HP 3000 SERIES 39/40/42/44/48
COMPUTER SYSTEMS
ENGINEERING DIAGRAMS SET

FOR HP REPAIR USE ONLY

HEWLETT PACKARD
19447 PRUNERIDGE AVENUE, CUPERTINO, CA 95014

Part No. 30090-90034
E1084

Printed in U.S.A. 10/84

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LIST OF EFFECTIVE PAGES

The List of Effective Pages gives the date of the current edition, and lists the dates of all changed pages. Unchanged pages are listed as "ORIGINAL". Within the manual, any page changed since the last edition is indicated by printing the date the changes were made on the bottom of the page. Changes are marked with a vertical bar in the margin. If an update is incorporated when an edition is reprinted, these bars and dates remain. No information is incorporated into a reprinting unless it appears as a prior update.

First Edition . . . . . October 1984

Effective Pages	Date
ALL	OCT 1984

PRINTING HISTORY

New editions are complete revisions of the manual. Update packages, which are issued between editions, contain additional and replacement pages to be merged into the manual by the customer. The date on the title page and back cover of the manual changes only when a new edition is published. When an edition is reprinted, all the prior updates to the edition are incorporated. No information is incorporated into a reprinting unless it appears as a prior update.

First Edition . . . . . OCT 1984

CONTENTS

PREFACE

This manual contains schematic diagrams and assembly drawings for all PC assemblies used in the HP 3000 Series 39/40/42/44/48 Computer System Processor. A cross-reference table of integrated circuit part numbers is also provided. This document is intended to be used for troubleshooting purposes by Hewlett-Packard TSEs, SEs, CEs, and other support personnel. The manual is divided into four sections which are listed in the table of contents.

INTEGRATED CIRCUIT CROSS REFERENCE TABLE

SECTION I

This section provides cross-reference information for integrated circuits with HP part numbers. The HP part number will appear at the left side of each column pair with a typical equivalent vendor part number to the right. In addition, the selected vendor abbreviations will appear beneath each typical part number. For a description and explanation of IC internal circuitry, refer to the appropriate vendor data book.

Each abbreviation listed below corresponds to the vendor name shown to it's right.

AMD	Advanced Micro Devices
DALE	Dale Electronics
FAIR	Fairchild Semiconductors
FUJI	Fujitsu Ltd.
HITA	Hitachi
INTL	Intel Corp.
MMI	Monolithic Memories, Inc.
MOT	Motorola
NATL	National Semiconductor Corp.
NEC	Nippon Electric Corp.
SIG	Signetics Corp.
TI	Texas Instruments

Integrated Circuit Cross Reference Table

HP P/N	Typical P/N	HP P/N	Typical P/N
1813-0143	19.6608MHZOSC MOT, DALE	1816-0724	SN74S189 TI, AMD
1816-1451	29631A 50NS AMD, FUJI	1816-1458	N82S19 SIG
1816-1482	N82S131F SIG	1816-1558*	TTL 16K PROM AMD, FUJI
1816-1569*	8KX8 TTL PROM FUJI	1818-0849	ICD2147 INTL
1818-1397	RAM 16K 150NS FUJI,NEC,HITA, AMD,TI	1818-1738	HM6116LP-4 HITA

* This is a blank PROM part number. The HP programmed part numbers can be found on the CPS Assembly Drawing (P/N 30090-60075) or the CPS-E Assembly Drawing (P/N 30090-60081) which are located in Section II of this Engineering Diagrams Set.

Integrated Circuit Cross Reference Table (Cont.)

HP P/N	Typical P/N	HP P/N	Typical P/N
1820-0509	MC1488L MOT,FAIR,NATL	1820-0577	SN7416N TI,FAIR,SIG,NATL
1820-0618	SN7417N TI,SIG,NATL	1820-0629	SN74S112N TI,SIG,NATL
1820-0681	SN74S00N TI,FAIR,SIG,NATL	1820-0682	SN74S03 TI,FAIR
1820-0683	SN74S04 TI,FAIR,SIG,NATL	1820-0684	SN74S05 TI,FAIR
1820-0685	SN74S10 TI,SIG,NATL	1820-0686	SN74S11 TI,NATL,SIG
1820-0687	SN74S15N TI,FAIR,NATL	1820-0688	SN74S20 TI,FAIR,SIG,NATL
1820-0689	SN74S22N TI	1820-0690	SN74S40 TI,FAIR,NATL
1820-0691	SN74S64N TI,FAIR,NATL	1820-0693	SN74S74 TI,FAIR,NATL
1820-0694	SN74S86N TI,NATL	1820-0990	MC1489AL MOT,TI,FAIR,NATL
1820-0998	SN74S153N TI,SIG,NATL	1820-1015	SN74S158N TI,NATL
1820-1072	SN74S139N TI,SIG	1820-1076	SN74S174N TI,SIG,NATL
1820-1077	SN74S157N TI,NATL	1820-1112	SN74LS74AN TI,SIG,MOT,HITA, NATL,FUJI
1820-1130	SN74S133N TI,NATL	1820-1131	DM8160N NATL
1820-1144	SN74LS02N TI,FAIR,SIG,MOT, NATL,HITA,FUJI	1820-1158	SN74S51 TI,SIG
1820-1191	SN74S175N TI,FAIR,SIG	1820-1195	SN74LS175N TI,SIG,MOT,NATL, FAIR,HITA,FUJI

Integrated Circuit Cross Reference Table (Cont.)

HP P/N	Typical P/N	HP P/N	Typical P/N
1820-1196	SN74LS174N TI,NATL,SIG, MOT,HITA,FUJI	1820-1197	SN74LS00 TI,SIG,NATL,MOT, FAIR,HITA,FUJI
1820-1199	SN74LS04N TI,NATL,SIG, HITA,FUJI	1820-1200	SN74LS05 TI,FAIR,SIG,MOT, NATL,HITA,FUJI
1820-1201	SN74LS08N TI,NATL,SIG, MOT,HITA	1820-1202	SN74LS10 TI,FAIR,SIG,MOT, NATL,HITA,FUJI
1820-1203	SN74LS11N TI,SIG,FAIR, NATL,HITA	1820-1204	SN74LS20N TI,FAIR,NATL,SIG, MOT,HITA,FUJI
1820-1206	SN74LS27N TI,SIG,MOT,NATL, HITA,FUJI	1820-1207	SN74LS30N TI,NATL,SIG, HITA,MOT
1820-1208	SN74LS32N TI,SIG,FAIR, NATL,MOT,HITA	1820-1209	SN74LS38N TI,MOT,HITA, NATL,SIG
1820-1210	SN74LS51N TI,SIG,MOT, HITA,NATL	1820-1216	SN74LS138N TI,SIG,NATL,FAIR, HITA,MOT,FUJI
1820-1240	SN74S138N TI,SIG,NATL	1820-1275	SN74S260N TI,SIG
1820-1278	IC-DIGITAL TI,NATL	1820-1281	SN74LS139N TI,SIG,MOT,HITA, FUJI,NATL
1820-1285	SN74LS54N TI,NATL,MOT,HITA	1820-1301	74S257N TI,SIG
1820-1302	SN74S251N TI,NATL	1820-1304	SN74S194N TI
1820-1305	SN74S182N TI,NATL	1820-1306	SN74S134N TI
1820-1307	SN74S132N TI,FAIR	1820-1319	SN74S151N TI,SIG,NATL
1820-1321	IC-DIGITAL TI	1820-1322	SN74S02N TI,SIG

Integrated Circuit Cross Reference Table (Cont.)

HP P/N	Typical P/N	HP P/N	Typical P/N
1820-1323	SN74S30N TI,NATL	1820-1360	IC-DIGITAL SIG
1820-1367	SN74S08N TI,SIG,NATL	1820-1423	74LS123N TI,MOT,HITA,NATL
1820-1425	SN74LS132N TI,MOT	1820-1433	SN74LS164 TI,SIG,NATL, HITA,MOT
1820-1438	SN74LS257N TI,MOT,NATL	1820-1439	SN74LS258N TI,MOT
1820-1440	SN74LS279N TI,MOT,FAIR, FUJI,NATL	1820-1441	SN74LS283N TI,MOT,SIG,NATL
1820-1445	SN74LS375N TI	1820-1448	SN74S09N TI,NATL
1820-1449	SN74S32 TI,SIG,NATL	1820-1450	SN74S37N TI
1820-1451	SN74S38N TI,SIG	1820-1453	SN74S163N TI,NATL
1820-1455	SN74S169N CTR TI	1820-1458	SN74S381N ALU TI
1820-1470	SN74LS157N TI,NATL,SIG, MOT,HITA	1820-1476	8T96B SIG
1820-1624	SN74S241N TI	1820-1633	SN74S240N TI
1820-1638	SN74S280N TI,NATL	1820-1639	SN74S135N TI
1820-1676	SN74S373N TI,MMI	1820-1677	SN74S374N F-F TI,MMI,SIG
1820-1730	SN74LS273N TI,SIG,FAIR	1820-1871	SN74S283N TI
1820-1917	SN74LS240 TI,FAIR,SIG,NATL	1820-1922	SN74LS166N TI

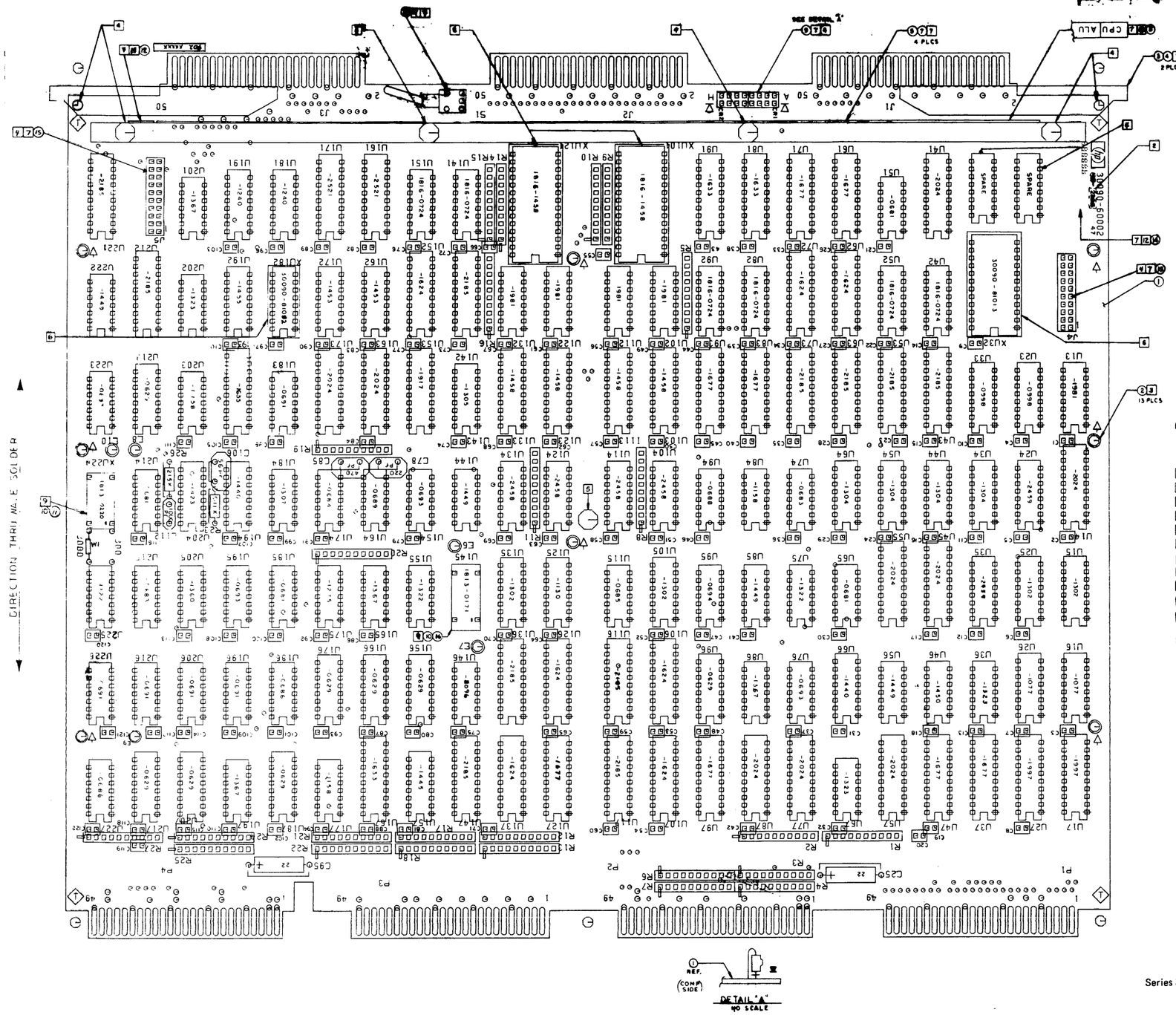
Integrated Circuit Cross Reference Table (Cont.)

HP P/N	Typical P/N	HP P/N	Typical P/N
1820-1981	AM25S09PC REG AMD	1820-1997	SN74LS374N NATL,TI
1820-2024	SN74LS244 TI,SIG,FAIR,NATL	1820-2075	SN74LS245N TI,MOT,NATL
1820-2096	SN74LS393 TI,SIG	1820-2102	SN74LS373N TI,SIG,NATL
1820-2185	SN74S373J MMI	1820-2311	AM25LS2521PC AMD
1820-2457	82S100 FPLA SIG	1820-2458	AM25S10PC AMD
1820-2459	AM25S18PC AMD	1820-2521	67S376J MMI
1820-2619	2661-1 UART SIG	1820-3386	74ALS15 P TI
1820-3411	74ALS175 P TI	1820-3560	74ALS804 P TI

CPU BAY PCA SCHEMATICS AND ASSEMBLY DRAWINGS

SECTION II

This section provides component location and schematic diagrams for the PCAs located in the CPU card cage of the System Processor Unit. Each diagram is labeled to indicate which HP 3000 system the PCA applies. The PCA diagrams appear in an ascending part number sequence. A listing of this sequence is shown below along with drawing titles, applicable systems, and page numbers.



NOTES:
1. UNLESS OTHERWISE SPECIFIED -
   ALL RESISTANCE IN OHMS
   ALL CAPACITANCE IN MICROFARADS
   ALL CAPACITORS ARE .01
   ALL IC'S ARE 1820 - XXXX
2. MARK DATE CODE.
3. INSTALL ITEM (2) 13 PLACES.
4. MASK AS INDICATED PRIOR TO LOADING.
5. USE SUPPORT FIXTURE DURING WAVE SOLDER.
6. INSTALL SOCKETS (XU-) AS INDICATED, DO NOT LOAD ICS.
7. INSTALL ITEMS (3) THRU (9) (12) THRU (15) IN TOUCHUP. USE FORMING TOOL # T-116700 TO FORM (9).
8. LOAD ICS U32, 101, 121, 182 IN TOUCHUP USING A GROUNDING STRAP.
9. LOAD ITEM (16) & (16A) USE 1 OF (10) IN EACH LEAD.
10. INSTALL ITEM (8) PER DWG. B-5951-4413-1.
11. INSTALL ITEM (2) IN AREA INDICATED
12. PRIOR TO STOCK FLOWING INSTALL ITEM (14) NEAR H.P. LOGO
13. INSPECTION CRITERIA _ HP STD. SECT. 410

NO.	QTY	DESCRIPTION	PART NO.
14	1	[illegible]	[illegible]
13	1	SWITCH	[illegible]
12	1	LABEL-BLANK (Serialized)	9320-5105
11	1	OSC [illegible] MHz	[illegible]
10	8	HEAD SPACER	4330-0148
9	2	LED ARRAY	1990-0682
8	1	LABEL	7121-[illegible]
7	1	BRACE, PC BOARD	5040-6058
6			
5	4	SCREW 4-40X .312 LG	0624-0077
4	2	EXTRACTOR	5040-6009
3	2	PIN	1480-0116
2	13	TERMINAL E1-E13	0360-0236
1	1	PCB-ALU	30090-[illegible]

PCA-ALU ASSY. DWG.
30090A
F-30090-60002-B

Series 39/40/42/44/48

REF. DWGS: F-2, ASSY
D-3, MODIFICATION
D-4, MODIFICATION
D-50, DATE CODE INFO
D-52-54 SCHEMATICS

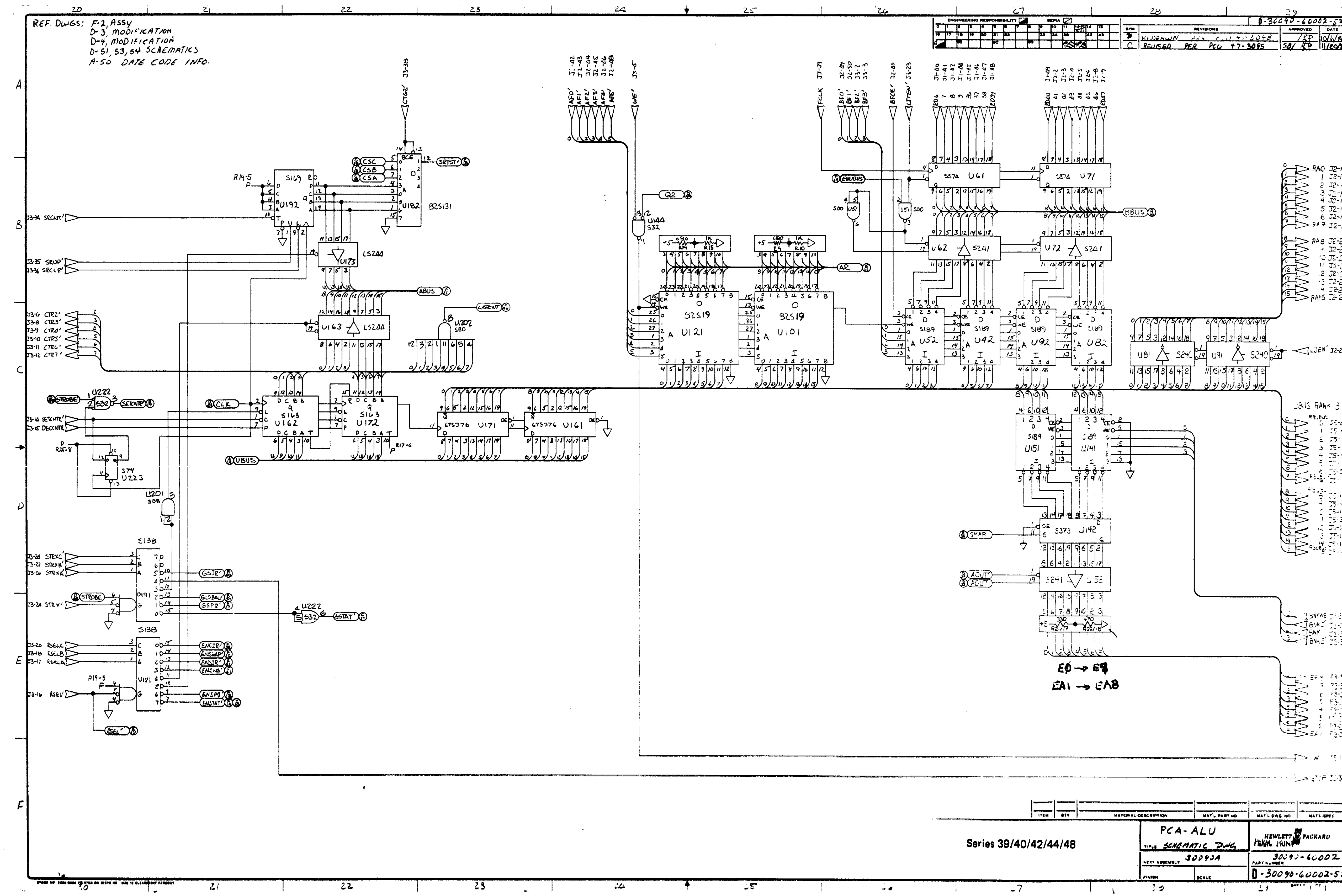
REVISIONS	APPROVED	DATE
REDRAWN PER PCO 97-3048		

8-30090-60002-51

PCA- ALU
TITLE SCHEMATIC DWG
30090A
NEXT ASSEMBLY
SCALE
FINISH

HEWLETT PACKARD
PERM. PRINT
30090-60002
PART NUMBER
D-30090-60002-51
SHEET 1 OF 1

Series 39/40/42/44/48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A-50 DATE CODE INFO.
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C REVISED PER PCO 47-3095
D-30090-60002-52
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U182 82S131
U173 LS240
U163 LS240
U202 S30
U162 S163
U172 S163
U171 67S376
U161 67S376
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U223 S74
U201 S08
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U151 S189
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CSA
CTG2'
ABUS
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STROBE
SETCNTR'
VBUS
GSIR'
GLOBAL'
GSPØ'
GSTAT'
ENCIR'
ENSWAP'
ENSIR'
ENSNS'
ENSPØ'
ENSTAT'
RSEL'
Q2
AR
ENVBUS
BBUS
GMAR
AOUT'
AOUT
LJEN' J2-29
RA0 J2-10
RA15 J2-28
EØ → E7
EA1 → EA8
Series 39/40/42/44/48
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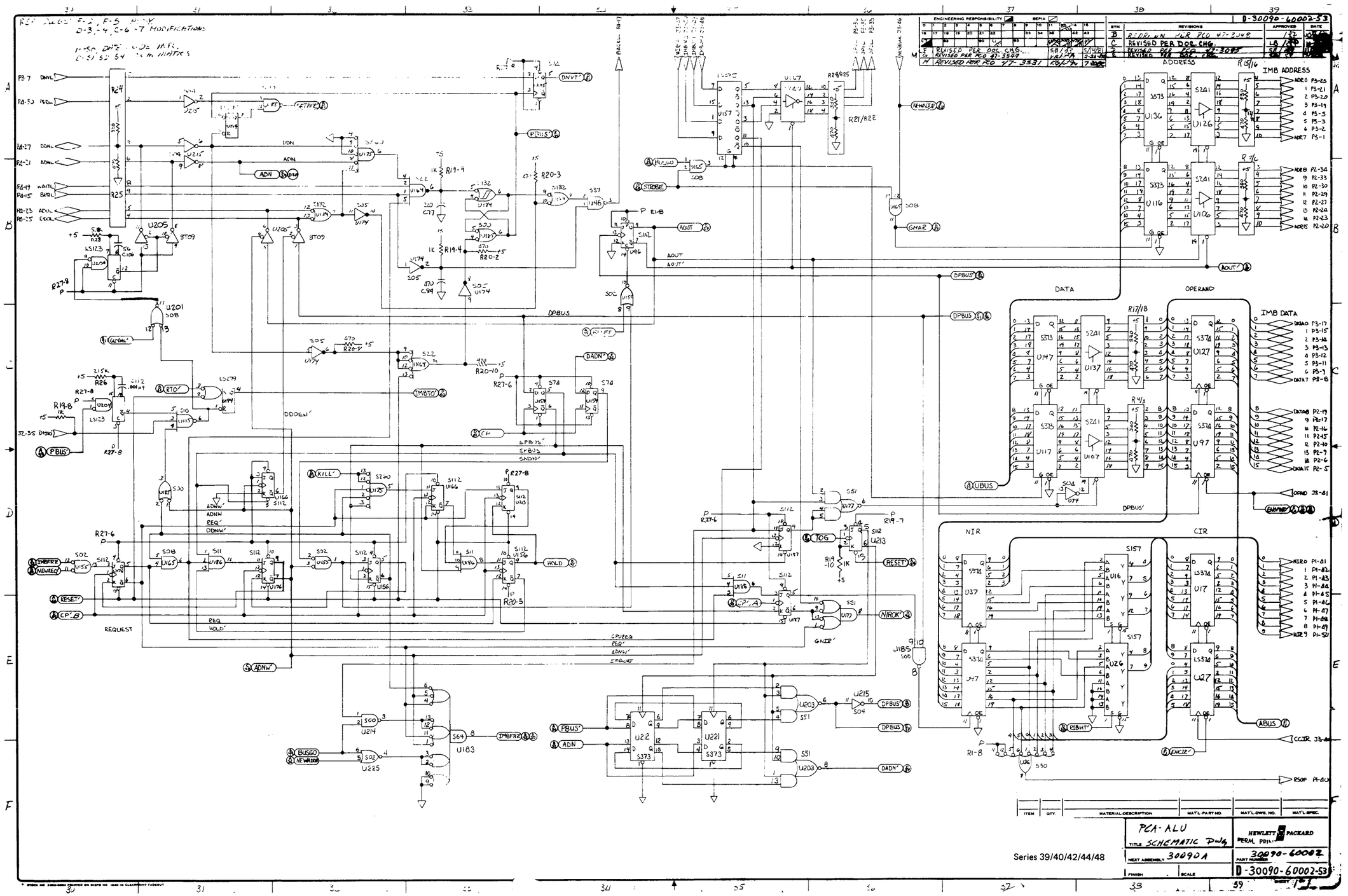
PART NUMBER 30090-60002
D-30090-60002-52
HEWLETT PACKARD
PERM. PRINT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Series 39/40/42/44/48
PCA-ALU
SCHEMATIC Dwg
30090A
30090-60002
D-30090-60002-53
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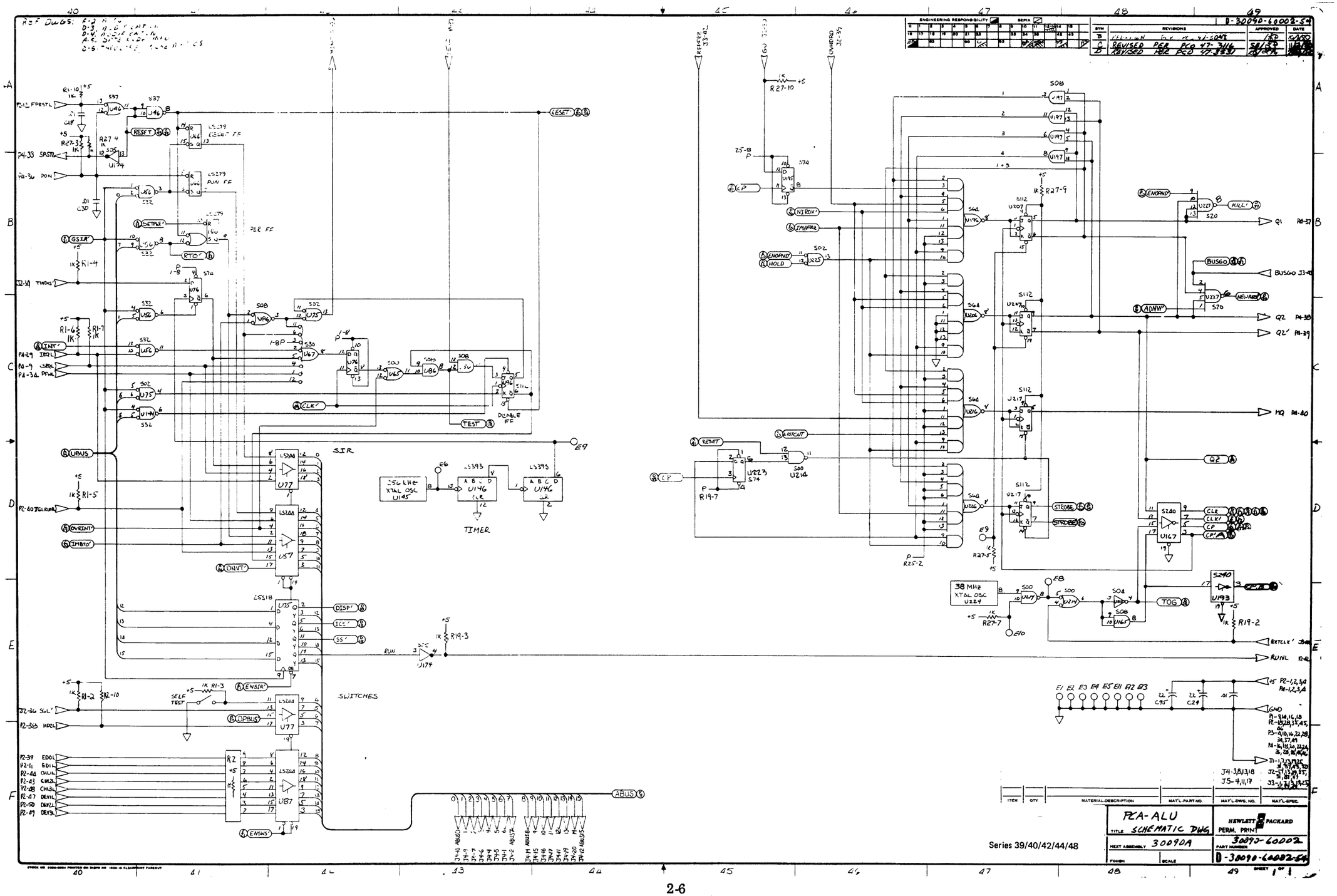
IMB DATA
DATA
OPERAND
ADDRESS
NIR
CIR
DPBUS
ABUS
PBUS
ADN
REQUEST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RESET FF
PWR FF
PER FF
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GSXR'
RTO'
INT'
IRQL
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PON
PDNL
UBUS
OVRINT'
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DNVT'
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IMBFRE
KILL'
BUSGO
NEWIRD
ADNW'
Q1
Q2
Q2'
MQ
TOG
CLK
CLK'
CP
CP'
STROBE
STROBE'
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CLP
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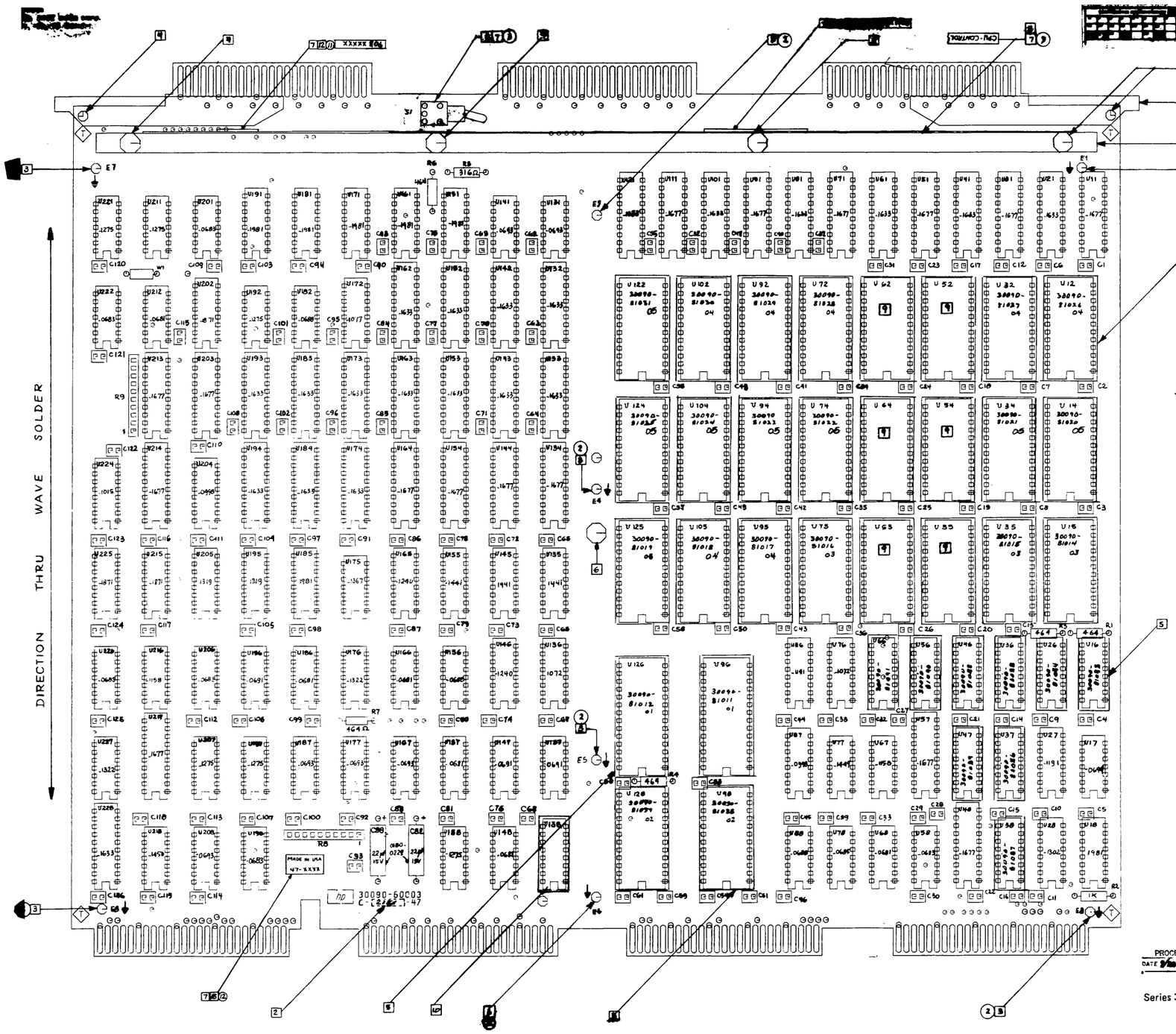
MAT'L-PART NO.
MAT'L-DWG. NO.
MAT'L-SPEC.
PCA-ALU
SCHEMATIC DWG.
HEWLETT PACKARD
PERM. PRINT
30090A
30090-60002
D-30090-60002-54
Series 39/40/42/44/48



NOTES

1. UNLESS OTHERWISE SPECIFIED
   ALL IC'S ARE 1820-
   ALL RESISTANCE IN OHMS
   ALL CAPACITANCE IN MICROFARADS
   ALL CAPACITORS ARE .01
2. MARK DATE CODE
3. INSTALL ITEM (2) IN RIVET
4. MASK AS INDICATED PRIOR TO LOADING
5. LOAD SOCKETS (XU-) AS INDICATED. DO NOT LOAD IC'S
6. USE SUPPORT FIXTURE DURING WAVE SOLDER
7. INSTALL ITEMS (3) THRU (12) IN TOUCH UP
8. LOAD IC'S U12, 14-16, 26, 32, 34-38, 46, 47, 54, 66, 72, 74, 75, 92, 94-96, 98, 102, 104, 105, 122, 124-126, 128 IN TOUCHUP USING A GROUNDING STRAP.
9. THE FOLLOWING ARE OPEN END SOCKETS: U32, 34, 56, 62, 64 & 65.
10. BUILD 'DETAIL A' AND INSTALL IN U138. IN TOUCH UP.
11. INSTALL ITEM (9) PER DWG. NO. B-5951-4413-1
12. INSTALL ITEMS (10) & (11) IN AREA INDICATED.
13. INSTALL ITEM 12 NEAR H.P. LOGO

NOTE: INSTALL ITEMS (9) BETWEEN PINS 1 & 16 AND PINS 33 & 48 OF ITEM (8) AND CLIP LEADS TO LENGTH INDICATED.

14	2	JUMPER	8159-0003
13	1	HDR 16 PIN DIP	1251-8549
12	1	LABEL-INFO	7120-6830
11	1	LABEL-BLANK (SER NO)	9320-5105
10	1	LABEL-ROM VERSION	7120-7[illegible]
9	1	LABEL-CPU CTL	[illegible]
8	1	[illegible]	[illegible]
7	1	BOARD-PC BOARD	[illegible]
6	4	SCREW 4-40 .188 LONG	[illegible]
5	2	EXTRACTOR	[illegible]
4	2	PIN	[illegible]
3	1	SWITCH	[illegible]
2	1	[illegible]	[illegible]
1	1	[illegible]	[illegible]

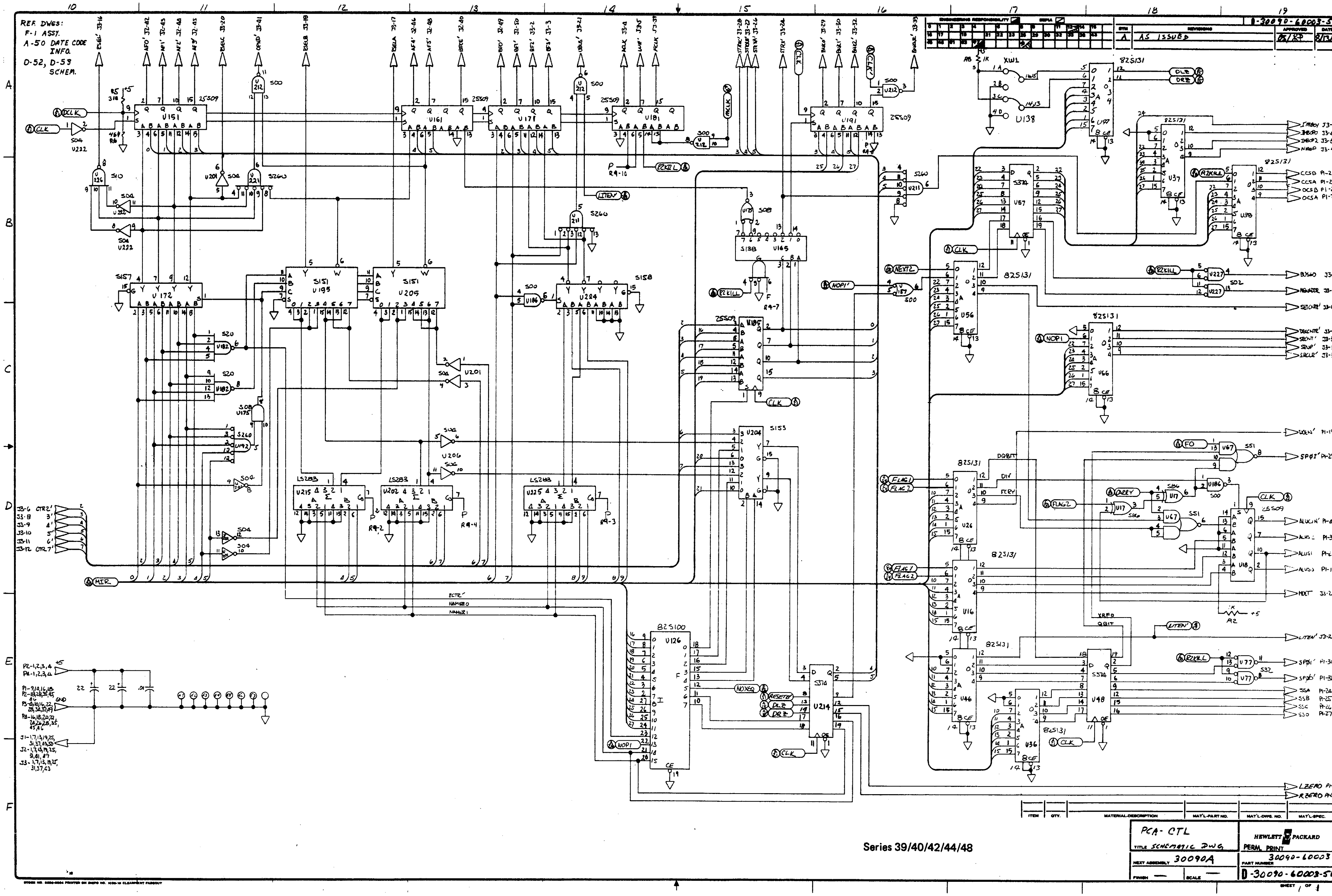
PROCESS REVIEW

PCA-CTL ASSEMBLY [illegible]

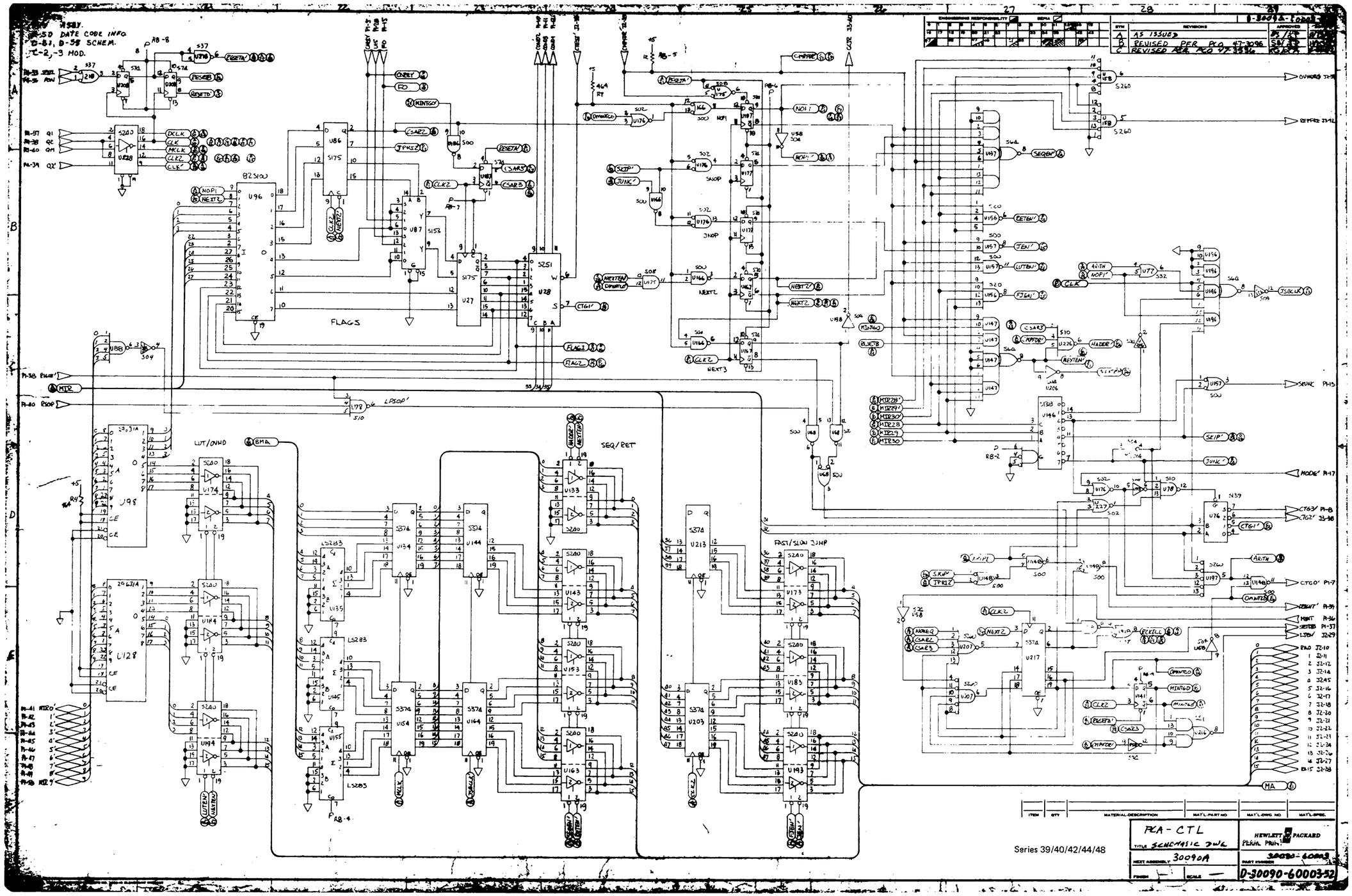
30090-60003

F30090-60034

Series 39/40/42/44/48



Series 39/40/42/44/48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C-2,-3 MOD.
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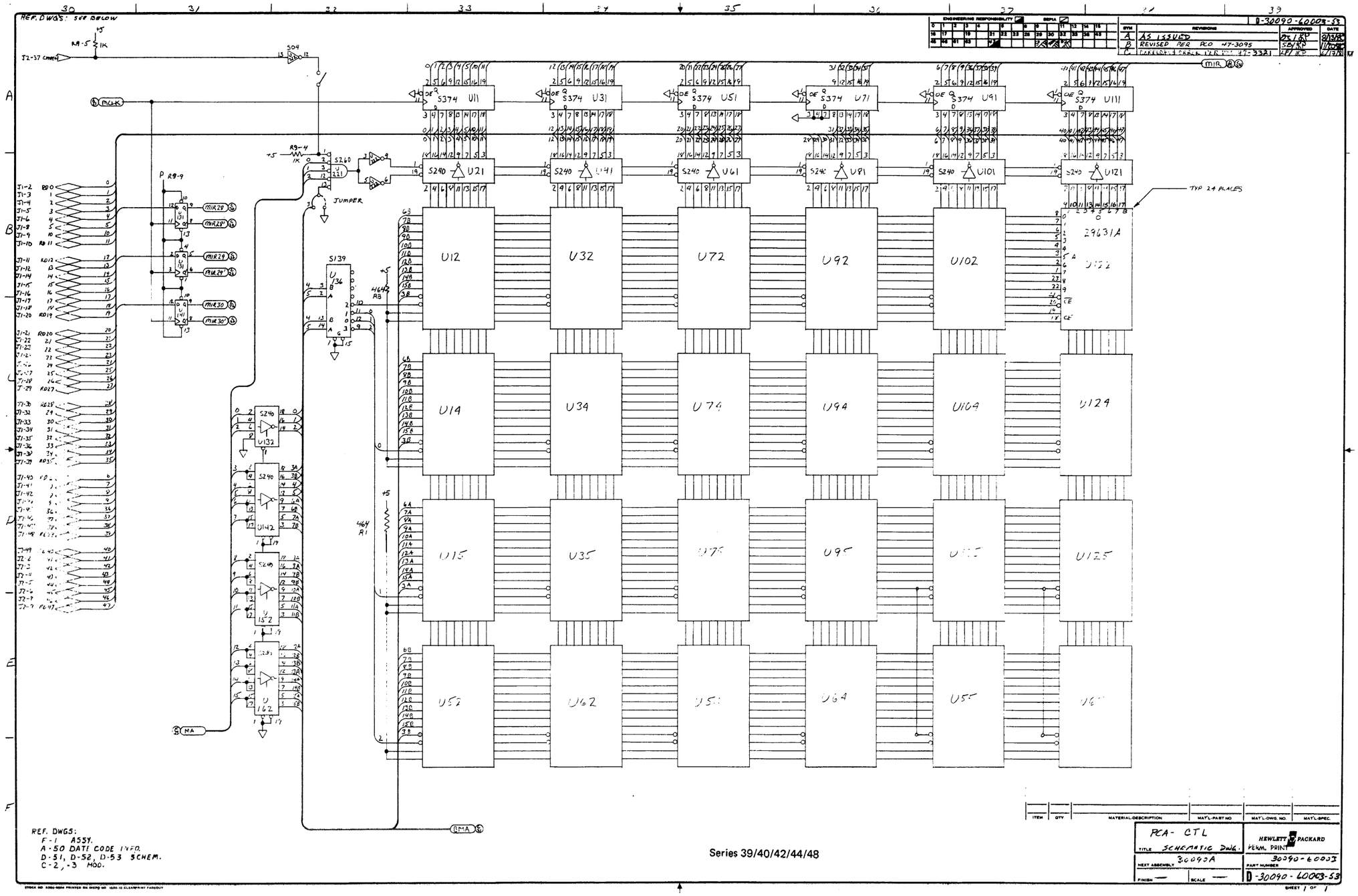
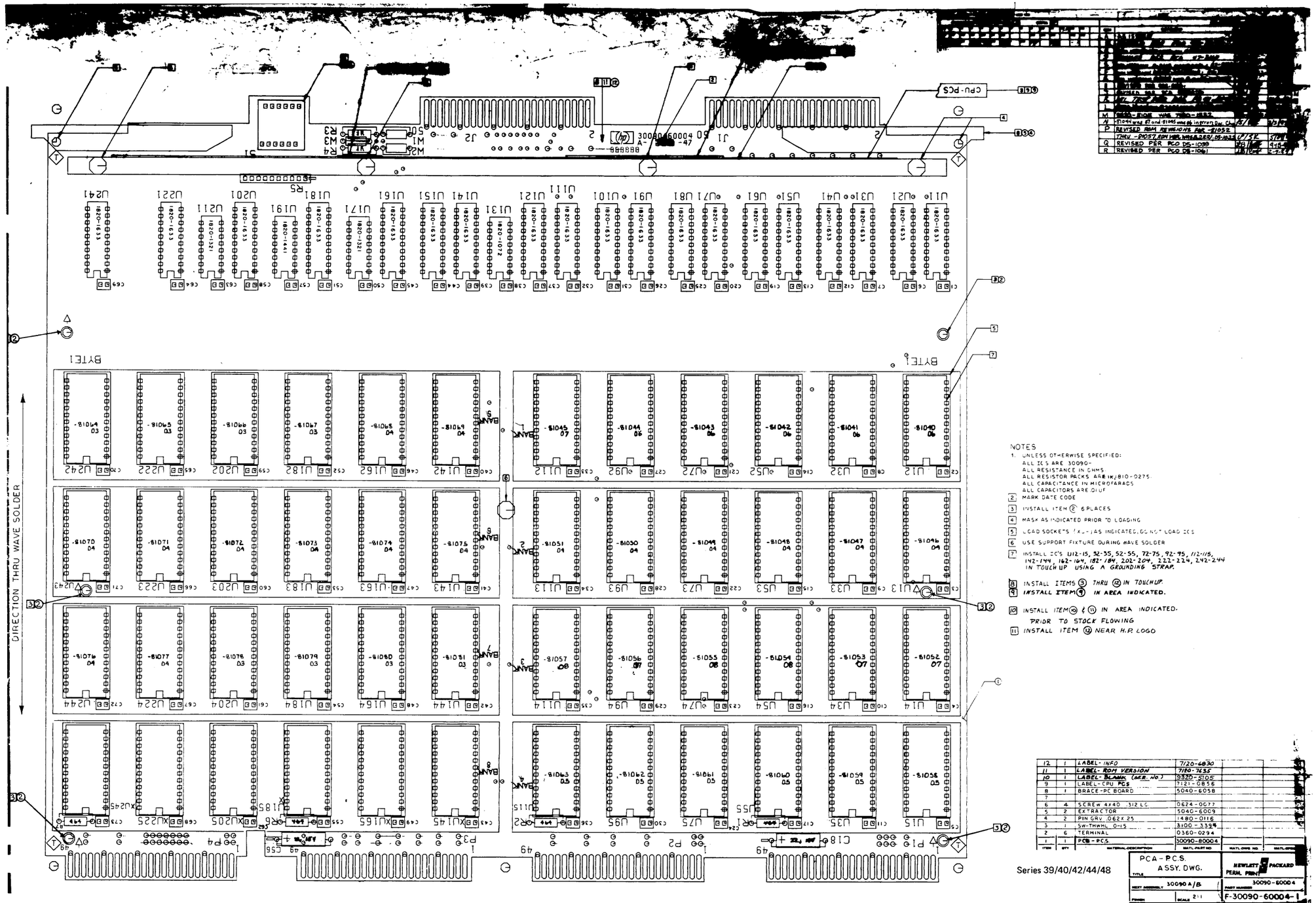
FLAG2
SEQ/RET
LIT/DWRD
FAST/SLOW JUMP
NEXT3
JNOP
SNOP
NEXTL
Series 39/40/42/44/48
PCA - CTL
SCHEMATIC DWG
30090A
D-30090-60003-52



Series 39/40/42/44/48



NOTES

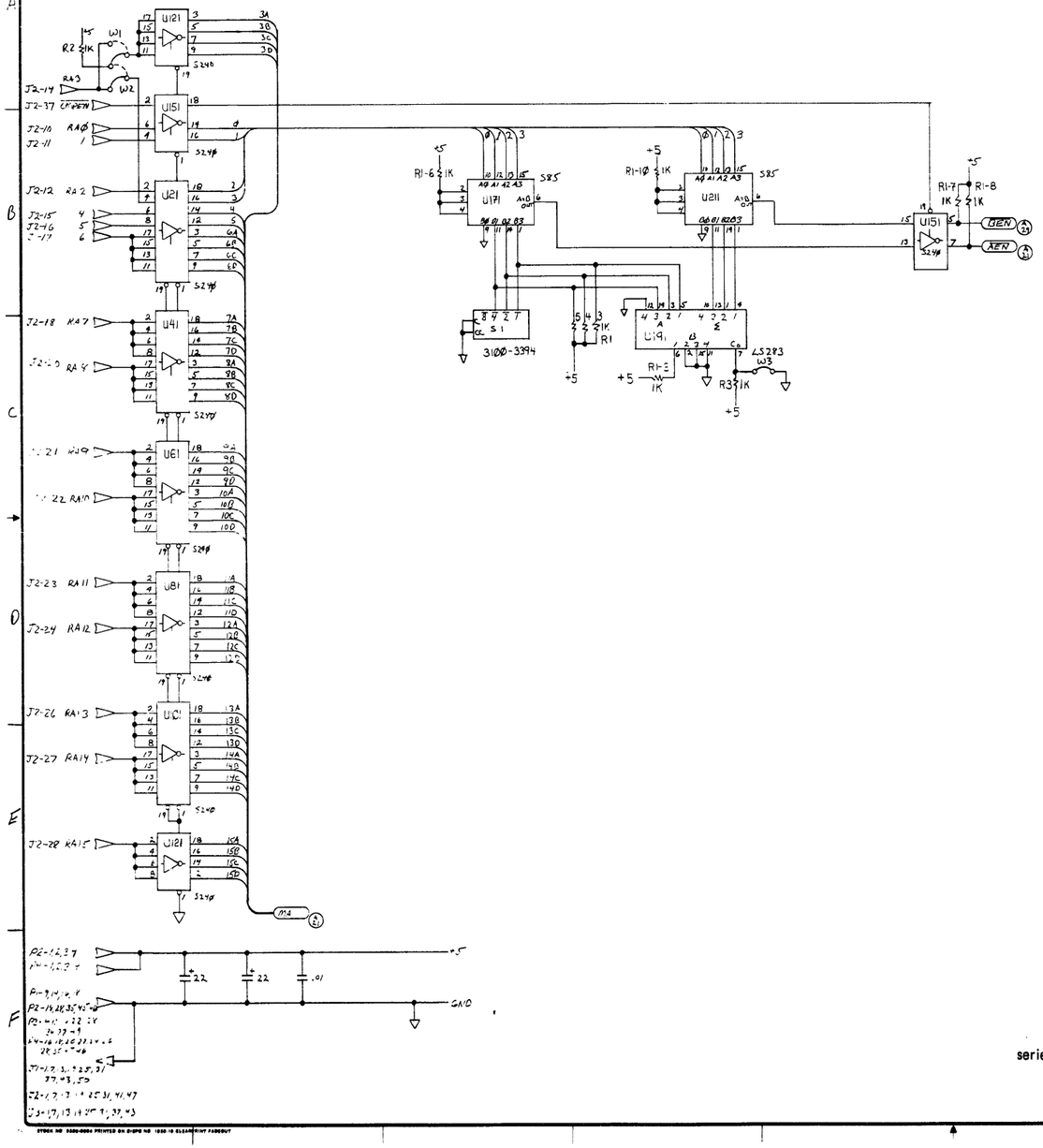
1. UNLESS OTHERWISE SPECIFIED:
   ALL ICS ARE 30090-
   ALL RESISTANCE IN OHMS
   ALL RESISTOR PACKS ARE 1K/810-0275
   ALL CAPACITANCE IN MICROFARADS
   ALL CAPACITORS ARE .01UF
2. MARK DATE CODE
3. INSTALL ITEM (2) 6 PLACES
4. MASK AS INDICATED PRIOR TO LOADING
5. LOAD SOCKETS (X-) AS INDICATED, DO NOT LOAD ICS
6. USE SUPPORT FIXTURE DURING WAVE SOLDER
7. INSTALL IC'S U12-15, 32-35, 52-55, 72-75, 92-95, 112-115, 142-144, 162-164, 182-184, 202-204, 222-224, 242-244 IN TOUCH UP USING A GROUNDING STRAP.
8. INSTALL ITEMS (3) THRU (12) IN TOUCHUP.
9. INSTALL ITEM (1) IN AREA INDICATED.
10. INSTALL ITEM (10) & (11) IN AREA INDICATED. PRIOR TO STOCK FLOWING
11. INSTALL ITEM (12) NEAR H.P. LOGO

ITEM	QTY	MATERIAL DESCRIPTION	MATL PART NO	MATL OWG NO	MATL SPEC
12	1	LABEL-INFO	7120-6830		
11	1	LABEL-ROM VERSION	7180-7435		
10	1	LABEL-BLANK (SER. NO.)	9320-5105		
9	1	LABEL-CPU PCS	7121-0856		
8	1	BRACE-PC BOARD	5040-6058		
7					
6	4	SCREW 4-40 .312 LG.	0624-0077		
5	2	EXTRACTOR	5040-6009		
4	2	PIN GRV .062X.25	1480-0116		
3	1	SW-THWHL 0-15	3100-3394		
2	6	TERMINAL	0360-0294		
1	1	PCB-PCS	30090-80004		

Series 39/40/42/44/48

TITLE	PCA-P.C.S. ASSY. DWG.	NEWLETT PACKARD PERM. PRINT	
NEXT ASSEMBLY	30090 A/B	PART NUMBER	30090-60004
FINISH	SCALE 2:1		F-30090-60004-1

REF. DWGS: F-1 ASSY.
A-50 DATE CODE INFO.
D-52 SCHEMATIC



ENGINEERING RESPONSIBILITY	SEPIA

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	[illegible]	6/3/80
B	REVISED PER PCO 47-3167	SB	6/18/80

D-30090-60004-51

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

PCA - PCS
TITLE SCHEMATIC DWG
NEXT ASSEMBLY 30090A
FINISH SCALE

HEWLETT PACKARD
PERM. PRINT
PART NUMBER 30090-60004
D-30090-60004-51

SHEET 1 OF 1

series 39/40/42/44/48

REF. DWGS: F-1 ASSY
A-50 DATE CODE INFO.
D-51 SCHEMATIC

ENGINEERING RESPONSIBILITY	SIZE	D-30090-60004-52
SYM	REVISIONS	APPROVED / DATE
A	AS ISSUED	2/5/80

U131 S139

U11 U12 U13 U14 U15 U31 U32 U33 U34 U35 U51 U52 U53 U54 U55 U71 U72 U73 U74 U75 U91 U92 U93 U94 U95 U111 U112 U113 U114 U115

U241 U242 U243 U244 U245 U221 U222 U223 U224 U225 U201 U202 U203 U204 U205 U181 U182 U183 U184 U185 U161 U162 U163 U164 U165 U141 U142 U143 U144 U145

29631A S240

J1-2 J1-3 J1-4 J1-5 J1-6 J1-8 J1-9 J1-10 J1-11 J1-12 J1-14 J1-15 J1-16 J1-17 J1-18 J1-20 J1-21 J1-22 J1-23 J1-24 J1-26 J1-27 J1-28 J1-29 J1-30 J1-32 J1-33 J1-39 J1-35 J1-36 J1-38 J1-39 J1-40 J1-41 J1-42 J1-44 J1-45 J1-46 J1-47 J1-48 J1-49 J2-2 J2-4 J2-5 J2-6 J2-8 J2-9

R6 464 R7 464 R5 464 R4 464

ITEM	QTY	MATERIAL-DESCRIPTION	MAT'L-PART NO	MAT'L-DWG. NO	MAT'L-SPEC

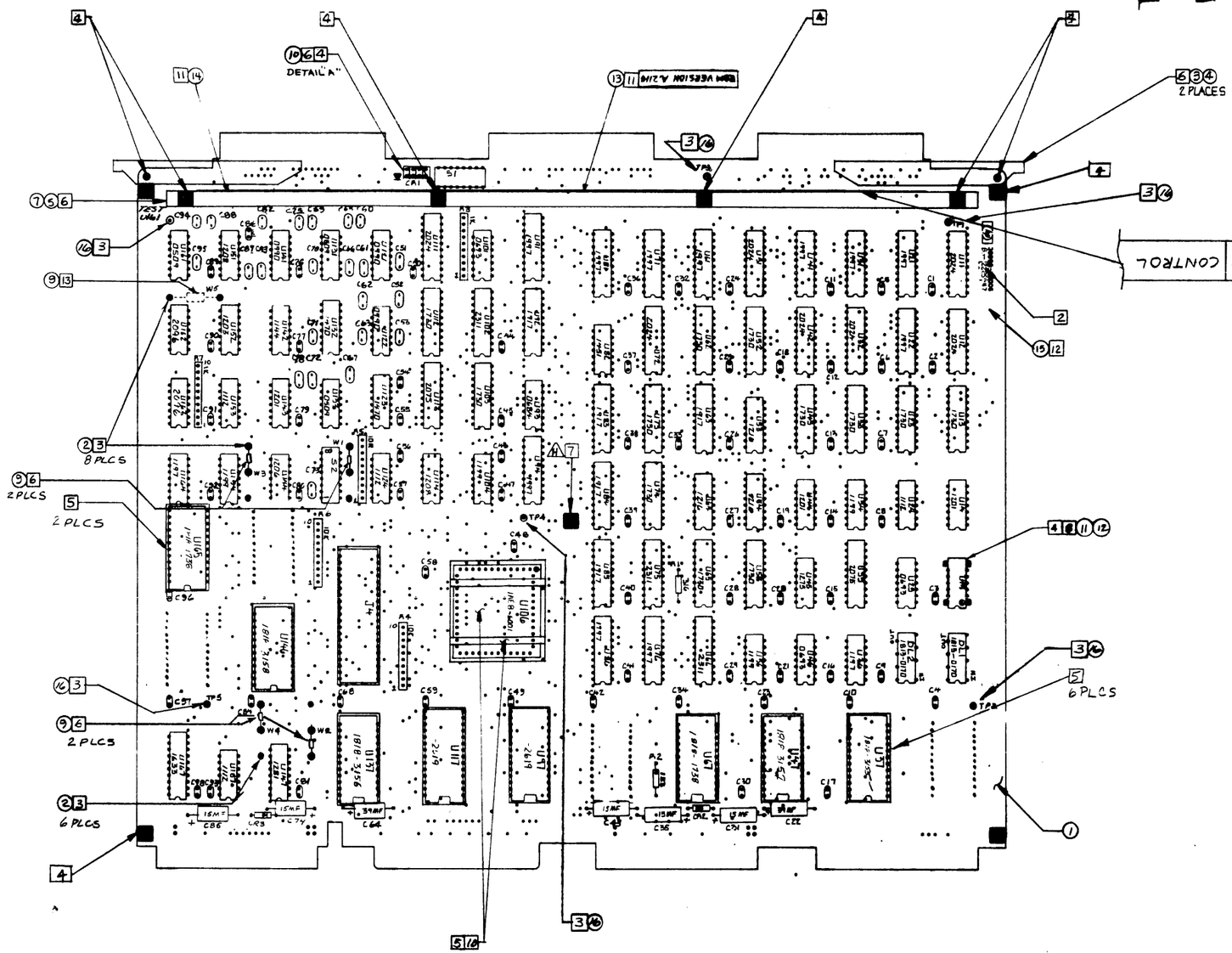
PCA-PCS
TITLE SCHEMATIC DWG
NEXT ASSEMBLY 30090A
FINISH SCALE 4/1

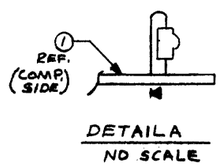
HEWLETT PACKARD
PERM. PRINT
30090-60004
PART NUMBER
D-30090-60004-52
SHEET 1 OF 1

STOCK NO 5280-0004 PRINTED ON DIGITO NO 1030-10 CLEARMENT FADEOUT

Series 39/40/42/44/48

A	AS ISSUED, PER PCO 47-3510	KG/DF	7-28-82
B	ITEM 16 WAS TERM-STUD SGL 0360-1682; PER PCO 47-5020	LA/RJE	12-22-82
C	9320-5105 WAS 7120-1232	SL/CMP	4/6/83
D	U162 + U163 WAS 1820-1989 PCO 05-1007P	LA/RJE	4/19/83
E	REPLACED 6 EPROMS by 4 ROMS, DS-1024	EM/RJE	5-23-84
	REPLACED 4 8K RAMS by 2 16K RAMS		
F	REVISION INDICATED SHIPPED DOC	KG/CMP	11-29-83
G	REVISED PER PCDS-10661	LA/RJE	10-19-84
H	DELETED NOTE 6 REF N DEXTER DWG; DS PCF		
	DOC C-G		





DETAIL A
NO SCALE

NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   ALL RESISTANCE IN OHMS
   ALL CAPACITANCE IN MICROFARADS
   ALL CAPACITORS ARE .1UF (0160-4685)
   ALL ICS ARE 1820-____
2. MARK DATE CODE
3. INSTALL ITEM (2) 14 PLACES, ITEM (16) 6 PLACES
4. MASK AS INDICATED
5. LOAD SOCKETS (XU-) AS INDICATED, DO NOT LOAD IC'S. LOAD IC'S IN TOUCHUP
6. INSTALL ITEMS (3) THRU (15) IN TOUCHUP USE FORMING TOOL #T116700. FOR ITEM (15)
7. USE SUPPORT FIXTURE DURING WAVE SOLDER
8. LOAD ITEM (12), USE 1 OF (11) ON EACH LEAD
9. INSTALL ITEM (8) PER DRAWING NO. B-5951-4413-1 PRIOR TO INSTALLING ITEMS (13) & (14)
10. LOAD U106 IN TOUCHUP AFTER PRETEST
    INSTALL RETAINERS (SUPPLIED WITH SOCKETS).
11. INSTALL LABELS ITEMS (13) & (14), ON ITEM (7).
12. INSTALL LABEL ITEM (15) NEAR H.P. LOGO
13. INSTALL AFTER PRETEST

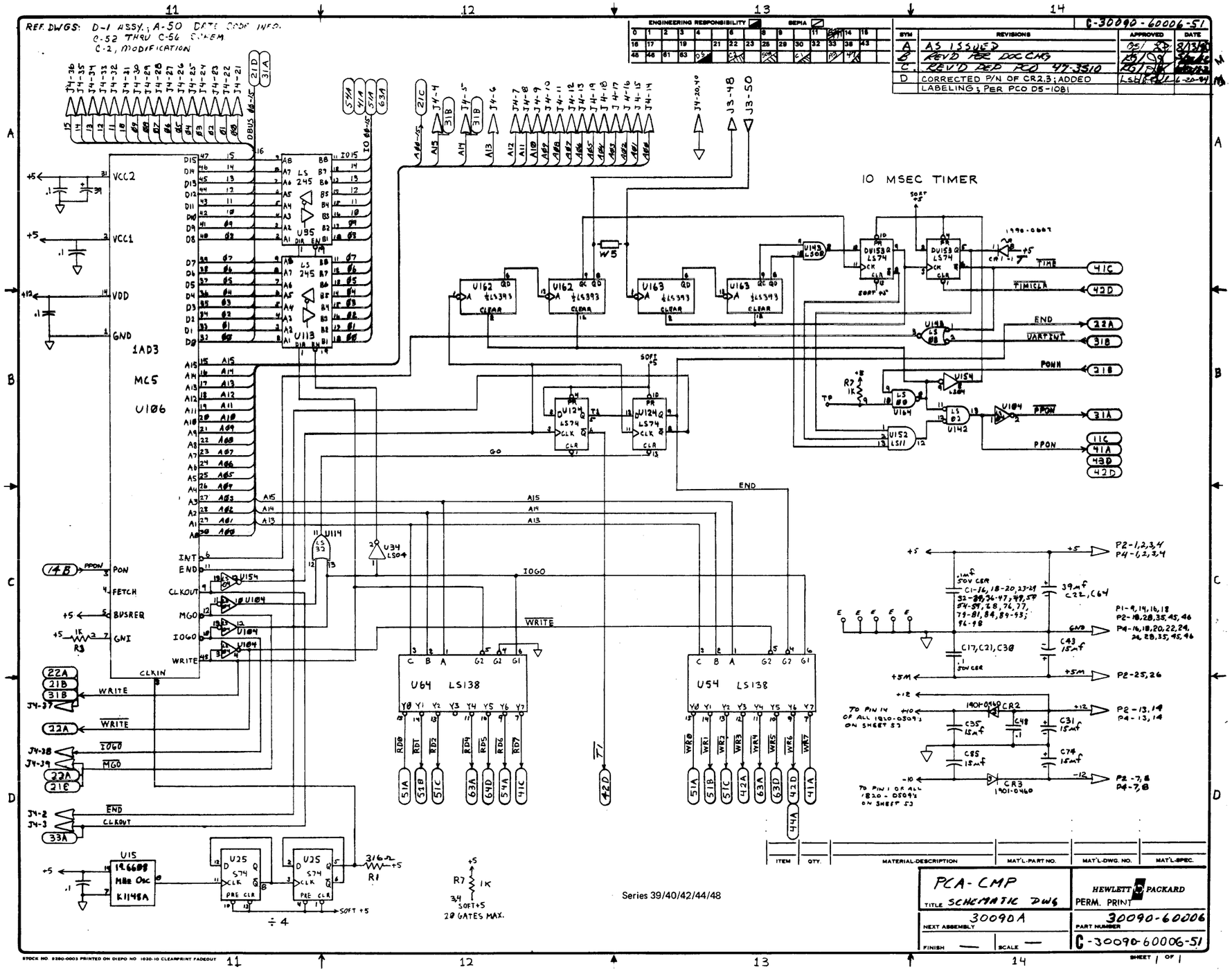
16	6	STUD, SOLDER TERM	0360-0294
15	1	LABEL - WARRANTY	7120-6830
14	1	LABEL - BLANK	9320-5105
13	1	LABEL - ROM VERSION	7120-7635
12	1	IC - 03C	1813-0143
11	4	BEAD SPACER	4330-0145
10	1	LED ARRAY	1990-0662
9	5	WIRE JUMPER	8159-0005
8	1	LABEL	7121-0857
7	1	BRACE - PC BOARD	5040-6058
6			
5	4	SCREW 4X40 .312 LONG	0624-0077
4	2	EXTRACTOR	5040-6009
3	2	PIN	1480-0116
2	14	TERMINAL, PIN	0360-1482
1	1	PCB-CMP	30090-80006
ITEM	QTY	MATERIAL IN DETAIL	MFR NUMBER	MFR NAME	MATL SPEC

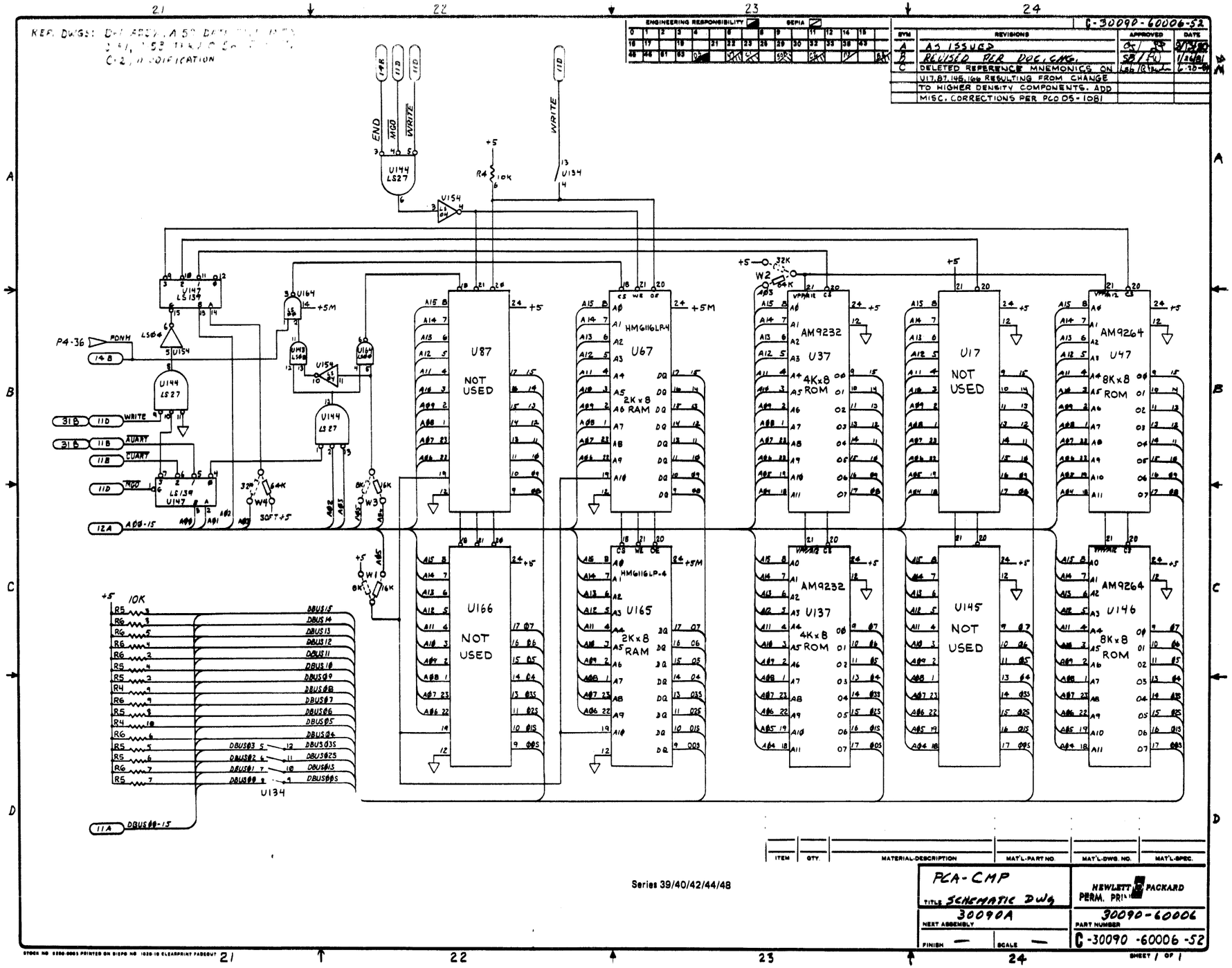
PROCESS REVIEW
DATE 7/28/87

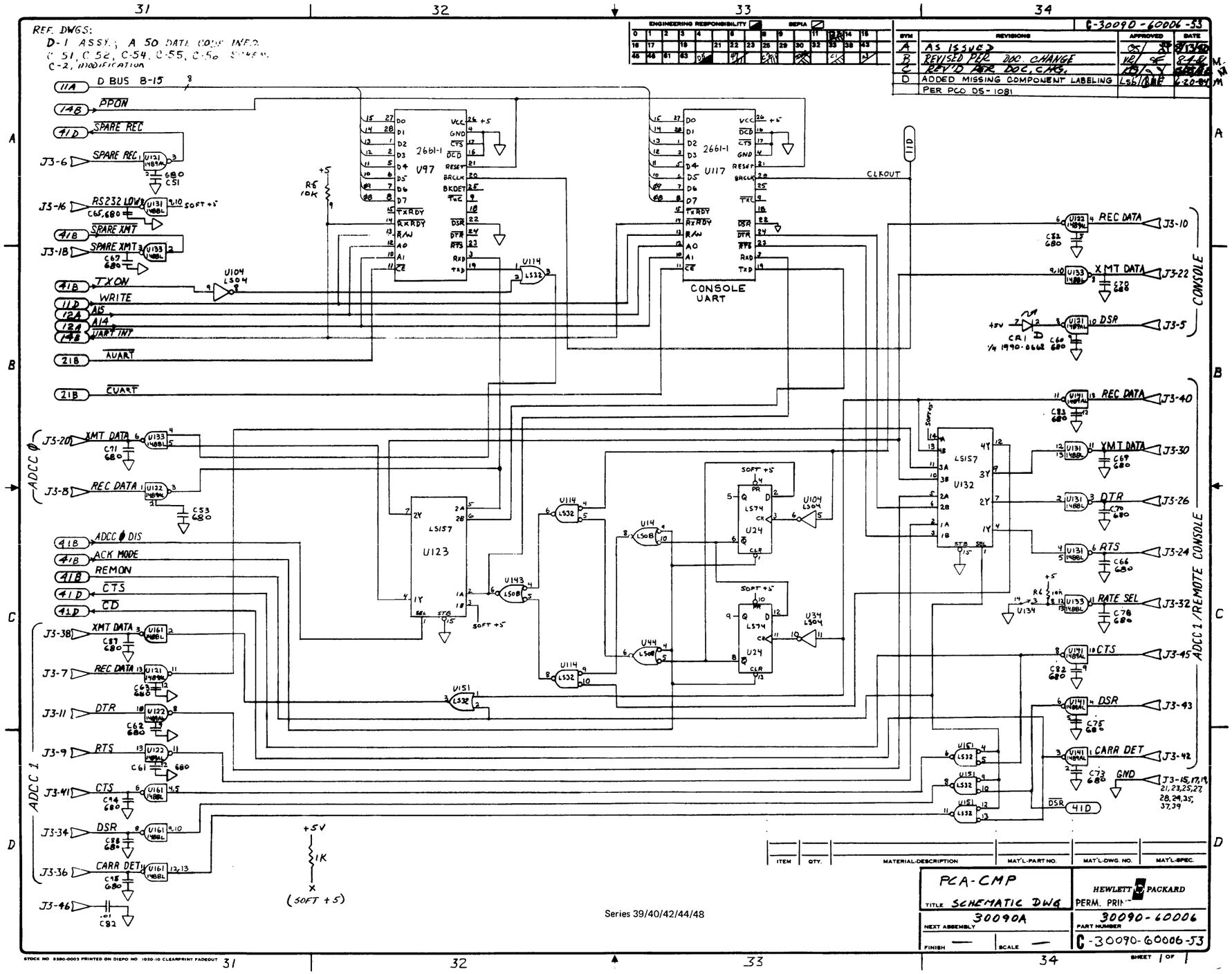
PCA-CMP ASSY-DWG.	HEWLETT PACKARD PERM. PRINT
30090A NEXT ASSEMBLY	30090-60006 PART NUMBER
FINISH SCALE 1:1	D-30090-60006-3 SHEET

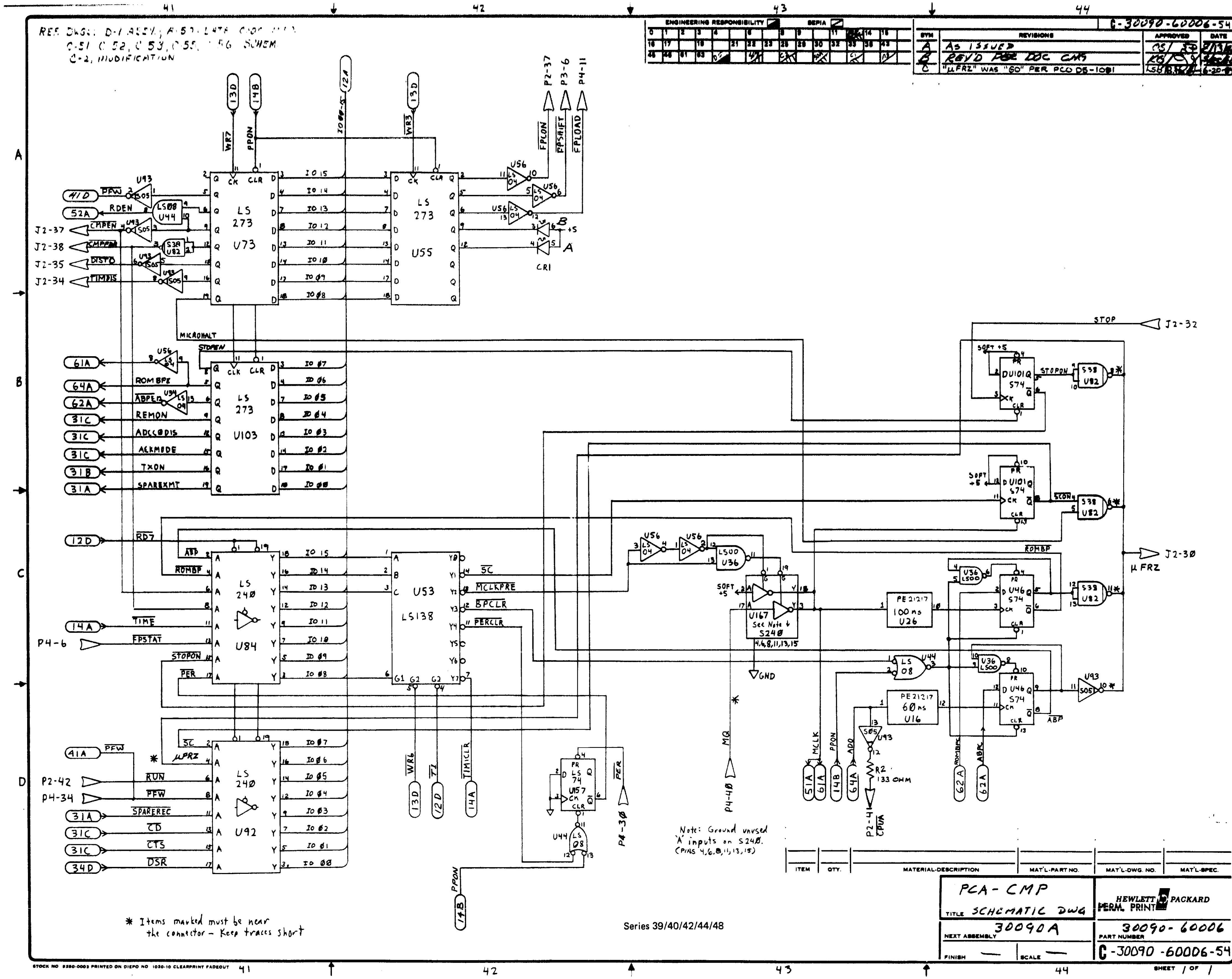
DIRECTION THRU SOLDER WAVE

Series 39/40/42/44/48

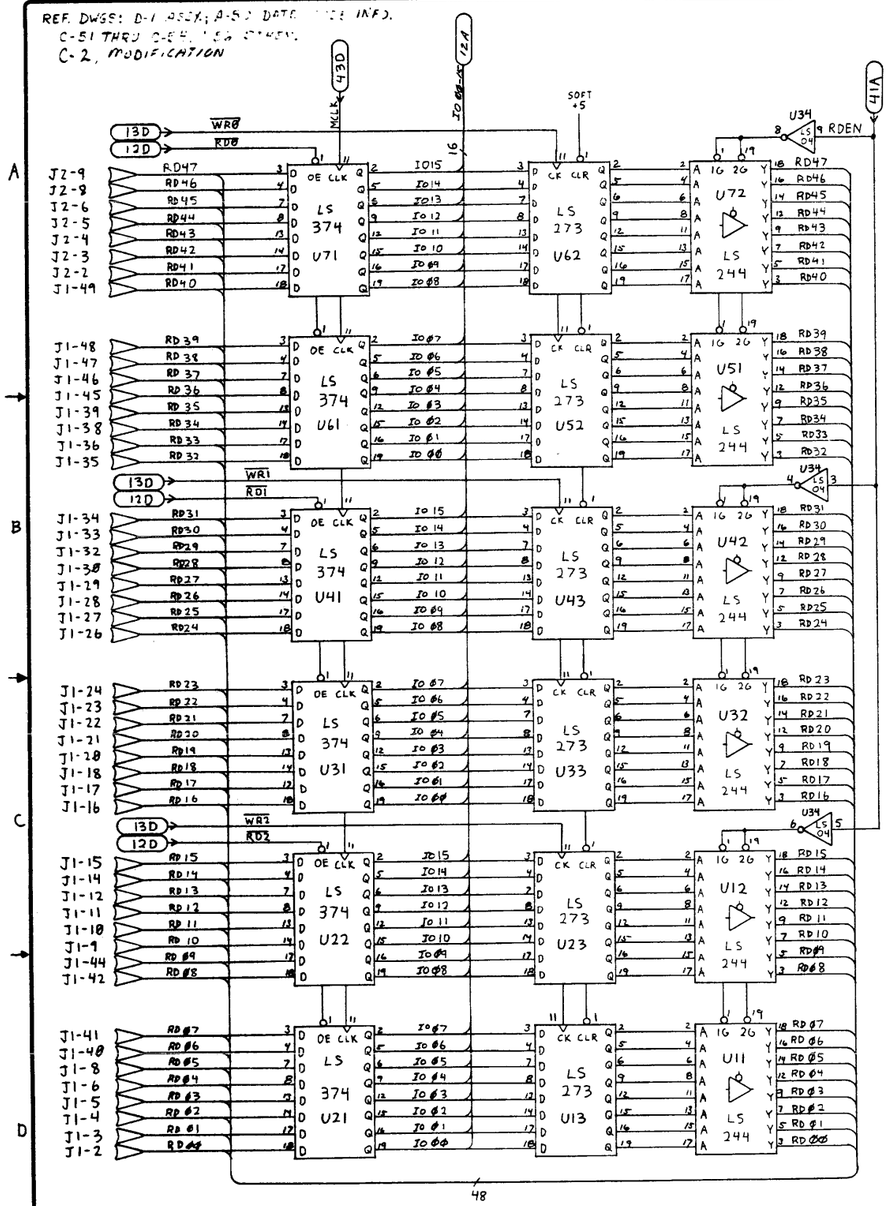

REF. DWGS: D-1 ASSY.; A-50 DATE CODE INFO.
C-52 THRU C-56 SCHEM.
C-2, MODIFICATION
C-30090-60006-51
REVISIONS
A AS ISSUED
B REV'D PER DCC CM3
C REV'D PER PCO 47-3510
D CORRECTED P/N OF CR2,3; ADDED
LABELING; PER PCO 05-1081
10 MSEC TIMER
1AD3
MC5
U106
U95
U113
U162
U163
U124
U154
U164
U152
U142
U114
U34
U64 LS138
U54 LS138
U15
U25
W5
R3
R7 1K
R1
VCC2
VCC1
VDD
GND
CLKIN
CLKOUT
WRITE
END
PPON
PON
FETCH
BUSRER
GNI
INT
MGO
IOGO
TIMER
TIMCLR
END
VARINT
PONN
PPON
SOFT +5
GO
÷4
20 GATES MAX.
Series 39/40/42/44/48
PCA-CMP
SCHEMATIC DWG
30090A
30090-60006
C-30090-60006-51
HEWLETT PACKARD
PERM. PRINT
SHEET 1 OF 1

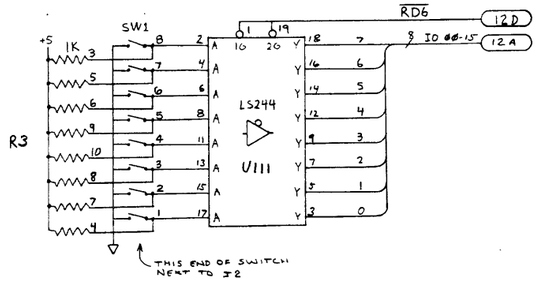

REF. DWGS: DWG. ABOVE, A5 DWG. (SHEET 2), 1 & 3 TIMING DWG. (SHEET 2)
C-2 MODIFICATION
C-30090-60006-52
SYM | REVISIONS | APPROVED | DATE
A | AS ISSUED | CK/RW | 2/25/80
B | REVISED PER DOC. CHG. | SB/RW | 1/26/81
C | DELETED REFERENCE MNEMONICS ON U17,87,145,166 RESULTING FROM CHANGE TO HIGHER DENSITY COMPONENTS. ADD MISC. CORRECTIONS PER PCO 05-10811 | SB/RW | 6-30-81
ENGINEERING RESPONSIBILITY
SEPIA
END
WRITE
U144 LS27
U154 LS04
U147 LS139
U164 LS08
U159 LS04
R4 10K
U87 NOT USED
U67 HM6116LP-4 2K x 8 RAM
U37 AM9232 4K x 8 ROM
U17 NOT USED
U47 AM9264 8K x 8 ROM
U166 NOT USED
U165 HM6116LP-4 2K x 8 RAM
U137 AM9232 4K x 8 ROM
U145 NOT USED
U146 AM9264 8K x 8 ROM
W1 8K 16K
W2 32K 64K
W3 8K 16K
W4 32K 64K
P4-36 PDNH
31B 11D WRITE
31B 11B XUART
11B XUART
11D MGO
12A A00-15
11A DBUS00-15
DBUS15 DBUS14 DBUS13 DBUS12 DBUS11 DBUS10 DBUS09 DBUS08 DBUS07 DBUS06 DBUS05 DBUS04 DBUS03 DBUS02 DBUS01 DBUS00
DBUS03S DBUS02S DBUS01S DBUS00S
U134
Series 39/40/42/44/48
PCA-CMP
SCHEMATIC DWG
30090A
30090-60006
C-30090-60006-52
HEWLETT PACKARD
SHEET 1 OF 1


REF. DWGS:
D-1 ASSY.; A 50 DATE CODE INFO.
C 51, C 52, C-54, C-55, C-56 SYSTEM.
C-2, MODIFICATION
C-30090-60006-53
REVISIONS
A AS ISSUED
B REVISED PER DOC. CHANGE
C REV'D PER DOC. CHG.
D ADDED MISSING COMPONENT LABELING
PER PCO DS-1081
D BUS B-15
PDON
SPARE REC
SPARE XMT
TXON
WRITE
A15
A14
UART INT
AUART
CUART
ADCC ∅ DIS
ACK MODE
REMON
CTS
CD
CLKOUT
CONSOLE UART
2661-1
U97
U117
U123
LS157
U132
U24
LS74
REC DATA
XMT DATA
DTR
RTS
RATE SEL
CTS
DSR
CARR DET
GND
J3-10
J3-22
J3-5
J3-40
J3-30
J3-26
J3-24
J3-32
J3-45
J3-43
J3-42
J3-15,17,19,21,23,25,27,28,29,35,37,39
J3-20
J3-8
J3-38
J3-7
J3-11
J3-9
J3-41
J3-34
J3-36
J3-46
+5V
1K
(SOFT +5)
CONSOLE
ADCC 1/REMOTE CONSOLE
ADCC 1
PCA-CMP
SCHEMATIC DWG
30090A
30090-60006
C-30090-60006-53
HEWLETT PACKARD
Series 39/40/42/44/48


REF DWGS: D-1 ASSY, A-52 LATE CODE, C-51, C-52, C-53, C-55, C-56 SCHEM, C-2, MODIFICATION
ENGINEERING RESPONSIBILITY
SEPIA
SYM
REVISIONS
APPROVED
DATE
A As ISSUED
B REV'D PER DOC CMS
C "µFRZ" WAS "GO" PER PCO DS-1081
C-30090-60006-54
LS 273 U73
LS 273 U55
LS 273 U103
LS 240 U84
LS 240 U92
U53 LS138
WR7
PPON
IO ØØ-15
WR3
FPLON
FPSHIFT
FPLOAD
P2-37
P3-6
P4-11
CR1
PFW
RDEN
CMPEN
CMPPER
DISTO
TIMDIS
J2-37
J2-38
J2-35
J2-34
MICROHALT
STOPEN
ROM BPE
ABPEN
REMON
ADCC@DIS
ACKMODE
TXON
SPAREXMT
RD7
ABP
ROMBP
TIME
FPSTAT
STOPON
PER
P4-6
SC
µFRZ
RUN
SPAREREC
CD
CTS
DSR
P2-42
P4-34
MCLKPRE
BPCLR
PERCLR
WR6
T1
TIMICLR
LS 74 U157
P4-30
MQ
P4-40
U167 See Note ↓ S240
GND
SOFT +5
PE 21217 100 ns U26
PE 21217 60 ns U16
R2 133 OHM
P2-41 CPUA
MCLK
ADO
ROMBPC
ABPC
STOP
J2-32
DU101 S74
S38 U82
SCON
J2-30
U46 S74
U36 LS00
U44 LS 08
U93 S05
Note: Ground unused 'A' inputs on S240. (PINS 4,6,8,11,13,15)
* Items marked must be near the connector - Keep traces short
ITEM
QTY.
MATERIAL-DESCRIPTION
MAT'L-PART NO.
MAT'L-DWG. NO.
MAT'L-SPEC.
PCA-CMP
TITLE SCHEMATIC DWG
HEWLETT PACKARD
PERM. PRINT
NEXT ASSEMBLY 30090A
PART NUMBER 30090-60006
FINISH —
SCALE —
C-30090-60006-54
SHEET 1 OF 1
STOCK NO 9280-0003 PRINTED ON DIEPO NO 1020-10 CLEARPRINT FADEOUT

REF. DWGS: D-1 (ASSY; A-5) DATA (SEE INFO).
C-51 THRU C-55, I/O SCHEM.
C-2, MODIFICATION





J1-1, 7, 13, 19, 25, 31, 37, 43, 50

J2-1, 7, 13, 19, 25, 31, 41, 47

Keep traces from J1 + J2 short

Series 39/40/42/44/48

ENGINEERING RESPONSIBILITY	SEPIA
0 1 2 3 4 8 8 8 9 11 12 14 15	
16 17 19 21 22 23 28 29 30 32 33 38 43	
46 48 51 53 55	

C-30090-60006-55

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	[illegible] RP	8/13/80
B	ADDED MISC. LABELING PER PCODS-1081	LSB/RP	6-20-89 M

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

PCA-CMP
TITLE SCHEMATIC DWG
NEXT ASSEMBLY 30090A
FINISH — SCALE —

HEWLETT-PACKARD
PERM. PRINT
PART NUMBER 30090-60006
C-30090-60006-55
SHEET 1 OF 1

STOCK NO. 5959-0003 PRINTED ON DIEPO NO 1030-10 CLEARPRINT FADEOUT

REF. DWGS: D-1 ASSEMBLY-SIO LATE MODE INFO.
D-51 THRU D-55 SCHEM.
D-2 MODIFICATION

ENGINEERING RESPONSIBILITY																SEPIA
0	1	2	3	4		6		8	9		11	12	14	16		
10	17		18		21	22	23	26	29	30	32	33	38	43		
45	46	61	63	4?				50				01				

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	05/80	9/12/80

C-30090-60006-56

Keep traces to J1 & J2 short

Series 39/40/42/44/48

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

PCA-CMP
TITLE SCHEMATIC DWG
30090A
NEXT ASSEMBLY
FINISH — SCALE —

HEWLETT PACKARD
PERM. PRINT
30090-60006
PART NUMBER
C-30090-60006-56
SHEET 1 OF 1

STOCK NO. 5380-0003 PRINTED ON DIEPO NO. 1020-10 CLEARPRINT FADEOUT

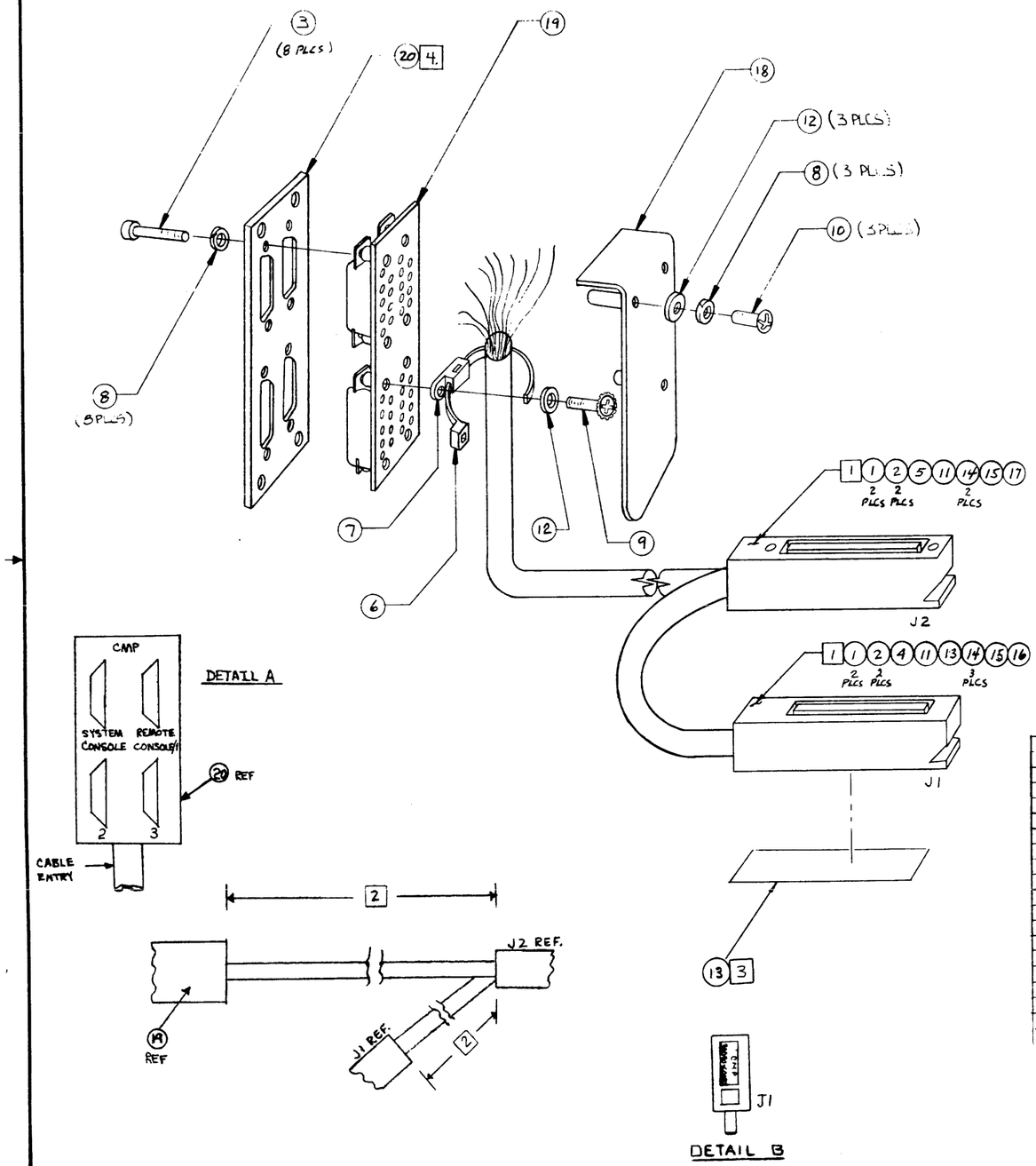
REF. DWG:
D-2 WIRING

ENGINEERING RESPONSIBILITY														
0	1	2	3	4		6		8	9		11	12	14	15
16	17		19		21	22	23	25	29	30	32	33	38	43
45	46	61	63	47										

SEPIA

C-30090-60030-1

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	[illegible]	8-9-85
B	REVISED PER PCO 42-3173	SB/[illegible]	12-11-90
C	ITEM 3 PN 1251-7205 WAS 1251-1198. PER P.O. 42-3231	BH/JGA	3-16-91



NOTES:

1. ASSEMBLE J1 & J2 HOODS PER REF DWG D-5955-1752-1.
2. FINISHED CABLE LENGTHS:
   J1 TO J2 8.5 ± .5 INCHES.
   J2 TO PCA EDGE 42.5 ± 2 INCHES.
3. INSTALL ITEM (13) PER DETAIL B.
4. INSTALL ITEM (20) PER DETAIL A

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.
20	1	PLATE - CMP MTG	30090-00039		
19	—	PCA - ADCC MODEM	REF	30021-60002	C-2
18	1	PLATE - ADCC SHRD	30021-00001		
17	1	HOOD - CONN SING	5040-7265		
16	1	HOOD - CONN SING	5040-6062		
15	2	END - CABLE CLAMP	5090-6061		
14	5	CLAMP	5040-6055		
13	1	LABEL - CMP/ADCC	7121-1069		
12	4	WASH - FLT #4	3050-0222		
11	2	SCR - SET 6-32 X .5	3030-0143		
10	3	SCR - PH 4-40 X 1.12	2200-0504		
9	1	SCR - PH 4-40 X .31	2200-0185		
8	11	WASH - LK #4	2190-0078		
7	1	MOUNT - CBL TIE	1400-0786		
6	1	CBL TIE	1400-0493		
5	—	CONN - PC 2 X 28 J2	REF	1251-4902	C-2
4	—	CONN - PC 2 X 25 J1	REF	1251-3106	C-2
3	8	JACKSCR/POST	1251-7205		
2	4	SCR - TAP 4-40 X .38	0624-0203		
1	4	SCR - TAP 4-40 X .44	0624-0098		

CA-CMP/ADCC ASSEMBLY DWG
TITLE

30090-60001
NEXT ASSEMBLY

FINISH —

SCALE NONE

HEWLETT PACKARD
PERM. PRINT

30090-60030
PART NUMBER

C-30090-60030-1

SHEET 1 OF 1

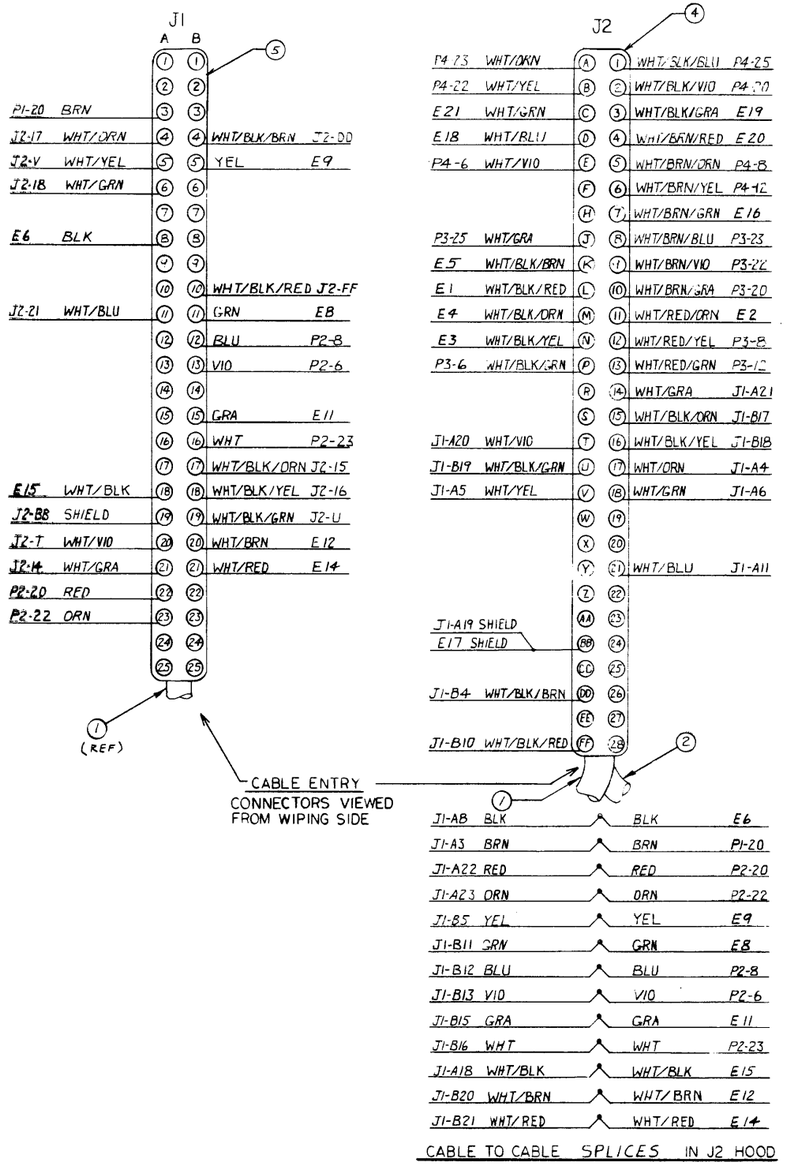
Series 39/40/42/44/48

STOCK NO 5956-0003 PRINTED ON DIEPO NO 1030-10 CLEARPRINT FADEOUT

REF DWG:
C-1 ASSEMBLY

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	BE/EW	2-4-80
B	REVISED PER PCO 47-3175	SBC/PW	12-8-80
C	REVISED PER PCO 47-3226	LB/SF	1-12-81

D-30090-60030-2



NOTES:

1. ONE END OF ITEM (1) SHOULD BE STRIPPED AS FOLLOWS: STRIP OUTER INSULATION 3 ½ INCHES. CUT THE SHIELD 3/4 INCH FROM THE OUTER INSULATION AND STRIP EACH WIRE 3/16 INCH. THE OTHER END SHOULD BE STRIPPED AS FOLLOWS: STRIP OUTER INSULATION 4½ INCHES CUT THE SHIELD ¾ INCH FROM OUTER INSULATION & STRIP EACH WIRE ¾.
2. ONE END OF ITEM (2) SHOULD HAVE THE OUTER INSULATION STRIPPED 4 ½ INCHES. THE BRAID SHOULD BE CUT ¾ INCH FROM THE OUTER INSULATION. EACH WIRE SHOULD BE STRIPPED 3/16 INCH. THE OTHER END SHOULD BE STRIPPED AS FOLLOWS: STRIP THE OUTER INSULATION 3 ½ INCHES. CUT THE SHIELD 3/4 INCH FROM THE OUTER INSULATION AND STRIP EACH WIRE 3/16 INCH.
3. AT EACH END OF CABLE 3, UNWRAP THE SHIELD AND SOLDER 3 ½ INCHES OF ITEM (3) TO THE SHIELD. COVER THE CONNECTIONS WITH 1 INCH OF ITEM (7). COVER THE CABLE TO OVERLAP 1.25 IN OF ITEM (10) AT THE PC BOARD END OF ITEM (2).
4. AT THE SHORTER STRIPPED END OF ITEM (2), ITEM (9) SHOULD BE INSTALLED ON THE WIRES TO P1 THRU P4 ONLY.
5. CONNECT THE CABLES TO J1 AND J2 AS SHOWN. J2 SHOULD CONNECT TO ITEM (2) AT THE END OPPOSITE THE CRIMPED PINS.
6. MAKE THE CABLE-TO-CABLE SPLICES AT J2 AS SHOWN IN DETAIL A AND COVER EACH CONNECTION WITH .6 INCH OF ITEM (5).
7. ATTACH ITEM (2) TO THE PRINTED CIRCUIT ASSEMBLY, AS SHOWN ON DWG C-30090-60030-1, TO HOLD THE CABLE IN PLACE WHILE WIRING. DO NOT PROCEED WITH THE REMAINDER OF THAT ASSEMBLY AT THIS TIME. SOLDER THE WIRES TO THE PC BOARD AND INSERT THE PINS INTO P1 THRU P4 AS SHOWN.
8. COVER THE ENDS OF THE WHT/RED/BLU, WHT/RED/VIO AND WHT/RED/GRA WIRES WITH ONE 1 INCH PIECE OF ITEM (7) AT EACH END OF ITEM (2).
9. SEE C-1 FOR ASSEMBLY.
10. COVER EVERY CONNECTION OF J1 AND J2 WITH SHRINK TUBING ITEM (11).

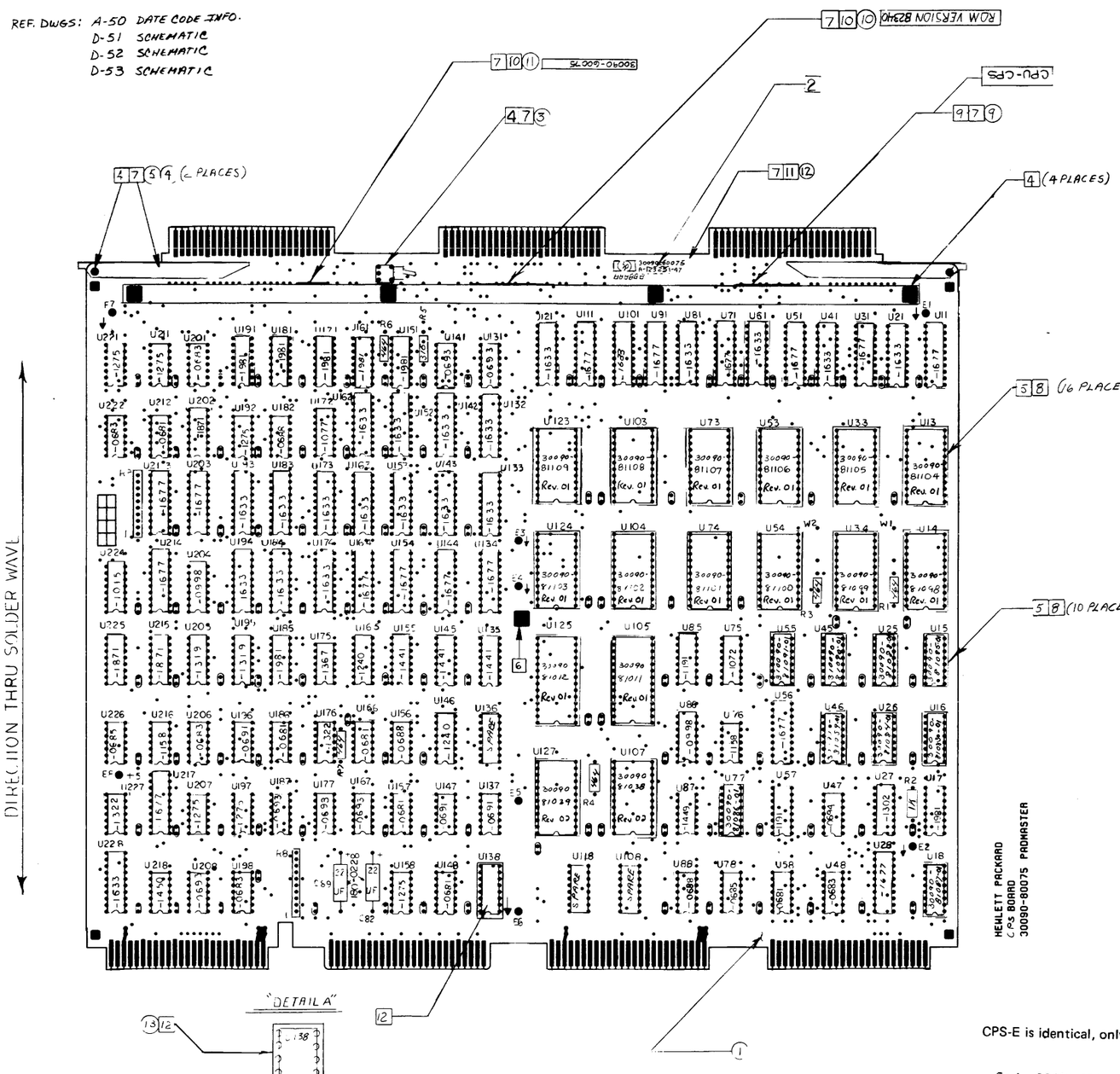
ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.
11	3 FT	SHRINK TUBING	0890-1372		
10	1.25 IN	SHRINK TUBING .5 IN DIA.	0890-0878		
9	20	CONT CONN F "D"	1251-5781		
8	8 IN	SHRINK TUBING .062 IN DIA	0890-0132		
7	6 IN	SHRINK TUBING .125 IN DIA	0890-0811		
6	1	PCA-ADCC MODEM	30021-60002		
5	1	CONN PC 50 PIN	1251-3106		
4	1	CONN PC 56 PIN	1251-1702		
3	15 IN	WIRE #24 BLACK	8150-0447		
2	3.5 M	CABLE 40 COND	8120-5040		
1	10.5 M	CABLE 24 COND	8120-2126		

Series 39/40/42/44/48

CA-CMP/ADCC
TITLE WIRING DWG
NEXT ASSEMBLY 30090-60001
FINISH — SCALE —

HEWLETT-PACKARD
PERM. PRINT
30090-60030
PART NUMBER
D-30090-60030-2
SHEET 1 OF 1

REF. DWGS: A-50 DATE CODE INFO.
D-51 SCHEMATIC
D-52 SCHEMATIC
D-53 SCHEMATIC



1 UNLESS OTHERWISE SPECIFIED:
ALL IC'S ARE 1820-
ALL RESISTANCE IN OHMS
ALL CAPACITANCE IN MICROFARDS
ALL CAPACITORS ARE .01

2 MARK DATE CODE.

4 MASK AS INDICATED PRIOR TO LOADING.

5 LOAD SOCKETS (XU-) AS INDICATED.

6 USE SUPPORT FIXTURE DURING WAVE SOLDER.

7 INSTALL ITEMS (3) THRU (7) AND (9) THRU (14) IN TOUCH UP

8 LOAD IC'S THAT ARE USED IN SOCKETS IN TOUCH UP

9 INSTALL ITEM (9) PER DWG NO. B-5951-4413-1 USING TOOL # 64226

10 INSTALL ITEMS (3), (10) & (11) AS INDICATED

11 INSTALL ITEM (2) NEAR H.P. LOGO

12 BUILD "DETAIL A" FOR U138. INSTALL ITEMS (14) BETWEEN PINS 1 & 16 AND 3 & 14. CLIP LEADS TO LENGTH AS INDICATED.

HEWLETT PACKARD
CPS BOARD
30090-80075 PROMASTER

CPS-E is identical, only the Firmware is different

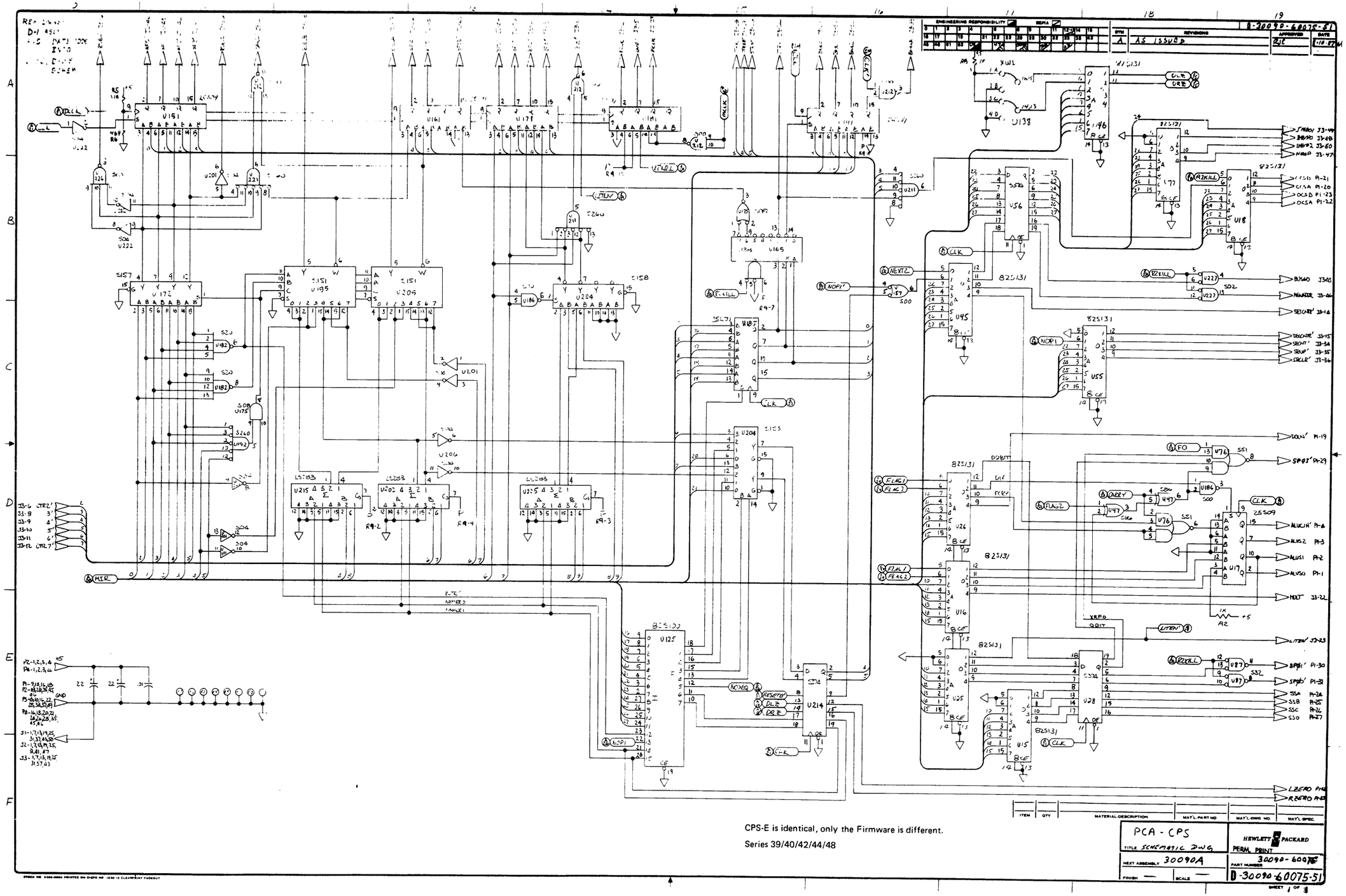
Series 39/40/42/44/48

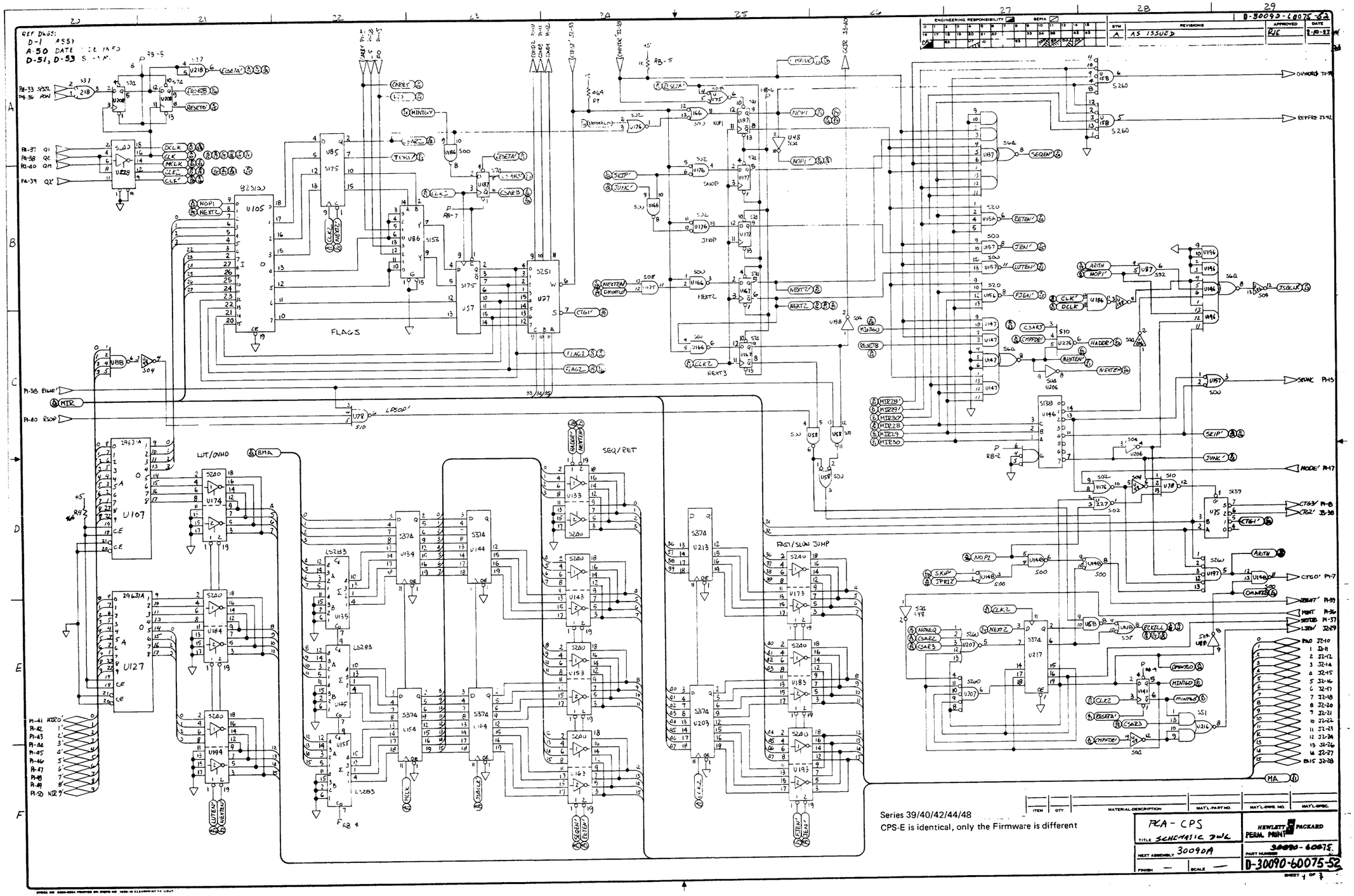
ITEM	QTY	MATERIAL DESCRIPTION	MATL PART NO	MATL DWG NO	MATL SPEC
14	2	JUMPER W3 W4	8159-0005		
13	1	HDR 16 PIN DIP	1251-0515		
12	1	LABEL-WARR DATE CD	7120-6839		
11	1	LABEL-BLANK (SER NO)	3320-5105		
10	1	LABEL-ROM VERSION	7120-7635		
9	1	LABEL - CPU CPS	30090-80203		
8					
7	1	BRACE - PC BOARD	5040-6058		
6	4	SCREW 4-40 X 3/2 LONG	0624-0077		
5	2	EXTRACTOR	5040-5009		
4	2	PIN	1480-0115		
3	1	SWITCH	3101-2537		
2	8	TERMINAL E1-E8	0360-0299		
1	1	PCB - CPS	30090-60075		

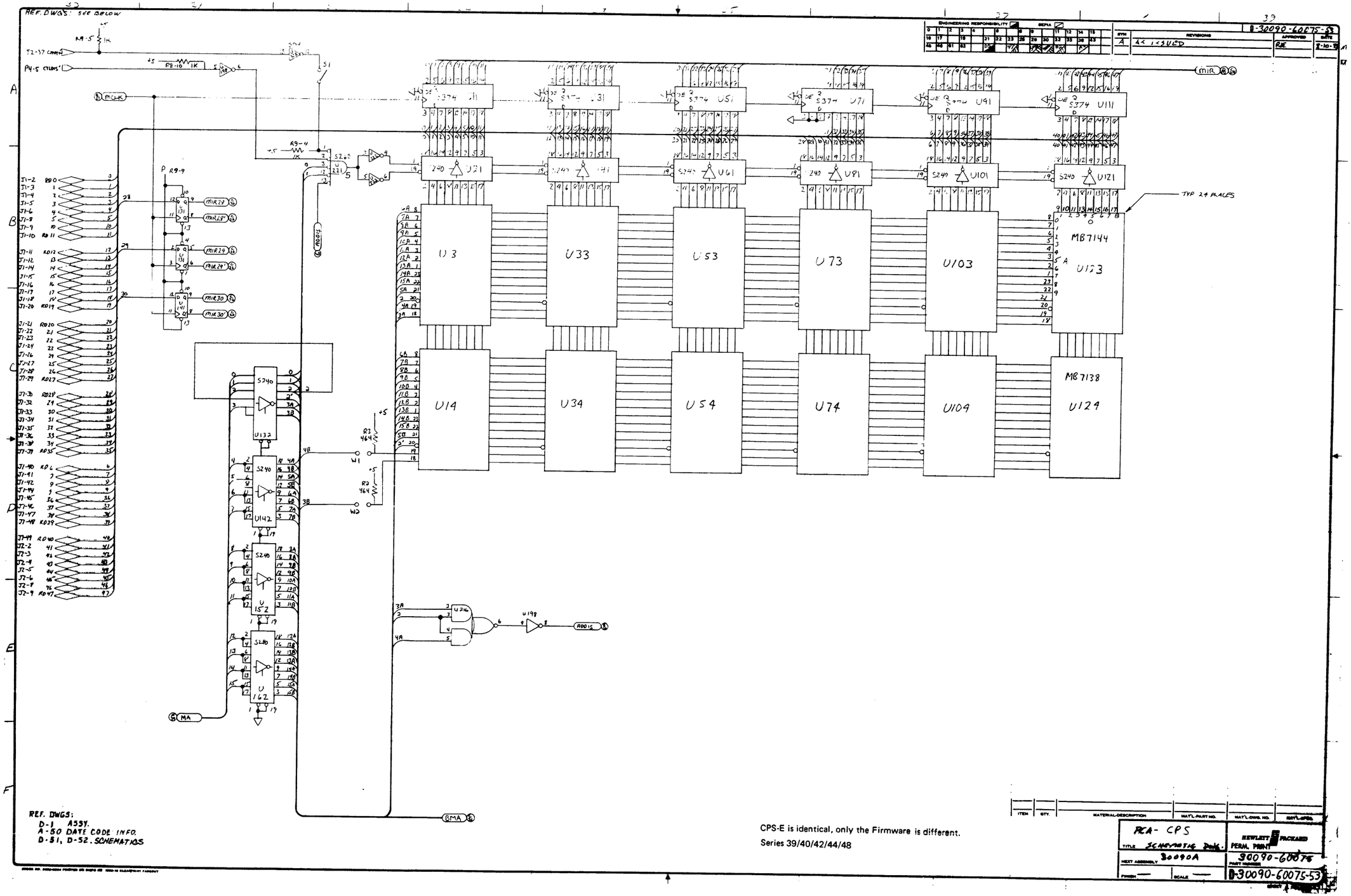
PCA - CPS ASSEMBLY DWG.
TITLE
300902, 30170B
NEXT ASSEMBLY
FINISH
SCALE 1-1
HEWLETT PACKARD
30090-60075
PART NUMBER
D-30090-60075-1
SHEET 1 OF 1

D-30090-60075-1

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	TKE	8-10-83
B	ROM VERSION WAS B2323; D5-1044	[illegible]	11-1-83
C	REVISED PER PCD5-1061	[illegible]	2-7-84


D-30090-60075-51
A AS ISSUED
CPS-E is identical, only the Firmware is different.
Series 39/40/42/44/48
PCA - CPS
SCHEMATIC DWG
HEWLETT PACKARD
PERM. PRINT
30090A
30090-60075
D-30090-60075-51


REF DWGS:
D-1 ASSY
A-50 DATE CODE INFO
D-51, D-53 SCHEM.
D-30093-60075-52
REVISIONS
A AS ISSUED
APPROVED RJE
DATE 8-10-83
ENGINEERING RESPONSIBILITY
SEMA
FLAGS
SEQ/PET
LUT/OVHD
FAST/SLOW JUMP
LPSOP'
Series 39/40/42/44/48
CPS-E is identical, only the Firmware is different
PCA - CPS
TITLE SCHEMATIC DWG
NEXT ASSEMBLY 30090A
HEWLETT PACKARD
PERM. PRINT
30090-60075
PART NUMBER D-30090-60075-52
SHEET 1 OF 3



REF. DWGS:
D-1 A537.
A-50 DATE CODE INFO.
D-51, D-52. SCHEMATICS

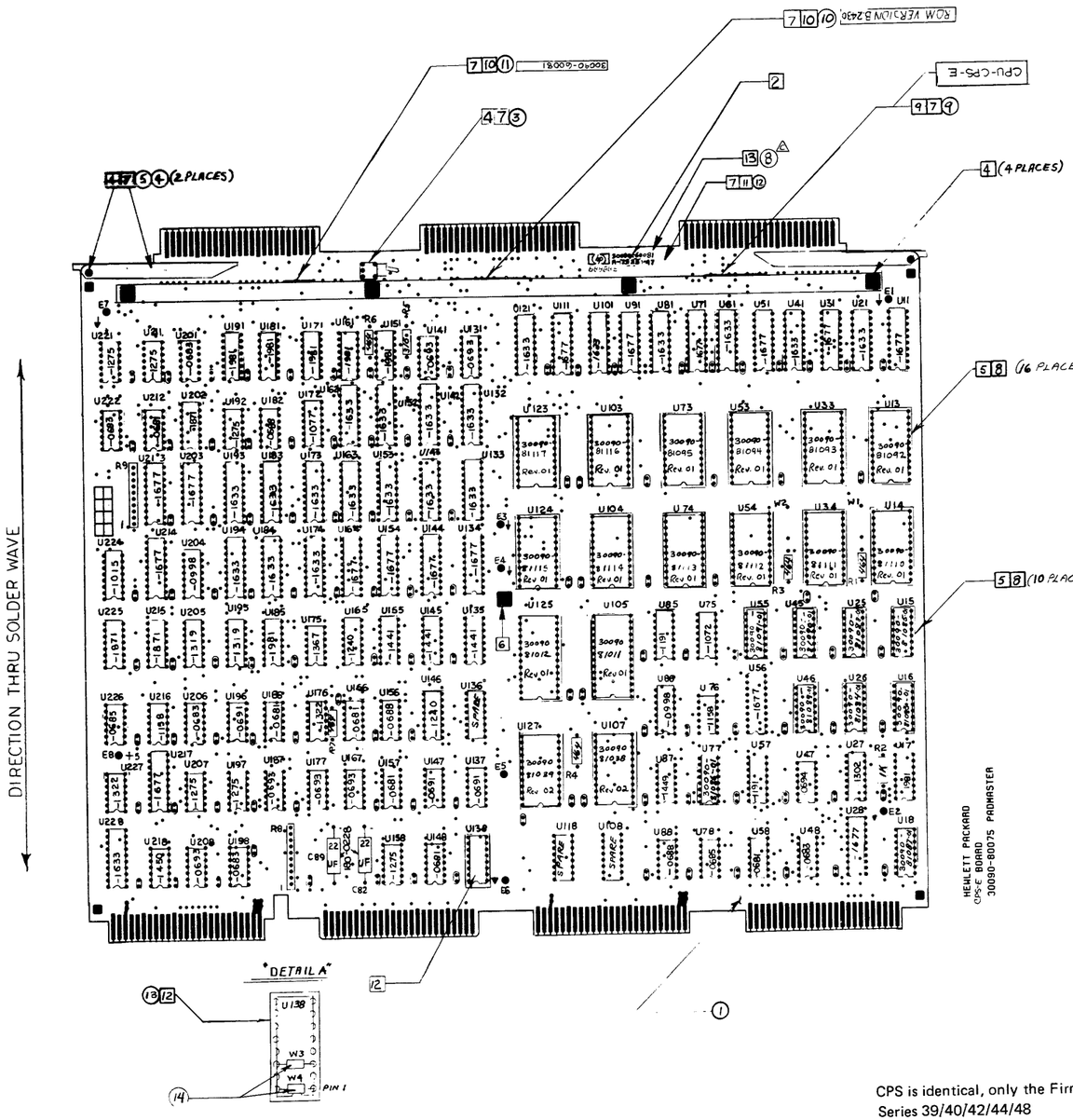
CPS-E is identical, only the Firmware is different.
Series 39/40/42/44/48

PER DWGS: A-50 DATE CODE INFO.
D-30090-60075-51 SCHEMATIC
D-30090-60075-52 "
D-30090-60075-53 "

ENGINEERING RESPONSIBILITY																			
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15				
16	17	18	19	20	21	22	23			30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47			50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67			70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87			90	91	92	93	94	95	96	97	98	99

D-30090-60081-1

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	RJE	12-15-83
B	MODIFIED NOTE 11 AND ADDED NOTE 13; PER PCOS-1061	LB	4-7-89
C	ADDED ITEM 8, REVISED NOTE 13; DOC CHG.	PS	4-9-91
D	CHANGED MPE VE PROMS; PER PCO 05-1101	PS	7-2-91



1 UNLESS OTHERWISE SPECIFIED:
ALL IC'S ARE 1820-
ALL RESISTANCE IN OHMS
ALL CAPACITANCE IN MICROFARDS
ALL CAPACITORS ARE .01

2 MARK DATE CODE.

4 MASK AS INDICATED PRIOR TO LOADING.

5 LOAD SOCKETS (XU-) AS INDICATED.

6 USE SUPPORT FIXTURE DURING WAVE SOLDER.

7 INSTALL ITEMS (3) THRU (7) AND (9) THRU (14) IN TOUCH UP

8 LOAD IC'S THAT ARE USED IN SOCKETS IN TOUCH UP

9 INSTALL ITEM (9) PER DWG NO. B-5951-4413-1 USING TOOL #64226

10 INSTALL ITEMS (9), (10) & (11) AS INDICATED

11 INSTALL ITEM (12) NEAR H.P. LOGO

12 BUILD "DETAIL A" FOR U138. INSTALL ITEMS (14) BETWEEN PINS 1 & 16 AND 3 & 14. CLIP LEADS TO LENGTH AS INDICATED.

△ 13 PLACE ITEM (8) OVER SUFFIX OF PART-NUMBER, CHANGING IT TO "-60081".

CPS is identical, only the Firmware is different
Series 39/40/42/44/48

ITEM	QTY	MATERIAL DESCRIPTION	MATL PART NO	MATL DWG NO	MATL SPEC
14	2	JUMPER W3 W4	8159-0005		
13	1	HDR 16 PIN DIP	1251-0849		
12	1	LABEL-WARR DATE CD	7120-6830		
11	1	LABEL-BLANK (SER NO)	9320-5105		
10	1	LABEL-ROM VERSION	7120-7635		
9	1	LABEL - CPU CPS-E	30090-80205		
△ 8	1	LABEL - .31 X .12	9320-5320		
7	1	BRACE - PC BOARD	5040-6058		
6	4	SCREW 4X40 - 3/2 LONG	0624-0077		
5	2	EXTRACTOR	5040-6009		
4	2	PIN	1480-0116		
3	1	SWITCH	3101-2587		
2	8	TERMINAL E1-E8	0360-0294		
1	1	PCB - CPS	30090-80075		

TITLE: PCA - CPS-E ASSEMBLY DWG.
NEXT ASSEMBLY: 30090C, 30170B
FINISH | SCALE 1-1
HEWLETT PACKARD
PART NUMBER: 30090-60081
D-30090-60081-1
SHEET 1 OF 1

8-15-89 RJE for TV

REF DWG: D-51 SCHEMATIC
A-70 PCS-70
A-71 TEST PROG.

G	[illegible]	[illegible]	[illegible]
H	ADDED NOTE 11 PER PCO05-1026	LB	3-1-84
J	REVISED PER PCO 05-1039	LB	3-15-84
K	REVISED PER PCO5-1041	LB	3-19-84

256K MOD

S1 3100-1646

1K R1

SILKSCREEN COMPONENT SIDE

NOTES:

1. UNLESS OTHERWISE SPECIFIED
   ALL RESISTANCE IN OHMS
   ALL RESISTORS ¼ W, 1%
   ALL CAPACITORS IN MICROFARADS
   ALL CAPACITORS .1 UF
   ALL IC'S ARE-1818-1397

2. INSPECT RAW BOARD FOR ET 85 TEST STAMP
3. MARK DATE CODE (ASSY NO: "30092-60001"
4. MASK AS INDICATED BEFORE LOADING
5. LOAD SOCKETS AS INDICATED (156 PLCS)
   LOAD IC'S IN TOUCHUP. USE GROUND STRAP WHEN LOADING IC'S.
6. BEFORE WAVE SOLDER, CONFIRM OPEN CIRCUITS BETWEEN P2-21 AND GRND, P2-1 AND GRND, P2-34 AND GRND P2-20 AND GRND. CONFIRM OHMS BEFORE LOADING THE 1818-1397'S
7. USE SUPPORT FIXTURE DURING WAVE SOLDER.
8. INSTALL ITEM (8) PER DWG. NO. B-5951-4413-1.
   INSTALL ITEM (5) PRIOR TO ITEM (9)
   INSTALL ITEM (9) SO THAT SERIAL #19 LOCATED BETWEEN (A) AND CONNECTOR J2.
9. INSTALL ITEM (2) THRU (8) & IC'S 1818-1397 IN TOUCHUP.
10. INSTALL ITEM (9) PRIOR TO STOCK FLOWING.
11. MAKE SURE THAT ALL 1818-1397'S INSTALLED IN LOCATIONS MARKED WITH A SLASH ARE FROM THE SAME VENDOR.
    VENDOR SYMBOLS: E ... FUJITSU, NEC ... NEC, ... ADVANCED MICRO DEVICES, ... TEXAS INSTRUMENTS

ITEM	QTY	PART NAME	PART NUMBER
10	1	WARRANTY LABEL	7120-6830
9	1	LABEL - BLANK (SERIAL #)	7120-3766
8	1	LABEL	7181-0868
7			
6	4	BRACE, P.C. BD	5040-6078
5	4	SCRW, 4-40 .38 LG.	[illegible]
4	1	SWITCH, THUMBWHEEL	[illegible]
3	2	ATTACHOR	[illegible]
2	1	[illegible]	[illegible]
1	1	[illegible]	[illegible]

MEMORY BOARD ASSEMBLY
2A
30092-60001
E-30092-60001-1

Series 39/40/42/44/48

REF DWG: F-1, ASSY DWG

ENGINEERING RESPONSIBILITY	SIZE
Q 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 26 28 30 33 35 38 43 46 48 51 53 61 63	D

SYM	REVISIONS	DATE CODE	APPROVED	DATE
A	AS (SHEET)	3013	[illegible]	[illegible]
B	REVISED PER PCO 47-3087	4013	[illegible]	[illegible]
C	REVISED PER DOC. CHG.	2013	[illegible]	[illegible]

D-30092-60001-01

ADDR BUFFER

TO ARRAY

	PIN #	ROW #
MA0	7	0-1
MA1	7	2-3
MA2	6	0-1
MA3	6	2-3
MA4	5	0-1
MA5	5	2-3
MA6	10	0-1
MA7	10	2-3
	11	0-1
	11	2-3
	12	0-1
	12	2-3
	13	0-1
	13	2-3

DIAL	C6	C5	C4
0	1	0	0
1	1	0	1
2	1	1	0
3	1	1	1
4	0	0	0
5	0	0	1
6	0	1	0
7	0	1	1

SWITCH SHOWN IN 2Ø'S Ø POSITION

3100-1646

R/W BUFFER

	PIN #	ROW #
R/W Ø	3	Ø
	3	1
	3	2
	3	3
RAS Ø	4	Ø
RAS 1	4	1
RAS 2	4	2
RAS 3	4	3
CAS Ø	15	Ø
CAS 1	15	1
CAS 2	15	2
CAS 3	15	3

BOARD SELECT

ROW SELECT

RAS Ø-1 BUFFER

RAS 2-3 BUFFER

CAS BUFFER

DAV PULSE GENERATOR

DAV DELAY

GROUND: P1-2,4,6,8,10,12,15,18,21,25,29,33,37,41,45,49
P3-4,10,16,22,28,34,37,49
P4-18,20,22,24,26,28,35,45,46
J1-5,10,15,20,25,30,35,40,45,50

UNLESS OTHERWISE NOTED ALL ICs ARE 1820-XXXX-47

◈ INDICATES BATTERY POWER (+5B)

5081-2705
ALL RAMS IN ARRAY

ARRAY

ROW 3 / ROW 2 / ROW 1 / ROW 0

DIO BUFFER

Series 39/40/42/44/48

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L OWNER	MAT'L SPEC.

MEMORY ARRAY
256 KB MOD

30092A

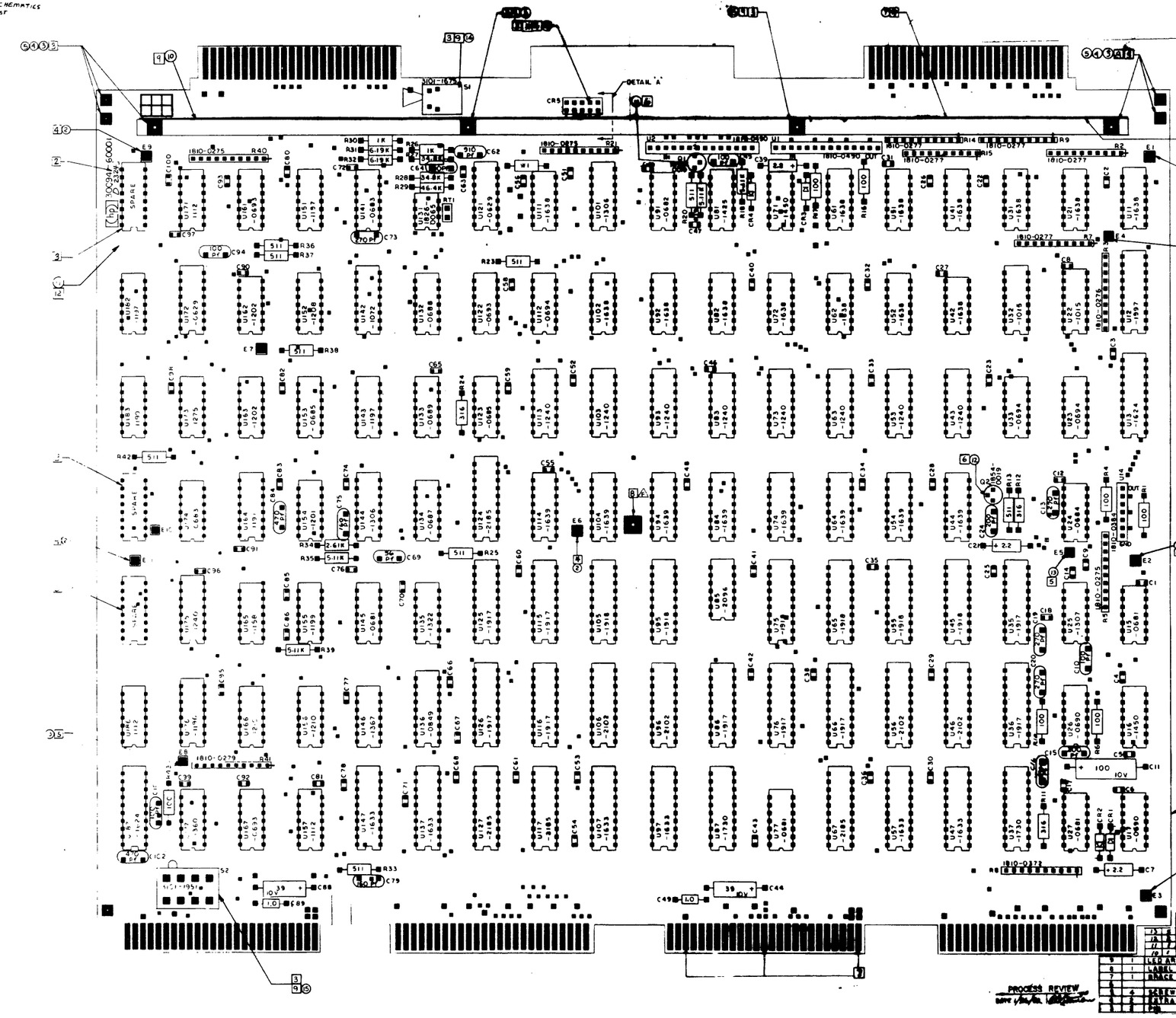
PERM. PRINT
HEWLETT PACKARD

PART NUMBER D-30092-60001-01

SHEET 1 OF 1

A-50, DATE CODE INFO
REF DWGS: D-51, D-52 SCHEMATICS
A-70, OPS-70 TEST

D	REVISED PER PCO 08-1959	
E	REVISED PER PCO 08-1061	
F	DELETED NOTE 6 REF IN CENTER OF DWG.; DOC CHG	



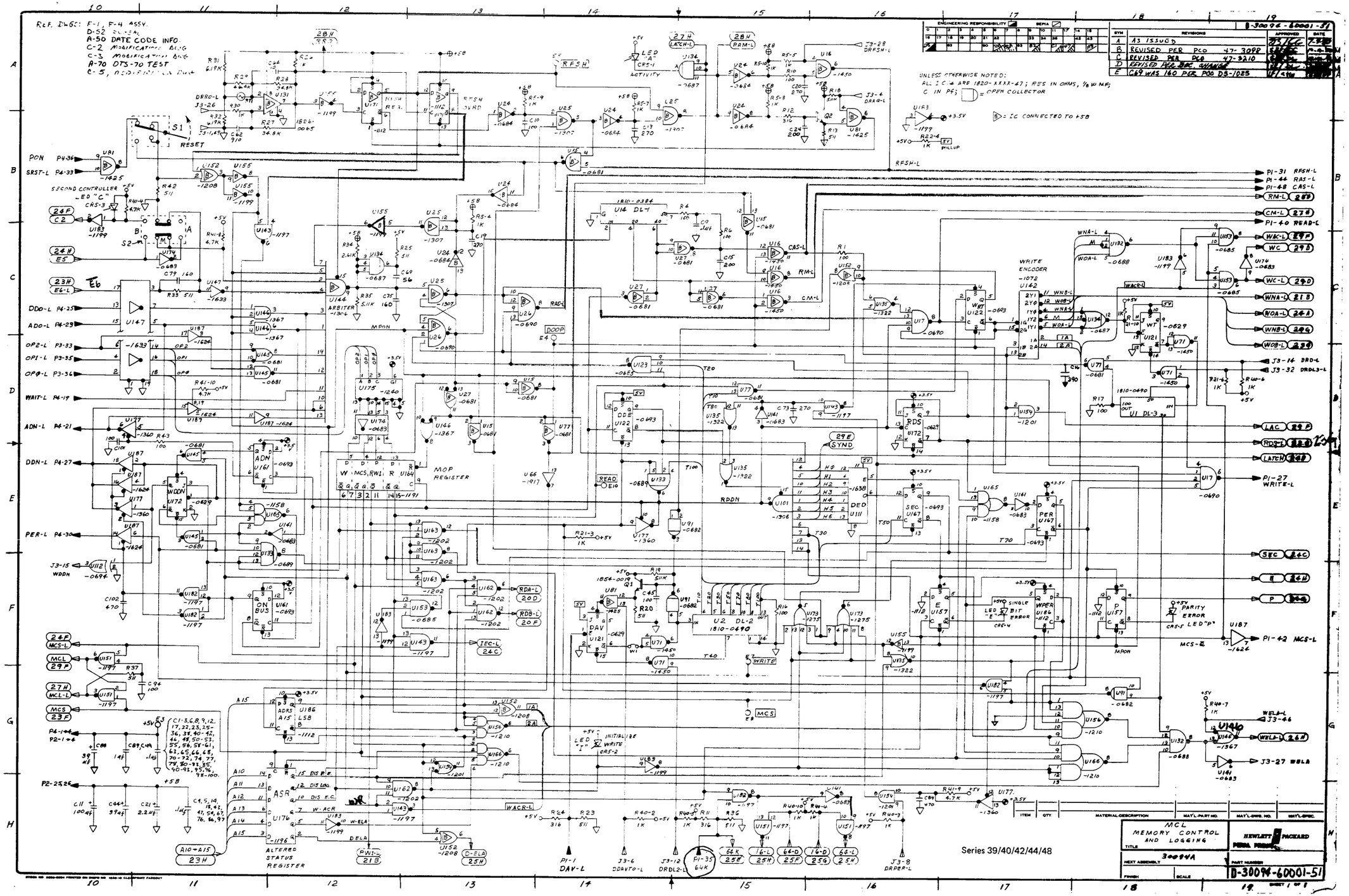
NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   ALL RESISTANCE IN OHMS
   ALL RESISTORS 1/8 W 1%
   ALL CAPACITORS IN MICROFARADS
   ALL CAPACITORS ARE .1UF
   ALL ICS ARE 74S
2. MARK DATE CODE & CHECK FOR ET OPS TEST STAMP BOARD.
3. MASK AS INDICATED PRIOR TO LOADING
4. INSTALL ITEM (2) 2 PLACES
5. INSTALL ITEM (13) 5 PLACES.
6. INSTALL Q1 AND Q2 USING ITEM (14)
7. BEFORE WAVE SOLDER, CONFIRM CONT. CIRCUITS BETWEEN P2-1, P2-25, AND P2-45.
8. USE SUPPORT FIXTURE DURING WAVE SOLDER
9. INSTALL ITEMS [illegible]
10. INSTALL ITEM (8) PRIOR TO INSTALLING ITEM [illegible]
11. INSTALL ITEM 9 PER DETAIL 'A' USE CRIMPING TOOL # T116700.
12. INSTALL ITEM 11 WARRANTY LABEL PRIOR TO STOCK FLOWING.
13. INSPECTION CRITERIA-HP STD SECT 4.4.0

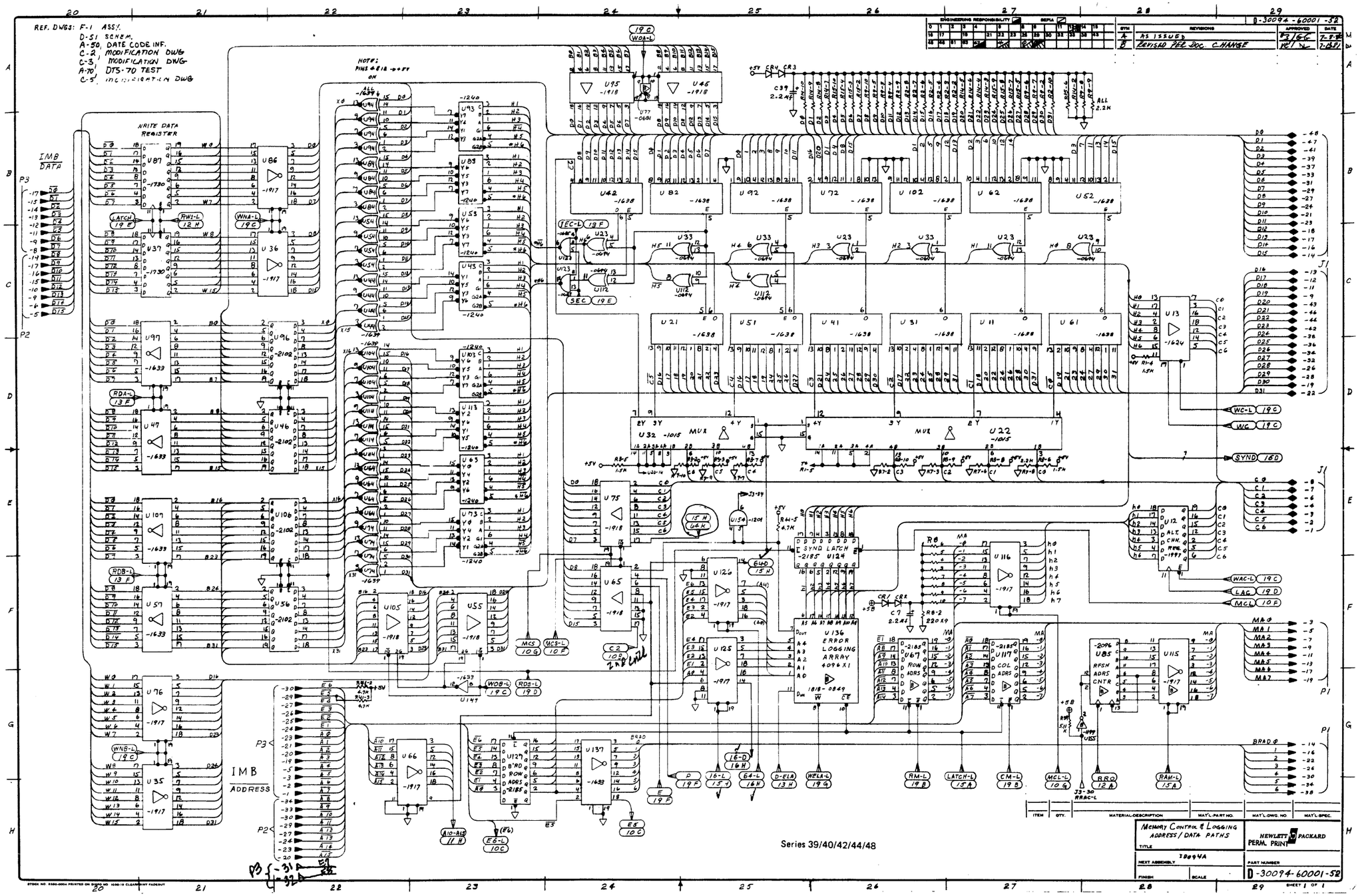
CATHODE END

DETAIL 'A'

ITEM	QTY	DESCRIPTION	PART NO.
1	1	SWITCH - 8 SIDE	3101 - 1951
2	1	SWITCH	3101 - 1675
3	8	[illegible]	[illegible]
4	8	[illegible]	[illegible]
5	1	[illegible]	0340 - 0221
6	1	[illegible]	7130 - 0284
7	1	[illegible]	7180 - 3766
8	1	LED ARRAY	1990 - 0523
9	1	LABEL	7121 - 0811
10	1	BLANK PC BOARD	30040 - 6038
11			
12	4	SCREW	0380 - 0097
13	5	EXTRACTOR	1480 - 0015
14	2	PIN	1480 - 0018

ASSEMBLY NO.
30094A
30094-60001
F-30094-60001-9


REF. DWGS: F-1, F-4 ASSY.
D-52 SCHEM.
A-50 DATE CODE INFO.
C-2 MODIFICATION BKLG
C-3 MODIFICATION BKLG
A-70 DTS-70 TEST
C-5, MODIFICATION BKLG
D-30096-60001-51
REVISIONS
A AS ISSUED
B REVISED PER PCO 47-3098
C REVISED PER PCO 47-3210
D REVISED PER ECC CHANGE
E C69 WAS 160 PER POO DS-1025
UNLESS OTHERWISE NOTED:
ALL I.C.'s ARE 1820-XXXX-47; RES IN OHMS, 1/8 W MF;
C IN PF; = OPEN COLLECTOR
= IC CONNECTED TO +5V
RESET
SECOND CONTROLLER "LED "C"
WRITE ENCODER U142
MOP REGISTER
ARBITER
ALTERED STATUS REGISTER
MEMORY CONTROL AND LOGGING
HEWLETT PACKARD
MEDICAL PRODUCTS
D-30096-60001-51
Series 39/40/42/44/48


REF. DWGS: F-1 ASSY.
D-51 SCHEM.
A-50, DATE CODE INF.
C-2, MODIFICATION DWG
C-3, MODIFICATION DWG-
A-70, DTS-70 TEST
C-5, INSTALLATION DWG
NOTE: PINS 4&18 → +5V ON
WRITE DATA REGISTER
IMB DATA
IMB ADDRESS
MEMORY CONTROL & LOGGING ADDRESS / DATA PATHS
HEWLETT PACKARD
PERM. PRINT
D-30094-60001-52
Series 39/40/42/44/48

REF DWGS: D-51 SCHEMATIC

REVISIONS			
		30161-60001	
A	25 ISSUED		7-16-81
B	ZENER DIA CHANGE	DC	7-29-82
C	ETCHED [illegible]	[illegible]	8-8-84
D	[illegible]	LF/KW	1-19-93
E	ADDED NOTE [10] PER DCC CHG	EM/SKW	2-3-93
F	REVISED PER PCO 05-1039	JB/BHF	9-15-94
G	REVISED PER PCO 05-1061	JB/BHF	2-9-95

NOTES:
1. UNLESS OTHERWISE SPECIFIED
   ALL RESISTANCE IN OHMS.
   ALL RESISTORS 1/8W, 1%
   ALL CAPACITANCE IN MICROFARADS.
   ALL CAPACITORS 10UF.
   ALL ICS ARE 1818-3005
2. INSPECT RAW BOARD FOR ELECTRICAL TEST STAMP
3. MARK DATE CODE & ASSY. NO. 30161-60001
4. MASK AS INDICATED PRIOR TO LOADING.
5. LOAD SOCKETS AS INDICATED (5V PLANES) DO NOT LOAD 1818-3005 (SEE NOTE 6).
6. BEFORE AND AFTER WAVE SOLDER CONFIRM OPEN CIRCUITS BETWEEN P2-1 AND E12 (GND), P2-21 & E12, P2-25 & E12, P2-31 & E12.
7. USE SUPPORT FIXTURES DURING WAVE SOLDER.
8. INSTALL ITEM (2) THRU (3) & 1818-3005'S IN TOUCH UP. (GROUNDING STRAP MUST BE USED WHEN HANDLING 1818-3005'S.
   INSTALL ITEM (8) PRIOR TO ITEM (3). INSTALL ITEM (9) SO THAT SERIAL NO IS LOCATED BETWEEN ITEM (4) AND CONNECTOR J2.
9. INSTALL ITEM (10) PRIOR TO STOCK FLOWING. (NEAR H.P. LOGO)
10. NOTE THAT THIS CAPACITOR IS AN EXCEPTION TO THE PATTERN SHOWN BY THE OTHER CAPACITORS AND SHOULD BE PLACED AS SHOWN.

10	1	WARRANTY LABEL	7120-6830	
9	1	LABEL-BLANK (SERIAL #)	7120-3766	
8	1	LABEL-MEM IMB MOD	7121-2432	
7				
6	1	BRACE, P.C. BOARD	5040-6058	
5	4	SCREW, 4-40 .312 LG.	0624-0077	
4	1	SWITCH, THUMBWHL	3100-1646	
3	2	EXTRACTOR	5040-6009	
2	2	PIN	1480-0116	
1	1	PCB-MEMORY ARRAY	30092-80004	

QTY	MATERIAL	PART OR IDENTIFYING NO.	NAME AND DESCRIPTION

M.MILLS

PCA MEMORY 1 MB MOD ASSY. DWG

30161 A

SIZE 2:1

HEWLETT PACKARD

30161-60001

F-30161-60001-1

Series 39/40/42/44/48

COMPONENT SIDE

REF. DWG.: F I A.SSY.

ENGINEERING RESPONSIBILITY	SEPIA
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	
16 17 18 21 22 23 25 26 28 30 32 34 36 38 42	
48 54 60 66 72	

ZONE	REVISIONS	DATE CODE	APPROVED	DATE
A	AS 1330-0	A-2120-17	[illegible]	7-2-81
B	U26 WAS U29 INCORRECT PART NO.		[illegible]	10-1-81

1-30161-60001-67

ARRAY

ROW 3 / ROW 2 / ROW 1 / ROW 0

Series 39/40/42/44/48

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L COMP. NO.	MAT'L SPEC.

PCA-MEMORY 1 MB

TITLE SCHEMATIC DWG

NEXT ASSEMBLY 30161A

FINISH — SCALE —

HEWLETT PACKARD

30161-60001

PART NUMBER 0-30161-60001-57

SHEET 1 OF 1

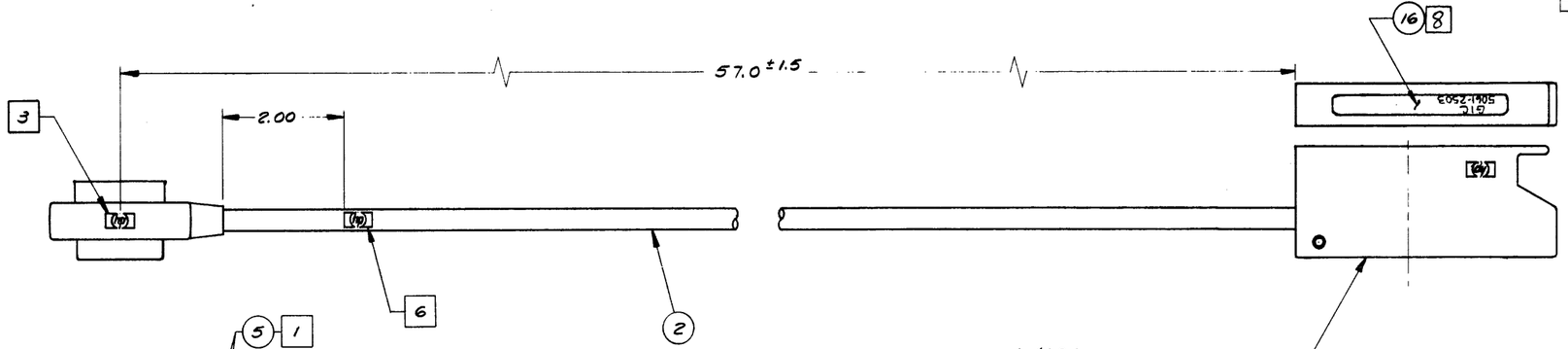
I/O BAY PCA SCHEMATICS AND ASSEMBLY DRAWINGS

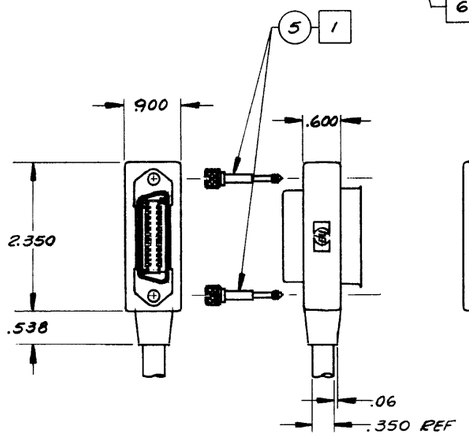
SECTION III

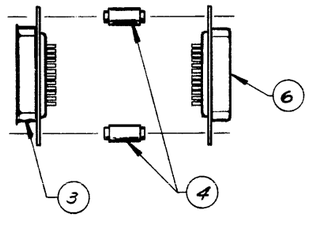
This section provides component location and schematic diagrams for the PCAs located in the I/O card cage of the System Processor Unit. Each diagram is labeled to indicate which HP 3000 system the PCA applies. The PCA diagrams appear in an ascending part number sequence. A listing of this sequence is shown below along with drawing titles, applicable systems, and page numbers.

SYM	REVISIONS	APPROVED	DATE
A	AS 133467		
B	ADD NOTE 8 PER DOC CHG.		10-11-78
C	REVISED ITEMS 4 + 14 PER ECO 47-35476		
D	REVISED PER DOC CHANGE		2-26-81
E	ITEM 10 MFG 5021-0704 47-5577		3-3-81

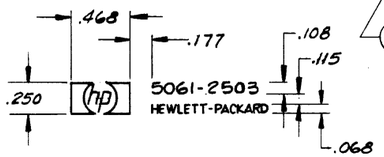
1-5061-2503-1







CONNECTOR ASSEMBLY DETAIL



MARKING DETAIL -NOTE 6 (2x)

P1

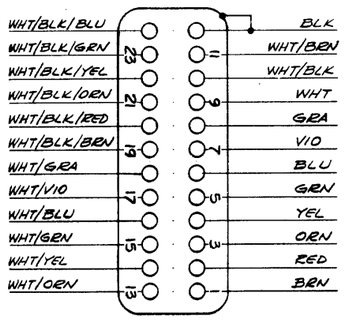
WHT/ORN	A	1	BRN
WHT/YEL	B	2	RED
WHT/GRN	C	3	ORN
WHT/BLU	D	4	YEL
WHT/VIO	E	5	GRN
WHT/GRA	F	6	BLU
WHT/BLK/BRN	H	7	VIO
WHT/BLK/RED	J	8	GRA
WHT/BLK/ORN	K	9	WHT
WHT/BLK/YEL	L	10	WHT/BLK
WHT/BLK/GRN	M	11	WHT/BRN
WHT/BLK/BLU	N	12	BLK
	P	13	
	R	14	
	S	15	

P1 CONNECTOR VIEWED FROM WIRING SIDE

2
7

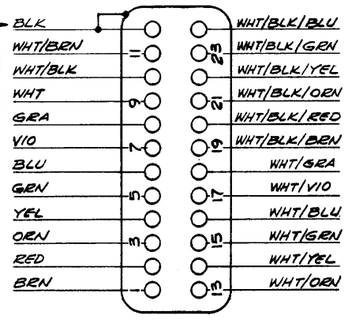
CABLE ENTRY

FEMALE CONNECTOR



CABLE ENTRY CONNECTOR VIEWED FROM WIRING SIDE.

MALE CONNECTOR



CABLE ENTRY CONNECTOR VIEWED FROM WIRING SIDE.

NOTES

1. PKG. ITEM (5) SEPARATELY & ATTACH TO FINISHED ASSY.
2. BLK. WIRE IS 22 AWG. CONNECTED TO PIN 12 OF BOTH FEMALE & MALE CONNECTOR.
3. STD. TYPE 3 -.250" HP LOGO. LOGO TO BE RAISED ON BOTH SIDES.
4. MFG DIV I.D. TO BE LOCATED HERE ONLY.
5. COSMETIC SPEC TO BE CATEGORY II, CLASS B PER HP CORP. MFG. STD. SECTION 741.
6. MARK HP SYMBOL & STOCK Nº ON EACH CABLE WITH JET BLACK MARKING INK. ALLOW TO AIR DRY 2 HOURS BEFORE HANDLING.
7. 22 AWG BLK. WIRE SOLDERED TO SPACER, ITEM (4) & WITH SHIELD DRAIN ON CABLE ENTRY END.
8. NOTE ORIENTATION OF LABEL

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG NO.	MAT'L-SPEC.
17	A/R	WIRE, BLK, 22 AWG	8150-0005		
16	1	LABEL	7120-7284		
15	2	SCREW, ¾-40×.25 FL.HD.	2200-0165		
14	1	SCREW, 4-40×.38 PN.HD.	2200-0115		
13	1	SCREW, SET	3030-0113		
12	1	SCREW, TAP	0624-0098		
11	3	CLAMP	5060-6055		
10	1	MOUNTING BLOCK	5040-7292		
9	1	CONNECTOR, 30 PIN	1251-0159		
8	1	HOOD	5040-7266		
7	A/R	ADHESIVE, HOT MELT	0470-0		
6	1	CONN., 24 PIN FEMALE	1251-3283		
5	2	SCREW, MTG, METRIC	3204-0703		
4	2	SPACER, RIVET-ON	5021-0701		
3	1	CONN., 24 PIN MALE	1251-3284		
2	6.0FT	CABLE	8120-1887		
1	A/R	MOLDING COMPOUND	5		

TITLE: CABLE ASSY.- 6K to 1 PIB MTH. PANEL		HEWLETT PACKARD
MFG NO. 30079A	30079A	PART NO. 5061-2503
FINISH —	SCALE NONE	D-5061-2503-1

SHEET 1 OF 1

STOCK NO. 5380-0004 PRINTED ON DISPO NO. 1020-10 CLEARPRINT FADEOUT

Series 44/48

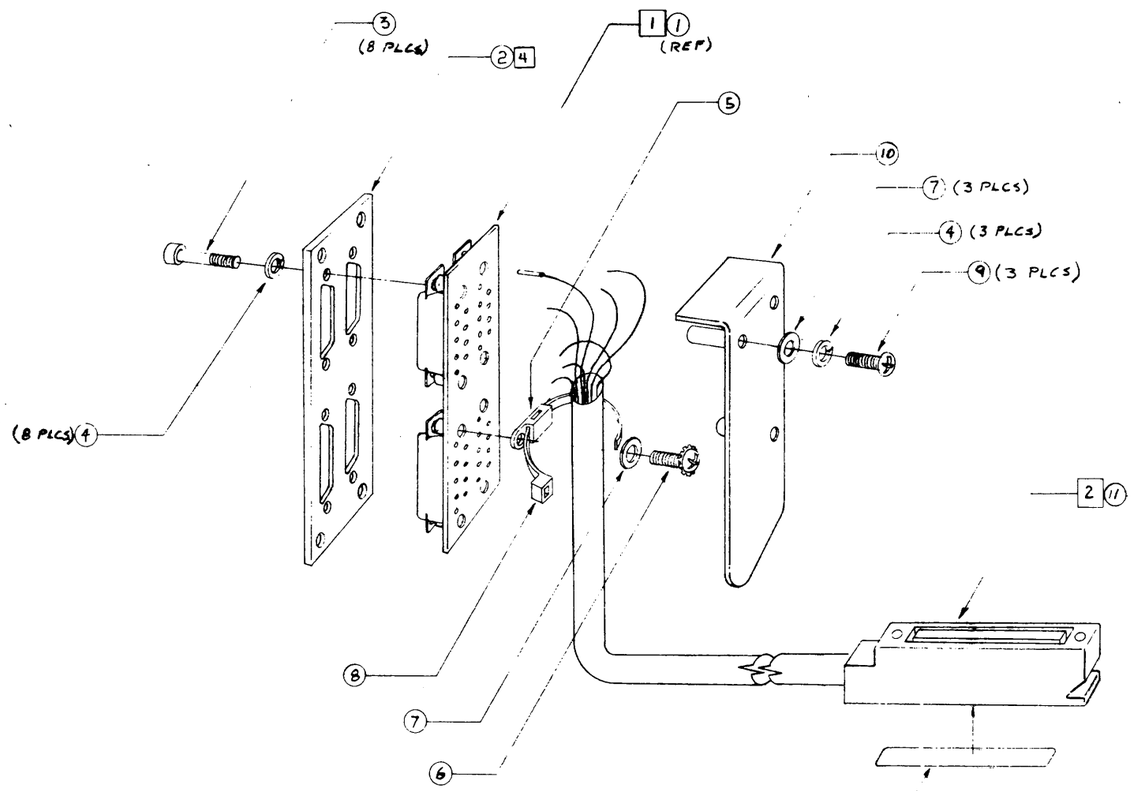
REF. DWG: C-2 WIRING

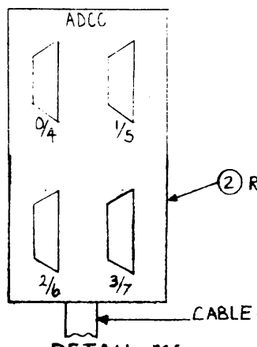
ENGINEERING RESPONSIBILITY / SEPIA

0	1	2	3	4		6		8	9		11	12-28	14	15	
16	17		18		21	22	23	25	29	30	32	33	38	43	
46	48	61	65	66											

C-30021-60001-1

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	BK/JS	8-24-82
B	REVISED PER PCO 47-3173	SB/JW	4-4-83
C	REVISED PER DOC. CHG	SB/AT	11-5-83
D	REVISED PER PCO 47-3326	LB/SC	2-14-84
E	ITEM 3 PN 1251-7208 WAS 1251-3493 PER PCO 47-3231	BR/JGA	3-16-84
F	ADDED NOTE 5 PER PCO 66-1069	G. Gouyet	9-7-82
G	TRANSFERED TO DIV 52 PCO 66-1186		10-18-83
H	ADDED NOTE 6 & ITEM 18 PER PCO 52-0602	SPM	4-10-84





DETAIL "A"

P-END OF CABLE

J-END OF CABLE

NOTES:

1. REMOVE SCREWS FROM CONNECTORS ON ITEM (1) BEFORE INSTALLING ITEMS (2), (3) & (4).
2. ASSEMBLE HOOD & CONNECTOR PER REF. DWG. D-5955-1752-1.
3. CABLE FINISHED LENGTH: 6.0 FT.
4. SEE DETAIL "A"
5. (F) TEST PER A-30021-60001-71
   EQUIPMENT REQUIRED TO TEST CABLE ASSEMBLY
   ET10999 CONTINUITY TESTER MODEL 1024
   ET10957-6053 TEST CONSOLE
   ET10957-6051 QUAD BOX ADAPTER CABLE
6. INSERT P-END OF CABLE (AFTER ASSEMBLY) INTO ANTI-STATIC BAG, ITEM 18, AND SECURE BAG ON CABLE.

ITEM	QTY	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG NO.	MAT'L-SPEC
18	1	BAG 5x8	9222-0787		
17	1	LABEL-ADCC MODEM	7121-1128		
16	1	HOOD-CONN 56 P	5040-7265		
15	1	END-CABLE CLAMP	5040-6041		
14	3	CLAMP	5040-6055		
13	1	SCREW SET 6-32 x .50	3030-0143		
12	2	SCREW TAP 4-40 X .38	0624-0203		
11	2	SCREW TAP 4-40 x .44	0624-0098		
10	1	PLATE-ADCC SHLD	30021-00001		
9	3	SCREW 4-40 x 1.062 PH	2200-0504		
8	1	CABLE TIE 5.5L	1400-0493		
7	4	WASHER-FLT #4	3050-0222		
6	1	SCREW-4-40 X .31 PH	2200-0105		
5	1	MOUNT-CABLE TIE	1400-0786		
4	11	WASHER-LK #4	2190-0078		
(E) 3	8	JACKPOST	1251-7205		
2	1	PLATE-ADCC MOUNTING	30021-00003		
1	—	PCA-ADCC MODEM	REF	30021-60002	

8/14/84

Series 44/48

CA-ADCC/JTWL MODEM ASSY. DWG

HEWLETT PACKARD

PERM. PAIN 30021-60001

C-30021-60001-1

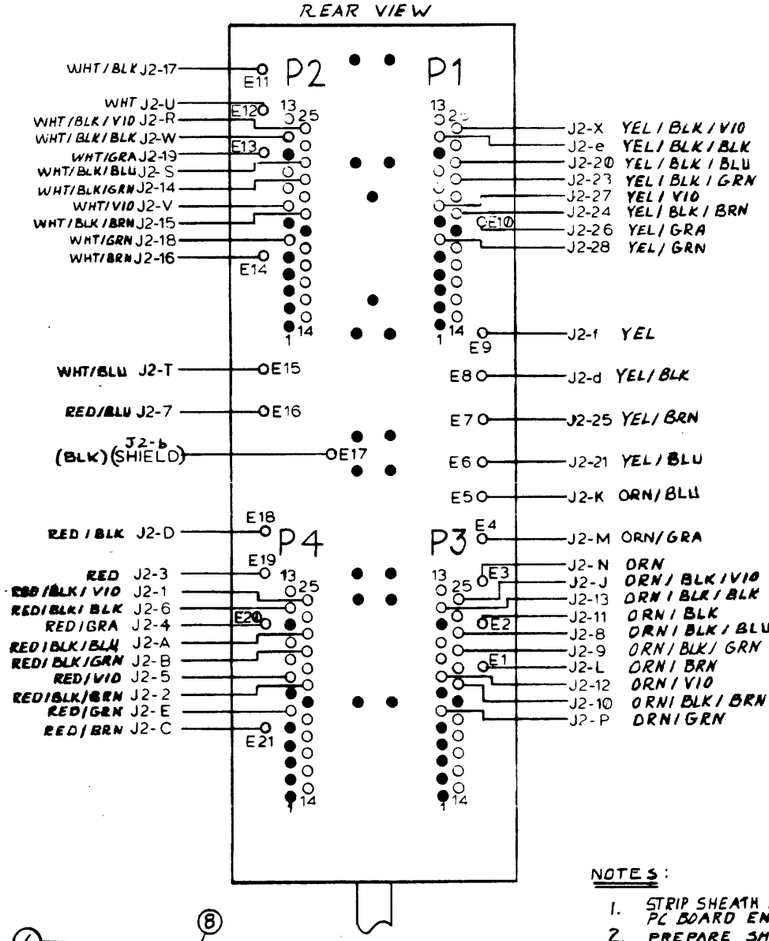
REF. DWG: C-1 ASSY.

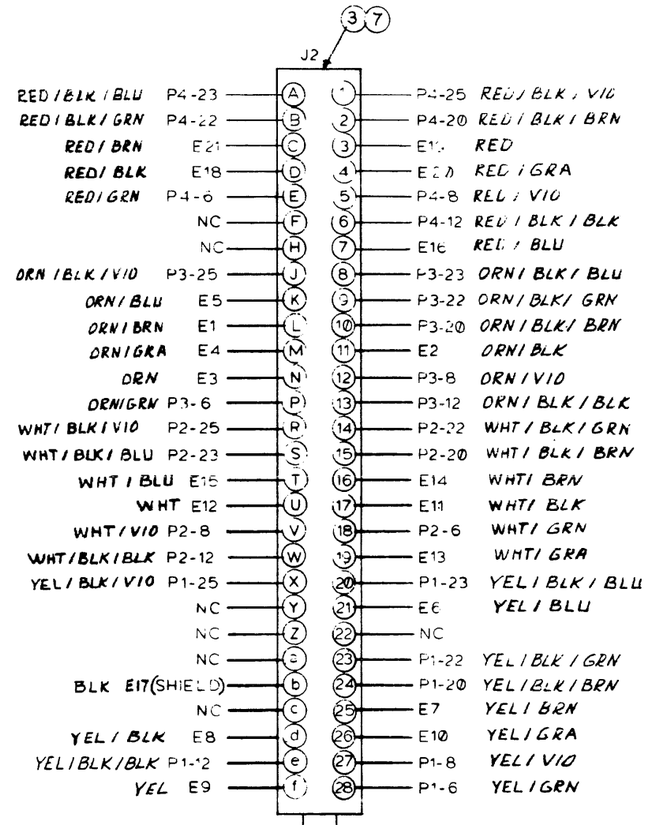
ENGINEERING RESPONSIBILITY / SEPIA

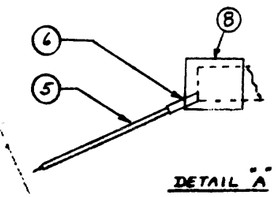
C-30021-60001-2

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	[illegible]	8-21-80
B	REVISED PER PCO 47-3173	SB/[illegible]	12-11-80
C	REVISED PER PCO 47-3226	LB/[illegible]	2-10-81
D	REVISED NOTE 2 PER DOC. CHG.	SB/[illegible]	2-19-81
E	ADDED NOTE 4 PER PCO 66-1069	G. Gouvy/[illegible]	9-8-82
F	ADDED NOTE 5 PER DOC. CHG.	[illegible]	12-16-82
G	TRANSFERED TO DIV 52 PCO66-11186	[illegible]	10-1883

REAR VIEW







DETAIL "A"

NOTES:

1. STRIP SHEATH AT J2 END 5.0 IN. AT PC BOARD END 3.5 IN.
2. PREPARE SHIELD CONNECTION AT BOTH ENDS PER DETAIL "A". FINISHED LENGTH = 3.5 IN. DO NOT USE ITEM 8 ON J2 END.
3. COVER EVERY CONNECTION OF J2 WITH SHRINK TUBING ITEM 7.
4. TEST PER A-30021-60001-71. EQUIPMENT REQUIRED TO TEST CABLE ASSEMBLY. ET10999 CONTINUITY TESTER MODEL 1026. ET10967-6088 TEST CONSOLE. ET10967-6051 ADAPTER TEST CABLE.
5. CABLE 2S 8120-6033 6 FT ± 0.3 FT.

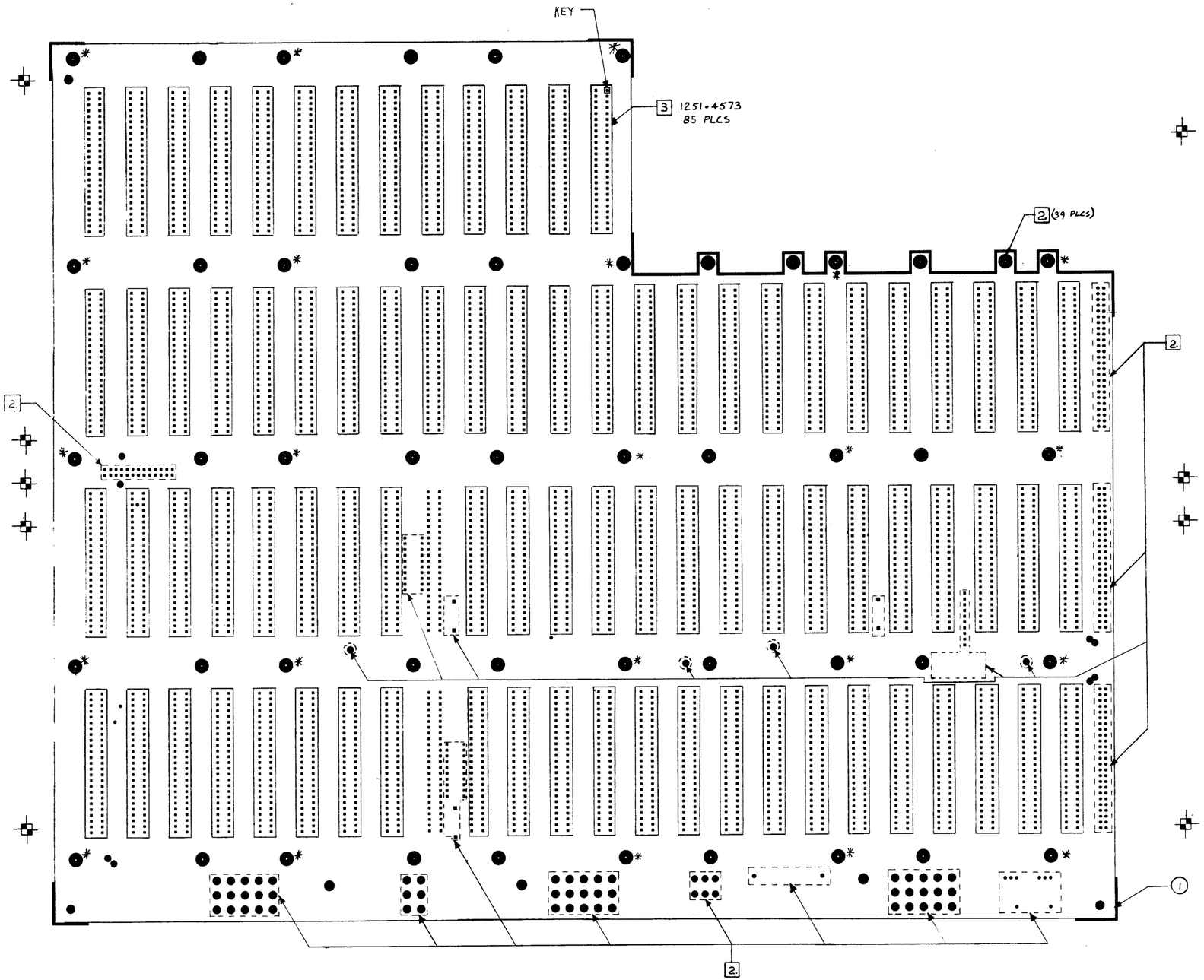
PROCESS REVIEW
DATE 2/14/84 BY [illegible]

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.
8	1 IN.	TBE HS BLACK	0890-0273		
7	2 FT	TBG HS CLR	0890-1372		
6	1 IN.	TUBING HS BLK	0890-0311		
5	7 IN.	WIRE-BLK 24AWG	8150-0447		
4	28	CONT CONN F "D"	1251-5781		
3	1	CONN PC 2X28 .125S	1251-4902		
2	1	PCA-ADCC MODEM	30021-60002		
1	6.0 FT	CABLE SH 48x26 GA	8120-3224		

Series 44/48

CABLE ASSEMBLY — ADCC/JUNCTION PANEL
TITLE MODEM (WIRING)
NEXT ASSEMBLY 30021C
FINISH — SCALE —
HEWLETT PACKARD
PART NUMBER 30021-60001
C-30021-60001-2

REF DWGS: D-12 CIRCUIT SIDE
C-51 THRU 55 SCHEMATIC



NOTES: (FORMING & LOADING)

1. MARK DATE CODE ON CIRCUIT SIDE.
2. MASK AS INDICATED ON CIRCUIT SIDE BEFORE LOADING. DO NOT MASK HOLES MARKED *. (23 PLACES)
3. LOAD CONNECTORS.
4. MASK LOGO ON CIRCUIT SIDE IF IT DOES NOT HAVE SOLDER RESIST OVER IT.
5. WAVE SOLDER. (USE SUPPORT FIXTURE)
6. SEE D-12 FOR TOUCHUP.

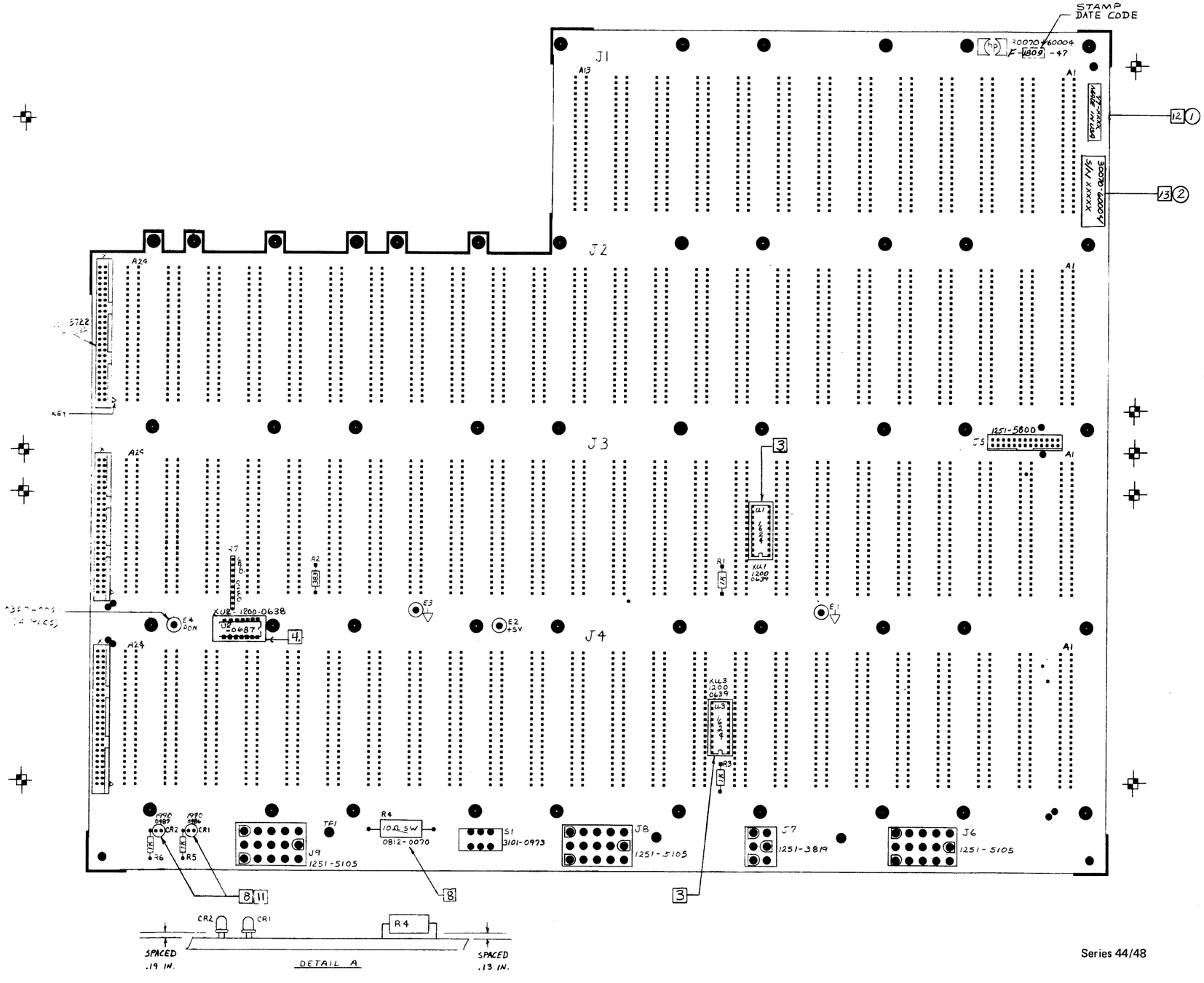
ITEM	QTY.	MATERIAL-DESCRIPTION	MATL-PART NO.	MATL-DWG. NO.
1	1	PCB-BACKPLANE	30070-80004	

TITLE BACKPLANE ASSY DWG COMPONENT SIDE
NEXT ASSEMBLY 30070-60003
FINISH
SCALE FULL
PART NUMBER 30070-60004
D-30070-60004-1

STOCK NO. 7120-6804
ENGINEERING RESPONSIBILITY — SEPIA

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED PCO 47-3522		3/4/83

D-30070-60004-1



NOTES: (TOUCHUP)

1. AFTER WAVE SOLDERING INSPECT ASSY. FOR SOLDER BRIDGES & RAISED CONNECTORS-TOUCHUP AS REQUIRED. (SEE NOTE 2)
2. LOAD J2X, J3X & J4X
3. LOAD XU1 & XU3 PRIOR TO LOADING XJ3A9 & J4A9.
4. LOAD XU2
5. LOAD J5, J6, J7, J8, J9
6. INSERT 3 ET-10928-6010 PIN COVER ASSEMBLIES ONTO J2x, J3x, & J4x.
7. UNLESS OTHERWISE SPECIFIED:
   ALL RESISTANCE IN OHMS
   ALL RESISTORS ARE ⅛W., 1%
8. COMPLETE TOUCH UP. LOAD CR1, CR2 & R4 LAST, SPACED OFF OF BOARD SURFACE, PER DETAIL A.
9. LOAD U1-U3
10. AFTER TOUCH UP SOLDERING, INSPECT ASSY WITH TEST LIGHT FOR SOLDER BRIDGES ON R7.
11. TEST LED'S (CR1 & CR2) AS FOLLOWS:
    A. USE CIRCUIT TESTER (STK # 0960-0062)
    B. CONNECT CLIP END TO GROUND POST E3
    C. TOUCH PROBE END (LIGHT) TO J9, PIN 10. RED LED SHOULD LIGHT DIMLY.
    D. TOUCH PROBE END (LIGHT) TO J9, PIN 12. YELLOW LED SHOULD LIGHT DIMLY.
    E. IF EITHER LED DOES NOT LIGHT, CHECK FOR SOLDER BRIDGES. THEN REPLACE LED.
12. INSTALL LABEL, ITEM (1) IN AREA INDICATED. (DO NOT INSTALL OVER TRACES.)
13. INSTALL SERIAL NUMBER LABEL, ITEM (2), IN AREA INDICATED (DO NOT INSTALL OVER TRACES)

ITEM	QTY.	MATERIAL-DESCRIPTION	MFR. CODE
2	1	LABEL-SERIAL NUMBER	9320-4818
1	1	LABEL-DATE CODE	7180-6830

BACK PLANE ASSY DWG
CIRCUIT SIDE
30070-60003 | 30070-60004
FULL. | D-30070-60004-12

Series 44/48

Ref. Dwgs: C-52 J2
C-53 J3
C-54 J4
C-55 J5-J9
A-50 DATE CODE INFO

ENGINEERING RESPONSIBILITY — SEPIA

0	1	2	3	4		6	8	9		11	12	15
16	17		19		21	22	23	28	29	30	32	33	38	43
45	46	61	63	115	J1		J2		J7					

SYM	REVISIONS	APPROVED	DATE
A	AS 1S3U8D	[illegible]	1/18/82

C-30070-60004-61

J1

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	
1					RA3							STB1		1
2					COM							RESET		2
3					R/W							RPAR		3
4					COM							BIRC		4
5					CAS							BWRQ		5
6					COM							BRRQ		6
7					REF							BX-B3		7
8					COM							BX-B1		8
9					LATCH							COM		9
10					COM							BNIR		10
11					CS							BBUSD		11
12					COM							IDBR		12
13					C-A0							BMEMA		13
14					C-A1							COM		14
15					COM							CPUCLK		15
16					C-A2							COM		16
17					C-A3							INTCLK		17
18					COM							COM		18
19					C-A4							MARST		19
20					C-A5							NIR		20
21					COM							DATST		21
22					D0							LOAD		22
23					D1							ISR		23
24					D2							FRE		24
25					COM							BUSEN		25
26					D3							CLR		26
27					D4							MICRO		27
28					D5							MACRO		28
29					COM							IRPT		29
30					D6							PEN		30
31					D7							CPU BUS EN		31
32					D8							83		32
33					COM							82		33
34					D9							81		34
35					D10							0		35
36					D11							1		36
37					COM							2		37
38					D12							3		38
39					D13							4		39
40					D14							5		40
41					COM							6		41
42					D15							7		42
43					H0							8		43
44					H1							9		44
45					COM							10		45
46					H2							11		46
47					H3							12		47
48					H4							13		48
49					COM							14		49
50					H5							15		50
	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	

VIEWED FROM COMPONENT SIDE

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

Series 44/48

TITLE: PCA - BACKPLANE 1 SCHEMATIC (J1) PERM PRINT	HEWLETT PACKARD
NEXT ASSEMBLY: 30070-60003	PART NUMBER: 30070-60004
FINISH / SCALE	C-30070-60004-51

SHEET 1 OF 7

STOCK NO 9280-0003 PRINTED ON DIEPO NO. 1030-10 CLEARPRINT FADEOUT

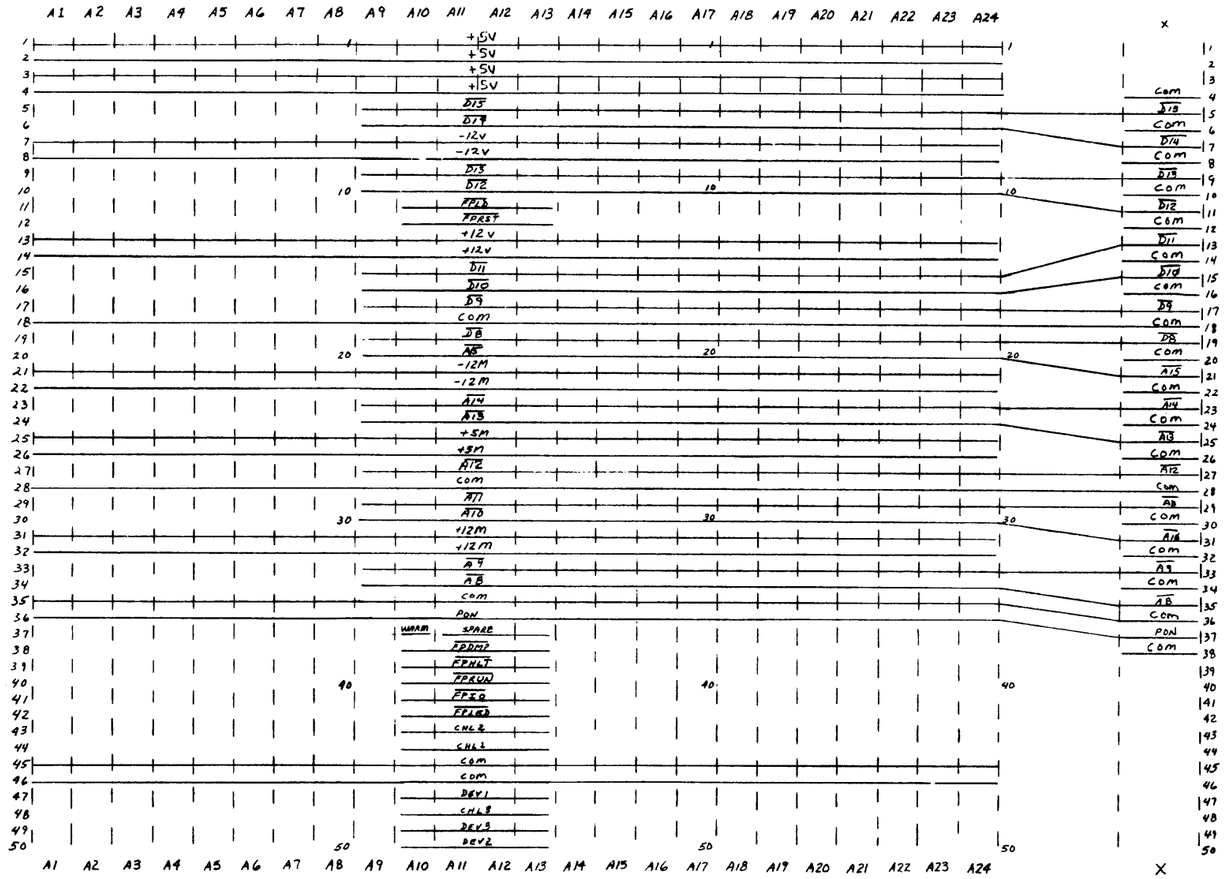
REF. DWG: A-51 J1
A-55 J3
A-56 J4
A-55 J5-J9
A-50 DATE CODE INFO

ENGINEERING RESPONSIBILITY ☐ SEPIA ☐

SYM	REVISIONS	APPROVED	DATE
A	AS 13508 D	PE/CO	7/3/78
B	REVISED PER ECL CHG	QE	6/19/84

C-30070-60004-02

J2



VIEWED FROM THE COMPONENT SIDE

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

TITLE: PCA-BACKPLANE 1 SCHEMATIC (J2) PERM COPY	HEWLETT PACKARD
NEXT ASSEMBLY: 30070-60003	PART NUMBER: 30070-60004
FINISH / SCALE	C-30070-60004-52

Series 44/48

SHEET 1 OF 1

STOCK NO 9280-0003 PRINTED ON DIEPO NO 1020-10 CLEARPRINT FADEOUT

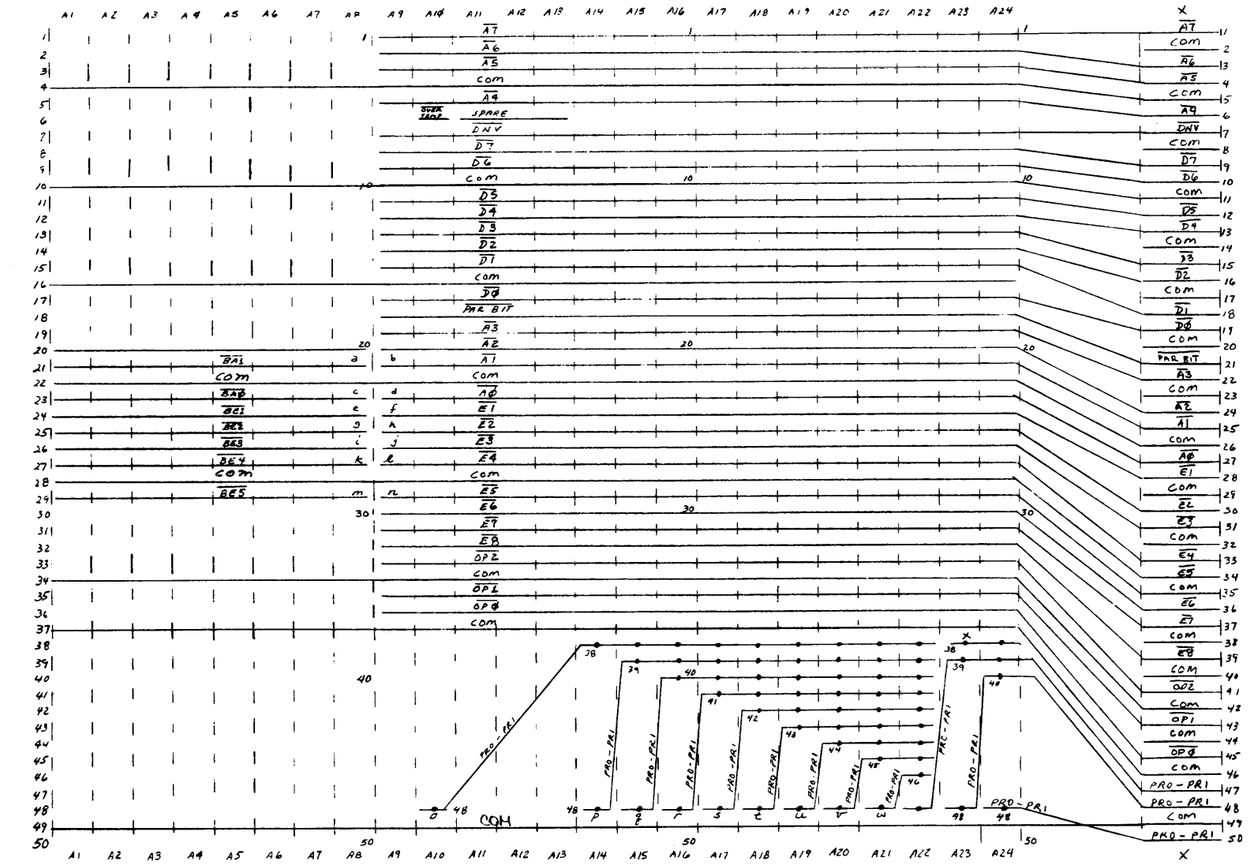
DEFDWG J3
J2
J4
J5-J9
A50 DATE CODE WIRED

ENGINEERING RESPONSIBILITY — SEPIA

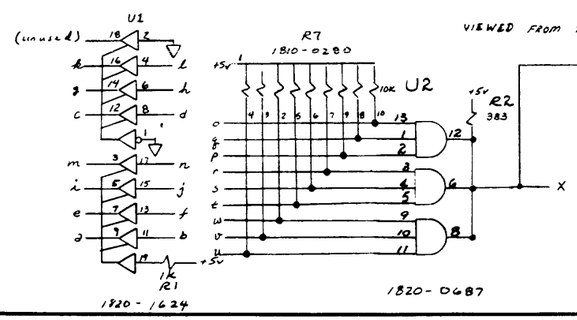
SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	BS/GD	1/13/78
B	REVISED TO PCA REV B	[illegible] E	5/9/78
C	REVISED PER LOC. CHG.	[illegible]	6/19/78

C-30070-60004-53

J3



VIEWED FROM THE COMPONENT SIDE



Series 44/48

ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.

TITLE: PCA - BACKPLANE 1 SCHEMATIC (J3) PERM. PRINT	HEWLETT PACKARD
NEXT ASSEMBLY: 30070-60003	PART NUMBER: 30070-60004
FINISH / SCALE	C-30070-60004-53

SHEET 1 OF 1

STOCK NO 5280 0003 PRINTED ON DIEPO NO 1020-10 CLEARPRINT FADEOUT

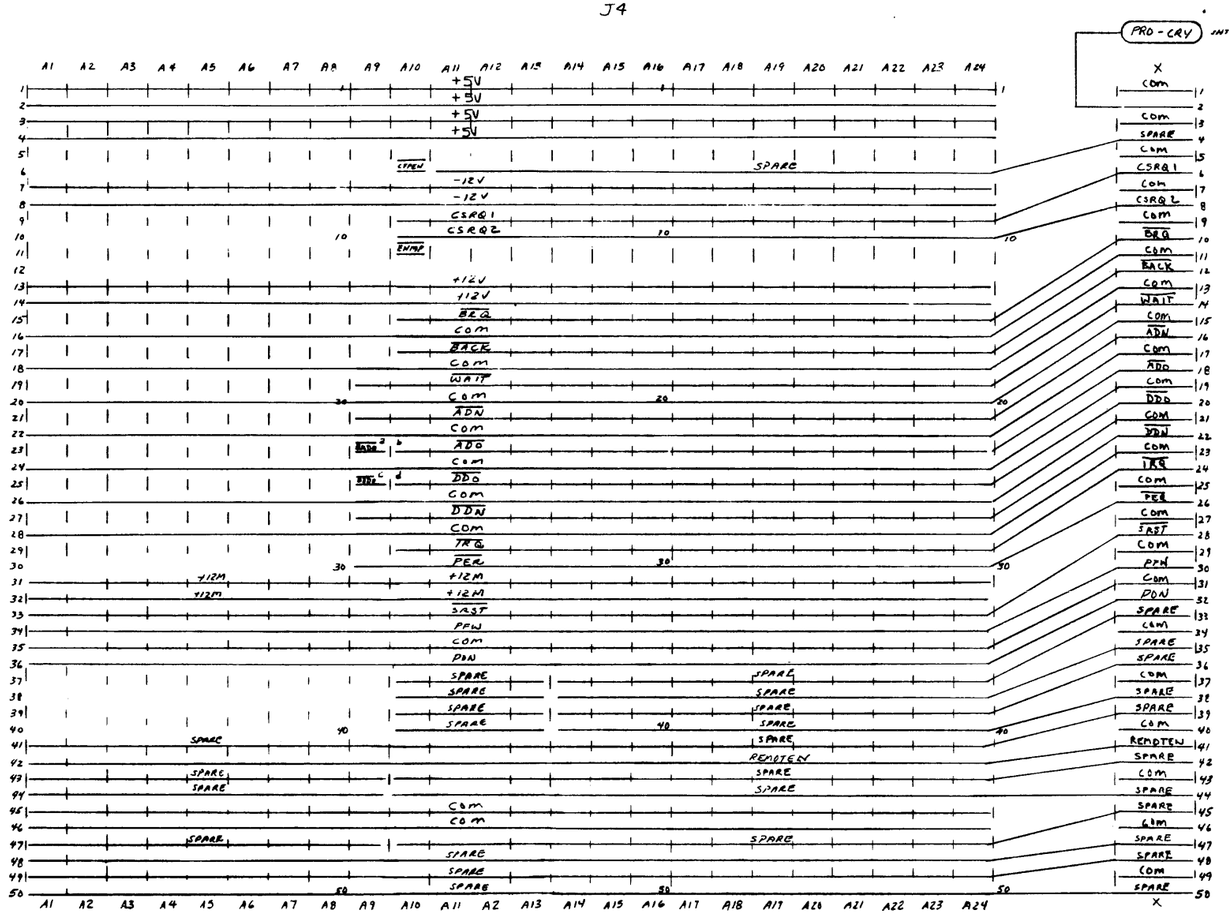
REF. DWGS: C-51 J1
C-52 J2
C-53 J3
C-55 J5-J1
A-50 DATE CODE INFO

ENGINEERING RESPONSIBILITY — SEPIA

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	[illegible]	7/13/78
B	REVISED TO PCA REV B	[illegible]	5/6/77
C	REVISED PER DOC. CHG.	[illegible]	6/19/77

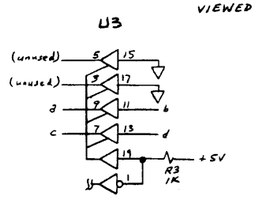
C-30070-60004-54

J4



VIEWED FROM COMPONENT SIDE

U3



1820-1624

Series 44/48

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

TITLE: PCA-BACKPLANE 1 SCHEMATIC (J4)	HEWLETT PACKARD
NEXT ASSEMBLY: 30070-60003	PART NUMBER: 30070-60004
FINISH	SCALE: C-30070-60004-54

PRINT

SHEET 1 OF 1

STOCK NO 9280-0003 PRINTED ON DIEPO NO 1020:10 CLEARPRINT FADEOUT

REF.DWG: C-51 J1
C-52 J2
C-53 J3
C-54 J4
A-50 DATE CODE INFO

ENGINEERING RESPONSIBILITY ▨ SEPIA ▨

0	1	2	3	4		6		8	9		11	12		15
16	17		19		21	22	23	25	29	30	32	38	38	43
45	46	61	63											

C-30070-60004-55

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	DS/QA	7/13/78

J5

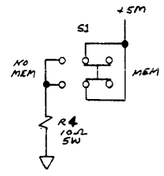
PIN #		
1	FPRUN	J2-40
2	FPHLT	J2-39
3	FPREQ	J2-42
4	FPRST	J2-12
5	FPLD	J2-11
6	WARM	J2-37
7	FPDMP	J2-38
8	CHL 1	J2-44
9	CHL 2	J2-43
10	CHL 3	J2-48
11	DEV 1	J2-47
12	DEV 2	J2-50
13	DEV 3	J2-49
14	OVERTEMP	J3-6
15	FPPEN	J4-6
16	FNMI	J1-11
17	FPIO	J2-41
18	+5V	
19	+5V	
20	+5V	
21	COM	
22	COM	
23	COM	
24	COM	
25	COM	
26	COM	

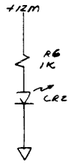
J6, J8, J9

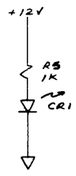
PIN→	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
J6	+5V	+5V	+5V	-12V	+5V	PFN	COM	COM	PON	+12V	-12V	+12V	COM	COM	COM
J8	+5V	+5V	+5V	-12V	+5M	+5M	COM	COM	COM	+12V	-12V	+12V	COM	COM	COM
J9	+5V	+5V	+5V	-12V	+5V	—	COM	COM	COM	+12V	-12M	+12M	COM	COM	COM

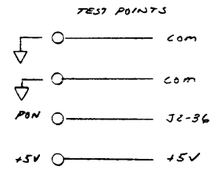
J7

PIN→	1	2	3	4	5	6
J7	—	COM	+12V	-12V	+5V	—









ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

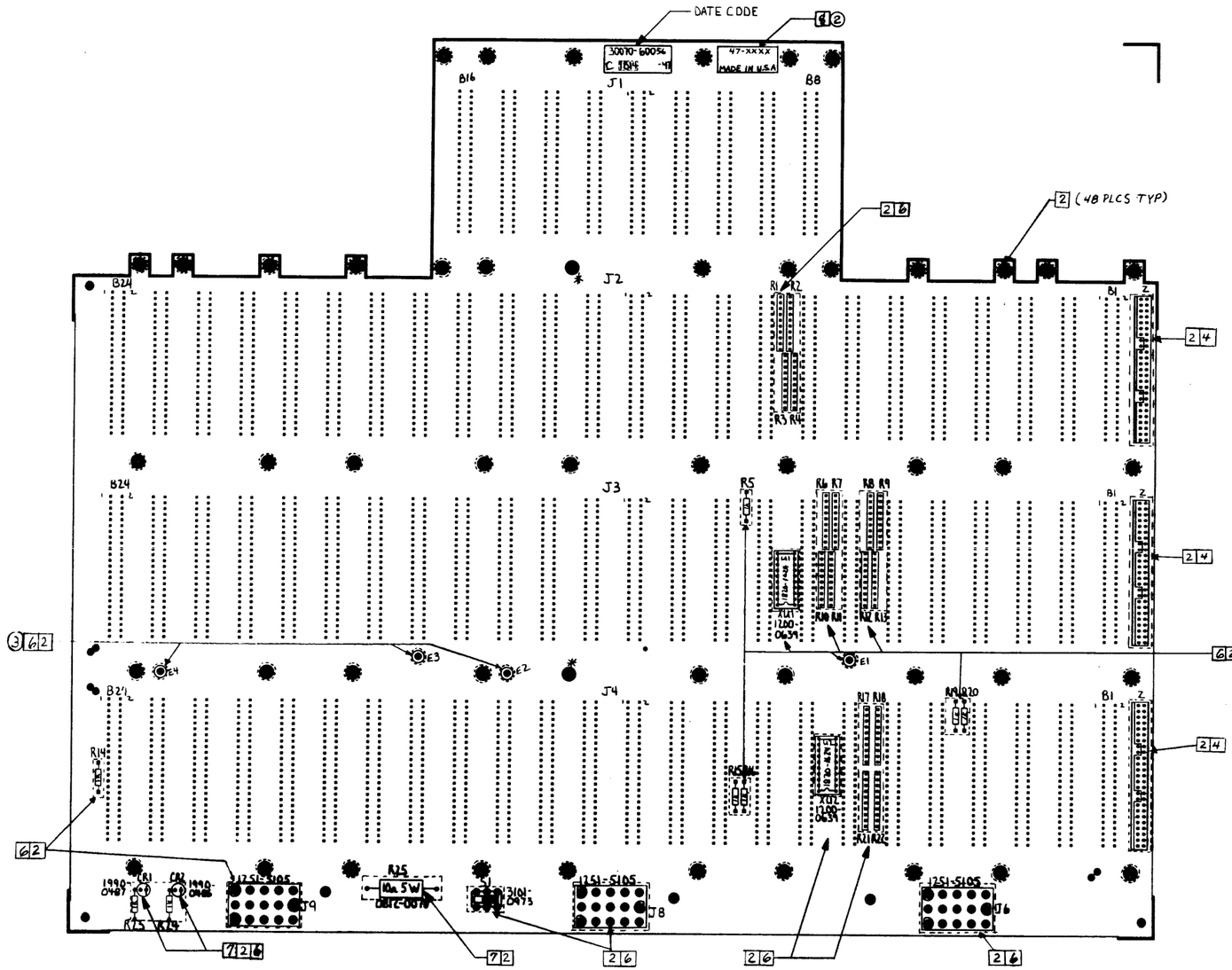
Series 44/48

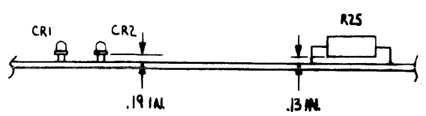
TITLE PCA-BACKPLANE 1 SCHEMATIC (J5-J9) PERM. PRINT	HEWLETT-PACKARD
NEXT ASSEMBLY 30070-60003	PART NUMBER 30070-60004
FINISH / SCALE	C-30070-60004-55

SHEET 1 OF 1

STOCK NO 5280-0003 PRINTED ON DIEPO NO 1030-10 CLEARPRINT FADEOUT

REF. DWGS:
D- ASSY. COMP. SIDE
C-51 through -55, SCHEMATIC





DETAIL A

NOTES:

1. BOARD MUST HAVE ET STAMP - MARK DATE CODE.

2 MASK AS INDICATED BEFORE LOADING DO NOT MASK HOLES MARKED (*) (2 PLACES)

3 AFTER WAVE SOLDERING INSPECT ASSY. FOR SOLDER BRIDGES AND RAISED CONNECTORS. TOUCH UP AS REQUIRED.

4 LOAD J22, J32, & J42 ON CIRCUIT SIDE

5. UNLESS OTHERWISE SPECIFIED:
ALL RESISTANCE IN OHMS.
ALL RESISTORS ARE ¼ W, 1%.
R1, 3, 6, 8, 10, 12, 17, 21, ARE 1810-0272
R2, 4, 7, 9, 11, 13, 19, 22, ARE 1810-0274

6 LOAD R1-24, XU1 AND XU2, E1-4, S1, J6, J8 AND J9 ON CIRCUIT SIDE

7 LOAD CR1, CR2, AND R25 LAST SPACED OFF OF BOARD SURFACE AS INDICATED (PER DETAIL A

8 INSTALL LABEL, ITEM ②, PRIOR TO SHIPPING (DO NOT INSTALL OVER TRACES)

9. ELECTRICAL TEST- 3060

PROCESS REVIEW
DATE 11/19/81

Series 44/48

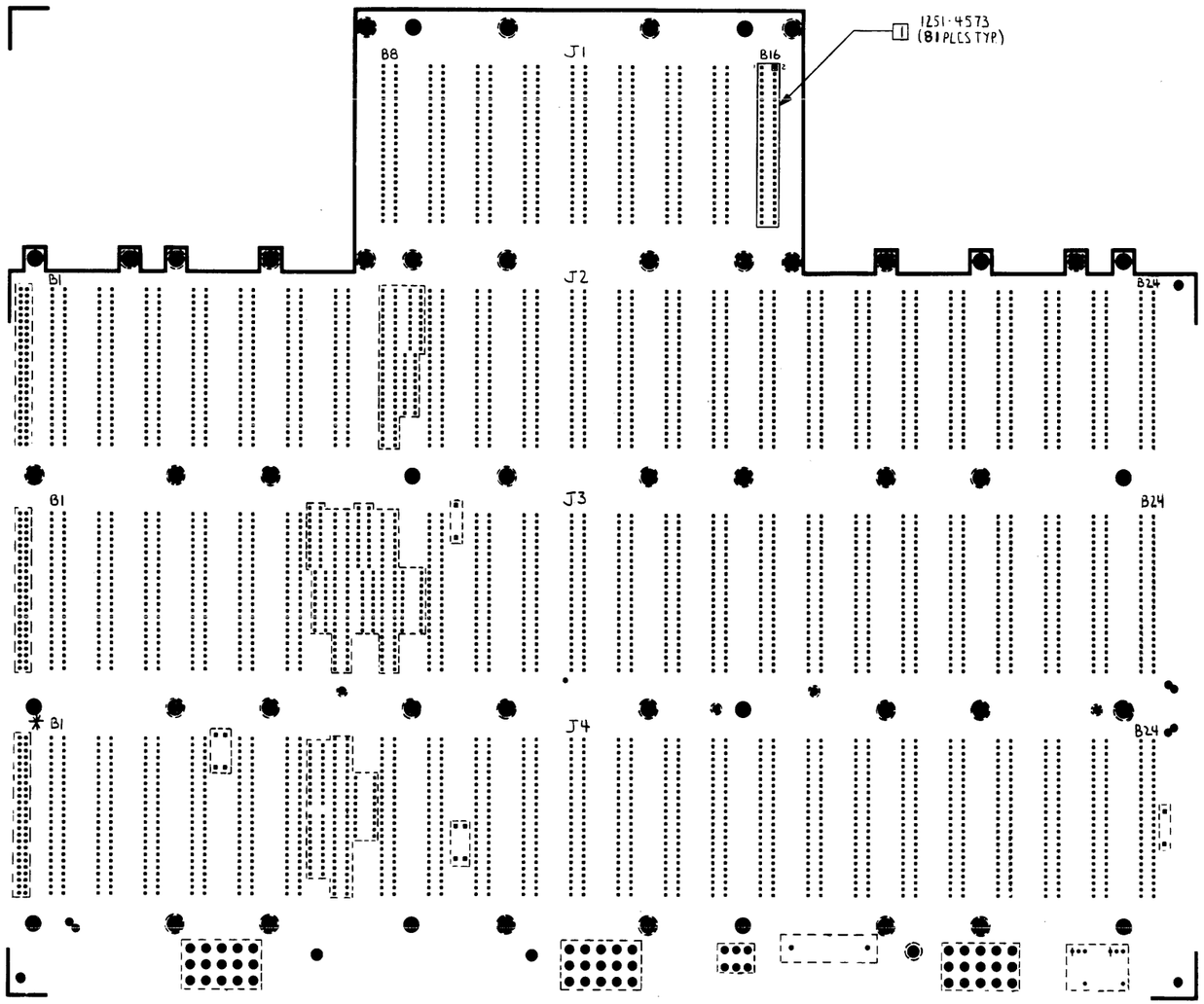
ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG NO	MAT'L SPEC
3	4	TERMINAL	0360-0090		
2	1	LABEL - DATE CODE	7120-6830		
1	-	PCB - BACKPLANE 2	30070-60056	REF.	

BACK PLANE 2 PC ASSEMBLY DRAWING
TITLE CIRCUIT SIDE
NEXT ASSEMBLY 30070A
DO NOT PRINT FROM MYLAR-FILM SCALE FULL
PRINT HEWLETT PACKARD
PART NUMBER 30070-60056
D-30070-60056-7
SHEET 1 OF 1

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED PCO 47-3399		8-24-81
B	REVISED PER PCO 47-3492		11/16/81

D-30070-60056-7

REF. DWGS: D- ASSY. CIRC. SIDE
C-51 through -55, SCHEMATIC



NOTES:
LOADING

1. LOAD CONNECTORS ON COMPONENT SIDE.
2. USE SUPPORT FIXTURE DURING WAVE SOLDERING
3. SEE DWG. D- FOR TOUCHUP OPERATION.

PROCESS REVIEW
DATE 8/25/81

ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO	MAT'L DWG NO	MAT'L SPEC
1	1	PCB - BACKPLANE 2	30070-80056		

BACKPLANE 2 ASSEMBLY DRAWING
TITLE COMPONENT
NEXT ASSEMBLY 30070A
DO NOT PRINT ON DRI-FILM | SCALE FULL
HEWLETT PACKARD
PART NUMBER 30070-60056
D-30070-60056-8
SHEET 1 OF 1

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED PCO 47-3599	DL	2-24-82

D-30070-60056-8

Series 44/48

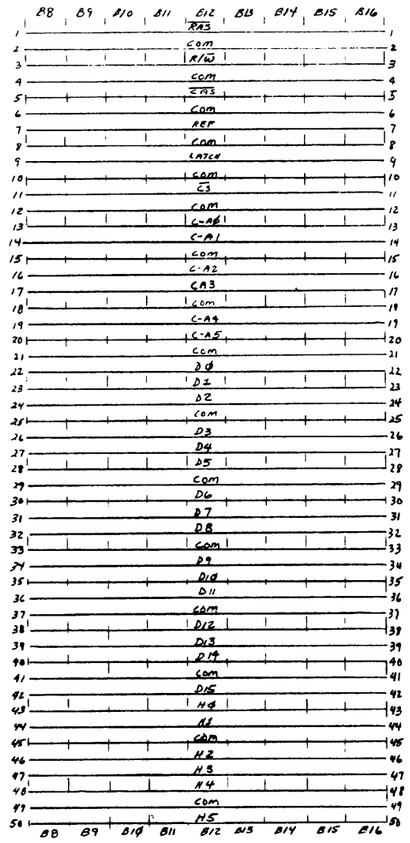
REF DWGS: A 50 DIM JOB INFO
C-52
C-53
C-54
C-55

ENGINEERING RESPONSIBILITY ☒ SEPIA ☐

C-30070-60056-51

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	BS	4-M-78

J1



VIEWED FROM THE COMPONENT SIDE

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

Series 44/48

PERM

BACK PLANE # 2

TITLE SCHEMATIC J1

PRINT HEWLETT PACKARD

NEXT ASSEMBLY —

PART NUMBER 30070-60056

FINISH SCALE

C-30070-60056-51

SHEET 1 OF 1

STOCK NO. 5280-0003 PRINTED ON DIEPO NO. 1030-10 CLEARPRINT FADEOUT

REF DWGS: A 50 DATE CODE INFO...
C-51
C-53
C-54
C-55

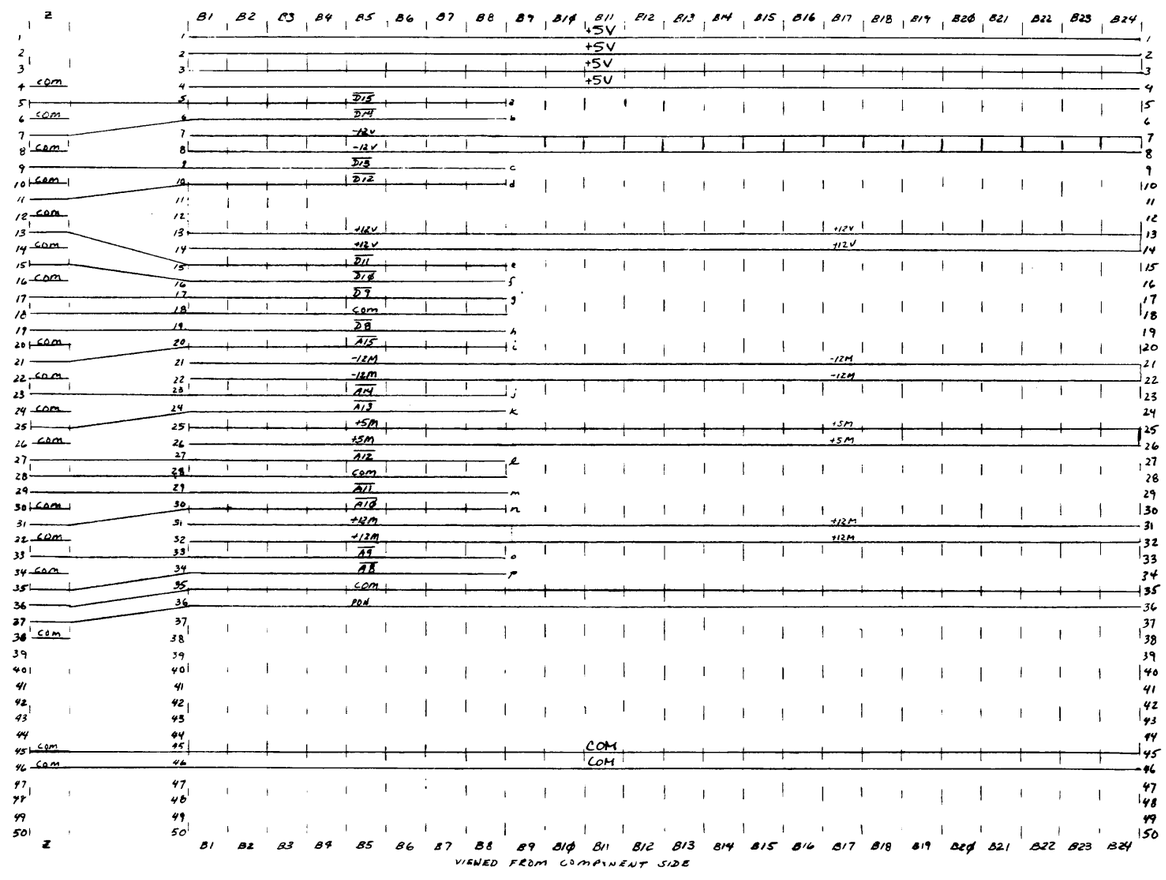
ENGINEERING RESPONSIBILITY / SEPIA

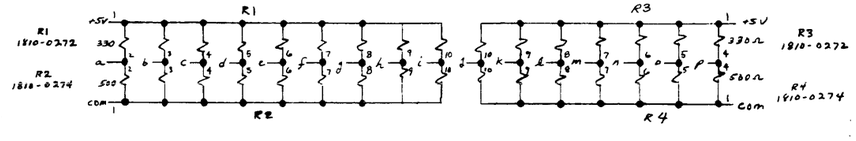
0	1	2	3	4		6		8	9		11	12		15
16	17		19		21	22	23	25	29	30	32	33	38	43
45	46	61	63											

C-30070-60056-52

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	DJ/GE	5-9-79
B	REVISED FEK INC CHG.	GE	6-19-79

J2





ALL Z location connector - 1251-4737
ALL other connectors - 1251-4573

Series 44/48

ITEM	QTY	MATERIAL DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

PERM. PRINT
TITLE BACKPLANE #2 SCHEMATIC J2
HEWLETT PACKARD
NEXT ASSEMBLY —
PART NUMBER 30070-60056
FINISH SCALE
C-30070-60056-52
SHEET 1 OF 1

STOCK NO. 8280-0003 PRINTED ON DIEPO NO. 1020-10 CLEARPRINT FADEOUT

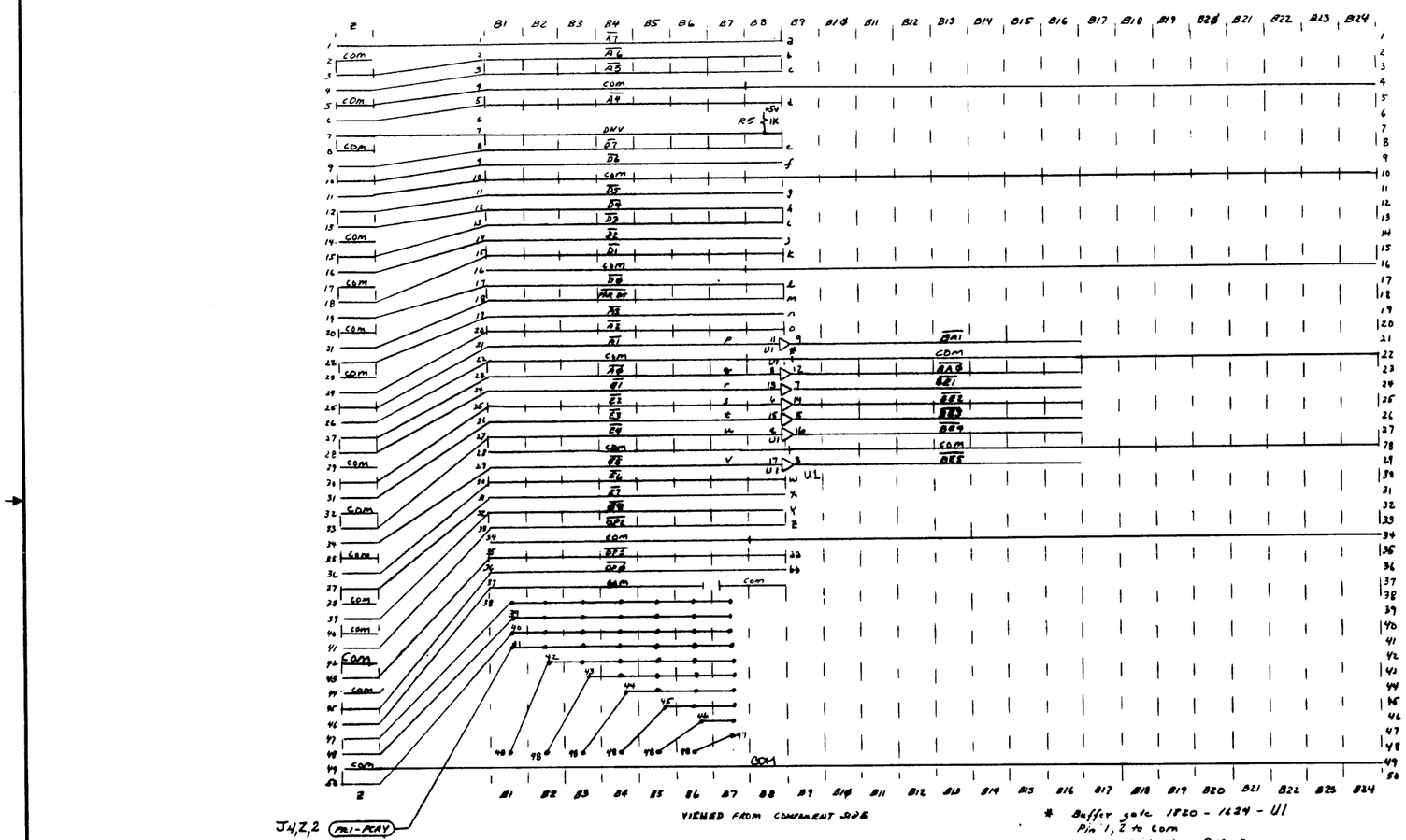
REF. DWG: A-50 DATE CODE INFO.
C-51
C-52
C-54
C-55

ENGINEERING RESPONSIBILITY / SEPIA

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	BS/GE	5-9-78
B	REVISED PER. Doc. Chg.	GE	6-19-78

C-30070-60056-53

J3



ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

Series 44/48

BACKPLANE # 2 PERM. PRINT
TITLE SCHEMATIC J3
HEWLETT PACKARD
NEXT ASSEMBLY —
PART NUMBER 30070-60056
FINISH SCALE
C-30070-60056-53
SHEET 1 OF 1

STOCK NO. 5960-0003 PRINTED ON DIEPO NO. 1050-10 BLEARPRINT FADEOUT

REF. DWG: A-50 DATE CODE INFO.
C-51
C-52
C-53
C-55

J3-B1,41 - B7,41

PRO-PLAY

J4

+ BUFFER 1820-1624 745241
pin 1, 2, and 8 grounded

VIEWED FROM COMPONENT SIDE

R21 1810-0272
R22 1810-0274
R17 1810-0272
R18 1810-0274

ENGINEERING RESPONSIBILITY															
0	1	2	3	4		6		8	9		11	12			15
16	17		19		21	22	23	25	29	30	32	33	38	43	
45	46	61	63												

SEPIA

C-30070-60056-54

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED		5-9-77
B	R15 WAS R19, R16 WAS R20		3-9-78
C	REVISED PER DOC. CHG		6/19/78

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

Series 44/48

BACKPLANE B 2 PERM
TITLE SCHEMATIC J4

PRINT HEWLETT PACKARD

NEXT ASSEMBLY —
FINISH SCALE

30070-60056
PART NUMBER C-30070-60056-54

SHEET 1 OF 1

STOCK NO 5300-0003 PRINTED ON DIEPO NO 1030-10 CLEARPRINT FADEOUT

REF DWG: A-50 DATE CODE INFO.
C-51
C-52
C-53
C-54

ENGINEERING RESPONSIBILITY ▨ SEPIA ▨

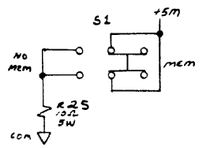
0	1	2	3	4		6		8	9		11	12		15
16	17		19		21	22	23	25	29	30	32	33	38	43
46	46	61	63											

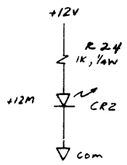
C-30070-60056-55

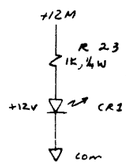
SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	03/FE	5-9-77

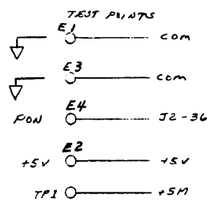
J6, J8, J9

PIN →	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
J6	+5V	+5V	+5V	-12V	+5S	PFW	Com	com	PBN	+12V	-12S	+12V	com	com	com
J8	+5V	+5V	+5V	+12V	+5M	+5M	com	com	ccm	+12V	-12V	+12S	Com	com	com
J9	+5V	+5V	+5V	-12V	+5V	–	com	com	clm	+12V	-12M	+12M	com	com	com









J5 and J7 not used

Series 44/48

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

PERM. PRINT

BACK PLANE #2
TITLE SCHEMATIC J5, J6, J7

HEWLETT PACKARD

NEXT ASSEMBLY —

PART NUMBER 30070-60056

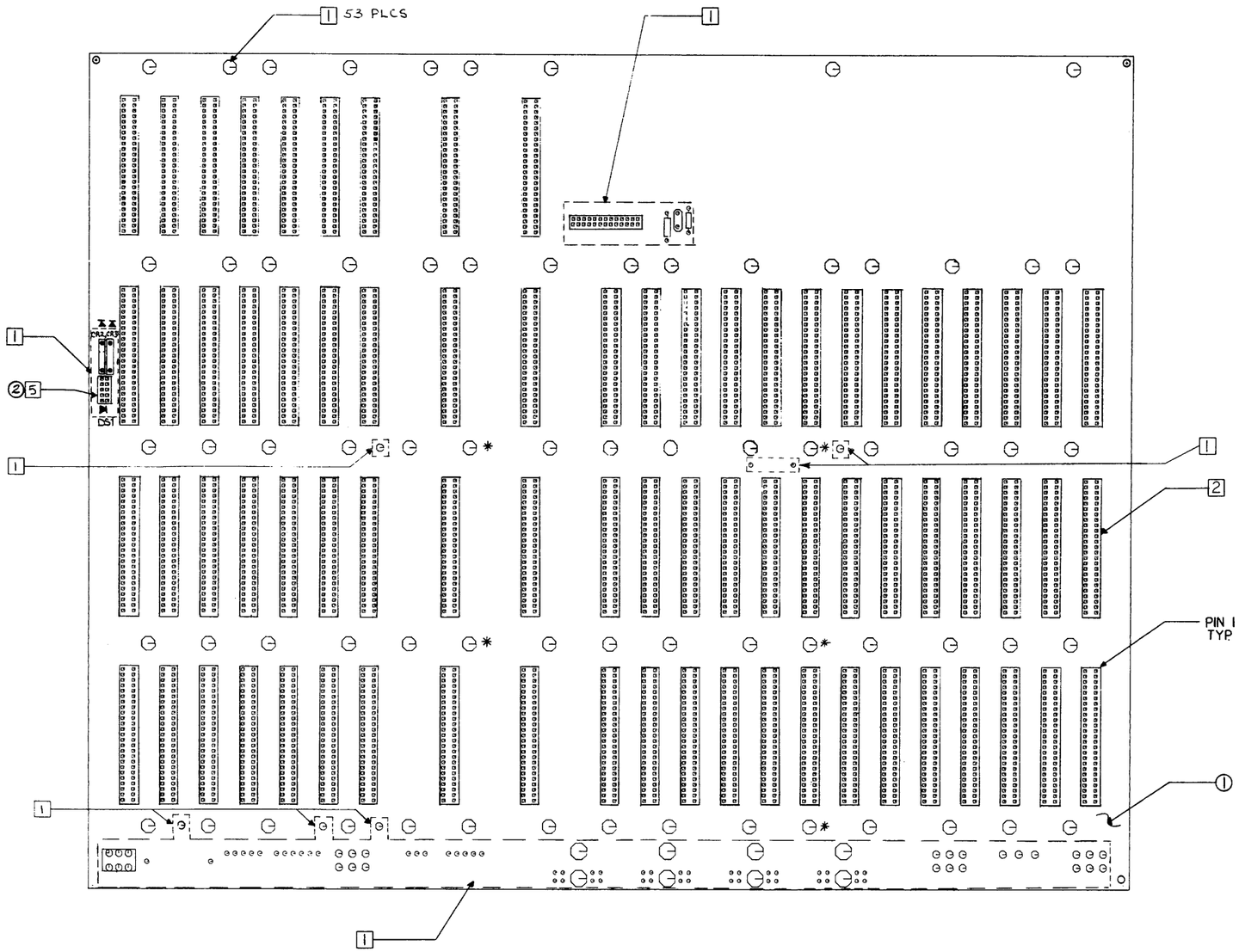
FINISH | SCALE

C-30070-60056-55

SHEET 1 OF 1

STOCK NO 5960-0003 PRINTED ON DIEPO NO 1030-10 CLEARPRINT FADEOUT

REF DWGS: D-6 CIRCUIT SIDE
A-50 DATE CODE INFO.
C-51 THRU -54 SCHEMATICS



NOTES: FORMING & LOADING

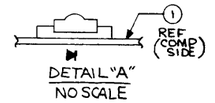
1 MASK AS INDICATED ON CIRCUIT SIDE PRIOR TO LOADING. DO NOT MASK HOLES MARKED (*) - 4 PLCS

2 LOAD CONNECTORS ON COMPONENT SIDE - 75 PLCS

3 USE SUPPORT FIXTURE DURING WAVE SOLDERING

4 AFTER WAVE SOLDERING SEND ASSEMBLY TO RIVET OPERATION.
(REF. DWG. D-6)

5 AFTER PRETEST, LOAD ITEM 2 PER DETAIL "A" USING SPACING TOOL T-116724.



REVISIONS			
DASH	DESCRIPTION	APPROVED	DATE
A	AS ISSUED		

ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L SPEC NO.	MAT'L SPEC
2	1	LED ARRAY SREOV	1990-2882		
1	1	PC BACKPLANE	30170-60008		

PROCESS REVIEW
DATE 6/4/82 BY

Series 39/40/42

PCA - BACKPLANE ASSY. COMPONENT SIDE

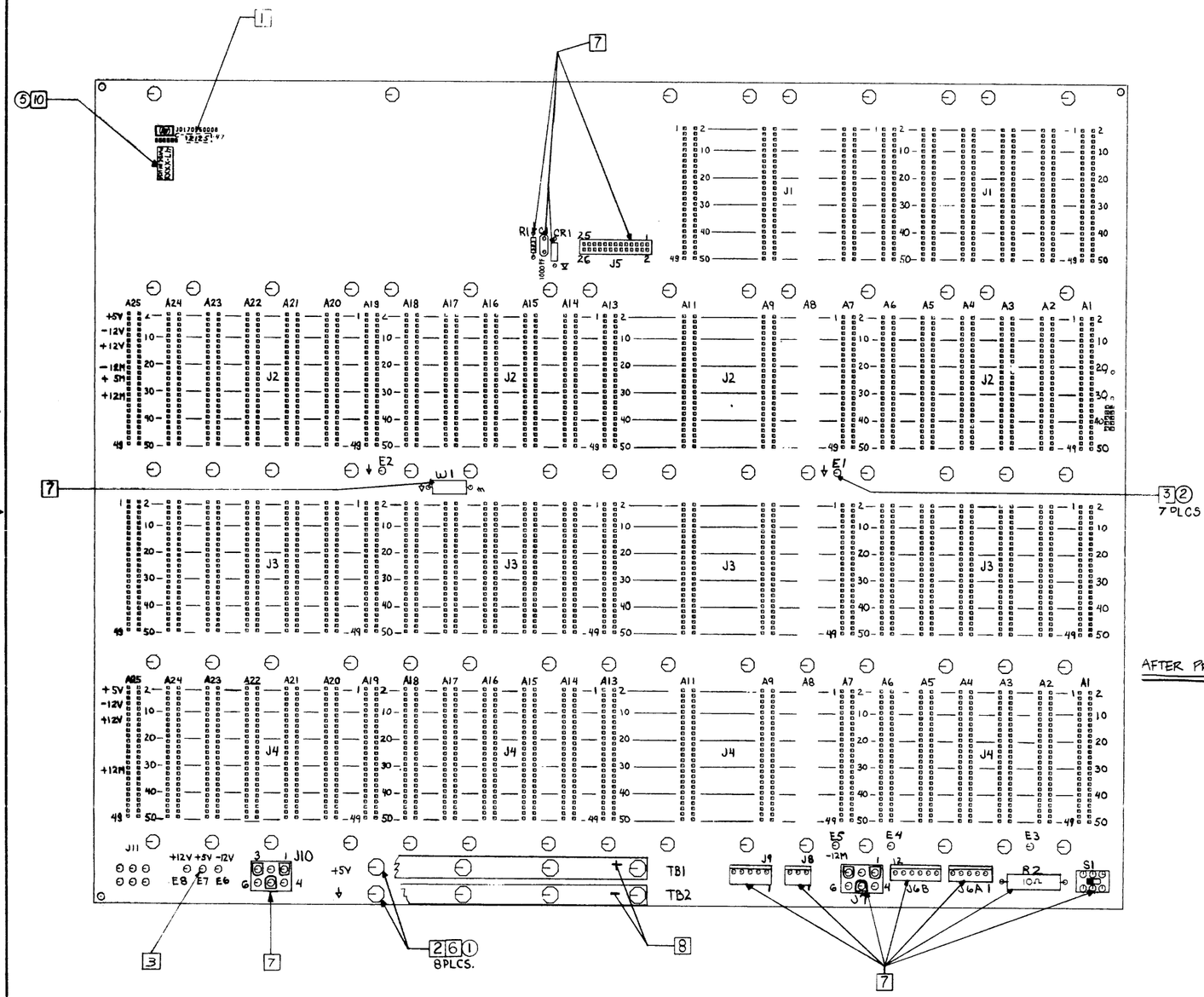
NEXT ASSEMBLY 30170-60007

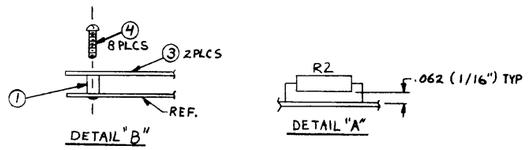
FINISH SCALE

HEWLETT PACKARD

D-30170-60008-5

REF DWGS: D-5 ASSY COMPONENT SIDE
C-51 THRU 54 SCHEMATICS
A-50 (DATE CODE INFO)





NOTES: (AFTER WAVE SOLDERING)

1. MARK DATE CODE.

IN RIVET OPERATION

2. INSTALL ITEM ① ON CIRCUIT SIDE.
3. INSTALL ITEM ② E1-E6, E8 ON CIRCUIT SIDE. DO NOT INSTALL ITEM ② IN E7.
4. SEND ASSY. TO TOUCH UP.

IN TOUCH UP

5. INSPECT ASSY. FOR SOLDER BRIDGES & RAISED CONNECTORS. TOUCH UP AS REQUIRED.
6. SOLDER ITEMS ① AND ITEM ② ON COMPONENT SIDE.
7. LOAD J5-J10, R1-R2, C1, CR1, W1, S1 ON CIRCUIT SIDE (FOR R2 SEE DETAIL "A")
8. INSTALL HARDWARE FOR TB1 & TB2 ON CIRCUIT SIDE. (SEE DETAIL "B")
9. SEND ASSY. TO PRETEST.

AFTER PRE-TEST:

10. INSTALL WARRANTY LABEL (ITEM 5).
11. LOAD CR2, CR3 & DS1 ON COMPONENT SIDE. (PER DWG D-3)
12. INSPECT PER HP STD. SEC. 410.

ITEM	QTY	MATERIAL-DESCRIPTION	MAT'L PART NO.	MAT'L DWG NO	MAT'L SPEC
5	1	LBL - WARR. DATE C D	7120-6080		
4	8	SCR-C-SEX-.38 PH	2240-0477		
3	1	PLATE-COVER DIST	[illegible]		
2	7	STUD SOLDER TERM	0380-0480		
1	8	STAND-OFF-RIVET 6-32X.12	0380-0388		

PROCESS REVIEW
DATE 6/4/82 BY [signature]

Series 39/40/42

PCA-BACKPLANE
TITLE ASSY-CIRCUIT SIDE
PERM. PRINT
HEWLETT PACKARD
30170-60007 NEXT ASSEMBLY
30170-60008 PART NUMBER
FINISH SCALE
D-30170-60008-6 SHEET 1 OF 1

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED		

D-30170-60008-6

REF DWGS: D-1, -2 ASSY
A-50
C-52 THRU -54

C-30170-60008-51

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	05/16C	6-29-81

	CPU				MEM					
	A11	A9	A7	A6	A5	A4	A3	A2	A1	
J1-1	ALUSØ				DAVL					1
2	ALUS1				COM					
3	ALUS2				MAØ					
4	ALUCINL				COM					
5	CARRY				MA1					
6	SPARE				COM					
7	CTGØL				MA2					
8	CTG3L				COM					
9	COM				MA3					
10	COND2				COM					10
11	COND3				MA4					
12	COND4				COM					
13	SKUNC				MA5					
14	COM				BRADØ					
15	FØ				COM					
16	COM				BRAD1					
17	MODEL				MA6					
18	COM				COM					
19	DCENL				MA7					
20	CCSA				SPARE					20
21	CCSB				COM					
22	OCSA				BRAD2					
23	OCSB				SPARE					
24	SSA				SPARE					
25	SSB				COM					
26	SSC				BRAD3					
27	SSØ				WRITEL					
28	WIS				SPARE					
29	XRIL				COM					
30	XRS1L				BRAD4					30
31	XRSØL				RFSHL					
32	LZERO				SPARE					
33	REERO				COM					
34	SPARE				BRAD5					
35	SPARE				64K					
36	MINT				SPARE					
37	SETDIS				COM					
38	RIGHTL				BRAD6					
39	DRIGHTL				SPARE					
40	RSSP				READL					40
41	NIRØ				COM					
42	NIR1				MCSL					
43	NIR2				SPARE					
44	NIR3				RASL					
45	NIR4				COM					
46	NIR5				SPARE					
47	NIR6				SPARE					
48	NIR7				CASL					
49	NIR8				COM					
50	NIR9				RESERVED					50

NOTE:

1. VIEWED FROM CIRCUIT SIDE.

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

Series 39/40/42

PCA - BACKPLANE 340
TITLE SCHEMATIC J1

HEWLETT PACKARD

NEXT ASSEMBLY 30170-60007
FINISH
SCALE

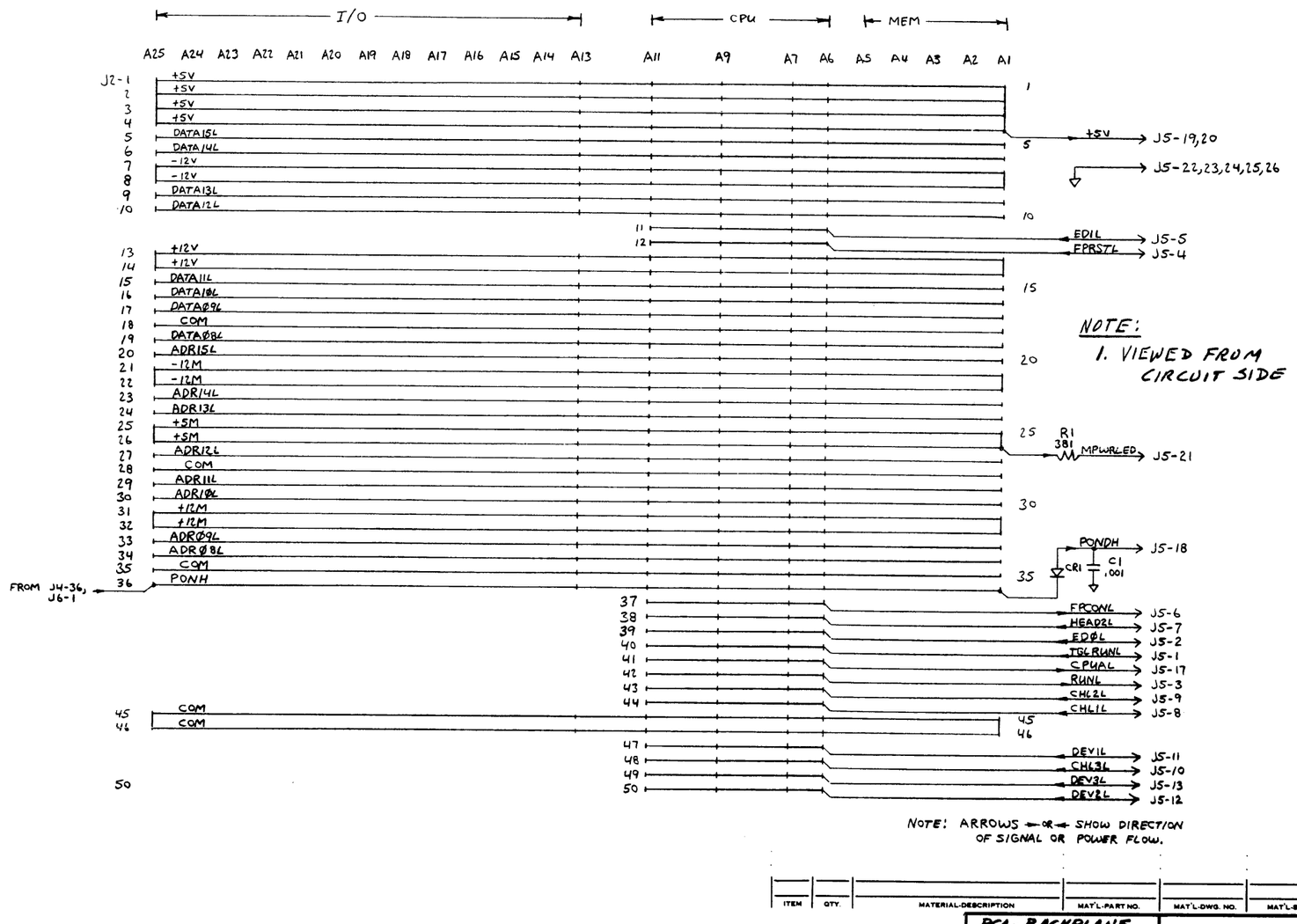
PART NUMBER 30170-60008
C-30170-60008-51

SHEET 1 OF 1

REF DWGS: D-1,-2 ASSY
A-50
C-51,-53,-54 SCHEMATICS

C-30170-60008-52

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	DJ/GG	6-29-81



NOTE:
1. VIEWED FROM CIRCUIT SIDE

NOTE: ARROWS → OR ← SHOW DIRECTION OF SIGNAL OR POWER FLOW.

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

Seris 39/40/42

PCA - BACKPLANE 340
TITLE SCHEMATIC J2

HEWLETT PACKARD

NEXT ASSEMBLY 30170-60007
PART NUMBER 30170-60008
FINISH
SCALE
C-30170-60008-52
SHEET 1 OF 1

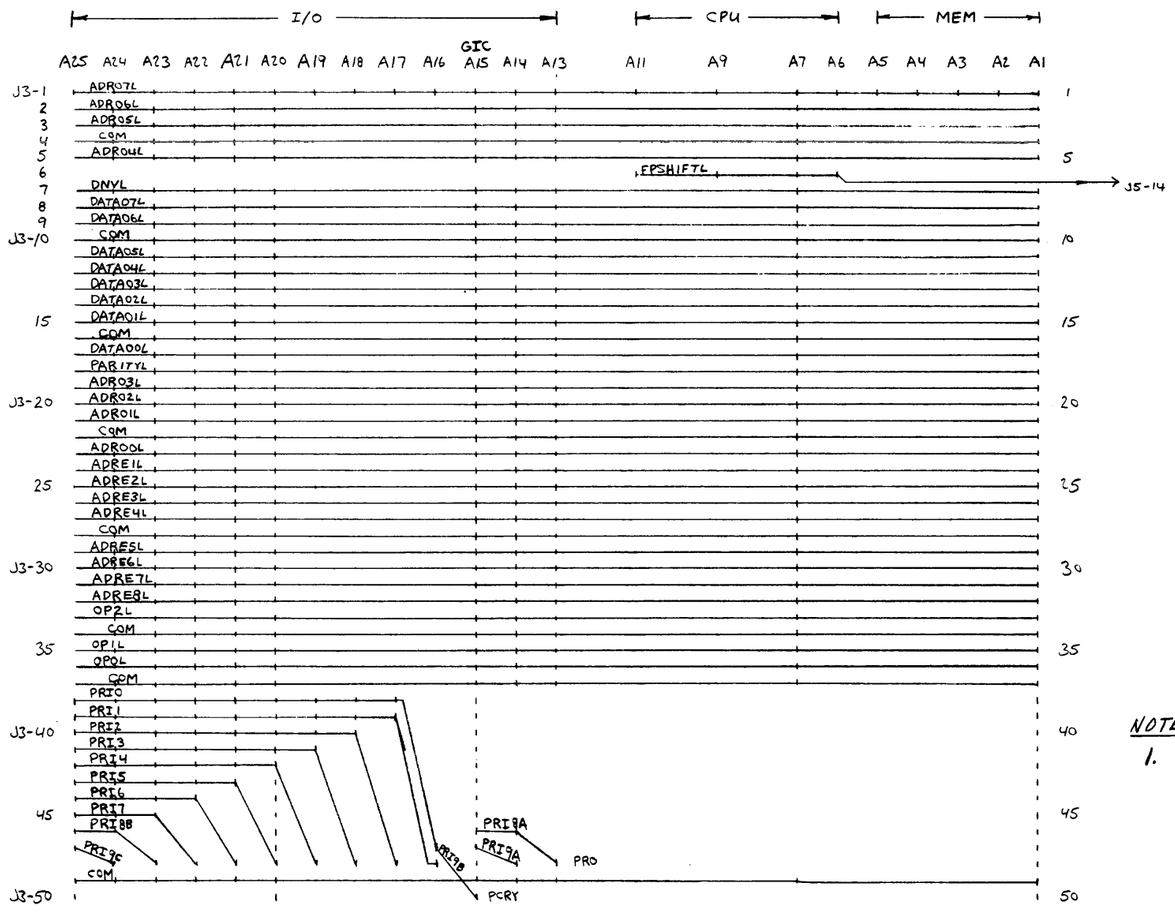
30 | 31 | 32 | 33 | 34 | 35 | 36 | 37

REF DWGS: D-1 -2 ASSY
1 A-50
C-51, -52, -54 SCHEMATICS

ENGINEERING RESPONSIBILITY / SEPIA

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	BE/GC	6-29-87

C-30170-60008-53



NOTE:
1. VIEWED FROM CIRCUIT SIDE.

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

Series 39/40/42

PCA - BACKPLANE 540
TITLE SCHEMATIC J3

HEWLETT PACKARD

NEXT ASSEMBLY 30170-60007
FINISH | SCALE

30170-60008
PART NUMBER C-30170-60008-53

SHEET 1 OF 1

STOCK NO 5280-0003 PRINTED ON DIEPO NO 1030-10 CLEARPRINT FADEOUT

40 41 42 43 44 45 46 47

REF DWGS: D-1, -2 ASSY
A-50
C-1 THRU -53 SCHEMATICS

ENGINEERING RESPONSIBILITY / SEPIA	SYM	REVISIONS	APPROVED	DATE
	A	AS ISSUED	03/66	6-29-81

C-30170-60008-54

I/O CPU MEM

A25 A24 A23 A22 A21 A20 A19 A18 A17 A16 A15 A14 A13 A11 A9 A8 A7 A6 A5 A4 A3 A2 A1

J4-1 +5V
2 +5V
3 +5V
4 +5V
5 SPARE
6 FPSTATL → J5-15
7 -12V
8 -12V
9 CSRQ1L
10 CSRQ2L
11 FPLOADL → J5-16
12 SPARE
13 +12V
14 +12V
15 BRQL
16 COM
17 BACKL
18 COM
19 WAITL
20 COM
21 ADNL
22 COM
23 ADOL
24 COM
25 DDOL
26 COM
27 DDNL
28 COM
29 IRQL
30 PERL
31 +12M
32 +12M
33 SRSTL
34 PFWL → J6-2
35 COM
36 PONH → J6-1
37 Q1
38 Q2
39 Q2L
40 MQ
41 SPARE
42 REMOTEL
43 SPARE
44 SPARE
45 COM
46 COM
47 SPARE
48 SPARE
49 SPARE
50 SPARE

TB1 +5V, J10-4 +5V, J10-1 +5 SENSE
J10-3 -12V, J10-5 5RTN SENSE, J10-6 12RTN, J10-2 +12V
TB2 To COM
J7-1,4 +5M, J7-2 +12M, J7-3 -12M, J7-5,6
70 J2-36 CR1

DS1 PONH PFWL +5V, CR2 7.5V, CR3 7.5V, +12V +12M

+5V → J6-9
COM → J6-3,10
+12V → J6-7
-12V → J6-8

NOTE:
1. VIEWED FROM CIRCUIT SIDE.

J9 5 4 3 2 1
J8 1 ACV1, 2 ACCT, 3 ACV2

R2 10Ω, S1 NO MEM / NORMAL, +5M

NO-MEM POWER SUPPLY TEST LOAD

W1 CHASSIS LOGIC COM

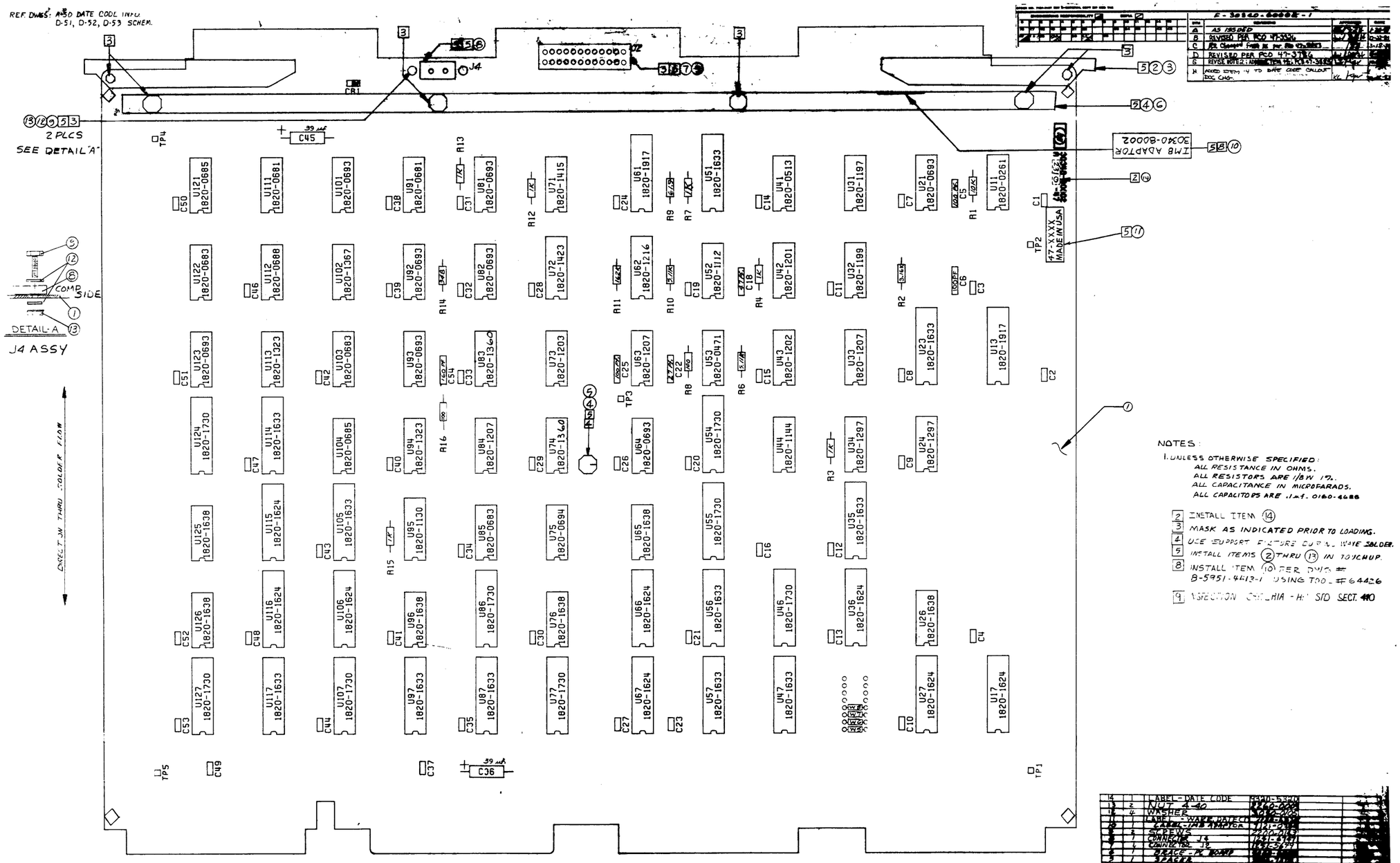
Series 39/40/42

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

PCA-BACKPLANE 340
TITLE SCHEMATIC J4
NEXT ASSEMBLY 30170-60007
FINISH SCALE

HEWLETT PACKARD
PART NUMBER 30170-60008
C-30170-60008-54
SHEET 1 OF 1

STOCK NO 5950-0003 PRINTED ON DIEPO NO 1020-10 CLEARPRINT FADEOUT



Series 39/40/42

REF DWGS: F-1 455V.
A-50 [illegible]

REVISIONS			
ZONE		APPROVED	DATE
A	AS ISSUED	[illegible]	2/27/84
B	ADDED RS1CTR,N/C changed from NUM's 1K PER PCO 41-3526	[illegible]	2/27/84
C	R2 WAS 1K Ω. PCO41-3553	[illegible]	4-2-84

30340-60002 -81

IMB5VA — 39D — R8 100Ω 0757-0401 — U41 -0513 — +5V 37E — 0157-0288 1K R7

SOFT5B 18E — U71 -1415

PON — J2-6

IMBPON — P4-36

IOCLR — 29H

IMBPFW — P4-34

PFW — J2-2 — +5V 37E — R6 5.11K 0757-0438 — U41 -0513

IOD00 — J1-20
IOD01 — J1-21
IOD02 — J1-23
IOD03 — J1-24

U51 -1633 — SOFT5A 38E

CLK — 29G — 0757-0276 61.9 R9

CLR — P2-50
IORESET — J2-8
IOCMD0 — J1-4
IOCMD1 — J1-6
IOCMD2 — J1-5
SO — J2-18

U61 -1917 — U62 -1216 — U63 -1207 — U32 -1199

+5V 37E — R4 1K 0757-0280 — U41 -0513 — C18 47pf 0160-2307

U71 -1633 — U51

U121 -0485 — U31 -1197 — SOFT5A 38E — U52 -1112 — U53 -0471

U32 -1199 — U33 -1207

DEVN00 — J1-8
DEVN01 — J1-9
DEVN02 — J1-11
DEVN03 — J1-12
DEVN04 — J1-14
DEVN05 — J1-15
DEVN06 — J1-17
DEVN07 — J1-18

U13 -1917 — U23 -1633 — U34 -1297 — U24 -1297 — U54 -1730 — CLR

+5V 37E — R3 1K 0757-0280

SOFT5A 38E

IMBDATAB09-15 — 38E

+5V 37E — R2 3.16K 0757-0879 — C6 100pf 0160-2204 — U41 -0513

U42 -1201 — U43 -1202 — U44 -1144 — U32 -1199 — U52 -1112 — U53 -0471

U83 -1360

59D/51H	MCLR
28G/36G	CMSRQ
U53 -0471	P4-9 CSRQI
29G	GLOBRESP
29G	INTREQ
U53 -0471	J1-44 INTREQ
U53 -0471	J2-16 SI
	P2-41 INTPOLL IN
U53 -0471	J1-58 INTACK
U42 -1201 — 29G	DIPOLL
U83 -1360	P2-37 INTPOLL OUT

Series 39/40/42

ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.

PCA- IMB ADAPTOR SIII
TITLE SCHEMATIC
NEXT ASSEMBLY 30340A
FINISH — SCALE —
HEWLETT PACKARD
REVISIONS
PART NUMBER 30340-60002
D-30340-60002-5T
SHEET 1 OF 1

REF. DWGS: F-1 ASSY.
A-50 LATE DOOF NFI
D-51, D-52 SIMILAR

ENGINEERING RESPONSIBILITY	SEPIA
0 1 2 3 4 5 6 7 8 9 10 11 12 14 16	
16 17 19 21 22 23 25 28 30 32 35 38 43	
46 46 51 63	

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED		
B	R15 Redesignated R16 per PCO 47-3324		
C	REVISED PER PCO 47-3378A		
D	CORRECT SCHEM. ERROR U84,11 DOC CHANGE B		

B-30340 - 60002 - 52

PER P4-30

DDN P4-27
ADN P4-21
DDO P4-25
ADO P4-23
WAIT P4-19

U85 -1633 U84 -1287 U94 -1323 U95 -1138 U104 -0685 U103 -0683 U122 -1360 U91 -0681 U112 -1202 U123 -0693 U72 -1423 U81 -1112 U92 -1367 U102 -1203 U73 U111 U121 U53 -0471

R11 0160-2284 162K 100pF C25
R10 0160-2396 5.11K 27pF C22
R16 0757-0401 100 160pF C54 0160-2206
R42 1K 0757-0280

+5V 37E
SOFT58 38E
GLOBRESP
CLROP 34H
MISC 39A

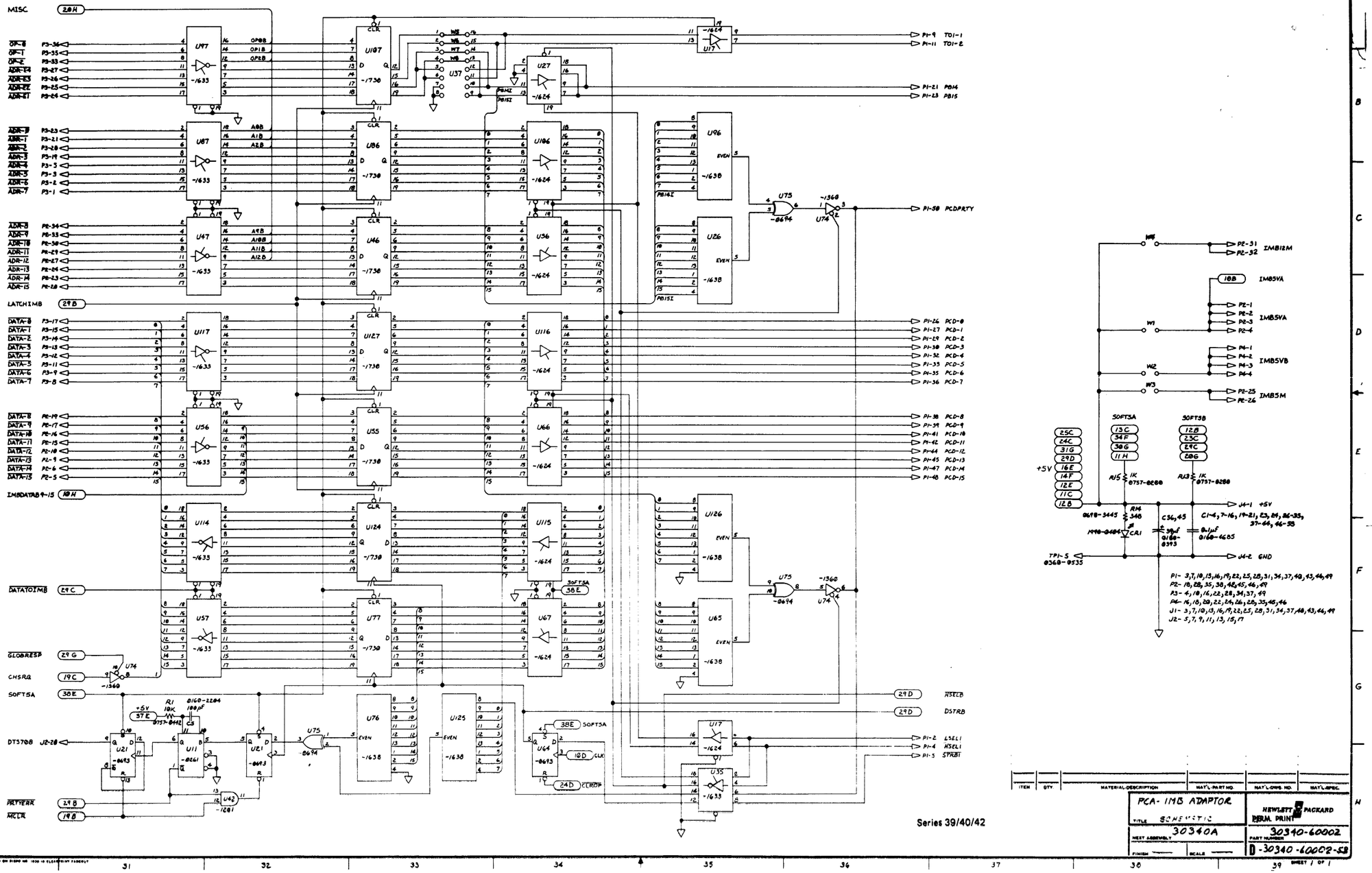
30H PRTYERR
30D LATCHIMB
38E SOFT58
30F DATAIOIMB
36G DSTRB
37E +5V
19B MCLK
36G HSELB
P1-8 XXXXXX
P1-6 XXXXXX
19D CLK
19D INTRSR
19E DIPOLL
MC/300 GLOBRESP
19B IOCLR

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.

PCA-IMB ADAPTOR SCH
TITLE SCHEMATIC
NEXT ASSEMBLY 30340A
FINISH — SCALE —
HEWLETT-PACKARD
B-30340-60002-52

Series 39/40/42

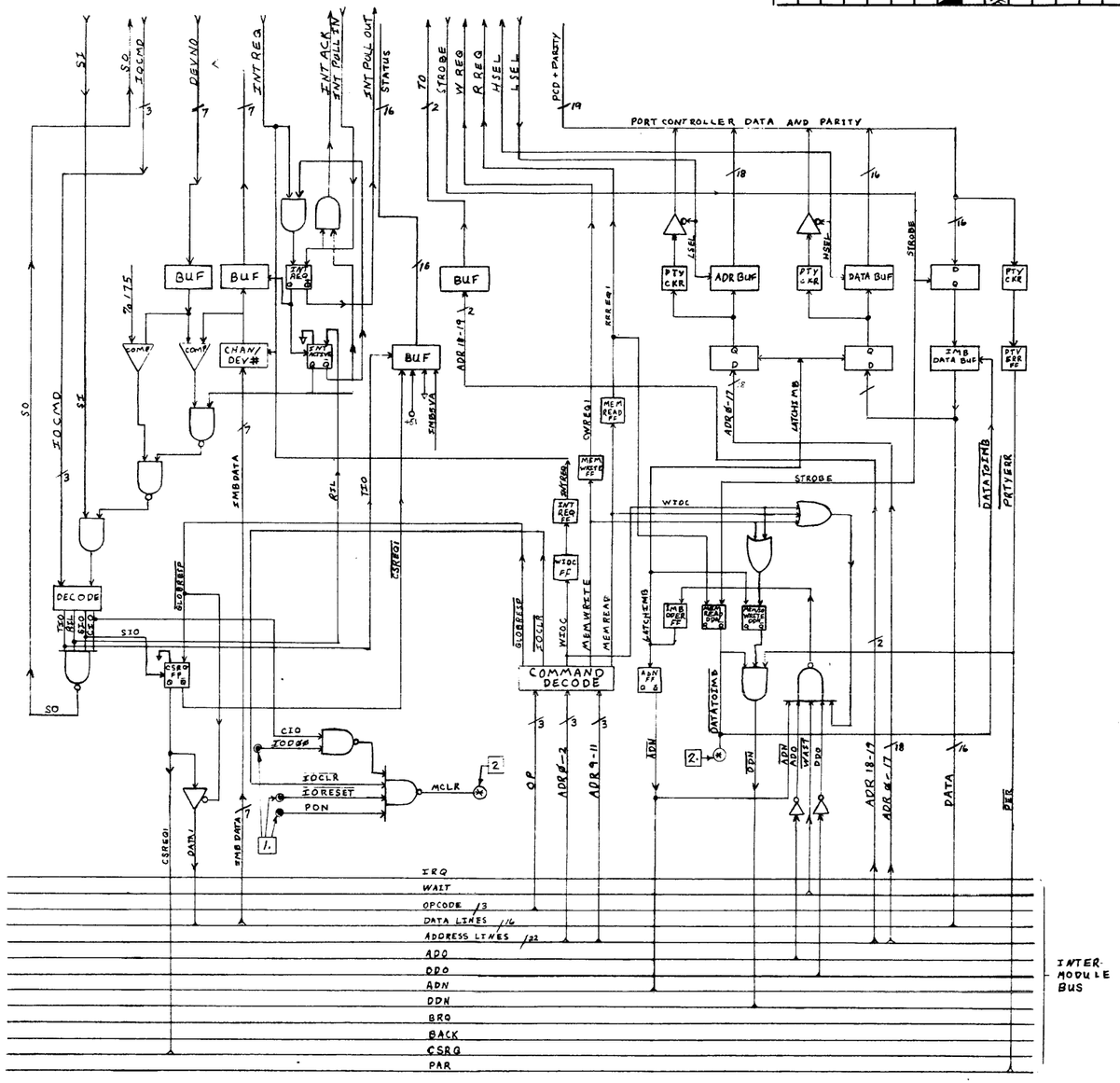
REF. DWGS.: F-1 ASSY.
A-50 DATE CODE INFO.
D-51, D-52 SCHEM.



ENGINEERING RESPONSIBILITY								SEPIA							
0	1	2	3	4			7		9		11	12	14	15	
16	17		19		21	22	23	25	29	30	32	33	38	43	
45	46	61	63				47								

C-30340-60002-54

SYM	REVISIONS	APPROVED	DATE
A	AC IMPED	JJH	8-19-81



NOTES:

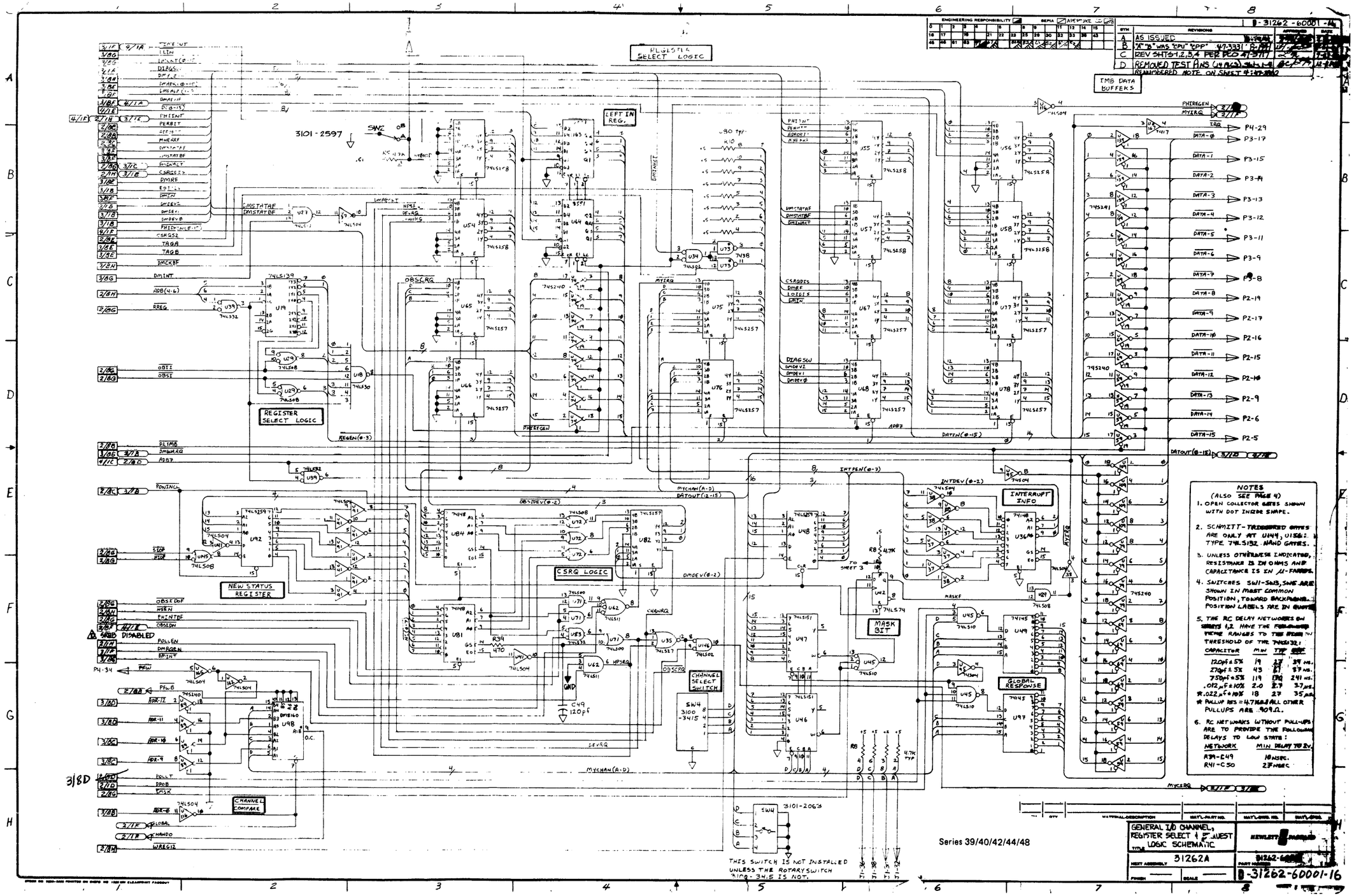
1. ⊙ THESE SIGNALS ARE FROM THE SERIES III IOP/PWR BUS
2. ✱ THESE SIGNALS ARE INTERNAL TO THE IMBA

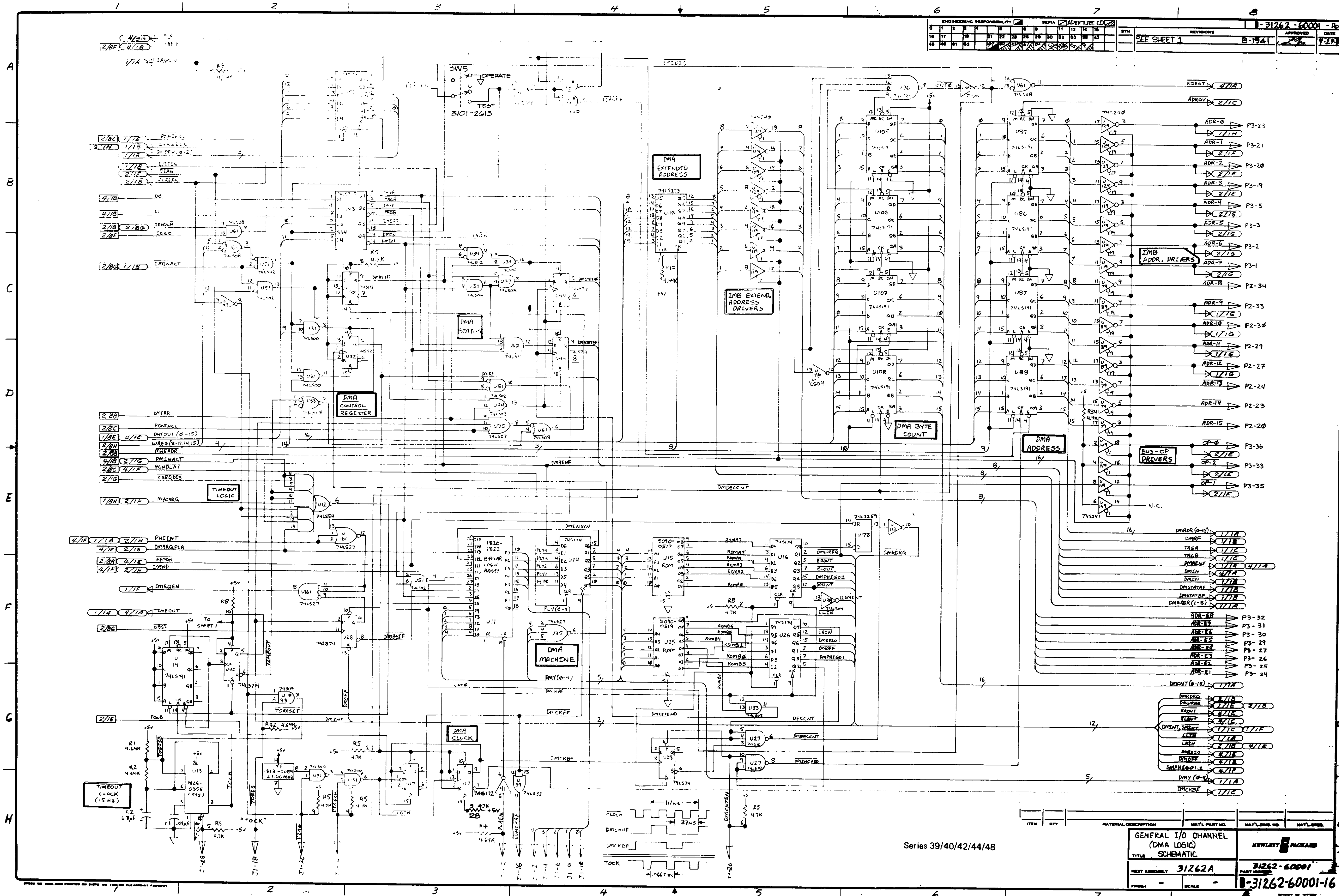
ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

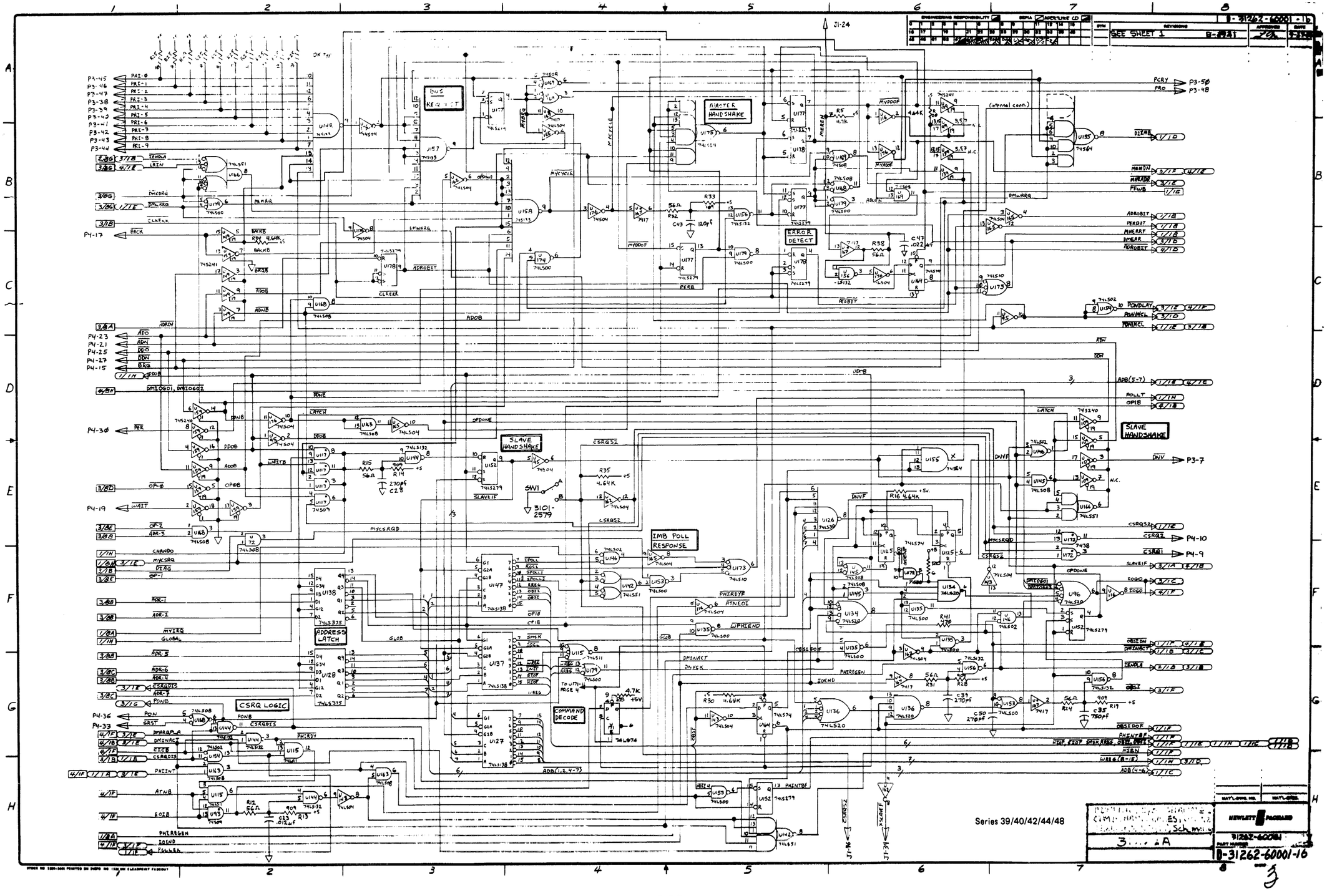
TITLE: SERIES III IMB ADAPTOR BLOCK DIAGRAM	HEWLETT PACKARD
NEXT ASSEMBLY: —	PART NUMBER: 30340-60002
FINISH: — SCALE: —	C-30340-60002-54

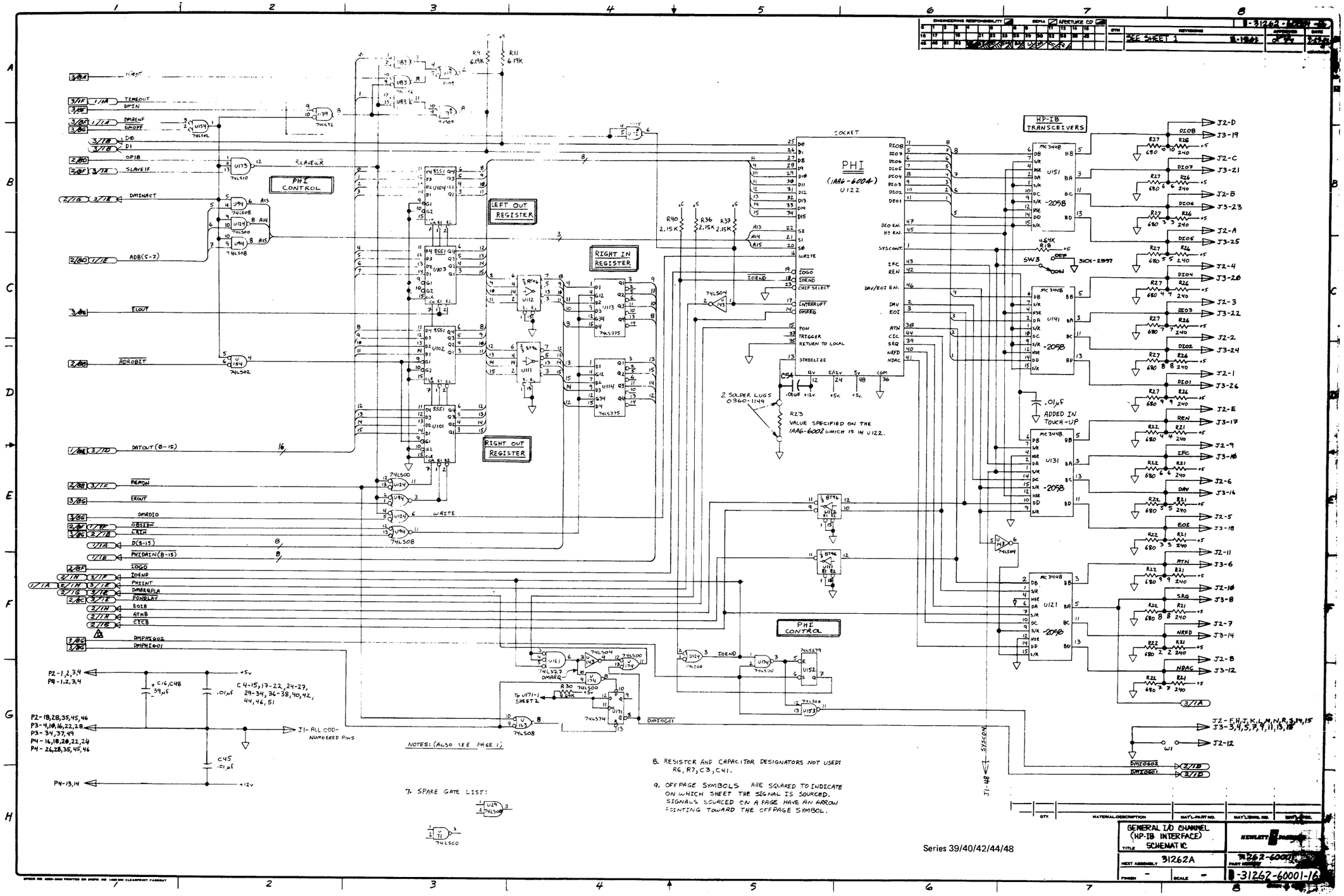
SHEET 1 OF 1

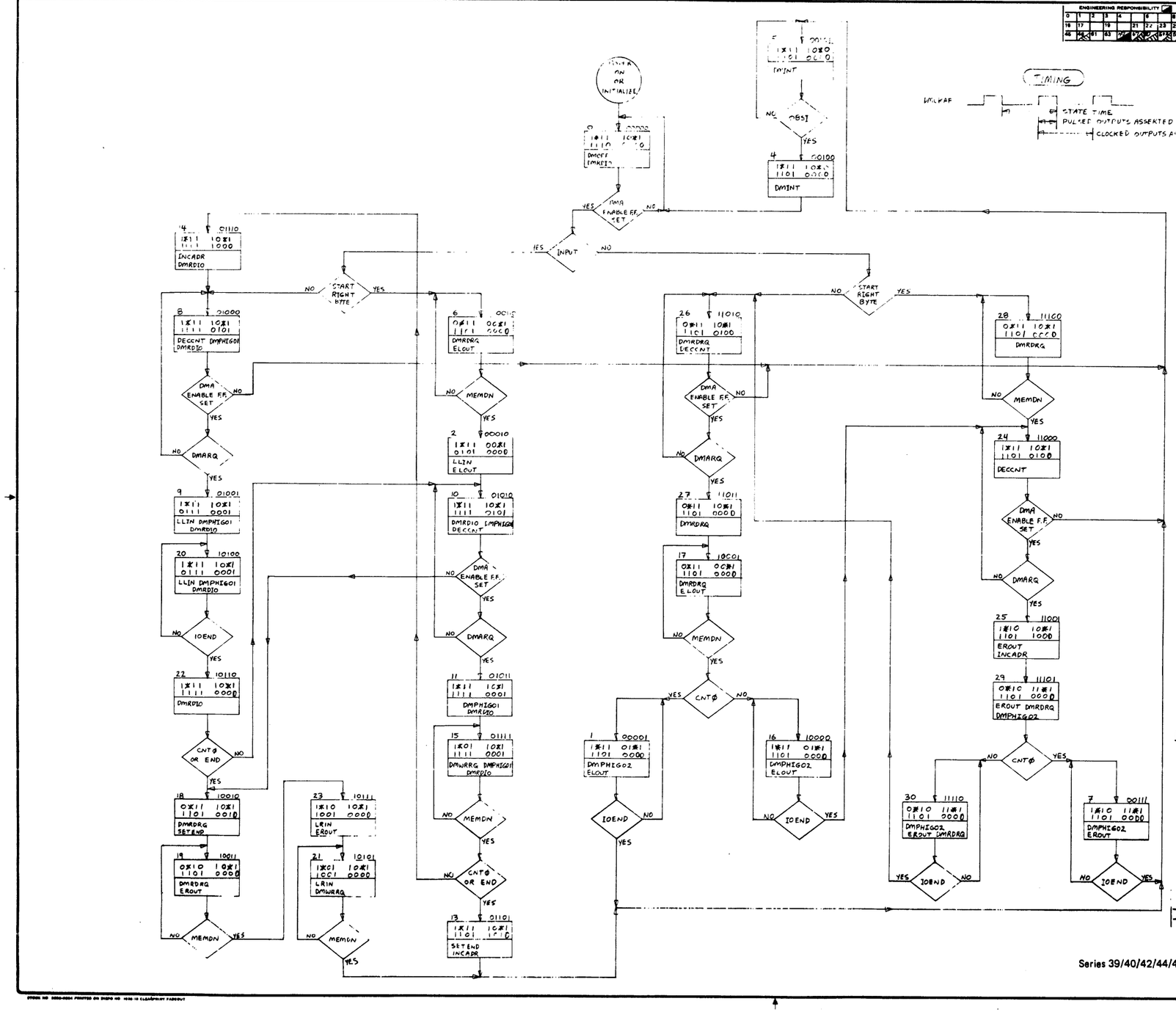
STOCK NO. 9280-0003 PRINTED ON DIEPO NO. 1020-10 CLEARPRINT FADEOUT


REGISTER SELECT LOGIC
LEFT IN REG.
IMB DATA BUFFERS
3101 - 2597
NEW STATUS REGISTER
CSRQ LOGIC
CHANNEL COMPARE
CHANNEL SELECT SWITCH
MASK BIT
INTERRUPT INFO
GLOBAL RESPONSE
NOTES
(ALSO SEE PAGE 4)
1. OPEN COLLECTOR GATES SHOWN WITH DOT INSIDE SHAPE.
2. SCHMITT-TRIGGERED GATES ARE ONLY AT U144, U136: TYPE 74LS132 NAND GATES.
3. UNLESS OTHERWISE INDICATED, RESISTANCE IS IN OHMS AND CAPACITANCE IS IN µ-FARDS.
4. SWITCHES SW1-SW3, SW6 ARE SHOWN IN MOST COMMON POSITION, TOWARD BACKPANEL. POSITION LABELS ARE IN QUOTES.
5. THE RC DELAY NETWORKS ON SHEETS 1,2 HAVE THE FOLLOWING TIME RANGES TO THE HIGH-TO-LOW THRESHOLD OF THE 74LS132:
CAPACITOR MIN TYP MAX
120pf ± 5% 19 27 39 ns.
270pf ± 5% 43 61 87 ns.
750pf ± 5% 119 170 241 ns.
.012µF ± 10% 2.0 2.7 3.7 µs.
.022µF ± 10% 1.8 2.7 3.5 µs.
* PULLUP RES = 4.7KΩ & ALL OTHER PULLUPS ARE 909Ω.
6. RC NETWORKS WITHOUT PULL-UPS ARE TO PROVIDE THE FOLLOWING DELAYS TO LOW STATE:
NETWORK MIN DELAY TO 2V
R39-C49 18 nsec.
R41-C50 23 nsec.
THIS SWITCH IS NOT INSTALLED UNLESS THE ROTARY SWITCH 3109-3415 IS NOT.
Series 39/40/42/44/48
GENERAL I/O CHANNEL, REGISTER SELECT & REQUEST LOGIC SCHEMATIC
31262A
D-31262-60001-16


DMA EXTENDED ADDRESS
IMB EXTEND. ADDRESS DRIVERS
DMA BYTE COUNT
DMA ADDRESS
IMB ADDR. DRIVERS
BUS-OP DRIVERS
DMA STATUS
DMA CONTROL REGISTER
TIMEOUT LOGIC
DMA MACHINE
DMA CLOCK
TIMEOUT CLOCK (15 Hz)
SW5
OPERATE
TEST
3101-2613
SEE SHEET 1
B-1541
GENERAL I/O CHANNEL
(DMA LOGIC)
SCHEMATIC
31262A
31262-60001
B-31262-60001-16
HEWLETT PACKARD
Series 39/40/42/44/48


MASTER HANDSHAKE
SLAVE HANDSHAKE
IMB POLL RESPONSE
ERROR DETECT
COMMAND DECODE
CSRQ LOGIC
ADDRESS LATCH
Series 39/40/42/44/48
NEWLETT PACKARD
31262-60001
0-31262-60001-16


PHI CONTROL
LEFT OUT REGISTER
RIGHT IN REGISTER
RIGHT OUT REGISTER
PHI (1AA6-6004) U122
SOCKET
HP-IB TRANSCEIVERS
R11 6.19K
R4 6.19K
R40 2.15K
R36 2.15K
R37 2.15K
4.64K R18
SW3
DEF
3101-2597
.01μF ADDED IN TOUCH-UP
R23 VALUE SPECIFIED ON THE 1AA6-6002 WHICH IS IN U122.
2 SOLDER LUGS 0360-1149
C54 .01μF
DATOUT(0-15)
WRITE
DMAMI602
DMAMI601
DMRQ
IDGO
IDEND
PHEINT
DMARQPLA
PONRLAY
EOIB
ATNB
CTCB
ELOUT
ADROBIT
ERDAV
EROUT
DMADIO
DMSION
DMRN
D(8-15)
PHIDMIN(8-15)
SLAVEIR
SLAVEIF
DMINACT
ADB(5-7)
TIMEOUT
DMAIN
DMAENF
DMAOFF
OPIB
DO
D1
P2-1,2,3,4
P9-1,2,3,4
+5v
C16,C48 39μF
.01μF
C4-15,17-22,24-27, 29-34,36-38,40,42, 44,46,51
P2-18,28,35,45,46
P3-4,10,16,22,28
P3-34,37,49
P4-16,18,20,22,24
P4-26,28,35,45,46
J1- ALL ODD-NUMBERED PINS
C45 .01μF
P4-13,14
+12v
NOTES: (ALSO SEE PAGE 1)
7. SPARE GATE LIST:
8. RESISTOR AND CAPACITOR DESIGNATORS NOT USED: R6, R7, C3, C41.
9. OFFPAGE SYMBOLS ARE SQUARED TO INDICATE ON WHICH SHEET THE SIGNAL IS SOURCED. SIGNALS SOURCED ON A PAGE HAVE AN ARROW POINTING TOWARD THE OFFPAGE SYMBOL.
J1-48 SYSCONT
J2-F,H,J,K,L,M,N,R,3,14,15
J3-3,4,5,7,9,11,13,15
W1
J2-12
DMI0802
DMI0601
GENERAL I/O CHANNEL (HP-IB INTERFACE) SCHEMATIC
31262A
31262-60001
-31262-60001-16
Series 39/40/42/44/48



MNEMONICS

• INPUTS

CNTØ	≡	BYTE COUNT REGISTER EQUALS ZERO.
DMARQ	≡	INPUT: INBOUND FIFO NOT EMPTY. OUTPUT: OUTBOUND FIFO NOT FULL.
IOEND	≡	PHI HANDSHAKE COMPLETED.
MEMDN	≡	MEMORY OPERATION COMPLETED.
OBSI	≡	IMB "OBSI" COMMAND HAS BEEN DONE.
TAG	≡	TAG BITS D0,D1 OF PHI INDICATE END OF TRANSFER.

• OUTPUTS

DECCNT	≡	DECREMENT BYTE COUNT AND COMPLEMENT LEFT/RIGHT BIT ONCE IN THIS STATE.
DMINT	≡	ASSERT CSRQ. AFTER OBSI, CSRQ IS HELD OFF.
DMPHIGO1	≡	START WRITE TO PHI. THIS WILL PROVIDE A "FAST" PHI HANDSHAKE WHICH RELEASES IOGO AS SOON AS IOEND IS ASSERTED, ASYNCHRONOUS TO DMA MACHINE.
DMPHIGO2	≡	START READ FROM PHI. THIS PROVIDES A PHI HANDSHAKE WHICH RELEASES IOGO AS SOON AS MEMDN IS ASSERTED, ASYNCHRONOUS TO DMA MACHINE.
DMOFF	≡	DMA IS IDLE. : RE-ENABLE ALL CSRQ'S AND ALLOW SLAVE ACCESS TO PHI.
DMRDIO	≡	SELECT PHI TO READ FIFO. IT IS SELECTED TO WRITE TO FIFO OTHERWISE. IN STATE Ø, THE SLAVE MAY OVERRIDE DMRDIO.
DMRDRQ	≡	REQUEST READ OF MEMORY.
DMWRRQ	≡	REQUEST WRITE TO MEMORY. THE CYCLE WILL NOT START UNTIL IOEND OR LRIN IS ASSERTED.
ELOUT	≡	GATE THE LEFT BYTE OUTPUT REGISTER TO THE PHI DATA LINES.
EROUT	≡	GATE THE RIGHT BYTE OUTPUT REGISTER TO THE PHI DATA LINES.
INCADR	≡	INCREMENT THE DMA ADDRESS REGISTER.
LLIN	≡	CLOCK PHI DATA LINES INTO LEFT BYTE INPUT REGISTER EACH STATE TIME AT DMCKAF↓.
LRIN	≡	LATCH PHI DATA LINES INTO RIGHT BYTE INPUT REGISTER.
SETEND	≡	SET DMA STATUS TO APPROPRIATE TERMINATION CODE.

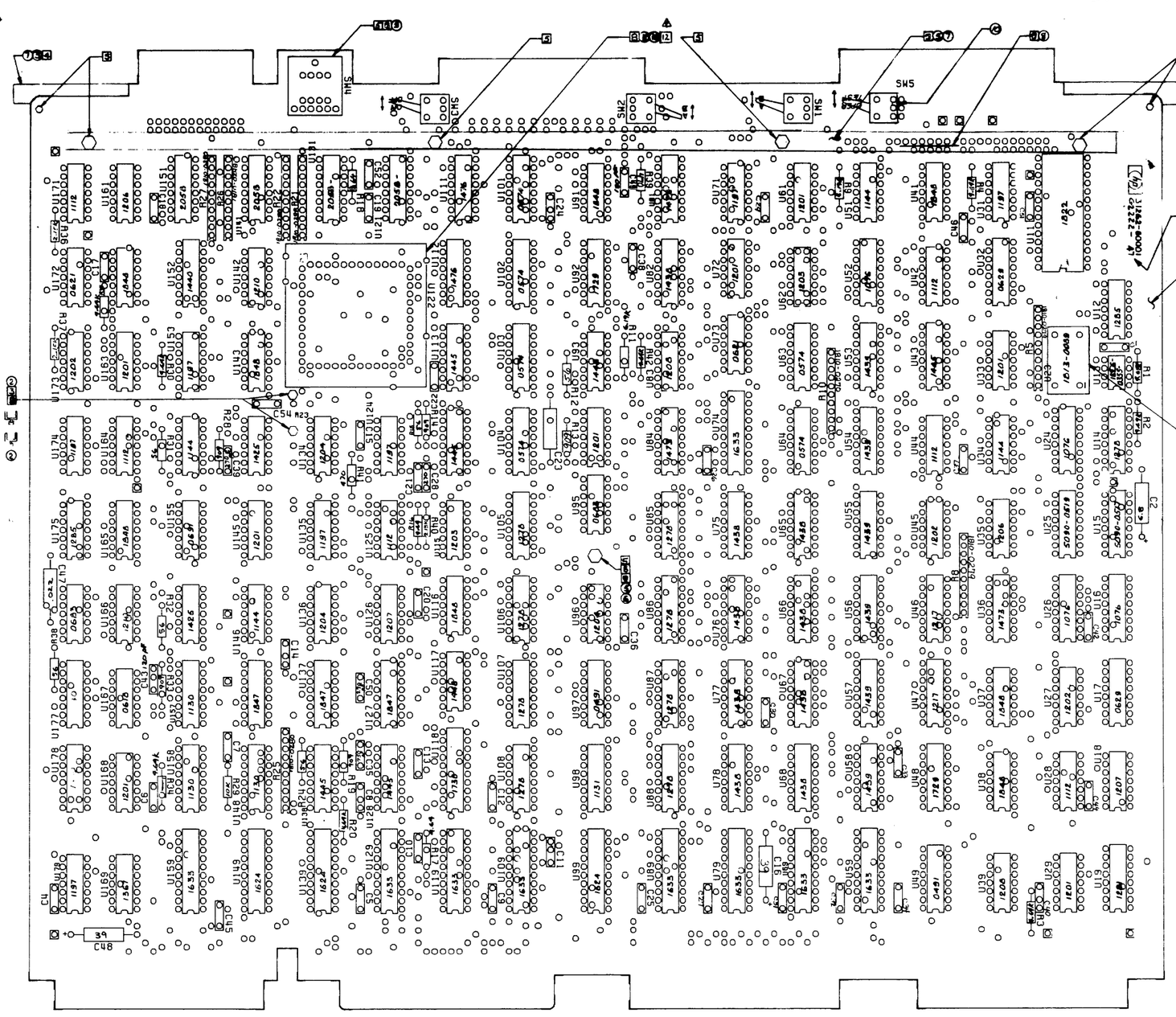
NOTES

1. OUTPUTS OCCURRING IN CONSECUTIVE STATES DO NOT GLITCH BETWEEN STATES, EXCEPT LLIN, WHICH IS TAKEN DIRECTLY FROM THE DECODER ROM.
2. THESE INPUTS ARE ASYNCHRONOUS : IOEND, MEMDN, DMARQ, OBSI.
3. THE ONLY PULSED OUTPUTS ARE: DECCNT, SETEND.
4. BOTH OUTPUT DATA REGISTERS ARE LOADED AT OCCURRENCE OF MEMDN.
5. THE HP-IB "END" MESSAGE IS SENT IN STATES 7,16 UNLESS INHIBITED WITH A DMA CONTROL BIT.
6. MEMDN REMAINS ASSERTED UNTIL BOTH DMRDRQ AND DMWRRQ ARE NOT ASSERTED.
7. ONCE DMRDRQ IS ASSERTED, THE MEMORY CYCLE WILL COMPLETE EVEN IF DMRDRQ IS REMOVED BEFORE MEMDN.

Series 39/40/42/44/48

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

GENERAL I/O CHANNEL (DMA MACHINE FLOWCHART) SCHEMATIC
TITLE
31262A
NEXT ASSEMBLY
FINISH — SCALE —
HEWLETT PACKARD
31262-60001
PART NUMBER
B-31262-60001-16



REVISIONS			
ZONE	DESCRIPTION	DATE	APPROVED
A	AS ISSUED		
B	ADDED NOTE 11 ITEM 11	1-15-87	
C	DELETED		
D	ADDED ITEM 16 TO PART LIST CALLOUT DOC CHG		
E	REMOVED W56 R86 (4 PLACES) 97-3902	8/6/91	
F	ADDED NOTE 12 PER DOC CHG NH-1-93	1-5-93	
G	ITEM 5 ADDED 4 SILKWELDS (47-3416) ITEM 6 ADDED 4 SILKWELDS (47-3416)	1-5-93	
H	ADDED 270pF NPO 5% CH CAP DWG 8-1-93	8-1-93	

F-31262-60001-18

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   ALL RESISTANCE IN OHMS.
   ALL RESISTORS 1/4 W 1% MF.
   EXCEPT 56Ω & 470 ARE 5%.
   ALL CAPACITANCE IN MICROFARADS.
   ALL CAPACITORS ARE .01 CER DISC.
   ALL SWITCHES ARE 3101-2597
   ALL I.C.'S ARE 1820-
2. INSTALL ITEM 16
3. INSTALL & RIVET ITEM 2 2 PLACES PRIOR TO LOADING ANY COMPONENTS. ORIENTATION AS SHOWN AT LEFT OF NOTATION SYMBOL
4. ORIENT Y1 WITH MANUFACTURER ORIENTATION SYMBOL AT LOWER RIGHT. BODY OF ITEM 12 MUST BE SPACED FROM BOARD WITH BEADS. ITEM 5 OR SELF CONTAINED SPACERS
5. MASK AS INDICATED PRIOR TO WAVE SOLDER
6. USE SUPPORT FIXTURE DURING WAVE SOLDER.
7. INSTALL ITEMS 3, 4 & 6 IN P.C. FINAL ASSEMBLY.
8. INSTALL ITEM 11 IN U122 AFTER ITS-70 TEST. & SOLDER R23 RES. OF VALUE STAMPED ON 11 ACROSS THE TWO ITEMS 16. USE ANTI STATIC PROTECTION BEFORE HANDLING ITEM 11.
9. SERIALIZE BOARD
10. SCHEMATIC D-31262-60001-16.
11. ITEM 14 NEAR HP LOGO.
12. NOTE: R23 RES. VALUE MAY NOT MATCH VALUE STAMPED ON ITEM 11 AFTER SYSTEM TEST IS COMPLETE!

ITEM	QTY	MATERIAL/DESCRIPTION	MATL PART NO	MATL DRWG NO	MATL SPEC
16		LABEL - DATE CODE	9320-5320		
15	2	SOCKET CLIPS	1200-0844		
14	1	LABEL, WARRANTY	7120-6830		
13	4	BEAD SPACER	4330-0145		
12	1	I.C. DIGITAL (Y1)	1813-0088		
11	1	PHI	1AA6-6004		
10	1	SWITCH	3101-2613		
9	1	SWITCH, THWAL 16 POS	3100-3415		
8	1	LABEL	7120-6600		
7	1	BRACE, PC BOARD	5040-6058		
6	1	SPACER	5020-7818		
5	5	SCREW 4-40 X .31	0624-0077		
4	2	EXTRACTOR	5040-6008		
3	2	PIN GRV. .062 X .250	1480-0116		
2	2	SOLDER, SOLDER TEARN.	0390-1168		
1	1	[illegible] ETCHED	31262-60001		

PROCESS REVIEW
DATE 2/1/84

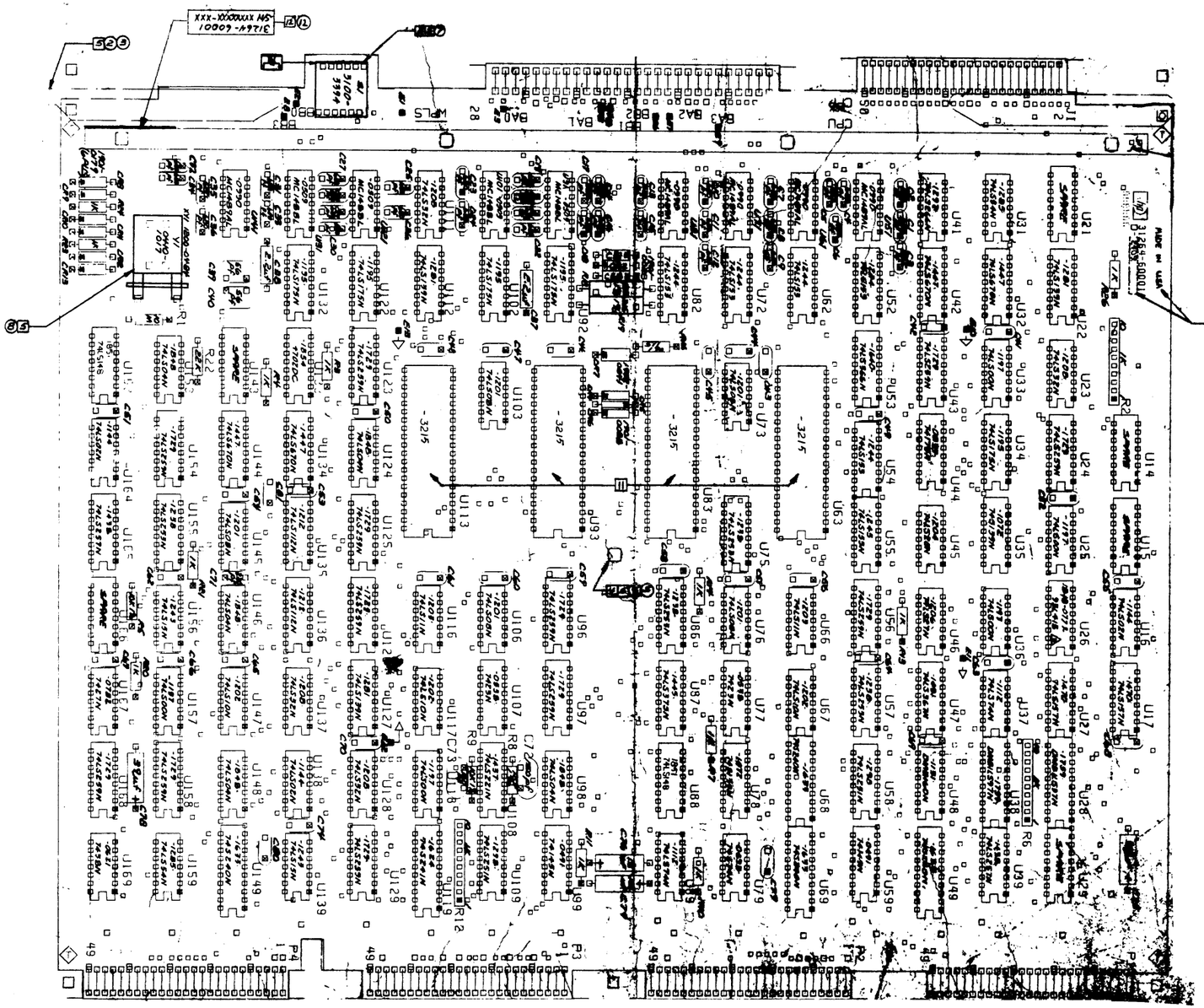
GENERAL I/O CHANNEL ASSY

HEWLETT PACKARD

31662A | 31262-60001 | SCALE 8/1 | F-31262-60001-18

Series 39/40/42/44/48

DIRECTION THRU SOLDER WAVE



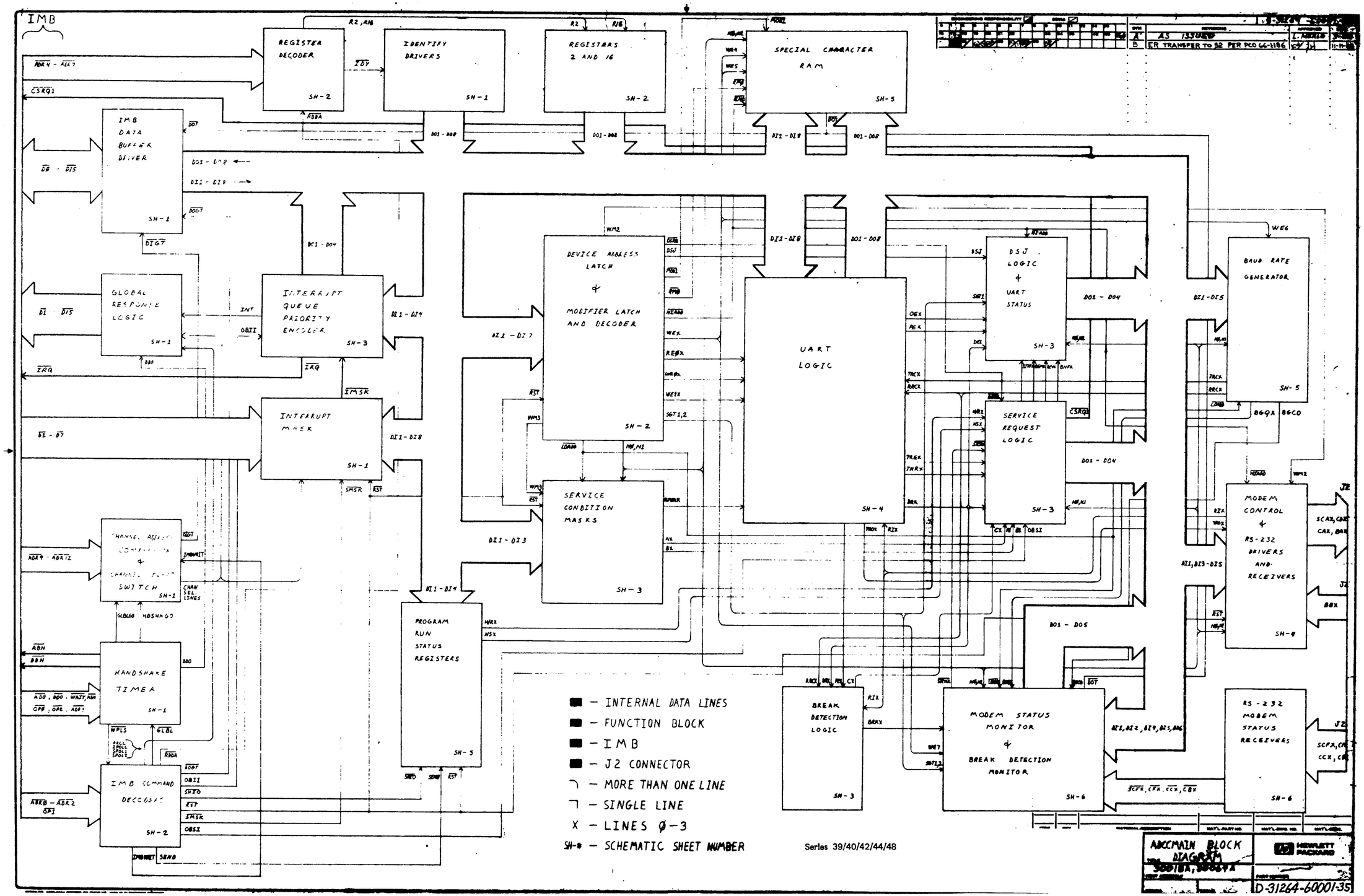
DELETED

11. INSTALL U63 & U118 AT THE STATIC PROTECTED STATION
12. INSTALL ITEM (16) IN AC. FINAL ASS'Y.

Series 39/40/42/44/48

ADCC MAIN ASSY

31264-60001
D-31264-60001-31


IMB
REGISTER DECODER
SH-2
IDENTIFY DRIVERS
SH-1
REGISTERS 2 AND 16
SH-2
SPECIAL CHARACTER RAM
SH-5
IMB DATA BUFFER DRIVER
SH-1
GLOBAL RESPONSE LOGIC
SH-1
INTERRUPT QUEUE PRIORITY ENCODER
SH-3
INTERRUPT MASK
SH-1
CHANNEL ADDRESS COMPARATOR & CHANNEL FLAG SWITCH
SH-1
HANDSHAKE TIMER
SH-1
IMB COMMAND DECODER
SH-2
DEVICE ADDRESS LATCH & MODIFIER LATCH AND DECODER
SH-2
SERVICE CONDITION MASKS
SH-3
PROGRAM RUN STATUS REGISTERS
SH-5
UART LOGIC
SH-4
DSJ LOGIC & UART STATUS
SH-3
SERVICE REQUEST LOGIC
SH-3
BAUD RATE GENERATOR
SH-5
MODEM CONTROL & RS-232 DRIVERS AND RECEIVERS
SH-4
BREAK DETECTION LOGIC
SH-3
MODEM STATUS MONITOR & BREAK DETECTION MONITOR
SH-6
RS-232 MODEM STATUS RECEIVERS
SH-6
DI1-DI8
DO1-DO8
DO1-DO4
DO1-DO5
DI1-DI5
DI1-DI7
DI1-DI3
J1
J2
INTERNAL DATA LINES
FUNCTION BLOCK
I M B
J2 CONNECTOR
MORE THAN ONE LINE
SINGLE LINE
X - LINES Ø-3
SH-# - SCHEMATIC SHEET NUMBER
Series 39/40/42/44/48
ABCCMAIN BLOCK DIAGRAM
D-31264-60001-35

RS-232 RECEIVERS

MODEM STATUS MONITOR

J2-26 J2-19 J2-M J2-4 J2-25 J2-16 J2-L J2-C J2-24 J2-15 J2-18 J2-2 J2-23 J2-14 J2-9 J2-B

J1-40 J2-X J1-45 J2-R J1-46 J2-J J1-50 J2-1

U81 U71 U61 U51

74LS153 DUAL MUX U81

74LS153 DUAL MUX U52

74LS158 DUAL MUX U72

74LS158 DUAL MUX U62

U53 74LS366 (T.S.)

74LS670 4X4 FILE T.S. U42

STATUS REFERENCE

U41 74LS266

U32 74LS670 4X4 FILE T.S.

U31 74L554

U22 74LS259 LATCH

U55 74LS243 DUAL MUX T.S.

U23 74LS139

SGTZ

DOX

DOT

SGTI

+Vs (22-6)

R2-9 R2-10 R2-8 R2-7 1K +5V

R3 1.5K

R2-3 10K

Series 39/40/42/44/48

MAIN ASSY, DATA COMM. CHANNEL MODEM STATUS, RS-232 STATUS SCHEMATIC		NEWLETT PACKARD	
31264A		31264-60001	
		D-31264-60001-56	

C E.R. TRANSFER TO BB. PER PCO 46-11196.
D A1820-3214 WAS A1820-2060 PCO 42-01493

MODEM CONTROLS

UARTS

MC1488 POWER:
PIN 1 = -10V
PIN 7 = GND
PIN 14 = +10V

NOTES
1. IF 42 PIN PACK IS USED (1820-2002) SCHEMATIC PINOUTS DO NOT CORRESPOND TO PC ASSEMBLY PINOUTS. 40 PIN PACK IS LOADED WITH PIN 1 TO PIN 1 ON BOARD

Series 39/40/42/44/48

MAIN ASYNC DATA COMM CHANNEL UARTS, MODEM CONTROL SCHEMATIC
31264A
31264-60001
B-31264-60001-5

BAUD RATE CODE DEFINITION		
BAUD RATE CODE (BINARY)	BAUD RATE (BPS)	FREQUENCY (kHz)
0000	(EXTERNAL)	—
0001	(EXTERNAL)	—
0010	50	0.8
0011	75	1.2
0100	134.5	2.153
0101	200	3.2
0110	600	9.6
0111	2400	38.4
1000	9600	153.6
1001	4800	76.8
1010	1800	28.8
1011	1200	19.2
1100	2400	38.4
1101	300	4.8
1110	150	2.4
1111	110	1.744

BAUD RATE GENERATOR

74LS670 4X4 T.S. RCV FILE U134

74LS670 4X4 T.S. XMIT FILE U144

34702 BAUD GEN. U133

74LS259 ADDR LATCH U125

74LS157 QUAD 2-1 MUX U17

74LS157 QUAD 2-1 MUX U27

74LS259 U96

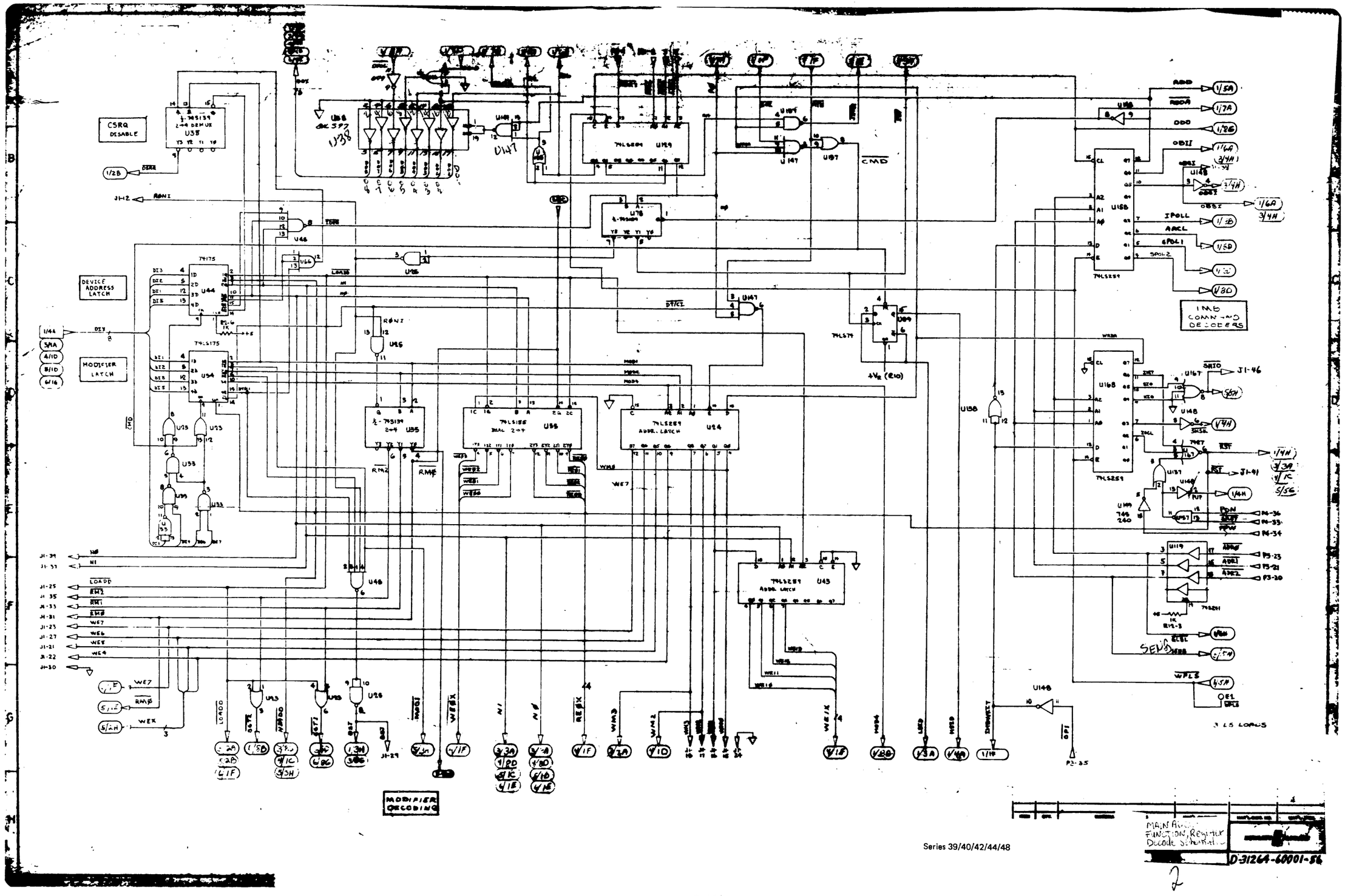
74LS259 U97

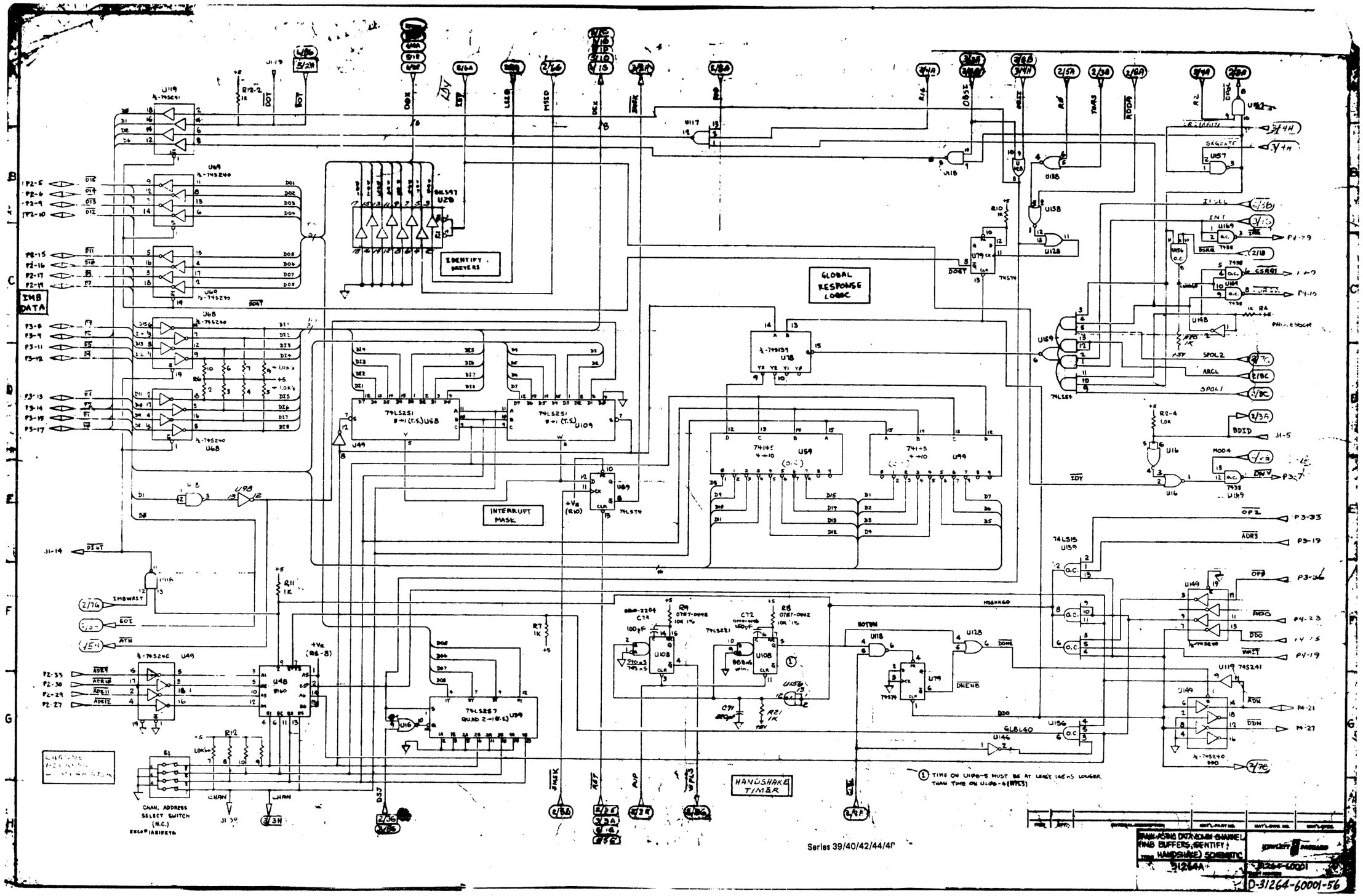
74LS259 U98

DMA ADDRESS REGISTER

Series 39/40/42/44/48

MAIN ASYNC DATA COMM CHANNEL SPEC CHAR, BAUD GEN, H/R, NS SCHEMATIC	HEWLETT PACKARD
31264A	31264-60001
	31264-60001-56


CSRQ DISABLE
DEVICE ADDRESS LATCH
MODIFIER LATCH
MODIFIER DECODING
CMD
IMB COMMAND DECODERS
ADD
ADDA
ODD
OBII
OBSI
IPOLL
ARCL
SPOL1
SPOL2
SEND
WRBA
WRBB
WRBC
WRBE
SRTO
RST
PUP
PDN
ADRI
ADR2
SERIES 39/40/42/44/48
MAIN ASSY. FUNCTION, Register Decode Schematic
D-31264-60001-56


IMB DATA
P2-5
P2-6
P2-9
P2-10
P2-15
P2-16
P2-17
P2-19
P3-6
P3-9
P3-11
P3-12
P3-13
P3-14
P3-15
P3-17
P2-33
P2-30
P2-29
P2-27
U119
U69
U68
U48
U49
U98
U20
IDENTIFY DRIVERS
INTERRUPT MASK
GLOBAL RESPONSE LOGIC
HANDSHAKE TIMER
CHAN. ADDRESS SELECT SWITCH (N.C.)
IMBWRST
DSJ
JNAK
RST
AVP
WPL3
GLBL
DBIN
DBOE
MSIO
DACK
IRQ
R/W
OBSE
SREQ
AS
TRAS
RDDS
SREQATN
SPOL2
ARCL
SPOL1
BDID
MODA
DNV
IDY
OP2
ADR3
OPD
ADD
DDD
WRIT
ADN
DDN
DBENB
HSHKREQ
DONE
GLBLREQ
TIME ON U108-5 MUST BE AT LEAST 145nS LONGER THAN TIME ON U108-4(RVCS)
Series 39/40/42/44/45
DMA/ASYNC DATA/COMM CHANNEL IMB BUFFERS, IDENTIFY & HANDSHAKE SCHEMATIC
31264A
D-31264-60001-56

SERVICE CONDITION MASKS:

BIT #	CONDITION
0	XMIT BUFF NOT FULL
1	XMIT BUFF EMPTY
2	RCV BUFF NOT EMPTY
3	—

SERVICE CONDITION MASKS

SERVICE REQUEST LOGIC

BREAK DETECTION

INTERRUPT ENABLE

DSJ LOGIC

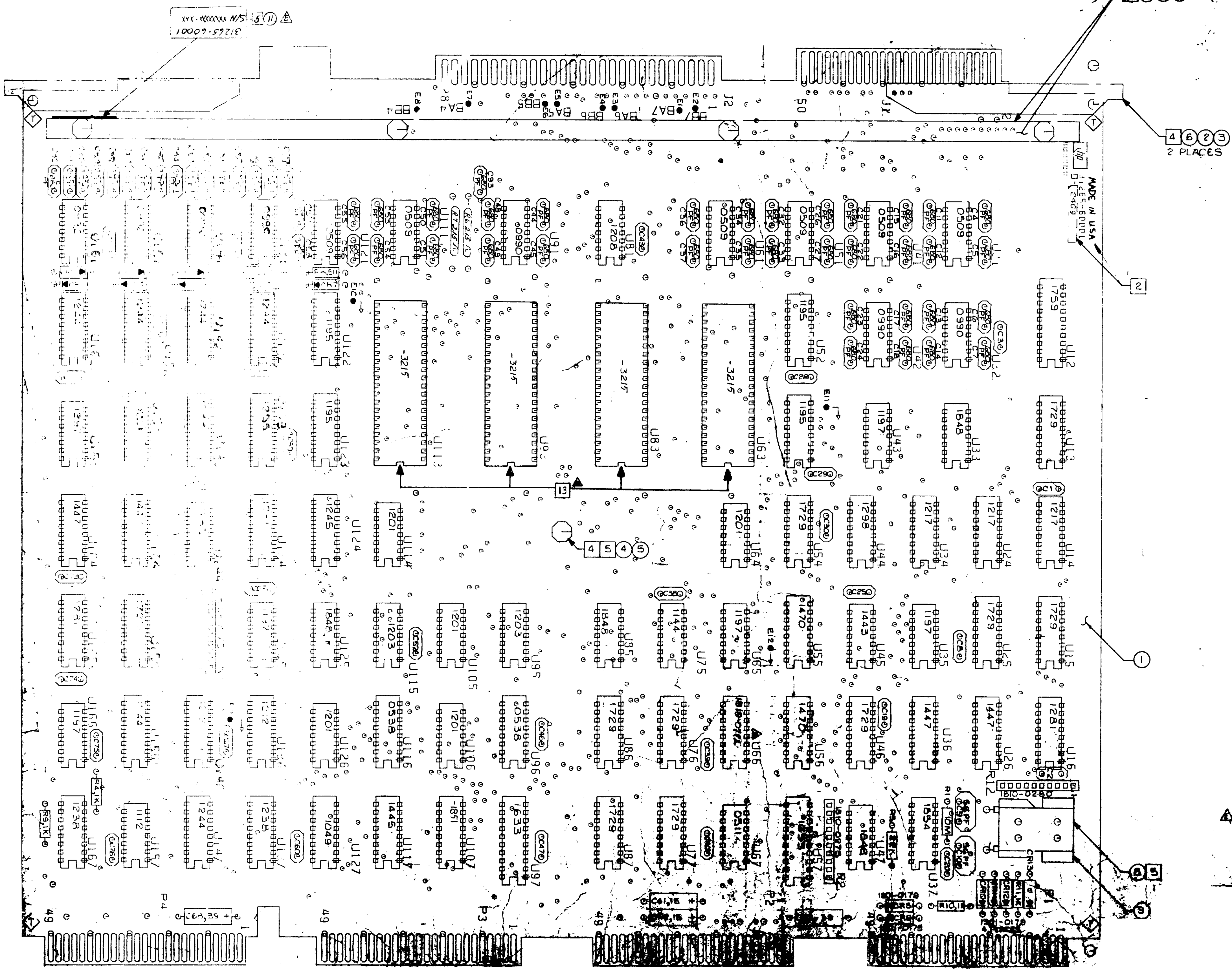
DSJ RETURN
READ 0
WRITE 1
STATUS 2
DEFAULT 3

MANAGER	
POLL, DST, DBXI, INT. Schmatic	

D-31264-60001-56

Series 39/40/42/44/48

D	[illegible]	[illegible]	[illegible]
E	[illegible]	[illegible]	[illegible]
F	[illegible]	[illegible]	[illegible]
G	[illegible]	[illegible]	[illegible]
H	DELETED +D ON 1820-[illegible] PER PCO 66-1179 [illegible]	CC	[illegible]
J	TRANSFERED TO DIV. 52 PER PCO 66-1186	KW	10-6-83
K	DELETED +D PER PCO 52-0543	KW	[illegible]
L	1820-3215 WAS 1820-2060 PCO 52-0[illegible]	[illegible]	1-16-84
M	U107 WAS 1820-0987 PCO 52-0578	[illegible]	9-1-84
N	DELETED NOTES 3 & 12, PHOTO DATE WAS 7-31-80 PER PCO 52-0671	[illegible]	[illegible]



NOTES:

1. UNLESS OTHERWISE SPECIFIED
   ALL RESISTANCE IN OHMS
   ALL RESISTORS ARE 1/4 W, 1%
   ALL CAPACITANCE IN MICROFARADS
   ALL CAPACITORS ARE .01 CER DISC
   ALL DIODES ARE 1901-0028
   ALL I.C.'S ARE 1820-

2. MARK DATE CODE D-2409 AND MADE IN USA
3. DELETED
4. USE SUPPORT FIXTURE DURING WAVE SOLDER.
5. IN TOUCH UP INSTALL ITEMS (2) THRU (8) AND (11)
6. DIP AUTO INSERTION TAPE AVAILABLE FOR FULLY AUTOMATIC INSERTER.
7. SCHEMATIC D-31265-60001
8. IN TOUCH UP SERIALIZE BOARD.
9. AT THE MECHANICAL INSPECTION STATION, APPLY ITEM (10) NEAR THE HP LOGO.

12. DELETED

13. USE STATIC PROTECTED STATION AND WRIST STRAP WHEN LOADING.
14. SEE MODIFICATION DWG C-31265-60001-1 FOR ADDITION OF JUMPER WIRE.

11	1	LABEL-SERIAL NUMBER	9320-[illegible]
10	1	LABEL, WARRANTY	9320-[illegible]
9	1	SOCKET, CRYSTAL	[illegible]
8	1	CRYSTAL, 2457[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	P.C. BOARD	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

ADCC EXTENDER ASSY

D-31265-60001-31

REV	DESCRIPTION
D	ACTIVATED PER ECO 8[illegible]
E	ER TRANSFER TO B2 PER PCO 08-[illegible]
F	74LS348 WAS 93L18 PER PCO 82-07[illegible]

INTR CONDITION
- 0 XMIT BUF NOT FULL
- 1 XMIT BUF EMPTY
- RC BUF NOT EMPTY

SERVICE CONDITION MASKS

SERVICE REQUEST LOGIC

UART STATUS

FRAMING ERROR

OVERRUN ERR

PARITY ERROR

BREAK DETECTION

BREAK RQST. FF's

DSJ LOGIC
DSJ RETURN
READ 0
WRITE 1
STATUS 2
DEFAULT 3

U176 74LS259 SERVICE MASKS REG., BITS 4,5

U146 74LS259 SERVICE MASKS REG., BITS 6,7

U146 ½-74LS139 SERVICE MASKS LOADD CONTROL

U156 74LS153

U157 74LS258

U147 74LS153

U117 74LS375 RQST. LATCHES

U107 74LS348 RQST. PRIORITY ENCODER

U127 ½-74LS367 OBSJ CODE READ GATE

U77 74LS259 CHNL. PROG. HLT/RUN REG.

U87 74-LS284 CHNL. PROG. NEW STATUS REG.

U97 ½-74LS240

U134 ½74S240

U157-1 LS139

U125 LS04

U126 LS08

U116 7428

U136 7423

U147 LS00

U85 LS04

U95 LS08

U107 LS00

U127 LS08

U137 LS08

U147 LS04

74LS374

74LS125

74LS112A

74LS112

74LS244

74LS255

R1 1K +5V

R2 1K +5V

R3 1K +5V

R4 1K BEMN

R9 1K +5V

BNFN

LOADD

DOX

DSJ

ESRQ

CHAV

OBSJX

OBSJ

PGT

SMIO

ADR2

RMSKN

Series 39/40/42/44/48

ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG NO	MAT'L SPEC.

EXTD ASYNC DATA COMM CHANNEL MUL.,DSJ, OBSJ, HAR, MS SCHEMATIC

HEWLETT PACKARD

31765A

31765-60001

D-31265-60001-53

RS-232 RECIEVERS

MODEM STATUS MONITOR

Series 39/40/42/44/48

EXTD ASYNC DATA COMM CHANNEL MODEM STATUS, READ STATUS SCHEMATIC

31265A

HEWLETT PACKARD

SWISS-COLONY

D-31265-60001-53

REVISIONS			
C	INITIATED PER PCO 42-3814		
D	E R TRANSFER TO B2 PER PCO 46-1196		
D	1820-3815 WAS 1820-2060 PCO SE-0999		

MODEM CONTROL

UARTS

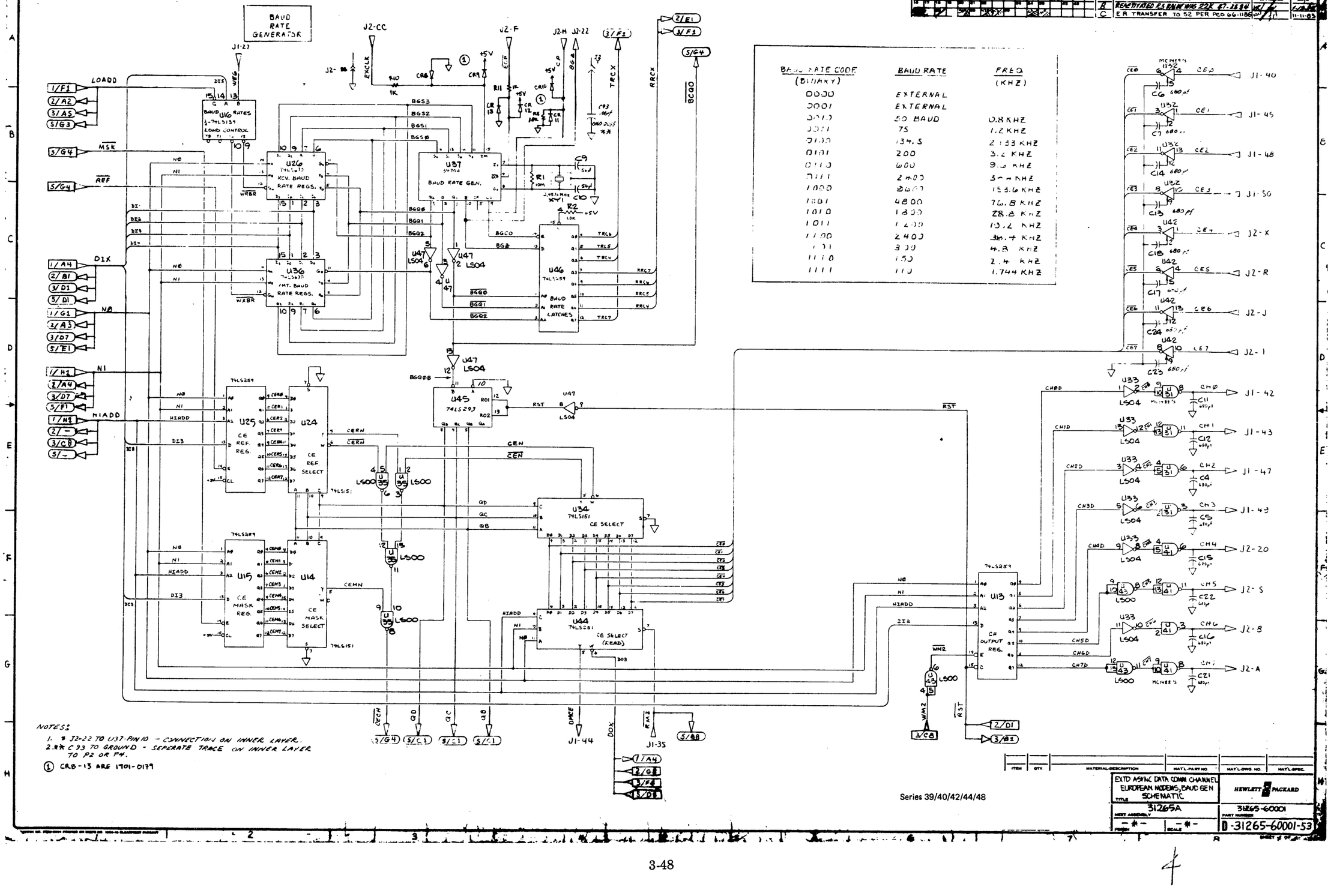
MC1488 POWER:
PIN 5 = -10V
PIN 7 = GND
PIN 14 = +10

NOTES
(1) IF 42 PIN PACK IS USED(1820-2070) - SCHEMATIC PINOUTS DO NOT CORRESPOND TO P.C. ASSEMBLY PINOUTS. 40 PIN PACK IS LOADED WITH PIN 1 TO PIN 1 ON BOARD.

Series 39/40/42/44/48

ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG NO	MAT'L SPEC.

EXTD ASYNC DATA COMM CHANNEL (ATC, MODEM CONTROL)
TITLE SCHEMATIC
NEXT ASSEMBLY 31265A
FINISH - SCALE -
HEWLETT-PACKARD
PART NUMBER 31265-60001
D-31265-60001-53
SHEET 1 OF 1



BAUD RATE CODE (BINARY)	BAUD RATE	FREQ (KHZ)
0000	EXTERNAL	
0001	EXTERNAL	
0010	50 BAUD	0.8 KHZ
0011	75	1.2 KHZ
0100	134.5	2.153 KHZ
0101	200	3.2 KHZ
0110	600	9.6 KHZ
0111	2400	38.4 KHZ
1000	9600	153.6 KHZ
1001	4800	76.8 KHZ
1010	1800	28.8 KHZ
1011	1200	19.2 KHZ
1100	2400	38.4 KHZ
1101	300	4.8 KHZ
1110	150	2.4 KHZ
1111	110	1.744 KHZ

NOTES:
1. * J2-22 TO U37-PIN 10 - CONNECTION ON INNER LAYER.
2. ** C 93 TO GROUND - SEPERATE TRACE ON INNER LAYER TO P2 OR P4.
(1) CRB-13 ARE 1901-0179

Series 39/40/42/44/48

EXTD ASYNC DATA COMM CHANNEL EUROPEAN MODEMS, BAUD GEN SCHEMATIC
31265A
31265-60001
D-31265-60001-53
HEWLETT PACKARD

DTH	REVISIONS	APPROVED	DATE
E	REACTIVATED PER PCO # 5 SCN	[illegible]	1-Feb-82
F	ER TRANSFER TO 52 PER PCO # 6 1186	[illegible]	11-16-82

31265-60001

J1-22 J1-21 J1-31

WE4 WE5 RMB

5/D2 4/C2 3/D2 2/D3 5/C8 4/H4 3/E2 2/C8

DIX DOX RAM

SPECIAL CHARACTER RAM

IMB DATA

P2-5 P2-6 P2-9 P2-10 P2-15 P2-16 P2-17 P2-19 J1-14

½ U57 ½ U57 ½ U57 ½ U57 ½-74S240

DI1 DI2 DI3 DI4 DI5 DI6 DI7 DI8

1K's +5V R2 1K's

OUTPUT DATA DRIVERS

J1-6 J1-7 J1-8 J1-9 J1-2 J1-1 J1-3 J1-4

DO1G DO2G DO3G DO4G DO5A DO6A DO7A DO8A

½ U12 ½ U12 ½-81LS97

DO1 DO2 DO3 DO4 DO5 DO6 DO7 DO8

10K'S +5V R12 10K'S

DOGT DOGT1

U55 74LS157 SELECT LOAD OR COMPARE

U56 74LS157 SELECT LOAD OR COMPARE

RAMA2 RAMA8 RAMA4 RAMA9 RAMA5 RAMA6 RAMA3 RAMA7

U66 D2114A 1K RAM

RAMWE RAMCS RAMIN RAMEN

L502 L500

WINDD N0 N1 NIID HIADD

ESRQ OBSI J1-34 2/H5 LS00

J1-12 RQNI LS02

J1-26 LOADD LS04

2/A2 3/A4 5/B3 5/C3 LOADD

J1-29 DSJ 2/A6

J1-38 N0D 7408 5/A3 3/B3 4/D3 5/E3

J1-37 NID 7408 2/A4 3/B3 4/D3 5/E3 4/C7 4/B8

DOGT 5/G7

P1-1,2,3,4 P4-1,2,3,4

+5V C1-3,8,14,20 25,28-30,33-40 43,46,47 52,59-61 64-67,69-76 0160-2055 .01µf (.ERAMS) C31,C68 0180-2388 (2) .47µf 10V (TANT.)

P2-13,35,45,46 P4-13,35,45,46

+15Ω ½W R6 +10V

POSITIVE SUPPLY VOLTAGE FOR 1488's (U31,41,51,61,111,121) PIN 14 CR1 CR3 CR5 1901-0028 P2-19,19 +12V C62 0180-1746 15µf 20V

NEGATIVE SUPPLY VOLTAGE FOR 1488's (U31,41,51,61,111,121) PIN 7 -12V C63 C41 CR2 CR4 CR6 P2-7,8

511Ω R8 -5V CR7 1902-0041

215Ω ½W R7 -10V J2-AA

J2 10 24 30

TEST POINTS E9 E10 E11 E12

Series 39/40/42/44/48

ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO	MAT'L DWG NO	MAT'L SPEC

EXTD ASYNC DATA COM'N CHANNEL DRIVERS, RECEIVERS, SPEC. CHAR

HEWLETT PACKARD

31265A — 31265-60001

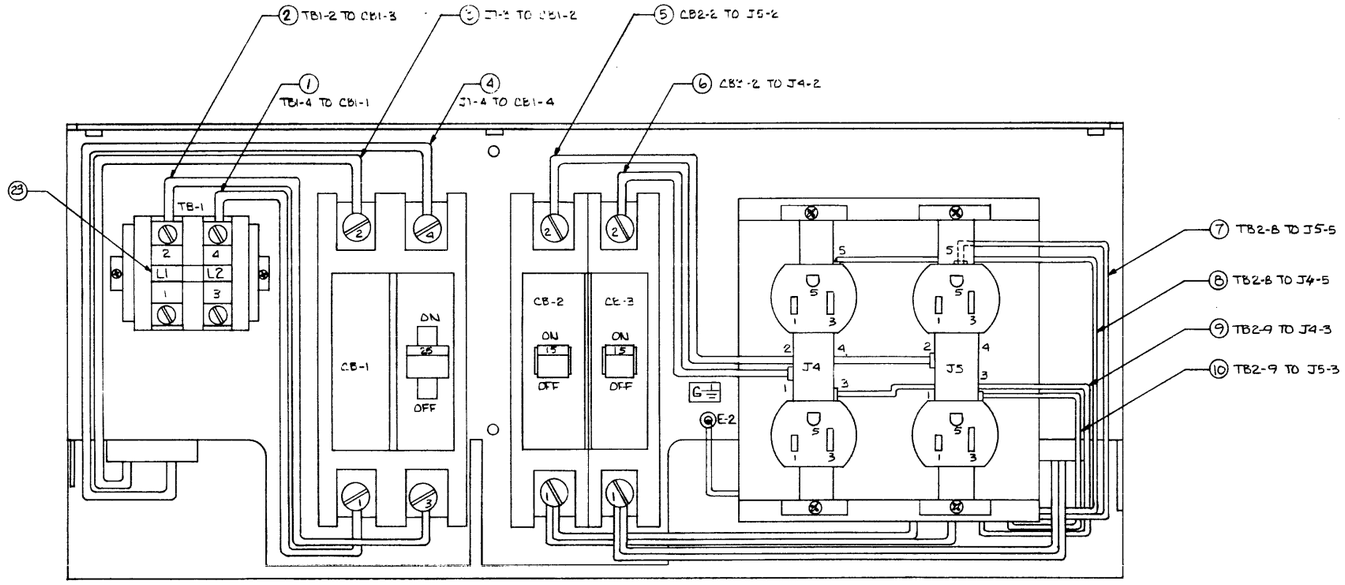
D-31265-60001-53

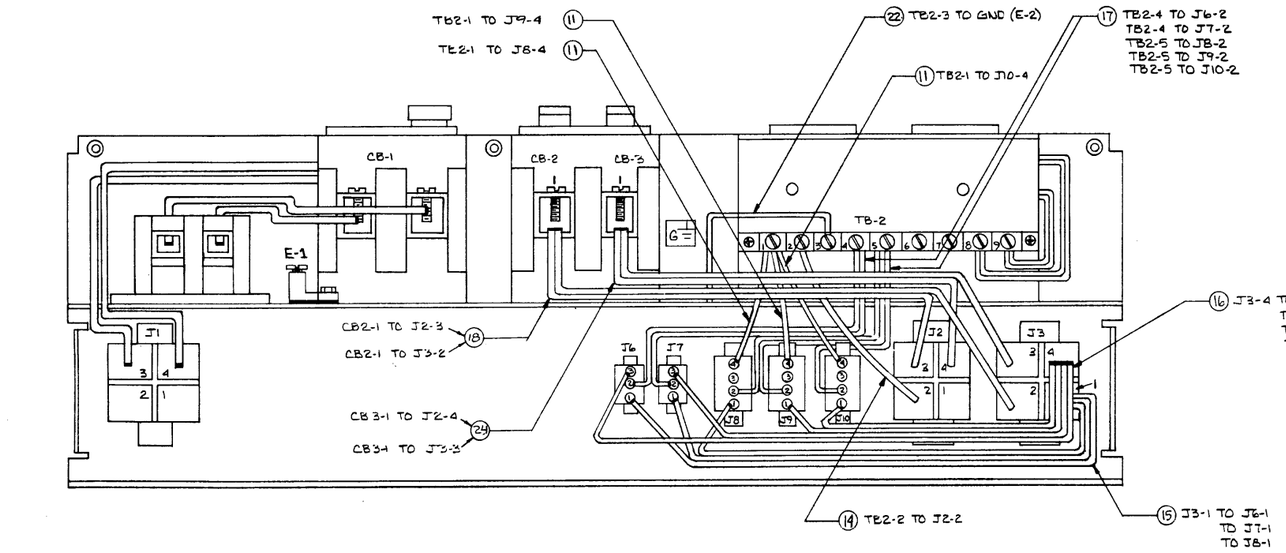
POWER PCA SCHEMATICS AND ASSEMBLY DRAWINGS

SECTION IV

This section provides component location and schematic diagrams for the PCAs located in the power section of the System Processor Unit. Mainframe power wiring and cable organization diagrams have also been included. Each diagram is labeled to indicate which HP 3000 system the PCA applies. The PCA diagrams appear in an ascending part number sequence. A listing of this sequence is shown below along with drawing titles, applicable systems, and page numbers.

REF: A-2 WIRE LIST
D-51 SCHEM





NOTE:

1. DWG C-30016-90002-1, WIRE ASSY REF ITEMS (3) TO (22)

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.
24	2	WIRE ASSY	30016-60007	C-30016-90002-1	
23	1	LABEL L1-L2	-		
22	1	WIRE ASSY	30016-60021		
21		DELETED			
20		DELETED			
19		DELETED			
18	2	WIRE ASSY	30016-60007	C-30016-90002-1	
17	1	CA-GROUND	30016-60004		
16	1	CA-LINE 2	30016-60003		
15	1	CA-LINE 1	30016-60002		
14	1	WIRE ASSY	30016-60018		
13		DELETED			
12		DELETED			
11	3	WIRE ASSY	30016-60016		
10	1	WIRE ASSY	30016-60015		
9	1	WIRE ASSY	30016-60014		
8	1	WIRE ASSY	30016-60019		
7	1	WIRE ASSY	30016-60020		
6	1	WIRE ASSY	30016-60011		
5	1	WIRE ASSY	30016-60006		
4	1	WIRE ASSY	30016-60012		
3	1	WIRE ASSY	30016-60005		
2	1	WIRE NO. 2		A-2	
1	1	WIRE NO. 1		A-2	

PROCESS REVIEW
DATE 4/13/82 BY

Series 44/48

WIRING — PCM
TYPE I - 60 Hz
TITLE
30016A
NEXT ASSEMBLY
PERM.
HEWLETT-PACKARD
30016-60001
PART NUMBER
B-30016-60001-3
SHEET 3 OF 3

C-30016-60001-J

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED		
B	WIRE ASSY REF'S CHGD PER ECO 30016-6006		
C	ITEM 12 REVERSED PER ECO 30016-6004		
D	ITEM 18 WAS QTY 1 ADDED ITEM 24 PER ECO 30016-6025		

ENGINEERING RESPONSIBILITY — SEPIA

D-30016-60001-51

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	[illegible]	[illegible]
B	MARKED WIRE COLOR PER 47-1664	[illegible]	[illegible]

J4 LAYOUT PHYSICAL LAYOUT

FRONT VIEW

AC INPUT:
1-PHASE
W/ GROUND
50/60 HZ

TB 1

#10 RED

#10 BLACK

2A/250V CIRCUIT BREAKER CKB 1

#10 RED

#10 BLACK

J1

TERM 1

E1

SYSTEM GROUND

NOT PART OF POWER CONTROL MODULE

P1

#10 RED

#10 BLACK

SEE CONNECTION MATRIX AT LOWER LEFT

ISOLATION TRANSFORMER 9100-4062

120 V. #10 RED

#10 WHITE

120 V. #10 BLACK

P2

J2

P6

S1

S2

S6

TERM 2

TERM 3

E3

GROUND BRAID

LOCATED ON PCM

LOCATED ON MAINFRAME CHASSIS

L1 #10 BLK

L1 #10 BLK

CKB 2 15A.

L2 #10 BLK

CKB 3 15A.

L2 #10 BLK

#10 BLK

#10 WHITE

J4 (120 V. AT 10 A.)

GROUND #14 GREEN/YEL

NEMA DUPLEX OUTLETS

J5 (120 V. AT 10 A.)

GROUND #14 GREEN/YEL

#16 WHITE EA

#14 WHITE EA

TB 3

GROUNDING BLOCK

J6 (240 V.) FOR PSU 1

GROUND #16 GREEN/YEL

J7 (240 V.) FOR PSU 2

GROUND #16 GREEN/YEL

#16 RED EA

#16 WHT/VIO EA.

#10 GRN/YEL

TERM 4 E2

LOCATED ON PCM

J8 (120 V.) FOR PLENUMS 1&2

GROUND #14 GREEN/YEL

J9 (120 V.) FOR 7902H MOTOR

GROUND #16 GREEN/YEL

J10 (120 V.) FOR 7902H FAN

GROUND #16 GREEN/YEL

J3

P3

WHT-BLK #10

WHT-BLU #10

CKB 4 20A.

1251-4770

TO POWER SUPPLY UNIT 1

#16

1251-4780

TO POWER SUPPLY UNIT 2

#16

NOT PART OF AC DISTRIBUTION

THIS CKB SWITCH IS LOCATED IN FRONT, TO THE RIGHT OF THE OPERATOR'S KNEE.

CONNECTION MATRIX
PRIMARY VOLTAGE STRAPPING FOR ISOLATION TRANSFORMER
(NUMBERS IN TABLE REPRESENT TAPS ON THE ISOLATION TRANSFORMER)

VOLTAGE	A	B	C	D
200 V.	1	2	5	6
210 V.	1	3	5	6
220 V.	1	3	5	7
230 V.	1	4	5	7
240 V.	1	4	5	8

Series 44/48

ITEM	QTY	MATERIAL-DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.

PWR CONTROL MOD. TYPE 1 SCHEMATIC DWG

TITLE

NEXT ASSEMBLY 30016A

FINISH

SCALE NONE

PERM PRINT

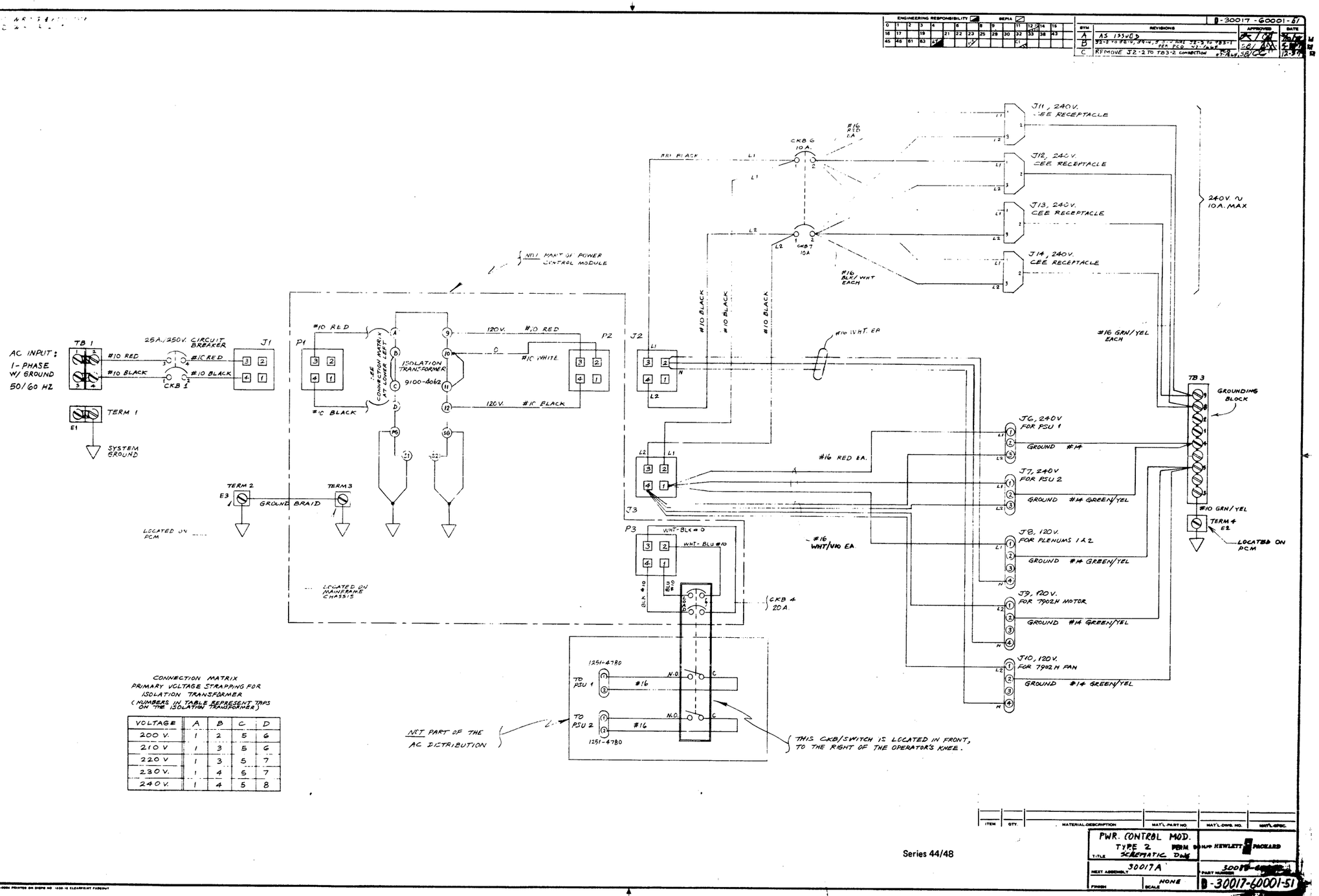
HEWLETT PACKARD

30016-60001

PART NUMBER D-30016-60001-51

SHEET 1 OF 1

STOCK NO. 5180-0004 PRINTED ON DIEPO NO. 1030-10 CLEARPRINT FADEOUT



CONNECTION MATRIX
PRIMARY VOLTAGE STRAPPING FOR ISOLATION TRANSFORMER
(NUMBERS IN TABLE REPRESENT TAPS ON THE ISOLATION TRANSFORMER)

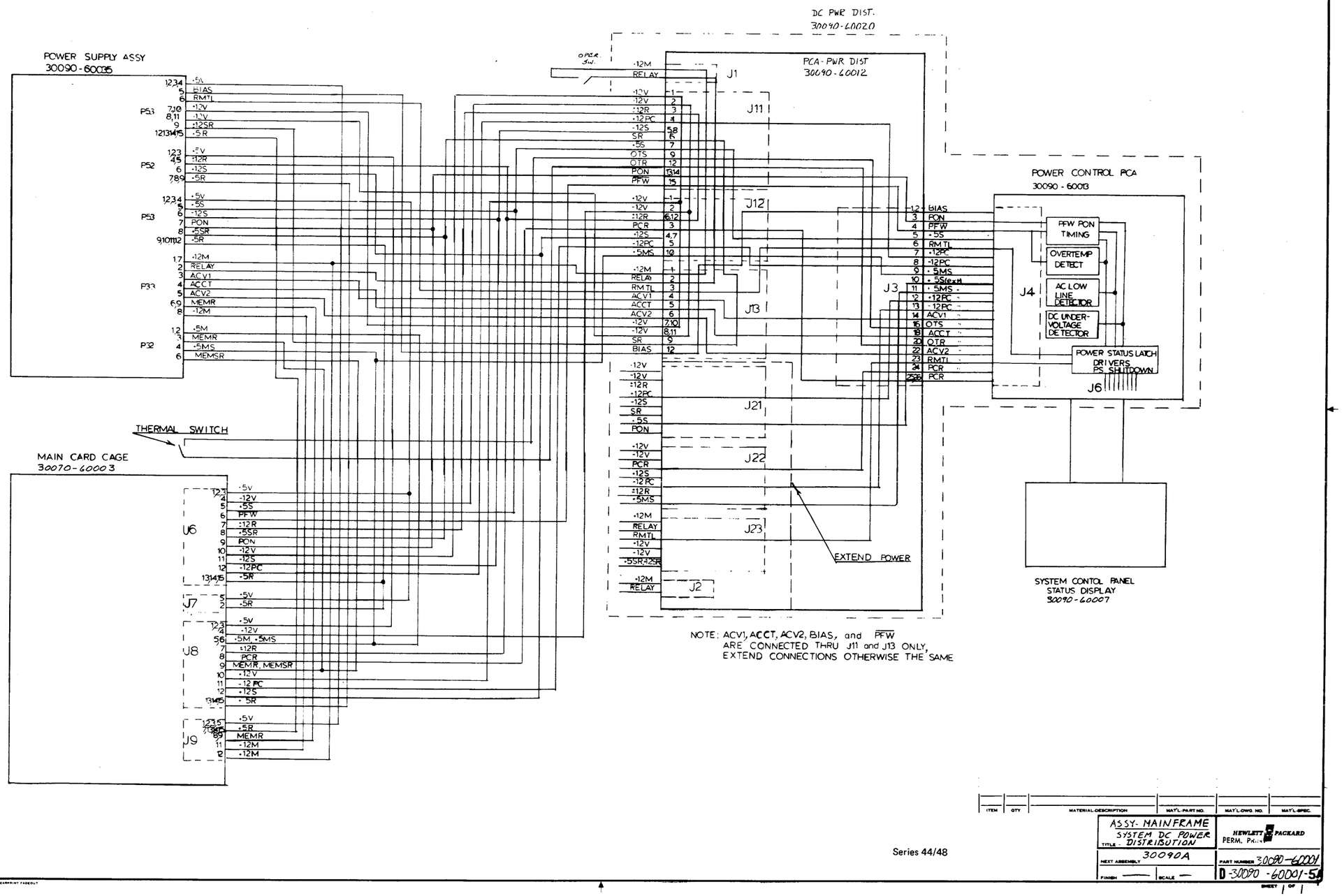
VOLTAGE	A	B	C	D
200 V.	1	2	5	6
210 V	1	3	5	6
220 V	1	3	5	7
230 V.	1	4	5	7
240 V.	1	4	5	8

SYM	REVISIONS	APPROVED	DATE
A	A5 1334U6		
B	J12-2 TO J13-2, J13-2 TO J14-2, J12-3 TO J13-3, J13-3 TO J14-3 PER ECO [illegible]		
C	REMOVE J2-2 TO T83-2 CONNECTION PER ECO [illegible]		

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.

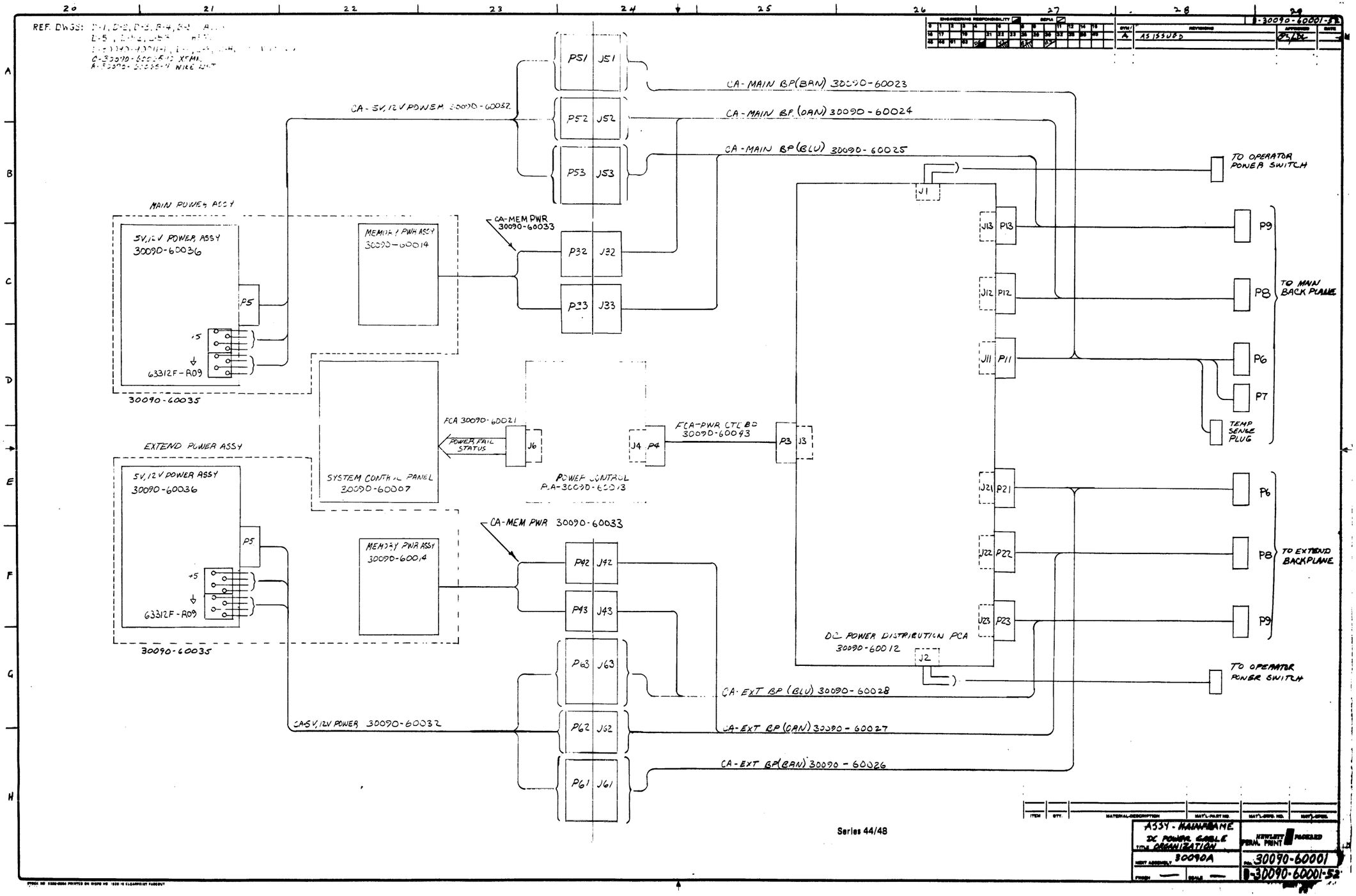
TITLE	PWR. CONTROL MOD. TYPE 2 SCHEMATIC Dwg
NEXT ASSEMBLY	30017A
FINISH	SCALE NONE
	HEWLETT PACKARD
PART NUMBER	D-30017-60001-51

Series 44/48



Series 44/48

ASSY- MAINFRAME
SYSTEM DC POWER DISTRIBUTION
30090A
30090-60001
D-30090-60001-5A
SHEET 1 OF 1


REF. DWGS:
C-30090-60001-12 XFMR.
A-30090-61035-14 WIRE ASSY
CA-MAIN BP(BRN) 30090-60023
CA-MAIN BP (ORN) 30090-60024
CA-MAIN BP(BLU) 30090-60025
CA-5V,12V POWER 30090-60032
P51 J51
P52 J52
P53 J53
TO OPERATOR POWER SWITCH
J1
MAIN POWER ASSY
5V,12V POWER ASSY 30090-60036
P5
+5
63312F-R09
30090-60035
MEMORY PWR ASSY 30090-60014
CA-MEM PWR 30090-60033
P32 J32
P33 J33
J13 P13
J12 P12
J11 P11
P9
P8
P6
P7
TO MAIN BACK PLANE
TEMP SENSE PLUG
FCA 30090-60021
POWER FAIL STATUS
J6
SYSTEM CONTROL PANEL 30090-60007
POWER CONTROL P.A-30090-60013
J4 P4
FCA-PWR CTL BD 30090-60093
P3 J3
EXTEND POWER ASSY
5V,12V POWER ASSY 30090-60036
P5
+5
63312F-R09
30090-60035
MEMORY PWR ASSY 30090-60014
CA-MEM PWR 30090-60033
P42 J42
P43 J43
J21 P21
J22 P22
J23 P23
P6
P8
P9
TO EXTEND BACKPLANE
DC POWER DISTRIBUTION PCA 30090-60012
J2
TO OPERATOR POWER SWITCH
P63 J63
P62 J62
P61 J61
CA-EXT BP (BLU) 30090-60028
CA-5V,12V POWER 30090-60032
CA-EXT BP(GRN) 30090-60027
CA-EXT BP(GRN) 30090-60026
Series 44/48
ASSY - MAINFRAME
DC POWER CABLE
30090A
30090-60001
30090-60001-52

REF. DWGS: D-1, D-2, D-3, B-4, B-5 SCH.
D-51, D-52, D-53 SCHEM.
D-30090-40031-1, D-2, D-3, D-4, D-5 WIRING
C-30090-60005-10 XFMR ASSY.
A-30090-60005-11 WIRE LIST

ENGINEERING RESPONSIBILITY / SEPIA

C-30090-60001-53

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	BJ/DL	

BLUE CABLES

SIGNAL	30090-60032	30090-60033	30090-60025/28		NOTE
	P53/63	P33/P43	P13/23	P9	
+5V	1			1	
+5V	2			2	
+5V	3			3	
+5V	4			5	
+5R	12			7	
MEMR		6		8	
MEMR		9		9	
-12M		8		11	
+12M		7		12	
+5R	13			13	
+5R	14			14	
+5R	15			15	
+12V	7		7		
+12V	10		10		
-12V	8		8		
-12V	11		11		
±12SR	9		9		
RMTL	6		3		
BIAS	5		12		
ACCT		4	5		1
+12M		1	1		
RELAY		2	2		
ACV1		3	4		1
ACV2		5	6		1

ORANGE CABLES

SIGNAL	30090-60032	30090-60033	30090-60024/27	
	P52/P62	P32/P42	P12/22	P8
+5V	1			1
+5V	2			2
+5V	3			3
-12V			2	4
+5M		1		5
+5MS		4	10	5
+5M		2		6
±12R			6	7
PCR			3	8
MEMR		3		9
MEMSR		6		9
+12V			1	10
-12PC			5	11
+12S			4	12
+5R	7			13
+5R	8			14
+5R	9			15
±12R	4		9	
±12R	5		12	
+12S	6		7	
SPARE		5	8	

BROWN CABLES

SIGNAL	30090-60032	30090-60033	30090-60023/26				
	P51/P61		P11/21	TEMP SENS	P6	P7	NOTE
+5V	1				1		
+5V	2				2		
+5V	3				3		
-12V			2		4		
+5S	5		7		5		
PFW			15		6		1
±12R			3		7		
+5SR	8		6		8		
PON			13		9		1
+12V			1		10		
-12S			5		11		
+12PC			4		12		
+5R	10				13		
+5R	11				14		
+5R	12				15		
+5V	4					5	1
+5R	9					2	1
OTSENS			9	1			1
OTCOM			12	2			1
-12S	6		8				
PON	7		14				

FCA-30090-60021

SIGNAL NAME	PIN #
TGL RUN	1
EDO	2
RUN	3
FPRST	4
EDI	5
FPCOM	6
HEAD2	7
CHL1	8
CHL2	9
CHL3	10
DEV1	11
DEV2	12
DEV3	13
FPSHIFT	14
FPSTAT	15
FPLOAD	16
CPUA	17
+5	19,20
GND	22-26
±12MFI	27
OTCOM	28
+5MFI	29
OTSENS	30
EMFI	31
ACLI	32
±12EFI	33
OTPI	34
+SERI	35
+5M	36
MMFI	37
+5A (+5 VOLTS FROM REGULATOR)	38
SPARE	18,21,39-50

FCA-30090-60043

SIGNAL NAME	PIN #
BIAS	1,2
PON	3
PFW	4
+5S	5
RMTL	6
+12PC	7
-12PC	8
+5MS	9
+5S	10
+5MS (EXT)	11
+12PC (EXT)	12
-12PC (EXT)	13
ACV1	14
OTSENS	16
ACCT	18
OTCOM	20
ACV2	22
AMTL (EXT)	23
PCR (EXT)	24
PCA	25,26
SPARE	15,17,19,21

NOTE:

1. INDICATES NOT PART OF EXTEND CABLE SET 30090-60026 THRU 28, OTHERWISE THE SAME

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

ASSY. MAINFRAME
TITLE DC POWER CABLES PIN ASSIGNMENT

HEWLETT PACKARD PERM. PRINT

NEXT ASSEMBLY 30090A

PART NUMBER 30090-60001

FINISH — SCALE —

C-30090-60001-53

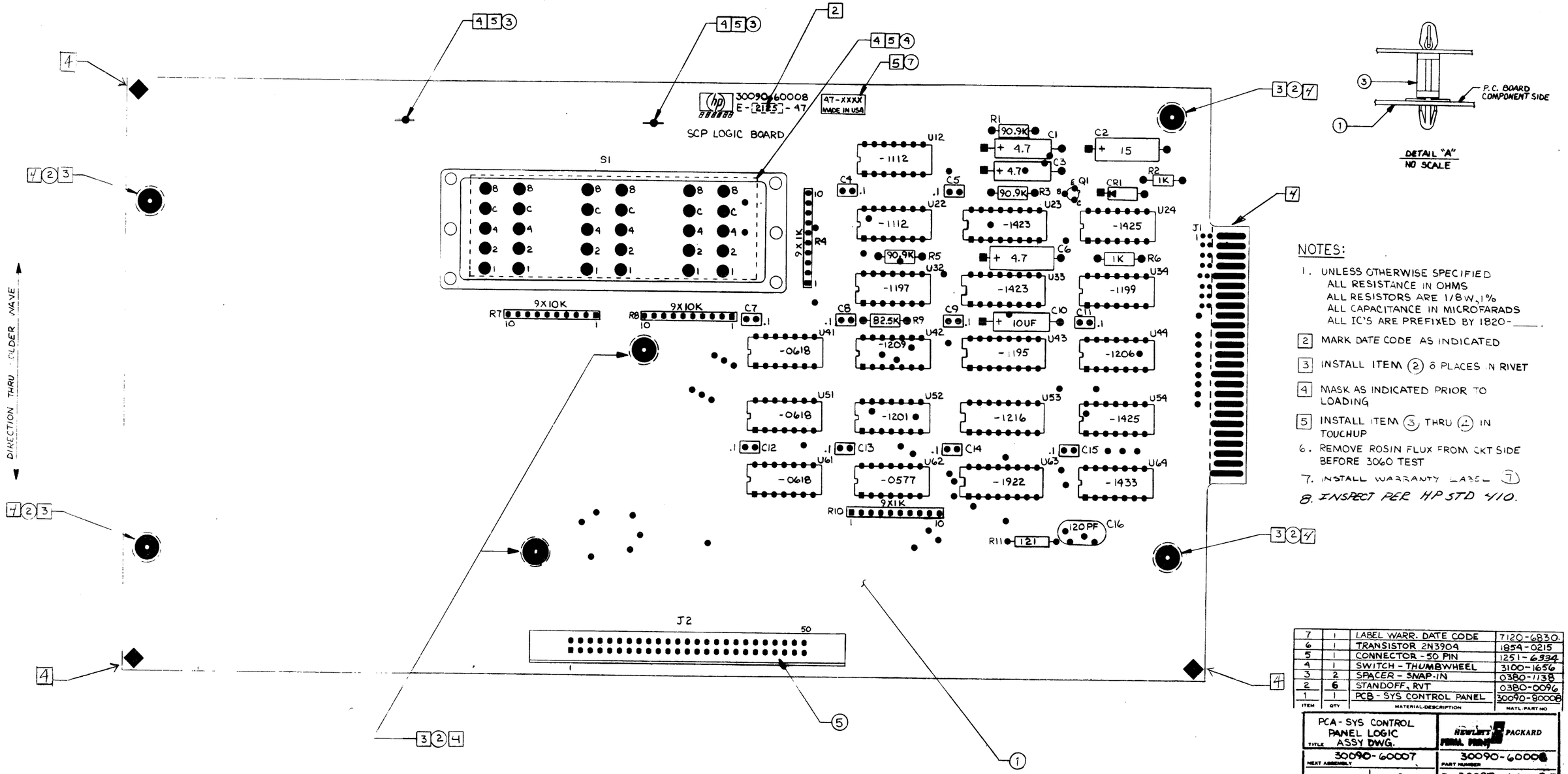
SHEET 1 OF 1

STOCK NO 8280-0083 PRINTED ON DIEPO NO 1030-10 CLEARPRINT FADEOUT

Series 44/48

REF DWG: C-51, SCHEMATIC

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED PER PCO-47-3471	[illegible]	11-13-81
B	ADD E&C TO Q1 PER DOC. CHANGE	[illegible]	4-12
C	ITEM 3 WAS 1251-5782 47-3583	[illegible]	[illegible]
D	REVISED PER DOC CHG	[illegible]	[illegible]
E	REVISED NOTE 5; ITEM 5 IS NOW WAVE SOLDERED; DOC. CHG.	[illegible]	11-3-83



NOTES:

1. UNLESS OTHERWISE SPECIFIED
   ALL RESISTANCE IN OHMS
   ALL RESISTORS ARE 1/8W, 1%
   ALL CAPACITANCE IN MICROFARADS
   ALL IC'S ARE PREFIXED BY 1820-____.
2. MARK DATE CODE AS INDICATED
3. INSTALL ITEM (2) 8 PLACES IN RIVET
4. MASK AS INDICATED PRIOR TO LOADING
5. INSTALL ITEM (3) THRU (7) IN TOUCHUP
6. REMOVE ROSIN FLUX FROM CKT SIDE BEFORE 3060 TEST
7. INSTALL WARRANTY LABEL (7)
8. INSPECT PER HP STD 4/10.

ITEM	QTY	MATERIAL-DESCRIPTION	MATL-PART NO
7	1	LABEL WARR. DATE CODE	7120-6830
6	1	TRANSISTOR 2N3909	1854-0215
5	1	CONNECTOR - 50 PIN	1251-6934
4	1	SWITCH - THUMBWHEEL	3100-1656
3	2	SPACER - SNAP-IN	0380-1138
2	6	STANDOFF, RVT	0380-0096
1	1	PCB - SYS CONTROL PANEL	30090-80008

TITLE: PCA - SYS CONTROL PANEL LOGIC ASSY DWG.	HEWLETT-PACKARD FEDERAL PRINT
NEXT ASSEMBLY: 30090-60007	PART NUMBER: 30090-60008
FINISH	SCALE: 2X
	D-30090-60008-7

Series 44/48

REF DWG: D-1 ASSY (OBS.)
C-2 " (OBS.)
C-5 PIOD. (OBS)

ENGINEERING RESPONSIBILITY — SEPIA

REVISIONS															
0	1	2	3	4		6	8	9		11		14	15		
16	17		19		21	22	23	25	29	30	32	33	38	43	
46	46	61	63												

SYM	REVISIONS	DATE CODE	APPROVED	DATE
A	AS ISSUED	B-2105	BS/ SBI	2/20/81
B	REVISED PER PCO 47-3216	B-2107	LB/ SF	2/16/81
C	REVISED PER DOC. CHG.	C-2108	SBI SF	2/26/81
D	REVISED PER PCO 47-3262	C-2111	SBI SF	3/19/81
E	RENUMBER CAPS + RES. #7-3278	D-2125	SF	8/10/81

C-30090-60008-51

J1-46 J1-45 J1-43 J1-48 J1-44 J1-40 J1-41 J1-38 J1-42 J1-47

J2-38 +5R
J2-29 +5MFI
J2-27 ±12MFI
J2-37 MMFI
J2-35 +5EFI
J2-33 ±12EFI
J2-31 EMFI
J2-34 OTPI
J2-36 +5M
J2-32 ACLI

J1-25 LOAD SW
J1-27 START SW
J1-29 DUMP SW

J2-14 FP SHIFT
J2-6 FP CON
J2-16 FP LOAD
J1-31 ENAB MP
J1-35 ENAB REM
J1-33 OFFED
J2-30 DTSRS
J1-23 RUN LED
J1-7 TSTOSZ
J1-17 RUNSW
J1-15 HLTSW
J1-21 HLT LED
J2-3 RUN
J2-39 POND
J1-9 TSTOSZ

SOFT +5
FP RST
PWR RST

LOAD
START
DUMP
EO1
EO2
FPSTAT
HEAD 2
PTCOM
TGL RUN
SPARE
POND
CPUA

J2-5
J2-2
J2-15
J2-4
J2-7
J1-37
J2-28
J2-1
J2-18
J1-41
J2-39
J1-50
J2-17
J1-39

WARM START — CHNL SW1-A, DEV SW1-B
DUMP — CHNL SW1-C, DEV SW1-D
LOAD — CHNL SW1-E, DEV SW1-F
THUMBWHEEL SWITCHES

MSB
DEV1 J2-11
DEV2 J2-12
DEV3 J2-13
CHL1 J2-8
CHL2 J2-9
CHL3 J2-10

+5 J2-19,20
J1-2,4,6
J2-22-26
J1-8,10,12,14,16

C4,5,7-9,11-15 .1 MF
C2 15MF

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

SYSTEM CONTROL PANEL
LOGIC BOARD
TITLE SCHEMATIC DWG

HEWLETT PACKARD
PERM. PRINT

NEXT ASSEMBLY 30090-60007
PART NUMBER 30090-60008
FINISH — SCALE
C-30090-60008-51
SHEET 1 OF 1

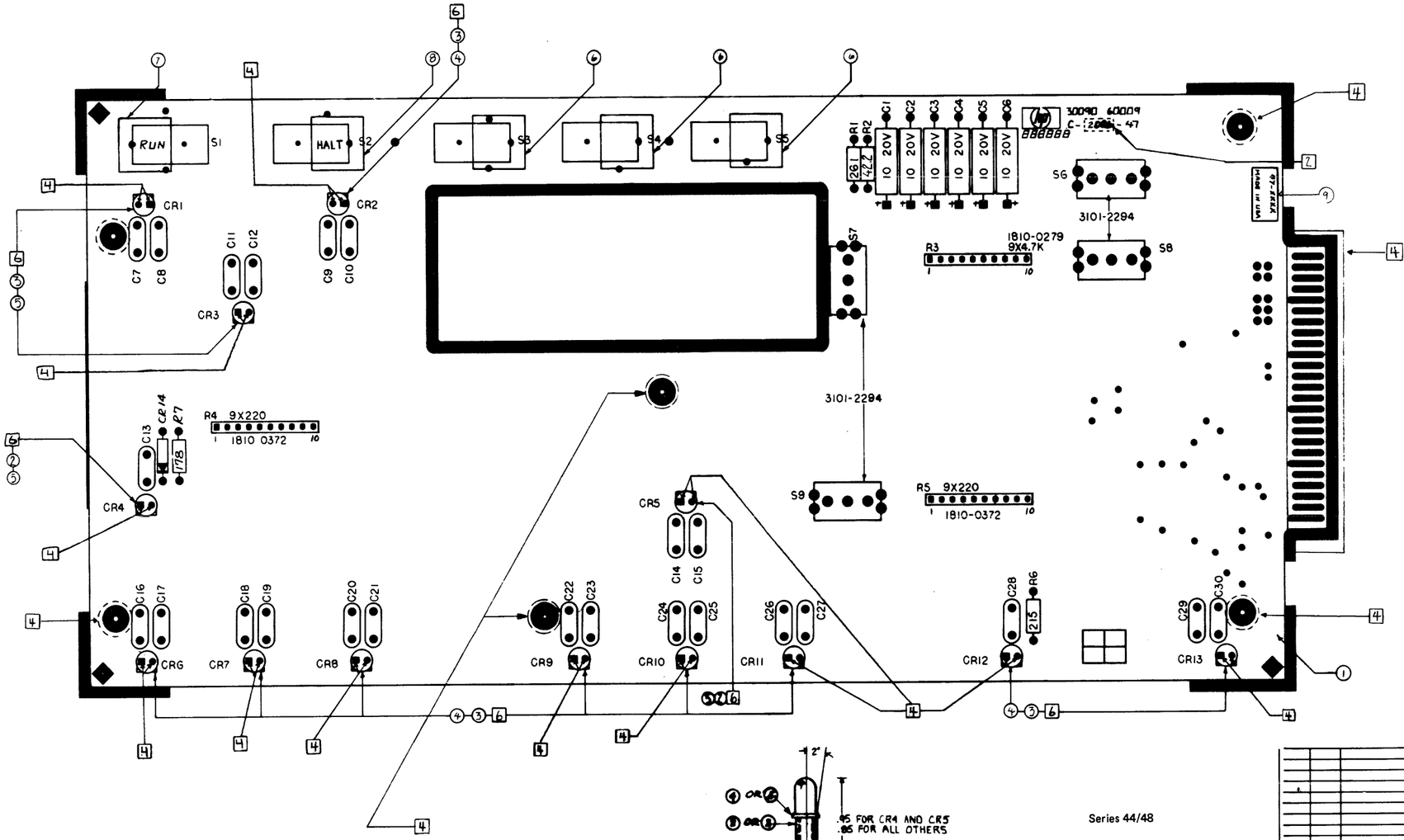
Series 44/48

STOCK NO. 8390-0003 PRINTED ON DIEPO NO 1030-10 CLEARPRINT FADEOUT

REF. DWG: C-51, SCHEMATIC

D-30090-60009-3

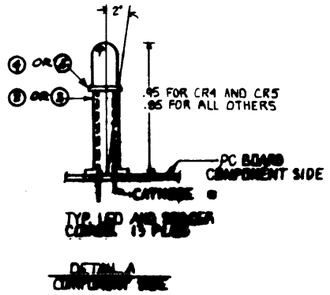
SYM	REVISIONS	APPROVED	DATE
A	AS 195409 PER PCO 47-3491	K.V.	2-11-83
B	REVISED PER PCO 47-4561	CT	3-1-83
C	REVID ASY DOC CHG	KS	4-29-83
D	DEL. ITEM 10 (0380-0096) DEL. NOTE 3 DOC CHG		6-24-83



NOTES:

1. UNLESS OTHERWISE SPECIFIED;
   ALL RESISTANCE IN OHMS.
   ALL RESISTORS ARE 1/8W, 1%.
   ALL CAPACITANCE IN MICROFARADS.
   ALL UNMARKED CAPACITORS ARE .001μf.

2. MARK DATE CODE AS *INDICATED*
3. DELETED
4. MASK AS INDICATED PRIOR TO LOADING.
5. INSTALL ITEMS (4) THRU 9 IN TOUCH UP.
6. INSTALL ITEMS 2 THRU (5) PER DETAIL "A"
7. ASSEMBLE SWITCHES *USING FIXTURE* T-116690
8. ASSEMBLE LEDS USING FIXTURE T-116689.



Series 44/48

PROCESS REVIEW
DATE 6/24/83

9	1	LABEL - WARR DATE CODE	7120- 6830
8	1	KEY FULL HALT	5041-1608
7	1	KEY - FULL RUN	5041-1607
6	3	KEY - FULL BLANK	5041-0311
5	4	LED YELLOW	1990-0848
4	9	LED - RED	1990-0847
3	11	STDF - 0.8 IN. LED	4040-7075
2	2	STDF - 0.600 IN. LED	4040-7076

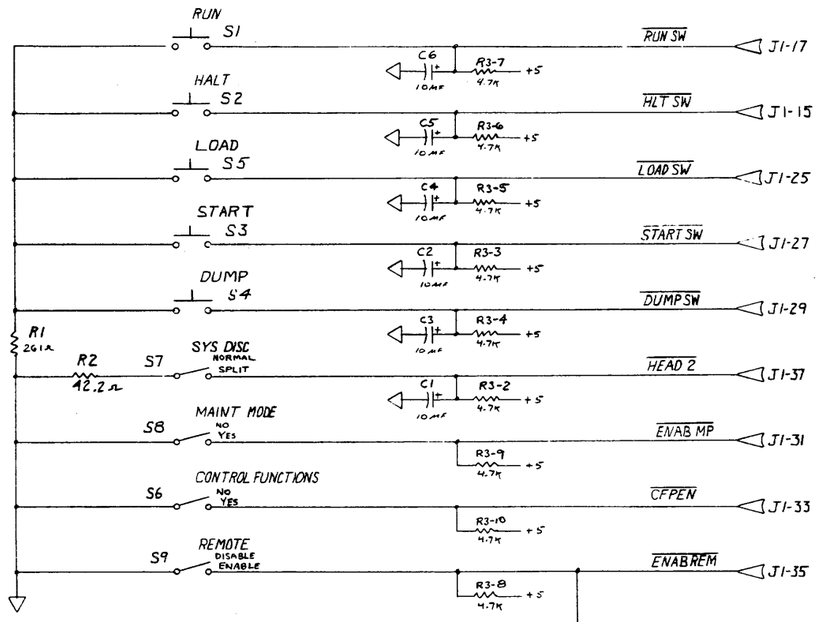
D-30090-60009-3

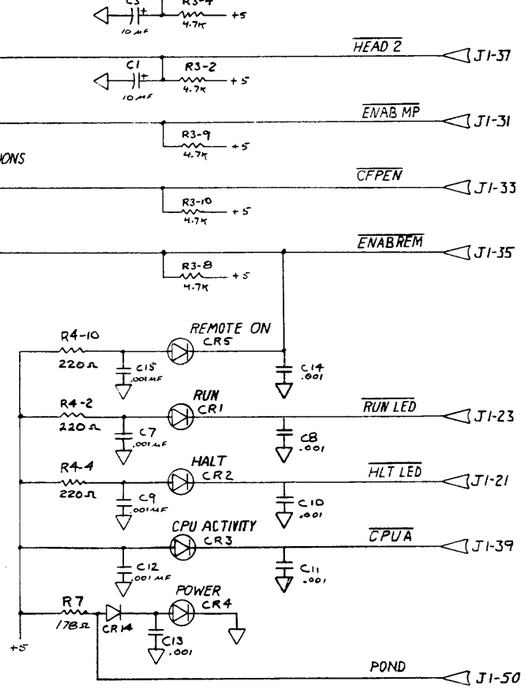
REF DWG: D-1 ASSY

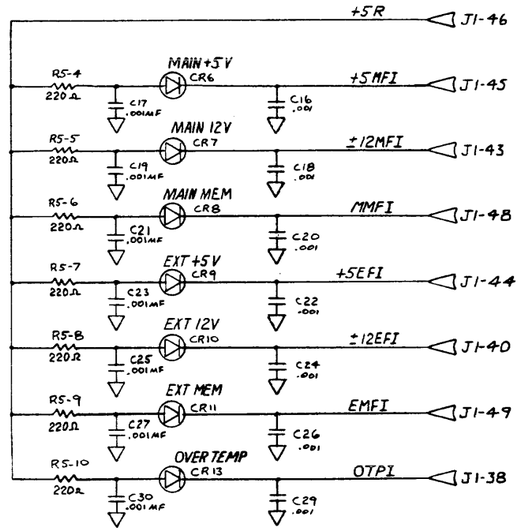
ENGINEERING RESPONSIBILITY — SEPIA

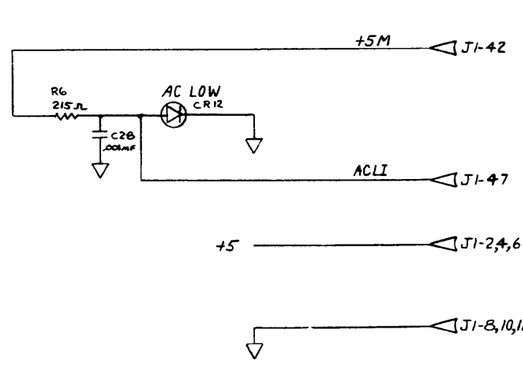
REVISIONS	DATE CODE	APPROVED	DATE
A AS ISSUED	A-2026-47	05/80	8/20/80

C-30090-60009-51









ITEM	QTY	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

Series 44/48

SYSTEM CONTROL PANEL
SWITCH BOARD
TITLE SCHEMATIC DWG

HEWLETT PACKARD
PERM. PRINT

30090-60007
NEXT ASSEMBLY

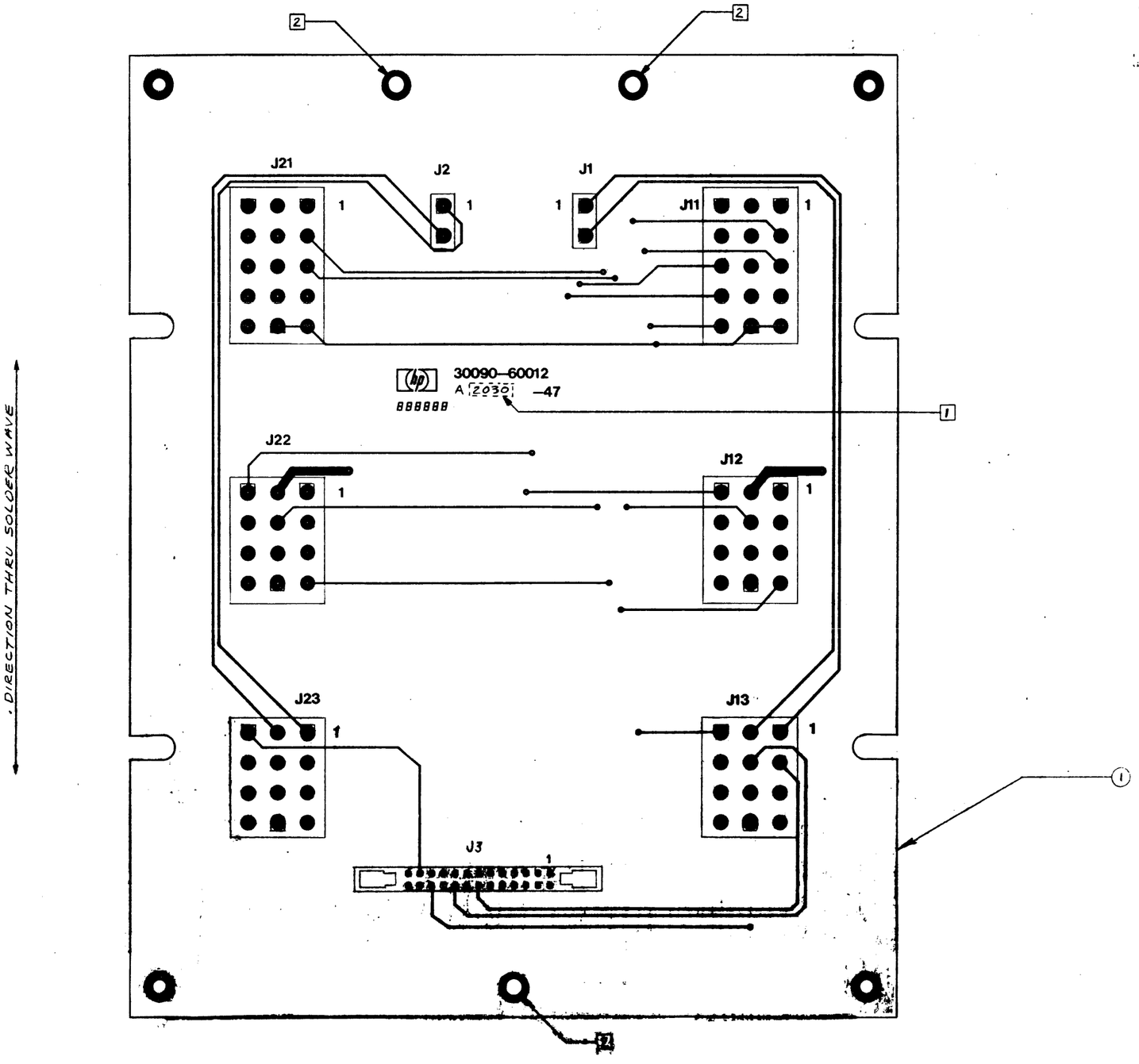
30090-60009
PART NUMBER

FINISH | SCALE

C-30090-60009-51

SHEET 1 OF 1

STOCK NO 9280-0003 PRINTED ON DIEPO NO 1020-10 CLEARPRINT FADEOUT



STOCK NO. 7120-2187 REV D—MATERIAL COPY 2-P MED TAC

ENGINEERING RESPONSIBILITY — SEPIA

D-30090-60012-/

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	DS/DL	7-29-80
B	REVISED — PER PCO 47-3300	DL	1-20-82

NOTES:

[1] MARK DATE CODE

[2] MASK AS INDICATED

3. INSPECTION CRITERIA — HP STD. SECT. 410

PROOF REVIEW
DATE 1/25/82 BY

ITEM	QTY	DESCRIPTION	PART NUMBER	MATERIAL
1	1	PCB = DC PWR DIST	30090-80012	

PCA-DC POWER DIST ASSY DWG

HEWLETT PACKARD

30090-60020 NEXT ASSEMBLY

30090-60012 PART NUMBER

FINISH — SCALE 2/1

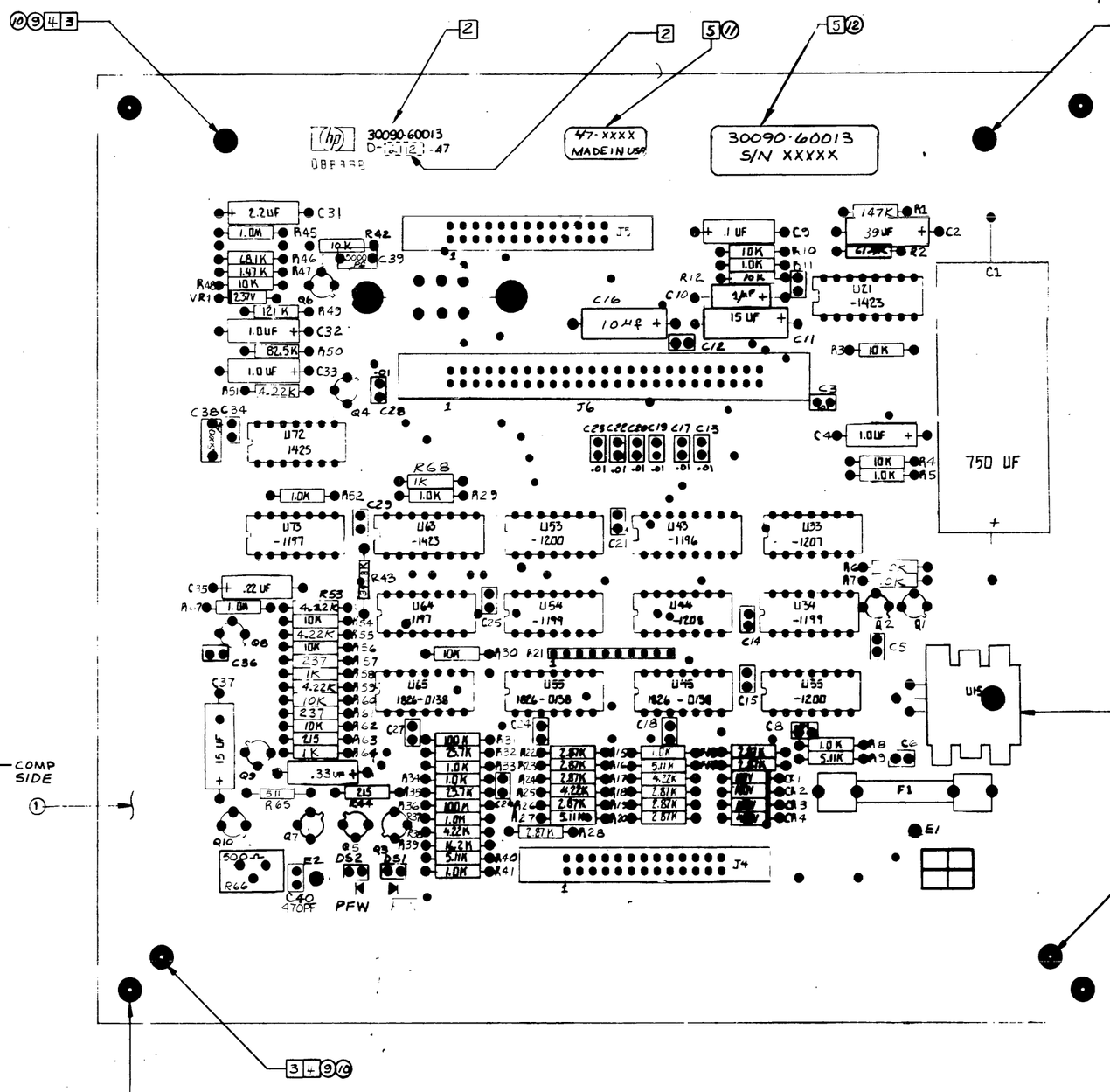
D-30090-60012-1

SHEET 1 OF 1

Series 44/48

REF. DWG: D-51, SCHEMATIC

REV	DESCRIPTION	BY	DATE
A	AS ISSUED		
B	REVISED PER PCO 47-3296	LG/	5-5-81
C	REVISED PER PCO 47-3359	VR/ DL	7-8-81
D	Item 3 was 2260-0259 ADD NOTE 5, 47-3459	/DL	10-19-81
E	REVISED PER PCO 47-3626	AG/	3/22/82
F	Arranged note 5 to be done before		7/6/83
—	Pretest; Per Doc Chg.		
G	Revised Notes Per Doc. Chg.		7/14/83
H	REVISED NOTES #5 PER DCN		9/21/83

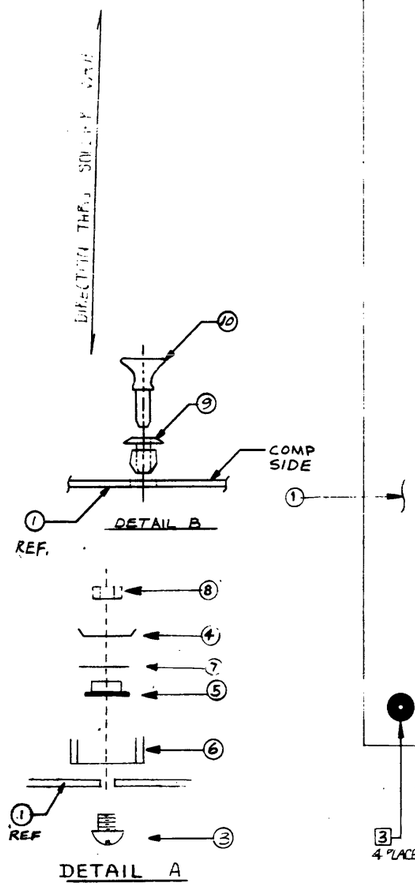


NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   ALL RESISTANCE IN OHMS
   ALL CAPACITANCE IN MICROFARADS
   ALL CAPACITORS ARE .1UF (0160-4685).
   ALL ICS ARE 1820-____.

2 MARK DATE CODE
3 MASK AS INDICATED PRIOR TO LOADING
4 INSTALL ITEMS ③ THRU ⑩ [illegible]

AFTER PRETEST

△ 5 AFFIX LABEL (11)



△	ITEM	QTY	DESCRIPTION	MATL PART NO.		
△	12	1	LABEL - S/N	9320-4848		
△	11	1	LBL-WARR. DATE CD	7120-6830		
	10	4	SNAP-IN PLUNGER	1390-0365		
	9	4	SNAP-IN GROMMET	1390-0366		
	8	1	NUT 6-32	2420-0003		
	7	1	FLAT WASHER	3050-0016		
	6	1	HEAT SINK	1205-0219		
	5	1	VOLTAGE REGULATOR, U15	1826-0122		
	4	1	WASHER - LOCKING	2190-0007		
	3	1	SCREW, 6-32 X .38 PH	2360-0195		
	2					
	1	1	PCB - DC PWR CONTROL	30090-60015		

TITLE: PC - DC PWR. CONTROL ASSY. DWG.	HEWLETT PACKARD
NEXT ASSY: 30090-60020	PART NUMBER: 30090-60013
FINISH: —	SCALE: 2:1
	D-30090-60013-7

Series 44/48

REF. DWG: D-4 ASSY.
C-5 MOD. COMP. SIDE
C-6 MOD. CIRC. SIDE

REVISIONS	DATE CODE	APPROVED	DATE
A	REDRAWN, PER 47-3089	B-2043	DL	11-6-80
C	REVISED PER 47-3171	B-2043	SB/DL	12-18-80
D	REVISED PER 47-3492	1-2048	SB/DL	3-4-81
E	REVISED PER 47-3533	1-2048	SB/DL	3-17-81
F	REVISED PER 47-3561	08-2112	SB/DL	5-4-82
G	Revised to Reflect Actual Board: Per Doc. Change		SB	4-6-83

8-30090-60013-61

DIRECT, PIN TO PIN CONNECTION TO J6-1-26

FROM BACKPLANE

J5-1 TACH/RPG
J5-2 RPG
J5-3 RUN
J5-4 PRNT
J5-5 EXT
J5-6 TRIG
J5-7 MEAS
J5-8 CAL
J5-9 AUTO
J5-10 REM
J5-11 REF
J5-12 DEV2
J5-13 DEV1
J5-14 PRSRV
J5-15 EPSTAT
J5-16 EPLOAD
J5-17 CLR
J5-18 * E
J5-19,20 GND
J5-21 SPARE

J6-1-26
J4-16 OTSENSE → J6-30
J4-20 OTCOM → J6-28
J4-9 +5MS → J6-36

RESET
+5R
+15V
-12VPC
+5MS
PFSU
OVET
PFSD
REF
BIAS
ACV1
ACV2
ACCT F1 500 ma Slo-Blow
T= 0.33RC
1.9 MS DELAY ± 15% AFTER P/S FAIL
180 MS AFTER PFW GOES LOW
VOFF TRIGGER
VON TRIGGER
LM339
U63
U43
U53
U33
U72
U73
U64
U65
U54
U44
U45
U46
U21
U15
Q1 REMTL 54-215
Q2 REMTL (J4-9) 54-215
Q3 54-215
Q4 54-215
Q5 54-215
Q6 54-215
Q7 53-36
Q8 54-215
Q9 54-215
Q10 54-215
VR1 2.37V ZENER
DS1 90-0986
DS2 90-0986

J6-32 ACLI
J6-29 +5MPE
J6-27 BTMPE
J6-37 MMPE
J6-35 +5BPE
J6-31 PMPE
J6-33 ?/5BPE
J6-34 OTPE
J6-39 PDNO
J4-3 PDN
J4-4 PFW
J4-6 REMTL
J4-23 REMTL (J4-9)

J4-1,2 BIAS
J4-6 +5S
J4-26,26 RCA
J4-7 +12PC
J4-8 -12PC
J4-9 +5MS
J4-10 +5S (RMT)
J4-11 +5MS (RMT)
J4-12 +12PC (RMT)
J4-13 -12PC (RMT)
J4-24 PCB (RMT)

J6-3B
C6,7,12,14,15,21,25,29,34 0.1 CER (9) (1 EVERY TWO TTL & PS) (1 FOR +5S REMOTE)

TYP FOR EVERY OUTPUT OF U53 GOING UPWARDS C13,20,17,13,23,22

Series 44/48

ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO	MAT'L LOWS NO	MAT'L SPEC

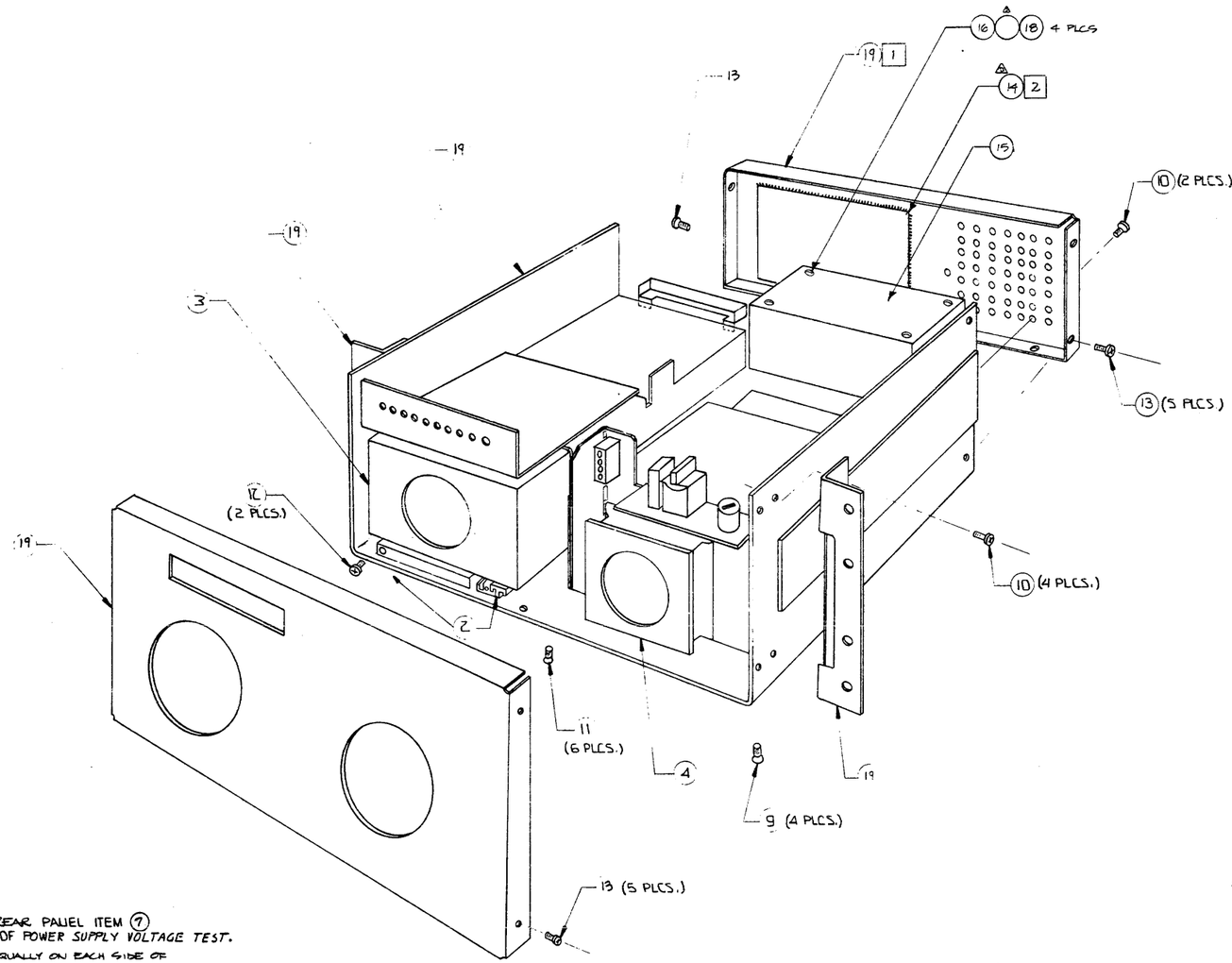
PCA-DC POWER CONTROL
NEXT ASSEMBLY 30090-60020
FINISH — SCALE —
HEWLETT PACKARD
PART NUMBER 30090-60013
D-30090-60013-61
SHEET 1 OF 1

REF DWG: D-2 WIRING

ENGINEERING RESPONSIBILITY	SEPIA
0 1 2 3 4 8 9 11 12 14 15	
16 17 19 21 22 23 25 29 30 32 33 38 42	
45 46 61 63 BMK AP	

D-30090-60035-1

SYM	REVISIONS	APPROVED	DATE
A	A2 ISSUED.	[illegible]	8-78
B	REVISED PER ECO 77-3172	[illegible]	12-77
C	DELETED ITEMS 1,3,6,7,8 and ADDED ITEM 19; PER PCO 78-1078	[illegible]	[illegible]
D	DELETED ITEM 17; ITEM 11 WAS 2360-0183; PARTIAL REMOVAL OF ITEM 19; PER DCG CHG	[illegible]	[illegible]



NOTES:

1. DO NOT INSTALL REAR PANEL ITEM (7) UNTIL COMPLETION OF POWER SUPPLY VOLTAGE TEST.
2. ATTACH ITEM (4) EQUALLY ON EACH SIDE OF CORNER INDICATED.

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.
19	1	POWER SUPPLY STAT KIT	30090-60079		
18	4	#8 LOCKWASHER	2190-0073		
17					
16	4	SCR #8-32 X 3.75	2520-0089		
15	1	BATTERY PACK	3100-60001		
14	1 FT.	GROM CHAN	0400-0082		
13	11	SCR #6-32 X .312 F.H.	2360-0182		
12	2	SCR #8-32 X .31 P.H.	2360-0118		
11	6	SCR #6-32 X .31 F.H. 182°	2350-0182		
10	6	SCR #8-32 X .38 P.H.	2360-0045		
9	4	SCR #10-32 X .38 F.H. 82°	2680-0118		
8					
7					
6					
5					
4	1	ASSY-MEMORY POWER	30090-60014		
3	1	ASSY-5V, 12V POWER	30090-60086		
2	2	GUIDE PC2	30135-40001		
1					

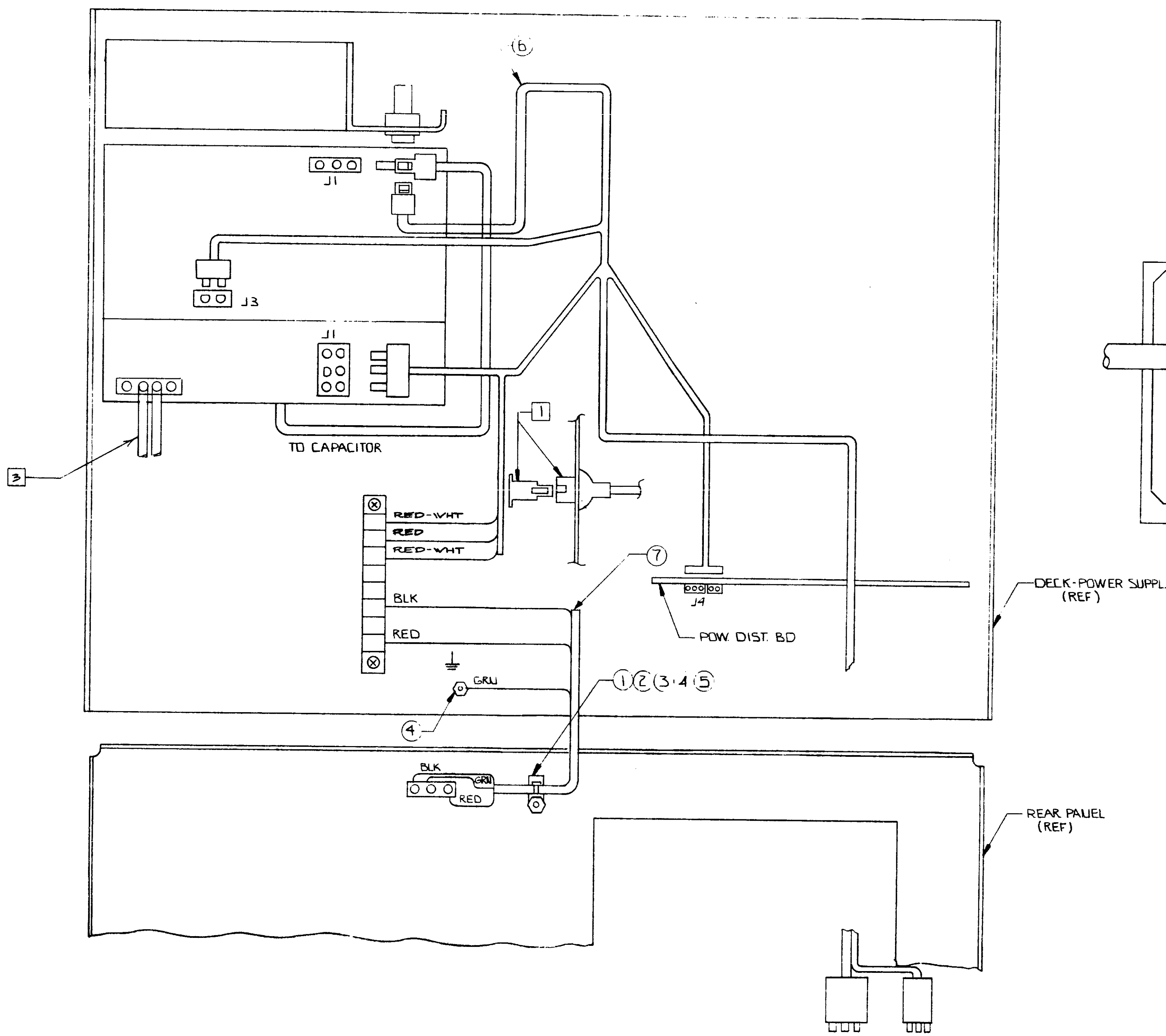
Series 44/48

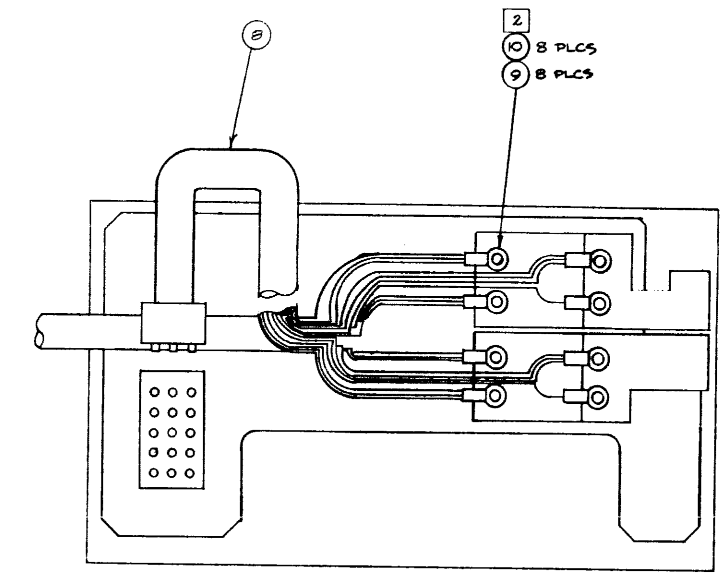
TITLE: ASSY POWER SUPPLY ASS'Y. DWG.	PERM. PRINT HEWLETT PACKARD
NEXT ASSEMBLY: 30087A, 30090-60001	PART NUMBER: 30090-60035
FINISH: —— SCALE: ——	SHEET: D-30090-60035-1

REF DWG: D-1 ASSY.

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	[illegible]	[illegible]
B	REVISED PER PCO 47-3172	[illegible]	[illegible]

D-30090-60035-2





NOTES:

1. INTER BAY POWER CONNECT CABLES SHOWN AS REF. ONLY.
2. SOLID COLOR WIRES CONNECT TO UPPER BRACKET. STRIPED COLOR WIRES CONNECT TO LOWER BRACKET.
3. BATTERY CABLE INSTALLATION.

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.
10	8	#10 SPLIT LOCK	2190-0034		
9	8	SCW 10-32 x .438	2680-0101		
8	1	CA-5V, 12V, POWER	30090-60032		
7	—	POWER CABLE-REAR PANEL	REF	D-30090-60014-2	30090-[illegible]
6	—	MEMORY POWER CABLE	60090-[illegible]		[illegible]
5	1	SCR. #6-32 X .312 P.H. W LK	2360-0115		
4	2	NUT #6-32 W LK	2420-0001		
3	1	WSHR #6 FLAT	3050-0227		
2	1	CABLE TIE	1400-0249		
1	1	MTG-CABLE TIE	1400-0786		

TITLE ASSY-POWER SUPPLY WIRING DWG.

PERM. PRINT HEWLETT PACKARD

NEXT ASSEMBLY 30087A/30090-60001

PART NUMBER 30090-60036

FINISH — SCALE —

D-30090-60035-2

SHEET 1 OF 1

REF. DWGS:
D-1 ASSY.
D-2 WIRING
A-71 TEST PROC

PON BATT -12M +12M +5M -12V +12V +5V

TEST POINTS

C-30090-60035-51

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	BS/DL	11-14-80
B	REV'D PER DOC CHG	AG/JL	5-14-81

63312F - R09
AC N

+12S
+12V
+12R
+12RS
-12V
-12S

+5V
+5R
5S
5RS
BIAS
RMTL

J1 J2 J3 J4 J5 J6

5V, 12V, DIST PCA
30090 - 60050

+5
MEMSR
5MS
MEMSR

P53/63
+5V 1,2,3,4
BIAS 5
RMTL 6
+12V 7,10
-12V 8,11
+12SR 9
+5R 12,13,14,15

P52/62
+5V 1,2,3
+12R 4,5
+12S 6
+5R 7,8,9

P51/61
+5V 1,2,3,4
+5S 5
-12S 6
PON 7
+5SR 8
+5R 9,10,11,12

5V, 12V PWR.
30090-60036

AC POWER 240 V
BLK
GRN
RED
F1 250V 5A
BLK
BLK

1 ACV1
2 ACCT
3 ACV2
7 RED
5 RED

TB1
T1
FAN

WHT - RED - GRN
WHT - RED
WHT - RED - VIO

MEM - REG

BLU
BLU
CR1
R1 1.7K
6900 uf C1

MEM PRE-REG

RELAY ASSY
30070 - 60089

P33/43
+12M 1,7
RELAY 2
ACV1 3
ACCT 4
ACV2 5
MEMR 6,9
-12M 8

P32/42
+5M 1,2
MEMR 3
5MS 4
MEMSR 6

MEMORY POWER
30090-60014

BATT ASSY
31000 - 60001

Series 44/48

ITEM	QTY	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC

ASSY- POWER SUPPLY
SCHEMATIC
TITLE

30090-60001
NEXT ASSEMBLY

FINISH — SCALE —

PERM. PRINT
HEWLETT PACKARD

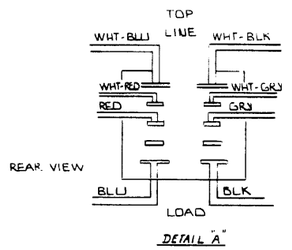
PART NUMBER 30090-60035
C-30090-60035-51

SHEET 1 OF 1

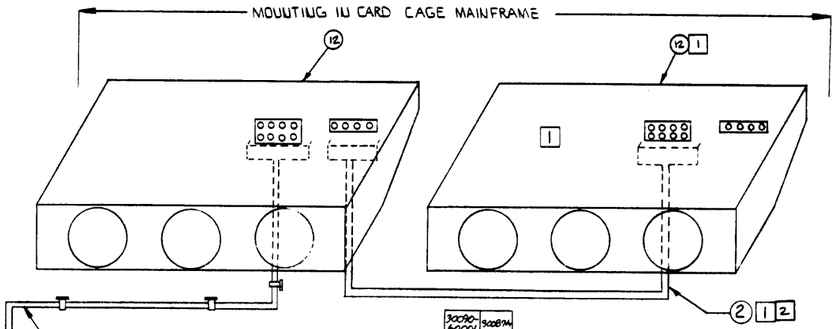
STOCK NO 9300-0083 PRINTED ON DIEPO NO 1020-10 CLEARPRINT FADEOUT

REF DWGS:

D-2 DC WIRING
D-3 PWR SUPPLY WIRING
C-5 2MF BIC CABLES



DETAIL "A"



NOTES:

1. THESE ITEMS WILL BE INSTALLED ONLY WHEN SYSTEM IS UPGRADED TO 300B7A. ALL CABLES AND COMPONENTS WILL BE CALLED OUT ON THE UPGRADE MATERIAL LIST.
2. ITEM (2) IS ROUTED ALONG THE BOTTOM AND IS SECURED BY 'U' CLAMPS SUPPLIED WITH FRAME.
3. STEP I
   ROUTE CABLE, ITEM (1) UP SIDE OF CABINET TO THE MIDDLE THEN TO THE FRONT. SECURE CABLE WITH 2 CABLE TIES, ITEM (5). WIRE TO CIRCUIT BREAKER PER DETAIL A.
   STEP II
   ROUTE THE 2 BREAKOUTS WITH 2 PIN CONNECTORS TO THE BOTTOM OF THE 30090-60080 ASSEMBLY. TIE BACK EXTRA WIRE WITH ITEM (5) TO SIDE OF CABINET.
4. THE PART NUMBER FOR ITEM (13) DEPENDS ON THE SYSTEM INTO WHICH THE 30090-60001 IS BEING INSTALLED. REFER TO DRAWING C-3 FOR THE CORRECT NUMBER.
5. ROUTE CABLE ITEM (3) DOWN LEFT SIDE OF CABINET. SECURE WITH ITEMS (6) (7) (8) TO CENTER UPRIGHT. THE REMAINDER IS COILED AND SECURED WITH CABLE TIE ITEM (5) UNLESS IT IS PLUGGED INTO THE POWER SUPPLY.
6. REFER TO DRAWINGS D-30090-60001-1 & D-30087-90001-1.
7. REFER TO DRAWINGS D-30090-60001-3 & D-30087-90001-2.

30090-60001	300BM				
13	—	—	PCM-60HZ OR PCM-50HZ	REF	
12	—	—	ASSY-AIR PLENUM	REF	
11	—	—	ASSY-POWER SUP	REF	
10	—	—	ASSY-BC PWR 318T	REF	
9	—	—	ASSY-130 XFMR	REF	
8	4	—	SCR PH 8G-32 X .312	2360-0115	
7	4	—	WSHR FLAT #8	3050-0271	
6	4	—	MT CABLE TIE	1400-0786	
5	3	—	CABLE TIE	1400-0493	
4	1	—	GND STRAP	30010-60061	
3	2	—	CA-PWR SUP AC	30010-60084	
2	1	1	CA-PCM TO PLENUM	30010-60083	
1	1	—	CA-AC PWR	30090-60087	
ITEM	QTY	QTY	MATERIAL DESCRIPTION	MFG PART NO	MFG NAME & ADDR / MFG SPEC

ENGINEERING RESPONSIBILITY	SEPIA	D-30090-90011-1
		APPROVED / DATE
STM	REVISIONS	
A	A3 13246D	LB 12/4/80
B	REVISED PER ECO 47-3172	

ASSY-MAINFRAME
AC WIRING
SEE FAMILY DWG RARDEX
FINISH — SCALE —
PERM. PRINT
HEWLETT PACKARD
PART NUMBER D-30090-90011-1
SHEET 1 OF 1

Series 44/48

REF DWGS:
D-1 AC WIRING
D-3 PWR SUPPLY WIRING
C-5 CMP BIC CABLES

(10) 2

6 2
3 PLCS

2

30070-60097
CARD CAGE #2

30070-60003
CARD CAGE #1

11
(2 PLCS)

4

5

30090-60007
REF. ASSY. SYS.
CONTROL PANEL

ASSY-DC
POWER DIST. - 30090-60020

MAIN/BRN 3

MAIN/ORN 2

MAIN/BLU 1

7 EXT./BRN

8 EXT./ORN

9 EXT./BLU

9 1
EXT.
BLU

8 1
EXT.
ORN

7 1
EXT.
BRN

3 I
MAIN
BLU

2 I
MAIN
ORN

1 I
MAIN
BRN

NOTES:

1. ROUTED ALONG THE FRONT OF THE BOTTOM OF CARD CAGE CABINET AND ARE SECURED & COILED IN PLACE BY LARGE CLAMPS IF NOT USED ON 30087A.

2. THESE ITEMS WILL BE INSTALLED ONLY WHEN SYSTEM IS UPGRADED TO 30087A, ALL CABLES & COMPONENTS FOR UPGRADE ARE CALLED FOR ON 30087A MATERIAL LIST.

ITEM	QTY	30090-60001	30087A	MATERIAL DESCRIPTION	MAT'L PART NO	MAT'L DWG NO	MAT'L SPEC
12	2	—	11	CABLE TIE	1400-0482		
11	2	—	—	CABLE TIE	1400-0895		
10	—	1	—	CA-TEMP SENSE	30070-60052		
9	1	—	—	CA-EXT BP/BLU	30090-60028		
8	1	—	—	CA-EXT BP/ORN	30090-60027		
7	1	—	—	CA-EXT BP/BRN	30090-60026		
6	—	—	3	PCA-IMB I/CONN	30070-60015		
5	—	—	—	PCA-CTRL PANEL	REF	30090-60007	
4	—	—	—	PCA-BP/DIST ASSY	REF	30090-60001	
3	1	—	—	CA-MAIN BP/BLU	30090-60025		
2	1	—	—	CA-MAIN BP/ORN	30090-60024		
1	1	—	—	CA-MAIN BP/BRN	30090-60023		

Series44/48

ENGINEERING RESPONSIBILITY																MEMA															
0	1	12	13	14		0		8	9		11	12	14	15																	
16	17		19		21	22	23	25	29	30	32	33	38	43																	
45	46	61	63																												

SYM	REVISIONS	APPROVED	DATE
A	ΔZ ISSUED	[illegible]	8/15/80
B	REVISED PER PCO 47-3172	[illegible]	10/16/80
C	ADD ITEM 12(1400-0482); 47-3208	[illegible]	2/8/81

B-30090-90011-2

ASSY - MAINFRAME DC WIRING
TITLE
SEE FAMILY DWG KARDEX
USED ASSEMBLY
FINISH —
SCALE —

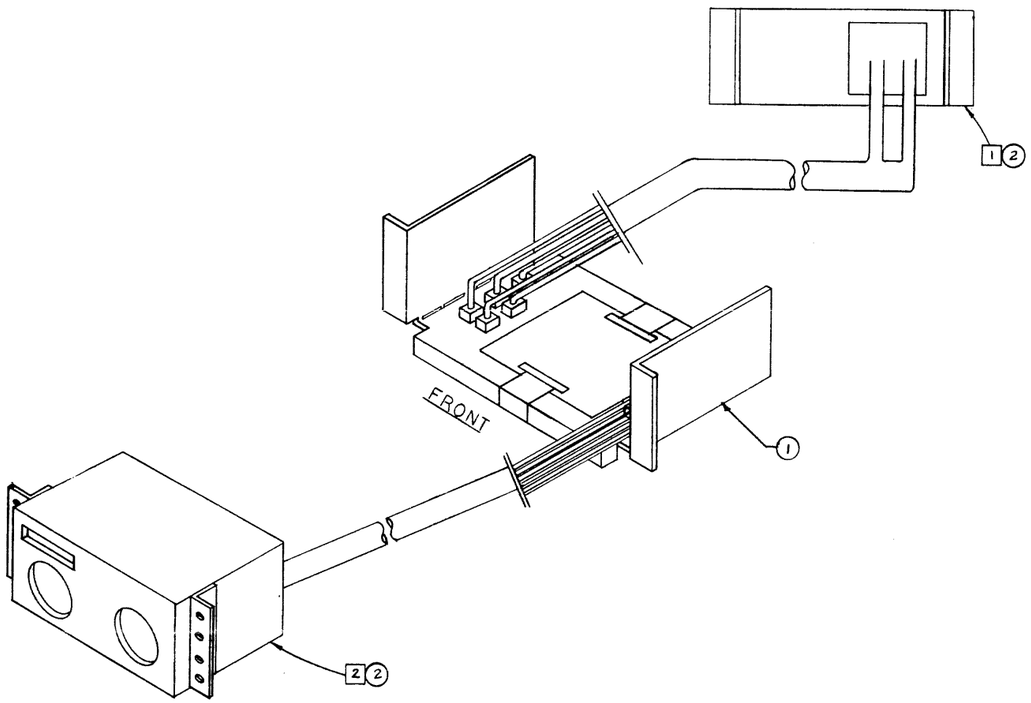
PERM. PRINT
HEWLETT PACKARD
PART NUMBER —
D-30090-90011-2
SHEET 1 OF 1

STOCK NO 5950-6004 PRINTED ON DUPO NO 1030 10 CLEARPRINT FADEOUT

REF DWGS:

D-1 AC WIRING,
D-2 DC WIRING,

C-5 CMP, GIC CABLES



NOTES:

1. FIRST P.S. (UPPER REAR) D.C. POWER CABLE MUST ONLY MATE TO CONNECTORS ON LEFT SIDE (FROM FRONT) OF DC POWER DIST. ASSY.

2. SECOND P.S. (LOWER FRONT) DC. POWER CABLE MUST ONLY MATE TO CONNECTORS ON RIGHT SIDE (FROM FRONT) OF DC. POWER DIST. ASSY. THESE ITEMS WILL BE INSTALLED WHEN SYSTEM IS BEING UPGRADED TO 30987A AND ARE CALLED OUT ON THE UPGRADE MATERIAL LIST.

ITEM	QTY	30090-60001	30987A
2	—		1
1	—		1

ITEM	QTY	MATERIAL-DESCRIPTION	MATL-PRINT NO
2	—	ASSY-POWER SUPPLY	REF
1	—	ASSY-DC POWER DIST	REF

ASSY-MAIN FRAME
Power Supply DC Wiring
30090

FINAL PRINT
HEWLETT PACKARD
D-30090-90011-3

Series 44/48

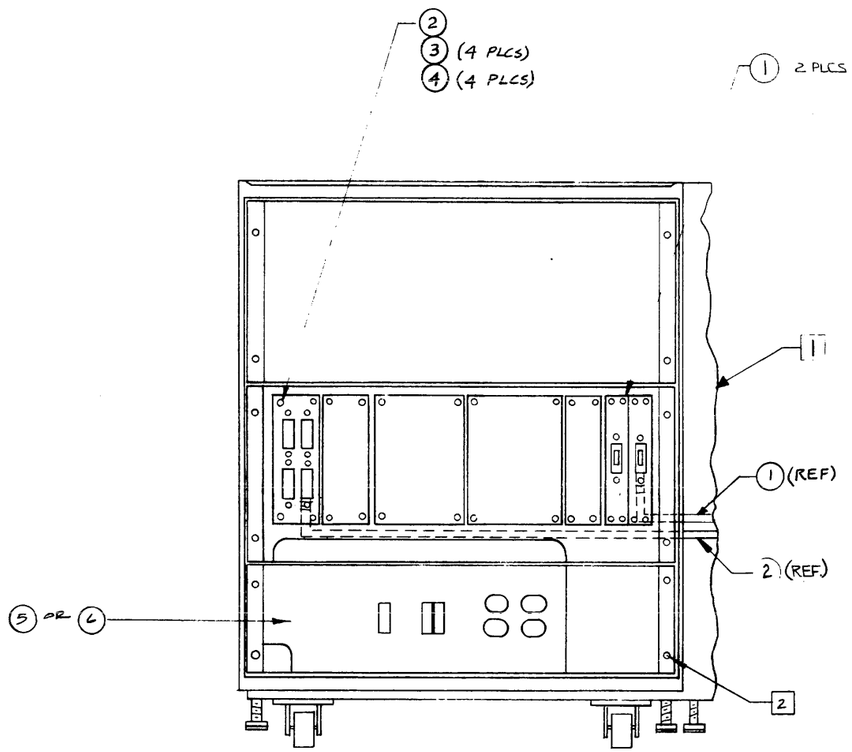
REF DRWG'S: D-1 AC WIRING
D-2 DC WIRING
D-3 PWR SUPPLY WIRING

ENGINEERING RESPONSIBILITY — SEPIA

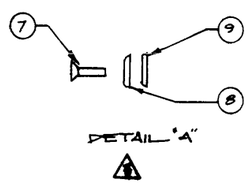
0	1	2	3	4		6		8	9		11	12	14	15
16	17		19		21	22	23	25	29	30	32	33	38	43
45	46	61	63											

C-30090-90011-5

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED	KG/MH	8/26/80
B	REVISED PER PCO 47-3172	LB/DV	12/18/80
C	REVISED PER PCO 47-3465	HR/VP	11-11-81



REAR VIEW



DETAIL "A"

NOTES:

1. ROUTE CABLES, ITEMS (1) & (2), FROM CARD CAGE MAINFRAME TO ELECTRONIC ENCLOSURE THRU PARTITION (SEE C-4)
2. INSTALL ITEMS (7) (8) & (9) 4 PLACES PER DETAIL "A"

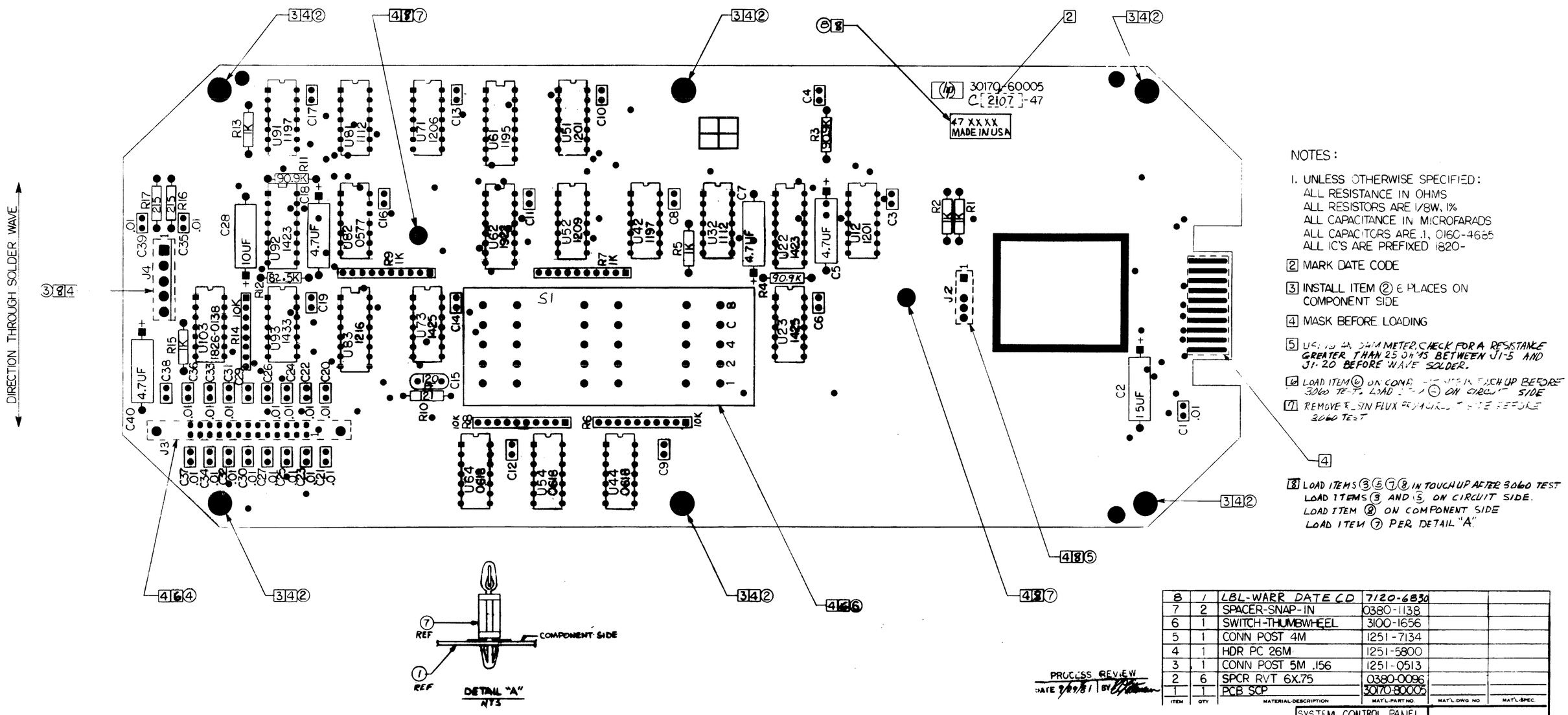
ITEM #	QTY	30090-60003, 60004	QTY	32440A 32440B	QTY	32441A 32440B Opt	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.
9	4	—		—		—	WSHR - FILLER	3050-0284		
8	4	—		—		—	WASHER-CUP	3050-0007		
7	4	—		—		—	SCR #10-32 FH	2680-0106		
6	—	—		—		1	PCM-50 Hz	30015A		
5	—	1		—		—	PCM-60 Hz	30016A		
4	4	—		—		—	WSHR. #6 FLAT	3050-0227		
3	4	—		—		—	SCR #6-32 .312 PAN HD	2380-0115		
2	1	—		—		—	CABLE-ADCC-CMP	30090-60090		
1	—	—		—		—	CABLE-GIC	REF	—	Spec 734 #044

ASSY - MAINFRAME CMP, GIC CABLES
TITLE
SEE FAMILY DWG & KARDEX
ASSEMBLY
FINISH — SCALE —

PERM. PRINT
HEWLETT PACKARD
PART NUMBER —
C-30090-90011-5
SHEET 1 OF 1

Series 44/48

STOCK NO 5960-0003 PRINTED ON DIEPO NO 1030-10 CLEARPRINT FADEOUT



NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   ALL RESISTANCE IN OHMS
   ALL RESISTORS ARE 1/8W, 1%
   ALL CAPACITANCE IN MICROFARADS
   ALL CAPACITORS ARE .1, 0160-4655
   ALL IC'S ARE PREFIXED 1820-
2. MARK DATE CODE
3. INSTALL ITEM (2) 6 PLACES ON COMPONENT SIDE
4. MASK BEFORE LOADING
5. USING AN OHMMETER, CHECK FOR A RESISTANCE GREATER THAN 25 OHMS BETWEEN J1-5 AND J1-20 BEFORE WAVE SOLDER.
6. LOAD ITEM (6) ON COMPONENT SIDE IN TOUCH UP BEFORE 3060 TEST. LOAD ITEM (1) ON CIRCUIT SIDE
7. REMOVE RESIN FLUX RESIDUE FROM BOARD BEFORE 3060 TEST
8. LOAD ITEMS 3 5 7 8 IN TOUCH UP AFTER 3060 TEST
   LOAD ITEMS (3) AND (5) ON CIRCUIT SIDE.
   LOAD ITEM (8) ON COMPONENT SIDE
   LOAD ITEM (7) PER DETAIL "A"

ITEM	QTY	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG NO	MAT'L-SPEC
8	1	LBL-WARR DATE CD	7120-6830		
7	2	SPACER-SNAP-IN	0380-1138		
6	1	SWITCH-THUMBWHEEL	3100-1656		
5	1	CONN POST 4M	1251-7134		
4	1	HDR PC 26M	1251-5800		
3	1	CONN POST 5M .156	1251-0513		
2	6	SPCR RVT 6X.75	0380-0096		
1	1	PCB SCP	30170-60005		

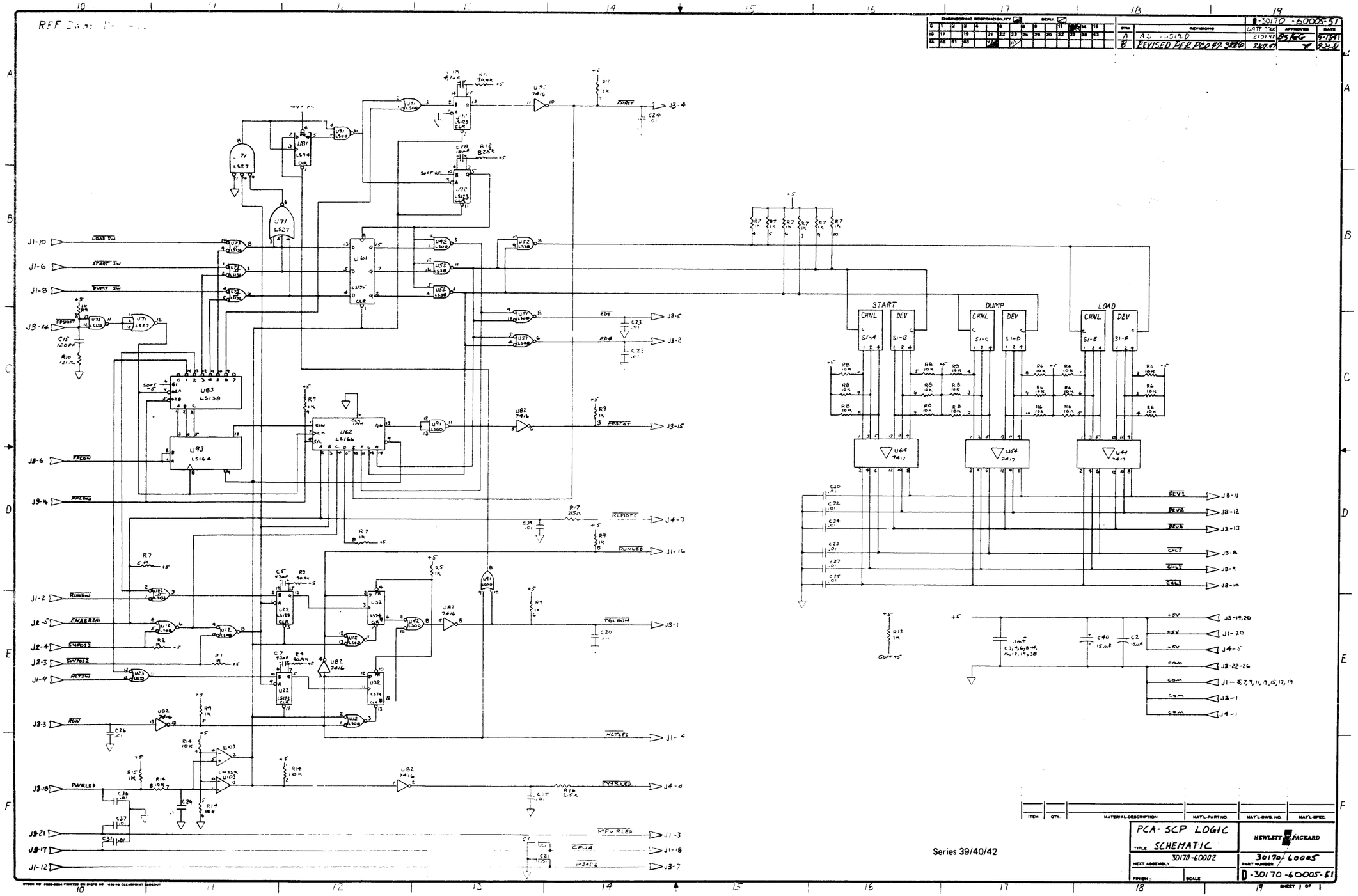
PROCESS REVIEW
DATE 2/27/81 BY

TITLE	SYSTEM CONTROL PANEL LOGIC ASSY. DWG.
NEXT ASSEMBLY	30170-60002
FINISH	SCALE 2/1
	HEWLETT PACKARD
PERM. PART	30170-60005
PART NUMBER	D-30170-60005-4
	SHEET 1 OF 1

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED PCO 47-3432		4-29-81
B	REVISED PER PCO D5-1039		2-5-85

D-30170-60005

Series 39/40/42



Series 39/40/42

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L PART NO	MAT'L ORG. NO	MAT'L SPEC.
		PCA- SCP LOGIC		HEWLETT PACKARD	
		TITLE SCHEMATIC		30170-60005	
		NEXT ASSEMBLY 30170-60002		PART NUMBER D-30170-60005-51	
		FINISH: SCALE			SHEET 1 OF 1

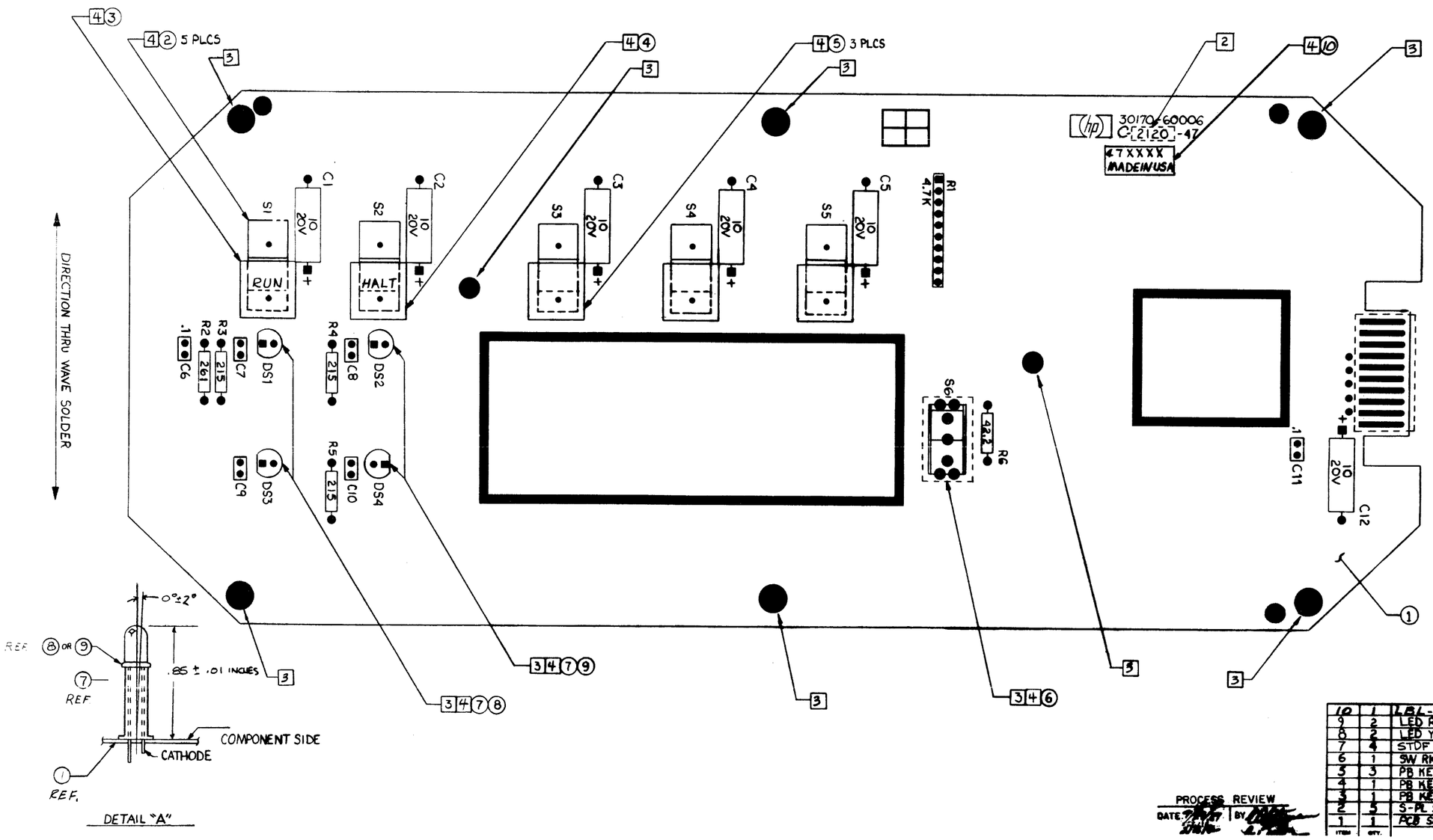
ENGINEERING RESPONSIBILITY	SIGMA

SYM	REVISIONS	DATE	APPROVED	DATE
	30170-60005-51			
A	AS SHIPPED	2/17/87	BSTeC	2-17-87
B	REVISED PER ECO #7-3880	2/17/87		9-22-87

ENGINEERING RESPONSIBILITY	SEPIA

D-30170-60006-E

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED PER PCO 47-3286	—	7-27-81
B	REVISED PER PCO 47-3449	SP	2-26-82
C	ADDED NOTE 3 PER DOC. CHG.	KT/	1-25-82
D	PER PCO 47-3551	KT/	2-19-82



DETAIL "A"

NOTES:

UNLESS OTHERWISE SPECIFIED:
1 ALL RESISTANCE IN OHMS
ALL RESISTORS ARE 1/8W, 1%
ALL CAPACITANCE IN MICROFARADS
ALL CAPACITORS .01, 0160-5352
2 MARK DATE CODE.
3 MASK BEFORE LOADING
4 LOAD ITEMS (2) THRU (10) IN TOUCHUP.
LOAD ITEMS (7) THRU (9) PER DETAIL "A" USING ASSEMBLY FIXTURE J1167/8

5. REMOVE ROSIN FLUX FROM CIRCUIT SIDE BEFORE 3060 TEST.

PROCESS REVIEW
DATE: 2/17 BY

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.
10	1	LBL-WARR DATE CD	7180-6836		
9	2	LED RED SEL	1990-0847		
8	2	LED YEL SEL	1990-0846		
7	4	STDF - 0.5 IN. LED	4040-2075		
6	1	SW RKR SPDT PC	3101-2294		
5	3	PB KEY-FULL BLNK	5041-0311		
4	1	PB KEY-FULL HALT	5041-1608		
3	1	PB KEY-FULL RUN	5041-1607		
2	5	S-PL SWITCH ASSY	3060-9436		
1	1	PCB SCP ETCHED	30170-60006		

TITLE: PCA-SCP SWITCHES ASSEMBLY PERM. PRINT	HEWLETT PACKARD
NEXT ASSEMBLY: 30170-60002	PART NUMBER: 30170-60006
FINISH:	SCALE: 2/1
	D-30170-60006-2

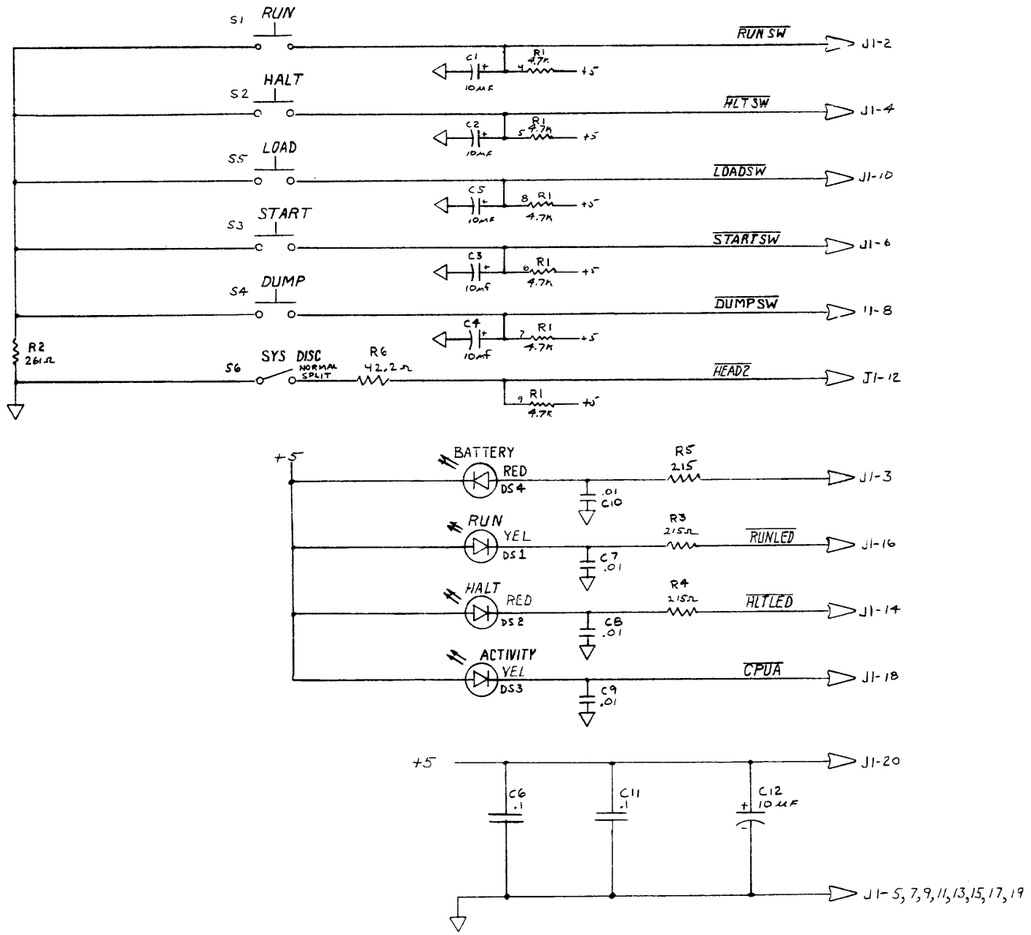
Series 39/40/42

REF. DWG: D-1 A. . .

ENGINEERING RESPONSIBILITY																SEPIA
0	1	2	3	4		6		8	9		11	12	14	15		
16	17		19		21	22	23	25	28	30	32	33	38	43		
46	48	61	63		67											

SYM	REVISIONS	DATE CODE	APPROVED	DATE
A	AS ISSUED	A-2107.47	BS/GG	5-20-87

C-30170-60006-51



ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

PCA- SCP SWITCHES
TITLE SCHEM. DWG.
NEXT ASSEMBLY 30170-60002
FINISH
SCALE

HEWLETT PACKARD
30170-60006
PART NUMBER
C-30170-60006-51
SHEET 1 OF 1

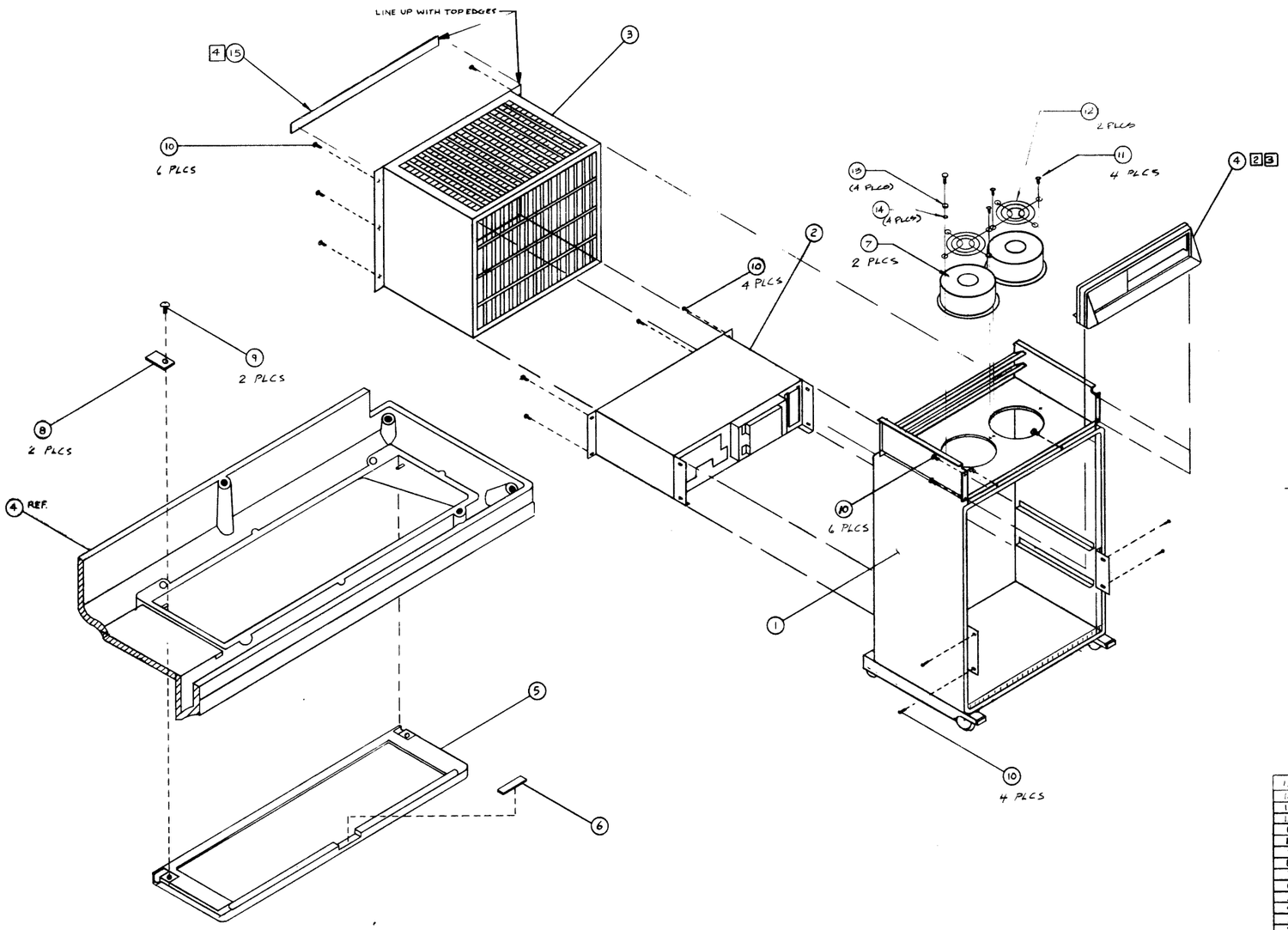
Series 39/40/42

STOCK NO. 5280-0003 PRINTED ON DIEPO NO. 1030-10 CLEARPRINT FADEOUT

REF DWGS: D-2 CHASSIS

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED THD 77-121		9-22-8
B	ADDED ITEMS 15 AND NOTE 4 PER PCO DE-10354	RJG	8-11-83
C	5161-0452, NAS 3160-0893, PER ECN 10706		3-3-84

1-30170-90006 1



NOTES:

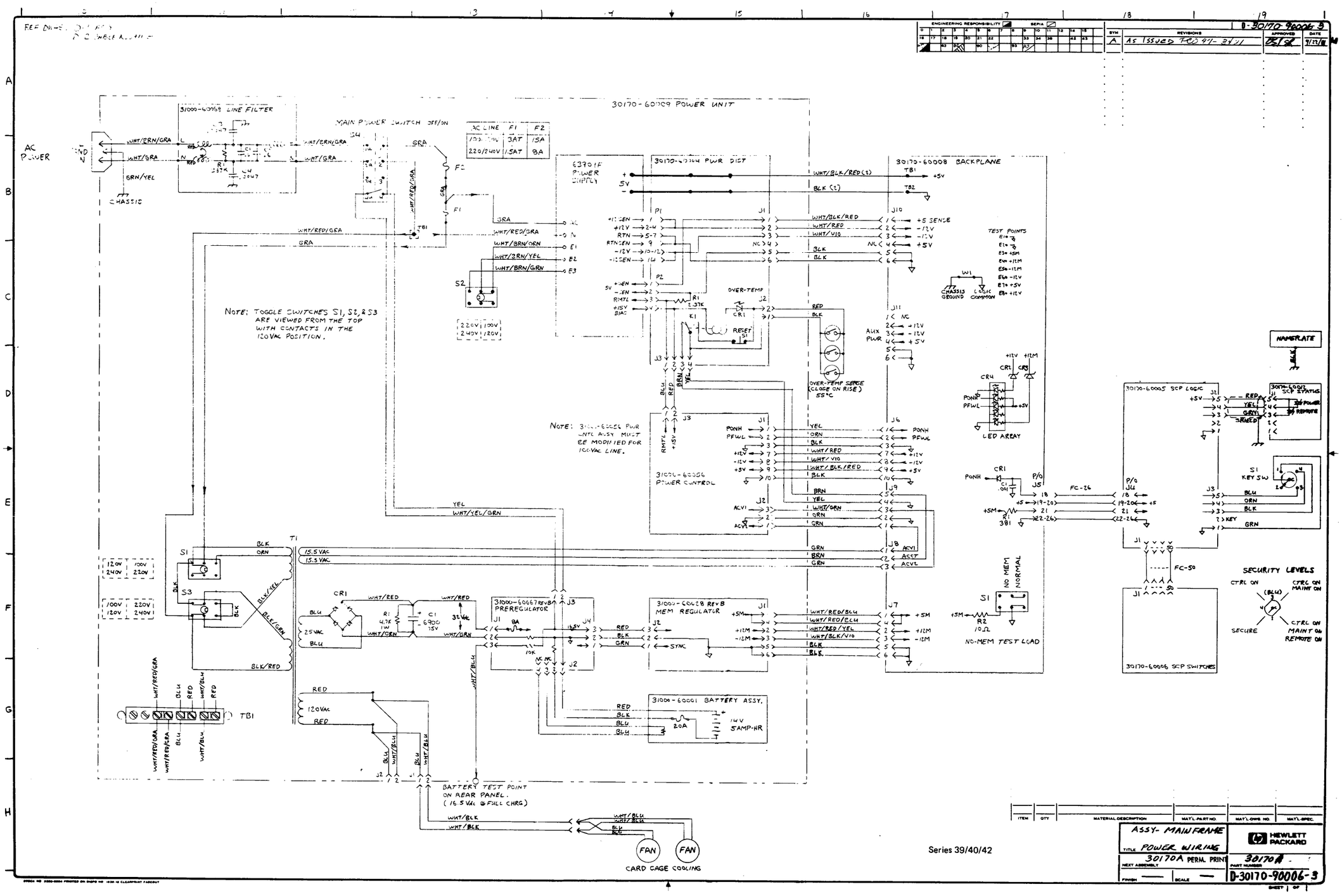
1. IMPORTANT! ASSEMBLE ALL ITEMS SHOWN BELOW BEFORE GOING ON TO D-2.
2. COMPLETE ITEM (2) SUB-ASSEMBLY, PER DETAIL A, PRIOR TO INSTALLING IT ON MAINFRAME
3. INSTALL ITEM (4) PRIOR TO INSTALLING ITEM (7)
4. INSTALL ITEM (15) IN RACKING

DETAIL "A"
SEEN FROM THE REAR OF ITEM 4

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.
15	1	LABEL PLATE	1121-1582		
14	4	LEVER	2190-0007		
13	4	WSHR .500 OD	3050-0781		
12	2	GRILL FAN	5161-0315		
11	4	SCR 6-32 X 5/8	2360-0221		
10	20	SCR-8-32 X .37 PH	2510-0045		
9	2	SCR-TAP 4-40 X .25	0624-0333		
8	2	PLATE-HINGE KEEP	30080-00019		
7	2	FANS	3160-0452		
6	1	CATCH-STRIKE PLATE	1390-0285		
5	1	DOOR-CTRL PANEL	30170-60002		
4	1	BEZEL-FRONT	30170-60001		
3	1	ASSY-CARD CAGE	30170-60007		
2	1	ASSY-POWER UNIT	30170-60009		
1	1	ASSY-CABINET	30170-60010		

Series 39/40/42

TITLE: MAINFRAME ASSY.	HEWLETT PACKARD
NEXT ASSEMBLY: 30170A	PART NUMBER: 30170A
FINISH	SCALE
	D-30170-90006-1
	SHEET 1 OF 1



ENGINEERING RESPONSIBILITY — SEPIA

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED ECO 97-2411	DLS	9/29/88

D-30170-90006-3

Series 39/40/42

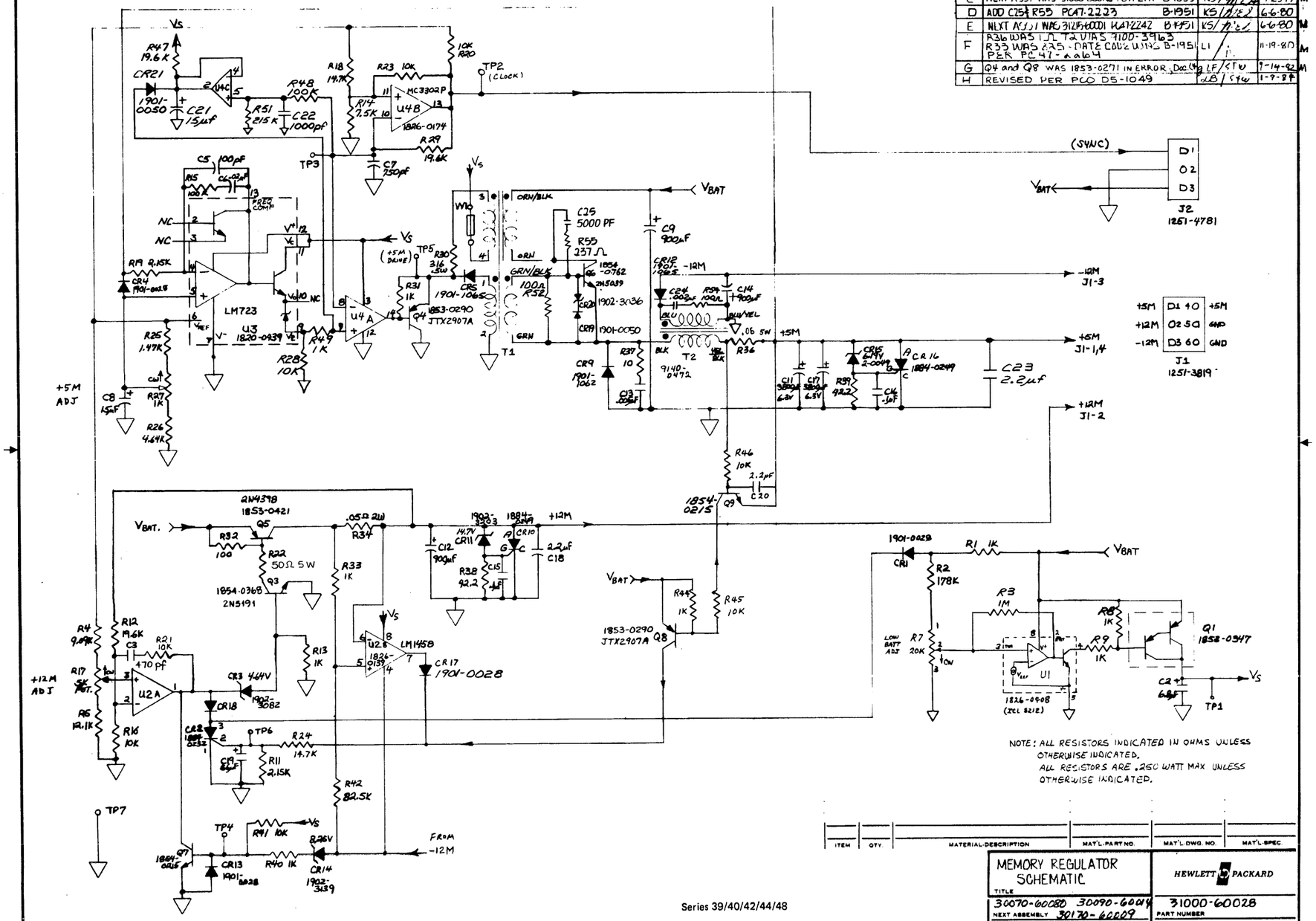
ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L CAGE NO.	MAT'L SPEC.

ASSY- MAINFRAME
TITLE POWER WIRING
30170A PERM. PRINT
NEXT ASSEMBLY
FINISH — SCALE —
HEWLETT PACKARD
30170A
PART NUMBER
D-30170-90006-3
SHEET 1 OF 1

ENGINEERING RESPONSIBILITY	SEPIA	APERTURE CD
0 1 2 3 4 6 8 9 11 12 14 15		
16 17 19 21 22 23 26 29 30 32 33 36 43		
46 48 61 63		

C-31000-60028-16

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED VCAT-2071 B-1835	NM	2-21-78
B	Q3 WAS 1854-0602 PCAT-2111 B-1835	KS/	1-18-79
C	NEXT ASSY WAS 31000-60002 PCAT 2171 B 1835	KS/	7-23-79
D	ADD C25, R55 PCAT-2223 B-1951	KS/	6-6-80
E	NEXT ASSY WAS 31015-60001 PCAT-2242 B-1951	KS/	6-6-80
F	R36 WAS 10Ω 1W PCAT 9100-3963 R33 WAS 22K, DATE CODE WAS B-1951 PER PC 41-A0604	LI	11-19-80
G	Q4 and Q8 WAS 1853-0271 IN ERROR, Doc'g	LF/	9-14-82
H	REVISED PER PCO DS-1049	AB/	1-9-84



NOTE: ALL RESISTORS INDICATED IN OHMS UNLESS OTHERWISE INDICATED.
ALL RESISTORS ARE .250 WATT MAX UNLESS OTHERWISE INDICATED.

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.

Series 39/40/42/44/48

MEMORY REGULATOR SCHEMATIC

TITLE

30070-60080 30090-60004

NEXT ASSEMBLY 30170-60009

FINISH SCALE

HEWLETT PACKARD

31000-60028

PART NUMBER

C-31000-60028-16

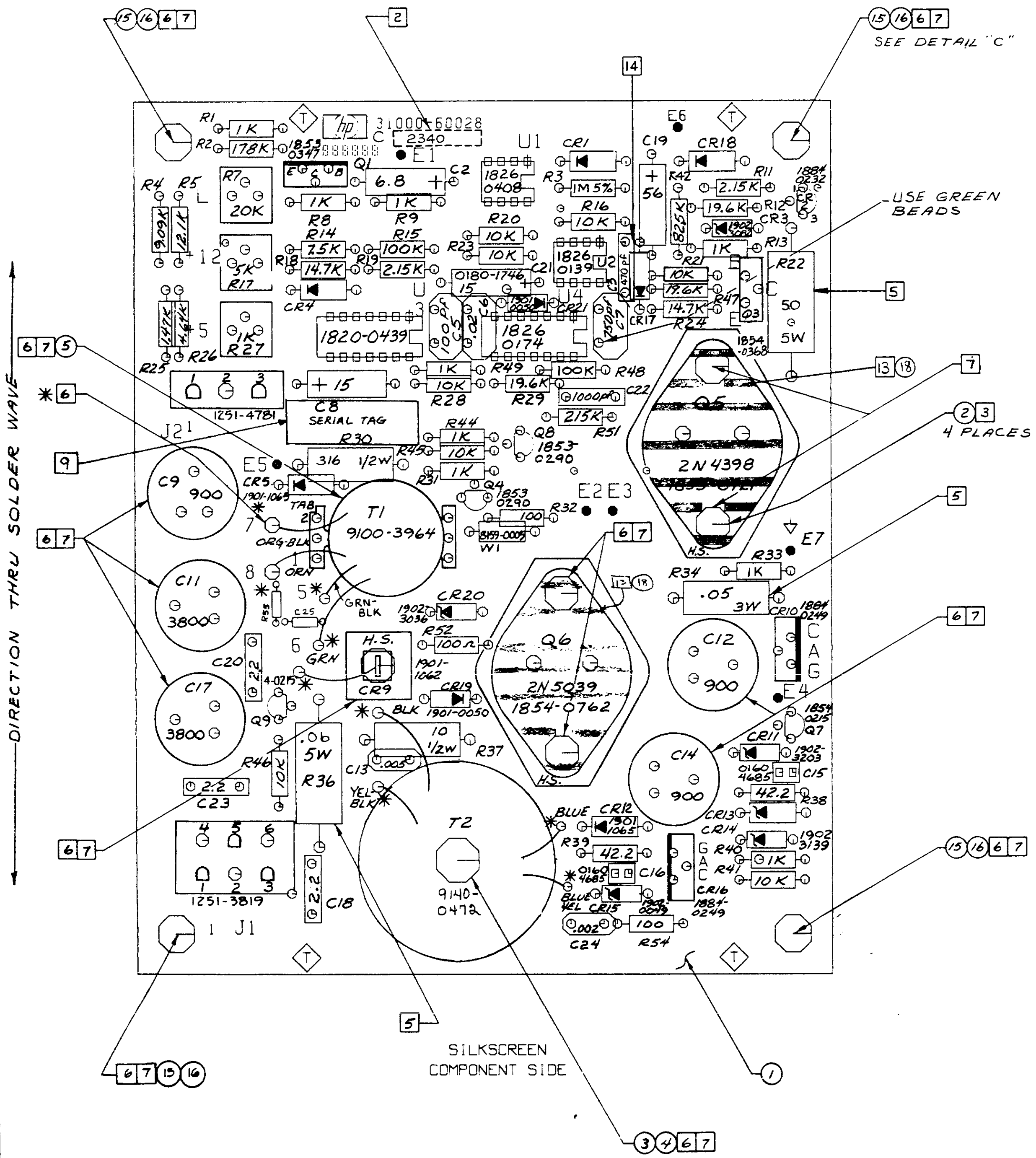
SHEET 1 OF 1

STOCK NO 5180-0003 PRINTED ON DIEPO NO 1050-10 CLEARPRINT FADEOUT

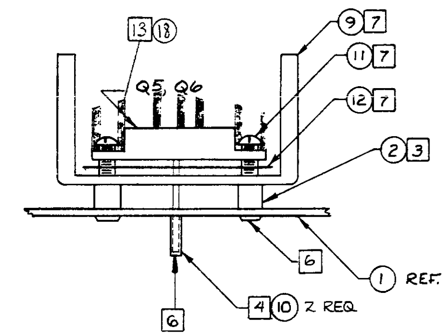
SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED PC D5-1041	LB/STW	1-18-83
B	REVISED PER PC D5-1049	LB/STW	1-9-84

D-31000-60028-17

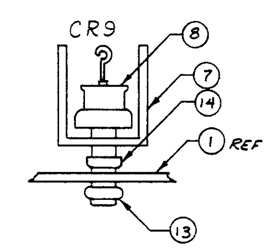
DIRECTION THRU SOLDER WAVE



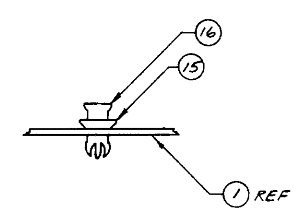
DETAIL "A"



DETAIL "B"



DETAIL "C"



NOTES

1. UNLESS OTHERWISE SPECIFIED:
   ALL RESISTANCE IN OHMS
   ALL RESISTORS ARE 1/8 W 1%
   ALL CAPACITANCE IN MICROFARADS
   ALL DIODES ARE 1901-0028

2. MARK DATE CODE C-2340
3. INSTALL ITEM (2) 4 PLACES IN RIVET
4. DO NOT CUT ITEM (10) INSTALL IN LOADING AND TAPE TOPSIDE. SEE DETAIL "A"
5. MOUNT R22, 34, 36 1/8" ABOVE BOARD
6. MASK AS INDICATED PRIOR TO LOADING
7. INSTALL IN P.C. FINAL ASSEMBLY: CR9 PER DETAIL "B"
   C9, C11, C12, C14, C17, ITEMS (3), (4), (5) AND (6).
8. (B) DELETED
9. SERIALIZE BOARD IN P.C. FINAL ASSEMBLY. PLACE SERIAL TAG AS SHOWN.
10. SCHEMATIC C-31000-60028-16
11. AT THE MI STATION APPLY ITEM (17) NEAR LOGO.

13. ADD ITEMS (9) (11) (12) (18) AND Q5, Q6 IN P.C. FINAL ASSEMBLY, TIGHTEN SCREWS TO 21 IN/LBS.

14. REFORM THE LEADS FOR C3 TO A .375 SPACING.

ITEM	QTY	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.
18	2	HEAT SINK	1205-0351		
17	1	LABEL, WARRANTY	7120-6830		
16	4	NYLATCH PLUNGER	1390-0365		
15	4	NYLATCH GROMMET	1390-0366		
14	1	NUT, 10-32	2740-0002		
13	1	NUT, 10-32 W/LOCK	2740-0003		
12	2	THERMAL WASHER	0340-0875		
11	4	SCREW 6-32 X .500	2360-0121		
10	4	XSTR SOCKET	1251-2913		
9	2	HEAT SINK	1205-0289		
8	1	DIODE	1901-1062		
7	1	HEAT SINK	31000-00125		
6 (A)	1	WIRE, 22 AWG 1 1/2" BLACK	8150-1540		
5	1	XFMR T1	9100-3964		
4	1	XFMR T2	9100-3963		
3	1	NUT 6-32 X .250	9140-0472		
2	4	SPACER	0380-0342		
1	1	P.C. BOARD, ETCHED	31000-80028		

Series 39/40/42/44/48

PROCESS REVIEW
DATE 7/19/83 BY Jim Williams
12/8/83 Jim Pierce

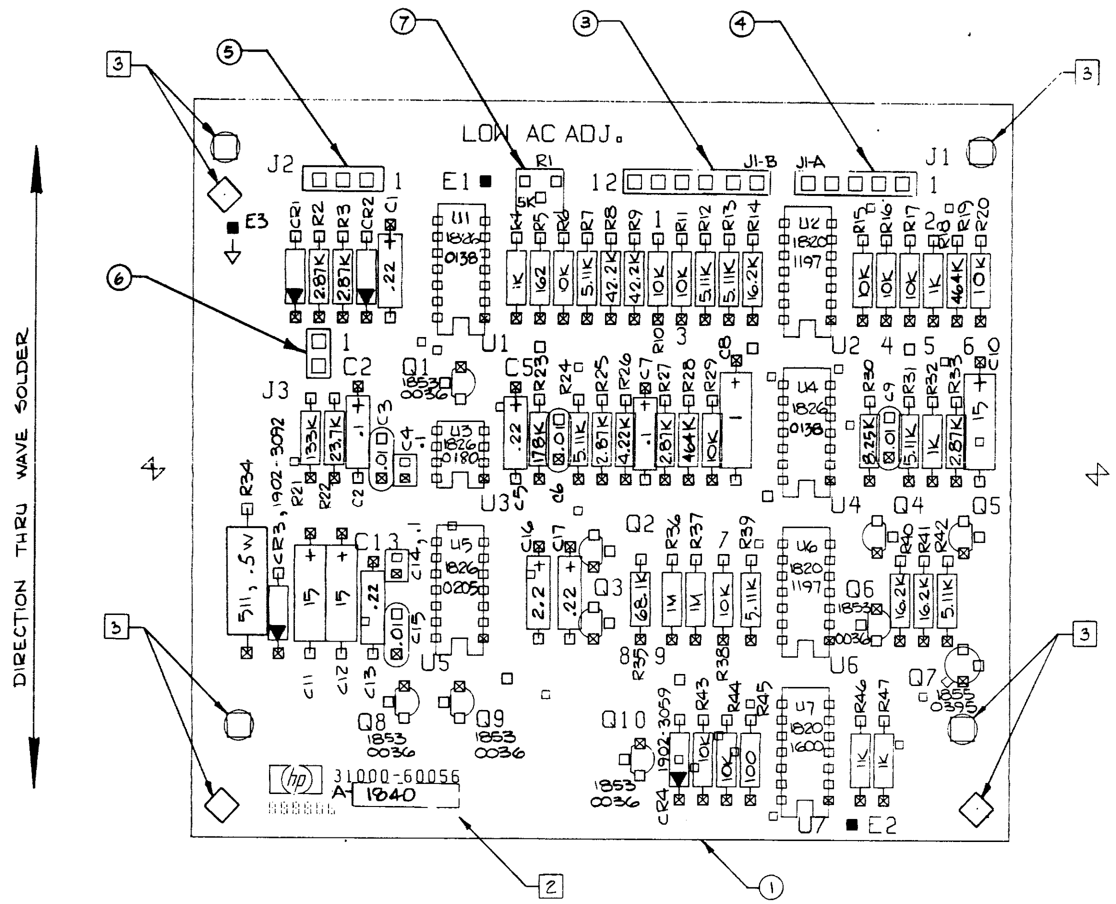
MEMORY REGULATOR
PERM. PRINT
TITLE ASSEMBLY
30070-60080 30070-60014
NEXT ASSEMBLY 30170-60009
FINISH
SCALE 2/1

HEWLETT PACKARD
PART NUMBER 31000-60028
C-31000-60028-17

REF DWG: D-... SCHEM.

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED		1-26-78
B	C8 WAS 15UF; C13 WAS .1UF; R19,28 WAS 68.1K; R23 WAS 135K; R30 WAS 5.11K; U1A WAS 1826-0174 AND DATE CODE WAS 1804 PCA7-2079	KS	10-16-78
C	NEXT ASSY WAS 31000-60002 PCA7-2171	KS	7-23-79
D	NEXT ASSY WAS 31214-60001 PC47-2242		5-23-80
E	ADDED TOOLING HOLES PC67-0089	MEP	8-21-81

D-31000-60056-1



NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL RESISTANCE VALUES ARE IN OHMS ± 1%, 1/4W. ALL CAPACITANCE VALUES ARE IN MICROFARADS. ALL TRANSISTORS ARE 1854-0215. ALL DIODES ARE 1901-0050
2. MARK DATE CODE A-1840
3. MASK AS INDICATED PRIOR TO WAVE SOLDERING
4. SERIALIZE IN PC FINAL ASSEMBLY.
5. SCHEMATIC: D-31000-60056-6
6. AT THE MECHANICAL INSPECTION STATION, APPLY ITEM ② NEAR THE HP LOGO.

Series 39/40/42

ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO	MAT'L DWG NO	MAT'L SPEC
7	1	RESISTOR 5K R1	2100-3252		
6	1	CONN-POST 2PIN J3	1251-4795		
5	1	CONN-POST 3PIN J2	1251-4627		
4	1	CONN-POST 5POS J1A	1251-3848		
3	1	CONN-POST TYPE J1B	1251-3766		
2	1	LABEL-WARRANTY	7120-6830		
1	1	PC BOARD, ETCHED	31000-80056		

PROCESS REVIEW
DATE 1-24-78 BY Pat Wright

TITLE: ASSEMBLY - POWER CONTROL — PERM. PRINT
HEWLETT PACKARD
NEXT ASSEMBLY: 31000-60002
PART NUMBER: 31000-60056
SCALE: 2/1
D-31000-60056-1

REF. DWG.: D-1 ASSY.

LOW LINE DETECTOR

VAC OVER VON TURNS MAIN SUPPLY ON AND ALLOWS PFWL AND LATER PONH TO GO "HIGH".

VAC UNDER VOFF CAUSES PFWL AND 2ms LATER PONH TO GO "LOW".

VAC UNDER VOFF TURNS OFF MAIN SUPPLY AFTER 37ms.

1. ALL RESISTORS 1/4W, 1% UNLESS OTHERWISE SPECIFIED
2. ALL CAPACITANCE IN MICROFARADS
3. WHEN OPERATING THE HP300 SYSTEM WITH INPUT LINE VOLTAGES AT 100 VOLTS RMS OR LOWER, CERTAIN TIMING COMPONENTS ON THIS BOARD MUST BE CHANGED TO ALLOW PROPER SENSING OF LOW LINE CONDITIONS AND RESULTING POWER FAIL WARNING OPERATION. THE CHANGES REQUIRED ARE AS FOLLOWS:
   - R23 121K 0757-0461
   - R21 909K 0757-0464

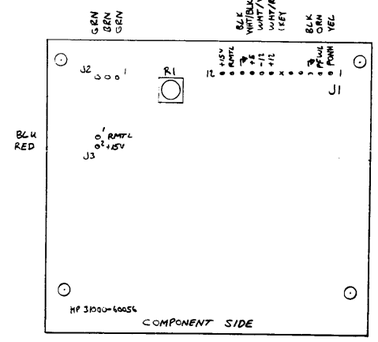
   CHECK WITH FACTORY SUPPORT PERSONNEL IF OPERATIONS UNDER THESE CONDITIONS ARE SUSPECTED.
4. THERE ARE OVERSIZE SQUARE RESISTOR PADS WITH NO OTHER TRACES UNDER THE RESISTOR LEAD ON THE COMPONENT SIDE. THESE POINTS ARE USED FOR CLIP LEADS DURING TEST ONLY.

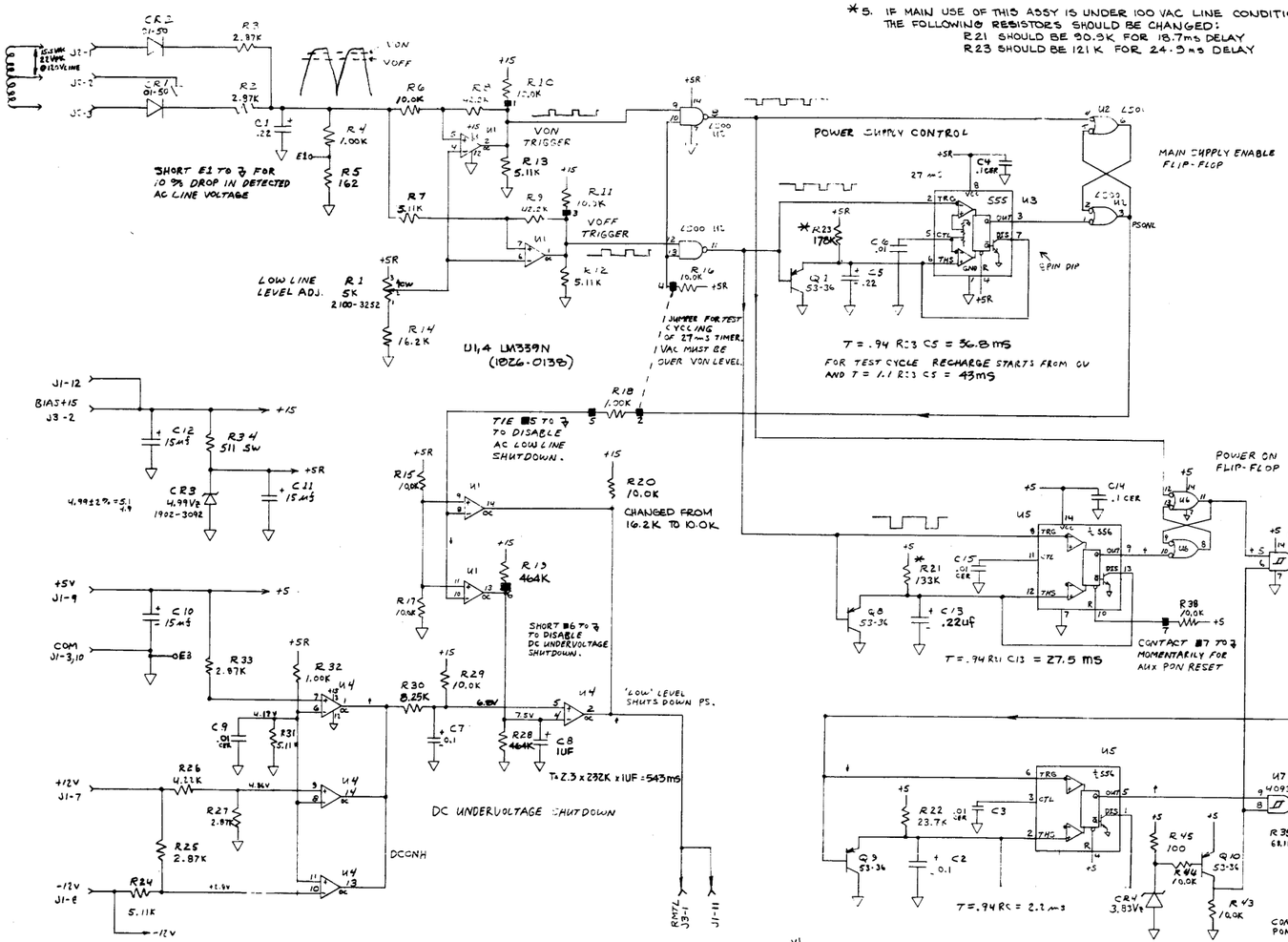
*5. IF MAIN USE OF THIS ASSY IS UNDER 100 VAC LINE CONDITIONS THE FOLLOWING RESISTORS SHOULD BE CHANGED:
R21 SHOULD BE 90.9K FOR 18.7ms DELAY
R23 SHOULD BE 121K FOR 24.9ms DELAY

ENGINEERING RESPONSIBILITY	SIGNAL	APERATURE CD
0 1 2 3 4 5 6 8 9 11 12 13 14 15		
16 17 19 21 22 23 26 29 30 32 33 36 43		
45 46 61 63		

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED A1804		
B	REVISED: DATE CODE WAS 1804 PL47-2019 A1840		
C	ADDED NOTE 5		
D	NEXT ASSY WAS 31000-60002 PL47-2171 A1840		
E	NEXT ASSY WAS 31014-60001 PER PC47-2242		

31000-60056-6





NOTE:
FOR TEST CYCLING OF PFWL & PONH,
(1) TIE 5 TO 7 TO DISABLE LOW LINE SHUT-DOWN, AND
(1) TIE E2 TO 4. (VAC ABOVE VON)
FOR FASTER CYCLING, TIE 8 TO 9.
TO ACCURATELY MEASURE ONE-SHOT(S) TIMING, SEE EXPONENTIAL WAVEFORM(S) ON TIMING CAPS C5, C13, OR C2. ALL VALUES ARE ±10%

NOTE:
ARROW ↑ OR ↓ SHOW SIGNAL LEVEL AT NORMAL OPERATION.

ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

TITLE	POWER CONTROL SCHEMATIC
NEXT ASSEMBLY	31000-60002
FINISH	SCALE
NEWLETT PACKARD	31000-60056 PART NUMBER
	B-31000-60056-6 SHEET 1 OF 1

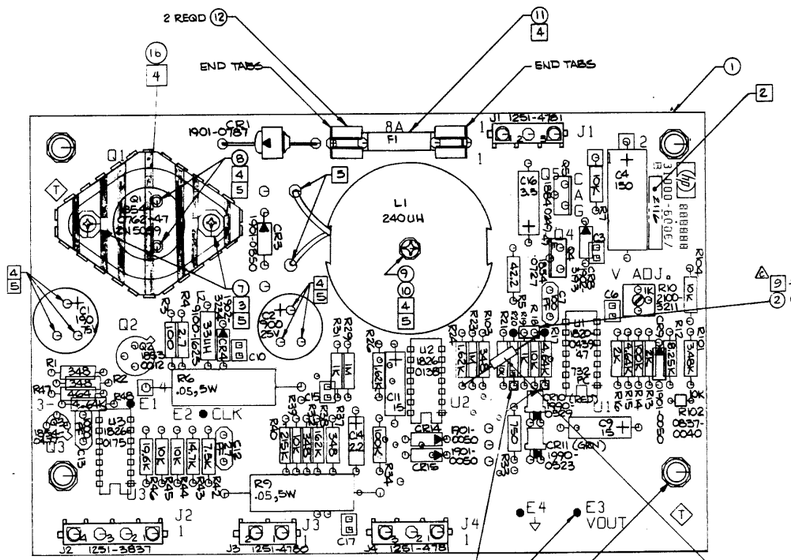
Series 39/40/42

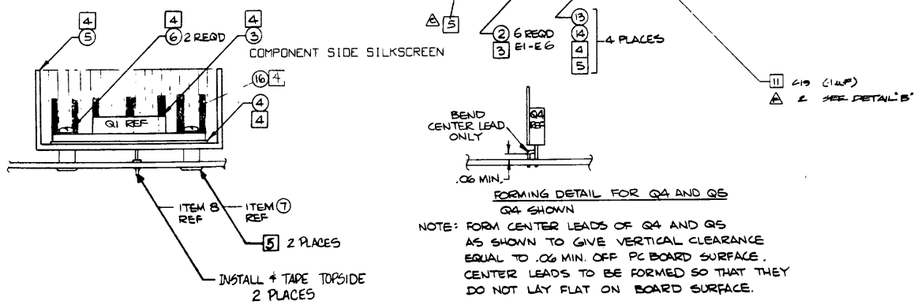
ENGINEERING RESPONSIBILITY	REV'S	ADD'L SHEETS
0 1 2 3 4 6 8 9 11 14 15 16 17 18 21 22 23 26 28 30 33 35 38 41 42 44 47 48		

SYM	REVISIONS	APPROVED	DATE
A	AS ISSUED PCA7-2173	NM/MC	7-30-79
B	ADD MASKING NOTE	CT/	7-20-79
C	PRO-47-1229. ADD NOTES 9 & 10, ADD DETAIL "A", ITEM 2 QTY. WAS 6, DATE CODE WAS 1928. ADD C18		5580
D	NEXT ASSY WAS 31215-60003 PER PC 47-2242.	LI/	8-22-80
E	ADD NOTE 14, 2380-0117 IN ITEM 4 WAS 2380-0117, DATE CODE WAS 2006 PER PC 47-2364	LI/	11-21-80
F	PRO 47-3306 ADD DETAIL "B", ADD NOTE 11, ITEM 2 WAS QTY 6, DATE CODE WAS 2030, ADD C19	DL	5-11-81
G	REVISED DETAIL B, PRO 47-3349 ADD NOTES 12 AND 13.	DL	7-1-81

0-31000 - 60067-11

DIRECTION THRU WAVESOLDER





FORMING DETAIL FOR Q4 AND Q5
Q4 SHOWN

NOTE: FORM CENTER LEADS OF Q4 AND Q5 AS SHOWN TO GIVE VERTICAL CLEARANCE EQUAL TO .06 MIN. OFF PC BOARD SURFACE. CENTER LEADS TO BE FORMED SO THAT THEY DO NOT LAY FLAT ON BOARD SURFACE.

NOTES:
1. UNLESS OTHERWISE SPECIFIED
   ALL RESISTANCE VALUES ARE IN OHMS
   ALL RESISTORS ARE ± 5%, 1/4W
   ALL CAPACITANCE VALUES ARE IN MICROFARADS
   ALL CAPACITORS ARE
2. MARK DATE CODE. (DATE CODE IS 2116)
3. INSTALL ITEM (2) 4 PLACES AND RIVET ITEM (7) 2 PLACES.
4. INSTALL ITEMS (5) THRU (6), (8) THRU (11), (13), (14) C1, C2, (16) AND BEND CR10, CR11 AS SHOWN IN TOUCH-UP.
5. MASK AS INDICATED PRIOR TO LOADING.
6. SERIALIZE PC BOARD IN TOUCH-UP
7. APPLY ITEM (8) NEAR HP LOGO AT MECHANICAL INSPECTION STATION
8. SCHEMATIC C-31000-60067-16.

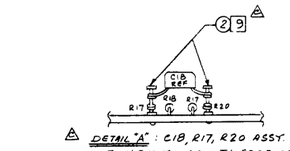
△ 9 INSTALL ITEM (2) 2 PLACES DURING LOADING. INSTALL C18, R17, R20 PER DETAIL "A" IN TOUCH-UP

△ 10. MODIFICATION PER C-31000-60067-14, 15

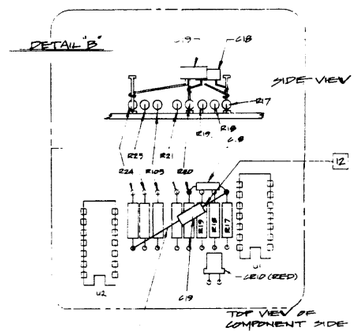
△ 11 INSTALL ITEM (2) DURING LOADING INSTALL C19 R24 PER DETAIL "B" IN TOUCH UP.

12 INSTALL C19 CLOSE TO C18 AS SHOWN PER DETAIL B.

13 PUT INSULATION TUBING AROUND LONGER LEG OF C19 AS SHOWN



△ DETAIL "A": C18, R17, R20 ASSY.
NOTE: VIEW IS FROM J1 EDGE OF PCA ON COMPONENT SIDE.



TOP VIEW OF COMPONENT SIDE

13

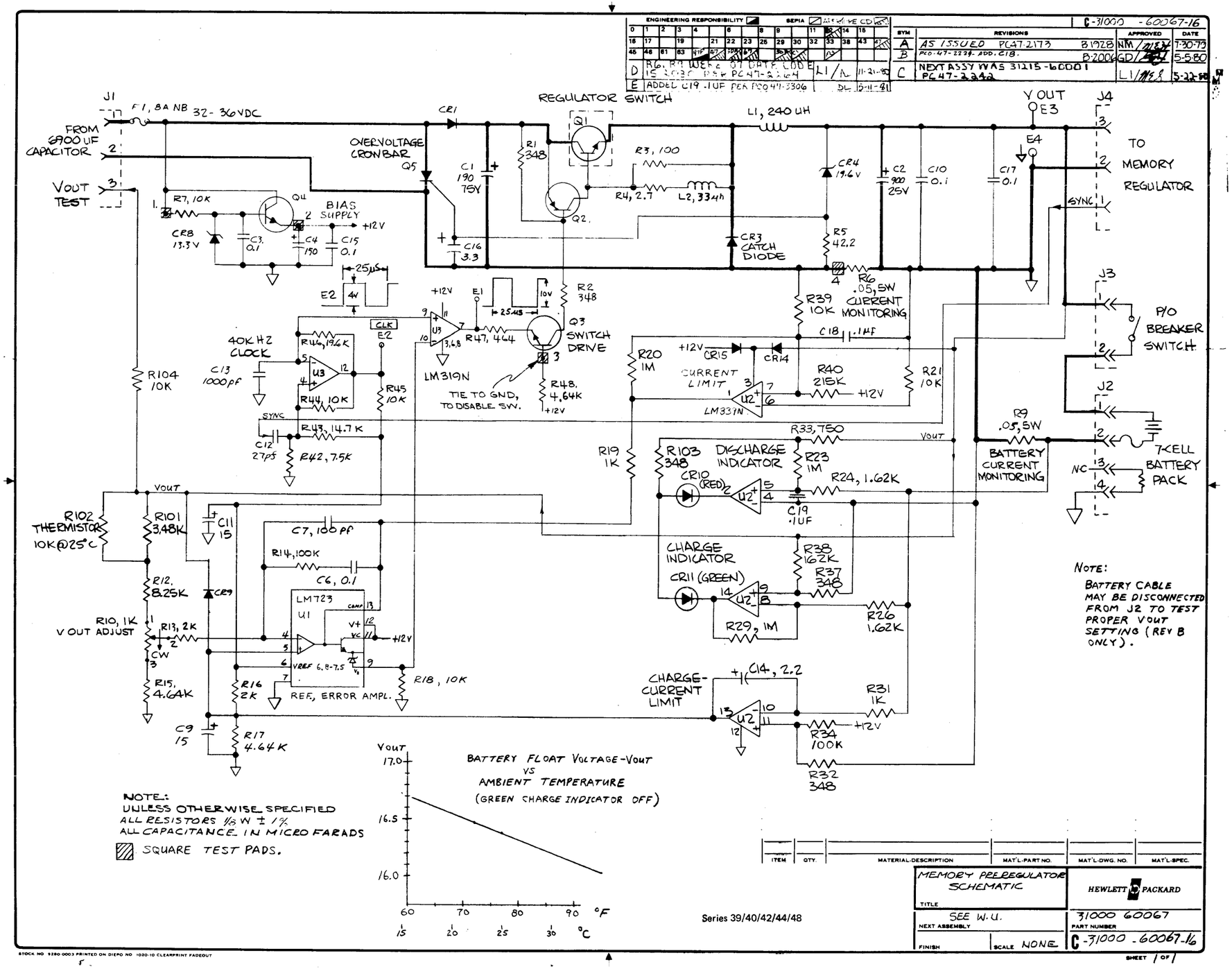
ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO	MAT'L SPEC
16	1	HEAT SINK	1205-0581	
15	1	LABEL, WARRANTY	7120-6830	
14	4	SNAP IN GROMMET	1390-0366	
13	4	SNAP IN PLUNGER	1390-0365	
12	2	FUSE CLIP (F1) .250DIA	2110-0269	
11	1	FUSE, F1 8A	2110-0342	
10	1	LOCKNUT, 6-32 (L1)	2420-0001	
9	1	INDUCTOR, L1	9100-3965	
8	2	CONN, SPG CLIP CUP (Q1)	1251-2913	
7	2	SPACER, 6-32 x .125 LG	0380-0382	
6	2	SCREW, 6-32 x .500 LG	3160-0121	
5	1	HEATSINK, XISTOR TO-3 (Q1)	1205-0289	
4	1	INSUL, XISTOR TO3 (Q1)	0340-0815	
3	1	TRANSISTOR TO3 Q1	1854-0742	
2	7	TERMINAL E1-E7	0360-1682	
1	1	PC BOARD ETCHED	31000-60067	

PROCESS REVIEW
DATE 7/1/81 BY

△△

TITLE	MEMORY PREREG ASSY PERM. PRINT
NEXT ASSEMBLY	SEE W.U.
FINISH	SCALE 2/1
	HEWLETT PACKARD
	31000-60067
	D 31000-60067-11
	SHEET 1 OF 1

Series 39/40/42/44/48


ENGINEERING RESPONSIBILITY
SEPIA
C-31000-60067-16
REVISIONS
A AS ISSUED PC47-2173 B-1978 NM 7-30-79
B PCO-47-2298. ADD. C18. B-2006 GD 5-5-80
C NEXT ASSY WAS 31215-60001 PC47-2398 LI 5-22-80
D RC, R4 WERE BY DATE CODE LI/A 11-21-80
E ADDED C19 .1UF PER PCO 47-3306 DL 5-11-81
J1
F1, 8A NB 32-36VDC
FROM 6900 UF CAPACITOR
VOUT TEST
CR1
REGULATOR SWITCH
Q1
L1, 240 uH
VOUT E3
E4
J4
TO MEMORY REGULATOR
SYNC
OVERVOLTAGE CROWBAR
Q5
C1 190 75V
R1 348
R3, 100
R4, 2.7
L2, 33uH
Q2
CR4 19.6V
C2 900 25V
C10 0.1
C17 0.1
CR3 CATCH DIODE
R5 42.2
R6 .05, 5W CURRENT MONITORING
C16 3.3
R7, 10K
Q4
BIAS SUPPLY
+12V
CR8 13.3V
C3, 0.1
C4 150
C15 0.1
25uS
E2 4V
E1
10V
25.4uS
R2 348
Q3 SWITCH DRIVE
+12V
U3
3.68
LM319N
R47, 4.64
TIE TO GND, TO DISABLE SW.
R48, 4.64K
40KHZ CLOCK
CLK
R46, 19.6K
U3
R44, 10K
R45 10K
C13 1000pf
SYNC
R43, 14.7K
C12 27pf
R42, 7.5K
R104 10K
R39 10K
C18 .1uF
J3
P/O BREAKER SWITCH
J2
R20 1M
+12V
CR15
CR14
CURRENT LIMIT
U2
LM337N
R40 215K
R21 10K
R9 .05, 5W
BATTERY CURRENT MONITORING
7-CELL BATTERY PACK
NC
R33, 750
VOUT
R19 1K
R103 348
DISCHARGE INDICATOR
CR10 (RED)
R23 1M
R24, 1.62K
C19 .1UF
CHARGE INDICATOR
CR11 (GREEN)
R38 162K
R37 348
R26 1.62K
R29, 1M
R102 THERMISTOR 10K@25°C
R101 3.48K
C11 15
C7, 100 pf
R14, 100K
C6, 0.1
LM723
U1
R12, 8.25K
CR9
R10, 1K VOUT ADJUST
R13, 2K
CW
R15, 4.64K
R16 2K
REF. ERROR AMPL.
R18, 10K
C9 15
R17 4.64K
CHARGE-CURRENT LIMIT
C14, 2.2
R31 1K
R34 100K
R32 348
NOTE:
BATTERY CABLE MAY BE DISCONNECTED FROM J2 TO TEST PROPER VOUT SETTING (REV B ONLY).
NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS 1/2 W ± 1%
ALL CAPACITANCE IN MICRO FARADS
SQUARE TEST PADS.
BATTERY FLOAT VOLTAGE-VOUT VS AMBIENT TEMPERATURE (GREEN CHARGE INDICATOR OFF)
VOUT
17.0
16.5
16.0
60 70 80 90 °F
15 20 25 30 °C
Series 39/40/42/44/48
ITEM QTY. MATERIAL-DESCRIPTION MAT'L-PART NO. MAT'L-DWG. NO. MAT'L-SPEC.
MEMORY PREREGULATOR SCHEMATIC
TITLE
HEWLETT PACKARD
SEE W.U.
NEXT ASSEMBLY
31000 60067
PART NUMBER
FINISH
SCALE NONE
C-31000-60067-16
SHEET 1 OF 1
STOCK NO. 9280-0003 PRINTED ON DIEPO NO. 1020-10 CLEARPRINT FADEOUT

REF DWGS: F-1, F-4 ASSY.
D-32 DATA
A-50 DATE CODE INFO.
C-2 MODIFICATION BLDG
C-3 MODIFICATION BLDG
A-70 DTS-70 TEST
B-5, DEFINITION PAGE
S1
RESET
SECOND CONTROLLER LED "C"
S2
MOP REGISTER
ASR
ALTERED STATUS REGISTER
ARBITER
ACTIVITY
INITIALIZE WRITE
LED "I"
MAP
DAV
READ
PDN
SRST-L
DDB-L
ADB-L
ADN-L
DDN-L
PER-L
WACR-L
D-ELA
DAV-L

REF. DWGS: F-1 ASSY.
D-51 SCHEM.
A-50, DATA CODE INF.
C-2, MODIFICATION DWG
C-3, MODIFICATION DWG
A-70, DTS-70 TEST
C-9, INTERCONNECTION DWG

NOTE: PINS 6818 + 6819 ON

WRITE DATA REGISTER

IMB DATA

IMB ADDRESS

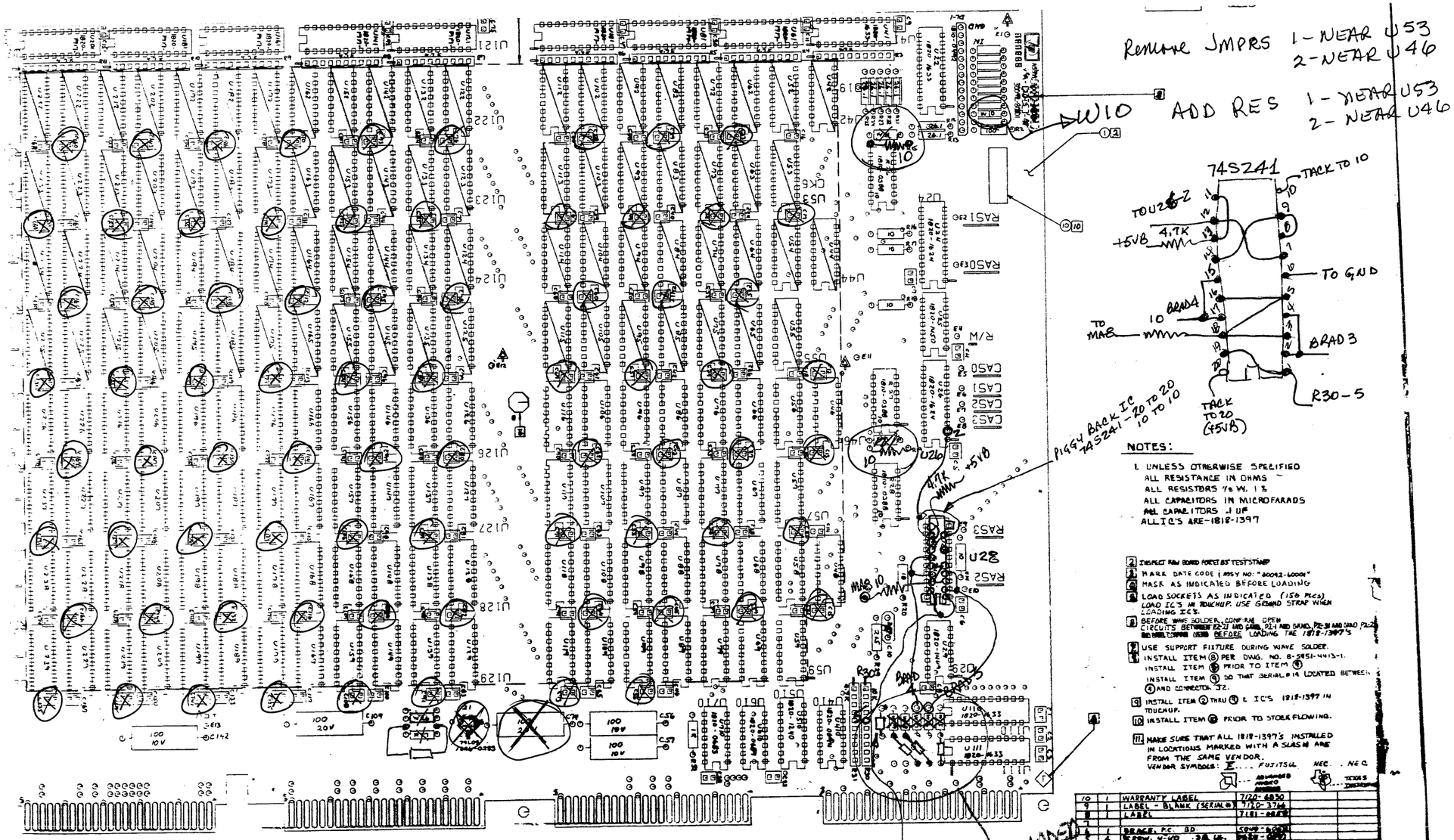
GATED OUT @ SAME TIME TERMINATED FROM ALU E29

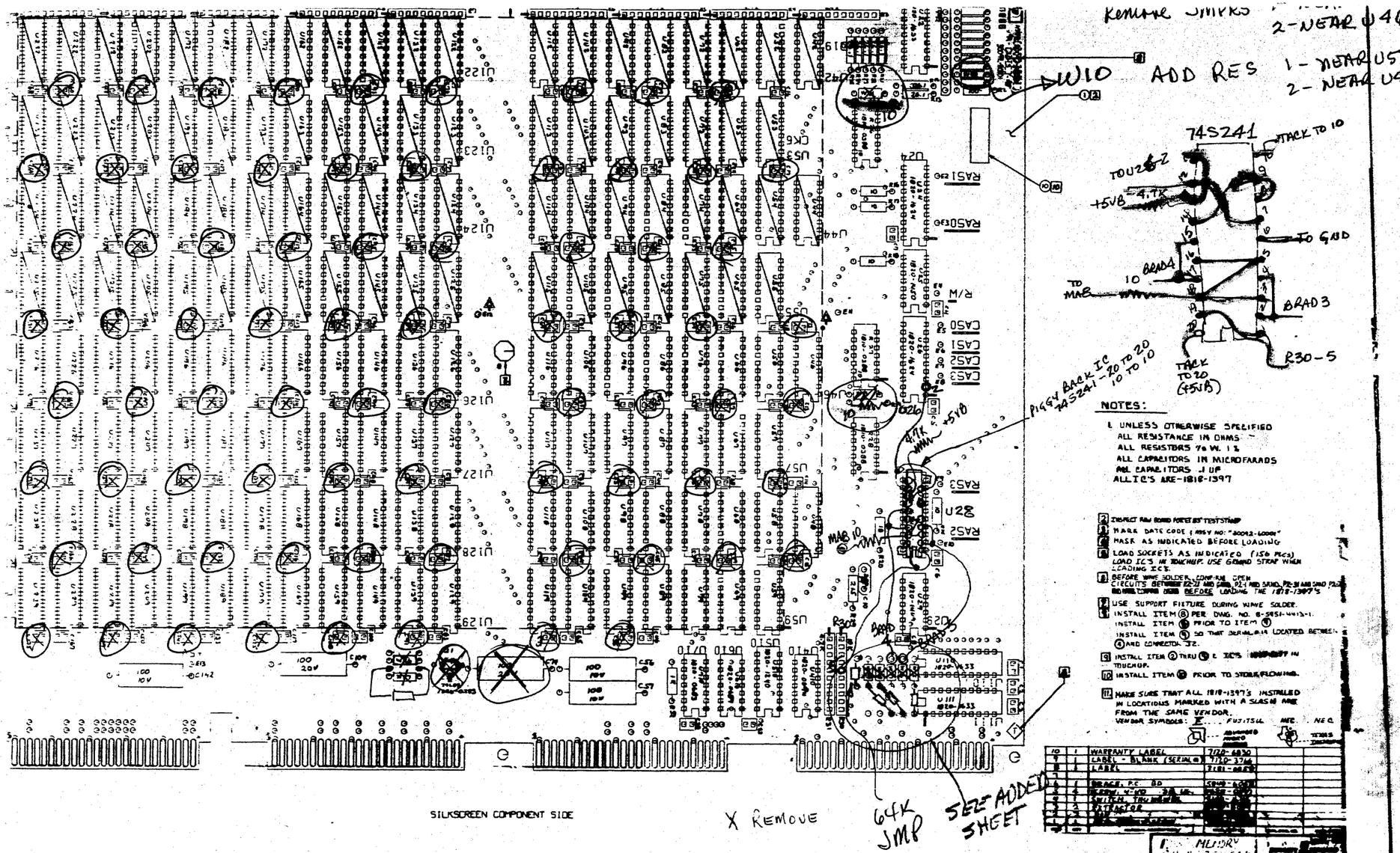
MCA

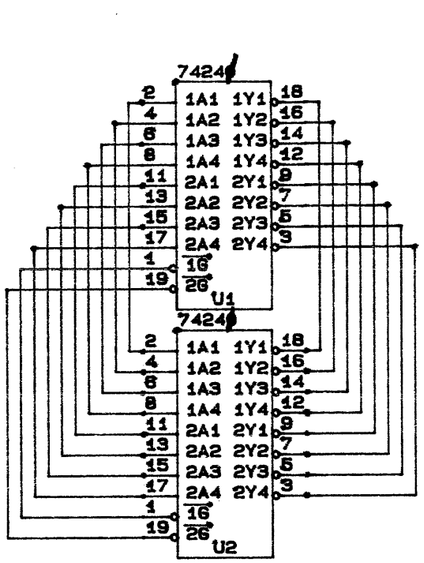
MCB

added

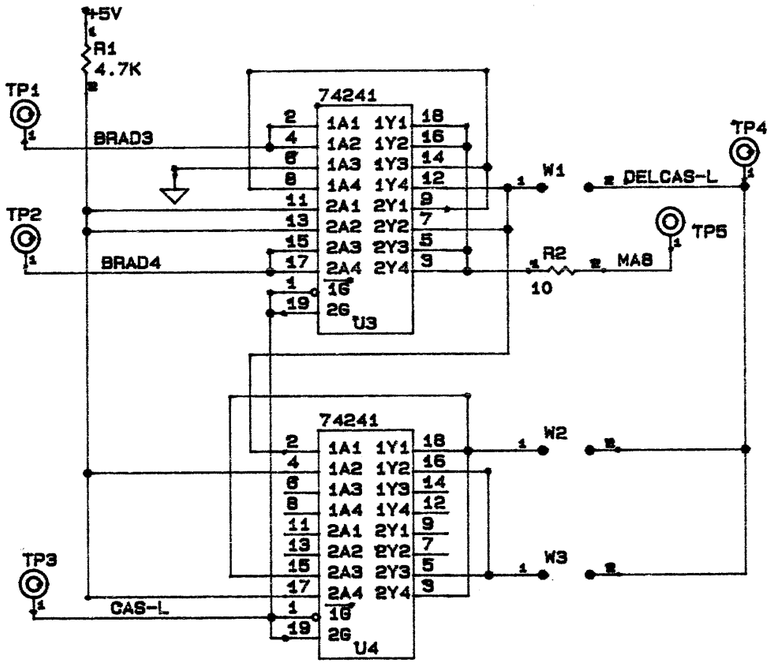
2-32


REMOVE JMPRS 1-NEAR U53
2-NEAR U46
W10 ADD RES 1-NEAR U53
2-NEAR U46
74S241
TRACK TO 10
TO U26-Z
4.7K
+5VB
TO GND
BRAD4
10
TO MAB
BRAD3
R30-5
TRACK TO 20 (+5VB)
PIGGY BACK IC 74S241 - 20 TO 20, 10 TO 10
NOTES:
1. UNLESS OTHERWISE SPECIFIED
ALL RESISTANCE IN OHMS
ALL RESISTORS 1/8 W, 1%
ALL CAPACITORS IN MICROFARADS
ALL CAPACITORS .1 UF
ALL IC'S ARE-1818-1397
2. INSPECT RAW BOARD PER ETS STD
3. MARK DATE CODE & ASSY NO: "30092-60001"
4. MASK AS INDICATED BEFORE LOADING
5. LOAD SOCKETS AS INDICATED (156 PLCS)
LOAD IC'S IN TOUCHUP. USE GROUND STRAP WHEN LOADING IC'S.
6. BEFORE WAVE SOLDER, CONFIRM OPEN CIRCUITS BETWEEN P2-21 AND GND, P2-1 AND GND, P2-51 AND GND PLCS AND REPLACE/REPAIR DEFECTIVE BEFORE LOADING THE 1818-1397'S
7. USE SUPPORT FIXTURE DURING WAVE SOLDER.
INSTALL ITEM 8 PER DWG. NO. 8-5951-4413-1.
INSTALL ITEM 5 PRIOR TO ITEM 4
INSTALL ITEM 5 SO THAT SERIAL # IS LOCATED BETWEEN 4 AND CONNECTOR J2.
9. INSTALL ITEM 2 THRU 4 & IC'S 1818-1397 IN TOUCHUP.
10. INSTALL ITEM 10 PRIOR TO SOLDER FLOWING.
11. MAKE SURE THAT ALL 1818-1397'S INSTALLED IN LOCATIONS MARKED WITH A SLASH ARE FROM THE SAME VENDOR.
VENDOR SYMBOLS: E.... FUJITSU, NEC .. NEC
10 1 WARRANTY LABEL 7120-6830
9 1 LABEL - BLANK (SERIAL #) 7120-3746
8 1 LABEL 7181-6858
7 1 BRACE, P.C. BD. 5099-6001
6 4 SCREW, 4-40 3/8 LG. 3030-6001
5 1 SWITCH, THUMBWHEEL 4300-6001
4 1 EXTRACTOR 7170-6001
3 2 DIP SOCKET 4300-6001
2 1 PC BOARD ASSEMBLY 30092-60001
1 1 PC BOARD 30092-60001
MEMORY ARRAY 2 ASSY 2A 30092-60001
E-30092-60001-1
SILKSCREEN COMPONENT SIDE
X REMOVE
64K JMP
SEE ADDED SHEET
CHANGE ALL MEMS TO 256K's
Series 39/40/42/44/48


REMOVE JUMPS
2-NEAR U46
W10 ADD RES 1-NEAR U53
2-NEAR U46
74S241
TACK TO 10
TO U26-Z
+5VB
4.7K
TO GND
BRAD4
TO MAB
10
BRAD3
R30-5
TACK TO 20 (+5VB)
PIGGY BACK IC 74S241 - 20 TO 20, 10 TO 10
NOTES:
1. UNLESS OTHERWISE SPECIFIED
ALL RESISTANCE IN OHMS
ALL RESISTORS ¼ W. 1%
ALL CAPACITORS IN MICROFARADS
ALL CAPACITORS .1 UF
ALL IC'S ARE-1818-1397
2. INSPECT PWA BOARD PRIOR TO TESTSTAND
3. MARK DATE CODE (ASSY NO: "30092-60001")
4. MASK AS INDICATED BEFORE LOADING
5. LOAD SOCKETS AS INDICATED (150 PCS)
LOAD IC'S IN TOUCHUP. USE GROUND STRAP WHEN LOADING IC'S.
6. BEFORE WAVE SOLDER, CONFIRM OPEN CIRCUITS BETWEEN
AND LOAD SOCKETS BEFORE LOADING THE 1818-1397'S
7. USE SUPPORT FIXTURE DURING WAVE SOLDER.
8. INSTALL ITEM ⑧ PER DWG. NO. B-9951-W113-1.
9. INSTALL ITEM ⑨ PRIOR TO ITEM ⑧
10. INSTALL ITEM ⑩ SO THAT SERIALNUM LOCATED BETWEEN ④ AND CONNECTOR J2.
11. INSTALL ITEM ② THRU ⑤ IC'S
12. INSTALL ITEM ⑫ PRIOR TO SOLDER FLOWING.
13. MAKE SURE THAT ALL 1818-1397'S INSTALLED IN LOCATIONS MARKED WITH A SLASH ARE FROM THE SAME VENDOR.
VENDOR SYMBOLS: F... FUJITSU MFG. NEC
10 1 WARRANTY LABEL 7120-6830
9 1 LABEL - BLANK (SERIAL #) 7120-1746
8 1 LABEL 7120-6875
7 1 BRACE, PC BD 0340-6001
6 4 SCREW, 4-40 X .25 LG. 0515-0021
5 2 SWITCH, THUMBWHEEL
4 1 RESISTOR
3 1 IC
2 1 PWB
1 1 ASSY 2A 30092-60001
2A E-30092-60001-1
SILKSCREEN COMPONENT SIDE
X REMOVE
64K JMP
SEE ADDED SHEET
CHANGE ALL MEMS TO 256K's
Series 39/40/42/44/48

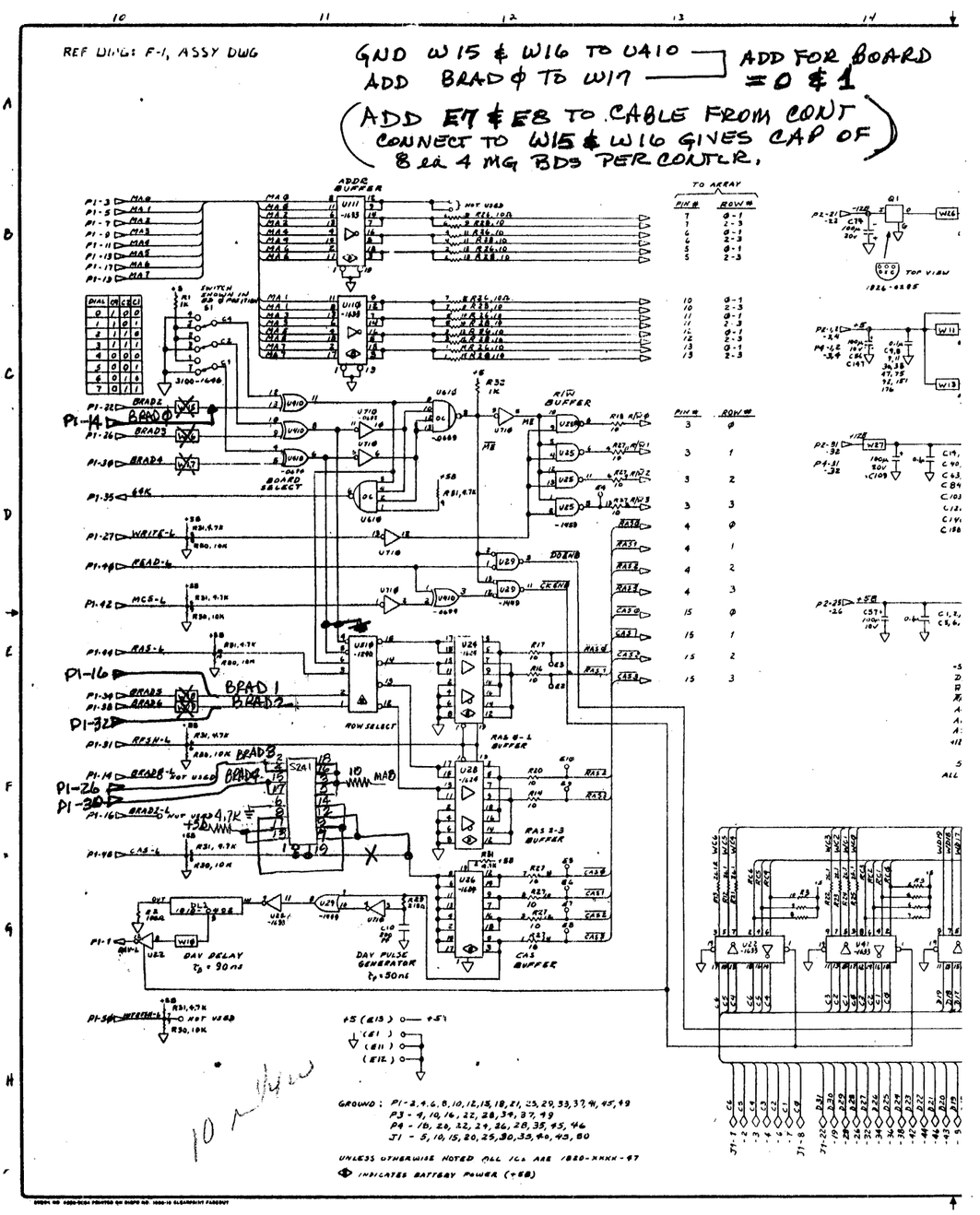


BRINGS UP POWER AND GND
TO UPPER BOARD.



ADDS ADDITIONAL ADDRESS LINES
NEEDED TO WORK WITH 256K MEMORIES

CRISIS COMPUTER 2298 Quimby Road San Jose, CA.			
TITLE ADD ON COMPONENT BOARD			
SIZE B	CODE	NUMBER XXXXX-XXXXX	REV
DATE SEP 28, 1990		SHEET 1 OF 1	



REMOVE -5V CAPS, Q1 & C74
ADJ JMPR BELOW U129
REMOVE JMPR 15, 16, 17, 18 & 19
ADD 64K JMPR
ADD JMPR FOR BRAD0 TO U410-13
ADD JMPR FOR BRAD3 TO U510-2
ADD JMPR FOR BRAD4 TO U510-1

CUT TRACE FROM R30/31 2-5
TO U26-2
ADD WIRE U410-7 TO U410-6, U410-8
ADD CKTRY SHOWN ABOVE OVER
U28 - TIE GND & +5V-
ADD WIRE BRAD1 TO PIN 2
ADD WIRE BRAD2 TO PIN 15
ADD REMAINING WIRES

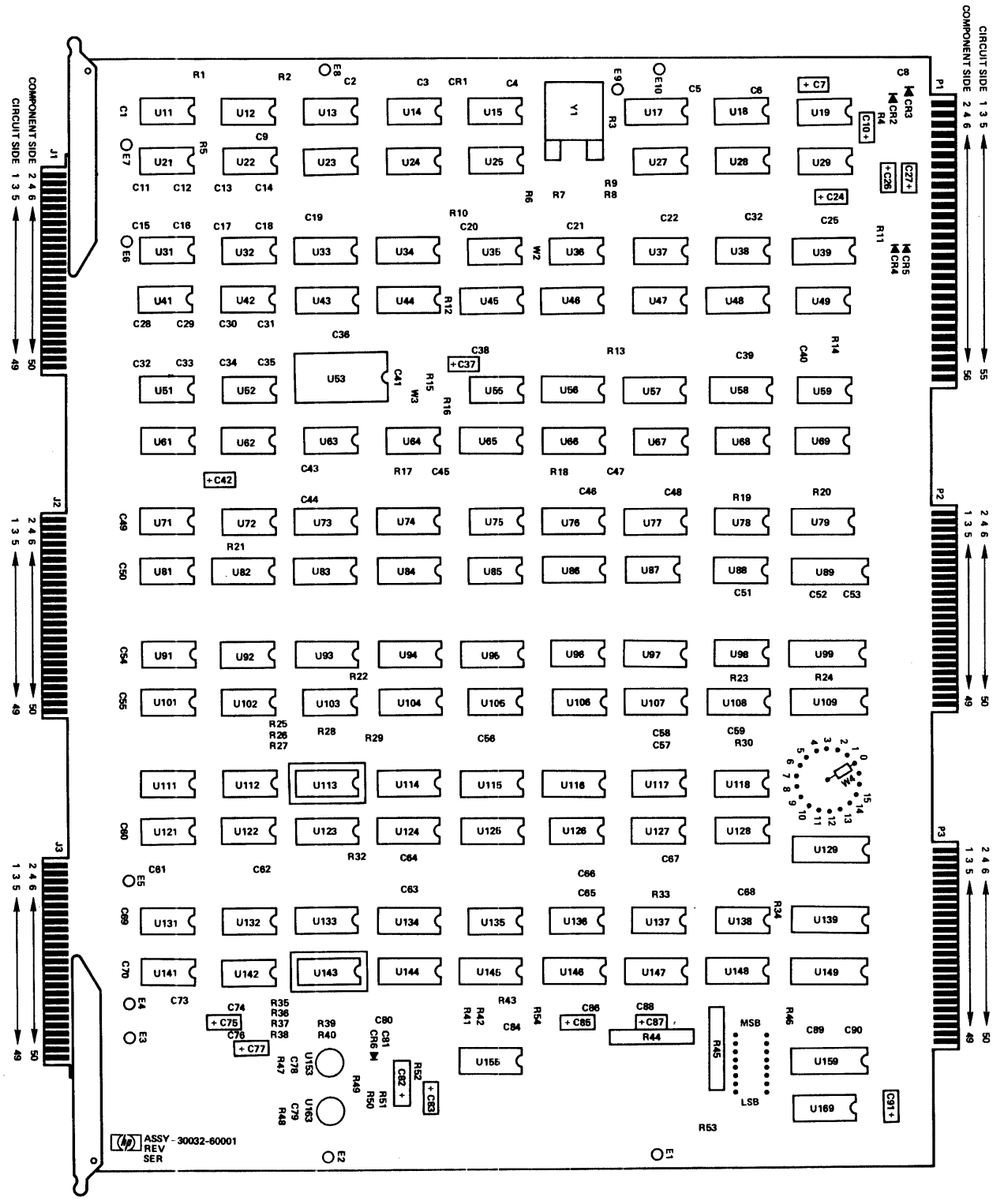
I/O DETAILED DIAGRAM SET

DD-507

TERMINAL DATA INTERFACE PCA

30032-60001

SERIES 1401


J1
J2
J3
P1
P2
P3
COMPONENT SIDE
CIRCUIT SIDE
Y1
MSB
LSB
ASSY - 30032-60001
REV
SER

CHANGE	REFERENCE	REVISION/PREFIX
A	ORIG.	A-1343-22
B	22-1984	A-1401-22

INTERRUPT LOGIC

INTPOLL IN ← P1-48

U118A

+5V

R30 3.16K

C59 75PF

1,13,14

U98A

U69D

RESET INT (F6)

U88A

P1-44 → INTPOLL OUT

INT ACTIVE FF

U128D

U128A

U118B

U38A

INT LATCH U108A

(F4) D000

U28D

U19A

U69A

MASTER RESET (C11)

U69C

U88C

U138A

P3-50 → INT ACK1

U138B

P3-44 → INTREQ

U98B

R23 3.16K

+5V

C51 75PF

U59B

INT MASK FF U78A

R19

+5V

U118F

INTREQ

U88B

U128B

U128C

U138C

P1-49 → SI

U118E

SERVICE IN GENERATOR

U118D

U59A

U27E

D CONT STB (B11)

SET INT

D CONT STB

D WRIT STB 1,2,4,5

D STAT STB (A12)

D READ STB (D17)

U55A

WT STB (E21)

U29D

U79 BINARY TO DECIMAL DECODER

COMMAND DECODER

DISABLE

ENABLE

W4 (INT MASK)

D015 (B11)(E21)
D014 (E21)(B12)
D013 (E21)
D012 (D21)
D011 (D21)
D010 (D21)
D009 (D21)
D008 (C21)
D007 (C21)
D006 (A14)(C21)
D005 (A14)(B21)
D004 (A14)(B21)
D003 (B14)(B21)
D002 (B14)(B21)
D001 (A21)
D000 (B3)(D11)(A21)

U28C

U19D

(A5) RESET INT

(B13) FLAG

R15 1K

U64A D INTERRUPT REQUEST FF C

INTREQ (A13)

SO ← P1-53
IO RESET ← P1-11
IOCMD0 ← P3-4
IOCMD1 ← P3-6
IOCMD2 ← P3-5

U89

ENABLE

9,11

R20

+5V

CR3 CR2

+15V → +10V TO LINE DRIVERS

R4 147 1/2W

C10 2.2UF

CR5 CR4

-15V → -10V TO LINE DRIVERS

R11 147 1/2W

C26 2.2UF

R34

+5V

IOD15 ← P3-42
IOD14 ← P3-41
IOD13 ← P3-39
IOD12 ← P3-38
IOD11 ← P3-36
IOD10 ← P3-35
IOD09 ← P3-33
IOD08 ← P3-32

IOD07 ← P3-30
IOD06 ← P3-29
IOD05 ← P3-27
IOD04 ← P3-26
IOD03 ← P3-24
IOD02 ← P3-23
IOD01 ← P3-21
IOD00 ← P3-20

U129

U109

U139

U99

R1 316 1/2W

-15V

J1-3,4

J1-1,2

R2 316 1/2W

+15V

C8 .01UF

C27 2.2UF

C79 .01UF

C83 2.2UF

COM ← J1-49,50

-5V ← P1-17,18

+5V ← P1-1,2,3,4

P1-15,16,19, 20,29,30 → COM

C16,55 2.2UF

C15,54 .01UF

C70 .01UF

C77 2.2UF

COM ← P1-43,47,50,54

COM ← P2-2,4,6,8,10,15, 20,23,30,36,42

COM ← P3-3,7,10,13,16,19,22,25, 28,31,34,37,40,43,46,49

R246 1.5K
R24F 1.5K
R24E 1.5K
R24D 1.5K
R24C 1.5K
R24B 1.5K
R24A 1.5K
R14 1.5K
R33
R44G 1.5K
R44F 1.5K
R44E 1.5K
R44D 1.5K
R44C 1.5K
R44A 1.5K
R44B 1.5K

+5V

ADDRESS GENERATOR/ COMPARATOR

+5V R53 1.5K

R45A 1.5K
R45B 1.5K
R45C 1.5K
R45D 1.5K
R45E 1.5K
R45F 1.5K
R45G 1.5K

W2 W3 W4 W5

W5 W6 W7 W8

U159

U149

U148

U169

5-BIT COMPARATOR

A<B A=B A>B

ENABLE

9,11

R46 +5V

P3-18 → DEVNO7
P3-17 → DEVNO6
P3-15 → DEVNO5
P3-14 → DEVNO4
P3-12 → DEVNO3
P3-11 → DEVNO2
P3-9 → DEVNO1
P3-8 → DEVNO0

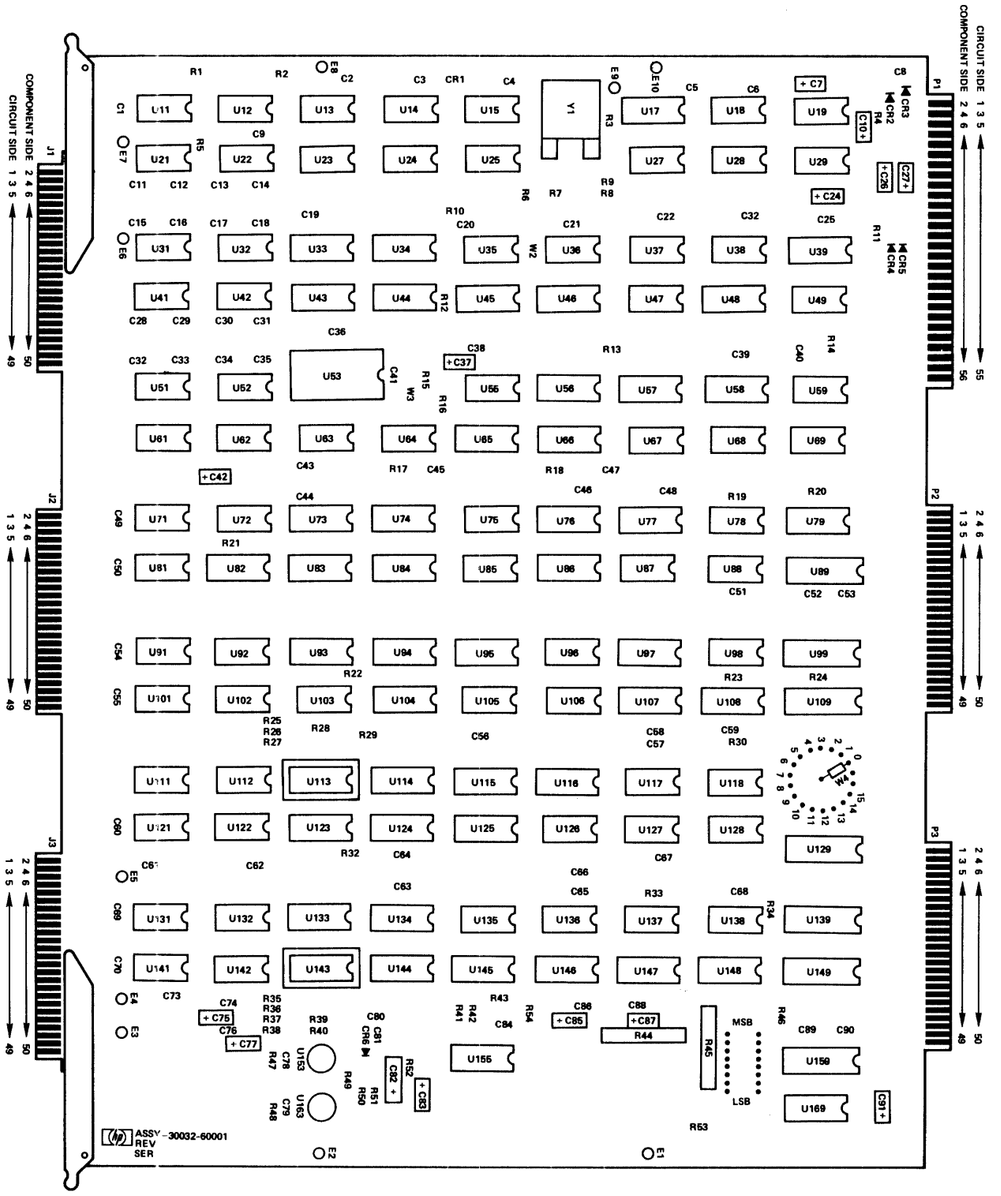
1. ALL RESISTOR VALUES ARE IN OHMS, 1.47K, 1/8W, ±1%.

NOTE: UNLESS OTHERWISE SPECIFIED

30032-60001 TITLE: TERMINAL DATA INTERFACE PCA — SHEET 1 OF 4

ENGINEER | APPROVED | DATE

HEWLETT PACKARD CO
DATA SYSTEMS DEVELOPMENT DIVISION


CIRCUIT SIDE 1 3 5
COMPONENT SIDE 2 4 6
P1
P2
P3
J1
J2
J3
COMPONENT SIDE 2 4 6
CIRCUIT SIDE 1 3 5
56
55
50
49
MSB
LSB
ASSY -30032-60001
REV
SER

CHANGE	REFERENCE	REVISION/PREFIX
A	ORIG.	A-1343-22
B	22-1984	A-1401-22

P/O STATUS INPUT BUFFER

UP/DOWN TRANSFER LOGIC

(E6) D STAT STB — U27B — STAT STB

(F7) INTREQ — U18C — DIO2 (H18) (G4)

U67C — DIO4 (G4) (G6)

U67B — DIO1 (G6) (B16) (A18)

+5V — R12

(F16) CLOCK • DP

(D6) D CONT STB

(E4) DO15

XFER ACK FF U46B

XFER UP FLAG FF U45B — FLAG (F6)

U47D

BUFFER FLAG (C38)

TRANSFER UP (D38)

DP (G15) — U37B

(E4) DO14 — U38B

DN ADR BUFFER LOAD

R13 — +5V

REQ XFER DOWN FF U46A

XFER DOWN FLAG FF U45A — U15A — TRANSFER DOWN (A22)

MATCH

U15D — R/W OK

U25B

W11

LOAD PULSE (F26)

(B4) MASTER RESET — J2-8

U14B — U13B

(F4) DO00

INIT FF U64B

INITIALIZE (F23)

R15 — +5V

(E4) DO06 — U48A

(F4) DO05 — U48C

(F4) DO04 — U48B

(F4) DO03 — U48D

(F4) DO02 — U57C

CHAN LSB — U57A

CHAN 3 — U57B

STAT STB

CHAN2

UP/DOWN ADDRESS BUFFER

E9

U58C — U68B — DIO2 (G6)

U58B — U68A — DIO1 (G6)

U58D — U68C — DIO0 (G6)

U58A — U68D

(B27) I9

(B27) I8

P/O STATUS INPUT BUFFER (D28) U145-2

U39A — U49D — DIO7 (G6)

(C38) CHAR LOST — U39B — U49A — DIO6 (G6)

U39D — U49C — DIO5 (G6)

AUX CHANNEL SEND/RECEIVE

U39C — U49B

UP LATCH LOAD

U67A — DIO4 (G6)

U67D — DIO3 (G6)

OLD BIT (G35)

OUTPUT BUFFERS — LINE DRIVERS — E6

U34A — U31B — J1-10

U34D — U31A — J1-13

U33D — U32B — J1-16

U33A — U32A — J1-15

U33C — U32D — J1-17

U33B — U32C — J1-18

U34B — U31C — J1-20

U34C — U31D — J1-19

U44B — U41C — J1-27

U44C — U41D — J1-28

U43C — U42D — J1-30

U43B — U42C — J1-29

U43A — U42B — J1-33

U43D — U42A — J1-32

U44A — U41B — J1-36

U44D — U41A — J1-34

C14 .001UF — C15 .001UF — C17 .001UF — C16 .001UF — C13 .001UF — C12 .001UF — C10 .001UF — C11 .001UF — C30 .001UF — C31 .001UF — C33 .001UF — C28 .001UF — C32 .001UF — C25 .001UF — C26 .001UF — C27 .001UF

U18D — (G29) — RD STB (G25)

U12B — U13C — LINE (B25)(E39)

LINE (D31)

SEND/RECEIVE (A26)(F35)

U63A — 1,2,4,5 — D READ STB (E6)

+5V — R5

U64A — INPUT BUFFER FF U21A

(G37) NEW BIT

U11 QUAD 2-BIT MULTI-PLEXER

U13D — MAIN/DIAGNOSE CHANNEL SELECT LOGIC

ENABLE

SELECT

LOGIC CLK

AUX CHAN

DP

U15B — U14C — REG CLK

INITIALIZE

U56 6-BIT ADDRESS COMPARATOR — SEND/RECEIVE

(A22) S/R — U13A — (H16)

AUX CHNL MEMORY FF U21B

COUNTER CLOCK

(B25) DIAGNOSE — U14A — U29B — U19C

SERIAL A — SERIAL B — U24 8-BIT SHIFT REGISTER — CLOCK — CLEAR

SERIAL A — SERIAL B — U23 8-BIT SHIFT REGISTER — CLOCK — CLEAR

OUTPUT REGISTERS

TEST OSCILLATOR INPUT — J1-5

J1-25 — U52A

J1-36 — U52B

J1-35 — U51A

J1-31 — U51B

J1-37 — U51C

J1-26 — U51D

J1-40 — U52C

J1-23 — U52D

J1-41 — U62D

J1-42 — U62C

J1-46 — U61D

J1-45 — U61C

J1-43 — U61B

J1-47 — U61A

J1-44 — U62B

J1-48 — U62A

LINE RECEIVERS

CR1 4.22V

CLOCK AND TIMING LOGIC

Y1 4.32MHZ

R8 1K — R7 1K

U36A — C21 200PF — U36B

R9 1.78K — R6 1.78K

LOGIC CLK — 100 N SEC

U36C — W2 W9

R10 3.16K — C21 47PF

TDI CLOCK FF U35

U25A — LOGIC CLK (A25)(E31)

U15C — CLOCK • DP (D31)(A12)

U27D — COUNTER CLOCK

+5V — R3

U17B AUX/MAIN FF

W3 W12 — J2-9

FIELD COUNTER

U65 4-BIT P COUNTER

PARALLEL ENABLE

CLEAR CLK

CARRY IN — CARRY OUT

COUNT — CLEAR

U55B — U22A — E7 — {B13}(F31)

DP (A24)(F34)

F2

ADDRESS COUNTER

R16 — +5V

U66 4-BIT COUNTER

COUNT CLEAR CARRY OUT — CARRY IN — CLOCK — PARALLEL ENABLE

FC CARRY OUT

U28A — U27C — U28B — LAST CHANNEL DETECT

U63B

U53 16-TO-1 MULTIPLEXER — STROBE

LAST CHANNEL

CHAN MSB

CHAN 2

CHAN 3

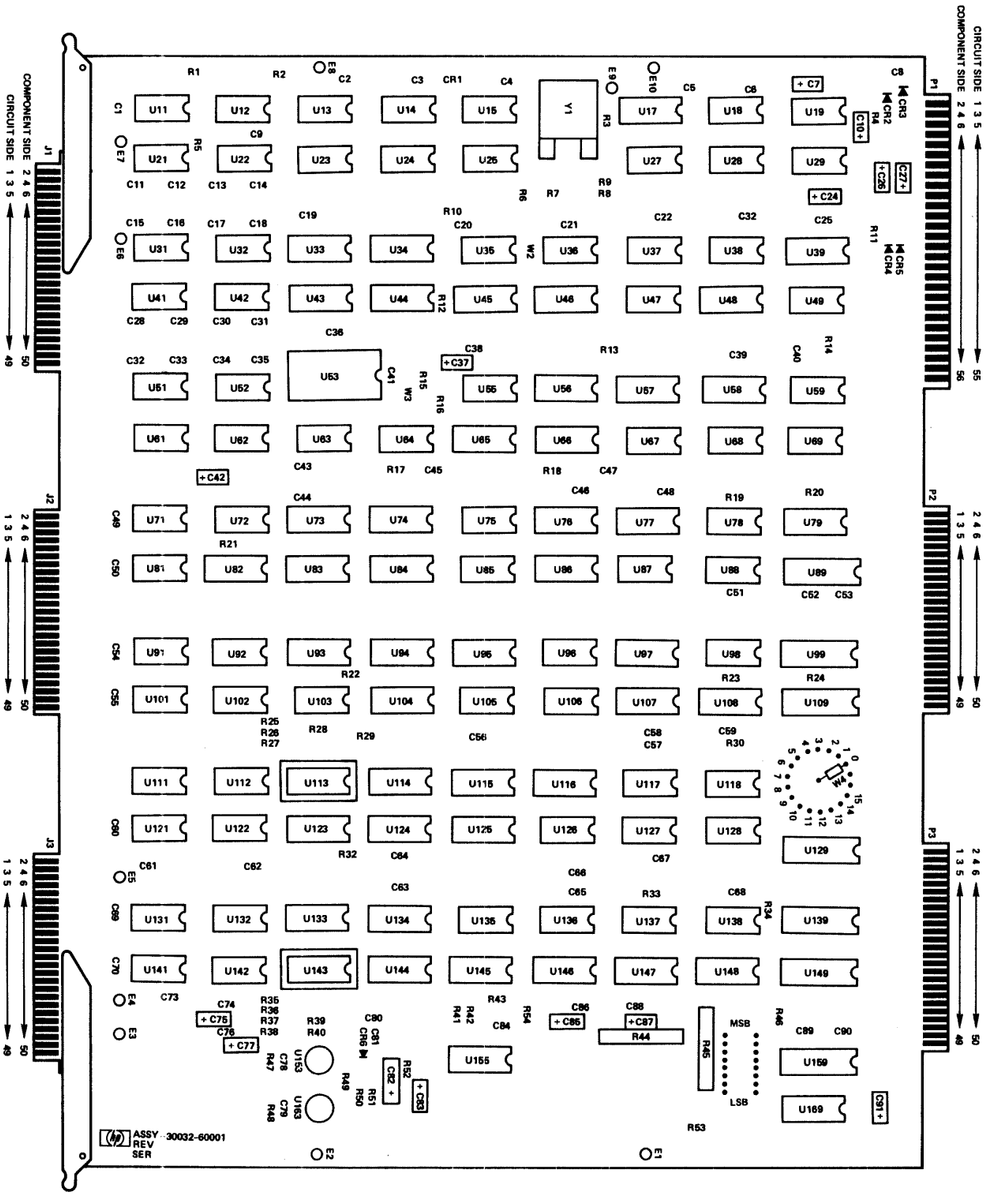
CHAN LSB

AUX CHANNEL

U22B — 9,10,12,13

U13F — 12 NEW BIT — NEW BIT (G37)

30032-60001	TITLE: TERMINAL DATA INTERFACE PCA	SHEET 2 OF 4
ENGINEER	APPROVED	DATE
HEWLETT PACKARD CO DATA SYSTEMS DEVELOPMENT DIVISION		


CIRCUIT SIDE 1 3 5
COMPONENT SIDE 2 4 6
P1
P2
P3
J1
J2
J3
COMPONENT SIDE 2 4 6
CIRCUIT SIDE 1 3 5
ASSY 30032-60001
REV
SER
MSB
LSB

CHANGE	REFERENCE	REVISION/PREFIX
A	ORIG.	A-1343-22
B	22-1984	A-1401-22

DATA OUT HOLDING REGISTER

(F4) D000 — P/D U77A — D000 — (B13) TRANSFER DOWN
(F4) D001 — S/R U77B — D001 — S/R (E14)
(F4) D002 — ENABLE U77C — D002 — ENABLE
(F4) D003 — PARITY/ECHO U77D — D003 — (D29) F, (D29) E
(F4) D004 — SYNC/DIAGNOSE U87A — D004 — (D29) D, (D29) C
(F4) D005 — CHAR BIT10 U87B — D005 (A38)
(E4) D006 — CHAR BIT9 U87C — D006 (A38)
(E4) D007 — CHAR BIT8 U87D — D007
(E4) D008 — BAUD BIT7 U97A — D008
(E4) D009 — BAUD BIT6 U97B — D009
(E4) D010 — BAUD BIT5 U97C — D010
(E4) D011 — BAUD BIT4 U97D — D011
(E4) D012 — BAUD BIT3 U107A — D012
(E4) D013 — BAUD BIT2 U107B — D013
(E4) D014 — BAUD BIT1 U107C — D014
(E4) D015 — BAUD BIT0 U107D — D015
(D7) WT STB

U92B, U91D, U102C, U111F, U92C, U131D, U131A, U141A, U91A, U91C, U112D

PARAMETER, DATA, DATA (F35), (G16) DP, (F16) LOGIC CLK, PARAM LATCH CLOCK (D31), (C17) SEND/RECEIVE, U142-13 (F34), (D37) U133-11, (G35) U82-6, PARAM MUX LOAD (B31)

LOWER CONTROL BUFFER

U76 QUAD 2-BIT MULTIPLEXER — SELECT, ENABLE
U86 4-BIT REGISTER — CLOCK, CLEAR
ENABLE (D39), ECHO (H34)

DIAGNOSE (E16)

DATA ACCUMULATOR/ BUFFERS

U96 QUAD 2-BIT MULTIPLEXER — ENABLE, SELECT
U106 4-BIT SHIFT REGISTER — SERIAL IN, SERIAL/SHIFT CLOCK, PARALLEL CLOCK, PARALLEL ENABLE
U116 4-BIT REGISTER — CLOCK, CLEAR
LINE (C17)

PARALLEL CLOCK ENABLE, PARALLEL DATA CLOCK, SERIAL DATA CLOCK

18 (B16), 19 (B16)

U95 QUAD 2-BIT MULTIPLEXER — ENABLE, SELECT
U105 4-BIT SHIFT REGISTER — SERIAL IN, SERIAL/SHIFT CLOCK, CLOCK, PARALLEL ENABLE

(B22) DO04, DATA MUX LOAD

U115 4-BIT REGISTER — CLOCK, CLEAR
U125 QUAD 2-BIT MULTIPLEXER — ENABLE, SELECT
U135 4-BIT SHIFT REGISTER — SERIAL IN, SERIAL/SHIFT CLOCK, PARALLEL CLOCK, PARALLEL ENABLE
U145 4-BIT REGISTER — CLOCK, CLEAR
U143 QUAD 256-BIT SHIFT REGISTER — CLOCK, CLOCK

BUFFER CLK (F40), PARALLEL DATA CLOCK (F37), (F35) PARALLEL CLOCK ENABLE, SEND BIT (G35), (E32) DATA MUX ENABLE, BUFFER CLK

LOWER MOS MEMORY

(F34) G, (G34) H
(B22) F, (B22) E, (B22) D, (B22) C
R40 3.16K, R37 3.16K, R38 3.16K, R39 3.16K, -5V
R42 3.16K, R35 3.16K, R36 3.16K, R41 3.16K, +5V
(B16) U39-3

(D12) INITIALIZE — U117B — INITIALIZE
U117A — MR1 (B32) (D36)
U127A — MR2 (B34) (D31)

P/O RESET LOGIC

DATA INPUT BUFFER

U147A, U147B, U147C, U147D
U137A — DI08 (G6)
U137D — DI09 (G6)
U137C — DI10 (G6)
U137B — DI11 (G56)
(D18) RD STB

U146A, U146B, U146C, U146D
(C14) LOAD PULSE
U136A — DI12 (F6)
U136D — DI13 (F6)
U136C — DI14 (F6)
U136B — DI15 (F6)

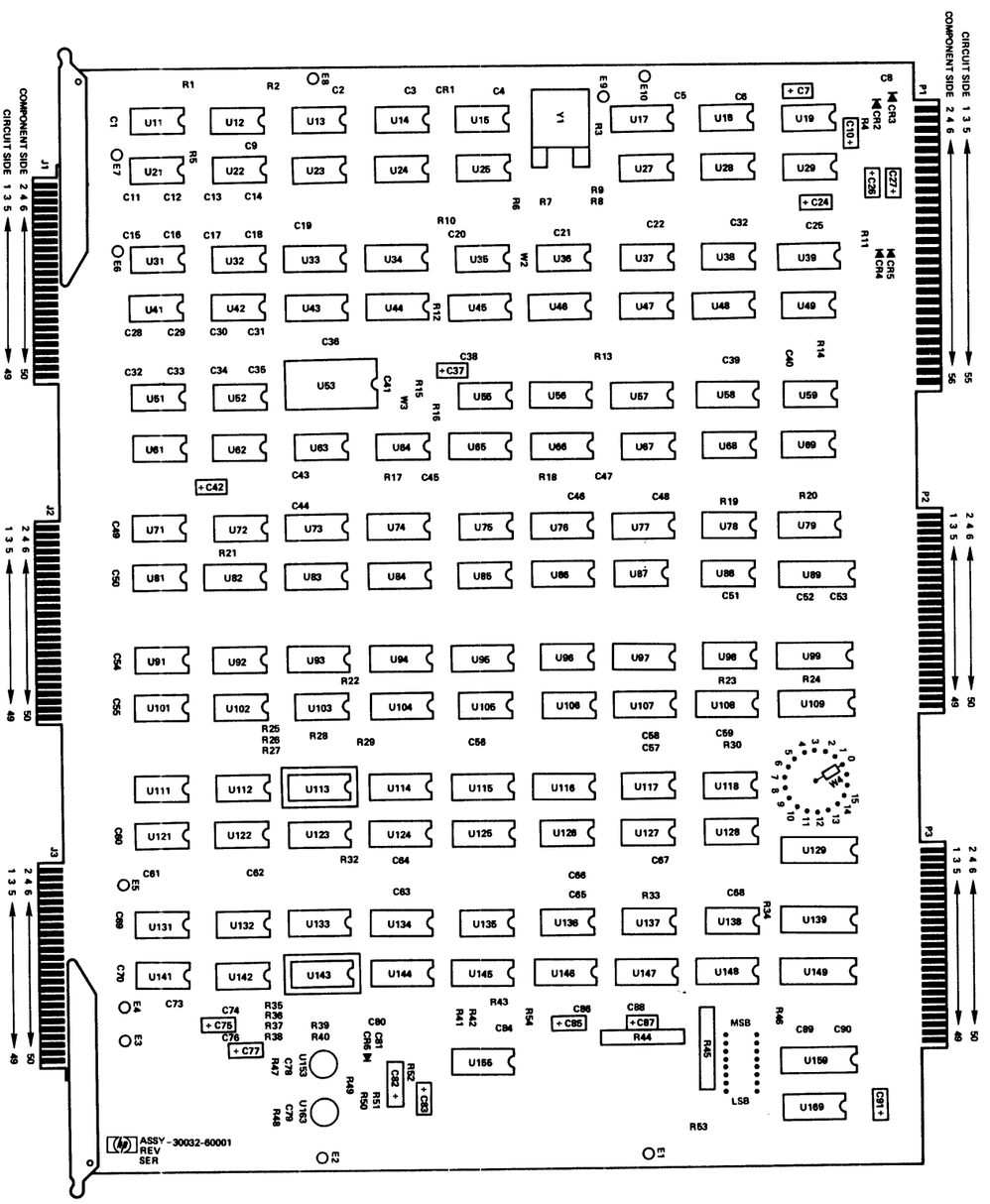
INPUT PARITY CHECKER/GEN

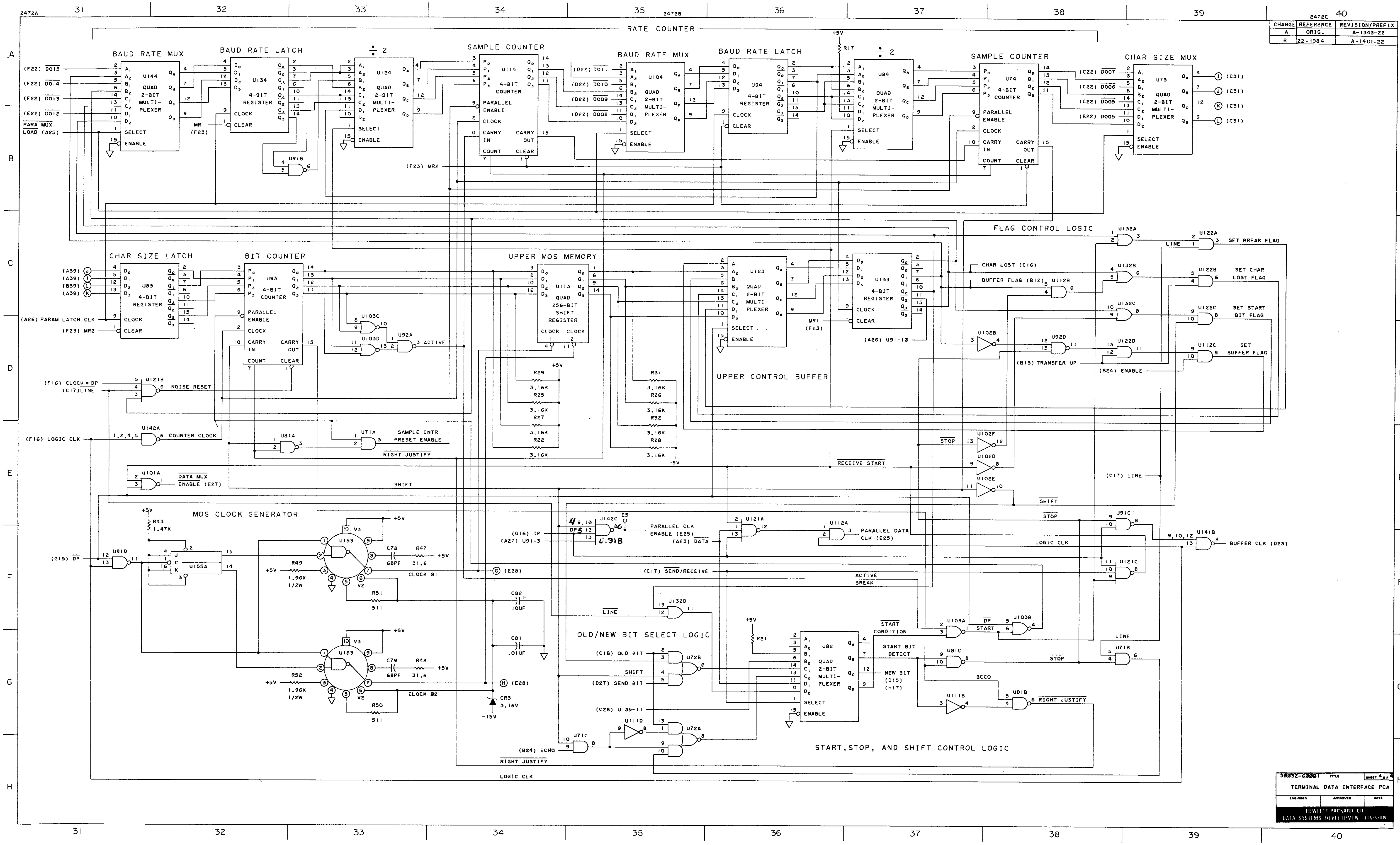
U126 PARITY CHECKER/ GENERATOR — ΣEVEN, ΣODD, EVEN IN, ODD IN
+5V R54, (B) (C17)

U85 PARITY CHECKER/ GENERATOR — ΣEVEN, ΣODD, EVEN IN, ODD IN
+5V R11T
D008, PARITY BIT
U102A, U75B — PARITY

OUTPUT PARITY LOGIC

30832-60001	TITLE	SHEET 3 OF 5
TERMINAL DATA INTERFACE PCA		
ENGINEER	APPROVED	DATE
HEWLETT PACKARD CO DATA SYSTEMS DEVELOPMENT DIVISION		


CIRCUIT SIDE
COMPONENT SIDE
P1
P2
P3
J1
J2
J3
Y1
MSB
LSB
ASSY -30032-60001
REV
SER



RATE COUNTER
BAUD RATE MUX
U144 QUAD 2-BIT MULTI-PLEXER
BAUD RATE LATCH
U134 4-BIT REGISTER
÷ 2
U124 QUAD 2-BIT MULTI-PLEXER
SAMPLE COUNTER
U114 4-BIT COUNTER
BAUD RATE MUX
U104 QUAD 2-BIT MULTI-PLEXER
BAUD RATE LATCH
U94 4-BIT REGISTER
÷ 2
U84 QUAD 2-BIT MULTI-PLEXER
SAMPLE COUNTER
U74 4-BIT COUNTER
CHAR SIZE MUX
U73 QUAD 2-BIT MULTI-PLEXER
(F22) DO15
(F22) DO14
(F22) DO13
(E22) DO12
PARA MUX LOAD (A25)
MR1 (F23)
(F23) MR2
(D22) DO11
(D22) DO10
(D22) DO09
(D22) DO08
(C22) DO07
(C22) DO06
(C22) DO05
(B22) DO05
(C31)
CHAR SIZE LATCH
U83 4-BIT REGISTER
(A39)
(B39)
(A26) PARAM LATCH CLK
BIT COUNTER
U93 4-BIT COUNTER
UPPER MOS MEMORY
U113 QUAD 256-BIT SHIFT REGISTER
UPPER CONTROL BUFFER
U123 QUAD 2-BIT MULTI-PLEXER
U133 4-BIT REGISTER
(A26) U91-10
FLAG CONTROL LOGIC
SET BREAK FLAG
CHAR LOST (C16)
BUFFER FLAG (B12)
SET CHAR LOST FLAG
SET START BIT FLAG
SET BUFFER FLAG
(B13) TRANSFER UP
(B24) ENABLE
ACTIVE
(F16) CLOCK • DP
(C17) LINE
NOISE RESET
(F16) LOGIC CLK
COUNTER CLOCK
SAMPLE CNTR PRESET ENABLE
RIGHT JUSTIFY
DATA MUX ENABLE (E27)
SHIFT
STOP
RECEIVE START
(C17) LINE
MOS CLOCK GENERATOR
(G15) DP
U155A
U153
U163
CLOCK Ø1
CLOCK Ø2
(E28)
CR3 3.16V
-15V
(G16) DP
(A27) U91-3
PARALLEL CLK ENABLE (E25)
(A23) DATA
PARALLEL DATA CLK (E25)
(C17) SEND/RECEIVE
BREAK
BUFFER CLK (D23)
LOGIC CLK
OLD/NEW BIT SELECT LOGIC
(C18) OLD BIT
(D27) SEND BIT
(C26) U135-11
(B24) ECHO
U82 QUAD 2-BIT MULTI-PLEXER
START CONDITION
START BIT DETECT
NEW BIT (D15) (H17)
START
BCCO
START, STOP, AND SHIFT CONTROL LOGIC
CHANGE | REFERENCE | REVISION/PREFIX
A | ORIG. | A-1343-22
B | 22-1984 | A-1401-22
30032-60001
SHEET 4 OF 4
TERMINAL DATA INTERFACE PCA
HEWLETT PACKARD CO
DATA SYSTEMS DEVELOPMENT DIVISION

ASSEMBLY # 30032-60001

REFERENCE DESIGNATION	HP PART NO.	DESCRIPTION	MFR CODE	MFR PART NO.	TQ
C1-6,8,9,19,22,23, 25,36,38-41,43-50, 52-58,60-74,76,80, 81,84,86,88-90	0160-2055	CAPACITOR,FXD,CER,0.01 UF,+80 -20%,100VDCW	28480	0160-2055	55
C7,10,24,26,27,37, 42,75,77,83,85,87,91	0180-0197	CAPACITOR,FXD,ELECT,2.2 UF,10%,20 VDCW	28480	0180-0116	13
C11-18,28-35	0160-3456	CAPACITOPR,FXD,NON-ELECT,.001UF 10%	56289	C016F251F102KS22	16
C20	0160-2307	CAPACITOR,FXD,NON-ELECT,47PF 5% 300WVDC	72136	RDM15E470J3C	1
C21	0140-0198	CAPACITOR,FXD,MICA,200 PF,5%	28480	0140-0198	1
C51,59	0160-2202	CAPACITOR,FXD,MICA,75PF,5%,300 VDCW	72136	0160-2202 OBD	2
C78,79	0140-0192	CAPACITOR,FXD,MICA,68 PF,5%	28480	0140-0192	2
C82	0180-0374	CAPACITOR,FXD,ELECT,10 UF,10%,20 VDCW	28480	0180-0374	1
CR1	1902-3070	DIODE,ZENER,4.22V 5%,0.4W MAX	04713	OBD	1
CR2,4	1902-0579	DIODE,ZENER,5.11V 5%,1W MAX	04713	OBD	2
CR3,5	1901-0159	DIODE,PWR RECT,SI,400V MAX,750MA	04713	OBD	2
CR6	1902-3036	DIODE,ZENER,3.16V,0.4W MAX	15818	OBD	1
E1-10	0360-0294	TERMINAL,SOLDER STUD,.063 IN.SHK DIA	28480	0360-0294	10
R1,2	0698-3402	RESISTOR,FXD,FLM,316 OHM 1%,.5W 350VDC	19701	MF7C1/2-TO-316R	2
R3,5,12-14,16-21,33, 34,43,46,54	0757-1094	RESISTOR,FXD,FLM,1.47K,1%,1/8W	28480	0757-1094	16
R4,11	0698-3400	RESISTOR,FXD,FLM,147 OHMS,1%,1/2W	28480	0698-3400	2
R6,9	0757-0278	RESISTOR,FXD,FLM,1.78KOHM 1% .125W 250VDC	19701	MF4C-1/8-TO-1781-F	2
R7,8,15	0757-0280	RESISTOR,FXD,FLM,1K,1%,1/8W	28480	0757-0280	3
R10,22,23,25-32,35-42	0757-0279	RESISTOR,FXD,FLM,3.16K,1%,1/4W	24546	C4-1/8-TO-3161-F	19
R24,44,45	1810-0020	RESISTOR,7 X 1.5K OHMS,5%,500PPM	56289	200C1098-CRR	3
R47,48	0757-0180	RESISTOR,FXD,FLM,31.6 OHM 1% .125W 250VDC	19701	MF4C-1/8-TO-3161-F	2
R49,52	0698-3407	RESISTOR,FXD,FLM,1.96K,1%,1/2W	28480	0698-3407	2
R50,51	0757-0416	RESISTOR,FXD,FLM,511 OHM 1%,0.125W	24546	C4-1/8-TO-511R-F	2
R53	0757-0427	RESISTOR,FXD,FLM,1.5K OHM,1%,0.125W,250VDC	19701	MF4C-1/8-TO-1501-F	1
U11,73,76,82,84,95, 96,104,123,124,125, 144	1820-0616	IC,2-INPUT 4-BIT MULTIPLEXER,TTL	07263	U7B932259X	12
U12,72,75	1820-0063	IC,DUAL 2-WIDE 2-INPUT AND-OR-INVERT GATE,TTL	01295	SN7451N	3
U13,27,102,111,118	1820-0424	IC,HS HEX INVERTER,TTL	01295	SN74H04N	5
U14,121	1820-0371	IC,HS TRIPLE 3-INPUT NAND GATE,TTL	01295	SN74H10N	2
U15,19,69,71,112,122	1820-0141	IC,QUAD 2-INPUT AND GATE,TTL	04713	MC3001P	6
U17,46,155	1820-0715	IC,HS DUAL J-K FLIP-FLOP EDGE TRIGGERED,TTL	01295	SN74H106N	3
U18,49,67,68,136,137	1820-0327	IC,QUAD 2-INPUT NAND GATE OPEN COLLECTOR	01295	SN7401N	6

ASSEMBLY # 30032-60001 (CONTINUED)

REFERENCE DESIGNATION	HP PART NO.	DESCRIPTION	MFR CODE	MFR PART NO.	TQ
U21,64,78	1820-0077	IC,DUAL D FLIPP-FLOP,TTL	01295	SN7474N	3
U22,55,63,141,142	1820-0376	IC,HS DUAL 4-INPUT NAND BUFFER,TTL	01295	SN74H40N	5
U23,24	1820-0294	IC,8 BIT SER-IN PAR-OUT SHIFT REGISTER,TTL	27014	DM8570N	2
U25,38,117,127	1820-0140	IC,DUAL 4-INPUT AND BUFFER,TTL	04713	MC3026P	4
U28,29,47,81,91,92, 128,131	1820-0370	IC,HS QUAD 2-INPUT NAND GATE,TTL	01295	SN74H00N	8
U31,32,41,42	1820-0509	IC,QUAD 1-2-2-2--INPUT NAND LINE DRIVER	04713	MC1488L	4
U33,34,39,43,44,48, 57,58,77,87,97,107, 108,146,147	1820-0301	IC,QUAD BISTABLE D LATCH,TTL	01295	SN7475N	15
U35	1820-0261	IC,MONOSTABLE MULTIVIBRATOR,TTL	01295	SN74121N	1
U36	1820-0127	IC,QUAD 2-INPUT NAND GATE,TTL	07263	U6A900259X	1
U37,101,103	1820-0328	IC,QUAD 2-INPUT NOR GATE,TTL	01295	SN7402N	3
U45	1820-0076	IC,DUAL J-K FLIP-FLOP W/PRESET AND CLOCK,TTL	01295	SN7476N	1
U51,52,61,62	1820-0990	IC,QUAD NAND LINE RECIEVER,DTL	04713	MC1489AL	3
U53	1820-0640	IC,16-INPUT MULTIPLEXER,TTL	01295	SN74150N	1
U56	1820-0250	IC,DGTL 6-BIT COMPARATOR,TTL	28480	1820-0250	1
U59	1820-0374	IC,HS DUAL 4-INPUT AND GATE,TTL	01295	SN74H21N	1
U65,66,74,93,114	1820-0231	IC,4-BIT BINARY COUNTER,SYNCHRO,TTL	07263	U6B931659X	5
U79	1820-0214	IC,BCD/DECIMAL DECODER,TTL	01295	SN7442N	1
U83,86,94,115,116, 133,134,145	1820-0839	IC,QUAD D FLIP-FLOP W/CLEAR,TTL	01295	SN74175N	8
U85,126	1820-0435	IC,8-BIT ODD/EVEN PARITY GENERATOR/CHECKER,TTL	01295	SN74180N	2
U88	1820-0686	IC,TRIPLE 3-INPUT AND GATE,SCHOTTKY,TTL	01295	SN74S11N	1
U89,109,129,149	1820-0760	IC,8-BIT RECEIVER INVERTING(TRI-STATE),TTL	28480	1820-0760	4
U98	1820-0844	IC,DUAL 3-INPUT PULSE SHAPER/DELAY AND GATE,TTL	04713	MC426	1
U99,139	1820-0755	IC,8-BIT DRIVER NON-INVERTING(TRI-STATE),TTL	28480	1820-0755	2
U105,106,135	1820-0367	IC,4-BIT RT/LT SHIFT REGISTER PAR IN/OUT,TTL	01295	SN7495N	3
U113,143	1820-0733	IC,QUAD 256-BIT DYNAMIC SHIFT REGISTER,MOS	34649	P1402	2
U132	1820-0205	IC,QUAD 2-INPUT OR GATE,TTL	04713	MC3003P	1
U138	1820-0761	IC,HEX-INVERTER/DRIVER	01295	SN7406N	1
U148,169	1820-0706	IC,5-BIT COMPARATOR,TTL	07263	U7B932459X	2
U153,163	1820-0832	IC,TRANSLATOR/CLOCK DRIVER,TTL-TO-MOS	27014	NH0007C	2
U159	1820-0756	IC,8-BIT DRIVER INVERTING(TRI STATE),TTL	28480	1820-0756	1
W2-4	8159-0005	WIRE JUMPER,22 AWG	0073G	L-2007-1	4
X1	1200-0199	SOCKET,ELECT:CRYSTAL 2-CONT HC-6/V PKG DIP	91506	8000-AG9	1
XU113,143	1200-0482	SOCKET,ELECT:IC 16-CONT DIP SOLDER TERM	91506	516-AG10D	2
XW5	1200-0473	SOCKET,ELECT:IC 16-CONT DIP SOLDER TERM	01295	C931602	1
Y1	0410-0459	XTAL-QUARTZ,4.32MHZ .002% @25DEG	28480	0410-0459	1

I/O DETAILED DIAGRAM SET

DD-509

TERMINAL CONTROL INTERFACE PCA

30061-60001

SERIES 1251 /911

2212-12
J1
J2
J3
P1
P2
P3
COMPONENT SIDE 2 4 6
CIRCUIT SIDE 1 3 5
ASSY -30061-60001
C72 +
C70 +
C37 +
C88 +
C96 +
C77 +
C89 +
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
CR1
CR2
CR3
CR4
W1
W2
E1
E2
E3

CHANGE	REFERENCE	REVISION/PREFIX	SHEETS AFFECTED
A	ORIG.	A-1210-22	ALL
B	REDRAWN	NO CHANGE	ALL
C	PPC-A	NO CHANGE	1
D	PPC-B	NO CHANGE	1
E	PPC-C	A-1241-22	1
F	PC-22-952	A-1251-22	ALL
G	PC-1776	B-1251-22	1, 3

P/O RESET LOGIC

P/O INTERRUPT LOGIC

(B23) CONT STB-D08

(E29) INT REQ

+5V R8 3.16K C81 75

U96A

INTPOLL IN P1-48

U68F

U98A INT LATCH

U88C

INTPOLL OUT P1-44

(C9) INT ACTIVE

U68D U68B U28B

U48A INT MASK FF

(B24)

R5E +5V

U88A U78B

MASTER RESET (C22)(C7)(B24)

U166F P3-44 INT REQ 1

U78C U28A U166B P1-49 SI

COMMAND DECODER

U58 BINARY TO DECIMAL DECODER

U68C

SERVICE IN GENERATOR

U38D RESET INT (C27)

U38B U78D

D CONT STB (C22)

SET INT (E29)

INT ACTIVE FF U86B U86C

U68A U38C U166E P3-50 INT ACK

U88B

SO P1-53

I/O RESET P1-11

IO CMD 00 P3-4

IO CMD 01 P3-6

IO CMD 02 P3-5

CLOCK P1-13

U18 ENABLE 9,11

R5F +5V

CLK (B22)

U38A U35B

DISABLE

DATA OUT LINE RECEIVERS

IOD 15 P3-42
IOD 14 P3-41
IOD 13 P3-39
IOD 12 P3-38
IOD 11 P3-36
IOD 10 P3-35
IOD 09 PE-33
IOD 08 P3-32

U148 ENABLE 9,11

R17 +5V

D015 (E22)
D014 (E22)
D013 (E22)
D012 (E22)
D011 (C22)
D010 (C22)
D09 (D22)
D08 (D22)

IOD 07 P3-30
IOD 06 P3-29
IOD 05 P3-27
IOD 04 P3-26
IOD 03 P3-24
IOD 02 P3-23
IOD 01 P3-21
IOD 00 P3-20

U128 ENABLE 9,11

R10 +5V ENABLE

D07 (F22)
D06 (F22)
D05 (F22)
D04 (F22)
D03 (D22)
D02 (D22)
D01 (B22)
D00 (C22)

DATA IN LINE DRIVERS

U158 ENABLE 9,11

D115 (B15)
D114 (E15)
D113 (F29)
D112 (G29)
D111 (F29)
D110 (F29)

+5V R9 4.64K

U118 ENABLE 9,11

D17 (D15)
D16 (D15)
D15 (D15)
D14 (D15)
D12 (E29)

+5V R6 3.16K C80 75

U96B

DECODER ENABLE

+5V R12C R13G R13F R13E R13D R13C R13B R13A

ADDRESS GENERATOR / COMPARATOR

MSB W1 W2 W3 W4 W5 W6 W7 W8 LSB

U156 5-BIT COMPARATOR

U146 5-BIT COMPARATOR

A<B A=B A>B

ENABLE

U168 ENABLE 9,11

P3-8 DEV NO 00
P3-9 DEV NO 01
P3-11 DEV NO 02
P3-12 DEV NO 03
P3-14 DEV NO 04
P3-15 DEV NO 05
P3-17 DEV NO 06
P3-18 DEV NO 07

U108 ENABLE 9,11

R5A +5V

P1-1,2,3,4 +5V

.01UF 2.2UF

P1-14,15,16,19,20, 29,30,43,47,50,54

P2-2,4,6,8,10,14, 15,20,23,30,36,42

P3-3,7,10,13,16,19,22,25, 28,31,34,37,40,43,46,49

4. ALL RESISTANCE IS IN OHMS 1/KW 1% FILM

3. ALL RESISTORS IN PACKS 4.7K 1810-0125

2. ALL DISCRETE RESISTORS 4.64K

1. ALL CAPACITORS ARE 470 PICOFARADS.

NOTES: UNLESS OTHERWISE SPECIFIED

30061-60001 TITLE SHEET 1 OF 3

TERMINAL CONTROL INTERFACE PCA

ENGINEER | APPROVED | DATE

HEWLETT-PACKARD CO.
DATA SYSTEMS DEVELOPMENT DIVISION

2212-12
ASSY-30061-60001
COMPONENT SIDE 2 4 6
CIRCUIT SIDE 1 3 5
J1
J2
J3
P1
P2
P3
W1
W2
R13
R12
R10
R11
CR1
CR2
CR3
CR4
C70
C71
C72
C73
C74
C75
C76
C77
C78
C79
C80
C81
C82
C83
C84
C85
C86
C87
C88
C89
R1
R2
R3
R4
R5
R6
R7
R8
R9

CHANGE	REFERENCE	REVISION/PREFIX
A	ORIG.	A-1210-22
B	REDRAWN	NO CHANGE
C	PPC-A	NO CHANGE
D	PPC-B	NO CHANGE
E	PPC-C	A-1241-22
F	PC-22-1622	A-1251-22
G	PC-1776	B-1251-22

(CC/SB0) 0S1 ← J1-33
(CC/SB1) 1S1 ← J1-31
(CC/SB2) 2S1 ← J1-29
(CC/SB3) 3S1 ← J1-27
(CC/SB4) 4S1 ← J1-23
(CC/SB5) 5S1 ← J1-25
(CC/SB6) 6S1 ← J1-21
(CC/SB7) 7S1 ← J1-19
(CC/SB8) 8S1 ← J2-31
(CC/SB9) 9S1 ← J2-29
(CC/SB10) 10S1 ← J2-25
(CC/SB11) 11S1 ← J2-27
(CC/SB12) 12S1 ← J2-23
(CC/SB13) 13S1 ← J2-21
(CC/SB14) 14S1 ← J2-19
(CC/SB15) 15S1 ← J2-17
(CF/CB0) 0S2 ← J1-45
(CF/CB1) 1S2 ← J1-44
(CF/CB2) 2S2 ← J1-40
(CF/CB3) 3S2 ← J1-46
(CF/CB4) 4S2 ← J1-49
(CF/CB5) 5S2 ← J1-50
(CF/CB6) 6S2 ← J1-47
(CF/CB7) 7S2 ← J1-48
(CF/CB8) 8S2 ← J2-10
(CF/CB9) 9S2 ← J2-9
(CF/CB10) 10S2 ← J2-2
(CF/CB11) 11S2 ← J2-1
(CF/CB12) 12S2 ← J2-12
(CF/CB13) 13S2 ← J2-13
(CF/CB14) 14S2 ← J2-3
(CF/CB15) 15S2 ← J2-4

U83 16-TO-1 MULTIPLEXER → S1 → DI15 (F5)(G22)
U63 16-TO-1 MULTIPLEXER → S2 → DI14 (F5)(G22)
STROBE
DI4 (G5)(G22)
DI5 (G5)(G22)
DI6 (G5)(G22)
DI7 (G5)(G22)

DEVICE CONTROL SIGNAL INPUT SCAN LOGIC

(C29) $\overline{C2}$
(C29) $\overline{C1}$
(D29) A
(D29) B
(A24)

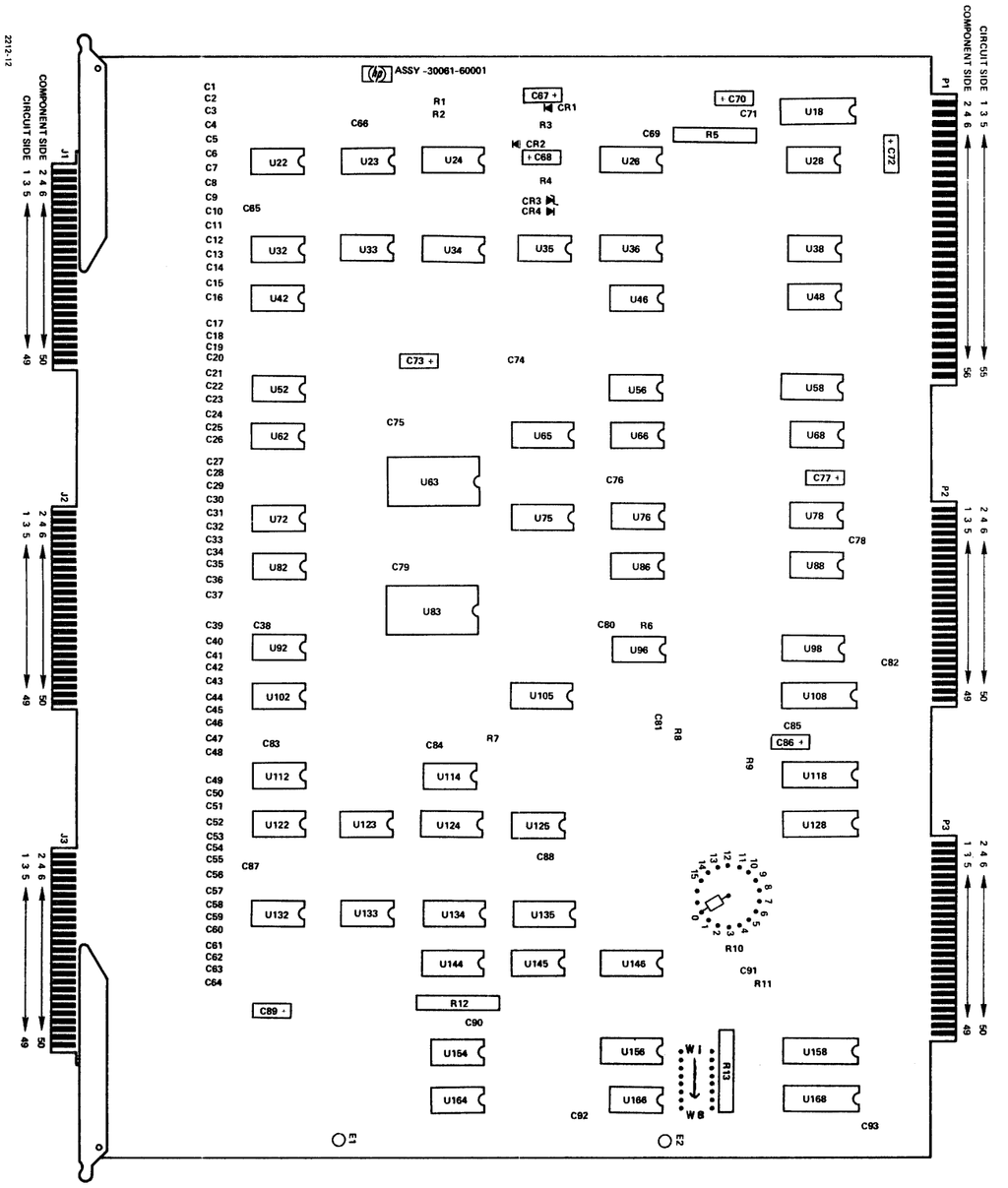
U145C, U114B, U114C, U114D, U114A
U124, U134, U34, U24 — DATA IN, LOAD, CLEAR
U122, U123, U132, U133, U32, U22, U23, U33

J2-43 8C2 (CA/CH8)
J2-41 9C2 (CA/CH9)
J2-34 10C2 (CA/CH10)
J2-37 11C2 (CA/CH11)
J2-45 12C2 (CA/CH12)
J2-35 13C2 (CA/CH13)
J2-47 14C2 (CA/CH14)
J2-33 15C2 (CA/CH15)
J2-44 8C1 (CD/SA8)
J2-46 9C1 (CD/SA9)
J2-42 10C1 (CD/SA10)
J2-40 11C1 (CD/SA11)
J2-48 12C1 (CD/SA12)
J2-38 13C1 (CD/SA13)
J2-39 14C1 (CD/SA14)
J2-36 15C1 (CD/SA15)
J1-13 0C2 (CA/CH0)
J1-18 1C2 (CA/CH1)
J1-9 2C2 (CA/CH2)
J1-7 3C2 (CA/CH3)
J1-15 4C2 (CA/CH4)
J1-5 5C2 (CA/CH5)
J1-17 6C2 (CA/CH6)
J1-3 7C2 (CA/CH7)
J1-12 0C1 (CD/SA0)
J1-10 1C1 (CD/SA1)
J1-6 2C1 (CD/SA2)
J1-8 3C1 (CD/SA3)
J1-14 4C1 (CD/SA4)
J1-4 5C1 (CD/SA5)
J1-16 6C1 (CD/SA6)
J1-11 (CD/SA7) 7C1

R12B, +5V
−9.5V +9.5V

DEVICE CONTROL SIGNAL OUTPUT LOGIC

30061-60001 TITLE		SHEET 2 OF 3
TERMINAL CONTROL INTERFACE PCA		
ENGINEER	APPROVED	DATE
HEWLETT-PACKARD CO DATA SYSTEMS DEVELOPMENT DIVISION		


2212-12
ASSY -30061-60001
COMPONENT SIDE
CIRCUIT SIDE
J1
J2
J3
P1
P2
P3
C1
C2
C3
C4
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C6
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C59
C60
C61
C62
C63
C64
C65
C66
C67 +
CR1
R1
R2
R3
CR2
+ C68
R4
CR3
CR4
C69
R5
+ C70
C71
+ C72
C73 +
C74
C75
C76
C77 +
C78
C79
C80
R6
C81
R7
R8
C82
C83
C84
C85
C86 +
R9
C87
C88
R10
C89 +
C90
R11
C91
R12
C92
R13
C93
U18
U22
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U124
U125
U128
U132
U133
U134
U135
U144
U145
U146
U154
U156
U158
U164
U166
U168
W1
W2
E1
E2

CHANGE	REFERENCE	REVISION/PREFIX
A	ORIG.	A-1210-22
B	REDRAWN	NO CHANGE
C	PPC-A	NO CHANGE
D	PPC-B	NO CHANGE
E	PPC-C	A-1241-22
F	PC-22-1622	A-1251-22
G	PC-1776	B-1251-22

P/O RESET LOGIC

MASTER RESET

(B16) (A)

(E5) D08

U86D

CONT STB-D08 (A3)

STATUS CLEAR U48B

(D) (B4)

CONTROL DATA HOLDING REGISTER

(C4) CLK

(E5) D01

(D5) D011

(D5) D010

U75 4-BIT REGISTER

(C7) D CONT STB

(A8) MASTER RESET

U145A

CLOCK

CLEAR

U86A

(E5) D03

(E5) D02

(D5) D08

(D5) D09

U76A

U65 4-BIT REGISTER

UPDATE

SCAN

SCAN

EC2

EC1

(D5) D014

(D5) D015

(D5) D012

(D5) D013

U135 4-BIT REGISTER

S2

S1

ES2

ES1

CHANNEL COUNTER

(E5) D07

(E5) D06

(E5) D05

(E5) D04

(C29) (C)

U125 4-BIT COUNTER

CLOCK 1

CLOCK 2

LOAD CLEAR

(D15) D17

(D15) D16

(D15) D15

(D15) D14

(B15) D115

(E15) D114

+5V R7

U105A CLOCK ÷2A

U105B CLOCK ÷28

CONTROL LOGIC

U56D

U66A

U56A

U56B

U56C

U46A

U46B

U46C

U76B

R3C +5V

U46D

U26A SYNC 1

U26B SYNC 2

A STATUS

R5B +5V

U36A CHANGE FF

U36B INT REQ FF

SET INT (C7)

DI2 (G5)

INT REQ (B5)

P/O INTERRUPT LOGIC

+15V

CR2

R2 1K 1/4W±5%

J1-2 +15V

R3 120 2W

CR1 5.11V

+9.5V

C67 2.2UF

C68 2.2UF

J1-1 COM

J2-49 COM

-9.5V

R4 120 2W

CR3 5.11V

-15V

CR4

R1 1K 1/4W±5%

J2-50 -15V

CT (C16)

STATUS STORAGE

U144 64 BIT RAM

SELECT

WRITE

R11D R11E R11G R12F +5V

STATUS DECODE LOGIC

U154B

U154C

U164C

U164D

U164B

U164A

U145E

U145F

(B9) RESET INT

U35A

(B) (E16)

(A) (D16)

DI11 (F5)

DI10 (F5)

DI13 (F5)

DI12 (F5)

30061-60001 TITLE	SHEET 3 OF 3
TERMINAL CONTROL INTERFACE PCA	
ENGINEER	APPROVED / DATE
HEWLETT PACKARD CO. DATA SYSTEMS DEVELOPMENT DIVISION	

ASSEMBLY # 30061-60001

REFERENCE DESIGNATION	HP PART NO.	DESCRIPTION	MFR CODE	MFR PART NO.	TQ
C1-66,69,71,74-76, 78,79,82-85,87,88, 90-93	0160-2055	CAPACITOR,FXD,CER,0.01 UF,+80 -20%,100VDCW	28480	0160-2055	83
C67,68,70,72,73,77, 86,89	0180-0197	CAPACITOR,FXD,ELECT,2.2 UF,10%,20 VDCW	28480	0180-0116	8
C80,81	0160-2202	CAPACITOR,FXD,MICA,75PF,5%,300 VDCW	72136	0160-2202 OBD	2
CR1,3	1902-0579	DIODE,ZENER,5.11V 5%,1W MAX	04713	OBD	2
CR2,4	1901-0159	DIODE,PWR RECT,SI,400V MAX,750MA	04713	OBD	2
E1,2	0360-0294	TERMINAL,SOLDER STUD,.063 IN.SHK DIA	28480	0360-0294	2
R1,2	0683-1025	RESISTOR,FXD,FLM,1K, 5%,1/4W	01121	CB1025	2
R3,4	0698-3622	RESISTOR,FXD,METAL OXIDE,120 OHM 5%,2W	24546	FP42-2-T00-120R-J	2
R5,12,13	1810-0125	RESISTOR,PASSIVE,NON-REPAIRABLE,7X4.7K OHM,5%	56289	200C-1861	3
R6,8	0757-0279	RESISTOR,FXD,FLM,3.16K,1%,1/4W	24546	C4-1/8-T0-3161-F	2
R7,9-11	0698-3155	RESISTOR,FXD,FLM,4.64K,1%,1/8W	28480	0698-3155	4
U18,108,128,148	1820-0760	IC,8-BIT RECEIVER INVERTING(TRI-STATE),TTL	28480	1820-0760	4
U22,23,32,33,122, 123,132,133	1820-0509	IC,QUAD 1-2-2-2--INPUT NAND LINE DRIVER	04713	MC1488L	8
U24,34,124,134	1820-0833	IC,8-BIT ADDRESSABLE LATCH,TTL	02763	U78933459X	4
U26,105	1820-0076	IC,DUAL J-K FLIP-FLOP W/PRESET AND CLOCK,TTL	01295	SN7476N	2
U28	1820-0374	IC,HS DUAL 4-INPUT AND GATE,TTL	01295	SN74H21N	1
U35,38,46	1820-0141	IC,QUAD 2-INPUT AND GATE,TTL	04713	MC3001P	3
U36	1820-0715	IC,HS DUAL J-K FLIP-FLOP EDGE TRIGGERED,TTL	01295	SN74H106N	1
U42,52,62,72,82,92, 102,112	1820-0990	IC,QUAD NAND LINE RECIEVER,DTL	04713	MC1489AL	8
U48	1820-0077	IC,DUAL D FLIPP-FLOP,TTL	01295	SN7474N	1
U56,78,86	1820-0370	IC,HS QUAD 2-INPUT NAND GATE,TTL	01295	SN74H00N	3
U58	1820-0214	IC,BCD/DECIMAL DECODER,TTL	01295	SN7442N	1
U63,83	1820-0640	IC,16-INPUT MULTIPLEXER,TTL	01295	SN74150N	2
U65,75,135	1820-0839	IC,QUAD D FLIP-FLOP W/CLEAR,TTL	01295	SN74175N	3
U66	1820-0371	IC,HS TRIPLE 3-INPUT NAND GATE,TTL	01295	SN74H10N	1
U68,76,145	1820-0424	IC,HS HEX INVERTER,TTL	01295	SN74H04N	3
U88	1820-0686	IC,TRIPLE 3-INPUT AND GATE,SCHOTTKY,TTL	01295	SN74S11N	1
U96	1820-0844	IC,DUAL 3-INPUT PULSE SHAPER/DELAY AND GATE,TTL	04713	MC426	1
U98	1820-0301	IC,QUAD BISTABLE D LATCH,TTL	01295	SN7475N	1
U114	1820-0205	IC,QUAD 2-INPUT OR GATE,TTL	04713	MC3003P	1
U118,158,168	1820-0756	IC,8-BIT DRIVER INVERTING(TRI STATE),TTL	28480	1820-0756	3
U125	1820-0765	IC,4-BIT BINARY COUNTER,PRESETTABLE,50MHZ MIN,TTL	01295	SN74197N	1
U144	1820-0628	IC,64-BIT (16X4) RAM,TTL	01295	SN7489N	1
U146,156	1820-0706	IC,5-BIT COMPARATOR,TTL	07263	U78932459X	2
U154	1820-0617	IC,QUAD 2-INPUT EXCL.NOR GATE,TTL	04713	MC3022P	1
U164	1820-0239	IC,QUAD 2-INPUT NOR GATE,TTL	04713	MC3002P	1
U166	1820-0761	IC,HEX-INVERTER/DRIVER	01295	SN7406N	1
W1,2	8159-0005	WIRE JUMPER,22 AWG	0073G	L-2007-1	2