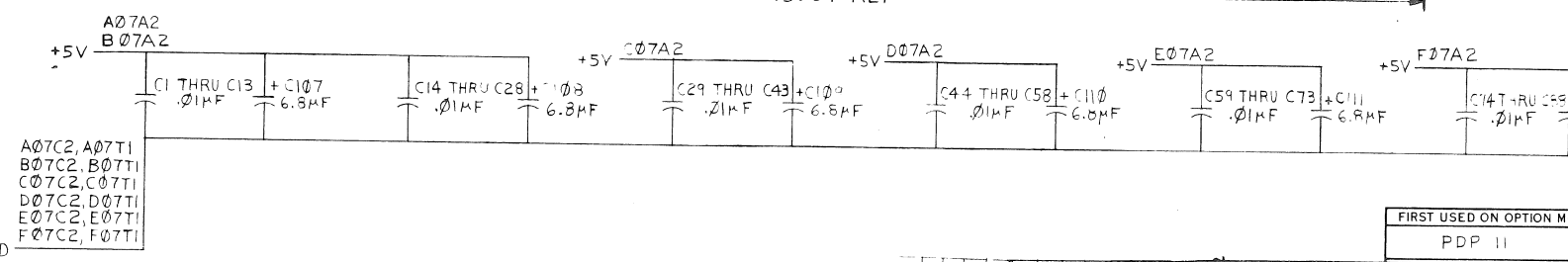
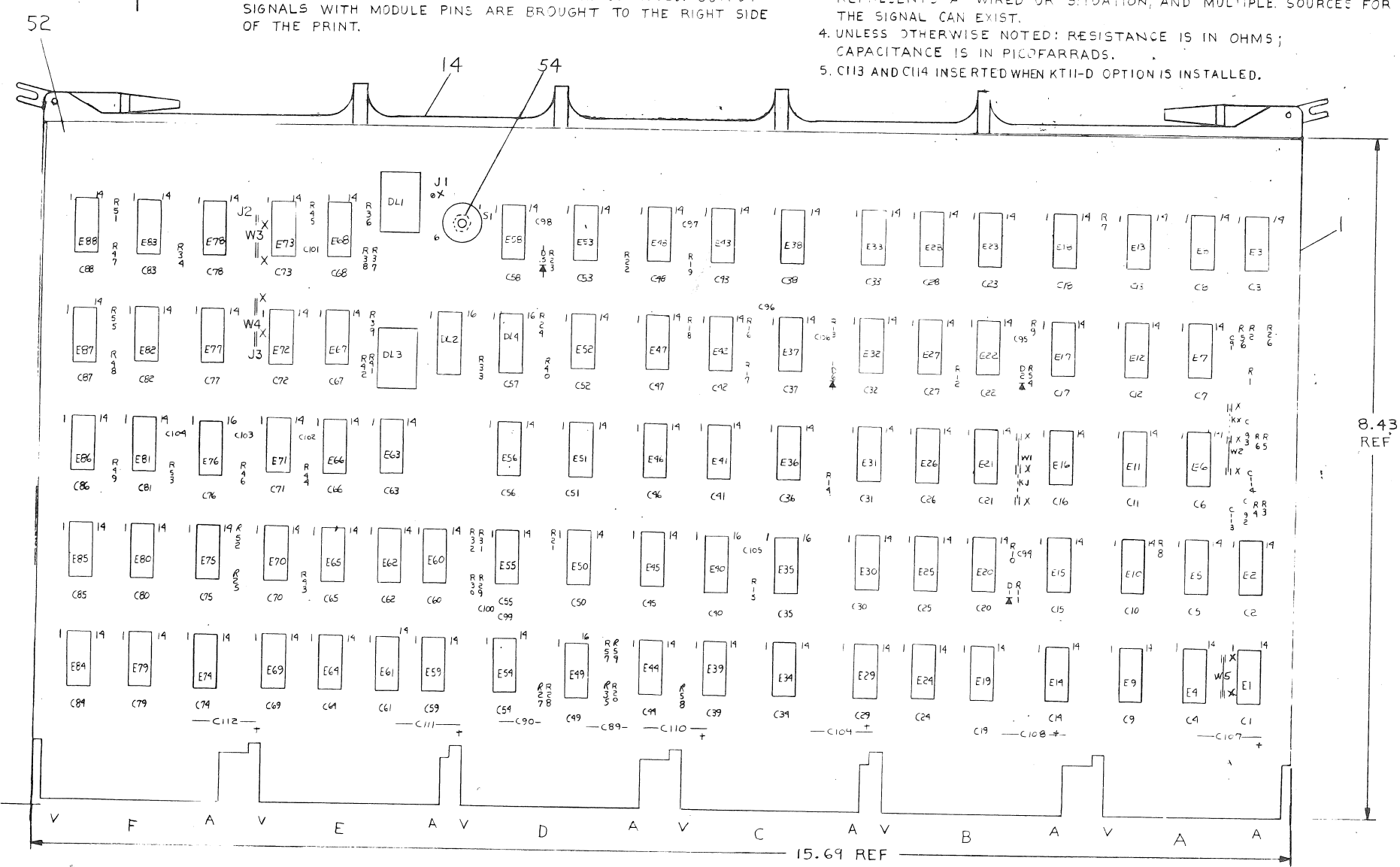


and applications herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied in whole or in part as the basis for the manufacture or sale of items without written permission.

NOTES:

- PIN IDENTIFICATION THROUGHOUT IS BASED UPON MODULE PLACEMENT IN THE K11-A PROCESSOR. MODULE REFERENCE ALONE IS OBTAINED BY DELETING THE NUMBER (NOT LOCATION) AFTER THE FIRST LETTER.
- ALL SIGNALS THAT HAVE MODULE PINS ARE SO NOTED. OUTPUT SIGNALS WITH MODULE PINS ARE BROUGHT TO THE RIGHT SIDE OF THE PRINT.
- PROCESSOR SIGNAL PREFIX NOTATION (K2-1 FOR EXAMPLE) IDENTIFIES THE SIGNAL SOURCE (PRINT AND MODULE). THE FIRST NUMBER AFTER THE K INDICATES THE MODULE PRINT SET, WHILE THE SECOND INDICATES THE SHEET WITHIN THE SET. SIGNALS WITH A 'BUS' PREFIX REPRESENTS A 'WIRED OR' SITUATION, AND MULTIPLE SOURCES FOR THE SIGNAL CAN EXIST.
- UNLESS OTHERWISE NOTED: RESISTANCE IS IN OHMS; CAPACITANCE IS IN PICOFARRADS.
- C113 AND C114 INSERTED WHEN K11-D OPTION IS INSTALLED.



DEC 74175	8	16
DEC 74123	8	16
DEC 380	1	8
IC TYPE	GND	+5V
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE.		

DEC 1088
880-112A

1-0-482W SD
ECO No. 07234-0002 Sheet 4 of 9

5	W1, W2, W3, W4, W5	INSULATED JUMPER	3009185	25
1	USED AS A SPACER	HEX NYLON NUT, # 4-40	9007992	54
12		SPLIT LUGS	9006735	53
12		EYELET	9006732	52
1	E40	I.C. DEC 74175	1910651	51
3	E35, E41, E76	I.C. DEC 74123	1910436	50
				49
4	E26, E30, E56, E19	I.C. DEC 8815	1909713	48
6	E2, E8, E42, E44, E55, E70	I.C. DEC 8881	1909705	47
7	E7, E15, E29, E32, E53, E75, E58	I.C. DEC 7404	1909686	46
5	E10, E27, E78, E83, E12	I.C. DEC 74H74	1909667	45
4	E1, E3, E37, E39	I.C. DEC 380	1909485	44
7	E14, E33, E46, E47, E60, E71, E5	I.C. DEC 74H11	1909267	43
1	E88	I.C. DEC 74H55	1909063	42
3	E77, E82, E6	I.C. DEC 74H53	1909062	41
4	E16, E23, E65, E31	I.C. DEC 74H50	1909060	40
2	E34, E51	I.C. DEC 74H21	1909058	39
4	E17, E4, E41, E69	I.C. DEC 74H10	1909057	38
6	E21, E63, E64, E66, E72, E73	I.C. DEC 74H00	1909056	37
3	E22, E43, E86	I.C. DEC 7402	1909004	36
5	E62, E87, E9, E80, E48	I.C. DEC 74H20	1905635	35
5	E59, E67, E68, E61, E25	I.C. DEC 74H40	1905586	34
				33
				32
				31
				30
10	E18, E20, E28, E36, E45, E52, E74, E79, E84, E85	I.C. DEC 7400	1905575	29
7	E11, E13, E38, E50, E54, E81, E24	I.C. DEC 7474	1905547	28
				27
2	DL2, DL4	DELAY LINE 100NS	1610033	27
1	DL3	DELAY LINE 50NS	1609428	26
1	DL1	DELAY LINE 30NS	1609427	25
				24
2	R20, R28	RES 39K 1/4W ±5%	1302514	24
3	R15, R46, R53	RES 5.6K 1/4W ±5%	1301874	23
				22
23	R1, R2, R3, R5, R7, R8, R12, R18, R21, R22, R25, R26, R27, R31, R32, R34, R43, R47, R48, R49, R51, R52, R55	RES 1K 1/4W ±5%	1300365	22
4	R35, R57, R58, R59	RES 180 1/4W ±5%	1301322	21
5	R1, R10, R14, R17, R24	RES 470 1/4W ±5%	1300316	20
2	R39, R37	RES 330 1/4W ±5%	1300295	19
6	R11, R13, R23, R33, R40, R54	RES 220 1/4W ±5%	1300271	18
2	R38, R41	RES 150 1/4W ±5%	1300250	17
3	R36, R42, R45	RES 100 1/4W ±5%	1300229	16
8	R4, R6, R16, R19, R29, R30, R44, R56	RES 47 1/4W ±5%	1300202	15
				14
1		HANDLE, MODULE	1210711-02	14
1	SI	SWITCH, 10 POS	1210042-01	13
				12
4	D1, D2, D5, D6	DIODE D664	1100114	12
				11
6	C107 THRU C112	CAP 6.8MF 35V ±10% TANT	1005306	11
3	C89, C90, C91	CAP 1200PF 100V ±5% D.M.	1002619	10
2	C104, C105	CAP 27PF 100V ±5% D.M.	1001739	9
88	C1 THRU C88	CAP .01MF 100V ±20% DISC	1001610	8
3	C97, C101, C103	CAP 1000PF 100V ±5% D.M.	1000042	7
				6
3	C92, C99, C100	CAP 470PF 100V ±5% D.M.	1000024	5
5	C94, C96, C98, C102, C106	CAP 330PF 100V ±5% D.M.	1000023	4
2	C93, C95	CAP 220PF 100V ±5 D.M.	1000021	3
				2
				1
1		ETCH CIRCUIT BOARD	5009983	1

QTY REF DESIGNATION DESCRIPTION PART NO. ITEM NO.

FIRST USED ON OPTION MODEL PDP 11

ETCH BOARD REV D

REVISIONS:

CHK	CHANGE NO.	REV
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	10

DEC NO. EIA NO. DEC NO. EIA NO.

SEMICONDUCTOR CONVERSION CHART

SCALE SHEET 1 OF 6

DRN. DATE 6-23-72
CHK'D DATE 7/14/72
ENG. DATE 7/14/72
PROF. DATE 7/14/72
PROD. DATE 7/14/72

NEXT HIGHER ASSY: K11-A

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: TIMING

SIZE CODE: DCS
NUMBER: M7234-0-1
REV. E

K4-1

This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied in whole or in part on the basis for the manufacture or sale of items without written permission.

CLK WAVEFORMS:

U. WORD CONTROL	NAME	WAVEFORMS
K2-8 CLK1 (1)H = 0	CL1	← 140 NS → K4-2 P1 H
K2-8 CLK0 (1)H = 0, 1	CL2	← 200 NS → K4-2 P2 H
K2-8 CLK1 (1)H = 1	CL3	← 200 NS → ← 300 NS → K4-2 P2 H

NOTE:
* SYMBOL ON SCHEMATIC INDICATES NOMINAL SETTING FOR A CLI TIME ≥ 135NS. DETAILS ON CLOCK ADJUSTMENTS NOTED BELOW.

XOR TEST:
JUMPERS W3 AND W4 ARE REMOVED ONLY DURING XAP MODULE TEST. THEY ARE NORMALLY INSERTED.

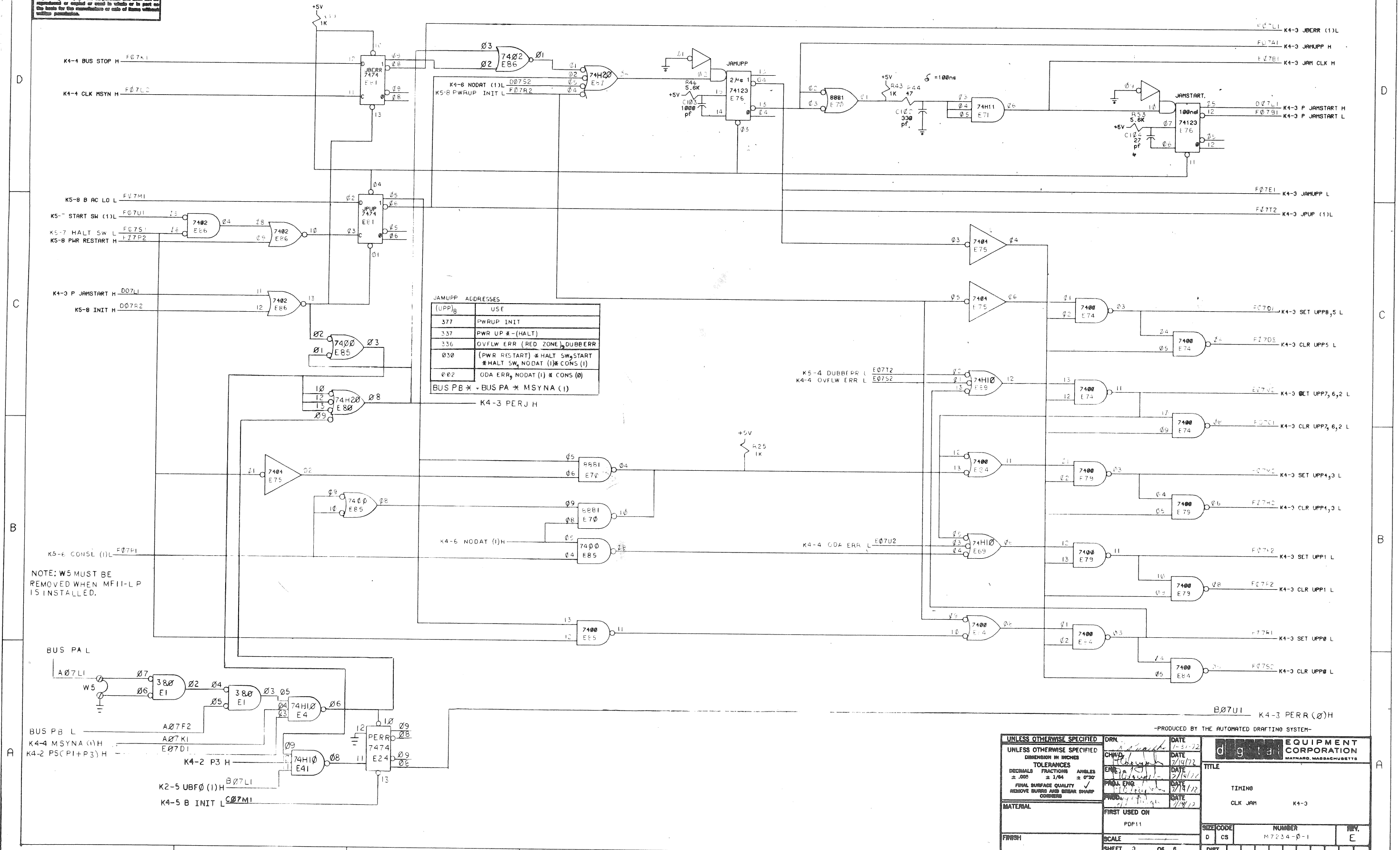
CLOCK ADJUSTMENT:
CLOCK ADJUSTMENT REQUIRES A DUAL-TRACE OSCILLOSCOPE WITH ONE CHANNEL (TP66PH13) ON K4-2 P END H AND THE OTHER CHANNEL ON K4-2 P1 H. THE MACHINE SHOULD BE IN THE CONSOLE LOOP WAITING FOR A SWITCH ACTIVATION (HWP) WORDS CON04 (02C) AND CON06 (04E). THIS LOOP IS USUAL WHEN IN CONSOLE MODE, OR MAY BE FORCED BY A START IN THE HWT MODE. THE S1 SWITCH IS ADJUSTED (10 NANO SECONDS INCREMENTS) UNTIL THE CLI INTERVAL NOTED BELOW IS ≥ 135 NANO SECONDS.



-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED	DRN.	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	CHK'D	DATE	
TOLERANCES	ENR	DATE	TITLE
DECIMALS FRACTIONS ANGLES	PRD	DATE	TIMING
± .008 ± 1/64 ± 0°30'	PROD.	DATE	CLOCK
FINISH	FIRST USED ON	DATE	K4-2
	POP11	DATE	
SCALE	SIZE CODE	NUMBER	REV.
SHEET 2 OF 6	D CS	M7234-0-1	E

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 on the basis of the manufacture or sale of items without written permission.



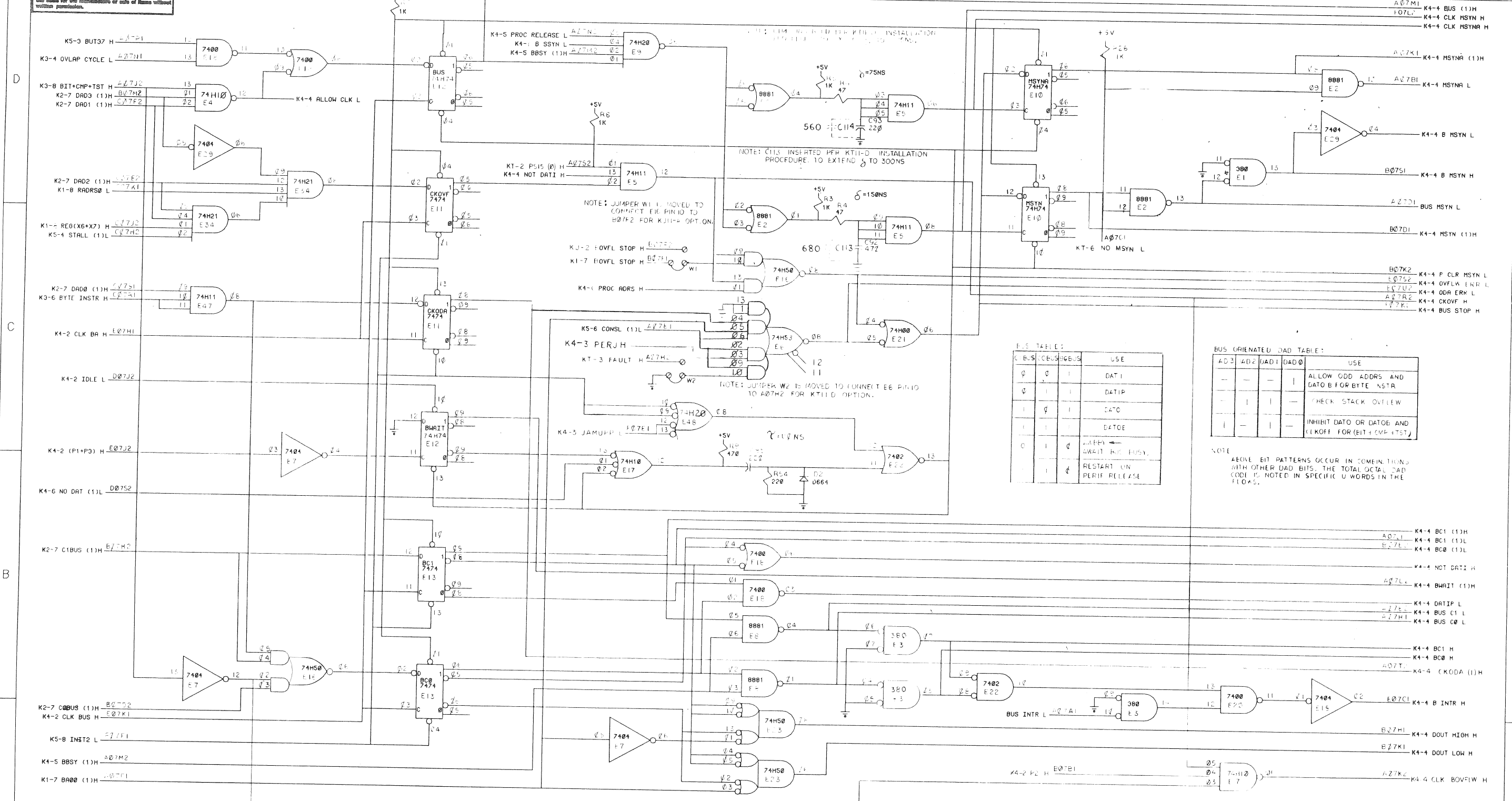
(UPP) _B	USE
377	PWR UP *-(HALT)
336	OVFLW ERR (RED ZONE), DUBBERR
030	(PWR RESTART) * HALT SW, START * HALT SW, NODAT (1) * CONS (1)
002	ODA ERR, NODAT (1) * CONS (0)

NOTE: W5 MUST BE REMOVED WHEN MF11-L P IS INSTALLED.

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED		DRN	DATE	DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED		CHKD	DATE	TITLE	
DIMENSION IN INCHES		ENGR	DATE	TIMING	
TOLERANCES		PRG	DATE	CLK JAH K4-3	
DECIMALS FRACTIONS ANGLES		PROV	DATE	FIRST USED ON	
± .05 ± 1/64 ± 30°		PDP11		SIZE CODE	
FURNISH SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS		SCALE		NUMBER	
MATERIAL		SHEET 3 OF 8		M7234-0-1	
FINISH		DIST.		REV. E	

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.



E-S TABLE:

C	B	S	C	B	S	USE
0	0	1	1	1	1	DAT1
0	1	1	1	1	1	DATIP
1	0	1	1	1	1	DAT0
1	1	1	1	1	1	DAT0E
0	1	0	1	1	1	WAIT FOR BUS
1	1	0	1	1	1	RESTART ON PERIF RELEASE

BUS ORIENTED DAD TABLE:

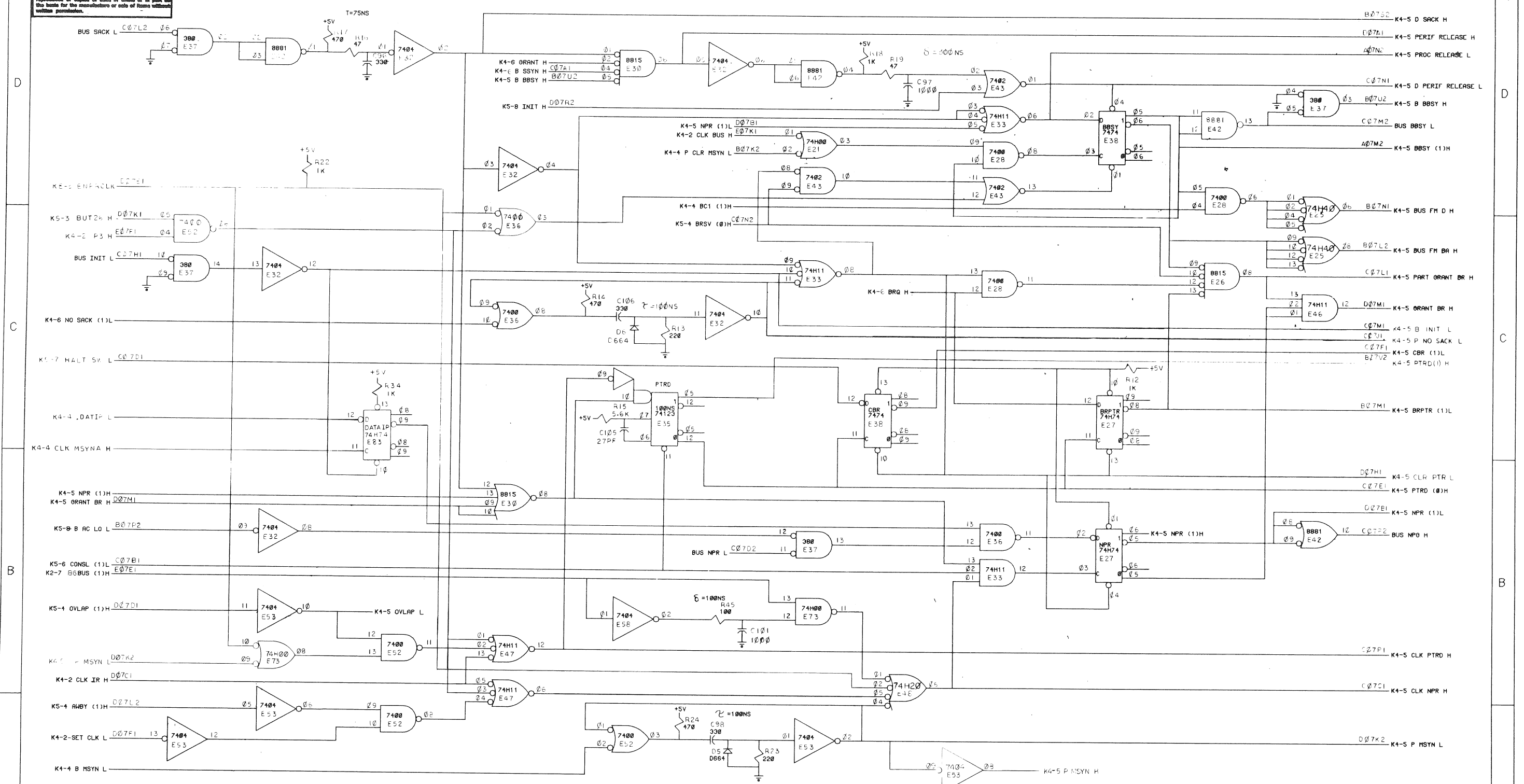
AD3	AD2	DAD1	DAD0	USE
-	-	-	-	ALLOW ODD ADDRS AND DAT0 B FOR BYTE ASTR
-	-	-	-	CHECK STACK OVLW
-	-	-	-	INHIBIT DAT0 OR DAT0E AND CKOFF FOR (BIT+CMP+TST)

NOTE: ABOVE BIT PATTERNS OCCUR IN COMBINATION WITH OTHER DAD BITS. THE TOTAL OCTAL DAD CODE IS NOTED IN SPECIFIC U WORDS IN THE FLOWS.

UNLESS OTHERWISE SPECIFIED

DRN.	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D	DATE	
ENR.	DATE	TITLE
PRD/ENGR	DATE	
PROD/ENGR	DATE	TIMING
FIRST USED ON	DATE	
MATERIAL		BUS DATA CNTRL K4-4
FINISH		
SCALE		SIZE CODE
SHEET 4 OF 6		NUMBER
		REV.
		E

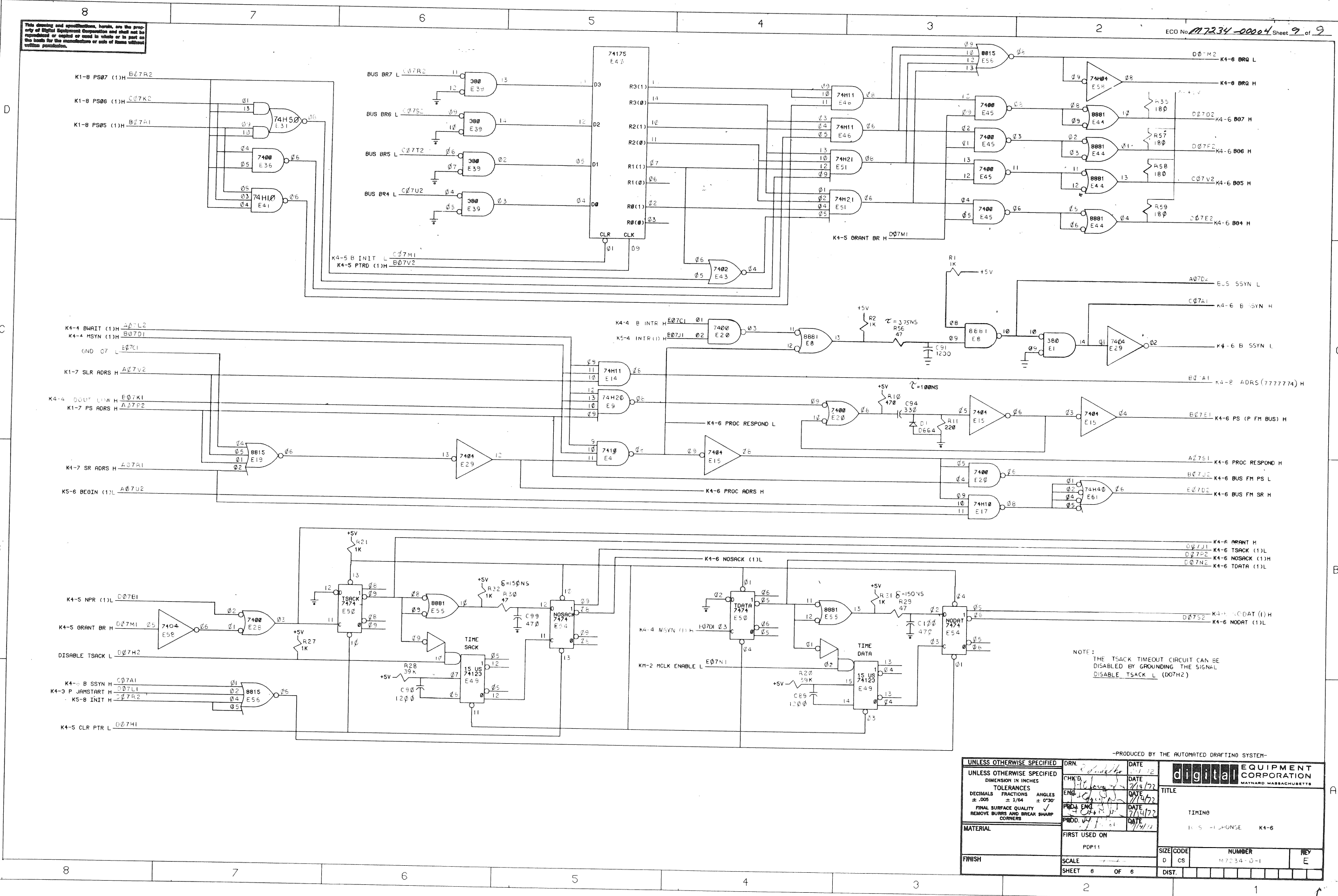
This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied in whole or in part without the written permission of the manufacturer or copy of items without written permission.



-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED		DRN	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED		CHKD	DATE	TITLE	
DIMENSION IN INCHES		ENG	DATE	TIMING	
TOLERANCES		PROJ ENGR	DATE	BUS OWNERSHIP K4-5	
DECIMALS FRACTIONS ANGLES		MOD. OF PROJ	DATE	SIZE CODE	
±.005 ± 1/64 ± 0°30'		DATE	DATE	NUMBER	
PRIME SURFACE QUALITY		DATE	DATE	REV. E	
REMOVE BURRS AND BREAK SHARP CORNERS		DATE	DATE	MATERIAL	
FIRST USED ON		SCALE		SHEET 5 OF 8	
PDP11		DWT.		DWT.	

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



-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS FRACTIONS ANGLES ±.005 ±.1/64 ±.030° FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	DRN	DATE	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	TITLE TIMING K4-6
	CHK'D	DATE		
MATERIAL	ENG	DATE	SIZE CODE	NUMBER
	PRD. ENG.	DATE		
FINISH	PRDD. V	DATE	SCALE	SHEET
	FIRST USED ON	DATE		
	PDP11			