

HP 3000 Computer Systems

**HP 3000 SERIES 64/68 A/B  
COMPUTER SYSTEMS  
ENGINEERING DIAGRAMS SET**

FOR HP REPAIR USE ONLY



19447 PRUNERIDGE AVENUE, CUPERTINO, CA 95014

Part No. 30140-90046  
E0384

Printed in U.S.A. 04/84

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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.....March 1984

Effective Pages	Date
ALL.....	APR 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..... APR 1984

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# PREFACE

This manual contains schematic diagrams and assembly drawings for all PC assemblies used in the HP 3000 Series 64/68 A/B Computer System Processor. A cross-reference table of integrated-circuit part numbers is also provided. This document is intended to be used by Hewlett-Packard ASEs, SEs, CEs, and other support personnel for troubleshooting purposes. 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 to the right. In addition, selected vendor abbreviations will appear beneath each typical Part Number. Refer to the appropriate vendor data book for a description and explanation of IC internal circuitry.

The following abbreviations listed below correspond to the vendor name shown immediately to the right.

AMD	Advanced Micro Devices
DALE	Dale Electronics
FAIR	Fairchild Semiconductors
FUJI	Fujitsu Ltd.
HRIS	Harris Semiconductor Div., Harris-Intertype
HITA	Hitachi
INTL	Intel Corp.
MSTK	Mostek
MOT	Motorola
NATL	National Semiconductor Corp.
NEC	Nippon Electric Corp.
RAY	Raytheon Co., Semiconductor Div.
RCA	RCA Corp., Solid State Div.
SIG	Signetics Corp.
TI	Texas Instruments
ZILG	Zilog Inc.

Integrated Circuit Cross Reference Table

HP P/N	Typical P/N	HP P/N	Typical P/N
1813-0089	K1100A MOT	1813-0143	K1114AM DALE, MOT
1816-0916	HM7603-5 HRS, SIG	1816-1153	SN91383N TI
1816-1430	MCM10145L MOT	1816-1435	MCM10143L MOT
1816-1456	MCM10149L MOT	1816-1459	HM10470 FUJI, HITA
1816-1460	MBM10415AHC FUJI, NATL	1816-1461	10149F SIG

Integrated Circuit Cross Reference Table (Cont.)

HP P/N	Typical P/N	HP P/N	Typical P/N
1816-1462	HM10422 FUJI, HITA	1816-1469	F100142DC FAIR, HITA
1818-0492	P2114A-4 INTL	1818-0762	TMS2532JL TI, HITA
1818-3006	HM4864P-3 HITA, FUJI	1820-0430	LM309K T03 MOT, NATL
1820-0491	SN74145N TI, NATL	1820-0509	MC1488L FAIR, MOT
1820-0574	8551 TI, NATL	1820-0618	SN7417N TI, SIG
1820-0621	SN7438N TI, FAIR	1820-0629	SN74S112N TI, SIG
1820-0681	SN74S00N FAIR, SIG	1820-0683	SN74S04 TI, FAIR
1820-0685	SN74S10 TI, SIG	1820-0686	SN74S11 TI, SIG
1820-0688	SN74S20 TI, SIG	1820-0689	SN74S22N TI
1820-0691	SN74S64N TI, NATL	1820-0693	SN74S74 TI, FAIR
1820-0694	SN74S86N TI, NATL	1820-0790	MC1660L MOT
1820-0795	MC1664L MOT	1820-0801	MC10101P MOT, SIG
1820-0802	MC10102P MOT, SIG	1820-0803	MC10105P MOT, SIG
1820-0804	MC10106P MOT, SIG	1820-0805	MC10107P MOT, SIG
1820-0806	MC10109P MOT, SIG	1820-0809	MC10115P MOT, SIG
1820-0811	MC10117P MOT, SIG	1820-0815	MC10121P MOT, SIG

Integrated Cross Reference Table (Cont.)

HP P/N	Typical P/N	HP P/N	Typical P/N
1820-0827	MC10161P MOT, SIG	1820-0828	MC10162P MOT, SIG
1820-0920	MC1692L MOT	1820-0990	MC1489AL NATL, MOT
1820-0998	SN74S153N TI, SIG	1820-1015	SN74S158N TI, NATL
1820-1052	MC10125L MOT, SIG	1820-1072	SN74S139NS TI, SIG
1820-1076	SN74S174N TI, SIG	1820-1112	SN74LS74AN MOT, SIG
1820-1130	SN74S133N TI, NATL	1820-1131	DM8160N NATL
1820-1144	SN74LS02N MOT, SIG	1820-1158	SN74S51 TI, SIG
1820-1191	SN74S175N FAIR, SIG	1820-1196	SN74LS174N FUJI, TI
1820-1197	SN74LS00 FUJI, TI	1820-1199	SN74LS04N HITA, FUJI
1820-1200	SN74LS05 HITA, FUJI	1820-1201	SN74LS08N SIG, FAIR
1820-1202	SN74LS10 MOT, HITA	1820-1203	SN74LS11N TI, SIG
1820-1204	SN74LS20N MOT, TI	1820-1205	SN74LS21N SIG, NATL
1820-1206	SN74LS27N HITA, FUJI	1820-1207	SN74LS30N TI, MOT
1820-1208	SN74LS32N SIG, FAIR	1820-1210	SN74LS51N TI, MOT
1820-1211	SN74LS86NS TI, MOT	1820-1216	SN74LS138N HITA, FUJI
1820-1217	SN74LS151N TI, NATL	1820-1224	MC10216P MOT

Integrated Circuit Cross Reference Table (Cont.)

HP P/N	Typical P/N	HP P/N	Typical P/N
1820-1225	MC10231P MOT	1820-1244	SN74LS153N MOT, SIG
1820-1257	SN74159N TI	1820-1272	SN74LS33N MOT, SIG
1820-1275	SN74S260N TI, SIG	1820-1278	SN74LS191 TI, NATL
1820-1281	SN74LS139N HITA, SIG	1820-1285	SN74LS54N NATL, HITA
1820-1301	SN74S257N TI, SIG	1820-1304	SN74S194N TI
1820-1307	SN74S132N TI, FAIR	1820-1322	SN74S02N TI, SIG
1820-1359	MC10174P MOT	1820-1360	N8T09N SIG
1820-1367	SN74S08N TI, NATL	1820-1400	MC10104P MOT
1820-1423	SN74LS123N TI, MOT	1820-1425	SN74LS132N TI, MOT
1820-1427	SN74LS156 TI, NATL	1820-1430	SN74LS161N TI, HITA
1820-1437	MC4015P MOT, TI	1820-1438	SN74LS257N TI, MOT
1820-1439	SN74LS258N TI, MOT	1820-1440	SN74LS279S TI, MOT
1820-1441	SN74LS283N TI, MOT	1820-1445	SN74LS375N TI
1820-1448	SN74S09N TI, NATL	1820-1450	SN74S37N TI
1820-1451	SN74S38N TI, SIG	1820-1470	SN74LS157N MOT, SIG
1820-1473	SN74148N TI	1820-1476	8T96B SIG

Integrated Circuit Cross Reference Table (Cont.)

HP P/N	Typical P/N	HP P/N	Typical P/N
1820-1482	MC10211P MOT	1820-1562	MM74C175N NATL
1820-1624	SN74S241N TI	1820-1633	SN74S240N TI, AMD
1820-1638	SN74S280N TI, NATL	1820-1639	SN74S135N TI
1820-1676	SN74S373N TI	1820-1677	SN74S374N TI
1820-1685	MC10195P MOT	1820-1686	MC10103P MOT
1820-1729	SN74LS259 MOT, FAIR	1820-1730	SN74LS273N TI, SIG
1820-1822	CF1190 SIG	1820-1847	SN74LS138N MOT, SIG
1820-1848	SN74LS04N TI, NATL	1820-1858	SN74LS377N TI, MOT
1820-1897	CD4024BF RCA, MOT	1820-1950	MC10212P MOT
1820-1997	SN74LS374N AMD, NATL	1820-2023	MC10197P MOT
1820-2024	SN74LS244N TI, SIG	1820-2053	SN74LS154N NATL, SIG
1820-2058	MC3448 MOT, AMD	1820-2075	SN74LS245N TI, NATL
1820-2096	SN74LS393 TI, SIG	1820-2121	SN74LS348N TI
1820-2298	Z80A-CPU-4M MSTK, ZILG	1820-2348	MC10805L MOT
1820-2381	MC10166P MOT, FAIR	1820-2401	MC10173P MOT
1820-2402	MC10175P MOT	1820-2420	MC10171P MOT

Integrated Circuit Cross Reference Table (Cont.)

HP P/N	Typical P/N	HP P/N	Typical P/N
1820-2421	MC10163P MOT	1820-2449	MC10165P MOT
1820-2450	MC110189P MOT	1820-2455	MC10172P MOT
1820-2477	MC10170P MOT	1820-2495	MC10210P MOT
1820-2508	MC10113P MOT	1820-2509	F100122DC FAIR, HITA
1820-2510	F100136DC FAIR, HITA	1820-2511	F100163DC FAIR, HITA
1820-2512	F100164DC FAIR, HITA	1820-2513	F100179DC FAIR, HITA
1820-2514	F100181DC FAIR, HITA	1820-2515	F100114DC FAIR, HITA
1820-2517	MC10100P MOT	1820-2522	MC10188P MOT
1820-2588	CD4060B RCA	1820-2594	SN79571N TI
1820-2611	HM100101 FAIR, HITA	1820-2619	2661-1N-A SIG
1820-2648	F100165 FAIR, HITA	1820-2703	SN75174N TI
1820-2821	MC10159P MOT	1820-2847	MC10153P MOT
1820-3124	MC10124P MOT	1820-3125	MC10125P MOT
1820-3126	MC10136P MOT	1820-3127	MC10141P MOT
1820-3128	MC10158P MOT	1820-3129	MC10164P MOT
1820-3130	MC10181P MOT	1820-3338	10H117P MOT

Integrated Circuit Cross Reference Table (Cont.)

HP P/N	Typical P/N	HP P/N	Typical P/N
1826-0065	LM311 NEC, TI	1826-0138	LM339 TI, MOT
1826-0161	LM324N MOT, SIG	1826-0323	HA1-4741 HRIS, RAY
1826-0355	NE555N SIG, NATL	1826-0367	MC78M05 MOT, FAIR
1826-0581	13508 NATL	1826-0750	ADC0801 NATL
1826-0791	LF398N NATL	1826-0792	HA4905 HRIS



# CPU BAY PCA SCHEMATICS AND ASSEMBLY DRAWINGS

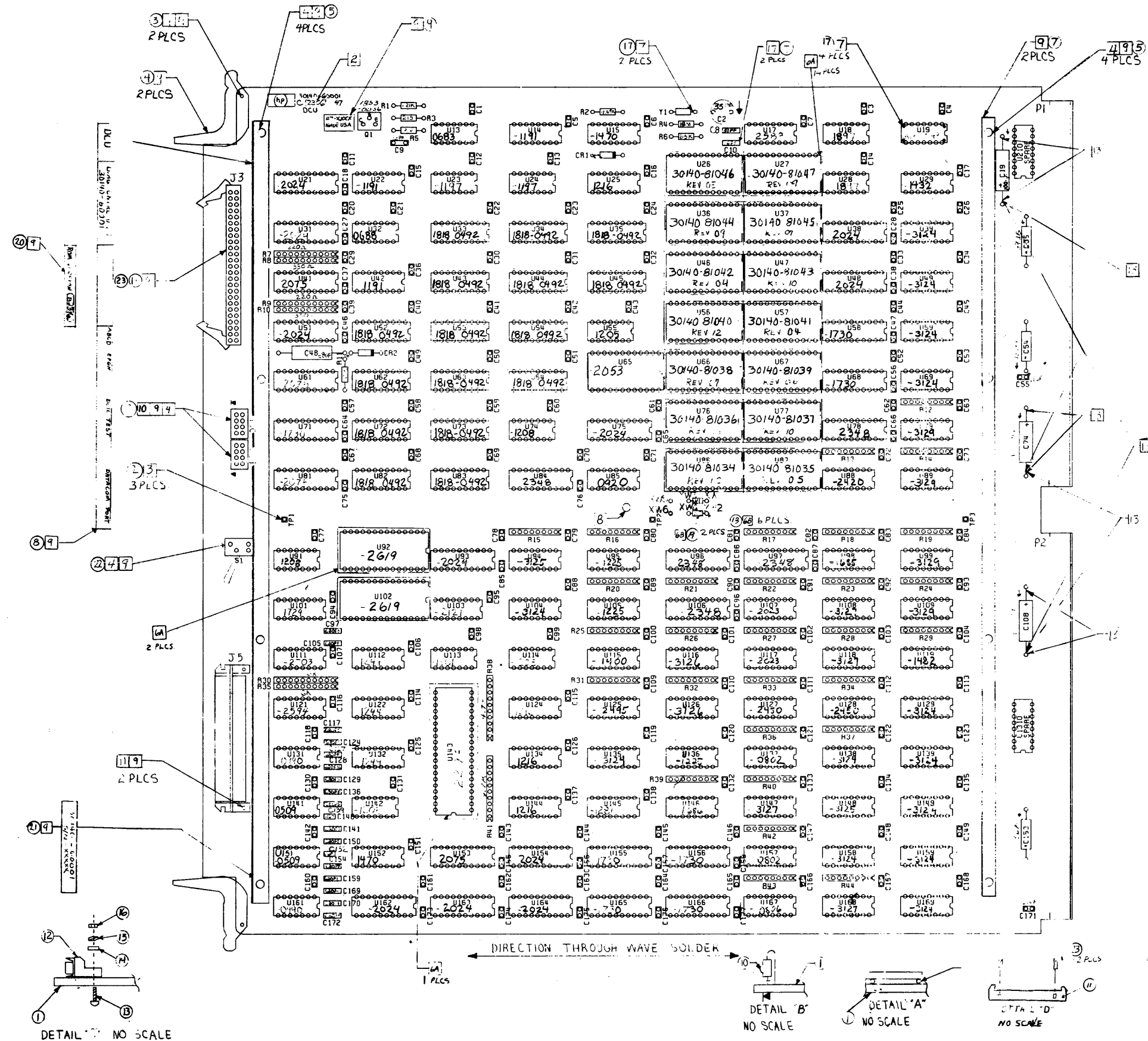
SECTION

II

This section provides component location and schematic diagrams for the PCAs located in the CPU card cage of the System Processor Unit. The PCA diagrams appear according to an ascending part number sequence. A listing of this sequence is shown below along with drawing titles and page numbers.

P/N	DWG. TITLE	PAGE
F-30140-60001-7	PCA DCU ASSY. DWG.	2-3
D-30140-60001-51	PCA DCU SCHEMATIC	2-4
-52	"	2-5
-53	"	2-6
-54	"	2-7
D-30140-60001-55	"	2-8
F-30140-60002-7	PCA RALU ASSY. DWG.	2-9
D-30140-60002-51	PCA RALU SCHEMATIC	2-10
-52	"	2-11
-53	"	2-12
-54	"	2-13
-55	"	2-14
-56	"	2-15
D-30140-60002-57	"	2-16
F-30140-60003-7	PCA CIR ASSY. DWG.	2-17
D-30140-60003-51	PCA CIR SCHEMATIC	2-18
-52	"	2-19
-53	"	2-20
D-30140-60003-54	"	2-21
F-30140-60004-1	PCA VBUS ASSY. DWG.	2-22
D-30140-60004-51	PCA VBUS SCHEMATIC	2-23
-52	"	2-24
-53	"	2-25
-54	"	2-26
-55	"	2-27
D-30140-60004-56	"	2-28
F-30140-60005-3	PCA SKSP ASSY. DWG.	2-29
D-30140-60005-51	PCA SKSP SCHEMATIC	2-30
-52	"	2-31
-53	"	2-32
-54	"	2-33
-55	"	2-34
-56	"	2-35
D-30140-60005-57	"	2-36

P/N	DWG. TITLE	PAGE	P/N	DWG. TITLE	PAGE
F-30140-60007-4	PCA CTLA ASSY. DWG.	2-37	F-30140-60013-4	PCA MCS ASSY. DWG.	2-80
D-30140-60007-51	PCA CTLA SCHEMATIC	2-38	D-30140-60013-51	PCA MCS SCHEMATIC	2-81
-52	"	2-39	-52	"	2-82
-53	"	2-40	-53	"	2-83
-54	"	2-41	-54	"	2-84
-55	"	2-42	D-30140-60013-55	"	2-85
D-30140-60007-56	"	2-43	F-30140-60014-4	PCA MMA ASSY. DWG.	2-86
F-30140-60008-4	PCA CTLB ASSY. DWG.	2-44	D-30140-60014-51	PCA MMA SCHEMATIC	2-87
D-30140-60008-51	PCA CTLB SCHEMATIC	2-45	-52	"	2-88
-52	"	2-46	-53	"	2-89
-53	"	2-47	-54	"	2-90
-54	"	2-48	-55	"	2-91
-55	"	2-49	-56	"	2-92
D-30140-60008-56	"	2-50	D-30140-60014-57	"	2-93
F-30140-60009-13	PCA CAC ASSY. DWG.	2-51	F-30140-60015-9	PCA IOB ASSY. DWG.	2-94
D-30140-60009-51	PCA CAC SCHEMATIC	2-52	D-30140-60015-51	PCA IOB SCHEMATIC	2-95
-52	"	2-53	-52	"	2-96
-53	"	2-54	-53	"	2-97
-54	"	2-55	-54	"	2-98
-55	"	2-56	-55	"	2-99
-56	"	2-57	-56	"	2-100
-57	"	2-58	-57	"	2-101
-58	"	2-59	D-30140-60015-58	"	2-102
D-30140-60009-59	"	2-60	D-30140-60018-4	PCA CPU BP ASSY. DWG.	2-103
F-30140-60010-1	PCA CMA ASSY. DWG.	2-61	D-30140-60020-1	PCA MEM BP ASSY. DWG.	2-104
D-30140-60010-51	PCA CMA SCHEMATIC	2-62	F-30140-60026-1	PCA 8K WCS ASSY. DWG.	2-105
-52	"	2-63	D-30140-60026-51	PCA 8K WCS SCHEMATIC	2-106
-53	"	2-64	-52	"	2-107
-54	"	2-65	D-30140-60026-53	"	2-108
D-30140-60010-55	"	2-66	A-30140-60028-1	FCA CBI/IOB/MCS	2-109
F-30140-60011-4	PCA CBI ASSY. DWG.	2-67	A-30140-60029-1	FCA CBI/CMA/CAC	2-109
D-30140-60011-51	PCA CBI SCHEMATIC	2-68	D-30140-60053-2	PCA CPU FP UPR. ASSY. DWG.	2-110
-52	"	2-69	D-30140-60054-2	PCA CPU FP LWR. ASSY. DWG.	2-111
-53	"	2-70			
-54	"	2-71			
-55	"	2-72			
-56	"	2-73			
D-30140-60011-57	"	2-74			
F-30140-60012-6	PCA MMC ASSY. DWG.	2-75			
D-30140-60012-51	PCA MMC SCHEMATIC	2-76			
-52	"	2-77			
-53	"	2-78			
D-30140-60012-54	"	2-79			



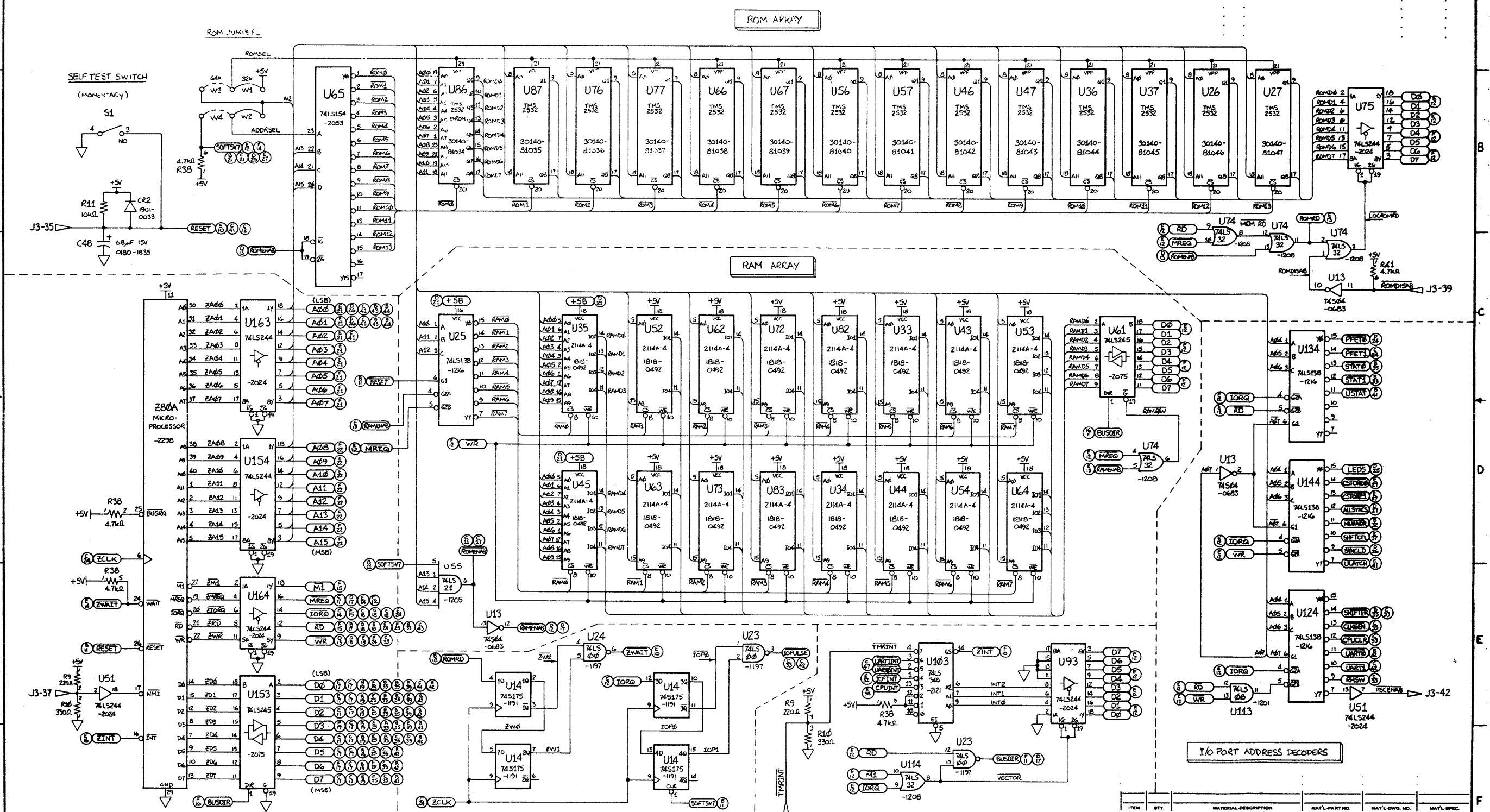
- NOTES:**
- UNLESS OTHERWISE SPECIFIED:  
ALL RESISTANCE IN OHMS  
RESISTORS ARE 68 OHMS  
ALL CAPACITANCE IN MICROFARADS  
ALL CAPACITORS ARE .01UF (0160-5352)  
ALL IC'S ARE 1520-
  - INSTALL ITEM 24
  - INSTALL ITEM 23 PLACES
  - MASK AS INDICATED PRIOR TO LOADING
  - ALL BOARD LOADING & HANDLING MUST BE DONE AT AN ELECTROSTATIC DISCHARGE PROTECTED AREA (EPA) USING AN ANTI-STATIC TABLE TOP MATS, GROUND WRIST STRAP, AND AN ASSEMBLY IN ELECTROSTATIC BAGS.
  - LOAD SOCKETS AS INDICATED.  
LOAD IC'S IN TOUCH-UP.  
LOAD SOCKET XW1-6 IN LOADING. LOAD JUMPER PLUG 10 IN TOUCH-UP
  - LOAD U19, U15 & C10 USING 1 OF ITEM 17 (ON THE LEAD SIDE OF LEAD "A")
  - USE 17-PART EXTRACTOR DURING WAVE SOLDER.
  - LOAD ITEM 23 THROUGH 24 IN TOUCH UP. INSTALL ITEM 23 INTO J3 PER DETAIL "D".
  - LOAD ITEM 20 PER DETAIL "B". USE FORM TOOL 1 110700.
  - INSTALL ITEMS 23 THRU 24 PER DETAIL "C".
  - 17 TEST REQ'D ON BOARD TEST SYSTEM FOLLOWED BY TEST ON ET10975 (DCU TEST FIXTURE).
  - USING AN OHMMETER, CHECK FOR A RESISTANCE OF GREATER THAN 25 OHMS. BETWEEN THESE POINTS DO NOT USE A CONTINUITY LIGHT (6 PLCS).
  - IN INSPECTION CRITERIA STD. SECT. H10.

24	1	LABEL - DATE CODE	9320-5320	
23	2	POLARITY MARK	1251-5575	
22	2	SWITCH TGL DPST M	3/01-1675	
21	1	LABEL - SERIAL NUMBER	9920-4648	
20	1	LABEL "ROM VERSION"	7120-7635	
19	2	JUMPER PLUG	1256-0124	
18	6	CONN SGL CONT	1251-1556	
17	2	BEADS INDIAN	4330-0145	
16	2	NUT 4-40	2260-0662	
15	2	LOCK WASHER #4	200-0077	
14	2	FLAT WASHER #4	3050-0247	
13	2	SCREW 4-40X0.500	2200-0147	
12	1	CONN D PC 37M	1251-7150	
11	1	CONN. POST 50M RA	121-8836	
10	2	LED ARRAY #RED 5V	1990-0662	
9	1	LBL-WORK DATE CD	7120-0370	
8	1	LABEL-PCB DCU	7121-2577	
7	2	BRACE	5040-6058	
6	1	PCB DIAG. CTAL. UNIT	3040-8000	
5	8	SCREW 4-40X.31	0624-0077	
4	2	EXTRACTOR	5040-9804	
3	2	PIN	1130-012	
2	3	STUD SOLDER TERM	0360-0294	
1	1	PCB DIAG. CTAL. UNIT	3040-8000	

PCU-DCU		HEWLETT PACKARD	
TITLE ASSY. DWG.		30140-6000-7	
NEXT ASSEMBLY 30140A		F30140-6000-7	
SCALE 2:1			

REF. DWGS: F-4 ASSY.  
 D-5 MODIF.  
 A-50 DATE CODE INFO.  
 D-52, D-53, D-54, D-55 SCHEM.  
 D-6

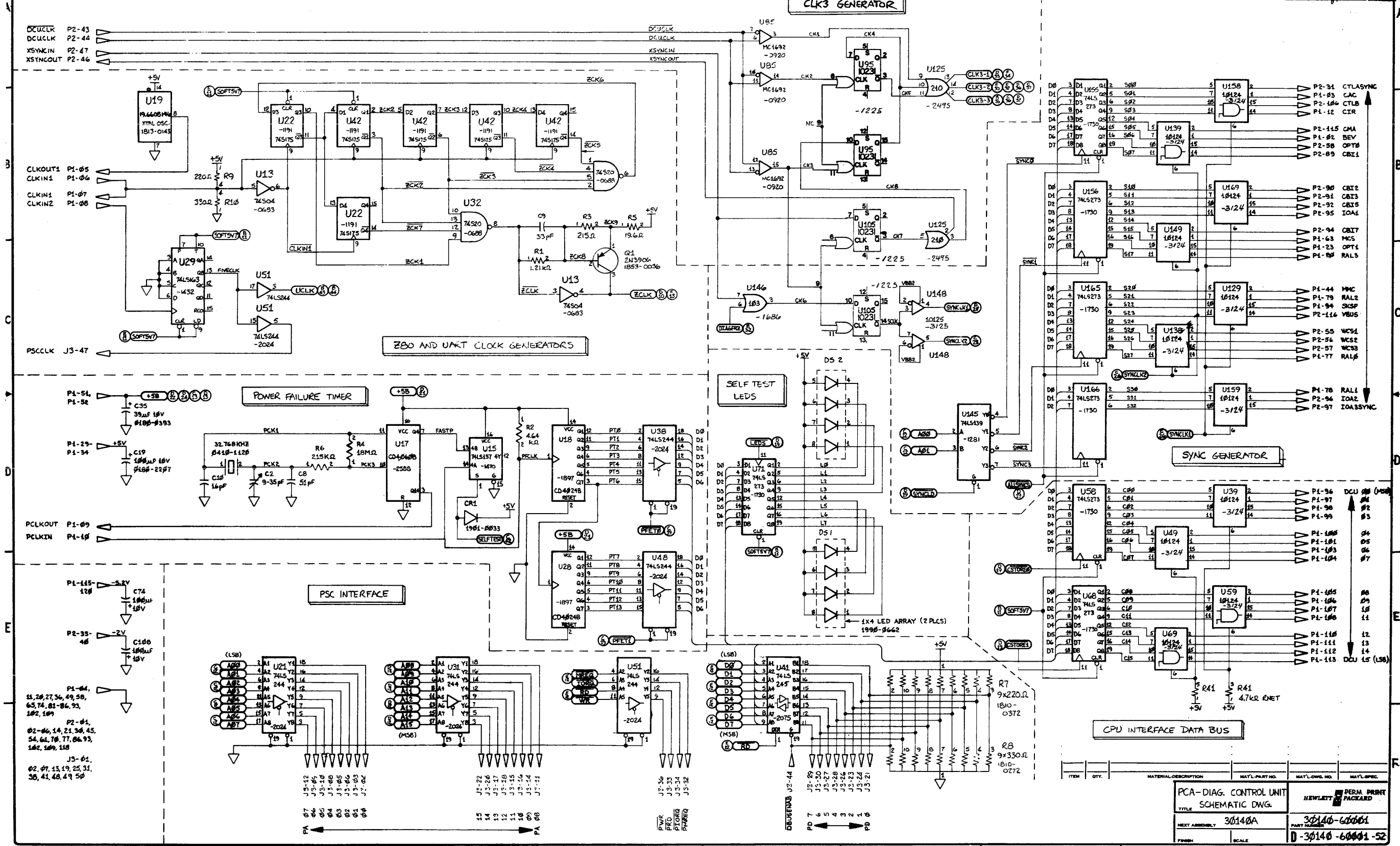
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BY	DATE	NO.	DESCRIPTION	BY	DATE
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C	10-21-74	2	REVISED PER PCO 47-3456	KT/	10-21-74
D	11-14-74	3	REVISED PER PCO 47-3754	KT/	11-14-74
E	11-14-74	4	REVISED PER PCO 47-3775	KT/	11-14-74



ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.
PCA-DIAG. CONTROL UNIT					
TITLE SCHEMATIC DWG.					
NEXT ASSEMBLY 30140A			PART NUMBER 30140-60001		
FINISH			SCALE D-30140-60001-51		

REF. DWGS: F-4 ASSY.  
 D-5 MODIF.  
 A-50 DATE CODE INFO.  
 D-51, D-53, D-54, D-55 SCHEM.  
 D-6 MOD

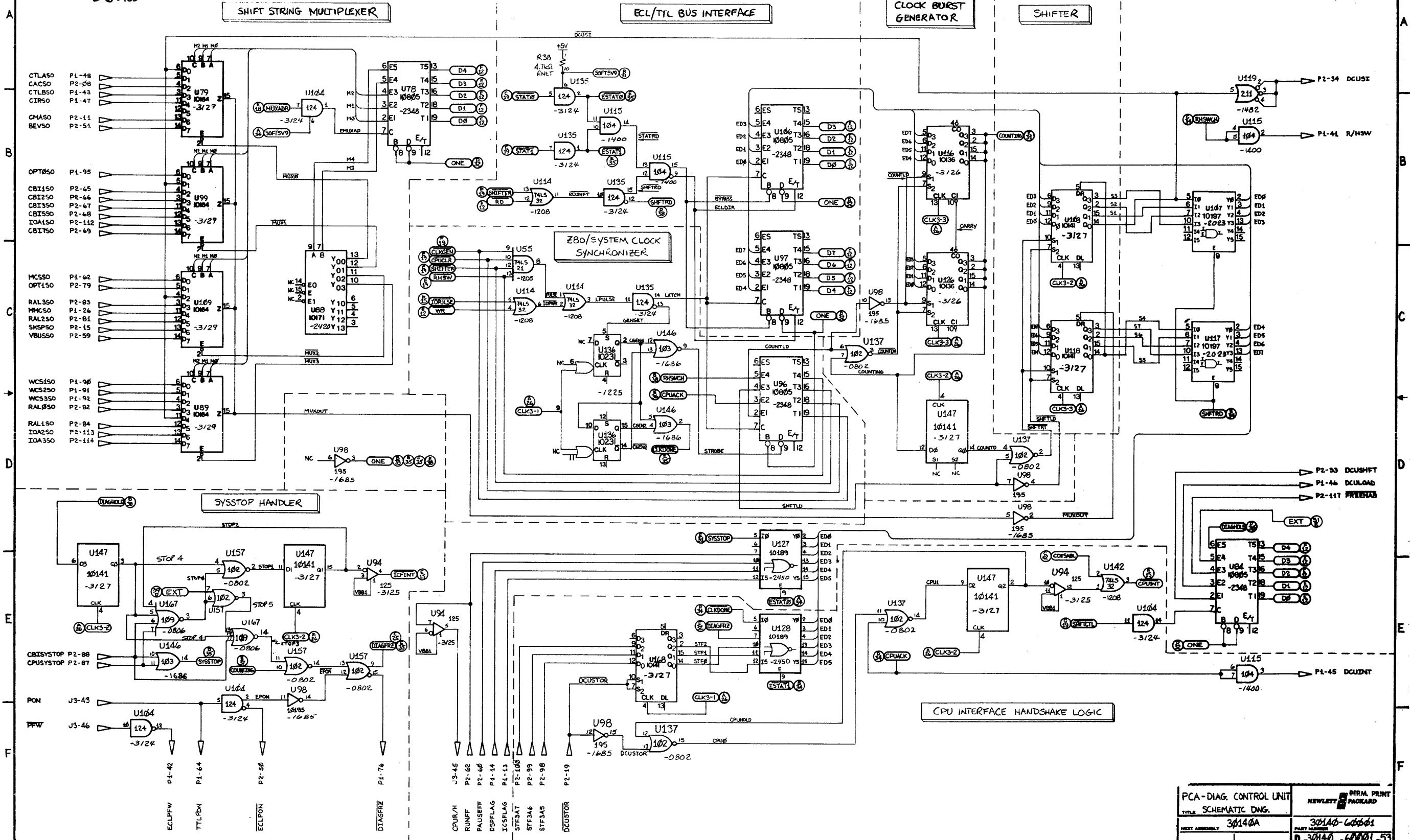
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C	REVISED PER PCO 47-3545	1-27-79
D	REVISED PER PCO 47-3579	3-27-79
E	REVISED PER PCO 47-3565	5-27-79
F	REVISED PER PCO 47-3779	7-27-79



PCA-DIAG. CONTROL UNIT	HEWLETT PERM. PRINT PACKAGE
TITLE	30140A
NEXT ASSEMBLY	30140-60001
FORM	D-30140-60001-52

REF. DWGS: F-4 ASSY  
 D-S MODIF.  
 A-30 DATE CODE INFO.  
 D-51, D-52, D-54 D-55 SCHEM.  
 D-6 M00

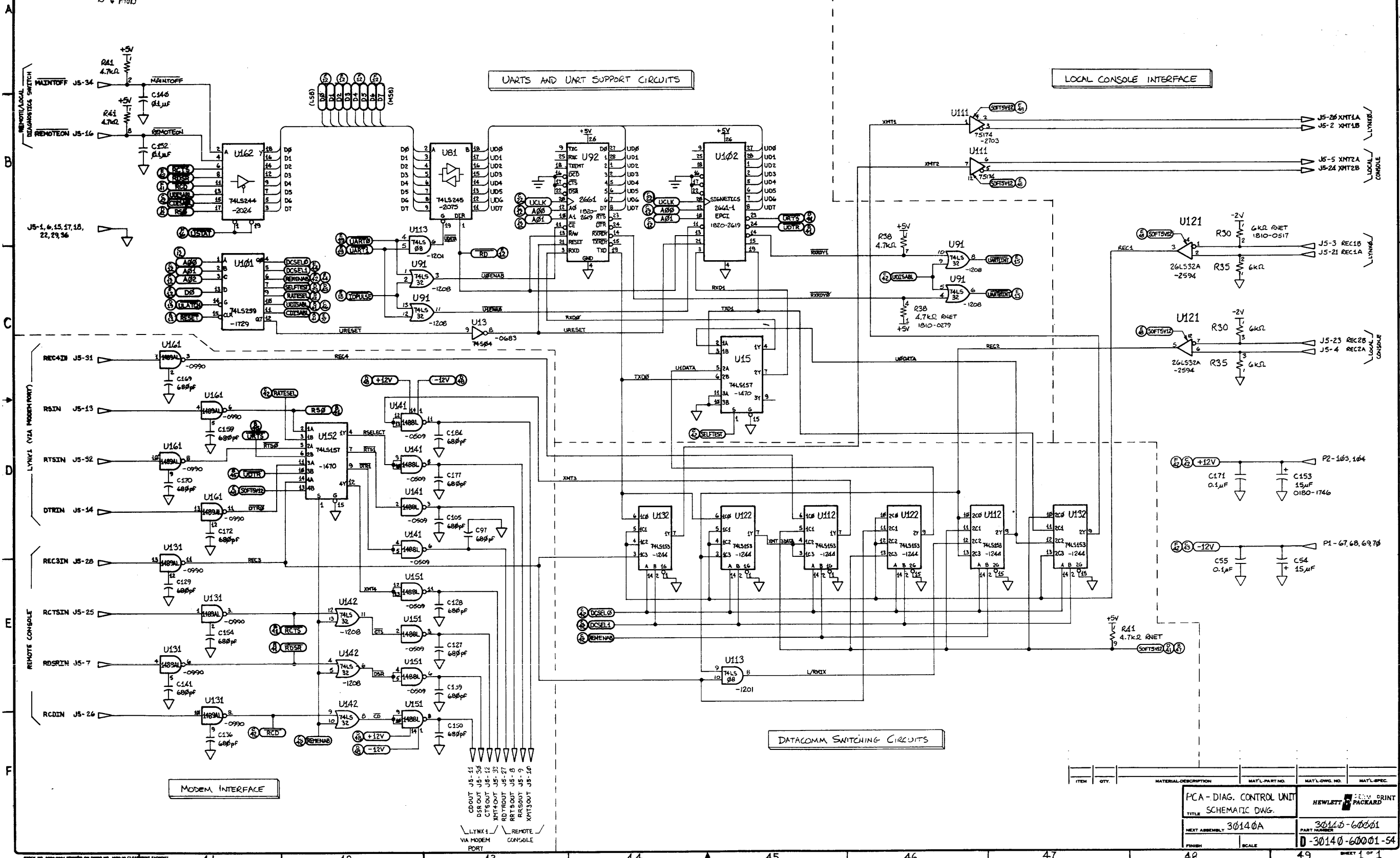
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DESIGN						CHECKED						DATE						APPROVED																					
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C												REVISED & REGRAB PER PCD 47-146																											
D												REVISED PER PCD 47-3590																											
E												REVISED PER PCD 47-3565																											
F												REVISED PER PCD 47-3779																											



PCA-DIAG CONTROL UNIT		HEWLETT PACKARD	
TITLE SCHEMATIC DWG.		PART NUMBER 30140-60001	
NEXT ASSEMBLY 30140A		SCALE	
FORM NO. 30140-60001-53		PAGE 1 OF 1	

REF. DWGS: F-4 ASSY.  
 D-5 MODIF.  
 A-50 DATE CODE INFO.  
 D-51, D-52, D-53, D-55 SCHEM.  
 D-6 M100

REVISIONS											
NO.	DATE	BY	REVISION								
1											
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ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.
PCA-DIAG. CONTROL UNIT					
TITLE SCHEMATIC DWG.					
NEXT ASSEMBLY 30140A			PART NUMBER 30140-60001		
FINISH			SCALE		
D-30140-60001-54			D-30140-60001-54		

**RESISTOR TERMINATIONS**

ALL SIGNALS ARE UNTERMINATED EXCEPT AS SHOWN ON SCHEMATIC AND/OR NOTED HERE:

1. THE FOLLOWING SIGNALS ARE TERMINATED AS SHOWN IN FIGURE ①:

SIGNAL NAME	RESISTOR NETWORK REF. DES. (XX) - PIN NO. (Y)	SIGNAL NAME	RESISTOR NETWORK REF. DES. (XX) - PIN NO. (Y)
BEVSO	R14 7	ESTAT1*	R37 8
BYPASS*	R17 6	GENSET	R39 5
CACSO	R12 4	ICFLAG	R36 4
CARRY	R32 7	IOA1SO	R24 3
CBI2STOP	R39 7	IOA2SO	R18 2
CBI1SO	R19 2	IOA3SO	R19 8
CBI2SO	R19 3	JAY1*	R43 3
CBI3SO	R24 6	LATCH	R17 5
CBI5SO	R19 4	MCSSO	R24 8
CBI7SO	R24 2	MMCSO	R24 9
CGEN1	R39 6	MUXOUT	R18 5
CGEN2	R39 4	MUXOUT*	R28 4
CGEN2*	R39 3	MUX0*	R12 2
CIRSO	R12 7	MUX1*	R19 4
CK1	R31 8	MUX2*	R24 7
CK2	R16 6	MUX3*	R13 2
CK3	R25 8	M0	R24 7
CK4	R31 7	M1	R29 8
CK5	R31 6	M2	R29 7
CK6	R25 7	M3	R13 8
CK7	R31 5	M4	R13 7
CK8	R20 7	ONE	R21 6
CLKDONE*	R37 4	OPT0SO	R19 6
CLK3-1	R44 4	OPT1SO	R25 6
CLK3-2	R23 3	PAUSEFF	R36 7
CLK3-3	R15 3	RAL0SO	R14 2
CMA30	R14 3	RAL1SO	R19 5
COUNTD	R40 5	RAL2SO	R29 4
COUNTDN*	R26 7	RAL3SO	R29 4
COUNTING	R43 3	RHSWCH	R25 4
COUNTLD	R36 3	RUNFF	R15 8
COUNTLD*	R32 8	SCLK	R37 3
CPACK	R40 7	SHFTLD	R36 5
CPUHOLD	R15 8	SHFTLD*	R28 8
CPUSYSTOP	R43 8	SHFTRD	R27 8
CPU0	R40 2	SHFTRD*	R31 4
CPU1	R42 8	SHFTRT*	R28 7
CTLASO	R12 6	SKSPSO	R29 6
CTLB50	R12 5	STATRD*	R31 7
DCUCLK	R16 4	STF0	R37 7
DCUCLK*	R16 5	STF1	R37 6
DCUSIF	R14 4	STF2	R37 5
DCUSTOR	R40 4	STF3A5	R44 5
DCUSTOR*	R44 8	STF3A6	R44 6
DIAGFRZ	R34 7	STF3AT	R44 7
DIAGHOLD	R40 6	STDP0	R42 5
DR14	R15 6	STDP1	R42 2
DSP FLAG	R36 5	STDP2	R15 6
ECLDIR	R22 8	STROBE	R21 7
ED0	R28 5	SYSTOP	R33 5
ED1	R28 6	S1	R22 6
ED2	R23 8	S2	R22 7
ED3	R23 6	S3	R27 7
ED4	R32 5	S4	R27 5
ED5	R32 4	S5	R27 6
ED6	R26 6	S6	R27 4
ED7	R26 5	S7	R33 7
EMUXAD	R13 6	VBUS50	R29 3
EPDN	R23 7	WCS1SO	R14 8
EPDN*	R43 5	WCS2SO	R14 5
ESTAT0*	R36 8	WCS3SO	R14 4
EXT	R42 7	WCSIN	R20 6
		STOP 3	R43 6
		STOP 4	R43 4
		STOP 5	R43 2

2. THE FOLLOWING SIGNALS ARE TERMINATED AS SHOWN IN FIGURE ②:

SIGNAL NAME	RESISTOR NETWORK REF. DES. (XX) - PIN NO. (Y)
MAINTOFF*	R41 2
REMOTEON*	R41 8
ROMDISAB*	R41 6
RKRDY0*	R38 4
RKRDY1*	R38 7
ST0	R38 3
ST1	R41 10
ZWAIT*	R38 5

3. THE FOLLOWING SIGNALS ARE TERMINATED AS SHOWN IN FIGURE ③:

SIGNAL NAME	RESISTOR NETWORK REF. DES. (XX) - PIN NO. (Y)
REC1B	R30 2
REC2B	R30 3

4. THE FOLLOWING SIGNALS ARE TERMINATED AS SHOWN IN FIGURE ④:

SIGNAL NAME	RESISTOR NETWORK REF. DES. (XX) - PIN NO. (Y)
REC1A	R35 2
REC2A	R35 3

5. THE FOLLOWING SIGNALS ARE TERMINATED AS SHOWN IN FIGURE ⑤:

SIGNAL NAME	220Ω RESISTOR NETWORK REF. DES. (XX) - PIN NO. (Y)	330Ω RESISTOR NETWORK REF. DES. (ZZ) - PIN NO. (Y)
CLKEN1	R9 4	R10 4
DBUSENAB*	R7 2	R8 2
PD0	R7 3	R8 3
PD1	R7 4	R8 4
PD2	R7 5	R8 5
PD3	R7 6	R8 6
PD4	R7 7	R8 7
PD5	R7 8	R8 8
PD6	R7 9	R8 9
PD7	R7 10	R8 10
PSCINT*	R9 2	R10 2
TWRINT*	R9 3	R10 3

**POWER SUPPLY BYPASS CAPACITORS**

ALL CAPACITORS ARE 0.01μF (0160-5352)

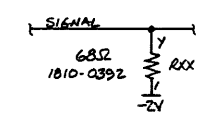
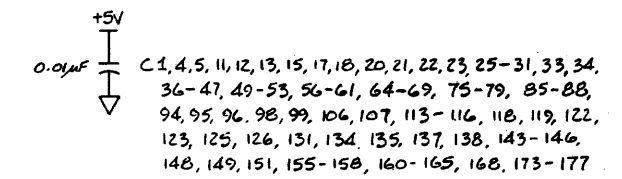
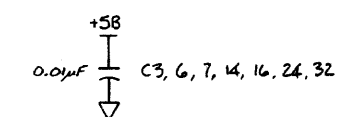
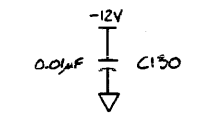
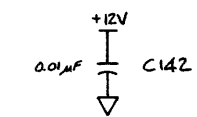
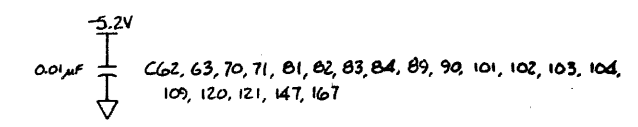
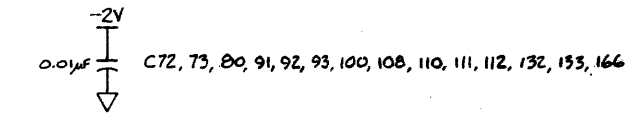


FIGURE ①.

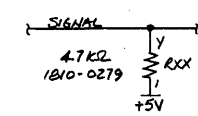


FIGURE ②.

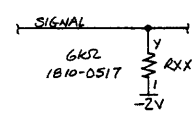


FIGURE ③.

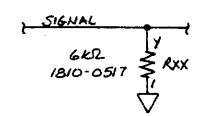


FIGURE ④.

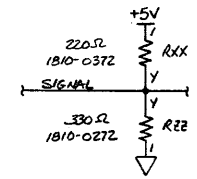


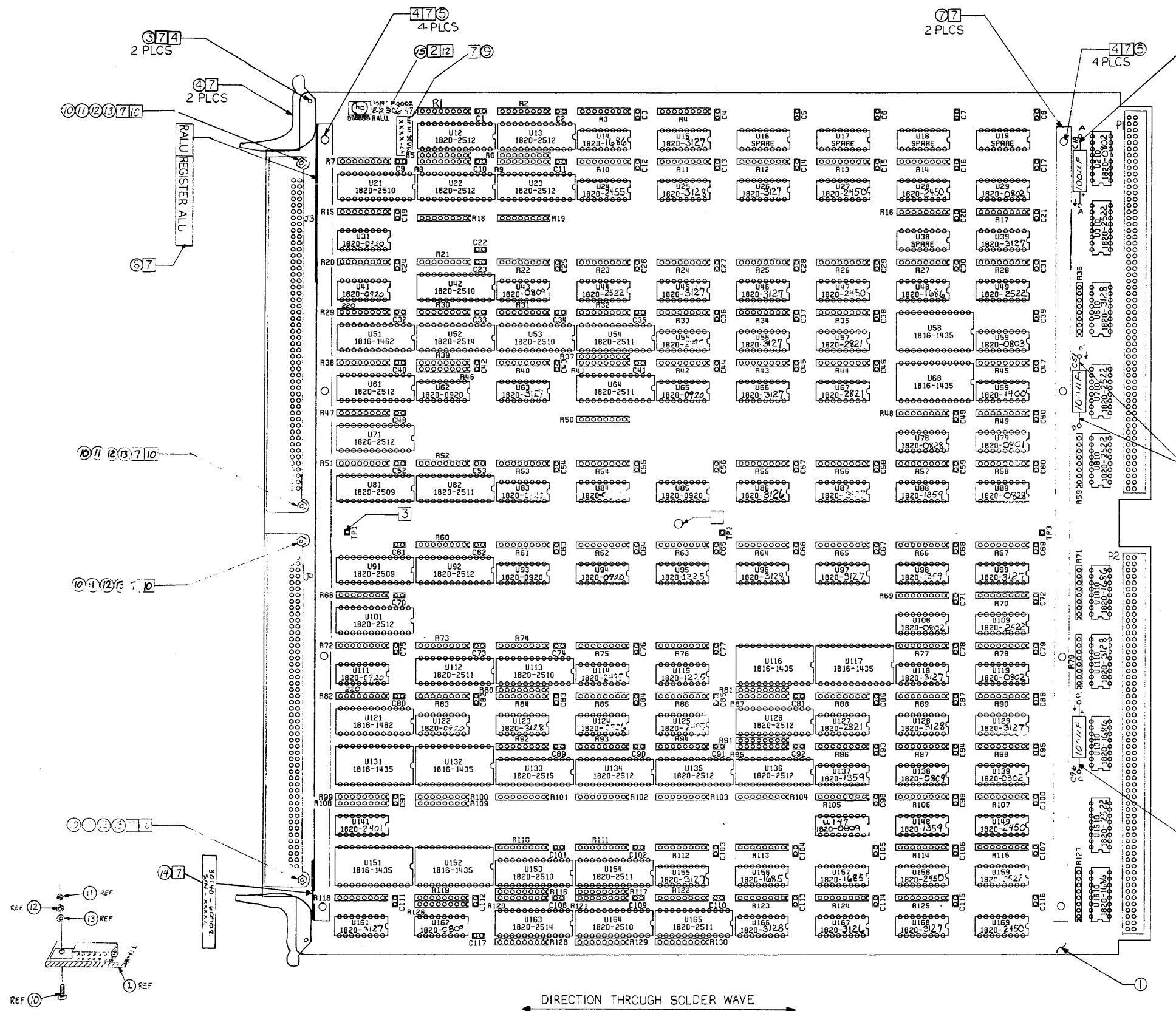
FIGURE ⑤.

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY NO.	MAT'L SPEC.
		PCA - DIAG. CONTROL UNIT			
		TITLE	SCHEMATIC DWG.		
		NEXT ASSEMBLY	30140A		
		DATE	30140-60001		
		SCALE	1-30140-60001-55		



REF DWGS: D-51 THRU D-57 SCHEMATICS  
A-50 DATE CODE INFO.

REVISIONS		F-30140-6002-7	
REV	DESCRIPTION	DATE	BY
D	REVISED PER PCD 4-3179	11/27/88	WJL
E	REVISED PER PCD 4-3179	11/27/88	WJL
F	REVISED PER PCD 4-3179	11/27/88	WJL
G	REVISED PER PCD 4-3179	11/27/88	WJL



NOTES:

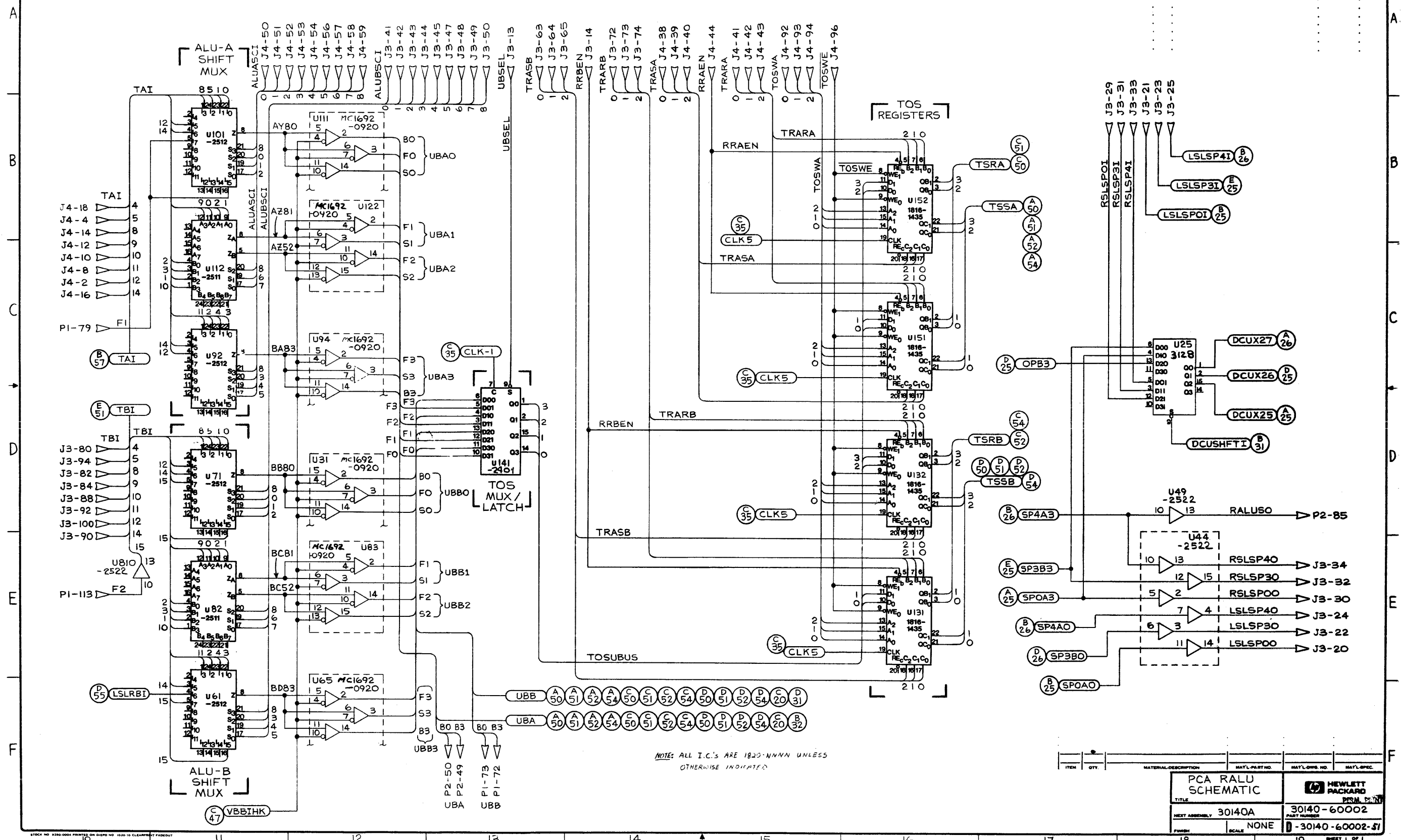
1. UNLESS OTHERWISE SPECIFIED:  
ALL RESISTANCE IN OHMS  
RESISTORS ARE 68 OHMS  
ALL CAPACITANCE IN MICROFARADS  
ALL CAPACITORS ARE .01UF (0160-5352)  
ALL IC'S ARE 1820-
2. INSTALL ITEM 15
3. INSTALL ITEM 2 3 PLACES
4. MASK AS INDICATED PRIOR TO LOADING
5. ALL BOARD LOADING AND HANDLING MUST BE DONE AT AN ELECTROSTATIC DISCHARGE PROTECTED WORK STATION CONTAINING TABLE & FLOOR MATS & GROUNDED WRIST STRAP. TRANSPORT ASSEMBLY IN ELECTROSTATIC BAGS.
6. PRETEST REQUIRED ON THE GUEST SYSTEM.
7. USING AN OHMMETER CHECK FOR A RESISTANCE OF GREATER THAN 25 OHMS BETWEEN THESE POINTS: -B, A-C, B-C, A-B, B-B AND B-B BEFORE AND AFTER WAVE SOLDER. DO NOT USE A CONTINUITY LIGHT ON THIS ASSEMBLY.
8. INSTALL ITEMS 10, 11, 12 PER DETAIL 'A'
9. INSPECTION CRITERIA - HP STD. SECT. 410
10. THIS ASSEMBLY DWG (F-7) IS GOOD FOR BOTH BD. REV D & E BOARDS.

ITEM	QTY	LABEL	DATE CODE	MATERIAL PART NO.	MATERIAL SPEC.
15	1	LABEL	DATE CODE	9320-5320	
14	1	LABEL-SERIAL NUMBER	1820-4-3		
13	4	WASHER - FLAT	2190-0119		
12	4	WASHER - LOCK	2190-0045		
11	4	MUT. 2-56	0610-0001		
10	4	SCREW, 2-56 X .312	0520-0129		
9	1	LBL-WAR DATE CD	7120-6830		
8	1	LABEL-RALU	7121-2112		
7	2	BRACE	5040-6958		
5	8	SCREW 4-40	0624-0077		
4	2	EXTRACTOR	5040-3804		
3	2	PIN	1480-0116		
2	2	TERM-TEST POINT	0360-0294		
1	1	PCB - RALU	30140-80002		

PCA-RALU ASSY DWG		HEWLETT-PACKARD	
30140A		30140-6002	
SCALE		F-30140-6002-7	
SHEET 1		1	

REF DWGS: F-7 ASS.  
A-50 DATE CODE INFO  
D-52 THRU D-57 SCHEMATIC

ENGINEERING RESPONSIBILITY														REVISED		APPROVED		DATE	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	B		C		D	
														REVISED AND REDUCED PER DCU 47-346		RTH		11-22	
														REVISED PER ALO 47-3565		RTH		11-22	
														REVISED PER P.O. 47-3779		DW/RS		4-1-73	

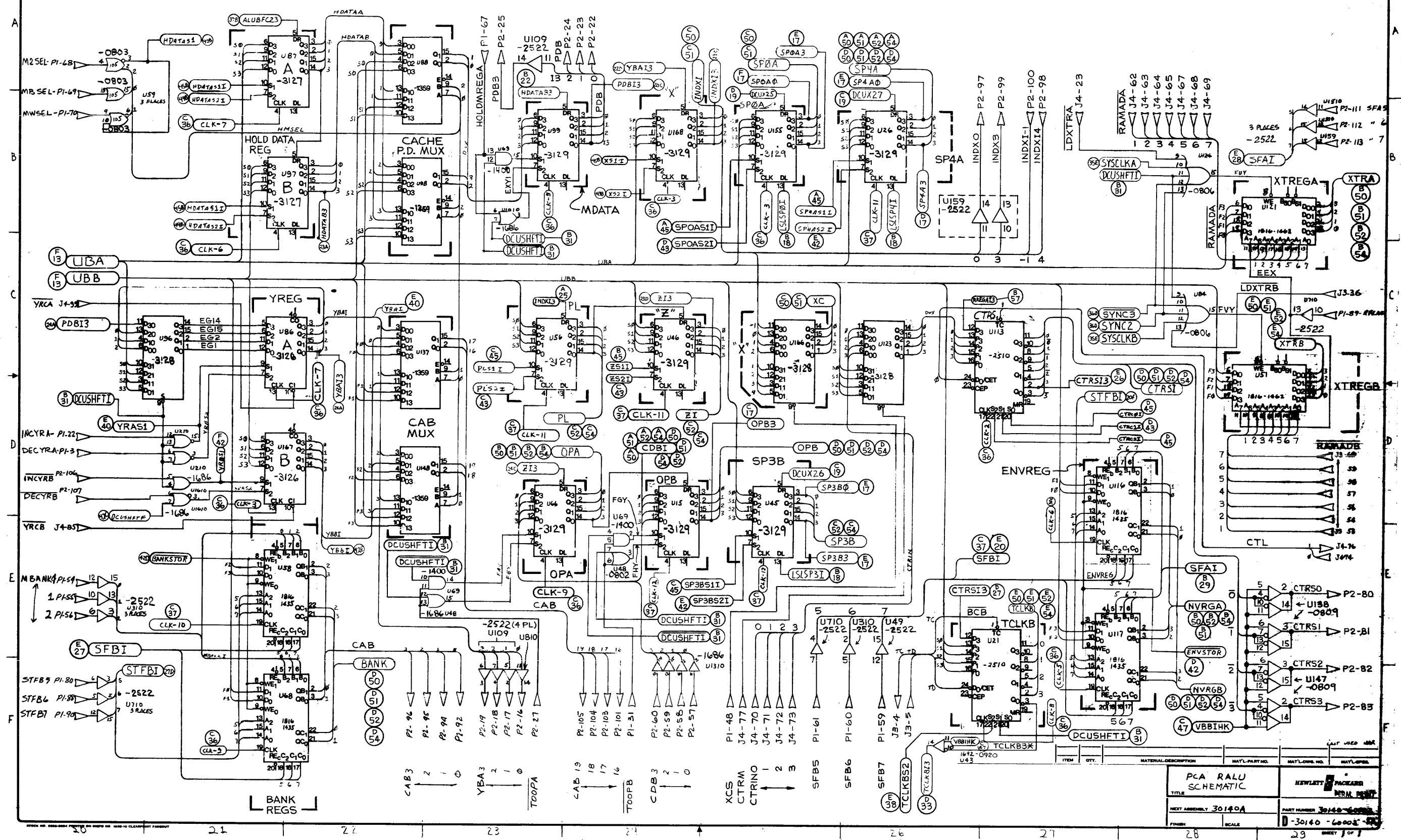


NOTE: ALL I.C.'S ARE 1820-NNNN UNLESS OTHERWISE INDICATED

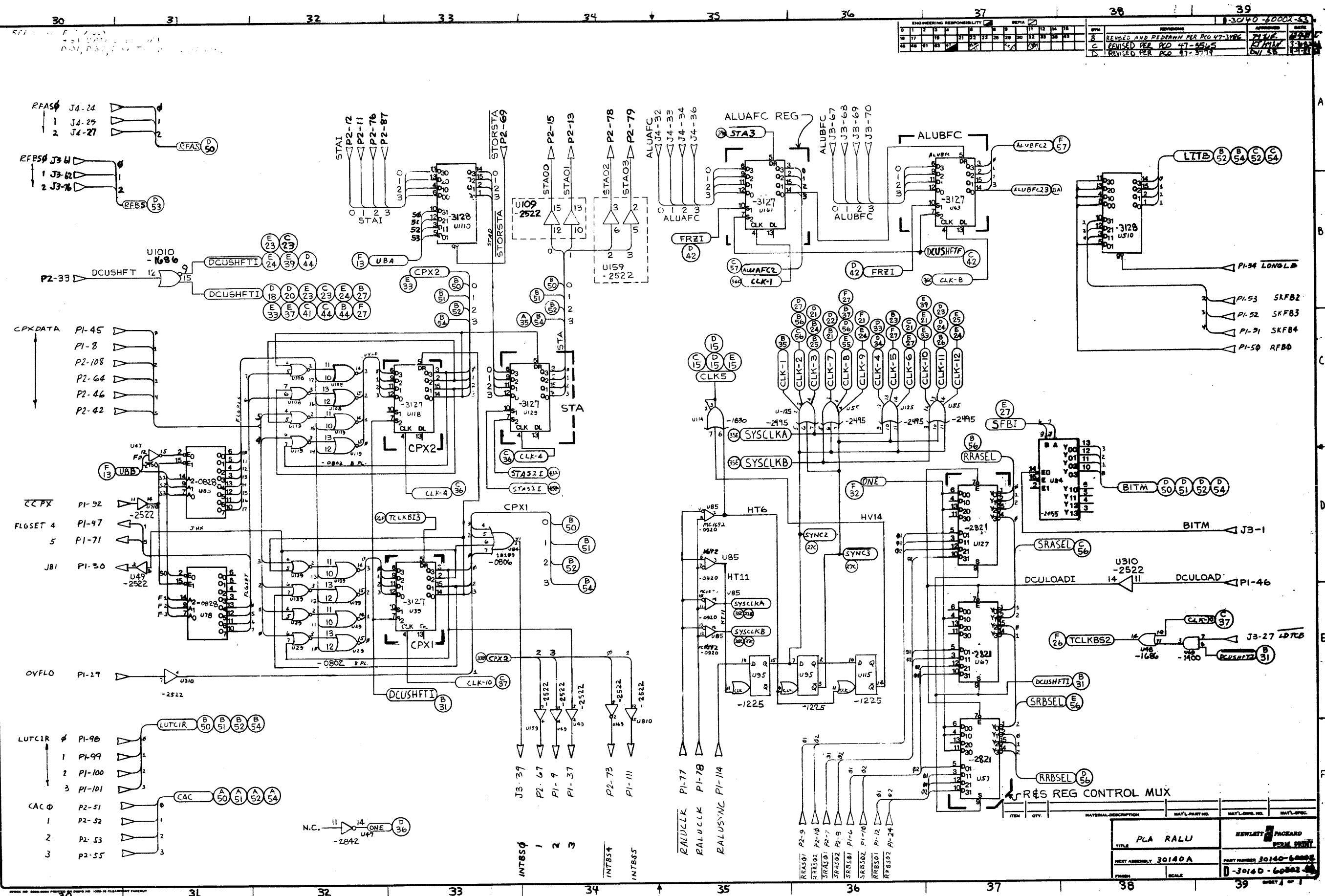
ITEM	QTY	MATERIAL DESCRIPTION	MATL. PART NO.	MATL. QTY. NO.	MATL. SPEC.
PCA RALU SCHEMATIC					
TITLE			HEWLETT PACKARD		
NEXT ASSEMBLY: 30140A			30140-60002		
FINISH: NONE			D-30140-60002-31		

177 D-11 F-7 ASSY  
A-S3 DATE CODE: 11F3  
D-S1, D-S3 THRU D-S7 SCHEMATIC

REV	DESCRIPTION	DATE
0	REVISED AND REDESIGNED PER PWD 49-3746	JUN 77
1	REVISED PER PCO 47-3565	KT 78
2	REVISED PER PCO 47-3565	DW 78
3	REVISED PER PCO 47-3779	DW 78



PCA RALU SCHEMATIC		REVISED PER PACKARD PERM. UNIT
ITEM	QTY.	MATERIAL DESCRIPTION
NEXT ASSEMBLY 30140A		
PART NUMBER 30140A		SCALE
FINISH		SHEET 1 OF 1



ENGINEERING RESPONSIBILITY																REVISIONS															
DESIGNED BY: [Signature]																REVISED BY: [Signature]															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
[Signature]																[Signature]															
DATE: 11/11/71																DATE: 11/11/71															

TITLE		NEWLETT  PACKARD	
PCA RALU		PCBA PRINT	
NEXT ASSEMBLY 30140A		PART NUMBER 30140-6082	
FINISH		SCALE	
30140-6082-4		1	

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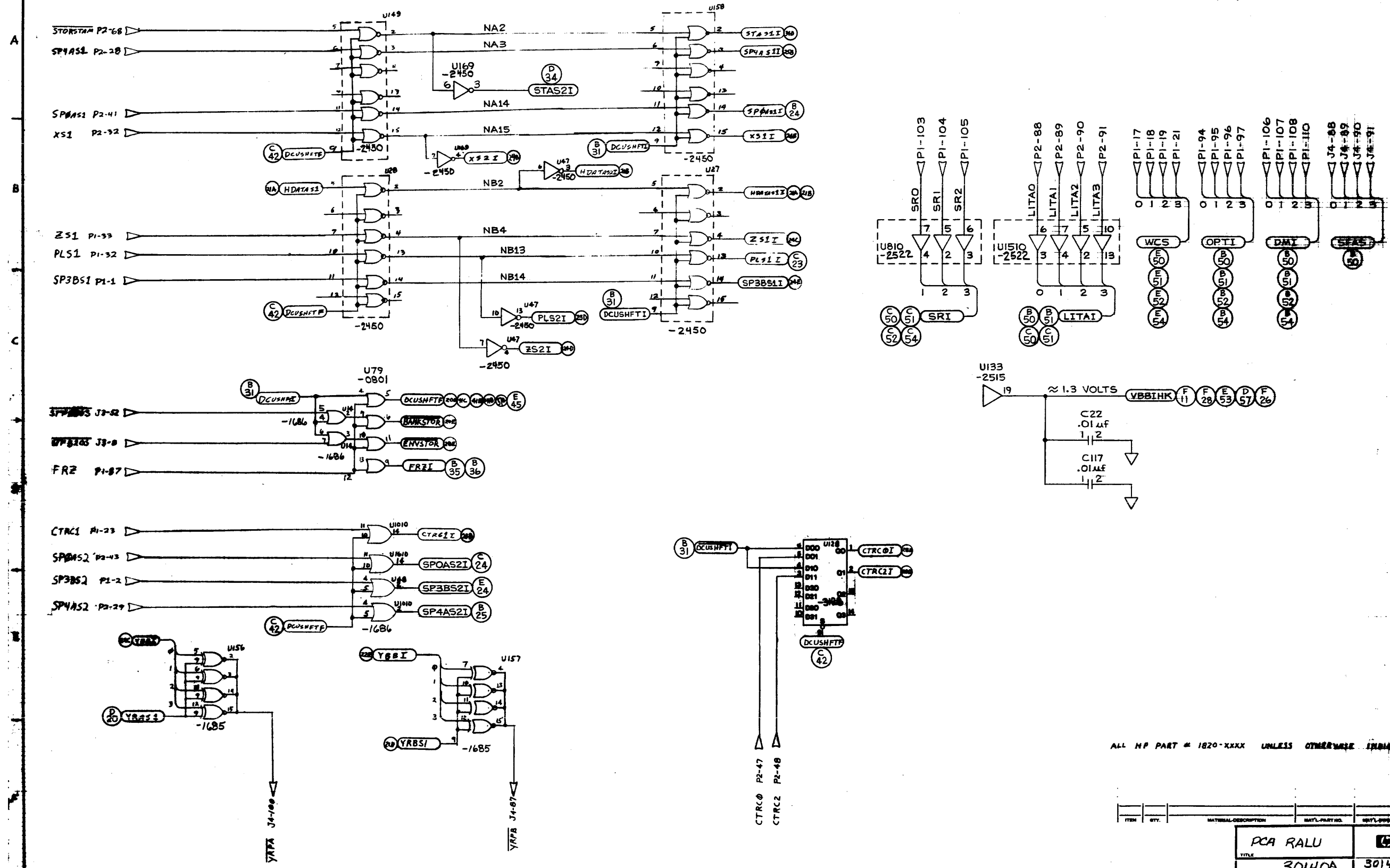
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REF DWGS: F-7 ASSY  
A-S0 DATE CODE INFO  
D-S1, D-S2, D-S3, D-S5, D-S6, D-S7 SCHEMATICS

ENGINEERING RESPONSIBILITY		REVISIONS	
0	1	1	2
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6	7	7	8
8	9	9	10
10	11	11	12
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48	49	49	50

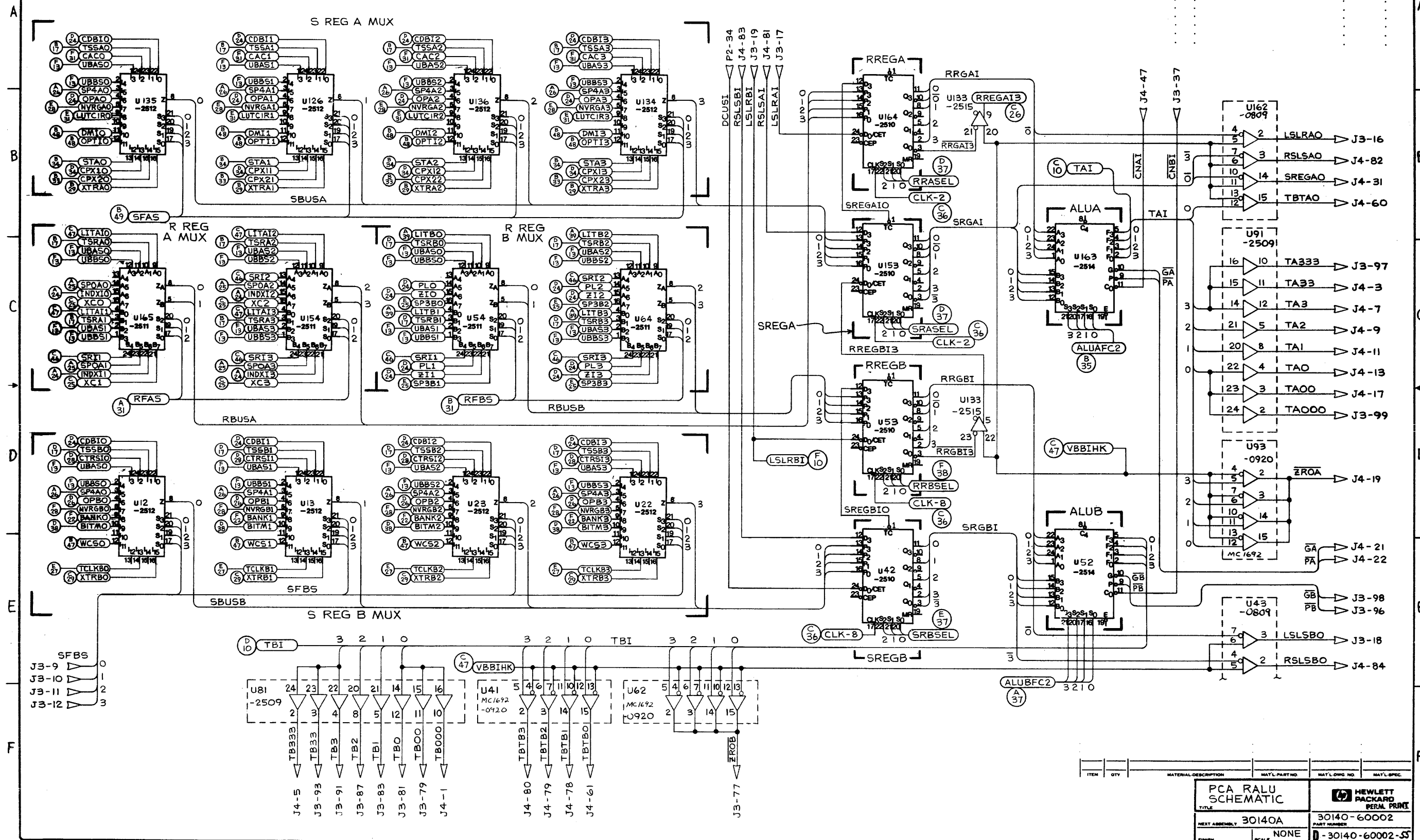


ALL HP PART # 1820-XXXX UNLESS OTHERWISE INDICATED

ITEM	QTY	MATERIAL DESCRIPTION	MATL PART NO.	REV'L. DATE NO.	TEST POINTS
		PCA RALU			
		HEWLETT PACKARD			
		TITLE		30140A	
		NEXT ASSEMBLY		30140-60002	
		FINISH		SCALE	
				D-30140-60002-54	

REF DWGS: F-7 ASSY  
 A-50 DATE CODE INFO  
 D-51 THRU 54, D-56, D-57 SCHEMATICS

ENGINEERING RESPONSIBILITY		REVISIONS		APPROVED		DATE	
BY	CHK	BY	CHK	BY	CHK	BY	CHK
A		AS ISSUED PER P.C.O. 47-3486		MTF		12/27/71	
B		REVISED PER P.C.O. 47-3505		CT/MLV		1-28-72	
C		REVISED PER P.C.O. 47-3771		MM/BR		4-10-72	



ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO	MAT'L DRG NO	MAT'L SPEC
PCA RALU SCHEMATIC					
TITLE			HEWLETT PACKARD PERM. PRINT		
NEXT ASSEMBLY			30140A		
FINISH			NONE		
SCALE			1-30140-60002-55		



REF DMS F:7 ASSY  
A-30 DATE CODE (MPO)  
D-51 THRU D-56 SCHEMATICS

ENGINEERING RESPONSIBILITY										REVISIONS		-30140-60002-57	
APPROVED										DATE		DATE	
A										AS ISSUED PER PEO 47-3486		2/17/68	

GND C1-2, C2-2, C3-2, C4-2, C5-2, C6-2, C7-2, C8-2, C9-2, C10-2, C11-2, C12-2, C13-2, C14-2, C15-2, C16-2, C17-2, C18-1, C19-2, C20-2, C21-2, C22-2, C23-2, C24-2, C25-2, C26-2, C27-2, C28-2, C29-2, C30-2, C31-2, C32-2, C33-2, C34-2, C35-2, C36-2, C37-2, C38-2, C39-2, C40-2, C41-2, C42-2, C43-2, C44-2, C45-2, C46-2, C47-2, C48-2, C49-2, C50-2, C51-1, C52-2, C53-2, C54-2, C55-2, C56-2, C57-2, C58-2, C59-2, C60-2, C61-2, C62-2, C63-2, C64-2, C65-2, C66-2, C67-2, C68-2, C69-2, C70-2, C71-2, C72-2, C73-2, C74-2, C75-2, C76-2, C77-2, C78-2, C79-2, C80-2, C81-2, C82-2, C83-2, C84-2, C85-2, C86-2, C87-2, C88-2, C89-2, C90-2, C91-2, C92-2, C93-2, C94-2, C95-2, C96-1, C97-2, C98-2, C99-2, C100-2, C101-2, C102-2, C103-2, C104-2, C105-2, C106-2, C107-2, C108-2, C109-2, C110-2, C111-2, C112-2, C113-2, C114-2, C115-2, C116-2, C117-2,

P1-004, P1-011, P1-020, P1-027, P1-036, P1-049, P1-058, P1-065, P1-074, P1-081, P1-082, P1-083, P1-084, P1-085, P1-086, P1-093, P1-102, P1-109, P2-001, P2-002, P2-003, P2-004, P2-005, P2-006, P2-014, P2-021, P2-030, P2-045, P2-054, P2-061, P2-070, P2-077, P2-086, P2-093, P2-102, P2-109, P2-118, P3-006, P3-015, P3-026, P3-035, P3-046, P3-055, P3-066, P3-075, P3-086, P3-095, P4-006, P4-015, P4-026, P4-035, P4-046, P4-055, P4-066, P4-075, P4-086, P4-095,

TP1-1, TP2-2, TP3-3,

U12-6, U12-7, U13-6, U13-7, U14-16, U14-17, U15-16, U15-17, U16-16, U16-17, U17-16, U17-17, U18-16, U18-17, U19-16, U19-17, U20-16, U20-17, U21-6, U21-7, U22-6, U22-7, U23-6, U23-7, U24-16, U24-17, U25-16, U25-17, U26-16, U26-17, U27-16, U27-17, U28-16, U28-17, U29-16, U29-17, U30-16, U30-17, U31-16, U31-17, U32-16, U32-17, U33-16, U33-17, U34-16, U34-17, U35-16, U35-17, U36-16, U36-17, U37-16, U37-17, U38-16, U38-17, U39-16, U39-17, U40-16, U40-17, U41-16, U41-17, U42-16, U42-17, U43-16, U43-17, U44-16, U44-17, U45-16, U45-17, U46-16, U46-17, U47-16, U47-17, U48-16, U48-17, U49-16, U49-17, U50-16, U50-17, U51-16, U51-17, U52-16, U52-17, U53-16, U53-17, U54-16, U54-17, U55-16, U55-17, U56-16, U56-17, U57-16, U57-17, U58-16, U58-17, U59-16, U59-17, U60-16, U60-17, U61-16, U61-17, U62-16, U62-17, U63-16, U63-17, U64-16, U64-17, U65-16, U65-17, U66-16, U66-17, U67-16, U67-17, U68-16, U68-17, U69-16, U69-17, U70-16, U70-17, U71-16, U71-17, U72-16, U72-17, U73-16, U73-17, U74-16, U74-17, U75-16, U75-17, U76-16, U76-17, U77-16, U77-17, U78-16, U78-17, U79-16, U79-17, U80-16, U80-17, U81-16, U81-17, U82-16, U82-17, U83-16, U83-17, U84-16, U84-17, U85-16, U85-17, U86-16, U86-17, U87-16, U87-17, U88-16, U88-17, U89-16, U89-17, U90-16, U90-17, U91-16, U91-17, U92-16, U92-17, U93-16, U93-17, U94-16, U94-17, U95-16, U95-17, U96-16, U96-17, U97-16, U97-17, U98-16, U98-17, U99-16, U99-17, U100-16, U100-17, U101-16, U101-17, U102-16, U102-17, U103-16, U103-17, U104-16, U104-17, U105-16, U105-17, U106-16, U106-17, U107-16, U107-17, U108-16, U108-17, U109-16, U109-17, U110-16, U110-17, U111-16, U111-17, U112-16, U112-17, U113-16, U113-17, U114-16, U114-17, U115-16, U115-17, U116-16, U116-17, U117-16, U117-17, U118-16, U118-17, U119-16, U119-17, U120-16, U120-17, U121-16, U121-17, U122-16, U122-17, U123-16, U123-17, U124-16, U124-17, U125-16, U125-17, U126-16, U126-17, U127-16, U127-17, U128-16, U128-17, U129-16, U129-17, U130-16, U130-17,

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P1-115, P1-116, P1-117, P1-118, P1-119, P1-120,

U14-8, U15-8, U16-8, U17-8, U18-8, U19-8, U20-8, U24-8, U25-8, U26-8, U27-8, U28-8, U29-8, U30-8, U31-8, U38-8, U39-8, U41-8, U43-8, U44-8, U45-8, U46-8, U47-8, U48-8, U49-8, U50-8, U51-12, U55-8, U56-8, U57-8, U58-12, U59-8, U62-8, U63-8, U65-8, U66-8, U67-8, U68-12, U69-8, U70-8, U78-8, U79-8, U80-8, U83-8, U84-8, U85-8, U86-8, U87-8, U88-8, U89-8, U93-8, U94-8, U95-8, U96-8, U97-8, U98-8, U99-8, U101-8, U108-8, U109-8, U111-8, U111-8, U114-8, U115-8, U116-12, U117-12, U118-8, U119-8, U121-12, U122-8, U123-8, U124-8, U125-8, U127-8, U128-8, U129-8, U131-8, U131-12, U132-12, U137-8, U138-8, U139-8, U141-8, U147-8, U148-8, U149-8, U151-8, U151-12, U152-12, U155-8, U156-8, U157-8, U158-8, U159-8, U161-8, U161-8, U162-8, U166-8, U167-8, U168-8, U169-8,

VBBINX C22-1, C117-1, U31-7, U41-13, U41-10, U41-8, U31-13, U31-10, U31-4, U43-5, U43-6, U62-13, U62-10, U41-7, U43-13, U43-11, U43-5, U43-6, U65-7, U65-4, U65-4, U65-4, U65-4, U83-13, U83-4, U83-4, U83-7, U93-13, U93-10, U93-4, U93-7, U94-13, U94-10, U94-4, U94-7, U111-13, U111-10, U111-4, U111-7, U122-13, U122-10, U122-4, U122-7, U133-22, U133-20, U133-19, U133-17, U133-15, U133-1, U138-12, U138-11, U138-5, U138-6, U147-5, U147-6, U147-12, U147-11, U162-13, U162-11, U162-5, U162-6,

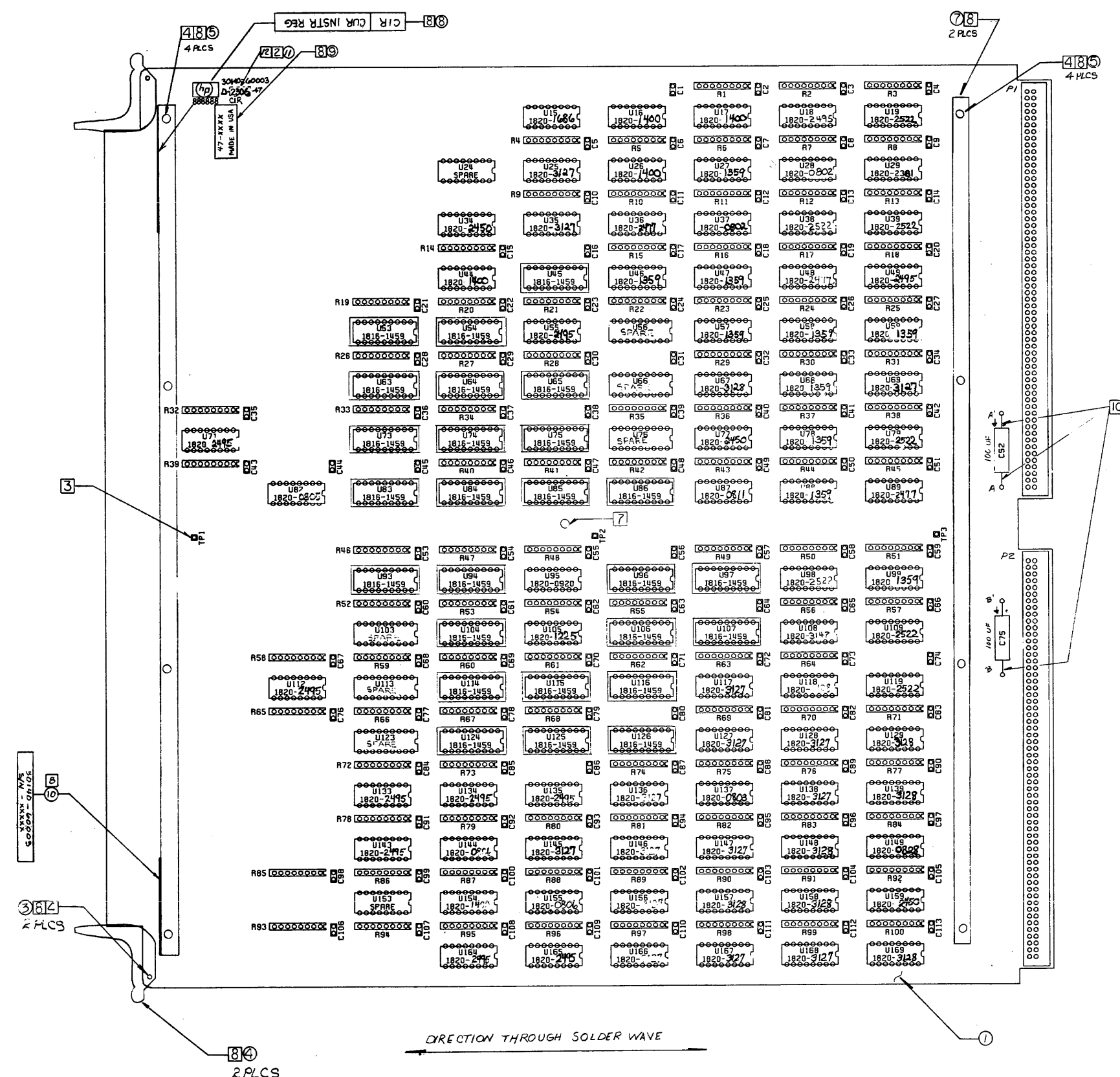
- NOTES:
- 1 SIGNAL NAME REFERS TO SIGNALS LINE BEING TERMINATED BY THE RESPECTIVE RESISTOR. (SEE NOTE 2)
  - 2 THE PREFIX NUMBER LISTED UNDER "PACK" REPRESENTS THE REFERENCE DESIGNATOR ASSOCIATED WITH THE RESISTOR PREFIX TERMINATING THE RESPECTIVE SIGNAL NAME. THE NUMBER LISTED UNDER "PIN" REPRESENTS THE TERMINATING PIN FOR THAT SIGNAL.
  - 3 THIS TABLE SHOWS THE INTEGRATED CIRCUITS COMPRISING EACH SEGMENT OF THE SHIFT STRING. THE NUMBERS FOLLOWING THE LOOK NO., SUCH AS "LOOK 0-1", REPRESENTS THE BIT NUMBERS OF THE INTEGRATED CIRCUIT THAT ARE PRESENT IN THAT SEGMENT. IF NO BIT NUMBERS ARE GIVEN, SUCH AS "LOOK", THEN ALL OF THE OUTPUT BITS, 0-3, ARE PRESENT IN THE SHIFT STRING SEGMENT. THE NUMBERS THAT ARE IN PARENTHESES, SUCH AS "(1)", GIVE THE NUMBER OF BITS THAT ARE PRESENT IN THAT SEGMENT OF THE SHIFT STRING. THE SEGMENTS WITH NO SUCH NUMBERS HAVE THE NUMBER OF BITS THAT WOULD BE EXPECTED. THE "H" OR "B" SPECIFIES IF THE SEGMENT IS REPRESENTED IN A HEX OR A BINARY NUMBER.
  - 4 UNLESS OTHERWISE NOTED, ALL INTEGRATED CIRCUITS IN THE SHIFT STRING ARE 1620-0623. BIT 0-PIN 3, BIT 1-PIN 2, BIT 2-PIN 15, BIT 3-PIN 14.

ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO	MAT'L ORG NO	MAT'L SPEC
		PCA RALLU SCHEMATIC			
		NEXT ASSEMBLY 30140A	PART NUMBER 30140-60002		
		FORM	SCALE		
		-30140-60002-57			SHEET 1 OF 1



REF DWGS: D-51, THRU D-54 SCHEMATICS  
A-50 DATE CODE INFO.

REV	DESCRIPTION	DATE	BY	CHKD
1	REVISED PER RQ 47-3882	10/27/72	WJG	WJG
2	REVISED PER RQ 47-3882	11/16/72	WJG	WJG
3	REVISED PER RQ 47-3882	12/11/72	WJG	WJG
4	ADD NOTE 12, B-1, B-2, C-2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50	1/16/73	WJG	WJG
5	ADD NOTE 12, B-1, B-2, C-2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50	1/16/73	WJG	WJG



- NOTES:
- UNLESS OTHERWISE SPECIFIED:  
ALL RESISTANCE IN OHMS  
RESISTORS ARE 68 OHMS  
ALL CAPACITANCE IN MICROFARADS  
ALL CAPACITORS ARE .01UF(0160-5352)  
ALL IC'S ARE 1820-
  - INSTALL ITEM ①
  - INSTALL ITEM ② 3 PLACES.
  - MASK AS INDICATED PRIOR TO LOADING
  - ALL BOARD LOADING & HANDLING MUST BE DONE AT AN ELECTROSTATIC DISCHARGE PROTECTED WORK STATION CONTAINING TABLE & FLOOR MATS & GROUNDED WRIST STRAP. TRANSPORT ASSEMBLY IN ELECTRO-STATIC BAGS.
  - LOAD SOCKETS & IC'S IN LOADING
  - USE SUPPORT FIXTURE DURING WAVE SOLDER
  - LOAD ITEMS ③ thru ⑤ and ⑦ thru ⑩ IN TOUCH-UP
  - PRETEST REQUIRED ON THE GUEST SYSTEM.
  - USING AN OHMMETER CHECK FOR A RESISTANCE OF GREATER THAN 25 OHMS BETWEEN THESE POINTS; A-A', B-B', A-B, BEFORE AND AFTER WAVE SOLDER.
  - INSPECTION CRITERIA - HP STD SECT 410
  - THIS ASSEMBLY DWG, F-7, CAN BE USED FOR 30140B, 30140A, 30140-60003-RDS

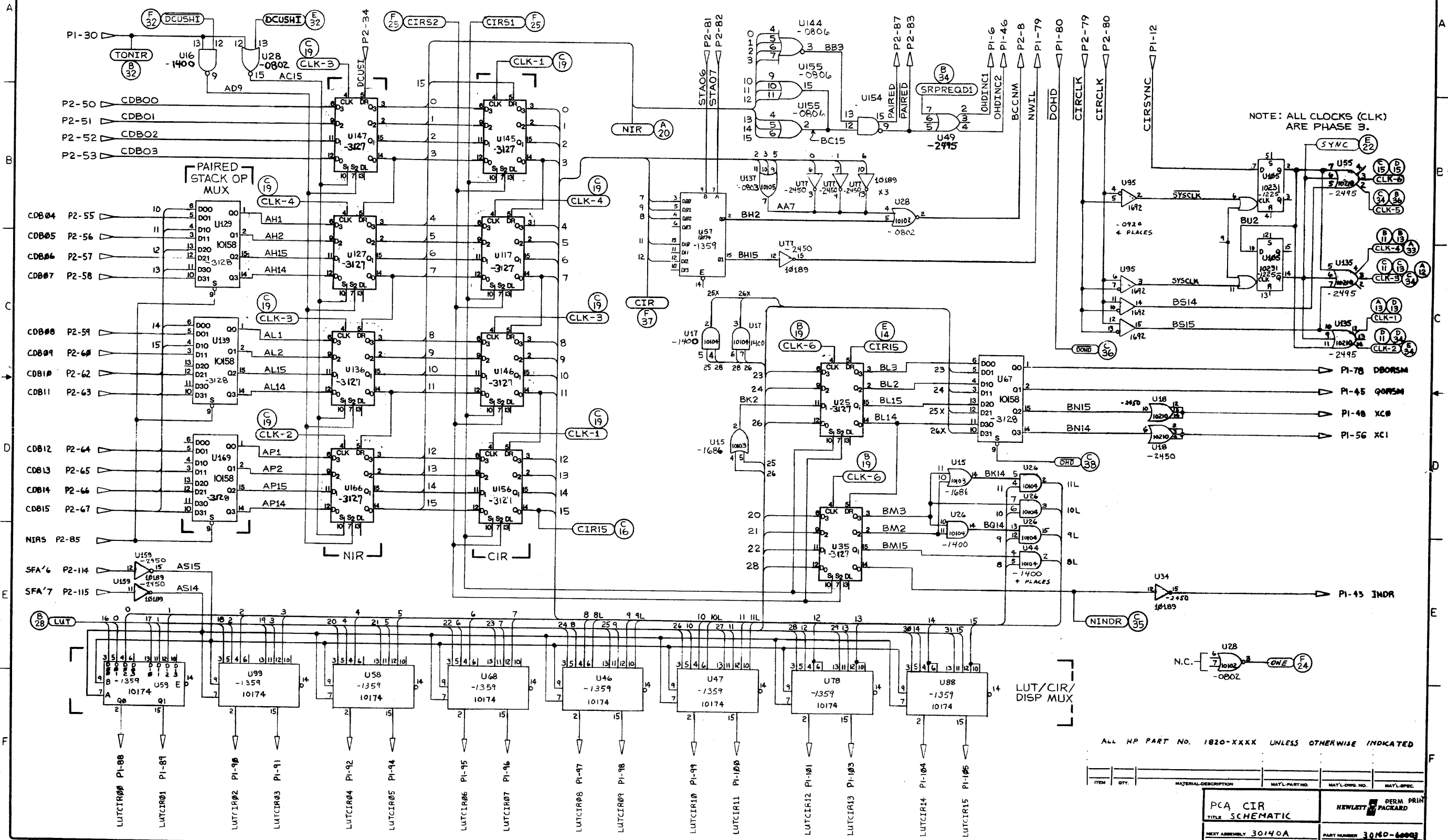
ITEM	QTY	MATERIAL DESCRIPTION	MATL. PART NO.	MATL. DWG. NO.	MATL. SPEC.
11	1	LABEL - DATE CODE	9820-5320		
10	1	LABEL - SERIAL NUMBER	0510-4983		
9	1	LAB - MARK DATE CD	7120-6830		
8	1	LABEL	7121-8116		
7	2	BRACE	5040-2028		
6	2	SCREW 4-40	0624-0077		
5	2	EXTRACTOR	5023-1801		
4	2	EXTRACTOR	4820-2110		
3	2	TERM-TEST POINT	0360-0234		
2	1	PCB - CIR	30140-60003		

PCA-CIR ASSY. DWG.		HEWLETT-PACKARD	
TITLE	30140B 30140A	30140-60003	
DATE	1/5/73		
SCALE	1.5/1	F-30140-60003-7	

REF DWGS: F-4 ASSY  
 D-5 MOD A  
 D-6 MOD B  
 A-50 DATE CODE INP  
 D-52 THRU D-54 SCHEMATIC

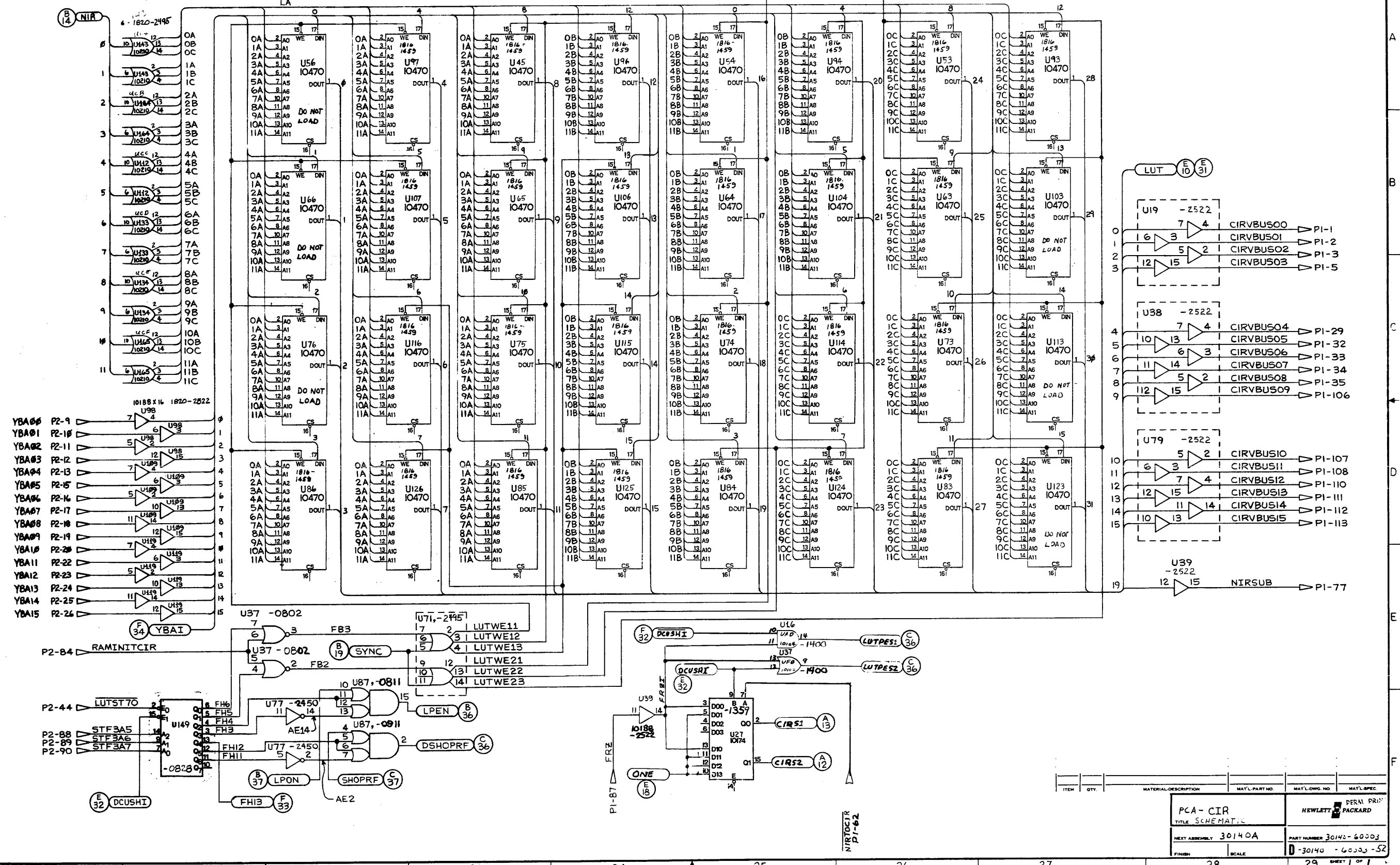
REVISIONS														
REV	DATE	BY	REVISIONS	APPROVED	DATE									
B	12-16-77		REVISED AND REDRAWN PER PCD 47-3509	JPL/F	12-16-77									
C	4-19-78		REVISED PER PCD 47-3565	ZT/ML	4-19-78									
D	4-19-78		REVISED PER PCD 47-3779	GW/RS	4-19-78									



NOTE: ALL CLOCKS (CLK) ARE PHASE 3.

ALL HP PART NO. 1820-XXXX UNLESS OTHERWISE INDICATED

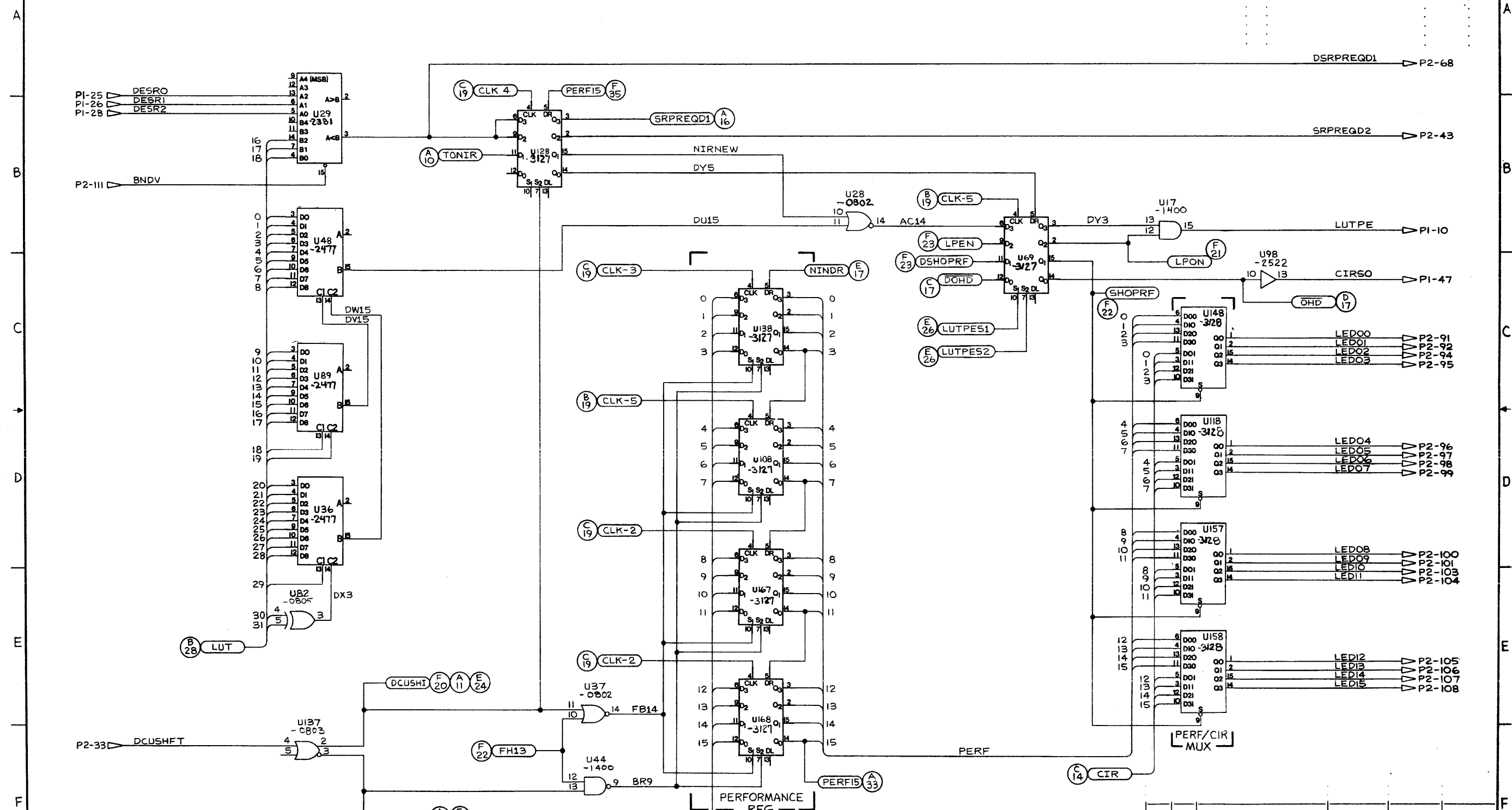
ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L LOW NO.	MAT'L SPEC.
PCA CIR					
TITLE SCHEMATIC				HEWLETT-PACKARD	
NEXT ASSEMBLY 30140A			PART NUMBER 30140-6003		
FINISH			SCALE		
D-30140-6003-51			SHEET 1 OF 5		



ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L OWNS NO.	MAT'L SPEC.
PCA - CIR					
TITLE SCHEMATIC					
NEXT ASSEMBLY 30140A			PART NUMBER 30140-60003		
FINISH			SCALE		
D-30140-60003-52			SHEET 1 of 1		

REF DWG F-4 ASSY  
D-5 MOD  
D-6 MOD  
A-50 DATE CODE INFO  
D-51, D-52, D-54 SCHEMATIC

ENGINEERING RESPONSIBILITY															REVISIONS														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	SYM	REV	DATE	APPROVED	DATE										
															A	AS ISSUED PER PCO 47-3509	12-4-83	MTJ	12-4-83										
															B	REVISED PER PCO 47-3565	4-7-83	KT/MLK	4-7-83										
															C	REVISED PER PCO 47-3779	7-4-83	DW/RZ	7-4-83										



ITEM	QTY	MATERIAL DESCRIPTION	MATL. PART NO.	MATL. DWG. NO.	MATL. SPEC.
PCA-CIR SCHEMATIC					
TITLE			PERM. PRINT PACKARD		
NEXT ASSEMBLY			PART NUMBER		
FINISH			SCALE NONE		
30140A			30140-60003		
D-30140-60003-53			SHEET 1 OF 1		

STOCK NO. 3390-0000 PRINTED ON CROPS NO. 1010-10 CLEAN ROOM FABRIQUT

REF DWG F-4 ASSY  
D-5 MODIF  
D-6 MODIF  
A-50 DATE CODE INFO  
D-51 THRU D-53, SCHEMATIC

ENGINEERING RESPONSIBILITY															REVISIONS																																																																																									
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SIGNAL	PACK PIN	SIGNAL	PACK PIN	SIGNAL	PACK PIN	SIGNAL	PACK PIN	SIGNAL	PACK PIN	SIGNAL	PACK PIN
AA7	R12	CDB11	R77	FB11	R36	LED08	R92	LUT9	R45	YBAI13	R59
AA7	R31	CDB12	R100	FB12	R49	LED09	R93	LUT9	R45	YBAI14	R66
AA7	R97	CDB13	R100	FB13	R20	LED10	R94	LUT9	R45	YBAI15	R73
AD9	R97	CDB14	R100	FB3	R43	LED11	R93	LUT10	R45	YBAI16	R84
AE14	R43	CDB15	R100	FB4	R49	LED12	R94	LUT10	R45	YBAI17	R47
AE2	R43	CDB15	R100	FB5	R11	LED13	R94	LUT10	R45	YBAI18	R53
AH1	R69	CIRCLK*	R48	FB6	R11	LED14	R94	LUT10	R45	YBAI19	R60
AH14	R75	CIRSTYC	R54	FBZ	R5	LED15	R100	LUT10	R45	YBAI20	R68
AH2	R75	CIRSI	R69	LA0A	R42	LA0B	R21	LUT10	R45	YBAI21	R73
AL1	R74	CIRNO	R25	LA0C	R19	LA0D	R19	LUT10	R45	YBAI22	R73
AL14	R81	CIR1	R31	LA1A	R40	LUT10	R45	LUT10	R45	YBAI23	R73
AL15	R81	CIR10	R5	LA1B	R20	LUT10	R45	LUT10	R45	YBAI24	R73
AL2	R74	CIR10L	R16	LA1C	R19	LUT10	R45	LUT10	R45	YBAI25	R73
AP14	R97	CIR11	R5	LA10A	R48	LUT10	R45	LUT10	R45	YBAI26	R73
AP15	R97	CIR11L	R16	LA10B	R27	LUT10	R45	LUT10	R45	YBAI27	R73
AP2	R97	CIR13	R44	LA10C	R26	LUT10	R45	LUT10	R45	YBAI28	R73
AS14	R15	CIR14	R43	LA11A	R8	LUT10	R45	LUT10	R45	YBAI29	R73
AS15	R22	CIR15	R4	LA11B	R20	LUT10	R45	LUT10	R45	YBAI30	R73
BH2	R87	CIR2	R51	LA11C	R26	LUT10	R45	LUT10	R45	YBAI31	R73
BC15	R95	CIR3	R57	LA2A	R41	LUT10	R45	LUT10	R45	YBAI32	R73
BH15	R43	CIR4	R24	LA2B	R27	LUT10	R45	LUT10	R45	YBAI33	R73
BH2	R7	CIR5	R30	LA2C	R26	LUT10	R45	LUT10	R45	YBAI34	R73
BK14	R5	CIR6	R43	LA2A	R48	LUT10	R45	LUT10	R45	YBAI35	R73
BK2	R9	CIR7	R35	LA2B	R27	LUT10	R45	LUT10	R45	YBAI36	R73
BL14	R36	CIR8	R14	LA2C	R19	LUT10	R45	LUT10	R45	YBAI37	R73
BL15	R36	CIR8L	R22	LA2A	R20	LUT10	R45	LUT10	R45	YBAI38	R73
BL2	R29	CIR9	R10	LA2B	R26	LUT10	R45	LUT10	R45	YBAI39	R73
BL3	R29	CIR9L	R22	LA2C	R41	LUT10	R45	LUT10	R45	YBAI40	R73
BM15	R14	CLK-1	R89	LA2A	R19	LUT10	R45	LUT10	R45	YBAI41	R73
BM2	R4	CLK-2	R99	LA2B	R19	LUT10	R45	LUT10	R45	YBAI42	R73
BM3	R4	CLK-3	R76	LA2C	R41	LUT10	R45	LUT10	R45	YBAI43	R73
BMVD	R13	CLK-4	R76	LA2A	R27	LUT10	R45	LUT10	R45	YBAI44	R73
BM14	R2	CLK-5	R56	LA2B	R19	LUT10	R45	LUT10	R45	YBAI45	R73
BM15	R7	CLK-6	R4	LA2C	R41	LUT10	R45	LUT10	R45	YBAI46	R73
BQ14	R10	DCUSHZ	R16	LAT7	R41	LUT10	R45	LUT10	R45	YBAI47	R73
BS9	R98	DCUSHZ*	R20	LAT8	R26	LUT10	R45	LUT10	R45	YBAI48	R73
BS14	R21	DESRO	R13	LAT9	R41	LUT10	R45	LUT10	R45	YBAI49	R73
BS15	R80	DESR	R8	LAT9	R27	LUT10	R45	LUT10	R45	YBAI50	R73
BZ2	R28	DESR2	R13	LAT9	R27	LUT10	R45	LUT10	R45	YBAI51	R73
CDB00	R82	DSHOPRF	R38	LAT9	R41	LUT10	R45	LUT10	R45	YBAI52	R73
CDB01	R90	DSRPREQD1	R76	LA9B	R27	LUT10	R45	LUT10	R45	YBAI53	R73
CDB02	R82	DU15	R12	LA9C	R26	LUT10	R45	LUT10	R45	YBAI54	R73
CDB03	R82	DU15	R24	LEDO0	R92	LUT10	R45	LUT10	R45	YBAI55	R73
CDB04	R71	DM15	R24	LEDO1	R85	LUT10	R45	LUT10	R45	YBAI56	R73
CDB05	R71	DX3	R15	LEDO2	R92	LUT10	R45	LUT10	R45	YBAI57	R73
CDB06	R71	DY3	R6	LEDO3	R85	LUT10	R45	LUT10	R45	YBAI58	R73
CDB07	R77	DY5	R31	LEDO4	R92	LUT10	R45	LUT10	R45	YBAI59	R73
CDB08	R77	FB14	R98	LEDO5	R85	LUT10	R45	LUT10	R45	YBAI60	R73
CDB09	R77	FB2	R39	LEDO6	R85	LUT10	R45	LUT10	R45	YBAI61	R73
CDB10	R77	FB3	R32	LEDO7	R92	LUT10	R45	LUT10	R45	YBAI62	R73

-2V	C1-2, C2-2, C3-2, C4-2, C5-2, C6-2, C7-2, C8-2, C9-2, C10-2, C11-2, C12-2, C13-2, C14-2, C15-2, C16-2, C17-2, C18-2, C19-2, C20-2, C21-2, C22-2, C23-2, C24-2, C25-2, C26-2, C27-2, C28-2, C29-2, C30-2, C31-2, C32-2, C33-2, C34-2, C35-2, C36-2, C37-2, C38-2, C39-2, C40-2, C41-2, C42-2, C43-2, C44-2, C45-2, C46-2, C47-2, C48-2, C49-2, C50-2, C51-2, C52-2, C53-2, C54-2, C55-2, C56-2, C57-2, C58-2, C59-2, C60-2, C61-2, C62-2, C63-2, C64-2, C65-2, C66-2, C67-2, C68-2, C69-2, C70-2, C71-2, C72-2, C73-2, C74-2, C75-2, C76-2, C77-2, C78-2, C79-2, C80-2, C81-2, C82-2, C83-2, C84-2, C85-2, C86-2, C87-2, C88-2, C89-2, C90-2, C91-2, C92-2, C93-2, C94-2, C95-2, C96-2, C97-2, C98-2, C99-2, C100-2, C101-2, C102-2, C103-2, C104-2, C105-2, C106-2, C107-2, C108-2, C109-2, C110-2, C111-2, C112-2, C113-2,	P2-035, P2-036, P2-037, P2-038, P2-039, P2-040,
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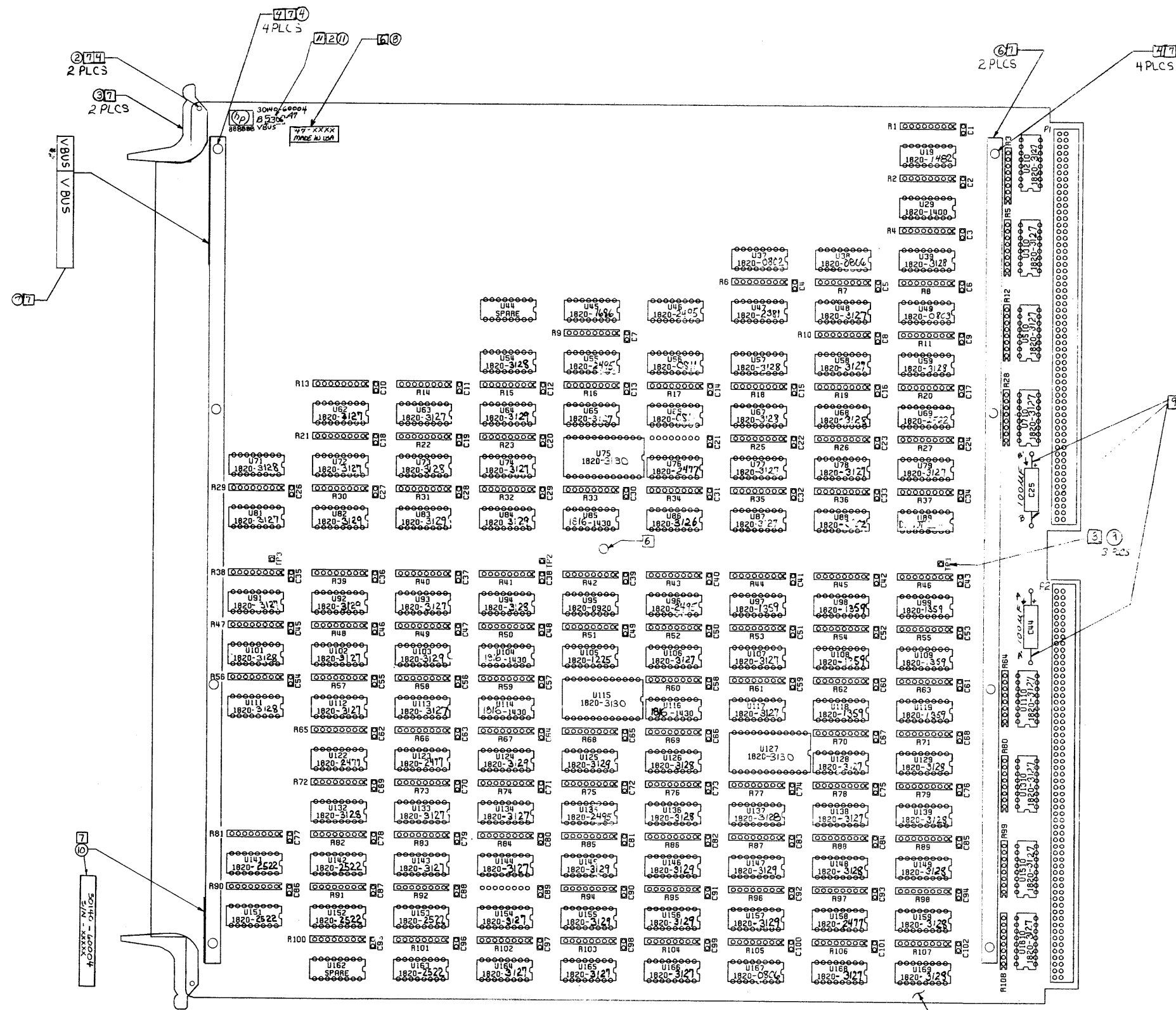
  

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- NOTES:
- SIGNAL NAME REFERS TO SIGNALS LINE BEING TERMINATED BY THE RESPECTIVE RESISTOR. (SEE NOTE 2)
  - THE PACK NUMBER LISTED UNDER "PACK" REPRESENTS THE REFERENCE DESIGNATOR ASSOCIATED WITH THE RESISTOR PACK TERMINATING THE RESPECTIVE SIGNAL NAME. THE NUMBER LISTED UNDER "PIN" REPRESENTS THE TERMINATING PIN FOR THAT SIGNAL.
  - THIS TABLE SHOWS THE INTEGRATED CIRCUITS COMPRISING EACH SEGMENT OF THE SHIFT STRING. THE NUMBERS FOLLOWING THE LOOK NO., SUCH AS "LOOK 0-1", REPRESENTS THE BIT NUMBERS OF THE INTEGRATED CIRCUIT THAT ARE PRESENT IN THAT SEGMENT. IF NO BIT NUMBERS ARE GIVEN, SUCH AS "LOOK", THEN ALL OF THE OUTPUT BITS, 0-3, ARE PRESENT IN THE SHIFT STRING SEGMENT. THE NUMBERS THAT ARE IN PARENTHESES, SUCH AS "(6)", GIVE THE NUMBER OF BITS THAT ARE PRESENT IN THAT SEGMENT OF THE SHIFT STRING. THE SEGMENTS WITH NO SUCH NUMBERS HAVE THE NUMBER OF BITS THAT WOULD BE EXPECTED. THE "H" OR "B" SPECIFIES IF THE SEGMENT IS REPRESENTED IN A HEX OR A BINARY NUMBER.
  - UNLESS OTHERWISE NOTED, ALL INTEGRATED CIRCUITS IN THE SHIFT STRING ARE 1820-0025. BIT 0=PIN 3, BIT 1=PIN 2, BIT 2=PIN 15, BIT 3=PIN 14.

ITEM	QTY	MATERIAL DESCRIPTION	MATL. PART NO.	MATL. DWG NO.	MATL. SPEC.
PCA-CIR SCHEMATIC					
TITLE			HEWLETT PACKARD		
NEXT ASSEMBLY 30140A			PART NUMBER 30140-60003		
FINISH			SCALE		
			D 30140-60003-54		

REVISIONS		DATE	
1	REVISED	11/14/68	3/10
2	REVISED	11/14/68	3/10
3	REVISED	11/14/68	3/10
4	ADD NOTE 11, DATE CODE WAS 4-2306-471 PER PCB 47-5853	04/12	1-23-69



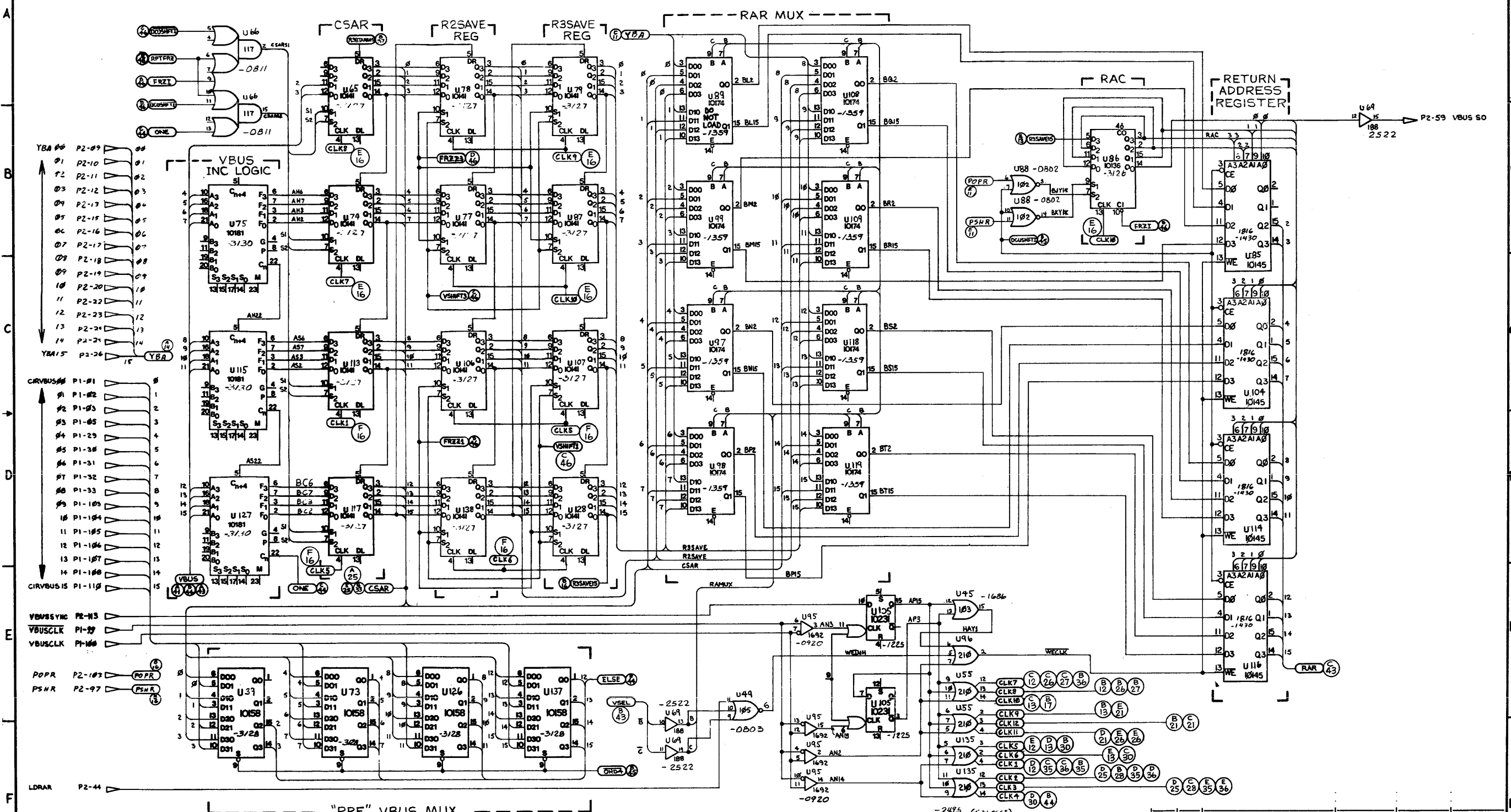
- NOTES:
- UNLESS OTHERWISE SPECIFIED:  
ALL RESISTANCE IN OHMS  
RESISTOR NETWORKS ARE 68 OHMS  
ALL CAPACITANCE IN MICROFARADS  
ALL CAPACITORS ARE .01UF (0160-5352)  
ALL IC'S ARE 1820 -
  - INSTALL ITEM ①  
LOAD ITEM ③ 3 PLCS.
  - MASK AS INDICATED PRIOR TO LOADING
  - ALL LOADING AND BOARD HANDLING MUST BE DONE WITH A GPO. NEED WRIST STRAP. THIS ASSEMBLY MUST BE TRANSPORTED IN AN ELECTROSTATIC DISCHARGE PROTECTIVE BAG.
  - USE SUPPORT FIXTURE DURING WAVE SOLDER.
  - INSTALL ITEMS ④, ⑤, ⑥ AND ⑦ IN TOUCHUP
  - PRETEST REQUIRED ON THE GUEST SYSTEM.
  - USING AN OHMMETER, CHECK FOR A RESISTANCE OF GREATER THAN 25 OHMS BETWEEN THESE POINTS: A-A', A-A'' AND B-B' BEFORE AND AFTER WAVE SOLDER. DO NOT USE A CONTINUITY LIGHT ON THIS ASSEMBLY
  - INSPECTION CRITERIA-HP STD. SECT 410.
  - THIS ASSY DWG. F-1.15 GOOD FOR BOTH BOARD REV A & B.

ITEM	QTY	DESCRIPTION	MATERIAL PART NO.	MATERIAL NO.	MATERIAL SPEC.
11	1	LABEL - DATE CODE	9320-5320		
10	1	LABEL - SERIAL NUMBER	9320-4049		
9	3	TERM - TEST POINT	0360-0294		
8	1	LABEL - WARR DATE CD	7120-6830		
7	1	LABEL V BUS	7121-2123		
6	2	BRACE	5010-6058		
		Dr. of 68			
4	8	SCREW 4-40	0624-0077		
3	2	EXTRACTOR	5040-9804		
2	2	PIN	1480-0116		
1	1	PCB - VBUS	3010-60004		

PCA - VBUS		HEWLETT PACKARD	
ASSY. DWG.		ERRA:	
REV ASSEMBLY	3010A	PART NUMBER	3010-60004
SCALE		DATE	7-3010-60004-1

REF: F-1 ASS.  
 R-50 DATE VOLE INFO  
 D-22 TYP 1716 5-11  
 A-70 TEST

ENGINEERING RESPONSIBILITY																REVISED		DATE	
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	REVISED		DATE	
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	REVISED		DATE	
32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	REVISED		DATE	
48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	REVISED		DATE	



NOTE: ALL CLOCKS (CLK) ARE PHASE 3.  
 - ALL I.C. PART #'S -NNNN ARE PREFIXED BY 1920 UNLESS OTHERWISE INDICATED.

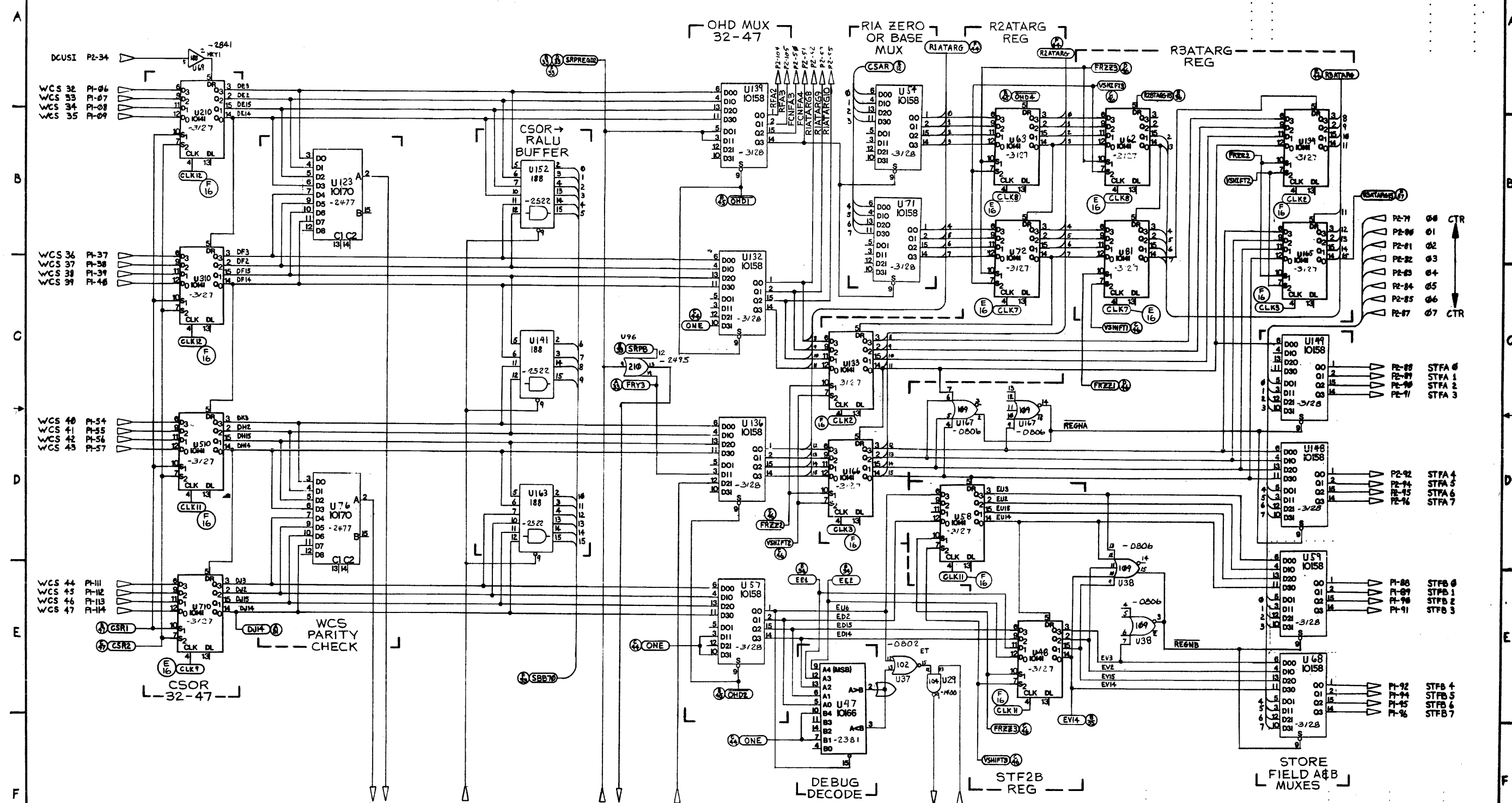
ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L OWL NO.	MAT'L SPEC.
PCA VBUS SCHEMATIC					
HEWLETT PACKARD					
NEXT ASSEMBLY 30140A					
PART NUMBER 30140-6004					
D-30140-6004-57					

REF DWG: P1 155  
AND DATA SHEET  
AND DATA SHEET  
AND DATA SHEET

ENGINEERING RESPONSIBILITY		REVISE		APPROVED		DATE	
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22		23		24		25	
26		27		28		29	
30		31		32		33	

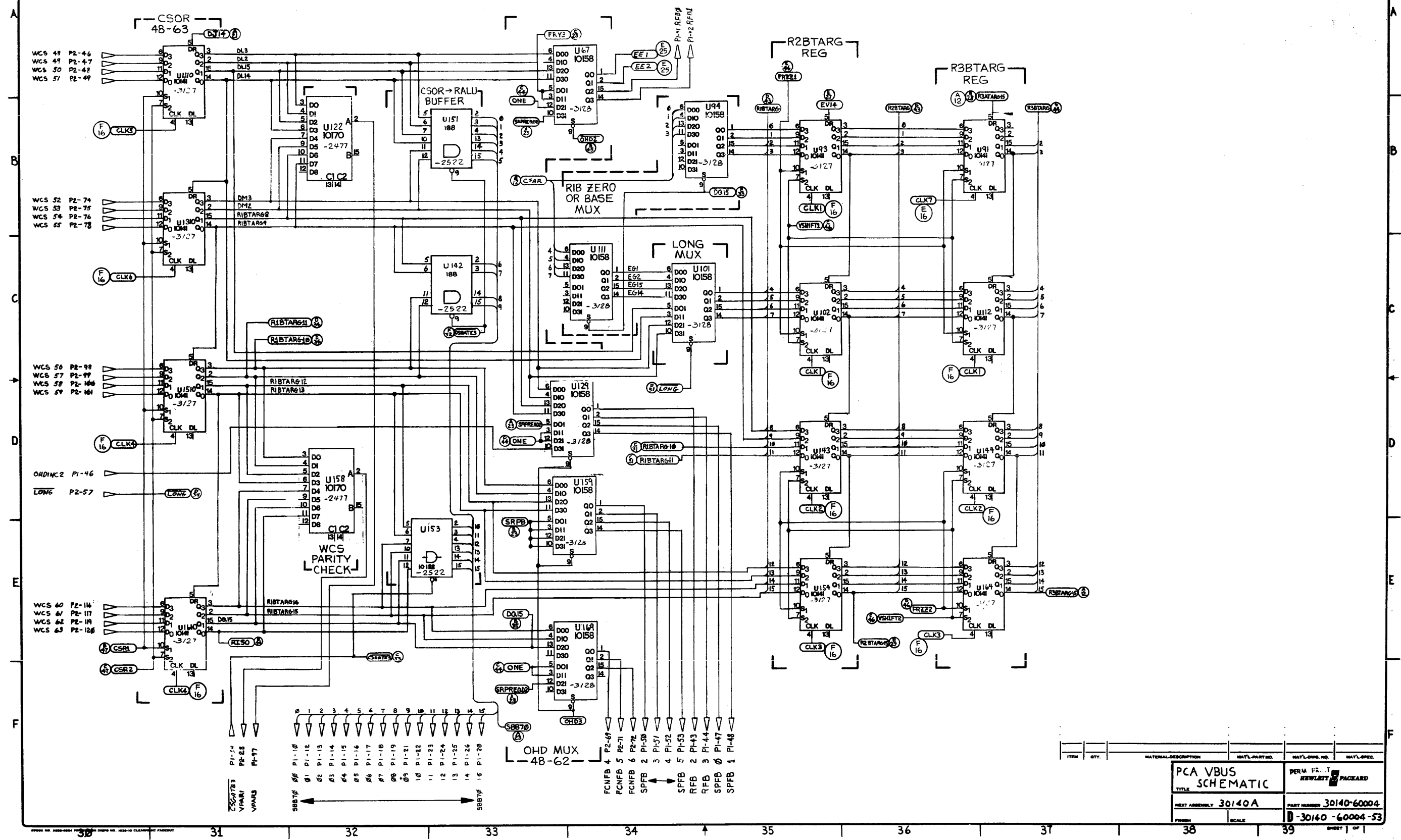
REV	DESCRIPTION	DATE
B	REVISED AND REDRAWN PER PCD 47-3509	7/27/71
C	REVISED PER PCD 47-3515	1-3-82
D	REVISED PER PCD 47-3777	4/1/82



ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L LOWE NO.	MAT'L SPEC.
		PCA I2C BUS SCHEMATIC			
		NEXT ASSEMBLY: 30140A			
		PART NUMBER: 30140-60004			
		DRAWN: [Signature]			
		SCALE			
		D-30140-60004-S3			

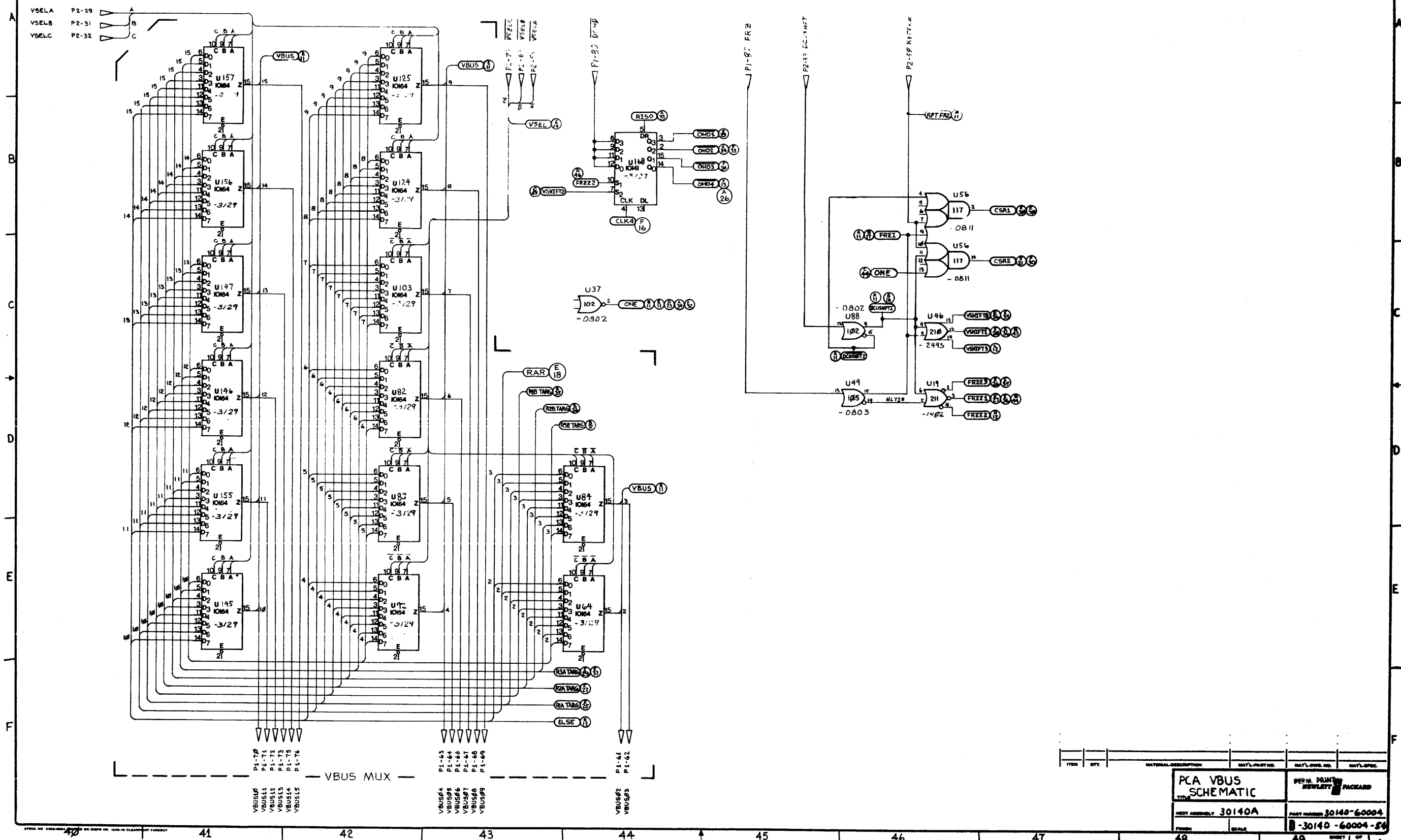


ENGINEERING RESPONSIBILITY														DATE		
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	DATE
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	APPROVED
BY: [Signature]														DATE		
REVISED AND REDRAWN PER NO. 47-3504														DATE		
REVISED PER NO. 47-3545														DATE		
REVISED PER NO. 47-3777														DATE		



ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L LOWE NO.	MAT'L SPEC.
PCA VBUS SCHEMATIC					
TITLE			PERM. FR. HEWLETT PACKARD		
NEXT ASSEMBLY 30140A			PART NUMBER 30140-60004		
FINISH			SCALE		
			D-30140-60004-53		

ENGINEERING RESPONSIBILITY												REVISED AND REDRAWN PER PCO 47-3507		REVISED PER PCO 47-3545		REVISED PER PCO 47-3779															
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												DATE: 12/4/81		DATE: 12/4/81		DATE: 12/4/81															
												BY: J.M.P.		BY: J.M.P.		BY: J.M.P.															
												CHECKED: J.M.P.		CHECKED: J.M.P.		CHECKED: J.M.P.															



ITEM	QTY	NAT'L DESCRIPTION	MAT'L PART NO.	MAT'L QTY REQ.	MAT'L SPEC.
<b>PCA VBUS SCHEMATIC</b>					
NEXT ASSEMBLY: 30140A			PART NUMBER: 30140-60004		
FROM: SCALE:			30140-60004-54		

GND C1-2, C2-2, C5-2, C9-2, C10-2, C11-2, C13-2, C16-2, C17-2, C18-2, C19-2, C20-2, C21-2, C22-2, C23-2, C24-2, C25-2, C27-2, C28-2, C29-2, C30-2, C31-2, C32-2, C33-2, C34-2, C35-2, C36-2, C37-2, C38-2, C39-2, C40-2, C41-2, C42-2, C43-2, C44-2, C45-2, C46-2, C47-2, C48-2, C49-2, C50-2, C51-2, C52-2, C53-2, C54-2, C55-2, C56-2, C57-2, C58-2, C59-2, C60-2, C61-2, C62-2, C63-2, C64-2, C65-2, C66-2, C67-2, C68-2, C69-2, C70-2, C71-2, C72-2, C73-2, C74-2, C75-2, C76-2, C77-2, C78-2, C79-2, C80-2, C81-2, C82-2, C83-2, C84-2, C85-2, C86-2, C87-2, C88-2, C89-2, C90-2, C91-2, C92-2, C93-2, C94-2, C95-2, C96-2, C97-2, C98-2, C99-2, C100-2, C101-2, C102-2, C103-2, C104-2, C105-2, C106-2, C107-2, C108-2, C109-2, C110-2, C111-2,

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TP3-1, TP2-1, TP1-1,

U19-16, U19-15, U19-1, U210-16, U210-16, U29-16, U29-1, U310-1, U310-16, U37-16, U37-1, U38-16, U38-1, U39-16, U44-16, U44-1, U45-16, U45-1, U46-16, U46-1, U47-16, U47-1, U48-16, U48-1, U49-16, U49-1, U510-1, U510-16, U54-16, U55-16, U55-15, U55-1, U56-16, U56-1, U57-16, U58-16, U58-1, U59-16, U62-16, U62-1, U63-16, U63-1, U64-16, U64-1, U65-16, U65-1, U66-16, U66-1, U67-16, U68-16, U69-16, U69-1, U710-1, U710-16, U71-16, U72-16, U72-1, U73-16, U74-16, U74-1, U75-24, U75-1, U76-16, U76-1, U77-16, U77-1, U78-16, U78-1, U79-16, U79-1, U81-16, U81-1, U82-16, U82-1, U83-16, U83-1, U84-16, U84-1, U85-16, U85-1, U86-16, U86-1, U87-16, U87-1, U88-16, U88-1, U89-16, U89-1, U91-16, U91-1, U92-16, U92-1, U93-16, U93-1, U94-16, U95-16, U95-1, U96-16, U96-15, U96-1, U97-16, U97-1, U98-16, U98-1, U99-16, U99-1, U101-16, U102-16, U102-1, U103-16, U103-1, U104-16, U105-16, U105-1, U106-16, U106-1, U107-16, U107-1, U108-16, U108-1, U109-16, U109-1, U111-1, U111-16, U111-16, U112-16, U112-1, U113-16, U113-1, U114-16, U115-24, U115-1, U116-16, U117-16, U117-1, U118-16, U118-1, U119-16, U119-1, U122-16, U122-1, U123-16, U123-1, U124-16, U124-1, U125-16, U125-1, U126-16, U127-24, U127-1, U128-16, U128-1, U129-16, U131-1, U131-16, U132-16, U132-1, U133-1, U133-16, U134-1, U134-16, U135-16, U135-1, U136-16, U136-1, U138-16, U138-1, U139-16, U141-16, U141-1, U142-16, U142-1, U143-16, U143-1, U144-16, U144-1, U145-16, U145-1, U146-16, U146-1, U147-16, U147-1, U148-16, U148-1, U149-16, U151-1, U151-16, U151-16, U151-1, U152-16, U152-1, U153-16, U153-1, U154-16, U154-1, U155-16, U155-1, U156-16, U156-1, U157-16, U157-1, U158-16, U158-1, U159-16, U161-1, U161-16, U162-16, U162-1, U163-16, U163-1, U164-16, U164-1, U165-16, U165-1, U166-16, U166-1, U167-16, U167-1, U168-16, U168-1, U169-16,

-2Y C2-1, C9-1, C10-1, C11-1, C13-1, C18-1, C20-1, C22-1, C23-1, C24-1, C25-1, C28-1, C34-1, C35-1, C37-1, C38-1, C39-1, C40-1, C41-1, C42-1, C46-1, C53-1, C54-1, C56-1, C57-1, C58-1, C59-1, C60-1, C61-1, C64-1, C70-2, C71-1, C73-1, C75-1, C76-1, C77-1, C79-1, C81-1, C83-1, C86-1, C87-1, C89-1, C91-1, C93-1, C94-1, C95-1, C97-1, C99-1, C101-1, C104-1, C106-1, C108-1, C110-1, C111-1,

P2-035, P2-036, P2-037, P2-038, P2-039, P2-040,

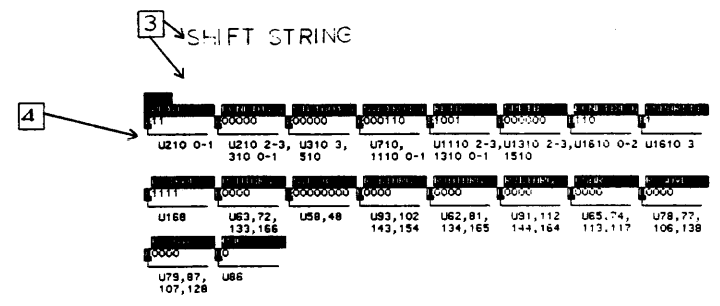
R1-1, R2-1, R3-1, R6-1, R7-1, R11-1, R12-1, R13-1, R15-1, R18-1, R19-1, R20-1, R21-1, R22-1, R23-1, R24-1, R25-1, R26-1, R27-1, R28-1, R30-1, R31-1, R32-1, R33-1, R34-1, R35-1, R36-1, R37-1, R38-1, R39-1, R40-1, R41-1, R42-1, R43-1, R44-1, R45-1, R46-1, R47-1, R48-1, R49-1, R50-1, R51-1, R52-1, R53-1, R54-1, R55-1, R56-1, R57-1, R58-1, R59-1, R60-1, R61-1, R62-1, R63-1, R64-1, R65-1, R66-1, R67-1, R68-1, R69-1, R70-1, R71-1, R72-1, R73-1, R74-1, R75-1, R76-1, R77-1, R78-1, R79-1, R80-1, R81-1, R82-1, R83-1, R84-1, R85-1, R86-1, R87-1, R88-1, R89-1, R90-1, R91-1, R92-1, R93-1, R94-1, R95-1, R96-1, R97-1, R98-1, R99-1, R100-1, R101-1, R102-1, R103-1, R104-1, R105-1, R106-1, R107-1, R108-1, R109-1, R110-1, R111-1, R112-1, R113-1, R114-1, R115-1, R116-1, R117-1,

-5.2V C1-1, C5-1, C16-1, C17-1, C19-1, C21-1, C27-1, C29-1, C30-1, C31-1, C32-1, C33-1, C36-1, C38-1, C44-1, C45-1, C47-1, C48-1, C49-1, C50-1, C51-1, C52-1, C55-1, C62-1, C63-1, C65-1, C66-1, C67-1, C68-1, C69-1, C78-1, C80-1, C82-1, C84-1, C85-1, C88-1, C90-1, C92-1, C95-1, C96-1, C98-1, C100-1, C102-1, C103-1, C105-1, C107-1, C109-1,

P1-115, P1-116, P1-117, P1-118, P1-119, P1-120,

U19-8, U210-8, U29-8, U310-8, U37-8, U38-8, U39-8, U44-8, U45-8, U46-8, U47-8, U48-8, U49-8, U510-8, U54-8, U55-8, U56-8, U57-8, U58-8, U59-8, U62-8, U63-8, U64-8, U65-8, U66-8, U67-8, U68-8, U69-8, U710-8, U71-8, U72-8, U73-8, U74-8, U75-12, U76-8, U77-8, U78-8, U79-8, U81-8, U82-8, U83-8, U84-8, U85-8, U86-8, U87-8, U88-8, U89-8, U91-8, U92-8, U93-8, U94-8, U95-8, U96-8, U97-8, U98-8, U99-8, U101-8, U102-8, U103-8, U104-8, U105-8, U106-8, U107-8, U108-8, U109-8, U111-8, U111-8, U112-8, U113-8, U114-8, U115-12, U116-8, U117-8, U118-8, U119-8, U122-8, U123-8, U124-8, U125-8, U126-8, U127-12, U128-8, U129-8, U131-8, U132-8, U133-8, U134-8, U135-8, U136-8, U137-8, U138-8, U139-8, U141-8, U142-8, U143-8, U144-8, U145-8, U146-8, U147-8, U148-8, U149-8, U151-8, U151-8, U152-8, U153-8, U154-8, U155-8, U156-8, U157-8, U158-8, U159-8, U161-8, U162-8, U163-8, U164-8, U165-8, U166-8, U167-8, U168-8, U169-8,

- NOTES:
- 1 SIGNAL WAVE REFERS TO SIGNALS LINE BEING TERMINATED BY THE RESPECTIVE RESISTOR. (SEE NOTE 2)
  - 2 THE ROOM NUMBER LISTED UNDER "PROCK" REPRESENTS THE REFERENCE DESIGNATOR ASSOCIATED WITH THE RESISTOR PROCK TERMINATING THE RESPECTIVE SIGNAL WAVE. THE NUMBER LISTED UNDER "PIN" REPRESENTS THE TERMINATING PIN FOR THAT SIGNAL.
  - 3 THIS TABLE SHOWS THE INTEGRATED CIRCUITS COMPRISING EACH SEGMENT OF THE SHIFT STRING. THE NUMBERS FOLLOWING THE LOOK NO., SUCH AS "LOOK 0-1", REPRESENTS THE BIT NUMBERS OF THE INTEGRATED CIRCUIT THAT ARE PRESENT IN THAT SEGMENT. IF NO BIT NUMBERS ARE GIVEN, SUCH AS "LOOK", THEN ALL OF THE OUTPUT BITS, 0-3, ARE PRESENT IN THE SHIFT STRING SEGMENT. THE NUMBERS THAT ARE IN PARENTHESIS, SUCH AS "(8)", GIVE THE NUMBER OF BITS THAT ARE PRESENT IN THAT SEGMENT OF THE SHIFT STRING. THE SEGMENTS WITH NO SUCH NUMBERS HAVE THE NUMBER OF BITS THAT WOULD BE EXPECTED. THE "M" OR "B" SPECIFIES IF THE SEGMENT IS REPRESENTED IN A HEX OR A BINARY NUMBER.
  - 4 UNLESS OTHERWISE NOTED, ALL INTEGRATED CIRCUITS IN THE SHIFT STRING ARE 1820-0825. BIT 0-PIN 3, BIT 1-PIN 2, BIT 2-PIN 15, BIT 3-PIN 14.
  - 5 ALL IC ARE 1820-XXXX UNLESS OTHERWISE SPECIFIED

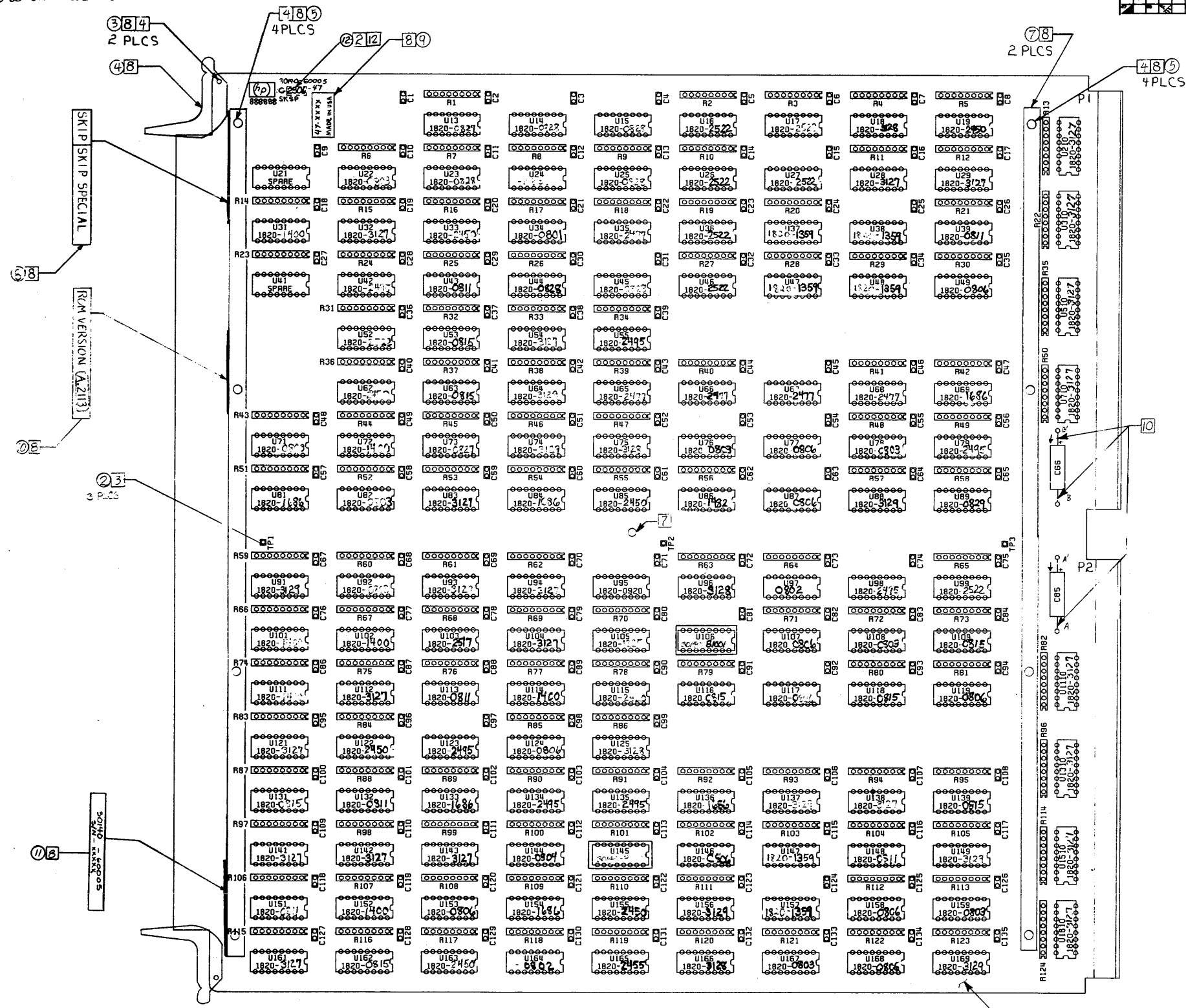


ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L LOWE. NO.	MAT'L SPEC.
PCA VBUS SCHEMATIC					
NEXT ASSEMBLY 30140A		PART NUMBER 30140-60004			
FINISH		SCALE		D-30140-60004-55	



REF DRAWINGS: D-51 THRU D-57, SCHEMATICS  
D-50 DATE CODE INFO.

F-3040-60005-3			
REV	DESCRIPTION	BY	DATE
2	REVISED PER PCO 47-565	ST/TMR	7-78
E	REVISED PER PCO 47-565	ST/TMR	7-78
F	REVISED PER PCO 47-979	ST/TMR	7-78
G	REVISED PER PCO 47-979	ST/TMR	7-78
H	DATE CODE INFO B-3040-60005-3	ST/TMR	7-78
I	REVISIONS: ADDITIONAL PCO 47-565	ST/TMR	10-81



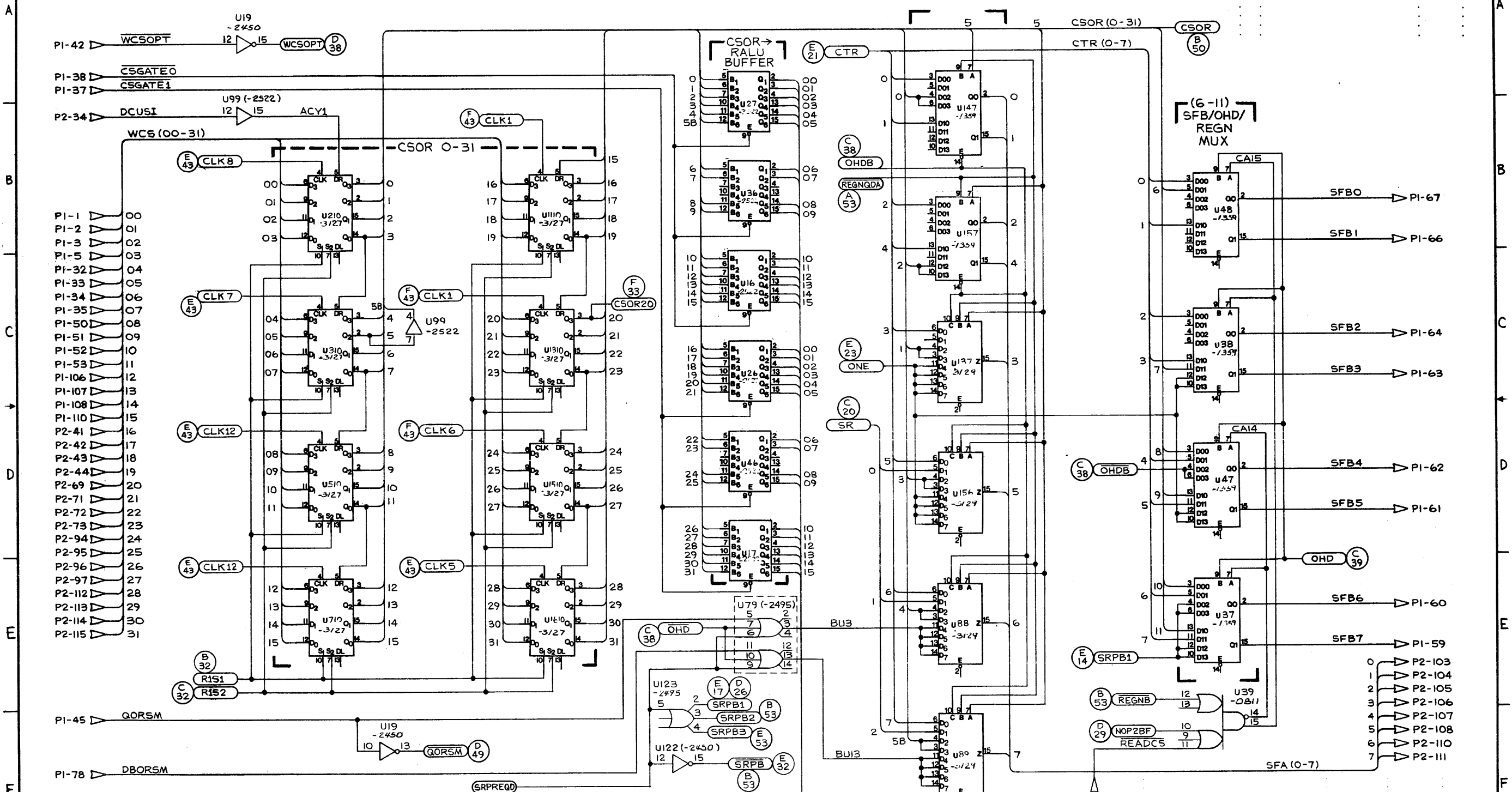
- NOTES:
- UNLESS OTHERWISE SPECIFIED:  
ALL RESISTANCE IN OHMS  
RESISTORS ARE 68 OHMS  
ALL CAPACITANCE IN MICROFARADS  
ALL CAPACITORS ARE C.M.F. (0160-5352)  
ALL IC'S ARE 1820-
  - INSTALL ITEM (2)
  - INSTALL ITEM (3) 3PLACES
  - MASK AS INDICATED PRIOR TO LOADING
  - ALL BOARD HANDLING & HANDLING  
MUST BE DONE AT AN ELECTROSTATIC  
DISCHARGE PROTECTED WORK  
STATION CONTAINING TABLE & FLOOR  
MATS & GROUNDED WRIST STRAP.  
TRANSPORT ASSEMBLY IN ELECTRO-  
STATIC BAGS.
  - LOAD SOCKETS & IC'S IN LOADING.  
USE SUPPORT FIXTURE DURING  
WAVE SOLDER
  - LOAD ITEMS (7) and (8) IN TOUCHUP
  - PRETEST REQUIRED ON THE  
GUEST SYSTEM.
  - USING AN OHMMETER CHECK FOR A  
RESISTANCE OF GREATER THAN 25  
OHMS BETWEEN THESE POINTS A-A', A-B & B-B'  
BEFORE AND AFTER WAVE SOLDER  
DO NOT USE A CONTINUITY LIGHT ON  
THIS ASSEMBLY.
  - INSPECTION CRITERIA-HP STD. SECT 410.
  - THIS ASSY DWG, F-3, IS GOOD FOR  
BOTH REV B & C BOARDS.

12	1	LABEL-DATE CODE	9320-5320
11	1	LBL-SERIAL NUMBER	4520-4818
10	1	LBL-SCM VER. SU	7120-7635
9	1	LBL-WARR DATE CD	7120-6830
8	1	LABEL SKSP	7121-2116
7	2	BRACE	5070-6059
5	8	SCREW 4-40	0424-5077
4	2	EXTRACTOR	5070-8574
3	2	FIN	1750-2116
2	3	TERM-TEST POINT	9320-5327
1	1	PCB SKSP	3040-60005

PCA SKSP		PCB SKSP	
ASSY. DWG.			
REV	30140 A, B	REV	30140-60005
DATE	10-81	DATE	F-30140-60005-3

REF. DWGS: F-3 ASSY  
 A-50 DATE CODE INFO  
 D-5/2 THRU D-5/7

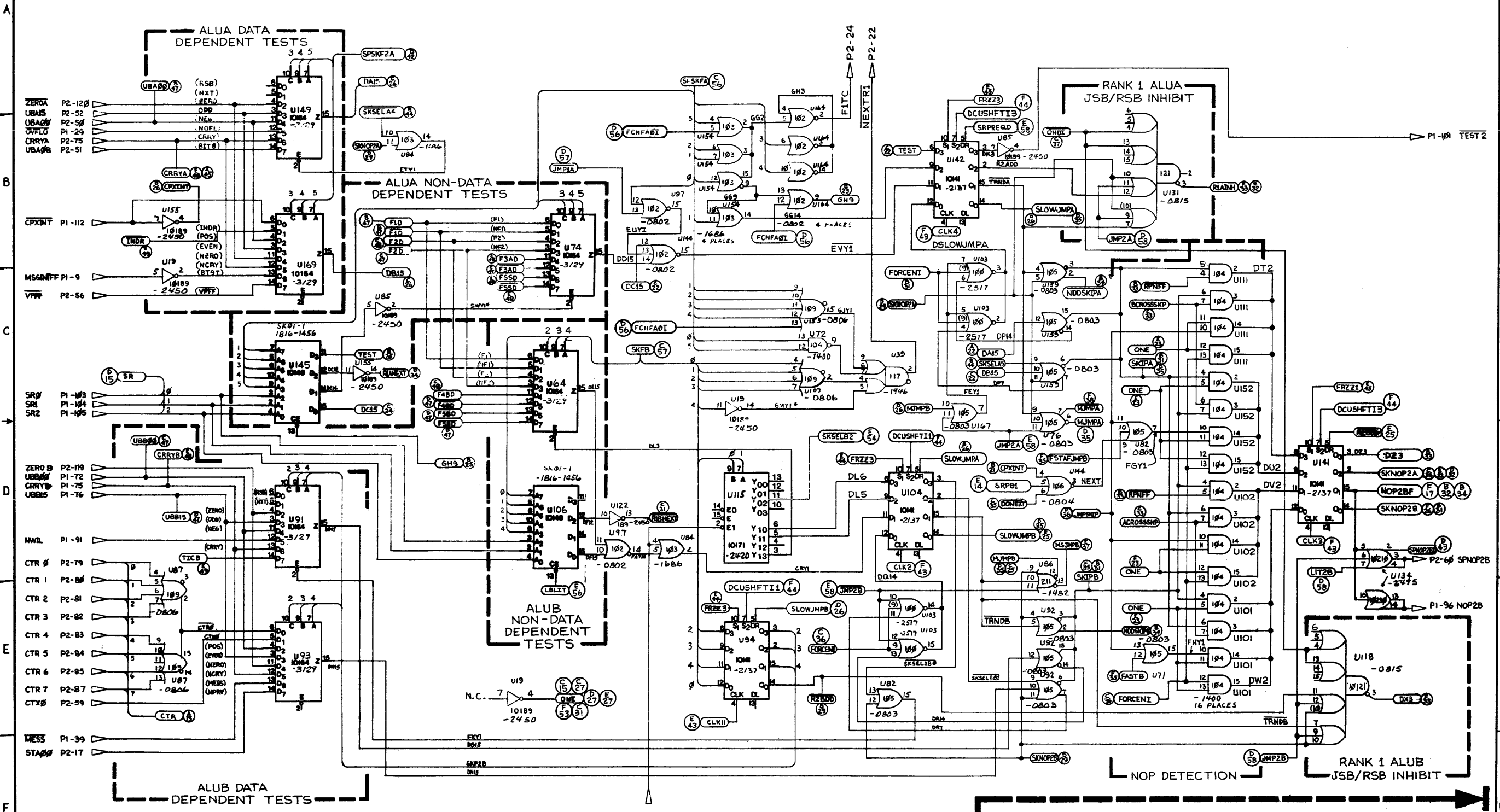
ENGINEERING RESPONSIBILITY										SERIAL										REVISED										APPROVED										DATE									
																				B										C										D									
																				REVISED AND RECALC PER RD 47-3505										REVISED PER RD 47-3505										REVISED PER RD 47-3505									
																				REVISED PER RD 47-3505										REVISED PER RD 47-3505										REVISED PER RD 47-3505									



NOTE: ALL I.C. PART #'s -NNNN ARE PREFIXED BY 1820 UNLESS OTHERWISE INDICATED

WCSSBB70  
 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15  
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 PI- 10 12 13 14 15 16 17 18 19 21 22 23 24 25 26 28

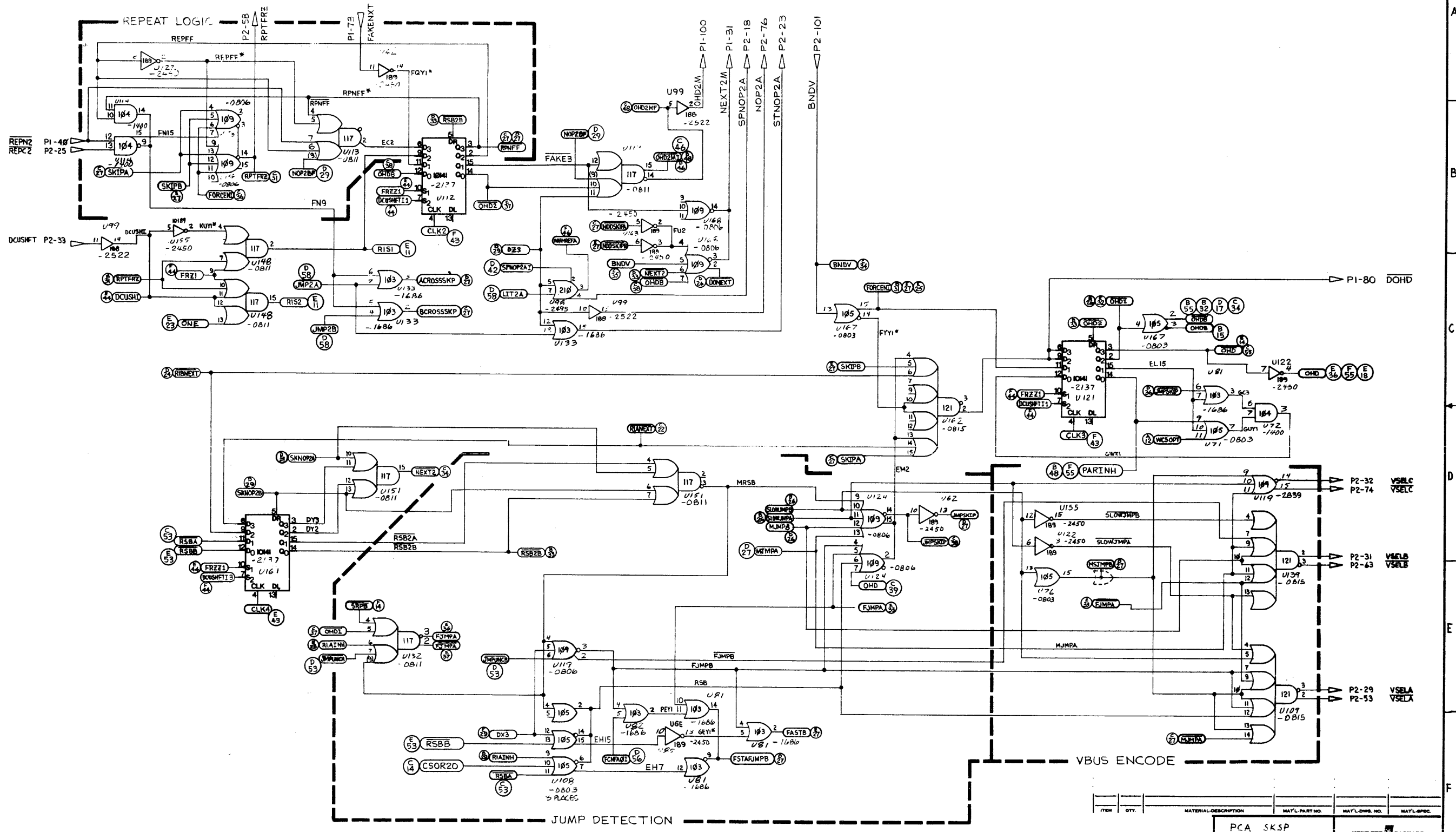
ITEM	QTY	MATERIAL DESCRIPTION	MATL. PART NO.	MATL. DWG. NO.	MATL. SPEC.
PCA SKSP SCHEMATIC					
HEWLETT PACKARD PERM. PRINT					
TITLE 30140A					
NEXT ASSEMBLY 30140A					
FINISH SCALE					
D-30140-60005-51					



ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L LOWE NO.	MAT'L SPEC.
PCA SKSP SCHEMATIC					
HEWLETT PACKARD PERM. PRINT					
TITLE			PART NUMBER 30140-60005		
NEXT ASSEMBLY 30140 A			PART NUMBER 30140-60005-52		
FORM			SCALE		

REF D-15  
 42177  
 02/22/64

ENGINEERING RESPONSIBILITY												REVISIONS												DATE	
BY: [Signature]												1												12-28-64	
2												REVISED AND REDRAWN PER PCO 47-3509												12-28-64	
3												REVISED PER PCO 47-3565												12-28-64	
4												REVISED PER PCO 47-3779												12-28-64	

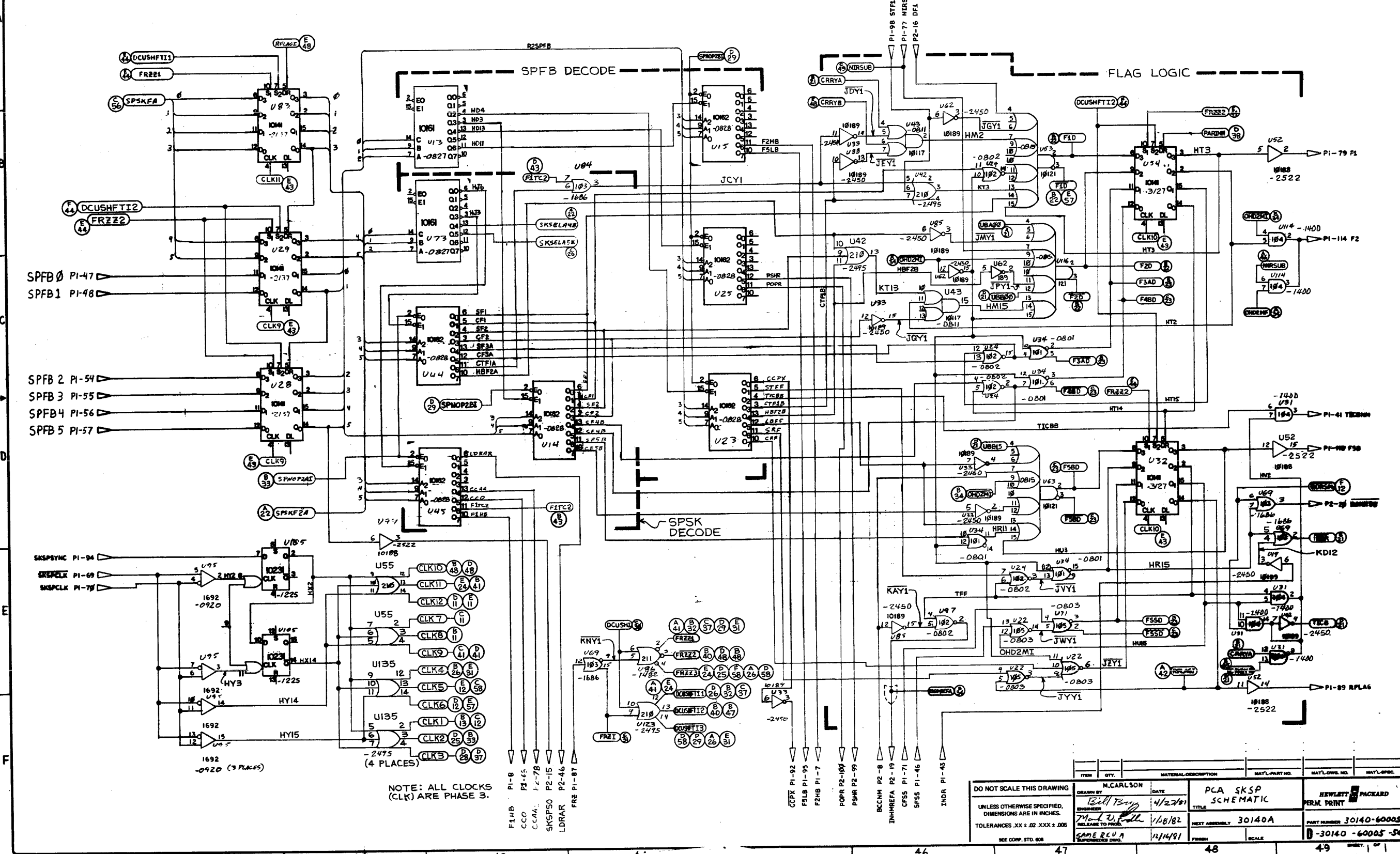


ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-OWB. NO.	MAT'L-SPEC.
PCA SKSP SCHEMATIC					
TITLE			HEWLETT-PACKARD TERM. PRINT		
NEXT ASSEMBLY 30140A			PART NUMBER 30140-60005		
FINISH			SCALE		
			D-30140-60005-53		



RFP DWS: F S HJJ  
 33 DATE JOE HJJ  
 D-51, D-52, D-53, D-55, D-56, D-57, D-58

SUPERSEDES RESPONSIBILITY														REVISIONS									
DATE	BY	REASON												DATE	BY	REASON							
15		REVISED AND REDRAWN PER PCD 47-3559												12/21/81	PC	3-304							
16		REVISED PER PCD 47-3565												3-304	PC	4-200							
17		REVISED PER PCD 47-3779												4-200	PC	4-200							

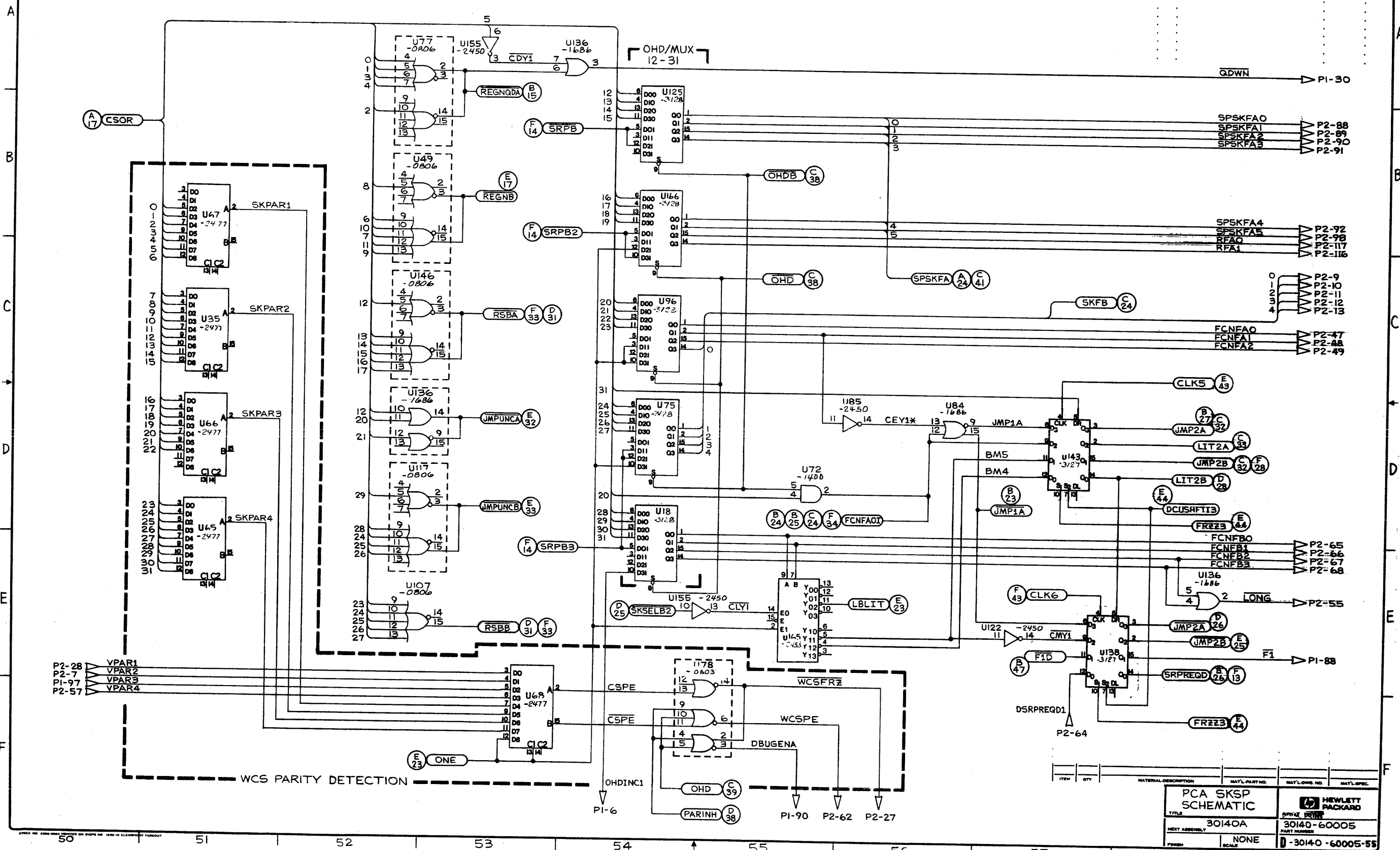


NOTE: ALL CLOCKS (CLK) ARE PHASE 3.

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L OWN. NO.	MAT'L SPEC.
DO NOT SCALE THIS DRAWING					
DRAWN BY		DATE		TITLE	
M.CARLSON		4/22/81		PCA SKSP SCHEMATIC	
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.		TOLERANCES .XX ± .02 .XXX ± .005		HEWLETT PACKARD	
RELEASE TO PROJ.		NEXT ASSEMBLY		PART NUMBER	
SAME RELV A		30140A		30140-60005	
SEE COMP. STD. 608		SCALE		PART. OF 1	
		12/14/81			

REF DESG P3 H22  
 A-SI DATE 10/7/67  
 D-SI P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11, P12

ENGINEERING RESPONSIBILITY		REVISED	DATE													
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
A		AS ISSUED PER PEO 47-3509			7/7/67		12-67									
B		REVISED PER PEO 47-3506			8/1/67		12-67									
C		REVISED PER PEO 47-3779			8/1/67		12-67									

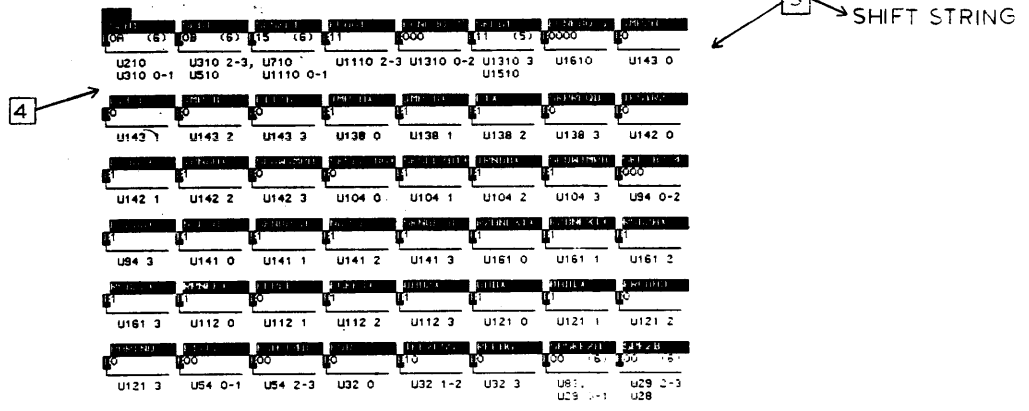


ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L OWNS NO.	MAT'L SPEC.
PCA SKSP SCHEMATIC					
TITLE			HEWLETT PACKARD		
30140A			30140-60005		
NEXT ASSEMBLY			PART NUMBER		
NONE			D-30140-60005-55		
FINISH			SCALE		

SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN
ACROSSSKIP	R66	7	CSOR18	R10	7	DC15	R67	5	FSSD	R86	4	HY2	R70	8	SKF2B4	R59	7	VPAR2	R48	4																								
ACV1	R13	3	CSOR19	R19	5	DM15	R67	7	FSSD*	R54	3	HY3	R78	6	SK1PA	R74	5	VPAR3	R48	5																								
BCCMH	R37	7	CSOR2	R21	5	DK3	R55	7	FSTAFJMPB	R60	7	INDR	R12	6	SK1PB	R65	7	VPAR4	R116	6																								
BCCROSSSKIP	R74	7	CSOR20	R44	4	DL3	R38	2	FU2	R122	4	INDR*	R123	2	SKNOP2A	R28	4	VPAR5	R113	6																								
BH4	R108	5	CSOR21	R19	3	DL5	R19	3	FY1*	R116	8	JCY1	R24	4	SKNOP2B	R121	4	VPAR6	R123	3																								
BH5	R88	6	CSOR22	R40	3	DL5	R59	6	F1D	R46	6	JDY1*	R25	4	OHDC1	R11	7	WCSOPT	R51	6																								
BT9T	R123	5	CSOR23	R27	8	DOMEXT*	R100	6	F1D*	R104	6	JEY1*	R25	7	OHDC2	R83	5	WCS01	R13	8																								
BU13	R58	3	CSOR24	R40	8	DP14	R68	6	F1TC2	R54	8	JGY1*	R32	6	OHDCMF	R65	8	WCS02	R41	7																								
BU3	R57	3	CSOR25	R40	2	DP7	R68	4	F2D	R38	8	JHY1*	R37	6	OHDCMI	R79	8	WCS03	R48	8																								
CA14	R28	7	CSOR26	R3	5	DQ14	R77	5	F2D*	R66	3	JHPSKIP	R63	7	OHDCMI*	R44	2	WCS04	R48	6																								
CA15	R29	7	CSOR27	R3	5	DR14	R76	4	F3AD	R46	4	JHPSKIP*	R44	7	OHDCMI*	R74	6	WCS05	R54	7																								
CPF2	R16	6	CSOR28	R4	6	DRT	R76	5	F3AD*	R54	5	JHPUNCA*	R88	8	OVFL0	R105	5	WCS06	R119	7																								
CDY1*	R92	7	CSOR29	R4	4	DSLWJMPA	R107	5	F4BD	R38	6	JMPUNCB*	R80	6	PARINH	R48	3	WCS07	R52	4																								
CEY1*	R62	4	CSOR3	R111	2	DSRPREQD1	R104	5	F4BD*	R46	5	JMP1A	R99	6	PEY1	R51	2	WCS08	R67	8																								
CFSS	R43	4	CSOR30	R47	6	DT2	R97	3	F5BD	R24	6	JMP1A*	R94	7	QORSM	R49	6	WCS09	R70	5																								
CF1	R8	6	CSOR31	R11	6	DU2	R97	8	F5BD*	R46	2	JMP2A*	R97	8	QORSM*	R23	7	WCS10	R70	4																								
CF2	R25	5	CSOR4	R57	4	DY2	R106	6	GC3	R52	6	JMP2A*	R56	4	READCS*	R30	5	WCS11	R70	7																								
CF3A	R17	4	CSOR5	R110	6	DW2	R106	5	GEY1*	R51	5	JMP2B*	R90	6	REGNB*	R30	6	WCS12	R81	5																								
CF4B	R17	7	CSOR5B	R20	5	DX3	R81	7	GG14	R107	8	JMP2B*	R76	7	REGNDA*	R102	6	WCS13	R81	3																								
CF5B	R16	5	CSOR6	R19	6	DY2	R106	3	GG2	R118	5	JMY1*	R79	6	REPC2*	R85	4	WCS14	R73	6																								
CLK1	R82	4	CSOR7	R18	3	DI3	R106	4	GS9	R118	7	JNY1*	R79	5	REP2*	R85	7	WCS15	R95	4																								
CLK10	R15	4	CSOR8	R18	4	DI3	R73	7	GH3	R118	4	JQY1*	R32	4	REFFF*	R122	8	WCS16	R33	2																								
CLK11	R62	3	CSOR9	R18	5	DI3	R75	6	GH9	R110	4	JTY1*	R37	5	REPNI	R54	4	WCS17	R37	2																								
CLK12	R50	4	CSPE	R57	2	EH15	R55	8	GJY1*	R21	2	JY1*	R45	6	REPNI*	R76	6	WCS18	R53	3																								
CLK2	R75	4	CSPE*	R57	6	EH7	R51	8	GKY1*	R21	7	JY1*	R26	4	RFLAGI*	R53	5	WCS19	R53	8																								
CLK3	R83	4	CTF1A	R54	6	EL15	R51	7	GL11	R21	4	JY1*	R43	5	RPMFF*	R85	7	WCS20	R43	7																								
CLK4	R115	4	CTF1B	R24	7	EM2	R116	4	GMY1*	R21	5	JY1*	R15	8	RSB	R85	5	WCS21	R123	6																								
CLK5	R124	4	CTRO	R29	3	ET11	R105	2	GU11	R44	6	JZY1*	R24	5	RSBA*	R115	2	WCS22	R122	2																								
CLK6	R114	4	CTRO*	R61	6	EUY1*	R109	4	GW11	R87	5	KAY1*	R64	5	RSBA*	R115	5	WCS23	R123	7																								
CLK7	R22	4	CTR1	R29	2	EVY1*	R107	7	HBF2A	R55	6	KD12	R42	2	RSB2A*	R115	3	WCS24	R86	4																								
CLK8	R13	2	CTR2	R29	5	EWY1*	R54	2	HBF2B	R36	5	KMY1*	R75	5	RSB2B*	R75	5	WCS25	R91	5																								
CLK9	R12	4	CTR3	R29	5	FAKENMT	R44	5	HD11	R9	2	KT13	R32	7	R1AINH	R80	8	WCS26	R28	5																								
CLY1*	R119	3	CTR4	R28	3	FAKE3*	R122	7	HD13	R18	2	KT3	R37	3	R1AINH*	R115	6	WCS27	R120	5																								
CMY1*	R104	8	CTR5	R28	2	FASTB	R51	3	HD3	R8	2	KUY1*	R104	3	R1BNEXT*	R115	8	WCS28	R11	5																								
CPXINT*	R100	4	CTR6	R20	4	FAY1*	R53	2	HD4	R16	2	LBP5	R45	4	R1S1	R84	8	WCS29	R98	5																								
CPFINT*	R110	8	CTR7	R28	6	FCFPAOI	R108	8	HJ3	R33	2	LBLIT	R79	4	R1S2	R84	8	WCS30	R101	2																								
CRF	R15	7	CTR8	R61	5	FET1	R68	7	HJ6	R34	2	LIT2A	R72	7	R2ADD*	R97	5	WCS31	R101	2																								
CRYA	R23	5	DA15	R113	5	FGY1	R116	7	HJ15	R79	3	LIT2B	R104	4	R2ADD*	R97	4	ZEROA*	R101	4																								
CRYB	R68	5	DBORSM	R58	6	FHY1	R74	8	HM2	R32	5	MESS*	R61	4	R2SPFB5	R65	5	ZEROB	R8	7																								
CRY1	R77	6	DB15	R123	4	FJMPA	R59	6	HR11	R45	3	MJMPA	R81	6	R2SPFB1	R7	8		R31	6																								
CSGATED*	R10	8	DCUSHFTI1	R53	7	FJMPA*	R81	8	HR15	R49	5	MJMPA*	R81	2	R2SPFB2	R1	7		R107	6																								
CSGATEY1*	R40	7	DCUSHFTI2	R12	7	FJMPS	R51	4	HT14	R15	4	MJMPB	R121	6	R2SPFB3	R16	3		R64	4																								
CSOR0	R103	8	DCUSHFTI3	R94	8	FJMPS*	R95	6	HT15	R17	5	MRSB	R90	8	R2SPFB4	R16	8		R66	3																								
CSOR1	R93	4	DCUSHI	R56	6	FKY1	R59	2	HT2	R77	4	MSGINTFF	R5	5	R2SPFB5	R65	5		R14	6																								
CSOR10	R2	5	DC12	R119	6	FN15	R112	7	HT3	R31	5	MSJMPB	R80	2	SFSS	R15	3		R113	4																								
CSOR11	R2	6	DC14	R55	5	FN9	R89	6	HU15	R23	6	NDSSKIPA*	R117	5	SF1	R32	2		R63	5																								
CSOR12	R86	6	DC15	R109	5	FORCENI	R76	8	HU3	R45	2	NDSSKIPB*	R117	7	SF2	R31	8		R75	2																								
CSOR13	R86	4	DD15	R109	3	FOY1*	R84	6	HV2	R36	7	NEXT	R52	7	SF3A	R17	3		UBA00	R105	3																							
CSOR14	R91	4	DE15	R71	8	FRZ1	R89	8	HX14	R34	6	NEXT2*	R122	6	SF4B	R8	4		UBA15	R113	3																							
CSOR15	R10	4	DF1	R37	2	FRZZ1	R115	7	HX2	R39	8	MIRSUB	R77	3	SF5B	R26	7		UBB00	R66	6																							
CSOR16	R19	4	DF12	R88	7	FRZZ2	R12	8	HY14	R34	5	NOP2BF	R30	7	SKF2B2	R66	5		UBB15	R59	3																							
CSOR17	R10	5	DF15	R71	7	FRZZ3	R104	7	HY15	R101	6	HW1L	R66	4	SKF2B3	R66	8		VPAR1	R41	3																							

NOTES:

1. SIGNAL NAME REFERS TO SIGNALS LINE BEING TERMINATED BY THE RESPECTIVE RESISTOR (SEE NOTE 2).
2. THE PACK NUMBER LISTED UNDER "PACK" REPRESENTS THE REFERENCE DESIGNATOR ASSOCIATED WITH THE RESISTOR PACK TERMINATING THE RESPECTIVE SIGNAL NAME. THE NUMBER LISTED UNDER "PIN" REPRESENTS THE TERMINATING PIN FOR THAT SIGNAL.
3. THIS TABLE SHOWS THE INTEGRATED CIRCUITS COMPRISING EACH SEGMENT OF THE SHIFT STRING. THE NUMBERS FOLLOWING THE LOOK NO., SUCH AS "LOOK 0-1", REPRESENTS THE BIT NUMBERS OF THE INTEGRATED CIRCUIT THAT ARE PRESENT IN THAT SEGMENT. IF NO BIT NUMBERS ARE GIVEN, SUCH AS "LOOK", THEN ALL OF THE OUTPUT BITS, 0-3, ARE PRESENT IN THE SHIFT STRING SEGMENT. THE NUMBERS THAT ARE IN PARENTHESES, SUCH AS "(8)", GIVE THE NUMBER OF BITS THAT ARE PRESENT IN THAT SEGMENT OF THE SHIFT STRING. THE SEGMENTS WITH NO SUCH NUMBERS HAVE THE NUMBER OF BITS THAT WOULD BE EXPECTED. THE "HF" OR "B" SPECIFIES IF THE SEGMENT IS REPRESENTED IN A HEX OR A BINARY NUMBER.
4. UNLESS OTHERWISE NOTED, ALL INTEGRATED CIRCUITS IN THE SHIFT STRING ARE 1620-0823. BIT 0=PIN 3, BIT 1=PIN 2, BIT 2=PIN 15, BIT 3=PIN 14.



ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L LONG NO.	MAT'L SPEC.
		PCA SKSP SCHEMATIC			
TITLE			HEWLETT PACKARD		
30140 A			PART NUMBER		
NEXT ASSEMBLY			30140-6005		
PART NUMBER			D-30140-6005-56		
FINISH			SCALE		
			SHEET 1 OF 1		

KFF 0010 F3 ASSY  
KSD DAT JSD W01  
SBI TALL D-56 CHERAF

ENGINEERING RESPONSIBILITY													REVISIONS		APPROVED		DATE	
													AS ISSUED PER PCO 47-3509		M.L.		12-82	

GND C1-2, C2-2, C3-2, C4-2, C5-2, C6-2, C7-2, C8-2, C9-2, C10-2, C11-2, C12-2, C13-2, C14-2, C15-2, C16-2, C17-2, C18-2, C19-2, C20-2, C21-2, C22-2, C23-2, C24-2, C25-2, C26-2, C27-2, C28-2, C29-2, C30-2, C31-2, C32-2, C33-2, C34-2, C35-2, C36-2, C37-2, C38-2, C39-2, C40-2, C41-2, C42-2, C43-2, C44-2, C45-2, C46-2, C47-2, C48-2, C49-2, C50-2, C51-2, C52-2, C53-2, C54-2, C55-2, C56-2, C57-2, C58-2, C59-2, C60-2, C61-2, C62-2, C63-2, C64-2, C65-2, C66-1, C67-2, C68-2, C69-2, C70-2, C71-2, C72-2, C73-2, C74-2, C75-2, C76-2, C77-2, C78-2, C79-2, C80-2, C81-2, C82-2, C83-2, C84-2, C85-1, C86-2, C87-2, C88-2, C89-2, C90-2, C91-2, C92-2, C93-2, C94-2, C95-2, C96-2, C97-2, C98-2, C99-2, C100-2, C101-2, C102-2, C103-2, C104-2, C105-2, C106-2, C107-2, C108-2, C109-2, C110-2, C111-2, C112-2, C113-2, C114-2, C115-2, C116-2, C117-2, C118-2, C119-2, C120-2, C121-2, C122-2, C123-2, C124-2, C125-2, C126-2, C127-2, C128-2, C129-2, C130-2, C131-2, C132-2, C133-2, C134-2, C135-2,

P1-004, P1-011, P1-020, P1-027, P1-036, P1-049, P1-058, P1-065, P1-074, P1-081, P1-082, P1-083, P1-084, P1-085, P1-086, P1-093, P1-102, P1-109, P2-001, P2-002, P2-003, P2-004, P2-005, P2-006, P2-014, P2-021, P2-030, P2-045, P2-054, P2-061, P2-070, P2-077, P2-086, P2-093, P2-102, P2-109, P2-118,

TP1-1, TP2-1, TP3-1,

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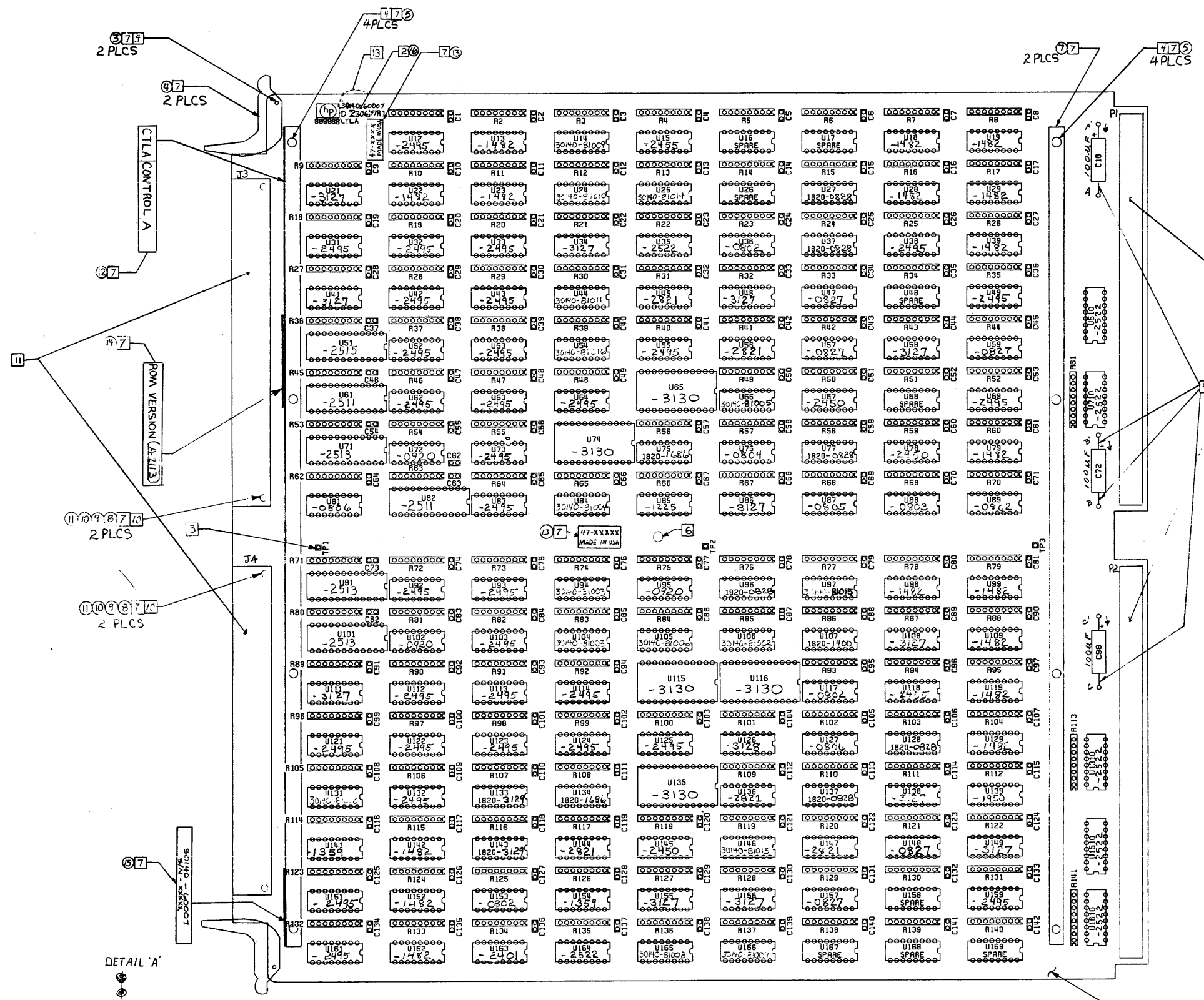
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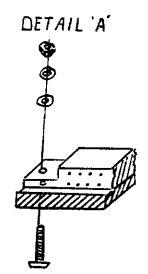
ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY NO.	MAT'L SPEC.
PCA SKSP SCHEMATIC					
HEWLETT PACKARD PERM. PRINT					
30140A					
30140-60005					
30140-60005-57					

REF DWGS.: A-50 DATE CODE INFO.  
D-51 THRU D-56 SCHEM.  
D-5 MODIF DWG

REV	DATE	BY	CHKD
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			



- NOTES:
- UNLESS OTHERWISE SPECIFIED, ALL RESISTANCE IN OHMS. RESISTORS ARE 68 OHMS. ALL CAPACITANCE IN MICROFARADS. ALL CAPACITORS ARE .01UF (0160-5302). ALL IC'S ARE 192C-
  - INSTALL ITEM ⑥
  - INSTALL ITEM ② 3 PLACES
  - MASK AS INDICATED PRIOR TO LOADING.
  - ALL LEADS AND PINS HANDLING MUST BE CLEAN WITH CLEANED WASH STEEL. THIS ASSEMBLY MUST BE TRANSPORTED IN AN ELECTROSTATIC DISCHARGE PROOF CONTAINER.
  - USE SUPPORT FIXTURE DURING WAVE SOLDER.
  - INSTALL ITEMS ③, ④, ⑤, ⑥, ⑦, ⑧, ⑨, ⑩, ⑪ IN TOUCHUP.
  - PRETEST REQUIRED ON THE SOLDER WAVE.
  - USING AN X-RAY EQUIPMENT FOR A PERCENTAGE OF GREATER THAN 25 OHMS RETURN TO THE POINTS: A-B, B-C, A-C, A-B, B-B AND C-B BEFORE AND AFTER WAVE SOLDERING. DO NOT USE A CONTINUITY LIGHT IN THIS ASSEMBLY.
  - INSTALL ITEMS ③ THRU ⑪ PER DETAIL 'A'.
  - LOAD CONNECTORS FIRST.
  - INSPECTION CRITERIA-HP STD. SECT 410
  - THIS ASSEMBLY DWG, F-4, IS GOOD FOR BOARD REV'S B, C, D.

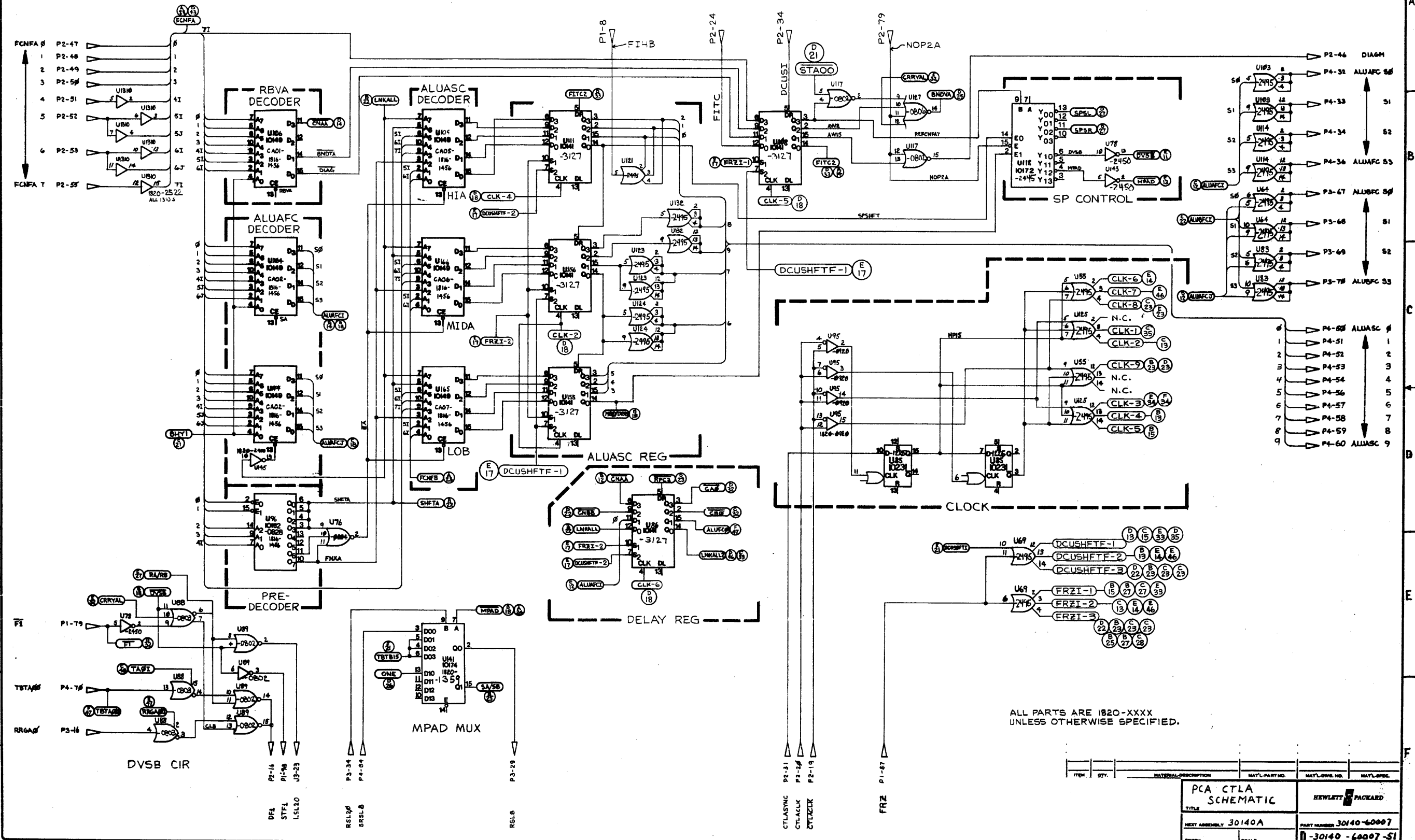


16	1	LABEL-DATE CODE	9320-5320
15	1	LABEL-SERIAL NUMBER	9320-4848
14	1	LABEL-ROM VERSION	7120-7635
13	1	LBL-WARR DATE CD	7120-6630
12	1	LABEL	7121-2125
11	4	WASHER, FLAT #2	2190-0479
10	4	WASHER LOCK #2	2190-0045
9	4	NUT 2-56	0610-0001
8	4	SCREW 2-56 X .312	0520-0121
7	2	BRACE	5040-6059
6		Deleted	
5	8	SCREW 4-40	0624-0077
4	2	EXTRACTOR	5090-9804
3	2	PIN	1480-0116
2	3	STUD SOLDER TERM	0360-0294
1	1	PCB-CTLA	30140-8007

PCA-CTLA		HEWLETT-PACKARD	
ASSY DWG.		30140-60007	
REV	DATE	REV	DATE
1	1-5-1	1	1-5-1

REF DWGS: F-4 ASS.  
 ALSO DATE CODE INFO  
 D-52 THRU D-56 SCHEMATICS  
 D-5, MODIS DWG.

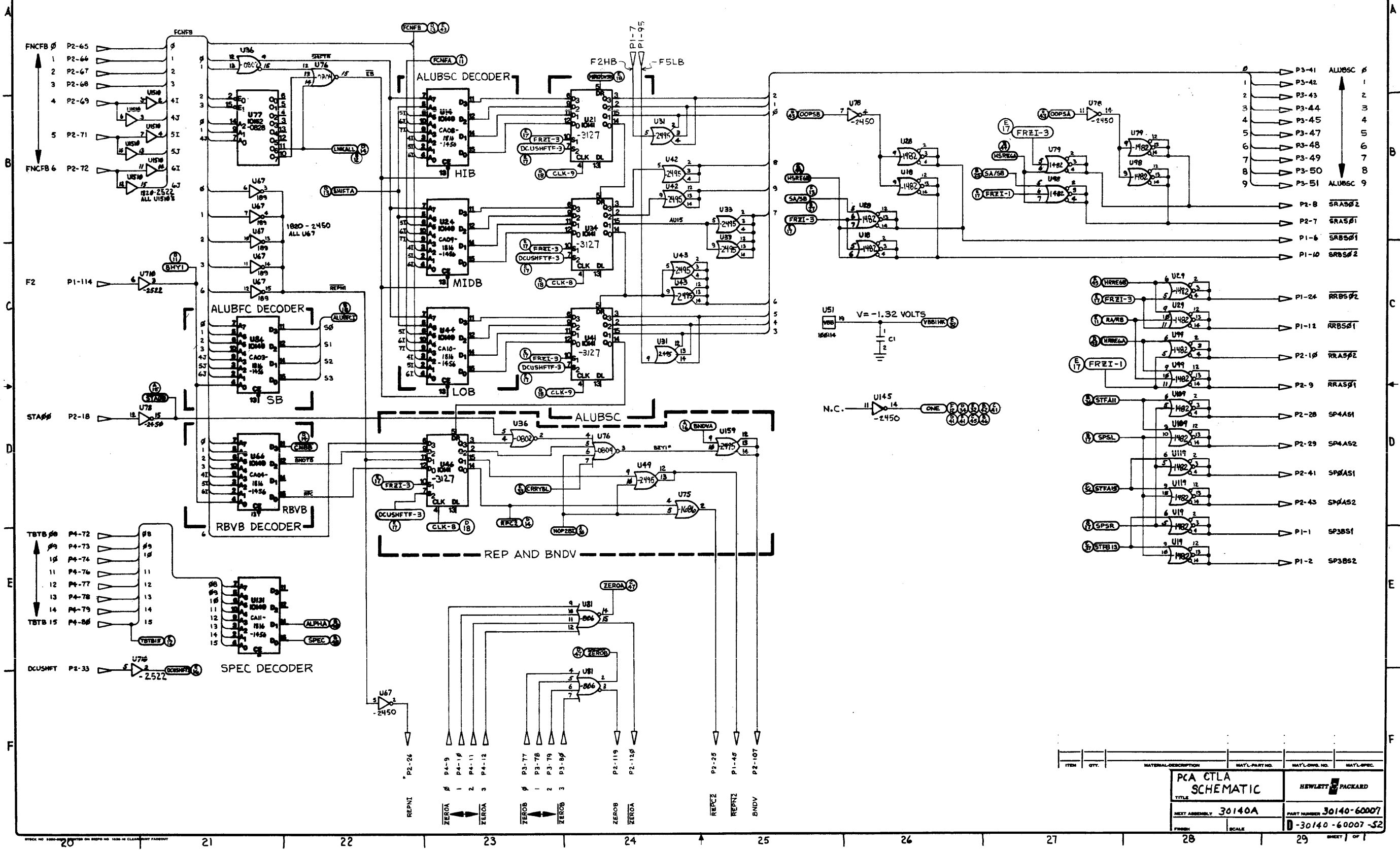
ENGINEERING RESPONSIBILITY										REVISIONS										APPROVED			
BY	CHK	APP	DATE	BY	CHK	APP	DATE	BY	CHK	APP	DATE	REV	DATE	DESCRIPTION	BY	CHK	APP	DATE	DATE	SCALE	SHEET	TOTAL	
1				1				1				B	7/5/77	REVISED AND REDRAWN PER NO 47-3481	STP/LLK				7/5/77		1	1	
2				2				2				C		REVISED PER NO 47-3545	STP/LLK				11/2/77		2	2	
3				3				3				D		REVISED PER NO 47-3779	STP/LLK				11/2/77		3	3	



ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY. NO.	MAT'L SPEC.
<b>PCA CTLA SCHEMATIC</b>					
HEWLETT PACKARD					
NEXT ASSEMBLY 30140A			PART NUMBER 30140-6007		
FINISH			SCALE		
D-30140-6007-51					

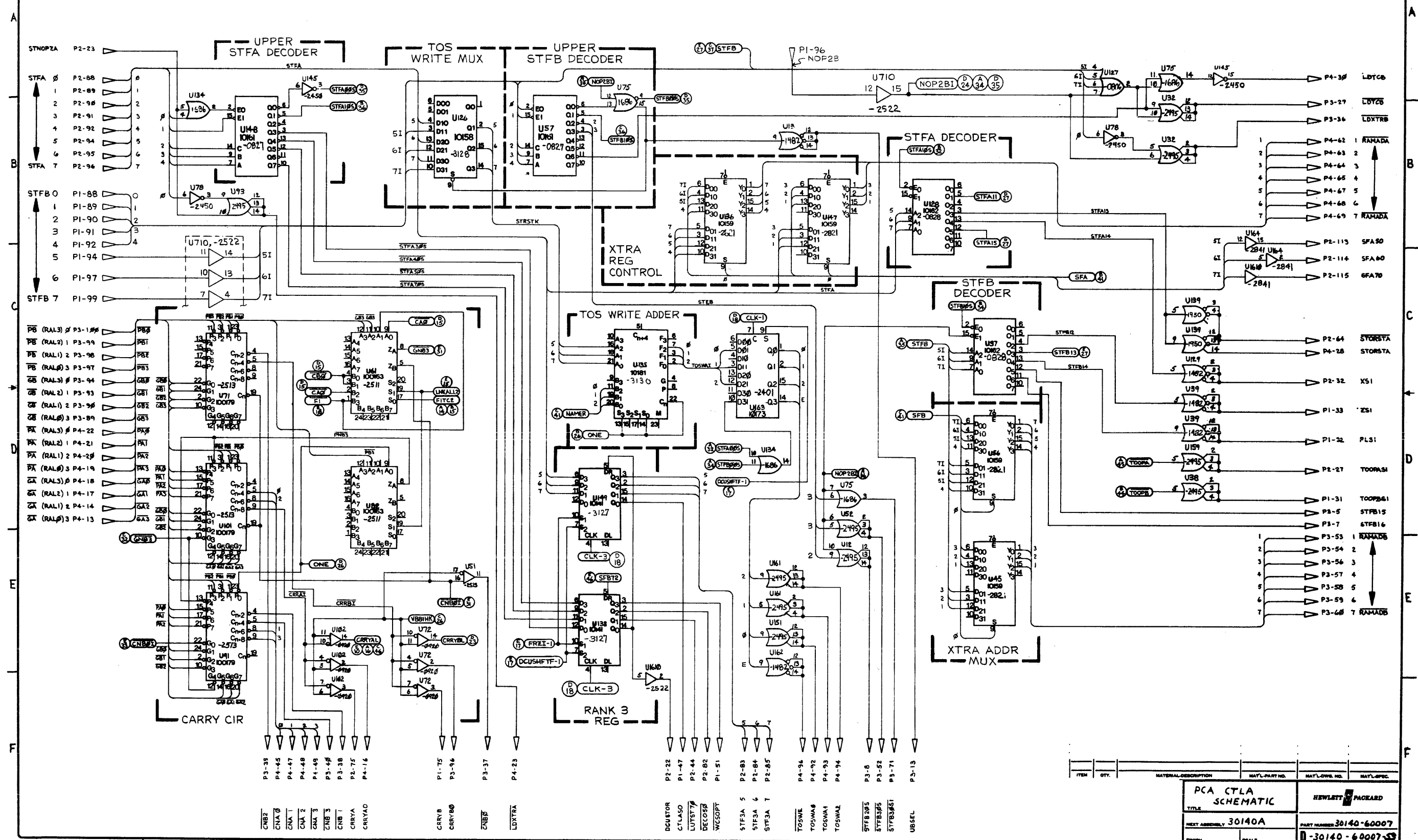
REF DESG F-4 1455  
 4-50 DATE JDE HFD  
 D-51, D-53 TWC D-54 SCHEMATIC  
 D-5, MODIF BUL

DESIGNING RESPONSIBILITY		REVISIONS		APPROVED		DATE	
1		A					
2		B	REVISED AND REDRAWN PER RCD 47-3481				11-68
3		C	REVISED PER RCD 47-3545				11-68
4		D	REVISED PER RCD 47-3779				9-3-69



REF DWGS: F-4.5V  
 A 50 DATE 00F 11/41  
 D-51 D-52 D-54, D-55, D-56, D-57, D-58  
 D-5, MODIF DWG

ENGINEERING RESPONSIBILITY		REVISED		APPROVED		DATE	
1	2	3	4	5	6	7	8
REVISED AND REDESIGNED PER PCD 47-3481		REVISED PER PCD 47-3545		REVISED PER PCD 47-3771			



ITEM	QTY	MATERIAL DESCRIPTION	MATL. PART NO.	MAT'L QTY NO.	MAT'L SPEC.
PCA CTLA SCHEMATIC					
TITLE			HEWLETT PACKARD		
NEXT ASSEMBLY 30140A			PART NUMBER 30140-60007		
FORM			SCALE		
-			-		
-			-		
-			-		
-			-		
-			-		
-			-		







REF DwgS F-4 A.D.Y  
 4-53, DATE CODE (M/F)  
 1-57 THRU D-55, SCHEMATICS  
 D-5, MODIF DWG

ENGINEERING RESPONSIBILITY												REVISED		B-30140-60007-56					
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	BYN	REVISED	APPROVED	DATE
																A	AS 155/55 PER PCO 47-3471		7-6-56

**GND** C1-2, C2-2, C3-2, C4-2, C5-2, C6-2, C7-2, C8-2, C9-2, C10-2, C11-2, C12-2, C13-2, C14-2, C15-2, C16-2, C17-2, C18-2, C19-2, C20-2, C21-2, C22-2, C23-2, C24-2, C25-2, C26-2, C27-2, C28-2, C29-2, C30-2, C31-2, C32-2, C33-2, C34-2, C35-2, C36-2, C37-2, C38-2, C39-2, C40-2, C41-2, C42-2, C43-2, C44-2, C45-2, C46-2, C47-2, C48-2, C49-2, C50-2, C51-2, C52-2, C53-2, C54-2, C55-2, C56-2, C57-2, C58-2, C59-2, C60-2, C61-2, C62-2, C63-2, C64-2, C65-2, C66-2, C67-2, C68-2, C69-2, C70-2, C71-2, C72-2, C73-2, C74-2, C75-2, C76-2, C77-2, C78-2, C79-2, C80-2, C81-2, C82-2, C83-2, C84-2, C85-2, C86-2, C87-2, C88-2, C89-2, C90-2, C91-2, C92-2, C93-2, C94-2, C95-2, C96-2, C97-2, C98-2, C99-2, C100-2, C101-2, C102-2, C103-2, C104-2, C105-2, C106-2, C107-2, C108-2, C109-2, C110-2, C111-2, C112-2, C113-2, C114-2, C115-2, C116-2, C117-2, C118-2, C119-2, C120-2, C121-2, C122-2, C123-2, C124-2, C125-2, C126-2, C127-2, C128-2, C129-2, C130-2, C131-2, C132-2, C133-2, C134-2, C135-2, C136-2, C137-2, C138-2, C139-2, C140-2, C141-2, C142-2.

P1-004, P1-011, P1-020, P1-027, P1-036, P1-049, P1-058, P1-065, P1-074, P1-081, P1-082, P1-083, P1-084, P1-085, P1-086, P1-093, P1-102, P1-109, P2-001, P2-002, P2-003, P2-004, P2-005, P2-006, P2-014, P2-021, P2-030, P2-045, P2-054, P2-061, P2-070, P2-077, P2-086, P2-093, P2-102, P2-109, P2-118, P3-006, P3-015, P3-026, P3-035, P3-046, P3-055, P3-066, P3-075, P3-086, P3-095, P4-006, P4-015, P4-026, P4-035, P4-046, P4-055, P4-066, P4-075, P4-086, P4-095.

TP1-1, TP2-1, TP3-1.

U12-16, U12-15, U12-1, U13-16, U13-15, U13-1, U14-16, U14-1, U15-16, U15-1, U16-16, U16-1, U17-16, U17-1, U18-16, U18-1, U19-16, U19-1, U20-16, U20-1, U21-16, U21-1, U22-16, U22-1, U23-16, U23-1, U24-16, U24-1, U25-16, U25-1, U26-16, U26-1, U27-16, U27-1, U28-16, U28-1, U29-16, U29-1, U30-16, U30-1, U31-16, U31-1, U32-16, U32-1, U33-16, U33-1, U34-16, U34-1, U35-16, U35-1, U36-16, U36-1, U37-16, U37-1, U38-16, U38-1, U39-16, U39-1, U40-16, U40-1, U41-16, U41-1, U42-16, U42-1, U43-16, U43-1, U44-16, U44-1, U45-16, U45-1, U46-16, U46-1, U47-16, U47-1, U48-16, U48-1, U49-16, U49-1, U50-16, U50-1, U51-16, U51-1, U52-16, U52-1, U53-16, U53-1, U54-16, U54-1, U55-16, U55-1, U56-16, U56-1, U57-16, U57-1, U58-16, U58-1, U59-16, U59-1, U60-16, U60-1, U61-16, U61-1, U62-16, U62-1, U63-16, U63-1, U64-16, U64-1, U65-16, U65-1, U66-16, U66-1, U67-16, U67-1, U68-16, U68-1, U69-16, U69-1, U70-16, U70-1, U71-16, U71-1, U72-16, U72-1, U73-16, U73-1, U74-16, U74-1, U75-16, U75-1, U76-16, U76-1, U77-16, U77-1, U78-16, U78-1, U79-16, U79-1, U80-16, U80-1, U81-16, U81-1, U82-16, U82-1, U83-16, U83-1, U84-16, U84-1, U85-16, U85-1, U86-16, U86-1, U87-16, U87-1, U88-16, U88-1.

**GND** U89-16, U89-1, U91-6, U91-7, U92-16, U92-15, U92-1, U93-16, U93-15, U93-1, U94-16, U94-1, U95-16, U95-1, U96-16, U96-1, U97-16, U97-1, U98-16, U98-1, U99-16, U99-1, U101-6, U101-7, U102-16, U102-1, U103-16, U103-15, U103-1, U104-16, U104-1, U105-16, U105-1, U106-16, U106-1, U107-16, U107-1, U108-16, U108-1, U109-16, U109-1, U111-16, U111-1, U112-16, U112-1, U113-16, U113-1, U114-16, U114-1, U115-16, U115-1, U116-16, U116-1, U117-16, U117-1, U118-16, U118-1, U119-16, U119-1, U120-16, U120-1, U121-16, U121-1, U122-16, U122-1, U123-16, U123-1, U124-16, U124-1, U125-16, U125-1, U126-16, U126-1, U127-16, U127-1, U128-16, U128-1, U129-16, U129-1, U131-16, U131-1, U133-16, U133-1, U134-16, U134-1, U135-16, U135-1, U136-16, U136-1, U137-16, U137-1, U138-16, U138-1, U139-16, U139-1, U141-16, U141-1, U142-16, U142-1, U143-16, U143-1, U144-16, U144-1, U145-16, U145-1, U146-16, U146-1, U147-16, U147-1, U148-16, U148-1, U149-16, U149-1, U151-16, U151-1, U152-16, U152-1, U153-16, U153-1, U154-16, U154-1, U155-16, U155-1, U156-16, U156-1, U157-16, U157-1, U158-16, U158-1, U159-16, U159-1, U161-16, U161-1, U162-16, U162-1, U163-16, U163-1, U164-16, U164-1, U165-16, U165-1, U166-16, U166-1, U167-16, U167-1, U168-16, U168-1, U169-16, U169-1.

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P2-035, P2-036, P2-037, P2-038, P2-039, P2-040.

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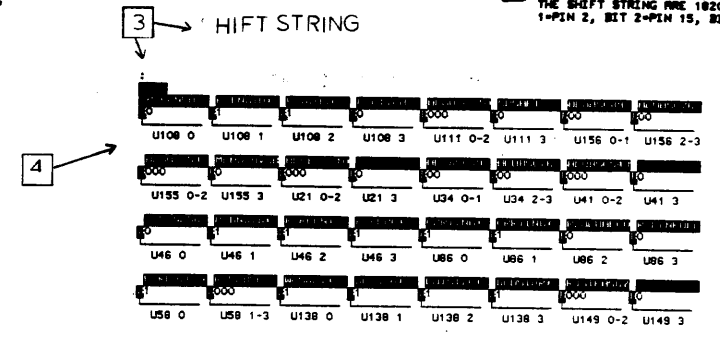
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**VBB1HK** C62-1, R45-4, U51-1, U51-23, U51-21, U51-19, U51-17, U51-15, U72-13, U72-11, U72-5, U72-6, U102-13, U102-11, U102-6, U102-5.

**NOTES:**

- 1 SIGNAL NAME REFERS TO SIGNALS LINE BEING TERMINATED BY THE RESPECTIVE RESISTOR. (SEE NOTE 2)
- 2 THE ROOM NUMBER LISTED UNDER "PACK" REPRESENTS THE REFERENCE DESIGNATOR ASSOCIATED WITH THE RESISTOR PACK TERMINATING THE RESPECTIVE SIGNAL NAME. THE NUMBER LISTED UNDER "PIN" REPRESENTS THE TERMINATING PIN FOR THAT SIGNAL.
- 3 THIS TABLE SHOWS THE INTEGRATED CIRCUITS COMPRISING EACH SEGMENT OF THE SHIFT STRING. THE NUMBERS FOLLOWING THE LOOK NO., SUCH AS "LOOK 0-1", REPRESENTS THE BIT NUMBERS OF THE INTEGRATED CIRCUIT THAT ARE PRESENT IN THAT SEGMENT. IF NO BIT NUMBERS ARE GIVEN, SUCH AS "LOOK", THEN ALL OF THE OUTPUT BITS, 0-3, ARE PRESENT IN THE SHIFT STRING SEGMENT. THE NUMBERS THAT ARE IN PARENTHESES, SUCH AS "(6)", GIVE THE NUMBER OF BITS THAT ARE PRESENT IN THAT SEGMENT OF THE SHIFT STRING. THE SEGMENTS WITH NO SUCH NUMBERS HAVE THE NUMBER OF BITS THAT WOULD BE EXPECTED. THE "M" OR "B" SPECIFIES IF THE SEGMENT IS REPRESENTED IN A HEX OR A BINARY NUMBER.
- 4 UNLESS OTHERWISE NOTED, ALL INTEGRATED CIRCUITS IN THE SHIFT STRING ARE 1820-0825. BIT 0-PIN 3, BIT 1-PIN 2, BIT 2-PIN 15, BIT 3-PIN 14.



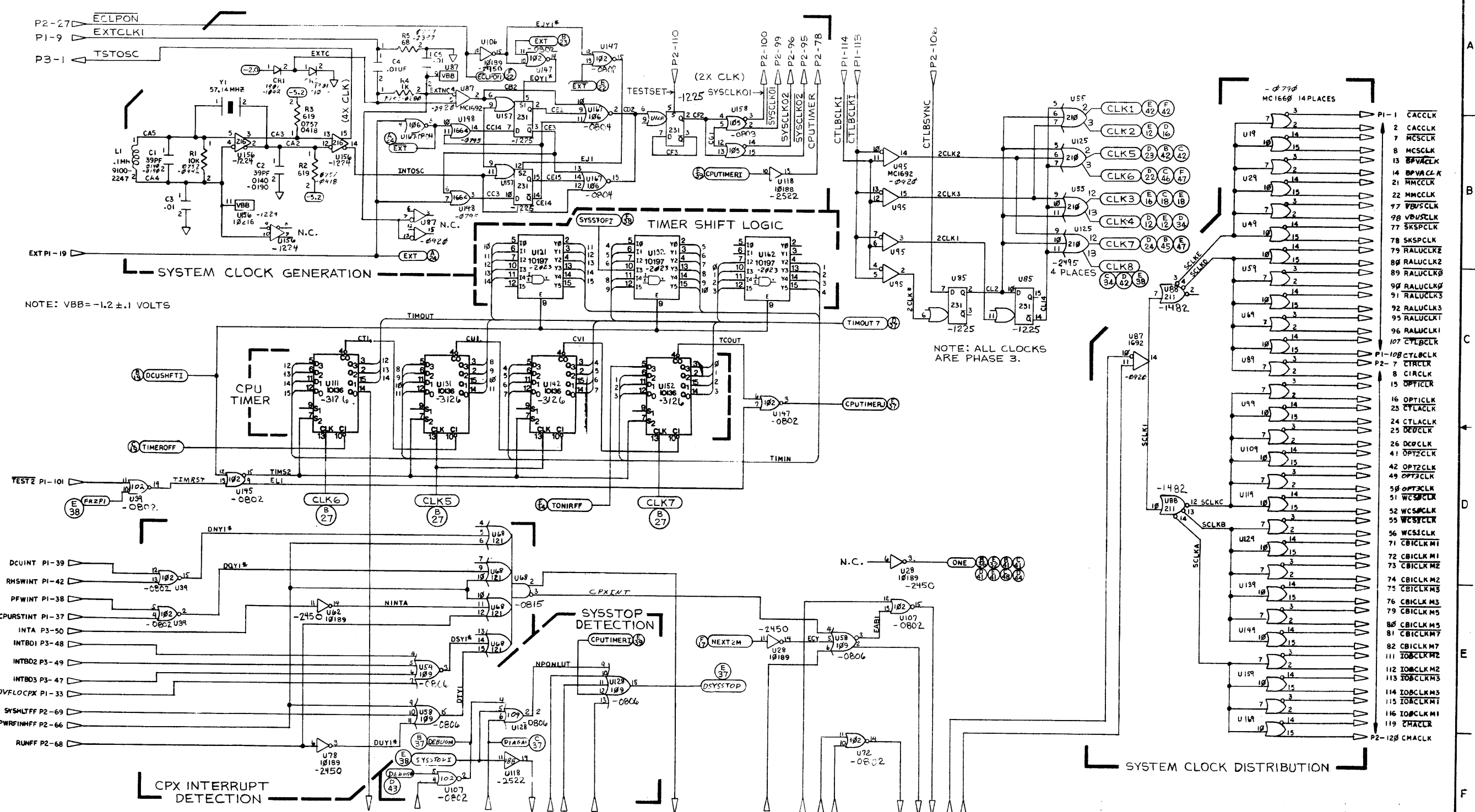
ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY NO.	MAT'L SPEC.
		PCA CTLA SCHEMATIC			
		TITLE	30140A	PART NUMBER	30140-60007
		FINISH		SCALE	D-30140-60007-56





REF DWGS: F-4 ASSY  
 A-50 DATE: JUL 1973  
 D-51 SCHEMATIC  
 D-53 TEST: 20 SCHEDULES

ENGINEERING RESPONSIBILITY																REVISIONS															
DESIGN								CHECKED								APPROVED								DATE							
[Signature]								[Signature]								[Signature]								[Signature]							
REVISED AND REDRAWN PER DWG 47-3342																REVISED PER PGO 47-3565															
REVISED PER PGO 47-3774																REVISED PER PGO 47-3774															



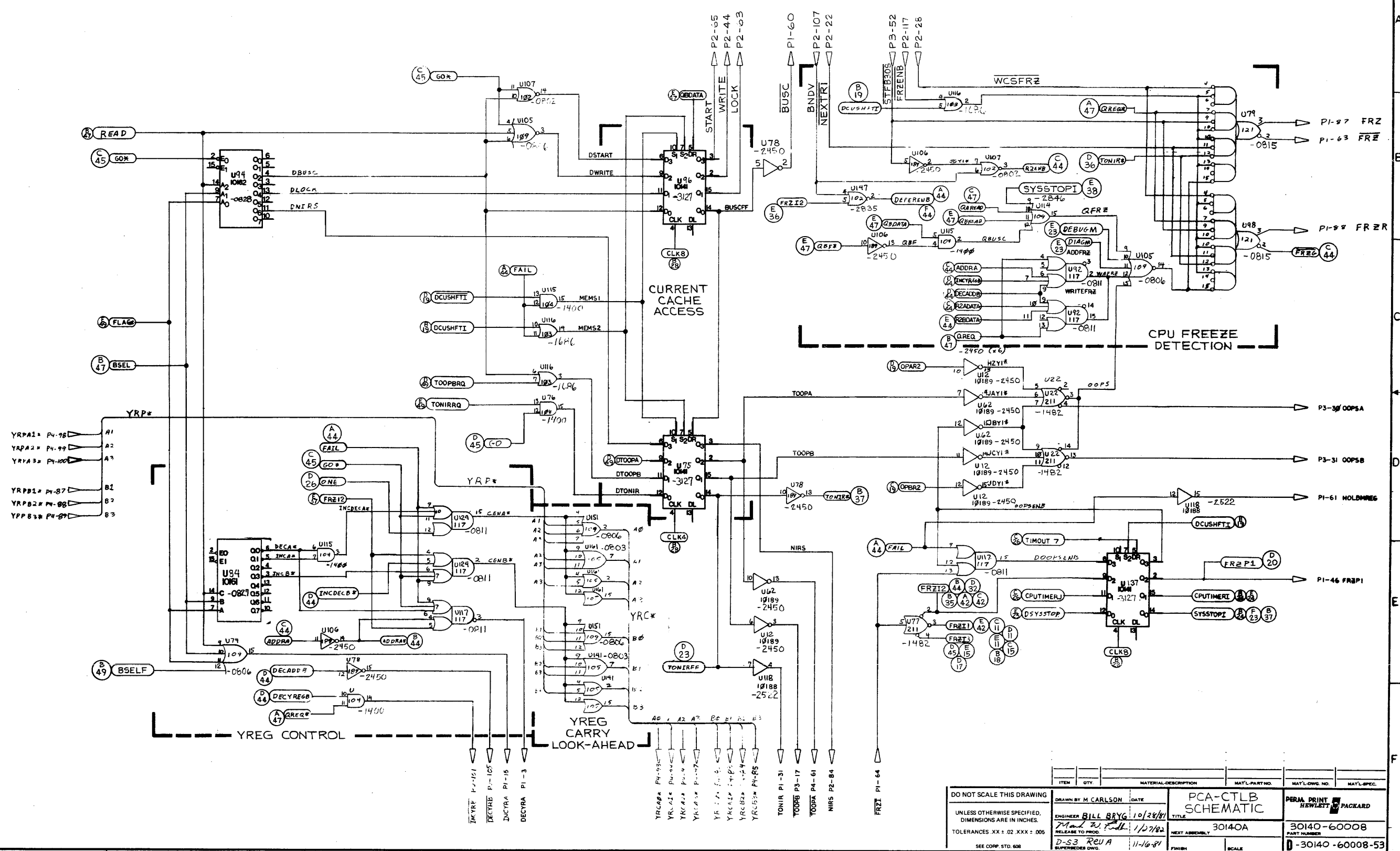
NOTE: VBB = -1.2 ± .1 VOLTS

NOTE: ALL CLOCKS ARE PHASE 3.

ITEM	QTY	MATERIAL DESCRIPTION	MATL PART NO.	MATL DWG NO.	MATL SPEC.
<b>PCA-CTLB SCHEMATIC</b>					
TITLE			HEWLETT PACKARD		
NEXT ASSEMBLY			PART NUMBER		
30140A			30140-60008		
FINISH			SCALE		
			D-30140-60008-52		

REF DESG FOR ASSY  
 D-31 DATE 10/24/81  
 D-31 D-32 DATE 11/27/82

ENGINEERING RESPONSIBILITY														REVISE		APPROVED		DATE	
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	SYN	REVISE	APPROVED	DATE
																15	REVISED AND REDRAWN PER PLO 47-3342	7/17/81	11/16/81
																16	REVISED PER PLO 47-3565	8/7/81	4/2/82
																17	REVISED PER PLO 47-3774	8/11/81	8/11/81



ITEM	QTY	MATERIAL DESCRIPTION	MATL PART NO.	MATL DWG NO.	MATL SPEC.
DO NOT SCALE THIS DRAWING					
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.					
TOLERANCES: XX ± .02, XXX ± .005					
SEE CORP. STD. 608					

DRAWN BY: M. CARLSON	DATE: 10/24/81	TITLE: PCA-CTLB SCHEMATIC	PART NUMBER: 30140A
ENGINEER: BILL BRYG	DATE: 11/27/82	TITLE: PCA-CTLB SCHEMATIC	PART NUMBER: 30140A
RELEASABLE TO: PROD.	DATE: 11/16/81	TITLE: PCA-CTLB SCHEMATIC	PART NUMBER: 30140A
D-31 REU A	DATE: 11/16/81	TITLE: PCA-CTLB SCHEMATIC	PART NUMBER: 30140A
SUPERSEDES DWG.		TITLE: PCA-CTLB SCHEMATIC	PART NUMBER: 30140A



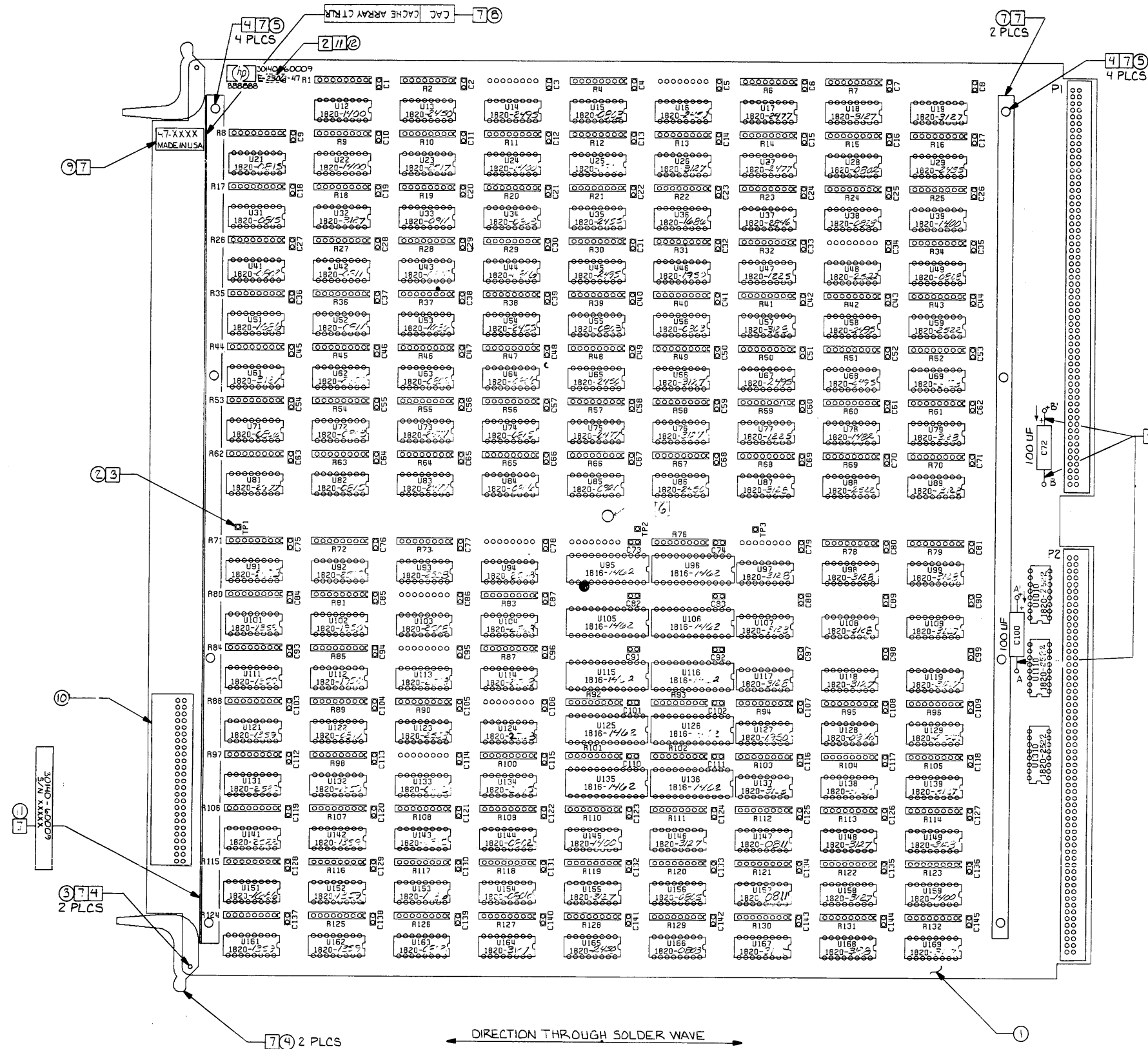






REF DWGS: A-50 DATE CODE INFO.  
D-51 THRU D-56 SCHEM

ENGINEERING RESPONSIBILITY		REVISIONS		DATE
BY:	DATE:	BY:	DATE:	
A	AS ISSUED PER PCO 47-3894			3-28-83
B	REV D PER PCO 47-3894			3-28-83
C	DATE CODE UMS B-2346			7-29-83
D	REVISED NOTE 7: ITEM 10 WAS 125. PER PCO 47-3894			10-11-83
E	REVISED NOTE 7: ITEM 10 WAS 125. PER PCO 47-3894			10-11-83



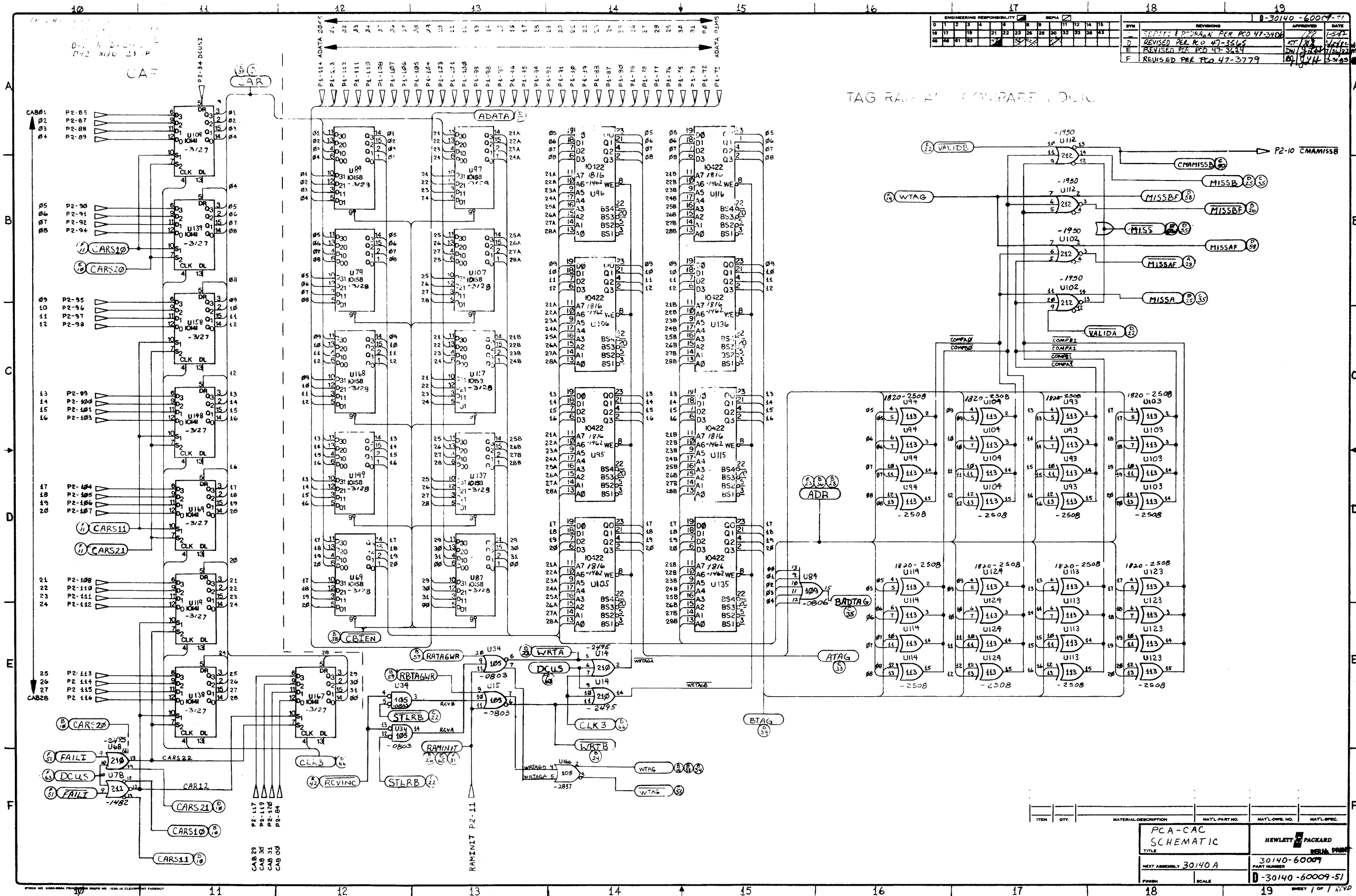
NOTES:

1. UNLESS OTHERWISE SPECIFIED:  
ALL RESISTANCE IN OHMS  
RESISTORS ARE 68 OHMS  
ALL CAPACITANCE IN MICROFARADS  
ALL CAPACITORS ARE .01UF (0160-5352)
2. INSTALL ITEM ②
3. INSTALL ITEM ② 3 PLCS
4. MASK AS INDICATED PRIOR TO LOADING
5. ALL BOARD LOADING & HANDLING MUST BE DONE AT AN ELECTROSTATIC DISCHARGE PROTECTED WORK STATION CONTAINING TABLE & FLOOR MATS & GROUNDED WRIST STRAP TRANSPORT ASSEMBLY IN ELECTROSTATIC BAGS.
6. USE SUPPORT FIXTURE DURING WAVE SOLDER
7. LOAD ITEMS ③ THRU ⑤
8. PRETEST REQUIRED ON THE GUEST SYSTEM
9. USING AN OHMMETER CHECK FOR A RESISTANCE OF GREATER THAN 25 OHMS BETWEEN THESE POINTS: A-A', B-A' AND A-B BEFORE AND AFTER WAVE SOLDERING DO NOT USE A CONTINUITY LIGHT ON THIS ASSEMBLY.
10. INSPECTION CRITERIA - HP STD SECT 410.
11. THIS DRAWING IS GOOD FOR BOTH  
REV D & REV E BOARDS

ITEM	QTY	MATERIAL DESCRIPTION	MATERIAL PART NO.	MATERIAL SPEC.
12	1	LABEL - DATE CODE	7320-5320	
11	1	LABEL - SERIAL #	7320-5320	
10	1	CONN-POST SOM RA	7351-3336	
9	1	LABEL-WARR DATE CD	7120-6830	
8	1	LABEL PCB CAC	7121-7121	
7	2	BRACE	5040-6058	
5	2	SCREW 4-40	0624-0011	
4	2	EXTRACTORS	5040-9804	
3	2	PIN	480-0116	
2	3	TERM-TEST POINT	0560-0294	
1	1	PCB - CIR	3040-60009	

PCA-CACHE ASSY DWG		HEWLETT PACKARD	
REV: 30140A/B	DATE: 30140-60009	SCALE: 1.5/1	SHEET: 13

ENGINEERING RESPONSIBILITY											REVISIONS											APPROVED		DATE	
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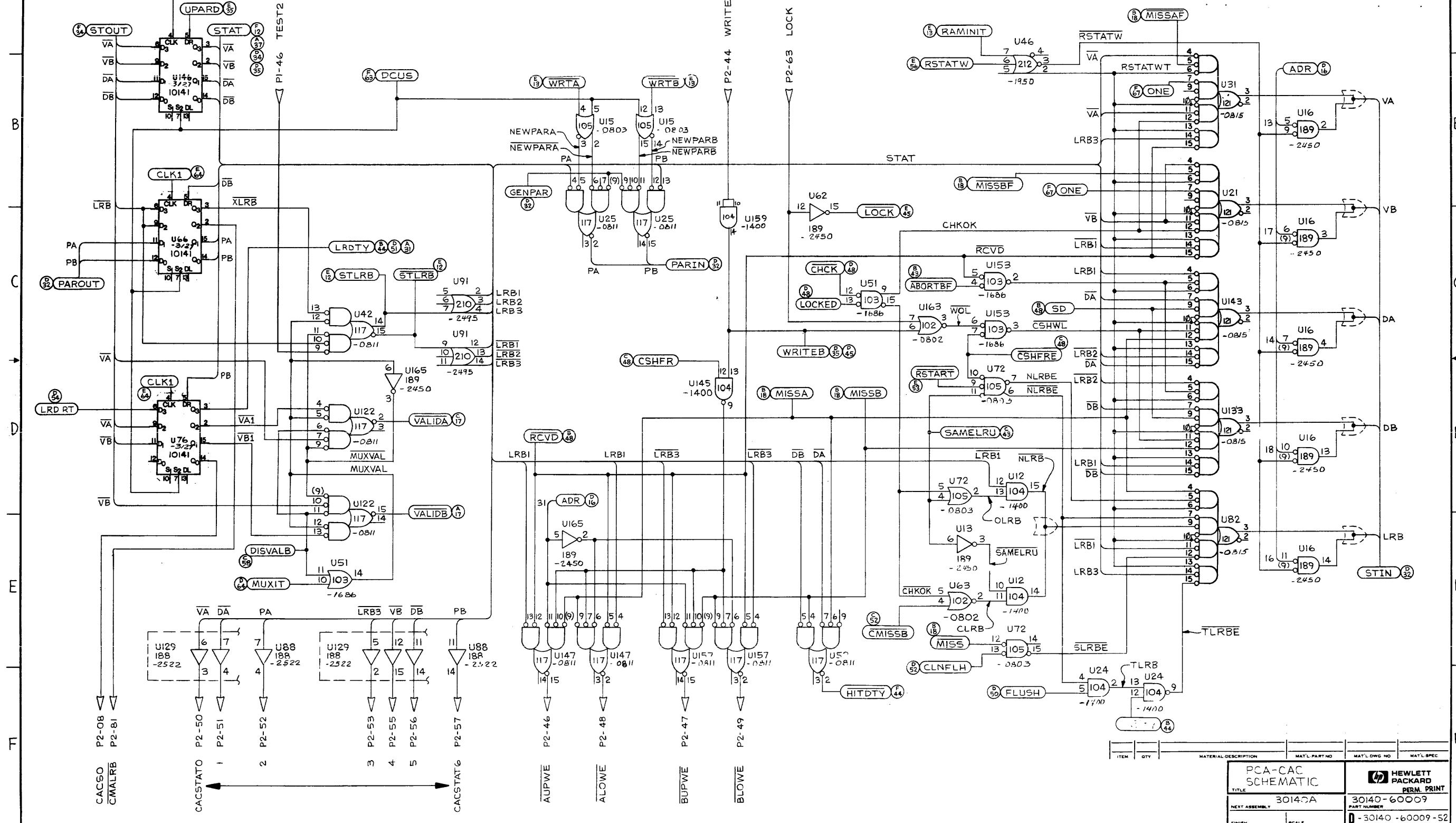


ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L WKS. NO.	MAT'L SPEC.
PCA-CAC SCHEMATIC			HEWLETT PACKARD		
TITLE			30140-60009		
NEXT ASSEMBLY 30140A			PART NUMBER		
FINISH			D-30140-60009-51		
SCALE			SHEET 1 OF 1 REV D		

REF DES 4-1 1988  
 D-51 2-18 7/11/88  
 A-39 DATE 2/11/81  
 D-11 MID-2/81  
 D-12 MOD-2/81

ENGINEERING RESPONSIBILITY														REVISIONS		APPROVED	DATE	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	D E F G H I	REVISOR PER PCD 47-3400 PER PCD 47-3507 PER PCD 47-3565 PER PCD 47-3624 PER PCD 47-3779	DATE 1/22/81 2/11/81 2/23/81 2/23/81 2/23/81
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29				
30	31	32	33	34	35	36	37	38	39	40	41	42	43	44				
45	46	47	48	49	50	51	52	53	54	55	56	57	58	59				
60	61	62	63	64	65	66	67	68	69	70	71	72	73	74				

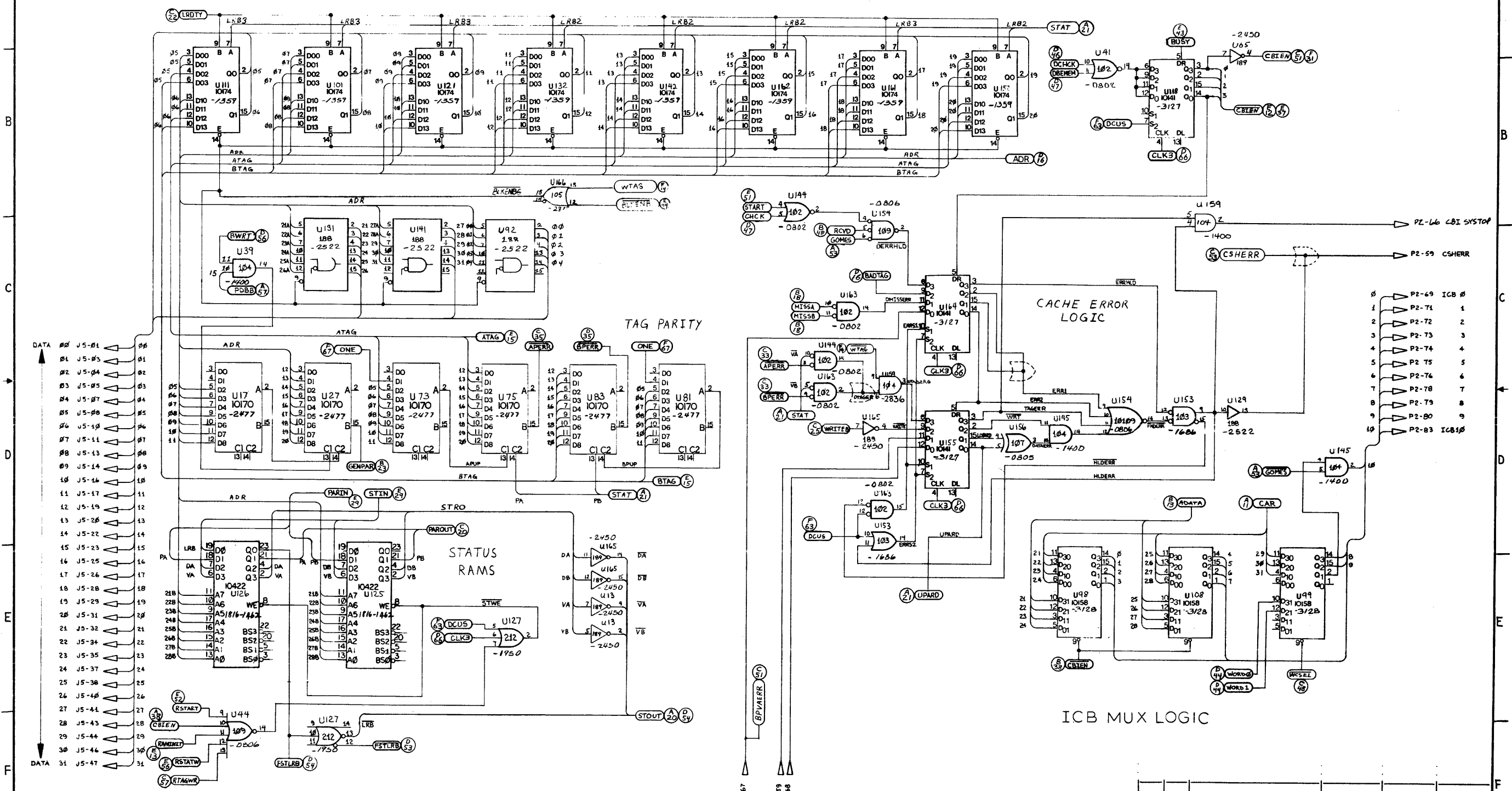
### STATUS REGISTER AND GENERATION LOGIC



ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO	MAT'L DWG NO	MAT'L SPEC
PCA-CAC SCHEMATIC					
TITLE			HEWLETT PACKARD PERM. PRINT		
NEXT ASSEMBLY			PART NUMBER		
FINISH			SCALE		

ENGINEERING RESPONSIBILITY																REVISIONS																DATE	
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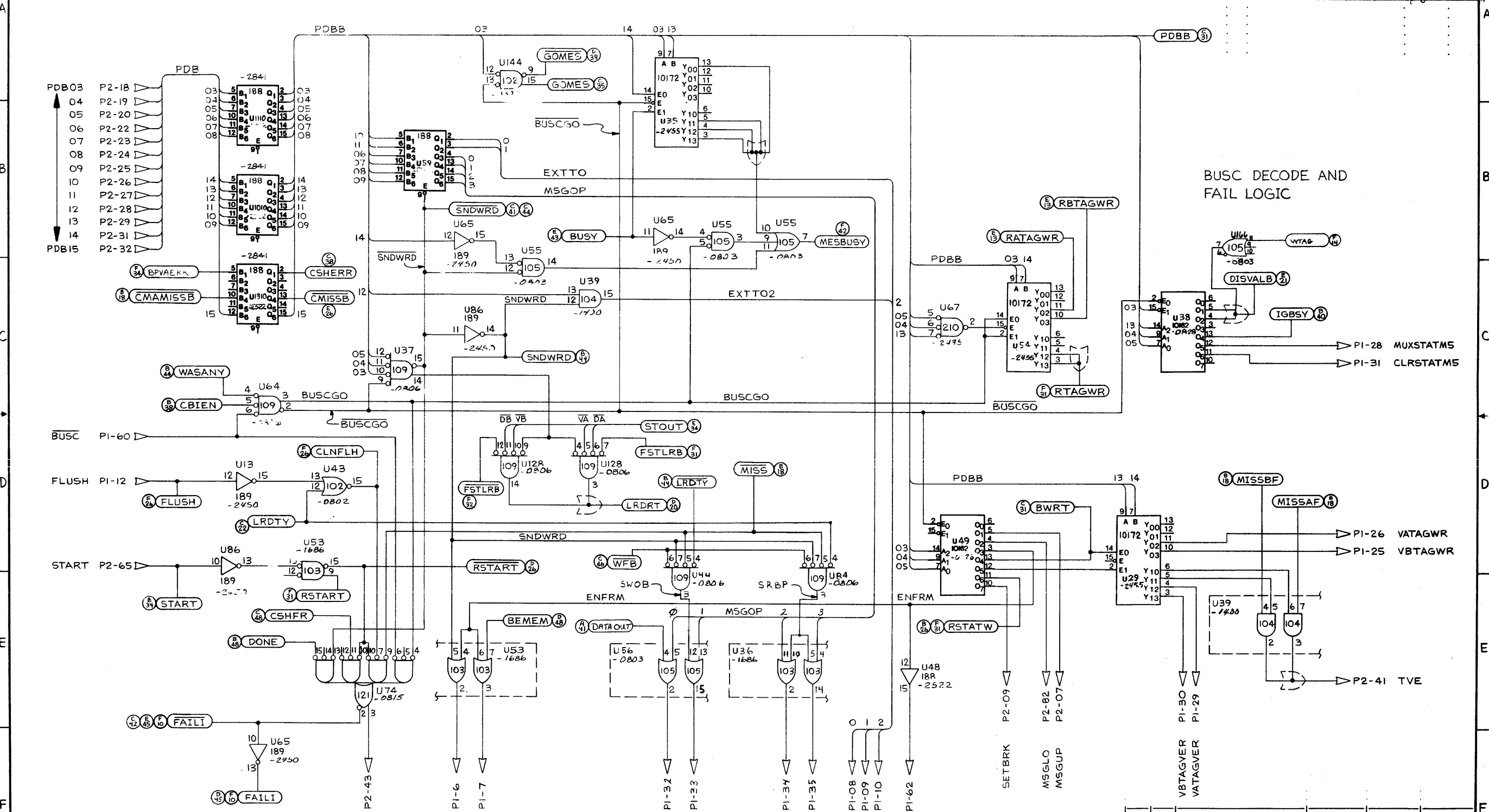
### DATA BUS MUX LOGIC



ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.
PCA-CAC SCHEMATIC					
TITLE			HEWLETT PACKARD PERM. PRINT		
NEXT ASSEMBLY 30140A			PART NUMBER 30140-60009		
PART NO.			SCALE		
30140-60009-53			1-30140-60009-53		



ENGINEERING RESPONSIBILITY		SERIAL		DATE	
A		B		C	
D		E		F	
G		H		I	
J		K		L	
M		N		O	
P		Q		R	
S		T		U	
V		W		X	
Y		Z		AA	
AB		AC		AD	
AE		AF		AG	
AH		AI		AJ	
AK		AL		AM	
AN		AO		AP	
AQ		AR		AS	
AT		AU		AV	
AW		AX		AY	
AZ		BA		BB	
BC		BD		BE	
BF		BG		BH	
BI		BJ		BK	
BL		BM		BN	
BO		BP		BQ	
BR		BS		BT	
BU		BV		BW	
BX		BY		BZ	
CA		CB		CC	
CD		CE		CF	
CG		CH		CI	
CJ		CK		CL	
CM		CN		CO	
CP		CQ		CR	
CS		CT		CU	
CV		CW		CX	
CY		CZ		DA	
DB		DC		DD	
DE		DF		DG	
DH		DI		DJ	
DK		DL		DM	
DN		DO		DP	
DQ		DR		DS	
DT		DU		DV	
DW		DX		DY	
DX		DY		DZ	
EA		EB		EC	
ED		EE		EF	
EG		EH		EI	
EJ		EK		EL	
EM		EN		EO	
EP		EQ		ER	
ES		ET		EU	
EV		EW		EX	
EY		EZ		FA	
FB		FC		FD	
FE		FF		FG	
FH		FI		FJ	
FK		FL		FM	
FN		FO		FP	
FQ		FR		FS	
FT		FU		FV	
FW		FX		FY	
FZ		GA		GB	
GC		GD		GE	
GF		GG		GH	
GI		GJ		GK	
GL		GM		GN	
GO		GP		GQ	
GR		GS		GT	
GU		GV		GW	
GX		GY		GZ	
HA		HB		HC	
HD		HE		HF	
HG		HH		HI	
HJ		HK		HL	
HM		HN		HO	
HP		HQ		HR	
HS		HT		HU	
HV		HW		HX	
HY		HZ		IA	
IB		IC		ID	
IE		IF		IG	
IH		II		IJ	
IK		IL		IM	
IN		IO		IP	
IQ		IR		IS	
IT		IU		IV	
IW		IX		IY	
IZ		JA		JB	
JC		JD		JE	
JF		JG		JH	
JI		JJ		JK	
JL		JM		JN	
JO		JP		JQ	
JR		JS		JT	
JU		JV		JW	
JX		JY		JZ	
KA		KB		KC	
KD		KE		KF	
KG		KH		KI	
KJ		KK		KL	
KM		KN		KO	
KP		KQ		KR	
KS		KT		KU	
KV		KW		KX	
KY		KZ		LA	
LB		LC		LD	
LE		LF		LG	
LH		LI		LJ	
LK		LL		LM	
LN		LO		LP	
LQ		LR		LS	
LT		LU		LV	
LW		LX		LY	
LZ		MA		MB	
MC		MD		ME	
MF		MG		MH	
MI		MJ		MK	
ML		MN		MO	
MP		MQ		MR	
MS		MT		MU	
MV		MW		MX	
MY		MZ		NA	
NB		NC		ND	
NE		NF		NG	
NH		NI		NJ	
NK		NL		NM	
NO		NP		NQ	
NR		NS		NT	
NU		NV		NW	
NX		NY		NZ	
OA		OB		OC	
OD		OE		OF	
OG		OH		OI	
OJ		OK		OL	
OM		ON		OO	
OP		OQ		OR	
OS		OT		OU	
OV		OW		OX	
OY		OZ		PA	
PB		PC		PD	
PE		PF		PG	
PH		PI		PJ	
PK		PL		PM	
PN		PO		PP	
PQ		PR		PS	
PT		PU		PV	
PW		PX		PY	
PZ		QA		QB	
QC		QD		QE	
QF		QG		QH	
QI		QJ		QK	
QL		QM		QN	
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QX		QY		QZ	
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RD		RE		RF	
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RM		RN		RO	
RP		RQ		RR	
RS		RT		RU	
RV		RW		RX	
RY		RZ		SA	
SB		SC		SD	
SE		SF		SG	
SH		SI		SJ	
SK		SL		SM	
SN		SO		SP	
SQ		SR		SS	
ST		SU		SV	
SW		SX		SY	
SZ		TA		TB	
TC		TD		TE	
TF		TG		TH	
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TL		TM		TN	
TO		TP		TQ	
TR		TS		TT	
TU		TV		TW	
TX		TY		TZ	
UA		UB		UC	
UD		UE		UF	
UG		UH		UI	
UJ		UK		UL	
UM		UN		UO	
UP		UQ		UR	
US		UT		UU	
UV		UW		UX	
UY		UZ		VA	
VB		VC		VD	
VE		VF		VG	
VH		VI		VJ	
VK		VL		VM	
VN		VO		VP	
VQ		VR		VS	
VT		VU		VV	
VW		VX		VY	
VZ		WA		WB	
WC		WD		WE	
WF		WG		WH	
WI		WJ		WK	
WL		WM		WN	
WO		WP		WQ	
WR		WS		WT	
WU		WV		WW	
WX		WY		WZ	
XA		XB		XC	
XD		XE		XF	
XG		XH		XI	
XJ		XK		XL	
XM		XN		XO	
XP		XQ		XR	
XS		XT		XU	
XV		XW		XZ	
YA		YB		YC	
YD		YE		YF	
YG		YH		YI	
YJ		YK		YL	
YM		YN		YO	
YP		YQ		YR	
YS		YT		YU	
YV		YW		YZ	
ZA		ZB		ZC	
ZD		ZE		ZF	
ZG		ZH		ZI	
ZJ		ZK		ZL	
ZM		ZN		ZO	
ZP		ZQ		ZR	
ZS		ZT		ZU	
ZV		ZW		ZX	
ZY		ZZ		AA	

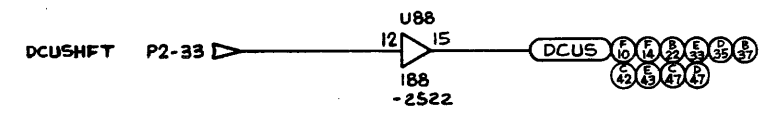
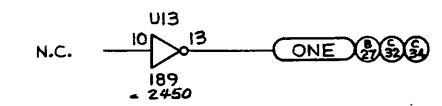
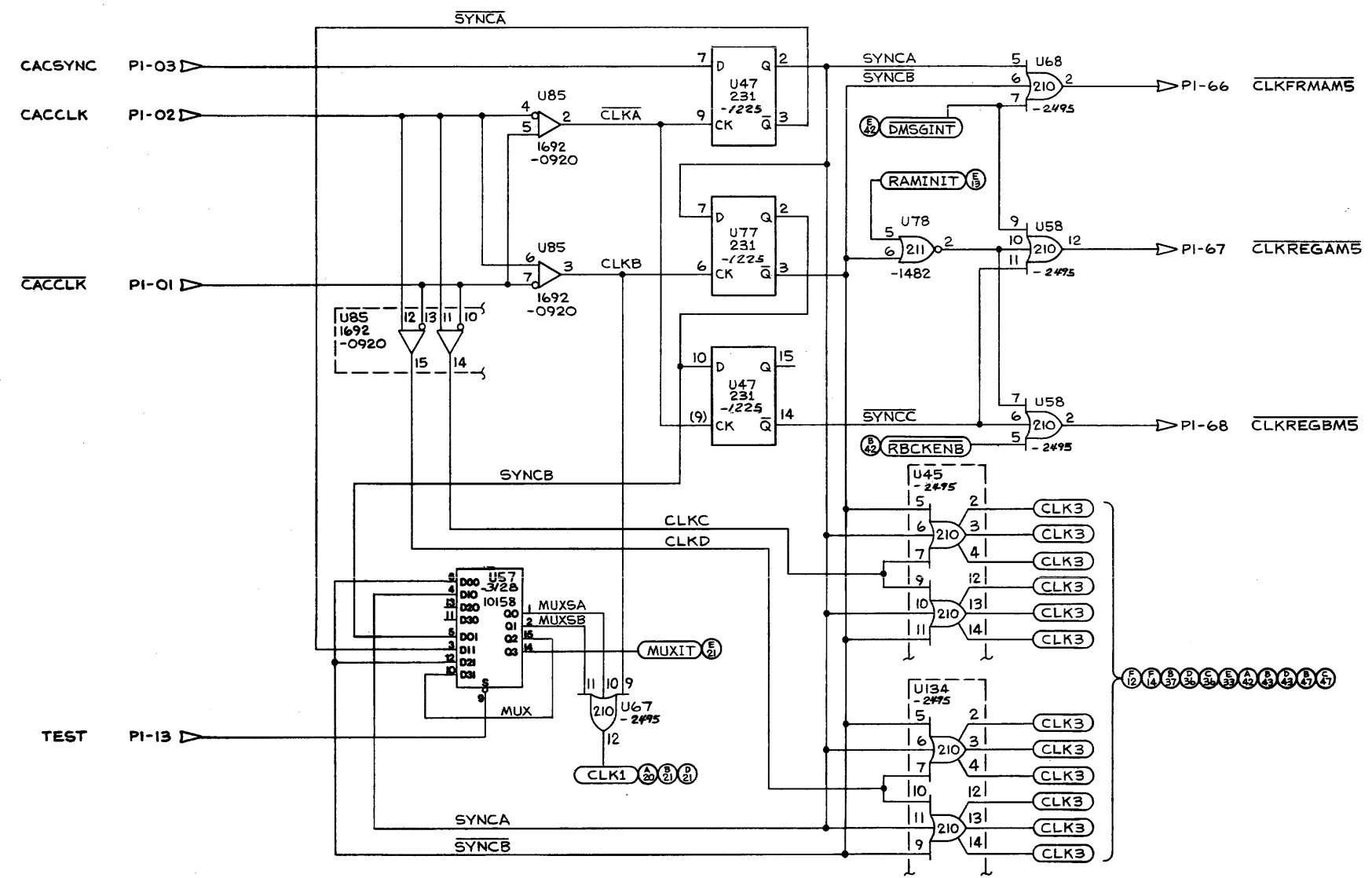


BUSC DECODE AND FAIL LOGIC

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.
PCA-CAC SCHEMATIC					
TITLE			HEWLETT PACKARD PERM. PRINT		
NEXT ASSEMBLY			30140-60009		
FINISH			D-30140-60009-55		
SCALE			SHEET 1 OF 1		



CLOCK GENERATION LOGIC



ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L OWL. NO.	MAT'L SPEC.
PCA-CAC SCHEMATIC					
TITLE			HEWLETT PACKARD PERM. PRINT		
NEXT ASSEMBLY			30140A	30140-60009	
PART NUMBER			1-30140-60009-56		
FORM			SCALE		

-5.2V C1-1, C2-1, C3-1, C4-1, C5-1, C6-1, C7-1, C8-1, C9-1, C19-1, C20-1, C21-1, C22-1, C23-1, C24-1, C25-1, C26-1, C27-1, C37-1, C38-1, C39-1, C40-1, C41-1, C42-1, C43-1, C44-1, C45-1, C55-1, C56-1, C57-1, C58-1, C59-1, C60-1, C61-1, C62-1, C63-1, C72-2, C73-1, C74-1, C76-1, C77-1, C78-1, C79-1, C80-1, C81-1, C84-1, C91-1, C92-1, C94-1, C95-1, C96-1, C97-1, C98-1, C99-1, C103-1, C110-1, C111-1, C113-1, C114-1, C115-1, C116-1, C117-1, C118-1, C119-1, C129-1, C130-1, C131-1, C132-1, C133-1, C134-1, C135-1, C136-1, C137-1,

P1-115, P1-116, P1-117, P1-118, P1-119, P1-120,

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P2-035, P2-036, P2-037, P2-038, P2-039, P2-040,

R1-1, R2-1, R3-1, R4-1, R5-1, R6-1, R7-1, R8-1, R9-1, R10-1, R11-1, R12-1, R13-1, R14-1, R15-1, R16-1, R17-1, R18-1, R19-1, R20-1, R21-1, R22-1, R23-1, R24-1, R25-1, R26-1, R27-1, R28-1, R29-1, R30-1, R31-1, R32-1, R33-1, R34-1, R35-1, R36-1, R37-1, R38-1, R39-1, R40-1, R41-1, R42-1, R43-1, R44-1, R45-1, R46-1, R47-1, R48-1, R49-1, R50-1, R51-1, R52-1, R53-1, R54-1, R55-1, R56-1, R57-1, R58-1, R59-1, R60-1, R61-1, R62-1, R63-1, R64-1, R65-1, R66-1, R67-1, R68-1, R69-1, R70-1, R71-1, R72-1, R73-1, R74-1, R75-1, R76-1, R77-1, R78-1, R79-1, R80-1, R81-1, R82-1, R83-1, R84-1, R85-1, R86-1, R87-1, R88-1, R89-1, R90-1, R91-1, R92-1, R93-1, R94-1, R95-1, R96-1, R97-1, R98-1, R99-1, R100-1, R101-1, R102-1, R103-1, R104-1, R105-1, R106-1, R107-1, R108-1, R109-1, R110-1, R111-1, R112-1, R113-1, R114-1, R115-1, R116-1, R117-1, R118-1, R119-1, R120-1, R121-1, R122-1, R123-1, R124-1, R125-1, R126-1, R127-1, R128-1, R129-1, R130-1, R131-1, R132-1,

GROUND U12-16, U12-1, U13-16, U13-1, U14-16, U14-15, U14-1, U15-16, U15-1, U16-16, U16-1, U17-16, U17-1, U18-16, U18-1, U19-16, U19-1, U21-16, U21-1, U22-16, U22-1, U23-16, U23-1, U24-16, U24-1, U25-16, U25-1, U26-16, U26-1, U27-16, U27-1, U28-16, U28-1, U29-16, U29-1, U31-16, U31-1, U32-16, U32-1, U33-16, U33-1, U34-16, U34-1, U35-16, U35-1, U36-16, U36-1, U37-16, U37-1, U38-16, U38-1, U39-16, U39-1, U41-16, U41-1, U42-16, U42-1, U43-16, U43-1, U44-16, U44-1, U45-16, U45-15, U45-1, U46-16, U46-15, U46-1, U47-16, U47-1, U48-16, U48-1, U49-16, U49-1, U51-16, U51-1, U52-16, U52-1, U53-16, U53-1, U54-16, U54-1, U55-16, U55-1, U56-16, U56-1, U57-16, U57-1, U58-16, U58-15, U58-1, U59-16, U59-1, U61-16, U61-1, U62-16, U62-1, U63-16, U63-1, U64-16, U64-1, U65-16, U65-1, U66-16, U66-1, U67-16, U67-15, U67-1, U68-16, U68-15, U68-1, U69-16, U69-1, U71-16, U71-1, U72-16, U72-1, U73-16, U73-1, U74-16, U74-1, U75-16, U75-1, U76-16, U76-1, U77-16, U77-1, U78-16, U78-15, U78-1, U79-16, U79-1, U81-16, U81-1, U82-16, U82-1, U83-16, U83-1, U84-16, U84-1, U85-16, U85-1, U86-16, U86-1, U87-16, U87-1, U88-16, U88-1, U89-16, U89-15, U89-1, U92-16, U92-1, U93-16, U93-1, U94-16, U94-1, U95-24, U95-1, U96-24, U96-1, U97-16, U97-1, U98-16, U98-1, U101-1, U101-16, U102-16, U102-15, U102-1, U103-16, U103-1, U104-16, U104-1, U105-24, U105-1, U106-24, U106-1, U107-16, U107-1, U109-16, U109-1, U111-16, U111-1, U112-16, U112-15, U112-1, U113-16, U113-1, U114-16, U114-1, U115-24, U115-1, U116-24, U116-1, U117-16, U117-1, U118-16, U118-1, U119-16, U119-1, U121-16, U121-1, U122-16, U122-1, U123-16, U123-1, U124-16, U124-1, U125-24, U125-1, U126-24, U126-1, U127-16, U127-15, U127-1, U128-16, U128-1, U129-16, U129-1, U131-1, U131-16, U131-1, U132-16, U132-1, U133-16, U133-1, U134-16, U134-15, U134-1, U135-24, U135-1, U136-24, U136-1, U137-16, U137-1, U138-16, U138-1, U139-16, U139-1, U141-16, U141-1, U142-16, U142-1, U143-16, U143-1, U144-16, U144-1, U145-16, U145-1, U146-16, U146-1, U147-16, U147-1, U148-16, U148-1, U149-16, U151-16, U151-1, U152-16, U152-1, U153-16, U153-1, U154-16, U154-1, U155-16, U155-1, U156-16, U156-1, U157-16, U157-1, U158-16, U158-1, U159-16, U159-1, U161-16, U161-1, U162-16, U162-1, U163-16, U163-1, U164-16, U164-1, U165-16, U165-1, U166-16, U166-1, U167-16, U167-1, U168-16, U169-16, U169-1, U1010-16, U1010-1, U1110-16, U1110-1, U1310-16, U1310-1

GROUND C1-2, C2-2, C3-2, C4-2, C5-2, C6-2, C7-2, C8-2, C9-2, C10-2, C11-2, C12-2, C13-2, C14-2, C15-2, C16-2, C17-2, C18-2, C19-2, C20-2, C21-2, C22-2, C23-2, C24-2, C25-2, C26-2, C27-2, C28-2, C29-2, C30-2, C31-2, C32-2, C33-2, C34-2, C35-2, C36-2, C37-2, C38-2, C39-2, C40-2, C41-2, C42-2, C43-2, C44-2, C45-2, C46-2, C47-2, C48-2, C49-2, C50-2, C51-2, C52-2, C53-2, C54-2, C55-2, C56-2, C57-2, C58-2, C59-2, C60-2, C61-2, C62-2, C63-2, C64-2, C65-2, C66-2, C67-2, C68-2, C69-2, C70-2, C71-2, C72-1, C73-2, C74-2, C75-2, C76-2, C77-2, C78-2, C79-2, C80-2, C81-2, C82-2, C83-2, C84-2, C85-2, C86-2, C87-2, C88-2, C89-2, C90-2, C91-2, C92-2, C93-2, C94-2, C95-2, C96-2, C97-2, C98-2, C99-2, C100-1, C101-2, C102-2, C103-2, C104-2, C105-2, C106-2, C107-2, C108-2, C109-2, C110-2, C111-2, C112-2, C113-2, C114-2, C115-2, C116-2, C117-2, C118-2, C119-2, C120-2, C121-2, C122-2, C123-2, C124-2, C125-2, C126-2, C127-2, C128-2, C129-2, C130-2, C131-2, C132-2, C133-2, C134-2, C135-2, C136-2, C137-2, C138-2, C139-2, C140-2, C141-2, C142-2, C143-2, C144-2, C145-2,

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J5-002, J5-006, J5-009, J5-012, J5-015, J5-018, J5-021, J5-024, J5-027, J5-030, J5-033, J5-036, J5-039, J5-042, J5-045, J5-049,

TP1-1, TP2-1, TP3-1,

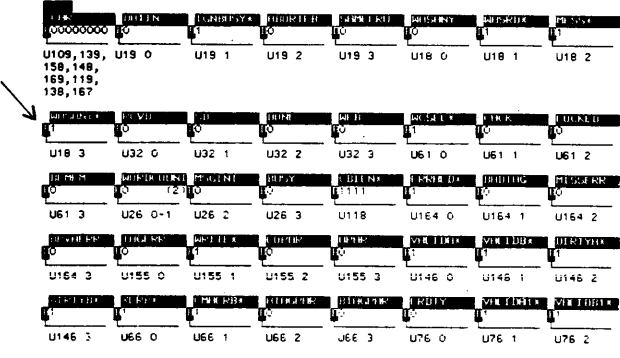
- NOTES:
1. SIGNAL NAME REFERS TO SIGNALS LINE BEING TERMINATED BY THE RESPECTIVE RESISTOR. (SEE NOTE 2)
  2. THE BOX NUMBER LISTED UNDER "PACK" REPRESENTS THE REFERENCE DESIGNATOR ASSOCIATED WITH THE RESISTOR PACK TERMINATING THE RESPECTIVE SIGNAL NAME. THE NUMBER LISTED UNDER "PIN" REPRESENTS THE TERMINATING PIN FOR THAT SIGNAL.
  3. THIS TABLE SHOWS THE INTEGRATED CIRCUITS COMPRISING EACH SEGMENT OF THE SHIFT STRING. THE NUMBERS FOLLOWING THE LOOK NO., SUCH AS "LOOK 0-1", REPRESENTS THE BIT NUMBERS OF THE INTEGRATED CIRCUIT THAT ARE PRESENT IN THAT SEGMENT. IF NO BIT NUMBERS ARE GIVEN, SUCH AS "LOOK", THEN ALL OF THE OUTPUT BITS, 0-3, ARE PRESENT IN THE SHIFT STRING SEGMENT. THE NUMBERS THAT ARE IN PARENTHESES, SUCH AS "(8)", GIVE THE NUMBER OF BITS THAT ARE PRESENT IN THAT SEGMENT OF THE SHIFT STRING. THE SEGMENTS WITH NO SUCH NUMBERS HAVE THE NUMBER OF BITS THAT WOULD BE EXPECTED. THE "H" OR "B" SPECIFIES IF THE SEGMENT IS REPRESENTED IN A HEX OR A BINARY NUMBER.
  4. UNLESS OTHERWISE NOTED, ALL INTEGRATED CIRCUITS IN THE SHIFT STRING ARE 1820-0825. BIT 0=PIN 3, BIT 1=PIN 2, BIT 2=PIN 15, BIT 3=PIN 14.

ITEM	QTY	MATERIAL DESCRIPTION	MAT'L DWG NO.	MAT'L DWG NO.	MAT'L SPEC.
		PCA-CAC SCHEMATIC			
		HEWLETT PACKARD PERM. PRINT			
		NEXT ASSEMBLY 30140A			
		PART NUMBER			
		SCALE			
		30140-60009-57			

SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN			
ABORTB*	R27	7	ADR18	R124	6	BTAG14	R116	7	CAR03	R70	2	CLRB	R9	6	ERH	R104	4	NEWPARB*	R21	6	SNDWRD*	R124	7	WASS2	R7	7
ABORTBP	R66	2	ADR19	R116	5	BTAG15	R125	2	CAR04	R70	7	CMISSB*	R46	2	FAILI	R60	8	NK11	R122	6	SRRP	R22	6	WASS2	R79	3
ABORTBF*	R117	2	ADR20	R125	6	BTAG16	R125	8	CAR05	R70	6	COMPAD*	R85	6	FAILI*	R115	4	NL14	R127	5	START	R67	7	WETAGA*	R76	4
ABORTIM5*	R16	6	ADR21A	R97	4	BTAG17	R124	8	CAR06	R70	4	COMPBD*	R85	7	FLUSH	R10	5	NL14*	R72	8	STATDA*	R36	8	WETAGB*	R110	3
ADATAP0M5	R44	7	ADR21B	R102	7	BTAG18	R124	2	CAR07	R61	5	COMPB1*	R89	7	FNDERR*	R126	3	NLRBE	R63	5	STATDB*	R49	4	WFB	R69	2
ADATAP1M5	R43	8	ADR22A	R97	6	BTAG19	R64	6	CAR08	R61	6	COMPBD*	R119	5	FPF	R121	6	NLRBE*	R63	7	STATLRR1*	R121	4	WFB*	R118	8
ADATAP2M5	R43	9	ADR22B	R102	6	BTAG20	R64	5	CAR09	R131	6	CSHFR	R130	7	NP6	R130	7	NP6	R95	5	STATLRR2*	R17	3	WFB*	R23	6
ADATAP3M5	R43	8	ADR23A	R97	7	BUSC4*	R56	6	CAR10	R121	5	CSHFR*	R117	7	OLRB	R9	4	OLRB	R95	4	STATLRR2*	R117	6	WOL*	R117	6
ADATAP4M5	R70	3	ADR23B	R97	7	BUSCGO	R39	5	CAR11	R113	2	CSHNL*	R108	6	QNE	R55	4	QNE	R55	4	STATLRR3*	R117	3	WORD0	R129	2
ADATAP5M5	R70	8	ADR24A	R106	7	BUSCGO*	R34	2	CAR12	R113	3	CLR3	R35	3	FX12	R51	7	PARINPA	R102	3	STATLRR3*	R115	8	WORD1	R129	3
ADATAP6M5	R70	5	ADR24B	R92	4	BWRT	R25	3	CAR13	R123	6	DATAERR	R119	7	GEMPAR	R21	8	PARINPB	R101	3	STATLRR3*	R121	3	WQY	R53	4
ADATAP7M5	R60	3	ADR25A	R106	6	EMRT	R25	3	CAR14	R123	4	DATAIN	R48	4	GEMES	H118	2	PAROUTPA	R58	6	STATPA	R12	4	WRITE*	R128	3
ADATAP8M5	R52	2	ADR25B	R101	4	CAB00	R130	4	CAR15	R111	4	DATAOPH5	R24	6	HV	R119	6	PAROUTPB	R58	5	STATPB	R21	4	WRITEB	R46	5
ADATAP9M5	R61	2	ADR26A	R106	4	CAB01	R83	5	CAR16	R123	2	DATAOUT	R15	5	HV	R47	2	PDBB03	R100	6	STATVA*	R26	6	WRT*	R119	2
ADATAP10M5	R131	7	ADR26B	R106	5	CAB02	R87	2	CAR17	R52	4	DANEH	R15	5	HIDTY*	R49	7	PDBB04	R50	6	STATVB*	R17	6	WRTA*	R4	6
ADATAP11M5	R131	3	ADR27A	R106	5	CAB03	R96	7	CAR18	R61	4	DBNEH	R53	6	HLDER*	R105	7	PDBB05	R50	4	STINDA	R93	3	WRTB*	R11	6
ADATAP12M5	R131	5	ADR27B	R110	7	CAB04	R96	3	CAR19	R52	7	DCBS	R32	8	HLDER*	R126	2	PDBB06	R34	8	STINDB	R92	3	WRY	R110	2
ADATAP13M5	R131	3	ADR28A	R115	5	CAB05	R114	6	CAR20	R52	6	DCHCK	R53	8	HLDWAS*	R28	5	PDBB07	R52	8	STINLRB	R102	2	WRY	R53	5
ADATAP14M5	R123	7	ADR28B	R110	8	CAB06	R114	6	CAR21	R94	6	DCUS	R16	7	HLDWAS*	R15	4	PDBB08	R51	2	STINVA	R93	2	WRY	R36	4
ADATAP15M5	R114	2	ADR29	R106	8	CAB07	R114	3	CAR22	R94	4	DCUS	R16	7	IGBSY	R15	4	PDBB09	R43	7	STINVB*	R92	2	WRTAGA	R129	6
ADATAP16M5	R114	2	ADR30	R115	7	CAB08	R105	5	CAR23	R78	4	DRHLD*	R18	5	KB4	R19	4	PDBB10	R43	5	STILRB	R71	7	WRTAGB	R129	5
ADATAP17M5	R61	7	ADR31	R115	6	CAB09	R122	6	CAR24	R78	6	DL5	R25	6	KB4	R19	4	PDBB11	R43	6	STILRB*	R80	8			
ADATAP18M5	R61	3	APER*	R118	6	CAB10	R131	8	CAR25	R83	2	DISVALB	R98	6	LOCK	R54	5	PDBB12	R34	4	STOUTDA*	R95	6			
ADATAP19M5	R52	3	APUP	R66	4	CAB11	R122	3	CAR26	R78	3	DLOCKED	R53	2	LOCK*	R55	5	PDBB13	R30	8	STOUTDB*	R104	6			
ADATAP20M5	R52	5	ATAG05	R84	4	CAB12	R121	2	CAR27	R78	2	DL5	R25	5	LOCK*	R44	4	PDBB14	R47	7	STOUTLRB*	R36	7			
ADATAP21M5	R52	5	ATAG06	R88	5	CAB13	R122	2	CAR28	R129	4	DL5	R25	5	LOCKED*	R27	6	PDBB15	R34	7	STOUTVA*	R104	5			
ADATAP22M5	R54	7	ATAG08	R84	5	CAB14	R122	8	CAR29	R79	6	DL6	R25	6	LOPAR	H119	4	PG11	R31	5	STOUTVB*	R104	7			
ADATAP23M5	R54	3	ATAG09	R88	4	CAB15	R122	5	CAR30	R79	5	DNSS*	R15	6	LOPARD	R120	4	RAMINIT	R12	5	STRODA	R128	6			
ADATAP24M5	R94	3	ATAG10	R97	5	CAB16	R113	5	CAR31	R79	2	DNSS*	R21	3	LRDRT	R37	3	RATAGWR	R29	7	STRODB	R128	5			
ADATAP25M5	R94	3	ATAG11	R97	4	CAB17	R113	4	CAR32	R77	5	DNSS*	R21	3	LRDRT*	R115	2	RBCKENB*	R42	3	STROVA	R2	7			
ADATAP26M5	R112	7	ATAG12	R107	5	CAB18	R132	8	CBLEH1*	R61	8	DNSS*	R51	8	LSDTY*	H29	4	RBPMS	R23	4	STROVB*	R2	5			
ADATAP27M5	R112	3	ATAG13	R107	4	CAB19	R132	7	CBLEH2*	R94	8	DNSS*	R65	2	NESBUSY	R22	7	RBSM5	R23	7	STW*	R92	8			
ADATAP28M5	R112	3	ATAG14	R116	4	CAB20	R132	2	CBLEH3*	R61	8	DRCVD	R18	6	MISS*	R29	6	RBTAGWR	R12	8	SW11	R37	5			
ADATAP29M5	R66	6	ATAG15	R125	4	CAB21	R96	4	CBLEH3*	R127	4	DSELCTHS	R110	5	NISSA	R120	2	RB9	R16	8	SWOB	R49	5			
ADATAP30M5	R68	5	ATAG16	R125	7	CAB22	R96	8	CHKC	R109	5	DTAGER	R17	2	NISSAF*	R25	7	RCVA	R29	8	SWOPHS	R24	4			
ADATAP31M5	R68	3	ATAG17	R124	8	CAB23	R96	6	CHKC*	R49	8	DWASANY	R19	5	NISSAF*	R17	5	RCVB	R12	7	SYNCA	R109	6			
ADRO0	R72	5	ATAG18	R124	3	CAB24	R96	5	CHKOK	R17	4	DWASANY*	R48	5	HISSB*	R130	8	RCVD*	R118	5	SYNCA*	R41	3			
ADRO1	R72	6	ATAG19	R116	3	CAB25	R104	8	CHKOK*	R63	4	DWASANY*	R48	5	HISSB*	R130	8	RCVD*	R117	5	SYNCA*	R41	6			
ADRO2	R81	7	ATAG20	R125	5	CAB26	R113	7	CLKA*	R41	8	DWASRD*	R15	8	HISSB*	R8	5	RCVDSET	R9	7	SYNCA*	R109	4			
ADRO3	R81	7	BADTAG	R127	8	CAB27	R113	6	CLKB	R59	8	DWFL*	R27	5	NI2	R32	4	RCVINC	R28	6	SYNCC*	H51	6			
ADRO4	R81	5	BEMER	R13	5	CAB28	R113	4	CLKC	R30	7	DWOR0	R13	6	NI13	R23	3	RCVINC*	R20	4	TAGER	R118	7			
ADRO5	R84	6	BEMER*	R45	5	CAB29	R130	5	CLKD	R109	6	DWOR1	H22	8	NI11	R18	4	RCG	R7	6	TEST	R50	8			
ADRO6	R86	6	BLKENB*	R107	3	CAB30	R121	8	CLK1	R111	4	MSGOPO	H40	5	NI11	H11	8	RCVINC*	R18	7	TEST2	R36	5			
ADRO7	R80	5	BLKENB*	R126	4	CAB31	R130	2	CLK3-1	R44	3	MSGOP1	R49	3	NI11	R18	4	RSTART	R18	7	TLRB	R20	5			
ADRO8	R84	7	BPER*	R66	5	CACCLX	R66	3	CLK3-10	R132	4	MSGOP2	R31	6	NI11	R18	4	RSTART*	R38	8	TLRB*	R63	2			
ADRO9	R6	8	BPVALERR	R127	3	CACCLX*	R66	3	CLK3-11	R113	8	MSGOP3	R31	3	NI11	R18	4	RSTATW	R38	5	UPAR	R128	4			
ADR10	R14	5	BTAG05	R62	3	CACSL14C	R32	7	CLK3-12	R104	3	HUX	R50	7	NI11	R18	4	RSTATW*	R117	4	VALID*	R85	8			
ADR11	R14	4	BTAG06	R62	4	CARS10	R114	7	CLK3-2	R11	7	HUXIT	R44	8	NI11	R18	4	RSTATW*	R38	4	VALID*	R89	8			
ADR12	R14	3	BTAG07	R62	7	CARS11	R132	3	CLK3-3	R16	4	EL3	R48	8	NI11	R18	4	RSTATW*	R38	4	VALID*	R89	8			
ADR13	R14	8	BTAG08	R62	4	CARS12	R130	6	CLK3-4	R105	2	EL4	R39	4	NI11	R18	4	SAMELRU	R63	6	VA1*	R98	2			
ADR14	R14	2	BTAG09	R62	8	CARS20	R105	6	CLK3-5	R95	2	ERRHLD*	R126	5	NI11	R18	4	SAMELRU*	R9	8	VB1*	R98	3			
ADR15	R13	2	BTAG10	R62	6	CARS21	R132	5	CLK3-6	R105	3	ERKS1	R128	8	NI11	R18	4	SAOPMS	R24	5	VER	R25	2			
ADR16	R14	7	BTAG11	R62	5	CARS22	R130	3	CLK3-7	R118	3	ERKS2	R128	7	NI11	R18	4	SD	R117	8	WASALY	R46	6			
ADK17	R124	5	BTAG12	R64	3	CAR00	R16	5	CLK3-8	R121	7	ERR1	R127	2	NI11	R18	4	SDET	R1	4	WASANT*	R26	7			
			BTAG13	R107	6	CAR01	R69	6	CLK3-9	R128	2	ERR2	R127	2	NI11	R18	4	SRRB*	R63	3	WASS1	R49	6			
			BLKENBGA	R72	4	CAR02	R43	4	CLNFLH	R56	7	ERR2	R119	3	NI11	R18	4	SNDWRD	R109	7	WASS1	R15	7			
									CLNTGER	R119	6				NI11	R18	4				WTAG*	R81	3			

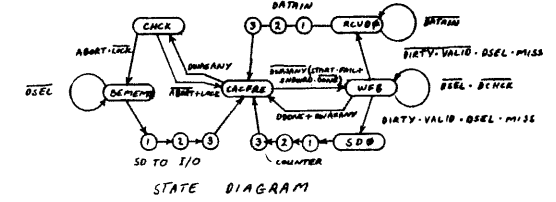
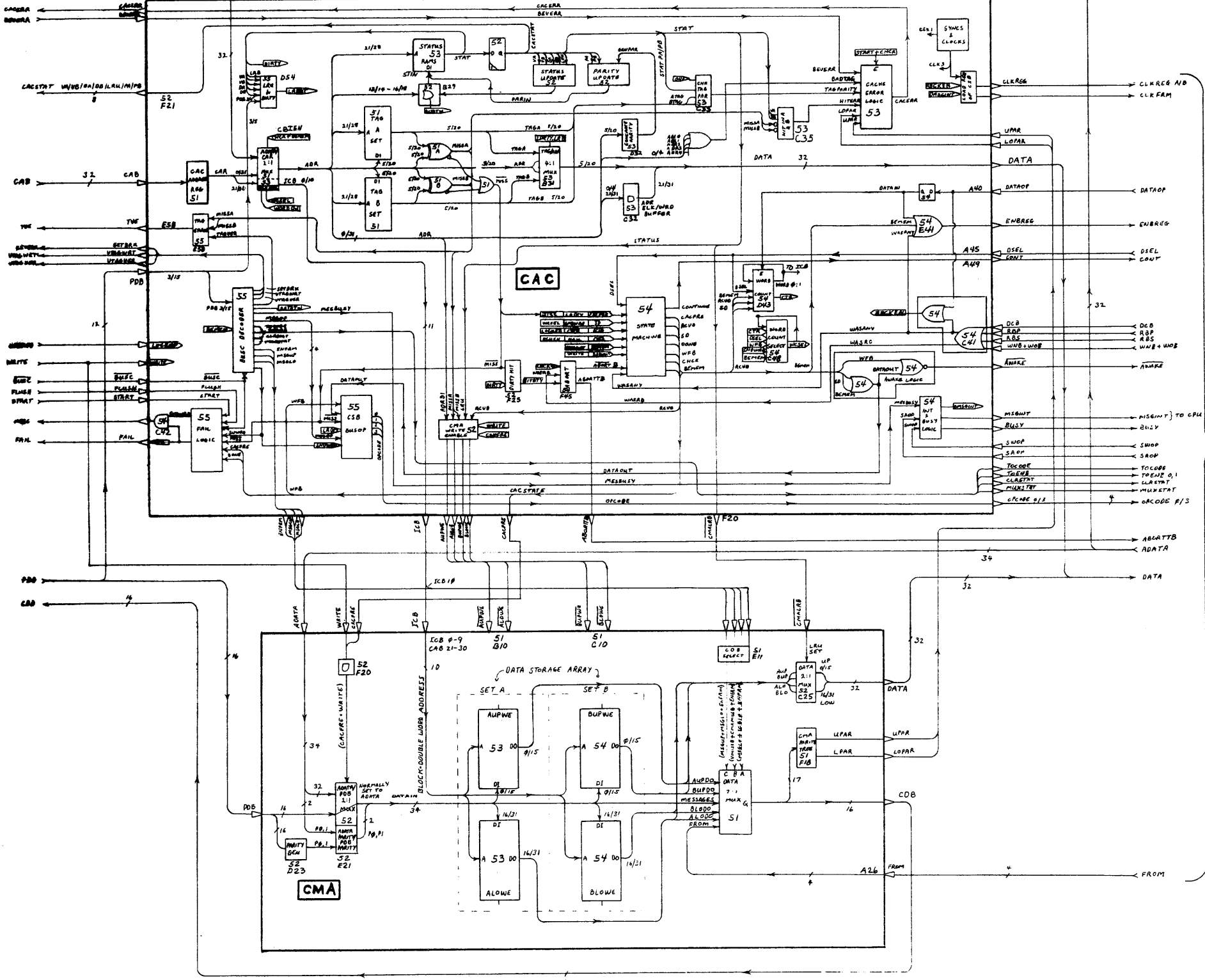
- NOTES:
- SIGNAL NAME REFERS TO SIGNALS LINE BEING TERMINATED BY THE RESPECTIVE RESISTOR. (SEE NOTE 2)
  - THE ROOM NUMBER LISTED UNDER "PACK" REPRESENTS THE REFERENCE DESIGNATOR ASSOCIATED WITH THE RESISTOR PACK TERMINATING THE RESPECTIVE SIGNAL NAME. THE NUMBER LISTED UNDER "PIN" REPRESENTS THE TERMINATING PIN FOR THAT SIGNAL.
  - THIS TABLE SHOWS THE INTEGRATED CIRCUITS COMPRISING EACH SEGMENT OF THE SHIFT STRING. THE NUMBERS FOLLOWING THE LOOK NO., SUCH AS "LOOK 0-1", REPRESENTS THE BIT NUMBERS OF THE INTEGRATED CIRCUIT THAT ARE PRESENT IN THAT SEGMENT. IF NO BIT NUMBERS ARE GIVEN, SUCH AS "LOOK", THEN ALL OF THE OUTPUT BITS, 0-3, ARE PRESENT IN THE SHIFT STRING SEGMENT. THE NUMBERS THAT ARE IN PARENTHESES, SUCH AS "(8)", GIVE THE NUMBER OF BITS THAT ARE PRESENT IN THAT SEGMENT OF THE SHIFT STRING. THE SEGMENTS WITH NO SUCH NUMBERS HAVE THE NUMBER OF BITS THAT WOULD BE EXPECTED. THE "H" OR "B" SPECIFIES IF THE SEGMENT IS REPRESENTED IN A HEX OR A BINARY NUMBER.
  - UNLESS OTHERWISE NOTED, ALL INTEGRATED CIRCUITS IN THE SHIFT STRING ARE 1820-0825. BIT 0=PIN 3, BIT 1=PIN 2, BIT 2=PIN 15, BIT 3=PIN 14.

SHIFT STRING



REF DWG: F-70 ASSY  
 D-11 MOD-CIR  
 D-12 MOD-COMP  
 A-50 DATE CODE INFO  
 D-31 THRU 58 SCHEM

ENGINEERING RESPONSIBILITY														REVISED		APPROVED		DATE	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	7	8	9	10	11	12
[Signature]														[Signature]		[Signature]		[Signature]	
[Signature]														[Signature]		[Signature]		[Signature]	

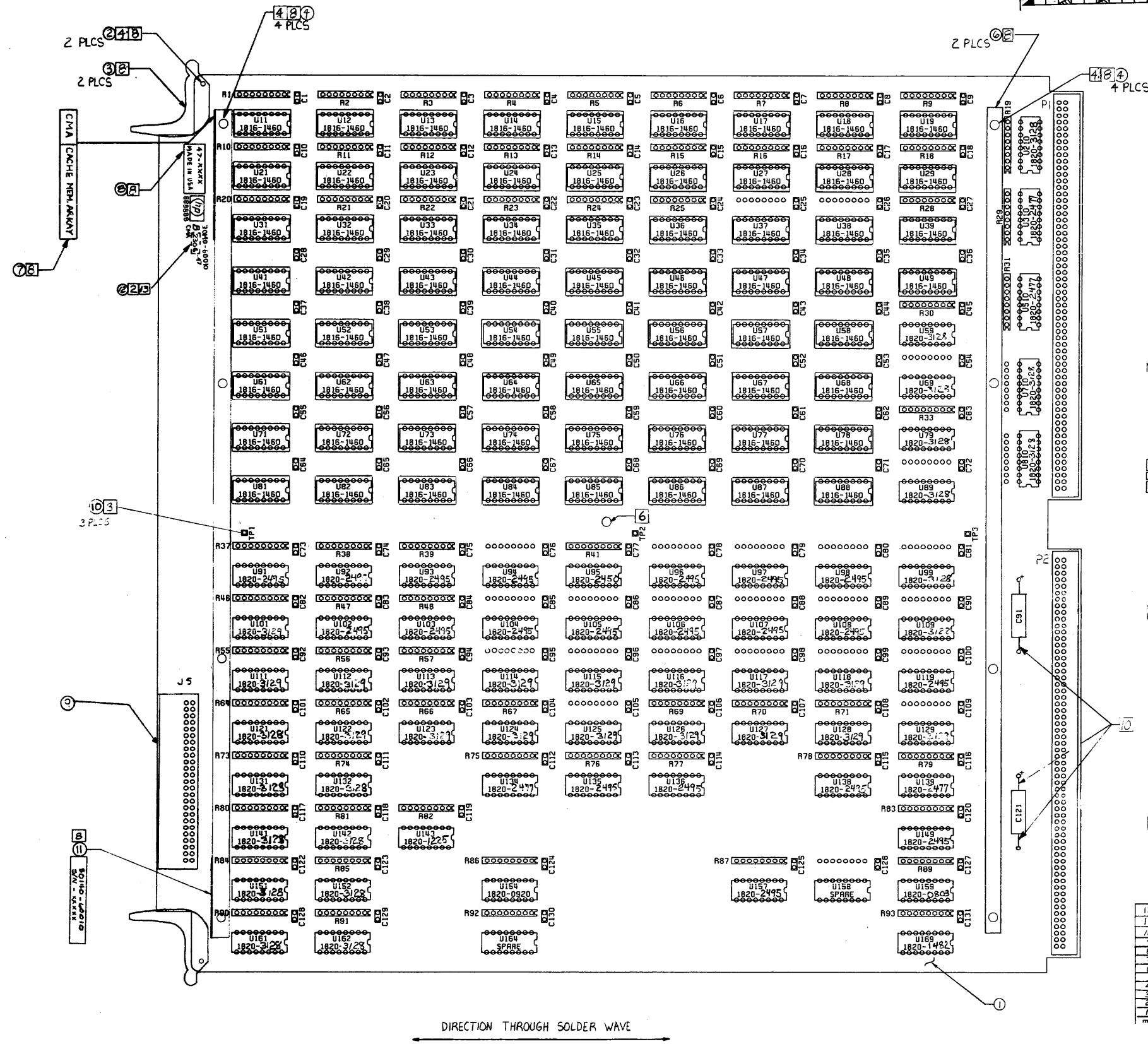


CBI INTERFACE

ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.
		CACHE SYSTEM BLOCK DIAGRAM			
		TITLE	HEWLETT PACKARD PERM. PRINTS		
		NEXT ASSEMBLY	30140A		
		FINISH	SCALE		

REF DWG: R-50 DATE CONF 1M  
 D-SI THROUGH SOLDER WAVE

REV	DESCRIPTION	DATE
A	AS ISSUED	1-24-51
B	REVISED PER P.C.D. 47-3516	1-24-51
C	REVISED PER P.C.D. 47-3516	1-24-51
D	REVISED PER P.C.D. 47-3516	1-24-51
E	REVISED PER P.C.D. 47-3516	1-24-51
F	REVISED PER P.C.D. 47-3516	1-24-51
G	REVISED PER P.C.D. 47-3516	1-24-51
H	REVISED PER P.C.D. 47-3516	1-24-51
I	REVISED PER P.C.D. 47-3516	1-24-51
J	REVISED PER P.C.D. 47-3516	1-24-51



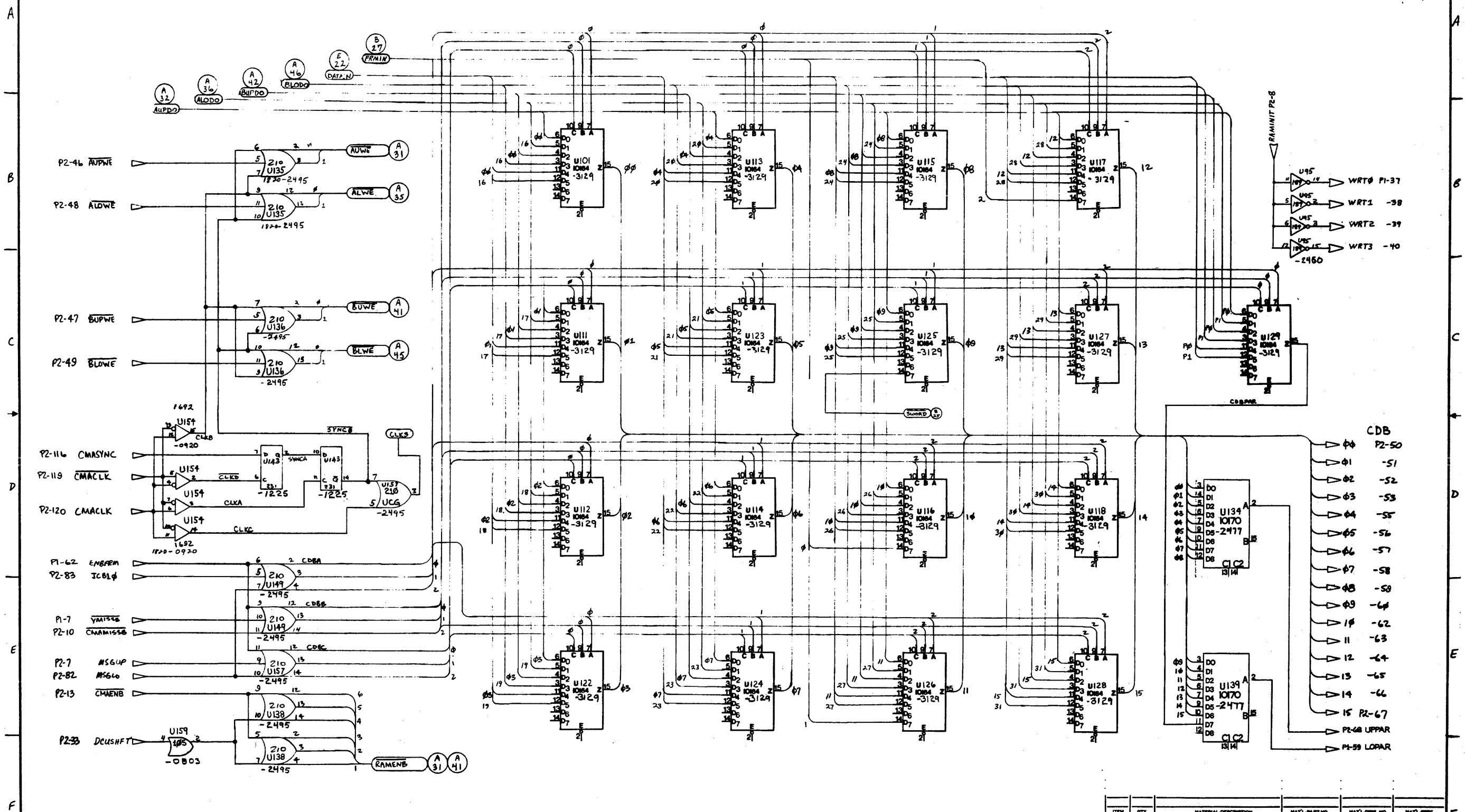
- NOTES:
- UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE IN OHMS  
 RESISTOR NETWORKS ARE 68 OHMS  
 ALL CAPACITANCE IN MICROFARADS  
 ALL CAPACITORS ARE .01UF (0160-5352)  
 ALL IC'S ARE 1820-
  - INSTALL ITEM (A)
  - INSTALL ITEM (B)
  - MASK AS INDICATED PRIOR TO LOADING
  - ALL BOARD LOADING & HANDLING MUST BE DONE AT AN ELECTROSTATIC DISCHARGE PROTECTED WORK STATION CONTAINING TABLE & FLOOR MATS, GROUNDED WRAPE, THERM. TRANSFORMERS, AND ALLY IN ELECTROSTATIC DISCHARGE PROTECTED BAGS.
  - USE SUPPORT FIXTURE DURING WAVE SOLDER.
  - LOAD 16 PIN SOCKETS AS INDICATED, XU---, ETC. LOAD IC'S IN TOUCHUP
  - INSTALL ITEMS (A), (B), (C), (D) IN TOUCHUP
  - PRETEST REQUIRED ON THE GUEST TEST SYSTEM
  - USING AN OHMMETER, CHECK FOR A RESISTANCE OF GREATER THAN 25 OHMS BETWEEN THESE POINTS. DO NOT USE A CONTINUITY LIGHT.
  - INSPECTION CRITERIA - HP STD. SECT. 410
  - THIS ASSY DWG. F-1 IS GOOD FOR BOTH REV A & B BOARDS.

ITEM	QTY	MATERIAL DESCRIPTION	MATL. PART NO.	MATL. QTY. NO.	MATL. SPEC.
12	1	LABEL - DATE CODE	9320-5320		
11	1	LABEL - SERIAL NUMBER	9320-4848		
10	3	TERM - TEST POINT	0360-0294		
9	1	CONN - POST 50M RA	125L-5836		
8	1	LABEL - WARR DATE CD	7120-1430		
7	1	LABEL	7121-2120		
6	2	BRACE	5040-6088		
5	1	DRIVER	0634-6077		
4	5	SCREW 4-40	5040-9804		
3	2	EXTRACTOR	1480-0716		
2	2	AN	30140-8000		
1	1	PCB-CMA	30140-8000		

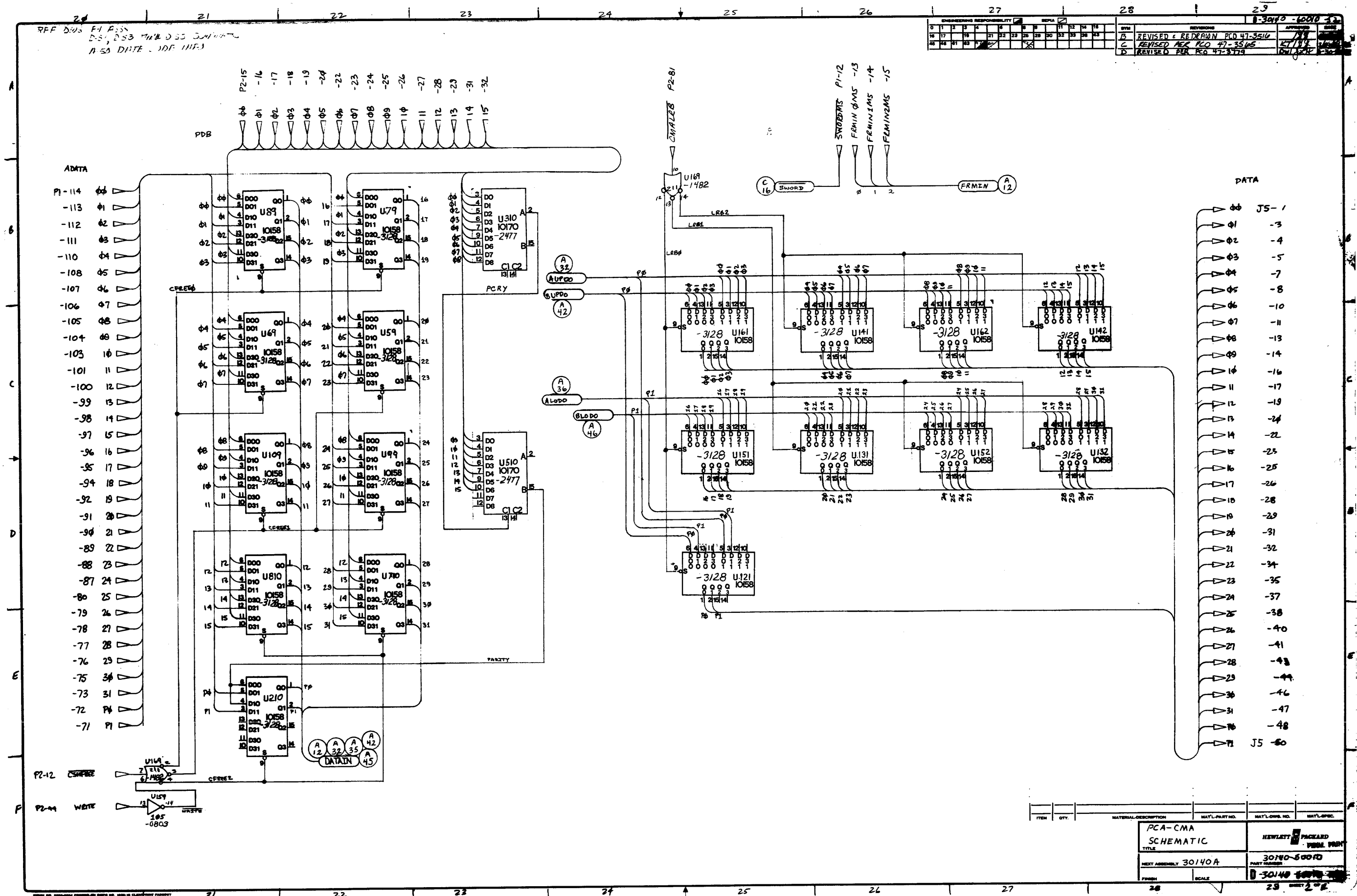
PCA - CMA  
 TITLE ASSY DWG  
 30140A  
 PART NUMBER 30140-60010  
 SCALE 1:1  
 F-30140-60010-1

KFF Dwg 1/1/133Y  
 D-52 NEW D-55 3/4/14/14  
 A-53 NEW 1/1/133Y

ENGINEERING RESPONSIBILITY															REVISIONS															DATE	
DESIGNED BY															CHECKED BY															1/1/133Y	
DRAWN BY															APPROVED BY															1/1/133Y	
PART NO.															REVISED PER P.C. 47-5545															1/1/133Y	
REVISED PER P.C. 47-5179																														1/1/133Y	



ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY. NO.	MAT'L SPEC.
PCA-CMA SCHEMATIC					
TITLE					
NEXT ASSEMBLY 30140A			PART NUMBER 30140-60010		
PART NO.			REVISED PER P.C. 47-5545		
PART NO.			REVISED PER P.C. 47-5179		



ENGINEERING RESPONSIBILITY												
REVISIONS												
0	1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24	25
26	27	28	29	30	31	32	33	34	35	36	37	38
39	40	41	42	43	44	45	46	47	48	49	50	51

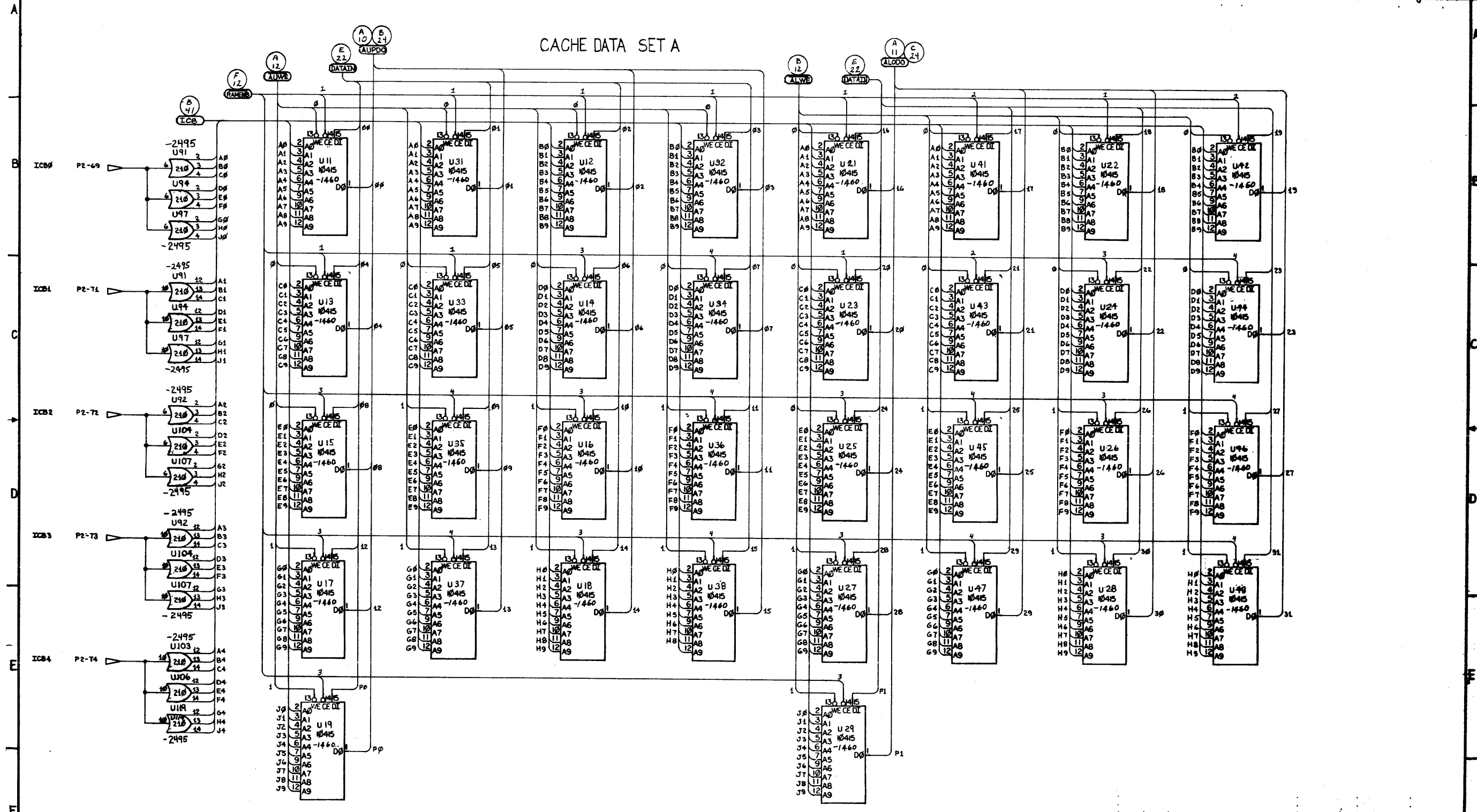
REV	DESCRIPTION	DATE	BY	CHKD	APP'D	DATE
B	REVISED & REDRAWN PCD 47-3514	1/11/68				
C	REVISED PER PCD 47-3515	1/11/68				
D	REVISED PER PCD 47-3517	1/11/68				

ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L ORIG. NO.	MAT'L SPEC.
PCA-CMA					
SCHEMATIC					
HEWLETT-PACKARD					
FEDERAL PRINT					
NEXT ASSEMBLY 30140A			PART NUMBER 30140-50010		
FORM			SCALE		
D-30140 1-6078					
28					

REF DWG F-1 Assy  
D-SI, D-L, D-S7, D-S5, D-SH, R7C  
A-SO DATE CODE INFO

ENGINEERING RESPONSIBILITY																REVISED PER PRO 47-501															
A																REVISED PER PRO 47-501															
B																REVISED PER PRO 47-501															
C																REVISED PER PRO 47-501															
D																REVISED PER PRO 47-501															

CACHE DATA SET A



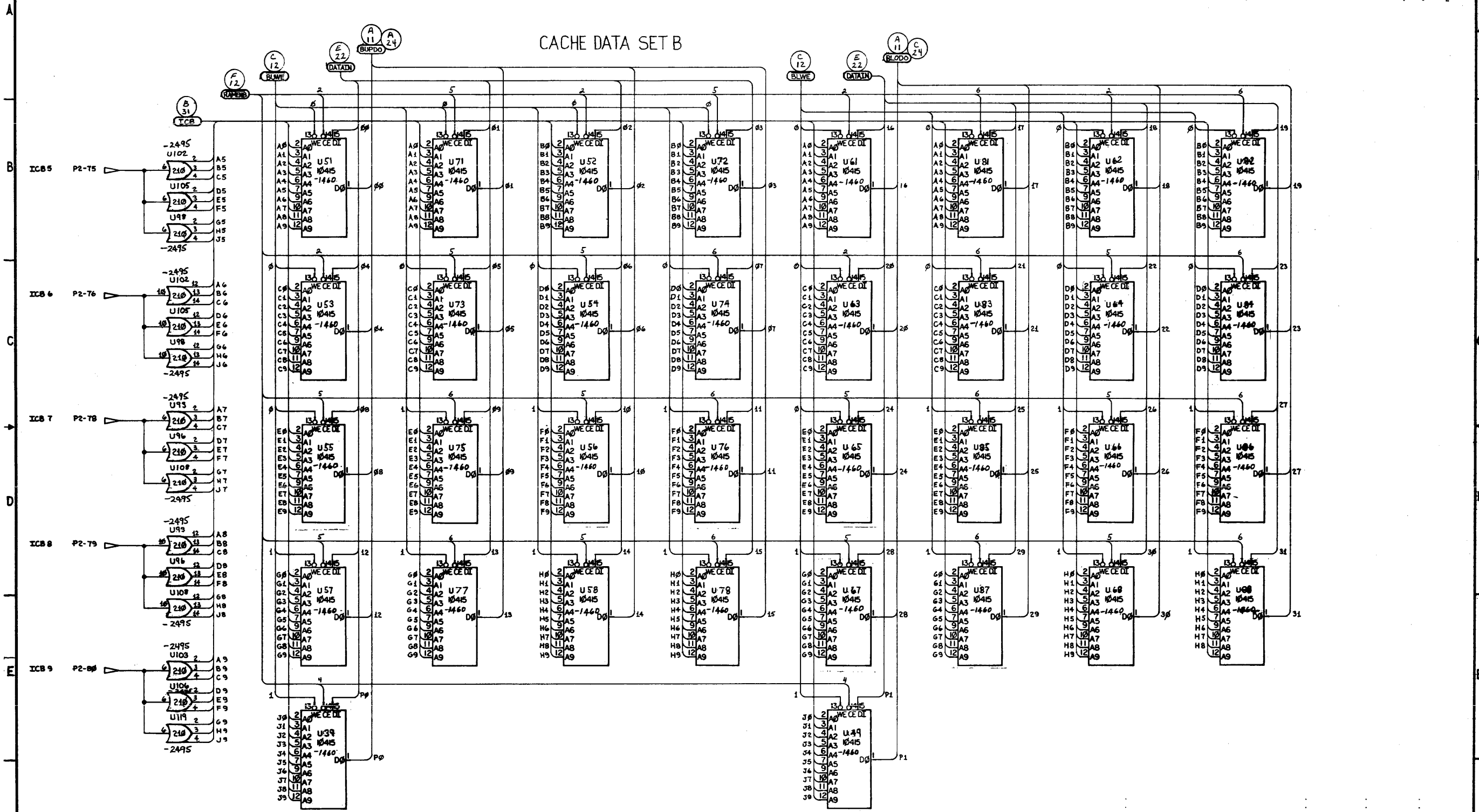
ITEM	QTY.	MATERIAL DESCRIPTION	MATL. PART NO.	MATL. QTY. REQ.	MATL. QTY. SUP.
PCA-CMA					
SCHEMATIC					
TITLE					
NEXT ASSEMBLY 30140A					
PART NO. 30140-0001					
FRONT SCALE					
D-30140-0001-01					



REF DWG: F-1 HSSY  
 D-51 THRU D-52 L-43 S-27A AND  
 A-50 DATE CODE INFO

ENGINEERING RESPONSIBILITY														REVISIONS																											
DESIGN							CHECK							APPROVED							DATE																				
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
BY		REVISED C REDRAWN PER PLO 47-3514		DATE		BY		REVISED PER PLO 47-3505		DATE		BY		REVISED PER PLO 47-3719		DATE		BY		REVISED PER PLO 47-3719		DATE		BY		REVISED PER PLO 47-3719		DATE		BY		REVISED PER PLO 47-3719		DATE		BY		REVISED PER PLO 47-3719		DATE	

CACHE DATA SET B

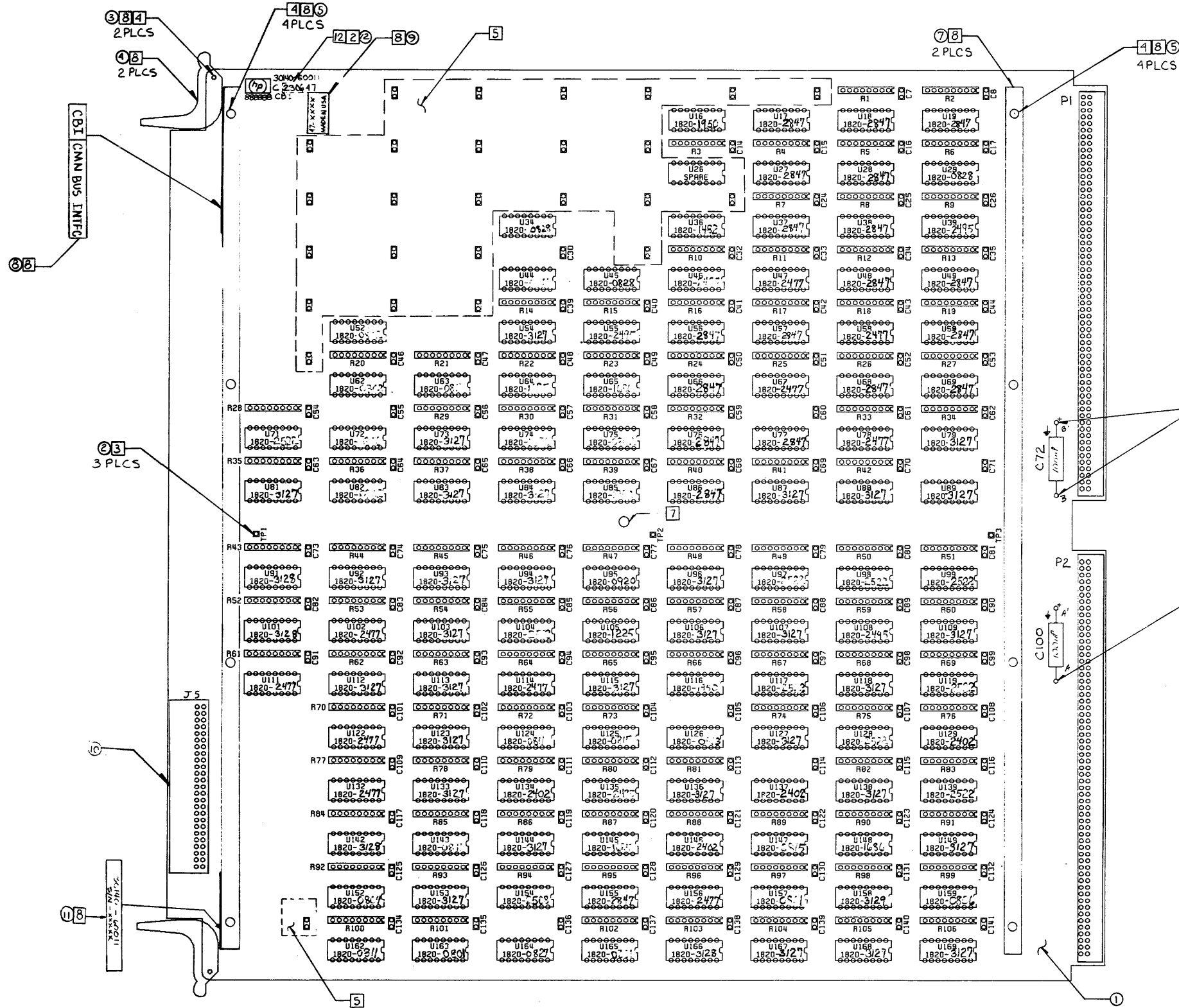


ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY. NO.	MAT'L SPEC.
		PCA-CMA SCHEMATIC		HEWLETT-PACKARD PERM. PRINT	
		NEXT ASSEMBLY 30140A		30140-60010	
		PART NUMBER		D-30140-60010	
		FRSH		SCALE	



REF DWGS: A-50 DATE CODE INFO.  
D-51 THRU D-56 SCHEM.

REV	DESCRIPTION	DATE	BY
1	REVISED PER P.O. 47-3895	11/17/84	BJA
2	REVISED PER P.O. 47-3895	11/17/84	BJA
3	REVISED PER P.O. 47-3895	11/17/84	BJA
4	REVISED PER P.O. 47-3895	11/17/84	BJA
5	REVISED PER P.O. 47-3895	11/17/84	BJA
6	REVISED PER P.O. 47-3895	11/17/84	BJA
7	REVISED PER P.O. 47-3895	11/17/84	BJA
8	REVISED PER P.O. 47-3895	11/17/84	BJA
9	REVISED PER P.O. 47-3895	11/17/84	BJA
10	REVISED PER P.O. 47-3895	11/17/84	BJA
11	REVISED PER P.O. 47-3895	11/17/84	BJA
12	REVISED PER P.O. 47-3895	11/17/84	BJA



- NOTES
- UNLESS OTHERWISE SPECIFIED:  
ALL RESISTANCE IN OHMS  
RESISTORS NETWORKS ARE 68 OHME  
ALL CAPACITANCE IN MICROFARADS  
ALL CAPACITORS ARE .01UF (0160-5352)  
ALL IC'S ARE 1820-
  - INSTALL ITEM ②
  - INSTALL ITEM ③ PLACES
  - MASK AS INDICATED PRIOR TO LOADING
  - DO NOT MASK OR LOAD COMPONENTS IN ENCLOSED AREA
  - ALL LOADING AND BOARD HANDLING MUST BE DONE WITH GROUNDED WRIST STRAP. THIS ASSEMBLY MUST BE TRANSPORTED IN AN ELECTROSTATIC DISCHARGE PROTECTIVE BAG.
  - USE SUPPORT FIXTURE DURING WAVE SOLDER.
  - INSTALL ITEMS ⑧
  - PRETEST REQUIRED ON THE GUEST SYSTEM.
  - USING AN OHMMETER, CHECK FOR A RESISTANCE OF GREATER THAN 25 OHMS BETWEEN THESE POINTS. DO NOT USE A CONTINUITY CHECKER ON THIS ASSEMBLY.
  - INSPECTION CRITERIA-HP STD SECT 410.
  - THIS ASSY DWG. F-4, 5 533D FJE BOTH REV B & C BOARDS

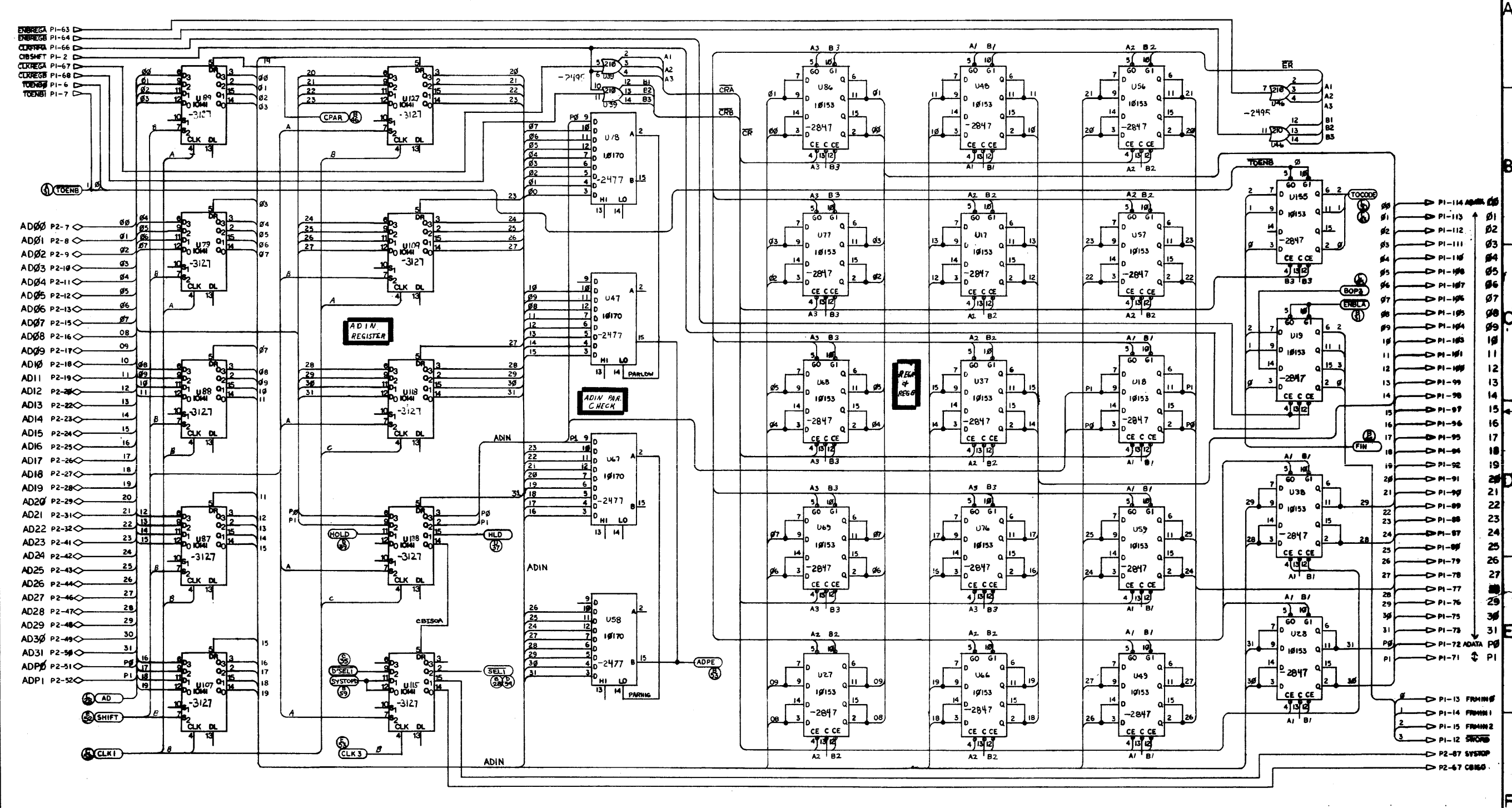
QTY	DESCRIPTION	DATE CODE	QTY
12	LABEL - DATE CODE	4340-5340	
11	LABEL - SERIAL NUMBER	1250-2443	
10	CONN AND POST KA	1251-2886	
9	PCB - WAVE DATE CODE	1121-6830	
8	LABEL	1121-6115	
7	BRACE	5040-5038	
5	SCREW 4-40	0624-0077	
4	EXTRACTOR	5040-3804	
3	FIN	1180-0116	
2	TERM - TEST POINT	0350-0704	
1	PCB CBI	5040-8001	

PCA-CBI ASSY DWG	HEWLETT PACKARD
30140A	30140-60011
SCALE 1.5:1	F-30140-60011-4

DIRECTION THROUGH SOLDER WAVE

REF. DWG. 101-4-455  
 D-52 THRU D-54  
 A-53 DATE 11/15/65

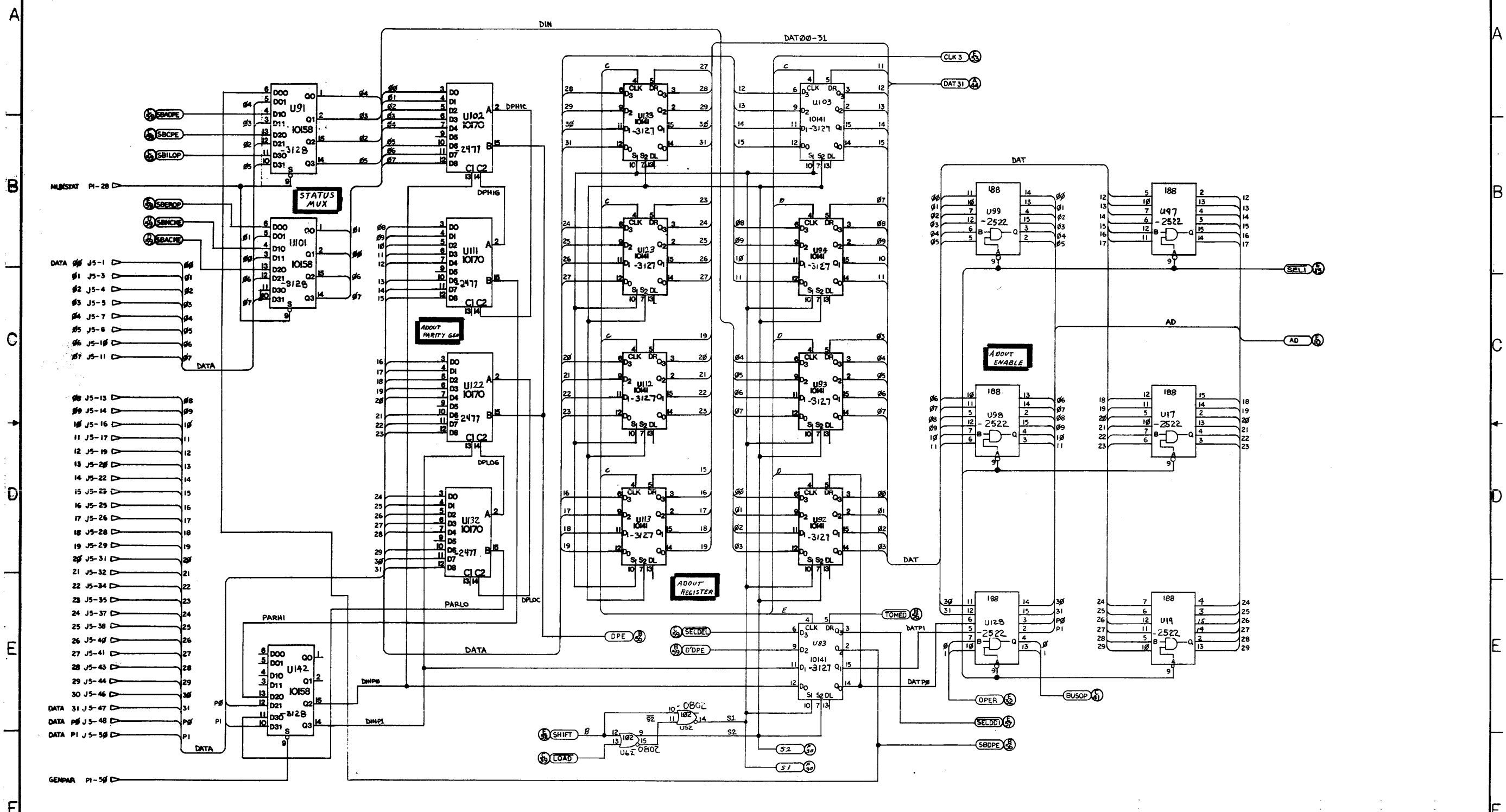
ENGINEERING RESPONSIBILITY		REVISIONS		DATE	
1	2	3	4	5	6



ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY. NO.	MAT'L SPEC.
		PCA-CSI			HEWLETT-PACKARD
		TITLE SCHEMATIC			PERMANENT PRINT
		30140A			30140-60011
		NEXT ASSEMBLY			D-30140-60011-53
FINISH	SCALE				

REF. DWGS: F-4 ASSY  
A-50 DATE CODE INFO.  
D-51, D-53 THRU D-56 SCHEM.

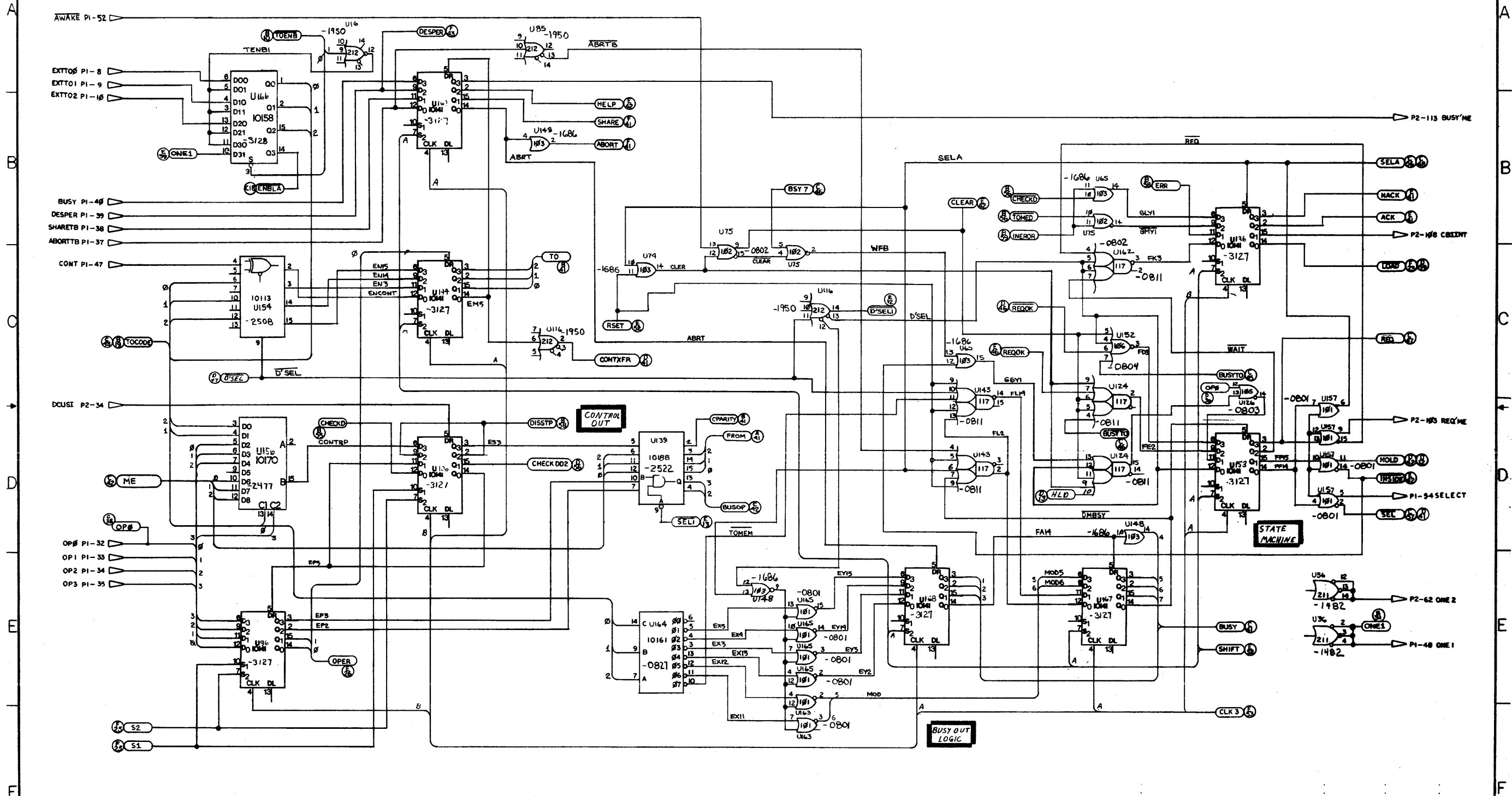
ENGINEERING RESPONSIBILITY															REVISIONS														
DATE															DATE														
BY															BY														
CHECKED															CHECKED														
APPROVED															APPROVED														
DATE															DATE														
REVISED & REDRAWN PER PCO 47-349															REVISED PER PCO 47-356														
REVISED PER PCO 47-356															REVISED PER PCO 47-374														



ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.
PCA-CBI			HEWLETT PACKARD		
TITLE SCHEMATIC			PERM. PRINT		
30140A			30140-60011		
NEXT ASSEMBLY			PART NUMBER		
FINISH			SCALE		
D-30140-60011-52			SHEET 1 OF 1		

REF. DWGS.: 5-4 ASSY  
 A-50 DATE CODE INFO  
 D-51, D-52, D-53, D-54, D-55

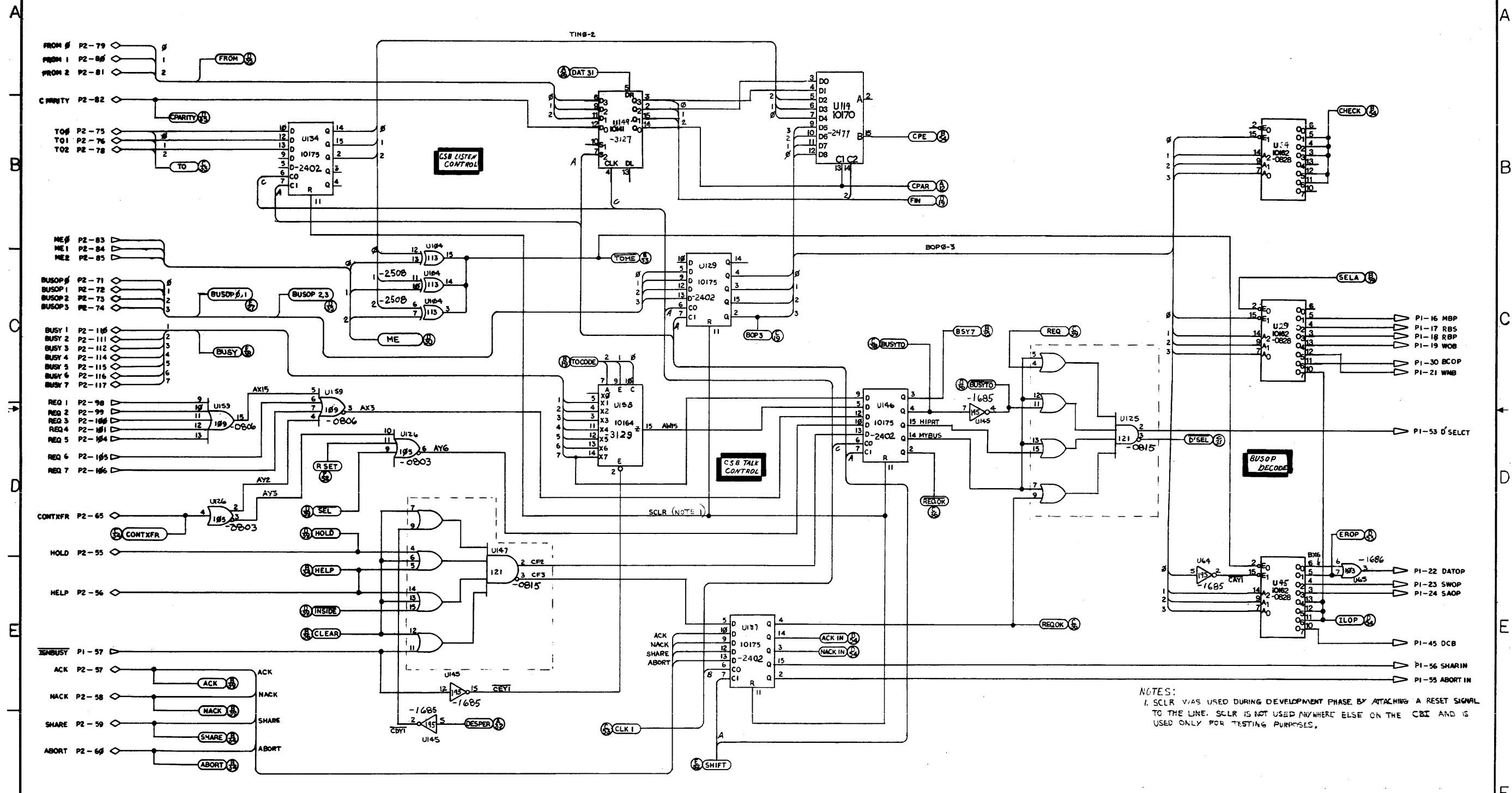
ENGINEERING RESPONSIBILITY														REVISED / REDRAWN PER PCD 47-3748														APPROVED														DATE													
C														REVISED PER PCD 47-3565														7/1/77														10/18/77													
D														REVISED PER PCD 47-3773														11/1/77														11/1/77													
E																																																							



ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY. NO.	MAT'L SPEC.
		PCA-CBI			HEWLETT PACKARD PERM. PRINT
		TITLE SCHEMATIC			
		NEXT ASSY/REV	30140A		30140-6001
		FINISH			D-30140-6001-53
		SCALE			

REF. DWGS.: F-4 ASSY.  
 A-50 DATE CODE INFO.  
 D-51, D-52, D-53, D-55, D-56 SCHEM.

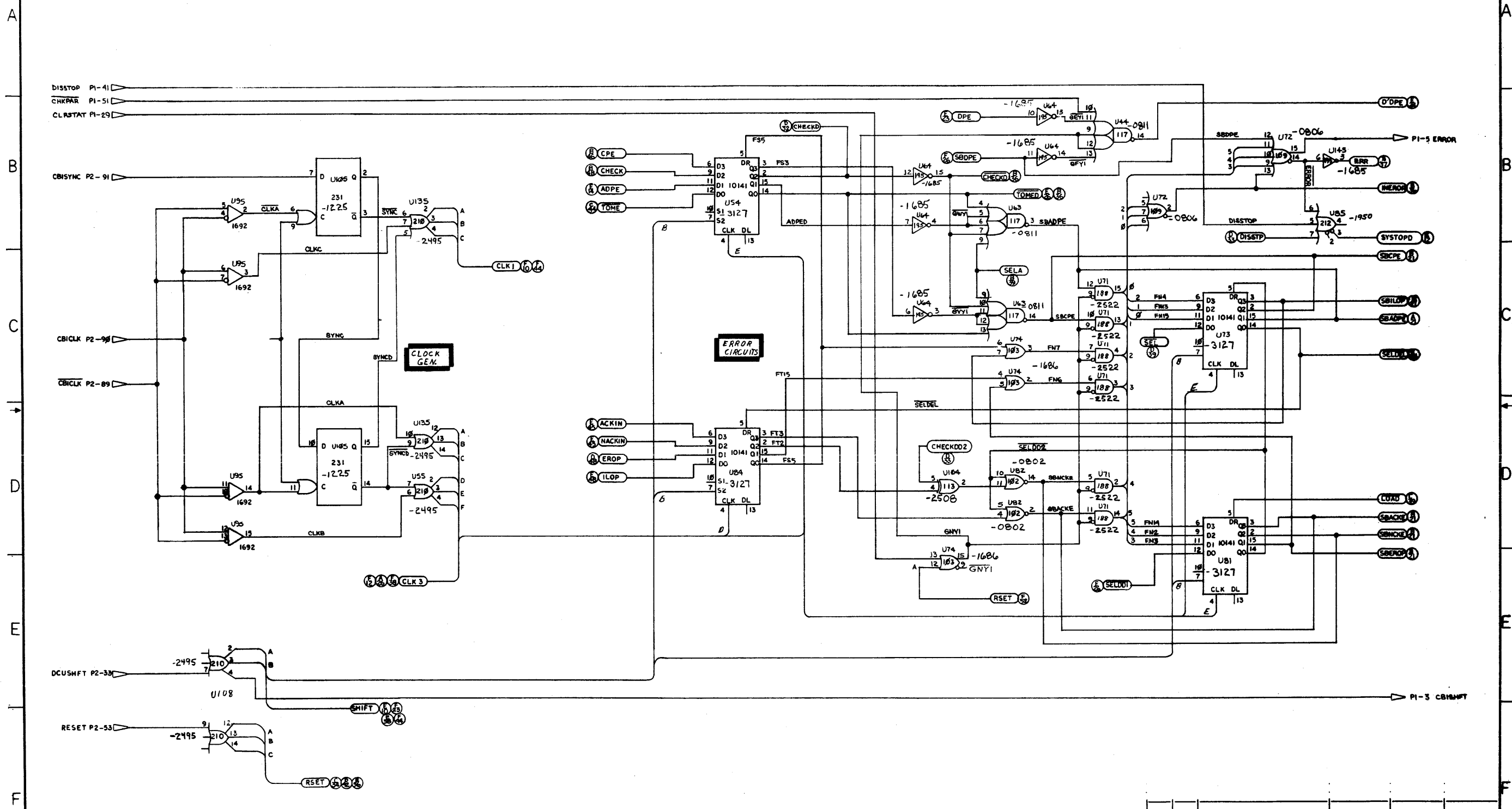
REV	DATE	BY	CHKD	APP'D	DESCRIPTION
C	REVISED & REDRAWN PER PCO 47-3448	M/D			
D	REVISED PER PLO 47-3565	KT/MAT			
E	REVISED PER PEG 47-3174	BW/SLW			
F	Added Note #1 per DOC CHG.				



NOTES:  
 1. SCLR VIAS USED DURING DEVELOPMENT PHASE BY ATTACHING A RESET SIGNAL TO THE LINE. SCLR IS NOT USED ANYWHERE ELSE ON THE CBI AND IS USED ONLY FOR TESTING PURPOSES.

ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L Dwg. NO.	MAT'L SPEC.
		PCA-CBI			
		TITLE SCHEMATIC			
		30140A			
		NEXT ASSEMBLY			
		FINISH			
			HEWLETT PACKARD		
			30140-60011		
			PART NUMBER		
			D-30140-60011-54		
			SCALE		

ENGINEERING RESPONSIBILITY														REVISED		DATE																																																																																				
BY: [Signature]														BY: [Signature]		DATE: [Date]																																																																																				
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REVISED # REDRAWN PER PGO 47-3748														77/47		10/11/77																																																																																				
REVISED PER PGO 47-3565														77/177		10/11/77																																																																																				
REVISED PER PGO 47-3779														77/177		10/11/77																																																																																				



ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY. NO.	MAT'L SPEC.
PCA - C81					
TITLE SCHEMATIC					
30140A					
NEXT ASSEMBLY					
PART NUMBER					
30140-60011					
FINISH SCALE					
D-30140-60011-55					



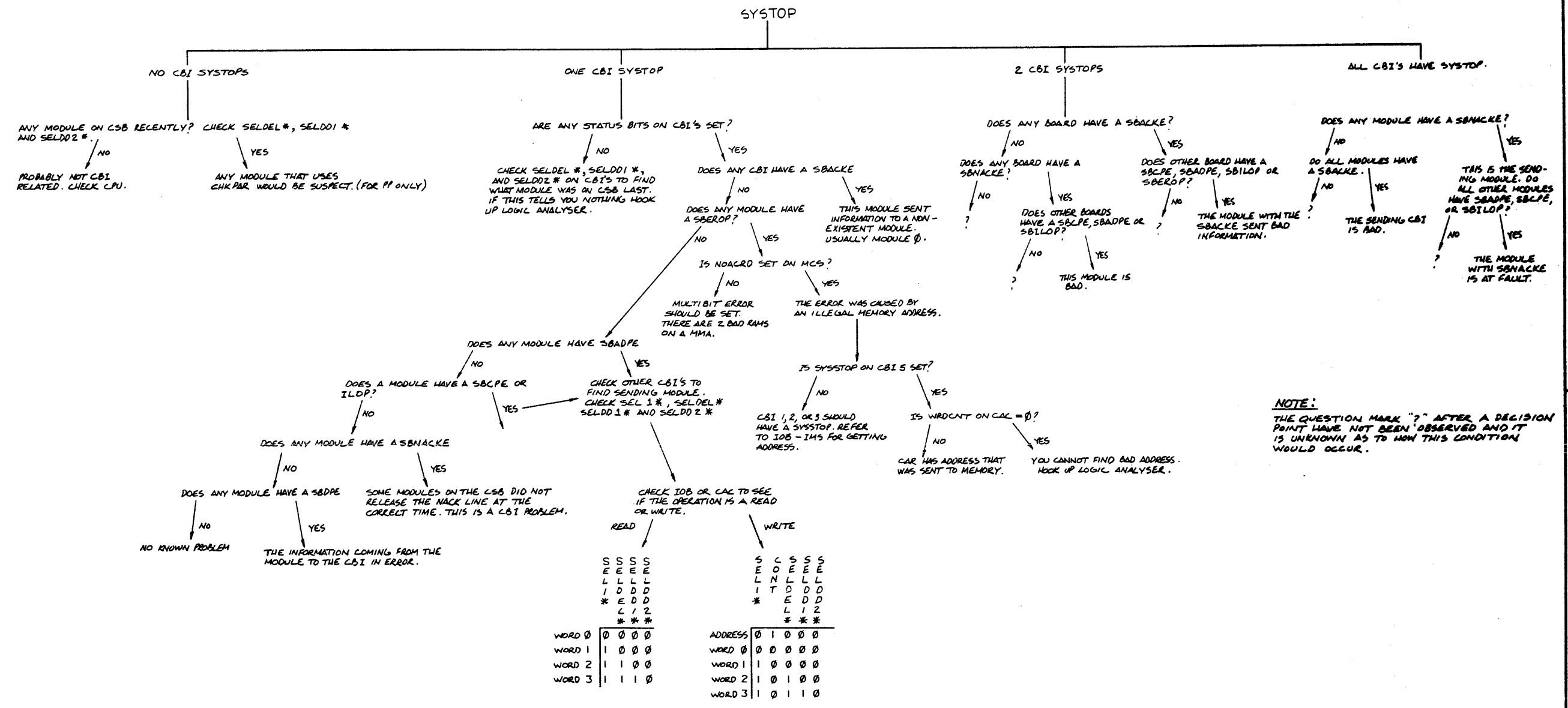
REF DWG: F + A  
50 DATE 01/17/84  
DWT 3131-2

ENGINEERING RESPONSIBILITY		REVISIONS		APPROVED DATE	
DESIGN	DATE	REV		DATE	
AS ISSUED	PER 3047-3448	MILK		HJ/BB	

SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN
ABORTTB	R106	-6	DATR06	R61	-5	EX3	R102	-7
ABORT	R80	-4	DATR07	R61	-8	EX4	R102	-8
ACKIN	R38	-8	DATR08	R66	-5	EX5	R102	-3
ACKIN	R38	-8	DATR09	R55	-8	EV14	R105	-8
ACKIN	R38	-8	DATR10	R55	-6	EV15	R105	-6
ACKIN	R38	-8	DATR11	R54	-4	EV2	R105	-4
ACKIN	R38	-8	DATR12	R54	-7	EV3	R105	-7
ACKIN	R38	-8	DATR13	R63	-8	FA14	R88	-7
ACKIN	R38	-8	DATR14	R63	-6	FD3	R93	-5
ACKIN	R38	-8	DATR15	R63	-5	FE14	R101	-6
ACKIN	R38	-8	DATR16	R71	-8	FE2	R101	-8
ACKIN	R38	-8	DATR17	R71	-7	FF14	R97	-7
ACKIN	R38	-8	DATR18	R71	-5	FF15	R97	-6
ACKIN	R38	-8	DATR19	R71	-4	FG0	R2	-3
ACKIN	R38	-8	DATR20	R62	-6	FIN1	R6	-8
ACKIN	R38	-8	DATR21	R70	-8	FIN2	R2	-7
ACKIN	R38	-8	DATR22	R70	-6	FK3	R86	-5
ACKIN	R38	-8	DATR23	R70	-5	FL14	R104	-7
ACKIN	R38	-8	DATR24	R71	-6	FL2	R104	-5
ACKIN	R38	-8	DATR25	R78	-8	FN13	R37	-8
ACKIN	R38	-8	DATR26	R78	-6	FN14	R36	-6
ACKIN	R38	-8	DATR27	R78	-5	FN15	R37	-6
ACKIN	R38	-8	DATR28	R78	-7	FN2	R35	-6
ACKIN	R38	-8	DATR29	R85	-8	FND	R35	-7
ACKIN	R38	-8	DATR30	R85	-6	FH4	R25	-5
ACKIN	R38	-8	DATR31	R85	-5	FNE	R28	-8
ACKIN	R38	-8	DATP0	R82	-6	FN7	R28	-7
ACKIN	R38	-8	DATP1	R75	-7	FS3	R22	-4
ACKIN	R38	-8	DATP2	R80	-6	FS5	R23	-5
ACKIN	R38	-8	DAT01	R60	-7	FT15	R36	-3
ACKIN	R38	-8	DAT02	R51	-7	FT2	R55	-3
ACKIN	R38	-8	DAT03	R60	-5	FT3	R36	-4
ACKIN	R38	-8	DAT04	R61	-8	GENPRR	R92	-8
ACKIN	R38	-8	DAT05	R51	-5	GY1	R14	-6
ACKIN	R38	-8	DAT06	R59	-7	GY1	R14	-3
ACKIN	R38	-8	DAT07	R59	-6	GY1	R75	-4
ACKIN	R38	-8	DAT08	R50	-6	GLY1	R11	-6
ACKIN	R38	-8	DAT09	R59	-5	GY1	R86	-8
ACKIN	R38	-8	DAT10	R50	-7	GY1	R14	-5
ACKIN	R38	-8	DAT11	R50	-4	GY1	R23	-6
ACKIN	R38	-8	DAT12	R49	-8	HPRD	R90	-2
ACKIN	R38	-8	DAT13	R58	-7	HPRD	R79	-7
ACKIN	R38	-8	DAT14	R49	-7	MD	R95	-2
ACKIN	R38	-8	DAT15	R49	-6	IQBUSY	R36	-4
ACKIN	R38	-8	DAT16	R58	-8	ILOP	R31	-4
ACKIN	R38	-8	DAT17	R58	-6	INERDR	R31	-6
ACKIN	R38	-8	DAT18	R74	-5	INSIDE	R21	-4
ACKIN	R38	-8	DAT19	R74	-6	LDRD	R43	-8
ACKIN	R38	-8	DAT20	R67	-5	MODS	R104	-8
ACKIN	R38	-8	DAT21	R74	-7	MODS	R104	-8
ACKIN	R38	-8	DAT22	R67	-7	HADSTRT	R52	-2
ACKIN	R38	-8	DAT23	R67	-6	MYBUS	R73	-7
ACKIN	R38	-8	DAT24	R68	-8	NACKIN	R48	-8
ACKIN	R38	-8	DAT25	R69	-8	OPERO	R86	-3
ACKIN	R38	-8	DAT26	R76	-5	OPERR	R82	-7
ACKIN	R38	-8	DAT27	R76	-6	OPR	R86	-7
ACKIN	R38	-8	DAT28	R69	-5	DP1	R96	-7
ACKIN	R38	-8	DAT29	R76	-8	DP2	R103	-7
ACKIN	R38	-8	DAT30	R82	-4	DP3	R103	-3
ACKIN	R38	-8	DAT31	R81	-8	PRNG	R92	-3
ACKIN	R38	-8	DDPE	R37	-7	PRNG	R26	-3
ACKIN	R38	-8	DESPER	R95	-3	PRRLD	R92	-2
ACKIN	R38	-8	DIHP0	R45	-4	PRRLD	R17	-2
ACKIN	R38	-8	DIHP1	R45	-5	REC	R104	-4
ACKIN	R38	-8	DIHP0	R44	-5	REO	R100	-4
ACKIN	R38	-8	DIHP1	R45	-6	REGDK	R72	-7
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ACKIN	R38	-8	DIHP3	R45	-8	RESET	R68	-8
ACKIN	R38	-8	DIHP4	R45	-9	RSET	R36	-3
ACKIN	R38	-8	DIHP5	R45	-10	SBCKE	R61	-4
ACKIN	R38	-8	DIHP6	R45	-11	SBDPE	R43	-4
ACKIN	R38	-8	DIHP7	R45	-12	SBDPE	R52	-4
ACKIN	R38	-8	DIHP8	R45	-13	SBDPE	R43	-6
ACKIN	R38	-8	DIHP9	R45	-14	SBDPE	R43	-7
ACKIN	R38	-8	DIHP10	R45	-15	SBDPE	R43	-8
ACKIN	R38	-8	DIHP11	R45	-16	SBDPE	R43	-9
ACKIN	R38	-8	DIHP12	R45	-17	SBDPE	R43	-10
ACKIN	R38	-8	DIHP13	R45	-18	SBDPE	R43	-11
ACKIN	R38	-8	DIHP14	R45	-19	SBDPE	R43	-12
ACKIN	R38	-8	DIHP15	R45	-20	SBDPE	R43	-13
ACKIN	R38	-8	DIHP16	R45	-21	SBDPE	R43	-14
ACKIN	R38	-8	DIHP17	R45	-22	SBDPE	R43	-15
ACKIN	R38	-8	DIHP18	R45	-23	SBDPE	R43	-16
ACKIN	R38	-8	DIHP19	R45	-24	SBDPE	R43	-17
ACKIN	R38	-8	DIHP20	R45	-25	SBDPE	R43	-18
ACKIN	R38	-8	DIHP21	R45	-26	SBDPE	R43	-19
ACKIN	R38	-8	DIHP22	R45	-27	SBDPE	R43	-20
ACKIN	R38	-8	DIHP23	R45	-28	SBDPE	R43	-21
ACKIN	R38	-8	DIHP24	R45	-29	SBDPE	R43	-22
ACKIN	R38	-8	DIHP25	R45	-30	SBDPE	R43	-23
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ACKIN	R38	-8	DIHP27	R45	-32	SBDPE	R43	-25
ACKIN	R38	-8	DIHP28	R45	-33	SBDPE	R43	-26
ACKIN	R38	-8	DIHP29	R45	-34	SBDPE	R43	-27
ACKIN	R38	-8	DIHP30	R45	-35	SBDPE	R43	-28
ACKIN	R38	-8	DIHP31	R45	-36	SBDPE	R43	-29
ACKIN	R38	-8	DIHP32	R45	-37	SBDPE	R43	-30
ACKIN	R38	-8	DIHP33	R45	-38	SBDPE	R43	-31
ACKIN	R38	-8	DIHP34	R45	-39	SBDPE	R43	-32
ACKIN	R38	-8	DIHP35	R45	-40	SBDPE	R43	-33
ACKIN	R38	-8	DIHP36	R45	-41	SBDPE	R43	-34
ACKIN	R38	-8	DIHP37	R45	-42	SBDPE	R43	-35
ACKIN	R38	-8	DIHP38	R45	-43	SBDPE	R43	-36
ACKIN	R38	-8	DIHP39	R45	-44	SBDPE	R43	-37
ACKIN	R38	-8	DIHP40	R45	-45	SBDPE	R43	-38
ACKIN	R38	-8	DIHP41	R45	-46	SBDPE	R43	-39
ACKIN	R38	-8	DIHP42	R45	-47	SBDPE	R43	-40
ACKIN	R38	-8	DIHP43	R45	-48	SBDPE	R43	-41
ACKIN	R38	-8	DIHP44	R45	-49	SBDPE	R43	-42
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ACKIN	R38	-8	DIHP46	R45	-51	SBDPE	R43	-44
ACKIN	R38	-8	DIHP47	R45	-52	SBDPE	R43	-45
ACKIN	R38	-8	DIHP48	R45	-53	SBDPE	R43	-46
ACKIN	R38	-8	DIHP49	R45	-54	SBDPE	R43	-47
ACKIN	R38	-8	DIHP50	R45	-55	SBDPE	R43	-48
ACKIN	R38	-8	DIHP51	R45	-56	SBDPE	R43	-49
ACKIN	R38	-8	DIHP52	R45	-57	SBDPE	R43	-50
ACKIN	R38	-8	DIHP53	R45	-58	SBDPE	R43	-51
ACKIN	R38	-8	DIHP54	R45	-59	SBDPE	R43	-52
ACKIN	R38	-8	DIHP55	R45	-60	SBDPE	R43	-53
ACKIN	R38	-8	DIHP56	R45	-61	SBDPE	R43	-54
ACKIN	R38	-8	DIHP57	R45	-62	SBDPE	R43	-55
ACKIN	R38	-8	DIHP58	R45	-63	SBDPE	R43	-56
ACKIN	R38	-8	DIHP59	R45	-64	SBDPE	R43	-57
ACKIN	R38	-8	DIHP60	R45	-65	SBDPE	R43	-58
ACKIN	R38	-8	DIHP61	R45	-66	SBDPE	R43	-59
ACKIN	R38	-8	DIHP62	R45	-67	SBDPE	R43	-60
ACKIN	R38	-8	DIHP63	R45	-68	SBDPE	R43	-61
ACKIN	R38	-8	DIHP64	R45	-69	SBDPE	R43	-62
ACKIN	R38	-8	DIHP65	R45	-70	SBDPE	R43	-63
ACKIN	R38	-8	DIHP66	R45	-71	SBDPE	R43	-64
ACKIN	R38	-8	DIHP67	R45	-72	SBDPE	R43	-65
ACKIN	R38	-8	DIHP68	R45	-73	SBDPE	R43	-66
ACKIN	R38	-8	DIHP69	R45	-74	SBDPE	R43	-67
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ACKIN	R38	-8	DIHP71	R45	-76	SBDPE	R43	-69
ACKIN	R38	-8	DIHP72	R45	-77	SBDPE	R43	-70
ACKIN	R38	-8	DIHP73	R45	-78	SBDPE	R43	-71
ACKIN	R38	-8	DIHP74	R45	-79	SBDPE	R43	-72
ACKIN	R38	-8	DIHP75	R45	-80	SBDPE	R43	-73
ACKIN	R38	-8	DIHP76	R45	-81	SBDPE	R43	-74
ACKIN	R38	-8	DIHP77	R45	-82	SBDPE	R43	-75
ACKIN	R38	-8	DIHP78	R45	-83	SBDPE	R43	-76
ACKIN	R38	-8	DIHP79	R45	-84	SBDPE	R43	-77
ACKIN	R38	-8	DIHP80	R45	-85	SBDPE	R43	-78
ACKIN	R38	-8	DIHP81	R45	-86	SBDPE	R43	-79
ACKIN	R38	-8	DIHP82	R45	-87	SBDPE	R43	-80
ACKIN	R38	-8	DIHP83	R45	-88	SBDPE	R43	-81
ACKIN	R38	-8	DIHP84	R45	-89	SBDPE	R43	-82
ACKIN	R38	-8	DIHP85	R45	-90	SBDPE	R43	-83
ACKIN	R38	-8	DIHP86	R45	-91	SBDPE	R43	-84
ACKIN	R38	-8	DIHP87	R45	-92	SBDPE	R43	-85
ACKIN	R38	-8	DIHP88	R45	-93	SBDPE	R43	-86
ACKIN	R38	-8	DIHP89	R45	-94	SBDPE	R43	-87
ACKIN	R38	-8	DIHP90	R45	-95	SBDPE	R43	-88
ACKIN	R38	-8	DIHP91	R45	-96	SBDPE	R43	-89
ACKIN	R38	-8	DIHP92	R45	-97	SBDPE	R43	-90
ACKIN	R38	-8	DIHP93	R45	-98	SBDPE	R43	-91
ACKIN	R38	-8	DIHP94	R45	-99	SBDPE	R43	-92
ACKIN	R38	-8	DIHP95	R45	-100	SBDPE	R43	-93
ACKIN	R38	-8	DIHP96	R45	-101	SBDPE	R43	-94
ACKIN	R38	-8	DIHP97	R45	-102	SBDPE	R43	-95
ACKIN	R38	-8	DIHP98	R45	-103	SBDPE	R43	-96
ACKIN	R38	-8	DIHP99	R45	-104	SBDPE	R43	-97
ACKIN	R38	-8	DIHP100	R45	-105	SBDPE	R43	-98
ACKIN	R38	-8	DIHP101	R45	-106	SBDPE	R43	-99
ACKIN	R38	-8	DIHP102	R45	-107	SBDPE	R43	-100
ACKIN	R38	-8	DIHP103	R45	-108	SBDPE	R43	-101
ACKIN	R38	-8	DIHP104	R45	-109	SBDPE	R43	-102
ACKIN	R38	-8	DIHP105	R45	-110	SBDPE	R43	-103
ACKIN	R38	-8	DIHP106	R45	-111	SBDPE	R43	-104
ACKIN	R38	-8	DIHP107	R45	-112	SBDPE	R43	-105
ACKIN	R38	-8	DIHP108	R45	-113	SBDPE	R43	-106
ACKIN	R38	-8	DIHP109	R45	-114	SBDPE	R43	-107
ACKIN	R38	-8	DIHP110	R45	-115	SBDPE	R43	-108
ACKIN	R38	-8	DIHP111	R45	-116	SBDPE	R43	-109
ACKIN	R38	-8	DIHP112	R45	-117	SBDPE	R43	-110
ACKIN	R38	-8	DIHP113	R45	-118	SBDPE	R43	-111
ACKIN	R38	-8	DIHP114	R45	-119	SBDPE	R43	-112

REF. DWGS: F-4 ASSY.  
A-50 DATE CODE INFO.  
D-51 THRU D-56 SCHEM.

ENGINEERING RESPONSIBILITY												REVISED												APPROVED												DATE											
A												A												A												A											
A												A												A												A											

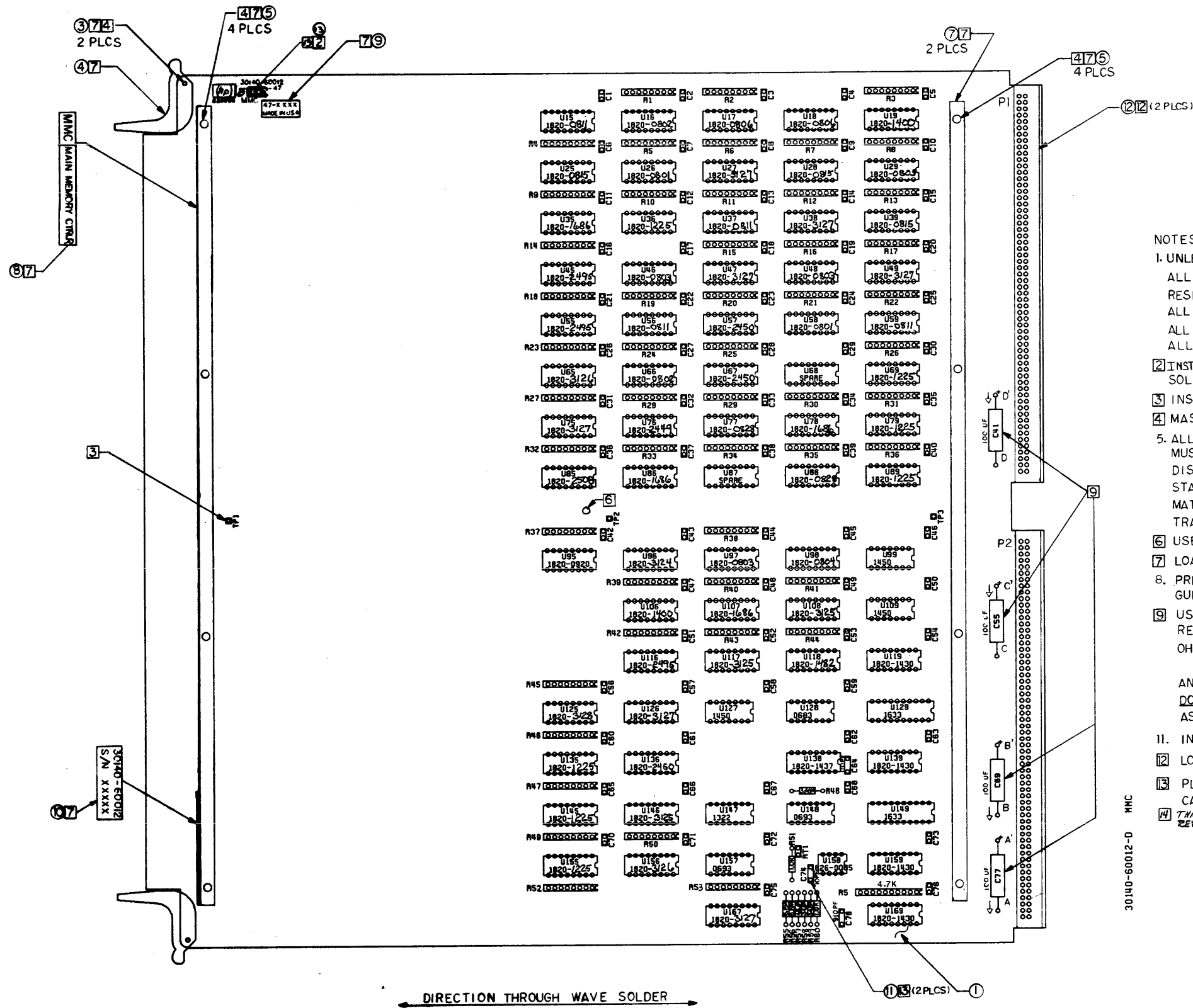


**NOTE:**  
THE QUESTION MARK "?" AFTER A DECISION POINT HAVE NOT BEEN OBSERVED AND IT IS UNKNOWN AS TO HOW THIS CONDITION WOULD OCCUR.

ITEM	QTY.	MATERIAL DESCRIPTION	DAYL PART NO.	DAYL QTY. NO.	DAYL SPEC.
		PCA - CBI SYSTOP DELISION TREE		HEWLETT PACKARD	
		30140 A, 30145 A		30140-60011	
		SCALE		0 - 30140 - 60011 - 51	

Ref. Dwg: D-5: thru D-24  
A-50 Date Code 75

REVISIONS		F-30140-60012-4	
NO.	DESCRIPTION	DATE	BY
A	AS DESIGNED	12/11/74	WJH
B	REVISED PER 47-XXXX MAKE PLCS	12/11/74	WJH
C	REVISED PER 47-XXXX MAKE PLCS	12/11/74	WJH
D	REVISED PER 47-XXXX MAKE PLCS	12/11/74	WJH
E	REVISED PER 47-XXXX MAKE PLCS	12/11/74	WJH
F	ADDED ITEM 13 TO DATE CODE CALLOUT, DEC. 1974	12/11/74	WJH
G	703 WIRE 14, STATE CODE WAYS 2-2504-121 PER PCA 47-3740	12/11/74	WJH



- NOTES:
- UNLESS OTHERWISE SPECIFIED:  
ALL RESISTANCE IN OHMS  
RESISTORS ARE 68 OHMS  
ALL CAPACITANCE IN MICROFARADS  
ALL CAPACITORS ARE .01  $\mu$ F (0160-5352)  
ALL IC'S ARE 1820-XXXX
  - INSTALL ITEM ③ AREA SHOULD BE FREE OF SOLDER RESIST.
  - INSTALL ITEM ② 3 PLACES
  - MASK AS INDICATED PRIOR TO LOADING
  - ALL BOARD LOADING & HANDLING MUST BE DONE AT AN ELECTROSTATIC DISCHARGE PROTECTED WORK STATION CONTAINING TABLE & FLOOR MATS & GROUNDED WRIST STRAP. TRANSPORT ASSEMBLY IN ELECTROSTATIC BAGS.
  - USE SUPPORT FIXTURE DURING WAVE SOLDER
  - LOAD ITEMS
  - PRETEST REQUIRED ON THE GUEST SYSTEM.
  - USING AN OHMMETER CHECK FOR A RESISTANCE OF GREATER THAN 25 OHMS BETWEEN THESE POINTS:  
A-B, A-C, A-D, B'-C, B'-D AND C-D BEFORE AND AFTER WAVE SOLDER.  
DO NOT USE A CONTINUITY LIGHT ON THIS ASSEMBLY.
  - INSPECTION CRITERIA-HP STD. SECT 410.
  - LOAD EDGE CONNECTORS(2) PRIOR TO COMPONENTS.
  - PLACE STANDOFF BEADS (2) ITEM ⑪ ON CAP. C74 BEFORE LOADING.
  - THIS ASSY DWG. F. IS GOOD FOR BOTH REV D & E BOARDS.

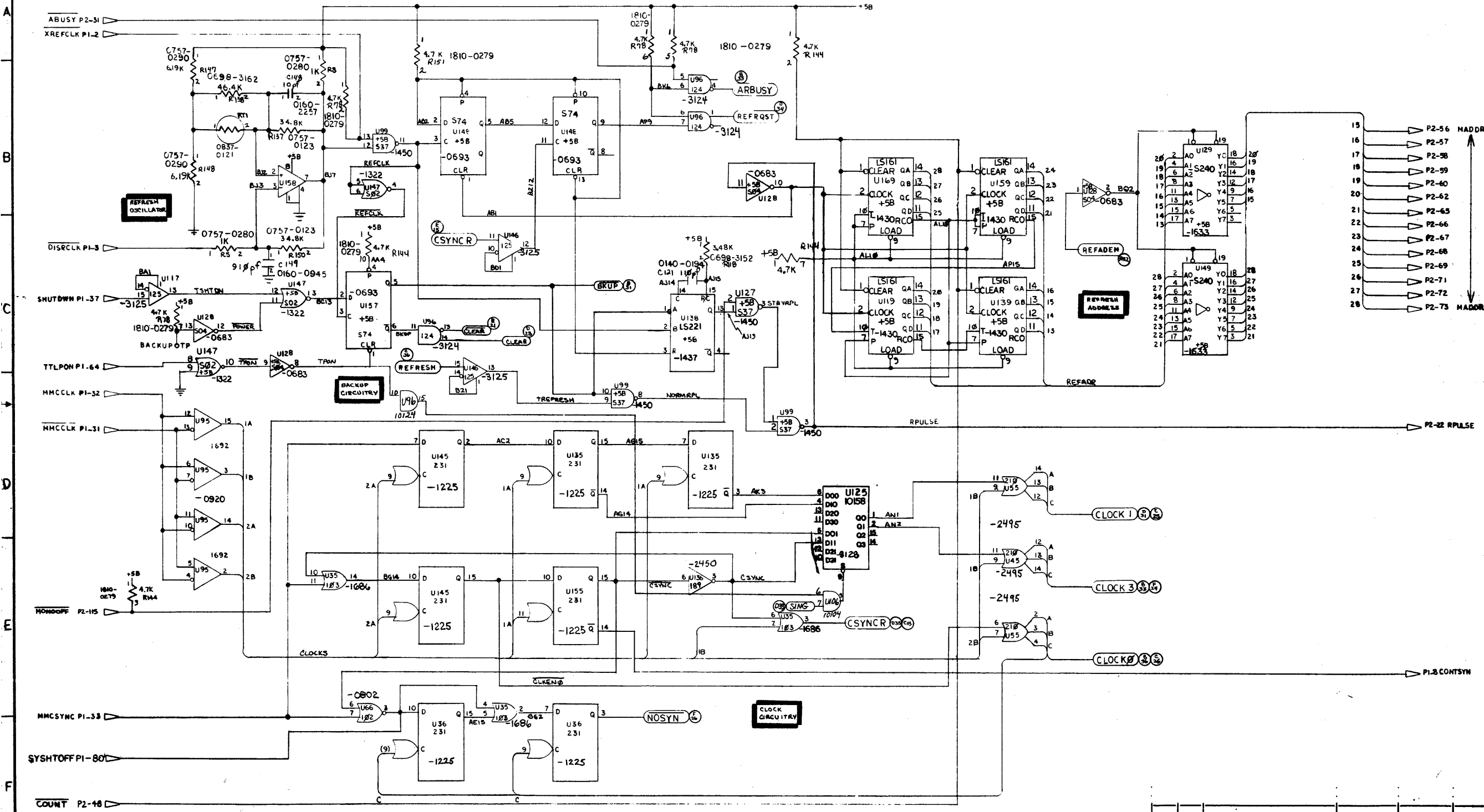
30140-60012-D MMC

QTY	DESCRIPTION	DATE CODE
13	1 LABEL - DATE CODE	1820-5324
12	2 CONN. RECEPTACLE 120F	1211-6911
11	2 INDIAN BEADS	4330-0445
10	1 LBL-SERIAL NO.	9320-4848
9	1 LBL-WARR DATE CD	7120-6830
8	1 LABEL	7121-2113
7	2 BRACE	5040-6056
5	8 SCREW 4-40	0824-0077
4	2 EXTRACTOR	5040-9804
3	2 PIN	1480-0116
2	3 TERM-TESTPOINT	0360-0294
1	1 MMC	0740-5002

PCA MMC	HEWLETT PACKARD
ASSY DWG.	30140A
30140A	30140-60012
15x1	F-30140-60012-4

REF DWGS.: F-4 ASSY.  
A-50 DATE CODE INFO.  
D-52, D-53 SCHEM.

REV	DATE	DESCRIPTION	BY	CHK
B		REVISED / REDRAWN PER PCO 47-3515		
C		REVISED PER PCO 47-3515		
D		REVISED PER PCO 47-3515		
E		REVISED PER PCO 47-3779		



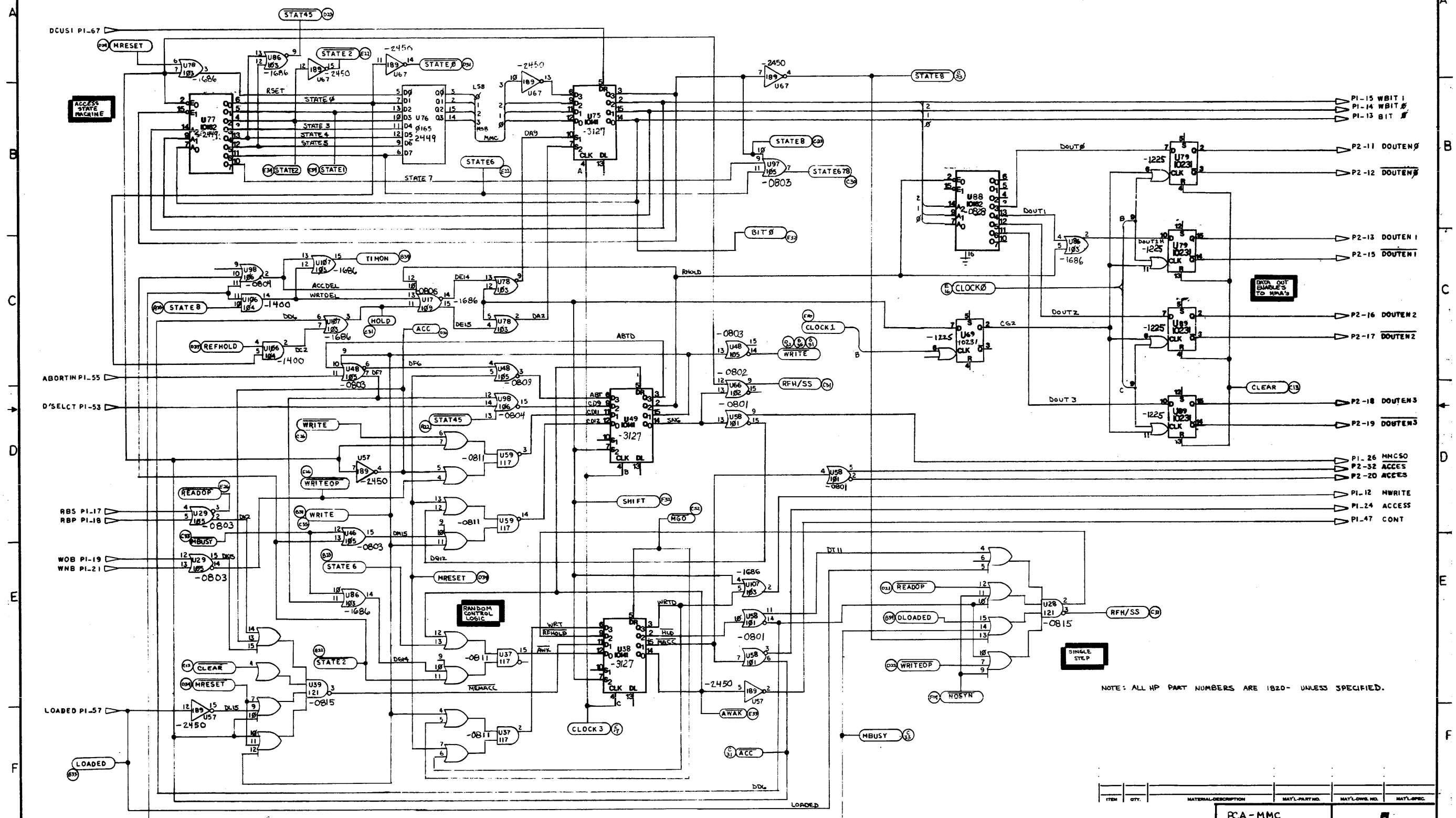
15	P2-56	ADDR 15
16	P2-57	
17	P2-58	
18	P2-59	
19	P2-60	
20	P2-62	
21	P2-65	
22	P2-66	
23	P2-67	
24	P2-68	
25	P2-69	
26	P2-71	
27	P2-72	
28	P2-73	ADDR 28

NOTE: ALL HP PART NUMBERS ARE 1820- UNLESS SPECIFIED.

ITEM	QTY.	MATERIAL DESCRIPTION	MATL. PART NO.	MAT. LEADS NO.	MAT. LEADS
PCA-MMC SCHEMATIC					
TITLE 30140A					
NEW ASSEMBLY					
SCALE 1-30140-00012					

REF. DWGS: F-4 ASSY.  
A-50 DATE CODE INFO.  
D-51, D-53 SCHEM.

REVISIONS RESPONSIBILITY														REVISED PER REDRAWN P.O. 47-3504														REVISED PER P.O. 47-3505														REVISED PER P.O. 47-3114													
DATE														DATE														DATE														DATE													
BY														BY														BY														BY													
APPROVED														APPROVED														APPROVED														APPROVED													

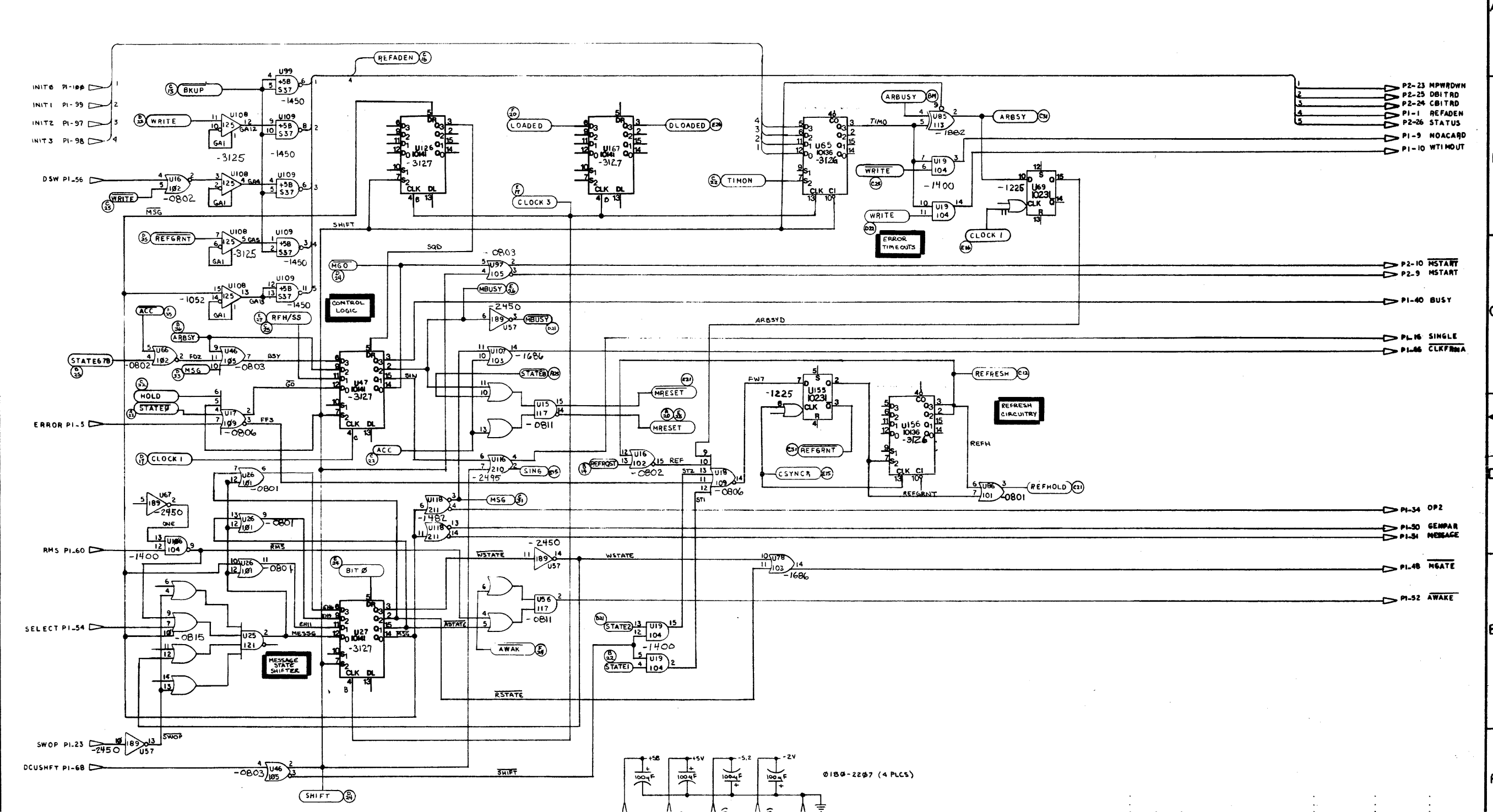


NOTE: ALL HP PART NUMBERS ARE 1820- UNLESS SPECIFIED.

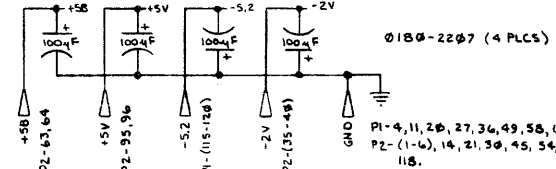
ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L OWNS. NO.	MAT'L SPEC.
PCA - MMC					
TITLE SCHEMATIC					
NEXT ASSEMBLY 30140A			PART NUMBER 30140-60012		
FINISH			SCALE		
DRAWN			DATE		

REF DWGS.: F-4 ASSY  
A 50 DATE CODE INFO  
D-51, D-52 S.W.H.M.

ENGINEERING RESPONSIBILITY														REVISIONS													
[Signature]														[Signature]													
[Signature]														[Signature]													
[Signature]														[Signature]													



NOTE: ALL HP PART NUMBERS ARE 1820- UNLESS SPECIFIED.



0180-2207 (4 PLCS)  
P1-4, 11, 20, 27, 34, 49, 58, 65, 74, 81, 86, 93, 102, 109, 118.

ITEM	QTY	MATERIAL DESCRIPTION	MATL. PART NO.	MATL. DWG. NO.	MATL. SPEC.
PCA - MMC SCHEMATIC			HEWLETT PACKARD		
30140A			30140-60012		
NEXT ASSEMBLY			PART NUMBER		
30140-60012-53			SCALE		

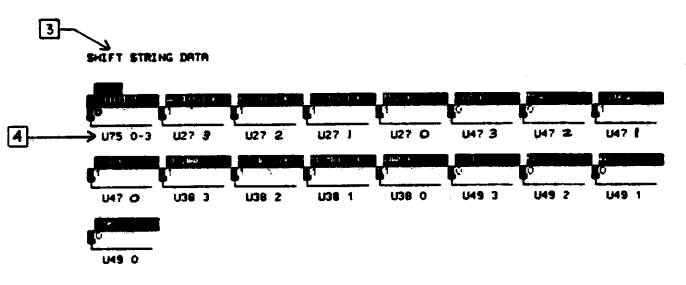
REF. DWGS: F-4 ASSY  
A-50 LATE MODEL IN C  
D-51 THROUGH 53 FROM

ENGINEERING RESPONSIBILITY												REVISIONS												APPROVED		DATE	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	BY	DATE	BY	DATE		
												A	A	A	A	A	A	A	A	A	A	As Issue	1-18-72				
												B	B	B	B	B	B	B	B	B	B	Shift String Corrected Per Doc. CNG	1-22-72				

SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN
ABT	R17	-5	DE14	R25	-5	REFRESH	R5	-5
ABTD	R21	-7	DE15	R30	-5	REFROST	R5	-4
ABUD	R25	-3	DF6	R16	-4	RFH/RS	R20	-6
ACC	R43	-7	DF7	R33	-4	RFHOLD	R16	-8
ACC*	R17	-7	DG14	R15	-7	RHOLD	R6	-8
ACCCL	R6	-7	DISCLK*	R61	-1	RHS	R42	-4
ACCCL*	R47	-6	DK15	R17	-2	RHS*	R9	-8
RE15	R14	-5	DK2	R17	-3	RSET	R28	-5
RE14	R46	-4	DLAND	R12	-2	RSTATE*	R35	-6
RE15*	R46	-4	DL15	R17	-9	SELECT	R4	-7
RE15*	R46	-4	DM15	R26	-7	SHIFT	R27	-7
RJ15	R48	-2	DOUT0	R31	-7	SHIFT*	R3	-5
RJ3	R45	-6	DOUT1	R28	-9	SHUTDN	R10	-6
RL10	R25	-8	DOUT1M	R26	-7	SIOR	R51	-1
RN1	R23	-6	DOUT2	R26	-9	SIOR*	R57	-2
RN2	R18	-5	DOUT3	R26	-6	SIOR	R55	-1
RNSBY	R21	-6	DS12	R26	-5	SIOR	R58	-1
RNSBYD	R7	-8	DSELECT	R41	-2	SIN	R42	-6
RNSBYD*	R22	-4	DM	R1	-5	SING	R46	-8
RSTATE*	R18	-8	DT11	R12	-7	SNC	R28	-4
RSTATE*	R18	-5	EM11	R11	-6	SOO	R15	-5
RSTATE*	R18	-5	EM6	R6	-5	STATE0	R29	-6
RSTATE*	R18	-5	EM8	R11	-9	STATE0*	R2	-4
RSTATE*	R18	-5	ERROR	R2	-7	STATE1	R3	-4
BC14	R47	-6	FR2	R41	-3	STATE2	R6	-4
BC2	R10	-8	FS2	R19	-6	STATE2*	R41	-7
BJ2	R51	-2	FF3	R7	-6	STATE3	R23	-6
BJ3	R59	-1	FN7	R48	-7	STATE4	R23	-5
BJ7	R50	-1	GD*	R20	-5	STATE5	R23	-2
BJ7	R61	-2	HLDA	R21	-6	STATE6	R15	-4
BJ7	R59	-2	HOLD	R6	-6	STATE7B	R24	-4
BJ7	R50	-2	LOADED	R54	-6	STATE7	R40	-8
BK6	R55	-2	NRCC*	R21	-4	STATE8	R42	-7
BSY	R15	-6	NRCC*	R23	-8	STATE8*	R4	-6
CD11	R22	-6	NRCC*	R16	-6	STR45*	R41	-4
CD12	R22	-8	NRCC*	R11	-5	ST1	R7	-5
CD8	R22	-8	NRCC*	R26	-8	ST2	R7	-4
CG2	R26	-3	NRCC*	R27	-4	SNOP	R25	-7
CLEAR	R26	-4	NRCC*	R27	-5	SNOP*	R9	-4
CLEAR*	R13	-3	NRCC*	R47	-7	SYNTOFF	R25	-6
CLOCK1	R18	-7	NRCC*	R32	-5	TIH0	R8	-7
CLOCK1A	R53	-6	NRCC*	R32	-6	WAB	R13	-4
CLOCK1B	R9	-7	NRCC*	R32	-8	WAB*	R13	-5
CLOCK1C	R49	-8	NRCC*	R29	-7	WRITE	R44	-6
CLOCK2	R18	-6	NRCC*	R27	-8	WRITE*	R1	-4
CLOCK2B	R31	-6	NRCCOFF*	R55	-6	WRITEB*	R22	-4
CLOCK2C	R26	-5	NRCC*	R26	-4	WRT	R16	-7
CLOCK1D	R21	-8	NRCC*	R11	-6	WRTD	R40	-5
CLOCK3	R27	-3	NRCC*	R19	-7	WRTDEL	R5	-4
CLOCK3B	R24	-4	NRCC*	R44	-2	WSTATE	R5	-5
CLOCK3C	R12	-4	NRCC*	R12	-6	WSTATE*	R25	-6
CLOCK3D	R25	-4	NRCC*	R26	-3	WSTATE*	R25	-6
CSYHC	R14	-6	NRCC*	R6	-5	WSTATE*	R25	-6
CSYHC*	R24	-6	NRCC*	R12	-5	WSTATE*	R25	-6
CSYHC*	R20	-5	NRCC*	R7	-7	WSTATE*	R25	-6
DFZ	R27	-8	NRCC*	R24	-8	WSTATE*	R25	-6
DFB	R32	-7	NRCC*	R41	-6	WSTATE*	R25	-6
DCZ	R40	-7	NRCC*	R23	-3	WSTATE*	R25	-6
DB6	R40	-8	NRCC*	R26	-4	WSTATE*	R25	-6

POWER AND GROUND

POWER	CAPACITORS
+5B	C46-1, C29-1, C38-1, C58-1, C63-1, C67-1, C68-1
+5V	C43-1, C48-1, C52-1, C6-1, C77-1, C12-1, C14-1
-2V	C2-1, C4-1, C5-1, C6-1, C8-1, C12-1, C14-1, C15-1, C16-1, C18-1, C22-1, C24-1, C25-1, C26-1, C28-1, C32-1, C34-1, C35-1, C36-1, C38-1, C41-1, C42-1, C44-1, C45-1, C47-1, C48-1, C54-1, C55-2, C56-1, C57-1, C58-1, C65-1, C71-1, C73-1, R1-1, R2-1, R3-1, R4-1, R5-1, R6-1, R7-1, R8-1, R9-1, R10-1, R11-1, R12-1, R13-1, R14-1, R15-1, R16-1, R17-1, R18-1, R19-1, R20-1, R21-1, R22-1, R23-1, R24-1, R25-1, R26-1, R27-1, R28-1, R29-1, R30-1, R31-1, R32-1, R33-1, R34-1, R35-1, R36-1, R37-1, R38-1, R39-1, R40-1, R41-1, R42-1, R43-1, R44-1, R45-1, R46-1, R47-1, R48-1, R49-1, R50-1, R53-1, R54-1
-5.2V	C1-1, C3-1, C7-1, C9-1, C10-1, C11-1, C13-1, C17-1, C19-1, C20-1, C21-1, C23-1, C27-1, C28-1, C30-1, C31-1, C33-1, C37-1, C39-1, C40-1, C41-2, C42-1, C44-1, C93-1, C91-1, C70-1
GN	C1-2, C2-2, C3-2, C4-2, C5-2, C6-2, C7-2, C8-2, C9-2, C10-2, C11-2, C12-2, C13-2, C14-2, C15-2, C16-2, C17-2, C18-2, C19-2, C20-2, C21-2, C22-2, C23-2, C24-2, C25-2, C26-2, C27-2, C28-2, C29-2, C30-2, C31-2, C32-2, C33-2, C34-2, C35-2, C36-2, C37-2, C38-2, C39-2, C40-2, C41-1, C42-2, C43-2, C44-2, C45-2, C46-2, C47-2, C48-2, C49-2, C50-2, C51-2, C52-2, C53-2, C54-2, C55-1, C56-2, C57-2, C58-2, C59-2, C61-2, C62-2, C63-2, C64-2, C65-2, C66-2, C67-2, C68-2, C69-2, C70-2, C71-2, C72-2, C73-2, C75-2, C76-2, C77-2, C78-2, C79-2

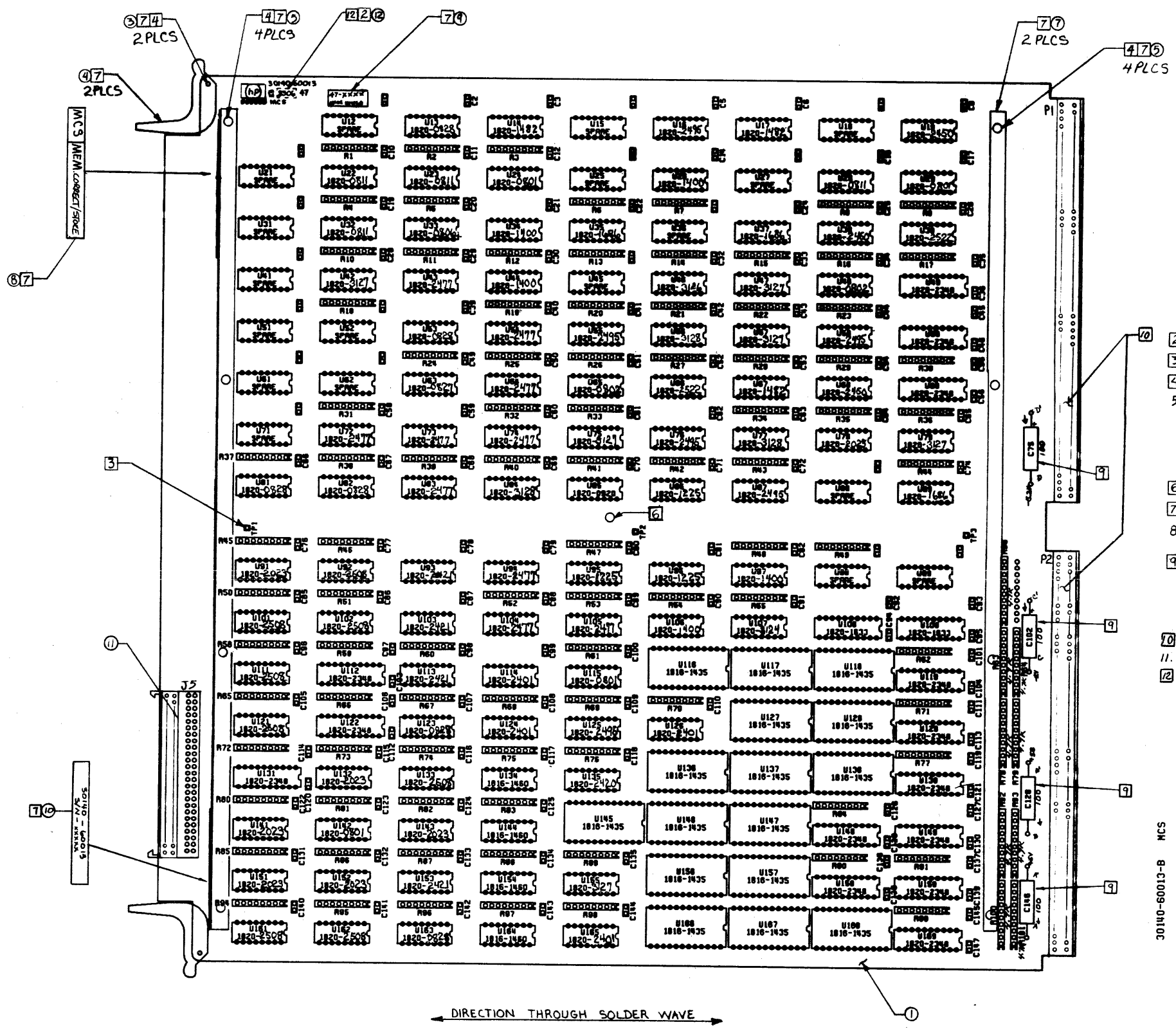


NOTES:

- SIGNAL NAME REFERS TO SIGNAL LINE BEING TERMINATED BY THE RESPECTIVE RESISTOR. (SEE NOTE 2)
- THE ROOM NUMBER LISTED UNDER "PACK" REPRESENTS THE REFERENCE DESIGNATOR ASSOCIATED WITH THE RESISTOR PACK TERMINATING THE RESPECTIVE SIGNAL NAME. THE NUMBER LISTED UNDER "PIN" REPRESENTS THE TERMINATING PIN FOR THAT SIGNAL.
- THIS TABLE SHOWS THE INTEGRATED CIRCUITS COMPRISING EACH SEGMENT OF THE SHIFT STRING. THE NUMBERS FOLLOWING THE LOOK NO., SUCH AS "LOOK 0-1", REPRESENTS THE BIT NUMBERS OF THE INTEGRATED CIRCUIT THAT ARE PRESENT IN THAT SEGMENT. IF NO BIT NUMBERS ARE GIVEN, SUCH AS "LOOK 0", THEN ALL OF THE OUTPUT BITS, 0-3, ARE PRESENT IN THE SHIFT STRING SEGMENT. THE "M" OR "B" SPECIFIES IF THE SEGMENT IS REPRESENTED IN A HEX OR A BINARY NUMBER.
- UNLESS OTHERWISE NOTED, ALL INTEGRATED CIRCUITS IN THE SHIFT STRING ARE 1820-0025. BIT 0-PIN 3, BIT 1-PIN 2, BIT 2-PIN 15, BIT 3-PIN 14.
- THE TABLE LABELED "POWER AND GROUND" IDENTIFY THE CAPACITORS AND RESISTOR PINS THAT CONNECT TO THE SPECIFIED POWER AND GROUND PLANES. (SEE ASSEMBLY DRAWING FOR LOCATIONS OF THESE CAPACITORS AND RESISTORS.)

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY. NO.	MAT'L SPEC.
		PCA - MNC SCHEMATIC			HEWLETT PACKARD
		30140A			30140 - 60012
		NEXT ASSEMBLY			PART NUMBER
		FINISH			D - 30140 - 60012 - 54

REVISED		DATE		BY		DESCRIPTION	
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							



- NOTE:
1. UNLESS OTHERWISE SPECIFIED:  
ALL RESISTANCE IN OHMS  
RESISTOR NETWORK ARE 68 OHMS  
ALL CAPACITANCE IN MICROFARADS  
ALL CAPACITORS ARE .01UF (0160-5352)  
ALL IC'S ARE 1820-
  2. INSTALL ITEM ②
  3. INSTALL ITEM ③ 3 PLACES
  4. MASK AS INDICATED PRIOR TO LOADING
  5. ALL BOARD LOADING & HANDLING MUST BE DONE AT AN ELECTROSTATIC DISCHARGE PROTECTED WORK STATION CONTAINING TABLE & FLOOR MATS & GROUNDED WRIST STRAP. TRANSPORT ASSEMBLY IN ELECTROSTATIC BAGS.
  6. USE SUPPORT FIXTURE DURING WAVE SOLDER
  7. LOAD ITEMS ② thru ④ and ⑥ thru ⑩ IN TOUCH UP
  8. PRETEST REQUIRED ON THE GUEST TEST SYSTEM.
  9. USING AN OHMMETER CHECK FOR A RESISTANCE OF GREATER THAN 25 OHMS BETWEEN THESE POINTS. A-A', A-B', A-C, A-D, A'-B', A'-C, A'-D, B'-C, B'-D, AND C-D BEFORE AND AFTER WAVE SOLDERING. DO NOT USE A CONTINUITY LIGHT ON THIS ASSEMBLY.
  10. LOAD THE CONNECTORS FIRST
  11. INSPECTION CRITERIA - HP STD. SECT 40.
  12. THIS ASSY DWG IS GOOD FOR BOTH REV B & C DWGDS.

12	1	LABEL - DATE CODE	932D-532D
11	1	EDGE CONN. - 50 PIN	1251-8936
10	1	LABEL - SERIAL NUMBER	9320-4848
9	1	LBL-WARR DATE CD	7120-6830
8	1	LABEL	7121-2118
7	2	BRACE	504016038
		Double	
5	8	SCREW 4-40	062410077
4	2	EXTRACTOR	5040-9801
3	2	PIN	4180-0116
2	2	STUD SOLDER TEAM	0360-0374
1	1	PLS BRCA	

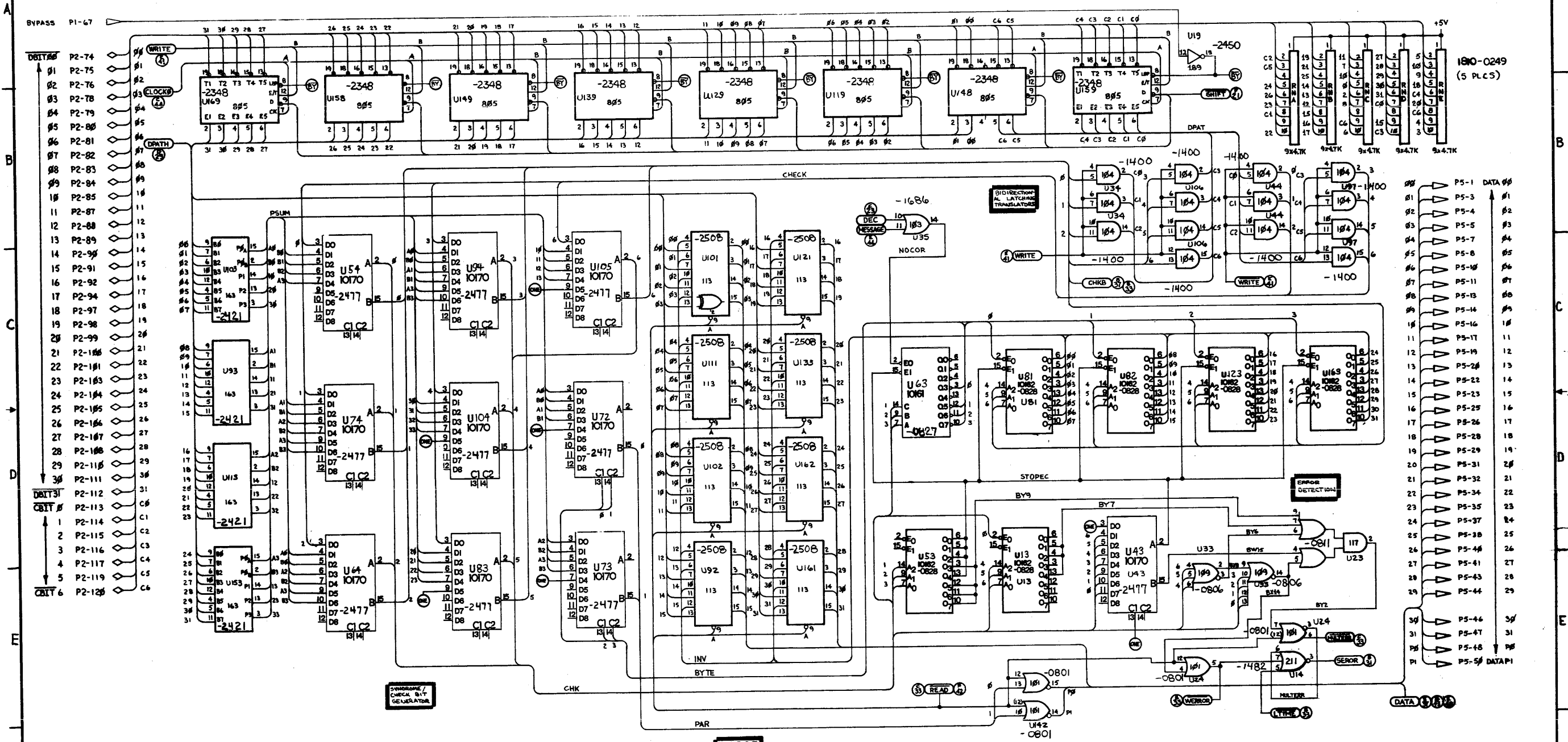
PCA-MCS  
ASSY. DWG.  
30140A

HEWLETT  
PACKARD

30140-60013  
F-30140-60013-1



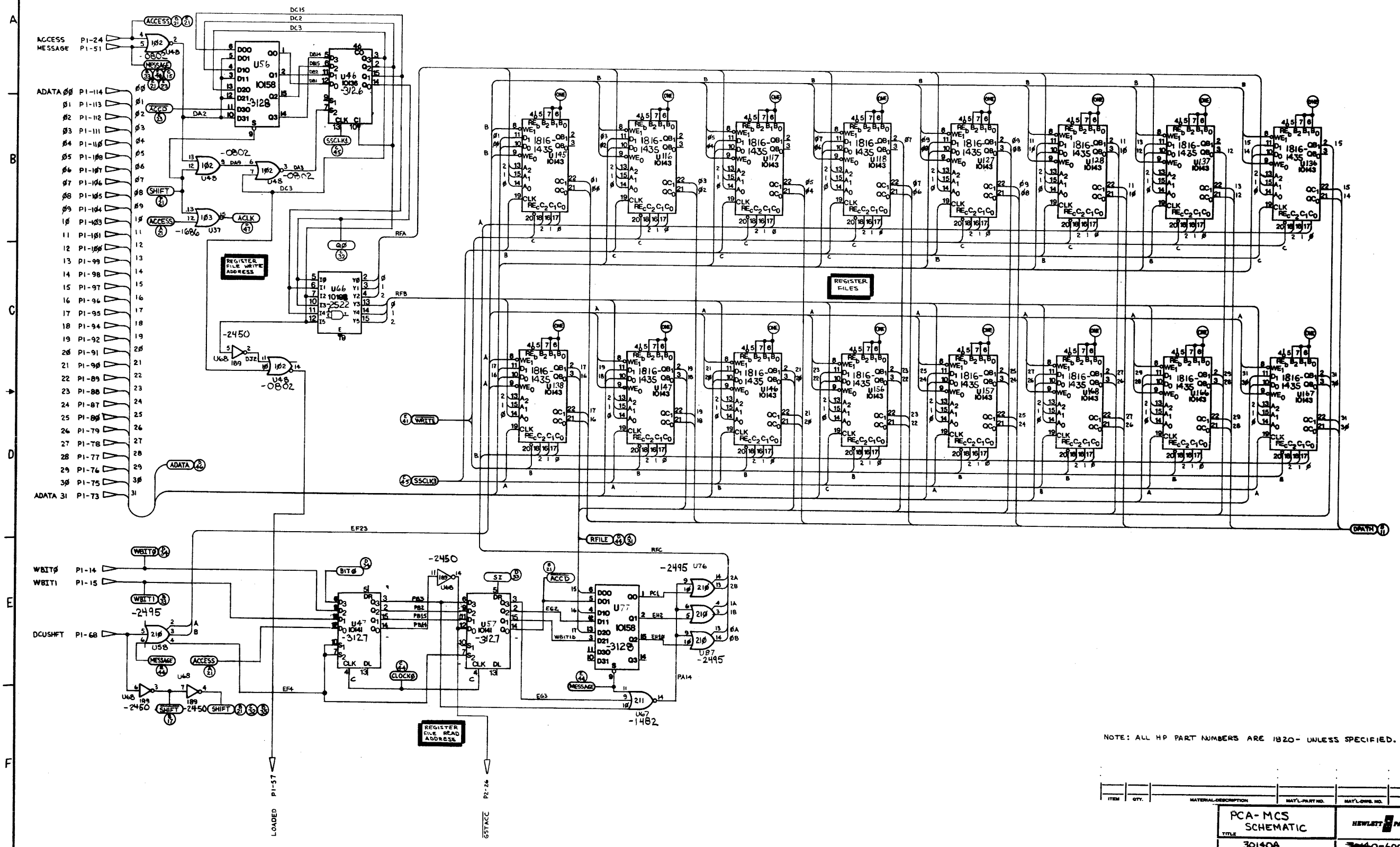
REVISIONS		APPROVED	
REV	DESCRIPTION	DATE	BY
A	REDESIGNED PER PCD 47-3549	11/13/74	WJL
B	REDESIGNED PER PCD 47-3549	11/13/74	WJL
C	REDESIGNED PER PCD 47-3549	11/13/74	WJL
D	REDESIGNED PER PCD 47-3549	11/13/74	WJL



NOTE: ALL HP PART NUMBERS ARE 1820- UNLESS SPECIFIED.

ITEM	QTY.	MATERIAL DESCRIPTION	MAYL PART NO.	MAYL QTY. NO.	MAYL SPEC.
PCA-MCS SCHEMATIC					
TITLE			HEWLETT PACKARD		
30140A			30140-60013		
NEXT ASSEMBLY			PART NUMBER		
30140			60013-51		
FORM			SCALE		

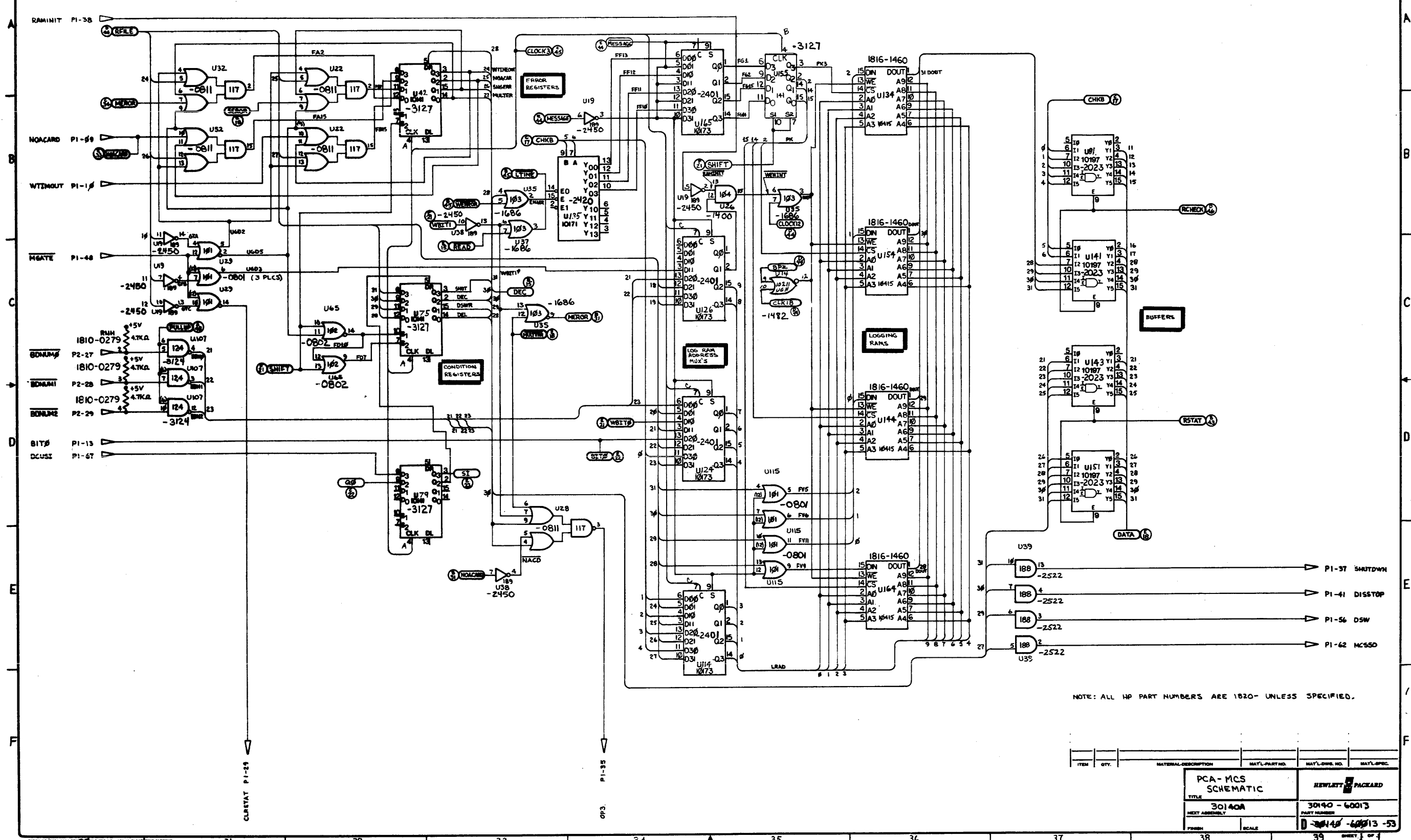
ENGINEERING RESPONSIBILITY												REVISIONS																												
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
												A REDRAWN PER REV 47-3314 B REVISED PER REV 47-3545 C REVISED PER REV 47-3174 D REVISED PER REV 47-3174																												



NOTE: ALL HP PART NUMBERS ARE 1820- UNLESS SPECIFIED.

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L ORG. NO.	MAT'L SPEC.
<b>PCA-MCS SCHEMATIC</b>					
TITLE			HEWLETT-PACKARD		
30140A			30140-60013		
NEXT ASSEMBLY			PART NUMBER		
FINISH			SCALE		
D-30140-60013-52			SHEET 1 OF 1		

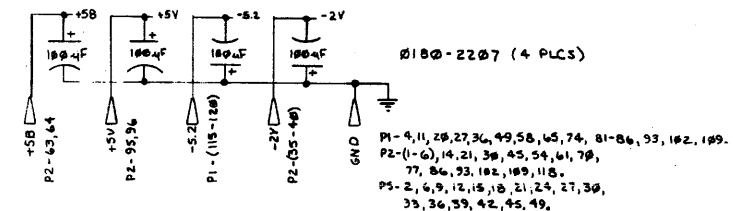
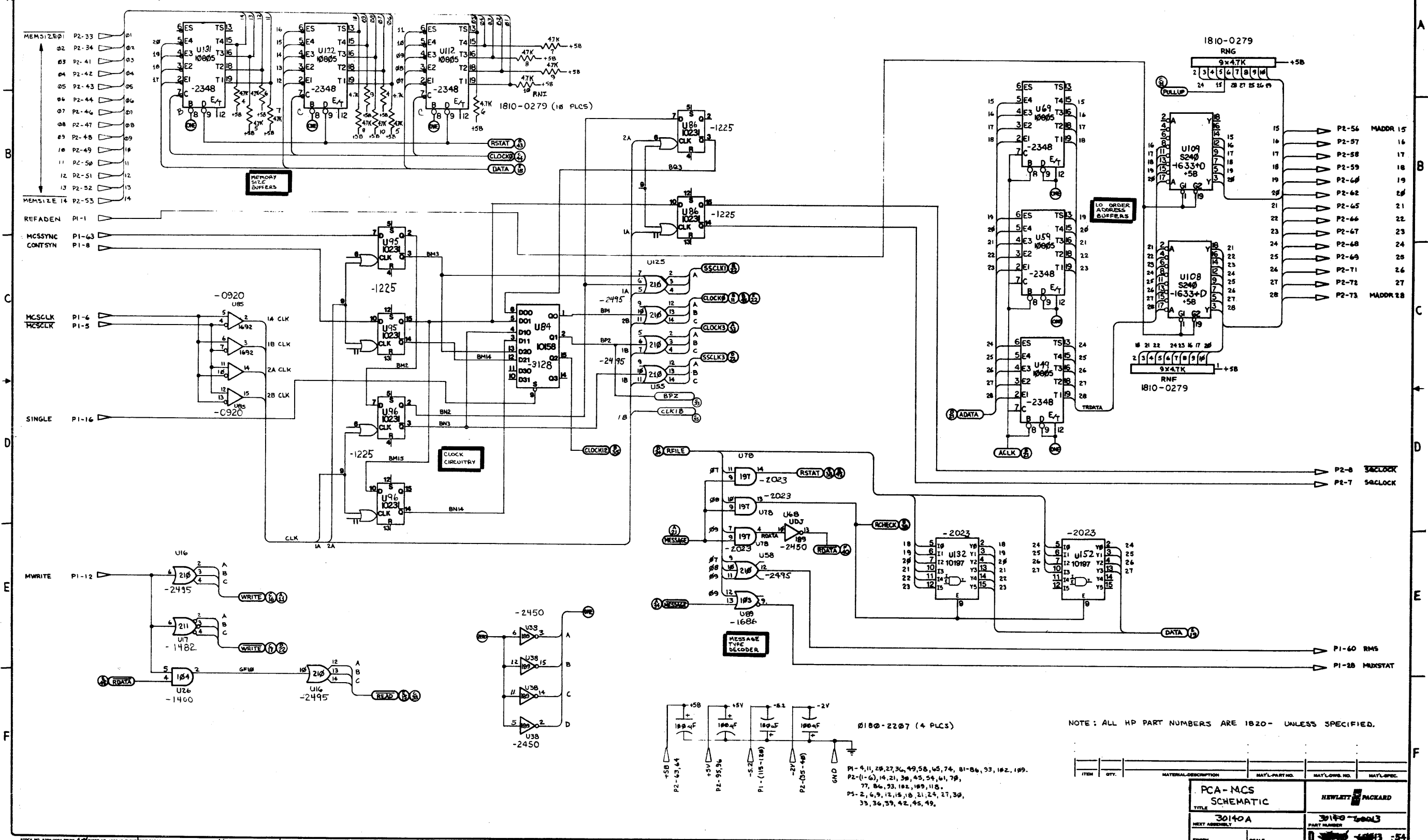
DESIGN RESPONSIBILITY										DATE									
BY										DATE									
REVISION										DATE									
B REDRAWN & REVISED 47-3344										12/20/68									
C REVISED PER PCD 47-3565										12/21/68									
D REVISED PER PCD 47-3779										12/22/68									



NOTE: ALL HP PART NUMBERS ARE 1820- UNLESS SPECIFIED.

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY. NO.	MAT'L SPEC.
PCA-MCS SCHEMATIC					
TITLE					
30140A					
NEXT ASSEMBLY					
30140 - 60013					
PART NUMBER					
30140 - 60013 - 53					
FORM					
SCALE					
30140 - 60013 - 53					

ENGINEERING RESPONSIBILITY											REVISIONS										
DATE											DATE										
											B REDRAWN & REVISED 47-3344										
											C REVISED PER PCD 47-3565										
											D REVISED PER PCD 47-3779										



NOTE: ALL HP PART NUMBERS ARE 1820- UNLESS SPECIFIED.

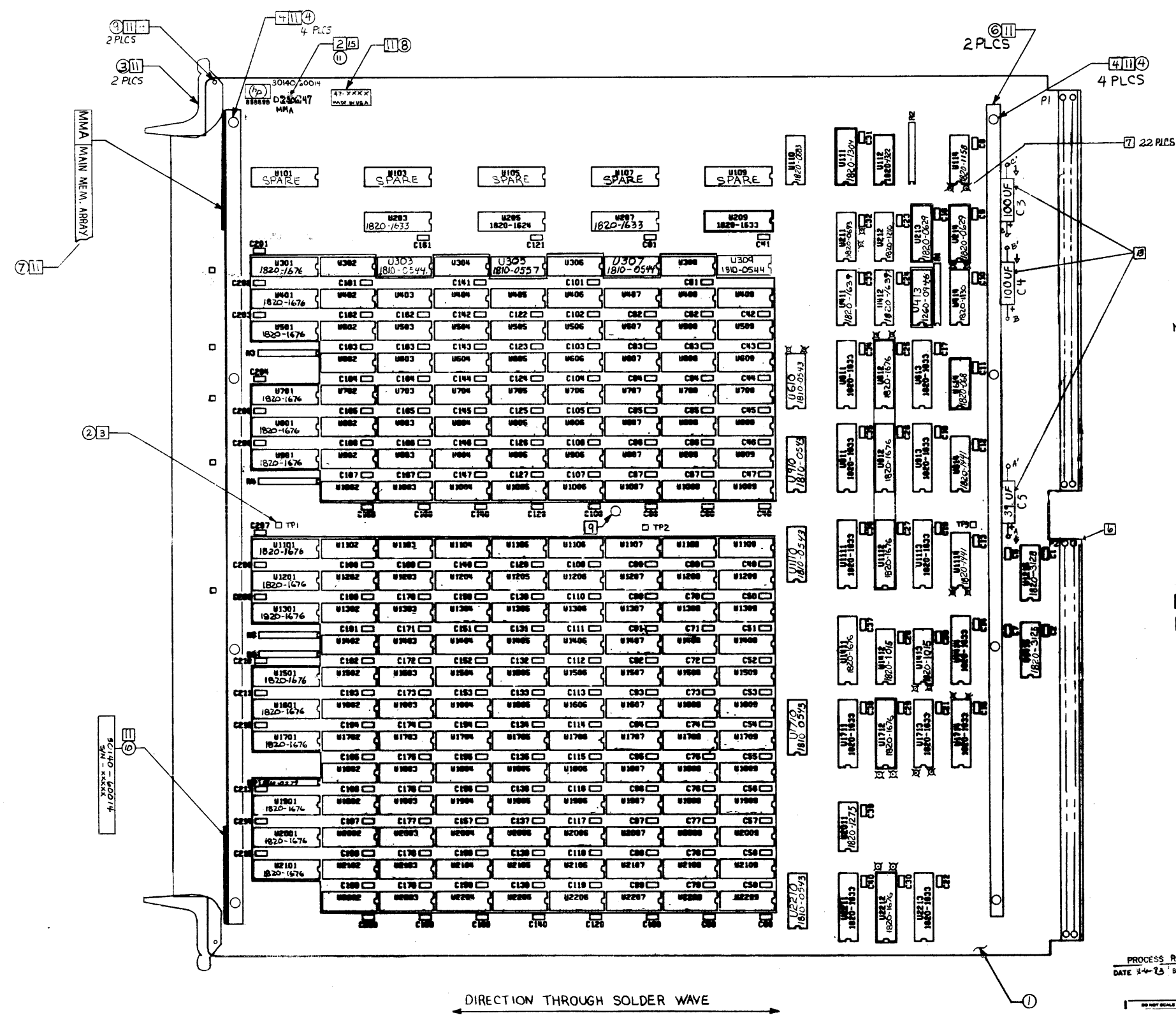
- P1-4, 11, 28, 27, 36, 49, 58, 65, 74, 81-86, 93, 102, 109.
- P2-(1-6), 14, 21, 30, 43, 54, 61, 70, 77, 86, 93, 102, 109, 118.
- P5-2, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 49.

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'LSW. NO.	MAT'L SPEC.
PCA-MCS SCHEMATIC					
TITLE			30140A		
NEXT ASSEMBLY			30140-60013		
PART NUMBER			30140-60013		
FORM			SCALE		

SIGNAL	PACK PIN	SIGNAL	PACK PIN	SIGNAL	PACK PIN	SIGNAL	PACK PIN	SIGNAL	PACK PIN	SIGNAL	PACK PIN	SIGNAL	PACK PIN
ACCESS	R15 -5	DC15	R23 -2	HEMSIZE01	R63 -6	CHECK3	R52 -3	FV11	R88 -8	RFA1	R89 -6	POWER	RND
ACK	R30 -6	DC2	R29 -5	HEMSIZE02	R63 -5	CHECK4	R52 -2	FV5	R75 -2	RFA2	R89 -6	GROUND	
ADATRO0	R76 -6	DC3	R23 -7	HEMSIZE03	R56 -10	CHECK5	R38 -3	FV6	R88 -5	RFB1	R88 -6		
ADATRO1	R83 -2	DEC	R94 -6	HEMSIZE04	R64 -10	CHECK6	R53 -3	FV9	R86 -2	RFB2	R88 -4		
ADATRO2	R61 -3	DEL	R95 -7	HEMSIZE05	R63 -3	CHK30	R45 -6	GF10	R7 -7	RFB3	R88 -4		
ADATRO3	R61 -2	DJ2	R23 -6	HEMSIZE06	R64 -4	CHKB1	R45 -7	GSTRCC*	R25 -3	RFC0	R89 -3		
ADATRO4	R70 -4	DOUT28	R80 -7	HEMSIZE07	R64 -6	CHKB2	R50 -4	GTR	R9 -2	RFC01	R86 -5		
ADATRO5	R88 -8	DOUT29	R85 -8	HEMSIZE08	R63 -4	CHKB3	R50 -6	GTR	R9 -4	RFC1	R89 -5		
ADATRO6	R70 -8	DOUT30	R85 -6	HEMSIZE09	R64 -5	CHKB4	R45 -4	GT	R8 -4	RFC12	R88 -4		
ADATRO7	R61 -4	DOUT31	R85 -5	HEMSIZE10	R63 -2	CHKB5	R54 -7	INVO0	R50 -3	RFC2	R89 -4		
ADATRO8	R70 -7	DPRTC0	R12 -3	HEMSIZE11	R64 -3	CHKB6	R38 -7	INVO1	R50 -8	RFC21	R88 -5		
ADATRO9	R61 -5	DPRTC1	R12 -6	HEMSIZE12	R64 -9	CHKD	R2 -2	INVO2	R59 -8	RFILE07	R29 -6		
ADATRO10	R19 -3	DPRTC2	R15 -6	HEMSIZE13	R64 -2	CHK1	R11 -5	INVO3	R50 -2	RFILE08	R29 -7		
ADATRO11	R69 -4	DPRTC3	R48 -5	HEMSIZE14	R62 -7	CHK2	R11 -8	INVO4	R59 -3	RFILE09	R29 -8		
ADATRO12	R55 -2	DPRTC4	R48 -7	HEMSIZE15	R64 -6	CHK3	R11 -7	INVO5	R59 -8	RFILE10	R9 -6		
ADATRO13	R76 -4	DPRTC5	R35 -6	HEMSIZE16	R64 -5	CHK4	R2 -3	INVO6	R56 -8	RFILE11	R9 -3		
ADATRO14	R70 -6	DPRTC6	R35 -4	HEMSIZE17	R64 -4	CHK5	R2 -6	INVO7	R59 -2	RFILE12	R9 -8		
ADATRO15	R70 -5	DPRTC7	R50 -5	HEMSIZE18	R64 -3	CHK6	R2 -7	INVO8	R51 -3	RFILE13	R34 -8		
ADATRO16	R77 -8	DPRTC8	R50 -7	HEMSIZE19	R64 -2	CLK1R	R69 -5	INVO9	R51 -2	RFILE14	R34 -4		
ADATRO17	R70 -2	DPRTC9	R59 -6	HEMSIZE20	R64 -1	CLK1B	R20 -6	INV10	R59 -7	RFILE15	R43 -4		
ADATRO18	R75 -3	DPRTC10	R59 -4	HEMSIZE21	R64 -9	CLK2R	R47 -8	INV11	R59 -5	RFILE16	R72 -5		
ADATRO19	R83 -5	DPRTC11	R59 -5	HEMSIZE22	R64 -8	CLK2B	R76 -5	INV12	R46 -4	RFILE17	R72 -4		
ADATRO20	R76 -8	DPRTC12	R59 -7	HEMSIZE23	R64 -7	CLOCK0	R15 -4	INV13	R46 -6	RFILE18	R72 -7		
ADATRO21	R83 -3	DPRTC13	R59 -8	HEMSIZE24	R64 -6	CLOCK1	R16 -2	INV14	R51 -4	RFILE19	R81 -4		
ADATRO22	R83 -7	DPRTC14	R59 -4	HEMSIZE25	R64 -5	CLOCK2	R15 -3	INV15	R46 -8	RFILE20	R72 -6		
ADATRO23	R83 -9	DPRTC15	R59 -5	HEMSIZE26	R64 -4	CLOCK12	R6 -7	INV16	R65 -9	RFILE21	R81 -6		
ADATRO24	R89 -2	DPRTC16	R59 -7	HEMSIZE27	R64 -3	CLOCK3	R36 -4	INV17	R72 -8	RFILE22	R81 -5		
ADATRO25	R80 -7	DPRTC17	R59 -8	HEMSIZE28	R64 -2	CLOCK31	R86 -3	INV18	R72 -7	RFILE23	R81 -5		
ADATRO26	R90 -4	DPRTC18	R59 -4	HEMSIZE29	R64 -1	CLOCK32	R64 -8	INV19	R72 -5	RFILE24	R81 -5		
ADATRO27	R90 -6	DPRTC19	R59 -6	HEMSIZE30	R64 -9	CLOCK33	R64 -9	INV20	R74 -4	RFILE25	R81 -5		
ADATRO28	R99 -3	DPRTC20	R46 -7	HEMSIZE31	R64 -8	CONTSYN	R53 -8	INV21	R74 -6	RFILE26	R81 -5		
ADATRO29	R61 -8	DPRTC21	R46 -7	HEMSIZE32	R64 -7	DC	R27 -7	INV22	R82 -7	RFILE27	R81 -5		
ADATRO30	R82 -2	DPRTC22	R51 -4	HEMSIZE33	R64 -6	DP	R23 -8	INV23	R82 -5	RFILE28	R81 -5		
ADATRO31	R76 -2	DPRTC23	R51 -5	HEMSIZE34	R64 -5	DP100*	R52 -8	INV24	R85 -4	RFILE29	R81 -5		
BDNLDP*	R64 -8	DPRTC24	R51 -7	HEMSIZE35	R64 -4	DBIT01*	R83 -7	INV25	R85 -5	RFILE30	R81 -5		
BDNLDP1*	R63 -8	DPRTC25	R72 -6	HEMSIZE36	R64 -3	DBIT02*	R56 -2	INV26	R85 -7	RFILE31	R81 -5		
BDNLDP2*	R64 -7	DPRTC26	R72 -4	HEMSIZE37	R64 -2	DBIT03*	R52 -10	INV27	R85 -5	RFILE32	R81 -5		
BDND	R82 -8	DPRTC27	R67 -5	HEMSIZE38	R64 -1	DBIT04*	R83 -10	INV28	R84 -4	RFILE33	R81 -5		
BDN1	R82 -6	DPRTC28	R67 -4	HEMSIZE39	R64 -9	DBIT05*	R82 -8	INV29	R84 -7	RFILE34	R81 -5		
BDN2	R87 -7	DPRTC29	R67 -5	HEMSIZE40	R64 -8	DBIT06*	R83 -9	INV30	R84 -3	RFILE35	R81 -5		
BIT0	R68 -3	DPRTC30	R67 -4	HEMSIZE41	R64 -7	DBIT07*	R56 -4	INV31	R84 -2	RFILE36	R81 -5		
BM14	R40 -7	DPRTC31	R67 -4	HEMSIZE42	R64 -6	DBIT08*	R56 -3	INV32	R87 -7	RFILE37	R81 -5		
BM15	R40 -5	DPRTC32	R67 -5	HEMSIZE43	R64 -5	DBIT09*	R53 -8	INV33	R87 -2	RFILE38	R81 -5		
BM2	R69 -6	DPRTC33	R67 -6	HEMSIZE44	R64 -4	DBIT10*	R53 -8	INV34	R87 -3	RFILE39	R81 -5		
BM3	R69 -8	DPRTC34	R67 -2	HEMSIZE45	R64 -3	DBIT11*	R63 -10	INV35	R87 -5	RFILE40	R81 -5		
BM4	R40 -3	DPRTC35	R67 -8	HEMSIZE46	R64 -2	DBIT12*	R63 -6	INV36	R87 -6	RFILE41	R81 -5		
BM5	R5 -7	DPRTC36	R67 -7	HEMSIZE47	R64 -1	DBIT13*	R63 -5	INV37	R87 -8	RFILE42	R81 -5		
BM6	R40 -6	DPRTC37	R67 -6	HEMSIZE48	R64 -9	DBIT14*	R63 -5	INV38	R87 -8	RFILE43	R81 -5		
BM7	R40 -4	DPRTC38	R67 -5	HEMSIZE49	R64 -8	DBIT15*	R63 -4	INV39	R86 -6	RFILE44	R81 -5		
BM8	R5 -3	DPRTC39	R67 -4	HEMSIZE50	R64 -7	DBIT16*	R63 -4	INV40	R86 -4	RFILE45	R81 -5		
BM9	R3 -6	DPRTC40	R67 -3	HEMSIZE51	R64 -6	DBIT17*	R63 -4	INV41	R86 -4	RFILE46	R81 -5		
BM10	R5 -8	DPRTC41	R67 -2	HEMSIZE52	R64 -5	DBIT18*	R63 -4	INV42	R86 -4	RFILE47	R81 -5		
BM11	R5 -3	DPRTC42	R67 -1	HEMSIZE53	R64 -4	DBIT19*	R63 -4	INV43	R86 -4	RFILE48	R81 -5		
BM12	R3 -6	DPRTC43	R67 -7	HEMSIZE54	R64 -3	DBIT20*	R63 -4	INV44	R86 -4	RFILE49	R81 -5		
BM13	R5 -8	DPRTC44	R67 -6	HEMSIZE55	R64 -2	DBIT21*	R63 -4	INV45	R86 -4	RFILE50	R81 -5		
BM14	R5 -3	DPRTC45	R67 -5	HEMSIZE56	R64 -1	DBIT22*	R63 -4	INV46	R86 -4	RFILE51	R81 -5		
BM15	R3 -6	DPRTC46	R67 -4	HEMSIZE57	R64 -9	DBIT23*	R63 -4	INV47	R86 -4	RFILE52	R81 -5		
BM16	R5 -8	DPRTC47	R67 -3	HEMSIZE58	R64 -8	DBIT24*	R63 -4	INV48	R86 -4	RFILE53	R81 -5		
BM17	R5 -3	DPRTC48	R67 -2	HEMSIZE59	R64 -7	DBIT25*	R63 -4	INV49	R86 -4	RFILE54	R81 -5		
BM18	R3 -2	DPRTC49	R67 -1	HEMSIZE60	R64 -6	DBIT26*	R63 -4	INV50	R86 -4	RFILE55	R81 -5		
BM19	R3 -2	DPRTC50	R67 -7	HEMSIZE61	R64 -5	DBIT27*	R63 -4	INV51	R86 -4	RFILE56	R81 -5		
BM20	R3 -2	DPRTC51	R67 -6	HEMSIZE62	R64 -4	DBIT28*	R63 -4	INV52	R86 -4	RFILE57	R81 -5		
BM21	R3 -2	DPRTC52	R67 -5	HEMSIZE63	R64 -3	DBIT29*	R63 -4	INV53	R86 -4	RFILE58	R81 -5		
BM22	R3 -2	DPRTC53	R67 -4	HEMSIZE64	R64 -2	DBIT30*	R63 -4	INV54	R86 -4	RFILE59	R81 -5		
BM23	R3 -2	DPRTC54	R67 -3	HEMSIZE65	R64 -1	DBIT31*	R63 -4	INV55	R86 -4	RFILE60	R81 -5		
BM24	R3 -2	DPRTC55	R67 -2	HEMSIZE66	R64 -9	DBIT32*	R63 -4	INV56	R86 -4	RFILE61	R81 -5		
BM25	R3 -2	DPRTC56	R67 -1	HEMSIZE67	R64 -8	DBIT33*	R63 -4	INV57	R86 -4	RFILE62	R81 -5		
BM26	R3 -2	DPRTC57	R67 -7	HEMSIZE68	R64 -7	DBIT34*	R63 -4	INV58	R86 -4	RFILE63	R81 -5		
BM27	R3 -2	DPRTC58	R67 -6	HEMSIZE69	R64 -6	DBIT35*	R63 -4	INV59	R86 -4	RFILE64	R81 -5		
BM28	R3 -2	DPRTC59	R67 -5	HEMSIZE70	R64 -5	DBIT36*	R63 -4	INV60	R86 -4	RFILE65	R81 -5		
BM29	R3 -2	DPRTC60	R67 -4	HEMSIZE71	R64 -4	DBIT37*	R63 -4	INV61	R86 -4	RFILE66	R81 -5		
BM30	R3 -2	DPRTC61	R67 -3	HEMSIZE72	R64 -3	DBIT38*	R63 -4	INV62	R86 -4	RFILE67	R81 -5		
BM31	R3 -2	DPRTC62	R67 -2	HEMSIZE73	R64 -2	DBIT39*	R63 -4	INV63	R86 -4	RFILE68	R81 -5		
BM32	R3 -2	DPRTC63	R67 -1	HEMSIZE74	R64 -1	DBIT40*	R63 -4	INV64	R86 -4	RFILE69	R81 -5		
BM33	R3 -2	DPRTC64	R67 -7	HEMSIZE75	R64 -9	DBIT41*	R63 -4	INV65	R86 -4	RFILE70	R81 -5		
BM34	R3 -2	DPRTC65	R67 -6	HEMSIZE76	R64 -8	DBIT42*	R63 -4	INV66	R86 -4	RFILE71	R81 -5		
BM35	R3 -2	DPRTC66	R67 -5	HEMSIZE77	R64 -7	DBIT43*	R63 -4	INV67	R86 -4	RFILE72	R81 -5		
BM36	R3 -2	DPRTC67	R67 -4	HEMSIZE78	R64 -6	DBIT44*	R63 -4	INV68	R86 -4	RFILE73	R81 -5		
BM37	R3 -2	DPRTC68	R67 -3	HEMSIZE79	R64 -5	DBIT45*	R63 -4	INV69	R86 -4	RFILE74	R81 -5		
BM38	R3 -2	DPRTC69	R67 -2	HEMSIZE80	R64 -4	DBIT46*	R63 -4	INV70	R86 -4	RFILE75	R81 -5		
BM39	R3 -2	DPRTC70	R67 -1	HEMSIZE81	R64 -3	DBIT47*	R63 -4	INV71	R86 -4	RFILE76	R81 -5		
BM40	R3 -2	DPRTC71	R67 -7	HEMSIZE82	R64 -2	DBIT48*	R63 -4	INV72	R86 -4	RFILE77	R81 -5		
BM41	R3 -2	DPRTC72	R67 -6	HEMSIZE83	R64 -1	DBIT49*	R63 -4	INV73	R86 -4	RFILE78	R81 -5		
BM42	R3 -2	DPRTC73	R67 -5	HEMSIZE84	R64 -9	DBIT50*	R63 -4	INV74	R86 -4	RFILE79	R81 -5		
BM43	R3 -2	DPRTC74	R67 -4	HEMSIZE85	R64 -8	DBIT51*	R63 -4	INV75	R86 -4	RFILE80	R81 -5		
BM44	R3 -2	DPRTC75	R67 -3	HEMSIZE86	R64 -7	DBIT52*	R63 -4	INV76	R86 -4	RFILE81	R81 -5		
BM45	R3 -2	DPRTC76	R67 -2	HEMSIZE87	R64 -6	DBIT53*	R63 -4	INV77	R86 -4	RFILE82	R81 -5		
BM46	R3 -2	DPRTC77	R67 -1	HEMSIZE88	R64 -5	DBIT54*	R63 -4	INV78	R86 -4	RFILE83	R81 -5		
BM47	R3 -2	DPRTC78	R67 -7	HEMSIZE89	R64 -4	DBIT55*	R63 -4	INV79	R86 -4	RFILE84	R81 -5		
BM48	R3 -2	DPRTC79	R67 -6	HEMSIZE90	R64 -3	DBIT56*	R63 -4	INV80	R86 -4	RFILE85	R81 -5		
BM49	R3 -2	DPRTC80	R67 -5	HEMSIZE91	R64 -2	DBIT57*	R63 -4	INV81	R86 -4	RFILE86	R81 -5		
BM50	R3 -2	DPRTC81	R67 -4	HEMSIZE92	R64 -1	DBIT58*	R63 -4	INV82	R86 -4	RFILE87	R81 -5		
BM51	R3 -2	DPRTC82	R67 -3	HEMSIZE93	R64 -9	DBIT59*	R63 -4	INV83	R86 -4	RFILE88	R81 -5		
BM52	R3 -2	DPRTC83	R67 -2	HEMSIZE94	R64 -8	DBIT60*	R63 -4	INV84	R86 -4	RFILE89	R81 -5		
BM53	R3 -2	DPRTC84	R67 -1	HEMSIZE95	R64 -7	DBIT61*	R63 -4	INV85	R86 -4	RFILE90	R81 -5		
BM54	R3 -2	DPRTC85	R67 -7	HEMSIZE96	R64 -6	DBIT62*	R63 -4	INV86	R86 -4	RFILE91	R81 -5		
BM55	R3 -2	DPRTC86	R67 -6	HEMSIZE97	R64 -5	DBIT63*	R63 -4	INV87	R86 -4	RFILE92	R81 -5		
BM56	R3 -2	DPRTC87	R67 -5	HEMSIZE98	R64 -4	DBIT64*	R63 -4	INV88	R86 -4	RFILE93	R81 -5		
BM57	R3 -2	DPRTC88	R67 -4	HEMSIZE99	R64 -3	DBIT65*	R63 -4	INV89	R86 -4	RFILE94	R81 -5		
BM58	R3 -2	DPRTC89	R67 -3	HEMSIZE100	R64 -2	DBIT66*	R63 -4	INV90	R86 -4	RFILE95	R81 -5		
BM59	R3 -2	DPRTC90	R67 -2	HEMSIZE101	R64 -1	DBIT67*	R63 -4						

REF. DWG.: D-51 THR D-57 SCHEMATIC  
 A-50 DATE CODE INFO  
 A-30140-70013-1 FINAL TEST  
 A-70 PRE-TEST

REV	DATE	DESCRIPTION	BY	CHK
A	AS ISSUED			
B	REMOVED FROM BOARD			
C	REMOVED FROM BOARD			
D	REMOVED FROM BOARD			
E	REMOVED FROM BOARD			
F	REMOVED FROM BOARD			
G	REMOVED FROM BOARD			
H	REMOVED FROM BOARD			
I	REMOVED FROM BOARD			
J	REMOVED FROM BOARD			
K	REMOVED FROM BOARD			
L	REMOVED FROM BOARD			



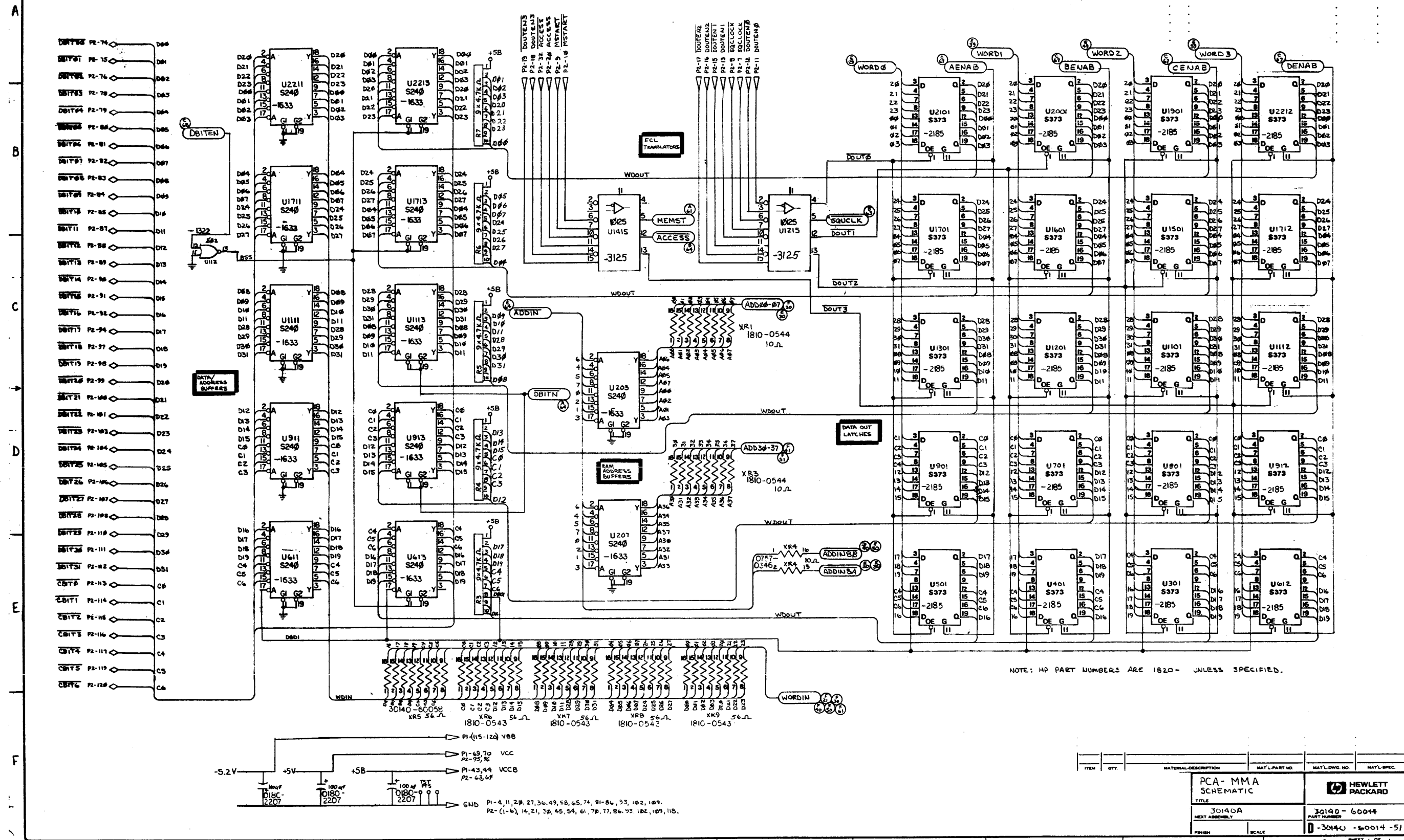
- NOTES:
- UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE IN OHMS  
 RESISTORS ARE 4.7K OHMS  
 ALL CAPACITANCE IN MICROFARADS  
 ALL CAPACITORS ARE .1UF (0160-4685)  
 ALL IC'S ARE 1818-3006
  - INSTALL ITEM ①
  - INSTALL ITEM ② 3 PLACES
  - MASK AS INDICATED PRIOR TO LOADING
  - ALL BOARD LOADING & HANDLING MUST BE DONE AT AN ELECTROSTATIC DISCHARGE PROTECTED WORK STATION CONTAINING TABLE & FLOOR MATS & GROUNDED WRIST STRAP. TRANSPORT ASSEMBLY IN ELECTROSTATIC DISCHARGE PROTECTED BAGS.
  - LOAD EDGE CONNECTORS PRIOR TO COMPONENTS.
  - THE TWENTY TWO (22) CIRCLED HOLES (Ø) ARE FEED THROUGH DO NOT MISTAKENLY LOAD A CAPACITOR, IC, OR SOCKET IN THEM.
  - LOAD 16 PIN SOCKETS AS REQUIRED (XU-III THRU XU-2214)
  - USE SUPPORT FEATURE DURING WAVE SOLDER.
  - LOAD ALL IC'S, IN SOCKETS IN TOUCH UP.
  - INSTALL ITEMS ③ thru ⑤ and ⑥ thru ⑧ IN TOUCH UP.
  - PRETEST REQUIRED ON THE GUEST TEST SYSTEM.
  - USING AN OHMMETER CHECK FOR A RESISTANCE OF GREATER THAN 25 OHMS BETWEEN THESE POINTS BEFORE AND AFTER WAVE SOLDER. DO NOT USE A CONTINUITY LIGHT. TEST A-A; A-B, A-C, A'-B, A'-C AND B-C.
  - INSPECTION CRITERIA M.P. STD. SECTION 410.
  - THIS ASSEMBLY DWG. (F-4) IS GOOD FOR BOTH C-2306-47 & D-2306-47 BOARDS.

NO	QTY	DESCRIPTION	DATE	BY
1	1	PCB-MMA	3820-0004	
2	3	STUD SOLDER TERM	0360-0294	
3	2	EXTRACTOR	5040-9804	
4	6	SCREW 4-40	0624-0077	
5	1	Label		
6	2	BRACE	5090-6058	
7	1	LBL-WARR DATE CD	7120-6830	
8	1	LBL-PIN	1480-0116	
9	2	Label - SERIAL NUMBER	3920-4918	
10	1	Label - DATE CODE	4320-5320	

PCA-MEM MEM ARR	HEWLETT PACKARD
ASSY DWG.	PRINT
30140A/B 30142A	30140-60014
REV. 1.5/1	F-30140-60014

REF. DW65: F-3 ASSY.  
A-50 DATE CODE INFO.  
D-52 THRU D-51 SCHEM.

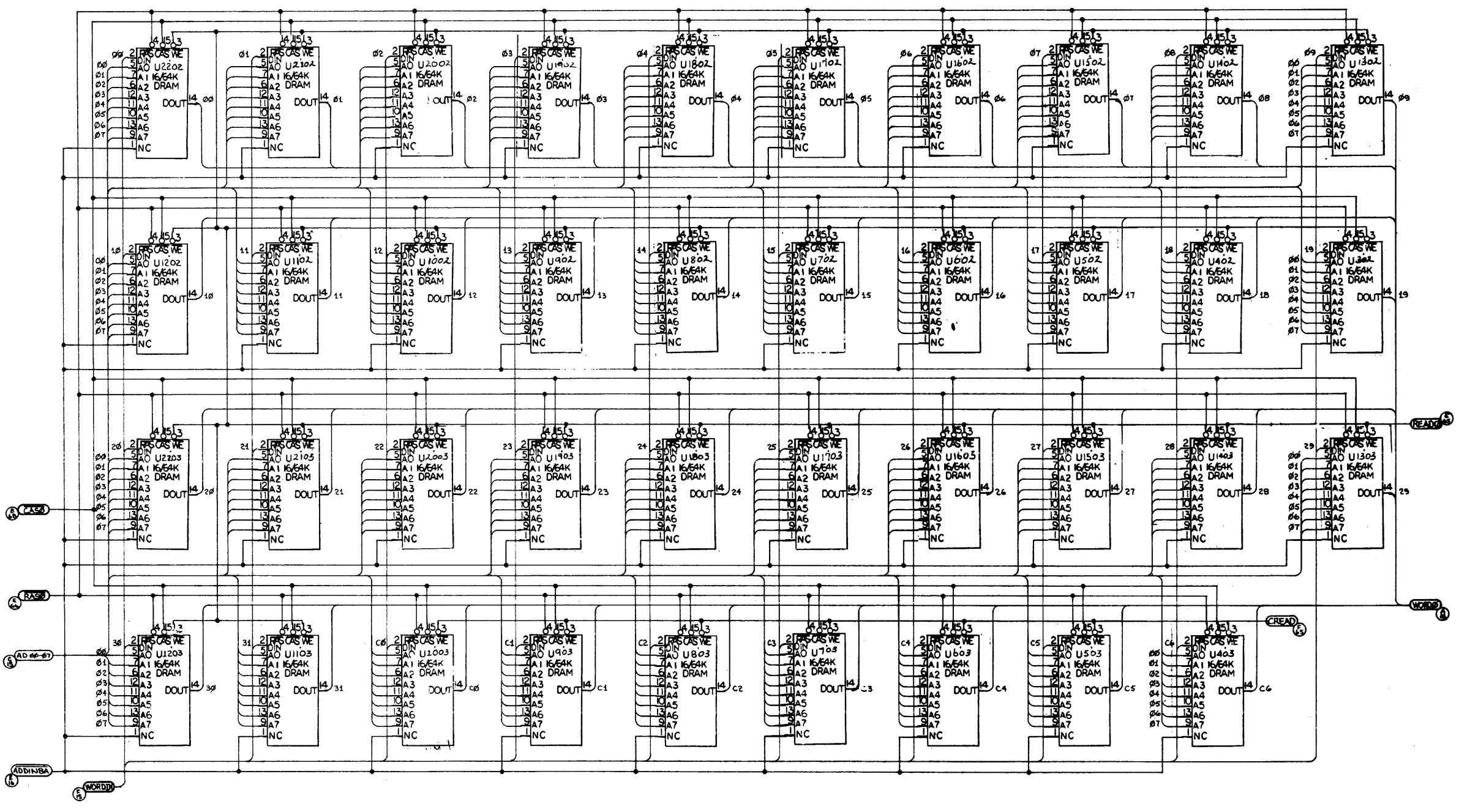
ENGINEERING RESPONSIBILITY															REVISED PER PCO 47-3317															REVISED PER PCO 47-3779															CAG-UII2 FIN HUMPING: P5B WAS 15V (CAGS) IN PER HANGS. LOC. D85, C82, PER ECU														
DATE															DATE															DATE															DATE														
APPROVED															APPROVED															APPROVED															APPROVED														



ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG NO.	MAT'L SPEC.
PCA-MMA SCHEMATIC					
TITLE			HEWLETT PACKARD		
30140A			30140-6004		
NEXT ASSEMBLY			PART NUMBER		
FINISH			SCALE		
			D-30140-6004-51		

REF. DWGS.: F-3 ASSY  
 4-50 DATE: 10-21-57  
 D-51, D-52 THRU D-57 51-54

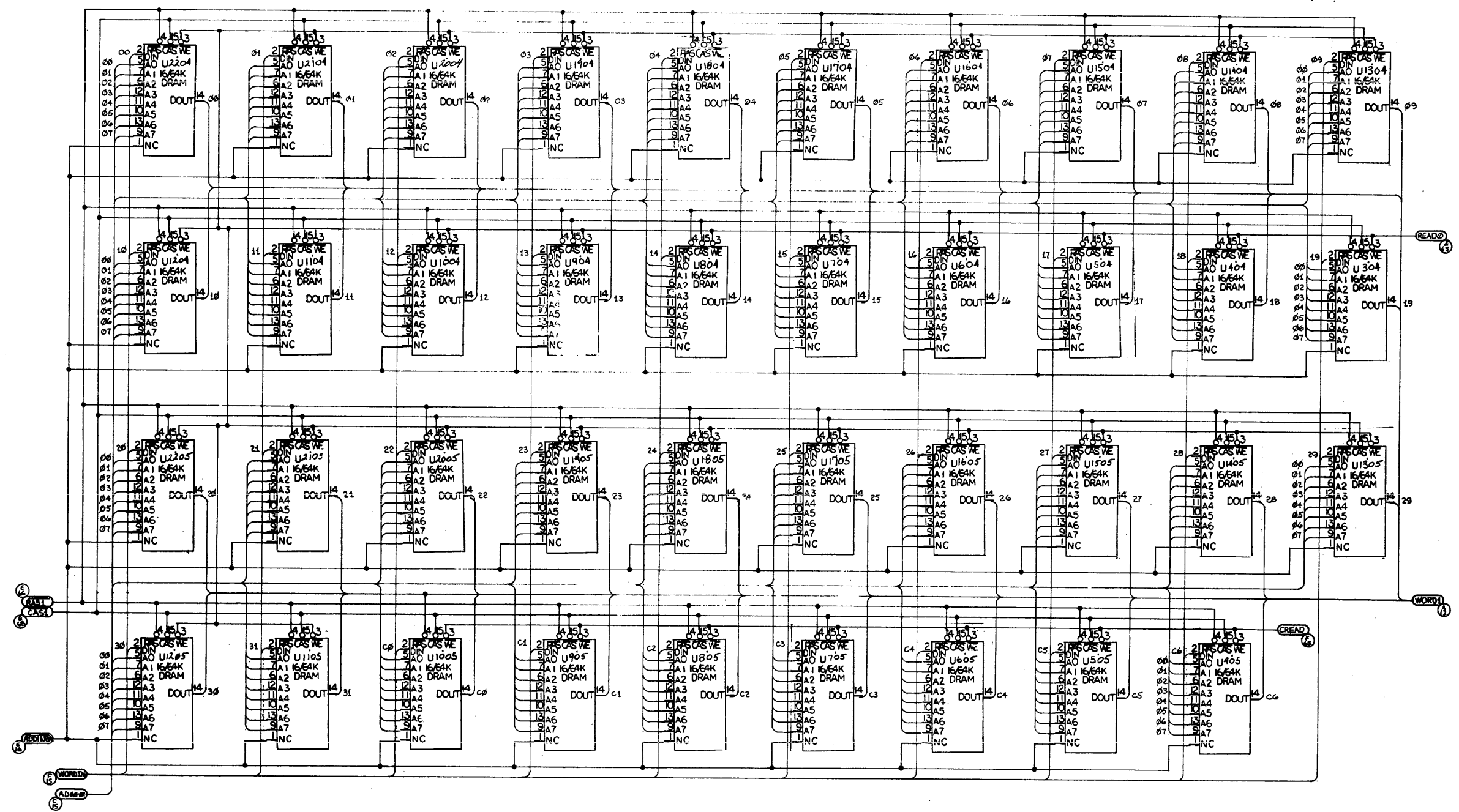
ENGINEERING RESPONSIBILITY														REVISED & REDRAWN PER PCD 47-3317				DATE: 10-2-57	
BY: [Signature]														DATE: 10-2-57					



NOTE: ALL IC'S ARE 5180-D133 (STRESID 1818-1559)

ITEM	QTY.	MATERIAL DESCRIPTION	MATL. PART NO.	MATL. QTY. NO.	MATL. SPEC.
		PCA-MMA			
		SCHEMATIC			
		30140A			
		HEWLETT PACKARD			
		30140-60014			
		D-30140-60014-52			



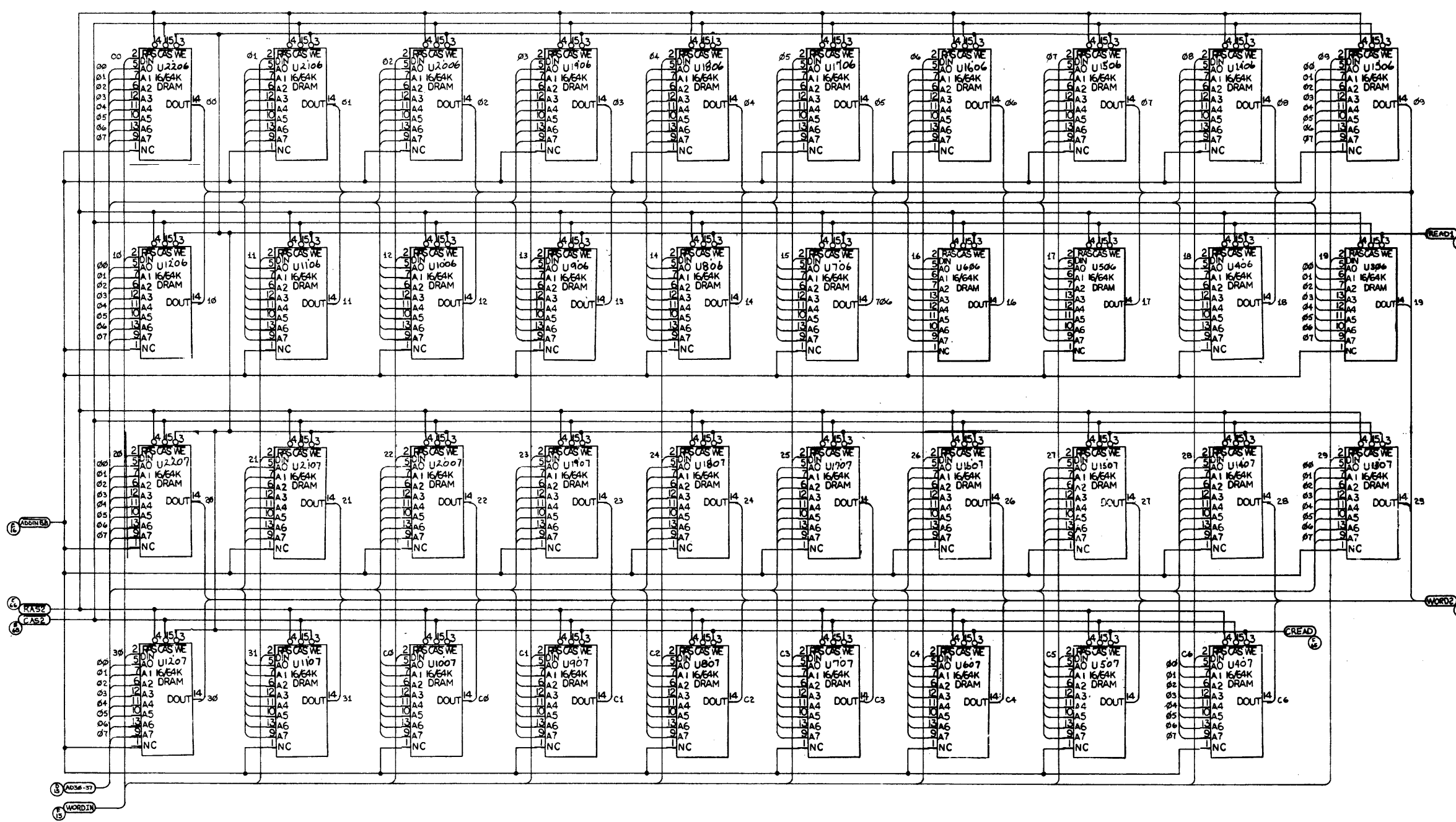


NOTE: ALL IC'S ARE: 5180-0133 (SIPESD 1818-1559)

ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY NO.	MAT'L SPEC.
		PCA-MMA			
		TITLE SCHEMATIC			
		30140A	30140-60014		
		HEWLETT PACKARD			
		FINISH	SCALE		
				D-30140-60014-53	
				SHEET / OF /	

REF. DWG: PMS 400  
 ALL DATE: 007-10-60  
 D-51, D-52, D-53, D-54, D-55, D-56, D-57, D-58, D-59, D-60, D-61, D-62, D-63, D-64, D-65, D-66, D-67, D-68, D-69, D-70, D-71, D-72, D-73, D-74, D-75, D-76, D-77, D-78, D-79, D-80, D-81, D-82, D-83, D-84, D-85, D-86, D-87, D-88, D-89, D-90, D-91, D-92, D-93, D-94, D-95, D-96, D-97, D-98, D-99, D-100

ENGINEERING RESPONSIBILITY												REVISIONS		APPROVED	DATE	
1	2	3	4	5	6	7	8	9	10	11	12	BY	DATE	REVISED & REDRAWN PER PCD 47-3317	HJK	A-2-78

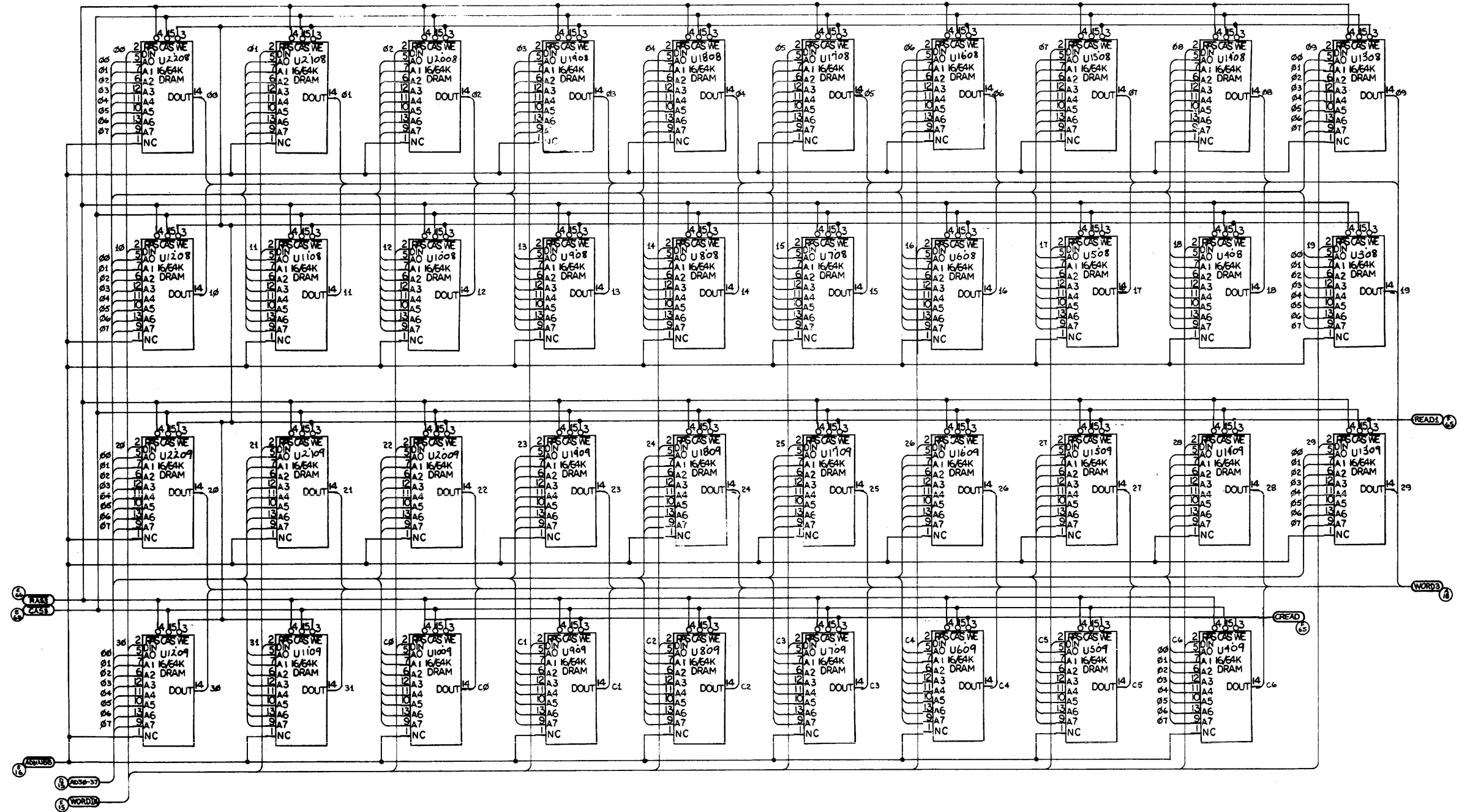


NOTE: ALL IC'S ARE: 5180-0133 (STRES 1818-1559)

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY. NO.	MAT'L SPEC.
PCA - MMA					
TITLE SCHEMATIC					
30140A					
NEXT ASSEMBLY					
PART NUMBER					
30140-60008					
D-30140-60014-54					
SCALE					
SHEET 1 OF 1					

REF. DWG.: F-5 A-1  
 30140A  
 0-51, 0-52, 0-53, 0-54, 0-55, 0-56, 0-57, 0-58, 0-59

ENGINEERING RESPONSIBILITY														REVISED & REDRAWN PER PCO 47-3317		APPROVED	DATE	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	REVISED & REDRAWN PER PCO 47-3317		JCH	8-2-74



NOTE: ALL IC'S ARE 5180-0133 (STRESS 1816-1059)

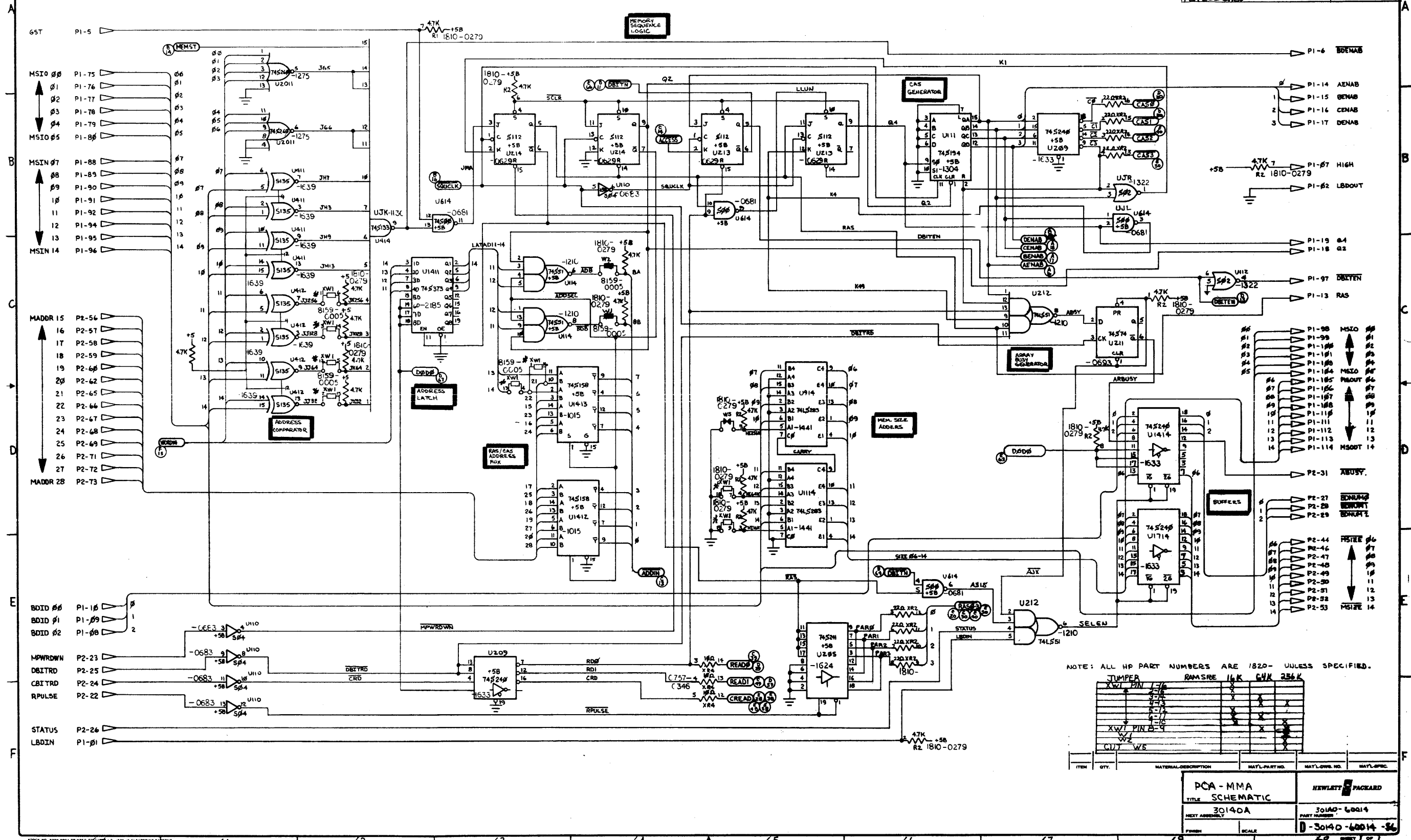
ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY NO.	MAT'L SPEC.
		PCA - MMA SCHEMATIC			
		TITLE	30140A	30140-60014	
		NEXT ASSEMBLY		PART NUMBER	
		FINISH		SCALE	
				0-30140-60014-55	

REF. DWG. FOR ASSY.  
A-50 EST. OF P.C.B.  
DATE: 7/1/74

ENGINEERING RESPONSIBILITY		REVISED		APPROVED		DATE	
1	2	3	4	5	6	7	8
10	11	12	13	14	15	16	17
20	21	22	23	24	25	26	27
30	31	32	33	34	35	36	37
40	41	42	43	44	45	46	47
50	51	52	53	54	55	56	57
60	61	62	63	64	65	66	67
70	71	72	73	74	75	76	77
80	81	82	83	84	85	86	87
90	91	92	93	94	95	96	97
100	101	102	103	104	105	106	107

REV	DATE	BY	APP	REVISIONS
B	7/1/74	WJH	WJH	REVISED & REDRAWN PER PCO 47-3317
C	7/1/74	WJH	WJH	REVISED PER PCO 47-3516
D	7/1/74	WJH	WJH	U141 WAS U174 (4BIS); PIN 18 WAS 18 ON U209 PER ECN
E	7/1/74	WJH	WJH	CLARIFIED SYMBOLISM FOR U141, U174, U209 PER DOC CHG.



NOTE: ALL HP PART NUMBERS ARE 1820- UNLESS SPECIFIED.

JUMPER		RAMSISE 16K		G4K 256K	
XW1	PIN	XW2	PIN	XW3	PIN
	1		1		1
	2		2		2
	3		3		3
	4		4		4
	5		5		5
	6		6		6
	7		7		7
	8		8		8
	9		9		9
	10		10		10
	11		11		11
	12		12		12
	13		13		13
	14		14		14

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY. NO.	MAT'L SPEC.
PCA - MMA					
TITLE SCHEMATIC					
30140A					
PART NUMBER					
D-30140-60014-86					
SCALE					
SHEET 1 OF 1					

REV. 2-15-72  
 30140-60014-57

ENGINEERING RESPONSIBILITY														REVISED		APPROVED		DATE	
														A	A	ISSUED			3/72

3  
 POWER AND GROUND

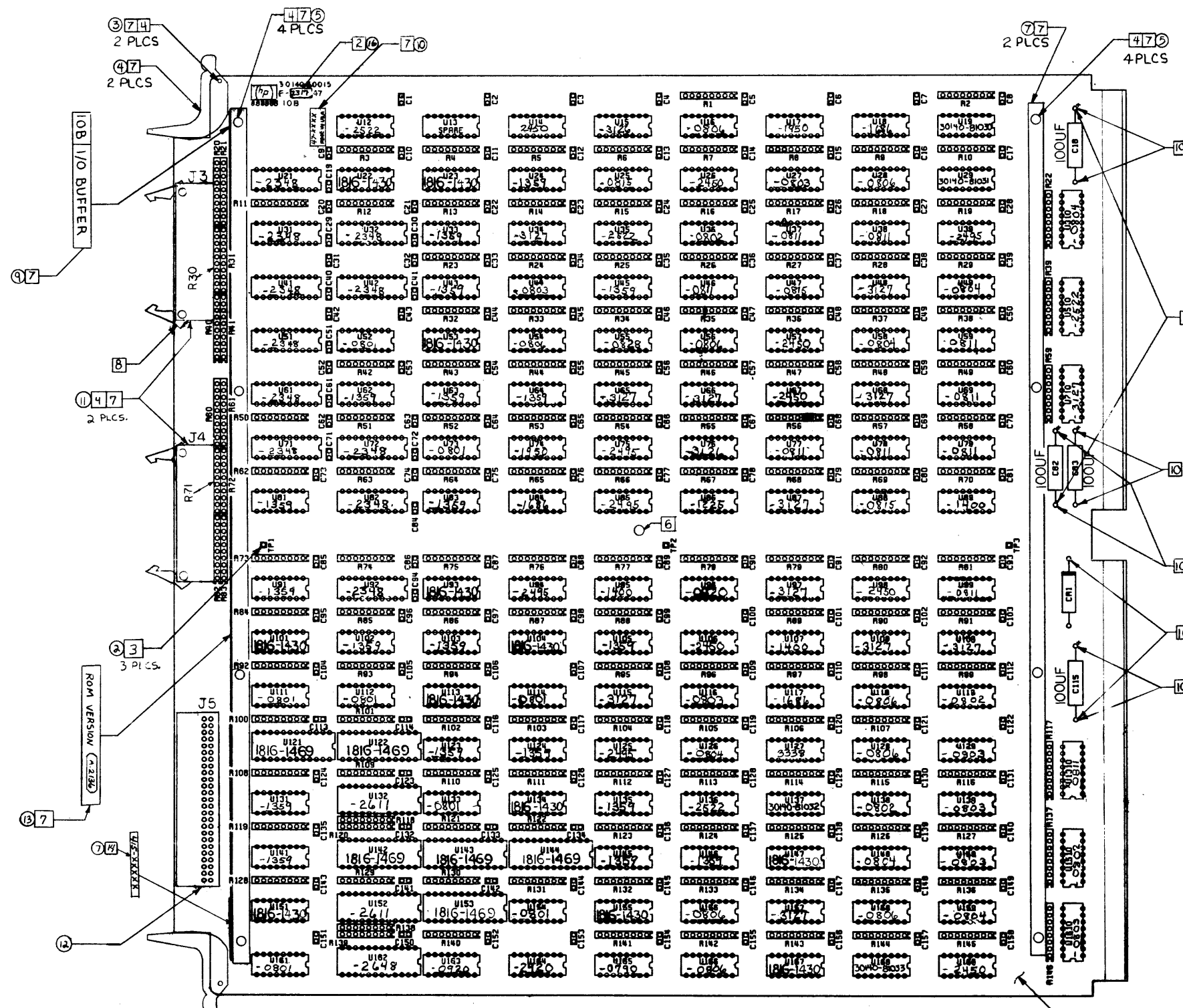
POWER AND GROUND	C3-1, C24-1, C45-1, C32-1, C38-1, C65-1, C73-1, C80-1, C87-1, C94-1, C101-1, C108-1, C115-1, C122-1, C129-1, C136-1, C143-1, C150-1, C157-1, C164-1, C171-1, C178-1, C185-1, C192-1, C199-1	C8-1, C29-1, C46-1, C53-1, C60-1, C67-1, C74-1, C81-1, C88-1, C95-1, C102-1, C109-1, C116-1, C123-1, C130-1, C137-1, C144-1, C151-1, C158-1, C165-1, C172-1, C179-1, C186-1, C193-1, C200-1	C9-1, C30-1, C47-1, C54-1, C61-1, C68-1, C75-1, C82-1, C89-1, C96-1, C103-1, C110-1, C117-1, C124-1, C131-1, C138-1, C145-1, C152-1, C159-1, C166-1, C173-1, C180-1, C187-1, C194-1, C201-1	C11-1, C41-1, C48-1, C55-1, C62-1, C69-1, C76-1, C83-1, C90-1, C97-1, C104-1, C111-1, C118-1, C125-1, C132-1, C139-1, C146-1, C153-1, C160-1, C167-1, C174-1, C181-1, C188-1, C195-1, R1-1, R2-1	C16-1, C42-1, C49-1, C56-1, C63-1, C70-1, C77-1, C84-1, C91-1, C98-1, C105-1, C112-1, C119-1, C126-1, C133-1, C140-1, C147-1, C154-1, C161-1, C168-1, C175-1, C182-1, C189-1, C196-1, R2-1	C20-1, C43-1, C50-1, C57-1, C64-1, C71-1, C78-1, C85-1, C92-1, C99-1, C106-1, C113-1, C120-1, C127-1, C134-1, C141-1, C148-1, C155-1, C162-1, C169-1, C176-1, C183-1, C190-1, C197-1, R2-1	C23-1, C44-1, C51-1, C58-1, C65-1, C72-1, C79-1, C86-1, C93-1, C100-1, C107-1, C114-1, C121-1, C128-1, C135-1, C142-1, C149-1, C156-1, C163-1, C170-1, C177-1, C184-1, C191-1, C198-1, R2-1
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1 2

SIGNAL	PACK	PIN	SIGNAL	PACK	PIN
ADDINB	R1-6		MDOUTD04	RS-10	
ADDN	R1-8		MDOUTD05	RS-2	
AJX*	R2-10		MDOUTD06	RS-3	
DOD0	R2-8		MDOUTD07	RS-4	
DOD1	R3-8		MDOUTD08	RS-10	
GST	R1-7		MDOUTD09	RS-2	
HIGH	R2-7		MDOUTD10	RS-3	
HI 16K	R2-3		MDOUTD11	RS-4	
HI256K	R2-5		MDOUTD12	RS-10	
HI64K	R2-4		MDOUTD13	RS-2	
JK128	R1-2		MDOUTD14	RS-3	
JK256	R1-10		MDOUTD15	RS-4	
JK32	R1-4		MDOUTD16	RS-10	
JK64	R1-3		MDOUTD17	RS-2	
LBDIN	R2-2		MDOUTD18	RS-3	
SCLR*	R2-6		MDOUTD19	RS-4	
			MDOUTD20	RS-5	
MDOUTC0	RS-5		MDOUTD21	RS-6	
MDOUTC1	RS-6		MDOUTD22	RS-7	
MDOUTC2	RS-7		MDOUTD23	RS-8	
MDOUTC3	RS-8		MDOUTD24	RS-5	
MDOUTC4	RS-5		MDOUTD25	RS-6	
MDOUTC5	RS-6		MDOUTD26	RS-7	
MDOUTC6	RS-7		MDOUTD27	RS-8	
MDOUTD00	RS-10		MDOUTD28	RS-5	
MDOUTD01	RS-2		MDOUTD29	RS-6	
MDOUTD02	RS-3		MDOUTD30	RS-7	
MDOUTD03	RS-4		MDOUTD31	RS-8	

NOTES:  
 1 SIGNAL NAME REFERS TO SIGNAL LINE BEING TERMINATED BY THE RESPECTIVE RESISTOR. (SEE NOTE 2)  
 2 THE ROOM NUMBER LISTED UNDER "PACK" REPRESENTS THE REFERENCE DESIGNATOR ASSOCIATED WITH THE RESISTOR PACK TERMINATING THE RESPECTIVE SIGNAL NAME. THE NUMBER LISTED UNDER "PIN" REPRESENTS THE TERMINATING PIN FOR THAT SIGNAL.  
 3 THE TABLE LABELED "POWER AND GROUND" IDENTIFY THE CAPACITORS AND RESISTOR PINS THAT CONNECT TO THE SPECIFIED POWER AND GROUND PLANES. (SEE ASSEMBLY DRAWING FOR LOCATIONS OF THESE CAPACITORS AND RESISTORS.)

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY. NO.	MAT'L SPEC.
		PCA - MMA SCHEMATIC			HEWLETT PACKARD
		TITLE	30140-60014		30140-60014
		NEXT ASSEMBLY			PART NUMBER
		FINISH			SCALE
					30140-60014-57



NOTES:

1. UNLESS OTHERWISE SPECIFIED ALL RESISTANCE IN OHMS RESISTOR NETWORK ARE 68 OHMS ALL CAPACITANCE IN MICROFARADS ALL CAPACITORS ARE .01UF (5000-5352) ALL IC'S ARE 1820-
2. INSTALL ITEM ⑥
3. INSTALL ITEM ② 3 PLACES
4. MASK AS INDICATED PRIOR TO LOADING
5. ALL BOARD LOADING & HANDLING MUST BE DONE AT AN ELECTROSTATIC DISCHARGE PROTECTED WORK STATION CONTAINING TABLE & FLOOR MATS & GROUNDED WRIST STRAP. TRANSPORT ASSEMBLY IN ELECTROSTATIC BAGS.
6. USE SUPPORT FIXTURE DURING WAVE SOLDER
7. LOAD ITEMS ⑤ thru ⑤ and ⑦ thru ⑦ IN TOUCHUP
8. SNAP ITEM ⑧ INTO J3 & J4 PER DETAIL "A"
9. PRETEST REQUIRED ON THE GUEST SYSTEM.
10. USING AN OHMMETER CHECK FOR A RESISTANCE OF GREATER THAN 15 OHMS BETWEEN THESE POINTS. DO NOT USE A CONTINUITY LIGHT ON THIS ASSEMBLY.

REV	DESCRIPTION	DATE	BY
16	1 LABEL - DATE CODE	9320-5320	
	DELETED		
14	1 LABEL - PART NUMBER	7120-1232	
13	1 LABEL - ROM VERSION	7120-7635	
12	1 CONN AC POST 50M	1251-8836	
11	2 CONN AC POST 50M	1251-6990	
10	1 LABEL - DATE CODE	7120-6830	
9	1 LABEL - DATE CODE	7121-2114	
8	4 LABEL - DATE CODE	1251-6991	
7	2 BRACKET	5040-6058	
	Deleted		
5	8 SCR	0624-0077	
4	2 EXT	5040-9804	
3	2 PIN	1480-0116	
2	3 STV	0740-0894	
1	1 PCB	30140-60015-9	

PCA I/O BUFFER  
ASSY. DWG.

TITLE: 30140A

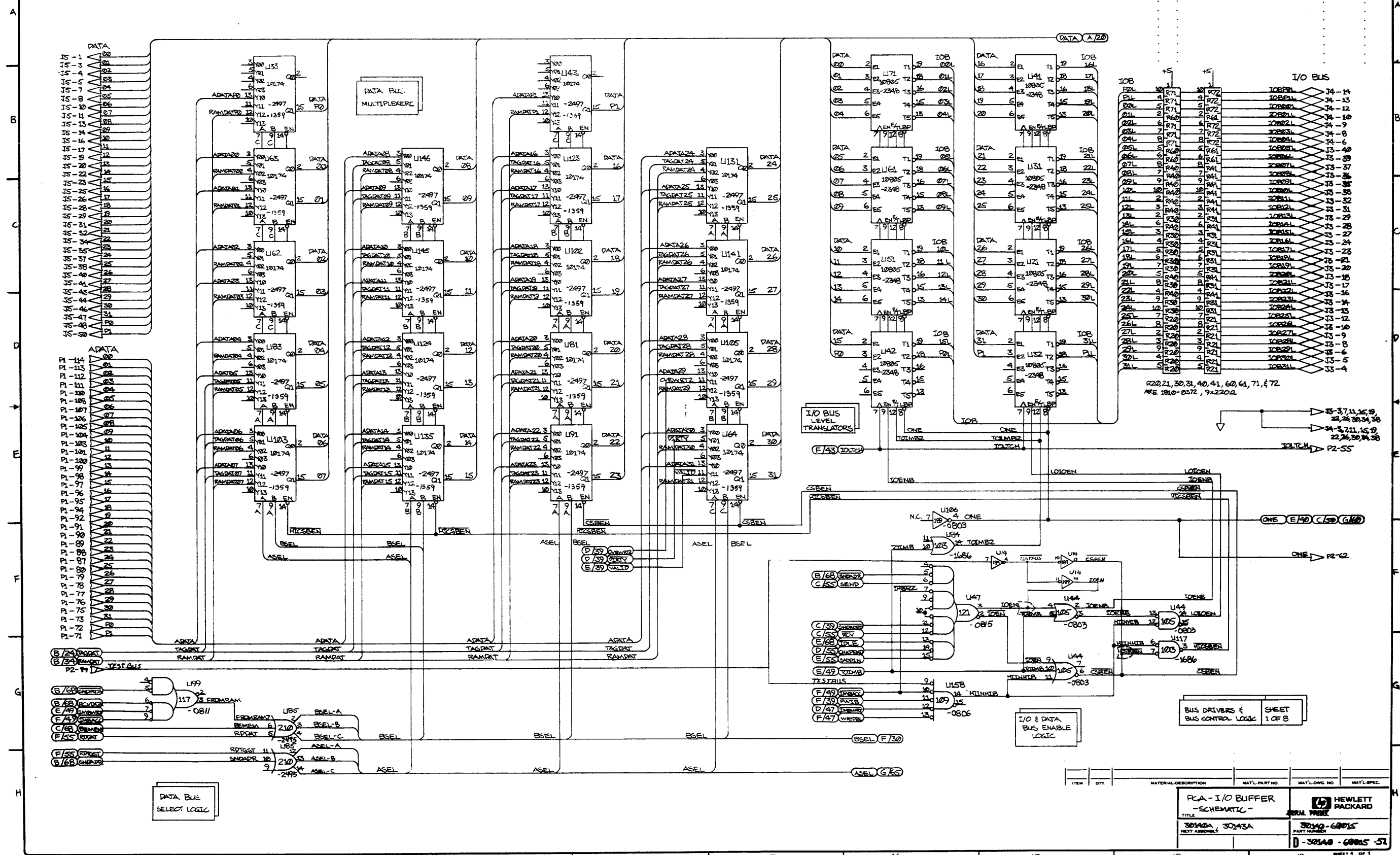
HEWLETT PACKARD

30140-60015

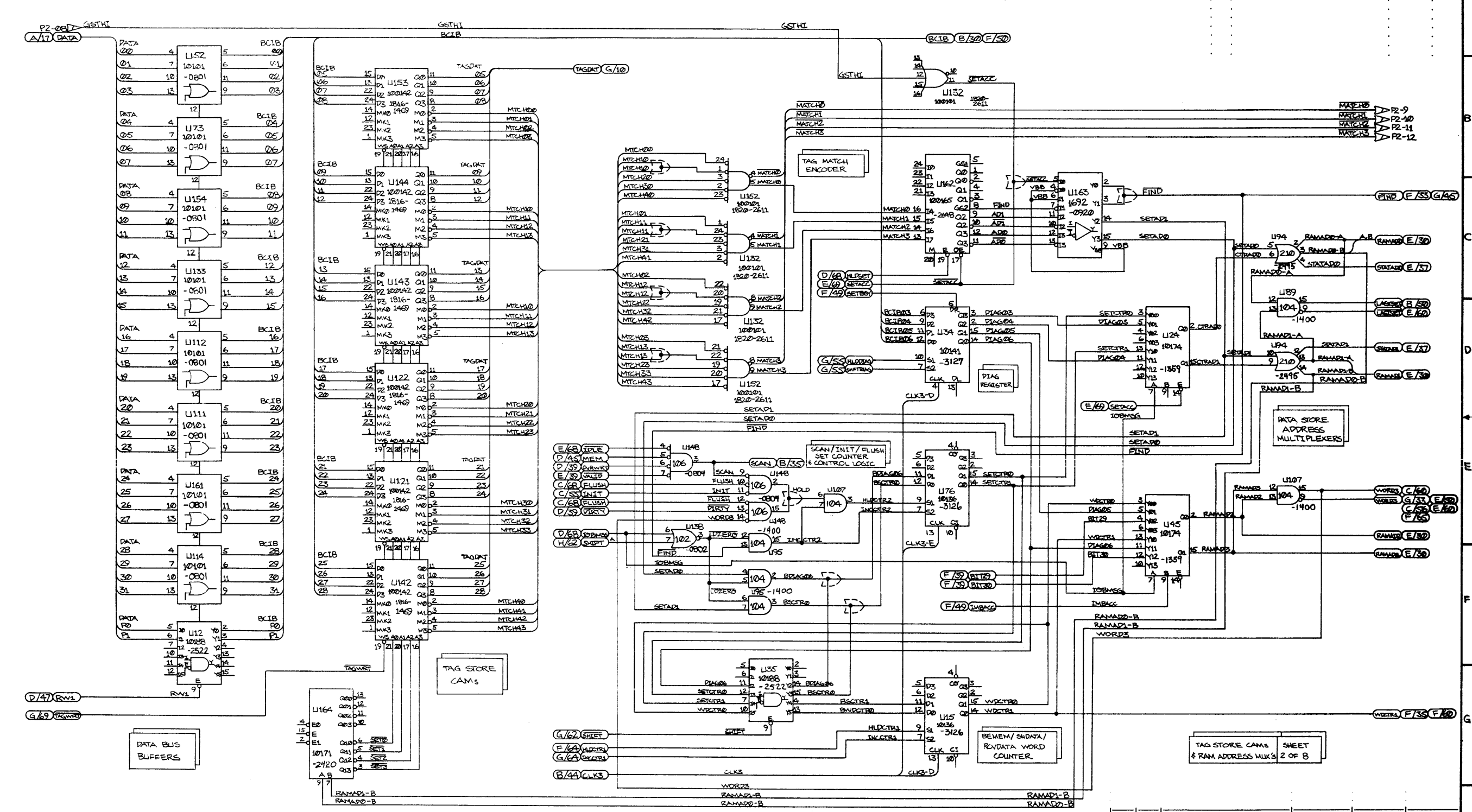
SCALE: 5X

F-30140-60015-9

ENGINEERING RESPONSIBILITY										REVISED PER RCD 47-3429										REVISED PER RCD 47-3779										REVISED PER RCD 47-3759									
										DATE: 1/29/78										DATE: 8/1/78										DATE: 8/1/78									



ITEM	QTY	MATERIAL DESCRIPTION	MATL PART NO.	MATL QTY NO.	MATL SPEC.
PCA-I/O BUFFER					
-SCHEMATIC-					
30140A, 30143A			30140-60015		
NEXT ASSEMBLY			PART NUMBER		
D-30140-60015-51			D-30140-60015-51		

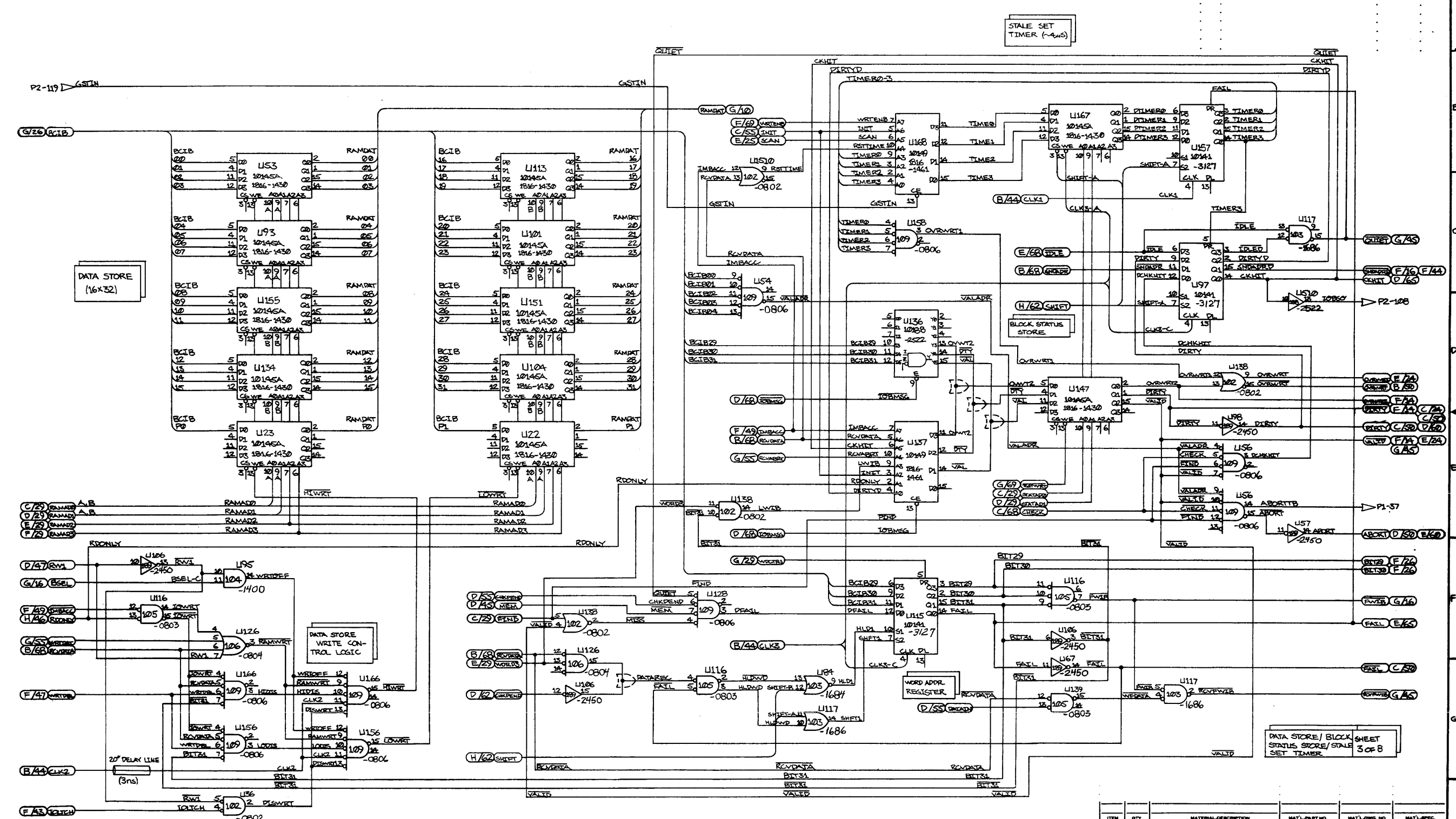


ITEM	QTY	MATERIAL DESCRIPTION	MATL. PART NO.	MAT'L. QTY. NO.	MAT'L. SPEC.
PCA-I/O BUFFER					
TITLE SCHEMATIC					
HEWLETT PACKARD					
30140A 30143A 30140-60015					
PART NUMBER					
-30140-60015-52					



REF. DWG: F-7 41  
 41 41 41 41 41  
 D-30, D-52, D-54, D-55, D-56, D-57, D-58, D-59, D-60, D-61, D-62, D-63, D-64, D-65, D-66, D-67, D-68, D-69, D-70, D-71, D-72, D-73, D-74, D-75, D-76, D-77, D-78, D-79, D-80, D-81, D-82, D-83, D-84, D-85, D-86, D-87, D-88, D-89, D-90, D-91, D-92, D-93, D-94, D-95, D-96, D-97, D-98, D-99, D-100

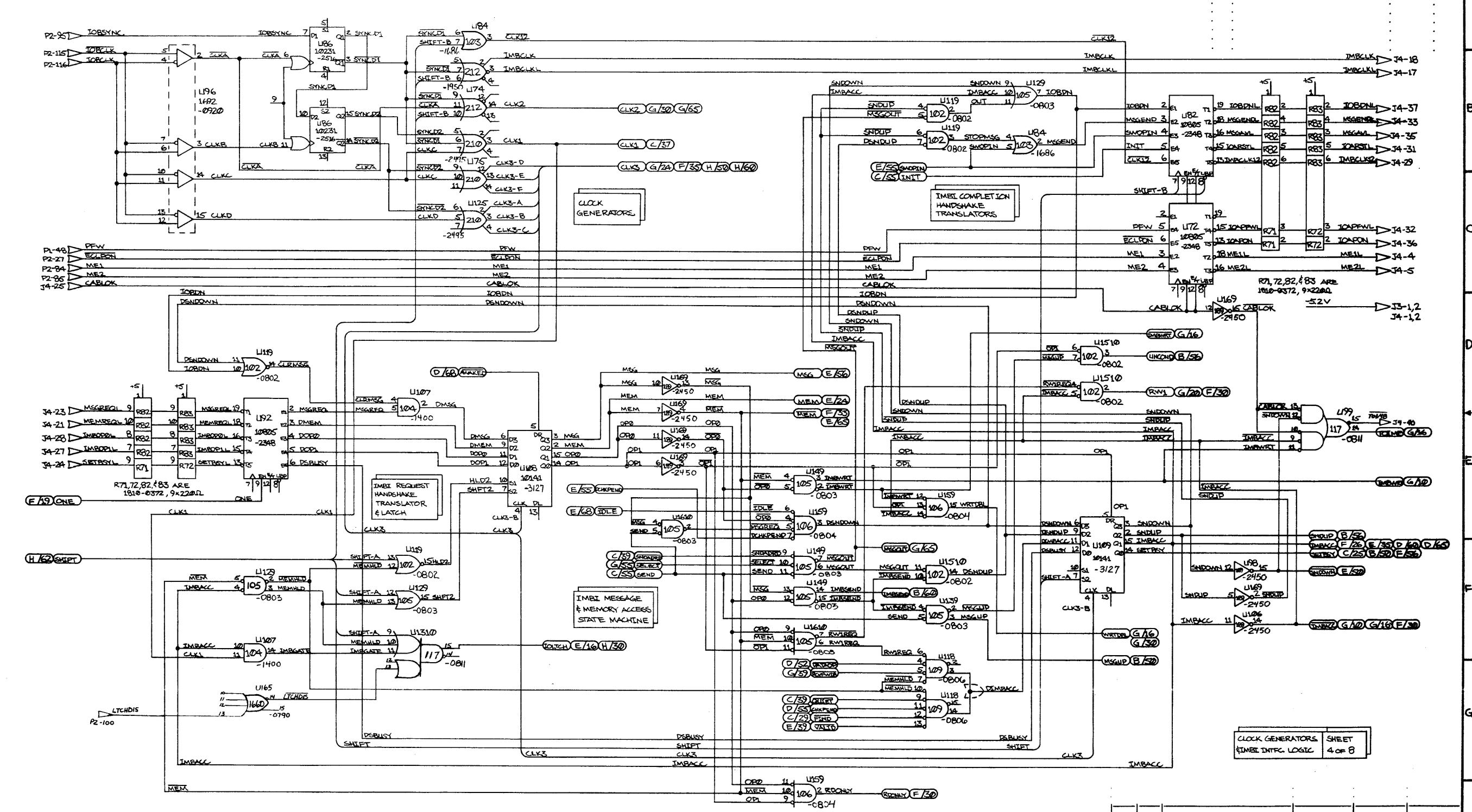
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DATE	BY	CHKD	APPD	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE
10/17/77	D																
10/17/77	E																



ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG NO.	MAT'L SPEC.
		PCA - I/O BUFFER SCHEMATIC			
		TITLE	30140A 30143A		
		BEST ASS'Y			
		PERM. PRINT	30140-60015		
		PART NUMBER			
			D-30140-60005-53		

REF. DESIG: F-7  
A SATELITE AND NEW  
30140A-60015-54

ENGINEERING RESPONSIBILITY														REVISIONS														APPROVED		DATE	
														D REVISED & REDRAWN PER RCD 47-3779														RL		1/8/62	
														E REVISED PER PCO 47-3779														RM/SL		9/30/61	
														F REVISED PER PCO 47-3779														RL/SL		1/1/62	

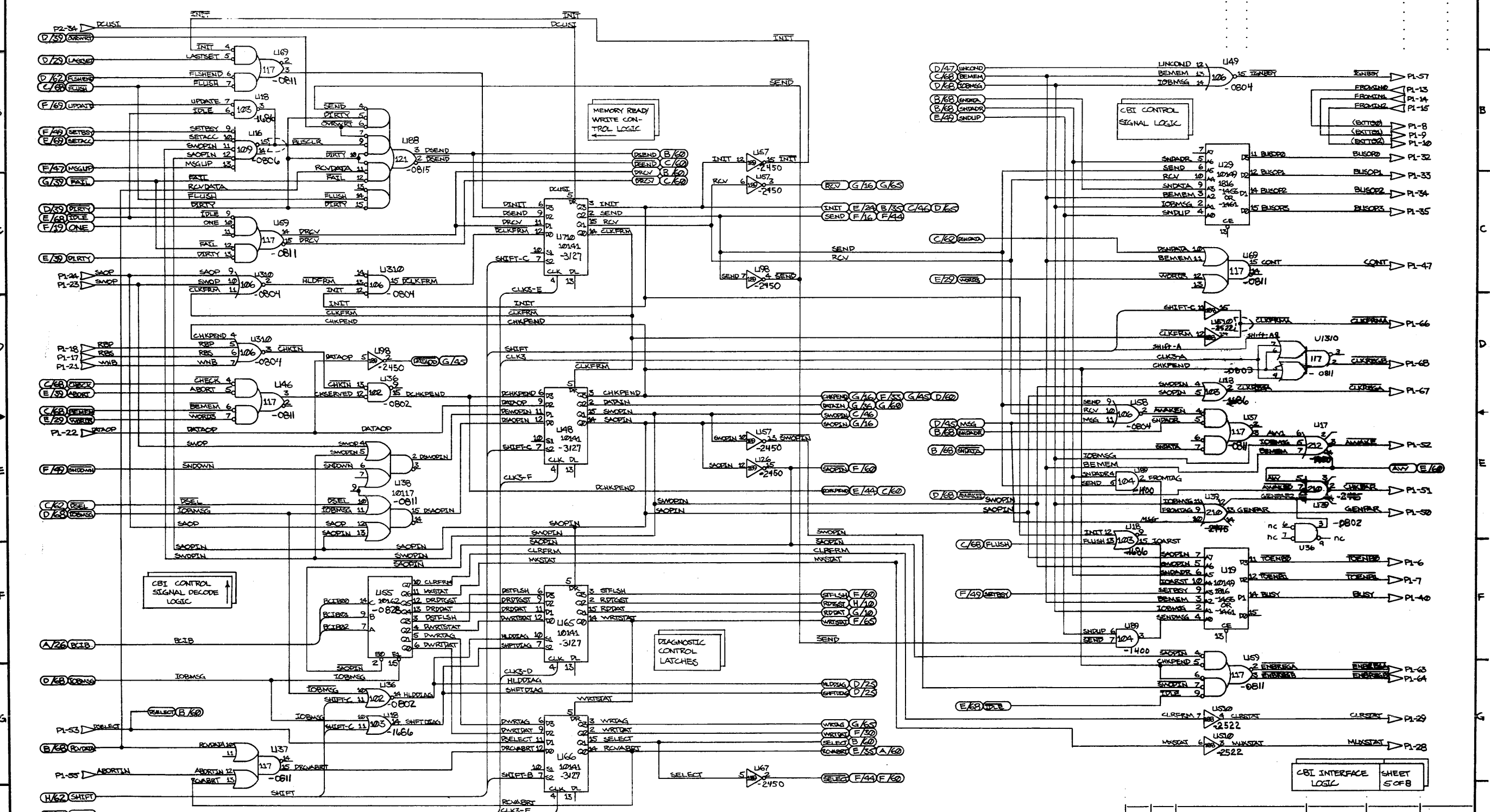


CLOCK GENERATORS SHEET  
& IMBEX INTRC LOGIC  
4 OF 8

ITEM	QTY.	MATERIAL DESCRIPTION	MATL. PART NO.	MATL. QTY. NO.	MATL. SPEC.
PCA-I/O BUFFER					
-SCHEMATIC-					
30140A, 30143A					
HEWLETT PACKARD PERM. PRINT					
30140-60015					
PART NUMBER					
D 30140-60015-54					
PART NUMBER					

REF DWGS: F 7 A-B-X  
 A-53 LATT  
 D-54 D-55 D-56 D-57 D-58 D-59

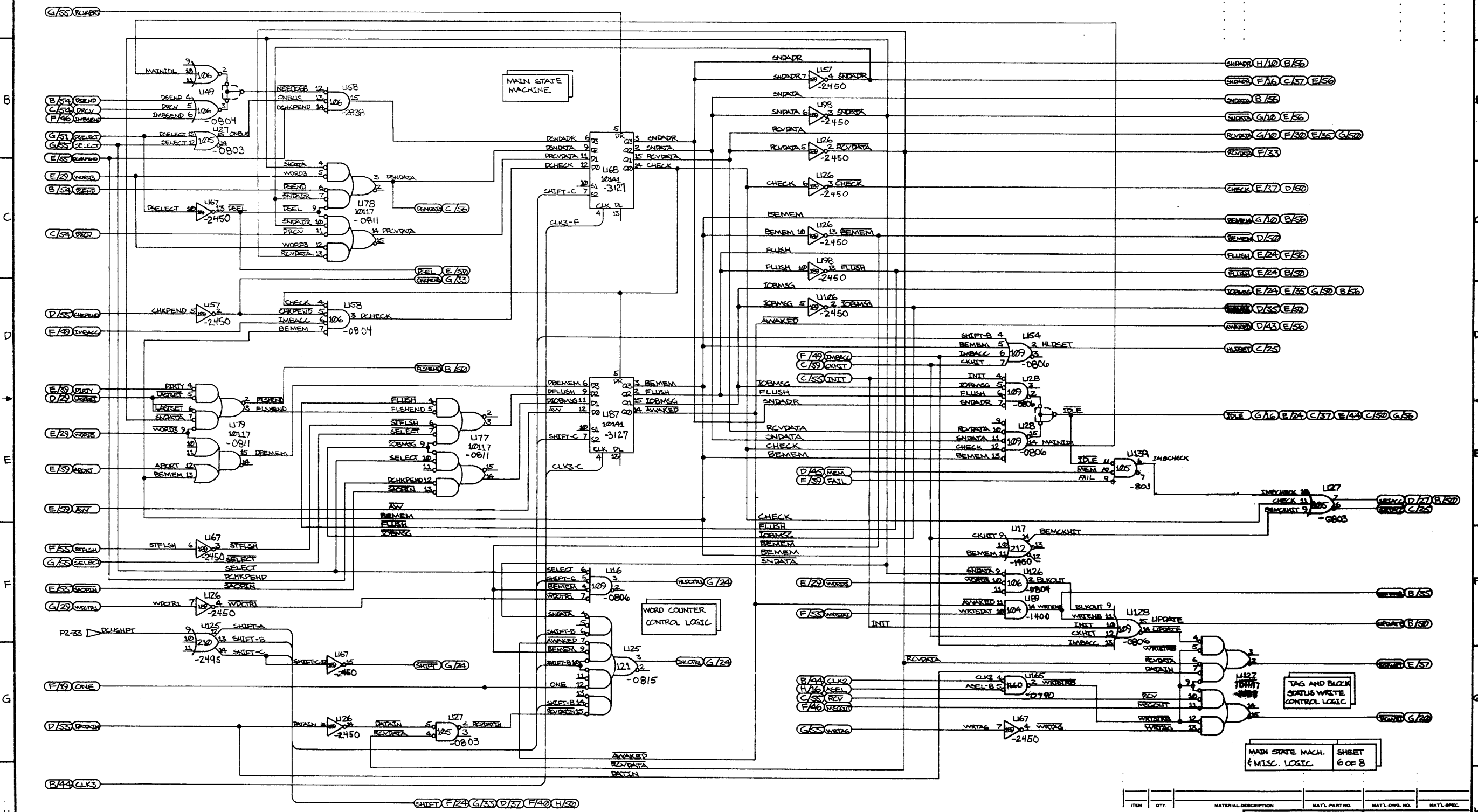
ENGINEERING RESPONSIBILITY														REVISED		APPROVED		DATE	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	BYN	REVISED	APPROVED	DATE		
15	16	17	18	19	20	21	22	23	24	25	26	27	28	D	REVISED & REDRAWN PER PCO 47-3729	RT	1/77		
29	30	31	32	33	34	35	36	37	38	39	40	41	42	E	REVISED PER PCO 47-3608	RT	1/77		
43	44	45	46	47	48	49	50	51	52	53	54	55	56	F	REVISED PER PCO 47-3779	DW/BR	11/77		
57	58	59	60	61	62	63	64	65	66	67	68	69	70	G	REVISED PER PCO 47-3738	DW/BR	11/77		



CBI INTERFACE LOGIC SHEET 5 OF 8

ITEM	QTY	MATERIAL DESCRIPTION	MATL PART NO.	MATL DWG NO.	MATL SPEC.
PCA I/O BUFFER SCHEMATIC					
HEWLETT PACKARD PERM PRINT					
30140A 30143A 30140-60015 PART NUMBER					
D-30140-60015-55					

ENGINEERING RESPONSIBILITY														REVISIONS														APPROVED		DATE	
														D REVISED PER PCO 47-9429														R/S		10/72	
														E REVISED PER PCO 47-3648														B/S		12/72	
														F REVISED PER PCO 47-3719														D/S		3-50-73	
														G REVISED PER PCO 47-3738														B/C		1-78-73	



MAIN STATE MACH. SHEET 6 OF 8  
 & MISC. LOGIC

ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L ORG. NO.	MAT'L SPEC.
I/O BUFFER SCHEMATIC					
TITLE					
30140 30143A					
HEWLETT PACKARD PERM. PRINT					
30140-60015					
D-30140-60015-58					

REF. DWGS.: F-7 ASSY.  
A-50 DATE: 001-001  
D-51 THRU 1-1-60, 1-1-60, 1-1-60

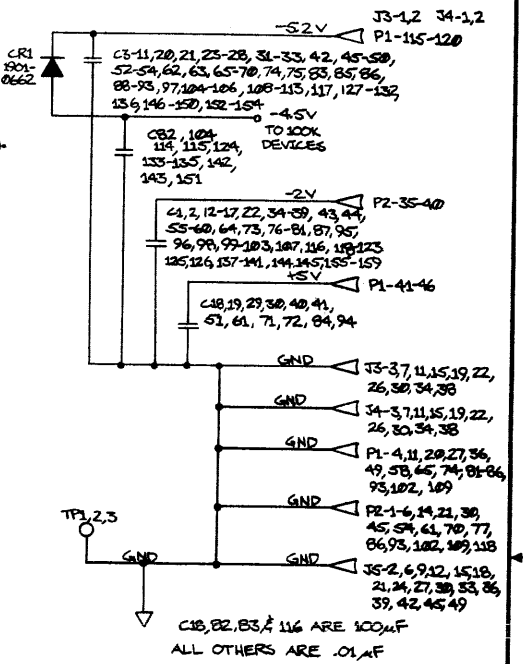
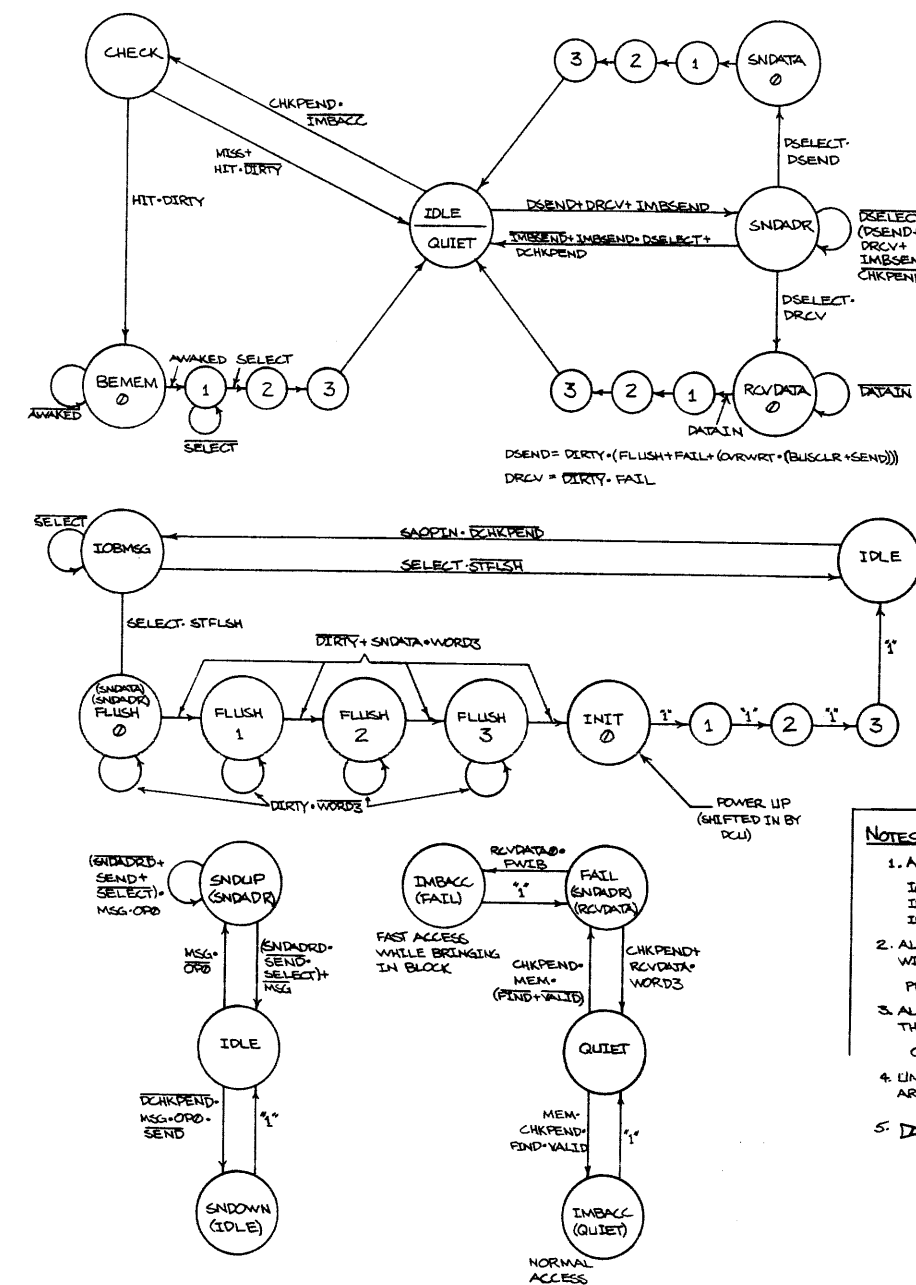
ENGINEERING RESPONSIBILITY										REVISED										APPROVED										DATE									
BYM										AS ISSUED PER PCO 47-3429										RIS										1/15/60									

ABORT R70-5	BCIB07 R140-2	CLK2 R142-4	DSELECT R55-7	INBVRT R146-5	MTCH20 R129-5	RANDAT21 R62-5	SETACC R130-4	TAGDAT16 R102-7
ABORT* R36-7	BCIB08 R132-5	CLK3-1 R117-4	DSEND R39-2	INBVRT* R144-5	MTCH21 R118-5	RANDAT22 R84-5	SETADO R77-4	TAGDAT17 R110-6
ABORTIN R27-5	BCIB09 R134-4	CLK3-2 R91-3	DSNDADR R48-7	INCCTR1 R6-7	MTCH22 R120-3	RANDAT23 R84-3	SETAD1 R77-7	TAGDAT18 R85-6
ADO R130-3	BCIB10 R141-6	CLK3-3 R68-4	DSNDATA R58-7	INCCTR2 R67-7	MTCH23 R129-3	RANDAT24 R119-2	SETBSY R14-2	TAGDAT19 R93-6
AD* R140-6	BCIB11 R132-8	CLK3-4 R6-3	DSNDOWN R99-6	INIT R135-6	MTCH30 R129-4	RANDAT25 R118-7	SETCTRO R5-3	TAGDAT20 R62-8
AD1* R140-7	BCIB12 R123-8	CLK3-5 R59-4	DSNDUP R99-7	IOARST R49-6	MTCH31 R109-3	RANDAT26 R128-5	SETCTRI R14-4	TAGDAT21 R62-6
ADATA00 R52-4	BCIB13 R111-4	CLK3-6 R28-2	DSTFLSH R45-6	IOARST R10-7	MTCH32 R120-2	RANDAT27 R128-2	SHFT1 R95-7	TAGDAT22 R73-5
ADATA01 R52-2	BCIB14 R122-6	CLK* R53-5	DSWOPIN R37-6	IOBCLK R78-4	MTCH33 R138-5	RANDAT28 R88-6	SHFT2 R98-5	TAGDAT23 R84-6
ADATA02 R42-3	BCIB15 R131-8	CLKB R67-2	DTIMER2 R143-2	IOBCLK R78-5	MTCH40 R138-2	RANDAT29 R95-4	SHFTDIAG R45-7	TAGDAT24 R108-5
ADATA03 R51-4	BCIB16 R122-8	CLKC R66-8	DTIMER3 R134-3	IOBND R63-3	MTCH41 R121-8	RANDAT30 R44-2	SHIFT* R25-8	TAGDAT25 R119-6
ADATA05 R75-4	BCIB17 R102-3	CLKD R104-5	DTIMER4 R134-3	IOBNSG R38-3	MTCH42 R118-4	RANDAT31 R53-4	SHIFT-1 R117-8	TAGDAT26 R119-5
ADATA06 R86-3	BCIB18 R102-6	CLKFRM* R28-5	DTIMER5 R125-5	IOBNSG* R28-8	MTCH43 R138-4	RANDATFO R23-2	SHIFT-2 R63-6	TAGDAT27 R128-6
ADATA07 R94-4	BCIB19 R101-2	CLFRM R39-5	DTY* R97-8	IOBSYNC R78-7	MKSTAT R39-6	RANDATP1 R23-5	SHIFT-3 R26-6	TAGDAT28 R88-7
ADATA08 R124-3	BCIB20 R110-7	CLRSBEM* R97-8	DWRTAG R55-6	IOEN R24-4	NEEDCSB* R48-5	RAMWRT* R142-8	SNDADR R10-5	TAGWRT* R108-4
ADATA09 R124-4	BCIB21 R100-6	CTRADO R76-3	DWRTDAT R55-8	IOEN* R33-8	ONBUS R48-4	RBP R22-7	SNDADR* R89-5	TGSTWRT* R125-4
ADATA10 R123-2	BCIB22 R108-8	CTRAD1 R87-8	DWRTSTAT R54-5	IOENB R50-7	ONE R74-7	RBS R22-6	SNDADR* R136-8	TIME0 R143-5
ADATA11 R132-3	BCIB23 R118-8	DATAIN R127-4	FAIL R35-7	IOENB* R33-4	OPO R146-8	RCV R19-7	SNDATA R19-8	TIME1 R143-4
ADATA12 R103-3	BCIB24 R109-7	DATAIN* R17-5	FAIL* R96-5	IOENB* R33-4	OPO* R136-5	RCV* R114-7	SNDATA* R113-8	TIME2 R143-6
ADATA13 R111-2	BCIB25 R129-6	DATAP R80-7	FIND R140-5	IOENB* R33-4	OP1 R145-8	RCVABRT R125-7	SNDATA* R116-8	TIME3 R143-3
ADATA14 R112-3	BCIB26 R129-8	DATAREC R96-2	FIND* R35-5	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	TIMER0 R144-8
ADATA15 R112-5	BCIB27 R129-2	DCEMEM R68-6	FLSH* R35-5	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	TIMER1 R144-3
ADATA16 R110-3	BCIB28 R130-8	DCHKCHK R69-4	FLSHEND R56-5	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	TIMER2 R144-2
ADATA17 R110-4	BCIB29 R124-7	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	TIMER3 R79-5
ADATA18 R85-4	BCIB30 R124-6	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	TOIMB R24-5
ADATA19 R93-3	BCIB31 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	TOIMB2 R11-8
ADATA20 R62-2	BCIB32 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	UMCONCD R38-6
ADATA21 R62-3	BCIB33 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	UPDATE R9-7
ADATA22 R73-3	BCIB34 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	UPDATE* R114-2
ADATA23 R84-4	BCIB35 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	VAL* R134-5
ADATA24 R108-3	BCIB36 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	VALADR* R46-4
ADATA25 R119-4	BCIB37 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	VALID* R53-6
ADATA26 R119-3	BCIB38 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	WDCTR0 R25-3
ADATA27 R128-4	BCIB39 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	WDCTR1 R95-5
ADATA28 R88-4	BCIB40 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	WDCTR1* R1-7
ADATA29 R88-2	BCIB41 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	WFDATA* R97-4
ADATA30 R44-3	BCIB42 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	WNB R22-8
ADATA31 R44-4	BCIB43 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	WORD3 R126-3
ADATAPO R23-4	BCIB44 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	WORD3* R58-8
ASEL-1 R119-7	BCIB45 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	WRTAG R47-7
ASEL-2 R141-5	BCIB46 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	WRTAG* R106-4
ASEL-3 R23-7	BCIB47 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	WRTDAT R105-3
AM* R79-4	BCIB48 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	WRTDBL R142-6
AM1 R8-5	BCIB49 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	WRTEB R144-4
AWAKEN* R6-6	BCIB50 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	WRTOFF R142-5
AWAKEN* R27-4	BCIB51 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	WRTSTAT R81-7
BCIB00 R45-3	BCIB52 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	WRTSTBB* R114-5
BCIB01 R45-8	BCIB53 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	
BCIB02 R34-7	BCIB54 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	
BCIB03 R24-6	BCIB55 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	
BCIB04 R24-8	BCIB56 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	
BCIB05 R130-6	BCIB57 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	
BCIB06 R140-8	BCIB58 R113-5	DCHKCHK* R69-4	FLSHEND* R58-6	IOENB* R33-4	OP1 R137-5	RCVABRT R125-7	SNDOWN* R28-6	

SIGNAL TERMINATION LIST SHEET 7 OF 8

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.
		I/O BUFFER SCHEMATIC			
TITLE		HEWLETT PACKARD PERM. PRINT			
PART NUMBER		30140-60015			
NEXT ASSEMBLY		30140-60015-57			
FRESH		SCALE			
		SHEET 1 OF 1			

ENGINEERING RESPONSIBILITY										REVISIONS									
DESIGNED BY										DATE									
CHECKED BY										APPROVED									
DRAWN BY										DATE									
DATE										DATE									

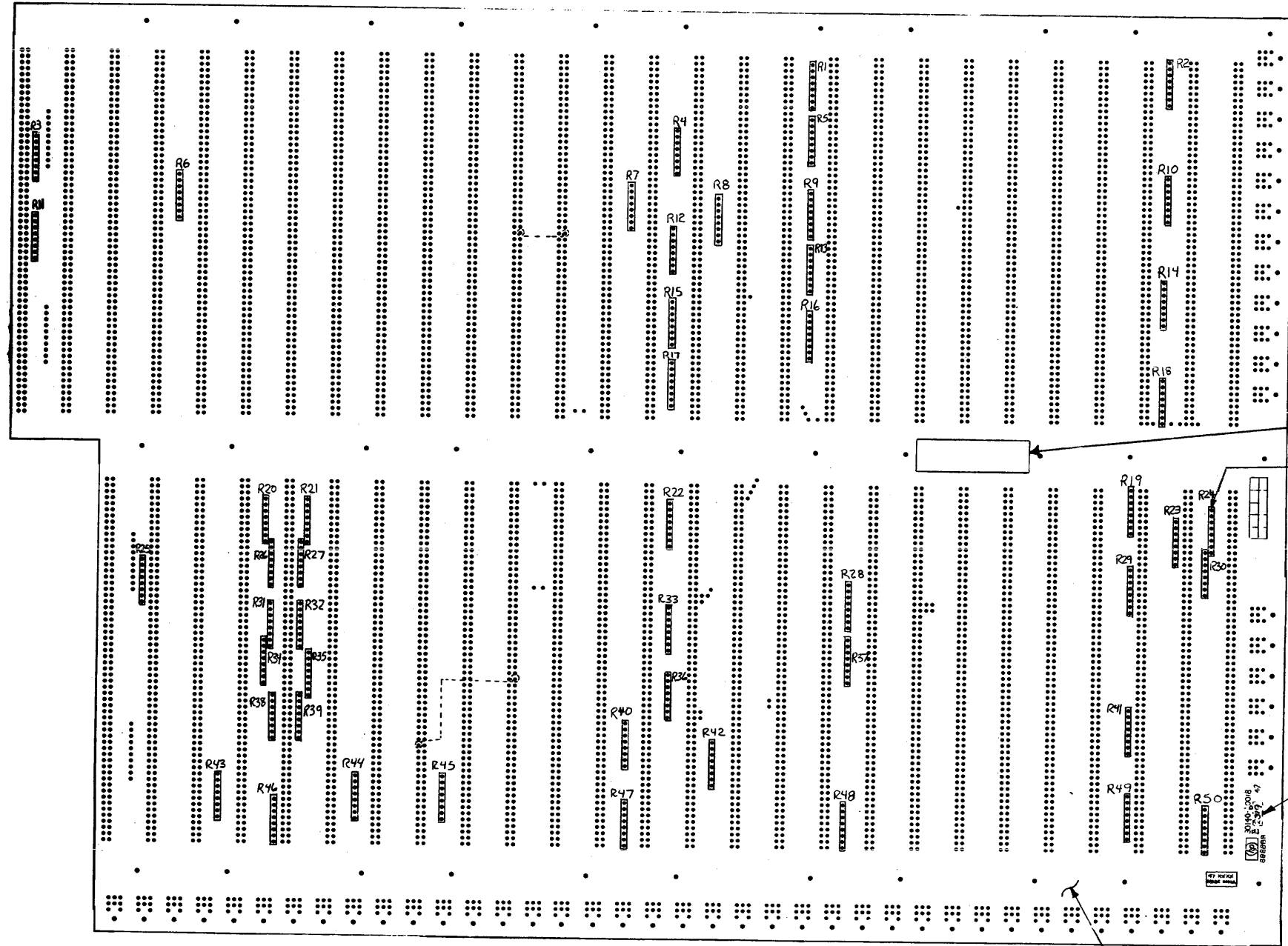


- NOTES**
1. ALL SIGNALS ARE ECL LEVEL EXCEPT THE FOLLOWING:  
 IOB20-31, IOB20P3, MSGRBL, MEMRBL, IMBOP1,  
 IMBOP1L, SETBYL, IMBONL, MSGENDL, MSGAVL, IOARSTL,  
 IMBCLK12, IOAPFVL, IOAPON, ME1L, ME2L
  2. ALL ECL INPUT AND ON-BOARD SIGNALS ARE TERMINATED  
 WITH 68Ω TO -2V EXCEPT THE FOLLOWING:  
 PFW, ECLON, ME1, ME2, DCUSL, DCUSHT, FROMIND-2
  3. ALL ECL OUTPUT SIGNALS ARE UNTERMINATED EXCEPT  
 THE FOLLOWING:  
 ONE
  4. UNLESS OTHERWISE NOTED, ALL HP PART NUMBERS  
 ARE PREFIXED 1820-XXXX.
  5. ▽ - INDICATES TEST CONNECTOR PIN

STATE DIAGRAM SHEET  
 DCU SHIFT STRING LIST 8 OF 8

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY. NO.	MAT'L SPEC.
I/O BUFFER - SCHEMATIC -					
HEWLETT PACKARD PERM. PRINT					
30140A, 30143A					
30140-60015					
FINISH SCALE					
D-30140-60015-58					

REVISIONS	
A	AS ISSUED PER P22
B	ADD JUMPER WIRE T10
C	DATE CODE WAS B-2203, P22
D	DOC CHG. CHANGING A10
E	ADDED NOTE A, DOC CHG.
F	REVISED NOTE 2 TO ADD T10 WIRE



- NOTES:
- 1. UNLESS OTHERWISE SPECIFIED:  
ALL RESISTOR NETWORK ARE 68 OHMS
  - 2. INSTALL ITEM 3
  - 3. LOAD ITEM 2 IN TOUCHUP AND  
DO NOT SOLDER
  - 4. VENDOR SERIAL NUMBERTAG CAN  
BE PUT IN THIS AREA.

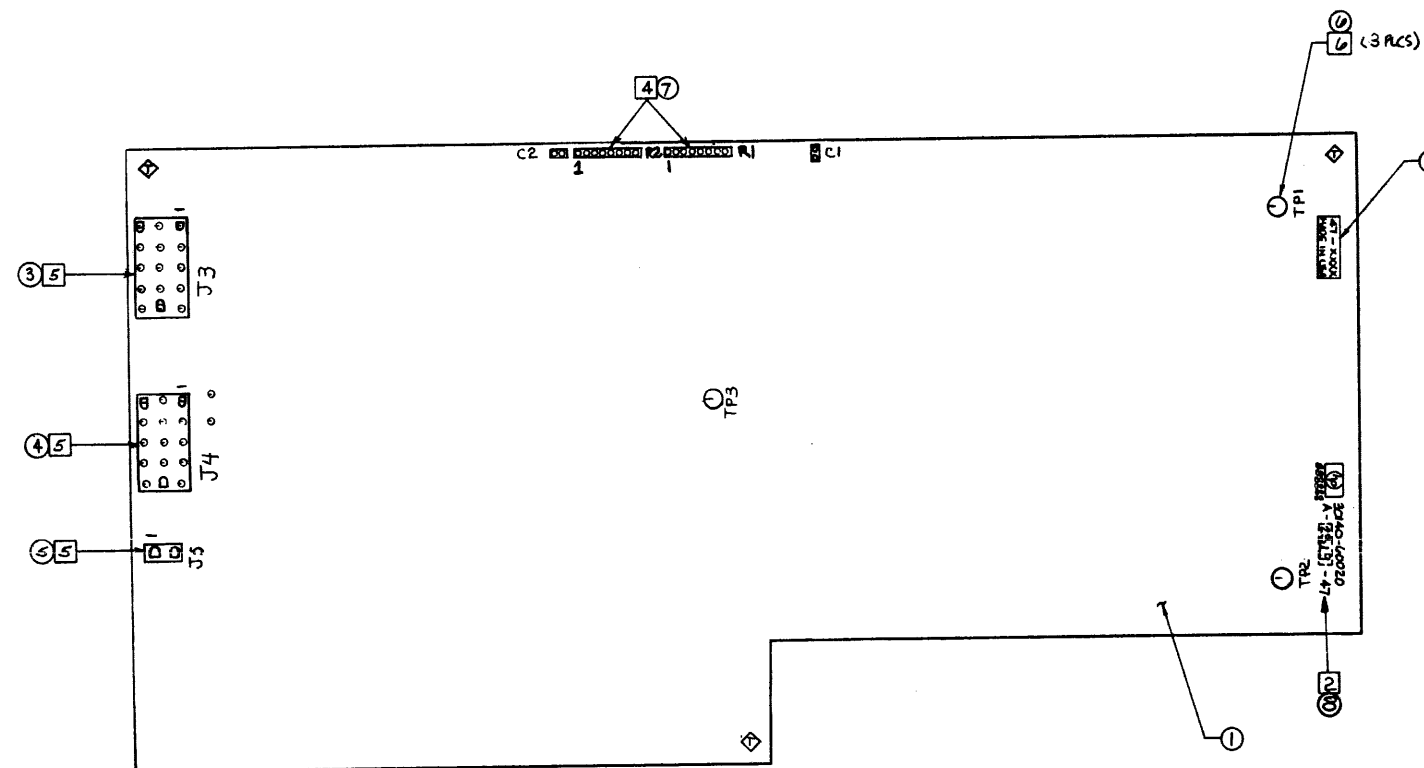
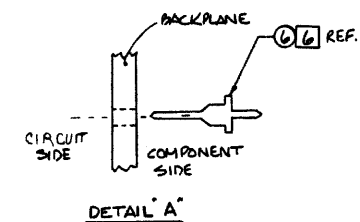
CIRCUIT SIDE

QTY	DESCRIPTION	PART NO.
3	LABEL - DATE CODE	9520-5330
2	50 RESISTOR NETWORK	1810-0392
1	PCB-CPU BACKPLANE	30140-0000

PCA-CPU BACKPLANE		HEWLETT PACKARD	
30140A		30140-60018	
NEXT ASSEMBLY		SCALE	
		D-30140-60018-4	

ENGINEERING RESPONSIBILITY		DEPT	
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32

REVISIONS		DATE
A	AS ISSUED	10/21/83
B	REVISION A DATA PER OCT 21	10/21/83
C	REVISED PER PCD 47-8400	10/21/83
D	REVISED PER PCD 47-8500	10/21/83
E	REVISED PER PCD 47-8600	10/21/83
F	DATE CODE WAS A-2003: PCD 47-8825	10/21/83
G	DOC CHG CLARIFYING NOTE 2	10/21/83
H	REVISED NOTE 3, ADDED ITEM 3; RQNT-3845	10/21/83



- NOTES:**
- UNLESS OTHERWISE SPECIFIED:  
ALL RESISTANCE IN OHMS  
RESISTOR NETWORK ARE 68 OHMS  
ALL CAPACITANCE IN MICROFARADS  
ALL CAPACITORS ARE 0.1UF (0160-5143).
  - INSTALL ITEM 6
  - LOAD IN TOUCHUP, ITEMS 1 THRU 5 ON CIRCUIT SIDE,  
INSTALL ITEM 6 ON COMPONENT SIDE PER DETAIL A.
  - PLUG ITEM 7 INTO PRINTED CIRCUIT BOARD. DO NOT SOLDER.
  - SOLDER PINS USING 50-WATT SOLDERING IRON (B490-0134)  
WITH LARGE TIP (B690-0020) OR EQUIV.
  - INSERT PIN 6 INTO PRINTED CIRCUIT BOARD HOLE FROM  
COMPONENT SIDE PER DETAIL A USING AMP TOOL  
NO. 265871-2 WITH TIP NO. 308554-1. (PUSH OUT EXTRACTION  
TIP IS NO. 265964-1)
  - INSPECTION CRITERIA - WP STD. SEC. 410.

PROCESS REVIEW  
DATE 10-21-83 BY T. 163

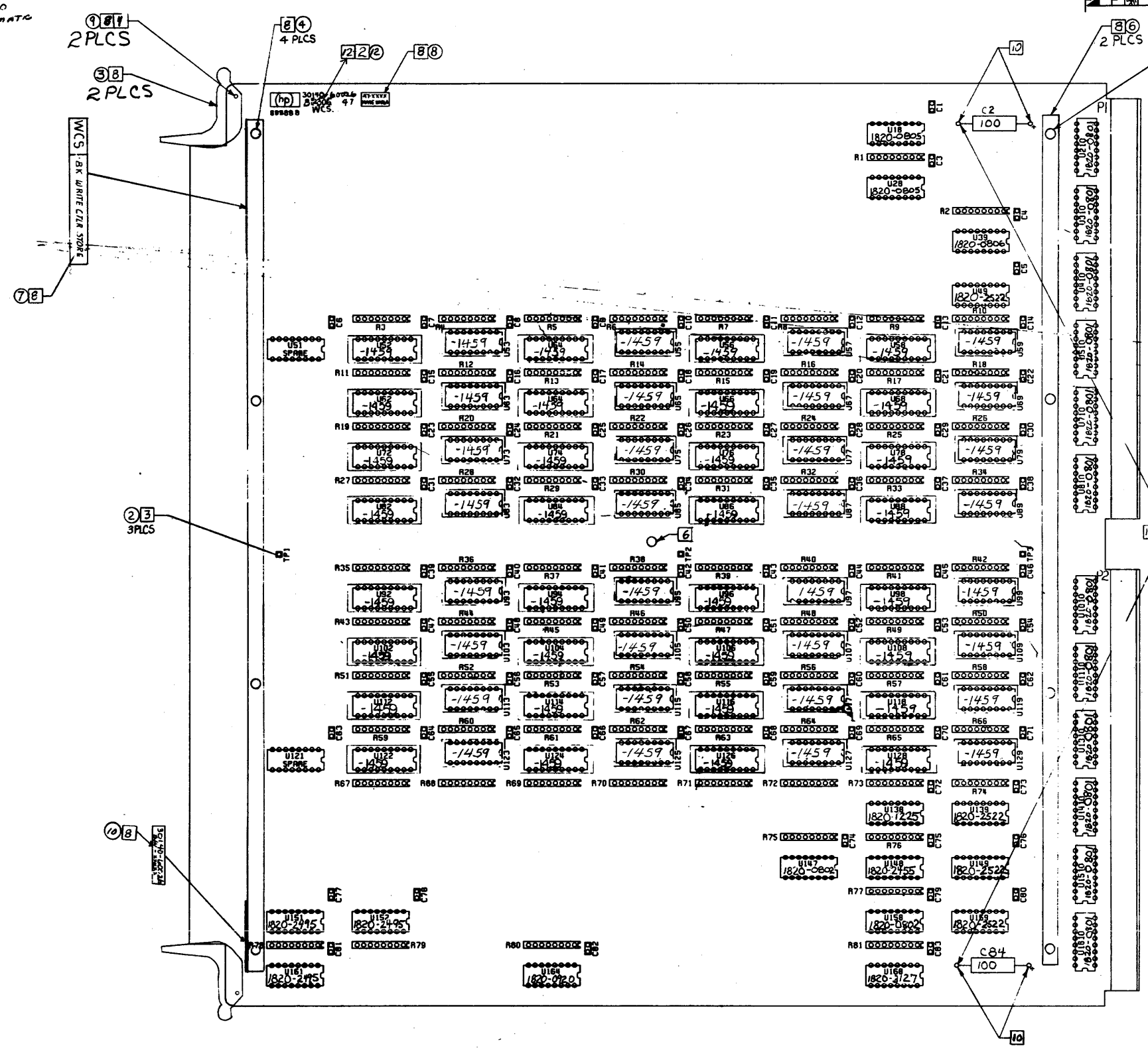
8	1	LABEL - DATE CODE	9228-5330
7	2	RES NET 7X68 81 82	11810-8974
6	3	PINS - PRESS IN	1251-1771
5	1	CONN. - 8 PIN (M)	1251-1771
4	1	CONN. - 18 PIN (E)	1251-1771
3	1	CONN. - 18 PIN (M)	1251-1771
2	1	LBL-WARR DATE CD	7120-6030
1	1	PCB MEM. BACKPLANE	3090-8900

DATE	10/21/83
BY	T. 163
TITLE	ASST. DWG
PCB MEM. BACKPLANE	3090 A



REF DWG:  
A-50 DATE CODE INFO  
D-51, D-52, D-53 SCHEMATIC

F-30140-60026-1	
1	AS ISSUED
2	REVISED NOTES (1) BY: JAMES T. HARRIS (2) BY: JAMES T. HARRIS
3	REVISED DATE CD: 7120-6830
4	REVISED DATE CD: 7120-6830
5	REVISED DATE CD: 7120-6830
6	REVISED DATE CD: 7120-6830
7	REVISED DATE CD: 7120-6830
8	REVISED DATE CD: 7120-6830
9	REVISED DATE CD: 7120-6830
10	REVISED DATE CD: 7120-6830
11	REVISED DATE CD: 7120-6830
12	REVISED DATE CD: 7120-6830



- NOTES:
- UNLESS OTHERWISE SPECIFIED ALL RESISTANCE IN OHMS ALL RESISTORS ARE 68 OHMS ALL CAPACITANCE IN MICROFARADS ALL CAPACITORS ARE .01UF (0160-5352)
  - ALL IC'S 1816-1459 ARE TO BE LOADED IN TOUCHUP
  - INSTALL ITEM @
  - INSTALL ITEM @ 3 PLACES
  - MASK AS INDICATED PRIOR TO LOADING
  - ALL BOARD LOADING/HANDLING MUST BE DONE AT AN ELECTROSTATIC DISCHARGE PROTECTED WORK STATION CONTAINING TABLE FLOOR MATS & GROUNDED WRIST STRAP. TRANSPORT ASSEMBLY IN ELECTROSTATIC DISCHARGE PROTECTED BAGS.
  - USE SUPPORT FIXTURE DURING WAVE SOLDER
  - LOAD SOCKETS AS INDICATED. XU--, ETC. LOAD IC'S BEFORE WAVE SOLDER
  - INSTALL ITEMS @ thru @ and @ thru @ IN TOUCHUP
  - PRETEST REQUIRED ON THE GUEST TEST SYSTEM.
  - USING AN OHMMETER, CHECK FOR A RESISTANCE OF GREATER THAN 25 OHMS BETWEEN THESE POINTS. DO NOT USE A CONTINUITY LIGHT.
  - INSPECTION CRITERIA-HP STD SECT #10
  - THIS ASSY DWG IS GOOD FOR BOTH REV A & B BOARDS

12	1	LABEL-DATE CODE	9520-5320
11	64	IC. ECL RAM	1816-1459
10	1	LBL SERIAL NUMBER	9920-4848
9	2	PIN	1480-016
8	1	LBL-WARR DATE CD	7120-6830
7	1	LABEL-PCB BK WCS	7121-3746
6	2	BRACE	5040-6058
5	1	DELTA	
4	8	SCREW 4-40	0624-0077
3	2	EXTRACTOR	5040-8004
2	3	TERM TEST POINT	0160-0034
1	1	PCB WCS	

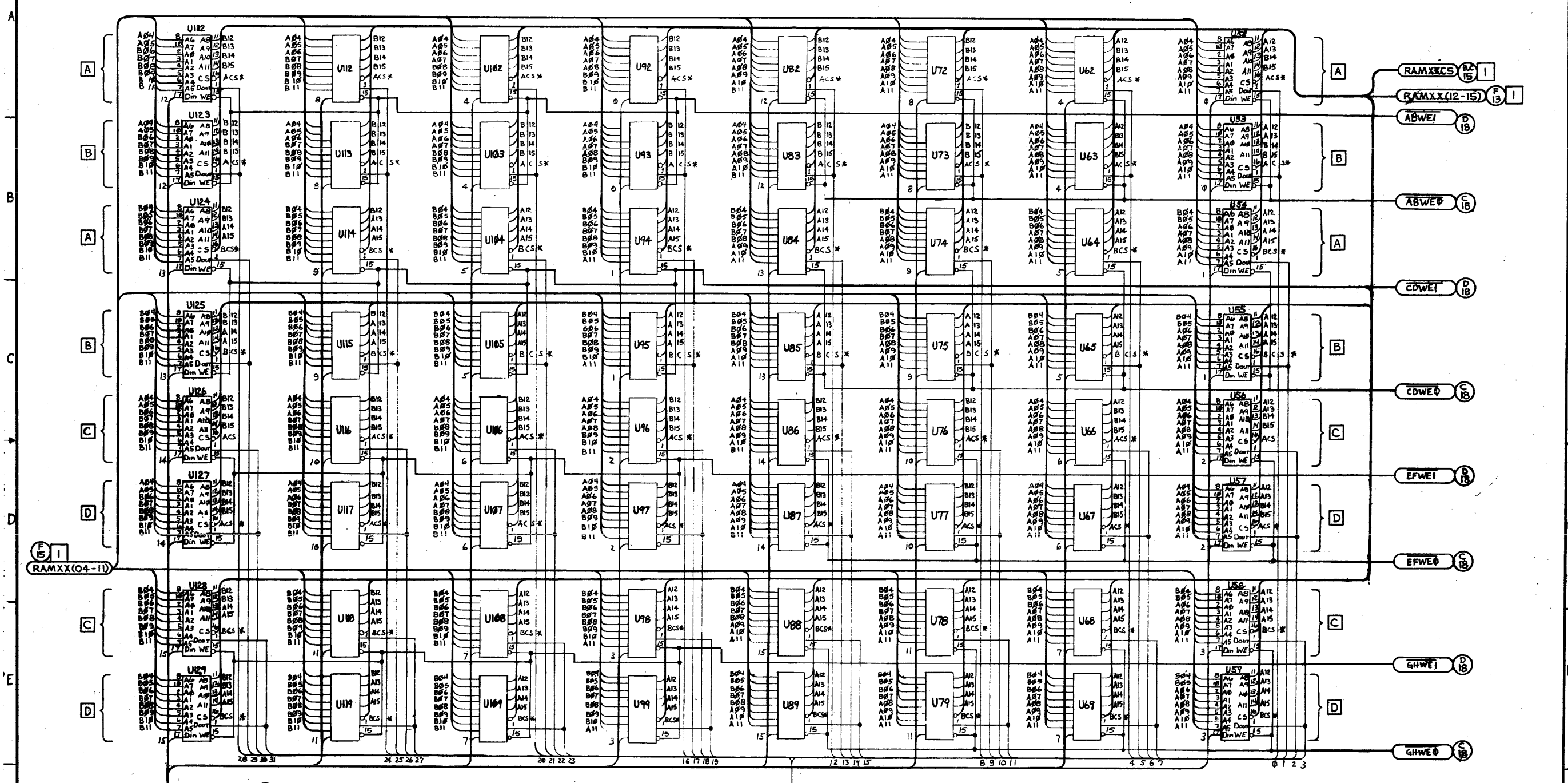
PROCESS REVIEW  
DATE: 1/24/84 BY: [Signature]

PCA-BK WRITE CTRL STORE  
ASSY DWG  
30140 A  
30140-60026  
F-30140-60026-1



REF DWG 30140A  
 1-53 DATE CODE 1NF7  
 D-51, D-53 SCHMATIC

DESIGNER'S RESPONSIBILITY															SYMBOL															APPROVED															DATE																		
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	7/74	2-74



NOTES, UNLESS OTHERWISE SPECIFIED ALL I.C.'S ARE:  
 1816-1459 (10470) TYP 8 PLACES ACROSS PAGE.

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.
PCA BK WCS					
TITLE SCHEMATIC					
NEXT ASSEMBLY 30140A			30140-60076		
PART NUMBER			D-30140-60076-52		
SCALE					

SIGNAL	PACK	PIN	SIGNAL	PACK	PIN	SIGNAL	PACK	PIN
ABWED*	R36	5	RAMBA07	R44	2	RAMDA07	R48	2
ABWET*	R68	4	RAMBA08	R36	3	RAMDA08	R40	3
AS1A	R81	5	RAMBA09	R28	4	RAMDA09	R32	4
CMWED*	R38	5	RAMBA10	R20	6	RAMDA10	R24	6
CMWET*	R70	3	RAMBA11	R20	6	RAMDA11	R24	6
CLK	R81	4	RAMBA12	R20	7	RAMDA12	R24	7
OCUSBFTI	R2	8	RAMBA13	R12	6	RAMDA13	R16	6
OU2	R81	6	RAMBA14	R6	5	RAMDA14	R10	5
OU3	R77	4	RAMBA15	R6	4	RAMDA15	R10	4
OXIK	R77	3	RAMBBS*	R70	2	RAMDBCS*	R74	2
SAXI	R77	2	RAMBBS*	R70	7	RAMDBCS*	R74	7
CB12	R75	4	RAMBBS*	R70	8	RAMDBCS*	R74	8
ED2	R78	4	RAMBBS*	R60	2	RAMDBCS*	R74	3
EFWED*	R40	5	RAMBBS*	R44	3	RAMDBCS*	R48	7
EFWET*	R72	5	RAMBBS*	R36	4	RAMDBCS*	R40	4
EF14	R81	7	RAMBBS*	R60	5	RAMDBCS*	R64	5
GF2	R78	5	RAMBBS*	R28	6	RAMDBCS*	R32	6
GF3	R76	6	RAMBBS*	R28	7	RAMDBCS*	R32	7
CHWED*	R34	3	RAMBBS*	R20	5	RAMDBCS*	R24	5
CHWET*	R74	3	RAMBBS*	R4	5	RAMDBCS*	R8	5
MAP3	R1	5	RAMBBS*	R4	4	RAMDBCS*	R8	4
RAMAACS*	R67	2	RAMCA07	R71	2	RAMDBCS*	R75	5
RAMA0A	R67	7	RAMCA0A	R71	7	TESTCS	R2	6
RAMA0S	R67	8	RAMCA0S	R71	8	WCSCLK	R80	5
RAMA06	R51	2	RAMCA06	R55	4	WCSCLK*	R80	4
RAMA07	R43	2	RAMCA07	R55	2	WCSNO	R76	7
RAMA08	R35	3	RAMCA08	R39	3	WCSYAC	R76	8
RAMA09	R27	4	RAMCA09	R31	4	WECLK*	R78	7
RAMA10	R27	5	RAMCA10	R31	5	WE0*	R78	8
RAMA11	R19	6	RAMCA11	R23	6	WE1*	R79	6
RAMA12	R19	7	RAMCA12	R23	7	WE2CLK*	R78	6
RAMA13	R11	6	RAMCA13	R15	6	YBA10	R44	4
RAMA14	R9	5	RAMCA14	R9	5	YBA11	R45	3
RAMA15	R9	4	RAMCA15	R9	4	YBA110	R32	2
RAMARCS*	R69	2	RAMC03*	R73	2	YBA111	R34	2
RAMAR04	R69	7	RAMC04	R73	7	YBA112	R36	2
RAMAR05	R69	8	RAMC05	R73	8	YBA113	R31	8
RAMAR06	R60	6	RAMC06	R71	3	YBA114	R40	2
RAMAR07	R59	2	RAMC07	R63	2	YBA115	R42	2
RAMAR08	R51	3	RAMC08	R55	3	YBA12	R49	8
RAMAR09	R59	4	RAMC09	R63	4	YBA13	R50	2
RAMAR10	R59	5	RAMC10	R63	5	YBA14	R20	2
RAMAR11	R27	6	RAMC11	R31	6	YBA15	R42	2
RAMAR12	R27	7	RAMC12	R31	7	YBA16	R24	2
RAMAR13	R19	5	RAMC13	R23	5	YBA17	R26	8
RAMAR14	R3	5	RAMC14	R7	5	YBA18	R28	2
RAMAR15	R3	4	RAMC15	R7	4	YBA19	R30	2
RAMARCS*	R68	3	RAMDA0A	R72	2			
RAMA0A	R68	7	RAMDA0A	R72	7			
RAMA0S	R68	8	RAMDA0S	R72	8			
RAMA06	R52	2	RAMDA06	R56	2			

GND C1-2, C2-1, C3-2, C4-2, C5-2, C6-2, C7-2, C8-2, C9-2, C10-2, C11-2, C12-2, C13-2, C14-2, C15-2, C16-2, C17-2, C18-2, C19-2, C20-2, C21-2, C22-2, C23-2, C24-2, C25-2, C26-2, C27-2, C28-2, C29-2, C30-2, C31-2, C32-2, C33-2, C34-2, C35-2, C36-2, C37-2, C38-2, C39-2, C40-2, C41-2, C42-2, C43-2, C44-2, C45-2, C46-2, C47-2, C48-2, C49-2, C50-2, C51-2, C52-2, C53-2, C54-2, C55-2, C56-2, C57-2, C58-2, C59-2, C60-2, C61-2, C62-2, C63-2, C64-2, C65-2, C66-2, C67-2, C68-2, C69-2, C70-2, C71-2, C72-2, C73-2, C74-2, C75-2, C76-2, C77-2, C78-2, C79-2, C80-2, C81-2, C82-2, C83-2, C84-2.

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TP1-1, TP2-1, TP3-1.

U18-1, U18-16, U210-1, U210-16, U28-1, U28-16, U310-1, U310-16, U39-1, U39-16, U410-1, U410-16, U49-1, U49-16, U51-1, U51-16, U52-18, U53-18, U54-18, U55-18, U56-18, U57-18, U58-18, U59-18, U510-1, U510-16, U62-18, U63-18, U64-18, U65-18, U66-18, U67-18, U68-18, U69-18, U70-1, U710-16, U72-18, U73-18, U74-18, U75-18, U76-18, U77-18, U78-18, U79-18, U810-1, U810-16, U82-18, U83-18, U84-18, U85-18, U86-18, U87-18, U88-18, U89-18, U92-18, U93-18, U94-18, U95-18, U96-18, U97-18, U98-18, U99-18, U101-1, U101-16, U102-18, U103-18, U104-18, U105-18, U106-18, U107-18, U108-18, U109-18, U111-1, U111-16, U112-18, U113-18, U114-18, U115-18, U116-18, U117-18, U118-18, U119-18, U131-1, U131-16, U121-1, U121-16, U122-18, U123-18, U124-18, U125-18, U126-18, U127-18, U128-18, U129-18, U138-1, U138-16, U139-1, U139-16, U141-1, U141-16, U147-1, U147-16, U148-1, U148-16, U149-1, U149-16, U151-1, U151-16, U151-1, U151-16, U152-1, U152-16, U152-1, U152-16, U153-1, U153-16, U154-1, U154-16, U155-1, U155-16, U156-1, U156-16, U157-1, U157-16, U158-1, U158-16, U159-1, U159-16, U161-1, U161-16, U161-1, U161-16, U161-16, U161-16, U164-1, U164-16, U168-1, U168-16, U168-16, U168-16, U253-16, U255-16, U257-16, U259-16, U263-16, U265-16, U267-16, U269-16, U273-16, U275-16, U277-16, U279-16, U283-16, U285-16, U287-16, U289-16, U293-16, U295-16, U297-16, U299-16, U303-16, U305-16, U307-16, U309-16, U313-16, U315-16, U317-16, U319-16, U323-16, U325-16, U327-16, U329-16, U333-16, U335-16.

-2V C3-1, C4-1, C6-1, C9-1, C10-1, C11-1, C14-1, C15-1, C16-1, C20-1, C21-1, C25-1, C26-1, C27-1, C30-1, C31-1, C32-1, C36-1, C37-1, C41-1, C42-1, C43-1, C46-1, C47-1, C48-1, C52-1, C53-1, C57-1, C58-1, C59-1, C62-1, C64-1, C65-1, C69-1, C70-1, C73-1, C75-1, C77-1, C80-1, C82-1, C83-1, C84-2.

P2-035, P2-036, P2-037, P2-038, P2-039, P2-040.

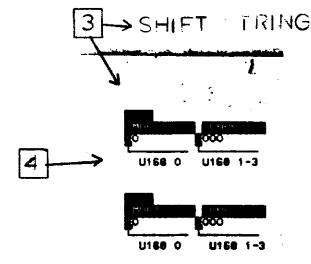
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-5.2V C1-1, C2-2, C5-1, C7-1, C8-1, C12-1, C13-1, C17-1, C18-1, C19-1, C22-1, C23-1, C24-1, C28-1, C29-1, C33-1, C34-1, C35-1, C38-1, C39-1, C40-1, C44-1, C45-1, C49-1, C50-1, C51-1, C54-1, C55-1, C56-1, C60-1, C61-1, C63-1, C66-1, C67-1, C68-1, C71-1, C72-1, C74-1, C76-1, C78-1, C79-1, C81-1.

P1-115, P1-116, P1-117, P1-118, P1-119, P1-120.

U18-8, U210-8, U28-8, U310-8, U39-8, U410-8, U49-8, U51-8, U52-8, U53-8, U54-8, U55-8, U56-8, U57-8, U58-8, U59-8, U10-8, U102-8, U103-8, U104-8, U105-8, U106-8, U107-8, U108-8, U109-8, U111-8, U112-8, U113-8, U114-8, U115-8, U116-8, U117-8, U118-8, U119-8, U131-8, U131-16, U121-8, U121-16, U122-8, U123-8, U124-8, U125-8, U126-8, U127-8, U128-8, U129-8, U138-8, U138-16, U139-8, U139-16, U141-8, U141-16, U147-8, U147-16, U148-8, U148-16, U149-8, U149-16, U151-8, U151-16, U151-8, U151-16, U152-8, U152-16, U152-8, U152-16, U153-8, U153-16, U154-8, U154-16, U155-8, U155-16, U156-8, U156-16, U157-8, U157-16, U158-8, U158-16, U159-8, U159-16, U161-8, U161-16, U161-8, U161-16, U161-16, U161-16, U164-8, U164-16, U168-8, U168-16, U168-16, U168-16, U253-8, U255-8, U257-8, U259-8, U263-8, U265-8, U267-8, U269-8, U273-8, U275-8, U277-8, U279-8, U283-8, U285-8, U287-8, U289-8, U293-8, U295-8, U297-8, U299-8, U303-8, U305-8, U307-8, U309-8, U313-8, U315-8, U317-8, U319-8, U323-8, U325-8, U327-8, U329-8, U333-8, U335-8.

- NOTES:
- 1 SIGNAL NAME REFERS TO SIGNALS LINE BEING TERMINATED BY THE RESPECTIVE RESISTOR. (SEE NOTE 2)
  - 2 THE PACK NUMBER LISTED UNDER "PACK" REPRESENTS THE REFERENCE DESIGNATOR ASSOCIATED WITH THE RESISTOR PACK TERMINATING THE RESPECTIVE SIGNAL NAME. THE NUMBER LISTED UNDER "PIN" REPRESENTS THE TERMINATING PIN FOR THAT SIGNAL.
  - 3 THIS TABLE SHOWS THE INTEGRATED CIRCUITS COMPRISING EACH SEGMENT OF THE SHIFT STRING. THE NUMBERS FOLLOWING THE LOOK NO., SUCH AS "LOOK 0-1", REPRESENTS THE BIT NUMBERS OF THE INTEGRATED CIRCUIT THAT ARE PRESENT IN THAT SEGMENT. IF NO BIT NUMBERS ARE GIVEN, SUCH AS "LOOK", THEN ALL OF THE OUTPUT BITS, 0-3, ARE PRESENT IN THE SHIFT STRING SEGMENT. THE NUMBERS THAT ARE IN PARENTHESES, SUCH AS "(8)", GIVE THE NUMBER OF BITS THAT ARE PRESENT IN THAT SEGMENT OF THE SHIFT STRING. THE SEGMENTS WITH NO SUCH NUMBERS HAVE THE NUMBER OF BITS THAT WOULD BE EXPECTED. THE "H" OR "B" SPECIFIES IF THE SEGMENT IS REPRESENTED IN A HEX OR A BINARY NUMBER.
  - 4 UNLESS OTHERWISE NOTED, ALL INTEGRATED CIRCUITS IN THE SHIFT STRING ARE 1820-022. BIT 0-PIN 3, BIT 1-PIN 2, BIT 2-PIN 15, BIT 3-PIN 14.



ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.
		PCA WCS SCHEMATIC			
		NEXT ASSEMBLY 30140A			
		FINISH	SCALE		
				FORM PRINT	
				HEWLETT	
				PACKARD	
				PART NUMBER 30140-60026	
				30140-60026-53	
				SHEET	OF 1

HEWLETT-PACKARD CO. 

NOTES:

1. Unless otherwise specified, all dimensions between adjacent connectors are .875 inches center to center.

Wire side of cable is up.



Red wire of cable and pin 1 of each connector should be oriented as specified on diagram, connector face down, as viewed in assembly fixture.

2. Mark top-most connector with cable stock number per Dwg. A-5951-4406-1.

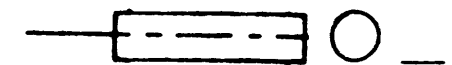
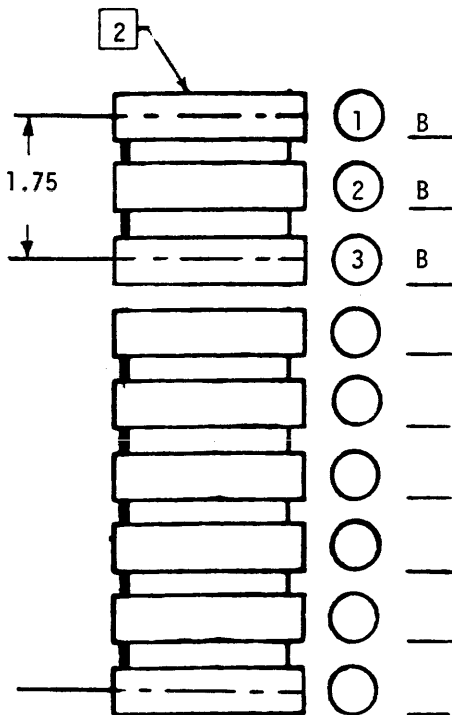
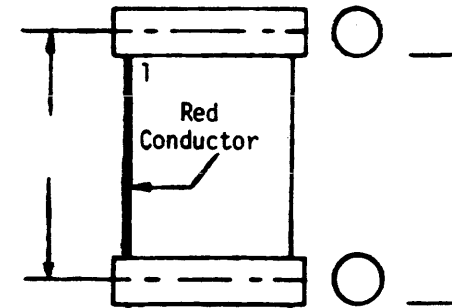
3. Cable Stock No.: 8120-1595  
No. of Conductors: 50  
Shielded  Unshielded

4. Cable cut length: 2.00 inches

5. Connectors:		Type			
Part No.	Cont.	PC Edge	Skt.	Ears	
B. 1251-3077	50		X		

6. Install handles, 5040-6059, in positions  on cover side of connector. Use Fixture: T116667

7. For Test, refer to Drawing(s):  
TEST PER A-30140-60029-71.  
EQUIPMENT REQUIRED TO TEST CABLE ASSEMBLY:  
ET10957-6007 50 PIN PC-TO-PC ADAPTOR (2)  
ET10957-6052 ADAPTER CABLES (2)  
ET10957-6054 CABLE TEST CONSOLE  
ET10999 CONTINUITY TESTER MODEL 1024  
ET10999-1001 CASSETTE TAPE



		MODEL	---	STK NO	30140-60029
		FCA-CBI/CMA/CAC			
		BY	K. HODOR	DATE	11-18-80
		APPD		SHEET NO	2 OF 2
		REVISIONS		DWG NO A-30140-60029-1	
		SUPERSEDES			

HEWLETT-PACKARD CO. 

NOTES:

1. Unless otherwise specified, all dimensions between adjacent connectors are .875 inches center to center.

Wire side of cable is up.



Red wire of cable and pin 1 of each connector should be oriented as specified on diagram, connector face down, as viewed in assembly fixture.

2. Mark top-most connector with cable stock number per Dwg. A-5951-4406-1.

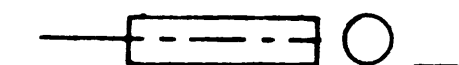
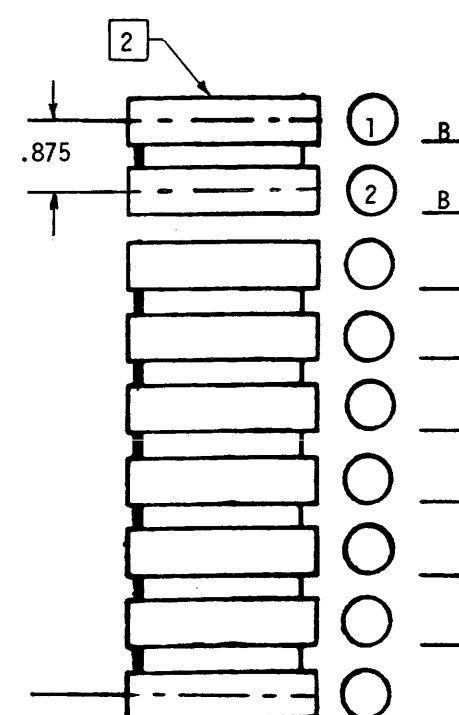
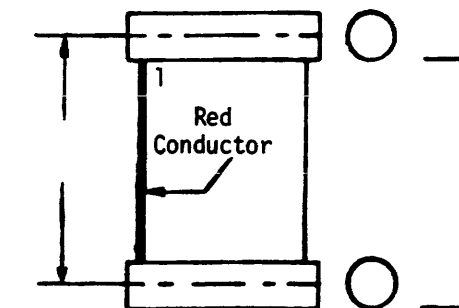
3. Cable Stock No.: 8120-1595  
No. of Conductors: 50  
Shielded  Unshielded

4. Cable cut length: 1.13 inches

5. Connectors:		Type			
Part No.	Cont.	PC Edge	Skt.	Ears	
B. 1251-3077	50		X		

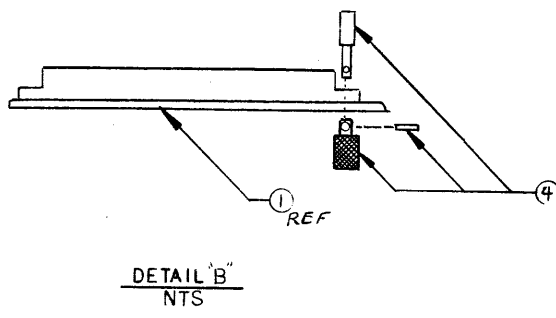
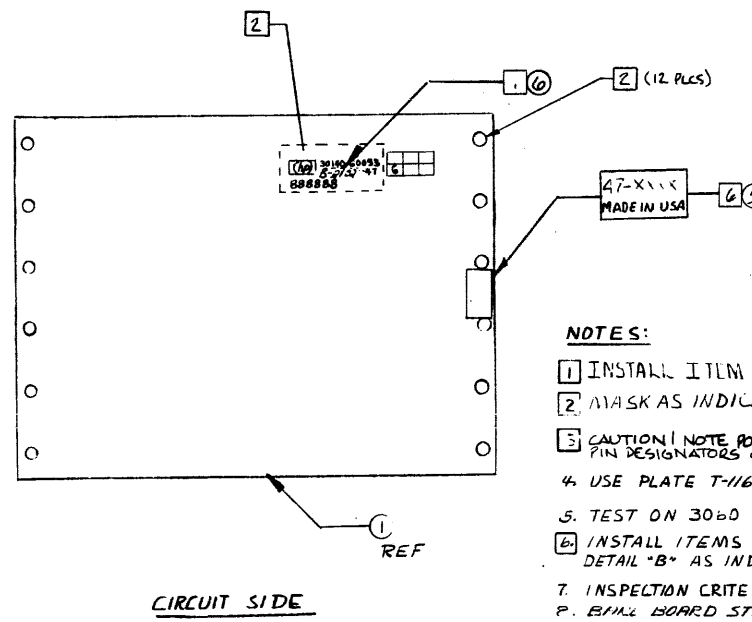
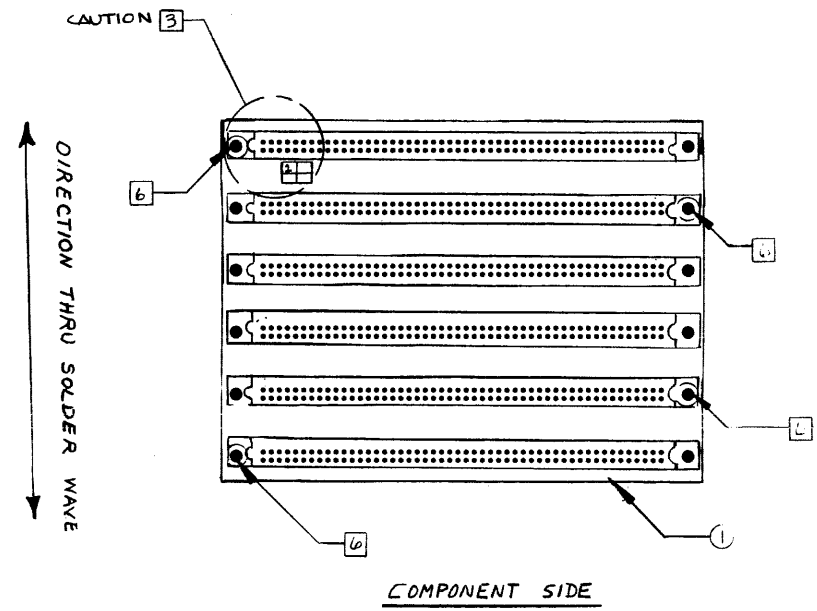
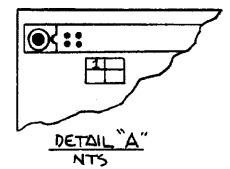
6. Install handles, 5040-6059, in positions  on cover side of connector. Use Fixture: T116667

7. For Test, refer to Drawing(s):  
TEST PER A-30140-60028-71.  
EQUIPMENT REQUIRED TO TEST CABLE ASSEMBLY:  
ET10957-6007 50 PIN PC-TO-PC ADAPTERS (2)  
ET10957-6052 ADAPTER CABLES (2)  
ET10957-6054 CABLE TEST CONSOLE  
ET10999 CONTINUITY TESTER MODEL 1024  
ET10999-1001 CASSETTE TAPE



		MODEL	---	STK NO	30140-60028
		FCA-CBI/IOB (MCS)			
		BY		DATE	11-18-80
		APPD		SHEET NO	2 OF 2
		REVISIONS		DWG NO A-30140-60028-1	
		SUPERSEDES			

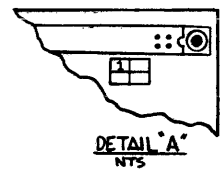
A	AS ISSUED
B	ADDED NOTE 2 PER DEC 62
C	PER DOC. CHG.
D	REVISED NOTES, DOC. CHG.
E	ADDED NOTE 3, DOC. CHG.
F	REVISED NOTE 4, PER DOC. CHG.
G	REVISED NOTE 5, PER DOC. CHG.



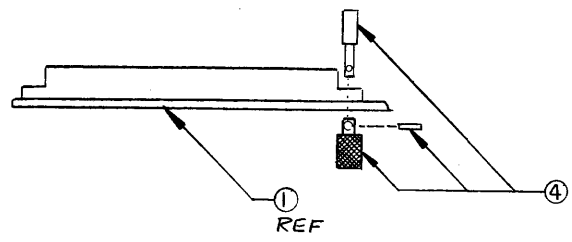
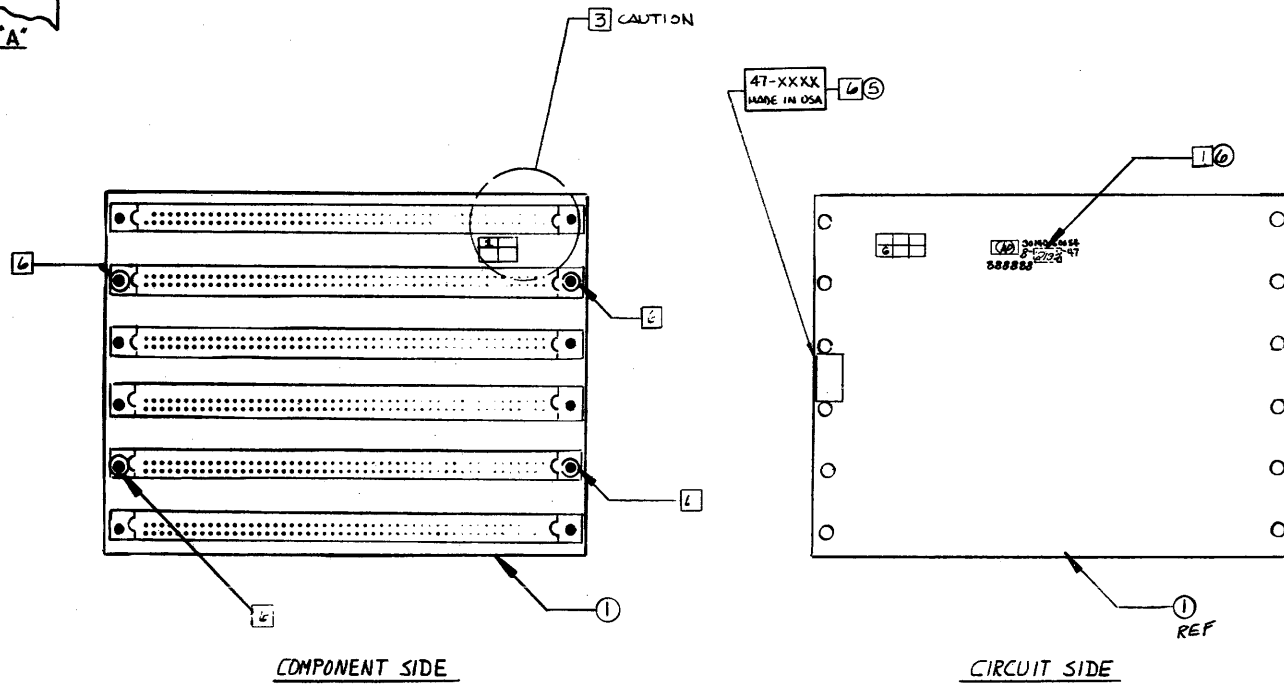
- NOTES:**
- 1 INSTALL IITM 6
  - 2 MASK AS INDICATE, USING AMBER COLORED TAPE.
  - 3 CAUTION! NOTE POSITION OF TAB INDICATOR ON CONNECTORS. SILKSCREEN NUMBERS DO NOT MATCH PIN DESIGNATORS ON CONNECTORS. SEE DETAIL "A".
  - 4 USE PLATE T-116712 TO SUPPORT CONNECTORS OVER SOLDER WAVE.
  - 5 TEST ON 3000
  - 6 INSTALL ITEMS 4 AND 5 BEFORE PRETEST. INSTALL ITEM 4 PER DETAIL "B" AS INDICATED (4 PLCS). USE TOOL NO. T-116717.
  - 7 INSPECTION CRITERIA - HP STD. SECT 410.
  - 8 BILL BOARD STAMP SHOULD BE ON THE BOARD BEFORE THE CONNECTORS ARE LOADED.

ITEM	QTY	MATERIAL DESCRIPTION	MATL. PART NO.
6	1	LABEL - DATE CODE	9320-5320
5	1	LABEL - WARR. DATE CODE	7120-6830
4	4	JACKSCREW KIT	1251-7252
3		DELETED	
2		DELETED	
1	1	PCB CPU FP UPPER	30140-6053

PCA-CPU FP UPPER ASSEMBLY DWG.		HEWLETT PACKARD
TITLE COMP + CIRCUIT		
REV. 30140A	30140-60053	
PROB:	SCALE:	D-30140-60053-2



DIRECTION THRU SOLDER WAVE



NOTES:

- 1 INSTALL ITEM 6
- 2 MASK AS INDICATED, USING AMBER COLORED TAPE.
- 3 CAUTION! NOTE POSITION OF TAB INDICATOR ON CONNECTORS. SILK SCREEN DO NOT MATCH PIN DESIGNATORS ON CONNECTORS. SEE DETAIL "A".
4. USE PLATE T-116712 TO SUPPORT CONNECTORS OVER SOLDER WAVE.
5. TEST ON 3060.
- 6 INSTALL ITEMS 4 AND 5 BEFORE PRETEST. INSTALL ITEM 4 PER DETAIL "B" AS INDICATED. (4 PLCS) USE TOOL NO. T-116719
7. INSPECTION CRITERIA-HP STD. SECT. 410.
8. BARE BOARD TEST STAMP SHOULD BE ON THE BOARD BEFORE THE CONNECTORS ARE LOADED.

PROCESS REVIEW  
DATE 10-21-83

6	1	LABEL - DATE CODE	9330
5	1	LABEL WARR DATE CODE	7252
4	4	JACKSCREW KIT	1251-7252
3		DELETED	
2		DELETED	
1	1	PCB CLIPP LOWE	

PCA CPU FP LWR. ASSY. DWG	HEWLETT PACKARD
30140A	30140-60054
	D-30140-60054-2

# I/O BAY PCA SCHEMATICS AND ASSEMBLY DRAWINGS

SECTION

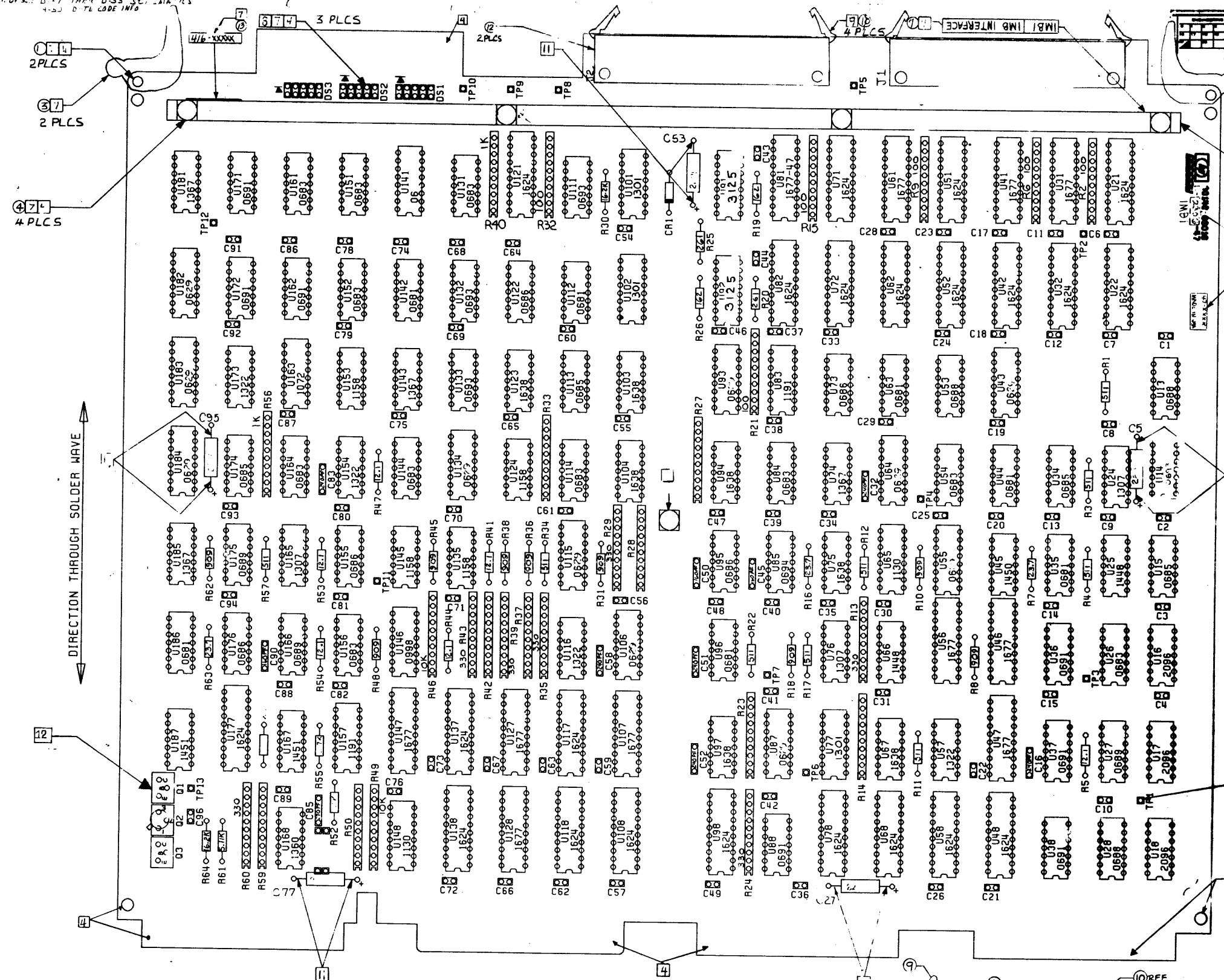
III

This section provides component location and schematic diagrams for the PCAs located in the I/O card cage of the System Processor Unit. The PCA diagrams appear according to an ascending part number sequence. A listing of this sequence is shown below along with drawing titles and page numbers.

P/N	DWG. TITLE	PAGE
F-30140-60016-10	PCA IMBI ASSY. DWG.	3-2
D-30140-60016-51	PCA IMBI SCHEMATIC	3-3
-52	"	3-4
-53	"	3-5
-54	"	3-6
D-30140-60016-55	"	3-7
D-30140-60021-6	PCA DUAL I/O BP CMP. SIDE	3-8
D-30140-60021-7	PCA DUAL I/O BP CRT. SIDE	3-9
C-30140-60021-51	PCA DUAL I/O BP SCHEMATIC	3-10
-52	"	3-11
-53	"	3-12
-54	"	3-13
C-30140-60021-55	"	3-14
F-31262-60001-18	PCA GIC ASSY. DWG.	3-15
D-31262-60001-16	PCA GIC SCHEMATIC 1 of 5	3-16
-16	" 2 of 5	3-17
-16	" 3 of 5	3-18
-16	" 4 of 5	3-19
D-31262-60001-16	PCA GIC SCHEMATIC 5 of 5	3-20



REF. DVISE: D-41 TRM D-55 SC1 JIA-7-15  
4-50 D. TE. CODE INFO



COMPONENT SIDE VIEW

DETAIL "A"  
NO SCALE

DETAIL "B"  
NO SCALE

14	1	LEAD DATE CODE	0000-0000
13	1	LABEL SERIAL NUMBER	7120-7232
12	1	CONV RC POST HOH	1251-6720
11	2	PIN	1480-016
10	4	LATCH CONN	1251-1999
9	3	LED ARRAY 5V 5V	1970-0622
8	1	LBL-WARN DATE CD	7120-6830
7	1	LABEL	7121-2298
6	1	BRACE	5040-6058
4	4	SCREW 4-40	0674-0077
3	2	EXTRACTOR	5040-4804
2	5	STUD SOLDER TERM	0360-0047
1	1	PCB	5040-6006

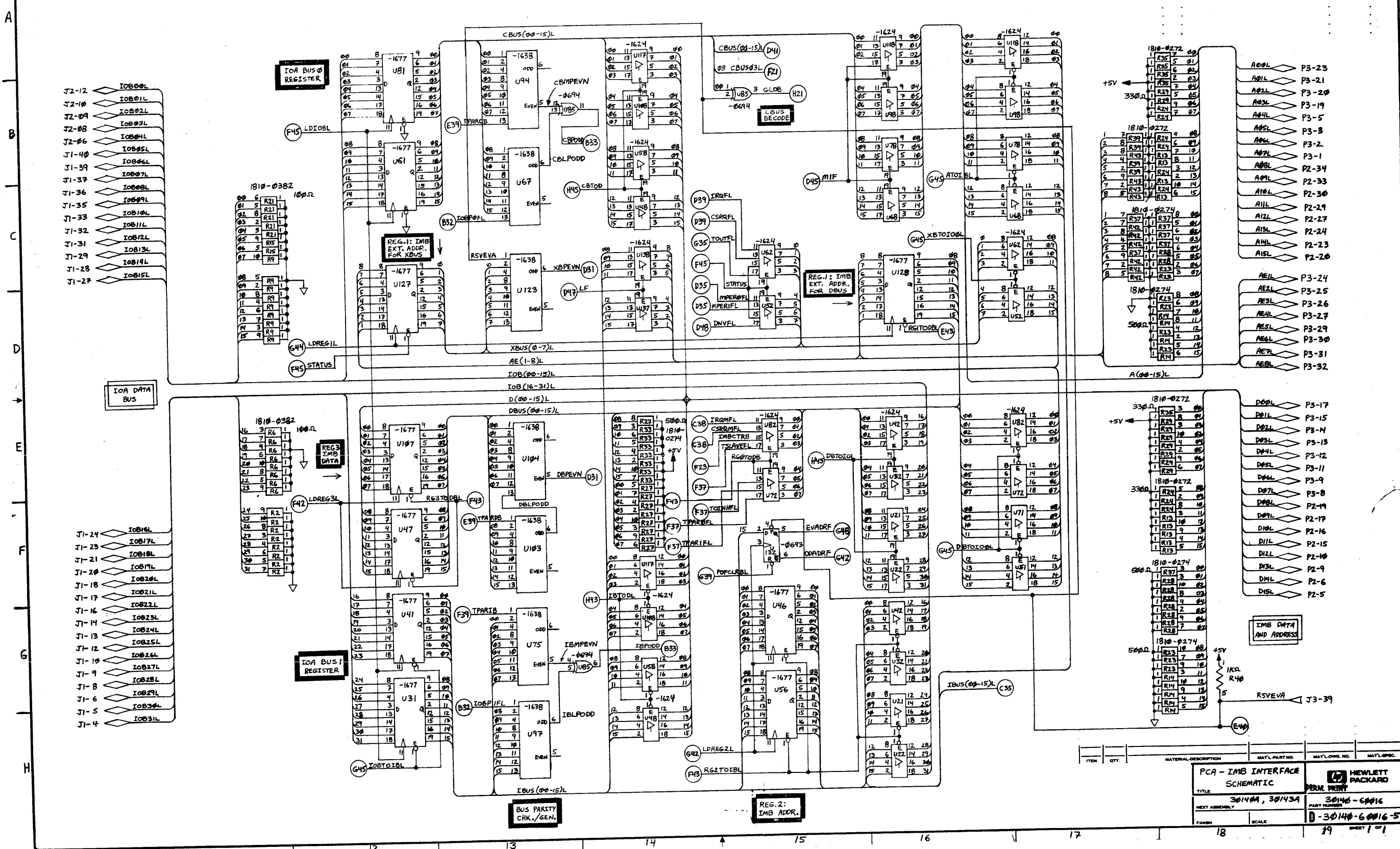
- NOTES:
- UNLESS OTHERWISE SPECIFIED:  
ALL RESISTANCE IN OHMS  
RESISTOR NETWORKS ARE 500 OHMS  
ALL CAPACITANCE IN MICROFARADS  
ALL CAPACITORS ARE .01UF (0160-5352)  
ALL IC'S ARE 1820-  
INSTALL ITEM 14
  - ITEM 12, 3 PLACES  
MASK AS INDICATED PRIOR TO LOADING  
WHEN MASKING DON'T COVER ALIGNMENT FEED THROUGH'S
  - ALL BOARD LOADING & HANDLING MUST  
BE DONE AT AN ELECTROSTATIC DIS-  
CHARGE PROTECTED WORK STATION.  
CONTAINING TABLE & FLOOR MATS &  
GROUNDED WRIST STRAP. TRANS-  
PORT ASSEMBLY IN ELECTROSTATIC  
DISCHARGE PROTECTED BAGS.
  - USE SUPPORT FIXTURE DURING  
WAVE SOLDER
  - LOAD ITEMS 1 and 4 and 6 and 12 IN TOUCHUP
  - LOAD ITEM 10 PER DETAIL "A"  
USE LED FORMING TOOL T116700
  - SNAP ITEM 3 INTO J1 J2 PER  
DETAIL "B"
  - PRETEST REQUIRED ON THE D-45-20.  
TEST SYSTEM
  - USING AN OHMMETER, CHECK FOR  
A RESISTANCE OF GREATER THAN  
5.0 OHMS BETWEEN THESE POINTS.  
DO NOT USE A CONTINUITY LIGHT.
  - IF LEADS COME PREFORMED THEN  
TRANSISTOR SHOULD BE INSTALLED  
AS RECEIVED.

F-3040-6006-10	
A	AS ISSUED PER 4750
B	REVISION PER 4750
C	REVISION PER 4750
D	REVISION PER 4750
E	REVISION PER 4750
F	REVISION PER 4750

PCA-IMB INTERFACE	
ASSY. DWG	
30140A, 30143A	3040-6006
1/2 X 1	F-3040-6006-10

REF. DWGS.: F & ASSY.  
A-50 DATE CODE INFO.  
D-52 THRU D-55 SCHEM.

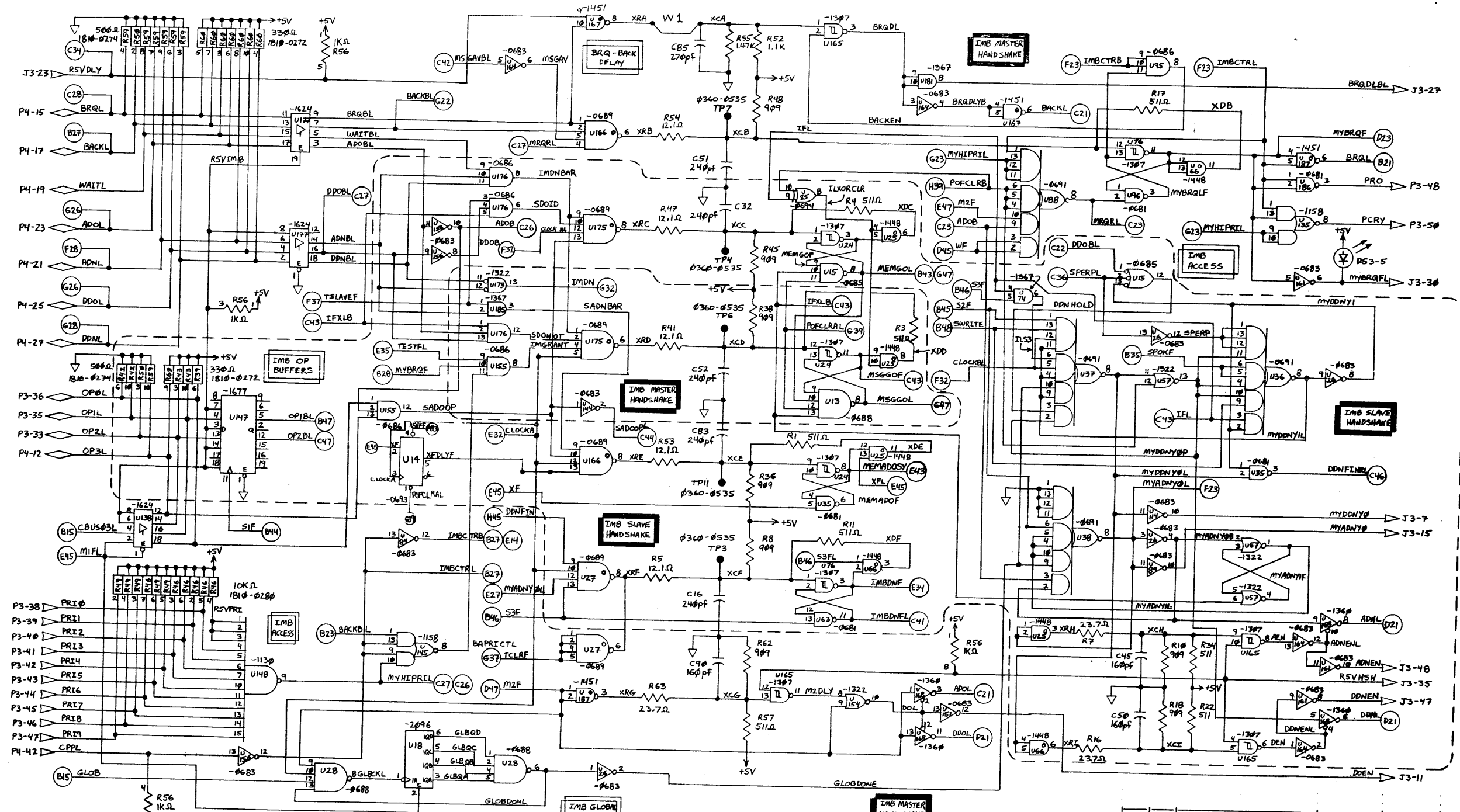
ENGINEERING RESPONSIBILITY	DESIGN	REVISIONS	APPROVED	DATE
		REVISED REDRAWN PER POO 47-3477	HSE BS	7-7-76



ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L LOG. NO.	MAT'L SPEC.
PCA - IMB INTERFACE SCHEMATIC					
TITLE			HEWLETT PACKARD		
NEXT ASSEMBLY			PERM. PRINT		
30140A, 30143A			30140-60016		
FINISH			SCALE		
D-30140-60016-57			SHEET 1 OF 1		

REF DWGS: P8 4111  
 A-30 DATE COMP INFO  
 3-21, 3-22, D-54, D-55

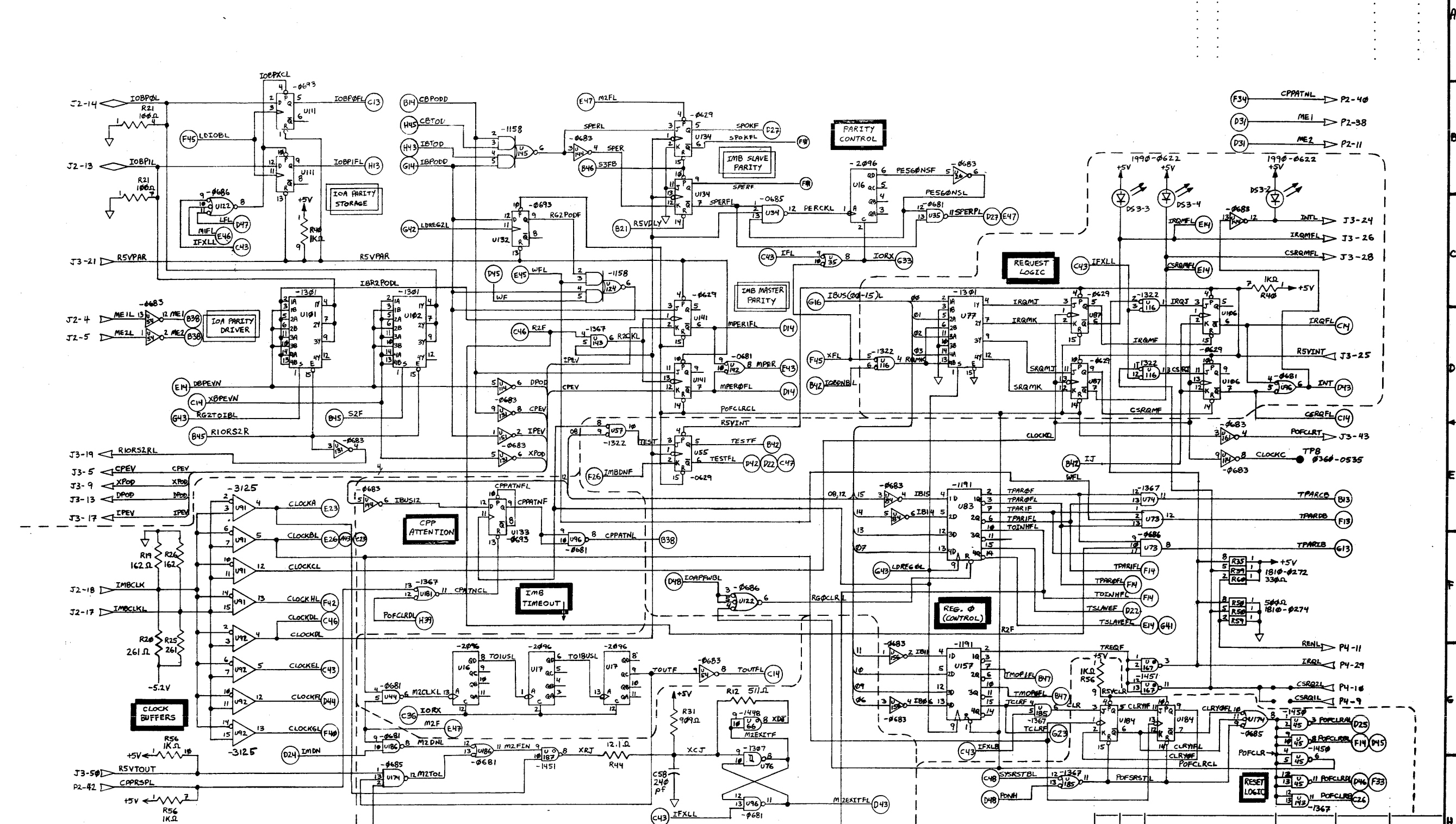
ENGINEERING RESPONSIBILITY												REVISIONS											
DATE	BY	CHKD	APPD	DATE	BY	CHKD	APPD	DATE	BY	CHKD	APPD	REV	DATE	DESCRIPTION	BY	CHKD	APPD						
10/18/72	...	...	...	10/18/72	...	...	...	10/18/72	...	...	...	1	10/18/72	REVISED PER PCO 47-3447	...	...	...						
11/15/72	...	...	...	11/15/72	...	...	...	11/15/72	...	...	...	2	11/15/72	REVISED PER PCO 47-3500	...	...	...						
12/15/72	...	...	...	12/15/72	...	...	...	12/15/72	...	...	...	3	12/15/72	REVISED PER PCO 47-3415	...	...	...						
1/15/73	...	...	...	1/15/73	...	...	...	1/15/73	...	...	...	4	1/15/73	REVISED PER PCO 47-3445	...	...	...						



ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY	MAT'L SPEC.
PCA-IMB INTERFACE SCHEMATIC					
TITLE: 30140, 30143A					
NEXT ASSEMBLY: 30140-60016					
FINISH: D-30140-60016-52					
SCALE: 1:1					

REF. DRAWING: F B A-11  
 A-53 TATE JUNE 1972  
 E-1, E-2, E-3, D-1, D-2, D-3

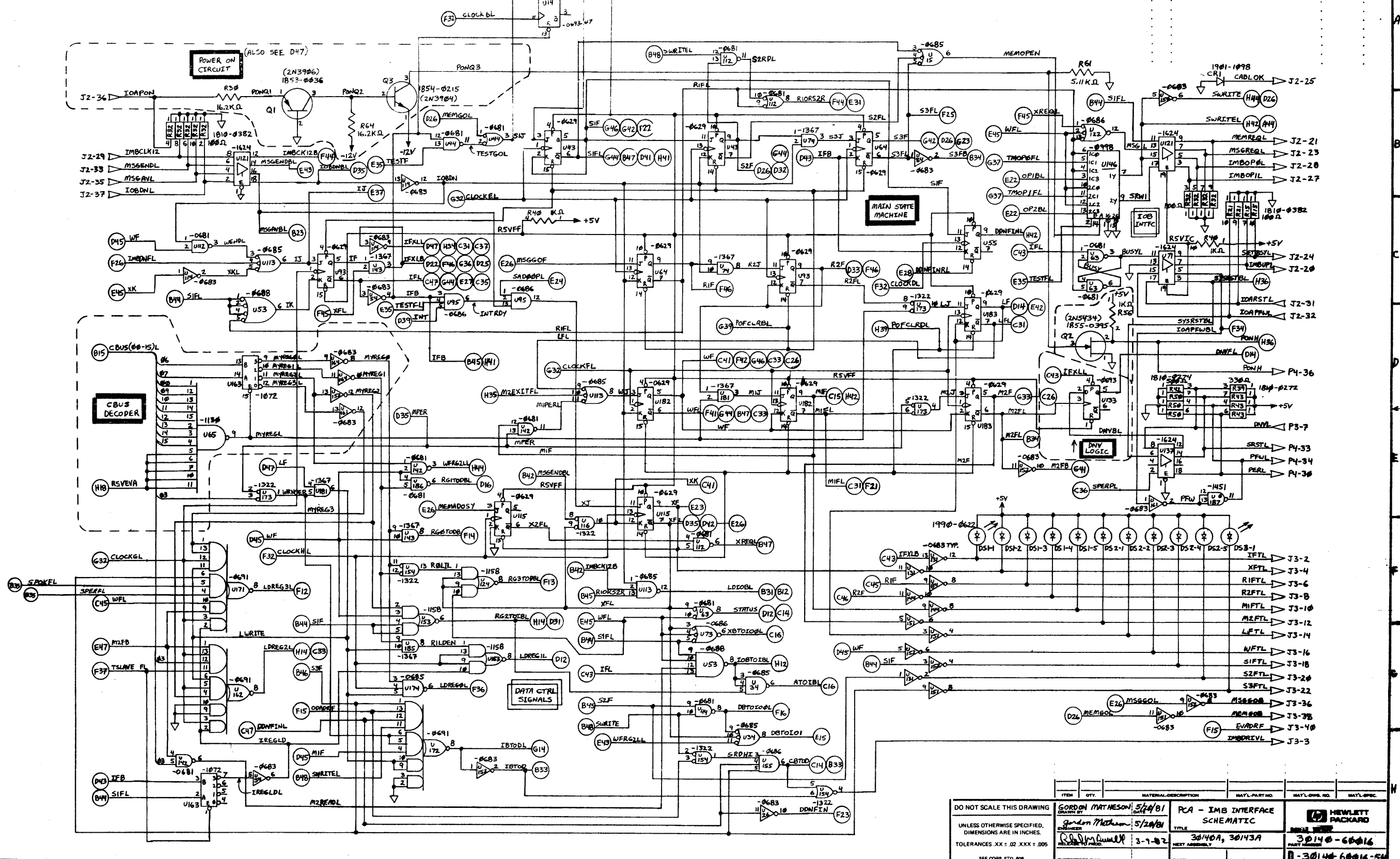
ENGINEERING RESPONSIBILITY														REVISIONS													
BY: [Signature]														DATE: 1-7-72													
C														REVISED & REDRAWN PER PCD 47-3797													
D														REVISED PER PCD 47-3506													
E														REVISED PER PCD 47-3779													



ITEM	QTY.	MATERIAL DESCRIPTION	MATL. PART NO.	MAT'L. QTY. NO.	MAT'L. SPEC.
PCA-IMB INTERFACE					
SCHEMATIC					
TITLE					
3014A, 3014A					
NEXT ASSEMBLY					
3014B-60016					
PART NUMBER					
3014B-60016					
PART NO.					
3014B-60016					
PART NO.					
3014B-60016					
PART NO.					
3014B-60016					

REF DWGS.: F-8 ASSY.  
A-50 DATE CODE INFO.  
D-51, D-52, D-53, D-55 SCHEM.

ENGINEERING RESPONSIBILITY														REVISIONS													
1	2	3	4	5	6	7	8	9	10	11	12	13	14	1	2	3	4	5	6	7	8	9	10	11	12	13	14
GORDON MATHESON 5/24/81														REVISED PER PCD 47-3447													
Gordon Matheson 5/28/81														REVISED PER PCD 47-3506													
Richard G. Gault 3-7-82														REVISED PER PCD 47-3445													

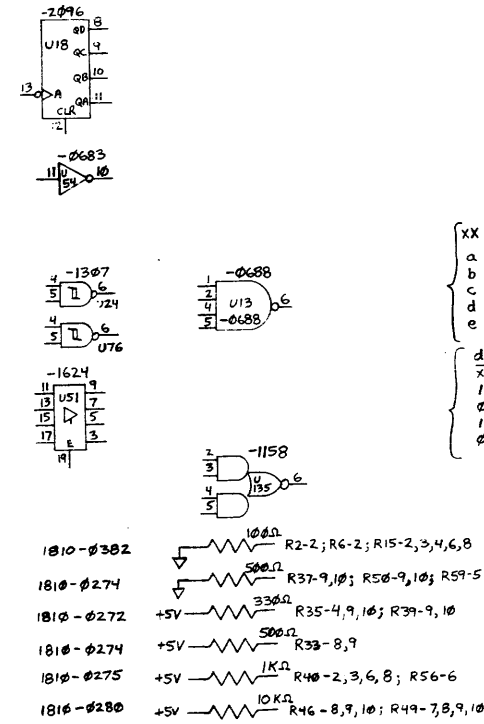


DO NOT SCALE THIS DRAWING	ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY. NO.	MAT'L SPEC.
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.	GORDON MATHESON 5/24/81		PCA - IMB INTERFACE SCHEMATIC			HEWLETT PACKARD
TOLERANCES XX ± .02 .XXX ± .005	Gordon Matheson 5/28/81					
SEE CORP. STD. 008	Richard G. Gault 3-7-82		30140A, 30143A			
			NEXT ASSEMBLY			
			30140-60016			
			SCALE			

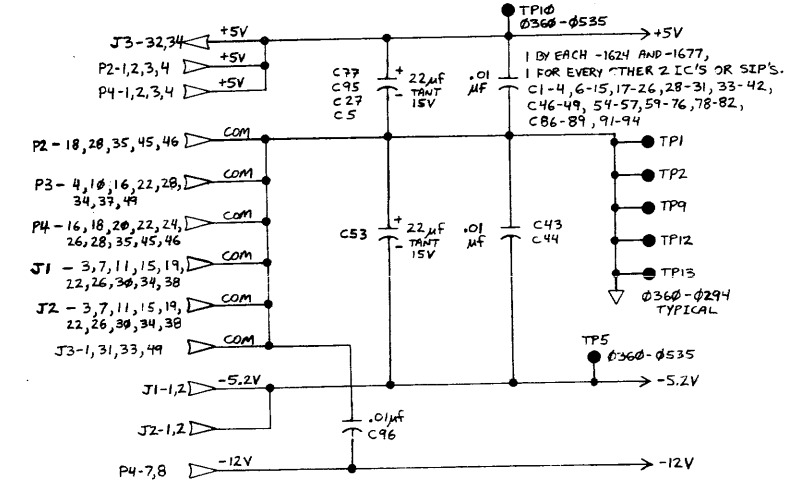
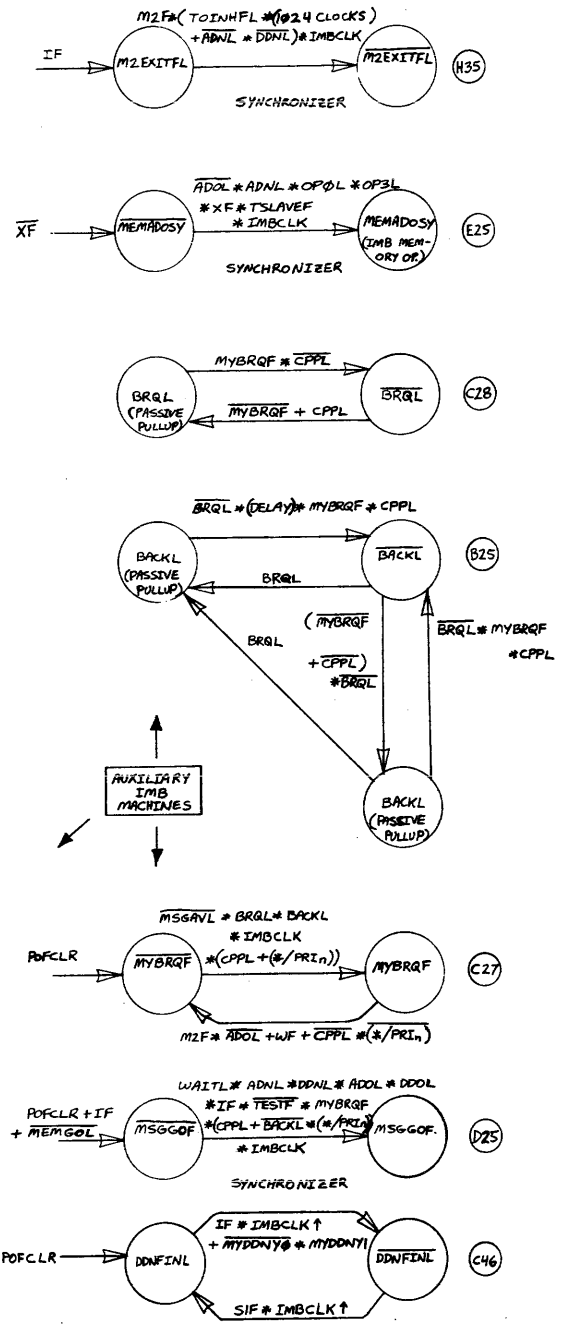
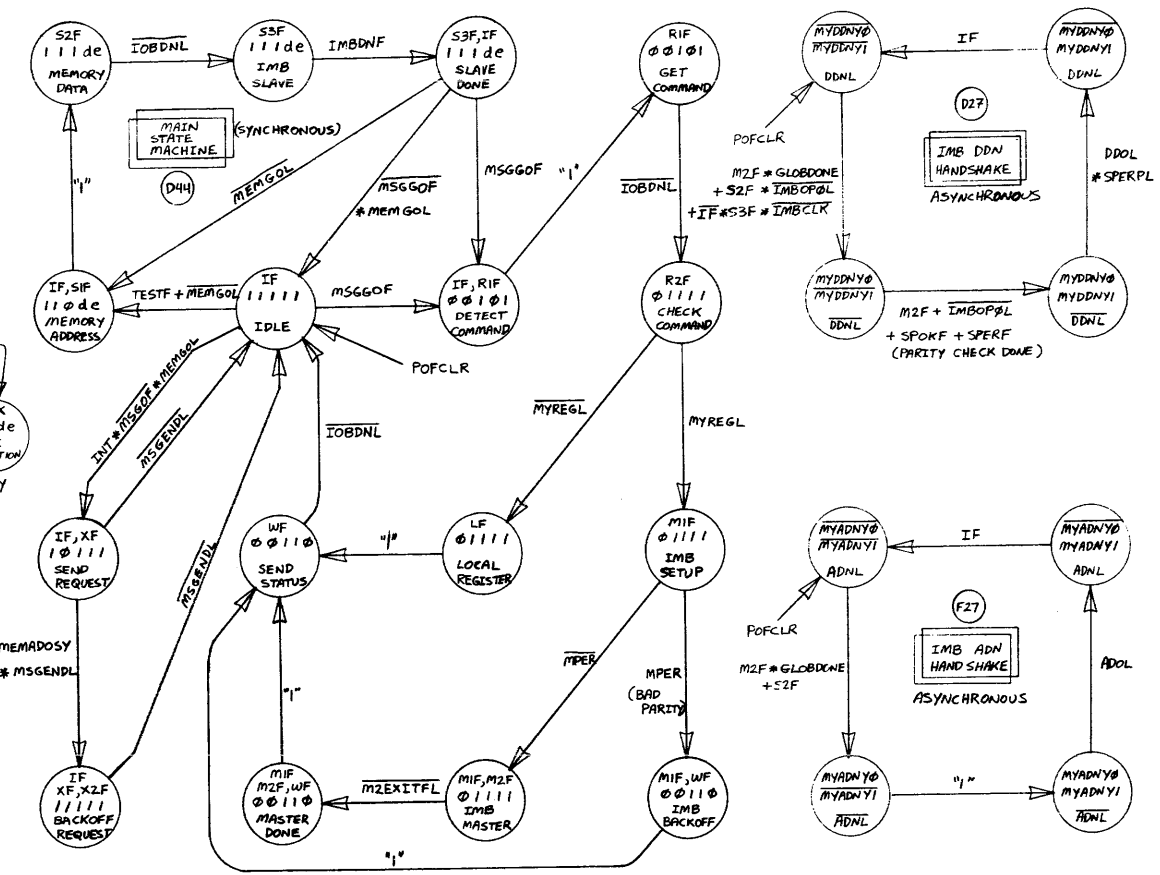
REF. DWGS: F-3 A-SY  
 A-50 DATE COCP 1/73  
 -51, D-53, D-54

ENGINEERING RESPONSIBILITY										REVISIONS									
DATE										DATE									
BY										BY									
C										D									
D										E									
E										E									

SPARE PARTS:

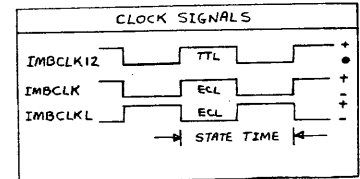


XX = STATE FF ACTIVE  
 a = SETBSYL  
 b = MSGREQL  
 c = MEM REQL  
 d = IMBOPOL  
 e = IMBOPIL  
 MEMORY OPERATION:  
 XX NONE  
 11 READ  
 01 WRITE  
 10 SEMAPHORE  
 00 WR. DOUBLE  
 KEY



**NOTES FOR STATE DIAGRAMS:**  
 1. "ZZ" = SIGNAL ZZ IS AT LOW VOLTAGE.  
 2. POFCLR = IOAPON + IOARSTL + IMBI CLEAR.  
 3. "1" = UNCONDITIONAL STATE TRANSITION.  
 4. MACHINES REMAIN IN A STATE UNTIL AN EXIT CONDITION SHOWN IS TRUE.  
 5. ALL MACHINES EXCEPT MAIN ARE ASYNCHRONOUS.  
 6. \*/PRI<sub>n</sub> = PRI0 \* PRI1 \* ... \* PRI<sub>n</sub>.  
 7. CROSS REFERENCE IS GIVEN TO SCHEMATIC LOCATION OF EACH STATE MACHINE: (XB).

**NOTES FOR REST OF SCHEMATICS:**  
 1. PART NUMBERS SHOWN - NAME ARE PREFIXED 1820-.  
 2. SPECIAL GATE TYPES:  
 OPEN COLLECTOR TRIGGER  
 3. UNLESS OTHERWISE INDICATED, ALL RESISTANCE IS IN OHMS, AND ALL CAPACITANCE IS IN PICO FARADS.  
 4. FUNCTIONAL BLOCK LABELS:  
 MAIN FUNCTION SUB BLOCKS  
 DASHED LINES AROUND BLOCKS.



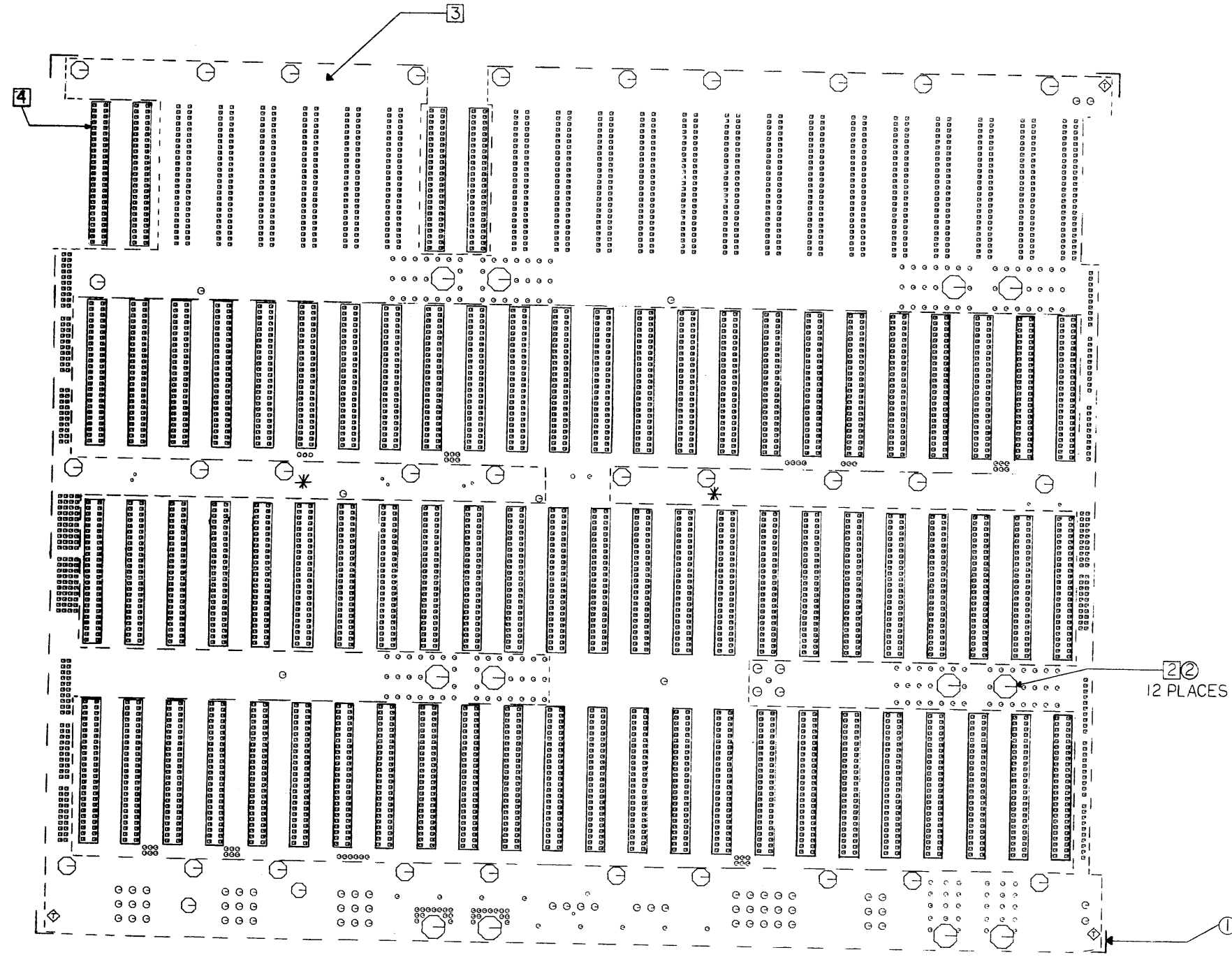
5. ALL SIGNAL NAMES ENDING WITH "L" ARE ACTIVE LOW (EQUIVALENT TO OVERBAR), AND ALL ACTIVE LOW SIGNALS HAVE NAMES WHICH END IN "L".

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L LONG. NO.	MAT'L SPEC.
PCA - IMB INTERFACE SCHEMATIC					
TITLE			HEWLETT PACKARD PERM. PRINT		
NEXT ASSEMBLY			30140-60016		
FINISH			D-30140-60016-55		
SCALE			SHEET 1 OF 1		

REF. DWGS.:

D-7 ASSY  
A-50 DATE CODE (M/F)  
C-51 THR; C-55 SCHF.

ENGINEERING RESPONSIBILITY												REVISIONS		APPROVED		DATE	
1	2	3	4	5	6	7	8	9	10	11	12	A		AS		1/27/74	
13	14	15	16	17	18	19	20	21	22	23	24	B		AS		2/11/74	
25	26	27	28	29	30	31	32	33	34	35	36	C		AS		5/21/73	



- NOTES:
1. MARK DATE CODE ON CIRCUIT SIDE.
  2. INSTALL ITEM ② 12 PLACES (RIVET)
  3. MASK AS INDICATED ON CIRCUIT SIDE BEFORE LOADING. DO NOT MASK HOLES MARKED \* (2 PLACES)
  4. LOAD CONNECTORS (76 PLACES)
  5. USE SUPPORT FIXTURE DURING WAVE SOLDER
  6. SEE D-7 FOR TOUCHUP.
  7. INSPECTION CRITERIA- HP STD. SECT 4/0

②  
12 PLACES

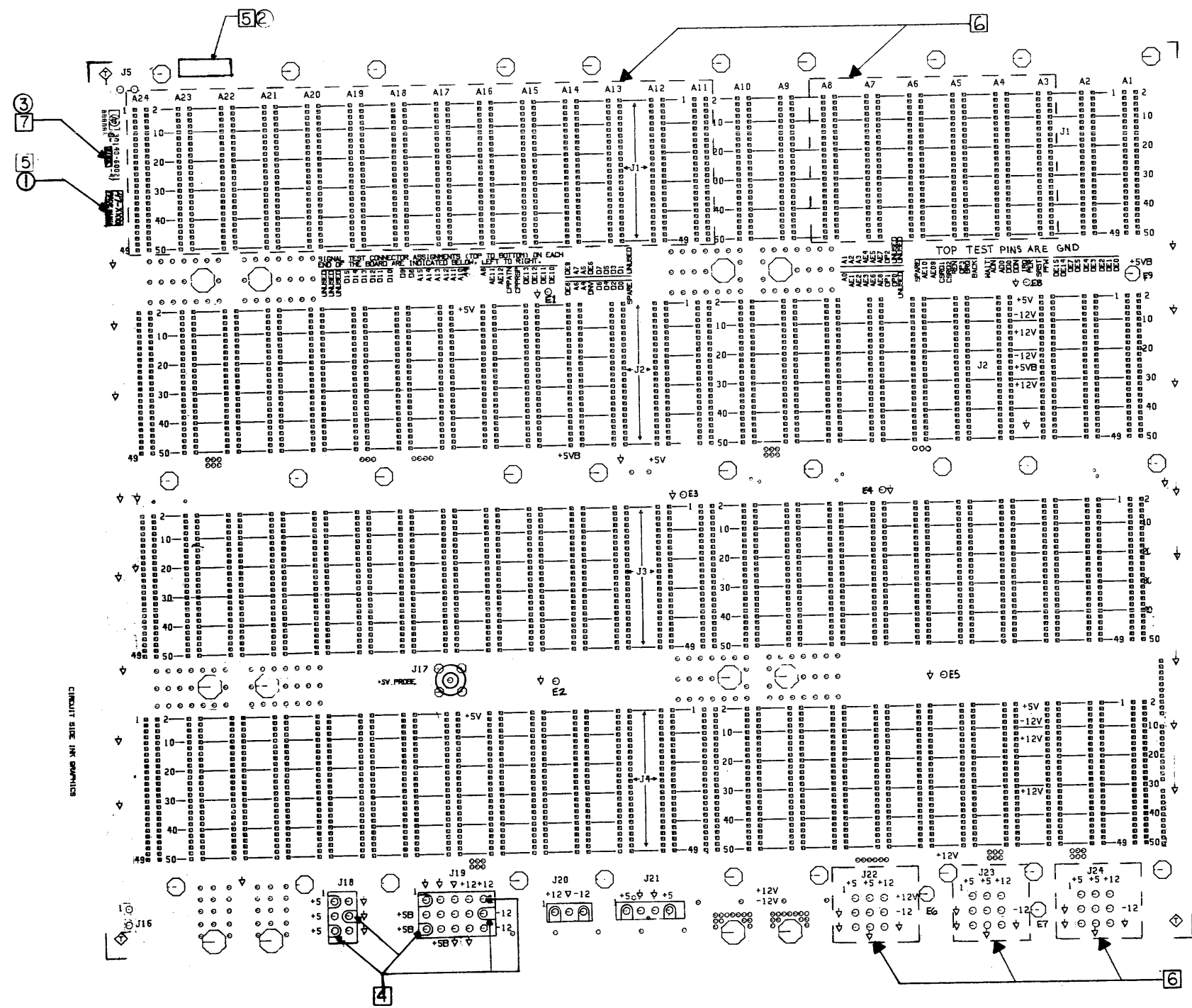
REVIEW		DATE 10-21-73 BY T. Uehara		NUT PT 6-32.062		0590-0970			
ITEM		QTY		PCB-IOBP		30140-60021			
MATERIAL DESCRIPTION				MATERIAL PART NO		MATERIAL QTY		MATERIAL SPEC	
PCA-LWA I/O BP COMPONENT SIDE				HEWLETT PACKARD		30140-60021		PART NUMBER	
NEXT ASSEMBLY				FINISH		SCALE		SHEET 1 OF 1	

REF. DWGS.:

D-6 ASSY  
A-50 DATE CODE INFO  
C-51 TRAJ C-55 SCHEM.

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63

REV	DESCRIPTION	DATE	BY
A	AS ISSUED PER PCO 47-3504		
B	ADDED 4320-1848 & NOTE 5: 47-3744		
C	REVISED BY: PCO 47-3878		
D	CORRECTED NOTE 5: Doc. Chg		
E	ADDED NOTE 6: PCO 47-3879		
F	ADDED NOTE 7: PCO 47-3885		



NOTES:

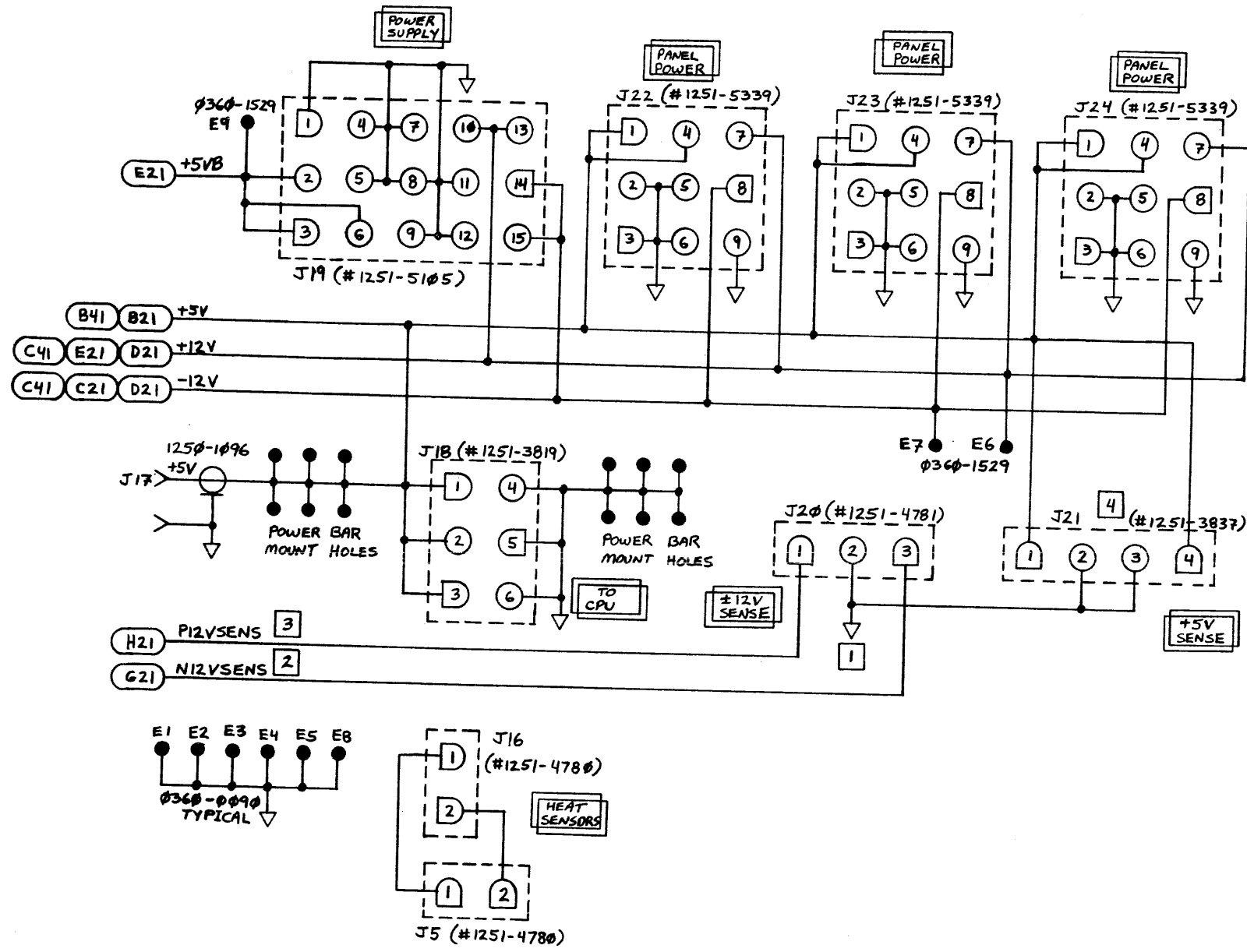
1. AFTER WAVE SOLDERING INSPECT ASSY. FOR SOLDER BRIDGES & RAISED CONNECTORS- TOUCHUP AS REQUIRED.
2. TEST FOR SHORTS.
3. LOAD REST OF COMPONENTS.
4. USING OHMMETER CHECK FOR GREATER THAN 1000 OHMS (OPEN CIRCUIT) BETWEEN ANY TWO POINTS. DO NOT USE A CONTINUITY CHECKER.
5. ATTACH ITEMS ① and ②.
6. DO NOT MASK
7. ADD ITEM ③

PROCESS REVIEW  
DATE 11-2-85 BY T. Under

3	1	LABEL DATE CODE	4530-5330
2	1	LABEL SERIAL NO.	7280-1
1	1	MATERIAL DESCRIPTION	7228-1
ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L-QUANTITY
		PCA-DUAL I/D BP	
		CIRCUIT SIDE	
		TITLE	
		30140A	
		PART NO. 30140-1	
		SCALE 1:1	
		D-30140-60021-7	

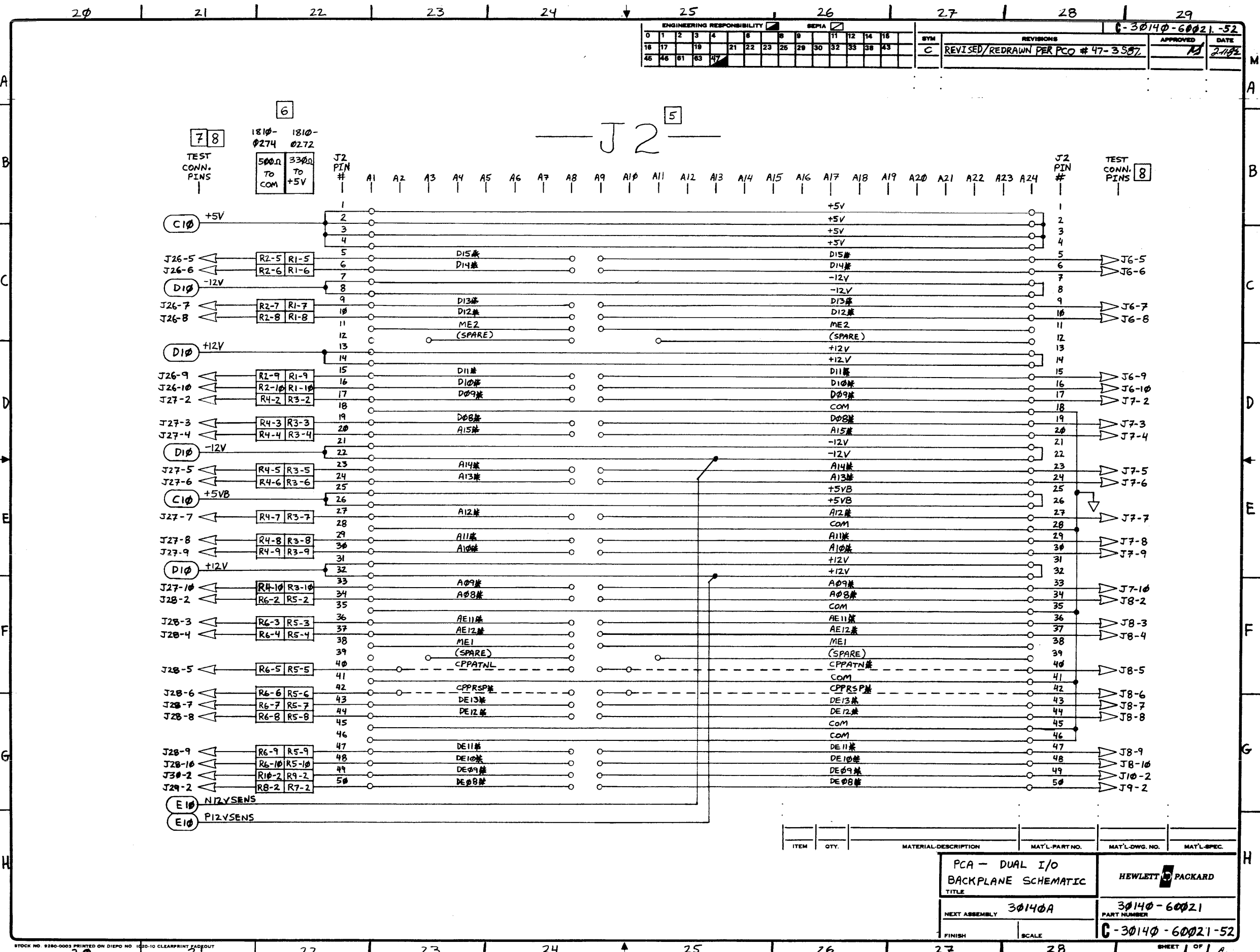


ENGINEERING RESPONSIBILITY										SEPIA										REVISED/REDRAWN PER PCO #47-3387										DATE 2/4/80													
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	BYM	APPROVED	DATE



- NOTES:**
- J20-2, J21-2, J21-3 CONNECT TO COMMON PLANE AT BOARD CENTER BY AN UNIQUE TRACE.
  - J20-3 (NI2VSENS) CONNECTS TO A13J2-22 BY AN UNIQUE TRACE.
  - J20-1 (PI2VSENS) CONNECTS TO A13J2-32 BY AN UNIQUE TRACE.
  - J21-1, J21-4 CONNECT TO THE +5V PLANE AT BOARD CENTER BY AN UNIQUE TRACE.
  - A SIGNAL ATTACHES TO EACH CONNECTOR PIN UNDER WHOSE COLUMN THE SOLID LINE PASSES. BLANKS INDICATE GAPS IN THE TRACE. DASHED LINES INDICATE CONNECTION ONLY AT END POINTS OF THE DASHED LINE.
  - RESISTORS ARE NOT INSTALLED. THEY ARE SHOWN HERE TO INDICATE BOARD LAYOUT ONLY. PIN 1 IS AT THE TOP.
  - TEST CONNECTORS J26-J35 ARE INSTALLED IN LOCATIONS LAYED OUT FOR PULLDOWN RESISTORS R2, R4, R6, ..., R20, RESPECTIVELY.
  - TEST CONNECTORS IN J6-J15 AND J26-J35 ARE PART NO. 1251-7117.
  - ALL CONNECTOR PINS ON THIS SHEET ARE MALE. CONNECTORS ARE SHOWN AS VIEWED FROM BOARD CIRCUIT SIDE (SOLDER SIDE). KEYED CONNECTOR PIN CAVITIES ARE SHOWN BY "D" SHAPE DRAWN FOR THAT PIN.
  - ALL SIGNALS WHICH END IN "\*" ARE ACTIVE LOW (EQUIVALENT TO OVERBAR), AND ALL ACTIVE LOW SIGNALS HAVE NAMES WHICH END IN "\*".

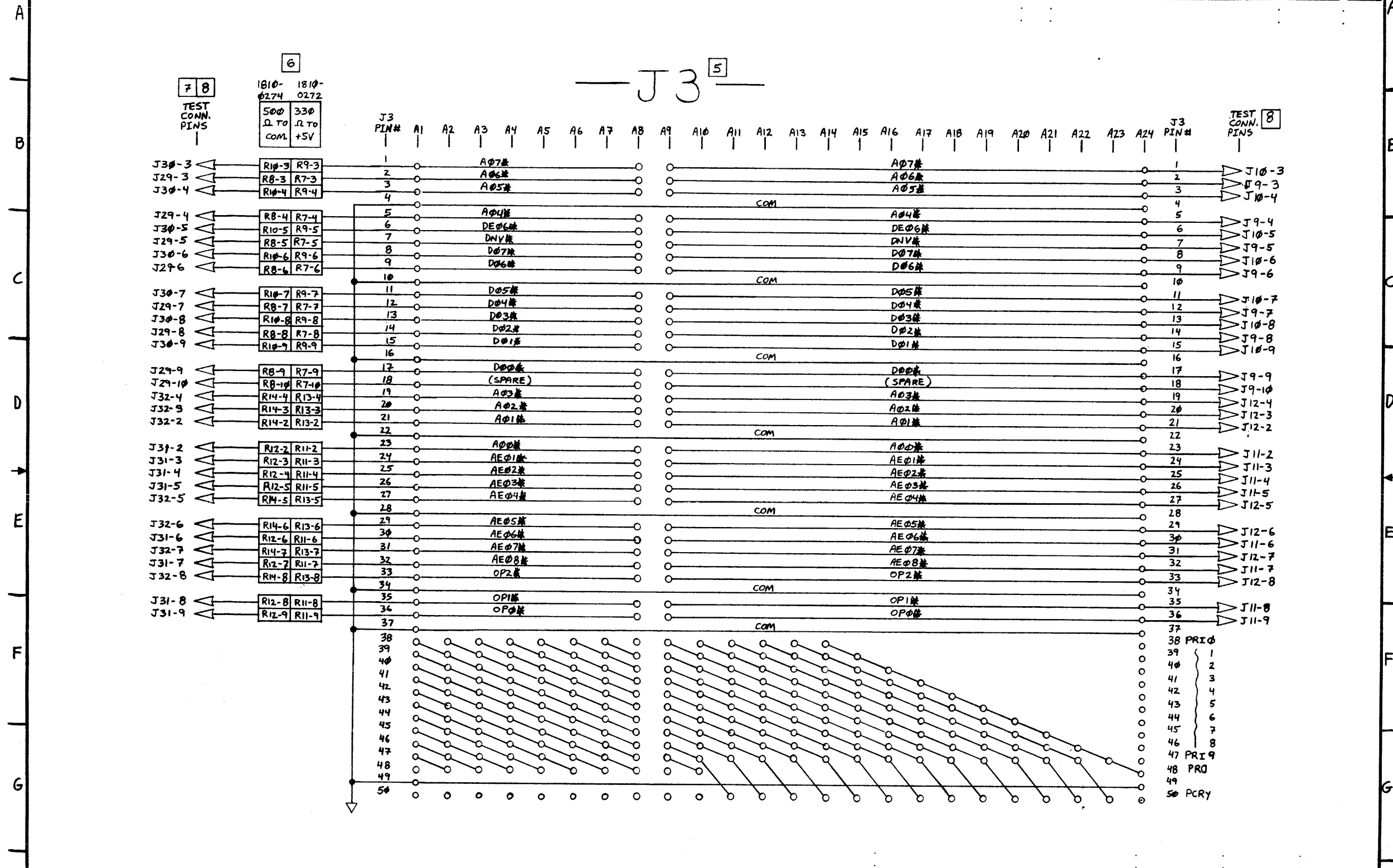
ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.
PCA - DUAL I/O BACKPLANE SCHEMATIC			HEWLETT PACKARD		
NEXT ASSEMBLY 30140A			PART NUMBER 30140-60021		
FINISH			SCALE		
			G-30140-60021-51		



ENGINEERING RESPONSIBILITY																SEMA																REV. NO.		DATE	
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	SYM	REV. NO.	APPROVED	DATE		
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	C	REVISED/REDRAWN PER PCO # 47-3587	M	2/18/82				
44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	

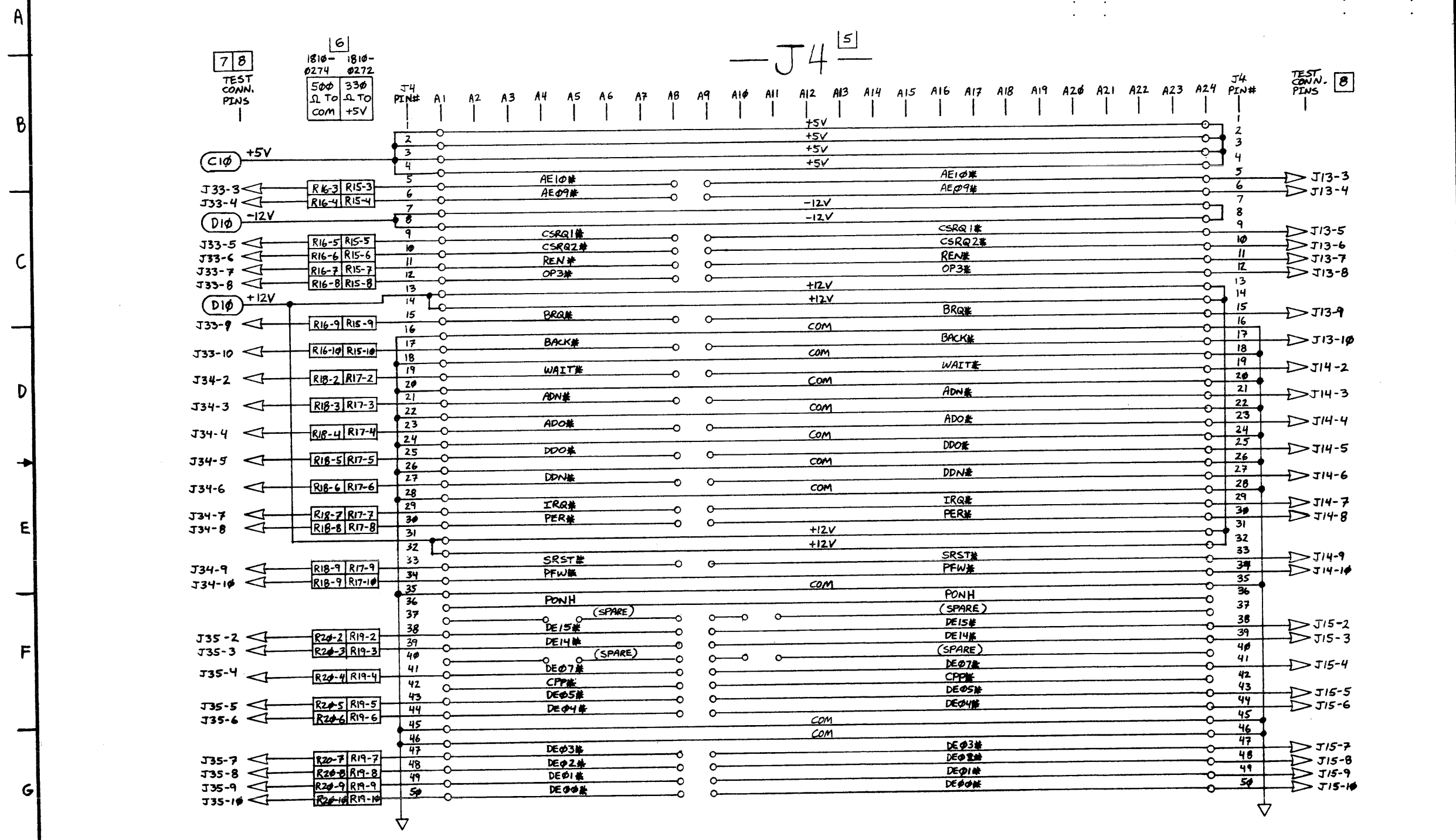
ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.
PCA - DUAL I/O BACKPLANE SCHEMATIC					
NEXT ASSEMBLY			PART NUMBER		
30140A			30140-60021		
FINISH		SCALE		C-30140-60021-52	

ENGINEERING RESPONSIBILITY										DESIGN										REVISED/REDRAWN PER PCO #47-3587		APPROVED		DATE															
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	C		2/1/82	

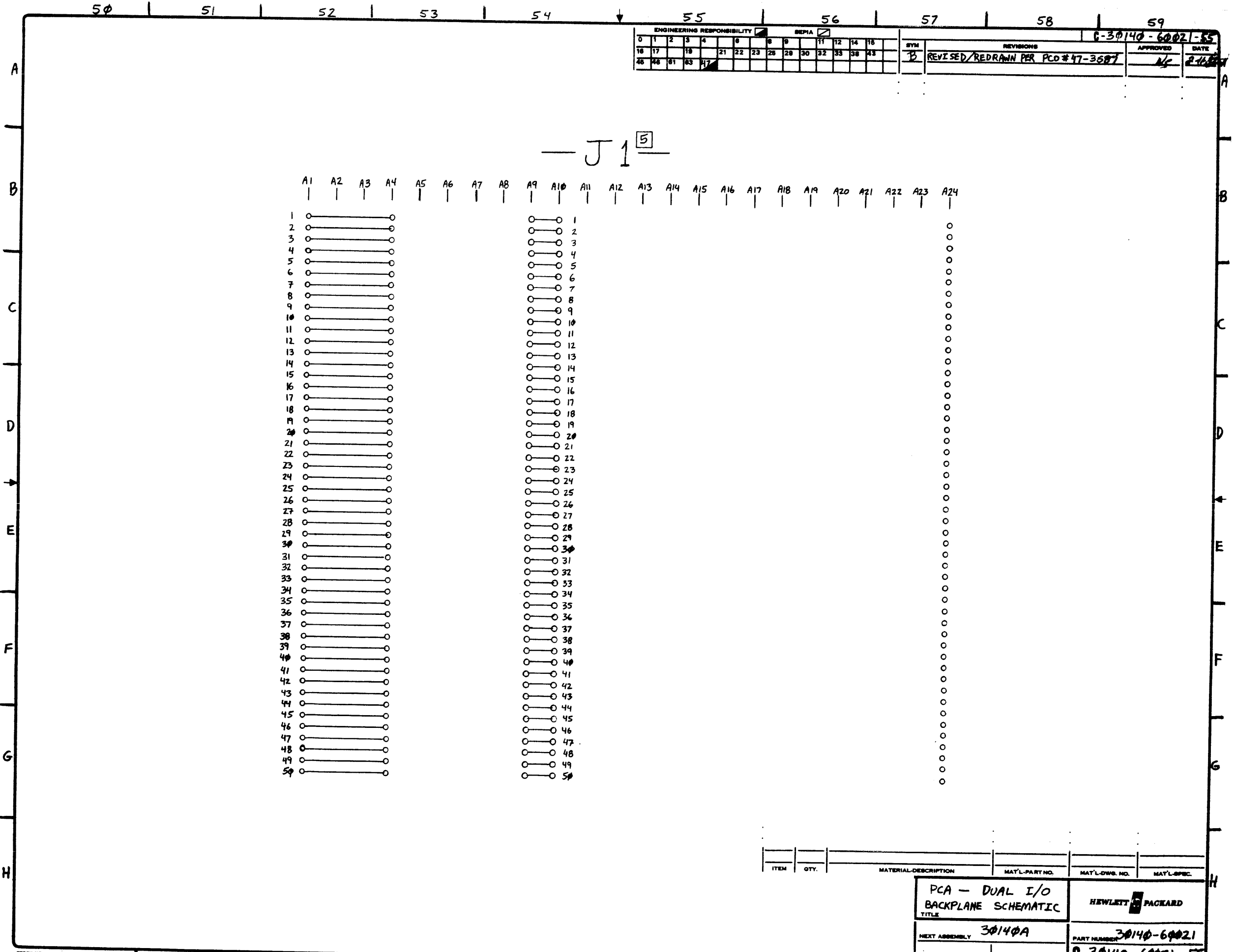


ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.
		PCA - DUAL I/O BACKPLANE SCHEMATIC	HEWLETT PACKARD		
		TITLE	30140A		
		NEXT ASSEMBLY	30140-60021		
		FINISH	PART NUMBER		
		SCALE	C-30140-60021-53		

ENGINEERING RESPONSIBILITY																REVISED/REDRAWN PER PCO# 47-3587		APPROVED	DATE
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	C		AS	2/1/82

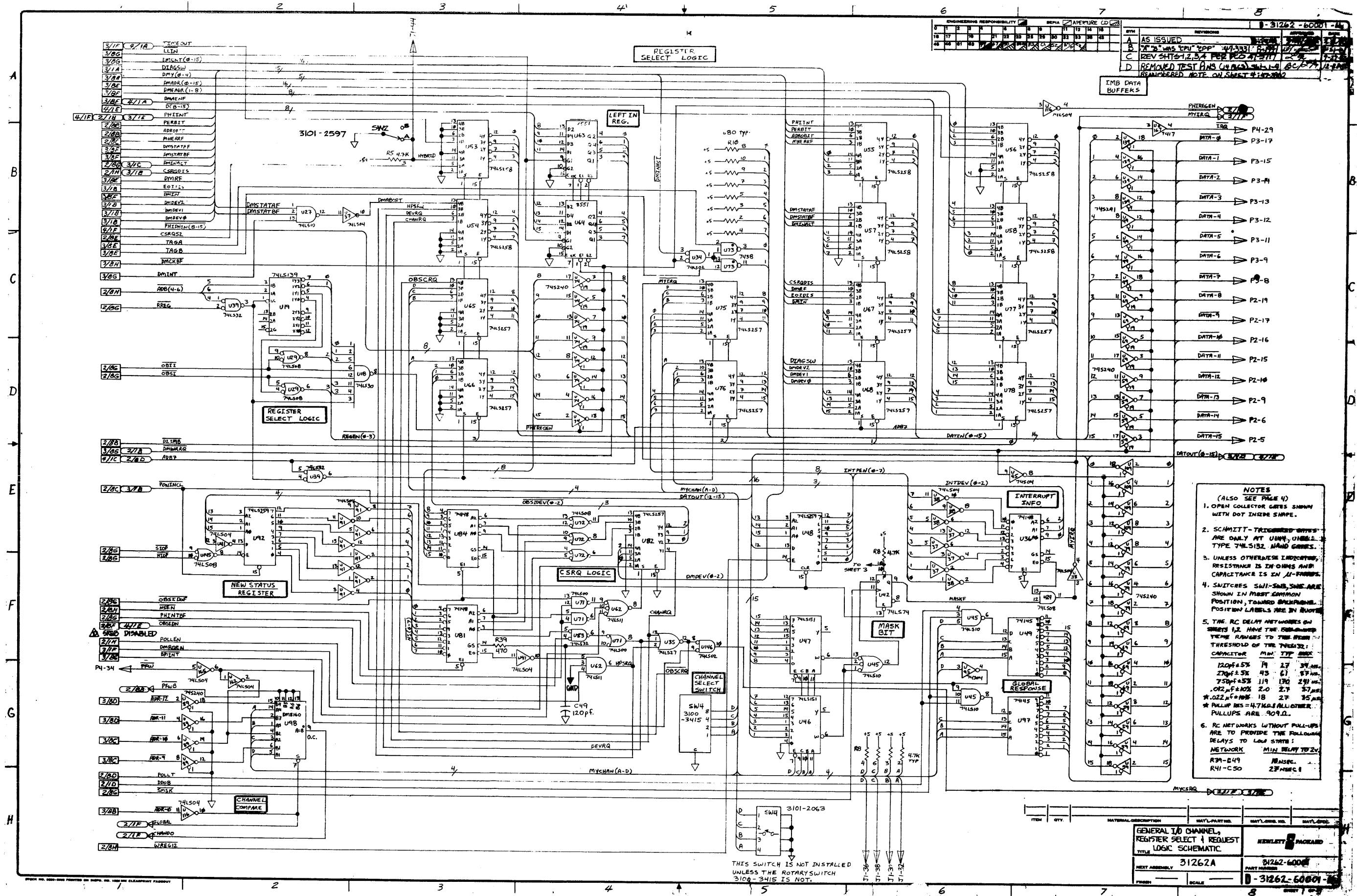


ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWS. NO.	MAT'L SPEC.
		PCA - DUAL I/O BACKPLANE SCHEMATIC	HEWLETT PACKARD		
		TITLE	30140A		
		NEXT ASSEMBLY	PART NUMBER 30140-60021		
		FINISH	C-30140-60021-54		



ENGINEERING RESPONSIBILITY																DEPT																REVISED/REDRAWN PER PCO #47-3587		APPROVED		DATE																			
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	C-30140-60021-55		K		2-16-87	

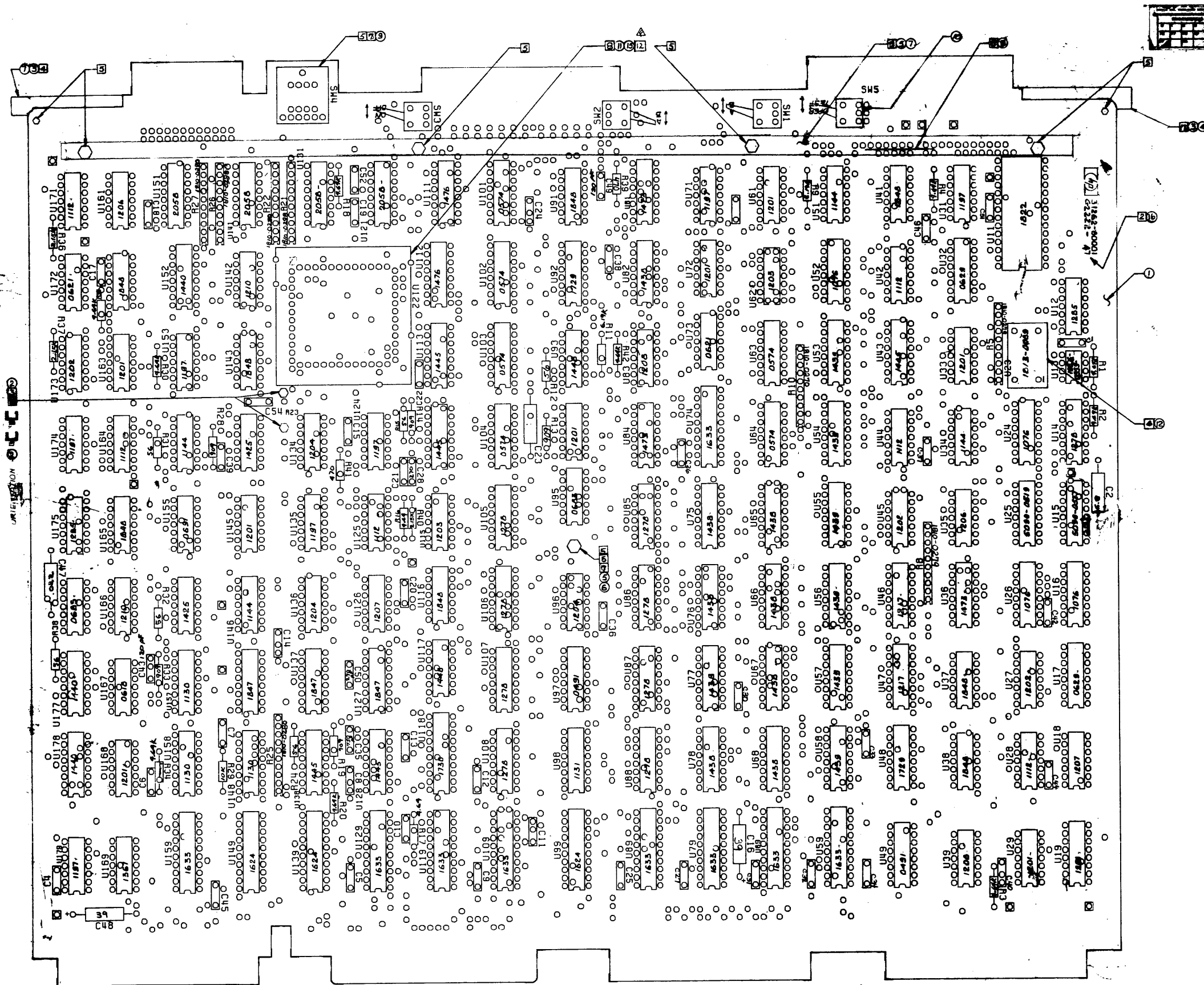
ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.
		PCA - DUAL I/O BACKPLANE SCHEMATIC	HEWLETT-PACKARD		
		NEXT ASSEMBLY 30140A	PART NUMBER 30140-60021		
		FINISH	SCALE		C-30140-60021-55



REV	DESCRIPTION	DATE	BY
A	AS ISSUED		
B	REV 31262-6001-1		
C	REV 31262-6001-2		
D	REV 31262-6001-3		

- NOTES**  
(ALSO SEE PAGE 4)
- OPEN COLLECTOR GATES SHOWN WITH DOT INSIDE SHAPE.
  - SCHMITT-TRIGGERED GATES ARE ONLY AT U44, U45, U46, U47, U48, U49, U50, U51, U52, U53, U54, U55, U56, U57, U58, U59, U60, U61, U62, U63, U64, U65, U66, U67, U68, U69, U70, U71, U72, U73, U74, U75, U76, U77, U78, U79, U80, U81, U82, U83, U84, U85, U86, U87, U88, U89, U90, U91, U92, U93, U94, U95, U96, U97, U98, U99, U100.
  - UNLESS OTHERWISE INDICATED, RESISTANCE IS IN OHMS AND CAPACITANCE IS IN  $\mu$ F.
  - SALICIDES SHOWN ARE SHOWN IN MOST COMMON POSITION, TOWARD BACK PANEL. POSITION LABELS ARE IN BRACKET.
  - THE RC DELAY NETWORKS ON GATES 1-2 HAVE THE FOLLOWING TIME CONSTANTS TO THE 50% THRESHOLD OF THE TRANSISTOR CAPACITOR MIN: 177 nsec.
- |   |     |     |              |
|---|-----|-----|--------------|
| 120pf ± 5%  | 19  | 27  | 39 nsec      |
| 270pf ± 5%  | 43  | 61  | 67 nsec      |
| 750pf ± 5%  | 119 | 130 | 293 nsec     |
| 1.02 $\mu$ f ± 10%  | 2.0 | 2.7 | 57 $\mu$ sec |
| * PULLUP RES = 4.7K $\Omega$ ALL OTHER PULLUPS ARE 909 $\Omega$ . |     |     |              |
- RC NETWORKS WITHOUT PULLUPS ARE TO PROVIDE THE FOLLOWING DELAYS TO LOW STATE: NETWORK MIN DELAY TO 2V.
- |         |          |
|---------|----------|
| R31-R49 | 1 nsec   |
| R41-C50 | 2.7 nsec |

GENERAL I/O CHANNEL REGISTER SELECT LOGIC SCHEMATIC	31262A	31262-6001
SCALE		

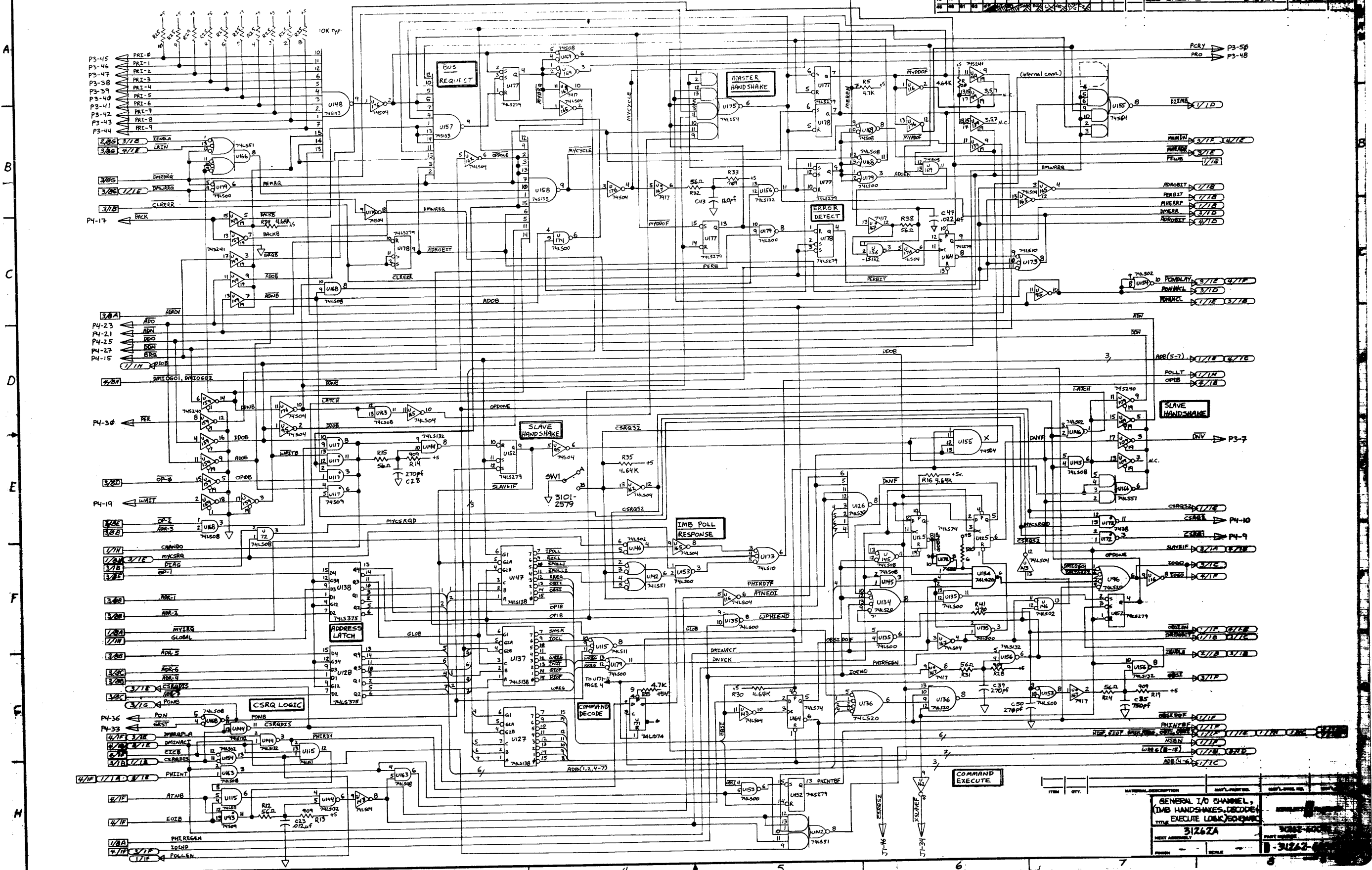


REV.	DESCRIPTION	DATE	BY
1	ISSUED FOR PRODUCTION	11/15/60	...
2	ADDED ITEM 14 TO DATE CODE CALLOUT DOC. CHG.	11/15/60	...
3	REMOVED TEST PINS (MINI-C) 47-3901	11/15/60	...
4	ADDED NOTE 12 PER DOC. CHG. MIN-C	11/15/60	...
5	REWORKED BOARD 2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	11/15/60	...

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

QTY	DESCRIPTION	PART NO.
16	1 LABEL - DATE CODE	9320-5320
18	2 SOCKET CLIPS	1800-0844
14	1 LABEL, WARRANTY	7120-6880
13	4 BRAD SPACER	4350-0466
12	1 I.C. DIGHTAL (M)	1818-0000
11	1 PINE	1186-6004
10	1 SWITCH	3101-2613
9	1 SWITCH, THERM 16 POS	3100-3415
8	1 LABEL	7120-6600
7	1 BRACE, PC BOARD	5040-6050
6	1 SPACER	5080-7810
5	5 SCRIBER 4-40 X .31	5000-0077
4	2 EXTRACTOR	5040-6008
3	2 PIN GRV. DOE X 280	1480-0116
2	2 SOLDER TERM. BRACKET	5000-1148
1	1 BRACKET	5000-1148

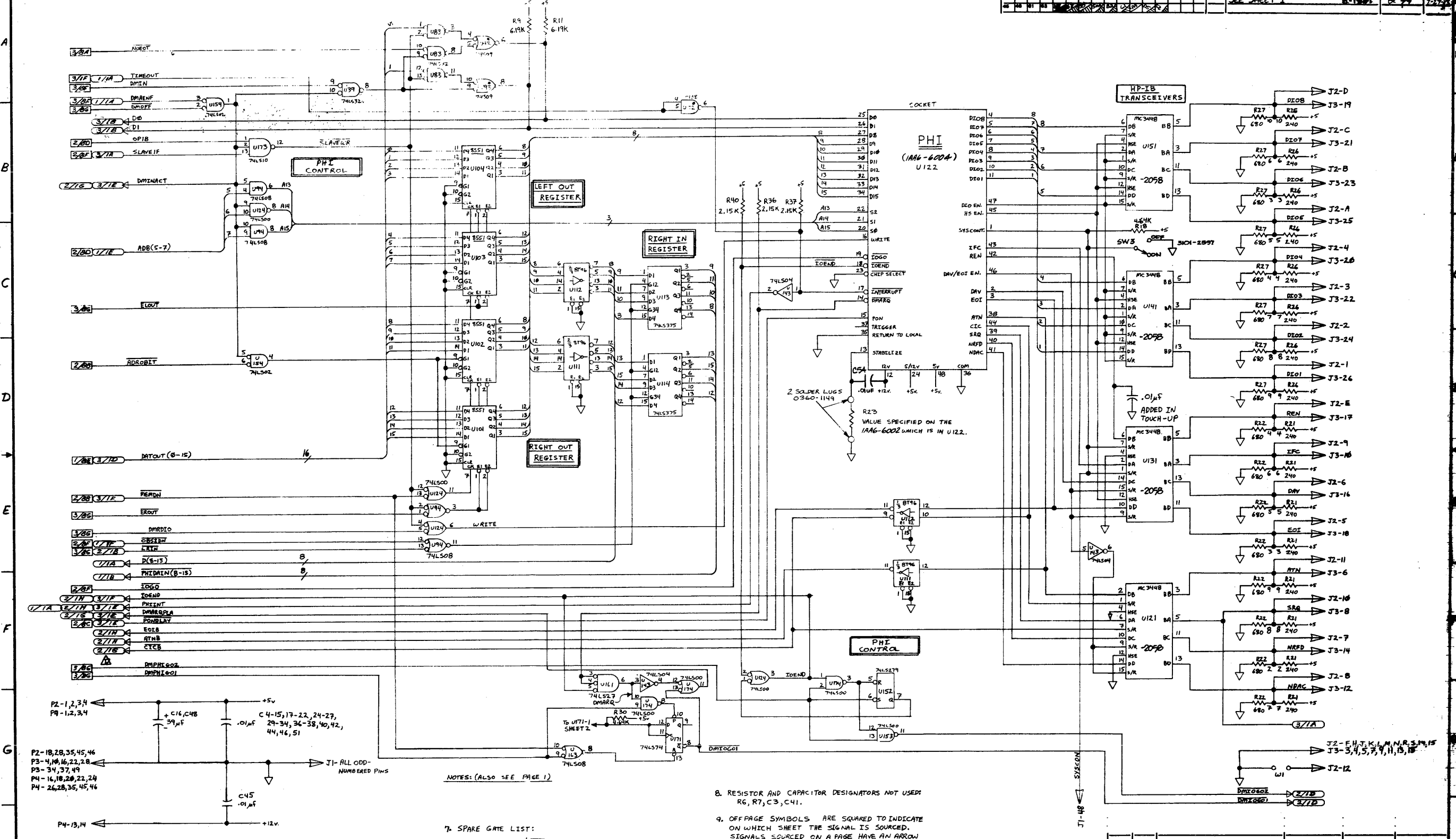
GENERAL 378 CHANNEL ASSY. HEWLETT PACKARD  
 TITLE SHEET-A 31262-60001-18  
 SCALE 2:1 31262-60001-18







ENGINEERING RESPONSIBILITY	DATE	REVISED	DATE
DESIGN	11/22/72	REVISED	11/22/72
CHECKED		REVISED	
APPROVED		REVISED	



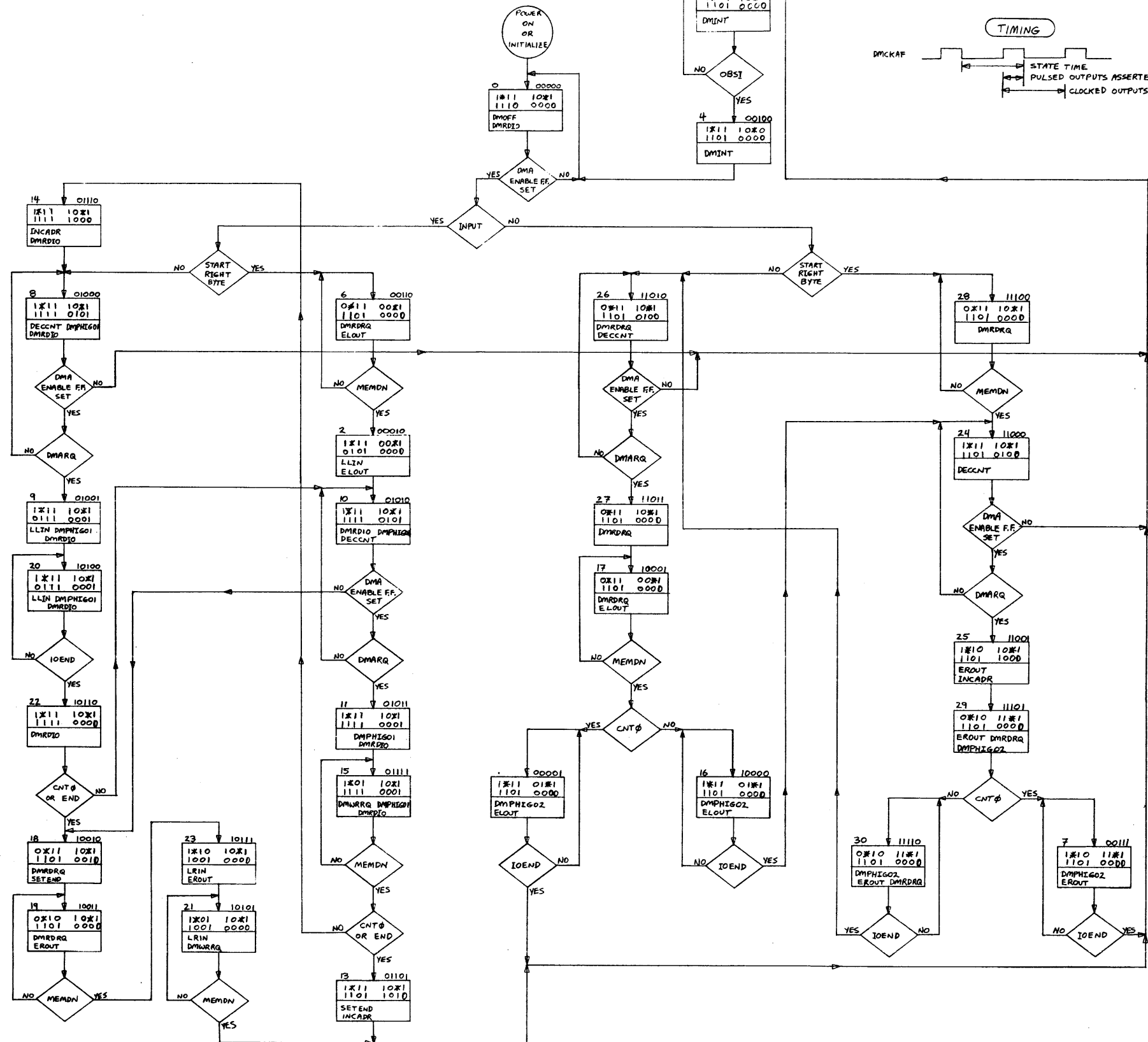
P2-1,2,3,4  
P3-4,16,22,28  
P3-34,37,49  
P4-16,18,20,22,24  
P4-26,28,35,45,46

+5V  
C16, C48  
39µF  
C4-15, 17-22, 24-27,  
29-34, 36-38, 40, 42,  
44, 46, 51  
.01µF  
C45  
.01µF  
+12V

J1- ALL ODD-NUMBERED PINS  
NOTES: (ALSO SEE PAGE 1)  
7. SPARE GATE LIST:  
1 U29  
2 74LS00

8. RESISTOR AND CAPACITOR DESIGNATORS NOT USED: R6, R7, C3, C41.  
9. OFF-PAGE SYMBOLS ARE SQUARED TO INDICATE ON WHICH SHEET THE SIGNAL IS SOURCED. SIGNALS SOURCED ON A PAGE HAVE AN ARROW POINTING TOWARD THE OFF-PAGE SYMBOL.

ITEM	QTY.	MATERIAL DESCRIPTION	MFG. PART NO.	MFG. LTR. NO.	MFG. SPEC.
<b>GENERAL I/O CHANNEL (HP-IB INTERFACE) SCHEMATIC</b>					
TITLE			HEWLETT-PACKARD		
PART NUMBER			9262-6001		
NEXT ASSEMBLY			9262-6001		
FINISH			SCALE		
DATE			9262-6001		



**LEGEND**

STATE NAME (DECIMAL VALUE OF STATE VARIABLES)

STATE VARIABLES (BINARY-DIGITS)

NOTE: ROMA1 AND ROMA2 APPEAR AS X IN ALL STATES, AS THEY ARE NOT USED BY THE DMA MACHINE.

MNEMONICS OF SIGNALS ASSERTED IN THIS STATE.

- INPUTS**
- CNT# = BYTE COUNT REGISTER EQUALS ZERO.
  - DMARQ = INPUT: INBOUND FIFO NOT EMPTY, OUTPUT: OUTBOUND FIFO NOT FULL.
  - IDEND = PHI HANDSHAKE COMPLETED.
  - MEMDN = MEMORY OPERATION COMPLETED.
  - OBSI = IMB "OBSI" COMMAND HAS BEEN DONE.
  - TAG = TAG BITS D0,D1 OF PHI INDICATE END OF TRANSACTION.
- OUTPUTS**
- DECCNT = DECREMENT BYTE COUNT AND COMPLEMENT LEFT/RIGHT BIT ONCE IN THIS STATE.
  - DMINT = ASSERT CSRQ. AFTER OBSI, CSRQ IS HOLD OFF.
  - DMPHIG01 = START WRITE TO PHI. THIS WILL PROVIDE A PHI HANDSHAKE WHICH RELEASES IOG0 AS IOEND IS ASSERTED, ASYNCHRONOUS TO DMCKAF.
  - DMPHIG02 = START READ FROM PHI. THIS PROVIDES A PHI HANDSHAKE WHICH RELEASES IOG0 AS IOEND IS ASSERTED, ASYNCHRONOUS TO DMCKAF.
  - 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 6, THE SLAVE MAY OVERRIDE DMRDIO. REQUEST READ OF MEMORY.
  - DMWRDQ = REQUEST WRITE TO MEMORY. THE CLOCK SIGNAL 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 TERMINATING STATE.

- NOTES**
- OUTPUTS OCCURRING IN CONSECUTIVE STATES DO NOT SWITCH BETWEEN STATES, EXCEPT LLIN, WHICH IS TAKEN DIRECTLY FROM THE TERMINAL BUS.
  - THESE INPUTS ARE ASYNCHRONOUS: IOEND, MEMDN, DMARQ, OBSI.
  - THE ONLY PULSED OUTPUTS ARE: DECCNT, SETEND, OBSI.
  - BOTH OUTPUT DATA REGISTERS ARE LOADED AT OCCURRENCE OF MEMDN.
  - THE "NO-IB" "END" MESSAGE IS SENT IN STATES 7,16 UNLESS INHIBITED WITH A DMA CONTROL BIT.
  - MEMDN REMAINS ASSERTED UNTIL BOTH DMWRDQ AND DMWRDQ ARE NOT ASSERTED.
  - ONCE DMWRDQ IS ASSERTED, THE MEMORY CYCLE WILL COMPLETE EVEN IF DMWRDQ IS REMOVED BEFORE MEMDN.

ITEM	QTY.	MATERIAL DESCRIPTION	MATL. PART NO.	MATL. QTY. NO.	QTY. USED
GENERAL I/O CHANNEL (DMA MACHINE FLOWCHART) SCHEMATIC					
TITLE: 31262A					
NEXT ASSEMBLY: 31262-0001					
DRAWN BY: [Signature]					

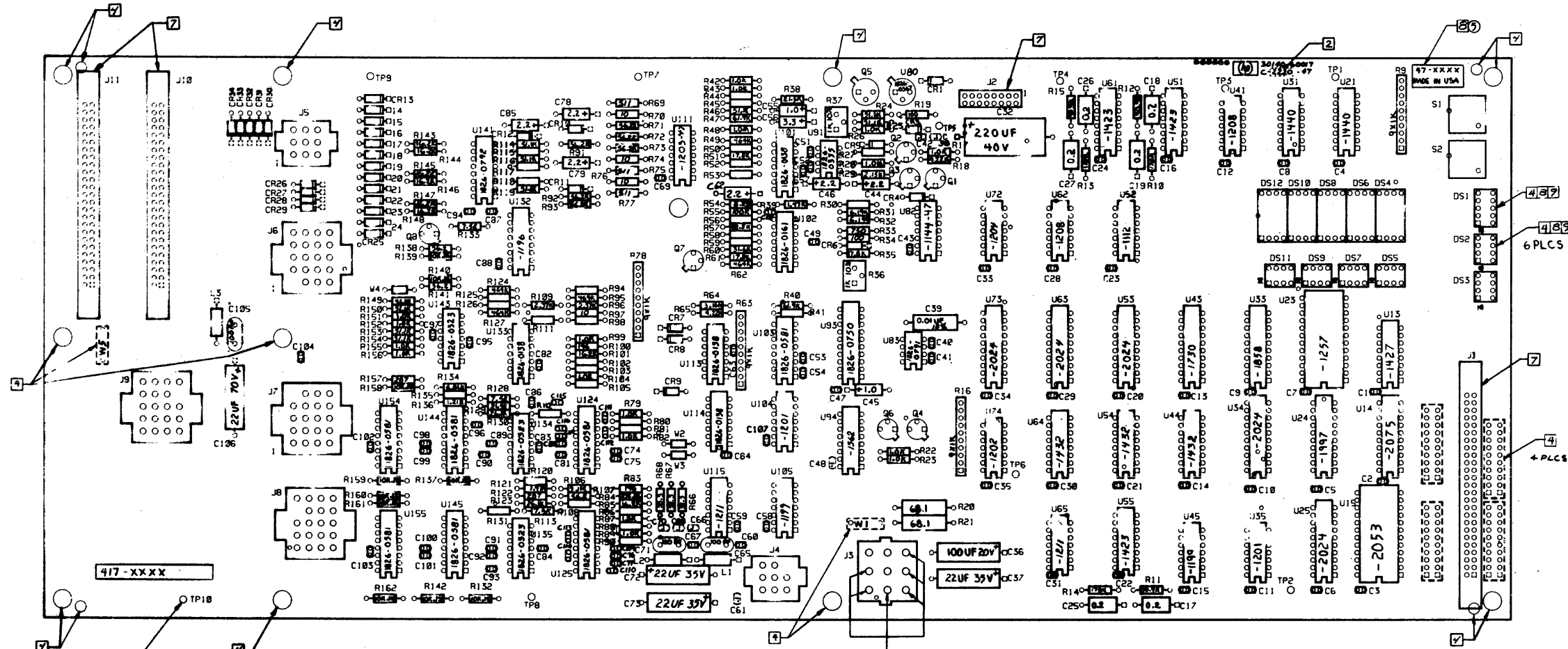
# DC POWER PCAs A/B

SECTION

IV

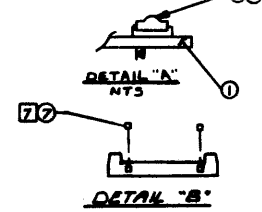
This section provides component location and schematic diagrams for the PCAs located in the power section of the System Processor Unit. The PCA diagrams appear according to an ascending part number sequence. A listing of this sequence is shown below along with drawing titles and page numbers.

P/N	DWG. TITLE	PAGE
E-30140-60017-7	PCA PSC ASSY. DWG.	4-2
D-30140-60017-51	PCA PSC SCHEMATIC	4-3
-52	"	4-4
-53	"	4-5
-54	"	4-6
D-30140-60017-55	"	4-7
D-30140-60022-3	PCA SSDP ASSY. DWG.	4-8
D-30140-60022-51	PCA SSDP SCHEMATIC	4-9
D-30140-60022-52	"	4-10
D-30140-60024-1	PCA MSD (PS1) ASSY. DWG.	4-11
D-30140-60025-1	PCA BSD (PS4) ASSY. DWG.	4-12
F-30140-60091-1	PCA PDM ASSY. DWG.	4-13
D-30140-60091-51	PCA PDM SCHEMATIC	4-14
-52	"	4-15
D-30140-60091-53	"	4-16
D-30140-60092-1	PCA SSDP-B ASSY. DWG.	4-17
D-30140-60092-51	PCA SSDP-B SCHEMATIC	4-18



NOTES:  
 UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE IN OHMS  
 ALL RESISTORS ARE 10K  
 ALL CAPACITANCE IN MICROFARADS  
 ALL CAPACITORS ARE .01UF (0160-5352)  
 ALL IC'S ARE 18 20-  
 1. INSTALL ITEM ②  
 2. INSTALL ITEM ③ TO PLACES  
 3. MASK AS INDICATED PRIOR TO LOADING  
 4. ALL BOARD LOADING & HANDLING MUST BE DONE AT AN ELECTROSTATIC DISCHARGE PROTECTED WORK STATION CONTAINING TABLE & FLOOR MATS & GROUNDED WRIST STRAP. TRANSPORT ASSEMBLY IN ELECTROSTATIC BAGS.  
 5. REMOVE UNUSED PINS FROM J4, J6, J7, J8 & J9 PRIOR TO LOADING.  
 6. INSTALL ITEM ① INTO J1, J2, J10, J11 PER DETAIL "B"

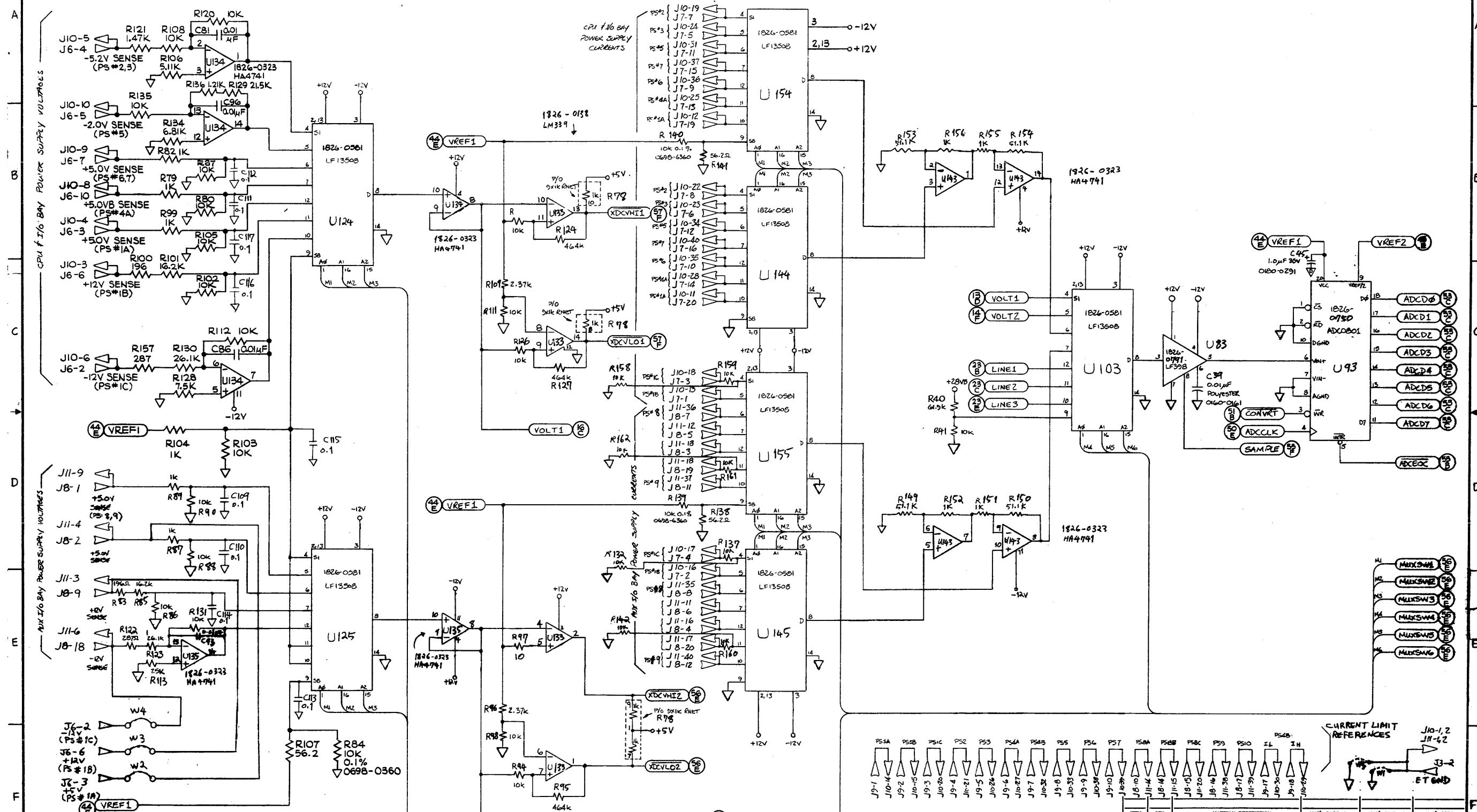
② LOAD ITEMS ③ THRU ⑥ IN TOUCHUP  
 ③ LOAD ITEMS ③ & ④ PER DETAIL "A". USE FORM TOOL T-116724.  
 ④ USING AN OHMMETER CHECK FOR A RESISTANCE OF GREATER THAN 25 OHMS BETWEEN EACH OF THESE 5 POINTS  
 II. INSPECTION CRITERIA, HP STD. SEC. 410



1	UNL. DATE CODE	650-8130
2	ASSEMBLY QTY	1000
3	MANUFACTURING CD	110-1
4	DATE	11/10/67
5	REVISED BY	
6	REVISED DATE	
7	REVISED QTY	
8	REVISED BY	
9	REVISED DATE	
10	REVISED QTY	
11	REVISED BY	
12	REVISED DATE	
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100	REVISED QTY	

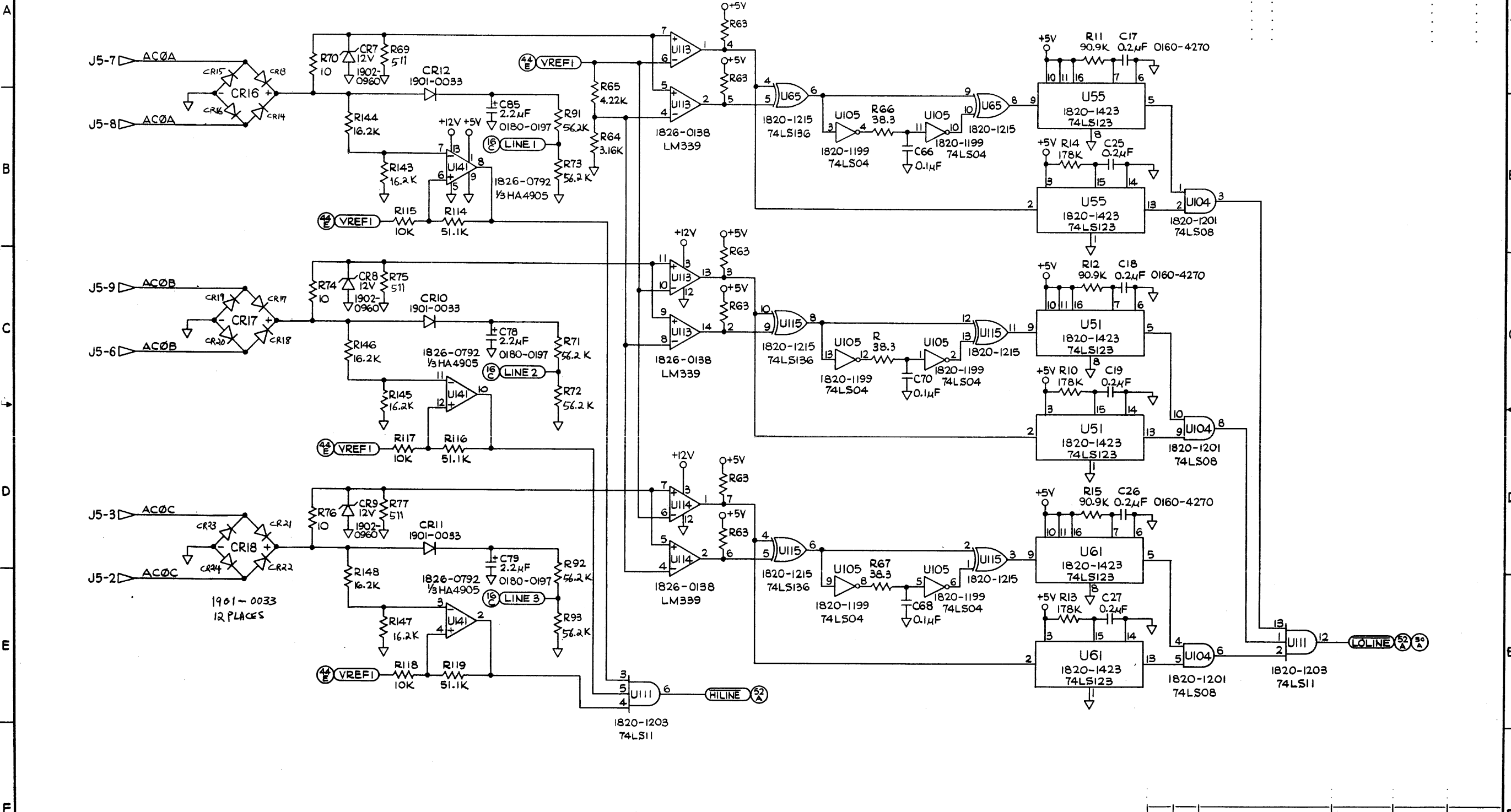
PCR-PWR.SYS.CONTROL  
 ASS. DWG.  
 30140A  
 30140-6001-7  
 SCALE 2:1  
 E-30140-6001-7

ENGINEERING RESPONSIBILITY										REVISIONS										DATE																													
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
REVISED & REDRAWN PER PCD 37-3762																																																	

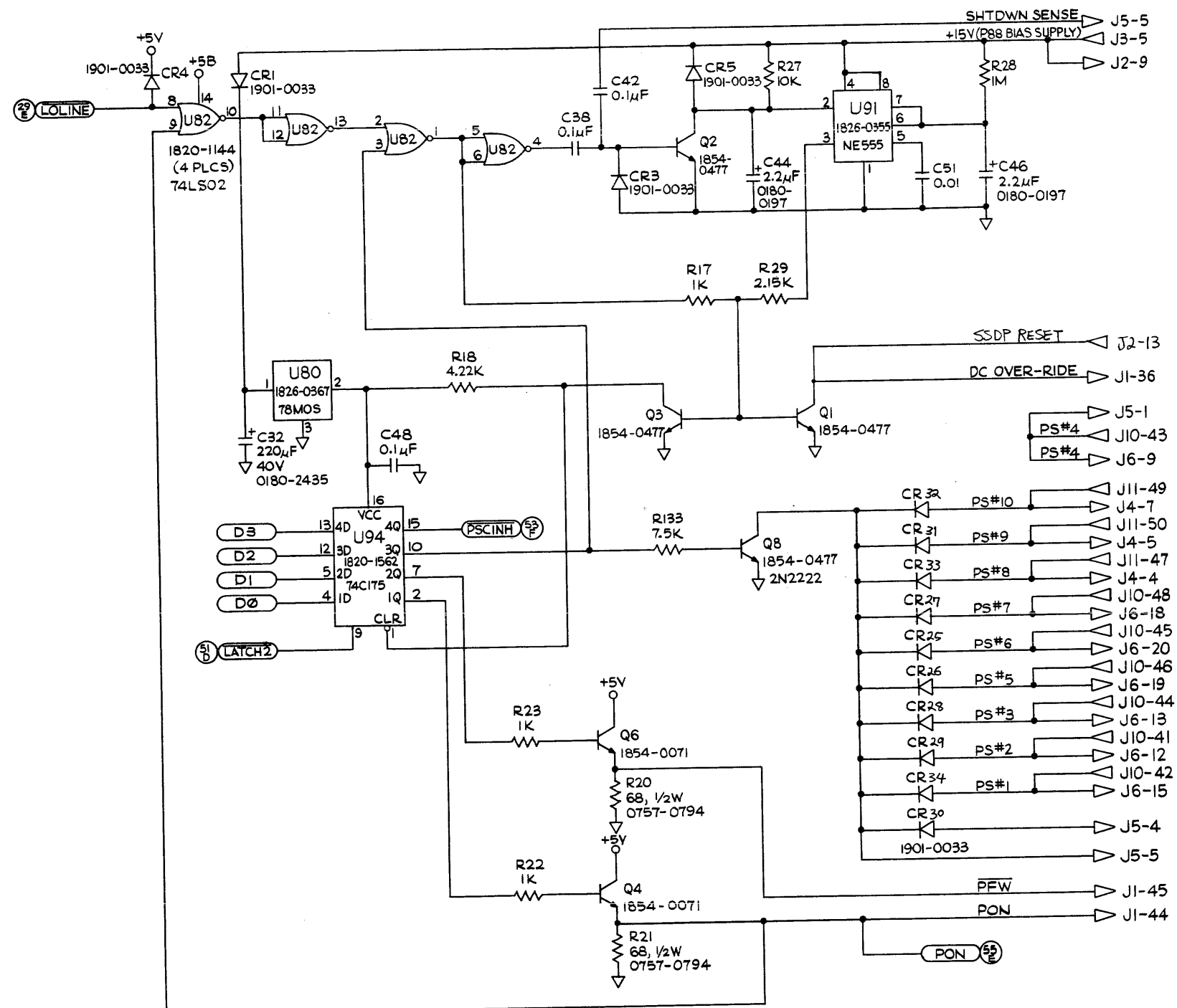


PCA-PWR SYS CNTRL		HEWLETT PACKARD	
TITLE SCHEM DWG		PART NUMBER	
30140A		30140-60017	
NEXT ASSEMBLY		PART NUMBER	
30140A-60017-S1		30140-60017-S1	
FORM	SCALE	DATE	
		1981	

ENGINEERING RESPONSIBILITY															REVISED 1 (REWORK) PER PC 47-3462															APPROVED															DATE														
BYM															F															DATE															DATE														



ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L ORG. NO.	MAT'L SPEC.
PCA-PWR SYS CNTRL					
TITLE SCHEM DWG					
NEXT ASSEMBLY 30140 A					
PART NUMBER 30140-60017					
FINISH SCALE D-30140-60017-52					



POWER SUPPLY SHUTDOWN LINES

LIST OF DECOUPLING CAPACITORS  
 (NOTE) ALL THE DECOUPLING CAPACITORS ARE (0160-5352)  
 0.01 uF UNLESS OTHERWISE SPECIFIED

C 1-16, 20-24, 28-31, 33-35, 40, 41, 43  
 C 47, 49, 50, 52-54, 57, 74-77, 82-84, 87, 89  
 C 91, 94, 95, 97-103, 107

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY. NO.	MAT'L SPEC.
		PCA-PWR SYS CNTRL			
		SCHM DWG			
		TITLE			
		NEXT ASSEMBLY	30140A		
		FINISH			
		SCALE			

HEWLETT  
 PACKARD

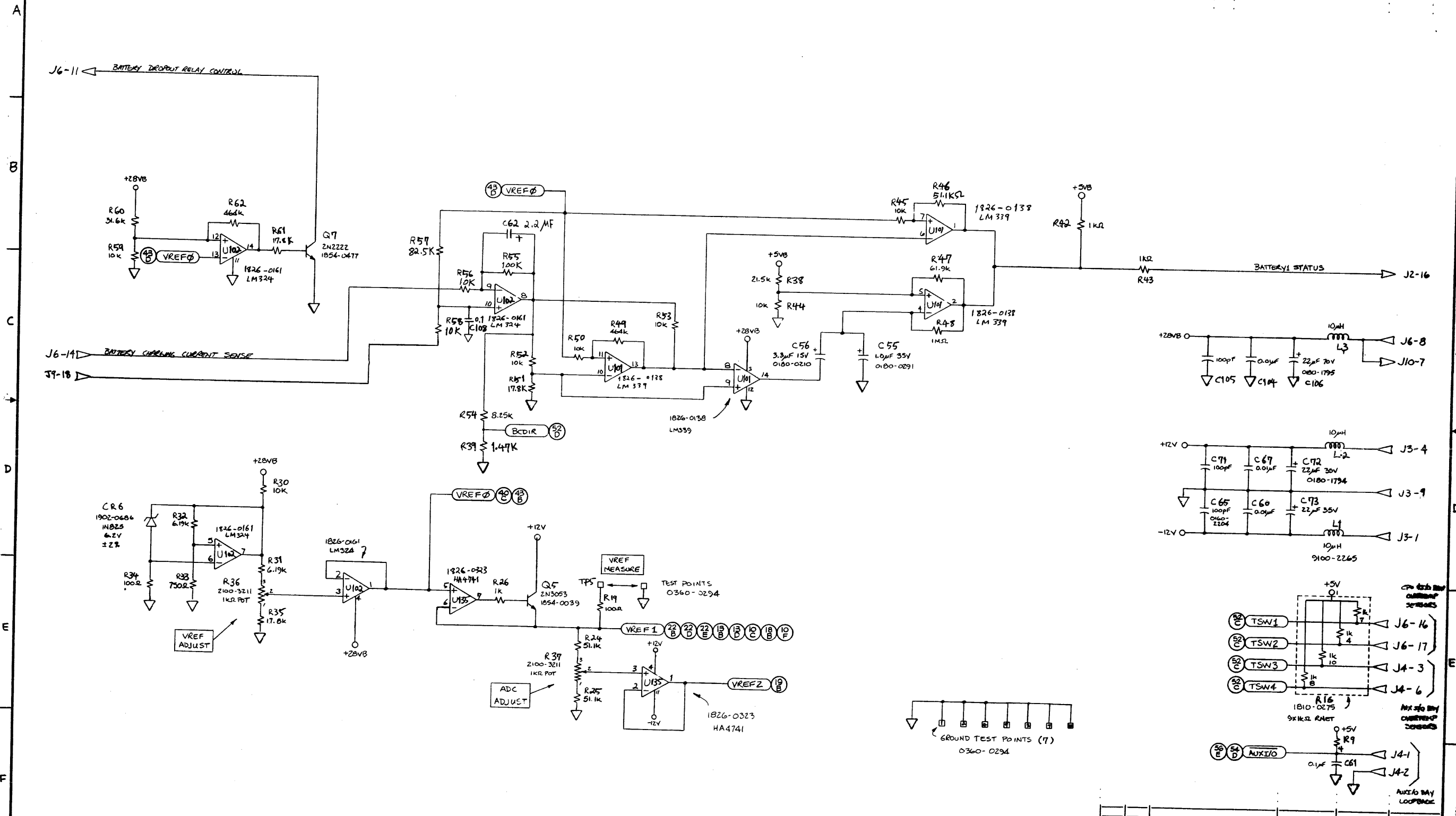
30140-6007

D-30140-60017-53

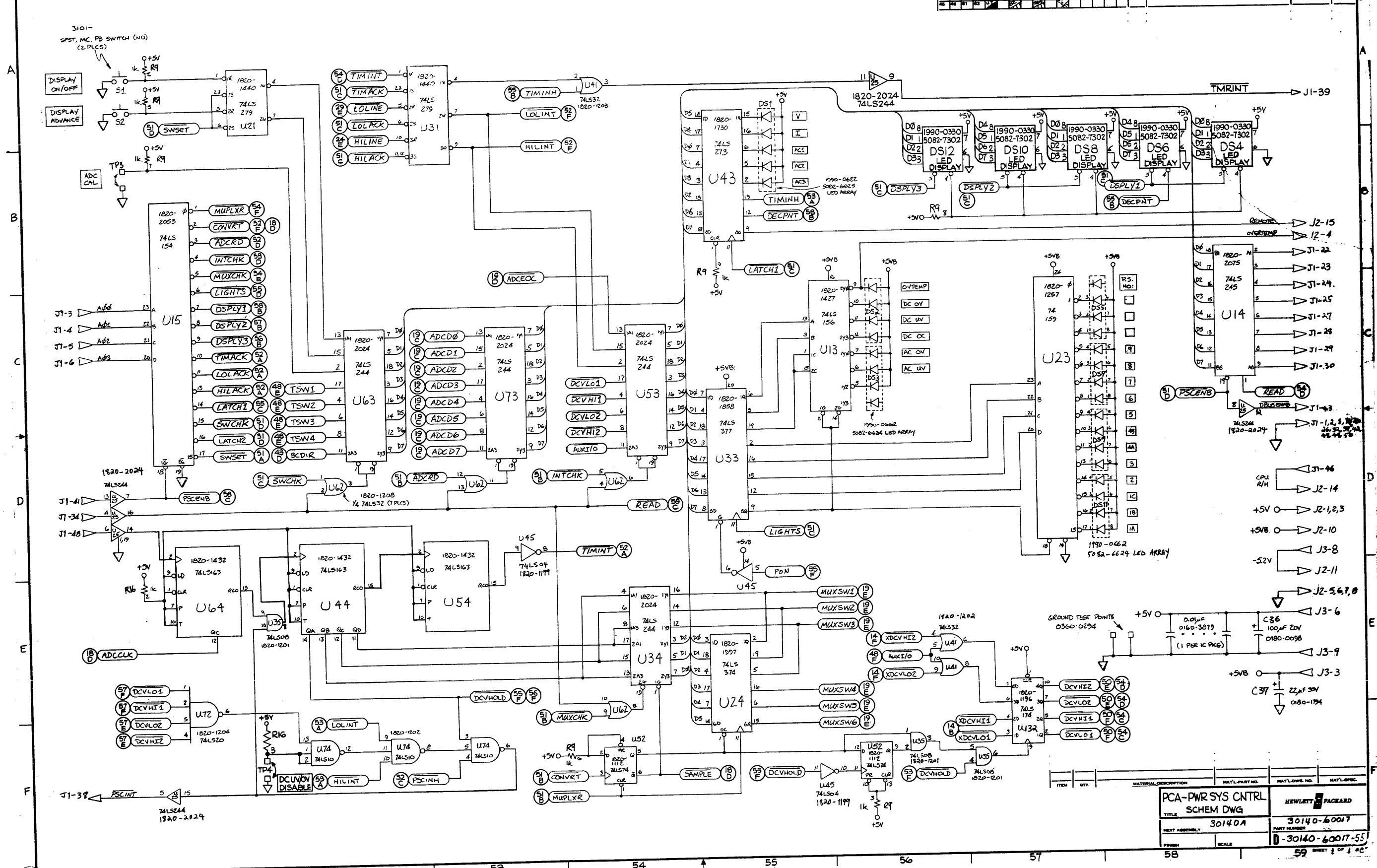
39 SHEET 4 OF 9



ENGINEERING RESPONSIBILITY												REVISIONS											
BY: [Signature]												REVISED & REDRAWN PER PCO 4/7/77											
DATE: 7/17/77												APPROVED: [Signature]											
PROJECT: 30140												DATE: 7/17/77											



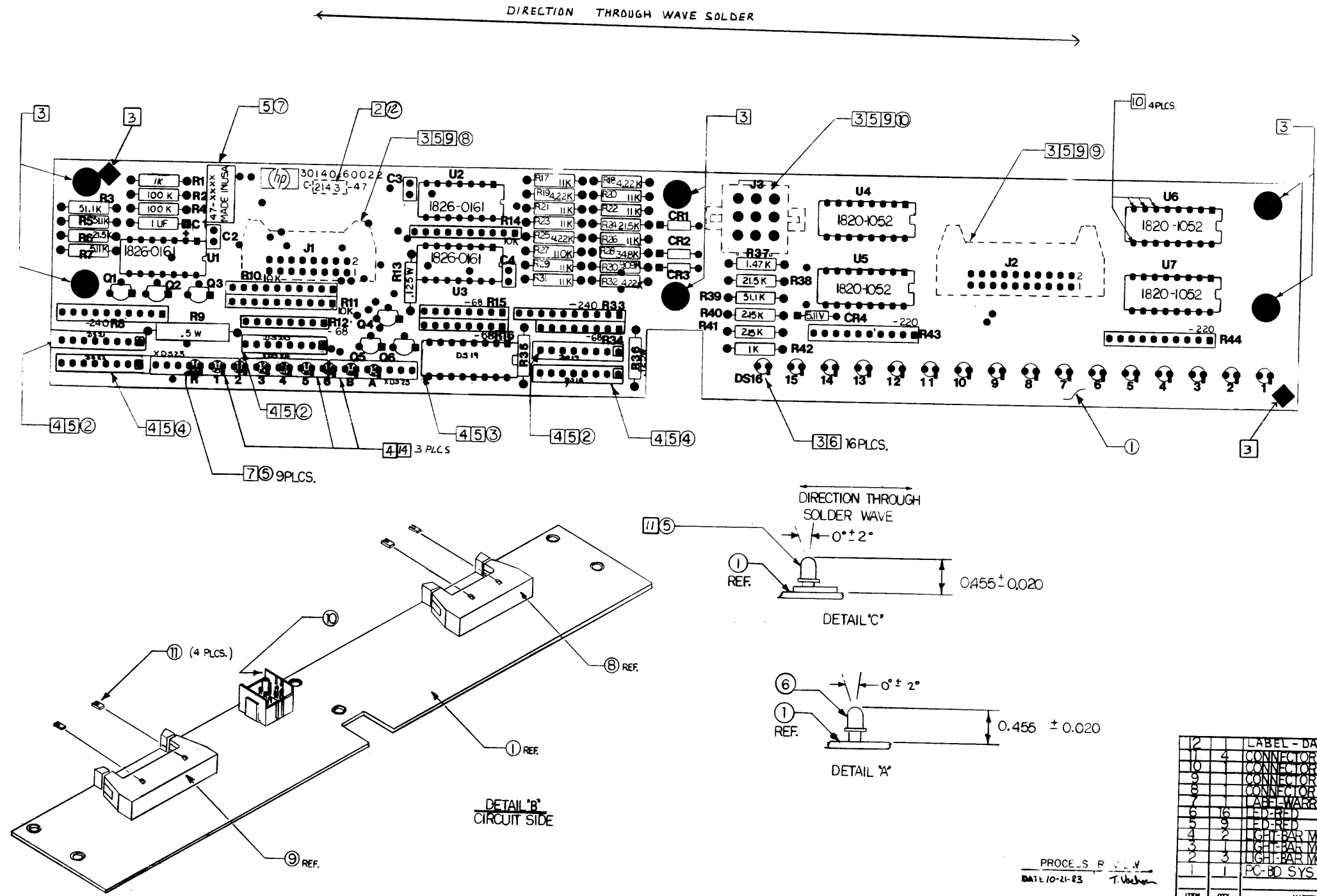
ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY. NO.	MAT'L SPEC.
PCA-PWR SYS CNTRL					
TITLE SCHEM DWG					
NEXT ASSEMBLY 30140A			PART NUMBER 30140-6647		
FINISH			SCALE D-30140-60017-54		



ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L WKS. NO.	MAT'L SPEC.
PCA-PWR SYS CNTRL SCHEM DWG					
TITLE		HEWLETT PACKARD		30140-60017	
NEXT ASSEMBLY		30140A		PART NUMBER	
FINISH		SCALE		D-30140-60017-55	
58		59		SHEET 1 OF 10	

Ref Dwg:  
 A-50 DATE CODE INFO.  
 D-51 Schematic  
 D-52 Schematic

STOCK NO 1130-2187 REV D-MATERIAL COPY 214 REG TAG											
ENGINEERING RESPONSIBILITY											
REVISIONS											
D-30140-60022-3											
REV	BY	DATE	APPROVED	DATE							
A	AS ISSUED			11-30-81							
B	REVISED PER PCD 47-3500	12/1/82		12/1/82							
C	REVISED PER DDC CHG.	09/1/83		2-20-83							
D	REVISED NOTES TO CLARIFY LEADERS OF PINS	09/1/83		3-22-83							
E	REVISED NOTES TO ADD LEAD TIME INFORMATION	10/1/83		10-31-83							



- NOTES:
- UNLESS OTHERWISE NOTED ALL RESISTORS ARE 1/8W 1% ALL IC'S ARE 1820-
  - INSTALL ITEM ②
  - MASK AS INDICATED PRIOR TO LOADING
  - LOAD SOCKETS XDS17 THRU 25 BEND LEGS 3/4 ENDS FLUSH ON BOARD. DO NOT LOAD COMPONENTS.
  - LOAD ITEM ② THRU ⑪ IN TOUCH-UP
  - LOAD ITEM ⑥ PER DETAIL "A" USE ASSY FIXTURE T-116714.
  - LOAD ITEM ⑤ PER DETAIL "C"
  - TEST BOARD ON 3060 TEST.
  - LOAD ITEMS ③ THRU ⑪ ON CIRCUIT SIDE PER DETAIL "B" AFTER PRETEST.
  - CUT LEAD FLUSH WITH BOARD ON CIRCUIT SIDE IN TOUCH-UP
  - CUT LED LENGTH TO  $3.275 \pm 0.010$
  - ALL TRANSISTORS TO BE A MAXIMUM OF  $9/32"$  IN HEIGHT OFF THE BOARD.
  - SPECIAL HANDLING REQUIRED AFTER TOUCH-UP. USE SPECIAL 1 INCH CUT DIVIDERS TO PROTECT LED'S FROM DAMAGE. SPECIAL NOTE TO BE ADDED TO EACH BOX.
  - LOAD XDS23, 24, 25 ON BOARD SO THAT GAP IS ON RIGHT SIDE (WIDER GAP IS NEXT TO DS19).
  - INSPECTION CRITERIA - HP STD. SECT-10.

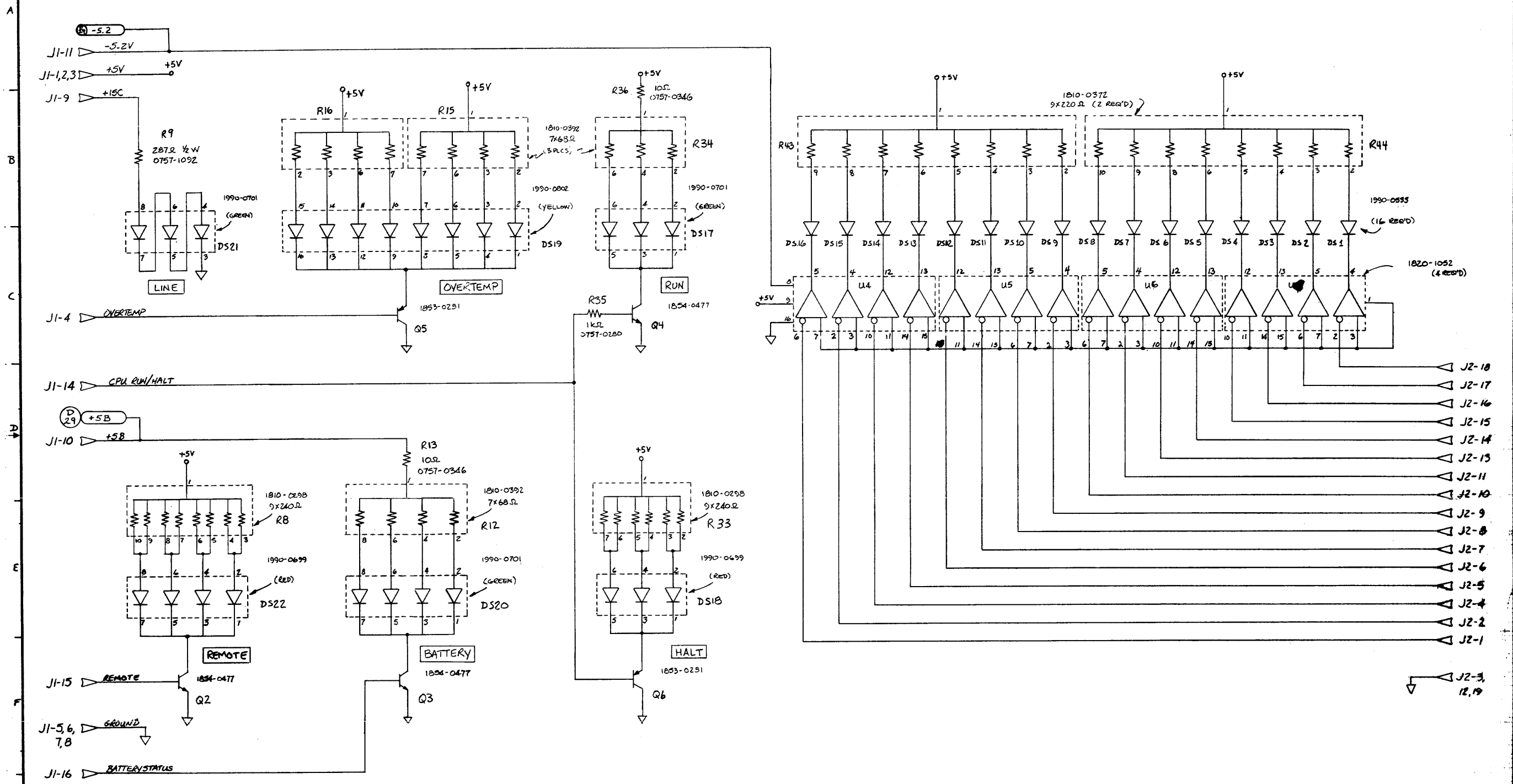
ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.
12	1	LABEL - DATE CODE	9320-5320		
11	4	CONNECTOR KEY	125-5595		
10	1	CONNECTOR J3	125-4002		
9	1	CONNECTOR J2	125-5249		
8	1	CONNECTOR J1	125-5248		
7	1	LABEL WARR. DATE CODE	7120-2530		
6	16	LED-RED	1890-0533		
5	9	LED-RED	1890-0282		
4	2	LIGHT-BAR MODULE RED	1890-0638		
3	1	LIGHT-BAR MODULE YELLOW	1890-0637		
2	3	LIGHT-BAR MODULE GREEN	1890-0701		
1	1	PC-BD SYS STATUS DISPLAY	30140-60022		

PROCESS P.C.W.  
 DATE 10-21-83 T. Weber

PCA-SYS. STATUS DISPLAY PANEL ASSEMBLY		HEWLETT PACKARD PERM. PRINT	
TITLE	30140A	PART NUMBER	30140-60022
NEXT ASSEMBLY		PART NUMBER	
FINISH		SCALE	3/1
			D-30140-60022-3

REF. DWG: D-3 ASSY.  
D-52 SCHEMATIC  
A-50 DATE CODE INFO.

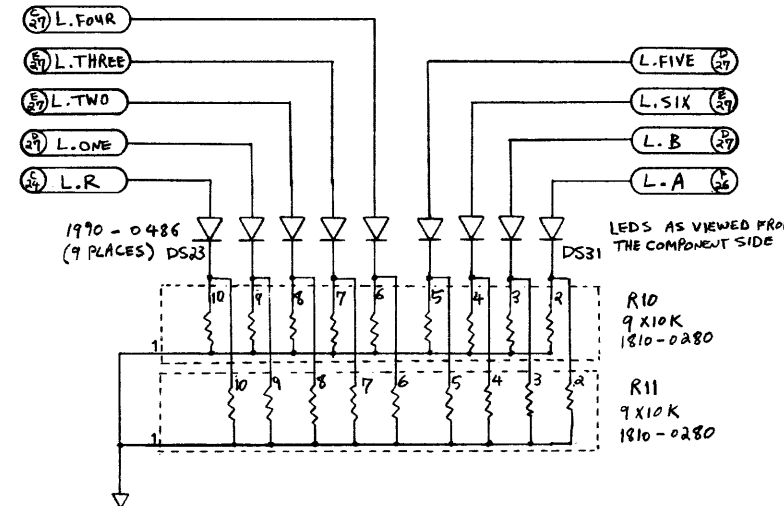
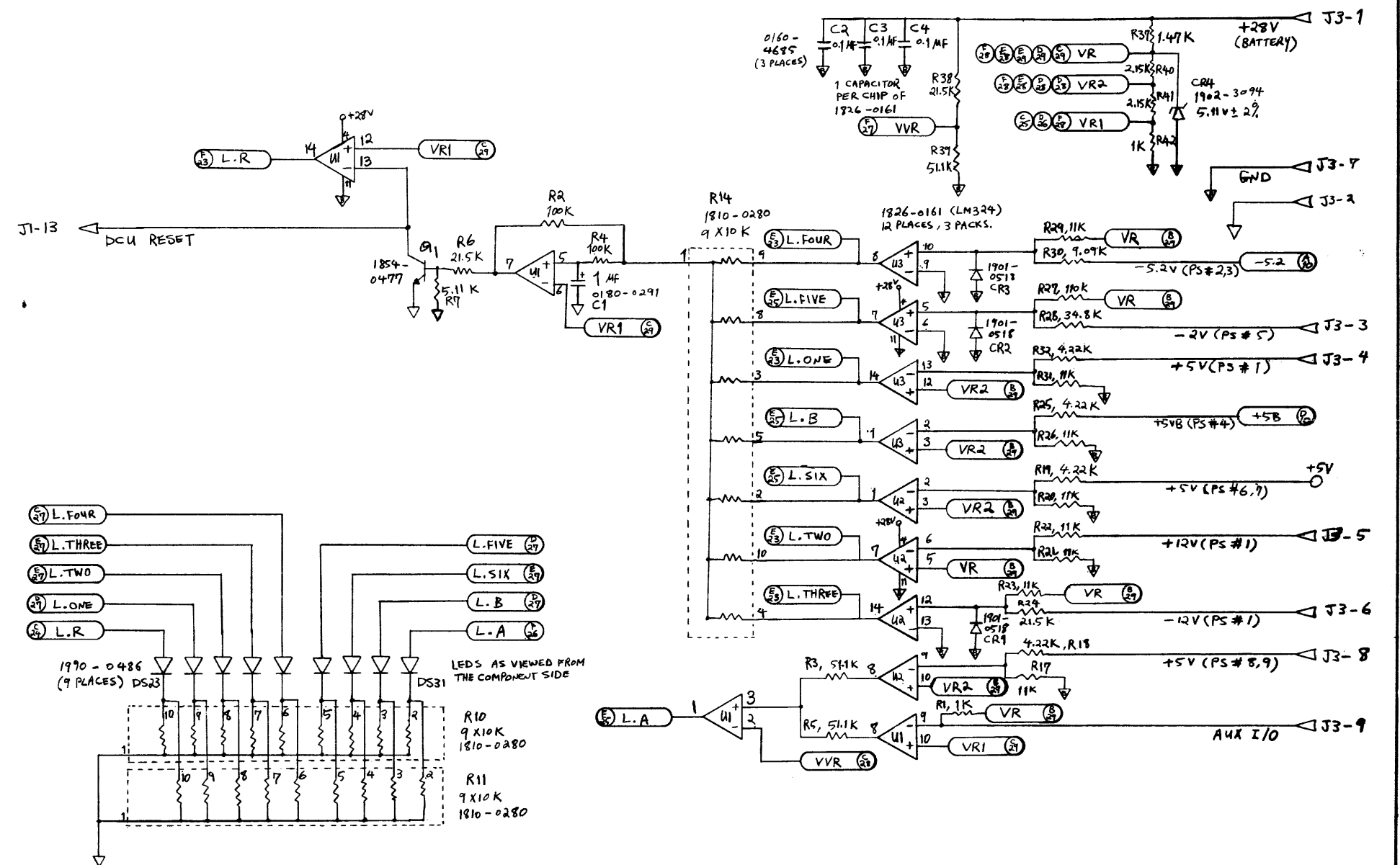
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DATE	BY	CHKD	APP'D	DATE	BY	CHKD	APP'D	DATE	BY	CHKD	APP'D	DATE	BY	CHKD	APP'D	DATE	BY	CHKD	APP'D
11/17/68	AS			11/17/68	AS			11/17/68	AS			11/17/68	AS			11/17/68	AS		
11/17/68	AS			11/17/68	AS			11/17/68	AS			11/17/68	AS			11/17/68	AS		
11/17/68	AS			11/17/68	AS			11/17/68	AS			11/17/68	AS			11/17/68	AS		



ITEM	QTY.	MATERIAL DESCRIPTION	MATL. PART NO.	MATL. QTY.	MATL. SPEC.
PCA-SYSTEM STATUS DISPLAY PANEL SCHEMATIC DWG					
30140A			30140-6000		
NEXT ASSEMBLY			PART NUMBER		
FORM			SCALE		
30140-6000			30140-6000		

Rev Dwg  
 D-3 Assy  
 D-51 Schematic  
 A-50 DATE CODE INFO.

ENGINEERING RESPONSIBILITY										REVISIONS										DATE	
BY: A										A5 ISSUED										1/30/81	
CHECKED																				1/28/81	

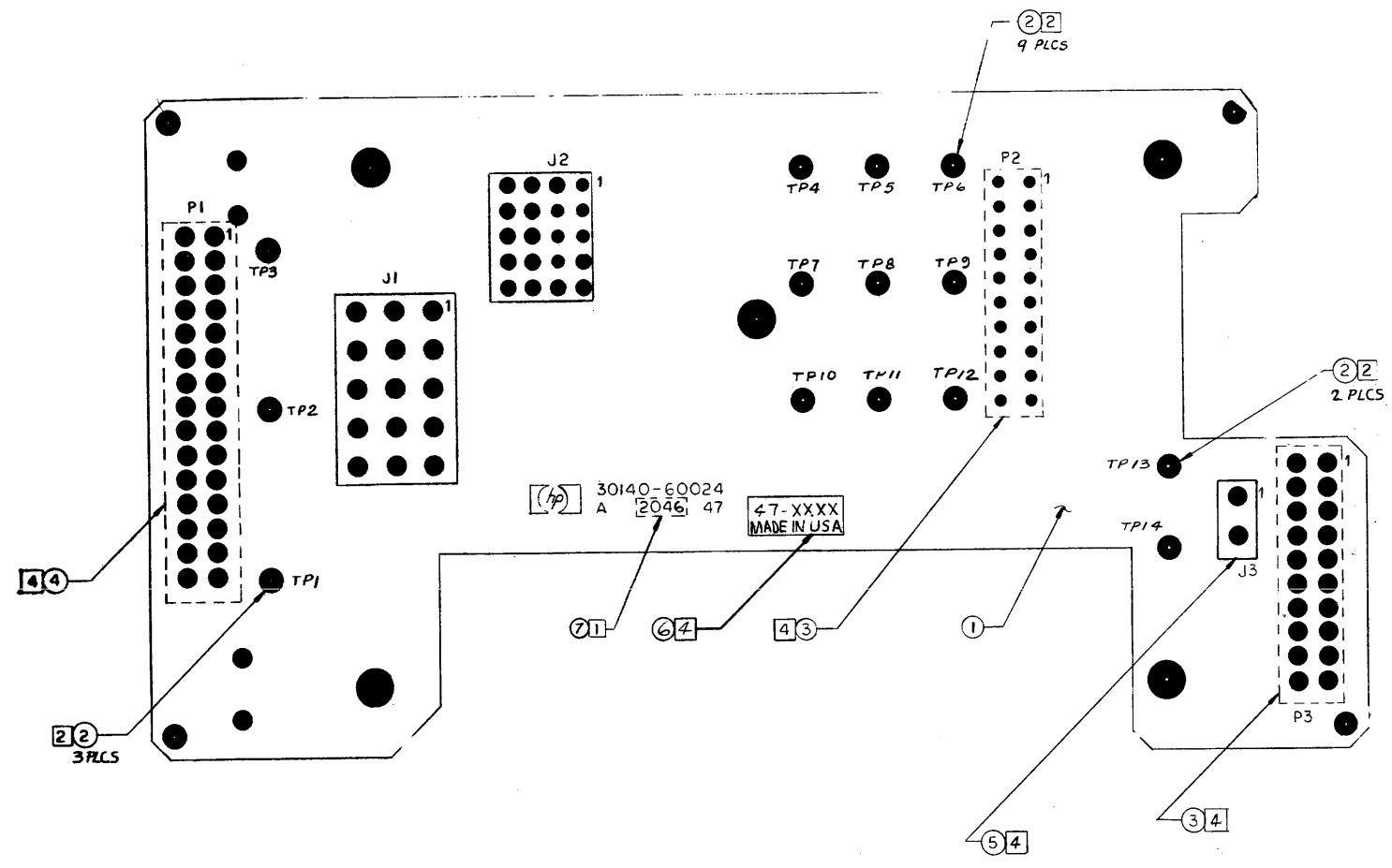


ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY NO.	MAT'L SPEC.
		PCA - SYSTEM STATUS DISPLAY PANEL			
		TITLE SCHEMATIC DWG			
		NEXT ASSEMBLY 30140 A			
		FINISH			
		SCALE			

HEWLETT  
 PACKARD  
 30140-60022  
 30140-60022-52

D-50	
A	AS ISSUED
B	REVISED PER PCA 47-3423
C	REVISED ITEM 2 PER DCI CW
D	REVISED NOTE ADDED ITEM 4-12-51

COMPONENT SIDE



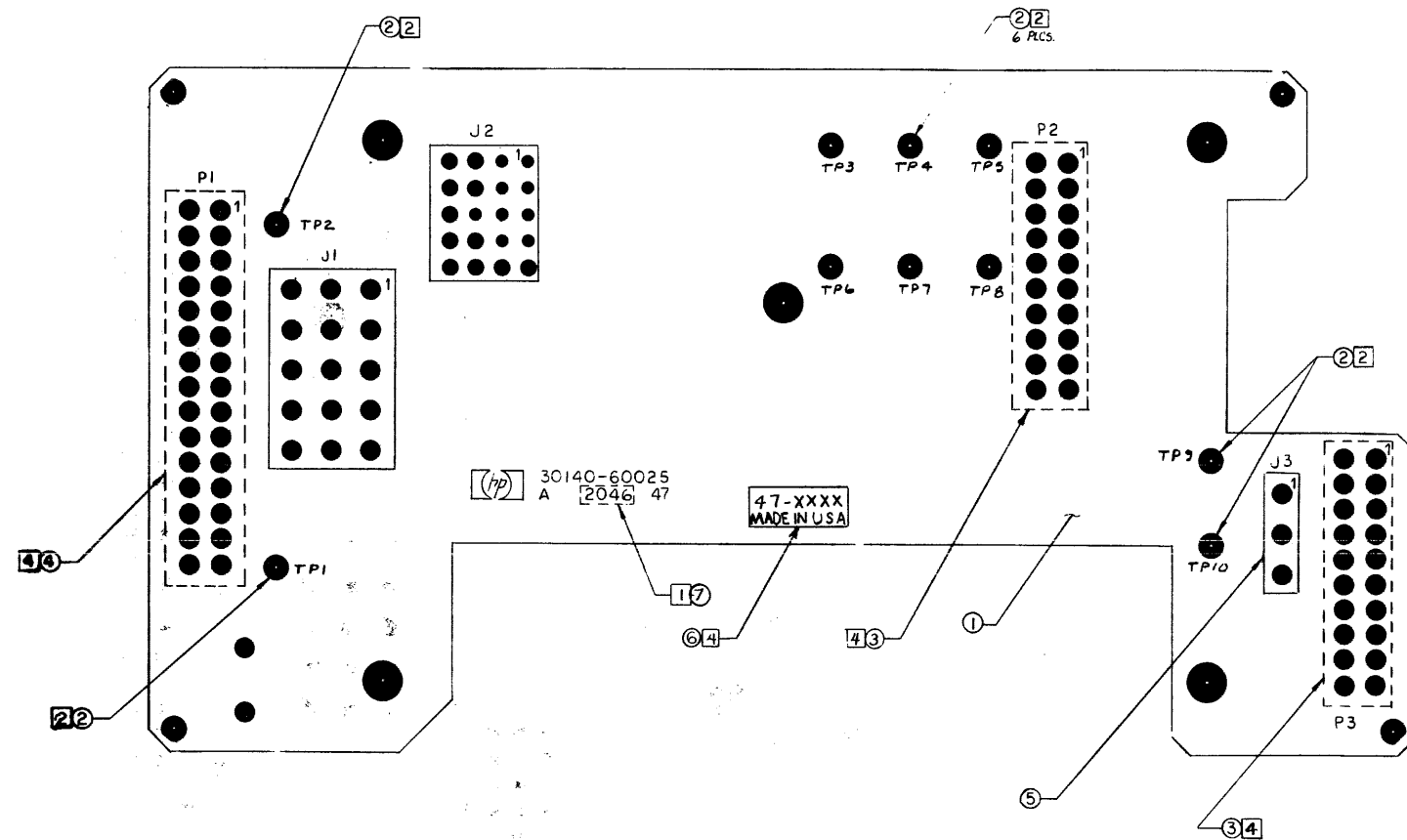
- NOTES:
- 1 INSTALL ITEM 7
  - 2 INSTALL ITEM 2 14 PLACES IN RIVET
  - 3 LOAD ALL COMPONENTS IN TOUCH-UP
  - 4 INSTALL ITEMS 3 AND 4 ON CIRCUIT SIDE
  - 5 INSTALL ITEM 6 ON COMPONENT SIDE

7	1	LABEL - DATE CODE	9320-5320
6	1	LBL-WARR DATE CD	7120-6830
5	1	CONNECTOR UTIL 2 PIN M	1251-4780
4	1	CONNECTOR 2X15 .1560	1251-2035
3	2	CONNECTOR 2X10 .1560	1251-2034
2	14	TERMINAL-SOLDER STUD	0360-0294
1	1	PCB-MSD	30140-60024

PCA - MSD (PS1)		HEWLETT PACKARD	
ASSY. DWG.			
30140A	30140-60024		
SCALE 2:1	D-30140-60024-1		

REV. DIV. 11. 1981. 10-21-83

COMPONENT SIDE



D-30140-	
A	AS ISSUED
B	REVISED WITH 4 PER PCA 47
C	REVISION 11/81
D	REVISION 10/83

NOTES:

- ① INSTALL ITEM ⑦
- ② INSTALL ITEM ② IN PLACES IN RIVET
- ③ LEAVE ALL COMPONENTS IN TOUCH-UP
- ④ INSTALL ITEMS ③ AND ④ ON CIRCUIT SIDE
- ⑤ INSTALL ITEM ⑥ ON COMPONENT SIDE

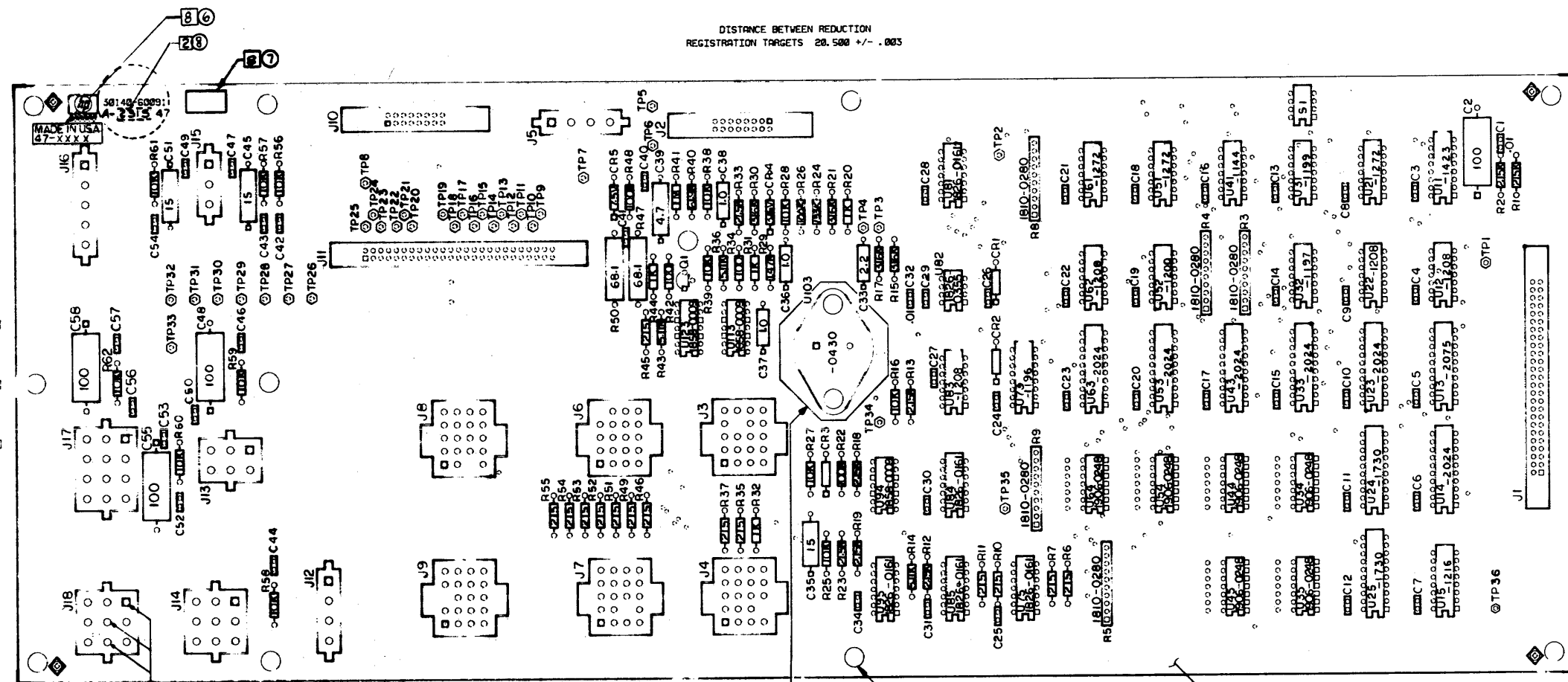
ITEM	QTY	DESCRIPTION	DATE	BY
7	1	LABEL - DATE CODE	1980	
6	1	LBL - WARR DATE CD	7180	
5	1	CONNECTOR UTIL 3PIN M	1251	
4	1	CONNECTOR 2X15 .1560	1251	
3	2	CONNECTOR 2X10 .1560	1251	
2	10	SOLDER TERMINALS		
1	1	PCB - BSD		

10-21-83 J. T. Vukobrat

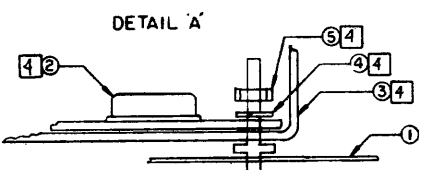
PCA-BSD (PS4)		HEWLETT PACKARD
ASSY. DWG.		
REV. NO.	30140A	30140-60025
SCALE	2:1	D-30140-600257

REF. DWGS.: D-2 MOD. D-3 MOD.  
A-50 DATE CODE INFO.  
D-51 THRU D-53 SCHEM.

REV	DESCRIPTION	DATE
A	AS ISSUED	11/27/82
B	REV'D PER PCO 47-8747	12/21/82
C	REV'D PER PCO 47-8747	12/21/82
D	DATE CODE INFO REV'D PER PCO 47-8747	11/27/82
E	REMOVED ALL DATE CODE INFO FROM BOARD	11/27/82
F	REV'D PER PCO 47-8747	11/27/82



30140-60091 11-3-82 (IC PLACES)



- NOTES:
- UNLESS OTHERWISE SPECIFIED:  
ALL RESISTANCE IN OHMS  
ALL CAPACITANCE IN MICROFARADS  
ALL CAPACITORS .1 (0160-4685)  
ALL IC'S ARE 1820-
  - INSTALL ITEM ⑧
  - MASK AS INDICATED PRIOR TO LOADING
  - ASSEMBLE ITEMS ② THRU ⑤ PRIOR TO LOADING PER DETAIL 'A'
  - ALL BOARD LOADING AND HANDLING MUST BE DONE AT AN ELECTROSTATIC DISCHARGE PROTECTED WORK STATION CONTAINING TABLE AND FLOOR MATS AND GROUNDED WRIST STRAP. TRANSPORT ASSEMBLY IN ELECTROSTATIC BAGS.
  - REMOVE UNUSED PINS FROM J3, J4, J6, J7, J8 & J9 PRIOR TO LOADING.
  - USE SUPPORT FIXTURE DURING WAVE SOLDER.
  - LOAD ITEMS ⑧ & ⑨ IN TORN UP.
  - AFTER WAVE SOLDERING, USING AN OHMMETER CHECK FOR A RESISTANCE OF GREATER THAN 25 OHMS BETWEEN THESE 3 POINTS.
  - PRETEST USING THE 3060 TEST SYSTEM.
  - INSPECTION CRITERIA, HP STD. SEC. 410.

REVISED REV 1/1  
DATE 11-75 BY 1/1

REV	DESCRIPTION	DATE
8	LABEL - DATE CODE	4330-8320
7	LBL. SERIAL	1720-28378
6	LBL. WARR. DATE CD	1720-6830
5	NUT	2420-0003
4	WASHER - I-K	2190-0851
3	TO-3 HEAT SINK	1205-0516
2	TO-3	1820-0430
1	ASSEMBLY	30140-60091

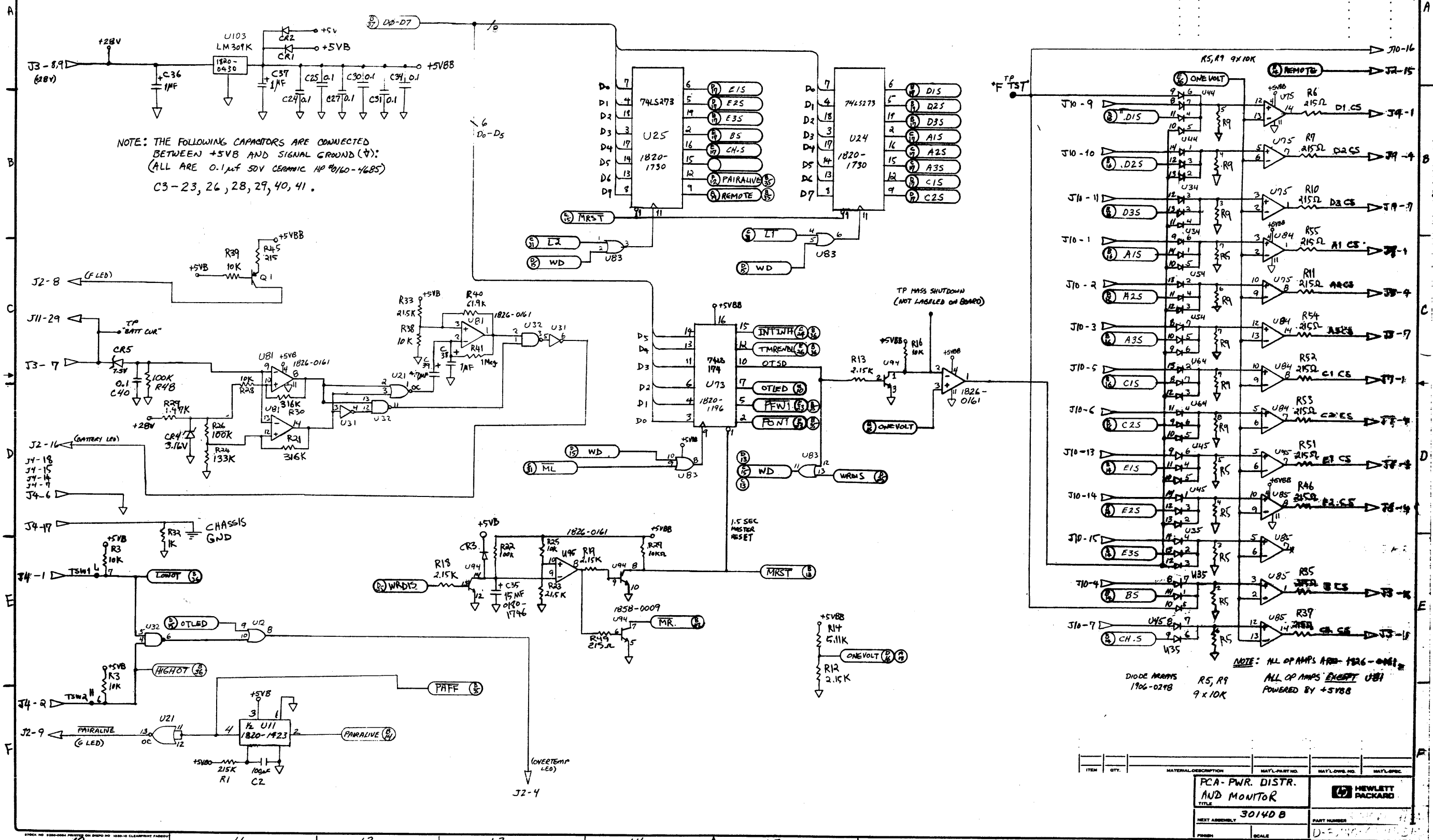
  

PCA - PDM	HEWLETT PACKARD
ASSY. DWG.	
30140B	30140-60091
15/1	F-30140-60091-1



REF. DWGS: F-1 ASSY.  
A-50 DATE LOGUE INFO.  
D-52, D-53 SCHEM.

ENGINEERING RESPONSIBILITY		REVISIONS		APPROVED		DATE	
1		A	AS ISSUED				
2		B	LABELED LOW ACTIVE SIGNALS 41-507				
3		C	MOVED R49 FROM R22-V2-313				



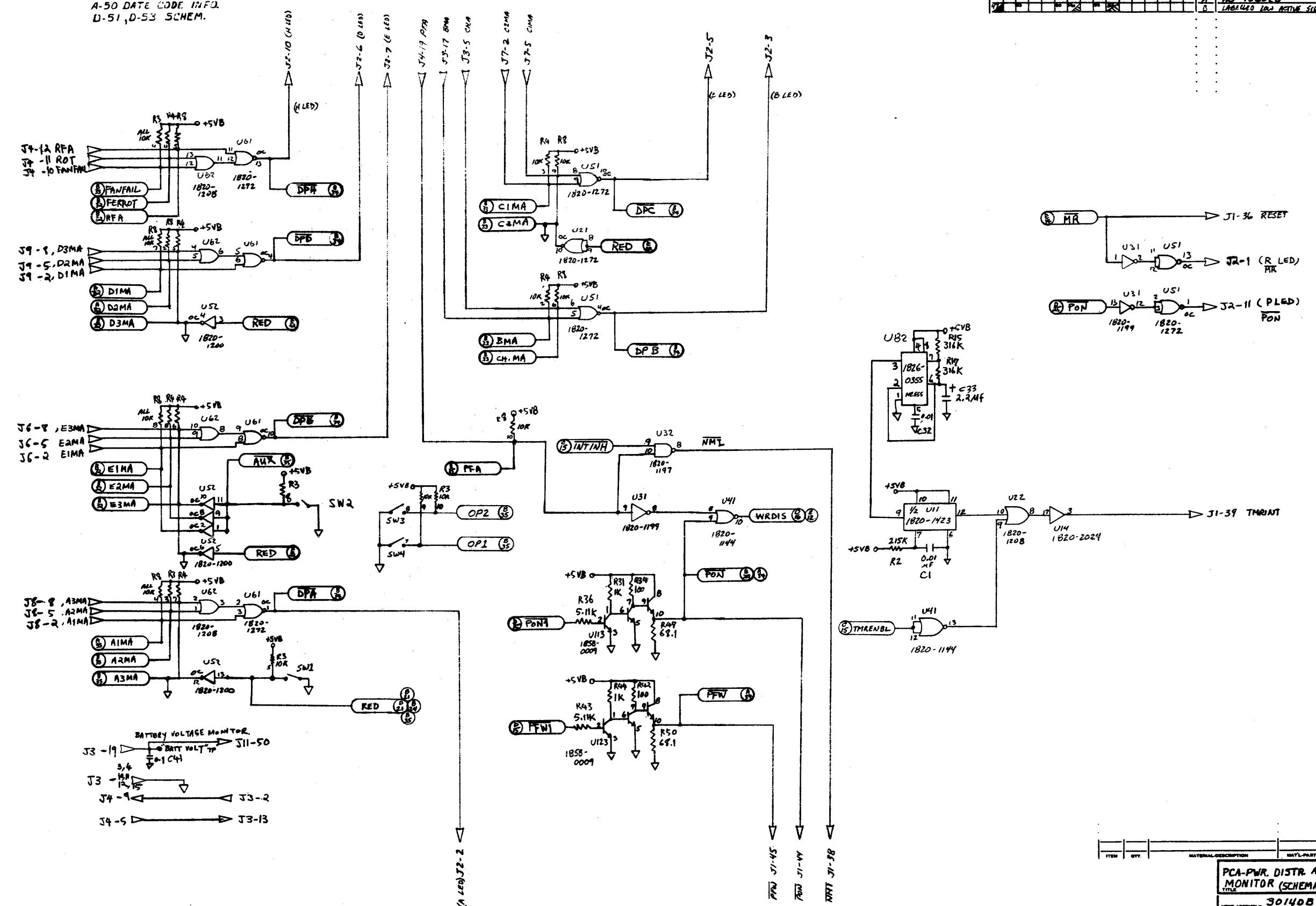
NOTE: THE FOLLOWING CAPACITORS ARE CONNECTED BETWEEN +5VB AND SIGNAL GROUND (4):  
(ALL ARE 0.1µF 50V CERAMIC HP 40160-4685)  
C3-23, 26, 28, 29, 40, 41.

NOTE: ALL OF AMPS ARE 1826-0161.  
ALL OF AMPS EXCEPT U81  
POWERED BY +5VBB

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY. NO.	MAT'L SPEC.
PCA-PWR. DISTR. AND MONITOR					
TITLE 30140 B					
NEXT ASSEMBLY			PART NUMBER		
PREP			SCALE		
HEWLETT PACKARD					

REF. DWGS: F-1 ASSY.  
A-50 DATE CODE INFO.  
D-51, D-53 SCHEM.

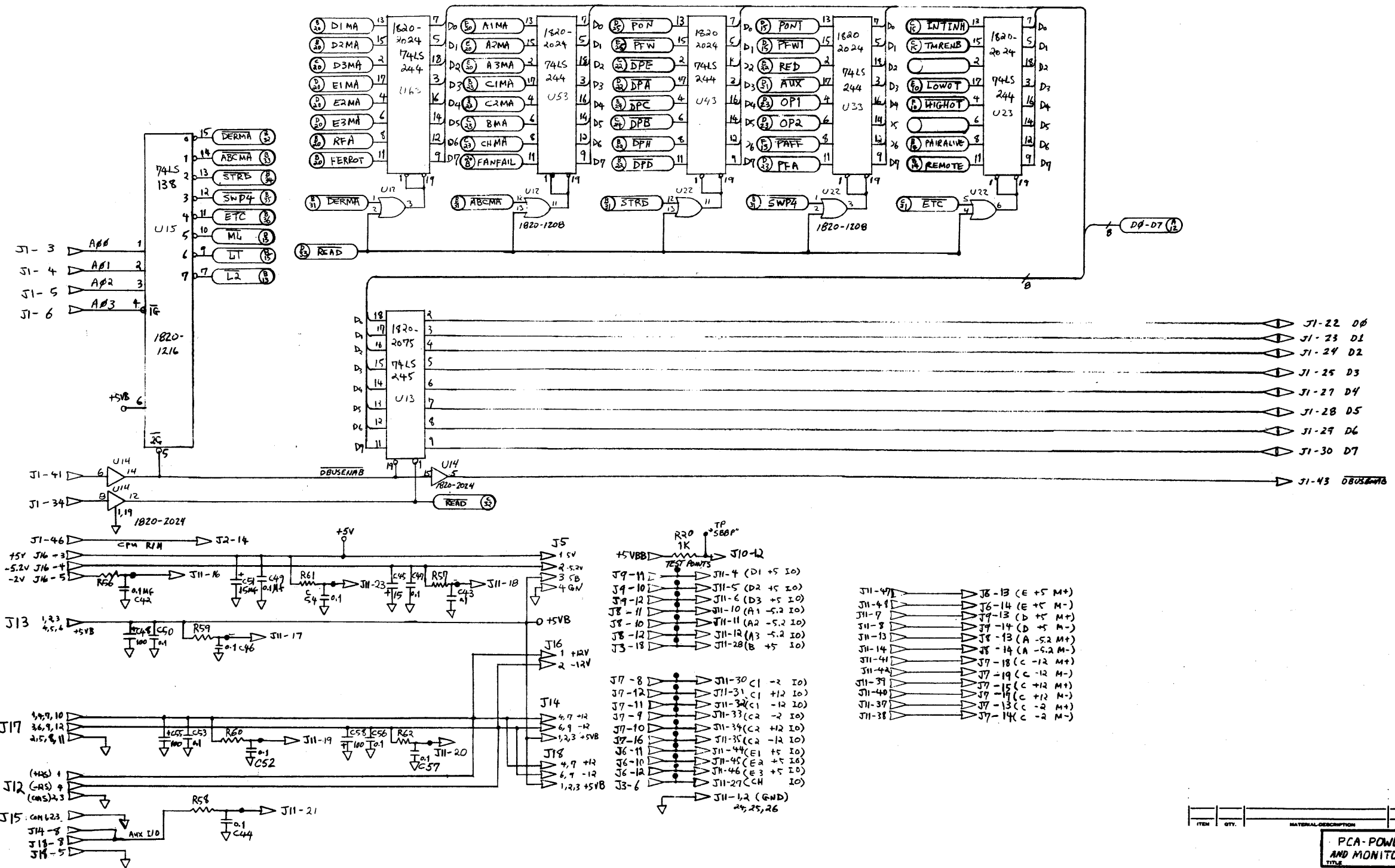
ENGINEERING RESPONSIBILITY	DESIGN	DATE	30140-60091-52
APPROVED	DATE	AS ISSUED	3/67
		LABELED IN ACTIVE SLIMS 47-3007	JSA
			WJZ/RE



ITEM	QTY	MATERIAL DESCRIPTION	MATL PART NO.	MATL QTY	MATL SPEC.
PCA-PWR. DISTR. AND MONITOR (SCHEMATIC)					
HEWLETT PACKARD					
PART NUMBER 30140-60091					
SCALE 1-30140-60091-52					

REF. DWGS: F-1 ASSY  
 A 53 DATE: OLF INF. 2  
 D-52, D-53 SCHEM.

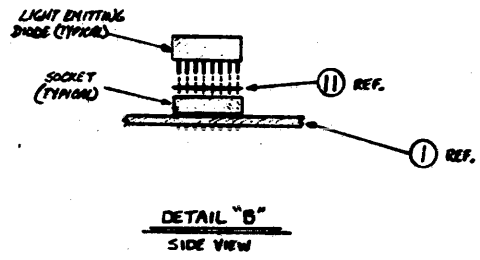
ENGINEERING RESPONSIBILITY												REVISIONS												DATE	
A 3 ISSUED												A 3 ISSUED												3/77	
B UNCLE LOW ACTIVE SIGNALS 47-2007												B UNCLE LOW ACTIVE SIGNALS 47-2007												2/81	



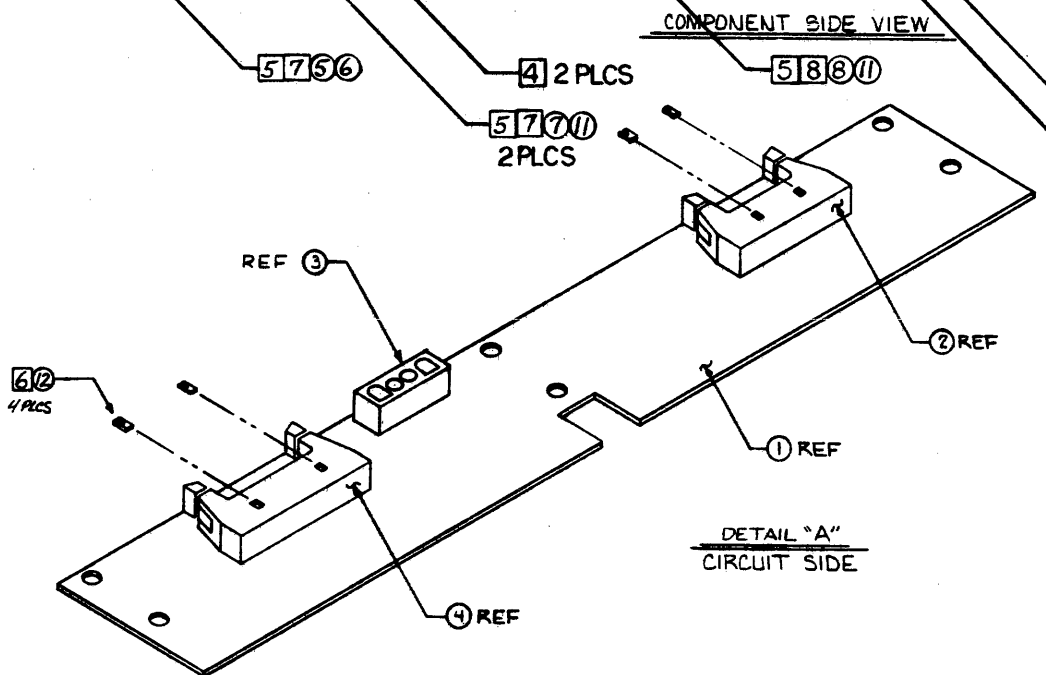
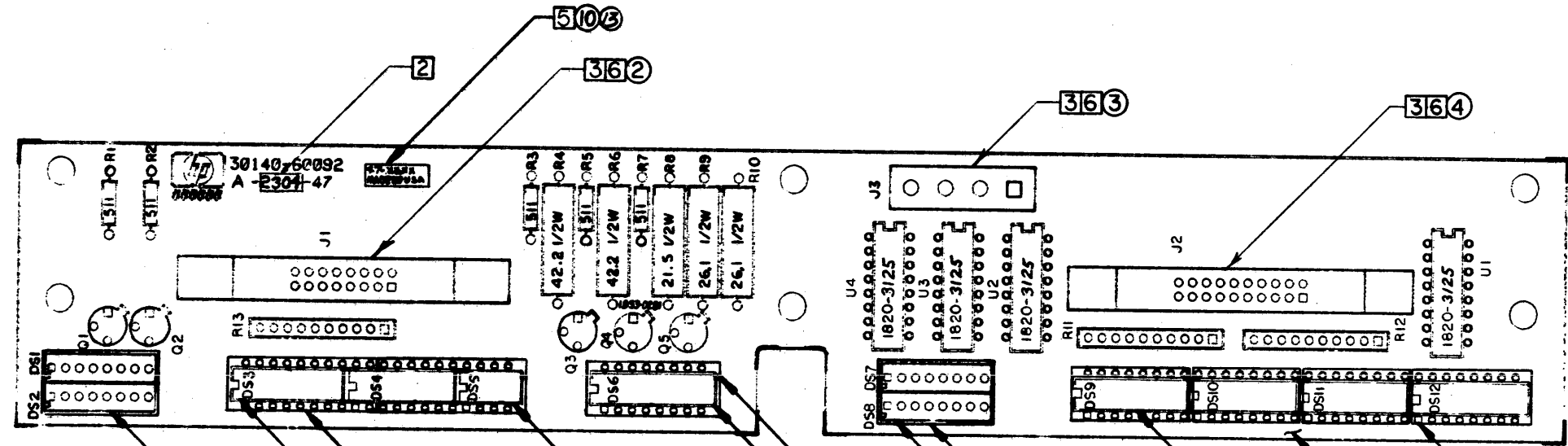
ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY. NO.	MAT'L SPEC.
PCA-POWER DISTR. AND MONITOR (SCHEMATIC)					
TITLE: 301408					
NEXT ASSEMBLY: 301408					
PART NUMBER: 301408-60071					
PART NUMBER: 301408-60071					
SCALE: 1:1					

REF. DWG.:  
D-51 SCHEMATIC

REV	DESCRIPTION	DATE
A	AS ISSUED	12/22/82
B	REVISED PER PWB 47-3084	7/28/83
C	ITEM 11 WAS QTY 1; PCB QTY 387	11/17/83
D	REVISIONS ADDED: ITEM 13; PCB QTY 387	11/21/83



DIRECTION THRU SOLDER WAVE



- NOTES:
- UNLESS OTHERWISE SPECIFIED ALL RESISTANCE IN OHMS  
ALL TRANSISTORS ARE 1854-0477  
ALL NETWORK RESISTORS ARE 220 OHMS-1810 0372  
ALL RESISTORS ARE 1/2W 196
  - INSTALL ITEM 13
  - MASK AS INDICATED
  - LOAD SOCKETS AS INDICATED
  - LOAD ITEMS 5 THRU 12 IN TOUCHUP
  - LOAD ITEMS 2 THRU 4, AND 12, ON CIRCUIT SIDE IN TOUCHUP, SEE DETAIL "A".
  - LOAD ITEM 11 BETWEEN SOCKET AND LIGHT EMITTING DIODE AS SHOWN IN DETAIL "B".
  - CUT ONE (1) EA. OF ITEM 11 IN HALF AND INSERT BETWEEN ITEM 6 AND THE SOCKET AS IN DETAIL "B".
  - PRETEST USING 306D TEST SYSTEM.
  - INSPECTION CRITERIA - HP STD. SECT. 410

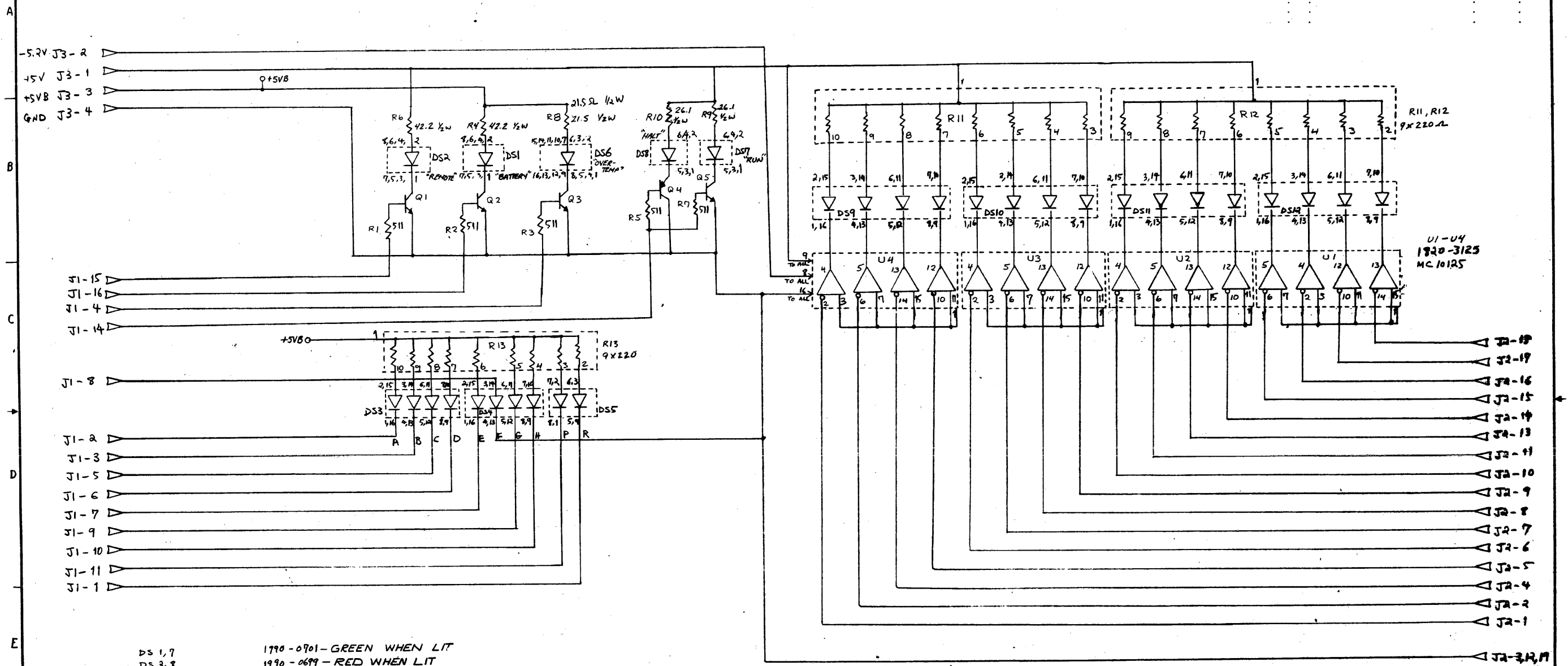
ITEM	QTY	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG. NO.	MAT'L SPEC.
13	1	LABEL - DATE CODE	9320-532D		
12	4	POLARIZING KEY	1251-5595		
11	2	WRAP ID., 16 PIN	1200-1041		
10	7	LABEL WARR DATE CODE	7120-6830		
9	1	LIGHT EMITTING DIODE	1990-0802		
8	1	LIGHT EMITTING DIODE	1990-0776		
7	6	LIGHT EMITTING DIODE	1990-0759		
6	2	LIGHT EMITTING DIODE	1990-0699		
5	2	LIGHT EMITTING DIODE	1990-0701		
4	1	CONN RC/POST 20M	1251-5649		
3	1	CONN UTIL 4PINM	1251-3837		
2	1	CONN RC/POST 16M	1251-5648		
1	1	PCB-SYS. STATUS DISP. PNL	30140-80092		

PROCESS REVIEW  
DATE 10-21-83 BY T. V. [Signature]

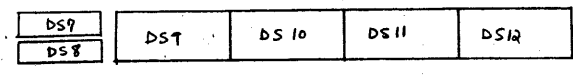
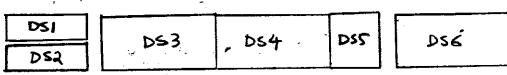
PCA-SYSTEM STATUS DISPLAY PANEL ASSY DWG.	HEWLETT PACKARD
30140-60095	30140-60092
SCALE 2:1	D-30140-60092-1

REF. DWG: D-1 ASSY.

ENGINEERING RESPONSIBILITY										REPA									
A AS ISSUED										B REVISED									
BY: [Signature]										DATE: [Date]									



DS 1,7      1790-0701-GREEN WHEN LIT  
 DS 2,8      1990-0699-RED WHEN LIT  
 DS 3,4,9,10,11,12      1990-0759-RED WHEN LIT  
 DS 5      1990-0796-RED WHEN LIT  
 DS 6      1990-0902-YELLOW WHEN LIT



J1 16 PIN RIBBON CABLE CONNECTOR  
 J2 20 PIN RIBBON CABLE CONNECTOR  
 J3 4 PIN MATE AND LOCK CONNECTOR

ITEM	QTY.	MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L QTY. NO.	MAT'L SPEC.
		PCA-SSDP-B			
		(SCHEMATIC)			
		30140-60075			
		HEWLETT PACKARD			
		30140-60075			
		D-30140-60075-01			