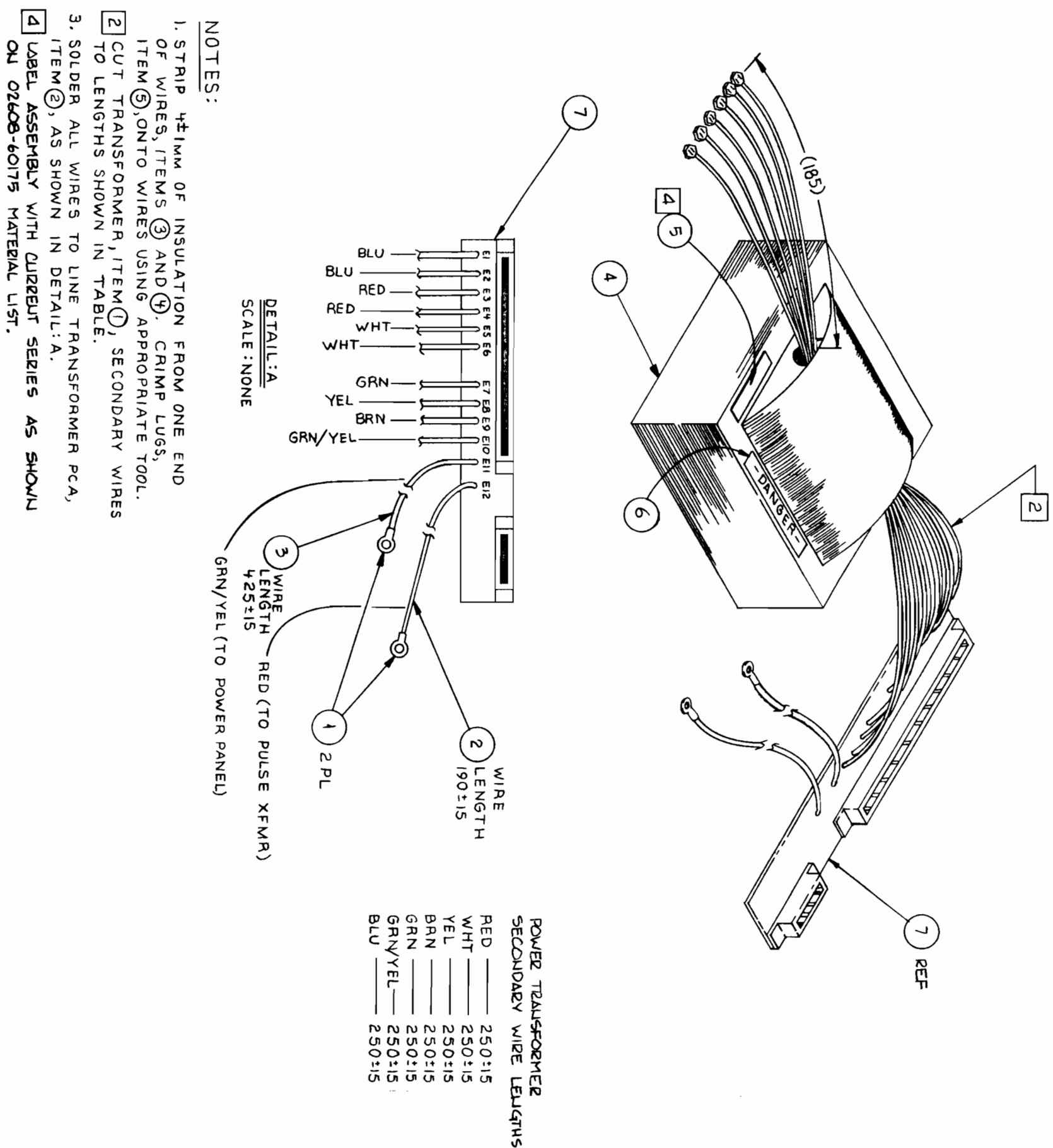


Figure 2-15. Line Transformer Assembly
Diagram

**Table 2-15: PARTS LIST FOR
PULSE TRANSFORMER ASSEMBLY**
(Part No. 02608-60009)

Reference Designator	Part Description	HP Part No.
1	XFORMER: PULSE	9100-4082
2	TBG:HS.5D.25RCVD	0890-0539
3	CBL:RFI BRD.375W	8160-0312
4	WIRE 16 WH/BLK	8150-2608
5	CONT:CONN FEM	1251-2527
6	CONN:CABLE 6-PIN	1251-0692
7	CONT:CONN MALE	1251-2097
8	XFMR CORE LABEL	02608-00134
9	TBG:HS .25 DIA	0890-0540
10	TBG HS BLK.125D	0890-0311
11	RFI BRD-CA.125"W	8160-0319

TURNS RATIO UNLOADED			
EXITS		RATIO	% TOL.
BLK -	BLK/RED	1.000	REF.
BLK -	BLK/YEL	.170	± 1.0
BLK/GRN -	BLK/RED	.170	± 1.0
5 -	6	.072	± 2.0

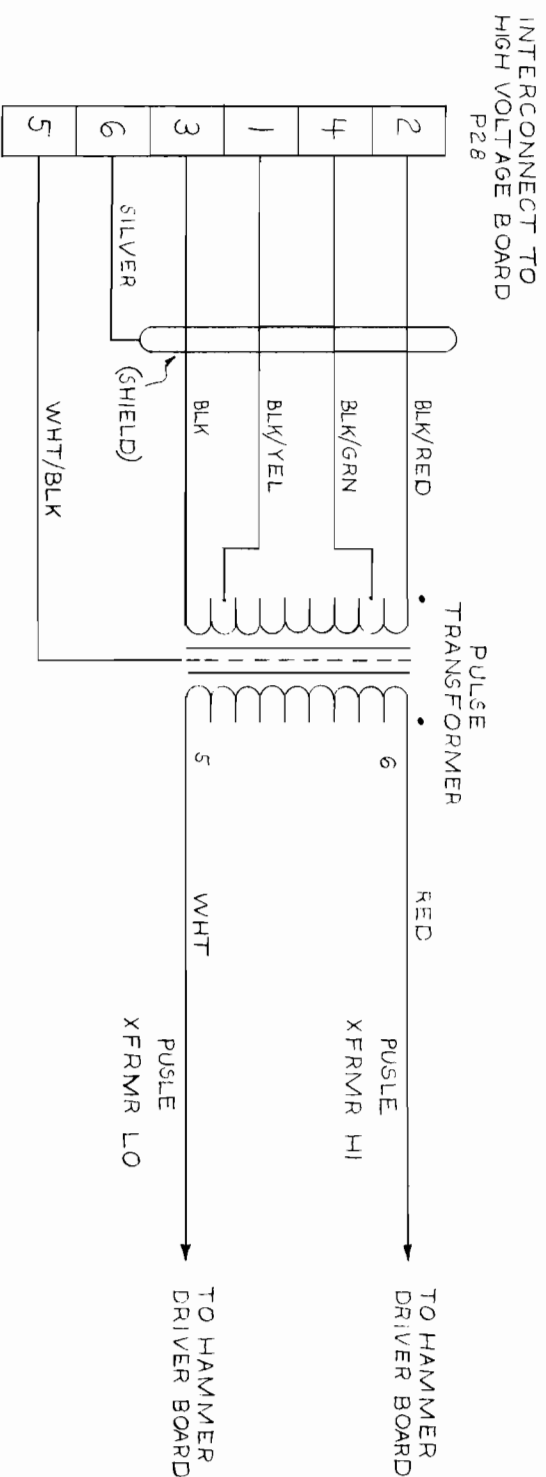


Figure 2-16. Pulse Transformer Assembly Schematic Diagram

**Table 2-16: PARTS LIST FOR
DETECTOR ASSEMBLY**
(Part No. 02608-60194) - Series 2212

Reference Designator	Part Description	HP Part No.
1	ADHESIVE-EPOXY	0470-0585
2	TBG:HS .25 DIA	0890-0540
3	TBG:HS .063 DIA	0890-0732
4	BODY:6-PIN F	1251-2993
5	CONTACT:CONNCTR	1251-3897
6	SW: LED OPTICAL	1990-0820
7	SWITCH:MICRO	3101-2589
8	SLDR-WIRE: 370DEC	8090-0485
9	CBL:SHLD 26AWG	8120-0164
10	LBL:IMPRINTABLE	9320-4863
11	WHEEL:FOAM	02608-00199
12	SHAFT:JAM	02608-20067
13	SPINDLE	02608-40060
14	INTERRUPTER	02608-40061
15	CASE:TOP DETECT	02608-40062
16	CASE:BOTTOM DET	02608-40063
17	PCB:DETECTOR	02608-80194

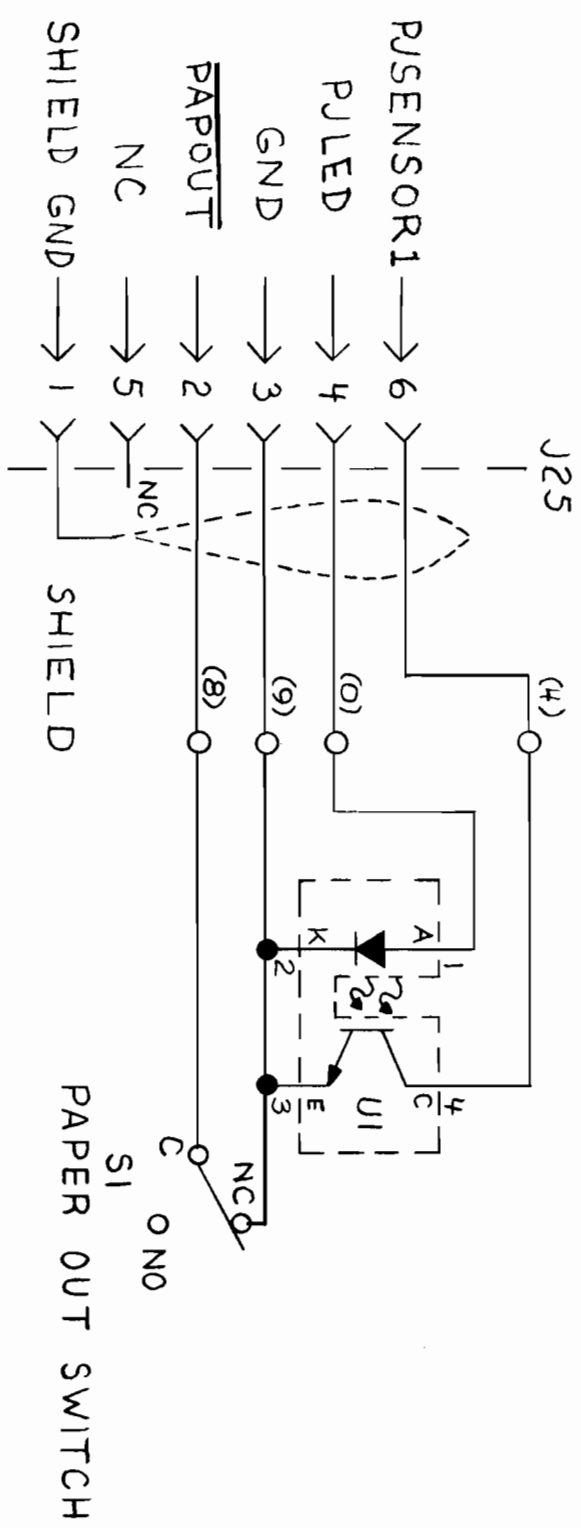
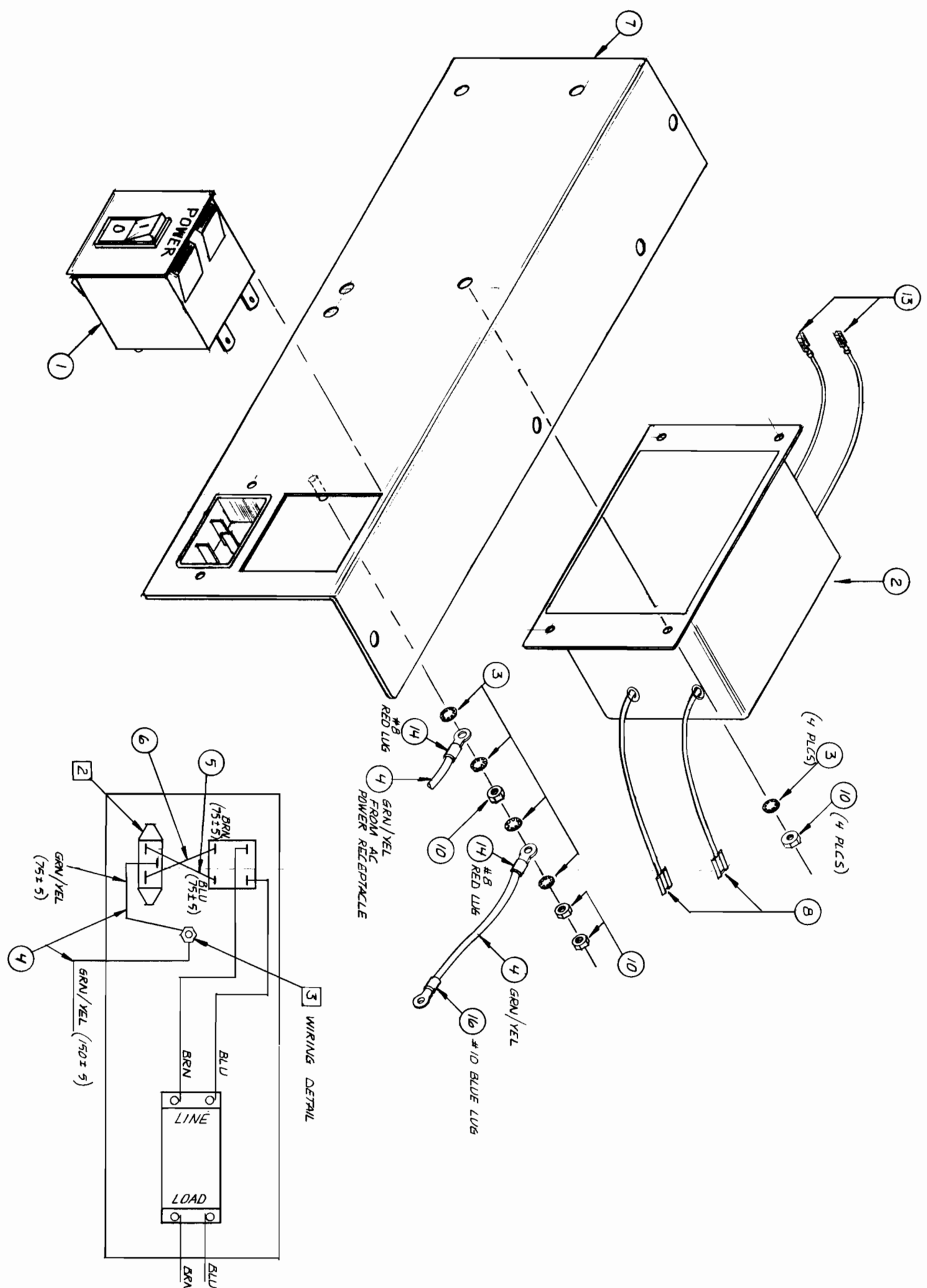


Figure 2-17. Detector Assembly Schematic Diagram

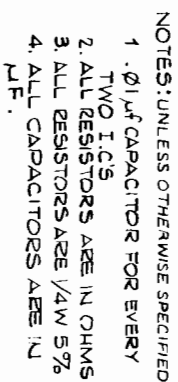
**Table 2-17: PARTS LIST FOR
REAR PANEL ASSEMBLY**
(Part No. 02608-60005 OR 02608-60057)

Reference Designator	Part Description	HP Part No.
1	CB 2P 12.5A 250V (for Part No. 02608-60005) (OR) CB 2P 6.25A 250V (for Part No. 02608-60057)	3105-0144 3105-0145
2	FILTER, LINE	9135-0105
3	WSHR:LK 8 INT	2190-0009
4	WR:18AWG GRN/YEL	8150-3284
5	WIRE 16 BLUE	8150-3357
6	WIRE 16 BRN	8150-2606
7	BRKT:RR PNL	02608-60004
8	CONN:SGL CONTACT	0362-0574
9	TBG:HS .187 DIA	0890-0029
10	NUT:HEX	0535-0006
13	CONT.CONNECTOR	1251-5661
14	TERM:CRP LUG #8	0362-0065
16	TERM:CRP #10 BLU	0362-0204



- NOTES:
1. CRIMP AN ITEM (8) TO ONE END OF THE 75 MM BLUE WIRE AND ANOTHER ITEM (8) TO ONE END OF THE 75 MM BROWN WIRE
 2. SOLDER WIRES TO LUGS OF AC POWER RECEPTACLE AND COVER EACH LUG WITH 15MM OF ITEM (9)
 3. PLACE GREEN/YELLOW WIRE FROM AC POWER RECEPTACLE ON STUD FIRST.
 4. REFER TO WIRING DETAIL FOR WIRE LENGTHS AND PROPER CONNECTIONS.
 5. BEND 4 TABS OF ITEM 1 AT A 45 DEGREE ANGLE PRIOR TO ATTACHING TERMINALS.

Figure 2-18. Rear Panel Assembly Diagram

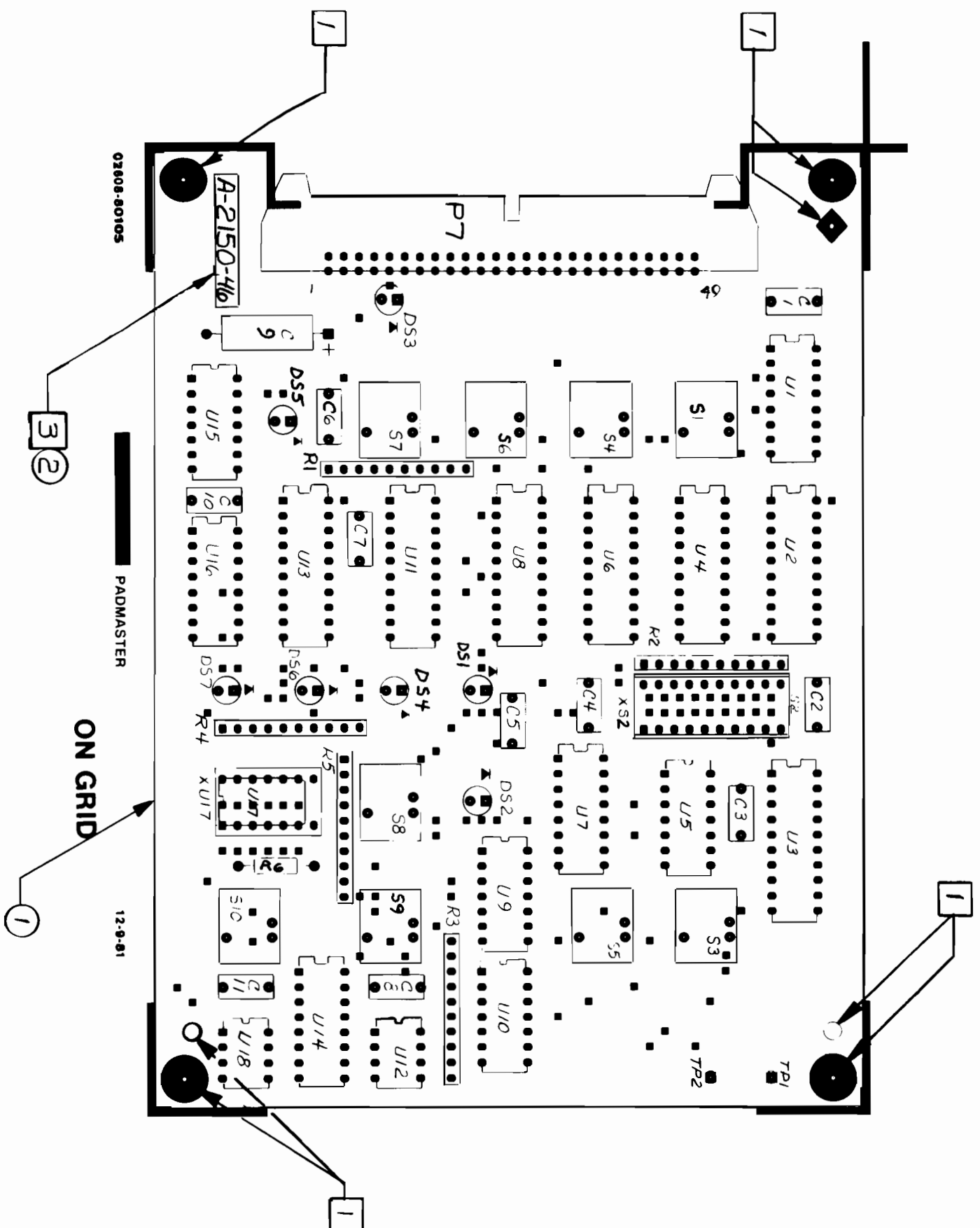


2-41

Table 2-18: PARTS LIST FOR FRONT PANEL PCA

(Part No. 02608-60105) - Series 2150

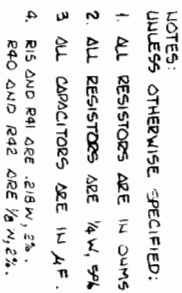
Reference Designator	Part Description	HP Part No.
1	PCB:FRONT PANEL	02608-80105
2	LBL:IMPRINTABLE	9320-4863
C1-8,10,11	C:F .01UF 20% DIP	0160-5298
C9	C:F3.3UF 10%35VDC	0180-0161
DS1-7	LED-LMP 20MA RED	1990-0659
P7	CONN-POST-TP-HDR	1251-3141
R1-R3	N:R9X4.7 K2%.125W	1810-0279
R4	N:R9X330 2%.125W	1810-0272
R5	N:R9X680 2%.125W	1810-0270
R6	R:F 470 5% .25W	0683-4715
S1,3-10	SW:PB SPST .25A	3101-2458
S2	SW:RKR 10-A .05A	3101-2440
TP1-2	TERM: TEST POINT	0360-0535
U1	IC:SN74LS138NDC	1820-1216
U2,6	IC:SN74LS273N	1820-1730
U3,4,8,11	IC:SN74LS244N	1820-2024
U5	IC:SN74LS125AN	1820-1568
U7	IC:SN74LS249N	1820-1643
U9	IC:SN74LS00NGAT	1820-1197
U10	IC:SN74LS04NINV	1820-1199
U12,18	IC:SN75452BPDRV	1820-0799
U13	IC SN74LS374PN	1820-1997
U14	IC:SN74L139NDC	1820-1281
U15	IC SN74LS393N	1820-2096
U16	IC:SN74S112N F-F	1820-0629
U17	DISPLAY: SOLID ST	1990-0785
XS2	SOCKET:IC 20-CONT	1200-0960
XU17	SOCKET:IC 14-CONT	1200-0548
	PROC:FRONT PANEL	02608-90118



NOTES:

1. MASK AS INDICATED PRIOR TO LOADING.
2. S2 AND U17 TO BE LOADED IN TOUCH-UP.
3. LABEL WITH DATE CODE AS SHOWN.
4. REFERENCE DRAWING: A. SCHEMATIC D-02608-60105-5.

Figure 2-20. Front Panel PCA Diagram



2.44

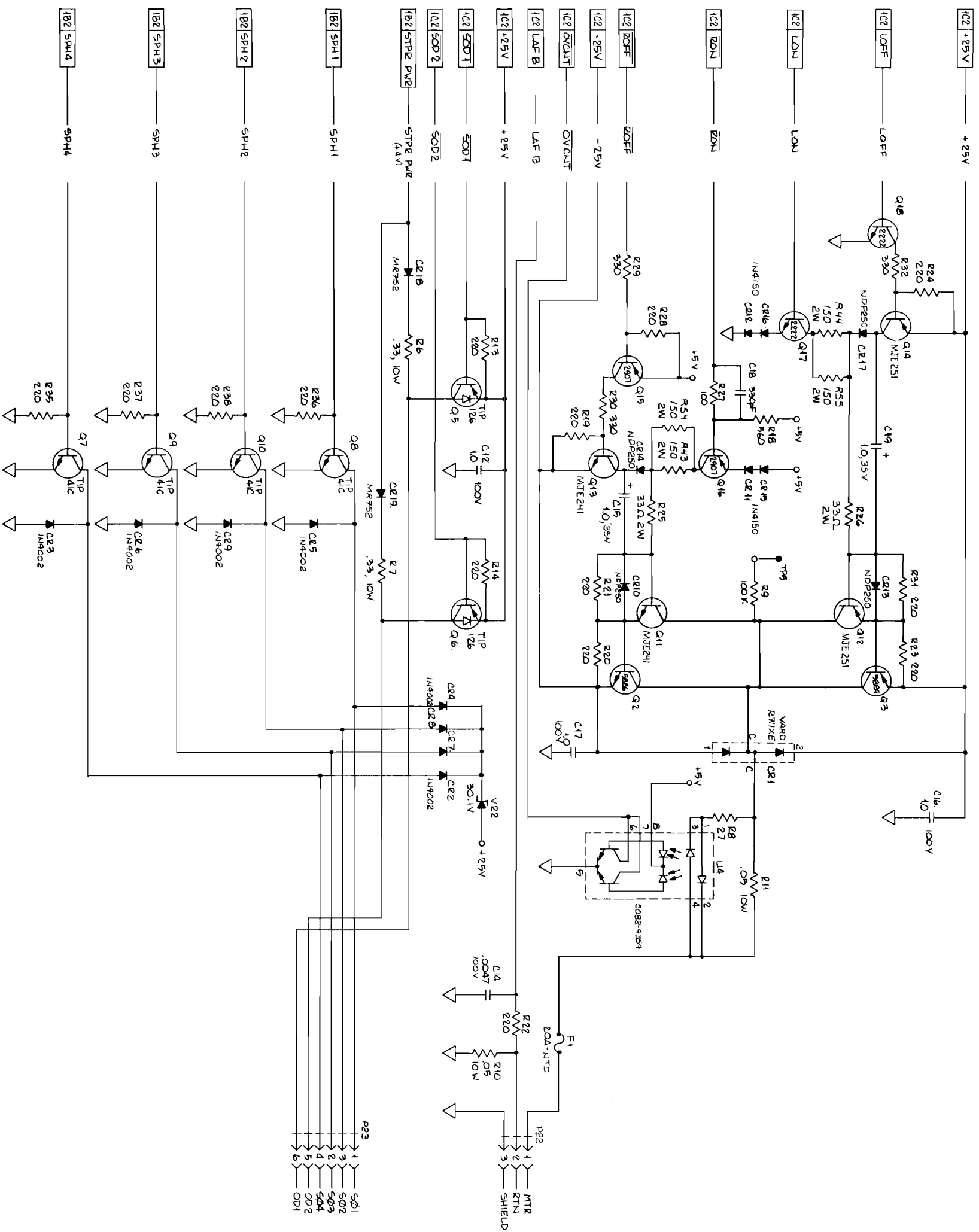
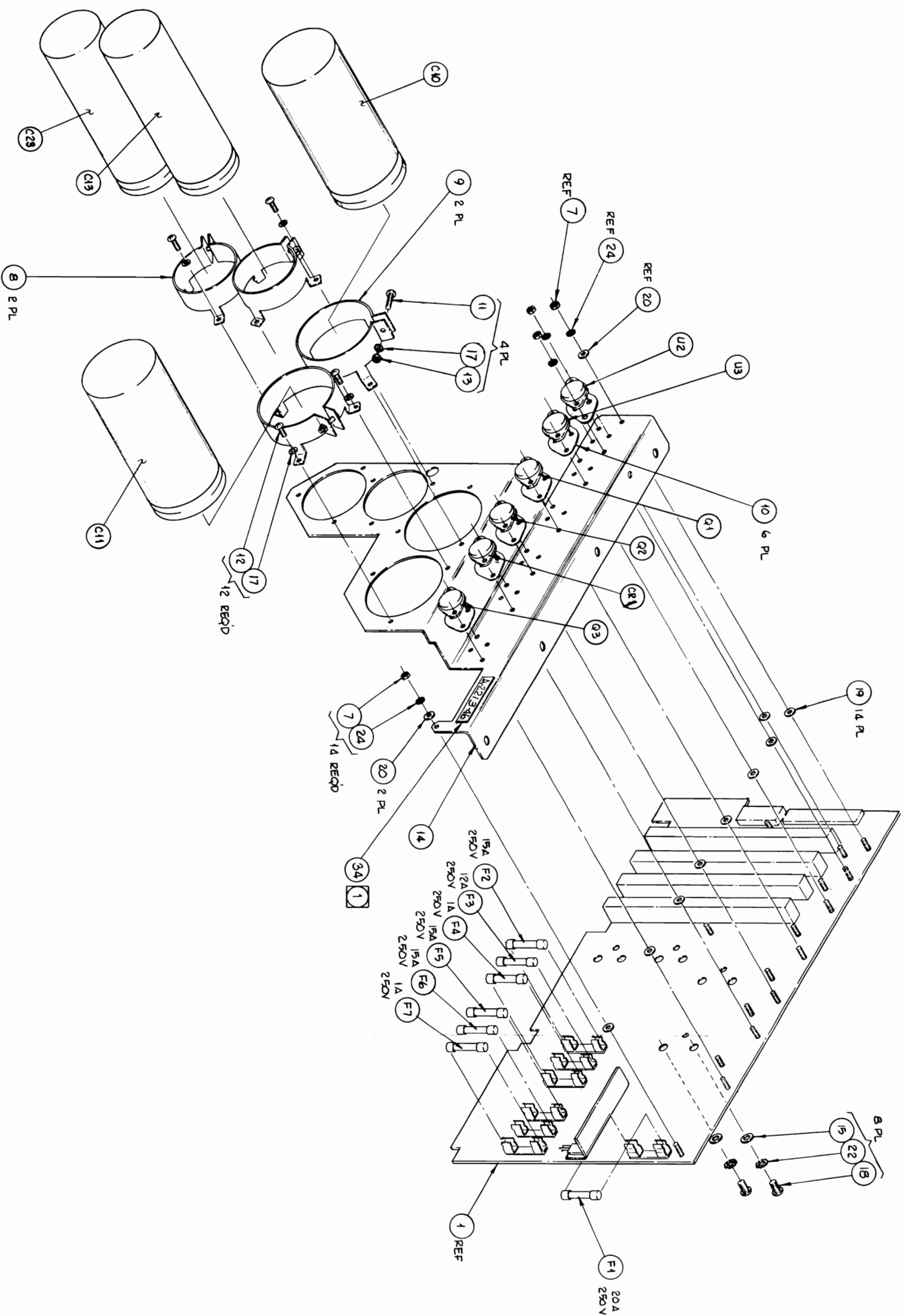


Figure 2-21. Backplane Assembly Schematic Diagram (Sheet 2 of 2)

**Table 2-19: PARTS LIST FOR
BACKPLANE ASSEMBLY**
(Part No. 02608-60106) - Series 2209

Reference Designator	Part Description	HP Part No.
1	PCB:BACKPLANE	02608-80106
2	STUD:M3X 12 PRSIN	0570-0639
3	CONN-SGL CONT	1251-2913
4	INSUL:XSTR	0340-0620
5	INSUL: FLG-BSHG	0340-0676
6	WSHR:M3 SPL LOCK	2190-0584
7	NUT:M3 HEX	0535-0004
8	CLP:CAP 2-DIA	0180-1969
9	CLP:CAP 2.562 DIA	0180-1970
10	INSUL:XSTR MICA	0340-0978
11	SCR:MCH M3.5X16P	0515-0068
12	SCR:MCH M4X6 POZ	0515-0070
13	NUT:HX M3.5X2.8L	0535-0007
14	BRKT:BACKPLANE	02608-00205
15	WSHR:#10 EXT LK	2190-0012
17	WSHR:M4 SPL LOCK	2190-0586
18	SCR:10-32X.375PN	2680-0099
19	WSHR:SHD #4 .312D	3050-0004
20	WSHR:M3 FLAT	3050-0891
21	WSHR:FL3 .5X3.8MM	3050-0892
22	WSHR:FL#10 .5"D	3050-0019
23	WSHR:FL# 8 .375"D	3050-0239
24	WSHR-LK9 OCTSK3MM	2190-0597
34	LBL: IMPRINTABLE	9320-4863
C1,4-7,9,12 16,17	C:F 1UF 20% 50V	0160-3490
C2,15,19,22	C:F 1UF 20% 35VDC	0180-2764
C3	C:F.01UF 20%100V	0160-4019
C8	C:F 2200 PF 10%	0160-0154
C10,11	C:F.067F +75-10%	0180-2883
C13,23	C:F ALUM 160 KUF	0180-3201
C14	C:F 4700 PF 20%	0160-0573
C18	C:F330PF 5% 300V	0160-2208
C20	C:F 100UF -10+75%	0180-0061
C21	C:F1UF 10% 35VDC	0180-0291
CR1	DIO:CT-RECT 100V	1906-0242
CR2-9	DIO:PWR 1N4002	1901-0704
CR10,13,14,17	DIO:SW 60V400MA	1901-0620
CR11,12,15, 16,22,23	DIO 50V IN4150	1901-1098
CR18-21,25-32	DIO:PWR REC 200V	1901-0788
CR24	THYR-SCR MCR69-1	1884-0296
F1	FUSE:20A 250V	2110-0098
F2,5,6	FUSE:15A 250V	2110-0054
F3	FUSE:12A 250V NTD	2110-0249
F4,7	FUSE:1A 250V TD	2110-0007
HS1	HEAT SINK T0-220	02608-00206
J3-6	CONN:100 PIN	1251-5378
J7	CBL ASSY:50 COND	02608-60082

J10	CBL ASSY:26 PIN	J2608-60227
P22	CONN 3-PIN MOLEX	1251-5251
P23	CONN:MOLEX 6-PIN	1251-5249
P24,30	CONN:5 PIN	1251-5347
P25	CONN:6 PIN	1251-4348
P31	CONN:3 PIN	1251-5393
Q1,3	XSTR PNP2N5884	1853-0340
Q2	XSTR NPN2N5886	1854-0697
Q4,7-10	XSTR:NPN TIP 41C	1854-0799
Q5,6	XSTR:PNP TIP 126	1853-0424
Q11,13	XSTR:NPN2N6474	1854-0727
Q12,14	XSTR:PNP2N6476	1853-0406
Q15,16	XSTR:PNP2N2907A	1853-0281
Q17,18	XSTR:2N2222AT018	1854-0477
R1	R:F 1.62K 1%.125W	0757-0428
R2	R:F 2.37K 1%.125	0698-3150
R3	R:F5.62K 1%.125W	0757-0200
R4,5,13,14, 19-24,28, 31,35-38	R:F 220 5% .25W	0683-2215
R6,7		
R8,39	R:F.33 5% 10W PW	0811-3177
R9	RES:27 5% .25W	0683-2705
R10,11	R:F 100K 5% .25	0683-1045
R12	R:F.05 5% 10W PW	0811-1887
R15,41	RES:.033 5% 2W	0811-1077
R16	N:R 8X1K 2%.218W	1810-0037
R17,33	R:F7.5 5% 2W PW	0811-2553
R18	R:F 100 1% .5W	0757-0198
R25,26	R:F 560 5% .25	0683-5615
R27,49,50, 52,53	R:F 42.2 1% .5W	0698-3397
R29,30,32	R:F 100 5% .25W	0683-1015
R34,46		
R40,42	R:F 330 5% .25W	0683-3315
R43,44	R:F,1K,2 W,5%	0764-0016
R45	N:R 4X10 K2%.125W	1810-0406
R47	R:F 150 5% 2W MO	0698-3624
R48	R:F 330 5% 2W MO	0698-3631
R51	R:F 15K 5% .25W	0683-1535
TP1-14	R:F 270K 5% .25W	0683-2745
U1	R:F 11K 1% .125W	0757-0443
U2	TERM:TEST POINT	0360-0535
U3	IC:UA723 DC VLT-R	1826-0049
U4	IC:7812K C V-REG	1826-0117
U5	IC:MC7912CK V-RG	1826-0123
VR1	OPTO-ISLTR PDIO	1990-0594
VR2	IC:339 CMPTR-GP	1826-0138
XF1-XF7	DIO: ZNR 3.83V 5%	1902-3059
	DIO: ZNR 30V 5%	1902-0244
	CLIP FUS HLDR:25X1.4	2110-0643
	HEAT SINK CMPD	6040-0454

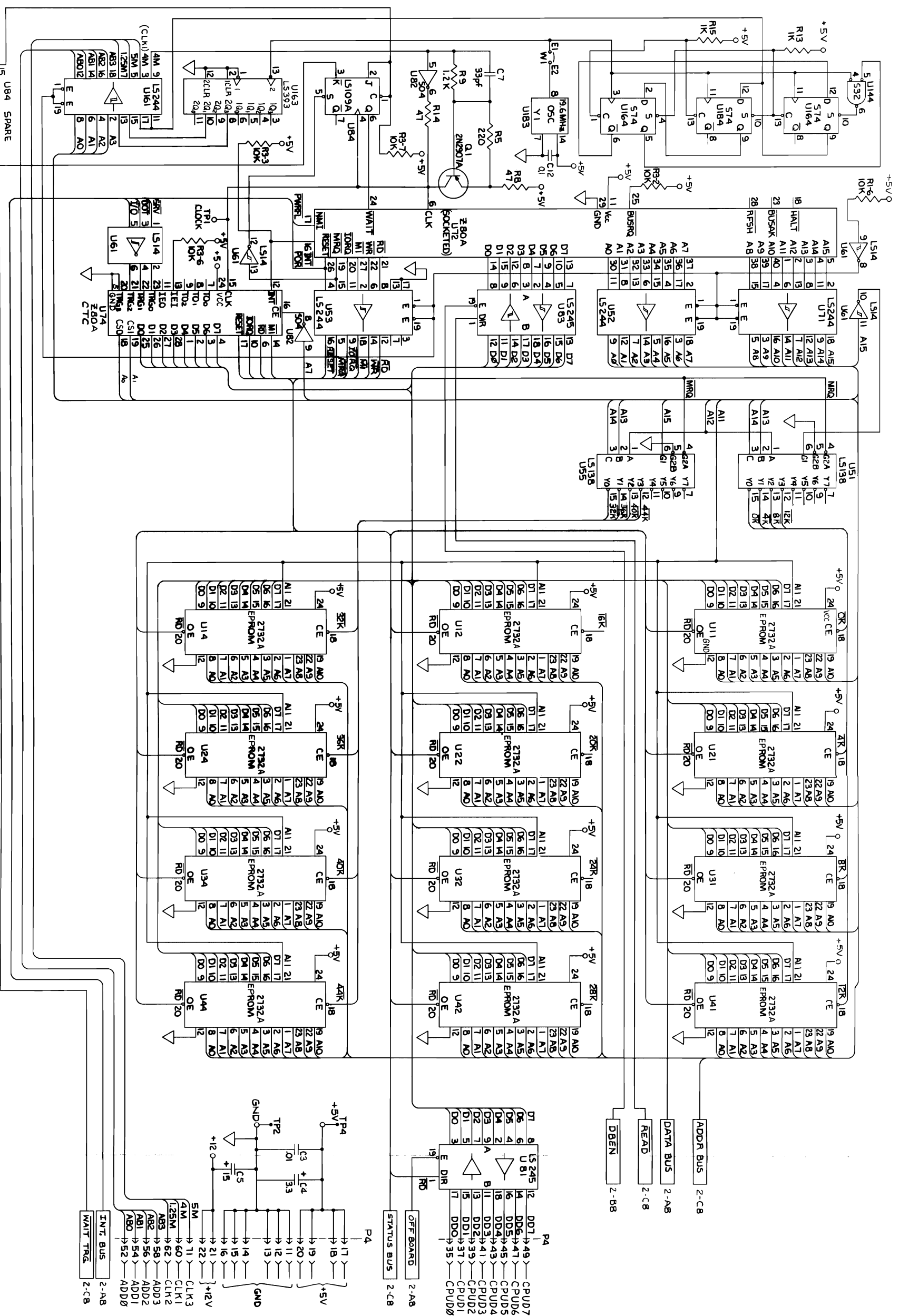


NOTES:
 1 LABEL WITH ASSY. NUMBER AND SERIES AS SHOWN.

Figure 2-22. Backplane Assembly Diagram
 (Sheet 2 of 2)



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NOTES: UNLESS OTHERWISE SPECIFIED:

1. ALL RESISTORS ARE $\pm 5\%/1/4W$.

2. ALL CAPACITORS ARE IN $4F$.

3. IC POWER CONNECTIONS:

IC	POWER	CONNECTIONS
U1	24	$+5V$
U2	24	GND
U3	24	GND
U4	24	GND
U5	24	GND
U6	24	GND
U7	24	GND
U8	24	GND
U9	24	GND
U10	24	GND
U11	24	GND
U12	24	GND
U13	24	GND
U14	24	GND
U15	24	GND
U16	24	GND
U17	24	GND
U18	24	GND
U19	24	GND
U20	24	GND
U21	24	GND
U22	24	GND
U23	24	GND
U24	24	GND
U25	24	GND
U26	24	GND
U27	24	GND
U28	24	GND
U29	24	GND
U30	24	GND
U31	24	GND
U32	24	GND
U33	24	GND
U34	24	GND
U35	24	GND
U36	24	GND
U37	24	GND
U38	24	GND
U39	24	GND
U40	24	GND
U41	24	GND
U42	24	GND
U43	24	GND
U44	24	GND
U45	24	GND
U46	24	GND
U47	24	GND
U48	24	GND
U49	24	GND
U50	24	GND
U51	24	GND
U52	24	GND
U53	24	GND
U54	24	GND
U55	24	GND
U56	24	GND
U57	24	GND
U58	24	GND
U59	24	GND
U60	24	GND
U61	24	GND
U62	24	GND
U63	24	GND
U64	24	GND
U65	24	GND
U66	24	GND
U67	24	GND
U68	24	GND
U69	24	GND
U70	24	GND
U71	24	GND
U72	24	GND
U73	24	GND
U74	24	GND
U75	24	GND
U76	24	GND
U77	24	GND
U78	24	GND
U79	24	GND
U80	24	GND
U81	24	GND
U82	24	GND
U83	24	GND
U84	24	GND
U85	24	GND
U86	24	GND
U87	24	GND
U88	24	GND
U89	24	GND
U90	24	GND
U91	24	GND
U92	24	GND
U93	24	GND
U94	24	GND
U95	24	GND
U96	24	GND
U97	24	GND
U98	24	GND
U99	24	GND
U100	24	GND

NOTES CONTINUED ON SHEET 2.

Figure 2-23. Control PCA Schematic Diagram
(Sheet 2 of 2)

**Table 2-20: PARTS LIST FOR
CONTROL PCA**
(Part No. 02608-60100) - Series 2209

Reference Designator	Part Description	HP Part No.
1	PCB:CONTROL	02608-80100
2	CBL:TIE.09WX3.5L	1400-0249
3	LBL:IMPRINTABLE	9320-4863
BT1	BATTERY: LITHIUM	1420-0301
C1,2,6,10,11	C:F .01UF 100V DIP	0160-5298
C3,8	C:F.01UF 20%100V	0160-4019
C4,9	C:F3.3UF 20%15V	0180-2664
C5	C:F15UF 20%20VDC	0180-2765
C7	C:F 33PF 5% 200V	0160-4386
C12	C:F 0.1UF 20% 50V	0160-0576
CR1	DIO:RECT IN5818	1901-0734
CR2,3	DIO 50V IN4150	1901-1098
Q1	XSTR: PNP 2N2907A	1853-0281
Q2	XSTR: 2N3904 PL5	1854-0215
R1,2,3,4	N:R9X10K 2% .125W	1810-0280
R5,7	R:F 220 5% .25W	0683-2215
R6,12,13,15	R:F 1K5% .25W	0683-1025
R9	R:F 1.2K 5% .25W	0683-1225
R10	R:F 10K 5% .25W	0683-1035
R11	R:F 270 5% .25W	0683-2715
R8,R14	R:F47 5% .25W	0683-4705
S1	SW:RKR 4-1A .05A	3101-2063
TP1-4	TERM:TEST POINT	0360-0535
U11	PROM ASSY: IC	02608-60209
U12	PROM ASSY: IC	02608-60213
U14	PROM ASSY: IC	02608-60217
U21	PROM ASSY: IC	02608-60210
U22	PROM ASSY: IC	02608-60214
U24	PROM ASSY: IC	02608-60218
U31	PROM ASSY: IC	02608-60211
U32	PROM ASSY: IC	02608-60215
U34	PROM ASSY: IC	02608-60219
U41	PROM ASSY: IC	02608-60212
U42	PROM ASSY: IC	02608-60216
U44	PROM ASSY: IC	02608-60220
U51,55,56 104,182	IC:SN74LS138N	1820-1216
U52,53,71,101, 102,141,161	IC:SN74LS244N	1820-2024
U54,124	IC:SN74LS08N	1820-1201
U61	IC:SN74LS14N	1820-1416
U72	IC:Z80A CPU 8-B	1820-2298
U74	IC:Z80A CTC 8-B	1820-2301
U81,83,121	IC:SN74LS245N	1820-2075
U82	IC:SN74S 04N INVT	1820-0683
U84	IC:SN74LS109A FP	1820-1282
U85,95,115, 122,135,142, 145,155,175	IC:P2114A-55RAM	1818-0443

U103,123,143	IC:SN74LS191	1820-1278
U144	IC:SN74S 32N	1820-1449
U162	IC:SN74L S30N GAT	1820-1207
U163	IC SN74L S393N	1820-2096
U164,184	IC:74S74N	1820-0693
U185	IC CMOS4 K 4096-B	1818-0955
VR1	DIO-ZNR5 .11V 5%	1902-0041
VR3	DIO:ZNR 5.62V 5%	1902-3104
W1,W4	RES:0-OH M 22G	8159-0005
XU72	SCKT:40P IN IC	1200-0654
XU11,12,14,21, 22,24,31,32, 34,41,42,44	SCKT:24 PIN IC	1200-0541
XU185	SOCKET I C 18CONT	1200-0539
Y1	XTAL-C-O SC19.66M	1813-0143
	INSUL:BEAD GLASS	4330-0145

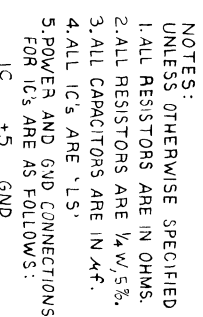
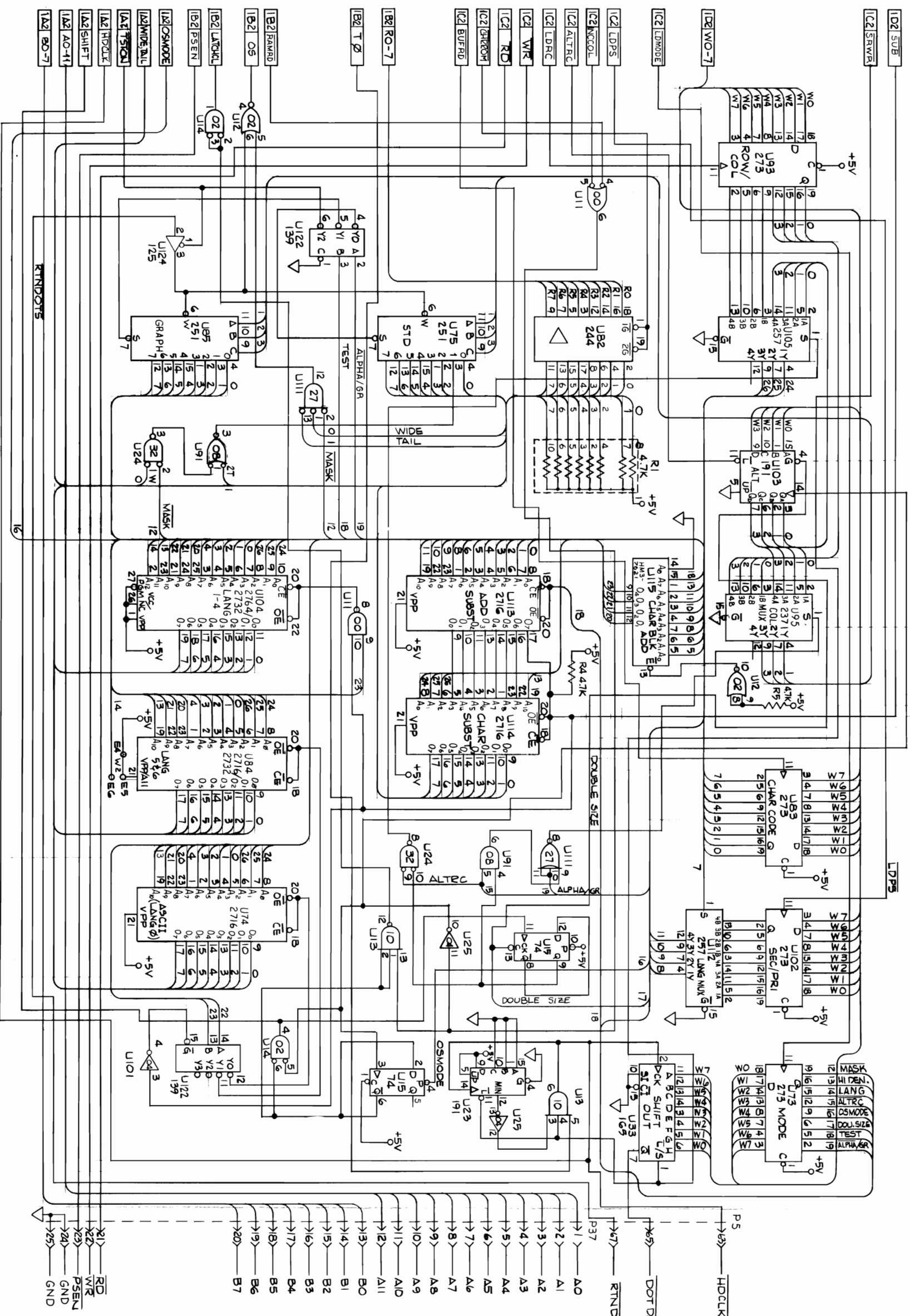


Figure 2-25. Dot Generation PCA Schematic Diagram
(Sheet 1 of 2)



NOTES CONT. FROM PAGE 1.

IC	+5	GND
U11	14	7
U12	16	8
U13	2124	12
U14	2124	12
U15	16	8
U16	16	8
U17	14	7

6. IF U84 IS A 2716, JUMPER MUST BE INSTALLED BETWEEN E4 AND E5. IF U84 IS A 2732, JUMPER MUST BE INSTALLED BETWEEN E5 AND E6.

Figure 2-25. Dot Generation PCA Schematic Diagram (Sheet 2 of 2)

**Table 2-21: PARTS LIST FOR
DOT GENERATION PCA**
(Part No. 02608-60116) - Series 2151

Reference Designator	Part Description	HP Part No.
1	LBL:IMPRINTABLE	9320-4863
2	PCB:DOT GEN	02608-80116
C1,2,4,5,7-12	C:F .01UF 20% DIP	0160-5298
C3	C:F3.3UF 20%15V	0180-2664
C6	C:F22PF 5% 200V	0160-3875
P37	CONN POS T 26 PIN	1251-7589
R1	N:R9X4.7 K2%.125W	1810-0279
R2-5	R:F 4.7K 5% .25W	0683-4725
TP1-3	TERM:TEST POINT	0360-0535
U11	IC:SN74LS00N GAT	1820-1197
U12,14	IC:SN74LS02NGATE	1820-1144
U13	IC:SN74LS10N GAT	1820-1202
U15,21,35	IC:SN74LS74N F-F	1820-1112
U22	IC:SN74S32N	1820-1449
U23,103	IC:SN74LS191NCNT	1820-1278
U24	IC:SN74LS32NGATE	1820-1208
U25,101	IC:SN74LS04N INV	1820-1199
U31,41	IC SN74LS393N	1820-2096
U32,42,81	IC:SN74LS138N DC	1820-1216
U33	IC:SN74LS165N	1820-1975
U34	ASSY:ROM F.W.	02608-60204
U43	IC-SN74L S373N	1820-2102
U51,71	IC NMOS4K 4096-B	1818-0443
U52,53,65,72,82	IC:SN74LS244N	1820-2024
U54	8C-8039 HL	1820-2733
U61	IC:SN74LS245N	1820-2075
U62,63	IC SN74LS374PN	1820-1997
U73,83,93,102	IC:SN74LS273N	1820-1730
U74	E PROM 2KX8	02608-60184
U75,85	IC:SN74LS251 MPX	1820-1298
U91	IC:SN74LS08N GAT	1820-1201
U92	IC: SN74LS299N	1820-1987
U95,105,112	IC:SN74LS257AN	1820-1438
U111	IC:SN74LS27N GAT	1820-1206
U115	PROM:512X8	02608-60185
U122	IC:SN74LS139N DC	1820-1281
U124	IC:SN74LS125AN	1820-1568
W1,2,3	RES:0-OHM 22G	8159-0005
XU34,84,113,114	SCKT:24 PIN IC	1200-0541
XU54	SCKT:40 PIN IC	1200-0654
XU104	SCKT:28 PIN IC	1200-0567
Y1	XTAL:11 MHZ	0410-1304



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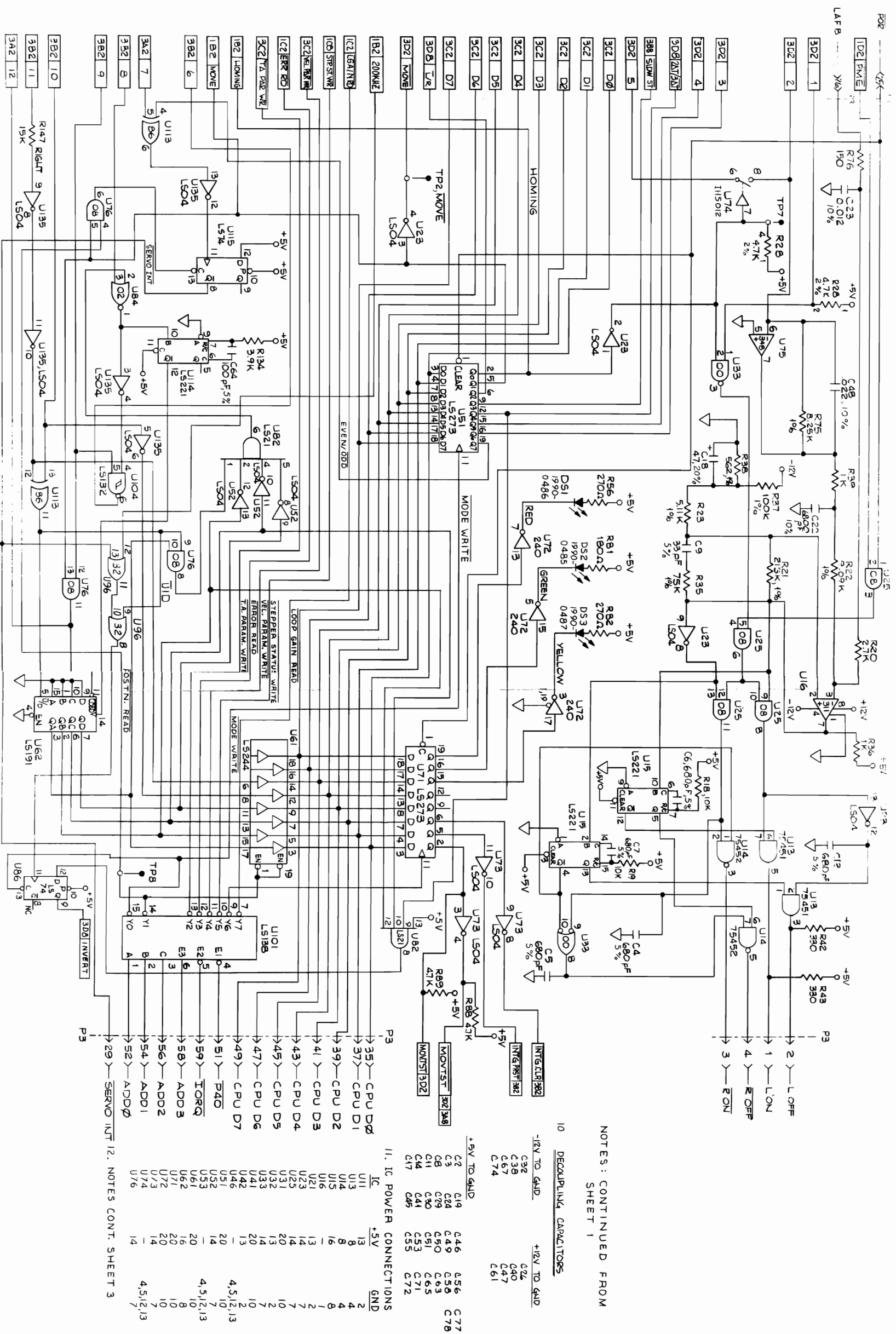
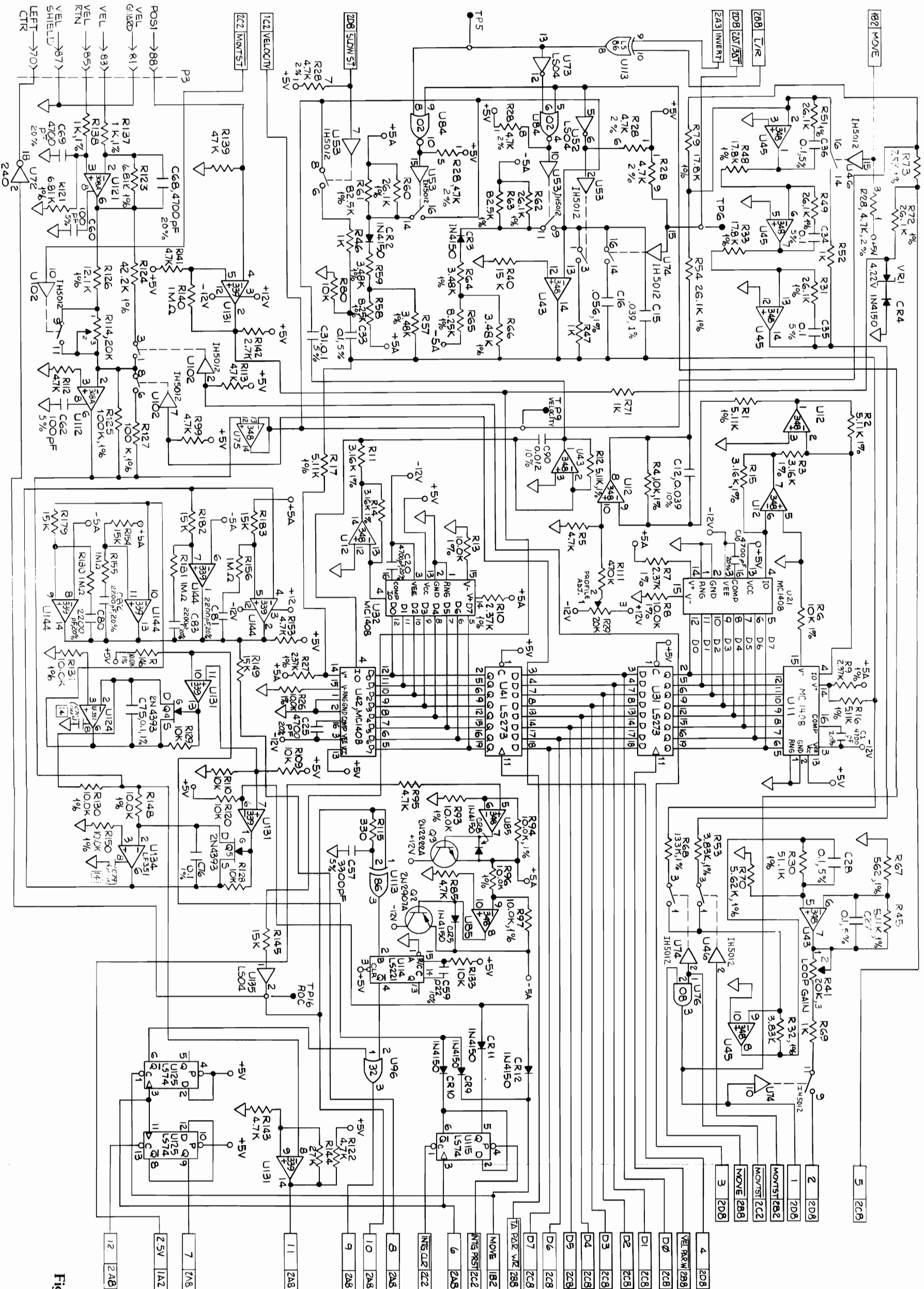


Figure 2-27. Servo/Motor Driver PCA Schematic Diagram (Sheet 2 of 3)



NOTES CONT. FROM SHEET 2
13. IC POWER CONNECTIONS
CONT.

IC	+5V	GND
U1	20	10
U2	14	7
U3	16	8
U4	14	7
U5	14	7
U6	14	7
U7	20	10
U8	16	8
U9	16	8
U10	16	8
U11	16	8
U12	16	8
U13	16	8
U14	16	8
U15	16	8
U16	16	8
U17	16	8
U18	16	8
U19	16	8
U20	16	8
U21	16	8
U22	16	8
U23	16	8
U24	16	8
U25	16	8
U26	16	8
U27	16	8
U28	16	8
U29	16	8
U30	16	8
U31	16	8
U32	16	8
U33	16	8
U34	16	8
U35	16	8
U36	16	8
U37	16	8
U38	16	8
U39	16	8
U40	16	8
U41	16	8
U42	16	8
U43	16	8
U44	16	8
U45	16	8
U46	16	8
U47	16	8
U48	16	8
U49	16	8
U50	16	8
U51	16	8
U52	16	8
U53	16	8
U54	16	8
U55	16	8
U56	16	8
U57	16	8
U58	16	8
U59	16	8
U60	16	8
U61	16	8
U62	16	8
U63	16	8
U64	16	8
U65	16	8
U66	16	8
U67	16	8
U68	16	8
U69	16	8
U70	16	8
U71	16	8
U72	16	8
U73	16	8
U74	16	8
U75	16	8
U76	16	8
U77	16	8
U78	16	8
U79	16	8
U80	16	8
U81	16	8
U82	16	8
U83	16	8
U84	16	8
U85	16	8
U86	16	8
U87	16	8
U88	16	8
U89	16	8
U90	16	8
U91	16	8
U92	16	8
U93	16	8
U94	16	8
U95	16	8
U96	16	8
U97	16	8
U98	16	8
U99	16	8
U100	16	8

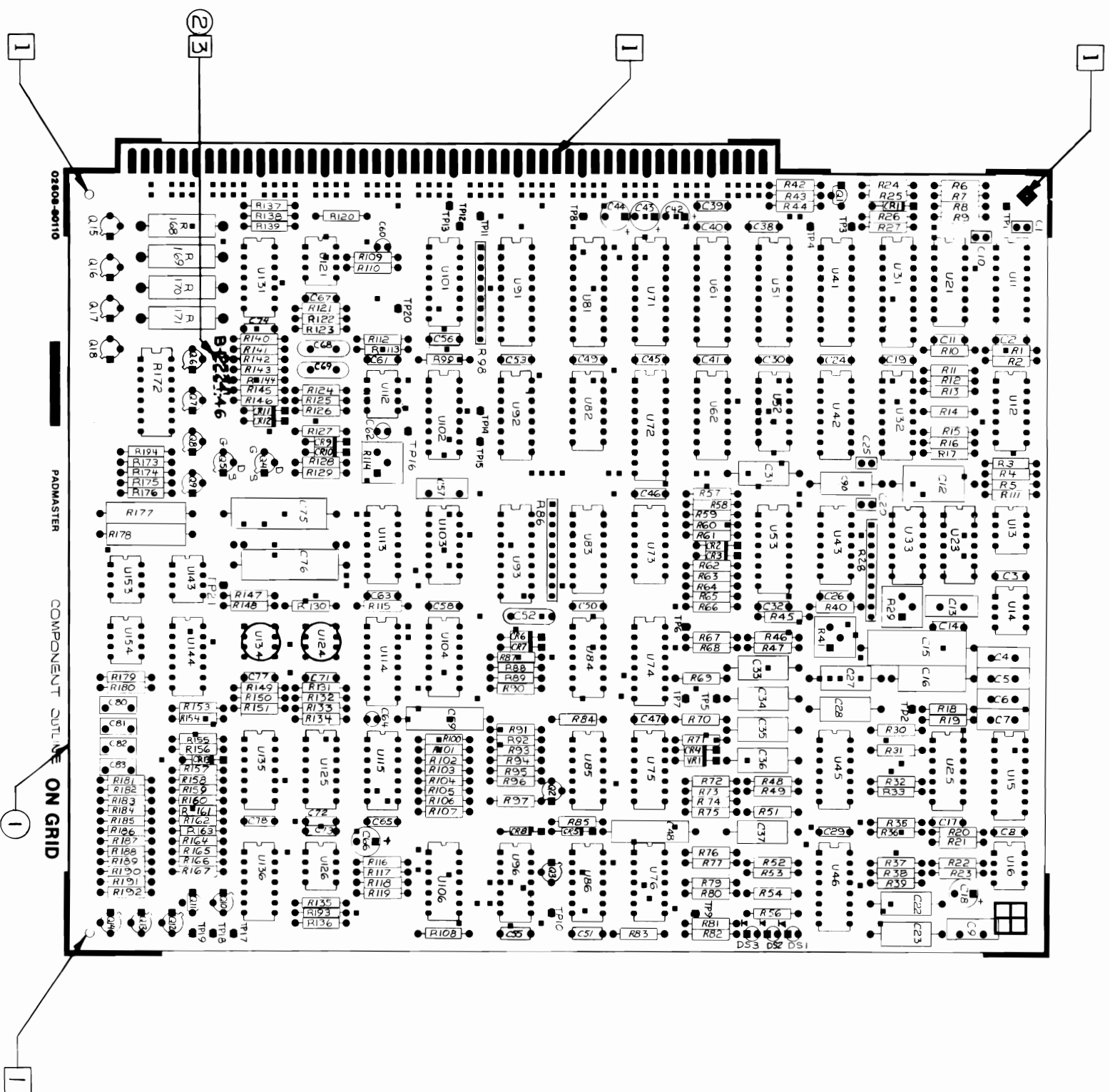
14. C70 AND C79 NOT LOADED FOR U13, U15.

Figure 2-27. Servo/Motor Driver PCA
Schematic Diagram
(Sheet 3 of 3)

**Table 2-22: PARTS LIST FOR
SERVO/MOTOR DRIVER PCA**
(Part No. 02608-60110) - Series 2212

Reference Designator	Part Description	HP Part No.
1	PCB:SERV DOT GEN	02608-80110
2	LBL: IMPRINTABLE	9320-4863
C1,10,20,25	C:F 4700PF 20%	0160-0573
C2,3,8,11,14,	C:F .01UF 20% DIP	0160-5298
17,19,24,26,29,		
30,32,38-41,45-47,		
49-51,53,55,56,58,		
61,63,65,67,		
71-74,77,78		
C4-7,13	C:F 680PF 5%	0140-0208
C9	C:F 33PF 5% 300V	0160-2150
C12	C:F.039UF10%	0160-0164
C15	C:F.039UF 1% 100V	0160-4606
C16	C:F.056UF 1%200V	0160-4596
M C18	C:F 47UF 20%8VDC	0180-2602
C22	C:F 6800 PF 10%	0160-0159
C23,90	C:F .012 UF 10%	0160-0301
C27,28,33-37	C:F 1UF 5% 80V	0160-2671
C31	C:F.1UF 5% 50V	0160-3661
C42	C:F 22UF 20% 10VDC	0180-2615
C43,44,66	C:F15UF 20%20VDC	0180-2765
C48,59	C:F .022 UF 10%	0160-0162
C52	C:F 1UF 20% 25V	0160-0127
C57	C:F 3300 PF 5%	0160-2230
C60,62,64	C:F 100PF 5% 200V	0160-4389
C68,69	C:F 4700PF20%250V	0160-4298
C75,76	C:F .1UF 1% 100V	0160-4397
C80-83	C:F 2200PF20%250V	0160-4299
CR1-13	DIO 50V IN4150	1901-1098
DS1	LED:LAMP 20MA RED	1990-0486
DS2	LED:LAMP 30MA GRN	1990-0485
DS3	LED:LAMP 20MA YLW	1990-0487
Q1,11	XSTR:2N3 904 PL5	1854-0215
Q2,6-10,12-14	XSTR:PMP 2N2907A	1853-0281
Q3,15-18	XSTR: 2N2222AT018	1854-0477
Q4,5	TRAN: J-FET2N4393	1855-0414
R1,2,12,16,	R:F 5.11K 1% .125W	0757-0438
17,23,45		
R3,11,14,15	R:F 3.16K 1% .125	0757-0279
R4,6,8,13,26,	R:F 10.K 1% .125W	0757-0442
93,94,96,97,		
130,131,146,		
148,150		
R5,24,25,85,88,	R:F 4.7K 5% .25W	0683-4725
89,95,99,112,		
113,122,135,		
141,143,151,		
153,165,166		
R7,9,10,27	R:F 2.37K 1% .125	0698-3150
R18,19,80,84,	R:F 10K 5% .25W	0683-1035
91,92,109,110,		
120,128,129,		
133,186		
R20,142	R:F 2.7K 5% .25W	0683-2725
R21,77	R:F 215K 1% .125	0698-3454
R22	R:F 9.09K 1% .125	0757-0288
R28,98	N:R9X4.7K 2% .125W	1810-0279
R29,41,114	R:V TRMR 20K 10%	2100-0558
R30	R:F 51.1K 1% .125W	0757-0458
R31,49,51,54,	R:F 26.1K 1% .125	0698-3159
60,62,72		
R32,53	R:F 3.83K 1%125	0698-3153
R33,48,79	R:F 17.8K 1% .125W	0698-3136
R35	R:F 75K 1% .125	0757-0462
R36,39,44,46,47,	R:F 1K 5% .25W CC	0683-1025
52,69,71,90,161,		
190-192,194		
R37,100,125,127	R:F 100K 1% .125W	0757-0465
R38,67	R:F 562 1% .125W	0757-0417
R40,132,145,	R:F 15K 5% .25W	0683-1535
147,149,154,		
179,182,183		
R42,43,115	R:F 330 5% .25W	0683-3315
R56,82	R:F 270 5% .25W	0683-2715
R57,59,64,66	R:F 3.48K 1% .125W	0698-3152

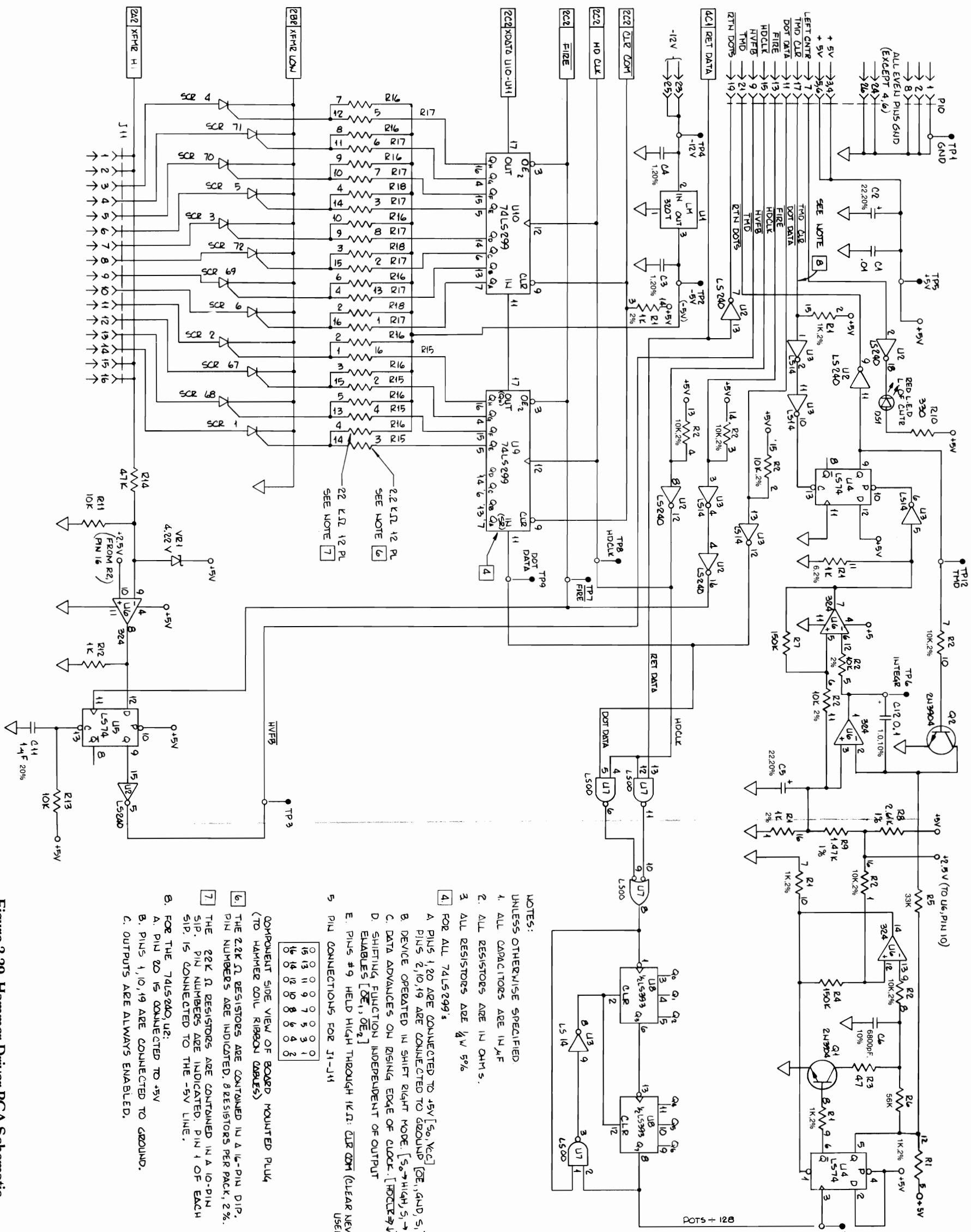
Reference Designator	Part Description	HP Part No.
R58,65,75	R:F 8.25K 1% .125	0757-0441
R61,63	R:F 82.5K 1% .125	0757-0463
R68	R:F 133K 1% .125	0698-3451
R70,106	R:F 5.62K 1% .125W	0757-0200
R73	R:F 7.5K 1% .125W	0757-0440
R74	R:F 13.3K 1% .125	0757-0289
R76	R:F 150 5% .25W	0683-1515
R81	R:F 180 5% .25W	0683-1815
R83	R:F 16.2K 1% .125W	0757-0447
R86	N:R 9X1K 2% .125W	1810-0275
R87	RES: 3.3M 5% .25W	0683-3355
R101,103	R:F 34.8K 1% .125	0757-0123
R102,104,107,108, 117,118,157,159	R:F 4.64K 1% .125	0698-3155
R105	R:F 68.1K 1% .125	0757-0461
R111	R:F 470K 5% .25W	0683-4745
R116,184	R:F 200 5% .25W	0683-1015
R119,137,138	R:F 1K 1% .125W F	0757-0280
R121,123	R:F 6.81K 1% .125W	0757-0439
R124	R:F 42.2K 1% .125W	0698-3450
R126	R:F 12.1K 1% .125	0757-0444
R134	R:F 3900 5% .25	0683-3925
R136	RES: 27 5% .25W	0683-2705
R139,163,187, 188,193	R:F 47K 5% .25	0683-4735
R140,155,156, 167,180,181	R:F 1M 5% .25W CC	0683-1055
R144	R:F 27K 5% .25W	0683-2735
R158	R:F 31.6K 1% .125	0698-3160
R160,164	R:F 680K 5% .25W	0683-6845
R162	R:F 1.5K 5% .25W	0683-1525
R168-171	R:F 7.5 5% 2W PW	0811-2553
R172	N:R8X56 OHM 16DIP	1810-0543
R173-176	R:F 390 5% .25W	0683-3915
R177,178	R:F 1K 1% .5W	0757-0159
R185,189	R:F 220 5% .25W	0683-2215
SCR1-132	THYR: SCR T-106A	1884-0294
TP1-21	TERM:TEST POINT	0360-0535
U11,21,32,42	IC:MC1408L 8-BIT	1826-0188
U12,43,45,75,85	IC:LM348N AMP-GP	1826-0315
U13	IC:SN75451 DRIVER	1820-0535
U14,143,153,154	IC:SN75452BP DRV	1820-0799
U15,114	IC:SN74LS221N	1820-1437
U16	IC:LINEAR LM311	1826-0065
U23,52,73,135	IC:SN74LS04N INV	1820-1199
U25,76	IC:SN74LS08N GAT	1820-1201
U31,41,51,71,81	IC:SN74LS273N	1820-1730
U33	IC:SN74LS00N GAT	1820-1197
U46,53,74,102	ANLG SW F4IH5012	1826-0193
U61,91	IC:SN74LS244N	1820-2024
U62	IC:SN74LS191NCNT	1820-1278
U72	IC: SN74LS240N	1820-1917
U82	IC:SN74LS21N GAT	1820-1205
U83	IC SN74LS348N	1820-2121
U84	IC:SN74LS02N GATE	1820-1144
U86,115,125	IC:SN74LS74N F-F	1820-1112
U92	IC:SN74LS390N	1820-1991
U93	IC:3914 DOT/BAR	1826-0655
U96	IC:SN74LS32NGATE	1820-1208
U101	IC:SN74LS138N DC	1820-1216
U103	IC SN74LS393N	1820-2096
U104	IC:SN74LS132N	1820-1425
U106,131,136, 144	IC:339CMPTR-GP	1826-0138
U112,121	IC:LM308AN AMP-B	1826-0493
U113	IC:SN74LS86NGATE	1820-1211
U124,134	IC:LF351H	1826-0685
U126	IC:MC14037 V-REG	1826-0544
VR1	DIO:ZNR 4.22V .4W	1902-3070



NOTES:

- 1 MASK AS INDICATED PRIOR TO LOADING.
2. GLASS BEAD INSULATORS, 4330-0145, TO BE USED ON COMPONENT LEADS AS NECESSARY.
- 3 LABEL WITH SERIES CODE AS SHOWN.
4. REFERENCE DRAWINGS:
A. SCHEMATIC D-02608-60110-S. (35HTS)

Figure 2-28. Servo/Motor Driver PCA Diagram



- NOTES:
- UNLESS OTHERWISE SPECIFIED
 - ALL CAPACITORS ARE IN μF
 - ALL RESISTORS ARE IN OHMS.
 - ALL RESISTORS ARE $\frac{1}{4}\text{W } 5\%$
 - FOR ALL 74LS299'S
 - PINS 1, 20 ARE CONNECTED TO +5V [50, YC]
 - PINS 2, 10, 19 ARE CONNECTED TO GROUND [50, HIGH, 5, LOW]
 - DEVICE OPERATED IN SHIFT RIGHT MODE [50, HIGH, 5, LOW]
 - DATA ADVANCES ON RISING EDGE OF CLOCK [HCLK, 7, 1]
 - SHIFTING FUNCTION INDEPENDENT OF OUTPUT
 - ENABLES [OE, 1, OE]
 - PINS #9 HELD HIGH THROUGH 1K Ω CLEAR (CLEAR NEVER USED)
 - PIN CONNECTIONS FOR J1-J11
 - COMPONENT SIDE VIEW OF BOARD MOUNTED PLUG (TO HAMMER COIL RIBBON CABLES)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
9. BY-PASS CAPACITOR LOCATIONS.
- | CAP NUMBER | NEAR IC | IC# | TYPE | VALUES |
|------------|---------|-----|---------|--------|
| C1 | U1 | 1 | LM320-5 | 10 |
| C2 | U2 | 2 | LM320-5 | 20 |
| C3 | U3 | 3 | LM320-5 | 10 |
| C4 | U4 | 4 | LM320-5 | 10 |
| C5 | U5 | 5 | LM320-5 | 10 |
| C6 | U6 | 6 | LM320-5 | 10 |
| C7 | U7 | 7 | LM320-5 | 10 |
| C8 | U8 | 8 | LM320-5 | 10 |
| C9 | U9 | 9 | LM320-5 | 10 |
| C10 | U10 | 10 | LM320-5 | 10 |
| C11 | U11 | 11 | LM320-5 | 10 |
| C12 | U12 | 12 | LM320-5 | 10 |
| C13 | U13 | 13 | LM320-5 | 10 |
| C14 | U14 | 14 | LM320-5 | 10 |
| C15 | U15 | 15 | LM320-5 | 10 |
| C16 | U16 | 16 | LM320-5 | 10 |
| C17 | U17 | 17 | LM320-5 | 10 |
| C18 | U18 | 18 | LM320-5 | 10 |
| C19 | U19 | 19 | LM320-5 | 10 |
| C20 | U20 | 20 | LM320-5 | 10 |
| C21 | U21 | 21 | LM320-5 | 10 |
| C22 | U22 | 22 | LM320-5 | 10 |
| C23 | U23 | 23 | LM320-5 | 10 |
| C24 | U24 | 24 | LM320-5 | 10 |
| C25 | U25 | 25 | LM320-5 | 10 |

Figure 2-29. Hammer Driver PCA Schematic Diagram (Sheet 1 of 4)

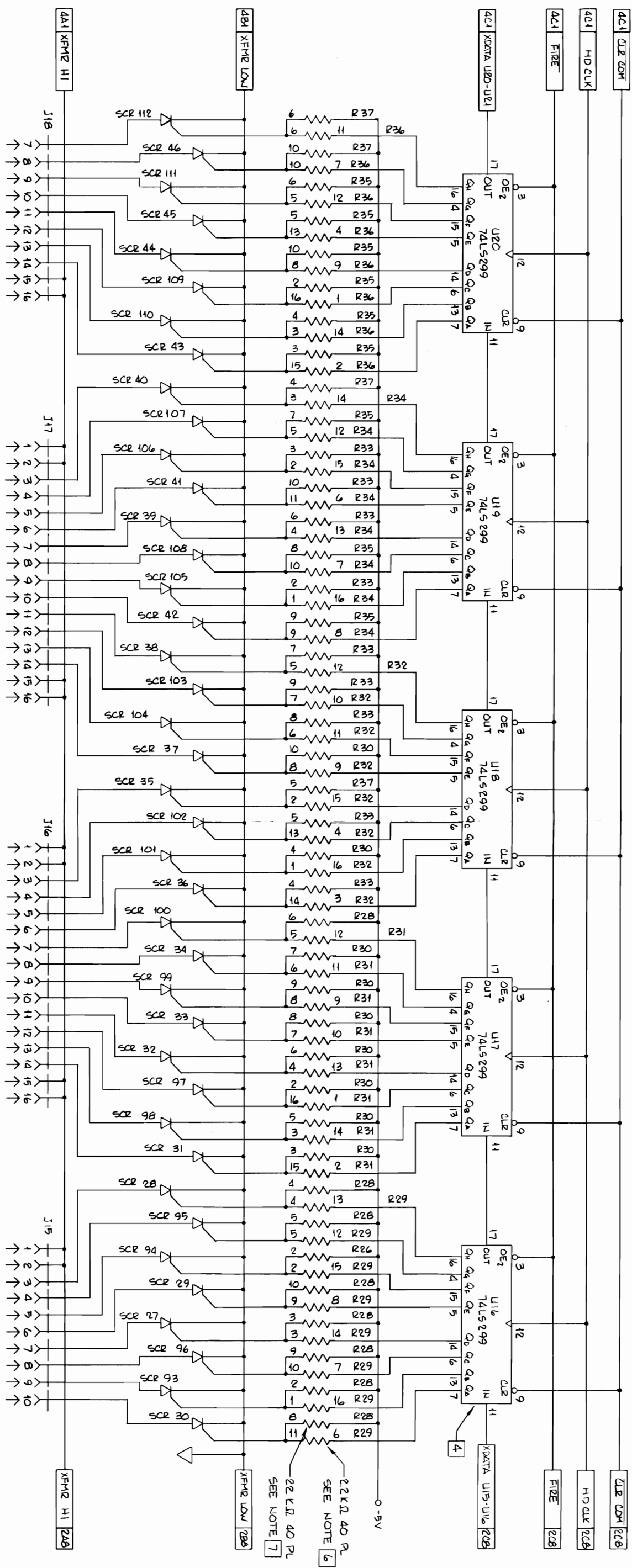


Figure 2-29. Hammer Driver PCA Schematic Diagram
(Sheet 3 of 4)

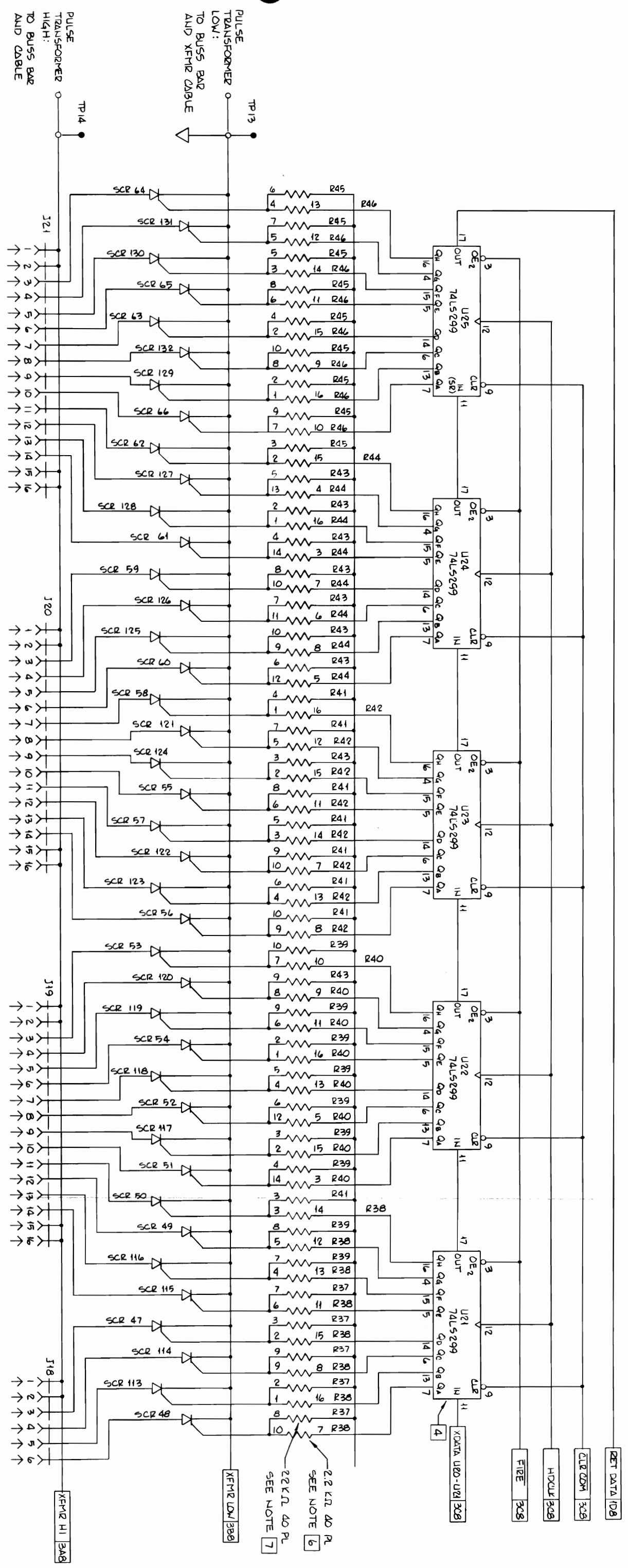


Figure 2-29. Hammer Driver PCA Schematic Diagram
(Sheet 4 of 4)

**Table 2-23: PARTS LIST FOR
HAMMER DRIVER PCA**
(Part No. 02608-60153) - Series 2225

Reference Designator	Part Description	HP Part No.
1	PCB:HAMMER DRIVR	02608-80153
2	WSHR:M4 STAR LCK	2190-0599
3	NUT:M4 HEX	0535-0006
4	STUD:M4X8 PRSIN	0570-1228
5	BUS BAR:HDB	02608-00175
6	STUD:M3X12 PRSIN	0570-0639
7	NUT:M3 HEX	0535-0004
8	WSHR:FL#4 .25"D	3050-0300
9	STNDF:CLEAR HOLE	0380-1520
10	INSUL:BEAD GLASS	4330-0145
11	LBL:IMPRINTABLE	9320-4863
C1,7-10,13-31	C:F .01UF 20% DIP	0160-5298
C2,C5	C:F 22UF 20%10VDC	0180-2615
C3,4,11	C:F 1UF 20% 35VDC	0180-2764
C6	C:F 6800PF 10%	0160-0159
C12	C:F.1UF10%35VDC	0160-0291
DS1	LED:LMP20MA RED	1990-0486
J11-21	CONN:16-PIN POST	1251-6877
P10	CONN:26-PIN POST	1251-7563
Q1,2	XSTR:2N3904 PL5	1854-0215
R1	N:R 8X1K 2%.218W	1810-0037
R2	N:R 8X10K 2%.22W	1810-0316
R3	R:F47 5% .25W	0683-4705
R4,7	R:F 150K 5% .25W	0683-1545
R5	R:F 33K 5% .25W	0683-3335
R6	R:F 56K 5% .25W	0683-5635
R8	R:F 2.61K 1% .125	0698-0085
R9	R:F 1.47K 1%.125W	0757-1094
R10	R:F 330 5% .25W	0683-3315
R11,13	R:F 10K 5% .25W	0683-1035
R12	R:F 1K 5% .25W CC	0683-1025
R14	R:F 47K 5% .25	0683-4735
R15,17,19,21, 23,25,27,29,31, 32,34,36,38,40, 42,44,46	N:R8X2.2K 2%.218W	1810-0470
R16,18,20,22,24, 26,28,30,33,35, 37,39,41,43,45	N:R 9X22K 2%.125W	1810-0398
SCR1-132	THYR:SCR T-106A	1884-0294
TP1-14	TERM:TEST POINT	0360-0535
U1	IC:MC790 5CT V-RG	1826-0294
U2	IC: SN74 LS240N	1820-1917
U3	IC:SN74L S14N	1820-1416
U4,5	IC:SN74L S74N F-F	1820-1112
U6	IC:324AMP-GP	1826-0161
U7	IC:SN74LS00N GAT	1820-1197
U8	IC SN74LS393N	1820-2096
U9-U25	IC:SN74LS299N	1820-1987
VR1	DIO:ZNR 4.22V .4W	1902-3070

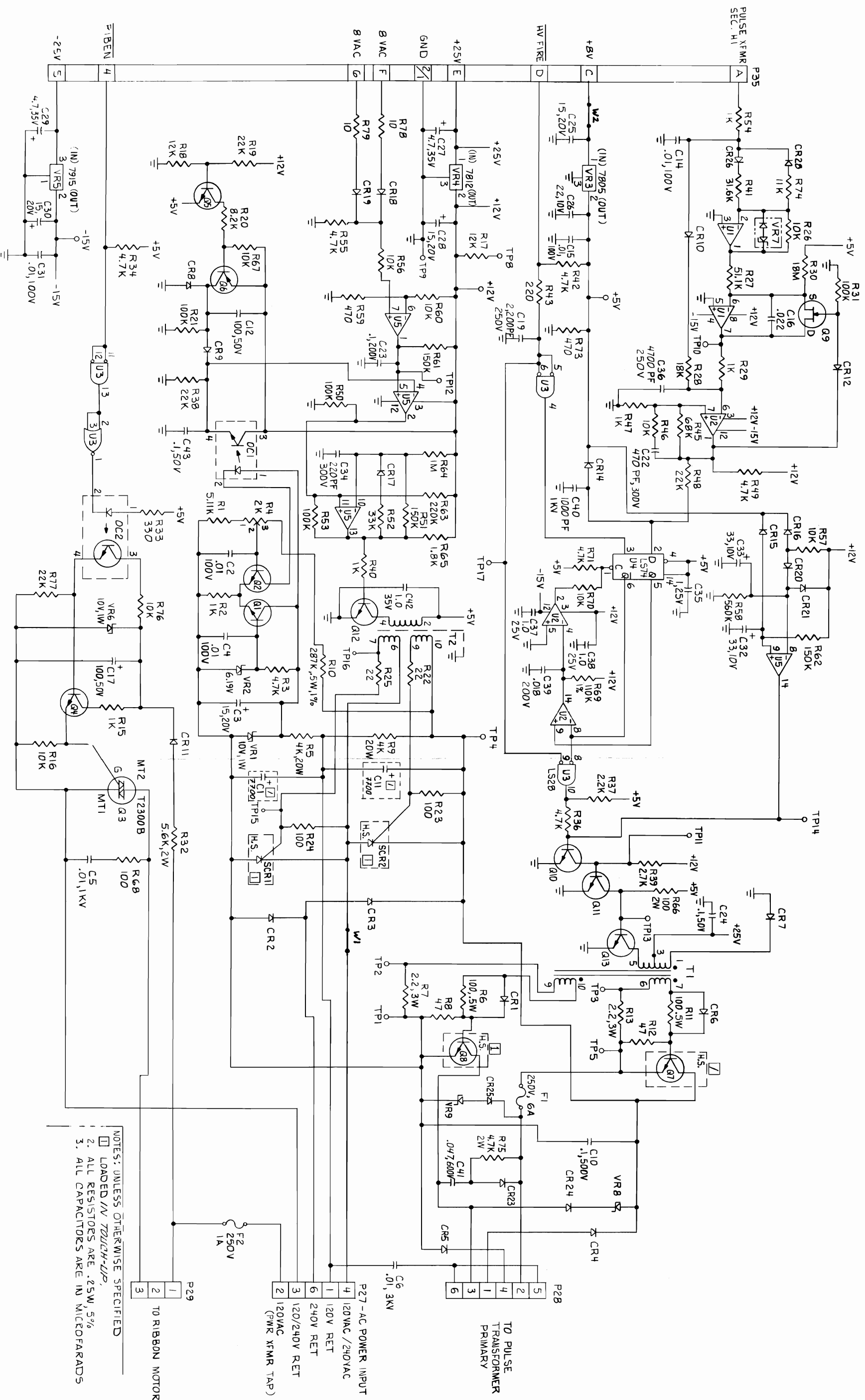
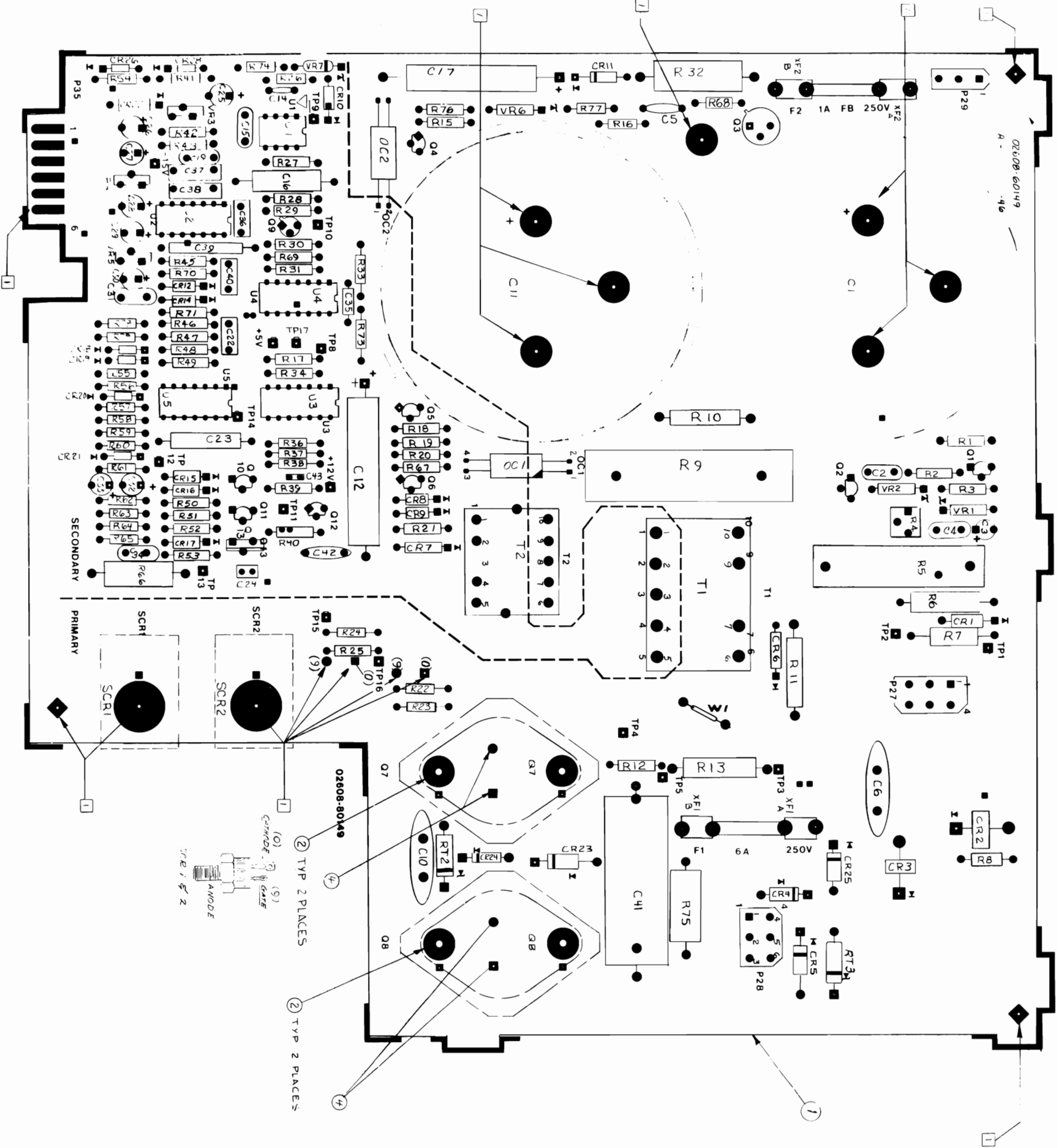


Figure 2-31. High Voltage Assembly
Schematic Diagram



NOTES:

- 1 MASK AS INDICATED PRIOR TO LOADING.
- 2 INSTALL ITEM (1) & (2) IN PC LOAD.
- 3 THRU-HOLE PARTS CLIP INTO Q7, Q8, SCR1 AND SCR2 TO BE USED IN TUNING.
- 4 SCHEMATIC IN 300M D-07609-60149-5.

Figure 2-32. High Voltage PCA Diagram
(Sheet 1 of 2)

**Table 2-24: PARTS LIST FOR
HIGH VOLTAGE PCA**
(Part No. 02608-60250) - Series 2222

Reference Designator	Part Description	HP Part No.
1	PCB:HI VOLTAGE	02608-80149
2	STUD:M3X12 PRSIN	0570-0639
3	SCR:10-32X.312PN	2680-0129
4	CONN-SGL CONT	1251-2913
5	CLP-CBL18/DX3/4L	1400-0914
6	NUT:M3 HEX	0535-0004
7	WSHR-LK90CTSK3MM	2190-0597
10	LBL:BLNK .37X.75L	7120-6260
11	BRKT:HI VOLTAGE	02608-00010
13	SCR:M4X10PAN POZ	0515-0053
14	WSHR:M4 SPL LOCK	2190-0586
15	SCR:MCH M3.5X10P	0515-0067
16	STANDOFF:HV	02608-20030
17	INSUL:XSTR	0340-0580
19	NUT:HX M3.5X2.8L	0535-0007
20	WSHR:LK HLCL 3.5	2190-0585
21	SCR:MCH M3.5X16P	0515-0068
22	CLP:CAP 3-DIA	0180-1958
23	WSHR:FL 3.5X3.8MM	3050-0892
24	HEAT SINK CMPD	6040-0454
25	TBG:FLX .04-ID	0890-0797
26	HEAT SINK:SCR	02608-00092
27	WSHR:SHD #4 .312D	3050-0004
28	HEAT SNK:TO-3CS	1205-0310
29	WSHR:LK INTL 1/4	2190-0388
30	NUT:HX-DCH1/4-28	2950-0135
31	GROM:CHAN.052"	0400-0018
32	WIRE 22GA WHT	8150-1549
33	WIRE 18 BLACK	8150-2890
34	LABEL:HIGH VOLT	7120-0137
35	WSHR:#10 EXT LK	2190-0012
37	HEAT SINK LABEL	02608-00133
38	TBG:HS .25 DIA	0890-0540
C1,11	C:F7700 UF+50-10%	0180-2893
C2,4,14,15,31	C:F.01UF +80%100V	0160-2055
C3,25,28,30	C:F15UF 20%20VDC	0180-2765
C5	C:F.01UF 20% 1KV	0160-2902
C6	C:F.01 UF +80-20%	0160-2568
C10	C:F.1UF 20% 500V	0160-0269
C12,17	C:F100UF +75-10%	0180-1819
C16	C:F .022 UF 10%	0160-0162
C19	C:F2200PF20% 250V	0160-4299
C22	C:F 470PF 5% 300V	0160-3533
C23	C:F.1UF 10% 200V	0160-0168
C24,43	C:F 0.1UF 20% 50V	0160-0576
C26	C:F 22UF 20%10VDC	0180-2615
C27,29	C:F4.7UF 20% 35V	0180-2683
C32,33	C:F 33UF 20% 8VDC	0180-2684
C34	C:F 220PF 5%	0160-0134
C35,37,38,42	C:F 1UF 20% 25V	0160-0127
C36	C:F4700PF 20%250V	0160-4298
C39	C:F.018UF 10%	0160-0302
C40	C:F 1000 PF 10%	0160-3456
C41	C:F.047UF 10%1KV	0160-5230
CR1,6,7	DIO:PWR 1N4002	1901-0704
CR2,3	DIO-PWR REC 400V	1901-0767
CR4,11,24,25	DIO-PWR REC 1KV	1901-0732
CR5,23	DIO:PWR REC 400V	1901-0719
CR8-10,12,14-21,26,28	DIO 50V 1N4150	1901-1098
F1	FUSE 6A 250V MTD	2110-0386
F2	FUSE:1A 250V TD	2110-0007
OC1,2	OPTO-ISL L-FXSTR	1990-0715
P27	CONN:MOLEX 6 PIN	1251-5249
P28	CONN:6 PIN	1251-5250
P29	CONN 3-PIN MOLEX	1251-5251
Q1,2,5,10,11	XSTR:S1 NPN T018	1854-0071
Q3	THYR-TRAC T2300B	1884-0054
Q4	XSTR:2N3904PL5	1854-0215
Q6	XSTR:2N3906PL18	1853-0036
Q7,8	XSTR NPN SI DARL	1854-0804
Q9	TRAN:J-FET2N4391	1855-0420
Q12	XSTR:NPNSI	1854-0668
Q13	XSTR:NPN TIP 41C	1854-0799
R1	R:F 5.11K 1%.125W	0757-0438

Reference Designator	Part Description	HP Part No.
R2,15,29,47,54,40	R:F 1K 5% .25W CC	0683-1025
R3,34,36,42,49,55,71	R:F 4.7K 5% .25W	0683-4725
R4	R:V TRMR 2K 10%	2100-0567
R5,9	R:F 4K 5% 20W PW	0818-0001
R6,11	R:F 100 1% .5W	0757-0198
R7,13	R:F 2.2 5% 3W PW	0812-0039
R8,12	R:F 47 5% .25W	0683-4705
R10	R:F 287K 1% .5W	0757-0154
R16,46,56,57,60,67,70,76	R:F 10K 5% .25W	0683-1035
R17,18	R:F 12K 5% .25W	0683-1235
R19,38,48,77	R:F 22K 5% .25	0683-2235
R20	R:F 8.2K 5% .25W	0683-8225
R21,31,50,53	R:F 100K 5% .25	0683-1045
R22,25	R:F 22 5% .25W	0683-2205
R23,24,68	R:F 100 5% .25W	0683-1015
R26	R:F 10. K 1% .125W	0757-0442
R27	R:F 51.1K 1% .125W	0757-0458
R28	R:F 18K 5% .25W	0683-1835
R30	R:F 18M 5% .25W	0683-1865
R32	R:F 5.6K 5% 2W	0764-0020
R33	R:F 330 5% .25W	0683-3315
R37	R:F 2.2K 5% .25W	0683-2225
R39	R:F 2.7K 5% .25W	0683-2725
R41	R:F 3L.6K 1% .125	0698-3160
R43	R:F 220 5% .25W	0683-2215
R45	R:F 68K 5% .25W	0683-6835
R51,61,62	R:F 150K 5% .25W	0683-1545
R52	R:F 33K 5% .25	0683-3335
R58	R:F 560K 5% .25W	0683-5645
R59,73	R:F 470 5% .25W	0683-4715
R63	R:F 220K 5% .25W	0683-2245
R64	R:F 1M 5% .25W CC	0683-1055
R65	R:F 1.8K 5% .25W	0683-1825
R66	R:F 100 5% 2W MO	0698-3620
R69	R:F 110K 1% .125W	0757-0466
R74	R:F 11K 1% .125W	0757-0443
R75	R:F 4.7K 5% 2W	0764-0018
R78,79	R:F 10 5% .25W	0683-1005
RT1	DISC:THRM2.5 OHM	0837-0179
RT2,RT3	SUPPRES: VOLT 100	0837-0200
SCR1,2	THYR-SCR S6210D	1884-0283
T1	XFORMER: DRIVER	9100-4083
T2	XFMR PULSE	9100-0422
TP1-5,8-17	TERM:TEST POINT	0360-0535
U1	IC:353B AMP-L-B	1826-0734
U2,5	IC:339 CMPTR-GP	1826-0138
U3	IC:SN74LS28N BUF	1820-1273
U4	IC:SN74LS74N F-F	1820-1112
VR1,6	DIO:ZENER 10V,1W	1902-0554
VR2	DIO:ZNR6 .19V 5%	1902-0049
VR3	IC:UA7805UC V-RG	1826-0122
VR4	IC:MC7812CT V-RG	1826-0147
VR5	IC:MC7915CT V-RG	1826-0214
VR7	DIO:ZNR 9V 5%	1902-0786
W1	WIRE:18AWG BARE	8151-0011
W2	WIRE:22AWG JMP	8159-0005
XF1A,B,2A,B	FUHLDLR:.25D CLP	2110-0269

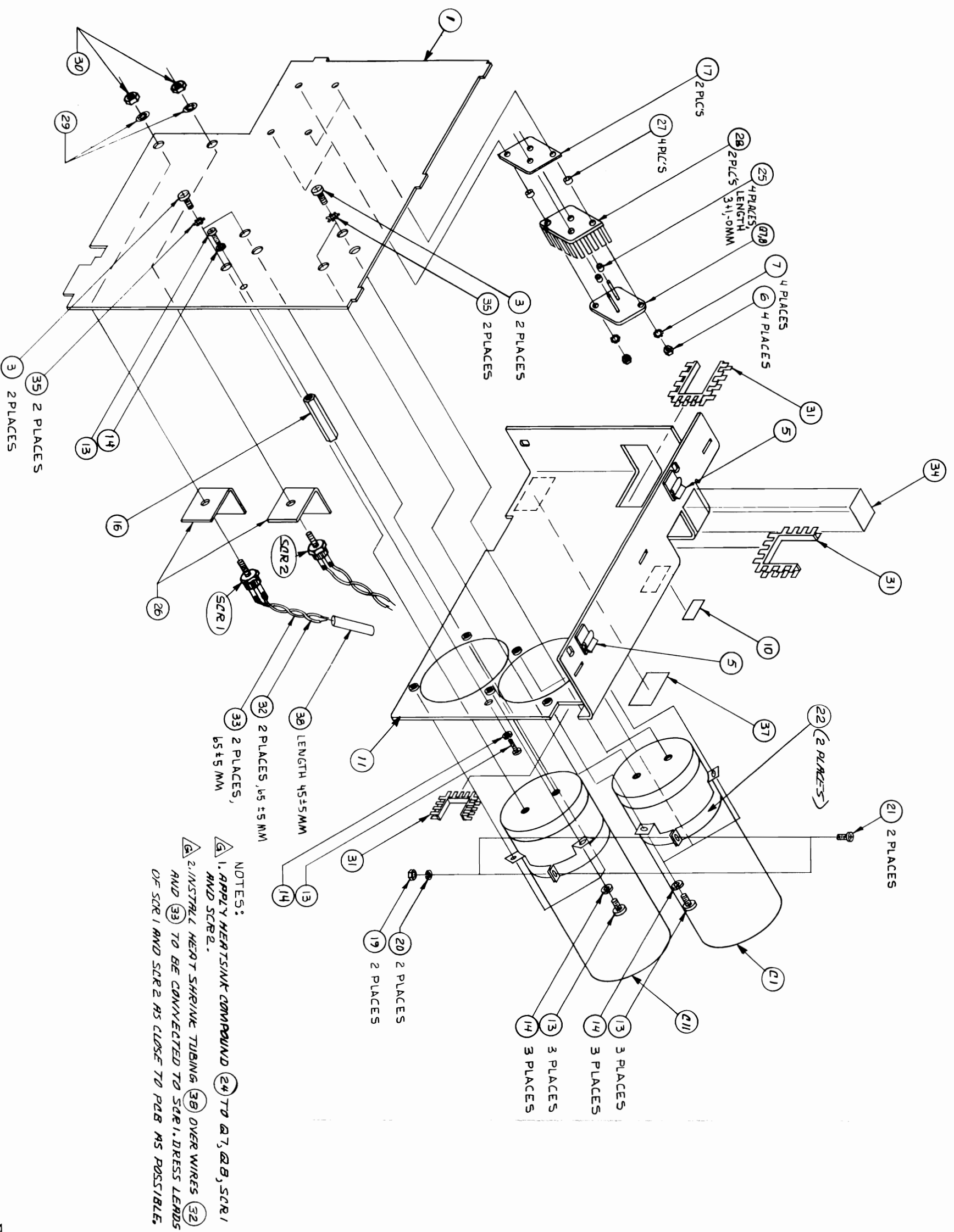


Figure 2-32. High Voltage PCA Diagram
(Sheet 2 of 2)

**Table 2-25: PARTS LIST FOR
HP-IB INTERFACE PCA**
(Part No. 02608-60108) - Series 2209

Reference Designator	Part Description	HP Part No.
1	LBL:IMPRINTABLE	9320-4863
2	PCB:HPIB	02608-80108
C1-3,8,9, 27,30	C:F3.3UF 20%15V	0180-2664
C4-7,10-26, 28,29,31,32	C:F .01UF 20% DIP	0160-5298
J38	CONN POST 26 PIN	1251-7589
J39	CONN-POST-TP-HDR	1251-5651
R1	N:R 16X3K 5%.1W	1810-0408
R2	N:R 16X1.5K 5%.1W	1810-0410
R4	N:R 16X1.5K 2%.1W	1810-0409
R11,12	R:F 470 5% .25W	0683-4715
R13,15	N:R9X4.7K 2%.125W	1810-0279
R14	R:F 15K 5% .25W	0683-1535
R23,102	IC:SN74LS04N INV	1820-1199
TP1-14	TERM:TEST POINT	0360-0535
U22	IC:SN74LS37N BFR	1820-1287
U25	8C-8039 HL	1820-2733
U31,92	IC:SN74LS10N GAT	1820-1202
U41,51	IC SN74LS393N	1820-2096
U42,52	IC:SN74LS74N F-F	1820-1112
U43,62,101	IC:SN74LS08N GAT	1820-1201
U44,55,65,74, 75,85,86	IC:SN74LS244N	1820-2024
U45	ASSY:IC PROM	02608-60201
U53	IC:SN74LS32NGATE	1820-1208
U54,64	IC SN74LS374PN	1820-1997
U56	IC:SN74LS273N	1820-1730
U61	IC:SN74LS02NGATE	1820-1144
U63	IC:SN74LS27N GAT	1820-1206
U66	IC-SN74LS373N	1820-2102
U81,83	IC:SN74LS138N DC	1820-1216
U82	IC SN74LS279N	1820-1440
U84	IC:SN74LS157	1820-1470
U91,112	IC:SN74S112N F-F	1820-0629
U94	CHIP-PHI	1AA6-6104
U103,104, 113,114	IC: MC3448AL	1820-2058
U111	IC:SN74LS00N GAT	1820-1197
W1,W2	RES:0-OHM 22G	8159-0005
XU1,XU1-A, XU2,XU2-A, XU4,XU4-A	SOCKET IC 18CONT	1200-0539
XU25	SCKT:40 PIN IC	1200-0654
XU45,XU94-A, XU94-B	SCKT: 24 PIN IC	1200-0541

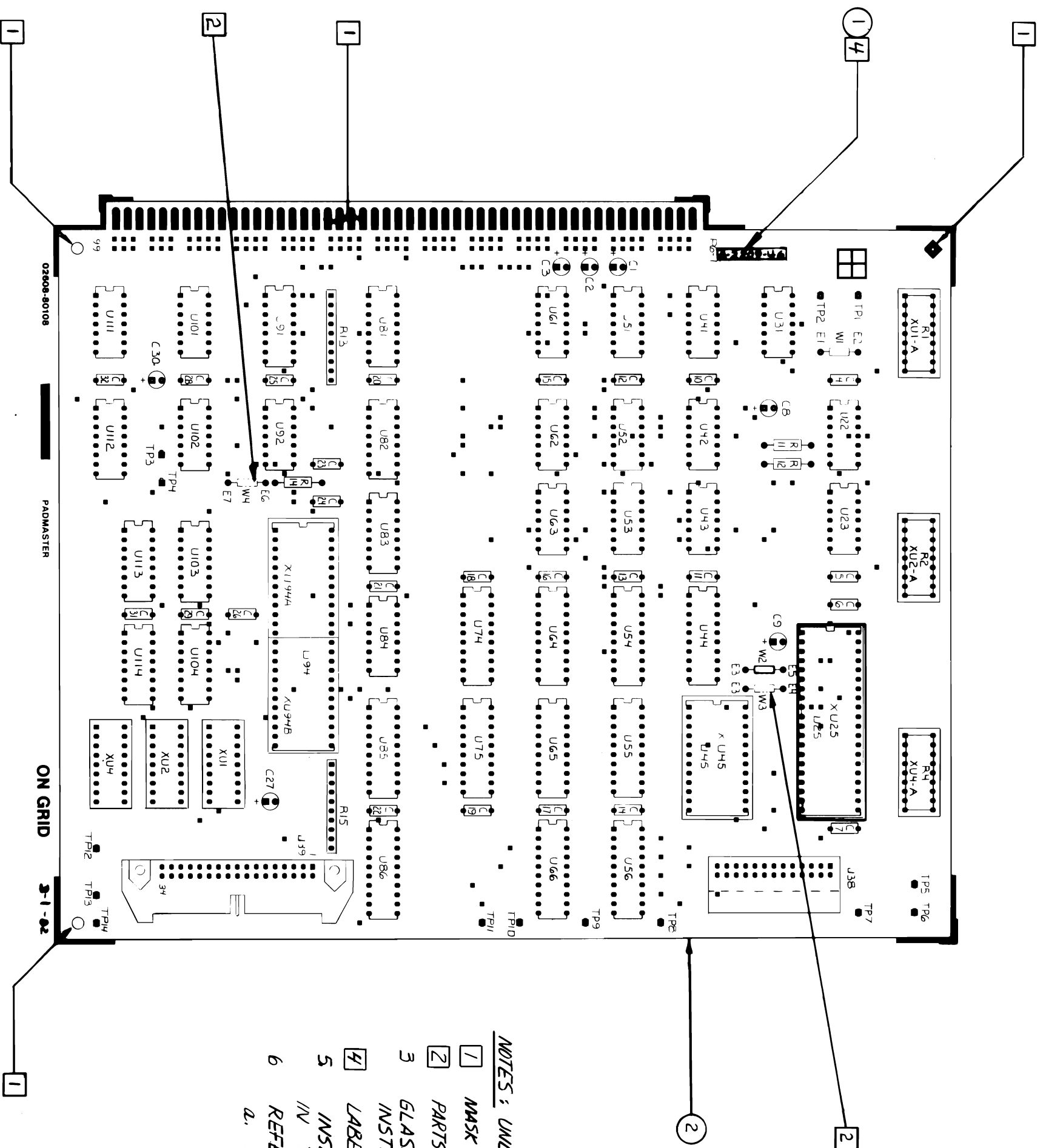
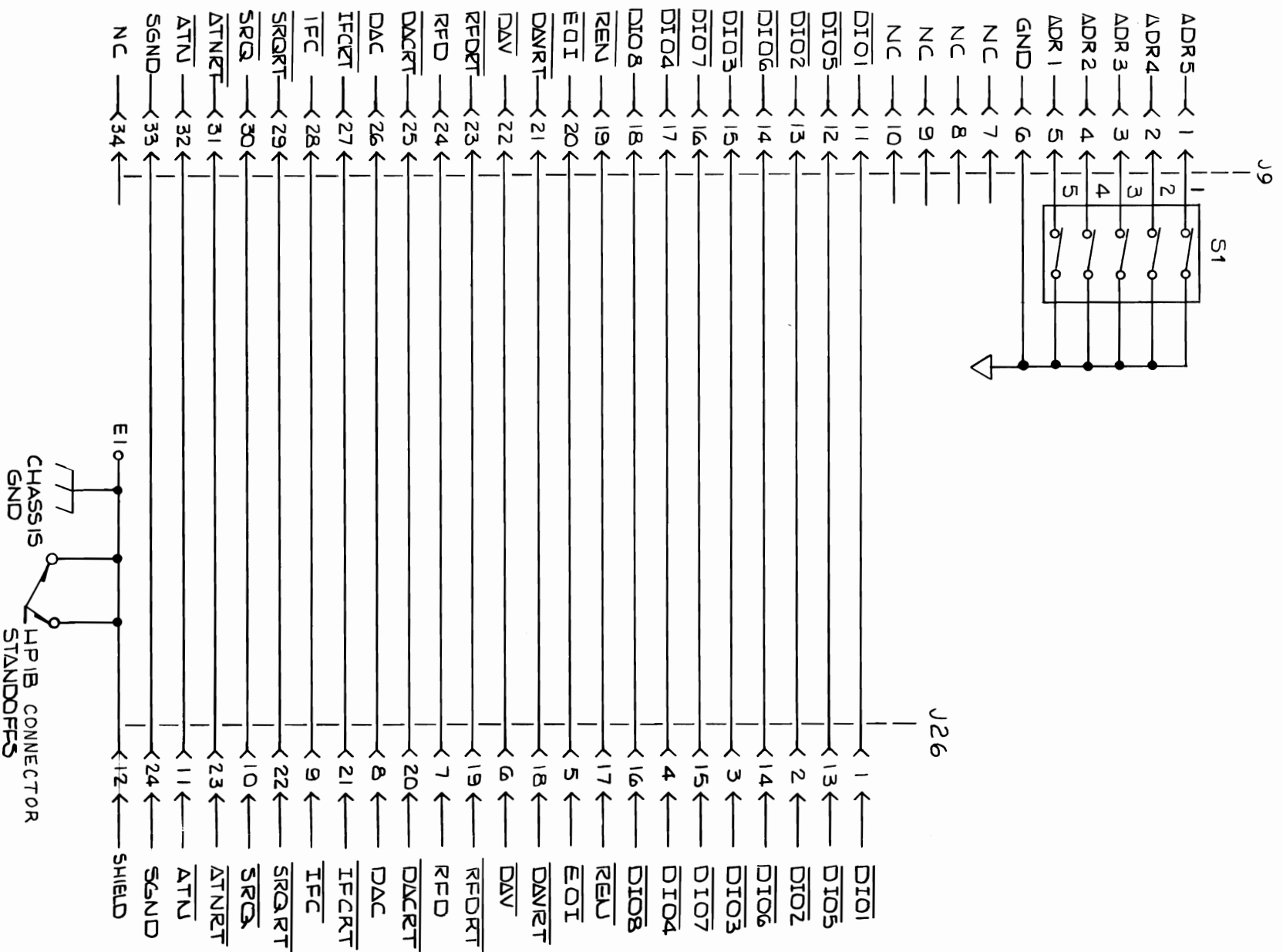


Figure 2-34. HPiB Interface PCA Diagram



NOTE:
 1. SIX TOROID CORES ARE COVERED WITH HEAT SHRINK TUBING IN TWO GROUPS OF THREE, AND ARE PART OF RIBBON CABLE ASSY. ITEM ③ CONNECTED TO J9. REFER TO D-02608-60115-1 AND B-8120-3601-1 FOR FURTHER INFO.

Figure 2-35. HPPIB Interface Adapter PCA Schematic Diagram

**Table 2-26: PARTS LIST FOR
HP-IB INTERFACE ADAPTER PCA**
(Part No. 02608-60115) - Series 2151

Reference Designator	Part Description	HP Part No.
1	PCB:HPIB ADPTR	02608-80115
2	STDF:RVT #6X.188	0380-0390
3	ASSY:TOROID CBL	8120-3601
4	PLATE:HPIB CONN	02608-40058
5	STDOFF:HEX M/FM	0380-0644
6	WSHR:#10 SPL LOCK	2190-0034
7	CBL:RFI BRD.375W	8160-0312
8	LUG:TERMINAL #10	0362-0713
9	LBL:IMPRINTABLE	9320-4863
S1	SW:5POS DIP RKR	3101-2325
J26	CONN:24 PIN F	1251-4040

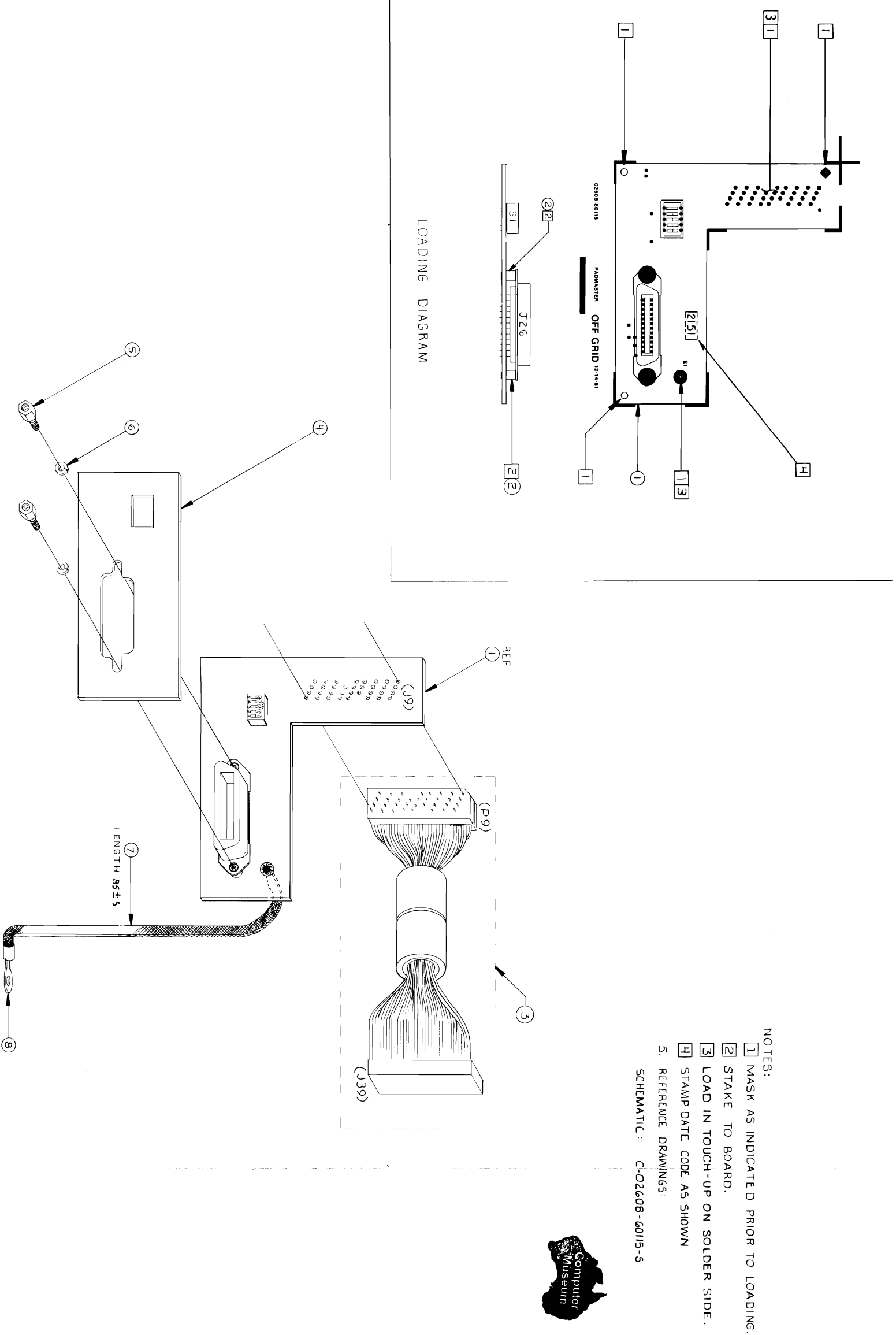
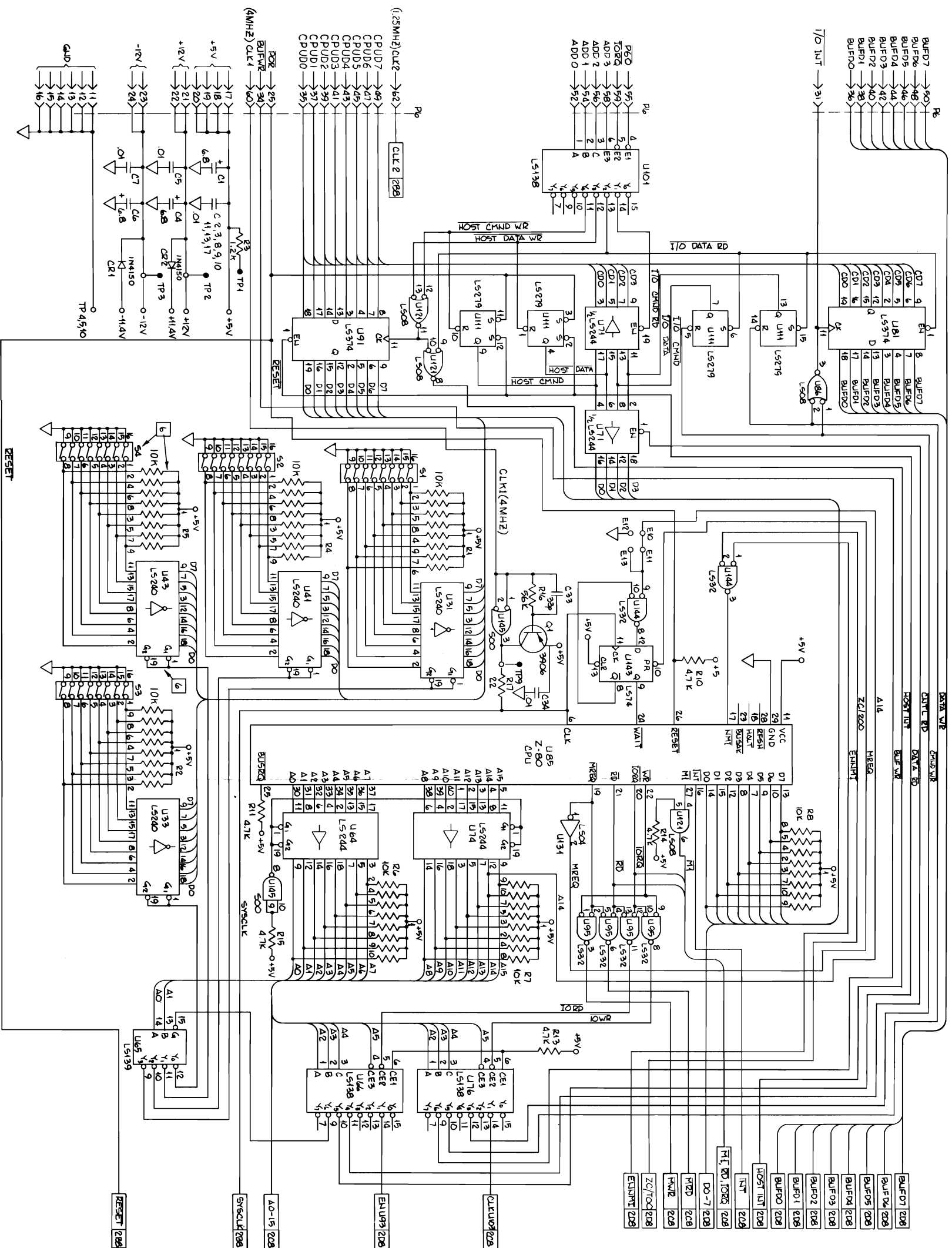


Figure 2-36. HP1B Interface Adapter PCA
Diagram



SIO JUMPER CONNECTIONS		
/0	/1	/2
E1-NC	E5-E1	E1-NC
E4-E5	E4-E7	E4-E5
E8-E9	E8-E9	E7-E8
E6-E7	E6-E7	E6-E7
E2-NC	E2-NC	E2-E9

NOTES: UNLESS OTHERWISE SPECIFIED:
 1. ALL RESISTORS ARE IN OHMS.
 2. ALL RESISTORS ARE 1/4W, 5%.
 3. ALL CAPACITORS ARE IN μ F.
 4. CUT TRACE E10-E11 AND INSTALL JUMPER BETWEEN E12-E13 FOR SLOW RAM.
 5. REMOVE ANY JUMPERS FOR THE APPROPRIATE SIO THAT ARE NOT SHOWN IN THE TABLE.

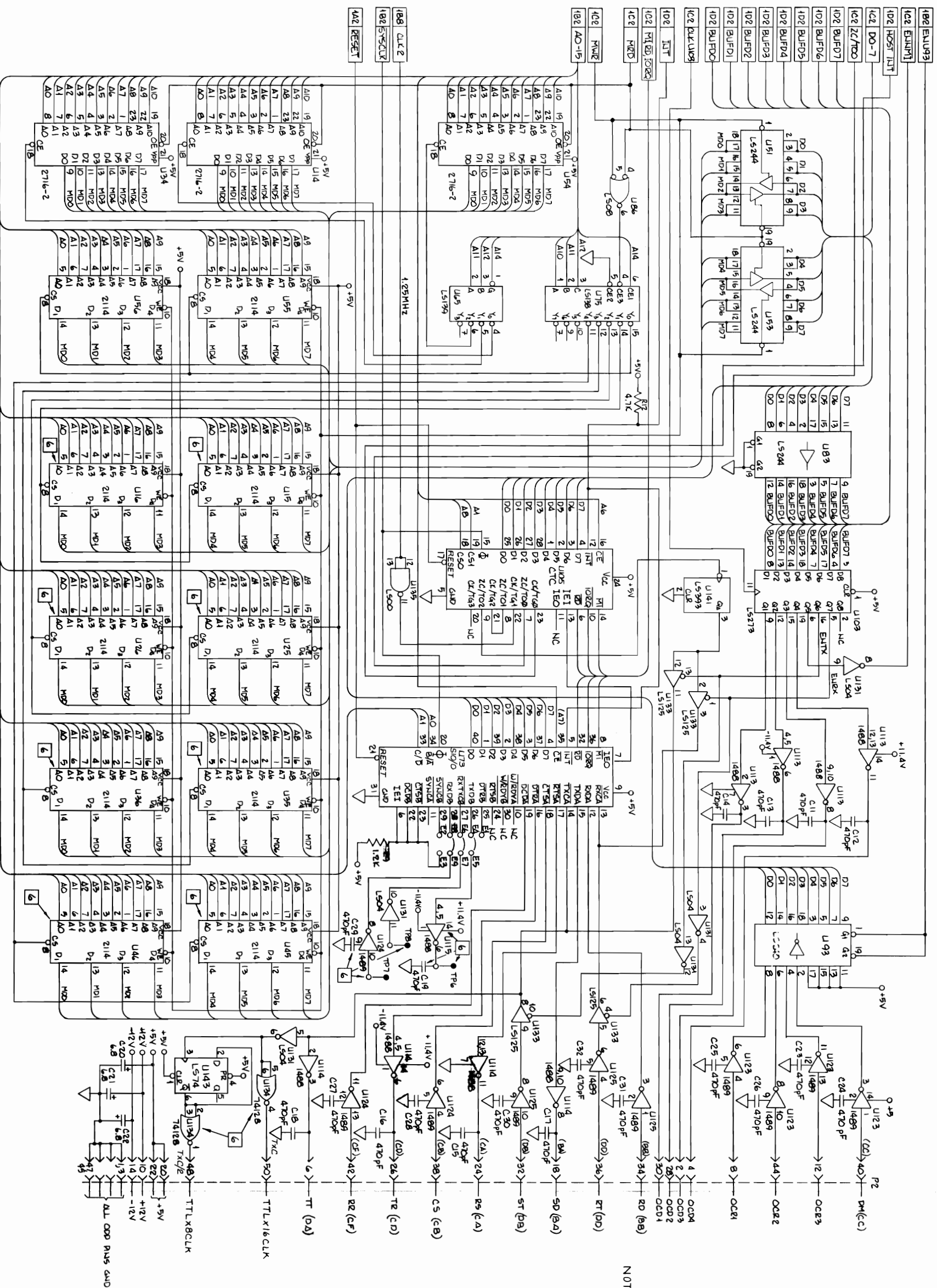
THESE PARTS ARE NOT LOADED FOR PRODUCTION.

7. I.C. POWER CONNECTIONS:

I.C.'s	+5V	GND
U14	21, 24	12
U15	18	9
U16	18	9
U25	18	9
U26	18	9
U31	18	9
U33	20	10
U34	21, 24	12
U35	18	9
U36	18	9
U41	20	10
U43	20	10
U45	18	9
U46	18	9
U51	20	10

NOTES CONTINUED ON SHEET 2.

Figure 2-37. Multipoint Serial I/O PCA
 Schematic Diagram
 (Sheet 1 of 2)



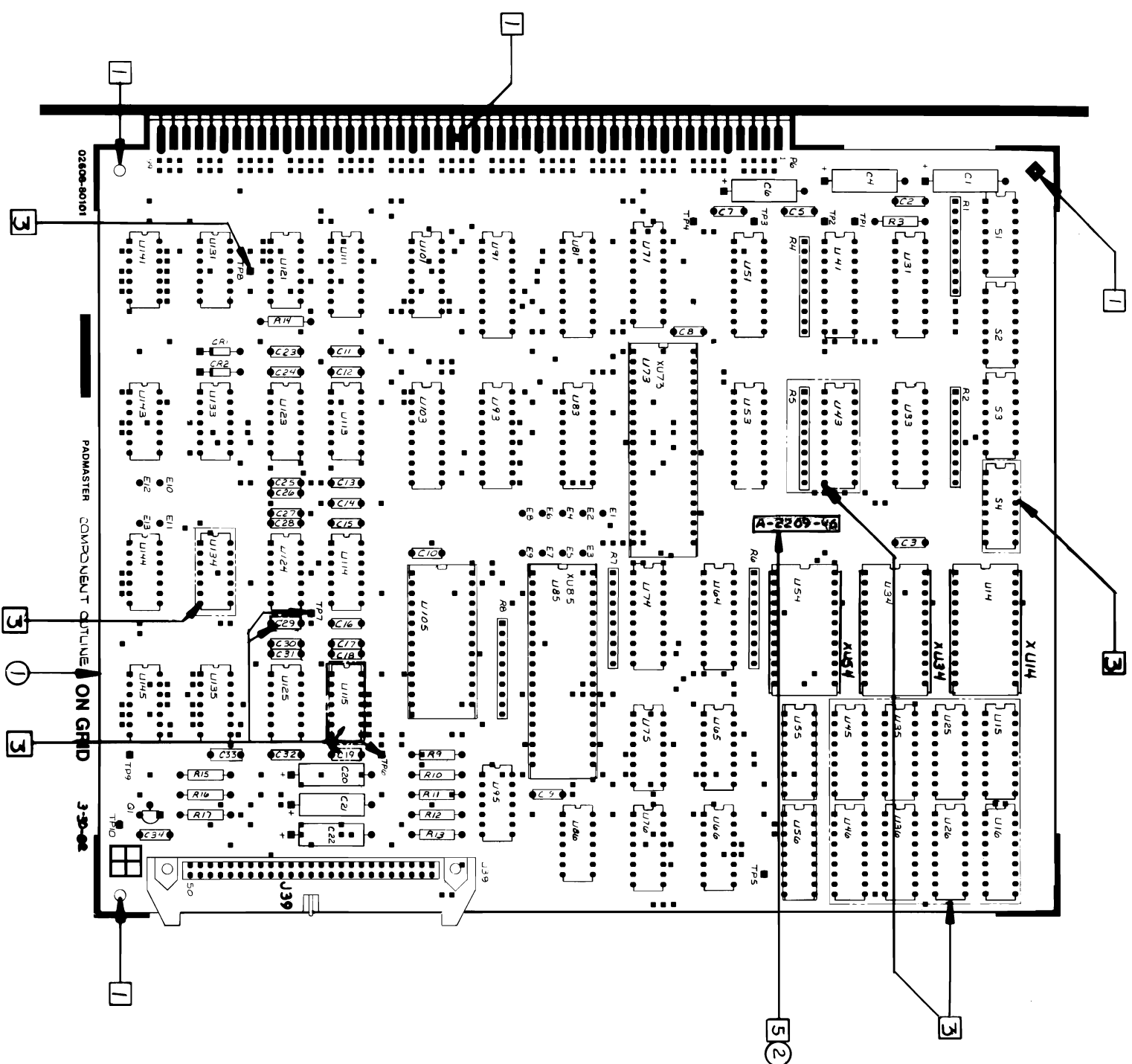
NOTES CONTINUED FROM SHEET 1:

IC	+5V	GND
U3	20	10
U54	20	10
U55	21,24	12
U56	18	9
U65	18	9
U66	16	8
U73	16	8
U74	20	10
U75	20	10
U76	16	8
U81	20	10
U83	20	10
U85	11	5
U91	20	10
U93	20	10
U95	14	7
U101	16	8
U103	20	10
U105	24	14
U111	5	7
U113	16	8
U114	7	7
U115	7	7
U121	14	7
U123	14	7
U124	14	7
U125	14	7
U131	14	7
U133	14	7
U134	14	7
U135	14	7
U141	14	7
U143	14	7
U144	14	7
U145	14	7

Figure 2-37. Multipoint Serial I/O PCA
Schematic Diagram
(Sheet 2 of 2)

**Table 2-27: PARTS LIST FOR
MULTIPOINT SERIAL I/O PCA**
(Part No. 02608-60101) - Series 2209

Reference Designator	Part Description	HP Part No.
1	PCB: SERIAL I/O	02608-80101
2	LBL:IMPRINTABLE	9320-4863
C1,4,6,20-22	C:F6.8UF 10%35VDC	0180-0116
C2,3,5,7,8, 9,10,34	C:F.01UF 20%100V	0160-5298
C11-18,23-28, 30-32	C:F 470PF 5%	0160-5312
C33	C:F 33PF 5% 200V	0160-5327
CR1,2	DIO 50V IN4150	1901-1098
J39	CONN:50PIN POSTEJ	1251-5653
Q1	XSTR:2N3906 PL18	1853-0036
R1,2,4,6-8	N:R9X10K 2% .125W	1810-0280
R3,9	R:F 1.2K 5% .25W	0683-1225
R10-15	R:F 4.7K 5% .25W	0683-4725
R16	R:F 56K 5% .25W	0683-5635
R17	R:F 22 5% .25W	0683-2205
S1,3,2	SW:RKR 8-1A .05A	3101-1983
TP1-5,9,10	TERM:TEST POINT	0360-0535
U14	PROM ASSY: IC	02608-60225
U31,33,41,93	IC: SN74LS240N	1820-1917
U34	PROM ASSY:IC	02608-60226
U51,53,64,71, 74,83	IC:SN74LS244N	1820-2024
U54	PROM ASSY	02608-60232
U55,56	IC NMOS4K 4096-B	1818-0443
U65	IC:SN74LS139N DC	1820-1281
U66,75,76,101	IC:SN74LS138N DC	1820-1216
U73	IC:Z80A SIO 8-B	1820-2518
U85	IC:Z80A CPU 8-B	1820-2298
U86,121	IC:SN74LS08N GAT	1820-1201
U91,81	IC SN74LS374PN	1820-1997
U95,144	IC:SN74LS32NGATE	1820-1208
U103	IC:SN74LS273N	1820-1730
U105	IC:Z80A CTC 8-B	1820-2301
U111	IC SN74LS279N	1820-1440
U113,114	IC:MC1488L DRIVR	1820-0509
U123,124,125	IC:MC1489AL RCVR	1820-0990
U131	IC:SN74LS04N INV	1820-1199
U133	IC: SN74LS125AN	1820-1568
U135	IC:SN74LS00N GAT	1820-1197
U141	IC SN74LS393N	1820-2096
U143	IC:SN74LS74N F-F	1820-1112
U145	IC:SN74S00N GATE	1820-0681
XU14,34,54	SOCKET IC 24CONT	1200-0541
XU73,85	SCKT:40PIN IC	1200-0654
XU105	SCKT:28PIN IC	1200-0567



NOTES:

- 1 MASK AS INDICATED PRIOR TO LOADING.
2. IF ANY CONFLICT OCCURS BETWEEN TRANSISTOR LEAD FORMING AND THIS DRAWING, THE LEAD PATTERN ON THE BOARD SHALL DETERMINE POSITIONING.
- 3 THESE PARTS NOT LOADED.
4. U14, U34, U54, U73, U85 TO BE LOADED IN TOUCH-UP.
- 5 LABEL WITH SERIES CODE AS SHOWN.
6. REFERENCE DRAWINGS:
 - A. SCHEMATIC D-02608-60101-5 (25HT5)

Figure 2-38. Multipoint Serial I/O PCA Diagram

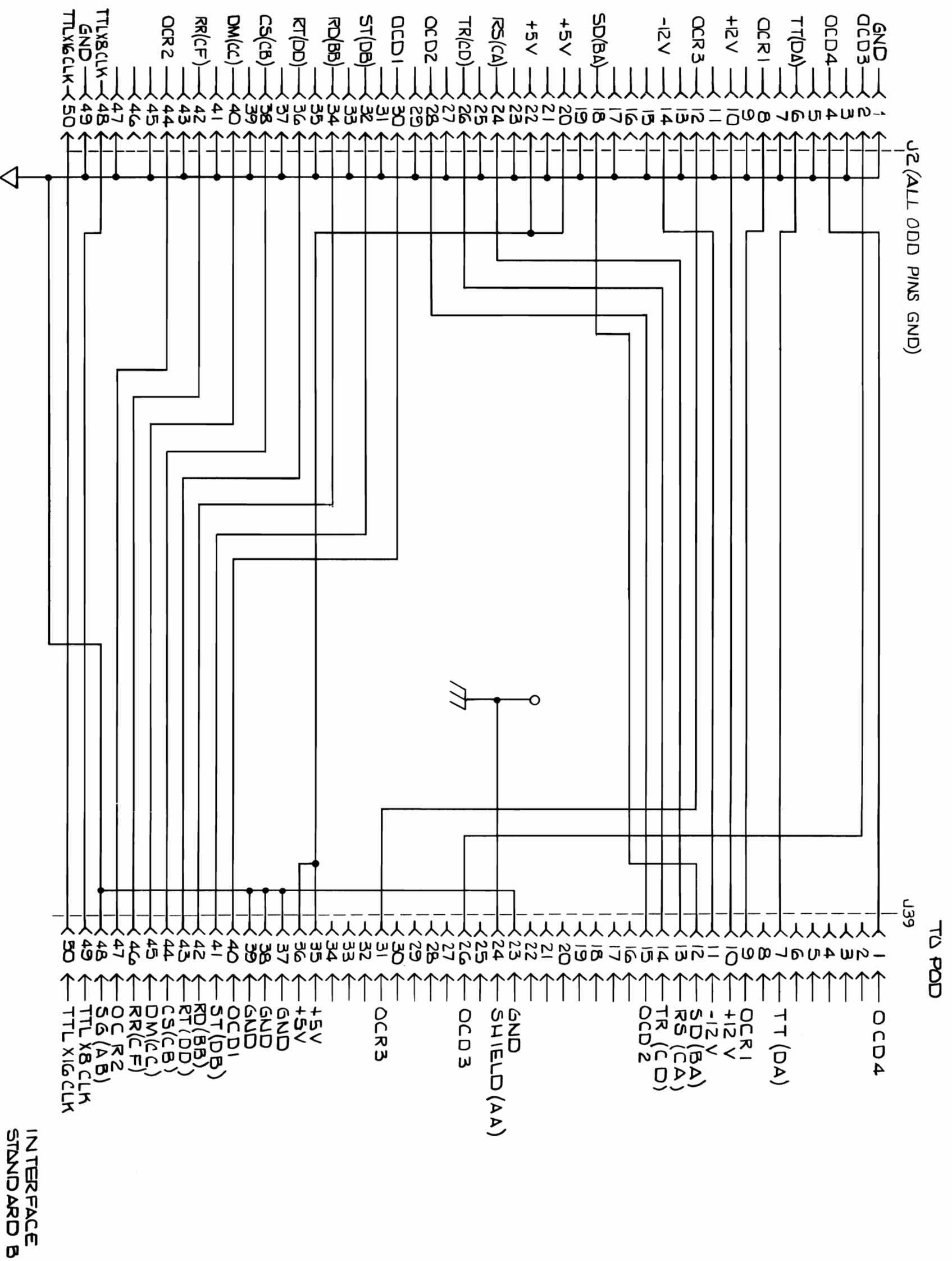
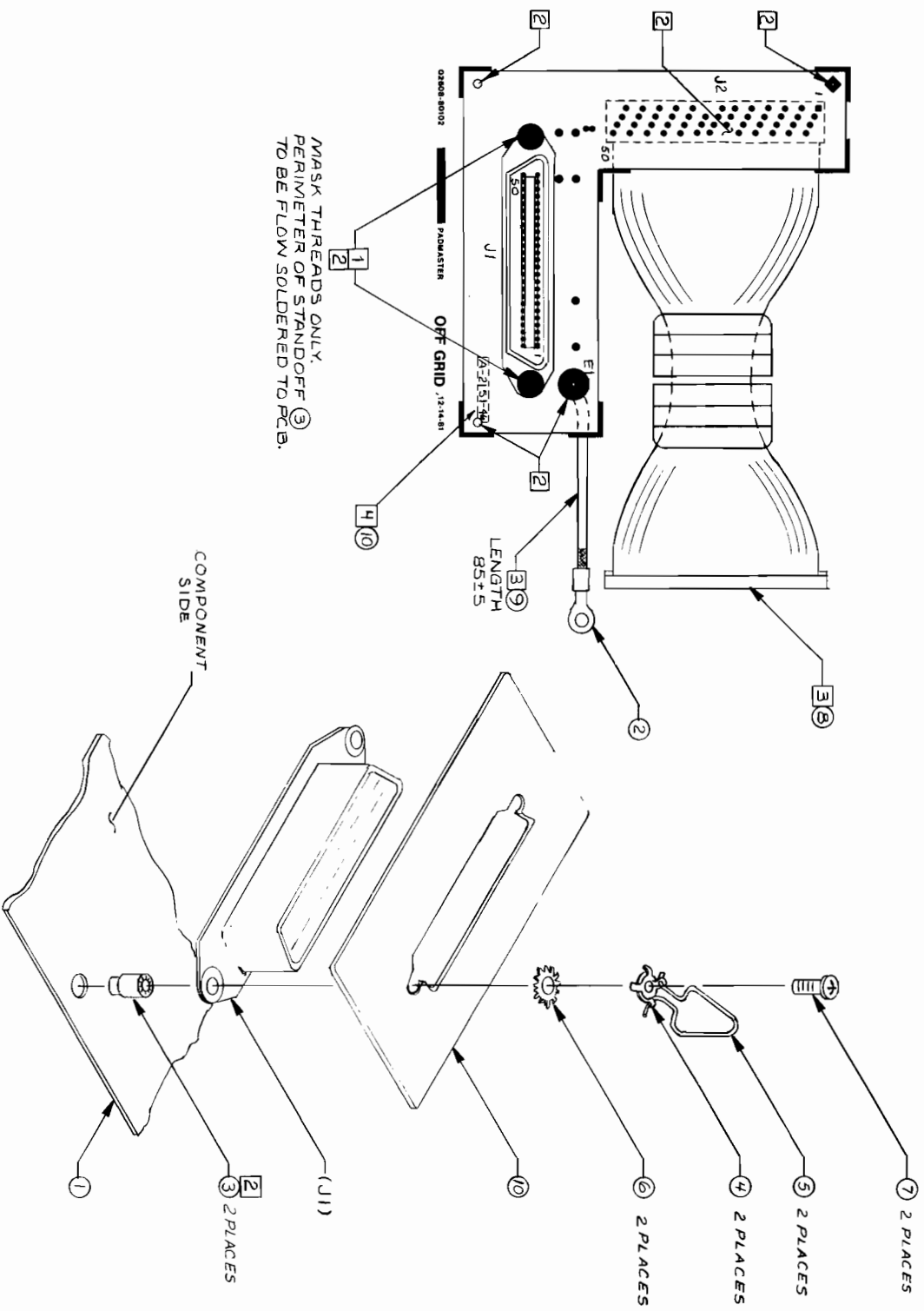


Figure 2-39. Multipoint Serial I/O Adapter PCA Schematic Diagram

**Table 2-28: PARTS LIST FOR
MULTIPOINT SERIAL I/O ADAPTER PCA**
(Part No. 02608-60102) - Series 2151

Reference Designator	Part Description	HP Part No.
1	PCB:SRL I/O ADPT	02608-80102
2	LUG:TERMINAL #10	0362-0713
3	STDF:RVT #6X.187	0380-0745
4	BAIL-BRACKET	1251-4765
5	BAIL-AMP CHP CNN	1251-4766
6	WSHR:LK EXT #6	2190-0008
7	SCR:6-32X.375PAN	2360-0197
8	CBL ASSY:TOROID	T-82663
9	CBL:RFI BRD.375W	8160-0312
10	LBL:IMPRINTABLE	9320-4863
11	PL:MULTI CONN	02608-00172
J1	CONN:50 PIN	1251-2756



- NOTES:
1. INSTALL IN RIVET OPERATION.
 2. MASK AS INDICATED PRIOR TO LOADING.
 3. INSTALL IN TOUCHUP.
 4. LABEL WITH DATE CODE AS SHOWN (SOLDER SIDE).
 5. REFERENCE DRAWINGS:

SCHEMATIC C-02608-60102-5

Figure 2-40. Multipoint Serial I/O Adapter
PCA Diagram

