

**GT40 graphic  
display terminal  
engineering drawings**

# DRAWING DIRECTORY

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## CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

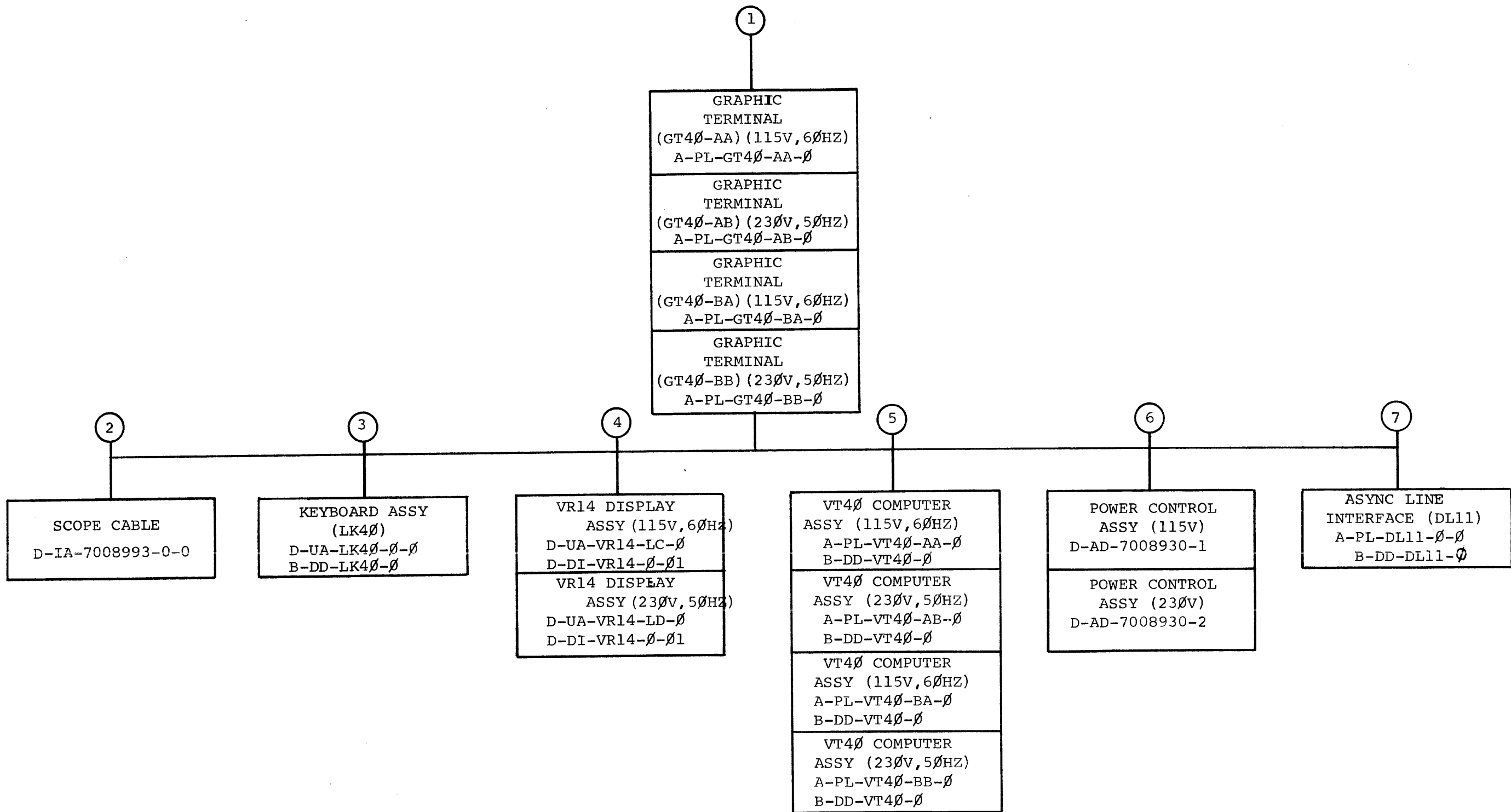
	SEQUENCE <span style="font-size: 2em;">7</span>	SEQUENCE <span style="font-size: 2em;">7</span>
GRAPHIC TERMINAL (GT4Ø)	A-PL-GT4Ø-Ø-Ø	
KEYBOARD ASSY (LK4Ø)	B-DD-LK4Ø-Ø	
DISPLAY (VR14)	A-ML-VR14-Ø	
VT4Ø COMPUTER ASSY	B-DD-VT4Ø-Ø	
POWER CONTROL ASSY	D-AD-7008930-0-0	
BASE DIAGRAMS	D-SP-GT4Ø-Ø-2	
INTERCONNECT DIAGRAM	D-IC-GT4Ø-Ø-3	
DISPLAY PROCESSOR	D-BD-GT4Ø-Ø-4	
SET GRAPHIC MODE	D-FD-GT4Ø-Ø-5	
DISPLAY JUMP	D-FD-GT4Ø-Ø-6	
NO OPERATION	D-FD-GT4Ø-Ø-7	
LOAD STATUS REGISTER A	D-FD-GT4Ø-Ø-8	
LOAD STATUS REGISTER B	D-FD-GT4Ø-Ø-9	
GRAPH X OR GRAPH Y	D-FD-GT4Ø-Ø-10	
POINT MODE	D-FD-GT4Ø-Ø-11	
VECTOR MODE	D-FD-GT4Ø-Ø-12	
SHORT VECTOR OR REL PT. CHARACTER GEN.	D-FD-GT4Ø-Ø-13	
	D-FD-GT4Ø-Ø-14	
CHAR. GEN. LOGIC TIMING	D-FD-GT4Ø-Ø-16	
WIRE LIST	K-WL-GT4Ø-Ø-WL	
SCOPE CABLE	D-IA-7008993-0-0	
ASYNC LINE INTERFACE	B-DD-DL11-Ø	
LIGHT PEN AMPLIFIER	B-DD-375-Ø	

UNIT VARIATIONS		PRINT SET		
VAR	TITLE	GT4Ø-Ø		
GT4Ø-AA	GRAPHIC TERM(GT4Ø) (115V, 60HZ)	x		
GT4Ø-AB	GRAPHIC TERM(GT4Ø) (23ØV, 50HZ)	x		
GT4Ø-BA	GRAPHIC TERM(GT4Ø) (115V, 60HZ)	x		
GT4Ø-BB	GRAPHIC TERM(GT4Ø) (23ØV, 50HZ)	x		

REVISONS	DATE	CHK NO.	REV
	11/72	GT4Ø-4	A
	2/73	GT4Ø-7	B

USED ON OPTION/MODEL		DRN. C. MCCOY	DATE 10/16/72	TITLE  GRAPHIC TERMINAL (GT4Ø)
		CHK'D. <i>[Signature]</i>	DATE 10-22-72	
		PROJ ENG. <i>[Signature]</i>	DATE 10/24/72	
		PROD. <i>[Signature]</i>	DATE 10/24/72	
FIELD SERV.		<i>[Signature]</i>	DATE 10/26/72	SIZE CODE B DD
SHEET 1 OF 3		DIST		NUMBER GT4Ø - Ø
REV B				





TITLE	SHEET	OF	SIZE	CODE	NUMBER	REV
GRAPHIC TERMINAL (GT4Ø)	2	3	B	DD	GT4Ø-Ø	B

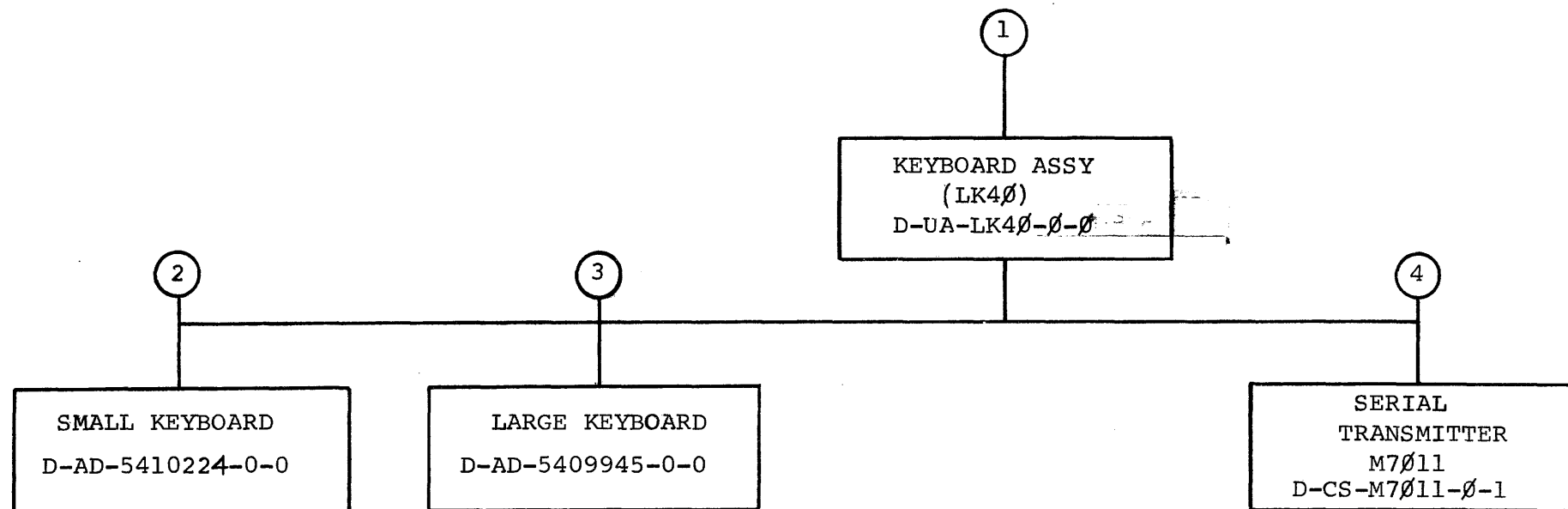
CUSTOMER PRINT SET				ELECTRICAL					CUSTOMER PRINT SET				MECHANICAL								
GT40-0				MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE	GT40-0				MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X					1	D-SP-GT40-0-2	*	4	BASE DIAGRAMS		X					1	A-PL-GT40-0-0	*	1	GRAPHIC TERMINAL (GT40)	
X						D-IC-GT40-0-3	*	1	INTERCONNECT DIAGRAM												
X						D-BD-GT40-0-4	*	1	DISPLAY PROCESSOR												
X						D-FD-GT40-0-5	*	1	SET GRAPHIC MODE												
X						D-FD-GT40-0-6	*	1	DISPLAY JUMP												
X						D-FD-GT40-0-7	*	1	NO OPERATION												
X						D-FD-GT40-0-8	*	1	LOAD STATUS REGISTER A		C					3	D-UA-LK40-0-0		2	KEYBOARD ASSY (LK40)	
X						D-FD-GT40-0-9	*	1	LOAD STATUS REGISTER B								B-DD-LK40-0	#	3	KEYBOARD ASSY (LK40)	
X						D-FD-GT40-0-10	*	1	GRAPH X OR GRAPH Y												
X						D-FD-GT40-0-11	*	1	POINT MODE												
X						D-FD-GT40-0-12	*	1	VECTOR MODE							4	D-UA-VR14-0-0		3	VR14 DISPLAY ASSY	
X						D-FD-GT40-0-13	*	1	SHORT VECTOR OR REL. POINT		C						A-PL-VR14-0-0		3	VR14 DISPLAY ASSY (PL)	
X						D-FD-GT40-0-14	*	1	CHARACTER GENERATOR								A-ML-VR14-0	#	1	MASTER LIST (VR14)	
						A-SP-GT40-0-15	*	39	ENGINEER SPECIFICATIONS												
X						D-TD-GT40-0-16	*	5	CHAR. GEN. LOCK TIMING							5	A-PL-VT40-0-0		1	VT40 COMPUTER ASSY	
C						K-WL-GT40-0-WL	B		WIRE LIST		C						B-DD-VT40-0	#	3	VT40 COMPUTER ASSY	
											X					6	D-AD-7008930-0-0	#	1	POWER CONTROL ASSY	
X					2	D-IA-7008993-0-0	#	1	SCOPE CABLE		C						B-DD-375-0	#	3	LIGHT PEN AMPLIFIER	
					7	A-PL-DL11-0-0		1	ASYNCH LINE INTERFACE												
C						B-DD-DL11-0	#	3	ASYNCH LINE INTERFACE	DL11-3											

CUSTOMER PRINT SET CODES  
X = PRINT OF DOCUMENT INCLUDED IN PRINT SET  
C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT  
S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE: GRAPHIC TERMINAL (GT40)  
SHEET 3 OF 3  
SIZE CODE: B DD  
NUMBER: GT40-0  
REV: B



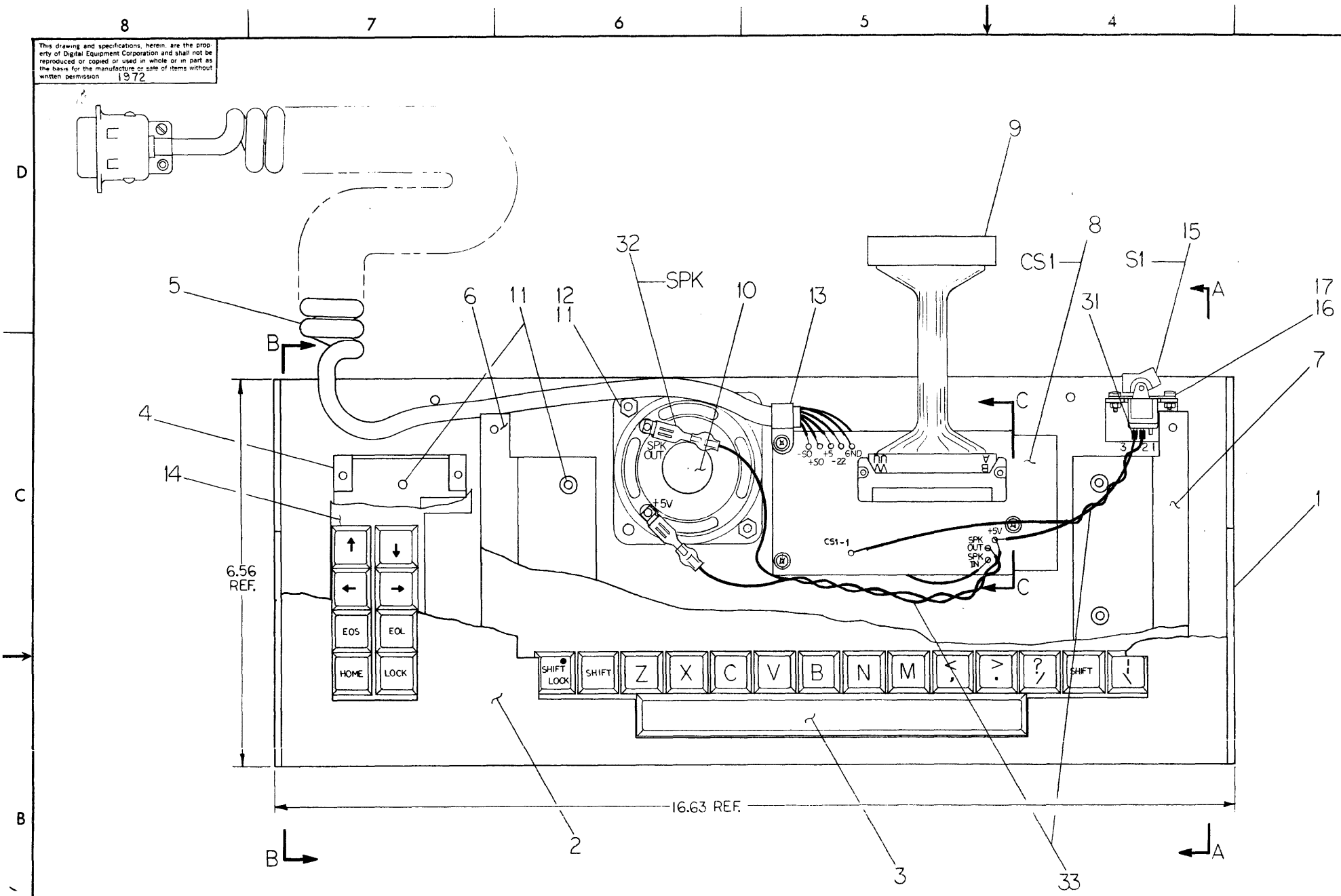




TITLE	SHEET	OF	SIZE	CODE	NUMBER	REV
KEYBOARD ASSY (LK4Ø)	2	3	B	DD	LK4Ø-Ø	A



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TOP VIEW  
PARTIAL TOP COVER AND  
PARTIAL LARGE & SMALL  
KEYBOARD

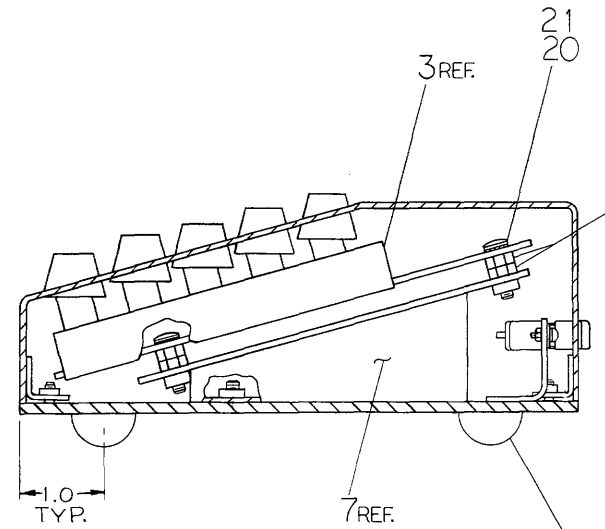
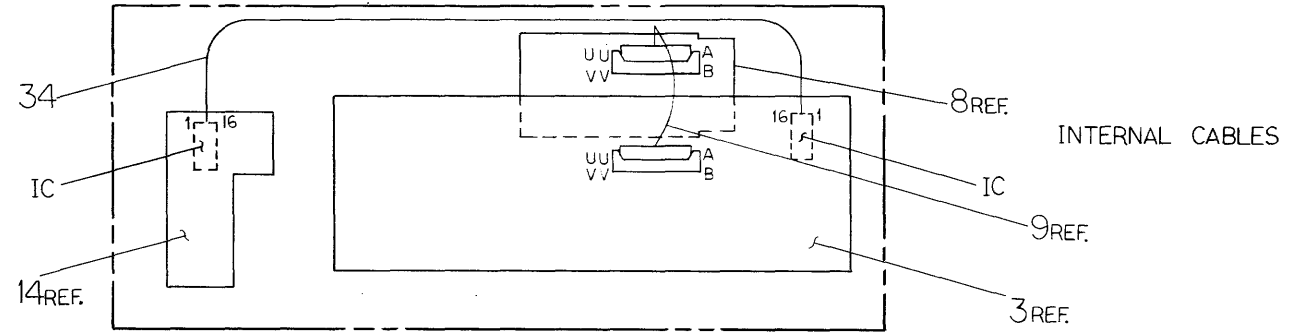
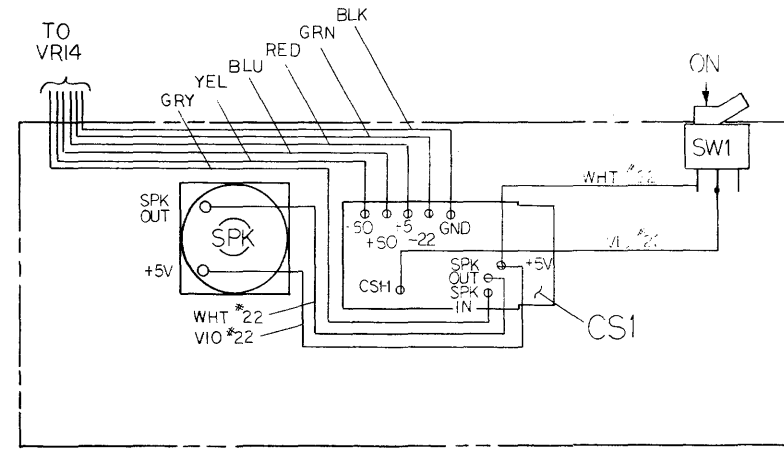
3	WASHER, INT. TOOTH #4	9006632	36
4	WASH., FLAT NYLON #4	9006706	35
1	CABLE, INTRA-KEYBOARD	7008612-18	34
A/R	WIRE, #22 AWG TWP WHT/V10	9107420-79	33
2	TERM., SOLDERLESS	9007917	32
A/R	TUBING, HEAT SHRINK	9107255-09	31
2	SCREW, PHL. PAN HD. #4-40x3/16	9008032-1	30
3	SCREW, PHL. FLT. HD #4-40x1/4	9006009-2	29
3	SPACER, FIBER #4-40x5/16	9007623	28
1	STRAIN RELIEF	9008492-1	27
4	FOOT, HEMISPHERE, 3M SJ5017	9008525	26
4	SCREW, PHL. FLT. HD. #6-32x1/4	9006020-2	25
1	SCREW, PHL. PAN HD. #4-40x5/16	9006010-1	24
4	SCREW, PHL. PAN HD. #4-40x5/16	9006010-1	23
4	WASH., INT. TOOTH LOCK #4	9006632	22
4	SCREW, PHL. PAN HD. #8-32x1/2	9006039-1	21
4	WASH., INT. TOOTH LOCK #8	9006634	20
4	SPACER, AL. HEX. 1/8 LG. #4	9006791	19
8	SPACER, AL. HEX. 1/8 LG. #8	9006795	18
2	NUT, KEPS #4-40	9006557	17
2	SCREW, PHL PAN HD #4-40x1/4	9008301-1	16
1	SWITCH, #7101-J1 ZBE C&K	1210894	15
1	KEYBOARD, SMALL	5410229	14
1	CLAMP, CABLE NYLON 1/4"	9007081	13
2	NUT, KEPS #8-32	9006563	12
8	SCREW, PHL FLT. HD., #8-32x3/8 LG	9006037-2	11
1	SPEAKER, BELL	1210299	10
1	CABLE, KEYBOARD	D-IA-7008960-0-0	9
1	SERIAL TRANSMITTER	M7011	8
1	BRACKET, LARGE KEYBOARD	7408638-1	7
1	BRACKET, LARGE KEYBOARD	7408638-2	6
1	KEYBOARD CABLE	D-IA-7008959-0-0	5
1	BRACKET, SMALL KEYBOARD	C-IA-7409761-0-0	4
1	KEYBOARD, LARGE	5409945	3
1	COVER, KEYBOARD	D-IA-7409833-0-0	2
1	BASEPLATE, KEYBOARD	E-IA-7409834-0-0	1

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
LK40				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN. <i>CEM</i>	DATE 8-9-72	<b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS	CHK'D.	DATE 8-21-72		
ANGLES	ENG.	DATE		
.XXX = .005 .XX = .02 .X = .1	PROJ. ENG.	DATE 8-26-72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD.	DATE 8-21-72	TITLE	
MATERIAL	NEXT HIGHER ASSY.		KEYBOARD ASSY, (LK40)	
FINISH			SIZE CODE	NUMBER
			DUA	LK40-0-0
			SCALE	REV.
			1/1	B
			SHEET 1 OF 2	
			DIST.	

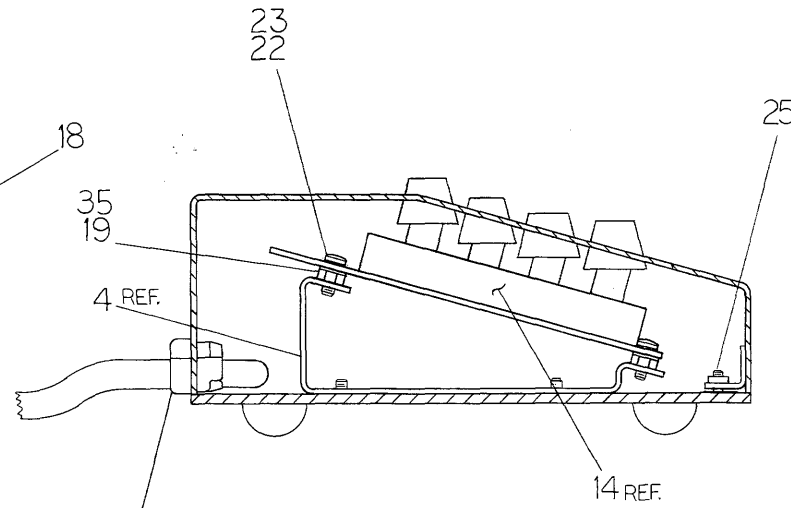
BRUNING 40-107-15868	REV. 1	DATE 8-21-72
REVISIONS	CHANGE NO.	REV.
	GT40-00001	A
	CRABBE	
	LK40-00002	B
	CRABBE	
	1/24/73	
	2-16-73	

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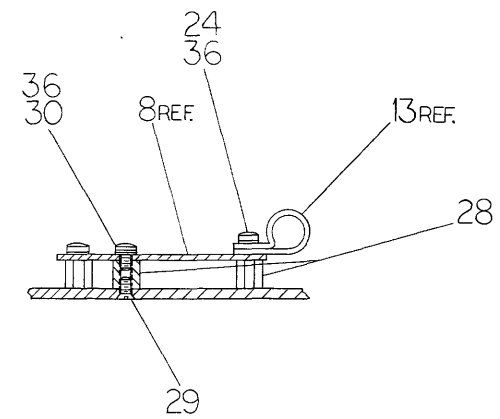
WIRE TABLE						
ITEM NO.	DESCRIPTION	FROM		TO		REMARKS
		CONNECTION	WITH	CONNECTION	WITH	
5	*18	GRN	---	---	CS1, -22	SOLDER
		YEL	---	---	CS1, +5V	
		REL	---	---	CS1, +5	
		GRY	---	---	CS1, GRY IN	
		BLU	---	---	CS1, +50	
5	*18	BLK	---	---	CS1, GND	
33	*22	WHT	SPK OUT	32	CS1, SPK OUT	
	TWP	VIO	SPK +5V	32	CS1, +5V	
33	*22	VIO	S1-3	SOLDER	CS1, +5V	USE ITEM 31
	TWP	WHT	S1-2	SOLDER	CS1-1	SOLDER USE ITEM 31



SECTION A-A  
(LARGE KEYBOARD)



SECTION B-B  
(SMALL KEYBOARD)



SECTION C-C

REV	
CHK	
CHN	
DES	

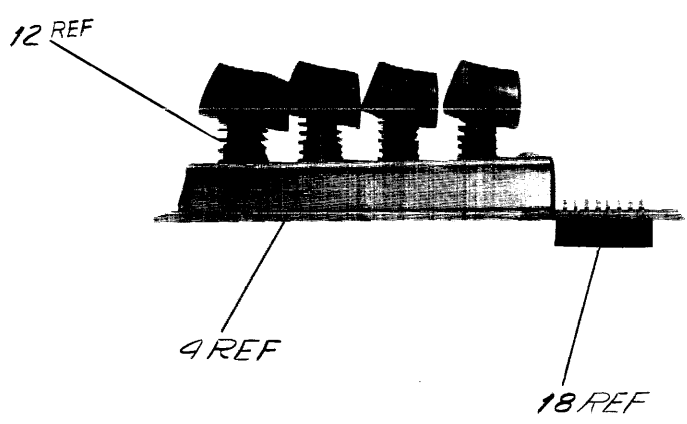
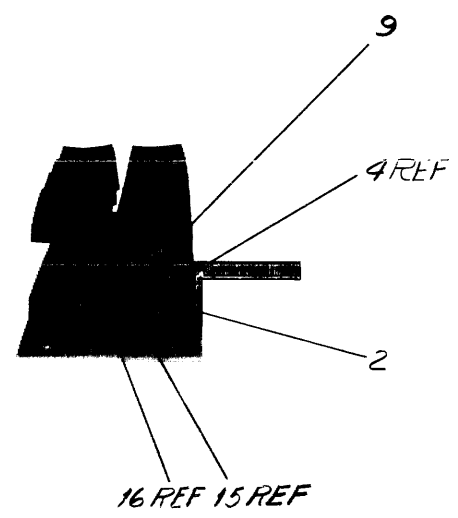
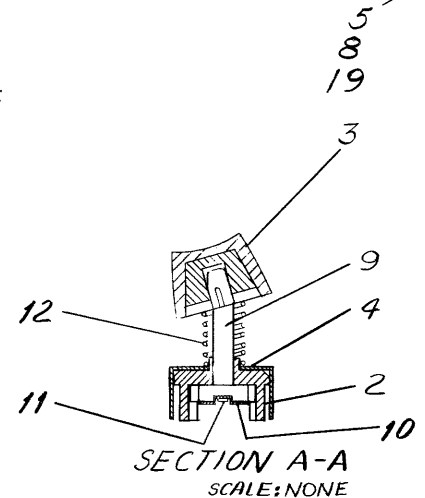
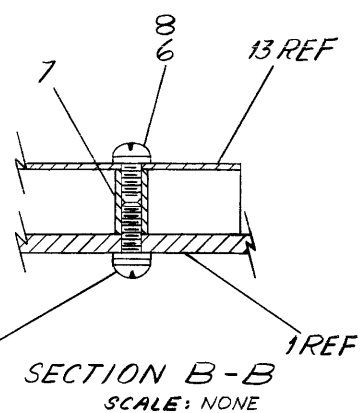
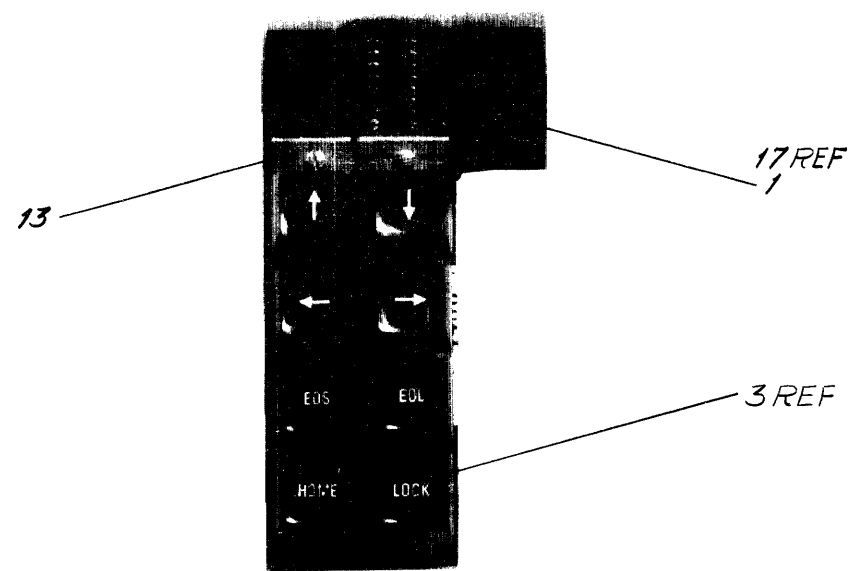
DEC FORM NO. DRD 100-A

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
LK40		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DRN: <i>CBH/Caj</i>	DATE: 8-18-72		
TOLERANCES	CHK'D:	DATE: 8-1		
DECIMALS	ENG.	DATE:		
ANGLES	PROJ. ENG.	DATE: 8-24-72		
xxx = .005	PROR: <i>CBH/Caj</i>	DATE: 8-24-72	TITLE: KEYBOARD ASS'Y (LK40)	
xx = .02			MATERIAL: NEXT HIGHER ASSY	
x = .1			FINISH: ---	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY			SCALE 1/1	
			SHEET 2 OF 2	
			SIZE CODE: B-UL LK40	
			NUMBER: DUA LK40-0-0	
			REV: B	



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NOTES:  
 1 FOR REFERENCE INFO REFER TO  
 DWG. NO. D-AD-5409945-0-0



QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	ETCH CIRCUIT BOARD	5010223	20
2	NYLON WASHER	9009263	19
1	SOCKET, 16 PIN IC	1210025	18
8	TRANSISTOR NPN	1510948	17
1	CAP. .005 UF	1001765	16
8	RES. 1/4 W 5% 68K (CARBON COMP)	1301327	15
REF	CURSOR BOARD (KEYBOARD)	D-CS-5410224-0-1	14
1	DUST COVER, SHORT	B-MD-7410521-0-0	13
8	SPRING, LIGHT	9009161	12
8	SCREW, DRIVE 3/16	9009162	11
8	PLATE, COUPLING	C-MD-7409516-0-0	10
8	KEY SHAFT, STEPPED 90° TURN	D-MD-7410599-0-0	9
4	WASHER, #2	9006631	8
2	STANDOFF, CHANNEL	B-MD-7409538-0-0	7
2	SCREW, #2-56 X 1/4 LG	9006001-9	6
2	SCREW, #2-56 X 5/16 LG	9006002-9	5
2	CHANNEL MACHINING	C-MD-7410520-0-0	4
1 SET	KEY CAP, SINGLE	D-PS-9003198-69-0	3
8	KEY GUIDE	C-MD-7409525-0-0	2
REF	P/C BOARD, CURSOR BOARD	D-JA-5010223-0-0	1

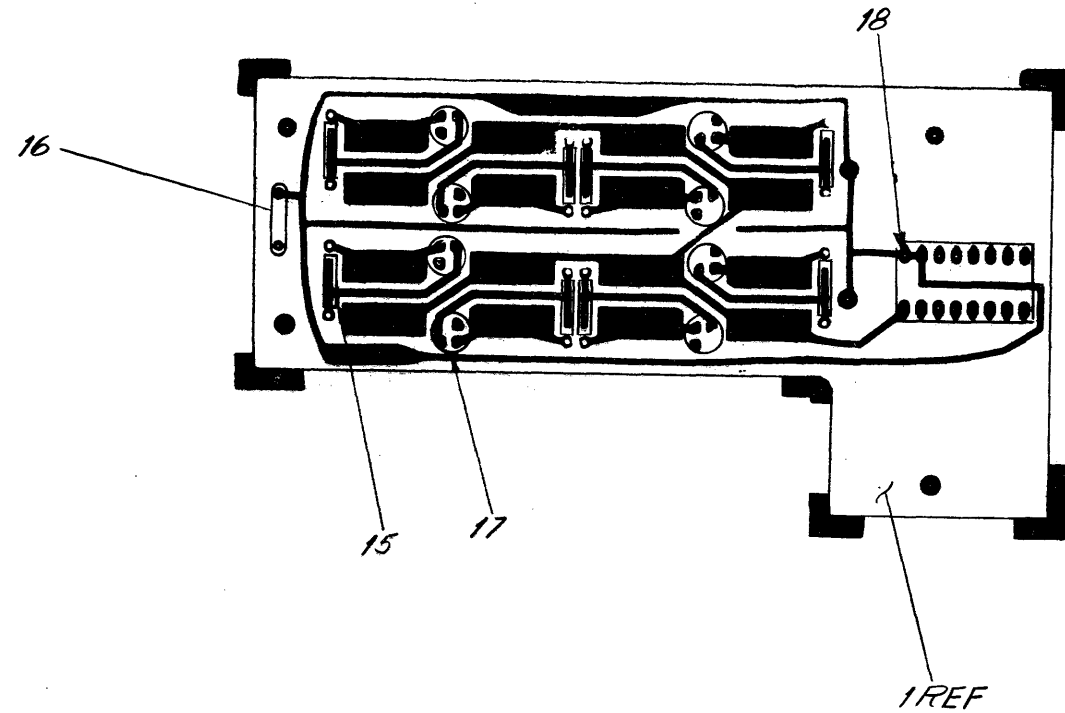
FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
VT05					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN	D. Schmidt	DATE	7-17-72
DECIMALS		CHK'D	B. Hatrop	DATE	7-27-72
ANGLES		ENG	Jean S. Schuman	DATE	7-31-72
xxx .005		PROJ. ENG.	D. W. Scler	DATE	7/24/72
xx .02		PROD	R. Davis	DATE	8/1/72
x .05		REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY			
MATERIAL		NEXT HIGHER ASSY.			
SEE PARTS LIST		D-UA-VT05-0-0		SIZE CODE	D AD 5410224-0-0
FINISH		SCALE NONE		NUMBER	2
		SHEET OF 2		REV.	

**digital** EQUIPMENT CORPORATION  
 WATFORD, MASSACHUSETTS  
 TITLE  
 CURSOR BOARD ASSY  
 (KEYBOARD)

REV.	CHANGE NO.

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REV. NUMBER  
D AD 5410224-0-0 2



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN <i>D. Schmidt</i>	DATE 7-20-72	<b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
DECIMALS .XXX ±.006 ANGLES ±0° 30'		CHK'D <i>P. B. Smith</i>	DATE 7-29-72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		PROJ. ENG. <i>D. W. Allen</i>	DATE 7/11/72	TITLE CURSOR BOARD ASSY (KEYBOARD)
MATERIAL	NEXT HIGHER ASSY.	PROD. <i>R. Davis</i>	DATE 9/16/72	SIZE CODE D AD 5410224-0-0
FINISH	SCALE NONE	SHEET 2 OF 2		REV.

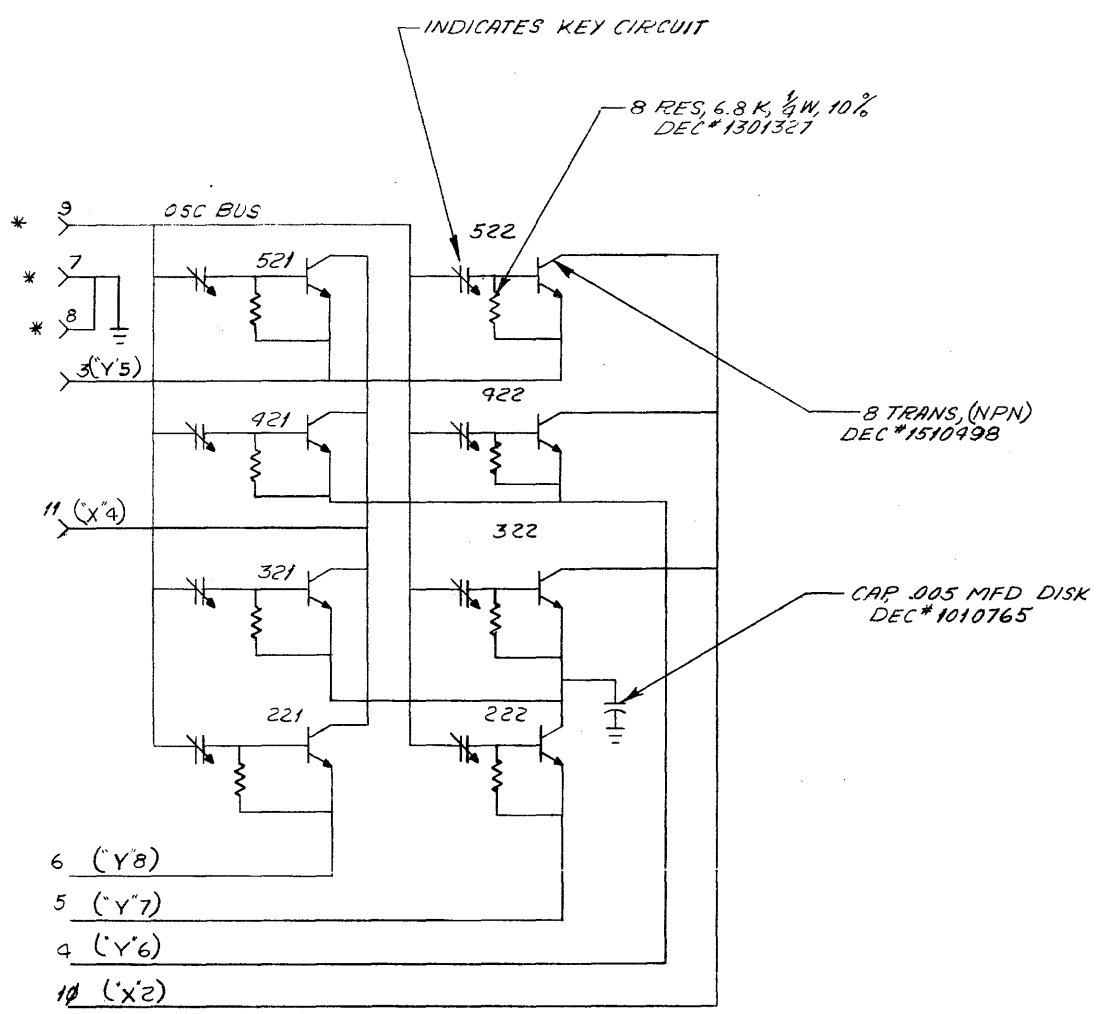
REV.	NO.	CHANGE	NO.

DEC FORM NO DRD 100-A

REV. NUMBER  
D AD 5410224-0-0

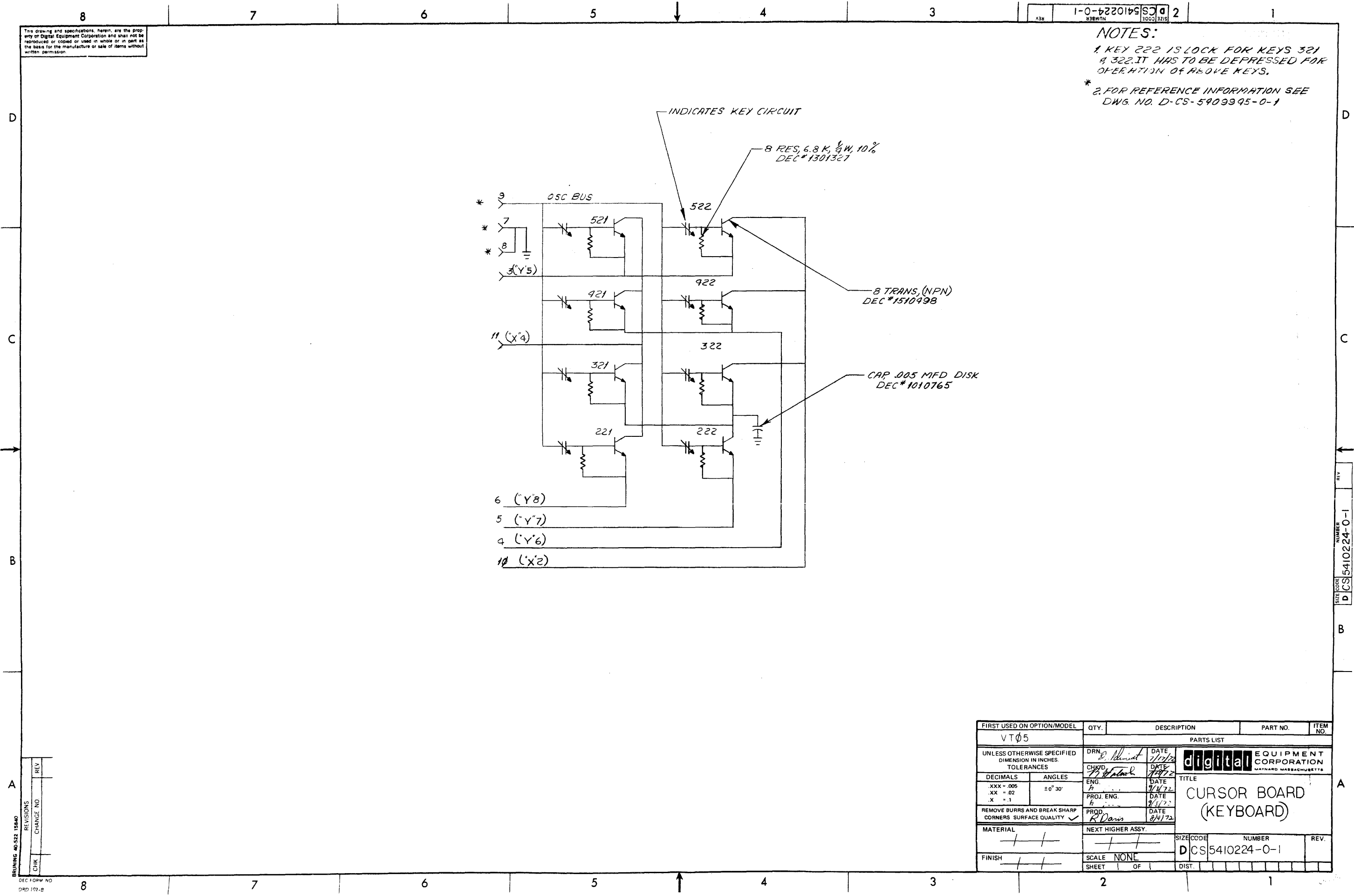
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**NOTES:**  
 1. KEY 222 IS LOCK FOR KEYS 321 & 322. IT HAS TO BE DEPRESSED FOR OPERATION OF ABOVE KEYS.  
 \* 2. FOR REFERENCE INFORMATION SEE DWG. NO. D-CS-5909995-0-1



BRUING 40-522 15840	REVISIONS	REV
CHK	CHANGE NO	

FIRST USED ON OPTION/MODEL VT05	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN <i>D. Miniat</i>	DATE 7/1/72	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .XXX = .005 .XX = .02 .X = .1	CHK'D <i>T. F. Falm</i>	DATE 7/27/72		
ANGLES ±0° 30'	ENG. <i>R</i>	DATE 7/14/72	TITLE <b>CURSOR BOARD (KEYBOARD)</b>	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROJ. ENG. <i>h</i>	DATE 7/1/72		
MATERIAL	PROD. <i>R. Davis</i>	DATE 8/14/72	SIZE CODE <b>DCS 5410224-0-1</b>	
FINISH	NEXT HIGHER ASSY.			
SCALE NONE			NUMBER	REV.
SHEET OF 1				

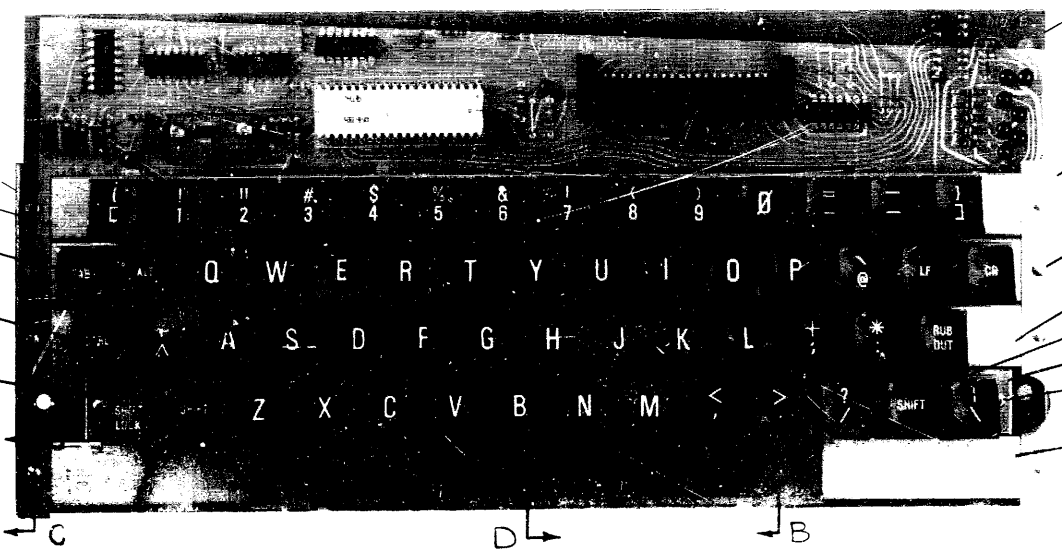


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NOTES:

- \*1. IF ITEM #11 (COMPLETE SET) IS ORDERED DO NOT ORDER ITEM #4 (9 KEY SPACE BAR) AS IT IS PART OF COMPLETE SET WHEN ORDERED FROM CONTROL DEVICES. IF INDIVIDUAL KEYCAPS (ITEM #11) ARE ORDERED ITEM #4 MUST THEN BE ORDERED ALSO AS PER PARTS LIST.
2. FOR COMPONENT ASSY INFORMATION ON ITEM #1 (PC BOARD) REFER TO SHEET #3
3. FOR CIRCUIT SCHEMATIC INFORMATION REFER TO DWG D-CS-5409945-1

D  
C  
B  
A



SEE NOTE #2 & SHEET #3

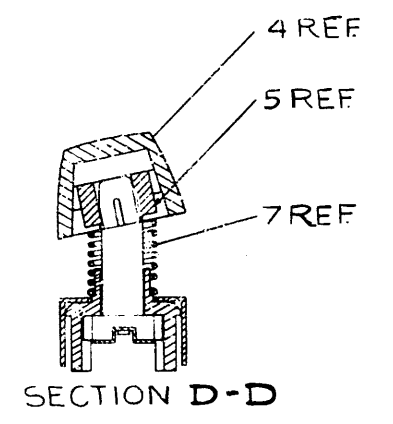
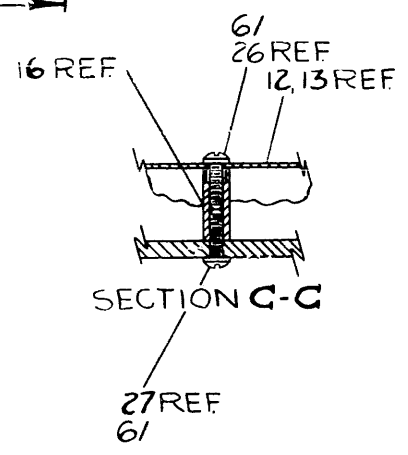
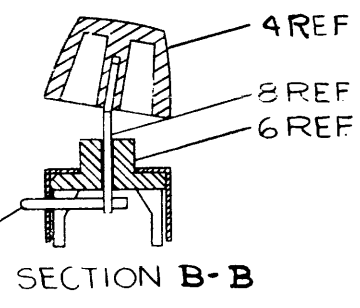
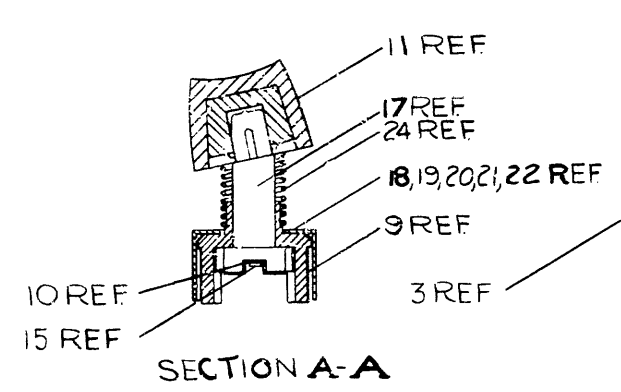
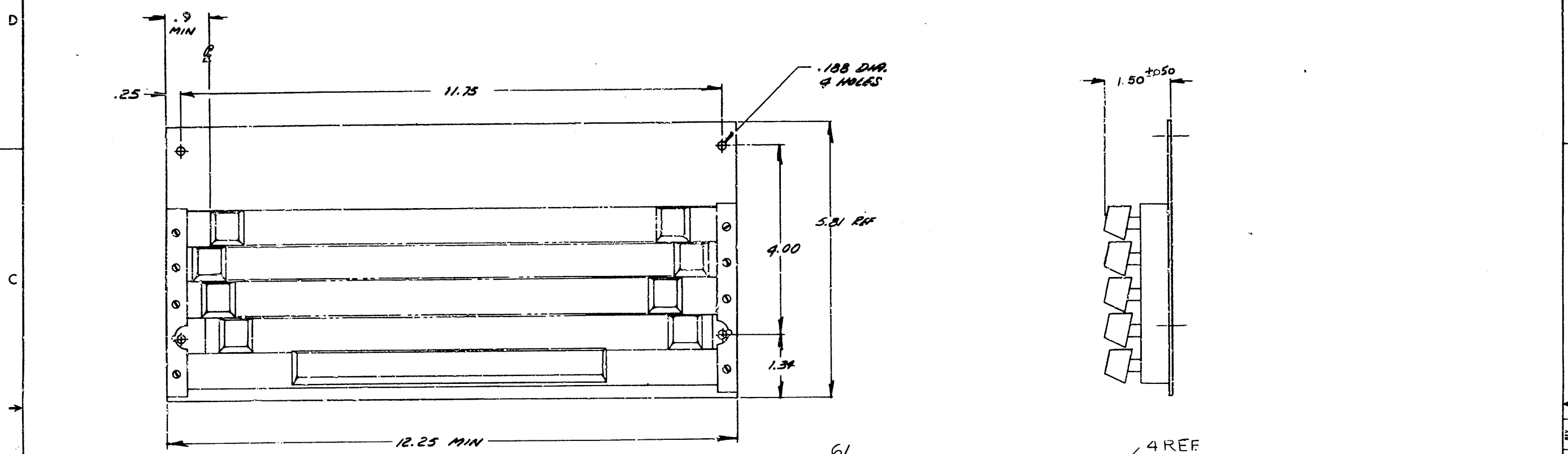


REV	DATE	BY	CHK'D
A	1-4-72	BEATTY	
B	1-17-72	BEATTY	
C	2-22-72	BEATTY	
D	3-1-72	BEATTY	
E	3-1-72	BEATTY	
F	3-1-72	BEATTY	
G	3-1-72	BEATTY	
H	3-1-72	BEATTY	
I	3-1-72	BEATTY	
J	3-1-72	BEATTY	
K	3-1-72	BEATTY	
L	3-1-72	BEATTY	
M	3-1-72	BEATTY	
N	3-1-72	BEATTY	
O	3-1-72	BEATTY	
P	3-1-72	BEATTY	
Q	3-1-72	BEATTY	
R	3-1-72	BEATTY	
S	3-1-72	BEATTY	
T	3-1-72	BEATTY	
U	3-1-72	BEATTY	
V	3-1-72	BEATTY	
W	3-1-72	BEATTY	
X	3-1-72	BEATTY	
Y	3-1-72	BEATTY	
Z	3-1-72	BEATTY	

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN	DATE
DECIMALS	ANGLES	CHK'D	DATE
XXX 000	1/2 3/4	ENG	DATE
XX 00	1/4 3/8	PROJ ENG	DATE
X 00	1/8 3/16	PROD	DATE
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY		NEXT HIGHER ASSY.	
MATERIAL		B-DD-LK01-0	SIZE CODE
FINISH		SCALE	NUMBER
		SHEET	DIST
		OF 3	1

SIZE (FOOT) NUMBER D AD 5409945-0-0 REV E

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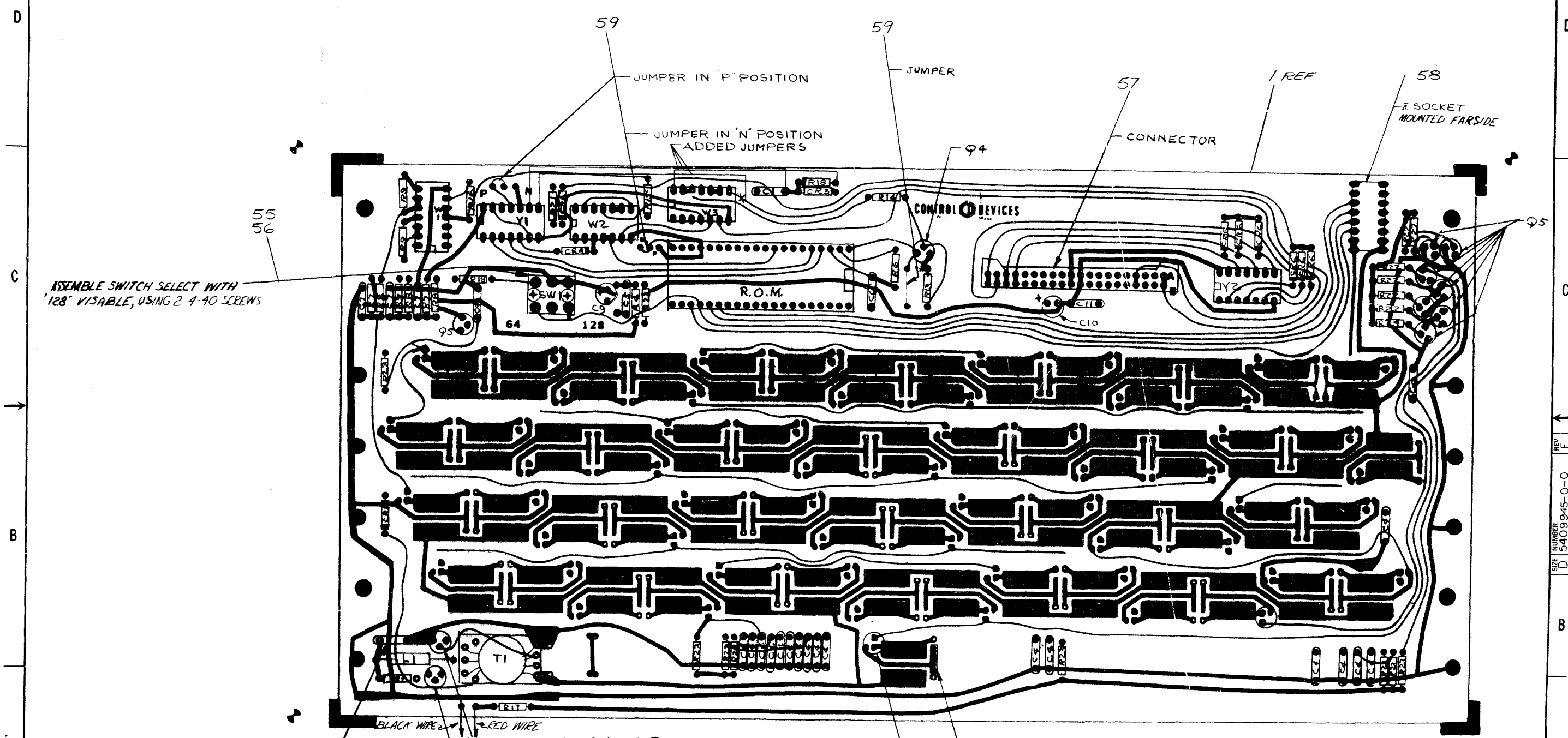
REVISIONS	REV.
CHK	CHANGE NO.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DATE 11.72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS	ANGLES	DATE 11.72	TITLE	
XXX - .005	±0° 30'	DATE 11.72	KEYBOARD ASSY	
XX - .02		DATE		
X - .1		DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD.	DATE		
MATERIAL	NEXT HIGHER ASSY.	DATE		
FINISH	SCALE NONE	DATE		
	SHEET 2 OF 3	DATE		
		DIST.		

REV F  
NUMBER 5409945-0-0  
SIZE CODE DAD

NOTES:  
1. FORMERLY CONTROL DEVICE DWG. NO. D4459

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ASSEMBLE SWITCH SELECT WITH "128" VISABLE, USING 2 4-40 SCREWS

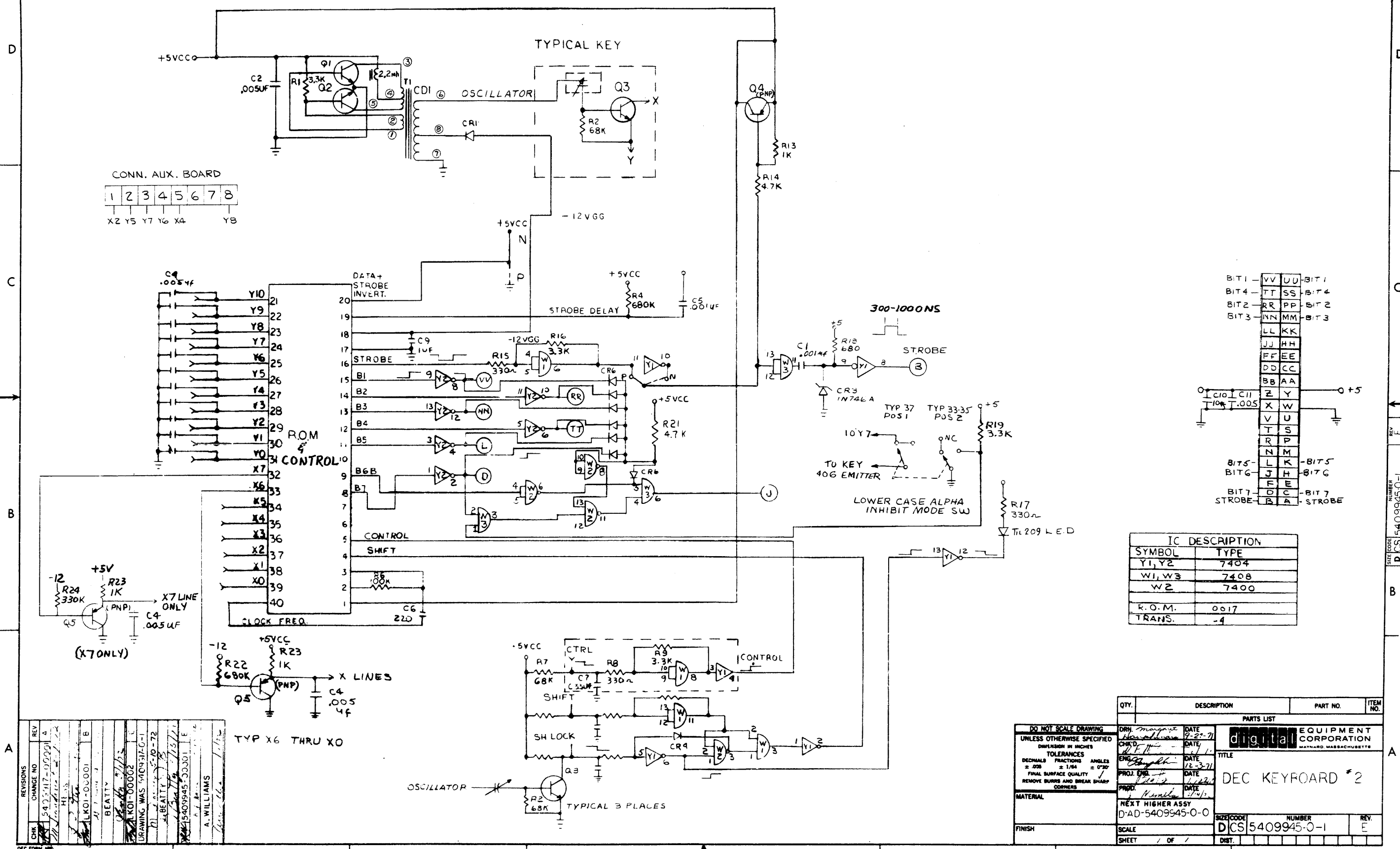
BLACK WIRE  
RED WIRE  
HARDWARE TO LIGHTED KEYCAP  
Q1  
Q2

TOLERANCES DECIMAL  
.XXX = .005  
.XX = .02  
.X = .1

FIRST USED ON C/P/ MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
+				
PARTS LIST				
DO NOT SCALE DRAWING	DRN. <i>[Signature]</i>	DATE 1/6-72	 DIGITAL EQUIPMENT CORPORATION TITLE KEYBOARD ASSY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES	CHKD. <i>[Signature]</i>	DATE 1/14/72		
TOLERANCES	ENG. <i>[Signature]</i>	DATE 2/10/72		
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	PROJ. ENG. <i>[Signature]</i>	DATE 2/14/72		
MATERIAL	PROD. <i>[Signature]</i>	DATE 2/14/72	CODE SIZE NUMBER AD D-5409945-0-0 DIST. G	
FINISH	INVT HIGHER ASSY		SCALE 2/1 SHEET 3 OF 3	

REV.	CHANGE NO.

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CONN. AUX. BOARD

1	2	3	4	5	6	7	8
X2	Y5	Y7	Y6	X4			Y8

BIT 1	VV	UU	BIT 1
BIT 4	TT	SS	BIT 4
BIT 2	RR	PP	BIT 2
BIT 3	NN	MM	BIT 3
	LL	KK	
	JJ	HH	
	FF	EE	
	DD	CC	
	BB	AA	
	Z	Y	0 +5
	X	W	
	V	U	
	T	S	
	R	P	
	N	M	
BIT 5	L	K	BIT 5
BIT 6	J	H	BIT 6
	F	E	
BIT 7	D	C	BIT 7
	B	A	STROBE

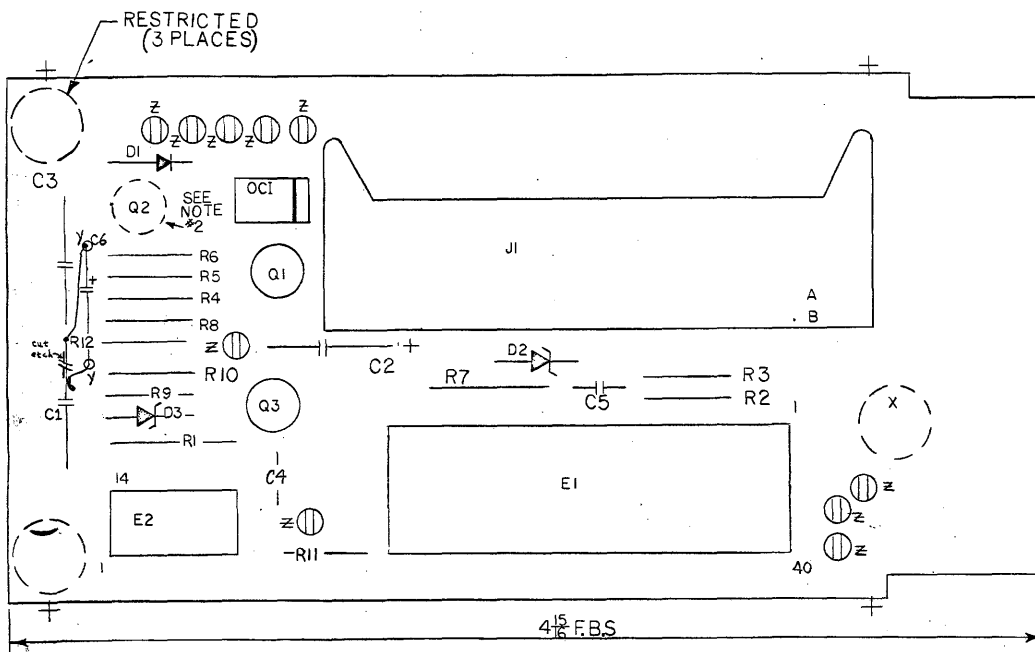
IC DESCRIPTION	
SYMBOL	TYPE
Y1, Y2	7404
W1, W3	7408
W2	7400
R.O.M.	0017
TRANS.	-4

REV	CHANGE NO	BY	DATE
1	5409945-0-1	BEATTY	12-27-71
2	5409945-0-2	BEATTY	12-27-71
3	5409945-0-3	BEATTY	12-27-71
4	5409945-0-4	BEATTY	12-27-71
5	5409945-0-5	BEATTY	12-27-71
6	5409945-0-6	BEATTY	12-27-71
7	5409945-0-7	BEATTY	12-27-71
8	5409945-0-8	BEATTY	12-27-71

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	digital EQUIPMENT CORPORATION		
	DEC KEYBOARD # 2		
	SCALE	SIZE CODE	NUMBER
	SHEET / OF /	DIST.	REV. E

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**NOTES:**  
1. Q2 IS A CUSTOMER OPTION, AND SHOULD NOT BE INSERTED ON THE PC BOARD.



QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	R 5	RES 120 1/4W 5%	1300247	29
1	R12	RES 5.6K 1/4W, 5%	1301874	28
1	E1	IC 1808 UART	1910459	27
1	E2	IC DEC 7413	1909989	26
1	OC1	OC TIL 108	1510399	25
2	Q1, Q3	TRANS DEC 3009 B	1503100	24
1	R9	RES 820 1/4W 5%	1301775	23
1	R3	RES 750 1/4W 5%	1301401	22
1	R8	RES 10 1/4W 5%	1301317	21
1	R6	RES 100 1/4W 5%	1300229	20
1	R10	RES 2.7K 1/4W 5%	1300426	19
1	R1	RES 511 1/8W 1%	1302411	18
2	R2, R4	RES 330 1/4W 5%	1300295	17
1	R7	RES 330 1/2W 10%	1300294	16
1	R11	RES 150 1/4W 5%	1300250	15
1	J1	CONN. 40 PIN BERG	1209941	14
1	D2	DIODE IN 758	1103116	13
1	D1	DIODE IN 4001	1102942	12
1	D3	DIODE ZENER AZ 5	1101938	11
1	C4, C5	CAP. .01uF 100V 20% DISC.	10-01610	10
1	C1	CAP. 3.9uF 10V 10% S. TANT	10-00064	9
3	C2, C3, C6	CAP. 1.4uF 35V 10% S. TANT	10-01776	8
9		SPLIT LUG	9006735	7
1				6
1				5
1				4
REF		ETCHED CIRCUIT BOARD	5010078	4
REF		MODULE ECC HISTORY	B-MH-M7011-0-6	3
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M7011-0-5	2
REF		X-Y COORDINATE HOLE LOC	K-CO-M7011-0-4	1

IC TYPE	GND	+ 5V

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

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

ETCH BOARD REV D

DATE 7-28-72  
DATE 8-7-72  
DATE  
DATE  
DATE  
DATE  
DATE

DRN. A Campbell  
CHK'D. NANCY MOORE  
ENG. [Signature]  
PROD. [Signature]

SCALE NONE  
SHEET 1 OF 2

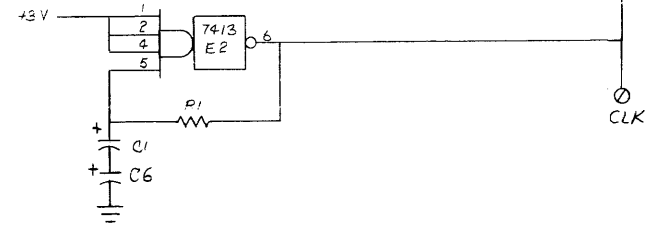
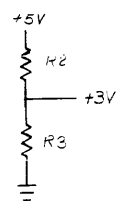
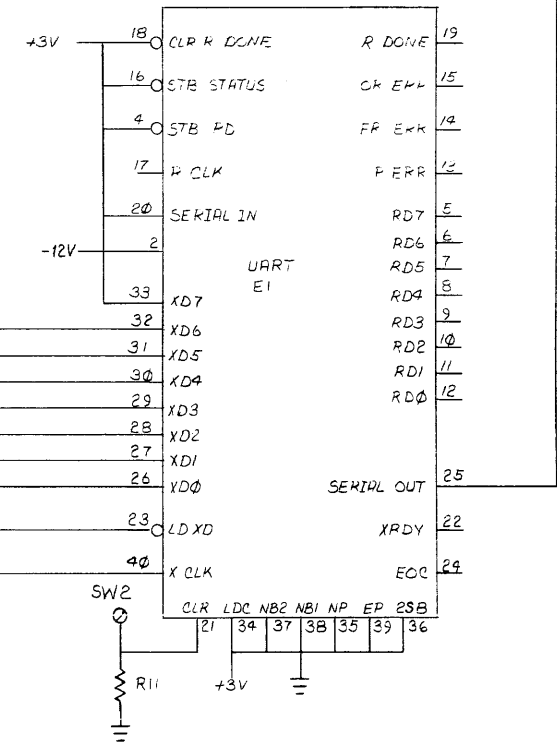
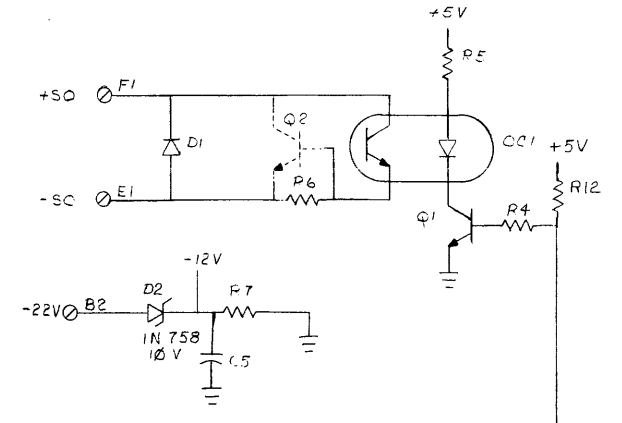
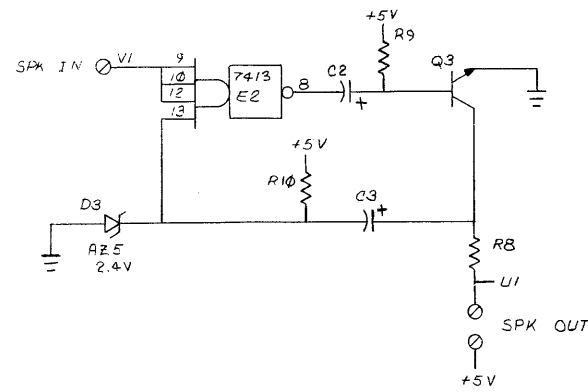
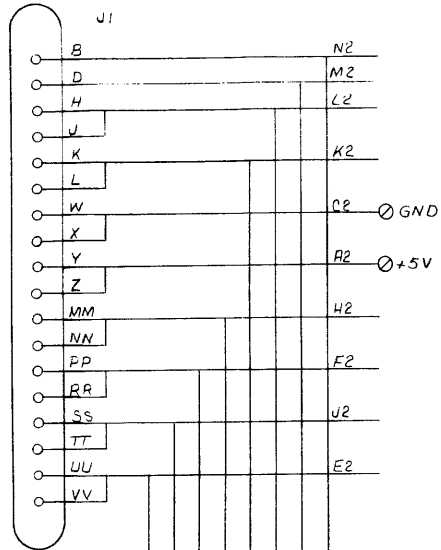
SEMICONDUCTOR CONVERSION CHART

SIZE CODE NUMBER REV. DCS M7011-0-1 C



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**NOTES:**



IC TYPE	GND	+5V
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				
M7011				
ETCH BOARD REV D				
DRN	A Campbell	DATE	8-7-72	
CHKD	NANCY MOORE	DATE	8-7-72	
ENG		DATE	9/7/72	
PROJ. ENG		DATE	9/7/72	
PROD		DATE	9/7/72	
NEXT HIGHER ASSY				
DEC NO.	EIA NO.	DEC NO.	EIA NO.	
SEMICONDUCTOR CONVERSION CHART				
SCALE		SHEET	OF	
SIZE CODE		NUMBER	REV.	
DICS M7011-0-1		C		

# MASTER DRAWING LIST

MAINTENANCE MANUALS		UNIT VARIATIONS									
NO.	TITLE	VR14-Ø	VR14-A	VR14-B	VR14-C	VR14-D	VR14-E	VR14-IC	VR14-ID	VR14-IE	VR14-IF
VR14	DISPLAY	X	X	X	X	X	X	X	X		

USED ON OPTIONS

REV. S D T M	DATE	4/72	7/72	10/72	12/72	1/73			
	CHG. NO.	00016	00019	00021	00022	00023			
	APP'D.	P.F.	P.F.	P.F.	D.C.				

**digital**  
EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

TITLE  
VR14 DISPLAY

SIZE	CODE	NUMBER	REV.
A	ML	VR14-0	S

SHEET 1 OF 2

SCALE  
VR14

FIRST USED ON  
VR14

DRA 1.131

Dec 16 (325)-1048-N471

PRINT SET	DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE	OPTION NO.
X	D-DI-VR14-0-2	J	2	DRAWING INDEX LIST	
X	D-CS-G836-0-1	#	1	POWER SUPPLY & REGULATOR SCHEMATIC	
X	C-CS-7007080-0-1	A	1	POWER SUPPLY HEAT SINK SCHEMATIC	
X	C-CS-7007082-0-1	A	1	DEFLECTION HEAT SINK SCHEMATIC	
X	D-CS-7007084-0-1	D	2	POWER SUPPLY SCHEMATIC	
X	C-MU-VR14-0-3	B	1	MODULE UTILIZATION	
X	D-IC-VR14-0-1	K	3	VR14 BLOCK SCHEMATIC	
X	A-PL-VR14-0-3	B	1	MODULE UTILIZATION (PL)	
X	D-UA-VR14-0-0	J	4	DISPLAY ASSEMBLY	
X	A-PL-VR14-0-0	J	4	DISPLAY ASSEMBLY (PL)	
X	D-AD-7007078-0-0	F	1	WIRED ASSEMBLY	
X	A-PL-7007078-0-0	F	2	WIRED ASSEMBLY (PL)	
X	A-SP-VR14-0-4		4	ENGINEERING SPECIFICATION	
X	A-SP-VR14-0-5	B	31	CHECKOUT & ACCEPTANCE PROCEDURE	
X	D-UA-G836-0-0	#	1	POWER SUPPLY & REGULATOR ASSY	
X	A-PL-G836-0-0	#	3	POWER SUPPLY & REGULATOR ASSY (PL)	
X	D-AD-7007080-0-0		1	POWER SUPPLY HEAT SINK ASSY	
X	A-PL-7007080-0-0		1	POWER SUPPLY HEAT SINK ASSY (PL)	
X	D-AD-7007082-0-0	B	1	DEFLECTION HEAT SINK ASSY	
X	A-PL-7007082-0-0	B	1	DEFLECTION HEAT SINK ASSY (PL)	
X	D-AD-7007084-0-0	F	2	POWER SUPPLY ASSY	
X	A-PL-7007084-0-0	F	3	POWER SUPPLY ASSY (PL)	

TITLE

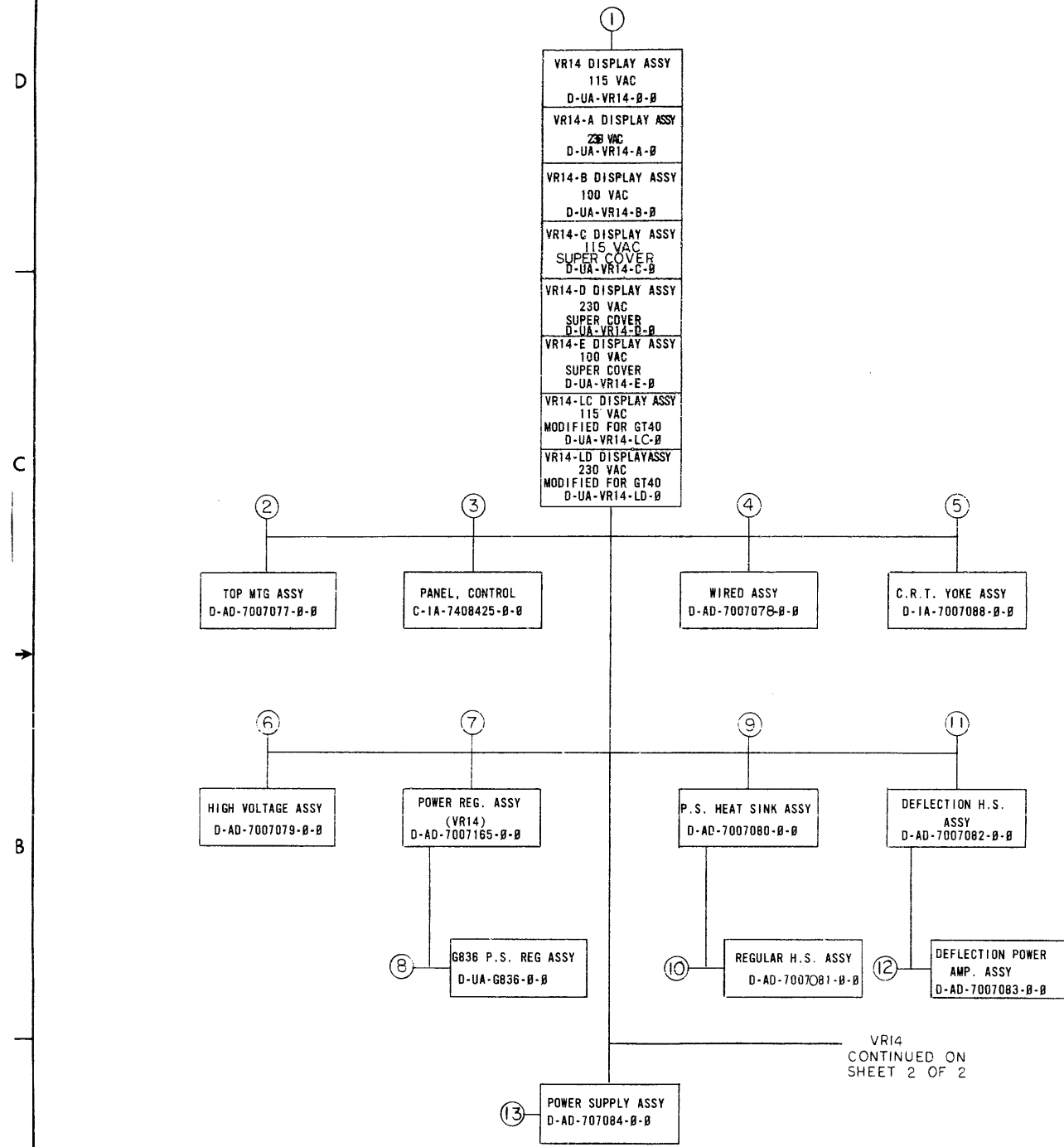
VR14 DISPLAY

DRA 1.132

DEC 16 (325)-1048-1-N471

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MECHANICAL				DEPT USAGE			ELECTRICAL				DEPT USAGE		
FIND NO.	DESCRIPTION	PART NO.	PROD	CUST	F/C	FIND NO.	DESCRIPTION	PART NO.	PROD	CUST	F/C		
1.	VR14 DISPLAY ASSY 115 VAC VR14-A DISPLAY ASSY 230 VAC VR14-B DISPLAY ASSY 100 VAC VR14-C DISPLAY 115 VAC S.C. VR14-D DISPLAY 230 VAC S.C. VR14-E DISPLAY 100 VAC S.C. VR14-LC DISPLAY ASSY 115 VAC GT 40 VR14-LD DISPLAY ASSY 230 VAC GT 40 VR14 DISPLAY ASSY P.L. BEZEL (VR12) BEZEL, CONTROL PANEL (VR12) CAP, REAR CAP (VR14) MASK, C.R.T. (VR14) MASK, C.R.T. SCREEN, SAFETY SCREEN, SAFETY (VR14) PLATE, BOTTOM MTG. FAN, SCREEN C.R.T. SHIELD MAIN CHASSIS CABLE HARNESS GROUND TUBE CHASSIS TRACK BRACE CHANNEL SWITCH MASK BRACE, CHASSIS  SHIELD SAFETY HOLDER, CARD PKG INST VR14 RACK MOUNT PKG INST VR14 SUPER COVER JUMPER	D-UA-VR14-B-B D-UA-VR14-A-B D-UA-VR14-B-B D-UA-VR14-C-B D-UA-VR14-D-B D-UA-VR14-E-B D-UA-VR14-LC-B D-UA-VR14-LD-B A-PL-VR14-B-B E-SC-1209230-B-B E-IA-7406891-B-B C-SC-1209229-B-B C-MD-7408434-B-B D-SC-1209228-B-B D-MD-7406837-B-B D-SC-1210113-B-B D-IA-7408408-B-B D-IA-7408400-B-B C-MD-7404881-B-B E-SC-1210104-B-B E-IA-7008477-9-B C-IA-7408411-B-B D-MD-7408549-B-B B-IA-7008976-B-B E-PS-121106-B-B E-IA-7409964-B-B  C-IA-7408409-B-B C-MD-7408414-B-B A-PL-3700026-B-B A-PL-3700027-B-B B-IA-7007006-3-B				1.	VR14 DISPLAY 115 VAC VR14-A DISPLAY 230 VAC VR14-B DISPLAY 100 VAC VR14-C DISPLAY 115 VAC S.C. VR14-D DISPLAY 230 VAC S.C. VR14-E DISPLAY 100 VAC S.C. VR14-LC DISPLAY ASSY 115 VAC GT 40 VR14-LD DISPLAY ASSY 230 VAC GT 40 CIRCUIT SCHEMATIC (VR14) MODULE UTILIZATION MODULE UTILIZATION (PL) ENGINEERING SPECIFICATION CHECK OUT AND ACCEPTANCE PROCEDURE	A-ML-VR14-B A-ML-VR14-A A-ML-VR14-B A-ML-VR14-C A-ML-VR14-D A-ML-VR14-E D-UA-VR14-LC-B D-UA-VR14-LD-B D-IC-VR14-B-1 C-MU-VR14-B-3 A-MU-VR14-B-3 A-SP-VR14-B-4 A-SP-VR14-B-5					
2.	TOP MTG. ASSY TOP MTG. ASSY P.L. PLATE, TOP MTG. SCOTCHCAL (VR14)	D-AD-7007077-B-B A-PL-7007077-B-B E-IA-7408401-B-B A-DC-7408407-B-B				4.	WIRED ASSY WIRED ASSY P.L.	C-AD-7007078-B-B A-PL-7007078-B-B					
3.	PANEL, CONTROL PANEL, CONTROL SILK SCREEN	C-IA-7408425-B-B B-SS-7408425-B-1				8.	G836 POWER REG. ASSY G836 POWER REG. ASSY P.L. CIRCUIT SCHEMATIC (G836)	D-UA-G836-B-B A-PL-G836-B-B D-SC-G836-B-1					
4.	WIRED ASSY WIRED ASSY P.L. FRAME LOGIC SAR, MTG LOGIC FRAME DECALS LOGIC FRAME DECALS	D-AD-7007078-B-B A-PL-7007078-B-B D-IA-7408422-B-B B-MD-7407114-B-B A-SS-5308753-B-2 A-SS-5308753-B-4				9.	POWER SUPPLY HEAT SINK ASSY POWER SUPPLY H.S. ASSY PL CIRCUIT SCHEMATIC (HEAT SINK)	D-AD-7007080-B-B A-PL-7007080-B-B D-CS-7007080-B-1					
5.	C.R.T. YOKE ASSY	D-IA-7007088-B-B				11.	DEFLECTION HEAT SINK ASSY DEFLECTION H.S. ASSY P.L. CIRCUIT SCHEMATIC(DEFLECTION)	D-AD-7007082-B-B A-PL-7007082-B-B D-CS-7007082-B-1					
6.	HIGH VOLTAGE ASSY HIGH VOLTAGE ASSY P.L. PLATE, HIGH VOLTAGE MTG. SHIELD, HIGH VOL. PROTECTION SPACER, HEX HIGH VOLTAGE SHIELD	D-AD-7007079-B-B A-PL-7007079-B-B D-IA-7408420-B-B B-MD-7408424-B-B B-MD-7408413-B-B D-SC-1210169-B-B				13.	POWER SUPPLY ASSY POWER SUPPLY ASSY P.L. POWER SUP. CABLE HAPN. COVER, CAPACITOR HOLD DOWN PLATE, SIDE MTG COVER, PROTECTION	D-AD-7007081-B-B A-PL-7007081-B-B D-AD-7007165-B-B A-PL-7007165-B-B D-IA-7408439-B-B C-MD-7408436-B-B D-UA-G836-B-B A-PL-G836-B-B D-AD-7007080-B-B A-PL-7007080-B-B C-MD-7408438-B-B C-MD-7408437-B-B D-SC-1210131-B-B D-AD-7007081-B-B A-PL-7007081-B-B D-AD-7007082-B-B A-PL-7007082-B-B D-AD-7007083-B-B A-PL-7007083-B-B E-AD-7007084-B-B A-PL-7007084-B-B E-IA-7007147-B-B D-IA-7408433-B-B E-IA-7408402-B-B B-MD-7408416-B-B					
7.	POWER REGULATOR ASSY (VR14) POWER REG. ASSY (VR14) P.L. MATE-N-LOK ASSY BRKT COVER, CAPACITOR	D-AD-7007165-B-B A-PL-7007165-B-B D-IA-7408439-B-B C-MD-7408436-B-B											
8.	G836 POWER REG. ASSY G836 POWER REG. ASSY P.L.	D-UA-G836-B-B A-PL-G836-B-B											
9.	POWER SUPPLY H.S. ASSY POWER SUPPLY H.S. ASSY P.L. SPACER, MTG. BRKT, MTG. SPACER POWER SUPPLY HEAT SINK	D-AD-7007080-B-B A-PL-7007080-B-B C-MD-7408438-B-B C-MD-7408437-B-B D-SC-1210131-B-B											
10.	REGULATOR HEAT SINK ASSY REGULATOR H.S. ASSY P.L.	D-AD-7007081-B-B A-PL-7007081-B-B											
11.	DEFLECTION HEAT SINK ASSY DEFLECTION H.S. ASSY	D-AD-7007082-B-B A-PL-7007082-B-B											
12.	DEFLECTION POWER AMP. ASSY DEFLECTION POWER AMP (PL)	D-AD-7007083-B-B A-PL-7007083-B-B											
13.	POWER SUPPLY ASSY POWER SUPPLY ASSY (PL) POWER SUP. CABLE HAPN. COVER, CAPACITOR HOLD DOWN PLATE, SIDE MTG COVER, PROTECTION	E-AD-7007084-B-B A-PL-7007084-B-B E-IA-7007147-B-B D-IA-7408433-B-B E-IA-7408402-B-B B-MD-7408416-B-B											

FIRST USED ON OPTION/MODEL  
VR14

DRN	D. K. CRABBE	DATE	11-3-70
CHK'D	D. K. CRABBE	DATE	11-4-70
ENG	D. K. CRABBE	DATE	11-6-70
PROJ. ENG.	A. FISHMAN	DATE	11-6-70
PROD.	R. PETERSON	DATE	2-8-70

TITLE  
DRAWING INDEX LIST

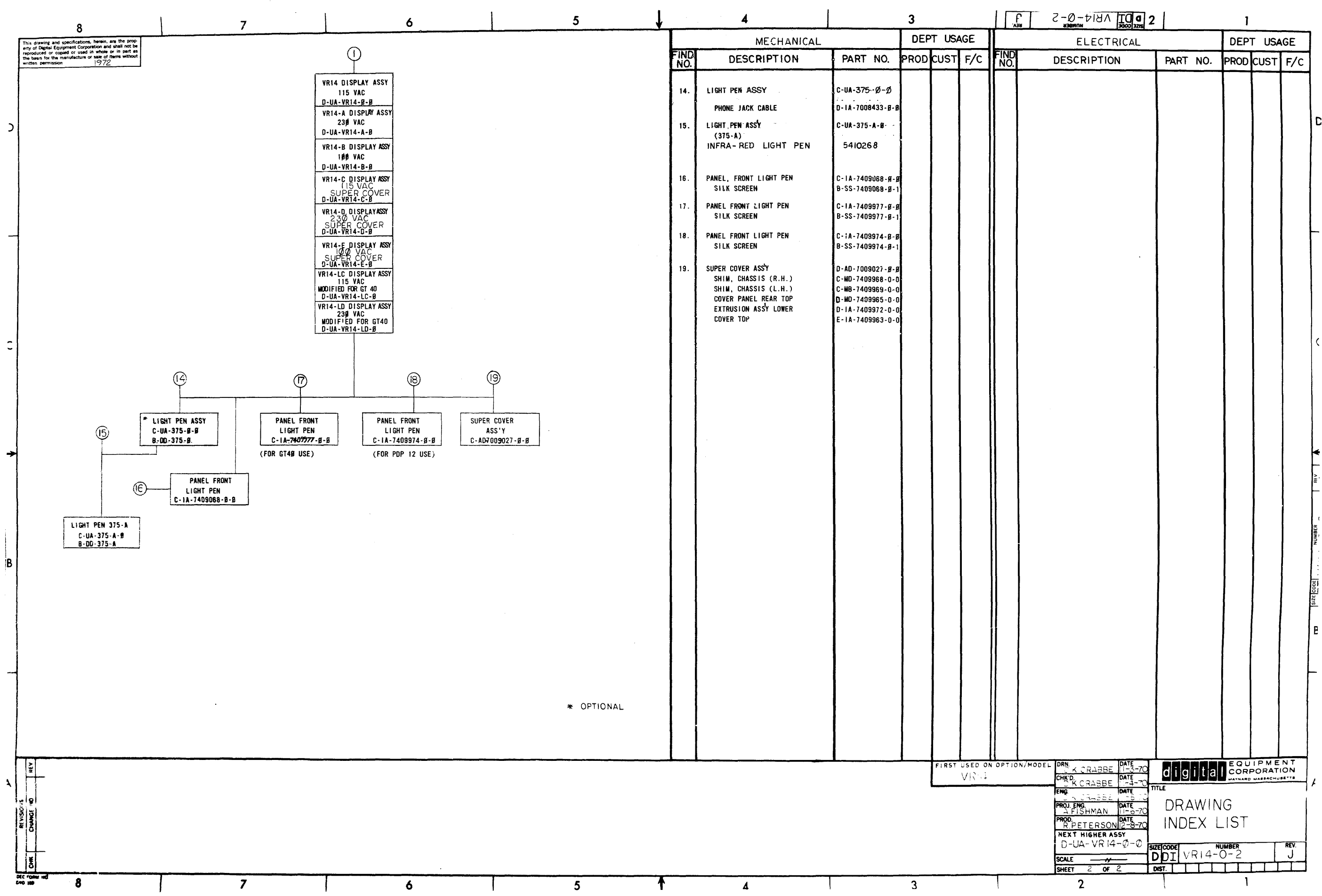
SIZE/CODE  
DDI VR14-0-2

SCALE  
1 OF 2

SHEET 1 OF 2

REV	CHANGE NO	BY	DATE
1	0001	F	
2	0002	F	
3	0003	J	
4	0004	J	
5	0005	J	
6	0006	J	
7	0007	J	
8	0008	J	
9	0009	J	
10	0010	J	
11	0011	J	
12	0012	J	
13	0013	J	

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MECHANICAL			DEPT USAGE			ELECTRICAL			DEPT USAGE		
FIND NO.	DESCRIPTION	PART NO.	PROD	CUST	F/C	FIND NO.	DESCRIPTION	PART NO.	PROD	CUST	F/C
14.	LIGHT PEN ASSY	C-UA-375-0-0									
	PHONE JACK CABLE	D-1A-7008433-B-B									
15.	LIGHT PEN ASSY (375-A)	C-UA-375-A-0									
	INFRA-RED LIGHT PEN	5410268									
16.	PANEL, FRONT LIGHT PEN SILK SCREEN	C-1A-7409068-B-B B-SS-7409068-B-1									
17.	PANEL FRONT LIGHT PEN SILK SCREEN	C-1A-7409977-B-B B-SS-7409977-B-1									
18.	PANEL FRONT LIGHT PEN SILK SCREEN	C-1A-7409974-B-B B-SS-7409974-B-1									
19.	SUPER COVER ASSY	D-AD-7009027-B-B									
	SHIM, CHASSIS (R.H.)	C-MD-7409968-0-0									
	SHIM, CHASSIS (L.H.)	C-MB-7409969-0-0									
	COVER PANEL REAR TOP	D-MD-7409965-0-0									
	EXTRUSION ASSY LOWER COVER TOP	D-1A-7409972-0-0 E-1A-7409963-0-0									

\* OPTIONAL

REV	DATE	BY	CHKD

FIRST USED ON OPTION/MODEL  
VR14

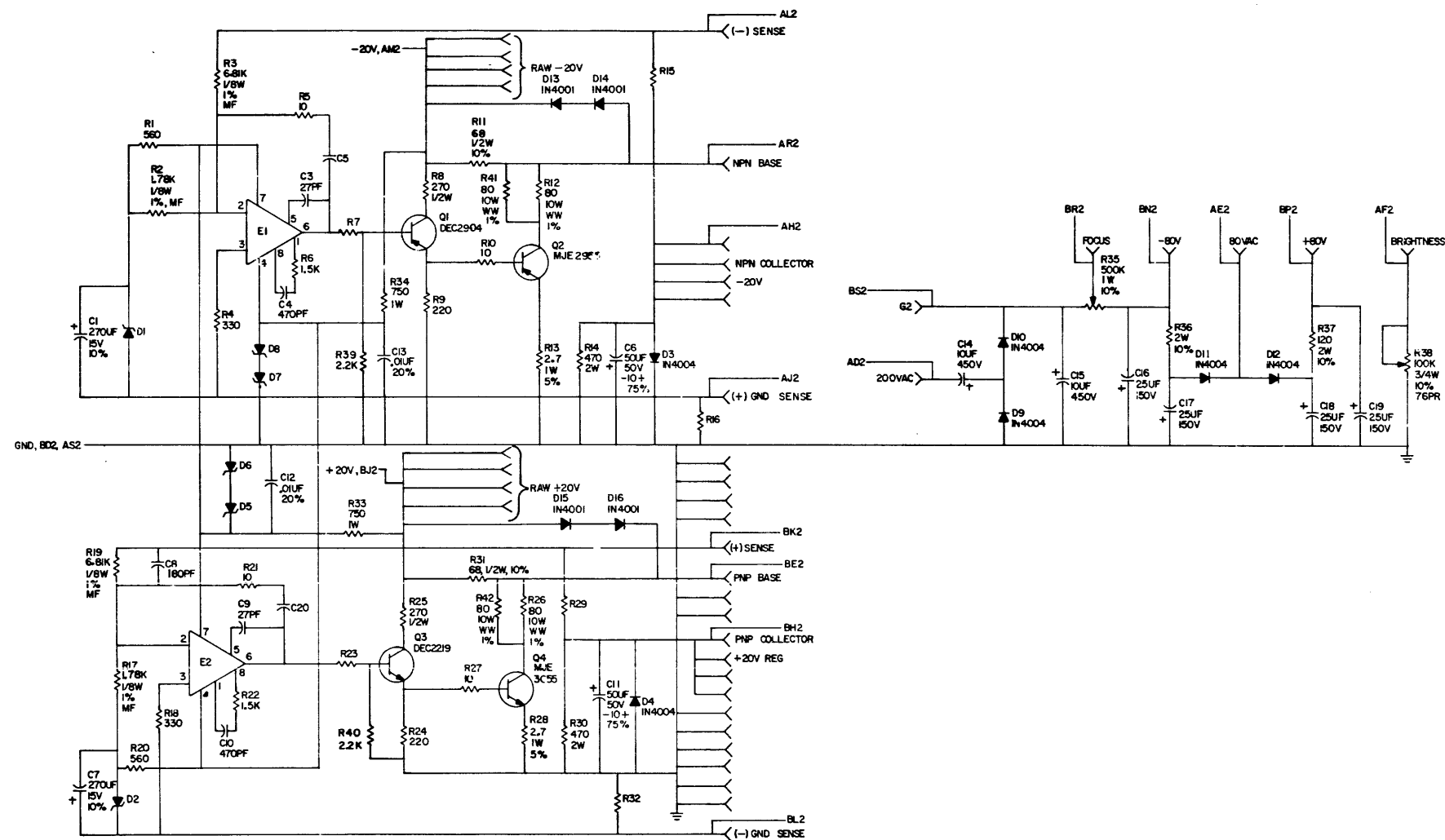
DRN	K CRABBE	DATE	1-3-70
CHKD	K CRABBE	DATE	1-3-70
ENG	K CRABBE	DATE	1-3-70
PROJ. ENG.	A FISHMAN	DATE	11-8-70
PROD.	R PETERSON	DATE	2-9-70
NEXT HIGHER ASSY D-UA-VR14-0-0			
SCALE			
SHEET	2 OF 2		

**digital** EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

TITLE  
**DRAWING INDEX LIST**

SIZE CODE NUMBER REV  
**DDI** VR14-0-2 J

THIS SCHEMATIC IS FURNISHED ONLY FOR TEST AND MAINTENANCE PURPOSES. THE CIRCUITS ARE PROPRIETARY IN NATURE AND SHOULD BE TREATED ACCORDINGLY. COPYRIGHT 1970 BY DIGITAL EQUIPMENT CORPORATION.



UNLESS OTHERWISE INDICATED:  
 RESISTORS ARE 1K, 1/4W, 5%  
 DIODES ARE IN752A, 5.6V  
 CAPACITORS ARE 1000PF, 100V, 5%  
 E1, E2 ARE DEC709C  
 > - EYELETS

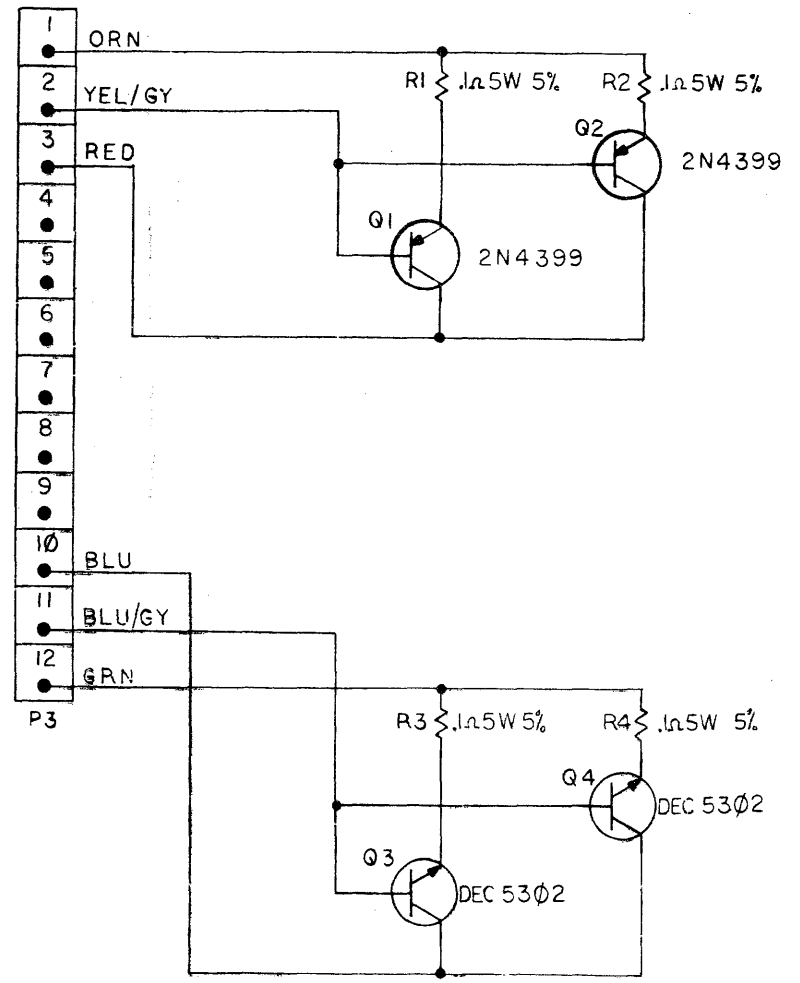
REVISIONS		DATE		TRANSISTOR & DIODE CONVERSION CHART		TITLE	
1	00000	11/27/70		DEC	EA	DEC 2904	VR-14 POWER SUPPLY AND REGULATOR BD G836
2	00000	12/23/70		EA	EA		
3	00000	1/14/71					
4	00000	1/14/71					
5	00000	1/14/71					
6	00000	1/14/71					
7	00000	1/14/71					
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9	00000	1/14/71					
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50	00000	1/14/71					

VR-14 POWER SUPPLY AND REGULATOR BD G836  
 EQUIPMENT CORPORATION  
 NUMBER 0836-0-1  
 PRINTED CIRCUIT REV 0

REVISED BY: DCS  
 DATE: 1/14/71  
 SHEET: 1 OF 1

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HEAT SINK CONNECTOR  
 SOCKET HOUSING  
 DEC 1209351-12



REF DESIGNATION	DESCRIPTION	PART NO.
P3	AMP 12 CIRCUIT	1209351-12
Q1 Q2	TRANSISTOR 2N4399	1510362
Q3, Q4	TRANSISTOR DEC 5302	1510196
R1 - R4	RESISTOR .1n5W 5%	1305872

REV.	CHANGE NO.	DATE	BY	CHK
A	VRI4-0005	4/14/71	A. FISHMAN	

FIRST USED ON OPTION MODEL  
 VRI4

DEC		EIA	
DEC 5302	2N 5302		
DEC 3790	2N 3790		

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED

DIMENSION IN INCHES

TOLERANCES

DECIMALS FRACTIONS ANGLES

±.005 ±.010 ±.030

FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN: *[Signature]* DATE: 7/24/70

CHK'D: *[Signature]* DATE: 10/10/70

EMS: *[Signature]* DATE: 11/6/70

PROF. *[Signature]* DATE: 11/6/70

NEXT HIGHER ASSY: D-AL-70070830-0-0

SCALE: --+--

SHEET: 1 OF 1

digital EQUIPMENT CORPORATION  
 MAYNARD, MASSACHUSETTS

TITLE: CIRCUIT SCHEMATIC (HEAT SINK)

SIZE CODE: CCS NUMBER: 7007080-0-1 REV. A

4 3 2 1

D

C

B

A

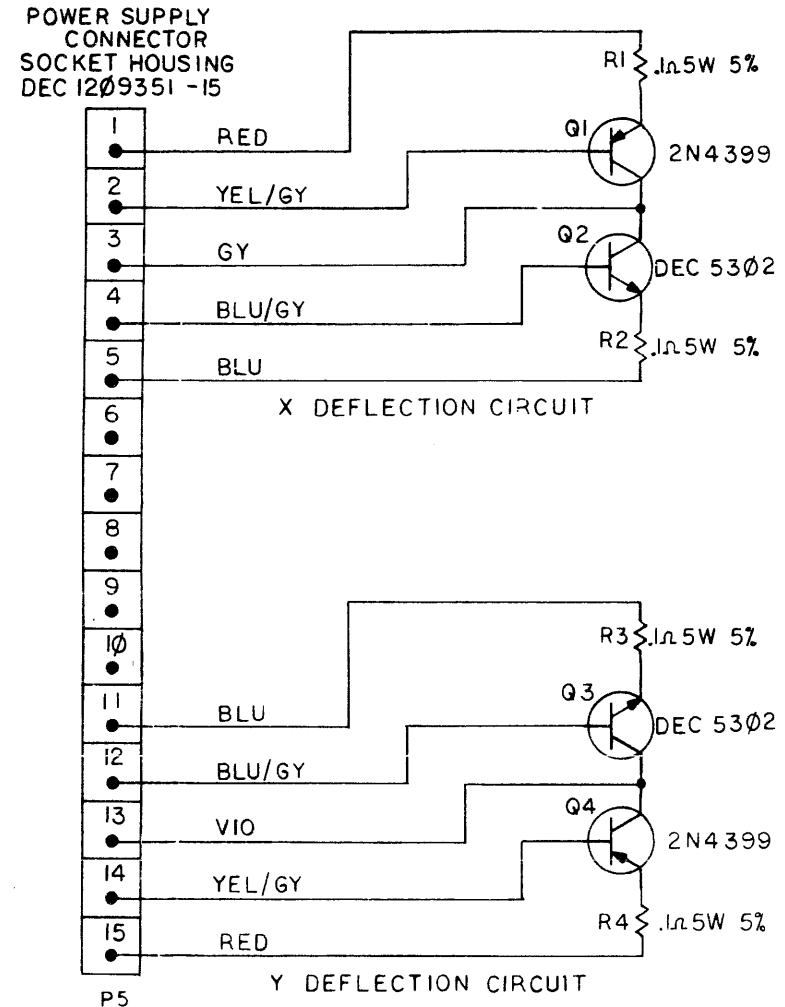
REV. A

NUMBER 7007080-0-1

SIZE CODE CCS

4 3 2 1

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REF DESIGNATION	DESCRIPTION	PART NO.
Q2, Q3.	TRANSISTOR DEC 5302	1510196
P5	AMP 15-CIRCUIT	1209351-15
Q1, Q4.	TRANSISTOR 2N4399	1510362
R1-R4	RESISTOR .1n5W 5%	1305872

PARTS LIST		TITLE	
DRN.	DATE	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D.	DATE		
ENG.	DATE		
PROJ. ENG.	DATE		
PROD.	DATE		
NEXT HIGHER ASSY		D-AD-7007082-0-0	
MATERIAL		SCALE	
FINISH		SHEET 1 OF 1	
UNLESS OTHERWISE SPECIFIED		SIZE CODE	
UNLESS OTHERWISE SPECIFIED		NUMBER	
DIMENSION IN INCHES		REV.	
TOLERANCES		A	
DECIMALS FRACTIONS ANGLES		C CS 7007082-0-1	
± .005 ± 1/64 ± 0°30'		DIST.	
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			

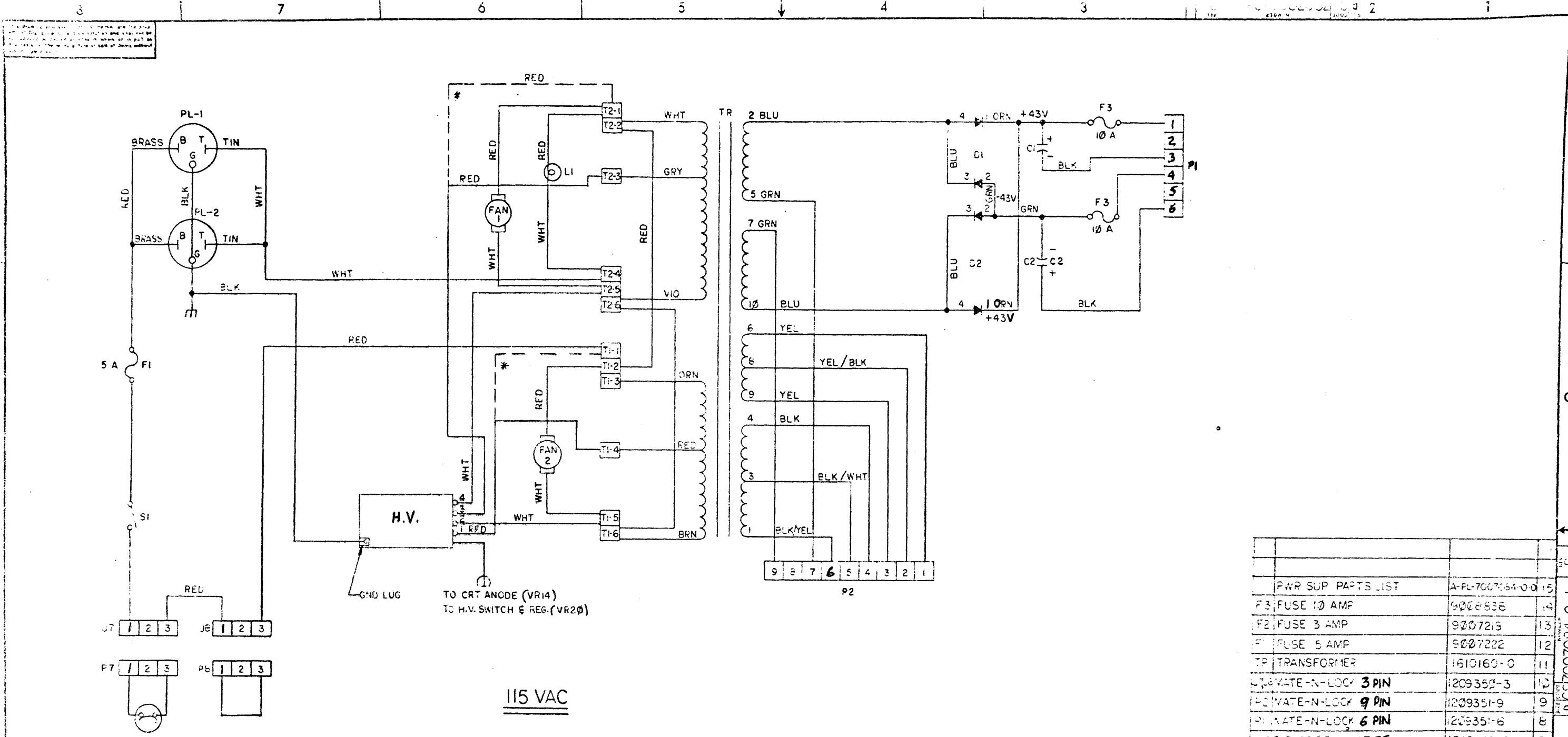
TRANSISTOR-DIODE CONVERSION CHART

DEC	EIA	DEC	EIA
DEC 3790	2N 3790		
DEC 5302	2N 5302		

REVISIONS	CHANGE NO.	REV.
CHK	VR14-00005	A
A.FISHMAN		

FIRST USED ON OPTION/MODEL  
VR14

REV. A  
NUMBER 7007082-0-1  
SIZE CODE C CS



\* FOR VR20 OPERATION:  
 DELETE T1-4, ADD TO T1-1  
 DELETE T2-3, ADD TO T2-1

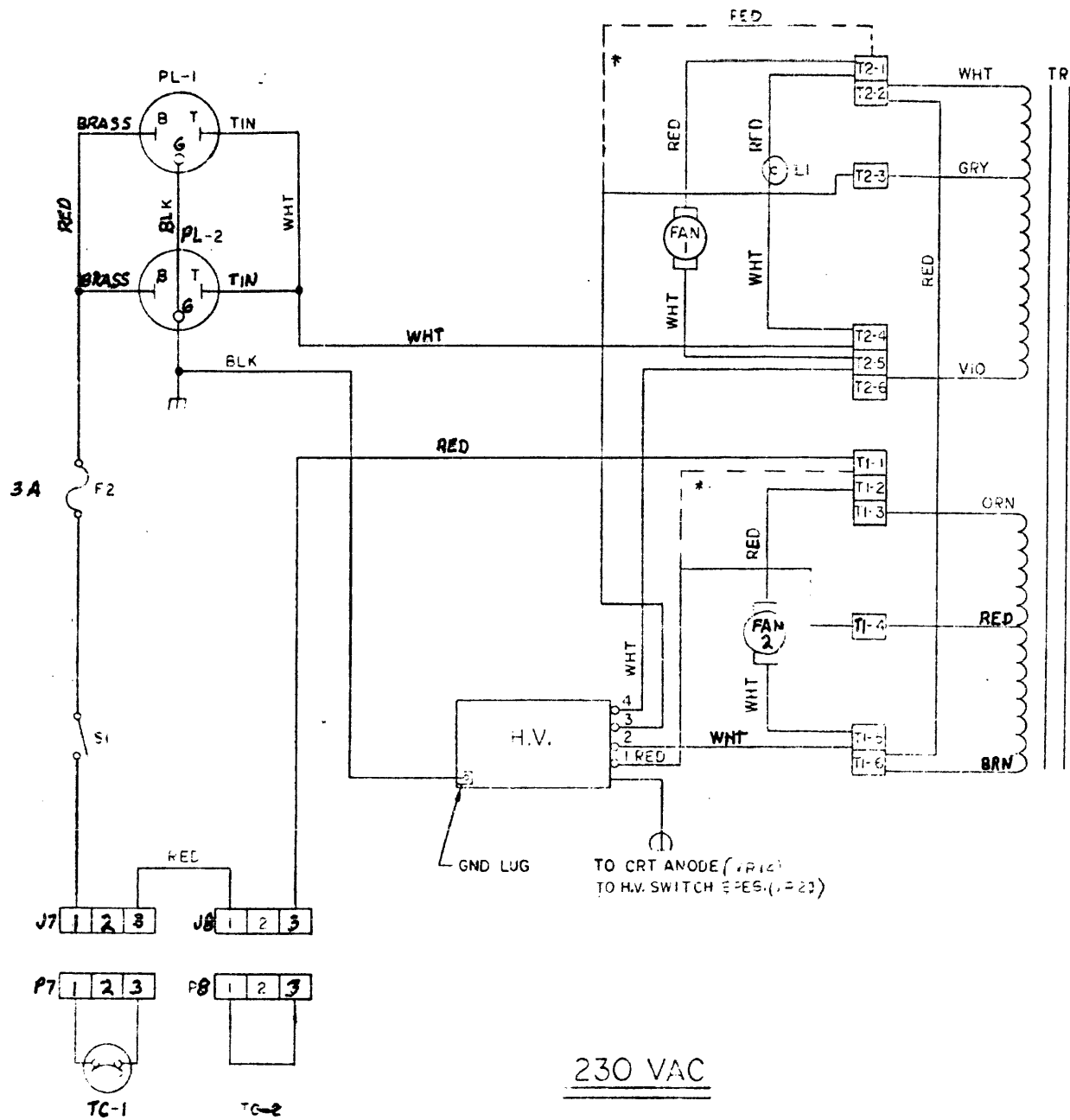
115 VAC

QTY	DESCRIPTION	PART NO.	ITEM NO.
	PWR SUP PARTS LIST	A-PL-7007084-0-0-15	
	F3 FUSE 10 AMP	9006536	14
	F2 FUSE 3 AMP	9207213	13
	F1 FUSE 5 AMP	9007222	12
	TR TRANSFORMER	1610160-0	11
	DIODE VATE-N-LOCK 3 PIN	1209352-3	10
	DIODE VATE-N-LOCK 9 PIN	1209351-9	9
	DIODE VATE-N-LOCK 6 PIN	1209351-6	8
	DIODE CAR 5900 AT 75V	1010143-0	7
	PL2 RECFER AC MALE 160-5 AMPH (115V)	1201252	6
	PL1 RECFER AC FEM 160-4 AMPH (115V)	1201251	5
	SWITCH & POT 100K 1/2W	1310393	4
	L1 LIGHT, PILOT 115 VAC	1209348	3
	C2 RECTIFIER, DM-15	1105799	2
	T2 JONES STRIP	9006904	1

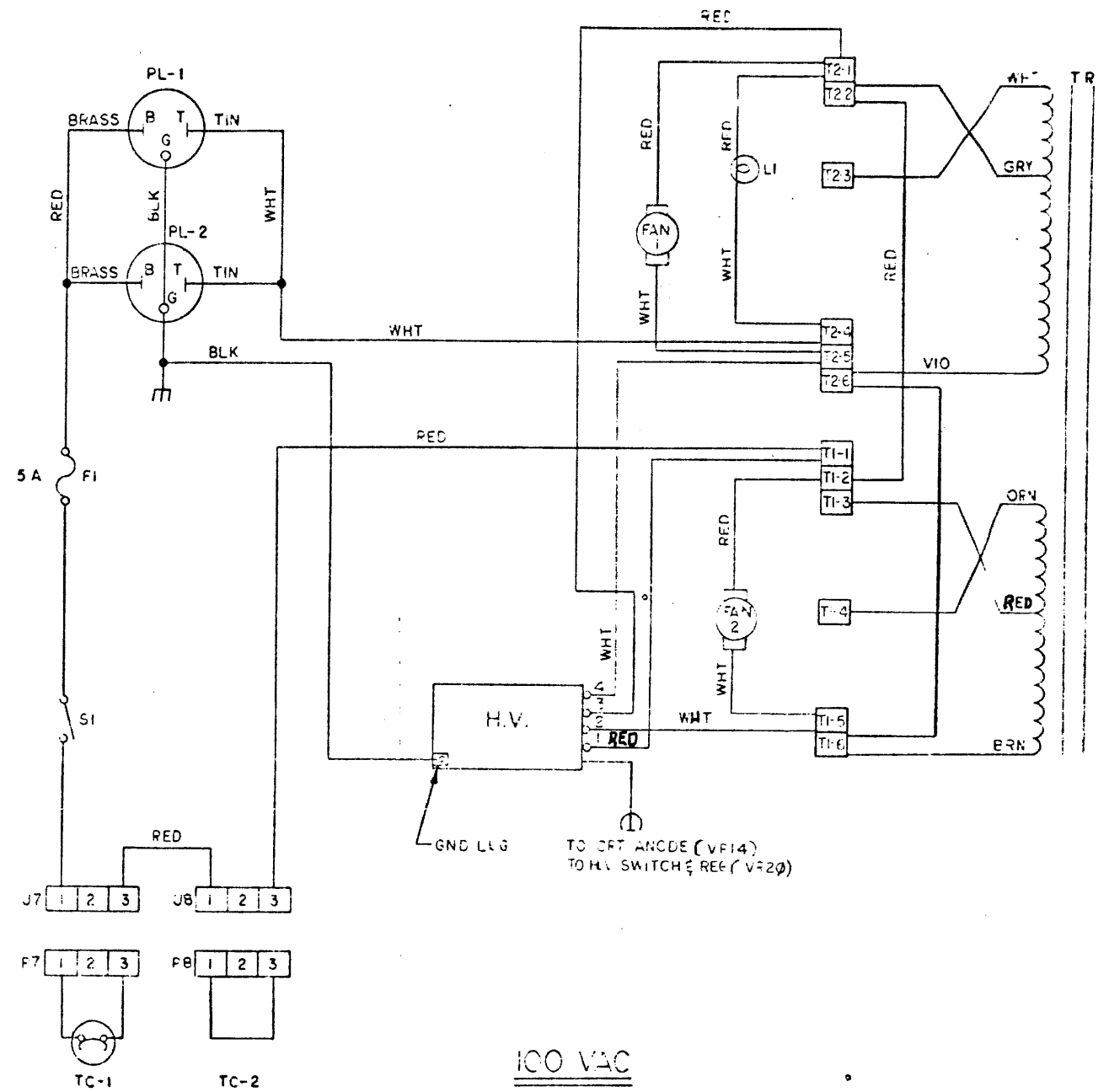
TRANSISTOR & DIODE CONVERSION CHART	FIRST USED ON OPTION/ MODEL VR14	EQUIPMENT CORPORATION MATHEW, MASSACHUSETTS
TITLE <b>CIRCUIT SCHEMATIC</b> (PWR. SUP.)	PART NO. <b>D-AD-7007084-0-0</b>	NUMBER <b>D-517007084-0-1</b>

1. VMS  
 2. A. FISHMAN  
 3. A. FISHMAN  
 4. A. FISHMAN  
 5. A. FISHMAN  
 6. A. FISHMAN  
 7. A. FISHMAN  
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 17. A. FISHMAN  
 18. A. FISHMAN  
 19. A. FISHMAN  
 20. A. FISHMAN





\* FOR VR20 OPERATION  
 DELETE T1-4, ADD TO T1-1  
 DELETE T2-3, ADD TO T2-1

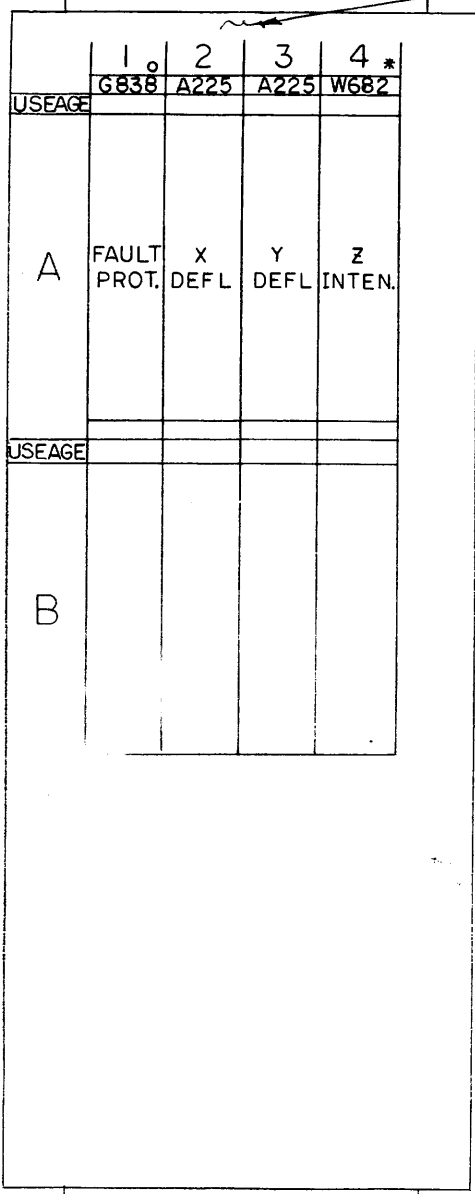


FIRST USED ON OPTION/MODEL		DATE		EQUIPMENT OCCUPATION	
VR14				CIRCUIT SCHEMATIC (PWR. SUP.)	
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES		TOLERANCES		NEXT HIGHER ASSY	
DECIMALS FRACTIONS ANGLES		± 0.05 ± 0.125 ± 0.008		DRAWING NO. 7007084-0-1	
FINAL PLATE QUALITY REMOVE BURRS AND BREAK SHARP EDGES		MATERIAL		REV	
		FINISH		2	

7007084-0-1  
 REV. 2  
 B

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NOTES:  
 1. MODULE INFORMATION SHOWN FROM WIRING SIDE.  
 2. A225' ARE REPLACED WITH A225-YB'S ON VRI4-LC AND LD

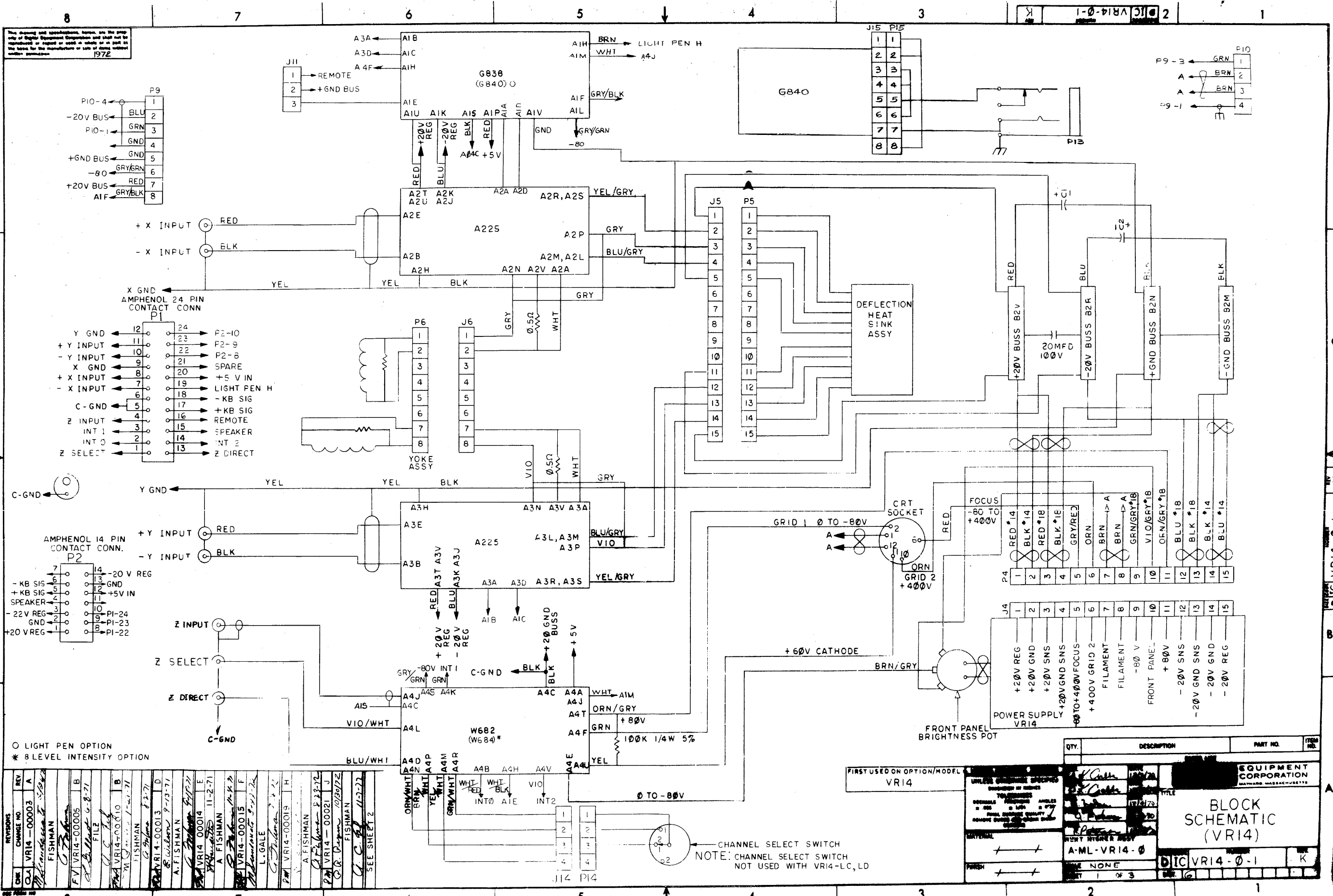


o G840 LIGHT PEN OPTION } (STANDARD ON VRI4 LC, LD)  
 \* W684 8 LEVEL INTENSITY OPTION }

REV.	CHANGE NO.	DATE	BY
A	-00019	8-10-72	A. FISHMAN
B	-00022	1-5-73	A. FISHMAN
		1-16-73	C. P.

FIRST USED ON OPTION/MOD VRI4	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DRN	DATE	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS TITLE <b>MODULE UTILIZATION (VRI4)</b>	
UNLESS OTHERWISE SPECIFIED	CHK'D	DATE		
TOLERANCES	ENG.	DATE		
DECIMALS ± .005	PROJ. ENG.	DATE		
FRACTIONS ± 1/64	PROD.	DATE		
ANGLES ± 0°30'				
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS				
MATERIAL	G-MU-VRI4-Ø-3		SIZE CODE	NUMBER
FINISH	SCALE	SHEET	C MU	VRI4-Ø-3
	1 OF 1			REV. B

REV. 1  
REV. 2  
REV. 3  
REV. 4  
REV. 5  
REV. 6  
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REV. 98  
REV. 99  
REV. 100



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○ LIGHT PEN OPTION  
\* 8 LEVEL INTENSITY OPTION

REV	CHG	NO	DATE	BY	CHK
A	01	VR14-00003			
B		VR14-00005			
C		VR14-00006			
D		VR14-00013			
E		VR14-00014			
F		VR14-00015			
G		VR14-00019			
H		VR14-00021			
I		VR14-00022			
J		VR14-00023			
K		VR14-00024			
L		VR14-00025			
M		VR14-00026			
N		VR14-00027			
O		VR14-00028			
P		VR14-00029			
Q		VR14-00030			
R		VR14-00031			
S		VR14-00032			
T		VR14-00033			
U		VR14-00034			
V		VR14-00035			
W		VR14-00036			
X		VR14-00037			
Y		VR14-00038			
Z		VR14-00039			
AA		VR14-00040			
AB		VR14-00041			
AC		VR14-00042			
AD		VR14-00043			
AE		VR14-00044			
AF		VR14-00045			
AG		VR14-00046			
AH		VR14-00047			
AI		VR14-00048			
AJ		VR14-00049			
AK		VR14-00050			
AL		VR14-00051			
AM		VR14-00052			
AN		VR14-00053			
AO		VR14-00054			
AP		VR14-00055			
AQ		VR14-00056			
AR		VR14-00057			
AS		VR14-00058			
AT		VR14-00059			
AU		VR14-00060			
AV		VR14-00061			
AW		VR14-00062			
AX		VR14-00063			
AY		VR14-00064			
AZ		VR14-00065			
BA		VR14-00066			
BB		VR14-00067			
BC		VR14-00068			
BD		VR14-00069			
BE		VR14-00070			
BF		VR14-00071			
BG		VR14-00072			
BH		VR14-00073			
BI		VR14-00074			
BJ		VR14-00075			
BK		VR14-00076			
BL		VR14-00077			
BM		VR14-00078			
BN		VR14-00079			
BO		VR14-00080			
BP		VR14-00081			
BQ		VR14-00082			
BR		VR14-00083			
BS		VR14-00084			
BT		VR14-00085			
BU		VR14-00086			
BV		VR14-00087			
BW		VR14-00088			
BX		VR14-00089			
BY		VR14-00090			
BZ		VR14-00091			
CA		VR14-00092			
CB		VR14-00093			
CC		VR14-00094			
CD		VR14-00095			
CE		VR14-00096			
CF		VR14-00097			
CG		VR14-00098			
CH		VR14-00099			
CI		VR14-00100			

FIRST USED ON OPTION/MODEL  
VR14

CHANNEL SELECT SWITCH  
NOTE: CHANNEL SELECT SWITCH NOT USED WITH VR14-LC, LD

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	UNLESS OTHERWISE SPECIFIED		
	RESISTORS IN OHMS		
	RESISTORS IN KΩ		
	RESISTORS IN MΩ		
	RESISTORS IN Ω		
	RESISTORS IN 10 <sup>3</sup> Ω		
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	RESISTORS IN 10 <sup>99</sup> Ω		
	RESISTORS IN 10 <sup>100</sup> Ω		

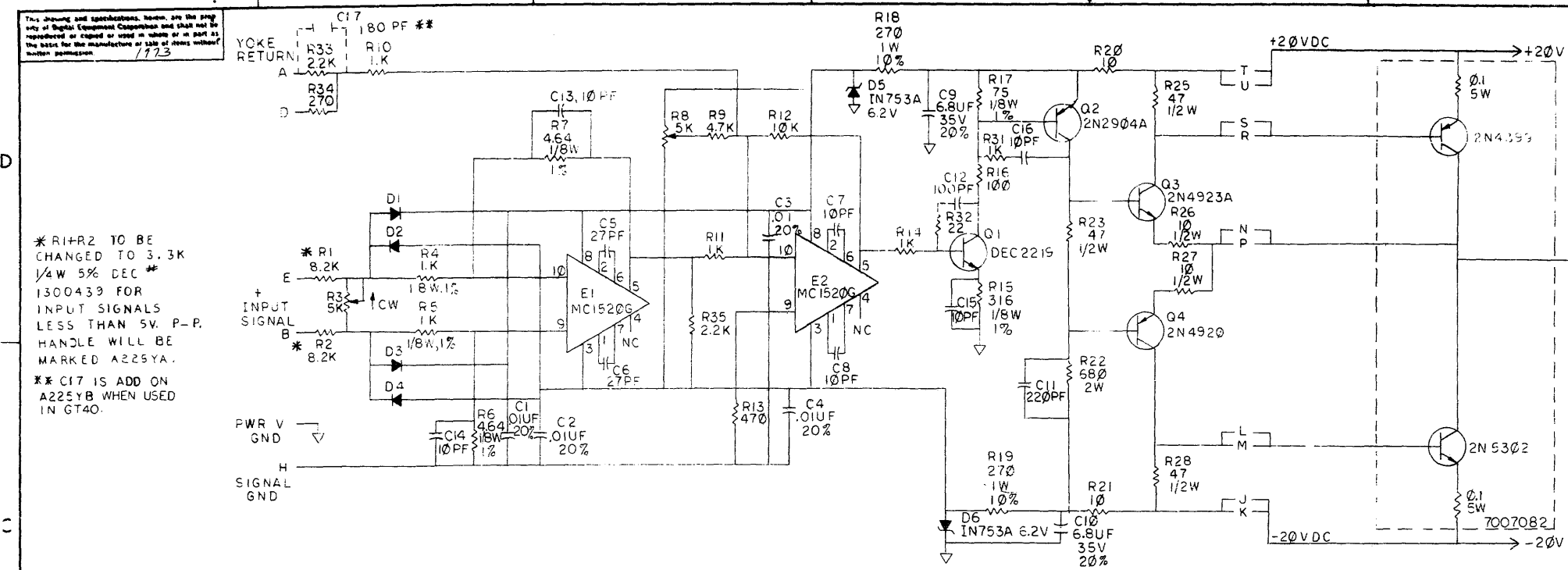
BLOCK SCHEMATIC (VR14)

VR14-0-1 K

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UNLESS OTHERWISE INDICATED:  
 ALL CAPS ARE 10PF, 100V, 5%  
 ALL RESISTORS ARE 1/4W, 5%  
 ALL DIODES ARE D664

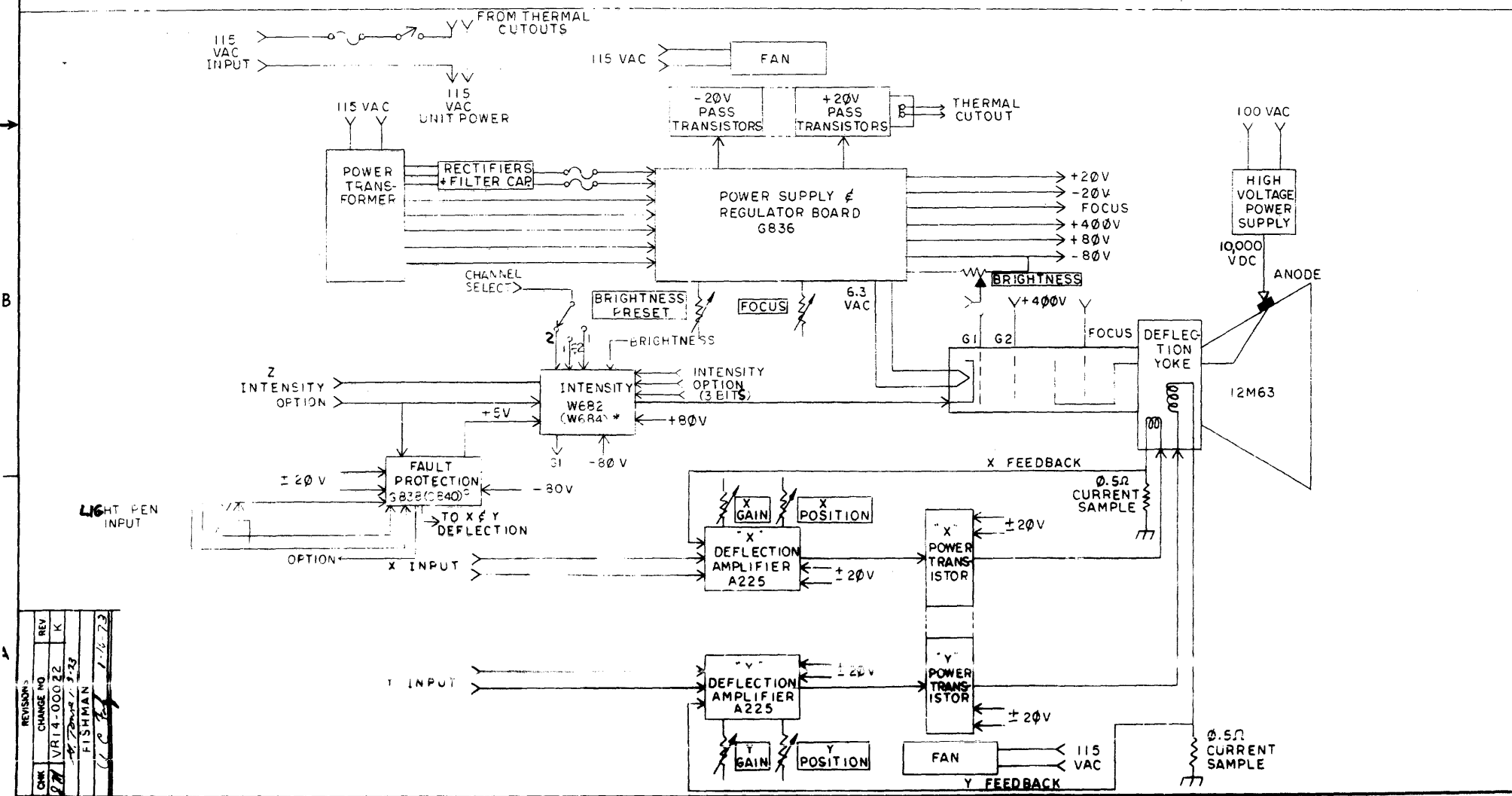
DEFLECTION AMPLIFIER  
 MAINTENANCE DRAWING



\* R1-R2 TO BE CHANGED TO 3.3K 1/4W 5% DEC \*  
 1300439 FOR INPUT SIGNALS LESS THAN 5V. P-P. HANDLE WILL BE MARKED A225YA.  
 \*\* C17 IS ADD ON A225YB WHEN USED IN GT40.

VR14 FUNCTIONAL BLOCK DIAGRAM  
 MAINTENANCE DRAWING

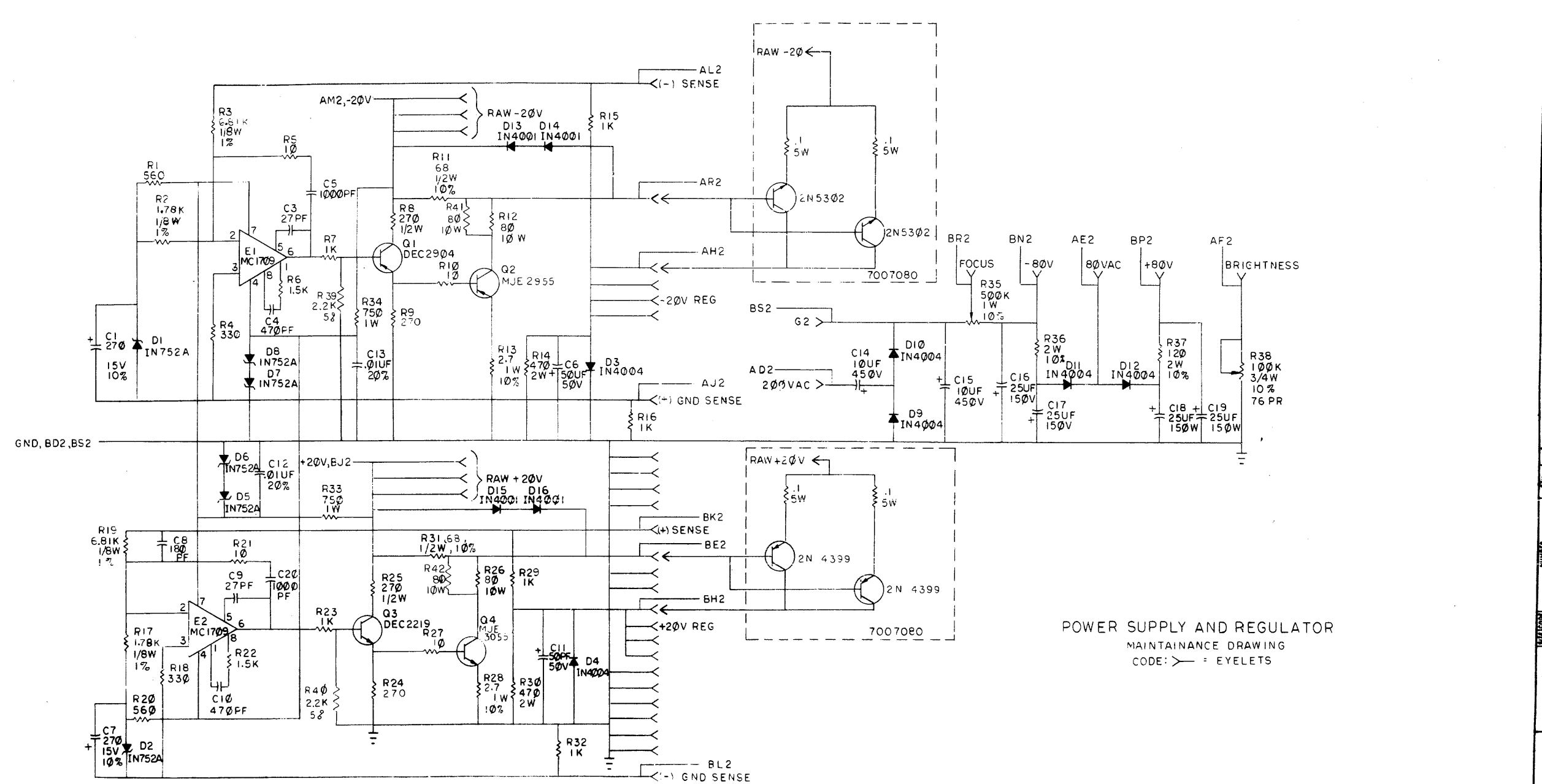
\* 8 LEVEL INTENSITY CONTROL OPTION.  
 O LIGHT PEN OPTION



REV	CHANGE NO	DATE	BY	CHK
1	VR14-0002	11/25/70	K	
2	VR14-0003	12/4/70	FISHMAN	
3	VR14-0004	1/23/71	FISHMAN	

FIRST USED ON OPTION/MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VR14				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED				
DIMENSIONS IN INCHES				
TOLERANCES UNLESS OTHERWISE SPECIFIED				
ORIGINALS	± .005	FRACTIONS	± .005	ANGLES
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP EDGES				
MATERIAL				
FINISH				
NEXT NUMBER ASSY				
A-ML-VR14-0				
SCALE NONE				
SHEET 2 OF 3				
DATE 11/25/70				
DRAWN BY [Signature]				
CHECKED BY [Signature]				
APPROVED BY [Signature]				
EQUIPMENT CORPORATION				
BLOCK SCHEMATIC (VR14)				
D I C VR14-0-1				

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1972



POWER SUPPLY AND REGULATOR  
MAINTENANCE DRAWING  
CODE: > = EYELETS

REV.	NO.

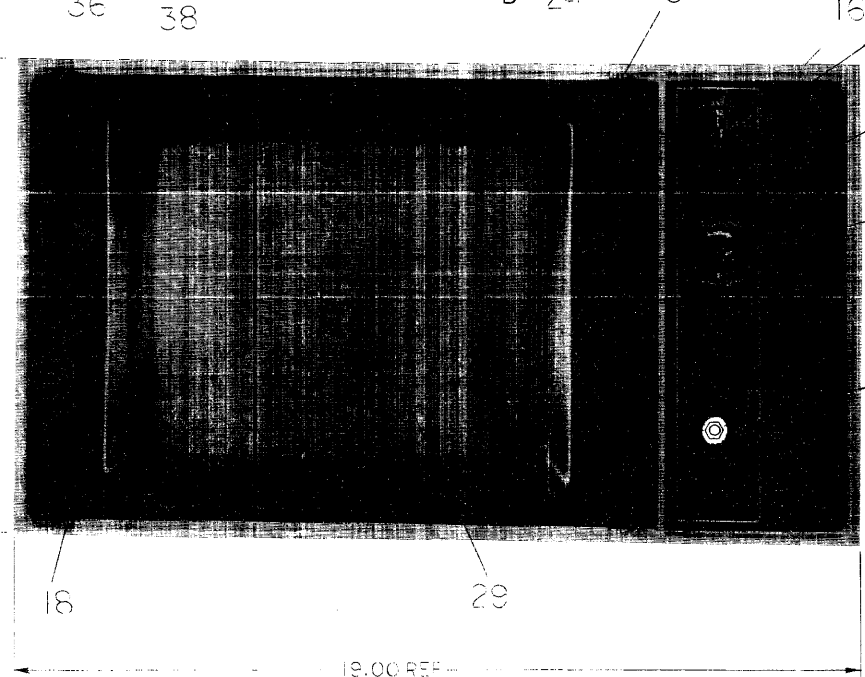
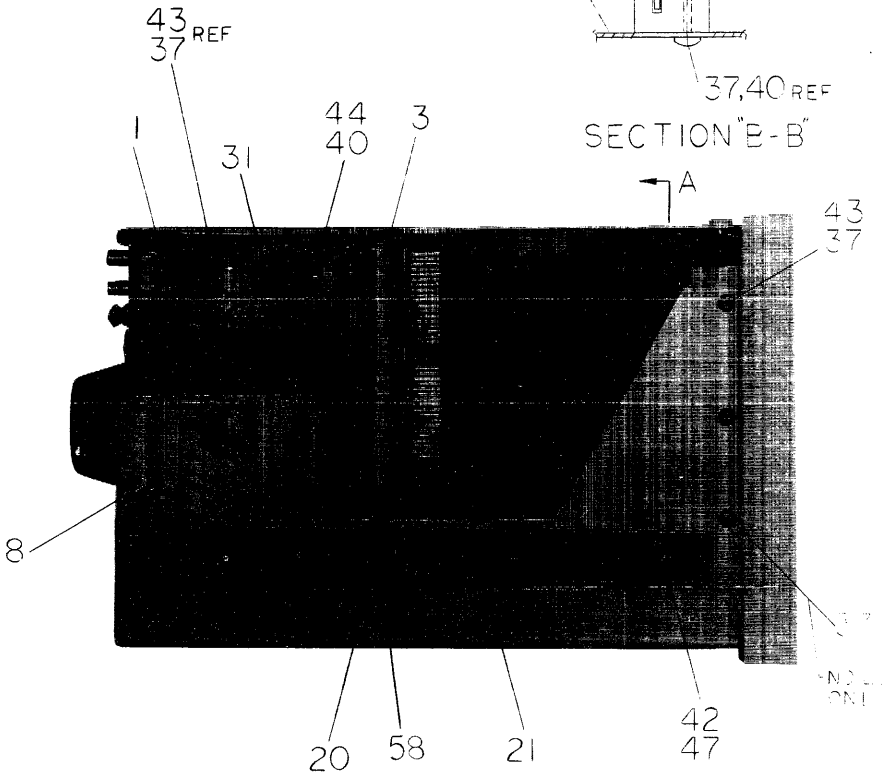
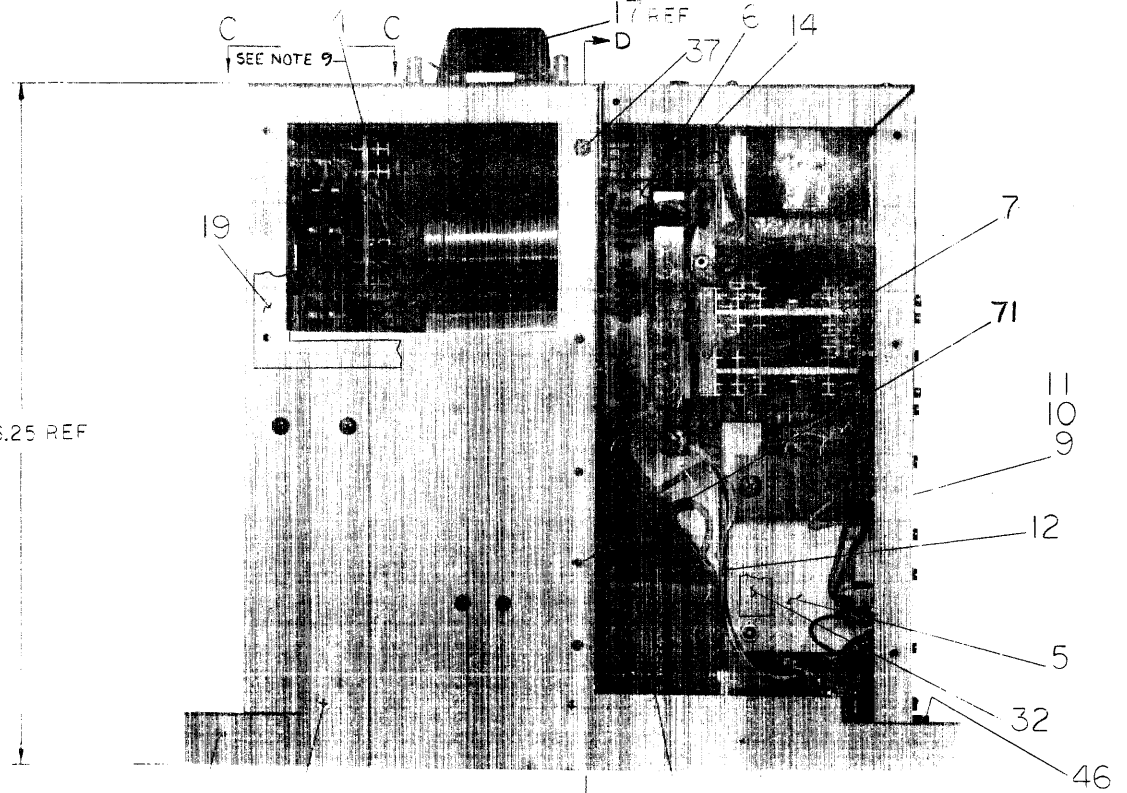
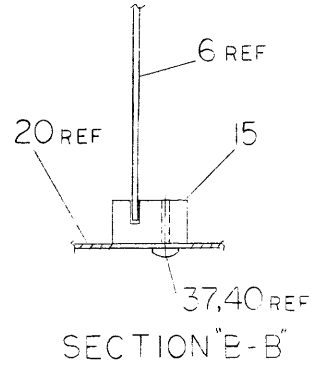
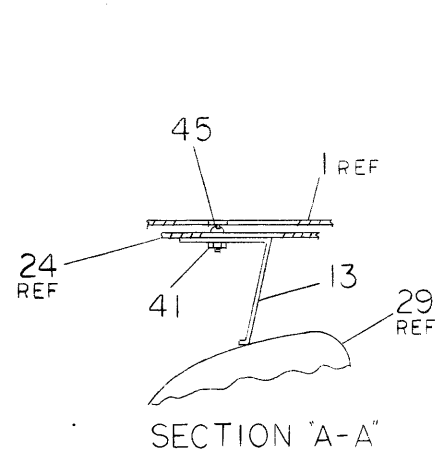
FIRST USED ON OPTION/NO.	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VR14				
<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES DECIMALS FRACTIONS ANGLES = .000 = .001 = 90° REMOVE DIMENSIONS FROM DIMENSION LINES</p>				
MATERIAL		EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS		
FINISH		BLOCK SCHEMATIC (VR14)		
A-ML-VR14-0		DRAWING NUMBER DIC VR14-0-1		
NONE		REV. NO. K		



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LEGEND	
NO.	VARIATION
VR14-0	115 VAC 50/60 HZ
VR14-A	230 VAC 50/60 HZ
VR14-B	100 VAC 50/60 HZ
VR14-C	115 VAC 50/60 HZ SUPER COVER
VR14-D	230 VAC 50/60 HZ SUPER COVER
VR14-E	100 VAC 50/60 HZ SUPER COVER
VR14-LC	115 VAC 50/60 HZ MODIFIED FOR GT 40
VR14-LD	230 VAC 50/60 HZ MODIFIED FOR GT 40

- NOTES:
- FOR DWG INDEX LIST REFER TO D-DI-VR14-0-2.
  - REMOVE ITEM #52 (WASHER) AFTER SHIPPING.
  - BEFORE MOUNTING CHASSIS TRACKS (ITEM #21) DRILL OUT BEAD OF METAL AT ONE END OF MIDDLE RUNNER ON BOTH TRACKS. USE 1/8 DRILL.
  - PLACE SHRINKIES, ITEM #55 ON POT-A, POT-B, & POT-C.
  - W684 USED WITH VR14-LC, LD.
  - G840 LIGHT PEN OPTION.
  - WHEN KEYBOARD IS CONNECTED THERE IS + AND -22 VOLTS ON PIN 22+24 ON INPUT CONNECTOR.
  - CONNECT BLK WIRE ITEM #67 WITH ITEM #5 68, 69 & 55 FROM TOP SCREW OF CONTROL PANEL TO GND LUG ON HI VOLTAGE SUPPLY ONLY ON C, D, E, LC & LD SYSTEMS.
  - FOR VR14'S LC & LD ROTATE YOKE (SYNTRONIC) SO THAT POINTS 3 & 4 ON YOKE ARE LOCATED ON TOP.



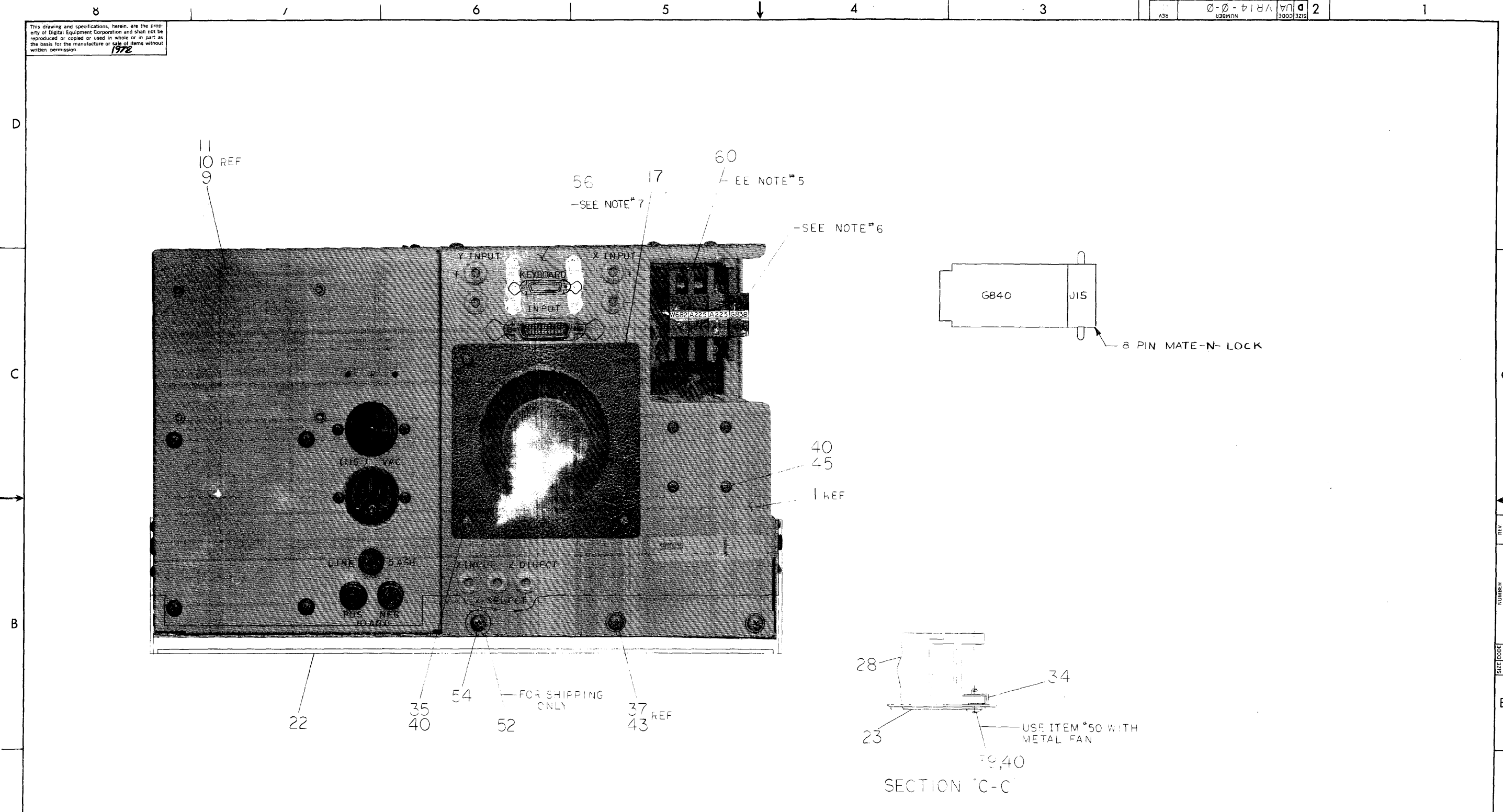
REV	CHANGE NO.	DATE	BY	CHK'D.	DATE
A	0003	12/15/70	FISHMAN	C. G. Galt	12/15/70
B	0009	12/15/70	FISHMAN	C. G. Galt	12/15/70
C	0010	12/15/70	FISHMAN	C. G. Galt	12/15/70
D	0013	12/15/70	FISHMAN	C. G. Galt	12/15/70
E	0015	12/15/70	FISHMAN	C. G. Galt	12/15/70
F	0018	12/15/70	FISHMAN	C. G. Galt	12/15/70
G	0021	12/15/70	FISHMAN	C. G. Galt	12/15/70
H	0022	12/15/70	FISHMAN	C. G. Galt	12/15/70
J	0023	12/15/70	FISHMAN	C. G. Galt	12/15/70

FIRST USED ON OPTION/MODEL  
 VR14

DO NOT SCALE DRAWING	
UNLESS OTHERWISE SPECIFIED	DIMENSION IN INCHES
TOLERANCES	DECIMALS FRACTIONS ANGLES
±.005	± 1/64 ± 0°30'
FINAL SURFACE QUALITY	
REMOVE BURRS AND BREAK SHARP CORNERS	
MATERIAL	
FINISH	

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS			
TITLE VR14 DISPLAY ASSY			
SCALE NONE		SIZE CODE D U A	NUMBER VR14-0-0
SHEET OF 4		DIST.	REV. J

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REVISIONS
CHK
CHK
CHK
CHK

FIRST USED ON OPTION/MODEL  
VR14

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
DECIMALS FRACTIONS ANGLES
±.005 ± 1/64 ± 0°30'
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
DRN.	DATE	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D.	DATE		
ENG.	DATE	TITLE VR14 DISPLAY ASSY	
PROD. ENGR.	DATE		
PROD.	DATE	NEXT HIGHER ASSY A-ML-VR14-0	
SCALE	NONE		
SHEET	2 OF 4	SIZE CODE	NUMBER
		DUA VR14-0-0	REV. J
		DIST.	



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### HARNESS TABLE

COLOR	HARN.#	MAIN CHASSIS LOC.
RED	1	BNC(L) TOP
BLK	2	BNC(L) BOT
YEL	3	BNC(L) TOP GND
RED	4	BNC(R) TOP
BLK	5	BNC(R) BOT
YEL	6	BNC(R) TOP GND
WHT/BLU	7	A04D
BLK	8	A04C
W-1/BLU	10	A24D
WHT/VIO	11	A04L
CLEAR	12	A04J
WHT/VIO	13	A04L
ORN	14	E04D
RED	15	E04J
FRN	16	B04A
BRN	17	B04B
ERN	18	B04A
ERN	19	B04B
BRN	20	B04A
ERN	21	E04B
BLK	22	E04I
GRN	23	E04F
YEL	24	E04L
ORN	25	E24D
BLU	26	E03R
BLK	27	B01M
BLU	28	B04R
BLK	29	E03M
RED	30	E04E
GRY/RED	31	E04J
BLK	32	B02M
BLU	33	E03R
RED	34	B23V
BLK	35	E01M
BLK	36	B04I
RED	37	B04V
GRY/BLK	38	A01F
GRY/GRN	39	A01L
WHT/BLK	40	A01E
GRY/GRN	56	P0TA
GRY/GRN	57	P0TA
GRY/GRN	58	P0TA
GRY/VIO	59	P0TC
GRY/BRN	60	P0TB
WHT/GRN	81	A04R
WHT/BRN	82	A04P
WHT/YEL	83	A04M
WHT/ORN	84	A04N
GRY/BRN	85	A04E
BLK	86	B04M
RED	87	E03V

### HARNESS TABLE CONT.

COLOR	HARN.#	MAIN CHASSIS LOC.
BLK	88	B04N
BLU	89	B04R
GRY/GRN	90	A04T
RED	91	A02E
BLK	92	A02E
YEL	93	A02F
RED	94	A03E
BLK	95	A03B
YEL	96	A03H
BLK	97	CAPI-NEG
RED	98	CAPI-POS
BLK	99	CAP2-POS
BLU	100	CAP2-NEG
BLK	101	C-GND POINT
WHT/VIO	102	PI-1
CLEAR	103	PI-4
BLU	104	PI-16
WHT/BLU	105	PI-13
BLK	106	C-GND POINT
CLEAR	107A	Z INPUT
WHT/VIO	108	Z SELECT
BLK	109	Z INPUT GND DIRECT
WHT/BLU	110	Z INPUT
CLEAR	107C	Z INPUT
SHIELD	107B	Z INPUT GND
SHIELD	102D	C-GND POINT
SHIELD	107	Z INPUT GND
SHIELD	11A	A04C
WHT/RED	105C	PI-2
WHT/RED	6A	A04B
GRN	105B	PI-3
GRN	10A	A04K
VIO	105A	PI-14
VIO	13A	A04V
BRN	102A	PI-19
BRN	96A	A01H
BLU	101C	P2-3
BLU	96F	CAP 2 - NEG
BLK	101B	P2-2
BLK	96D	CAP 2 - POS
RED	101A	P2-1
RED	96B	CAPI- POS
BLU	102C	P2-14
BLU	96E	CAP 2 - NEG
BLK	102B	P2-13
BLK	96C	CAP 2 - POS

BNC (L) TOP



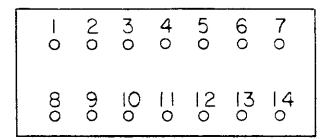
BNC (L) BOT.



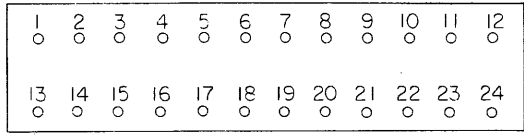
BNC (R) TOP



BNC (R) BOT.

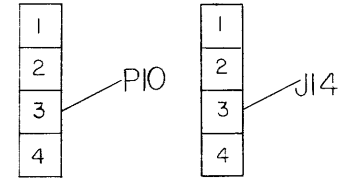


P2 AMPHENOL 14 CONTACT CONN.



P1 AMPHENOL 24 CONTACT CONN.

C-GND POINT



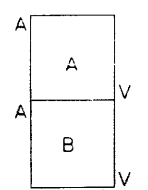
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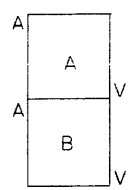
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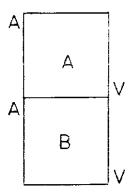
Z SELECT



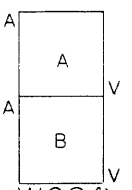
(G840)  
G838  
FAULT PROTECTION



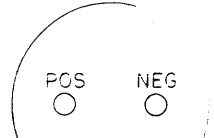
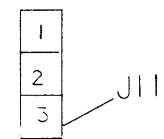
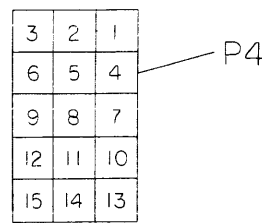
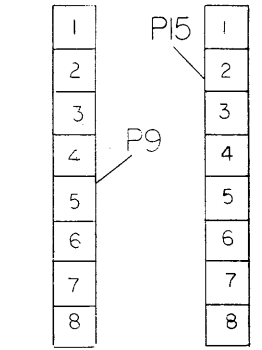
A225  
X AMP



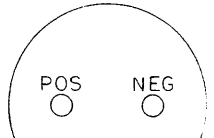
A225  
Y AMP



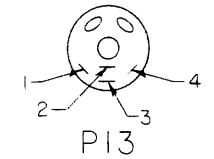
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W682  
Z INTENSITY



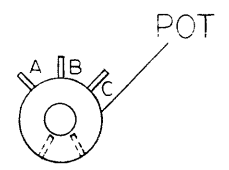
CAP 2



CAP 1



P13



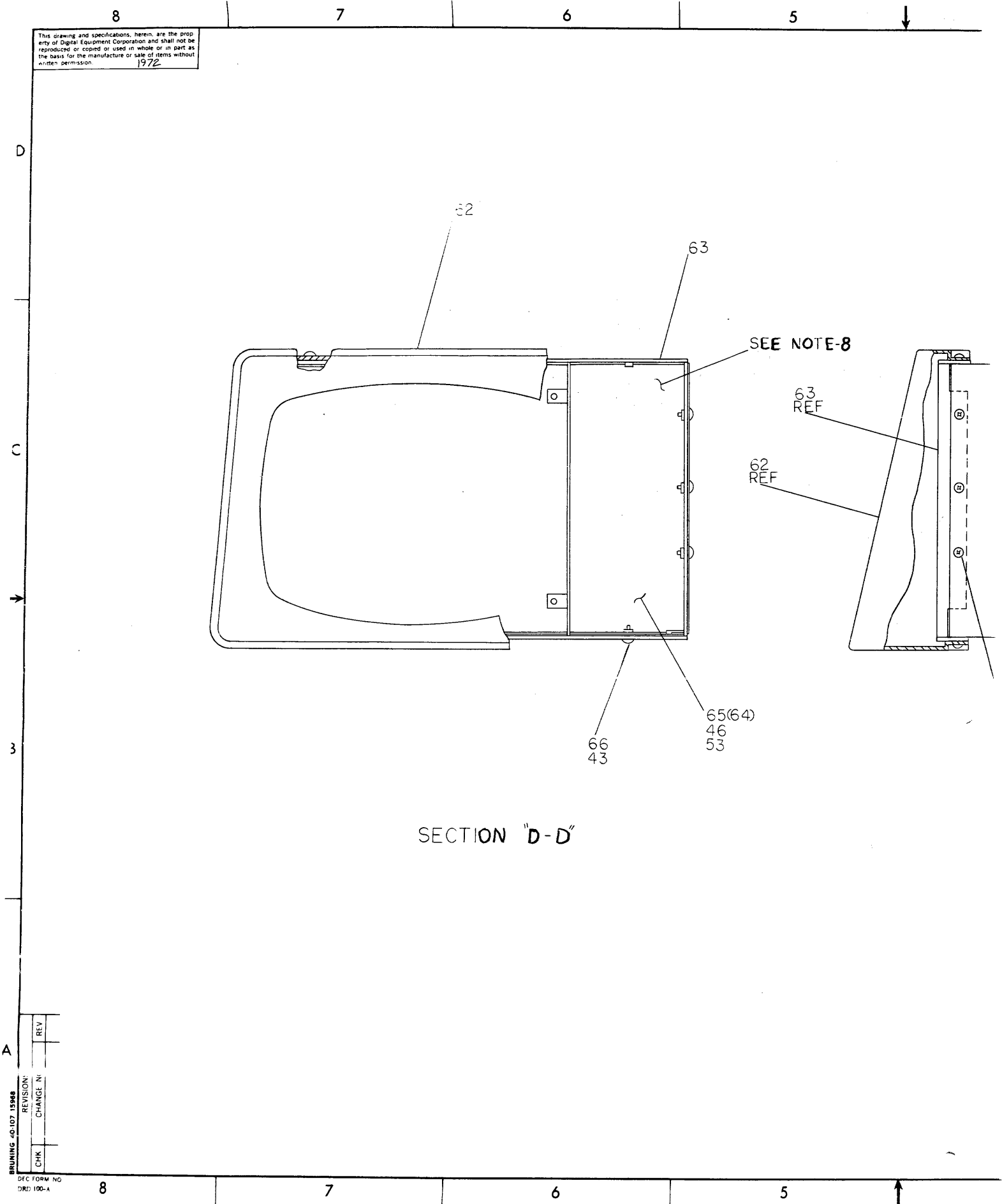
POT

NOTE: ALL ABOVE PARTS SHOWN ARE VIEWED FROM WIRING SIDE. P15 PLUGS INTO J15 ON 6840.

FIRST USED ON OPTION / MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VR14				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DRN	DATE	<b>digital</b> EQUIPMENT CORPORATION <small>WATERTOWN MASSACHUSETTS</small>	
UNLESS OTHERWISE SPECIFIED	CHK'D	DATE		
DIMENSION IN INCHES	ENG	DATE		
TOLERANCES	PROJ. ENG.	DATE		
DECIMALS FRACTIONS ANGLES	PROD.	DATE		
= .005 ± .164 ± 0°30'			<b>VR14</b> <b>DISPLAY ASSY</b>	
REMOVE BURRS AND BREAK SHARP CORNERS			SIZE CODE	NUMBER
MATERIAL			DUA	VR14-0-0
FINISH			SCALE	NONE
			SHEET	3 OF 3

REVISIONS  
CHANGE NO.  
CHK

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SECTION "D-D"

UNLESS OTHERWISE SPECIFIED		DRN		DATE		DESCRIPTION		PART NO.		ITEM NO.	
DIMENSION IN INCHES		Cerny		10-1672		digital EQUIPMENT CORPORATION		MAYNARD MASSACHUSETTS		TITLE	
TOLERANCES		CHK'D		DATE		VR14		DISPLAY ASSY		REV	
DECIMALS	ANGLES	C.P.		10-18-72		MATERIAL		NEXT HIGHER ASSY.		SIZE CODE	
XXX = .005	±0° 30'	ENG		DATE		2-ML-VR14-φ		SCALE NONE		NUMBER	
X = 1		PROJ. ENG		DATE		DUA VR14-0-1		SHEET 4 OF 4		DIST.	
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY		PROD.		DATE							

DRUMING 10-107 15948	REV	
REVISION	CHG	
CHANGE IN		
CHK		

NUMBER V114-0-1  
 SIZE CODE DUA  
 B

**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS  
**PARTS LIST**

**QUANTITY / VARIATION**

MADE BY D.K. CRABBE  
DATE 12-2-70  
ENG *D.K. Crabbe*  
DATE 12/18/70

CHECKED *D.K. Crabbe* SECTION 1  
DATE 12/18/70  
PROD *R Peterson* ISSUED SECT. 1  
DATE 12/18/70

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	VR14-B	VR14-A	VR14-B	VR14-C	VR14-D	VR14-E	VR14-LC	VR14-LD
1	D-AD-7007077-0-0	TOP MFG ASSY	1	1	1	1	1	1	1	1
2	C-IA-7409068-0-0	PANEL, CONTROL	1	1	1	-	-	-	-	-
3	D-AD-7007078-0-0	WIRED ASSY	1	1	1	1	1	1	1	1
4	D-IA-7007088-0-0	C.R.T. YOKE ASSY	1	1	1	1	1	1	1	1
5	D-AD-7007079-0-0	HIGH VOLTAGE ASSY	1	1	1	1	1	1	1	1
6	D-AD-7007165-0-0	POWER REGULATOR ASSY (VR14)	1	1	1	1	1	1	1	1
7	D-AD-7007080-0-0	POWER SUPPLY HEAT SINK ASSY	1	1	1	1	1	1	1	1
8	D-AD-7007082-0-0	DEFLECTION HEAT SINK ASSY	1	1	1	1	1	1	1	1
9	D-AD-7007084-1-0	POWER SUPPLY ASSY	1	-	-	1	-	1	-	-
10	D-AD-7007084-2-0	POWER SUPPLY ASSY	-	1	-	-	1	-	-	1
11	D-AD-7007084-3-0	POWER SUPPLY ASSY	-	-	1	-	-	1	-	-
12	E-IA-7008457-0-0	MAIN CHASSIS HARNESS	1	1	1	1	1	1	1	1
13	C-IA-7408411-0-0	GROUND, TUBE	1	1	1	1	1	1	1	1
14	C-IA-7408409-0-0	SHIELD, SAFETY	1	1	1	1	1	1	1	1
15	C-MD-7408414-0-0	HOLDER, CARD	1	1	1	1	1	1	1	1
16	E-IA-7406891-0-0	BEZEL, CONTROL PANEL	1	1	1	1	1	1	1	1
17	C-MD-7408434-0-0	CAP (VR14)	1	1	1	1	1	1	1	1
18	D-MD-7406837-0-0	MASK, CATHODE RAY TUBE	1	1	1	-	-	-	-	-
19	D-IA-7408408-0-0	SCREEN, SAFETY (VR14)	1	1	1	1	1	1	1	1
20	D-IA-7408400-0-0	PLATE, BOTTOM MFG.	1	1	1	1	1	1	1	1
21	D-SC-1209147-0-0	SLIDE, 16" TRAVEL CHASSIS TRACK	1	1	1	-	-	-	-	-
22	D-MD-7408549-0-0	CHASSIS TRACK BRACE	1	1	1	-	-	-	-	-

TITLE VR14 DISPLAY ASSY  
ASSY NO. D-UA-VR14-0-0  
SHEET 1 OF 4  
SIZE CODE A PL  
DIST. G  
NUMBER VR14-0-0  
REV. J  
ECO NO. VR14-00022

**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS  
**PARTS LIST**

**QUANTITY / VARIATION**

MADE BY D. CRABBE  
DATE 12-2-70  
ENG *D.K. Crabbe*  
DATE 12/18/70

CHECKED *D.K. Crabbe* SECTION 1  
DATE 12/18/70  
PROD *R Peterson* ISSUED SECT. 1  
DATE 12/18/70

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	VR14-B	VR14-A	VR14-B	VR14-C	VR14-D	VR14-E	VR14-LC	VR14-LD
23	C-MD-7404881-0-0	FAN, SCREEN	2	2	2	2	2	2	2	2
24	E-SC-1210104-0-0	C.R.T. SHIELD	1	1	1	1	1	1	2	2
25	D-IA-7407791-0-0	SUPER COVER VR14								
26	B-MD-7407793-0-0	SPACER								
27	B-MD-7407794-0-0	BAR, SPACER								
28	1209403-0	FAN, BOXER 7 BLADE	2	2	2	2	2	2	2	2
29	1209597-6	CATHODE RAY TUBE TYPE 12 M63 THOMAS	1	1	1	1	1	1	1	1
30	1209576	KNOB # SS-70L-2-BLK BUCKEYE	1	1	1	1	1	1	1	1
31	1009434	CAPACITOR, 5500 MFD 40 VDC-10, +100%	2	2	2	2	2	2	2	2
32	3610267	"DANGER HIGH VOLTAGE" STICKER	1	1	1	1	1	1	1	1
33	9006584	SPEED NUT #C8091-6-32-4 TINNEMAN	4	4	4	4	4	4	4	4
34	9008202	CLIP, FAN TINNEMAN	8	8	8	8	8	8	8	8
35	9006022-1	SCR, PANHD PHL #6-32 X 3/8 SST	4	4	4	4	4	4	4	4
36	9006024-2	SCR, FLAT HD PHL #6-32 X 1/2 SST	4	4	4	4	4	4	4	4
37	9006071-3	SCR, PHL TRUSS HD #10-32 X 3/8 SST	49	49	49	49	49	49	49	49
38	9006071-2	SCR, PHL FLAT HD #10-32 X 3/8 SST	5	5	5	5	5	5	5	5
39	9006024-1	SCR, PAN HD PHL #6-32 X 1/2 SST	8	8	8	8	8	8	8	8
40	9006633	WASHER, LOCK INT TOOTH #6	26	26	26	26	26	26	26	26
41	9006560	NUT, KEPS #6-32	5	5	5	5	5	5	5	5
42	9006070-1	SCR, PHL TRUSS HD #10-32 X 5/16 SST	10	10	10	2	2	2	2	2
43	9006635	WASHER, LOCK INT TOOTH #10	61	61	61	61	61	61	61	61
44	9006020-1	SCR, PHL PAN HD #6-32 X 1/2 SST	4	4	4	4	4	4	4	4

TITLE VR14 DISPLAY ASSY.  
ASSY NO. D-UA-VR14-0-0  
SHEET 2 OF 4  
SIZE CODE A PL  
DIST. G  
NUMBER VR14-0-0  
REV. J  
ECO NO.

# DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS PARTS LIST

MADE BY D. CRABBE  
 DATE 12-2-70  
 ENG D. CRABBE  
 DATE 12-8-70  
 CHECKED D. CRABBE  
 DATE 12-8-70  
 PROD R. PETERSON  
 DATE 12-8-70  
 SECTION 1  
 ISSUED SECT. 1

ITEM NO.	DWG NO / PART NO.	DESCRIPTION	VR14-0	VR14-A	VR14-B	VR14-C	VR14-D	VR14-E	VR14-LC	VR14-LD
45	9006021-1	SCR, PHL PAN HD #6-32 X 5/16 SST	10	10	10	10	10	10	10	10
46	9006563	NUT, KEPS #8-32	2	2	2	3	3	3	3	3
47	9007651	WASHER, LOCK EXT TOOTH #10	8	8	8	-	-	-	-	-
48	<del>9006074-2</del>	<del>SCR, PHL FLAT HD #10-32 X 5/8 SST</del>								
49	9006025-2	SCR, PHL FLAT HD #6-32 X 5/8 SST	-	-	-	2	2	2	2	2
50	9006121	SCR, SELF-TAPPING #8-32 X 3/8 SST	8	8	8	8	8	8	8	8
51	<del>9006071-1</del>	<del>SCR, PHL PAN HD #10-32 X 3/8 SST</del>	6	6	6	6	6	6	6	6
52	9008146	WASHER, FLAT .63 OD X .23 ID X .048 THK	1	1	1	-	-	-	-	-
53	9006660	WASHER, FLAT .375 OD X .187 X .036 THK	-	-	-	3	3	3	3	3
54	9006074-3	SCR, PHL TRUSS HD #10-32 X 5/8 SST	1	1	1	-	-	-	-	-
55	9107305	SHRINKIES (RED)	3	3	3	3	3	3	3	3
56	7408407	DECALS (VR14)	1	1	1	1	1	1	1	1
57	C-IA-7408425-0-0	PANEL CONTROL (GT-40)								
58	7007006-3	JUMPER	1	1	1	1	1	1	1	1
59	7008976	CHANNEL SELECT SWITCH	1	1	1	1	1	1	1	1
60	C-UA-375-0-0	LIGHT PEN OPTION	A/RA/RA/RA/RA/E	A/RA/RA/RA/RA/E	A/RA/RA/RA/RA/E	A/RA/RA/RA/RA/E	A/RA/RA/RA/RA/E	A/RA/RA/RA/RA/E	A/RA/RA/RA/RA/E	A/RA/RA/RA/RA/E
61	D-AD-7009027-0-0	SUPER COVER ASSY	-	-	-	1	1	1	1	1
62	E-PS-1211106-0-0	MASK	-	-	-	1	1	1	1	1
63	E-IA-7409964-0-0	BRACE CHASSIS	-	-	-	1	1	1	1	1
64	C-IA-7409977-0-0	PANEL CONTROL (GT-40)	-	-	-	-	-	-	-	-
65	C-IA-7409974-0-0	PANEL CONTROL (PDP-12)	-	-	-	1	1	1	1	1
66	9006073-3	SCR, PHL TRUSS HD #10-32 X 1/2 SST	-	-	-	6	6	6	6	6

TITLE VR14 DISPLAY ASSY  
 ASSY NO. D-UA-VR14-0-0  
 SIZE CODE A PL  
 NUMBER VR14-0-0  
 REV. ECO NO. U  
 SHEET 3 OF 4  
 DIST. G

DEC FORM DEC 16 (325)-1031-N870  
 PRA 110

# DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS PARTS LIST

MADE BY D. CRABBE  
 DATE 12-2-70  
 ENG D. CRABBE  
 DATE 12-8-70  
 CHECKED D. CRABBE  
 DATE 12-8-70  
 PROD R. PETERSON  
 DATE 12-8-70  
 SECTION  
 ISSUED SECT.

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	VR14-0	VR14-A	VR14-B	VR14-C	VR14-D	VR14-E	VR14-LC	VR14-LD
67	9107360-0-0	WIRE #18 AWG IVPC BLK	-	-	-	A/RA/RA/RA/RA/RA/E	A/RA/RA/RA/RA/RA/E	A/RA/RA/RA/RA/RA/E	A/RA/RA/RA/RA/RA/E	A/RA/RA/RA/RA/RA/E
68	9007930-0	CONN, ARKLES #50360-1	-	-	-	1	1	1	1	1
69	9007925-0	CONN, #300H21A-1K	-	-	-	1	1	1	1	1
70	9006637	WASHER, INT TOOTH 3/8 ID #1220	1	1	1	1	1	1	1	1
71	9007081	CLAMP, CABLE 1/4 ID	1	1	1	1	1	1	1	1

TITLE VR14 DISPLAY ASSY  
 ASSY NO. D-UA-VR14-0-0  
 SIZE CODE A PL  
 NUMBER VR14-0-0  
 REV. ECO NO. U  
 SHEET 4 OF 4  
 DIST.

DEC FORM DEC 16-(325)-1031-N870  
 PRA 110

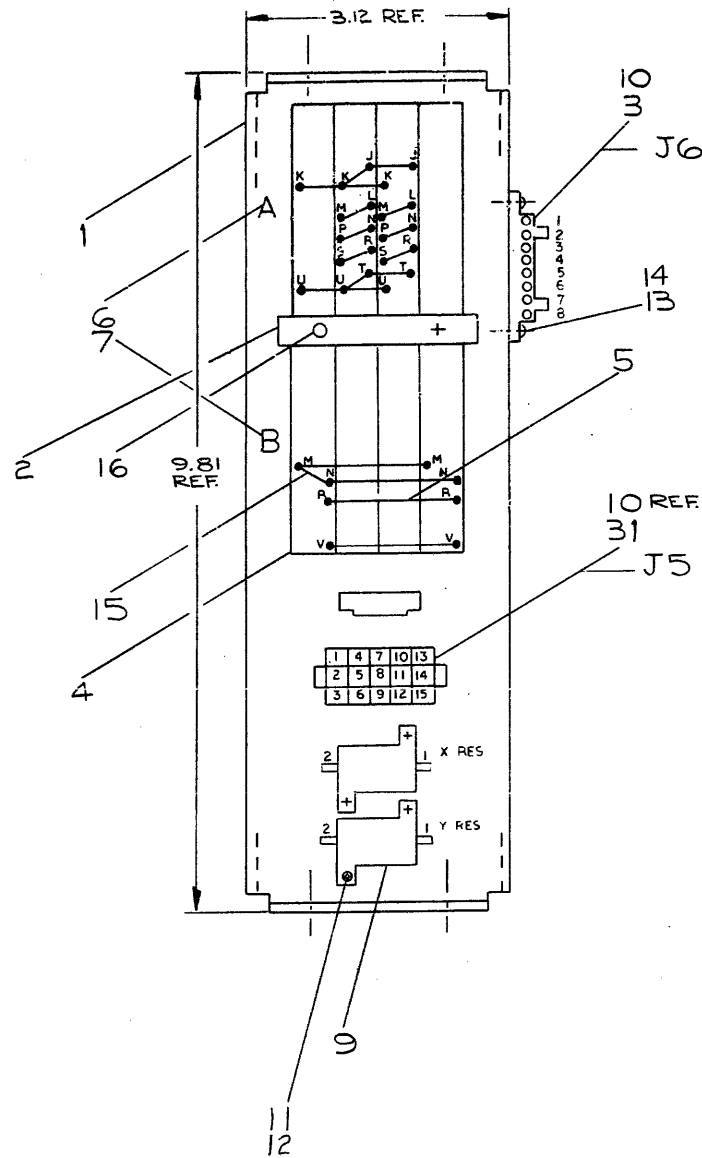
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EXTERNAL COMPONENTS TABLE						
ITEM	COMP	POL	FROM	TO	POL	REMARKS
8	RES		A04U	A04T		100K
9	XRES		SEE WIRE TABLE			0.5Ω
9	YRES		SEE WIRE TABLE			0.5Ω
32	CAP		A01K	A01V		20 MFD
36	RES		B04F	B04N		470K

WIRE TABLE					
SIGNAL NAME	ITEM NO	DESCRIPTION	CONNECTION		
			AWG	COLOR	FROM TO
	5				A02T A03T
					A01U A03U
					A02J A03J
					A01K A03K
					B01N B04N
					B01M B04M
					B01R B04R
	5				B01V B04V
	15	18	BUS		A02J A02K
					A02T A02U
					A02S A02R
					A02N A02P
					A02L A02M
					A03S A03R
					A03N A03P
					A03L A03M
	15		BUS		B01N B01M
+20 DC	17		RED	B02V	J5-1
+20 DC	17		RED	B02V	J5-15
	22		YEL/GRY	A02S	J5-2
	22		YEL/GRY	A03S	J5-14
	23		BLU/GRY	A02M	J5-4
	23		BLU/GRY	A03M	J5-12
-20 DC	20		BLU	B02R	J5-5
-20 DC	20		BLU	B02R	J5-11
X YOKE HOT	19		GRY	A02P	J5-3
Y YOKE HOT	21		VIO	A03P	J5-13
X YOKE HOT	19		GRY	A02N	J6-1
Y YOKE HOT	21		VIO	A03N	J6-8
X YOKE RETURN	18		WHT	J6-2	XRES-2
Y YOKE RETURN	18		WHT	J6-7	YRES-1
+20 DC	17		RED	B01V	A02U
-20 DC	20		BLU	B01R	A02K
GND	24		BLK	A03V	B03M
GND	24		BLK	XRES-1	A02V
	26	22	YEL	B04L	A04U
	25		GRN	B04F	A04F
X SAMPLE	29		WHT	A01A	XRES-2
Y SAMPLE	29		WHT	A03A	YRES-1
X SIG GND	27		BLK	A02H	A02V
Y SIG GND	27		BLK	A03H	A03V
+5V	28		RED	A01P	A04A
GND	27		BLK	A04C	B03M
GND	27		BLK	XRES-1	A02H
GND	27	22	BLK	YRES-2	A03H
	5			A01A	A02A
	5			A01D	A02D
GND	24	18	BLK	A01V	B02M
GND	24	18	BLK	A02V	B02M
	29	22	WHT	A03A	A01B
	29	22	WHT	A03D	A01C
-80V	35	18	GRY/GRN	A04S	A01L
	34	22	WHT/BLK	A01E	A04H
GND	27	22	BLK	A01S	A04C

NOTES:  
 1. TWIST (2 WIRES) 3 TWIST PER INCH MIN & 4 TWIST PER INCH MAX.  
 2. USE TERMIPOINT CONNECTORS ON ITEMS 8+32

SIGNAL NAME	ITEM NO	AWG	COLOR	FROM	TO
Z INT	19	22	WHT	A01M	A04U



REV	DESCRIPTION	DATE
A	VR14-0002	1-6-71
B	VR14-0010	1-15-71
C	VR14-0014	11-2-71
D	VR14-0019	11-2-71
E	VR14-0021	11-2-71
F	VR14-0022	11-2-71
	VR14-0023	11-2-71
	VR14-0024	11-2-71

DEC FORM NO. 100

FIRST USED ON OPTION / MODEL: VR14

DO NOT SCALE DRAWING UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES

TOLERANCES: DECIMALS FRACTIONS ANGLES: .005 .015 .030 = 0°30'

FINAL SURFACE QUALITY: REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: ---

FINISH: ---

DATE: 5/2/70  
 DATE: 11/2/70  
 DATE: 11/6/70

DRN: [Signature]  
 ENGR: [Signature]  
 PROJ. ENG: [Signature]  
 PROD: [Signature]

digital EQUIPMENT CORPORATION  
 MAYNARD, MASSACHUSETTS

TITLE: WIRED ASSY (VRI4)

NEXT HIGHER ASSY: D-UR-VR14-φ-φ

SCALE: NONE

SHEET 1 OF 1

SIZE CODE: DAD NUMBER: 7007078-0-0 REV: F

**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS

**PARTS LIST**

MADE BY J. Cahill  
DATE 10/2/70  
ENG *D.K. Crabbe*  
DATE 11/6/70

CHECKED D. Crabbe  
DATE 10/2/70  
PROD R. Peterson  
DATE 11/6/70

SECTION 1  
ISSUED SECT. 1

ITEM NO	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	D-IA-740 422-0-0	FRAME, LOGIC	1
2	B-MD-740 114-0-0	BAR, MTG	1
3	1209340-10	8 CIRCUIT MATE-N-LOK SOCKET AMP	1
4	1202244	144 CONNECTOR BLOCK	1
5	1202188	VOLTAGE CHAIN	A/R
6	A-SS-530 753-0-2	LOGIC FRAME DECALS	A/R
7	A-SS-530 753-0-4	LOGIC FRAME DECALS	A/R
8	1302466	RESISTOR 100K 1/4W 5%	1
9	1310180	RESISTOR 0.5Ω 20W 1%	2
10	1209379-1	CONTACT TERM PIN SOCKET AMP. INC.	14
11	9006011-1	SCR, PHL HD PAN #4-40 x 3/8 SST	4
12	9006557	NUT, KEPS #4-40	4
13	9006021-1	SCR, PHL HD PAN*6-32 x 5/16 SST	2
14	9006560	NUT, KEPS #6-32	2
15	9107560-1	#18 AWG SOLID BUSSING	A/R
16	9006120	POZIDRIVE SCR FIL HD 8-32 x 5/8 SST	2
17	9107360-22	#18 AWG STRD TEFLON (RED)	A/R
18	9107360-59	#18 AWG STRD TEFLON (WHITE)	A/R
19	9107360-88	#18 AWG STRD TEFLON (GRAY)	A/R
20	9107360-66	#18 AWG STRD TEFLON (BLUE)	A/R
21	9107360-77	#18 AWG STRD TEFLON ( VIO )	A/R
22	9107410-84	#18 AWG STRD TEF TRACER (GRAY/YELLOW)	A/R

TITLE WIFED ASSEMBLY (VR14)  
ASSY NO. D-AD-7007078-0-0  
SIZE CODE A PL  
NUMBER 7007078-0-0  
REV F  
ECO NO. VR14-00022  
SHEET 1 OF 2  
DIST. 6

DEC FORM NO. 16-1131  
DRA 110

**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS

**PARTS LIST**

MADE BY J. Cahill  
DATE 11/3/70  
ENG *D.K. Crabbe*  
DATE 11/6/70

CHECKED D. Crabbe  
DATE 11/3/70  
PROD R. Peterson  
DATE 11/6/70

SECTION 1  
ISSUED SECT. 1

ITEM NO	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
23	9107410-36	#18 AWG STRD TEF TRACER (GRY/BLU)	A/R
24	9107360-00	#18 AWG STRD TEF WIRE (BLACK)	A/R
25	9107350-55	#22 AWG STRD TEF WIRE (GREEN)	A/R
26	9107350-14	#22 AWG STRD TEF WIRE (YELLOW)	A/R
27	9107350-00	#22 AWG STRD TEF WIRE (BLACK)	A/R
28	9107350-22	#22 AWG STRD TEF WIRE (RED)	A/R
29	9107350-99	#22 AWG STRD TEF WIRE (WHITE)	A/R
30	9107256-1	#22 TEF TUBING (BLACK)	A/R
31	1209350-15	CONN PIN HOUSING MATE-N-LOK AMP	1
32	1010195-0	CAPACITOR 20 mFd 100V 10%	1
33	9007230	TERMI POINT CONNECTORS	6
34	9107420-09	#22 AWG STRD TEF TRACER (BLK/WHT)	A/R
35	9107410-85	#18 AWG STRD TEF TRACER (GRY/GRN)	A/R
36	1302398	RES. 470K 1/4W 5%	1

TITLE WIFED ASSEMBLY (VR14)  
ASSY NO. D-AD-7007078-0-0  
SIZE CODE A PL  
NUMBER 7007078-0-0  
REV F  
ECO NO. VR14-00022  
SHEET 2 OF 2  
DIST. 6

DEC FORM NO. 16-1131  
DRA 110



**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS

**ENGINEERING SPECIFICATION**

DATE 10/22/70

TITLE VR14 SPECIFICATION

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

GENERAL DESCRIPTION

The VR14 is a self-contained CRT display unit requiring only analog position and digital unblanking information. It is designed for use with a digital display controller. The amount of information displayed depends on the specific system; however, 1250 random points can be displayed flicker free at a 40 Hz. refresh rate. Viewable area is 62 inches square with an aspect ratio of 3:4. The unit is 10 1/2 inches high, 19 inches wide, 17 inches deep, and weighs about 75 pounds. It is available in either a rack mounted or table top model.

OPERATOR CONTROLS (All controls labeled as to function)

Front Panel:

Brightness / ON-OFF                      Manual brightness control and AC power switch.

Channel Select                              Operator selection of either channel 1 or channel 2 if a time multiplexed signal is available.

Internal Controls: These controls accessible from the top of the unit through the safety screen.

Deflection Controls: The following controls are 10 turn pots located on the deflection amplifiers (A225). All inputs have protection against momentary excessive voltage.

X Gain                                      Controls horizontal input sensitivity.

Y Gain                                      Controls vertical input sensitivity.

X Position                                Manual Position Control.

Y Position                                Manual Position Control.

NOTE: With deflection inputs grounded, the position controls allow the beam to be positioned anywhere within the usable screen area.

**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE VR14 SPECIFICATION

CRT Controls: These controls are 10 turn pots located on the G836 power supply module. Their purpose is to adjust focus and grid bias voltages. They are adjusted at the factory.

Focus: Adjusted for best overall focus.

Brightness Preset: To adjust the range of the front panel brightness control.

GENERAL ELECTRICAL SPECIFICATION

Spot Size:  $\leq 20$  mils inside the usable screen area at a brightness of 30 footlamberts. Spot size is measured using shrinking raster technique at a brightness of greater than 30 foot-lamberts.

Jitter:  $\leq \pm 1/2$  spot diameter.

Repeatability:  $\leq \pm 1$  spot diameter  
(Repeatability is the deviation from the nominal location of any given spot)

Gain Change: From a fixed point on the screen, less than  $\pm 0.3$  percent gain change for each  $\pm 1$  percent line voltage variation.

Temperature Range: 0 to 50°C operating

Relative Humidity: 10 to 90 percent noncondensing.

Brightness:  $\geq 30$  footlamberts; measured using a shrinking raster technique.

Linearity: Maximum deviation of any straight line will be  $\leq 1$  percent of the line length measured perpendicular to a best fit straight line.

Deflection Method: Magnetic (70° diagonal deflection angle)

Focus Method: Electrostatic

High Voltage: 11.7 KV DC nominal (voltage proportional to input line voltage). Supply is self-contained and equipped with a bleeder resistor.

Shielding: CRT is fully enclosed in a magnetic shield.

Overload Protection: Unit is protected against fan failure or air blockage by thermal cutouts.

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ENG	<i>A. Fisher</i> 10/25/70	APPD	<i>L. Gale</i> 10/28/70	SIZE	CODE	NUMBER	REV
				A	SP	VR14 - 0 - 4	

SIZE	CODE	NUMBER	REV
A	SP	VR14 - 0 - 4	

TITLE VR14 SPECIFICATION

DEFLECTION AMPLIFIER SPECIFICATION

1. Deflection Amplifiers are DC coupled and are capable of sustaining a worst case AC or DC deflection at environmental extremes.
2. Input Specification
  - A. Inputs are differential.
  - B. Differential input impedance . . . 5K ohms minimum.
  - C. Input sensitivity . . . 200 mv/inch maximum.
  - D. Common Mode Rejection Ratio . . . 40 db.
  - E. Maximum Operating Input . . . ± 6V. (Maximum operating input is the sum of the common mode input and the differential input.)
  - F. Input offset not to exceed ± 1/2 peak to peak input signal.
  - G. Maximum non-operating input . . . ± 50V.
3. Full screen deflection and settling time to within ± 1 spot diameter . . . . . ≤ 18 μs.
4. Small signal settling time to within 1/2 spot diameter . . . ≤ 1 μs for a 0.1 inch deflection.
5. Small signal linear slew rate . . . ≥ 0.4 in 1 μs.
6. Velocity error coefficient . . . 500 ns. maximum. (Average ramp delay between input and output.)

Z AXIS SPECIFICATION

1. Z Input
 

A negative transition from ≥ +2.4V, but not exceeding +8V, to ≤ +0.8V, but not less than -4V, in ≤ 20 ns will cause an unblanking pulse at the CRT cathode from approximately +60V to ground with a duration of ≥ 200 ns at the 50 percent points. Delay between the 50 percent point of the negative input transition to the 50 percent point of the output pulse is less than 100 ns.
2. Z Direct
 

A positive going pulse not exceeding 35V, but at least 20V in height and not exceeding 10 μs, but at least 1 μs in duration will unblank the CRT to a viewable intensity. This signal is AC coupled to the CRT grid.
3. Channel Select
 

With the Channel Select Switch in the Channel 1 position, a positive level of greater than +2.4V, but not exceeding +8V will enable the Z input circuit. A level of less than +0.8V but not less than -4V will disable the circuit. With the switch in the Channel 2 position, a positive level will enable the Z circuit; a negative level will disable it. Placing the switch in the Channel 1 and 2 position disables this input.

SIZE <b>A</b>	CODE SP	NUMBER VR14 - 0 - 4	REV
------------------	------------	------------------------	-----

TITLE VR14 SPECIFICATION

POWER SUPPLY SPECIFICATION

1. All power supplies necessary for operation of the unit are self contained.
2. Input Requirements
 

Voltage: 100 V ± 10 percent  
117 V ± 10 percent  
230 V ± 10 percent

Selectable by tap changes.

Frequency: 50 - 60 Hz.

Power: ≤ 500 Watts

Current: ≤ 5 Amperes

Type: Single Phase

NOTE: Different AC power receptacles are provided on 200 and 230 V Units.
3. Fuses are provided and labeled as to function, type, and rating for the primary circuit and deflection power circuits.
4. Thermal Cutouts, which operate on the AC primary, are used to prevent damage due to fan failure, air blockage, or excessive ambient temperature.

REAR PANEL CONNECTIONS

Deflection Inputs: BNC connectors labeled X+, X-, and Y+, Y-.

With operator facing the screen and the polarity switches in the up position, if X+ is positive with respect to X-, deflection is to the right and, if Y+ is positive with respect to Y-, deflection is up.

CRT Inputs: BNC connectors labeled Z input, Z direct, and channel.

Z input is a TTL compatible input which generates a pulse at the CRT cathode for each negative transition.

Z direct is an AC coupled input to the CRT grid circuit.

Channel is a TTL compatible input which, in conjunction with the Channel Select Switch, enables or disables the Z input circuit.

NOTE: All above inputs are available at a 24 pin plug, DEC No. 1209630.

SIZE <b>A</b>	CODE SP	NUMBER VR14 - 0 - 4	REV
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**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS

**ENGINEERING SPECIFICATION**

DATE 9/20/71

TITLE VR14 CHECKOUT AND ACCEPTANCE PROCEDURE

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	ECO CHANGE	00015	A.FILZ	3/72	<i>A. Fishman</i>	3-28-72
B	ECO CHANGE	00022	A FISHMAN	1/73	<i>A.C.F.</i>	1-16-73

ENG <i>A. Fishman</i>	APPD <i>[Signature]</i>	SIZE <b>A</b>	CODE SP	NUMBER VR14-0-5	REV B
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**ENGINEERING SPECIFICATION**



CONTINUATION SHEET

TITLE

VR14 CHECKOUT PROCEDURE AND ACCEPTANCE PROCEDURE \*

I. INTRODUCTION

The VR14 is a completely self-contained CRT display providing a 6.75 inch by 9 inch viewing area in a compact 19 inch package. The VR14 requires only analog X and Y position information with an intensity pulse to generate sharp, bright point plot displays.

II. SOFTWARE

A. Manuals

1. VR14 Users Manual
2. PDP-12 Systems Reference Manual

B. Prints

1. VR14-0
2. VC12-0
3. EM12-0

C. Diagnostics

1. Display Test Maindec 12-D68C  
(Maindec-12-D6BB could also be used)

\* Acceptance Procedure consist of Section VI through Section X excluding VI-1, VI-10, and VI-10.

SIZE <b>A</b>	CODE SP	NUMBER VR14-0-5	REV B
---------------	---------	-----------------	-------

## TITLE

## A. Basic Mechanical Check

1. Check all knobs for position and tightness
2. All silk screening is correct and legible
3. All AC and high voltage is covered and labeled
4. Slides work correctly
5. Tube face and phosphor are not damaged
6. Serial number tag is present and correct
7. 110v, 220v labeling is correct
8. Cables are correct type and length
9. All decals are present and on straight
10. All switches operate smoothly
11. Module block is not cracked or broken
12. Deflection coil is properly adjusted and tightened
13. No chips or scratches on painted surfaces
14. All shrinkies are secure
15. No loose parts or filings on bottom of chassis
16. Check wire dress
17. Check for proper fan operation
18. High voltage connection on CRT is secure
19. All crimped terminations are mated and seated
20. Check for wiring touching power transistor cases

SIZE  
ACODE  
SPNUMBER  
VR14-0-5REV  
B

SHEET 4 OF 31

## TITLE

III. TEST EQUIPMENT

## A. Off-Line Test

1. VOM

## B. On-Line Test

1. VOM
2. Oscilloscope
3. EP12
4. EM12
5. TU56
6. TC12
7. TTY
8. VC12

## C. Special Test Equipment

None Required

IV. OFF-LINE CHECKOUT PROCEDURE

CAUTION: The CRT is under high vacuum and is potentially in danger of explosion if subject to sharp blows or rough handling.

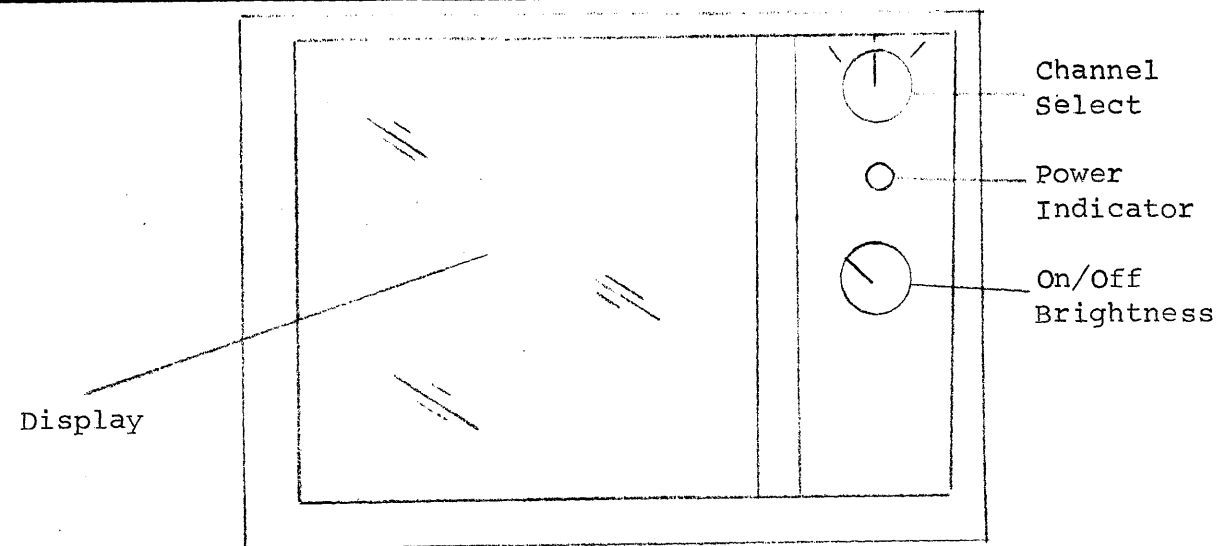
SIZE  
ACODE  
SPNUMBER  
VR14-0-5REV  
B

SHEET 3 OF 31

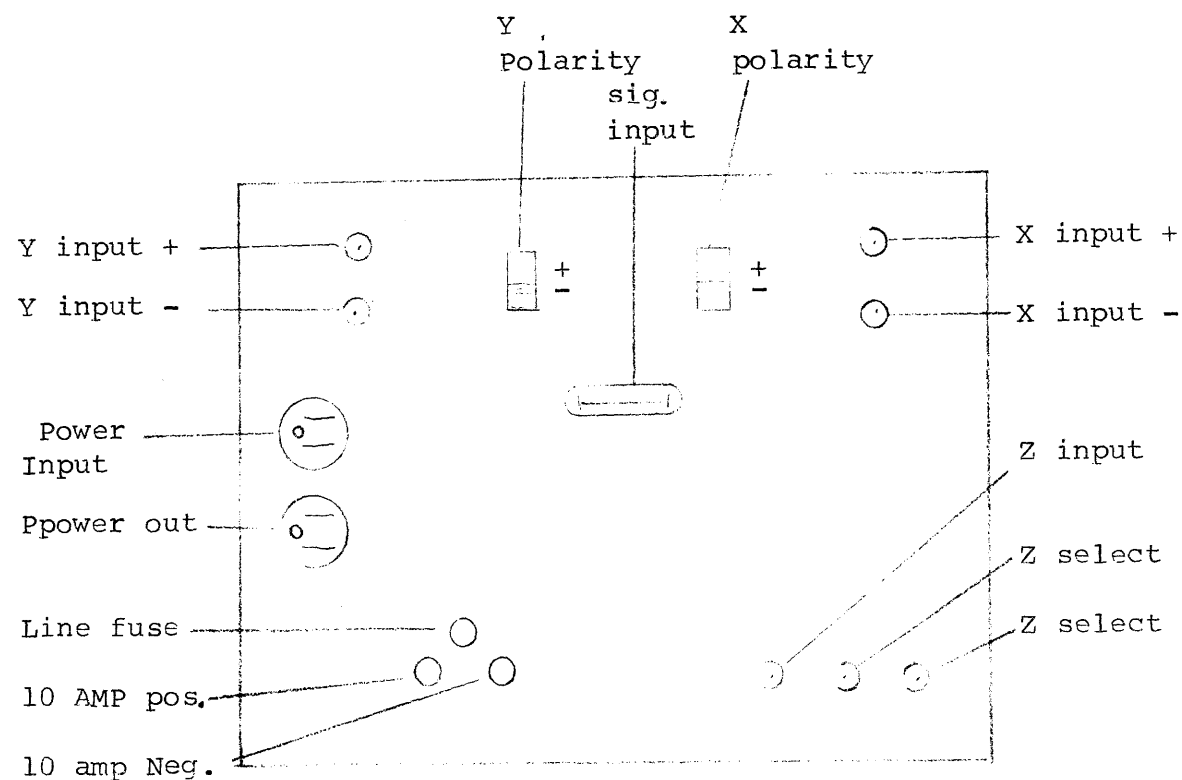
**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE



VR14 FRONT VIEW



VR14 REAR VIEW

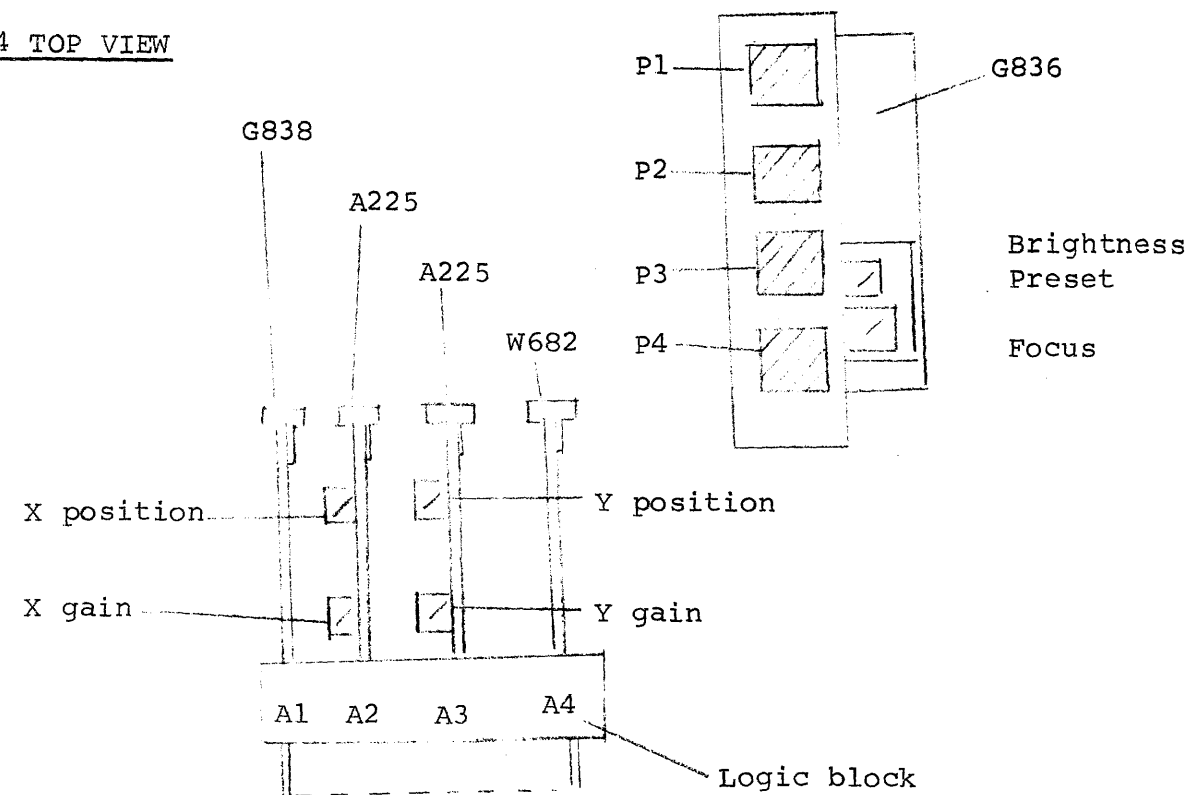
SIZE <b>A</b>	CODE SP	NUMBER VR14-0-5	REV B
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**ENGINEERING SPECIFICATION**

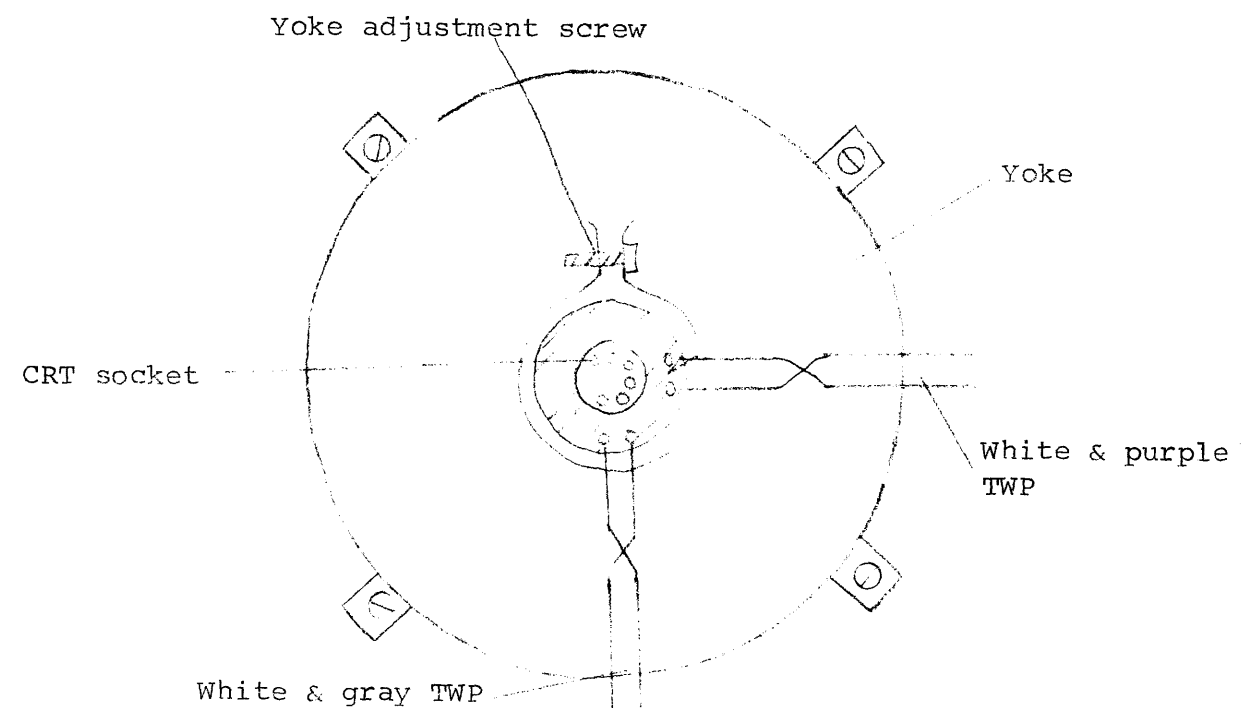
CONTINUATION SHEET

TITLE

VR14 TOP VIEW



VR14 YOKE ADJUSTMENT



SIZE <b>A</b>	CODE SP	NUMBER VR14-0-5	REV B
------------------	------------	--------------------	----------

## TITLE

## B. Basic Electrical Check

1. Remove the following modules from the VR14 under test.

- a. G838 Location - A01
- b. A225 Location - A02
- c. A225 Location - A03
- d. W682 Location - A04

2. Unplug the CRT socket from the CRT.

3. Check all fuses for proper value.

- a. F1 5 AMP Slow Blow ( Line Fuse, 110v).
- b. F2 3 AMP Slow Blow ( Line Fuse, 220v).
- c. F3 NEG 10 AMP
- d. F3 POS 10 AMP

4. Check the on-off brightness control and put it in the off position.

NOTE: Check that the line voltage applied is the same as the voltage required by the unit under test.

5. Plug in AC line cord to the proper line voltage required.

SIZE	CODE	NUMBER	REV
A	SP	VR14-0-5	B

SHEET 7 OF 31

## TITLE

DC VOLTAGE CHECKS

The next series of tests are voltage tests.

The meter should be set up and connected to the test points first then power turned on for a minimum amount of time (1 to 3 seconds).

It is very important that power be on only briefly because if a fault does exist damage to the unit can be avoided. Never leave power on even if correct voltage is observed because a fault may exist that will not be detected

until a later test.

6. Perform the following voltage checks using the procedure outlined above.

- a. Perform voltage check number 1 of table 1.
- b. Perform voltage check number 2 of table 1.
- c. Perform voltage check number 3 of table 1.
- d. Perform voltage check number 4 of table 1.
- e. Plug in the W682 in location A04. Perform voltage check number 5 of table 1.
- f. Perform voltage check number 6 of table 1. Adjust the front panel brightness control through its full range.

SIZE	CODE	NUMBER	REV
A	SP	VR14-0-5	B

SHEET 8 OF 31

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE

TEST	SCALE	RANGE	VOM + PROBE	- PROBE	VOLTAGE	NOTES
7	DC	1200V	B04J	B01M	+350VDC TO -60VDC Tolerance = $\pm 25$ VDC	ADJUST FOCUS CONTROL TO CHECK. (G836) CW = -60VDC CW = +350VDC
8	AC	12V	CRT	CRT	6.3 VAC	
9	DC	1200V	SOCKET PIN 1	SOCKET PIN 12	Tolerance = $\pm .3$ VAC	
10	DC	300V	CRT	CHASSIS GND.	-80VDC TO -20VDC Tolerance = $\pm 10$ V. THE -20VDC MAY BE 0.	ADJUST THE BRIGHTNESS CONTROL ON THE FRONT PANEL TO VARY THIS VOLTAGE.
11	DC	1200V	CRT SOCKET PIN 6	CHASSIS GND.	+350VDC TO -60VDC Tolerance = $\pm 25$ VDC	ADJUST THE FOCUS CONTROL TO VARY THIS VOLTAGE. (G836) CCW = -60VDC CW = +350VDC
12	DC	60V	B01V	B01M	Nominal = +21.5V Tolerance = $\pm 2$ V, -1V.	THIS VOLTAGE SHOULD NOT EXCEED 23.5VDC OR BE LESS THAN 20.5VDC.

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE

TEST	SCALE	RANGE	VOM + PROBE	- PROBE	VOLTAGE	NOTES
1	DC	60V	D1-4	CHASSIS GND.	+45VDC Tolerance = $\pm 5$ V	D1-4 SHOULD HAVE AN ORANGE WIRE ON THIS TERMINAL.
2	DC	60V	CHASSIS GND.	D2-4	-45VDC Tolerance = $\pm 5$ V	D2-4 SHOULD HAVE A GREEN WIRE ON THIS TERMINAL.
3	AC	12V	B04A	B04B	6.3VAC Tolerance = $\pm .3$ V	
4	DC	1200V	B04D	B01M	+350VDC Tolerance = $\pm 25$ V	
5	DC	300V	CRT SOCKET, PIN 11	CHASSIS GND.	+60VDC Tolerance $\pm 6$ V	PLUG IN THE W682 IN LOCATION A04.
6	DC	300V	B01M	B04F	-80VDC TO -20VDC Tolerance $\pm 10$ V. The -20VDC COULD BE AS LOW AS 0.	ADJUST THE FRONT PANEL BRIGHTNESS CONTROL TO VARY THIS VOLTAGE.

TABLE VR14-1

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE

TEST	SCALE	RANGE	VOM	VOLTAGE	NOTES
13	DC	60V	B01M + PROBE B01R - PROBE	Nominal = -21.5VDC Tolerance = -2V, +1V	THIS VOLTAGE SHOULD NOT EXCEED -23.5VDC OR BE LESS THAN -20.5VDC.
14	DC	12V	A02A + PROBE B01M - PROBE	0VDC	WITH THE A225 REMOVED FROM LOCATION A02 THIS VOLTAGE MUST BE 0VDC.
15	DC	12V	A03A + PROBE B01M - PROBE	0VDC	WITH THE A225 REMOVED FROM LOCATION A03 THIS VOLTAGE MUST BE 0VDC.
16	DC	12V	A04A + PROBE B01M - PROBE	+5VDC (+4VDC MIN.) (+6VDC MAX.)	PLUG IN THE G838 LOCATION A01.
17	DC	12V	A02A + PROBE B01M - PROBE	+2.6VDC TO -2.6VDC	A. PLUG IN THE A225 LOC. A02. B. ADJUST THE POSITION POT ON THE A225 IN LOC. A02.
18	DC	12V	B01M + PROBE A03A - PROBE	+2.6VDC TO -2.6VDC	A. PLUG IN THE A225 LOC. A03. B. ADJUST THE POSITION POT ON THE A225 IN LOC. A03.

TABLE VR14-1

SIZE A CODE SP NUMBER VR14-0-5 RFV B

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE

VOLTAGE CHART

All voltages measured with respect to ground

(chassis or B01M, N)

\*Indicates voltage depends upon input signal

Circuit Block

A02A	* +3 volts nominal	X Current Sample
A03A	* +3 volts nominal	Y Current Sample
A02E, B	*	X Input Signal
A03E, B	*	Y Input Signal
A01U, B01V	+21.5 VDC (red)	+ Regulated D.C.
A01K, B01R	-21.5 VDC (blue)	- Regulated D.C.
A01P	+5 VDC	For W682
B04A	3.5 VRMS	1/2 Filament
B04B	3.5 VRMS	1/2 Filament
B04D	+400 VDC	G2
B04F	0 to -80 VDC	Brightness (G1)
B04J	-80 VDC to -400 VDC	Focus
B04L	* +60 volts	Cathode With Negative Pulses
Brightness Pot		
Gray/Green	-80 VDC	

TABLE VR14-2

SIZE A CODE SP NUMBER VR14-0-5 RFV B

## TITLE

## VOLTAGE CHART - (CONTINUED)

Deflection Heat Sink - P5

X AXIS      Y AXIS

P5 - 2	P5 - 14	+20.5 VDC	PNP Base (2N4399)
P5 - 1	P5 - 15	+21.5 VDC	PNP Emitter (2N4399)
P5 - 3	P5 - 13	* <1 volt	All Collectors
P5 - 4	P5 - 12	-20.5 VDC	NPN Base (2N5302)
P5 - 5	P5 - 11	-21.5 VDC	NPN Emitter (2N5302)

Regulator Heat Sink - P3

P3 - 1	+43 VDC Orange	Emitters of 2N4399
P3 - 2	+42 VDC Gray/Yellow	Bases of 2N4399
P3 - 3	+21.5 VDC Red	Collectors of 2N4399
P3 - 12	-43 VDC Green	Emitters of 2N5302
P3 - 11	-42 VDC Gray/Blue	Bases of 2N5302
P3 - 10	-21.5 VDC Blue	Collectors of 2N5302

G836 Regulator Circuit Connectors -- P1, P2, P4

P1 - 1	+43 VDC	Raw + D.C.
P1 - 3, 6	Ground	
P1 - 4	-43 VDC	Raw - D.C.

TABLE VR14-2

SIZE	CODE	NUMBER	RFV
A	SP	VR14-0-5	B

## TITLE

## VOLTAGE CHART - (CONTINUED)

P2 - 1	3.5 VRMS	1/2 Filament
P2 - 2, 4, 7, 9	Ground	
P2 - 3	3.5 VRMS	1/2 Filament
P2 - 5	70 VRMS (200 P-P)	+80 v. tap
P2 - 6	150 VRMS (400 P-P)	+400 v. tap
P4 - 1	+21.5 VDC Red	+ Regulated
P4 - 2, 14	Ground Black	
P4 - 3	+21.5 VDC Red	Hot + Sense
P4 - 4	0 VDC Black	Cold + Sense
P4 - 5	-80 to +400 VDC Gray/Red	Focus
P4 - 6	+400 VDC Orange	G2
P4 - 7	3.5 VRMS Brown	Filament
P4 - 8	3.5 VRMS Brown	Filament
P4 - 9	-80 VDC Gray/Green	To Brightness Pot
P4 - 10	0 to -40 VDC Gray/Violet	Brightness Preset
P4 - 11	+80 VDC Gray/Orange	For W682
P4 - 12	-21.5 VDC Blue	Hot - Sense
P4 - 13	0 VDC Black	Cold - Sense
P4 - 15	-21.5 VDC Blue	- Regulated

TABLE VR14-2

SIZE	CODE	NUMBER	RFV
A	SP	VR14-0-5	B

## TITLE

- (1) OFF = OVDC
- (2) FULLY CCW -80VDC
- (3) FULLY CW = between 0 and -20VDC
- g. Perform voltage check number 7 of table 1 and vary the focus control pot. Adjust this pot to its limits. Reset to approximately + 300 VDC after testing.
- h. Make the following voltage checks at the CRT socket.
- (1) No. 8 Table 1
- (2) No. 9 Table 1
- (3) No. 10 Table 1. Vary the brightness control on the front panel to insure proper operation.
- (a) OFF OVDC
- (b) FULLY CCW -80 VDC
- (c) FULLY CW between 0 and -20VDC
- (4) Perform check number 11 Table 1. Adjust the focus control on the G836 a minimum amount to insure that the focus control varies this voltage. Reset to +300 after test.
- i. Perform voltage check number 12 of table 1.

SIZE A	CODE SP	NUMBER VR14-0-5	REV B
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## TITLE

- j. Perform voltage check number 13 of table 1.
- k. Perform voltage check number 14 of table 1.
- l. Perform voltage check number 15 of table 1.
- m. Plug in the G838 in location AØ1 and perform voltage check number 16 of table 1.
- NOTE: On A225 voltage checks number 17 and number 18, shut off the VR14 immediately if the voltage exceeds +2.6VDC and cannot be turned down by the position trim pot.
- n. Plug in the A225 in location AØ2 and perform voltage check number 17 of table 1. Adjust the position trim pot on the A225 to insure proper control of this voltage. After test position to +2.5VDC.
- o. Plug in the A225 in location AØ3 and perform voltage check number 18 of table 1. Adjust position pot on the A225 to insure proper control of the voltage. After test position to +2.5VDC
- p. The case temperature of the "X" deflection 2N4399 must be measured while the X deflection current is set for 5 amps (+2.5V at AØ2-A). No unit is to ship if the case is greater than 72°C.
- q. Same test for "X" 2N5302 for X current at -5A (-2.5V at AØ2-A). Must be less than 72°C.
- r. With AØ2-A and AØ3-A adjusted to +5A (+2.5V on both) measure the case temperature on the top 2N4399 of the power supply. Must be less than 72°C.
- s. With AØ2-A, AØ3-A at -2.5V measure the top 2N5302 case temperature on the power supply heat sink. Must be less than 72°C.

SIZE A	CODE SP	NUMBER VR14-0-5	REV B
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## TITLE

V. BASIC ON-LINE TEST PROCEDURE

NOTE: Before applying power check that the power applied is the same as the voltage required by the VR14 under test.

## A. Cabling

1. Install the BC12 Display cable from location F38 of the EM12 to the Display under test. (For extended scope output use F39 of the EM12.)

## B. Basic Set-Up

1. Set-Up the M711 location CD37 as follows:
  - a. Intens - Negative
  - b. P.R.R. - Fast
  - c. Width - For cables less than 100' set to minimum, for cables over 100' set to maximum.
2. Check that the polarity switches located on the back of the VR14 are in the negative position (down).
3. Set the channel select control on the front panel to channel 1 and 2.

SIZE	CODE	NUMBER	REV
A	SP	VR14-0-5	B

SHEET 17 OF 31

## TITLE

## C. Basic On-line Checkout

1. Do not apply power to the VR14 under test at this point.
2. Load in the display diagnostic D6BC.
  - a. The following switches control this test.
    - (1) Setting Sense Switch -1 cause the display to freeze on the current test.
    - (2) Resetting Sense Switches to zero will cause the display to cycle thru the patterns listed below.
      - (a) Pattern 1 - Point Plotting (Box) Sense Sw  $\emptyset$
      - (b) Pattern 2 - Character Generation Sense Sw 1
      - (c) Pattern 3 - Diagonal Lines Sense Sw 2
3. Start diagnostic D6BC and freeze on Pattern 3 (Diagonal lines). LINC mode/START 20.
4. Using an oscilloscope check the input to the X deflection Tp A $\emptyset$ 2-E. This signal should be 6 volts in amplitude. From 0 to -6VDC.
5. Using an oscilloscope check the input to the Y deflection Tp A $\emptyset$ 3E. This signal should be 6 volts in amplitude. From 0 to -6VDC.
  - a. Make sure no oscillations are present at A $\emptyset$ 2A and A $\emptyset$ 3A.

SIZE	CODE	NUMBER	REV
A	SP	VR14-0-5	B

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## TITLE

6. Depress STOP and I/O PRESET on the PDP-12 console.
7. Apply power to the VR14 under test.
8. Using a meter perform voltage check number 17 of table 1.
9. Using a meter perform voltage check number 18 of table 1.
10. Depress "START 20" on the PDP-12 console.
11. **Select Sense Switch** when pattern 1, a box, is displayed.
12. VR14 Alignment.
  - a. Adjust the X position pot so that the left side of the box pattern aligns with the left side of plastic display mask. The display should be parallel and about  $\frac{1}{4}$ " from the mask at its closest point.
  - b. Perform the above step for the Y position using the bottom edge of the display mask.
  - c. Adjust the horizontal gain so the right side of the pattern aligns with the right edge of the plastic mask, within  $\frac{1}{4}$ " at its closest point.

SIZE	CODE	NUMBER	REV
A	SP	VR14-0-5	B

## TITLE

- d. Adjust the vertical gain in the same manner as above for the top edge of the pattern.
- e. On the G836 adjust the brightness preset to prevent the scope display from blooming (when front brightness control is fully CCW).
- f. Adjust the yoke for horizontal and vertical alignment by loosening the adjustment screw and turning the yoke by hand while watching the display. When aligned, the box should be parallel to the mask on all edges. Tighten the alignment screw down securely.
- g. **Reset Sense Switches to zero.** This will cause patterns to rotate when pattern 2 appears on the scope **select sense switch.** **Pattern two will now freeze on the scope.**
- h. Adjust the focus for sharp clear character display dots.
- i. Fine tune the brightness preset and focus control for a very clear display.

SIZE	CODE	NUMBER	REV
A	SP	VR14-0-5	B

## TITLE

- j. Using character test, select channel 1 using the front channel select knob - only channel 1 should be displayed. Repeat for channel 2 - only channel 2 should be displayed.
- k. Reset the front panel channel select to 1 and 2.
13. Stop D6BC Diagnostic
14. Load in DIAL
- a. LSW = 701
- b. RSW = 7300
- c. Line Mode
- d. I/O Preset
- e. Do
- f. The tape will move then stop
- g. Hit start 20
- h. Program will load in
15. At this point there will be a number 1 displayed in the upper left corner of the display. There will also be a cursor pointing to the present line position.
16. Strike "E" on the TTY and repeat. This will cause a row of E's to be displayed on the VR14 under test. Continue to strike E until 3 rows of E's are displayed.

SIZE A	CODE SP	NUMBER VR14-0-5	REV B
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## TITLE

17. Observe the display for acceptable limits of ripple.
18. Strike rub out and repeat on the TTY until the cursor returns to its original starting position.
19. Strike line feed on the TTY. This will cause the cursor to move to the lower left corner of the display.
20. Type "DX, comma, carriage return," this will cause the directory of tape unit 0 to be displayed. Check the general quality of the display for acceptable limits.
21. Power down the VR14 and disconnect the line cord. Wire the unit for 230VAC input.
22. Power up the VR14 with 230VAC and check display quality with DISPTST.
23. If O.K. remove line cord and rewire for 115VAC.
24. Hit stop and I/O PRESET on the PDP-12 console.
25. With a Variac set the line to each unit to 90VAC and with no signal connected and A02-A, A03-A at approximately +2.2V (standard settings for PDP-12), turn on off switch on and off rapidly (within 1/2 sec) about 5 times while monitoring the voltage at A02-A. Leave power on after the fifth time. If A02-A does not return to its original value (about 2.2V), but instead goes away negative shut down and do not ship this unit. It has power-on latch up.
26. All VR14/20's must be vibrated horizontally, vertically, and on its back facing up thru the range 0-60 on the vibration table while displaying DISPTST. Any breaking up or disappearing of the picture is a reject and cannot be retested unless the intermittent cause is found and fixed.
27. All units must be tested in a heat tent which has an ambient temperature between 45 and 55° C. For 3 hours with A02-A, A03-A at +2.0V (not 2.5) and then 3 hours with A02-A, A03-A adjusted to -2.0V (not 2.5). Now run DISPTST for 3 hours under heat tent. After both heat tent tests the following measurements must be made to see if any power transistors have become "leaky".

SIZE A	CODE SP	NUMBER VR14-0-5	REV B
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TITLE

- A. Turn the position pots on X and Y deflection (A225) so that +2.5 volts is measured at A02-A and A03-A. This causes +5 amps to flow from both amplifiers and represents the worst case dissipation for the 2N4399 transistors in the power supply and deflection.
- B. Measure the case temperature of the 2N4399 in the X and Y and power supply. The case temperature a room ambient should never exceed 72°C (161°F).
- C. While the 2N4399's are still at full load, the 2N5302's are all unloaded and should be measured for leakage. Measure A02L to A02K, this voltage should read less than .75 volts. Measure A03L to A03K and should read less than .75 volts. This same measurement can be made at the power supply regulator board by measuring less than .75 volts between pin 11 (blue gray) and pin 12 (green) P3.
- D. Now that the 2N4399's have been run full load, the 2N5302's should be done. Turn the X and Y position pots so that -2.5 volts is measured at A02-A and A03-A. This loads fully all the 2N5302's.
- E. Measure the case temperatures of all 2N5302's. They should also be less than 72°C (161°F).
- F. Now measure the 2N4399's (which should all be off). Measure less than .75 volts between A02-R and A02-T and also between A03-R and A03-T. On the power supply measure less than .75 volts between pin 2 (yellow gray) and pin 1 (orange) on P3.
- G. After the test return the position setting to 0, 0 in X and Y.
- H. If any of the measurements are above limits, the unit should never be shipped to anyone as it is a potential failure.

SIZE	CODE	NUMBER	REV
A	SP	VR14-0-5	B

TITLE

VI. ON-LINE TEST

1. Plug in the signal input cable from the PDP-12 to the VR14.
2. Load in display test D6CB.
3. Turn on power to the VR14 and PDP-12. (On/off brightness fully CW).
4. Set the channel select on the front of the VR14 to channel 1 and 2.
5. Start the display test, LINC mode, start 20.
6. Freeze the display on pattern 2, character display.
7. Check the displayed characters for acceptable quality.
8. Turn the brightness control on the front panel. CCW fully, (No intensity,)

SIZE	CODE	NUMBER	REV
A	SP	VR14-0-5	B

## TITLE

10. Run the display in this configuration for 48 hours.
11. After completion of the 48 hour run make the following checks.
  - a. Turn the front panel intensity control fully CW and check the quality of the displayed characters.
  - b. Check the VR14 transformer for excessive heat.
12. Hit I/O PRESET and STOP on the PDP-12 console.
13. Make the following voltage checks: (remove signal cable)
  - a. Voltage check number 12 of table 1.
  - b. Voltage check number 13 of table 1.
  - c. Replace signal cable
14. Start the display test D68C (LINC mode, START 20).
15. Select Sense Switch while the display is running pattern 3.
16. Check pattern 3 for the quality of the display.

SIZE	CODE	NUMBER	REV
A	SP	VR14-0-5	B

## TITLE

- 16A. Check the yoke alignment and adjust if required.
17. Resetting Sense Switchs to zero will cause the display test to rotate thru the patterns.
18. Select Sense Switch while the display is running pattern 1.
19. Check the quality of the display. (The box should extend to within  $\frac{1}{4}$ " of the edge of the usable display area at its closest point).
20. Check the yoke alignment and adjust if required.
21. Remove input signal and zero position on X & Y (A02A, A03A = 0V).

## VII. MARGINAL TEST

None Required

## VIII. VIBRATION TEST

1. Power up the VR14 and PDP-12.
2. Load and start display test D6CB (LINC, mode, START 20).
3. Vibrate the logic in accordance with specification SP-7665057-0-0. Observe the display for no malfunctions while vibrating the logic.

SIZE	CODE	NUMBER	REV
A	SP	VR14-0-5	B

**ENGINEERING SPECIFICATION**



CONTINUATION SHEET

TITLE

IX. ACCELERATED LIFE TEST

None Required

X. RELIABILITY TEST

None required

SIZE <b>A</b>	CODE SP	NUMBER VR14-0-5	REV B
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**ENGINEERING SPECIFICATION**



CONTINUATION SHEET

TITLE

XI VR14 PRODUCTION CHECKLIST

VR14 Serial Number \_\_\_\_\_

Phosphor \_\_\_\_\_

Power Required \_\_\_\_\_

Table Top \_\_\_\_\_

Chassis Mount \_\_\_\_\_

	Tech	Date
1. Basic Mechanical Check IV. A1 - A20	_____	_____
2. Basic Electrical Check IV. B1 - B7	_____	_____

Test 1	+	_____	VDC	
Test 2	-	_____	VDC	
Test 3		_____	VAC	
Test 4	+	_____	VDC	
Test 5	+	_____	VDC	
Test 6	-	_____	VDC	to - _____ VDC
	-	_____	VDC	to _____ VDC
Test 7	+	_____	VDC	to - _____ VDC
Test 8		_____	VAC	
Test 9	+	_____	VDC	
Test 10	-	_____	VDC	to - _____ VDC
	-	_____	VDC	to _____ VDC

SIZE <b>A</b>	CODE SP	NUMBER VR14-0-5	REV B
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**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE

Test 11 + \_\_\_\_\_ VDC to - \_\_\_\_\_ VDC  
 Test 12 + \_\_\_\_\_ VDC  
 Test 13 - \_\_\_\_\_ VDC  
 Test 14 \_\_\_\_\_ VDC  
 Test 15 \_\_\_\_\_ VDC  
 Test 16 + \_\_\_\_\_ VDC  
 Test 17 + \_\_\_\_\_ VDC to - \_\_\_\_\_ VDC  
 Test 18 + \_\_\_\_\_ VDC to - \_\_\_\_\_ VDC

B1 - P \_\_\_\_\_ °C  
 B1 - Q \_\_\_\_\_ °C  
 B1 - R \_\_\_\_\_ °C  
 B1 - S \_\_\_\_\_ °C

3. Basic On Line Test

A. M711 Set up

V. B1 \_\_\_\_\_ Intens  
 \_\_\_\_\_ P.R.R.  
 \_\_\_\_\_ Width

B. Input Signal

V. C4 \_\_\_\_\_ VDC  
 C5 \_\_\_\_\_ VDC  
 C5A \_\_\_\_\_ yes \_\_\_\_\_ no

If yes do not proceed until oscillation has been fixed.

SIZE <b>A</b>	CODE SP	NUMBER VR14-05	REV B
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**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE

C. Brightness Preset  
 V. C12,i \_\_\_\_\_  
 D. Channel Select  
 V. C12,J \_\_\_\_\_ Channel 1  
 \_\_\_\_\_ Channel 2  
 V. C12,K \_\_\_\_\_ Channel 1 and 2  
 E. V. C25 \_\_\_\_\_ yes \_\_\_\_\_ no  
 If yes do not ship unit.  
 F. V. C26 \_\_\_\_\_ O.K.  
 H. V. C27<sub>a</sub> - C27h  
 C27b + \_\_\_\_\_ VDC  
 C27c + \_\_\_\_\_ VDC  
 C27d + \_\_\_\_\_ VDC  
 C27f - \_\_\_\_\_ VDC  
 C27g - \_\_\_\_\_ VDC  
 C27h - \_\_\_\_\_ VDC

4. On Line Testing

A. 48 hour reliability

VI. 10 \_\_\_\_\_ OK  
 13A \_\_\_\_\_ VDC  
 13b \_\_\_\_\_ VDC

SIZE <b>A</b>	CODE SP	NUMBER VR14-0-5	REV B
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**ENGINEERING SPECIFICATION**

**019131**

**CONTINUATION SHEET**

TITLE

B. Yoke tightened Down

VI. 16A \_\_\_\_\_ OK

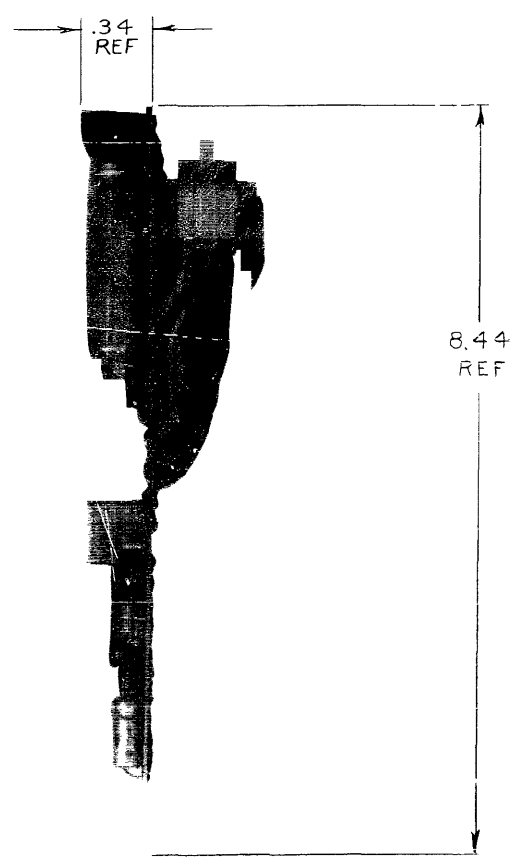
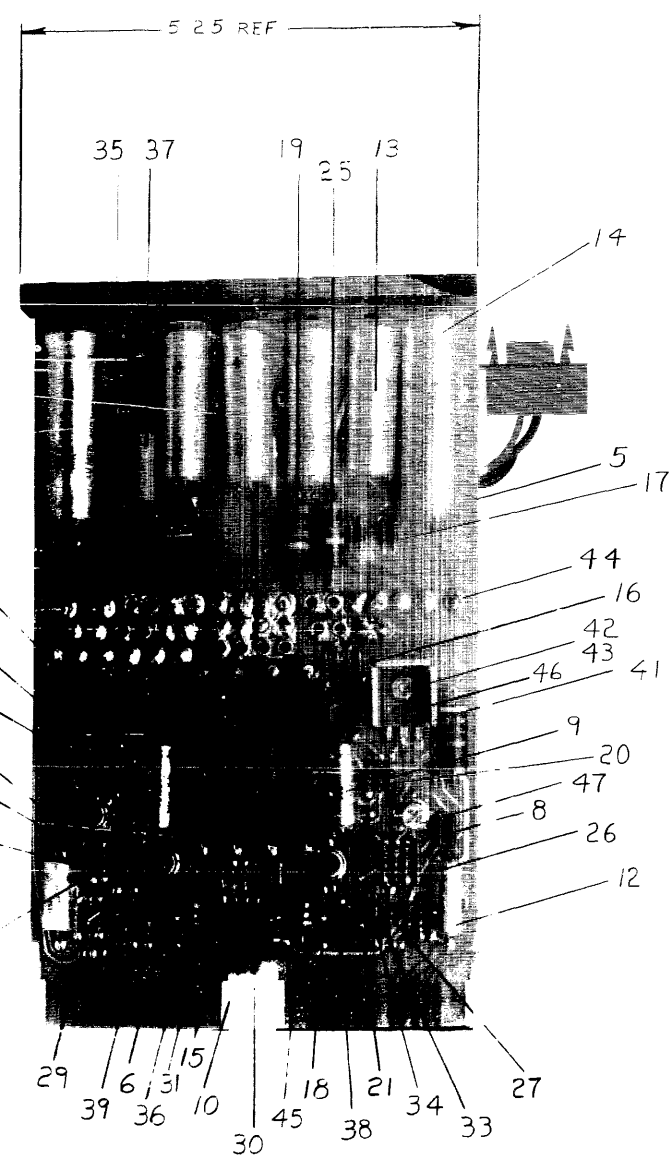
5. Vidration Test

VIII. 1 - 3 \_\_\_\_\_ OK

SIZE	CODE	NUMBER	REV
A	SP	VR14-0-5	B



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REV	CHANGE NO	DATE	BY	CHK'D
1	1	11/24/70	A. FISHMAN	A. FISHMAN
2	1	11/24/70	A. FISHMAN	A. FISHMAN
3	1	11/24/70	A. FISHMAN	A. FISHMAN
4	1	11/24/70	A. FISHMAN	A. FISHMAN
5	1	11/24/70	A. FISHMAN	A. FISHMAN
6	1	11/24/70	A. FISHMAN	A. FISHMAN
7	1	11/24/70	A. FISHMAN	A. FISHMAN
8	1	11/24/70	A. FISHMAN	A. FISHMAN

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VR14				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN W. HCVF	DATE 11/24/70	<b>digital</b> EQUIPMENT CORPORATION MAYFIELD MASSACHUSETTS	
DECIMALS	CHK'D D. CRABBE	DATE 11/2/70		
ANGLES	ENG D. CRABBE	DATE 11/6/70	TITLE 2830 POWER REGULATOR BOARD ASSEMBLY	
XXX .005 XX .02 X .1	PROJ ENG A. FISHMAN	DATE 11/2/70		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD R. FETTERSON	DATE 11/6/70		
MATERIAL	NEXT HIGHER ASSY	SIZE CODE	NUMBER	REV
FINISH	SCALE	DIA	836-0-0	E
	SHEET	OF	DIST	

DIGITAL EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY Mary Ann Gilbert  
DATE July 8, 1971  
ENG C *F. Johnson*  
DATE 8-15-71

CHECKED *AS*  
DATE 7-11-71  
PROD  
DATE

SECTION  
ISSUED SECT.

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	D-CS-6836-0-1	CIRCUIT SCHEMATIC	
2	K-CO-6836-0-4	X-Y COORDINATE HOLE LOCATION	
3	E-AH-6836-0-5	ASSY/DRILLING HOLE LAYOUT	
4	B-MH-6836-0-6	MODULE ECO HISTORY	
4 1/2	D-UA-6836-0-0	POWER REGULATOR BOARD ASSEMBLY	
5	5009224	ETCHED CIRCUIT BOARD	
6	1000020	CAP. 180PF 100V 5% D.M.	1 C8
7	1000024	CAP. 470PF 100V 5% DL.ML.	2 C4, 10
8	1000042	CAP. 1000PF 100V 5% MICA	2 C5, 20
9	1000080	CAP. 50UF 50V -10 +75% S.TANT	2 C6, 11
10	1001610	CAP. .01UF 100V 20% DISC	2 Q2, 13
11	1001739	CAP. 27PF 100V 5% MICA	2 C3, 9
12	1001886	CAP. 270UF 15V 10% S.TANT	2 C1, 7
13	100 2438	CAP. 25UF 150V 39D	4 C16, 17, 18, 19
14	100 2439	CAP. 10UF 450V 39D	2 C14, 15
15	110 808	DIODE 1N752A 5.6V	6 D1, 2, 5, 6, 7, 8
16	110 942	DIODE 1N4001	4 D13, 14, 15, 16
17	110 796	DIODE 1N4004	6 D3, 4, 9, 10, 11, 12
18	130 220	RES. 68 1/2W 10%	2 R11, 31
19	130 245	RES. 120 2W 10%	1 R37
20	130 317	RES. 10 1/2W 5%	4 R10, 27, 5, 21
21	130 285	RES. 270 1/2W 5%	2 R8, 25

TITLE  
VR-14 POWER SUPPLY AND REGULATOR BOARD

ASSY NO.  
A PL

SIZE CODE  
A PL

DEC FORM NO. 16-1031  
DRA 110

DIGITAL EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY Mary Ann Gilbert  
DATE July 8, 1971  
ENG A *F. Johnson*  
DATE 7-15-71

CHECKED *AS*  
DATE 7-11-71  
PROD  
DATE

SECTION  
ISSUED SECT.

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
22	1 00295	RES. 330 1/2W 5%	2 R4, 18
23	1 00271	RES. 220 1/2W 5%	2 R9, 24
24	300265	RES. 1K 1/2W 5%	6 R7, 15, 16, 23, 29, 32
25	1 00369	RES. 1K 2W 10%	1 R36
26	1 00391	RES. 1.5K 1/2W 5%	2 R6, 22
27	1 00417	RES. 2.2K 1/2W 5%	2 R39, 40
28	1 00417	RES. 10 1/2W 5%	2 R5, 21
29	13 1890	RES. 560 1/2W 5%	2 R1, 20
30	13 2385	RES. 750 1W 5%	2 R33, 34
31	13 2385 1310701	RES. 80 10W 1% WW	4 R12, 26, 41, 42
32	13 3062	RES. 470 2W 5%	2 R14, 30
33	13 2612	RES. 1.78K 1/8W 1% MF	2 R2, 17
34	13 4870	RES. 6.81K 1/8W 1% MF	2 R3, 19
35	13 0179	RES. 500K 1W 10% 78PR POT	1 R35
36	13 0382	RES. 2.7 1W 5%	2 R13, 28
37	13 9143-14	RES. 100K 3/4W 10% 76PR POT	1 R38
38	15C1742	TRANSISTOR 2N2904	1 Q1
39	15C1891	TRANSISTOR DEC 2219	1 Q3
40	15 0556	TRANSISTOR MJE 2955	1 Q2
41	900501	HEAT SINK REV A	4
42	9005011	SCREW SLOTTED #4-40 x3/8 SST	2
43	9005556	NUT HEX #4-40 SST	2

TITLE  
VR-14 POWER SUPPLY AND REGULATOR BOARD

ASSY NO.  
A PL

SIZE CODE  
A PL

DEC FORM NO. 16-1031  
DRA 110

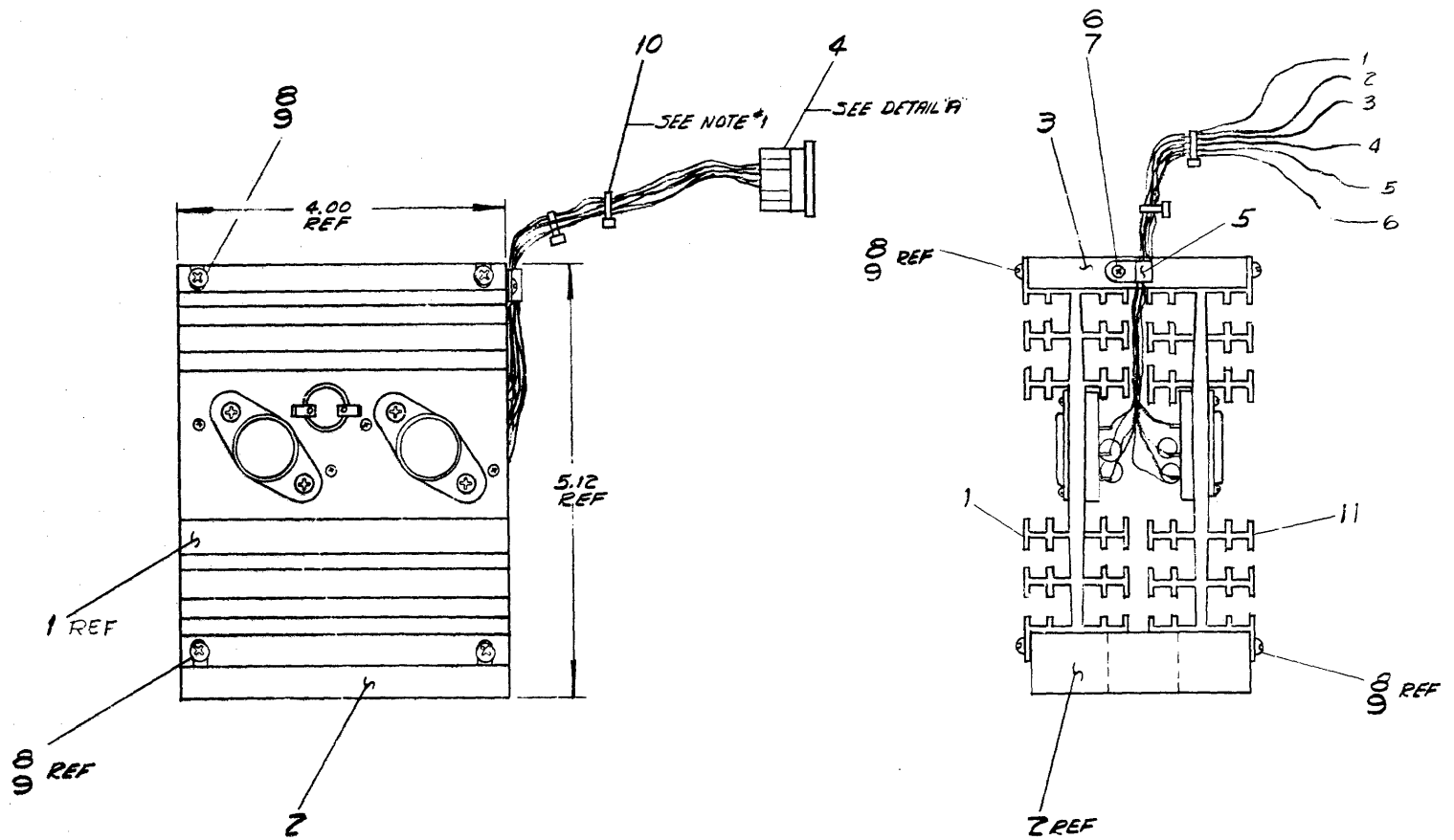
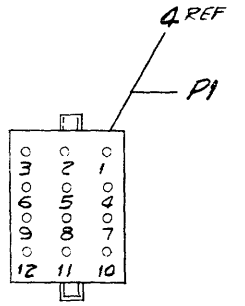


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WIRE TABLE						
ITEM NO.	AWG	COLOR	FROM CONNECTION	WITH	TO CONNECTION	WITH
1	14	GRN	BRADY M. #4	---	P1-1	4
1	18	GRY/YEL		5	P1-2	4
1	14	RED		6	P1-3	4
1	14	BLU		1	P1-10	4
1	18	GRY/BLU		2	P1-11	4
1	14	GRN	BRADY M. 3	---	P1-12	4

0-0-080700Z DAD 2

NOTES:  
1. USE TIE WRAPS WHEREVER NECESSARY



REV	CHANGE NO.

QTY	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
FIRST USED ON OPTION / MODEL VRI4		DO NOT SCALE DRAWING	
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES		DRN	DATE
TOLERANCES		DATE	DATE
DECIMALS	FRACTIONS	ANGLES	
± .005	± 1/64	± 0°30'	
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS		ENGR	DATE
		PROJ. ENG.	DATE
		PROD.	DATE
MATERIAL	NEXT HIGHER ASSY	digital EQUIPMENT CORPORATION LITTLETON, MASSACHUSETTS	
FINISH	D-4A-1R1A-0-P	TITLE PS HEAT SINK ASSY VRI4	
		SIZE/CODE	NUMBER
		DAD	7007080-0-0
		SCALE	DIST.
		SHEET	1 OF 1

**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS  
**PARTS LIST**

MADE BY J. Devin	CHECKED D. Crabbe	SECTION
DATE 10/14/70	DATE 10/15/70	1
ENG <i>D. F. Crabbe</i>	PROD <i>R. Peterson</i>	ISSUED SECT.
DATE 11/6/70	DATE 11/6/70	1

**QUANTITY/VARIATION**

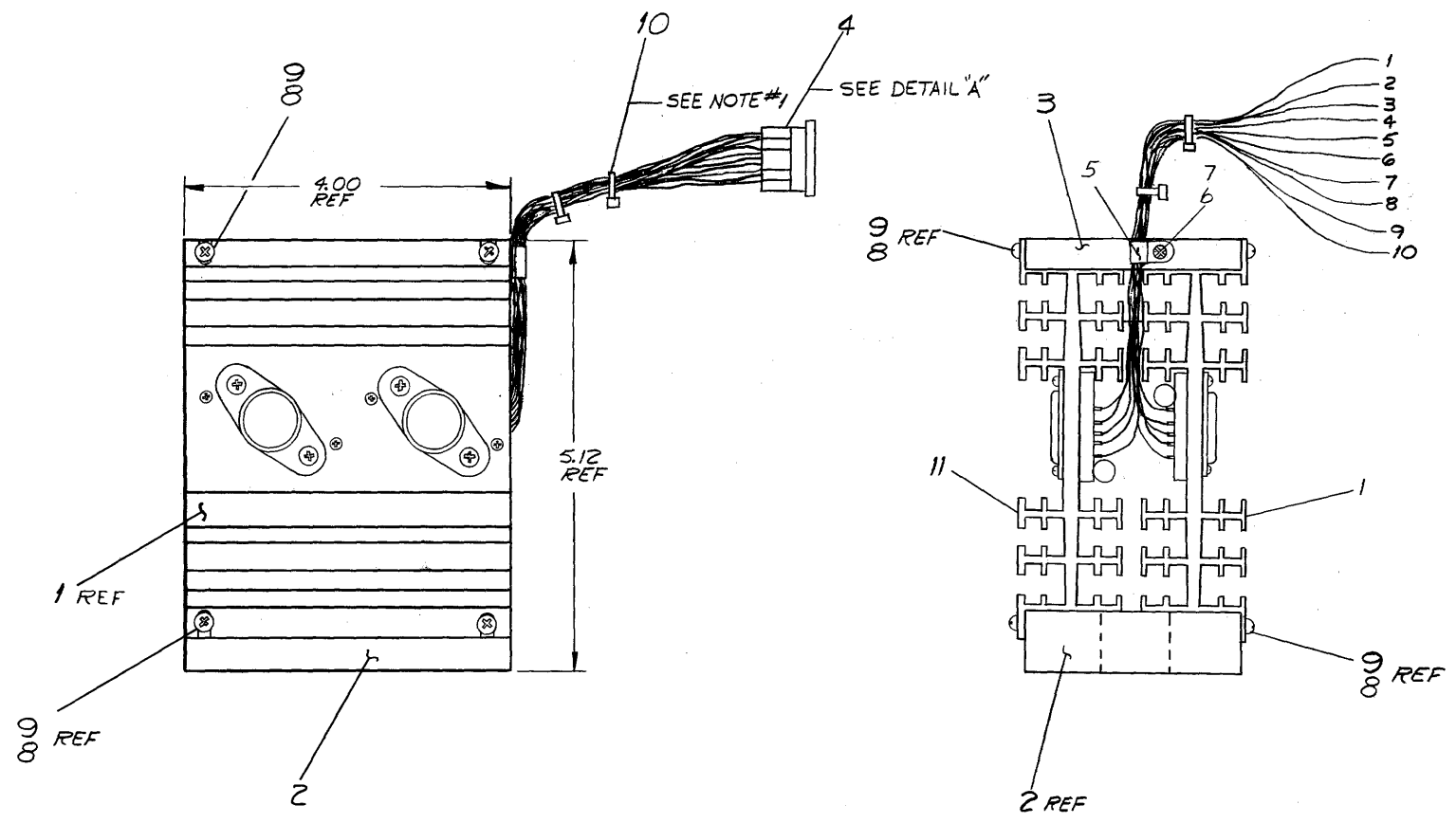
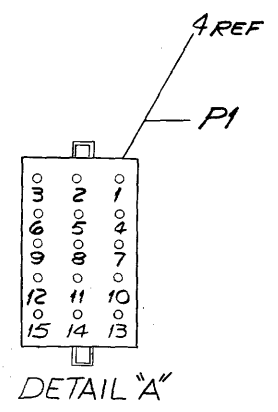
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY	UNIT	DESCRIPTION	QUANTITY	UNIT	DESCRIPTION	QUANTITY	UNIT	DESCRIPTION	QUANTITY	UNIT	DESCRIPTION	QUANTITY	UNIT	DESCRIPTION	QUANTITY	UNIT
1	D-AD-7007081-1-0	REGULATOR HEAT SINK ASSY.	1																
2	C-MD-7408437-0-0	BRKT, MTG. SPACER	1																
3	C-MD-7408438-0-0	SPACER, MTG.	1																
4	1209351-12	SOCKET HOUSING MATE-N-LOK	1																
5	CPS-1953-4A	CLAMP NYLON 1/4 I.D.	1																
6	9006021-1	SCR, PHL HD PAN #6-32 x 5/16 LG	1																
7	9006656	WASHER, FLAT #6 SST	1																
8	9006020-1	SCR, PHL HD PAN #6-32 x 1/4 LG SST	8																
9	9006633	WASHER, INTERNAL #6-32 SST	8																
10	9007031	TIE WRAPS SST-1B	2																
11	D-AD-7007081-2-0	REGULATOR HEAT SINK ASSY.	1																

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
P.S. HEAT SINK ASSY.	D-AD-7007080-0-0	A	PL	7007080-0-0		
SHEET 1 OF 1	DIST.					

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WIRE TABLE						
ITEM NO.	DESCRIPTION	FROM		TO		
		AWG	COLOR	CONNECTION	WITH CONNECTION	WITH
1	18	RED	BRADY M 1	—	P1-1	4
1		GRY/YEL	2	—	P1-2	4
1		GRY	3	—	P1-3	4
1		GRY/BLU	4	—	P1-4	4
1		BLU	5	—	P1-5	4
11		BLU	6	—	P1-11	4
11		GRY/BLU	7	—	P1-12	4
11		VIO	8	—	P1-13	4
11		GRY/YEL	9	—	P1-14	4
11	18	RED	BRADY M 10	—	P1-15	4

NOTES:  
1. USE TIE-WRAPS WHEREVER NECESSARY.



REV.	CHG.	NO.	REV.
1	VR14	0003	A
2	VR14	0015	B
3	VR14	0012	C
4	VR14	0012	D

FIRST USED ON OPTION/MODEL  
VR14

DO NOT SCALE DRAWING	DRN. <i>W. Honey</i>	DATE <i>10/27/72</i>
UNLESS OTHERWISE SPECIFIED	CHK'D <i>C. Clark</i>	DATE <i>10/15/72</i>
DIMENSION IN INCHES	ENG. <i>W. Honey</i>	DATE <i>10/15/72</i>
TOLERANCES	PROJ. ENG. <i>W. Honey</i>	DATE <i>10/15/72</i>
DECIMALS FRACTIONS ANGLES	PROD. <i>W. Honey</i>	DATE <i>10/15/72</i>
±.001 ±.005 ±.010	NEXT HIGHER ASSY	
FINAL SURFACE QUALITY	D-VA-VR14-0-0	
REMOVE BURRS AND BREAK SHARP CORNERS	MATERIAL	
	FINISH	

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS		
	TITLE DEFLECTION HEAT SINK ASSY		
	SCALE	SIZE CODE	NUMBER
	1 OF 1	D	AD7007082-0-0
	SHEET	DIST.	REV. B

DIGITAL EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS  
**PARTS LIST**

MADE BY	W. Hovey	CHECKED	D.K. Crabbe	SECTION	1
DATE	October 15, 1970	DATE	Oct. 15, 1970	ISSUED SECT.	1
ENG	<i>D.K. Crabbe</i>	PROD	<i>K. Peterson</i>		
DATE	<i>11/6/70</i>	DATE	<i>11/6/70</i>		

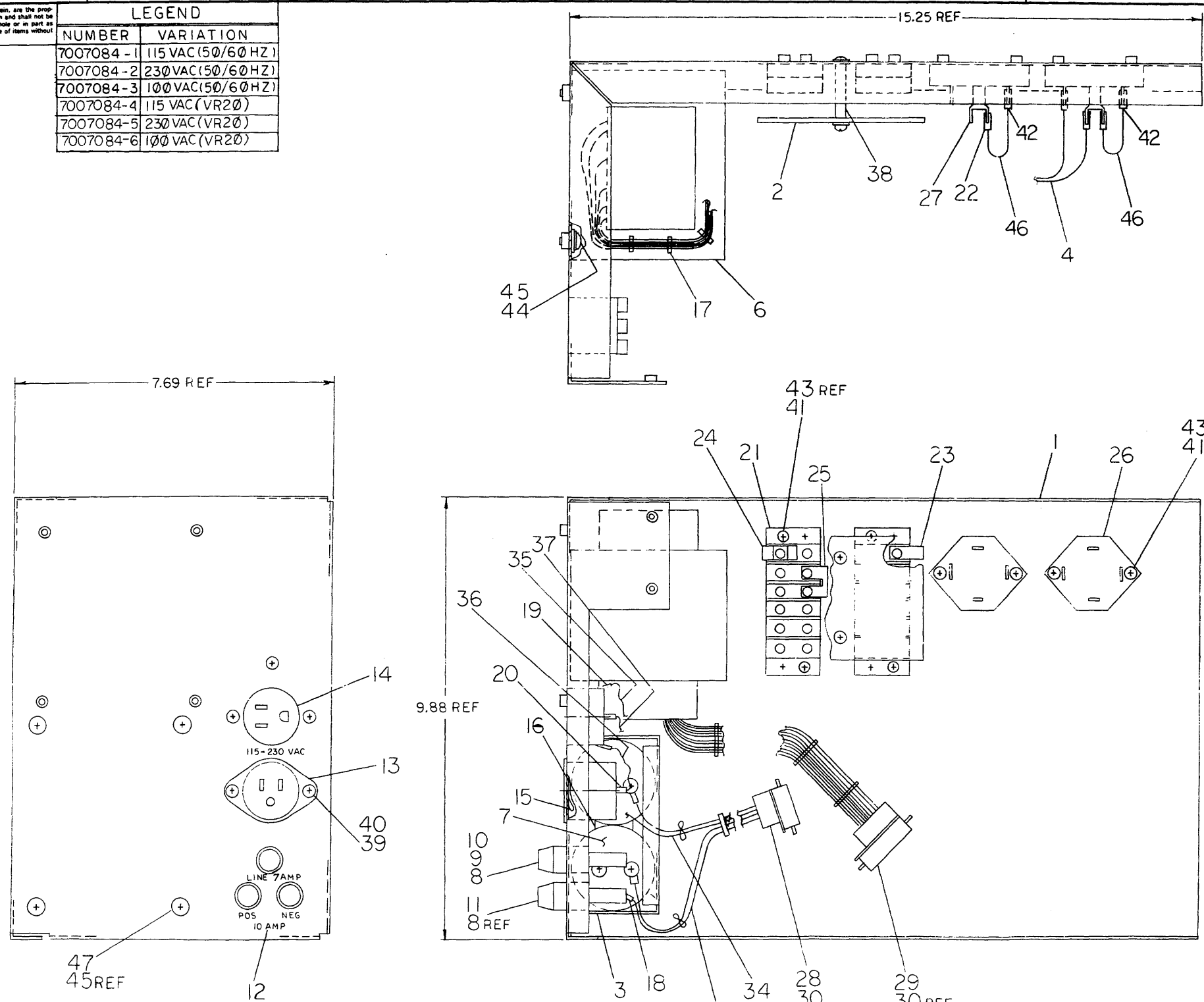
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION
1	D-AD-7007083-1-0	DEFLECTION POWER AMP. ASSY.
2	C-MD-7408437-0-0	BRKT, MTG. SPACER
3	C-MD-7408438-0-0	SPACER, MTG
4	1209351-15	SOCKET HOUSING MATE-N-LOK
5	CPS-1953-4A	CLAMP NYLON $\frac{1}{4}$ I.D.
6	9006021-1	SCR PHL HD PAN #6-32 x 5/16 LG
7	9006656	WASHER, FLAT #6 SST
8	9006020-1	SCR, PHL HD PAN #6-32 x $\frac{1}{4}$ LG SST
9	9006633	WASHER, INTERNAL #6-32 SST
10	9007031	TIE-WRAPPS SST-1R
11	D-AD-7007083-2-0	DEFLECTION POWER AMP. ASSY.
<del>12</del>	<del>1209351-03</del>	<del>SOCKET HOUSING (PLATE) MATE-N-LOK</del>

QUANTITY / VARIATION									

TITLE	DEFLECTION HEAT SINK ASSY.	ASSY NO.	SIZE CODE	NUMBER	REV.	ECO NO.
		D-AD-7007082-0-0	A PL	7007082-0-0	B	V814-0015
SHEET		1	OF		1	DIST.

LEGEND	
NUMBER	VARIATION
7007084-1	115 VAC (50/60 HZ)
7007084-2	230 VAC (50/60 HZ)
7007084-3	100 VAC (50/60 HZ)
7007084-4	115 VAC (VR20)
7007084-5	230 VAC (VR20)
7007084-6	100 VAC (VR20)

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REV.	CHK	CHANGE IN
A	FV	VRI4-00002
B	MC	1-6-71
C	A	FISHMAN
D	O.F.	1-15-71
E	A	FISHMAN
F	A	FISHMAN
G	A	FISHMAN
H	A	FISHMAN
I	A	FISHMAN
J	A	FISHMAN
K	A	FISHMAN
L	A	FISHMAN
M	A	FISHMAN
N	A	FISHMAN
O	A	FISHMAN
P	A	FISHMAN
Q	A	FISHMAN
R	A	FISHMAN
S	A	FISHMAN
T	A	FISHMAN
U	A	FISHMAN
V	A	FISHMAN
W	A	FISHMAN
X	A	FISHMAN
Y	A	FISHMAN
Z	A	FISHMAN

FIRST USED ON OPTION / MODEL  
VRI4

DO NOT SCALE DRAWING  
UNLESS OTHERWISE SPECIFIED  
DIMENSIONS IN INCHES  
TOLERANCES  
ANGLES  
FINISH  
MATERIAL  
FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
DPN: <i>D.K. Cobble</i> DATE: 10/20/70 PRJ. ENG: <i>D.K. Cobble</i> DATE: 11/6/70 PROD. ENG: <i>A. Fulmer</i> DATE: 11/6/70 DATE: 11/11/70			
TITLE <b>POWER SUPPLY ASSY (VRI4)</b>		EQUIPMENT CORPORATION MANUFACTURING DEPARTMENT	
NEXT HIGHER ASSY D-UA-VRI4-0-0		SIZE CODE D	NUMBER 7007084-0-0
SCALE NONE		REV. F	DIST.
SHEET 1 OF 2		1	



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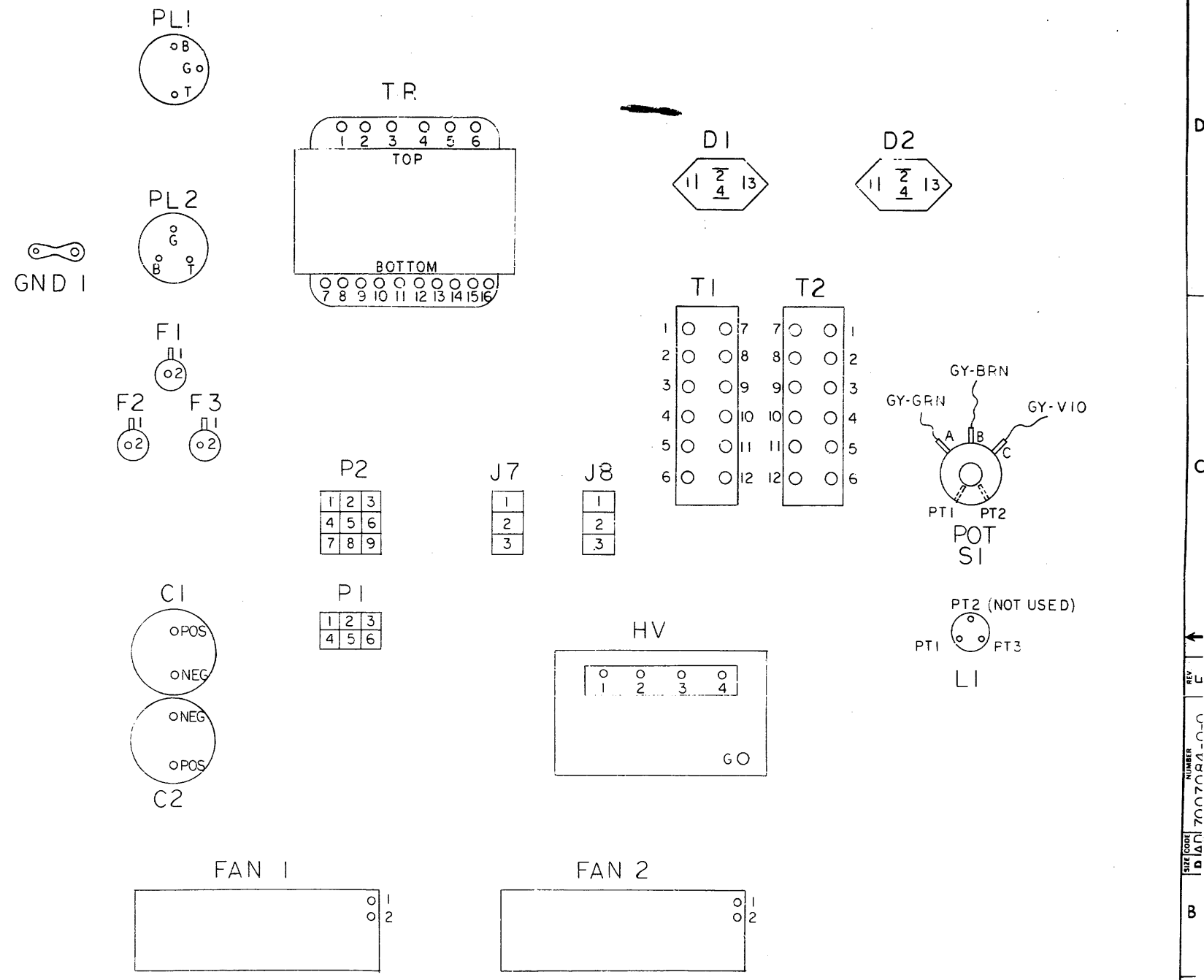
WIRE TABLE

WIRE		CONNECTIONS			
ITEM NO.	COLOR	TYPE-ITEM	FROM	TO	TYPE-ITEM
46	BLU	22	D2-3	D2-4	22,27
46	BLU	22	D1-3	D1-4	22,27
35	RED	22,24	T1-2	T2-2	22,24
36	WHT	22,24	T1-6	T2-6	22,24
32	ORN	19	C1-POS	F3-1	*A,18
	BLK	19	C1-NEG	P1-3	28,30
33	ORN	*A,18	F3-2	P1-1	28,30
	BLK	19	C2-POS	P1-6	28,30
34	GRN	*A,18	F2-2	P1-4	28,30
31	GRN	*A,18	F2-1	C2-NEG	19
35	RED	*A,18	F1-2	PL2-B	20
35	RED	19	PL1-B	PL2-B	20
36	WHT	19	PL1-T	PL2-T	20
37	BLK	19	PL1-G	PL2-G	20
6	VIO	*A	TR-1	T2-6	22
6	GRY		TR-2	T2-3	22
6	WHT		TR-3	T2-2	22
6	BRN		TR-4	T1-6	22
6	RED		TR-5	T1-4	22
6	ORN		TR-6	T1-3	22
6	YEL		TR-7	P2-1	28,30
6	BLU		TR-8	D2-4	22,27
6	YEL-BLK		TR-9	P2-2	28,30
6	GRN		TR-10	P2-9	28,30
6	YEL		TR-11	P2-3	28,30
6	GRN		TR-12	P2-7	28,30
6	BLK		TR-13	P2-4	28,30
6	BLK-WHT		TR-14	P2-5	28,30
6	BLU		TR-15	D1-4	22,27
6	BLK-YEL	*A	TR-16	P2-6	28,30

\* LETTER DESIGNATION "A" INDICATES WIRE IS TO BE SOLDERED PER TABLE ABOVE (WIRE TABLE)

HARNESS TABLE		
COLOR	HARN PT	P.S. LOCATION
RED	3	FAN2-1
WHT	4	FAN2-2
GRN	6	C2-NEG
GRN	7	C2-NEG
BLK	8	GND-1
RED	9	F1-2
WHT	10	PL2-T
ORN	11	C1-POS
ORN	12	C1-POS
RED	14	T1-2
WHT	15	T1-5
RED	16	T2-1
WHT	17	T2-5
GRN	22	D1-2
ORN	23	D1-1
GRN	25	D2-2
ORN	24	D2-1
RED	21	T2-1
WHT	20	T2-4
RED	19	T1-1
WHT	18	T2-4
BLK	30	GND-2 (ON H.V. ASSY)
RED	32	FAN1-1
WHT	31	FAN1-2

JUMPER TABLE		
ITEM NO.	FROM	TO
25	T1-7	T1-8
25	T1-8	T1-9
25	T1-11	T1-12
25	T2-7	T2-8
25	T2-10	T2-11
25	T2-11	T2-12



FIRST USED ON OPTION/MODEL  
VR14

DO NOT SCALE DRAWING  
UNLESS OTHERWISE SPECIFIED  
DIMENSION IN INCHES  
TOLERANCES  
DECIMALS FRACTIONS ANGLES  
±.005 ±.004 ±.030  
FINAL SURFACE QUALITY  
REMOVE BURRS AND BREAK SHARP CORNERS  
MATERIAL  
FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
DRN	<i>D. Carbe</i>	DATE 10/15/70	<b>digital</b> EQUIPMENT CORPORATION MAYHARD, MASSACHUSETTS TITLE POWER SUPPLY ASSY (VR14) NEXT HIGHER ASSY D-UA-VR14-0-0 SCALE NONE SHEET 2 OF 2 DIST. G-1
CHKD	<i>D. Carbe</i>	DATE 10/16/70	
ENG	<i>D. Carbe</i>	DATE 11/6/70	
PROJ. ENG.	<i>C. Blumman</i>	DATE 11-6-70	
PROD.	<i>R. Peterson</i>	DATE 11/11/70	
SIZE CODE		NUMBER	REV.
DAD7007084-0-0			F

REV.	CHANGE NO.

## DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS PARTS LIST

MADE BY D. Crabbe  
 DATE 10/9/70  
 ENG *D.K. Crabbe*  
 DATE 11/19/70  
 CHECKED D. Crabbe  
 DATE 10/22/70  
 PROD *R. Peterson*  
 DATE 11/11/70  
 SECTION 1  
 ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY	VARIATION
1	E-IA-7408402-0-0	PLATE, SIDE MTG.	1	1
2	B-MD-7408416-0-0	COVER, PROTECTION	1	1
3	D-IA-7408433-0-0	COVER, CAPACITOR HOLDDOWN	1	1
4	E-IA-7407147-0-0	POWER SUPPLY CABLE HARNESS	1	1
5	D-SC-7407084-0-1	POWER SUPPLY CIRCUIT SCHEMATIC	REF REF REF REF REF REF	REF REF REF REF REF REF
6	1610161-0	TRANSFORMER MMC-3833-1 MERRIMACK	1	1
7	1010141-0	CAPACITOR, 5900 MFD 75V SPRAGUE	2	2
8	900724	FUSE HOLDER #HKP	3	3
9	900722	7 AMP SLO BLO FUSE (115V)	1	1
10	900721	3 AMP SLO BLO FUSE (230V)	-	1
11	900883	10 AMP FAST BLO FUSE (230V)	-	1
12	A-DC-7408407-0-0	SCOTCHCALS (VR14)	2	2
13	120125	RECEP #160-5 MALE AMPH.	A/RA/R	A/RA/RA/RA/R
14	120125	RECEP #160-4 FEM AMPH.	1	1
15	900676	TERMINAL #2101-06-00 SHAKE PROOF	1	1
16		FOAM 1/2 x 3/4 STICKY BACK 3M	1	1
17	900703	TIE WRAP SST-1-B	A/RA/RA/R	A/RA/RA/R
18	910730	SHRINKIES	A/RA/RA/R	A/RA/RA/R
19	900677	SOLDERLESS CONN #31889 (RED) AMP	7	7
20	900678	SOLDERLESS CONN #34144 (RED) AMP	4	4
21	9006904	TERM STRIP #6-541 CINCH JONES	2	2
22	9007917	FASTON TAB #50902 AMP	12	12

TITLE POWER SUPPLY ASSY (VR14)  
 ASSY NO. D-AD-7007084-0-0  
 SIZE CODE **A PL**  
 SHEET 1 OF 3  
 NUMBER 7007084-0-0  
 REV. F  
 ECO NO. VR14-00022

## DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS PARTS LIST

MADE BY D. Crabbe  
 DATE 10/9/70  
 ENG *D.K. Crabbe*  
 DATE 11/19/70  
 CHECKED D. Crabbe  
 DATE 10/22/70  
 PROD *R. Peterson*  
 DATE 11/11/70  
 SECTION 1  
 ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY	VARIATION
23	9007112	FASTON TAB #60145-1 AMP	1	1
24	9007269	FASTON TAB #41287-1 AMP	12	12
25	9007131	JUMPERS #541 CINCH JONES	6	6
26	110579	DIODE PACK DM15 SOLARTRON	2	2
27	900792	PIGGYBACK FASTONS #3000H21A ARKLESS	2	2
28	1209351-06	SOCKET HSG (MALE) #1480273-1 MATE-N-LOK	1	1
29	1209351-09	SOCKET HSG (MALE) #1480274-1 MATE-N-LOK	1	1
30	1209378-01	CONTACT PIN (MALE) MATE-N-LOK	12	12
31	9107370-55	#14GA TEF STRD INS WIRE (GRN)	A/RA/RA/R	A/RA/RA/R
32	9107370-33	#14GA TEF STRD INS WIRE (ORN)	A	A
33	9107440-03	#14GA TEF STRD INS TWP (BLK-ORN)	A	A
34	9107440-05	#14GA TEF STRD INS TWP (BLK-GRN)	A	A
35	9107360-22	#18GA TEF STRD INS WIRE (RED)	A	A
36	9107360-99	#18GA TEF STRD INS WIRE (WHT)	A	A
37	9107360-00	#18GA TEF STRD INS WIRE (BLK)	A/RA/RA/R	A/RA/RA/R
38	9006864	SPACER, AL. #6-32 TAP 1/4 AF x 1 1/4	2	2
39	9006560	NUT, KEPS #6-32	4	4
40	9006021-1	SCR PHL PAN HD #6-32 x 5/16 SST	8	8
41	9006025-1	SCR PHL PAN HD #6-32 x 5/8 SST	4	4
42	9007917	FASTON TAP AMP	4	4
43	9006632	LOCK WASHER #6 INT TOOTH	2	2
44	9006070-1	SCR, PHL PAN HD #10-32 x 5/16 SST	12	12

TITLE POWER SUPPLY ASSY (VR14)  
 ASSY NO. D-AD-7007084-0-0  
 SIZE CODE **A PL**  
 SHEET 2 OF 3  
 NUMBER 7007084-0-0  
 REV. F  
 ECO NO.

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS <b>PARTS LIST</b>				QUANTITY/VARIATION												
MADE BY D. Crabbe		CHECKED D. Crabbe		SECTION												
DATE 10/9/70		DATE 10/22/70		1												
ENG <i>D. Crabbe</i>		PROD <i>R. Peterson</i>		ISSUED SECT.												
DATE 11/6/70		DATE 11/11/70		1												
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION			7007084-1	7007084-2	7007084-3	7007084-4	7007084-5	7007084-6						
45	9006635	LOCK WASHER #10 INT TOOTH			12	12	12	12	12	12						
46	9107370-66	# 14 AWG TEF STRDINS WIRE (BLUE)			A/R	A/R	A/R	A/R	A/R	A/R						
47	9007019-3	SCR, PHL TRUSS HD #10-32 X 5/16SST			4	4	4	4	4	4						
TITLE POWER SUPPLY ASSY (VR14)				ASSY NO. D-AD-7007084-0-0		SIZE CODE <b>A PL</b>		NUMBER 7007084-0-0			REV. F		ECO NO.			
SHEET 3 OF 3				DIST.												

DEC FORM NO. 16-1031  
DRA 110

## CUSTOMER PRINT SET INDEX

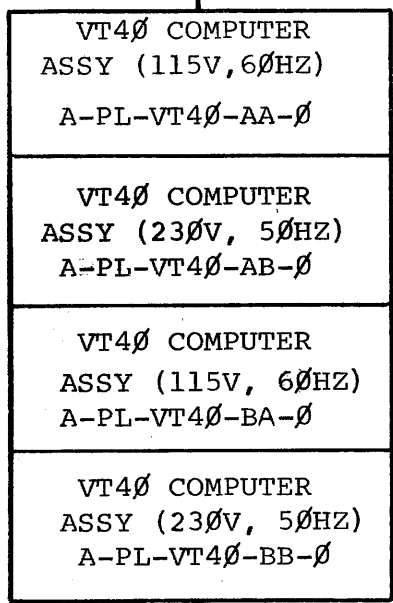
THIS IS PRINT SET

SEQUENCE	DESCRIPTION	SEQUENCE	DESCRIPTION
1	COMPUTER ASSY (VT40)	B-DD-VT40-0	
	16 BIT COMPUTER ASSY (1105)	B-DD-1105-0	
	MODULE UTILIZATION	D-MU-VT40-0-1	
	BUS CONTROL	C-CS-M7013-0-1	
	ROM PATTERNS	D-RL-M7013-0-8	
	DISPLAY CONTROL	C-CS-M7014-0-1	
	ROM PATTERNS	D-RL-M7014-0-8	
	VECTOR GENERATOR	C-CS-A320-0-1	
	COMPUTER ASSY (VT40)	A-PL-VT40-0-0	

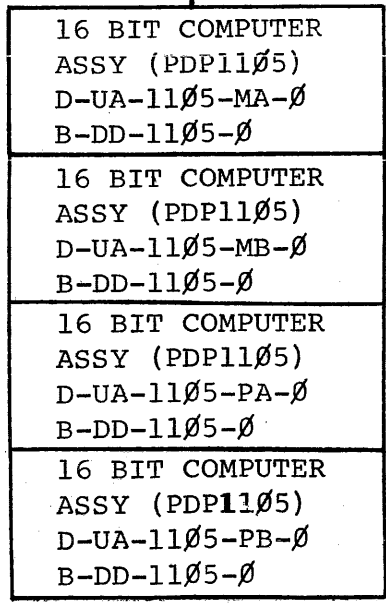
UNIT VARIATIONS		PRINT SET		
VAR	TITLE	VT40-0		
VT40-AA	VT40 COMPUTER ASSY (115V, 60HZ)	x		
VT40-AB	VT40 COMPUTER ASSY (230V, 50HZ)	x		
VT40-BA	VT40 COMPUTER ASSY (115V, 60HZ)	x		
VT40-BB	VT40 COMPUTER ASSY (230V, 50HZ)	x		

REVISIONS	DATE	1-73	CHG. NO.	VT40-1	REV	A	USED ON OPTION/MODEL				DRN.	C.MCCOY	DATE	10/16/72	TITLE				
															VT40 COMPUTER ASSY				
															SIZE	CODE	NUMBER		REV
															B	DD	VT40-0		A
															DIST	G			
								SHEET 1 OF 3											

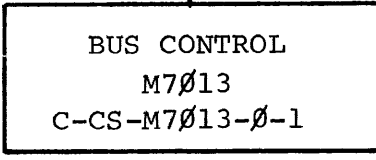
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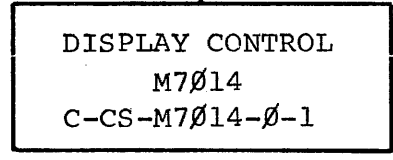
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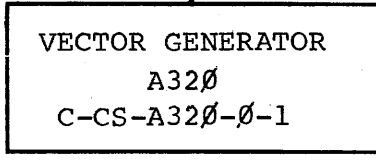
3



4



5



TITLE	SHEET 2 OF 3	SIZE CODE	NUMBER	REV
VT4Ø COMPUTER ASSY		B DD	VT4Ø-Ø	A

G

CUSTOMER PRINT SET		ELECTRICAL					CUSTOMER PRINT SET		MECHANICAL									
VT40-0		MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE	VT40-0		MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE	
x			1	D-MU-VT40-0-1		1	MODULE UTILIZATION		x			1	A-PL-VT40-0-0		1	VT40 COMPUTER ASSY		
													D-IA-7409966-0-0		1	COVER PANEL, REAR BOTTOM		
													D-MD-7409971-0-0		1	EXTRUSION, SIDE		
													A-PI-3700079-0-0		2	PACKAGING INSTRUCTIONS		
x			3	C-CS-M7013-0-1	#		BUS CONTROL (M7013)					2	D-UA-PDP1105-0-0		3	16 BIT COMPUTER ASSY (PDP1105)		
C				D-RL-M7013-0-8	#		ROM PATTERNS		C				A-PL-PDP1105-0-0		4	16 BIT COMPUTER ASSY (PDP1105)		
													B-DD-1105-0	#	6	16 BIT COMPUTER (PDP1105)	1105-	
x			4	C-CS-M7014-0-1	#		DISPLAY CONTROL											
C				D-RL-M7014-0-8	#		ROM PATTERNS											
x			5	C-CS-A320-0-1	#		VECTOR GENERATOR											

CUSTOMER PRINT SET  
 X = PRINT OF DOCUMENT INCLUDED IN PRINT SET  
 C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT  
 S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

# DRAWING DIRECTORY

## CUSTOMER PRINT SET INDEX

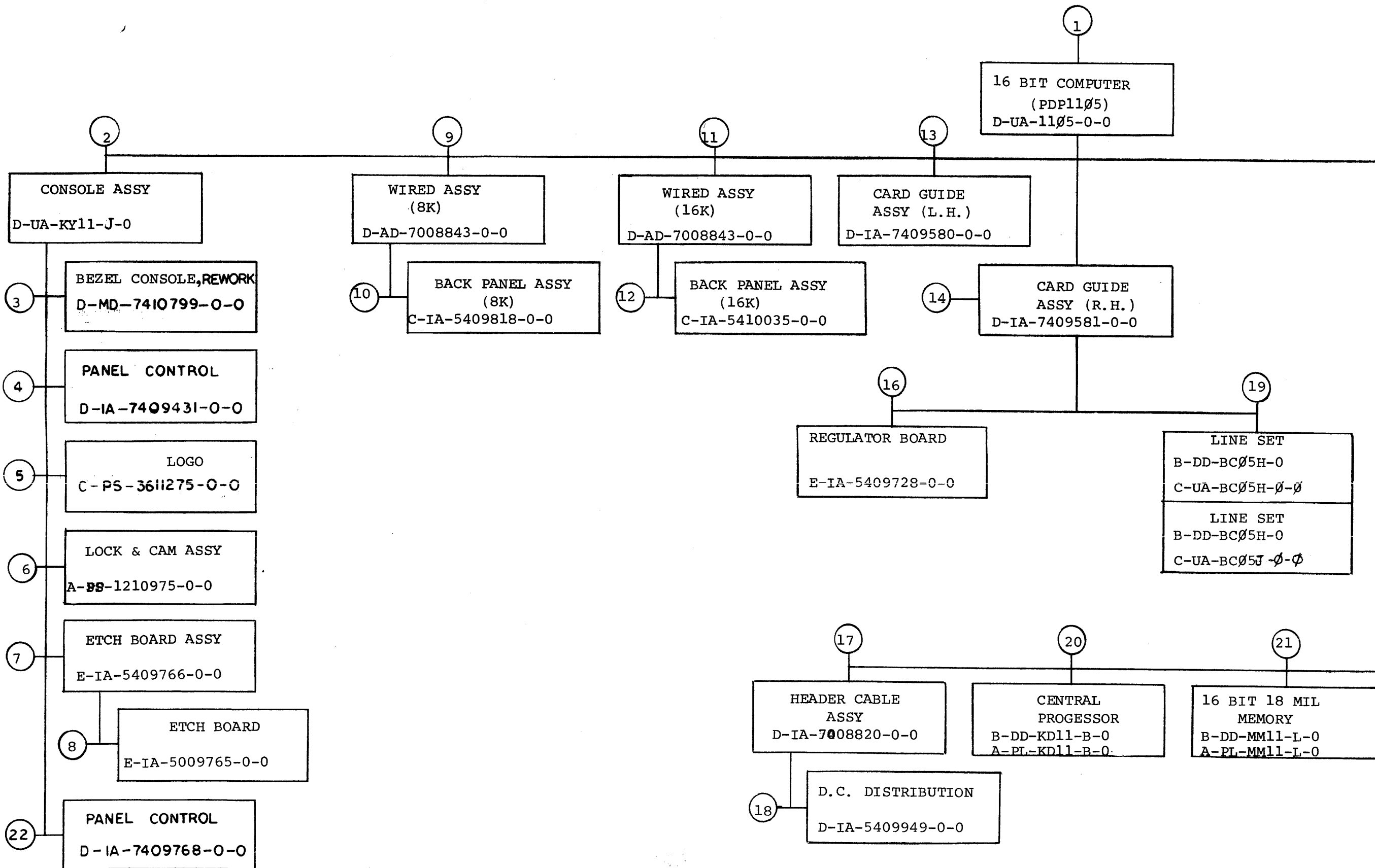
THIS IS PRINT SET

SEQUENCE		SEQUENCE	
	16 BIT COMPUTER (PDP 1105)	B-DD-1105-0	
	16 BIT COMPUTER (PDP 1105)	D-UA-1105-0-0	
	16 BIT COMPUTER (PDP 1105) (PL)	C-PL-1105-0-0	
	MODULE UTILIZATION (16K)	D-MU-1105-0-02	
	MODULE UTILIZATION (8K)	D-MU-1105-0-01	
	CENTRAL PROCESSOR	B-DD-KD11-B	
	16 BIT 18 MIL MEMORY	B-DD-MM11-L	
	ETCH BOARD ASSY (1105 CONSOLE)	E-1A-5409766-0-0	
	CIRCUIT SCHEMATIC	D-CS-5409766-0-1	
	REGULATOR BOARD	E-1A-5409728-0-0	
	CIRCUIT SCHEMATIC	D-CS-5409728-0-1	
	LINE SET BC05H	B-DD-BC05H-0	
	INPUT HARNESS (A.C.)	E-1A-7008713-0-0	
	HARNESS (D.C.)	D-1A-7008856-0-0	
	HEADER CABLE ASSY	D-1A-7008820-0-0	
	CIRCUIT SCHEMATIC	C-CS-5409949-0-1	
	CONSOLE ASSY	D-UA-KY11-J-0	
	CONSOLE ASSY (PL)	A-PL-KY11-J-0	
	I/O CABLE	C-UA-BC05R-03-0	
	CIRCUIT SCHEMATIC (8K)	C-CS-5409818-0-1	
	ETCH/WIRE LIST (8K)	K-WL-7008843-1-1	
	CIRCUIT SCHEMATIC (16K)	C-CS-5410035-0-1	
	ETCH/WIRE LIST (16K)	K-WL-7008843-2-1	
	1105 ACCESSORY LIST	A-AL-1105-0-04	
	1105 SOFTWARE LIST	A-SL-1105-0-05	
	1105 ACCEPTANCE PROCEDURE	A-SP-1105-0-06	

VARIATION	TITLE	PRINT SET TYPE				
		1105-1				
CONFIGURATION #1						
1105-HA	KD11-B, MM11-K, 115V/60HZ	X				
1105-HB	KD11-B, MM11-K, 320V/50HZ	X				
1105-JA	KD11-B, MM11-L, 115V/60HZ	X				
1105-JB	KD11-B, MM11-L, 230V/50HZ	X				
CONFIGURATION #2						
1105-KA	KD11-B, MM11-K, 115V/60HZ	X				
1105-KB	KD11-B, MM11-K, 230V/50HZ	X				
1105-LA	KD11-B, MM11-L, 115V/60HZ	X				
1105-LB	KD11-B, MM11-L, 230V/50HZ	X				
CONFIGURATION #3						
1105-MA	KD11-B, MM11-K, 115V/60HZ	X				
1105-MB	KD11-B, MM11-K, 230V/50HZ	X				
1105-PA	KD11-B, MM11-L, 115V/60HZ	X				
1105-PB	KD11-B, MM11-L, 230V/50HZ	X				

REVISIONS	DATE	CHG. NO.	REV														
				A	B	C	D	E	F	H	J	K	L				
	2/9	1105-17	A														
	M.T.	1105-30	B														
	G.G.	1105-33	C														
	10/72	1105-34	D														
	10/72	1105-35	E														
	12/72	1105-37	F														
	12/72	1105-39	H														
	12/72	1105-40	J														
	2/73	1105-41	K														
	2/73	KY11J-1	L														

USED ON OPTION/MODEL	DRN.	DATE	TITLE	
	J. CAHILL	4/19/72	16 BIT COMPUTER (PDP 1105)	
	CHK'D.	DATE		
	C. TESCHNER	4/19/72		
	PROJ. ENG.	DATE		
	<i>B. Williams</i>	5-25-72		
	PROD.	DATE		
	<i>B. Williams</i>	5-25-72		
	FIELD SERV.	DATE		
	<i>D. Williams</i>	5-25-72		
	SHEET 1 OF 6	DIST	SIZE CODE	NUMBER
			B DD	1105-0
				REV L



TITLE	SIZE	CODE	NUMBER	REV
16 BIT COMPUTER (PDP 1105)	B	DD	1105-0	L
SHEET 2 OF 6				



CUSTOMER PRINT SET				ELECTRICAL					CUSTOMER PRINT SET				ELECTRICAL						
				FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.					FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X	X			1.	E-1A-7008713-0-0	#	1	AC INPUT HARNESS		X				16	E-1A-5409728-0-0	#	1	REGULATOR BOARD	
X	X				E-1A-7008856-0-0	#	1	HARNESS (D.C.)		X					D-CS-5409728-0-1	#	1	CIRCUIT SCHEMATIC	
X	X				A-AL-1105-0-04	*	1	1105 ACCESSORY LIST							B-MH-5409728-0-6	#	1	MODULE E.C.O. HISTORY	
X	X				A-SL-1105-0-05	*	1	1105 SOFTWARE LIST											
X					D-MU-1105-0-01	*	1	MODULE UTILIZATION (8K)		X				17.	D-1A-7008820-0-0	#	1	HEADER CABLE ASSY	
X					D-MU-1105-0-02	*	1	MODULE UTILIZATION (16K)											
X					A-SP-1105-0-6		23	1105 ACCEPTANCE PROCEDURE											
X	X			7.	E-1A-5409766-0-0	#	1	ETCH BOARD ASSY (1105 CONSOLE)		X				18.	D-1A-5409949-0-0	#	1	D.C. DISTRIBUTION	
X	X				D-CS-5409766-0-1	#	1	CIRCUIT SCHEMATIC							C-CS-5409949-0-1	#	1	CIRCUIT SCHEMATIC	
					B-MH-5409766-0-6	#	1	MODULE E.C.O. HISTORY							B-MH-5409949-0-6	#	1	MODULE E.C.O. HISTORY	
				9.	D-AD-7008843-0-0	#	1	WIRED ASSY (8K)		C				19.	B-DD-BC05H-0	#	3	LINE SET	
					K-WL-7008843-1-1	#	1	ETCH/WIRE LIST (8K)							C-UA-BC05H-0-0	#	1	LINE SET BC05H (115V)	
															C-UA-BC05J-0-0	#	1	LINE SET BC05J (230V)	
X				10.	C-1A-5409818-0-0	#	1	BACK PANEL ASSY (8K)											
					C-CS-5409818-0-1	#	2	CIRCUIT SCHEMATIC (8K)											
X				11.	D-AD-7008843-0-0	#	1	WIRED ASSY (16K)		C				20	B-DD-KD11-B	#	1	CENTRAL PROCESSOR	
					K-WL-7008843-2-1	#	1	ETCH/WIRE LIST (16K)							A-PL-KD11-B-0-0	#	1	CENTRAL PROCESSOR (PL)	
				12.	C-1A-5410035-0-0	#	1	BACK PANEL ASSY (16K)		C				21	B-DD-MM11-L	#	3	16 BIT 18 MIL MEMORY	
					C-CS-5410035-0-1	#	2	CIRCUIT SCHEMATIC (16K)							A-PL-MM11-L-0-0	#	1	16 BIT 18 MIL MEMORY (PL)	

CUSTOMER PRINT SET		MECHANICAL						CUSTOMER PRINT SET		MECHANICAL					
1105-0	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE	1105-0	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	D-UA-1105-0-0	F	5	16 BIT (PDP 1105) ASSY									
X			C-PL-1105-0-0	F	2	16 BIT (PDP 1105) ASSY (P.L.)				4	D-IA-7409431-0-0	#	1	PANEL CONTROL	
			E-IA-7409458-0-0	#	4	CHASSIS					C-SS-7409431-0-1	#	1	SILK SCREEN (MAGENTA)	
			D-IA-7409453-0-0	#	1	FAN MOUNTING PLATE					C-SS-7409431-0-2	#	1	SILK SCREEN (BLACK) REAR	
			A-DC-5309413-0-0	#	1	SPECIAL DECAL (UL)					C-SS-7409431-0-3	#	1	SILK SCREEN (1105) VERMILLON	
			D-PS-1210974-0-0	#	1	1.75 FILLER STRIP				5	C-PS-3611275-0-0	#	1	LOGO	
			C-IA-7409476-0-0	#	1	RET CONN BLOCK (L.H.)					A-SS-3611275-0-1	#	1	SILK SCREEN	
			C-IA-7409551-0-0	#	1	RET CONN BLOCK (R.H.)					A-SS-3611275-0-2	#	1	SILK SCREEN	
			D-IA 7409459-0-0	#	1	BRKT CHASSIS SLIDE (L.H.)					A-SS-3611275-0-3	#	1	SILK SCREEN	
			D-IA-7409533-0-0	#	1	COVER, SIDE					A-SS-3611275-0-4	#	1	SILK SCREEN	
			C-MD-7409460-0-0	#	1	COVER, TOP					A-SS-3611275-0-5	#	1	SILK SCREEN	
			C-IA-7409449-0-0	#	1	BRKT CHASSIS SLIDE (R.H.)				6	A-PS-1210975-0-0	#	1	LOCK & CAM ASSY	
			C-MD-7409591-0-0	#	1	CLAMP									
			C-PS-1210698-0-0	#	1	GUIDE, CARD CENTER									
			D-PS-1210931-0-0	#	1	BLOCK, CABLE RETAINER									
			D-MD-7409432-0-0	#	1	PLATE, LOWER RETAINER									
			C-MD-7409430-0-0	#	1	NUT, SWIVEL									
			C-MD-7409479-0-0	#	1	PLATE, PRESSURE									
			D-IA-7008856-0-0	#	1	HARNESS DC									
			E-IA-7008713-0-0	#	1	AC INPUT HARNESS									
			A-AL-1105-0-04	#	1	1105 ACCESSORY LIST									
			A-SL-1105-0-05	#	1	1105 SOFTWARE LIST									
			A-PI-3700061-0-0	#	2	PACKAGING INSTRUCTION									
			B-MD-7409817-0-0	#	1	PLATE, CABLE CLAMP									
			B-MD-7409816-0-0	#	1	SHIPPING BRACKET									
			C-MD-7409818-0-0	#	1	BRACKET, CABLE CLAMP									
			B-IA-7409729-0-0	#	1	JUMPER, POWER									
			D-PS-1210945-0-0	#	4	SLIDES									
			B-IA-7409903-0-0	#	1	JUMPER, POWER									
			D-IA-7409533-1-0	#	1	COVER, SIDE									
			E-IA-5309816-0-0	#	1	CHASSIS POWER SUPPLY									
			D-IA-7008726-0-0	#	1	TRANSFORMER ASSY									
			A-DC-5309414-0-0	#	1	SPECIAL DECAL (UL)									
X		2	D-UA-KY11-J-0	#	1	CONSOLE ASSY									
X			A-PL-KY11-J-0	#	2	CONSOLE ASSY (P.L.)									
			C-MD-7409534-0-0	#	1	ACTUATOR (REWORK)									
			B-IA-7409444-0-0	#	1	DETENT									
X			C-UA-BC08R-03-0	#	1	I/O CABLE									
			B-IA-7409730-0-0	#	1	JUMPER, POWER									
			B-MD-7409867-0-0	#	1	EXTENDED LEAF REWORK (ACTUATOR)									
			B-MD-7409868-0-0	#	1	SWITCH ADAPTER PLATE									
		3	D-MD-7410799-0-0	#	1	BEZEL CONSOLE, REWORK									
			J-PS-1210992-0-0	#	1	BEZEL CONSOLE, CASTING									

CUSTOMER PRINT SET CODES  
X = PRINT OF DOCUMENT INCLUDED IN PRINT SET  
C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT  
S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

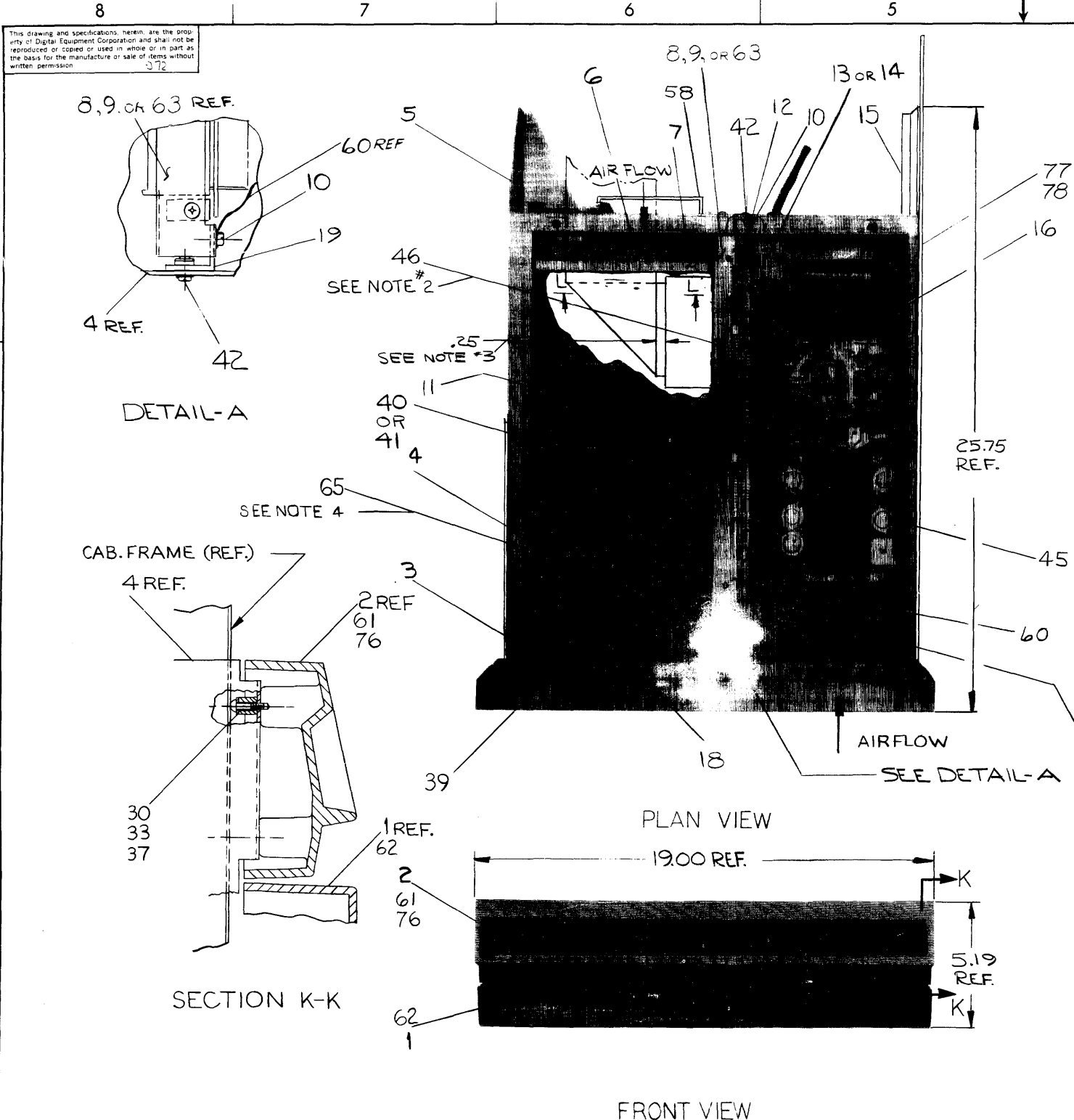
TITLE  
16 BIT COMPUTER (PDP 1105)

SHEET 4 OF 6  
SIZE CODE B DD  
NUMBER 1105-0

REV  
L



CUSTOMER PRINT SET					MECHANICAL					CUSTOMER PRINT SET				
MFG. SET					MFG. SET					MFG. SET				
FIND NO.	DRAWING NO.	REV	NO OF SHT	OPTION NO.	FIND NO.	DRAWING NO.	REV	NO OF SHT	OPTION NO.	FIND NO.	DRAWING NO.	REV	NO OF SHT	OPTION NO.
20	B-DD-KD11-B	#	1	CENTRAL PROCESSOR										
	A-PL-KD11-B -0-0	#	1	CENTRAL PROCESSOR (PL)										
21	B-DD-MM11-L	#	3	16 BIT 18 MIL MEMORY										
	A-PL-MM11-L -0-0	#	1	16 BIT 18 MIL MEMORY (PL)										
22	D-IA-7409768-0-0	#	1	PANEL , CONTROL										
	C-SS-7409768-0-1	#	1	SILK SCREEN										
	C-SS-7409768-0-2	#	1	SILK SCREEN										
	C-SS-7409768-0-3	#	1	SILK SCREEN										



WIRE TABLE					
PART NO.	COLOR	FROM HARNESS LEAD NO.	TO SYSTEM LOCATION	REMARKS	
7008713	RED	J1	51-2	VIEW E-E	
	RED	J2	51-1		
	VIO	J3	51-6		
	BLK	J4	51-5		
	RED	J12	H740 P/S J3		THERMAL INTERLOCK
	RED	J11	H740 FAN		P/S. FAN TAB
	WHT	J10	H740 FAN		P/S. FAN TAB
7008713	WHT	J6	P9	BACK OF CHASSIS	
		J5	P8	BACK OF CHASSIS	
	RED	J9	TRANSFORMER P5	VIEW H-H	
		P1	A.C. INPUT BOX J13	A.C. INPUT BOX	
	RED	J7	11/05 FAN	CHASSIS FAN	
	WHT	J8	11/05 FAN	CHASSIS FAN	
	7008856	P1	H740 P/S. J2	P/S. MATE-N-LOCK	VIEW F-F
		VIO	8	BP-1	
		RED	9	BP-3	
		YEL	10	BP-2	
BLK		11	BP-4		
BLU		12	BP-5		
ORN		13	LOGIC POINT COIL1	+15	
BRN	14	LOGIC POINT COIL2	LTC L0		
BLK	15	BP-6	VIEW F-F		
7008856	RED	16		BP-7	
		TRANSFORMER P2	H740 P/S J1	VIEW H-H & POWER CARD TO TRANSFORMER	
7409729-2	RED	B.P.-7	CONSOLE-+5	CONSOLE TO BACK PLANE & VIEW D-D	
7409729-1	BLK	B.P.-6	CONSOLE-GND	CONSOLE TO BACK PLANE & VIEW D-D	
7409903	BLK	B.P.-6	BACK PLANE-GND	BACK PLANE TO CHASSIS-DETAIL-A	

- NOTES:
- INSTALLATION OF I/O CABLE, WHICH IS ALREADY CONNECTED TO ITEM \*(2), CONSOLE ASSY, IS AS FOLLOWS.  
RUN I/O CABLE DOWN INNER SIDE OF ITEM \*(18) CARD GUIDE ASSY. SLIDE CABLE THROUGH OPENING ON BOTTOM OF ITEM \*(18) CARD GUIDE ASSY, TO ONE OF THE THREE EXIT LOCATIONS FOR THE CABLE, AFTER EXIT LOCATION IS DECIDED, FOLD CABLE 90° AND HOLD IN PLACE BY USING ITEM \* 35 (CLAMP) AND ITEM \*46 (TAPE) AS SHOWN IN VIEW C-C.
  - USE TAPE (ITEM \*46) TO HOLD HEADER CABLE ASSY TO CHASSIS.
  - FOLD CABLE 90° AS SHOWN TO INSURE CORRECT LOCATION IN CABLE CLAMP.
  - ITEM \*65 (ELECTROMAGNETIC SHIELD) GOES BETWEEN CENTRAL PROCESSOR BOARDS & MEMORY BOARDS.
  - THE 6 PIN MATE-N-LOCK CONN (MALE) ON TRANSFORMER (ITEM \*67) IS TO REMAIN ON FLOOR OF CHASSIS.
  - CONNECT 3 PIN-MATE-N LOCK CONN. (FEMALE) ON TRANSFORMER (ITEM \*67) TO 3 PIN MATE-N-LOCK CONN. (MALE) ON REGULATOR BOARD (ITEM \*75) (SECTION P-P).
  - 2 PIN MATE-N-LOCK TO BE SECURED TO HEAT SINK FOR HANDLING.

THIS CONNECTION IS SHOWN 90° OUT OF POSITION FOR CLARITY.

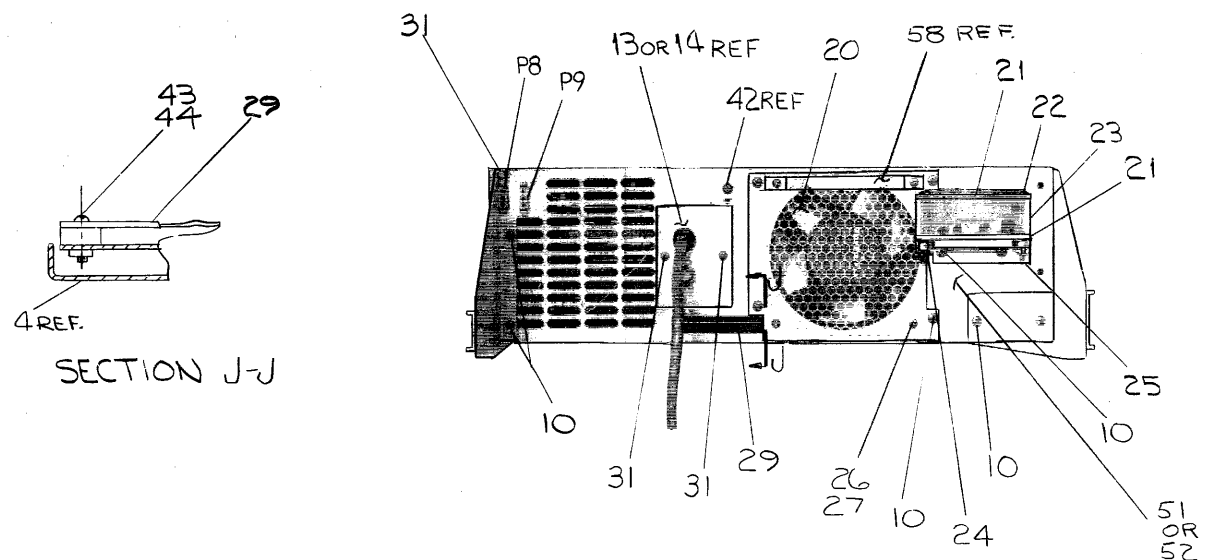
REV	CHG	ENG	REV	DATE	DESCRIPTION
1					
2					
3					
4					
5					
6					
7					
8					

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 1105				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN DATE 2-27-72	digital EQUIPMENT CORPORATION	
DECIMALS .005	ANGLES ±0°30'	CHKD DATE 4-14-72	TITLE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		ENG. DATE 5-15-72	16 BIT COMPUTER ASSY (PDP 1105)	
MATERIAL	NEXT HIGHER ASSY.	PROD. DATE 5/1/72	SIZE CODE	NUMBER
FINISH			DUA	1105-0-0
SCALE NONE		SHEET 1 OF 5		DIST

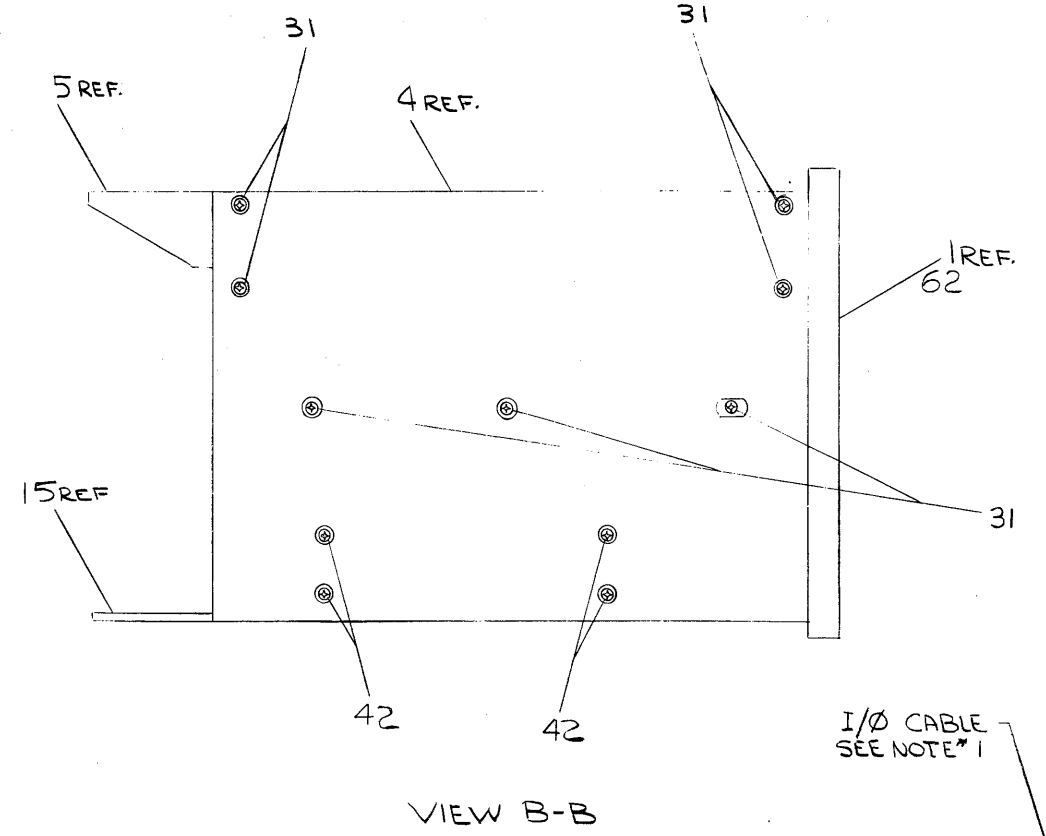
REV H  
NUMBER  
DUA 1105-0-0

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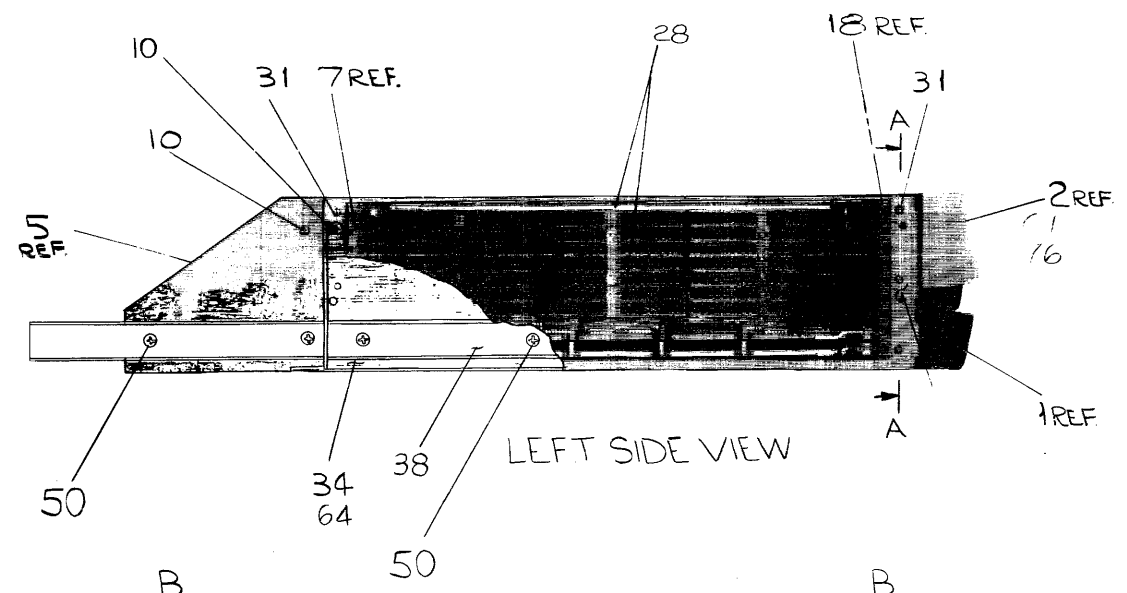
REAR VIEW



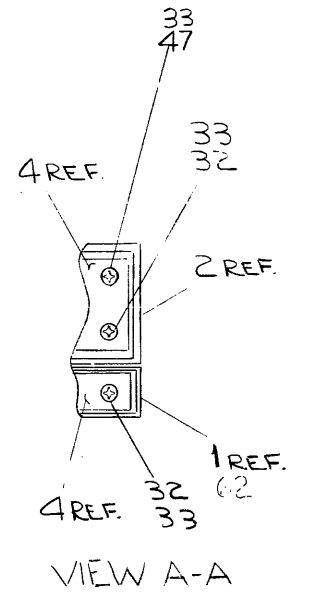
SECTION J-J



VIEW B-B

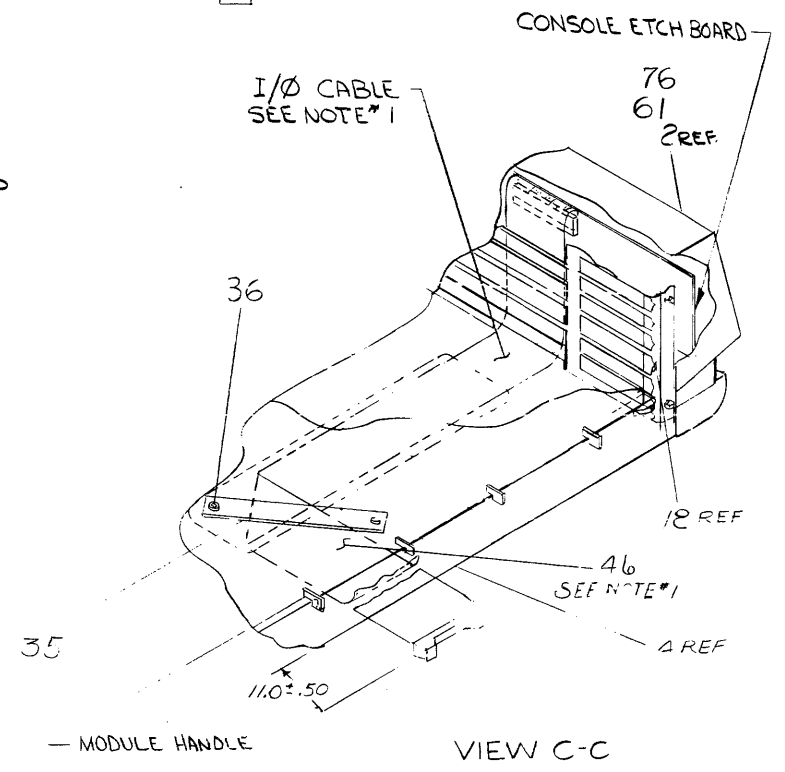


LEFT SIDE VIEW



VIEW A-A

— SEE VIEW C-C

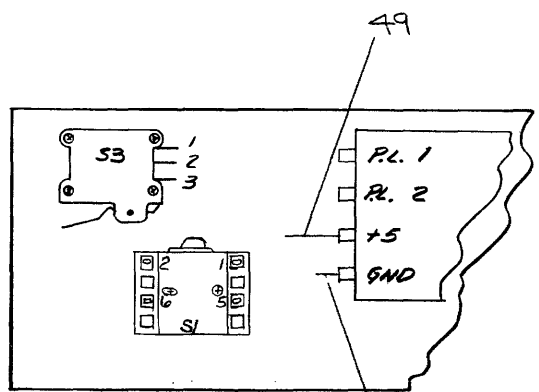


FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 1105				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN CHK'D ENG. PROJ. ENG. PROD.	DATE DATE DATE DATE DATE	<b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
DECIMALS XXX 005 XX 02 X 1	ANGLES 10' 30'	C. Teschner Alan Lyons J. C. B.	4-14-72 5-15-72 5-24-72	TITLE 16 BIT COMPUTER ASSY (PDP 1105)
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	FINISH	NEXT HIGHER ASSY.	SIZE CODE	NUMBER
++	++	B-DD 1105-0	DUA	1105-C-0
		SCALE NONE		
		SHEET 2 OF 5		

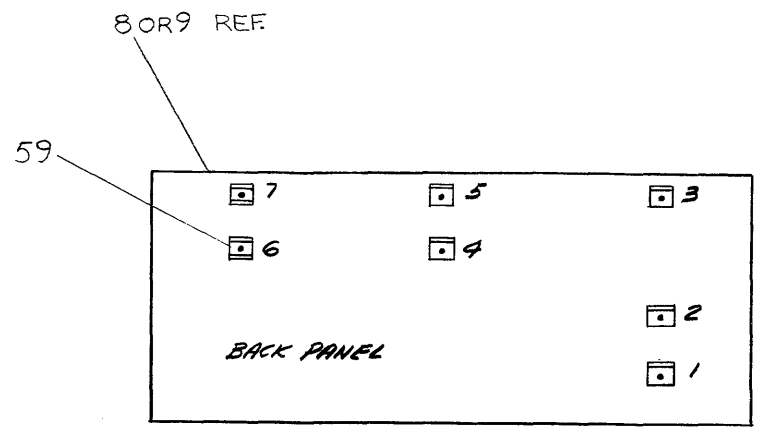
REV	CHANGE NO.

REV 2  
 DUA 1105-C-0  
 PART NO.

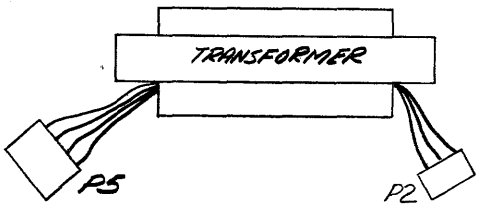
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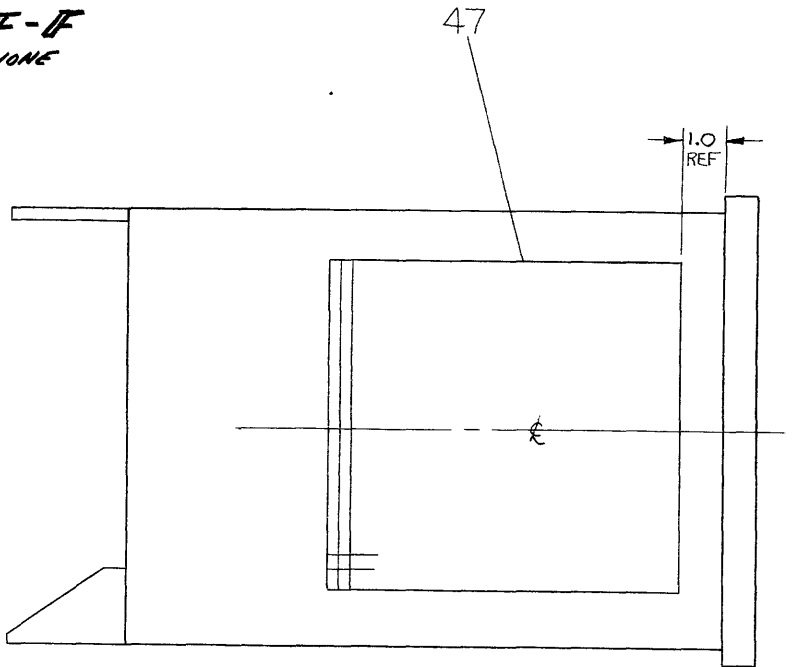
VIEW D-D  
SCALE: NONE



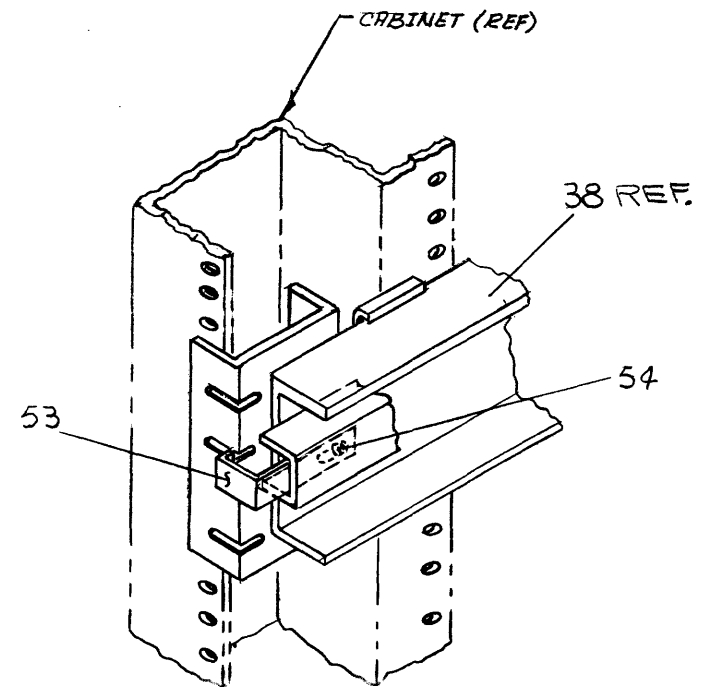
VIEW E-E  
SCALE: NONE



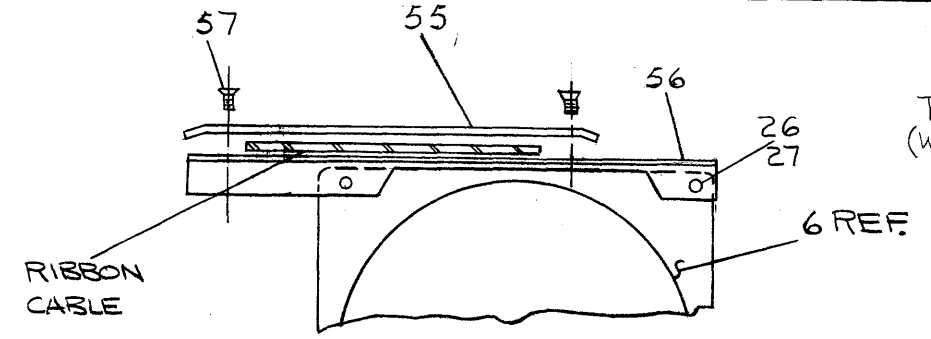
VIEW H-H  
SCALE: NONE



TOP VIEW  
(WITH TOP COVER)



LOCATION OF SHIPPING BRACKETS WHEN UNIT IS SUPPLIED IN CAB. (BOTH SIDES)



VIEW L-L  
SCALE: NONE

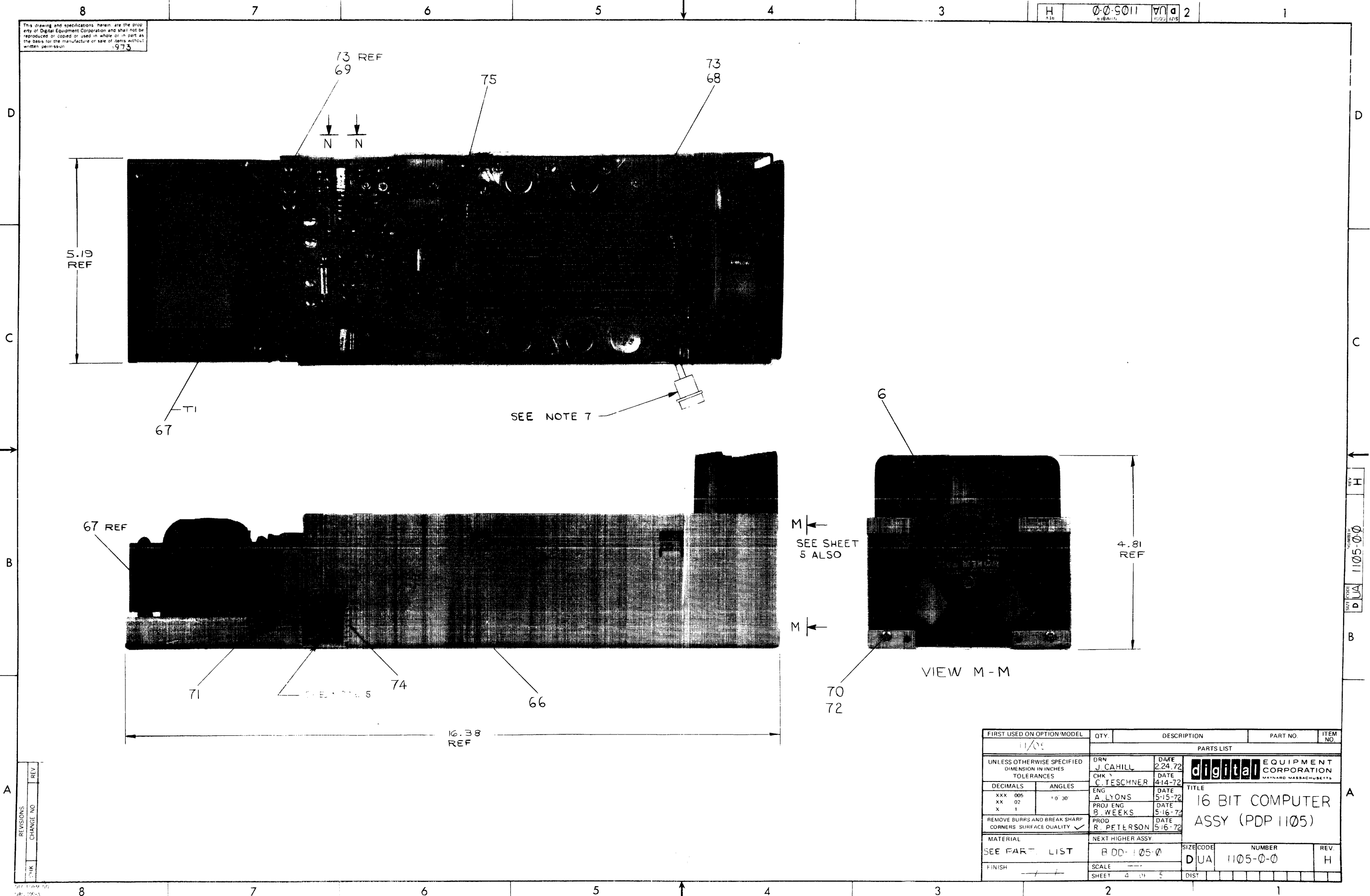
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP1105		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DATE 3-22-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS		
DECIMALS ANGLES	DATE 4-14-72	TITLE		
XXX - .005 ±0° 30'	DATE 5-15-72	16 BIT COMPUTER ASSY (PDP1105)		
XX - .02	DATE 5-15-72	PROD. DATE		
X - .1	DATE 5-15-72	NEXT HIGHER ASSY.		
MATERIAL	5-00-1105-0	SIZE CODE	NUMFR	REV.
FINISH	SCALE NONE	DUA	1105-0-0	H
	SHEET 3 OF 5	DIST.		

REV. NO.	REV.
CHG. NO.	CHG.



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H 005011 70 a 2



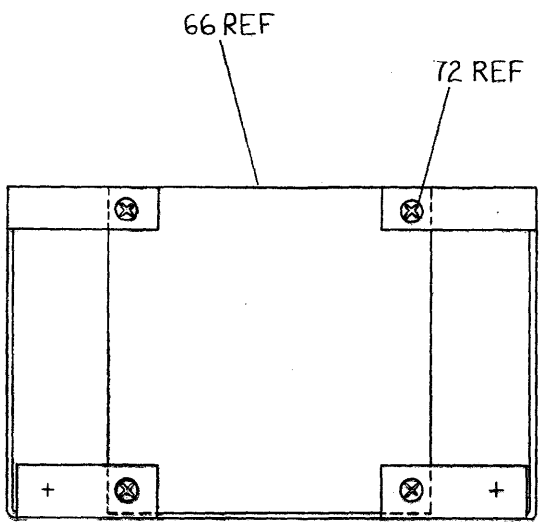
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DRN J. CAHILL	DATE 2-24-72	<b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD MASSACHUSETTS</small>	
TOLERANCES	CHK C. TESCHNER	DATE 4-14-72		
DECIMALS	ENG A. LYONS	DATE 5-15-72		
ANGLES	PROJ ENG B. WEEKS	DATE 5-16-72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD R. PETERSON	DATE 5-16-72	<b>TITLE</b> 16 BIT COMPUTER ASSY (PDP 1105)	
MATERIAL	NEXT HIGHER ASSY		SIZE CODE	NUMBER
SEE PART LIST	RDD-105-0		DUA	1105-0-0
FINISH	SCALE		DIST	REV.
	SHEET 4 OF 5			H

REV	CHANGE NO

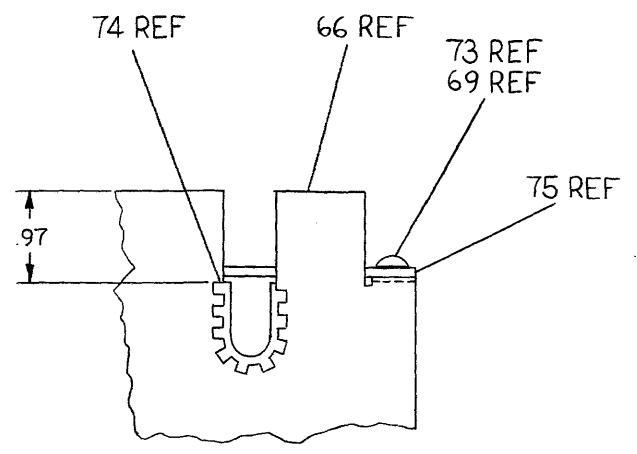
REV H  
 NUMBER 1105-00  
 DUA



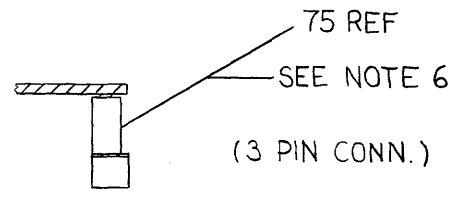
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VIEW M-M



VIEW N-N



SECTION P-P

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN. J. CAHILL	DATE 2-24-72	<b>digital</b> CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS	CHK'D. C. TESCHNER	DATE 4-14-72		
ANGLES	ENG. A. LYONS	DATE 5-15-72	TITLE 16 BIT COMPUTER ASSY (PDP 1105)	
XXX + .005 XX + .02 X + .1	± 0° 30'	PROJ. ENG. B. WEEKS		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD. R. PETERSON	DATE 5-16-72		
MATERIAL	NEXT HIGHER ASSY.		B-DD-1105-0	SIZE CODE DUA
FINISH	SCALE NONE		SHEET 5 OF 5	NUMBER 1105-0-0
				REV. H

BRUNING 40-107 1544  
REV. NO.  
CHANGE NO.  
CHK

REV H  
NUMBER 1105-0-0  
SIZE CODE DUA

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1973

ITEM NO.	DWG. NO./PART NO.	DESCRIPTION	QUANTITY / VARIATION															
			1105-FA	1105-FB	1105-FE	1105-FF	1105-HA	1105-HB	1105-JA	1105-JB	1105-KA	1105-KB	1105-LA	1105-LB	1105-MA	1105-MB	1105-PA	1105-PB
1	D-PS-1210974-0-0	1.75 FILLER STRIP	1	1	1	1	1	1	1	1	1	1	1	X	X	X	X	
2	D-UA-KY11-J-0	CONSOLE ASSY	X	X	X	X	1	1	1	1	1	1	1	X	X	X	X	
3	C-MD-7409460-0-0	COVER, TOP	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
4	E-IA-7409458-0-0	CHASSIS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
5	D-IA-7409459-0-0	BRACKET, CHASSIS SLIDE (L.H.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
6	1209403	FAN, SUPER BOXER	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
7	D-IA-7409580-0-0	CARD GUIDE ASSY (L.H.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
8	C-IA-5409818-0-0	BACK PANEL ASSY (8K)	1	1	1	1	X	X	X	X	1	1	1	X	X	X	X	
9	C-IA-5410035-0-0	BACK PANEL ASSY (16K)	X	X	X	X	1	1	1	1	X	X	X	X	X	X	X	
10	9009191	SCR PHL HD PAN NYLON *8-32 x 1/4 LG	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	
11	D-IA-7008856-0-0	HARNESS (D.C.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
12	C-IA-7410777-0-0	RET. CONN. BLOCK (L.H.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
13	C-UA-BC05H-0-0	LINE SET BC05H (115V/60HZ)	1	X	1	X	1	X	1	X	1	X	1	X	1	X	1	
14	C-UA-BC05J-0-0	LINE SET BC05J (230V/50HZ)	X	1	X	1	X	1	X	1	X	1	X	1	X	1	X	
15	C-IA-7409449-0-0	BRACKET, CHASSIS SLIDE (R.H.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
16	E-IA-7008713-0-0	AC INPUT HARNESS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
17																		
18	D-IA-7409581-0-0	CARD GUIDE ASSY (R.H.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
19	C-IA-7410778-0-0	RET. CONN. BLOCK (R.H.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
20	D-IA-7409463-0-0	FAN MTG PLATE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
21	C-MD-7409479-0-0	PLATE, PRESSURE	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
22	9006047-1	SCR PHL HD PAN *8-32 x 2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
23	D-PS-1210931-0-0	BLOCK, CABLE RETAINING	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
24	C-MD-7409480-0-0	SWIVEL NUT	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
25	D-MD-7409482-0-0	PLATE LOWER RETAINER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
26	9006024-1	SCR PHL HD PAN *6-32 x 1/2	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
27	9009165	FAN CLIP	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
28	C-PS-1210698-0-0	GUIDE CARD CENTER	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
29	C-IA-7008820-0-0	HEADER CABLE ASSY	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
30	9006074-3	SCR PHL HD TRUSS #10-32 x 5/8	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
31	9009186	SCR PHL HD PAN NYLOC #6-32 x 5/16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	
32	9006071-3	SCR PHL HD TRUSS #10-32 x 3/8	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
33	9007651	WASHER EXT TOOTH #10	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
34	D-IA-7409533-0-0	COVER SIDE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
35	C-MD-7409591-0-0	CLAMP	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
36	9009173	SCR BINDER HD NYLON #8-32 x 1/4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
37	9008074	SPACER 1/2" AF x 5/16-#10	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
38	1210945	CHASSIS SLIDE	X	1	1	1	1	1	1	1	1	1	1	X	X	X	X	
39	9008196	CLIP-ON RECPT.-SOUTHCO #82-47-104-15	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
40	D-MU-1105-01-0	MODULE UTILIZATION (8K)	1	1	1	1	X	X	X	X	1	1	1	1	1	1	1	
41	D-MU-1105-02-0	MODULE UTILIZATION (16K)	X	X	X	X	1	1	1	1	X	X	X	X	X	X	X	
42	9009192	SCR PHL HD PAN NYLOC #8-32 x 3/8	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
43	9006005-1	SCR PHL HD PAN #2-56 x 1/2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	

CHK	CHANGE NO.	REV.
	11/05-00040	F
	REVISED & REDRAWN	
	1-24-72	S. S. Longenecker
	M. TITTEBAUM	
	11/05-00041	H
	G. GRAHAM	
	2-8-73	

FIRST USED ON OPTION/MODEL  
11/05

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'	DRN. J. CAHILL DATE 2/25/2
UNLESS OTHERWISE SPECIFIED FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D. C. TESCHNER DATE 5/2/2
MATERIAL + + +	ENG. A. LYONS DATE 5/15/2
FINISH + + +	PROJ. ENG. B. WEEKS DATE 5/16/2
	PROD. R. PETERSON DATE 5/16/2
	NEXT HIGHER ASSY. D-UA-1105-0-0
	SCALE + + +
	SHEET 1 OF 2

**digital EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS

TITLE  
16 BIT COMPUTER ASSY (PDP 1105)

SIZE CODE: **C PL** NUMBER: 1105-0-0 REV. H

ITEM NO.	DWG. NO., PART NO.	DESCRIPTION	QUANTITY / VARIATION															
			1105-FA	1105-FB	1105-FE	1105-FF	1105-FA	1105-HB	1105-FA	1105-GB	1105-FA	1105-FB	1105-FA	1105-LB	1105-MA	1105-MB	1105-PA	1105-PB
44	9000001	WASHER INT TOOTH #	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
45	9008440	CABLE CLAMP (1/4)	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
46	9009010	SCOTCH BRAND ADHESIVE TRANSFER TAPE	A/R	A/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA		
48	7409729-01	JUMPER POWER (BLACK)	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
49	7409729-02	JUMPER POWER (RED)	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
50	9009224	SCR SLOT PAN HD #8-32 x 1/4 LG	10	10	10	10	10	10	10	10	10	10	10	10	10	10		
51	A-DC-5309900-0-0	POWER CONTROL DECAL (230V)	X	1	X	1	X	1	X	1	X	1	X	1	X	1		
52	A-DC-5309899-0-0	POWER CONTROL DECAL (115V)	1	X	1	X	1	X	1	X	1	X	1	X	1	X		
53	B-MD-7409810-0-0 *	SHIPPING BRACKET	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
54	9008143-1	SCR PHL HD PAN #8-32 X 1/4 THD CUTTING	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
55	B-MD-7409817-0-0	PLATE, CABLE CLAMP	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
56	C-MD-7409818-0-0	BRACKET CABLE CLAMP	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
57	9006011-2	SCR PHL HD FLAT #4-40 X 3/8	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
58	B-MD-7409828-0-0	BRACKET	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
59	9007194	QUIK DISCONNECT	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
60	7409903	JUMPER POWER (BLACK)	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
61	D-UA-KY11-JC-0	CONSOLE ASSY	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
62	D-MD-7409978-0-0	BOTTOM TRIM	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
63	D-AD-7009119-0-0	BACK PANEL ASSY	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
		* USED ONLY WHEN INSTALLED IN CABINET																
64	D-IA-7409533-1-0	COVER SIDE	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
65	1700021-0	ELECTROMAGNETIC SHIELD 1 OZ. CU	A/R	A/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA		
66	E-IA-7409816-0-0	CHASSIS	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
67	D-IA-7008726-0-0	TRANSFORMER MMC 415 <sup>o</sup> -1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
68	9006023-1	SCR PHL PAN HD #6-32 X.44 LG	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
69	9006020-1	SCR PHL PAN HD #6-32 X.25 LG	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
70	9006031-1	SCR PHL PAN HD #6-32 X1.75 LG	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
71	9006563	NUT KEPS #8-32	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
72	9006560	NUT KEPS #6-32	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
73	9007449	WASHER EXT. LOCK #6-32	6	6	6	6	6	6	6	6	6	6	6	6	6	6		
74	9007035	GROMMET CATER PILLAR	A/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA	RA/RA		
75	E-IA-5409728-0-0	REGULATOR BOARD	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
76	D-UA-KY11-JF-0	CONSOLE ASSY	1	1	1	1	X	X	X	X	X	X	X	X	X	X		
77	A-DC-5309413-0-0	SPECIAL DECAL (UL)	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
78	A-DC-5309414-0-0	SPECIAL DECAL (UL)	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

REV. CHANGE NO.	11/05	UNLESS OTHERWISE SPECIFIED	DRN. J. CANON	DATE 2/25/73	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
	CHK	UNLESS OTHERWISE SPECIFIED	CHK'D. J. SCHMIDT	DATE 7/27/72	
		DIMENSION IN INCHES	ENG. J. SCHMIDT	DATE 2/25/73	TITLE
		TOLERANCES	PROJ. ENG. J. SCHMIDT	DATE 2/25/73	COMPUTER ASSY PDP-10
		DECIMALS ± .005	PROD. R. PATRICKSON	DATE 7/1/72	
		FRACTIONS ± 1/64	NEXT WORKER ASSY.		
		ANGLES ± 0°30'	DRAWN 11/05		
		FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	SCALE 1" = 1"		
		MATERIAL +-----+	SHEET 1 OF 2	SIZE CODE C PL	NUMBER 1105-0-0
		FINISH +-----+		DIST.	REV. H

## CUSTOMER PRINT SET INDEX

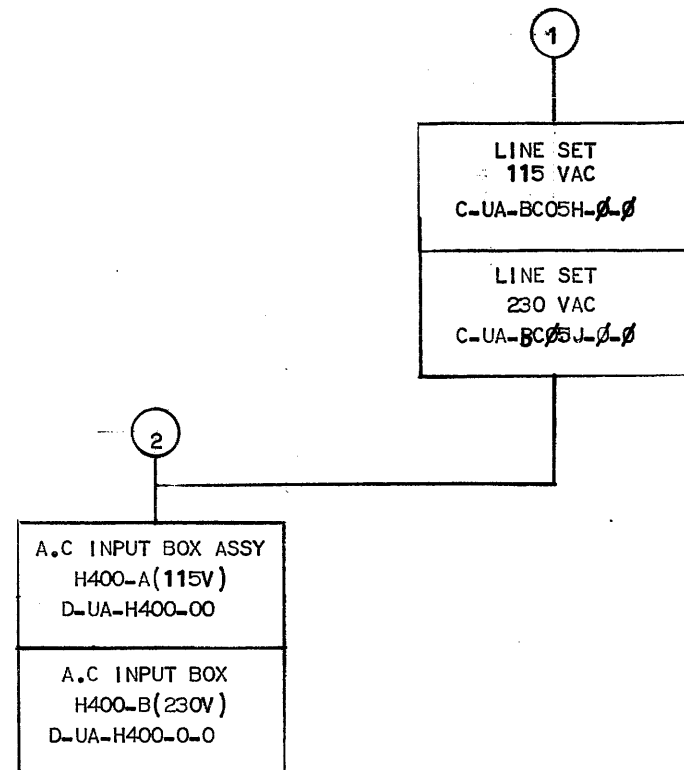
THIS IS PRINT SET   

SEQ. DIRECTORY LINE SET 115V LINE SET 230V A.C INPUT BOX A.C INPUT BOX (P.L.) PWR CONTROL BD. 115V PWR CONTROL BD. 230V	SEQUENCE <span style="float: right;">T</span> R-DD-BC05-0 C-UA-BC05H-0-0 C-UA-BC05J-0-0 D-UA-H40-0-0 A-PL-H40-0-0 C-1A-5409324-0-0 C-1A-5409325-0-0
---	--

SEQUENCE T

UNIT VARIATIONS		PRINT SET TYPE					
VARIATION	TITLE	X	BC	TH	L		
BC05H	LINE SET 115VAC 7 AMP	X					
BC05J	LINE SET 230VAC 5 AMP	X					

<b>REVISIONS</b>	DATE	CHG. NO.	REV		USED ON OPTION/MODEL	DRN.	DATE	TITLE  LINE SET																	
					11/67	D. FONTAINE	4-1-72																		
						CHK'D	DATE																		
						PROJ ENG.	DATE																		
						PROD.	DATE																		
				FIELD SERV.	DATE																				



TITLE	SHEET	SIZE	CODE	NUMBER	REV
LINE SET	2 OF 3	B	DD	BC05H-0	

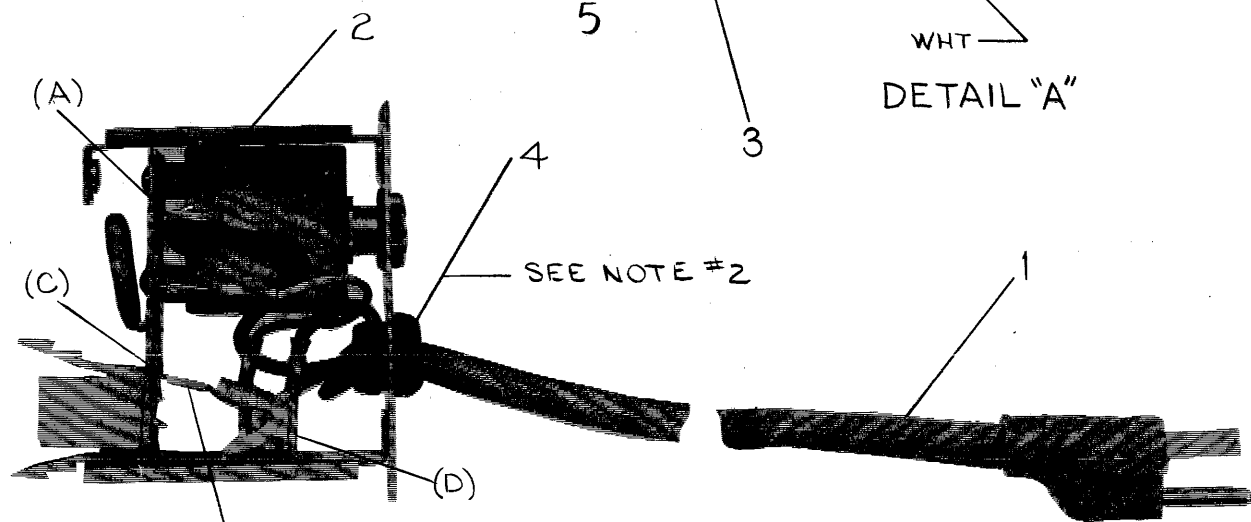
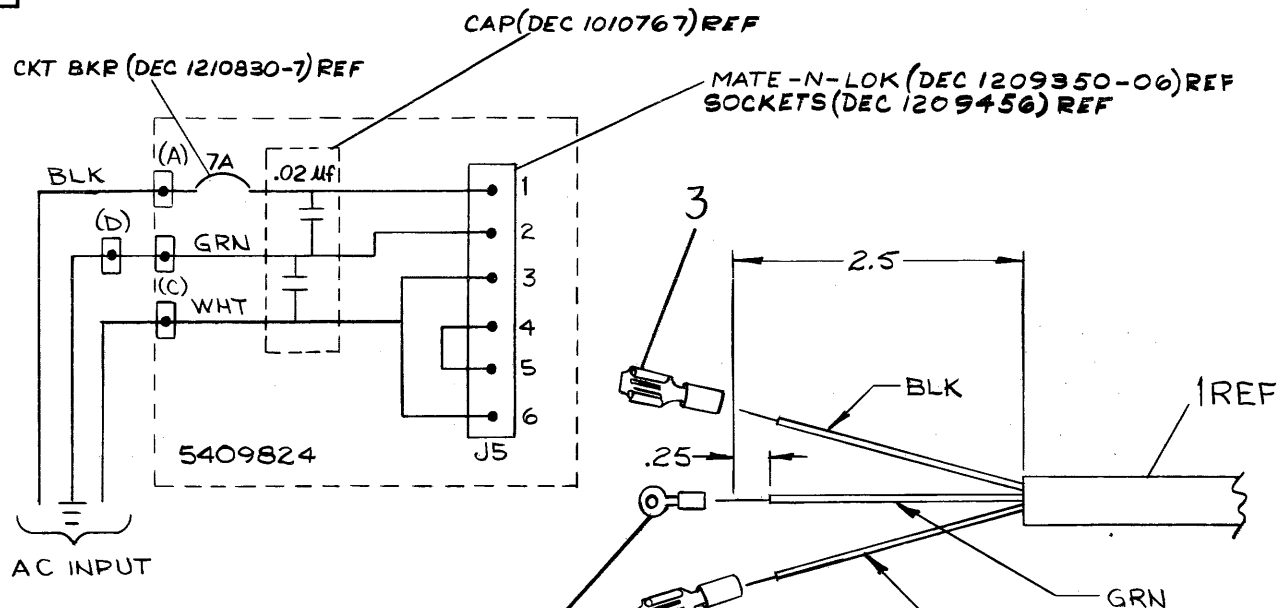
CUSTOMER PRINT SET				ELECTRICAL					CUSTOMER PRINT SET				MECHANICAL				
BC05-H-1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.	BC05-H-1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.		
								X		1.	C-UA-BC05H-0-0		1	LINE SET 115V 7 AMP	BC05H		
								X			C-UA-BC05J-0-0		1	LINE SET 230V 5 AMP	BC05J		
X		2.	C-1A-5409824-0-0		1	POWER CONTROL BD 115V	H400										
X			C-1A-5409825-0-0		1	POWER CONTROL BD 230V	H400										
								X		2.	D-UA-H400-0-0		1	AC INPUT BOX	H400		
								X			A-PL-H400-0-0		1	A.C INPUT BOX PARTS LIST	H400		
											D-1A-5309845-0-0		1	BOX	H400		
											C-MD-5309849-0-0		1	COVER	H400		
											A-DC-5309899-0-0		1	PWR CONTROL DECAL 115V	H400		
											A-DC-5309900-0-0		1	PWR CONTROL DECAL 230V	H400		

TITLE	SHEET 3 OF 3	SIZE CODE	NUMBER	REV
LINE SET	B DD	BC05H-0		

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NOTES:

1. CONNECT ITEM #1 (POWER CORD) AND ITEM #2 (AC INPUT BOX) PER CIRCUIT SCHEMATIC.
2. FOR INSTALLATION USE HEYCO #29 STRAIN RELIEF PLIERS



SHOWN WITHOUT COVER

QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	SOLDER CONN ARKLESS	9007929-0	5
1	STRAIN RELIEF SR-6N3-4	9008492-2	4
2	SOLDERLESS CONN. ARKLESS	9007919	3
1	AC INPUT BOX H400A	D-UA-H400-0-0	2
1	POWER CORD 120V	170015-6	1

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN. T. Guillen	DATE 12-27-71	<b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small>
DECIMALS	ANGLES	CHK'D. [Signature]	DATE 1-4-72	
.XXX = .005	±0° 30'	ENG. David DeManella	DATE 1-4-72	
.XX = .02		PROJ. ENG. [Signature]	DATE 1-7-72	
.X = .1		PROD. R.K. Peterson	DATE 1/2/72	TITLE
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		LINE SET		
MATERIAL		115VAC 7AMP		
FINISH		SIZE CODE C UA		
		NUMBER BC05H-0-0		
		REV.		
SCALE		SHEET OF		
DIST.				

CHK	CHANGE NO.	REV.
	BC05H-00001	A
	3-28-72	
	R. WOLFF	
	3-29-72	
	BC05H-00002	B
	5-13-72	
	DEMORANVILLE	
	5/17/72	
	H400-00002	C
	5-25-72	
	H. BURTON	
	5-31-72	
	BC05H-00003	E
	5-30-72	
	H. BURTON	
	11-2-72	

REV. D  
REV. C  
REV. B  
REV. A

NUMBER BC05H-0-0

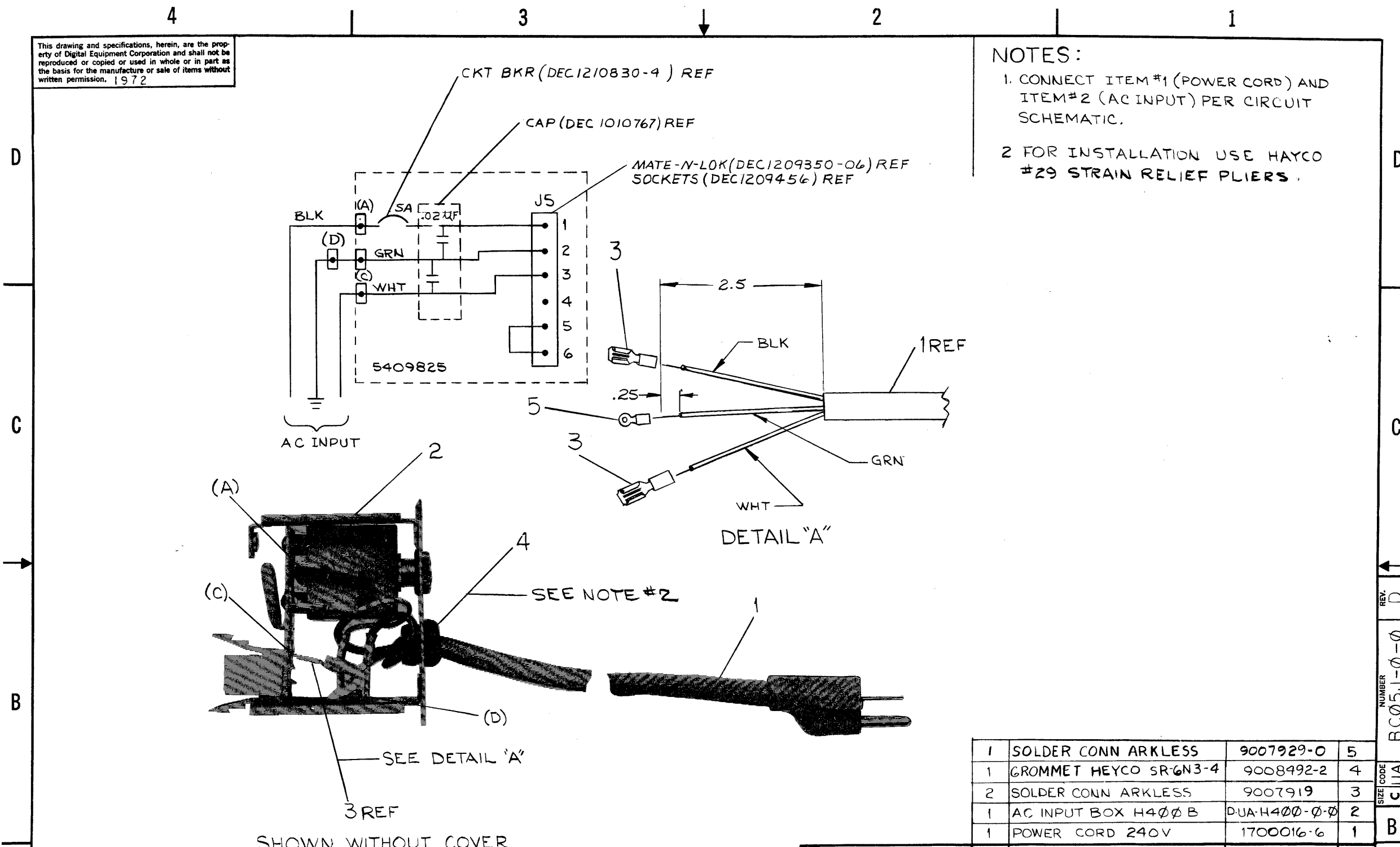
SIZE CODE C UA

REV. A

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NOTES:

1. CONNECT ITEM #1 (POWER CORD) AND ITEM #2 (AC INPUT) PER CIRCUIT SCHEMATIC.
- 2 FOR INSTALLATION USE HAYCO #29 STRAIN RELIEF PLIERS.



1	SOLDER CONN ARKLESS	9007929-0	5
1	GROMMET HEYCO SR-6N3-4	9008492-2	4
2	SOLDER CONN ARKLESS	9007919	3
1	AC INPUT BOX H4ØØ B	DUA-H4ØØ-Ø-Ø	2
1	POWER CORD 240V	1700016-6	1

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.										
11/Ø5		PARTS LIST												
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		<table border="1"> <tr> <td>DRN T. Guillon</td> <td>DATE 12-27-71</td> <td colspan="2" rowspan="4"> <b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS </td> </tr> <tr> <td>CHK'D D. Hartman</td> <td>DATE 1-4-72</td> </tr> <tr> <td>ENG. David De Moanville</td> <td>DATE 1-1-72</td> </tr> <tr> <td>PROJ. ENG. R. K. Peterson</td> <td>DATE 1-7-72</td> </tr> </table>			DRN T. Guillon	DATE 12-27-71	<b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS		CHK'D D. Hartman	DATE 1-4-72	ENG. David De Moanville	DATE 1-1-72	PROJ. ENG. R. K. Peterson	DATE 1-7-72
DRN T. Guillon	DATE 12-27-71	<b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS												
CHK'D D. Hartman	DATE 1-4-72													
ENG. David De Moanville	DATE 1-1-72													
PROJ. ENG. R. K. Peterson	DATE 1-7-72													
DECIMALS .XXX = .005 .XX = .02 Y = .1	ANGLES ±0° 30'	TITLE LINE SET 230V AC 4 AMP												
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		SIZE CODE C UA												
MATERIAL + + +	NEXT HIGHER ASSY. + + +	NUMBER BCØ5J-Ø-Ø	REV. D											
FINISH + + +	SCALE + + +	DIST.												
	SHEET OF													

CHK	REVISION	CHANGE NO.	REV.
		BCØ5J-Ø-Ø001	A
		WOLFF	
		H400-ØØØ2	B
		R. BURTON	
		BCØ5J-ØØØ2	C
		R. BURTON	
		BCØ5J-ØØØ3	D
		R. BURTON	

REV. D  
NUMBER BCØ5J-Ø-Ø  
SIZE CODE C UA

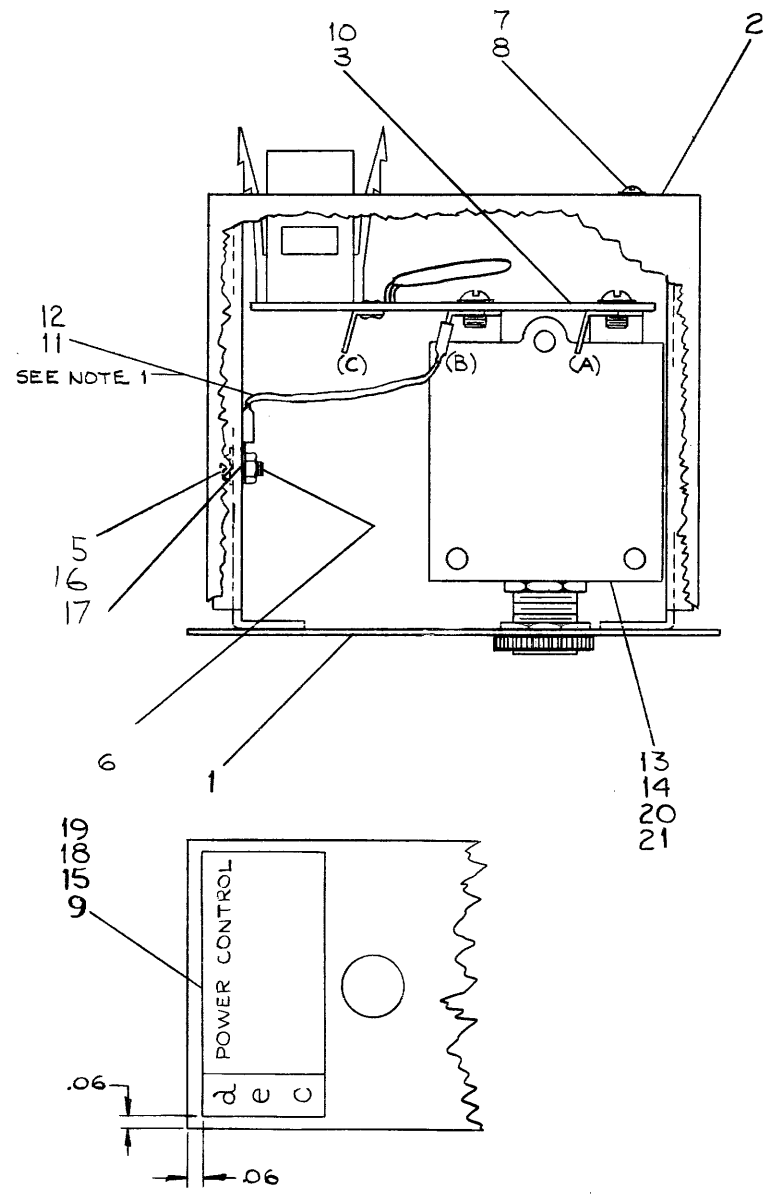
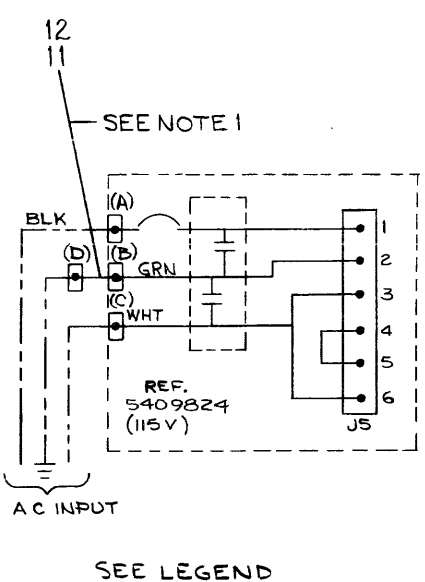
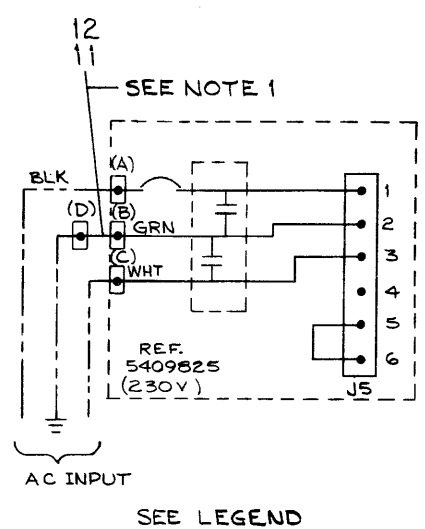


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0-0-004H UN 2

LEGEND		
NUMBER	VARIATION	USED ON
H400-A	115 VAC 7AMP	BC05H
H400-B	230 VAC 4AMP	BC05J
H400-C	115 VAC 10AMP	BC05U
H400-D	230 VAC 5AMP	BC05T

NOTES:  
 1. ITEM #11 (WIRE) AND TWO OF ITEM #12 (FASTON TABS) ARE TO BE CONNECTED FROM POINT D TO POINT B.



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
D-UA-BC05H-0-0				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		 digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS		
DECIMALS	ANGLES			
.XXX = .005	± 0° 30'			
.XX = .02				
.X = .1		TITLE AC INPUT BOX ASSY		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		DRN T. Quillin	DATE 12-23-71	
		CHKD M. Platner	DATE 1-2-72	
		ENG. David DeMason	DATE 1-4-72	
		PROD. ENG. Ronald Hines	DATE 1-7-72	
		PROD. R.K. Peterson	DATE 1/7/72	
MATERIAL		NEXT HIGHER ASSY.		
FINISH		D-UA-BC05H-0-0		
		SCALE	SIZE CODE	NUMBER
		SHEET	DUA	H400-0-0
		OF	DIST.	REV.
				D

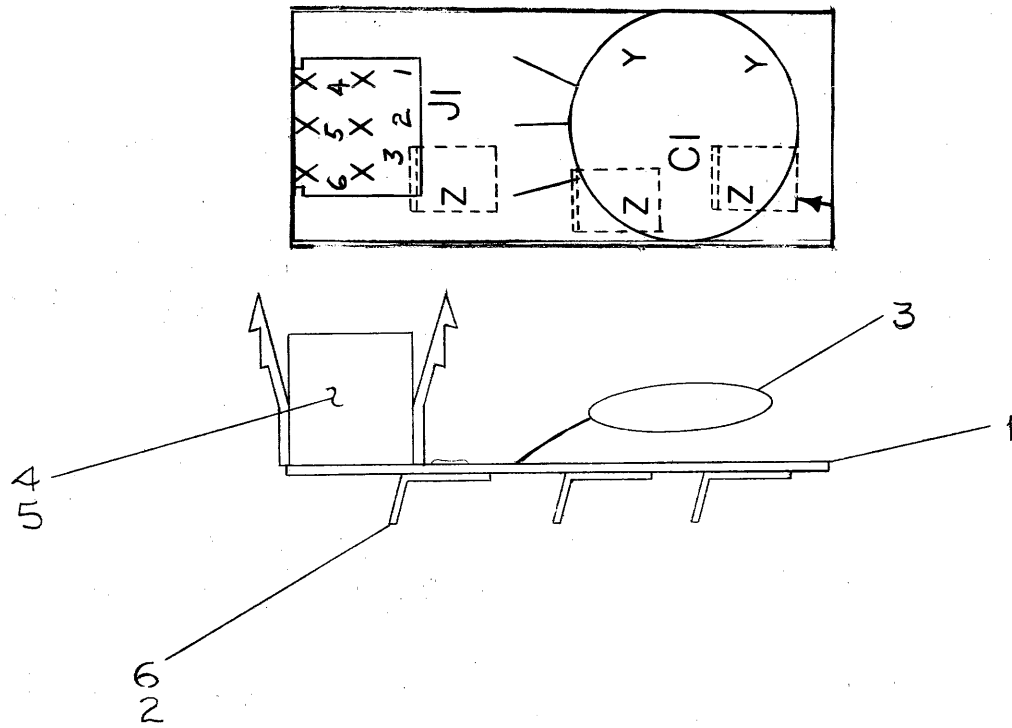
REVISIONS	CHANGE NO.	REV.
CHK	H400-00002	A
DRN	5-25-72	
ENG	5-31-72	
PROJ	5-31-72	
PROD	5-31-72	
CHK	11-9-72	B
DRN	12-21-72	
ENG	12-21-72	
PROJ	12-21-72	
PROD	12-21-72	
CHK	1-18-73	C
DRN	1-18-73	
ENG	1-18-73	
PROJ	1-18-73	
PROD	1-18-73	
CHK	2-8-73	D
DRN	2-8-73	
ENG	2-8-73	
PROJ	2-8-73	
PROD	2-8-73	

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS					QUANTITY / VARIATION															
PARTS LIST			SECTION		H400-A (115V)	H400-B (230V)	H400-C (115V)	H400-D (230V)												
MADE BY TYRONE QUILLIN		CHECKED <i>O. Salami</i>		SECTION																
DATE 12-1-71		DATE 1-9-72		ISSUED SECT.																
ENG <i>David De Mozanville</i>		PROD <i>R.K. Peterson</i>																		
DATE 1-4-72		DATE 1/2/72																		
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION																		
1	D-IA-5309845-0-0	BOX		1	1															
2	C-MD-5309849-0-0	COVER		1	1															
3	C-IA-5409825-0-0	POWER CONTROL BOARD (230V)		-	1															
4	<del>9007113</del>	<del>DOUBLE FASTAB</del>		<del>1</del>	<del>1</del>															
5	9006011-1	SCR PHL PAN HD #4-40 x 3/8 LG		1	1															
6	9006557	KEP NUT HEX HD #4-40		1	1															
7	9006633	WASHER INT. #6		1	1															
8	9006020-1	SCR PHL PAN HD #6-32 x 1/4 LG		1	1															
9	A-DC-5309899-0-0	PWR CONTROL DECAL 115V		1																
10	C-IA-5409824-0-0	POWER CONTROL BOARD (115V)		1																
11	9107360-55	#18 AWG STRD <del>3FT</del> INS (GRN 3 IN. LG)		1	1															
12	9007917	FASTON TABS		1	1															
13	1210830-4	CRK BREAKER (WOOD 4 AMP)		-	1															
14	1210830-7	CRK BREAKER (WOOD 7 AMP)		1																
15	A-DC-5309900-0-0	PWR CONTROL DECAL (230V)		-	1															
16	9006632	WASHER # 4 INTERNAL TOOTH		1	1															
17	9007929-01	CRIMP-ON EYELET		1	1															
18	A-DC-7410727-0-0	PWR CONT DECAL		-																
19	A-DC-7410726-0-0	PWR CONT DECAL		-																
20	1210830-5	CKT BREAKER (WOOD 5 AMP)		-																
21	1210830-10	CKT BREAKER (WOOD 10 AMP)		-																
TITLE AC INPUT BOX ASS'Y				ASSY NO. D-UA-H400-0-0		SIZE CODE A PL		NUMBER H400-0-0		REV D										
SHEET 1 OF 1				DIST. G																

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**NOTES:**

1. PDP CIRCUIT SCHEMATIC REFER TO DWG D-UA-H400-0-0
2. ETCHED BOARD #5009821 MUST BE U.L. APPROVED. MANUFACTURER'S U.L. NUMBER LOCATION IS SHOWN ON AN DRAWING.



REVISIONS		REV.
CHK	CHANGE NO.	
	5409824-00001	A
	Bj. Nade	2-1-72
	H. WOLFF	
	R. H. H. H. H. H.	
	5409824-00002	B
	R. BURTON	5/22/72
	R. BURTON	

QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
		ASSY/DRILLING HOLE LAYOUT	D-AH-5409824-00	REF
3		FASTON TAB	9008219	6
6		P.C. SOCKETS FEMALE	1209456	5
1	J1	MATE-N-LOCK 6-PIN	1209350-06	4
1	C1	CAP INPUT .02MF	1010767	3
3		EYELET # GS4-5	9009500	2
		ETCHED CIRCUIT BD	5009821	1
		MODULE ECO HISTORY	B-MH-5409824-0-6	REF
		X-Y COORDINATE HOLE LOCATION	K-00-5409824-0-0	REF

FIRST USED ON OPTION/MODEL		PARTS LIST	
H400 A			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN. <i>T. Quillen</i> DATE 12-8-71	<b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS ANGLES	CHKD. <i>R. H. H. H.</i> DATE 1-4-72		
XXX = .005 XX = .02 .X = .1	±0° 30'	ENG. <i>R. H. H. H.</i> DATE 1-4-72	TITLE
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROJ. ENG. <i>R. H. H. H.</i> DATE 1-6-72	PROJ. ENG. <i>R. H. H. H.</i> DATE 1-6-72	POWER CONTROL BOARD (115V)
MATERIAL	NEXT HIGHER ASSY.	PROD. <i>R. H. H. H.</i> DATE 1/7/72	
FINISH			

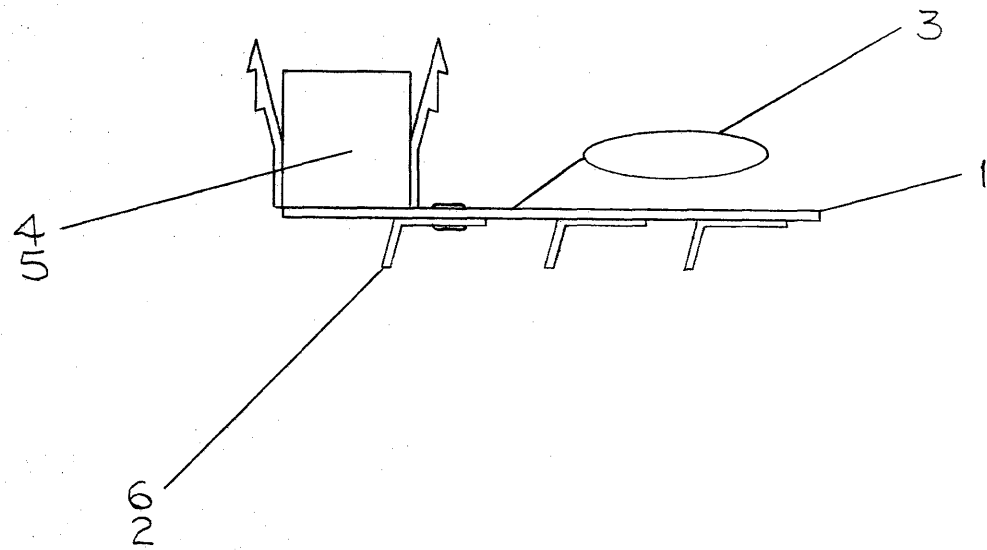
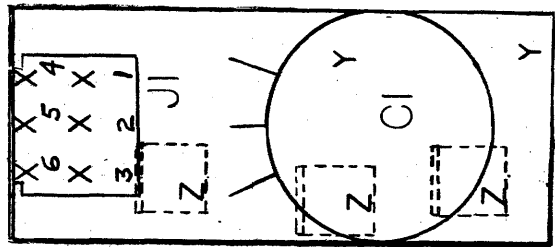
SIZE CODE	NUMBER	REV.
C IA	5409824-0-0	B

REV. NUMBER C IA 5409824-0-0 B

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NOTES:

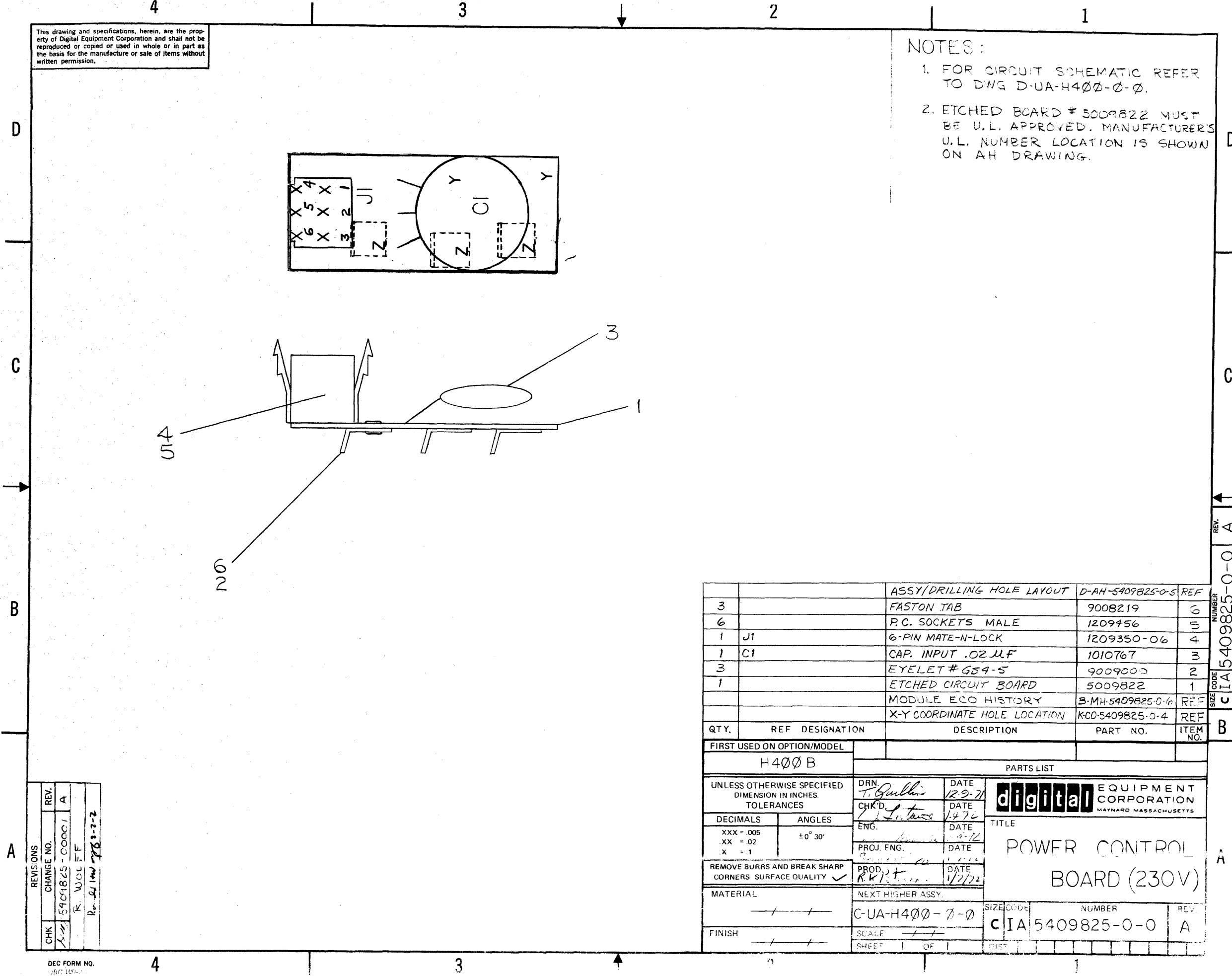
1. FOR CIRCUIT SCHEMATIC REFER TO DWG D-UA-H400-0-0.
2. ETCHED BOARD # 5009822 MUST BE U.L. APPROVED. MANUFACTURER'S U.L. NUMBER LOCATION IS SHOWN ON AH DRAWING.



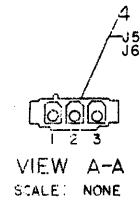
QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
		ASSY/DRILLING HOLE LAYOUT	D-AH-5409825-0-5	REF
3		FASTON TAB	9008219	6
6		P.C. SOCKETS MALE	1209456	5
1	J1	6-PIN MATE-N-LOCK	1209350-06	4
1	C1	CAP. INPUT .02 $\mu$ F	1010767	3
3		EYELET # GS4-5	9009000	2
1		ETCHED CIRCUIT BOARD	5009822	1
		MODULE ECO HISTORY	B-MH-5409825-0-6	REF
		X-Y COORDINATE HOLE LOCATION	KCO-5409825-0-4	REF

FIRST USED ON OPTION/MODEL		PARTS LIST	
H400 B		UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	
DECIMALS	ANGLES	DRN. T. Guilin	DATE 12-9-71
XXX = .005	±0° 30'	CHK'D J. L. L...	DATE 1-4-72
XX = .02		ENG. [Signature]	DATE 2-12-72
X = .1		PROJ. ENG. [Signature]	DATE 4-11-72
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		PROD. [Signature]	DATE 1/2/72
MATERIAL	NEXT HIGHER ASSY.	TITLE	
— / — / —	C-UA-H400-0-0	POWER CONTROL BOARD (230V)	
FINISH	SCALE	SIZE CODE	NUMBER
— / — / —	— / — / —	C IA	5409825-0-0
SHEET	OF	REV.	A

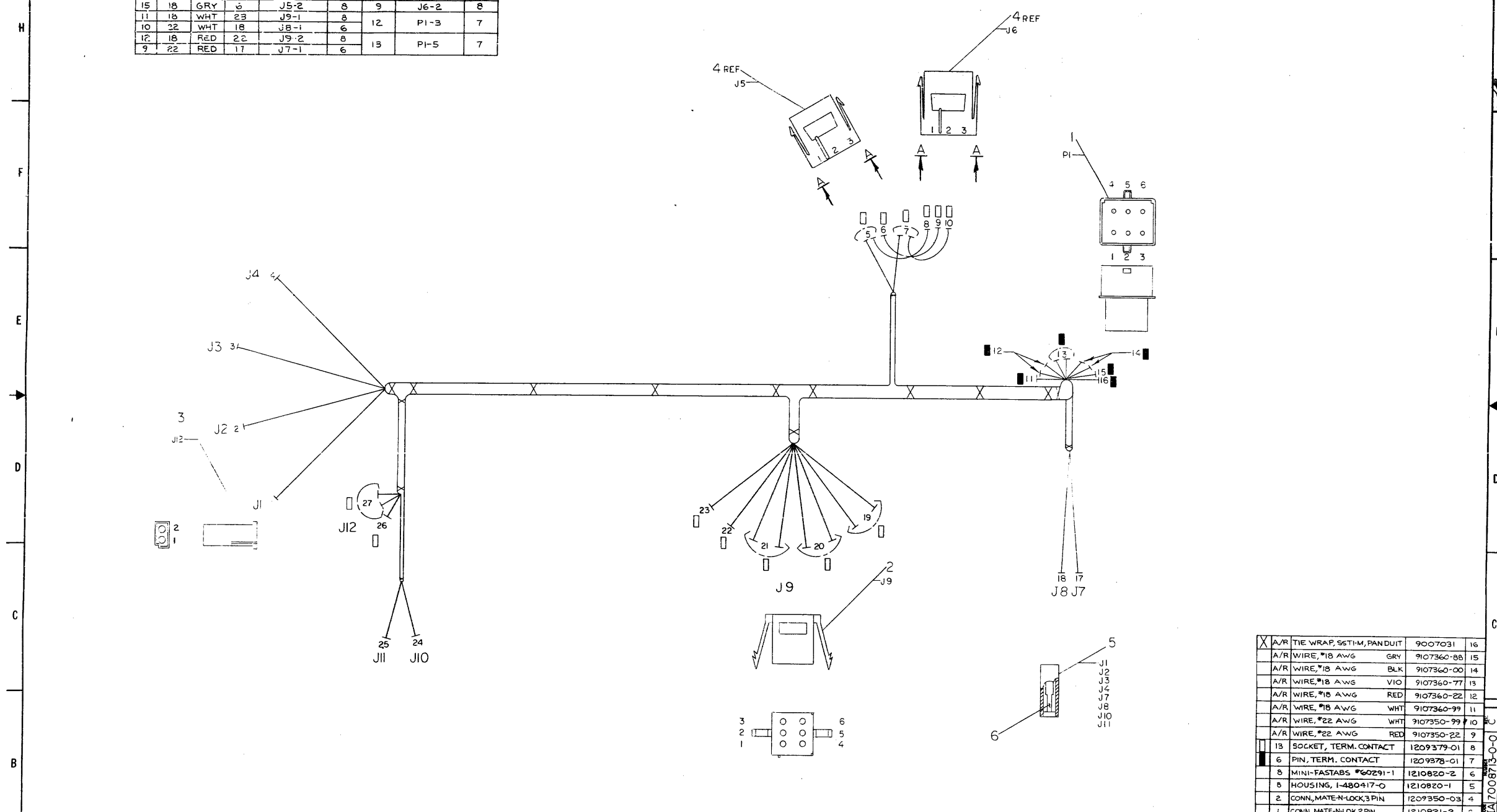
REV.	CHANGE NO.	CHK.	DATE
A	5409825-COOC1	R. WOLFF	12-14-71



WIRE TABLE									
ITEM NO.	AWG	COLOR	POINT	CONNECTION	TERM	POINT	CONNECTION	TERM	
9	22	RED	24	J10-1	6	19	J9-3	8	
12	18	RED	11	PI-6	7				
9	22	RED	25	J11-1	6	27	J12-2	8	
12	18	RED	20	J9-4	8	16	PI-4	7	
12	13	RED	26	J12-1	8	1	J1-1	6	
12	18	RED	2	J2-1	6	15	PI-1	7	
13	18	VIO	3	J3-1	6	5	J5-1	8	
13	18	VIO	6	J6-1	8	21	J9-5	8	
14	18	BLK	4	J4-1	6	7	J5-3	8	
14	18	BLK	14	PI-2	7	9	J6-2	8	
14	18	BLK	10	J6-3	8				
15	18	GRY	5	J5-2	8				
11	18	WHT	23	J9-1	8	12	PI-3	7	
10	22	WHT	18	J8-1	6				
12	18	RED	22	J9-2	8	13	PI-5	7	
9	22	RED	17	J7-1	6				



NOTES:  
1. USE TIE WRAPS (ITEM #16) APPROXIMATELY EVERY THREE INCHES WHEN NECESSARY AND AT EVERY BREAKOUT POINT



DO NOT REDUCE  
SCALE  
6 IN

QTY.	DESCRIPTION	PART NO.	ITEM NO.
X	A/R TIE WRAP, SST-1/4, PANDUIT	9007031	16
A/R	WIRE, #18 AWG	GRY 9107360-88	15
A/R	WIRE, #18 AWG	BLK 9107360-00	14
A/R	WIRE, #18 AWG	VIO 9107360-77	13
A/R	WIRE, #18 AWG	RED 9107360-22	12
A/R	WIRE, #18 AWG	WHT 9107360-99	11
A/R	WIRE, #22 AWG	WHT 9107350-99	10
A/R	WIRE, #22 AWG	RED 9107350-22	9
1	13 SOCKET, TERM. CONTACT	1209379-01	8
6	PIN, TERM. CONTACT	1209378-01	7
8	MINI-FASTABS #60291-1	1210820-2	6
8	HOUSING, I-480417-0	1210820-1	5
2	CONN., MATE-N-LOK, 3 PIN	1209350-03	4
1	CONN., MATE-N-LOK, 2 PIN	1210821-2	3
1	CONN., MATE-N-LOK, 6 PIN	1209350-06	2
1	CONN., MATE-N-LOK, 6 PIN	1209351-06	1

FIRST USED ON OPTION/MODEL: PDP-1105

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES: DECIMALS ANGLES

DATE: 4-2-70  
 DATE: 4-17-70  
 DATE: 4-22-70  
 DATE: 4-22-70  
 DATE: 4-22-70

DRN: CDM  
 ENGR: [Signature]  
 PROJ: [Signature]

TITLE: AC INPUT HARNESS (PDP1105)

MATERIAL: SEE PARTS LIST

FINISH: [Blank]

REVISIONS: [Table with columns for REV, DATE, DESCRIPTION]

DATE: 4-2-70

SCALE: 1/1

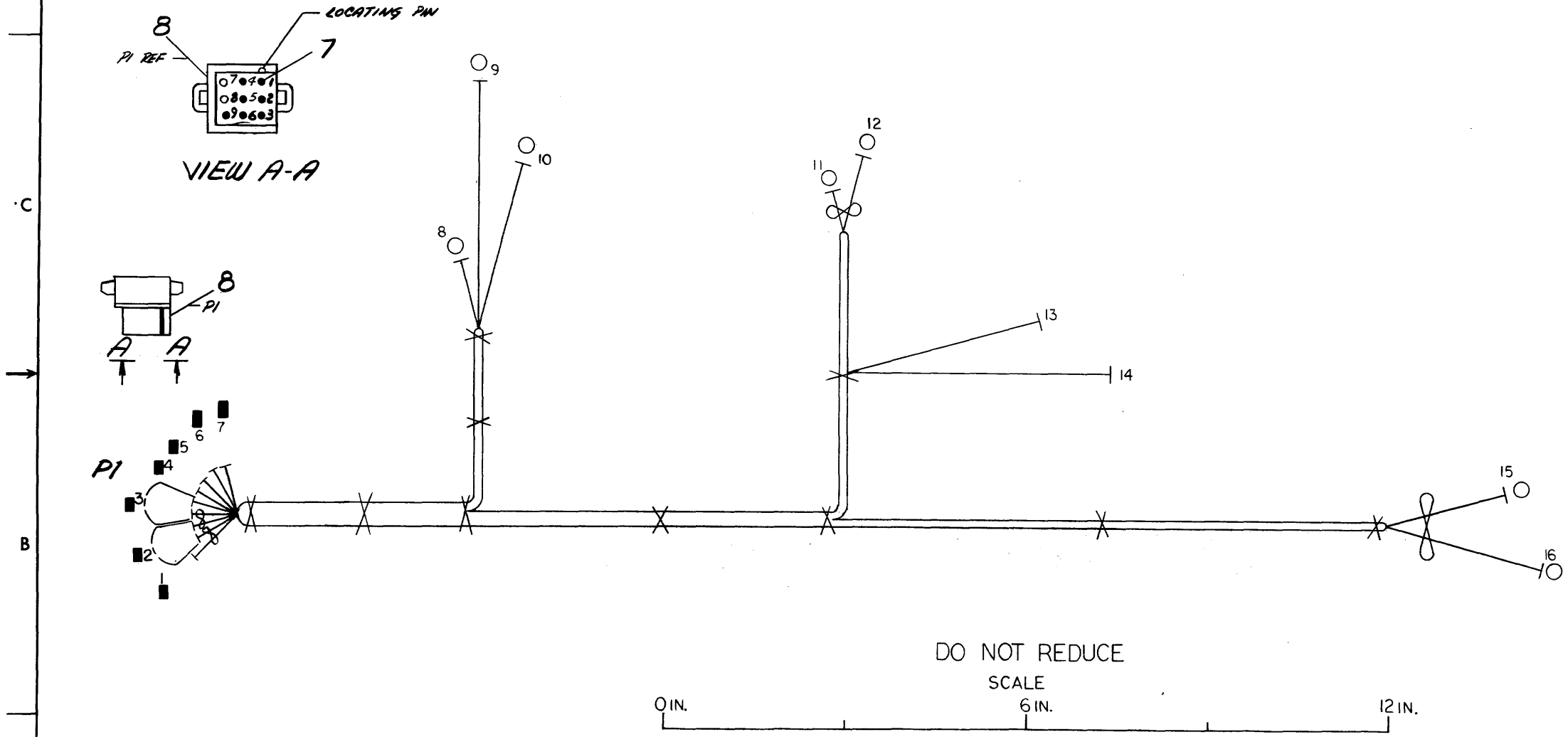
SHEET: 1 OF 1

DIST. P. [Blank]

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ITEM NO.	DESCRIPTION	FROM			TO			REMARKS	
		AWG	COLOR	POINT	CONNECTION	TERM	POINT		CONNECTION
5	*18 TWP	BLU	1	PI-9	7	12	---	6	
		BLK	2	PI-2	11	---	---		
4	*18 TWP	BLK	2	PI-2	15	---	---		
		RED	3	PI-3	16	---	---		
3	*18	RED	3	PI-3	9	---	---		
1	*22	YEL	4	PI-1	10	---	---		
2	*22	VIO	5	PI-6	8	---	---	6	
10	*22	BRN	6	PI-4	14	---	---	12	
11	*22	ORN	7	PI-5	7	13	---	12	

NOTES:  
 1. USE CABLE TIES (X) ITEM #9 AS SHOWN AND AT BREAK OUT POINTS WHERE NECESSARY.



QTY.	DESCRIPTION	PART NO.	ITEM NO.
2	TERMINAL AMP #85952-3	9007655	12
A/R	WIRE #22 AWG STRD (ORN)	9107350-33	11
A/R	WIRE #22 AWG STRD (BRN)	9107350-11	10
X	A/R TIE, CABLE PANDUIT SST15M	9007880	9
PI	1 CONN., MATE-N-LOCK 9 PIN MALE	1209351-09	8
7	PIN, MATE-N-LOCK MALE	1209378-01	7
7	TERM., AMP TAB RED	9007917	6
A/R	WIRE #18 AWG STRD TWP BLK	9107430-06	5
A/R	WIRE #18 AWG STRD TWP RED	9107430-02	4
A/R	WIRE #18 AWG STRD RED	9107360-22	3
A/R	WIRE #22 AWG STRD VIO	9107350-77	2
A/R	WIRE #22 AWG STRD YEL	9107350-44	1

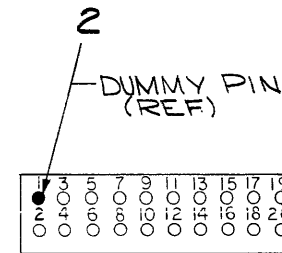
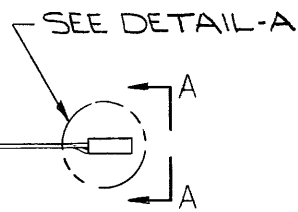
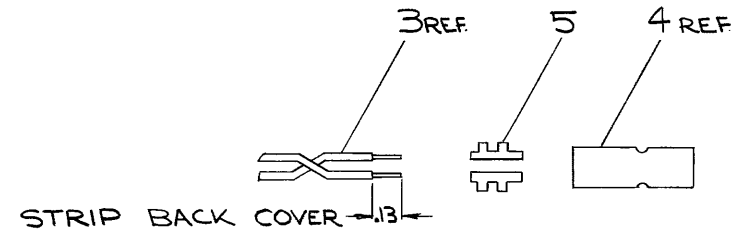
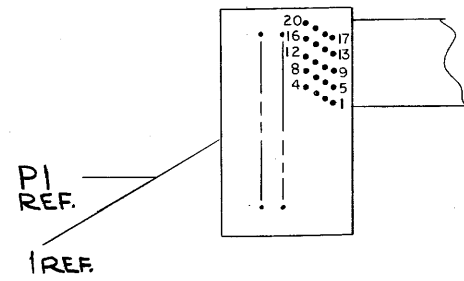
FIRST USED ON OPTION/MODEL PDP 1105		QTY.	DESCRIPTION	PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES					
DECIMALS	ANGLES	DRN	DATE	PARTS LIST	
.XXX - .005	±0° 30'	CHK'D	DATE	digital EQUIPMENT CORPORATION	
.XX - .02		ENG.	DATE	MAYNARD MASSACHUSETTS	
.X - .1		PROJ. ENG.	DATE	TITLE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD.	DATE	HARNISS DC (PDP 1105)	
MATERIAL	NEXT HIGHER ASSY.	D-UA-1105-0-0			
SEE PARTS LIST	SCALE 1/1	SIZE CODE		NUMBER	REV.
FINISH	SHEET 1 OF 1	DIA 7008856-0-0			

REV. NO. 8  
 CHG. NO. 7  
 DATE 6/1/72

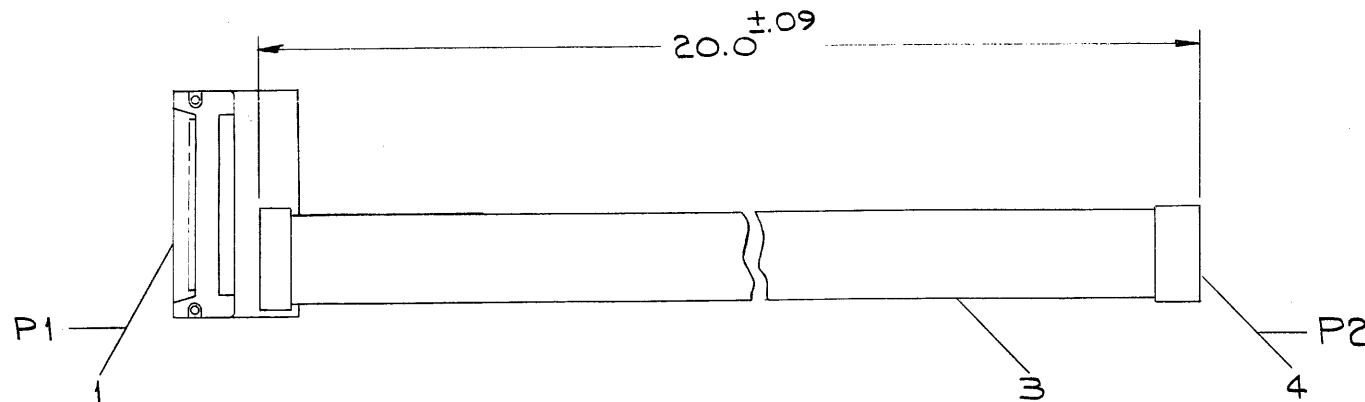
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NOTES:

1. CONNECTORS P1 AND P2 ARE TO BE WIRED POINT TO POINT (P1-1 TO P2-1 P1-2 TO P2-2 ECT.)



VIEW A-A  
(FRONT VIEW)



QTY.	DESCRIPTION	PART NO.	ITEM NO.
19	MINI-TERMINAL*4783 BERG	1210089-0	5
1	RECEPTACLE 20 PIN *63043-027 BERG	1210918-027	4
A/R	CABLE SCOTCHFLEX *3350 3M	9107747	3
1	DUMMY PIN *47900 BERG	9009190	2
1	DC. DISTRIBUTION MODULE	5409949-00	1

FIRST USED ON OPTION/MODEL		PARTS LIST	
PDP 1105		digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DATE 2-16-72	TITLE	
DECIMALS ANGLES	DATE 3-1-72	HEADER CABLE ASSY	
.XXX = .005 .XX = .02 .X = .1	±0° 30'	DATE 5-24-72	REV. A
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE 3-24-72	SIZE CODE NUMBER	
MATERIAL	DATE 3-24-72	D-UR-1105-0-0	DIA 7008820-0-0
SEE PARTS LIST	DATE 3-24-72	SCALE NONE	SHEET 1 OF 1
FINISH	DATE 3-24-72	DIST. 6	

REVISIONS	CHANGE NO.	REV.
CHK	7008820-00001 A	
DEMORVILLE		

REV. A  
NUMBER  
DIA 7008820-0-0

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J1 BERG HEADER ON P.C. CARD	J2 20 PIN 3M CONNECTOR	SIGNAL	OUTPUT CABLE (REFERENCE)
VV	9-12	GROUND	GROUND (A)
UU	9-12	GROUND	GROUND (B)
B	9-12	GROUND	GROUND (UU)
A	9-12	GROUND	GROUND (VV)
RR	16	SERIAL IN (TTL)	E
NN	15	20 MA INTERLOCK	H
LL	14	SERIAL IN (+20MA)	K
DD	5	SERIAL IN (-20MA)	S
Y	7	SERIAL OUT (+20MA)	AA
T	6	CLOCK IN (TTL)	CC
R	4	READER RUN (-20MA)	EE
Z	3	CLOCK DISABLE (TTL)	HH
F	2	SERIAL OUT (-20MA)	KK
F	8	READER RUN (+20MA)	PP
D	19	SERIAL OUT (TTL)	SS
C	20	+5 VOLTS	TT
BB	8	+15 VOLTS	U

BRUNING 40-107 15968	REVISIONS	REV.
	CHANGE NO.	
CHK		

FIRST USED ON OPTION/MODEL PDP-1105	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRAWN C. Teschner	DATE 4-6-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .XXX = .005 .XX = .02 .X = .1	ANGLES ±0° 30'	ENG. C. Teschner	DATE 4-6-72	TITLE CIRCUIT SCHEMATIC
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROD.	DATE		
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE C CS	NUMBER 5409949-0-1
FINISH	SCALE	SHEET 1 OF 1	DIST.	REV.

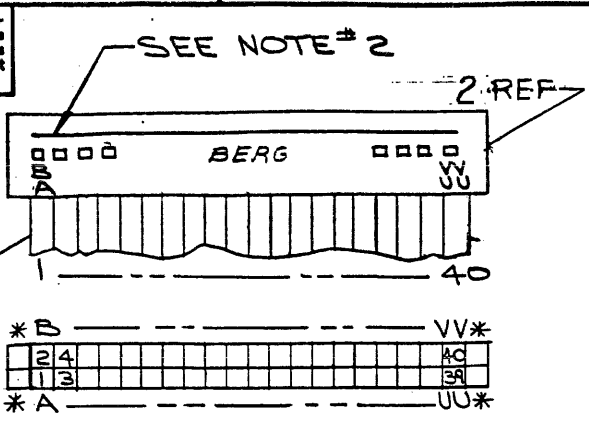
REV. 1  
NUMBER 5409949-0-1  
SIZE CODE C CS



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**WIRE TABLE**

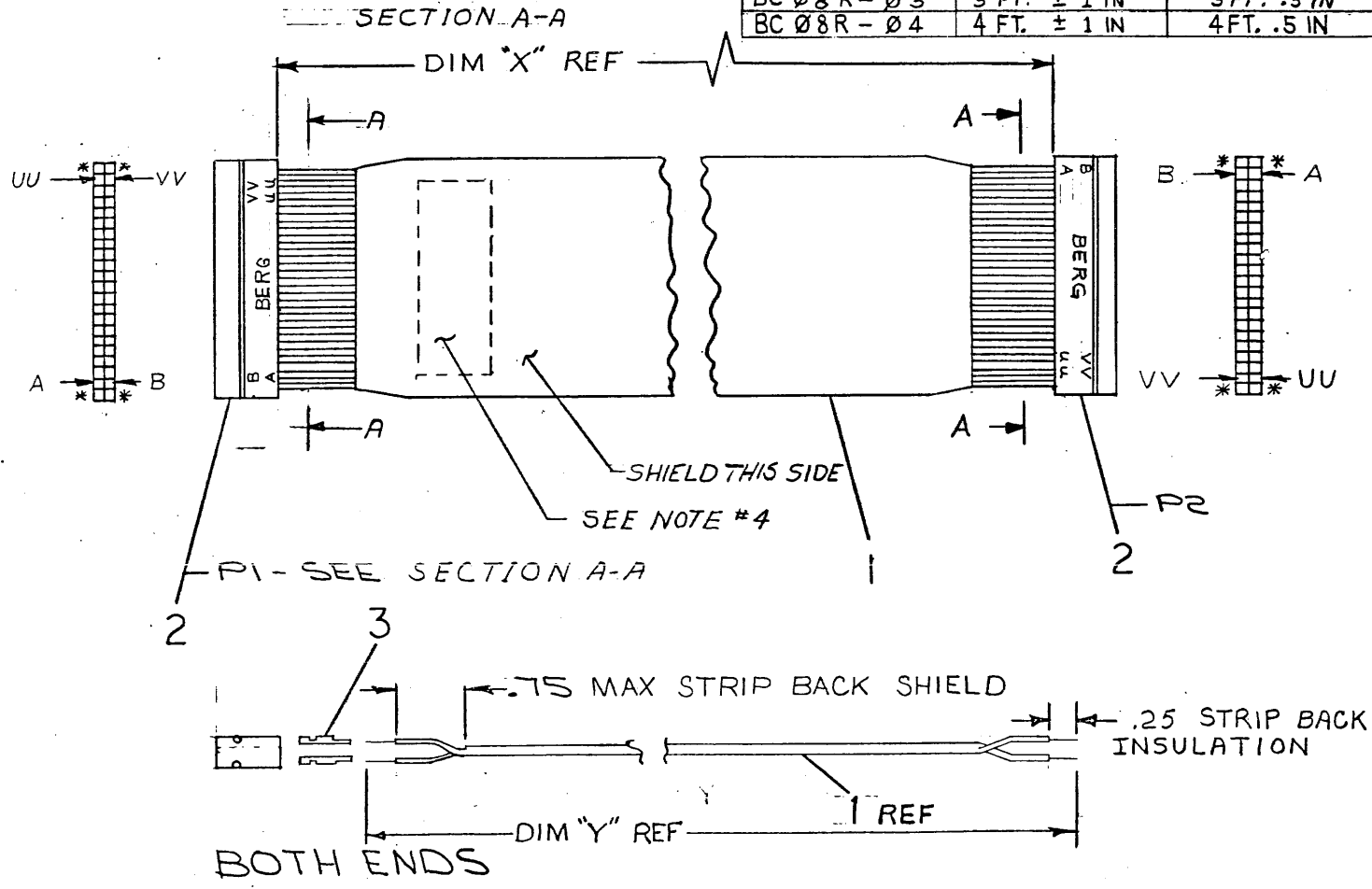
FROM	TO
PI-A	P2-VV
PI-B	P2-UU
PI-C	P2-TT
PI-D	P2-SS
PI-E	P2-RR
PI-F	P2-PP
PI-G	P2-NN
PI-H	P2-MM
PI-I	P2-LL
PI-J	P2-KK
PI-K	P2-JJ
PI-L	P2-II
PI-M	P2-HH
PI-N	P2-GG
PI-O	P2-FF
PI-P	P2-EE
PI-Q	P2-DD
PI-R	P2-CC
PI-S	P2-BB
PI-T	P2-AA
PI-U	P2-ZZ
PI-V	P2-YY
PI-W	P2-XX
PI-X	P2-WW
PI-Y	P2-VV
PI-Z	P2-UU
PI-AA	P2-TT
PI-BB	P2-S
PI-CC	P2-R
PI-DD	P2-Q
PI-EE	P2-P
PI-FF	P2-N
PI-GG	P2-M
PI-HH	P2-L
PI-II	P2-K
PI-JJ	P2-J
PI-KK	P2-I
PI-LL	P2-H
PI-MM	P2-G
PI-NN	P2-F
PI-PP	P2-E
PI-RR	P2-D
PI-SS	P2-C
PI-TT	P2-B
PI-UU	P2-A



**LEGEND**

NUMBER	DIM "X" VAR	DIM Y (PRE-CUT) REF
BCØ8R-Ø1	1 FT ± 1 IN	1 FT .5 IN
BCØ8R-Ø6	6 FT ± 2 IN	6 FT .5 IN
BCØ8R-Ø8	8 FT ± 2 IN	8 FT .5 IN
BCØ8R-1Ø	1Ø FT ± 2 IN	1Ø FT .5 IN
BCØ8R-12	12 FT ± 3 IN	12 FT .5 IN
BCØ8R-2Ø	2Ø FT ± 3 IN	2Ø FT .5 IN
BCØ8R-25	25 FT ± 3 IN	25 FT .5 IN
BCØ8R-5Ø	5Ø FT ± 1 FT	5Ø FT .5 IN
BCØ8R-6Ø	6Ø FT ± 1.2 FT	6Ø FT .5 IN
BCØ8R-75	75 FT ± 1.5 FT	75 FT .5 IN
BCØ8R-AØ	1ØØ FT ± 2 FT	1ØØ FT .5 IN
BCØ8R-A3	13Ø FT ± 2.6 FT	13Ø FT .5 IN
BCØ8R-A6	16Ø FT ± 3.2 FT	16Ø FT .5 IN
BCØ8R-Ø3	3 FT ± 1 IN	3 FT .5 IN
BCØ8R-Ø4	4 FT ± 1 IN	4 FT .5 IN

- NOTES:**
- ~~CABLE TO BE WIRED POINT TO POINT. P1-A TO P2-VV, P1-B TO P2-UU, P1-C TO P2-TT - ETC~~
  - LINE & LEGEND TO BE HOT STAMPED (WHITE)
  - \* DENOTES CAVITIES NOT USED OR DESIGNATED BY LETTERS.
  - VENDOR IDENTIFICATION, DEC PART NO. AND DATE CODE, TO BE HOT STAMPED (WHT), SHIELD SIDE, IN THIS APPROX. AREA.
  - THIS CABLE MUST CONFORM TO THE INSPECTION REQ'S OF DEC. A-II-7007035 UPON RECEIPT AT DEC INCOMING INSPECTION
  - A BERG ELECTRONICS #HT 68 CRIMP TOOL MAY BE USED.



**REVISIONS**

CHK	CHANGE NO.	REV.
mes	BCØ8R-0001	A
GARDNER	10-23-70	
mes	BCØ8R-0002	B
GARDNER	12-3-70	
mes	BCØ8R-0003	C
GARDNER	12-9-70	
FV	BCØ8R-0001	D
GARDNER	5/20/71	
mes	BE-00035	E
PROVIDENT	7-26-71	
mes	BCØ8R-0002	F
P. GARDNER	2/2/72	
mes	BCØ8R-0003	H
M. TITELBAUM	11/15/72	

**TOLERANCES DECIMALS**

XXX = ± .005  
 XX = ± .02  
 X = ± .1

FIRST USED ON OPTION MODEL

UNLESS OTHERWISE SPECIFIED  
 DIMENSION IN INCHES

TOLERANCES  
 DECIMALS: ± .005  
 FRACTIONS: ± 1/16  
 ANGLES: ± 0°30'

FINAL SURFACE QUALITY  
 REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: +

FINISH: +

**PARTS LIST**

QTY.	DESCRIPTION	PART NO.	ITEM NO.
80	SOCKET #47183 BERG	1210089-0	3
2	HOUSING #20383 BERG	1210090-1	2
	AVR CABLE, FLAT, 40 COND	9107722-0	1

DRN. *W. Fontaine* DATE 8/28/70  
 CHK'D. *H. Fleming* DATE 8-28-70  
 ENG. *K. L.* DATE 9-3-70  
 PROJ. ENG. *K. L.* DATE 9-3-70  
 PROD. *M. M. M.* DATE 9/4/70

UNLESS OTHERWISE SPECIFIED  
 DIMENSION IN INCHES

SCALE NONE

SHEET 1 OF 1

DIGITAL EQUIPMENT CORPORATION  
 MAYNARD, MASSACHUSETTS

TITLE: I/O CABLE (BCØ8R)

SIZE CODE: CUAB  
 NUMBER: BCØ8R-Ø-Ø  
 REV.: H

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS			LEGEND		QUANTITY / VARIATION									
ACCESSORY LIST			D	DOCUMENT	ALL MODELS									
MADE BY E. Pellegrini		CHECKED C. Teschner	DN	DOCUMENT CHANGE NOTICE										
DATE 5/26/72		DATE 5-31-72	PA	PAPER TAPE ASCII										
ENG B.D. Weeks		PROD R. Peterson	PB	PAPER TAPE BINARY										
DATE 5-31-72		DATE 5/31/72	PM	PAPER TAPE READ-IN-MODE										
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION												
1	7008360-0-0	CABLE ASSEMBLY			1									
2	11/05-0	CUSTOMER PRINT SET			1									
3	DEC-11-H05AA-A-D	MAINTENANCE MANUAL			*									
4	LIBKIT 11/05 BASEA-A-K	BASIC DIAGNOSTIC KIT			*									
5	LIBKIT 11/05 XBASA-A-K	SYSTEM SOFTWARE KIT			*									
*NOTE: THESE ITEMS ARE TO BE SHIPPED ONLY WHEN SHOWN ON THE CONSTRUCTION REQ.														
TITLE			ASSY. NO.	SIZE CODE	NUMBER			REV.	ECO NO					
PDP-11/05 ACCESSORY LIST			11/05-0-0	A AL	11/05-0-4									
SHEET 1 OF 1			DIST											

<b>DIGITAL EQUIPMENT CORPORATION</b> MAYNARD, MASSACHUSETTS			<b>LEGEND</b>		<b>QUANTITY / VARIATION</b>																							
<b>SOFTWARE LIST</b>			D	DOCUMENT	ALL MODELS						KIT CHECK	BY	DATE	INSTALLATION CHECK	BY	DATE												
MADE BY	E. Pellegrini	CHECKED	<i>C. Teschner</i>	SECTION													DN	DOCUMENT CHANGE NOTICE	PA	PAPER TAPE ASCII	PB	PAPER TAPE BINARY	PM	PAPER TAPE READ-IN-MODE				
DATE	5/30/72	DATE	5-31-72																									
ENG	<i>B.D. Weeks</i>	PRODR	<i>R.K. Peterson</i>	ISSUED SECT.																								
DATE	5-31-72	DATE	5/31/72																									
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION																										
1	LIBKIT 11/05 BASEA-A-K	BASIC DIAGNOSTIC KIT																										
2	LIBKIT 11/05 XBASA-A-K	SYSTEM SOFTWARE KIT																										
NOTE: THESE ITEMS ARE TO BE SHIPPED ONLY WHEN SHOWN ON THE CONSTRUCTION REQ.																												
TITLE				ASSY. NO.	SIZE	CODE	NUMBER				REV.	ECONO																
PDP-11/05 SOFTWARE LIST				11/05-0-0	A	SL	11/05-0-05																					
SHEET OF				DIST.																								

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**DIGITAL EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS**

**ENGINEERING SPECIFICATION**

DATE 10/9/72

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP1105

**REVISIONS**

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

ENG	APPD	SIZE A	CODE SP	NUMBER 11/05-0-6	REV
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**ENGINEERING SPECIFICATION**

**DIGITAL**

CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP1105

**1.0 SCOPE**

- 1.1 This procedure establishes the minimum mechanical and electrical standards that a PDP11/05 must meet to be considered acceptable for shipment.
- 1.2 Any basic PDP11/05 that fails any portion of this procedure may be returned to production for correction of the discrepancy at the discretion of the acceptance supervisor. Upon resubmission of product acceptance, the PDP11/05 may be subjected to this entire procedure or portion thereof; provided no one step of this procedure is omitted.

**2.0 INITIAL VERIFICATION**

- 2.1 All PDP11/05's should have the T-17 (D00E or latest revision) diagnostic in core when the machine is submitted to acceptance.
  - 2.1.1 Plug the power cord of the PDP11/05 into the appropriate AC outlet.
  - 2.1.2 Depress halt switch.
  - 2.1.3 Turn the key switch to power on.
  - 2.1.4 Set the switch register of the PDP11/05 to 200 (8).
  - 2.1.5 Ensure that both fans turn.
  - 2.1.6 Depress the "load address" switch.
  - 2.1.7 Put switches 11 and 15 in the up position and switch 8 in the down position.
  - 2.1.8 Depress the "Start" switch.
  - 2.1.9 After the PDP11/05 has been running for the time specified in Table 1 without halting, depress the "halt" switch. The machine should halt.
  - 2.1.10 Turn off the key switch and remove the AC cord from the power outlet.
- 2.2 Should the basic PDP11/05 fail to meet the requirements of 2.0, one reloading of the diagnostic will be allowed. (See 9.1 and 9.4.1.1 to 9.4.1.8). Should the PDP11/05 then fail to run properly as described in 2.1.1 to 2.1.10, it shall be rejected and returned to production for repair.

**3.0 MECHANICAL INSPECTION**

- 3.1 Description of sides.
  - 3.1.1 Front side shall be the console side.
  - 3.1.2 The right side shall be the side on the right when looking at the PDP11/05 from the front.

SIZE A	CODE SP	NUMBER 11/05-0-6	REV
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**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP11/05

- 3.2 Inspect the unit for conformance to "Hardware Assembly Standard" A-SP-7665099-0-0.
- 3.3 With the PDP11/05 chassis on its right side, check the bottom of the chassis for:
  - 3.3.1 Four (4) Phillips head screws with internal lock washers securing the power supply chassis to the PDP11/05 chassis.
  - 3.3.2 Three (3) Phillips head screws with internal lock-washers securing the logic to the chassis.
  - 3.3.3 Four (4) Phillips head screws with internal lock-washers holding the module guides in place.
- 3.4 With the PDP11/05 chassis on its bottom, check the left side for:
  - 3.4.1 Six (6) Phillips head screws with internal lock-washers securing the card guide supports.
  - 3.4.2 Side cover should have foam against the module handle. This cover is secured to the chassis with four (4) Phillips head screws with internal lockwashers.
  - 3.4.3 Console cable should be routed to avoid damage from module handles.
- 3.5 Check the 54-9728 regulator module for six (6) Phillips head screws securing the module to the power supply chassis, these screws are located on the top of the module, one on each corner of the heat sink and one at each corner of the module at the end closest to the transformer.
  - 3.5.1 Make sure the regulator module is not bowed.
- 3.6 All wires must be tied neatly using cable ties.
- 3.7 Make sure that two (2) plastic cable clamps have been used to dress the AC harness wires coming from the AC input box and going to the power supply fan and the key switch.
- 3.8 The remaining wires should be supported by two (2) more cable clamps along the left side of the power supply chassis
- 3.9 Check all crimp connections by pulling gently on the wires entering the crimp. There should be no signs of looseness. The stranded wire should be exposed beyond the crimp approximately 1/16".
- 3.10 Check the male tabs to which the crimp connector attaches for cold solder joints and flux.

SIZE	CODE	NUMBER	REV
A	SP	11/05-0-6	

**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP11/05

- 3.11 Insure that an acceptance stamp appears on the top of the logic indicating that the logic has been tested by the AWT.
- 3.12 All units must be free of all loose hardware.
- 3.13 Inspect the AC power cord. The cord must be free from cuts, burns and abrasions.
- 3.14 There should be two (2) Phillips head screws with internal lockwashers securing the AC input box to the chassis.
- 3.15 The rear fan screw should not be missing, bent, or damaged in anyway.
- 3.16 The rear fan must be secured to the rear screen assembly by four (4) Phillips head screws with internal lockwashers.
- 3.17 A second cable clamp should be attached to the left rear of the chassis, across the cable access hole.
- 3.18 Failure Determination
  - 3.18.1 Any PDP11/05 that fails to meet the criteria in 3.0 with the exceptions of 3.9 and 3.10 will be documented as a recycle, but the failure may be corrected in the acceptance area by a person (s) from production.
  - 3.18.2 Any PDP11/05 that fails to meet the criteria outlined in 3.9 and/or 3.10 must be documented as a recycle and returned to the production area for correction of the discrepancy. Before the unit is returned to acceptance, a quick verify must be run in production.

4.0 MODULE INSPECTION AND LOGIC BLOCK CHECK

- 4.1 Remove and inspect all modules except power supply for conformance to the specifications listed.
  - 4.1.1 "Final Module Inspection Procedure" A-SP-7665039
  - 4.1.2 "Module Rework Standard" A-SP-7605845
  - 4.1.3 Memory Circuit Boards - Acceptance Standards - A-SP-7665052
- 4.2 Visually inspect the top of the 54-9728 regulator module for conformance to the specification listed in 4.1.1 and 4.1.2.
- 4.3 Check the modules for a circuit revision letter and an etch revision letter. These revision letters must be up to shippable ECO levels. A three (3) digit numeric date code must be present on the module handle. If ECO levels are correct, sign the ECO status sheet.
  - 4.3.1 Check the component lead length on side 2 of each module. The leads must not protrude more than 1/16.

SIZE	CODE	NUMBER	REV
A	SP	11/05-0-6	

## ENGINEERING SPECIFICATION

010101

CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP11/05

- 4.3.2 Make sure all "ROM's" are marked for identification and ensure the markings are legible.
- 4.3.3 Make sure the pot on the G110 module is glyptolled to prevent a change in strobe setting.
- 4.3.4 Make sure the serial number stamped on the three (3) memory modules matches the number on the systems tag.

4.4 When the modules have been removed from the logic block, inspect the logic block.

- 4.4.1 Any chip or crack which could conceivably allow a shorting of two or more logic pins will not be acceptable.

4.5 Replace the modules in the block in their proper slots.

5.0 POWER & GROUND CHECK

5.1 Make sure the PDP11/05 is not plugged into an AC power source.

5.2 Check chassis ground.

- 5.2.1 Set a Simpson Module 362 ohmmeter or equivalent to the adjust setting and zero the meter.
- 5.2.2 Set the Simpson Module 362 ohmmeter to the ground pin on the AC power cord.
- 5.2.4 Put the other lead of the ohmmeter to the ground lug on the logic block. The ohmmeter should read less than 1 $\Omega$ .
- 5.2.5 Remove the lead from the ground lug and put it to the screw on the heat sink of the regulator module that is surrounded by bare metal. The ohmmeter should read less than 1 $\Omega$ .
- 5.2.6 Remove the lead from the screw on the regulator module and put it on a screw on the PDP11/05 chassis. The ohmmeter should read less than 1 $\Omega$ .
- 5.2.7 Remove both ohmmeter leads.

5.3 Power Supply Check

- 5.3.1 Plug the power cord of the PDP11/05 into an appropriate AC outlet.
- 5.3.2 Turn on the key switch on the PDP11/05 console.
- 5.3.3 Using a Dixon VT-300 meter or its equivalent, measure the power supply voltages on the logic backplane. See attachment 1 for lead placement and voltage tolerances. Record voltages on checklist. (Attachment # 5.)

SIZE	CODE	NUMBER	REV
A	SP	11/05-0-6	

## ENGINEERING SPECIFICATION

010101

CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP11/05

5.4 Failure Determination

- 5.4.1 If any PDP11/05 fails any portion of 5.0, it shall be documented as a recycle and returned to production for repair.
- 5.4.2 Upon resubmission to acceptance the PDP11/05 will be visually inspected to ensure all hardware is present and the PDP11/05 will be required to pass 5.0.

6.0 QUICK VERIFY

- 6.1 Remove terminator per table two and connect the PDP11/05 to a daughter station then connect the teletype to the 11/05 under test.
- 6.2 Set the program select register switches to reflect the memory size of the PDP11/05 under test (See Table # 4).
- 6.3 Set the "mode" switch to processor.
- 6.4 Set the "function" switch to quick verify.
- 6.5 Set the "type" switch to 11/05.
- 6.6 Turn on power to the PDP11/05 and put the "enable/halt" switch in the enable position.
- 6.7 Momentarily depress the "initialize" switch on the daughter station.
- 6.8 A pass complete message should appear when test is finished.
- 6.9 Disconnect the 11/05 from the daughter station and replace the terminator.
- 6.10 Failure Determination
- 6.10.1 Should the PDP11/05 not run the quick verify properly after the first load, the machine will be documented as a recycle and returned to production for repair.

7.0 CONSOLE TEST

- 7.1 Depress "enable/halt" switch.
- 7.2 Turn on power to the PDP11/05.
- 7.2.1 Load Address 100<sub>g</sub>.
- 7.3 Set "052525" in the switches and lift "DEposit".

SIZE	CODE	NUMBER	REV
A	SP	11/05-0-6	

## ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP11/05

- 7.4 Set "125252<sub>8</sub>" in the switches and lift "DEPOSIT".
- 7.5 Load address 100<sub>8</sub>.
- 7.6 Depress and release EXAMINE.
- 7.7 The address/data display should contain "052525<sub>8</sub>".
- 7.8 Depress and release EXAMINE.
- 7.9 The address/data display should contain "125252<sub>8</sub>".
- 7.10 Load address 100<sub>8</sub>.
- 7.11 Set "000777<sub>8</sub>" in the switches and lift DEPOSIT.
- 7.12 Put "enable/halt" switch in ENABLE position.
- 7.13 Depress and release "START" switch. The RUN light should light.
- 7.14 Turn console key to PANEL LOCK position.
- 7.15 Put ENABLE/HALT switch in HALT position. The RUN light should remain lit.
- 7.16 Turn console key to "POWER" position. The PDP11/05 should halt.
- 7.17 Failure Classification
- 7.17.1 Any PDP11/05 that fails to pass 7.1 to 7.16 shall be documented as a recycle and returned to production for repair.
- 7.17.2 Upon resubmission to acceptance, the PDP11/05 may, at the discretion of the acceptance supervisor, be required to pass 24 hours of burn-in.
- 7.18 Paper Tape Load
- 7.18.1 Determine start address and load at that address.  
4K = 17744  
8K = 37744  
12K = 57744  
16K = 77744
- 7.18.2 Load bootstrap loader per PDP11 instruction card.
- 7.18.3 Load start address as in 7.18.1
- 7.18.4 Read in absolute loader paper tape from teletype.
- 7.18.5 Load start address as follows:  
4K = 17500

SIZE	CODE	NUMBER	REV
A	SP	11/05-0-6	

## ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP 11/05

8K = 37500  
12K = 57500  
16K = 77500

- 7.18.6 Load MAINDEC-11-D0MA (T13) thru teletype.
- 7.18.7 Load 200 (<sub>8</sub>).
- 7.18.8 Put switch 15 up and start.
- 7.18.9 Allow program to run one pass (One TTY bell). It will halt on error.
- 7.18.10 Shut off machine and proceed with the next test.

8.0 UNIBUS TESTER

- 8.1 Insert the unibus cable coming from the unibus tester into the appropriate logic slot in the PDP11/05. First remove terminator from the slot in the PDP11/05. See Table II.
- 8.2 Plug the PDP11/05 into an appropriate AC power source.
- 8.3 Turn on power to unibus tester.
- 8.4 Turn on the power to the PDP11/05.
- 8.5 If machine has only 4K of memory:
- 8.5.1 Load unibus test program (Octal number 143).
- 8.5.2 Load address 200 (<sub>8</sub>).
- 8.5.3 Depress START
- 8.5.4 Program will run continuously without typeout until stopped by operator. Let the program run for 30 minutes. If program fails, it will halt.
- 8.6 If machine has 8K or more of memory"
- 8.6.1 Load GTP program (Octal number 135)
- 8.6.2 Load address 200 (<sub>8</sub>).
- 8.6.3 Set bits 0 through 15 up.
- 8.6.4 Set bits 4, 8, 9 and 14 down and press start.
- 8.6.5 Set bits 0 through 15 up and press continue two times.
- 8.6.6 Set bits 0 through 15 down and press continue.

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**ENGINEERING SPECIFICATION**

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CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP 11/05

8.6.7 Program will run continuously with typeout until stopped by operator. Let the program run for 30 minutes. If program fails, it will halt and type out error message.

8.7 Power Down Sequence

- 8.7.1 Halt the 11/05.
- 8.7.2 Turn key switch of 11/05 to OFF.
- 8.7.3 Take daughter station off line.
- 8.7.4 Remove unibus cable and replace terminator.
- 8.7.5 If desired, you may shut off the unibus tester.

9.0 ELECTRICAL ACCEPTANCE

This test is to be run in the heat box at high temperature.

9.1 Connecting the PDP 11/05 to a daughter station.

- 9.1.1 Remove the terminator from the slot in the PDP11/05 logic block. (See Table #2).
- 9.1.2 Insert the unibus cable from the daughter station into the slot in the PDP11/05 logic block specified in Table #2.
- 9.1.3 Connect the teletype to the Berg connector on the back of the PDP11/05 chassis.
- 9.1.4 Plug the power cord on the PDP11/05 into an appropriate AC outlet.

9.2 PDP11/05 Diagnostic Testing

9.2.1 The normal mode of diagnostic testing for the PDP11/05 shall be the automatic acceptance method described in 9.3. An alternate method of diagnostic testing is described in 9.4. This method shall be used in the event of an automatic acceptance system hardware failure and must have the acceptance supervisor's approval.

9.3 Automatic Acceptance

- 9.3.1 Set the "type" switch to 11/05-1.
- 9.3.2 Set the "mode" switch to processor.
- 9.3.3 Set the "function" switch to auto accept.
- 9.3.4 Set the "on line" switch to the UP (one) position. The on line light should be lit.
- 9.3.5 Set the "heat" switch and the "repeat" switch to the UP (one) position.

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**ENGINEERING SPECIFICATION**

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CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP11/05

9.3.6 Set the program select register switches to reflect the memory size of the PDP11/05 under test (See Table #4).

9.3.7 Depress the initialize switch momentarily.

9.3.8 Check to make sure no error lights are lit. If one is, halt the PDP11/05 and repeat 9.3.1 to 9.3.7 once. If an error light is lit after the second loading attempt, the machine will be recycled and subject to 10.0.

9.3.9 After approximately 1 hour, 45 minutes for 4K and 3 hours 45 minutes for 8K, the TTY should print out a pass complete message.

9.3.10 Load the T17 diagnostic (Section 9.4.1.8)

9.3.11 Verify program runs in machine.

9.3.12 Remove machine from acceptance station.

9.4 Automatic Acceptance Backup

9.4.1 This section is to be used as back up if the auto accept function of the test line is not working.

9.4.1.1 Manually set the octal location of the program to be run in the program select register. (See Table #3).

9.4.1.2 Set the "type" switch to 11/05-1.

9.4.1.3 Set the "mode" switch to processor.

9.4.1.4 Set the "function" switch to dump.

9.4.1.5 Set the "on line" switch to the UP (one) position.

9.4.1.6 Set the "heat" and "repeat" switches to UP (one) position.

9.4.1.7 Momentarily depress the "initialize switch.

9.4.1.8 Make sure no error lights are lit. If one or more error lights are lit, repeat steps 9.4.1.1 to 9.4.1.7 once. If an error light is lit after the second loading attempt, the machine will be recycled and subject to 10.0.

9.4.1.9 Set the PDP11/05 switch register to 200. Depress load address. Depress START.

9.4.1.10 Program should be running. Run the program the required length of time (See Table #3).

9.4.1.11 Load the next program listed in Table #3 as in steps 9.4.1.1 to 9.4.1.16.

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CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP11/05

- 9.4.2 All programs listed in Table 3 must be run in the order listed.
- 9.4.3 Load the PDP11/05 memory with the modified T17 diagnostic before sending machine to final inspection area.
- 9.4.4 Remove the unibus cable and insert the terminator. (see Table #2).

9.5 50 Cycle Conversion

- 9.5.1 If a machine must be converted to 50 cycle, it will be done after auto accept but before touch up.
- 9.5.2 After conversion, run the following tests:
  - A. Power and ground per paragraph 5.0.
  - B. GTP with power fail option (if only 4K, run T-17 and power fail).

9.6 Failure Classification

- 9.6.1 Any PDP11/05 that fails 9.4.0 or 9.5.2 will be documented as a recycle and will be returned to production for repair.
- 9.6.2 Upon resubmission to acceptance, the PDP11/05 may, at the discretion of the acceptance supervisor, be required to pass 24 hours of burn-in.

9.6.3 See next page.

10.0 DOCUMENTATION AND FAILURE CLASSIFICATION (con't)

- 10.1 Each system accepted against section 9.0 (Electrical Acceptance) of this procedure must have a completed log sheet and a PDP11/05 basic acceptance checklist added to its test and inspection envelope. See attachments.
- 10.2 Any unit which fails to properly run diagnostics according to MAINDEC documents other than continuously and as specified will be classified defective and returned to production for rework. Printouts, if generated will be returned to production with the PDP11/05.
- 10.3 Any system which has had any major modification as listed below; must be recycled through the entire production checkout procedure (including the heat cycle) prior to resubmission to the acceptance area. These machines will be required to undergo another 24 hours burn-in.
  - A. Power Supply replacement.
  - B. Memory System replacement.
  - C. Any module replacement in the processor or the front panel.

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**ENGINEERING SPECIFICATION**

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CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP11/05

- 9.6.3 Any PDP11/05 that only fails T166 (KW11-L) during auto acceptance will have T166 loaded as described in sections 9.4.1.1 - 9.4.1.10. If the program runs for 10 minutes the PDP11/05 shall be considered as having passed section 9.3 (Auto Acceptance).

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# ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP11/05

10.3.1 The front panel may have switches and/or LED's replaced and must undergo a Quick Verify only.

## 11.0 PREPARING MACHINES FOR SHIPMENT

11.1 All paperwork (logics, checklists, etc.), will be complete before the PDP11/05 leaves the electrical acceptance area.

11.2 Load the machine with T17 (4K) or GTP (8K or more), before sending to touch-up.

## 12.0 MECHANICAL TOUCH-UP

12.1 The PDP11/05 will be sent to the production touch-up area. The PDP11/05 will have minor mechanical defects corrected (keys put with the machine) and installed in a cabinet if necessary.

12.2 All hardware (chassis, tracks, etc.) will be secured to the chassis. The cover to the PDP11/05 will not be secured at this time. This will allow the final visual inspection of the PDP11/05 to be performed.

## 13.0 FINAL ACCEPTANCE

13.1 The test and inspection envelope of each PDP11/05 submitted to final acceptance must have lines #1 through #8 signed off. The envelope will contain the following:

- A. Key Sheet (original and at least 6 copies).
- B. Electrical acceptance checklist.
- C. Progress reports.
- D. ECO Status Sheets (white, pink and blue copies).
- E. Waiver if needed (white, pink, and yellow copies).
- F. Blanket waiver if needed (2 copies).
- G. Construction Requisition (green copy).
- H. Transfer sheet.

13.2 Check for 100% agreement between the key sheet, construction requisition, physical unit and print set.

13.3 If the documentation outlined in 13.1 through 13.3 is missing, incorrect, or incomplete, the system will be classified as being "down" and will not proceed any further until all documentation has been completed by the responsible production person (s).

13.4 Visually inspect the PDP11/05.

13.4.1 Ensure that all hardware is present and tight.

13.4.2 Check all decals for readability. If decal has missing letters or is illegible, the decal must be replaced.

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# ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP11/05

13.4.3 Patent decal.

13.4.4 The unit must be free of all foreign matter.

13.4.5 Insure that the unit has keys secured to the power cord with a tie wrap.

13.4.6 Move each switch up and down at least two (2) times to ensure each switch is unrestricted and operates freely.

13.4.7 Missing letters and chipped areas will not be allowed on silk screening.

13.4.8 Inspect each basic PDP11/05 for conformance to DEC STD 092 and recycle units to touch-up as required.

13.4.9 Check for foam on side cover.

13.4.10 Check to assure console cable is folded under the memory stack handle.

13.4.11 Check for unibus cable clamp and "handle".

13.4.12 Have top cover secured to the chassis, and sealed.

13.4.13 Check the power cord for cuts, abrasions, etc.

## 13.5 Electrical Verification

13.5.1 Complete one pass of the program in memory (T-17) for 4K of GTP for 8K and more. Exercise both TTY reader and punch while making a pass.

13.5.2 Console test run per paragraph 7.0.

13.5.3 Failure Classification

13.5.3.1 Any PDP11/05 that fails 13.5.1 or 13.5.2 will be documented as a recycle and returned to production for repair.

13.5.3.2 The acceptance supervisor will determine what must be run against the recycled unit when it is returned to acceptance.

13.5.3.3 Turn ON/OFF switch several times. Test should continue without error.

## 13.6 Supplementary Accessory Checklist

13.6.1 This form will be filled in by the final inspector.

13.6.1.1 The form will contain all software, prints, and accessories going to a customer.

13.6.1.2 After completing the form, it should be signed by the inspector and inserted in the T. & I. envelope.

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**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP11/05

- 13.7 Separating the paperwork in the T. & I. envelope.
  - 13.7.1 All the paperwork in the T. & I. envelope will be taken out of the envelope and separated.
    - 13.7.1.1 Take the key sheet (two copies) the accounting form, and the green copy of the construction requisition, clip them together and put them in a separate pile.
    - 13.7.1.2 Take the test data, progress reports, final inspection reports, key sheet (one copy) and clip them together.
    - 13.7.1.3 Put these papers in another pile. Get our copy of the construction requisition and attach key sheet (one copy) waiver, (white, and pink copy if needed) and clip them together. Take these papers to Field Service where they will type up the customer envelope
    - 13.7.1.4 Take the pink copy of ECO status sheet and the Supplementary Accessory check list and insert in the customer envelope.
    - 13.7.1.5 Have production stick the "silly sticker" on the top of the PDP11/05.
    - 13.7.1.6 Have the PDP11/05 moved next to the software that will be shipped with the unit.
- 13.8 A shipping tag must be made out for each box (listing the contents) or unpacked article. (See attachment #4).
- 13.9 Accessories shipped with each PDP11/05.
  - 13.9.1 All basic PDP11/05 computers will be shipped with the following:
    - 13.9.1.1 Prints
    - 13.9.1.2 Manuals
    - 13.9.1.3 Customer envelope
      - 13.9.1.3.1 Contents of customer envelope will include:
        - a. ECO Status Sheet (pink copy)
        - b. Supplementary Accessory Checklist.
        - c. Customer Acceptance Sheet
        - d. Key Sheet
      - 13.9.1.3.2 After the customer envelope has been check for contents, it will be sealed and placed in the software box.
- 13.10 Items shipped if required by the construction requisition.

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**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP11/05

- 13.10.1 Basic Software and Accessory List.
  - 13.10.1.1 LIB KIT 11/05 BASEA-A-K
- 13.10.2 Extended software and accessory list.
  - 13.10.2.1 LIB KIT 11/05 XBASA-A-K
- 13.10.3 If the basic PDP 11/05 is to be shipped with a teletype, it must also include the teletype accessory list.
  - 13.10.3.1 Teletype accessories include:
    - a. 310B Teletype Manual Vol. I
    - b. 310B Teletype Manual Vol. II
    - c. 1184B Teletype Parts List
    - d. 36-5365 1 roll of teleprinter paper
    - e. 36-5630 1 each teletype ribbon
    - f. 36-5360 3 each rolls of oiled paper tape
    - g. F4/e/69/260 paper price list.
- 13.11 After software, accessory hardware, print set, and customer envelope have checked, put them in the software box and seal it.
- 13.12 Check the contents of the T. & I. envelope for:
  - a. The remaining Key Sheets
  - b. ECO Status Sheets (pink copies)
  - c. Waiver if needed (yellow copy)
  - d. Blanket waiver if needed.
- 13.13 Before line #10 on the T. & I. envelope is signed off, an authorized person from computer administration must sign his name and the date across the side of the T. & I. envelope
- 13.14 Basic PDP11/05 destined for in-house users (CSS, TPL, System Integration) will not have lines 9 and 10 signed off on the T. & I. envelope.
  - 13.14.1 Other items not applicable to the in-house machine include: 13.6, 13.7.1.3, 13.7.1.4, 13.8 and 13.9.1.3.
- 13.15 The final acceptance line on the DEC 101 cover sheet (line #10) will only be signed off if all items in this procedure have been accepted for formally waived (DEC Form 12-1026).
- 13.16 Failure Determination
  - 13.16.1 Any unit which fails any of the requirements of this section will be classified defective and returned to production for the correction of any deficiencies.

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# ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP11/05

13.16.2 All units resubmitted for final inspection after the correction of a deficiency may be recycle through the entire inspection procedure or any portion thereof at the discretion of the Q.C. supervisor provided no one (1) step of section 13 is omitted from any unit.

## 14.0 PDP11/05 RETURNED FROM CRATING (SHIPPING)

14.1 Any PDP11/05 that is returned from crating (shipping) need only be submitted to 13.0 provided the PDP11/05 remains sealed in its shipping container. The PDP11/05 need not be submitted to 13.4 and 13.5.

## 15.0 VALIDATION OF SOFTWARE

15.1 10% of all software kits will be opened and the contents of the kits will be checked.

15.2 100% of the software kits will have their labels checked for correct revision levels.

15.3 If any software fails 15.1 and/or 15.2 the complete lot of software will be returned to the program library.

15.4 Assure that all documentation being shipped is at the same rev. as the hardware.

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# ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP11/05

## DUMP DIRECTORY

FRG #	END ADD	TITLE	DESC 'N
000000	014202	D0AA0	T1
000001	004326	D0BA0	T2
000002	005512	D0CA0	T3
000003	016360	D0DA0	T4
000004	010546	D0EA0	T5
000005	017214	D0FA0	T6
000006	013640	D0GA0	T7
000007	013424	D0HA0	T8
000010	014116	D0IA0	T9
000011	007462	D0JA0	T10
000012	007110	D0KA0	T11
000013	015706	D0LA0	T12
000014	003234	D0MA0	T13
000015	007566	D0NC0	T14
000016	016476	D0OB2	T15
000017	015514	D0QE2	T17
000020	000200	DUMM21	LDR
000021	000200	D1AA0	ADR UP
000022	000200	D1BA0	ADR DN
000023	001400	ZMMCA0	N/D AD
000024	000652	ZMMDA0	BASICP
000025	000636	ZMMEA1	MC1S0S
000026	000750	ZMMFA0	1'S SU
000027	001316	ZMMGB1	WCN'S
000030	000542	ZMMHA0	C/HTNG
000031	000716	ZMMIA0	RANDAT
000032	000426	ZMMKI0	ADR DN
000033	003046	ZQMAA1	MEMEXR
000034	001646	CMSAA0	MEMPAR
000035	000200	CMSBA0	GALOMP
000036	006606	ZQMBAL	EXTMEM
000037	000200	LDR	LDR
000041	000200	DUMMY	LDR
000042	003132	ZTMB00	TM-9TK
000043	003252	ZTMC00	TM-7TK
000044	002540	CKBAA0	SXT
000045	003562	CKBBA0	SOB
000046	007366	CKBCA0	XOR
000047	007234	CKBDA0	MARK
000050	002174	CKBEA0	RTT
000051	001712	CKBFA0	STKLIM
000052	001424	CKBGA0	SPL
000053	003740	CKBHA0	REGSET
000054	013550	CKBIA0	ASH
000055	014660	CKBJA0	ASHC

TABLE #3

SIZE	CODE	NUMBER	REV
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**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP1105

PROGRAM SELECT REGISTER SETTINGS REQUIRED TO RUN AUTO-ACCEPT OR QUICK VERIFY

MEMORY SIZE	SWITCH NUMBER				
	4	3	2	1	0
4K	0	0	0	0	0
8K	0	0	0	0	1
12K	0	0	0	1	0
16K	0	0	0	1	1

TABLE #4

SIZE <b>A</b>	CODE SP	NUMBER 11/05-0-6	REV
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**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP1105

MEASUREMENT OF POWER SUPPLY OUTPUT

POWER SUPPLY VOLTAGE	POWER SUPPLY VOLTAGE LIMITS	RED METER LEAD	BLACK METER LEAD
+5V	5.00 - 5.10V	Red crimp connector on logic block.	Black crimp connector on logic block.
+15V	14.75 - 15.25	Orange term point connector on logic block.	Black crimp connector on logic block.
-15V	14.75 - 15.25	Blue crimp connector on logic block.	Black crimp connector on logic block.

ATTACHMENT #1

SIZE <b>A</b>	CODE SP	NUMBER 11/05-0-6	REV
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ENGINEERING SPECIFICATION		CONTINUATION SHEET	
TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP1105			
<p style="text-align: center;">SHIPPING TAGS</p>          <p style="text-align: center;">FOR FOREIGN SHIPMENTS</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>CUSTOMER _____</p> <p>DEC# _____</p> <p>SERIAL# _____</p> <p>ITEM# _____</p> <p>TOTAL UNPACKED PIECES _____</p> <p>DESCRIPTION:</p>            <p>PACKED BY _____</p> <p>SHIPPED BY _____</p> <p>_____ OF _____ PIECES</p> </div>	<p>DEC# _____</p>          <p>ITEM _____ OF _____</p> <p style="text-align: center;">SIGNATURE _____</p>	<p style="text-align: center;">FOR DOMESTIC SHIPMENTS</p>          <p style="text-align: center;">ATTACHMENT #4</p>	
SIZE <b>A</b>	CODE SP	NUMBER 11/05-0-6	REV

ENGINEERING SPECIFICATION		CONTINUATION SHEET			
TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP11/05					
CUSTOMER	SLOT #	DEC #	System Type & Serial #	PRODUCT LINE	FISCAL MONTH
SYSTEM INSPECTED BY:	DATE	TIME IN	TIME OUT	DOWN TIME	TOTAL TIME
	1	1	1		
	2	2	2		
C.R. CHECKED BY:	DATE	DISPOSITION	CHECK TIME	DOWN TIME	TOTAL TIME
ACCEPTED BY:	Week & Date In	Week & Date Out	Run Time	Down Time	Total Time
CHECKOUT TECH.	Shipped By:	Ship Date	Ship Time	Total Acpt. Time	
<u>FAILURE REPORT</u>				TOTAL # OF FAILURES	
PROBLEMS:					
ITEM FAILED	F	A	R	WAIVERS	DESCRIPTION
1. Modules					
2. Test Equipment					
3. System					
4. Misc.					
5.					
6.					
7.					
8.					
9.					
SIZE <b>A</b>	CODE SP	NUMBER 11/05-0-6	REV		

# ENGINEERING SPECIFICATION



CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP11/05

ATTACHMENT #5

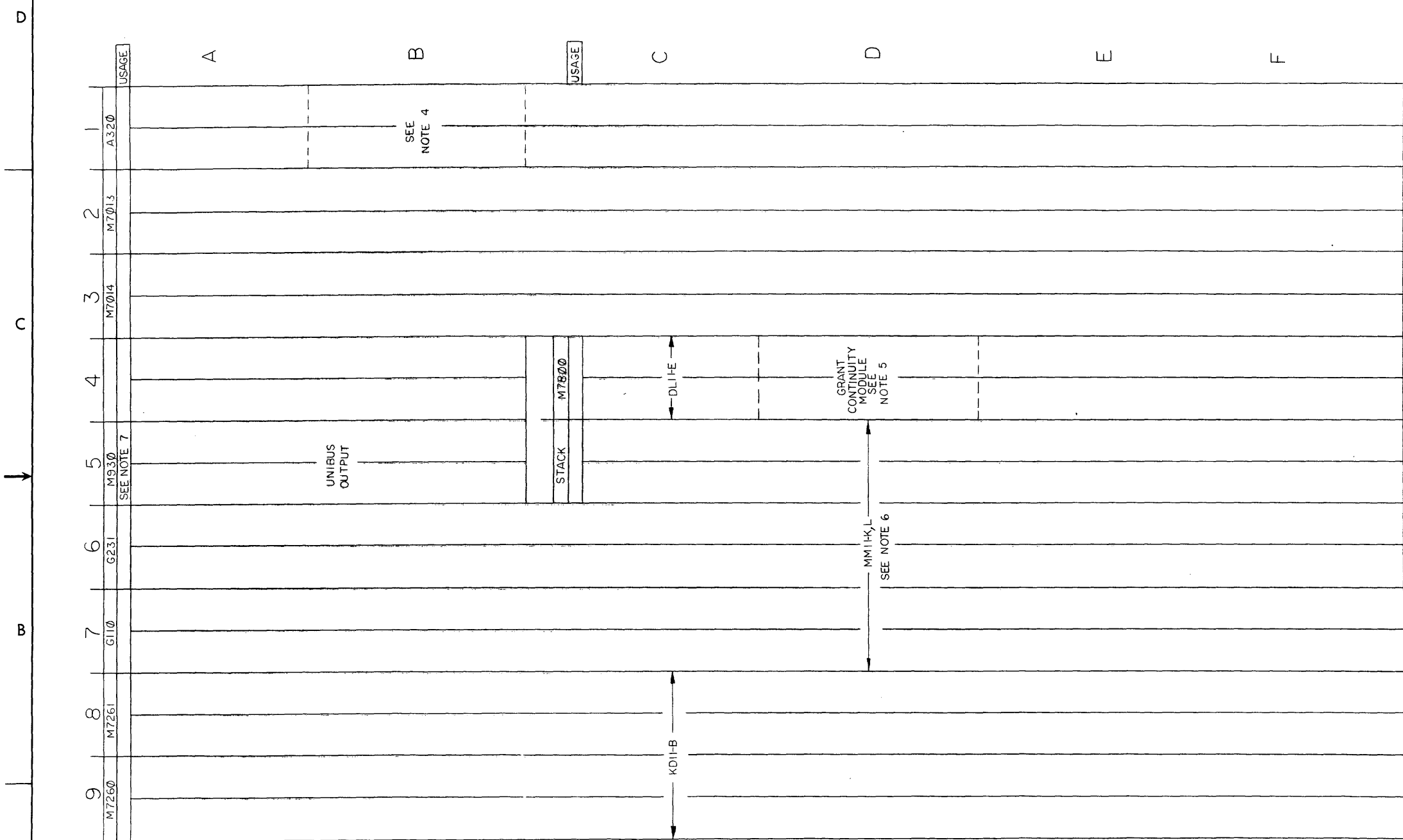
PDP11/05 ACCEPTANCE LOG (BASIC)

	Min Time	Date	Time In	Time Out	Pass	Fail	Time Up	Time Down
1. Initial Verification								
2. Mechanical Inspection								
3. Module Inspection								
4. Power and Ground Check								
5. Voltage Variation								
6. Quick Verify								
7. Burn-in Start								
Burn-in Recycle 1								
Burn-in Recycle 2								
Burn-in Complete								
8. Console Test, Key & Lock Test								
9. Paper Tape Read								
10. Unibus Test								
11. Electrical Acceptance								
12. 50 Cycle Conversion								
13. Final Inspection								
14. Software Check for Completness								

SIZE A	CODE SP	NUMBER 11/05-0-6	REV
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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.

- NOTES:**
- SUPPLIED WITH VT40 ASSEMBLY. SEE DWG. NO. A-PL-VT40-0-0.
  - SUPPLIED WITH PDP1105. SEE DWG. NO. D-MU-1105-0-0 FOR FURTHER INFORMATION.
  - ASYNC LINE INTERFACE IS OFFERED AS OPTION WITH GT40. SEE DWG. NO. A-PL-GT40-0-0.
  - THIS SLOT IS WIRED FOR THE KM11 LIGHT ED. FOR DEBUGGING OF THE 1105 CPU. REMOVE A320 MODULE TO USE THIS SLOT. REFER TO DWG. NO. A-55-5509081-0-9 FOR PROPER LIGHT BOARD OVERLAY INFORMATION.
  - PREWIRED MODULE SLOT FOR SMALL PERIPHERAL OPTIONS. WITH NO OPTIONS INSTALLED, BUS GRANT CONTINUITY IS PROVIDED BY G727 MODULE IN LOCATION D04. THE G727 MODULE IS REMOVED WHEN A SMALL PERIPHERAL OPTION IS INSTALLED.
  - IF MM11-K, STACK IS H213. IF MM11-L, STACK IS H214.
  - BEFORE THE 1105 IS CONNECTED TO OTHER SYSTEM OPTIONS, THE M930 BUS TERMINATOR IS MOVED TO THE END SYSTEM OPTION UPON INTERCONNECTION.



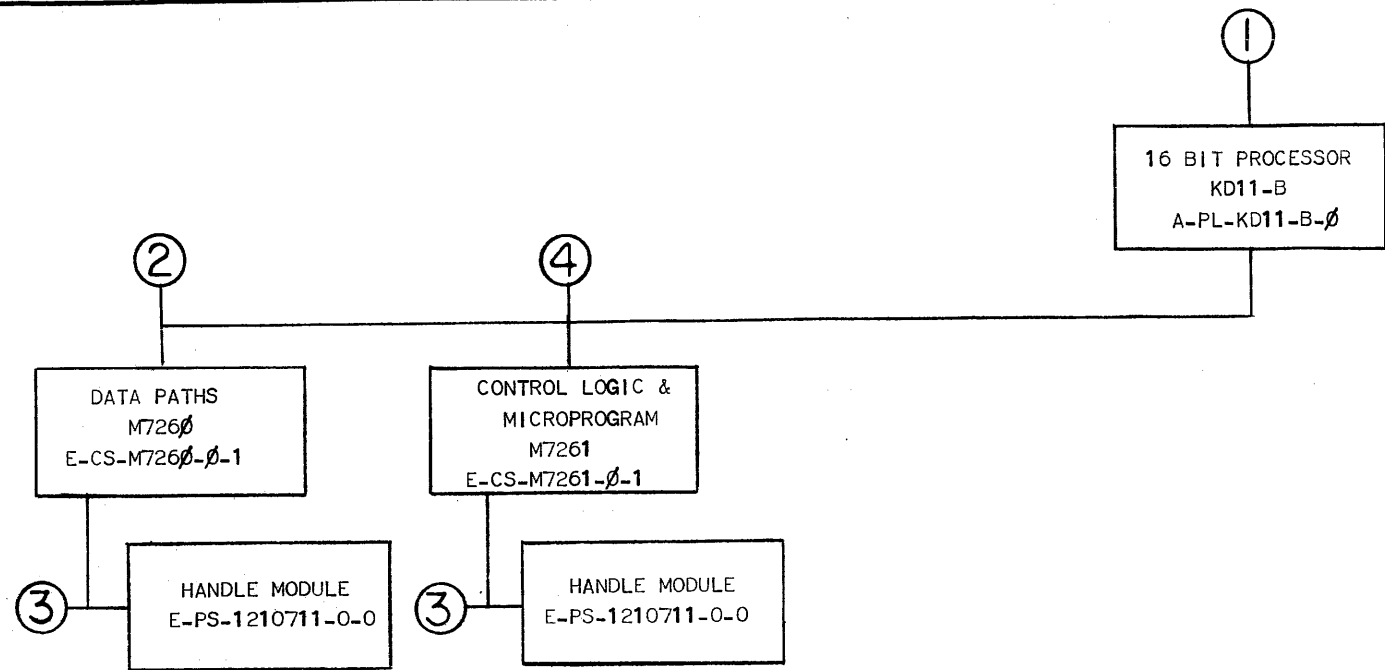
SEE NOTE	REF	DESCRIPTION	PART NO.	QTY.
2	REF	UNIBUS TERMINATOR	M930	12
3	REF	ASYNC LINE INTERFACE	M7800	11
2	REF	CPU DATA PATH	M7261	10
	REF	CPU CONTROL	M7260	9
1	REF	TERM., BUS CONT. & BOOTSTRAPS	M7014	8
1	REF	DISPLAY CONT. AND CHAR. GEN.	M7013	7
2	REF	MEMORY DRIVERS	G231	6
	REF	MEMORY CONTROL	G110	5
	REF	8 K MEMORY STACK	H214	4
1	REF	4 K MEMORY STACK	H213	3
	REF	GRANT CONTINUITY	G727	2
1	REF	VECTOR GEN. AND ANALOG	A320	1

FIRST USED ON OPTION/MODEL		VT40	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST						
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN	DATE	digital EQUIPMENT CORPORATION		
DECIMALS		CHKD.	DATE	MAYNARD MASSACHUSETTS		
XXX - .005	ANGLES	ENG	DATE	TITLE		
YY - .01	±0° 30'	PROJ. ENG.	DATE	MODULE		
X - .1		PROD. V.M.	DATE	UTILIZATION		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY						
MATERIAL	NEXT HIGHER ASSY.					
FINISH	B-DL-VT40	SIZE CODE	NUMBER	REV.		
	SCALE	D MU	VT40-0-1			
	SHEET 1 OF 1	DIST.				

BRUNNING 40-107 15968  
 REVISIONS  
 CHANGE NO. REV.  
 CHK







TITLE	SHEET ? OF 3	SIZE CODE	NUMBER	REV
16 BIT PROCESSOR KD11-B		B DD	KD11-B	C





## NOTES ON NOTATION:

1. MICROROUTINES BEGIN WITH A COMMENT THE FIRST CHARACTER OF WHICH IS '#',
2. ALL OTHER COMMENTS BEGIN WITH '//',
3. R1N1 REFERS SCRATCH PAD REGISTER N, R171 IS ALSO REFERRED TO AS 'PC',
4. R1S1 REFERS TO THAT REGISTER SPECIFIED IN THE SOURCE PORTION OF THE CURRENT INST, (IR<119>). LIKEWISE, R1D1 REFERS TO THAT REG SPECIFIED IN THE DESTINATION PORTION OF THE CURRENT INST, (IR<210>),
5. K1N1 REFERS TO THAT LOCATION OF THE CONSTANTS CHIP CONTAINING THE CONSTANT N,
6. 'BUT' STANDS FOR 'BRANCH ON MICRO TEST',

```

LOC  NXT  * INSTRUCTION FETCH
262  053  F=1  R=PC1 DAT1
263  365  F=2  R=PC+2
365  364  F=3  PC=81 CKOFF
364  061  F=4  B=IR*UNIBUS DATA
261  001  F=5  B=8 SEX; BUT IR DECODE
/ IF DOUBLE OP INST GOTO S0=1 THRU S7=1 DEPENDING ON SOURCE MODE
/ IF SINGLE OP INST GOTO D0=1 THRU D7=1 DEPENDING ON DEST MODE (INCLUDING JSR)
/ IF BRANCH, CHANGE PC GOTO B=1
/ IF CLEAR OR SET COND CODE(S) GOTO CCM=1
/ IF INST=RT1 GOTO R1=1
/ IF INST=RT2 GOTO R2=1
/ IF INST=WAIT GOTO W=1
/ IF INST=HALT GOTO H=1
/ IF INST=RESET GOTO RST=1
/ IF INST=EMT GOTO E=1
/ IF INST=BREAKPOINT TRAP GOTO BT=1
/ IF INST=TRAP GOTO T=1
/ IF RESERVED INST (NONE OF THE ABOVE) GOTO RT=1

```

## K-MP-KD-1181 MICROPROGRAM FLOW REV, A

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```

LOC  NXT  * SOURCE MODE 0 (REGISTER), GET SOURCE DATA
201  007  S0=1  R=RS1 FROM F=5 VIA BUT IR DECODE IR<119>=0
007  001  S0=2  R=RS1+1+BYTE; BAR
/ IF IR<513> =0 GOTO D0=1
/ IF IR<513> =1  D1=1
/ IF IR<513> =2  D2=1
/ IF IR<513> =3  D3=1
/ IF IR<513> =4  D4=1
/ IF IR<513> =5  D5=1
/ IF IR<513> =6  D6=1
/ IF IR<513> =7  D7=1

```

```

LOC  NXT  * SOURCE MODE 1 (REG; DEFERRED) GET SOURCE DATA
203  244  S1=1  R=RS1 FROM F=5 VIA BUT IR DECODE IR<119>
/ IF IR DECODE IR<119>=0
/ IF IR DECODE IR<119>=1  S3=5
/ IF IR DECODE IR<119>=2  S6=5
244  007  S1=2  B=UNIBUS DATA; BUT BYTE; GOTO S0=2
/ IF ODD BYTE GOTO S80=1
/ IF EVEN BYTE GOTO SBE=1
/ IF NOT BYTE FALL THROUGH TO S0=2

```

```

LOC  NXT  * SOURCE MODE 2 (AUTO=INC;) GET SOURCE DATA
205  301  S2=1  R=RS1 FROM F=5 VIA BUT IR DECODE IR<119>=2
301  014  S2=2  R=RS1+1+BYTE; BAR
014  244  S2=3  R=RS1 FROM S4=1 VIA GOTO
/ GET TO S2=3 FROM S4=1 VIA GOTO
/ GET TO S2=3 FROM S4=1 VIA GOTO S1=2

```

```

LOC  NXT  *SOURCE MODE 3 (AUTO=INC DEFERRED) GET SOURCE DATA
207  016  S3=1  R=RS1 FROM F=5 VIA BUT IR DECODE IR<119>=3
016  017  S3=2  R=RS1+2

```

```

/ GET TO S3=3 FROM S5=1 VIA GOTO
017 134 S3=3 R{S}B{I} CKOFF
/ GET TO S3=4 FROM S7=5 VIA GOTO
134 274 S3=4 B=UNIBUS DATA
274 244 S3=5 BA=B{I} DAT{I} CKOFF{I} GOTO S1=2{I} ALBYT

LOC NXT * SOURCE MODE 4 (AUTO=DEC) GET SOURCE DATA
211 014 S4=1 B,BA=RC{S}1=BYTE,BA{I} DAT{I} ENABOVER{I} GOTO S2=3{I} ALBYT

```

```

LOC NXT * SOURCE MODE 5 (AUTO=DEC DEFERRED) GET SOURCE DATA
/ GET TO S6=1 FROM F=5 VIA BUT IR DECODE IR<119>=5
213 047 S5=1 B,BA=RC{S}2{I} DAT{I}(MUST BE AN EVEN ADDRESS HERE){I} ENABOVER{I} GOTO S3=3

```

```

LOC NXT * SOURCE MODE 6 (INDEXED) GET SOURCE DATA
/ GET TO S6=1 FROM F=5 VIA BUT IR DECODE IR<119>=6
025 025 S6=1 BA=PC{I} DAT{I}(MUST BE EVEN ADDRESS HERE)
026 026 S6=2 B=PC=2
027 027 S6=3 PC=B{I} CKOFF
027 030 S6=4 B=UNIBUS DATA
030 244 S6=5 BA=B=RC{S}1{I} DAT{I} CKOFF{I} GOTO S1=2{I} ALBYT

```

```

LOC NXT * SOURCE MODE 7 (INDEXED DEFERRED) GET SOURCE DATA
/ GET TO S7=1 FROM F=5 VIA BUT IR DECODE IR<119>=7
217 032 S7=1 BA=PC{I} DAT{I}(MUST BE AN EVEN ADDRESS HERE)
032 033 S7=2 B=PC=2
033 034 S7=3 PC=B{I} CKOFF
034 035 S7=4 B=UNIBUS DATA
035 134 S7=5 BA=B=RC{S}1{I} DAT{I}(MUST BE AN EVEN ADDRESS){I} CKOFF{I} GOTO S3=4

```

```

LOC NXT * SOURCE BYTE ODD
/ GET TO S8=1 FROM S1=2 VIA BUT BYTE (BYTE INST, AND SOURCE DATA ODD ADDR)
067 346 S8=1 SHIFT B RIGHT{I} F SHIFT
346 324 S8=2 SHIFT B RIGHT{I} F SHIFT
324 340 S8=3 SHIFT B RIGHT{I} F SHIFT
340 361 S8=4 SHIFT B RIGHT{I} F SHIFT
361 050 S8=5 SHIFT B RIGHT{I} F SHIFT
050 020 S8=6 SHIFT B RIGHT{I} F SHIFT
020 052 S8=7 SHIFT B RIGHT{I} F SHIFT
052 047 S8=8 SHIFT B RIGHT{I} GOTO SBE=1

```

```

LOC NXT * SOURCE EVEN BYTE
/ GET TO SBE=1 FROM S8=8 VIA GOTO
/ GET TO SBE=1 FROM S1=2 VIA BUT BYTE; (BYTE INST AND SOURCE DATA EVEN ADDR)
/ GET TO SBE=1 FROM S0=1 VIA BUT BYTE; (BYTE INST,)
047 001 SBE=1 R{I}J{B} SEX{I} BUT DESTINATION
/ IF R{I}J{B} SEX{I} =0 GOTO D0=1
/ " " " " " " D1=1
/ " " " " " " D2=1
/ " " " " " " D3=1
/ " " " " " " D4=1
/ " " " " " " D5=1
/ " " " " " " D6=1
/ " " " " " " D7=1

```

```

LOC NXT * DEST, MODE 0 (REGISTER), GET DEST DATA, OP, AND REPLACE
/ GET TO D0=1 FROM S0=2 VIA BUT DESTINATION (IR<512>=0)
/ GET TO D0=1 FROM SBE=1 VIA BUT DESTINATION (IR<513>=0)
101 154 D0=1 B=RC{I} BUT MOVE
/ IF INST=MOVE,BAR (OTHER THAN MOVE) AND BYTE GOTO D0=1
/ IF INST=MOVE AND BYTE GOTO M8=0
/ IF INST=MOVE AND BYTE,BAR GOTO D0=3A
/ IF INST=MOVE,BAR AND BYTE,BAR FALL THROUGH TO D0=2
157 142 D0=2 R{I}J{B} BUT UNARY
/ IF INST=JMP OR JSR GOTO ERT=1 (ILLEGAL INST, TRAP)
/ IF INST=SWAB GOTO S81=1
/ IF INST=OTHER UNARY{CLR,COM,INC,DEC,NEG,ADC,SBC,TST,ROR,ROL,ASR,ASL} GOTO U1=1
/ GET TO D0=3 FROM U1=1 VIA GOTO
/ GET TO D0=3 FROM D0=1 VIA BUT BYTE (INST=MOVE AND BYTE,BAR)

```

```

192 332 04=3  B=RC10J OP B; BUT NONMOD
/ SEE DESCRIPTION OF AUXILIARY ALU CONTROL (AUX CONTROL)
/ FOR MORE DETAILS ON WHAT /OP/ ACCOMPLISHES
/ THERE EXISTS A D03=A WHICH IS IDENTICAL TO D0=3 EXCEPT LOC#155
/ GET TO D0=3A FROM S01=8 VIA GOTO
/ IF NONMOD GOTO B2=2 (BUT SERVICE)
/ IF NOT NONMOD FALL THROUGH TO D0=4
/ GET TO D0=4 FROM R1=6 VIA GOTO
D0=4  R1=6B; BUT SERVICE
/ PRIORITIES ARE LISTED HIGHEST TO LOWEST
/ IF T BIT TRAP GOTO B7=1
/ IF STACK OVERFLOW GOTO ERTEA
/ IF POWERFAIL GOTO PF=1
/ IF BR7 GOTO BG=1
/ IF BR6 GOTO RG=1
/ IF INTERNAL LINE CLOCK GOTO LC=1
/ IF BR5 GOTO BG=1
/ IF BR4 GOTO BG=1
/ IF UART RECEIVE GOTO URTR
/ IF UART TRANSMIT GOTO URTX
/ IF CONSOLE STOP GOTO H=1
/ IF NONE OF THE ABOVE GOTO F=1

```

```

LOC NXT * DEST, MODE 1 (REG,DEFERRED) GET DEST DATA, OP, AND REPLACE
/ GET TO D1=1 FROM S0=2 VIA BUT DESTINATION (IR<5:3>=1)
/ GET TO D1=1 FROM S0=1 VIA BUT DESTINATION (IR<5:3>=1)
193 200 01=1  B,BA=RC0J; DATIP; BUT JSRMP; ALBT) CKOFF
/ NOTE DATA IN PAUSE HERE
/ IF INST=JMP GOTO J1=1
/ IF INST=JSR GOTO J2=1
/ IF INST NOT JMP OR JSR FALL THROUGH TO D1=2
/ GET D0 D1=2 FROM D2=3 VIA GOTO
/ GET TO D1=2 FROM D3=5 VIA GOTO
/ SET TO D1=2 FROM D6=5 VIA GOTO
200 210 01=2  B=UNIBUS DATA; BUT BYTE
/ IF ODD BYTE GOTO D0=1
/ IF EVEN BYTE GO TO DE=1
/ IF NOT BYTE FALL THROUGH TO D1=3
210 143 01=3  R111=6B; BUT UNARY
/ IF INST=SWAB GOTO S02=1
/ IF INST=OTHER UNARY (CLR, COM, INC, DEC, NEG, ADD, SBC, TST, ROR, ROL, ASR, ASL) GOTO U2=1
/ GET TO D1=4 FROM DE=1 VIA BUT UNARY (NON UNARY)
/ GET TO D1=4 FROM U2=1 VIA GOTO
/ GET TO D1=4 FROM S02=8 VIA GOTO
163 334 01=4  B=RC10J OP B; BUT NONMOD
/ SEE DESCRIPTION OF AUXILIARY ALU CONTROL (AUX CONTROL)
/ FOR MORE DETAILS ON WHAT /OP/ ACCOMPLISHES

```

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```

/ IF NONMOD GOTO B2=2 (BUT SERVICE)
/ IF NOT NONMOD FALL THROUGH TO D1=5
334 065 01=5  DATO; ALBYT; CKOFF
/ GET TO D1=6 FROM D0=18 VIA GOTO
065 305 01=6  DRIVERS=R; GOTO S2=2 (BUT SERVICE)

```

```

LOC NXT * DEST MODE 2 (AUTO-INC) GET DEST DATA, OP AND REPLACE
/ GET TO D2=1 FROM S0=2 VIA BUT DESTINATION (IR<5:3>=2)
105 331 02=1  RA=RC0J; DATIP; ALBYT
/ NOTE DATA IN PAUSE HERE
331 341 02=2  F=RC0J+1+BYTE, BAR
/ GET TO D2=3 FROM D4=1 VIA GOTO
341 200 02=3  RC0J=6; BUT JSRMP; GOTO D1=2; CKOFF
/ IF INST=JMP GOTO J1=1
/ IF INST=JSR GOTO J2=1
/ IF INST NOT JMP OR JSR FALL THROUGH TO D1=2

```

```

LOC NXT * DEST MODE 3 (AUTO-INC DEFERRED) GET DEST DATA, OP AND REPLACE
/ GET TO D3=1 FROM S0=2 VIA BUT DESTINATION (IR<5:3>=3)
107 160 03=1  RA=RC0J; DATI
160 070 03=2  R=RC0J+2
/ GET TO D3=3 FROM D5=1 VIA GOTO
070 071 03=3  RC0J=8; CKOFF
/ GET TO D3=4 FROM D7=5 VIA GOTO
071 072 03=4  R=UNIBUS DATA
072 200 03=5  RA=6; DATIP; BUT JSRMP; GOTO D1=2; ALBYT; CKOFF
/ NOTE DATA IN PAUSE HERE
/ IF INST=JMP GOTO J1=1
/ IF INST=JSR GOTO J2=1
/ IF INST NOT JMP OR JSR FALL THROUGH TO D1=2

```

```

LOC NXT * DEST MODE 4 (AUTO-DEC) GET DEST DATA, OP AND REPLACE
/ GET TO S4=1 FROM S0=2 VIA BUT DESTINATION (IR<5:3>=4)
111 341 04=1  R,RA=RC0J-1+BYTE, PAR; DATIP; ENAFOVER; GOTO D2=3; ALBYT

```

```

LOC NXT * DEST MODE 5 (AUTO=DEC DEFERRED) GET DEST DATA, OP, AND REPLACE
/ GET TO D5=1 FROM S0=2 VIA BUT DESTINATION (IR<513>=5)
/ GET TO D5=1 FROM SBE=1 VIA BUT DESTINATION (IR<513>=5)
113 070 D5=1 B,RA*RC0J=2I DATI ENABOVERI GOTO D3=3

```

```

LOC NXT * DEST MODE 6 (INDEXED) GET DTA,OP, AND REPLACE
/ GET TO D6=1 FROM S0=2 VIA BUT DESTINATION (IR<513>=6)
/ GET TO D6=1 FROM SBE=1 VIA BUT DESTINATION (IR<512>=6)
115 075 D6=1 BA*PCJ DATI
075 077 D6=2 B*PC+2
077 057 D6=3 PC=BI CKOFF
057 300 D6=4 B=UNIBUS DATA
300 200 D6=5 B,BA*B*RC0J DATIPI BUT JSRMPJ GOTO D1=2I ALBYTI CKOFF
/ NOTE DATA IN PUASE HERE
/ IF INST=JMP GOTO J1=1
/ IF INST=JSR GOTO J2=1
/ IF INST NOT JMP OR JSR FALL THROUGH TO D1=2

```

```

LOC NXT * DEST MODE 7 (INDEXED DEFERRED) GET DEST DATA,OP, AND REPLACE
/ GET TO D7=1 FROM S0=2 VIA BUT DESTINATION (IR<513>=7)
/ GET TO D7=1 FROM SBE=1 VIA BUT DESTINATION (IR<512>=7)
117 310 D7=1 BA*PCJ DATI
310 104 D7=2 B*PC+2
104 320 D7=3 PC=BI CKOFF
320 106 D7=4 B=UNIBUS DATA
106 071 D7=5 BA*B*RC0J DATI CKOFFI GOTO D3=4

```

```

LOC NXT * DESTINATION MODE 0, BYTE
/ GET TO D0=1 FROM D0=1 VIA BUT BYTE (BYTE INST AND MOVE,IBAR)
156 144 D0=1 R<11>I,B*B SEXJ BUT UNARY
/ IF UNARY OTHER THAN JSR, JMP, OR SWAB (CLR,COM,INC,DEC,NEG,ADC,SBCT,TST,ROR,ROL,ASR,ASL) GOTO U3=1

```

```

164 304 / IF NOT UNARY FALL THROUGH TO D0=2
D0=2 B*RC10J OP BI BUT NONMOD
/ SEE DESCRIPTION OF AUXILIARY ALU CONTROL (AUX CONTROL)
/ FOR MORE DETAILS ON WHAT TOP, ACCOMPLISHES

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```

304 040 / IF NONMOD GOTO B2=2 (SERVICE)
/ IF NOT NONMOD FALL THRU TO D0=3
D0=3 R<DJK7I>=BI BUT SERVICEI GOTO F=1
/ PRIORITIES ARE LISTED HIGHEST TO LOWEST
/ T BIT TRAP GOTO BT=1
/ IF STACK OVERFLOW GOTO ERTIA
/ IF POWER FAIL GOTO PFE=1
/ IF BR7 GOTO BG=1
/ IF BR6 GOTO BG=1
/ IF INTERNAL LINE CLOCK GOTO LC=1
/ IF BR5 GOTO BG=1
/ IF BR4 GOTO BG=1
/ IF UART RECEIVE GOTO URTR
/ IF UART TRANSMIT GOTO URTX
/ IF CONSOLE STOP GOTO H=1
/ IF NONE OF THE ABOVE GOTO F=1

```

```

LOC NXT * DESTINATION ODD BYTE
/ GET TO D0=1 FROM D1=2 VIA BUT BYTE (BYTE INST AND ODD ADDR)
270 123 D0=1 SHIFT B RIGHTI F SHIFT
123 124 D0=2 SHIFT B RIGHTI F SHIFT
124 125 D0=3 SHIFT B RIGHTI F SHIFT
125 126 D0=4 SHIFT B RIGHTI F SHIFT
126 127 D0=5 SHIFT B RIGHTI F SHIFT
127 130 D0=6 SHIFT B RIGHTI F SHIFT
130 131 D0=7 SHIFT B RIGHTI F SHIFT
131 132 D0=8 SHIFT B RIGHT
132 145 D0=9 R<11>I,B*B SEXJ BUT UNARY
/ IF UNARY OTHER THAN JSR, JMP, OR SWAB (CLR,COM,INC,DEC,NEG,ADC,SBCT,TST,ROR,ROL,ASR,ASL) GOTO U4=1
/ IF NOT UNARY FALL THROUGH TO D0=10
D0=10 B*RC10J OP BI BUT NONMOD
/ SEE DESCRIPTION OF AUXILIARY ALU CONTROL (AUX CONTROL)
/ FOR MORE DETAILS ON WHAT TOP, ACCOMPLISHES
/ IF NONMOD GOTO B2=2 (BUT SERVICE)
/ IF NOT NONMOD FALL THROUGH TO D0=11
342 135 D0=11 SHIFT B LEFTI F SHIFT
135 136 D0=12 SHIFT B LEFTI F SHIFT
136 137 D0=13 SHIFT B LEFTI F SHIFT
137 140 D0=14 SHIFT B LEFTI F SHIFT
140 141 D0=15 SHIFT B LEFTI F SHIFT
141 142 D0=16 SHIFT B LEFTI F SHIFT
142 143 D0=17 SHIFT B LEFTI F SHIFT
143 065 D0=18 SHIFT B LEFTI DATOJ CKOFFI GOTO D1=6I ALBYT

```



```

LOC NXT * DESTINATION EVEN BYTE
250 163 / GET TO DE=1 FROM DI=2 VIA BUT BYTE (BYTE INST AND EVEN ADDR)
/ R=113=B SEXI GOTO DI=41 BUT UNARY
/ IF UNARY OTHER THAN JSR, JMP, OR SWAB (CLR, COM, INC, DEC, SBC, TST, ROR, ASR, ASL) GOTO U5=1
/ IF NOT UNARY FALL THROUGH TO DI=4

LOC NXT * UNARY OPERATORS GET SINGLE OPERAND IN B AND R[10]
/ CKOFF IN EACH OF THE FOLLOWING (U1=1, U2=1, U3=1, U4=1, AND U5=1)
/ GIVES THE AUX CONTROL SUFFICIENT TIME TO DO ITS THING,
/ THAT IS, REMAIN IN CURRENT STATE (MICRO STEP) FOR TWO
/ PROCESSOR CLOCK PERIODS SO THAT THE CONDITION CODE LOGIC
/ HAS SUFFICIENT TIME TO SETTLE.
352 162 U1=1 R[10]=B) CKOFF) GOTO D0=3
/ GET TO U2=1 FROM DI=3 VIA BUT UNARY (INST=CLR, COM, ..., ASL) SEE U1=1
353 163 U2=1 R[10]=B) CKOFF) GOTO D1=4
/ GET TO U3=1 FROM D0=1 VIA BUT UNARY (INST=CLR, COM, ..., ASL) SEE U1=1
354 164 U3=1 R[10]=B) CKOFF) GOTO D0=2
/ GET TO U4=1 FROM D0=9 VIA BUT UNARY (INST=CLR, COM, ..., ASL) SEE U1=1
355 165 U4=1 R[10]=B) CKOFF) GOTO D0=10
/ GET TO U5=1 FROM DE=1 VIA BUT UNARY (INST=CLR, COM, ..., ASL) SEE U1=1
373 163 U5=1 R[10]=B) CKOFF) GOTO D1=4

LOC NXT * MOV INST
154 240 / SET TO MB=0 FROM D0=1 VIA BUT MOVE (INST=MOVE AND BYTE)
MB=0 CKOFF
/ CKOFF IN MB=0 GIVES THE AUX CONTROL SUFFICIENT TIME TO DO ITS THING,
/ THAT IS, REMAIN IN CURRENT STATE (MICRO STEP) FOR TWO
/ PROCESSOR CLOCK PERIODS SO THAT THE CONDITION CODE LOGIC
/ HAS SUFFICIENT TIME TO SETTLE.
240 152 MB=1 B[R[10]
152 040 MB=2 R[D]=B SEXI) BUT SERVICE
/ PRIORITIES ARE LISTED HIGHEST TO LOWEST
/ IF T BIT TRAP GOTO BT=1
/ IF STACK OVERFLOW GOTO ERT1A
/ IF POWER FAIL GOTO PF=1

LOC NXT * BR7 GOTO BG=1
/ IF BR6 GOTO BG=1
/ IF INTERNAL LINE CLOCK GOTO LC=1
/ IF BR5 GOTO BG=1
/ IF BG4 GOTO BG=1
/ IF UARY RECEIVE GOTO URTR
/ IF UARY TRANSMIT GOTO URTX
/ IF CONSOLE STOP GOTO H=1
/ IF NONE OF THE ABOVE GOTO F=1

LOC NXT * BRANCH, CHANGE PC
015 147 B=1 SHIFT B LEFT
147 146 B=2 B=PC+B
146 040 B=3 PC=B) BUT SERVICE
/ PRIORITIES ARE LISTED HIGHEST TO LOWEST
/ IF T BIT TRAP GOTO BT=1
/ IF STACK OVERFLOW GOTO ERT1A
/ IF POWER FAIL GOTO PF=1
/ IF BR6 GOTO BG=1
/ IF INTERNAL LINE CLOCK GOT LC=1
/ IF BR5 GOTO BG=1
/ IF BR4 GOTO BG=1
/ IF UARY RECEIVE GOTO URTR
/ IF UARY TRANSMIT GOTO URTX
/ IF CONSOLE STOP GOTO H=1
/ IF NONE OF THE ABOVE GOTO F=1

LOC NXT * CONDITION CODE MASK (FOR BOTH SET AND CLEAR)
151 350 CCH=1 P=8 AND K[17]
350 112 CCM=2 RUT DEST
/ IF INST= SET, GO TO SC=1
/ IF INST= CLEAR, GOTO CC=1

LOC NXT * CLEAR CONDITION CODES
112 040 CC=1 P=8 AND (B, BAR)) BUT SERVICE
/ THIS EFFECTIVELY CLEARS THOSE BITS OF THE PSW WHICH ARE SET

```

```

/ IN THE B REG, B:BAR IS B REGISTER COMPLEMENTED;
/ PRIORITIES ARE LISTED HIGHEST TO LOWEST
/ IF T BIT BRAP GOTO BT=1
/ IF STACK OVERFLOW GOTO ERT1A
/ IF POWER FAIL GOTO PF=1
/ IF BR7 GOTO BG=1
/ IF BR6 GOTO BG=1
/ IF INTERNAL LINE CLOCK GOTO LC=1
/ IF BR5 GOTO BG=1
/ IF BR4 GOTO BG=1
/ IF UART RECEIVE GOTO URTR
/ IF UART TRANSMIT GOTO URTX
/ IF CONSOLE STOP GOTO H=1
/ IF NONE OF THE ABOVE GOTO F=1

```

```

LOC 116
NXT * SET CONDITION CODES
SC=1 PSM=PSM OR BI BUT SERVICE
/ PRIORITIES ARE LISTED HIGHEST TO LOWEST
/ IF T BIT TRAP GOTO BT=1
/ IF STACK OVERFLOW GOTO ERT1A
/ IF POWER FAIL GOTO PF=1
/ IF BR7 GOTO BG=1
/ IF BR6 GOTO BG=1
/ IF INTERNAL LINE CLOCK GOTO LC=1
/ IF BR5 GOTO BG=1
/ IF BR4 GOTO BG=1
/ IF UART RECEIVE GOTO URTR
/ IF UART TRANSMIT GOTO URTX
/ IF CONSOLE STOP GOTO H=1
/ IF NONE OF THE ABOVE GOTO F=1

```

```

LOC 166
NXT * SWAB, MODE 0
/ GET TO SB1=1 FROM D0=2 VIA BUT UNARY (INST=SWAB AND MODE=0)
/ ROTATE LEFT ACCOMPLISHED VIA ASR
SB1=1 ROTATE B LEFT; F SHIFT
SB1=2 ROTATE B LEFT; F SHIFT
SB1=3 ROTATE B LEFT; F SHIFT
SB1=4 ROTATE B LEFT; F SHIFT
SB1=5 ROTATE B LEFT; F SHIFT
SB1=6 ROTATE B LEFT; F SHIFT
SB1=7 ROTATE B LEFT; F SHIFT
SB1=8 ROTATE B LEFT; GOTO D0=3A

```

```

LOC 167
NXT * SWAB, NOT MODE 0
/ GET TO SB2=1 FROM D1=3 VIA BUT UNARY (INST=SWAB)
/ ROTATE LEFT ACCOMPLISHED VIA ASR
SB2=1 ROTATE B LEFT; F SHIFT
SB2=2 ROTATE B LEFT; F SHIFT
SB2=3 ROTATE B LEFT; F SHIFT
SB2=4 ROTATE B LEFT; F SHIFT
SB2=5 ROTATE B LEFT; F SHIFT
SB2=6 ROTATE B LEFT; F SHIFT
SB2=7 ROTATE B LEFT; F SHIFT
SB2=8 ROTATE B LEFT; GOTO D1=4

```

```

LOC 204
NXT * JMP
/ GET TO J1=1 FROM D1=1 VIA BUT JSRMP (INST=JMP)
/ GET TO J1=1 FROM D2=3 VIA BUT JSRMP (INST=JMP)
/ GET TO J1=1 FROM D3=5 VIA BUT JSRMP (INST=JMP)
/ GET TO J1=1 FROM D4=5 VIA BUT JSRMP (INST=JMP)
J1=1 NOP
/ J1=1 MUST BE A NOP BECAUSE FOLLOWING A GOTOFF, THE AMX WILL
/ BE FORCED TO TAKE DATA FROM THE UNIBUS;
J1=2 PC=BI BUT SERVICE
/ PRIORITIES ARE LISTED HIGHEST TO LOWEST
/ IF T BIT TRAP GOTO BT=1
/ IF STACK OVERFLOW GOTO ERT1A
/ IF POWER FAIL GOTO PF=1
/ IF BR7 GOTO BG=1
/ IF BR6 GOTO BG=1
/ IF INTERNAL LINE CLOCK GOTO LC=1
/ IF BR5 GOTO BG=1
/ IF BR4 GOTO BG=1
/ IF UART RECEIVE GOTO URTR
/ IF UART TRANSMIT GOTO URTX
/ IF CONSOLE STOP GOTO H=1
/ IF NONE OF THE ABOVE GOTO F=1

```

```

LOC  NXT  * JSR
          / GET TO J2=1 FROM D1=1 VIA BUT JSRMP (INST=JSR)
          / GET TO J2=1 FROM D2=3 VIA BUT JSRMP (INST=JSR)
          / GET TO J2=1 FROM D3=5 VIA BUT JSRMP (INST=JSR)
          / GET TO J2=1 FROM D4=4 VIA BUT JSRMP (INST=JSR)
212  261  J2=1  NOP
          / J2=1 MUST BE A NOP BECAUSE FOLLOWING A CKOFF, THE AMX WILL BE
          / FORCED TO TAKE DATA FROM THE UNIBUS,
261  262  J2=1A RC113=8
262  214  J2=2  B,BA=RC6J=2I ENABOVER
214  206  J2=3  RC6J=8I CKOFFI DATO
206  216  J2=4  DRIVERS=RSI
216  263  J2=5  B=PC
263  264  J2=6  RCSJ=8
264  265  J2=7  R=RC11J
265  040  J2=8  PC=8I BUT SERVICE
          / PRIORITIES ARE LISTED HIGHEST TO LOWEST
          / IF T BIT TRAP GOTO BT=1
          / IF STACK OVERFLOW GOT ERTIA
          / IF POWER FAIL GOTO PF=1
          / IF BR7 GOTO BG=1
          / IF BR6 GOTO BG=1
          / IF INTERNAL LINE CLOCK GOTO LC=1
          / IF BR5 GOTO BG=1
          / IF BR4 GOTO BG=1
          / IF UART RECEIVE GOTO URTR
          / IF UART TRANSMIT GOTO URTX
          / IF CONSOLE STOP GOTO H=1
          / IF NONE OF THE ABOVE GOTO F=1

```

```

LOC  NXT  * RTS
          / GET TO R1=1 FROM F=5 VIA BUT IR DECODE (INST=RTS)
005  221  R1=1  BA=RC6J DATI
221  222  R1=2  B=RC6J=2
222  223  R1=3  RC6J=8
223  224  R1=4  B=RLD3
224  225  R1=5  PC=8I CKOFF
225  332  R1=6  B=UNIBUS DATAI GOTO D0=4

```

```

LOC  NXT  * RTI
          / GET TO R2=2 FROM F=5 VIA BUT IR DECODE (INST=RTI)
227  230  R2=1  BA=RC6J DATI
230  231  R2=2  B=RC6J=2

```

```

231  232  R2=3  RC6J=8I CKOFF
232  234  R2=4  PC=UNIBUS DATA
          / THERE IS NO R2=5 (ANY MORE)
234  235  R2=6  BA=RC6J DATI
235  236  R2=7  B=RC6J=2
236  237  R2=8  RC6J=8I CKOFF
237  305  R2=9  PC=UNIBUS DATAI GOTO B2=2 (BUT SERVICE)

```

```

LOC  NXT  * WAIT
          / GET TO W=1 FROM F=5 VIA BUT IR DECODE (INST=WAIT)
          / GET TO W=1 FROM W=1 VIA GOTO IF BUT SERVICE IS FALSE
063  040  W=1  BUT SERVICE
          / THE MICRO PROGRAM WILL LOOP ON W=1 UNTIL SOME HIGHER
          / PRIORITY CONDITION IS RECOGNIZED BY THE 'BUT SERVICE' ROM SEE P101 ON
          / THE CONE PRINT,
          / PRIORITIES ARE LISTED HIGHEST TO LOWEST
          / IF T BIT TRAP GOTO BT=1
          / IF STACK OVERFLOW GOTO ERTIA
          / IF POWER FAIL GOT PF=1
          / IF BR7 GOTO BG=1
          / IF BR6 GOTO BG=1
          / IF INTERNAL LINE CLOCK GOTO LC=1
          / IF BR5 GOTO BG=1
          / IF BR4 GOTO BG=1
          / IF UART RECEIVE URTR
          / IF UART TRANSMIT TOTO URTX
          / IF CONSOLE STOP GOTO H=1
          / IF NONE OF THE ABOVE TOTO F=1

```

```

LOC  NXT  * HALT
          / GET TO H=1 FROM F=5 VIA BUT IR DECODE (INST=HALT)
          / GLT TO H=1 FROM BUT SERVICE
041  302  H=1  B=PC
          / DISPLAY PC IN LIGHTS BY PUTTING IT INTO B
          / GLT TO H=2 FROM CEI=3 VIA GOTO
          / GLT TO H=2 FROM CDI=5 VIA GOTO
          / GLT TO H=2 FROM CL=3 VIA GOTO
          / GLT TO H=2 FROM CL=3 VIA GOTO
302  300  H=2  BA=RC17J BUT SWITCH
          / THE BA IS LOADED HERE SO THAT THE ADDRESS WILL BE INCREMENTED BY +1 WHEN EXAMINING (DEPOSITING INTO) SUCCESSIVE CORE MEMORY,
          / AND BY +2 WHEN EXAMINING (DEPOSITING INTO) SUCCESSIVE CORE MEMORY,
          / IF START DEPRESSED GOTO CS=1
          / IF CONTINUE DEPRESSED GOTO CCS=1

```

```

/ IF EXAMINE (1 ST) GOTO CE1=1
/ IF EXAMINE (NOT 1 ST) GOTO CE2=1
/ IF DEPOSIT (1 ST) GOTO CD1=1
/ IF DEPOSIT (NOT 1 ST) GOT CD2=1
/ IF LOAD GOTO CL=1
/ IF NO SWITCHES ARE DEPRESSED LOOP ON H=2

```

```

LOC NXT * EMT TRAP (VECTOR LOC=30)
011 245 / GET TO ET=1 FROM F=5 VIA BUT IR DECODE (INST=EMT)
      ET=1 B=K[30]
      / GET TO ET=2 FROM BT=1 VIA GOTO
      / GET TO ET=2 FROM IT=1 VIA GOTO
      / GET TO ET=2 FROM T=1 VIA GOTO
      / GET TO ET=1 FROM RT=1 VIA GOTO
      / GET TO ET=2 FROM PP=1 VIA GOTO
      / GET TO ET=2 FROM PP=1 VIA GOTO
      ET=2 R[12]B
246 247 ET=3 B,BA=RC[6]21 ENABOVER
      / ET=4 HAS BEEN ELIMINATED
247 226 ET=5 R[6]B1 CKOFF1 DATO
      ET=6 DIRVERS=PS
248 251 ET=7 B,BA=RC[6]21 ENABOVER
249 252 ET=8 R[6]B1 CKOFF1 DATO
250 253 ET=9 DIRVERS=PC
251 254 ET=10 BA=RC[12] DAT11 CKOFF
252 255 ET=11 PC=UNIBUS DATA
253 256 ET=12 BA=RC[12]21 DAT11 CKOFF
254 257 ET=13 PS=UNIBUS DATA1 GOTO B2=2 (SERVICE)
255 305 ET=13 PS=UNIBUS DATA1 GOTO B2=2 (SERVICE)

```

```

LOC NXT * BREAKPOINT TRAP (VECTOR LOC=14) AND T BIT TRACE TRAP
      / GET TO BT=1 FROM ALL BUT SERVICE
045 245 / GET TO BT=1 FROM F=5 VIA BUT IR DECODE (INST=BREAKPOINT)
      BT=1 B=K[14] GOTO ET=2

```

```

LOC NXT * IOT (VECTOR LOC=20)
273 245 / GET TO IT=1 FROM F=5 VIA BUT IR DECODE (INST=IOT)
      IT=1 B=K[20] GOTO ET=2

```

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```

LOC NXT * TRAP (VECTOR LOC=34)
021 245 / GET TO T=1 FROM F=5 VIA BUT IR DECODE (INST=TRAP)
      T=1 B=K[34] GOTO ET=2

```

```

LOC NXT * RESERVED INST TRAP (VECTOR LOC=10)
001 245 RT=1 B=K[10] GOTO ET=2

```

```

LOC NXT * ERROR TRAP (BUS ERROR, STACK OVERFLOW, ILLEGAL INST) VECTOR LOC=4
      / THERE EXISTS ERT=1 (LOC=10) FOR BUS ERROR
      / THERE ALSO EXISTS ERT1A (LOC=46) FOR STACK OVERFLOW
      / ERT1A GOES TO ET2=2, A SEQUENCE WHICH DOESN'T HAVE THE
      / ENABOVER, WE DON'T WANT TO LOOK FOR STACK OVERFLOW WHILE
      / DOING THE STACK OVERFLOW TRAP, THE ET2=2 SEQUENCE REJOINS THE ET SEQUENCE AT ET=8
      / THERE ALSO EXISTS ERT1B (LOC=153) FOR ILLEGAL INST (JSR OR JMP, MODE 0)
010 245 ERT=1 B=K[4] GOTO ET=2

```

```

LOC NXT * CONSOLE START SWITCH
100 322 / GET TO CS=1 FOLLOWING RELEASE OF START SWITCH,
      CS=1 IR=ZERO
322 321 / CLOCKING THE IR TURNS ON THE RUN LIGHT
      CS=2 BA=BR[17]
321 040 CS=3 PC=BI BUT SERVICE
      / PRIORITIES ARE LISTED HIGHEST TO LOWEST
      / IF T BIT BRAP GOTO BT=1
      / IF STACK OVERFLOW GOTO ERT1A
      / IF POWER FAIL GOTO PP=1
      / IF BR7 GOTO BG=1
      / IF BR6 GOTO BG=1
      / IF BR5 GOTO BG=1
      / IF BR5 GOTO BG=1

```

```

/ IF BR4 GOTO BC=1
/ IF UART RECEIVE GOTO URTX
/ IF UART TRANSMIT GOTO URTX
/ IF CONSOLE STOP GOTO H=1
/ IF NONE OF THE ABOVE GOTO F=1

LOC NXT * CONSOLE EXAMINE SWITCH = FIRST TIME IN SEQUENCE (DON'T INC R(17))
317 307 / GET TO CE1=1 FROM H=2 VIA BUT SWITCH
      CE1=1 BA,B=RC(17) VIA GOTO
      / GET TO CE1=1 FROM CE2=2 VIA GOTO
      / DISPLAY ADDRESS BY PUTTING INTO THE B REGISTER WHILE EXAMINE IS DOWN
      / LOOP ON CE1=1 UNTIL SWITCH IS RELEASED
307 326 CE1=2 DATI CKOFF
326 302 CE1=3 R=UNIBUS DATAI GOTO H=2

```

```

LOC NXT * CONSOLE EXAMINE SWITCH = OTHER THAN FIRST IN SEQUENCE (INC R(17))
315 371 / GET TO CE2=1 FROM H=2 VIA BUT SWITCH
      CE2=1 B=RC(17)+2
371 317 / RC(17) IS IN BA FROM H=2, THIS WILL CAUSE +2 TO BECOME +1 WHEN EXAMINING REGISTERS,
      CE2=2 RC(17)+B) GOTO CE1=1

```

```

LOC NXT * CONSOLE DEPOSIT SWITCH = FIRST TIME IN SEQUENCE (DON'T INC R(17))
313 303 / GET TO CD1=1 FROM H=2 VIA BUT SWITCH
      / GET TO CD1=1 FROM CD2=2 VIA GOTO
      CD1=1 B=RC(17) BUT SWITCH
303 374 / LOOP ON CD1=1 UNTIL DEPOSIT SWITCH IS RELEASED
      CD1=2 BA=KE207) BARI DATI CKOFF
      / COMPLEMENT OF 207 = 177570 = SWITCH REGISTER ADDRESS
374 314 CD1=3 R=UNIBUS DATA
314 372 CD1=4 B=RC(17) DATOJ CKOFF
372 302 CD1=5 DRIVERS=8) GOTO H=2

```

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```

LOC NXT * CONSOLE DEPOSIT SWITCH = OTHER THAN FIRST IN SEQUENCE (INC R(17))
312 337 / GET TO CD2=1 FROM H=3) VIA BUT SWITCH
      CD2=1 B=RC(17)+2
337 313 / RC(17) IS IN BA, THIS WILL CAUSE +2 TO BECOME +1 WHEN DEPOSITING INTO REGISTERS
      CD2=2 RC(17)+B) GOTO CD1=1

```

```

LOC NXT * CONSOLE CONTINUE SWITCH
316 276 / GET TO CCS=1 FROM H=2 VIA BUT SWITCH
      CCS=1 R=PC
276 270 CCS=2 BUT SWITCH
272 062 / CLOCKING THE IR TURNS ON THE RUN LIGHT

```

```

LOC NXT * CONSOLE LOAD SWITCH
311 375 / GET TO CL=1 FROM H=2 VIA BUT SWITCH
      CL=1 B=KE207) BARI DATI CKOFF
      / COMPLEMENT OF 207 = 177570 = SWITCH REGISTER ADDRESS
375 367 CL=2 R=UNIBUS DATA
367 302 CL=3 RC(17)+B) GOTO H=2
      / CL=3 GOES TO H=2 VIA GOTO; IF LOAD IS STILL DEPRESSED, THE BUT
      / SWITCH IN H=2 WILL TAKE US BACK TO CL=1, THUS, AS LONG AS LOAD IS
      / DEPRESSED, CHANGES IN THE SWITCHES WILL SHOW UP IN THE B REG (LIGHTS) AND IN R(17);

```

```

LOC NXT * POWER FAIL (VECTOR LOC=24)
043 245 / GET TO PF=1 FROM SERVICE
      PF=1 B=KE24) GOTO ET=2

```

```

LOC NXT * RESTARTY FROM POWER FAIL (VECTOR LOC=24)
000 241 / GET TO RS=1 MYSTERIOUSLY AS POWER COMES UP ( NXT CHIPS; F092 AND F103 SHOWN ON THE CONF PRINT,
241 347 RS=1 B=KE24) DATI
      RS=1A CKOFF

```

```

347 074 / MUST DO CKOFF IN RS=1A BECAUSE OF CONFLICT BETWEEN
074 351 / CKOFF AND INIT CREATED BY CKOFF ASSOCIATED WITH AUX CONTROL
351 305 RS=2 PC=UNIBUS DATA
      RS=3 BA=K[24]J+2I DATI CKOFF
      RS=4 PS=UNIBUS DATAJ GOTO B2=2 (SERVICE)

```

```

LOC NXT * INTERRUPT SERVICING
325 246 / GET TO INT=1 FROM BG=2 VIA BUT INT (TRUE)
      INT=1 R[12]UNIBUS DATAJ SET SLAVESYNCJ GOTO ET=3

```

```

LOC NXT * BUS GRANT SERVICE
040 305 / GET TO B0=1 FROM BUT SERVICE
      BG=1 BUT INTERRUPTJ GOTO B2=2 (BUT SERVICE)
      / IF INTERRUPT GOTO INT=1
      / IF NO INTERRUPT FALL THROUGH TO B2=2

```

```

LOC NXT * NOP = BRANCH CONDITION NOT TRUE (PC UNCHANGED)
      B2=1 HAS BEEN ELIMINATED BECAUSE NEWI IS NO LONGER
      / GET TO B2=2A FROM D0=3 VIA BUT NONMOD (TRUE)
      / GET TO B2=2B FROM D1=4 VIA BUT NONMOD (TRUE)
      / GET TO B2=2C FROM D0=10 VIA BUT NONMOD (TRUE)
      / GET TO B2=2D FROM F=5 VIA BUT IR DECODE, BRANCH INST, CONDITION NOT TRUE
      / GET TO B2=2 FROM RST=1 VIA GOTO
      / GET TO B2=2 FROM D0=4 VIA GOTO
      / GET TO B2=2 FROM DB0=2 VIA BUT NONMOD (TRUE)
      / GET TO B2=2 FROM MB=2 VIA GOTO
      / GET TO B2=2 FROM CC=1 VIA GOTO
      / GET TO B2=2 FROM SC=1 VIA GOTO
      / GET TO B2=2 FROM J2=8 VIA GOTO
      / GET TO B2=2 FROM RS=10 VIA GOTO
      / GET TO B2=2 FROM EY=13 VIA GOTO
      B2=2 BUT SERVICE
      / PRIORITIES ARE LISTED HIGHEST TO LOWEST
      / IF T BIT TRAP GOTO BT=1
      / IF STACK OVERFLOW GOTO ERTIA
      / IF POWER FAIL GOTO PF=1
      / IF BR7 GOTO BG=1

```

```

305 040

```

```

      / IF BR6 GOTO BG=1
      / IF INTERNAL LINE CLOCK GOTO LC=1
      / IF BR5 GOTO BG=1
      / IF BR4 GOTO BG=1
      / IF UART RECEIVE GOTO URTR
      / IF UART TRANSMIT GOTO URTX
      / IF CONSOLE STOP GOTO H=1
      / IF NONE OF THE ABOVE GOTO F=1

```

```

LOC NXT * RESET
357 305 / GET TO RST=1 FROM F=5 VIA BUT IR DECODE (INST=RESET)
      RST=1 BUT INITJ CKOFFJ GOTO B2=2 (BUT SERVICE)

```

```

LOC NXT * DOUBLE BUS ERROR, GOTO HALT
110 041 DBE=1 NOPJ GOTO H=1

```

```

LOC NXT * UART XMIT (VECTOR LOC 64)
060 245 URTX B=K[64]J GOTO ET=2

```

```

LOC NXT * UART RECEIVE (VECTOR LOC 60)
064 245 URTR B=K[60]J GOTO ET=2

```

```

LOC NXT * LINE CLOCK (VECTOR LOC 100)
042 245 LC=1 B=K[100]J GOTO ET=2

```

ERT14 NOT EXPLICITLY SHOWN IN FLOW  
D003A NOT EXPLICITLY SHOWN IN FLOW  
A145 NOT EXPLICITLY SHOWN IN FLOW  
ET202 NOT EXPLICITLY SHOWN IN FLOW  
ET203 NOT EXPLICITLY SHOWN IN FLOW  
ET205 NOT EXPLICITLY SHOWN IN FLOW  
ET206 NOT EXPLICITLY SHOWN IN FLOW  
ET207 NOT EXPLICITLY SHOWN IN FLOW  
ERT18 NOT EXPLICITLY SHOWN IN FLOW  
B202A NOT EXPLICITLY SHOWN IN FLOW  
B202B NOT EXPLICITLY SHOWN IN FLOW  
B202C NOT EXPLICITLY SHOWN IN FLOW  
B202D NOT EXPLICITLY SHOWN IN FLOW









NAME	LOC	AUT	ALG	ALU	AUX	RAR	BLG	BRG	BUT	CON	CKD	CRI	FSH	PSW	SAM	SPA	SPF	TNS	NXT
S7#3	033	NO	SP	BL	OFF	H	BRG	H	NON	NON	ON	OFF	OFF	H	ROM	R7	WRI	NON	S7#4
S7#4	034	NO	NUL	AL	OFF	H	BRG	L	NON	NON	OFF	OFF	OFF	H	BAR	R0	REA	NON	S7#5
S7#5	035	NO	SP	A#8	OFF	L	BRG	H	NON	NON	ON	OFF	OFF	H	IR9	R0	REA	1	S3#4
SB1#1	166	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SB1#2
SB1#2	172	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SB1#3
SB1#3	173	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SB1#4
SB1#4	174	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SB1#5
SB1#5	144	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SB1#6
SB1#6	176	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SB1#7
SB1#7	177	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SB1#8
SB1#8	006	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	D0#3A
SB2#1	167	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SB2#2
SB2#2	012	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SB2#3
SB2#3	220	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SB2#4
SB2#4	022	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SB2#5
SB2#5	023	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SB2#6
SB2#6	024	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SB2#7
SB2#7	031	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SB2#8
SB2#8	330	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	D1#4
SBE#1	047	NO	SP	BL	OFF	H	SEX	H	DST	NON	OFF	OFF	OFF	H	ROM	R10	WRI	NON	R7#1
SBO#1	067	NO	SP	AL	OFF	H	BRG	SR	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SBO#2
SBO#2	346	NO	SP	AL	OFF	H	BRG	SR	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SBO#3
SBO#3	324	NO	SP	AL	OFF	H	BRG	SR	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SBO#4
SBO#4	340	NO	SP	AL	OFF	H	BRG	SR	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SBO#5
SBO#5	361	NO	SP	AL	OFF	H	BRG	SR	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SBO#6
SBO#6	050	NO	SP	AL	OFF	H	BRG	SR	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SBO#7
SBO#7	020	NO	SP	AL	OFF	H	BRG	SR	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SBO#8
SBO#8	052	NO	SP	AL	OFF	H	BRG	SR	NON	NON	OFF	OFF	ON	H	ROM	R0	REA	NON	SBE#1
SC#1	116	NO	PSW	AOR8	OFF	H	BRG	H	SRV	NON	OFF	OFF	OFF	L	ROM	R0	REA	NON	BG#1
T#1	021	NO	NUL	AL	OFF	H	BRG	L	CON	34	OFF	OFF	OFF	H	ROM	R0	WRI	NON	ET#2
U1#1	352	NO	SP	BL	OFF	H	BRG	H	NON	NON	ON	OFF	OFF	H	ROM	R10	WRI	NON	D0#3
U2#1	353	NO	SP	BL	OFF	H	BRG	H	NON	NON	ON	OFF	OFF	H	ROM	R10	WRI	NON	D1#4
U3#1	354	NO	SP	BL	OFF	H	BRG	H	NON	NON	ON	OFF	OFF	H	ROM	R10	WRI	NON	DB0#2
U4#1	355	NO	SP	BL	OFF	H	BRG	H	NON	NON	ON	OFF	OFF	H	ROM	R10	WRI	NON	DQ#10
U5#1	373	NO	SP	BL	OFF	H	BRG	H	NON	NON	ON	OFF	OFF	H	ROM	R10	WRI	NON	D1#4
URTR	064	NO	NUL	AL	OFF	H	BRG	L	CON	60	OFF	OFF	OFF	H	ROM	R0	WRI	NON	ET#2
URTX	060	NO	NUL	AL	OFF	H	BRG	L	CON	64	OFF	OFF	OFF	H	ROM	R0	WRI	NON	ET#2
W#1	063	NO	SP	AL	OFF	H	BRG	H	SRV	NON	OFF	OFF	OFF	H	ROM	R0	REA	NON	BG#1







N A M	L O C	N X Y	A L U	C F A R S U I H X	P S S D P S P I W 1 3 P	S S S B M P M B 0 0 1 Y	B A P P 2 A R P P 2	B B S S C A T K O T S	A L G	A B R C	B U T
S2#2	301	1111 0011	0110	0111	10001	10001	11100	11111	1111	1111	1111
S2#3	014	1101 1011	0101	1011	10001	10001	11100	11111	1111	1111	1111
S3#1	207	1111 0001	0000	1011	10001	10001	11100	11111	1100	1111	1111
S3#2	016	1111 0000	0110	0111	10001	10000	11110	11111	1111	1111	1111
S3#3	017	1010 0011	0101	1011	10001	10001	11100	11111	1100	1111	1111
S3#4	134	1100 0011	0000	1011	10001	10001	11100	11111	1011	1111	1111
S3#5	274	1101 1011	0101	1011	10001	10011	11100	11111	1100	1111	1111
S4#1	211	1111 0011	1001	0011	10001	10000	11110	11111	1111	0100	0100
S5#1	213	1111 0000	1001	0000	10001	10000	11110	11111	1111	1111	1111
S6#1	215	1110 1010	0000	1011	10001	10001	11110	11111	1111	1111	1111
S6#2	025	1110 1001	0110	1011	10001	10011	11110	11111	1111	1111	1111
S6#3	026	1110 1000	0101	1011	10001	10011	11110	11111	1100	1111	1111
S6#4	027	1110 0111	0000	1011	10001	00001	11110	11111	1011	1111	1111
S6#5	030	1101 1011	0110	1011	10001	10001	11110	11111	1100	1111	1111
S7#1	217	1110 0101	0000	1011	10001	10011	11110	11111	1111	1111	1111
S7#2	032	1110 0100	0110	1011	10001	10011	11110	11111	1111	1111	1111
S7#3	033	1110 0011	0101	1011	10001	10011	11110	11111	1100	1111	1111
S7#4	034	1110 0010	0000	1011	10001	00001	11110	11111	1011	1111	1111
S7#5	035	1010 0011	0110	1011	10001	10001	11110	11111	1100	1111	1111
S81#1	166	1000 0101	1110	0001	10001	10011	11110	11111	1101	1111	1111
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S81#4	174	0001 1011	1110	0001	10001	10011	11110	11111	1101	1111	1111
S81#5	144	0000 0001	1110	0001	10001	10011	11110	11111	1101	1111	1111
S81#6	176	0000 0000	1110	0000	10001	10011	11110	11111	1101	1111	1111
S81#7	177	0111 1001	1110	0001	10001	10011	11110	11111	1101	1111	1111
S81#8	006	0001 0010	1110	0010	10001	10011	11110	11111	1101	1111	1111
S82#1	167	0111 0101	1110	0101	10001	10011	11110	11111	1101	1111	1111
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S82#3	220	0110 1101	1110	1101	10001	10011	11110	11111	1101	1111	1111
S82#4	022	0110 1100	1110	1100	10001	10011	11110	11111	1101	1111	1111
S82#5	023	0110 1011	1110	1011	10001	10011	11110	11111	1101	1111	1111
S82#6	024	1110 0110	1110	0110	10001	10011	11110	11111	1101	1111	1111
S82#7	031	0010 0111	1110	0111	10001	10011	11110	11111	1101	1111	1111
S82#8	330	1000 1100	1110	1100	10001	10011	11110	11111	1101	1111	1111
S8E#1	047	1111 1110	0101	1110	10011	10011	11110	11111	1100	1001	1001
S80#1	067	0001 1001	0000	1001	10001	10011	11110	11111	1110	1111	1111
S80#2	346	0010 1011	0000	1011	10001	10011	11110	11111	1110	1111	1111
S80#3	324	0001 1111	0000	1111	10001	10011	11110	11111	1110	1111	1111
S80#4	340	0000 1110	0000	1110	10001	10011	11110	11111	1110	1111	1111

N A M	L O C	N X Y	A L U	C F A R S U I H X	P S S D P S P I W 1 3 P	S S S B M P M B 0 0 1 Y	B A P P 2 A R P P 2	B B S S C A T K O T S	A L G	A B R C	B U T
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S0#1	116	1001 1111	0100	1011	10001	10011	11110	11111	0000	1100	1100
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U2#1	353	1000 1100	0101	1011	10011	10011	11110	11111	1100	1111	1111
U3#1	354	1000 1011	0101	1011	10011	10011	11110	11111	1100	1111	1111
U4#1	355	1000 1010	0101	1011	10011	10011	11110	11111	1100	1111	1111
U5#1	373	1000 1100	0101	1011	10011	10011	11110	11111	1100	1111	1111
UR#1	064	0101 1010	0000	1010	10011	10011	11110	11111	1011	1101	1101
UR#1	060	0101 1010	0000	1010	10001	10011	11110	11111	1011	1101	1101
UR#1	063	1101 1111	0000	1111	10001	10011	11110	11111	1011	1100	1100







# PAGE REVISION CONTROL SHEET

SH NO.	PAGE REVISIONS	REMARKS
1		
2	L	
3	L	
4	L	
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6	L	
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97	L	
98	L	
99	L	
100	L	

FIRST USED ON OPTION/MODEL  
KD11-B

DRN: *B. J. P. 11/11*

CHK'D: *M. T. O'Donnell*

ENG: *M. T. O'Donnell*

PROJ. ENG: *M. T. O'Donnell*

PROD.

DATE: 10-16-72

DATE: 10/26/72

DATE: 10/26/72

DATE:

DATE:

digital EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

TITLE: DATA PATHS

NEXT HIGHER ASSY.  
B-DD-KD11-B

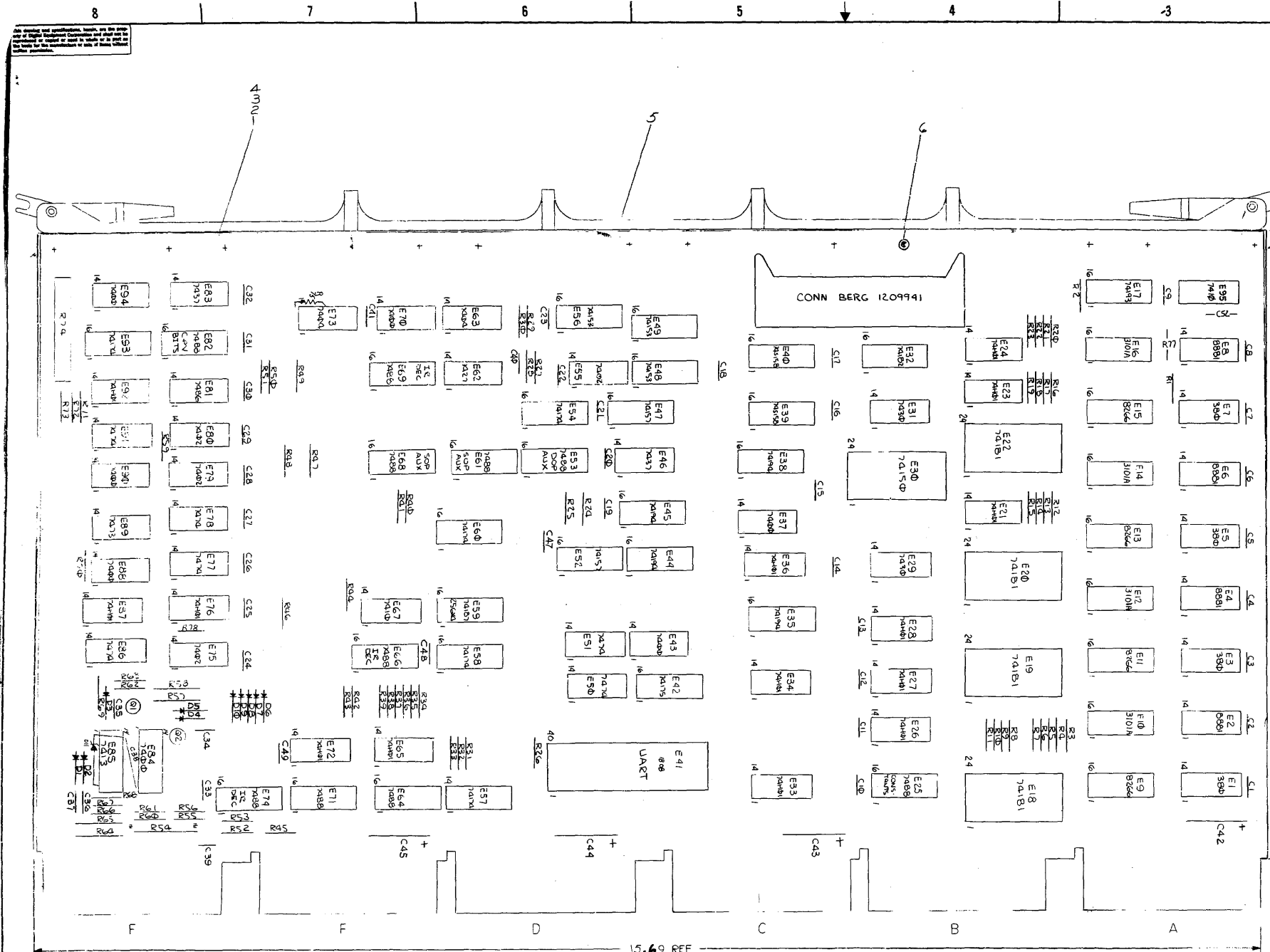
SCALE: 1-1

SHEET 1 OF 11

SIZE	CODE	NUMBER	REV.
B	CS	M7260-0-1	L

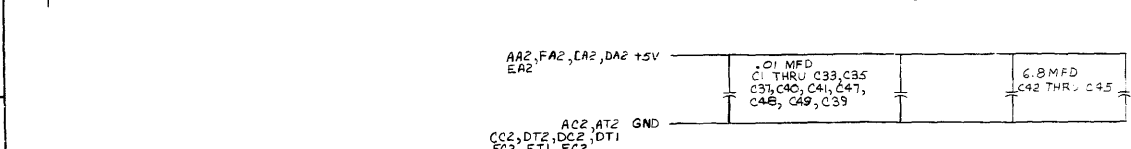
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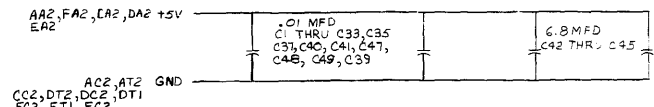


NOTE:  
1. UNLESS OTHERWISE NOTED RESISTANCE IS IN OHMS CAPACITANCE IS IN MICROFARADS

QTY	REF DESIGNATION	DESCRIPTION	PART NO	QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO.
1	D11	DIODE 1N5231B, 1/2W, 50V	1109443	72				
1	R78	RES 220K, 1/2W, 5%	1300274	71				
1		CONN, BERG	1205941	55				
1	R74	RES 500K TRIMPOT	1305631	54				
1	R34	RES 10K, 1/4W, 5%	1300479	53				
1	R67	RES 82, 1/4W, 5%	1301277	52				
1	R66	RES 750, 1/4W, 5%	1301401	50				
1	R65	RES 560, 1/2W, 5%	1300338	49				
1	R64	RES 63, 1/2W, 10%	1300220	48				
1	R63	RES 150, 1/4W, 5%	1300250	47				
2	R57, R58	RES 12K, 1/2W, 5%	1300487	46				
3	R56, R62, R36	RES 470, 1/4W, 5%	1300316	45				
1	R55	RES 1.5K, 1/4W, 5%	1300391	44				
1	R54	RES 150, 1/4W, 5%	1302385	43				
4	E2, E4, E6, E8	IC DEC 8881	1909705	42				
23	R25, R28 THRU R35, R35, R37- R45, R48, R50 THRU R53, R71, R72, R75	RES 2K 1/4W, 5%	1302388	41				
35	R1 THRU R24, R26, R27, R66, R67, R49, R59, R60, R61, R68, R70, R69	RES 1K 1/4W, 5%	1300365	40				
2	Q1, Q2	TRANSISTOR DEC 6534D	1503409	39				
1	E41	IC DEC 1808 UART	1910459	38				
1	E30	IC DEC 74150	1910153	37				
4	E18, E19, E20, E22	IC DEC 74181	1909982	36				
5	E54, E57, E58, E60, E93	IC DEC 74174	1910652	35				
3	E48, E49, E56	IC DEC 74153	1909937	34				
2	E47, E52	IC DEC 74157	1910655	33				
1	E42	IC DEC 74175	1910651	32				
2	E39, E40	IC DEC 74515B	1910549	31				
4	E35, E38, E44, E45	IC DEC 74194	1910623	30				
1	E32	IC DEC 74182	1910019	29				
1	E17	IC DEC 74193	1910018	28				
4	E10, E12, E14, E16	IC INTEL 3010A	1910653	27				
4	E9, E11, E13, E15	IC DEC 8266	1909934	26				
1	E89	IC DEC 7473	1905587	25				
1	E85	IC DEC 7413	1909989	24				
1	E81	IC DEC 7486	1910011	23				
2	E67, E95	IC DEC 7410	1905576	22				
2	E63, E73	IC DEC 7404	1909686	21				
1	E62	IC DEC 7427	1910878	20				
4	E55, E75, E79, E80	IC DEC 7402	1909004	19				
6	E50, E51, E77, E78, E86, E91	IC DEC 7474	1905547	18				
2	E46, E83	IC DEC 7437	1910091	17				
7	E37, E43, E70, E84, E88, E90, E94	IC DEC 7400	1905575	16				
2	E29, E31	IC DEC 7430	1905578	15				
14	E21, E23, E24, E26, E27, E28, E33, E34, E36, E65, E72, E76, E87, E92	IC DEC 74401	1909849	14				
4	E1, E3, E5, E7	IC DEC 330	1909485	13				
10	D1 THRU D10	DIODE 664	1100114	12				
69	C42 THRU C45	CAP 6.8 MFD, 35V, STANT	1005306	11				
1	C38	CAP 1 MFD, 35V, 10% STANT	1001776	68				
1	E82	IC IM5600	23-A12A1	67				
1	E74	IC IM5600	23-A11A1	65				
1	E71	IC IM5600	23-A10A1	64				
1	E69	IC IM5600	23-A08A1	63				
1	E68	IC IM5600	23-A06A1	62				
1	E66	IC IM5600	23-A05A1	61				
1	E64	IC IM5600	23-A04A1	60				
1	E61	IC IM5600	23-A03A1	59				
1	E59	IC 74187	23-A03A2	58				
1	E53	IC IM5600 RCM	23-A02A1	57				
1	E25	IC IM5600 32KB PROM	23-AD1A1	56				



DEC 74515B	8	16
DEC 74193	8	16
DEC 7489	8	16
DEC 1808	20	40
DEC 7418	12	24
DEC 74182	8	16
DEC 74150	12	24
DEC 74194	8	16
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DEC 74174	8	16

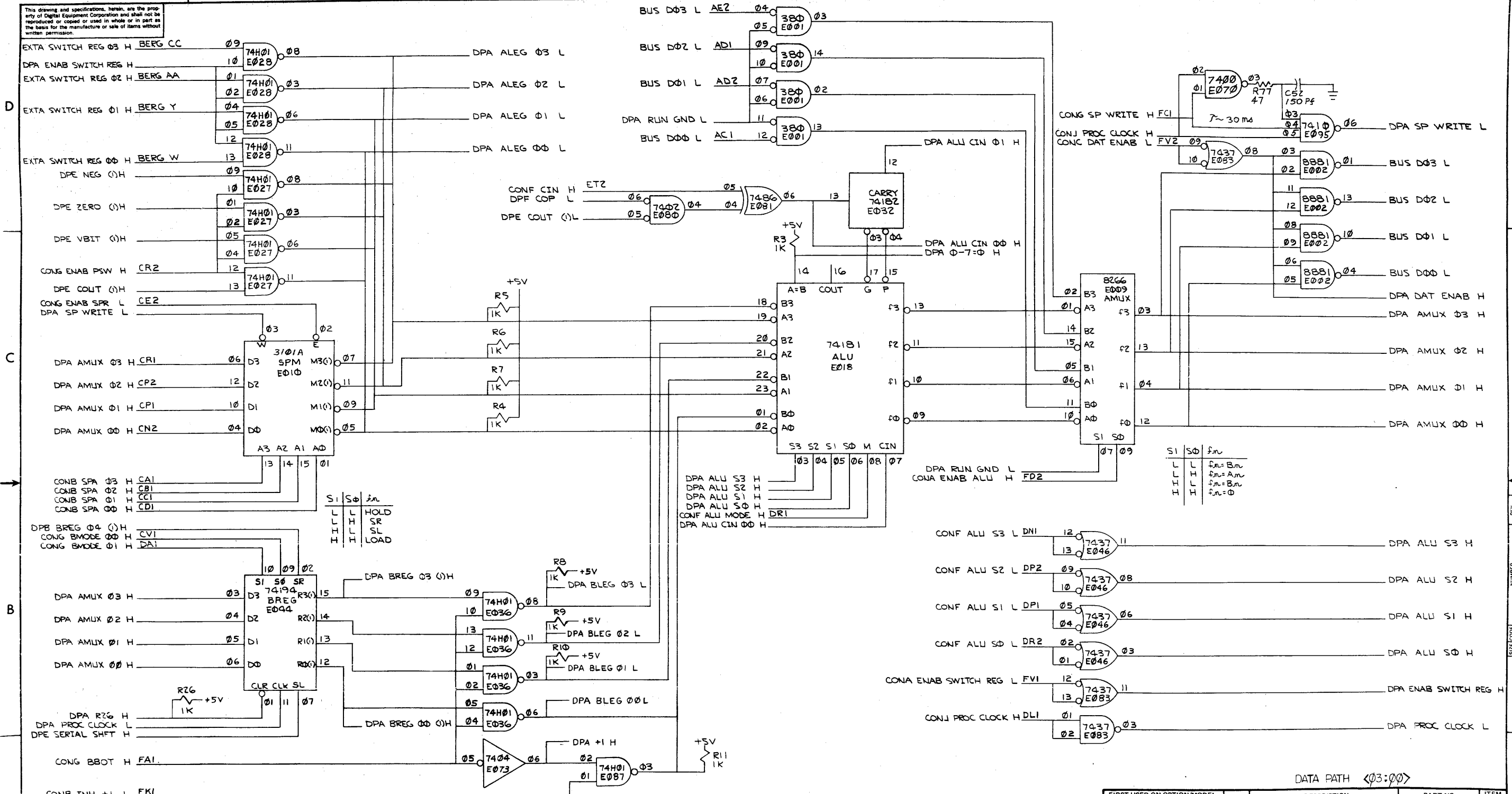


QTY	REF DESIGNATION	DESCRIPTION	PART NO	QTY
1	C52	CAP 150PF, 100V, 5%	1000019	70
2	R77, R73	RES 47, 1/4W, 5%	1300202	69
1	C38	CAP 1 MFD, 35V, 10% STANT	1001776	68
1	E82	IC IM5600	23-A12A1	67
1	E74	IC IM5600	23-A11A1	65
1	E71	IC IM5600	23-A10A1	64
1	E69	IC IM5600	23-A08A1	63
1	E68	IC IM5600	23-A06A1	62
1	E66	IC IM5600	23-A05A1	61
1	E64	IC IM5600	23-A04A1	60
1	E61	IC IM5600	23-A03A1	59
1	E59	IC 74187	23-A03A2	58
1	E53	IC IM5600 RCM	23-A02A1	57
1	E25	IC IM5600 32KB PROM	23-AD1A1	56

6534 D	NONE	DEC NO.	EIA NO.
SEMICONDUCTOR CONVERSION CHART		ECS M7260-0-1	

PARTS LIST			
DRN	WMA	OC	BY
DATE	REV	TITLE	
DATE	REV	DATA PATHS	
DATE	REV	B-DD-KD11-B	
DATE	REV	ECS M7260-0-1	

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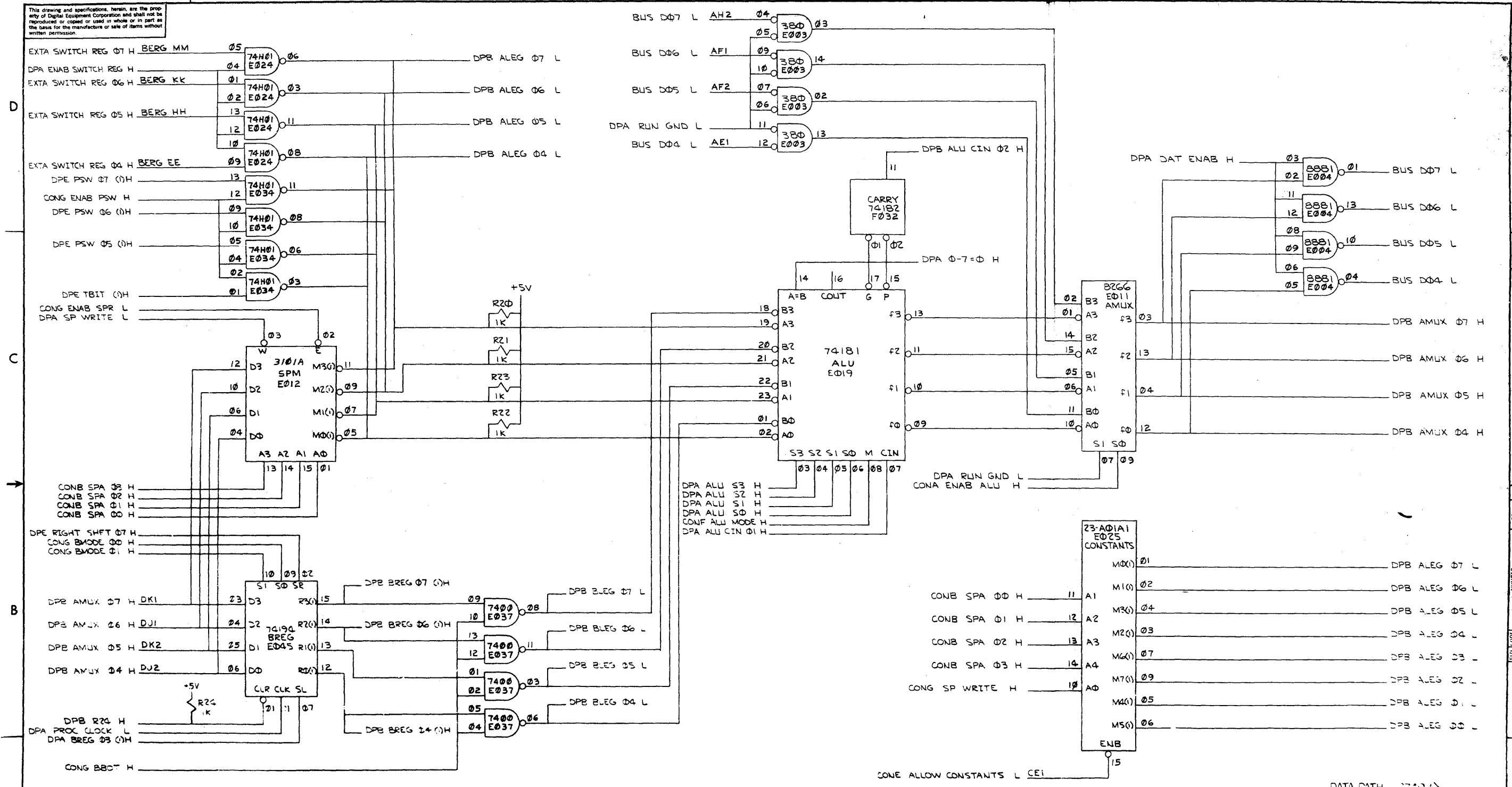


REV	NO	DATE	BY	CHK

FIRST USED ON OPTION/MODEL 11/05	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS .XXX = .005 .XX = .02 .X = .1	ANGLES ±0° 30'	TITLE <b>DATA PATHS</b>		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL + / +	NEXT HIGHER ASSY.	SIZE CODE B-DD-KD11-9	NUMBER DCS M7260-0-1	REV. J
FINISH + / +	SCALE SHEET 3 OF	DIST.		

REV J  
NUMBER M7260-0-1  
SIZE CODE DCS

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23-001A1 E025 CONSTANTS		
M(0)	01	DPB ALEG 07 L
M(1)	02	DPB ALEG 06 L
M(3)	04	DPB ALEG 05 L
M(2)	03	DPB ALEG 04 L
M(4)	07	DPB ALEG 03 L
M(7)	09	DPB ALEG 02 L
M(4)	05	DPB ALEG 01 L
M(5)	06	DPB ALEG 00 L
ENB		
15		

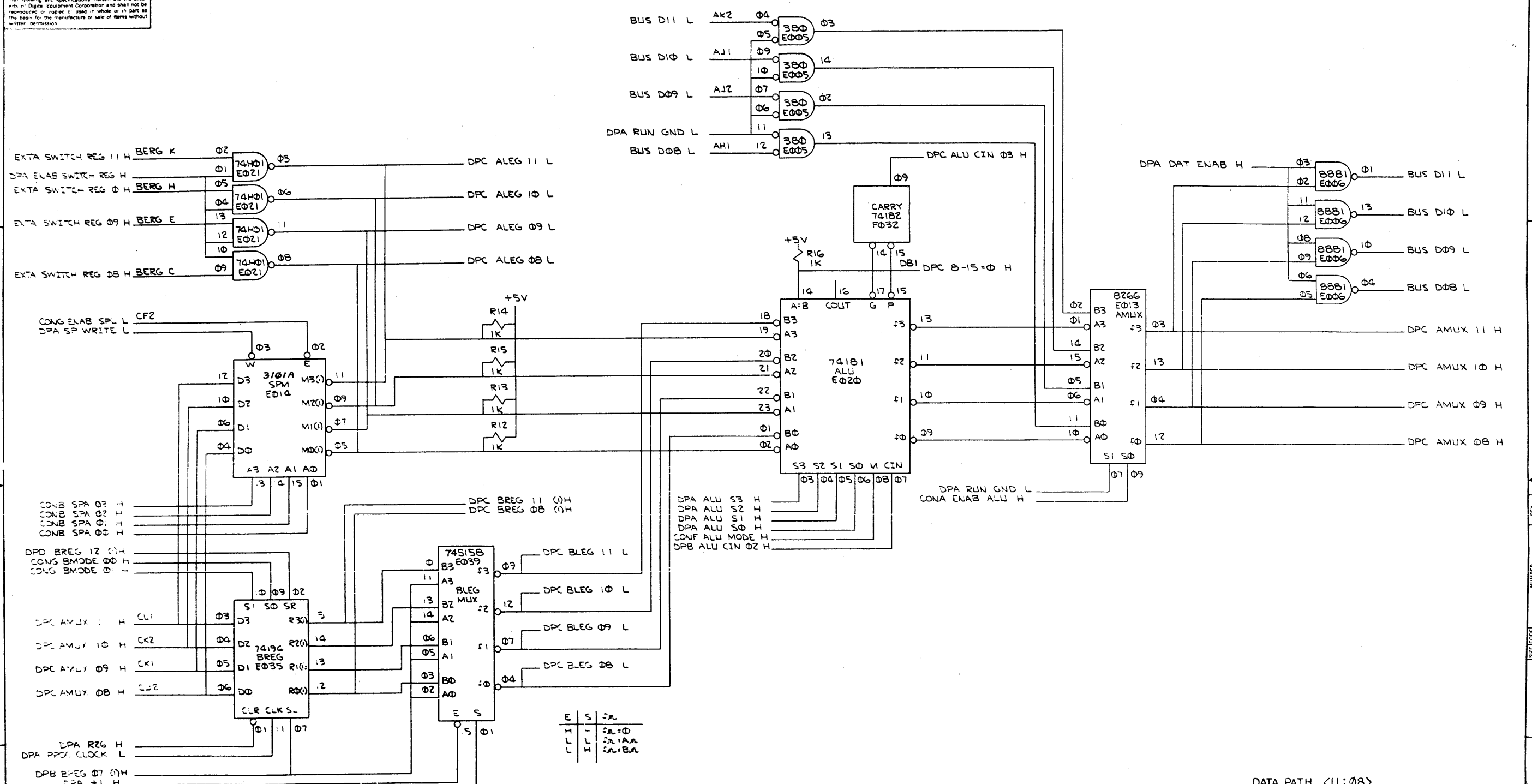
CONB SPA	Signal
00	H
01	H
02	H
03	H
04	H

DATA PATH 10704

REV	CHG	DATE

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
11/05				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN. W. MA JOR	DATE 2/11/72	
DECIMALS	ANGLES	digital CORPORATION		
.XXX - .006	± 0° 30'	TITLE DATA PATHS		
XX - .02		REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		
X - .1		MATERIAL NEXT HIGHER ASSY.		
		B-DD-KD11-B		
FINISH		SCALE	SHEET 4 OF	DIST

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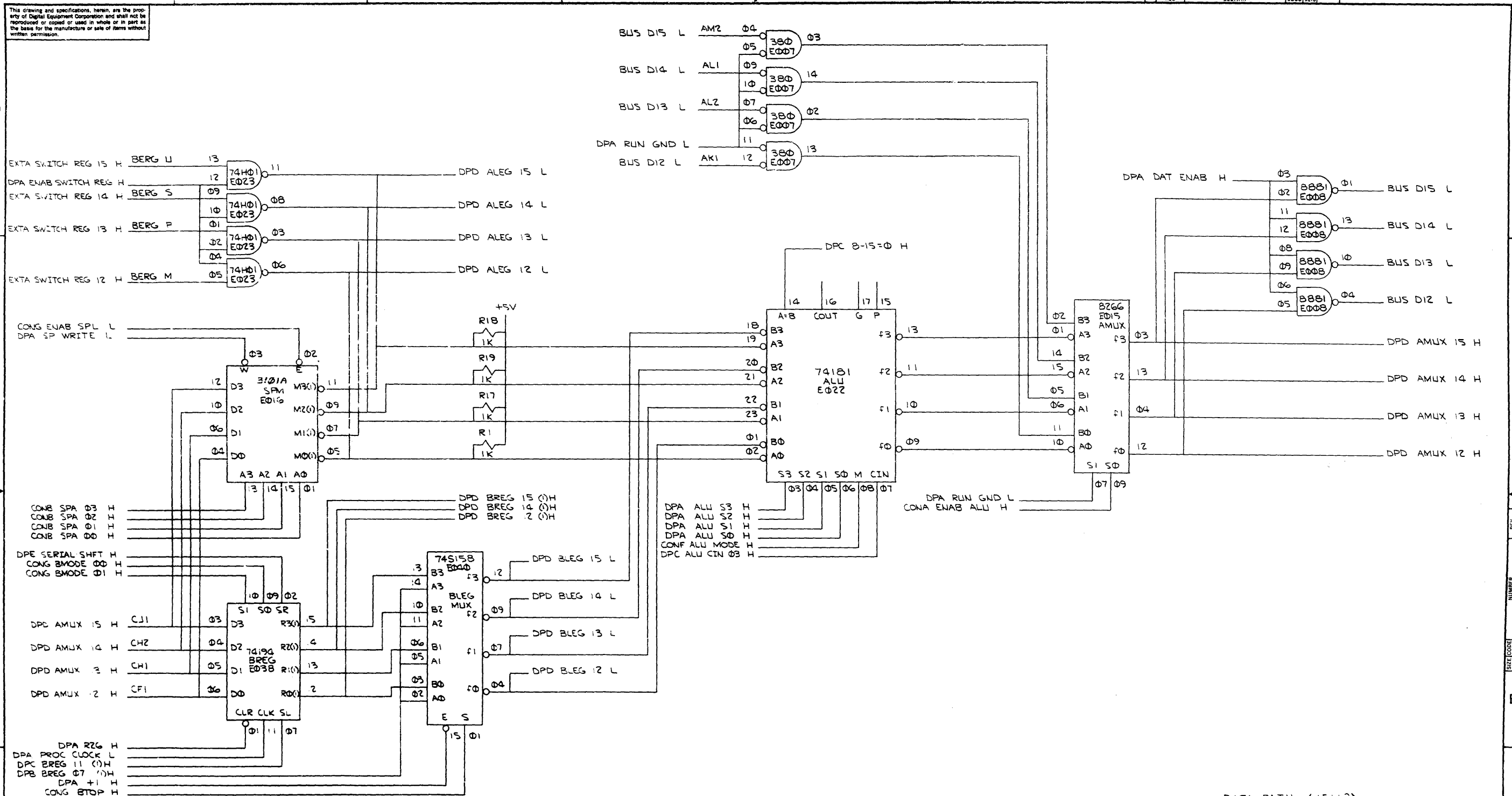
E	S	SA
H	-	SA=0
L	L	SA=AA
L	H	SA=BA

DATA PATH <11:08>

REV	CHANGE NO.

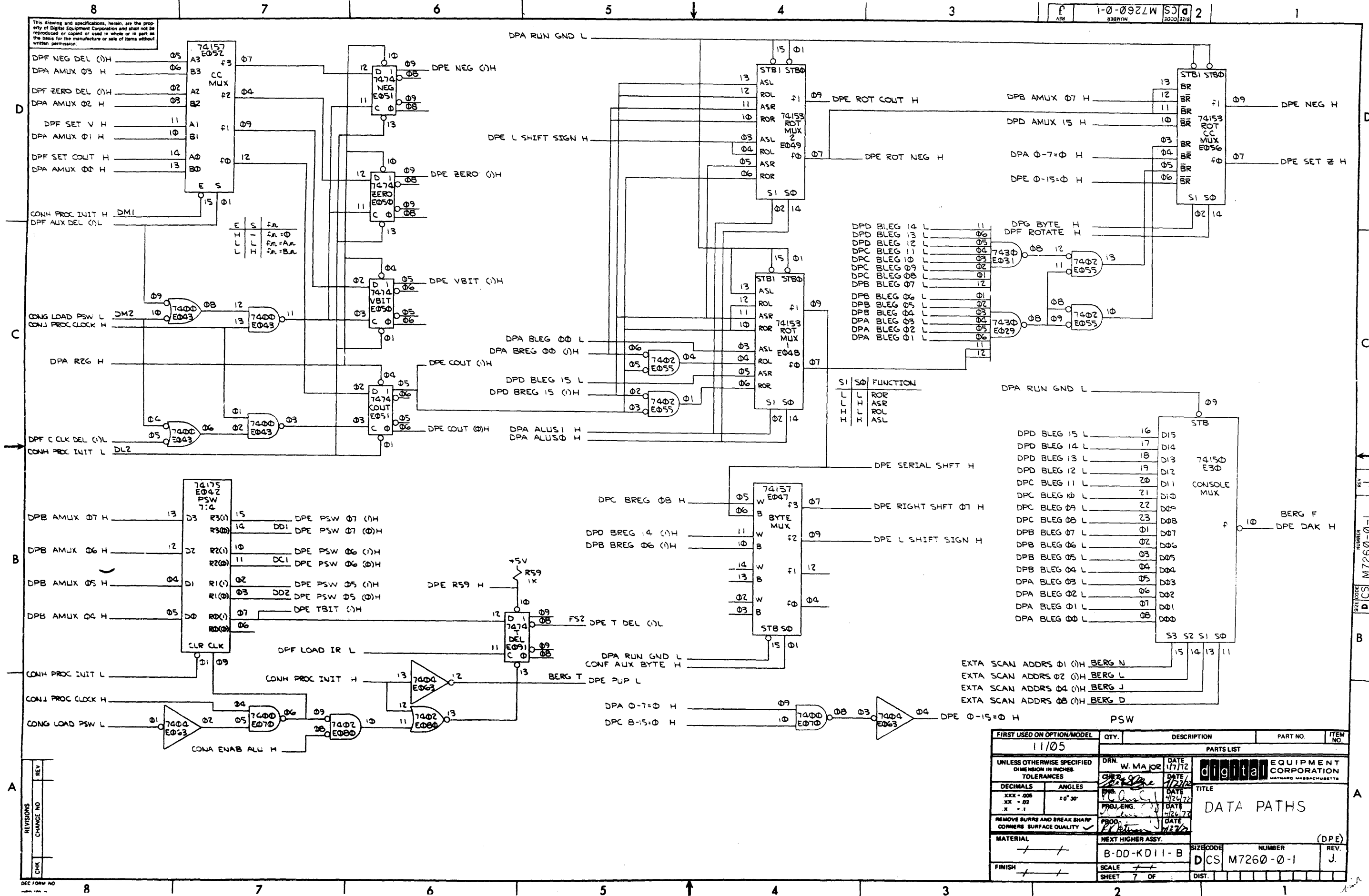
FIRST USED ON OPTION/MODEL 11/05	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN. W. MAJOR	DATE 2/19/72	DIGITAL EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS	CHK'D	DATE 7/27/72	TITLE	
ANGLES	ENG.	DATE 1/24/72	DATA PATHS	
.XX - .005	PROJ. ENG.	DATE 4/24/72		
.X - .02	PROD.	DATE 7/27/72		
.X - .1				
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.		(DPC)	
FINISH	B-DD-KD11-B	SIZE CODE DCS	NUMBER M7260-0-1	REV J
	SCALE	SHEET 5	DIST.	

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REV	NO	CHG	NO

FIRST USED ON OPTION/MODEL 11/05		QTY.	DESCRIPTION	PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES					
DECIMALS	ANGLES	PARTS LIST			
XXX - .006	±0° 30'	DRN	W. MAJOR	DATE	2/26/72
XX - .02		CHKD		DATE	12/72
X - .1		ENGR		DATE	4/21/72
REMOVE BLURBS AND BREAK SHARP CORNERS SURFACE QUALITY		PROJ. ENG.		DATE	7/24/72
		PROD.		DATE	4/27/72
MATERIAL		NEXT HIGHER ASSY.		(DPD)	
FINISH		B-DD-KD11-B		SIZE CODE	NUMBER
		SCALE		DCS	M7260-0-1
		SHEET 6 OF		DIST.	



REV	CHANGE NO

REV J  
 NUMBER M7260-0-1  
 SIZE CODE DCS

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11705					

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.		TOLERANCES	
DECIMALS	ANGLES	XXX - .008	10° 30'
.XX - .02		.X - .1	

MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
- / -	B-00-KD11-B	DCS	M7260-0-1	J.

SCALE	SHEET	7 OF	DIST.
- / -			

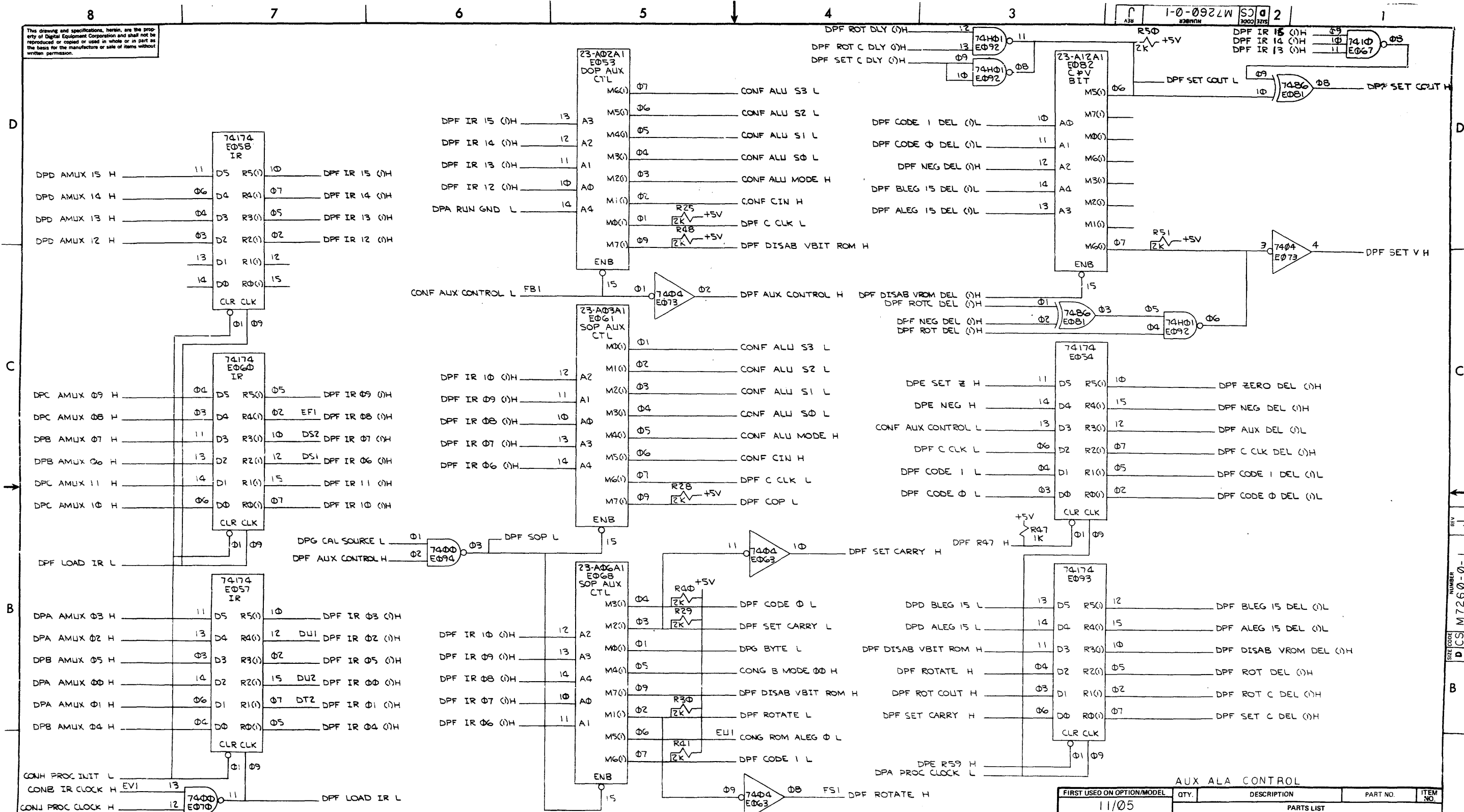
PARTS LIST		TITLE
DRN. W. MAJOR	DATE 1/7/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK. J. MAJOR	DATE 1/24/72	
ENGR. J. MAJOR	DATE 1/24/72	
PROJ. ENG. J. MAJOR	DATE 1/24/72	

TITLE: DATA PATHS



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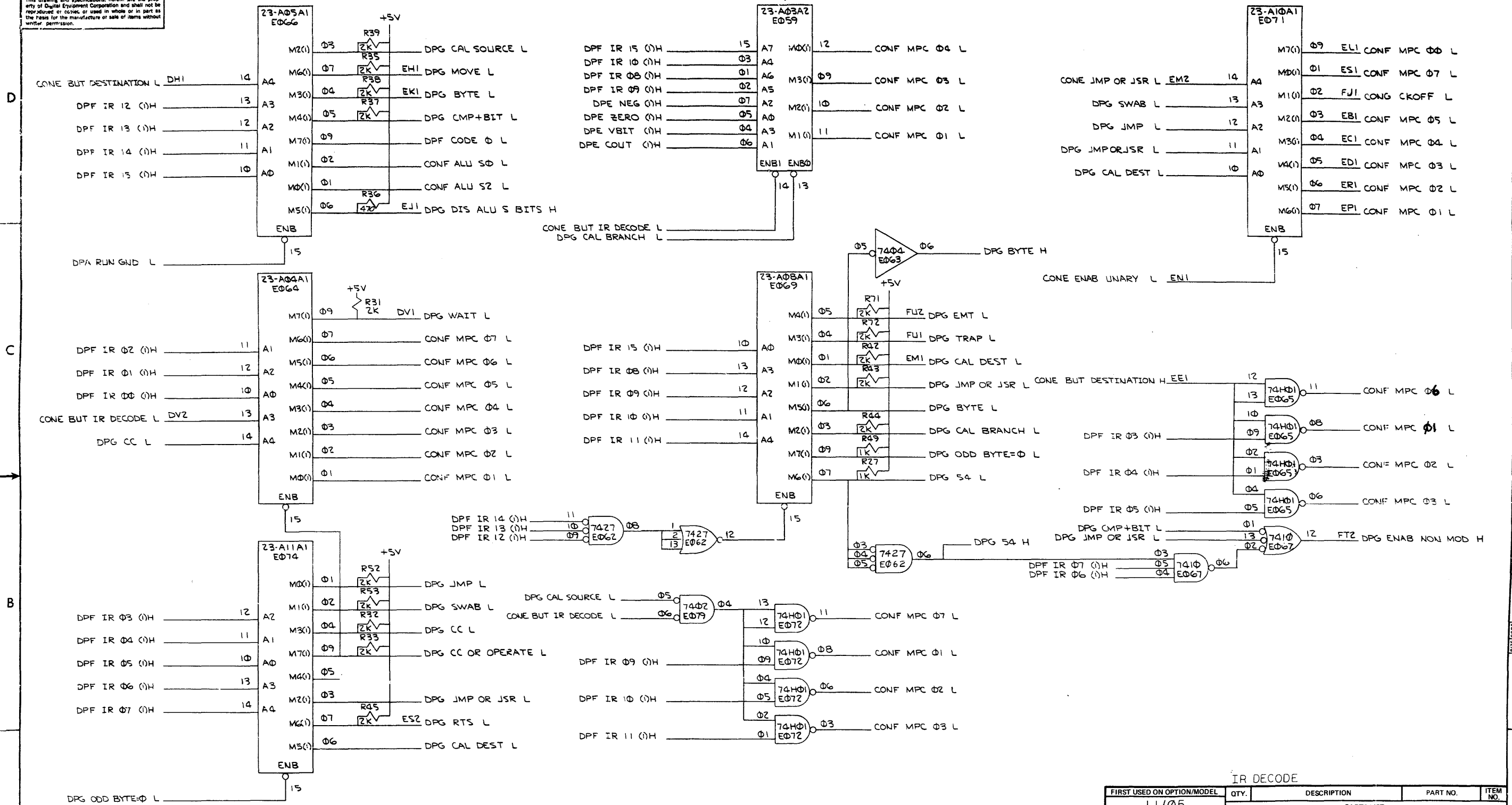
1-0-092LW SCJ 2



REV	CHANGE NO

FIRST USED ON OPTION/MODEL 11/05	QTY.	DESCRIPTION	PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS	ANGLES	TITLE		
XXX - .005	± 0° 30'	DATA PATHS		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
FINISH	B-DD-KD11-B	DCS	M7260-0-1	J
SCALE	SHEET 8 OF	DIST.		

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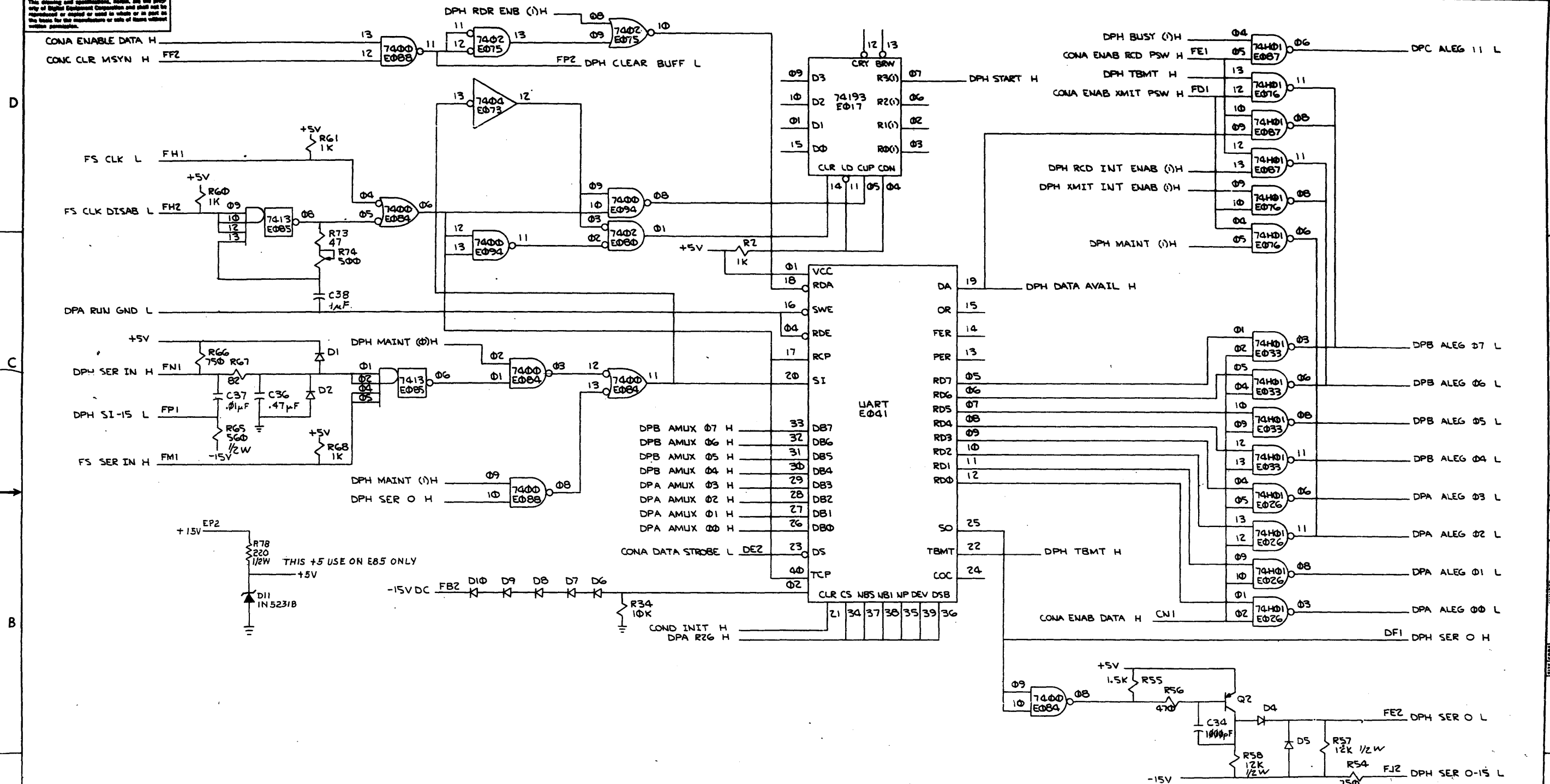


IR DECODE

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN. W. MAJOR DATE 2/22/72	digital EQUIPMENT CORPORATION WATYARD, MASSACHUSETTS	
DECIMALS	ANGLES	DATE 1/27/72		
.XXX - .005	± 0° 30'	DATE 4/24/72	TITLE DATA PATHS	
.XX - .02		DATE 7/24/72		
.X - .1		DATE 7/24/72	MATERIAL B-DD-KD11-B SCALE ++ SHEET 9 OF	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE 7/24/72		
NEXT HIGHER ASSY.		SIZE CODE	NUMBER	REV.
B-DD-KD11-B		DCS	M7260-0-1	J
FINISH		DIST.		

REV.	CHANGE NO.	REVISIONS

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- DPB AMUX 07 H 33 DB7
- DPB AMUX 06 H 32 DB6
- DPB AMUX 05 H 31 DB5
- DPB AMUX 04 H 30 DB4
- DPA AMUX 03 H 29 DB3
- DPA AMUX 02 H 28 DB2
- DPA AMUX 01 H 27 DB1
- DPA AMUX 00 H 26 DB0

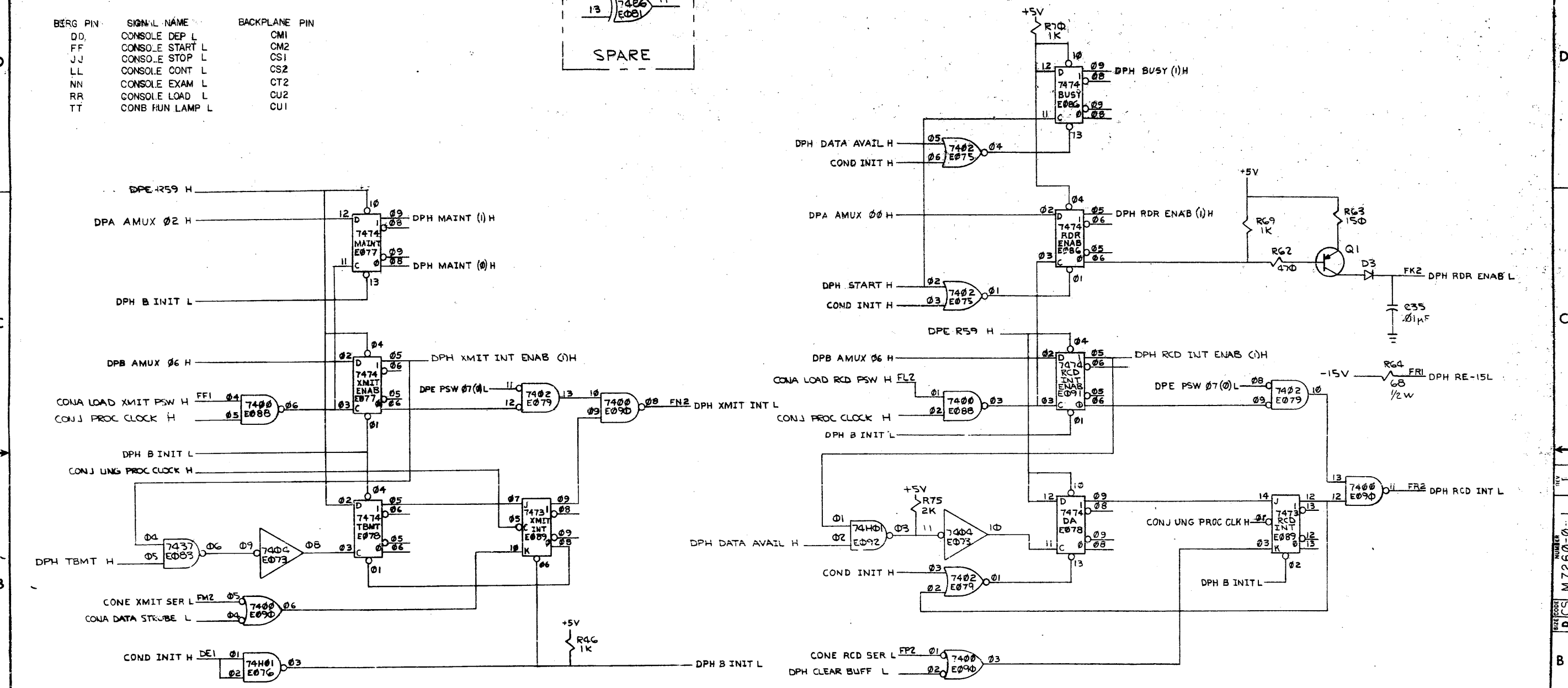
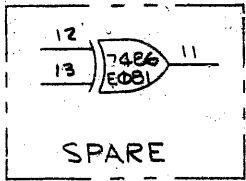
FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED		DRN	W. MAJOR	DATE	2/11/72
DIMENSION IN INCHES		DATE	2/24/72	<b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
TOLERANCES		DATE	4/24/72		
DECIMALS	ANGLES	DATE	4/24/72	DATA PATHS	
.XXX - .008	20° 30'	DATE	4/24/72		
.XX - .02		DATE	4/24/72	DPH	
.X - .1		DATE	4/24/72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD.	R. R. Johnson	DATE	4/22/72
MATERIAL		NEXT HIGHER ASSY.		SIZE CODE	NUMBER
FINISH		B-00-KD11-B		DCS	M7260-0-1
		SCALE	++	SHEET	10 OF
				DIST.	

REV.	CHANGE NO.	REVISIONS

REV. L  
M7260-0-1  
DCS

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BERG PIN	SIGNAL NAME	BACKPLANE PIN
DD	CONSOLE DEP L	CM1
FF	CONSOLE START L	CM2
JJ	CONSOLE STOP L	CS1
LL	CONSOLE CONT L	CS2
NN	CONSOLE EXAM L	CT2
RR	CONSOLE LOAD L	CU2
TT	CONB RUN LAMP L	CUI



REV	CHANGE NO

SCL CONTROL

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN: <i>R. Budell</i> DATE: 2-29-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS	ANGLES	ENG: <i>R. Budell</i> DATE: 10/27/70	TITLE: DATA PATHS	
.XXX - .005	±0° 30'	PROJ. ENG: <i>R. Budell</i> DATE: 1/24/72	(DPHI)	
.XX - .02		PROD. <i>R. Budell</i> DATE: <i>1/24/72</i>		
.X - .1				
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
+	B-DD-KD11-B		DCS	M7260-0-1
FINISH	SCALE	SHEET 11 OF	DIST.	REV. 1

REV. NO. J  
ITEM NO. M7260-0-1  
SIZE CODE DCS

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REV. NUMBER SIZE CODE KRL M7260-0-8 2 1

THIS FACE SHEET CONTAINS THE FOLLOWING CHIP PART NUMBERS

PART NUMBER

- 23-A01A1
- 23-A02A1
- 23-A03A1
- 23-A04A1
- 23-A05A1
- 23-A06A1
- 23-A08A1
- 23-A10A1
- 23-A11A1
- 23-A12A1
- 23-A03A2

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
KDII-B				

**digital** EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

TITLE  
DATA PATH  
ROM PATTERNS

DRN. C. Teschner	DATE 5-8-72
CHK'D. M. Titell	DATE 5-15-72
ENG. M. Titell	DATE
PROJ. ENG. M. Titell	DATE
PROD. M. Titell	DATE 3/19/72

NEXT HIGHER ASSEMBLY  
B-DD-KDII-B

SCALE  $\frac{1}{1}$   
SHEET 1 OF 15

SIZE	CODE	NUMBER	REV.
K	RL	M7260-0-8	
DIST.			

REVISIONS	REV.
CHANGE NO.	
CHK	

OCTAL ADDRESS	DECIMAL ADDRESS	EDCBA	DATA	DESCRIPTION
000	0	00000	00000	/( =Y8 (PIN #9) DPA ALEG 02 L
001	1	1111111	377	**/( =Y7 (PIN #7) DPA ALEG 03 L
002	2	00001	116	**/( =Y6 (PIN #6) DPA ALEG 00 L
003	3	00010	163	**/( =Y5 (PIN #5) DPA ALEG 01 L
004	4	00011	017	**/( =Y4 (PIN #4) DPB ALEG 05 L
005	5	00100	273	**/( =Y3 (PIN #3) DPB ALEG 04 L
006	6	00101	077	**/( =Y2 (PIN #2) DPB ALEG 06 L
007	7	00110	377	**/( =Y1 (PIN #1) DPB ALEG 07 L
010	8	01000	073	** *****
012	10	01010	377	** *****
013	11	01011	377	** *****
014	12	01100	277	** *****
015	13	01101	177	** *****
016	14	01110	377	** *****
017	15	01111	377	** *****
020	16	10000	173	** *****
021	17	10001	377	** *****
022	18	10010	377	** *****
023	19	10011	375	** *****
024	20	10100	377	** *****
025	21	10101	377	** *****
026	22	10110	377	** *****
027	23	10111	377	** *****
030	24	11000	377	** *****
031	25	11001	377	** *****
032	26	11010	377	** *****
033	27	11011	377	** *****
034	28	11100	377	** *****
035	29	11101	363	** *****
036	30	11110	377	** *****
037	31	11111	377	** *****

K#207 SWR ADDRESS I.E. 177570=000207, BAR  
 K#64 REQVR. VECTOR  
 K#360 CONDITION CODE MASK (CCM=1)  
 K#30 EMT VECTOR  
 K#14 T BIT VECTOR  
 K#20 IOT VECTOR  
 K#34 TRAP VECTOR  
 K#10 RESERVED (ILLEGAL) INSTRUCTION VECTOR  
 K#4 BUS ERROR OR STACK OVERFLOW ERROR  
 K#24 PWR FAIL VECTOR  
 K#100 LCLK INT VECTOR  
 K#60 TRANSMIT VECTOR

\*\*\*\*\*  
 \*\*/( A(PIN #10) IS CONG SP WRITE H  
 \*\*/( B(PIN #11) IS CONG ROM SPA 00 H  
 \*\*/( C(PIN #12) IS CONG ROM SPA 01 H  
 \*\*/( D(PIN #13) IS CONG ROM SPA 02 H  
 \*\*/( E(PIN #14) IS CONG ROM SPA 03 H

OCTAL ADDRESS	DECIMAL ADDRESS	EDCBA	DATA	DESCRIPTION
000	0	00000	00000	/( =Y8 (PIN #9) DPB DISAB V BIT ROM H
001	1	00001	377	**/( =Y7 (PIN #7) CONF ALU S3 L
002	2	00010	205	**/( =Y6 (PIN #6) CONF ALU S2 L
003	3	00011	112	**/( =Y5 (PIN #5) CONF ALU S1 L
004	4	00100	215	**/( =Y4 (PIN #4) CONF ALU S0 L
005	5	00101	275	**/( =Y3 (PIN #3) CONF ALU MODE H
006	6	00110	245	**/( =Y2 (PIN #2) CONF CIN H
007	7	00111	060	**/( =Y1 (PIN #1) DPF C CLK L
010	8	01000	377	** *****
011	9	01001	377	** *****
012	10	01010	205	** *****
013	11	01011	112	** *****
014	12	01100	215	** *****
015	13	01101	275	** *****
016	14	01110	245	** *****
017	15	01111	062	** *****
020	16	10000	377	** *****
021	17	10001	377	** *****
022	18	10010	377	** *****
023	19	10011	377	** *****
024	20	10100	377	** *****
025	21	10101	377	** *****
026	22	10110	377	** *****
027	23	10111	377	** *****
030	24	11000	377	** *****
031	25	11001	377	** *****
032	26	11010	377	** *****
033	27	11011	377	** *****
034	28	11100	377	** *****
035	29	11101	377	** *****
036	30	11110	377	** *****
037	31	11111	377	** *****

MOV F#A  
 CMP F#A MINUS B MINUS 1  
 BIT F#A B  
 BIC F#A, BARB  
 BIS F#A, B  
 ADD F#A PLUS B  
 RI (RESERVED INSTRUCTION)  
 MOV(B)  
 CMP(B)  
 BIT(B)  
 BIC(B)  
 BIS(B)  
 SUB F#A PLUS B  
 RI  
 MOV(B)  
 CMP(B)  
 BIT(B)  
 BIC(B)  
 BIS(B)  
 SUB  
 NOT ACCESSED  
 MOV = NOT ACCESSED  
 CMP = NOT ACCESSED  
 BIT = NOT ACCESSED  
 BIC = NOT ACCESSED  
 BIS = NOT ACCESSED  
 ADD = NOT ACCESSED  
 RI = NOT ACCESSED  
 RI = NOT ACCESSED  
 MOV(B) = NOT ACCESSED  
 CMP(B) = NOT ACCESSED  
 BIT(B) = NOT ACCESSED  
 BIC(B) = NOT ACCESSED  
 BIS(B) = NOT ACCESSED  
 SUB = NOT ACCESSED  
 RI = NOT ACCESSED

\*\*\*\*\*  
 \*\*/( A(PIN #10) IS DPF IR 12 (1)H  
 \*\*/( B(PIN #11) IS DPF IR 13 (1)H  
 \*\*/( C(PIN #12) IS DPF IR 14 (1)H  
 \*\*/( D(PIN #13) IS DPF IR 15 (1)H  
 \*\*/( E(PIN #14) IS DPA RUN GND L

OCTAL ADDRESS	EDCBA	
000	00000	
001	00001	
002	1111111	
003	10011100	
004	10101001	
005	10111111	
006	11111111	
007	001111	
010	011001	
011	11111111	
012	11100000	
013	00101111	
014	10111001	
015	11111111	
016	11111111	
017	11111111	
020	100000	
021	100011	
022	10010	
023	10011	
024	101100	
025	10101	
026	10110	
027	10111	
030	11000	
031	11001	
032	11010	
033	11011	
034	11100	
035	11101	
036	11110	
037	11111	

```

/( =Y8 (PIN #9) DPF COP L
*/( =Y7 (PIN #7) DPF C CLK L
*/( =Y6 (PIN #6) CONF CIN H
*/( =Y5 (PIN #5) CONF ALU MODE H
*/( =Y4 (PIN #4) CONF ALU S0 L
*/( =Y3 (PIN #3) CONF ALU S1 L
*/( =Y2 (PIN #2) CONF ALU S2 L
*/( =Y1 (PIN #1) CONF ALU S3 L
*****
OCTAL DATA
00000 377
00001 377
00010 234
00011 251
00100 377
00101 377
00110 377
00111 377
01000 377
01001 340
01010 057
01011 267
01100 377
01101 377
01110 377
01111 377
10000 377
10001 377
10010 225
10011 000
10100 273
10101 377
10110 377
10111 377
11000 232
11001 377
11010 317
11011 220
11100 263
11101 377
11110 377
11111 377
*****
*/( A(PIN #10) IS DPF IR 08 (1)H
*/( B(PIN #11) IS DPR IR 09 (1)H
*/( C(PIN #12) IS DPF IR 10 (1)H
*/( D(PIN #13) IS DPF IR 07 (1)H
*/( E(PIN #14) IS DPF IR 06 (1)H

```

```

CLR ALUF=ZERO
NEG CIN ALUF=A MINUS B MINUS 1
ROR

```

```

INC CIN ALUF=A ARITH
SBC CIN ALUF=A MINUS 1
ASR

```

```

COM ALUF=NOT B
ADD CIN ALUF=A ARITH
ROL

```

```

SWAB NOT B CLOCK LOW
DEC CIN ALUF=A MINUS 1
TSI ALUF=A
ASL

```

OCTAL ADDRESS	EDCBA	
000	00000	
001	00001	
002	00010	
003	00011	
004	00100	
005	00101	
006	00110	
007	00111	
010	01000	
011	01001	
012	01010	
013	01011	
014	01100	
015	01101	
017	01111	
020	10000	
021	10001	
022	10010	
023	10011	
024	10100	
025	10101	
026	10110	
027	10111	
030	11000	
031	11001	
032	11010	
033	11011	
034	11100	
035	11101	
036	11110	
037	11111	

```

*/( =Y8 (PIN #9) DPG WAIT L
*/( =Y7 (PIN #7) CONF MPC 07 L
*/( =Y6 (PIN #6) CONF MPC 06 L
*/( =Y5 (PIN #5) CONF MPC 05 L
*/( =Y4 (PIN #4) CONF MPC 04 L
*/( =Y3 (PIN #3) CONF MPC 03 L
*/( =Y2 (PIN #2) CONF MPC 02 L
*/( =Y1 (PIN #1) CONF MPC 01 L
*****
OCTAL DATA
00000 313
00001 313
00010 313
00011 313
00100 313
00101 313
00110 313
00111 377
01000 377
01001 377
01010 377
01011 377
01100 377
01101 377
01110 377
01111 377
10000 377
10001 377
10010 377
10011 377
10100 377
10101 377
10110 377
10111 377
11000 377
11001 377
11010 377
11011 377
11100 377
11101 377
11110 377
11111 377
*****
*/( A(PIN #10) IS DPF IR 08 (1)H
*/( B(PIN #11) IS DPF IR 02 (1)H
*/( C(PIN #12) IS DPF IR 01 (1)H
*/( D(PIN #13) IS DPG BUT IR DECODE L
*/( E(PIN #14) IS DPG CC L

```

```

RI (RESERVED INSTRUCTION)
NOT ACCESSED FOR NOT IR DECODE

```

```

HALT,BUT IR DEC
WAIT,BUT IR DEC

```

```

IOT
RESET
RTI
BREAKPOINT TRAP DECODE

```

```

WAIT,BUT IR DEC,BAR

```









```

/( =Y4 (PIN # 9) CONF MPC 03 L
*/( =Y3 (PIN #10) CONF MPC 02 L
**/( =Y2 (PIN #11) CONF MPC 01 L
***/( =Y1 (PIN #12) CONF MPC 04 L
**** OCTAL
**** DATA

```

OCTAL ADDRESS	DECIMAL ADDRESS	HGFECBA
000	0	00000000
001	1	1111 017
002	2	00000001
003	3	1111 017
004	4	00000010
005	5	1111 017
006	6	00000100
007	7	1111 017
008	8	00000110
009	9	1111 017
010	10	00000111
011	11	1111 017
012	12	00001011
013	13	1111 017
014	14	00001100
015	15	1111 017
016	16	00001101
017	17	1111 017
018	18	00001110
019	19	1111 017
020	20	00001111
021	21	00010000
022	22	1111 017
023	23	00010001
024	24	1111 017
025	25	00010010
026	26	1111 017
027	27	00010011
030	30	00011000
031	31	1111 017
032	32	00011001
033	33	1111 017
034	34	00011010
035	35	1111 017
036	36	00011011
037	37	1111 017

NOT ACCESSED  
\*\*\*\*\*

BGE  
\*\*\*\*\*

040	003
041	005
042	003
043	005
044	003
045	005
046	003
047	005
050	003
051	005
052	003
053	005
054	003
055	005
056	003
057	005
060	003
061	005
062	003
063	005
064	003
065	005
066	003
067	005
070	003
071	005
072	003
073	005
074	003
075	005
076	003
077	005

BNE  
\*\*\*\*\*

BGT  
\*\*\*\*\*

```

*****( A(PIN #05) IS DPE CC ZERO (1)H
*****( B(PIN #06) IS DPE CC COUT (1)H
*****( C(PIN #07) IS DPE CC NEG (1)H
*****( D(PIN #04) IS DPE CC VBIT (1)H
*****( E(PIN #03) IS DPF IR 10 (1)H
*****( F(PIN #02) IS DPF IR 09 (1)H
*****( G(PIN #01) IS DPF IR 08 (1)H
*****( H(PIN #15) IS DPF IR 15 (1)H

```







PAGE REVISION CONTROL SHEET

SH NO	DATE	BY	REVISION	REMARKS
1		H J K L M N		*ETCH REV'D NOT TO BE USED PER ORDER D.E.
2		H J K L M M		
3		H H H H H H		
4		H H H H H H		
5		H H H J J J		
6		H H H J J K		
7		H H H J J V		
8		H H H H H H		
9		H H H V V V		
10		H H H K L L		
11		H H H K K K		
12		H H H J J K K		
13		H H H J J K K		
14		H H H H H H		

ETCH REV NO: 5, 6, 7, 8, 9, 10, 105

DRN: J. M. Ceru DATE: 8/16/72

CHK'D: H.T. Tolson DATE: 8/21/72

ENG: J. J. [unclear] DATE: 8/17/72

PROJ. ENG: J. J. [unclear] DATE: 8/17/72

PROD: H.T. Tolson DATE: 8/21/72

NEXT HIGHER ASSY.

SCALE SHEET 1 OF 14

SIZE CODE: BCS M7261-0-1

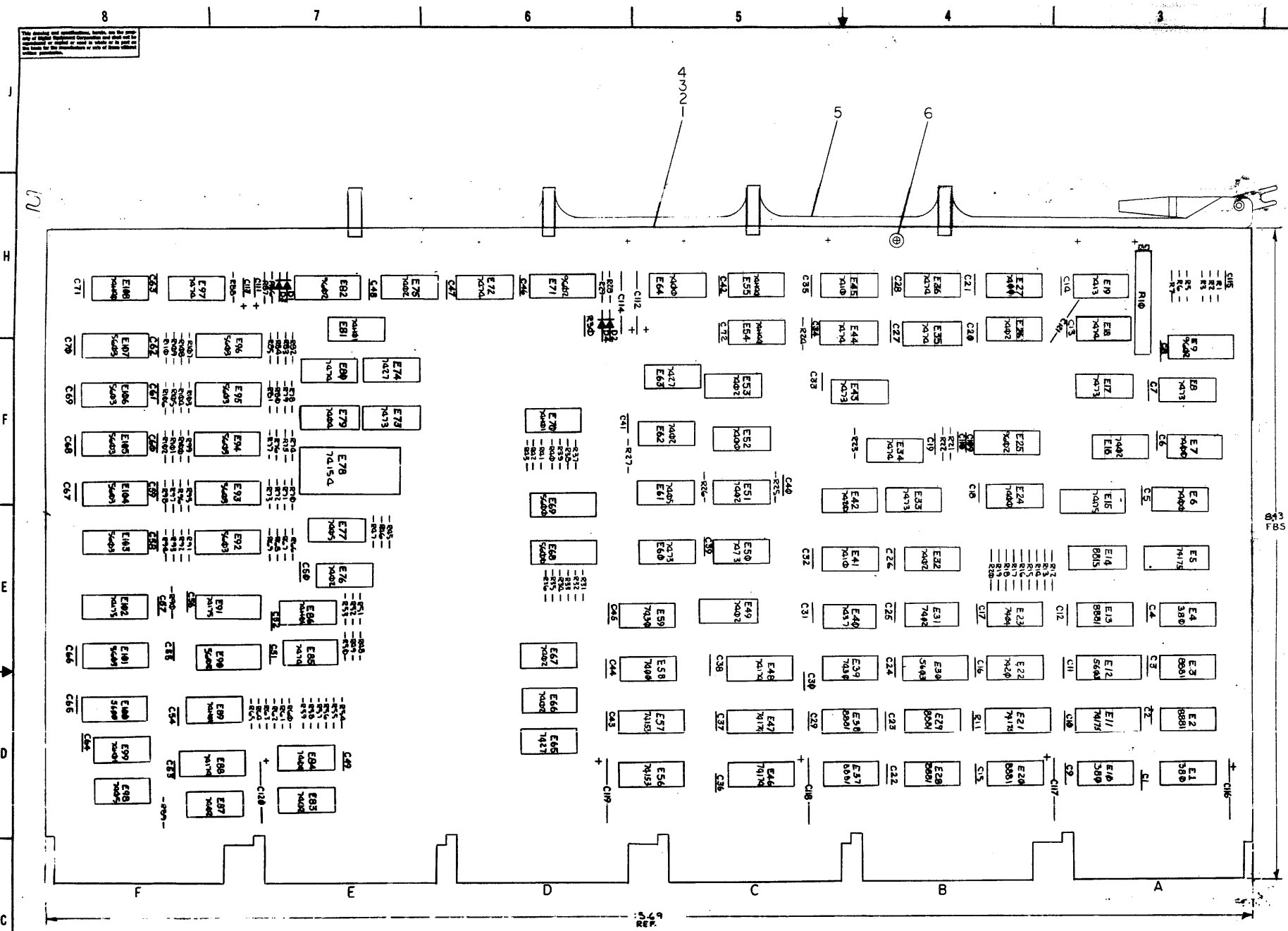
NUMBER: 1

REV: N

digital EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

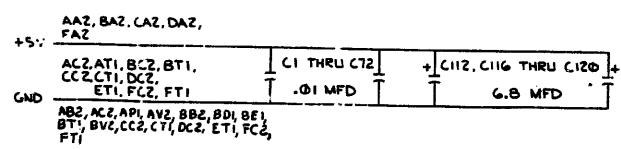
TITLE: CONTROL LOGIC AND MICROPROGRAM

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NOTE:  
1. UNLESS OTHERWISE NOTED: RESISTANCE IS IN OHMS,  
CAPACITANCE IS IN PICOFARADS.

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	INT. NO.
1	E100	IC IM5600	23-A14A1	60
1	E107	IC IM5603	23-A14A2	59
1	E106	IC IM5603	23-A13A2	58
1	E105	IC IM5603	23-A12A2	57
1	E104	IC IM5603	23-A11A2	56
1	E103	IC IM5603	23-A10A2	55
1	E101	IC IM5603	23-A09A2	54
1	E96	IC IM5603	23-A16A2	53
1	E95	IC IM5603	23-A17A2	52
1	E94	IC IM5603	23-A15A2	51
1	E92	IC IM5603	23-A05A2	50
1	E92	IC IM5603	23-A04A2	49
1	E90	IC IM5600	23-A13A1	48
1	E69	IC IM5600	23-A09A1	47
1	E68	IC IM5600	23-A07A1	46
1	E30	IC IM5603	23-A02A2	45
1	E12	IC IM5603	23-A01A2	44
1	R86	RES 10K 1/4W, 5%	1300479	43
1	R21, R22, R28, R29, R81	RES 30K 1/4W, 5%	1302394	42
1	R10	RES 1K 1/2W, 5%, POT	1309143-07	41
1	R6	RES 5.6K 1/4W, 5%	1301874	40
48	R3, 5, 12-18, 20, 24, 25, 27, 31-40, 42, 43, 45-50, 56, 58, 60-65, 79, 81-83, 107-109, 57	RES 2K 1/4W, 5%	1302388	39
41	R2, 7, 41, 84, 51-54, 59, 66-78, 80, 85, 91-106, 110, 80, 85, 91-106, 110, 80, 85, 91-106, 110	RES 470 1/4W 5%	1300316	38
9	R1, R8, R9, R10, R11, R19, R23, R30, R55, R88, R89	RES 1K 1/4W 5%	1300365	37
1	C110	CAP 1000 PF D.M.	1000042	36
1	E78	IC DEC 74154	1909701	35
2	E56, E57	IC DEC 74153	1909937	34
4	E46, E47, E48, E88	IC DEC 74174	1910652	33
4	E9, E25, E71, E82	IC DEC 9602	1910751	32
6	E5, E11, E15, E21, E91, E102	IC DEC 74175	1910651	31
3	E61, E77, E98	IC DEC 7405	1909930	30
3	E63, E65, E74	IC DEC 7427	1910878	29
3	E54, E55, E108	IC DEC 74440	1905586	28
2	E41, E45	IC DEC 7410	1905576	27
1	E40	IC DEC 7437	1910091	26
2	E39, E59	IC DEC 7430	1905578	25
5	E99, E70, E81, E86, E89	IC DEC 74401	1909849	24
3	E23, E79, E84	IC DEC 7404	1909686	23
2	E22, E42	IC DEC 7420	1905577	22
1	E9	IC DEC 7413	1909989	21
9	E15, E34, E35, E36, E44, E72, E80, E85, E97, E16, E26, E31, E32, E49, E51, E53, E62, E66, E67, E75, E76, E33, E87	IC DEC 7474	1905547	20
14	E14	IC DEC 7402	1909004	19
1	E14	IC DEC 8815	1909713	18
7	E8, E17, E33, E43, E50, E60, E73	IC DEC 7473	1905587	17
7	E6, E7, E24, E52, E58, E64, E27	IC DEC 7400	1905575	16
8	E2, E3, E13, E20, E28, E29, E37, E38	IC DEC 8801	1909705	15
3	E1, E4, E10	IC DEC 380	1909485	14
4	D1 THRU D4	DIODE D664	1100114	13
1	C115	CAP 120 PFD D.M.	1000018	12
1	C11	CAP 2.2 MFD	1002627	11
5	C116 THRU C120	CAP 6.8 MFD	1005306	10
2	C111, C113	CAP 4.8 MFD	1009964	9
1	C109	CAP 2200 PFD DISC	1000055	8
72	C1 THRU C72	CAP .01 MFD 100V, 20% DISC	1001610	7
12		EYELET	9006732	6
1		HANDLE, MODULE	EPY21071-2	5
1		ETCHED CIRCUIT BOARD	5009745	4
REF		MODULE ECO HISTORY	844-M7261-0-4	3
REF		ASSY/DRILL HOLE LAYOUT	844-M7261-0-5	2
REF		X-Y COORDINATE HOLE LOCATION	844-M7261-0-6	1



IC PIN LOCATIONS	NUMBER LIST
9602	0 12
74173	0 16
74174	0 16
74154	12 24
74153	0 16
5603	0 16
5600	0 16

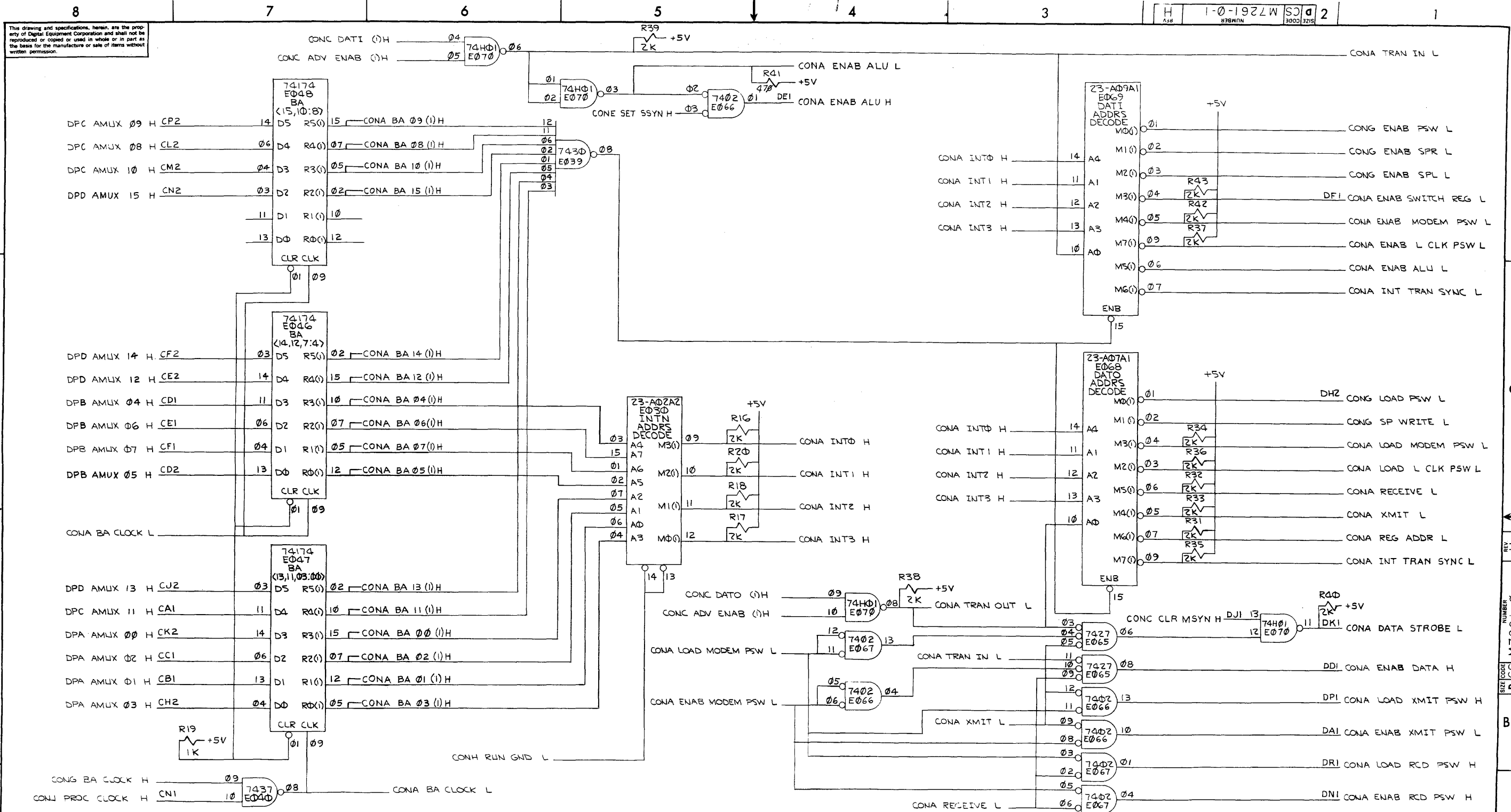
QTY	REF DESIGNATION	DESCRIPTION	PART NO.	INT. NO.
1	C112	CAP 15MFD 20V 10% STANT	1009812	
1	C119	CAP 10MFD 20V 10% STANT	1009812	
1	R26	RES 390 1/4W 5%	1300295	41

ETCH BOARD REV E

SEMICONDUCTOR CONVERSION CHART

EQUIPMENT CORPORATION  
CONTROL LOGIC & MICROPROGRAM  
844-M7261-0-1





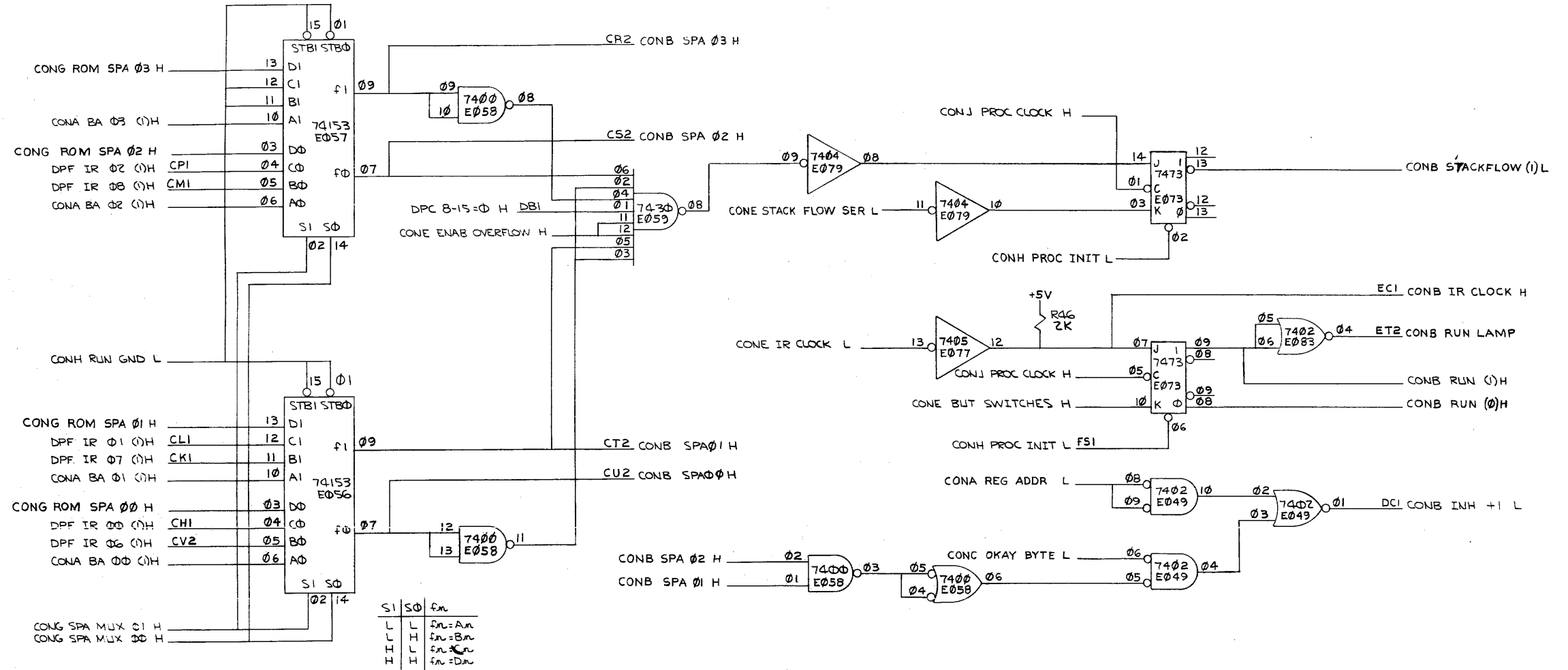
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H 1-0-1972W SD 2  
 3000 3215

REV	NO
CHK	NO

FIRST USED ON OPTION/MODEL 11/05	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN. W.MAJOR	DATE 2/18/72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .005	CHKD. G.	DATE 4/2/72	TITLE CONTROL LOGIC & MICROPROGRAM (CONA)	
ANGLES ±0°30'	ENG. R.C. QUINN	DATE 4/2/72	SIZE CODE NUMBER REV. D/CS M/261-0-1 H	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ. ENG.	DATE	NEXT HIGHER ASSY. B-DD-KD11-B	
MATERIAL	PROD.	DATE	SCALE 3 OF	
FINISH			SHEET 3 OF	

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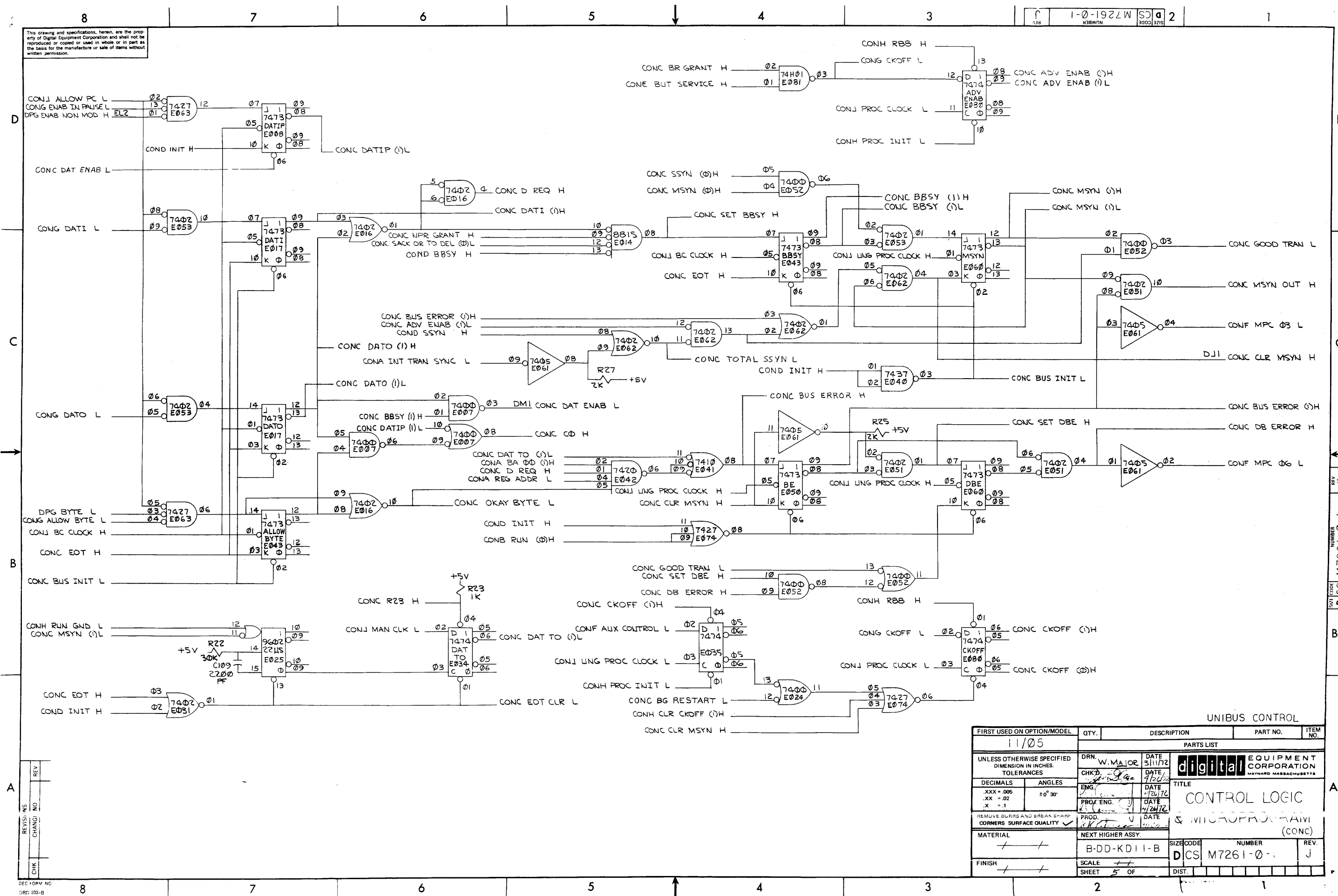
S1	S0	fn
L	L	fn = An
L	H	fn = Bn
H	L	fn = Cn
H	H	fn = Dn

REV	NO.

DEC FORM NO. DRD 102-B

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN. W. MAJOR	DATE 2/17/72	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS TITLE <b>CONTROL LOGIC &amp; MICROPROGRAM (CONB)</b>
DECIMALS	ANGLES	CHK'D. [Signature]	DATE 1/20/72	
.XXX = .005	± 0° 30'	ENG. [Signature]	DATE 1/20/72	
.XX = .02		PROJ. ENG. [Signature]	DATE 1/20/72	
.X = .1		PROD. [Signature]	DATE 1/20/72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		NEXT HIGHER ASSY.		
MATERIAL		B-DD-KD11-B	SIZE CODE	NUMBER
FINISH			DCS	M7261-0-1
SCALE		SHEET 4 OF		REV. H

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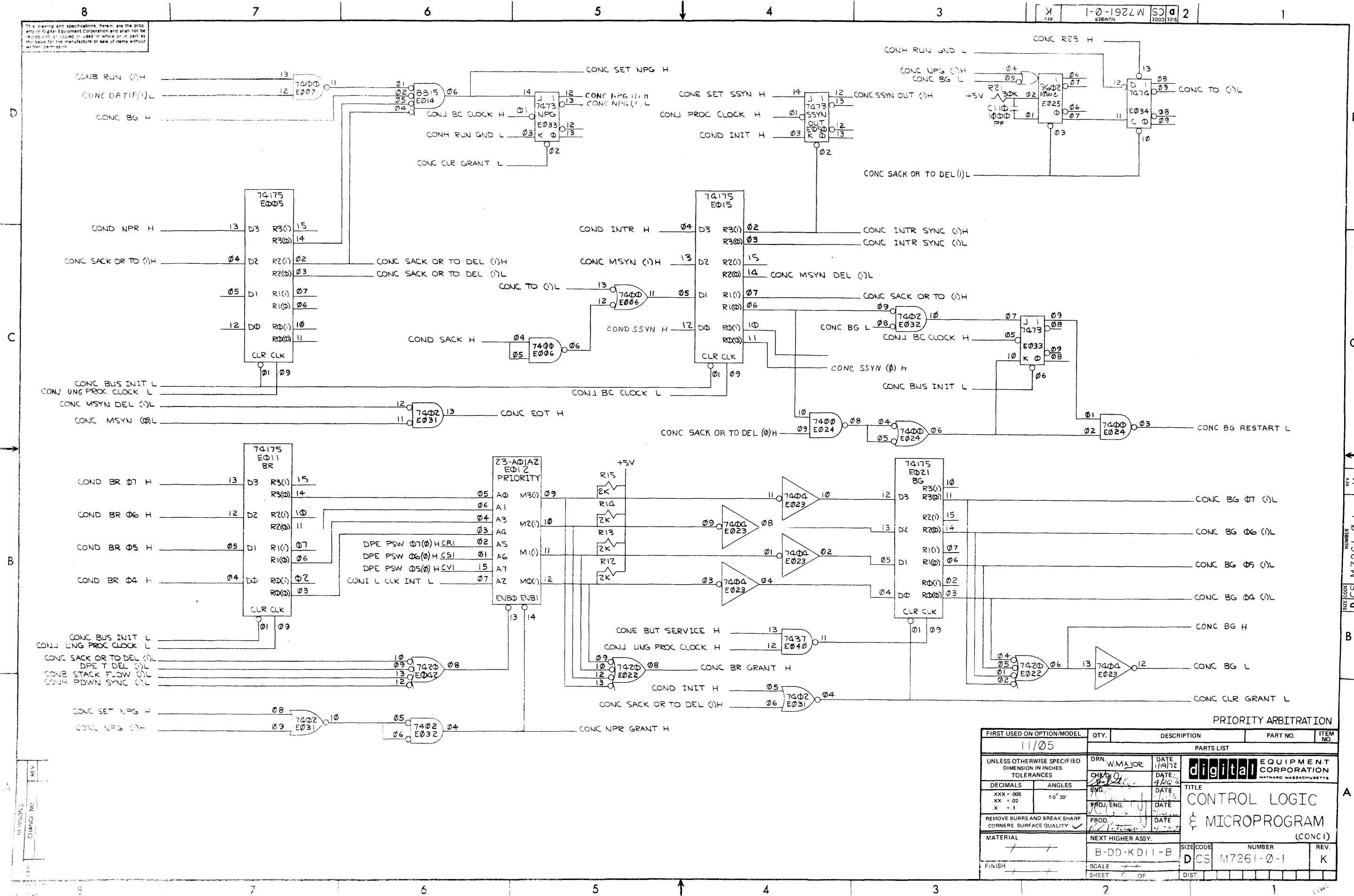


REV	NO	CHG	NO

DEC FORM NO DRP 102-B

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN. W. MAJOR	DATE 3/11/72	 <b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD MASSACHUSETTS</small>
DECIMALS	ANGLES	CHKD.	DATE 7/20/72	
.XXX = .005	±0° 30'	ENG.	DATE 4/26/72	
.XX = .02		PROJ. ENG.	DATE 7/24/72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD.	DATE	<b>CONTROL LOGIC &amp; MICROPROGRAM (CONC)</b>
MATERIAL		NEXT HIGHER ASSY.		
FINISH		SCALE		
		SHEET 5 OF		SIZE CODE <b>D</b> CS NUMBER <b>M7261-0-1</b> REV. <b>J</b>

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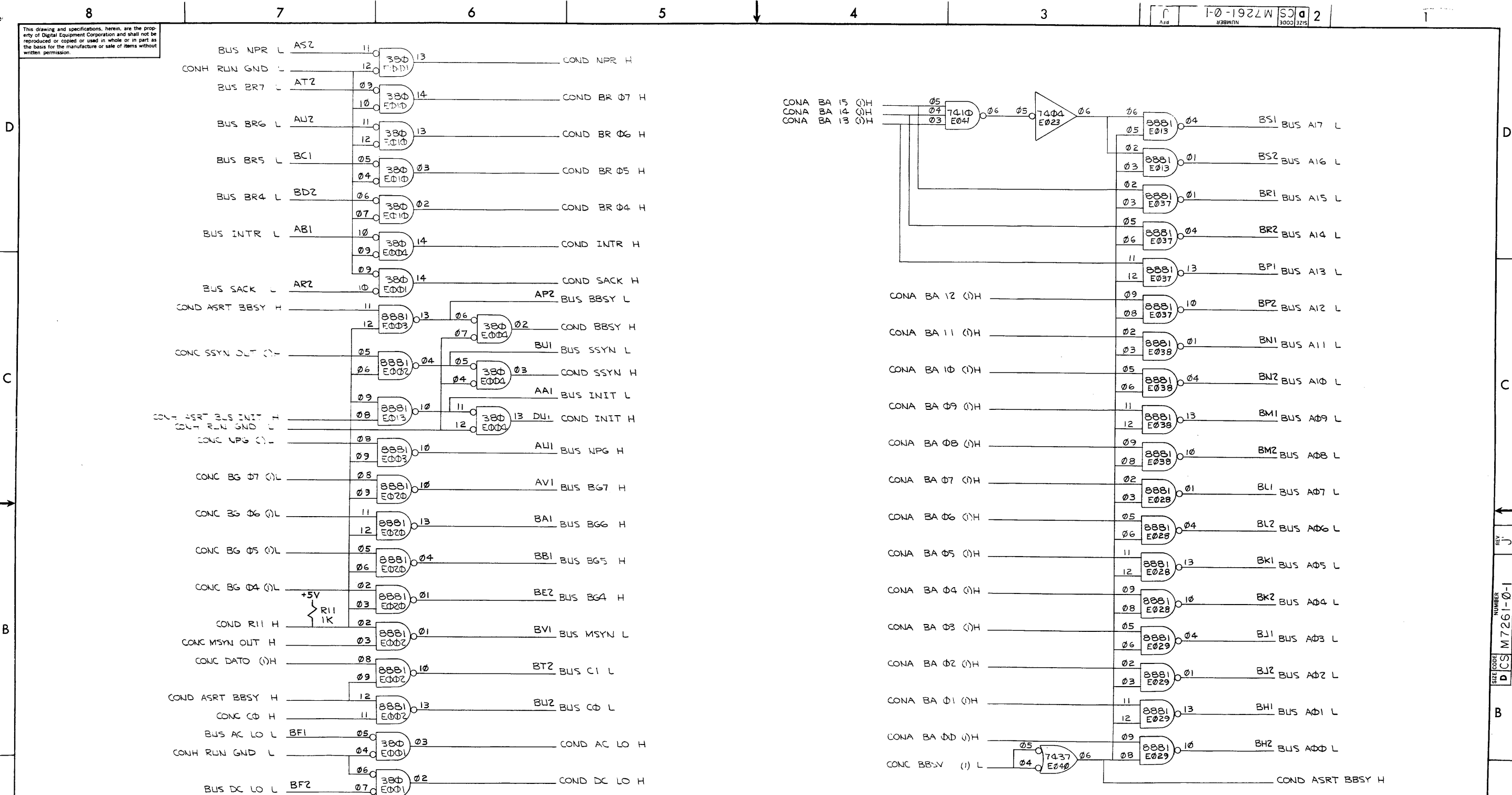


PRIORITY ARBITRATION				
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN. W.MAJOR	DATE 1/19/72	 <b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD MASSACHUSETTS</small>
DECIMALS	ANGLES	CHK'D BY	DATE 1/26/72	
XXX = .005	±0°30'	ENG.	DATE 1/27/72	
XX = .02		PROJ. ENG.	DATE 1/27/72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD.	DATE 1/27/72	<b>CONTROL LOGIC</b> <b>μ MICROPROGRAM</b> <small>(CONC I)</small>
MATERIAL		NEXT HIGHER ASSY.		
FINISH		B-DD-KD11-B	SCALE	SIZE CODE: <b>DCS</b> NUMBER: <b>M7261-0-1</b> REV.: <b>K</b>
SHEET		OF	DIST.	

REVISIONS  
CHANGE NO.  
REV.

REV. K  
NUMBER M7261-0-1  
SIZE CODE DCS

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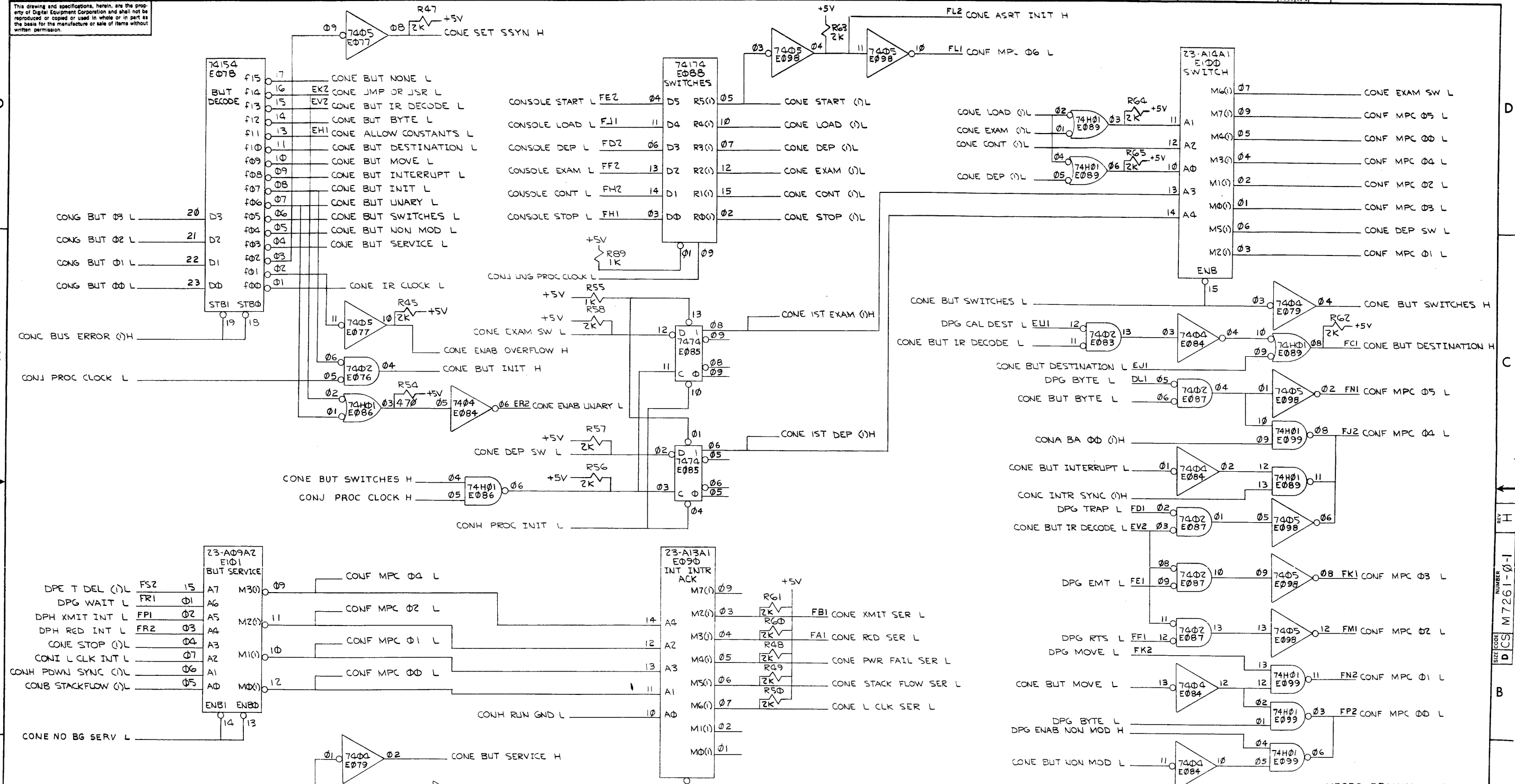


DRIVERS & RECEIVERS

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN. W. MAJOR	DATE 1/14/72	 <b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD MASSACHUSETTS</small>
DECIMALS .xxx = .005	ANGLES ±0° 30'	CHK'D:	DATE	
.xx = .02		ENG.	DATE	
.x = .1		PROJ. ENG.	DATE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD.	DATE	TITLE
				CONTROL LOGIC & MICROPROGRAM (COND)
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
	B-DD-KD11-B	D	CS M7261-0-1	J
FINISH	SCALE	SHEET	7 OF	DIST.

REV	NO	CHG	NO
CHK			

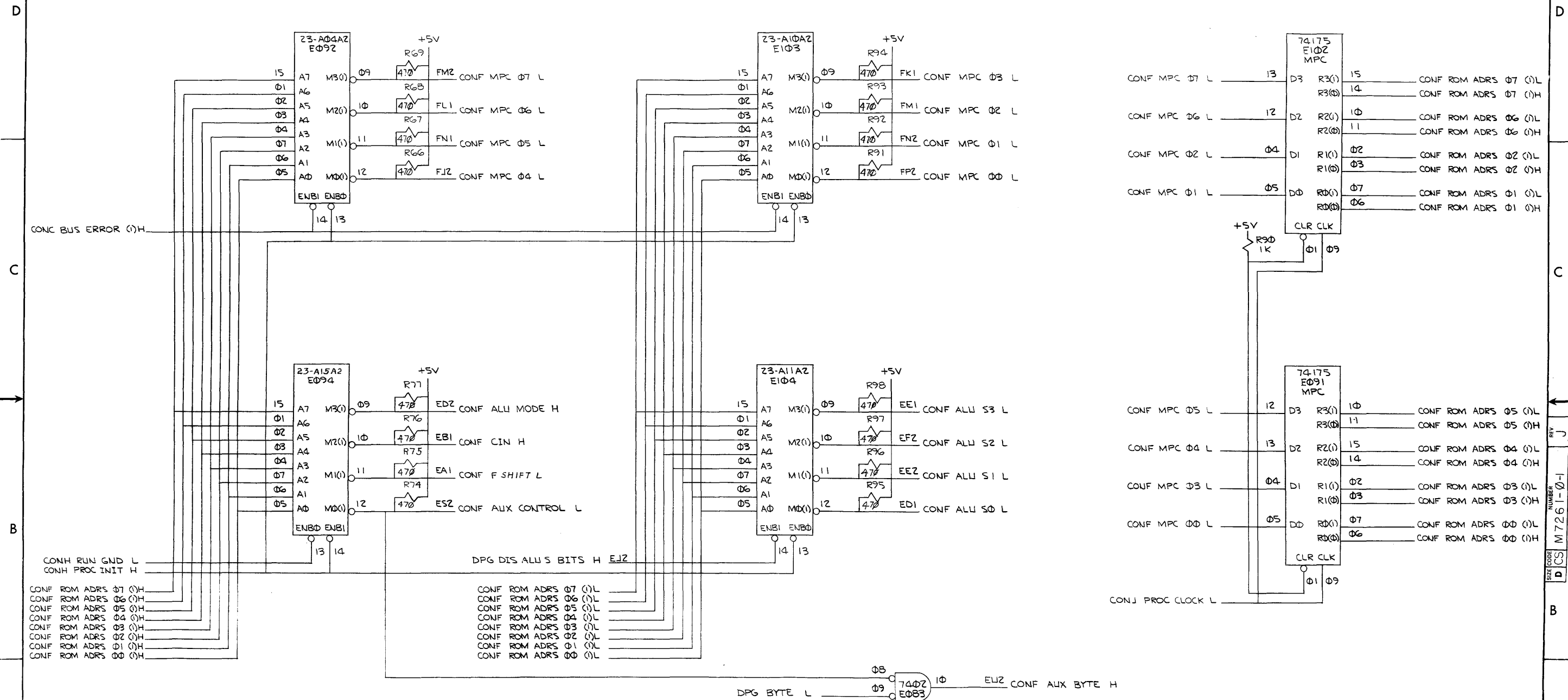
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FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11105				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS	ANGLES	DRN. W. MAJOR	DATE 2/26/72	
.XXX = .005	±0°30'	CHK'D	DATE	
.XX = .02		ENG.	DATE	
.X = .1		PROJ. ENG.	DATE	
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.	TITLE		
/ /	B-DD-KD11-B	CONTROL LOGIC & MICROPROGRAM (CONE)		
FINISH	SCALE	SIZE CODE	NUMBER	REV.
/ /	SHEET 8 OF	D CS	M7261-0-1	H

REV.	CHANGE NO.

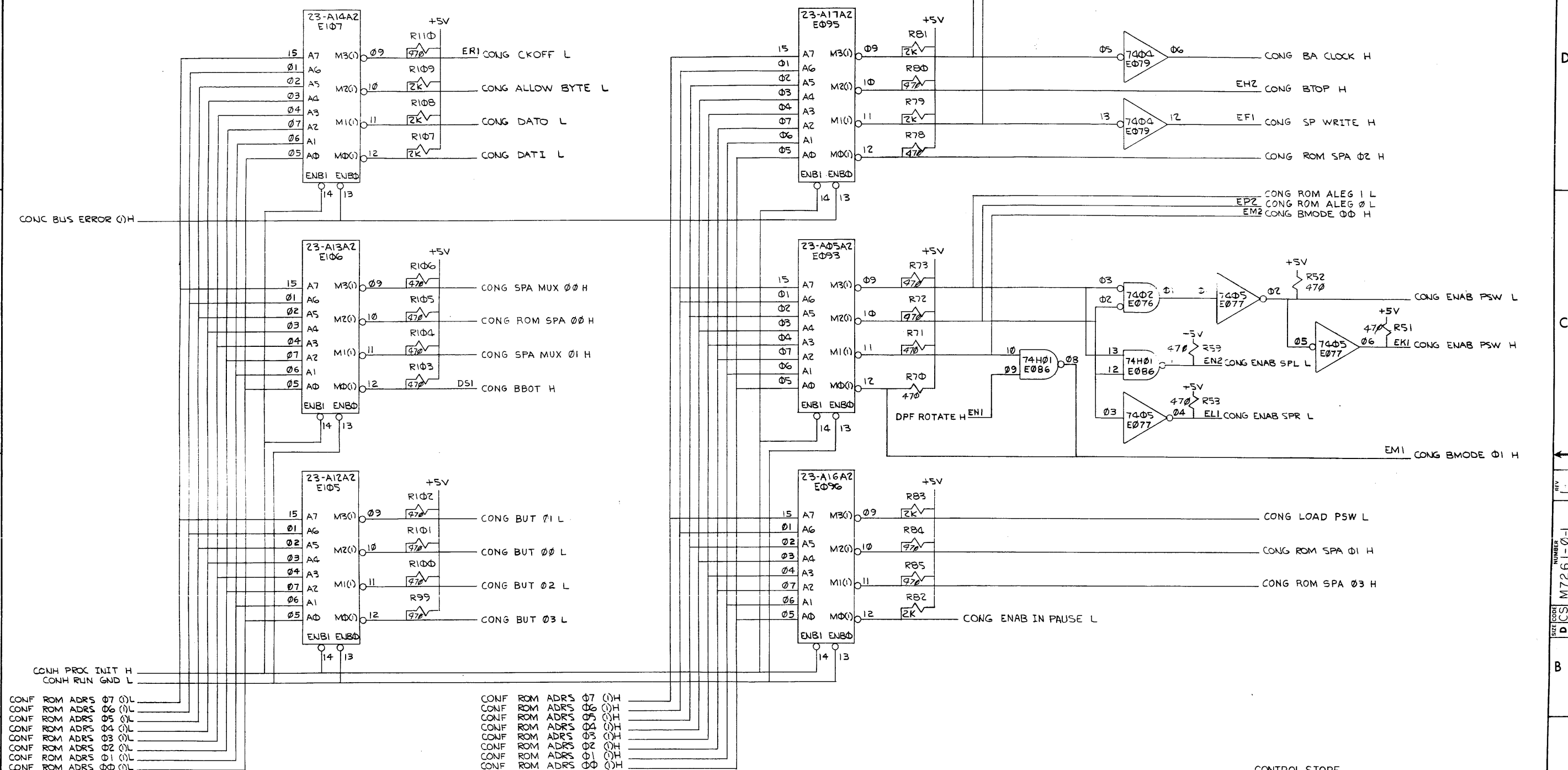
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REV.	NO.
CHK.	NO.

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES					
DECIMALS	ANGLES	PARTS LIST			
.XXX = .005	±0° 30'	DRN.	DATE	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
.XX = .02		CHKD.	DATE	TITLE	
.X = .1		ENG.	DATE	CONTROL LOGIC & MICROPROGRAM	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROJ. ENG.	DATE	(CONF)	
MATERIAL		PROD.	DATE		
NEXT HIGHER ASSY.		B-DD-KD11-B			
FINISH		SCALE	SHEET	9 OF	
		SIZE CODE		NUMBER	REV.
		D.C.S.		M7261-0-1	J
		DIST.			

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- CONF ROM ADRS 07 (0)L
  - CONF ROM ADRS 06 (0)L
  - CONF ROM ADRS 05 (0)L
  - CONF ROM ADRS 04 (0)L
  - CONF ROM ADRS 03 (0)L
  - CONF ROM ADRS 02 (0)L
  - CONF ROM ADRS 01 (0)L
  - CONF ROM ADRS 00 (0)L
- CONF ROM ADRS 07 (0)H
  - CONF ROM ADRS 06 (0)H
  - CONF ROM ADRS 05 (0)H
  - CONF ROM ADRS 04 (0)H
  - CONF ROM ADRS 03 (0)H
  - CONF ROM ADRS 02 (0)H
  - CONF ROM ADRS 01 (0)H
  - CONF ROM ADRS 00 (0)H

CONTROL STORE				
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.		DRN. W. MAJOR	DATE 2/13/72	 <b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD MASSACHUSETTS</small>
TOLERANCES		CHK'D.	DATE 11/26/71	
DECIMALS	ANGLES	ENG.	DATE	
.XXX = .005	±0° 30'	PROQ. ENG.	DATE	
.XX = .02		PROD.	DATE	<b>CONTROL LOGIC &amp; MICROPROGRAM</b> (CONG)
.X = .1				
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		NEXT HIGHER ASSY.		
MATERIAL	B-DD-KD11-B		SIZE/CODE	NUMBER
FINISH	SCALE		DCS	M7261-0-1
	SHEET 13 OF		DIST.	

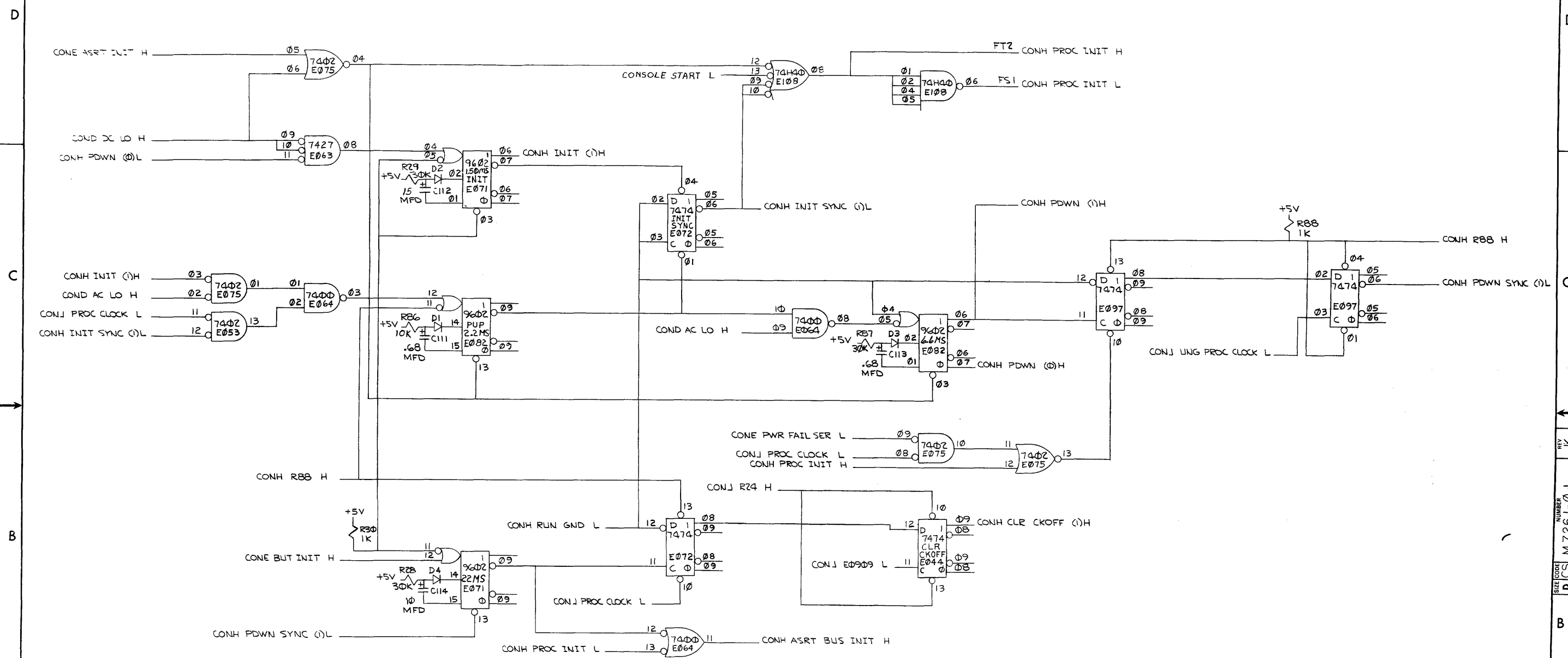
REV	CHANGE NO	REVISIONS

REV L  
NUMBER  
DCS M7261-0-1

A



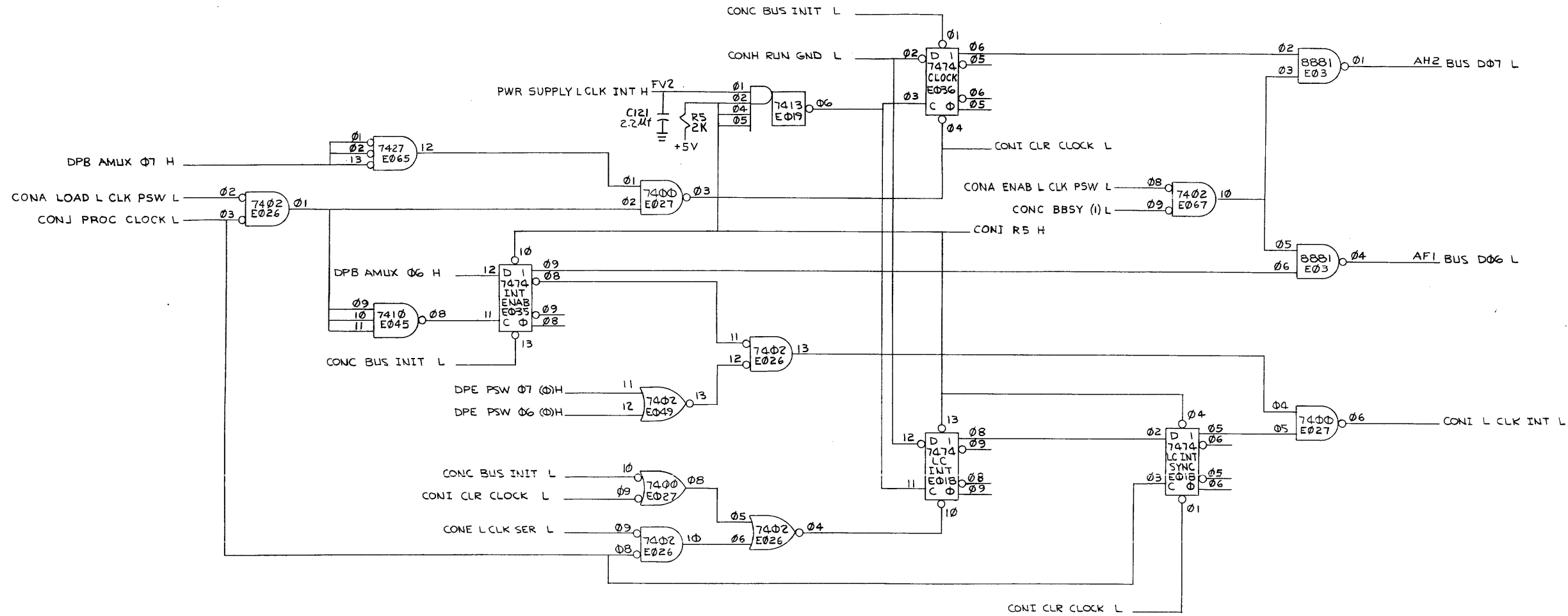
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REV	NO
CHG	NO

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN. W. MAJOR	DATE 2/17/72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS	ANGLES	CHK'D	DATE 4/26/72	TITLE	
.XXX = .005	± 0° 30'	ENG. J. S. J.	DATE 4/26/72	CONTROL LOGIC & MICROPROGRAM (CONH)	
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY		PROD. J. S. J.	DATE		
MATERIAL	NEXT HIGHER ASSY.	B-DD-KD11-B		SIZE CODE	NUMBER
FINISH	SCALE	SHEET 11 OF		D CS	M7261-0-1
					REV K

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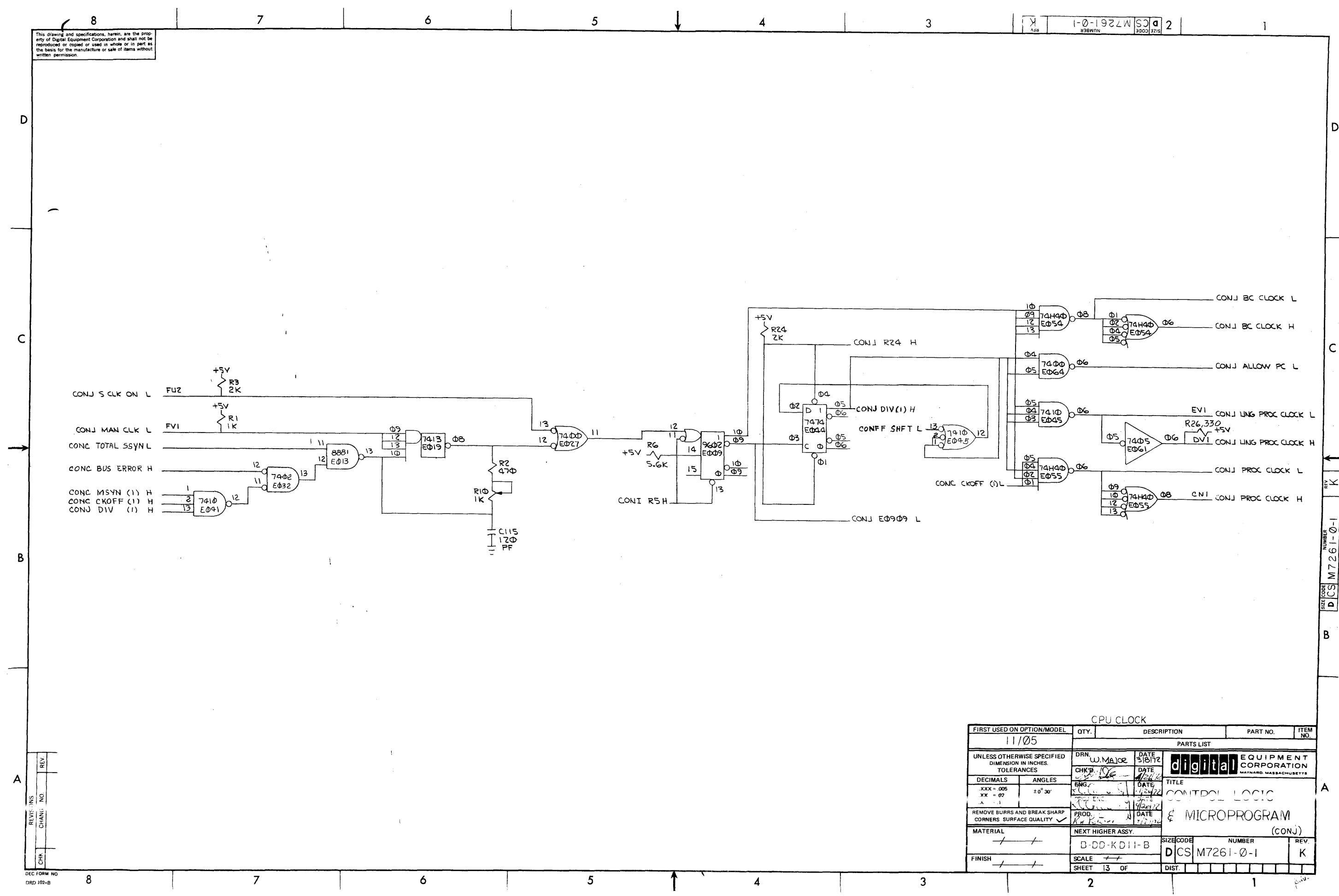


LINE CLOCK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.								
11/05												
PARTS LIST												
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN. W. MAJOR DATE 3/2/72	 <b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD MASSACHUSETTS</small>									
DECIMALS	ANGLES	CHK'D. DATE 1/1/72										
.XXX = .005	±0° 30'	ENG. DATE 1/1/72										
.XX = .02		PROJ. ENG. DATE 1/1/72										
.X = .1		PROD. DATE 1/1/72	<b>CONTROL LOGIC &amp; MICROPROGRAM (CONI)</b>									
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓												
MATERIAL	NEXT HIGHER ASSY.	<table border="1"> <tr> <td>SIZE CODE</td> <td>NUMBER</td> <td>REV.</td> </tr> <tr> <td>D CS</td> <td>M7261-0-1</td> <td>K</td> </tr> </table>			SIZE CODE	NUMBER	REV.	D CS	M7261-0-1	K		
SIZE CODE	NUMBER	REV.										
D CS	M7261-0-1	K										
FINISH	SCALE	<table border="1"> <tr> <td>SHEET</td> <td>12</td> <td>OF</td> <td></td> </tr> <tr> <td>DIST.</td> <td></td> <td></td> <td></td> </tr> </table>			SHEET	12	OF		DIST.			
SHEET	12	OF										
DIST.												

REVISIONS	REV.
CHANGE NO.	
CHK	

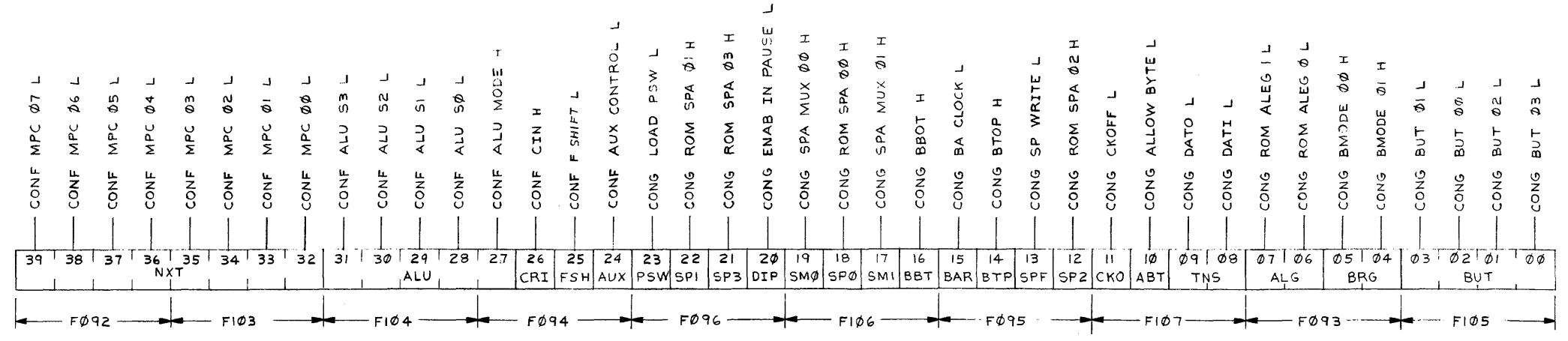
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CPU CLOCK			
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO. ITEM NO.
11/05			
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN. W. MAJOR	DATE 3/8/72	 digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
DECIMALS ANGLES	CHK'D. [Signature]	DATE 4/24/72	
.XXX - .005 .XX - .02 .X - .1	ENG. [Signature]	DATE 4/24/72	
	PROD. [Signature]	DATE 4/24/72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY			TITLE CONTROL LOGIC & MICROPROGRAM (CONJ)
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE NUMBER REV. B-DD-KD11-B DCS M7261-0-1 K
FINISH	SCALE	SHEET 13 OF	DIST.

REV. NO.	REV.
CHG. NO.	CHG.

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	31	30	29	28	27
AL	L	L	L	L	H
AA	L	L	L	L	L
AB	L	L	L	L	L
A $\bar{B}$	L	L	L	L	L
$\bar{A}$ OR B	L	L	L	L	L
BL	L	L	L	L	L
A PLUS B	L	L	L	L	L
A XOR B	L	L	L	L	L
A-B- $\bar{1}$	L	L	L	L	L
$\bar{B}$	L	L	L	L	L
-1	L	L	L	L	L
A- $\bar{1}$	L	L	L	L	L
ASL	L	L	L	L	L
ROL	L	L	L	L	L
ASR	L	L	L	L	L
ROR	L	L	L	L	L

<table border="1"> <tr><td>26</td><td>CRI</td></tr> <tr><td>OFF</td><td>L</td></tr> <tr><td>ON</td><td>H</td></tr> </table>	26	CRI	OFF	L	ON	H	<table border="1"> <tr><td>23</td><td>PSW</td></tr> <tr><td>HOLD</td><td>L</td></tr> <tr><td>LOAD</td><td>H</td></tr> </table>	23	PSW	HOLD	L	LOAD	H	<table border="1"> <tr><td>14</td><td>BTP</td></tr> <tr><td>BREG</td><td>L</td></tr> <tr><td>SEX +1</td><td>L</td></tr> </table>	14	BTP	BREG	L	SEX +1	L	<table border="1"> <tr><td>10</td><td>ABT</td></tr> <tr><td>NO</td><td>L</td></tr> <tr><td>YES</td><td>H</td></tr> </table>	10	ABT	NO	L	YES	H	<table border="1"> <tr><td>05</td><td>04</td></tr> <tr><td>BRG</td><td>BRG</td></tr> <tr><td>LOAD</td><td>L</td></tr> <tr><td>SLEFT</td><td>H</td></tr> <tr><td>SRIGHT</td><td>L</td></tr> <tr><td>HOLD</td><td>L</td></tr> </table>	05	04	BRG	BRG	LOAD	L	SLEFT	H	SRIGHT	L	HOLD	L	<table border="1"> <tr><td>03</td><td>02</td><td>01</td><td>00</td></tr> <tr><td colspan="4">BUT</td></tr> <tr><td>NON</td><td>H</td><td>H</td><td>H</td></tr> <tr><td>JMP/JSR</td><td>L</td><td>L</td><td>L</td></tr> <tr><td>IR DECODE</td><td>L</td><td>L</td><td>L</td></tr> <tr><td>BYTE</td><td>L</td><td>L</td><td>L</td></tr> <tr><td>CONST</td><td>H</td><td>H</td><td>H</td></tr> <tr><td>DEST</td><td>L</td><td>L</td><td>L</td></tr> <tr><td>MOV</td><td>L</td><td>L</td><td>L</td></tr> <tr><td>INTR</td><td>L</td><td>L</td><td>L</td></tr> <tr><td>INIT</td><td>H</td><td>H</td><td>H</td></tr> <tr><td>UNARY</td><td>L</td><td>L</td><td>L</td></tr> <tr><td>SWITCHES</td><td>L</td><td>L</td><td>L</td></tr> <tr><td>NON MOD</td><td>L</td><td>L</td><td>L</td></tr> <tr><td>SERVICE</td><td>H</td><td>H</td><td>H</td></tr> <tr><td>SSYNC</td><td>L</td><td>L</td><td>L</td></tr> <tr><td>ENOVFLO</td><td>L</td><td>L</td><td>L</td></tr> <tr><td>IR CLK</td><td>L</td><td>L</td><td>L</td></tr> </table>	03	02	01	00	BUT				NON	H	H	H	JMP/JSR	L	L	L	IR DECODE	L	L	L	BYTE	L	L	L	CONST	H	H	H	DEST	L	L	L	MOV	L	L	L	INTR	L	L	L	INIT	H	H	H	UNARY	L	L	L	SWITCHES	L	L	L	NON MOD	L	L	L	SERVICE	H	H	H	SSYNC	L	L	L	ENOVFLO	L	L	L	IR CLK	L	L	L
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BYTE	L	L	L																																																																																																														
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INTR	L	L	L																																																																																																														
INIT	H	H	H																																																																																																														
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SWITCHES	L	L	L																																																																																																														
NON MOD	L	L	L																																																																																																														
SERVICE	H	H	H																																																																																																														
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ENOVFLO	L	L	L																																																																																																														
IR CLK	L	L	L																																																																																																														
<table border="1"> <tr><td>25</td><td>FSH</td></tr> <tr><td>OFF</td><td>L</td></tr> <tr><td>ON</td><td>H</td></tr> </table>	25	FSH	OFF	L	ON	H	<table border="1"> <tr><td>20</td><td>DIP</td></tr> <tr><td>OFF</td><td>L</td></tr> <tr><td>ON</td><td>H</td></tr> </table>	20	DIP	OFF	L	ON	H	<table border="1"> <tr><td>16</td><td>BBT</td></tr> <tr><td>BRG</td><td>L</td></tr> <tr><td>SEX +1</td><td>L</td></tr> </table>	16	BBT	BRG	L	SEX +1	L	<table border="1"> <tr><td>13</td><td>SPF</td></tr> <tr><td>READ</td><td>L</td></tr> <tr><td>WRITE</td><td>H</td></tr> </table>	13	SPF	READ	L	WRITE	H	<table border="1"> <tr><td>09</td><td>08</td></tr> <tr><td>TNS</td><td>TNS</td></tr> <tr><td>NONE</td><td>L</td></tr> <tr><td>DATI</td><td>H</td></tr> <tr><td>DATO</td><td>L</td></tr> </table>	09	08	TNS	TNS	NONE	L	DATI	H	DATO	L																																																																											
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16	BBT																																																																																																																
BRG	L																																																																																																																
SEX +1	L																																																																																																																
13	SPF																																																																																																																
READ	L																																																																																																																
WRITE	H																																																																																																																
09	08																																																																																																																
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DATI	H																																																																																																																
DATO	L																																																																																																																
<table border="1"> <tr><td>24</td><td>AUX</td></tr> <tr><td>OFF</td><td>L</td></tr> <tr><td>ON</td><td>H</td></tr> </table>	24	AUX	OFF	L	ON	H	<table border="1"> <tr><td>19</td><td>17</td></tr> <tr><td>SM0</td><td>SMI</td></tr> <tr><td>ROM</td><td>L</td></tr> <tr><td>IRS</td><td>L</td></tr> <tr><td>IRD</td><td>L</td></tr> <tr><td>BA</td><td>L</td></tr> </table>	19	17	SM0	SMI	ROM	L	IRS	L	IRD	L	BA	L	<table border="1"> <tr><td>15</td><td>BAR</td></tr> <tr><td>HOLD</td><td>L</td></tr> <tr><td>LOAD</td><td>H</td></tr> </table>	15	BAR	HOLD	L	LOAD	H	<table border="1"> <tr><td>11</td><td>CKO</td></tr> <tr><td>OFF</td><td>L</td></tr> <tr><td>ON</td><td>H</td></tr> </table>	11	CKO	OFF	L	ON	H	<table border="1"> <tr><td>07</td><td>06</td></tr> <tr><td>ALG</td><td>ALG</td></tr> <tr><td>SP</td><td>L</td></tr> <tr><td>NULL</td><td>H</td></tr> <tr><td>SPR</td><td>L</td></tr> <tr><td>PSW</td><td>L</td></tr> </table>	07	06	ALG	ALG	SP	L	NULL	H	SPR	L	PSW	L																																																																			
24	AUX																																																																																																																
OFF	L																																																																																																																
ON	H																																																																																																																
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SM0	SMI																																																																																																																
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11	CKO																																																																																																																
OFF	L																																																																																																																
ON	H																																																																																																																
07	06																																																																																																																
ALG	ALG																																																																																																																
SP	L																																																																																																																
NULL	H																																																																																																																
SPR	L																																																																																																																
PSW	L																																																																																																																

CONTROL STORE WORD FORMAT			
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	ITEM NO.
11/05			
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN <i>[Signature]</i>	DATE 4-26-72
DECIMALS	ANGLES	CHK'D <i>[Signature]</i>	DATE 4/26/72
.XX = .02	±0° 30'	ENG. <i>[Signature]</i>	DATE 4/26/72
.X = .1		PROJ. ENG. <i>[Signature]</i>	DATE 4/26/72
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD. <i>[Signature]</i>	DATE 4/26/72
MATERIAL	NEXT HIGHER ASSY.	TITLE	
FINISH		CONTROL LOGIC & MICROPROGRAM	
	5-DD-KD11-B	SIZE CODE	NUMBER
		DCS	M7261-0-1
	SCALE	REV.	H
	SHEET 14 OF	DIST.	

BRUNING 40-522 15840	REV
DEC FORM NO DRD 102-B	CHANGE NO
	CHK

REV H  
 NUMBER M7261-0-1  
 SIZE CODE DCS

PAGE REVISION CONTROL SHEET

SH NO. 1 A 2 A 3 A 4 A 5 A 6 A 7 A 8 A 9 A 10 A 11 A 12 A 13 A 14 A 15 A 16 A 17 A

PAGE REVISIONS

REMARKS

Large grid area for revisions and remarks.

FIRST USED ON OPTION/MODEL

ETCH REVISIONS

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DRN. DATE CHKD. DATE ENG. DATE PROJ. ENG. DATE PROD. DATE

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE CONTROL LOGIC ROM PATTERNS.

SIZE CODE B RL NUMBER M7261-0-8 REV. A

NEXT HIGHER ASSY. SCALE SHEET 1 OF 17

```

OCTAL DECIMAL
ADDRESS ADDRESS EDCBA
000 0
001 1
002 2
003 3
004 4
005 5
006 6
007 7
010 8
011 9
012 10
013 11
014 12
015 13
016 14
017 15
020 16
021 17
022 18
023 19
024 20
025 21
026 22
027 23
030 24
031 25
032 26
033 27
034 28
035 29
036 30
037 31

/(( =Y8 (PIN #9) CONA INT TRAN SYNC L
/(( =Y7 (PIN #7) CONA REG ADDR L
/(( =Y6 (PIN #6) CONA RECEIVE L
/(( =Y5 (PIN #5) CONA TRANSMIT L
/(( =Y4 (PIN #4) CONA LOAD MODEM PSW L
/(( =Y3 (PIN #3) CONA LOAD L CLK PSW L
/(( =Y2 (PIN #2) CONG SP WRITE L
/(( =Y1 (PIN #1) CONG LOAD PSW L
***** OCTAL
***** DATA
1111111 377
1111111 377
1111111 377
1111111 377
01111110 176
1111111 377
01111011 173
1111111 377
00111101 075
1011111 277
0111111 177
1111111 377
1111111 377
0111111 177
1111111 377
1111111 377
0101011 127
10000 337
10001 147
10010 357
10011 137
10100 337
10101 157
10110 357
10111 377
11000 377
11001 377
11010 377
11011 377
11100 377
11101 377
11110 377
11111 377
*****
*****( A(PIN #10) IS CONA TRAN OUT L
*****( B(PIN #11) IS Y3 OF F025
*****( C(PIN #12) IS Y2 OF F025
*****( D(PIN #13) IS Y1 OF F025
*****( E(PIN #14) IS Y4 OF F025

```

```

PSW ,TRAN OUT BA=17776
PSW ,TRAN OUT, BAR
LCLK ,TRANOUT
LCLK ,TRANOUT, BAR
GRK0R17> ,TRANOUT RA=1777X
GRK0R17> ,TRANOUT, RAR
ODD BYTE (LCLK/TK/TP)

SWR ,TRANOUT BA=177570
SWR ,TRANOUT, BAR
TKS ,TRANOUT BA=177560
TKS ,TRANOUT, BAR
TPS ,TRANOUT BA=177564
TPS ,TRANOUT, BAR
TKB ,TRANOUT BA=177562
TKB ,TRANOUT, BAR
TPB ,TRANOUT BA=177566
TPB ,TRANOUT, BAR

```

```

OCTAL DECIMAL
ADDRESS ADDRESS EDCBA
000 0
001 1
002 2
003 3
004 4
005 5
006 6
007 7
010 8
011 9
012 10
013 11
014 12
015 13
016 14
017 15
020 16
021 17
022 18
023 19
024 20
025 21
026 22
027 23
030 24
031 25
032 26
033 27
034 28
035 29
036 30
037 31

/(( =Y8 (PIN #9) CONA ENAB L CLK PSW L
/(( =Y7 (PIN #7) CONA INT TRAN SYNC L
/(( =Y6 (PIN #6) CONA ENAB ALU L
/(( =Y5 (PIN #5) CONA ENAB MODEM PSW L
/(( =Y4 (PIN #4) CONA ENAB SWITCH REG L
/(( =Y3 (PIN #3) CONG ENAB SPL L
/(( =Y2 (PIN #2) CONG ENAB SPR L
/(( =Y1 (PIN #1) CONG ENAB PSW L
***** OCTAL
***** DATA
1111111 377
1111111 377
1111111 377
1111111 377
10011110 236
1111111 377
0011111 077
1111111 377
10011001 231
1111111 377
1011111 277
1111111 377
1111111 377
1111111 377
1001011 227
1111111 377
1000111 217
10001 377
10010 217
10011 377
10100 237
10101 377
10110 237
10111 377
11000 377
11001 377
11010 377
11011 377
11100 377
11101 377
11110 377
11111 377
*****
*****( A(PIN #10) IS CONA TRAN IN L
*****( B(PIN #11) IS Y3 OF F025
*****( C(PIN #12) IS Y2 OF F025
*****( D(PIN #13) IS Y1 OF F025
*****( E(PIN #14) IS Y4 OF F025

```

```

PSW ,TRANIN BA=17776
PSW ,TRANIN, BAR
LCLK ,TRANIN BA=17756
LCLK ,TRANIN, BAR
GEN REG ,TRANIN BA=1777X
GEN REG ,TRANIN, BAR
ODD BYTE ADDRESS (LCLK/TK/TP)

SWR ,TRANIN BA=177570
SWR ,TRANIN, BAR
TKS ,TRANIN BA=177560
TKS ,TRANIN, BAR
TPS ,TRANIN BA=177564
TPS ,TRANIN, BAR
TKB ,TRANIN BA=177562
TKB ,TRANIN, BAR
TPB ,TRANIN BA=177566
TPB ,TRANIN, BAR

```

```

/( =Y8 (PIN #9)
*/( =Y7 (PIN #7) CONE LINE CLOCK SER L
*/( =Y6 (PIN #6) CONE STACK FLOW L
*/( =Y5 (PIN #5) CONE PWR FAIL SER L
*/( =Y4 (PIN #4) CONE RCD SER L
*/( =Y3 (PIN #3) CONE XMIT SER L
*/( =Y2 (PIN #2)
*/( =Y1 (PIN #1)

```

OCTAL ADDRESS	DECIMAL ADDRESS	EDCBA
000	0	00000
001	1	1111111
002	2	00001
003	3	00010
004	4	00011
005	5	00100
006	6	00101
007	7	00111
008	8	01000
009	9	01001
010	10	01010
011	11	01011
012	12	01100
013	13	01101
014	14	01110
015	15	01111
016	16	10000
017	17	10001
018	18	10010
019	19	10011
020	20	10100
021	21	10101
022	22	10110
023	23	10111
024	24	11000
025	25	11001
026	26	11010
027	27	11011
028	28	11100
029	29	11101
030	30	11110
031	31	11111
032		00000
033		00001
034		00010
035		00011
036		00100
037		00101

UART RCD INT MPC=64

UART XMIT INT MPC=60

ERT=1A STACK FLOW MPC=46

PWR FAIL MPC=43

LINE CLK INT MPC=42

```

*/( A(PIN #10) IS CONH RUN GND L
*/( B(PIN #11) IS CONF MPC 00 L
*/( C(PIN #12) IS CONF MPC 02 L
*/( D(PIN #13) IS CONF MPC 01 L
*/( E(PIN #14) IS CONF MPC 04 L

```

```

/( =Y8 (PIN #9) CONF MPC 05 L
*/( =Y7 (PIN #7) CONE EXAM SW L
*/( =Y6 (PIN #6) CONE DEP SW L
*/( =Y5 (PIN #5) CONF MPC 00 L
*/( =Y4 (PIN #4) CONF MPC 04 L
*/( =Y3 (PIN #3) CONF MPC 01 L
*/( =Y2 (PIN #2) CONF MPC 02 L
*/( =Y1 (PIN #1) CONF MPC 03 L

```

OCTAL ADDRESS	DECIMAL ADDRESS	EDCBA
000	0	1111000
001	1	1111011
002	2	00010
003	3	00011
004	4	00100
005	5	00101
006	6	00110
007	7	00111
008	8	01000
009	9	01001
010	10	01010
011	11	01011
012	12	01100
013	13	01101
014	14	01110
015	15	01111
016	16	10000
017	17	10001
018	18	10010
019	19	10011
020	20	10100
021	21	10101
022	22	10110
023	23	10111
024	24	11000
025	25	11001
026	26	11010
027	27	11011
028	28	11100
029	29	11101
030	30	11110
031	31	11111
032		00000
033		00001
034		00010
035		00011
036		00100
037		00101

```

CONTINUE
TWO SW =CONT,DEP
TWO SW EXAM,CONT
TWO SW LOAD,CONT
NO SW
DEP SW1 GOTO 313
EXAM GOTO TO 317
LOAD GOTO TO 311
CONT=CLR EXAM
TWO SW =CONT,DEP
TWO SW EXAM,CONT
TWO SW LOAD,CONT
NO SW 1ST EXAM
DEP SW1
EXAM AND 1ST EXAM 323
LOAD GOTO 311
CONT=CLR DEP
TWO SW =CONT,DEP
TWO SW EXAM,CONT
TWO SW LOAD,CONT
NO SW 1ST DEP
DEP SW2 GOTO 312
EXAM 1ST DEP 317
LOAD GOTO 311

```

```

*/( A(PIN #10) IS CONE LOAD (1)L ,AND, DEP (1)L ,BAR
*/( B(PIN #11) IS CONE LOAD (1)L ,AND, EXAM (1)L ,BAR
*/( C(PIN #12) IS CONE CONT (1)L
*/( D(PIN #13) IS CONE 1ST EXAM (1)H
*/( E(PIN #14) IS CONE 1ST DEP (1)H

```

Handwritten marks: a checkmark and the number 5.





OCTAL ADDRESS	DECIMAL ADDRESS	HGFEDCBA	DATA
100	64	01000000	007
101	65	01000001	013
102	66	01000010	007
103	67	01000011	017
104	68	01000100	007
105	69	01000101	013
106	70	01000110	007
107	71	01000111	017
110	72	01001000	007
111	73	01001001	013
112	74	01001010	007
113	75	01001011	017
114	76	01001100	007
115	77	01001101	013
116	78	01001110	007
117	79	01001111	017
120	80	01010000	007
121	81	01010001	013
122	82	01010010	007
123	83	01010011	017
124	84	01010100	007
125	85	01010101	013
126	86	01010110	007
127	87	01010111	017
130	88	01011000	007
131	89	01011001	013
132	90	01011010	007
133	91	01011011	017
134	92	01011100	007
135	93	01011101	013
136	94	01011110	007
137	95	01011111	017

```

/( =Y4 (PIN # 9) CONC SET BG 07 L
*/( =Y3 (PIN #10) CONC SET BG 06 L
*/( =Y2 (PIN #11) CONC SET BG 05 L
*/( =Y1 (PIN #12) CONC SET BG 04 L

```

```

OCTAL DATA
ADDRESS DATA

```

7 cont

OCTAL ADDRESS	DECIMAL ADDRESS	LCLK	LCLK	LCLK
140	96	01100000	011	007
141	97	01100001	101	013
142	98	01100010	011	007
143	99	01100011	111	017
144	100	01100100	011	007
145	101	01100101	101	013
146	102	01100110	011	007
147	103	01100111	110	015
150	104	01101000	011	007
151	105	01101001	111	017
152	106	01101010	011	007
153	107	01101011	111	017
154	108	01101100	011	007
155	109	01101101	101	013
156	110	01101110	011	007
157	111	01101111	110	016
160	112	01110000	011	007
161	113	01110001	101	013
162	114	01110010	011	007
163	115	01110011	111	017
164	116	01110100	011	007
165	117	01110101	101	013
166	118	01110110	011	007
167	119	01110111	110	015
170	120	01111000	011	007
171	121	01111001	101	013
172	122	01111010	011	007
173	123	01111011	111	017
174	124	01111100	011	007
175	125	01111101	101	013
176	126	01111110	011	007
177	127	01111111	111	017

```

*/( A(PIN #05) IS CONC BR 07 (1)L
*/( B(PIN #06) IS CONC BR 06 (1)L
*/( C(PIN #07) IS CONC LCLK INT L
*/( D(PIN #04) IS CONC BR 05 (1)L
*/( E(PIN #03) IS CONC BR 04 (1)L
*/( F(PIN #02) IS DPE PSW 07 (0)H
*/( G(PIN #01) IS DPE PSW 06 (0)H
*/( H(PIN #15) IS DPE PSW 05 (0)H

```

```

/( =Y4 (PIN # 9) CONC SET BG 07 L
*/( =Y3 (PIN #10) CONC SET BG 06 L
**/( =Y2 (PIN #11) CONC SET BG 05 L
***/( =Y1 (PIN #12) CONC SET BG 04 L

```

```

OCTAL ADDRESS      HGFECDCA      DATA
200 10000000      0111 007
201 10000001      1111 017
202 10000010      0111 007
203 10000011      1111 017
204 10000100      0111 007
205 10000101      1111 017
206 10000110      0111 007
207 10000111      1111 017
210 10001000      0111 007
211 10001001      1111 017
212 10001010      0111 007
213 10001011      1111 017
214 10001100      0111 007
215 10001101      1111 017
216 10001110      0111 007
217 10001111      1111 017
220 10010000      0111 007
221 10010001      1111 017
222 10010010      0111 007
223 10010011      1111 017
224 10010100      0111 007
225 10010101      1111 017
226 10010110      0111 007
227 10010111      1111 017
230 10011000      0111 007
231 10011001      1111 017
232 10011010      0111 007
233 10011011      1111 017
234 10011100      0111 007
235 10011101      1111 017
236 10011110      0111 007
237 10011111      1111 017

```

8

```

240 10100000      0111 007
241 10100001      1011 013
242 10100010      0111 007
243 10100011      1111 017
244 10100100      0111 007
245 10100101      1011 013
246 10100110      0111 007
247 10100111      1101 015
250 10101000      0111 007
251 10101001      1011 013
252 10101010      0111 007
253 10101011      1111 017
254 10101100      0111 007
255 10101101      1011 013
256 10101110      0111 007
257 10101111      1110 016
260 10110000      0111 007
261 10110001      1011 013
262 10110010      0111 007
263 10110011      1111 017
264 10110100      0111 007
265 10110101      1011 013
266 10110110      0111 007
267 10110111      1101 015
270 10111000      0111 007
271 10111001      1011 013
272 10111010      0111 007
273 10111011      1111 017
274 10111100      0111 007
275 10111101      1011 013
276 10111110      0111 007
277 10111111      1111 017

```

```

*****/( A(PIN #05) IS CONC BR 07 (1)L
*****/( B(PIN #06) IS CONC BR 06 (1)L
*****/( C(PIN #07) IS CONT LCLK INT
*****/( D(PIN #04) IS CONC BR 05 (1)L
*****/( E(PIN #03) IS CONC BR 04 (1)L
*****/( F(PIN #02) IS DPE PSW 07 (0)H
*****/( G(PIN #01) IS DPE PSW 06 (0)H
*****/( H(PIN #15) IS DPE PSW 05 (0)H

```

```

LCLK
LCLK
LCLK

```

8 CTD

```

/( #Y4 (PIN # 9) CONC SET BG 07 L
/( #Y3 (PIN #10) CONC SET BG 06 L
*/( #Y2 (PIN #11) CONC SET BG 05 L
*/( #Y1 (PIN #12) CONC SET BG 04 L

```

OCTAL ADDRESS	HEXEDCBA	DATA
300	11000000	0111 007
301	11000001	1011 013
302	11000010	0111 007
303	11000011	1111 017
304	11000100	0111 007
305	11000101	1011 013
306	11000110	0111 007
307	11000111	1101 015
310	11001000	0111 007
311	11001001	1011 013
312	11001010	0111 007
313	11001011	1111 017
314	11001100	0111 007
315	11001101	1011 013
316	11001110	0111 007
317	11001111	1111 017
320	11010000	0111 007
321	11010001	1011 013
322	11010010	0111 007
323	11010011	1111 017
324	11010100	0111 007
325	11010101	1011 013
326	11010110	0111 007
327	11010111	1101 015
330	11011000	0111 007
331	11011001	1011 013
332	11011010	0111 007
333	11011011	1111 017
334	11011100	0111 007
335	11011101	1011 013
336	11011110	0111 007
337	11011111	1111 017

LCLK  
  
LCLK  
  
LCLK

340	11100000	0111 007
341	11100001	1011 013
342	11100010	0111 007
343	11100011	1111 017
344	11100100	0111 007
345	11100101	1011 013
346	11100110	0111 007
347	11100111	1101 015
350	11101000	0111 007
351	11101001	1011 013
352	11101010	0111 007
353	11101011	1111 017
354	11101100	0111 007
355	11101101	1011 013
356	11101110	0111 007
357	11101111	1110 016
360	11110000	0111 007
361	11110001	1011 013
362	11110010	0111 007
363	11110011	1111 017
364	11110100	0111 007
365	11110101	1011 013
366	11110110	0111 007
367	11110111	1101 015
370	11111000	0111 007
371	11111001	1011 013
372	11111010	0111 007
373	11111011	1111 017
374	11111100	0111 007
375	11111101	1011 013
376	11111110	0111 007
377	11111111	1111 017

LCLK  
  
LCLK  
  
LCLK

```

*****
*****/( A(PIN #05) IS CONC BR 07 (1) L
*****/( B(PIN #06) IS CONC BR 06 (1) L
*****/( C(PIN #07) IS CONC LCLK INT L
*****/( D(PIN #04) IS CONC BR 05 (1) L
*****/( E(PIN #03) IS CONC BR 04 (1) L
*****/( F(PIN #02) IS DPE PSW 07 (0) H
*****/( G(PIN #01) IS DPE PSW 06 (0) H
*****/( H(PIN #15) IS DPE PSW 05 (0) H

```

M7261-8 REV A







```

OCTAL ADDRESS      HGFEBCBA      DATA      REG
300 192 11000000      001      REG R0
301 193 11000001      001      REG R4
302 194 11000010      001      REG R2
303 195 11000011      001      REG R6
304 196 11000100      001      REG R1
305 197 11000101      001      REG R5
306 198 11000110      001      REG R3
307 199 11000111      001      REG R7
310 200 11001000      001      REG R10
311 201 11001001      001      REG R14
312 202 11001010      001      REG R12
313 203 11001011      001      REG R16
314 204 11001100      001      REG R11
315 205 11001101      001      REG R15
316 206 11001110      001      REG R13
317 207 11001111      001      REG R17
320 208 11010000      000
321 209 11010001      000
322 210 11010010      000
323 211 11010011      000
324 212 11010100      000
325 213 11010101      000
326 214 11010110      000
327 215 11010111      000
330 216 11011000      000
331 217 11011001      000
332 218 11011010      000
333 219 11011011      000
334 220 11011100      000
335 221 11011101      000
336 222 11011110      000
337 223 11011111      000

```

```

/( =Y4 (PIN # 9) Y4
*/( =Y3 (PIN #10) Y3
**/( =Y2 (PIN #11) Y2
***/( =Y1 (PIN #12) Y1
****
*****

```

13

```

340 224 11100000      000
341 225 11100001      000
342 226 11100010      000
343 227 11100011      000
344 228 11100100      000
345 229 11100101      000
346 230 11100110      000
347 231 11100111      000
350 232 11101000      000
351 233 11101001      000
352 234 11101010      000
353 235 11101011      000
354 236 11101100      000
355 237 11101101      000
356 238 11101110      000
357 239 11101111      000
360 240 11110000      000
361 241 11110001      000
362 242 11110010      000
363 243 11110011      000
364 244 11110100      000
365 245 11110101      000
366 246 11110110      000
367 247 11110111      000
370 248 11111000      000
371 249 11111001      000
372 250 11111010      000
373 251 11111011      000
374 252 11111100      000
375 253 11111101      000
376 254 11111110      000
377 255 11111111      000

```

```

*****
*****/( A(PIN #05) IS CONA BA 02 (1)H
*****/( B(PIN #06) IS CONA BA 01 (1)H
*****/( C(PIN #07) IS CONA BA 00 (1)H
***/( D(PIN #04) IS CONA BA 03 (1)H
**/( E(PIN #03) IS CONA BA 04 (1)H
*/( F(PIN #02) IS CONA BA 05 (1)H
*/( G(PIN #01) IS CONA BA 07 (1)H
/( H(PIN #15) IS CONA BA 06 (1)H

```

M7261-8 REV A

13 C.N







OCTAL ADDRESS

```

200 HGFEDCBA
201 10000000
202 10000001
203 10000010
204 10000011
205 10000100
206 10000101
207 10000110
208 10000111
209 10001000
210 10001001
211 10001010
212 10001011
213 10001100
214 10001101
215 10001110
216 10001111
217 10010000
218 10010001
219 10010010
220 10010011
221 10010100
222 10010101
223 10010110
224 10010111
225 10011000
226 10011001
227 10011010
228 10011011
229 10011100
230 10011101
231 10011110
232 10011111
233 10011100
234 10011101
235 10011110
236 10011111
237 10011111

```

```

/( #Y4 (PIN # 9) CONF MPC 04 L
*/( #Y3 (PIN #10) CONF MPC 01 L
**/( #Y2 (PIN #11) CONF MPC 02 L
***/( #Y1 (PIN #12) CONF MPC 00 L
****
*****
***** OCTAL
***** DATA
1001 011
1010 012
1001 011
1011 013
1001 011
1010 012
1001 005
1001 011
1010 012
1001 011
1011 013
1001 011
1010 012
1001 005
1001 011
1010 012
1001 011
1011 013
1001 011
1010 012
1001 007
1001 011
1010 012
1001 011
1011 013
1001 011
1010 012
1001 011
1011 013
1001 012
1001 011
1001 007
1001 011
1010 012
1001 011
1011 013
1001 012
1001 011
1001 007
1001 011

```

```

STKFL
PWRP
LCLK
STKFL
PWRP
STKFL
RCD
STKFL
PWRP
STKFL
LCLK
STKFL
PWRP
STKFL
RCD
STKFL
PWRP
STKFL
LCLK
STKFL
PWRP
STKFL
LCLK
STKFL
PWRP
STKFL
XMIT
STKFL
PWRP
STKFL
LCLK
STKFL
PWRP
STKFL
XMIT

```

*[Handwritten scribbles]*  
16

```

240 10100000
241 10100001
242 10100010
243 10100011
244 10100100
245 10100101
246 10100110
247 10100111
248 10101000
249 10101001
250 10101010
251 10101011
252 10101100
253 10101101
254 10101110
255 10101101
256 10101110
257 10101111
260 10110000
261 10110001
262 10110010
263 10110011
264 10110100
265 10110101
266 10110110
267 10110111
270 10111000
271 10111001
272 10111010
273 10111011
274 10111100
275 10111101
276 10111110
277 10111111

```

```

1001 011
1010 012
1001 013
1001 011
1010 012
1001 005
1001 011
1010 012
1001 011
1011 013
1001 011
1010 012
1001 005
1001 011
1010 012
1001 011
1011 013
1001 011
1010 012
1001 005
1001 011
1010 012
1001 011
1011 013
1001 011
1010 012
1001 002

```

```

STKFL
PWRP
STKFL
LCLK
STKFL
PWRP
STKFL
RCD
STKFL
PWRP
STKFL
LCLK
STKFL
PWRP
STKFL
RCD
STKFL
PWRP
STKFL
LCLK
STKFL
PWRP
STKFL
LCLK
STKFL
PWRP
STKFL
XMIT

```

```

*****/( A(PIN #05) IS CONB STACKFLOW (1)L
*****/( B(PIN #06) IS CONH PDWN SYNC (1)L
*****/( C(PIN #07) IS CONI LCLK INT (1)L
***/( D(PIN #04) IS CONE STOP (1)L
**/( E(PIN #03) IS DPH RCD INT (1)L
*/( F(PIN #02) IS DPH XMIT INT (1)L
*/( G(PIN #01) IS DPG WAIT L
*/( H(PIN #15) IS DPE T DEL (1)L

```

M7261-8 REV A

*[Handwritten scribbles]*  
16

/( #Y4 (PIN # 9) CONF MPC 04 L  
 /\* #Y3 (PIN #10) CONF MPC 01 L  
 \*\*/( #Y2 (PIN #11) CONF MPC 02 L  
 \*\*\*/( #Y1 (PIN #12) CONF MPC 00 L

OCV'L ADDRESS	DECIMAL ADDRESS	HEXDECRA	DATA	STKFL
300	192	11000000	1001	STKFL
301	193	11000001	1010	PWRF
302	194	11000010	1001	STKFL
303	195	11000011	1011	LCLK
304	196	11000100	1001	STKFL
305	197	11000101	1010	PWRF
306	198	11000110	1001	STKFL
307	199	11000111	1010	RCD
310	200	11001000	1001	STKFL
311	201	11001001	1010	PWRF
312	202	11001010	1001	STKFL
313	203	11001011	1011	LCLK
314	204	11001100	1001	STKFL
315	205	11001101	1010	PWRF
316	206	11001110	1001	STKFL
317	207	11001111	1010	RCD
320	208	11010000	1001	STKFL
321	209	11010001	1010	PWRF
322	210	11010010	1001	STKFL
323	211	11010011	1011	LCLK
324	212	11010100	1001	STKFL
325	213	11010101	1010	PWRF
326	214	11010110	1001	STKFL
327	215	11010111	1011	XMIT
330	216	11011000	1001	STKFL
331	217	11011001	1010	PWRF
332	218	11011010	1001	STKFL
333	219	11011011	1011	LCLK
334	220	11011100	1001	STKFL
335	221	11011101	1010	PWRF
336	222	11011110	1001	STKFL
337	223	11011111	1011	XMIT

340	224	11100000	1001	STKFL
341	225	11100001	1010	PWRF
342	226	11100010	1001	STKFL
343	227	11100011	1011	LCLK
344	228	11100100	1001	STKFL
345	229	11100101	1010	PWRF
346	230	11100110	1001	STKFL
347	231	11100111	1010	RCD
350	232	11101000	1001	STKFL
351	233	11101001	1010	PWRF
352	234	11101010	1001	STKFL
353	235	11101011	1011	LCLK
354	236	11101100	1001	STKFL
355	237	11101101	1010	PWRF
356	238	11101110	1001	STKFL
357	239	11101111	1010	RCD
360	240	11110000	1001	STKFL
361	241	11110001	1010	PWRF
362	242	11110010	1001	STKFL
363	243	11110011	1011	LCLK
364	244	11110100	1001	STKFL
365	245	11110101	1010	PWRF
366	246	11110110	1001	STKFL
367	247	11110111	1010	STOP
370	248	11111000	1001	STKFL
371	249	11111001	1010	

~~28 of 72~~

17 can

**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS  
**PARTS LIST**

MADE BY R. ROBICHAUD  
 DATE 12-8-71  
 ENG G. Graham  
 DATE 4-5-72  
 CHECKED C. TESCHNER  
 DATE 5-1-72  
 PROD R. K. PETERSON  
 DATE 5-10-72  
 SECTION 1  
 ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION			
			KY11-J	KY11-K	KY11-L	KY11-M
1	D-MD-7410799-0-0	CONSOLE BEZEL REWORK	1	1	1	
<del>2</del>	<del>E-IA-7409374-3-0</del>	<del>BEZEL CONSOLE (11/10)</del>	<del>X</del>	<del>1</del>	<del>X</del>	
3	E-IA-5409766-0-0	CONSOLE ETCH BOARD ASSY	1	1	1	
<del>4</del>	<del>E-IA-5409766-2-0</del>	<del>CONSOLE ETCH BOARD ASSY (EPOCH)</del>	<del>X</del>	<del>X</del>	<del>1</del>	
5	A-PS-1210975-0-0	LOCK & CAM ASS'Y	1	1	1	
6	9006020-1	SCR, PHL PAN HD. #6-32 X 1/4 LG	6	6	6	
7	9006631	WASH INT TOOTH LOCK #6	6	6	6	
8	9006001-1	SCR PHL PAN HD #2-56 X 3/8 LG	2	2	2	
9	9008021-1	SCR PHL PAN HD #2-56 X 5/8 LG	2	2	2	
10	<del>1210791-0-0</del>	<del>SWITCH DPST N.O.</del>	<del>1</del>	<del>1</del>	<del>1</del>	
11	<del>E-MD-7409534-0-0</del>	<del>ACTUATOR REWORK</del>	<del>1</del>	<del>1</del>	<del>1</del>	
12	<del>1210901-1</del>	<del>INSULATOR</del>	<del>2</del>	<del>2</del>	<del>2</del>	
13	B-IA-7409444-0-0	DETENT	1	1	1	
14	9006681	WASH #2 SPLIT LOCK	5	5	5	
15	9006001-4	SCR BINDER HD #2-56 X3/16 LG	2	2	2	
16	<del>1210901-1</del>	<del>SWITCH TMD 5201 (COLD CONTACT) 291-5201-001</del>	<del>1</del>	<del>1</del>	<del>1</del>	
17	C-UA-B08R-03	I/O CABLE (3'-0" LG)	1	1	1	
18	4901071	LUBE (FOR CAM LOCK)	A/RA/RA/RA/R			
19	B-IA-7409730-0-0	JUMPER, POWER	2	2	2	
20	<del>B-MD-7409868-0-0</del>	<del>SWITCH ADAPTER PLATE</del>	<del>1</del>	<del>1</del>	<del>1</del>	
21	<del>B-MD-7409867-0-0</del>	<del>EXPANDER LEAF REWORK (ACTUATOR)</del>	<del>1</del>	<del>1</del>	<del>1</del>	
22	<del>9006449-2</del>	<del>SCR TMD FLAT HD #2-56 X 1/4 LG.</del>	<del>2</del>	<del>2</del>	<del>2</del>	
TITLE			SIZE CODE	NUMBER	REV.	ECC. NO.
CONSOLE ASSY (PDP11/05)			<b>A PL</b>	KY11-J-0	F	KY11J-00001
			DIST.	G		
			SHEET	1	OF	2

**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS  
**PARTS LIST**

MADE BY R. ROBICHAUD  
 DATE 12-3-71  
 ENG G. GRAHAM  
 DATE 4-5-72  
 CHECKED C. TESCHNER  
 DATE 5-1-72  
 PROD R. K. PETERSON  
 DATE 5-10-72  
 SECTION 1  
 ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION			
			KY11-J	KY11-K	KY11-L	KY11-M
23	<del>E-IA-7409374-4-0</del>	<del>BEZEL CONSOLE (VT40)</del>	X	X	1	X
24	A-PS-1210982-0-0	KEY LOCK SWITCH	1	1	1	
25	<del>E-IA-7409374-5-0</del>	<del>BEZEL CONSOLE (UC15)</del>	<del>X</del>	<del>X</del>	<del>X</del>	
26	C-PS-3611275-0-0	LOGO (PDP-1105) NOTE VARIATIONS	1	1	X	X
27	D-IA-7409431-1-0	PANEL CONTROL (1105)	1	X	X	X
28	9009210-1	ADHESIVE TRANSFER TAPE 1/4 WIPE	A/RA/RA/RA/R			
29	1211052	CONSOLE PROTECTIVE COVER	1	1	1	
30	D-IA-7409431-3-0	PANEL CONTROL (1110)	X	1	X	X
31	D-IA-7409768-0-0	PANEL CONTROL (GT40)	X	X	1	X
32	C-PS-3611275-4-0	LOGO (DEC GRAPHIC)	X	X	1	X
33	C-PS-3611275-5-0	LOGO (UC15)	X	X	X	1
34	D-IA-7409431-4-0	PANEL CONTROL (UC15)	X	X	X	1
TITLE			SIZE CODE	NUMBER	REV.	ECC. NO.
CONSOLE ASSY (PDP11/05)			<b>A PL</b>	KY11-J-0	F	KY11J-00001
			DIST.	G		
			SHEET	2	OF	2

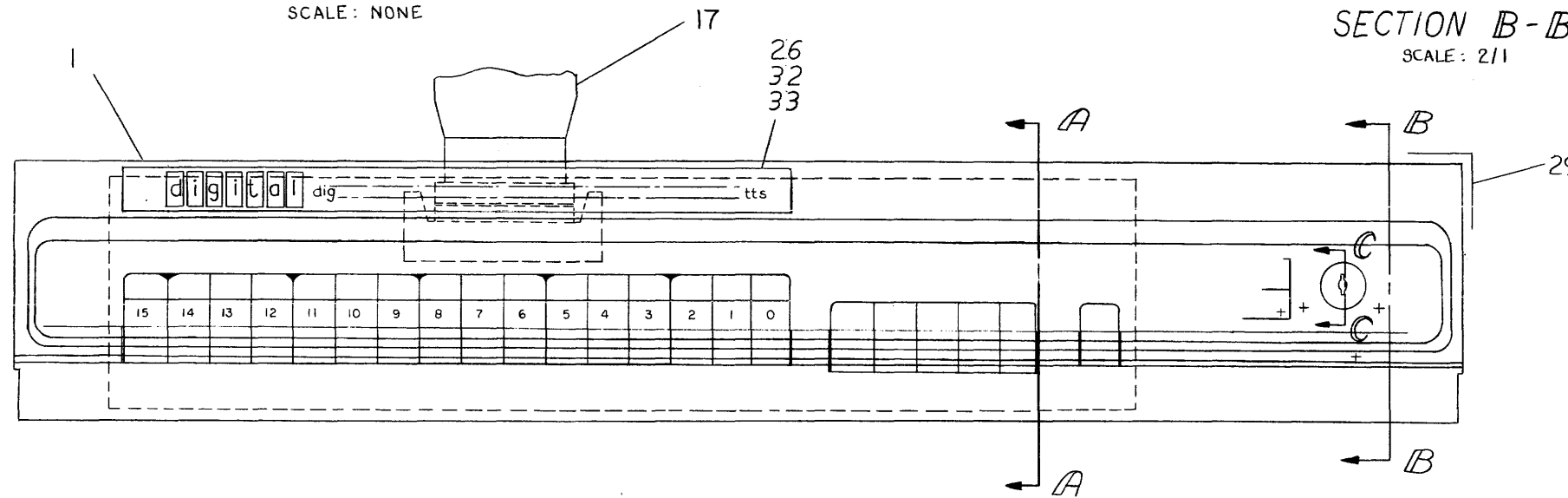
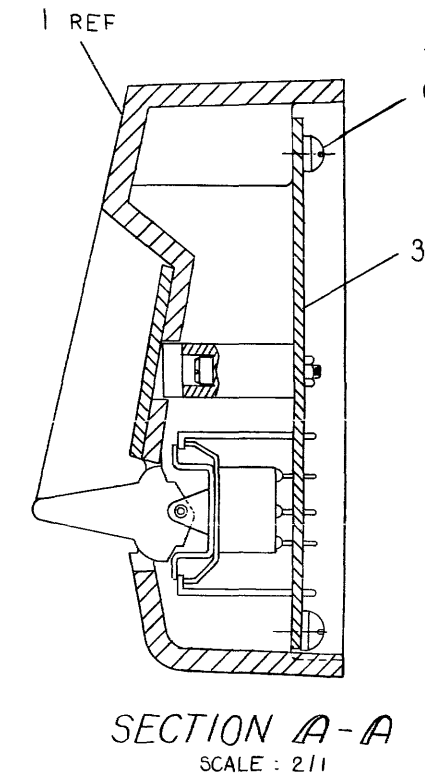
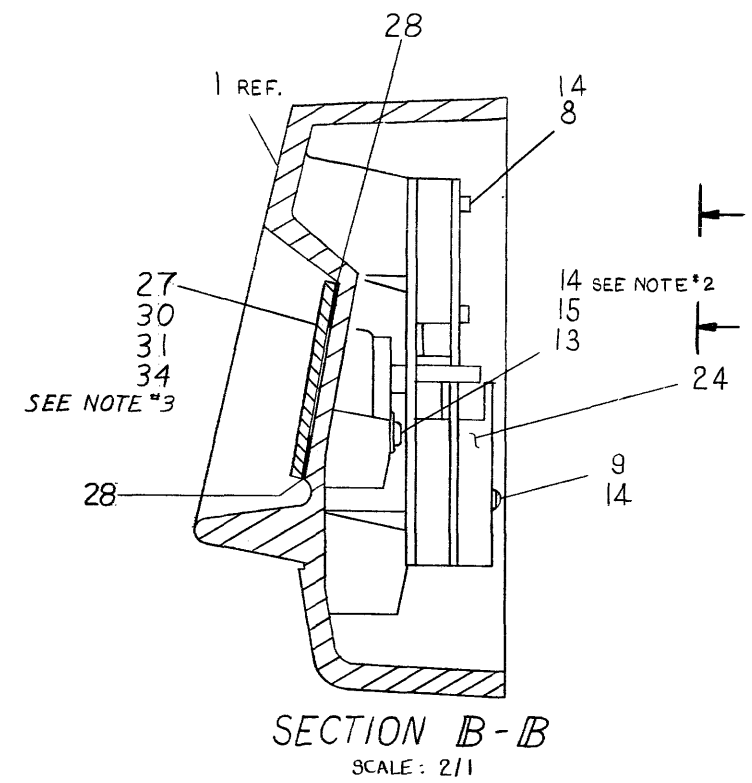
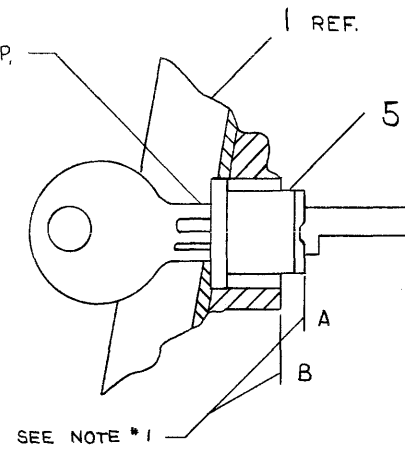
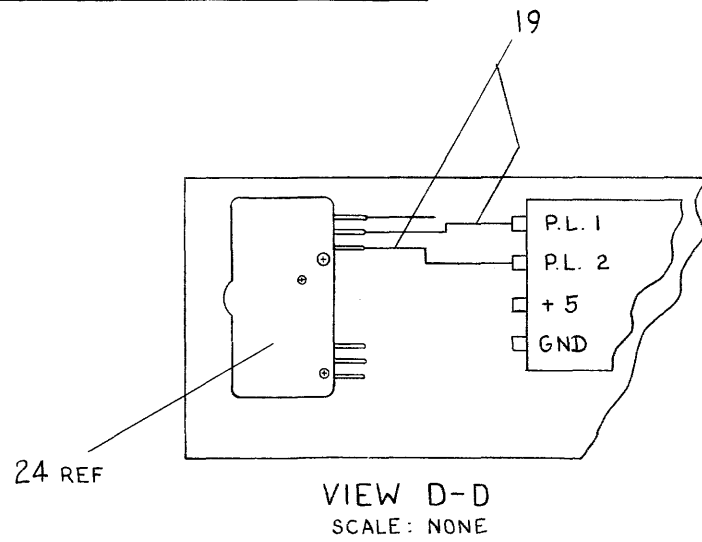
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**LEGEND**

PART NO.	VARIATION
KYII-JA	11Ø5 CONSOLE WITH L.E.D.S.
KYII-JB	1V1Ø CONSOLE WITH L.E.D.S.
KYII-JC	VT4Ø CONSOLE WITH L.E.D.S.
KYII-JF	UC15 CONSOLE WITH L.E.D.S.

**NOTES:**

1. CASTING KEY HOLE SURFACES A & B TO BE COATED WITH LUBE (ITEM #18)
2. LOCK WASHER IS NOT USED ON SCREW UNDER SWITCH.
3. INSERT CONTROL PANEL (ITEM #27,30,31OR34) USING ADHESIVE TRANSFER TAPE (ITEM #28) ON REAR SURFACE & PRESS FIRMLY IN PLACE.



REV.	CHANGE NO.	BY	DATE
1	00001	D	11-16-71
2	00002	D	4-14-72
3	00003	G. GRAHAM	4-5-72
4	00004	E	5-5-72
5	00005	F	5-10-72

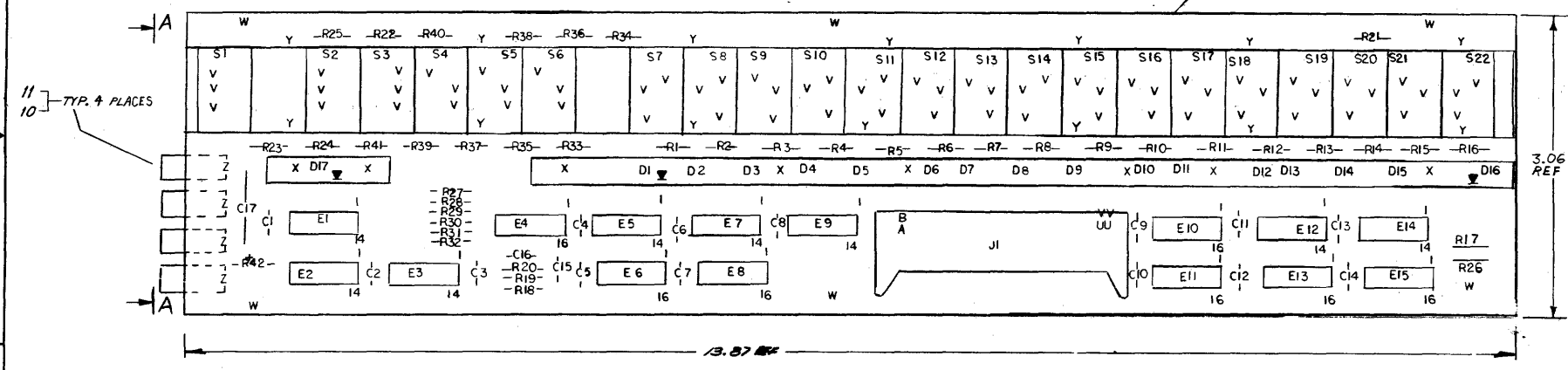
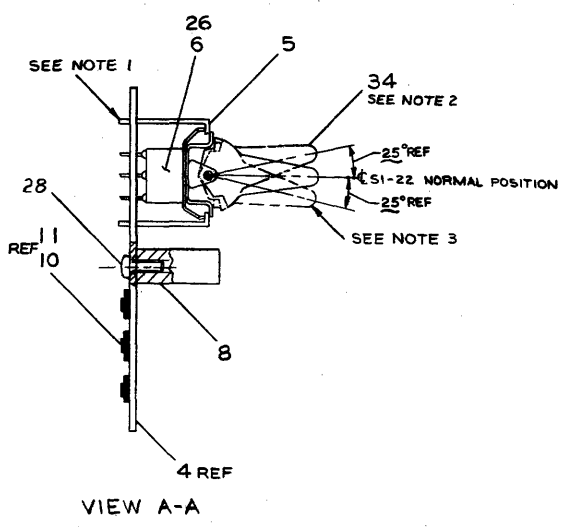
FIRST USED ON OPTION/MODEL PDP 11Ø5		DO NOT SCALE DRAWING UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	
DECIMALS ± .005	FRACTIONS ± 1/64	ANGLES ± 0°30'	REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL: / /		FINISH: / /	

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
DRN. CAHILL	DATE 11-16-71	<b>digital</b> CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. TESCHNER	DATE 4-14-72		
ENG. GRAHAM	DATE 4-5-72	TITLE <b>CONSOLE ASSY</b> (PDP 11Ø5)	
PROJ. ENG. WEEKS	DATE 5-5-72		
PROD. PETERSON	DATE 5-10-72	SIZE CODE: DUA NUMBER: KYII-J-Ø REV: F	
NEXT HIGHER ASSY D-UA-11Ø5-Ø-Ø			
SCALE 1/1	SHEET 1 OF 1	DIST. C.	

REV. F  
NUMBER KYII-J-Ø  
SIZE CODE DUA

See drawing for dimensions, tolerances, and the position of the components on the board. The position of the components is indicated by the X-Y coordinate system shown on the drawing.

**NOTES:**  
 1. ATTACH SWITCH BRACKET (ITEM #8) TO ETCH BOARD (ITEM #4) BY TURNING 2000 1/4 TURN ON SWITCH BRACKET USING TWISTING TOOL # B-MD-7606203 (14 PLACES)  
 2. ASSEMBLE S2, 3, 4, 5, 6 AS SHOWN.  
 3. ASSEMBLE S181 THRU S22 AS SHOWN.



DATE	BY	REV
DEC 7/1/53	B	1/6
DEC 7/1/53	B	1/6
DEC 8/27/53	B	1/6

IC TYPE	QTY	AVG	FROM	TO
IC PIN LOCATIONS <td></td> <td></td> <td></td> <td></td>				

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
36				
35				
34				
33				
32				
31				
30				
29				
28				
27				
26				
25				
24				
23				
22				
21				
20				
19				
18				
17				
16				
15				
14				
13				
12				
11				
10				
9				
8				
7				
6				
5				
4				
3				
2				
1				

ETCH BOARD REV: [ ]

DATE: [ ]

BY: [ ]

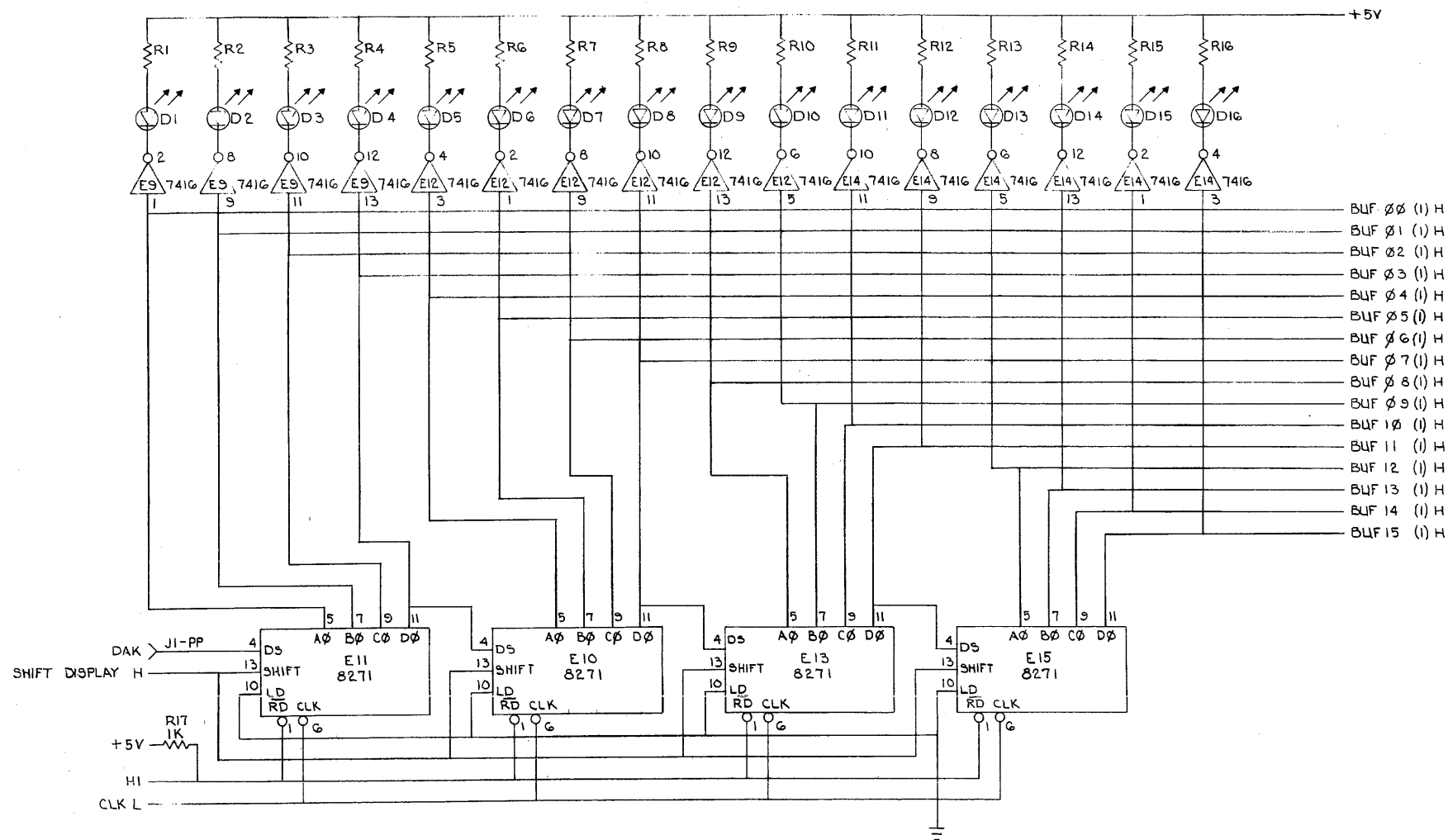
TITLE: ETCH BOARD ASSY. (1105 CONSOLE)

SEMICONDUCTOR CONVERSION CHART

DEC NO. [ ] EIA NO. [ ]

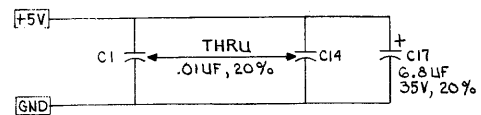
SHEET [ ] OF [ ]

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- BUF 00 (1) H
- BUF 01 (1) H
- BUF 02 (1) H
- BUF 03 (1) H
- BUF 04 (1) H
- BUF 05 (1) H
- BUF 06 (1) H
- BUF 07 (1) H
- BUF 08 (1) H
- BUF 09 (1) H
- BUF 10 (1) H
- BUF 11 (1) H
- BUF 12 (1) H
- BUF 13 (1) H
- BUF 14 (1) H
- BUF 15 (1) H

UNLESS OTHERWISE INDICATED:  
 RESISTORS= 1/4W, 5%  
 CAPACITORS= 100V, 5%  
 DIODES ARE LIGHT EMITTING  
 PIN 14=+5V, PIN7=GND ON DEC 7404, 7416, 7417  
 PIN 16=+5V, PIN8=GND ON DEC 8271, 74123, 74193

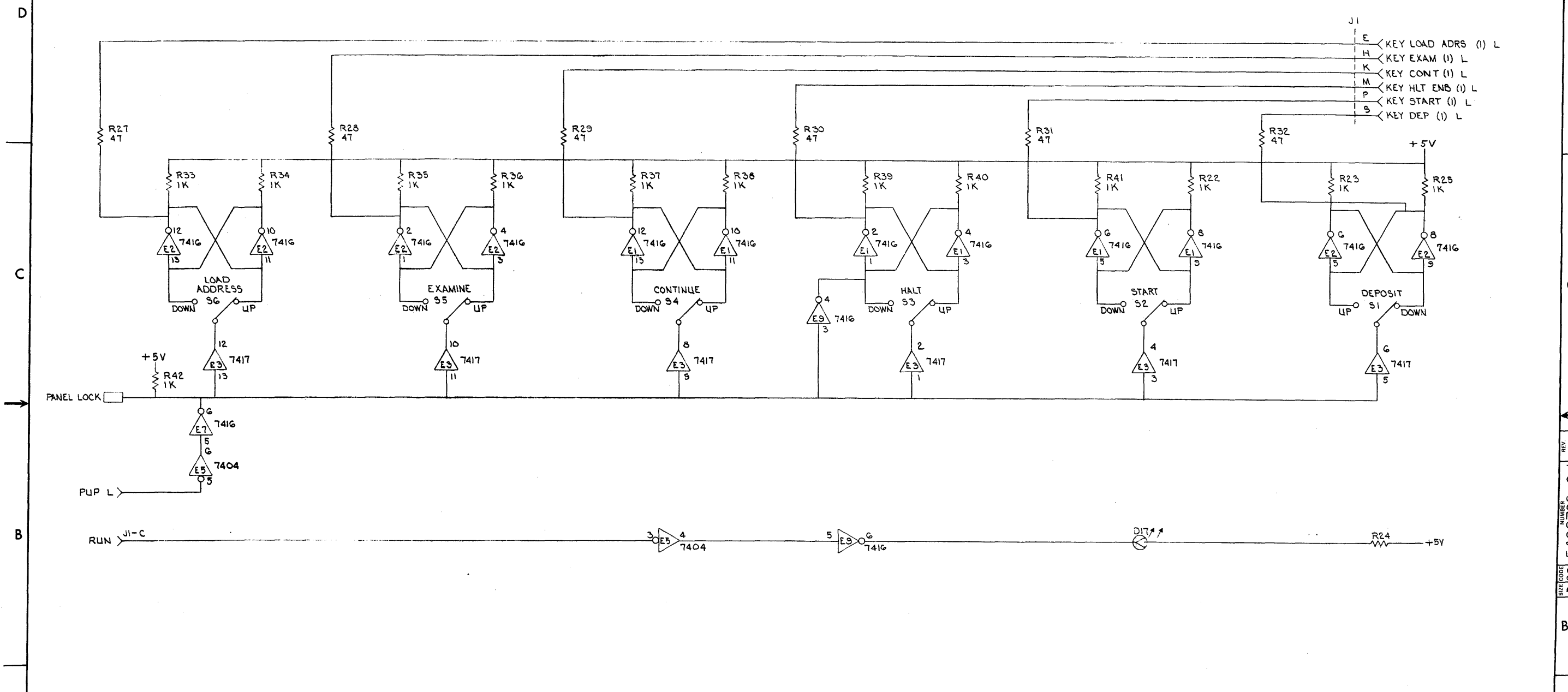


QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
ETCH BOARD REV D				
DRN. Roger J. DUNCETTE		DATE 18 JAN 72	 <b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHKD. <i>[Signature]</i>		DATE 20 JAN 72		
ENGR. R. Krishna		DATE 3-10-72		
PROJ. ENG. R. Krishna		DATE 2-10-72		
PROD. R. Krishna		DATE 2-10-72		
NEXT HIGHER ASSY		E-1A5409766-0-0		
TITLE		11/05 CONSOLE		
SIZE CODE		D CS 5409766-0-1		REV. E
SHEET		OF 3		DIST.

REV	CHANGE NO.	REVISIONS
1	1	5409766-00001 B
2	1	5409766-00002 A C
3	1	5409766-00003 D
4	1	5409766-00004 E
5	1	5409766-00005 F
6	1	5409766-00006 G
7	1	5409766-00007 H
8	1	5409766-00008 I
9	1	5409766-00009 J
10	1	5409766-00010 K
11	1	5409766-00011 L
12	1	5409766-00012 M
13	1	5409766-00013 N
14	1	5409766-00014 O
15	1	5409766-00015 P
16	1	5409766-00016 Q
17	1	5409766-00017 R
18	1	5409766-00018 S
19	1	5409766-00019 T
20	1	5409766-00020 U
21	1	5409766-00021 V
22	1	5409766-00022 W
23	1	5409766-00023 X
24	1	5409766-00024 Y
25	1	5409766-00025 Z

SEMICONDUCTOR CONVERSION CHART

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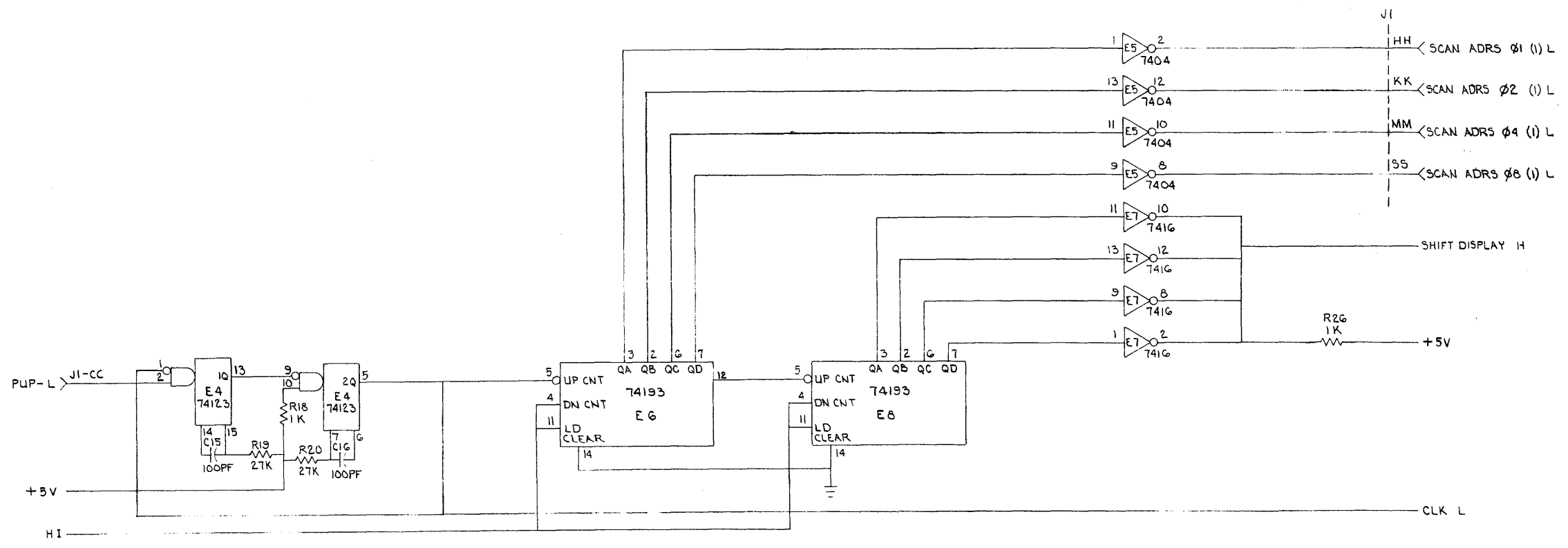
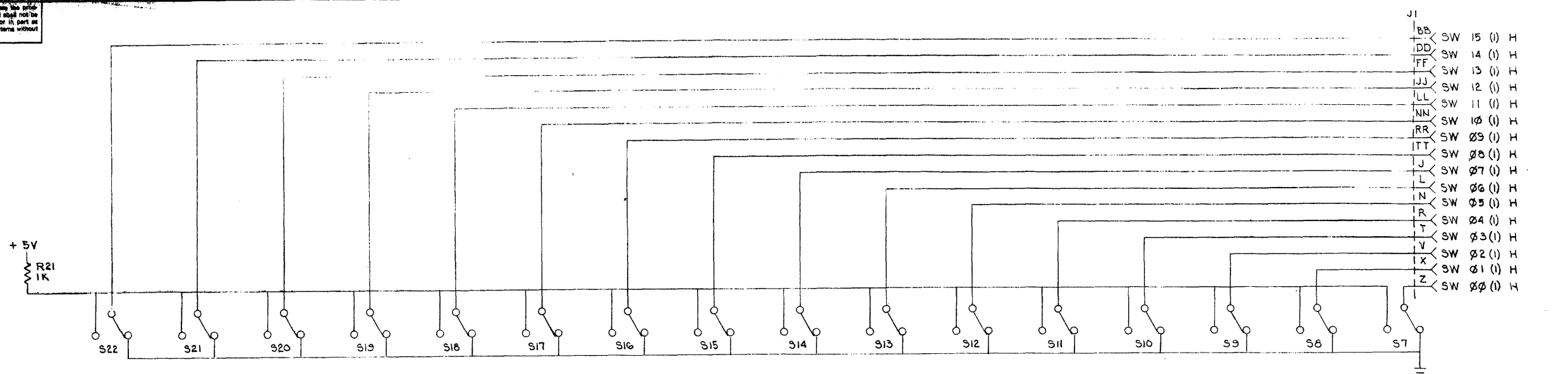


QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
ETCH BOARD REV D				
DRN. ROGER J		DATE 10 JAN 72	 <b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. <i>[Signature]</i>		DATE 20 JAN 72		
ENG. <i>[Signature]</i>		DATE 72		
PROL. ENG. <i>[Signature]</i>		DATE 2-10-72		
PROD. <i>[Signature]</i>		DATE 2-10-72	TITLE 11/05 CONSOLE	
NEXT HIGHER ASSY		E-IA-5409566-0-0		
DEC. NO.		EIA NO.	DEC. NO.	EIA NO.
SCALE		SEMICONDUCTOR CONVERSION CHART		
SHEET 2		OF 3		DIST.

REV. E NUMBER 5409766-0-1



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QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
ETCH BOARD REV D				
DRN. ROGER V. DOUGLASS		DATE 20 JAN 72	 11/05 CONSOLE	
CHKD. [Signature]		DATE 20 JAN 72		
ENG. [Signature]		DATE 2-10-72		
PROJ. ENG. [Signature]		DATE 7-10-72		
PRD. [Signature]		DATE 7-20-72		
NEXT HIGHER ASSY				
E-1A-5409766-0-0				
DEC NO.		EIA NO.	DEC NO.	EIA NO.
SEMICONDUCTOR CONVERSION CHART				
SCALE		SIZE CODE DCS		NUMBER 5409766-0-1
SHEET 3 OF 3		DIST.		REV. E

# DRAWING DIRECTORY

## CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

MODULE UTILIZATION  
BLOCK DIAGRAM  
TIMING DIAGRAM  
\* MEMORY DRIVERS  
\* CONTROL & DATA LOOPS  
STACK SCHEMATIC  
STACK SCHEMATIC  
BLOCK DIAGRAM  
4K MEMORY  
8K MEMORY

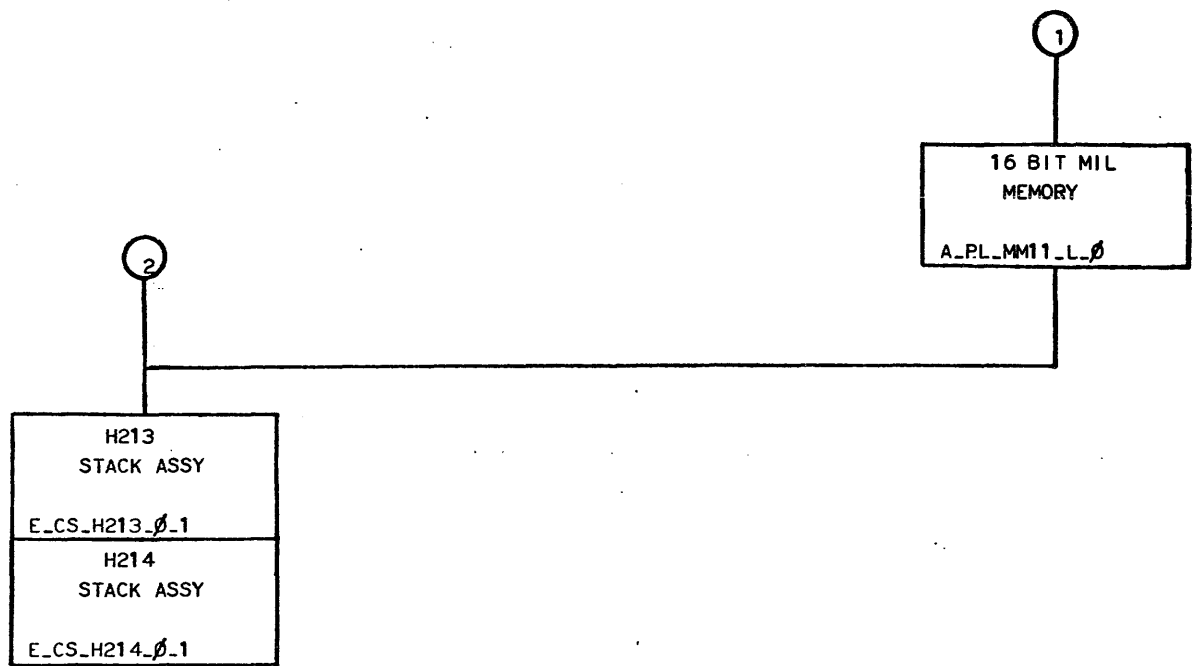
SEQUENCE T  
D\_MU\_MM11\_L-1  
D\_BD\_MM11\_L-2  
D\_TD\_MM11\_L-3  
E\_SC\_G231\_0-1  
E\_CS\_G110\_0-1  
E\_CS\_H213\_0-1  
E\_CS\_H214\_0-1  
D\_BD\_MM11-S-2  
A\_PL\_MM11-K-0  
A\_PL\_MM11-L-0

SEQUENCE T  
MFG. PRINT SET  
MFG. TEST PRO. FOR MM11/K,L,M,S&SP  
A-SP-MM11-L-5

UNIT VARIATIONS		PRINT SET TYPE			
VARIATION	TITLE	MM11-L			
MM11-K	4K 16 BIT 18 MIL MEMORY	X			
MM11-L	8K 16 BIT 18 MIL MEMORY	X			

\* SPECIAL REVISION PRINTS ARE AVAILABLE ON "C" ETCH REV. MODULES.  
CARE SHOULD BE TAKEN TO INSURE THAT PROPER PRINTS ARE ORDERED.

REVISIONS	DATE	CHG. NO.	REV	USED ON OPTION/MODEL	DRN.	DATE	TITLE			
	9/72	MM11L-0001	A	MM11-K	J. Kalayhu	1-25-72	TO GET TO THE MEMORY			
	11-72	MM11L0002	B	MM11-L	J. Kalayhu	1-25-72				
	1-73	MISC-00107	C		P. Duval	1-25-72				
					K.K. Potos	1-26-72				
					FIELD SERV.	DATE	SIZE	CODE	NUMBER	REV
					W.A. [signature]	1-26-72	B	DD	MM11-L	C
					SHEET	OF	DIST			
					1	3				



TITLE	SHEET	OF	SIZE	CODE	NUMBER	REV
16 BIT 18 MIL MEMORY	2	OF	3	B DD	MM11_L	C

CUSTOMER PRINT SET				ELECTRICAL					CUSTOMER PRINT SET				MECHANICAL						
MM11_L			MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.	MM11_L			MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X				1	D_MU_MM11_L_1	*	1	MODULE UTILIZATION						1	A_PL_MM11_L_0	*	1	MEMORY	
X					D_BD_MM11_L_2	*	1	BLOCK DIAGRAM											
X					D_TD_MM11_L_3	*	1	TIMING DIAGRAM											
X					E_CS_G231_0_1	E4	5	MEMORY DRIVER											
X					E_CS_G110_0_1	E5	5	CONTROL & DATA LOOPS											
X					D_BD_MM11_S_2	#	2	BLOCK DIAGRAM											
X					A_PL_MM11_K_0		1	4K MEMORY						2	B_DD_H214_0_1	#	2	STACK SCHEMATIC	
X					A_PL_MM11_L_0		1	8K MEMORY							B_DD_H213_0	#	2	STACK SCHEMATIC	
X				2	E_CS_H213_0_1	#	2	STACK SCHEMATIC											
X					E_CS_H214_0_1	#	2	STACK SCHEMATIC							A_PL_G645_0_0		1	STACK BOARD	
					A_SP_G109_0_8		1	G109,G110 CONT & DATA LOOP MFG. SPEC.											
					A_SP_G231_0_8		1	MEMORY DRIVER MFG. SPEC.											
					A_SP_MM11_L_4		1	MM11-K,-L,-S &-SP MFG. TEST SPEC.											
			X		A_SP_MM11_L_5		29	MFG. TEST PRO. MM11/K,L,M,S & SP											

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PIN SIDE VIEW OF BACKPLANE

**F**

SIDE 1	
V	UTSRPNMLKJHGFEDCBA
UTSRPNMLKJHGFEDCBA	GND GND
SIDE 2	
Y	UTSRPNMLKJHGFEDCBA
XPRD7 XPRD6 XNW07 XNW06 XNW05 XNW04 XNW03 XNW02 XNW01 XNW00	GND XPRD4 XPRD3 XPRD2 XPRD1 XPRD0 XS15 XS13 XS12 XS11 XS09 XS08 XS06 GND -15V 5V

**E**

SIDE 1	
V	UTSRPNMLKJHGFEDCBA
UTSRPNMLKJHGFEDCBA	GND
SIDE 2	
Y	UTSRPNMLKJHGFEDCBA
UTSRPNMLKJHGFEDCBA	GND -15V 5V

**D**

SIDE 1	
V	UTSRPNMLKJHGFEDCBA
UTSRPNMLKJHGFEDCBA	9SA GND
SIDE 2	
Y	UTSRPNMLKJHGFEDCBA
9SB 9TN 13SB 13IN 10SB 10SA 14SB 14IN 11SB 11SA 15SB 15IN 12SB	9SA GND 13SA 10IN 10SA 14SA 11IN 11SA 15SA 12IN 12SA GND -15V 5V

**C**

SIDE 1	
V	UTSRPNMLKJHGFEDCBA
UTSRPNMLKJHGFEDCBA	TMRH READ H XS03 XS02 XS06 XS04 XS02 YND7 YND6 YND5 YND4 YND3 YND2 YND1 GND -15V 5V
SIDE 2	
Y	UTSRPNMLKJHGFEDCBA
TMRH READ H XS03 XS02 XS06 XS04 XS02 YND7 YND6 YND5 YND4 YND3 YND2 YND1 GND -15V 5V	9SA GND 13SA 10IN 10SA 14SA 11IN 11SA 15SA 12IN 12SA GND -15V 5V

**B**

SIDE 1	
V	UTSRPNMLKJHGFEDCBA
UTSRPNMLKJHGFEDCBA	MSYNL SSYNL A17L A15L A13L A11L A07L A03L A01L DCLOL ACLOL GND BR4L BR5L BR6L BR7L BR8L
SIDE 2	
Y	UTSRPNMLKJHGFEDCBA
GND CB0L CB1L A16L A14L A12L A10L A06L A04L A02L DCLOL ACLOL GND BR4L BR5L BR6L BR7L BR8L	MSYNL SSYNL A17L A15L A13L A11L A07L A03L A01L DCLOL ACLOL GND BR4L BR5L BR6L BR7L BR8L

**A**

SIDE 1	
V	UTSRPNMLKJHGFEDCBA
UTSRPNMLKJHGFEDCBA	BG7H NPGH NPRL SACKL BBSYL PBL D15L D13L D12L D10L D06L D04L D02L D01L GND INTL INITL
SIDE 2	
Y	UTSRPNMLKJHGFEDCBA
BG7H NPGH NPRL SACKL BBSYL PBL D15L D13L D12L D10L D06L D04L D02L D01L GND INTL INITL	BG7H NPGH NPRL SACKL BBSYL PBL D15L D13L D12L D10L D06L D04L D02L D01L GND INTL INITL

THESE 2 GLOTS ARE UNIBUS WIRED ON ALL 3 CONNECTORS

H213, H214 STACK  
(F, E, D, C) (QUAD Ø 1/2)  
UNIBUS CONN OR TERM (A, B)

DRIVE  
(F, E, D, C, B, A) (HEX Ø 1/2)  
G231

SENSE - CONTROL  
(F, E, D, B, C, A) (HEX Ø 1/2)  
G18

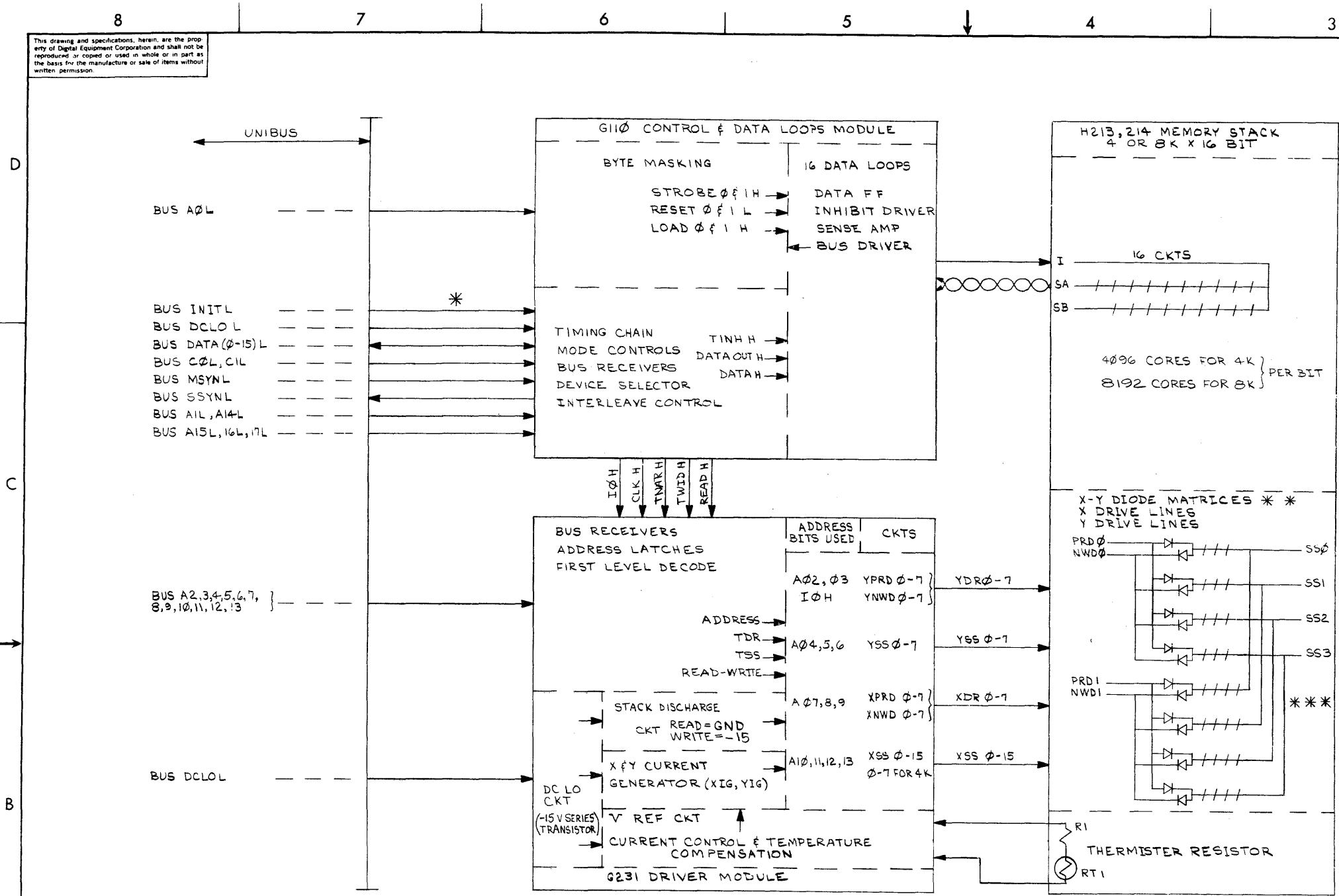
FIRST USED ON OPTION MODEL MM11-L	QTY	DESCRIPTION	PART NO	ITEM NO
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DATE 2-72	digital EQUIPMENT CORPORATION		
DECIMALS .0006	DATE	TITLE		
ANGLES 30	DATE	MODULE UTILIZATION		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE	MATERIAL		
	DATE	NEXT HIGHER ASSY		
	DATE	B-DD-MM11-L		
	DATE	SIZE CODE NUMBER		
	DATE	D-MM11-L		
	DATE	SCALE		
	DATE	SHEET		

REVISIONS

REV	CHANGE NO	DESCRIPTION
-----	-----------	-------------

MUMM1-L

NOTES:  
 \*1. ALL ARROWS SHOW SIGNAL FLOW DIRECTION.  
 \*\*2. MATRIX SHOWN IS FOR ILLUSTRATION ONLY.  
 \*\*\*3. ACTUAL MATRIX HAS  
 { Y AXIS 8PRD, 8NRD, 8SS  
 X AXIS 4K 8PRD, 8NRD, 8SS  
 X AXIS 8K 8PRD, 8NRD, 16SS

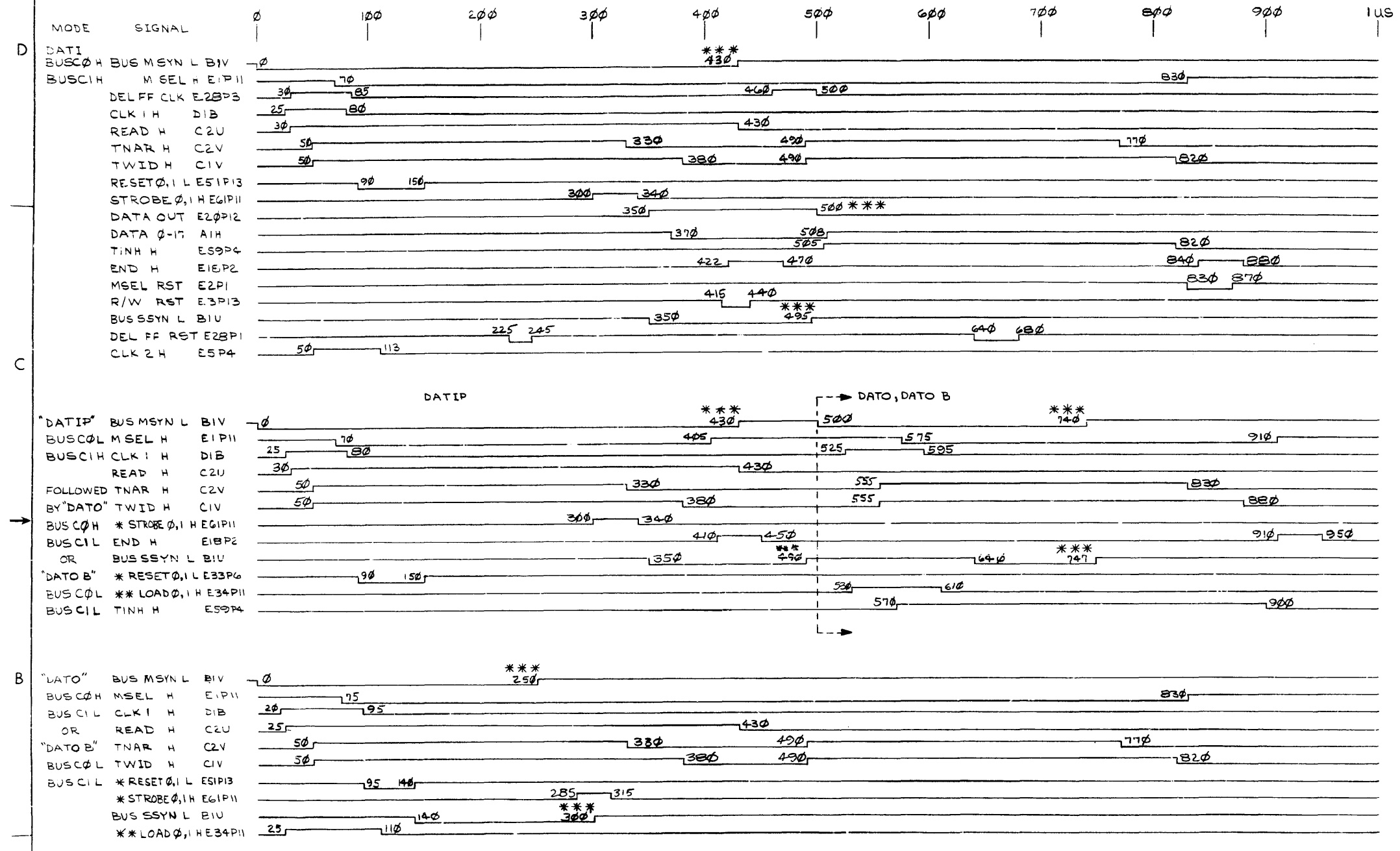


FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MMII-L				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN <i>J. Carbery</i> DATE 11/19/71	DATE 11/19/71	digital EQUIPMENT CORPORATION	
DECIMALS	ANGLES	ENG. <i>P. Duvant</i> DATE -25-71	TITLE BLOCK DIAGRAM	
.XXX - .005 .XX - .02 .X - .1	$\pm 0^{\circ} 30'$	PROJ ENG <i>P. Duvant</i> DATE -25-71		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD. <i>V.K. Peterson</i> DATE 1-26-72	DATE 1-26-72		
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
	B-DD-MMII-L	DBD	MMII-L-2	
FINISH	SCALE	SHEET	OF	DIST.

REV.	CHANGE NO.

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- NOTES:
1. ANY SIGNALS NOT SHOWN ON DATIP, DATO OR DATO B ARE AS SHOWN ON DATI TIMING.
  - \* 2. RESET L AND STROBE - DO NOT OCCUR IN DATO MODE. THEY ONLY OCCUR FOR THE BYTE NOT BEING ADDRESSSED IN DATO B MODE.
  - \*\* 3. LOAD H OCCURS FOR BOTH BITS IN DATO MODE AND ONLY FOR THE ADDRESSSED BYTE IN THE DATO B MODE.
  - \*\*\* 4. ACTUAL TIME DEPENDS ON BUS AND PROCESSOR DELAYS.
- 5 ALL SIGNALS ON G109 OR G110 MODULE

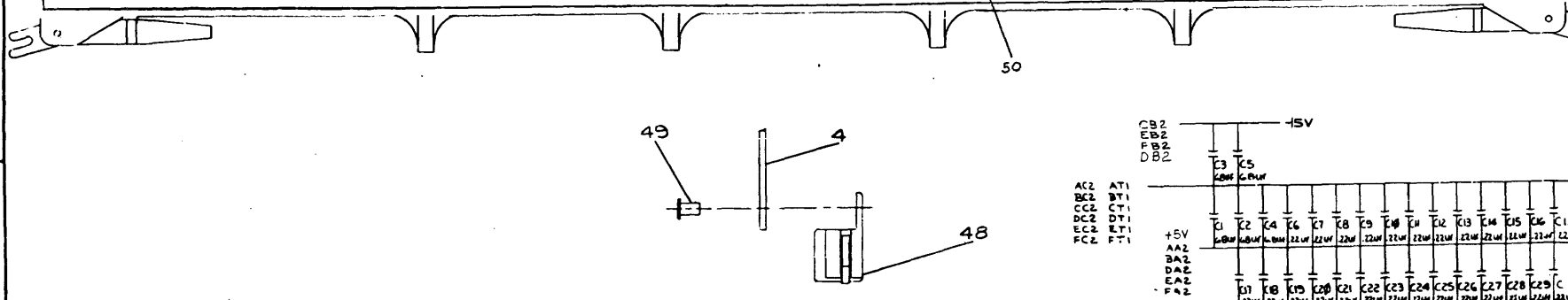
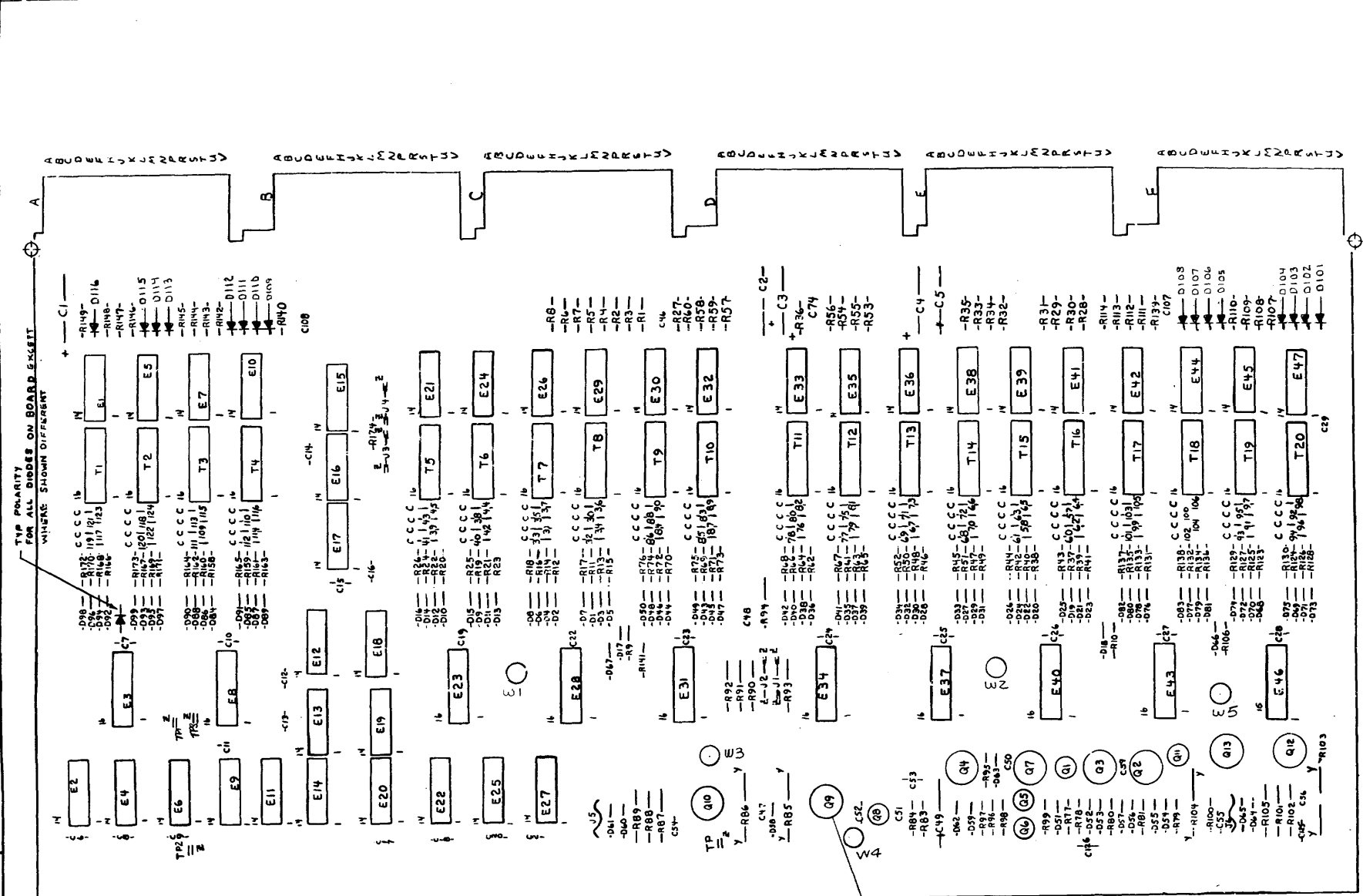


REV	CHANGE NO	REVISIONS

FIRST USED ON OPTION MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
MMII-L				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN	DATE	digital EQUIPMENT CORPORATION	
DECIMALS	CHK	DATE	MAYNARD MASSACHUSETTS	
ANGLES	ENG	DATE	TITLE	
REMOVE BURRS AND BREAK SHARP EDGES	PROJ. ENG.	DATE	TIMING DIAGRAM	
MATERIAL	PROD.	DATE	NEXT HIGHER ASSY. (MMII-L, MMII-K)	
FINISH	SCALE	DATE	B DC MMII-L	
	SHEET	DIST	SIZE CODE NUMBER REV	
			D T D MMII-L-3	

NUMBER 8  
 SIZE CODE  
 D T D MMII-L-3  
 REV.

NOTES:  
 1. UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE 1/4W 5% AND ALL CAPACITORS ARE 50V 5%  
 2. 75 #76 SHOULD BE 1.5 INCH OF INSULATED LOOP  
 3. THIS PRINT IS FOR C REV ETCH MODULES ONLY



QTY	REF. DESIGNATION	DESCRIPTION	PART NO.
2	W1, 2	3/8" STANDOFF	9008213
2		NYLON SCREWS	9008212
AR		WAKEFIELD COMPOUND	9008268
1	C52	CAP 470PF 100V 5%	1000024
3	W3-5	STANDOFF 1/4" OD, 7/16" LG 4-40TH	9009306
3		SCREW NYLON 3/8" LG 4-40TH	9006401-04
80	R1-24, R37-52, 61-76, R123-138, R158-173	RES 100Ω 1/4W 5%	1300219
1	C56	CAP 680PF 100V 5%	1000026
4		INSULATING FILM 245 x 600 x .002 THK	9008493
12		EYELET #654-T E B STIMPSON	9008132
1		HANDLE	1212111
1		SPLIT LUGS	9008135
12		HEAT SINK	202243
7	E11-E14, E18, E19, E20	IC 74004	9008667
1	E8	IC 74004	9008667
10	E3, E8, E23, E28, E31, E34, E37, E40, E43, E46	IC 8251	1000984
3	E2, E27	IC 74000	1000958
2	E22, E25	IC 74010	1000957
20	T1-T20	TRANSFORMER	1603996
4	E8, E19, E18, E17	IC DEC 350	9008485
20	E15, E7, E18, E21, E24, E26, E29, E32, E35, E38, E41, E44, E47	IC 4008 QUAD TRANSISTOR	1510015
4	Q9, Q10, Q12, Q15	TRANSISTOR 2N3762	1500940
3	Q4, Q5, Q7	TRANSISTOR 2N4250	1505321
1	Q11	TRANSISTOR 2N54 D	1507400
1	Q8	TRANSISTOR 2N93 B	1503100
3	Q3, Q7, Q7	TRANSISTOR 2N2907	1502155
1	Q4	TRANSISTOR 2N18	1501881
4	Q85, Q86, Q103, Q104	RES 10.0 OHM 1/2	1310032
1	Q82	RES 170K 1/8W 1%	1302642
1	Q81	RES 900Ω 1/8W 1%	1302645
2	Q88, Q94	RES 10K 1/8W 1%	1302674
2	Q89, Q106	RES 2.2K 1/8W 5%	1302187
4	Q9, Q10, Q103, Q104	RES 800Ω 1/8W 5%	1301424
1	Q83	RES 750Ω 1/8W 5%	1301431
4	Q27, Q30, Q130, Q140	RES 51Ω 1/8W 5%	1300942
1	Q87	RES 15K 1/8W 5%	1300486
1	Q134	RES 10K 1/8W 5%	1300479
1	Q85	RES 2.2K 1/8W 5%	1300417
4	Q11, Q88, Q101, Q102	RES 1.5K 1/8W 5%	1300394
2	Q10, Q98	RES 410Ω 1/8W 5%	1300317
3	Q84, Q92, Q100	RES 1.5K 1/8W 5%	1300287
1	Q83	RES 470Ω 1/8W 5%	1300219
AR		WIRE LAMPED #18 STRANDED (BLACK)	907350-D
2	Q78, Q80	RES 330Ω 1/8W 5%	1300220
4	R1-R8, R28-R35, R53-R60, R96, R107-R114, R142-R149	RES 100Ω 1/8W 5%	1300219
2	Q11, Q81	RES 10K 1/8W 5%	1300220
1	Q86	DIODE 1N423 ZENON	1100506
25	D17, D18, D55, D80, D81, D84-D87, D101-D116	DIODE D872	1100275
2	D1, D10, D18, D54, D56, D57, D58, D62, D63, D83, D86	DIODE D884	1100114
8	C1-C5, C48	CAP 6.8 MFD 35V 20%	1000087
4	C8-C29, C40, C47, C48, C50, C53, C54, C74, C107, C108, C125, C126, C59	CAP 220P 50V -20% 80%	1018274
80	C30-C45, C57, C58, C60-C73, C75-C100, C109-C124	CAP 1000PF 50V 5% 50	1000042
AR		WIRE JUMPER #18 22 SOLID	910750-D-1
1	C51, C55	CAP 300P 100V 5% 50	1000015
1		1/16" DIA #100011 BUSH	9008788
1		HANDLE LCA MOUNT	9-00-5211-02
REF		ASSY/DRILLING HOLE LAYOUT	C-00-5211-02
REF		2-T COORDINATE HOLE LOCATION	C-02-5211-02
REF		REF DESIGNATION	PART NO.

IC TYPE	QTY	LOCATIONS	APPROVED LIST
74004	7	26-A, 26-B, 27-A, 27-B, 28-A, 28-B, 29-A, 29-B, 30-A, 30-B	
74010	2	27-A, 27-B	
74000	2	27-A, 27-B	
74010	2	27-A, 27-B	
74004	7	26-A, 26-B, 27-A, 27-B, 28-A, 28-B, 29-A, 29-B, 30-A, 30-B	

REVISIONS

REV	DATE	DESCRIPTION
1	10/1/68	ORIGINAL
2	10/1/68	REVISED
3	10/1/68	REVISED
4	10/1/68	REVISED
5	10/1/68	REVISED
6	10/1/68	REVISED
7	10/1/68	REVISED
8	10/1/68	REVISED
9	10/1/68	REVISED
10	10/1/68	REVISED

ETCH BOARD REV

REVISIONS FOR CONVERSION CHART

REV	DATE	DESCRIPTION
1	10/1/68	ORIGINAL
2	10/1/68	REVISED
3	10/1/68	REVISED
4	10/1/68	REVISED
5	10/1/68	REVISED
6	10/1/68	REVISED
7	10/1/68	REVISED
8	10/1/68	REVISED
9	10/1/68	REVISED
10	10/1/68	REVISED

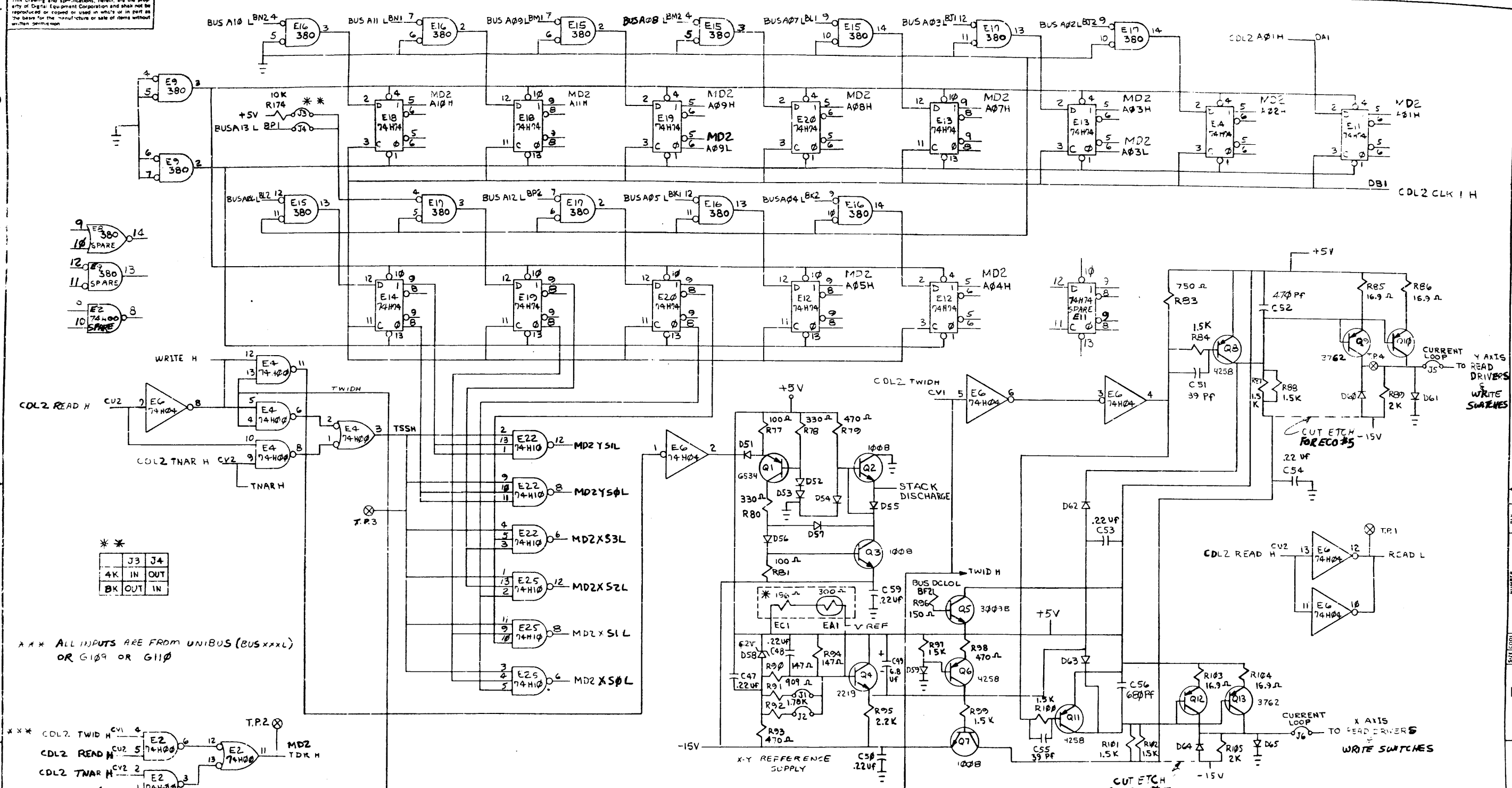
EQUIPMENT CORPORATION

PDP-11 MEMORY DRIVER (MD)

ECS G21-0-1 E4



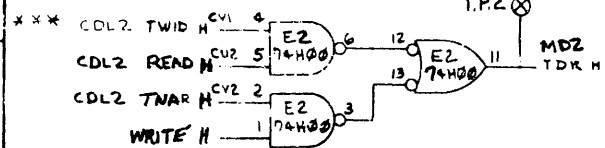
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\*\*\*

J3	J4
4K IN	OUT
BK OUT	IN

\*\*\* ALL INPUTS ARE FROM UNIBUS (BUSXXXX) OR G109 OR G110



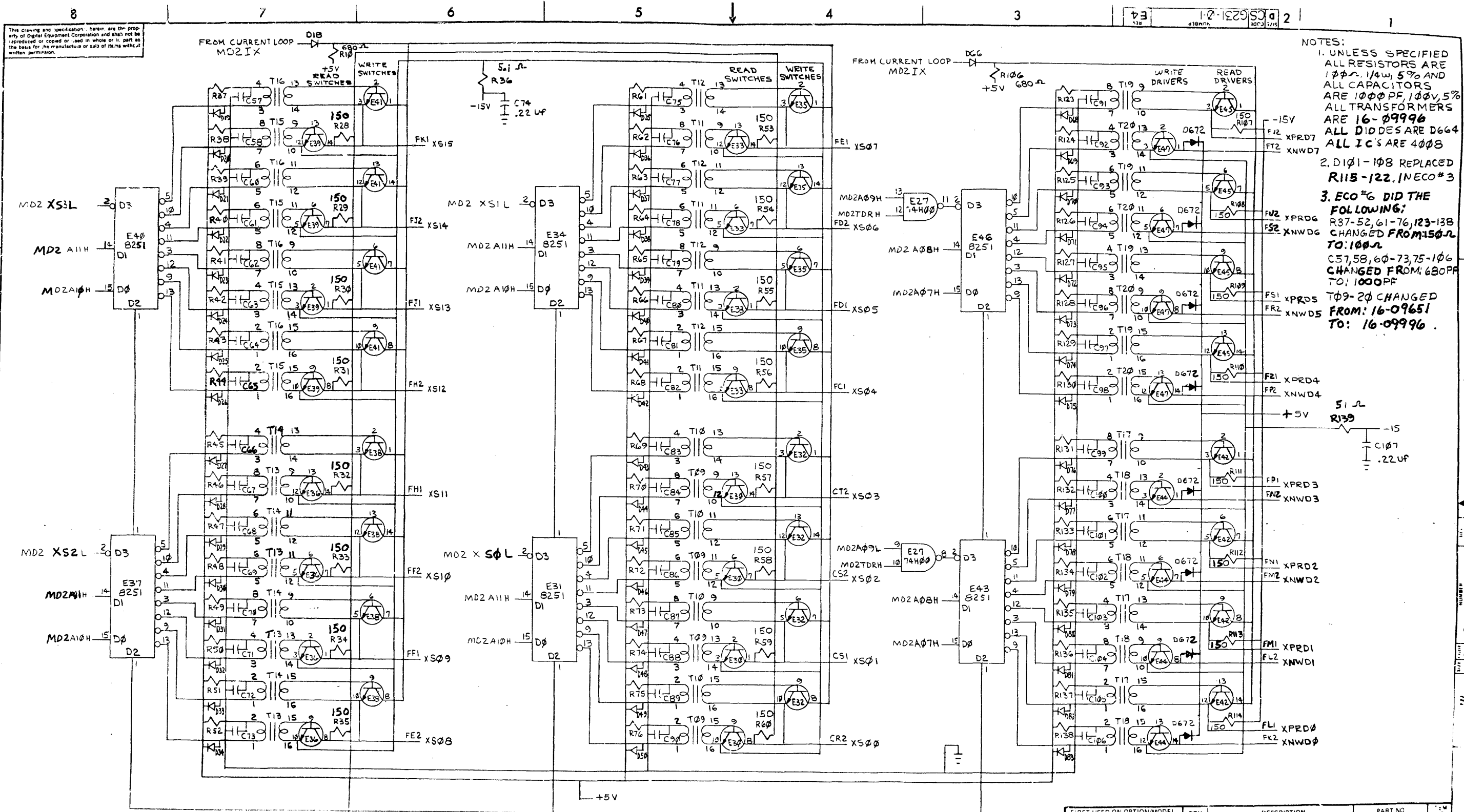
\* THIS CIRCUIT IS ON STACK BOARD

CUT ETCH FORECO #5

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	REV
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRY	DATE	PARTS LIST	
DECIMALS	CH	DATE	POP-MEMORY DRIVER	
ANGLES	ENG	DATE	DCS 6231-0-1 E4	
XXX - 000	PROJ ENG	DATE		
XX - 02	DESIGN	DATE		
X - 1	PROJ MGR	DATE		
REVISIONS	DATE	BY		
CHANGE NO				
REV				

REVISIONS

NO	DATE	BY
1		



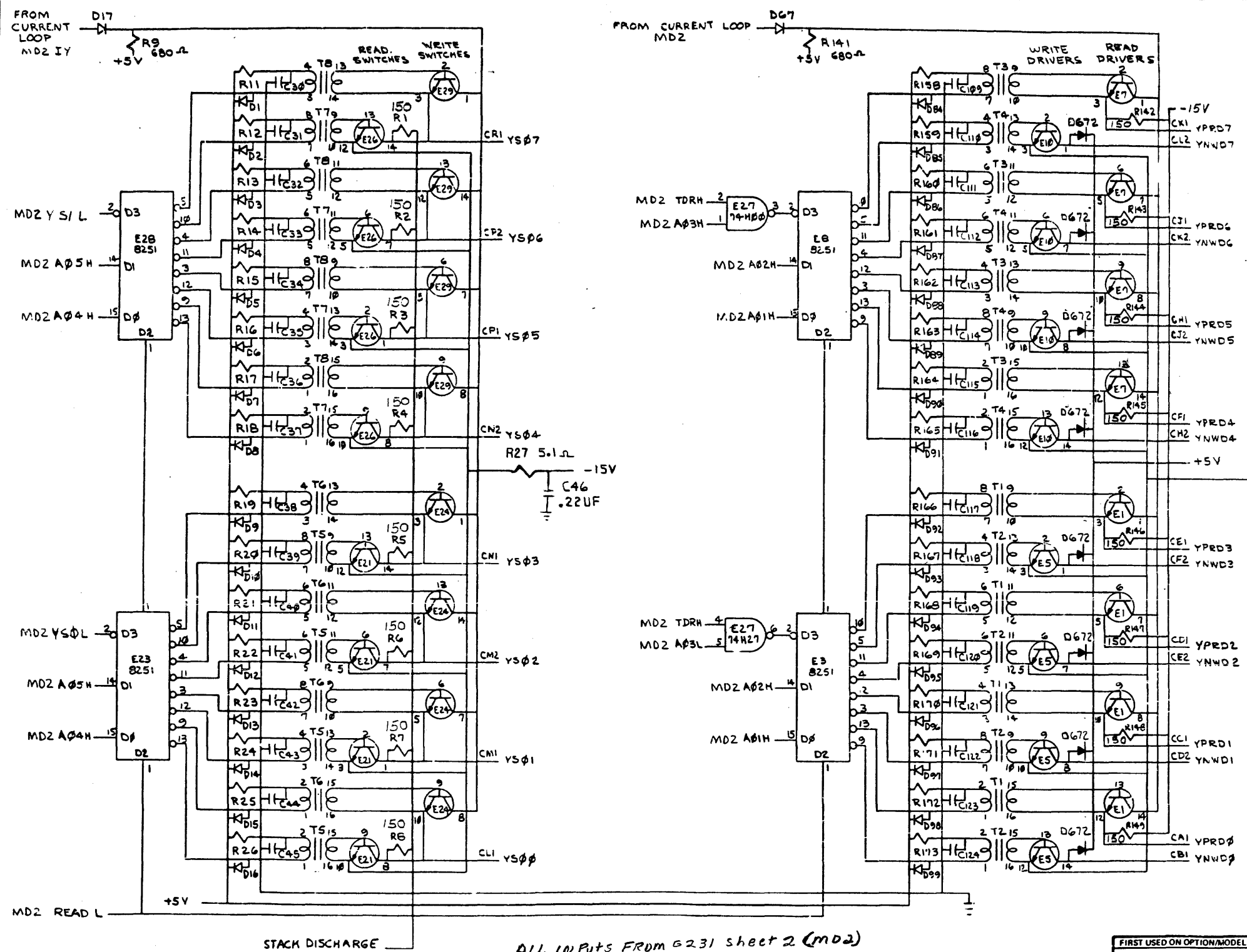
- NOTES:
1. UNLESS SPECIFIED ALL RESISTORS ARE 100Ω, 1/4W, 5% AND ALL CAPACITORS ARE 100PF, 100V, 5% ALL TRANSFORMERS ARE 16-09996 ALL DIODES ARE D664 ALL IC'S ARE 4008
  2. D101-108 REPLACED R115-122, INECO#3
  3. ECO#6 DID THE FOLLOWING:  
R37-52, 61-76, 123-138 CHANGED FROM 150Ω TO 100Ω  
C57, 58, 60-73, 75-106 CHANGED FROM 680PF TO 1000PF  
T09-20 CHANGED FROM 16-09651 TO 16-09996.

ALL INPUTS FROM G231 SHEET 2 (MD2)  
ALL OUTPUTS GO TO MEMORY STACK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN Z. Carling	DATE 10-1-71	<b>digital</b> EQUIPMENT CORPORATION
DECIMALS	CHKD. J. L. Loh	DATE 1-2-72	
XXX = .005 XX = .02 X = .1	ANULES 10 <sup>-30</sup>	ENG. P.D. UNIT DATE 2-5-72	TITLE <b>PDP-11 MEMORY DRIVER (MD3)</b>
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD. R. L. Tolson	DATE 1-26-72	
MATERIAL	NEXT HIGHER ASSY	SIZE CODE DCS G231-0-1	NUMBER E4
FINISH	SCALE 3 OF 5	DIST	REV E4

REV.	CHANGE NO.	DATE

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- NOTES:
- UNLESS SPECIFIED  
ALL RESISTORS ARE 100Ω, 1/4W, 5%  
ALL CAPACITORS ARE 1000 PF, 100V, 5%  
ALL TRANSFORMERS ARE 16-09996  
ALL DIODES ARE D664  
ALL I.C.'S ARE 4008
  - D101-108 REPLACED R115-122 IN ECO #3.
  - ECO #6 DID THE FOLLOWING:  
R11-26, 158-173 CHANGED FROM: 150Ω TO: 100Ω  
C30-45, 109-124 CHANGED FROM: 680 PF TO: 1000 PF  
T1-8 CHANGED FROM: 16-09651 TO: 16-09996

ALL INPUTS FROM G231 sheet 2 (MD2)  
ALL OUTPUTS TO MEMORY STACK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN P. Carberry	DATE 10/25/71	 EQUIPMENT CORPORATION WATFORD MASSCHUSETTS	
DECIMALS .XXX - .005	CHKD P. Duvaux	DATE 1-21-72		
ANGLES XX - .02	PROJ. ENG. P.D. Duvaux	DATE 1-25-72		
X - .1	PROD. P.D. Duvaux	DATE 1-26-72		
REMOV. BURRS AND BREAK SHARP CORNERS SURFACE QUALITY			TITLE <b>PDP-11 MEMORY DRIVER (MD4)</b>	
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV
FINISH	SCALE	DIST	DCS G231-0-1	E4
	SHEET 4 OF 5			

REV.	CHANGE NO.

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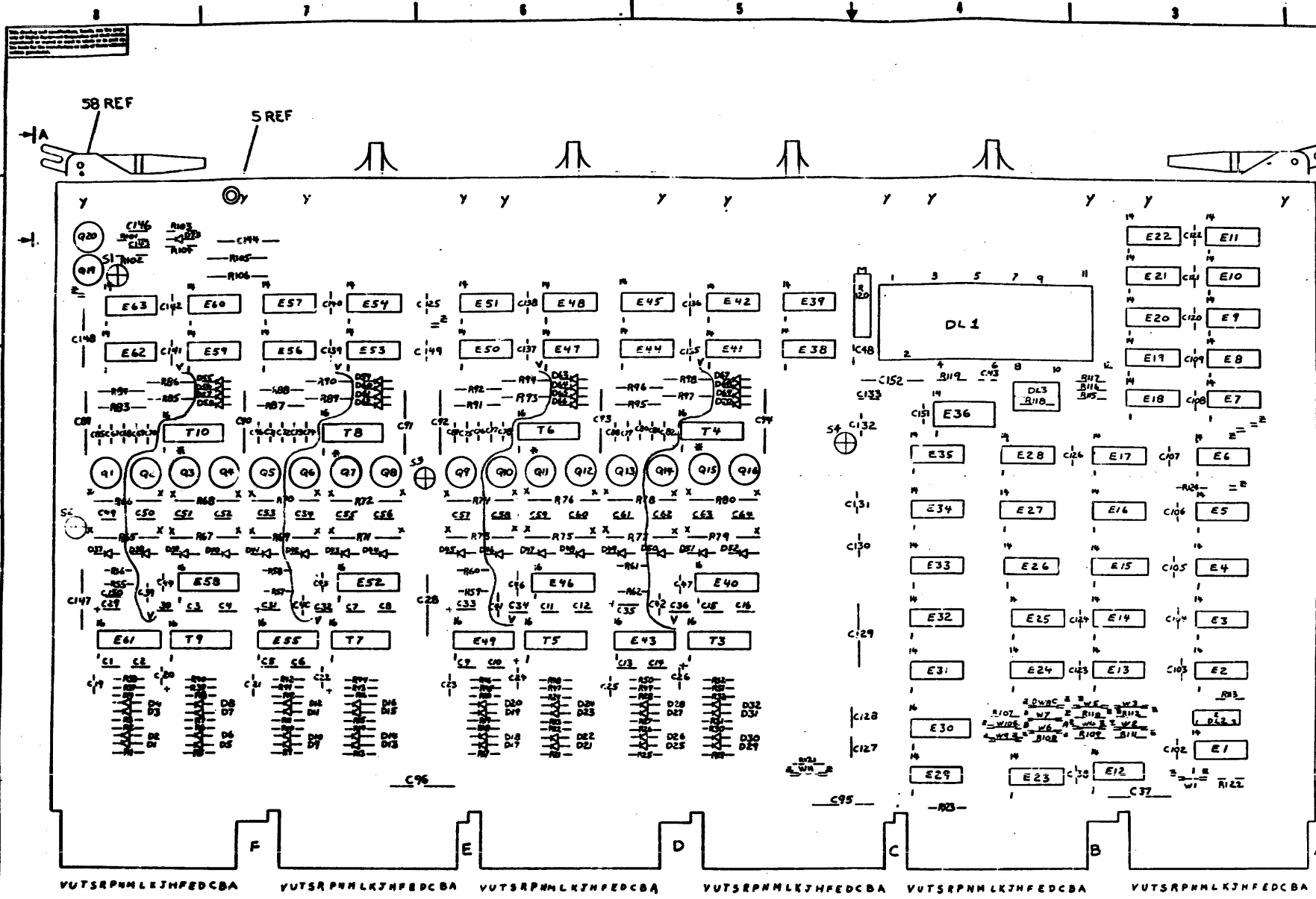
# ECO MODULE REFERENCE

DCS G231-0-1 E4

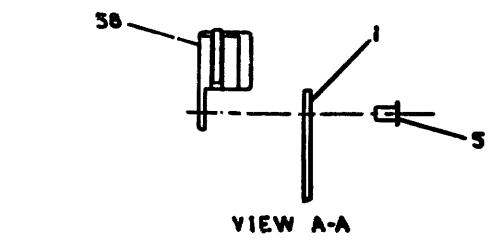
- NOTES:**
- THIS PRINT IS FOR 'C' REV ETCH MODULES ONLY.
  - THIS CHART IS DESIGNED TO ALLOW THIS G231 CIRCUIT SCHEMATIC TO BE USED WITH ALL PREVIOUS REVISION MODULES
  - TABLE IS USED AS FOLLOWS:
    - LOCATE REVISION LETTER STAMPED ON THE HANDLE.
    - FOLLOW THE MODULE STAMPED REVISION COLUMN TO FIND APPROPRIATE REV.
    - NOTICE SYMBOLS TO RIGHT OF REVISION LETTER, THESE SYMBOLS WILL INDICATE ECO REQUIREMENTS FOR THAT MODULE.
  - SYMBOLS:
    - = REQUIRED
    - △ = ONE OR THE OTHER IS REQUIRED
    - \* = NOT REQUIRED

ECO NO.	SUMMARY OF ECO (NOTE: MODULE WAS RELEASED AT CS REV B)	PRINT CHANGE LOCATIONS	MODULE STAMPED REVISION	CIRCUIT SCHEMATIC REVISION	ECO REQUIREMENTS													
					1	2	3	4	5	6	7	8	9					
1	ADD (2) STANDOFFS	STAND-OFFS GLUED ON WITH ECCO BOND	C	C	□													
2	DID NOT EFFECT 'C' REV ETCH MODULES				*	*												
3	REMOVE 16-150Ω RESISTORS, ADD 16-D67Z DIODES (DIØ1-116)	SEE SHEETS 3&4 AREA 1-D	E	C1	□	*	□											
4	DID NOT EFFECT 'C' REV ETCH MODULES				*	*	*	*										
5	FIXED DCLO 3-ETCH CUTS, 3 JUMPERS	SEE SHEET 2 AREA 2-B	E1	1	□	*	□	*	□									
6	IF ECO*6 IS NOT INSTALLED REF TABLE BELOW		E2	2	□	*	□	*	□	□								
	ITEM	REF DESIGNATION														DESCRIPTION	PART NO.	ITEM
	20	T1-20														TRANSFORMER	1909651	40
	80	R11-26, 37-52, 61-76, 123-138, 158-173														150Ω RES.	1300250	53
80	C30-45, 57, 60-73, 58, 75-106, 109-124	680PF CAP.	1000026	7														
7	DRILL BOARDS IN BOARD FABRICATION TO INSTALL NEW STAND-OFFS WITH SCREWS GENERATE CORRECT PRINTS	HANDLE STAMPED E 1 E 2	C.S. PRINT REQUIRED C 1 2	SEE SHEET 1 AREA 2-F	3	3	*	*	□	*	□	*	□					
8	CHANGE VALUE OF C52 FROM: 680PF TO: 470PF	SEE SHEET 2 AREA 2-C	3A	3A	△	*	□	*	□	*	△	□						
9	GENERATE A PRINT THAT SHOWS ECO STATUS AND UPDATE PRINTS TO DEC STANDARDS	PRINT CHANGE ONLY	E4	E4	△	*	□	*	□	*	△	□	□					

FIRST USE	DATE	PART NO.	REV.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		PARTS LIST	
TOLERANCES:	DATE	digital EQUIPMENT CORPORATION	
DECIMALS	DATE	PDP-11 MEMORY DRIVER (M05)	
± .009	DATE	DCS G231-0-1 E4	
± .02	DATE	SHEET 5 OF 5	
± .05	DATE		
REMOVE BURRS AND BREAK SHARP CORNERS. RADIUS .015 MIN.	DATE		
MATERIAL	DATE		
FINISH	SCALE NONE		
	SHEET 5 OF 5		



NOTES:  
 1. UNLESS OTHERWISE SPECIFIED ALL RESISTORS WILL BE 1/4 W 5% AND ALL CAPACITORS WILL BE 120 PF 100V 5% OH.  
 2. NOTE POLARITY OF 3.9UF CAPS.  
 3. THIS PRINT IS FOR C REV ETCH MODULES ONLY.



QTY	DESCRIPTION	REF	QTY	DESCRIPTION	REF
4	SCREW NYLON #4X3/8"	9206401-047	1	IC DEC 7400	100506
1	ECCO BOND-26	N/A	1	IC DEC 7410	100508
16	R37-AS2	RES.2K 1/4W 5%	1	IC DEC 7415	100509
1	DL1	DELAY LINE D-10100	1	IC DEC 7408	100510
2	R10, A11B	RES.220 1/4W 5%	1	IC DEC 7403	100511
AS	WIRE BINDER W/ BLANK END BLANK	1700029	1	IC DEC 7402	100512
23	SPLIT LUGS	9005132	7	L41, L47, L53, L58, L14	101001
1	HANDLE ASSY	1210111	1	IC DEC 7401	100513
1	E23	IC DEC 7400	1	IC DEC 7402	100514
1	E27	IC DEC 7410	1	IC DEC 7403	100515
1	E30	IC DEC 7415	1	IC DEC 7408	100516
1	E31	IC DEC 7408	1	IC DEC 7403	100517
1	E32	IC DEC 7403	1	IC DEC 7402	100518
1	E33	IC DEC 7402	1	IC DEC 7401	100519
1	E34	IC DEC 7401	1	IC DEC 7400	100520
1	E35	IC DEC 7400	1	IC DEC 7400	100521
1	E36	IC DEC 7400	1	IC DEC 7400	100522
1	E37	IC DEC 7400	1	IC DEC 7400	100523
1	E38	IC DEC 7400	1	IC DEC 7400	100524
1	E39	IC DEC 7400	1	IC DEC 7400	100525
1	E40	IC DEC 7400	1	IC DEC 7400	100526
1	E41	IC DEC 7400	1	IC DEC 7400	100527
1	E42	IC DEC 7400	1	IC DEC 7400	100528
1	E43	IC DEC 7400	1	IC DEC 7400	100529
1	E44	IC DEC 7400	1	IC DEC 7400	100530
1	E45	IC DEC 7400	1	IC DEC 7400	100531
1	E46	IC DEC 7400	1	IC DEC 7400	100532
1	E47	IC DEC 7400	1	IC DEC 7400	100533
1	E48	IC DEC 7400	1	IC DEC 7400	100534
1	E49	IC DEC 7400	1	IC DEC 7400	100535
1	E50	IC DEC 7400	1	IC DEC 7400	100536
1	E51	IC DEC 7400	1	IC DEC 7400	100537
1	E52	IC DEC 7400	1	IC DEC 7400	100538
1	E53	IC DEC 7400	1	IC DEC 7400	100539
1	E54	IC DEC 7400	1	IC DEC 7400	100540
1	E55	IC DEC 7400	1	IC DEC 7400	100541
1	E56	IC DEC 7400	1	IC DEC 7400	100542
1	E57	IC DEC 7400	1	IC DEC 7400	100543
1	E58	IC DEC 7400	1	IC DEC 7400	100544
1	E59	IC DEC 7400	1	IC DEC 7400	100545
1	E60	IC DEC 7400	1	IC DEC 7400	100546
1	E61	IC DEC 7400	1	IC DEC 7400	100547
1	E62	IC DEC 7400	1	IC DEC 7400	100548
1	E63	IC DEC 7400	1	IC DEC 7400	100549
1	E64	IC DEC 7400	1	IC DEC 7400	100550
1	E65	IC DEC 7400	1	IC DEC 7400	100551
1	E66	IC DEC 7400	1	IC DEC 7400	100552
1	E67	IC DEC 7400	1	IC DEC 7400	100553
1	E68	IC DEC 7400	1	IC DEC 7400	100554
1	E69	IC DEC 7400	1	IC DEC 7400	100555
1	E70	IC DEC 7400	1	IC DEC 7400	100556
1	E71	IC DEC 7400	1	IC DEC 7400	100557
1	E72	IC DEC 7400	1	IC DEC 7400	100558
1	E73	IC DEC 7400	1	IC DEC 7400	100559
1	E74	IC DEC 7400	1	IC DEC 7400	100560
1	E75	IC DEC 7400	1	IC DEC 7400	100561
1	E76	IC DEC 7400	1	IC DEC 7400	100562
1	E77	IC DEC 7400	1	IC DEC 7400	100563
1	E78	IC DEC 7400	1	IC DEC 7400	100564
1	E79	IC DEC 7400	1	IC DEC 7400	100565
1	E80	IC DEC 7400	1	IC DEC 7400	100566
1	E81	IC DEC 7400	1	IC DEC 7400	100567
1	E82	IC DEC 7400	1	IC DEC 7400	100568
1	E83	IC DEC 7400	1	IC DEC 7400	100569
1	E84	IC DEC 7400	1	IC DEC 7400	100570
1	E85	IC DEC 7400	1	IC DEC 7400	100571
1	E86	IC DEC 7400	1	IC DEC 7400	100572
1	E87	IC DEC 7400	1	IC DEC 7400	100573
1	E88	IC DEC 7400	1	IC DEC 7400	100574
1	E89	IC DEC 7400	1	IC DEC 7400	100575
1	E90	IC DEC 7400	1	IC DEC 7400	100576
1	E91	IC DEC 7400	1	IC DEC 7400	100577
1	E92	IC DEC 7400	1	IC DEC 7400	100578
1	E93	IC DEC 7400	1	IC DEC 7400	100579
1	E94	IC DEC 7400	1	IC DEC 7400	100580
1	E95	IC DEC 7400	1	IC DEC 7400	100581
1	E96	IC DEC 7400	1	IC DEC 7400	100582
1	E97	IC DEC 7400	1	IC DEC 7400	100583
1	E98	IC DEC 7400	1	IC DEC 7400	100584
1	E99	IC DEC 7400	1	IC DEC 7400	100585
1	E100	IC DEC 7400	1	IC DEC 7400	100586

REV	DATE	BY	CHKD	DESCRIPTION
1	12-15-68	J. DURANT		INITIALS SAME
2	1-10-69	J. DURANT		REVISION

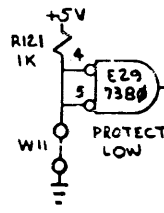
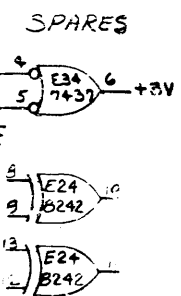
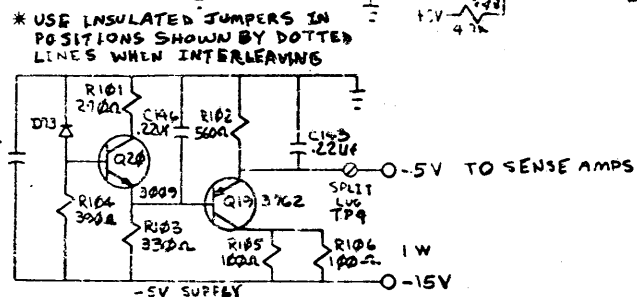
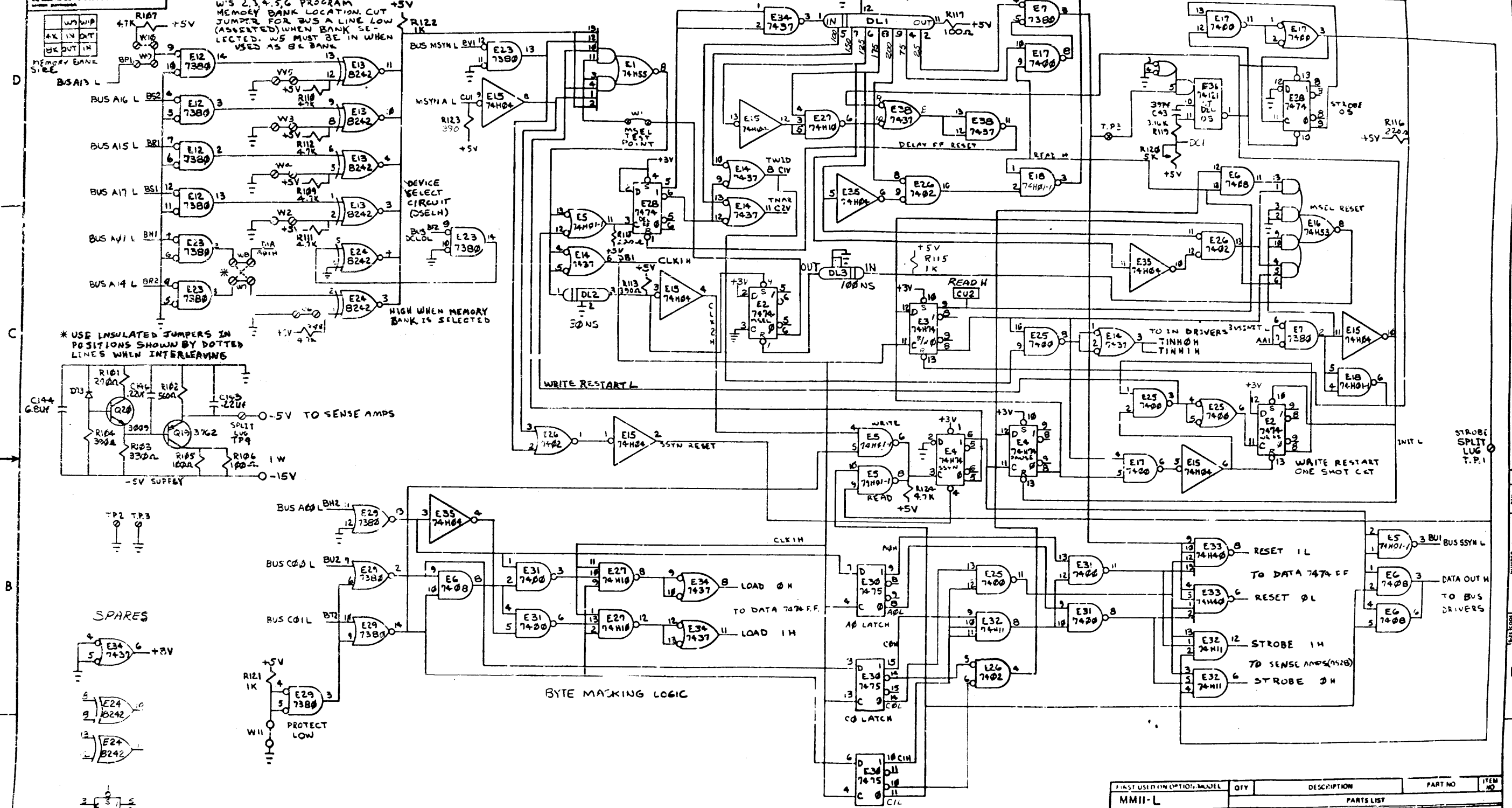
REV	DATE	BY	CHKD	DESCRIPTION
1	12-15-68	J. DURANT		INITIALS SAME
2	1-10-69	J. DURANT		REVISION

REV	DATE	BY	CHKD	DESCRIPTION
1	12-15-68	J. DURANT		INITIALS SAME
2	1-10-69	J. DURANT		REVISION

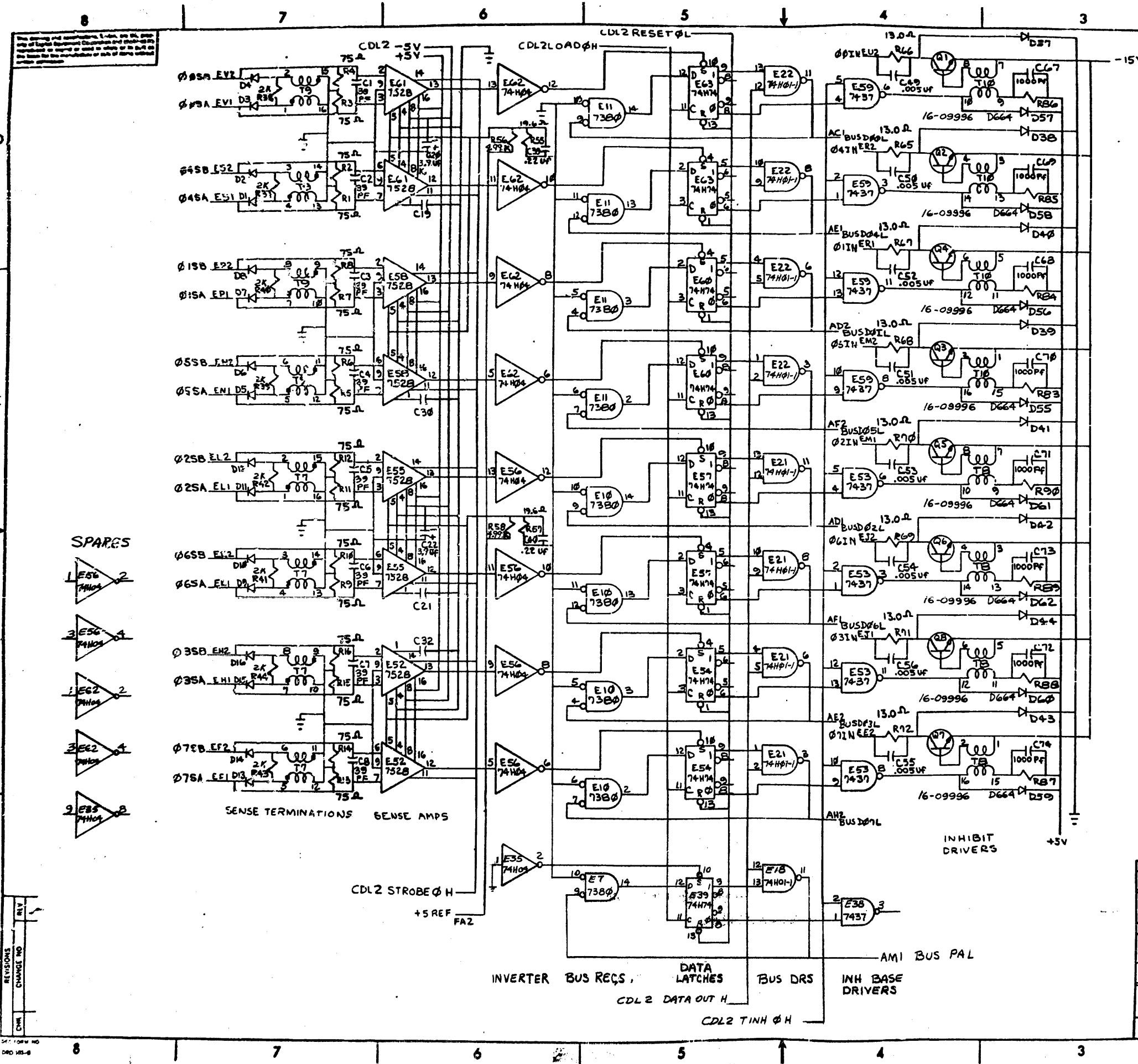
CONTROL & DATA LOOPS

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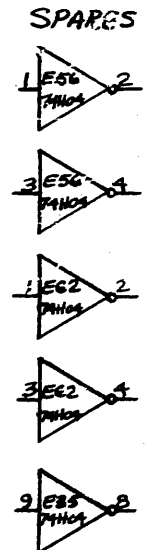
W'S 2,3,4,5,6 PROGRAM MEMORY BANK LOCATION. CUT JUMPER FOR BUS A LINE LOW (ASSERTED) WHEN BANK SELECTED. W5 MUST BE IN WHEN USED AS BK BANK.



FIRST USED ON OPTION MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
MMII-L				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES				
DECIMALS	ANGLES	DATE 12/72		
0.005	10°	DATE 1/72		
0.010	10°	DATE 1/72		
0.020	10°	DATE 1/72		
0.050	10°	DATE 1/72		
0.100	10°	DATE 1/72		
0.200	10°	DATE 1/72		
0.500	10°	DATE 1/72		
1.000	10°	DATE 1/72		
2.000	10°	DATE 1/72		
5.000	10°	DATE 1/72		
10.000	10°	DATE 1/72		
20.000	10°	DATE 1/72		
50.000	10°	DATE 1/72		
100.000	10°	DATE 1/72		
200.000	10°	DATE 1/72		
500.000	10°	DATE 1/72		
1000.000	10°	DATE 1/72		
REMOVED BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL				
NEXT HIGHER ASSY				
FINISH				
PARTS LIST				
EQUIPMENT CORPORATION				
CONTROL DATA				
LOOPS				
(CDL 2)				
B-00-MMII-L				
DCS G110-0-1				
SHEET 2 OF 5				
REV E5				



- NOTES:
1. ALL SIGNALS FROM UNIBUS (BUS D0-L TO BUS D07L), G110 SHEET 2 (CDL2) OR STACK (Q05A,B TO Q75A,B AND Q4IN TO Q7IN)
  2. UNLESS SPECIFIED:  
ALL RESISTORS ARE 82Ω 1/2 W 5%  
ALL CAPACITORS ARE 120 PF 100V 5%  
ALL TRANSFORMERS ARE 16-09996  
ALL DIODES ARE D672  
ALL TRANSISTORS ARE DEC-3734
  3. ECO#2 DID THE FOLLOWING:  
C1-C8 CHANGED FROM 60 PF TO 39 PF  
R37-R44 CHANGED FROM 330Ω TO 2 K  
C49-C56 CHANGED FROM .0022μf TO .005μf
  4. ECO#8 DID THE FOLLOWING:  
R56, R58 CHANGED FROM 5.62K TO 4.99K  
C20, C22 CHANGED FROM .22μf TO 3.9μf
  5. ECO#13 ADD JUMPER E35P1 TO GND.



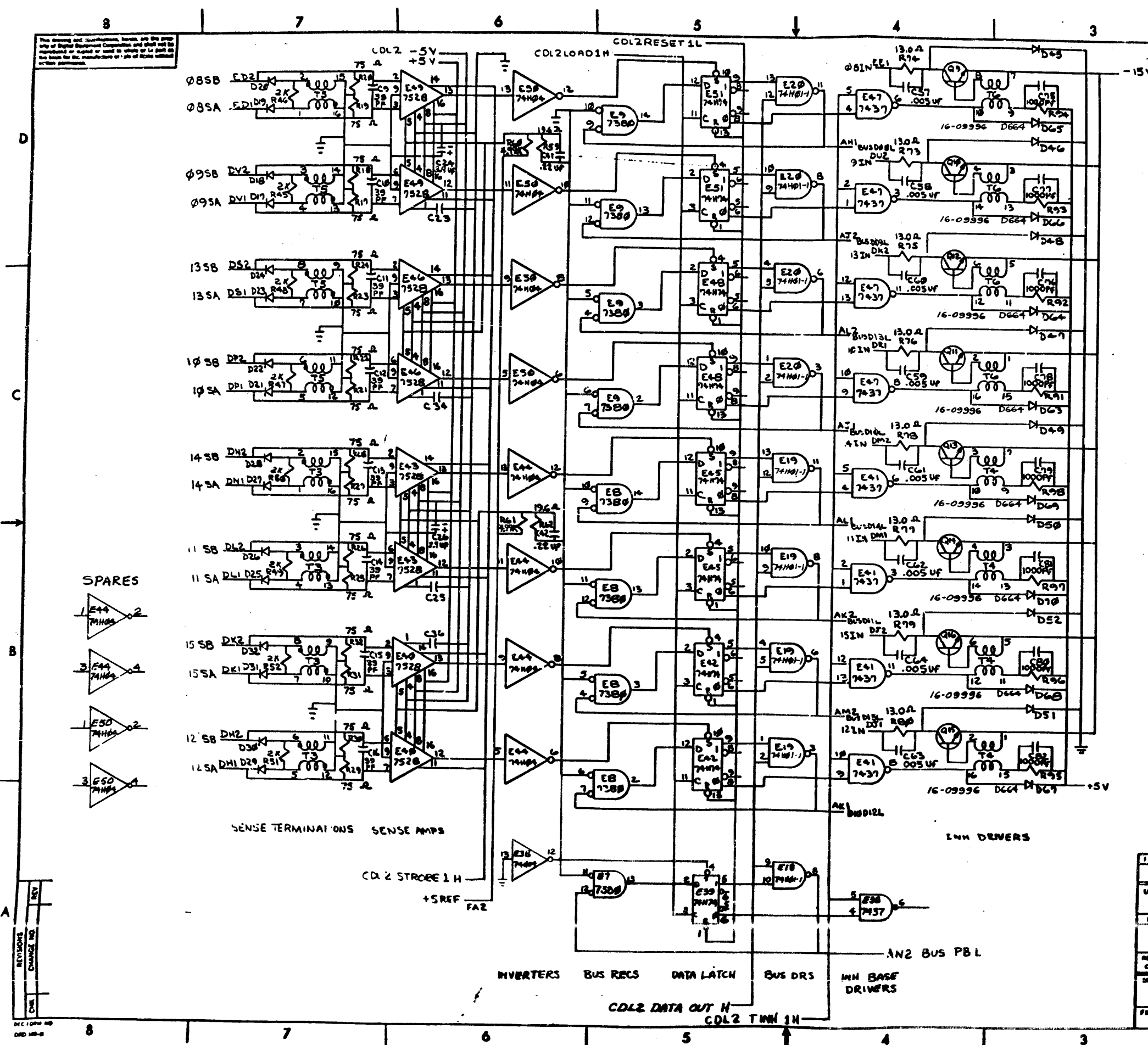
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MMII-L		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN CASH	DATE 11/18/72	EQUIPMENT CORPORATION	
DECIMALS .XXX = .005 .XX = .02 .X = .1	ENG P. Outman P. Outman PROD. R. P. R...	DATE 1/1/72 10/1/72 12/1/72	TITLE CONTROL & DATA LOOPS (CDL3)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY			MATERIAL NEXT HIGHER ASSY.	
			MATERIAL B-DD-MMII-L	
			FINISH SCALE SHEET 3 OF 5	
			SIZE CODE NUMBER DCS G110-0-1	
			REV E6	

REVISIONS  
CHANGE NO.

DCS G110-0-1



- NOTES:
- ALL SIGNALS FROM UNIBUS (BUS DOBL-DISL) G110 SHEET 2 (CDL2) OR STACK (083A, B TO 155A, B AND 081N TO 151N)
  - UNLESS SPECIFIED:  
ALL RESISTORS ARE 02Ω 1/2 W 5%  
ALL DIODES ARE D672  
ALL CAPACITORS ARE 120 PF 100V 5%  
ALL TRANSFORMERS ARE 16-09996  
ALL TRANSISTORS ARE DEC-3734
  - ECO #2 DID THE FOLLOWING:  
C9-C16 CHANGED FROM 68 PF TO 39 PF.  
R45-R52 CHANGED FROM 330Ω TO 2K  
C57-C64 CHANGED FROM .0022μF TO .005μF
  - ECO #8 DID THE FOLLOWING:  
R60, R61 CHANGED FROM 5.62K TO 4.99K  
C24, C26 CHANGED FROM .22μF TO 3.9μF
  - ECO #13 ADD JUMPER E35P13 TO GND.



CAUTION

FIRST USED ON OPTION/ROCEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MMH-L		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES		DATE 11/72	EQUIPMENT CORPORATION	
ORIGINALS		DATE 11/72	CONTROL & DATA LOOPS (CDL 4)	
REV. #		DATE 11/72	NUMBER	
PROJ. ENG.		DATE 11/72	REV. EB	
PROD. ENG.		DATE 11/72	SCALE	
MATERIAL		DATE 11/72	SHEET 4 OF 5	
REVISED		DATE	DST	



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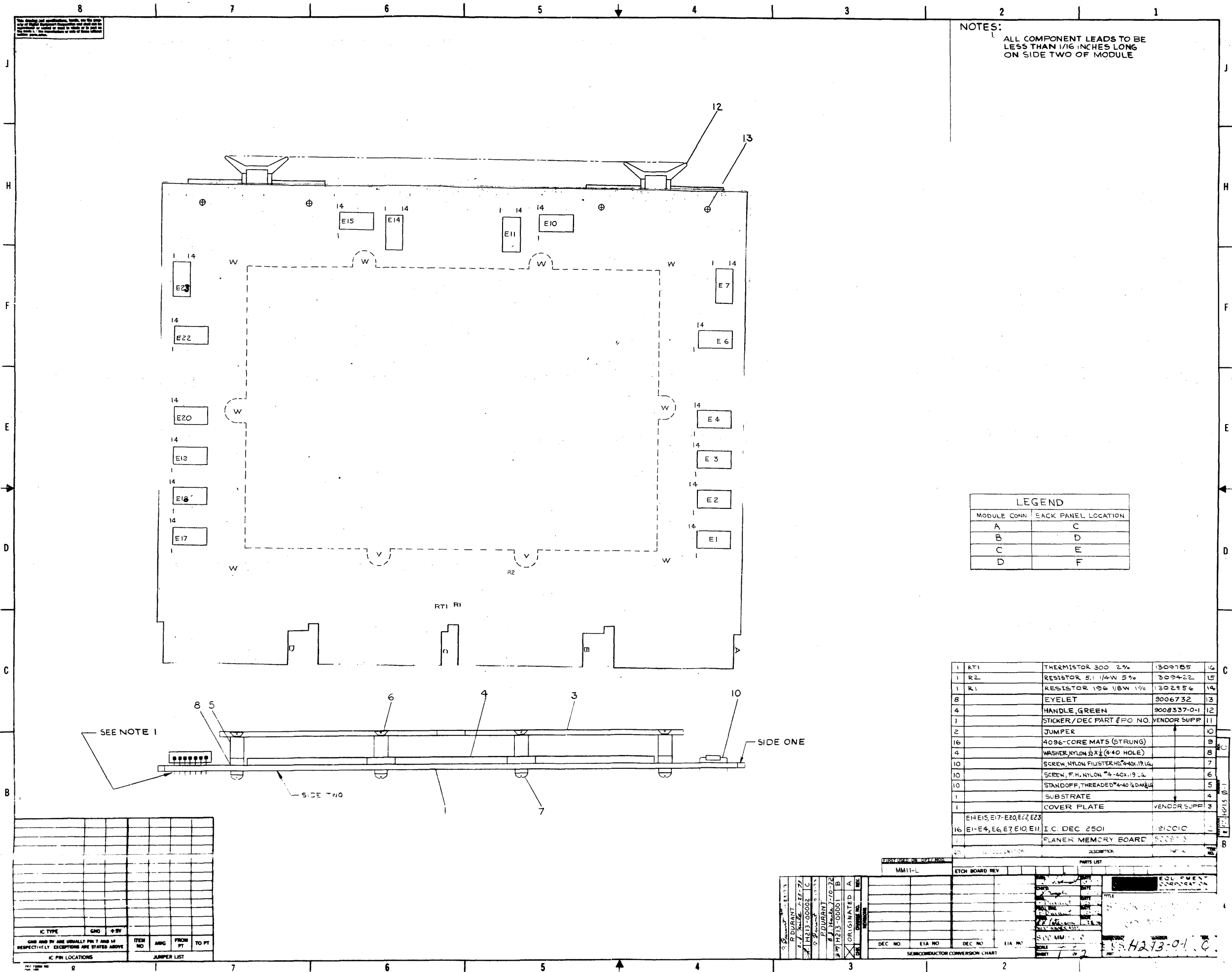
### E.C.O. MODULE REFERENCE

E.C.O. NUMBER	SUMMARY OF E.C.O.	PRINT CHANGE LOCATION	MODULE STAMPED REVISION	CIRCUIT SCHEM REVISION	E.C.O. REQUIREMENTS															
					1	2	3	3A	4	5	6	7	8	9	9A	10	10A	11	12	13
1	CHANGE R116, R118 FROM 1K TO 220Ω. CUT ETCH FROM E2-P3 TO E5-P4 & TO E15-P4. ADD JUMPERS FROM E2-P3 TO GND, FROM E5-P4 TO E15-P4. CUT ETCH FROM E2-P4 TO E2-P2. ADD JUMPER FROM E2-P4 TO DL2-P8. CUT ETCH FROM I 26-F8 TO DL1-P10. ADD JUMPER FROM E26-P8 TO DL1-P9.		A	A	□															
2	CHANGE SENSE TERM. CAPS FROM 68PF TO 39PF (C1-C6 10 PARTS); CHANGE BALUN R'S'S. R37-R52 FROM 380Ω TO 1K (6 PARTS); CHANGE INH. BY PASS CAPS.. C47-C64 FROM .0022UF TO .005UF (6 PARTS) CHANGE DL3 FROM 50NΩ TO 100NΩ DELAY LINE CHANGE TERM. RES R115 FOR DL3 FROM 390Ω TO 3K.	SHT 3 AREA 2-C SHT 2 AREA 4-C SHT 2 AREA 4-C	B	B	□	□														
3	DID NOT EFFECT C REV ETCH MODULES		-	-	*	*	*													
3A	DID NOT EFFECT C REV ETCH MODULES		-	-	*	*	*	*												
4	DL3 NOT TERMINATED PROPERLY. CHANGE R118 FROM 3K TO 1K, CUT ETCH FROM DL3 OUT TO E16-P8. CUT ETCH FROM DL3 IN TO E2-P1. ADD JUMPER FROM DL3 IN TO E16-P8. ADD JUMPER FROM DL3 OUT TO E2-P1. BLUE DOWN DL2 WITH ECCO BONE	SHEET 2 AREA 4-C	D	D	□	□	*	*	□											
5	REVERSE C152 SO THAT + SIDE OF CAPM. TOR GOES TO +5V (INSTALL 1/4" 100K SUB LG. STAND-OFFS)	SHT 1 AREA 4-E	E	E	□	□	*	*	□	□										
6	DID NOT EFFECT C REV ETCH MODULES		-	-	*	*	*	*	*	*	*									
7	DRILL BLANK BOARD, AND INSTALL (4) STANDOFFS & SCREWS	SHT 1 AREA 2-F	F1	F1	□	□	*	*	□	□	*	□								
8	CHANGE R54, 58, 60, 61 FROM 5.62K TO 4.99K CHANGE C20, 22, 24, 26, 27, 31, 33, 35 FROM .22UF TO 3.9UF - CHANGE C44-47 FROM .22UF TO .01UF	SHT 3 AREA 2-C SHT 1 AREA 5-C SHTS 3-4 AREA 2-C SHT 1 AREA 3-C	E2	E2	□	□	*	*	□	□	*	□	□							
9	INSTALL GND JUMPERS ON SIDE 1, CHANGE PART NO. OF #18 WIRE FROM 9107360-00 TO 1700029	SHEET 1	H	E3	□	□	*	*	□	□	*	□	□							
9A	RE-STAMP HANDLE E-3, CHANGE PRINT FROM H7 3E-3		E3	E3	□	□	*	*	□	□	*	□	□							
10	REMOVE E28, CUT ETCH FROM E28-P13 TO E28-P2 ADD E28 AND JUMPER E28-P13 TO E15-P10		J	E4	□	□	*	*	□	□	*	□	□	*	*	□				
10A	RE-STAMP HANDLE E-4, CHANGE PRINT REV FROM 4 TO E4		E4	E4	□	□	*	*	□	□	*	□	□	*	*	□				
11	CANCELED		-	-	-	-	-	-	-	-	-	-	-	-	-	-				
12	PRINT CHANGE ONLY		E5	E5	□	□	*	*	□	□	*	□	□	*	*	□	□	□	□	□
13	ADD 2 JUMPERS SO THAT PAL AND PBL ARE HIGH ON THE BUS		E6	E6	□	□	*	*	□	□	*	□	□	*	*	□	□	□	□	□

**NOTES:**

- THIS PRINT IS FOR 'C' REV. ETCH MODULES ONLY.
- THIS CHART IS DESIGNED TO ALLOW THIS 6110 CIRCUIT SCHEMATIC TO BE USED WITH ALL PREVIOUS REVISION MODULES.
- CHART IS USED AS FOLLOWS:
  - A. LOCATE REVISION LETTER STAMPED ON HANDLE
  - B. FOLLOW THE MODULE STAMPED COLUMN TO FIND APPROPRIATE REVISION
  - C. NOTICE SYMBOLS TO RIGHT OF REVISION LETTER, THESE SYMBOLS WILL INDICATE ECO REQUIREMENTS FOR THAT MODULE.
- SYMBOLS:
  - = REQUIRED
  - Δ = ONE OR THE OTHER IS REQUIRED
  - = ONE OR THE OTHER IS REQUIRED BUT (C152 MUST BE CHANGED)
  - \* = NOT REQUIRED

FIRST USED ON OPTION/MODEL <b>MMI1-L</b>	QTY.	DESCRIPTION	PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DRN. LG.	DATE 12-22-72	PARTS LIST	
TOLERANCES	CHK'D.	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .xxx = .006	ENG.	DATE	TITLE	
ANGLES .xx = .02	PROJ. ENG.	DATE	CONTROL & DATA LOOPS (CDL5)	
.x = .1	PROD.	DATE	SIZE CODE NUMBER REV.	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY F	NEXT HIGHER ASSY.		B-DD-MMI1-L	DCS 6110-0-0
MATERIAL			SCALE NONE	E6
FINISH			SHEET 5 OF 5	DIST.



NOTES:  
 1. ALL COMPONENT LEADS TO BE LESS THAN 1/16 INCHES LONG ON SIDE TWO OF MODULE

LEGEND	
MODULE CONN	EACH PANEL LOCATION
A	C
B	D
C	E
D	F

QTY	DESCRIPTION	REF
1	RT1 THERMISTOR 300 2%	1309785 14
1	R2 RESISTOR 5.1 1/4W 5%	303422 15
1	R1 RESISTOR 100 1/8W 1%	1302856 14
8	EYELET	8006732 13
4	HANDLE, GREEN	8002337-0-1 12
1	STICKER/DEC PART & PO NO. VENDOR SUPP	11
2	JUMPER	10
16	4096-CORE MATS (STRUNG)	8
4	WASHER, NYLON 3/8 X 1/2 (3/40 HOLE)	8
10	SCREW, NYLON FLUSTER, HD, #40X.19 LG.	7
10	SCREW, F.H. NYLON #4-40X.19 LG.	6
10	STANDOFF, THREADED #4-40 X .20 LG.	5
1	SUBSTRATE	4
1	COVER PLATE VENDOR SUPP	3
16	E1-E4, E6, E7, E10, E11, I.C. DEC 2501	310010 1
1	PLANAR MEMORY BOARD	500813 1

REV	DATE	DESCRIPTION
1		MM11-L
2		ETCH BOARD REV

REV	DATE	DESCRIPTION
1		ORIGINATED A
2		CHANGED B

DEC NO	EIA NO	DEC NO	EIA NO

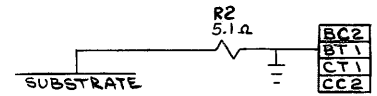
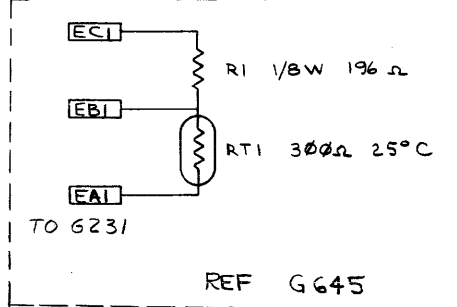
IC TYPE	GND	+5V	ITEM NO	AVG	FROM PT	TO PT

SEE NOTE 1

SIDE ONE

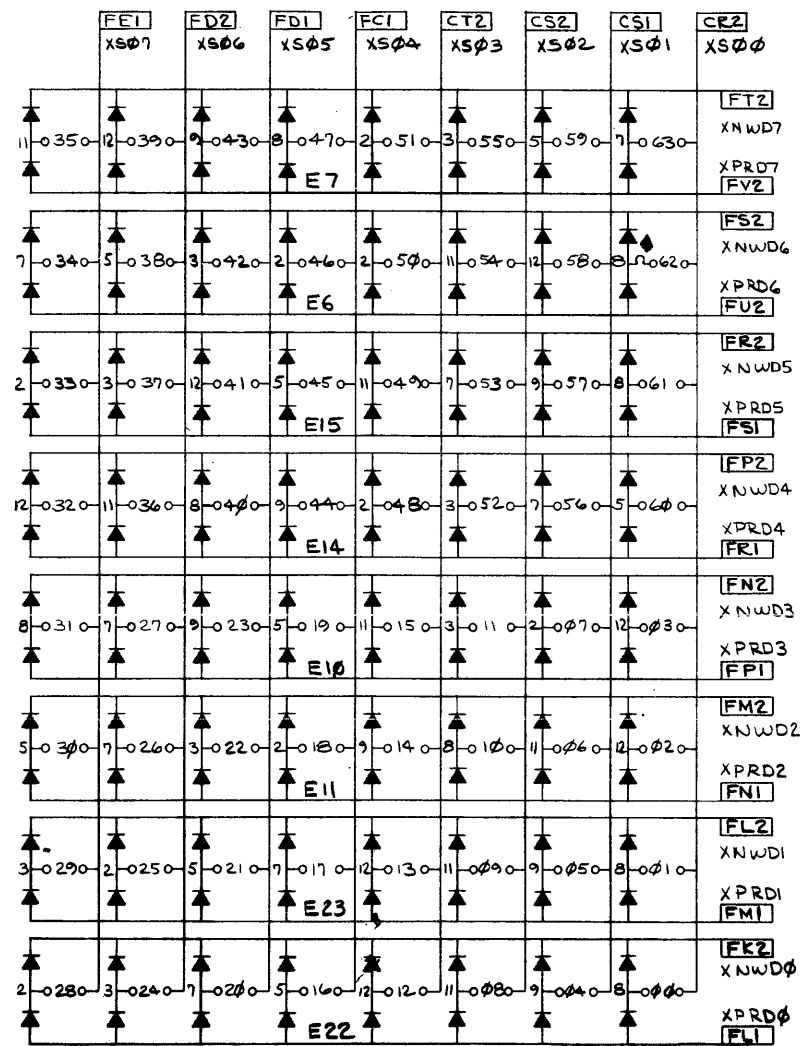
SIDE TWO

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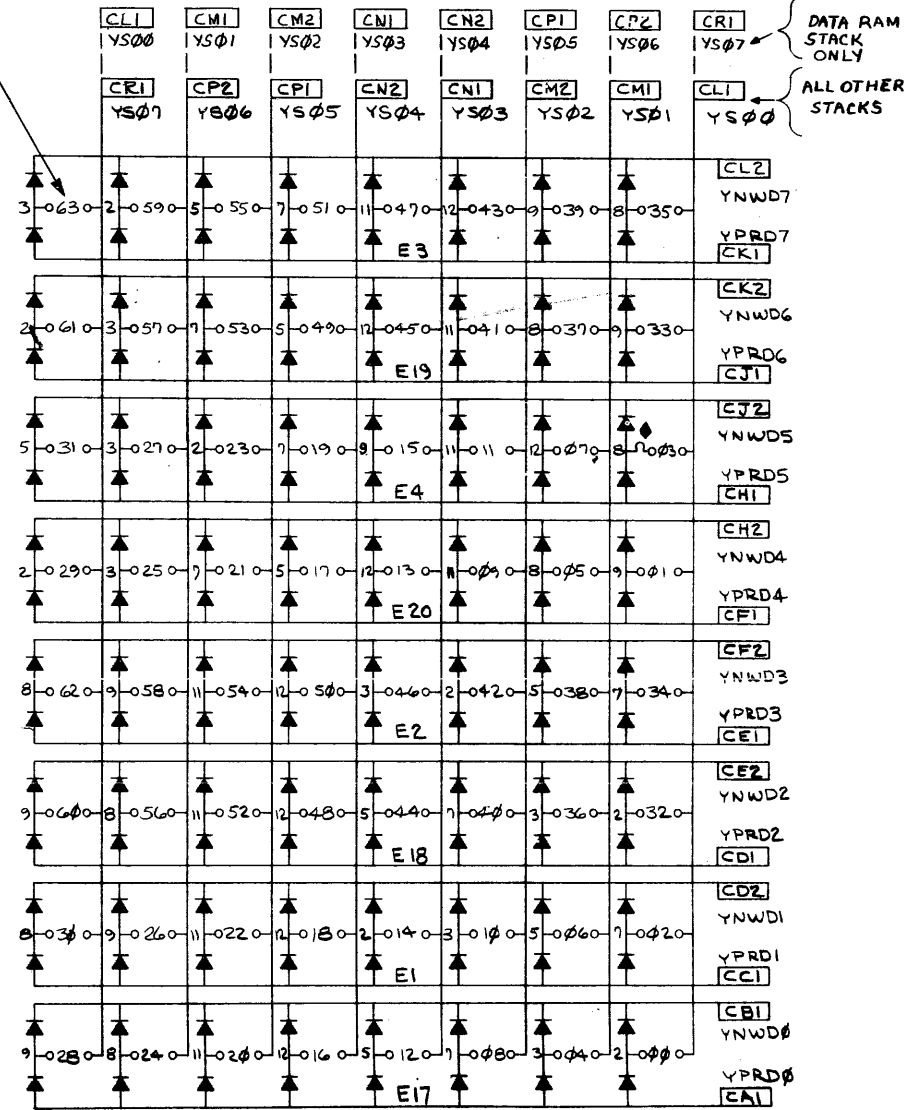


- NOTES  
 1. UNLESS OTHERWISE SPECIFIED:  
 IC'S ARE TO BE DEC PART # 1910010  
 2. INDICATES STACK LINE NUMBER. (TYP)  
 3. INDICATES CURRENT LOOP.  
 4. INDICATES MAGNET WIRE TERMINATION (SOLDERED TO P.C. PAD).

- EU2 -OIN } BIT 0
- EV2 -OSB }
- EVI -OSA }
- ER2 -OIN } BIT 4
- ES2 -OSB }
- ESI -OSA }
- ER1 -OIN } BIT 1
- EP2 -OSB }
- EPI -OSA }
- EM2 -OIN } BIT 5
- EN2 -OSB }
- ENI -OSA }
- EM1 -OIN } BIT 2
- EL2 -OSB }
- ELI -OSA }
- ET2 -OIN } BIT 6
- EK2 -OSB }
- EKI -OSA }
- EJ1 -OIN } BIT 3
- EH2 -OSB }
- EHI -OSA }
- EF2 -OIN } BIT 7
- EP2 -OSB }
- EFI -OSA }
- EE1 -OIN } BIT 8
- ED2 -OSB }
- EDI -OSA }
- DU2 -OIN } BIT 9
- DV2 -OSB }
- DVI -OSA }
- DR2 -OIN } BIT 13
- DS2 -OSB }
- DSI -OSA }
- DE1 -OIN } BIT 0
- DP2 -OSB }
- DEI -OSA }
- DM2 -OIN } BIT 14
- DN2 -OSB }
- DMI -OSA }
- DL1 -OIN } BIT 11
- OL2 -OSB }
- OLI -OSA }
- DY2 -OIN } BIT 15
- DX2 -OSB }
- DK1 -OSA }
- DZ1 -OIN } BIT 12
- DN2 -OSB }
- DNI -OSA }

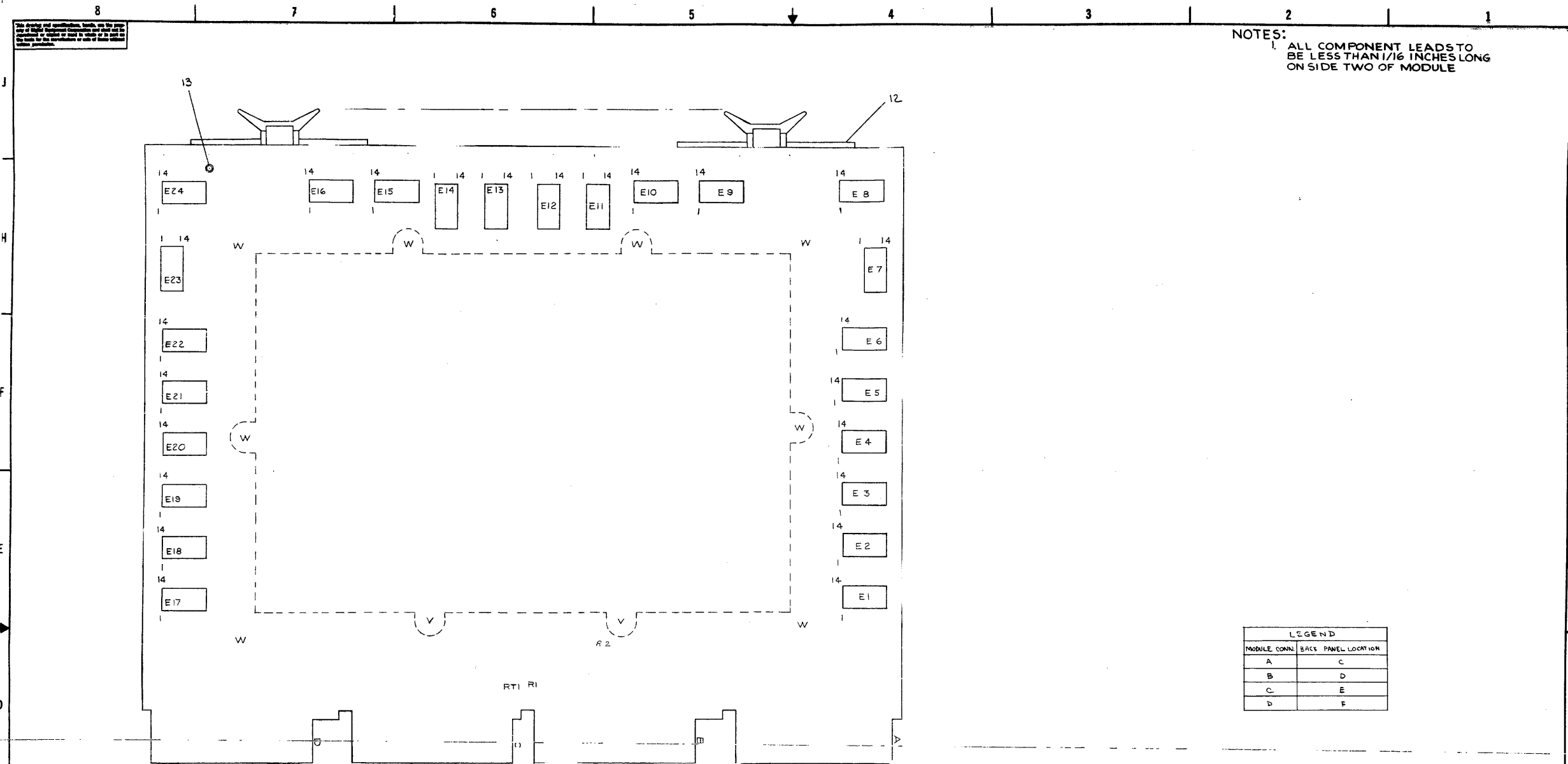


SEE NOTE 4

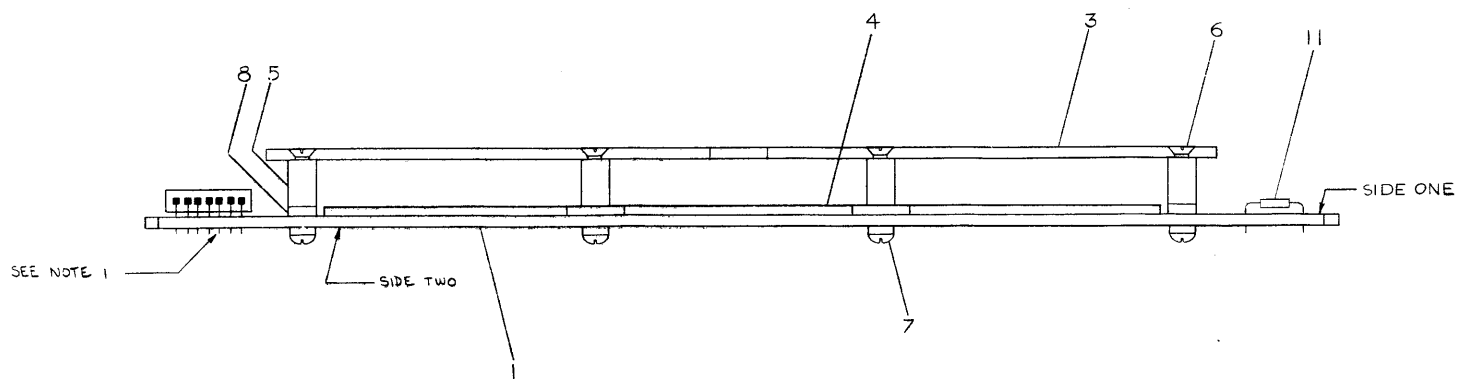


FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MM11-L				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.	DATE 12/1/71	EQUIPMENT CORPORATION BAYBURN MASSACHUSETTS		
TOLERANCES	DATE 1-25-72			
DECIMALS ANGLES	DATE 1-25-72			
.XXX - .999 ±.005 .XX - .99 ±.01 .X - .9 ±.02	DATE 1-25-72			
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE 1-24-72	TITLE STACK SCHEMATIC 4K X 16BIT		
MATERIAL	REV. NUMBER ASSY.	SIZE CODE	NUMBER	REV.
	B-00-MM11-L-0	DCS H213-0-1		C
FINISH	DATE 2 2	QTY.		

REV.	CHANGE NO.



LEGEND	
A	C
B	D
C	E
D	F

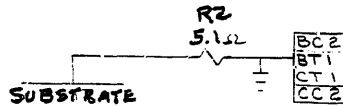
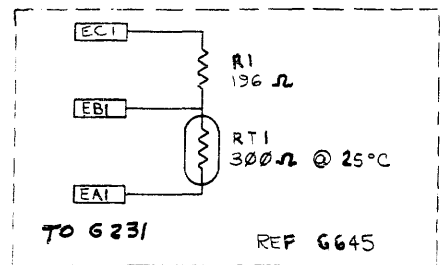


QTY	QTY	REF DESIGNATION	DESCRIPTION	PART NO.
1	1	RT1	THERMISTOR 300 2%	1309785
1	1	R2	RESISTOR 5.1 1/4W 5%	1309422
1	1	R1	RESISTOR 196 1/8W 1%	1302956
8	8		EYELET	9006732
4	4		HANDEL, GREEN	8008337-0-1
2	2		JUMPER,	VENDOR SUPP
1	1		STICKER WITH DEC PART # PO NO.	
4	18		8192-CORE MATS (STRUNG)	
4	4		WASHER, NYLON 5/8 X 3/4 (NO HOLE)	
10	10		SCREW, NYLON FILISTER #2-40 X .187 LG	
10	10		SCREW, FLAT HEAD NYLON #2-40 X .187 LG	
10	10		STANDOFF, THERMAD #2-40 X .187 LG	
1	1		SUBSTRATE	
1	1		COVER PLATE	VENDOR SUPP
24	24	E1 THRU E24	I.C. DIODE 2501	19-10010
1	1		PLANER MEMORY BOARD	5009713

IC TYPE	GND	V <sub>CC</sub>	V <sub>EE</sub>

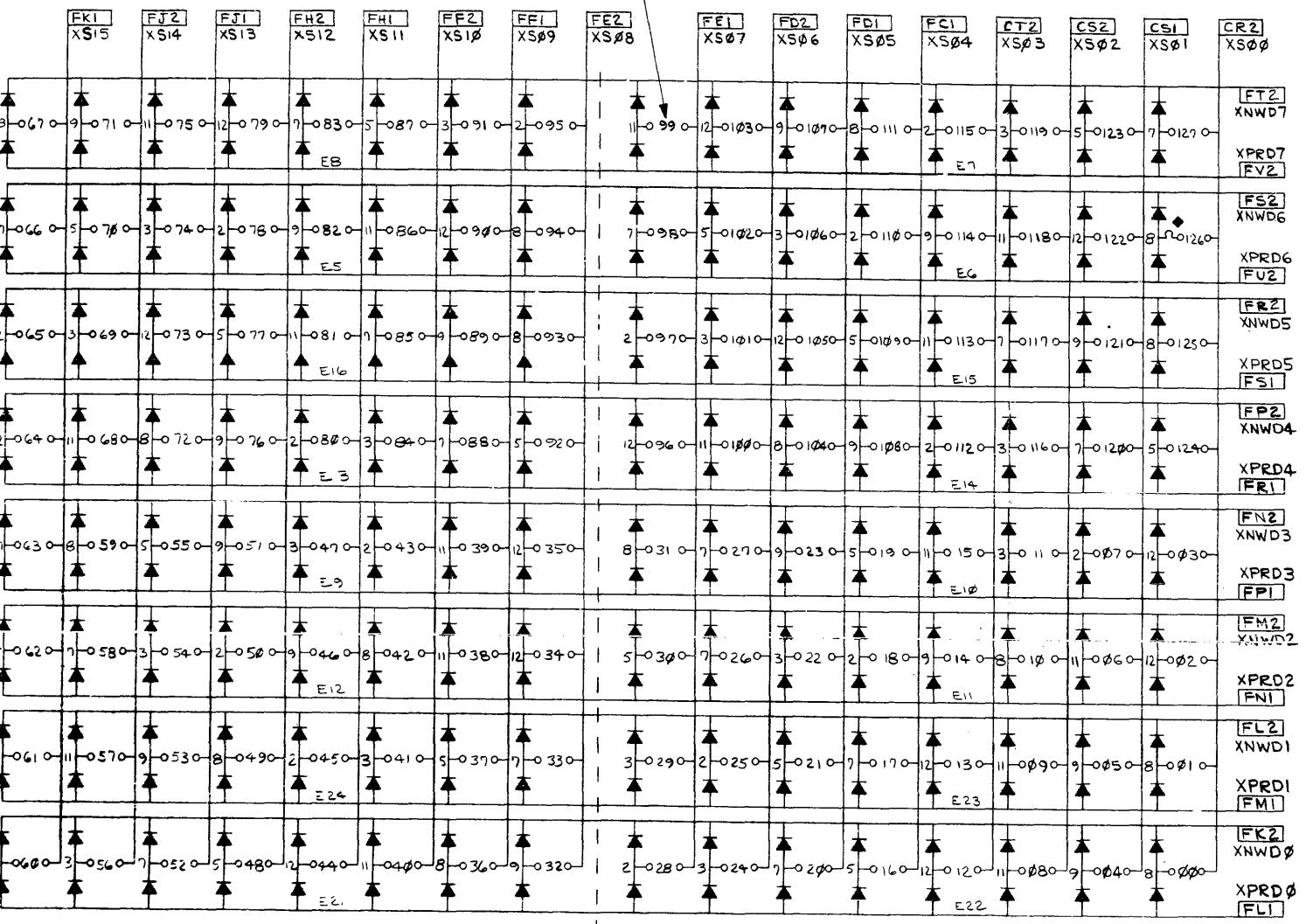
MM111  
 ETON BOARD REV  
 EQUIPMENT CORPORATION  
 HEMAT  
 100-10010  
 5009713

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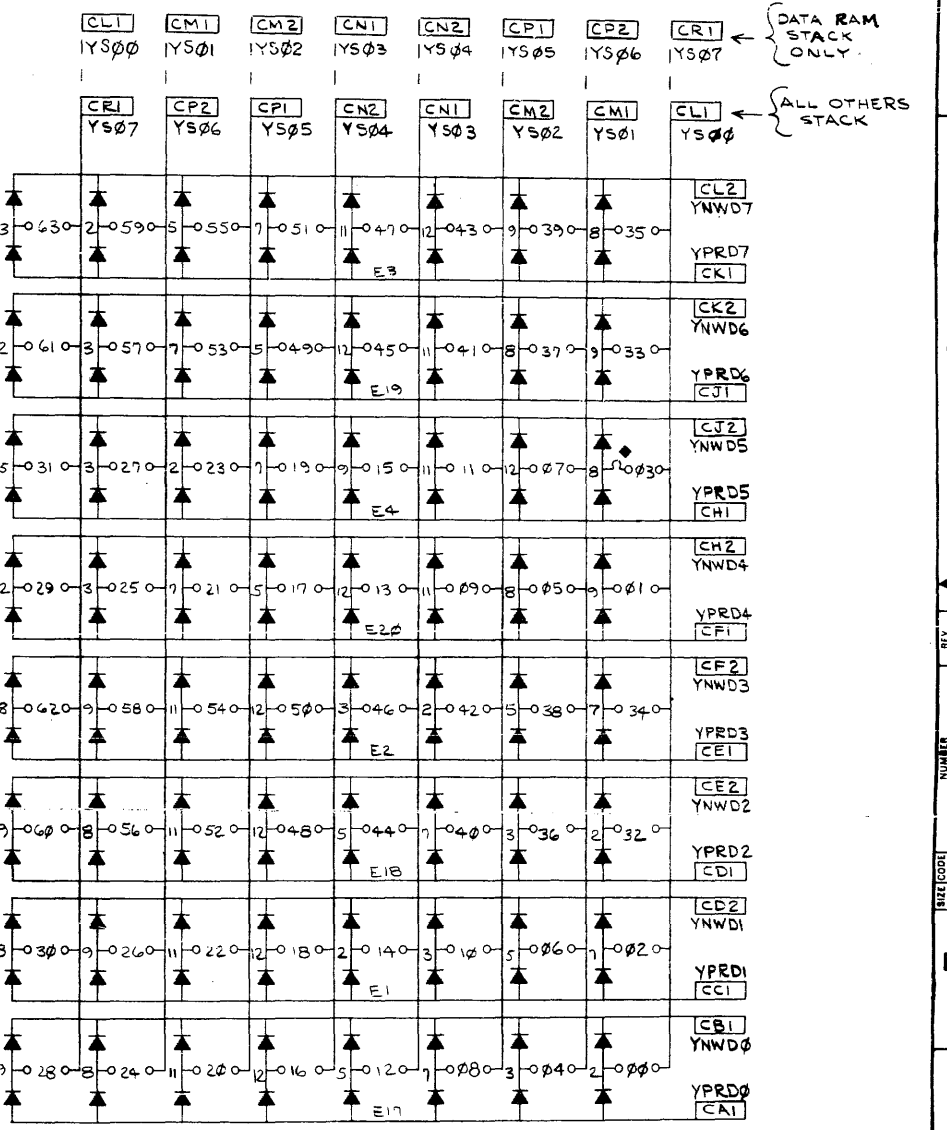


- NOTES:
- UNLESS OTHERWISE SPECIFIED, IC'S E1-E24 ARE TO BE DEC PART # 1910010.
  - INDICATES STACK LINE NUMBER (TYP)
  - INDICATES CURRENT LOOP
  - INDICATES MAGNET WIRE TERMINATION (SOLDERED TO P.C. PAD).
  - FOR H215 & H216 ONLY. P0=PA, P1=PB
  - FOR H216 ONLY.

- BIT 0: EU2 (OIN), EV2 (OSB), EV1 (OSA)
- BIT 4: ER2 (OIN), ES2 (OSB), ES1 (OSA)
- BIT 1: ER1 (OIN), EP2 (OSB), EP1 (OSA)
- BIT 5: EM2 (OIN), EN2 (OSB), EN1 (OSA)
- BIT 2: EM1 (OIN), EL2 (OSB), EL1 (OSA)
- BIT 6: EJ2 (OIN), EK2 (OSB), EK1 (OSA)
- BIT 3: EJ1 (OIN), EH2 (OSB), EH1 (OSA)
- BIT 7: FE2 (OIN), EF2 (OSB), EF1 (OSA)
- BIT 8: EE1 (OIN), ED2 (OSB), ED1 (OSA)
- BIT 9: DV2 (OIN), DV1 (OSA)
- BIT 13: DR2 (OIN), DS2 (OSB), DS1 (OSA)
- BIT 10: DR1 (OIN), DP2 (OSB), DP1 (OSA)
- BIT 14: DM2 (OIN), DN2 (OSB), DN1 (OSA)
- BIT 11: DM1 (OIN), DL2 (OSB), DL1 (OSA)
- BIT 15: DJ2 (OIN), DK2 (OSB), DK1 (OSA)
- BIT 12: DJ1 (OIN), DA2 (OSB), DA1 (OSA)
- BIT P0\*: DE2 (OIN), DF2 (OSB), DF1 (OSA)
- BIT P1\*: DE1 (OIN), DP2 (OSB), DP1 (OSA)
- BIT P2\*: DA2 (OIN), DA1 (OSA)

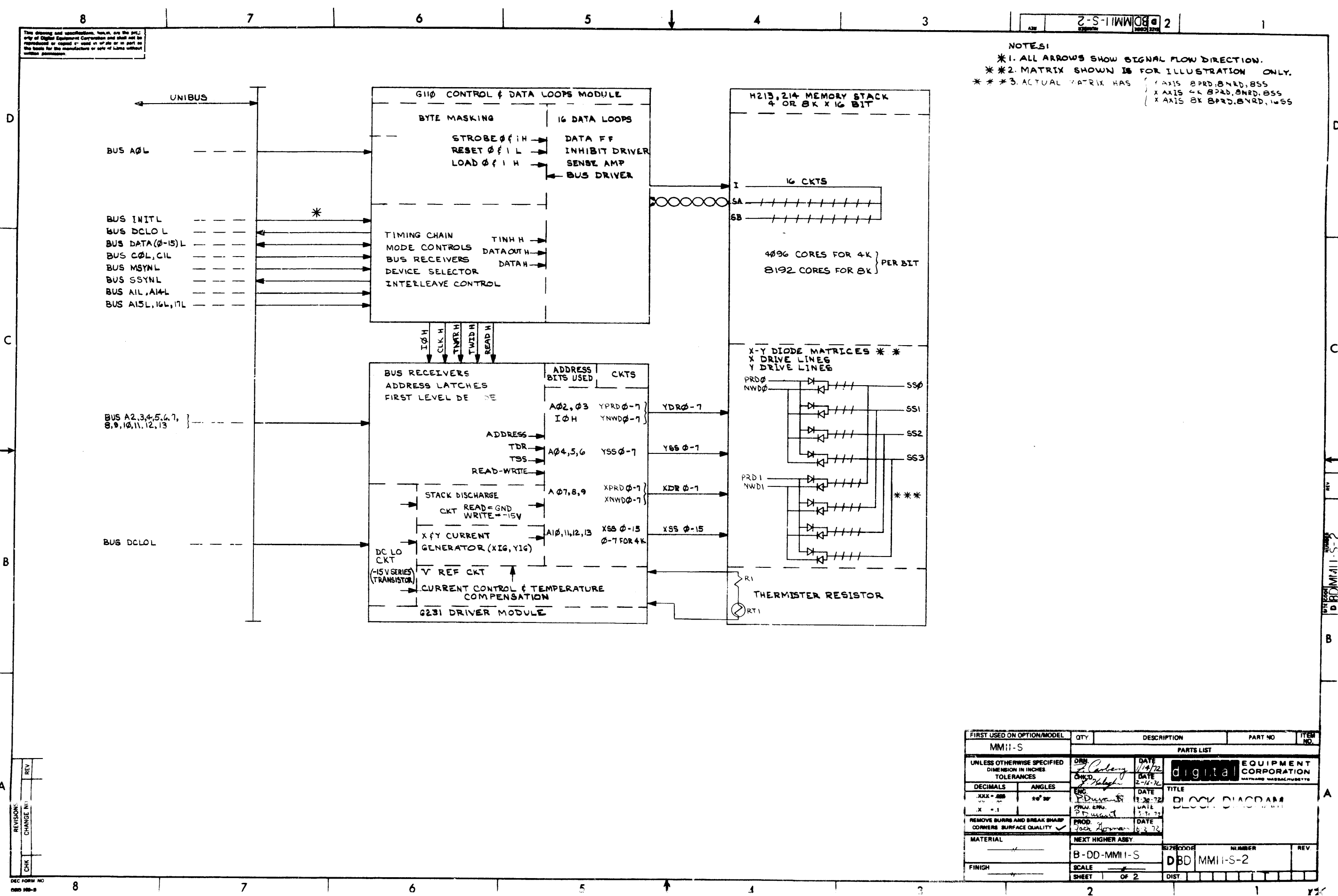


SEE NOTE 4



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VM11-		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN 2/22/71	DATE 11/22/71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
DECIMALS ANGLES		CHKD 2/23/72	DATE 2/23/72	
XXX - 000	±0.30	ENG 2/23/72	DATE 2/23/72	TITLE STACK SCHEMATIC
XX - 02		PRQJ ENG 2/23/72	DATE 2/23/72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD 2/23/72	DATE 2/23/72	
MATERIAL	NEXT HIGHER ASSY	SIZE CODE	NUMBER	REV
	B-DD-VM11-1-0	D05	H24 01	C
FINISH	SCALE	SHEET	2 OF 2	DIST.

REVISIONS  
CHANGE NO  
REV



NOTES:  
 \*1. ALL ARROWS SHOW SIGNAL FLOW DIRECTION.  
 \*\*2. MATRIX SHOWN IS FOR ILLUSTRATION ONLY.  
 \*\*\*3. ACTUAL MATRIX HAS  
 X AXIS 8PRD, 8NRD, 8SS  
 X AXIS 44 8PRD, 8NRD, 8SS  
 X AXIS 8X 8PRD, 8NRD, 16SS

REV	
CHANGE N°	
CHK	

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO.
MMII-S				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN: <i>J. Colony</i> DATE: 1/14/72	digital EQUIPMENT CORPORATION MAYFIELD MASSACHUSETTS	
		CHKD: <i>J. Schlegel</i> DATE: 2-11-72		
DECIMALS	ANGLES	ENG: <i>P. Dwyer</i> DATE: 12-30-72	TITLE: BLOCK DIAGRAM	
.XXX - .000	±0° 30'	PRJ. ENG. DATE: 1-31-72		
.X - .1		PROD. DATE: 6-3-72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD. DATE: 6-3-72		
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV
	B-DD-MMII-S	DBD	MMII-S-2	
FINISH	SCALE	SHEET	OF 2	DIST

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MEMORY BANK	MACHINE ADDRESS	W1 *	W5 A13 Δ	W6 □ A14 OR A81	W4 A15	W3 A16	W2 A17L	W9 4K 8K Δ	W7-B INTER LEAVE □	W11 PROTECT
0-4K	00000-017776	IN	IN	IN	IN	IN	IN			
4-8K	02000-037776	↑	OUT	IN	IN	IN	IN			
8-12K	04000-057776		IN	OUT	IN	IN	IN			
12-16K	06000-077776		OUT	OUT	IN	IN	IN			
16-20K	10000-117776		IN	IN	OUT	IN	IN			
20-24K	12000-137776		OUT	IN	OUT	IN	IN			
24-28K	14000-157776		IN	OUT	OUT	IN	IN			
28-32K	16000-177776		OUT	OUT	OUT	IN	IN			
32-36K	20000-217776		IN	IN	IN	OUT	IN			
36-40K	22000-237776		OUT	IN	IN	OUT	IN			
40-44K	24000-257776		IN	OUT	IN	OUT	IN			
44-48K	26000-277776		OUT	OUT	IN	OUT	IN			
48-52K	30000-317776		IN	IN	OUT	OUT	IN			
52-56K	32000-337776		OUT	IN	OUT	OUT	IN			
56-60K	34000-357776	IN	IN	OUT	OUT	OUT	IN			
60-64K	36000-377776	↑	OUT	OUT	OUT	OUT	IN			
64-68K	40000-417776		IN	IN	IN	IN	OUT			
68-72K	42000-437776		OUT	IN	IN	IN	OUT			
72-76K	44000-457776		IN	OUT	IN	IN	OUT			
76-80K	46000-477776		OUT	OUT	IN	IN	OUT			
80-84K	50000-517776		IN	IN	OUT	IN	OUT			
84-88K	52000-537776		OUT	IN	OUT	IN	OUT			
88-92K	54000-557776		IN	OUT	OUT	IN	OUT			
92-96K	56000-577776		OUT	OUT	OUT	IN	OUT			
96-100K	60000-617776		IN	IN	IN	OUT	OUT			
100-104K	62000-637776		OUT	IN	IN	OUT	OUT			
104-108K	64000-657776		IN	OUT	IN	OUT	OUT			
108-112K	66000-677776		OUT	OUT	IN	OUT	OUT			
112-116K	70000-717776		IN	IN	OUT	OUT	OUT			
116-120K	72000-737776		OUT	IN	OUT	OUT	OUT			
120-124K	74000-757776		IN	OUT	OUT	OUT	OUT			
DEVICE USED AS 4K MEMORY Δ		IN	X	X	X	X	X	IN	OUT	

**NOTES:**

\*1 W1 IS FOR TEST PURPOSES ONLY

Δ2 WHEN USED AS AN 8K BANK W5 AND W10 MUST BE INSTALLED AND W9 MUST BE OUT  
WHEN USED AS A 4K BANK W10 MUST BE OUT W9 MUST BE IN AND W5 DETERMINES THE BANKS LOCATION ON THE BUS

□3 THIS MEMORY CAN ONLY BE INTERLEAVED AS 16K (TWO ADJACENT CONTIGUOUS ADDRESS 8K BANKS) WHEN NOT INTERLEAVED (SOLID JUMPERS ON W7 AND W8) THE DEVICE SELECT IS AS SHOWN IN TABLE 1 USING A 4. WHEN TWO OF BANKS ARE INTERLEAVED W7 AND W8 MUST BE AS SHOWN IN DOTTED LINES IN TABLE 1 ALSO IN TABLE 1 A01 NOW RELIES TO THE DEVICE SELECTOR GATE CONTROLLED BY W6 THE TWO BANKS MUST HAVE W6 IN ON ONE BANK AND OUT ON THE OTHER

4 FIGURE 1 SHOWS THE PHYSICAL LOCATION OF THE JUMPERS ON THE G110 IF THE MODULE WERE LYING ON THE PRINT WITH COMPONENTS UP AND CONNECTORS TOWARD BOTTOM OF PRINT W7 & W8 ARE AS SHOWN SCHEMATICALLY ON DCS G110 0 1

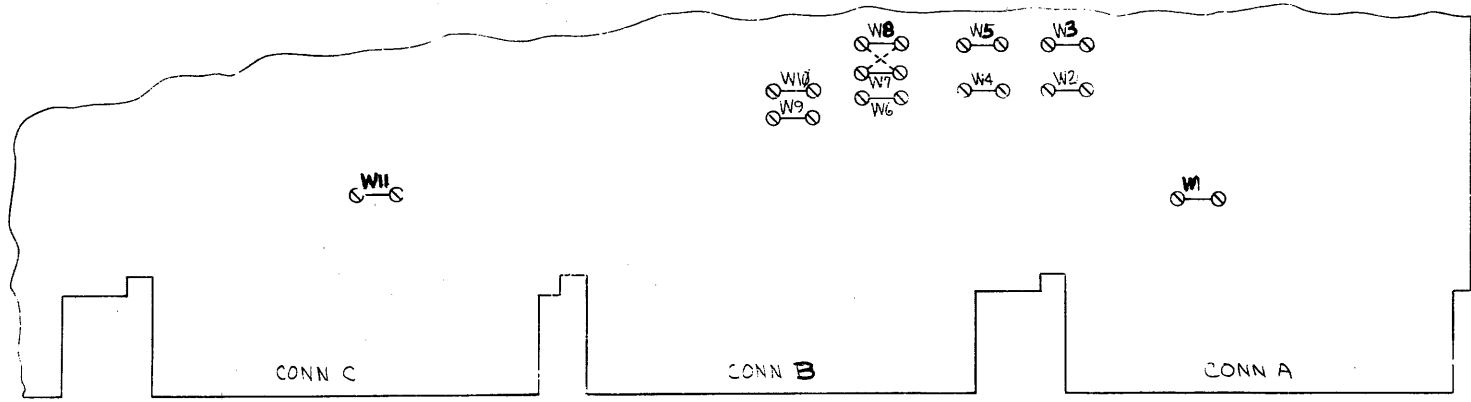


FIGURE 1  
G110 JUMPER PHYSICAL LOCATION  
SEE NOTE 4

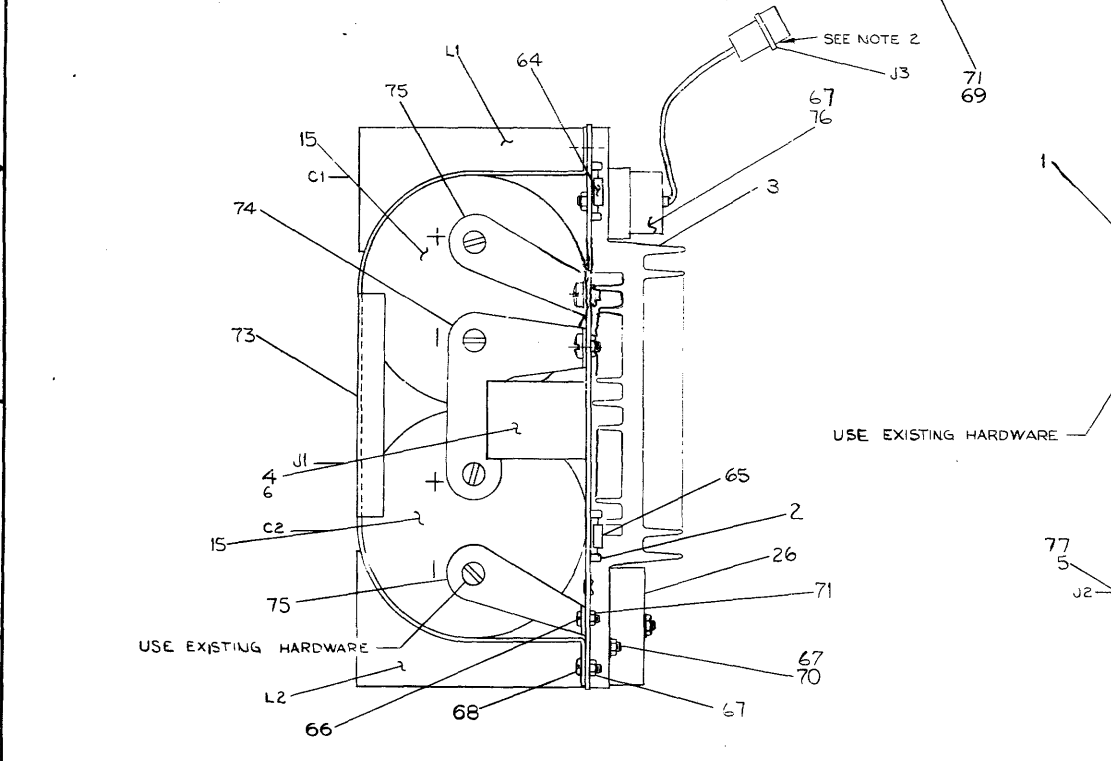
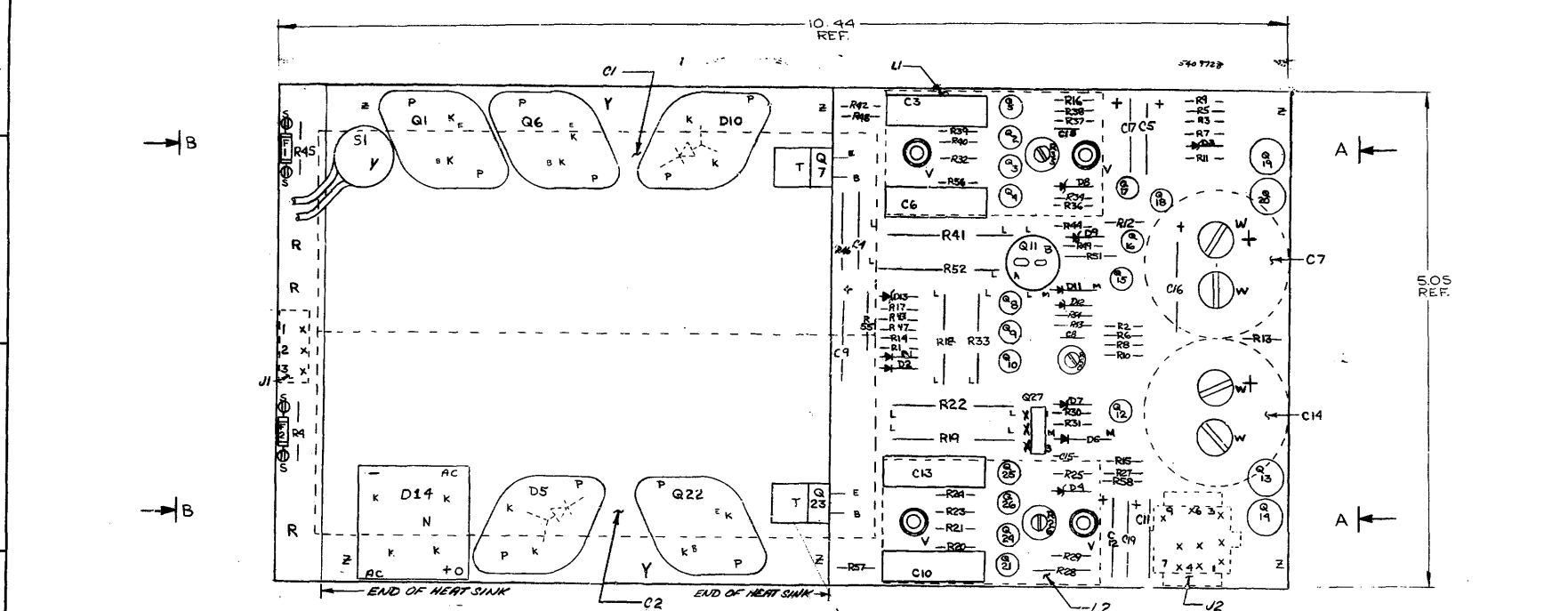
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MM 11-S		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN: <i>Cashin</i> DATE: 5/15/72	digital EQUIPMENT CORPORATION "NORTH AND MASSACHUSETTS"		
DECIMALS .XXX ± .005	CHK'D: <i>S. Selph</i> DATE: 5-23-72	TITLE: BLOCK DIAGRAM (DEVICE DECODING)		
ANGLES ± 0° 30'	ENG: <i>Selph</i> DATE: 5-23-72	SIZE CODE: E-DD-MM 11-S-0		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROJ. ENG. DATE: 5-22-72	NUMBER: D BD MM 11 S 2		
MATERIAL	PROD. DATE: 5-22-72	REV		
FINISH	SCALE: 1:1	SHEET 2 OF 2		

REVISIONS  
CHANGE NO. REV.  
CHK

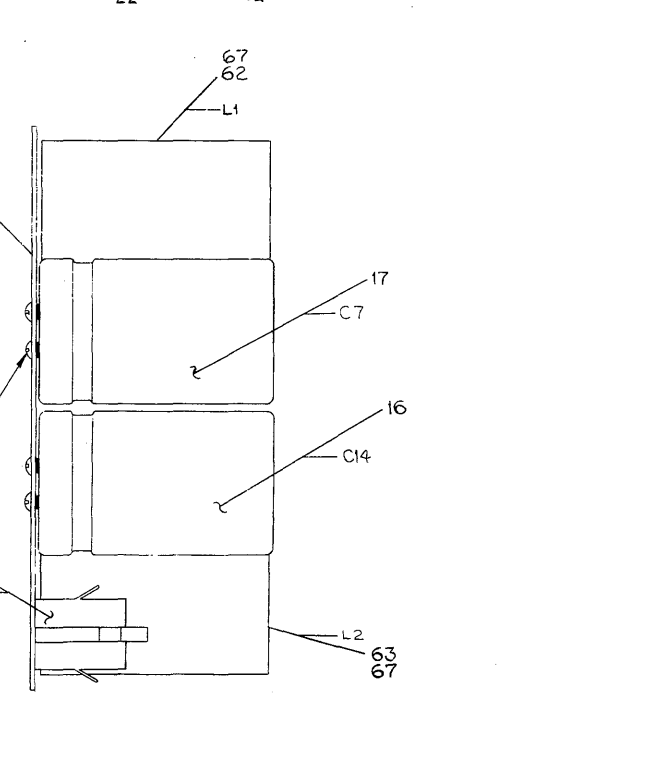




540 9728



VIEW B-B



VIEW A-A

IC TYPE	QTY	REV	REV	REV	REV	REV	REV	REV	REV	REV

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM
1	J1	MATE-N-LOCK CONNECTOR	1209350-09	9
1	J2	MATE-N-LOCK CONNECTOR	1209350-09	5
1	J3	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J4	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J5	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J6	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J7	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J8	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J9	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J10	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J11	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J12	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J13	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J14	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J15	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J16	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J17	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J18	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J19	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J20	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J21	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J22	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J23	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J24	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J25	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J26	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J27	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J28	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J29	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J30	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J31	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J32	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J33	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J34	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J35	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J36	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J37	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J38	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J39	MATE-N-LOCK CONNECTOR	1209351-03	4
1	J40	MATE-N-LOCK CONNECTOR	1209351-03	4

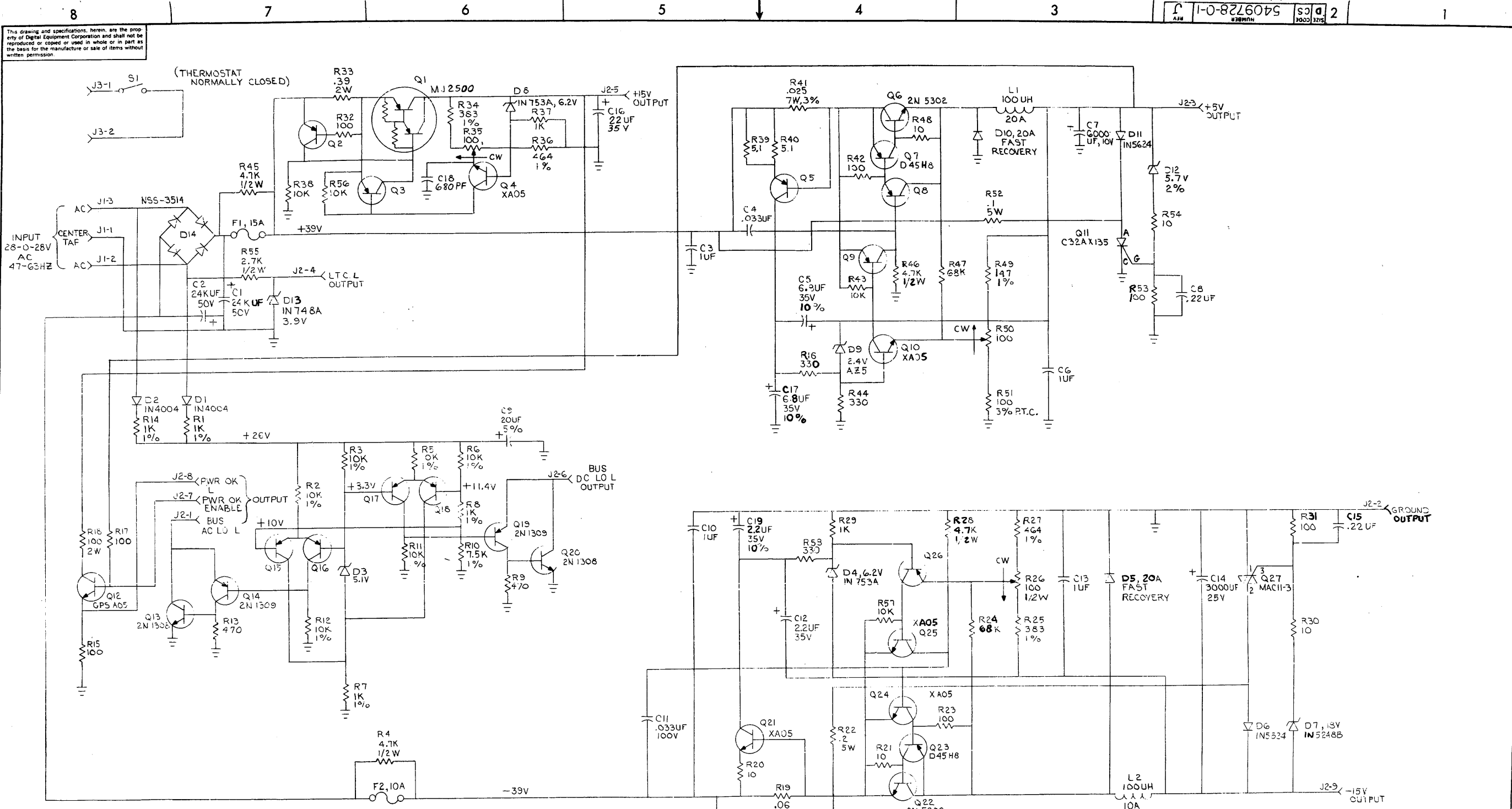
NOTES:  
 1. APPLY ITEM #8 (THERMAL COMPOUND) BETWEEN TRANSISTOR AND HEAT SINK FOR Q1, Q6, Q7, Q22, Q23, D5, D10, D14 & S1.  
 2. TRIM LEADS ON ITEM #76 (THERMOSTAT) TO (5) INCHES AND ATTACH ITEM #54 (PINS) AND ITEM #63 (HOUSING) AS SHOWN.

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM
1	Q1	XSTR C32AX135	1510928	87
2	R7, R13	RES 470 1/4 W 5%	1300316	53
2		PINS MALE CRIMP	1209350-09	5
1	J3	MATE-N-LOCK CONNECTOR	1209351-03	4
1	D2	DIODE ZENER 5.7 V 2%	1111205	81
1	C12, C19	CAP 2.2UF 35V 10% TANT	1002431	80
2	R39, R40	RES 5.1 1/4 W 5%	1309422	79
9		PIN FEMALE	1209456	77
1	S1	THERMOSTAT 5P5T	1210824	75
2		CONTACT CAPACITOR	C-14-5310126-0075	74
1		CONTACT COMMON CAPACITOR	C-MD-5307793-074	73
1		HOLDER CAPACITOR	C-1A-5310126-0073	72
5		NUT KEYS 4-40	9006557	71
1		SCR PHL PAN HD 6-32 3/4 LG	9006020-1	70
2		SCR PHL PAN HD 4-40X 1/2 LG	9006013A	69
12		SCR PHL HD 6-32 X 9/16 LG	9007793-1	68
10		NUT KEYS 6-32 X 1/4	9008185	67
1		SCR PHL PAN HD 4-40X 5/16 LG	9005007-1	66
1	F2	FUSE 10AMP PICO	1210921-01	65
1	F1	FUSE 15AMP PICO	1210929	64
1	L2	CHOKE 100UH 10A MMC 4445	1611031	63
1	L1	CHOKE 100UH 20A MMC 4289	1610717	62
1	Q27	XSTR MAC 11-3	1510165	61
1	Q1	XSTR MJ2500	1511282	60
2	Q7, Q23	XSTR D48 HB D	1510708-1	59
10	Q2, Q3, Q5, Q8, Q9	XSTR X A55	1510706	58
6	Q4, Q6, Q7, Q24, Q25	XSTR X A05	1510705	57
2	Q6, Q22	XSTR 2N5302	1510196	56
2	Q14, Q19	XSTR 2N1309	1510311	55
2	Q13, Q20	TRANSISTOR 2N1308	1500583	54
1	R41	RES 2.5 7W 3%	1310709-1	53
1	R22	RES 2.5 W 5%	1309884	51
3	R26, R35, R50	RES 100 1/2 W 20% 62 PR	1309150-05	50
1	R32	RES 1 SW 5% WW	1305872	49
1	R33	RES 39 2W 5% WW	1310868	48
1	R10	RES 3.5K 1/8 W 1% MF	1305322	47
1	R25, R34	RES 383 1/8 W 1% MF	1305125	46
6	R2, R5, R6, R11, R12, R3	RES 10K 1/8 W 1% MF	1303312	45
4	R8, R1, R7, R14	RES 1K 1/8 W 1% MF	1303114	44
2	R27, R36	RES 464 1/8 W 1% MF	1303047	43
1	R51	RES 100 3% PTC	1310927	42
1	R49	RES 147 1/8 W 1% MF	1302874	41
				40
				39
2	R24, R47	RES 68K 1/4 W 5%	1301317	38
5	R20, R21, R20A, A51	RES 10 1/4 W 5%	1301317	37
4	R5, R7, R56, R57	RES 10K 1/4 W 5%	1300479	36
4	R3, R4, R45	RES 4.7K 1/2 W 5%	1300445	35
1	R55	RES 2.7K 1/2 W 5%	1300425	34
1	R19	RES .06 5W 5% WW	1310876-02	33
2	R29, R37	RES 1K 1/4 W 5%	1300365	32
3	R44, R16, R58	RES 330 1/4 W 5%	1300295	31
1	R18	RES 100 2W 5%	1302380	30
7	R15, R17, R23, R51, R32, R-2, R53	RES 100 1/4 W 5%	1300229	29
1	D7	DIODE 1N2468 18V ZENER	1110766	28
2	D5, D10	DIODE 20AMP FAST RECOVERY RECT	1110715	27
1	D14	DIODE BRIDGE RECTIFIER	1110714	26
1	D3	DIODE 51V ZENER	1110925	25
2	D6, D11	DIODE 1N5624	1110420	24
2	D1, D2	DIODE 1N4004	1105796	23
2	D4, D8	DIODE 1N753A 6.2V ZENER	1102421	22
1	D9	DIODE AZ5 2.4V ZENER	1101938	21
1	D13	DIODE 1N748A 3.9V ZENER	1100122	20
1	C18	CAP 680PF, 100V, DM	1000026	19
1	C9	CAP 20UF 60V 5% TANT	1010716	18
1	C7	CAP 6000UF 10V -10% 75% STANT	1010704	17
1	C14	CAP 3000UF 25V -10% 75% STANT	1010703	16
2	C12, C2	CAP 24000UF 50V -10% 75% STANT	1010702	15
1	C16	CAP 22UF 35V 20% TANT	1002433	14
4	C3, C6, C10, C13	CAP 1UF 100V 10%	1011032	13
2	C8, C15	CAP 22UF 50V	1010274	12
2	C5, C17	CAP 6.8UF 35V 10% TANT	1005306	11
2	C4, C11	CAPACITOR .033UF 100V 10% MCLR	1000050	10
				9
				8
		THERMAL COMPOUND	9008268	7
				6
				5
		PINS MALE	1210823-01	4
		MATE-N-LOCK CONNECTOR	1209350-09	5
		MATE-N-LOCK CONNECTOR	1209351-03	4
		MATE-N-LOCK CONNECTOR	1209351-03	4
		MATE-N-LOCK CONNECTOR	1209351-03	4
		HEAT SINK	1210596	3
		SPLIT LUS	9006733	2
		ETCHED BOARD	9006727	1
		MODULE ECO HISTORY	9006728-0-0	0
		X-Y COORDINATE HOLE LOC.	K-CC-3429728-0-01	0
		HEAT WELDER Assy	9006728-0-01	0
		CIRCUIT SCHEMATIC	9006728-0-01	0

REV	DESCRIPTION	DATE
11/05		

REGULATOR BOARD  
 JTA 5409728-0-0

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UNLESS OTHERWISE INDICATED:  
 1% RESISTORS ARE 1/8 W  
 TRANSISTORS - XA15  
 VOLTAGES ARE TAKEN AT NO LOAD WITH 115 VAC LINE  
 VOLTAGES ARE ±10% TAKEN BY A ≥ 1.0KV METER

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.													
PARTS LIST																	
ETCH BOARD REV E																	
<table border="1"> <tr> <td>DRN. <i>R. Wolff</i></td> <td>DATE 12-20-71</td> <td rowspan="6">             digital EQUIPMENT CORPORATION            MAYNARD, MASSACHUSETTS         </td> </tr> <tr> <td>CHK'D. <i>R. Wolff</i></td> <td>DATE 12-21-71</td> </tr> <tr> <td>ENG. <i>R. Wolff</i></td> <td>DATE 12-25-71</td> </tr> <tr> <td>PROJ. ENG. <i>R. Wolff</i></td> <td>DATE 12-25-71</td> </tr> <tr> <td>PROD. <i>R. Wolff</i></td> <td>DATE 12-29-71</td> </tr> <tr> <td colspan="2">NEXT HIGHER ASSY</td> </tr> </table>					DRN. <i>R. Wolff</i>	DATE 12-20-71	 digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	CHK'D. <i>R. Wolff</i>	DATE 12-21-71	ENG. <i>R. Wolff</i>	DATE 12-25-71	PROJ. ENG. <i>R. Wolff</i>	DATE 12-25-71	PROD. <i>R. Wolff</i>	DATE 12-29-71	NEXT HIGHER ASSY	
DRN. <i>R. Wolff</i>	DATE 12-20-71	 digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS															
CHK'D. <i>R. Wolff</i>	DATE 12-21-71																
ENG. <i>R. Wolff</i>	DATE 12-25-71																
PROJ. ENG. <i>R. Wolff</i>	DATE 12-25-71																
PROD. <i>R. Wolff</i>	DATE 12-29-71																
NEXT HIGHER ASSY																	
DEC NO.		EIA NO.		SCALE													
SEMICONDUCTOR CONVERSION CHART																	
SHEET 1		OF 1		DIST													

R. WOLFF	1-25-73
S. BURTON	12-26-72
5409728-00008	J
R. BURTON	12-26-72
5409728-00007	H
R. WOLFF	9-29-72
5409728-00006	F
J. W. LAWRENCE	6-28-72
J. W. LAWRENCE	6-27-72
5409728-00005	E
R. BURTON	12-26-72
R. BURTON	5-1-72
5409728-00004	D
R. WOLFF	1-19-72
S. BURTON	12-26-72
5409728-00002	C
R. WOLFF	1-11-72
5409728-00001	B

PAGE REVISION CONTROL SHEET

SH NO.	PAGE REVISIONS	REMARKS
1	*	(TD)
2	*	(MD)
3	*	(SABR)
4	*	(GM)
5	*	(PVCS)
6	*	(SDM)
7	*	(CCL1)
8	*	(CCL2)
9	*	(CRD)
10	*	(CS)
11	*	
12	*	

DATE	ENG.	ETCH REV.	ECO NO.												FIRST USED ON OPTION/MODEL
		A													GT4Φ

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DRN. *Moore* DATE *10-27-72*

CHK'D. *Moore* DATE \_\_\_\_\_

ENG. *Moore* DATE *10-30-72*

PROF. ENG. *Moore* DATE \_\_\_\_\_

3RD *Moore* DATE *11/5/72*

AD *Moore*

TITLE

**digital** EQUIPMENT CORPORATION  
MAYNARD MASSACHUSETTS

VT 40 DISPLAY CONTROL

NEXT HIGHER ASSY. \_\_\_\_\_

B-DD-GT4Φ-Φ

SCALE *H*

SHEET *1* OF *12*

SIZE CODE

B CS

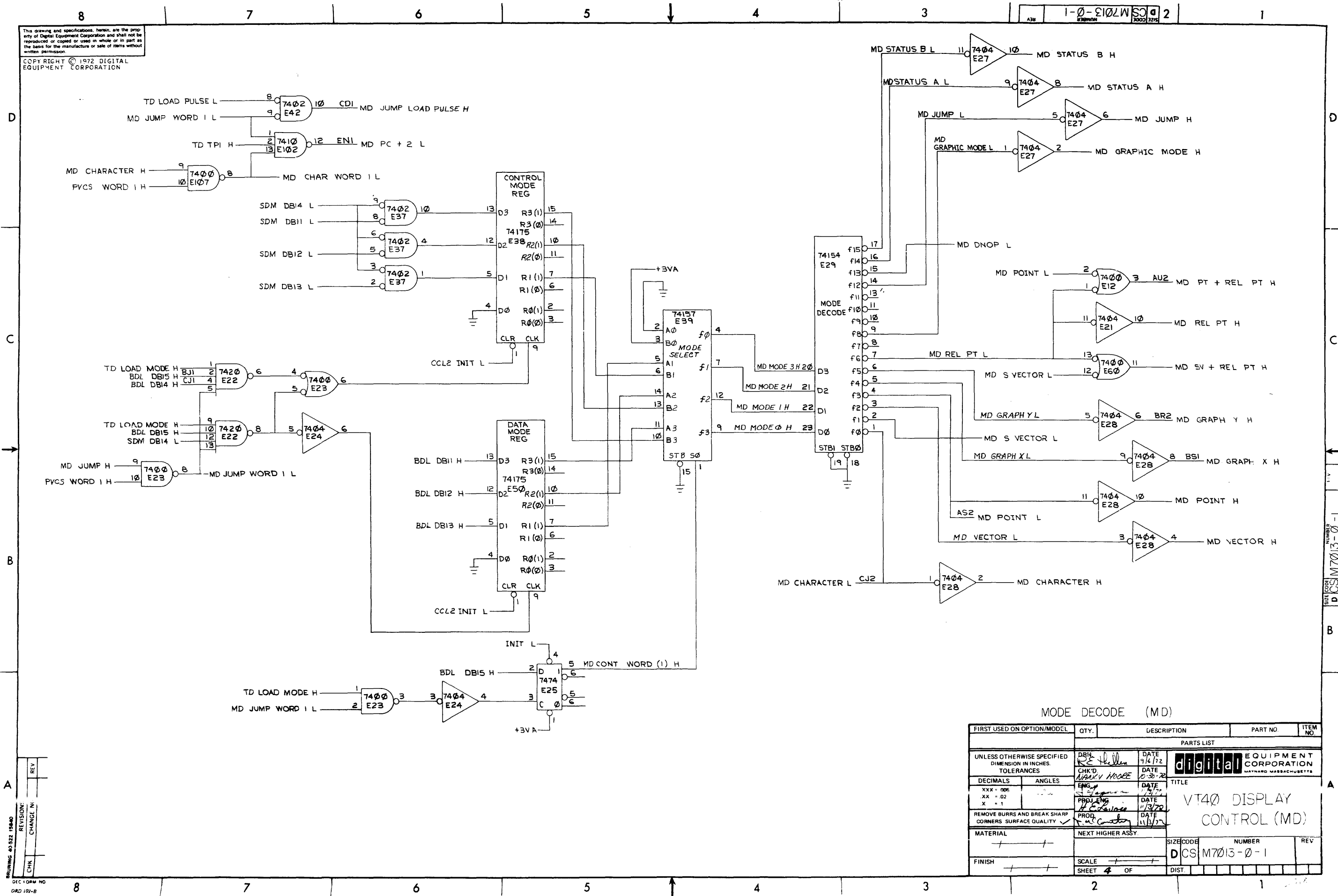
NUMBER

M7013-0-1

REV.

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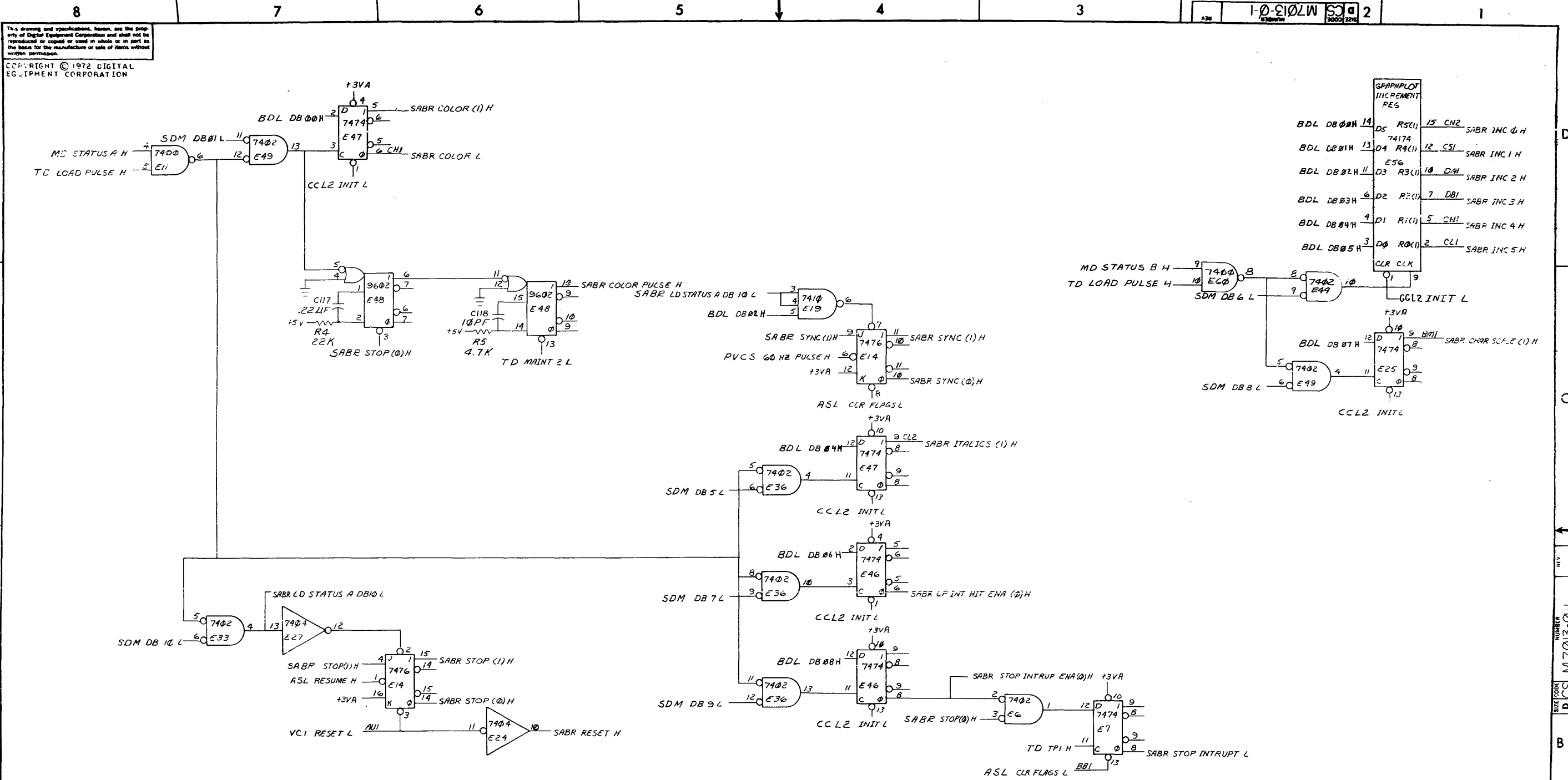
MODE DECODE (MD)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.	DBL	DATE 9/6/72	<b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
TOLERANCES	CHK'D	DATE 10/30/72		
DECIMALS	ANGLES	ENG	TITLE VT40 DISPLAY CONTROL (MD)	
XXX + 0.05 XX = 0.2 X = 1		DATE 11/13/72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD.	DATE 11/13/72		
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
FINISH	SCALE		D CS	M7013-0-1
	SHEET 4 OF		DIST.	

REV	
CHANGE NO.	
CHK	
REVISION	
DATE	

DEC 10 1972  
 ORD 102-B

NUMBER DCS M7013-0-1



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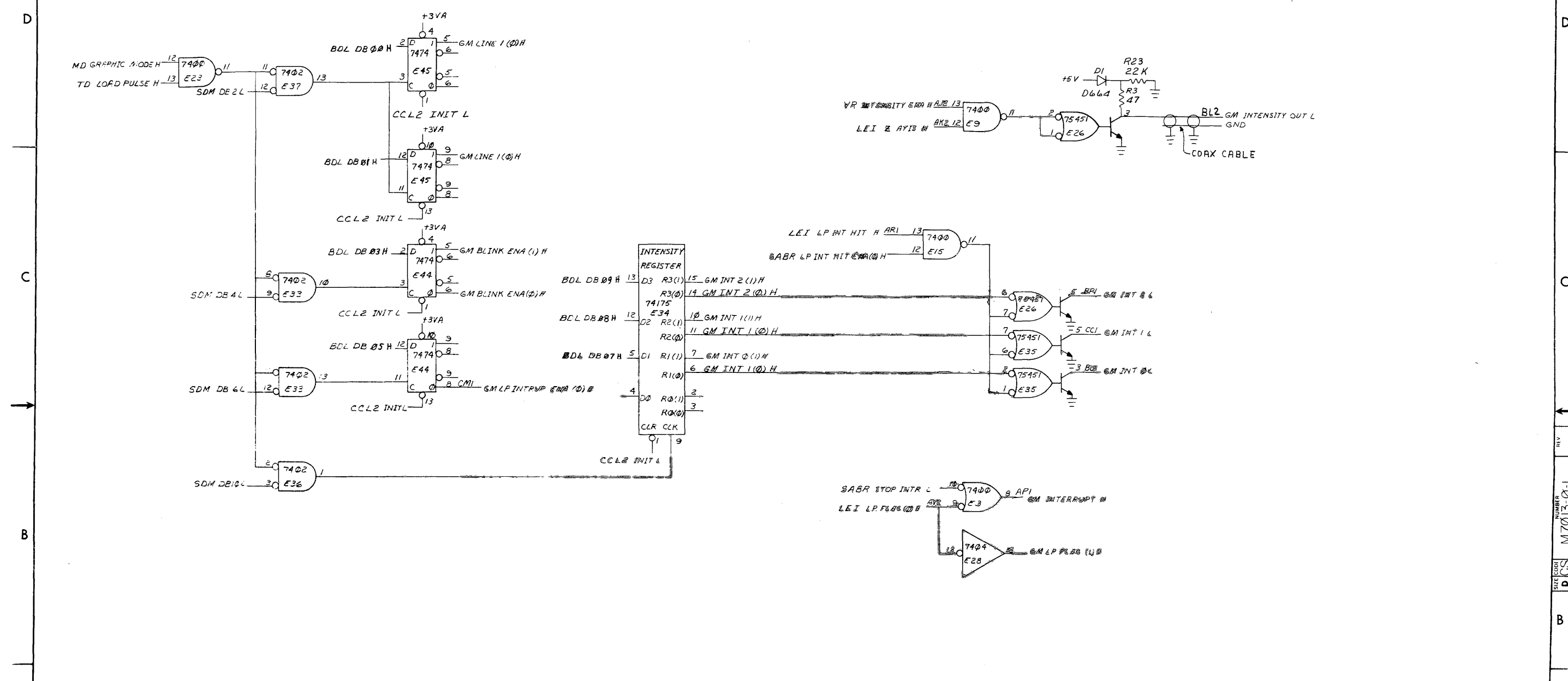
STATUS A & B REG (SABR)			
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DATE 9-6-72	DATE 10-30-72	DATE 11/24/72
DECIMALS .XXX ± .005	ANGLES ± 0° 30'	TITLE VT40 DISPLAY CONTROL (SABR)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	MATERIAL NEXT HIGHER ASSY.		
FINISH	SCALE	SIZE CODE DCS	NUMBER M70130-1
SHEET 5 OF	DIST.	REV.	

BRUNING 40-522 15840  
 DEC FORM NO DRD 102-B  
 REVISIONS  
 CHANGE NO  
 CHK

SIZE CODE  
 NUMBER  
 M70130-1

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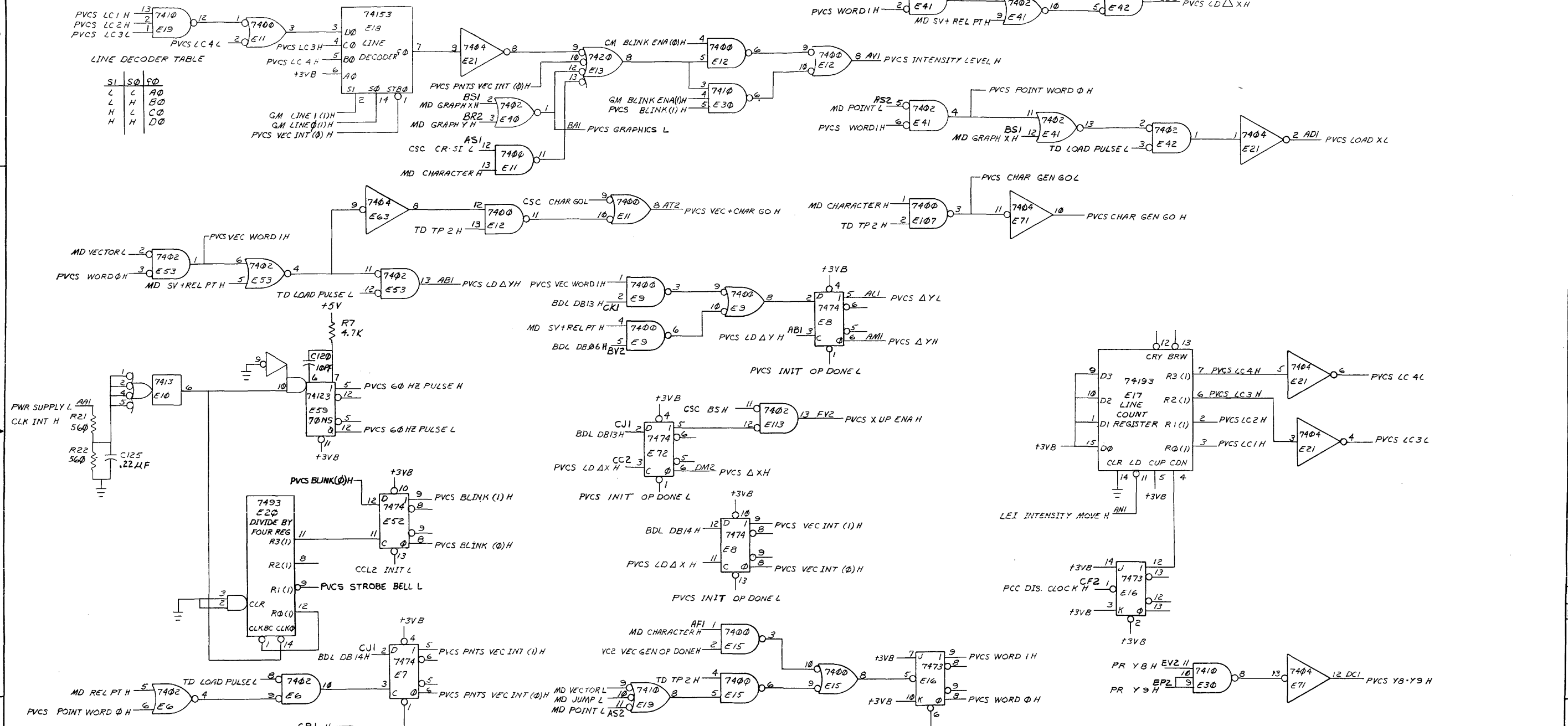


REV	
CHG	
REV	
CHG	

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES		DBN	DATE	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
TOLERANCES		CHK'D	DATE		
DECIMALS	ANGLES	ENG	DATE	TITLE V140 DISPLAY CONTROL (GM)	
XXX - 005		PROJ. ENG.	DATE		
.XX - 02		PROD.	DATE	MATERIAL NEXT HIGHER ASSY.	
.X - 1					
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		FINISH			
MATERIAL		SCALE		SIZE CODE	NUMBER
FINISH		SHEET 6 OF		DCS	M7013-0-1
				DIST.	REV

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LINE DECODER TABLE

SI	S0	F0
L	L	A0
L	L	B0
H	L	C0
H	H	D0

POINT, VECTOR, CHARACTER, START (PVCS)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DBN	DATE	<b>digital</b> EQUIPMENT CORPORATION WAYNAND MASSACHUSETTS	
DECIMALS	CHK'D.	DATE		
ANGLES	ENG.	DATE	TITLE <b>VT40 DISPLAY CONTROL (PVCS)</b>	
.XX = .05 .X = .1	PROJ. ENG.	DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD.	DATE	SIZE CODE NUMBER REV. <b>DCS M7013-0-1 A</b>	
MATERIAL	NEXT HIGHER ASSY.	DATE		
FINISH	SCALE	SHEET	DIST.	
		OF		

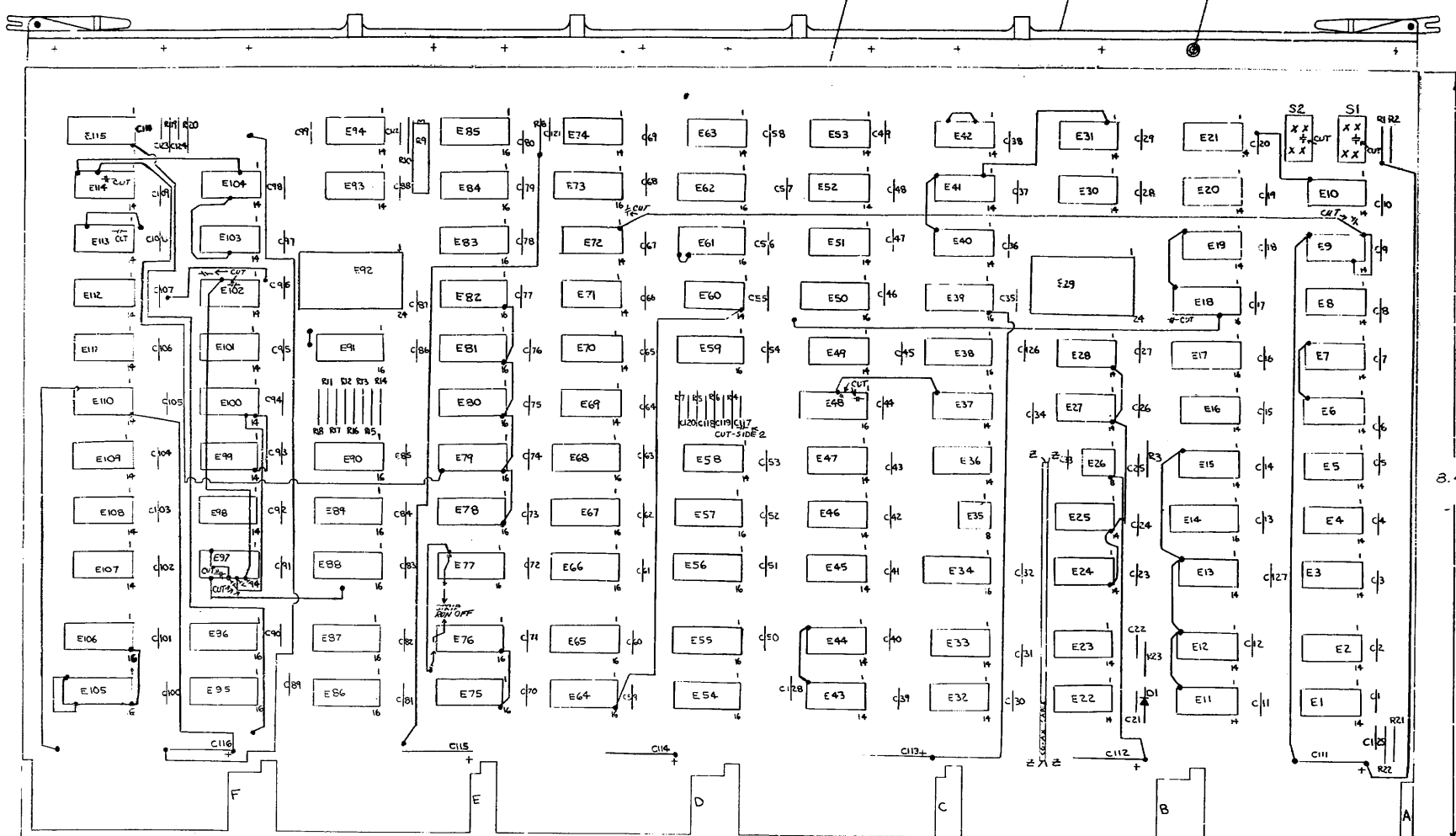
BRUNING 40-522 15840  
DEC 10 PM '72  
DRD 102-B

REV. A  
NUMBER  
DCS M7013-0-1  
B

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**NOTES:**

- UNLESS OTHERWISE SPECIFIED RESISTANCE IS IN OHMS. CAPACITANCE IS IN PICOFARADS



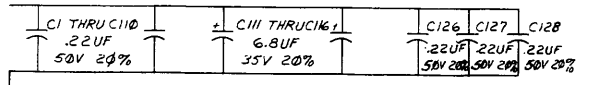
DEC IC	GRID	COORD
DEC IC 9602	B	16
IM 5603	B	16
DEC IC 74155	B	16
DEC IC 74174	B	16
DEC IC 75451	A	8
DEC IC 7493	10	5
DEC IC 7476	13	5
DEC IC 7473	11	4
DEC IC 7442	B	16
DEC IC 74194	B	16
DEC IC 74193	B	16
DEC IC 74175	B	16
DEC IC 74157	B	16
DEC IC 7454	12	24
DEC IC 74153	B	16
DEC IC 74123	B	16
IC TYPE	GND	+5V

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

**IC PIN LOCATIONS**

AA2, BA2, CA2, DA2, EA2, FA2

AC2, AT1, BC2, BT1, CC2, CT1, DC2, DT1, EC2, ET1, FC2, FT1



REF	ETCHED CIRCUIT BOARD	50:0146
REF	X/Y COORDINATE HOLE LOCATION	K-60-M7013-D-4
REF	ASSY/DRILLING HOLE LAYOUT	D-AH-M7013-D-5
REF	MODULE ECC HISTORY	B-MH-M7013-D-5
12	EYELET	9006732
1	HANDLE	1210711-2
3	C118, C120, C124	CAP 10PF 100V 5%
2	C121, C123	CAP 100PF 100V 5%
1	C119	CAP 330PF 100V 5%
1	C122	CAP 470PF 100V 5%
5	C111 THRU C116	CAP 6.8 MFD 35V 20% S TANT
115	C1 THRU C110, C125, C126, C127, C128, C117	CAP 22UF 5CV 20%
1	D1	DIODE D664
10	E7, E8, E25, E44, E45, E46, E47, E52, E58, E72	I.C. DEC 7474
14	E3, E5, E9, E11, E12, E15, E23, E31	
	E60, E99, E93, E107, E114, E109	I.C. DEC 7400
4	E2, E19, E30, E102	I.C. DEC 7410
2	E13, E22	I.C. DEC 7420
3	E1, E4, E70	I.C. DEC 7430
2	E14, E73	I.C. DEC 7476
6	E16, E51, E103, E104, E111, E112	I.C. DEC 7473
14	E6, E33, E36, E37, E40, E41, E42, E49, E53, E100, E97, E101, E98, E113	I.C. DEC 7402
1	E20	I.C. DEC 7493
10	E21, E24, E27, E28, E32, E43, E63, E69, E71, E110	I.C. DEC 7404
2	E29, E92	I.C. DEC 74154
9	E18, E75, E76, E86, E87, E95, E96, E105, E106	I.C. DEC 74153
1	E19	I.C. DEC 7413
4	E17, E61, E63, E89	I.C. DEC 74193
3	E84, E85, E88	I.C. DEC 7442
1	F108	I.C. DEC 7437
2	F74, E94	I.C. DEC 74121
2	E59, E115	I.C. DEC 74123
2	E90, E91	I.C. DEC 74194
3	E34, E38, E50	I.C. DEC 74175
3	E56, E57, E66	I.C. DEC 74174
7	E39, E54, E55, E64, E65, E67, E68	I.C. DEC 74157
1	E62	I.C. DEC 74155
2	E26, E35	I.C. DEC 75451
1	E48	I.C. 9602
1	E77	I.C. IM 5603 OR 74187
1	E78	I.C. IM 5603 OR 74187
1	E79	I.C. IM 5603 OR 74187
1	E80	I.C. IM 5603 OR 74187
1	E81	I.C. IM 5603 OR 74187
1	E82	I.C. IM 5603 OR 74187
1	R3	RES 47 1/4 W 5%
10	R1, R2, R11 THRU R18	RES 1K 1/4 W 5%
3	R5, R6, R7	RES 4.7K 1/4 W 5%
2	R4, R23	RES 22K 1/4 W 5%
2	R19, R20	RES 5.6K 1/4 W 5%
2	R21, R22	RES 560 1/4 W 5%
2	R8, R10	RES 3K 1/8 W 5%
1	R9	RES POT 2K 1/4 W 10% 76PR
2	S1, S2	SWITCH
1		COAX CABLE RG174U 4' LG

FIRST USED ON OPTION MODEL  
GT40

**PARTS LIST**

CHK	CHANGE NO	REV	DATE	BY

DRN	DATE	BY
CHK'D	DATE	BY
PROJ. ENG.	DATE	BY
PROD.	DATE	BY

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

SCALE	SHEET	OF
	2	OF

SIZE CODE	NUMBER	REV.
D 1 CS	M7013-0-1	

**SEMICONDUCTOR CONVERSION CHART**



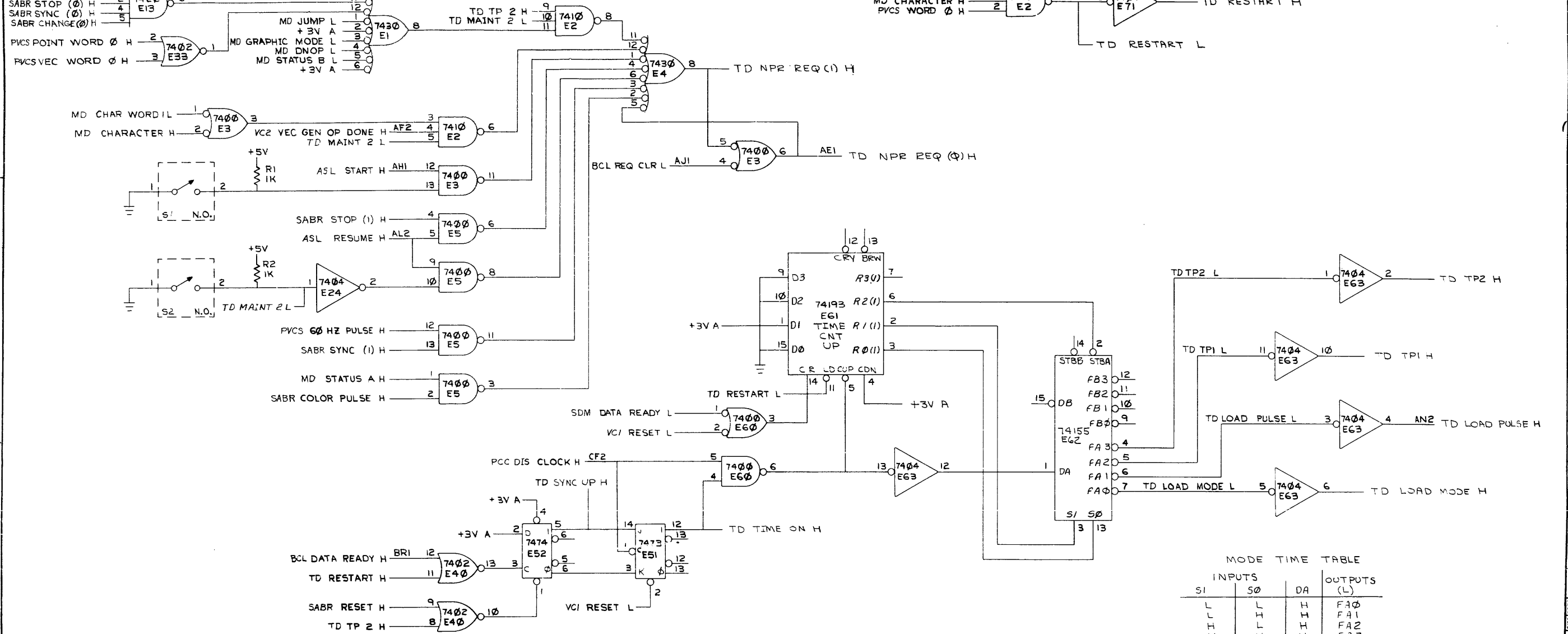
VT40 DISPLAY CONTROL

BRUNING 40-522 16699  
DEC FORM NO



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MODE TIME TABLE

INPUTS		OUTPUTS (L)	
S1	S0	DA	
I L L	I L L	I I H	FA0
			FA1
			FA2
			FA3

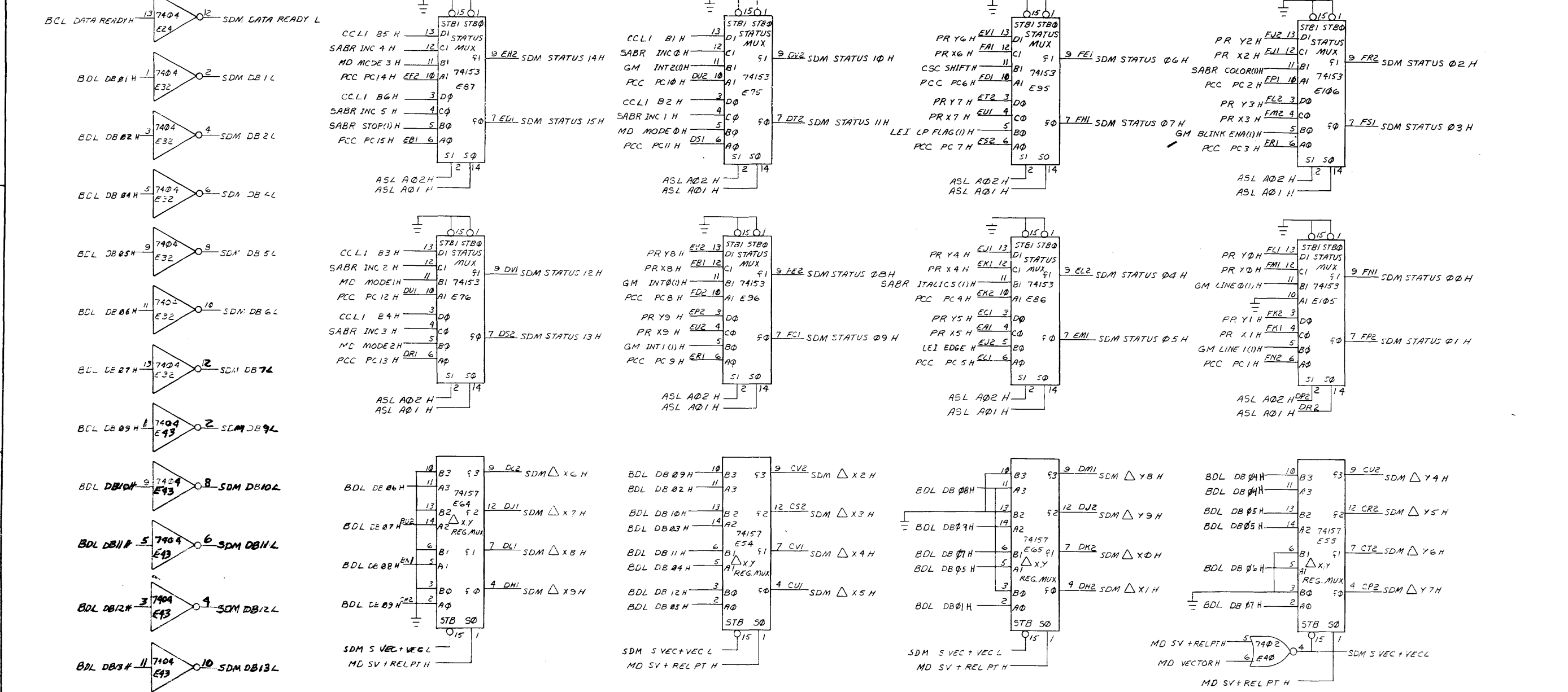
TIMING DECODER (TD)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.	DATE 9/15/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS		
TOLERANCES	CHK'D. DATE 10-30-72	TITLE		
DECIMALS	ARMY NO00E	VT40 DISPLAY CONTROL (TD)		
ANGLES	DATE 10-30-72			
.XXX = .005	PROJ. ENG. DATE 10/25/72			
.XX = .02	DATE 11/15/72			
.X = .1	DATE 11/15/72			
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD. DATE 11/15/72			
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV
FINISH	SCALE	DCS M7013-0-1		
	SHEET 3 OF	DIST		

REV  
CHANGE NO  
CHK

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STATUS REG. TABLE (74153)

SI	S0	SELECT
L	L	A
L	H	B
H	L	C
H	H	D

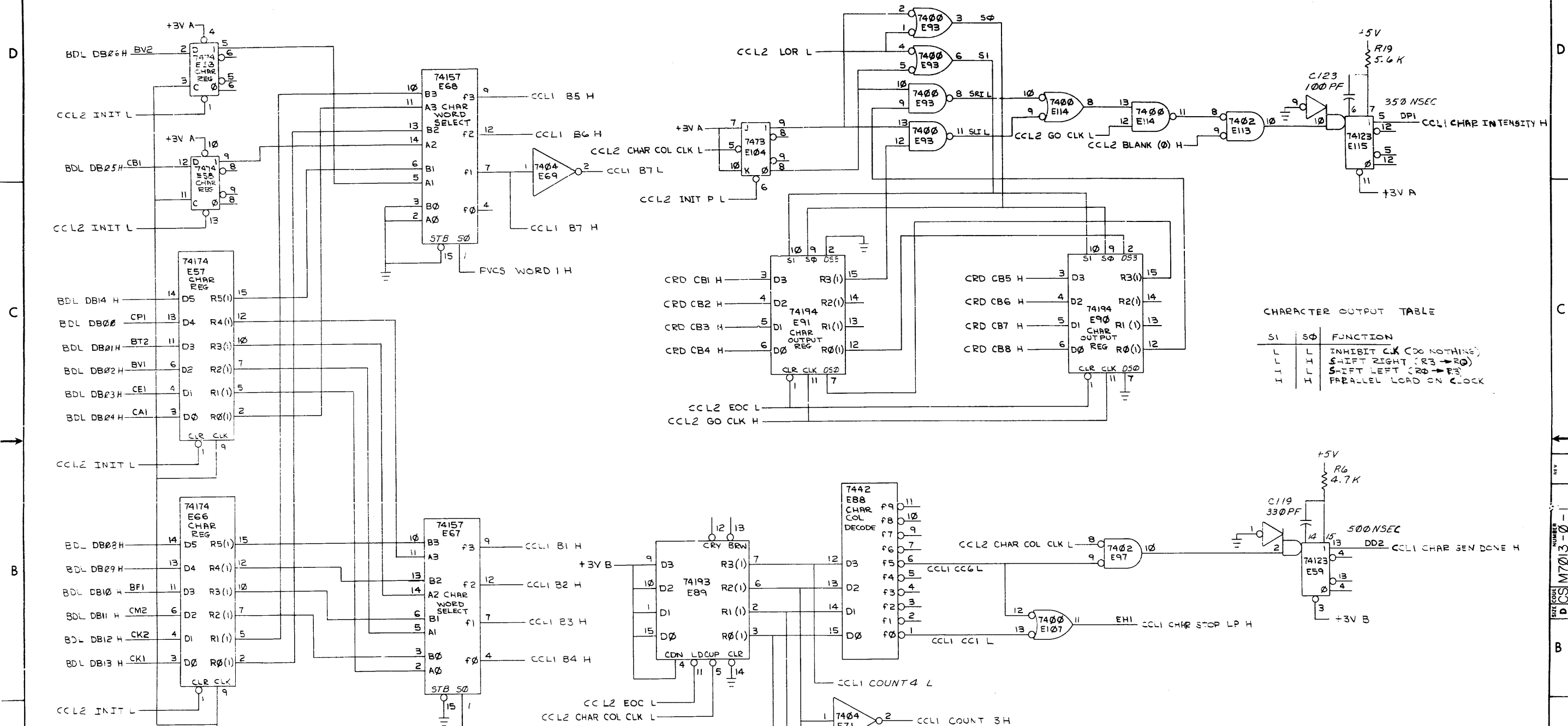
STATUS & DELTA MUX (SDM)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DBM	DATE 9-7-72	<b>digital</b> EQUIPMENT CORPORATION MAYFORD MASSACHUSETTS	
DECIMALS ANGLES	CHK'D. NANCY MOORE	DATE 10-30-72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	ENG. H.C. LAURENCE	DATE 11-30-72	TITLE V140 DISPLAY CONTROL (SDM)	
MATERIAL	PROJ. ENG. H.C. LAURENCE	DATE 11-30-72		
FINISH	PROD. DATE 11-17-72	SIZE CODE DCS		NUMBER M7013-0-1
	NEXT HIGHER ASSY.	SCALE	SHEET	REV

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

SIZE CODE M7013-0-1

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CHARACTER OUTPUT TABLE

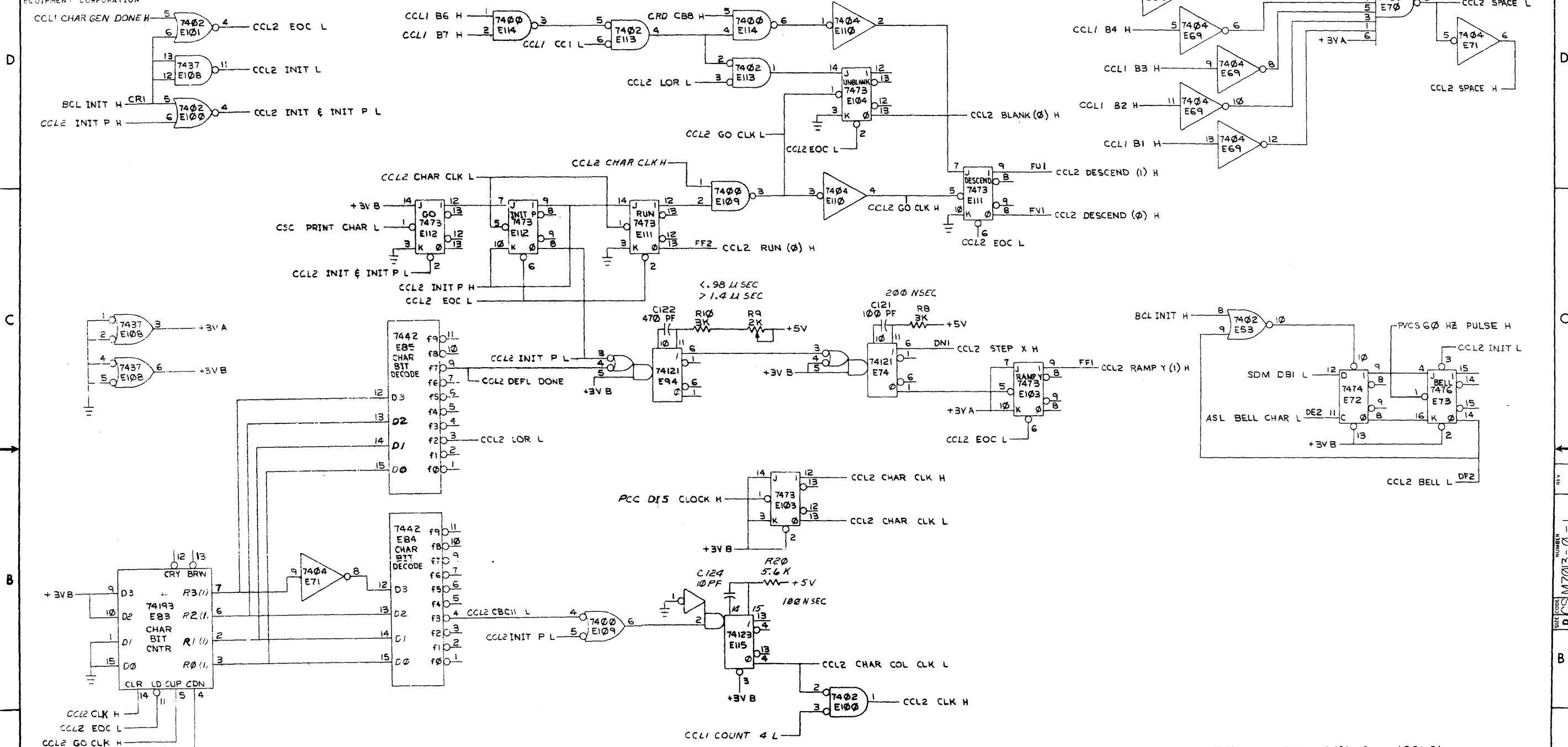
S1	S0	FUNCTION
L	L	INHIBIT CLK (DO NOTHING)
L	H	SHIFT RIGHT (R3 → R0)
L	L	SHIFT LEFT (R0 → R3)
H	H	PARALLEL LOAD ON CLOCK

CHARACTER CONTROL LOGIC I (CCL1)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN R. J. O'Connell	DATE 9/14/72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS	CHK'D M. J. MOORE	DATE 10-30-72		
ANGLES	ENG. J. J. J. J.	DATE 10-30-72		
XXX - .005 XX - .02 .X - .1	PROJ. ENG. H. E. Lawrence	DATE 10/30/72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD. W. C. Gentry	DATE 11/9/72	TITLE VT40 DISPLAY CONTROL (CCL1)	
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
FINISH	SCALE		D	CS M7013-0-1
	SHEET 9 OF		DIST	

BRUNING 40-322 15840  
 DEC 10 1972  
 7RD 102-B

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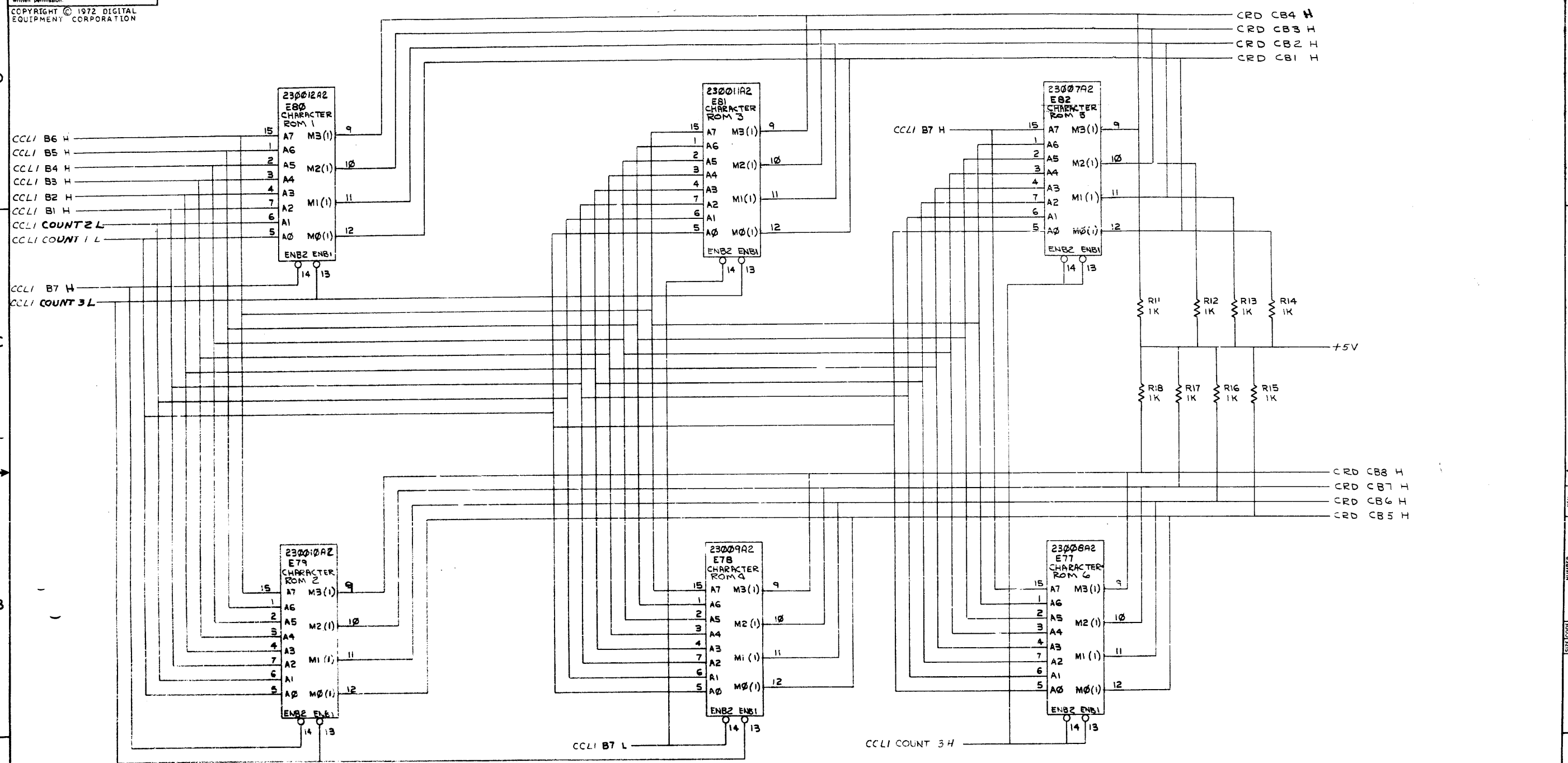
CHARACTER CONTROL LOGIC 2 (CCL2)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DATE 9/11/72			
DECIMALS	DATE 10/30/72			
ANGLES	DATE 10/30/72	VT40 DISPLAY CONTROL (CCL2)		
XXX - 006	DATE 11/1/72			
XX - 07	DATE 11/1/72	MATERIAL: NEXT HIGHER ASSY.		
X - 1	DATE 11/1/72	FINISH: SCALE: SHEET 10 OF		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE 11/1/72	SIZE CODE: NUMBER: REV:		
D E S I G N		DIST:		

REV	CHANGE NO.

NUMBER  
 DCS M7013-0-1

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CHARACTER ROMS DECODE (CRD)

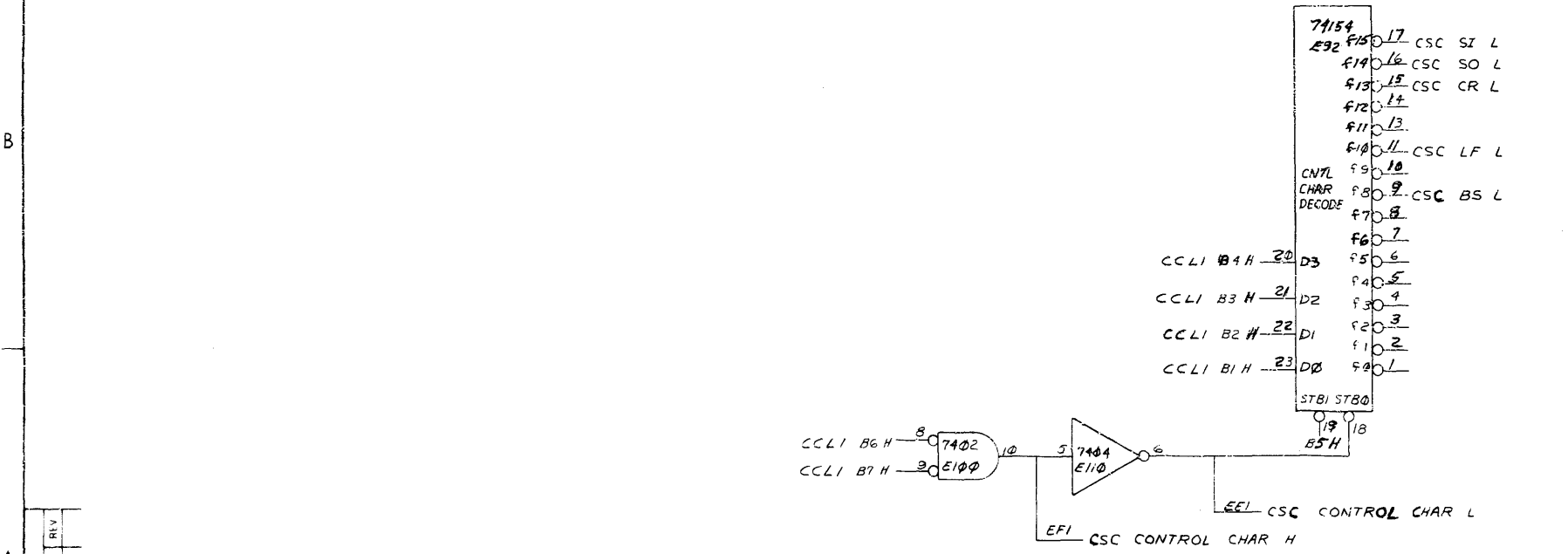
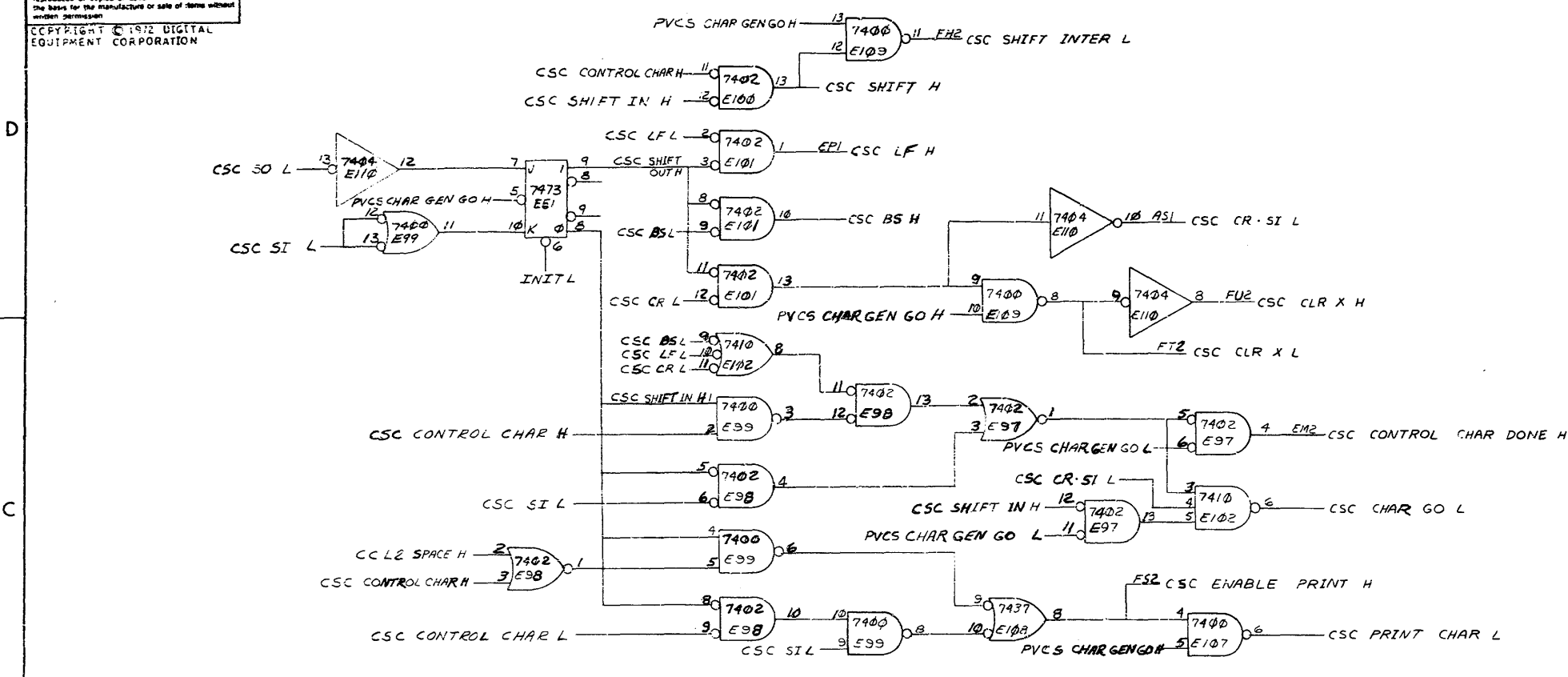
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN. <i>R.E. Hillen</i>	DATE 9/14/72	DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS TITLE VT40 DISPLAY CONTROL (CRD)	
DECIMALS .XXX - .005	CHK'D. <i>BRUCE MOORE</i>	DATE 10/30/72		
ANGLES 30° - 30'	ENG. <i>J. J. O'Neil</i>	DATE 10/30/72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ. ENG. <i>W. J. Conroy</i>	DATE 11/17/72		
MATERIAL	NEXT HIGHER ASSY.	DATE	SIZE CODE	NUMBER
FINISH	SCALE	SHEET 11 OF	DQS	M7013-0-1

REVISIONS  
 CHANGE NO. REV.  
 DATE  
 BY

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1-0-102LW SC 2



REV	REVISION	CHANGE N°
1	INITIAL	

CONTROL & SPECIAL CHARACTERS (CSC)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DBN CHK'D ENG. PROJ. ENG. PROD.	DATE 7-1-72 DATE 10-30-72 DATE 10-30-72 DATE 11/3/72	<b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS ANGLES			TITLE V740 DISPLAY CONTROL (CSC)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL			SIZE CODE DCS	NUMBER M70130-1
FINISH			SCALE	REV
		SHEET 12 OF	DIST.	

4

3



REV.

NUMBER M7013-0-8

SIZE CODE KRL

2

1

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THIS FACE SHEET CONTAINS THE FOLLOWING CHIP PART NUMBERS :

- PART NUMBER
- 23-007A2
- 23-008A2
- 23-009A2
- 23-010A2
- 23-011A2
- 23-012A2

B


B



A

A

REVISIONS	REV.
CHANGE NO.	
CHK	

FIRST USED ON OPTION/MODEL GT 4Ø	QTY.	DESCRIPTION	PART NO.	ITEM NO.		
PARTS LIST						
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005    FRACTIONS ± 1/64    ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	DRN. <i>CBM<sup>c</sup>Coy</i>	DATE 10-2-72	 <b>digital EQUIPMENT CORPORATION</b> <small>MAYNARD, MASSACHUSETTS</small>			
	CHK'D <i>DK Galle</i>	DATE 10-11-72				
	ENG. <i>A. Ferraro</i>	DATE 10-30-72				
	PROJ. ENG. <i>H.E. Lavoie</i>	DATE 10/30/72				
	PROD. <i>F. W. Country</i>	DATE 11/7/72				
MATERIAL ———//———	NEXT HIGHER ASSY B-DD-GT 4Ø-Ø		TITLE CHARACTER GENERATOR ROM PATTERNS			
FINISH ———//———	SCALE ———//———	SIZE CODE KRL			NUMBER M7013-0-8	REV.
	SHEET 1 OF	DIST.				

4

3



2

1

*Handwritten mark*

DEC PART NUMB1 23-007A2  
 ORIGINATOR1 JOHN BENTON  
 DATE OF ORIGIN1 8-3-72

RDM PATTERN SPEC PAGE 1 OF 8

DECIMAL LOC	DECIMAL LOC	BINARY DATA	DECIMAL DATA
0	000	0001	01
1	001	1110	16
2	002	0011	03
3	003	1100	14
4	004	0010	02
5	005	0001	01
6	006	1000	10
7	007	1100	14
8	010	1001	11
9	011	0110	06
10	012	1000	10
11	013	1111	17
12	014	1000	10
13	015	1000	10
14	016	0000	00
15	017	0000	00
16	020	0000	00
17	021	1111	17
18	022	0010	02
19	023	0001	01
20	024	0000	00
21	025	0000	00
22	026	0000	00
23	027	0000	00
24	030	0000	00
25	031	1000	10
26	032	0100	04
27	033	0011	03
28	034	1000	10
29	035	1100	14
30	036	0000	00
31	037	0000	00
32	040	1111	17
33	041	0000	00
34	042	1111	17
35	043	0000	00

DEC PART NUMB1 23-007A2  
 ORIGINATOR1 JOHN BENTON  
 DATE OF ORIGIN1 8-3-72

RDM PATTERN SPEC PAGE 2 OF 8

DECIMAL LOC	DECIMAL LOC	BINARY DATA	DECIMAL DATA
36	044	1010	12
37	045	1001	11
38	046	0111	07
39	047	0000	00
40	050	0000	00
41	051	0000	00
42	052	1001	11
43	053	0000	00
44	054	0000	00
45	055	0000	00
46	056	0001	01
47	057	0000	00
48	060	0000	00
49	061	0000	00
50	062	0100	04
51	063	0010	02
52	064	0000	00
53	065	0000	00
54	066	1000	10
55	067	1000	10
56	070	0001	01
57	071	0001	01
58	072	0010	02
59	073	0001	01
60	074	0000	00
61	075	0000	00
62	076	1000	10
63	077	1111	17
64	100	0000	00
65	101	0000	00
66	102	0000	00
67	103	0000	00
68	104	0000	00
69	105	0000	00
70	106	0111	07
71	107	0001	01



DEC PART NUMB1 23-007A2  
 ORIGINATOR: JOHN BENTON  
 DATE OF ORIGIN: 8-3-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	0011	03
73	111	0000	00
74	112	1010	12
75	113	0100	04
76	114	0101	05
77	115	1000	10
78	116	0000	00
79	117	0000	00
80	120	1000	10
81	121	0000	00
82	122	0000	00
83	123	0000	00
84	124	0001	01
85	125	0010	02
86	126	0000	00
87	127	0000	00
88	130	0000	00
89	131	0000	00
90	132	0000	00
91	133	0000	00
92	134	0000	00
93	135	0000	00
94	136	0000	00
95	137	0000	00
96	140	1000	10
97	141	0111	07
98	142	0000	00
99	143	0000	00
100	144	1000	10
101	145	1000	10
102	146	1000	10
103	147	0111	07
104	150	1111	17
105	151	0010	02
106	152	1000	10
107	153	0111	07

DEC PART NUMB1 23-007A2  
 ORIGINATOR: JOHN BENTON  
 DATE OF ORIGIN: 8-3-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	1001	11
109	155	0110	06
110	156	0000	00
111	157	0000	00
112	160	1000	10
113	161	0111	07
114	162	0100	04
115	163	0011	03
116	164	0000	00
117	165	0000	00
118	166	0000	00
119	167	0000	00
120	170	0100	04
121	171	0000	00
122	172	0001	01
123	173	0001	01
124	174	0000	00
125	175	0000	00
126	176	0000	00
127	177	0000	00
128	200	1001	11
129	201	0100	04
130	202	0001	01
131	203	1111	17
132	204	1000	10
133	205	0111	07
134	206	1000	10
135	207	0100	04
136	210	0100	04
137	211	0011	03
138	212	1000	10
139	213	1100	14
140	214	0000	00
141	215	0000	00
142	216	1001	11
143	217	1111	17

DEC PART NUMB1 23-007A2  
ORIGINATOR: JOHN BENTON  
DATE OF ORIGIN: 8-3-72

ROM PATTERN SPEC PAGE 5 OF 8

DECIMAL LOC	DECIMAL LOC	BINARY DATA	DECIMAL DATA
144	220	0000	00
145	221	1111	17
146	222	0000	00
147	223	0000	00
148	224	0111	07
149	225	0000	00
150	226	0010	02
151	227	1100	14
152	230	1000	10
153	231	1100	14
154	232	0000	00
155	233	1111	17
156	234	0010	02
157	235	1111	17
158	236	0100	04
159	237	0011	03
160	240	0000	00
161	241	0000	00
162	242	0100	04
163	243	1011	13
164	244	0010	02
165	245	1100	14
166	246	1001	11
167	247	0110	06
168	250	1000	10
169	251	0000	00
170	252	1000	10
171	253	0111	07
172	254	0000	00
173	255	0000	00
174	256	0100	04
175	257	1111	17
176	260	0010	02
177	261	1100	14
178	262	0000	00
179	263	0000	00

DEC PART NUMB1 23-007A2  
ORIGINATOR: JOHN BENTON  
DATE OF ORIGIN: 8-3-72

ROM PATTERN SPEC PAGE 6 OF 8

DECIMAL LOC	DECIMAL LOC	BINARY DATA	DECIMAL DATA
180	264	1000	10
181	265	1000	10
182	266	1000	10
183	267	0000	00
184	270	0010	02
185	271	0100	04
186	272	1111	17
187	273	0000	00
188	274	0000	00
189	275	0000	00
190	276	1000	10
191	277	1000	10
192	300	0000	00
193	301	0000	00
194	302	0101	05
195	303	1111	17
196	304	1000	10
197	305	0111	07
198	306	1000	10
199	307	0100	04
200	310	0100	04
201	311	1111	17
202	312	1001	11
203	313	1001	11
204	314	0000	00
205	315	0000	00
206	316	1001	11
207	317	0111	07
208	320	0000	00
209	321	1111	17
210	322	1000	10
211	323	0000	00
212	324	0111	07
213	325	0000	00
214	326	0100	04
215	327	1000	10

DEC PART NUMB1 23-007A2  
 ORIGINATOR: JOHN BENTON  
 DATE OF ORIGIN: 8-3-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	1000	10
217	331	0000	00
218	332	0000	00
219	333	1111	17
220	334	0000	00
221	335	1111	17
222	336	1000	10
223	337	0111	07
224	340	0010	02
225	341	0001	01
226	342	0001	01
227	343	1111	17
228	344	0000	00
229	345	0000	00
230	346	1001	11
231	347	0110	06
232	350	1000	10
233	351	0000	00
234	352	0100	04
235	353	1111	17
236	354	0100	04
237	355	0011	03
238	356	1000	10
239	357	0111	07
240	360	0010	02
241	361	1100	14
242	362	1001	11
243	363	0111	07
244	364	1000	10
245	365	1000	10
246	366	1000	10
247	367	1000	10
248	370	0000	00
249	371	0000	00
250	372	0110	06
251	373	0001	01

DEC PART NUMB1 23-007A2  
 ORIGINATOR: JOHN BENTON  
 DATE OF ORIGIN: 8-3-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	0001	01
253	375	0000	00
254	376	1111	17
255	377	1111	17

DEC PART NUMB1 23-008A2  
ORIGINATOR1 JOHN BENTON  
DATE OF ORIGIN1 8-4-72

RDM PATTERN SPEC PAGE 1 OF 8

DECIMAL LOC	DCTAL LOC	BINARY DATA	OCTAL DATA
0	000	0001	01
1	001	1010	12
2	002	0100	04
3	003	1000	10
4	004	1000	10
5	005	0100	04
6	006	0100	04
7	007	1000	10
8	010	0000	00
9	011	1000	10
10	012	0100	04
11	013	1111	17
12	014	0001	01
13	015	0011	03
14	016	0101	05
15	017	1001	11
16	020	0000	00
17	021	0010	02
18	022	0101	05
19	023	1001	11
20	024	0000	00
21	025	0000	00
22	026	0000	00
23	027	1000	10
24	030	0000	00
25	031	0100	04
26	032	0100	04
27	033	1100	14
28	034	0010	02
29	035	0100	04
30	036	1000	10
31	037	0100	04
32	040	1110	16
33	041	0001	01
34	042	0001	01
35	043	0001	01

DEC PART NUMB1 23-008A2  
ORIGINATOR1 JOHN BENTON  
DATE OF ORIGIN1 8-4-72

RDM PATTERN SPEC PAGE 2 OF 8

DECIMAL LOC	DCTAL LOC	BINARY DATA	OCTAL DATA
36	044	0010	02
37	045	1110	16
38	046	0000	00
39	047	1111	17
40	050	0000	00
41	051	1000	10
42	052	1000	10
43	053	1010	12
44	054	0000	00
45	055	0110	06
46	056	1001	11
47	057	1001	11
48	060	0000	00
49	061	0000	00
50	062	0000	00
51	063	1000	10
52	064	0000	00
53	065	0000	00
54	066	1100	14
55	067	0000	00
56	070	1000	10
57	071	1110	16
58	072	1001	11
59	073	1001	11
60	074	0000	00
61	075	0000	00
62	076	0000	00
63	077	0000	00
64	100	0100	04
65	101	0010	02
66	102	1110	16
67	103	0010	02
68	104	0000	00
69	105	1111	17
70	106	0000	00
71	107	0000	00

DEC PART NUMB1 23-008A2  
 ORIGINATOR1 JOHN BENTON  
 DATE OF ORIGIN1 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	1000	10
73	111	0100	04
74	112	0010	02
75	113	0010	02
76	114	1000	10
77	115	0100	04
78	116	0110	06
79	117	1010	12
80	120	0100	04
81	121	0010	02
82	122	0010	02
83	123	1110	16
84	124	0000	00
85	125	1000	10
86	126	0100	04
87	127	0010	02
88	130	1000	10
89	131	1100	14
90	132	1010	12
91	133	1000	10
92	134	1000	10
93	135	1000	10
94	136	1000	10
95	137	1010	12
96	140	0000	00
97	141	0100	04
98	142	0010	02
99	143	1111	17
100	144	0000	00
101	145	0000	00
102	146	0000	00
103	147	1110	16
104	150	0000	00
105	151	1111	17
106	152	0001	01
107	153	0001	01

DEC PART NUMB1 23-008A2  
 ORIGINATOR1 JOHN BENTON  
 DATE OF ORIGIN1 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	0000	00
109	155	0000	00
110	156	0000	00
111	157	1111	17
112	160	0100	04
113	161	0100	04
114	162	0100	04
115	163	1100	14
116	164	0100	04
117	165	0010	02
118	166	0010	02
119	167	0100	04
120	170	0000	00
121	171	0100	04
122	172	1000	10
123	173	0000	00
124	174	1111	17
125	175	0001	01
126	176	0001	01
127	177	0001	01
128	200	0000	00
129	201	0000	00
130	202	0000	00
131	203	0000	00
132	204	0000	00
133	205	0000	00
134	206	1111	17
135	207	0000	00
136	210	0000	00
137	211	0111	07
138	212	0000	00
139	213	0000	00
140	214	0000	00
141	215	0100	04
142	216	1111	17
143	217	0100	04

DEC PART NUMB1 23-008A2  
 ORIGINATOR: JOHN BENTON  
 DATE OF ORIGINI 8-4-72

ROM PATTERN SPEC PAGE 5 OF 8

DECIMAL LOC	DECIMAL LOC	BINARY DATA	DECIMAL DATA
144	220	1100	14
145	221	1010	12
146	222	1111	17
147	223	1010	12
148	224	0010	02
149	225	0101	05
150	226	0010	02
151	227	1000	10
152	230	0110	06
153	231	1001	11
154	232	1001	11
155	233	0110	06
156	234	0000	00
157	235	0000	00
158	236	0100	04
159	237	0010	02
160	240	0000	00
161	241	0000	00
162	242	1100	14
163	243	0010	02
164	244	0000	00
165	245	0001	01
166	246	0010	02
167	247	1100	14
168	250	0000	00
169	251	0010	02
170	252	0100	04
171	253	1111	17
172	254	0000	00
173	255	1000	10
174	256	1000	10
175	257	1110	16
176	260	0000	00
177	261	0000	00
178	262	0000	00
179	263	0000	00

DEC PART NUMB1 23-008A2  
 ORIGINATOR: JOHN BENTON  
 DATE OF ORIGINI 8-4-72

ROM PATTERN SPEC PAGE 6 OF 8

DECIMAL LOC	DECIMAL LOC	BINARY DATA	DECIMAL DATA
180	264	0000	00
181	265	1000	10
182	266	1000	10
183	267	1000	10
184	270	0000	00
185	271	0000	00
186	272	0000	00
187	273	0000	00
188	274	0000	00
189	275	0000	00
190	276	0000	00
191	277	1000	10
192	300	1110	16
193	301	0001	01
194	302	0001	01
195	303	1001	11
196	304	0000	00
197	305	0010	02
198	306	1111	17
199	307	0000	00
200	310	0010	02
201	311	0001	01
202	312	1001	11
203	313	1001	11
204	314	0011	03
205	315	0001	01
206	316	1001	11
207	317	1101	15
208	320	0000	00
209	321	1000	10
210	322	0100	04
211	323	0010	02
212	324	1111	17
213	325	1001	11
214	326	1001	11
215	327	1001	11

DEC PART NUMB: 23-008A2  
 ORIGINATOR: JOHN BENTON  
 DATE OF ORIGIN: 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	1100	14
217	331	0010	02
218	332	0001	01
219	333	0001	01
220	334	0011	03
221	335	0001	01
222	336	0001	01
223	337	1001	11
224	340	0110	06
225	341	1001	11
226	342	1001	11
227	343	1001	11
228	344	0110	06
229	345	1001	11
230	346	1001	11
231	347	1001	11
232	350	0000	00
233	351	0000	00
234	352	0110	06
235	353	0110	06
236	354	0000	00
237	355	0000	00
238	356	0110	06
239	357	0110	06
240	360	0000	00
241	361	1000	10
242	362	0100	04
243	363	0010	02
244	364	0000	00
245	365	0100	04
246	366	0100	04
247	367	0100	04
248	370	0000	00
249	371	0001	01
250	372	0010	02
251	373	0100	04

DEC PART NUMB: 23-008A2  
 ORIGINATOR: JOHN BENTON  
 DATE OF ORIGIN: 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	0010	02
253	375	0001	01
254	376	1001	11
255	377	1001	11

DEC PART NUMB1 23-009A2  
ORIGINATOR: JOHN BENTON  
DATE OF ORIGINI 8-4-72

ROM PATTERN SPEC PAGE 1 OF 8

DECIMAL LOC	DECIMAL LOC	BINARY DATA	OCTAL DATA
0	000	1111	17
1	001	0000	00
2	002	0000	00
3	003	0000	00
4	004	0111	07
5	005	1000	10
6	006	0100	04
7	007	0010	02
8	010	0000	00
9	011	0001	01
10	012	0010	02
11	013	1111	17
12	014	1100	14
13	015	1010	12
14	016	1001	11
15	017	1000	10
16	020	0000	00
17	021	0110	06
18	022	1001	11
19	023	1000	10
20	024	1100	14
21	025	1010	12
22	026	1001	11
23	027	1000	10
24	030	0000	00
25	031	0000	00
26	032	0000	00
27	033	1111	17
28	034	0110	06
29	035	1001	11
30	036	1000	10
31	037	0111	07
32	040	1111	17
33	041	0000	00
34	042	0000	00
35	043	0000	00

DEC PART NUMB1 23-009A2  
ORIGINATOR: JOHN BENTON  
DATE OF ORIGINI 8-4-72

ROM PATTERN SPEC PAGE 2 OF 8

DECIMAL LOC	DECIMAL LOC	BINARY DATA	OCTAL DATA
36	044	0000	00
37	045	0001	01
38	046	0010	02
39	047	1111	17
40	050	0000	00
41	051	0000	00
42	052	0000	00
43	053	0010	02
44	054	0000	00
45	055	0000	00
46	056	0000	00
47	057	0000	00
48	060	0000	00
49	061	1000	10
50	062	0000	00
51	063	0000	00
52	064	1000	10
53	065	0100	04
54	066	0011	03
55	067	0100	04
56	070	1000	10
57	071	1111	17
58	072	1000	10
59	073	1000	10
60	074	0000	00
61	075	0000	00
62	076	0000	00
63	077	0000	00
64	100	0000	00
65	101	0000	00
66	102	1111	17
67	103	0000	00
68	104	0000	00
69	105	1111	17
70	106	0000	00
71	107	0000	00



DEC PART NUMB1 23-009A2  
 ORIGINATOR1 JOHN BENTON  
 DATE OF ORIGIN1 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	1011	13
73	111	1100	14
74	112	0000	00
75	113	0100	04
76	114	0011	03
77	115	0100	04
78	116	1000	10
79	117	1000	10
80	120	0000	00
81	121	0000	00
82	122	0000	00
83	123	1111	17
84	124	0000	00
85	125	0011	03
86	126	0101	05
87	127	1001	11
88	130	0000	00
89	131	0001	01
90	132	0010	02
91	133	0000	00
92	134	0000	00
93	135	0000	00
94	136	0000	00
95	137	0010	02
96	140	0000	00
97	141	0000	00
98	142	0000	00
99	143	0111	07
100	144	0000	00
101	145	0010	02
102	146	0100	04
103	147	1111	17
104	150	0000	00
105	151	1111	17
106	152	0000	00
107	153	0000	00

DEC PART NUMB1 23-009A2  
 ORIGINATOR1 JOHN BENTON  
 DATE OF ORIGIN1 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	0000	00
109	155	1000	10
110	156	1000	10
111	157	1111	17
112	160	0001	01
113	161	0101	05
114	162	0011	03
115	163	0001	01
116	164	0010	02
117	165	0001	01
118	166	0001	01
119	167	0010	02
120	170	0000	00
121	171	0000	00
122	172	0000	00
123	173	0001	01
124	174	1111	17
125	175	1000	10
126	176	1000	10
127	177	1000	10
128	200	0000	00
129	201	0000	00
130	202	0000	00
131	203	0000	00
132	204	0000	00
133	205	0000	00
134	206	1011	13
135	207	0000	00
136	210	0000	00
137	211	0000	00
138	212	0000	00
139	213	0000	00
140	214	0000	00
141	215	0001	01
142	216	0111	07
143	217	0001	01

DEC PART NUMB1 23-009A2  
ORIGINATOR: JOHN BENTON  
DATE OF ORIGIN: 8-4-72

RDM PATTERN SPEC PAGE 5 OF 8

DECIMAL LOC	DCTAL LOC	BINARY DATA	DCTAL DATA
144	220	0100	04
145	221	0100	04
146	222	1111	17
147	223	0100	04
148	224	0100	04
149	225	0010	02
150	226	0001	01
151	227	0100	04
152	230	0110	06
153	231	1001	11
154	232	1001	11
155	233	0110	06
156	234	0000	00
157	235	0000	00
158	236	0000	00
159	237	0000	00
160	240	0000	00
161	241	0000	00
162	242	0011	03
163	243	0100	04
164	244	0000	00
165	245	1000	10
166	246	0100	04
167	247	0011	03
168	250	0000	00
169	251	0010	02
170	252	0001	01
171	253	0000	00
172	254	0000	00
173	255	0000	00
174	256	0000	00
175	257	0011	03
176	260	0000	00
177	261	1000	10
178	262	0110	06
179	263	0000	00

DEC PART NUMB1 23-009A2  
ORIGINATOR: JOHN BENTON  
DATE OF ORIGIN: 8-4-72

RDM PATTERN SPEC PAGE 6 OF 8

DECIMAL LOC	DCTAL LOC	BINARY DATA	DCTAL DATA
180	264	0000	00
181	265	0000	00
182	266	0000	00
183	267	0000	00
184	270	0000	00
185	271	0000	00
186	272	1100	14
187	273	1100	14
188	274	0100	04
189	275	0010	02
190	276	0001	01
191	277	0000	00
192	300	0111	07
193	301	1010	12
194	302	1001	11
195	303	1000	10
196	304	0000	00
197	305	1000	10
198	306	1111	17
199	307	1000	10
200	310	1110	16
201	311	1001	11
202	312	1000	10
203	313	1000	10
204	314	0100	04
205	315	1000	10
206	316	1000	10
207	317	1000	10
208	320	0011	03
209	321	0010	02
210	322	0010	02
211	323	0010	02
212	324	0100	04
213	325	1000	10
214	326	1000	10
215	327	1000	10

DEC PART NUMB1 23-009A2  
ORIGINATOR: JOHN BENTON  
DATE OF ORIGIN: 8-4-72

ROM PATTERN SPEC

PAGE 7 OF 8

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	0011	03
217	331	0110	06
218	332	1001	11
219	333	1001	11
220	334	0000	00
221	335	1110	16
222	336	0001	01
223	337	0000	00
224	340	0111	07
225	341	1000	10
226	342	1000	10
227	343	1000	10
228	344	0100	04
229	345	1000	10
230	346	1000	10
231	347	1000	10
232	350	0000	00
233	351	0000	00
234	352	0110	06
235	353	0110	06
236	354	0000	00
237	355	0000	00
238	356	1000	10
239	357	0110	06
240	360	0000	00
241	361	0000	00
242	362	0001	01
243	363	0010	02
244	364	0000	00
245	365	0001	01
246	366	0001	01
247	367	0001	01
248	370	0000	00
249	371	0100	04
250	372	0010	02
251	373	0001	01

DEC PART NUMB1 23-009A2  
ORIGINATOR: JOHN BENTON  
DATE OF ORIGIN: 8-4-72

ROM PATTERN SPEC

PAGE 8 OF 8

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	0000	00
253	375	0000	00
254	376	1011	13
255	377	0000	00

DEC PART NUMB1 23-010A2  
ORIGINATOR1 JOHN BENTON  
DATE OF ORIGIN1 8-15-72

RDM PATTERN SPEC PAGE 1 OF 8

DECIMAL LOC	DCIAL LOC	BINARY DATA	DCIAL DATA
0	000	1100	14
1	001	0010	02
2	002	1001	11
3	003	0101	05
4	004	1100	14
5	005	0010	02
6	006	0001	01
7	007	0001	01
8	010	0001	01
9	011	1111	17
10	012	1001	11
11	013	1001	11
12	014	1100	14
13	015	0010	02
14	016	0001	01
15	017	0001	01
16	020	0001	01
17	021	1111	17
18	022	0001	01
19	023	0001	01
20	024	0001	01
21	025	1111	17
22	026	1001	11
23	027	1001	11
24	030	0001	01
25	031	1111	17
26	032	1001	11
27	033	1001	11
28	034	1100	14
29	035	0010	02
30	036	0001	01
31	037	0001	01
32	040	1111	17
33	041	1000	10
34	042	1000	10
35	043	1000	10

DEC PART NUMB1 23-010A2  
ORIGINATOR1 JOHN BENTON  
DATE OF ORIGIN1 8-15-72

RDM PATTERN SPEC PAGE 2 OF 8

DECIMAL LOC	DCIAL LOC	BINARY DATA	DCIAL DATA
36	044	0000	00
37	045	0001	01
38	046	1111	17
39	047	0001	01
40	050	0000	00
41	051	0000	00
42	052	0001	01
43	053	0001	01
44	054	1111	17
45	055	0000	00
46	056	1000	10
47	057	0100	04
48	060	0001	01
49	061	1111	17
50	062	0001	01
51	063	0000	00
52	064	1111	17
53	065	0010	02
54	066	1100	14
55	067	1100	14
56	070	1111	17
57	071	0100	04
58	072	1000	10
59	073	0000	00
60	074	1100	14
61	075	0010	02
62	076	0001	01
63	077	0001	01
64	100	0001	01
65	101	1111	17
66	102	1001	11
67	103	1001	11
68	104	1100	14
69	105	0010	02
70	106	0001	01
71	107	0001	01

DECIMAL LOC	DECIMAL LOC	BINARY DATA	DECIMAL DATA
72	110	0001	01
73	111	1111	17
74	112	1001	11
75	113	1001	11
76	114	0100	04
77	115	1010	12
78	116	1001	11
79	117	1001	11
80	120	0011	03
81	121	0001	01
82	122	0001	01
83	123	1111	17
84	124	1111	17
85	125	0000	00
86	126	0000	00
87	127	0000	00
88	130	1111	17
89	131	0000	00
90	132	0000	00
91	133	0000	00
92	134	1111	17
93	135	0000	00
94	136	0000	00
95	137	0000	00
96	140	0011	03
97	141	0100	04
98	142	1000	10
99	143	1000	10
100	144	0000	00
101	145	0111	07
102	146	1000	10
103	147	0000	00
104	150	0001	01
105	151	0001	01
106	152	0001	01
107	153	1001	11

DECIMAL LOC	DECIMAL LOC	BINARY DATA	DECIMAL DATA
108	154	0000	00
109	155	1111	17
110	156	0001	01
111	157	0001	01
112	160	0010	02
113	161	0100	04
114	162	1000	10
115	163	0000	00
116	164	0000	00
117	165	0001	01
118	166	0001	01
119	167	0001	01
120	170	0000	00
121	171	1000	10
122	172	0100	04
123	173	0010	02
124	174	0000	00
125	175	0000	00
126	176	0000	00
127	177	0000	00
128	200	0000	00
129	201	0000	00
130	202	0001	01
131	203	0010	02
132	204	0000	00
133	205	0100	04
134	206	0100	04
135	207	0100	04
136	210	0000	00
137	211	1111	17
138	212	1000	10
139	213	0100	04
140	214	0000	00
141	215	1000	10
142	216	0100	04
143	217	0100	04

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	0000	00
145	221	1000	10
146	222	0100	04
147	223	0100	04
148	224	0000	00
149	225	1000	10
150	226	0100	04
151	227	0100	04
152	230	0000	00
153	231	0100	04
154	232	1110	16
155	233	0101	05
156	234	0000	00
157	235	1110	16
158	236	0001	01
159	237	0001	01
160	240	0000	00
161	241	1111	17
162	242	1000	10
163	243	0100	04
164	244	0000	00
165	245	0000	00
166	246	0100	04
167	247	1101	15
168	250	0000	00
169	251	0000	00
170	252	0000	00
171	253	0001	01
172	254	0000	00
173	255	1111	17
174	256	0000	00
175	257	1000	10
176	260	0000	00
177	261	0000	00
178	262	1111	17
179	263	0000	00

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	0000	00
181	265	1100	14
182	266	0100	04
183	267	1000	10
184	270	0000	00
185	271	1100	14
186	272	1000	10
187	273	0100	04
188	274	0000	00
189	275	1000	10
190	276	0100	04
191	277	0100	04
192	300	0000	00
193	301	1111	17
194	302	0010	02
195	303	0001	01
196	304	0000	00
197	305	1110	16
198	306	0001	01
199	307	0001	01
200	310	0000	00
201	311	1100	14
202	312	0000	00
203	313	1000	10
204	314	0000	00
205	315	1000	10
206	316	0100	04
207	317	0100	04
208	320	0000	00
209	321	0100	04
210	322	1111	17
211	323	0100	04
212	324	0000	00
213	325	1100	14
214	326	0000	00
215	327	0000	00

DEC PART NUMB1 23-010A2  
 ORIGINATOR1 JOHN BENTON  
 DATE OF ORIGIN1 8-15-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	0000	00
217	331	1100	14
218	332	0000	00
219	333	0000	00
220	334	0000	00
221	335	1100	14
222	336	0000	00
223	337	1000	10
224	340	0000	00
225	341	0100	04
226	342	1000	10
227	343	0000	00
228	344	0000	00
229	345	1111	17
230	346	0000	00
231	347	0000	00
232	350	0000	00
233	351	0100	04
234	352	0100	04
235	353	0100	04
236	354	0000	00
237	355	1000	10
238	356	0110	06
239	357	0001	01
240	360	0000	00
241	361	0000	00
242	362	0111	07
243	363	0000	00
244	364	0000	00
245	365	0001	01
246	366	0001	01
247	367	0001	01
248	370	0000	00
249	371	1000	10
250	372	0100	04
251	373	1000	10

DEC PART NUMB1 23-010A2  
 ORIGINATOR1 JOHN BENTON  
 DATE OF ORIGIN1 8-15-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	0000	00
253	375	1111	17
254	376	1111	17
255	377	1111	17

DEC PART NUMB1 23-011A2  
 ORIGINATOR JOHN BENTON  
 DATE OF ORIGIN 8-15-72

DECIMAL LOC	DECIMAL LOC	BINARY DATA	DECIMAL DATA
144	220	1000	10
145	221	1111	17
146	222	0000	00
147	223	0000	00
148	224	1111	17
149	225	0001	01
150	226	0010	02
151	227	0001	01
152	230	0000	00
153	231	0000	00
154	232	0010	02
155	233	1111	17
156	234	0000	00
157	235	1111	17
158	236	0010	02
159	237	1100	14
160	240	1001	11
161	241	0110	06
162	242	0010	02
163	243	1100	14
164	244	1001	11
165	245	0110	06
166	246	0001	01
167	247	0010	02
168	250	0001	01
169	251	0011	03
170	252	0000	00
171	253	1111	17
172	254	1000	10
173	255	0111	07
174	256	0000	00
175	257	1111	17
176	260	0100	04
177	261	0011	03
178	262	1000	10
179	263	0111	07

DEC PART NUMB1 23-011A2  
 ORIGINATOR JOHN BENTON  
 DATE OF ORIGIN 8-15-72

DECIMAL LOC	DECIMAL LOC	BINARY DATA	DECIMAL DATA
180	264	0101	05
181	265	0011	03
182	266	0001	01
183	267	0000	00
184	270	0000	00
185	271	0000	00
186	272	1111	17
187	273	0000	00
188	274	0100	04
189	275	1000	10
190	276	0000	00
191	277	0000	00
192	300	0100	04
193	301	0000	00
194	302	0100	04
195	303	1000	10
196	304	0100	04
197	305	1000	10
198	306	0100	04
199	307	1000	10
200	310	1000	10
201	311	1111	17
202	312	0100	04
203	313	1000	10
204	314	0101	05
205	315	0001	01
206	316	0010	02
207	317	1111	17
208	320	0100	04
209	321	1000	10
210	322	0000	00
211	323	0000	00
212	324	1111	17
213	325	0000	00
214	326	0100	04
215	327	0100	04



DEC PART NUMB1 23-011A2  
 ORIGINATOR1 JOHN BENTON  
 DATE OF ORIGIN1 8-15-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	0000	00
217	331	0000	00
218	332	0100	04
219	333	1000	10
220	334	0100	04
221	335	1000	10
222	336	0100	04
223	337	1000	10
224	340	0001	01
225	341	1110	16
226	342	0010	02
227	343	1111	17
228	344	0100	04
229	345	0100	04
230	346	0100	04
231	347	0100	04
232	350	0100	04
233	351	0000	00
234	352	0000	00
235	353	1100	14
236	354	0000	00
237	355	1100	14
238	356	0000	00
239	357	1100	14
240	360	1000	10
241	361	0100	04
242	362	0000	00
243	363	1111	17
244	364	1100	14
245	365	0100	04
246	366	0001	01
247	367	0001	01
248	370	0000	00
249	371	0000	00
250	372	0110	06
251	373	1000	10

DEC PART NUMB1 23-011A2  
 ORIGINATOR1 JOHN BENTON  
 DATE OF ORIGIN1 8-15-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	0000	00
253	375	1100	14
254	376	1111	17
255	377	1111	17

SEC PART NUMB1 23-011A2  
ORIGINATOR: JOHN BENTON  
DATE OF ORIGINI 8-15-72

ROM PATTERN SPEC

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DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	1000	10
145	221	1111	17
146	222	0000	00
147	223	0000	00
148	224	1111	17
149	225	0001	01
150	226	0010	02
151	227	0001	01
152	230	0000	00
153	231	0000	00
154	232	0010	02
155	233	1111	17
156	234	0000	00
157	235	1111	17
158	236	0010	02
159	237	1100	14
160	240	1001	11
161	241	0110	06
162	242	0010	02
163	243	1100	14
164	244	1001	11
165	245	0110	06
166	246	0001	01
167	247	0010	02
168	250	0001	01
169	251	0011	03
170	252	0000	00
171	253	1111	17
172	254	1000	10
173	255	0111	07
174	256	0000	00
175	257	1111	17
176	260	0100	04
177	261	0011	03
178	262	1000	10
179	263	0111	07

SEC PART NUMB1 23-011A2  
ORIGINATOR: JOHN BENTON  
DATE OF ORIGINI 8-15-72

ROM PATTERN SPEC

PAGE 6 OF 8

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	0101	05
181	265	0011	03
182	266	0001	01
183	267	0000	00
184	270	0000	00
185	271	0000	00
186	272	1111	17
187	273	0000	00
188	274	0100	04
189	275	1000	10
190	276	0000	00
191	277	0000	00
192	300	0100	04
193	301	0000	00
194	302	0100	04
195	303	1000	10
196	304	0100	04
197	305	1000	10
198	306	0100	04
199	307	1000	10
200	310	1000	10
201	311	1111	17
202	312	0100	04
203	313	1000	10
204	314	0101	05
205	315	0001	01
206	316	0010	02
207	317	1111	17
208	320	0100	04
209	321	1000	10
210	322	0000	00
211	323	0000	00
212	324	1111	17
213	325	0000	00
214	326	0100	04
215	327	0100	04

DEC PART NUMB1 23-011A2  
 ORIGINATOR: JOHN BENTON  
 DATE OF ORIGIN: 8-15-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	0000	00
217	331	0000	00
218	332	0100	04
219	333	1000	10
220	334	0100	04
221	335	1000	10
222	336	0100	04
223	337	1000	10
224	340	0001	01
225	341	1110	16
226	342	0010	02
227	343	1111	17
228	344	0100	04
229	345	0100	04
230	346	0100	04
231	347	0100	04
232	350	0100	04
233	351	0000	00
234	352	0000	00
235	353	1100	14
236	354	0000	00
237	355	1100	14
238	356	0000	00
239	357	1100	14
240	360	1000	10
241	361	0100	04
242	362	0000	00
243	363	1111	17
244	364	1100	14
245	365	0100	04
246	366	0001	01
247	367	0001	01
248	370	0000	00
249	371	0000	00
250	372	0110	06
251	373	1000	10

DEC PART NUMB1 23-011A2  
 ORIGINATOR: JOHN BENTON  
 DATE OF ORIGIN: 8-15-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	0000	00
253	375	1100	14
254	376	1111	17
255	377	1111	17

DEC PART NUMB1 23-012A2  
 ORIGINATOR: JOHN BENTON  
 DATE OF ORIGIN: 8-4-72

ROM PATTERN SPEC  
 1000  
 1111  
 0000

PAGE 1 OF 8

DECIMAL LOC	DECIMAL	BINARY DATA	DECIMAL	BINARY DATA
0	000	0000	000	0000
1	001	0000	001	0000
2	002	0000	002	0000
3	003	0000	003	0000
4	004	0000	004	0000
5	005	0000	005	0000
6	006	0000	006	0000
7	007	0000	007	0000
8	008	0000	008	0000
9	009	0000	009	0000
10	010	0000	010	0000
11	011	0000	011	0000
12	012	0000	012	0000
13	013	0000	013	0000
14	014	0000	014	0000
15	015	0000	015	0000
16	016	0000	016	0000
17	017	0000	017	0000
18	018	0000	018	0000
19	019	0000	019	0000
20	020	0000	020	0000
21	021	0000	021	0000
22	022	0000	022	0000
23	023	0000	023	0000
24	024	0000	024	0000
25	025	0000	025	0000
26	026	0000	026	0000
27	027	0000	027	0000
28	028	0000	028	0000
29	029	0000	029	0000
30	030	0000	030	0000
31	031	0000	031	0000
32	032	0000	032	0000
33	033	0000	033	0000
34	034	0000	034	0000
35	035	0000	035	0000
36	036	0000	036	0000
37	037	0000	037	0000
38	038	0000	038	0000
39	039	0000	039	0000
40	040	0000	040	0000
41	041	0000	041	0000
42	042	0000	042	0000
43	043	0000	043	0000

DEC PART NUMB1 23-012A2  
 ORIGINATOR: JOHN BENTON  
 DATE OF ORIGIN: 8-4-72

ROM PATTERN SPEC  
 1000  
 1111  
 0000

PAGE 2 OF 8

DECIMAL LOC	DECIMAL	BINARY DATA	DECIMAL	BINARY DATA
44	044	0000	044	0000
45	045	0000	045	0000
46	046	0000	046	0000
47	047	0000	047	0000
48	048	0000	048	0000
49	049	0000	049	0000
50	050	0000	050	0000
51	051	0000	051	0000
52	052	0000	052	0000
53	053	0000	053	0000
54	054	0000	054	0000
55	055	0000	055	0000
56	056	0000	056	0000
57	057	0000	057	0000
58	058	0000	058	0000
59	059	0000	059	0000
60	060	0000	060	0000
61	061	0000	061	0000
62	062	0000	062	0000
63	063	0000	063	0000
64	064	0000	064	0000
65	065	0000	065	0000
66	066	0000	066	0000
67	067	0000	067	0000
68	068	0000	068	0000
69	069	0000	069	0000
70	070	0000	070	0000
71	071	0000	071	0000
72	072	0000	072	0000
73	073	0000	073	0000
74	074	0000	074	0000
75	075	0000	075	0000
76	076	0000	076	0000
77	077	0000	077	0000
78	078	0000	078	0000
79	079	0000	079	0000
80	080	0000	080	0000
81	081	0000	081	0000
82	082	0000	082	0000
83	083	0000	083	0000
84	084	0000	084	0000
85	085	0000	085	0000
86	086	0000	086	0000
87	087	0000	087	0000
88	088	0000	088	0000
89	089	0000	089	0000
90	090	0000	090	0000
91	091	0000	091	0000
92	092	0000	092	0000
93	093	0000	093	0000
94	094	0000	094	0000
95	095	0000	095	0000
96	096	0000	096	0000
97	097	0000	097	0000
98	098	0000	098	0000
99	099	0000	099	0000

DECIMAL LOC	BINARY DATA	DECIMAL DATA
2072	1000	10
73	1111	17
2074	1000	10
2075	0001	01
2076	0100	04
77	1000	10
2078	0000	00
2079	0000	00
2080	0000	00
81	0000	00
2082	0000	00
2083	1111	17
2084	0111	07
85	1000	10
86	1000	10
2087	1000	10
2088	1111	17
89	0100	04
2090	0000	00
2091	0001	01
2092	1111	17
93	0100	04
2094	0011	03
2095	1011	03
2096	1100	14
97	0100	04
2098	0010	02
2099	1001	01
2100	0000	00
101	0000	00
2102	0000	00
103	1111	17
104	1100	14
105	1010	12
106	1001	11
107	1000	10

DECIMAL LOC	BINARY DATA	DECIMAL DATA
108	0000	00
109	1111	17
110	1000	10
115	1000	10
118	0000	00
119	0000	00
120	0000	00
121	0000	00
122	0000	00
123	0000	00
124	1000	10
125	1000	10
126	1000	10
127	1000	10
128	0000	00
129	0000	00
130	0000	00
131	0000	00
132	0000	00
133	0110	06
134	1001	11
135	1001	11
136	0000	00
137	1111	17
138	0100	04
139	1000	10
140	0000	00
141	0111	07
142	1000	10
143	1000	10

DEC PART NUMB1 23-012A2  
 ORIGINATOR1 JOHN BENTON  
 DATE OF ORIGIN1 8-4-72

DECIMAL LOC	DECIMAL LOC	BINARY DATA	OCTAL DATA
144	220	0000	00
145	221	0111	07
146	222	1000	10
147	223	1000	10
148	224	0000	00
149	225	0111	07
150	226	1001	11
151	227	1001	11
152	230	0000	00
153	231	0000	00
154	232	1111	17
155	233	0000	00
156	234	1000	10
157	235	0001	01
158	236	1010	12
159	237	1010	12
160	240	0000	00
161	241	1111	17
162	242	0000	00
163	243	0000	00
164	244	0000	00
165	245	0000	00
166	246	1000	10
167	247	1111	17
168	250	1000	10
169	251	0100	04
170	252	1000	10
171	253	1000	10
172	254	0000	00
173	255	1111	17
174	256	0001	01
175	257	0010	02
176	260	0000	00
177	261	0000	00
178	262	0111	07
179	263	1000	10

DEC PART NUMB1 23-012A2  
 ORIGINATOR1 JOHN BENTON  
 DATE OF ORIGIN1 8-4-72

DECIMAL LOC	DECIMAL LOC	BINARY DATA	OCTAL DATA
180	264	0000	00
181	265	1111	17
182	266	0000	00
183	267	1111	17
184	270	0000	00
185	271	1111	17
186	272	0000	00
187	273	0000	00
188	274	0000	00
189	275	0111	07
190	276	1000	10
191	277	1000	10
192	300	1000	10
193	301	1111	17
194	302	0001	01
195	303	0010	02
196	304	1000	10
197	305	0001	01
198	306	0010	02
199	307	0010	02
200	310	0000	00
201	311	1111	17
202	312	0001	01
203	313	0000	00
204	314	0000	00
205	315	0100	04
206	316	1001	11
207	317	1001	11
208	320	0000	00
209	321	0000	00
210	322	0111	07
211	323	1000	10
212	324	0000	00
213	325	0111	07
214	326	1000	10
215	327	1000	10

DEC PART NUMB1 23-012A2  
 ORIGINATOR1 JOHN BENTON  
 DATE OF ORIGIN1 8-4-72

DECIMAL LOC	DECIMAL LOC	BINARY DATA	DECIMAL DATA
216	330	0000	00
217	331	0011	03
218	332	0100	04
219	333	1000	10
220	334	0000	00
221	335	0111	07
222	336	1000	10
223	337	0111	07
224	340	0000	00
225	341	1100	14
226	342	0010	02
227	343	0001	01
228	344	1000	10
229	345	0001	01
230	346	1010	12
231	347	1010	12
232	350	0000	00
233	351	1100	14
234	352	1010	12
235	353	1001	11
236	354	0000	00
237	355	0001	01
238	356	0110	06
239	357	1000	10
240	360	0000	00
241	361	0000	00
242	362	1110	16
243	363	0000	00
244	364	0000	00
245	365	1000	10
246	366	1000	10
247	367	1000	10
248	370	0000	00
249	371	0001	01
250	372	0000	00
251	373	0000	00

DEC PART NUMB1 23-012A2  
 ORIGINATOR1 JOHN BENTON  
 DATE OF ORIGIN1 8-4-72

DECIMAL LOC	DECIMAL LOC	BINARY DATA	DECIMAL DATA
252	374	0000	00
253	375	1111	17
254	376	1111	17
255	377	1111	17

PAGE REVISION CONTROL SHEET

H. NO.	PAGE REVISIONS										REMARKS	
	DATE	ENG.	FTCH	ECO	NO.	REV.	A	NO.	ECO	FTCH		
1												(ASL)
2												(BCL)
3												(PCC)
4												(VCI)
5												(VC2)
6												(LEI)
7												(BRL)
8												(BDL)
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FIRST USED ON OPTION/MODEL

DRN D. Caunter		DATE 11-6-72
CHK'D. <i>Paul Reed</i>		DATE 11/9/72
ENG. <i>P. Quinn</i>		DATE 11/9/72
PROJ. ENG. <i>A. Lawrence</i>		DATE 11/9/72
PROD. <i>P. McCarthy</i>		DATE 11/9/72
NEXT HIGHER ASSY.		
SCALE 1/1		OF 11
SHEET 1		DIST.
B-DD-GT400		SIZE CODE BCS
M7014-0-1		NUMBER
* REV.		REV.

**digital** EQUIPMENT CORPORATION  
MAYNARD MASSACHUSETTS

TITLE  
BUS CONTROL & BOOTSTRAP

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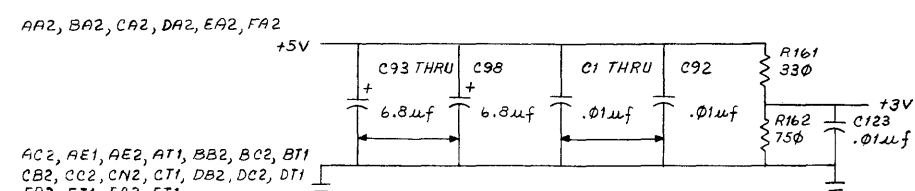
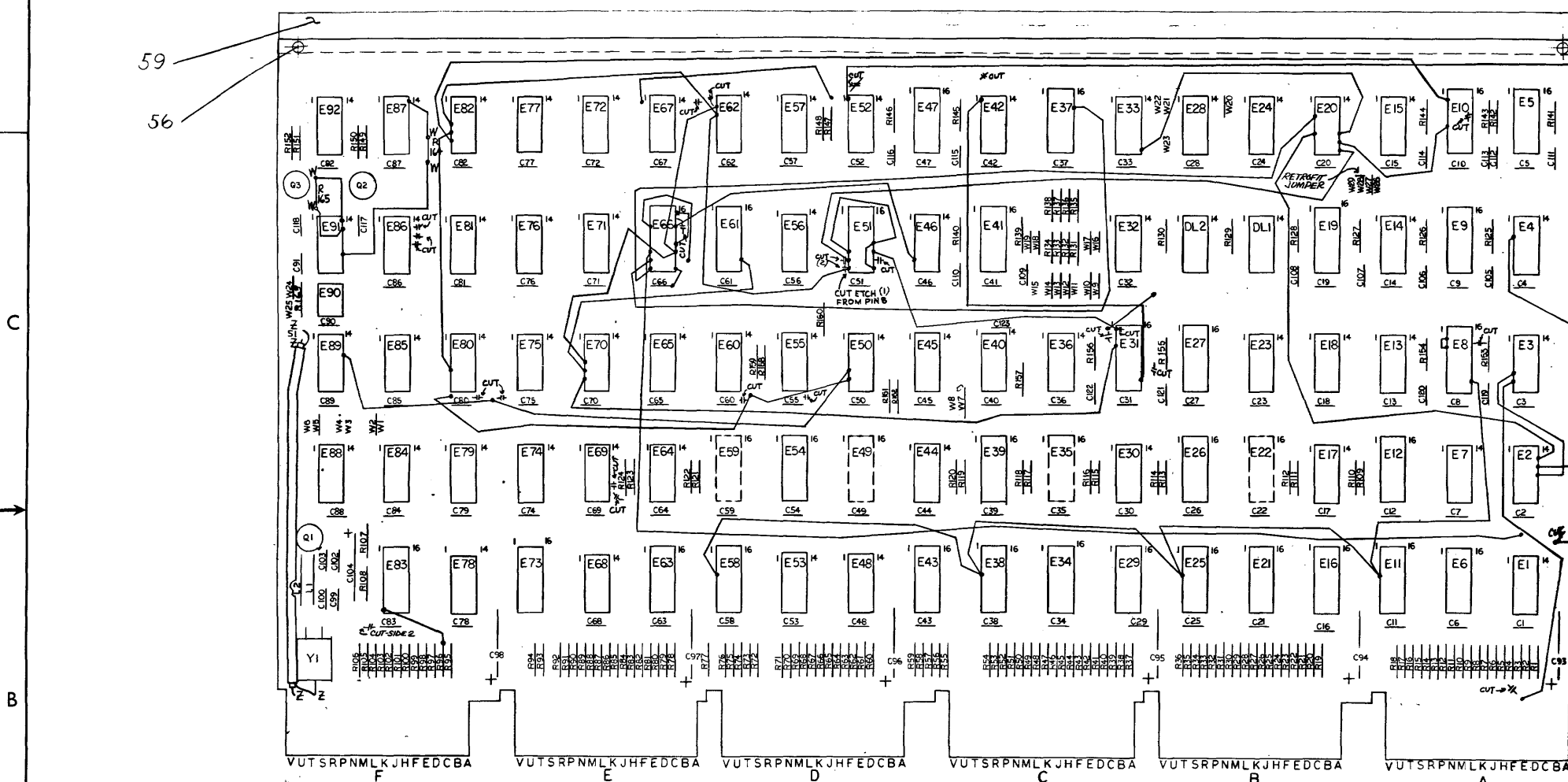
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JUMPERS  INSERT

EDGE CUTOFF	BOOTSTRAP ROM SELECT 1 & 2	VECTOR INTERRUPT	INTENSITY DELAY	CHARACTER SPACING	INT CLOCK	ADDRESS SELECT	
W1 = 1024 UNITS	W26 = DIS. 1	W8 = D08	W21 = 550 NS	W4 = 72 CHAR 29 LINES	W24 = INT.	W11 = A12	W18 = A05
W2 = 768 UNITS	W27 = ENA. 1	W7 = D07	W20 = 600 NS	W3 = 86 CHAR 32 LINES	W25 = EXT.	W13 = A09	W14 = A04
	W28 = ENA. 2	W10 = D06	W23 = 700 NS	W5 = 72 CHAR 32 LINES		W16 = A08	W12 = A03
	W29 = DIS. 2	W15 = D05	W22 = 1000 NS	W6 = 86 CHAR 29 LINES		W19 = A07	
		W9 = D04				W17 = A06	



IC TYPE	GND	+5V
8838	8	16
75451	4	8
74193	8	16
74157	8	16
7496	12	5
7476	13	5
5603	8	16
2602	8	16
380	1	8
314	1	8

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

IC PIN LOCATIONS

REF	X-Y COORDINATE HOLE LOCATION	K-CO-M7014-B-4	1
REF	ASSY/DRILLING HOLE LAYOUT	D-AH-M7014-B-5	2
REF	MODULE ECO HISTORY	B-MH-M7014-B-6	3
1	ETCHED CIRCUIT BOARD	5010129	4
10	C100, C103, C106, C107, C109, C112, C115, C119, C121, C122	CAP 10PF 5% 100V DM	5
2	C102, C110	CAP 100PF 5% 100V DM	6
4	C105, C108, C120, C111	CAP 330PF 5% 100V DM	7
2	C117, C118	CAP 560PF 5% 100V DM	8
6	C93 THRU C98	CAP 6.8UF 20% 35V TANT	9
4	C99, C114, C116, C123	CAP .01UF 20% 100V	10
1	C104	CAP 1.5UF 10% 20V	11
91	C1 THRU C72, C74 THRU C92	CAP .22UF 80% 20V	12
1	R161	RES 330 5% 1/4W	13
56	R1, R3, R5, R7, R9, R12, R13, R16, R17, R19, R22, R23, R25, R28, R30, R32, R34, R36, R37, R40, R41, R44, R45, R48, R50, R52, R54, R55, R57, R59, R62, R63, R65, R67, R69, R72, R74, R75, R77, R80, R81, R83, R86, R87, R89, R92, R93, R96, R99, R101, R103, R105, R147, R150, R151, R158	RES 390 5% 1/4W	14
27	R109, THRU R124, R131 THRU R138, R157, R164, R165	RES 1K 5% 1/4W	15
8	R126, R127, R139, R142, R145, R153, R155, R156	RES 4.7K 5% 1/4W	16
61	R2, R4, R6, R8, R10, R11, R14, R15, R18, R20, R21, R24, R26, R27, R29, R31, R33, R35, R38, R39, R42, R43, R46, R47, R49, R51, R53, R56, R58, R60, R61, R64, R66, R68, R70, R71, R73, R76, R78, R79, R82, R84, R85, R88, R90, R91, R94, R95, R97, R98, R100, R102, R104, R106, R129, R130, R148, R149, R152, R159, R160	RES 180 5% 1/4W	17
1	R162	RES 750 5% 1/4W	18
5	R154	RES 22K 5% 1/4W	19
1	R107	RES 270 5% 1/4W	20
1	R108	RES 100K 5% 1/4W	21
2	Q2, Q3	TRANS. DEC 3009B	22
1	Q1	TRANS. 2N5245	23
1	L2	COIL 2.2MH	24
1	L1	COIL 2.2UH	25
2	DL1, DL2	DELAY LINE L1842	26
1	Y1	CRYSTAL 20.0 MC	27
3	E28, E42, E77	IC DEC 7474	28
11	E2, E14, E15, E57, E70, E71, E72, E75, E80, E82, E89	IC DEC 7400	29
1	E13	IC DEC 7410	30
1	E68	IC DEC 7453	31
4	E37, E51, E61, E66	IC DEC 7476	32
19	E4, E7, E32, E33, E46, E62, E67, E74, E78, E79, E85, E86, E88	IC DEC 7402	33
2	E40, E56	IC DEC 74H21	34
2	E1, E55	IC DEC 380	35
7	E3, E18, E50, E60, E69, E76, E84	IC DEC 7404	36
1	E48	IC DEC 314	37
11	E17, E30, E44, E45, E52, E53, E64, E65, E87, E91, E92	IC DEC 8881	38
2	R144, R146	RES 6.8K 5% 1/4W	39

FIRST USED ON OPTION MODEL		PARTS LIST	
GT40	ETCH BOARD REV	B	
DRN. J. Vanier	DATE	10-2-72	
CHK'D. J. Vanier	DATE	11/8/72	
ENG. J. Vanier	DATE	11/8/72	
PROD. J. Vanier	DATE	11/8/72	
2N5245	SAME		
DEC. 3009B	2H3646		
DEC NO.	EIA NO.	DEC NO.	EIA NO.
SEMICONDUCTOR CONVERSION CHART			
SCALE	NEXT HIGHER ASSY		B-DD-GT40-0
SHEET 2 OF	DIST.	SIZE/CODE	M7014-0-1
		NUMBER	1
		REV.	A

8 7 6 5 4 3 2 1

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NOTES:

2	E23, E36	IC DEC 8242	1909712	39
4	E11, E25, E38, E58	IC DEC 74193	1910018	40
1	E20	IC DEC 7437	1910091	41
1	E19	IC DEC 2602	1910257	42
1	E27	IC DEC 7496	1910363	43
1	E90	IC DEC 75451	1910406	44
7	E5, E8, E9, E10, E31, E41, E47	IC DEC 74123	1910436	45
1	E83	IC DEC 74157	1910655	46
1	E24	IC DEC 7427	1910878	47
7	E6, E16, E21, E29, E34, E43, E63	IC DEC 8838 OR LM331	1911117	48
1	E12	IC DEC IM5603 OR 74187	23016A2	49
1	E54	IC DEC IM5603 OR 74187	23017A2	50
1	E39	IC DEC IM5603 OR 74187	23018A2	51
1	E26	IC DEC IM5603 OR 74187	23019A2	52
4	E22, E35, E49, E59	IC DEC IM5603 OR 74187 (OPTIONAL)		53
1	E81	IC DEC 74H74	1909667	54
1	E73	PRIORITY JUMPER (LEVEL) PLUG	5408776	55
12		EYELET GS-4-7	9006732	56
A/R		INSULATED JUMPER L-2007-1	9009185	57
1		COAX CABLE RG174U 6 IN. LG	9107530	58
1		HANDLE ASSY MODULE	1210711-2	59
REF		BOOT STRAP ROM PATTERNS	K-RL-M7014-0-8	60
1	C113	CAP 120 PF 5% 100V	1000018	61
1	R163	RES 47 OHM 5% 1/4 W	1300202	62
1	R125	RES 68 K OHM 5% 1/4 W	1301327	63

D  
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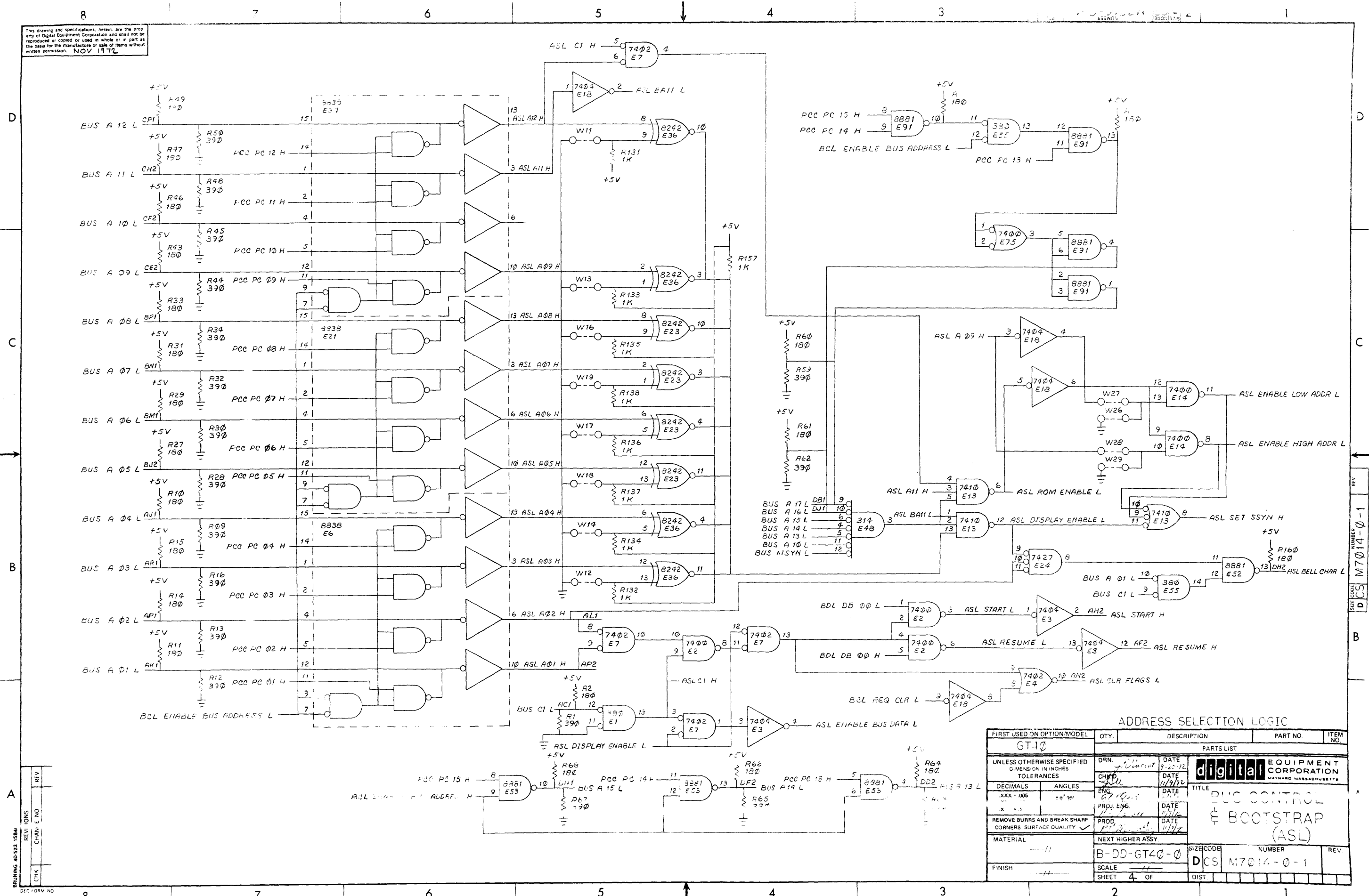
REV A  
NUMBER DCS M7014-0-1  
B

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
FIRST USED ON OPTION MODEL				
GT40				
ETCH BOARD REV B				
PARTS LIST				
DRN. DATE 11-6-71		digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS		
CHK'D. DATE 11/8/71		TITLE <b>BUS CONTROL &amp; BOOTSTRAP</b>		
ENG. DATE 11/8/71				
PROJ. ENG. DATE 11/8/71				
PROD. DATE 11/8/71				
NEXT HIGHER ASSY		SIZE CODE NUMBER REV. DCS M7014-0-1 A		
B-DD-GT40-0		SCALE		
SEMICONDUCTOR CONVERSION CHART		SHEET 3 OF DIST.		

IC TYPE	GND	+5V
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE		
IC PIN LOCATIONS		

8 7 6 5 4 3 2 1

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ADDRESS SELECTION LOGIC

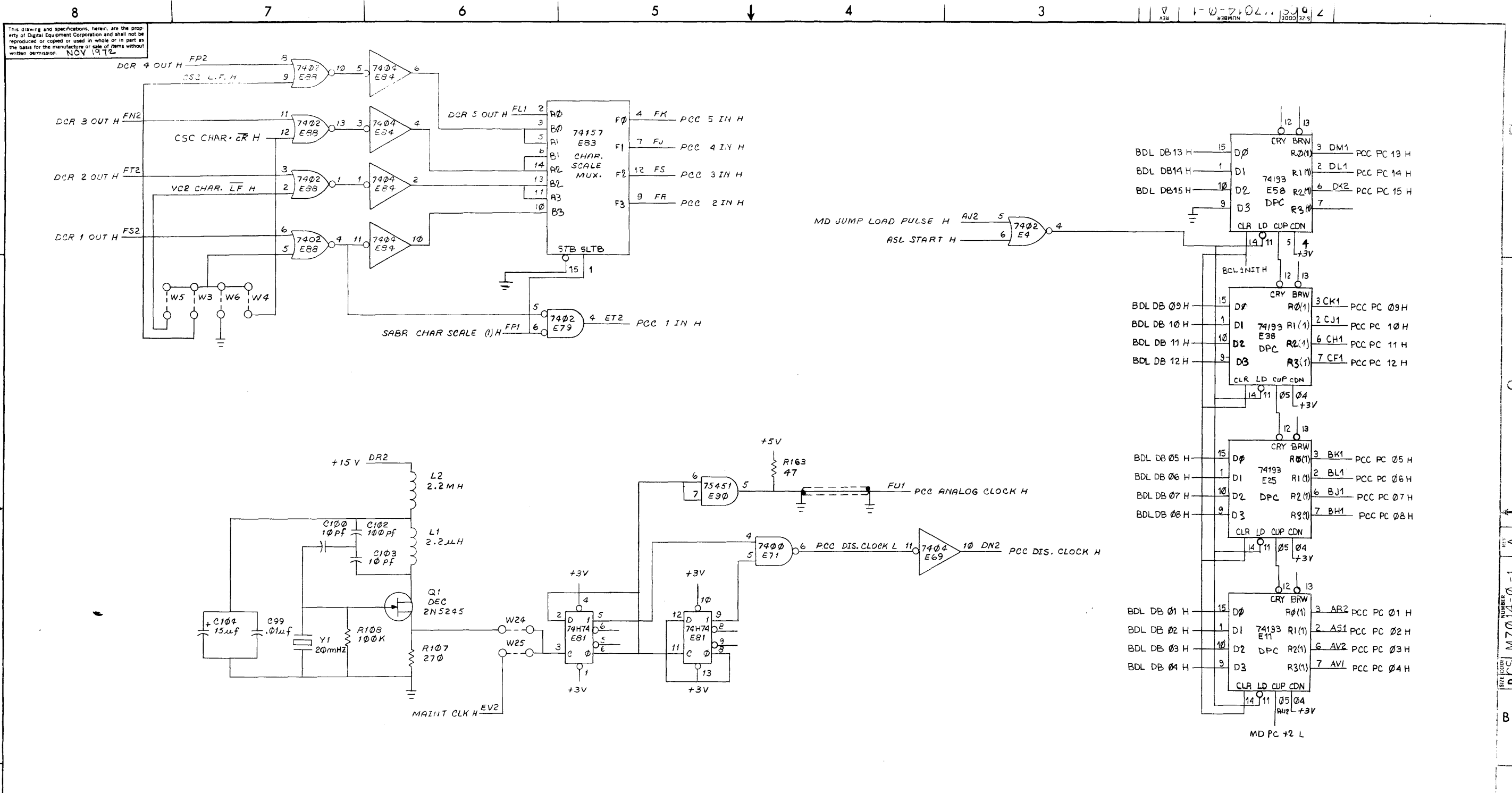
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN 1/11/72	DATE 1/11/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS .XXX - .005	ANGLES +0° 30'	ENG 1/11/72	TITLE PUC CONTROL & BOOTSTRAP (ASL)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD 1/11/72	DATE 1/11/72	MATERIAL NEXT HIGHER ASSY.	
			B-DD-GT40-0	SIZE CODE DCS
				NUMBER M7014-0-1
				REV
				SHEET 4 OF
				DIST

BRUNING 40522 1584  
REV IONS  
CHAN E NO  
CHK

REV  
NUMBER  
M7014-0-1  
REV



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PROGRAM COUNTER AND CLOCK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.
GT40			
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN	DATE	
DECIMALS	CHK'D	DATE	
.XXX = .005	ENG.	DATE	
.XX = .02	PROJ. ENG.	DATE	
ANGLES			TITLE
±0° 30'			BUS CONTROL & BOOTSTRAP (PCC)
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD.	DATE	
MATERIAL	NEXT HIGHER ASSY.		
	B-DD-GT40-0	SIZE CODE	NUMBER
FINISH	SCALE	DCS M7014-0-1	REV. 4
	SHEET 6 OF	DIST.	

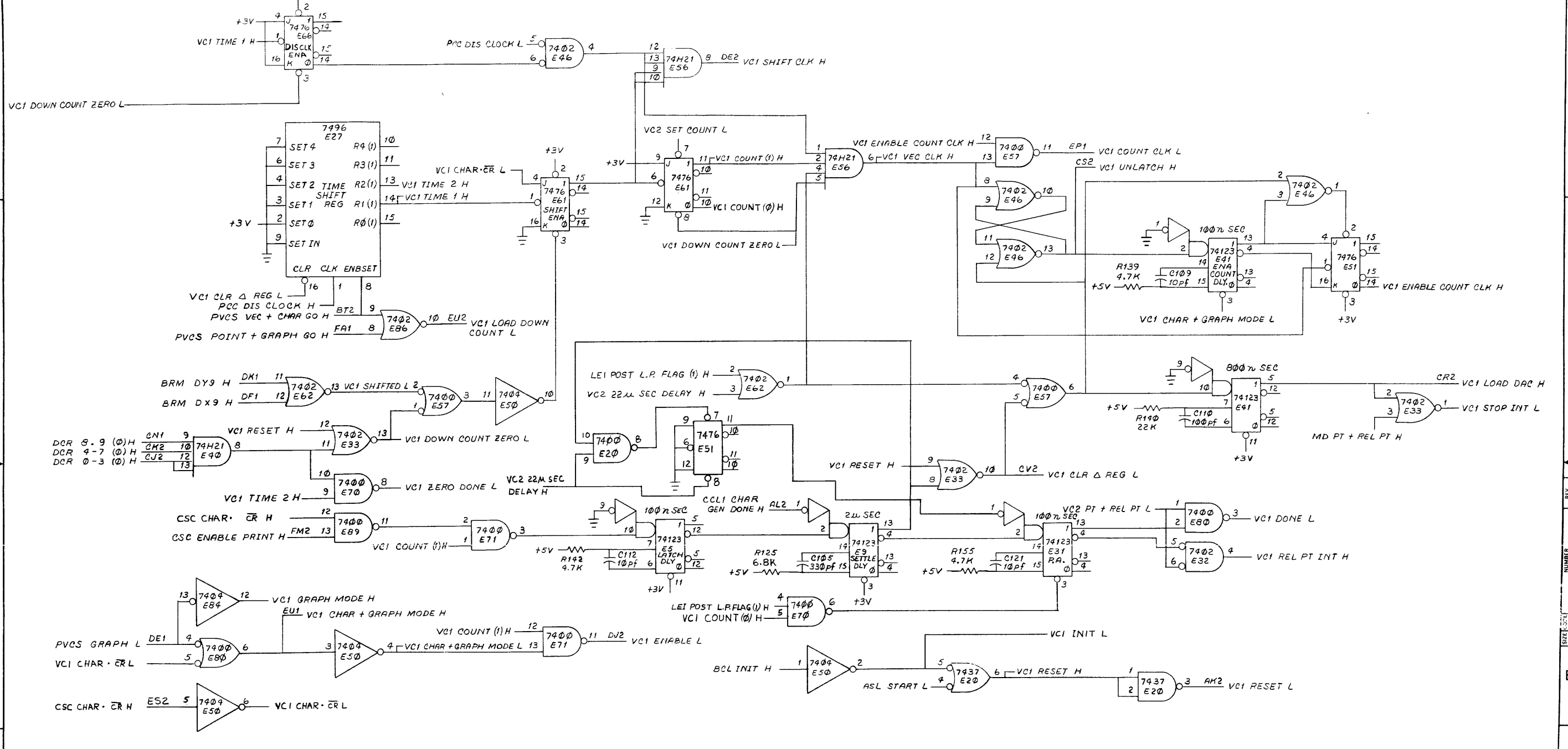
REV.	DATE	BY	CHK.
1			
2			
3			
4			

DEC FORM NO DRD 102-B

BRUNING 40-522 1584E

8 7 6 5 4 3 2 1

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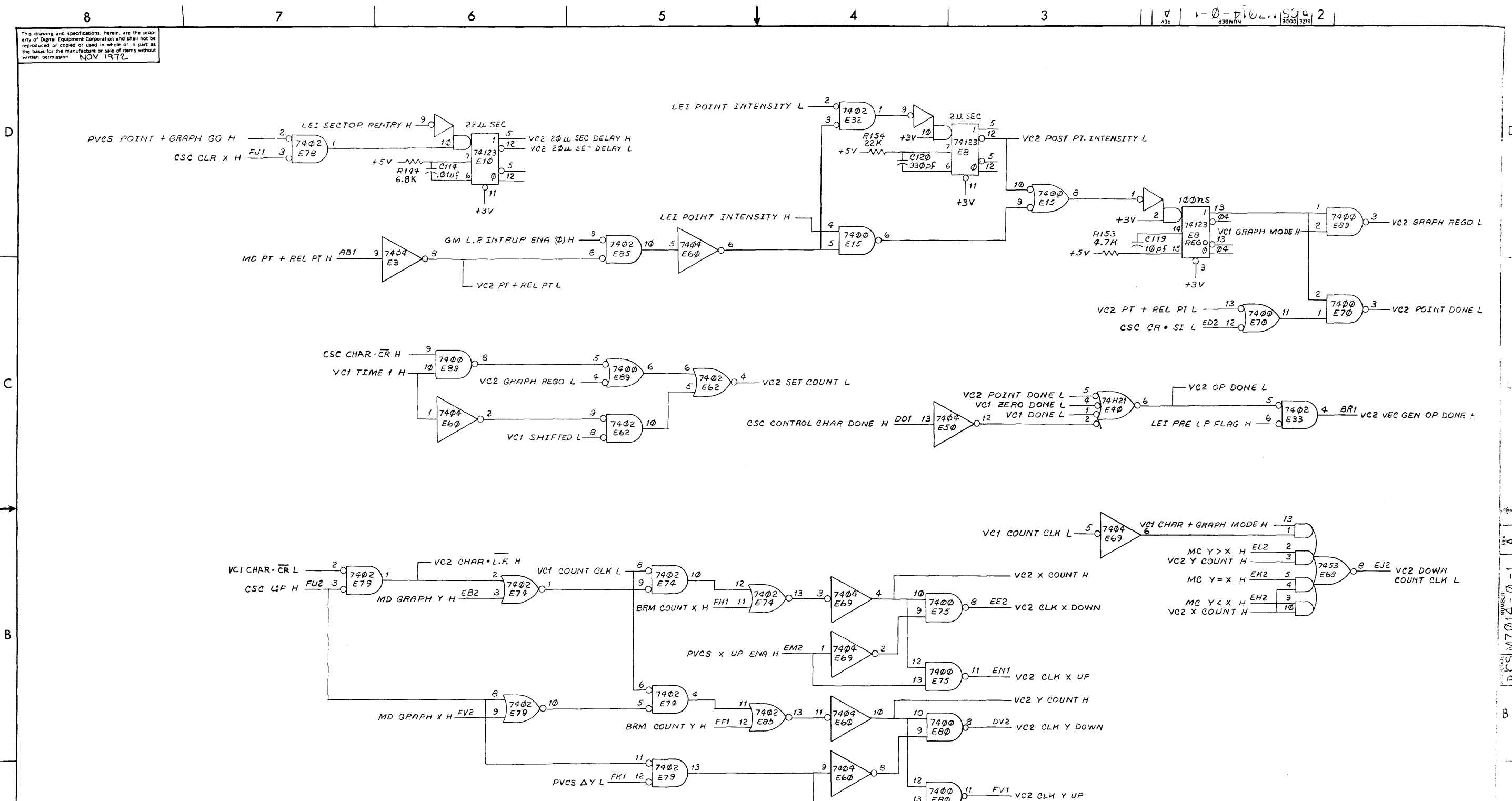


VECTOR CONTROL 1

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.	
GT40					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN. <i>[Signature]</i> DATE 9/18/72	 <b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS		
DECIMALS	ANGLES	CHK'D. <i>[Signature]</i> DATE 11/12/72			
.XXX - .005	±0° 30'	ENG. <i>[Signature]</i> DATE 11/12/72			
.XX = .02		PROJ. ENG. <i>[Signature]</i> DATE 11/12/72			
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD. <i>[Signature]</i> DATE 11/12/72	TITLE <b>BUS CONTROL &amp; BOOTSTRAP (VC1)</b>		
MATERIAL		NEXT HIGHER ASSY.			
FINISH		SCALE	SIZE CODE	NUMBER	REV.
		SHEET 7 OF	B-DD-GT40-0	DCS M7014-0-1	A

BRUNING 40-522 15840  
 REVISIONS  
 CHANGE NO.  
 REV.  
 CHK.

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VECTOR CONTROL 2

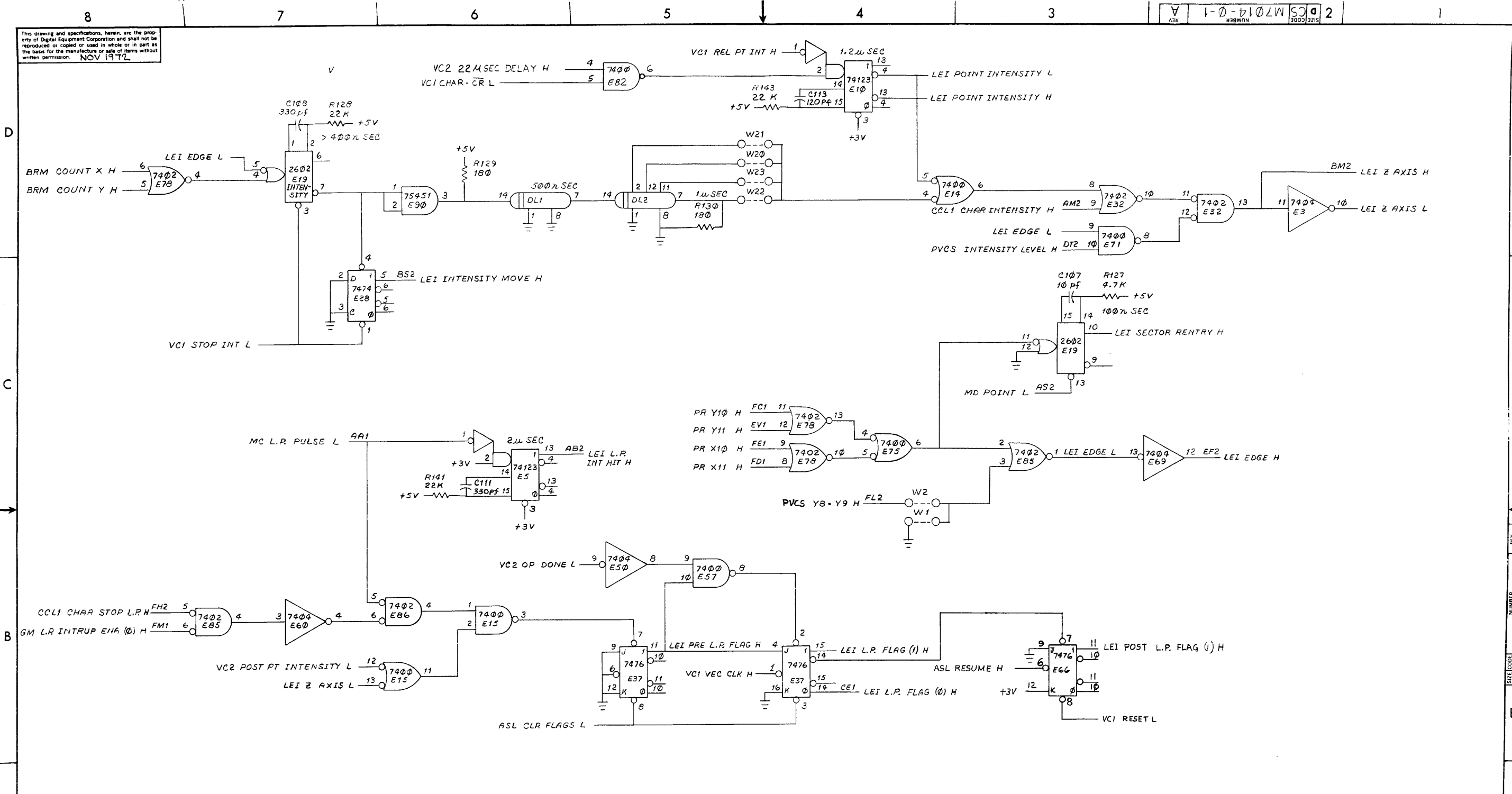
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.
GT40			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES			
DECIMALS	ANGLES	TITLE	
XXX = .005	±0° 30'	BUS CONTROL & BOOTSTRAP (VC2)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY			
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER
FINISH	SCALE	DCS	M7014-0-1
	SHEET 8 OF	DIST.	

REV	NO	DATE
REV	NO	DATE
CHK	NO	DATE

DEF: 100M NO  
REF: 102-B

DCS M7014-0-1

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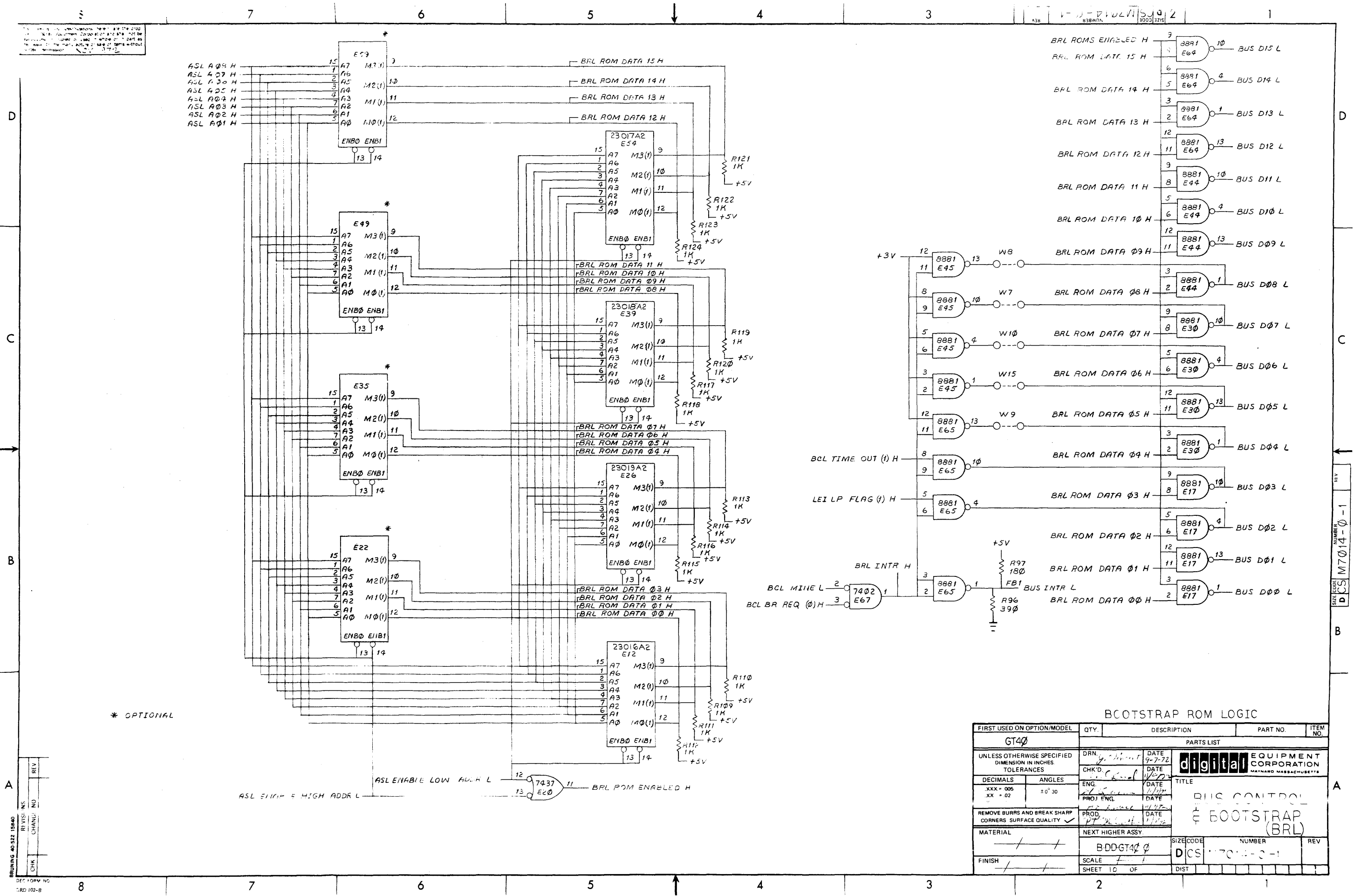
LIGHT PEN, EDGE AND INTENSITY LOGIC

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN <i>G. Us...</i>	DATE 4-14-72	<b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS <b>TITLE</b> <b>BUS CONTROL &amp; BOOTSTRAP (LEI)</b>	
DECIMALS	CHK'D <i>R. O...</i>	DATE		
ANGLES	ENG. <i>R. O...</i>	DATE		
.XXX - .005	PROJ. ENG.	DATE		
.XX - .02		DATE		
X = 1		DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD. <i>R. O...</i>	DATE	MATERIAL NEXT HIGHER ASSY. B-DD-GT40-0 SCALE SHEET 9 OF	
FINISH			SIZE CODE <b>DCS</b>	NUMBER <b>M7014-0-1</b>
			DIST	REV. <b>A</b>

BRUNING 40-522 15840  
DEC FORM NO  
DRD 102-B

REV	CHANGE NO	REVISIONS





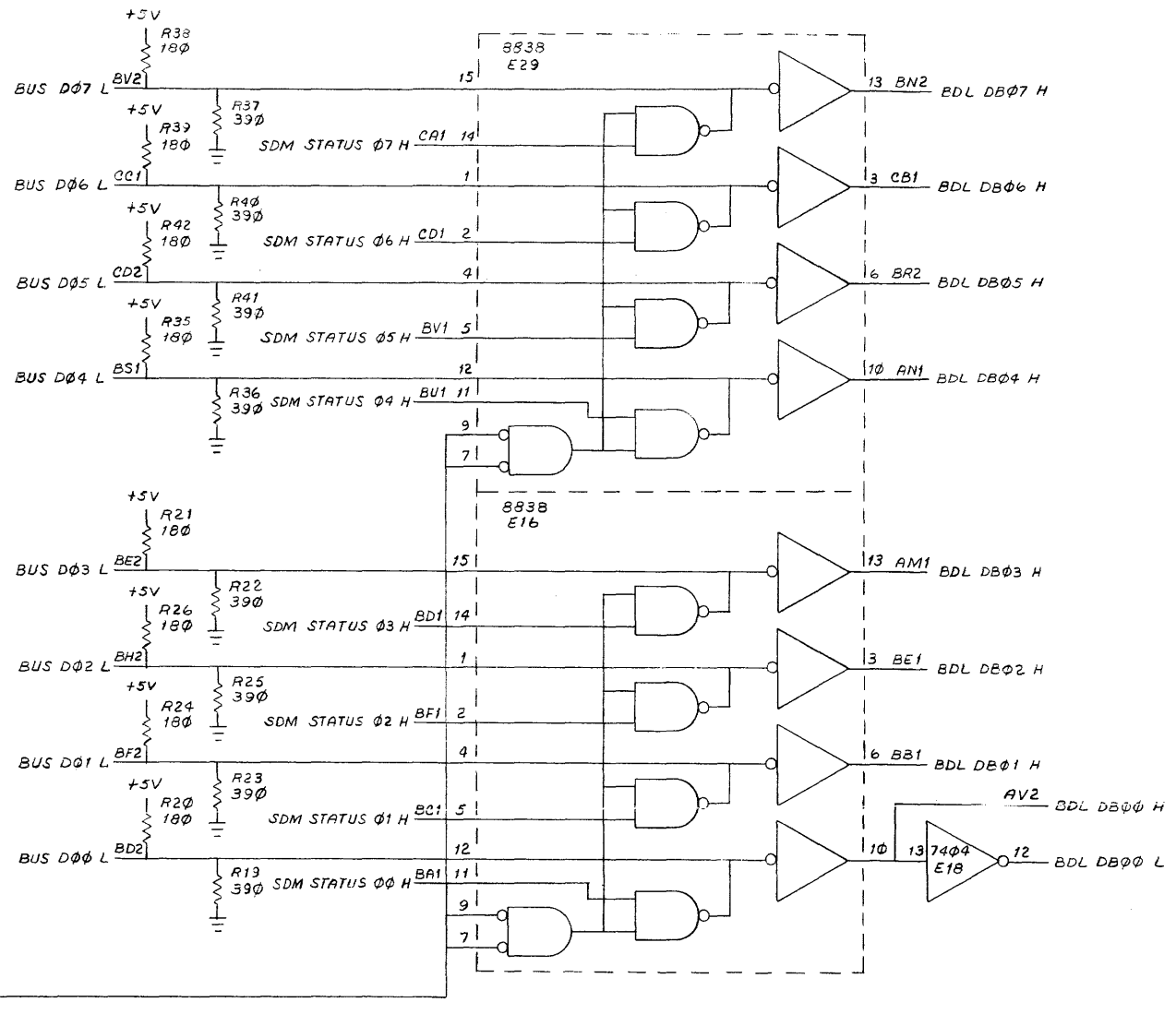
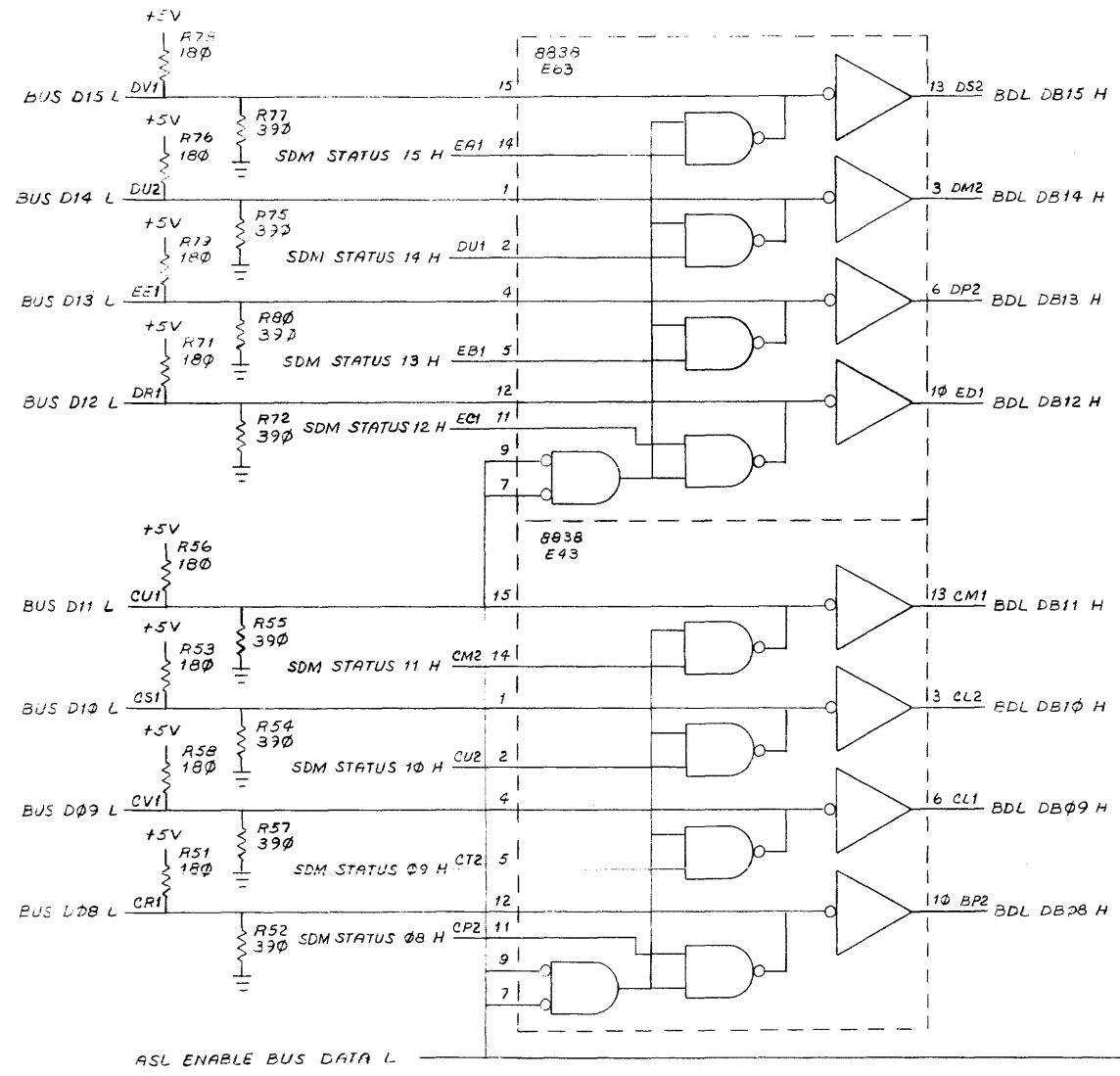
\* OPTIONAL

REV	NO
CHG	NO
BRUNING 40-522 15640	
DEC FORM NO	
TRD 102-B	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN	DATE	<b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
DECIMALS	ANGLES	CHK'D	DATE	
.XXX ± .005	± 0° 30'	ENG	DATE	
XX ± .02		PROJ ENG	DATE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD	DATE	TITLE
MATERIAL	NEXT HIGHER ASSY	BUS CONTROL & BOOTSTRAP (BRL)		
FINISH	SCALE	BDDGT40	SIZE/CODE	NUMBER
	SHEET 10 OF		DIST	REV

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1-0-0102W SCS 2



REV	NO
CHG	NO
REV	NO
CHG	NO

BUS DATA LINES

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN: Vincent	DATE: 9-26-72	<p>TITLE BUS CONTROL &amp; BOOTSTRAP (BDL)</p>
DECIMALS	ANGLES	CHK'D: [Signature]	DATE: 11/1/72	
.XXX = .005	±0° 30'	ENG: [Signature]	DATE: 11/1/72	
.XX = .02		PROJ. ENG: [Signature]	DATE: 11/1/72	
.X = .1		PROD. [Signature]	DATE: 11/1/72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		NEXT HIGHER ASSY.		SIZE CODE
MATERIAL		B-DD-GT40-0		NUMBER
FINISH		SCALE		DCS M7014-0-1
		SHEET 11 OF		REV.


REV. NO. M7014-0-1

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THIS FACE SHEET CONTAINS THE FOLLOWING CHIP PART NUMBERS :

- PART NUMBER
- 23-016A2
- 23-017A2
- 23-018A2
- 23-019A2

REV. NUMBER M7014-0-8 SIZE CODE KRL

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40				
PARTS LIST				
DRN. <i>CBM Cay</i>	DATE 10-11-72	<div style="text-align: center;">  <p><b>digital EQUIPMENT CORPORATION</b> MAYFARD, MASSACHUSETTS</p> </div>		
CHK'D. <i>J. Nugent</i>	DATE 10-11-72			
ENG. <i>B. Kelly</i>	DATE 10-11-72			
PROJ. ENG. <i>H.E. Lawrence</i>	DATE 11/9/72			
PROD. <i>P. McCarthy</i>	DATE 11/4/72			
NEXT HIGHER ASSEMBLY		<div style="text-align: center;"> <p>BOOTSTRAP ROM PATTERNS</p> </div>		
B-DD-GT40-0				
SCALE <i>1/1</i>	SIZE CODE KRL			
SHEET 1	OF 33	DIST.		

REV.	
CHANGE NO.	
CHK	

ROM PATTERN SPEC

DEC PART NUMB1 23-016A2  
 ORIGINATOR1 BRIAN O'DONNELL  
 DATE OF ORIGIN1 10-9-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	0101	05
1	001	0110	06
2	002	1101	15
3	003	0101	05
4	004	0101	05
5	005	0111	07
6	006	0111	07
7	007	1000	10
8	010	0111	07
9	011	0001	01
10	012	1010	12
11	013	0111	07
12	014	0001	01
13	015	0000	00
14	016	0110	06
15	017	1000	10
16	020	0001	01
17	021	0010	02
18	022	0000	00
19	023	0001	01
20	024	1001	11
21	025	1110	16
22	026	0001	01
23	027	1000	10
24	030	0000	00
25	031	0111	07
26	032	0010	02
27	033	0111	07
28	034	0110	06
29	035	0111	07
30	036	1000	10
31	037	0000	00
32	040	0000	00
33	041	0000	00
34	042	0110	06
35	043	1010	12

ROM PATTERN SPEC

DEC PART NUMB1 23-016A2  
 ORIGINATOR1 BRIAN O'DONNELL  
 DATE OF ORIGIN1 10-9-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	0101	05
37	045	0101	05
38	046	0101	05
39	047	0101	05
40	050	1101	15
41	051	1001	11
42	052	0001	01
43	053	1001	11
44	054	0111	07
45	055	0111	07
46	056	0100	04
47	057	0110	06
48	060	0001	01
49	061	0010	02
50	062	0010	02
51	063	0111	07
52	064	1000	10
53	065	0111	07
54	066	0100	04
55	067	0100	04
56	070	0000	00
57	071	0000	00
58	072	0000	00
59	073	1110	16
60	074	0000	00
61	075	1110	16
62	076	0000	00
63	077	0111	07
64	100	0000	00
65	101	0000	00
66	102	0000	00
67	103	0100	04
68	104	0000	00
69	105	0100	04
70	106	0000	00
71	107	0100	04

ROM PATTERN SPEC

DEC PART NUMB1 23-016A2  
 ORIGINATOR1 BRIAN O'DONNELL  
 DATE OF ORIGIN1 10-9-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	0000	00
73	111	0100	04
74	112	0000	00
75	113	0100	04
76	114	0111	07
77	115	0000	00
78	116	0000	00
79	117	0100	04
80	120	0000	00
81	121	0100	04
82	122	0000	00
83	123	0110	06
84	124	0111	07
85	125	0000	00
86	126	0110	06
87	127	0000	00
88	130	1000	10
89	131	0111	07
90	132	0000	00
91	133	0111	07
92	134	0000	00
93	135	0110	06
94	136	0111	07
95	137	1111	17
96	140	0011	03
97	141	0111	07
98	142	0110	06
99	143	0000	00
100	144	1010	12
101	145	0111	07
102	146	0100	04
103	147	1000	10
104	150	1100	14
105	151	0110	06
106	152	0000	00
107	153	1110	16

ROM PATTERN SPEC

DEC PART NUMB1 23-016A2  
 ORIGINATOR1 BRIAN O'DONNELL  
 DATE OF ORIGIN1 10-9-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	0000	00
109	155	0100	04
110	156	1110	16
111	157	1111	17
112	160	0001	01
113	161	1000	10
114	162	1101	15
115	163	0111	07
116	164	1000	10
117	165	0111	07
118	166	0010	02
119	167	0110	06
120	170	0111	07
121	171	1100	14
122	172	1101	15
123	173	1000	10
124	174	0000	00
125	175	0111	07
126	176	1101	15
127	177	0011	03
128	200	0111	07
129	201	0111	07
130	202	1000	10
131	203	1000	10
132	204	0111	07
133	205	0000	00
134	206	0101	05
135	207	0111	07
136	210	1100	14
137	211	1010	12
138	212	0111	07
139	213	0110	06
140	214	0111	07
141	215	0100	04
142	216	1100	14
143	217	0110	06

DEC PART NUMB1 23-016A2  
 ORIGINATOR1 BRIAN O'DONNELL  
 DATE OF ORIGIN1 10-9-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	0000	00
145	221	0111	07
146	222	0001	01
147	223	1000	10
148	224	0111	07
149	225	0110	06
150	226	0111	07
151	227	1110	16
152	230	1011	13
153	231	0111	07
154	232	1000	10
155	233	0111	07
156	234	1110	16
157	235	1001	11
158	236	0111	07
159	237	1010	12
160	240	1000	10
161	241	0111	07
162	242	0000	00
163	243	0010	02
164	244	0111	07
165	245	0111	07
166	246	1010	12
167	247	0111	07
168	250	0010	02
169	251	1010	12
170	252	0000	00
171	253	0110	06
172	254	1000	10
173	255	0011	03
174	256	0111	07
175	257	1000	10
176	260	0000	00
177	261	1011	13
178	262	0111	07
179	263	0000	00

DEC PART NUMB1 23-016A2  
 ORIGINATOR1 BRIAN O'DONNELL  
 DATE OF ORIGIN1 10-9-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	0111	07
181	265	1010	12
182	266	0101	05
183	267	0101	05
184	270	0100	04
185	271	0101	05
186	272	0010	02
187	273	1111	17
188	274	0111	07
189	275	1010	12
190	276	0001	01
191	277	0111	07
192	300	0110	06
193	301	1000	10
194	302	0011	03
195	303	1001	11
196	304	0000	00
197	305	0010	02
198	306	0111	07
199	307	1000	10
200	310	0111	07
201	311	1000	10
202	312	0001	01
203	313	0011	03
204	314	0111	07
205	315	1110	16
206	316	0011	03
207	317	0000	00
208	320	0000	00
209	321	0101	05
210	322	0111	07
211	323	0111	07
212	324	1110	16
213	325	0110	06
214	326	0111	07
215	327	1000	10

ROM PATTERN SPEC

DEC PART NUMB1 23-016A2  
 ORIGINATOR1 BRIAN O'DONNELL  
 DATE OF ORIGIN1 10-9-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	0000	00
217	331	0000	00
218	332	0111	07
219	333	0111	07
220	334	1100	14
221	335	0110	06
222	336	0111	07
223	337	1000	10
224	340	0011	03
225	341	0010	02
226	342	1110	16
227	343	0001	01
228	344	0110	06
229	345	0000	00
230	346	0111	07
231	347	0111	07
232	350	0110	06
233	351	0000	00
234	352	1110	16
235	353	1110	16
236	354	0111	07
237	355	0110	06
238	356	0111	07
239	357	1110	16
240	360	1011	13
241	361	0111	07
242	362	1000	10
243	363	0000	00
244	364	0000	00
245	365	0110	06
246	366	0111	07
247	367	1110	16
248	370	0100	04
249	371	0000	00
250	372	0000	00
251	373	0000	00

ROM PATTERN SPEC

DEC PART NUMB1 23-016A2  
 ORIGINATOR1 BRIAN O'DONNELL  
 DATE OF ORIGIN1 10-9-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	0000	00
253	375	1000	10
254	376	0000	00
255	377	0000	00

DEC PART NUMB: 23-017A2  
 ORIGINATOR: BRIAN O'DONNELL  
 DATE OF ORIGIN: 10-10-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	0001	01
1	001	0000	00
2	002	0000	00
3	003	0001	01
4	004	0000	00
5	005	0001	01
6	006	0000	00
7	007	0000	00
8	010	0001	01
9	011	0000	00
10	012	0001	01
11	013	0001	01
12	014	0000	00
13	015	0000	00
14	016	0001	01
15	017	0001	01
16	020	0000	00
17	021	0001	01
18	022	1110	16
19	023	0001	01
20	024	0001	01
21	025	1110	16
22	026	0001	01
23	027	0000	00
24	030	0000	00
25	031	0000	00
26	032	0000	00
27	033	0000	00
28	034	0000	00
29	035	0000	00
30	036	0000	00
31	037	0000	00
32	040	0000	00
33	041	0000	00
34	042	0001	01
35	043	1110	16

DEC PART NUMB: 23-017A2  
 ORIGINATOR: BRIAN O'DONNELL  
 DATE OF ORIGIN: 10-10-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	0001	01
37	045	0010	02
38	046	0000	00
39	047	0001	01
40	050	0000	00
41	051	0000	00
42	052	0101	05
43	053	0001	01
44	054	0000	00
45	055	0000	00
46	056	0000	00
47	057	0001	01
48	060	0000	00
49	061	0000	00
50	062	0000	00
51	063	0110	06
52	064	1110	16
53	065	0000	00
54	066	0000	00
55	067	0001	01
56	070	0000	00
57	071	0000	00
58	072	1000	10
59	073	1000	10
60	074	1000	10
61	075	1000	10
62	076	0001	01
63	077	0000	00
64	100	0000	00
65	101	0000	00
66	102	1000	10
67	103	1000	10
68	104	1000	10
69	105	1000	10
70	106	1000	10
71	107	1000	10



DEC PART NUMB: 23-017A2  
 ORIGINATOR: BRIAN O'DONNELL  
 DATE OF ORIGIN: 10-10-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	1000	10
73	111	1000	10
74	112	0001	01
75	113	0001	01
76	114	0000	00
77	115	0000	00
78	116	0000	00
79	117	0000	00
80	120	1000	10
81	121	0000	00
82	122	1000	10
83	123	0000	00
84	124	0000	00
85	125	0000	00
86	126	0000	00
87	127	0000	00
88	130	1111	17
89	131	0000	00
90	132	0000	00
91	133	0010	02
92	134	0000	00
93	135	0000	00
94	136	0010	02
95	137	0000	00
96	140	0000	00
97	141	0000	00
98	142	0000	00
99	143	0001	01
100	144	0001	01
101	145	0000	00
102	146	0000	00
103	147	0000	00
104	150	0000	00
105	151	0001	01
106	152	0000	00
107	153	0100	04

DEC PART NUMB: 23-017A2  
 ORIGINATOR: BRIAN O'DONNELL  
 DATE OF ORIGIN: 10-10-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
118	154	1111	17
119	155	0000	00
120	156	0010	02
121	157	0000	00
122	160	0000	00
123	161	0010	02
124	162	0000	00
125	163	0000	00
126	164	0001	01
127	165	0010	02
128	166	0000	00
129	167	0000	00
130	170	0010	02
131	171	0000	00
132	172	0000	00
133	173	0001	01
134	174	0001	01
135	175	0010	02
136	176	0000	00
137	177	0000	00
138	200	0000	00
139	201	0000	00
140	202	0010	02
141	203	0000	00
142	204	1000	10
143	205	0000	00
144	206	1000	10
145	207	0001	01
146	210	0010	02
147	211	0000	00
148	212	0000	00
149	213	0010	02
150	214	1000	10
151	215	0001	01
152	216	1000	10
153	217	1001	11

ROM PATTERN SPEC

DEC PART NUMB: 23-017A2  
 ORIGINATOR: BRIAN O'DONNELL  
 DATE OF ORIGIN: 10-13-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	0001	01
145	221	0001	01
146	222	0000	00
147	223	0001	01
148	224	0000	00
149	225	1111	17
150	226	0000	00
151	227	0010	02
152	230	0000	00
153	231	0001	01
154	232	0000	00
155	233	1000	10
156	234	0000	00
157	235	1000	10
158	236	1001	11
159	237	0000	00
160	240	0010	02
161	241	0101	05
162	242	1111	17
163	243	0010	02
164	244	0001	01
165	245	0000	00
166	246	0000	00
167	247	0000	00
168	250	0000	00
169	251	0001	01
170	252	1111	17
171	253	0001	01
172	254	0001	01
173	255	0000	00
174	256	0000	00
175	257	0000	00
176	260	1000	10
177	261	0000	00
178	262	0000	00
179	263	0000	00

ROM PATTERN SPEC

DEC PART NUMB: 23-017A2  
 ORIGINATOR: BRIAN O'DONNELL  
 DATE OF ORIGIN: 10-13-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	0000	00
181	265	0000	00
182	266	0001	01
183	267	1110	16
184	270	0000	00
185	271	0010	02
186	272	0000	00
187	273	0000	00
188	274	0000	00
189	275	0000	00
190	276	0001	01
191	277	0000	00
192	300	0000	00
193	301	0000	00
194	302	1000	10
195	303	0000	00
196	304	0001	01
197	305	1111	07
198	306	0000	00
199	307	0000	00
200	310	0000	00
201	311	1111	17
202	312	1001	11
203	313	0000	00
204	314	0000	00
205	315	1111	17
206	316	0110	06
207	317	0100	04
208	320	1111	17
209	321	0000	00
210	322	0000	00
211	323	0000	00
212	324	1111	17
213	325	0001	01
214	326	0000	00
215	327	1111	17

DEC PART NUMBER: 23-017A2  
 ORIGINATOR: BRIAN O'BONNELL  
 DATE OF ORIGIN: 10-10-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	0000	00
217	331	0101	05
218	332	0000	00
219	333	0000	00
220	334	1111	17
221	335	0001	01
222	336	0000	00
223	337	1111	17
224	340	1000	10
225	341	0000	00
226	342	0011	03
227	343	0000	00
228	344	0000	00
229	345	0001	01
230	346	0111	07
231	347	0000	00
232	350	0000	00
233	351	0000	00
234	352	0000	00
235	353	0000	00
236	354	0000	00
237	355	1111	17
238	356	0000	00
239	357	0010	02
240	360	0000	00
241	361	0001	01
242	362	0000	00
243	363	1000	10
244	364	0000	00
245	365	0000	00
246	366	0000	00
247	367	1111	17
248	370	1001	11
249	371	0000	00
250	372	0000	00
251	373	1000	10

DEC PART NUMBER: 23-017A2  
 ORIGINATOR: BRIAN O'BONNELL  
 DATE OF ORIGIN: 10-10-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	1110	16
253	375	0000	00
254	376	0000	00
255	377	0000	00

DEC PART NUMB1 23-018A2  
 ORIGINATOR1 BRIAN O'DONNELL  
 DATE OF ORIGIN1 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	0101	05
1	001	0000	00
2	002	1010	12
3	003	0001	01
4	004	0000	00
5	005	0101	05
6	006	0000	00
7	007	1111	17
8	010	0101	05
9	011	0000	00
10	012	0011	03
11	013	0101	05
12	014	0000	00
13	015	1111	17
14	016	0101	05
15	017	1011	13
16	020	1010	12
17	021	0101	05
18	022	0000	00
19	023	0000	00
20	024	0101	05
21	025	1101	15
22	026	0101	05
23	027	0000	00
24	030	1010	12
25	031	1001	11
26	032	0000	00
27	033	1010	12
28	034	0111	07
29	035	1001	11
30	036	0000	00
31	037	0000	00
32	040	0000	00
33	041	0000	00
34	042	0101	05
35	043	1100	14

DEC PART NUMB1 23-018A2  
 ORIGINATOR1 BRIAN O'DONNELL  
 DATE OF ORIGIN1 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	0000	00
37	045	0101	05
38	046	1010	12
39	047	0000	00
40	050	1010	12
41	051	1010	12
42	052	0000	00
43	053	0000	00
44	054	0000	00
45	055	1001	11
46	056	0000	00
47	057	0000	00
48	060	0001	01
49	061	1010	12
50	062	1011	13
51	063	1100	14
52	064	1100	14
53	065	1001	11
54	066	0000	00
55	067	0000	00
56	070	1100	14
57	071	1100	14
58	072	1100	14
59	073	1100	14
60	074	1100	14
61	075	1100	14
62	076	0101	05
63	077	0000	00
64	100	1100	14
65	101	1100	14
66	102	1100	14
67	103	1100	14
68	104	1100	14
69	105	1100	14
70	106	1100	14
71	107	1100	14

DEC PART NUMB1 23-018A2  
ORIGINATOR1 BRIAN O'DONNELL  
DATE OF ORIGIN1 10-11-72

ROM PATTERN SPEC

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	1100	14
73	111	1100	14
74	112	0001	01
75	113	0101	05
76	114	0000	00
77	115	1100	14
78	116	1100	14
79	117	1100	14
80	120	1100	14
81	121	1100	14
82	122	1100	14
83	123	1011	13
84	124	0000	00
85	125	0000	00
86	126	0000	00
87	127	0000	00
88	130	1111	17
89	131	1001	11
90	132	0000	00
91	133	0000	00
92	134	0000	00
93	135	0101	05
94	136	0000	00
95	137	0000	00
96	140	0110	06
97	141	0000	00
98	142	1011	13
99	143	0101	05
100	144	1011	13
101	145	1001	11
102	146	0000	00
103	147	1011	13
104	150	0011	03
105	151	0010	02
106	152	1010	12
107	153	0101	05

DEC PART NUMB1 23-018A2  
ORIGINATOR1 BRIAN O'DONNELL  
DATE OF ORIGIN1 10-11-72

ROM PATTERN SPEC

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	1111	17
109	155	0011	03
110	156	0101	05
111	157	0000	00
112	160	0011	03
113	161	0101	05
114	162	0000	00
115	163	0010	02
116	164	0011	03
117	165	0010	02
118	166	0000	00
119	167	0011	03
120	170	0010	02
121	171	0000	00
122	172	0011	03
123	173	0011	03
124	174	0101	05
125	175	0000	00
126	176	0000	00
127	177	0011	03
128	200	0000	00
129	201	1011	13
130	202	1110	16
131	203	0011	03
132	204	1011	13
133	205	1110	16
134	206	0000	00
135	207	1101	15
136	210	1110	16
137	211	1110	16
138	212	1010	12
139	213	1110	16
140	214	1011	13
141	215	0010	02
142	216	0000	00
143	217	1101	15

ROM PATTERN SPEC

DEC PART NUMB1 23-018A2  
 ORIGINATOR1 BRIAN O'DONNELL  
 DATE OF ORIGIN1 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	0010	02
145	221	0101	05
146	222	0000	00
147	223	0010	02
148	224	1001	11
149	225	1111	17
150	226	1011	13
151	227	1110	16
152	230	0010	02
153	231	0101	05
154	232	1110	16
155	233	1011	13
156	234	1110	16
157	235	0000	00
158	236	1101	15
159	237	1110	16
160	240	1110	16
161	241	0101	05
162	242	1111	17
163	243	1110	16
164	244	0101	05
165	245	0000	00
166	246	1110	16
167	247	0000	00
168	250	1010	12
169	251	0101	05
170	252	0100	04
171	253	0101	05
172	254	1011	13
173	255	1010	12
174	256	1001	11
175	257	0000	00
176	260	1010	12
177	261	0010	02
178	262	1001	11
179	263	0000	00

ROM PATTERN SPEC

DEC PART NUMB1 23-018A2  
 ORIGINATOR1 BRIAN O'DONNELL  
 DATE OF ORIGIN1 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	1001	11
181	265	0000	00
182	266	0000	00
183	267	0101	05
184	270	0000	00
185	271	0101	05
186	272	0000	00
187	273	0011	03
188	274	1001	11
189	275	0000	00
190	276	0000	00
191	277	1001	11
192	300	0000	00
193	301	0100	04
194	302	1011	13
195	303	0011	03
196	304	0101	05
197	305	1101	15
198	306	1001	11
199	307	0000	00
200	310	0000	00
201	311	1110	16
202	312	0000	00
203	313	0001	01
204	314	1001	11
205	315	1110	16
206	316	0000	00
207	317	0101	05
208	320	1111	17
209	321	1010	12
210	322	0000	00
211	323	1001	11
212	324	1111	17
213	325	0000	00
214	326	1001	11
215	327	1111	17

ROM PATTERN SPEC

DEC PART NUMB1 23-018A2  
 ORIGINATOR1 BRIAN O'DONNELL  
 DATE OF ORIGIN1 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	0000	00
217	331	0101	05
218	332	0000	00
219	333	1001	11
220	334	1111	17
221	335	0000	00
222	336	1001	11
223	337	1111	17
224	340	1011	13
225	341	0010	02
226	342	0101	05
227	343	0000	00
228	344	0011	03
229	345	0101	05
230	346	1101	15
231	347	1001	11
232	350	0000	00
233	351	0000	00
234	352	0001	01
235	353	0000	00
236	354	1001	11
237	355	1111	17
238	356	1011	13
239	357	1110	16
240	360	0010	02
241	361	0000	00
242	362	1101	15
243	363	1010	12
244	364	0000	00
245	365	0010	02
246	366	0000	00
247	367	0000	00
248	370	1010	12
249	371	0000	00
250	372	0010	02
251	373	0000	00

ROM PATTERN SPEC

DEC PART NUMB1 23-018A2  
 ORIGINATOR1 BRIAN O'DONNELL  
 DATE OF ORIGIN1 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	0000	00
253	375	0000	00
254	376	0000	00
255	377	0000	00

ROM PATTERN SPEC

DEC PART NUMB: 23-019A2  
 ORIGINATOR: BRIAN O'DONNELL  
 DATE OF ORIGIN: 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	1100	14
1	001	0001	01
2	002	0000	00
3	003	1110	16
4	004	0000	00
5	005	1111	17
6	006	0000	00
7	007	0111	07
8	010	1111	17
9	011	0000	00
10	012	0101	05
11	013	1111	17
12	014	1000	10
13	015	0111	07
14	016	1100	14
15	017	1111	17
16	020	0000	00
17	021	1100	14
18	022	0000	00
19	023	1001	11
20	024	1100	14
21	025	1110	16
22	026	1100	14
23	027	0001	01
24	030	0000	00
25	031	1111	17
26	032	0001	01
27	033	0011	03
28	034	1100	14
29	035	1111	17
30	036	1000	10
31	037	1010	12
32	040	1010	12
33	041	1010	12
34	042	1110	16
35	043	0011	03

ROM PATTERN SPEC

DEC PART NUMB: 23-019A2  
 ORIGINATOR: BRIAN O'DONNELL  
 DATE OF ORIGIN: 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	0100	04
37	045	0101	05
38	046	0001	01
39	047	1001	11
40	050	0000	00
41	051	0000	00
42	052	0001	01
43	053	1000	10
44	054	1000	10
45	055	1111	17
46	056	0101	05
47	057	0010	02
48	060	0000	00
49	061	0000	00
50	062	1101	15
51	063	1000	10
52	064	1010	12
53	065	1111	17
54	066	0100	04
55	067	0000	00
56	070	1100	14
57	071	1100	14
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59	073	0100	04
60	074	1100	14
61	075	0100	04
62	076	1000	10
63	077	1000	10
64	100	1100	14
65	101	1100	14
66	102	1100	14
67	103	0100	04
68	104	1100	14
69	105	0100	04
70	106	1100	14
71	107	0100	04



ROM PATTERN SPEC

DEC PART NUMB: 23-019A2  
 ORIGINATOR: BRIAN O'DONNELL  
 DATE OF ORIGIN: 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	1100	14
73	111	0100	04
74	112	0000	00
75	113	1000	10
76	114	1000	10
77	115	0100	04
78	116	0100	04
79	117	0000	00
80	120	0000	00
81	121	0000	00
82	122	0000	00
83	123	1101	15
84	124	1000	10
85	125	0000	00
86	126	0001	01
87	127	0011	03
88	130	1111	17
89	131	1111	17
90	132	0001	01
91	133	0001	01
92	134	0010	02
93	135	0110	06
94	136	0001	01
95	137	0101	05
96	140	0110	06
97	141	1000	10
98	142	1101	15
99	143	1100	14
100	144	1111	17
101	145	1111	17
102	146	0011	03
103	147	1100	14
104	150	1111	17
105	151	0010	02
106	152	0001	01
107	153	1100	14

ROM PATTERN SPEC

DEC PART NUMB: 23-019A2  
 ORIGINATOR: BRIAN O'DONNELL  
 DATE OF ORIGIN: 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	1000	10
109	155	1111	17
110	156	1100	14
111	157	0111	07
112	160	1111	17
113	161	1100	14
114	162	0111	07
115	163	0000	00
116	164	1000	10
117	165	0001	01
118	166	0101	05
119	167	1001	11
120	170	0001	01
121	171	0100	04
122	172	0010	02
123	173	1000	10
124	174	1000	10
125	175	0001	01
126	176	0111	07
127	177	1110	16
128	200	1000	10
129	201	1111	17
130	202	1111	17
131	203	0000	00
132	204	1111	17
133	205	1000	10
134	206	0000	00
135	207	1111	17
136	210	1110	16
137	211	0111	07
138	212	0011	03
139	213	1110	16
140	214	1111	17
141	215	0101	05
142	216	0000	00
143	217	1110	16

ROM PATTERN SPEC

DEC PART NUMB1 23-019A2  
 ORIGINATOR1 BRIAN O'DONNELL  
 DATE OF ORIGIN1 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	0101	05
145	221	1111	17
146	222	0000	00
147	223	0100	04
148	224	1111	17
149	225	1101	15
150	226	1111	17
151	227	1100	14
152	230	1111	17
153	231	1011	13
154	232	0101	05
155	233	1111	17
156	234	0100	04
157	235	0000	00
158	236	1111	17
159	237	0100	04
160	240	1011	13
161	241	1111	17
162	242	0000	00
163	243	1011	13
164	244	1111	17
165	245	0000	00
166	246	0011	03
167	247	0000	00
168	250	0000	00
169	251	1100	14
170	252	0000	00
171	253	1100	14
172	254	1111	17
173	255	0000	00
174	256	1111	17
175	257	0011	03
176	260	1100	14
177	261	1111	17
178	262	1111	17
179	263	0011	03

ROM PATTERN SPEC

DEC PART NUMB1 23-019A2  
 ORIGINATOR1 BRIAN O'DONNELL  
 DATE OF ORIGIN1 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	1111	17
181	265	0011	03
182	266	0000	00
183	267	1100	14
184	270	0000	00
185	271	1100	14
186	272	0000	00
187	273	0001	01
188	274	1111	17
189	275	0010	02
190	276	0000	00
191	277	1111	17
192	300	0001	01
193	301	0000	00
194	302	1100	14
195	303	1110	16
196	304	1100	14
197	305	0100	04
198	306	1111	17
199	307	0100	04
200	310	0111	07
201	311	1000	10
202	312	0001	01
203	313	1111	17
204	314	1111	17
205	315	1011	13
206	316	0000	00
207	317	1100	14
208	320	0000	00
209	321	1100	14
210	322	1000	10
211	323	1111	17
212	324	1110	16
213	325	0010	02
214	326	1111	17
215	327	1110	16

ROM PATTERN SPEC

DEC PART NUMB1 23-019A2  
 ORIGINATOR1 BRIAN O'DONNELL  
 DATE OF ORIGIN1 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	1100	14
217	331	1000	10
218	332	1000	10
219	333	1111	17
220	334	1110	16
221	335	0010	02
222	336	1111	17
223	337	1101	15
224	340	1100	14
225	341	1110	16
226	342	1100	14
227	343	0000	00
228	344	0000	00
229	345	1100	14
230	346	0100	04
231	347	1111	17
232	350	0000	00
233	351	0000	00
234	352	1111	17
235	353	0101	05
236	354	1111	17
237	355	0010	02
238	356	1111	17
239	357	0001	01
240	360	1111	17
241	361	0011	03
242	362	1010	12
243	363	0000	00
244	364	1100	14
245	365	1111	17
246	366	1000	10
247	367	1010	12
248	370	0101	05
249	371	0000	00
250	372	1111	17
251	373	0000	00

ROM PATTERN SPEC

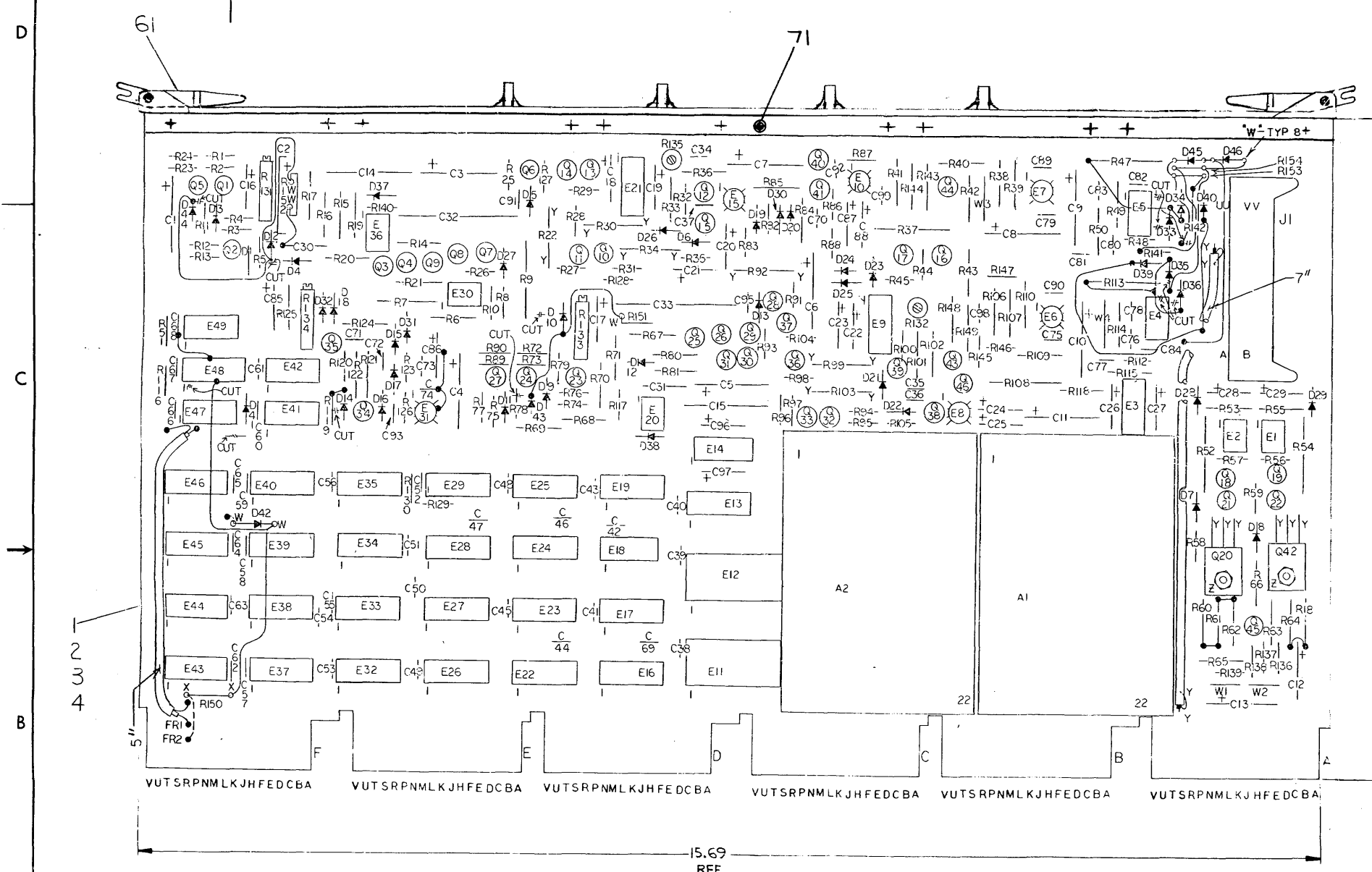
DEC PART NUMB1 23-019A2  
 ORIGINATOR1 BRIAN O'DONNELL  
 DATE OF ORIGIN1 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	0000	00
253	375	0001	01
254	376	0000	00
255	377	0000	00



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NOTES:



7496	12	5
7497	8	16
74193	8	16
7416	13	5
74191	8	16
7485	8	16
IC TYPE	GND	+5V
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE		
IC PIN LOCATIONS		

REF	X-Y COORDINATE HOLE LOCATION	K-CO-A320-B-4	1
REF	ASSY/DRILLING HOLE LAYOUT	D-AH-A320-B-5	2
REF	MODULE ECO HISTORY	B-MH-A320-B-6	3
1	ETCHED CKT BD	5010099	4
2	C34, C35	CAP 27PF 100V 5% DM	5
2	C36, C37	CAP 47PF 100V 5% DM	6
2	C91, C95	CAP 330PF 100V 5% DM	7
2	C14, C15	CAP .22UF 100V 10% MYLAR	8
2	C32, C33	CAP .02UF 50V 5% POLY	9
1	C98	CAP 10PF 100V 5% D4	10
32	C38 THRU C69	CAP 22UF 50V 8% CLR	11
1	C99	CAP 56PF 100V 5% DM	12
13	C1 THRU C13	CAP 100UF 20V 10% TANT	13
15	C70 THRU C84	CAP .01UF 100V 20% DISC	14
18	C16 THRU C29, E87, C88, C89, C97	CAP 1UF 35V 10% TANT	15
2	C89, C90	CAP 100PF 100V 5% DM	16
2	C85, C86	CAP 6.8UF 35V 10% TANT	17
2	C92, C93	CAP 1000PF 100V 5% DM	18
2	C30, C31	CAP 15UF 20V 10% TANT	19
2	D43, D44	DIODE IN753A	20
4	D39, D40, D45, D46	DIODE IN746A 3.3V ZENER	21
3	D41, D42, D38	DIODE 1/4MS. 1A2I 5.1V 1%	22
3	D27, D28, D29	DIODE IN825	23
22	D5, D6, D13-D26, D33-D38	DIODE D664	24
8	D1-D4, D9-D12	DIODE DEC777	25
2	D7, D8	DIODE IN4001	26
2	D31, D32	DIODE IN752A	27
1	J1	CONNECTOR RT, ANG, HEADER	28
2	A1, A2	12 BIT DAC	29
2	R151, R152	RESISTOR 270 1/8W 5%	30
1	R150	RESISTOR 180 1W 5%	31
1	R137	RESISTOR 1.5K 1/8W 5%	32
10	R16, R33, R36, R43, R44, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100, R101, R102, R103, R104, R105, R106, R107, R108, R109, R110, R111, R112, R113, R114, R115, R116, R117, R118, R119, R120, R121, R122, R123, R124, R125, R126, R127, R128, R129, R130, R131, R132, R133, R134, R135, R136, R138, R139, R140, R141, R142, R143, R144, R145, R146, R147, R148, R149, R150, R151, R152, R153, R154, R155, R156, R157, R158, R159, R160, R161, R162, R163, R164, R165, R166, R167, R168, R169, R170, R171, R172, R173, R174, R175, R176, R177, R178, R179, R180, R181, R182, R183, R184, R185, R186, R187, R188, R189, R190, R191, R192, R193, R194, R195, R196, R197, R198, R199, R200	RESISTOR 1K 1/8W 1% MF	33
1	R130	RESISTOR 330 1/8W 10%	34
1	R129	RESISTOR 750 1/8W 5%	35
1	R118	RESISTOR 464K 1/8W 1% MF	36
1	R42	RESISTOR 4.64K 1/8W 1% MF	37
2	R3, R74	RESISTOR 2.7K 1/8W 5%	38
2	R11, R78	RESISTOR 68 1/8W 5%	39
8	R37, R38, R41, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100, R101, R102, R103, R104, R105, R106, R107, R108, R109, R110, R111, R112, R113, R114, R115, R116, R117, R118, R119, R120, R121, R122, R123, R124, R125, R126, R127, R128, R129, R130, R131, R132, R133, R134, R135, R136, R137, R138, R139, R140, R141, R142, R143, R144, R145, R146, R147, R148, R149, R150, R151, R152, R153, R154, R155, R156, R157, R158, R159, R160, R161, R162, R163, R164, R165, R166, R167, R168, R169, R170, R171, R172, R173, R174, R175, R176, R177, R178, R179, R180, R181, R182, R183, R184, R185, R186, R187, R188, R189, R190, R191, R192, R193, R194, R195, R196, R197, R198, R199, R200	RESISTOR 2K 1/8W 1% MF	40
2	R38, R109	RESISTOR 422 1/8W 1% MF	41
14	R1, R2, R12, R24, R72, R73, R77, R90, R27, R31, R94, R96, R45, R46	RESISTOR 470 1/8W 5%	42
17	R13, R23, R25, R89, R91, R28, R128, R29, R127, R95, R97, R98, R104, R44, R147, R146, R75	RESISTOR 270 1/8W 5%	43
1	R43	RESISTOR 562 1/8W 1% MF	44
3	R84, R121, R124	RESISTOR 562 1/8W 1% MF	45
2	R85, R122	RESISTOR 2.74K 1/8W 1% MF	46
1	R125	RESISTOR 4.64K 1/8W 1% MF	47
1	R123	RESISTOR 6.8K 1/8W 5%	48
2	R65, R66	RESISTOR 1K 1/8W 5%	49
2	R62, R63	RESISTOR 7K 1/8W 1% MF	50
8	R56-R59, R138, R139, R140, R117	RESISTOR 2.2K 1/8W 5%	51

FIRST USED ON OPTION MODEL  
VT40

ORIGINATOR	CHANGE NO.	REVISIONS	DATE	BY	DESCRIPTION
B	1	1	11/25/72	S. K. [Signature]	IN4001 MR-2064
B	2	1	11/25/72	[Signature]	FD777 SAME
B	3	1	11/25/72	[Signature]	RCC4 IN747A
B	4	1	11/25/72	[Signature]	IN825 SAME
B	5	1	11/25/72	[Signature]	1/4MS. 1A2I NA
B	6	1	11/25/72	[Signature]	IN747A NA
B	7	1	11/25/72	[Signature]	IN753A NA
B	8	1	11/25/72	[Signature]	IN753A NA
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digital EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

V140  
DISPLAY  
GENERATOR

SEMICONDUCTOR CONVERSION CHART

SCALE	1:1
SHEET	2 OF 2
DIST	
SIZE CODE	DCS
NUMBER	A320-0
REV.	

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NOTES:

Table with columns: QTY., REF DESIGNATION, DESCRIPTION, PART NO., ITEM NO. Rows list various components like SCR BHM #4-40 X 5/16 LG, COAX CABLE, RESISTOR, TRANSISTOR, IC, etc.

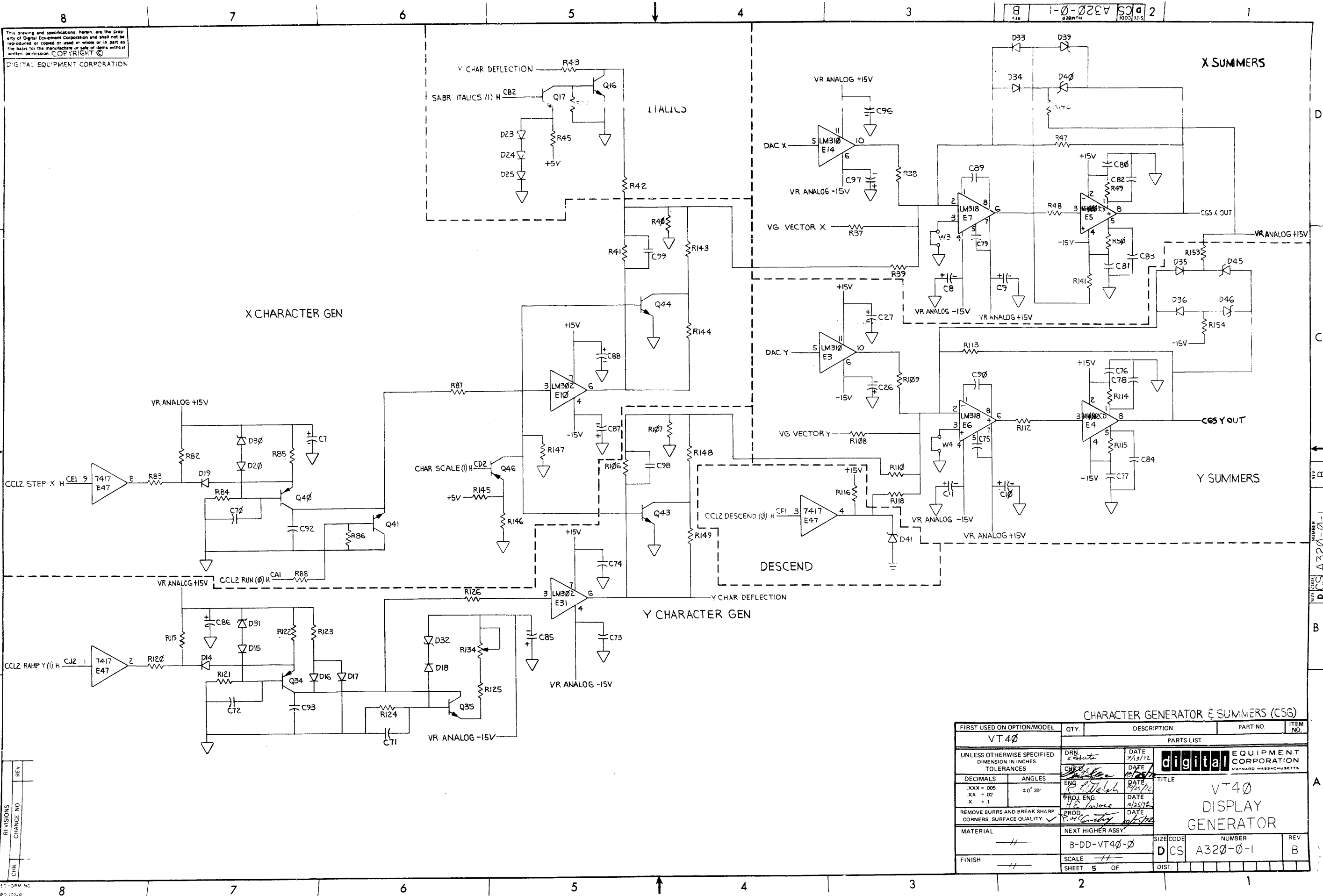
D C B A

D C B A

Table with columns: IC TYPE, GND, +5V. Includes note: GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE.

Complex form containing: FIRST USED ON OPTION MODEL (VT40), PARTS LIST, SEMICONDUCTOR CONVERSION CHART, and project details like DATE 7/22/72, TITLE VT40 DISPLAY GENERATOR, and size code DCS A320-0-1.

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BRUNING 40-922 15840  
REV  
CHANGE NO  
CHK

CHARACTER GENERATOR & SUMMERS (CSG)				
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VT 40				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	DATE	PARTS LIST	
.xxx = .005	± 0° 30'	2/13/72	digital EQUIPMENT CORPORATION LAWRENCE, MASSACHUSETTS	
x = .1		DATE	TITLE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		1/20/72	VT 40 DISPLAY GENERATOR	
MATERIAL	NEXT HIGHER ASSY.	DATE	SIZE CODE	NUMBER
— / —	B-DD-VT40-0	1/25/72	D CS	A320-0-1
FINISH	SCALE	DATE	DIST.	REV.
— / —	5 OF	1/25/72		B

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DIGITAL EQUIPMENT CORPORATION

X PRECISION PULSE

D

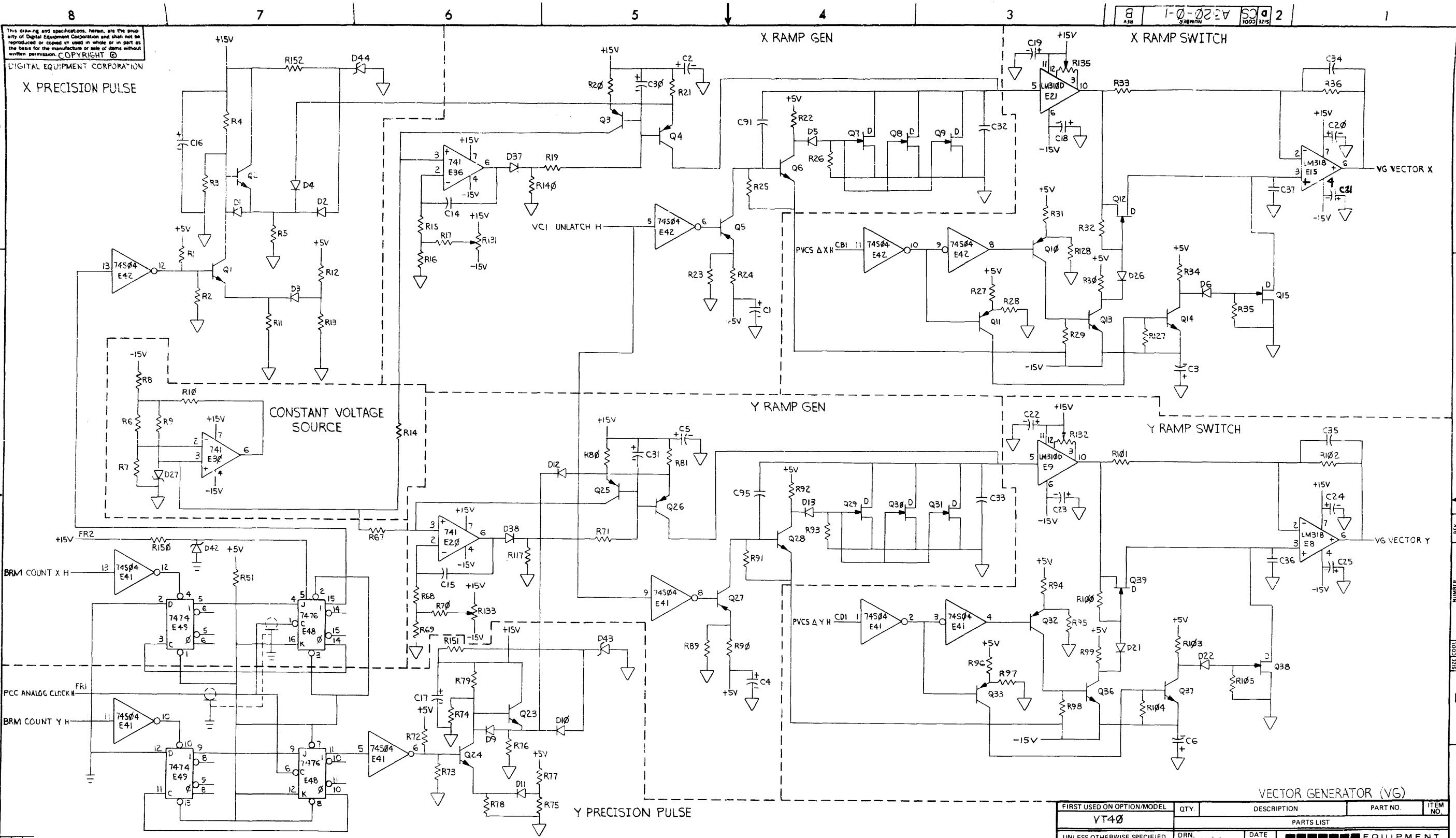
C

B

A

REV	CHANGE NO
CHK	NO
REV	NO
CHK	NO

BRUNING 40-322 15640  
DEC 1 1972  
102-B



VECTOR GENERATOR (VG)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VT40				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS .XXX - .005	ANGLES ±0° 30'	DRN 5/22/72	DATE 7/22/72	
XX +.02	X -.1	CHK D. W. L.	DATE 12/1/72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL				
NEXT HIGHER ASSY.				
SCALE			SIZE CODE	NUMBER
SHEET 4 OF			D CS	A320-0-1
			DIST	REV B

VT40  
DISPLAY  
GENERATOR

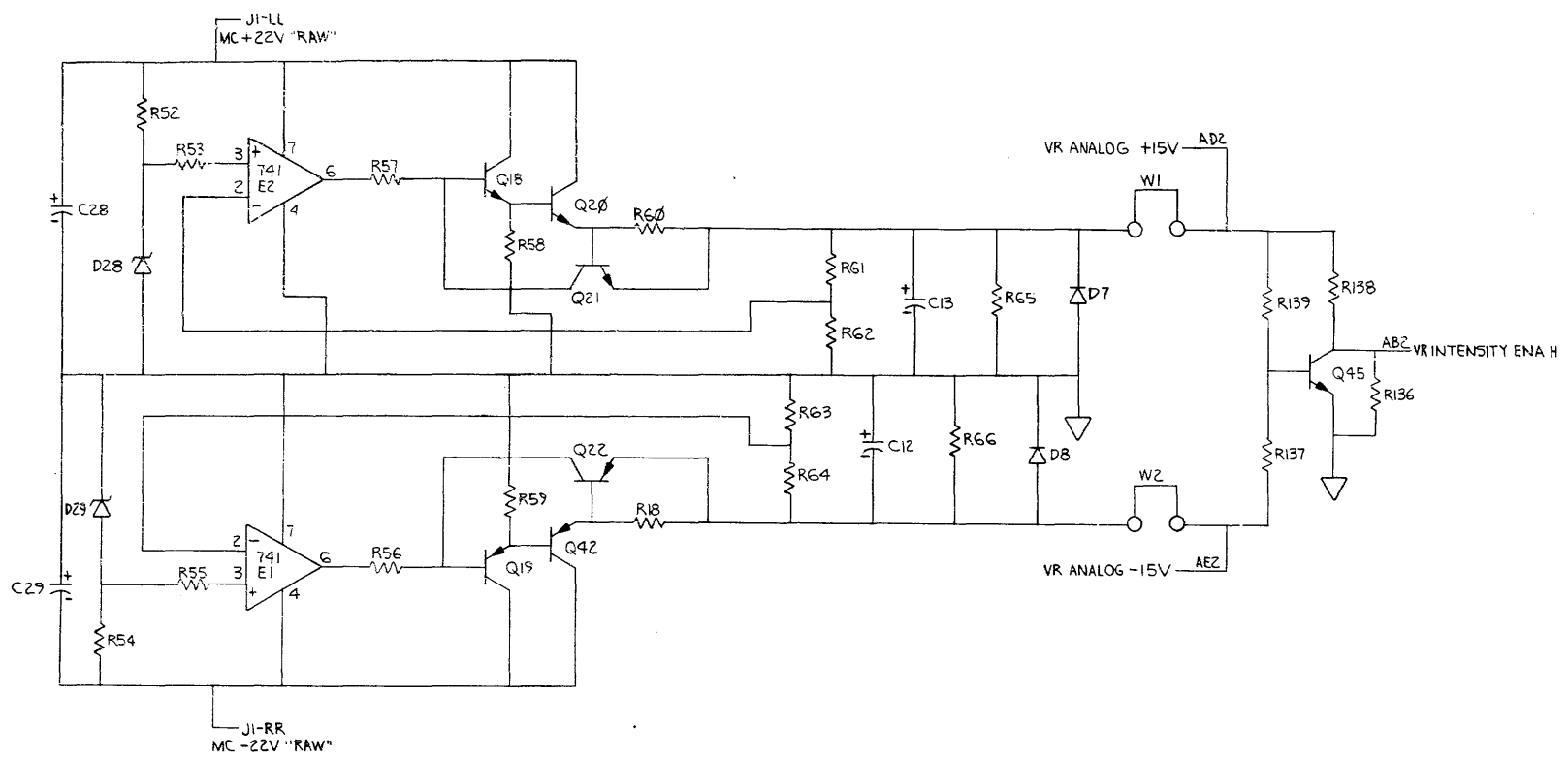
1-0-0-0-1  
REV B

A



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DIGITAL EQUIPMENT CORPORATION

8 7 6 5 4 3 2 1  
B A320-0-1  
DPCS  
2



VOLTAGE REGULATORS (VR)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VT40				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN S. K. [Signature]	DATE 7/25/72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS	ENG	DATE 1/25/72		
ANGLES	PROJ. ENG. H.C. [Signature]	DATE 11/25/72	TITLE VT40 DISPLAY GENERATOR	
XX = 02 X = 1	PROD. P. [Signature]	DATE 10/2/72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.			
FINISH: //	B-DD-VT40-0	SCALE //	SIZE CODE DPCS	NUMBER A320-0-1
	SHEET 6 OF		DIST.	REV B

BRUNING 40-522 15840  
DEC FORM NO  
DRD 102-B

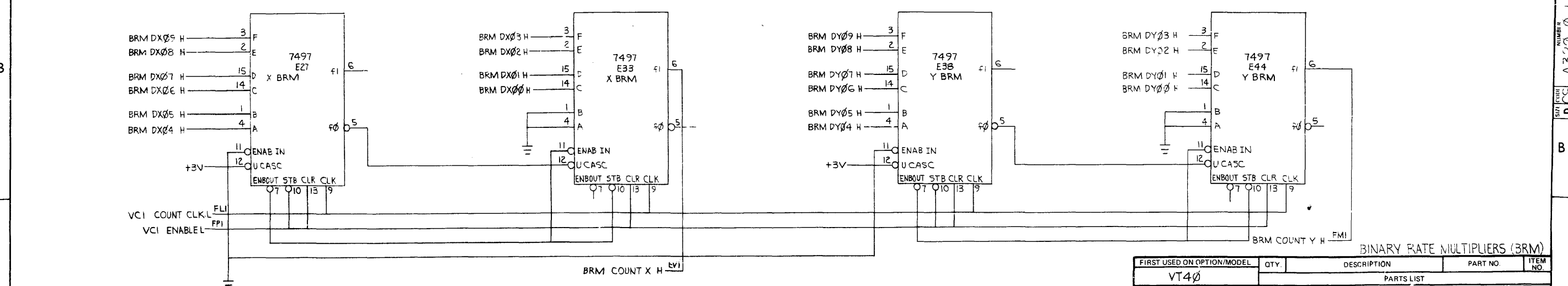
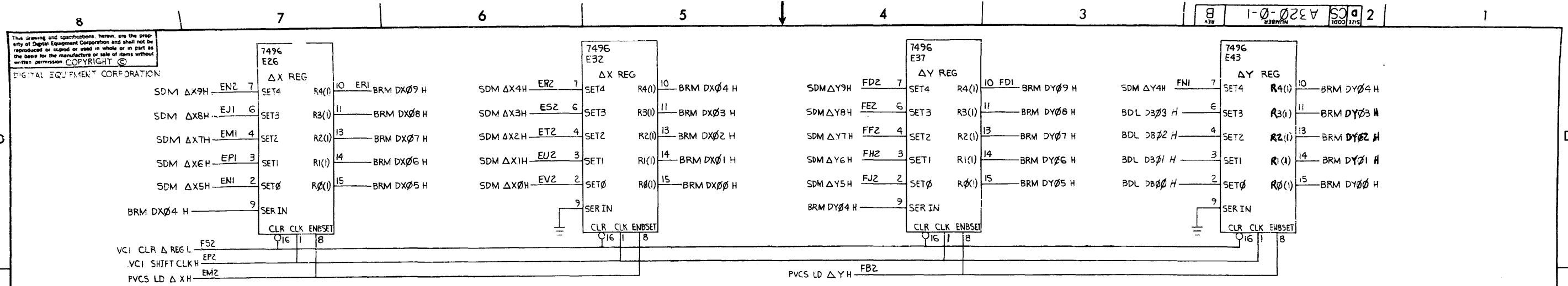
REVISION:  
CHANGE IN  
CHK

REV

REV  
FR  
A  
B  
C  
D

SIZE CODE  
DPCS

NUMBER  
A320-0-1-1

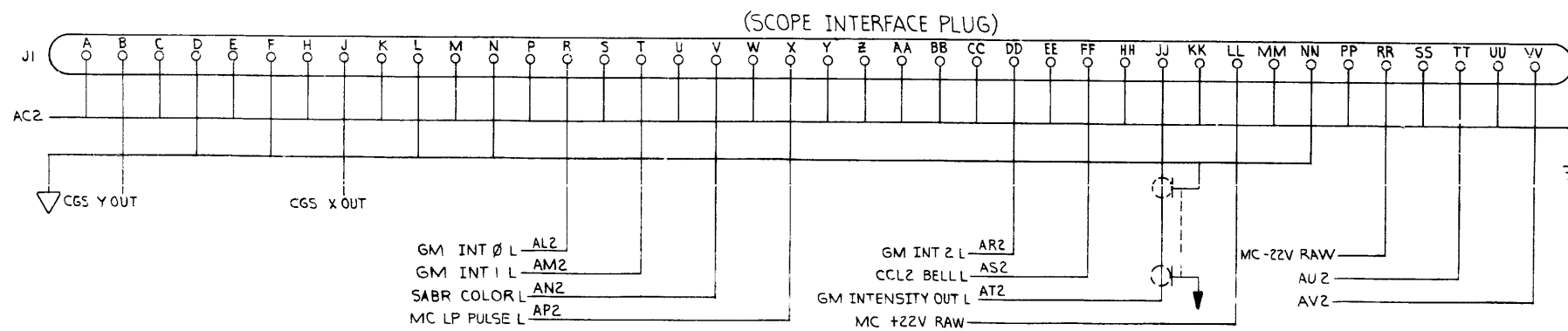
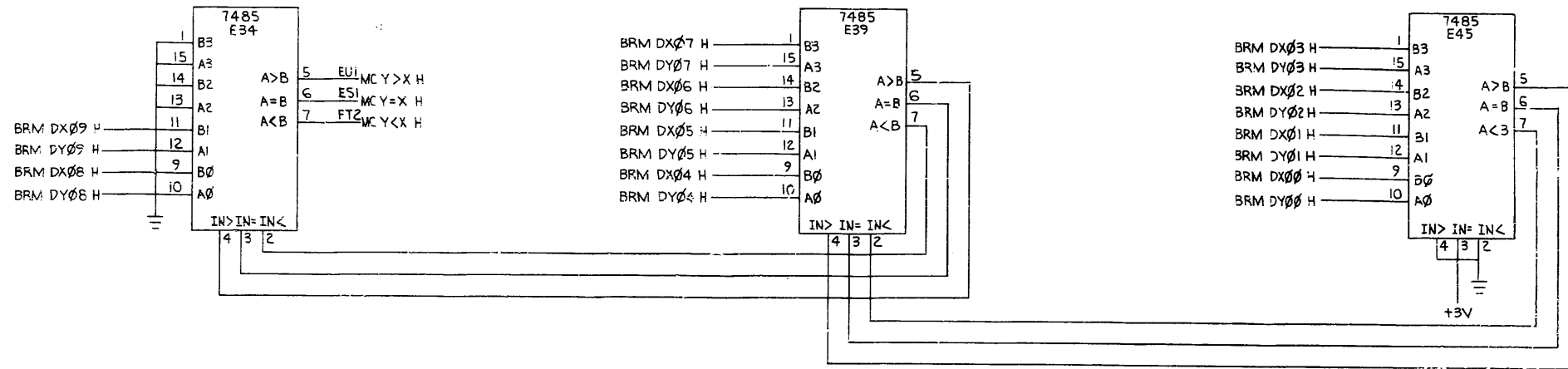


BRUNING 40-522 15840  
 DEC FORM NO DRD 102-B  
 REVISIONS  
 CHANGE NO  
 REV

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VT40				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS	ANGLES	PARTS LIST		
XXX = .005	± 0° 30'	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS		
XX = .02		TITLE		
X = .1		VT40 DISPLAY GENERATOR		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL				
NEXT HIGHER ASSY.				
FINISH				
SCALE		SIZE CODE	NUMBER	REV.
SHEET 7 OF		D CS	A320-0-1	B

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1-0-0220V SCS 2  
A320-0-1



MAGNITUDE COMPARTORS (MC)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VT40				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN S. Roberts	DATE 12/7/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
DECIMALS	ANGLES	CHK S. Roberts	DATE 1/25/73	
XXX - .006	10 00	ENG S. Roberts	DATE 1/25/72	TITLE VT40 DISPLAY GENERATOR
.XX - .02		PROJ. ENG. S. Roberts	DATE 1/25/72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		PROD S. Roberts	DATE 1/25/72	
MATERIAL	FINISH	NEXT HIGHER ASSY.	SCALE	
—	—	B-DD-VT40-0	SHEET B OF	
		SIZE CODE	NUMBER	REV
		D CS	A320-0-1	B
		DIST		

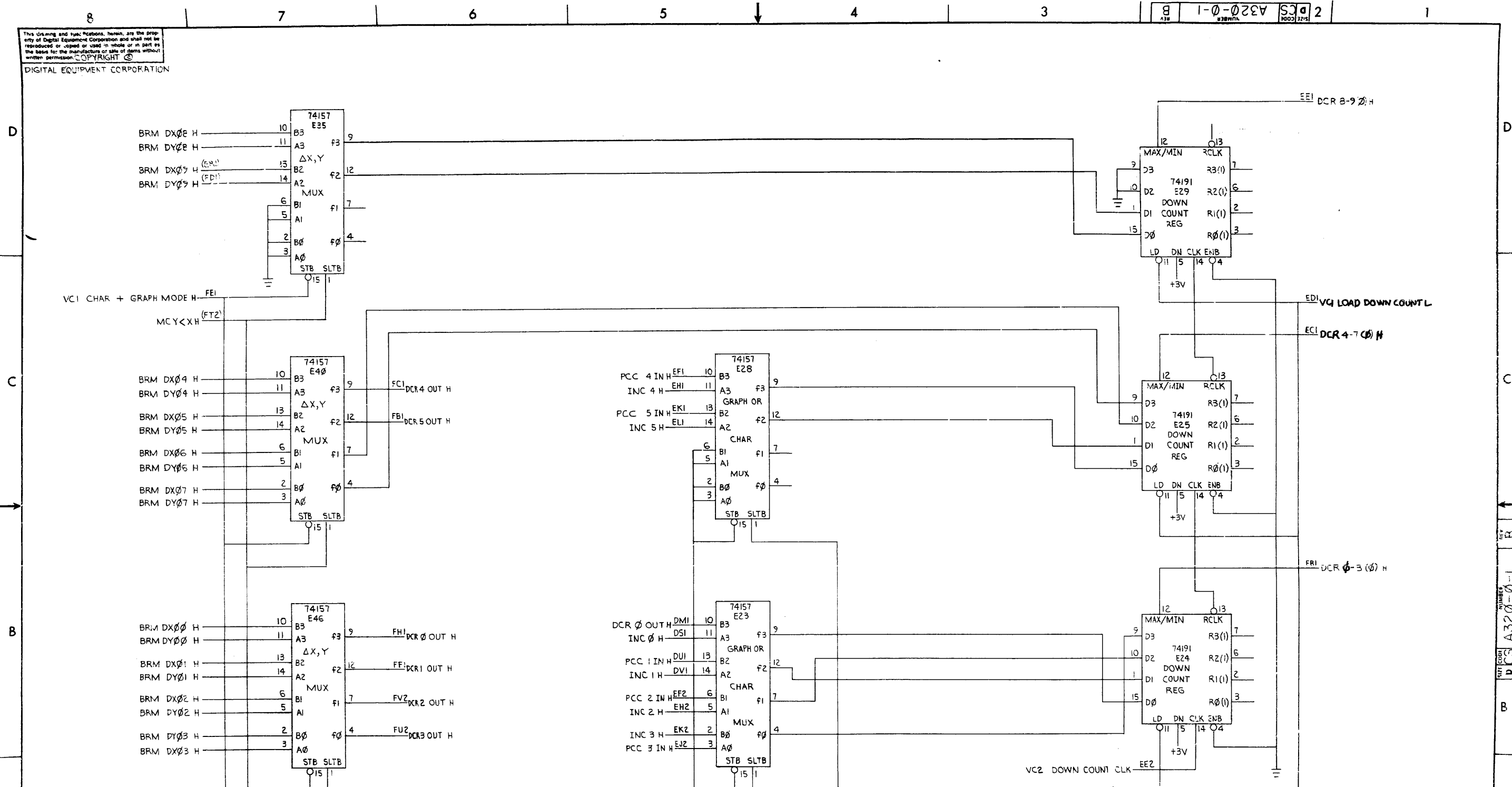
BRUNING 40-322 15840  
DEC FORM NO  
DRD 122-B

REVISIONS  
CHANGE NO  
REV

CHK

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DIGITAL EQUIPMENT CORPORATION



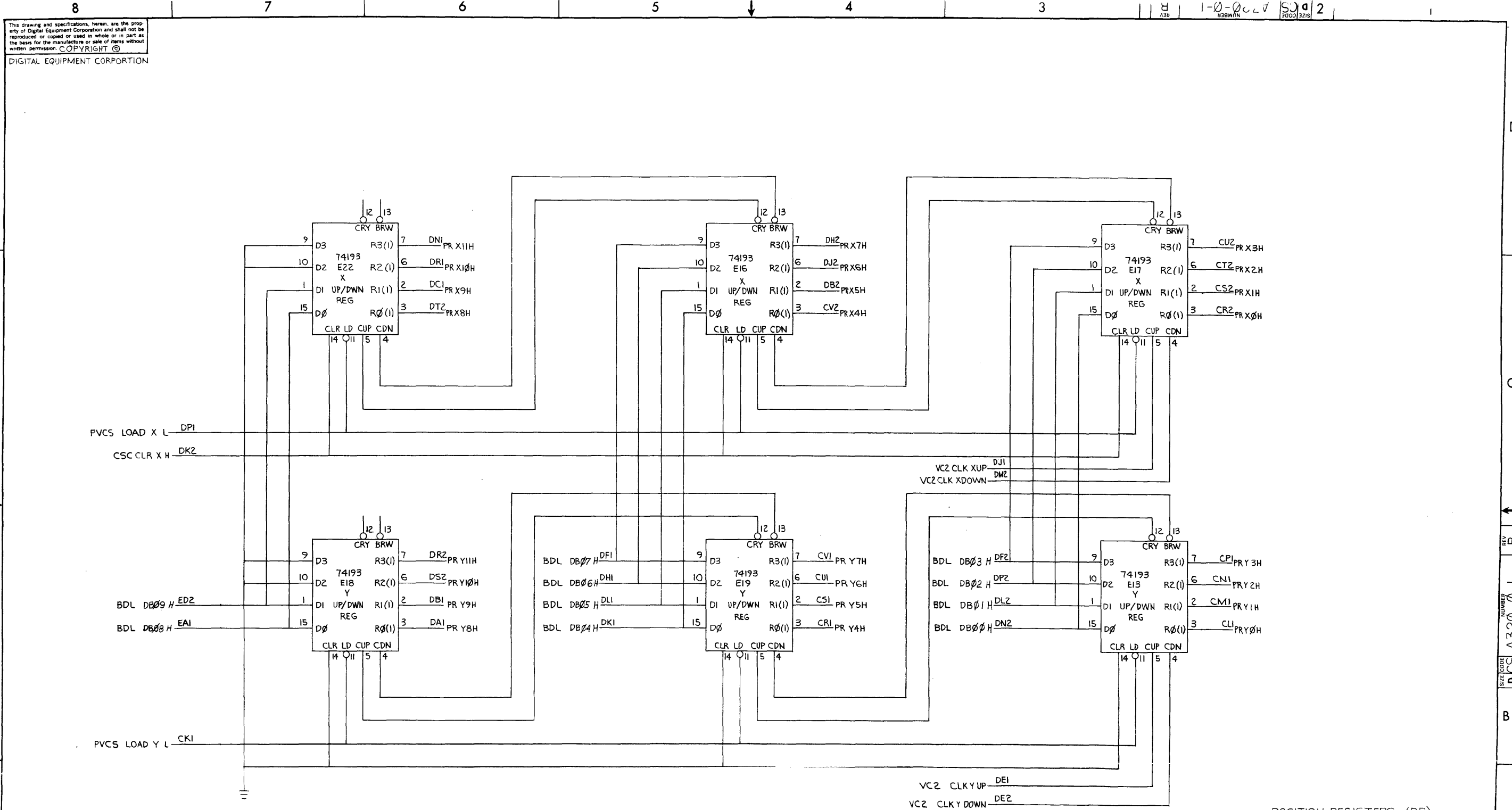
DOWN COUNT REGISTERS (DCR)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VT40				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN <i>S. Routs</i>	DATE 10/6/72	 <b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
DECIMALS	ANGLES	CHKD <i>[Signature]</i>	DATE 10/5/72	
XXX + .005	± 0° 30'	ENG. <i>[Signature]</i>	DATE 11/21/72	
XX + .02		PROJ. ENG. <i>[Signature]</i>	DATE 11/21/72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD. <i>[Signature]</i>	DATE 11/21/72	<b>VT40</b> <b>DISPLAY</b> <b>GENERATOR</b>
MATERIAL		NEXT HIGHER ASSY.	DATE 11/21/72	
SCALE		B-DD-VT40-0	SIZE CODE	NUMBER
SHEET 9 OF		DCS	A320-0-1	REV 5
DISTRIBUTION				

BRUNING 40-522 15840  
 DEC FORM NO  
 DRD 102-B

REV	CHANGE NO

PART NO. A320-0-1  
 REV. 5



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REV	NO
REV	NO
CHK	NO
CHK	NO

DEC FORM NO DRD 102-B

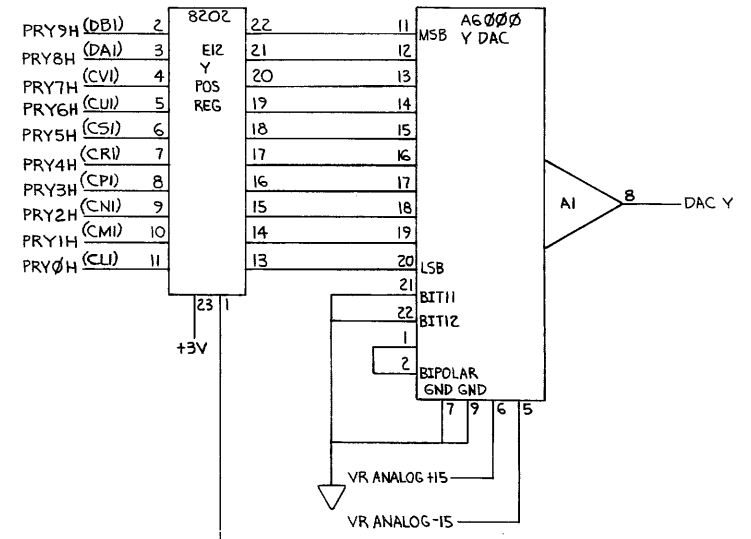
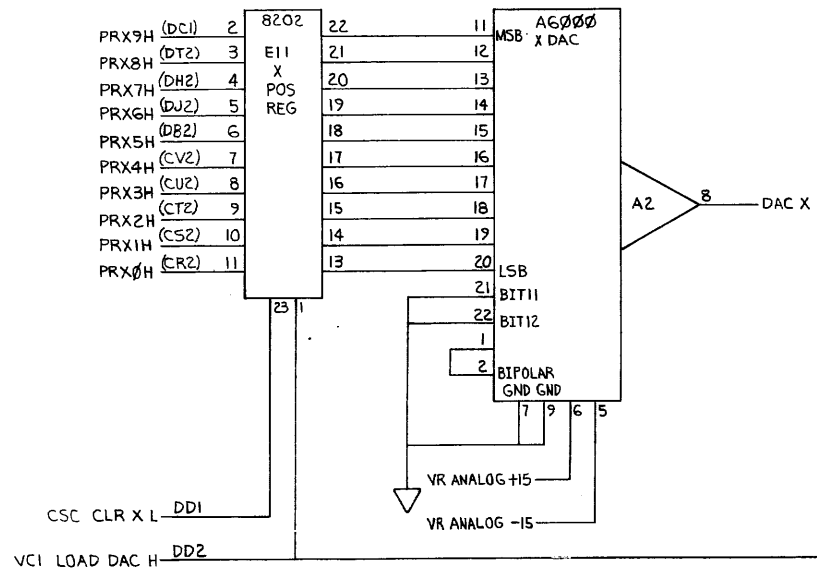
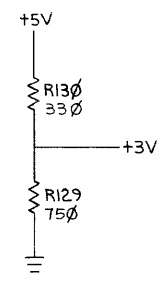
POSITION REGISTERS (PR)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VT40				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS	ANGLES	DATE	PARTS LIST	
XXX - 005	± 0° 30'	10/31/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
XX - 02		DATE	TITLE	
X - 1		12/5/72	VT40 DISPLAY GENERATOR	
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.	DATE	REV.	
FINISH	B-DD-VT40-0	12/1/72	DICS	A320-0-1 B
SCALE	SHEET 10 OF	DIST.		

REV B  
A320-0-1  
DICS

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SIZE CODE NUMBER  
DCS A320-0-1  
REV B



BRUNING 40-522 158-40	REV
REVISIONS	CHANGE NO
CHK	

DIGITAL TO ANALOG CONVERTERS (DAC)			
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.
VT40			
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN. <i>S. Roberts</i> DATE 10/10/72	
DECIMALS ANGLES		CHK'D <i>[Signature]</i> DATE 10/27/72	
.XXX = .005	± 0° 30'	ENG. <i>[Signature]</i> DATE 10/27/72	TITLE VT40 DISPLAY GENERATOR
.XX = .02		PROJ. ENG. <i>[Signature]</i> DATE 10/27/72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD. <i>[Signature]</i> DATE 10/27/72	
MATERIAL	NEXT HIGHER ASSY.		
FINISH			
SCALE		SIZE CODE	NUMBER
SHEET 11 OF		DCS	A320-0-1
		REV.	B

**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS  
**PARTS LIST**

MADE BY C.MCCOY	CHECKED <i>R. Kelly</i>	SECTION
DATE 10/16/72	DATE 10-22-72	I
ENG <i>R. Kelly</i>	PROD <i>P. McCarty</i>	ISSUED SECT.
DATE 10-23-72	DATE 10/24/72	

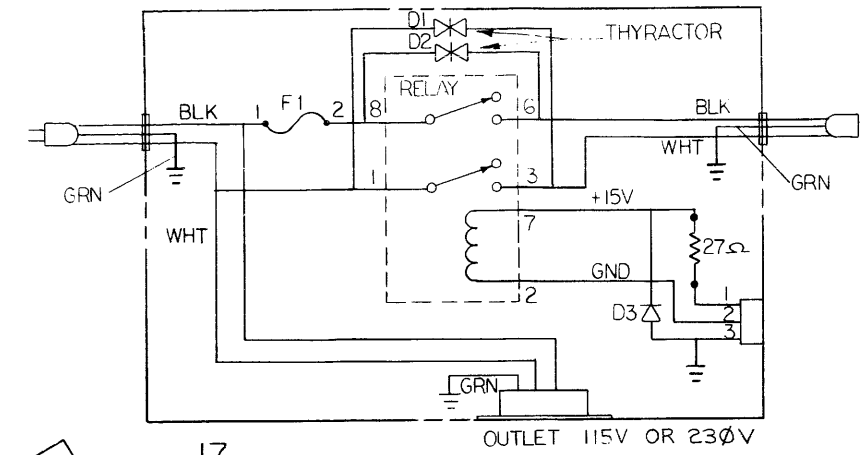
QUANTITY / VARIATION

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	VT40-AA	VT40-AB	VT40-BA	VT40-BB											
1	D-UA-1105-MA-0	16 BIT COMPUTER ASSY (PDP1105) 115V	-	-	1	-											
2	D-UA-1105-MB-0	16 BIT COMPUTER ASSY (PDP1105) 230V	-	-	-	1											
3	D-UA-1105-PA-0	16 BIT COMPUTER ASSY (PDP1105) 115V	1	-	-	-											
4	D-UA-1105-PB-0	16 BIT COMPUTER ASSY (PDP1105) 230V	-	1	-	-											
5	D-IA-7409966-0-0	COVER PANEL, REAR BOTTOM	1	1	1	1											
6	9009019-3	SCREW, PHL TRUSS HD #10-32 x .25 LG	4	4	4	4											
7	D-MD-7409971-1-0	EXTRUSION, SIDE (L.H.)	1	1	1	1											
8	D-MD-7409971-2-0	EXTRUSION, SIDE (R.H.)	1	1	1	1											
9	9009266	WASHER, FINISHING	4	4	4	4											
10	9006035-2	SCREW, PHL FLT HD #8-32 x .25 LG	4	4	4	4											
* 11	C-CS-M7013-0-1	BUS CONTROL	1	1	1	1											
* 12	C-CS-M7014-0-1	DISPLAY CONTROL	1	1	1	1											
* 13	C-CS-A320-0-1	VECTOR GENERATOR	1	1	1	1											
		* SEE DWG. NO. D-MU-VT40-0-1															
		FOR APPLICATION.															

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
VT40 COMPUTER ASSY	<i>1-1-1</i>	A	PL	VT40-0-0		
SHEET	1 OF 1	DIST.	6			

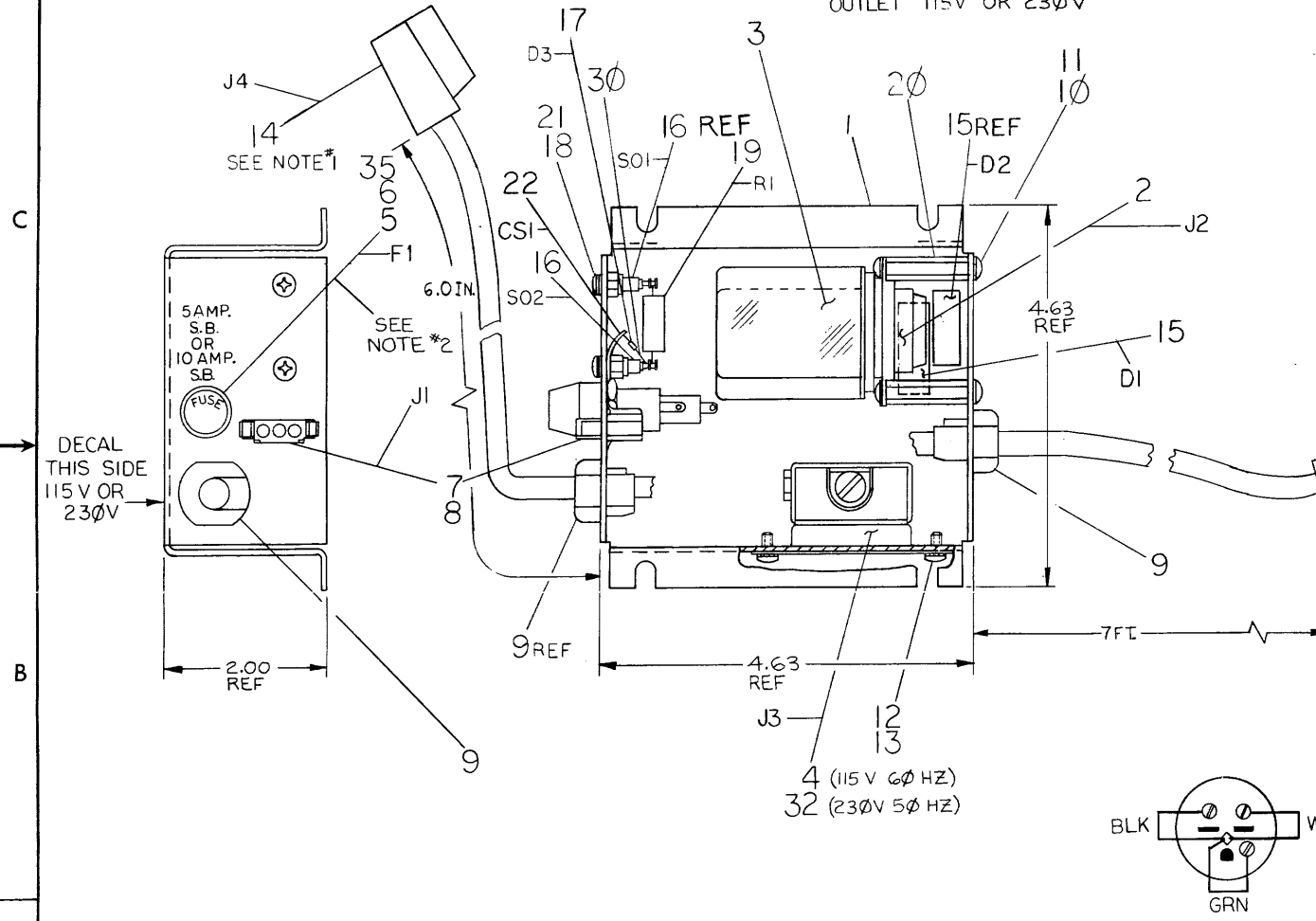
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LEGEND	
NUMBER	VARIATION
7008930-1	115V 60 HZ
7008930-2	230V 50 HZ

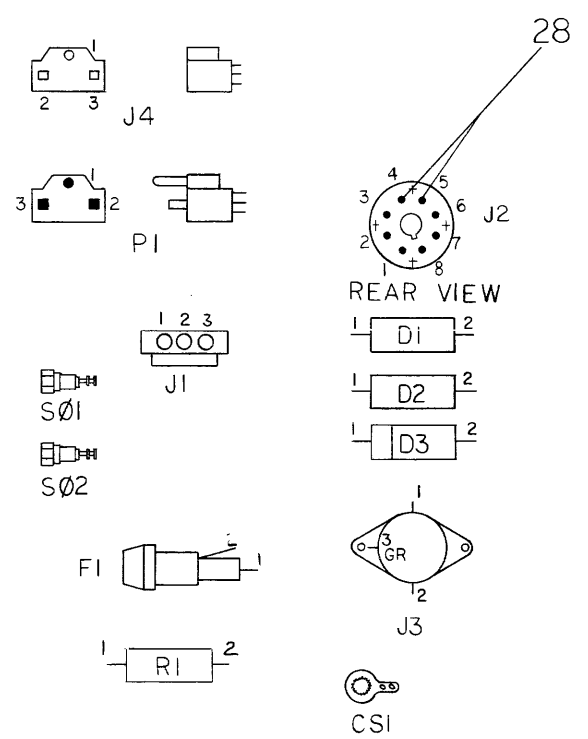


WIRE TABLE						
ITEM NO.	AWG.	COLOR	FROM CONNECTION	WITH	TO CONNECTION	WITH
14	14	GRN	J4-1	---	CS1	SOLD
23	18	GRN	J1-3	8	CS1	SOLD
14	14	BLK	J4-2	---	J2-6	SOLD,28
14	14	WHT	J4-3	---	J2-3	SOLD,28
24	18	ORN	J1-1	8	SO-1	SOLD
24	18	ORN	SO-2	SOLD	J2-7	SOLD,28
25	18	BLU	J1-2	8	J2-2	SOLD,28
14	14	GRN	P1-1	---	J3-3	29
14	14	WHT	P1-3	---	J3-1	29
14	14	BLK	P1-2	---	J3-2	29
27	14	BLK	F1-1	SOLD,28	J3-2	29
26	14	WHT	J2-1	SOLD,28	J3-1	29
27	14	BLK	F1-2	SOLD,28	J2-8	SOLD,28
15	---	---	D1-1	---	J2-1	SOLD,28,30
15	---	---	D1-2	---	J2-3	↑
15	---	---	D2-1	---	J2-8	↓
17	---	---	D2-2	---	J2-6	SOLD,28,30
17	---	---	D3-1	---	SO-2	SOLD
17	---	---	D3-2	---	CS-1	SOLD
19	---	---	R1-1	---	SO-1	SOLD,30
19	---	---	R1-2	---	SO-2	SOLD,30

NOTES:  
 1. CUT ITEM #14 (POWER CORD) APPROXIMATELY 13.0 IN. FROM RECEPTACLE (J4) AND INSTALL EACH PIECE AS INDICATED IN WIRE TABLE.  
 2. WHEN THE SYSTEM IS 230V, ITEM #14 IS REMOVED AND ITEM #33 IS WIRED TO REMAINING CORD USING DIAGRAM SHOWN. ITEM #4 (RECEPT.) IS REPLACED BY ITEM #32. ITEM #6 IS REPLACED BY ITEM #35. ADD APPROPRIATE DECALS WHERE SHOWN.



14 SEE NOTE #1 & 2  
 33 (NOT SHOWN)



ITEM NO.	QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	1	FUSE 5 AMP S.B.	9007222	35
A/R	A/R	DECALS	7408407	34
1	1	PLUG, HUBBELL #5666 230V	9008853	33
1	1	OUTLET, HUBBELL #5656 230V	9008470	32
A/R	A/R	TIE WRAP #552-M PANDUIT	9007032	31
A/R	A/R	TUBING, THINWAL TEF BLK	9107259-00	30
5	5	CONN. SOLD. #50364 ARK LESS	9007928	29
A/R	A/R	TUBING SHRINKABLE RED	9107305-02	28
A/R	A/R	WIRE #14 AWG IPVC INS. BLK	9107370-00	27
A/R	A/R	WIRE #14 AWG IPVC INS. WHT	9107370-99	26
A/R	A/R	WIRE #18 AWG IPVC INS. BLU	9107360-66	25
A/R	A/R	WIRE #18 AWG IPVC INS. ORN	9107360-33	24
A/R	A/R	WIRE #18 AWG IPVC INS. GRN	9107360-55	23
1	1	CONN. #2102-0600 SHAKEPROOF	9006765	22
2	2	WASHER INT TOOTH LOCK #4	9006632	21
2	2	SPACER 1/4 AF x 1" LG #6-32	9006862	20
1	1	RESISTOR 27Ω 2W 10%	1305624	19
2	2	SCREW, PHL PAN HD #4-40x3/16	9008032-1	18
1	1	DIODE #DGT2	1105275	17
2	2	STAND-OFF, PORCELAIN	9006965	16
2	2	THYRACTOR #GRS20SP484	1100106	15
1	1	POWER CORD	9107673-9	14
2	2	WASHER, INT TOOTH LOCK #8	9006634	13
2	2	SCREW, PHL PAN HD #8-32x1/4	9006035-1	12
4	4	WASHER, INT. TOOTH LOCK #6	9006633	11
4	4	SCREW, PHL HD PAN #6-32 x 3/8	9006022-1	10
2	2	BUSHING, STRAIN RELIEF	9008492-1	9
3	3	PIN, MATE-N-LOCK FEMALE	1209378-01	8
1	1	CONN., MATE-N-LOCK 3 PIN	1209350-3	7
-	1	FUSE 10AMP S.B.	9007225	6
1	1	FUSE HOLDER	9007242	5
-	1	OUTLET, HUBBELL 15A, 125V	1210761	4
1	1	RELAY, P&B. KRPIIDG 12V DC	1203431	3
1	1	OCTAL SOCKET 8 EM	1201244	2
1	1	BOX, POWER CONTROL	D-1A-7409765-0-0	1

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40				

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.		DRN	DATE
DECIMALS	ANGLES	CHK'D	DATE
.XXX = .005		ENG	DATE
.XX = .02	±0°30'	PROJ. ENG.	DATE
.X = .1		PROD.	DATE

PARTS LIST			
MATERIAL		NEXT HIGHER ASSY.	
SEE PARTS LIST		D-UA-GT40-0-0	
FINISH	SCALE	SHEET	OF
---	1/1	1	1

SIZE CODE	NUMBER	REV.
DAD	7C08930-0-0	A

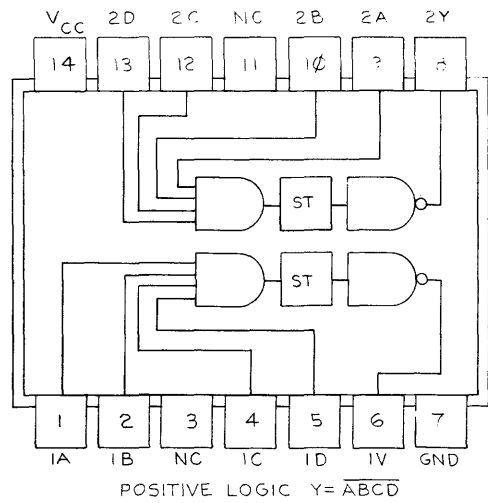
REVISIONS  
 CHG. CHANGE NO. REV. DATE  
 1 00002 A 10-19-72  
 2 00003 B 10-24-72  
 3 00004 C 10-24-72

DWG FORM NO. DRD 100-A

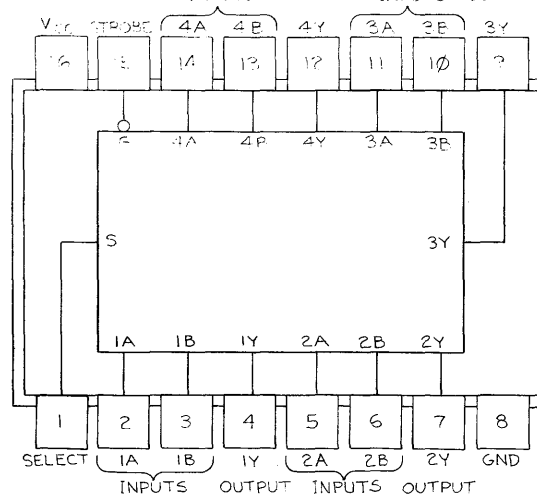


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SN7413  
1909853  
DUAL NAND SCHMITT TRIGGER



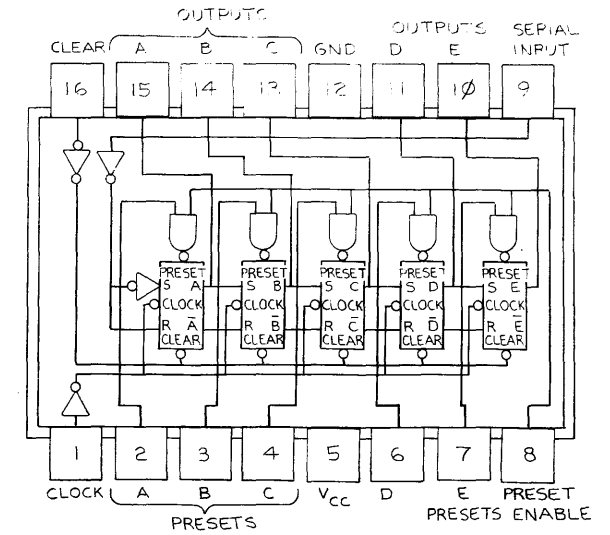
SN74157  
1910655  
QUAD 2 TO 1 MULTIPLEXER



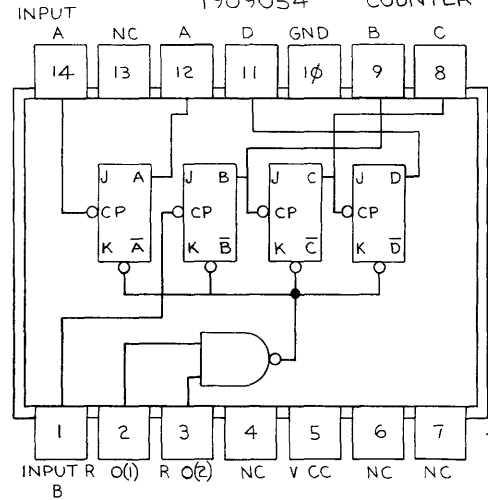
INPUTS		OUTPUT	
STROBE	SELECT	A B	Y
H	X	X X	L
L	L	L X	L
L	L	H X	H
L	H	X L	L
L	H	X H	H

POSITIVE LOGIC:  
LOW LOGIC LEVEL AT S SELECTS A INPUTS.  
HIGH LOGIC LEVEL AT S SELECTS B INPUTS.

SN7496  
1910363  
5-BIT  
SHIFT REG.

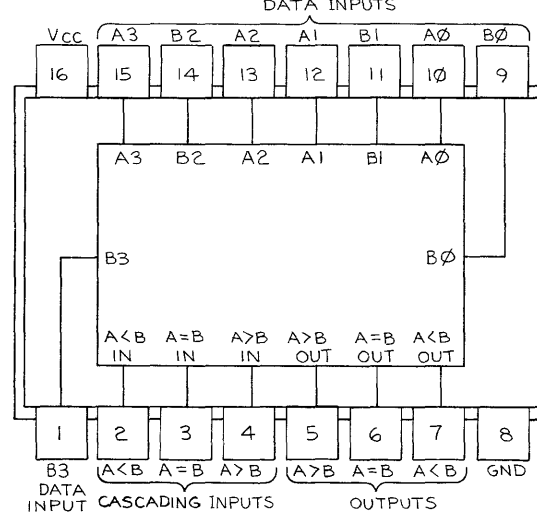


SN7493  
1909054  
4-BIT BINARY  
COUNTER



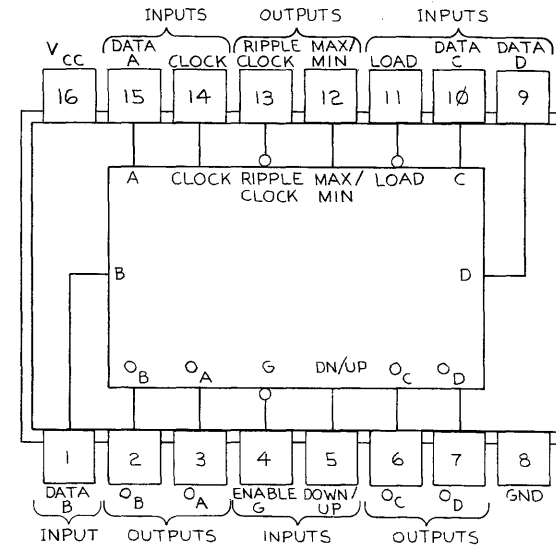
COUNT	OUTPUT			
	D	C	B	A
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

SN7485  
1910224  
4-BIT MAGNITUDE  
COMPARATOR



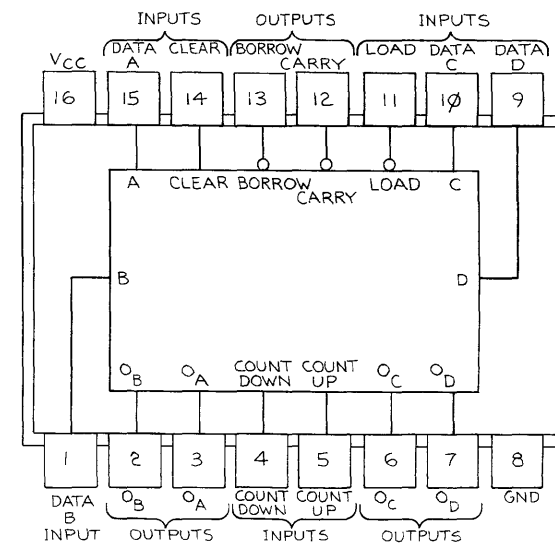
COMPARING INPUTS				CASCADING INPUTS			OUTPUTS		
A3, B3	A2, B2	A1, B1	A0, B0	A > B	A < B	A = B	A > B	A < B	A = B
A3 > B3	X	X	X	X	X	X	H	L	L
A3 < B3	X	X	X	X	X	X	L	H	L
A3 = B3	X	X	X	X	X	X	L	L	L
A3 > B3	A2 > B2	X	X	X	X	X	H	L	L
A3 < B3	A2 < B2	X	X	X	X	X	L	H	L
A3 = B3	A2 = B2	A1 > B1	X	X	X	X	H	L	L
A3 > B3	A2 = B2	A1 < B1	X	X	X	X	L	H	L
A3 = B3	A2 = B2	A1 = B1	A0 > B0	X	X	X	H	L	L
A3 < B3	A2 = B2	A1 = B1	A0 < B0	X	X	X	L	H	L
A3 = B3	A2 = B2	A1 = B1	A0 = B0	H	L	L	H	L	L
A3 > B3	A2 = B2	A1 = B1	A0 = B0	L	H	L	L	H	L
A3 < B3	A2 = B2	A1 = B1	A0 = B0	L	L	H	L	L	H

SN74191  
1910096  
SYNC UP/DWN  
COUNTER



ASYNCHRONOUS INPUTS: LOW INPUTS TO LOAD SETS  $Q_A = A$ ,  $Q_B = B$ ,  $Q_C = C$ , AND  $Q_D = D$

SN74193  
1910098  
4-BIT UP/DWN  
COUNTER



LOGIC: LOW INPUTS TO LOAD SETS  $Q_A = A$ ,  $Q_B = B$ ,  $Q_C = C$  AND  $Q_D = D$

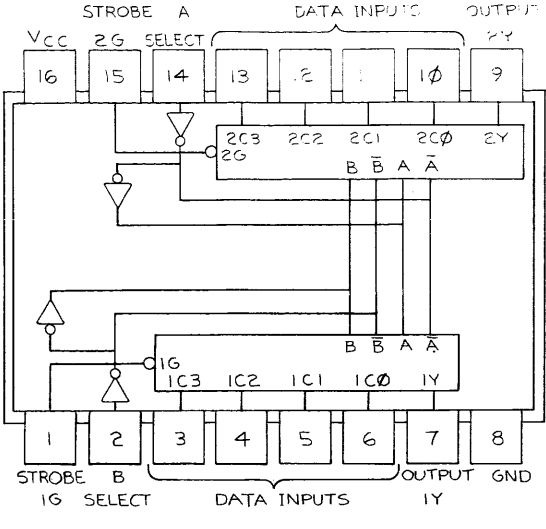
BRUNING 40-107-1536F  
DEC FORM NO DRD 100-A

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN. DATE 9-28-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS	ANGLES	CHK'D. DATE	TITLE	
XXX = .005	± 0° 30'	ENG. DATE	DACE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD. DATE	DATE	DIAGRAMS	
MATERIAL	NEXT HIGHER ASSY.	SCALE	SIZE CODE	NUMBER
FINISH	B-DD-GT40-0	SHEET 1 OF 4	DSP	GT40-0-2

REV. NO. GT40-0-2

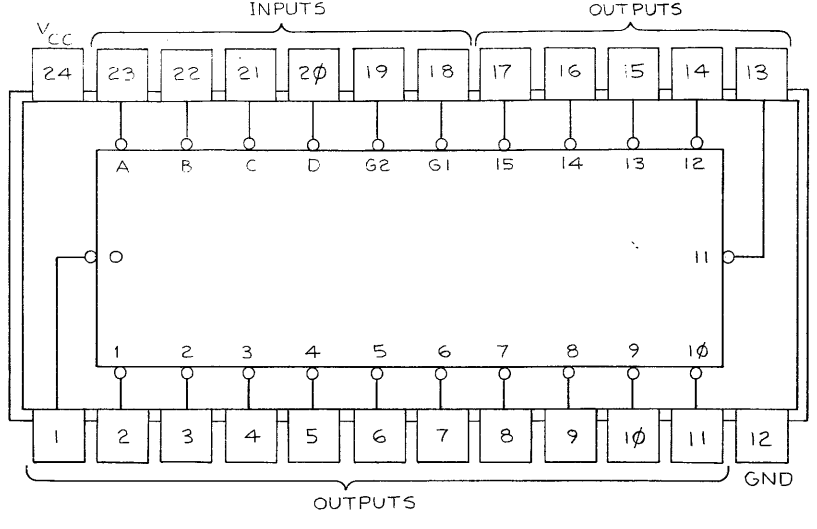
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### SN74155 1909257 DUAL 4 TO 1 MULTIPLEXER



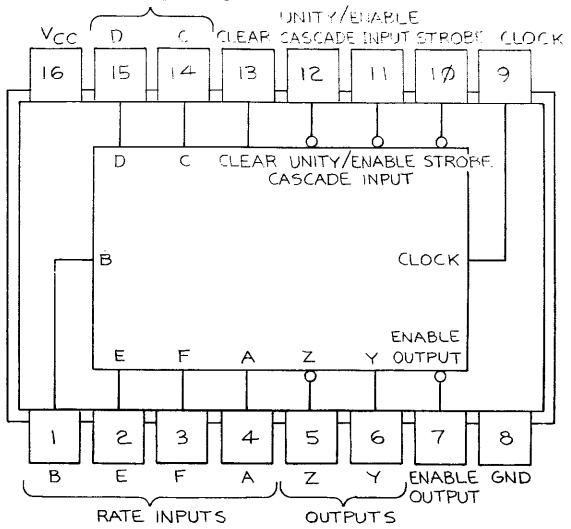
ADDRESS INPUTS		DATA INPUTS				STROBE	OUTPUT
B	A	C0	C1	C2	C3	G	Y
X	X	X	X	X	X	H	L
L	L	L	L	L	L	H	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L
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L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L

### SN74154 1909701 4 TO 16 DECODER / DEMULTIPLEXER



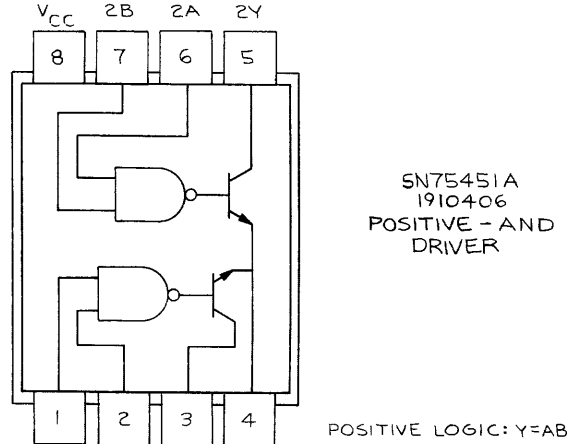
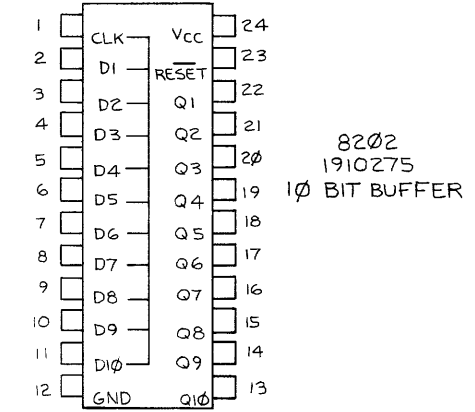
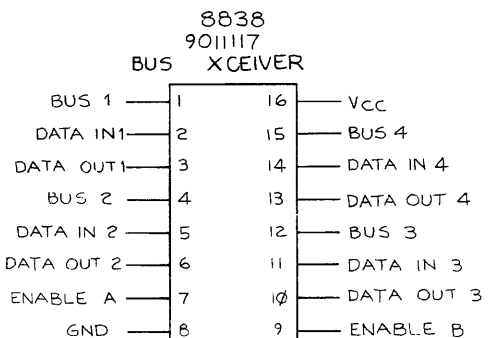
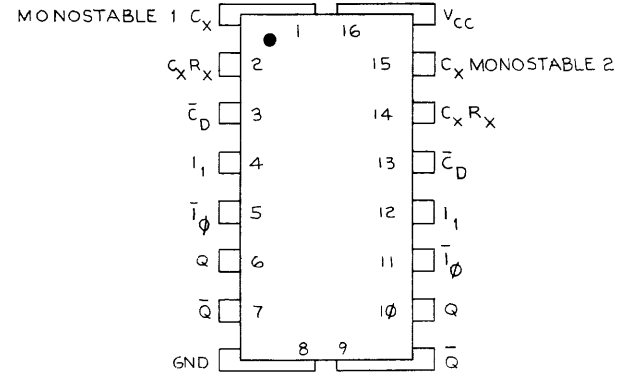
INPUTS				OUTPUTS																		
G1	G2	D	C	B	A	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
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L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L

### SN7497 1911195 BINARY RATE MULTIPLEXER



CLEAR	ENABLE	STROBE	INPUTS				NUMBER OF CLOCK PULSES	UNITY / CASCADE	OUTPUTS			NOTES
			F	E	D	C			B	A	Y	
L	X	H	X	X	X	X	X	H	L	H	H	B
L	L	L	L	L	L	L	L	H	L	L	L	C
L	L	L	L	L	L	L	L	H	L	L	L	C
L	L	L	L	L	L	L	L	H	L	L	L	C
L	L	L	L	L	L	L	L	H	L	L	L	C
L	L	L	L	L	L	L	L	H	L	L	L	C
L	L	L	L	L	L	L	L	H	L	L	L	C
L	L	L	L	L	L	L	L	H	L	L	L	C
L	L	L	L	L	L	L	L	H	L	L	L	C
L	L	L	L	L	L	L	L	H	L	L	L	C
L	L	L	L	L	L	L	L	H	L	L	L	C
L	L	L	L	L	L	L	L	H	L	L	L	C
L	L	L	L	L	L	L	L	H	L	L	L	C
L	L	L	L	L	L	L	L	H	L	L	L	C
L	L	L	L	L	L	L	L	H	L	L	L	C
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L	L	L	L	L	L	L	L	H	L	L	L	C
L	L	L	L	L	L	L	L	H	L	L	L	C
L	L	L	L	L	L	L	L	H	L	L	L	C
L	L	L	L	L	L	L	L	H	L	L	L	C
L	L	L	L	L	L	L	L	H	L	L	L	C

### 9602 1910951 2602 1910257 MONOSTABLE ONE SHOTS



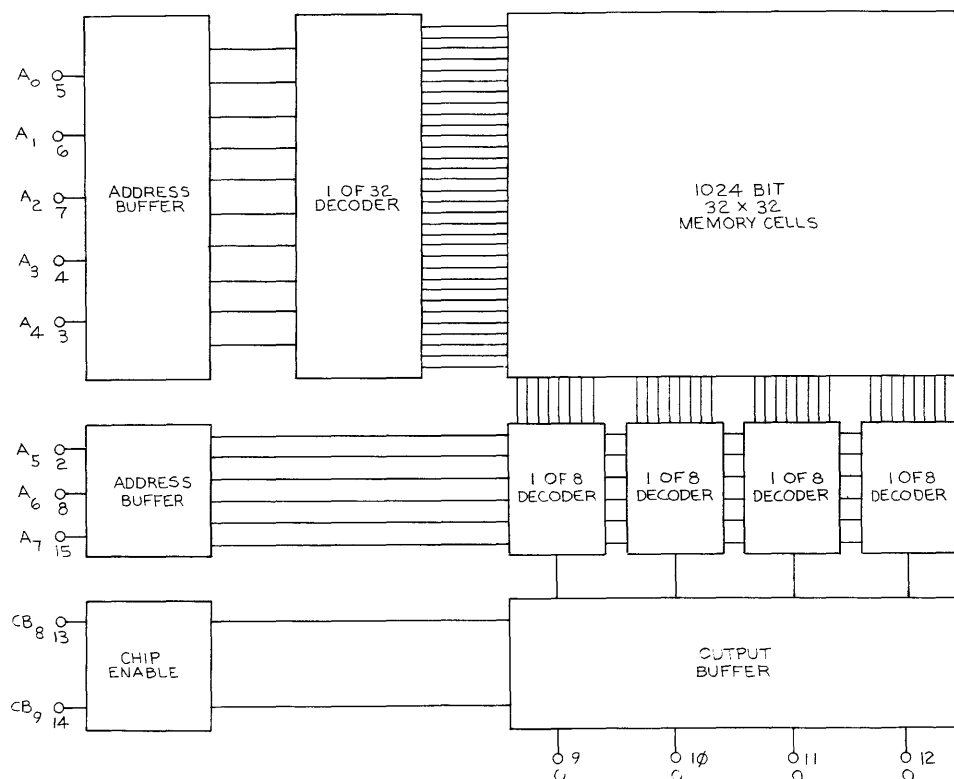
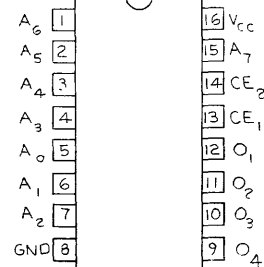
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES: TOLERANCES		DRN: <i>CBM/Cy</i> DATE: 9-25-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS: .xxx = .005, .xx = .02, .x = .1	ANGLES: ±0° 30'	CHK'D: <i>[Signature]</i> DATE: 11-2-72	TITLE: BASE DIAGRAMS	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		ENG: <i>[Signature]</i> DATE: 11-2-72		
MATERIAL: —	NEXT HIGHER ASSY: —	PROD. <i>[Signature]</i> DATE: 11/24/72	SIZE CODE: B-DD-GT40-φ	NUMBER: 2
FINISH: —	SCALE: —		REV.:	
		SHEET 2 OF 4	DIST: [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]	

BRUNING 40-107 15988  
REVISIONS  
CHK CHANGE NO. REV.

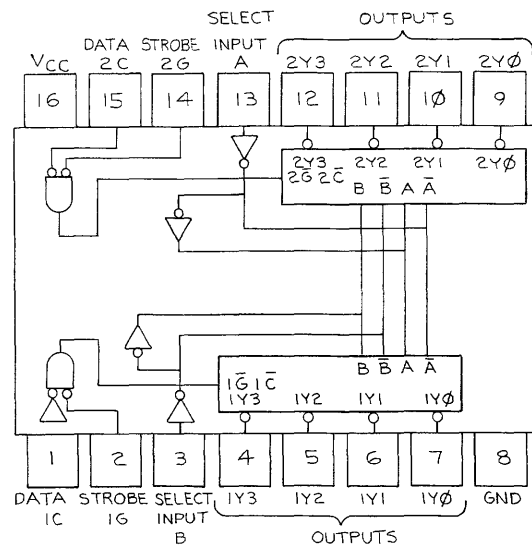
REV. GT40-0-2

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IM5603  
23000A2-03  
PROGRAMMABLE READ ONLY MEMORY

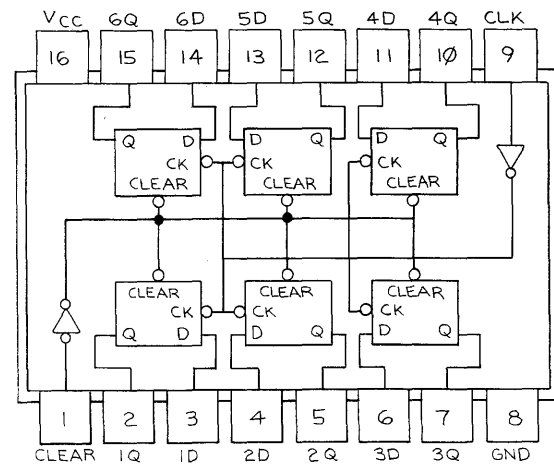


SN74155  
1910656  
2 TO 4 DECODER/DEMULTIPLEXER



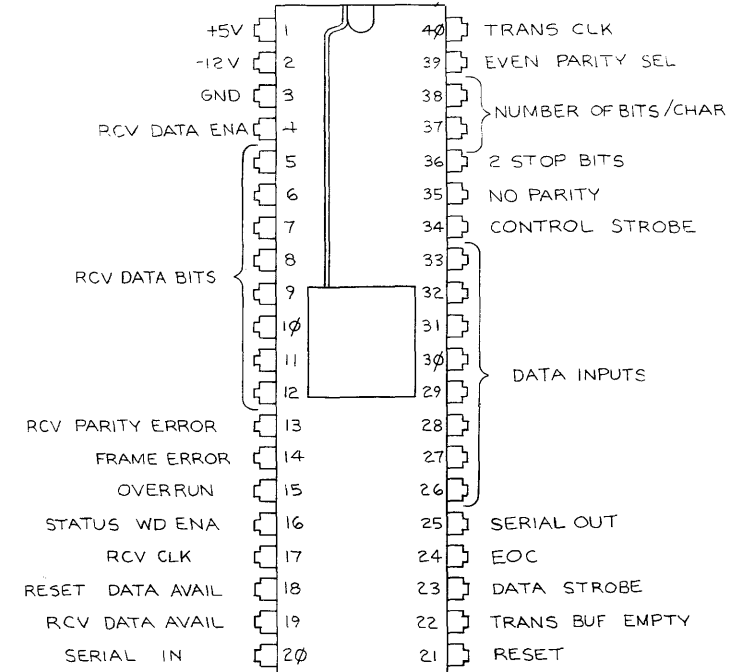
INPUTS			OUTPUTS			
SELECT	STROBE	DATA	IY0	IY1	IY2	IY3
B	A	1G	1C			
X	X	L	H	H	H	H
L	L	L	L	H	H	H
L	H	L	L	H	L	H
H	L	L	H	H	L	L
H	H	L	L	H	H	H
X	X	X	L	H	H	H

SN74174  
1910652  
HEX D-TYPE FF'S

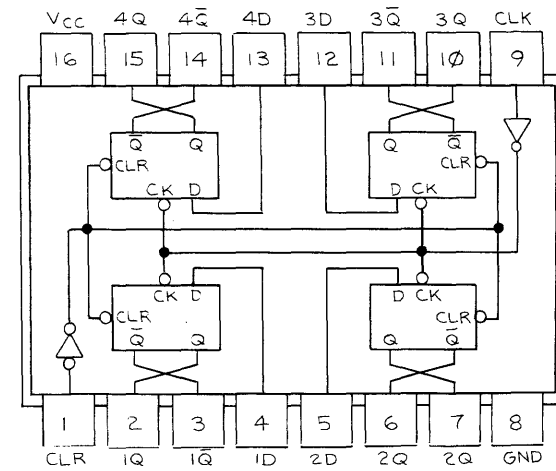


POSITIVE LOGIC: SEE FUNCTION TABLE

UART  
1910459  
UNIVERSAL ASYNC. RECEIVER TRANSMITTER



SN7475  
1910651  
QUAD D-TYPE FF'S



POSITIVE LOGIC: SEE FUNCTION TABLE

REV	
CHG	
CHK	
NO	
NO	
NO	

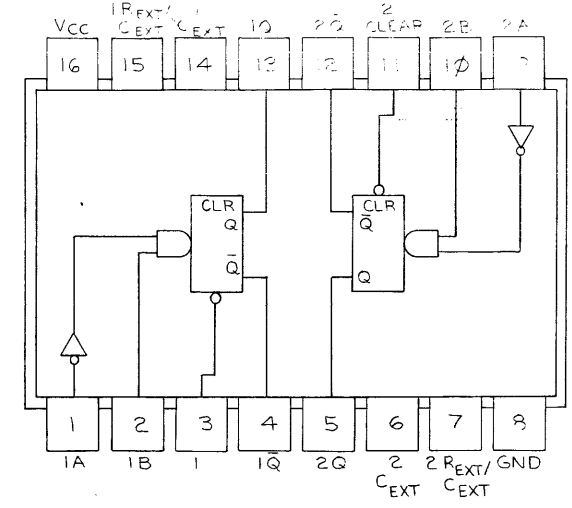
BRUNING 40-107 1586E  
DTC FORM 710  
DRD 100-A

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN. <i>LSM/Cy</i>	DATE 9-25-70	<b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS ANGLES	CHK'D.	DATE		
XXX = .005 XX = .02 K = 1	ENG. <i>LSM/Cy</i>	DATE	TITLE BASE DIAGRAMS	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD. <i>LSM/Cy</i>	DATE 10/24/70		
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
FINISH	B-PL GT40		DSP	GT40-0-2
	SCALE		SHEET 3 OF 4	DIST.

REV. NUMBER  
D SP GT40-0-2

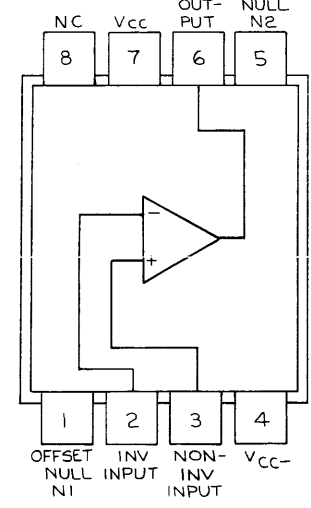
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SN74123  
1910436  
RETRIGGERABLE MONOSTABLE MULTIVIBRATOR

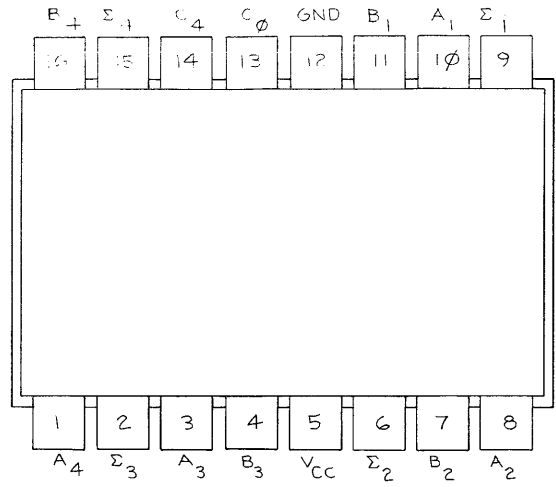


POSITIVE LOGIC  
LOW INPUT TO CLEAR RESETS Q TO LOW LEVEL AND INHIBITS DATA INPUTS.

DEC741C  
1910298

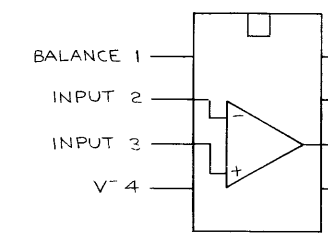


SN7483  
1909252  
4-BIT BINARY FULL ADDER

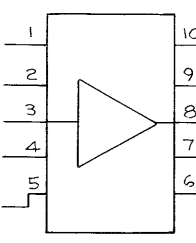


INPUT		OUTPUT			
		WHEN C <sub>0</sub> =0		WHEN C <sub>0</sub> =1	
A <sub>1</sub>	B <sub>1</sub>	Σ <sub>1</sub>	C <sub>1</sub>	Σ <sub>2</sub>	C <sub>2</sub>
0	0	0	0	0	0
0	1	1	0	1	0
1	0	1	0	1	0
1	1	0	1	0	1
0	0	0	0	0	0
0	0	1	0	1	0
0	1	1	0	0	1
0	1	0	1	0	0
1	0	1	0	0	1
1	0	0	1	1	0
1	1	0	0	1	1
1	1	1	0	0	0
1	1	1	1	0	1
1	1	0	1	1	0
1	1	1	1	1	1

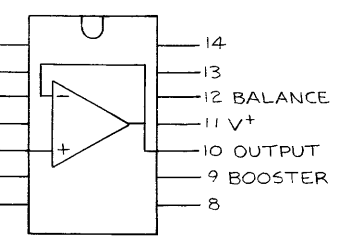
DEC 701AN  
1910282



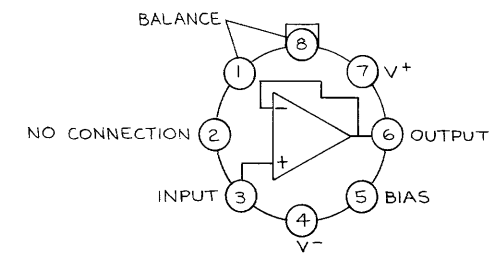
NH0002CN  
1910446



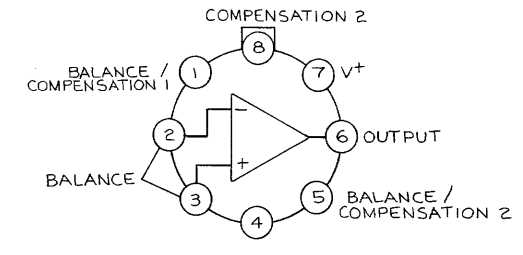
LM310  
1910235



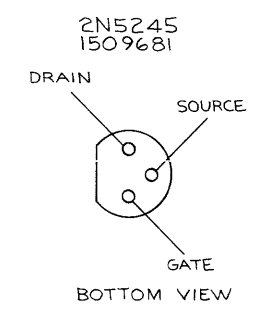
NOTE: PIN 6 CONNECTED TO BOTTOM OF PACKAGE.



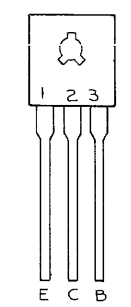
NOTE: PIN 4 CONNECTED TO CASE.  
LM302  
1909343



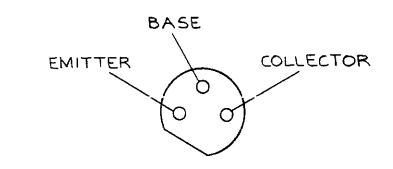
LM318  
1910735



MJE 2955  
1510556  
MJE 3055  
1510555



2N4250  
1509142  
DEC6534B  
1503409-01

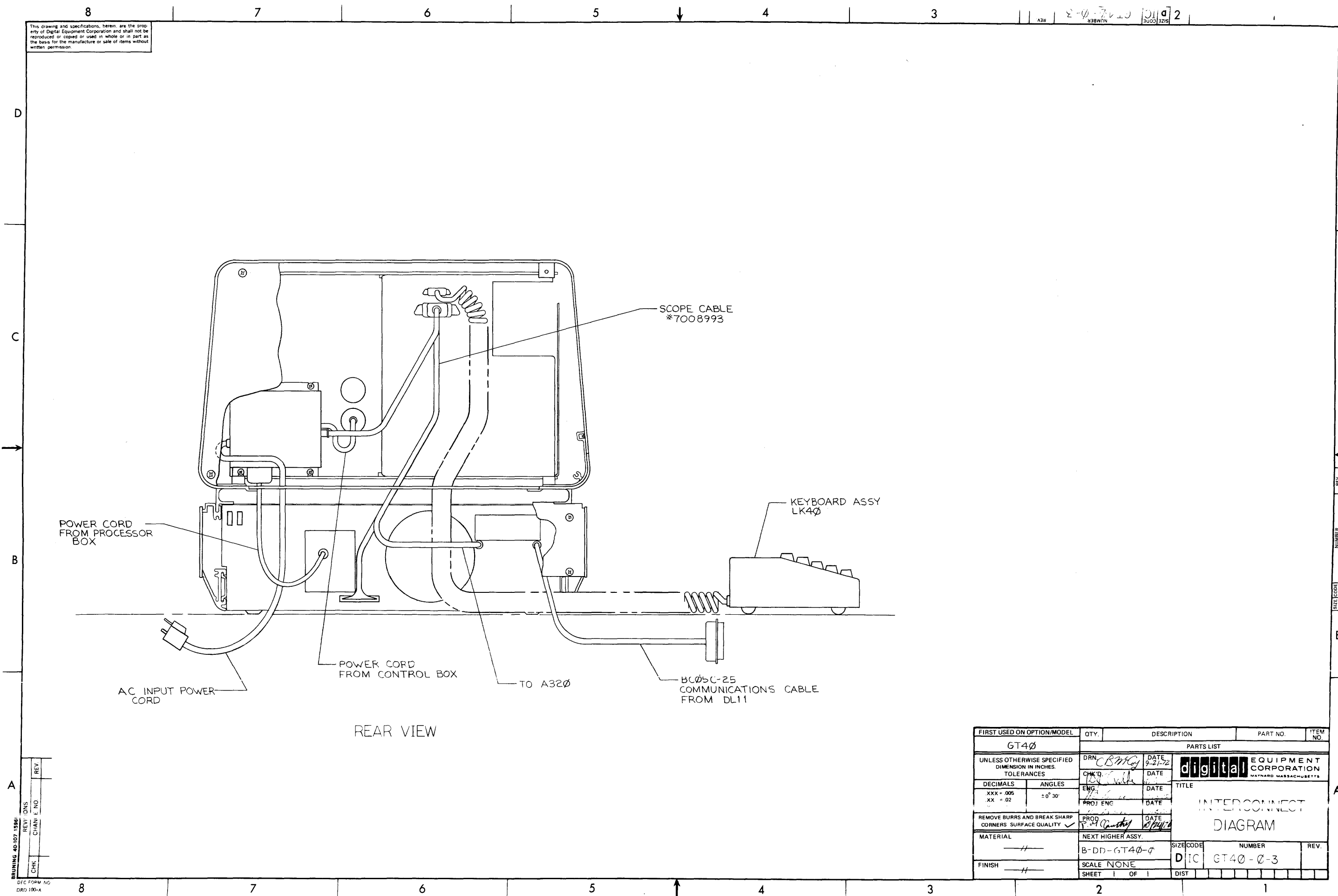


FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.		DRN. <i>CBM</i> DATE 7-26-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
TOLERANCES		CHK'D DATE		
DECIMALS	ANGLES	ENG. DATE	TITLE BASE DIAGRAMS	
.xxx = .005 .xx = .02 .x = .1	±0° 30'	PROJ. ENG. DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD. DATE	SIZE CODE NUMBER REV. DSP GT40-0-2	
MATERIAL		NEXT HIGHER ASSY.		
FINISH		SCALE	SHEET 4 OF 4	
		SHEET 4 OF 4		

BRUNING 40-107 1598B  
REVISIONS  
CHANGE NO.  
CHK  
REV

REV. NUMBER GT40-0-2

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REAR VIEW

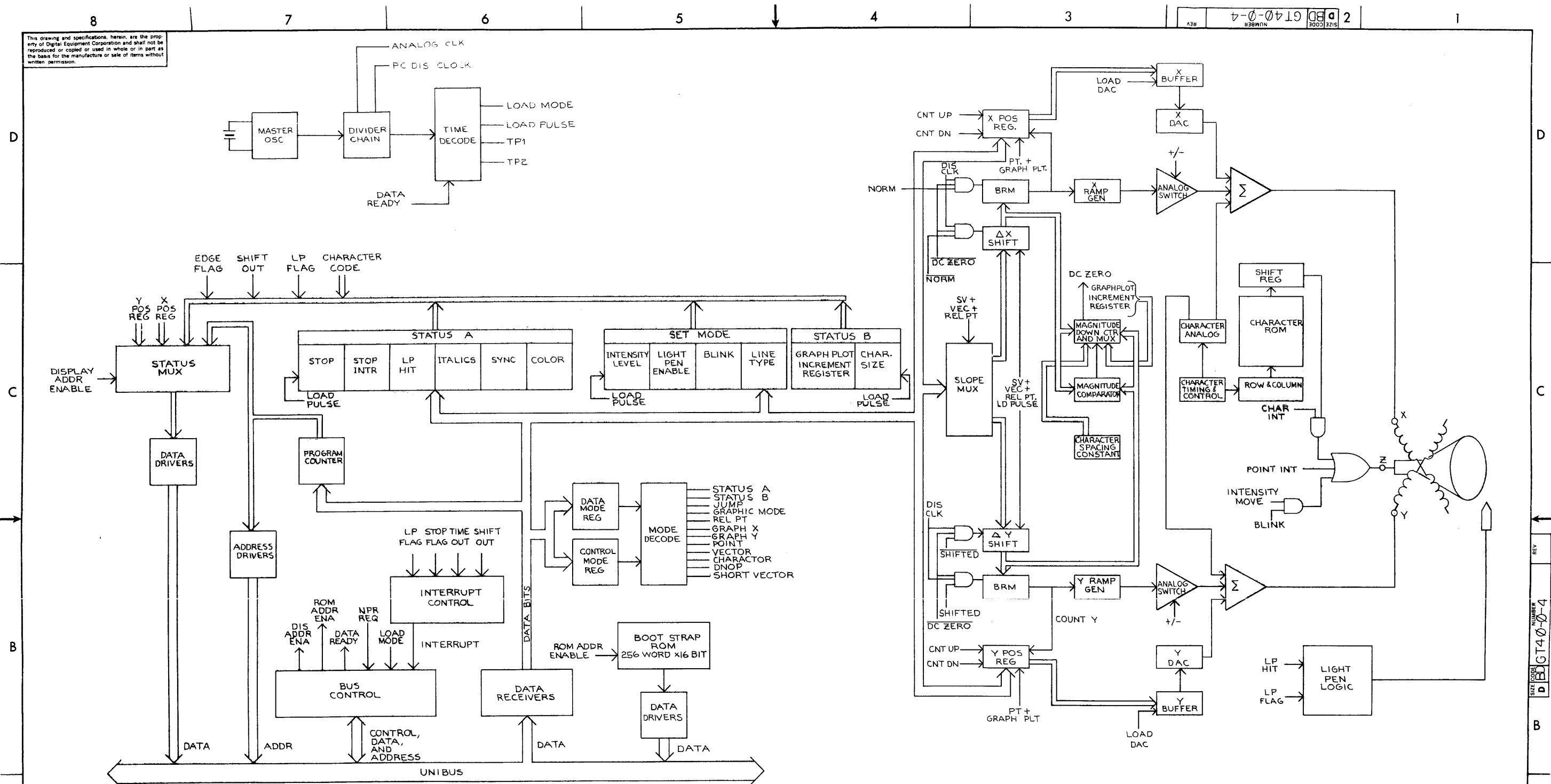
REVISIONS

REV.	DATE	BY	CHK.	APP.

STC FORM NO. DRD 100-A

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.						
GT4Ø		PARTS LIST								
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN	DATE	 <b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small>						
DECIMALS	ANGLES	CHK'D	DATE							
XXX = .005	± 0° 30'	ENG.	DATE							
XX = .02		PROJ. ENG.	DATE							
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	✓	PROD.	DATE	TITLE						
MATERIAL		NEXT HIGHER ASSY.		INTERCONNECT DIAGRAM						
FINISH		B-DD-GT4Ø-Ø	SCALE NONE	<table border="1"> <tr> <td>SIZE CODE</td> <td>NUMBER</td> <td>REV.</td> </tr> <tr> <td>DIC</td> <td>GT4Ø-Ø-3</td> <td></td> </tr> </table>	SIZE CODE	NUMBER	REV.	DIC	GT4Ø-Ø-3	
SIZE CODE	NUMBER	REV.								
DIC	GT4Ø-Ø-3									
		SHEET 1 OF 1	DIST							

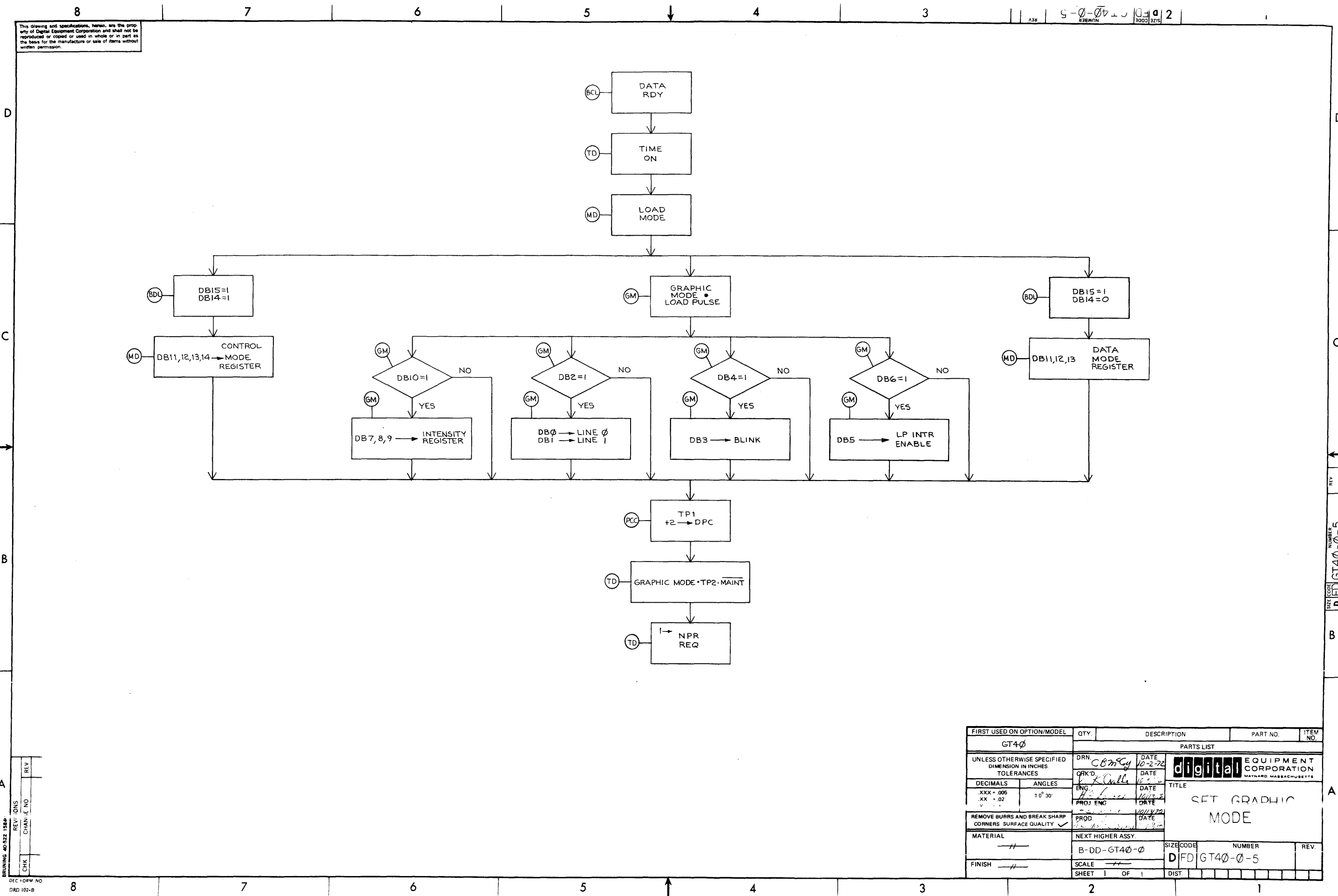
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REV	NO
CHG	NO
CHK	NO

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .XXX = .005	CHK'D	DATE	TITLE	
ANGLES ±.XX = .02	ENG.	DATE	DISPLAY PROCESSOR	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ. ENG.	DATE	SIZE CODE NUMBER REV.	
MATERIAL	PROD.	DATE	D BD	GT40-0-4
FINISH	NEXT HIGHER ASSY.		B-DD-GT40-0	
	SCALE			
	SHEET	OF	DIST	

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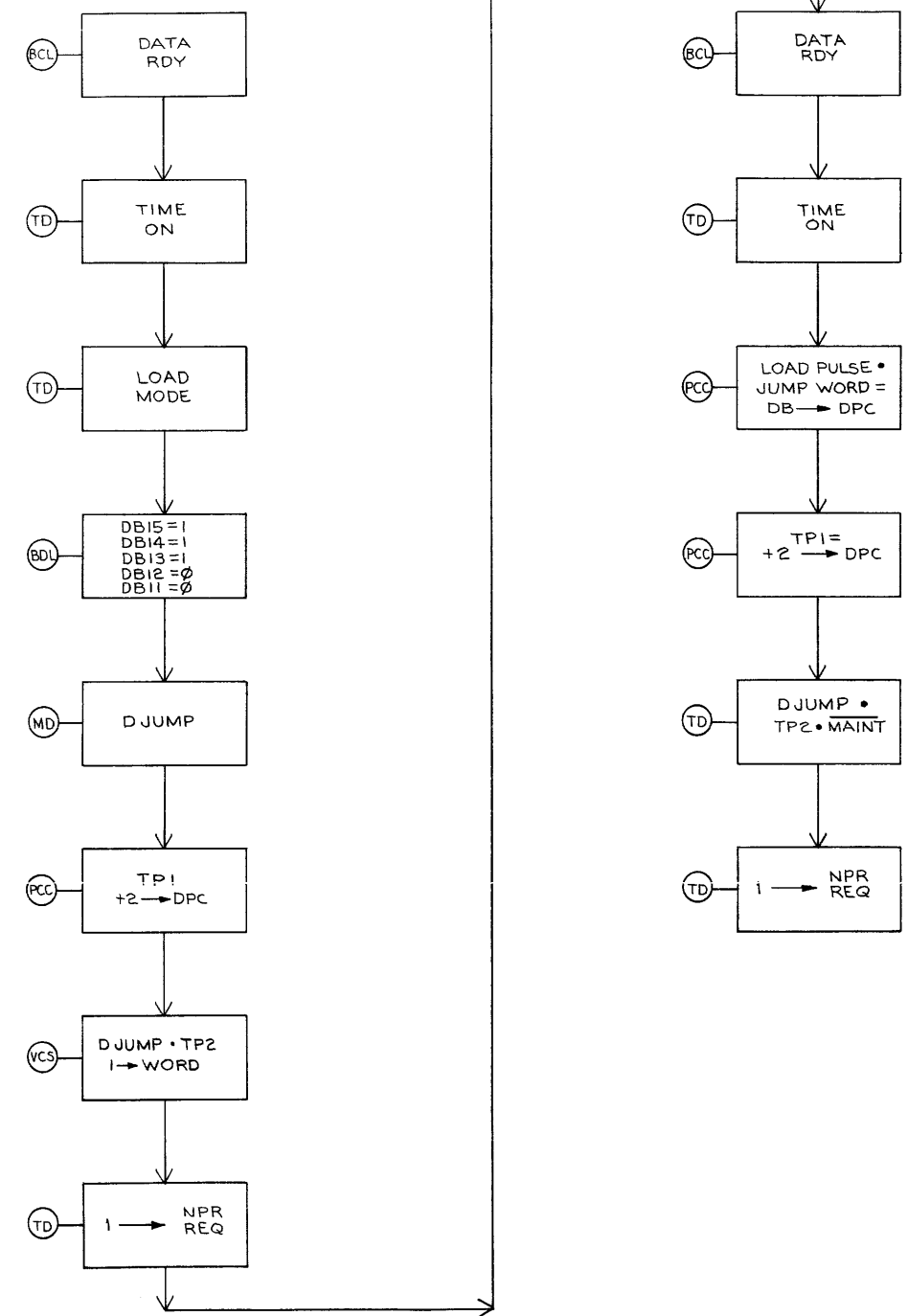
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN <i>CBMcy</i>	DATE 10-2-72	<b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS	ENG'D <i>K. O'Neil</i>	DATE 10-2-72		
ANGLES	ENG <i>H. L. ...</i>	DATE 10/18/72		
XXX - .005 XX - .02	PROJ ENG	DATE 10/18/72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD <i>[Signature]</i>	DATE 10/18/72	TITLE SET GRAPHIC MODE	
MATERIAL	NEXT HIGHER ASSY.			
FINISH	SCALE			
		SHEET 1 OF 1	SIZE CODE D	NUMBER FDGT40-0-5
			DIST	

REV	NO
CHK	NO
CHAN	NO
DESIGN	NO

DEC FORM NO  
DRD 101-B

REV. NO. 5  
PART NO. GT40-0-5

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FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN. <i>C.B. McCoy</i>	DATE 10-2-72	<b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS ANGLES	CHK'D. <i>[Signature]</i>	DATE 10-6-72		
.XXX = .005 .XX = .02 .X = .1	±0° 30'	ENG. <i>[Signature]</i>	TITLE <b>DISPLAY JUMP</b>	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ. ENG. <i>[Signature]</i>	DATE 10-19-72		
MATERIAL	NEXT HIGHER ASSY.	PROD. <i>[Signature]</i>	SIZE CODE NUMBER REV. <b>D</b> <b>FD</b> <b>GT40-0-6</b>	
FINISH	B-DD-GT40-0	DATE 10-19-72		
	SCALE	SHEET 1 OF 1	DIST.	

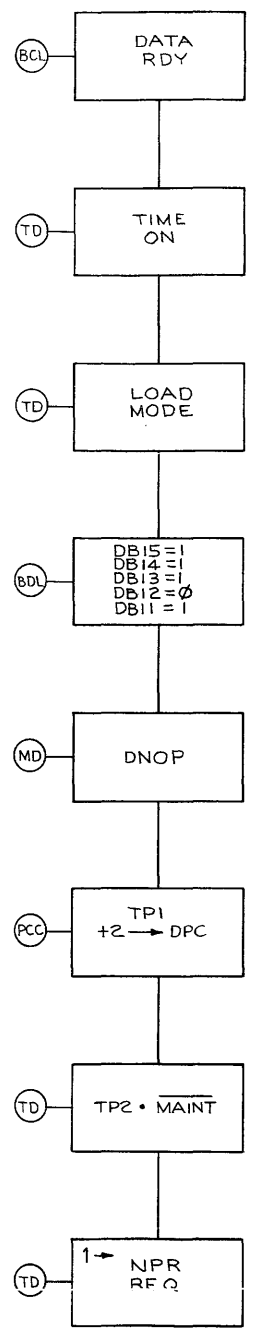
BRUNING 40-522 15840  
DEC FORM NO  
DRD 102-B

SIZE CODE NUMBER  
**D** **FD** **GT40-0-6**



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REV. NUMBER  
D F D GT40-0-7

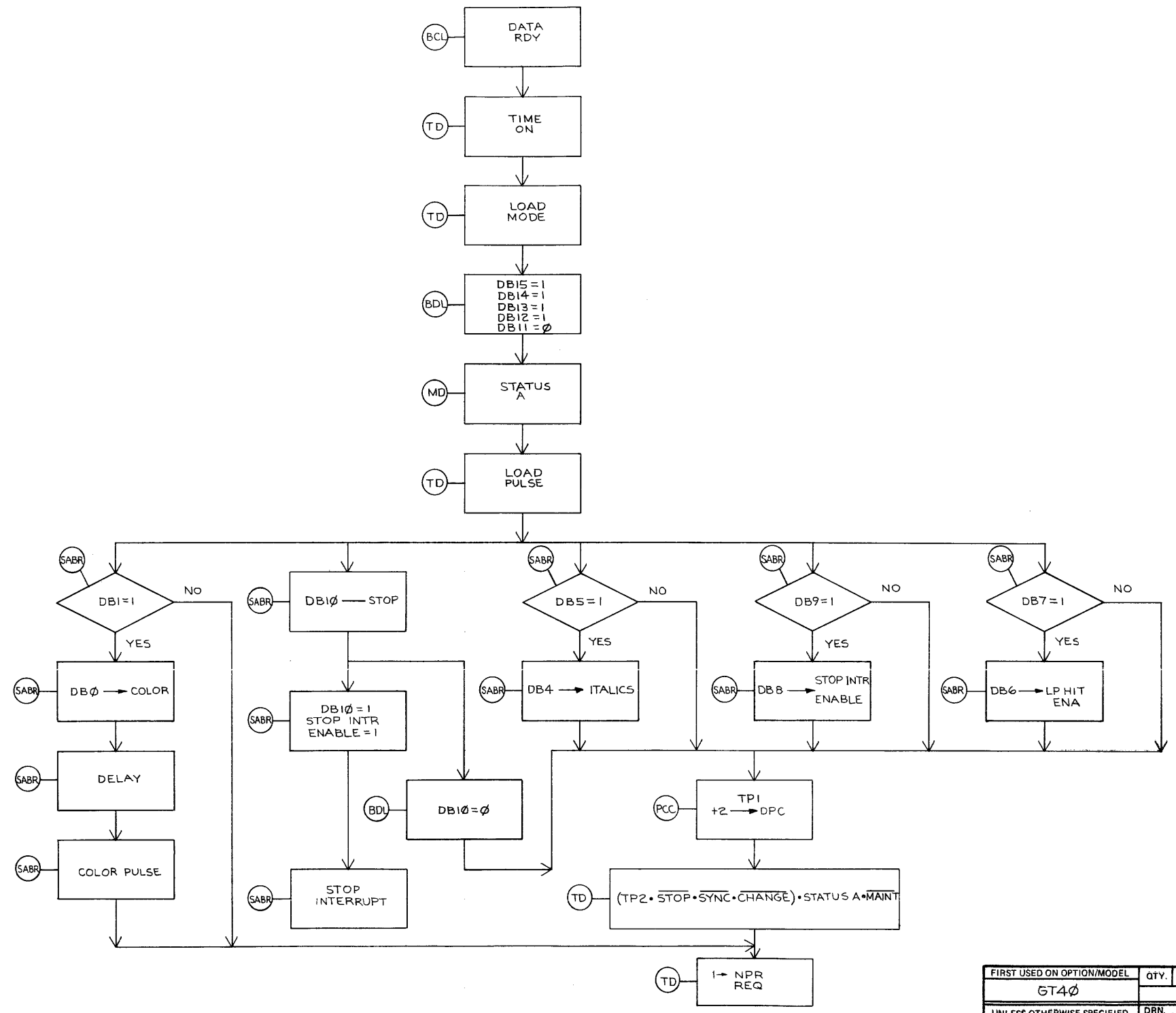


FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN. <i>CBACy</i>	DATE 10-2-72	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS	CHK'D. <i>[Signature]</i>	DATE 10-5-72		
ANGLES	ENG. <i>[Signature]</i>	DATE 11/1/72		
.XXX = .005 .XX = .02 X = .1	PROJ. ENG. <i>[Signature]</i>	DATE 11/1/72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROD. <i>[Signature]</i>	DATE 11/1/72	TITLE NO OPERATION	
MATERIAL	NEXT HIGHER ASSY.			
FINISH	SCALE			
	SHEET 1 OF 1	DIST.	SIZE CODE D F D	NUMBER GT40-0-7

BRUNING 40-522 15840  
DEC FORM NO  
DRD 102-B

REV. QMS	REV.
CHK	CHK
CHANGE NO.	

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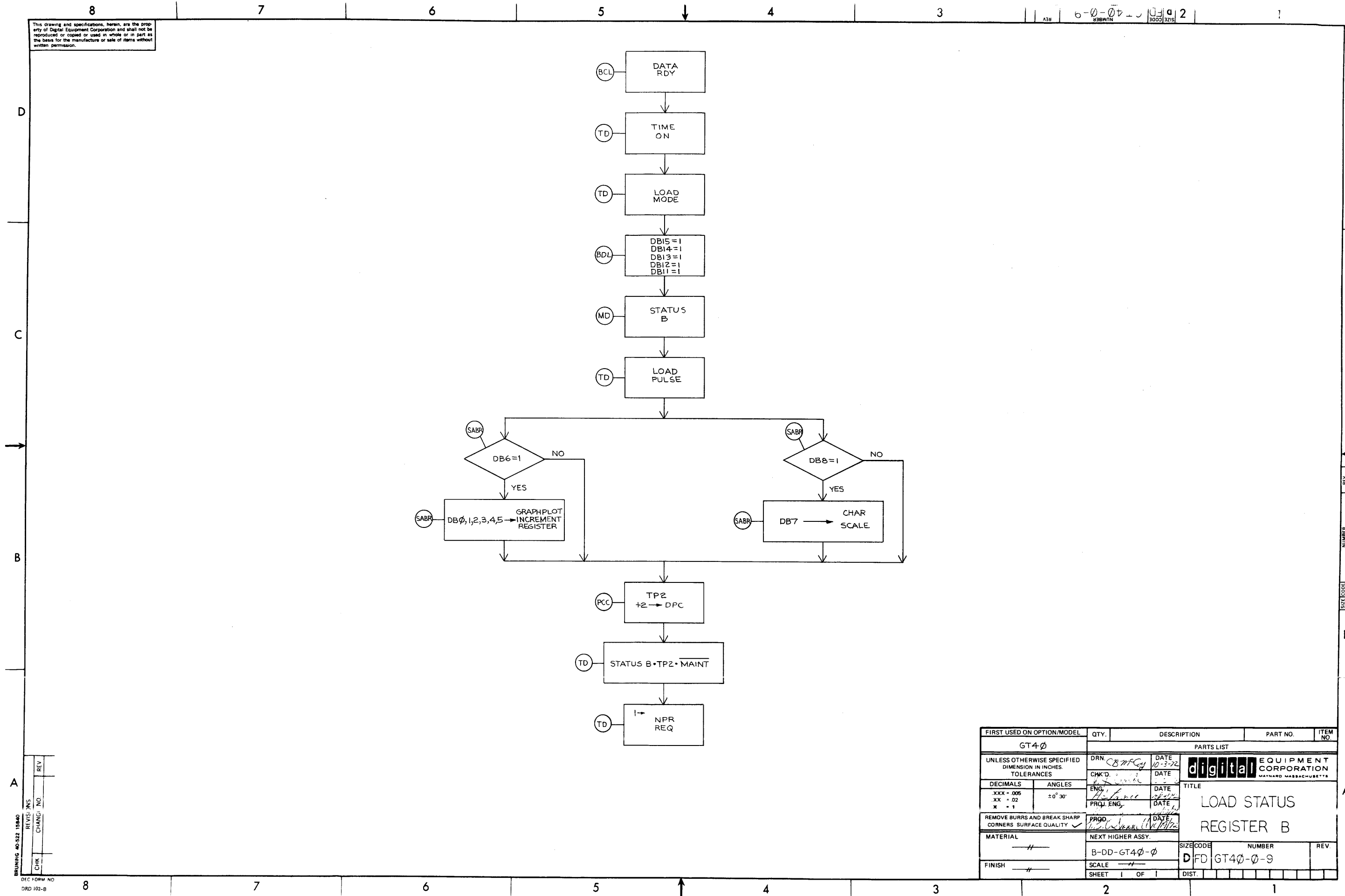


FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN. <i>CBW/Cy</i> DATE 10-2-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS		
DECIMALS ANGLES	CHK'D. <i>10/2/72</i> DATE	TITLE		
.XXX = .005 ±0° 30'	ENG. <i>11/13/72</i> DATE	LOAD STATUS REGISTER A		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ. ENG. <i>11/13/72</i> DATE	SIZE CODE NUMBER REV.		
MATERIAL	PROD. <i>11/13/72</i> DATE	B-DD-GT40-0	D	FD GT40-0-8
FINISH	NEXT HIGHER ASSY.	SCALE	SHEET OF 1	DIST.

BRUNING 40-522 15840  
 DEC FORM NO DRD 102-B  
 REVISIONS  
 CHANGE NO  
 REV

REV  
 NUMBER  
 D FD GT40-0-8

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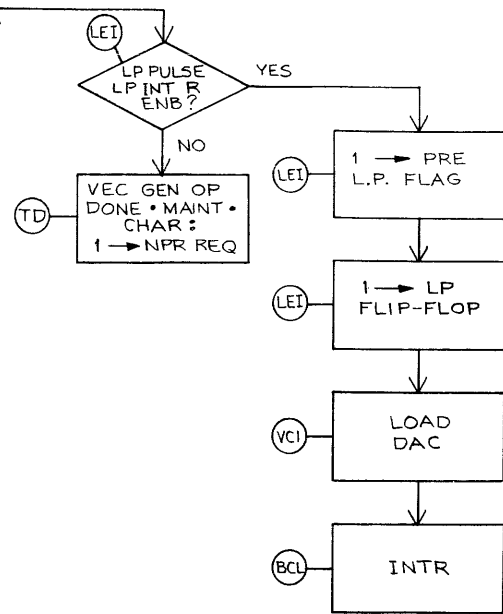
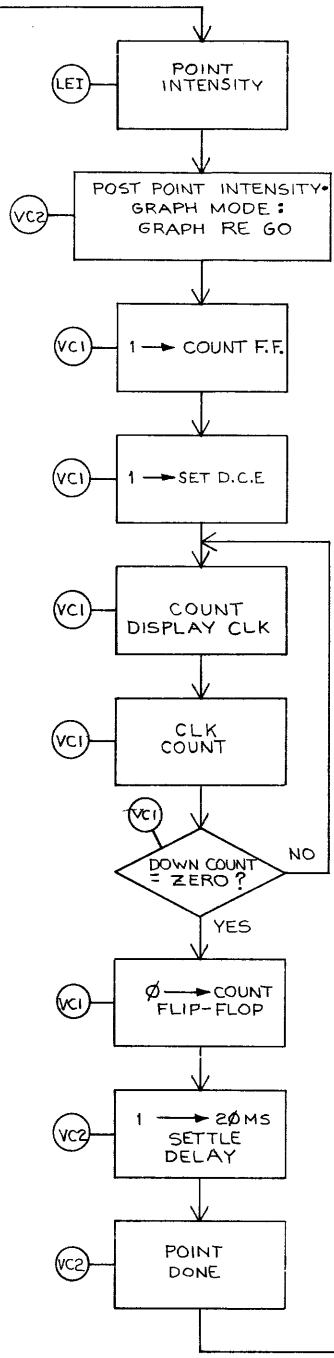
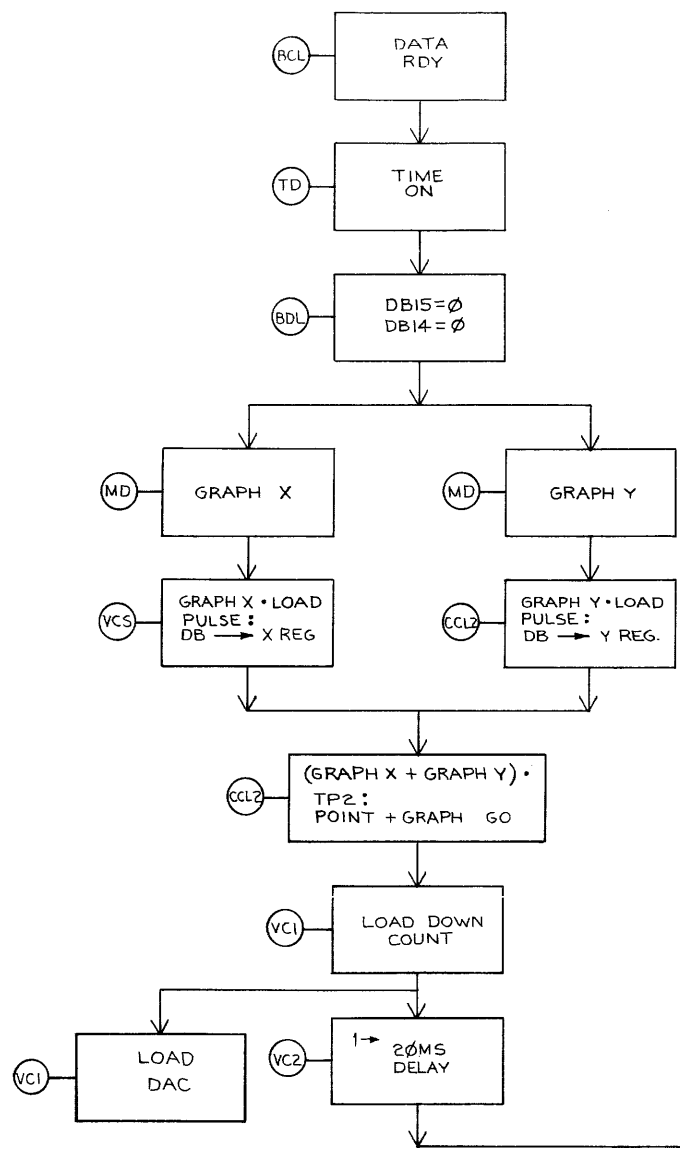


REV	
NO.	
CHG.	
CHK	

DEC FORM NO. 102-B

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS	ANGLES	DRN	DATE	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS TITLE <b>LOAD STATUS REGISTER B</b>
.xxx = .005	±0° 30'	CHK'D	DATE	
.xx = .02		ENG.	DATE	
x = .1		PROJ. ENG.	DATE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD.	DATE	
MATERIAL		NEXT HIGHER ASSY.		
FINISH		B-DD-GT40-0	SIZE CODE	NUMBER
		SCALE	D	FD GT40-0-9
		SHEET 1 OF 1	DIST.	

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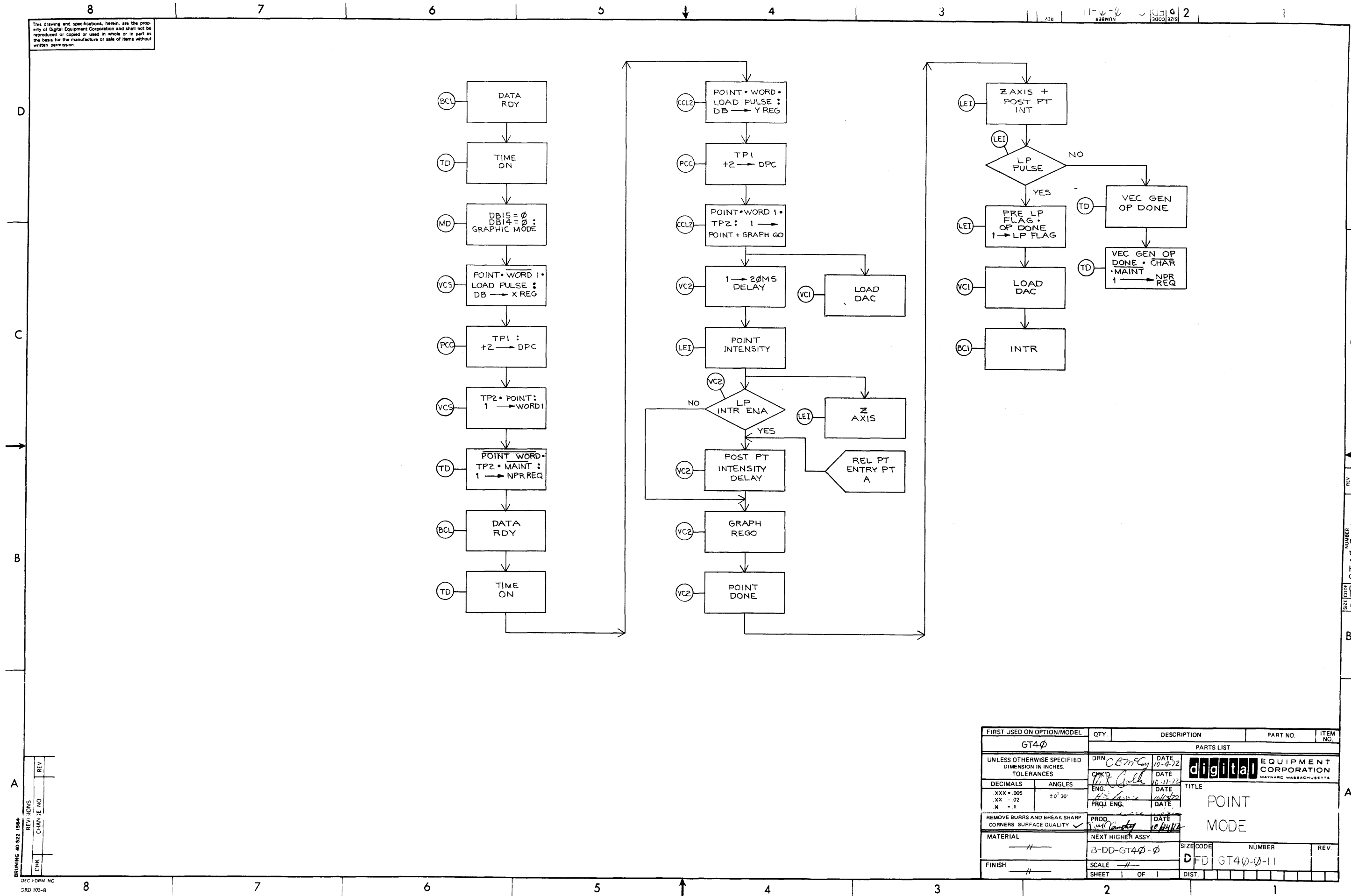


FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN: <i>CBM</i>	DATE: 10-3-72	<b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD MASSACHUSETTS</small>
DECIMALS	ANGLES	CHK'D: <i>[Signature]</i>	DATE: 10-5-72	
.xxx = .005	±0° 30'	ENG. <i>[Signature]</i>	DATE: 10-17-72	TITLE GRAPH X OR GRAPH Y
.xx = .02		PROJ. ENG. <i>[Signature]</i>	DATE: 11-17-72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		PROD. <i>[Signature]</i>	DATE: 10/24/72	
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
—//—	B-DD-GT40-0		D	FD GT40-0-10
FINISH	SCALE	SHEET	OF	DIST.
—//—	—//—			

BRUNING 40-522 15840  
 REVISIONS  
 CHANGE NO. REV.  
 CHK

REV. NUMBER  
 D FD GT40-0-10

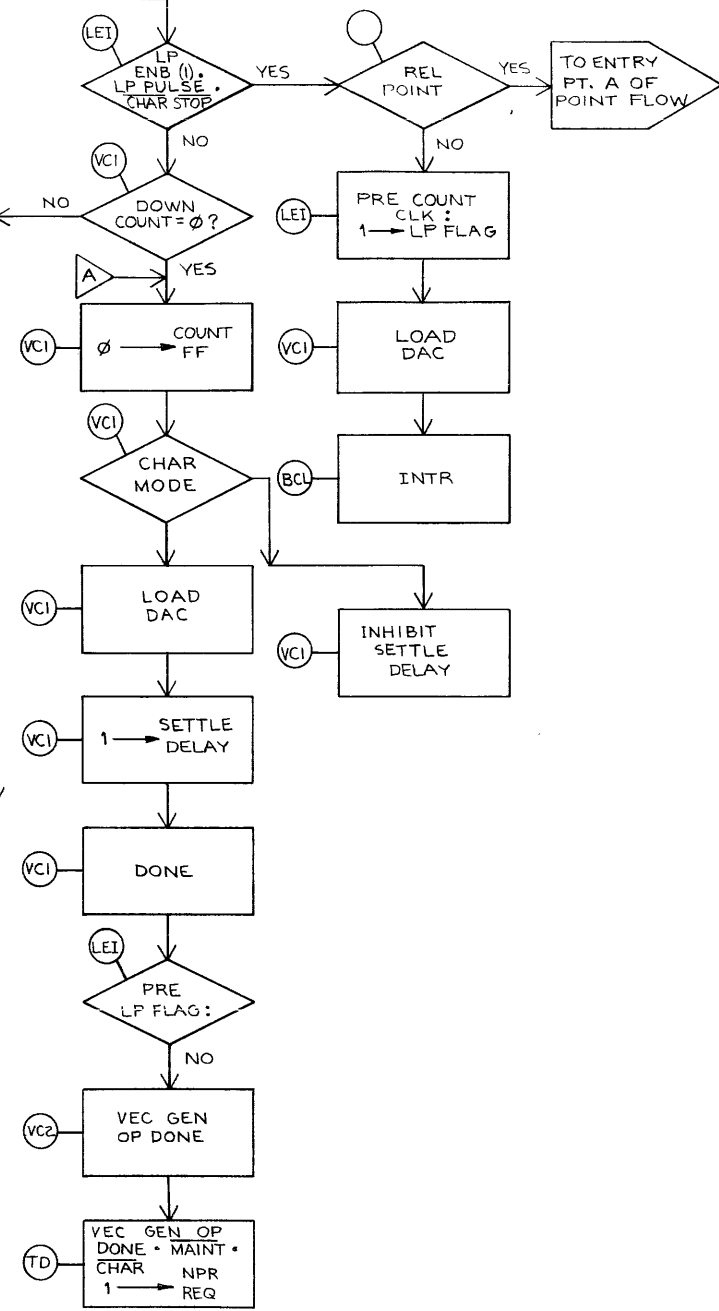
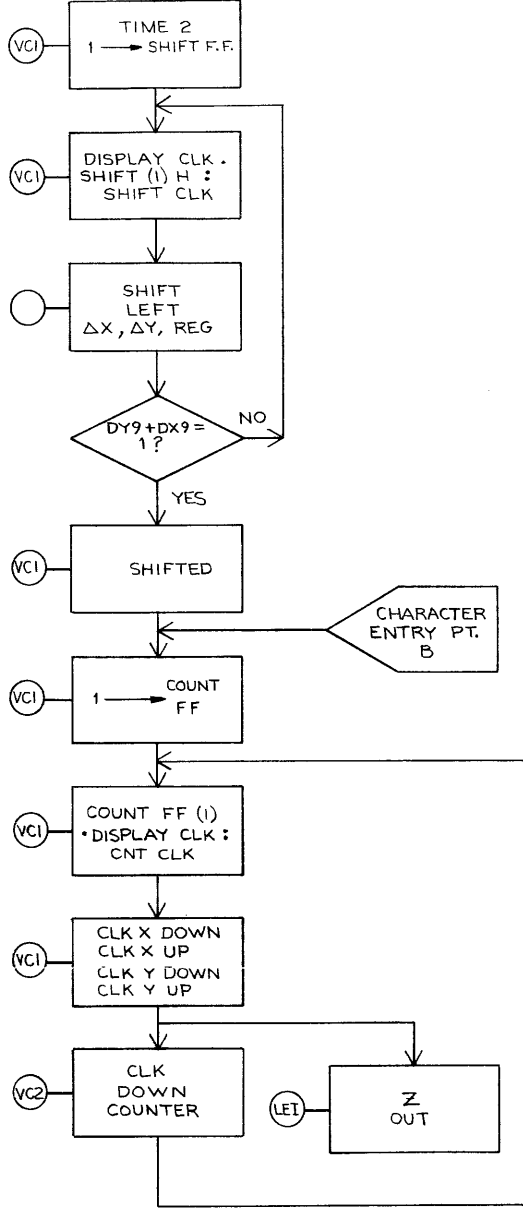
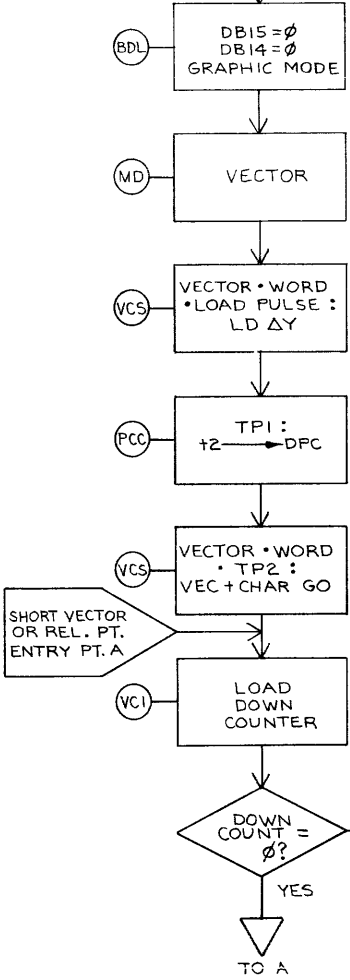
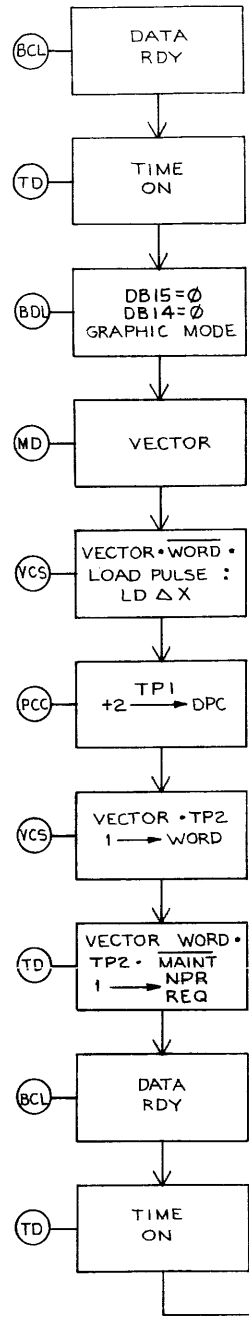
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BRUNING 40-532-1584	REV. NO.	REV.
CHK	CHAN. NO.	
DEC FORM NO ORD 102-B		

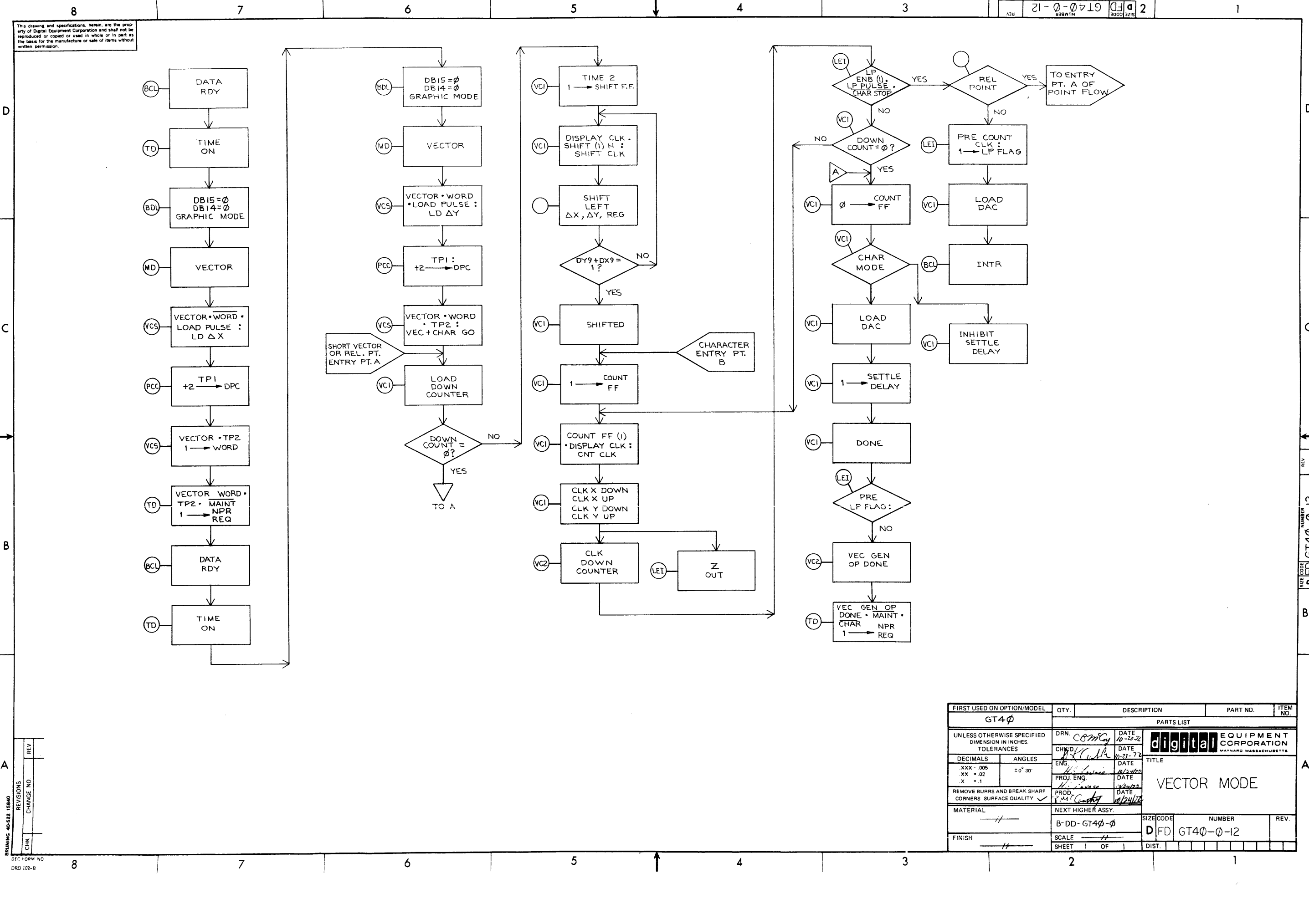
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN. <i>CBM</i>	DATE 10-4-72	 digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS	CHK'D. <i>W.C. Gull</i>	DATE 10-11-72		
ANGLES	ENG. <i>H. J. Lewis</i>	DATE 10/12/72		
.XXX = .005 .XX = .02 .X = .1	PROJ. ENG.	DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD. <i>W. J. Gaudy</i>	DATE 10/12/72	TITLE POINT MODE	
MATERIAL	NEXT HIGHER ASSY.	B-DD-GT40-0	SIZE CODE D	NUMBER FD GT40-0-11
FINISH	SCALE	OF 1	SHEET	REV.

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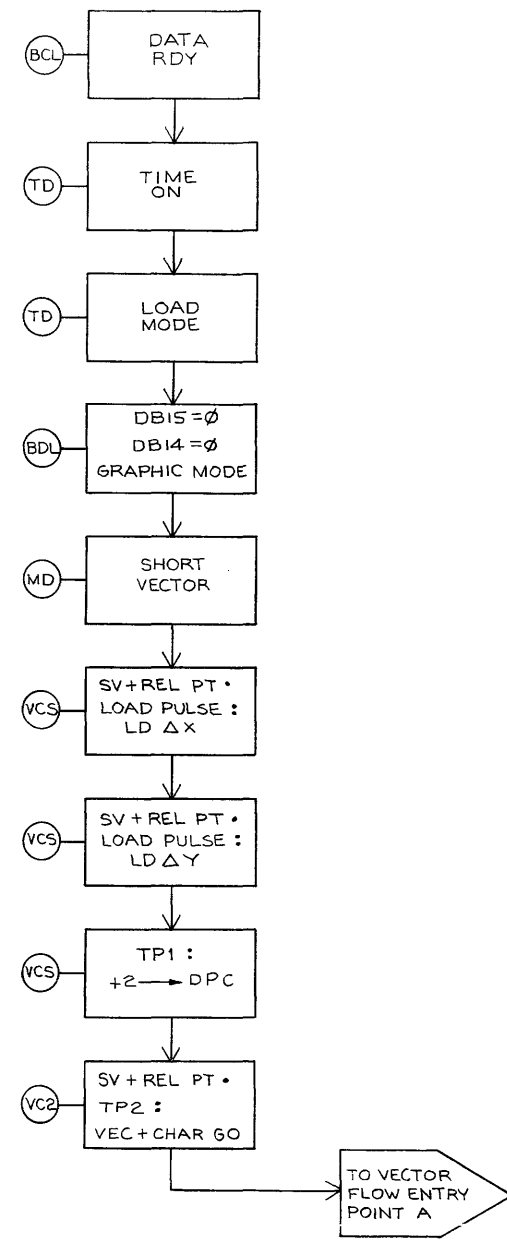
BRUNING 40-522 15840	REV
REVISIONS	NO
CHK	CHANGE

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN. <i>COM</i>	DATE 10-20-72	<b>digital</b> EQUIPMENT CORPORATION <small>WATYARD MASSACHUSETTS</small>
DECIMALS	ANGLES	CHK'D <i>CC</i>	DATE 10-23-72	
XXX = .005	± 0° 30'	ENG. <i>CC</i>	DATE 10/24/72	
XX = .02		PROJ. ENG. <i>CC</i>	DATE 10/24/72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD. <i>CC</i>	DATE 10/24/72	TITLE
MATERIAL		NEXT HIGHER ASSY.		VECTOR MODE
FINISH		B-DD-GT40-0	SIZE CODE	NUMBER
		SCALE	D FD	GT40-0-12
		SHEET	OF	DIST.



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REV 21-0-01 2

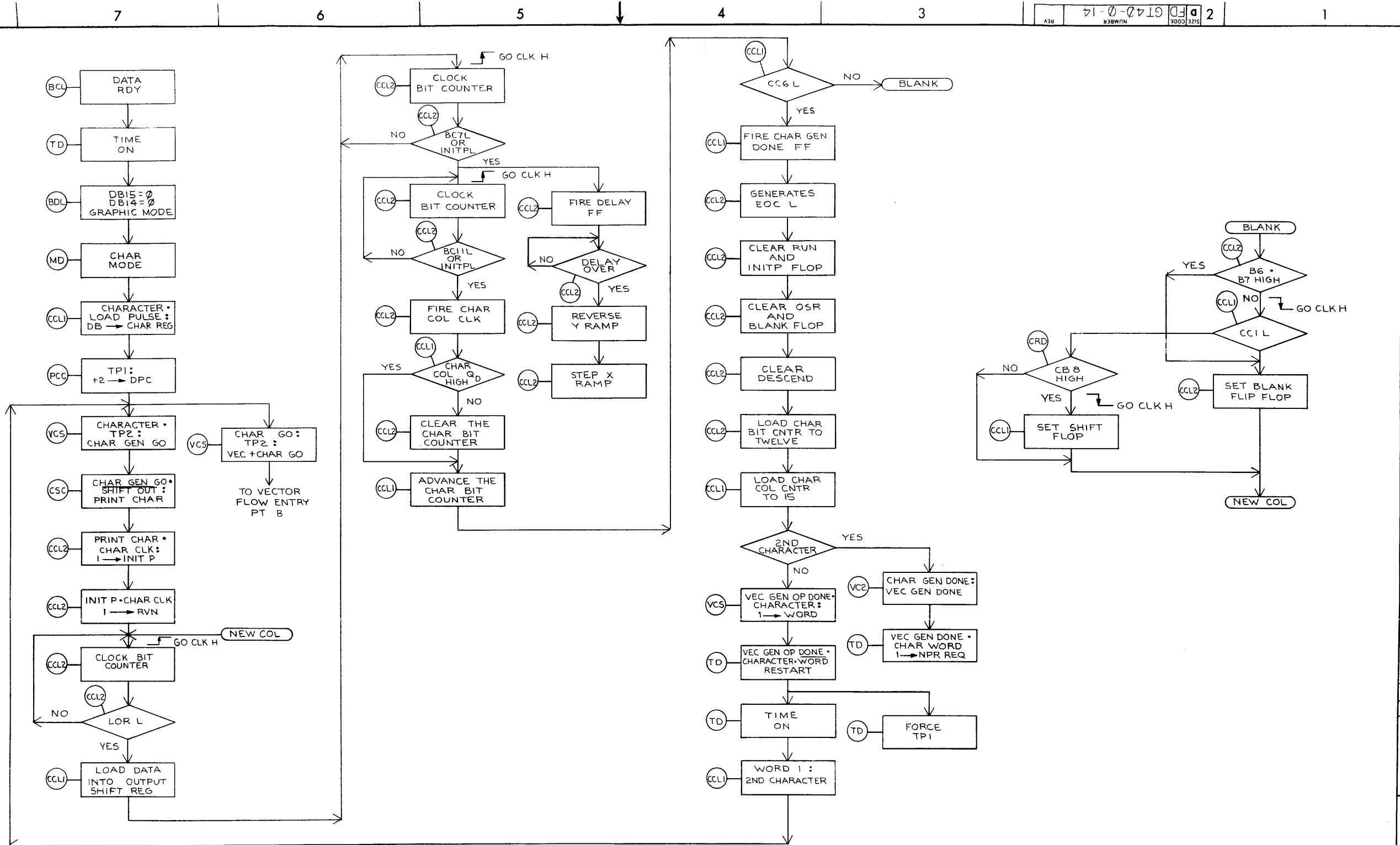


REV	
CHANGES	
CHK	

DEC FORM NO DRD 102-B

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN: <i>CBM</i>	DATE: 10-5-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS	CHK'D: <i>[Signature]</i>	DATE: 10-11-72	TITLE	
XXX = .005	ENG: <i>[Signature]</i>	DATE: 10-11-72	SHORT VECTOR OR	
XX = .02	PROJ. ENG: <i>[Signature]</i>	DATE: 10-11-72	RELATIVE POINT	
X = .1	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE: 10-11-72		
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
FINISH	B-DD-GT40-2	D	FD	GT40-0-13
	SCALE	SHEET	1	OF 1
		DIST.		

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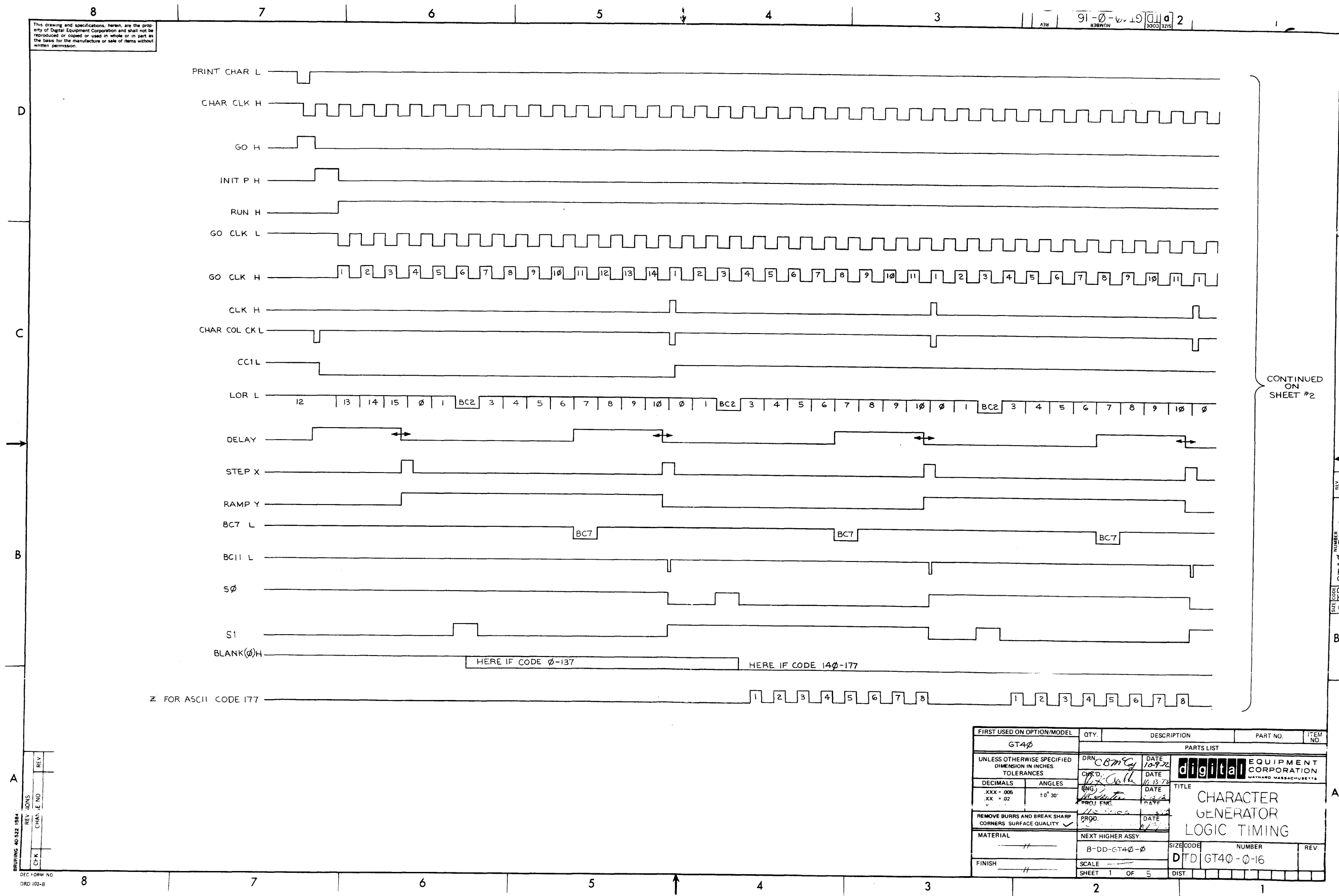
REV	NO
CHK	NO
BRN	NO
REV	NO
CHK	NO
BRN	NO

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN	DATE	 <b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD MASSACHUSETTS</small>
DECIMALS	ANGLES	CHK'D	DATE	
.XXX = .005	± 0° 30'	ENG	DATE	
.XX = .02		PROJ. ENG.	DATE	
.X = .1		PROD.	DATE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		TITLE		
		CHARACTER GENERATOR		
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
FINISH		B-DD-GT40-0	DFD GT40-0-14	
SCALE		SHEET 1 OF 1		
DISTRIBUTION				

DEC FORM NO. 080 102-B



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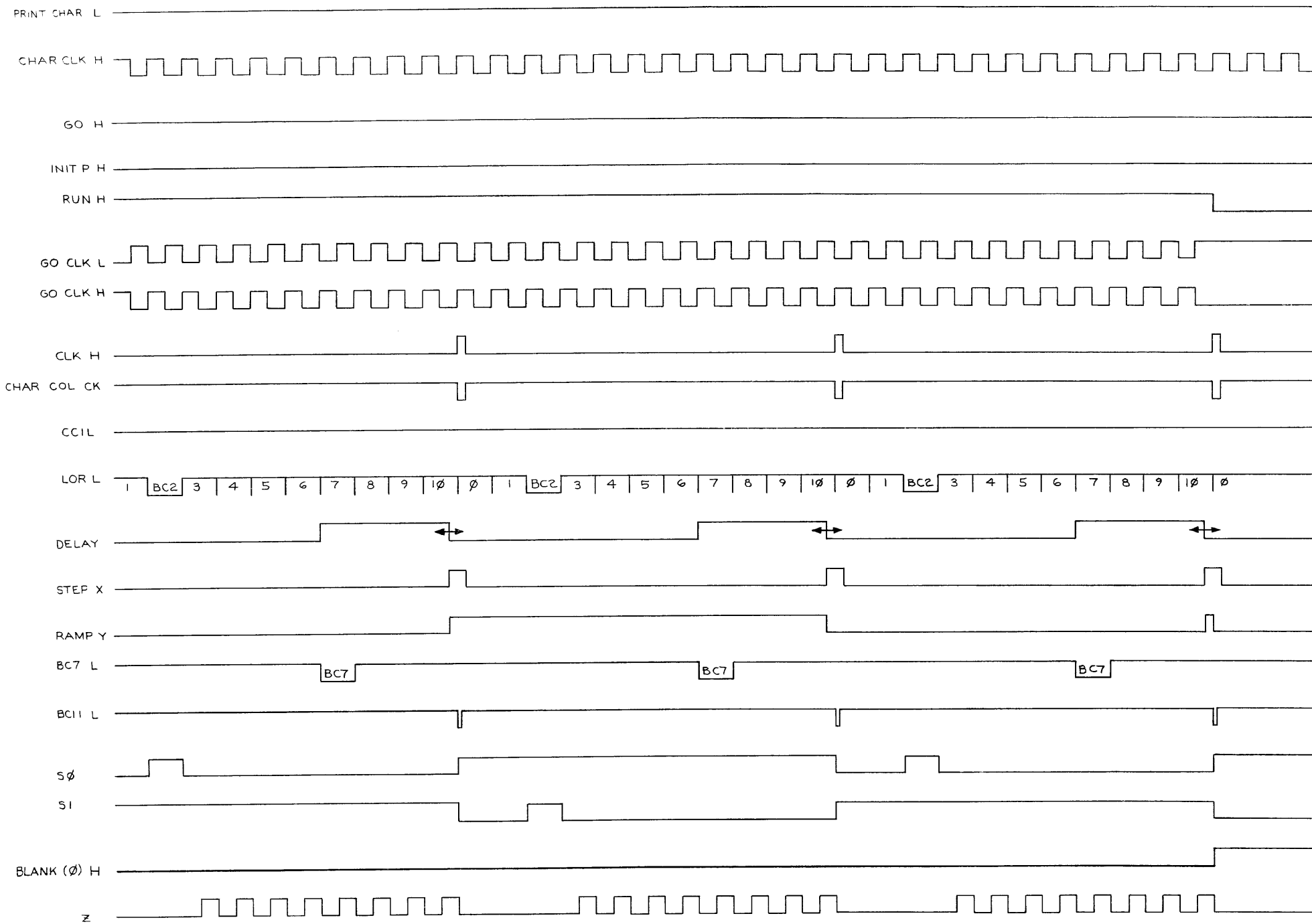


CONTINUED ON SHEET #2

BRUNING 40-522-1584  
 DEC FORM NO DRD 102-B  
 REV. IONS  
 CHAN. NO.  
 REV.  
 CLK

FIRST USED ON OPTION/MODEL GT40	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.	DRN C.B.M.Cy	DATE 10-9-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
TOLERANCES	CHK'D D.S. G.W.H.	DATE 11-13-72	TITLE CHARACTER GENERATOR LOGIC TIMING	
DECIMALS .XXX = .005 .XX = .02 V	ANGLES ±0° 30'	DATE 11-13-72	REV.	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROJ. ENG. H. S. G.	DATE 11-13-72	SCALE	
MATERIAL	NEXT HIGHER ASSY.	DATE	SIZE CODE B-DD-GT40-0	NUMBER GT40-0-16
FINISH	SCALE	SHEET 1 OF 5	DIST.	REV.

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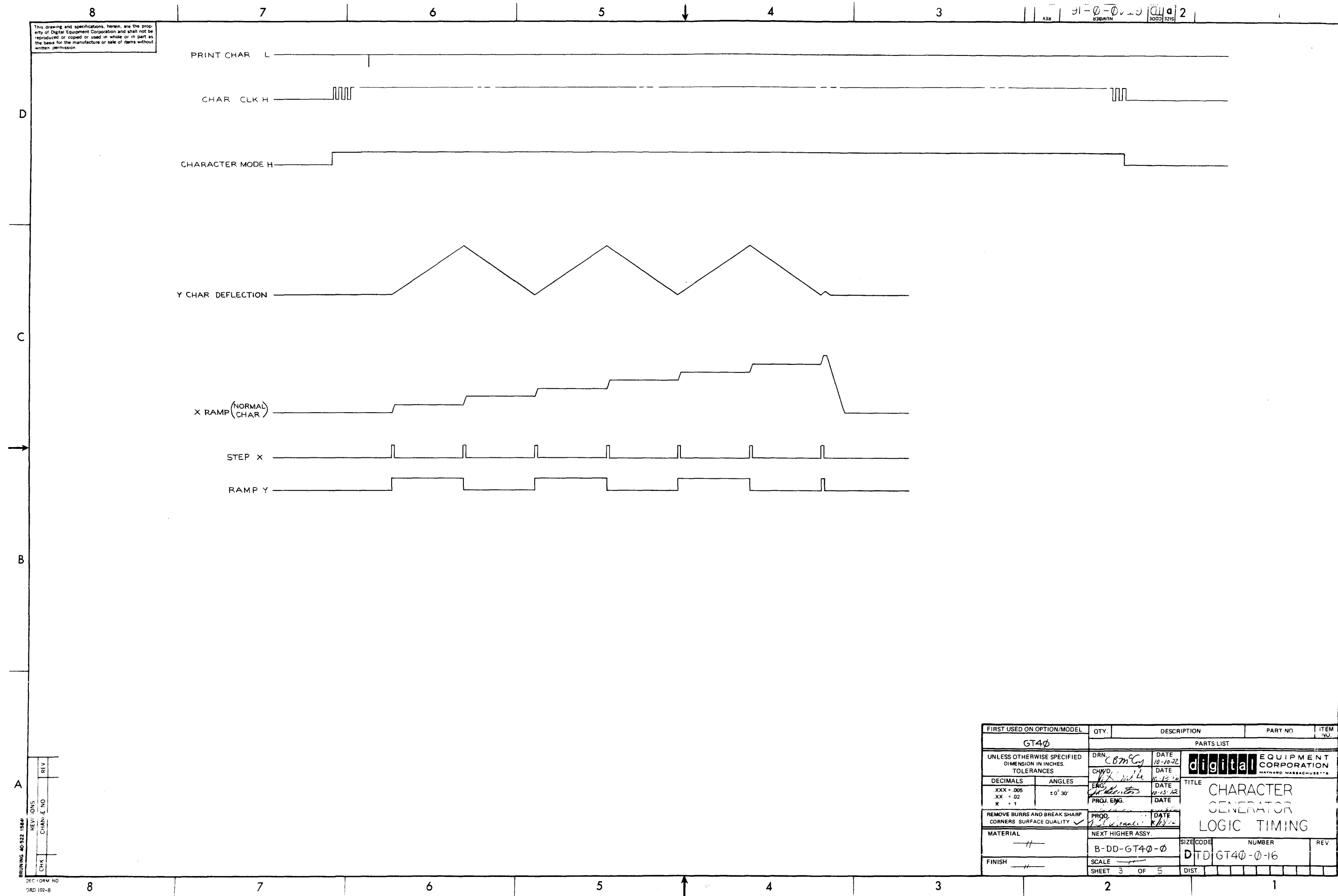


BRUNING 40-522 15840	REV
REVISIONS	CHANGE NO
CHK	

FIRST USED ON OPTION/MODEL GT40	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN C.B. Miley	DATE 10-10-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS	CHK'D W.D. Smith	DATE 11-13-72	TITLE CHARACTER GENERATOR LOGIC TIMING	
ANGLES	ENG K. G. Tr...	DATE 11-13-72	SIZE CODE D TD	
.XXX = .005 .XX = .02 .X = .1	PROJ. ENG. 11/13/72	DATE 11/13/72	NUMBER GT40-0-16	
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY	PROD. 11/13/72	DATE 11/13/72	REV.	
MATERIAL	NEXT HIGHER ASSY.	SCALE		
FINISH	B-DD-GT40-0	SHEET 2 OF 5		
DIST.		REV.		

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SIZE CODE: 3000 3216  
 NUMBER: 91-0-0-10  
 REV: 2



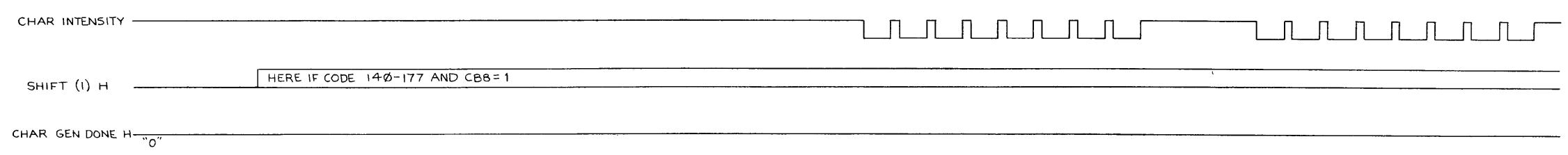
REV: 2  
 CHAR-E NO  
 CHK  
 DEC FORM NO  
 DRD 102-B

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO	ITEM NO.
GT40				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DRN. <i>C.B.M. Coy</i>	DATE 10-10-72	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
TOLERANCES	CHK'D. <i>W.K. Niles</i>	DATE 11-12-72		
DECIMALS .005	ENG. <i>J. K. ...</i>	DATE 10-13-72	TITLE CHARACTER GENERATOR LOGIC TIMING	
ANGLES ±0° 30'	PROJ. ENG.	DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROD. <i>W. J. ...</i>	DATE		
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
FINISH	B-DD-GT40-0		DITD	GT40-0-16
	SCALE		DIST.	
	SHEET 3 OF 5			

REV: 2  
 NUMBER: 91-0-0-16  
 DITD GT40-0-16

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REV. NUMBER GT40-0-16 2



CONTINUED ON SHEET #5

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DRN. <i>CBM</i>	DATE 10-10-72	 <b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
TOLERANCES	CHK'D	DATE		
DECIMALS	INS.	DATE		
ANGLES	PROJ. ENG.	DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD.	DATE	TITLE <b>CHARACTER GENERATOR LOGIC TIMING</b>	
MATERIAL	NEXT HIGHER ASSY.			
FINISH	B-DD-GT40-0	SCALE	SIZE CODE	NUMBER
		SHEET 4 OF 5	D TD	GT40-0-16
			DIST.	

BRUNING 40-522 15840  
 DEF 1 ORW NO  
 79D 102-B

REV	CHANGE NO

REV. NUMBER GT40-0-16

8 7 6 5 4 3 2 1

D D

C C

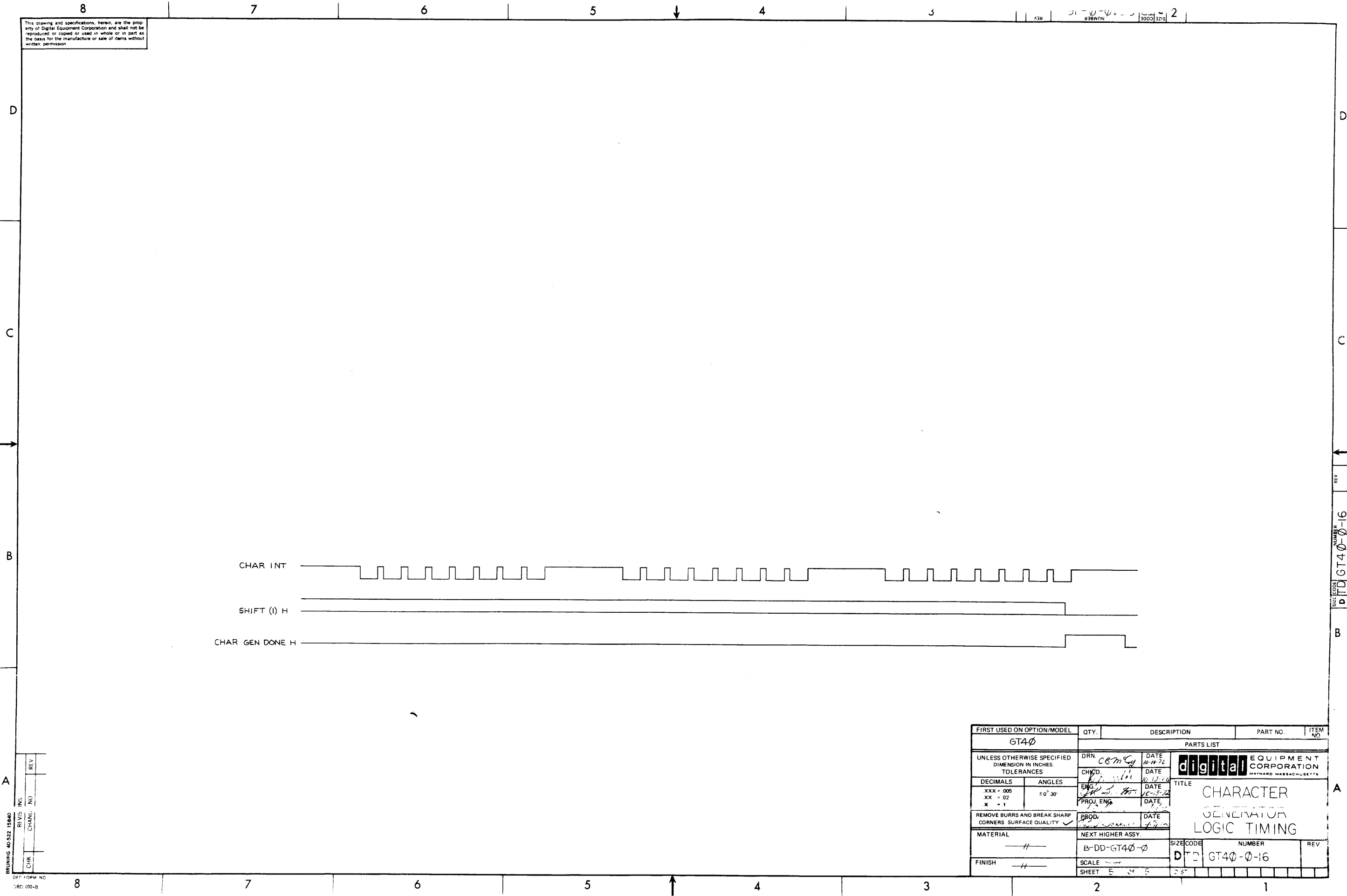
B B

A A

8 7 6 5 4 3 2 1

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3000 3215 2



BRUNING 40-532 19840	REV	NO
CHK	CHANG	NO
INS	REV	NO

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.	DRN: <i>CBM</i>	DATE: 10-11-72	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
TOLERANCES	CHK'D:	DATE:		
DECIMALS	ENG:	DATE:		
ANGLES	PROJ. ENG:	DATE:		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD:	DATE:	TITLE: CHARACTER GENERATOR LOGIC TIMING	
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
FINISH	B-DD-GT40-0		D	GT40-0-16
	SCALE			REV
	SHEET 5 OF 5			

REV GT40-0-16

DEF 1001-ND  
7RD 102-B

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REV. B  
 NUMBER GT40-0-WL  
 SIZE CODE K WL 2

REVISIONS		REV.
CHK	CHANGE NO.	
8	GT40-00004	A
	Seasley	11.27.72
	B. QUINN	
	Bob Quinn	11/28/72
8	GT40-00007	B
	B. Blodgett	2-23-73
	R. QUINN	
	Harold House	3-15-73

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40				
PARTS LIST				
DRN.	DATE	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS TITLE GRAPHIC TERMINAL		
CHK'D	DATE			
ENG.	DATE			
PROJ. ENG.	DATE			
PROD.	DATE			
NEXT HIGHER ASSEMBLY		SIZE CODE	NUMBER	REV.
B-DD-GT40-0		K WL	GT40-0-WL	B
SCALE		DIST.		
SHEET	1 OF			

GI40.B HND286.V17(17) 06/22/72

1-MAR-73 6152 PAGE 1  
LENGTH EXCEPTIONS RUN  
NUMBER

REMARKS

Q DRAW RV PG Y X Z

A/P PIN ORDER BAY -

+15V VDC E09P2 1-01 \* H 2 24 AWG  
+15V VDC F01R2 1-02 \* H 1 24AWG  
+15V VDC D03R2 1-03 \* H 2 24AWG  
+15V VDC C04U1 1-04 \* H 2 24AWG

+> VDC A01A2 1-01 \* H 2  
+> VDC A02A2 1-02 \* H 1  
+> VDC A03A2 1-03 \* H 2  
+> VDC A04A2 1-04 \* H 1  
+> VDC A05A2 1-05 \* H 2  
+> VDC A06A2 1-06 \* H 1  
+> VDC A07A2 1-07 \* H 1  
+> VDC A09A2 1-08 \* H 2  
+> VDC A08A2 1-09 \* H 2  
+> VDC B09A2 1-10 \* H 2  
+> VDC B08A2 1-11 \* H 2  
+> VDC B07A2 1-12 \* H 2  
+> VDC B06A2 1-13 \* H 2  
+> VDC B05A2 1-14 \* H 2  
+> VDC B04A2 1-15 \* H 2  
+> VDC B03A2 1-16 \* H 2  
+> VDC B02A2 1-17 \* H 2  
+> VDC B01B1 1-18 \* H 1  
+> VDC B01A2 1-19 \* H 2  
+> VDC C01A2 1-20 \* H 2  
+> VDC C02A2 1-21 \* H 2  
+> VDC C03A2 1-22 \* H 2  
+> VDC C04A2 1-23 \* H 2  
+> VDC C05A2 1-24 \* H 2  
+> VDC C06A2 1-25 \* H 2  
+> VDC C07A2 1-26 \* H 2  
+> VDC C08A2 1-27 \* H 2  
+> VDC C09A2 1-28 \* H 2  
+> VDC D09A2 1-29 \* H 2  
+> VDC D08A2 1-30 \* H 2  
+> VDC D07A2 1-31 \* H 2  
+> VDC D06A2 1-32 \* H 2  
+> VDC D05A2 1-33 \* H 2  
+> VDC D04A2 1-34 \* H 2  
+> VDC D03A2 1-35 \* H 2  
+> VDC D02A2 1-36 \* H 2  
+> VDC D01A2 1-37 \* H 2  
+> VDC E01A2 1-38 \* H 2  
+> VDC E02A2 1-39 \* H 2  
+> VDC E03A2 1-40 \* H 2  
+> VDC E04A2 1-41 \* H 2  
+> VDC E05A2 1-42 \* H 2  
+> VDC E06A2 1-43 \* H 2  
+> VDC E07A2 1-44 \* H 2  
+> VDC E08A2 1-45 \* H 2  
+> VDC E09A2 1-46 \* H 2  
+> VDC F09A2 1-47 \* H 2  
+> VDC F08A2 1-48 \* H 2  
+> VDC F07A2 1-49 \* H 2  
+> VDC F06A2 1-50 \* H 1

HND286.V17(17) 06/22/72

1-MAR-73 6152 PAGE 2  
LENGTH EXCEPTIONS RUN  
NUMBER

REMARKS

Q DRAW RV PG Y X Z

A/P PIN ORDER BAY -

+> VDC F05A2 1-51 \* H 2  
+> VDC F04A2 1-52 \* H 1  
+> VDC F03A2 1-53 \* H 2  
+> VDC F02A2 1-54 \* H 2  
+> VDC F01A2 1-55 \* H 1

-15V VDC C07B2 1-01 \* H 2  
-15V VDC C06B2 1-02 \* H 1  
-15V VDC C05B2 1-03 \* H 2  
-15V VDC C04B2 1-04 \* H 1  
-15V VDC D04B2 1-05 \* H 2  
-15V VDC D05B2 1-06 \* H 2  
-15V VDC D06B2 1-07 \* H 2  
-15V VDC D07B2 1-08 \* H 2  
-15V VDC E07B2 1-09 \* H 2  
-15V VDC E06B2 1-10 \* H 2  
-15V VDC E05B2 1-11 \* H 2  
-15V VDC E04B2 1-12 \* H 2  
-15V VDC F04B2 1-13 \* H 2  
-15V VDC F05B2 1-14 \* H 2  
-15V VDC F06B2 1-15 \* H 2  
-15V VDC F07B2 1-16 \* H 1  
-15V VDC F09B2 1-17 \* H 1

00 IN E05U2 1-01 \* H 2  
00 IN E06U2 1-02 \* H 1  
00 IN E07U2 1-03 \* H 1

00 SA E05V1 1-01 \* H 2  
00 SA E06V1 1-02 \* H 1  
00 SA E07V1 1-03 \* H 1

00 SB E05V2 1-01 \* H 2  
00 SB E06V2 1-02 \* H 1  
00 SB E07V2 1-03 \* H 1

01 IN E07R1 1-01 \* H 2  
01 IN E06R1 1-02 \* H 1  
01 IN E05R1 1-03 \* H 1

CI40,B RUN NAME	HND288.V17(17) 06/22/72 A/P PIN ORDER PIN	Q	DRAM RV PG Y	X	Z	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 3 RUN NUMBER
01 SA	E05P1	H			2		P	HAND WIRE	8
01 SA	E06P1	H			1		P	HAND WIRE	8
01 SA	E07P1							TO HERE	8
01 SA	1							5-4/8	8
01 SB	E05P2	H			2		P	HAND WIRE	9
01 SB	E06P2	H			1		P	HAND WIRE	9
01 SB	E07P2							TO HERE	9
01 SB	1							5-4/8	9
02 IN	E05M1	H			2		P	HAND WIRE	10
02 IN	E06M1	H			1		P	HAND WIRE	10
02 IN	E07M1							TO HERE	10
02 IN	1							5-4/8	10
02 SA	E05L1	H			2		P	HAND WIRE	11
02 SA	E06L1	H			1		P	HAND WIRE	11
02 SA	E07L1							TO HERE	11
02 SA	1							5-4/8	11
02 SB	E05L2	H			2		P	HAND WIRE	12
02 SB	E06L2	H			1		P	HAND WIRE	12
02 SB	E07L2							TO HERE	12
02 SB	1							5-4/8	12
03 IN	E05J1	H			2		P	HAND WIRE	13
03 IN	E06J1	H			1		P	HAND WIRE	13
03 IN	E07J1							TO HERE	13
03 IN	1							5-4/8	13
03 SA	E05H1	H			2		P	HAND WIRE	14
03 SA	E06H1	H			1		P	HAND WIRE	14
03 SA	E07H1							TO HERE	14
03 SA	1							5-4/8	14
03 SB	E05H2	H			2		P	HAND WIRE	15
03 SB	E06H2	H			1		P	HAND WIRE	15
03 SB	E07H2							TO HERE	15
03 SB	1							5-4/8	15
04 IN	E05R2	H			2		P	HAND WIRE	16
04 IN	E06R2	H			1		P	HAND WIRE	16
04 IN	E07R2							TO HERE	16
04 IN	1							5-4/8	16

CI40,B RUN NAME	HND288.V17(17) 06/22/72 A/P PIN ORDER PIN	Q	DRAM RV PG Y	X	Z	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 4 RUN NUMBER
04 SA	E05S1	H			2		P	HAND WIRE	17
04 SA	E06S1	H			1		P	HAND WIRE	17
04 SA	E07S1							TO HERE	17
04 SA	1							5-4/8	17
04 SB	E05S2	H			2		P	HAND WIRE	18
04 SB	E06S2	H			1		P	HAND WIRE	18
04 SB	E07S2							TO HERE	18
04 SB	1							5-4/8	18
05 IN	E05H2	H			2		P	HAND WIRE	19
05 IN	E06H2	H			1		P	HAND WIRE	19
05 IN	E07H2							TO HERE	19
05 IN	1							5-4/8	19
05 SA	E05N1	H			2		P	HAND WIRE	20
05 SA	E06N1	H			1		P	HAND WIRE	20
05 SA	E07N1							TO HERE	20
05 SA	1							5-4/8	20
05 SB	E05N2	H			2		P	HAND WIRE	21
05 SB	E06N2	H			1		P	HAND WIRE	21
05 SB	E07N2							TO HERE	21
05 SB	1							5-4/8	21
06 IN	E05J2	H			2		P	HAND WIRE	22
06 IN	E06J2	H			1		P	HAND WIRE	22
06 IN	E07J2							TO HERE	22
06 IN	1							5-4/8	22
06 SA	E05K1	H			2		P	HAND WIRE	23
06 SA	E06K1	H			1		P	HAND WIRE	23
06 SA	E07K1							TO HERE	23
06 SA	1							5-4/8	23
06 SB	E05K2	H			2		P	HAND WIRE	24
06 SB	E06K2	H			1		P	HAND WIRE	24
06 SB	E07K2							TO HERE	24
06 SB	1							5-4/8	24
07 IN	E05E2	H			2		P	HAND WIRE	25
07 IN	E06E2	H			1		P	HAND WIRE	25
07 IN	E07E2							TO HERE	25
07 IN	1							5-4/8	25



GI40,8 RUN NAME	A/P PIN	HND288.V17(17) 06/22/72 ORDER PIN	BAY ORDER	Q	DRAM	RV	PG	Y	X	Z	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 5 RUN NUMBER
07 SA	E05F1	1-01 *	H						2				HAND WIRE	26
07 SA	E06F1	1-02 *	H						1				HAND WIRE TO HERE	26
07 SA	E07F1	1-03 *										5-4/8		26
07 SB	E05F2	1-01 *	H						2				HAND WIRE	27
07 SB	E06F2	1-02 *	H						1				HAND WIRE TO HERE	27
07 SB	E07F2	1-03 *										5-4/8		27
08 IN	E05E1	1-01 *	H						2				HAND WIRE	28
08 IN	E06E1	1-02 *	H						1				HAND WIRE TO HERE	28
08 IN	E07E1	1-03 *										5-4/8		28
08 SA	E05D1	1-01 *	H						2				HAND WIRE	29
08 SA	E06D1	1-02 *	H						1				HAND WIRE TO HERE	29
08 SA	E07D1	1-03 *										5-4/8		29
08 SB	E05D2	1-01 *	H						2				HAND WIRE	30
08 SB	E06D2	1-02 *	H						1				HAND WIRE TO HERE	30
08 SB	E07D2	1-03 *										5-4/8		30
09 IN	D05U2	1-01 *	H						2				HAND WIRE	31
09 IN	D06U2	1-02 *	H						1				HAND WIRE TO HERE	31
09 IN	D07U2	1-03 *										5-4/8		31
09 SA	D05V1	1-01 *	H						2				HAND WIRE	32
09 SA	D06V1	1-02 *	H						1				HAND WIRE TO HERE	32
09 SA	D07V1	1-03 *										5-4/8		32
09 SB	D05V2	1-01 *	H						2				HAND WIRE	33
09 SB	D06V2	1-02 *	H						1				HAND WIRE TO HERE	33
09 SB	D07V2	1-03 *										5-4/8		33
10 IN	D05R1	1-01 *	H						2				HAND WIRE	34
10 IN	D06R1	1-02 *	H						1				HAND WIRE TO HERE	34
10 IN	D07R1	1-03 *										5-4/8		34

GI40,8 RUN NAME	A/P PIN	HND288.V17(17) 06/22/72 ORDER PIN	BAY ORDER	Q	DRAM	RV	PG	Y	X	Z	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 6 RUN NUMBER
10 SA	D05P1	1-01 *							2					35
10 SA	D06P1	1-02 *	H						1				HAND WIRE TO HERE	35
10 SA	D07P1	1-03 *										5-4/8		35
10 SB	D05P2	1-01 *	H						2				HAND WIRE	36
10 SB	D06P2	1-02 *	*						1				HAND WIRE TO HERE	36
10 SB	D07P2	1-03 *										5-4/8		36
11 IN	D05M1	1-01 *	H						2				HAND WIRE	37
11 IN	D06M1	1-02 *	H						1				HAND WIRE TO HERE	37
11 IN	D07M1	1-03 *										5-4/8		37
11 SA	D05L1	1-01 *	H						2				HAND WIRE	38
11 SA	D06L1	1-02 *	H						1				HAND WIRE TO HERE	38
11 SA	D07L1	1-03 *										5-4/8		38
11 SB	D05L2	1-01 *	H						2				HAND WIRE	39
11 SB	D06L2	1-02 *	H						1				HAND WIRE TO HERE	39
11 SB	D07L2	1-03 *										5-4/8		39
12 IN	D05J1	1-01 *	H						2				HAND WIRE	40
12 IN	D06J1	1-02 *	H						1				HAND WIRE TO HERE	40
12 IN	D07J1	1-03 *										5-4/8		40
12 SA	D05H1	1-01 *	H						2				HAND WIRE	41
12 SA	D06H1	1-02 *	H						1				HAND WIRE TO HERE	41
12 SA	D07H1	1-03 *										5-4/8		41
12 SB	D05H2	1-01 *	H						2				HAND WIRE	42
12 SB	D06H2	1-02 *	H						1				HAND WIRE TO HERE	42
12 SB	D07H2	1-03 *										5-4/8		42
13 IN	D05R2	1-01 *	H						2				HAND WIRE	43
13 IN	D06R2	1-02 *	H						1				HAND WIRE TO HERE	43
13 IN	D07R2	1-03 *										5-4/8		43







GT140.B  
RUN NAME

HND288.V17(17) 06/22/72  
A/P PIN ORDER BAY -  
NAME PIN ORDER

Q DRAW RV PG Y X Z REMARKS

1-MAR-73 LENGTH EXCEPTIONS  
PAGE 13 RUN NUMBER

GT140.B RUN NAME	HND288.V17(17) 06/22/72 A/P PIN ORDER BAY - NAME PIN ORDER	Q DRAW RV PG Y X Z REMARKS	1-MAR-73 LENGTH EXCEPTIONS	PAGE 13 RUN NUMBER
BUS A05	B09K1	1-01 * H	P	HAND WIRE 102
BUS A05	B06K1	1-02 * H	P	HAND WIRE 102
BUS A05	B07K1	1-03 * H	P	HAND WIRE 102
BUS A05	B06K1	1-04 * H	P	HAND WIRE 102
BUS A05	B05K1	1-05 * H	P	HAND WIRE 102
BUS A05	E04V1	1-06 * H		TO HERE 102
BUS A05	B03J2	1-07 * H		102
BUS A06	B09L2	1-01 * H	P	HAND WIRE 103
BUS A06	B08L2	1-02 * H	P	HAND WIRE 103
BUS A06	B07L2	1-03 * H	P	HAND WIRE 103
BUS A06	B06L2	1-04 * H	P	HAND WIRE 103
BUS A06	B05L2	1-05 * H	P	HAND WIRE 103
BUS A06	E04U1	1-06 * H		TO HERE 103
BUS A06	B03M1	1-07 * H		103
BUS A07	B09L1	1-01 * H	P	HAND WIRE 104
BUS A07	B08L1	1-02 * H	P	HAND WIRE 104
BUS A07	B07L1	1-03 * H	P	HAND WIRE 104
BUS A07	B06L1	1-04 * H	P	HAND WIRE 104
BUS A07	B05L1	1-05 * H	P	HAND WIRE 104
BUS A07	E04P2	1-06 * H		TO HERE 104
BUS A07	B03N1	1-07 * H		104
BUS A08	B09M2	1-01 * H	P	HAND WIRE 105
BUS A08	B08M2	1-02 * H	P	HAND WIRE 105
BUS A08	B07M2	1-03 * H	P	HAND WIRE 105
BUS A08	B06M2	1-04 * H	P	HAND WIRE 105
BUS A08	B05M2	1-05 * H	P	HAND WIRE 105
BUS A08	E04N2	1-06 * H		TO HERE 105
BUS A08	B03P1	1-07 * H		105
BUS A09	B09M1	1-01 * H	P	HAND WIRE 106
BUS A09	B08M1	1-02 * H	P	HAND WIRE 106
BUS A09	B07M1	1-03 * H	P	HAND WIRE 106
BUS A09	B06M1	1-04 * H	P	HAND WIRE 106
BUS A09	B05M1	1-05 * H	P	HAND WIRE 106
BUS A09	E04R1	1-06 * H		TO HERE 106
BUS A09	C03E2	1-07 * H		106

GT140.B  
RUN NAME

HND288.V17(17) 06/22/72  
A/P PIN ORDER BAY -  
NAME PIN ORDER

Q DRAW RV PG Y X Z REMARKS

1-MAR-73 LENGTH EXCEPTIONS  
PAGE 14 RUN NUMBER

GT140.B RUN NAME	HND288.V17(17) 06/22/72 A/P PIN ORDER BAY - NAME PIN ORDER	Q DRAW RV PG Y X Z REMARKS	1-MAR-73 LENGTH EXCEPTIONS	PAGE 14 RUN NUMBER
BUS A10	B09N2	1-01 * H	P	HAND WIRE 107
BUS A10	B08N2	1-02 * H	P	HAND WIRE 107
BUS A10	B07N2	1-03 * H	P	HAND WIRE 107
BUS A10	B06N2	1-04 * H	P	HAND WIRE 107
BUS A10	B05N2	1-05 * H	P	HAND WIRE 107
BUS A10	E04P1	1-06 * H		TO HERE 107
BUS A10	C03F2	1-07 * H		107
BUS A11	B09N1	1-01 * H	P	HAND WIRE 108
BUS A11	B08N1	1-02 * H	P	HAND WIRE 108
BUS A11	B07N1	1-03 * H	P	HAND WIRE 108
BUS A11	B06N1	1-04 * H	P	HAND WIRE 108
BUS A11	B05N1	1-05 * H	P	HAND WIRE 108
BUS A11	E04L1	1-06 * H		TO HERE 108
BUS A11	C03H2	1-07 * H		108
BUS A12	B09P2	1-01 * H	P	HAND WIRE 109
BUS A12	B08P2	1-02 * H	P	HAND WIRE 109
BUS A12	B07P2	1-03 * H	P	HAND WIRE 109
BUS A12	B06P2	1-04 * H	P	HAND WIRE 109
BUS A12	B05P2	1-05 * H	P	HAND WIRE 109
BUS A12	E04C1	1-06 * H		TO HERE 109
BUS A12	C03P1	1-07 * H		109
BUS A13	B09P1	1-01 * H	P	HAND WIRE 110
BUS A13	B08P1	1-02 * H	P	HAND WIRE 110
BUS A13	B07P1	1-03 * H	P	HAND WIRE 110
BUS A13	B06P1	1-04 * H	P	HAND WIRE 110
BUS A13	B05P1	1-05 * H	P	HAND WIRE 110
BUS A13	E04K2	1-06 * H		TO HERE 110
BUS A13	C03D2	1-07 * H		110
BUS A14	B09R2	1-01 * H	P	HAND WIRE 111
BUS A14	B08R2	1-02 * H	P	HAND WIRE 111
BUS A14	B07R2	1-03 * H	P	HAND WIRE 111
BUS A14	B06R2	1-04 * H	P	HAND WIRE 111
BUS A14	B05R2	1-05 * H	P	HAND WIRE 111
BUS A14	E04K1	1-06 * H		TO HERE 111
BUS A14	C03F2	1-07 * H		111

GI#0,B RUN NAME	A/P	PIN NAME	HND288.V17(17) 06/22/72 ORDER PIN	BAY - ORDER	Q	DRAM RV PG Y	X	Z	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 15 RUN NUMBER
BUS A15	L	B09R1		1-01 *	H			1			HAND WIRE	112
BUS A15	L	B08R1		1-02 *	H			2			HAND WIRE	112
BUS A15	L	B07R1		1-03 *	H			1			HAND WIRE	112
BUS A15	L	B06R1		1-04 *	H			2			HAND WIRE	112
BUS A15	L	B05R1		1-05 *	H			1			TO HERE	112
BUS A15	L	E0402		1-06 *				2		24-2/8		112
BUS A15	L	D03N1		1-07 *				1				112
BUS A16	L	B09S2		1-01 *	H			1			HAND WIRE	113
BUS A16	L	B08S2		1-02 *	H			2			HAND WIRE	113
BUS A16	L	B07S2		1-03 *	H			1			HAND WIRE	113
BUS A16	L	B06S2		1-04 *	H			2			HAND WIRE	113
BUS A16	L	B05S2		1-05 *	H			1			TO HERE	113
BUS A16	L	E04E2		1-06 *				2		24-6/8		113
BUS A16	L	D03J1		1-07 *				1				113
BUS A17	L	B09S1		1-01 *	H			1			HAND WIRE	114
BUS A17	L	B08S1		1-02 *	H			2			HAND WIRE	114
BUS A17	L	B07S1		1-03 *	H			1			HAND WIRE	114
BUS A17	L	B06S1		1-04 *	H			2			HAND WIRE	114
BUS A17	L	B05S1		1-05 *	H			1			TO HERE	114
BUS A17	L	E04D1		1-06 *				2		29-2/8		114
BUS A17	L	D03B1		1-07 *				1				114
BUS A17	L	B09F1		1-01 *	H			1			HAND WIRE	115
BUS A17	L	B06F1		1-02 *	H			2			HAND WIRE	115
BUS A17	L	B07F1		1-03 *	H			1			HAND WIRE	115
BUS A17	L	B08F1		1-04 *	H			2			HAND WIRE	115
BUS A17	L	B09F1		1-05 *	H			1			TO HERE	115
BUS A17	L	C04V1		1-06 *				2				115
BUS A17	L	F03E2		1-07 *				1				115
BUS A17	L	B01B2		1-08 *				2		55-0/8		115
BUS A17	L	F01K1		1-09 *				1				115
BUS BBSY	L	A09P2		1-01 *	H			2			HAND WIRE	116
BUS BBSY	L	A08P2		1-02 *	H			1			HAND WIRE	116
BUS BBSY	L	A07P2		1-03 *	H			2			HAND WIRE	116
BUS BBSY	L	A06P2		1-04 *	H			1			HAND WIRE	116
BUS BBSY	L	A05P2		1-05 *	H			2			HAND WIRE	116
BUS BBSY	L	F04D1		1-06 *				1			TO HERE	116
BUS BBSY	L	A03F1		1-07 *				2		46-4/8		116
BUS BBSY	L	B01E2		1-08 *				1				116

GI#0,B RUN NAME	A/P	PIN NAME	HND288.V17(17) 06/22/72 ORDER PIN	BAY - ORDER	Q	DRAM RV PG Y	X	Z	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 16 RUN NUMBER
BUS B0 04 OUT 3	H	D04S2		1-01 *				1				117
BUS B0 04 OUT 3	H	E03L1		1-02 *				1		4-4/8		117
BUS B0 05	H	B06B1		1-01 *	H			2			HAND WIRE	118
BUS B0 05	H	B07B1		1-02 *	H			1			HAND WIRE	118
BUS B0 05	H	B08B1		1-03 *	H			2			HAND WIRE	118
BUS B0 05	H	B09B1		1-04 *				1			TO HERE	118
BUS B0 05	H	E03P2		1-05 *				1		21-0/8		118
BUS B0 05 OUT 03	H	D04P2		1-01 *				1				119
BUS B0 05 OUT 03	H	E03R2		1-02 *				1		5-2/8		119
BUS B0 4	H	B06E2		1-01 *	H			2			HAND WIRE	120
BUS B0 4	H	B07E2		1-02 *	H			1			HAND WIRE	120
BUS B0 4	H	B08E2		1-03 *	H			2			HAND WIRE	120
BUS B0 4	H	B09E2		1-04 *				1			TO HERE	120
BUS B0 4	H	E03M1		1-05 *				1		20-4/8		120
BUS B0 4 OUT 04	H	D04T2		1-01 *				1				121
BUS B0 4 OUT 04	H	B05E2		1-02 *				1		9-2/8		121
BUS B0 4 OUT 04	H	D04R2		1-01 *				1				122
BUS B0 5 OUT 04	H	B05B1		1-02 *				1		9-2/8		122
BUS B0 6	H	B06A1		1-01 *	H			2			HAND WIRE	123
BUS B0 6	H	B07A1		1-02 *	H			1			HAND WIRE	123
BUS B0 6	H	B08A1		1-03 *	H			2			HAND WIRE	123
BUS B0 6	H	B09A1		1-04 *				1			TO HERE	123
BUS B0 6	H	E03R1		1-05 *				1		21-2/8		123
BUS B0 6 OUT 03	H	E03N2		1-01 *				1				124
BUS B0 6 OUT 03	H	D04M2		1-02 *				1		5-2/8		124
BUS B0 6 OUT 04	H	D04N2		1-01 *				1				125
BUS B0 6 OUT 04	H	B05A1		1-02 *				1		9-0/8		125

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PAGE 17  
RUN NUMBER

GI40.B RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAM	RV	PG	Y	X	#	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 17 RUN NUMBER
BUS BG 7	H	A06V1	1-01 *	1	H						2			HAND WIRE	126
BUS BG 7	H	A07V1	1-02 *	1	H						1			HAND WIRE	126
BUS BG 7	H	A08V1	1-03 *	1	H						2			HAND WIRE	126
BUS BG 7	H	A09V1	1-04 *	1	H						1			TO HERE	126
BUS BG 7	H	D03S1	1-05 *	1							1		19-4/8		126
BUS BG 7											1				127
BUS BG 7		E03S1	1-01 *	1							1				127
BUS BG 7		D04K2	1-02 *	1							1		6-0/8		127
BUS BG 7											1				128
BUS BG 7		D04L2	1-01 *	1							1		9-4/8		128
BUS BG 7		A03V1	1-02 *	1							1				128
BUS BG 7											1				129
BUS BK 4	L	B05D2	1-01 *	1	H						1			HAND WIRE	129
BUS BK 4	L	B06D2	1-02 *	1	H						2			HAND WIRE	129
BUS BK 4	L	B07D2	1-03 *	1	H						1			HAND WIRE	129
BUS BK 4	L	B08D2	1-04 *	1	H						2			HAND WIRE	129
BUS BK 4	L	B09D2	1-05 *	1	H						1			TO HERE	129
BUS BK 4	L	D04H2	1-06 *	1							1				129
BUS BK 4	L	E03K1	1-07 *	1							2		25-4/8		129
BUS BK 4											1				129
BUS BK 5	L	B05C1	1-01 *	1	H						1			HAND WIRE	130
BUS BK 5	L	B06C1	1-02 *	1	H						2			TO HERE	130
BUS BK 5	L	B07C1	1-03 *	1	H						1			HAND WIRE	130
BUS BK 5	L	B08C1	1-04 *	1	H						2			HAND WIRE	130
BUS BK 5	L	B09C1	1-05 *	1	H						1			TO HERE	130
BUS BK 5	L	D04F2	1-06 *	1							2		25-4/8		130
BUS BK 5	L	E03J1	1-07 *	1							1				130
BUS BK 5											1				130
BUS BK 6	L	A05U2	1-01 *	1	H						1			HAND WIRE	131
BUS BK 6	L	A06U2	1-02 *	1	H						2			HAND WIRE	131
BUS BK 6	L	A07U2	1-03 *	1	H						1			HAND WIRE	131
BUS BK 6	L	A08U2	1-04 *	1	H						2			HAND WIRE	131
BUS BK 6	L	A09U2	1-05 *	1	H						1			TO HERE	131
BUS BK 6	L	D04E2	1-06 *	1							2		26-4/8		131
BUS BK 6	L	E03H1	1-07 *	1							1				131
BUS BK 6											1				131

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PAGE 18  
RUN NUMBER

GI40.B RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAM	RV	PG	Y	X	#	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 18 RUN NUMBER
BUS BK 7	L	A05T2	1-01 *	1	H						1			HAND WIRE	132
BUS BK 7	L	A06T2	1-02 *	1	H						2			HAND WIRE	132
BUS BK 7	L	A07T2	1-03 *	1	H						1			HAND WIRE	132
BUS BK 7	L	A08T2	1-04 *	1	H						2			HAND WIRE	132
BUS BK 7	L	A09T2	1-05 *	1	H						1			TO HERE	132
BUS BK 7	L	D04D2	1-06 *	1							2		26-4/8		132
BUS BK 7	L	E03F1	1-07 *	1							1				132
BUS BK 7											1				132
BUS C0	L	B05U2	1-01 *	1	H						1			HAND WIRE	133
BUS C0	L	B06U2	1-02 *	1	H						2			HAND WIRE	133
BUS C0	L	B07U2	1-03 *	1	H						1			HAND WIRE	133
BUS C0	L	B08U2	1-04 *	1	H						2			HAND WIRE	133
BUS C0	L	B09U2	1-05 *	1	H						1			TO HERE	133
BUS C0	L	E04J2	1-06 *	1							2		25-4/8		133
BUS C0	L	F03B2	1-07 *	1							1				133
BUS C0											1				133
BUS C1	L	B05T2	1-01 *	1	H						2			HAND WIRE	134
BUS C1	L	B06T2	1-02 *	1	H						1			HAND WIRE	134
BUS C1	L	B07T2	1-03 *	1	H						2			HAND WIRE	134
BUS C1	L	B08T2	1-04 *	1	H						1			HAND WIRE	134
BUS C1	L	B09T2	1-05 *	1	H						2			TO HERE	134
BUS C1	L	E04F2	1-06 *	1							1		34-4/8		134
BUS C1	L	A03C1	1-07 *	1							1				134
BUS C1											1				134
BUS D00	L	B03D2	1-01 *	1							2				135
BUS D00	L	C04S2	1-02 *	1							1				135
BUS D00	L	A05C1	1-03 *	1	H						2			HAND WIRE	135
BUS D00	L	A06C1	1-04 *	1	H						1			HAND WIRE	135
BUS D00	L	A07C1	1-05 *	1	H						2			HAND WIRE	135
BUS D00	L	A08C1	1-06 *	1	H						1			TO HERE	135
BUS D00	L	A09C1	1-07 *	1							1		26-6/8		135
BUS D00											1				135
BUS D01	L	A09D2	1-01 *	1	H						1			HAND WIRE	136
BUS D01	L	A08D2	1-02 *	1	H						2			HAND WIRE	136
BUS D01	L	A07D2	1-03 *	1	H						1			HAND WIRE	136
BUS D01	L	A06D2	1-04 *	1	H						2			HAND WIRE	136
BUS D01	L	A05D2	1-05 *	1	H						1			TO HERE	136
BUS D01	L	C04R2	1-06 *	1							2		26-0/8		136
BUS D01	L	B03F2	1-07 *	1							1				136
BUS D01											1				136

GT40.B RUN NAME	HND288.V17(17) 06/22/72 A/P PIN NAME	ORDER PIN	BAY ORDER	Q	DRAM RV PG Y	X	Z	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 19 RUN NUMBER
BUS D02	A09D1		1-01 *	H			1			HAND WIRE	137
BUS D02	A08D1		1-02 *	H			2			HAND WIRE	137
BUS D02	A07D1		1-03 *	H			1			HAND WIRE	137
BUS D02	A06D1		1-04 *	H			2			HAND WIRE	137
BUS D02	A05D1		1-05 *				1			TO HERE	137
BUS D02	C04U2		1-06 *				2				137
BUS D02	F04E2		1-07 *				1				137
BUS D02	B03H2		1-08 *				1		42-0/8		137
BUS D03	A09E2		1-01 *	H			1			HAND WIRE	138
BUS D03	A08E2		1-02 *	H			2			HAND WIRE	138
BUS D03	A07E2		1-03 *	H			1			HAND WIRE	138
BUS D03	A06E2		1-04 *	H			2			HAND WIRE	138
BUS D03	A05E2		1-05 *				1			TO HERE	138
BUS D03	C04T2		1-06 *				2				138
BUS D03	F04L1		1-07 *				1				138
BUS D03	B03E2		1-08 *				1		43-6/8		138
BUS D04	A09E1		1-01 *	H			1			HAND WIRE	139
BUS D04	A08E1		1-02 *	H			2			HAND WIRE	139
BUS D04	A07E1		1-03 *	H			1			HAND WIRE	139
BUS D04	A06E1		1-04 *	H			2			HAND WIRE	139
BUS D04	A05E1		1-05 *				1			TO HERE	139
BUS D04	C04N2		1-06 *				2				139
BUS D04	F04N2		1-07 *				1				139
BUS D04	B03S1		1-08 *				1		42-4/8		139
BUS D05	A09F2		1-01 *	H			1			HAND WIRE	140
BUS D05	A08F2		1-02 *	H			2			HAND WIRE	140
BUS D05	A07F2		1-03 *	H			1			HAND WIRE	140
BUS D05	A06F2		1-04 *	H			2			HAND WIRE	140
BUS D05	A05F2		1-05 *				1			TO HERE	140
BUS D05	C04P2		1-06 *				2				140
BUS D05	F04F1		1-07 *				1				140
BUS D05	C03D2		1-08 *				1		40-0/8		140

GT40.B RUN NAME	HND288.V17(17) 06/22/72 A/P PIN NAME	ORDER PIN	BAY ORDER	Q	DRAM HV PG Y	X	Z	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 20 RUN NUMBER
BUS D06	A09F1		1-01 *	H			1			HAND WIRE	141
BUS D06	A08F1		1-02 *	H			2			HAND WIRE	141
BUS D06	A07F1		1-03 *	H			1			HAND WIRE	141
BUS D06	A06F1		1-04 *	H			2			HAND WIRE	141
BUS D06	A05F1		1-05 *				1			TO HERE	141
BUS D06	C04V2		1-06 *				2				141
BUS D06	F04F2		1-07 *				1				141
BUS D06	C03D1		1-08 *				1		40-0/8		141
BUS D07	A09H2		1-01 *	H			1			HAND WIRE	142
BUS D07	A08H2		1-02 *	H			2			HAND WIRE	142
BUS D07	A07H2		1-03 *	H			1			HAND WIRE	142
BUS D07	A06H2		1-04 *	H			2			HAND WIRE	142
BUS D07	A05H2		1-05 *				1			TO HERE	142
BUS D07	C04M2		1-06 *				2				142
BUS D07	F04H1		1-07 *				1				142
BUS D07	B03V2		1-08 *				1		40-6/8		142
BUS D08	A09H1		1-01 *	H			1			HAND WIRE	143
BUS D08	A08H1		1-02 *	H			2			HAND WIRE	143
BUS D08	A07H1		1-03 *	H			1			HAND WIRE	143
BUS D08	A06H1		1-04 *	H			2			HAND WIRE	143
BUS D08	A05H1		1-05 *				1			TO HERE	143
BUS D08	C04L2		1-06 *				2				143
BUS D08	F04K1		1-07 *				1				143
BUS D08	C03R1		1-08 *				1		39-4/8		143
BUS D09	A09J2		1-01 *	H			1			HAND WIRE	144
BUS D09	A08J2		1-02 *	H			2			HAND WIRE	144
BUS D09	A07J2		1-03 *	H			1			HAND WIRE	144
BUS D09	A06J2		1-04 *	H			2			HAND WIRE	144
BUS D09	A05J2		1-05 *				1			TO HERE	144
BUS D09	C04K2		1-06 *				2				144
BUS D09	C03V1		1-07 *				1		22-6/8		144
BUS D10	A09J1		1-01 *	H			1			HAND WIRE	145
BUS D10	A08J1		1-02 *	H			2			HAND WIRE	145
BUS D10	A07J1		1-03 *	H			1			HAND WIRE	145
BUS D10	A06J1		1-04 *	H			2			HAND WIRE	145
BUS D10	A05J1		1-05 *				1			TO HERE	145
BUS D10	C04J2		1-06 *				2				145
BUS D10	C03S1		1-07 *				1		22-2/8		145



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RUN NAME	A/P	PIN	ORDER	BAY	Q	DRAM	RV	PG	Y	X	#	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS D11	L	A09K2	1-01	*	H						1			HAND WIRE	146
BUS D11	L	A08K2	1-02	*	H						2			HAND WIRE	146
BUS D11	L	A07K2	1-03	*	H						1			HAND WIRE	146
BUS D11	L	A06K2	1-04	*	H						1			HAND WIRE	146
BUS D11	L	A05K2	1-05	*	H						1			TO HERE	146
BUS D11	L	C04H1	1-06	*							2				146
BUS D11	L	C03U1	1-07	*							1		22-4/8		146
BUS D12	L	A09K1	1-01	*	H						1			HAND WIRE	147
BUS D12	L	A08K1	1-02	*	H						2			HAND WIRE	147
BUS D12	L	A07K1	1-03	*	H						1			HAND WIRE	147
BUS D12	L	A06K1	1-04	*	H						2			HAND WIRE	147
BUS D12	L	A05K1	1-05	*	H						1			TO HERE	147
BUS D12	L	C04H2	1-06	*							2				147
BUS D12	L	D03S1	1-07	*							1		24-6/8		147
BUS D13	L	A09L2	1-01	*	H						2			HAND WIRE	148
BUS D13	L	A08L2	1-02	*	H						1			HAND WIRE	148
BUS D13	L	A07L2	1-03	*	H						2			HAND WIRE	148
BUS D13	L	A06L2	1-04	*	H						1			HAND WIRE	148
BUS D13	L	A05L2	1-05	*							2			TO HERE	148
BUS D13	L	C04E2	1-06	*							1				148
BUS D13	L	E03E1	1-07	*							1		26-0/8		148
BUS D14	L	A09L1	1-01	*	H						1			HAND WIRE	149
BUS D14	L	A08L1	1-02	*	H						2			HAND WIRE	149
BUS D14	L	A07L1	1-03	*	H						1			HAND WIRE	149
BUS D14	L	A06L1	1-04	*	H						2			HAND WIRE	149
BUS D14	L	A05L1	1-05	*							1			TO HERE	149
BUS D14	L	C04E2	1-06	*							2				149
BUS D14	L	D03U2	1-07	*							1		25-0/8		149
BUS D15	L	A09M2	1-01	*	H						2			HAND WIRE	150
BUS D15	L	A08M2	1-02	*	H						1			HAND WIRE	150
BUS D15	L	A07M2	1-03	*	H						2			HAND WIRE	150
BUS D15	L	A06M2	1-04	*	H						1			HAND WIRE	150
BUS D15	L	A05M2	1-05	*							2			TO HERE	150
BUS D15	L	C04D2	1-06	*							1				150
BUS D15	L	D03V1	1-07	*							1		25-2/8		150

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RUN NAME	A/P	PIN	ORDER	BAY	Q	DRAM	RV	PG	Y	X	#	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS D0 LO	L	B09F2	1-01	*	H						2			HAND WIRE	151
BUS D0 LO	L	B08F2	1-02	*	H						1			HAND WIRE	151
BUS D0 LO	L	B07F2	1-03	*	H						2			HAND WIRE	151
BUS D0 LO	L	B06F2	1-04	*	H						1			HAND WIRE	151
BUS D0 LO	L	B05F2	1-05	*							2			TO HERE	151
BUS D0 LO	L	C04N1	1-06	*							1				151
BUS D0 LO	L	F03D2	1-07	*							1		26-4/8		151
BUS INTH	L	A09A1	1-01	*	H						1			HAND WIRE	152
BUS INTH	L	A08A1	1-02	*	H						2			HAND WIRE	152
BUS INTH	L	A07A1	1-03	*	H						1			HAND WIRE	152
BUS INTH	L	A06A1	1-04	*	H						2			HAND WIRE	152
BUS INTH	L	A05A1	1-05	*							1			TO HERE	152
BUS INTH	L	D04L1	1-06	*							2				152
BUS INTH	L	A03O1	1-07	*							1		34-0/8		152
BUS INTH	L	A09B1	1-01	*	H						1			HAND WIRE	153
BUS INTH	L	A08B1	1-02	*	H						2			HAND WIRE	153
BUS INTH	L	A07B1	1-03	*	H						1			HAND WIRE	153
BUS INTH	L	A06B1	1-04	*	H						2			HAND WIRE	153
BUS INTH	L	A05B1	1-05	*							1			TO HERE	153
BUS INTH	L	F04M1	1-06	*							2				153
BUS INTH	L	F03B1	1-07	*							1		31-6/8		153
BUS MSYN	L	B01L2	1-01	*	H						2			HAND WIRE	154
BUS MSYN	L	B02V1	1-02	*	H						1			HAND WIRE	154
BUS MSYN	L	B06V1	1-03	*	H						2			HAND WIRE	154
BUS MSYN	L	B07V1	1-04	*	H						1			HAND WIRE	154
BUS MSYN	L	B08V1	1-05	*	H						2			HAND WIRE	154
BUS MSYN	L	B09V1	1-06	*							1			TO HERE	154
BUS MSYN	L	E04E1	1-07	*							2				154
BUS MSYN	L	D03P1	1-08	*							1		29-0/8		154
BUS NPG IN	H	A06U1	1-01	*	H						2			HAND WIRE	155
BUS NPG IN	H	A07U1	1-02	*	H						1			HAND WIRE	155
BUS NPG IN	H	A08U1	1-03	*	H						2			HAND WIRE	155
BUS NPG IN	H	A09U1	1-04	*							1			TO HERE	155
BUS NPG IN	H	D03L2	1-05	*							1		18-6/8		155



GI40.B RUN NAME	HND288.V17(17) 06/22/72	A/P	PIN	NAME	ORDER	BAY	PG	Y	X	Z	REMARKS	1-MAR-73	LENGTH	EXCEPTIONS	PAGE 25	RUN	NUMBER
CONA DATA STROBE	L	D0BK1			1-01 *											172	
CONA DATA STROBE	L	D09E2			1-02 *											172	
CONA DATA STROBE					1							3-2/8				172	
CONA ENAB ALU	H	D0BE1			1-01 *											173	
CONA ENAB ALU	H	F09D2			1-02 *											173	
CONA ENAB ALU					1							7-6/8				173	
CONA ENAB RCD PSW	H	D0BN1			1-01 *											174	
CONA ENAB RCD PSW	H	F09E1			1-02 *											174	
CONA ENAB RCD PSW					1							7-0/8				174	
CONA ENAB SWITCH REG	L	D0BF1			1-01 *											175	
CONA ENAB SWITCH REG	L	F09V1			1-02 *											175	
CONA ENAB SWITCH REG					1							9-2/8				175	
CONA ENAB XMI1 PSW	H	D0BA1			1-01 *											176	
CONA ENAB XMI1 PSW	H	F09D1			1-02 *											176	
CONA ENAB XMI1 PSW					1							8-2/8				176	
CONA ENABLE DATA	H	C09N1			1-01 *											177	
CONA ENABLE DATA	H	D0B01			1-02 *											177	
CONA ENABLE DATA					1							4-2/8				177	
CONA LOAD RCD PSW	H	D0BR1			1-01 *											178	
CONA LOAD RCD PSW	H	F09L2			1-02 *											178	
CONA LOAD RCD PSW					1							7-4/8				178	
CONA LOAD XMI1 PSW	H	D0BP1			1-01 *											179	
CONA LOAD XMI1 PSW	H	F09F1			1-02 *											179	
CONA LOAD XMI1 PSW					1							7-0/8				179	
CONB INH +1	L	D0BC1			1-01 *											180	
CONB INH +1	L	F09K1			1-02 *											180	
CONB INH +1					1							8-4/8				180	
CONB IR CLOCK	H	E0BC1			1-01 *											181	
CONB IR CLOCK	H	E09V1			1-02 *											181	
CONB IR CLOCK					1							4-4/8				181	
CONB RUN LAMP	L	C09U1			1-01 *											182	
CONB RUN LAMP	L	E0BT2			1-02 *											182	
CONB RUN LAMP					1							7-4/8				182	
CONB SPA 00	H	C08U2			1-01 *											183	
CONB SPA 00	H	C09D1			1-02 *											183	
CONB SPA 00					1							4-2/8				183	

GI40.B RUN NAME	HND288.V17(17) 06/22/72	A/P	PIN	NAME	ORDER	BAY	PG	Y	X	Z	REMARKS	1-MAR-73	LENGTH	EXCEPTIONS	PAGE 26	RUN	NUMBER
CONB SPA 01	H	C0BT2			1-01 *											184	
CONB SPA 01	H	C09C1			1-02 *											184	
CONB SPA 01					1							4-0/8				184	
CONB SPA 02	H	C0BS2			1-01 *											185	
CONB SPA 02	H	C09B1			1-02 *											185	
CONB SPA 02					1							4-2/8				185	
CONB SPA 03	H	C0BR2			1-01 *											186	
CONB SPA 03	H	C09A1			1-02 *											186	
CONB SPA 03					1							4-0/8				186	
CONC CLR MSYN	H	D0BJ1			1-01 *											187	
CONC CLR MSYN	H	F09F2			1-02 *											187	
CONC CLR MSYN					1							7-6/8				187	
CONC DAT ENAB	L	D0BM1			1-01 *											188	
CONC DAT ENAB	L	F09V2			1-02 *											188	
CONC DAT ENAB					1							8-6/8				188	
COND INIT	H	D0BU1			1-01 *											189	
COND INIT	H	D09E1			1-02 *											189	
COND INIT					1							4-0/8				189	
CONE ALLOW CONSTANTS	L	C09E1			1-01 *											190	
CONE ALLOW CONSTANTS	L	E0BH1			1-02 *											190	
CONE ALLOW CONSTANTS					1							8-0/8				190	
CONE BUT DESTINATION	H	E09E1			1-01 *											191	
CONE BUT DESTINATION	H	F08C1			1-02 *											191	
CONE BUT DESTINATION					1							5-0/8				191	
CONE BUT DESTINATION	L	D0PH1			1-01 *											192	
CONE BUT DESTINATION	L	E0BJ1			1-02 *											192	
CONE BUT DESTINATION					1							5-2/8				192	
CONE BUT IR DECODE	L	B01R2			1-01 *											193	
CONE BUT IR DECODE	L	D09V2			1-02 *											193	
CONE BUT IR DECODE	L	E0BV2			1-03 *											193	
CONE BUT IR DECODE					1							14-6/8				193	
CONE ENAB UNARY	L	E0BR2			1-01 *											194	
CONE ENAB UNARY	L	E09N1			1-02 *											194	
CONE ENAB UNARY					1							2-6/8				194	

GI40.B RUN NAME	HND288.V17(17) 06/22/72	A/P	PIN	ORDER	BAY	PG	Y	X	Z	REMARKS	1-MAR-73	LENGTH	EXCEPTIONS	PAGE 27
														RUN NUMBER
CONF JMP OR JSR	L	E08K2	1-01 *						1					195
CONF JMP UR JSR	L	E09M2	1-02 *											195
CONF JMP OR JSR			1									3-0/8		195
CONF KCD SER	L	F08A1	1-01 *						1					196
CONF KCD SER	L	F09P2	1-02 *											196
CONF KCD SER			1									4-2/8		196
CONF XMIT SER	L	F08B1	1-01 *						1					197
CONF XMIT SER	L	F09M2	1-02 *											197
CONF XMIT SER			1									3-6/8		197
CONF ALU MODE	H	D09R1	1-01 *						1					198
CONF ALU MODE	H	E08D2	1-02 *											198
CONF ALU MODE			1									3-6/8		198
CONF ALU S0	L	D09R2	1-01 *						1					199
CONF ALU S0	L	E08D1	1-02 *											199
CONF ALU S0			1									4-0/8		199
CONF ALU S1	L	D09P4	1-01 *						1					200
CONF ALU S1	L	E08E2	1-02 *											200
CONF ALU S1			1									4-0/8		200
CONF ALU S2	L	D09P2	1-01 *						1					201
CONF ALU S2	L	E08F2	1-02 *											201
CONF ALU S2			1									4-2/8		201
CONF ALU S3	L	D09N1	1-01 *						1					202
CONF ALU S3	L	E08E1	1-02 *											202
CONF ALU S3			1									4-2/8		202
CONF AUX BYTE	H	D09N2	1-01 *						1					203
CONF AUX BYTE	H	E08U2	1-02 *											203
CONF AUX BYTE			1									5-6/8		203
CONF AUX CONTROL	L	E08S2	1-01 *						1					204
CONF AUX CONTROL	L	F09B1	1-02 *											204
CONF AUX CONTROL			1									3-6/8		204
CONF CIN	H	E08B3	1-01 *						1					205
CONF CIN	H	E09T2	1-02 *											205
CONF CIN			1									4-4/8		205

GI40.B RUN NAME	HND288.V17(17) 06/22/72	A/P	PIN	ORDER	BAY	PG	Y	X	Z	REMARKS	1-MAR-73	LENGTH	EXCEPTIONS	PAGE 28
														RUN NUMBER
CONF MPC 00	L	B01P2	1-01 *						1					206
CONF MPC 00	L	E09L1	1-02 *						2					206
CONF MPC 00	L	F08P2	1-03 *											206
CONF MPC 00			1									17-0/8		206
CONF MPC 01	L	B01V1	1-01 *						1					207
CONF MPC 01	L	E09P1	1-02 *						2					207
CONF MPC 01	L	F08N2	1-03 *											207
CONF MPC 01			1									16-0/8		207
CONF MPC 02	L	B01N1	1-01 *						1					208
CONF MPC 02	L	E09R1	1-02 *						2					208
CONF MPC 02	L	F08M1	1-03 *											208
CONF MPC 02			1									17-0/8		208
CONF MPC 03	L	B01K2	1-01 *						1					209
CONF MPC 03	L	E09D1	1-02 *						2					209
CONF MPC 03	L	F08K1	1-03 *											209
CONF MPC 03			1									17-0/8		209
CONF MPC 04	L	B01U2	1-01 *						1					210
CONF MPC 04	L	E09C1	1-02 *						2					210
CONF MPC 04	L	F08J2	1-03 *											210
CONF MPC 04			1									15-6/8		210
CONF MPC 05	L	B01T2	1-01 *						1					211
CONF MPC 05	L	E09B1	1-02 *						2					211
CONF MPC 05	L	F08N1	1-03 *											211
CONF MPC 05			1									16-4/8		211
CONF MPC 06	L	B01C1	1-01 *						1					212
CONF MPC 06	L	E09A1	1-02 *						2					212
CONF MPC 06	L	F08L1	1-03 *											212
CONF MPC 06			1									18-0/8		212
CONF MPC 07	L	B01J1	1-01 *						1					213
CONF MPC 07	L	E09S1	1-02 *						2					213
CONF MPC 07	L	F08M2	1-03 *											213
CONF MPC 07			1									17-2/8		213
CONF SPARE	L	E08A1												214
CONF 880T	H	D08S1	1-01 *						1					215
CONF 880T	H	F09A1	1-02 *											215
CONF 880T			1									6-0/8		215

GT40.B RUN NAME	A/P	HND288.V17(17) 06/22/72 PIN ORDER	BAY - PIN ORDER	0	DRAM RV	PG Y	X	#	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 29 RUN NUMBER
CONG BMODE 00	H	C09V1	1-01 *					1				216
CONG BMODE 00	H	E08M2	1-02 *									216
CONG BMODE 00			1							7-0/8		216
CONG BMODE 01	H	D09A1	1-01 *					1				217
CONG BMODE 01	H	E08M1	1-02 *							6-2/8		217
CONG BMODE 01			1									217
CONG BSTOP	H	C09L2	1-01 *					1				218
CONG BSTOP	H	E08H2	1-02 *									218
CONG BSTOP			1							7-4/8		218
CONG CKOFF	L	E08R1	1-01 *					1				219
CONG CKOFF	L	F09J1	1-02 *									219
CONG CKOFF			1							4-4/8		219
CONG ENAB PSW	H	C09R2	1-01 *					1				220
CONG ENAB PSW	H	E08K1	1-02 *									220
CONG ENAB PSW			1							7-2/8		220
CONG ENAB SPL	L	C09F2	1-01 *					1				221
CONG ENAB SPL	L	E08N2	1-02 *									221
CONG ENAB SPL			1							8-4/8		221
CONG ENAB SPR	L	C09E2	1-01 *					1				222
CONG ENAB SPR	L	E08L1	1-02 *									222
CONG ENAB SPR			1							8-4/8		222
CONG LOAD PSW	L	D08H2	1-01 *					1				223
CONG LOAD PSW	L	D09M2	1-02 *									223
CONG LOAD PSW			1							3-0/8		223
CONG HOM ALEG 00	L	E08P2	1-01 *					1				224
CONG HOM ALEG 00	L	E09U1	1-02 *									224
CONG HOM ALEG 00			1							3-0/8		224
CONG SP WRITE	H	E08F1	1-01 *					1				225
CONG SP WRITE	H	F09C1	1-02 *									225
CONG SP WRITE			1							5-0/8		225
CUNH PROC INIT	H	D09M1	1-01 *					1				226
CUNH PROC INIT	H	F08T2	1-02 *									226
CUNH PROC INIT			1							8-2/8		226
CUNH PROC INIT	L	D09L2	1-01 *					1				227
CUNH PROC INIT	L	F08S1	1-02 *									227
CUNH PROC INIT			1							8-4/8		227

GT40.B RUN NAME	A/P	HND288.V17(17) 06/22/72 PIN ORDER	BAY - PIN ORDER	0	DRAM RV	PG Y	X	#	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 30 RUN NUMBER
CUNJ MAN CLK	L	B01V2	1-01 *					1				228
CUNJ MAN CLK	L	F08V1	1-02 *									228
CUNJ MAN CLK			1							14-2/8		228
CUNJ PROC CLOCK	H	C08N1	1-01 *					1				229
CUNJ PROC CLOCK	H	D09L1	1-02 *									229
CUNJ PROC CLOCK			1							5-0/8		229
CUNJ S CLK ON	L	B01U1	1-01 *					1				230
CUNJ S CLK ON	L	F08U2	1-02 *									230
CUNJ S CLK ON			1							14-4/8		230
CUNJ UNG PROC CLOCK	H	D08V1	1-01 *					1				231
CUNJ UNG PROC CLOCK	H	F09L1	1-02 *									231
CUNJ UNG PROC CLOCK			1							6-6/8		231
CUNSOLE CONT	L	C09S2	1-01 *					1				232
CUNSOLE CONT	L	F08H2	1-02 *									232
CUNSOLE CONT			1							9-4/8		232
CUNSOLE DEP	L	C09M1	1-01 *					1				233
CUNSOLE DEP	L	F08D2	1-02 *									233
CUNSOLE DEP			1							9-4/8		233
CUNSOLE EXAM	L	C09T2	1-01 *					1				234
CUNSOLE EXAM	L	F08F2	1-02 *									234
CUNSOLE EXAM			1							9-2/8		234
CUNSOLE LOAD	L	C09U2	1-01 *					1				235
CUNSOLE LOAD	L	F08J1	1-02 *									235
CUNSOLE LOAD			1							9-4/8		235
CUNSOLE START	L	C09M2	1-01 *					1				236
CUNSOLE START	L	F08E2	1-02 *									236
CUNSOLE START			1							9-6/8		236
CUNSOLE STOP	L	C09S1	1-01 *					1				237
CUNSOLE STOP	L	F08H1	1-02 *									237
CUNSOLE STOP			1							9-4/8		237
CK1		C04R1									1-PIN RUN	238
CSC CHARACTER,CR=	H	C02J2	1-01 *					1				239
CSC CHARACTER,CR=	H	E03S2	1-02 *									239
CSC CHARACTER,CR=			1							8-6/8		239





GI40.B RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	0	DRAM RV PG Y	X	Z	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 35 RUN NUMBER
DPG IM 0A(1)	H	C08M1	1-01 *	1				1				281
DPG IM 09(1)	H	E09F1	1-02 *	1						7-2/8		281
DPG IM 0A(1)												281
DPG ROTATE	H	E08N1	1-01 *	1				1				282
DPG ROTATE	H	F09S1	1-02 *	1						5-6/8		282
DPG ROTATE												282
DPG BYTE	L	D08L1	1-01 *	1				1				283
DPG BYTE	L	E09K1	1-02 *	1						5-0/8		283
DPG BYTE												283
DPG CAL DEST	L	E08U1	1-01 *	1				1				284
DPG CAL DEST	L	E09M1	1-02 *	1						3-2/8		284
DPG CAL DEST												284
DPG DIS ALU S BITS	H	E08J2	1-01 *	1				1				285
DPG DIS ALU S BITS	H	E09J1	1-02 *	1						2-4/8		285
DPG DIS ALU S BITS												285
DPG EMT	L	F08E1	1-01 *	1				1				286
DPG EMT	L	F09U2	1-02 *	1						4-2/8		286
DPG EMT												286
DPG ENAB NON MOD	H	E08L2	1-01 *	1				1				287
DPG ENAB NON MOD	H	F09T2	1-02 *	1						6-0/8		287
DPG ENAB NON MOD												287
DPG JMP DR JSH	L	D08H1	1-01 *	1				1				288
DPG JMP DR JSH	L	E09E2	1-02 *	1						5-0/8		288
DPG JMP DR JSH												288
DPG MOVE	L	E09H1	1-01 *	1				1				289
DPG MOVE	L	F08K2	1-02 *	1						5-4/8		289
DPG MOVE												289
DPG RCD INT	L	F08R2	1-01 *	1				1				290
DPG RCD INT	L	F09R2	1-02 *	1						2-6/8		290
DPG RCD INT												290
DPG RTS	L	E09S2	1-01 *	1				1				291
DPG RTS	L	F08F1	1-02 *	1						4-2/8		291
DPG RTS												291
DPG TRAP	L	F08D1	1-01 *	1				1				292
DPG TRAP	L	F09U1	1-02 *	1						4-2/8		292
DPG TRAP												292

GI40.B RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	0	DRAM RV PG Y	X	Z	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 36 RUN NUMBER
DPG WAIT	L	D09V1	1-01 *	1				1				293
DPG WAIT	L	F08R1	1-02 *	1						7-2/8		293
DPG WAIT												293
DPH RUR ENB	L	F09K2									1-PIN RUN	294
DPH RE -15	L	F09R1									1-PIN RUN	295
DPH S0 -15	L	F09J2									1-PIN RUN	296
DPH SER 0	H	D09F1									1-PIN RUN	297
DPH SER 0	L	F09E2									1-PIN RUN	298
DPH SER IN	L	F09N1									1-PIN RUN	299
DPH SI -15	L	F09P1									1-PIN RUN	300
DPH XMIT INT	L	F08P1	1-01 *	1				1				301
DPH XMIT INT	L	F09N2	1-02 *	1						3-2/8		301
DPH XMIT INT												301
F04E1		F04E1	1-01 *	1				1				302
F04E1		F04V2	1-02 *	1						4-2/8		302
F04E1												302
F04L2		F04L2	1-01 *	1				1				303
F04L2		F04R1	1-02 *	1						3-0/8		303
F04L2												303
F04M2		F04M2	1-01 *	1				1				304
F04M2		F04S1	1-02 *	1						3-0/8		304
F04M2												304
F04P2		F04P2	1-01 *	1				1				305
F04P2		F04S2	1-02 *	1						2-4/8		305
F04P2												305
F04R2		F04D2	1-01 *	2				1				306
F04R2		F04R2	1-02 *	1								306
F04R2		F04N1	1-03 *	1						6-2/8		306
F04R2												306
F05A1		F05A1	1-01 * H	1				1				307
F05A1		F06A1	1-02 *	1							HAND WIRE TO HERE	307
F05A1										2-6/8		307



GI40,B RUN NAME	HND288,V17(17) 06/22/72 A/P PIN ORDER	HND288,V17(17) 06/22/72 PIN ORDER	Q	DRAM RV PG Y	X	Z	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 37 RUN NUMBER
F05B1	F05B1	F05B1	1	H				P	HAND WIRE TO HERE	308
F05B1	F05B1	F05B1	1	H						308
F05B1	F05B1	F05B1	1	H						308
F05U1	F05U1	F05U1	1	H				P	HAND WIRE TO HERE	309
F05U1	F05U1	F05U1	1	H						309
F05U1	F05U1	F05U1	1	H						309
F05V1	F05V1	F05V1	1	H				P	HAND WIRE TO HERE	310
F05V1	F05V1	F05V1	1	H						310
F05V1	F05V1	F05V1	1	H						310
FS CLK	L F09H1								1-PIN RUN	311
FS CLK DISAB	L F09H2								1-PIN RUN	312
FS SER IN	L F09M1								1-PIN RUN	313
GM INI 00	L A01L2		1							314
GM INI 00	L B02U1		1							314
GM INI 00	L B02U1		1							314
GM INI 01	L A01M2		1							315
GM INI 01	L C02C1		1							315
GM INI 01	L C02C1		1							315
GM INI 02	L A01R2		1							316
GM INI 02	L B02P1		1							316
GM INI 02	L B02P1		1							316
GM INTENSITY OUT	L A01T2		1	H					HAND WIRE	317
GM INTENSITY OUT	L B02L2		1	H					H TO WHERE	317
GM INTENSITY OUT	L B02L2		1	H						317
GM INTERRUPT	H A02P1		1							318
GM INTERRUPT	H D03H1		1							318
GM INTERRUPT	H D03H1		1							318
GM L.P. INTERPI ENA (0) H	C02M1		1							319
GM L.P. INTERPI ENA (0) H	F03M1		1							319
GM L.P. INTERPI ENA (0) H	F03M1		1							319

GI40,B RUN NAME	HND288,V17(17) 06/22/72 A/P PIN ORDER	HND288,V17(17) 06/22/72 PIN ORDER	Q	DRAM RV PG Y	X	Z	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 38 RUN NUMBER
GND 01-03	A01C1		2	H				P	HAND WIRE	320
GND 01-03	A01T1		1	H					HAND WIRE	320
GND 01-03	A01C2		1	H					HAND WIRE	320
GND 01-03	A03C2	A02C2	1	H					HAND WIRE	320
GND 01-03	A02C2		1	H					HAND WIRE	320
GND 01-03	A03E2		1	H					HAND WIRE	320
GND 01-03	C03B2		1	H					HAND WIRE	320
GND 01-03	C03N2		1	H					HAND WIRE	320
GND 01-03	A03T1	A03T1	1	H					HAND WIRE	320
GND 01-03	B03B2	B03B2	1	H					HAND WIRE	320
GND 01-03	B03C2		1	H					HAND WIRE	320
GND 01-03	B02C2		1	H					HAND WIRE	320
GND 01-03	B01C2		1	H					HAND WIRE	320
GND 01-03	A02T1		1	H					HAND WIRE	320
GND 01-03	B02T1		1	H					HAND WIRE	320
GND 01-03	B01T1		1	H					HAND WIRE	320
GND 01-03	B03T1		1	H					HAND WIRE	320
GND 01-03	C03C2		1	H					HAND WIRE	320
GND 01-03	C02C2		1	H					HAND WIRE	320
GND 01-03	C01C2		1	H					HAND WIRE	320
GND 01-03	C01T1		1	H					HAND WIRE	320
GND 01-03	C02T1		1	H					HAND WIRE	320
GND 01-03	C03T1		1	H					HAND WIRE	320
GND 01-03	D03C2		1	H					HAND WIRE	320
GND 01-03	D02C2		1	H					HAND WIRE	320
GND 01-03	D01C2		1	H					HAND WIRE	320
GND 01-03	D01T1		1	H					HAND WIRE	320
GND 01-03	D02T1		1	H					HAND WIRE	320
GND 01-03	D03T1		1	H					HAND WIRE	320
GND 01-03	E03T1		1	H					HAND WIRE	320
GND 01-03	E02T1		1	H					HAND WIRE	320
GND 01-03	E01T1		1	H					HAND WIRE	320
GND 01-03	F01C2		1	H					HAND WIRE	320
GND 01-03	F02C2		1	H					HAND WIRE	320
GND 01-03	F03C2		1	H					HAND WIRE	320
GND 01-03	F03T1		1	H					HAND WIRE	320
GND 01-03	F02T1		1	H					HAND WIRE	320
GND 01-03	F01T1		1	H					HAND WIRE	320
GND 01-03	E01C2		1	H					HAND WIRE	320
GND 01-03	E02C2		1	H					HAND WIRE	320
GND 01-03	E03C2		1	H					HAND WIRE	320
GND 01-03	E04A1		1	H					HAND WIRE	320
GND 01-03	E04C2		1	H					HAND WIRE	320
GND 01-03	F04T1		1	H					HAND WIRE	320
GND 01-03	F04T1		1	H					H TO WHERE	320

GI40.B HND288.V17(17) 06/22/72 1-MAR-73 PAGE 39  
RUN NAME A/P PIN ORDER PIN BAY ORDER RUN NUMBER

GI40.B RUN NAME	A/P	PIN	ORDER	PIN	BAY	ORDER	Q	DRAM	RV	PG	Y	X	F	REMARKS	LENGTH	EXCEPTIONS	PAGE 39 RUN NUMBER
GND 04-06		A06B2		1-01		*	H									HAND WIRE	321
GND 04-06		A06C2		1-02		*	H									HAND WIRE	321
GND 04-06		A05B2		1-03		*	H									HAND WIRE	321
GND 04-06		A05C2		1-04		*	H									HAND WIRE	321
GND 04-06		A04C2		1-05		*	H									HAND WIRE	321
GND 04-06		A05T1		1-06		*	H									HAND WIRE	321
GND 04-06		A05S1		1-07		*	H									HAND WIRE	321
GND 04-06		A05R1		1-08		*	H									HAND WIRE	321
GND 04-06		A05P1		1-09		*	H									HAND WIRE	321
GND 04-06		A05N1		1-10		*	H									HAND WIRE	321
GND 04-06		A06P1		1-11		*	H									HAND WIRE	321
GND 04-06		A06N1		1-12		*	H									HAND WIRE	321
GND 04-06		A06R1		1-13		*	H									HAND WIRE	321
GND 04-06		A06S1		1-14		*	H									HAND WIRE	321
GND 04-06		A06V2		1-15		*	H									HAND WIRE	321
GND 04-06		A06T1		1-16		*	H									HAND WIRE	321
GND 04-06		A05V2		1-17		*	H									HAND WIRE	321
GND 04-06		B05B2		1-18		*	H									HAND WIRE	321
GND 04-06		B05C2		1-19		*	H									HAND WIRE	321
GND 04-06		B04C2		1-20		*	H									HAND WIRE	321
GND 04-06		B05E1		1-21		*	H									HAND WIRE	321
GND 04-06		B05D1		1-22		*	H									HAND WIRE	321
GND 04-06		B06E1		1-23		*	H									HAND WIRE	321
GND 04-06		B06D1		1-24		*	H									HAND WIRE	321
GND 04-06		B06C2		1-25		*	H									HAND WIRE	321
GND 04-06		B06B2		1-26		*	H									HAND WIRE	321
GND 04-06		B06V2		1-27		*	H									HAND WIRE	321
GND 04-06		B06T1		1-28		*	H									HAND WIRE	321
GND 04-06		B05V2		1-29		*	H									HAND WIRE	321
GND 04-06		B05T1		1-30		*	H									HAND WIRE	321
GND 04-06		B04T1		1-31		*	H									HAND WIRE	321
GND 04-06		B04C2		1-32		*	H									HAND WIRE	321
GND 04-06		C05C2		1-33		*	H									HAND WIRE	321
GND 04-06		C05C2		1-34		*	H									HAND WIRE	321
GND 04-06		C06C2		1-35		*	H									HAND WIRE	321
GND 04-06		C06T1		1-36		*	H									HAND WIRE	321
GND 04-06		C05T1		1-37		*	H									HAND WIRE	321
GND 04-06		C04T1		1-38		*	H									HAND WIRE	321
GND 04-06		D04C2		1-39		*	H									HAND WIRE	321
GND 04-06		D05C2		1-40		*	H									HAND WIRE	321
GND 04-06		D06C2		1-41		*	H									HAND WIRE	321
GND 04-06		D06T1		1-42		*	H									HAND WIRE	321
GND 04-06		D05T1		1-43		*	H									HAND WIRE	321
GND 04-06		D04T1		1-44		*	H									HAND WIRE	321
GND 04-06		E05C2		1-45		*	H									HAND WIRE	321
GND 04-06		E06C2		1-46		*	H									HAND WIRE	321
GND 04-06		E06T1		1-47		*	H									HAND WIRE	321
GND 04-06		E05T1		1-48		*	H									HAND WIRE	321
GND 04-06		E04T1		1-49		*	H									HAND WIRE	321
GND 04-06		F04C2		1-50		*	H									HAND WIRE	321
GND 04-06		F05C2		1-51		*	H									HAND WIRE	321
GND 04-06		F06C2		1-52		*	H									HAND WIRE	321
GND 04-06		F04J2		1-53		*	H									HAND WIRE	321
GND 04-06		F05T1		1-54		*	H									HAND WIRE	321
GND 04-06		F06T1		1-55		*	H									HAND WIRE	321
GND 04-06		F06C2		1-56		*	H									HAND WIRE	321

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GI40.B HND288.V17(17) 06/22/72 1-MAR-73 PAGE 40  
RUN NAME A/P PIN ORDER PIN BAY ORDER RUN NUMBER

GI40.B RUN NAME	A/P	PIN	ORDER	PIN	BAY	ORDER	Q	DRAM	RV	PG	Y	X	F	REMARKS	LENGTH	EXCEPTIONS	PAGE 40 RUN NUMBER
GND 07-09		A09B2		1-01		*	H									HAND WIRE	322
GND 07-09		A09C2		1-02		*	H									HAND WIRE	322
GND 07-09		A08B2		1-03		*	H									HAND WIRE	322
GND 07-09		A08C2		1-04		*	H									HAND WIRE	322
GND 07-09		A07B2		1-05		*	H									TO HERE	322
GND 07-09		A07C2		1-06		*	H									HAND WIRE	322
GND 07-09		A07N1		1-07		*	H									HAND WIRE	322
GND 07-09		A07P1		1-08		*	H									HAND WIRE	322
GND 07-09		A07R1		1-09		*	H									HAND WIRE	322
GND 07-09		A07S1		1-10		*	H									HAND WIRE	322
GND 07-09		A07T1		1-11		*	H									HAND WIRE	322
GND 07-09		A07V2		1-12		*	H									HAND WIRE	322
GND 07-09		A08T1		1-13		*	H									HAND WIRE	322
GND 07-09		A08S1		1-14		*	H									HAND WIRE	322
GND 07-09		A08R1		1-15		*	H									HAND WIRE	322
GND 07-09		A08P1		1-16		*	H									HAND WIRE	322
GND 07-09		A08N1		1-17		*	H									HAND WIRE	322
GND 07-09		A09P1		1-18		*	H									HAND WIRE	322
GND 07-09		A09N1		1-19		*	H									HAND WIRE	322
GND 07-09		A09R1		1-20		*	H									HAND WIRE	322
GND 07-09		A09S1		1-21		*	H									HAND WIRE	322
GND 07-09		A09V2		1-22		*	H									HAND WIRE	322
GND 07-09		A09T1		1-23		*	H									HAND WIRE	322
GND 07-09		A08V2		1-24		*	H									HAND WIRE	322
GND 07-09		B08B2		1-25		*	H									HAND WIRE	322
GND 07-09		B08C2		1-26		*	H									HAND WIRE	322
GND 07-09		B07B2		1-27		*	H									HAND WIRE	322
GND 07-09		B07E1		1-28		*	H									HAND WIRE	322
GND 07-09		B07D1		1-29		*	H									HAND WIRE	322
GND 07-09		B07C2		1-30		*	H									HAND WIRE	322
GND 07-09		B08E1		1-31		*	H									HAND WIRE	322
GND 07-09		B08D1		1-32		*	H									HAND WIRE	322
GND 07-09		B08V2		1-33		*	H									HAND WIRE	322
GND 07-09		B08T1		1-34		*	H									HAND WIRE	322
GND 07-09		B07V2		1-35		*	H									HAND WIRE	322
GND 07-09		B07B2		1-36		*	H									HAND WIRE	322
GND 07-09		B09V2		1-37		*	H									HAND WIRE	322
GND 07-09		B09T1		1-38		*	H									HAND WIRE	322
GND 07-09		B08V2		1-39		*	H									HAND WIRE	322
GND 07-09		B08T1		1-40		*	H									HAND WIRE	322
GND 07-09		B07V2		1-41		*	H									HAND WIRE	322
GND 07-09		B07T1		1-42		*	H									HAND WIRE	322
GND 07-09		C07C2		1-43		*	H									HAND WIRE	322
GND 07-09		C08C2		1-44		*	H									HAND WIRE	322
GND 07-09		C09C2		1-45		*	H									HAND WIRE	322
GND 07-09		C08T1		1-46		*	H									HAND WIRE	322
GND 07-09		C07T1		1-47		*	H									HAND WIRE	322
GND 07-09		D07C2		1-48		*	H									HAND WIRE	322
GND 07-09		D08C2		1-49		*	H									HAND WIRE	322
GND 07-09		D09C2		1-50		*	H									HAND WIRE	322
GND 07-09		D09T1		1-51		*	H									HAND WIRE	322
GND 07-09		D08T1		1-52		*	H									HAND WIRE	322
GND 07-09		D07T1		1-53		*	H									HAND WIRE	322
GND 07-09		D07T1		1-54		*	H									HAND WIRE	322
GND 07-09		E07C2		1-55		*	H									HAND WIRE	322
GND 07-09		F07C2		1-56		*	H									HAND WIRE	322



GI401B RUN NAME	HND288.V17(17) 06/22/72		DRAW RV PG Y		X	REMARKS	1-MAR-73	6152	PAGE 43
	A/P	PIN	ORDER	BAY	ORDER		LENGTH	EXCEPTIONS	RUN
		NAME	PIN	ORDER					NUMBER
P1 SA		D05D1		1-01 *	H				342
P1 SA		D06D1		1-02 *	H			HAND WIRE	342
P1 SA		D07D1		1-03 *	H			HAND WIRE	342
							5-4/8	TO HERE	342
P1 SB		D05D2		1-01 *	H				343
P1 SB		D06D2		1-02 *	H			HAND WIRE	343
P1 SB		D07D2		1-03 *	H			HAND WIRE	343
							5-4/8	TO HERE	343
PCC ANALOG CLOCK	H	F01R1		1-01 *	H			HAND WIRE	344
PCC ANALOG CLOCK	H	F03U1		1-02 *	H			H TO WHERE	344
							3-4/8		344
PCC ANALOG EDGE	L	F03P1		1-01 *					345
PCC ANALOG EDGE	L	F01V1		1-02 *					345
							3-4/8		345
PCC DIS 01 IN	H	D01U1		1-01 *					346
PCC DIS 01 IN	H	E03T2		1-02 *					346
							5-2/8		346
PCC DIS 02 IN	H	E01F2		1-01 *					347
PCC DIS 02 IN	H	F03K1		1-02 *					347
							6-4/8		347
PCC DIS 03 IN	H	E01J2		1-01 *					348
PCC DIS 03 IN	H	F03S1		1-02 *					348
							6-2/8		348
PCC DIS 04 IN	H	E01F1		1-01 *					349
PCC DIS 04 IN	H	F03J2		1-02 *					349
							6-0/8		349
PCC DIS CLP	H	C02F2		1-01 *	H			HAND WIRE	350
PCC DIS CLP	H	D03N2		1-02 *				TO HERE	350
							6-0/8		350
PCC PC 01	H	A03R2		1-01 *					351
PCC PC 01	H	F02N2		1-02 *					351
							15-4/8		351
PCC PC 02	H	A03S1		1-01 *					352
PCC PC 02	H	F02P1		1-02 *					352
							15-4/8		352

GI401B RUN NAME	HND288.V17(17) 06/22/72		DRAW RV PG Y		X	REMARKS	1-MAR-73	6152	PAGE 44
	A/P	PIN	ORDER	BAY	ORDER		LENGTH	EXCEPTIONS	RUN
		NAME	PIN	ORDER					NUMBER
PCC PC 03	H	A03T2		1-01 *					353
PCC PC 03	H	F02R1		1-02 *					353
							15-6/8		353
PCC PC 04	H	A03V1		1-01 *					354
PCC PC 04	H	E02K2		1-02 *					354
							12-0/8		354
PCC PC 05	H	B03K1		1-01 *					355
PCC PC 05	H	E02L1		1-02 *					355
							10-4/8		355
PCC PC 06	H	B03L1		1-01 *					356
PCC PC 06	H	F02D1		1-02 *					356
							12-2/8		356
PCC PC 07	H	B03J1		1-01 *					357
PCC PC 07	H	E02S2		1-02 *					357
							11-2/8		357
PCC PC 08	H	B03H1		1-01 *					358
PCC PC 08	H	F02D2		1-02 *					358
							12-4/8		358
PCC PC 09	H	C03K1		1-01 *					359
PCC PC 09	H	E02R1		1-02 *					359
							8-4/8		359
PCC PC 10	H	C03J1		1-01 *					360
PCC PC 10	H	D02U2		1-02 *					360
							6-4/8		360
PCC PC 11	H	C03H1		1-01 *					361
PCC PC 11	H	D02S1		1-02 *					361
							6-2/8		361
PCC PC 12	H	C03F1		1-01 *					362
PCC PC 12	H	D02U1		1-02 *					362
							6-6/8		362
PCC PC 13	H	D02R1		1-01 *					363
PCC PC 13	H	D03M1		1-02 *					363
							3-0/8		363
PCC PC 14	H	D03L1		1-01 *					364
PCC PC 14	H	E02F2		1-02 *					364
							4-4/8		364



GI40.B RUN NAME	HND288.V17(17) 06/22/72 A/P PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAM RV PG Y	X	#	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 47 RUN NUMBER
PH Y11	H D01R2		1-01 *				1				389
PH Y11	H E03V1		1-02 *				1		5-6/8		389
PH Y11			1								389
PVCS DELTA X	H C01B1		1-01 *				1				390
PVCS DELTA X	H D02M2		1-02 *				1		6-4/8		390
PVCS DELTA X			1								390
PVCS DELTA Y	H A02M1		1-01 *				1				391
PVCS DELTA Y	H C01D1		1-02 *				1		7-0/8		391
PVCS DELTA Y			1								391
PVCS DELTA Y	L A02L1		1-01 *				1				392
PVCS DELTA Y	L F03K1		1-02 *				1				392
PVCS DELTA Y			1						15-6/8		392
PVCS GRAPH	L B02A1		1-01 *				1				393
PVCS GRAPH	L D03E1		1-02 *				2				393
PVCS GRAPH	L E01L2		1-03 *				1				393
PVCS GRAPH			1						14-0/8		393
PVCS INTENSITY LEVEL	H A02V1		1-01 *				1				394
PVCS INTENSITY LEVEL	H D03I2		1-02 *				1				394
PVCS INTENSITY LEVEL			1						10-4/8		394
PVCS LD DELTA Y	H A02B1		1-01 *				1				395
PVCS LD DELTA Y	H F01B2		1-02 *				1				395
PVCS LD DELTA Y			1						15-6/8		395
PVCS LOAD DELTA X	H C02E2		1-01 *				1				396
PVCS LOAD DELTA X	H E01M2		1-02 *				1				396
PVCS LOAD DELTA X			1						8-4/8		396
PVCS LOAD X	L A02D1		1-01 *				1				397
PVCS LOAD X	L D01P1		1-02 *				1				397
PVCS LOAD X			1						11-6/8		397
PVCS LOAD Y	L B02P2		1-01 *				1				398
PVCS LOAD Y	L C01K1		1-02 *				1				398
PVCS LOAD Y			1						4-6/8		398
PVCS POINT OR GRAPH GO	A02M2		1-01 *				1				399
PVCS POINT OR GRAPH GO	F03A1		1-02 *				1				399
PVCS POINT OR GRAPH GO			1						14-4/8		399

GI40.B RUN NAME	HND288.V17(17) 06/22/72 A/P PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAM RV PG Y	X	#	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 48 RUN NUMBER
PVCS VEC+CHAR GO	H A02T2		1-01 *				1				400
PVCS VEC+CHAR GO	H B03T2		1-02 *				1				400
PVCS VEC+CHAR GO			1						5-2/8		400
PVCS XUP ENA	H E03M2		1-01 *				1				401
PVCS XUP ENA	H F02V2		1-02 *				1				401
PVCS XUP ENA			1						6-2/8		401
PVCS Y8.Y9	H D02C1		1-01 *				1				402
PVCS Y8.Y9	H F03L2		1-02 *				1				402
PVCS Y8.Y9			1						8-6/8		402
PWR SUPPLY L CLK INT	H C04D1		1-01 *				1				403
PWR SUPPLY L CLK INT	H F08V2		1-02 *				2				403
PWR SUPPLY L CLK INT	A02A1		1-03 *				1				403
PWR SUPPLY L CLK INT			1						32-2/8		403
READ	H C06U2		1-01 *				1				404
READ	H C07U2		1-02 *				1				404
READ			1								404
RES 1	H E05C1		1-01 *				1				405
RES 1	H E06C1		1-02 *				1				405
RES 1			1						2-6/8		405
RES 2	H E05B1		1-01 *				1				406
RES 2	H E06B1		1-02 *				1				406
RES 2			1						2-6/8		406
SABH CHAR SCALE (1)	H B02M1						2				407
SABH INC 00	H C02N2		1-01 *				1				408
SABH INC 00	H D01S1		1-02 *				1				408
SABH INC 00			1						5-6/8		408
SABR INC 01	H C02S1		1-01 *				1				409
SABR INC 01	H D01V1		1-02 *				1				409
SABR INC 01			1						5-6/8		409
SABR INC 02	H D02A1		1-01 *				1				410
SABR INC 02	H E01H2		1-02 *				1				410
SABR INC 02			1						5-6/8		410
SABR INC 03	H D02B1		1-01 *				1				411
SABR INC 03	H E01K2		1-02 *				1				411
SABR INC 03			1						6-0/8		411

GI40.8 RUN NAME	HND288.V17(17) 06/22/72 A/P PIN ORDER BAY - NAME PIN ORDER	Q	DRAM	RV	PG	Y	X	#	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 49 RUN NUMBER
SABR INC 04	H C02N1							1				412
SABR INC 04	H E01H1							1				412
SABR INC 04										7-2/8		412
SABR INC 05	H C02L1							1				413
SABR INC 05	H E01L1							1				413
SABR INC 05										7-6/8		413
SABR ITALICS (1)	H C01B2							1				414
SABR ITALICS (1)	H C02L2							1				414
SABR ITALICS (1)										3-4/8		414
SUM DELTA X00	H D02K2							1				415
SUM DELTA X00	H E01V2							1				415
SUM DELTA X00										6-2/8		415
SUM DELTA X01	H D02H2							1				416
SUM DELTA X01	H E01U2							1				416
SUM DELTA X01										6-2/8		416
SUM DELTA X02	H C02V2							1				417
SUM DELTA X02	H E01T2							1				417
SUM DELTA X02										7-4/8		417
SUM DELTA X03	H C02S2							1				418
SUM DELTA X03	H E01S2							1				418
SUM DELTA X03										7-6/8		418
SUM DELTA X04	H C02V1							1				419
SUM DELTA X04	H E01R2							1				419
SUM DELTA X04										7-2/8		419
SUM DELTA X05	H C02U1							1				420
SUM DELTA X05	H E01N1							1				420
SUM DELTA X05										7-2/8		420
SUM DELTA X06	H D02L2							1				421
SUM DELTA X06	H E01P1							1				421
SUM DELTA X06										5-4/8		421
SUM DELTA X07	H D02J1							1				422
SUM DELTA X07	H E01M1							1				422
SUM DELTA X07										5-4/8		422
SUM DELTA X08	H D02L1							1				423
SUM DELTA X08	H E01J1							1				423
SUM DELTA X08										4-6/8		423

GI40.8 RUN NAME	HND288.V17(17) 06/22/72 A/P PIN ORDER BAY - NAME PIN ORDER	Q	DRAM	RV	PG	Y	X	#	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 50 RUN NUMBER
SUM DELTA X09	H D02H1							1				424
SUM DELTA X09	H E01N2							1				424
SUM DELTA X09										5-4/8		424
SUM DELTA Y04	H C02U2							1				425
SUM DELTA Y04	H F01N1							1				425
SUM DELTA Y04										10-0/8		425
SUM DELTA Y05	H C02R2							1				426
SUM DELTA Y05	H F01J2							1				426
SUM DELTA Y05										9-6/8		426
SUM DELTA Y06	H C02T2							1				427
SUM DELTA Y06	H F01H2							1				427
SUM DELTA Y06										9-4/8		427
SUM DELTA Y07	H C02P2							1				428
SUM DELTA Y07	H F01F2							1				428
SUM DELTA Y07										9-6/8		428
SUM DELTA Y08	H D02M1							1				429
SUM DELTA Y08	H F01E2							1				429
SUM DELTA Y08										7-0/8		429
SUM DELTA Y09	H D02J2							1				430
SUM DELTA Y09	H F01D2							1				430
SUM DELTA Y09										7-2/8		430
SUM STATUS 00	H B03A1							1				431
SUM STATUS 00	H F02P2							1				431
SUM STATUS 00										14-4/8		431
SUM STATUS 01	H B03C1							1				432
SUM STATUS 01	H F02N1							1				432
SUM STATUS 01										14-2/8		432
SUM STATUS 02	H B03F1							1				433
SUM STATUS 02	H F02R2							1				433
SUM STATUS 02										14-0/8		433
SUM STATUS 03	H B03D1							1				434
SUM STATUS 03	H F02S1							1				434
SUM STATUS 03										14-4/8		434
SUM STATUS 04	H B03U1							1				435
SUM STATUS 04	H E02L2							1				435
SUM STATUS 04										9-2/8		435





GI#0,B RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	0	DRAM	RV	PG	Y	X	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 53 RUN NUMBER
VC1 SHIFT CLK	H	D03E2		1-01 *						1				460
VC1 SHIFT CLK	H	E01P2		1-02 *								6-2/8		460
VC1 SHIFT CLK				1										460
VC1 UNLATCH	H	C01C1		1-01 *						1				461
VC1 UNLATCH	H	C03S2		1-02 *								4-4/8		461
VC1 UNLATCH				1										461
VC2 CLK X DOWN		D01M2		1-01 *						1				462
VC2 CLK X DOWN		E03E2		1-02 *								4-4/8		462
VC2 CLK X DOWN				1										462
VC2 CLK X UP		D01J1		1-01 *						1				463
VC2 CLK X UP		E03N1		1-02 *								5-6/8		463
VC2 CLK X UP				1										463
VC2 CLK Y DOWN		D01E2		1-01 *						1				464
VC2 CLK Y DOWN		D03V2		1-02 *								4-4/8		464
VC2 CLK Y DOWN				1										464
VC2 CLK Y UP		D01E1		1-01 *						1				465
VC2 CLK Y UP		F03V1		1-02 *								9-6/8		465
VC2 CLK Y UP				1										465
VC2 DOWN COUNTI CLK	L	E01E2		1-01 *						1				466
VC2 DOWN COUNTI CLK	L	E03J2		1-02 *						2				466
VC2 DOWN COUNTI CLK	L	A02N1		1-03 *								16-4/8		466
VC2 DOWN COUNTI CLK				1										466
VC2 VEC GEN OP DONE		A02F2		1-01 *						1				467
VC2 VEC GEN OP DONE		B03R1		1-02 *								6-2/8		467
VC2 VEC GEN OP DONE				1										467
VH ANALOG +15V		A01D2											1-PIN RUN	468
VH ANALOG -15V		A01E2											1-PIN RUN	469
VR INTENSITY ENA	H	F01J1		1-01 *	2									470
VR INTENSITY ENA	H	A01B2		1-02 *						1				470
VR INTENSITY ENA	H	A02J2		1-03 *										470
VR INTENSITY ENA				1								19-6/8		470
XNW00		F05K2		1-01 *	H					1				471
XNW00		F06K2		1-02 *									HAND WIRE TO HERE	471
XNW00				1								2-6/8		471

GI#0,B RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	0	DRAM	RV	PG	Y	X	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 54 RUN NUMBER
XNW01		F05L2		1-01 *	H					1				472
XNW01		F06L2		1-02 *									HAND WIRE TO HERE	472
XNW01				1								2-6/8		472
XNW02		F05M2		1-01 *	H					1				473
XNW02		F06M2		1-02 *									HAND WIRE TO HERE	473
XNW02				1								2-6/8		473
XNW03		F05N2		1-01 *	H					1				474
XNW03		F06N2		1-02 *									HAND WIRE TO HERE	474
XNW03				1								2-6/8		474
XNW04		F05P2		1-01 *	H					1				475
XNW04		F06P2		1-02 *									HAND WIRE TO HERE	475
XNW04				1								2-6/8		475
XNW05		F05R2		1-01 *	H					1				476
XNW05		F06R2		1-02 *									HAND WIRE TO HERE	476
XNW05				1								2-6/8		476
XNW06		F05S2		1-01 *	H					1				477
XNW06		F06S2		1-02 *									HAND WIRE TO HERE	477
XNW06				1								2-6/8		477
XNW07		F05T2		1-01 *	H					1				478
XNW07		F06T2		1-02 *									HAND WIRE TO HERE	478
XNW07				1								2-6/8		478
XPR00		F05L1		1-01 *	H					1				479
XPR00		F06L1		1-02 *									HAND WIRE TO HERE	479
XPR00				1								2-6/8		479
XPR01		F05M1		1-01 *	H					1				480
XPR01		F06M1		1-02 *									HAND WIRE TO HERE	480
XPR01				1								2-6/8		480
XPR02		F05N1		1-01 *	H					1				481
XPR02		F06N1		1-02 *									HAND WIRE TO HERE	481
XPR02				1								2-6/8		481
XPR03		F05P1		1-01 *	H					1				482
XPR03		F06P1		1-02 *									HAND WIRE TO HERE	482
XPR03				1								2-6/8		482
XPR04		F05R1		1-01 *	H					1				483
XPR04		F06R1		1-02 *									HAND WIRE TO HERE	483
XPR04				1								2-6/8		483



GI401B HND288.V17(17) 06/22/72 PAGE 57  
 RUN NAME A/P PIN ORDER BAY - ORDER 1-MAR-73 LENGTH EXCEPTIONS RUN NUMBER

GI401B RUN NAME	A/P	PIN NAME	PIN ORDER	BAY - ORDER	1-MAR-73 LENGTH	EXCEPTIONS	PAGE 57 RUN NUMBER
YNW05		C05J2	1-01 *	H	P	HAND WIRE TO HERE	508
YNW05		C06J2	1-02 *				508
YNW05			1		2-6/8		508
YNW06		C05K2	1-01 *	H	P	HAND WIRE TO HERE	509
YNW06		C06K2	1-02 *				509
YNW06			1		2-6/8		509
YNW07		C05L2	1-01 *	H	P	HAND WIRE TO HERE	510
YNW07		C06L2	1-02 *				510
YNW07			1		2-6/8		510
YPR00		C05A1	1-01 *	H	P	HAND WIRE TO HERE	511
YPR00		C06A1	1-02 *				511
YPR00			1		2-6/8		511
YPR01		C05C1	1-01 *	H	P	HAND WIRE TO HERE	512
YPR01		C06C1	1-02 *				512
YPR01			1		2-6/8		512
YPR02		C05D1	1-01 *	H	P	HAND WIRE TO HERE	513
YPR02		C06D1	1-02 *				513
YPR02			1		2-6/8		513
YPR03		C05E1	1-01 *	H	P	HAND WIRE TO HERE	514
YPR03		C06E1	1-02 *				514
YPR03			1		2-6/8		514
YPR04		C05F1	1-01 *	H	P	HAND WIRE TO HERE	515
YPR04		C06F1	1-02 *				515
YPR04			1		2-6/8		515
YPR05		C05H1	1-01 *	H	P	HAND WIRE TO HERE	516
YPR05		C06H1	1-02 *				516
YPR05			1		2-6/8		516
YPR06		C05J1	1-01 *	H	P	HAND WIRE TO HERE	517
YPR06		C06J1	1-02 *				517
YPR06			1		2-6/8		517
YPR07		C05K1	1-01 *	H	P	HAND WIRE TO HERE	518
YPR07		C06K1	1-02 *				518
YPR07			1		2-6/8		518
YS 00		C05L1	1-01 *	H	P	HAND WIRE TO HERE	519
YS 00		C06L1	1-02 *				519
YS 00			1		2-6/8		519

GI401B HND288.V17(17) 06/22/72 PAGE 58  
 RUN NAME A/P PIN NAME PIN ORDER BAY - ORDER 1-MAR-73 LENGTH EXCEPTIONS RUN NUMBER

GI401B RUN NAME	A/P	PIN NAME	PIN ORDER	BAY - ORDER	1-MAR-73 LENGTH	EXCEPTIONS	PAGE 58 RUN NUMBER
YS 01		C05M1	1-01 *	H	P	HAND WIRE TO HERE	520
YS 01		C06M1	1-02 *				520
YS 01			1		2-6/8		520
YS 02		C05N2	1-01 *	H	P	HAND WIRE TO HERE	521
YS 02		C06N2	1-02 *				521
YS 02			1		2-6/8		521
YS 03		C05N1	1-01 *	H	P	HAND WIRE TO HERE	522
YS 03		C06N1	1-02 *				522
YS 03			1		2-6/8		522
YS 04		C05N2	1-01 *	H	P	HAND WIRE TO HERE	523
YS 04		C06N2	1-02 *				523
YS 04			1		2-6/8		523
YS 05		C05P1	1-01 *	H	P	HAND WIRE TO HERE	524
YS 05		C06P1	1-02 *				524
YS 05			1		2-6/8		524
YS 06		C05P2	1-01 *	H	P	HAND WIRE TO HERE	525
YS 06		C06P2	1-02 *				525
YS 06			1		2-6/8		525
YS 07		C05R1	1-01 *	H	P	HAND WIRE TO HERE	526
YS 07		C06R1	1-02 *				526
YS 07			1		2-6/8		526

ERROR LISTING

WIRE WRAP RUN NAME	A/P	PIN	NAME	ORDER	PIN	BAY	ORDER	HND288.V17(17) 06/22/72	Q	DRAM	RV	PG	Y	X	Z	REMARKS	1-MAR-73	LENGTH	EXCEPTIONS	6152	PAGE 1	RUN	NUMBER
+15V		E09P2				1-01	*	H							2	24 AWG			HAND WIRE		1	1	1
+15V		F01R2				1-02	*	H							1	24AWG			HAND WIRE		1	1	1
+15V		D03R2				1-03	*	H							2	24AWG			HAND WIRE		1	1	1
+5 VDC		C04U1				1-04	*	H							2				TO HERE		1	2	1
+5 VDC		A01A2				1-01	*	H							1				HAND WIRE		1	2	2
+5 VDC		A02A2				1-02	*	H							1				HAND WIRE		1	2	2
+5 VDC		A03A2				1-03	*	H							1				HAND WIRE		1	2	2
+5 VDC		A04A2				1-04	*	H							1				HAND WIRE		1	2	2
+5 VDC		A05A2				1-05	*	H							1				HAND WIRE		1	2	2
+5 VDC		A06A2				1-06	*	H							1				HAND WIRE		1	2	2
+5 VDC		A07A2				1-07	*	H							1				HAND WIRE		1	2	2
+5 VDC		A09A2				1-08	*	H							1				HAND WIRE		1	2	2
+5 VDC		A08A2				1-09	*	H							1				HAND WIRE		1	2	2
+5 VDC		B09A2				1-10	*	H							1				HAND WIRE		1	2	2
+5 VDC		B08A2				1-11	*	H							1				HAND WIRE		1	2	2
+5 VDC		B07A2				1-12	*	H							1				HAND WIRE		1	2	2
+5 VDC		B06A2				1-13	*	H							1				HAND WIRE		1	2	2
+5 VDC		B05A2				1-14	*	H							1				HAND WIRE		1	2	2
+5 VDC		B04A2				1-15	*	H							1				HAND WIRE		1	2	2
+5 VDC		B03A2				1-16	*	H							1				HAND WIRE		1	2	2
+5 VDC		B02A2				1-17	*	H							1				HAND WIRE		1	2	2
+5 VDC		B01B1				1-18	*	H							1				HAND WIRE		1	2	2
+5 VDC		B01A2				1-19	*	H							1				HAND WIRE		1	2	2
+5 VDC		C01A2				1-20	*	H							1				HAND WIRE		1	2	2
+5 VDC		C02A2				1-21	*	H							1				HAND WIRE		1	2	2
+5 VDC		C03A2				1-22	*	H							1				HAND WIRE		1	2	2
+5 VDC		C04A2				1-23	*	H							1				HAND WIRE		1	2	2
+5 VDC		C05A2				1-24	*	H							1				HAND WIRE		1	2	2
+5 VDC		C06A2				1-25	*	H							1				HAND WIRE		1	2	2
+5 VDC		C07A2				1-26	*	H							1				HAND WIRE		1	2	2
+5 VDC		C08A2				1-27	*	H							1				HAND WIRE		1	2	2
+5 VDC		C09A2				1-28	*	H							1				HAND WIRE		1	2	2
+5 VDC		D09A2				1-29	*	H							1				HAND WIRE		1	2	2
+5 VDC		D08A2				1-30	*	H							1				HAND WIRE		1	2	2
+5 VDC		D07A2				1-31	*	H							1				HAND WIRE		1	2	2
+5 VDC		D06A2				1-32	*	H							1				HAND WIRE		1	2	2
+5 VDC		D05A2				1-33	*	H							1				HAND WIRE		1	2	2
+5 VDC		D04A2				1-34	*	H							1				HAND WIRE		1	2	2
+5 VDC		D03A2				1-35	*	H							1				HAND WIRE		1	2	2
+5 VDC		D02A2				1-36	*	H							1				HAND WIRE		1	2	2
+5 VDC		D01A2				1-37	*	H							1				HAND WIRE		1	2	2
+5 VDC		E01A2				1-38	*	H							1				HAND WIRE		1	2	2
+5 VDC		E02A2				1-39	*	H							1				HAND WIRE		1	2	2
+5 VDC		E03A2				1-40	*	H							1				HAND WIRE		1	2	2
+5 VDC		E04A2				1-41	*	H							1				HAND WIRE		1	2	2
+5 VDC		E05A2				1-42	*	H							1				HAND WIRE		1	2	2
+5 VDC		E06A2				1-43	*	H							1				HAND WIRE		1	2	2
+5 VDC		E07A2				1-44	*	H							1				HAND WIRE		1	2	2
+5 VDC		E08A2				1-45	*	H							1				HAND WIRE		1	2	2
+5 VDC		E09A2				1-46	*	H							1				HAND WIRE		1	2	2
+5 VDC		F09A2				1-47	*	H							1				HAND WIRE		1	2	2
+5 VDC		F08A2				1-48	*	H							1				HAND WIRE		1	2	2
+5 VDC		F07A2				1-49	*	H							1				HAND WIRE		1	2	2

ERROR LISTING

WIRE WRAP RUN NAME	A/P	PIN	NAME	ORDER	PIN	BAY	ORDER	HND288.V17(17) 06/22/72	Q	DRAM	RV	PG	Y	X	Z	REMARKS	1-MAR-73	LENGTH	EXCEPTIONS	6152	PAGE 2	RUN	NUMBER
+5 VDC		F06A2				1-50	*	H							1				HAND WIRE		2	2	2

GI40.B RUN NAME	A/P	PIN NAME	ORDER PIN	BAY ORDER	Q	DRAM RV PG Y	X	Z	REMARKS	1=MAR=73 LENGTH	6152 EXCEPTIONS	PAGE 2 RUN NUMBER
+5 VDC		F05A2		1-51	H			2		P	HAND WIRE	2
+5 VDC		F04A2		1-52	H			1		P	HAND WIRE	2
+5 VDC		F03A2		1-53	H			2		P	HAND WIRE	2
+5 VDC		F02A2		1-54	H			1		P	HAND WIRE	2
-15V		C07B2		1-01	H			2		P	H TO WIRE	2
-15V		C06B2		1-02	H			1		P	HAND WIRE	3
-15V		C05B2		1-03	H			2		P	HAND WIRE	3
-15V		C04B2		1-04	H			3		P	HAND WIRE	3
-15V		D04B2		1-05	H			3		P	HAND WIRE	3
-15V		D05B2		1-06	H			3		P	HAND WIRE	3
-15V		D06B2		1-07	H			3		P	HAND WIRE	3
-15V		D07B2		1-08	H			3		P	HAND WIRE	3
-15V		E07B2		1-09	H			3		P	HAND WIRE	3
-15V		E06B2		1-10	H			3		P	HAND WIRE	3
-15V		E05B2		1-11	H			3		P	HAND WIRE	3
-15V		E04B2		1-12	H			3		P	HAND WIRE	3
-15V		F04B2		1-13	H			3		P	HAND WIRE	3
-15V		F05B2		1-14	H			3		P	HAND WIRE	3
-15V		F06B2		1-15	H			3		P	HAND WIRE	3
-15V		F07B2		1-16	H			3		P	HAND WIRE	3
-15V		F08B2		1-17	H			3		P	HAND WIRE	3
00 IN		E05U2		1-01	H			2		P	TO HERE	4
00 IN		E06U2		1-02	H			1		P	HAND WIRE	4
00 IN		E07U2		1-03	H			4		P	TO HERE	4
00 SA		E05V1		1-01	H			2		P	HAND WIRE	5
00 SA		E06V1		1-02	H			1		P	HAND WIRE	5
00 SA		E07V1		1-03	H			5		P	TO HERE	5
00 SB		E05V2		1-01	H			2		P	HAND WIRE	6
00 SB		E06V2		1-02	H			1		P	HAND WIRE	6
00 SB		E07V2		1-03	H			6		P	TO HERE	6
01 IN		E07R1		1-01	H			2		P	HAND WIRE	7
01 IN		E06R1		1-02	H			1		P	HAND WIRE	7
01 IN		E05R1		1-03	H			7		P	TO HERE	7
01 SA		E05P1		1-01	H			2		P	HAND WIRE	8
01 SA		E06P1		1-02	H			1		P	HAND WIRE	8
01 SA		E07P1		1-03	H			8		P	TO HERE	8
01 SB		E05P2		1-01	H			2		P	HAND WIRE	9
01 SB		E06P2		1-02	H			1		P	HAND WIRE	9
01 SB		E07P2		1-03	H			9		P	TO HERE	9
02 IN		E05M1		1-01	H			2		P	HAND WIRE	10
02 IN		E06M1		1-02	H			1		P	HAND WIRE	10
02 IN		E07M1		1-03	H			10		P	TO HERE	10
02 SA		E05L1		1-01	H			2		P	HAND WIRE	11
02 SA		E06L1		1-02	H			1		P	HAND WIRE	11
02 SA		E07L1		1-03	H			11		P	TO HERE	11
02 SB		E05L2		1-01	H			2		P	HAND WIRE	12
02 SB		E06L2		1-02	H			1		P	HAND WIRE	12

ERROR LISTING

GI40.B RUN NAME	A/P	PIN NAME	ORDER PIN	BAY ORDER	Q	DRAM RV PG Y	X	Z	REMARKS	1=MAR=73 LENGTH	6152 EXCEPTIONS	PAGE 3 RUN NUMBER
02 SB		E07L2		1-03	H			2		P	TO HERE	12
03 IN		E05J1		1-01	H			1		P	HAND WIRE	13
03 IN		E06J1		1-02	H			1		P	HAND WIRE	13
03 IN		E07J1		1-03	H			1		P	TO HERE	13
03 SA		E05H1		1-01	H			2		P	HAND WIRE	14
03 SA		E06H1		1-02	H			1		P	HAND WIRE	14
03 SA		E07H1		1-03	H			1		P	TO HERE	14
03 SB		E05H2		1-01	H			2		P	HAND WIRE	15
03 SB		E06H2		1-02	H			1		P	HAND WIRE	15
03 SB		E07H2		1-03	H			1		P	TO HERE	15
04 IN		E05R2		1-01	H			2		P	HAND WIRE	16
04 IN		E06R2		1-02	H			1		P	HAND WIRE	16
04 IN		E07R2		1-03	H			1		P	TO HERE	16
04 SA		E05S1		1-01	H			2		P	HAND WIRE	17
04 SA		E06S1		1-02	H			1		P	HAND WIRE	17
04 SA		E07S1		1-03	H			1		P	TO HERE	17
04 SB		E05S2		1-01	H			2		P	HAND WIRE	18
04 SB		E06S2		1-02	H			1		P	HAND WIRE	18
04 SB		E07S2		1-03	H			1		P	TO HERE	18
05 IN		E05M2		1-01	H			2		P	HAND WIRE	19
05 IN		E06M2		1-02	H			1		P	HAND WIRE	19
05 IN		E07M2		1-03	H			1		P	TO HERE	19
05 SA		E05N1		1-01	H			2		P	HAND WIRE	20
05 SA		E06N1		1-02	H			1		P	HAND WIRE	20
05 SA		E07N1		1-03	H			1		P	TO HERE	20
05 SB		E05N2		1-01	H			2		P	HAND WIRE	21
05 SB		E06N2		1-02	H			1		P	HAND WIRE	21
05 SB		E07N2		1-03	H			1		P	TO HERE	21
06 IN		E05J2		1-01	H			2		P	HAND WIRE	22
06 IN		E06J2		1-02	H			1		P	HAND WIRE	22
06 IN		E07J2		1-03	H			1		P	TO HERE	22
06 SA		E05K1		1-01	H			2		P	HAND WIRE	23
06 SA		E06K1		1-02	H			1		P	HAND WIRE	23
06 SA		E07K1		1-03	H			1		P	TO HERE	23
06 SB		E05K2		1-01	H			2		P	HAND WIRE	24
06 SB		E06K2		1-02	H			1		P	HAND WIRE	24
06 SB		E07K2		1-03	H			1		P	TO HERE	24
07 IN		E05E2		1-01	H			2		P	HAND WIRE	25
07 IN		E06E2		1-02	H			1		P	HAND WIRE	25
07 IN		E07E2		1-03	H			1		P	TO HERE	25
07 SA		E05F1		1-01	H			2		P	HAND WIRE	26
07 SA		E06F1		1-02	H			1		P	HAND WIRE	26
07 SA		E07F1		1-03	H			1		P	TO HERE	26
07 SB		E05F2		1-01	H			2		P	HAND WIRE	27
07 SB		E06F2		1-02	H			1		P	HAND WIRE	27
07 SB		E07F2		1-03	H			1		P	TO HERE	27
08 IN		E05E1		1-01	H			2		P	HAND WIRE	28
08 IN		E06E1		1-02	H			1		P	HAND WIRE	28
08 IN		E07E1		1-03	H			1		P	TO HERE	28
08 SA		E05D1		1-01	H			2		P	HAND WIRE	29
08 SA		E06D1		1-02	H			1		P	HAND WIRE	29
08 SA		E07D1		1-03	H			1		P	TO HERE	29
08 SB		E05D2		1-01	H			2		P	HAND WIRE	30

ERROR LISTING

GT140.B RUN NAME	A/P	HND288.V17(17)	06/22/72	ORDER PIN	BAY ORDER	Q	DRAM RV PG Y X	Z	REMARKS	1-MAR-73	LENGTH	EXCEPTIONS	PAGE 4 RUN NUMBER
08 \$B		E06D2			1-02 *		H	1		P		HAND WIRE	30
08 \$B		E07D2			1-03 *		H	1		P		TO HERE	30
09 IN		D05U2			1-01 *		H	2		P		HAND WIRE	31
09 IN		D06U2			1-02 *		H	1		P		HAND WIRE	31
09 IN		D07U2			1-03 *		H	1		P		TO HERE	31
09 SA		D05V1			1-01 *		H	2		P		HAND WIRE	32
09 SA		D06V1			1-02 *		H	1		P		HAND WIRE	32
09 SA		D07V1			1-03 *		H	1		P		TO HERE	32
09 \$B		D05V2			1-01 *		H	2		P		HAND WIRE	33
09 \$B		D06V2			1-02 *		H	1		P		HAND WIRE	33
09 \$B		D07V2			1-03 *		H	1		P		TO HERE	33
10 IN		D05R1			1-01 *		H	2		P		HAND WIRE	34
10 IN		D06R1			1-02 *		H	1		P		HAND WIRE	34
10 IN		D07R1			1-03 *		H	1		P		TO HERE	34
10 SA		D06P1			1-02 *		H	1		P		HAND WIRE	35
10 SA		D07P1			1-03 *		H	1		P		TO HERE	35
10 \$B		D05P2			1-01 *		H	2		P		HAND WIRE	36
10 \$B		D06P2			1-02 *		H	1		P		TO HERE	36
11 IN		D05M1			1-01 *		H	2		P		HAND WIRE	37
11 IN		D06M1			1-02 *		H	1		P		HAND WIRE	37
11 IN		D07M1			1-03 *		H	1		P		TO HERE	37
11 SA		D05L1			1-01 *		H	2		P		HAND WIRE	38
11 SA		D06L1			1-02 *		H	1		P		HAND WIRE	38
11 \$B		D05L2			1-01 *		H	2		P		TO HERE	38
11 \$B		D06L2			1-02 *		H	1		P		HAND WIRE	39
11 \$B		D07L2			1-03 *		H	1		P		TO HERE	39
12 IN		D05J1			1-01 *		H	2		P		HAND WIRE	40
12 IN		D06J1			1-02 *		H	1		P		HAND WIRE	40
12 IN		D07J1			1-03 *		H	1		P		TO HERE	40
12 SA		D05H1			1-01 *		H	2		P		HAND WIRE	41
12 SA		D06H1			1-02 *		H	1		P		HAND WIRE	41
12 SA		D07H1			1-03 *		H	1		P		TO HERE	41
12 \$B		D05H2			1-01 *		H	2		P		HAND WIRE	42
12 \$B		D06H2			1-02 *		H	1		P		HAND WIRE	42
12 \$B		D07H2			1-03 *		H	1		P		TO HERE	42
13 IN		D05R2			1-01 *		H	2		P		HAND WIRE	43
13 IN		D06R2			1-02 *		H	1		P		HAND WIRE	43
13 IN		D07R2			1-03 *		H	1		P		TO HERE	43
13 SA		D05S1			1-01 *		H	2		P		HAND WIRE	44
13 SA		D06S1			1-02 *		H	1		P		HAND WIRE	44
13 SA		D07S1			1-03 *		H	1		P		TO HERE	44
13 \$B		D05S2			1-01 *		H	2		P		HAND WIRE	45
13 \$B		D06S2			1-02 *		H	1		P		HAND WIRE	45
13 \$B		D07S2			1-03 *		H	1		P		TO HERE	45
14 IN		D05M2			1-01 *		H	2		P		HAND WIRE	46
14 IN		D06M2			1-02 *		H	1		P		HAND WIRE	46
14 IN		D07M2			1-03 *		H	1		P		TO HERE	46
14 SA		D05N1			1-01 *		H	2		P		HAND WIRE	47
14 SA		D06N1			1-02 *		H	1		P		HAND WIRE	47
14 SA		D07N1			1-03 *		H	1		P		TO HERE	47
14 \$B		D05N2			1-01 *		H	2		P		HAND WIRE	48
14 \$B		D06N2			1-02 *		H	1		P		HAND WIRE	48

ERROR LISTING

GT140.B RUN NAME	A/P	HND288.V17(17)	06/22/72	ORDER PIN	BAY ORDER	Q	DRAM RV PG Y X	Z	REMARKS	1-MAR-73	LENGTH	EXCEPTIONS	PAGE 5 RUN NUMBER
14 \$B		D07N2			1-03 *		H	2		P		TO HERE	48
15 IN		D05J2			1-01 *		H	1		P		HAND WIRE	49
15 IN		D06J2			1-02 *		H	1		P		HAND WIRE	49
15 IN		D07J2			1-03 *		H	1		P		TO HERE	49
15 SA		D05K1			1-01 *		H	2		P		HAND WIRE	50
15 SA		D06K1			1-02 *		H	1		P		HAND WIRE	50
15 SA		D07K1			1-03 *		H	1		P		TO HERE	50
15 \$B		D05K2			1-01 *		H	2		P		HAND WIRE	51
15 \$B		D06K2			1-02 *		H	1		P		HAND WIRE	51
15 \$B		D07K2			1-03 *		H	1		P		TO HERE	51
A01		D06A1			1-01 *		H	1		P		HAND WIRE	67
A01		D07A1			1-02 *		H	1		P		TO HERE	67
BUS A00		B09H2			1-01 *		H	2		P		HAND WIRE	97
BUS A00		B07H2			1-02 *		H	1		P		HAND WIRE	97
BUS A00		B08H2			1-03 *		H	1		P		TO HERE	97
BUS A00		B06H2			1-04 *		H	1		P		TO HERE	97
BUS A01		B09H1			1-05 *		H	1		P		TO HERE	97
BUS A01		B08H1			1-01 *		H	2		P		HAND WIRE	98
BUS A01		B07H1			1-02 *		H	1		P		HAND WIRE	98
BUS A01		B06H1			1-03 *		H	1		P		HAND WIRE	98
BUS A01		B05H1			1-04 *		H	1		P		HAND WIRE	98
BUS A01		B04H1			1-05 *		H	1		P		TO HERE	98
BUS A02		B09J2			1-01 *		H	2		P		HAND WIRE	99
BUS A02		B08J2			1-02 *		H	1		P		HAND WIRE	99
BUS A02		B07J2			1-03 *		H	1		P		HAND WIRE	99
BUS A02		B06J2			1-04 *		H	1		P		HAND WIRE	99
BUS A03		B09J1			1-05 *		H	1		P		TO HERE	99
BUS A03		B08J1			1-01 *		H	2		P		HAND WIRE	100
BUS A03		B07J1			1-02 *		H	1		P		HAND WIRE	100
BUS A03		B06J1			1-03 *		H	1		P		HAND WIRE	100
BUS A03		B05J1			1-04 *		H	1		P		HAND WIRE	100
BUS A04		B09K2			1-05 *		H	1		P		TO HERE	100
BUS A04		B08K2			1-01 *		H	2		P		HAND WIRE	101
BUS A04		B07K2			1-02 *		H	1		P		HAND WIRE	101
BUS A04		B06K2			1-03 *		H	1		P		HAND WIRE	101
BUS A05		B09K1			1-04 *		H	1		P		HAND WIRE	101
BUS A05		B08K1			1-05 *		H	1		P		TO HERE	101
BUS A05		B07K1			1-01 *		H	2		P		HAND WIRE	102
BUS A05		B06K1			1-02 *		H	1		P		HAND WIRE	102
BUS A05		B05K1			1-03 *		H	1		P		HAND WIRE	102
BUS A06		B09L2			1-04 *		H	1		P		TO HERE	102
BUS A06		B08L2			1-05 *		H	1		P		TO HERE	102
BUS A06		B07L2			1-01 *		H	2		P		HAND WIRE	103
BUS A06		B06L2			1-02 *		H	1		P		HAND WIRE	103
BUS A06		B05L2			1-03 *		H	1		P		HAND WIRE	103
BUS A07		B09L1			1-04 *		H	1		P		TO HERE	103
BUS A07		B08L1			1-05 *		H	1		P		TO HERE	103
BUS A07		B07L1			1-01 *		H	2		P		HAND WIRE	104
BUS A07		B06L1			1-02 *		H	1		P		HAND WIRE	104
BUS A07		B05L1			1-03 *		H	1		P		HAND WIRE	104
BUS A08		B09M2			1-04 *		H	1		P		TO HERE	104
BUS A08		B08M2			1-05 *		H	1		P		TO HERE	104

ERROR LISTING

GT40.B HND288.V17(17) 06/22/72 1-MAR-73 6152 PAGE 6

Table with columns: RUN NAME, A/P, PIN, ORDER, BAY, ORDER, Q, DRAW, RV, PG, Y, X, Z, REMARKS, LENGTH, EXCEPTIONS, RUN NUMBER. Contains error data for runs 105-115.

ERROR LISTING

GT40.B HND288.V17(17) 06/22/72 1-MAR-73 6152 PAGE 7

Table with columns: RUN NAME, A/P, PIN, ORDER, BAY, ORDER, Q, DRAW, RV, PG, Y, X, Z, REMARKS, LENGTH, EXCEPTIONS, RUN NUMBER. Contains error data for runs 115-135.

ERROR LISTING

GI40.B RUN NAME	A/P	PIN	HND288.V17(17) 06/22/72 ORDER PIN	BAY - ORDER	Q	DRAM	RV	PG	Y	X	Z	REMARKS	1-MAR=73 LENGTH	6152 EXCEPTIONS	PAGE 8 RUN NUMBER
BUS D00			A06C1	1-04 *	H								P	HAND WIRE	135
BUS D00			A07C1	1-05 *	H								P	HAND WIRE	135
BUS D00			A08C1	1-06 *	H								P	HAND WIRE	135
BUS D00			A09C1	1-07 *									P	TO HERE	135
BUS D01			A09D2	1-01 *	H								P	HAND WIRE	136
BUS D01			A08D2	1-02 *	H								P	HAND WIRE	136
BUS D01			A07D2	1-03 *	H								P	HAND WIRE	136
BUS D01			A06D2	1-04 *	H								P	HAND WIRE	136
BUS D01			A05D2	1-05 *									P	TO HERE	136
BUS D02			A09D1	1-01 *	H								P	HAND WIRE	137
BUS D02			A08D1	1-02 *	H								P	HAND WIRE	137
BUS D02			A07D1	1-03 *	H								P	HAND WIRE	137
BUS D02			A06D1	1-04 *	H								P	HAND WIRE	137
BUS D02			A05D1	1-05 *									P	TO HERE	137
BUS D03			A09E2	1-01 *	H								P	HAND WIRE	138
BUS D03			A08E2	1-02 *	H								P	HAND WIRE	138
BUS D03			A07E2	1-03 *	H								P	HAND WIRE	138
BUS D03			A06E2	1-04 *	H								P	HAND WIRE	138
BUS D03			A05E2	1-05 *									P	TO HERE	138
BUS D04			A09E1	1-01 *	H								P	HAND WIRE	139
BUS D04			A08E1	1-02 *	H								P	HAND WIRE	139
BUS D04			A07E1	1-03 *	H								P	HAND WIRE	139
BUS D04			A06E1	1-04 *	H								P	HAND WIRE	139
BUS D04			A05E1	1-05 *									P	TO HERE	139
BUS D05			A09F2	1-01 *	H								P	HAND WIRE	140
BUS D05			A08F2	1-02 *	H								P	HAND WIRE	140
BUS D05			A07F2	1-03 *	H								P	HAND WIRE	140
BUS D05			A06F2	1-04 *	H								P	HAND WIRE	140
BUS D05			A05F2	1-05 *									P	TO HERE	140
BUS D06			A09F1	1-01 *	H								P	HAND WIRE	141
BUS D06			A08F1	1-02 *	H								P	HAND WIRE	141
BUS D06			A07F1	1-03 *	H								P	HAND WIRE	141
BUS D06			A06F1	1-04 *	H								P	HAND WIRE	141
BUS D06			A05F1	1-05 *									P	TO HERE	141
BUS D07			A09H2	1-01 *	H								P	HAND WIRE	142
BUS D07			A08H2	1-02 *	H								P	HAND WIRE	142
BUS D07			A07H2	1-03 *	H								P	HAND WIRE	142
BUS D07			A06H2	1-04 *	H								P	HAND WIRE	142
BUS D07			A05H2	1-05 *									P	TO HERE	142
BUS D08			A09H1	1-01 *	H								P	HAND WIRE	143
BUS D08			A08H1	1-02 *	H								P	HAND WIRE	143
BUS D08			A07H1	1-03 *	H								P	HAND WIRE	143
BUS D08			A06H1	1-04 *	H								P	HAND WIRE	143
BUS D08			A05H1	1-05 *									P	TO HERE	143
BUS D09			A09J2	1-01 *	H								P	HAND WIRE	144
BUS D09			A08J2	1-02 *	H								P	HAND WIRE	144
BUS D09			A07J2	1-03 *	H								P	HAND WIRE	144
BUS D09			A06J2	1-04 *	H								P	HAND WIRE	144
BUS D09			A05J2	1-05 *									P	TO HERE	144
BUS D10			A09J1	1-01 *	H								P	HAND WIRE	145
BUS D10			A08J1	1-02 *	H								P	HAND WIRE	145
BUS D10			A07J1	1-03 *	H								P	HAND WIRE	145
BUS D10			A06J1	1-04 *	H								P	HAND WIRE	145

ERROR LISTING

GI40.B RUN NAME	A/P	PIN	HND288.V17(17) 06/22/72 ORDER PIN	BAY - ORDER	Q	DRAM	RV	PG	Y	X	Z	REMARKS	1-MAR=73 LENGTH	6152 EXCEPTIONS	PAGE 9 RUN NUMBER
BUS D10			A05J1	1-05 *									P	TO HERE	145
BUS D11			A09K2	1-01 *	H								P	HAND WIRE	146
BUS D11			A08K2	1-02 *	H								P	HAND WIRE	146
BUS D11			A07K2	1-03 *	H								P	HAND WIRE	146
BUS D11			A06K2	1-04 *	H								P	HAND WIRE	146
BUS D11			A05K2	1-05 *									P	TO HERE	146
BUS D12			A09K1	1-01 *	H								P	HAND WIRE	147
BUS D12			A08K1	1-02 *	H								P	HAND WIRE	147
BUS D12			A07K1	1-03 *	H								P	HAND WIRE	147
BUS D12			A06K1	1-04 *	H								P	HAND WIRE	147
BUS D12			A05K1	1-05 *									P	TO HERE	147
BUS D13			A09L2	1-01 *	H								P	HAND WIRE	148
BUS D13			A08L2	1-02 *	H								P	HAND WIRE	148
BUS D13			A07L2	1-03 *	H								P	HAND WIRE	148
BUS D13			A06L2	1-04 *	H								P	HAND WIRE	148
BUS D13			A05L2	1-05 *									P	TO HERE	148
BUS D14			A09L1	1-01 *	H								P	HAND WIRE	149
BUS D14			A08L1	1-02 *	H								P	HAND WIRE	149
BUS D14			A07L1	1-03 *	H								P	HAND WIRE	149
BUS D14			A06L1	1-04 *	H								P	HAND WIRE	149
BUS D14			A05L1	1-05 *									P	TO HERE	149
BUS D15			A09M2	1-01 *	H								P	HAND WIRE	150
BUS D15			A08M2	1-02 *	H								P	HAND WIRE	150
BUS D15			A07M2	1-03 *	H								P	HAND WIRE	150
BUS D15			A06M2	1-04 *	H								P	HAND WIRE	150
BUS D15			A05M2	1-05 *									P	TO HERE	150
BUS DC LO			B09F2	1-01 *	H								P	HAND WIRE	151
BUS DC LO			B08F2	1-02 *	H								P	HAND WIRE	151
BUS DC LO			B07F2	1-03 *	H								P	HAND WIRE	151
BUS DC LO			B06F2	1-04 *	H								P	HAND WIRE	151
BUS DC LO			B05F2	1-05 *									P	TO HERE	151
BUS DC LO			A09A1	1-01 *	H								P	HAND WIRE	152
BUS DC LO			A08A1	1-02 *	H								P	HAND WIRE	152
BUS DC LO			A07A1	1-03 *	H								P	HAND WIRE	152
BUS DC LO			A06A1	1-04 *	H								P	HAND WIRE	152
BUS DC LO			A05A1	1-05 *									P	TO HERE	152
BUS INTR			A09B1	1-01 *	H								P	HAND WIRE	153
BUS INTR			A08B1	1-02 *	H								P	HAND WIRE	153
BUS INTR			A07B1	1-03 *	H								P	HAND WIRE	153
BUS INTR			A06B1	1-04 *	H								P	HAND WIRE	153
BUS INTR			A05B1	1-05 *									P	TO HERE	153
BUS MSYN			B05V1	1-02 *	H								P	HAND WIRE	154
BUS MSYN			B06V1	1-03 *	H								P	HAND WIRE	154
BUS MSYN			B07V1	1-04 *	H								P	HAND WIRE	154
BUS MSYN			B08V1	1-05 *									P	TO HERE	154
BUS MSYN			A06U1	1-01 *	H								P	HAND WIRE	155
BUS NPC IN			A07U1	1-02 *	H								P	HAND WIRE	155
BUS NPC IN			A08U1	1-03 *	H								P	HAND WIRE	155
BUS NPC IN			A09U1	1-04 *	H								P	HAND WIRE	155
BUS NPC IN			A06S2	1-01 *	H								P	HAND WIRE	157
BUS NPC IN			A07S2	1-02 *	H								P	HAND WIRE	157
BUS NPC IN			A08S2	1-03 *	H								P	HAND WIRE	157



ERROR LISTING

Table with columns: RUN NAME, A/P, PIN, NAME, ORDER, PIN, BAY, ORDER, X, Y, Z, REMARKS, LENGTH, EXCEPTIONS, RUN NUMBER. Contains error entries for pins A09S2 through B03B2.

ERROR LISTING

Table with columns: RUN NAME, A/P, PIN, NAME, ORDER, PIN, BAY, ORDER, X, Y, Z, REMARKS, LENGTH, EXCEPTIONS, RUN NUMBER. Contains error entries for pins B03C2 through B05C2.

ERROR LISTING

GT40.B	HND288.V17(17) 06/22/72	1-MAR-73	6152	PAGE 12
RUN NAME	A/P PIN ORDER PIN BAY - ORDER	Q DRAW RV PG Y X Z	LENGTH EXCEPTIONS	RUN NUMBER
GND 04-06	B04C2	H		HAND WIRE 321
GND 04-06	B05E1	H		HAND WIRE 321
GND 04-06	B05D1	H		HAND WIRE 321
GND 04-06	B06E1	H		HAND WIRE 321
GND 04-06	B06D1	H		HAND WIRE 321
GND 04-06	B06C2	H		HAND WIRE 321
GND 04-06	B06B2	H		HAND WIRE 321
GND 04-06	B06V2	H		HAND WIRE 321
GND 04-06	B06T1	H		HAND WIRE 321
GND 04-06	B05V2	H		HAND WIRE 321
GND 04-06	B05T1	H		HAND WIRE 321
GND 04-06	B04T1	H		HAND WIRE 321
GND 04-06	C04C2	H		HAND WIRE 321
GND 04-06	C05C2	H		HAND WIRE 321
GND 04-06	C06C2	H		HAND WIRE 321
GND 04-06	C06T1	H		HAND WIRE 321
GND 04-06	C05T1	H		HAND WIRE 321
GND 04-06	C04T1	H		HAND WIRE 321
GND 04-06	D04C2	H		HAND WIRE 321
GND 04-06	D05C2	H		HAND WIRE 321
GND 04-06	D06C2	H		HAND WIRE 321
GND 04-06	D06T1	H		HAND WIRE 321
GND 04-06	D05T1	H		HAND WIRE 321
GND 04-06	D04T1	H		HAND WIRE 321
GND 04-06	E05C2	H		HAND WIRE 321
GND 04-06	E06C2	H		HAND WIRE 321
GND 04-06	E06T1	H		HAND WIRE 321
GND 04-06	E05T1	H		HAND WIRE 321
GND 04-06	F04C2	H		HAND WIRE 321
GND 04-06	F05C2	H		HAND WIRE 321
GND 04-06	F06C2	H		HAND WIRE 321
GND 04-06	F04J2	H		HAND WIRE 321
GND 04-06	F05T1	H		HAND WIRE 321
GND 04-06	F06T1	H		HAND WIRE 321
GND 07-09	A09B2	H		HAND WIRE 322
GND 07-09	A09C2	H		HAND WIRE 322
GND 07-09	A08B2	H		HAND WIRE 322
GND 07-09	A08C2	H		HAND WIRE 322
GND 07-09	A07B2	H		HAND WIRE 322
GND 07-09	A07C2	H		HAND WIRE 322
GND 07-09	A07N1	H		HAND WIRE 322
GND 07-09	A07P1	H		HAND WIRE 322
GND 07-09	A07R1	H		HAND WIRE 322
GND 07-09	A07S1	H		HAND WIRE 322
GND 07-09	A07T1	H		HAND WIRE 322
GND 07-09	A07V2	H		HAND WIRE 322
GND 07-09	A08T1	H		HAND WIRE 322
GND 07-09	A08S1	H		HAND WIRE 322
GND 07-09	A08R1	H		HAND WIRE 322
GND 07-09	A08P1	H		HAND WIRE 322
GND 07-09	A08N1	H		HAND WIRE 322
GND 07-09	A09P1	H		HAND WIRE 322

ERROR LISTING

GT40.B	HND288.V17(17) 06/22/72	1-MAR-73	6152	PAGE 13
RUN NAME	A/P PIN ORDER PIN BAY - ORDER	Q DRAW RV PG Y X Z	LENGTH EXCEPTIONS	RUN NUMBER
GND 07-09	A09N1	H		HAND WIRE 322
GND 07-09	A09R1	H		HAND WIRE 322
GND 07-09	A09S1	H		HAND WIRE 322
GND 07-09	A09V2	H		HAND WIRE 322
GND 07-09	A09T1	H		HAND WIRE 322
GND 07-09	A08V2	H		HAND WIRE 322
GND 07-09	B08B2	H		HAND WIRE 322
GND 07-09	B08C2	H		HAND WIRE 322
GND 07-09	B07B2	H		HAND WIRE 322
GND 07-09	B07E1	H		HAND WIRE 322
GND 07-09	B07D1	H		HAND WIRE 322
GND 07-09	B07C2	H		HAND WIRE 322
GND 07-09	B08E1	H		HAND WIRE 322
GND 07-09	B08D1	H		HAND WIRE 322
GND 07-09	B09E1	H		HAND WIRE 322
GND 07-09	B09D1	H		HAND WIRE 322
GND 07-09	B09C2	H		HAND WIRE 322
GND 07-09	B09B2	H		HAND WIRE 322
GND 07-09	B09V2	H		HAND WIRE 322
GND 07-09	B09T1	H		HAND WIRE 322
GND 07-09	B08V2	H		HAND WIRE 322
GND 07-09	B08T1	H		HAND WIRE 322
GND 07-09	B07V2	H		HAND WIRE 322
GND 07-09	B07T1	H		HAND WIRE 322
GND 07-09	C07C2	H		HAND WIRE 322
GND 07-09	C08C2	H		HAND WIRE 322
GND 07-09	C09C2	H		HAND WIRE 322
GND 07-09	C09T1	H		HAND WIRE 322
GND 07-09	C08T1	H		HAND WIRE 322
GND 07-09	C07T1	H		HAND WIRE 322
GND 07-09	D07C2	H		HAND WIRE 322
GND 07-09	D06C2	H		HAND WIRE 322
GND 07-09	D09C2	H		HAND WIRE 322
GND 07-09	D09T1	H		HAND WIRE 322
GND 07-09	D08T1	H		HAND WIRE 322
GND 07-09	D07T1	H		HAND WIRE 322
GND 07-09	E07C2	H		HAND WIRE 322
GND 07-09	E08C2	H		HAND WIRE 322

ERROR LISTING

GI40.B HND288.V17(17) 06/22/72 1-MAR-73 6152 EXCEPTIONS PAGE 14  
RUN NAME A/P PIN ORDER PIN BAY ORDER 0 DRAM RV PG Y X Z REMARKS LENGTH RUN NUMBER

Table with columns: RUN NAME, A/P, PIN, ORDER, PIN, BAY, ORDER, 0, DRAM, RV, PG, Y, X, Z, REMARKS, LENGTH, RUN NUMBER. Contains error entries for components like D06E2, D07E2, D05F1, etc., with remarks such as 'HAND WIRE TO HERE'.

ERROR LISTING

GI40.B HND288.V17(17) 06/22/72 1-MAR-73 6152 EXCEPTIONS PAGE 15  
RUN NAME A/P PIN ORDER PIN BAY ORDER 0 DRAM RV PG Y X Z REMARKS LENGTH RUN NUMBER

Table with columns: RUN NAME, A/P, PIN, ORDER, PIN, BAY, ORDER, 0, DRAM, RV, PG, Y, X, Z, REMARKS, LENGTH, RUN NUMBER. Contains error entries for components like F06L1, F05M1, F06M1, etc., with remarks such as 'HAND WIRE TO HERE'.

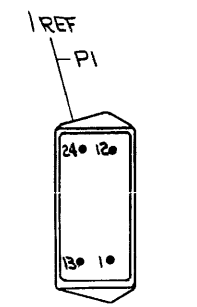
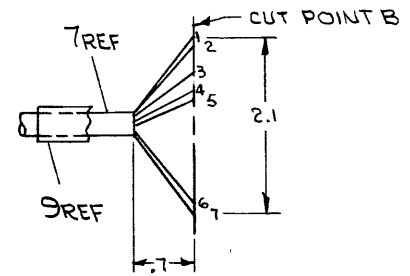
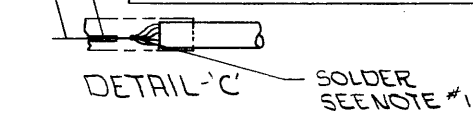
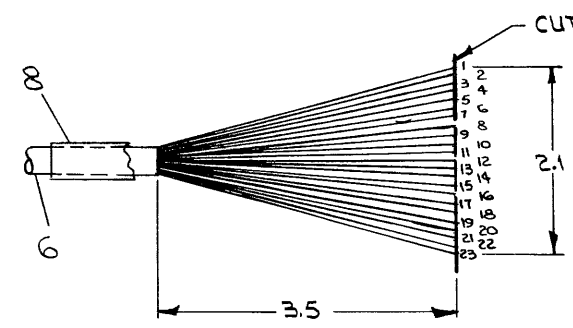
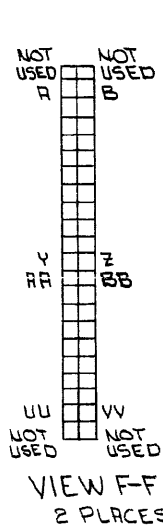
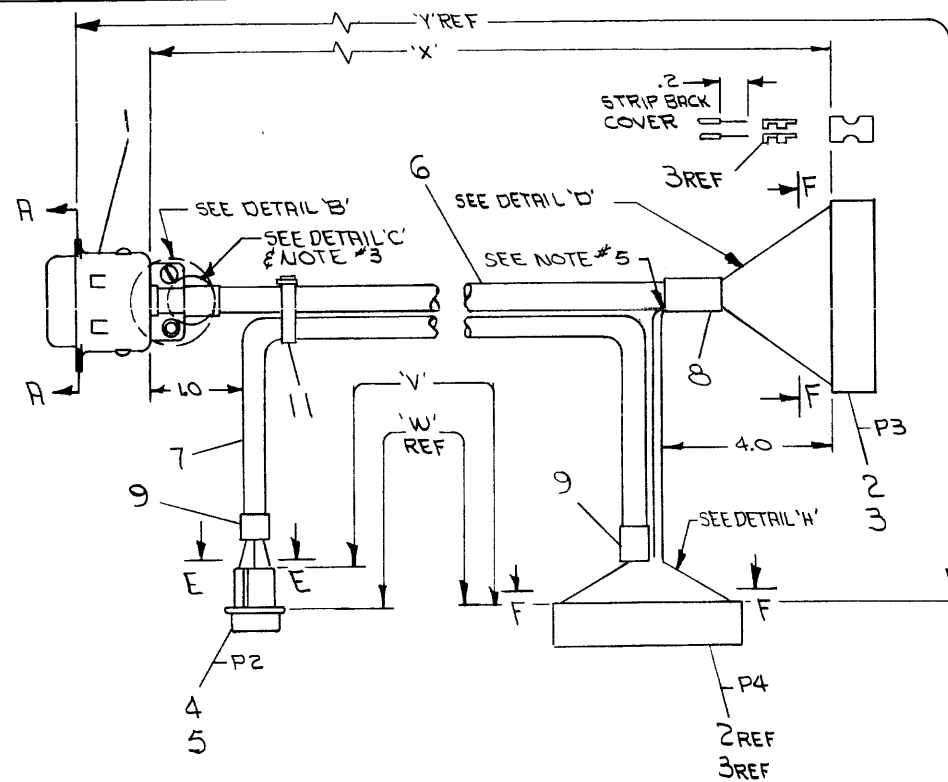
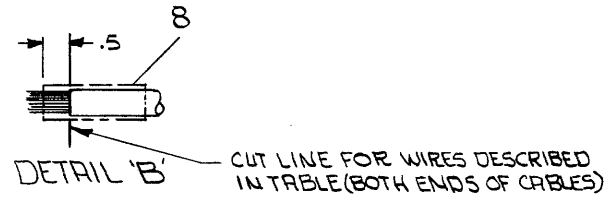


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ITEM NO	PAIR #	COLOR	WIRE TABLE					SIGNAL NAME
			FROM CONNECTION	WITH ITEM	TO CONNECTION	WITH ITEM	CUT POINT	
1		RED	P1-2	12SOLD	P3-R	3	7A	INT 0
		BLK	P1-3	12SOLD	P3-T		9A	INT 1
		DRAIN	SEE NOTE #3	12	P3-S		8A	GND
2		WHT	P1-4	12SOLD	P3-JJ		17A	Z INPUT
		BLK	P1-5	12SOLD	P3-HH		16A	GND
		DRAIN	SEE NOTE #3	12	P3-KK		18A	GND
3		GRN	P1-7	12SOLD	P3-J		4A	-X INPUT
		BLK	P1-8	12SOLD	P3-L	3	5A	+X INPUT
		DRAIN	P1-9	129SOLD	P3-M	3.9	6A	GND
4		BLU	P1-10	12SOLD	P3-B	3	7A	-Y INPUT
		BLK	P1-11	12SOLD	P3-D	3	2A	+Y INPUT
		DRAIN	P1-12	129SOLD	P3-E	3.9	3A	GND
5		YEL	P1-15	12SOLD	P3-FF	3	15A	SPEAKER
		BLK	P1-16	12SOLD	P3-V		10A	COLOR RED
		DRAIN	SEE NOTE #3	12	P3-W		11A	GND
6		BRN	P1-17	12SOLD	P4-K		3B	+KB SIG
		BLK	P1-18	12SOLD	P4-S		4B	-KB SIG
		DRAIN	SEE NOTE #3	12	P4-A		1B	GND
7		ORN	P1-19	12SOLD	P3-X		12A	LIGHT PEN
		BLK	P1-20	12SOLD	P4-TT		6B	+5V IN
		DRAIN	SEE NOTE #3	12	P3-Y		13A	GND
8		WHT	P1-1	12SOLD	P3-DD		14A	INT 2
		RED	P1-22	12SOLD	P3-LL		19A	+22V
		DRAIN	SEE NOTE #3	12	P3-PP		21A	GND
9		GRN	P1-23	12SOLD	P3-NK		20A	HQ GND
		RED	P1-24	12SOLD	P3-RR		22A	-22V
		DRAIN	SEE NOTE #3	12	P3-UU		23A	GND
7	1	RED	P2-1	5	P4-U		5B	REMOTE
		BLK	P2-2	5	P4-B	3	2B	GND
		DRAIN	P2-3	5	P4-UU	3	7B	GND

NUMBER	LEGEND VARIATION			
	DIM."V"	DIM."W"(PRECUT)	DIM."X"	DIM."Y"(PRECUT)
7008993-3F	4FT.11IN.±1IN.	5FT.0IN.±1IN.	3FT.6IN.±1IN.	4FT.2IN.±1IN.
7008993-5	6FT.5IN.±2IN.	6FT.6IN.±2IN.	5FT.0IN.±1IN.	5FT.8IN.±1IN.
7008993-10	11FT.5IN.±3IN.	11FT.6IN.±3IN.	10FT.0IN.±2IN.	10FT.8IN.±2IN.
7008993-15	16FT.5IN.±3IN.	16FT.6IN.±3IN.	15FT.0IN.±3IN.	15FT.8IN.±3IN.
7008993-20	21FT.5IN.±3IN.	21FT.6IN.±3IN.	20FT.0IN.±3IN.	20FT.8IN.±3IN.

- NOTES:
- CLEAR TEFLON TUBING (ITEM #2) TO BE USED ON ALL P1 PINS (ITEM #1).
  - MANUFACTURING SHOULD USE MACHINE CRIMPER. TOOL FOR CRIMPING PINS (ITEM #3) MUST BE HT66/HT68 FROM BERG OR EQUIV.
  - DRAINS FROM PAIR #1,2,5,6,7,8,9 ARE TO BE TIED TOGETHER AND ONE LEAD SOLDERED TO P1-G, SEE DETAIL 'C'.
  - ALL EXPOSED DRAIN WIRES TO HAVE CLEAR TUBING (ITEM #10) ADDED BEFORE SOLDERING.
  - TWP #6 AND BLK WIRE OF TWP #7, FROM P3, ARE TO BE SEPARATED FROM CABLE AND BROUGHT TO P4 AT POINT SHOWN, WIRES ARE TO BE TWISTED TOGETHER.
  - AFTER CUTTING MYLAR FOIL BACK, COVER CUT END WITH ITEM # 9.



QTY.	DESCRIPTION	PART NO.	ITEM NO.
	TUBING, TEFLON #12 CLR	9107301-10	12
	TIE WRAP #SST-2M PANDUIT	9007032	11
	TUBING, TEFLON #18 (CLEAR)	9107278-10	10
	TUBING, RED SHRINK 1/4 I.D.	9107253-02	9
	TUBING, BLK SHRINK 3/4 O.D.	9107250-00	8
	CABLE #2451 BELDEN	9107703	7
	CABLE, 18 COND. #874 BELDEN	9107687	6
	TERMINAL PIN CONTACT	1209378-03	5
	HOUSING #1480305-0 WATEN LOCK	1209351-03	4
	PIN, BERG #48015	1210089-4	3
	CONN/W RET ROD BERG	1210090-0	2
	CONN 24PIN #37-50240 RMP	1203466	1

FIRST USED ON OPTION/MODEL		PARTS LIST	
GT40		DIA 7008993-0-0	
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS	ANGLES	TITLE	
XXX = .005	±0° 30'	SCOPE CABLE	
XX = .02		MATERIAL	
X = .1		SEE PARTS LIST	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		NEXT HIGHER ASSY.	
FINISH		SCALE	NONE
SHEET		OF	
DIST.			

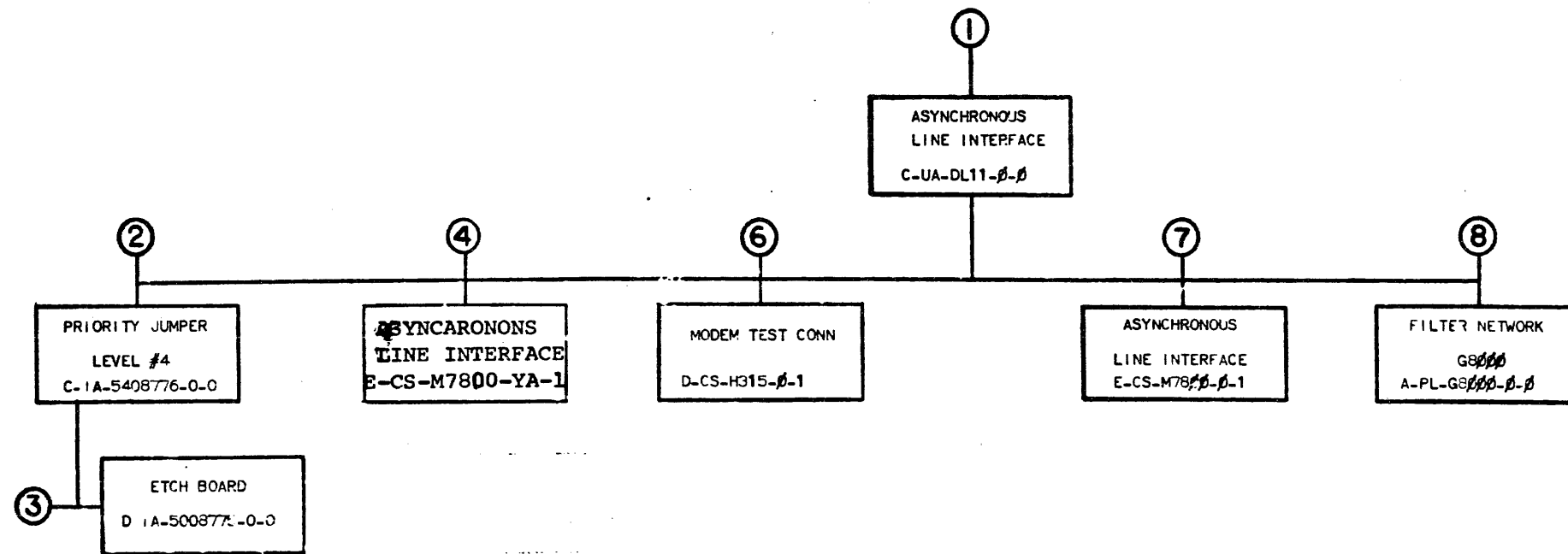
REV	CHG	NO	DATE
A		00003	10-27-72
B		00005	3-23-73
C		00007	1-2-73

REVISIONS

FORM NO 100-A

REV B  
NUMBER  
DIA 7008993-0-0





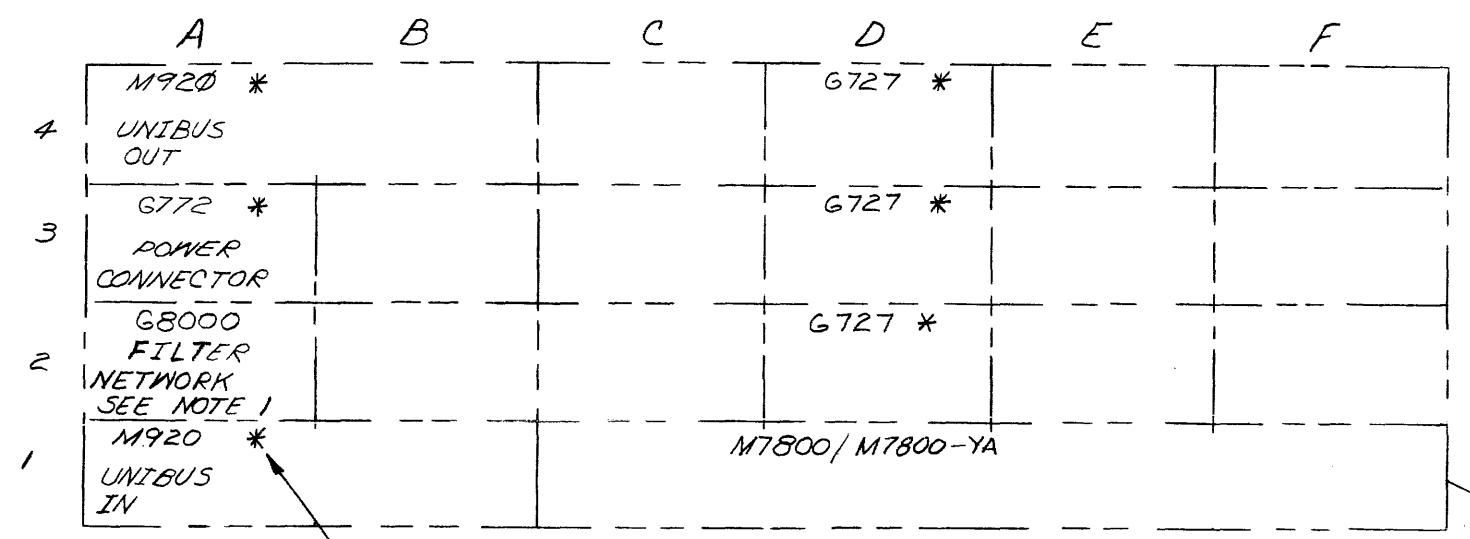
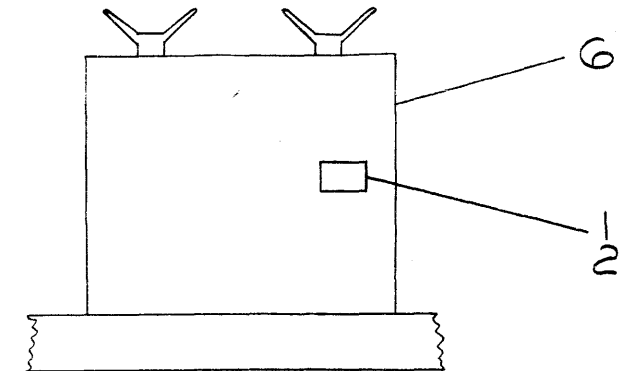
TITLE	ASYNCHRONOUS LINE INTERFACE	SIZE CODE	B DD	NUMBER	DLH - 0	REV	C
	SHEET 2 OF 3						

CUSTOMER PRINT SET										MECHANICAL									
DL11-1	DL11-2	DL11-3	DEPT	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.	DL11-1	DL11-2	DL11-3	DEPT	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X	X	X		1.	C-UA-DL11-0-0	B	1	ASYNCHRONOUS LINE INTERFACE						1.	C-UA-DL11-0-0	B	1	ASYNCHRONOUS LINE INTERFACE	
X	X	X			A-PL-DL11-0-0	B	1	ASYNCHRONOUS LINE INTERFACE (PL)							A-PL-DL11-0-0	B	1	ASYNCHRONOUS LINE INTERFACE (PL)	
	X	X			D-UA-BC05C-0-0	#	1	CABEE, MODEM, BC05C							D-UA-BC05C-0-0		1	CABLE, MODEM BC05C	
X		X			D-1A-7008360-0-0	#	1	CABLE, ASSEMBLY (KLB/E)							D-1A-7008360-0-0		1	CABLE ASSEMBLY (KLB/E)	
					A-SP-DL11-0-1	*	11	ENGINEERING SPECIFICATION											
					A-SP-DL11-0-2	*	8	INSTALLATION PROCEDURE											
					A-SP-DL11-0-3	A	7	TEST PROCEDURE											
X	X				A-SL-DL11-0-4	*	1	SOFTWARE LIST											
X	X				A-AL-DL11-0-5	A	1	ACCESSORY LIST											
				2.	C-1A-5408776-0-0		1	PRIORITY JUMPER LEVEL #4						2.	C-1A-5408776-0-0		1	PRIORITY JUMPER LEVEL #4	
					B-CS-5408776-0-1		1	CIRCUIT SCHEMATIC							K-CO-5408776-0-4		1	X-Y COORDINATE HOLE LOC	
					K-CO-5408776-0-4		1	X-Y COORDINATE HOLE LOC							B-MH-5408776-0-6		1	ASSY/DRILLING HOLE LAYOUT	
					B-MH-5408776-0-6		1	MODULE ECO HISTORY											
				3.	C-AH-5408776-0-5		1	ASSY/DRILLING HOLE LAYOUT						3.	D-1A-5008775-0-0		1	ETCH BOARD	
															C-AH-5408776-0-5		1	ASSY/DRILLING HOLE LAYOUT	
X				4	E-CS-M7800-YA-1	#	6	ASYNCHRONOUS LINE INTERFACE											
					K-CO-M7800-YA-4		1	X-Y COORDINATE HOLE LOCATION											
					D-AH-M7800-YA-5		1	ASSY DRILLING HOLE LAYOUT											
					B-MH-M7800-YA-6		1	MODULE ECO HISTORY											
				6.	D-CS-H315-0-1	#	1	MODEM TEST CONN						6.	D-CS-H315-0-1		1	MODEM TEST CONN	
X	X				K-CO-H315-0-4		1	X-Y COORDINATE HOLE LOC							K-CO-H315-0-4		1	X-Y COORDINATE HOLE LOC	
					D-AH-H315-0-5		1	ASSY DRILLING HOLE LAYOUT							C-AH-H315-0-5		1	ASSY/DRILLING HOLE LAYOUT	
					B-MH-H315-0-6		1	MODULE ECO HISTORY							B-MH-H315-0-6		1	MODULE ECO HISTORY	
X	X	X		7.	E-CS-M7800-0-1	#	7	ASYNCHRONOUS LINE INTERFACE						7.	E-CS-M7800-0-1		7	ASYNCHRONOUS LINE INTERFACE	
					K-CO-M7800-0-4		1	X-Y COORDINATE HOLE LOC							K-CO-M7800-0-4		1	X-Y COORDINATE HOLE LOC	
					D-AH-M7800-0-5		1	ASSY/DRILLING HOLE LAYOUT							D-AH-M7800-0-5		1	ASSY/DRILLING HOLE LAYOUT	
					B-MH-M7800-0-6		1	MODULE ECO HISTORY							B-MH-M7800-0-6		1	MODULE ECO HISTORY	
				8.	A-PL-G8000-0-0		1	FILTER NETWORK						8.	A-PL-G8000-0-0		1	FILTER NETWORK	
X					B-CS-G8000-0-1	#	1	CIRCUIT SCHEMATIC							K-CO-G8000-0-4		1	X-Y COORDINATE HOLE LOC	
					K-CO-G8000-0-4		1	X-Y COORDINATE HOLE LOC							C-AH-G8000-0-5		1	ASSY/DRILLING HOLE LAYOUT	
					C-AH-G8000-0-5		1	ASSY/DRILLING HOLE LAYOUT							B-MH-G8000-0-6		1	MODULE ECO HISTORY	
					B-MH-G8000-0-6		1	MODULE ECO HISTORY											
										TITLE		ASYNCHRONOUS LINE INTERFACE		SIZE CODE		NUMBER		REV	
										SHEET 3 of 3		B DD		DL11-0		C			



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NOTES:  
 1. G 8000 IS REQUIRED ONLY IN PDP 11 SYSTEMS WHERE +15V IS NOT AVAILABLE. THE INSTALLATION REQUIRES 2 WIRES TO BE ADDED.  
 A03V2-A02U2  
 A02N2-CXXUI  
 WHERE (XX) IS THE SLOT NUMBER CONTAINING THE DL11.  
 2. ITEMS INDICATED WITH ASTERICK (\*) ARE SHOWN FOR REFERENCE ONLY AND ARE NOT PART OF THIS UNIT.



SEE NOTE 2

REVISIONS	
CHANGE NO.	REV.
DL11-00001	A
M. J. Janson 7-18-72	
F. Janson 7-17-72	
DL11-00002	B
P. E. Janson 11-18-72	
JANSON	
P. E. Janson 12-5-72	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP-11		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN. M. Rivie	DATE 7/18/72	<b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS TITLE <b>ASYNCHRONOUS LINE INTERFACE</b>
DECIMALS .XXX = .005	ANGLES ±0° 30'	CHK'D. J. F. Janson	DATE 4-29-72	
.XX = .02		ENG. P. E. Janson	DATE 5-11-72	
.X = .1		PROJ. ENG. P. E. Janson	DATE 5-11-72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		PROD. J. M. Janson	DATE 5-15-72	
MATERIAL + + +	NEXT HIGHER ASSY.	B-DD-DL11-Ø		
FINISH + + +	SCALE NONE	SIZE CODE CUA	NUMBER DL11-Ø-Ø	REV. B
	SHEET OF	DIST. G		

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS <b>PARTS LIST</b>			QUANTITY/VARIATION																	
MADE BY M. PIERCE		CHECKED J. FERGUSON	SECTION		DL11-A	DL11-B	DL11-C	DL11-D	DL11-E											
DATE 4/27/72		DATE 4/27/72	1																	
ENG P. E. Janson		PROD J. McLaughlin	ISSUED SECT.																	
DATE 5/11/72		DATE 5/15/72	1																	
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION																		
1	C-IA-5408776-0-0	PRIORITY JUMPER LEVEL #4		1	1	1	1	1												
2	C-IA-5408778-0-0	PRIORITY JUMPER LEVEL #5		-	-	-	-	-												
3	D-UA-BC05C-25	CABLE, MODEM BC05C		-	1	-	1	1												
4	D-IA-7008360-0-0	CABLE ASSEMBLY (KL8E)		1	-	1	-	-												
5	D-CS-H315-0-1	MODEM TEST CONNECTOR		-	-	-	-	A/R	See Note 2											
6	E-CS-M7800-0-1	ASYNCHRONOUS LINE INTERFACE		-	1	-	1	1												
7	A-PL-G8000-0-0	FILTER NETWORK		-	A/R	-	A/R	A/R	See Note 1											
8		CRYSTAL		A/R	A/R	A/R	A/R	A/R	See Note 3											
9	E-CS-M7800-YA-1	ASYNCHRONOUS LINE INTERFACE		1	-	1	-	-												
	NOTES:	1.	G8000 IS REQUIRED ONLY IN PDP 11 SYSTEMS WHERE +15V IS NOT AVAILABLE. ONE PER DL11-A.																	
		2.	ONE H315 PER PDP11 SYSTEM																	
		3.	CRYSTAL FREQUENCY DEFINED BY CUSTOMER SPECIFIED BAUD RATE																	
TITLE			ASSY NO.	SIZE	CODE	NUMBER		REV.	ECO NO.											
ASYNCHRONOUS LINE INTERFACE			C-UA-DL11-0-0	A	PL	DL11-0-0		B	DL11-00002											
			SHEET 1 OF 1	DIST.	G															

For drawing and specifications, refer to the drawings of Digital Equipment Corporation and their subsidiaries, or copies or sales or other literature of the same, for the manufacturer or name of items without other designation.

**NOTES:**  
 1) PIN NOTATION THROUGHOUT IS ORDERED UPON MODULE PLACEMENT IN THE SYSTEM UNIT MODULE REFERENCE ALONE IS OBTAINED BY CONVERTING THE FIRST LETTER ACCORDING TO THE PIN NOMENCLATURE CHART AT THE LEFT.  
 2) JUMPERS TO BE USED AT CONNECTIONS A3-A10, J1-J10 V3-V8, AND N1.  
 3) LETTERS ENCLOSED IN PARENTHESIS REFER TO PINS ON THE BERG CONNECTOR.  
 EXAMPLE: (X1).

**PIN NOMENCLATURE**  
 MODULE SYSTEM UNIT

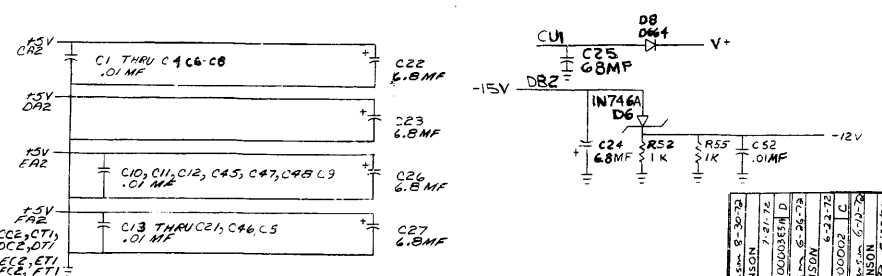
A C  
 B D  
 C E  
 D F

REF	DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
E27	IC DEC 74161	IC DEC 74161	1910550	70
3	NUT KEP 572	NUT KEP 572	9006553	63
3	SCR PHL PAN HD 256XV16	SCR PHL PAN HD 256XV16	10006001	64
2	AUGAT 8000 PG-1	AUGAT 8000 PG-1	1202812	67
7	DI-95 D7 D8	DIODE 1N74 GA	1100114	68
1	D6	DIODE 1N74 GA	1104860	69
2	Q1 Q2	TRANSISTOR 6534D	1103404	70
1	C3	CAP 100PF 100V 5% DIPPED NICA	1000016	73
1	C4	CAP 500PF 100V 5% DIPPED NICA	1000015	74
2	C50 C51	CAP 0.47MF CERAMIC	1000678	81
1	C36	CAP 220PF 100V 5% DIPPED NICA	1000021	82
2	C34 C35	CAP 330PF 100V 5% DIPPED NICA	1000023	83
9	C32 C37 C44	CAP 100PF 100V 5% DIPPED NICA	1000024	84
1	C31	CAP 100PF 100V 5% DIPPED NICA	1000012	85
22	U1 C1 C2 C30 C45 C47 C48	IC 74100 100V 5% DIPPED NICA	1000010	86
1	C29	CAP 47UF 35V 10% TANT	1000965	89
6	C22-C27	CAP 6.8UF 35V 20% TANT	1000067	90
1	C33	CAP 150PF 100V 5% DIPPED NICA	1000019	93
2	R14 R15	RES 1.5K 1/4W 5%	1300394	94
2	R33 R34 R35 R36 R37 R38	RES 1K 1/4W 5%	1300395	97
1	R41	RES 47.1K 1/4W 5%	1300302	98
1	R10	RES 68.1K 1/4W 5%	1300220	99
1	R5	RES 82.1K 1/4W 5%	1301477	100
4	R24 R25 R26 R27	RES 100.1K 1/4W 5%	1300229	101
1	R11	RES 130.1K 1/4W 5%	1300330	102
1	R12	RES 180.1K 1/4W 5%	1300332	103
1	R44 R53	RES 220.1K 1/4W 5%	1300271	104
1	R39	RES 390.1K 1/4W 5%	1300309	105
4	R7 R13 R43 R51	RES 470.1K 1/4W 5%	1300376	106
1	R4	RES 560.1K 1/4W 5%	1300338	107
1	R5	RES 750.1K 1/4W 5%	1300340	108
1	R16	RES 150.1K 1/4W 5%	1302385	109
27	R1 R2 R6 R7 R17 R23 R25 R27 R31 R39 R49 R50	RES 1K 1/4W 5%	1300479	110
2	R52 R53	RES 1.5K 1/4W 5%	1300397	111
1	E25	IC DEC 74147	1910939	112
4	E32 E33 E61 E62	IC DEC 7474	1903547	113
3	E15 E36 E41	IC DEC 7442	1909712	114
3	E3 E49 E59	IC DEC 7408	1910133	115
2	E18 E21	IC MC 7487	1910323	116
2	E20 E24	IC DEC 7480	1909071	117
11	E12 E26 E27 E29 E31 E30 E47 E54 E56	IC DEC 6887	1909705	118
1	E22	IC MC1488	1910322	119
1	E43	IC DEC 74123	1910436	120
3	E28 E29 E52	IC DEC 74174	1909667	121
3	E45 E39 E58	IC DEC 7400	1909704	122
1	E10	IC DEC 7413	1909989	123
2	E50 E53	IC DEC 7402	1909004	124
8	E3 E4 E33 E35 E43 E45 E46 E28	IC DEC 380	1909483	125
1	E2	IC DEC 74123	1910437	126
1	E20	IC DEC 74104	1909951	127
1	E25	IC DEC 7492	1909033	128
5	E6 E16 E17 E38 E39	IC DEC 7404	1909686	129
1	E24	IC DEC 7493	1909054	130
1	E34	IC DEC 7410	1903376	131
1	E29	IC DEC 374	1909704	132
1	E37	IC DEC 7442	1900094	133
1	E44	IC DEC 8271	1909415	134
2	E18 E14	IC DEC 7473	1910651	135
1		BRACKET CRYSTAL HOLDER	3302823	136
1		BRACKET CRYSTAL HOLDER	3303134	137
1	E19	IC SOCKET	1909704	138
1	S1 S2	SWITCH SINGLE POLE 10 POS	1210042-1	139
1		40 PIN CONNECTOR BERG	1209941	140
10		SPLIT LOGS	9001735	141
8		CRYLET #GSW-7 E.B. SIMMONS	9002732	142
8		HANDLE PLT-017A WAGETTA	9002332	143
8		ETCHED CIRCUIT BOARD	9002337-06	144
8		MODULE ECO HISTORY	B-M-N-7500-B-4-3	145
8		ASSY/DRILLING HOLE LAYOUT	D-24-M7500-B-4-2	146
8		KEY COORDINATE HOLE	K-25-M7500-B-4	147

**IC PIN LOCATIONS**

IC TYPE	8	7	6	5	4	3	2	1
DEC 74161	8	16						
DEC 7480	7		4					
DEC 74174	3	1						2
DEC 74123	8	16						
DEC 8271	8	16						
DEC 7442	8	16						
DEC 374	7	8						
DEC 7493	10	5						
DEC 7492	10	3						
DEC 74153	8	16						
DEC 380	7	8						
DEC 7490	10	5						
DEC 74123	8	16						

IC TYPE: GND +5V V -12V



**SEMICONDUCTOR CONVERSION CHART**

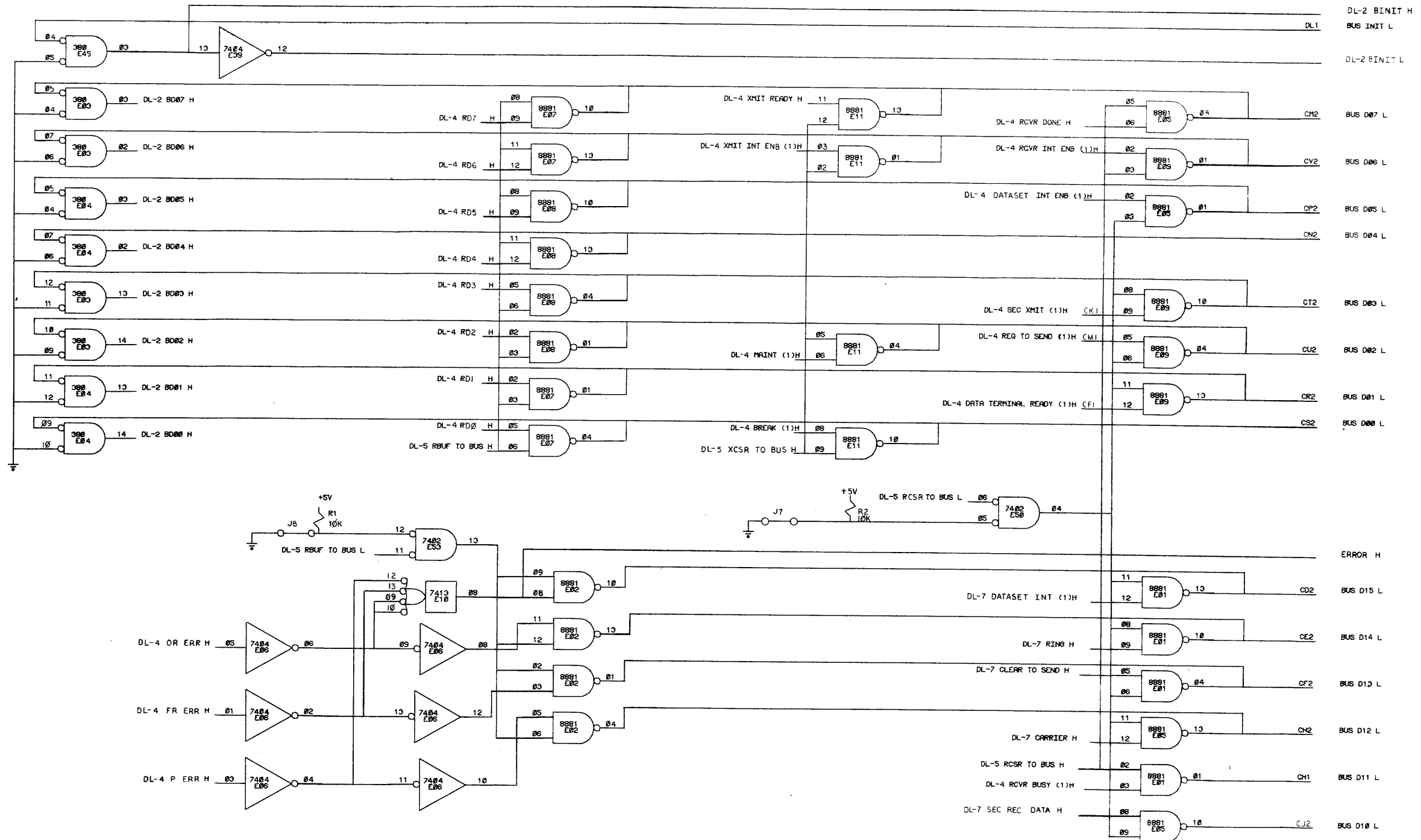
DEC NO.	EIA NO.	DEC NO.	EIA NO.
6534D	MP56539		
1N74GA	1N4M3.3A2		
D664	1N3606		

8

3

1

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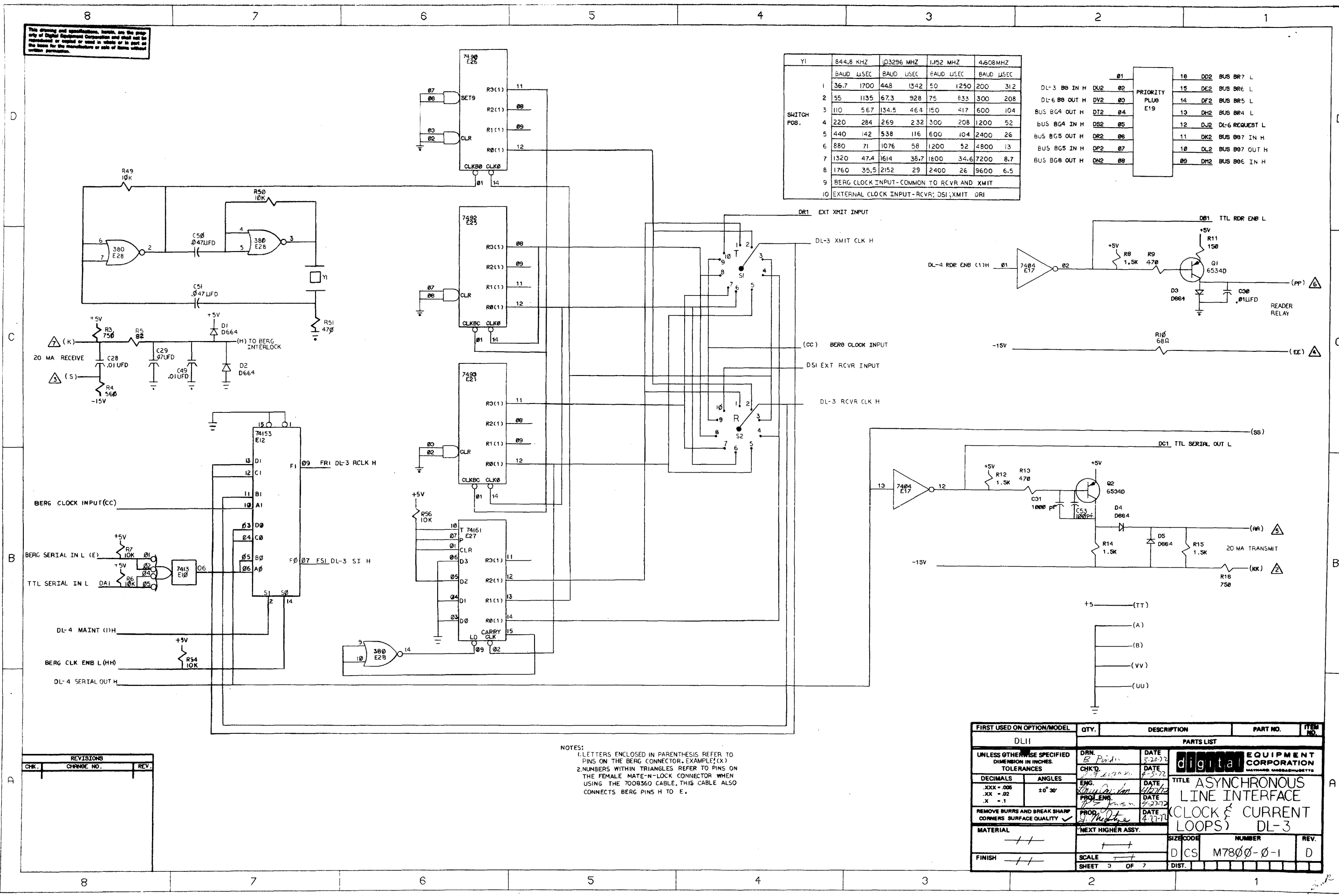


FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DL11		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN	DATE	<b>digital EQUIPMENT CORPORATION</b> <small>MAYNARD MASSACHUSETTS</small> <b>TITLE ASYNCHRONOUS LINE INTERFACE (BUS RECEIVERS &amp; DRIVERS) DL-2</b>
DECIMALS	ANGLES	CHK'D	DATE	
.XXX = .005	±0° 30'	ENG	DATE	
.XX = .02		PROJ ENGR	DATE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROJ	DATE	
MATERIAL		NEXT HIGHER ASSY.		
FINISH		SCALE	SIZE CODE	NUMBER
		SHEET 2 OF 7	D CS	M7800-0-1
			DIST.	REV. D

REVISIONS		
CHK.	CHANGE NO.	REV.

pink

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Y1	844.8 KHZ	103296 MHZ	1.152 MHZ	4.608MHZ
	BAUD U/SEC	BAUD U/SEC	BAUD U/SEC	BAUD U/SEC
1	36.7	1700	448	1342
2	55	1135	673	928
3	110	567	134.5	464
4	220	284	269	232
5	440	142	538	116
6	880	71	1076	58
7	1320	47.4	1614	35.7
8	1760	35.5	2152	29
9	BERG CLOCK INPUT-COMMON TO RCVR AND XMIT			
10	EXTERNAL CLOCK INPUT-RCVR; XMIT DRI			

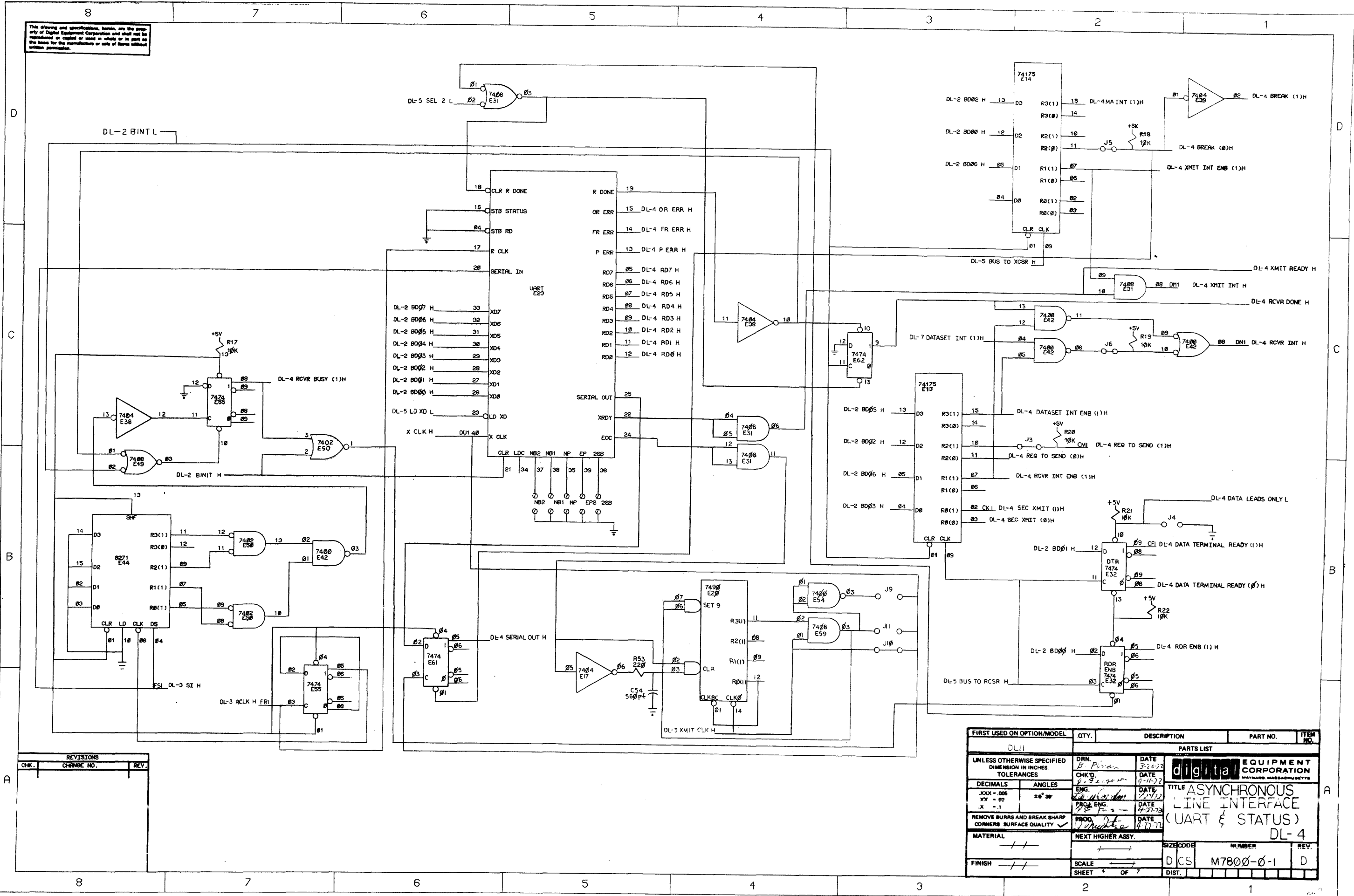
DL-3	B0 IN H	DU2	02	PRIORITY	18	DL2	BUS BR7 L
DL-6	B0 OUT H	DV2	03	PLUS	15	DL2	BUS BR6 L
BUS BG4	OUT H	DT2	04	E19	14	DL2	BUS BR5 L
BUS BG4	IN H	DS2	05		13	DL2	BUS BR4 L
BUS BG5	OUT H	DR2	06		12	DL2	DL-6 REQUEST L
BUS BG5	IN H	DP2	07		11	DL2	BUS BR7 IN H
BUS BG6	OUT H	DN2	08		10	DL2	BUS BR7 OUT H
					09	DL2	BUS BR6 IN H

NOTES:  
 1. LETTERS ENCLOSED IN PARENTHESIS REFER TO PINS ON THE BERG CONNECTOR. EXAMPLE: (X)  
 2. NUMBERS WITHIN TRIANGLES REFER TO PINS ON THE FEMALE MATE-N-LOCK CONNECTOR WHEN USING THE 7008360 CABLE. THIS CABLE ALSO CONNECTS BERG PINS H TO E.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DL11 PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DRN: B Poind	DATE: 3-20-72	<b>digital EQUIPMENT CORPORATION</b> MAYFIELD ROAD, BOSTON, MASS 02114	
TOLERANCES	CHKD: J. J. Poind	DATE: 4-5-72		
DECIMALS	ENG: J. J. Poind	DATE: 4-27-72	TITLE: ASYNCHRONOUS LINE INTERFACE (CLOCK & CURRENT LOOPS) DL-3	
ANGLES	PROB: J. J. Poind	DATE: 4-27-72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROP: J. J. Poind	DATE: 4-27-72	SCALE: 1:1 SHEET 3 OF 7	
MATERIAL: //	NEXT HIGHER ASSY.			
FINISH: //			SIZE CODE: DCS	NUMBER: M7800-0-1
			DIST:	REV. D

REVISIONS		
CHK.	CHANGE NO.	REV.

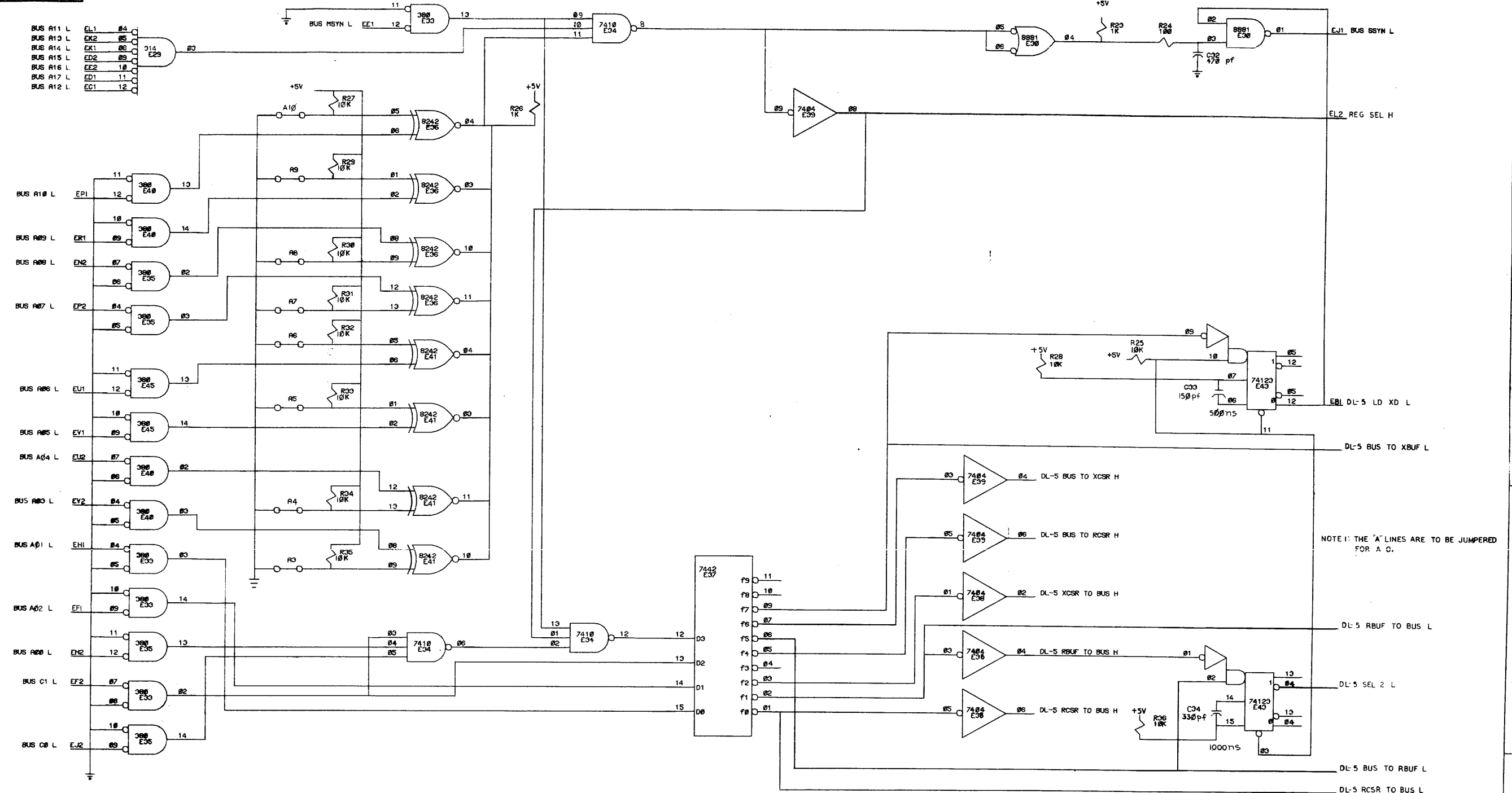
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REVISIONS		
CHK.	CHANGE NO.	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DL11				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS	ANGLES	PARTS LIST		
.XXX = .008	±0° 30'	DRN. B. Pagan	DATE 3-26-72	<b>digital EQUIPMENT CORPORATION</b> <small>MAYNARD MASSACHUSETTS</small> TITLE ASYNCHRONOUS LINE INTERFACE (UART & STATUS) DL-4
.XX = .07		CHK'D. J. S. Gordon	DATE 4-11-72	
.X = .1		ENG. J. S. Gordon	DATE 2-27-72	
		PROJ. ENG. J. S. Gordon	DATE 4-27-72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL		NEXT HIGHER ASSY.		
FINISH		SCALE		
		SHEET 4 OF 7		
		DCS M7800-0-1		
		REV. D		

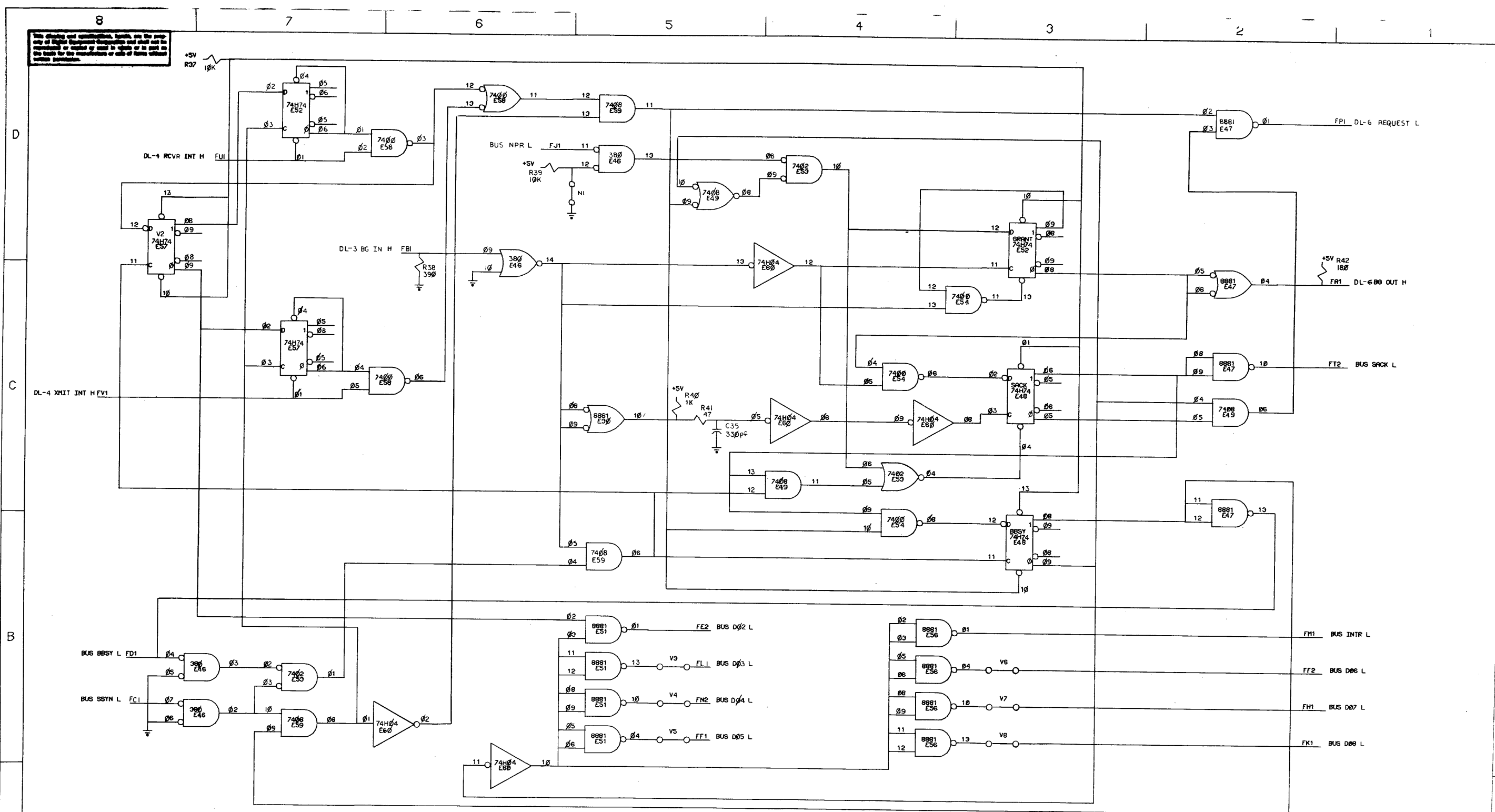
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REVISIONS		
CHK.	CHANGE NO.	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DL11				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS	ANGLES	PARTS LIST		
.XXX - .005	±0° 30'	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS		
.XX - .02		TITLE ASYNCHRONOUS LINE INTERFACE (ADDRESS SELECTION)		
.X - .1		DL-5		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓				
MATERIAL		NEXT HIGHER ASSY.		
FINISH		SCALE		
		SHEET 5 OF 7		
		DIST.		

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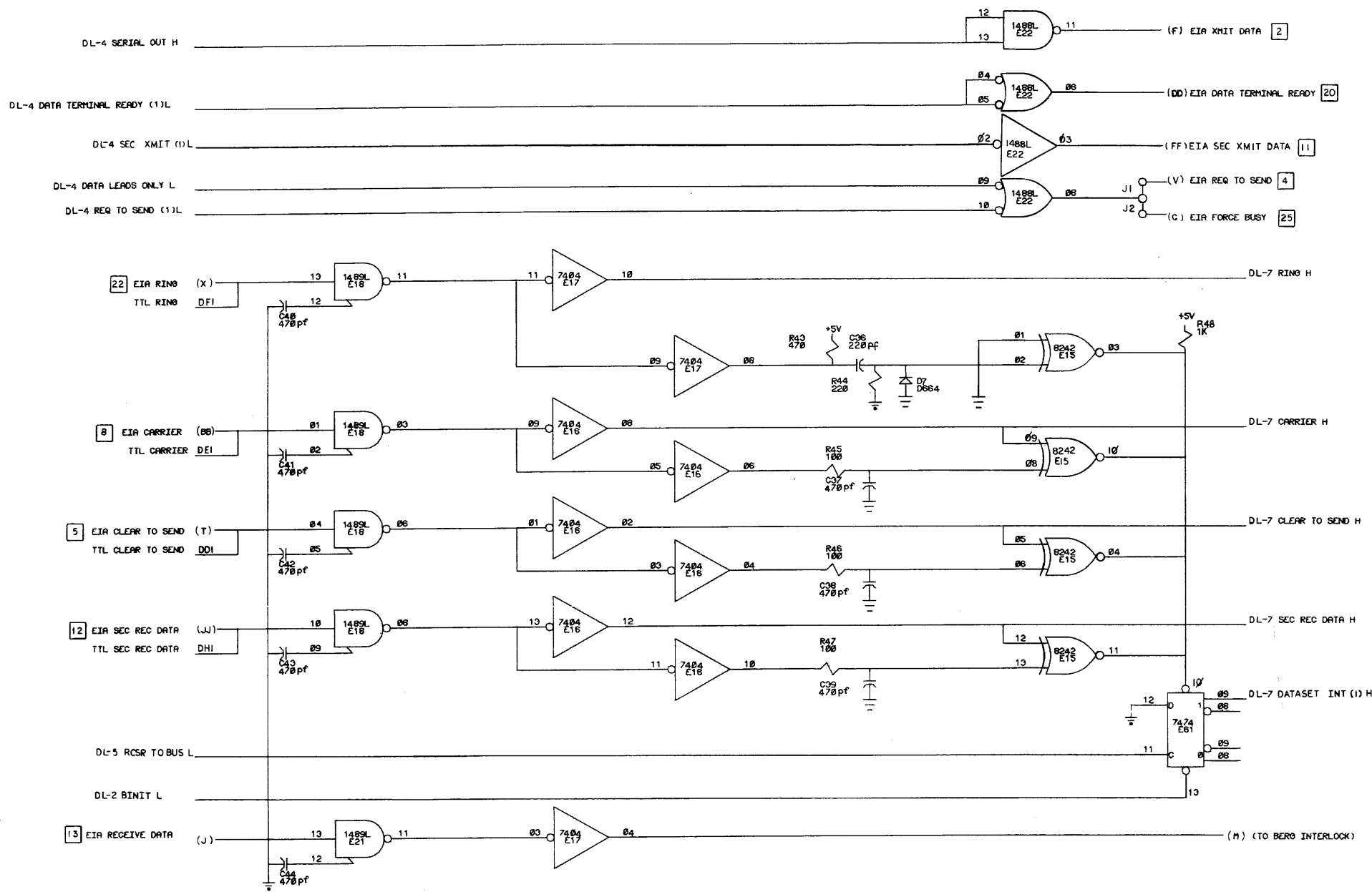
NOTE: THE "V" LINES ARE TO BE JUMPED FOR A I.

REVISIONS		
CHK.	CHANGE NO.	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DL11				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS	ANGLES	PARTS LIST		
.XXX - .005	±0° 30'	DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS		
.XX - .02		TITLE ASYNCHRONOUS LINE INTERFACE		
K - 1		DATE 4/6/72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
NEXT HIGHER ASSY.				
MATERIAL				
FINISH				
SCALE				
SHEET OF				
SIZE CODE NUMBER REV.				
D JCS M7800-0-1 D				



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- NOTES:
- LETTERS ENCLOSED- EXAMPLE (M) REFER TO PINS ON THE BERG CONNECTOR.
  - NUMBERS WITHIN BOXES REFER TO PINS ON THE MALE CINCH CONNECTOR WHEN USING THE BC05-C CABLE. THIS CABLE ALSO CONNECTS BERG PINS M TO E.

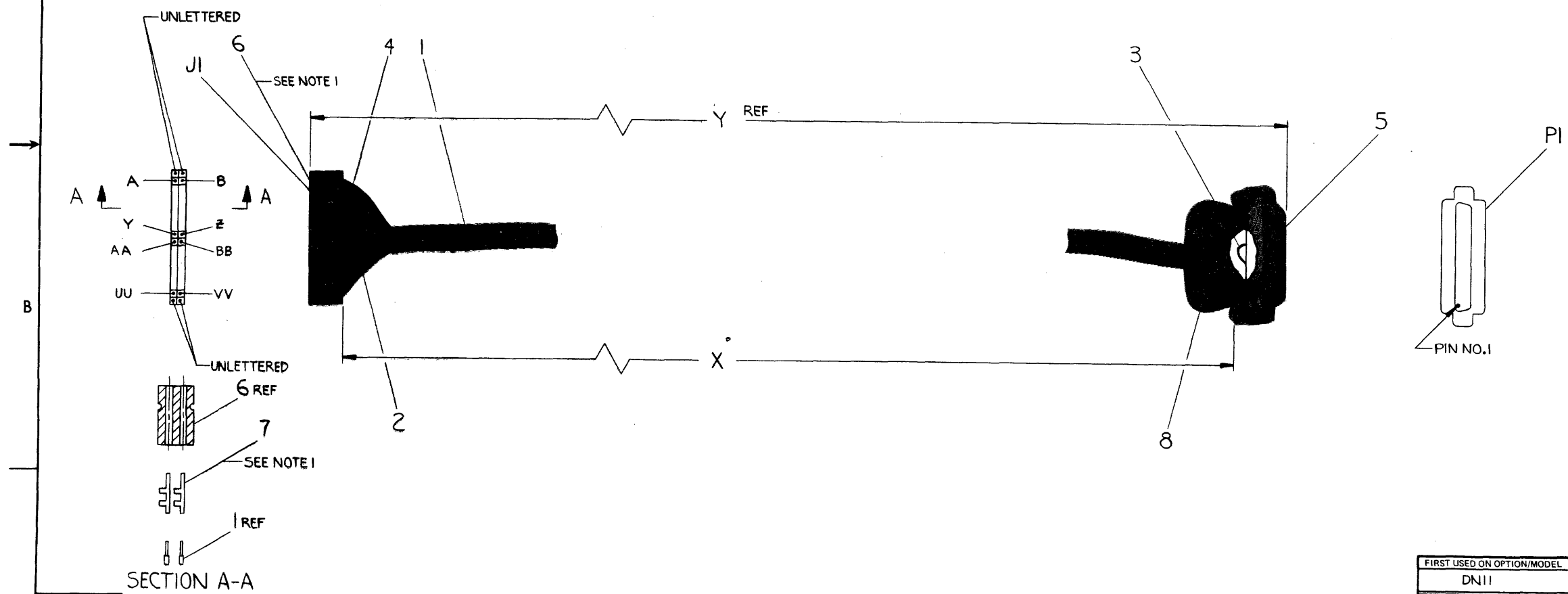
REVISIONS		
CHK.	CHANGE NO.	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DLII		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN. <i>B.P. Du...</i>	DATE 5-22-72	<b>digital EQUIPMENT CORPORATION</b> <small>MAYNARD, MASSACHUSETTS</small> TITLE ASYNCHRONOUS LINE INTERFACE (EIA DRIVERS & RECEIVERS) DL-7	
DECIMALS	CHK'D. <i>B.P. Du...</i>	DATE 8-5-72		
ANGLES	ENG. <i>K.O. y. Gordon</i>	DATE 12-17-72		
.XXX - .005	PROV'G. <i>B.P. Du...</i>	DATE 8-22-72		
.XX - .02	PROD. <i>B.P. Du...</i>	DATE 4-22-72		
.X - .1				
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
FINISH	SCALE	D CS	M7800-0-1	D
	SHEET 7 OF 7	DIST.		

WIRE TABLE												
ITEM NO.	DESCRIPTION	FROM		TO		ITEM NO.	DESCRIPTION	FROM		TO		
		AWG	COLOR	CONNECTION	WITH			CONNECTION	WITH	CONNECTION	WITH	
1	22	BLU/WHT	PI-1		J1-VV	1	22	RED/BRN	PI-16		J1-NN	
		WHT/BLU	PI-2		J1-F			SLA	PI-17		J1-R	
		ORN/WHT	PI-3		J1-J			RED/SLA	PI-18		J1-U	
		WHT/ORN	PI-4		J1-Y			BLU/BLK	PI-19		J1-P	
		GRN/WHT	PI-5		J1-T			BLK/BLU	PI-20		J1-DD	
		WHT/GRN	PI-6		J1-Z			ORN/BLK	PI-21		J1-MM	
		BRN/WHT	PI-7		J1-UU			BLK/ORN	PI-22		J1-X	
		WHT/BRN	PI-8		J1-BB			GRN/BLK	PI-23		J1-RR	
		SLA/WHT	PI-9		J1-Y			BRN/RED	PI-24		J1-L	
		WHT/SLA	PI-10		J1-W			RED/ORN	PI-25		J1-C	
		BLU/RED	PI-11		J1-FF			BLK	PI-1	4	J1-A	
		RED/BLU	PI-12		J1-JJ		1	22	BLK	PI-7	4	J1-B
		ORN/RED	PI-13		J1-D		3	26	BLK	PI-1		PI-7
		SLA/RED	PI-14		J1-LL		2	26	RED	J1-E		J1-M
1	22	SLA/GRN	PI-15		J1-N							

NUMBER	VARIATION	
	DIM X	DIM Y (PRE CUT)
BC05C-25	25'±3"	25'1.8"
BC05C-50	50'±2%	50'1.8"

NOTES:  
 1. MANUFACTURING SHOULD USE MACHINE CRIMPER TOOL FOR CRIMPING PINS (ITEM #7) MUST BE HT68 FROM BERG ELECT  
 2. ONLY DEC PART #1210090-0-0 MAY BE USED AS J1.



QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	HOOD, *DB51226-1 CINCH	1205885	8
29	SOCKET, *HT-68	1210089-5	7
1	HOUSING, *20383 BERG	1210090-0-0	6
1	PLUG, *DB-25P CINCH	1205886	5
A/R	TUBING, *22 AWG TEF BLK	9107256-00	4
A/R	WIRE, *26 AWG STRD TEF BLK	9107636-00	3
A/R	WIRE, *26 AWG STRD TEF RED	9107636-22	2
A/R	CABLE, 25 CONDUCTOR	9107736	1

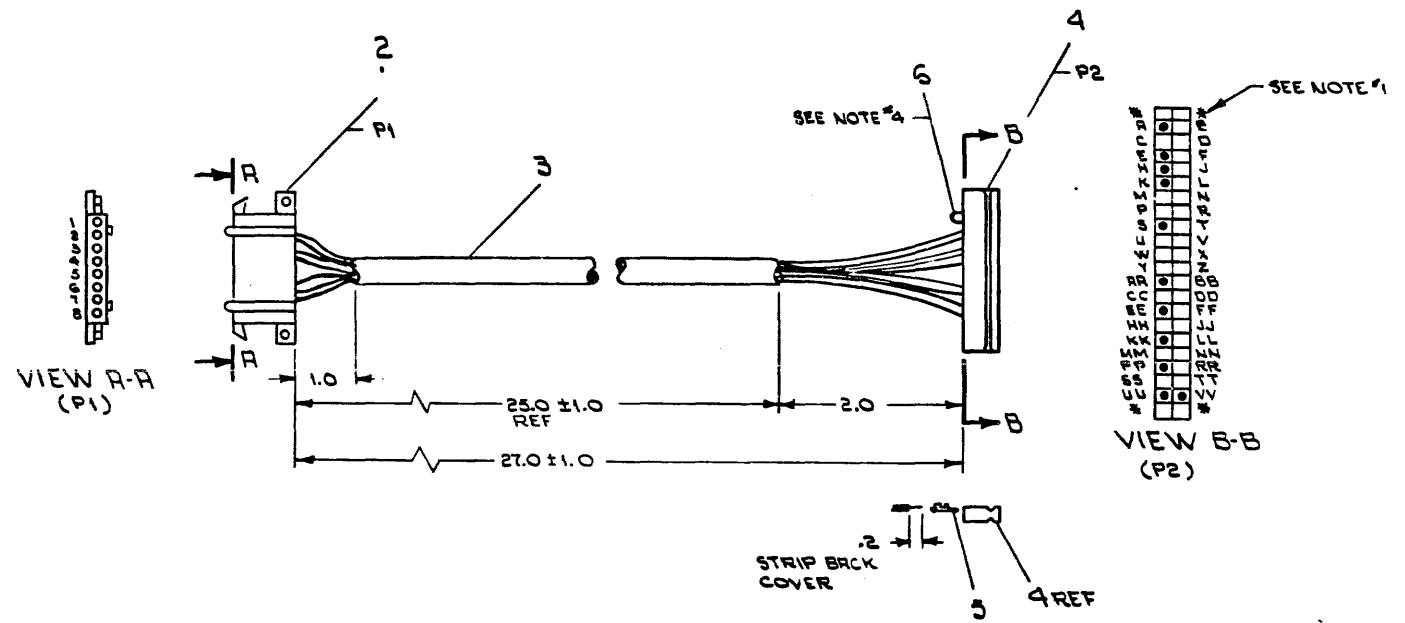
FIRST USED ON OPTION/MODEL DN11		PARTS LIST	
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN. S Roberts 11/17/71	DATE 11/17/71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
DECIMALS .0005	CHK. C. Cook 11/17/71	DATE 11/17/71	
ANGLES .0005	ENG. J. Smith 11/17/71	DATE 11/17/71	TITLE
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PBOL. ENG. A. Smith 11/17/71	DATE 11/17/71	CABLE, MODEM BC05C
MATERIAL	PROD. R. Smith 11/17/71	DATE 11/17/71	
FINISH	NEXT HIGHER ASSY.		
	SCALE NONE	SHEET 1 OF 1	

REV. A	REV. A
CHANGE NO. BC05C-01001	REV. A
SMITH	2-19-72

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WIRE TABLE						
ITEM NO.	DESCRIPTION	PAIR NO.	FROM CONNECTION WITH	TO CONNECTION WITH		
3	22 BLK	1	P1-2	2	P2-KK	5
3	RED		P1-3	2	P2-S	
3,7	SHIELD		SEE NOTE #2	-	P2-R (NOTE #3)	
3	BLK	2	P1-4	2	P2-EE	
3	WHT		P1-5	2	P2-RR	
3,7	SHIELD		SEE NOTE #2	-	P2-UU (NOTE #3)	
3	BLK	3	P1-6	2	P2-PP	
3	GRN		P1-7	2	P2-K	
3,7	SHIELD		SEE NOTE #2	-	P2-VV (NOTE #3)	
6	22 BLK	-	P2-E	5	P2-H	5

- NOTES:**
- \* ASTERISKS INDICATE CAVITIES NOT USED OR DESIGNATED BY LETTERS.
  - DRAIN WIRES TO BE CUT BACK TO OUTER INSULATION ON P1 END OF CABLE ONLY. SHIELDS TO BE CUT BACK TO OUTER INSULATION ON BOTH ENDS OF CABLES.
  - DRAIN WIRES ON P2 END OF CABLE TO BE EACH ENCLOSED WITH ITEM #7 (TUBING) FROM END OF CABLE JACKET TO POINT WHERE THEY ENTER P2 CONNECTOR.
  - ITEM #6 (WIRE) TO BE APPROXIMATELY ONE (1) INCH LONG.



QTY	DESCRIPTION	PART NO.	ITEM NO.
1	AIR TUB. #8 TEF. THINWALL WRT	910278-11	7
1	AIR WIRE #22 AWG STRD TEF BLK	910350-00	6
1	SOCKET BERG #47706	1210089-9	5
1	HOUSING BERG #20393	1210090-0	4
1	CABLE BELDEN #BTT-3PR SHLD	9107733-0	3
6	CONTACT MATE-N-LOCK (FEMALE)	1209379	2
1	CONN. MATE-N-LOCK (FEMALE)	1209340-00	1

REV	DATE	DESCRIPTION
1		

FIRST USED ON OPTION/MODEL: PDP-8E

DO NOT SCALE DRAWING UNLESS OTHERWISE SPECIFIED

TOLERANCES: DIMENSIONS IN INCHES

ANGLES: ± 0.30°

FINAL SURFACE QUALITY: REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST

FINISH: NONE

DATE: 10/27/71

SCALE: NONE

SHEET 1 OF 1

**DIGITAL EQUIPMENT CORPORATION**

**CABLE ASSEMBLY (KL8E)**

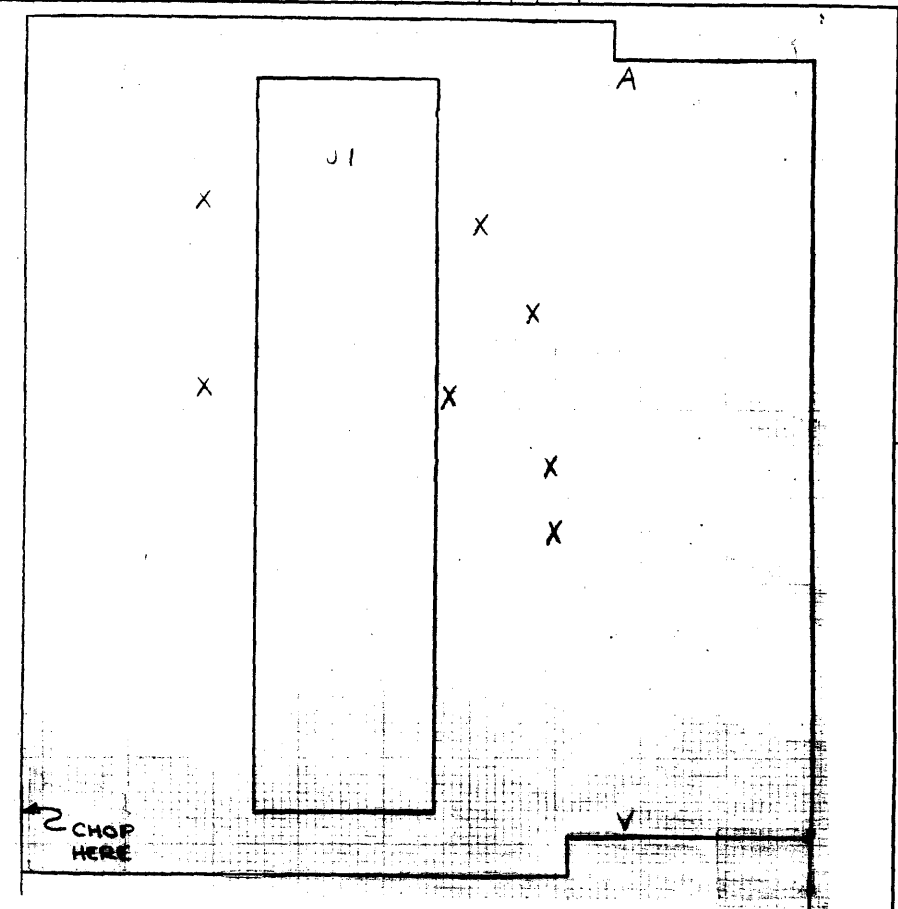
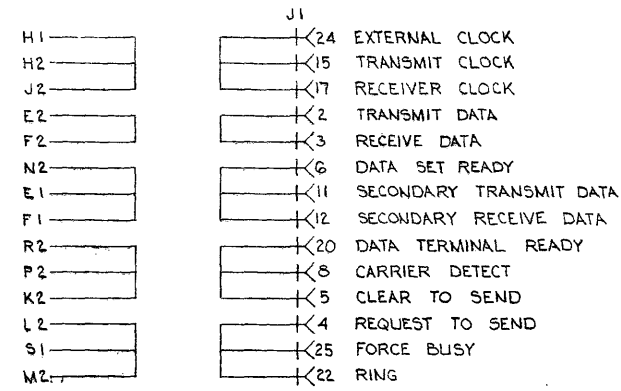
SIZE CODE: A-ML-KLB-E-0

NUMBER: DIA 7008360-0-0

REV: A

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REV 1-0-91CH SIZE CODE 2



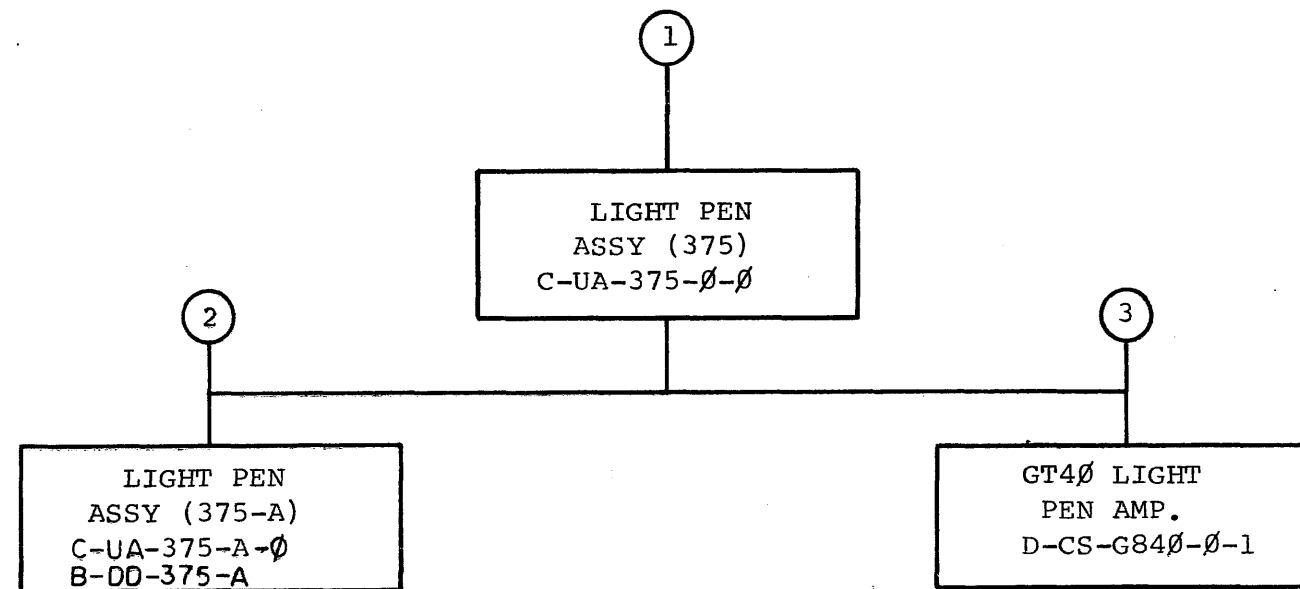
7		EYELET FEED THRU	9006731	4
1	J1	CONN. CINCH DB-255-3	1210247	5
1		ETCHED CIRCUIT BOARD	5010020	4
		MODULE BCO HISTORY	B-AM-H315-0-4	3
		ASSY/DRILLING HOLE LAYOUT	C-AM-H315-0-5	2
		X-Y COORDINATE HOLE LOCATION	K-CO-H315-0-4	1
QTY.	REF. DESIGNATION	DESCRIPTION	DEC PART NO.	

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
-----	-----------------	-------------	----------	----------

CHK	CHANGE NO.																		
	REVISION																		
	DRN <i>Roger J. Douette</i> DATE 3-5-72 CHD <i>W. Hall</i> DATE 3-14-72 PRD <i>E. J. Jones</i> DATE 3-13-72 PROD <i>E. J. Jones</i> DATE 3-13-72 NEXT HIGHER ASSY											digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS							
	DEC NO. EIA NO. DEC NO. EIA NO.											SCALE DCS H315-0-1 REV.							
	SEMICONDUCTOR CONVERSION CHART																		
	SHEET 1 OF 1 DIST.																		

REV 1-0-91CH NUMBER H315-0-1 SIZE CODE DCS





TITLE	SHEET	OF	SIZE	CODE	NUMBER	REV
LIGHT PEN ASSY (375)	SHEET 2	OF 3	B	DD	375-Ø	

CUSTOMER PRINT SET				ELECTRICAL					CUSTOMER PRINT SET				MECHANICAL						
375-Ø				FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE	375-Ø				FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
										X				1	C-UA-375-Ø-Ø 1209608	#	1	LIGHT PEN ASSY (375-Ø) CABLE	
														2	C-UA-375-A-Ø B-DD-375-A	#	1 3	LIGHT PEN ASSY (375-A) LIGHT PEN ASSY (375-A)	
			X	3	D-CS-G84Ø-Ø-1		2	GT4Ø LIGHT PEN AMP.						3	D-CS-G84Ø-Ø-1		2	GT4Ø LIGHT PEN AMP.	

CUSTOMER PRINT SET CODES  
X = PRINT OF DOCUMENT INCLUDED IN PRINT SET  
C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT  
S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

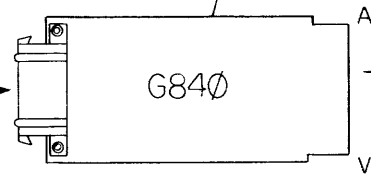
TITLE  
LIGHT PEN ASSY (375)  
SHEET 3 OF 3  
SIZE CODE  
B DD  
NUMBER  
375-Ø  
REV

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NOTES:

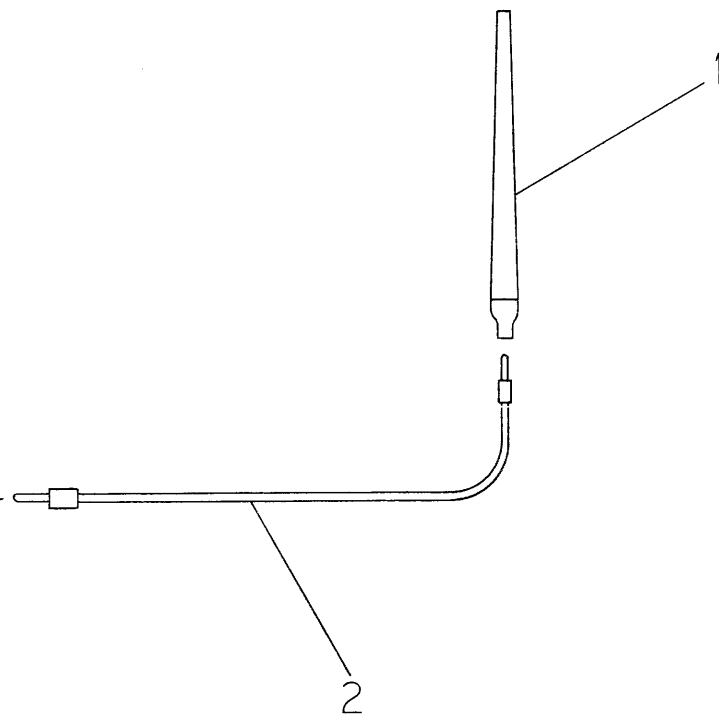
- ITEM #3 (L.P. AMPLIFIER) REPLACES THE G833 PHOSPHOR PROTECT MODULE IN SLOT A01 IN THE VRI4.
- MAIN CHASSIS HARNESS SUPPLIED WITH EXISTING HARDWARE.

MAIN CHASSIS HARNESS  
7008457  
SEE NOTE 2



TO VRI4,  
SLOT A01  
SEE NOTE 1

TO  
PHONO JACK  
MAIN CHASSIS  
HARNESS  
SEE NOTE 2



QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	G840 LIGHT PEN AMP.	G840	3
1	CABLE, SWITCHCRAFT	1209608	2
1	LIGHT PEN ASSY (375-A)	C-UA-375-A-0	1

FIRST USED ON OPTION/MODEL		PARTS LIST	
VRI4			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN. <i>CBM/Cy</i>	DATE <i>10-12-72</i>
DECIMALS ANGLES		CHK'D. <i>[Signature]</i>	DATE <i>11/12</i>
.XXX = .005	±0° 30'	ENG. <i>[Signature]</i>	DATE <i>11/12/72</i>
.XX = .02		PROJ. ENG. <i>[Signature]</i>	DATE <i>11/12/72</i>
.X = .1		PROD. <i>[Signature]</i>	DATE <i>11/12/72</i>
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		TITLE	
MATERIAL		LIGHT PEN ASS'Y (375)	
FINISH		NEXT HIGHER ASSY.	
		B-DD 375-0	SIZE CODE NUMBER REV.
		C UA 375-0-C	
		SCALE NONE	
		SHEET 1 OF 1	

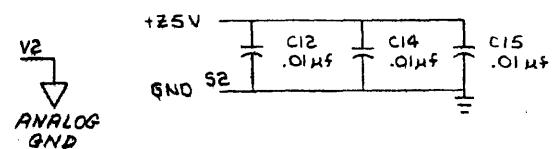
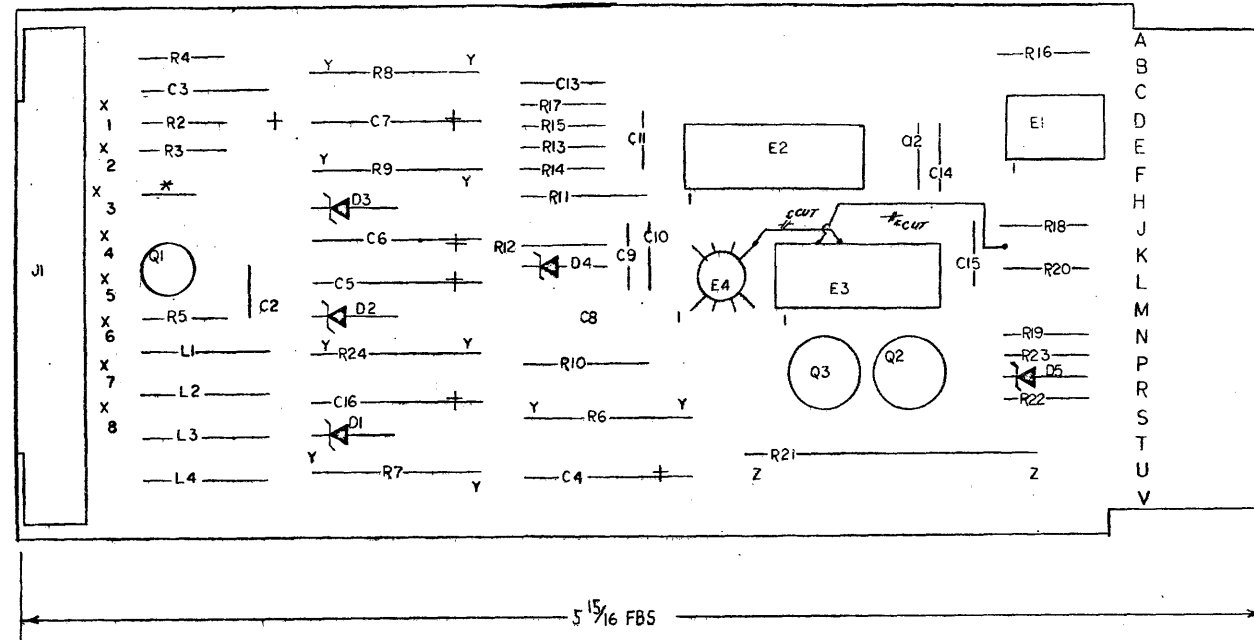
REV. NUMBER  
C UA 375-0-0

REVISIONS	CHANGE NO.	REV.
CHK		



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**NOTES:**  
1. PLACE ITEM #40 (TERMINAL) ON ITEM #25 (RESISTOR) R21.



QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1		INSULATED JUMPER (1/4")	9009185	41
2		SOLDER TERMINAL #2027-2 CAMBION	9008085	40
2		EYELET GS4-7 STIMPSON	9006732	39
8		PIN SOCKET #1320-1 (MATE-N-LOCK)	1209456	38
1		CONN MATE-N-LOCK (6 SOCKET) #1480459	1209340-00	37
1	E3	IC DEC 74H04	1909931	36
1	E1	IC 75453	1911036	35
1	E2	IC 9602	1910951	34
1	E4	IC LM306	1909675	33
4	L1, L2, L3, L4	CHOKE 2.00 UH 10% 99ma	1603421	32
1	Q1	TRANS DEC. 6534B	1503409-01	31
1	Q3	TRANS 2N2904A	1501913	30
1	Q2	TRANS DEC 2219-3	1501881	29
1	R5	RES 180 5% 1/4W	1301322	28
1	R14	RES 68K 5% 1/4W	1301327	27
2	R10, R11	RES 10K 1% 1/4W MF	1302886	26
1	R21	RES 150 5% 5W VWW	1301898	25
2	R3, R18	RES 2.2K 5% 1/4W	1300417	24
2	R7, R8	RES 10 5% 1W	1300171	23
1	R22	RES 10 5% 1/4W	1301317	22
4	R2, R3, R12, R23	RES 4.7K 5% 1/4W	1300447	21
2	R4, R15	RES 1K 5% 1/4W	1300365	20
1	R12	RES 470 5% 1/4W	1300316	19
1	R6	RES 100 5% 2W	1302380	18
2	R16, R20	RES 150 5% 1/4W	1300250	17
2	R9, R24	RES 100 5% 1W	1300232	16
1	R19	RES 100 5% 1/4W	1300229	15
1	D4	DIODE IN 746A, 3.6V, 5%, 40W	1104860	14
2	D1, D5	DIODE IN 4733A, 5.1V, 5%, 1W	1109943	13
2	D2, D3	DIODE IN 4744	1105648	12
5	C4, C5, C6, C7, C16	CAP 6.8UF, 10%, 35V TANT	1005306	11
1	C13	CAP .047UF, 20%, 250V MYLAR	1003053	10
1	C3	CAP 1.0UF, 10%, 35V TANT	1001776	9
5	C15, C12, C14, C10, C9	CAP .01UF, 20%, 50V	1001610-00	8
1	C11	CAP 47PF, 5%, 100V DM	1000011	7
1	C8	CAP .02UF, 20%, 100V DISC	1000004	6
1	C2	CAP 100PF, 5%, 100V DM	1000016	5
1		ETCHED CIRCUIT BOARD	5010281	4
REF		MODULE ECO HISTORY	B-MH-6840-0-6	3
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-6840-0-5	2
REF		XY COORDINATE HOLE LOCATION	K-CO-6840-0-4	1

FIRST USED ON OPTION MODEL		PARTS LIST	
ORIGINATED	REV	ETCH BOARD REV	C
DEC 68345	SAME		
2N2904A	SAME		
DEC 2219-3	SAME		
IN4733A	SAME		
IN4744	SAME		
DEC NO.	EIA NO.	DEC NO.	EIA NO.
SEMICONDUCTOR CONVERSION CHART			

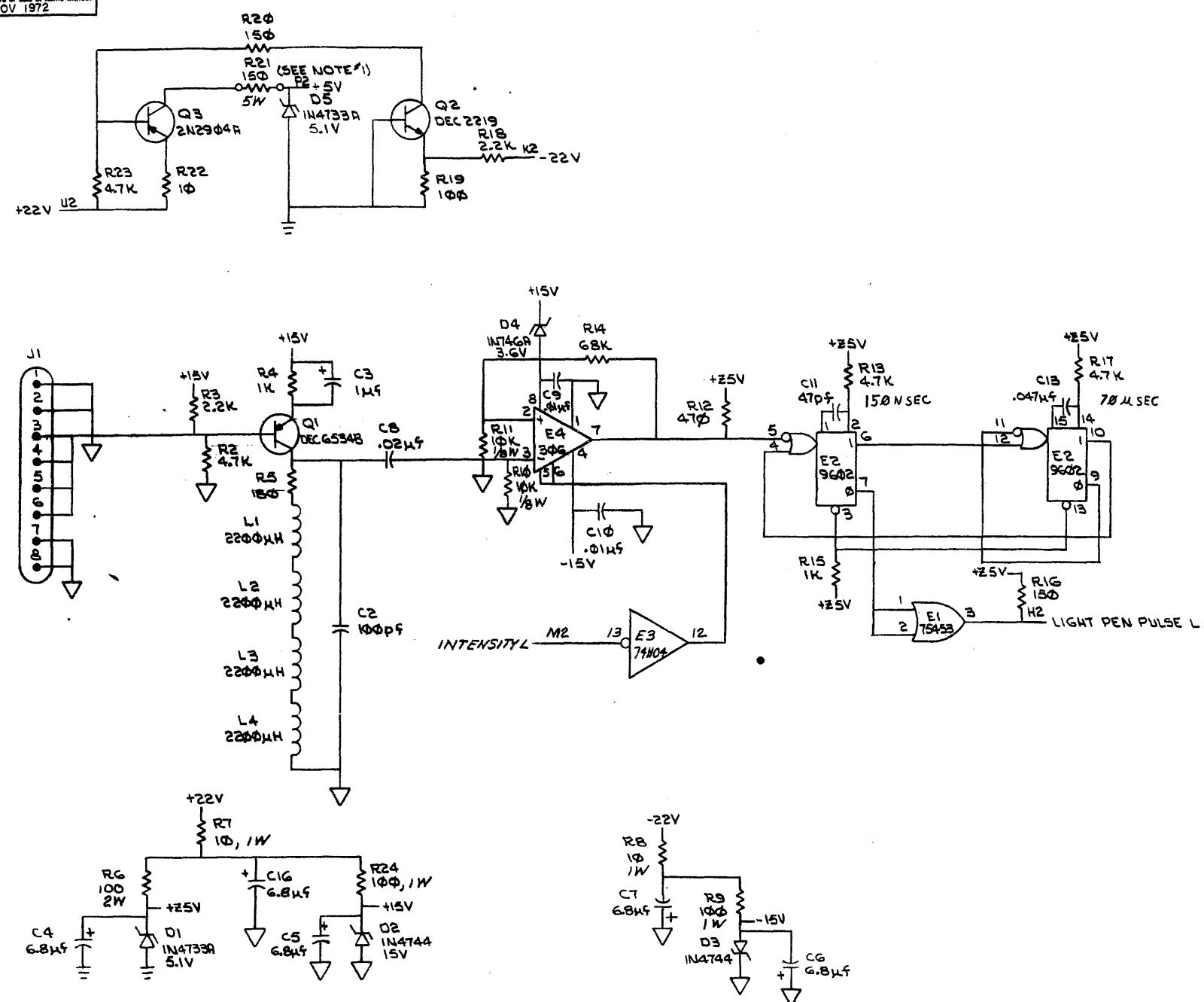
IC TYPE	GND	+5V
IC 9602	8	16
IC 75453	4	8

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

IC PIN LOCATIONS

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DCS G840-0-1 2



REVISIONS  
 CHANGE NO. REV.  
 CHK. DATE

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VT40				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN 4. J. E. [Signature]	DATE 9/20/72	 digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS	CHK'D. NANCY MOORE	DATE 11-9-72		
ANGLES	ENG. [Signature]	DATE 11-9-72		
.XXX = .005	PROJ. ENG. H. C. [Signature]	DATE 11/9/72		
.XX = .02	PROD. [Signature]	DATE 11/9/72		
.X = .1			TITLE VT40 LIGHT PEN AMPLIFIER	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY			NEXT HIGHER ASSY.	
MATERIAL			SIZE CODE	NUMBER
FINISH			DCS G840-0-1	REV. B
	SCALE		DIST.	
	SHEET 2 OF 2			