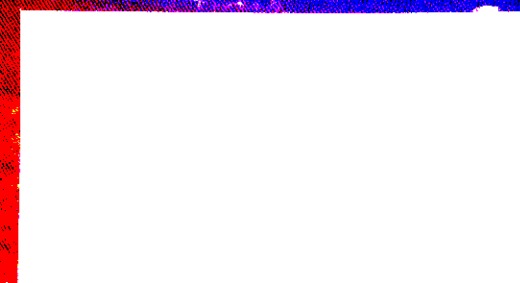


pcpn



digital

Walter Rison

**MF11-U/UP
memory system
engineering
drawings**

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THIS IS PRINT SET

SEQUENCE

B-DD-MF11-U
D-MU-MF11-U-MU
D-TD-MF11-U-1
D-CS-M8293-0-1
D-CS-G235-0-1
D-CS-G114-0-1
D-CS-H217-0-1
D-CS-M7259-0-1
D-CS-5410345-0-1
E-IA-7009535-0-0
A-PL-MF11-U-0
A-SP-MF11-U-3
D-UA-MF11-U-0
A-WT-7009295-3
A-WT-7009295-4

ON-LINE TEST PROCEDURE A-SP-MF11-U-2
MF11-U ENGINEERING SPECIFICATION A-SP-MF11-U-4

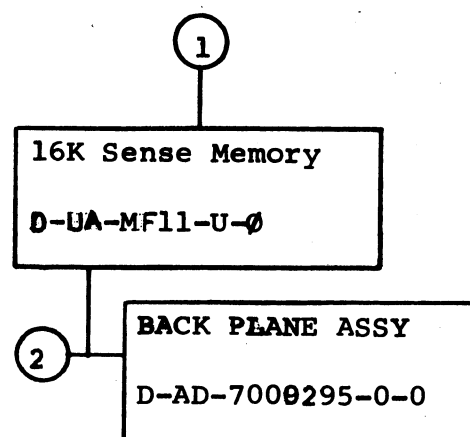
MFG. PRINT SET

[illegible]

NOTE: TO INSTALL MF11-U OR MF11-UP IN 11/40 CPU WITH SERIAL NUMBER LESS THAN 6000 OR H960-D (OR-E) WITH SERIAL LESS THAN 7000 A FIELD MODIFICATION KIT (FM11-UA, -UB, OR -UC) IS REQUIRED.

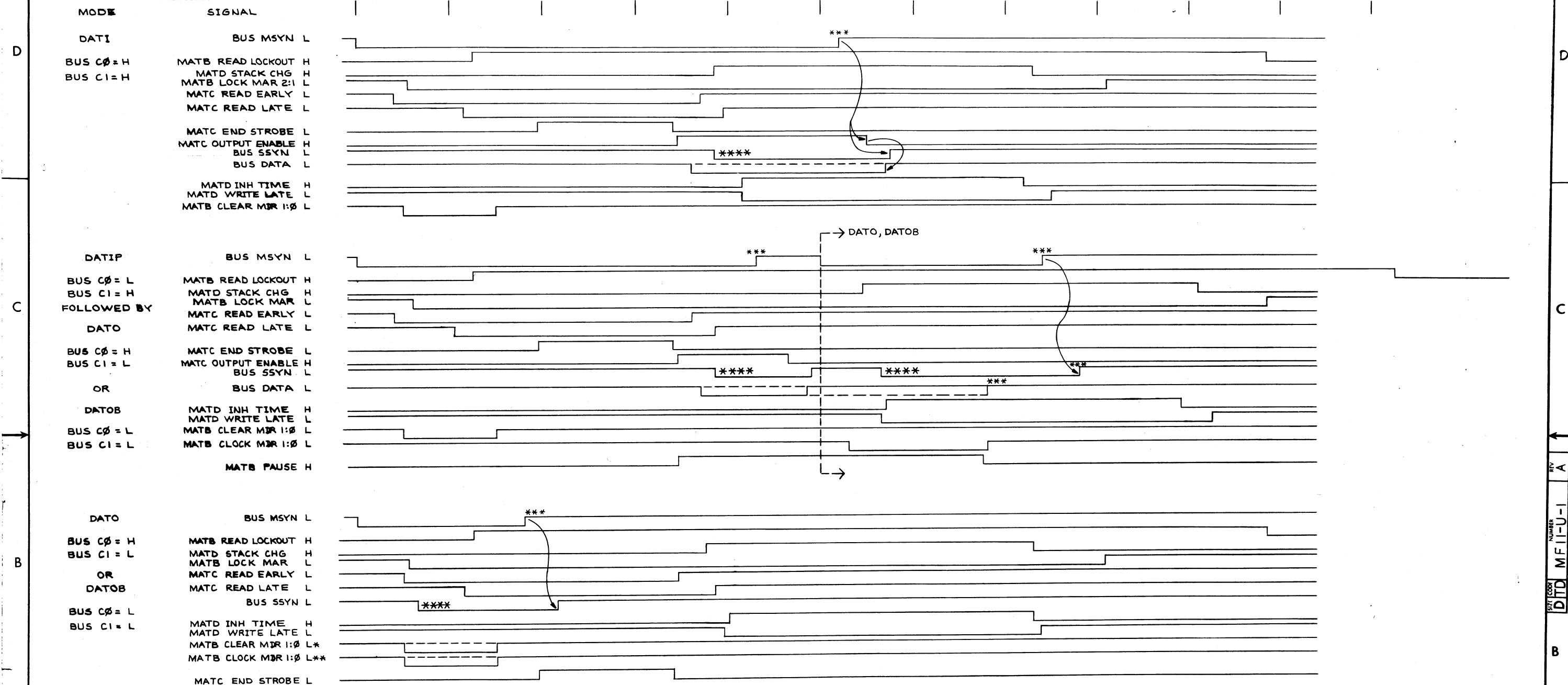
REVISIONS				
DATE	CHG. NO.	REV		
12/73	MF11U-1	A		
9/74	MF11U-2	B		
2/74	MF11U-3	C		
2 75	MF11U-4	D		
11/75	MF11U-5	E		
/76	MF11U-6	F		

USED ON OPTION/MODEL		DRM. J. FLEMING	DATE 5/1/73	TITLE									
		CHK'D. <th>DATE</th> <td colspan="10" rowspan="3">16K SENSE MEMORY</td>	DATE	16K SENSE MEMORY									
		W. MAJOR	5/11/73										
		PROJ ENG. <th>DATE</th>	DATE										
		D. SMELSER	5/15/73	SIZE	CODE	NUMBER					REV		
		PROD. <th>DATE</th> <td>B</td> <td>DD</td> <td colspan="5">MF11-U</td> <td>B</td>	DATE	B	DD	MF11-U					B		
		FIELD SERV. <th>DATE</th> <td colspan="3"></td> <td colspan="4"></td> <td></td>	DATE										
SHEET 1 OF 3		WP RUBEE	1/8/74	DIST									



TITLE	REVISION	DATE	BY	CHKD
16K SENSE MEMORY	SHEET 2 OF 3	0	00	MS11-E

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NOTES:

1. * IN THE DATOB MODE CLEAR MDR ONLY OCCURS IN THE BYTE NOT BEING ADDRESSED.
2. ** IN THE DATOB MODE CLOCK MDR ONLY OCCURS IN THE BYTE BEING ADDRESSED.
3. *** ACTUAL TIME DEPENDS ON BUS AND PROCESSOR DELAYS.
4. **** IN PARITY SYSTEMS BUS SSYN WILL BE 20 NS LATER THAN SHOWN FOR DATO-DATOB BUS MODES AND 150 NS LATER FOR DATI-DATIP MODES.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MFII-U				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES				
TOLERANCES				
DECIMALS	ANGLES			
.xxx = .005	.0° 30'			
.xx = .02				
.x = .1				
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL				
NEXT HIGHER ASSY.				
B-DD-MFII-U				
FINISH				
SCALE				
SHEET 1 OF 1				
DATE				
4-19-73				
DATE				
4/30/73				
DATE				
5/29/73				
DATE				
5/29/73				
DATE				
6/11/73				
TITLE				
MFII-U				
TIMING DIAGRAM				
(UNIBUS INTERFACE)				
SIZE CODE				
D TD				
NUMBER				
MFII-U-1				
REV.				
A				

PAGE REVISION CONTROL SHEET

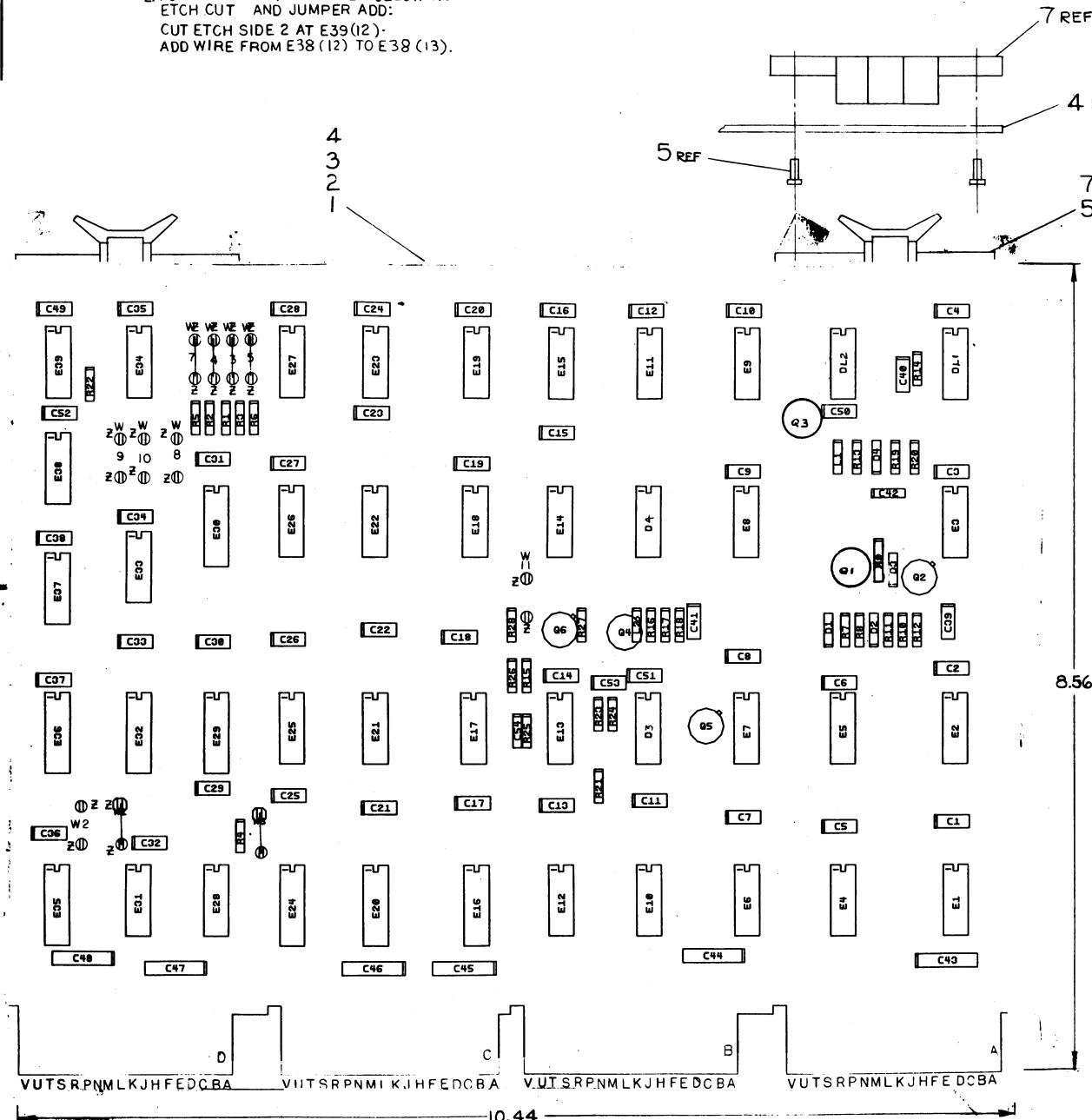
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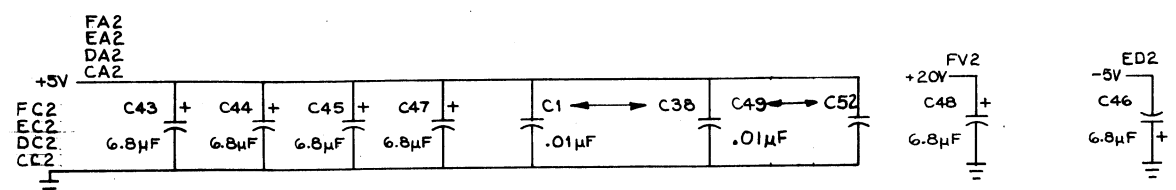
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NOTES:

- UNLESS OTHERWISE SPECIFIED:
RESISTANCE IS IN OHMS,
CAPACITANCE IS IN MICROFARADS.
- FOR M8293-YB, MAKE THE FOLLOWING
ETCH CUT AND JUMPER ADD:
CUT ETCH SIDE 2 AT E39(12).
ADD WIRE FROM E38 (12) TO E38 (13).

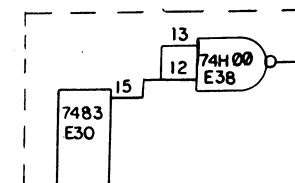


IC TYPE	GND	+5V
7483	12	5
7485	8	16
380	1	8
7475	12	5
IC TYPE	GND	+5V
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE		
IC PIN LOCATIONS		

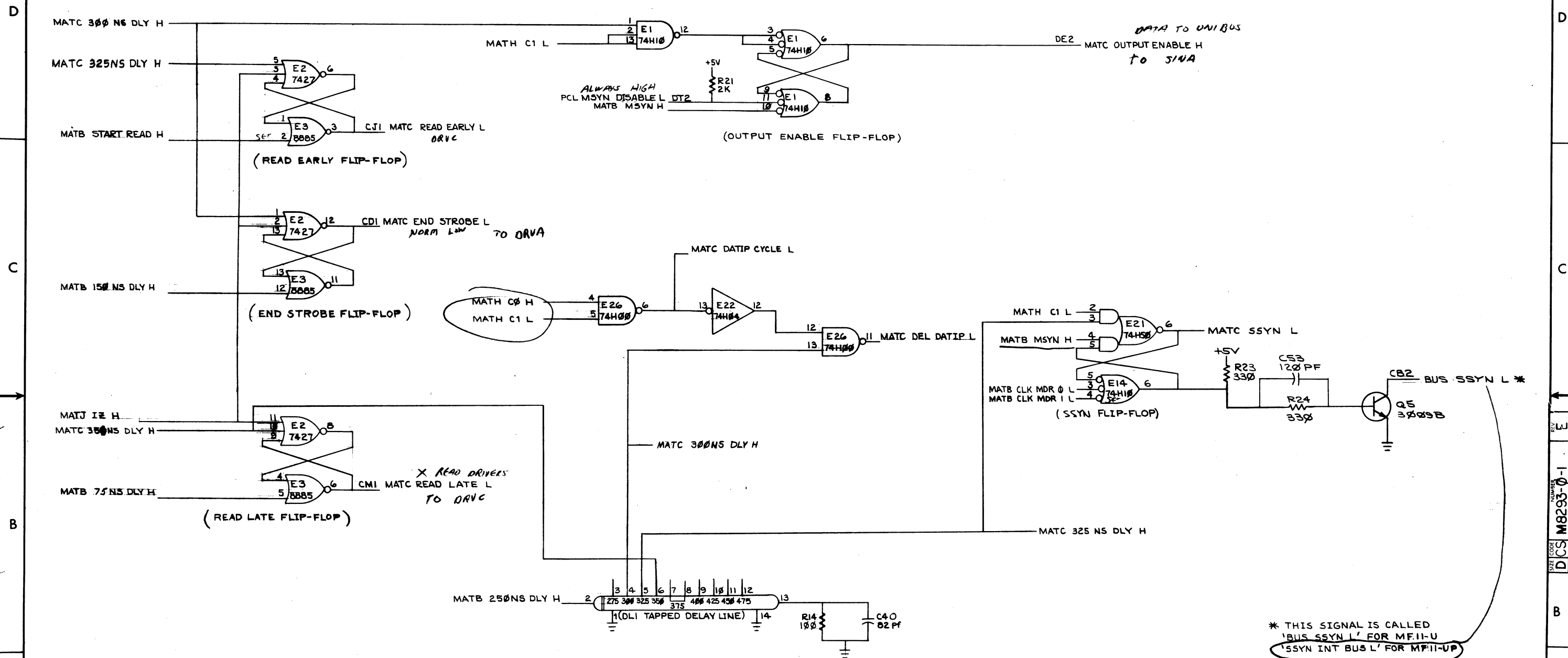


REF	REF	XY COORDINATE	HOLE LOCATION	K-CO-M8293-0-4	1
REF	REF	ASSY/DRILLING HOLE LAYOUT		D-4H-M8293-0-5	2
REF	REF	MODULE ECO HISTORY		B-MH-M8293-0-6	3
1	1	ETCHED CIRCUIT BOARD		5010473	4
8	8	EYELET GS-4-7		9006732	5
22	22	SPLIT LUGS		9006735	6
4	4	HANDLE FLIP-CHIP MAGENTA		9008337-6	7
2	2	C40, C41	CAP 82 PF 100V ±5% DM	1000015	8
1	1	C39	CAP 1000 PF 100V ±5% DM	1000042	9
43	43	C1 → 38, 42, 49, 52	CAP .01µF 50V ±20%	1001610	10
6	6	C43 → 48	CAP 6.8µF 35V ±10% S, TANT	1005306	11
1	1	D3	DIODE 1N746A 3.6V ±5% ZENER	1104860	12
3	3	D1, 2, 4	DIODE D672	1105275	13
3	3	R13, 14, 18	RES 100 1/4 W 5%	1300229	14
1	1	R17	RES 120 1/4 W 5%	1300247	15
1	1	R9	RES 750 1/2 W 5%	1300354	16
3	3	R16, R25, R27	RES 1K 1/4 W 5%	1300365	17
10	10	R1 → 6, 10, 21, 15, 22	RES 2K 1/4 W 5%	1302388	18
3	3	R7, 11, 8	RES 20K 1/4 W 5%	1302391	19
2	2	R19, 12	RES 560 1/4 W 5%	1301890	20
1	1	R20	RES 33K 1/4 W 10%	1300510	21
1	1	Q1	TRANSISTOR DEC 6534 D	1503409	22
5	5	Q2, 3, 4, 5, 6	TRANSISTOR DEC 3009 B	1503100	23
2	2	L1, 2	INDUCTOR 100µH	1610662	24
4	4	DL1, 2, 3, 4	DELAY LINE 250 NS, TAPPED	1611243	25
1	1	E28	IC DEC 74H40	1905586	26
5	5	E20, 24, 16, 36, 35	IC DEC 7475	1909050	27
5	5	E15, 8, 26, 37, 38	IC DEC 74H00	1909056	28
5	5	E14, 19, 1, 29, 18	IC DEC 74H10	1909057	29
2	2	E21, 33	IC DEC 74H50	1909060	30
2	2	E11, 25	IC DEC 74H53	1909062	31
2	2	E23, 27	IC DEC 74H55	1909063	32
6	6	E31, 4, 6, 17, 7, 5	IC DEC 8640	1911469	33
4	4	E9, 22, 13, 34	IC DEC 74H04	1909931	34
1	1	E30	IC DEC 7483	1909932	35
2	2	E29, 32	IC DEC 7485	1910224	36
2	2	E3, 10	IC DEC 8685	1910649	37
2	2	E2, 12	IC DEC 7427	1910878	38
2	2	R23, 24	RES 330 1/4 W 5%	1300298	39
1	1	C53	CAP 120 PF 100V ±5% D.M.	1000018	40
1	1	C54	CAP 220 PF 100V ±5% D.M.	1000021	41
1	1	R26	RES 24K 1/4 W 5%	1303177	42
1	1	R28	RES 511 1/4 W 1%	1302411	43
6	6	W1, W3 → W7	WIRE, JUMPER	9107560-01	44
A	A	-	WIRE, JUMPER, #30 AWG	9105740-44	45

FIRST USED ON OPTION MODEL		ETCH BOARD REV		C	
MM11-U					
CHK	CHANGE NO.	REV	DATE	TITLE	
			1-23-73	16K UNIBUS TIMING	
			5/10/73		
			5/10/73		
			5/10/73		
			5/10/73		
			5/10/73		
NEXT HIGHER ASSY			B-DD-MM11-U		
DEC NO.			EIA NO.		
SEMICONDUCTOR CONVERSION CHART			SCALE		
SHEET 2 OF 10			DIST.		



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REVISIONS		
CHK	CHANGE NO.	REV.

DEC FORM NO.
DSD 128

READ TIMING

TITLE 16K UNIBUS TIMING (MATC)		SIZE CODE DCS	NUMBER M8293-0-1	REV. E
SCALE #	SHEET 3 OF 10	DIST.		

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PC2 DATIP CLR PAUSE L
ORIGINATES FROM M7259
PARITY CONTROL MODULE
(SHEET 3) VIA MFII-UP BACKPLANE

(WRITE DEL DRIVER)

(WRITE DEL DRIVER GATING)

(WRITE LATE FLIP-FLOP)

(WRITE LOCKOUT FLIP-FLOP)

(STACK CHG FLIP-FLOP)

(INH FLIP-FLOP)

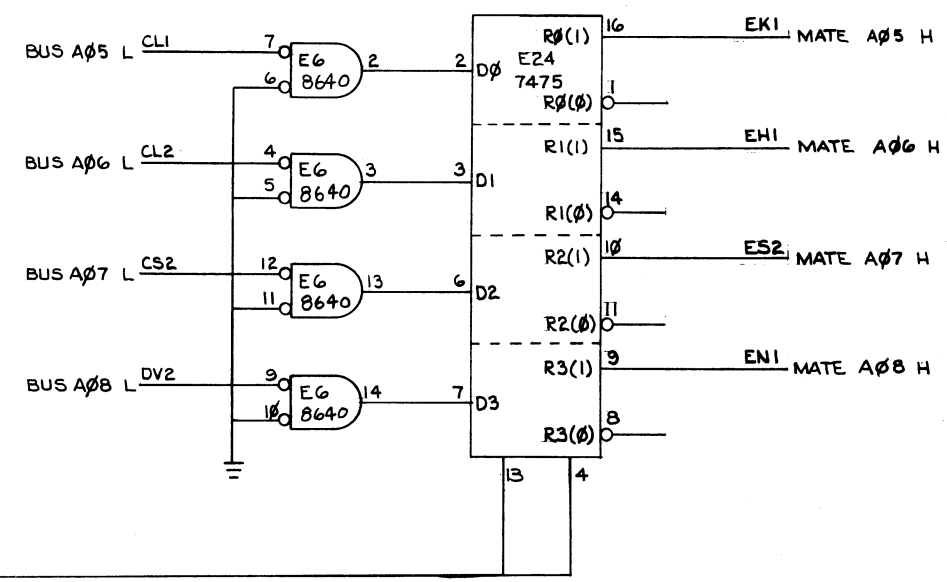
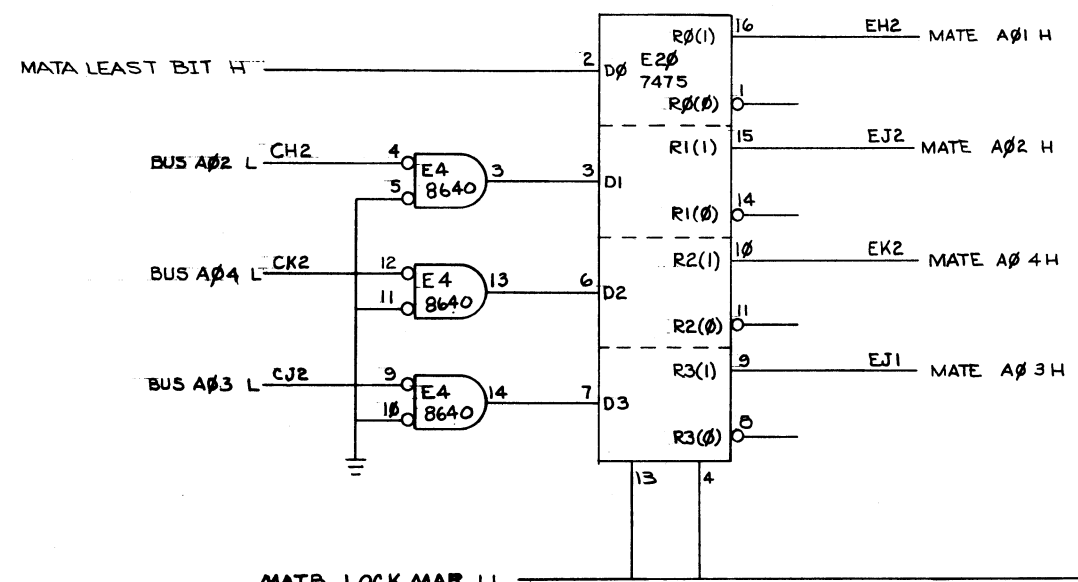
REVISIONS		
CHK	CHANGE NO.	REV.

DEC FORM NO. 100

WRITE TIMING

TITLE	16K UNIBUS TIMING (MATD)	SIZE CODE	D CS	NUMBER	M8293-0-1	REV.	E
SCALE	#	SHEET	6	OF	10	DIST.	

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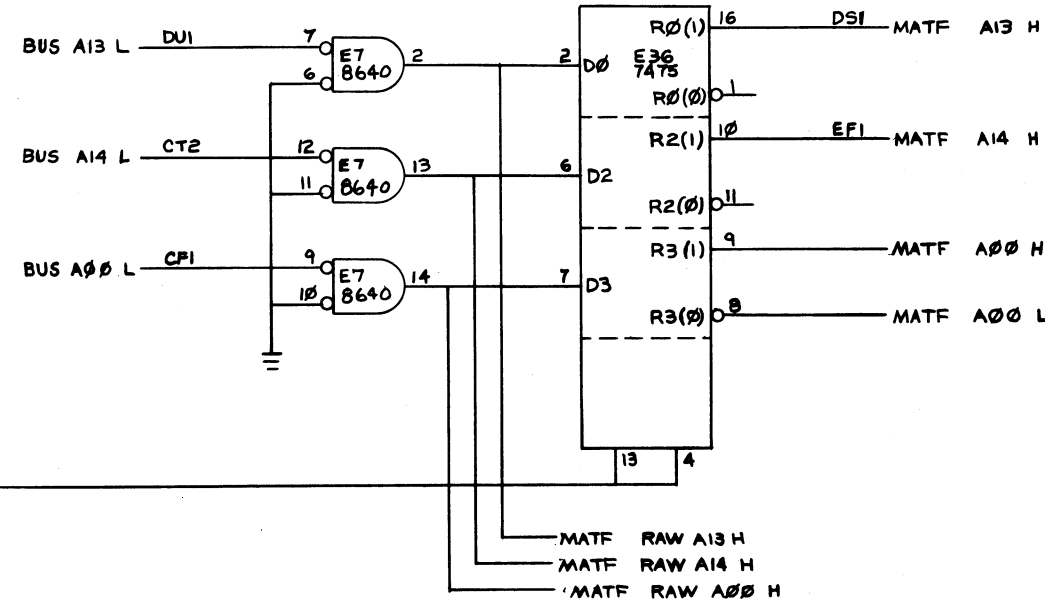
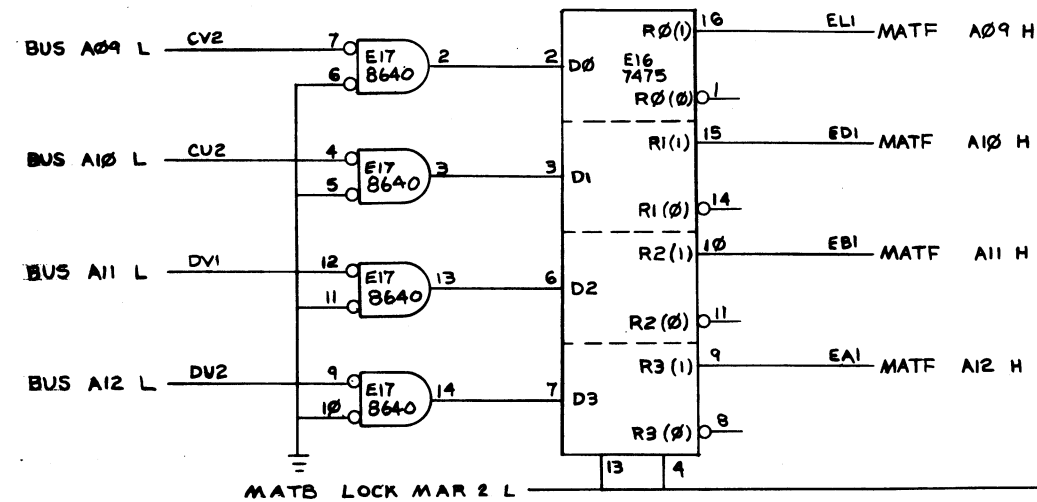
TO DRV C, B

MATB LOCK MAR 1 L
IF LOCK MAR 15 H
The input is passed to output
L inhibit input

REVISIONS		
CHK	CHANGE NO.	REV.

A01-A08 LATCHES		TITLE 16K UNIBUS TIMING (MATE)		SIZE CODE DCS	NUMBER M8293-0-1	REV. E
SCALE		SHEET 7 OF 10		DIST.		

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REVISIONS		
CHK	CHANGE NO.	REV.

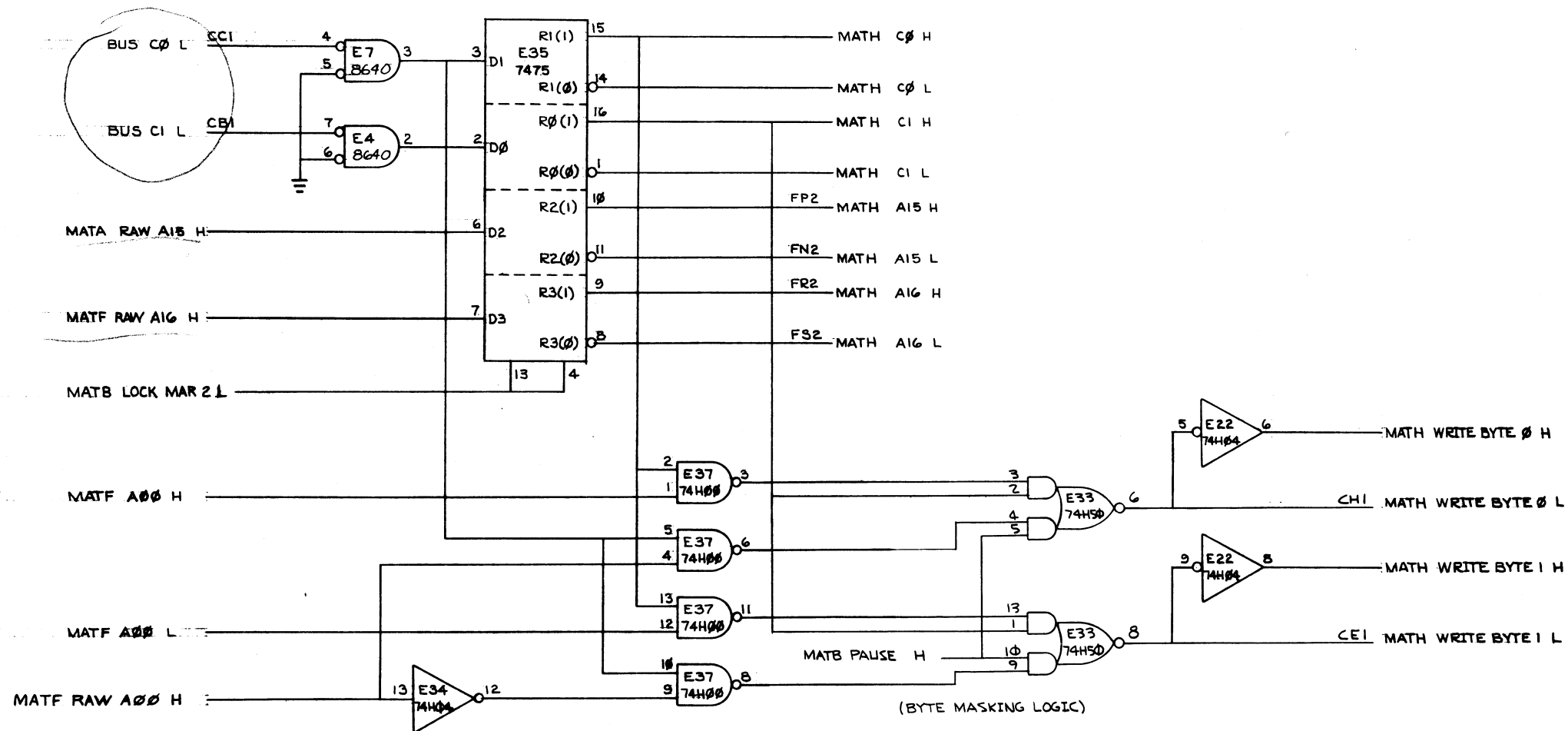
DEC FORM NO. 000 138

A00, A09 → A13 LATCHES
TITLE 16 K UNIBUS TIMING (MATF)

SIZE CODE DCS
NUMBER M8293-0-1
REV. E

SCALE 1:1 SHEET 8 OF 10 DIST. 1

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BYTE 0 = LOW BYTE
BYTE 1 = HIGH BYTE

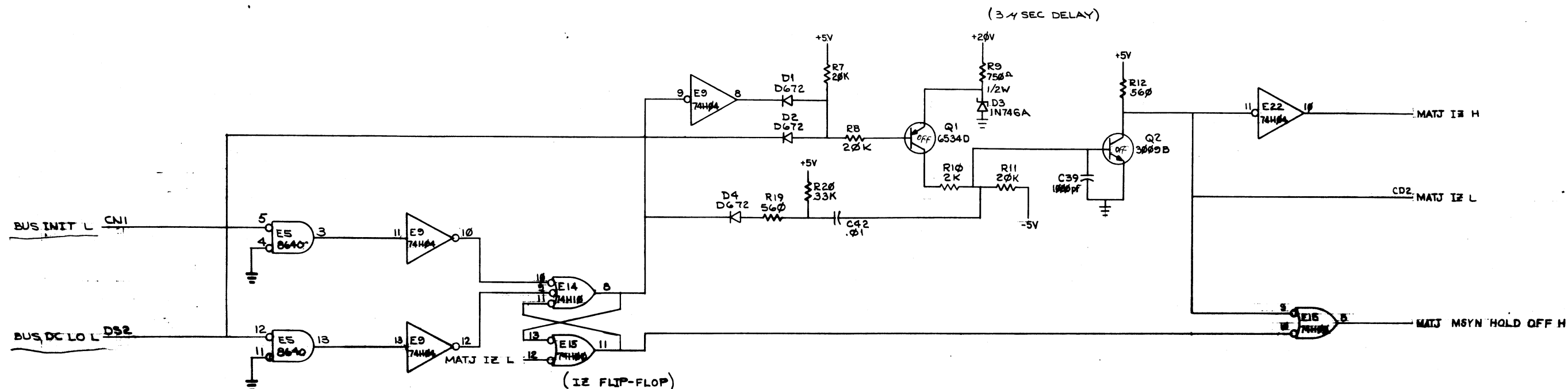
REVISIONS		
CHK	CHANGE NO.	REV.

DEC FORM NO. 010 120

LATCHES & BYTE MASKING

TITLE		SIZE CODE	NUMBER	REV.
16K UNIBUS TIMING (MATH)		DCS	M8293-0-1	E
SCALE	SHEET 9 OF 10	DIST.		

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REVISIONS		
CHK	CHANGE NO.	REV.

DEC FORM NO. 138

INIT & DCLO INITIALIZING

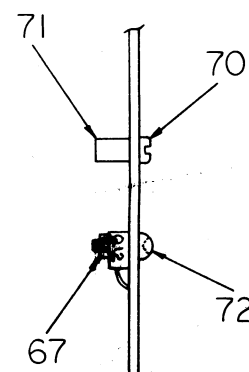
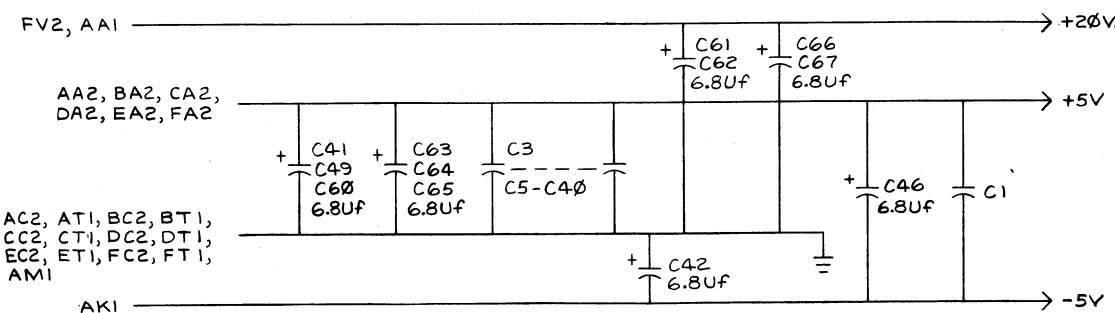
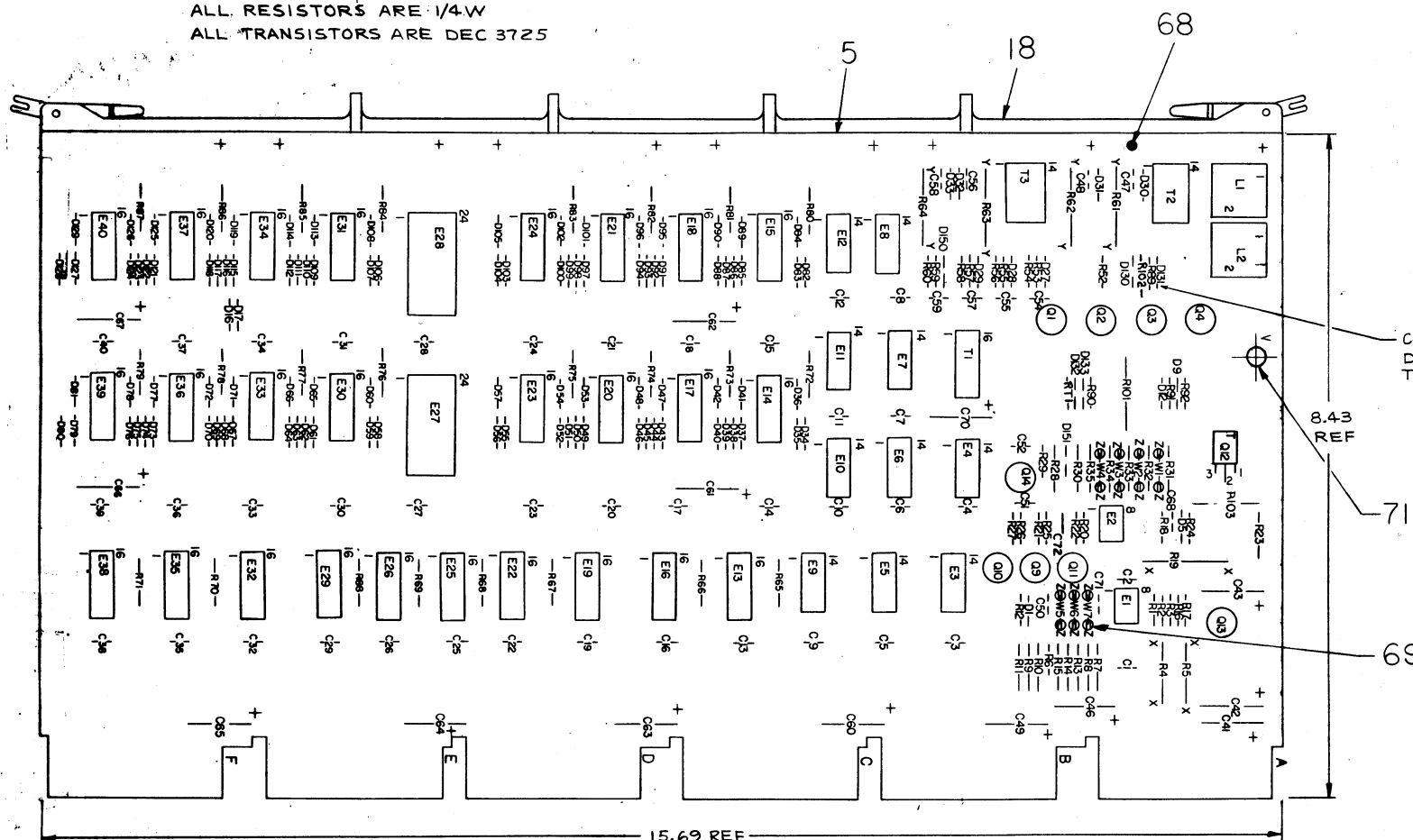
TITLE		SIZE CODE	NUMBER	REV.
16K UNIBUS TIMING (MATJ)		D CS	M8293-0-1	E
SCALE	SHEET 10 OF 10	DIST.		

[illegible]

DRN. <i>B. GALENTINE</i>		DATE 2-8-73	digital	EQUIPMENT CORPORATION		MAYNARD, MASSACHUSETTS		
CHK'D. MARCHEAUD		DATE 4-9-73						
ENG. <i>E. J. Jochen</i>		DATE 4/4/73						
PROJ. ENG. <i>E. J. Jochen</i>		DATE 4/4/73						
PROD. <i>E. J. Jochen</i>		DATE 4/4/73						
NEXT WORKER ASSY.			TITLE		16K X-Y DRIVE			
SCALE <i>1" = 1'</i>			SIZE CODE		NUMBER		REV.	
SHEET <i>1</i> OF <i>6</i>			B CS		G235 - 0-1		N	
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NOTES:

- * INDICATES NOT USED ON MFII-U & MFII-UP (2 PLACES).
- ** INDICATES NOT USED ON MFII-U & MFII-UP, BUT ARE TIED TO UNUSED TERMINATORS ON THE G114 MODULE, WHICH FORCES THEM TO +3V (5 PLACES).
1. THERMISTOR LOCATED ON H217 STACK MODULE, 1 ON 6235
- UNLESS OTHERWISE INDICATED;
ALL DIODES ARE D672
ALL CAPACITORS ARE .01 UF
ALL RESISTORS ARE 1/4W
ALL TRANSISTORS ARE DEC 3725

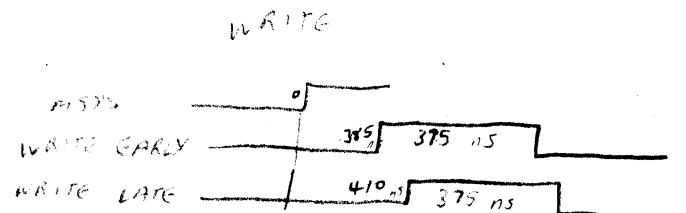


IC TYPE	GND	+5V	+20V
74121	7	—	—
741	—	—	—
75325	—	9	16
7442	8	16	—
74154	12	24	—

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE.

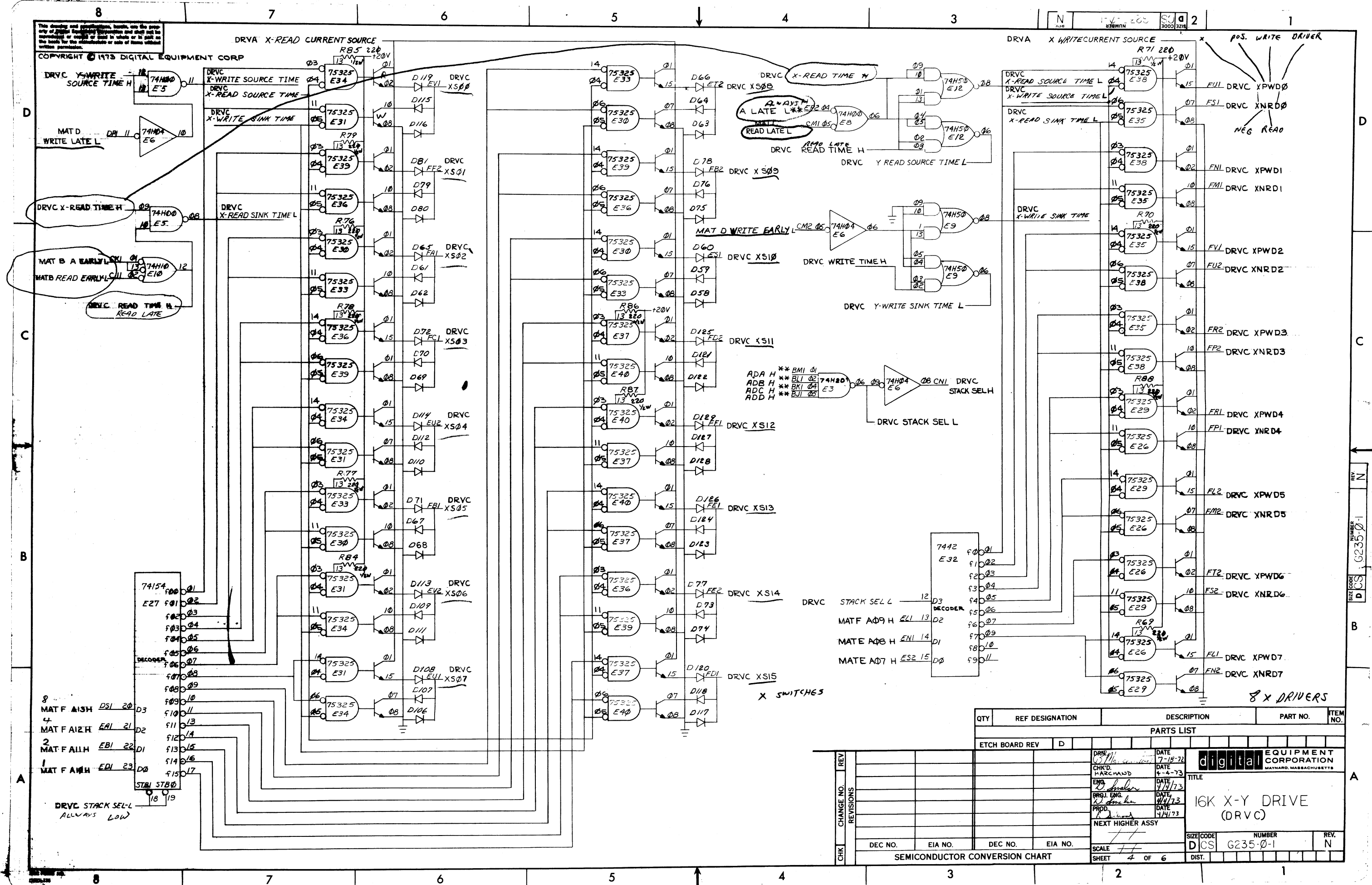
IC PIN LOCATIONS

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
FIRST USED ON OPTION MODEL				
MFII-U & MFII-UP				
ETCH BOARD REV D				
DRN CHK'D ENG PROJ. ENG PROD. DATE 4-4-73 4-4-73 7/4/73 7/4/73 7/4/73				
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS TITLE 16K X-Y DRIVE				
NEXT HIGHER ASSY				
DEC NO. EIA NO. DEC NO. EIA NO. DEC NO. EIA NO. DEC NO. EIA NO.				
SEMICONDUCTOR CONVERSION CHART				
SCALE SHEET 2 OF 6 SIZE CODE DIST.				
NUMBER G235-0-1 REV. N				

[illegible]

REVISIONS		
CHK	CHANGE NO.	REV.

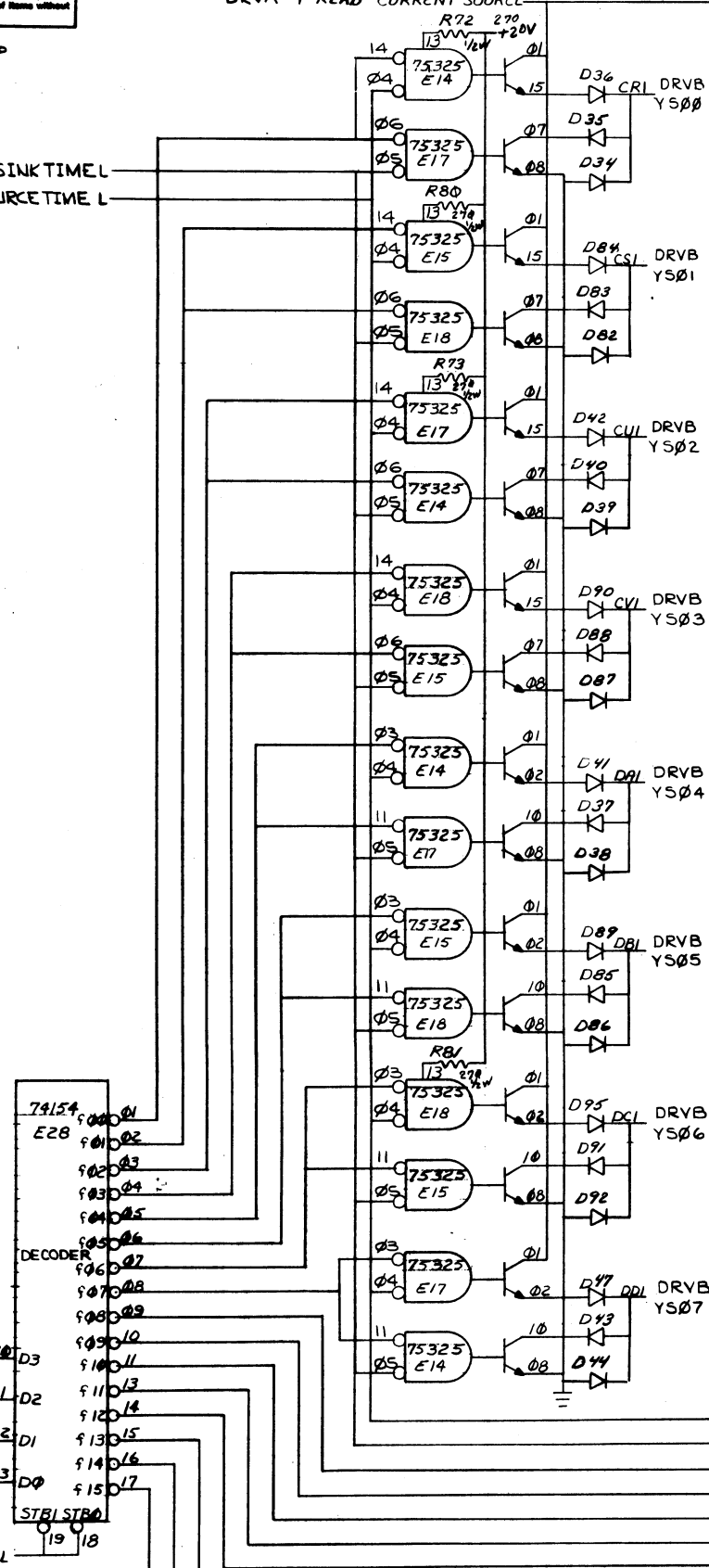
TITLE		SIZE	CODE	NUMBER		REV.
16K X-Y DRIVE		D	CS	G235-1		N
SCALE	1/1	SHEET	3	OF	6	
DIST.						



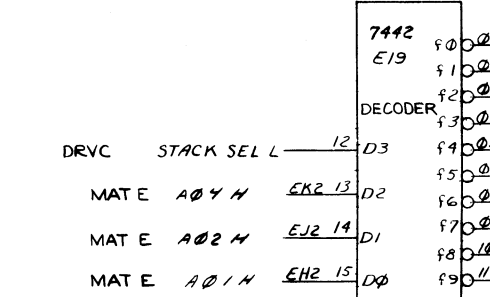
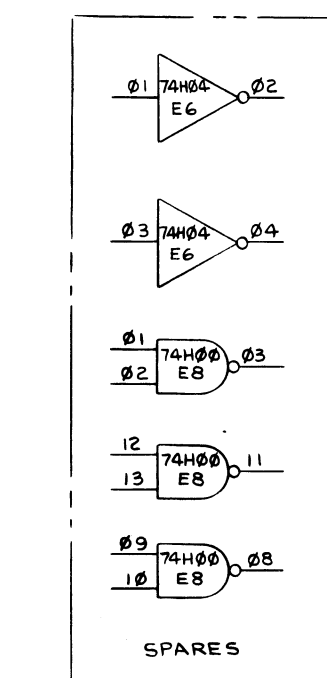
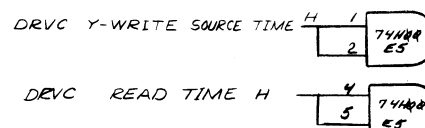
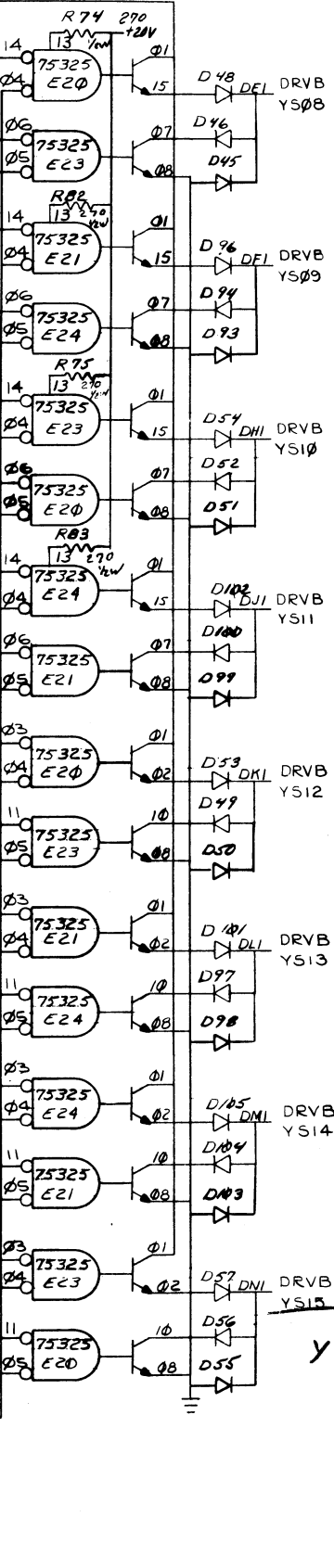
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DRVA Y-READ CURRENT SOURCE

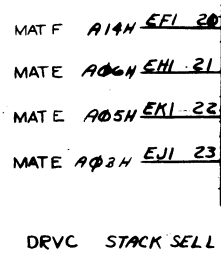
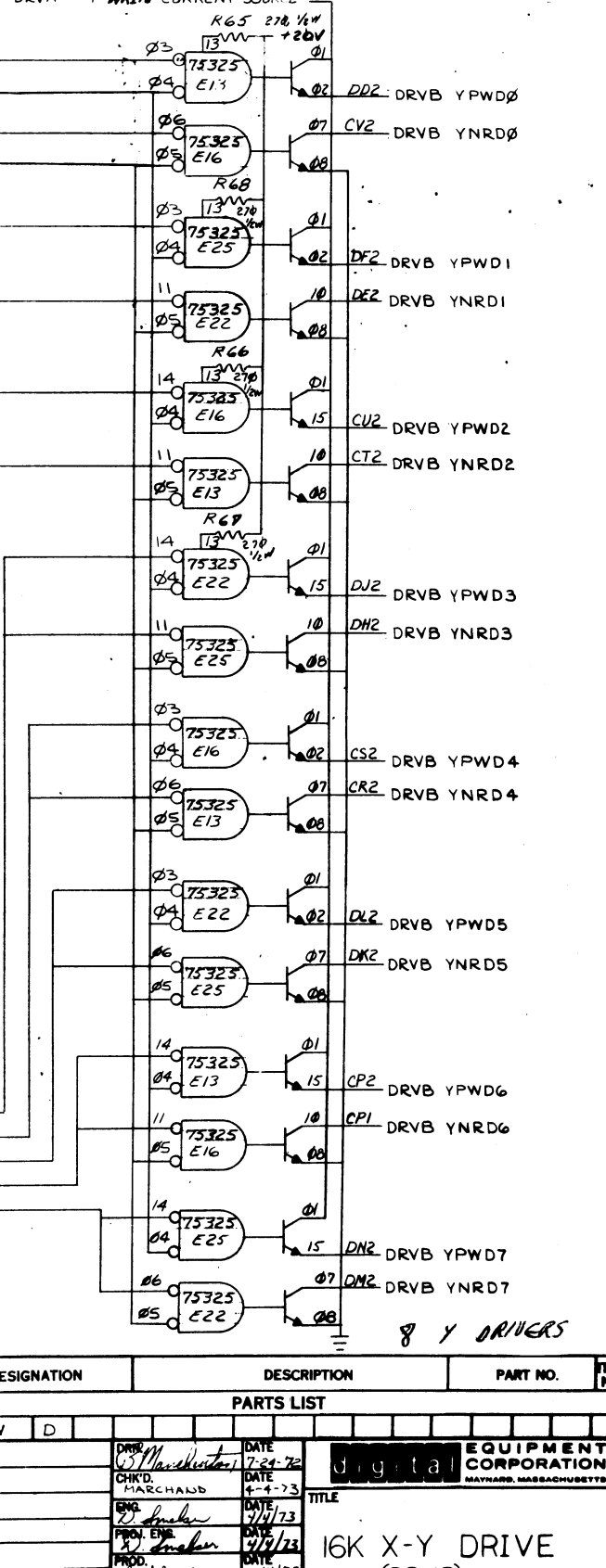


DRVA Y-WRITE CURRENT SOURCE

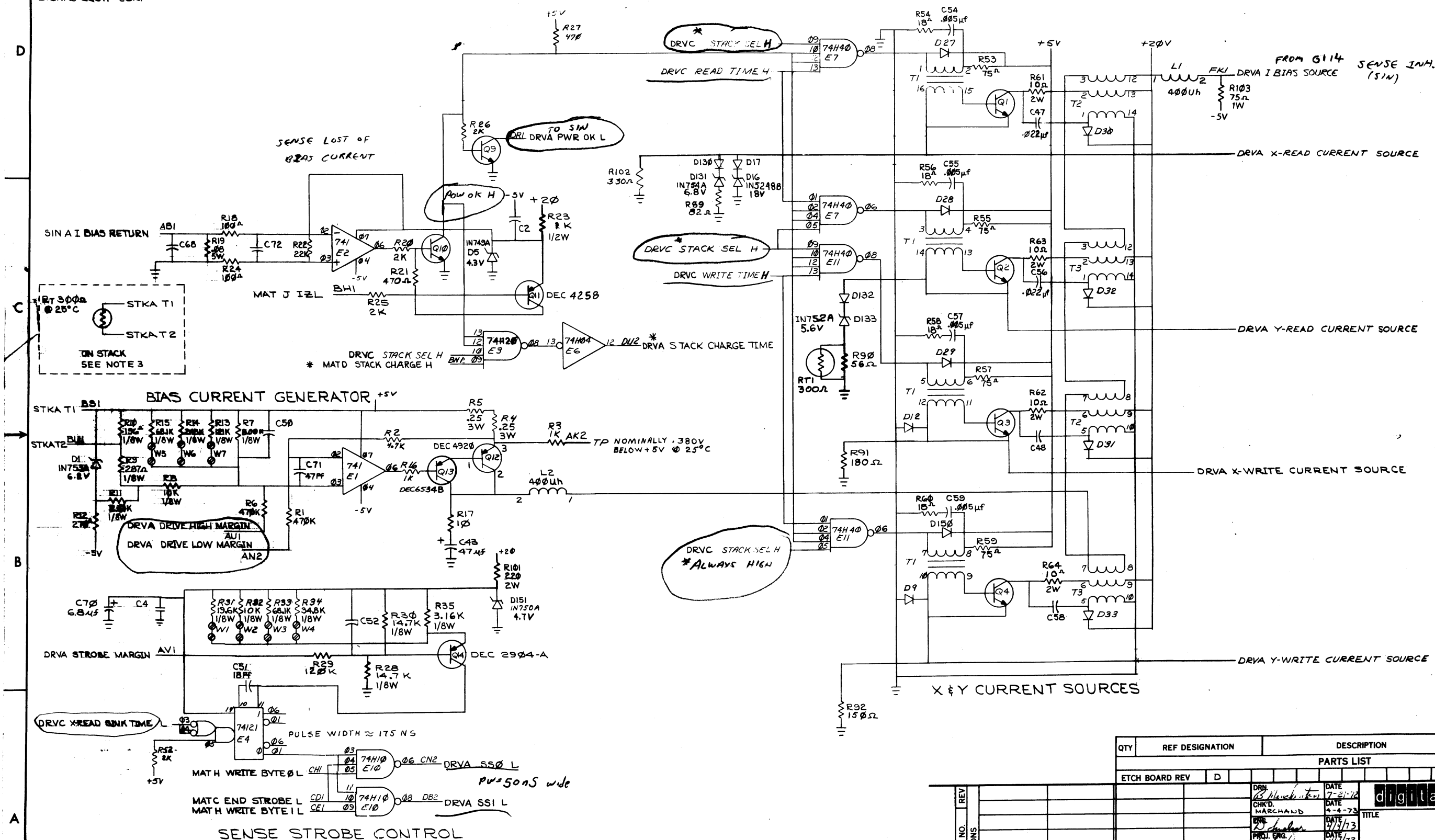


Y SWITCHES

DRVA Y-WRITE CURRENT SOURCE



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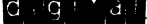
QTY	REF DESIGNATION	DESCRIPTION										PART NO.	ITEM NO.
PARTS LIST													
ETCH BOARD REV	D												
		DRN 13 March 1972	DATE 7-21-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS		TITLE 16K X-Y DRIVE (DRVA)							
		CHKD. MARCHAND	DATE 8-6-72										
		ENG R. Chandler	DATE 7/3/73										
		PROJ. ENG R. Chandler	DATE 7/11/73										
		PROD. R. Chandler	DATE 7/14/73										
		NEXT HIGHER ASSY + + +											
DEC NO.	EIA NO.	SCALE 1" = 1"		SIZE CODE Dcs	NUMBER G235-0-1		REV. N						
CONVERSION CHART													
		SHEET		OF 6									
		DIST.											

PAGE REVISION CONTROL SHEET

PAGE REVISIONS										REMARKS	
SH NO.											
1	A	B	C	D	E	F	G	H	I	J	
2	A	B	C	D	E	F	G	H	I	J	
3	A	B	C	D	E	F	G	H	I	J	
4	A	B	C	D	E	F	G	H	I	J	
5	A	B	C	D	E	F	G	H	I	J	
6	A	B	C	D	E	F	G	H	I	J	
7	A	B	C	D	E	F	G	H	I	J	
8	A	B	C	D	E	F	G	H	I	J	
9	A	B	C	D	E	F	G	H	I	J	
10	A	B	C	D	E	F	G	H	I	J	
11	A	B	C	D	E	F	G	H	I	J	
12	A	B	C	D	E	F	G	H	I	J	
13	A	B	C	D	E	F	G	H	I	J	
14	A	B	C	D	E	F	G	H	I	J	
15	A	B	C	D	E	F	G	H	I	J	
16	A	B	C	D	E	F	G	H	I	J	
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98	A	B	C	D	E	F	G	H	I	J	
99	A	B	C	D	E	F	G	H	I	J	
100	A	B	C	D	E	F	G	H	I	J	

FIRST USED ON OPTION/MODEL
MF11-U

DRN. <i>W. May Jr.</i> DATE 4/10/73		digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. <i>W. May Jr.</i> DATE 4/13/73	ENG. <i>L. Buckner</i> DATE 4/13/73	TITLE 16K SENSE/INHIBIT	
PROJ. ENG. <i>L. Buckner</i> DATE 4/13/73	PROD. <i>L. Buckner</i> DATE 4/13/73	SIZE CODE B CS	NUMBER G114-0-1
NEXT HIGHER ASSY. B-DD-MM11-U		REV. F	
SCALE			
SHEET 1 OF 9		DIST.	
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REV	CHANGE NO.	REVISIONS	FIRST USED ON OPTION MODEL MF 11-U & MF 11-UP	QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.	
			PARTS LIST						
			ETCH BOARD REV	C					
					DRAWN <i>[Signature]</i>	DATE 4-3-73	 EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS		
					CHECK'D <i>[Signature]</i>	DATE 4-13-73			
					ENG. <i>[Signature]</i>	DATE 9/12/73			
		INDU. ENG. <i>[Signature]</i>	DATE 1/20/73						
		MFG. <i>[Signature]</i>	DATE 9/13/73						
		NEXT HIGHER ASSY				TITLE 16 K SENSE INHIBIT			
DEC NO.	EIA NO.	DEC NO.	EIA NO.	SCALE <i>H</i>	SHEET 2 OF 9	DIST.	SIZE CODE DCS	NUMBER G14-0-1	
SEMICONDUCTOR CONVERSION CHART									

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REVISIONS		
CHK	CHANGE NO.	REV.

1-0-7119 SOI 2

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1	E1	IC DEC 74H00	1909056	30	REF	ETCHED CIRCUIT BOARD	5010478	1
14	E2 THRU E5, E105, E110, E205, E210, E305, E310, E405, E410 E505, E510	IC DEC 74H40	1905586	31	REF	X-Y COORDINATE HOLE LOCATION	K-CO-6114-0-4	2
10	E101, E106, E201, E206, E301, E306, E401, E406, E501, E506	IC DEC 7528 SENSE AMP	1910687	32	REF	ASSY/DRILLING HOLE LAYOUT	D-AH-6114-0-5	3
5	E107, E207, E307, E407 E507	IC DEC 8881	1909705	33	REF	MODULE ECC HISTORY	B-MH-6114-0-6	4
10	E104, E109, E204, E209, E304 E309, E404, E409, E504, E509	IC DEC 74H74	1909667	34	55	C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99, C100, C101, C102, C103, C104, C105, C106, C107, C108, C109, C110, C111, C112, C113, C114, C115, C116, C117, C118, C119, C120, C121, C122, C123, C124, C125, C126, C127, C128, C129, C130, C131, C132, C133, C134, C135, C136, C137, C138, C139, C140, C141, C142, C143, C144, C145, C146, C147, C148, C149, C150, C151, C152, C153, C154, C155, C156, C157, C158, C159, C160, C161, C162, C163, C164, C165, C166, C167, C168, C169, C170, C171, C172, C173, C174, C175, C176, C177, C178, C179, C180, C181, C182, 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1300 DIGITAL EQUIPMENT CORPORATION

TO DRVA
DRVA I BIAS
SOURCE

FROM DRVA
SINA I BIAS
RETURN

500 SERIES COMPONENTS
(SEE SHEET #3)
SINP

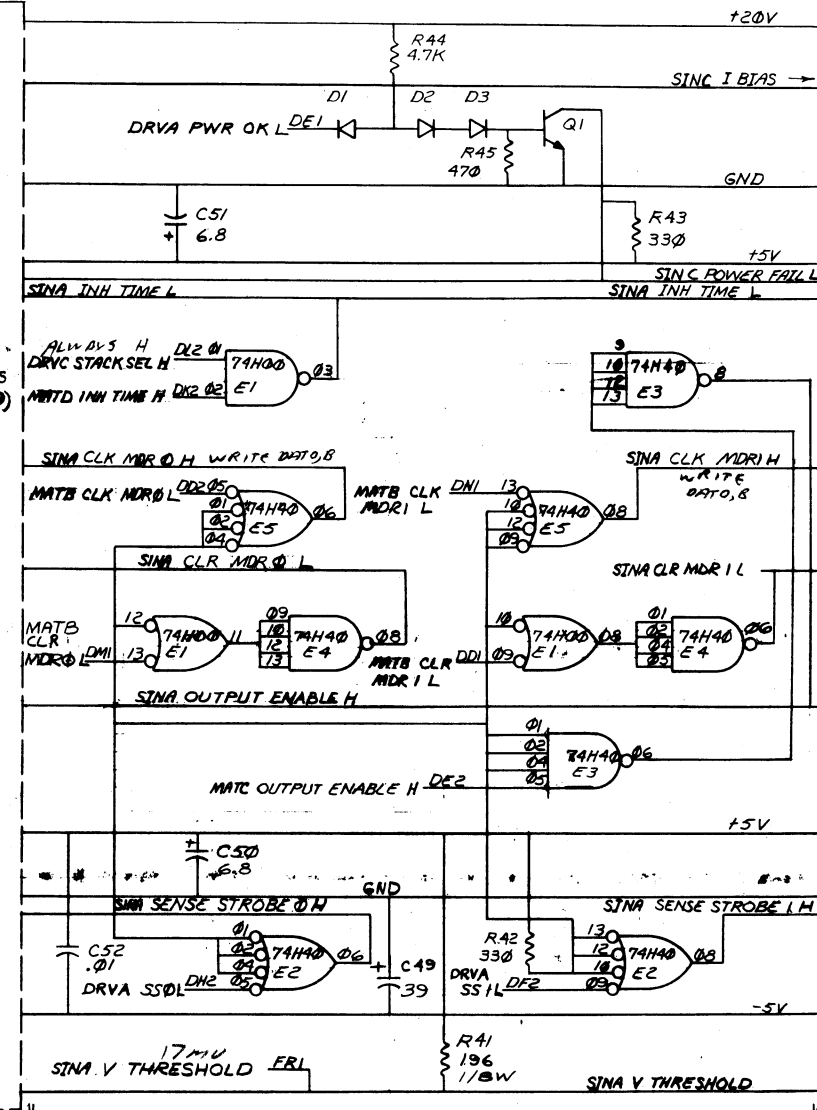
400 SERIES COMPONENTS
(SEE SHEET #6)
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300 SERIES
(SEE SHEET #9)
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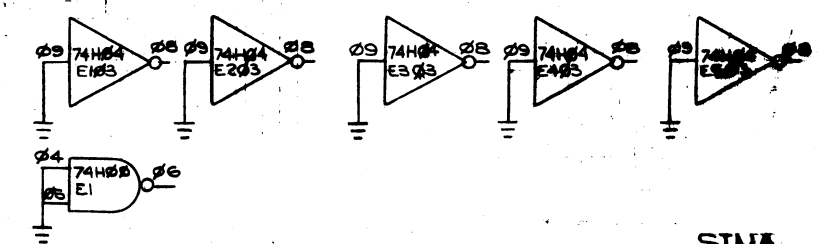
300 SERIES
(SEE SHEET #9)
SIND

200 SERIES COMPONENTS
(SEE SHEET #9)
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100 SERIES COMPONENTS
(SEE SHEET #10)
SINB



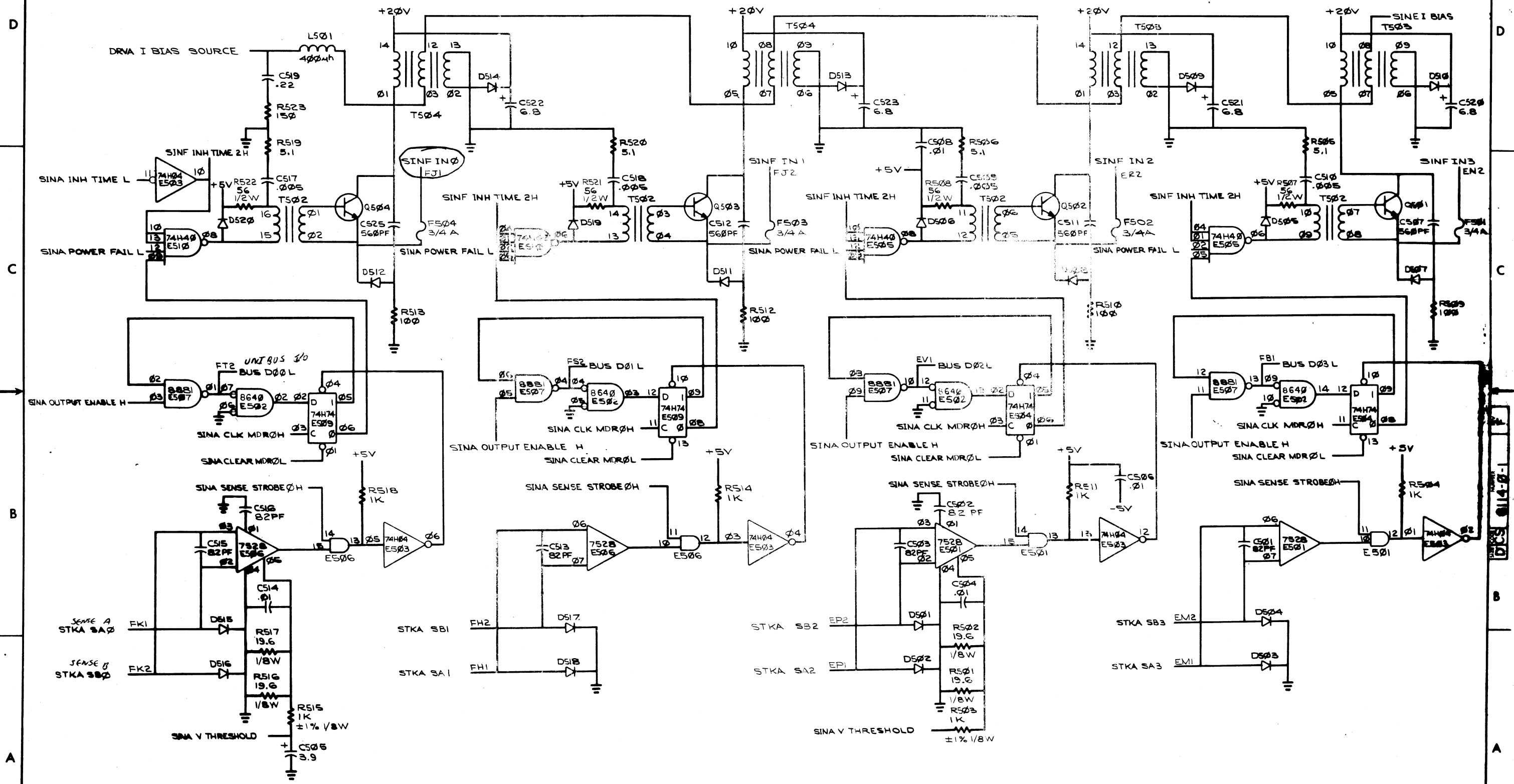
ET1	CT1	DT1	BC2	AC2	PC2	AT1	BT1	CL2	DC2	ET2	CT2	DT2	BC2	AC2	PC2	AT2	BT2	CL2	DC2
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01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MFI1-U & MFI1-UP				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN 6/13/73	DATE 6/13/73	PARTS LIST	
DECIMALS	ANGLES	DATE	TITLE	
.XXX - .005	±0° 30'	6/13/73	16K	
.XX - .02		6/13/73	SENSE/INHIBIT SINA	
.X - .1		6/13/73		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD.	DATE		
MATERIAL	NEXT HIGHER ASSY.	DATE		
FINISH	SCALE	DATE		
	SHEET 4 OF 9	DATE		

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1-0-4119 SCQ 2



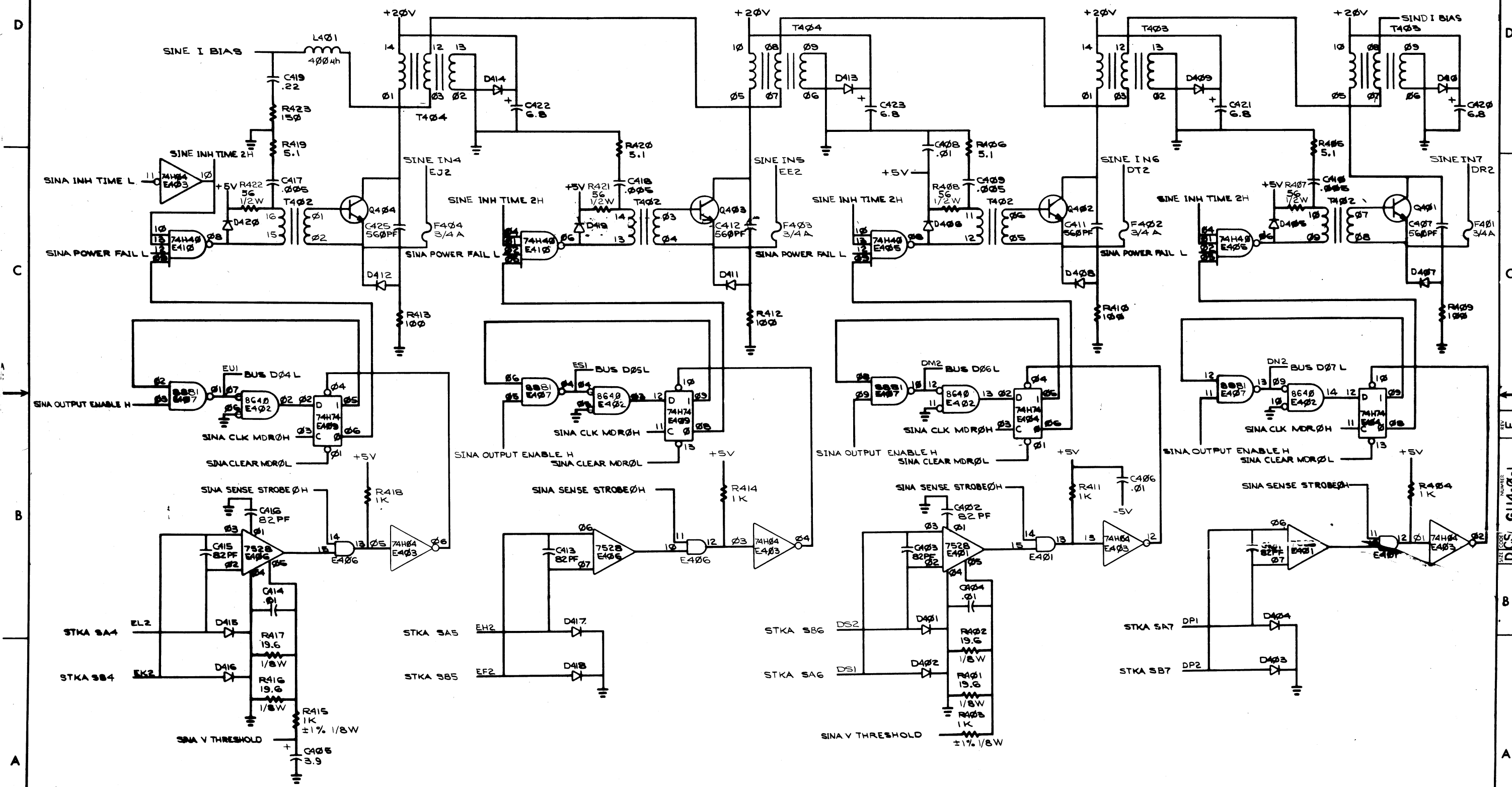
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE CODE	NUMBER	REV.
16K SENSE/INHIBIT (SINF)		DCS	G114-0-1	F
SCALE	SHEET 5 OF 9	DIST.		

500 SERIES SINF

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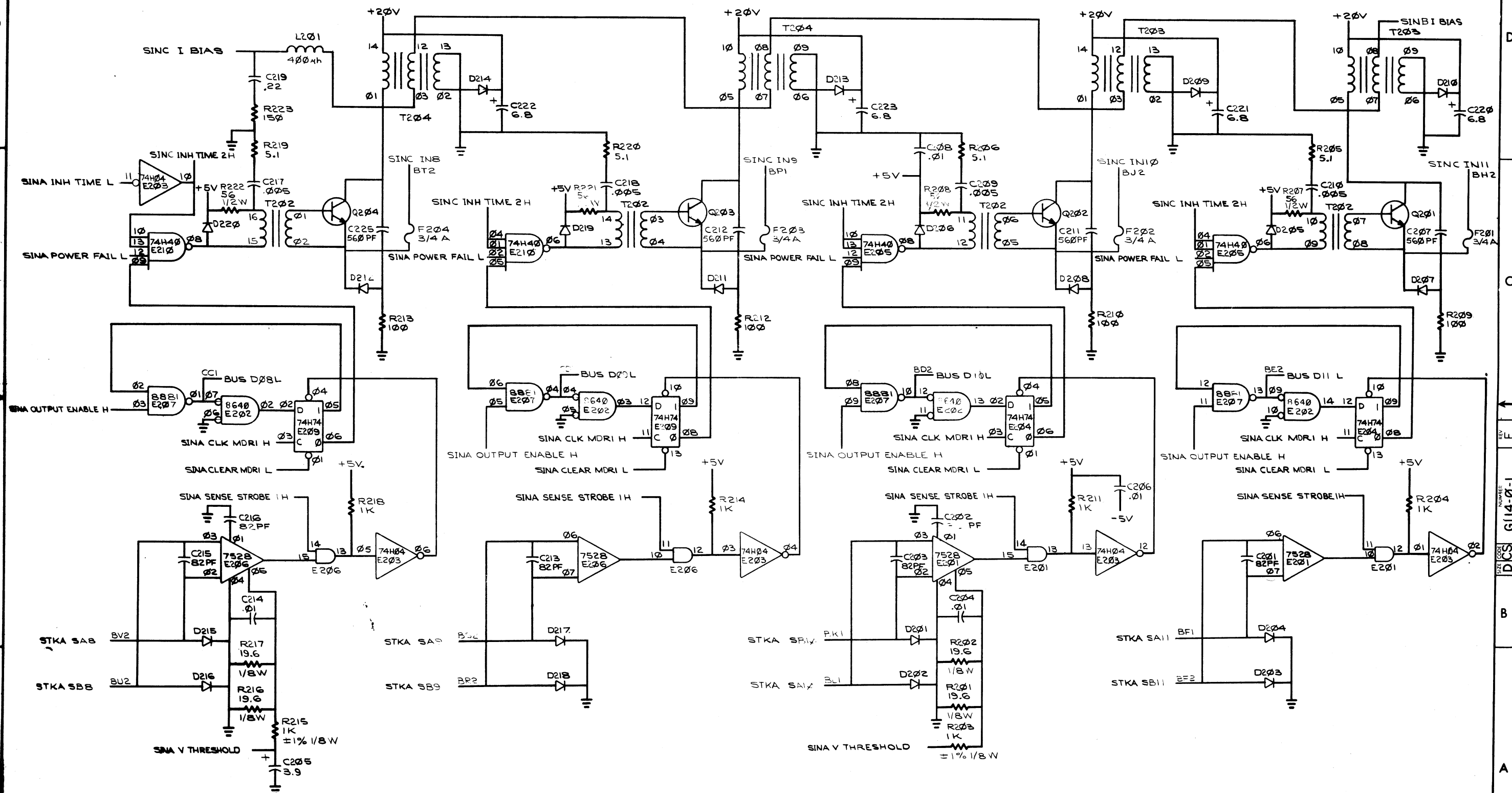
REV F
DCS 6114-0-1
NUMBER 0000 1275



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE CODE	NUMBER	REV.
16K SENSE/INHIBIT (SINE)		DCS	6114-0-1	F
SCALE		SHEET 6 OF 9	DIST.	

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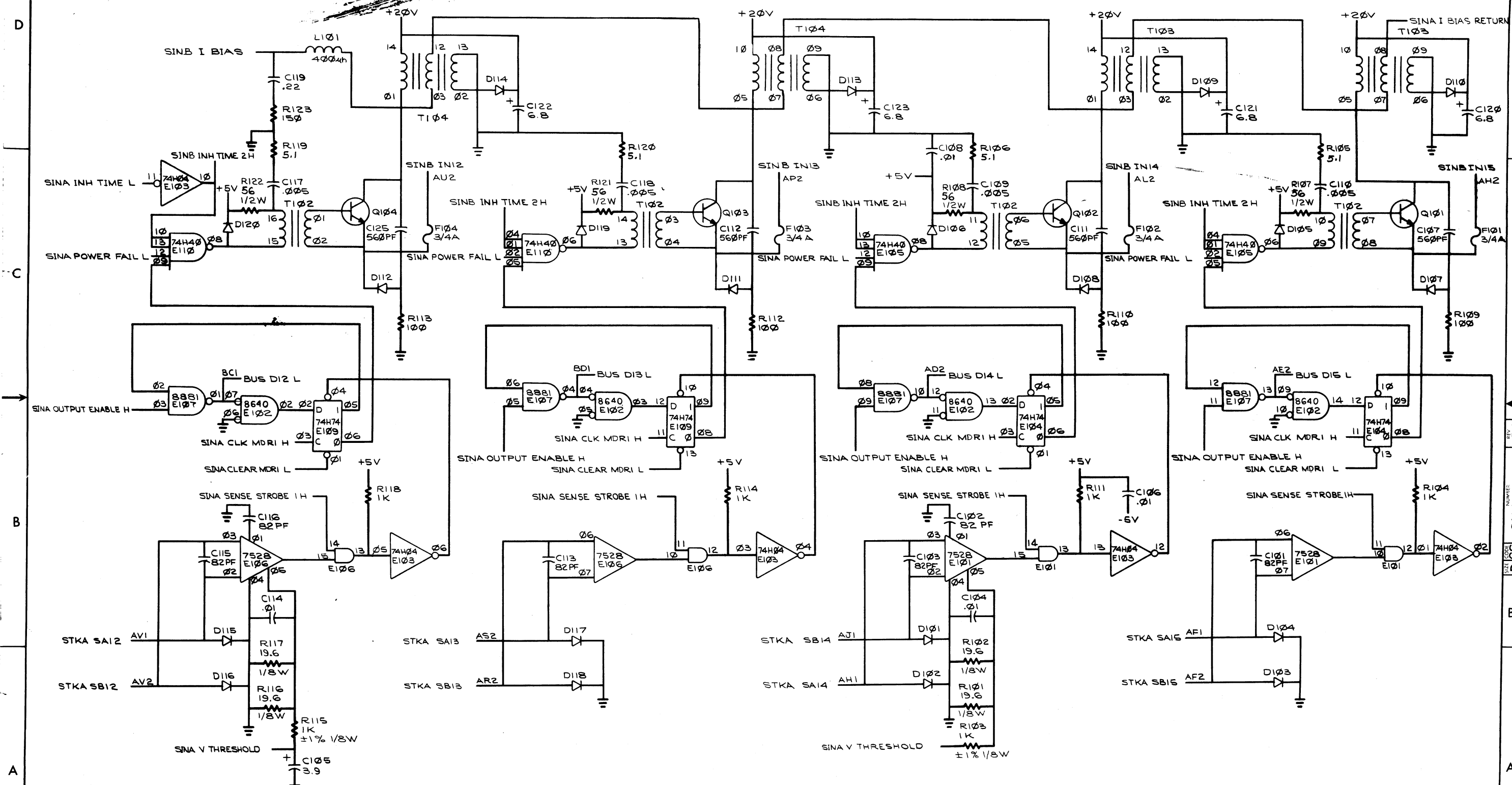


REVISIONS	
CHANGE NO.	REV.

200 SERIES SINC

TITLE		SIZE		CODE	NUM	REV
16K SENSE/INHIBIT (SINC)		D		CS	G114-2	F
SCALE	SHEET 7 OF 9	DIST.				

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REVISIONS		
CHK	CHANGE NO.	REV.

DEC FORM NO. 138

100 SERIES SINB

TITLE	SIZE CODE	NUMBER	REV.
16K SENSE/INHIBIT (SINB)	DCS	GI14-0-1	F
SCALE	SHEET 8 OF 9	DIST.	

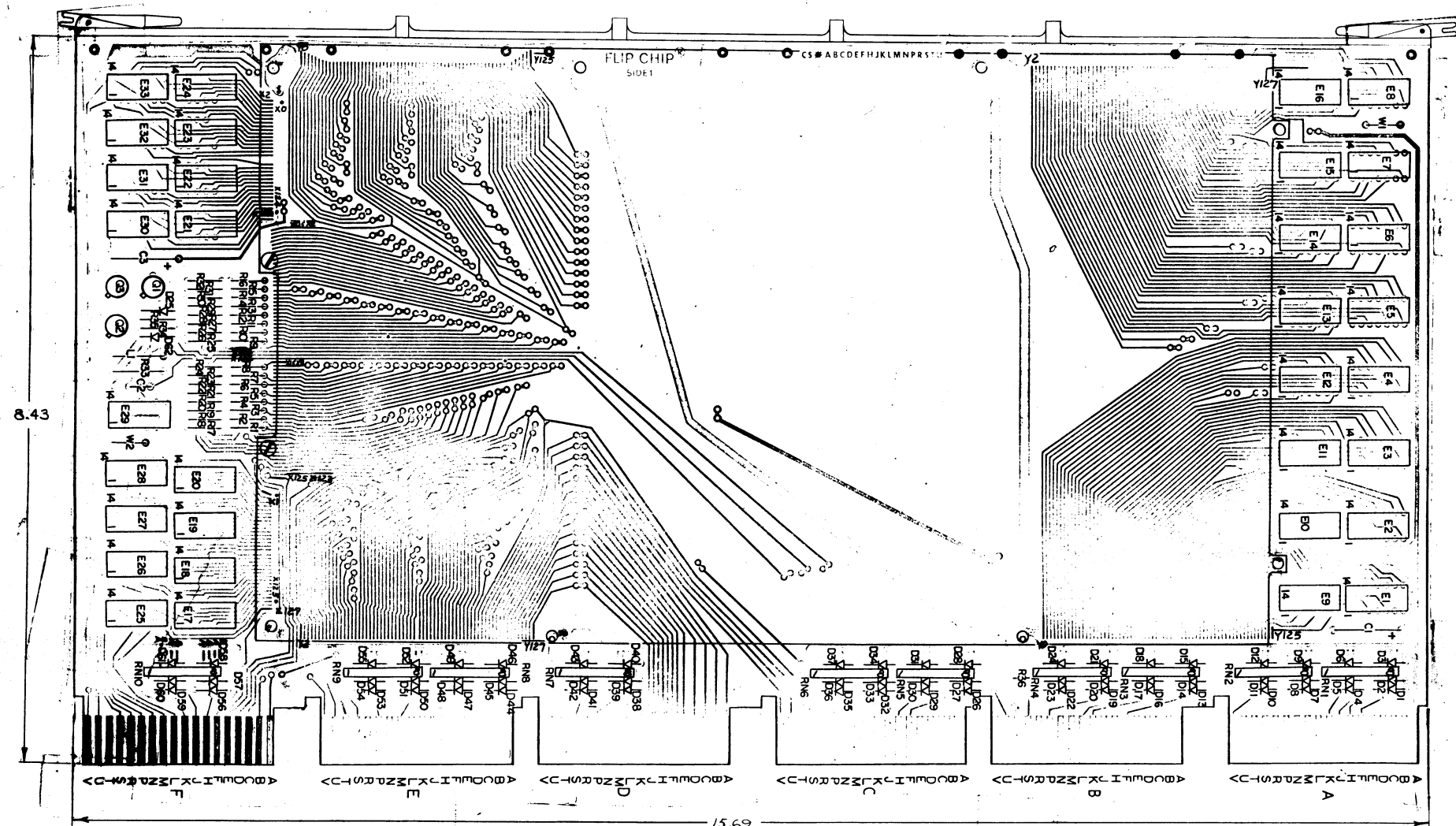


ODD PARITY 300 SERIES SIND

TITLE	SIZE CODE	NUMBER	REV.
16K SENSE/INHIBIT (SIND)	D CS	G114-0-1	F
SCALE $\frac{1}{2}$	SHEET 9 OF 9	DIST.	

1. — $\bigcirc$ XD THRU X127 $\bigcirc$ — & — $\bigcirc$ YD THRU Y127 $\bigcirc$ —
INDICATES MAGNET WIRE TERMINATION
(SOLDERED TO PRINTED CIRCUIT PAD).
2. FOR ASSEMBLY INFORMATION & PART NO'S.
OF ITEMS NOT CALLED OUT ON THIS DRAWING
REFER TO E-AD-9305680-0-0 (MEMORY
STACK ASS'Y).

LEGEND			
NUMBER	DESCRIPTION	PART NO.	STACK CONFIGURATION
9305680-1	PURCHASE SPEC.	H217-A	16K X 20
9305680-2		H217-B	16K X 19
9305680-3		H217-C	16K X 18
9305680-4		H217-D	16K X 16



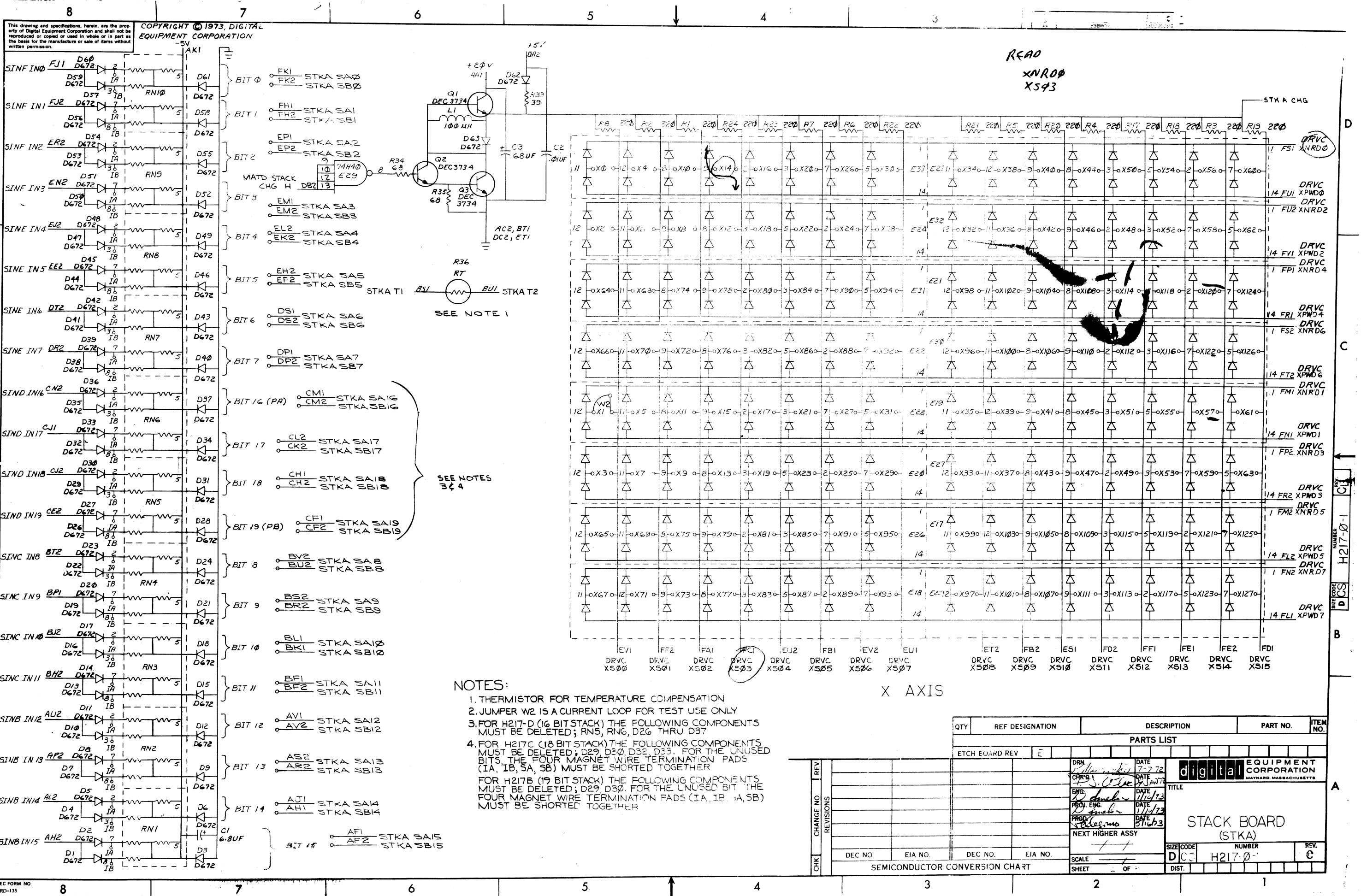
		MEMORY STACK ASSY	9309880	2
3		TRANSIPADS	9007200	23
2	W1, W2	WIRE, BUS #22 AWG	9107560-1	20
				21
				20
1	R36	RES 300 2% THERMAL DISC	1309785	19
1	L1	CHOKE 100UH 10%	16 10662	17
3	Q1, Q2, Q3	TRANSISTOR DEC 3734	15 10062	16
32	R1 THRU R32	RES. 220, 1/4W 5%	15 00271	15
2	R34, R35	RES. 68, 1/4W 5%	13 00219	14
1	R33	RES. 39 1/2W 5%	13 02336	13
10	RN1 THRU RN10	RES NETWORK 2-.5K, 4-.1K	13 10964	12
1	E29	IC DEC. 74H40	19 05586	11
32	E1 THRU E28, E30 THRU E33	IC DEC. 2501 (16 DIODE)	19 10010	10
62	D1 THRU D62	DIODE D672	11 05275	9
2	C1, C3	CAP 6.8UF 35V 10% S.TANT	10 05306	8
1	C2	CAP .01UF 50V 20%	10 01610-00	7
				6
				5
				4
				3
REF		X-Y COORDINATE HOLE LOCATION	KCO-H217-B-4	2
1		ETCH CKT. BOARD (G 6 4 7)	5010023	1
QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

ETCH BOARD REV		E	PARTS LIST									
DEC 3734	NONE	DRN	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS								
D672	IN3653	CHNGD	DATE									
		ENG	DATE									
		PROJ. ENG	DATE									
		PROD.	DATE									
		SCALE	DATE									
DEC NO.	EIA NO.	NEXT HIGHER ASSY		STACK BOARD								
CONVERSION CHART		SCALE		SIZE CODE	NUMBER			REV				
		1 OF 3		D/C S	H217			6				

[illegible]

<i>D Smelser</i>	<i>3/10/76</i>
<i>D. SMLSER</i>	
<i>H. Smlser</i>	<i>28 Nov 76</i>
<i>C</i>	<i>C</i>
<i>D Smelser</i>	<i>9/24</i>
<i>D. SMLSER</i>	
<i>E. SMLSER</i>	<i>9/24</i>
<i>E</i>	<i>E</i>
<i>H217-00003</i>	<i>H217-00003</i>
<i>CHK</i>	<i>CHANGE NO.</i>
	<i>REVISIONS</i>

SEMICONDUCTOR CONVERSION CHART

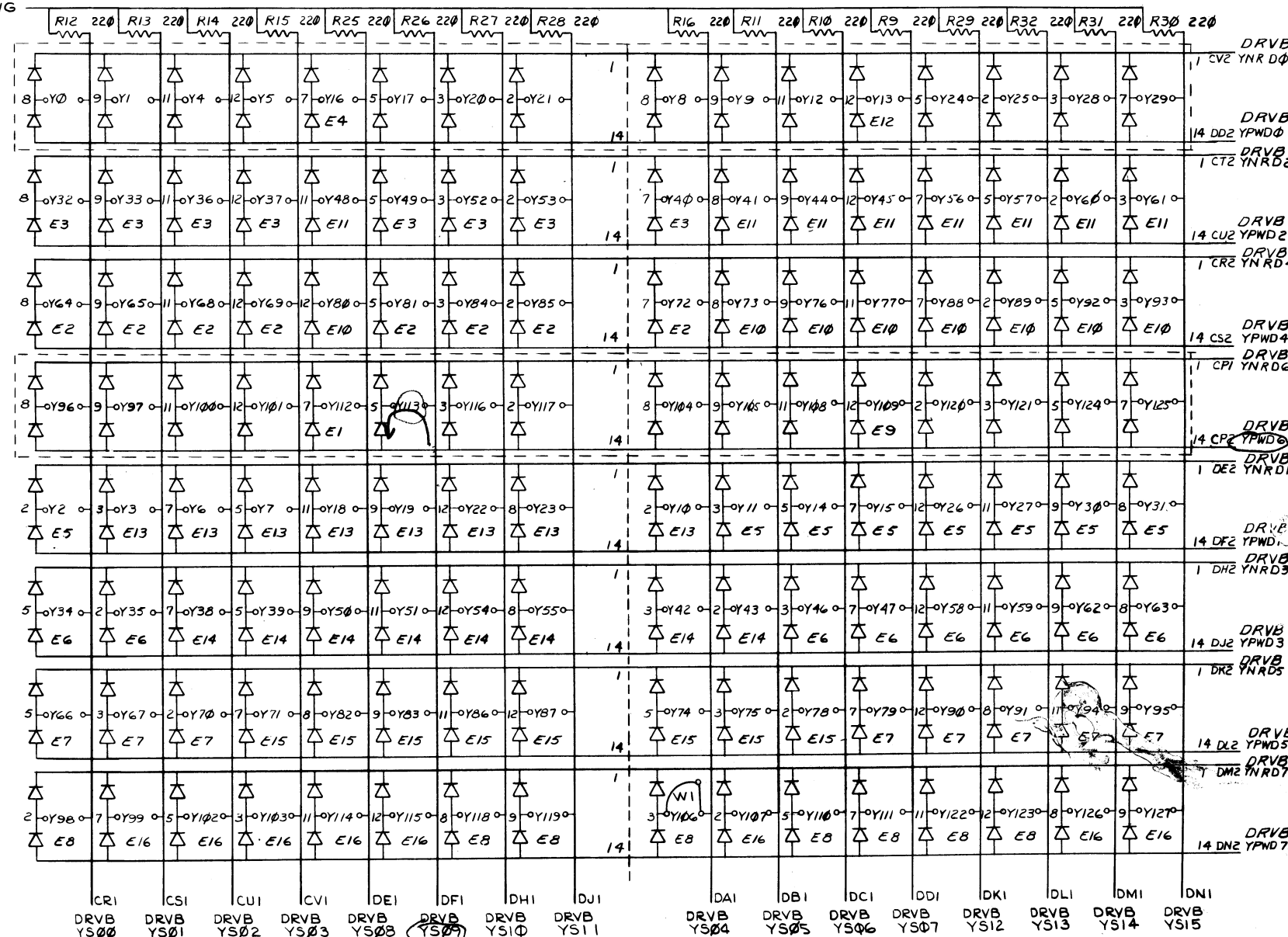


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WHITE
YPW06 Y113
YS09

STKA CHG



Y AXIS

NOTE: JUMPER WI IS A CURRENT LOOP FOR TEST USE ONLY

DRIVER 16x128
SWITCH 8x128
DIOOE 128

φ TO 128K MEM DIOOE

MF11-0/UP
SEE Page 2-8

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
ETCH BOARD REV E				
DATE 7-10-72				
DATE 8-1-72				
DATE 11-14-72				
DATE 11-15-72				
DATE 12-16-72				
NEXT HIGHER ASSY				
SCALE 1/1				
SHEET 3 OF 3				
DIST.				
TITLE				
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS				
STACK BOARD (STKB)				
SIZE CODE DCS				
NUMBER H217-0-1				
REV. C				

REV. C

SEMICONDUCTOR CONVERSION CHART

1

QTY	REF DESIGNATION										DESCRIPTION										PART NO.										ITEM NO.																												
PARTS LIST																																																											
ETCH BOARD REV										D																																																	
										DRN										DATE										digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS																													
										M. PIERCE										12/16/72																																							
										CHK'D										DATE																																							
										K. GLEEZEN										1/17/73																																							
										ENG										DATE																																							
										1 Mr.										5/18/73																																							
										PROJ. ENG.										DATE																																							
										1 Mr.										5/23																																							
										PROD										DATE																																							
										1 Mr.										5/24/73																																							
										NEXT HIGHER ASSY																																																	
										B-DD-MFII-LP																																																	
DEC NO										EIA NO										SIZE CODE										NUMBER										REV.																			
										NONE										D/C										M72										-0-1										F									
SHEET										OF										DIST.																																							
CONVERSION CHART																																																											

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D

C

B

A

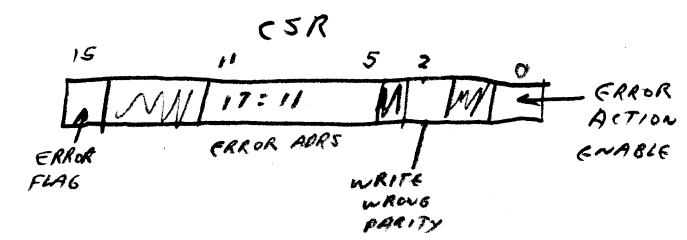
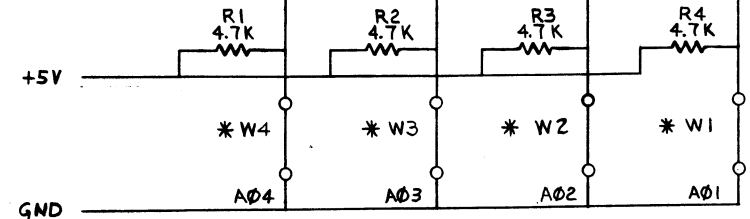
NOTES:

* THE ADDRESS OF THE CSR REGISTER IS LOCATED BETWEEN 772100 AND 772136. IT IS SELECTED WITH JUMPERS WITHRU W4. REMOVING A JUMPER SELECTS A ONE FOR THAT BIT POSITION.

** THE X INPUTS ARE SELECTED WHEN THE SEL INPUT GOES LOW.

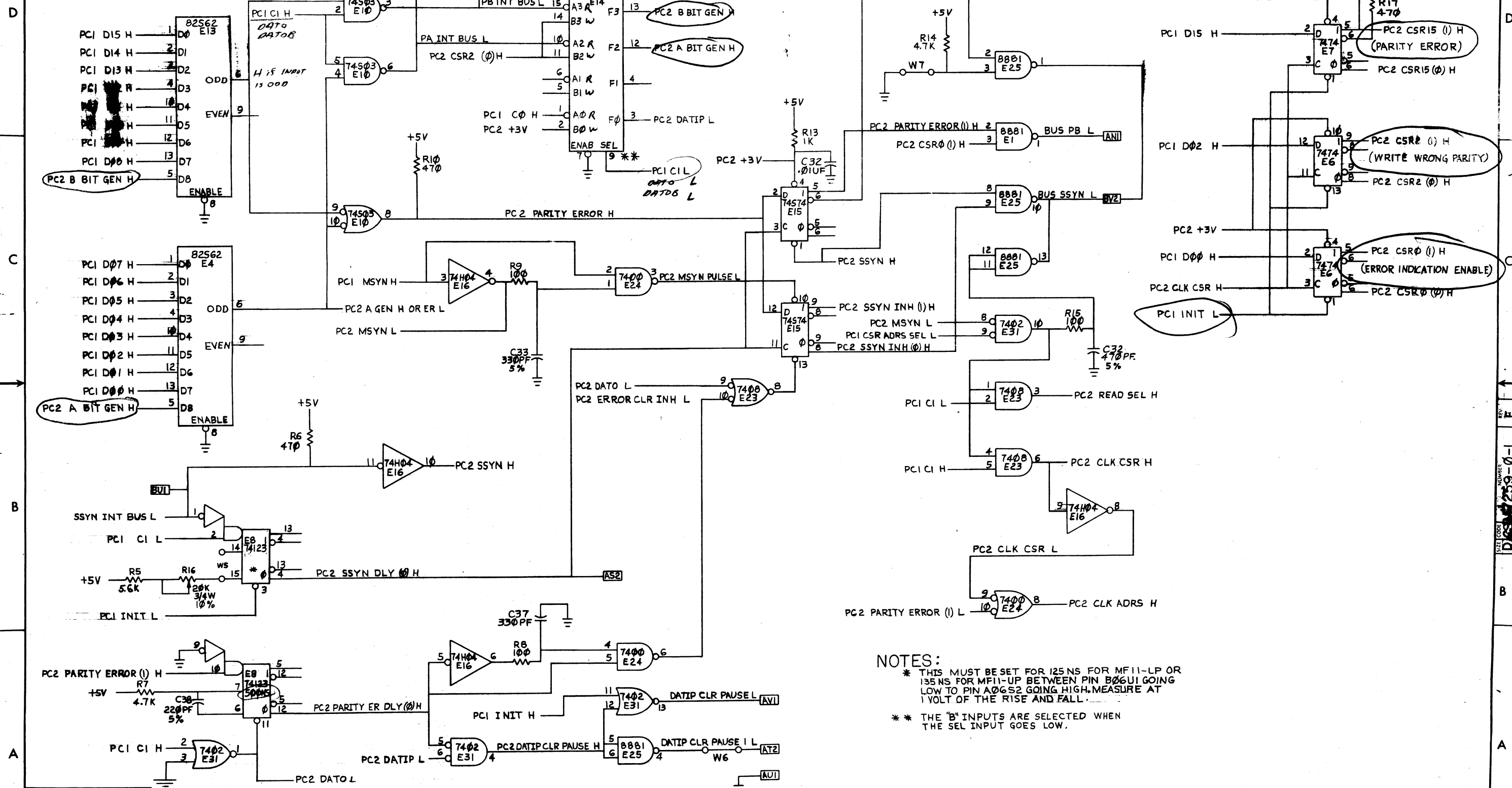
REVISIONS		
CHK	CHANGE NO.	REV.

DEC FORM NO. 500 120



TITLE		SIZE CODE	NUMBER	REV.
PARITY CONTROL-MFII-LP (PCI)		D	CS M7259-0-1	F
SCALE	NONE	SHEET	2 OF 3	DIST.

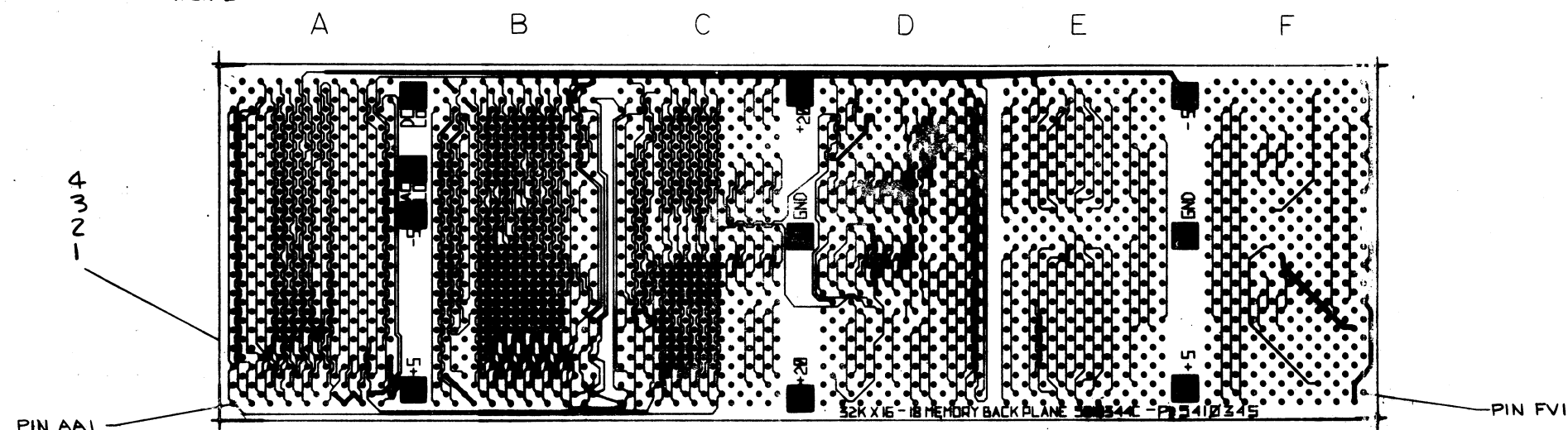
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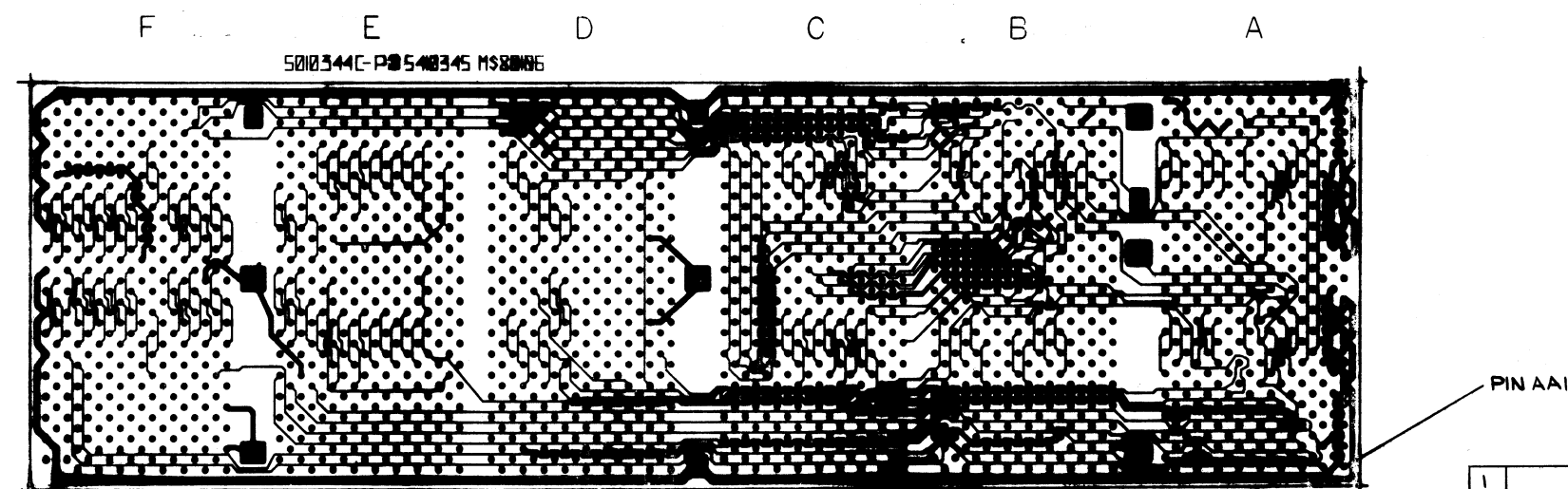
NOTES:
* THIS MUST BE SET FOR 125 NS FOR MFII-LP OR 135 NS FOR MFII-UP BETWEEN PIN B06U1 GOING LOW TO PIN A06S2 GOING HIGH. MEASURE AT 1 VOLT OF THE RISE AND FALL.
* * THE "B" INPUTS ARE SELECTED WHEN THE SEL INPUT GOES LOW.

REVISIONS			TITLE		SIZE CODE	NUMBER	REV.
CHK	CHANGE NO.	REV.	PARITY CONTROL-MFII-LP (PC2)		D	CSM7259-0-1	F
			SCALE	NONE	SHEET	3 OF 3	

1. THIS IS A MULTILAYER BOARD
2. +5V PINS AA2, BA2, CA2, DA2, EA2, FA2
ARE CONNECTED TOGETHER THROUGH LAYER 3
3. GND PINS AC2, AT1, BC2, BT1, CC2, CT1, DC2, DT1
EC2, ET1, FC2, FT1, ARE CONNECTED TOGETHER
THROUGH LAYER 2



SOLDER SIDE



CONN BLOCK SIDE

1		ETCHED CIRCUIT BOARD	5010344	4
REF		MODULE ECO HISTORY	B-MH-5410345-0	3
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-5410345-0	2
REF		X-Y COORDINATE HOLE LOCATION	K-CO-5410345-0	1
QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

EL		PARTS LIST											
ETCH BOARD REV		C											
		DRN. J. Major		DATE 3/30/73		digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS		TITLE 32K X 16-18 MEMORY BACK PLANE					
		CHRD. J. Major		DATE 3/30/73									
		ENG. J. Major		DATE 3/27/73									
		ENCL. ENG. J. Major		DATE 3/27/73									
		PROD. R. J. Major		DATE 5/1/73									
		NEXT HIGHER ASSY D-AD-7009295-0-0						SIZE CODE		NUMBER		REV.	
DEC NO.		EIA NO.		DCS 5410345-Q-1						C			
CONVERSION CHART													
SCALE 1/1		SHEET 1 OF 1		DIST.									

CHK	CHANGE NO.	REV
5410345-00001	B	
P. DURANT		
H. DURANT 9-29-73		
5410345-00002 C		
Ry Vargan 9/6/70		
D. SMELSER 2/3/75		

[illegible]

DIGITAL EQUIPMENT CORPORATION

MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY W. MAJOR	CHECKED W. MAJOR	SECTION
DATE 5/11/73	DATE 5/11/73	1
ENG <i>D. Smaker</i>	PROD	ISSUED SECT.
DATE <i>5/29/73</i>	DATE <i>6/13/73</i>	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION
1	D-CS-G114-0-1	16K SENSE INHIBIT
2	D-CS-G235-0-1	16K X-Y DRIVE
3	D-CS-M8293-0-1	16K UNIBUS TIMING
4	D-AD-7009295-1	BACK PLANE ASSY
5	D-CS-H217-D-1 *	MEMORY STACK (16K X 16)
6	D-CS-H217-C-1 *	MEMORY STACK (16K X 18)
7	D-AD-7009295-2	BACK PLANE ASSY
REF	D-MU-MF11-U-MU	MODULE UTILIZATION
8	D-CS-M7259-0-1	Parity(SAME AS MF11-LP)
9	E-IA-7009535-0-0	OPTION HARNESS
10	D-IA-7010167-0-0	SUPPORT HARNESS
11	9006037- 1	SCR PHIL PAN HD 8-32 + 3/8
12	9008072	EXTERNAL TOOTH LOCK WASHER # 8
13	D-CS-H217-B-1 *	MEMORY STACK(16K X 19)
*	THE H217B MAY BE SUBSTITUTED FOR THE H217C OR H217D AND THE H217C MAY BE SUBSTITUTED FOR THE H217D IN NON PARITY SYSTEMS	

TITLE 16K SENSE MEMORY	ASSY NO. D-UAE-MFI-U-0	SIZE A
	SHEET 1 OF 1	DI

QUANTITY / VARIATION

[illegible]

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

DATE 9/7/73

TITLE MF11-U/UP CUSTOMER ACCEPTANCE PROCEDURE

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

ENG	P. Durant	APPD	J. Shuman	12-5-73	SIZE	A	CODE	SP	NUMBER	MF11-U-3	REV
-----	-----------	------	-----------	---------	------	---	------	----	--------	----------	-----

DEC FORM NO.
DRA 107A

SHEET 1 OF 2

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE MF11-U/UP CUSTOMER ACCEPTANCE PROCEDURE

1.0 Overview

- 1.1 This procedure contains directions pertaining to field assurance of the correct operation of an MF11-U/UP.
- 1.2 Prior to this acceptance, the option will have been installed, inspected, and connected and have power applied. Generally the memories shipped as add ons will have been configured and tested at the factory with their addresses beginning at 000000. Prior to running diagnostics, these memories must be re-configured for the customers system, as directed in the MF11-U/UP Customer Print Set. (See M8293 MAT A)
- 1.3 If this option is part of a PDP-11/40-11/45 installation, as opposed to an add on, then the system acceptance procedures provided with those systems should be utilized in place of this procedure.

2.0 Inspection

- 2.1 Assure presence of the following documentation:
 - 2.1.1 Customer Acceptance Form
 - 2.1.2 Keysheets (2)
 - 2.1.3 Accessory Checklist
 - 2.1.4 LIBKIT list for MF11-U/UP
 - 2.1.5 ECO Status Sticker (for mounting in expansion box)
 - 2.1.6 Waiver Sheet (if applicable)
 - 2.1.7 Documentation Update Card (if applicable).
- 2.2 Utilize the accessory checklist, and LIBKIT list to verify that all items are present.

3.0 Diagnostic Testing:

- 3.1 The following tests must be run without error for the times specified:

*Maindec-11-DZQMA Memory I/O 5 min/MF11-U/UP
Maindec-11-DZQMB Memory Exerciser 5 min/MF11-U/UP
Maindec-11-DCMFA Parity Test 2 passes/MF11-U/UP
(MF11-UP Memory Only)

*Only for add-on memories in systems with NPR devices

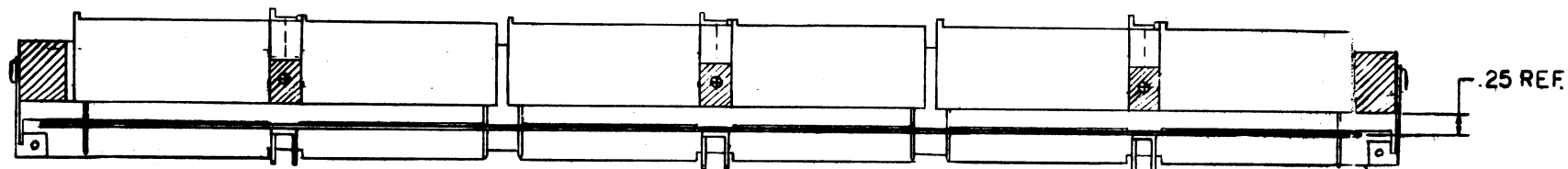
SIZE	CODE	NUMBER	REV
A	SP	MF11-U-3	

DEC FORM NO DEC 16-(381)-1022-N370
DRA 108

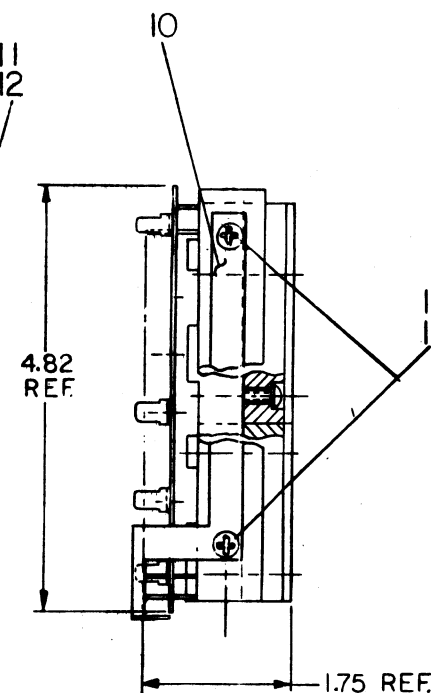
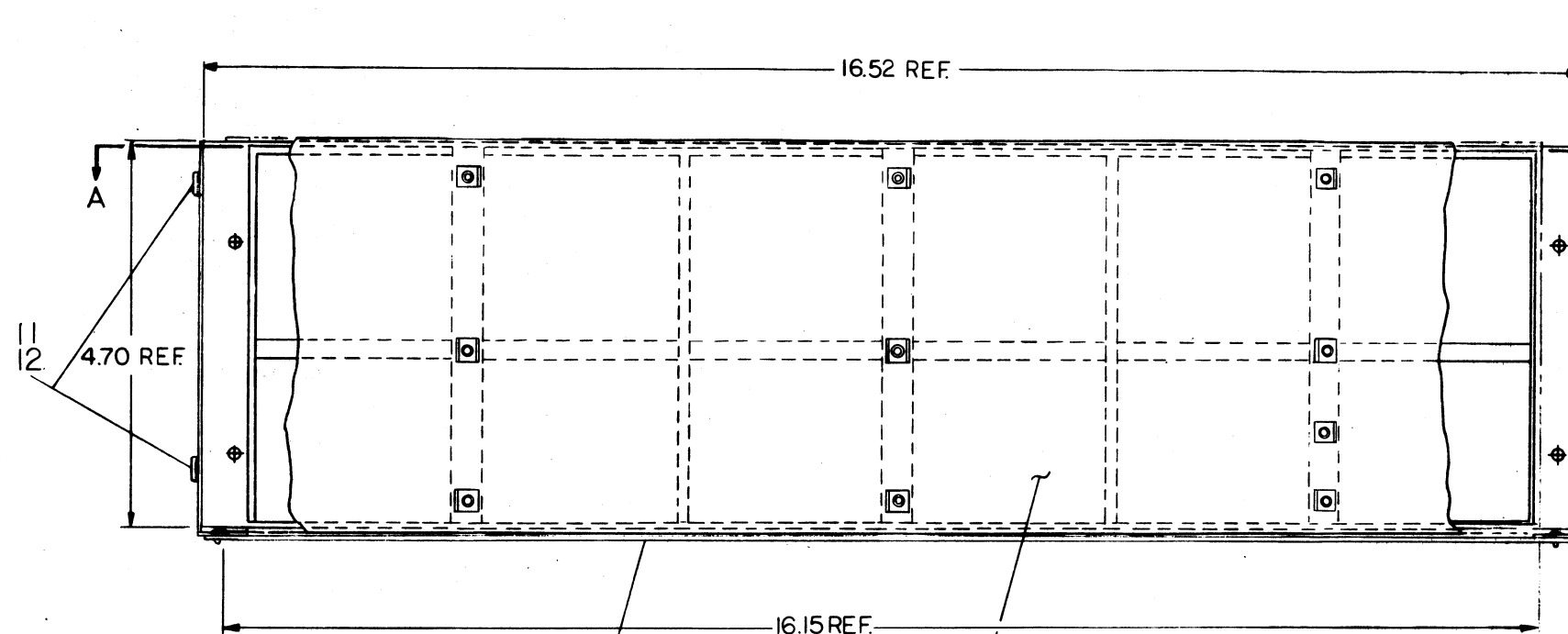
SHEET 2 OF 2

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1575

NOTES:



SECTION A-A



REV.	CHANGE NO.	DATE	BY
B	1	2-25-75	D. SMELSER
C	2	2-26-75	D. SMELSER
D	3	2-26-75	D. SMELSER
E	4	2-26-75	D. SMELSER
F	5	2-26-75	D. SMELSER
G	6	2-26-75	D. SMELSER
H	7	2-26-75	D. SMELSER
I	8	2-26-75	D. SMELSER
J	9	2-26-75	D. SMELSER
K	10	2-26-75	D. SMELSER
L	11	2-26-75	D. SMELSER
M	12	2-26-75	D. SMELSER
N	13	2-26-75	D. SMELSER
O	14	2-26-75	D. SMELSER
P	15	2-26-75	D. SMELSER
Q	16	2-26-75	D. SMELSER
R	17	2-26-75	D. SMELSER
S	18	2-26-75	D. SMELSER
T	19	2-26-75	D. SMELSER
U	20	2-26-75	D. SMELSER
V	21	2-26-75	D. SMELSER
W	22	2-26-75	D. SMELSER
X	23	2-26-75	D. SMELSER
Y	24	2-26-75	D. SMELSER
Z	25	2-26-75	D. SMELSER

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
MFII-U			PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN <i>Dr. Vande</i>	DATE 2-25-75	EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
		CHKD <i>Ch. Gilbert</i>	DATE 2-25-75		
DECIMALS	ANGLES	ENG <i>D. Sander</i>	DATE 2-26-75		
.XXX - .005 .XX - .02 .X - .1	± 0° 30'	PROJ. ENG <i>D. Sander</i>	DATE 2-26-75		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		PROD <i>D. Sander</i>	DATE 2/26/75	TITLE MFII-U MEMORY	
MATERIAL 		NEXT HIGHER ASSY. B-DD-MFII-U		SIZE CODE DUA	NUMBER MFII-U-0
FINISH 		SCALE 1/1		REV.	
		SHEET 1 OF 1	DIST.		

SIZE CODE ▲ WT 7009295-3 NUMBER

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DRAWING NUMBER	INIT REL		AUTOMATIC WIRE TESTER (AWT) REVISION STATUS																										REV.
	T4	C																											
D-CS-5410345-0-1	C	C																											7009295-4
D-AD-7009295-0-0	C	D																											

REVISIONS		REV.
CHK	CHANGE NO.	
—	MF1U-00005	C
ORIGINATED		

DRN. <i>J. Chastin</i>	DATE 11-25-75	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. <i>P. Gillbert</i>	DATE 26 Nov 75		
ENG. <i>[Signature]</i>	DATE 12-1-75	TITLE MF1U-W BACK PLANE ASSY AWT REVISION STATUS	
PROJ. ENG. <i>[Signature]</i>	DATE 12-1-75		
PROD. <i>[Signature]</i>	DATE 12-1-75		
FIRST USED ON MF1U		SIZE CODE A WT	NUMBER 7009295-4
SCALE + +		REV. C	
SHEET / OF /		DIST.	



DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS 01754