

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS		DATE 11/19/74			
ENGINEERING SPECIFICATION					
TITLE MS8-A FIELD INSTALLATION & ACCEPTANCE PROCEDURE					
REVISIONS					
REV	DESCRIPTION	CHG NO	ORIG DATE	APPD BY	DATE

ENG *John Hill* 20 Dec 74 APPD *J.C.H.*  
 DEC FORM NO. DRA 107

ENGINEERING SPECIFICATION		CONTINUATION SHEET	
TITLE MS8-A FIELD INSTALLATION & ACCEPTANCE PROCEDURE			
I GENERAL			
This procedure defines the performance standards required of an MS8A* RAM memory.			
NOTE: If MS8A was shipped as part of a PDP-8A system, proceed to installation procedure.			
*MS8AA (M8311YA) 1K Semiconductor Random Access Memory MS8AB (M8311YB) 2K Semiconductor Random Access Memory MS8AD (M8311YD) 4K Semiconductor Random Access Memory			
II INSPECTION			
After removing the MS8A from packing material, inspect the module for the following:			
1. Check for loose or broken components.			
2. Inventory software against software list, if ordered.			
3. Inventory prints against shipping list, if ordered.			
4. Inventory hardware against shipping list.			
III INSTALLATION PROCEDURE			
Install the equipment using the following procedure:			
1. Set up switches as indicated below for the particular variation being accepted.			
M8311YA 1K	M8311YB 2K	M8311YD 4K	
M8311 YA	M8311 YB	M8311 YD	
S1-1	ON	ON	ON = field 0
S1-2	ON	ON	ON = field 0
S1-3	ON	ON	ON = field 0
S1-4	ON	ON	ON ST Add
S1-5	ON	ON	ON ST Add
S1-6	OFF	OFF	ON On for 4K
S1-7	OFF	OFF	OFF On for 2K
S1-8	OFF	OFF	OFF On for 1K
S1-9	ON	OFF	OFF Normally On
S1-10	ON	ON	ON Normally On
NOTE: Reference Operator's Handbook for complete description of switch settings.			

DEC FORM NO DEC 16-12811-1022-4376  
 DRA 108

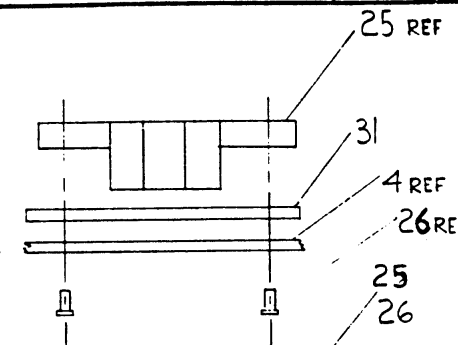
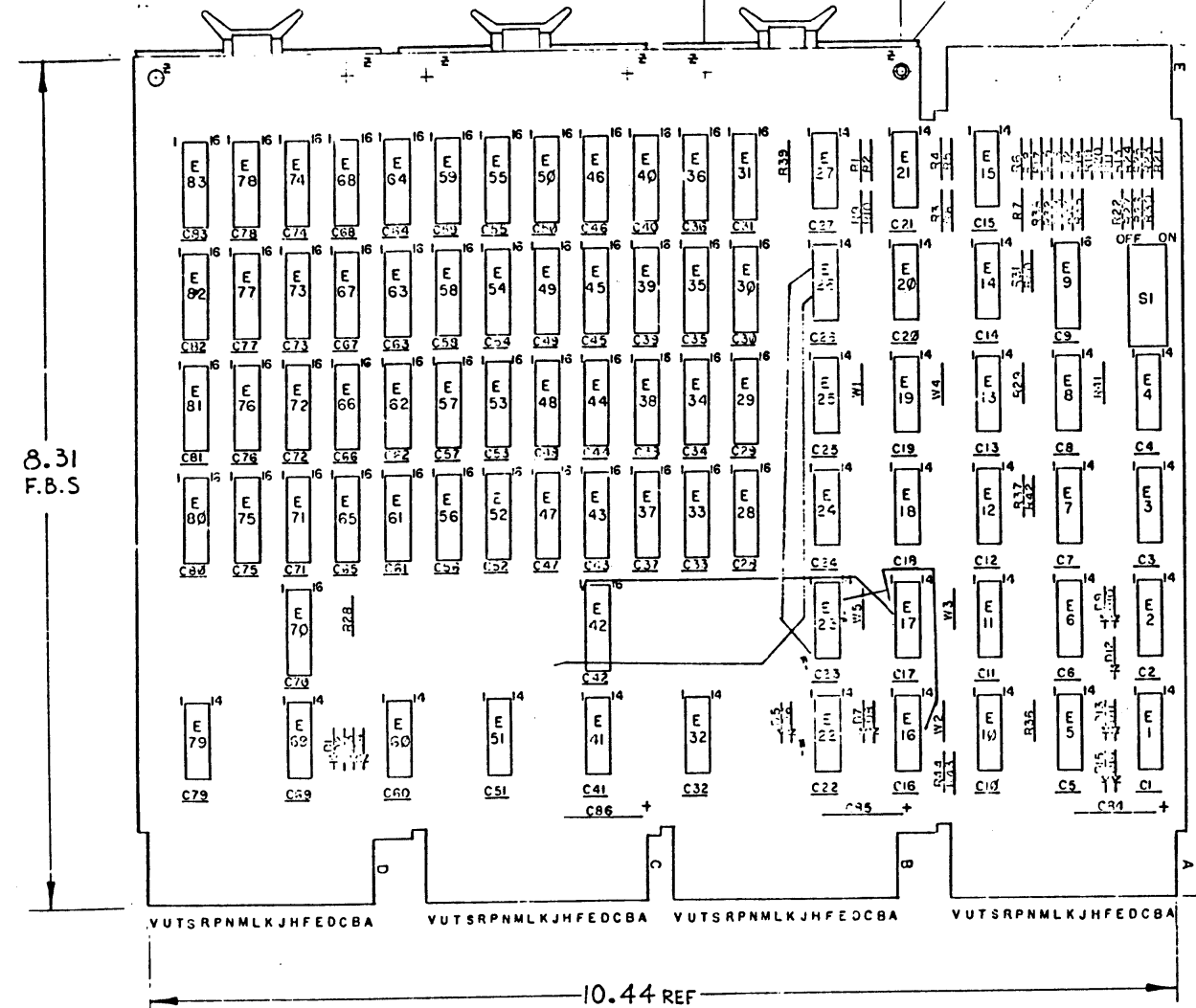
ENGINEERING SPECIFICATION		CONTINUATION SHEET	
TITLE MS8-A FIELD INSTALLATION & ACCEPTANCE PROCEDURE			
III INSTALLATION PROCEDURE (continued)			
2. Insure that the PDP-8A power is removed from the Omnibus TM.			
3. Insert the MS8A into the last slot vacant in the Omnibus TM.			
4. Turn Power on.			
IV ACCEPTANCE PROCEDURE			
Perform the Acceptance Test as indicated in Table B. If problems are encountered, refer to the diagnostic listing for type of error. Reference Operator's Manual and Diagnostic Write-up for instructions on loading diagnostic.			
Equipment required:			
1. PDP-8A with MS8A R/W Memory			
2. Programmer's Console			
3. Paper Tape input Device			
4. Diagnostic and Listings			
NOTE: If the Programmer's console and paper tape input device are not available as part of the system being used, they must be supplied in good working order by the customer.			
Table B			
Acceptance of MS8A: YA or YB			
Program Name	Maindec #	Accept Time	Restrictions
1--K MOS Memory Test (RIM)	08-DJM5A-PH	30 min	1K or 2K MS8A R/W Memory
Acceptance of MS8A: YD			
1-4K MOS Memory Test	08-DJM5A-PH	15 min.	4K MS8A R/W Memory
4-32K Memory Test	08-DJM5A-PB	15 min.	4K MS8A R/W Memory

DEC FORM NO DEC 16-12811-1022-4376  
 DRA 108

This drawing and specifications herein are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission. 1/74 ©

"THIS DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION.  
COPYRIGHT © 1974. DIGITAL EQUIPMENT CORPORATION"

- NOTES:**
- ITEM #5 CAP .01 UF 100V 20% MAY BE SUBSTITUTED WITH 100V 20% .01
  - ITEM #12 IC 7380, 1910390 MAY BE SUBSTITUTED WITH IC 6640 1911469.



REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	X-Y COORDINATE HOLE LOCATION	K-CD-M8311-0-4	ITEM NO.	
REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	ASSY/DRILLING HOLE LAYOUT	D-AH-M8311-0-5	2	
REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	MODULE ELD HISTORY	B-MH-M8311-0-6	3	
1	1	1	1	1	1	1	1	1	1	ETCHED CIRCUIT BOARD	5010586	4	
										C1-C27, C29-C32, C34-C36, C38, C42, C44, C46, C48, C51, C53, C55, C57, C60, C62, C64, C66, C70, C72, C74, C76, C78, C81, C83			
										C1-C27, C30-C32, C35, C36, C39, C40, C41, C42, C45, C46, C49, C50, C51, C54, C55, C58, C59, C68, C83, C84, C87, C70, C73, C74, C77, C78, C79, C82, C83			
										C1-C27, C31, C32, C36, C40, C42, C46, C50, C51, C55, C59, C60, C64, C68, C78, C74, C78, C79, C83	CAP .01 UF 100V 20% (SEE NOTE #1)	1001610-01	5
										C1-C33			
										D1-D18	DIODE D664	1100114	6
										R1-R10, R36	RES. 180 1/4W 5%	1301322	7
										R39-R43	RES. 220 1/4W 5%	1300271	8
										R11-R20, R30, R31, R37	RES. 2.2K 1/4W 5%	1300417	9
										S1	SWITCH 10 POS	1211164-06	10
										E7	IC 7482	1909004	11
										E22, E23, E41, E68, E79, E1	IC 7380 (SEE NOTE #2)	1910390	12
										E5, E32, E51, E89	IC 8881	1909705	13
										E4, E6, E17	IC 7400	1905575	14
										E10	IC 7410	1905576	15
										E2	IC 8242	1909712	16
										E13	IC 74164	1910041	17
										E10	IC 7488	1910155	18
										E8, E10, E15, E21, E27	IC 7437	1910091	19
										E3, E14, E20, E26	IC 7384	1910393	20
										E11, E12, E16, E24	IC 7474	1905547	21
										E42, F10	IC 74174	1910652	22
										E20, E31, E33, E40, E43, E50, E52, E59, E61, E68, E71, E78, E80, E83	IC DEC 2102-0	2111318-0C	23
										E29, E31, E34, E36, E38, E40, E44, E46, E48, E50, E53, E55, E57, E59, E62, E64, E66, E68, E72, E74, E76, E78, E81, E83			
										E30, E31, E35, E36, E39, E40, E45, E46, E49, E50, E54, E55, E58, E59, E83, E84, E87, E88, E73, E74, E77, E78, E82, E83			
										E31, E36, E40, E46, E50, E55, E59, E64, E68, E74, E78, E83			
										E20, E31, E33, E40, E43, E50, E52, E59, E61, E68, E71, E78, E80, E83	IC DEC 2102-1	2111318-01	24
										E29, E31, E34, E36, E38, E40, E44, E46, E48, E50, E53, E55, E57, E59, E62, E64, E66, E68, E72, E74, E76, E78, E81, E83			

8223	8	16
2102	9	10
74174	8	16
7384	1	8
7380	1	8
IC TYPE	GND	+5V
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE		
IC PIN LOCATIONS		

DRN	DATE
CHK'D	DATE
ENG	DATE
PROJ. ENG	DATE
PROD	DATE
NEXT HIGHER ASSY	
D-DD-PDP8A-0	
SCALE	NONE
SHEET	1 OF 6

**PDP8A** ETCH BOARD REV. E

**digital**

TITLE: 4K X 12 MOS. MEMORY

SIZE CODE: D CSM8311-0-1

NUMBR: 0-1

REV. F

SEMICONDUCTOR CONVERSION CHART

THIS DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © 1974 DIGITAL EQUIPMENT CORPORATION

QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
					24						E30, E31, E35, E36, E39, E40, E45, E46, E49, E50, E54, E55, E58, E59, E63, E64, E67, E68, E73, E74, E77, E78, E82, E83	IC DEC 2102-1	2111318-0-1	24
					12						E31, E38, E40, E46, E50, E55, E59, E64, E68, E74, E78, E83			
3	3	3	3	3	3	3	3	3	3			HANDLE FLIP CHIP MAGENTA	9008337-08	25
8	6	6	6	6	6	6	6	6	6			EYELET GS4-7	9006750	26
1	1	1	1	1	1	1	1	1	1	39		IC DEC 8223 OR EQUIVALENT	23083A1	27
5	5	5	5	5	5	5	5	5	5	WI-W5		INSULATED JUMPER	9009185	28
3	3	3	3	3	3	3	3	3	3	C84, C85, C86		CAP 6.8 MF 35V, 10% TAPT	1005306	29
14	14	14	14	14	14	14	14	14	14	R21-R29, R32-R35, R38		RES. 3.3K 1/4W 5%	1300439	30
3	3	3	3	3	3	3	3	3	3			SPACER (CABLE CLAMP)	1202704	31
1	1	1	1	1	1	1	1	1	1	R44		RES. 39B 1/4W 5%	1300309	32
1	1	1	1	1	1	1	1	1	1	E25		CRYSTAL OSCILLATOR 10 MHZ	1811660-01	33

SWITCH DEFINITIONS

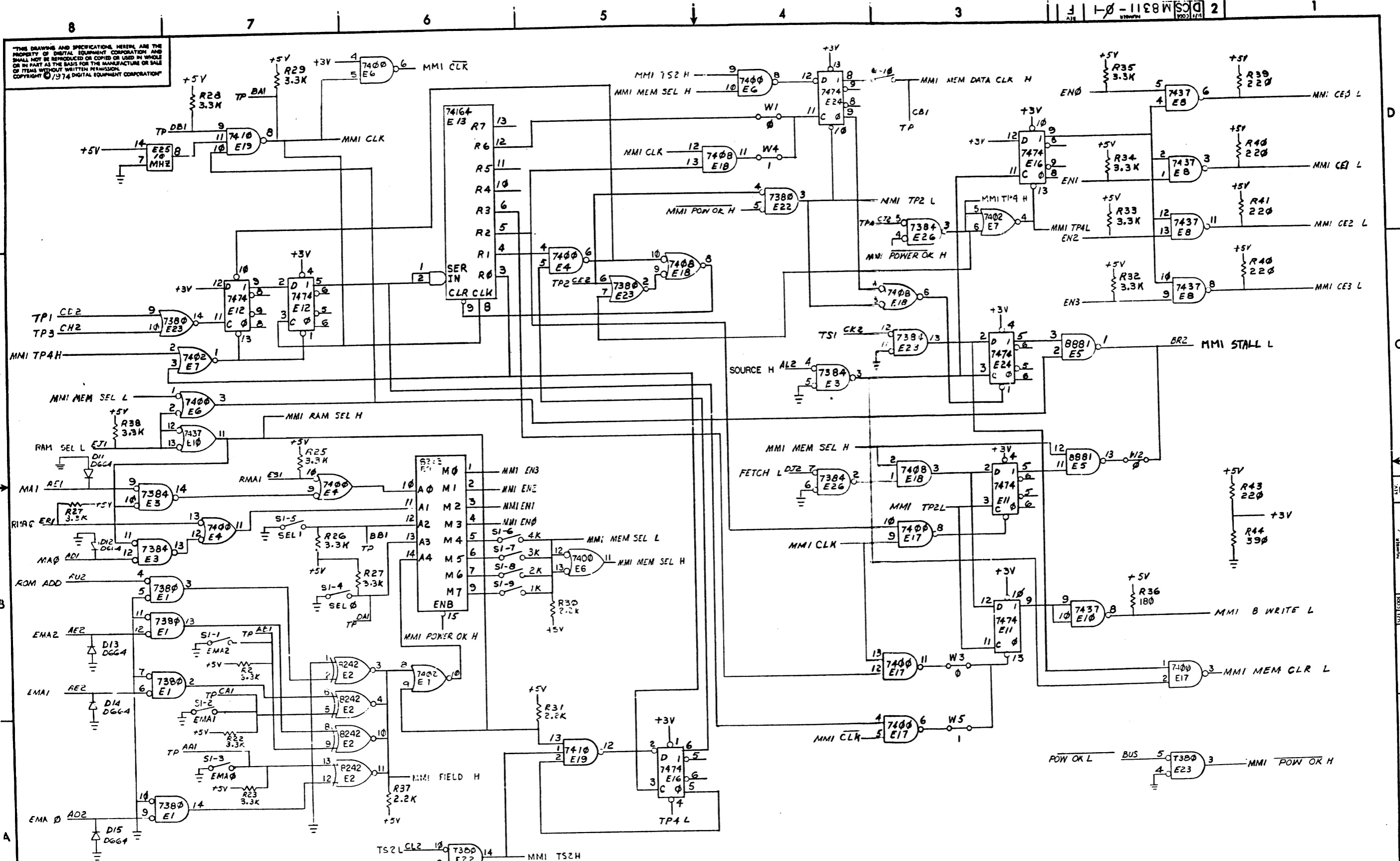
SWI	DEFINITION	DESCRIPTION
SWI-1	EMA2	FIELD SELECTION 'ON' IS 0
SWI-2	EMA1	
SWI-3	EMA0	
SWI-4	SEL0	STARTING ADDRESS SELECT 'ON' IS 0
SWI-5	SEL1	
SWI-6	4K	MEMORY SIZE SELECT CORRECT SIZE - 'ON' OTHERS - 'OFF'
SWI-7	3K	
SWI-8	2K	
SWI-9	1K	
SWI-10		USED FOR TEST ONLY, ALWAYS 'ON'

JUMPER CONFIGURATION

YA, YB, YC AND YD - W1, W2, W3 ARE IN	W4 AND W5 ARE OUT
YE, YF, YH AND YJ - W4 AND W5 ARE IN	W1, W2 AND W3 ARE OUT

REVISIONS		
CHK	CHANGE NO	REV

THIS DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © 1974 DIGITAL EQUIPMENT CORPORATION.

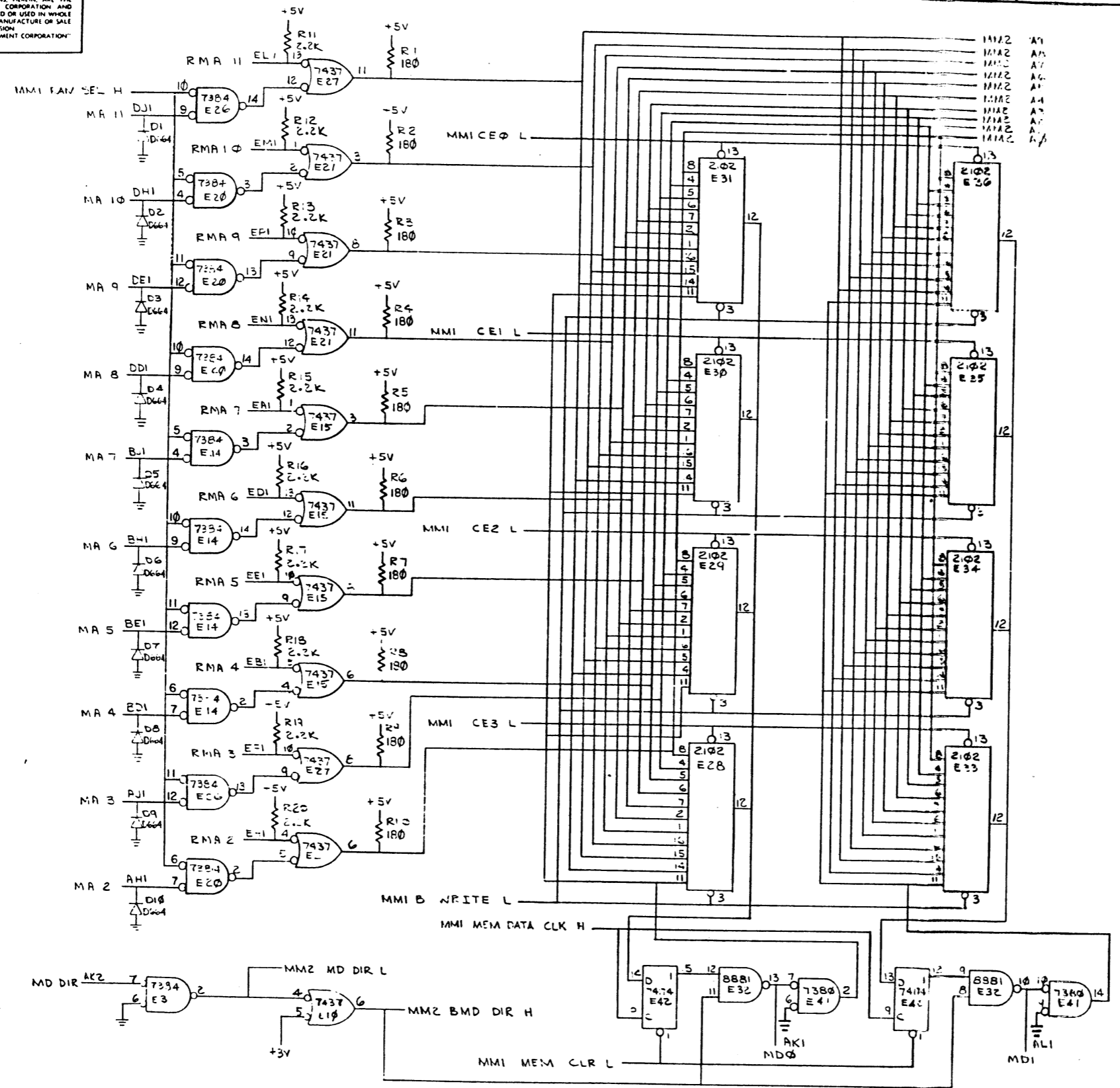


REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	4K X 12 MOS MEMORY (MMI)	SIZE CODE	DCS	NUMBER	MR311-0-1	REV.	F
SCALE		SHEET	3	OF 6			

REV. F. NUMBER MR311-0-1

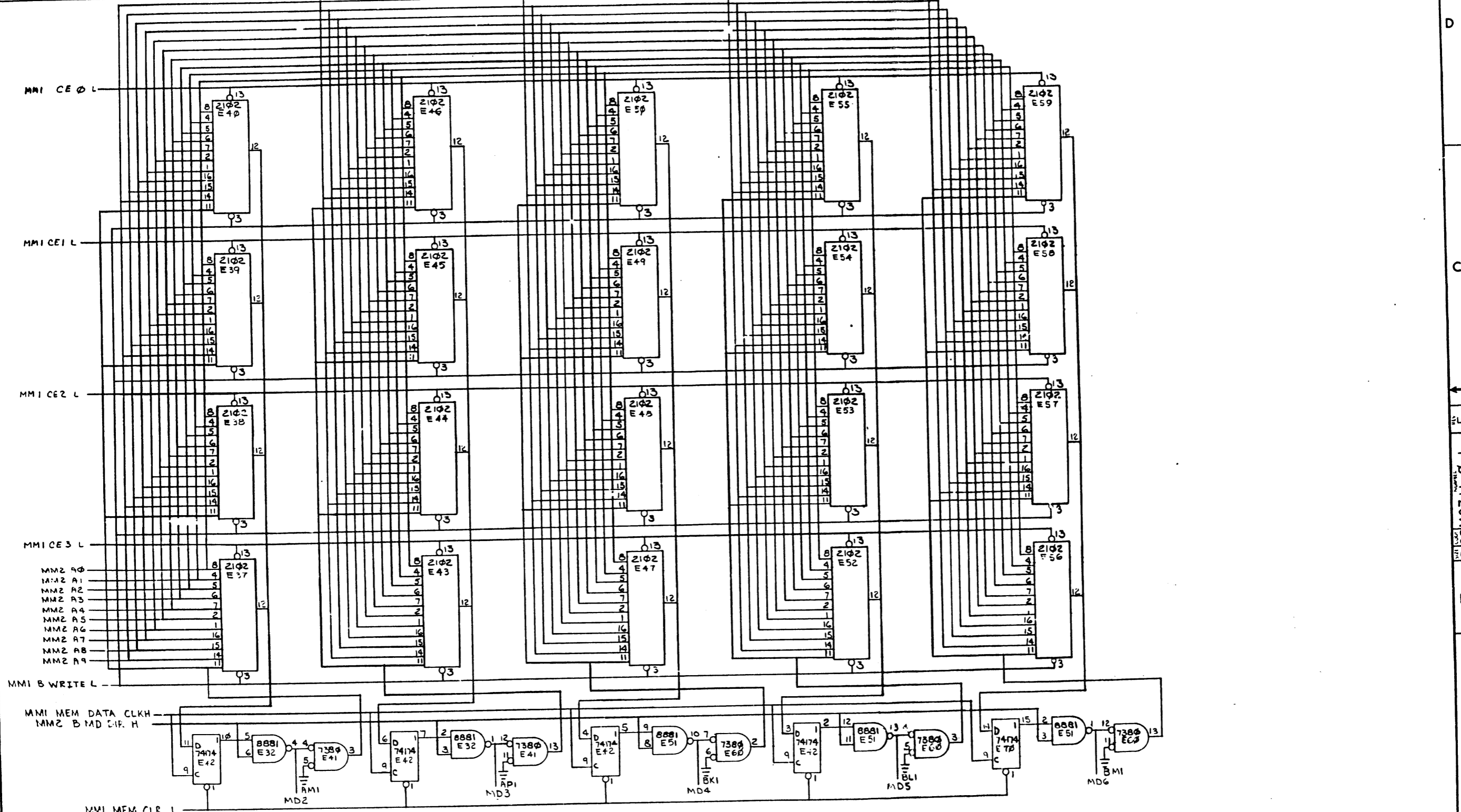
"THIS DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © 1973, DIGITAL EQUIPMENT CORPORATION"



REVISIONS		
CHK	CHANGE NO	REV

TITLE	4K X 12 MOS MEMORY (M1A2)	SIZE CODE	DCS	NUMBER	M0311-0-1	REV.	F
SCALE	1/4	SHEET	4	OF	6	DIST.	

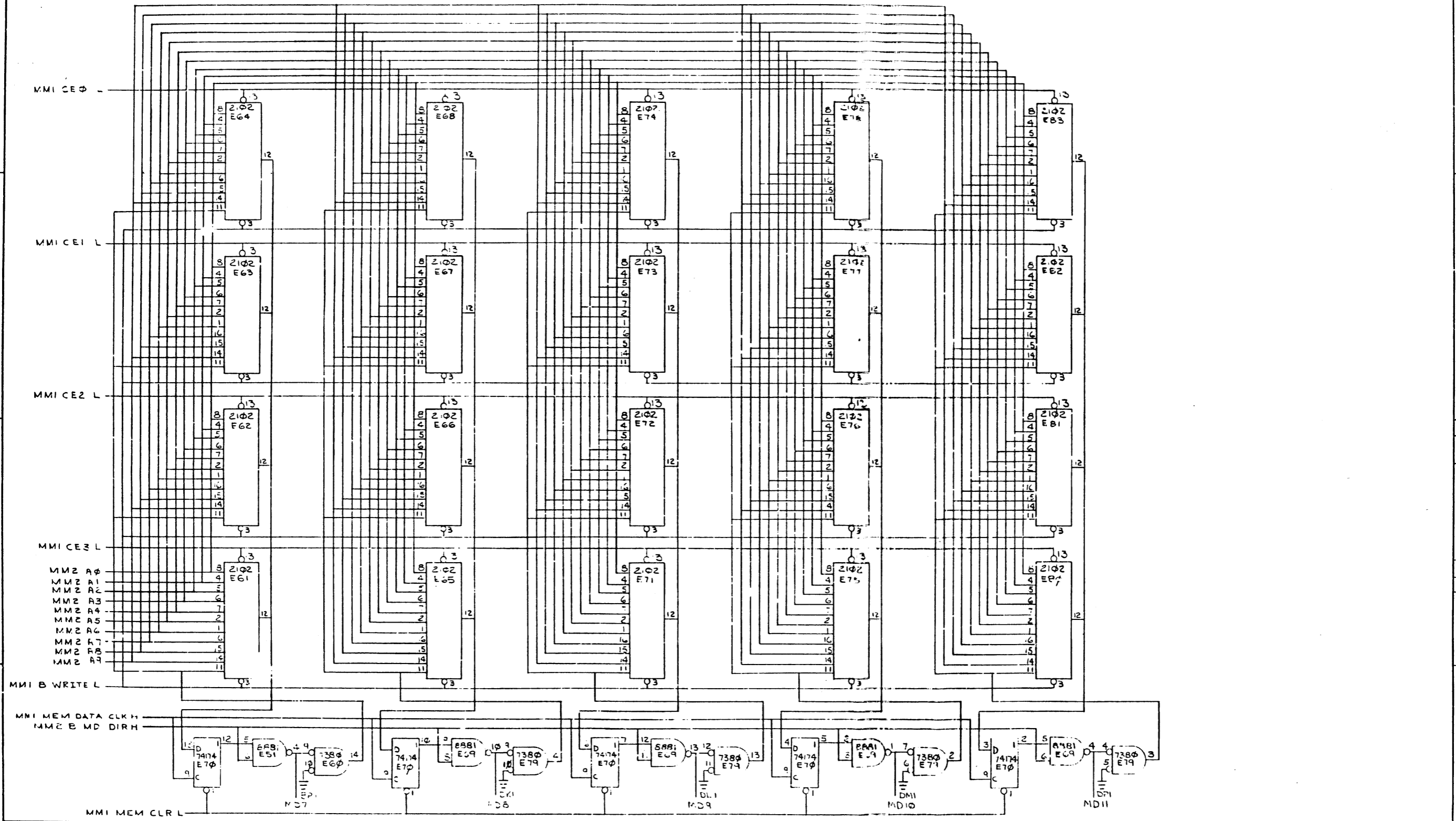
THIS DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © 1973 DIGITAL EQUIPMENT CORPORATION



REVISIONS		
CHK	CHANGE NO	REV

TITLE	4K X 12 MOS MEMORY (MM3)	SIZE CODE	NUMBER	REV.
SCALE	NONE	SHEET	5 OF 5	F
DIST.				

THIS DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © 1973 DIGITAL EQUIPMENT CORPORATION.



REVISIONS		
CHG	CHANGE NO	REV

TITLE	4K X 12 MOS MEMORY (MM2)	SIZE CODE	NUMBER	REV.
SCALE	MONTAGE	SHEET	OF 6	DIST

DCS M8311-0-1 F