

**INTELLEC SERIES IV
MICROCOMPUTER
DEVELOPMENT SYSTEM
SCHEMATIC DRAWINGS**

Order Number: 135168-001

intel[®]

INTELLEC SERIES IV MICROCOMPUTER DEVELOPMENT SYSTEM SCHEMATIC DRAWINGS

Order Number: 135168-001

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Literature Department
Intel Corporation
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Santa Clara, CA 95051

Additional copies of this manual may be obtained from:

Technical Publications, M/S DV2/292
Integrated Systems Operation—South
Intel Corporation
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Phoenix, Arizona 85027

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AEDIT	ICE	Intelevison	KEPROM	Promware
BITBUS	iCS	intelligent Identifier	Library Manager	QueX
BXP	iDBP	intelligent Programming	MCS	QUEST
COMMputer	iDIS	Intellec	Megachassis	Ripplemode
CREDIT	iLBX	Intellink	MICROMAINFRAME	RMX/80
Data Pipeline	i _a	iOSP	MULTIBUS	RUPI
Genius	iMDDX	iPDS	MULTICHANNEL	Seamless
i	iMMX	iRMX	MULTIMODULE	SLD
Δ	Insite	iSBC	OpenNET	SOLO
iATC	Intel	iSBX	Plug-A-Bubble	SYSTEM 2000
iPICE	int _e l	iSDM	PROMPT	UPI
	int _e IBOS	iSXM		

and the combination of ICE, iCS, iRMX, iSBC, iSBX, or MCS and a numerical suffix.

PREFACE

This manual is intended for use as reference material only. Any system troubleshooting should be performed by an authorized Intel Customer Engineer (CE). The use of the schematics contained herein for troubleshooting purposes by unauthorized personnel may result in the forfeiture of maintenance and warranty agreements.

This manual contains schematics of the standard board set in both the iMDX 430 and iMDX 431 Intellec Series IV systems. It does not provide schematics for any optional boards or memory boards. The manual is divided into seven sections as follows:

- "Series IV System" provides a schematic diagram of the Series IV system.
- "Series IV Backplane" provides the Printed Board Assembly and schematic diagram of the Series IV backplane.
- "Central Processor Input/Output-B1 (CPIO-B1)" provides the Configured Board Assembly and schematic diagram of the CPIO-B1 board.
- "ISIS Execution Unit-II (IEU-II)" provides the Configured Board Assembly and schematic diagram of the IEU-II board.
- "Slave Processing Unit (SPU)" provides the Configured Board Assembly and schematic diagram of the SPU board.
- "iSBC-215D 5¼"-inch Disk Controller" provides the Printed Board Assembly and schematic diagram of the iSBC-215D board.
- "iSBC-213A Data Separator" provides the Printed Board Assembly and schematic diagram of the iSBC-213A board.

CONTENTS

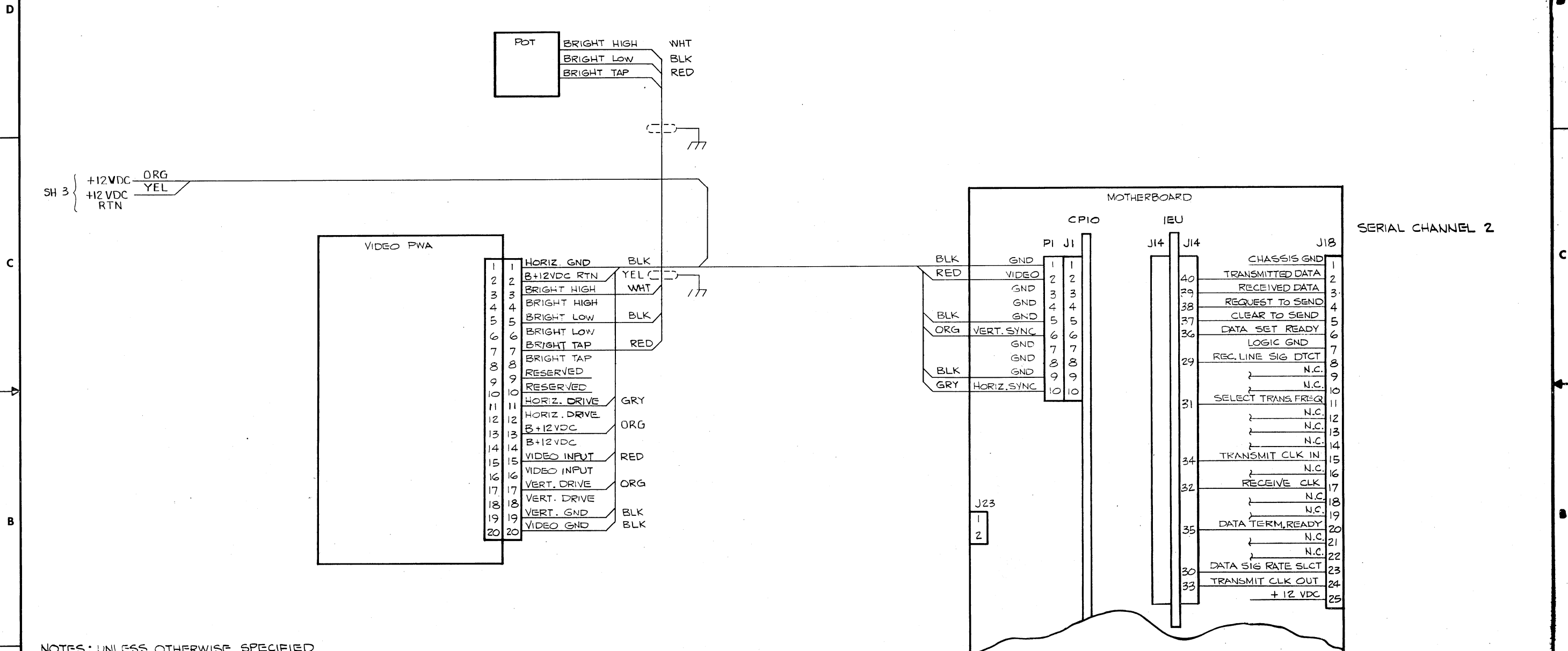
Title	Number
Schematic Diagram, Series IV System (5 pages).....	134693, Rev A
Printed Board Assembly, Series IV Backplane (1 page).....	134082, Rev A
Schematic Diagram, Series IV Backplane (5 pages).....	134081, Rev A
Configured Board Assembly, Central Processor Input/Output-B1 (CPIO-B1) (1 page).....	134688, Rev A
Schematic Diagram, Central Processor Input/Output-B1 (CPIO-B1) (18 pages).....	135283, Rev A
Configured Board Assembly, ISIS Execution Unit II (IEU-II) (1 page).....	125169, Rev H
Schematic Diagram, ISIS Execution Unit II (IEU-II) (11 pages).....	124745, Rev D
Configured Wiring Board Assembly, Slave Processing Unit (SPU) (1 page).....	123893, Rev L
Schematic Diagram, Slave Processing Unit (SPU) (18 pages).....	134933, Rev A
Printed Wiring Board Assembly, 215D 5¼-inch Disk Controller (1 page)*.....	132873, Rev K
Schematic Diagram, 215D 5¼-inch Disk Controller (14 pages)*.....	132800, Rev F
Printed Wiring Board Assembly, 213A Data Separator (1 page)*.....	132727, Rev J
Schematic Diagram, 213A Data Separator (4 pages)*.....	132726, Rev G

NOTE

This document contains drawings for boards at the aforementioned revision level. Boards at different revision levels will not correspond to these drawings.

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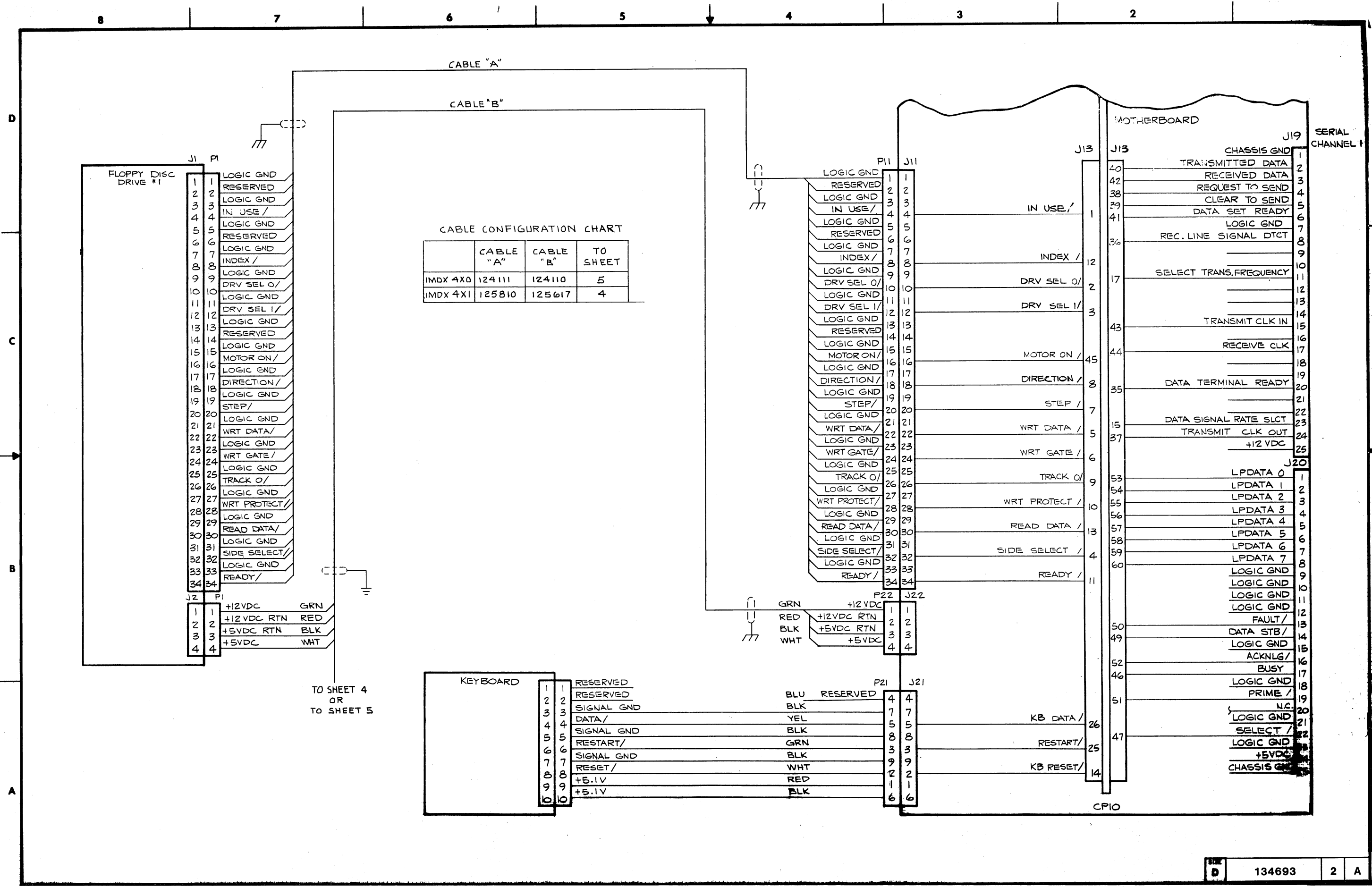


NOTES: UNLESS OTHERWISE SPECIFIED

1. SWITCH IS CLOSED WHEN SYSTEM COVER IS REMOVED, OPEN WHEN COVER IS IN PLACE (NORMAL OPERATING CONDITION).
2. 220 VAC UNITS HAVE ALL CONNECTIONS TO TB1-3,4 MOVED TO TB1-1,2.
3. 220 VAC UNITS HAVE ALL CONNECTIONS TO TB-15 MOVED TO TB-16.

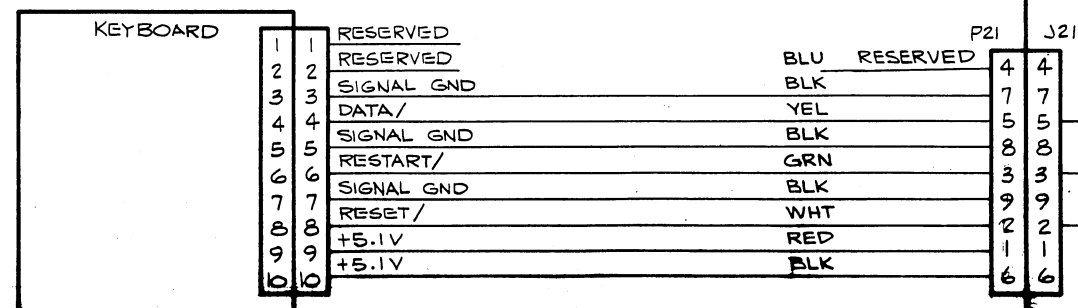
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UNLESS OTHERWISE SPECIFIED:		intel 3065 BOWERS AVE SANTA CLARA, CALIF. 95051
1. DIMENSIONS ARE IN INCHES.	SIGNATURE	
2. BREAK ALL SHARP EDGES.	DATE	
3. DO NOT SCALE DRAWING.	TITLE	
4. TOLERANCES:	APVD	SCHEMATIC DIAGRAM UT/C SYSTEM
ANGLES ±	APVD	
XXX ±		SIZE DCLC CL CODE RLSE LVL
XXX ±		D 21 01 - 134693 A
		SCALE SHEET 1 OF 5

SERIES IV SYSTEM 1

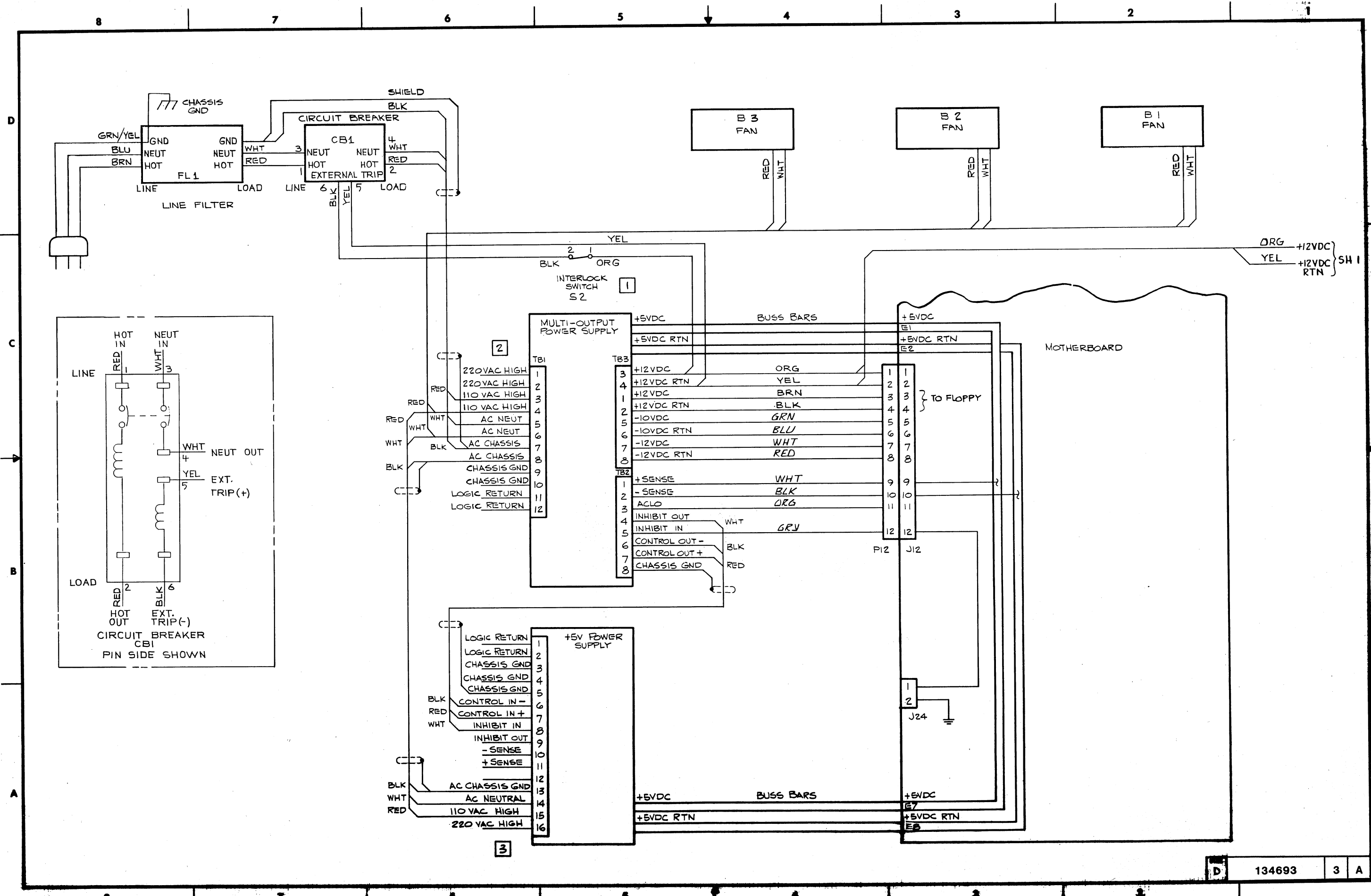


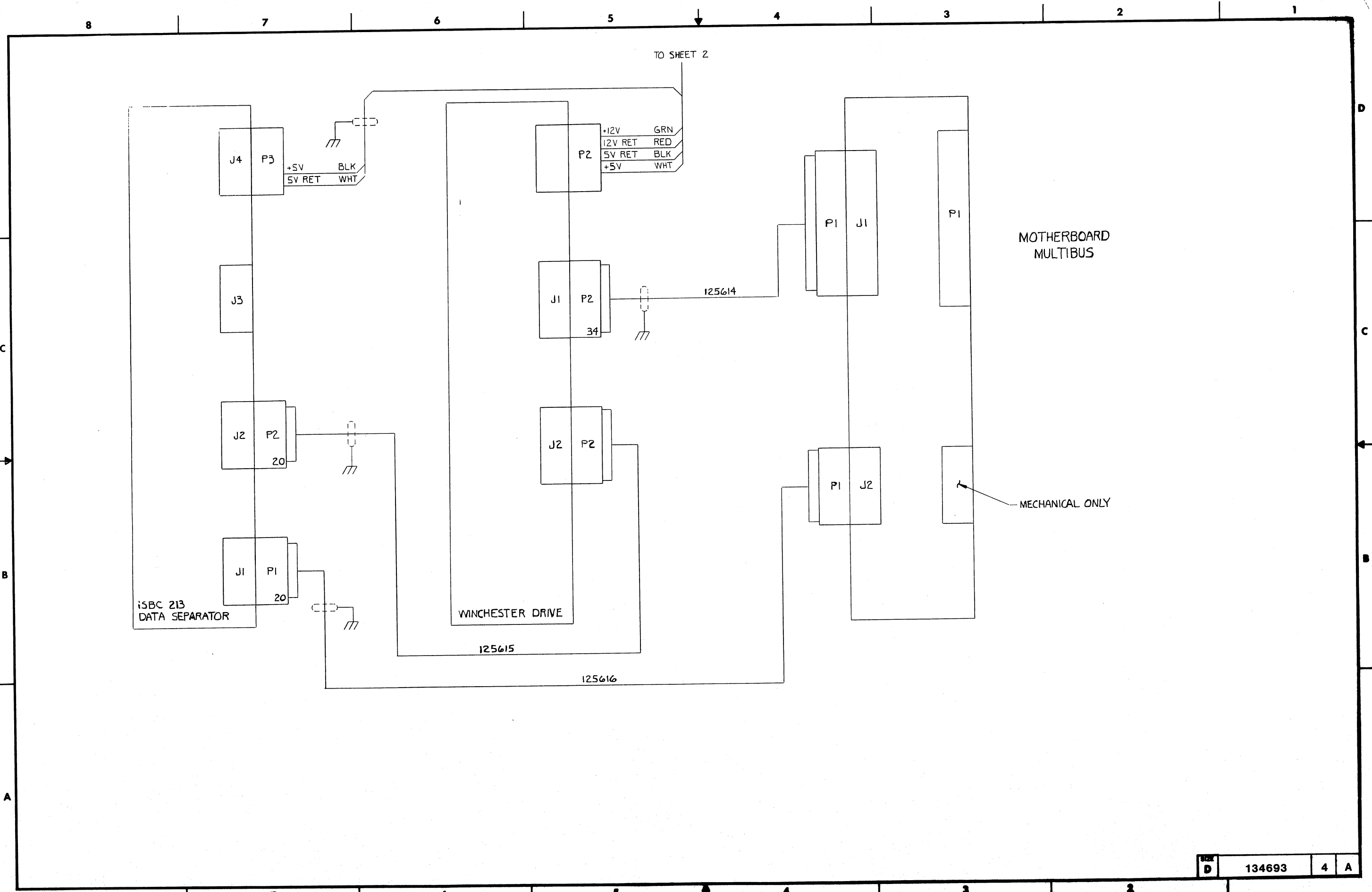
CABLE CONFIGURATION CHART

	CABLE "A"	CABLE "B"	TO SHEET
IMDX 4X0	124111	124110	5
IMDX 4X1	125810	125617	4



TO SHEET 4
OR
TO SHEET 5





TO SHEET 2

MOTHERBOARD MULTIBUS

MECHANICAL ONLY

iSBC 213
DATA SEPARATOR

WINCHESTER DRIVE

SIZE	134693	4	A
D			

SERIES IV
SYSTEM
4

8

7

6

5

4

3

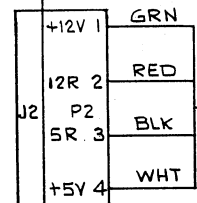
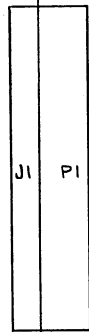
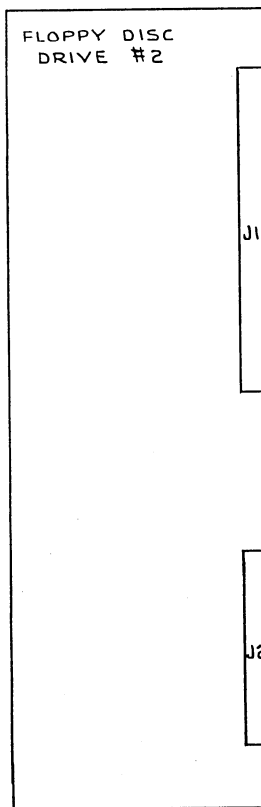
2

1

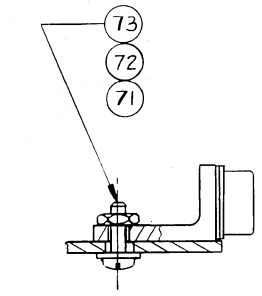
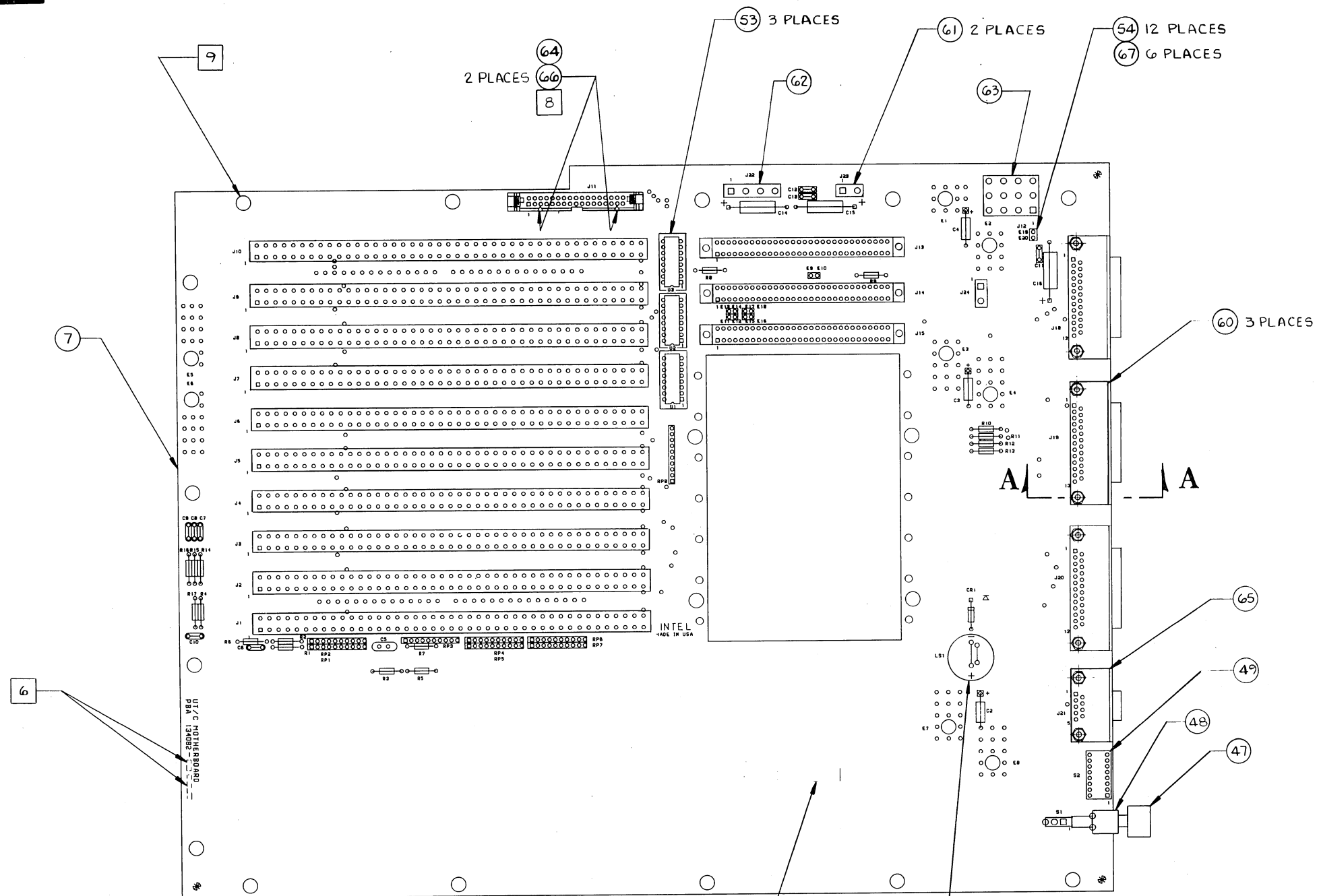
TO SHEET 2

124111

124110



REVISIONS						
REV	DESCRIPTION	DFT	DATE	CHK	DATE	APVD
A	ECO 21 55416	DK	7/1/84	R	3/6/84	Frahm



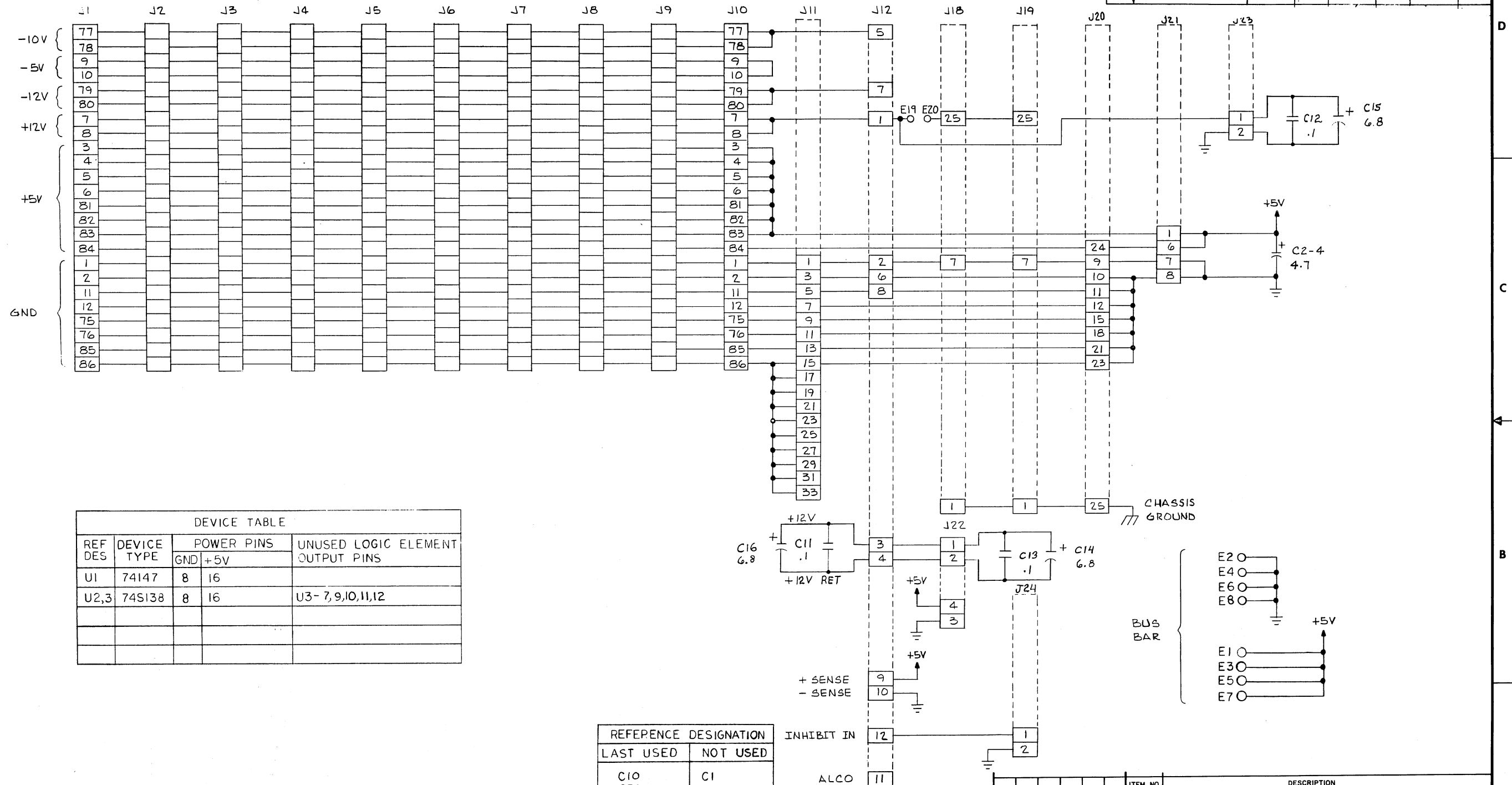
SECTION A-A
4 PLACES
NO SCALE

- NOTES: UNLESS OTHERWISE SPECIFIED
- ASSEMBLY PART NUMBER IS 134082-001.
 - THIS DOCUMENT AND PARTS LIST ARE TRACKING DOCUMENTS.
 - WORKMANSHIP PER INTEL 99-0007-001.
 - MAXIMUM HEIGHT OF COMPONENTS SHALL BE .80 INCH FROM THE BOARD SURFACE.
 - MAXIMUM HEIGHT OF LEADS ON SOLDER SIDE SHALL BE .05 INCH FROM BOARD SURFACE.
 - MARK "PBA", PART NUMBER, AND SERIAL NUMBER IN CONTRASTING PERMANENT COLOR, NON-CONDUCTIVE, .08 INCH MAXIMUM HIGH CHARACTERS APPROXIMATELY WHERE SHOWN.
 - MARK ASSEMBLY VENDOR IDENTIFICATION IN CONTRASTING PERMANENT COLOR, NON-CONDUCTIVE, .08 INCH MAXIMUM HIGH CHARACTERS APPROXIMATELY WHERE SHOWN.
 - INSTALL CONNECTOR WITH POLARIZING KEYS AS SHOWN.
 - ALL PLATED THRU MOUNTING HOLES SHOULD BE FREE OF SOLDER.
 - LS1 TO BE MOUNTED AFTER WAVE SOLDER AND HAND CLEANED. DO NOT IMMERSE.

QUANTITY PER DASH NO.		ITEM NO.	DESCRIPTION	
		PARTS LIST		
UNLESS OTHERWISE SPECIFIED:		SIGNATURE	DATE	intel 3065 BOWERS AVE SANTA CLARA CALIF. 95051 TITLE PBA, SIV BACKPLANE
1. DIMENSIONS ARE IN INCHES.		DRN BY: <i>Montoya</i>	10/11/83	
2. BREAK ALL SHARP EDGES.		CHK BY: <i>APVD</i>	10/16/83	
3. DO NOT SCALE DRAWING.		ENGR: <i>Frahm</i>	10/17/83	
4. TOLERANCES:		APVD		
ANGLES ± //				
XX ± //				
XXX ± //				
SIZE	DCL	CL CODE	RLSE LVL	
D	21	05		134082 A
SCALE NONE				SHEET 1 OF 1

BACKPLANE
1

REVISIONS							
REV	DESCRIPTION	DFT	DATE	CHK	DATE	APVD	DATE
A	ECO 21 55416	PAK	3/6/81	R	3/6/81	Fraser	11/2/84



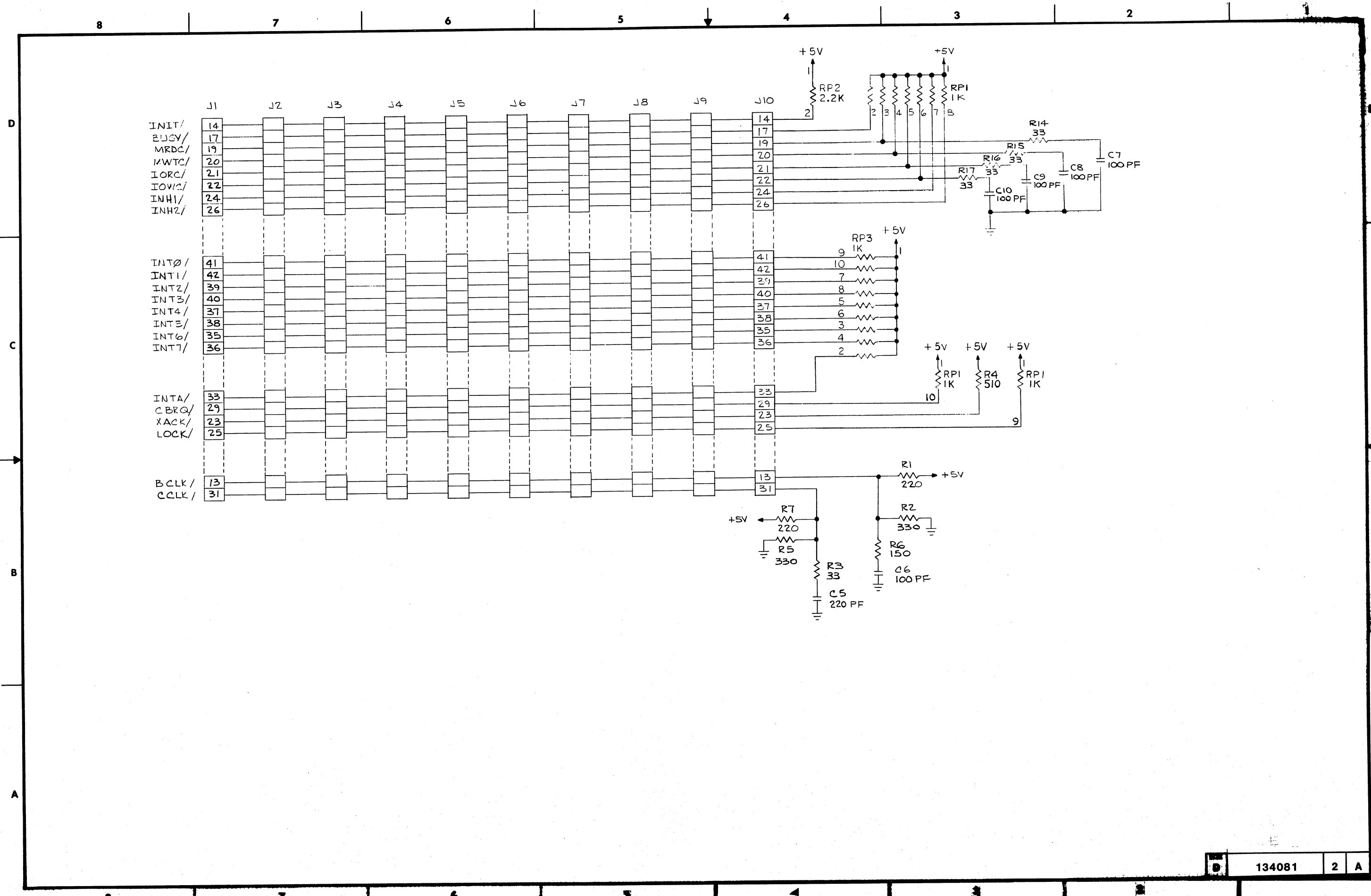
REF DES	DEVICE TYPE	POWER PINS		UNUSED LOGIC ELEMENT OUTPUT PINS
		GND	+5V	
U1	74147	8	16	
U2,3	74S138	8	16	U3- 7,9,10,11,12

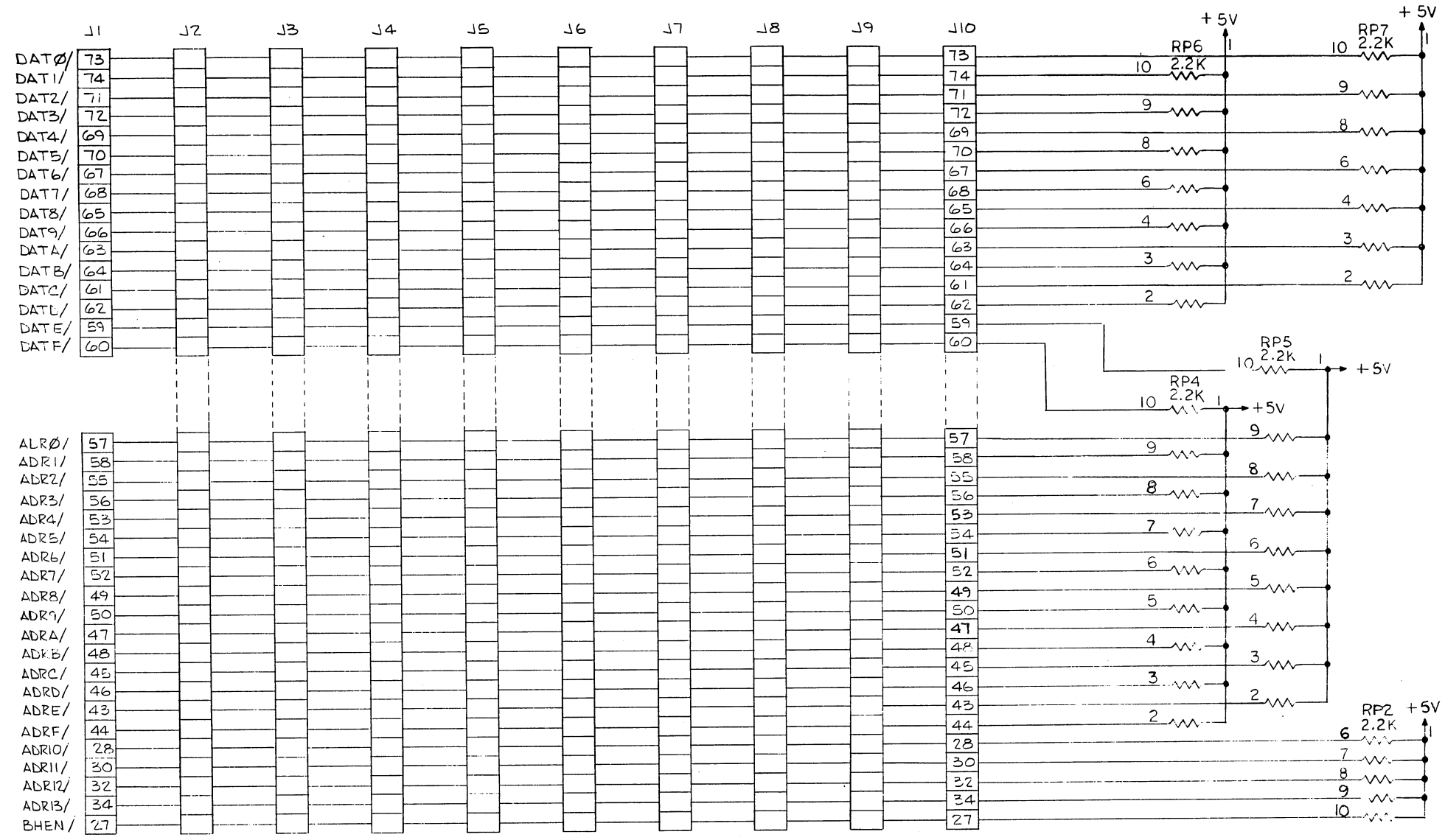
LAST USED	NOT USED
C10 C11 LS1 J24 R17 RP8 S2 U3 E20	C1 J16,17

NOTES: UNLESS OTHERWISE SPECIFIED.
 1. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
 2. ALL RESISTANCE VALUES ARE .1 OHMS 1/4W, 5%

ITEM NO.		DESCRIPTION	
QUANTITY PER DASH NO.		PARTS LIST	
UNLESS OTHERWISE SPECIFIED:		SIGNATURE	
1. DIMENSIONS ARE IN INCHES.		DATE	
2. BREAK ALL SHARP EDGES.		DRN BY <i>J. J. Montoy</i> 10/1/83	
3. DO NOT SCALE DRAWING.		CHK BY <i>SVS</i> 10/1/83	
4. TOLERANCES:		ENGR <i>Fraser</i> 10/1/80	
ANGLES ±		APVD	
XX ±		APVD	
XXX ±		APVD	
intel		3065 BOWERS AVE SANTA CLARA CALIF. 95051	
TITLE		SCHEMATIC DIAGRAM, SERIES IV BACKPLANE	
SIZE	D 21	CL CODE	01
SCALE	NONE	RLSE LVL	—
134081		A	
SHEET 1 OF 5		109515	

BACKPLANE 2

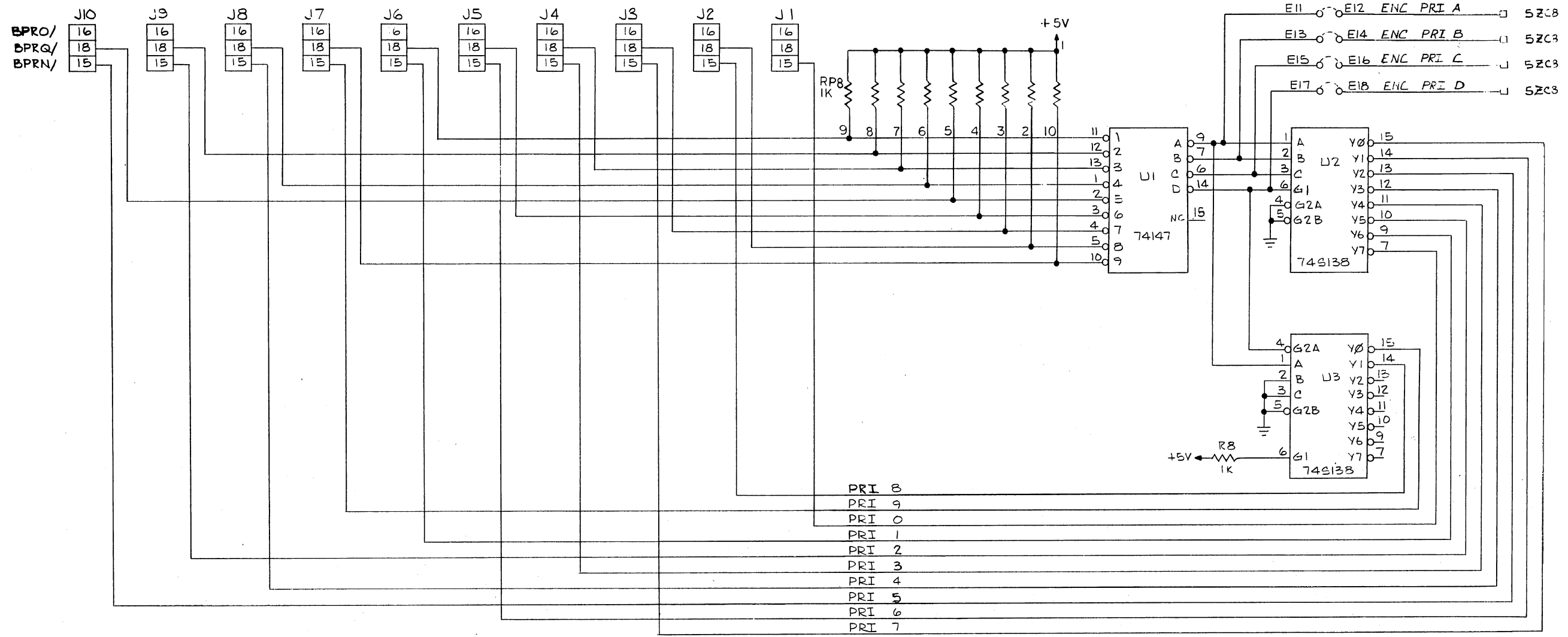




SIZE	D	134081	3	A
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109516

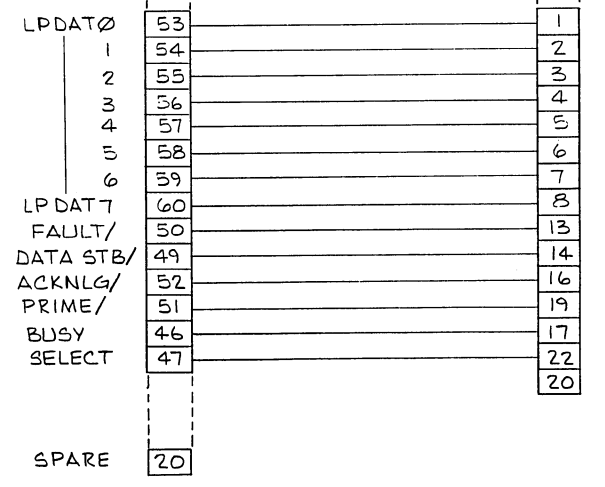
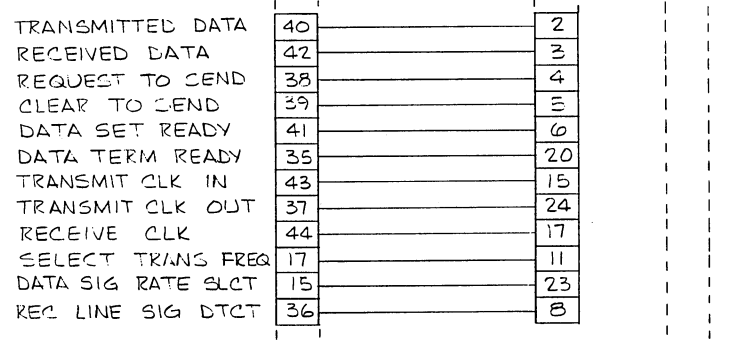
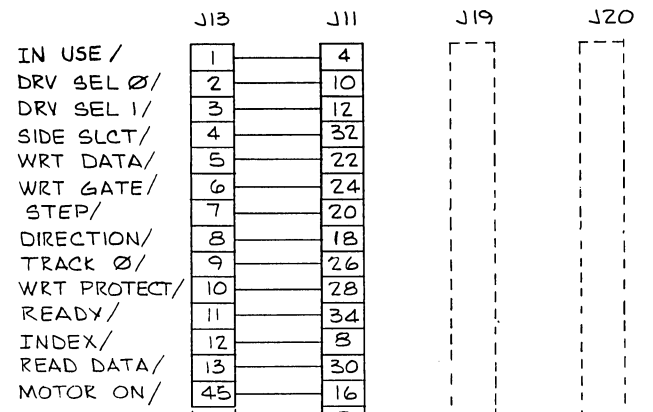
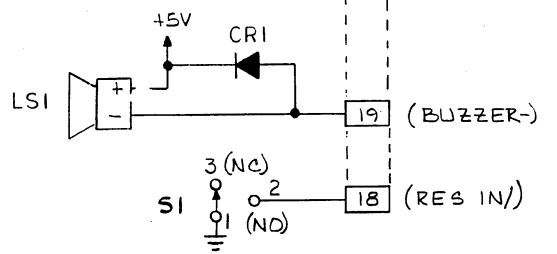
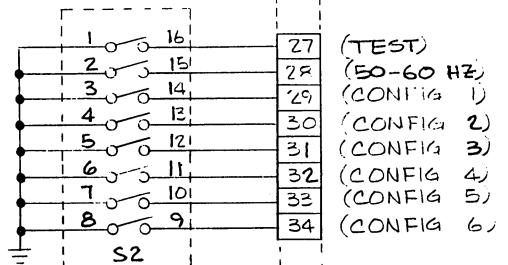
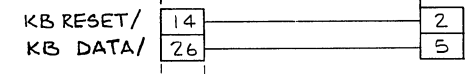
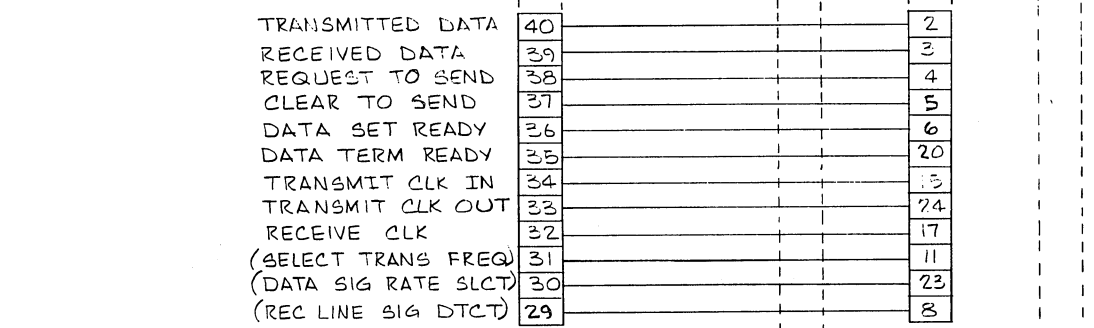
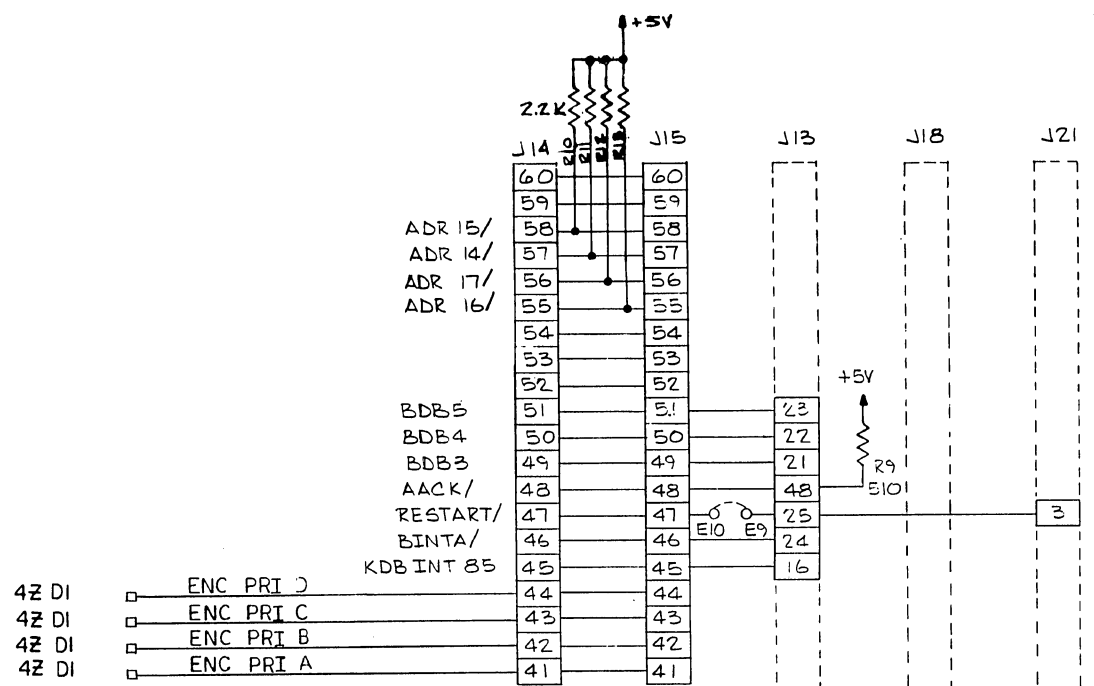
BACKPLANE
4



SIZE	D	134081	4	A
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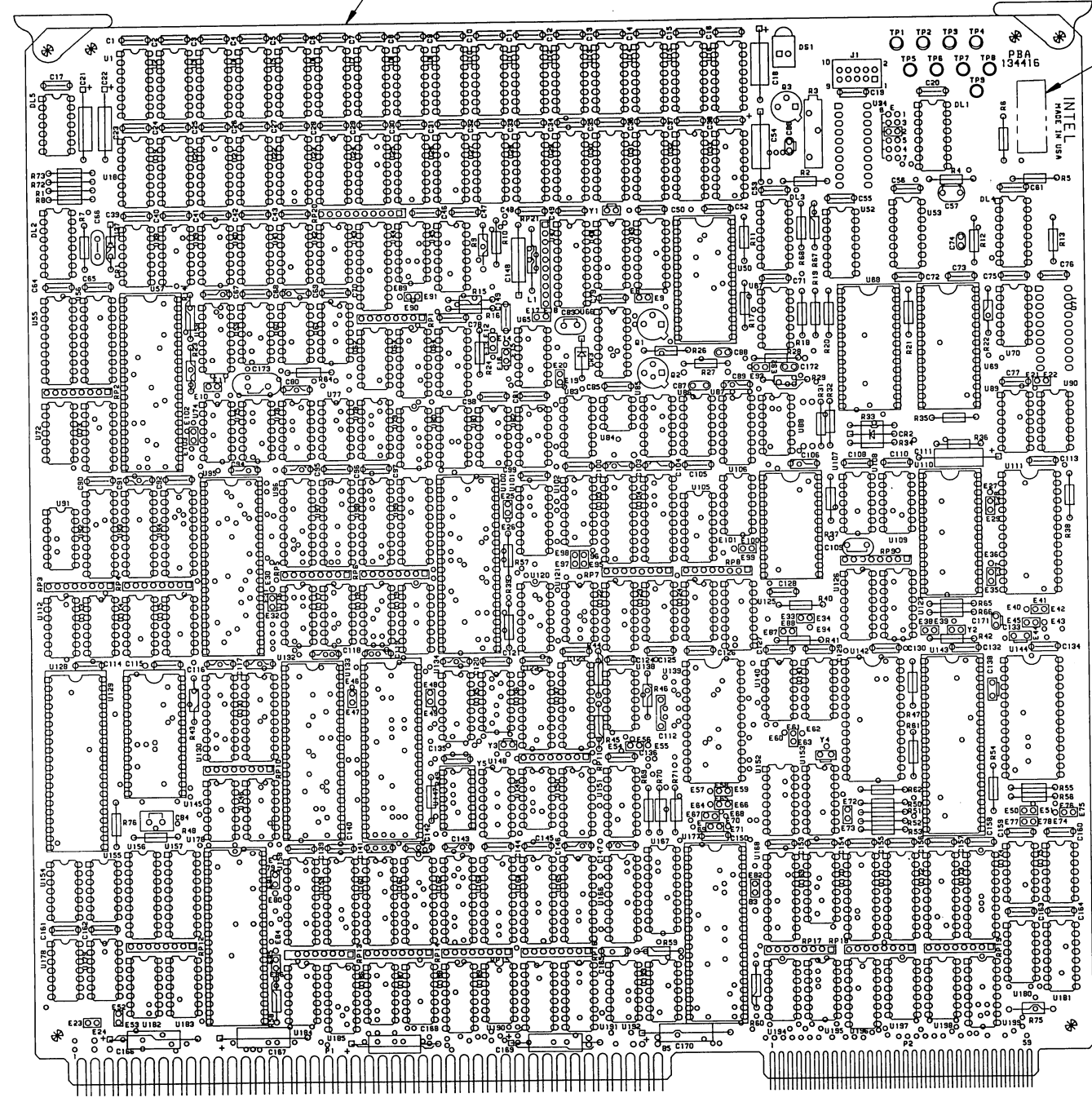
109516

BACKPLANE
5



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REVISIONS						
REV	DESCRIPTION	DFT	DATE	CHK	APVD	DATE
A	ECO 21 554 E3		4/5/84	Frank		4/5/84



REFERENCE
CPIO-B1 WIRE LIST
NOTES: ALL JUMPERS ARE SUITCASE TYPE.
Ø SETS MULTIBUS ACCESS TO 20000.
* SETS LOCAL ACCESS TO BOTH 00000 AND 20000.

UNDERLINE DENOTES CHANGES FROM PREVIOUS REV.

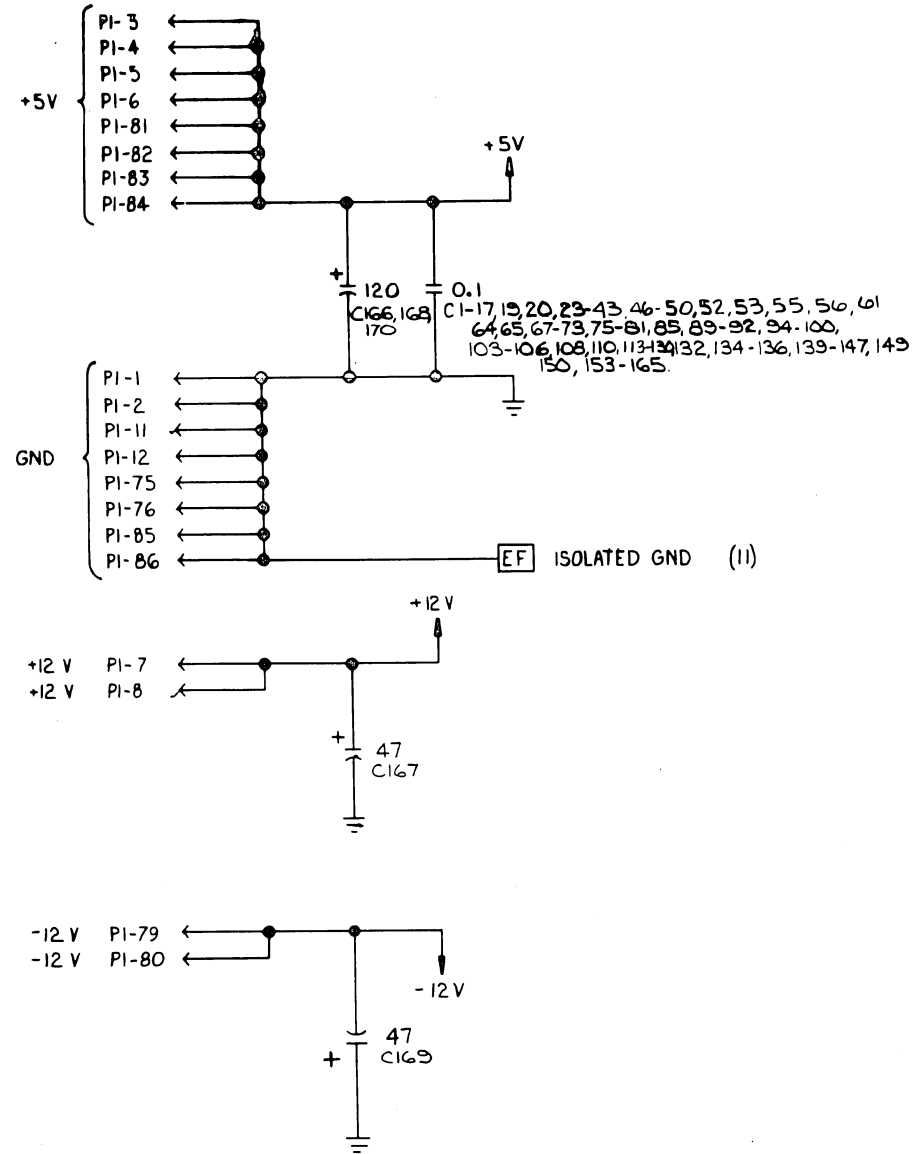
FROM	TO	USE	NAME	SCHMATIC PAGE	ZONE
E2	E6	IN	BUS ACK DELAY	17	C2
1		OUT			
3		OUT			
4		OUT			
5		OUT			
7		OUT			
8	9	IN	USART CLOCK	8	B3
10	11	IN	CAS	17	B4
12	13	OUT	8202 CONTROL	17	C6
16		OUT			
15	14	IN	PROM SELECT	5	B4
17	18	IN	FLIPPY CKT	11	A6
19	20	IN	8MHz VCO	8	A2
21	22	IN	USART CLOCK	8	B2
23	24	IN	C CLOCK	11	B6
25	26	OUT	FLIPPY SETUP	5	B6
29		OUT	PROM SELECT	5	B6
28	27	IN	PROM SELECT	5	B6
30		OUT			
31	32	IN	UPI CLK	9	D2
34	33	IN	OSC to 16 MHz	14	D7
35	37	IN	ROS	7	B5
36		OUT			
38	39	IN	DTR	7	B5
40	41	IN			
42		OUT	RXC	7	B5
44		IN			
43	45	OUT	TXC _i	7	B5
46	47	IN	8202 CLK	9	C4
48	49	IN	8202 CLK	9	C4
50	51	IN	TXDAMA	7	B7
52	53	IN	BC1K	8	B2
54	56	IN	FIFO ADR	8	B6
55		OUT			
57		IN	LOC AAC	6	D6
59		OUT			
60		OUT			
62		OUT			
61	63	IN	TRACK 43	10	C4
64		IN			
65	66	IN	TEST	2	C7
67	68	OUT	AACK	17	D3
69	70	IN	Address	16	C6
71		OUT			
72	73	IN	8 MHz	11	C6
74		OUT			
E75	E76	IN	REC DETECT	7	B7
E77	E78	IN	REC DATA	7	B7
79	81	IN	ANY RQST	4	B5
82	83	IN	BINTA ISIS INT	15	B7
84		OUT			
85	86	IN	CBRQ/	4	B4
87	88	IN	8202	17	B6
89		OUT			
90*	91	IN	LOC ACC 0,2	5	D8
92	93	IN	745124/745600	11	C3
94		OUT			
95	96	IN	15 MHZ	14	C6
97	98	IN	15 MHZ	14	C6
99	100	IN	15 MHZ	14	C6
101		OUT			
E102	E103	IN	BUS TIMEOUT	8	D5

- NOTES: UNLESS OTHERWISE SPECIFIED
- ASSEMBLY PART NUMBER IS 134688-001.
 - THIS DOCUMENT AND PARTS LIST ARE TRACKING DOCUMENTS.
 - WORKMANSHIP PER 99-0007-001.
 - APPLY CBA LABEL APPROXIMATELY WHERE SHOWN.

ITEM NO.	DESCRIPTION
QUANTITY PER DASH NO.	
UNLESS OTHERWISE SPECIFIED:	
1. DIMENSIONS ARE IN INCHES.	
2. BREAK ALL SHARP EDGES.	
3. DO NOT SCALE DRAWING.	
4. TOLERANCES:	
ANGLES ±	
XXX ±	
XXX ±	

SIGNATURE		DATE		 3065 BOWERS AVE SANTA CLARA CALIF. 95051
DRN BY	<i>Frank</i>		7/2/84	
CHK BY	<i>L. Montoya</i>		4/5/84	
ENGR	<i>Frank</i>		4/5/84	
APVD				TITLE
APVD				CBA, CPIO-B1
APVD				SIZE DCLC CL CODE RLSL LVL DOCUMENT NUMBER REV
				D 21 05 - 134688 A
SCALE NONE				SHEET 1 OF 1

CPIO-B1



- NOTES: UNLESS OTHERWISE SPECIFIED
- CAPACITANCE VALUES ARE IN MICROFARADS, +80%, -20%, 50V.
 - RESISTANCE VALUES ARE IN OHMS, 1/4 W, 5%.

POWER, GROUND AND SPARE GATE LOCATOR CHART						
REF DESIG.	DEVICE TYPE	POWER PINS				SPARE GATE OUTPUT PINS
		GND	+5V	+12V	-12V	
U75, 116, 178	74S00	7	14			U75-3, 8, 11
U182, 184	74S02	7	14			
U59, 106, 114, 124	74LS02	7	14			U114-4, 10 U41-8
U41, 121, 192	74S04	7	14			
U74, 88, 140	74LS04	7	14			U88-6, 140-8 U74-8, 10, 12 U182-3, 4
U70, 186, 189	7406	7	14			
U123	74S08	7	14			
U62, 72, 115, 141, 198	74LS08	7	14			
U61	74S10	7	14			
U149, 197	7414	7	14			149-6
U60	74LS21	7	14			
U44	74LS00	7	14			U44-6, 11
U145	74S22	7	14			U145-6
U138	74LS27	7	14			
U183, 187	74LS30	7	14			
U79, 81, 89, 112	74S32	7	14			U89-8,
U40, 78, 86, 91, 174	74LS32	7	14			U91-6, 8, 11, U40-8
U67	74S38	7	14			
U82, 113	74S51	7	14			U82-8
U38, 65, 80, 85, 117, 118, 135, 194	74S74	7	14			
U37, 42, 83	74LS74	7	14			
U73	74LS75	12	5			
U150	74LS109	8	16			
U101, 185, 191	74S112	8	16			
U190	74LS112	8	16			
U66	133420-001	9	16			SELECTED 74S124
U146, 179	74S132	7	14			
U63, 151	74S133	8	16			
U64, 125, 126	74S138	8	16			
U155	74S140	7	14			
U196	74LS151	8	16			
U199	74LS157	8	16			
U119, 120, 122, 134	74LS158	8	16			
U49, 102	74S161	8	16			
U45, 181	74LS163A	8	16			
U195	74LS164	7	14			
U152	74S174	8	16			
U169	74LS224	8	16			
U161, 163, 167, 168	74S240	10	20			
U170	74LS240	10	20			
U96, 171, 172, 173	74LS244	10	20			
U52, 188	74LS259	8	16			
U39	74S260	7	14			U39-5
U159	74S241	10	20			U159-12, 14
U130	74S299	10	20			
U43, 47, 97, 104, 131	74S373	10	20			U97-12
U92, 93	74LS373	10	20			
U76	74LS393	7	14			
U108, 109	75188	7		14	1	U108-3, 11
U84	LM358			8		U84-7

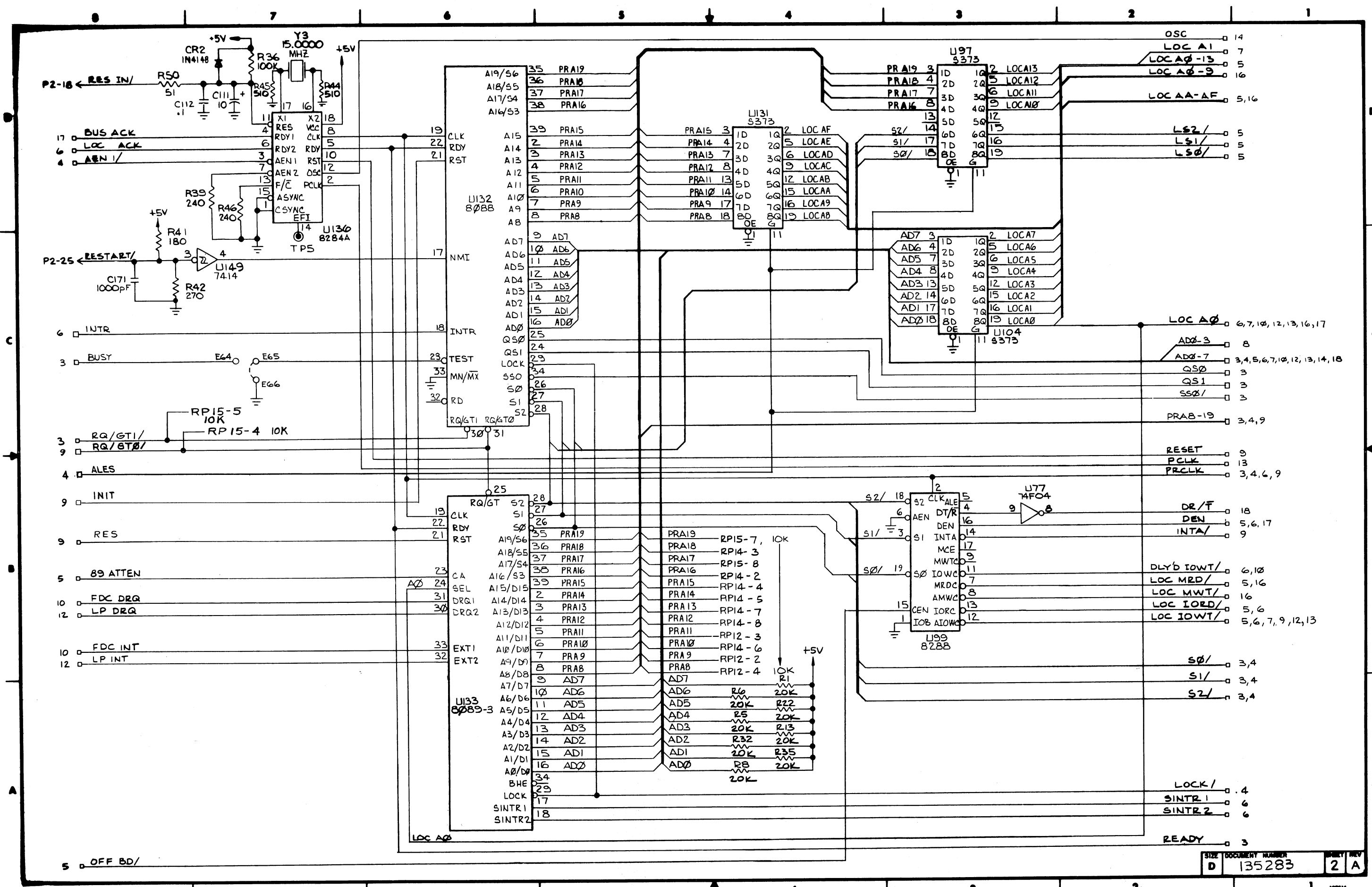
REVISIONS							
REV	DESCRIPTION	BY	DATE	CHK	DATE	APVD	DATE
1	DRF 2424	CL	9-22				

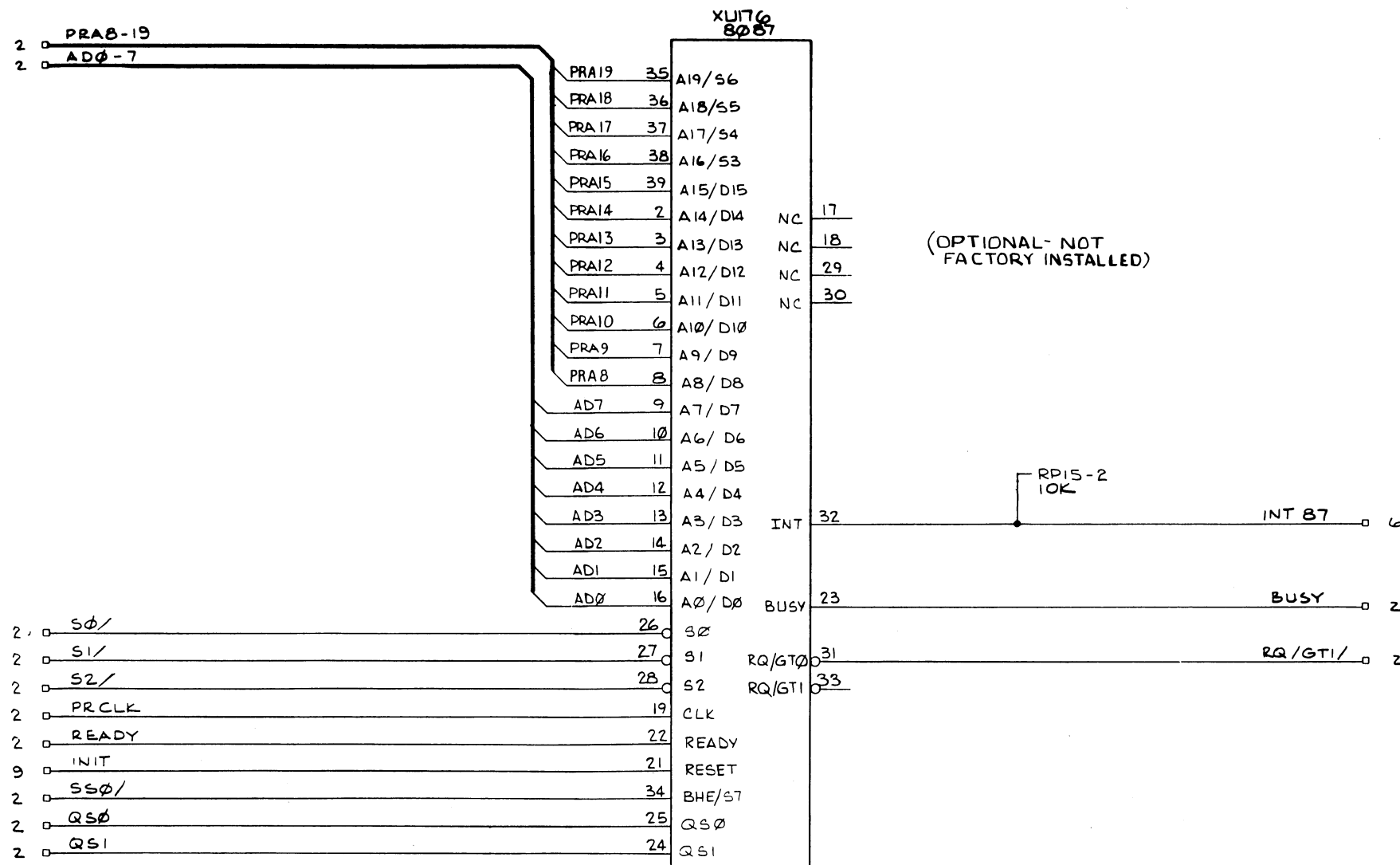
POWER, GROUND AND SPARE GATE LOCATOR CHART				
REF DESIG.	DEVICE TYPE	POWER PINS		SPARE GATE OUTPUT PINS
		GND	+5V	
U175, 180	75189A	7	14	U175-3, 8
U53, 58, 87	9602	8	16	
U154	74S20	7	14	
U193, 90	74LS114	7	14	
U1-16, 18-33	2118-4	16	8	
U55, 56	2168-15	10	20	
U129	2732A	14	28	
U50, 68, 69, 110	2764	14	28	
U95, 143	8741A	20	40	
U132	8088	1, 20	40	
U133	8089-3	1, 20	40	
U57	8202A	20	40	
U48, 127, 153	8224	8	16	
U100	8237A	20	31	
U111	8251A	4	26	
U107	8253	12	24	
U139, 142, 144	8259A	14	28	
U177	8272	20	40	
U128	8275	20	40	
U158, 160, 162	8283	10	20	
U136	8284A	9	18	
U94,	8286	10	20	
U98, 103, 166	8287	10	20	
U99, 157	8288	10	20	
U156	8289	10	20	
U148	74368	8	16	U148-9, 13
U137, 164, 165	8304B	10	20	
U177	74F04	7	14	U177-12
U105	74LS165	8	16	
DL1, 2, 3, 4		7, 8	16	
DL5		7	14	
RP1-17, 19-21			1	
RP8			8	

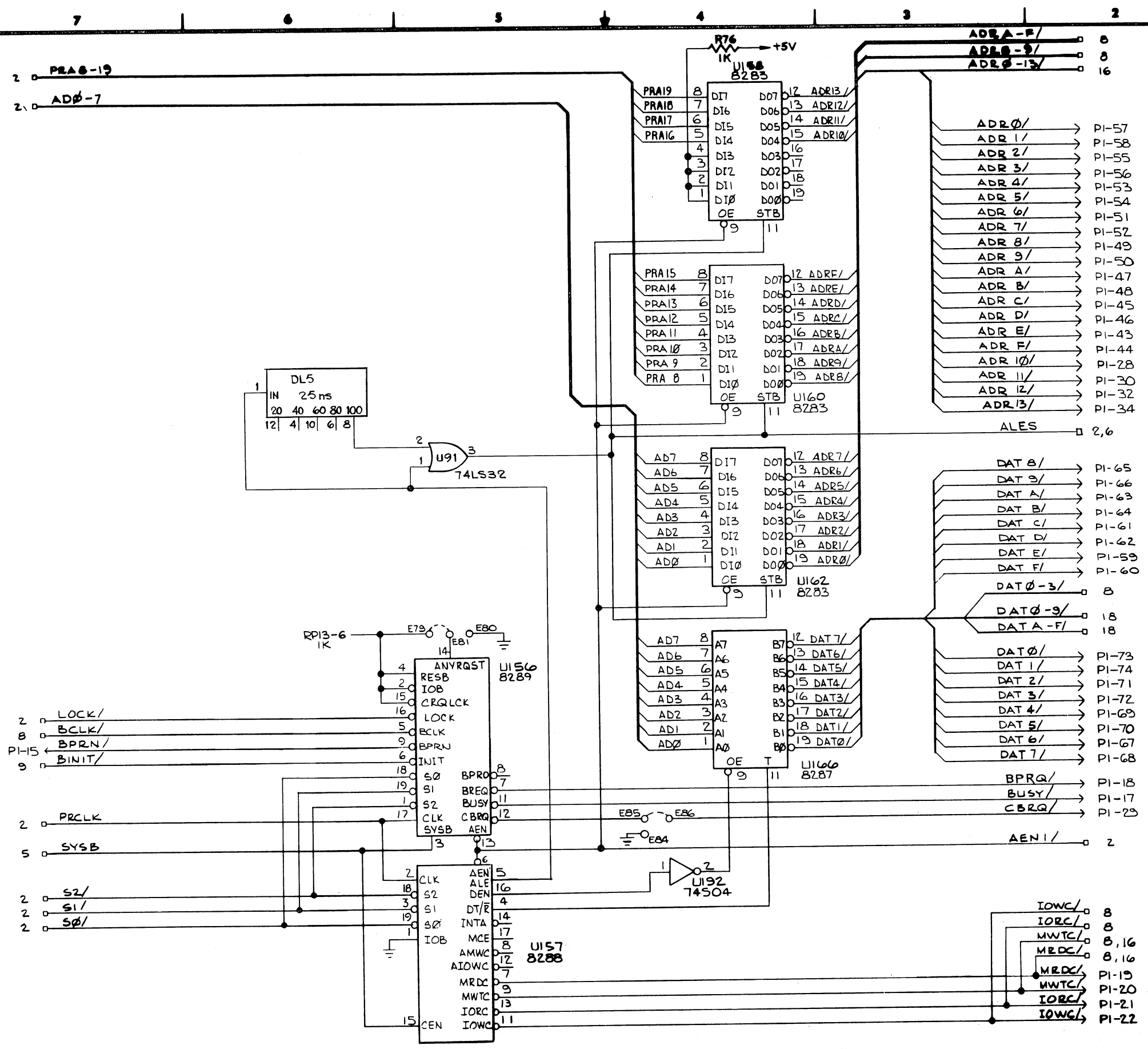
E103	
TP9	
DL5	
Y5	
Q2	
CR3	CR1
C173	C17, 45, 48, 50, 60, 62, 63, 71, 80, 107, 152, 148, 149
R16	R69, R74
RP21	
U199	U17, 55, 56, 64, 65, 123, 161, 178
LAST USED	NOT USED

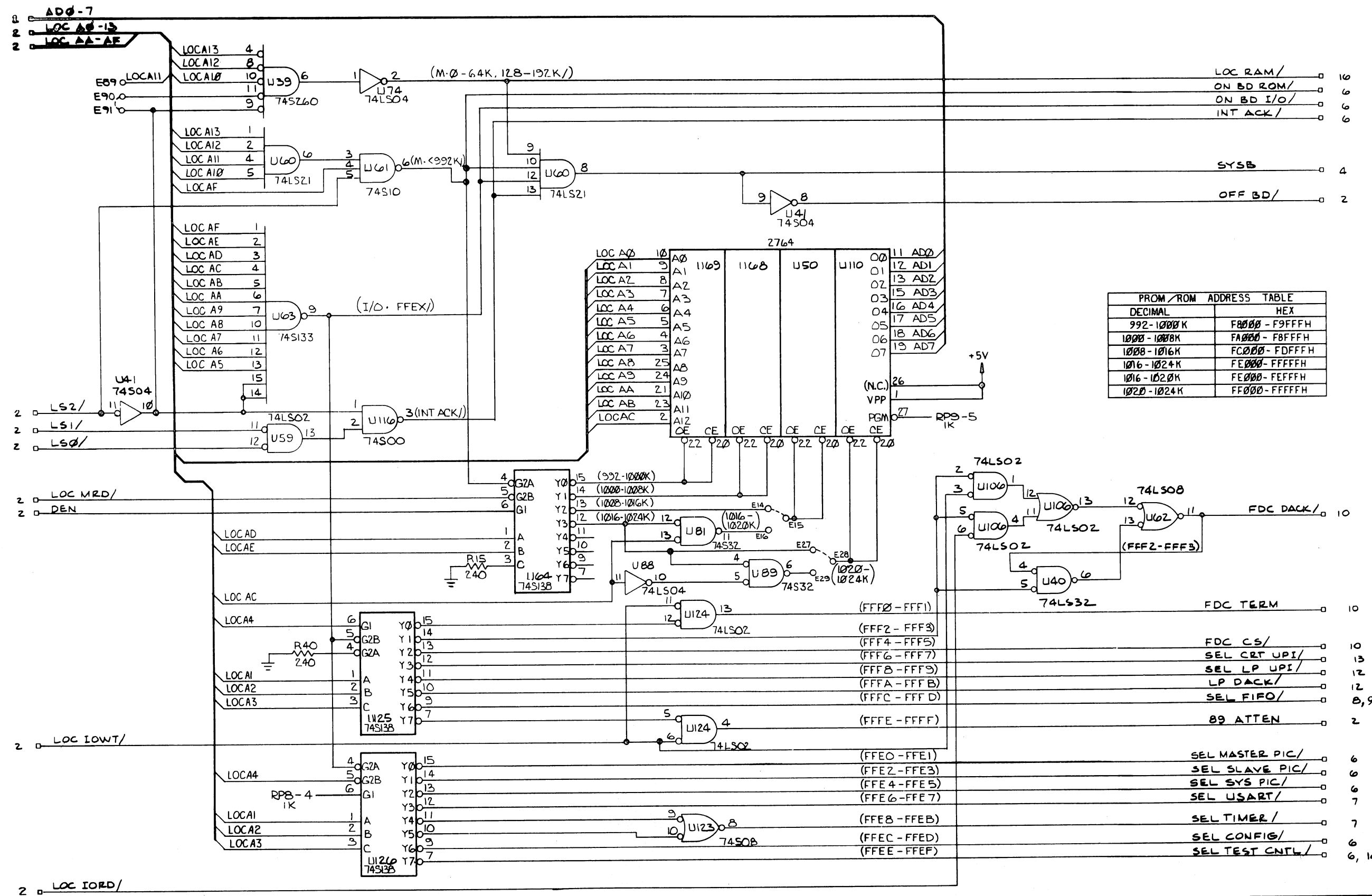
QUANTITY PER DASH NO.		DESCRIPTION	
PARTS LIST		PARTS LIST	
UNLESS OTHERWISE SPECIFIED:		SIGNATURE	
1. DIMENSIONS ARE IN INCHES.		DRN BY: C. Loto	DATE: 9/28
2. BREAK ALL SHARP EDGES.		CHK BY: Nelson	DATE: 9/28
3. DO NOT SCALE DRAWING.		APVD: R. Smith	DATE: 9/29
4. TOLERANCES:		TITLE	
ANGLES ±		SCHEMATIC	
HOLE ±		CENTRAL PROCESSOR/INPUT OUTPUT-B	
RADIUS ±		3085 BOWERS AVE SANTA CLARA CALIF. 95051	
		REV	
		D 21 01	135283
		SCALE NONE	
		SHEET 1 OF 1	

CP10-B1

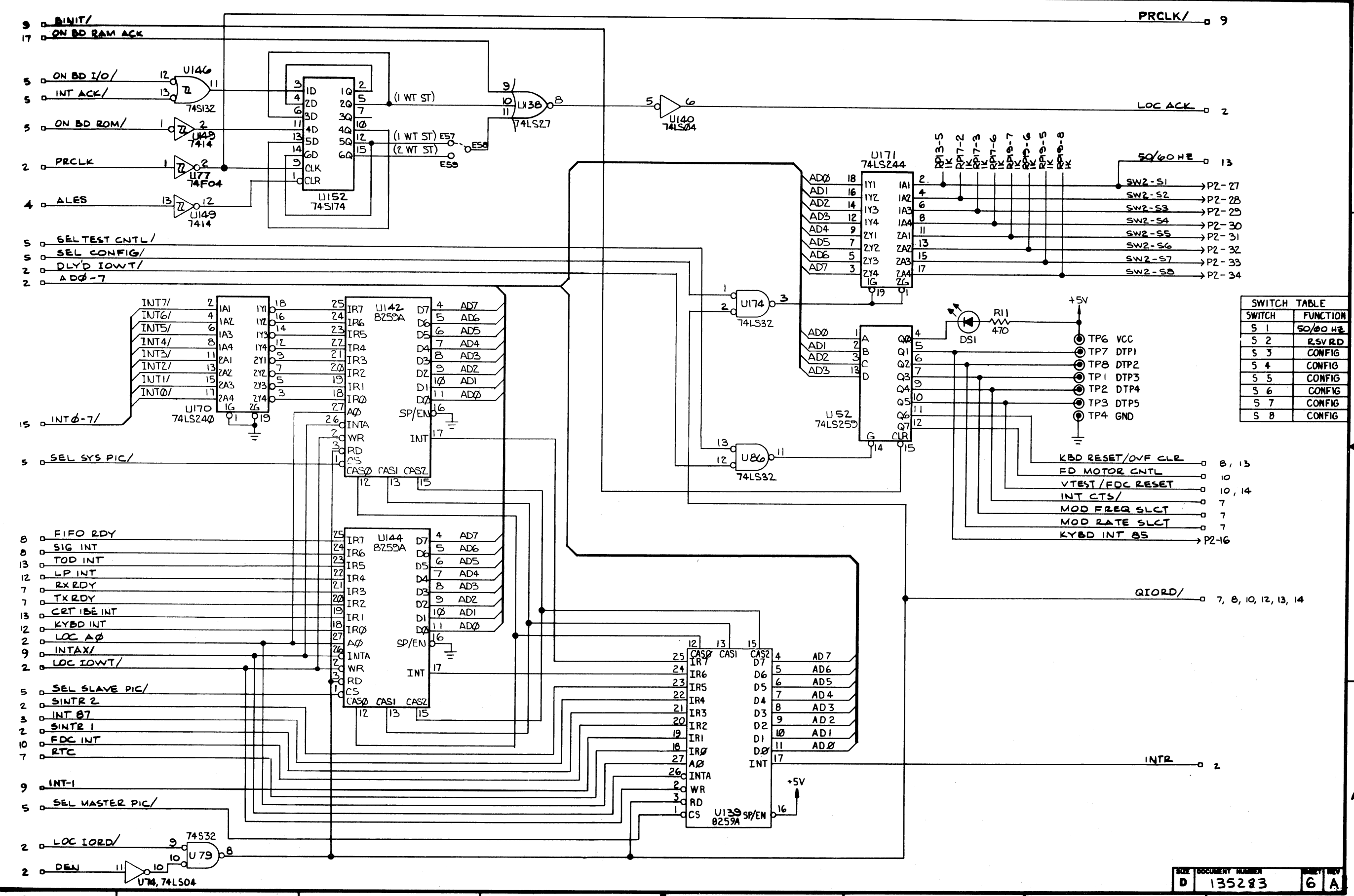




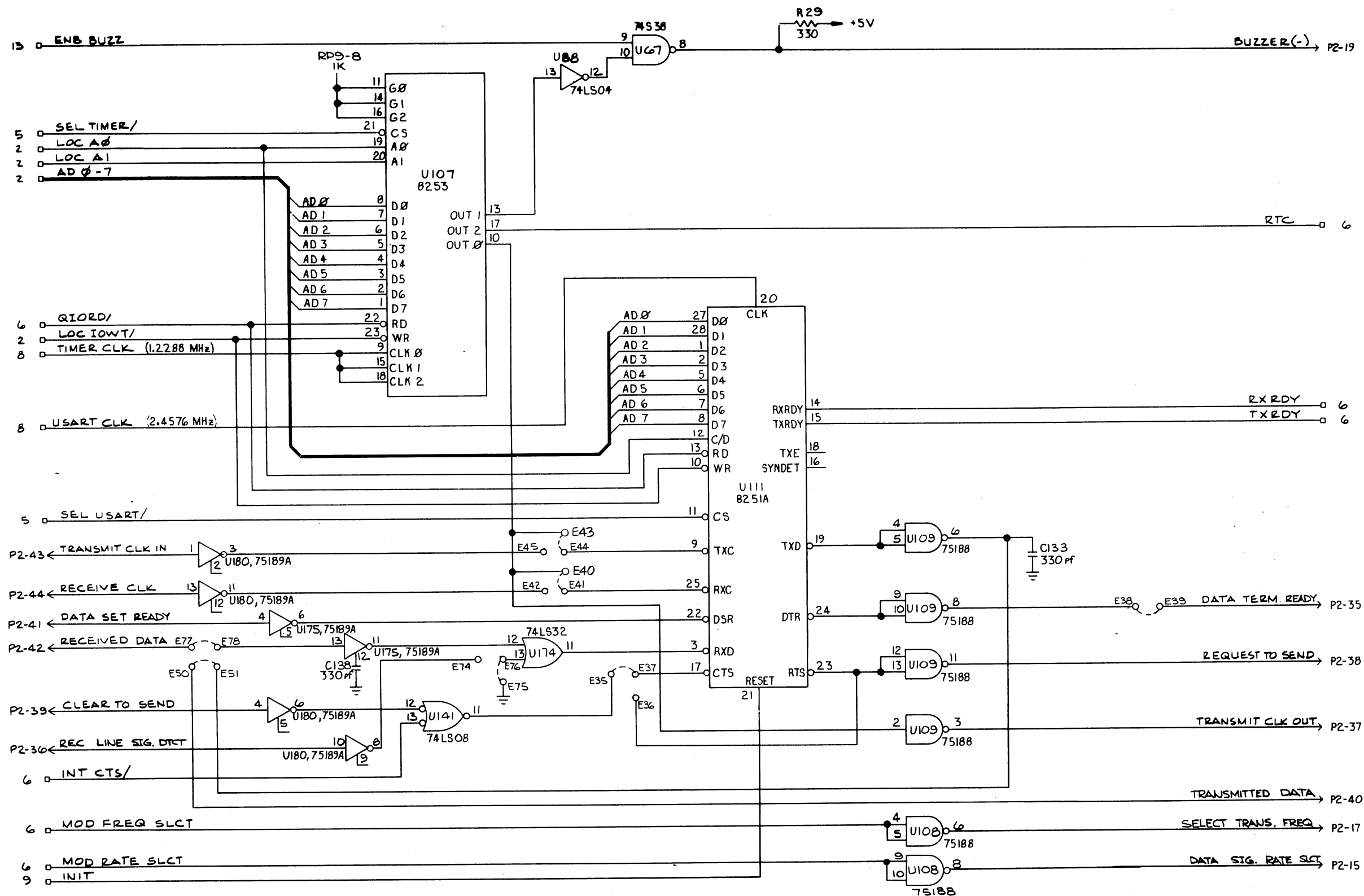


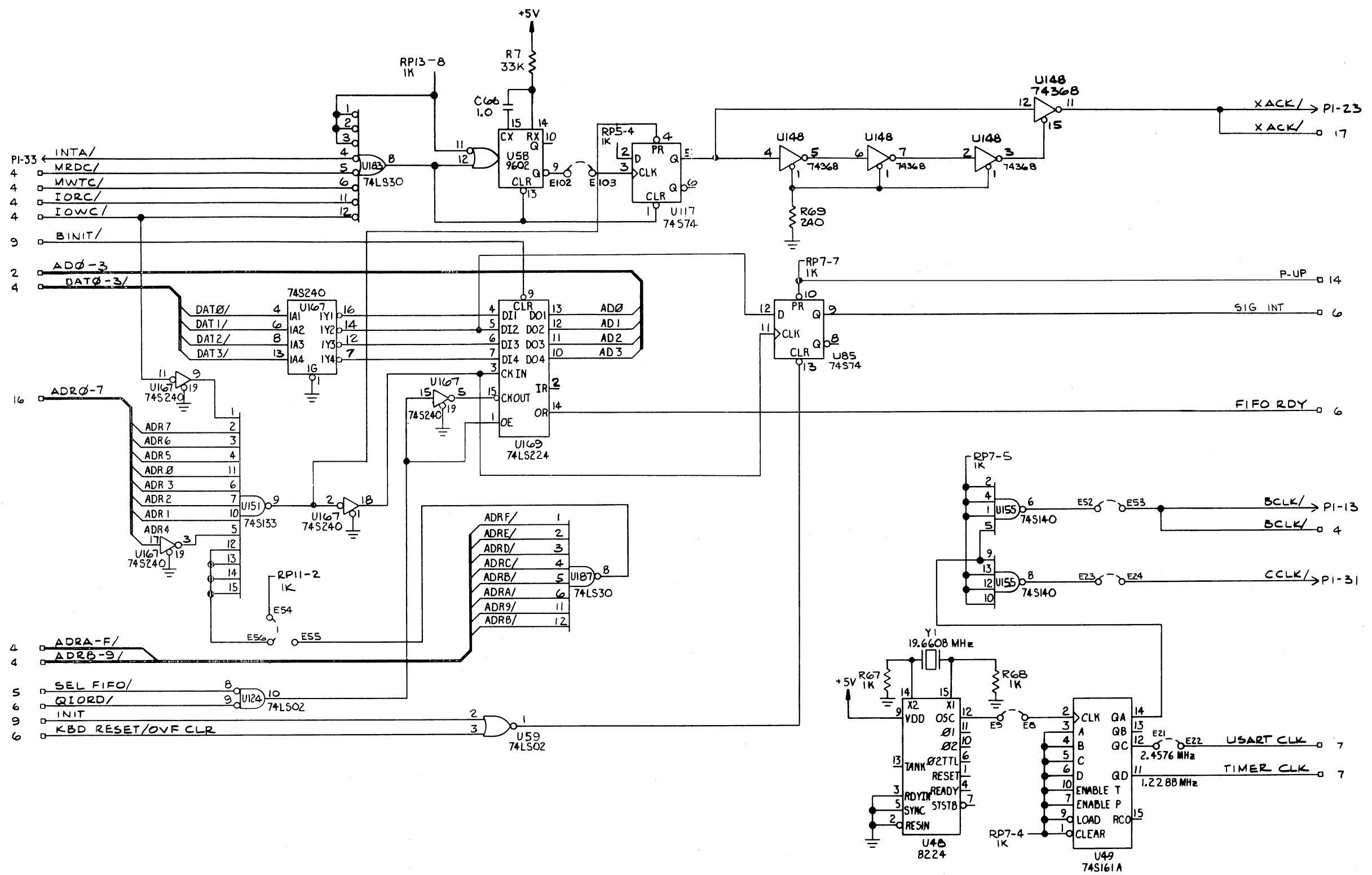


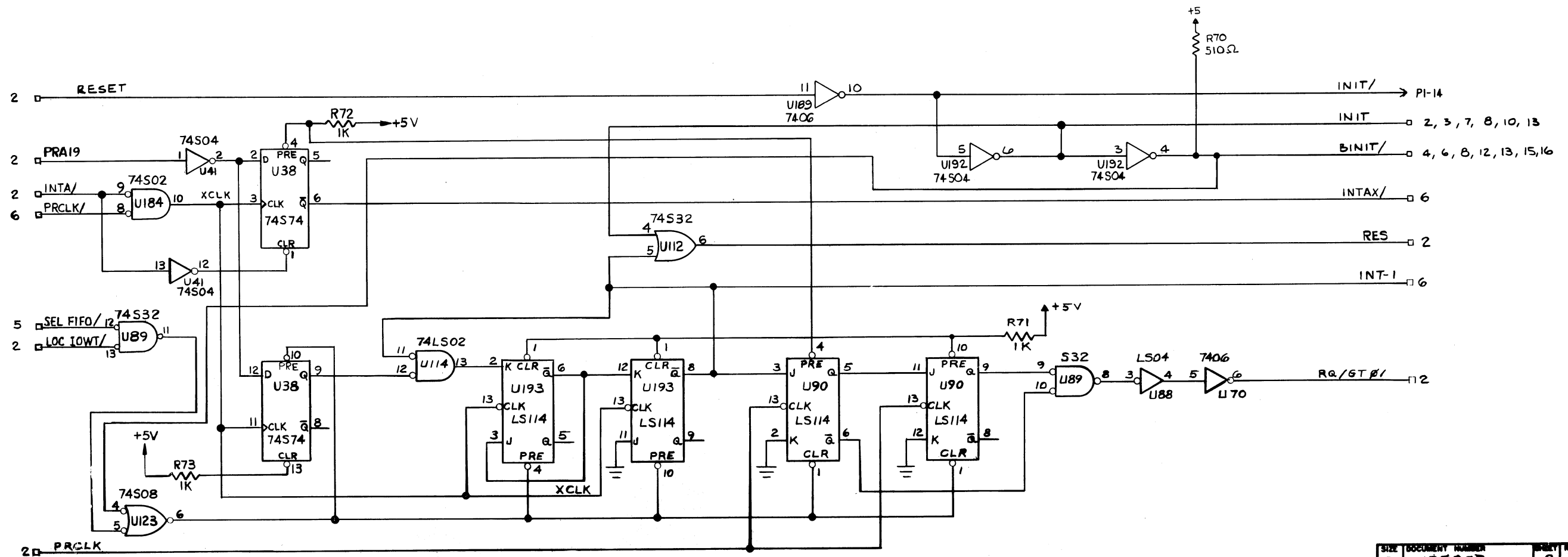
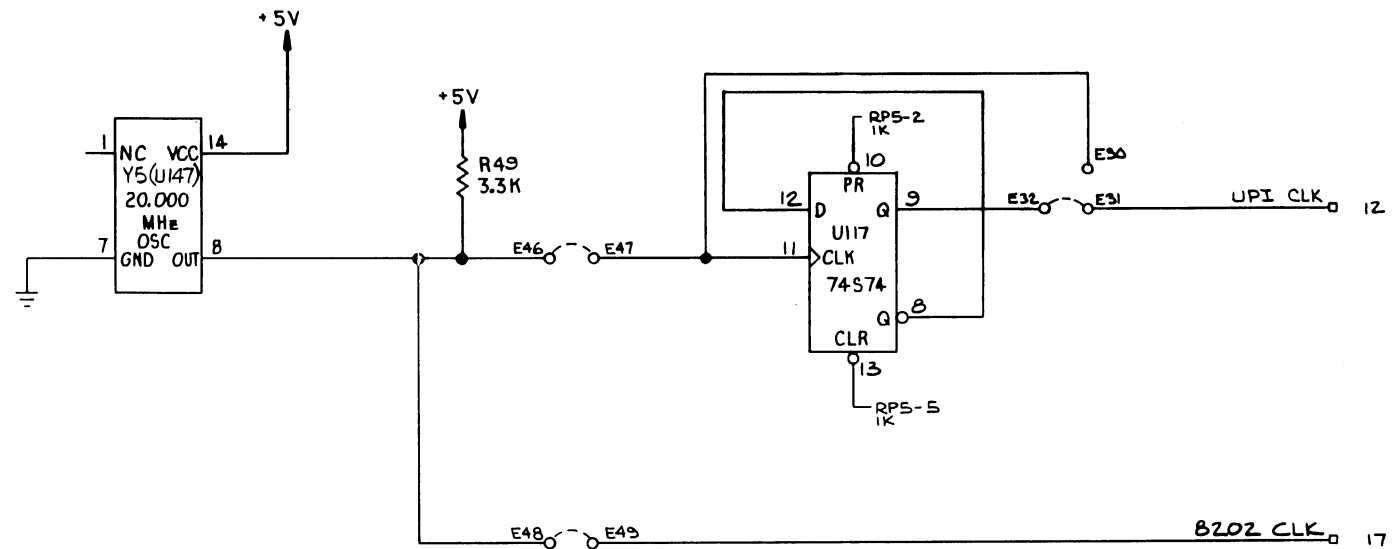
PROM/ROM ADDRESS TABLE	
DECIMAL	HEX
992-1000K	F8000 - F9FFFH
1000-1008K	FA000 - FBFFFH
1008-1016K	FC000 - FDFFFH
1016-1024K	FE000 - FFFFFH
1016-1020K	FE000 - FEFFFH
1020-1024K	FF000 - FFFFFH



SWITCH	FUNCTION
S 1	50/60 HZ
S 2	RSV RD
S 3	CONFIG
S 4	CONFIG
S 5	CONFIG
S 6	CONFIG
S 7	CONFIG
S 8	CONFIG

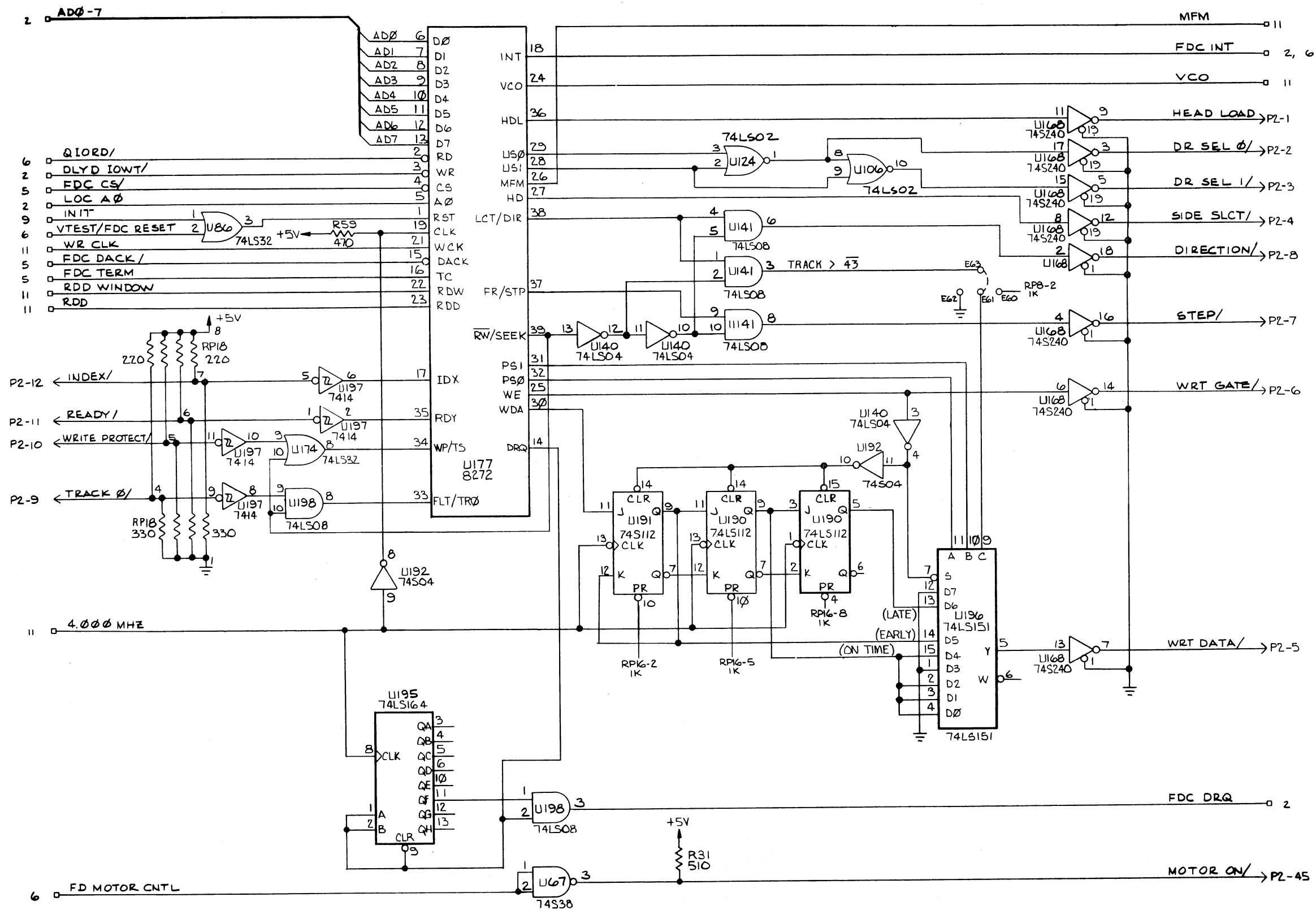


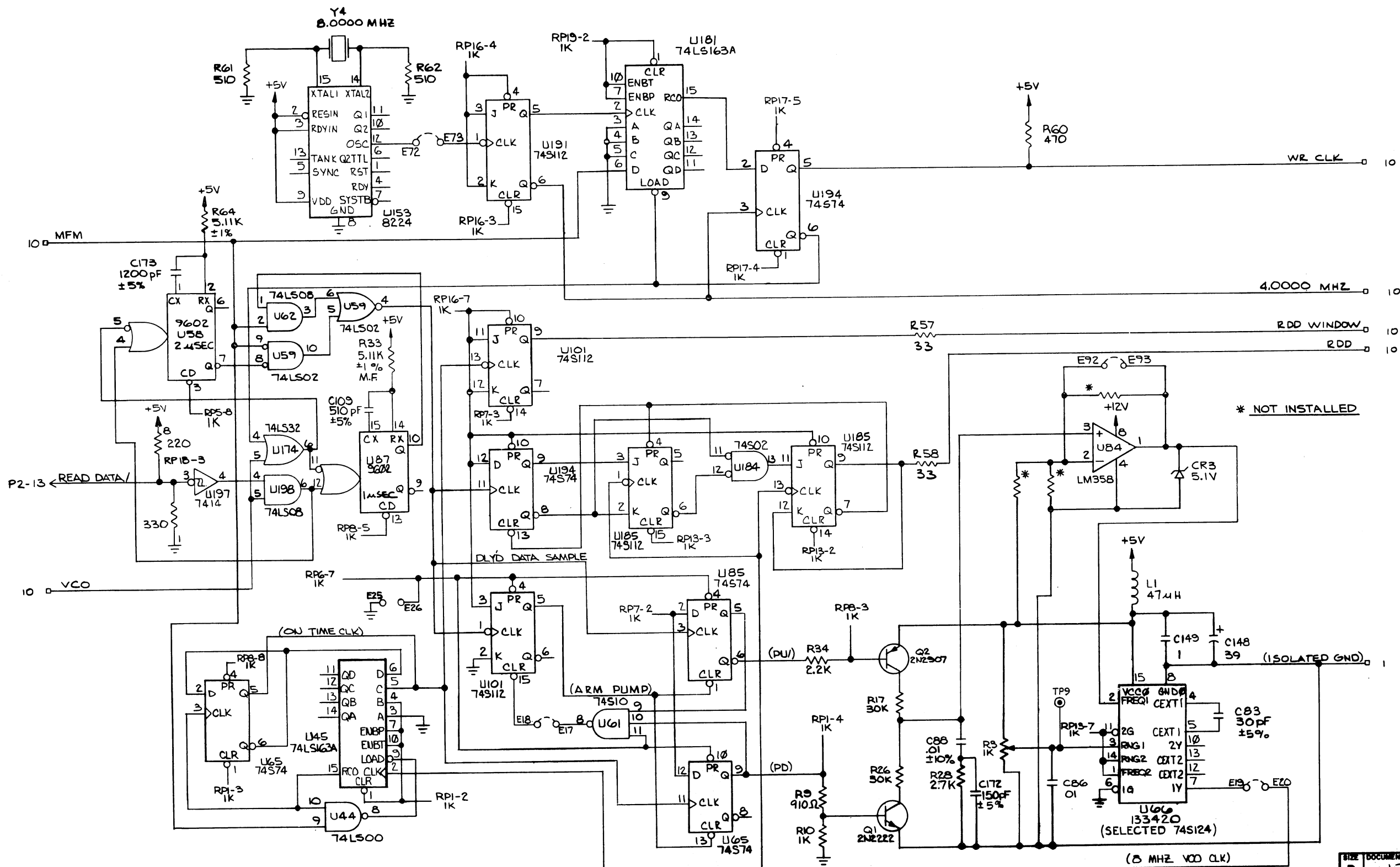




SIZE	DOCUMENT NUMBER	REV
D	135283	9 A

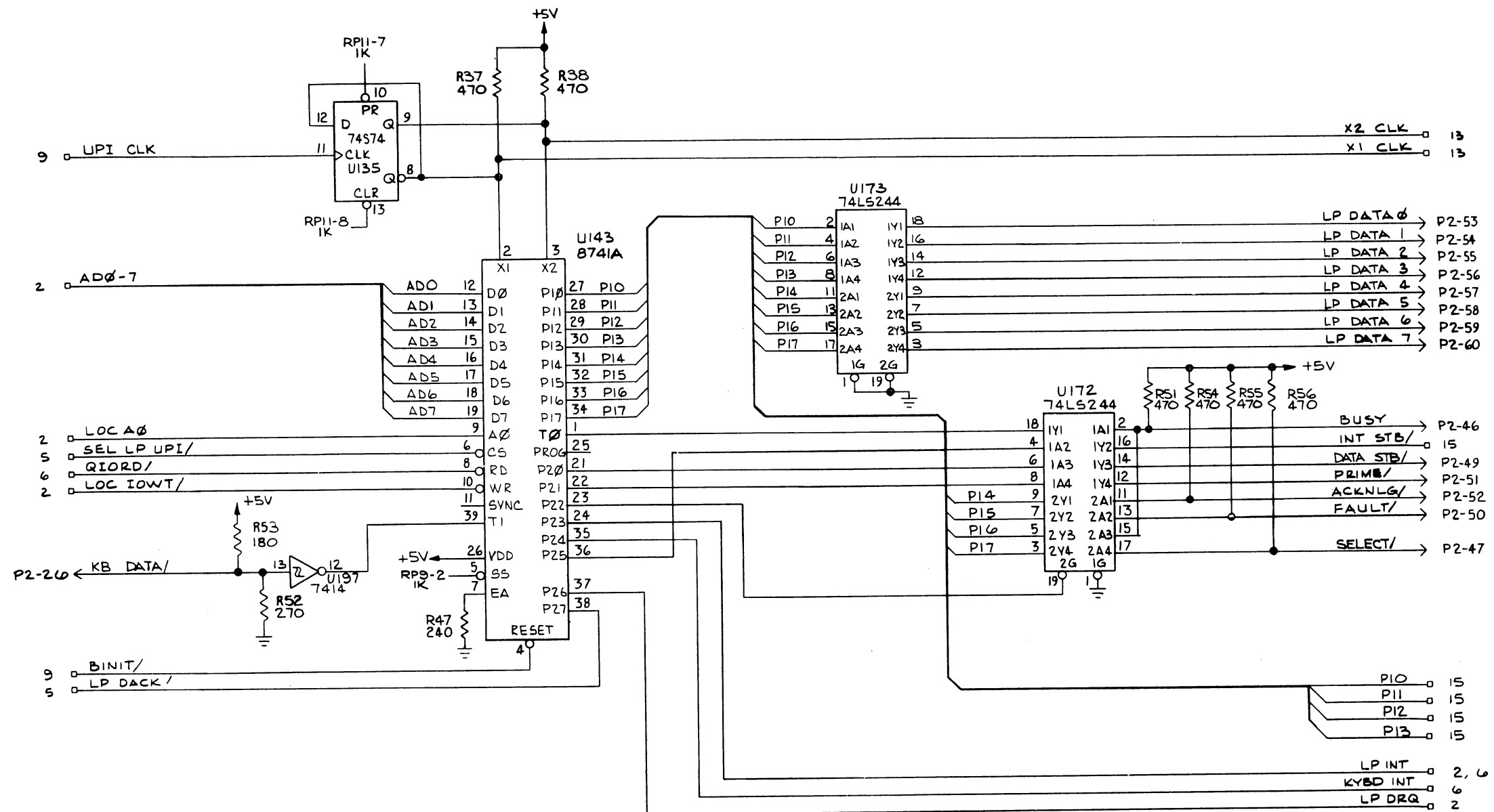
CPI0-B1
10

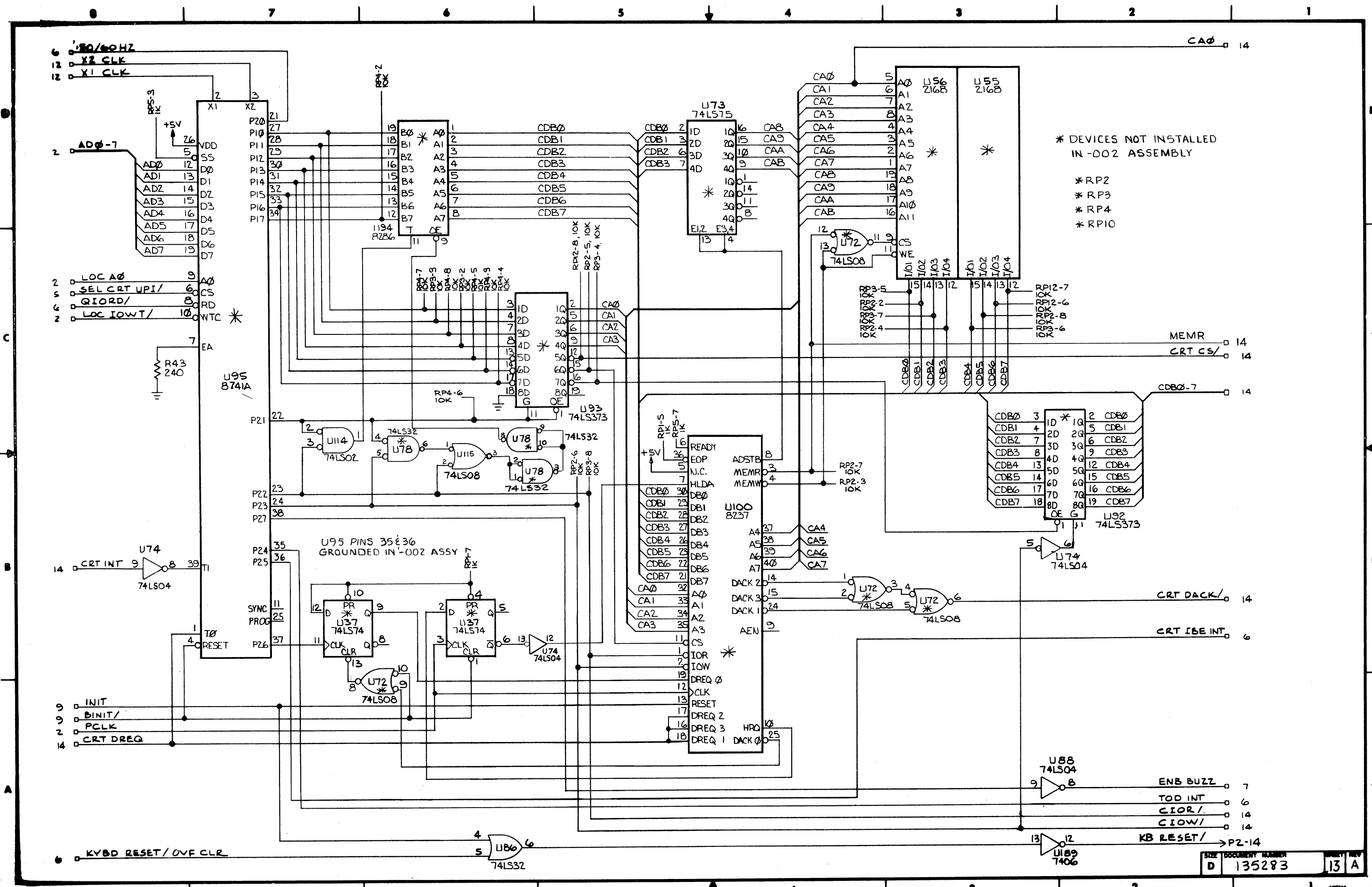




SIZE	DOCUMENT NUMBER	DATE	REV
D	135283	11	A

CPIO-B1
12



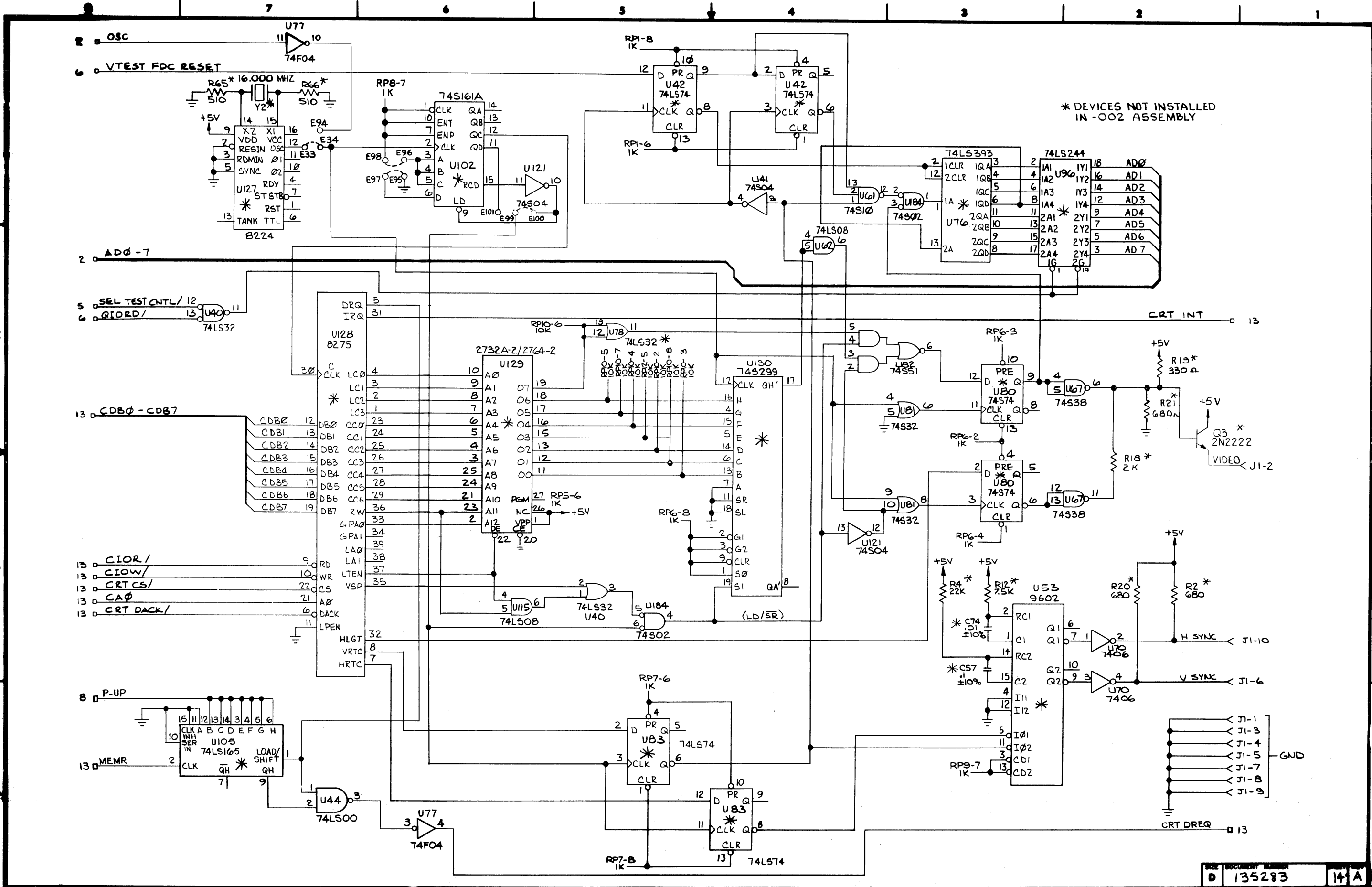


* DEVICES NOT INSTALLED
IN -002 ASSEMBLY

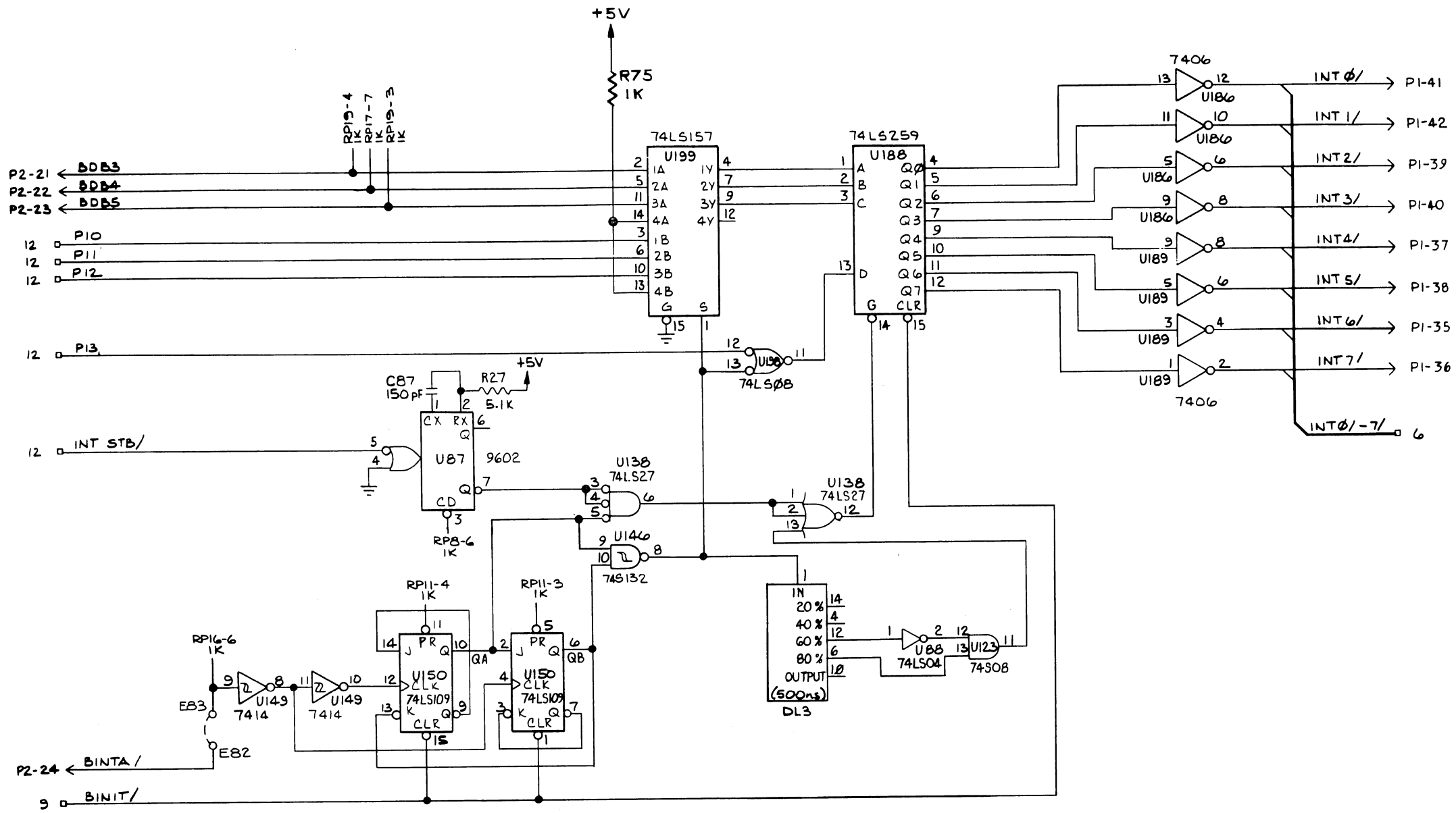
- * RP2
- * RP3
- * RP4
- * RP10

SIZE	DOCUMENT NUMBER	REV
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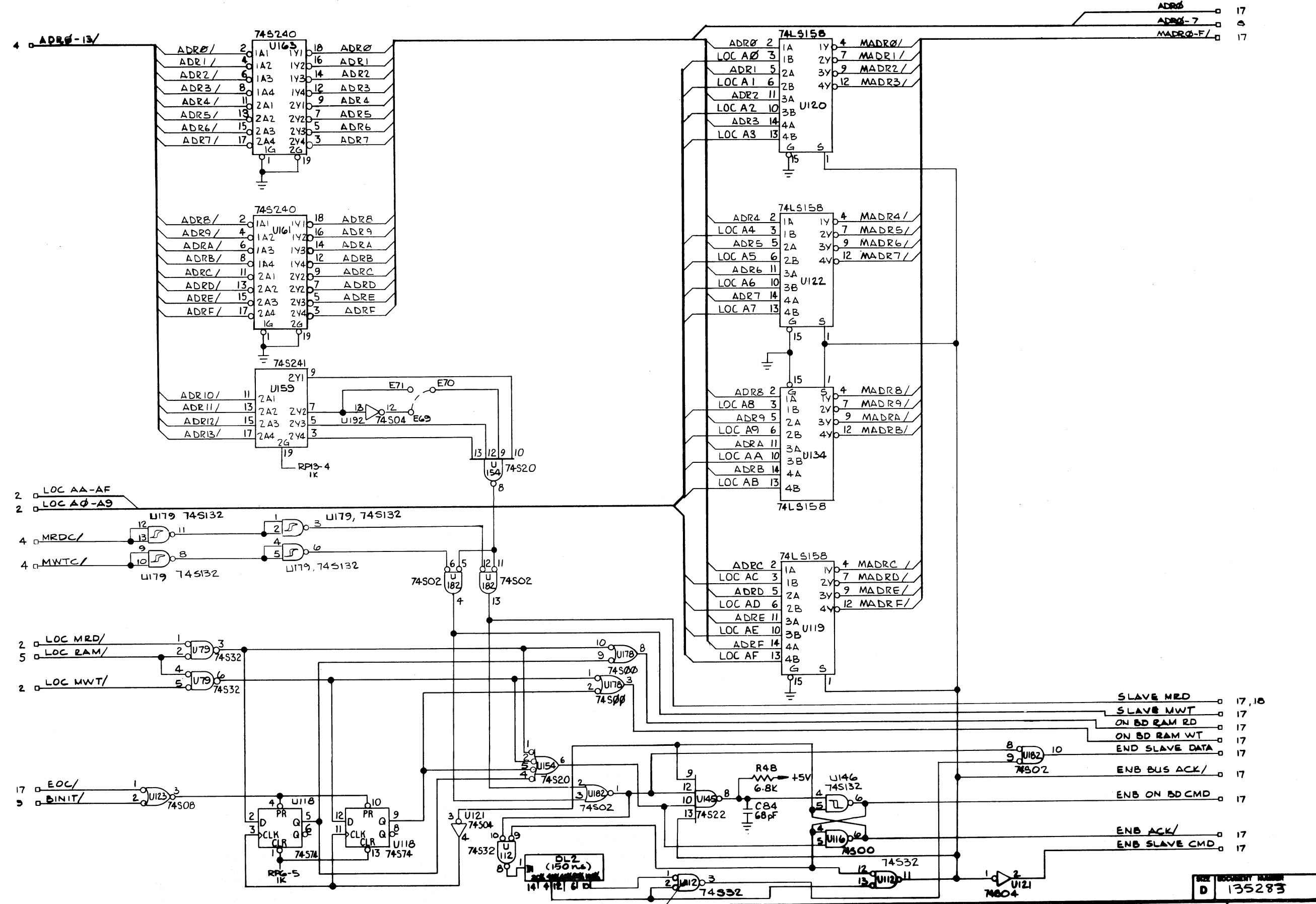
CPIO-B1
14



* DEVICES NOT INSTALLED
IN -002 ASSEMBLY



7 6 5 4 3 2 1



ADR6 17
ADR6-7 8
MADR6-F 17

LOC AA-AF 2
LOC A0-A9 2

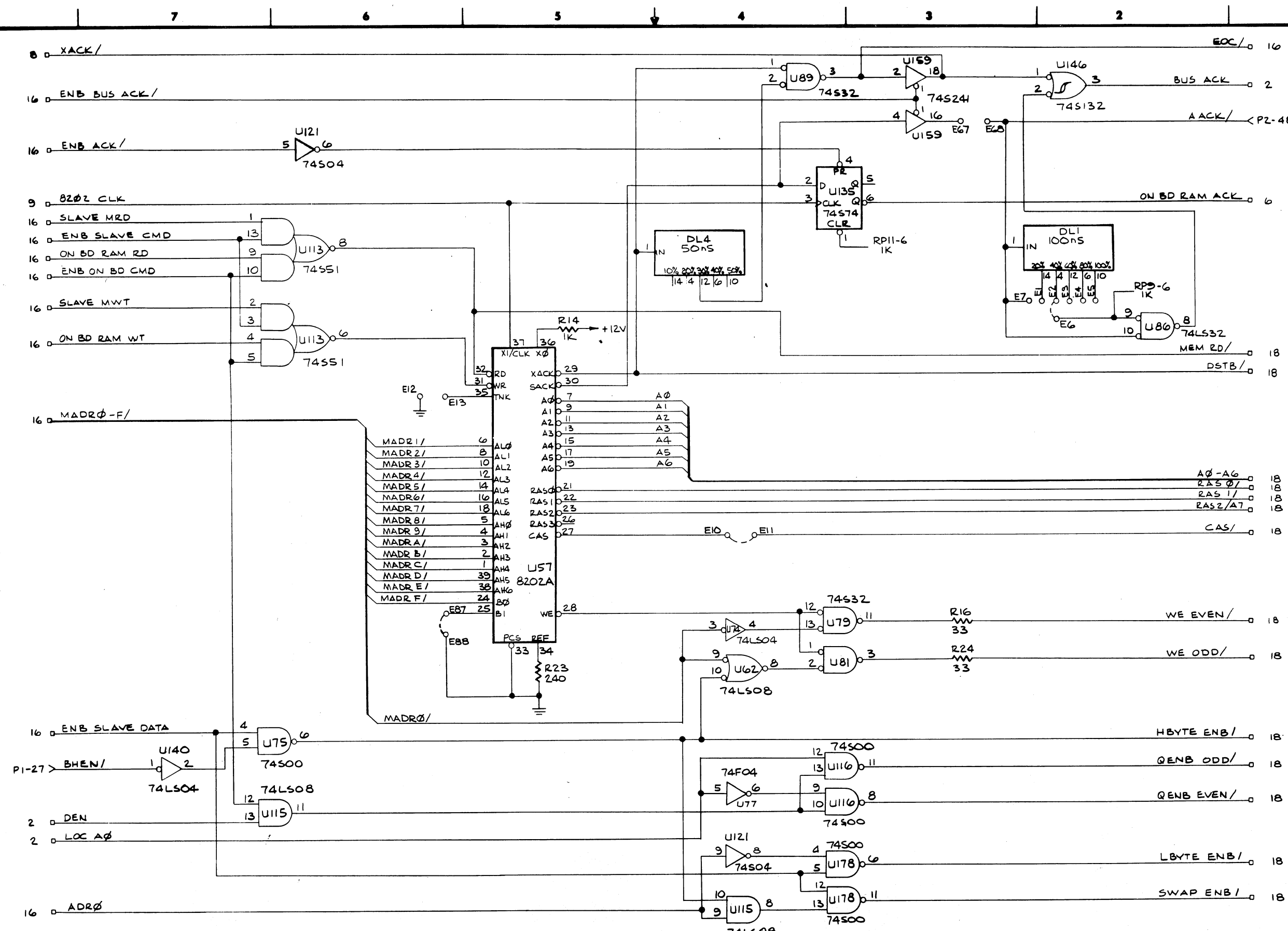
LOC MRD/ 2
LOC RAM/ 5
LOC MWT/ 2

EOC/ 17
BINIT/ 3

SLAVE MRD 17, 18
SLAVE MWT 17
ON BD RAM RD 17
ON BD RAM WT 17
END SLAVE DATA 17
ENB BUS ACK/ 17
ENB ON BDCMD 17
ENB ACK/ 17
ENB SLAVE CMD 17

D 135283 16 A

CPIO-B1
17



SIZE	DOCUMENT NUMBER	SHEET	REV
D	135283	17	A

CP10-B1
18

17 RAS 2/A7
 17 A7 - A6
 17 CAS/
 17 RAS/
 17 WE 000/

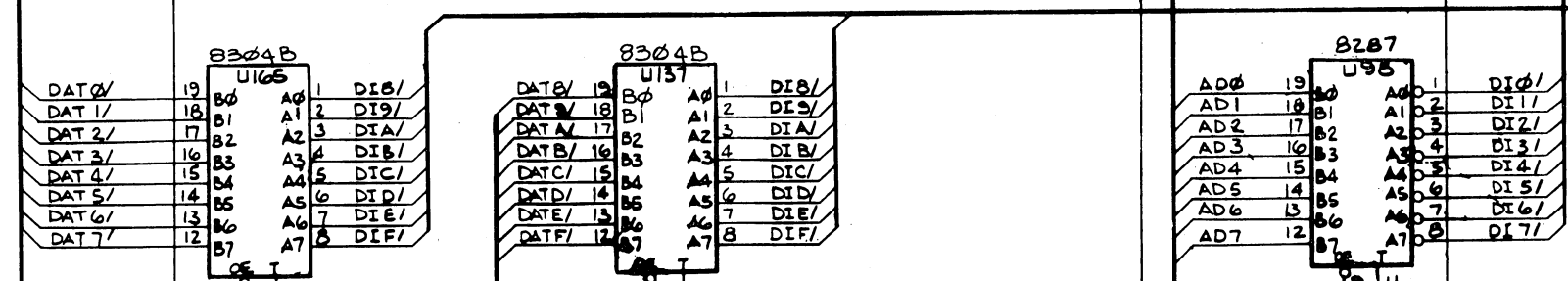
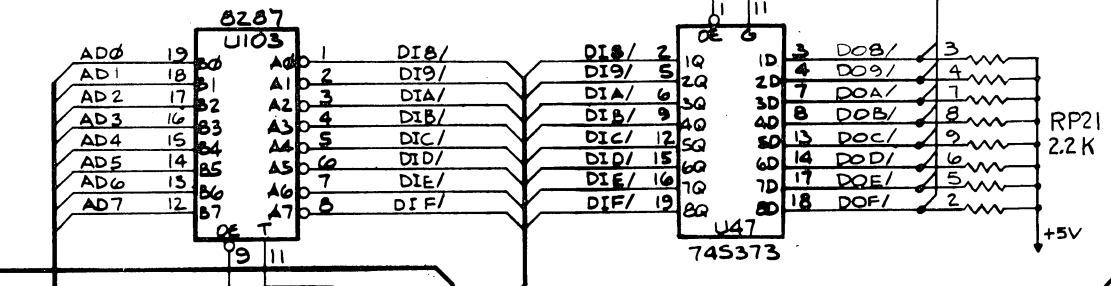
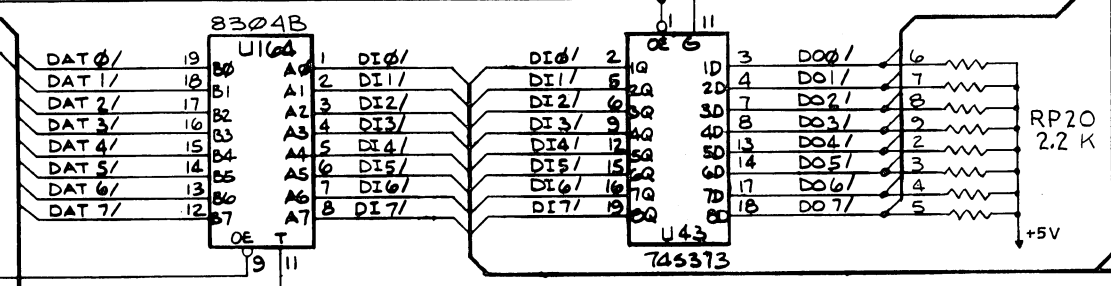
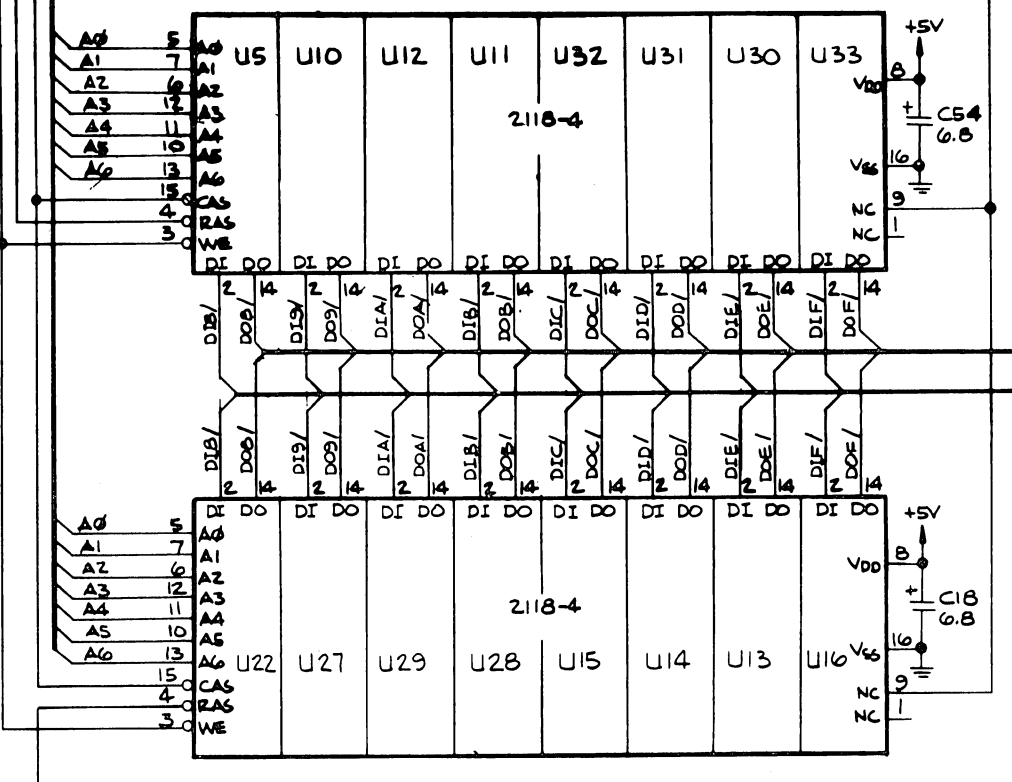
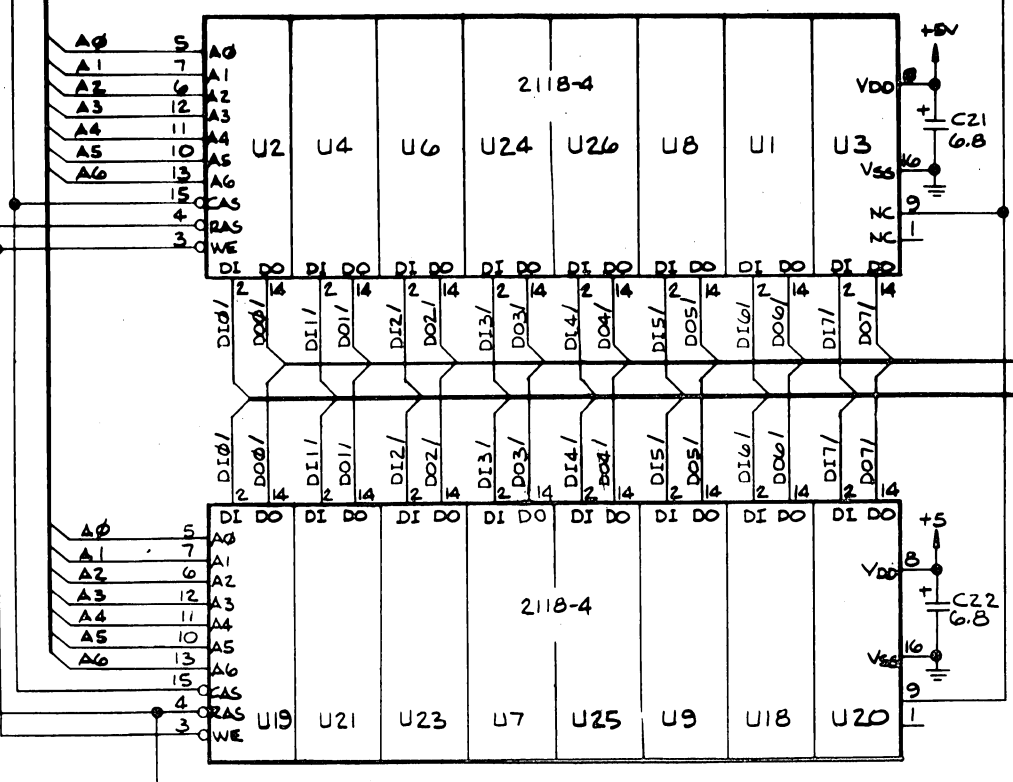
17 WE EVEN/

17 RAS1/

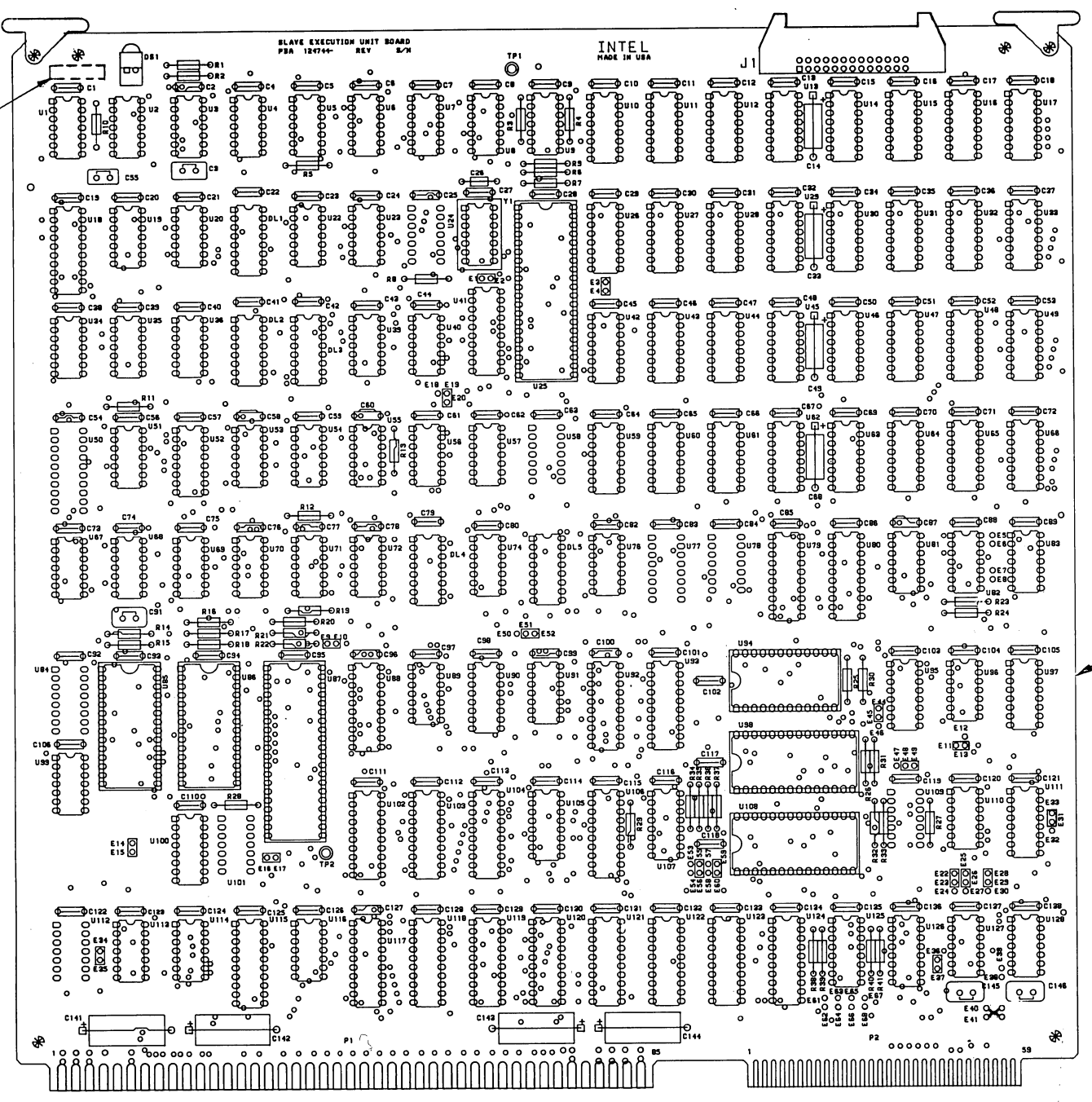
17 DSTB/
 17 MEM RD/
 4 DATA-F/
 4 DAT 0-7/

17 LBYTE ENB/

17 SWAP ENB/
 16 SLAVE MRD
 17 HBYTE ENB/
 17 QENB ODD/
 2 ADD -7
 17 QENB EVEN/
 2 DR/T



ATTENTION: PROPERTY DRAWING AND ITS CONTENTS ARE TO BE KEPT UNCLASSIFIED AND UNCONTROLLED UNLESS OTHERWISE SPECIFIED BY THE ISSUING OFFICE.



REVISIONS							
REV	DESCRIPTION	DFT	DATE	CHK	DATE	APVD	DATE
A	PROTOTYPE DRF-32	J.S.	12-14-81	EG	12/15/81	[Signature]	12/14/81
-	PILOT RLSE PER ECO 13-8004	MEEK	12/16/81	EG	12/22/81	[Signature]	12/24/81
B	ECO 13-8158	M. V. H.	2-23-82	[Signature]	3/1/82	[Signature]	2/23/82
C	ECO 53414	R	8-23-82	[Signature]	8/24/82	[Signature]	8/24/82
D	ECO 53743	Barley	11-9-82	R	11-9-82	[Signature]	11/9/82
E	ECO 54091	LP	2-4-83	R	2-15-83	[Signature]	2/15/83
F	ECO 54562	LP	4/12/83	AP	4/27/83	[Signature]	4/27/83
G	ECO 21-55010	RAR	11-1/83	[Signature]	11/1/83	[Signature]	11/1/83
H	ECO 21-55210	RAR	11-1/83	[Signature]	11/1/83	[Signature]	11/1/83

IEU/II WIRE LIST
 NOTES: ALL JUMPERS ARE SUITCASE, EXCEPT 40 AND 41.
 A DENOTES JUMPERS ADDED BY THIS ASSEMBLY
 R DENOTES JUMPERS REMOVED BY THIS ASSEMBLY

A/R	FROM	TO	STATUS	NAME	SCHEMATIC SHEET	ZONE
R	E 1	E 2	IN	20 MHz OSC	6	D-6
	3	4	IN	CAS/	6	B-5
	5	6	OPEN	DATA SIG RATE SLCT	11	C-4
	7	8	OPEN	SEL TRANS FREQ	11	C-4
	9	10	IN	READY	2	C-6
	12		OPEN			
	11	13	IN	TIMER OUTPUT	11	C-5
	14	15	IN	BREQ/	4	D-5
	16	17	IN	USART CCK	10	A-6
	18		OPEN			
R	19	20	IN	AACK	6	D-4
	21		X	NOT USED		
	22	23	IN	TxC	11	B-5
	24		OPEN			
	25	26	IN	RxC	11	B-5
	27		OPEN			
	28	29	IN	Req to SEND	11	A-5
	30		OPEN			
	31	33	IN	SEL USART	9	D-3
	32		OPEN			
R	34	35	IN	CBRQ	4	D-3
	36	37	IN	AACK	6	C-3
	38	39	OPEN	DTR	11	A-3
	40*		IN	RxD	11	A-7
	41*		IN	TxD	11	A-7
	44	45	IN	RxRDY	10	D-7
	46		OPEN			
	47		OPEN			
	48	49	IN	TxRDY	10	D-7
	50		OPEN			
51	52	IN	ADDRESSING	5	C-3	
E 69	F 70	OPEN	EINTA/	2	A-2	

DASH	ADDRESS JUMPER	Pg 5	I/O PORT JUMPER	Pg 9	ZONE	USAGE
	55	59	57	53	61 63 65 67	
	56	60	58	54	62 64 66 68	
004	in	in	in		0A000:0	1MDX44X
005	in				07000:0	1MDX43X
006		in			0B000:0	1MDX43X
007			in		0D000:0	1MDX44X
008			in		0E000:0	UPGRADE

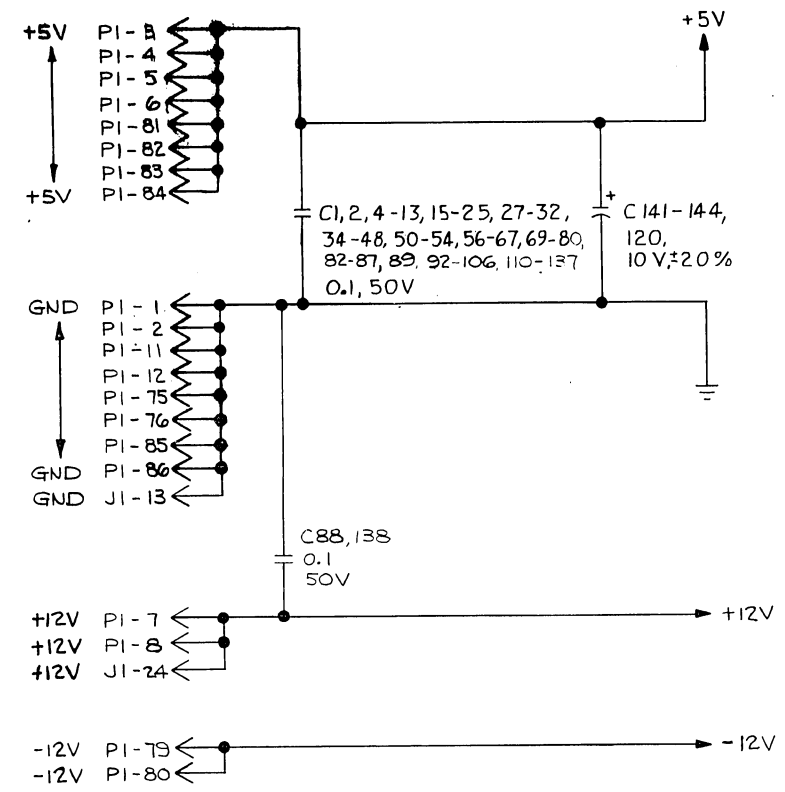
*ASSY'S BUILT FROM PB 124743-001 ARE: E40 TO E42, E41-E43
 *ASSY'S BUILT FROM PB 124743-002 ARE: E40 TO E43, E41 TO E42.

- NOTES: UNLESS OTHERWISE SPECIFIED.
- ASSEMBLY PART NUMBER IS 125169-XXX. THIS DOCUMENT, AND PL ARE TRACKING DOCUMENTS.
 - WORKMANSHIP PER 99-0007-001.
 - APPLY CBA LABEL APPROX WHERE SHOWN.
 - USE ITEM 2 (NOT SHOWN) PER JUMPER TABLE.

124155 SERIES IV NEXT ASSY USED ON

QUANTITY PER DASH NO.	ITEM NO.	DESCRIPTION
PARTS LIST		
SIGNATURE	DATE	3065 BOWERS AVE SANTA CLARA CALIF. 95051
DRN BY J. Stodden	12-14-81	
CHK BY E. Gross	12-22-81	
ENGR APVD D. Singer	12-23-81	
TITLE		CONFIGURED BOARD ASSY
APVD		1S15 EXECUTION UNIT II
SIZE	DCLC	CL CODE
D 21	12	125169
SCALE	NONE	SHEET 1 of 1

REVISIONS						
REV	DESCRIPTION	DFT	DATE	CHK	DATE	APVD
A	PILOT RELEASE PER E28 13-7947	N.WADA	10-19-81	SK	12-4-81	W.S.
B	ECO 13-8157	A.H.	3-1-82	SK	3-1-82	W.S.
C	ECO 54091	LP	2/7/83	SK	2-16-83	W.S.
D	ECO 54562	LP	4-15-83	GP	4/12	W.S.



I/O PORT ADDRESS	E65-E66	E67-E68	E61-E62	E63-E64
ØX	X	X	X	X
1X	X	X	X	
2X	X	X		X
3X	X	X		
4X	X		X	X
5X	X		X	
6X	X			X
7X	X			
8X		X	X	X
9X		X	X	
AX		X		X
BX		X		
CX			X	X
DX			X	
EX				X
FX				

MEMORY ADDRESS	E55-E56	E59-E60	E57-E58	E53-E54
0XXXX	X	X	X	X
1	X	X	X	
2	X	X		X
3	X	X		
4	X		X	X
5	X		X	
6	X			X
7	X			
8		X	X	X
9		X	X	
A		X		X
B		X		
C			X	X
D			X	
E				X
FXXXX				

REF DES	DEVICE TYPE	POWER PINS GND	+5V	SPARE GATES OUTPUT PINS
U34, 68, 76	74S00	7	14	U34-8, U68-11, U76-6, 8
U19, 113	74S02	7	14	
U39	74LS02	7	14	U39-1, 4
U6, 35	74S04	7	14	U6-12, U35-2, 12
U8, 69, 96	74LS04	7	14	
U99	7406	7	14	U99-2, 6, 8, 10
U7, 54, 72	74S08	7	14	
U51, 70, 83	74LS08	7	14	
U20, U23	74S10	7	14	U20-12
U116	74LS10	7	14	U116-6, 8
U114	7414	7	14	U114-2, 4, 6, 10, 12
U2	74S132	7	14	U2-3, 11
U111	74S138	8	16	
U100	74LS163A	8	16	
U52	74S174	8	16	
U110	74S20	7	14	U110-8
U1, 3	74S22	7	14	U3-8
U18, 41, 106	74S240	10	20	U18-3, 5, 7, 14, U41-3, 5, 7, 9, 14, 18
U115, 119, 124	74LS240	10	20	
U92, 93	74LS244	10	20	
U90, 105	74S257	8	16	
U95	74LS259	8	16	
U4, 91	74S260	7	14	U91-5
U81	74LS27	7	14	
U89	74LS30	7	14	
U9, 22, 55, 67, 74	74S32	7	14	U55-3, 11, U74-6, U22-3, U55-8
U79, 80, 88, 102	74S373	10	20	
U36	74S11	7	14	U36-6, 12
U57	74S51	7	14	
U40, 56, 71	74S74	7	14	U56-5, 6
U5	74LS74	7	14	
U53	74S86	7	14	U53-3, 6, 11
U97	74LS224	8	16	
U107, 126	74S85	8	16	
U125	74S157	8	16	
U109, 127	75189A	7	14	U109-3, 6, 11

REF DES	DEVICE TYPE	POWER PINS GND	+5V	SPARE GATES OUTPUT PINS
U108	8251A	4	26	
U94	8253	12	24	
U86, 98	8259A	14	28	
U117, 120, 123	8283	10	20	
U103, 104, 118, 121, 122	8287	10	20	
U87	8085A-2	20	40	
U85	8219	14	28	
U25	8202A	20	40	
U10-17, 26-33, U42-49, 59-66	2118-4	16	8	

REF DES	DEVICE TYPE	POWER PINS GND	+12V	-12V	SPARE GATE
U82, 128	75188	7	14	1	U82-3, 6

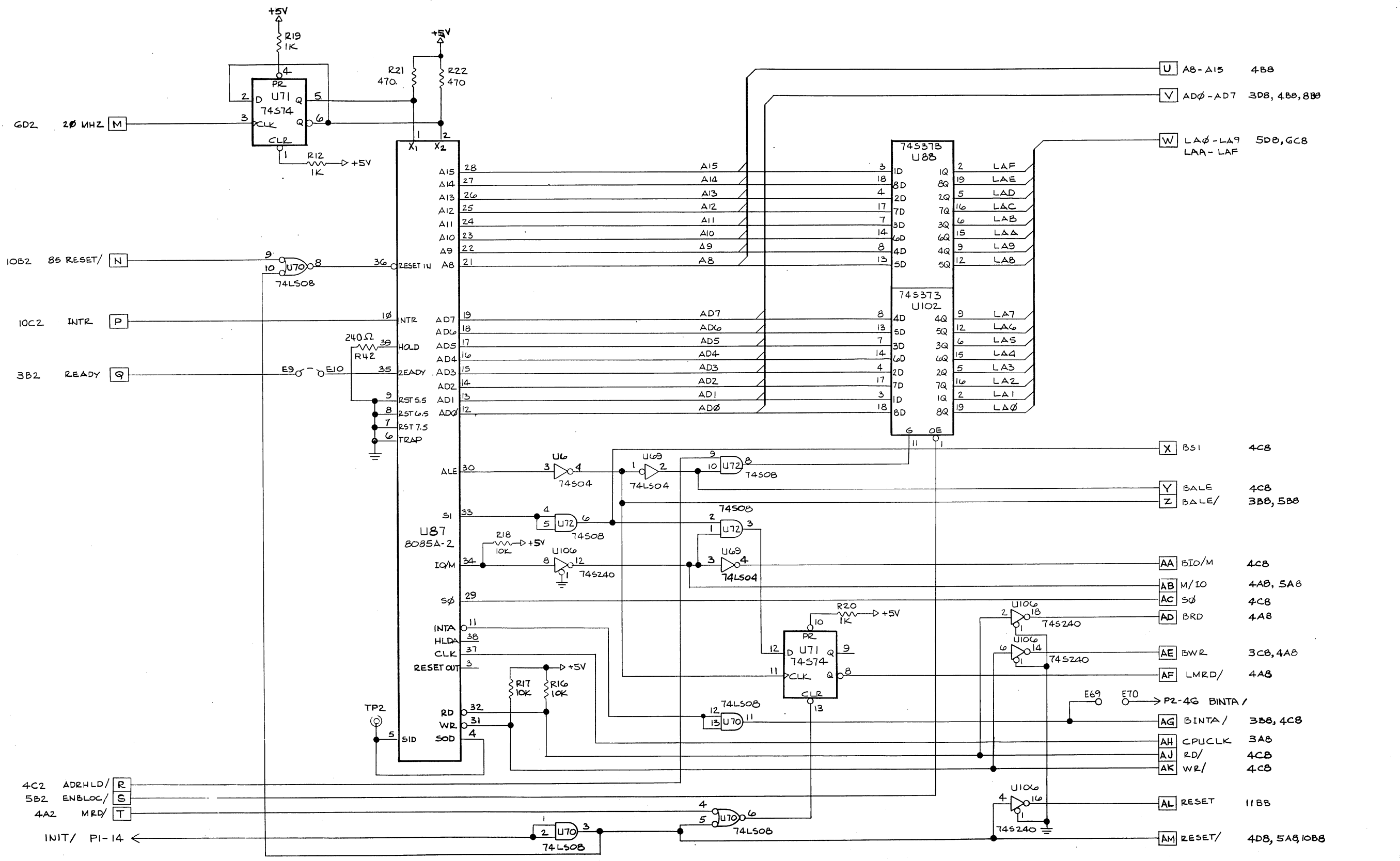
REF DES	DEVICE TYPE	POWER PINS GND	+5V	100% DELAY
DL5	DLY MOD	7, 8	16	(50 NS)
DL2, 4	DLY MOD	7, 8	16	(75 NS)
DL1	DLY MOD	7, 8	16	(150 NS)
DL3	DLY MOD	7, 8	16	(250 NS)

LAST USED	NOT USED
C146	C81, 90, 107, 109
DL5	C139, 140
DS1	
E76	E21
J1	
P2	
R42	
TP2	
U128	U21, 24, 37, 38, 50, 58, 73, 75, 77, 78, 84, 101, 112
Y1	

NOTES: UNLESS OTHERWISE SPECIFIED.
 1. CAPACITANCE VALUES ARE IN MICROFARADS, 50V, +80-20%.
 2. RESISTANCE VALUES ARE IN OHMS, 1/4W, 5%.

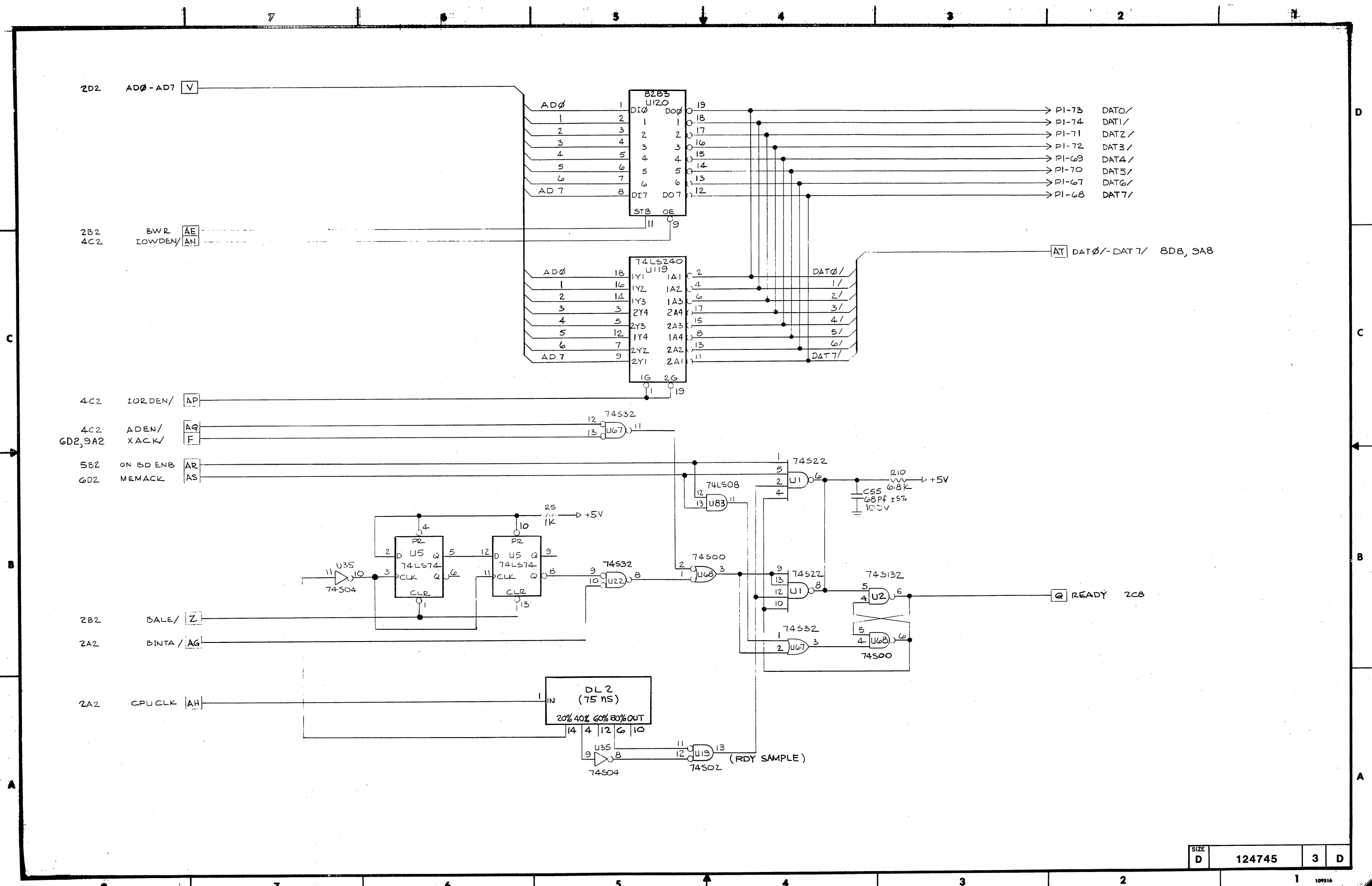
124744 IMDX-4XX
 NEXT ASSY: USED ON

QUANTITY PER DASH NO.	ITEM NO.	DESCRIPTION
PARTS LIST		
UNLESS OTHERWISE SPECIFIED:		3065 BOWERS AVE SANTA CLARA CALIF. 95051
1. DIMENSIONS ARE IN INCHES.	SIGNATURE	intel® SCHEMATIC, ISIS EXECUTION UNIT II
2. BREAK ALL SHARP EDGES.	DRN BY N. WADA 10-19-81	
3. DO NOT SCALE DRAWING.	CHK BY SKS 12-4-81	
4. TOLERANCES:	ENGR APVD 12/1/81	
ANGLES ±	APVD	SIZE DCLC CL CODE RLSL LVL
XXX ±		D 21 01 124745 D
XXX ±		SCALE NONE SHEET 1 OF 11



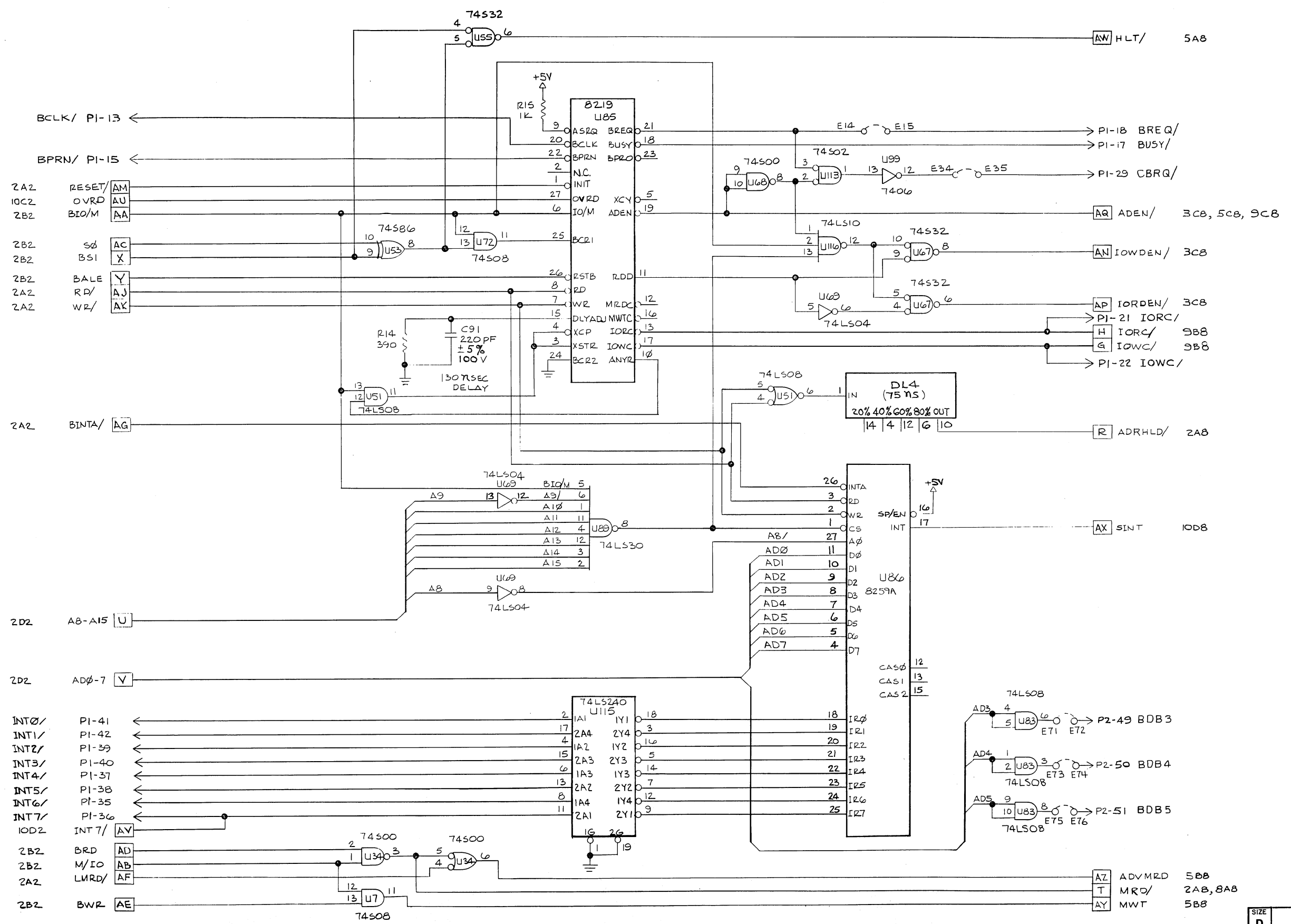
U	A8-A15	4B8
V	AD0-AD7	3D8, 4B8, 8B8
W	LA0-LA9 LAA-LAF	5D8, 6C8
X	BS1	4C8
Y	BALE	4C8
Z	BALE/	3B8, 5B8
AA	BIO/M	4C8
AB	M/IO	4A8, 5A8
AC	S0	4C8
AD	BRD	4A8
AE	BWR	3C8, 4A8
AF	LMRD/	4A8
AG	BINTA /	3B8, 4C8
AH	CPUCLK	3A8
AJ	RD/	4C8
AK	WR/	4C8
AL	RESET	11B8
AM	RESET/	4D8, 5A8, 10B8

SIZE	D	124745	2	D
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SIZE			
D	124745	3	D

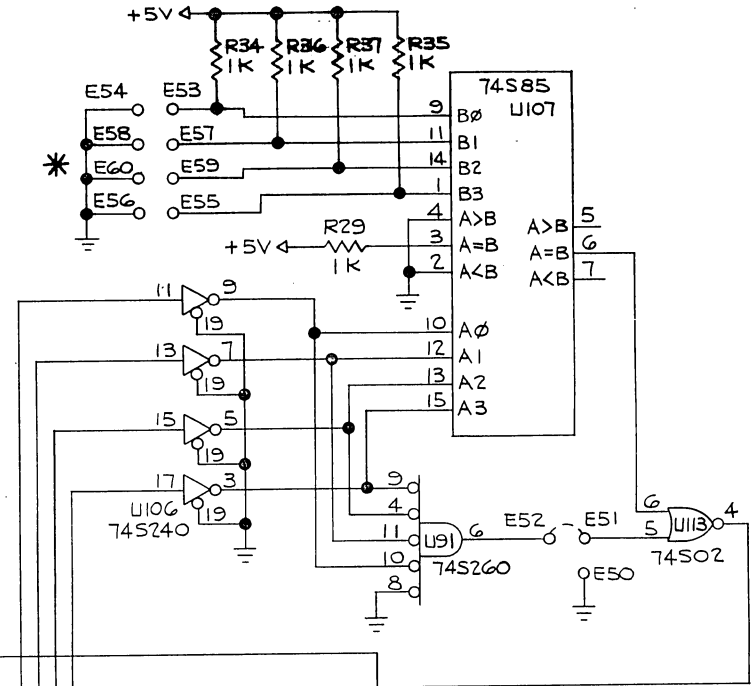
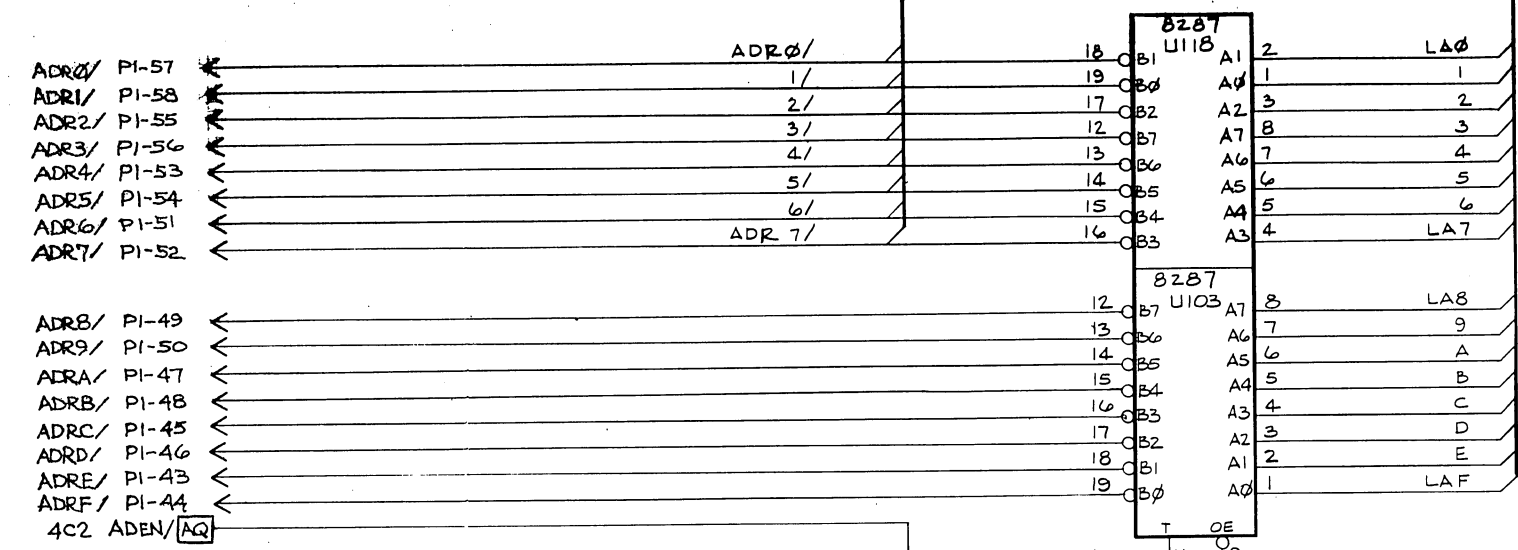
IEU-II



SIZE	D	124745	4	D
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2D2 LA0-LA9
LAA-LAF

BB ADR0/-ADR7/ 9DB



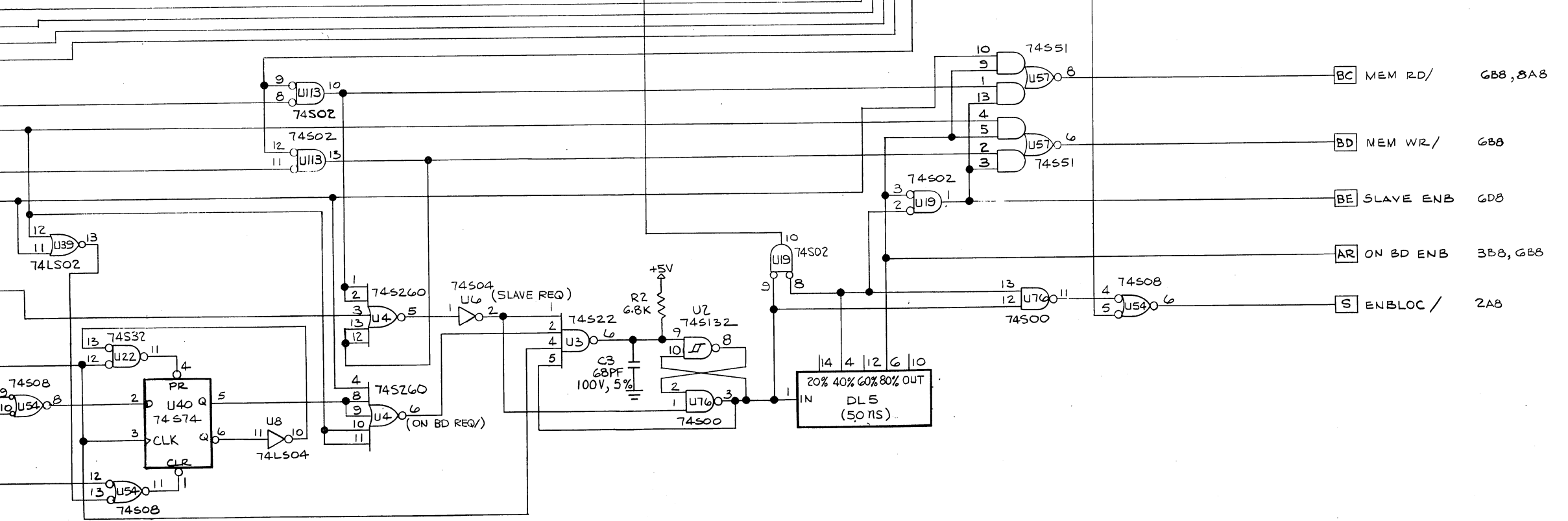
ADR10/ PI-28
ADR11/ PI-30
ADR12/ PI-32
ADR13/ PI-34

MRDC/ PI-19
4A2 MWT AY
MWTC/ PI-20
4A2 ADVMRD AZ

10C2 SLAVE LOCK BA

2B2 BALE/ Z
2B2 M/IO AB
4D2 HLT/ AW

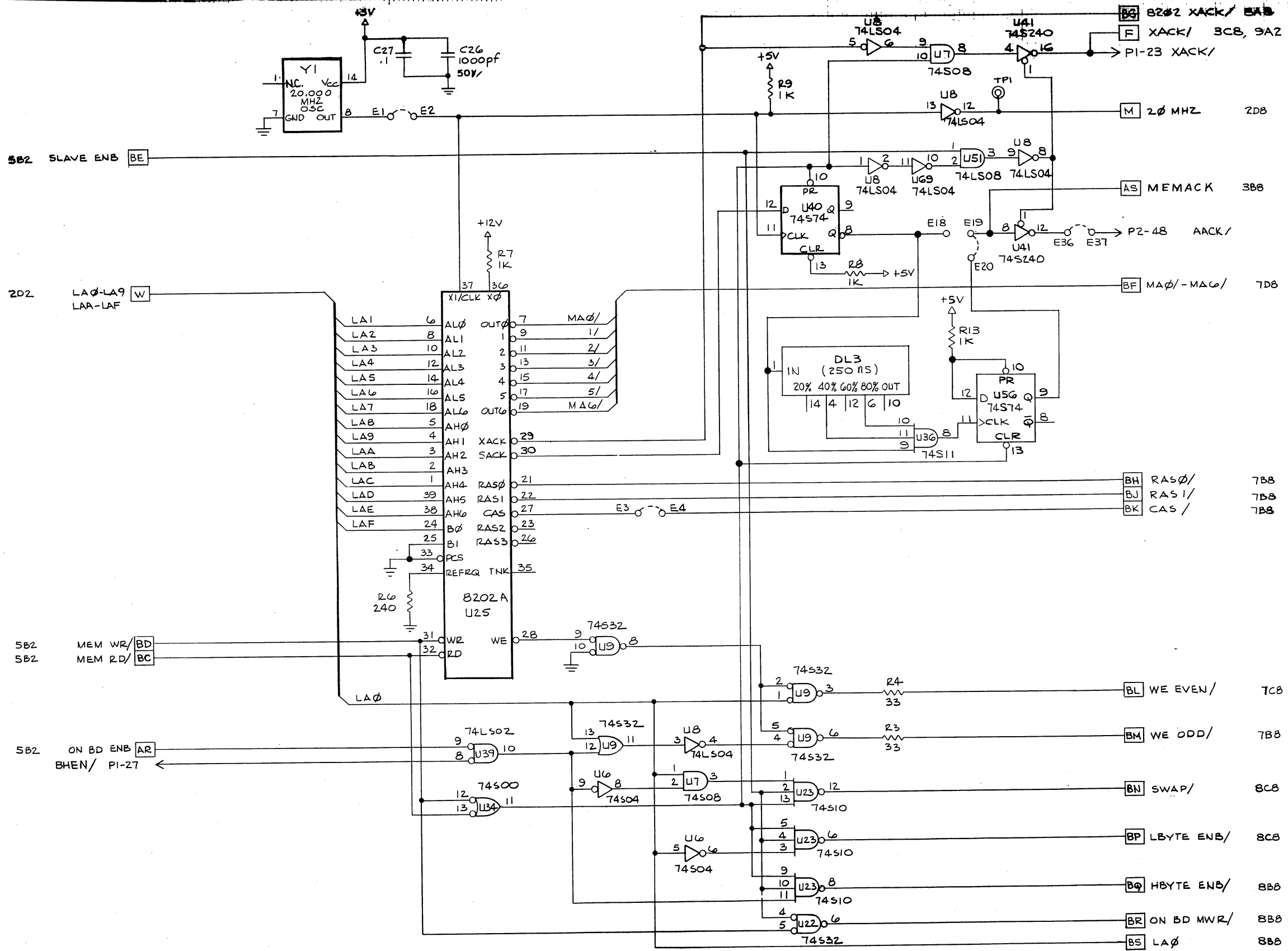
2A2 RESET/ AM



* SEE JUMPER TABLE - SHEET 1

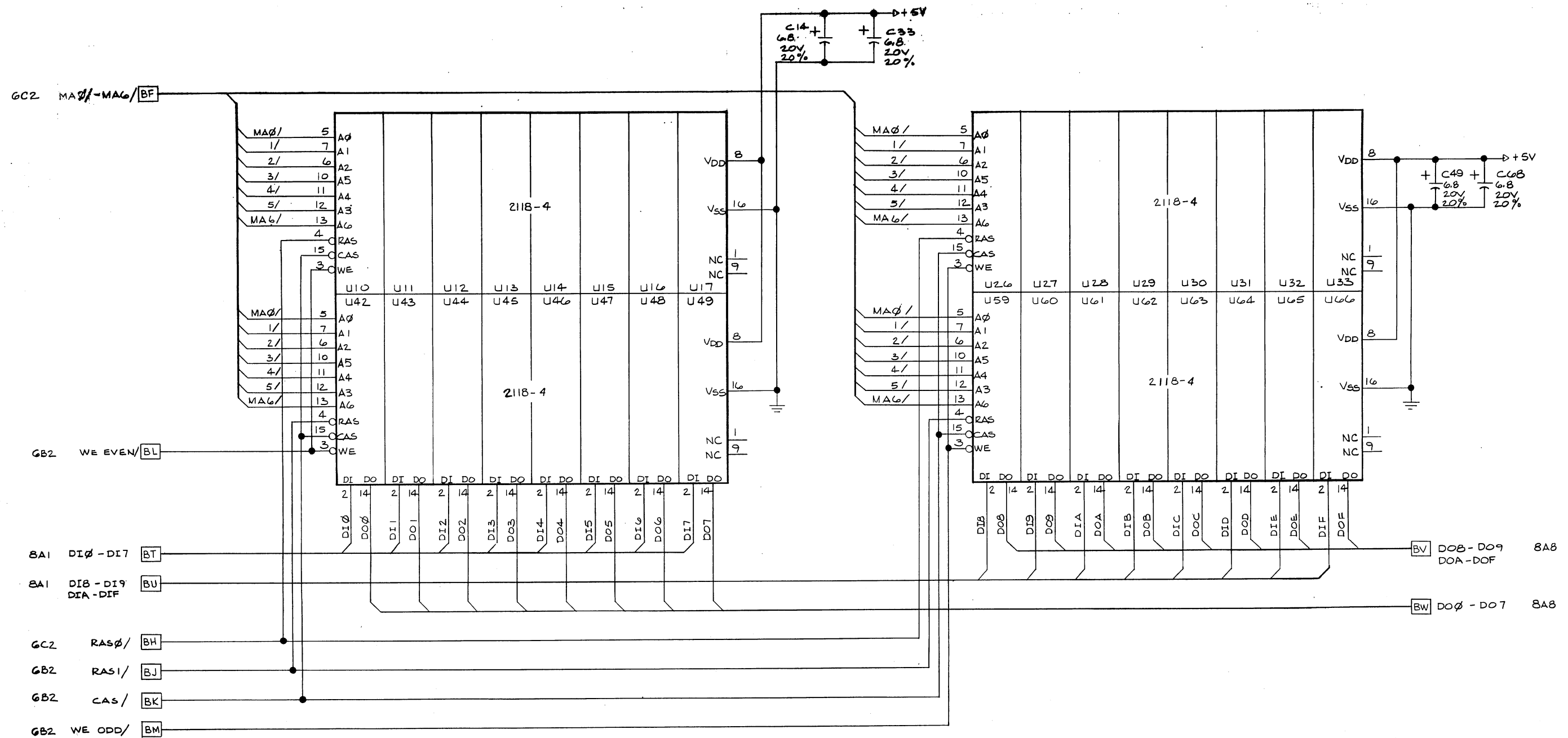
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IEU-II
6

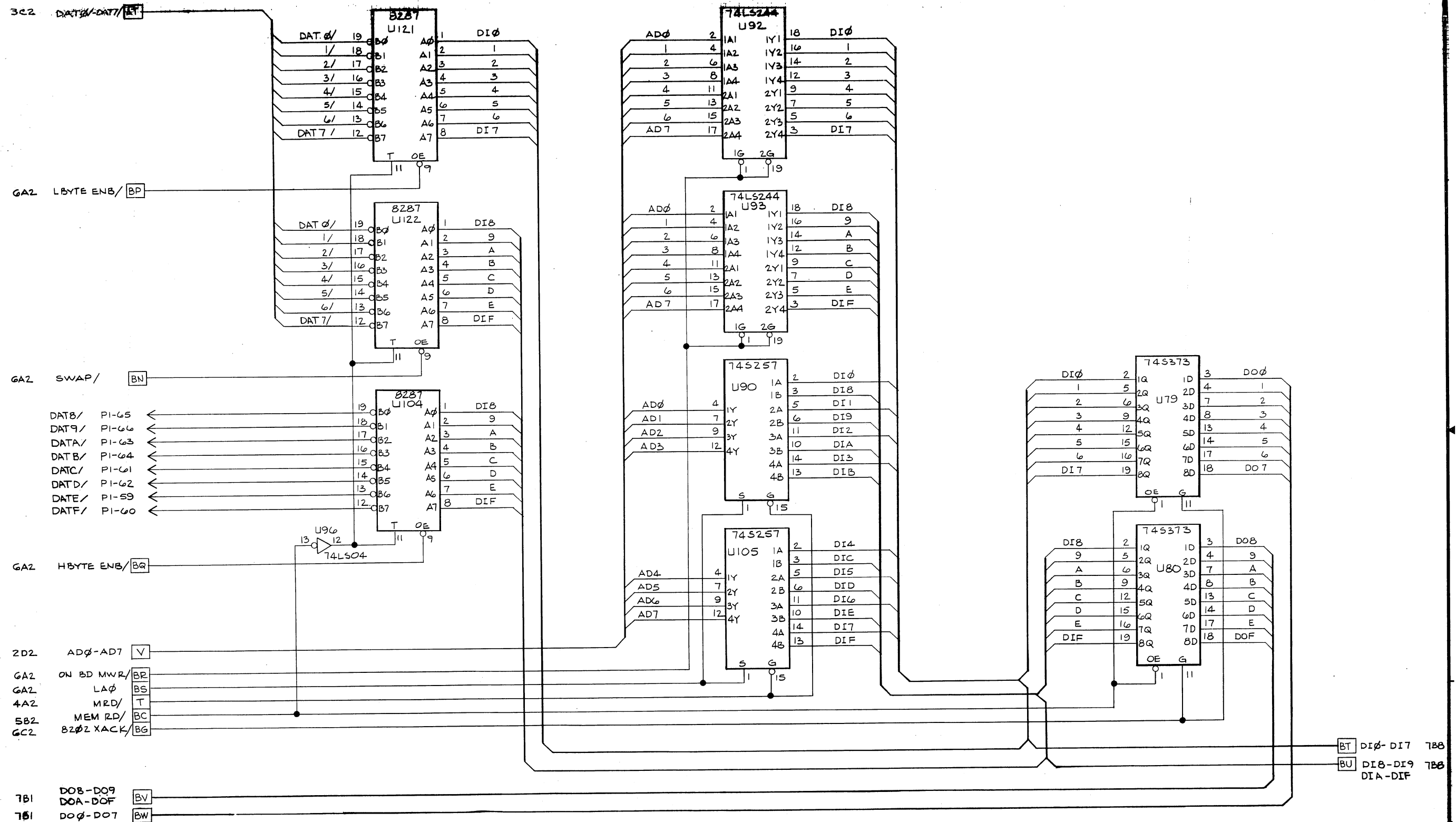


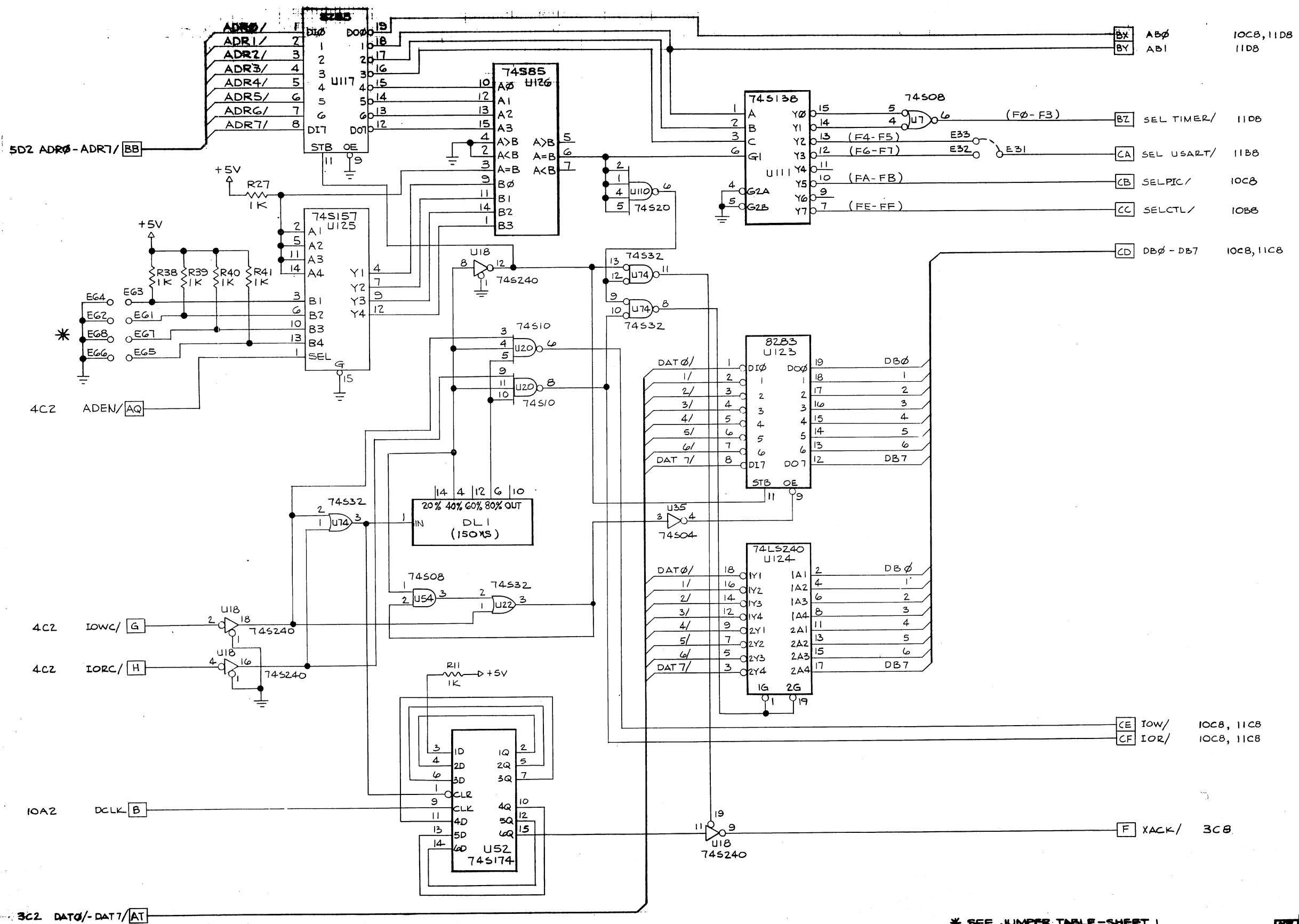
SIZE	D	124745	6	D
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IEU-II
7



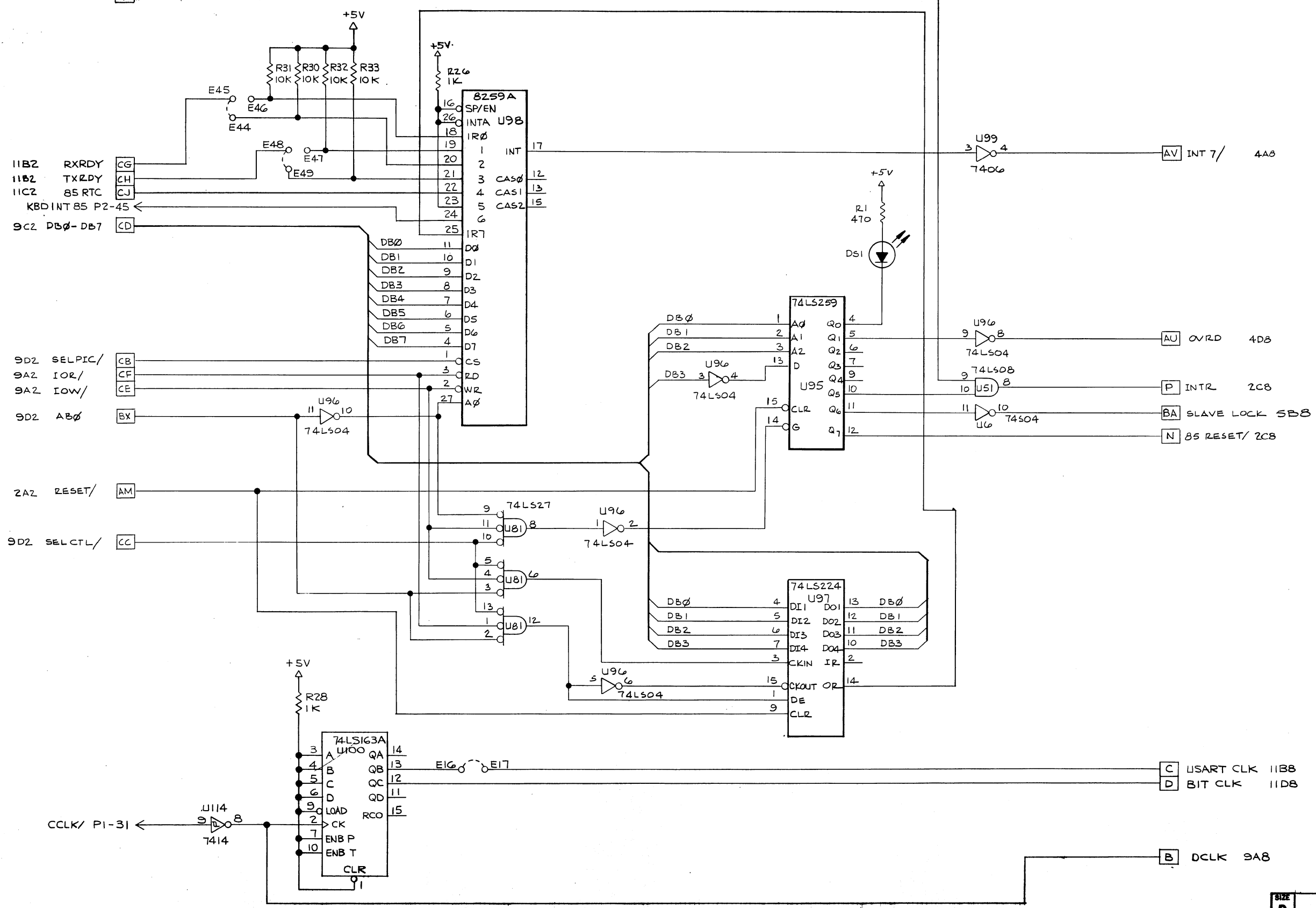
SIZE	D	124745	7	D
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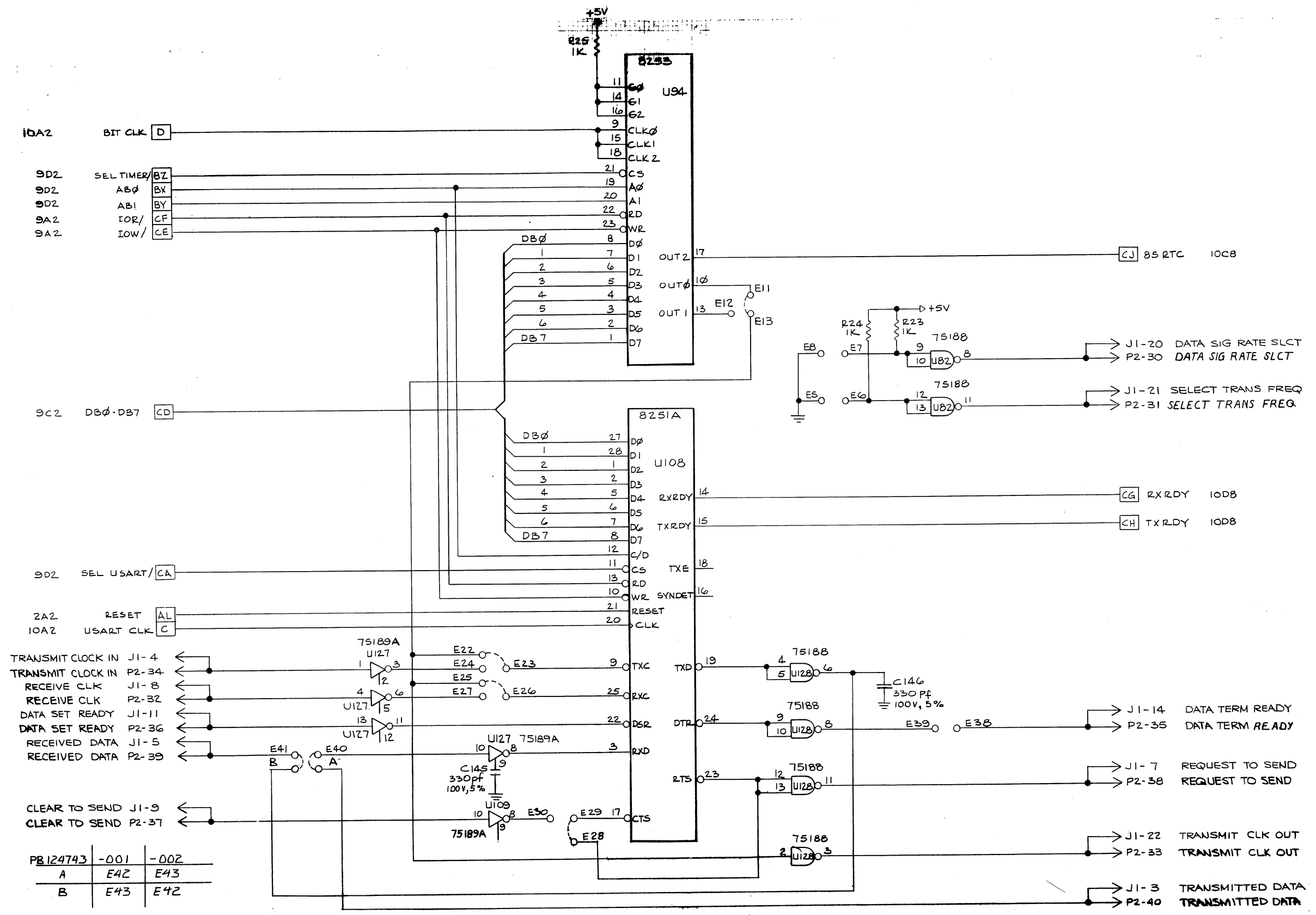




* SEE JUMPER TABLE - SHEET 1

4B2 SINT AX





IOA2 BIT CLK [D]
 9D2 SEL TIMER [BZ]
 9D2 AB0 [BX]
 9D2 AB1 [BY]
 9A2 IOR/ [CF]
 9A2 IOW/ [CE]

9C2 DB0-DB7 [CD]

9D2 SEL USART [CA]

2A2 RESET [AL]
 IOA2 USART CLK [C]

TRANSMIT CLOCK IN J1-4
 TRANSMIT CLOCK IN P2-34
 RECEIVE CLK J1-8
 RECEIVE CLK P2-32
 DATA SET READY J1-11
 DATA SET READY P2-36
 RECEIVED DATA J1-5
 RECEIVED DATA P2-39

CLEAR TO SEND J1-9
 CLEAR TO SEND P2-37

PB124743	-001	-002
A	E42	E43
B	E43	E42

[CJ] 85 RTC 10C8

J1-20 DATA SIG RATE SLCT
 P2-30 DATA SIG RATE SLCT
 J1-21 SELECT TRANS FREQ
 P2-31 SELECT TRANS FREQ

[CG] RXRDY 10D8

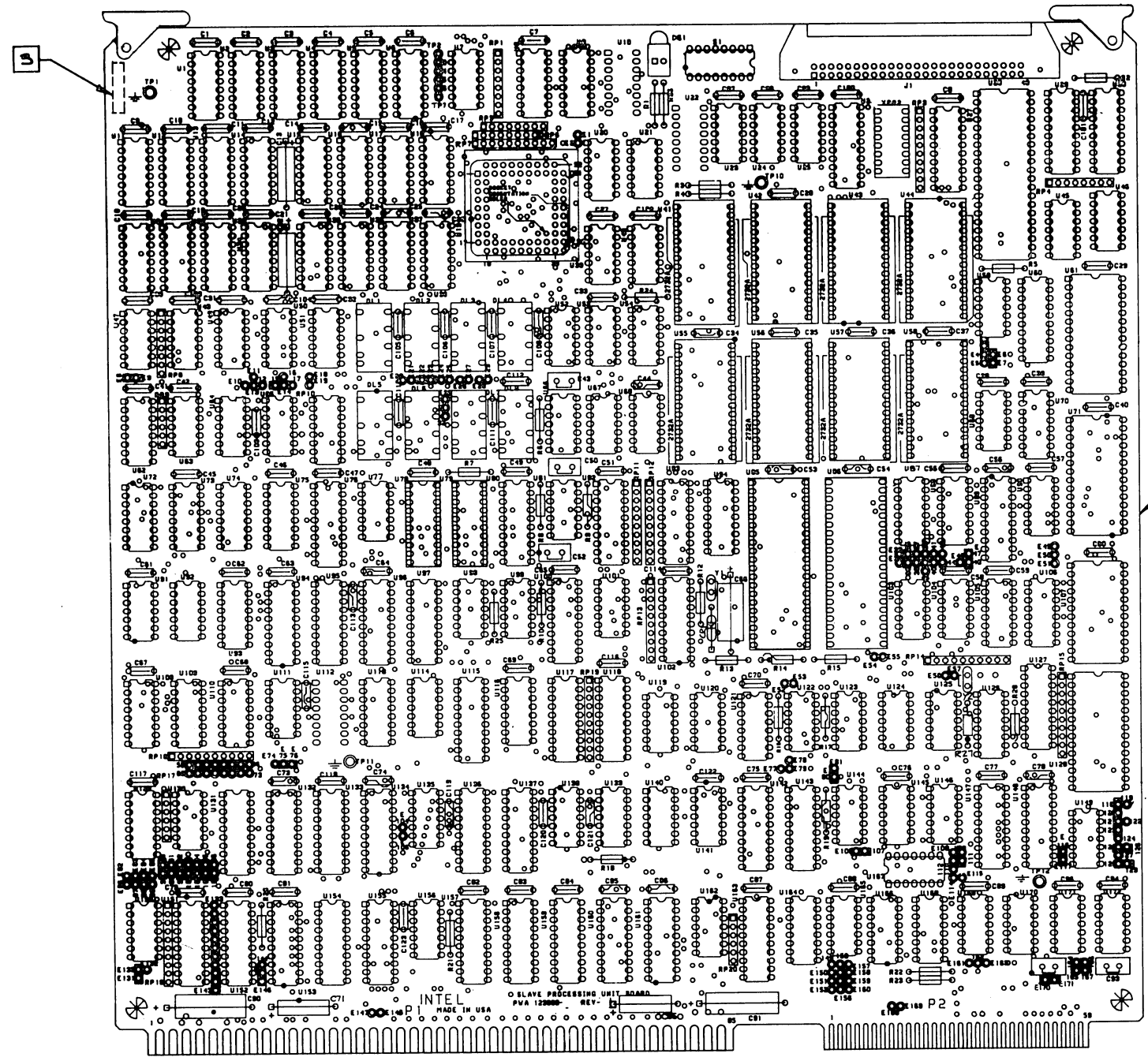
[CH] TXRDY 10D8

J1-14 DATA TERM READY
 P2-35 DATA TERM READY

J1-7 REQUEST TO SEND
 P2-38 REQUEST TO SEND

J1-22 TRANSMIT CLK OUT
 P2-33 TRANSMIT CLK OUT

J1-3 TRANSMITTED DATA
 P2-40 TRANSMITTED DATA



REVISIONS							
REV	DESCRIPTION	DFT	DATE	CHK	DATE	APVD	DATE
A	ECO 13-8187	J.S.	12-4-81	EG	3/4/81	GF	2/4/82
B	ECO 13-8308	ad. st.	3-22-82				
C	ECO 13-8816	DUFFY	7/30/82	Parl. 3/	7/30/82		8/1/82
D	ECO 53472	R.H.	10/12/82	John	10/12/82		10/12/82
E	ECO 53597	R.H.	10/12/82	John	10/12/82		10/12/82
F	ECO 53889	CP	11/10/82	Bailey	11/10/82		11/10/82
G	ECO 54466	Saxony	11/10/82				11/10/82
H	ECO 215514	J.A. MONTANA	11/10/84				11/10/84
J	ECO 2155402	LP	3-7-84				3/7/84
K	ECO 2155553	LP	5/11/84				5/11/84

-006

⑪

DEVICE INSTALLATION TABLE	
PART NUMBER	LOCATION
106119-001	U44
106118-001	U58

-007/008

⑫

DEVICE INSTALLATION TABLE	
PART NUMBER	LOCATION
106133-001	U44
106132-001	U58

-009,010

⑬

DEVICE INSTALLATION TABLE	
PART NUMBER	LOCATION
106134-002	U44
106133-002	U58

- NOTES: UNLESS OTHERWISE SPECIFIED
- ASSEMBLY PART NUMBER IS 124893-TAB THIS DOCUMENT, WIRE LIST AND PL ARE TRACKING DOCUMENTS.
 - WORKMANSHIP PER 99-0007-001.
 - APPLY CBA LABEL APPROX WHERE SHOWN.
 - THE TRACKING WIRE LIST DESCRIBES THE CBA BOARD CONFIGURATION.

QUANTITY PER DASH NO.	ITEM NO.	DESCRIPTION
		PARTS LIST
UNLESS OTHERWISE SPECIFIED:		<p>3065 BOWERS AVE SANTA CLARA CALIF. 95051</p> <p>TITLE CONFIGURED BOARD ASSY. SLAVE PROCESSING UNIT</p> <p>SIZE: D 21 12 CL CODE: 124893 LVL: DOCUMENT NUMBER: 124893 REV: L</p> <p>SCALE: NONE SHEET: 1 OF 1</p>
1. DIMENSIONS ARE IN INCHES.		
2. BREAK ALL SHARP EDGES.		
3. DO NOT SCALE DRAWINGS.		
4. TOLERANCES: ANGLES ± HOLE ± DIM ±		
SIGNATURE		DATE
DRN BY: J.S.		2-4-81
CHK BY: EG		12-14-81
ESN: GF		2-4-81
APVD:		
APVD:		

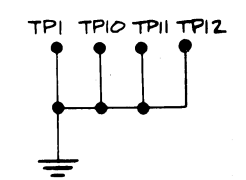
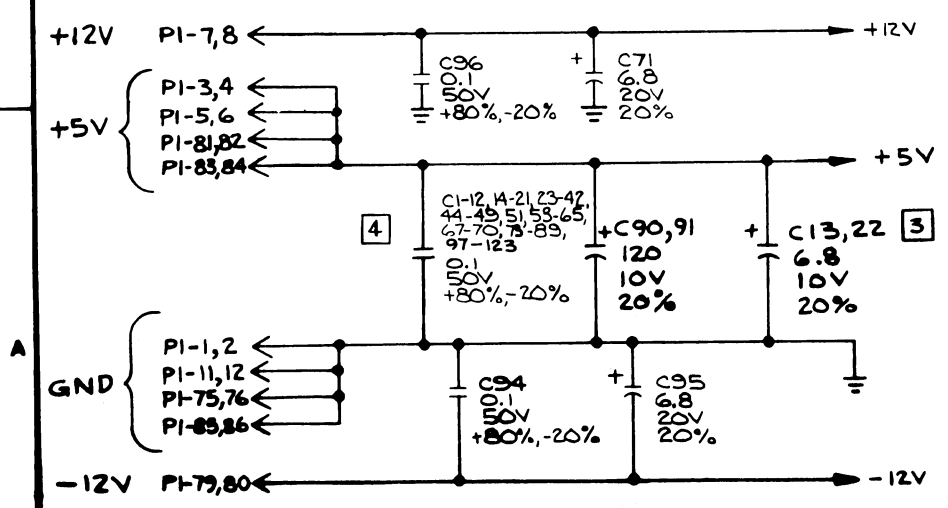
SPU

REVISIONS						
REV	DESCRIPTION	DFT	DATE	CHK	DATE	APVD
A	ECO 21 5554 8	24.M.	1/5/89			

DEVICE TABLE					
REF DES	DEVICE TYPE	POWER PINS			UNUSED OUTPUT PINS
		GND	+5V	+12V/-12V	
U68,U104,U140,U156	74500	7	14		U140 - 8, U156 - 6
U120	74LS00	7	14		
U51,U150	74502	7	14		
U24,U38	74LS02	7	14		U24 - 1,4,13
U7,U50,U64,U145	74504	7	14		
U39,U69,U114,U141	74LS04	7	14		U39 - 4,6, 10,12 U141 - 4
U23,U63,U138	74508	7	14		
U119,U170	74LS08	7	14		
U25,U65,U165	74510	7	14		U25 - 6,8, U65 - 6
U53	74511	7	14		
U130	74LS11	7	14		
U111	74520	7	14		
U66,U81	74522	7	14		U66 - 6
U146	74LS27	7	14		
U59	74530	7	14		
U77	74532	7	14		
U46,U90	74LS32	7	14		U46 - 6
U47,U52	74537	7	14		U52 - 3,11
U21	74LS51	7	14		
U48,U49,U167	74564	7	14		
U20,22,44,99,101,125,139	74574	7	14		U20 - 8,9
U129	74585	8	16		
U124	74LS90	10	5		
U169	74LS92	10	5		
U105,U166	745112	8	16		U105 - 7,9
U67	745132	7	14		U67 - 3
U70,U87,U88	745138	8	16		
U135	74128	7	14		U135 - 1,4
U8,U9,U72-75,U93,U108-110	745151	8	16		
U116	74LS155	8	16		
U62	745157	8	16		
U168	745175	8	16		
U121	74LS224	8	16		
U76,U132,U133,U134,U143,U147,U155	745240	10	20		U155 - 12,14,16 U155 - 3,5,7,9
U60,U142	74LS240	10	20		

DEVICE TABLE					
REF DES	DEVICE TYPE	POWER PINS			UNUSED OUTPUT PINS
		GND	+5V	+12V/-12V	
U29,U80	745241	10	20		U80 - 7,9,12
U21,U163	74LS244	10	20		
U127	74LS245	10	20		
U164	74LS259	8	16		
U54,U103	745260	7	14		U54 - 5
U30,U148	74LS273	10	20		
U106	74LS368A	8	16		U106 - 3,5,7,9,11,
U18,U79,U82,U83,U94,U95,U96,U97,U102	745373	10	20		
U26	745374	10	20		
U91,U92,U144	74LS393	7	14		
U131,U151	74LS688	10	20		
U1-6,U11-18,U31-38	2164A-15	16	8		
U1-6,U11-18,U31-38	2164A-25	16	8		
U41-44,U55-58	2732A	14	28		
U123,U162	7406	7	14		
U122	7414	7	14		U122 - 6,8,10
U45	7437	7	14		
U85	8086-2	1,20	40		
U19	8206	26A3	60		
U126	8224	8	16		
U128	8251A	4	26		
U107	8253-5	12	24		
U28	8255A-5	7	26		
U61,U71	8259A	14	28		
U100,U115,U117,U118,U136,U137,U154,U157,U158	8283	10	20		U154 - 13,17,18,19
U84	8284A	9	18		
U159,U160,U161	8287	10	20		
U89,U153	8288	10	20		
U132	8289	10	20		
U113	74367A	8	16		U113 - 3,5,11
U172	75188	7	14	14	1
U149,U171	75189A	7	14		U171 - 3,6
U86	8087-2	1,20	40		
DL1-8		7	14		
RP1,3,4,6,7,11,12,13,15,16,18,20	10K, SIP		1		
RP5,9,14,17	1K, SIP		1		
RP15	22K, SIP		1		

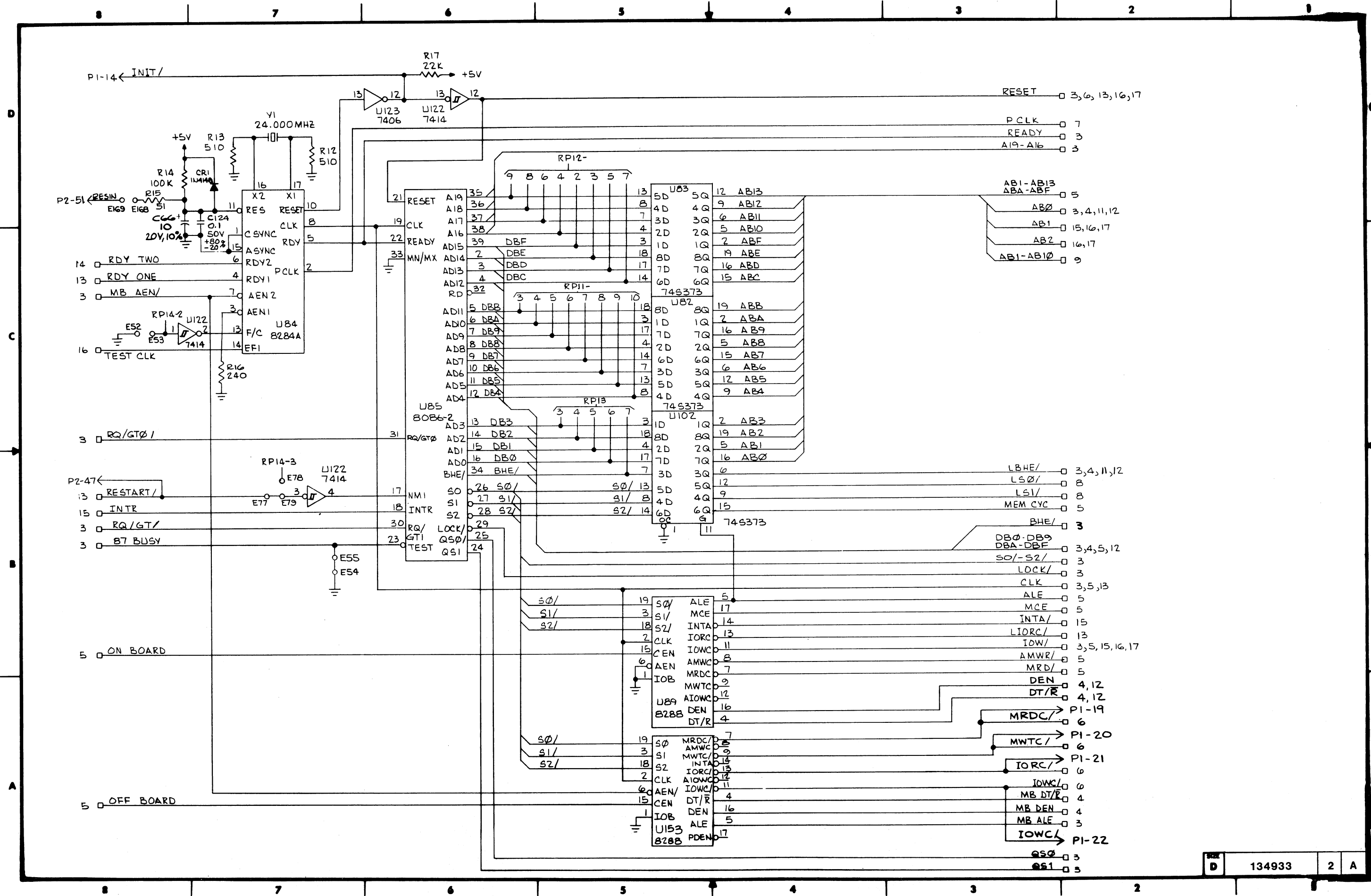
- NOTES: UNLESS OTHERWISE SPECIFIED
- CAPACITANCE VALUES ARE IN MICROFARADS, 100V, 5%
 - RESISTANCE VALUES ARE IN OHMS, 1/4W, 5%
 - C13, C22 ARE DECOUPLING FOR U1-6, 11-18, 31-38.
 - DECOUPLING CAPACITOR C-33 NOT INSTALLED ON -O17 & -O18 ASSEMBLY.

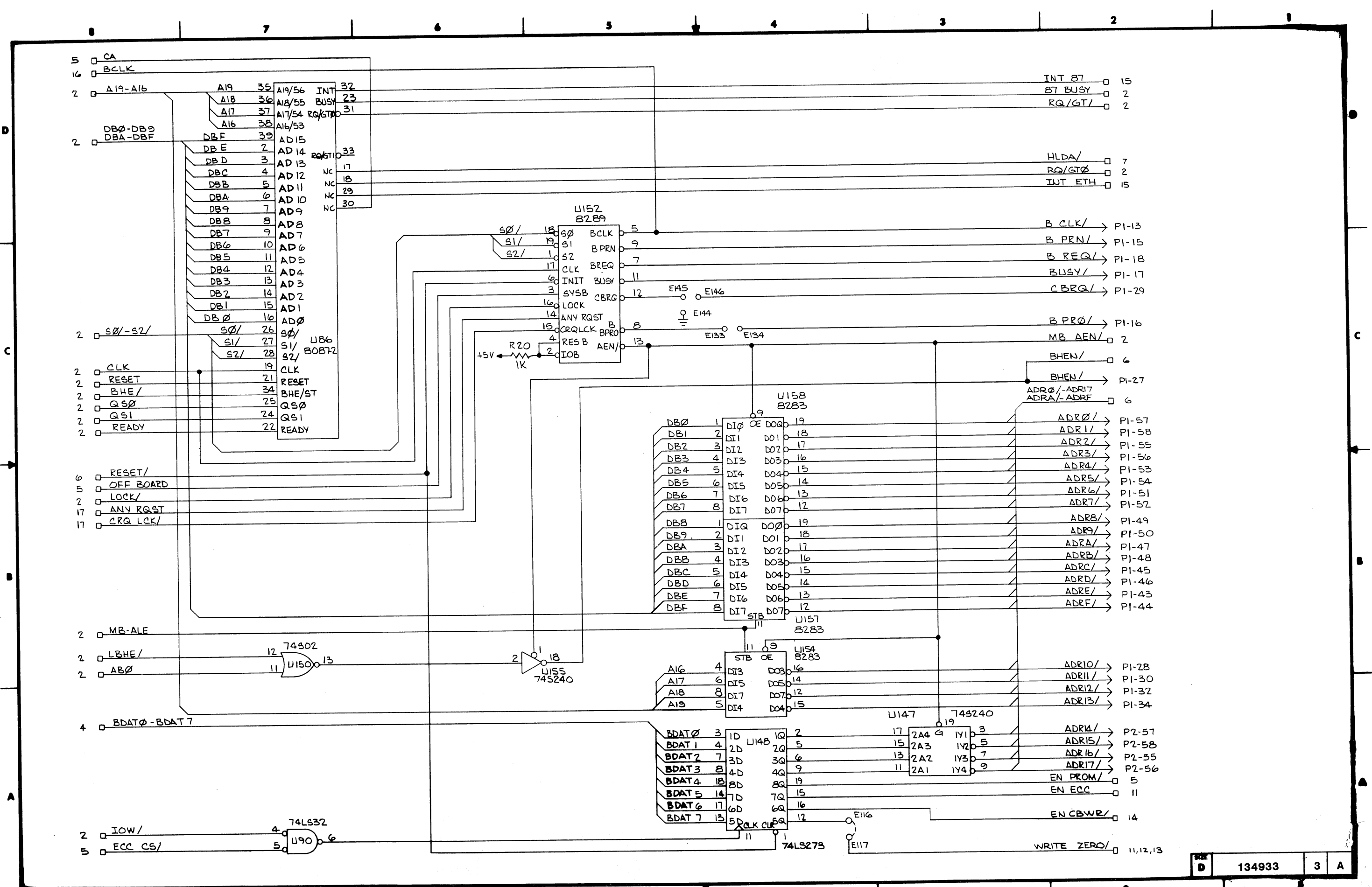


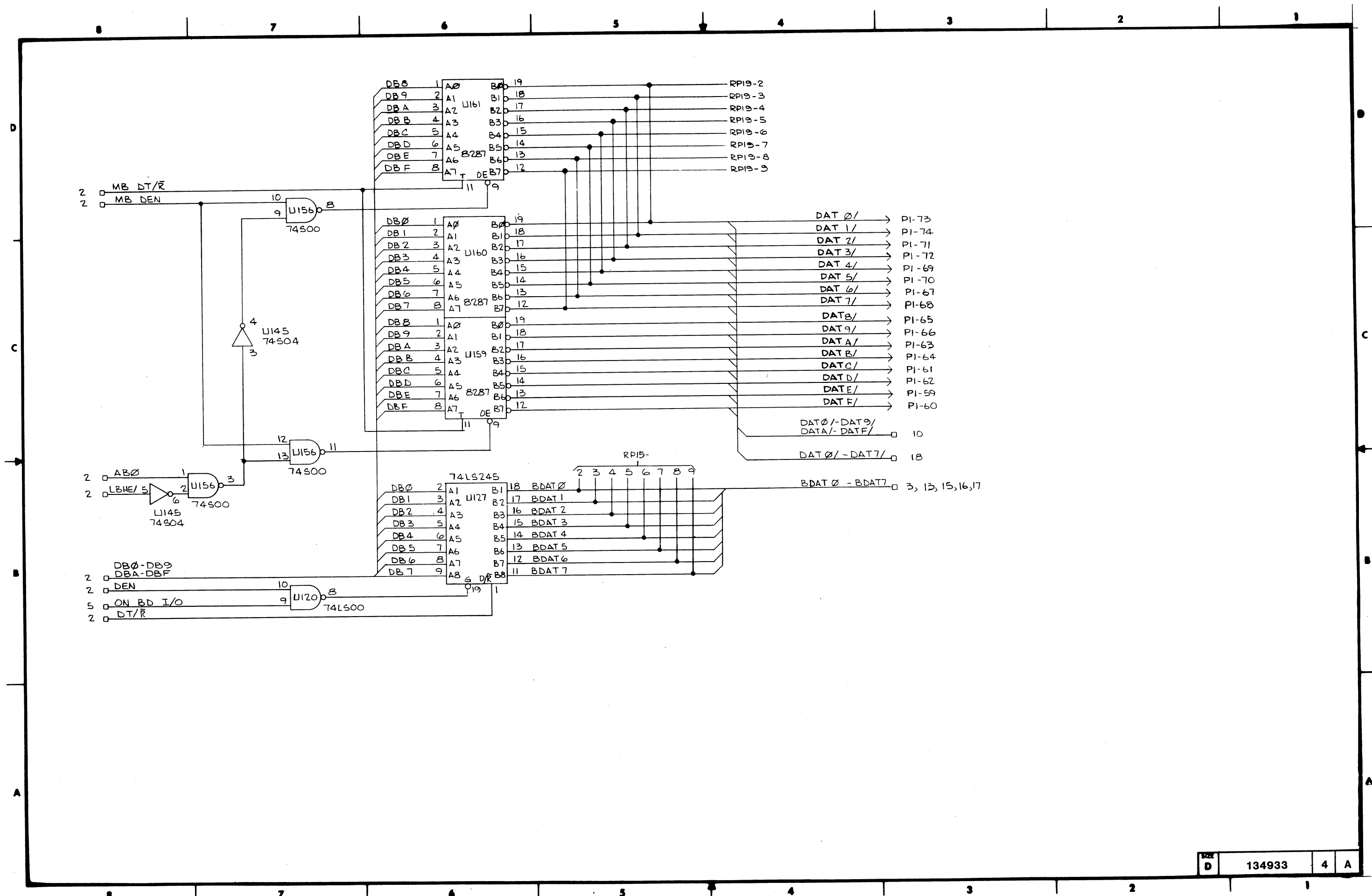
REF DES	
LAST USED	NOT USED
U172	U10
R28	R21,25,26
C124	C72
CRI	
DS1	
DLB	
RP20	
Y2	
S1	
TP12	TP8,9
E171	
J1	
P2	

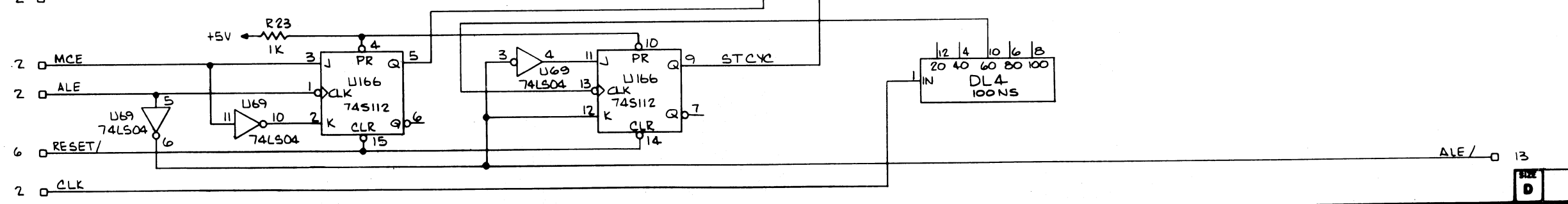
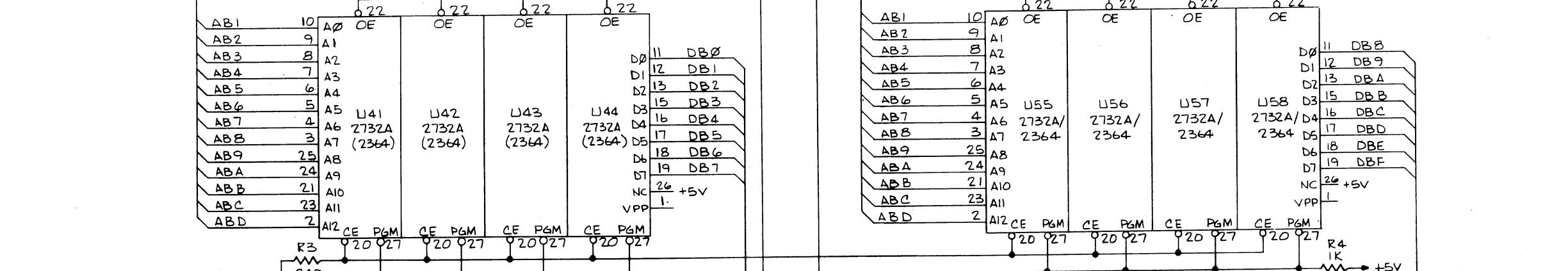
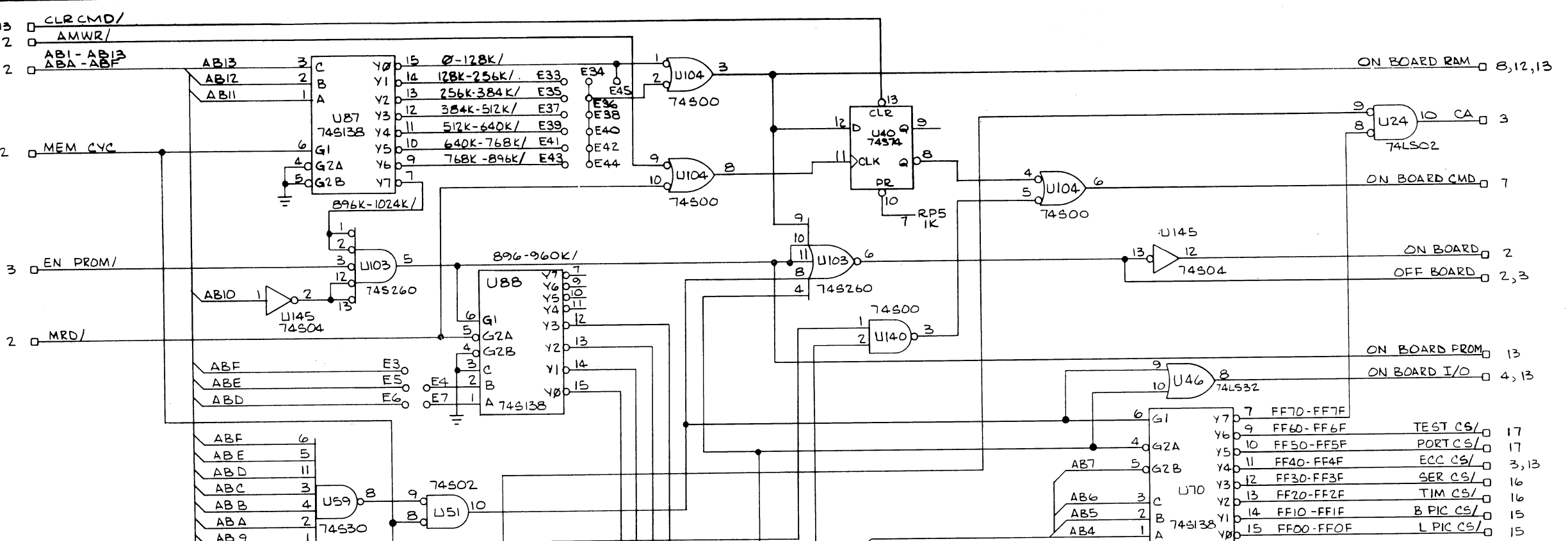
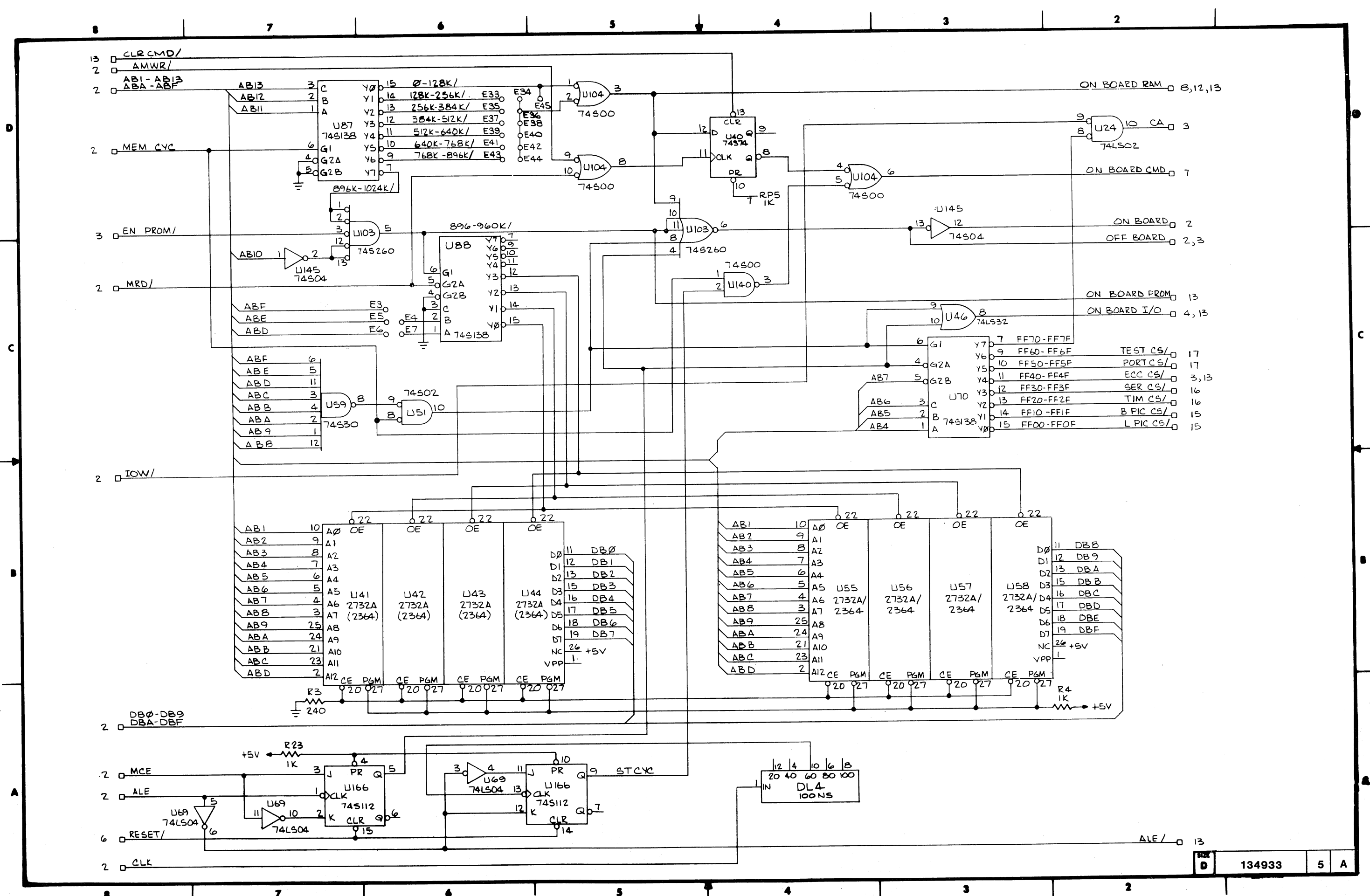
— SERIES IV
NEXT ASSY USED ON

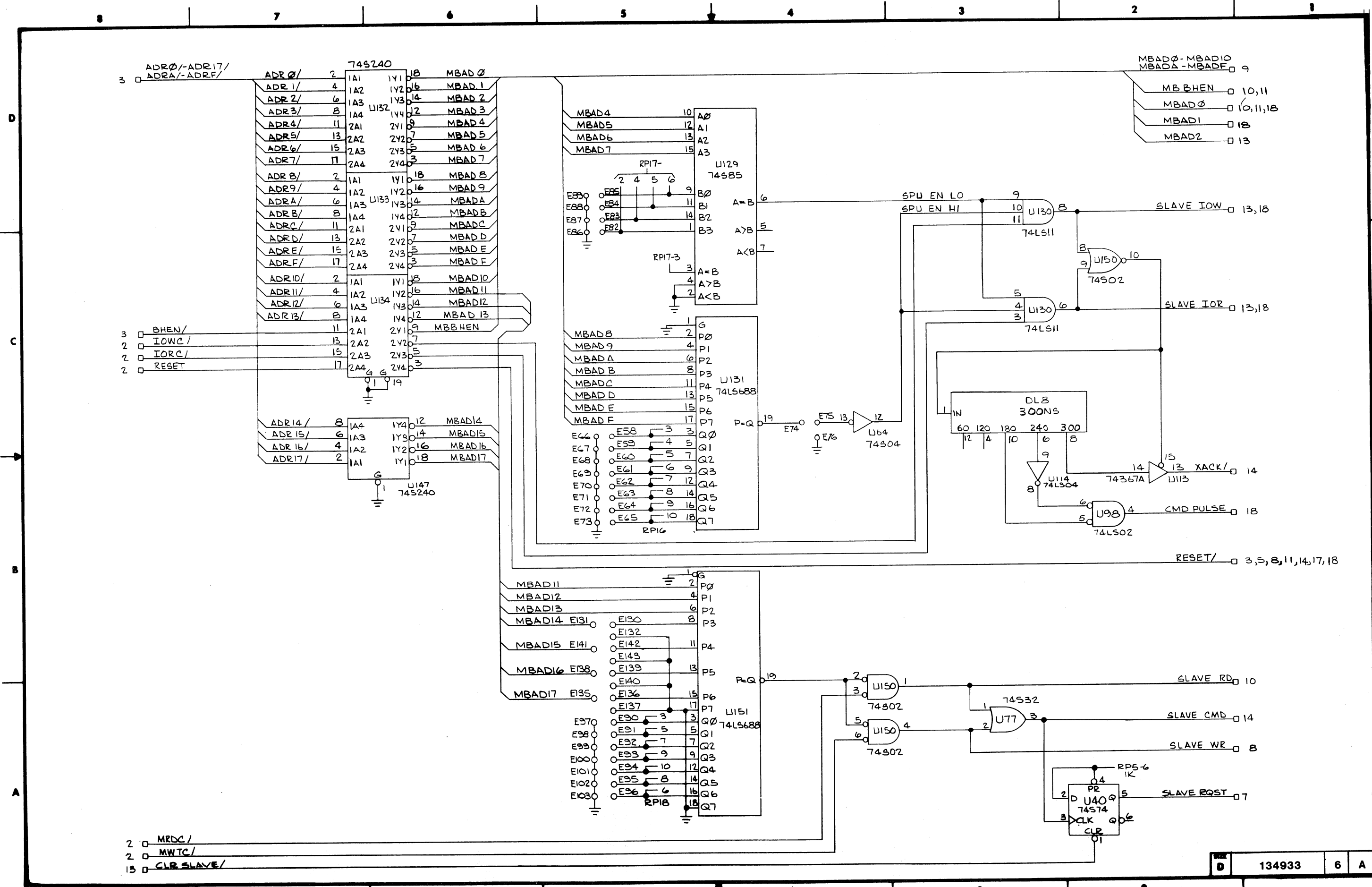
QUANTITY PER DASH NO	ITEM NO.	DESCRIPTION
		PARTS LIST
UNLESS OTHERWISE SPECIFIED:		
1. DIMENSIONS ARE IN INCHES.	SIGNATURE	DATE
2. BREAK ALL SHARP EDGES.	CHK BY	DATE
3. DO NOT SCALE DRAWING.	APVD	DATE
4. TOLERANCES:	APVD	
ANGLES ±		
XX ±		
XXX ±		
		TITLE SCHEMATIC DIAGRAM, SPU
SIZE D 21	SCALE NONE	134933 A

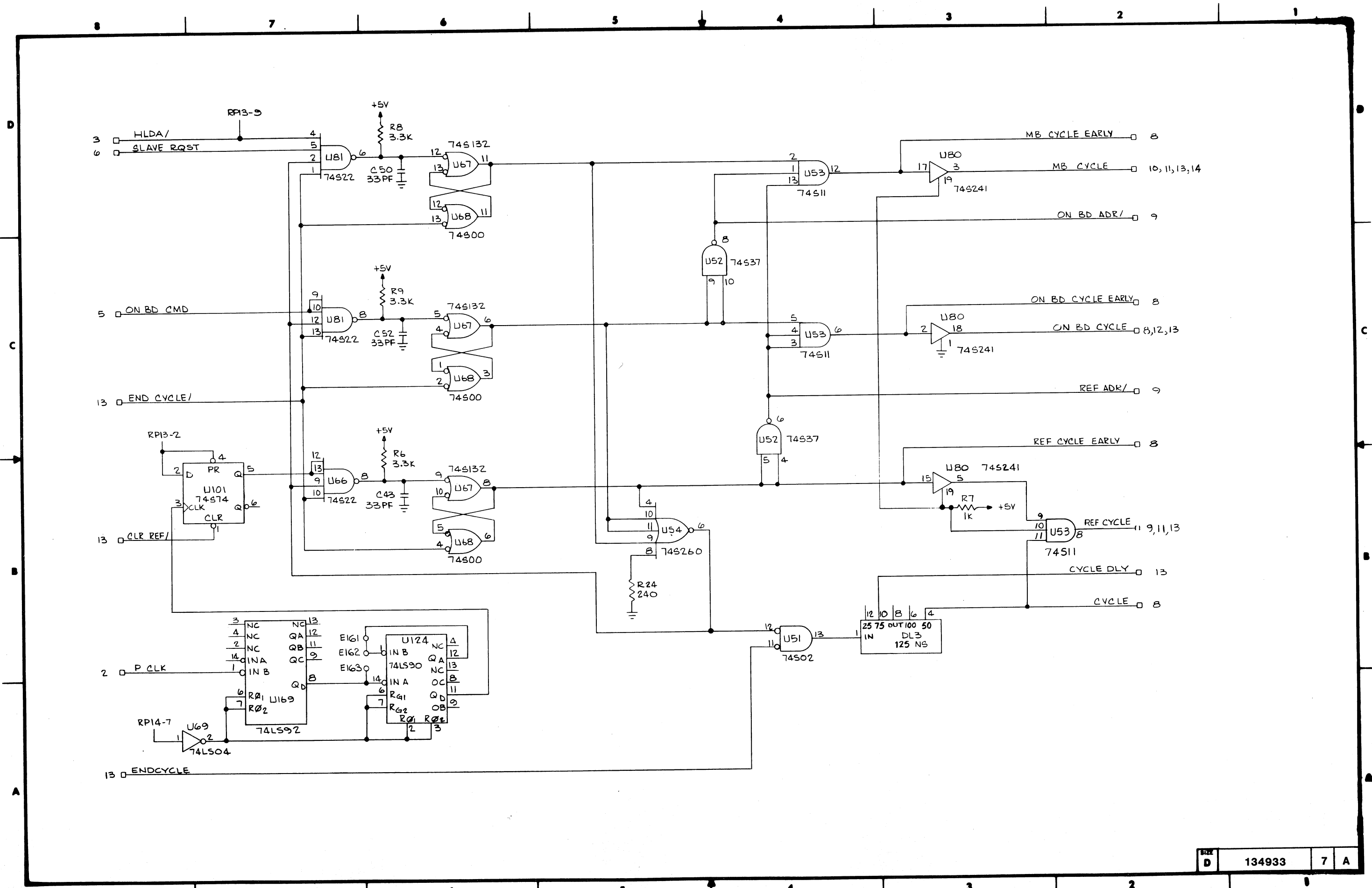


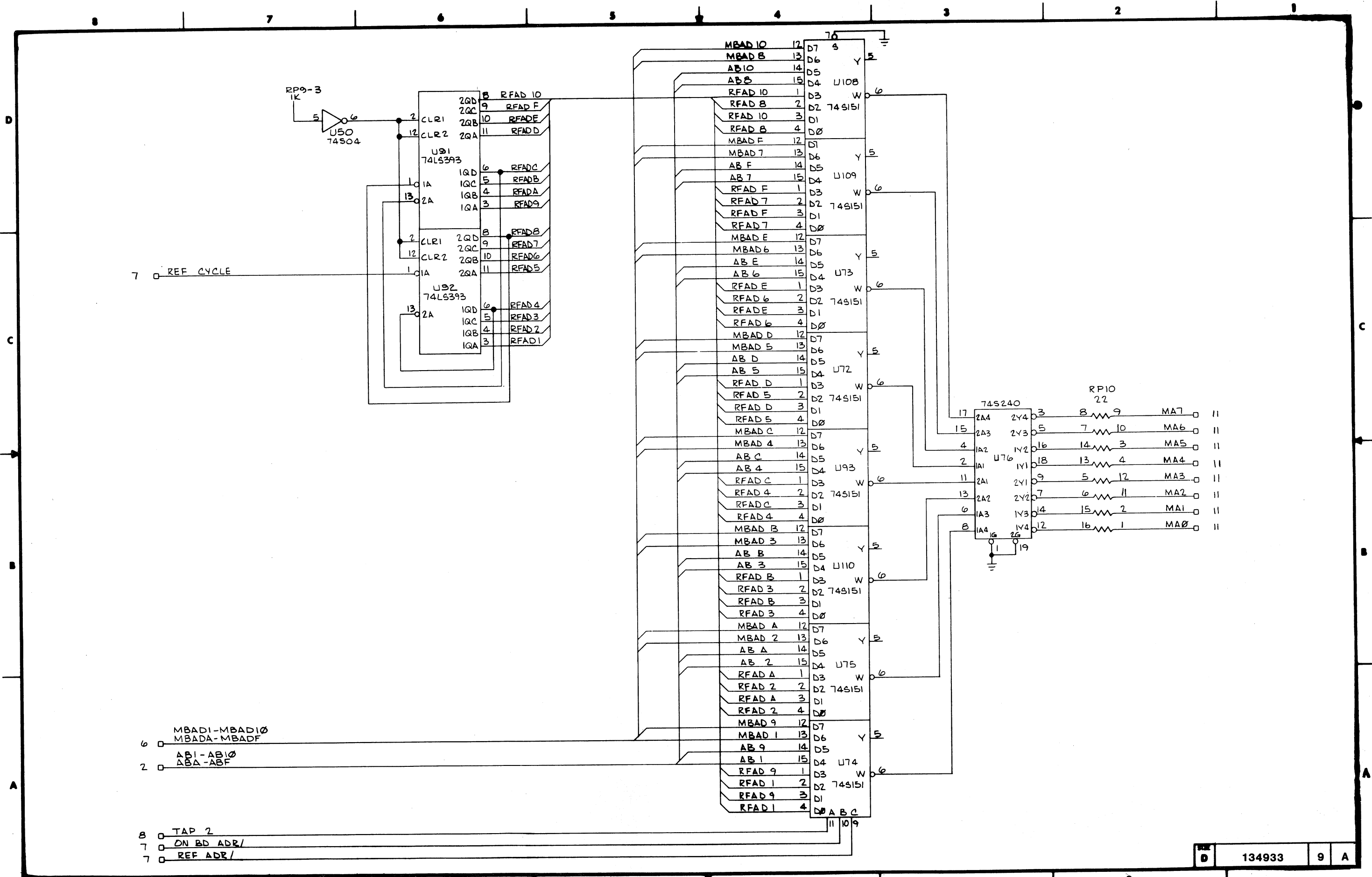












RP9-3
 1K
 U50
 74504

REF CYCLE

U91
 74LS393

U92
 74LS393

2QD 8 RFAD 10
 2QC 9 RFAD 9
 2QB 10 RFAD 8
 2QA 11 RFAD 7

1QD 6 RFAD 6
 1QC 5 RFAD 5
 1QB 4 RFAD 4
 1QA 3 RFAD 3

MBAD 10	12	D7	5
MBAD 8	13	D6	5
AB 10	14	D5	5
AB 8	15	D4	5
RFAD 10	1	D3	5
RFAD 8	2	D2	5
RFAD 10	3	D1	5
RFAD 8	4	D0	5
MBAD F	12	D7	5
MBAD 7	13	D6	5
AB F	14	D5	5
AB 7	15	D4	5
RFAD F	1	D3	5
RFAD 7	2	D2	5
RFAD F	3	D1	5
RFAD 7	4	D0	5
MBAD E	12	D7	5
MBAD 6	13	D6	5
AB E	14	D5	5
AB 6	15	D4	5
RFAD E	1	D3	5
RFAD 6	2	D2	5
RFAD E	3	D1	5
RFAD 6	4	D0	5
MBAD D	12	D7	5
MBAD 5	13	D6	5
AB D	14	D5	5
AB 5	15	D4	5
RFAD D	1	D3	5
RFAD 5	2	D2	5
RFAD D	3	D1	5
RFAD 5	4	D0	5
MBAD C	12	D7	5
MBAD 4	13	D6	5
AB C	14	D5	5
AB 4	15	D4	5
RFAD C	1	D3	5
RFAD 4	2	D2	5
RFAD C	3	D1	5
RFAD 4	4	D0	5
MBAD B	12	D7	5
MBAD 3	13	D6	5
AB B	14	D5	5
AB 3	15	D4	5
RFAD B	1	D3	5
RFAD 3	2	D2	5
RFAD B	3	D1	5
RFAD 3	4	D0	5
MBAD A	12	D7	5
MBAD 2	13	D6	5
AB A	14	D5	5
AB 2	15	D4	5
RFAD A	1	D3	5
RFAD 2	2	D2	5
RFAD A	3	D1	5
RFAD 2	4	D0	5
MBAD 9	12	D7	5
MBAD 1	13	D6	5
AB 9	14	D5	5
AB 1	15	D4	5
RFAD 9	1	D3	5
RFAD 1	2	D2	5
RFAD 9	3	D1	5
RFAD 1	4	D0	5

74S240
 U76

RPIO
 22
 U77

2A4 2Y4 3 MA7 11
 2A3 2Y3 5 MA6 11
 4 1A2 1Y2 16 MA5 11
 2 1A1 1Y1 18 MA4 11
 11 2A1 2Y1 9 MA3 11
 13 2A2 2Y2 7 MA2 11
 6 1A3 1Y3 14 MA1 11
 8 1A4 1Y4 12 MA0 11

6 MBADI-MBADIO
 MBADA-MBADF

2 ABI-ABIO
 ABA-ABF

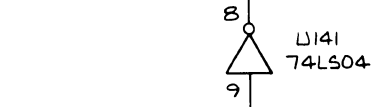
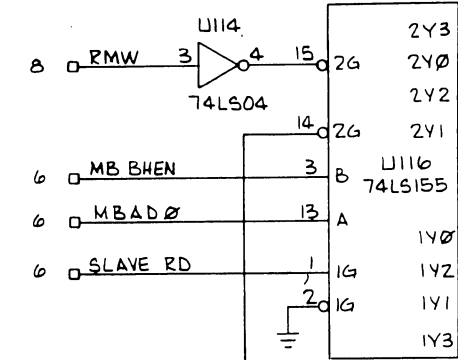
8 TAP 2

7 ON BD ADR/

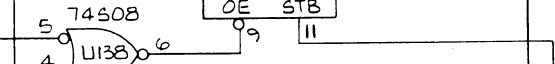
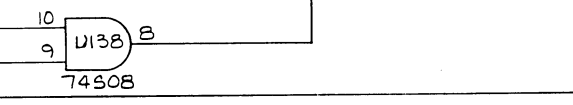
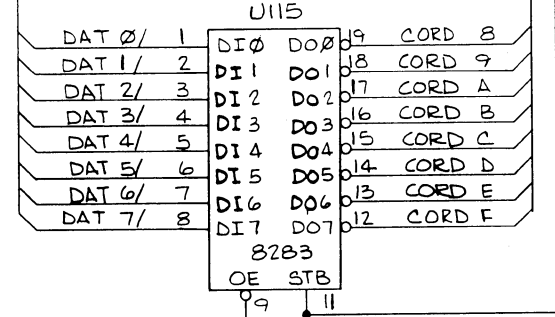
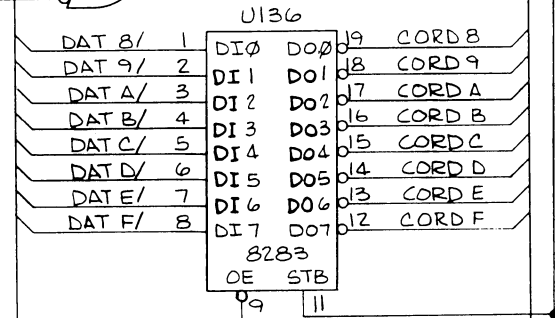
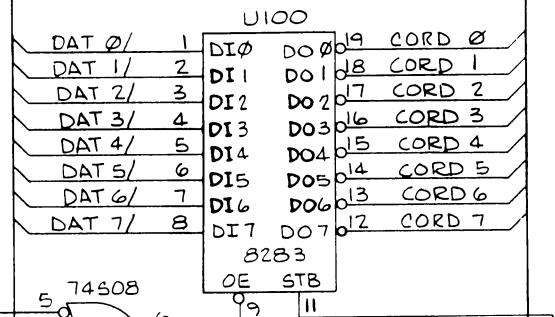
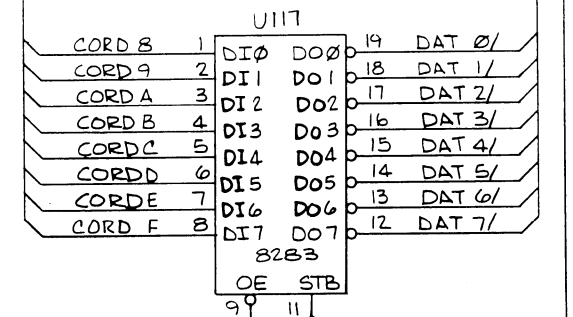
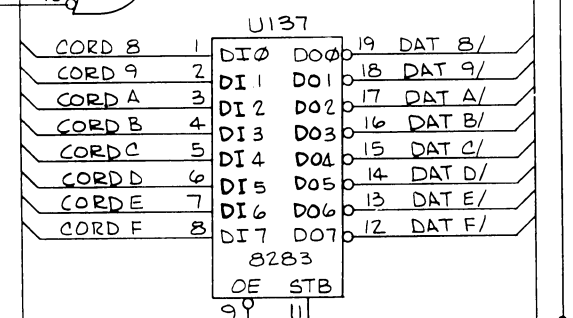
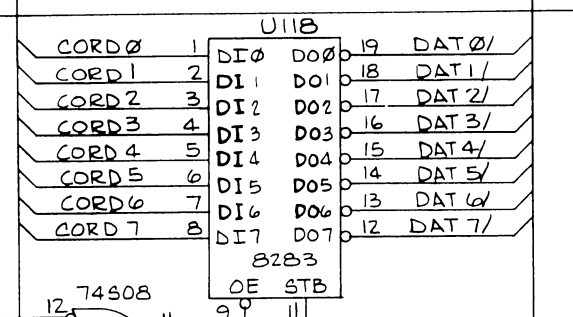
7 REF ADR/

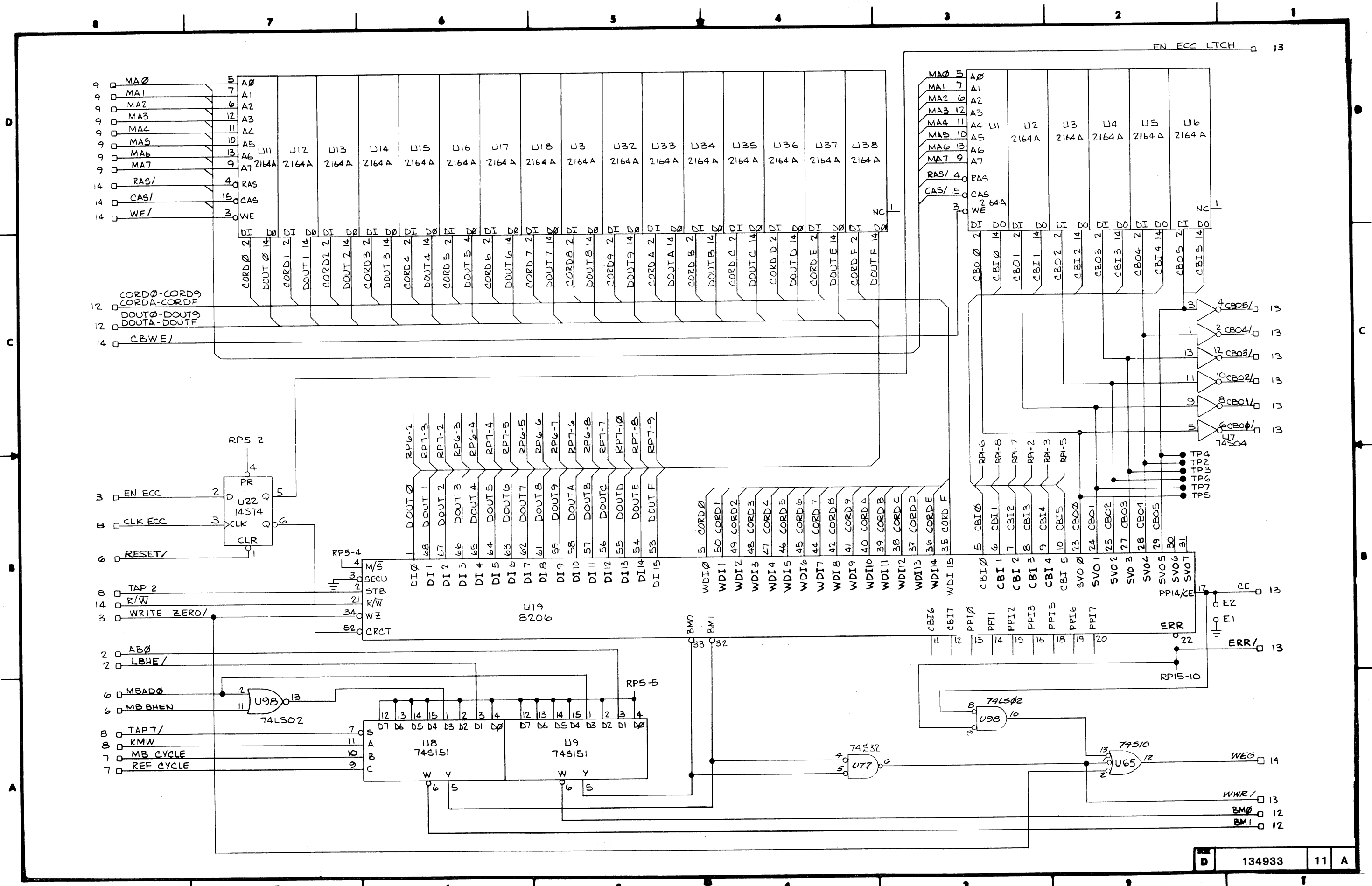
CORD0-CORD9
CORDA-CORDF

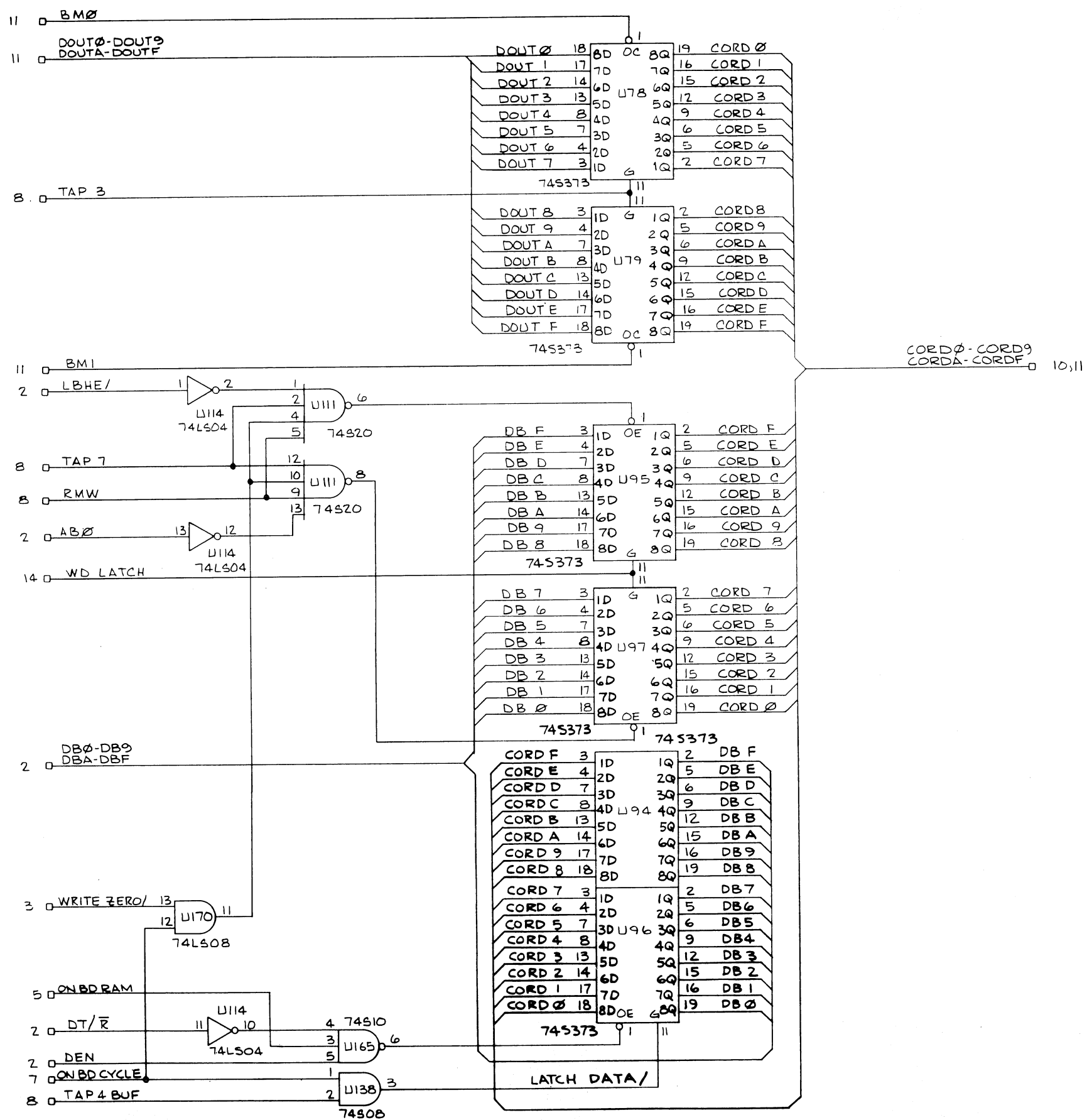
DAT0-DAT9/
DATA-/DATAF/

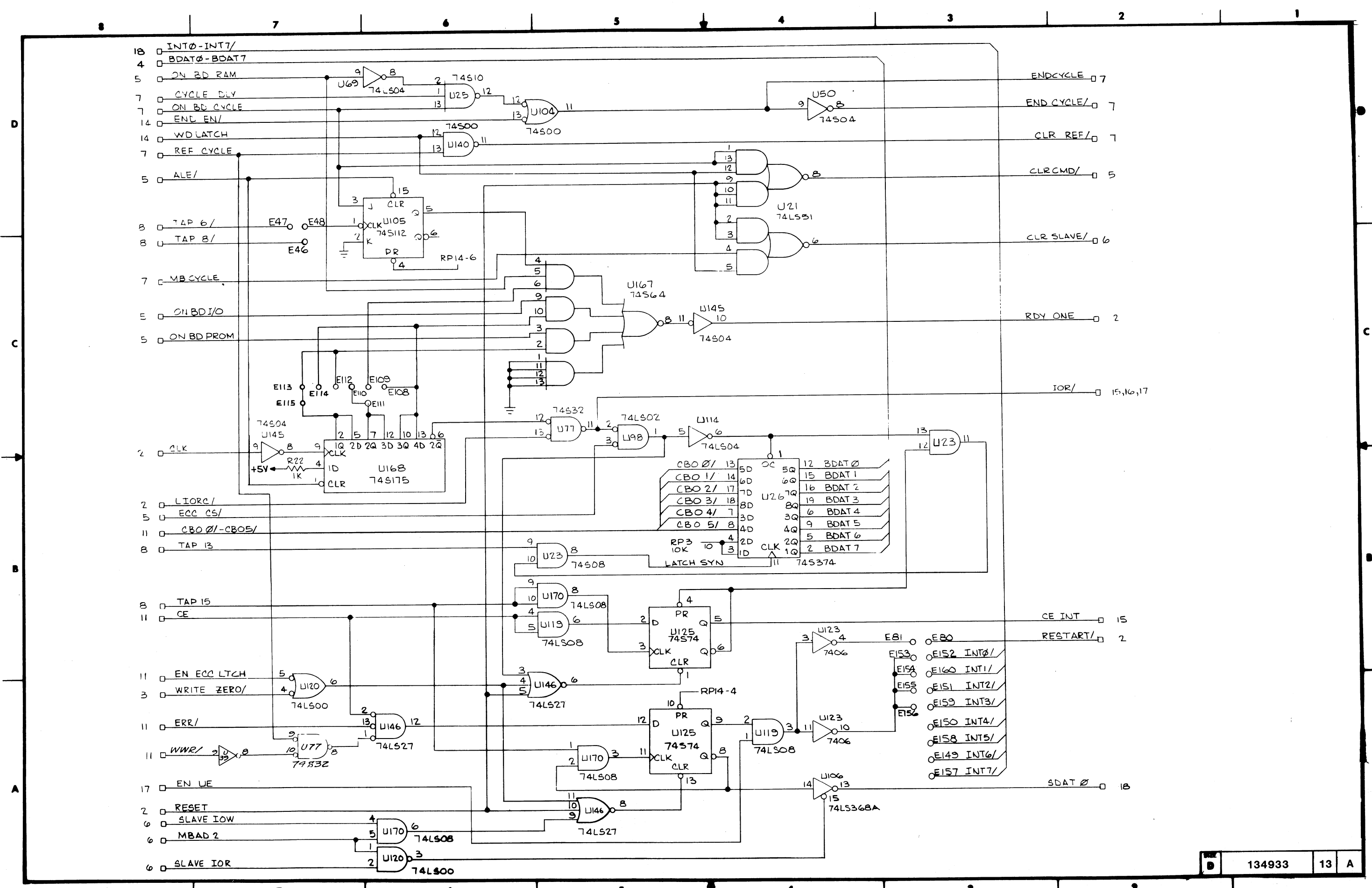


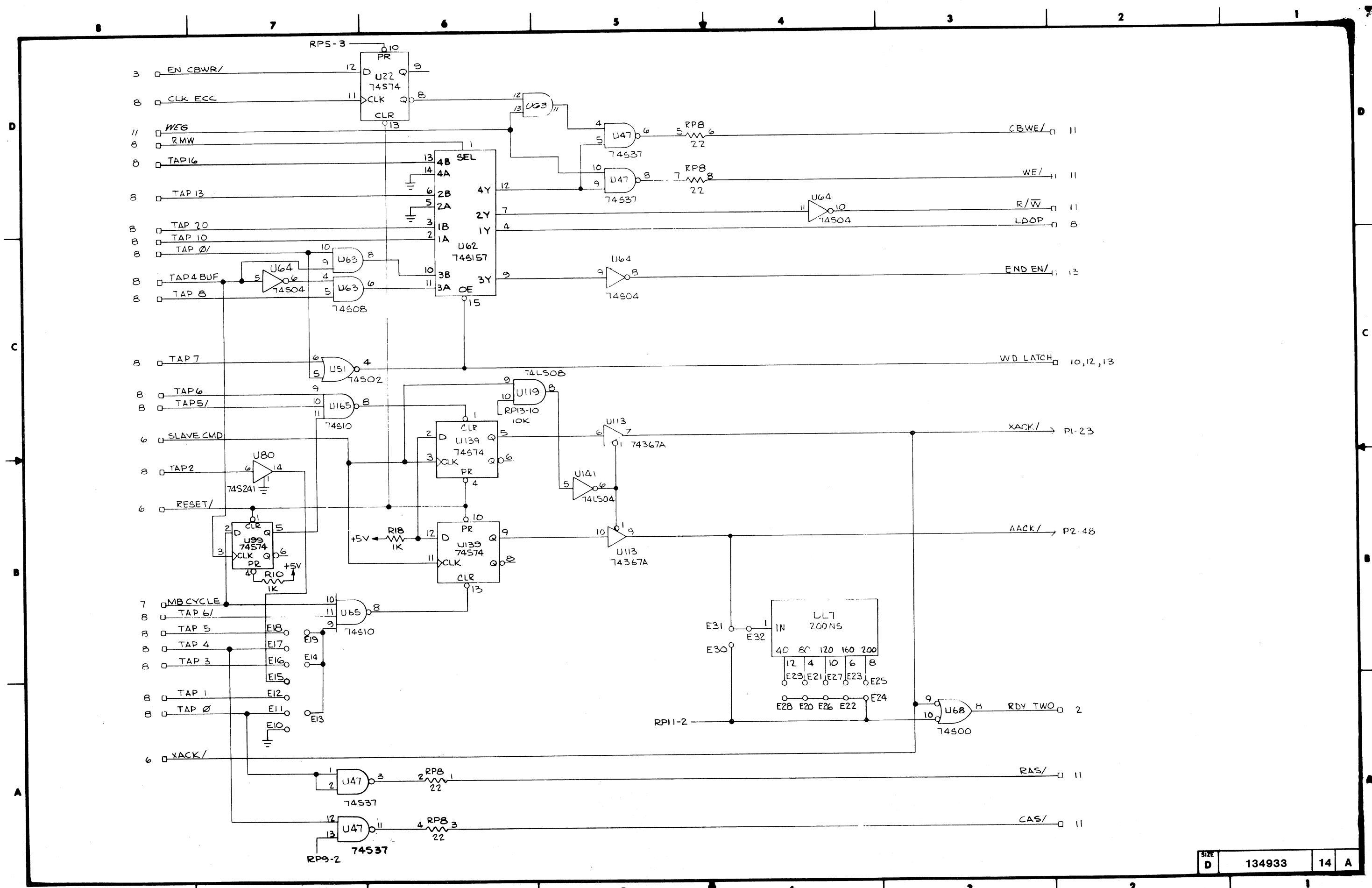
7 MB CYCLE
8 TAP 4 BUF
14 WD LATCH



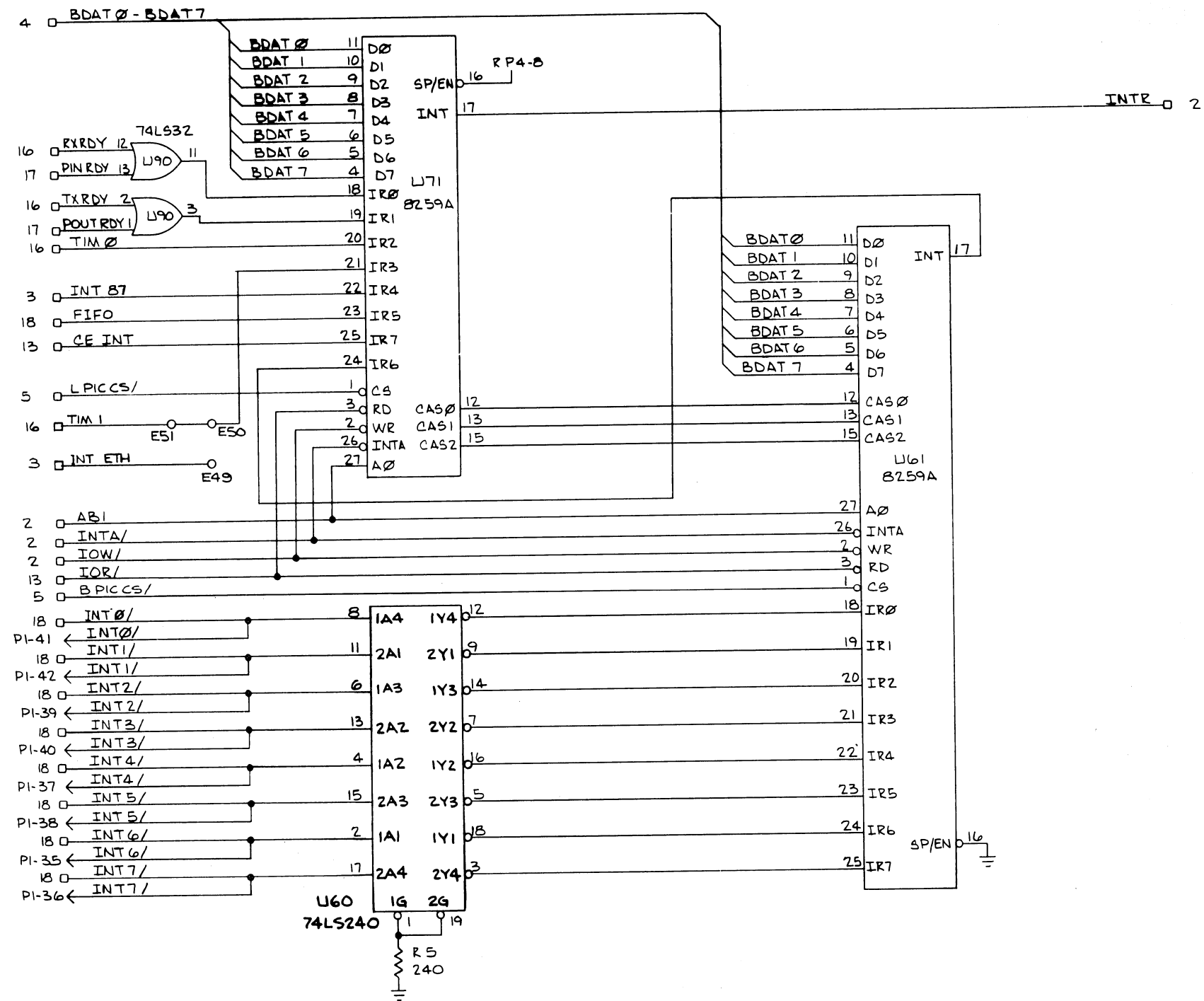


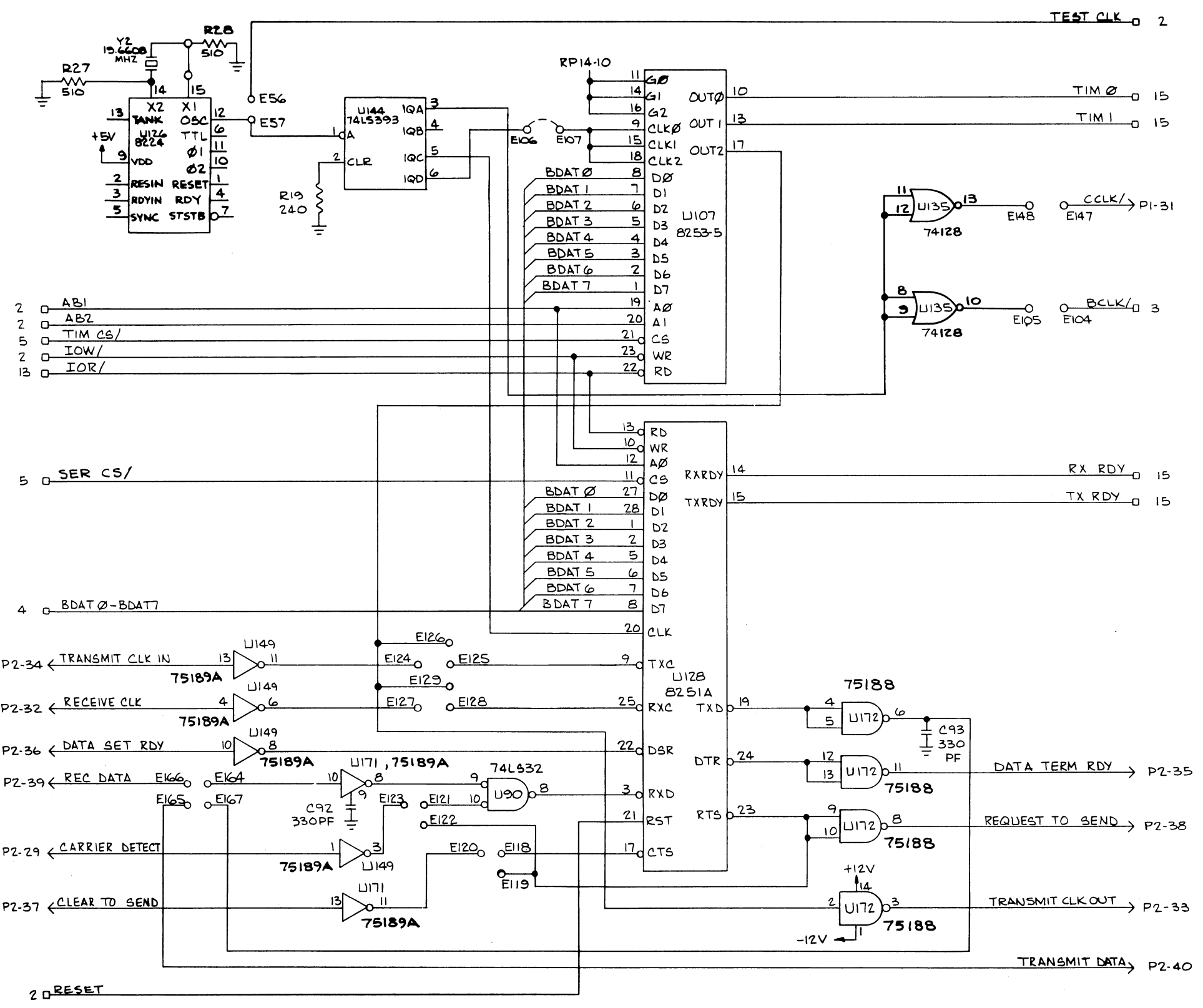






SIZE	D	134933	14	A
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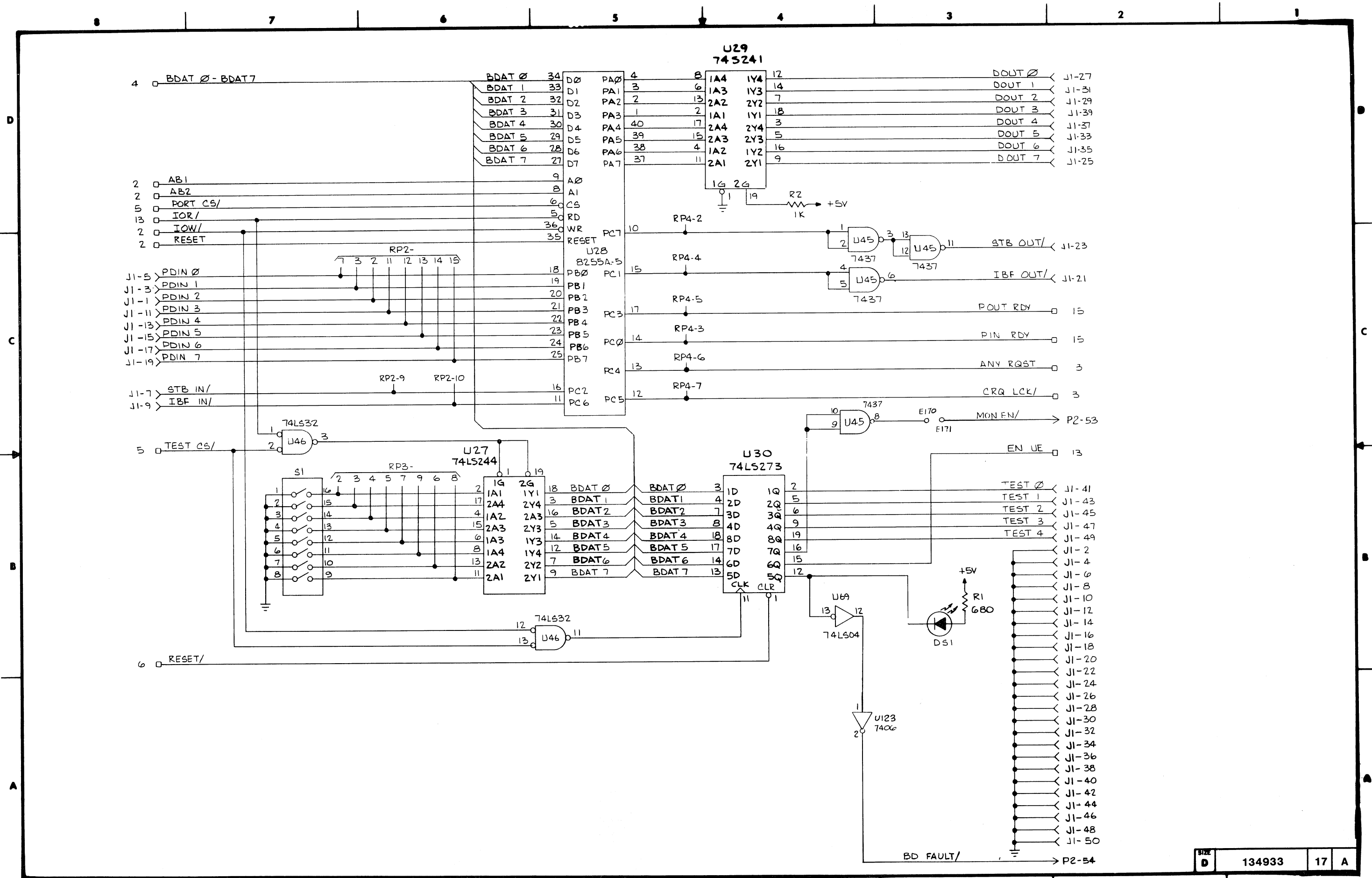
- 2 ABI
- 2 AB2
- 5 TIM CS/
- 2 IOW/
- 13 IOR/

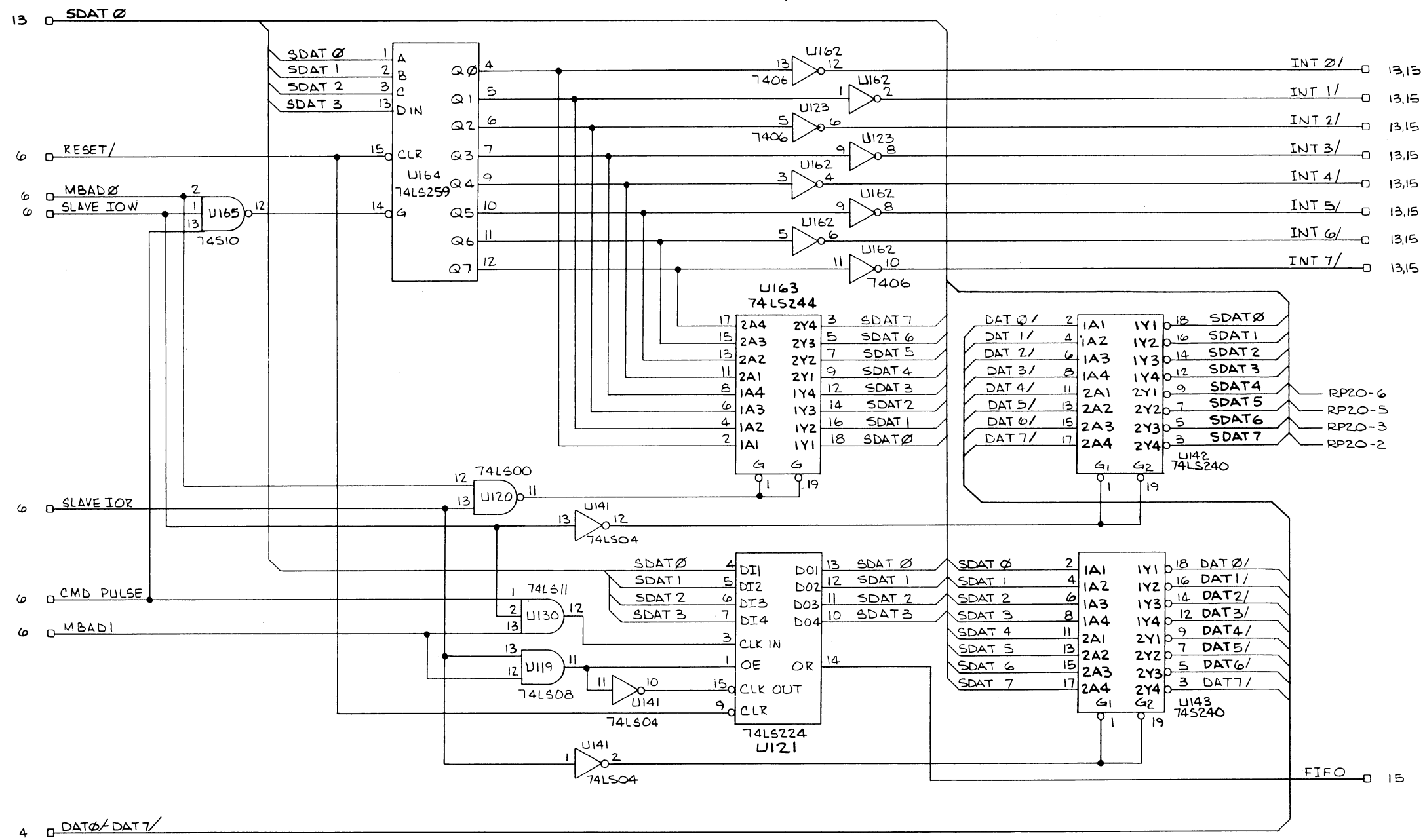
- 5 SER CS/

- 4 BDAT 0-BDAT 7

- P2-34 ← TRANSMIT CLK IN
- P2-32 ← RECEIVE CLK
- P2-36 ← DATA SET RDY
- P2-39 ← REC DATA
- P2-29 ← CARRIER DETECT
- P2-37 ← CLEAR TO SEND
- 2 RESET

- TEST CLK 0 2
- TIM 0 15
- TIM 1 15
- CCLK/ 0 E147 → P1-31
- BCLK/ 0 E104
- RX RDY 0 15
- TX RDY 0 15
- DATA TERM RDY → P2-35
- REQUEST TO SEND → P2-38
- TRANSMIT CLK OUT → P2-33
- TRANSMIT DATA → P2-40





REVISIONS						
REV	DESCRIPTION	DFT	DATE	CHK	DATE	APVD
A	PER DRF 921	RA KESTER	2/2/82	NATION	2-2	WEDDEN
B	PER DRF 969	M JAMES	2/16/82	C. Madhug	2/16/82	WEDDEN
C	PER DRF 1023	M JAMES	3/16/82	L. PARK	3-18	WEDDEN
D	PER ECO 53012	Belany	5-22	NATION	5-22	WEDDEN
E	PER ECO 53080	PARK	8-2	J.T.R.	8-2	WEDDEN
F	PER ECO 53672	DUFFY	11/12	A	11-2	WEDDEN
G	ECO 53904	Belany	2-23	WYP	2-23	WEDDEN
H	ECO 54368	PARK	3-18	WYP	3-18	WEDDEN
J	ECO 2155343	PARK	2/11/84	A	2-11	HERZOG
K	ECO 2155526	LETO	3/31/84	A	3-31	HERZOG

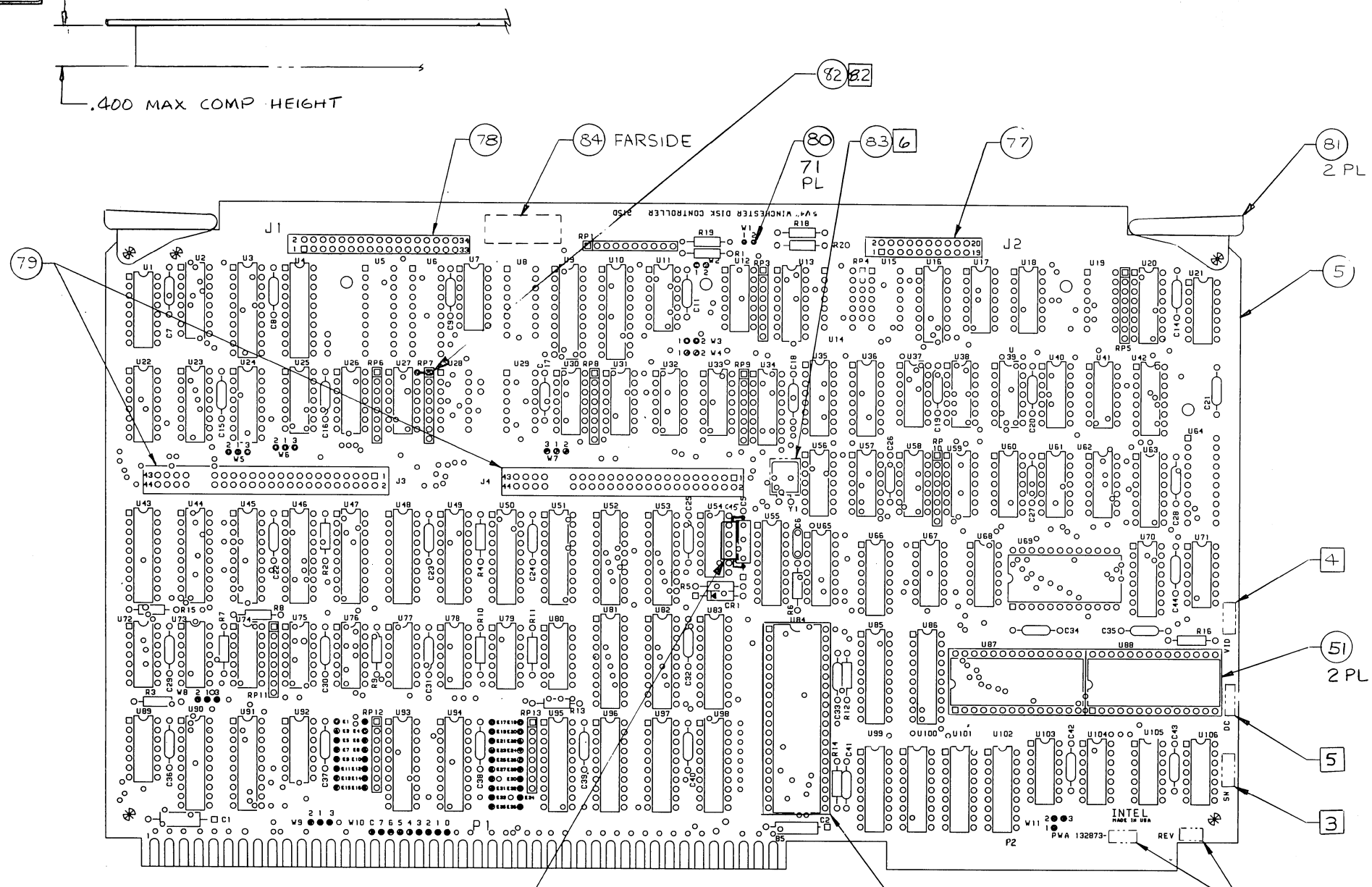


TABLE IV

DEFAULT JUMPER SELECTION			PL. ITEM
W1	OPEN	STEP SELECTION	-
W2	OPEN	STEP SELECTION	-
W3	1-2	1.5BX	95
W4	1-2	1.5BX	95
W5	OPEN	1.5BX	-
W6	OPEN	1.5BX	-
W7	OPEN	1.5BX	-
W8	1-2	ARBITOR MODE	95
W9	1-2	COMMON BUS REQUEST	95
W10	C-5	INTERRUPT SELECTION	82
W11	1-2	RAM SELECTION	95
E1-1G	OPEN	WAKEUP ADDRESS	-
E21-3G	OPEN	WAKEUP ADDRESS	-
E17-1B	OPEN	1G BIT SYS BUS	-
E19-20	OPEN	8 BIT I/O	-

NOTES: UNLESS OTHERWISE SPECIFIED.

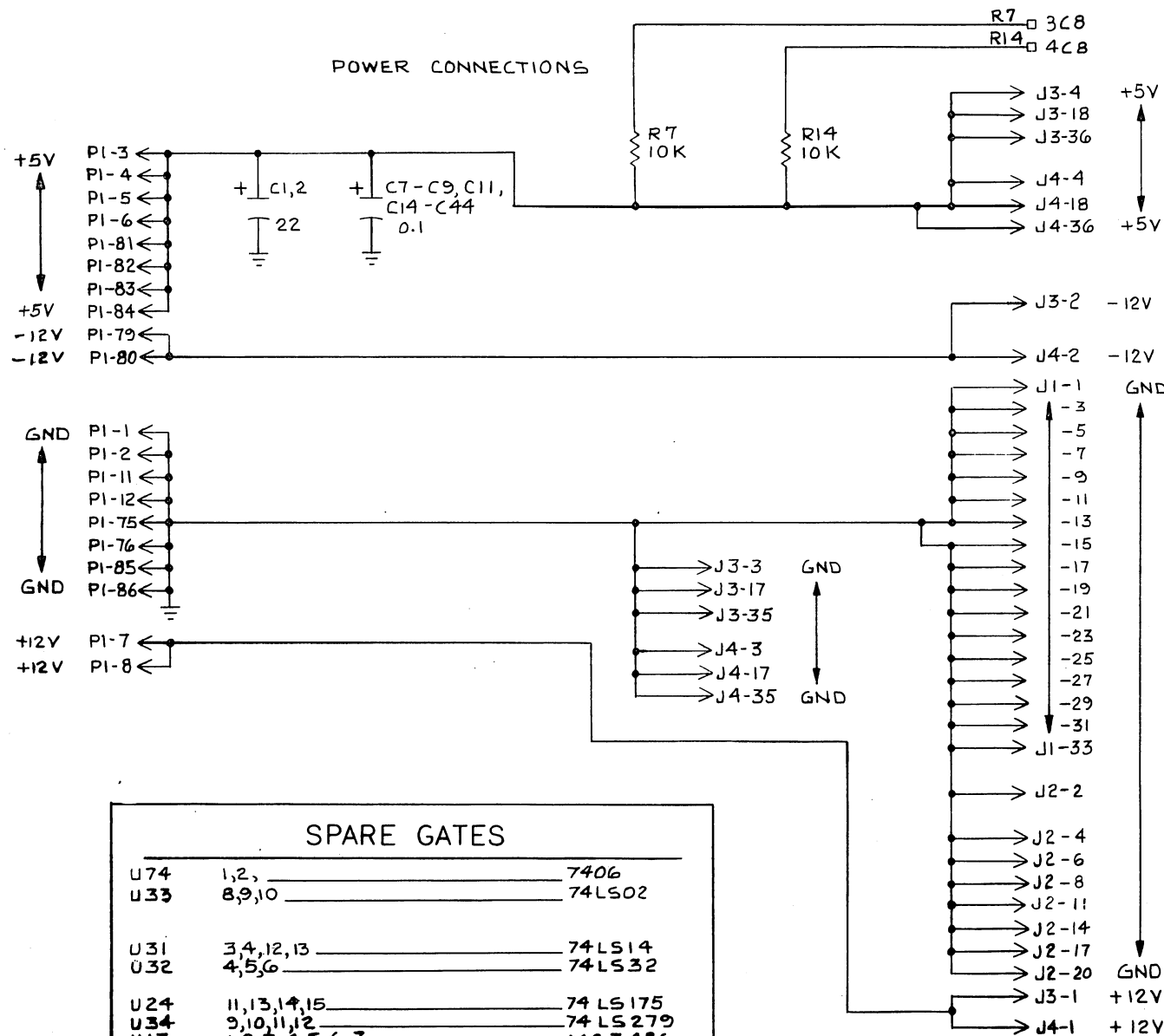
- ASSEMBLY PART NO. IS 132873-XXX, SEE TABULATION. THIS DOCUMENT AND PARTS LIST ARE TRACKING DOCUMENTS.
- WORKMANSHIP PER 99-0007-001, LATEST ISSUE.
- MARK "PBA", PART NUMBER, AND SERIAL NUMBER PER INTEL 164997 (NONCONDUCTIVE) APPROX WHERE SHOWN.
- MARK ASSEMBLY VENDOR ID ER INTEL 164997 (NONCONDUCTIVE) APPROX WHERE SHOWN.
- MARK DATE CODE PER INTEL 132049 (NONCONDUCTIVE) APPROX WHERE SHOWN.
- APPLY ADHESIVE TAPE, ITEM 83 TO PWB ITEM 5, UNDER CRYSTAL, ITEM 75.
- INSTALL JUMPERS W8-W11 AT ASSEMBLY, W3 AND W4 AFTER GND TEST, IN ACCORDANCE WITH TABLE IV.
- PERMANENT REWORK REQUIREMENTS:
 - ADD CAP C45 IN PARALLEL WITH C9 LEADS ON COMP. SIDE.
 - ADD JUMPER ON SOLDER SIDE FROM U27-14 TO RP7-1.

DEVICES NOT USED AT THESE LOCATIONS
 U5,6,8,14,15,19,28,29,64
 C3,4,10,12,13
 RP2, RP4
 R17

QUANTITY PER DASH NO.		ITEM NO.		DESCRIPTION	
UNLESS OTHERWISE SPECIFIED:		SIGNATURE		PARTS LIST	
1. DIMENSIONS ARE IN INCHES.		DRN BY RA. KESTER 2/2/82		intel® 3065 BOWERS AVE SANTA CLARA CALIF. 95051	
2. BREAK ALL SHARP EDGES.		CHK BY ANATION 2-3		TITLE	
3. DO NOT SCALE DRAWING.		ENGR APVD O. WEDDEN 1-5		PWB ASSY, 215 D 5 1/4"	
4. TOLERANCES:		APVD		DISK CONTROLLER	
ANGLES ±		REV		SIZE DCLC CL CODE ELSE LVL DOCUMENT NUMBER REV	
XX ±		D 21 13		132873 K	
XXX ±		SCALE NONE		SHEET 1 OF 1	

ISBC-215D

NOTES: UNLESS OTHERWISE SPECIFIED
 1. INTERPRET THIS DRAWING PER ANSI Y32.14-1973.
 2. CAPACITANCE VALUES ARE IN MICROFARADS.
 3. RESISTANCE VALUES ARE IN OHMS, 1/4 W, 5%.
 (NOTES CONTINUED ON SHEET 14.)



SPARE GATES		
U74	1,2	7406
U33	8,9,10	74LS02
U31	3,4,12,13	74LS14
U32	4,5,6	74LS32
U24	11,13,14,15	74LS175
U34	9,10,11,12	74LS279
U13	1,2,3,4,5,6,7	MC3486
U16	9,10,11,12,13,14,15	MC3487
U75	1,2,3,4,5,6,12,13	74LS10

POWER AND GROUND LOCATOR CHART

REF DESIG	DEVICE TYPE	POWER PINS	
		GND	+5V
U84	8089	1,20	40
U87,88	2764-J	14	128,27,26
U58,74	7406	7	14
U7,27	7438	7	14
U60	74502	7	14
U17	74504	7	14
U18	74574	7	14
U66	745133	8	16
U71	745280	7	14
U11,61,68	74LS00	7	14
U33,73	74LS02	7	14
U25	74LS04	7	14
U12,59,72	74LS08	7	14
U40,75	74LS10	7	14
U31	74LS14	7	14
U54	74LS20	7	14
U30,32,38,41,67,76,92	74LS32	7	14
U26	74LS51	7	14
U21,37,39,56,57,62	74LS74	7	14
U89	74LS125	7	14
U35,36	74LS138	8	16
U65	74LS139	8	16
U20	74LS161	8	16
U103,104,105,106	74LS164	7	14
U1,2,22,23	74LS165	8	16
U42	74LS174	8	16
U24	74LS175	8	16
U43,45,93,94,95	74LS244	10	20
U70	74LS257	8	16
U77,78,79,80	74LS266	7	14
U3	74LS273	10	20
U34,63	74LS279	8	16
U47,50	74LS299	10	20
U9,85,86	74LS373	10	20
U10,44,46,48,49,51	74LS374	10	20
U13	MC3486	8	16
U16	MC3487	8	16
U99,100,101,102	2114	10	19
U69	8254-E	12	24
U4,81,82,83	8283	10	20
U55	8284-A	9	18
U52,53	8286	10	20
U96,97,98	8287	10	20
U91	8288	10	20
U90	8289	10	20

SEE TABLE II

REVISIONS							
REV	DESCRIPTION	DFT	DATE	CHK	DATE	APVD	DATE
A	DRF 885	Bailey	12-14-81	O. WOODEN	1/25/82	O. WOODEN	1/25/82
B	PER DRF 969	J.T.R.	2/11/82	C. PARK	3/16/82	O. WOODEN	3/16/82
C	PER DRF 1023	M. JAMES	3-16-82	L. PARK	5-27-82	O. WOODEN	5/17/82
D	PER ECO 53012	SELANY	5-27-82	NATION	5-27-82	O. WOODEN	5/17/82
E	PER ECO 53080	PARK	6-2-82	J.T.R.	9/17/82	O. WOODEN	4/23/82
F	PER ECO 54368	PAT K	8-2-82	R.P.	9/10/82	O. WOODEN	11/18/82

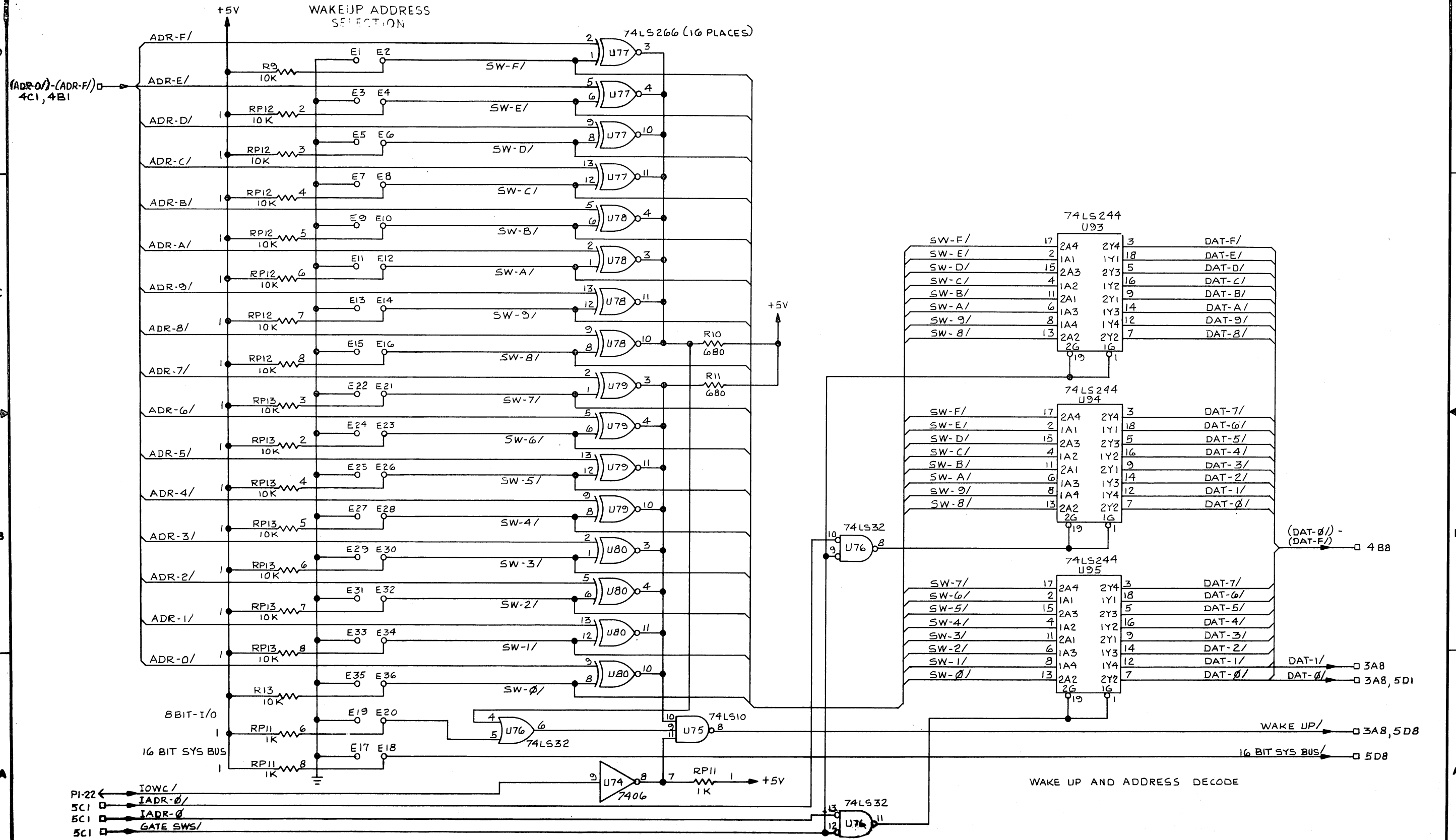
PCB ASSY USED WITH	
132873-001	A - D
132873-002	E
132873-004	E
132873-005	F

REF DESIGNATOR CHART	
HIGHEST USED	NOT USED
RP13	RP2, 4
J4	
PI	
E36	
W11	
Y1	
R19	R17
C44	C3,4,10,12,14
U106	U56,81,1513
	U88,29,64
C81	

QUANTITY PER DASH NO.		SIGNATURE		DATE		DESCRIPTION	
		DRN BY Bailey		12/14/81		PARTS LIST	
UNLESS OTHERWISE SPECIFIED:		CHK BY O. WOODEN		1/25/82	intel® 3065 BOWERS AVE SANTA CLARA CALIF. 95051		
1. DIMENSIONS ARE IN INCHES.		ENGR APVD O. WOODEN		1/25/82	TITLE "5 1/4 DISK CONTROLLER, 215D, PCB SCHEMATIC"		
2. BREAK ALL SHARP EDGES.		APVD			SIZE DCLC CL CODE RLSE LVL DOCUMENT NUMBER REV		
3. DO NOT SCALE DRAWING.					D 21 0100 132800 .F		
4. TOLERANCES:					SCALE NONE SHEET 1 OF 2		
ANGLES ±							
XX ±							
XXX ±							

ISBC-215D
2

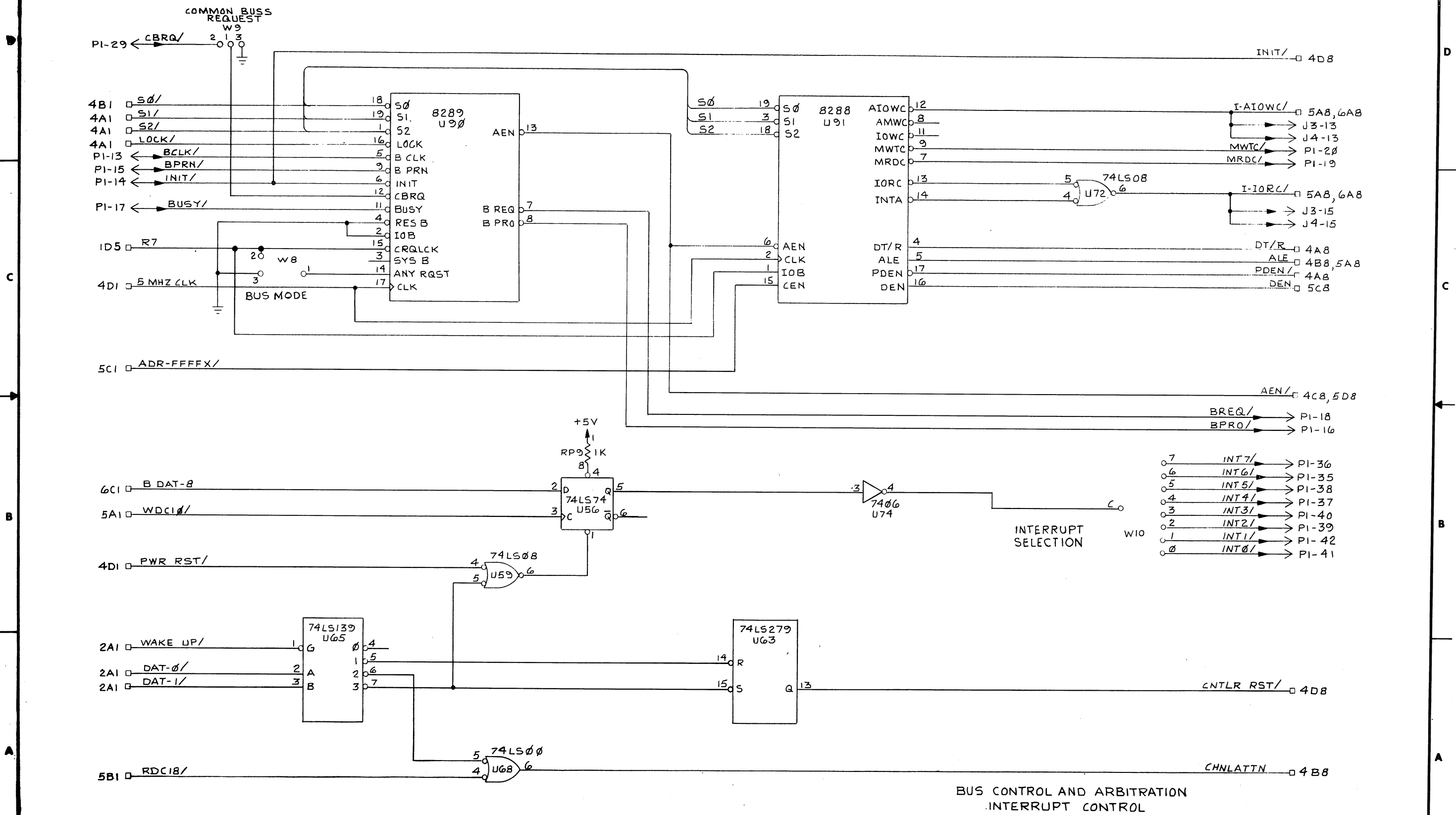
REVISIONS						
REV	DESCRIPTION	DFT	DATE	CHK	DATE	APVD



SIZE	DOCUMENT NUMBER	SHEET	REV
D	132800	2	F

ISBC-2-15D
3

REVISIONS						
REV	DESCRIPTION	DFT	DATE	CHK	DATE	APVD

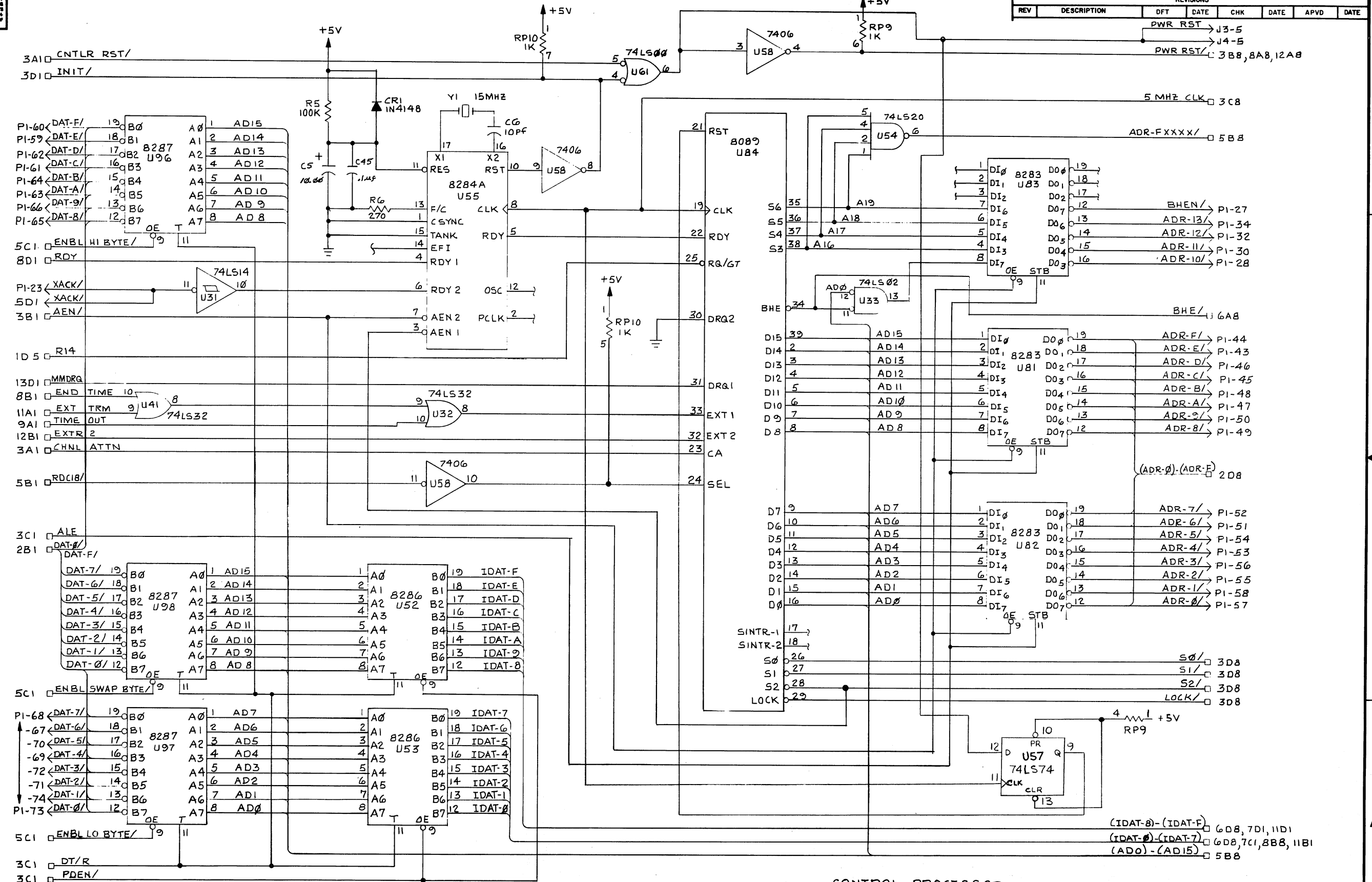


BUS CONTROL AND ARBITRATION
INTERRUPT CONTROL

SIZE	DOCUMENT NUMBER	SHEET	REV
D	132800	3	E

ISBC-215D
4

REVISIONS					
REV	DESCRIPTION	DFT	DATE	CHK	DATE



- 3A1 CNTLR RST/
- 3D1 INIT/
- P1-60 DAT-F/
- P1-59 DAT-E/
- P1-62 DAT-D/
- P1-61 DAT-C/
- P1-64 DAT-B/
- P1-63 DAT-A/
- P1-66 DAT-9/
- P1-65 DAT-8/
- 5C1 ENBL HI BYTE/
- 8D1 RDY
- P1-23 XACK/
- 5D1 XACK/
- 3B1 AEN/
- 1D5 R14
- 13D1 MMDRQ
- 8B1 END TIME
- 11A1 EXT TRM
- 9A1 TIME OUT
- 12B1 EXTR 2
- 3A1 CHNL ATTN
- 5B1 RDC18/
- 3C1 ALE
- 2B1 DAT-#/
- 5C1 ENBL SWAP BYTE/
- P1-68 DAT-7/
- 67 DAT-6/
- 70 DAT-5/
- 69 DAT-4/
- 72 DAT-3/
- 71 DAT-2/
- 74 DAT-1/
- P1-73 DAT-0/
- 5C1 ENBL LO BYTE/
- 3C1 DT/R
- 3C1 PDEN/

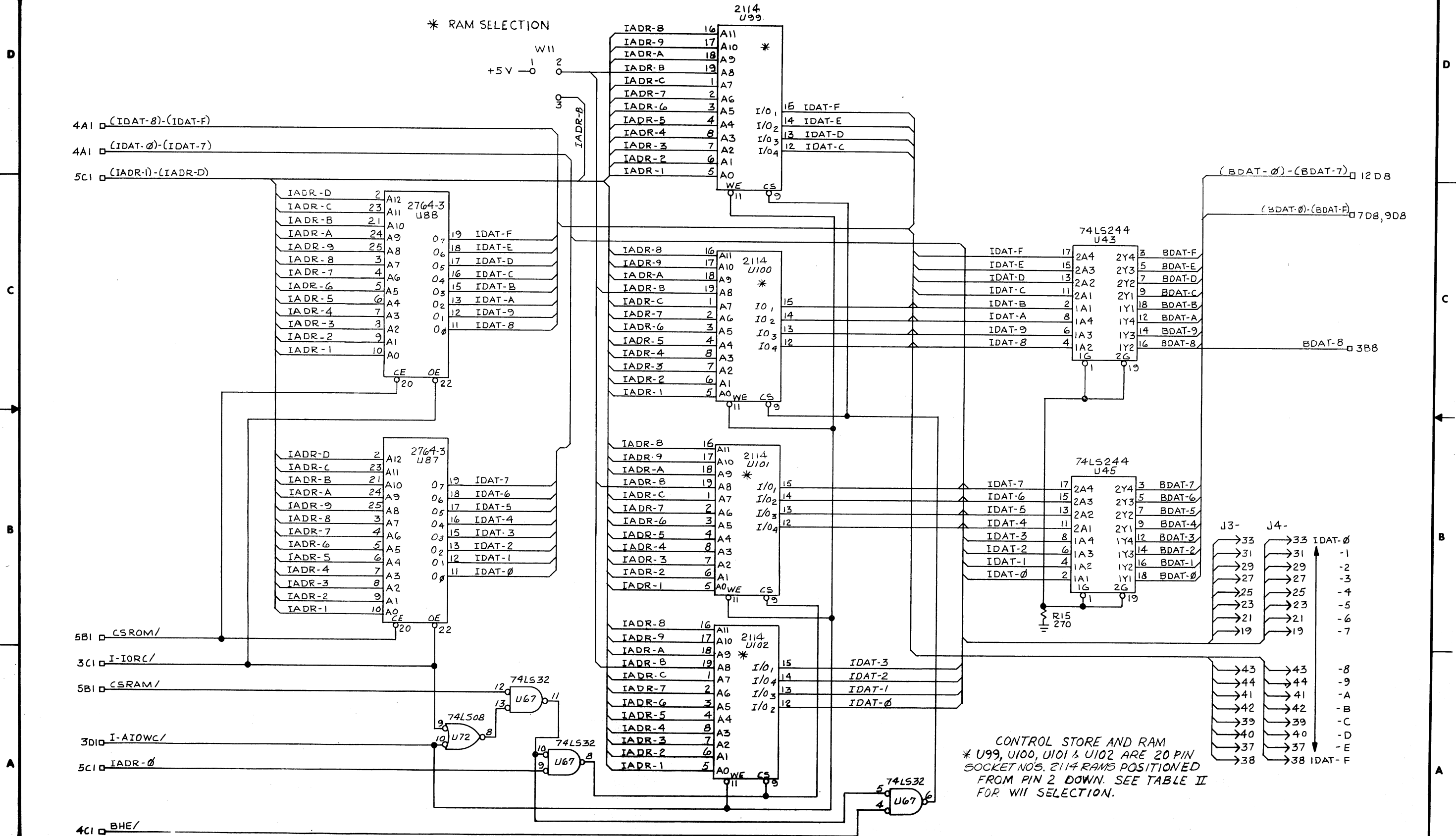
CONTROL PROCESSOR
ADDRESS AND DATA LATCH

SIZE	DOCUMENT NUMBER	SHEET	REV
D	132800	4	F

ISBC-215D
5

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REVISIONS						
REV	DESCRIPTION	DFT	DATE	CHK	DATE	APVD



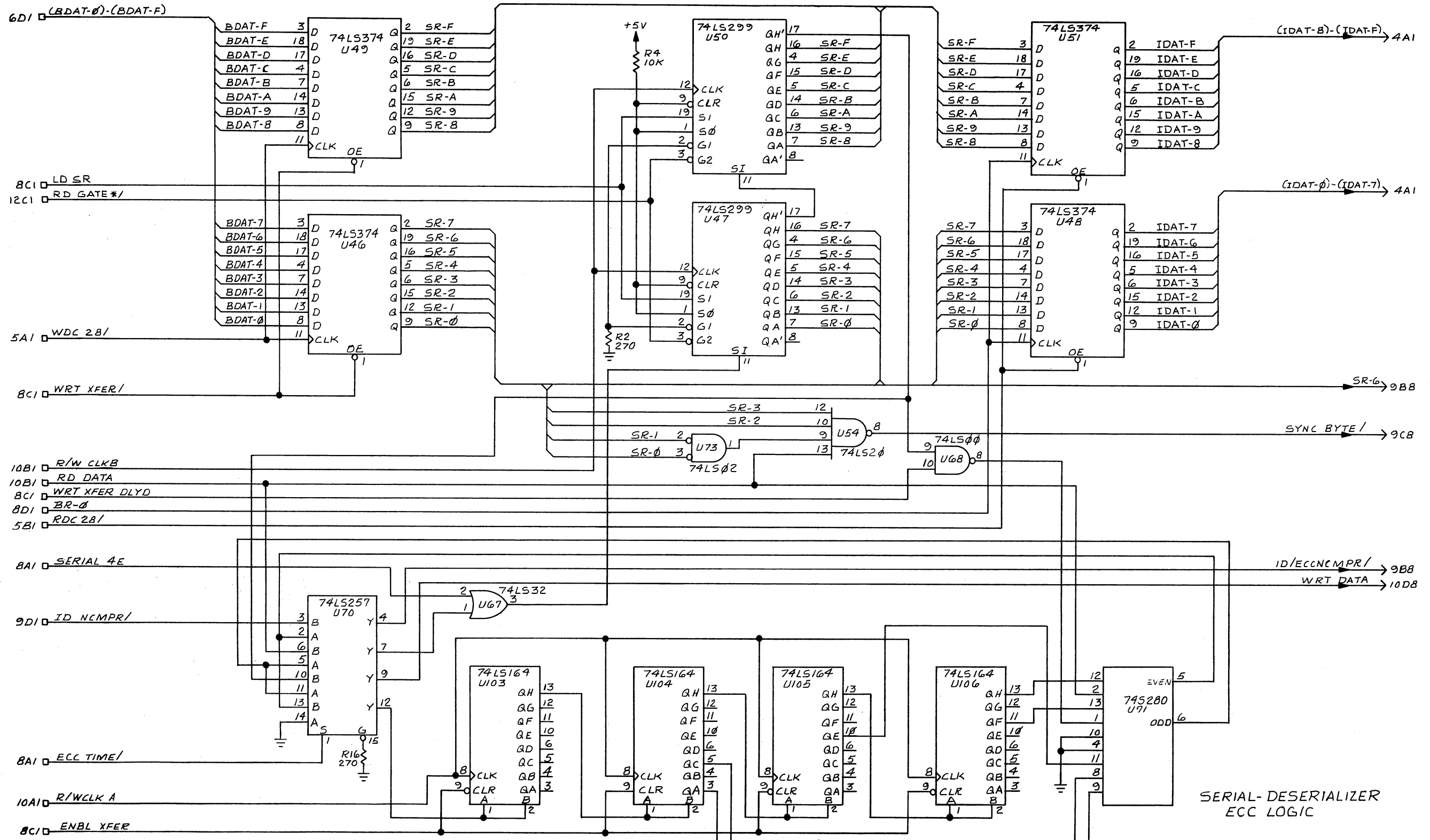
CONTROL STORE AND RAM
 * U99, U100, U101 & U102 ARE 20 PIN
 SOCKET NOS. 2114 RAMS POSITIONED
 FROM PIN 2 DOWN. SEE TABLE II
 FOR W11 SELECTION.

SIZE	DOCUMENT NUMBER	SHEET	REV
D	132800	6	F

ISBC-215D
7

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REVISIONS						
REV	DESCRIPTION	DFT	DATE	CHK	DATE	APVD



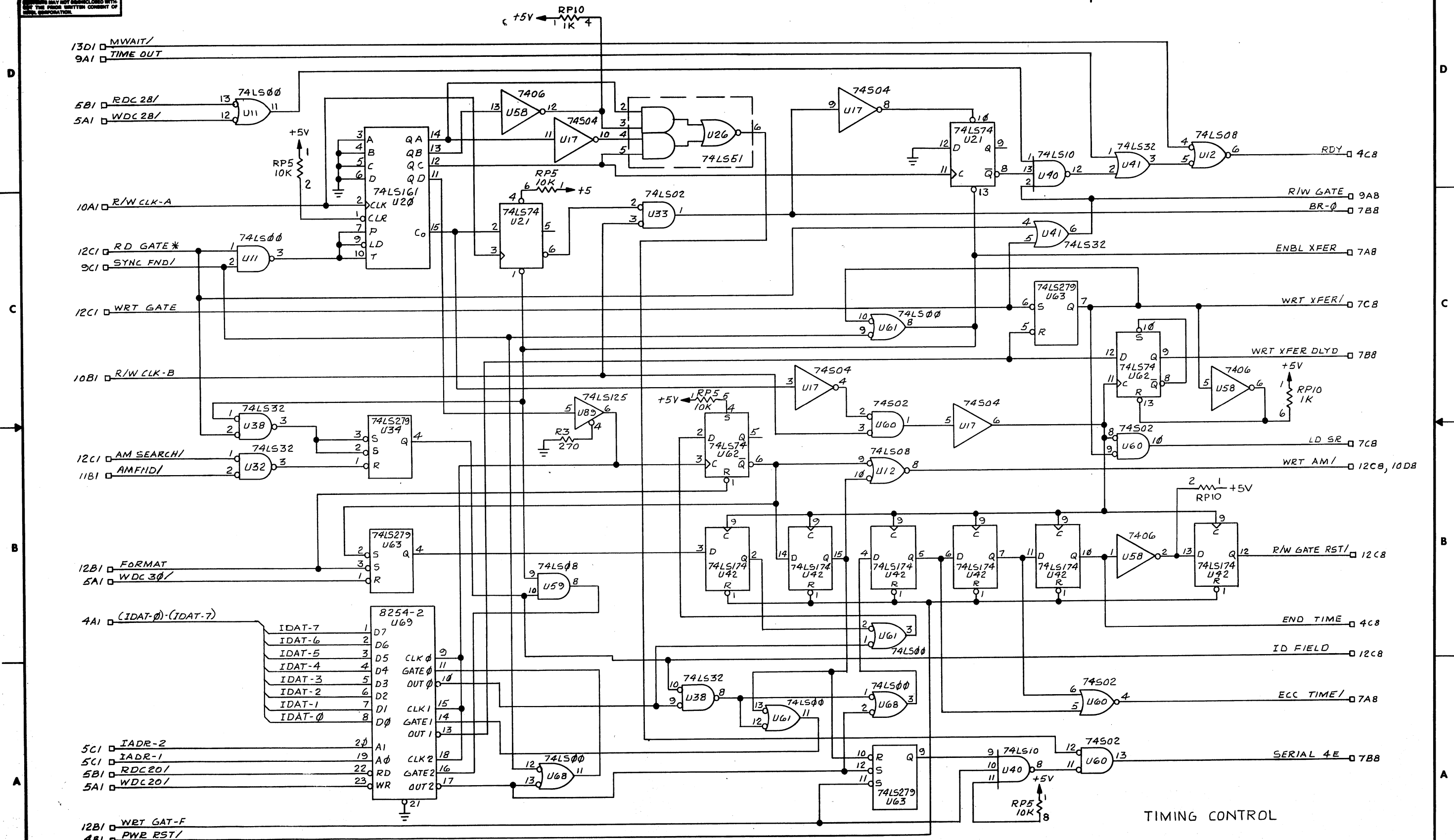
SERIAL-DESERIALIZER
ECC LOGIC

SIZE	DOCUMENT NUMBER	SHEET	REV
D	132800	7	F

ISBC-215D
8

ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE. THIS DOCUMENT IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE. DATE 08-08-2010 BY 60322 UCBAW/SJS

REVISIONS						
REV	DESCRIPTION	DFT	DATE	CHK	DATE	APVD

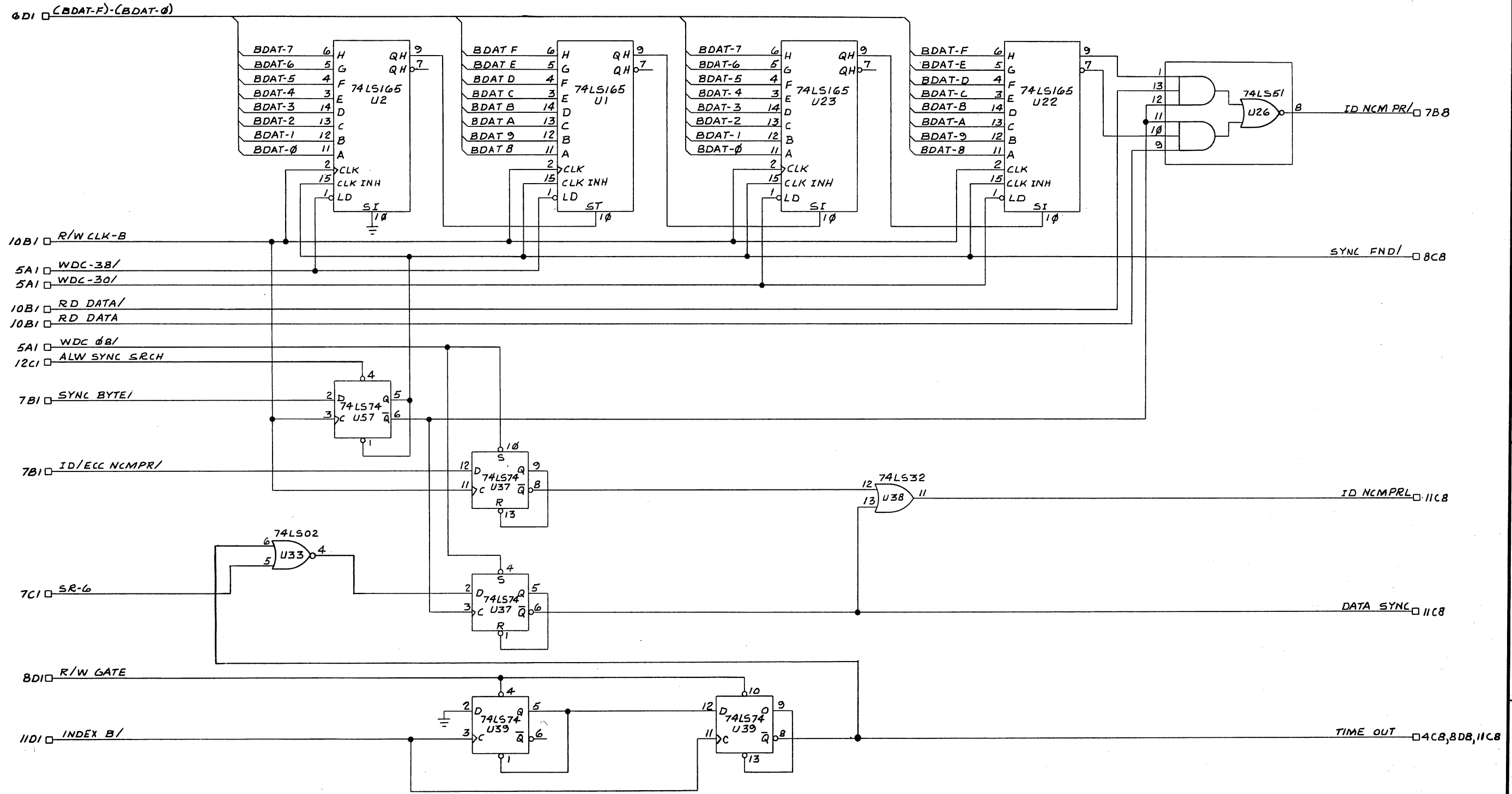


TIMING CONTROL

SIZE	DOCUMENT NUMBER	SHEET	REV
D	132800	8	F

ISBC-2150
9

REVISIONS						
REV	DESCRIPTION	DFT	DATE	CHK	DATE	APVD

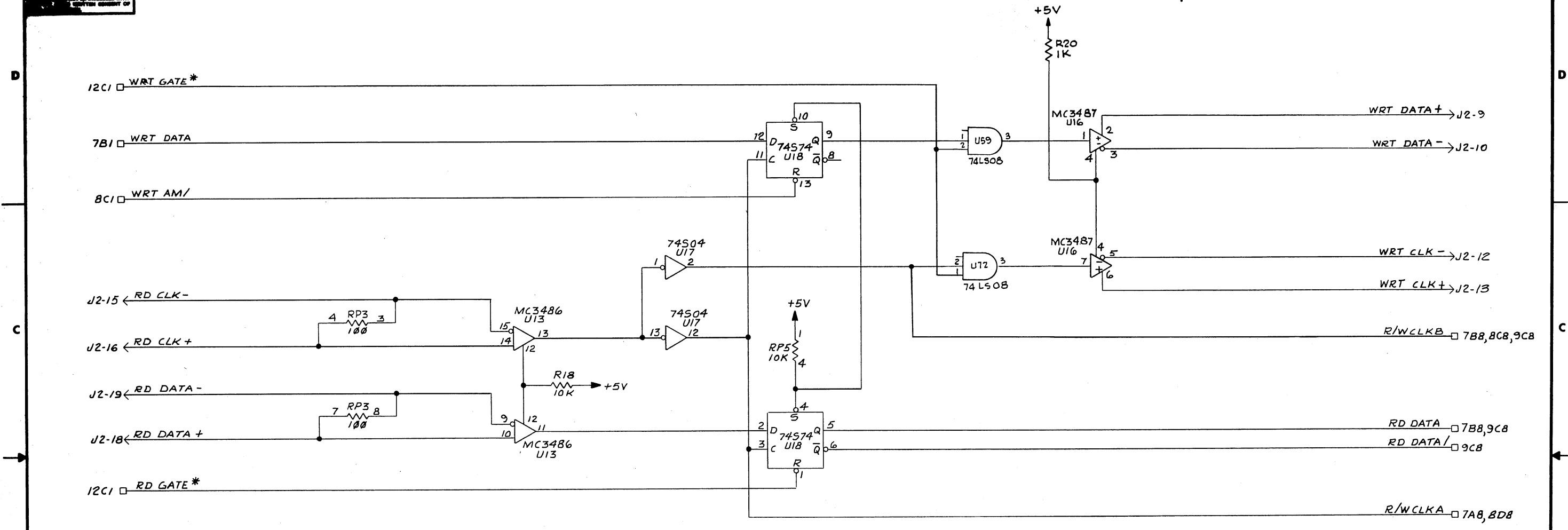


ID COMPARATOR / SYNC DETECT
INDEX WATCH DOG

SIZE	DOCUMENT NUMBER	SHEET	REV
D	132800	9	E

ISBC-2-15D
10

REVISIONS							
REV	DESCRIPTION	DFT	DATE	CHK	DATE	APVD	DATE



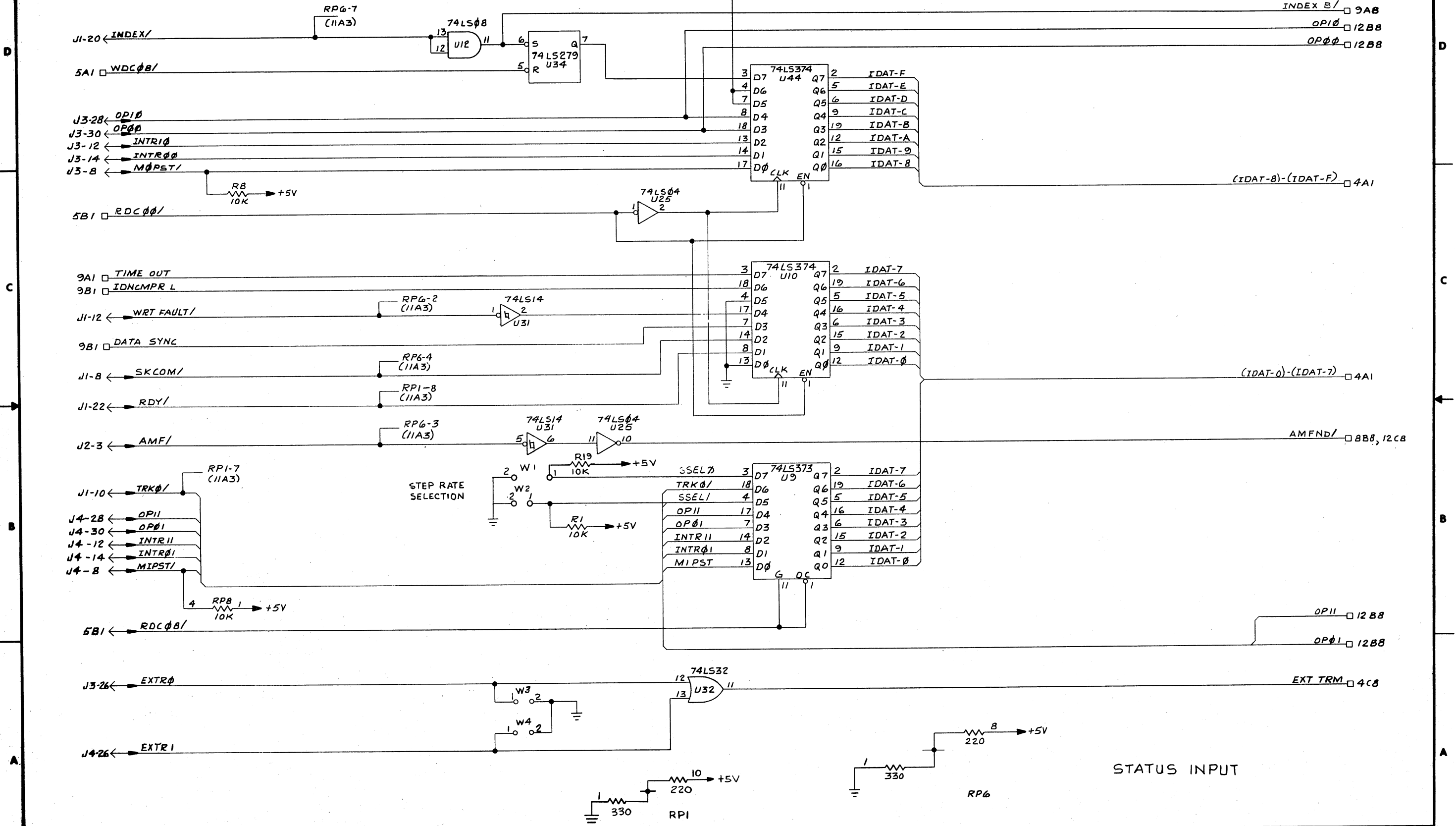
SERIAL DATA
DIFFERENTIAL DRIVERS AND RECIEVERS

SIZE	DOCUMENT NUMBER	SHEET	REV
D	132800	10	F

ISBC-215D
11

ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.

REVISIONS							
REV	DESCRIPTION	DFT	DATE	CHK	DATE	APVD	DATE

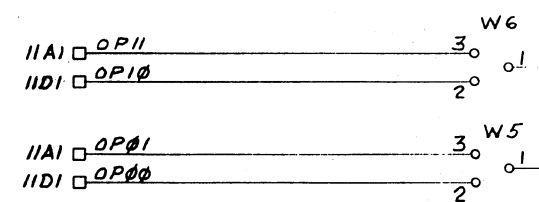
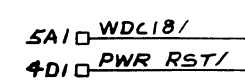
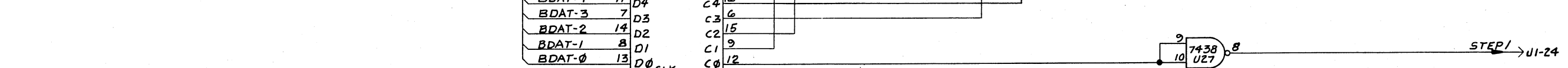
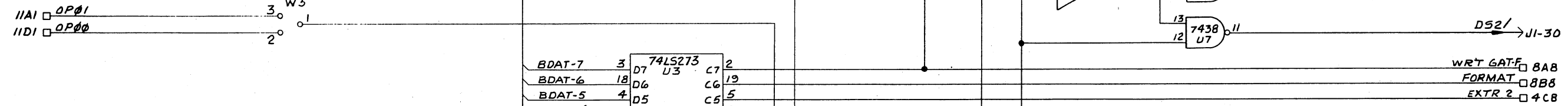
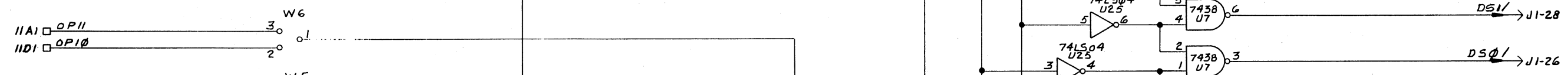
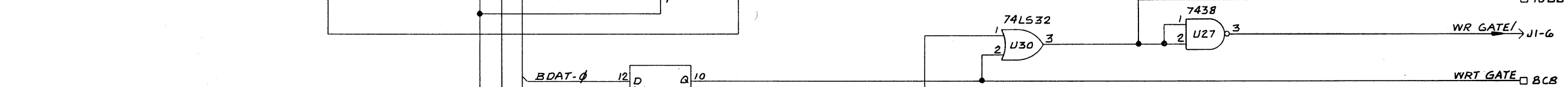
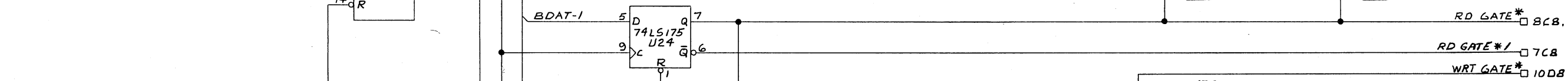
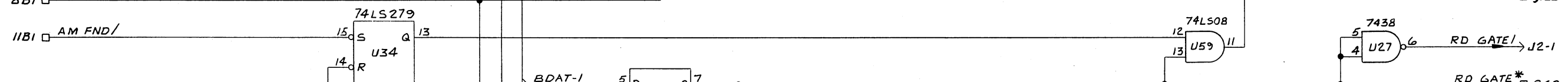
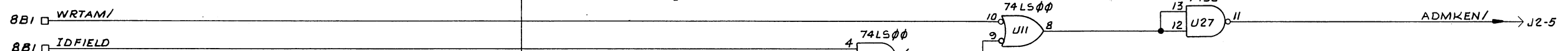
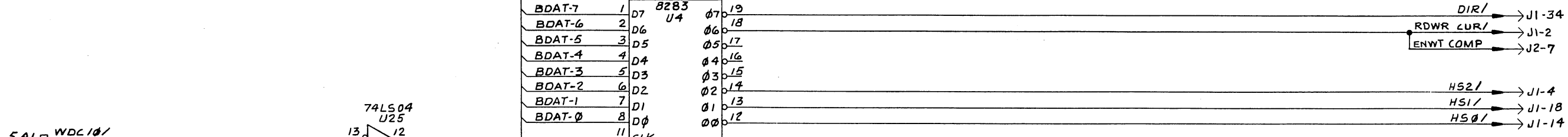


SIZE	DOCUMENT NUMBER	SHEET	REV
D	132800	11	F

ISBC-215D
12

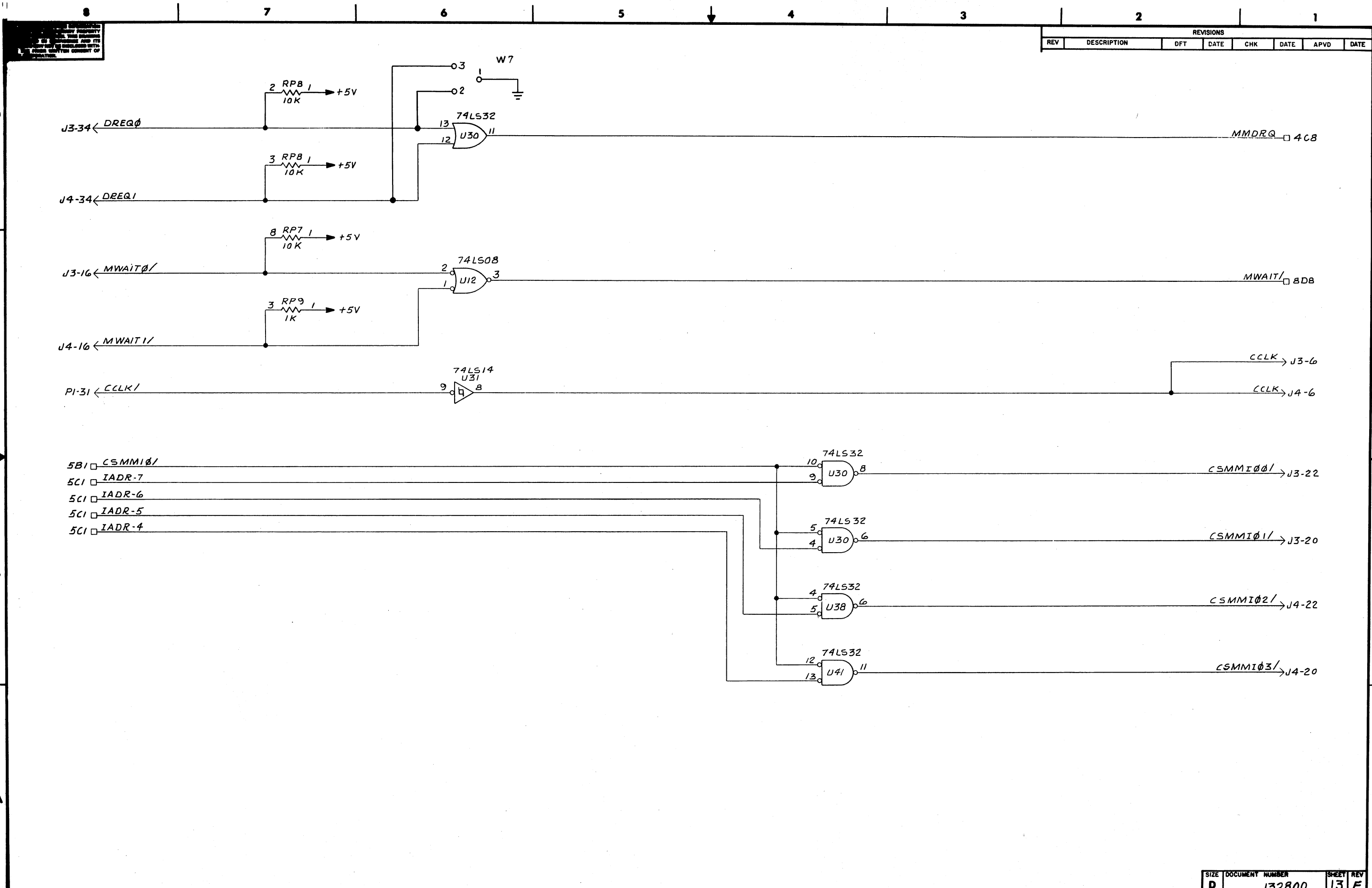
REVISIONS						
REV	DESCRIPTION	DFT	DATE	CHK	DATE	APVD

6DI (BDAT-0)-(BDAT-7)



SIZE	DOCUMENT NUMBER	SHEET	REV
D	132800	12	F

ISBC-215D
 13



REVISIONS							
REV	DESCRIPTION	DFT	DATE	CHK	DATE	APVD	DATE

SIZE	DOCUMENT NUMBER	SHEET	REV
D	132800	13	F

ISBC-215D
14

REVISIONS						
REV	DESCRIPTION	DFT	DATE	CHK	DATE	APVD

NOTES: UNLESS OTHERWISE SPECIFIED

4. SBX BOARD CONTROL:
FOUR JUMPERS ARE PROVIDED FOR SBX BOARD CONTROL. SEE THEIR RESPECTIVE SPECIFICATIONS FOR USE OF W3 AND W4, W5 AND W6. IF A SBX CONNECTOR IS NOT USED, THEN ITS CORRESPONDING W3 OR W4 MUST BE INSTALLED.

J3-W3-1-2
J4-W4-1-2

5. PRIORITY ARBITRATION SELECT:
W8 IS USED TO SELECT WHICH TYPE OF MULTIBUS ARBITRATION TO USE. W8-1-2 IS THE NORMAL MODE WHERE THE CONTROLLER ARBITRATES ON A PRIORITY BASIS. W8-1-3 SELECTS A MODE IN WHICH THE CONTROLLER SURRENDERS THE MULTIBUS FOR ANY REQUEST IRRESPECTIVE OF ANY PRIORITY. REFER TO ZONE 3C7.

6. COMMON BUS REQUEST SELECT W9 IS USED TO ALLOW THE CONTROLLER TO MAINTAIN CONTROL OF THE MULTIBUS OR TO SURRENDER THE BUS UPON COMPLETION OF EACH BUS ACCESS. W9-1-2 IS THE NORMAL MODE. W9-1-3 DIRECTS THE CONTROLLER TO SURRENDER THE BUS ON EACH ACCESS. FOR OTHER BUS MASTERS WHICH DO NOT DRIVE CBRQ1, W9 MUST BE WIRED W9-1-3 REFER TO ZONE 3D7.

TABLE I

STEP RATE CONTROL				
W	SEAGATE HALF/STEP	RMS	CM I	NORMAL
1	ON	OFF	OFF	ON
2	OFF	OFF	ON	ON

TABLE II

RAM SELECTION		
W	2114	2168
11	1-2	2-3

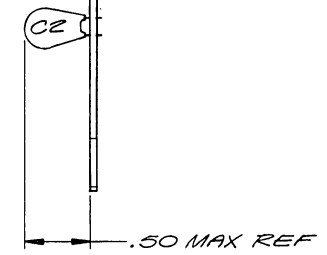
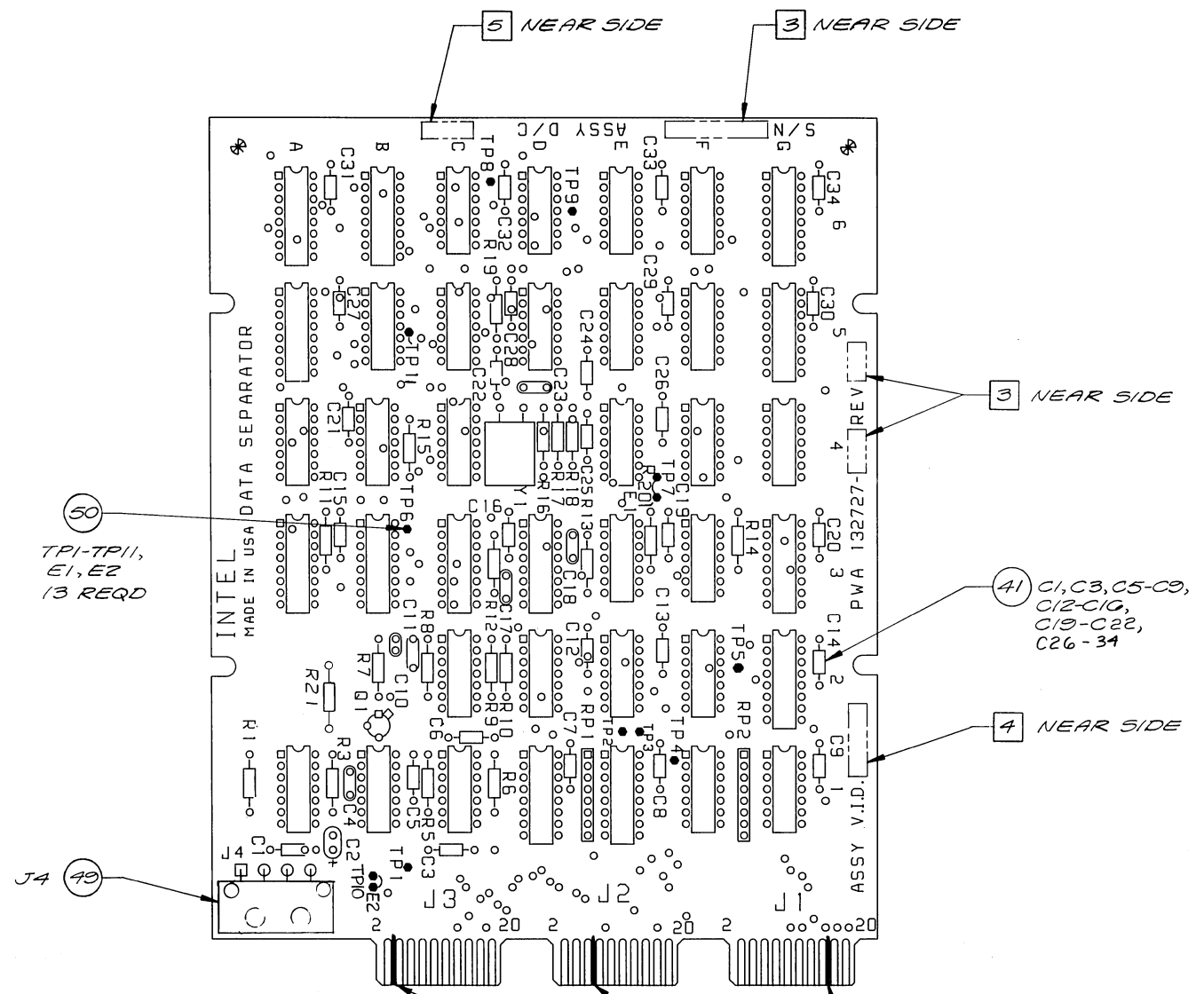
TABLE III

INTERRUPT LEVEL SELECTION (W10)		
LEVEL SELECTED	JUMPERS FROM	REQUIRED TO
0	C	0
1	C	1
2	C	2
3	C	3
4	C	4
5	C	5
6	C	6
7	C	7

TABLE IV

DEFAULT JUMPER SELECTION		
W	DESCRIPTION	STEP SELECTION
W1	OPEN	STEP SELECTION
W2	OPEN	STEP SELECTION
W3	1-2	LSBX
W4	1-2	LSBX
W5	OPEN	LSBX
W6	OPEN	LSBX
W7	OPEN	LSBX
W8	1-2	ARBITOR MODE
W9	1-2	COMMON BUS REQUEST
W10	0-5	INTERRUPT SELECTION
W11	1-2	RAM SELECTION
E1-16	OPEN	WAKEUP ADDRESS
E21-36	OPEN	WAKEUP ADDRESS
E17-18	OPEN	16 BIT SYS BUS
E19-20	OPEN	3 BIT I/O

REVISIONS							
REV	DESCRIPTION	DFT	DATE	CHK	DATE	APVD	DATE
A	DRF 848	AI	11-5-81	BB	10-11-81	O.W.	2-12-82
B	DRF 950	CM	2-11-82	AI	2-12-82	O.W.	2-12-82
C	REVISED AND REDRAWN PER DRF 972	Delany	3/6/82	CM	2-23-82	O.W.	3-16-82
D	DRF 1034 AND PILOT RELEASE PER ECO 53014	PARK	5-29-82	Boilen	5/26/82	O.W.	5-29-82
E	PER ECO 53078	PARK	6-7-82	PAK	7/10-82	O.W.	7-29-82
F	PER ECO 53323	PAK	8/21/82	PAK	8/28-82	O.W.	8/30/82
G	PER ECO 53907	L.P.	8-4-82	PAK	8-15-82	O.W.	3/15/83
H	ECO 21-54953	Delany	9-19-82	PAK	9/1-82	O.W.	11/1/83
J	ECO 21-55009	Delany	11-19-83	Wp	11/30-83	O.W.	1-7/83



- NOTES: UNLESS OTHERWISE SPECIFIED**
- ASSEMBLY PART NUMBER IS 132727-004. ASSY DRAWING AND PARTS LIST ARE TRACKING DOCUMENTS.
 - WORKMANSHIP PER INTEL PROCEDURE 99-0007-001, LATEST ISSUE.
 - MARK ASSY DASH NUMBER AND SERIAL NUMBER WITH CONTRASTING PERMANENT COLOR, NON-CONDUCTIVE, .12 HIGH, APPROX WHERE SHOWN.
 - MARK ASSY VENDOR I.D. WITH CONTRASTING PERMANENT COLOR, NON-CONDUCTIVE, APPROX WHERE SHOWN.
 - MARK DATE CODE PER INTEL PROCEDURE 132049, APPROX WHERE SHOWN.
 - COMPONENTS ORIENTATION AS SHOWN.
 - INSTALL JUMPERS BETWEEN E1 AND TP7, E2 AND TP10 AFTER CARD TEST.

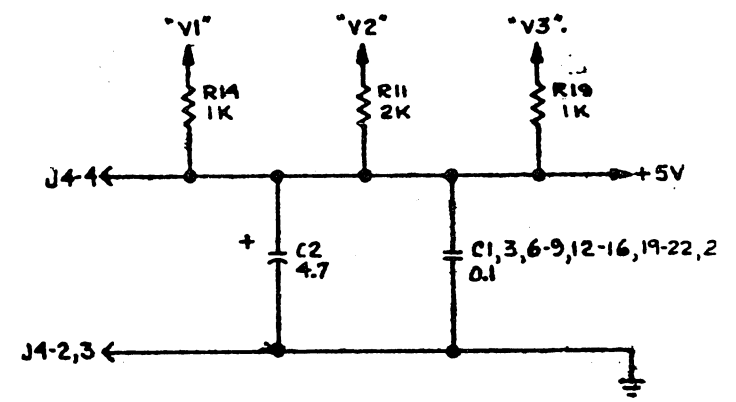
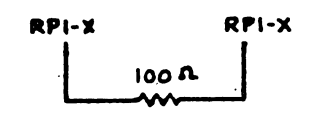
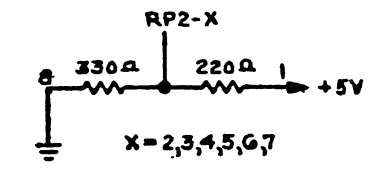
QUANTITY PER DASH NO.	ITEM NO.	DESCRIPTION
UNLESS OTHERWISE SPECIFIED:	SIGNATURE	DATE
1. DIMENSIONS ARE IN INCHES.	DRN BY <i>Delany</i>	3/16/82
2. BREAK ALL SHARP EDGES.	CHK BY <i>PAK</i>	5-14-82
3. DO NOT SCALE DRAWING.	ENGR APVD <i>O. Weedon</i>	5-26-82
4. TOLERANCES:	APVD <i>G. O. Kell</i>	10-7-83
ANGLES ±	APVD	
XXX ±		
XXX ±		
PARTS LIST		intel® 3085 BOWERS AVE SANTA CLARA CALIF. 95051
TITLE		FWB ASSY - 213A DATA SEPARATOR
SIZE	DCLC	CL CODE
D	21	0501
SCALE	1.5/1	DOCUMENT NUMBER
		132727
		REV
		J
		SHEET 1 OF 1

ISBC-213A

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PCB ASSY USED WITH	REVISIONS						
	REV	DESCRIPTION	DFT	DATE	CHK	DATE	APVD
132727-001	A	DB48	Bailey	10-28-80	NATION	11-21-80	Wenden
	B	DRE 950	Madsen	2-11-82	NATION	2-23-82	Wenden
	C	DRE 972	J.R.	2-23-82	J.R.	2-23-82	Wenden
	D	DRF 1034 AND PILOT RELEASE PER ECO 53014	PARK	8-22-82	Bailey	8-22-82	Wenden
132727-002	E	PER ECO 53078	PARK	8-22-82	RAK	7/26/82	Wenden
	F	PER ECO 53323	RAK	9/1/82	RAK	8/20/82	Wenden
132727-003	G	PER ECO 53907	LP	2-9-83	RAK	2-18-83	Wenden

- NOTES: UNLESS OTHERWISE SPECIFIED
1. INTERPRET THIS DRAWING PER ANSI Y32.14-1973
 2. CAPACITANCE VALUES ARE IN MICROFARADS.
 3. RESISTANCE VALUES ARE IN OHMS.
 4. R20 USED BY CARD TEST. DO NOT ADD OR DELETE FROM THIS NET.

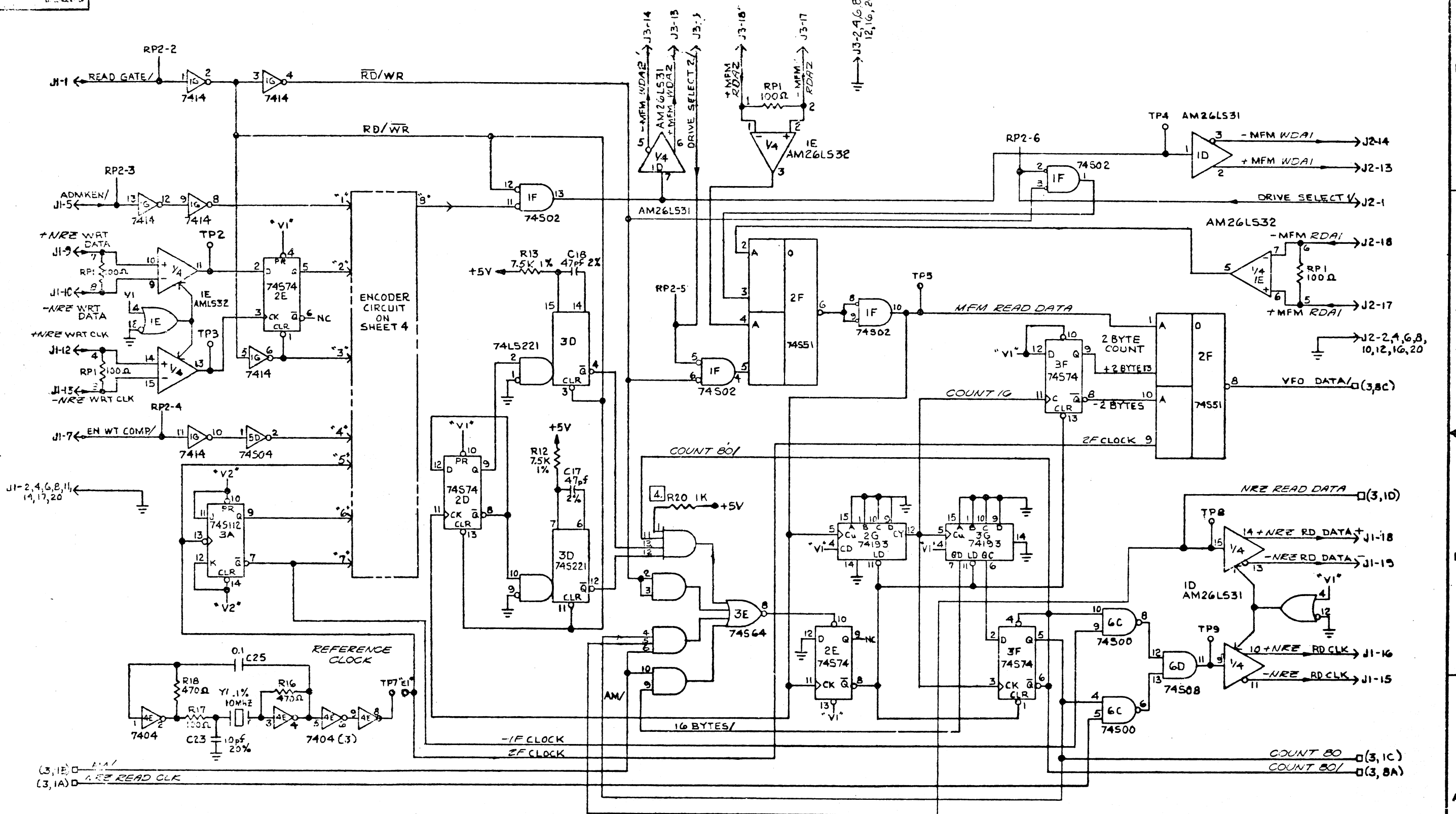


REF DESIGNATOR CHART	
HIGHEST USED	NOT USED
6G	R2, R1
Q1	
R21-	
RP2	
C34	
Y1	
J4	
TP11	

POWER/GROUND PIN ASSIGNMENT			
TYPE	REF DES	GND	+5V
74500	4C,6C	7	14
74502	1F	7	14
7404	4E	7	14
74504	5D	7	14
74508	6D	7	14
7414	1G	7	14
7430	5B,4G	7	14
74532	4F	7	14
74551	2F	7	14
74564	3E,5E,5F,6E,6F	7	14
74574	2D,2E,3F,4A,5C	7	14
745112	3A,3B,3C	8	16
745175	5A,5G,6A,6B,6G	8	16
74193	2G,3G	8	16
74LS221	3D	8	16
26LS31	1D	8	16
26LS32	1E	8	16
MC4024	1B	5,7	1,14

QUANTITY PER DASH NO.	ITEM NO.	DESCRIPTION
UNLESS OTHERWISE SPECIFIED:	SIGNATURE	DATE
1. DIMENSIONS ARE IN INCHES.	DWN BY <i>Bailey</i>	10-28-80
2. BREAK ALL SHARP EDGES.	CHK BY <i>NATION</i>	11-21-80
3. DO NOT SCALE DRAWING.	ENGR APVD <i>Wenden</i>	7/26/82
4. TOLERANCES:	APVD	
ANGLE ±		
X/2		
XXX		
		3080 BOWERS AVE SANTA CLARA CALIF. 95051
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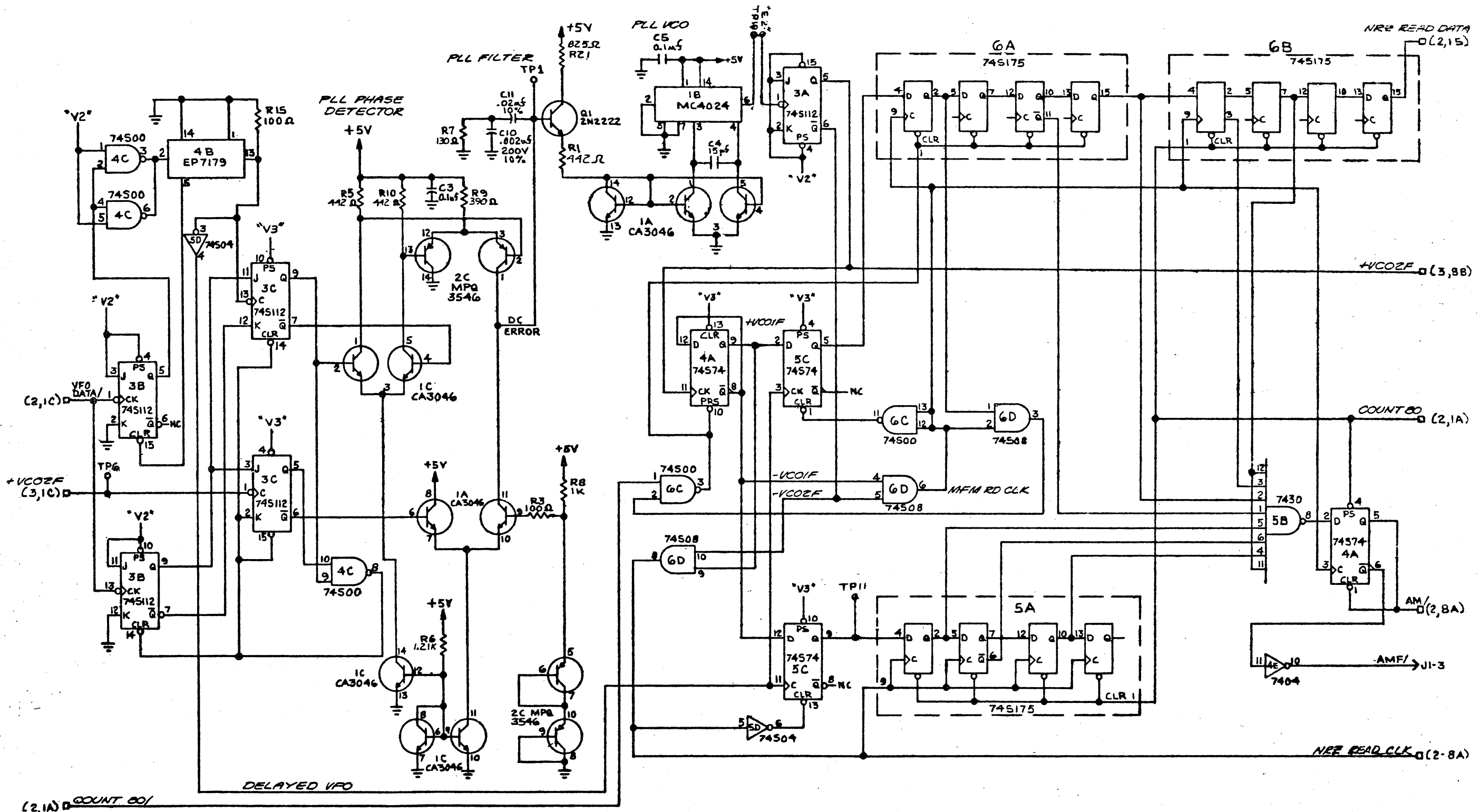
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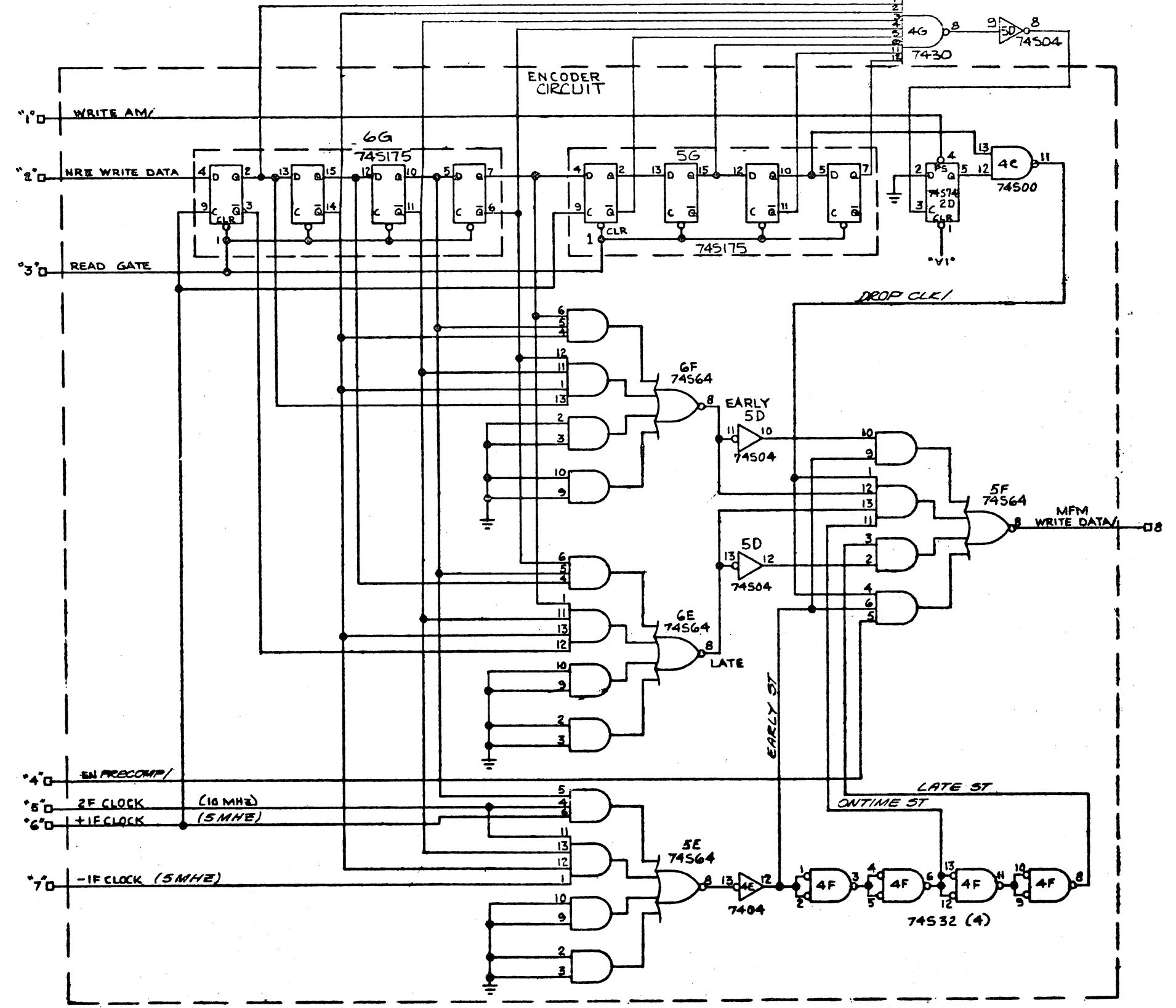
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