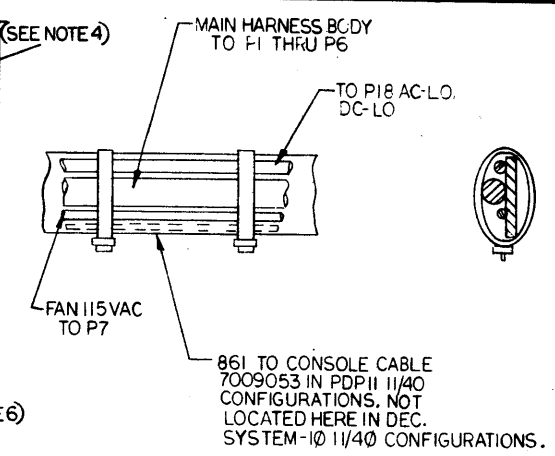
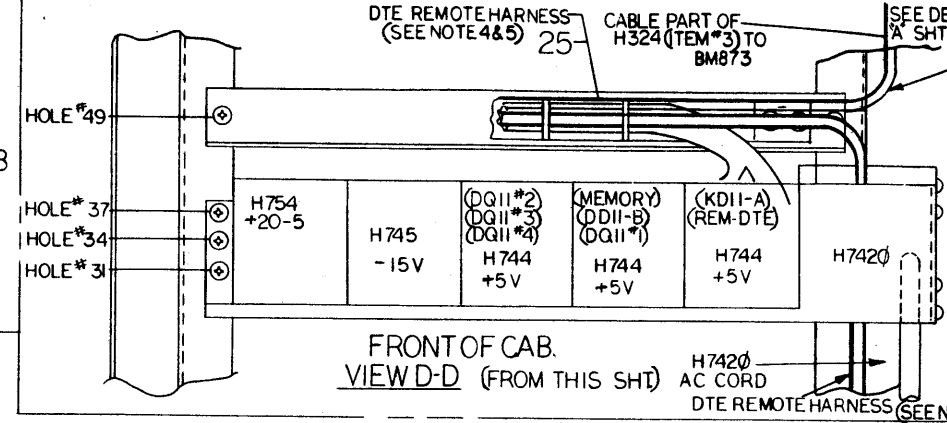
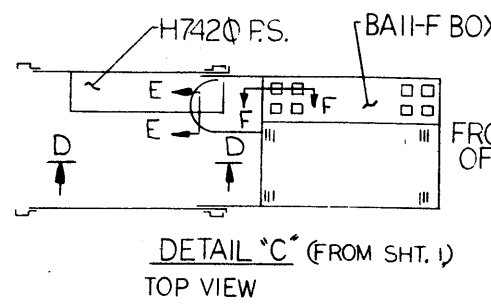




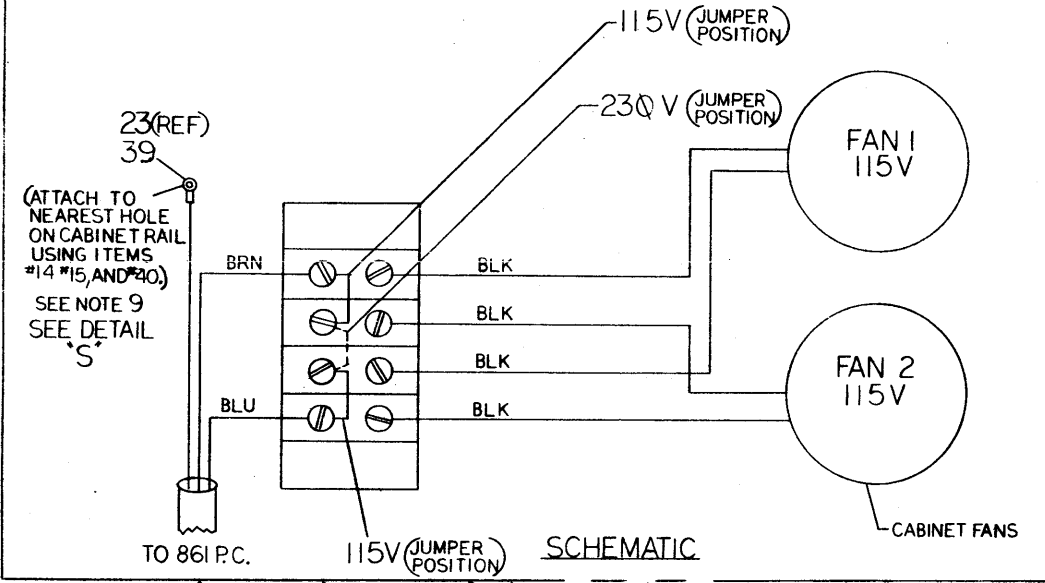


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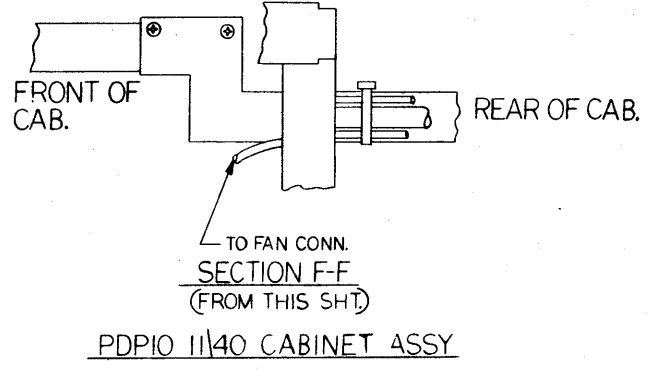
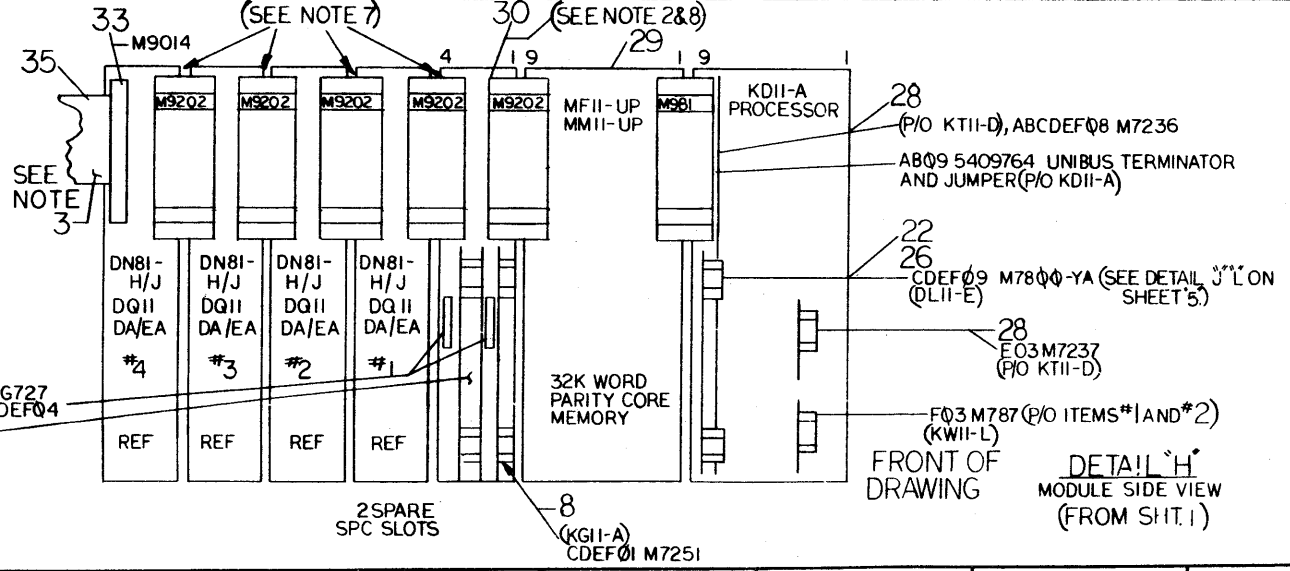


NOTE:

1. THE DQ11'S SHOWN IN THIS DWG ARE FOR EITHER SYNC OR SYNC/ASYNCR CONFIGURATIONS. ASYNCR ONLY CONFIGURATIONS DO NOT CONTAIN DQ11'S.
2. REMOVE M930 UNIBUS TERMINATOR FROM AB09 OF THE MF11-UP REINSTALL ITEM 30.
3. REPLACE WITH M930 FOR TESTING & CHECKOUT PURPOSES.
4. ROUTE ITEM 25 UP LEFT FRONT POST AND TIE WRAP TO FLEXIBLE BAND, TERMINATE ITEM 25 IN POWER HARNESS SOCKET SU3 (SEE SHT. 5) TERMINATE WHITE WIRE OF ITEM 25 ON H324 PANEL (SEE SHT. 9) ROUTE WHITE WIRE BACK TO LEFT FRONT POINT AND UP TO H324 PANEL.
5. REFERENCE D-1A-7014495-0-0, CONNECT 4PIN MATE-N-LOCK IN J2-J4RH20-DTE-20 WIRE ASSY (SEE SHT. 8)
6. REFERENCE D-1A-7014495-0-0, CONNECT TO FAST ON TABS ON M9310 (ITEM #12), ORN WIRE TO +5V BLACK WIRE TO GROUND INSERT M9310 IN DTE-20 SLOT HJ07, KL05, OR KL07 FOR 1ST, 2ND, OR 3RD, DN87'S RESPECTIVELY, AS SHOWN IN DETAIL 'P' ON SHEET 8
7. INSTALL M9202 BETWEEN EACH DQ11 AS SHOWN.
8. SHIP M930 MODULE IN ACCESSORIES BOX.
9. PLACE ITEM 23 NEAR GND COM. TO LAB RAIL.



DETAIL 'B' (FROM SHT. 1)

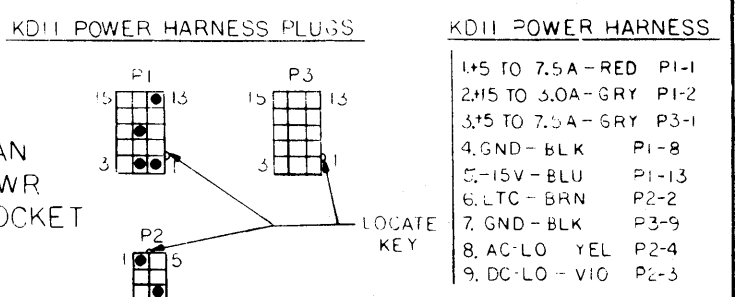


REVISIONS		
CHK	CHANGE NO.	REV.

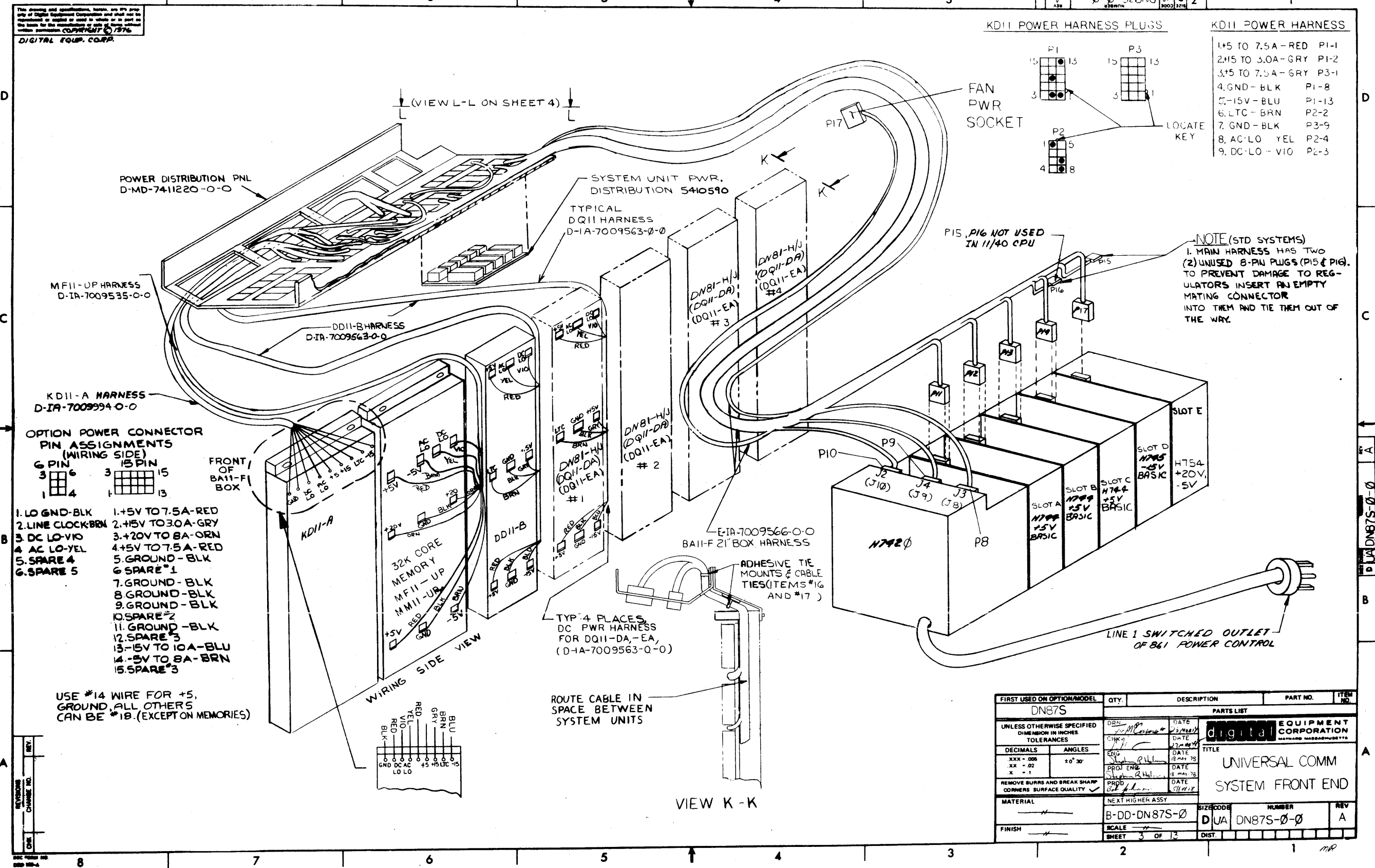
TITLE	UNIVERSAL COMM SYSTEM FRONT END	SIZE CODE	DUA	NUMBER	DN87S-Q-Q	REV.	A
SCALE		SHEET	2	OF	13	DIST.	

DUA DN87S-Q-Q

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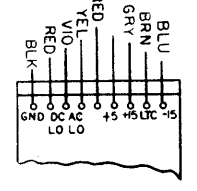


**NOTE (STD SYSTEMS)**  
 1. MAIN HARNESS HAS TWO  
 (2) UNUSED 8-PIN PLUGS (P15 & P16).  
 TO PREVENT DAMAGE TO REG-  
 ULATORS INSERT AN EMPTY  
 MATING CONNECTOR  
 INTO THEM AND TIE THEM OUT  
 OF THE WAY.



- OPTION POWER CONNECTOR PIN ASSIGNMENTS (WIRING SIDE)**
- | 6 PIN |   | 15 PIN |    |
|-------|---|--------|----|
| 1     | 4 | 1      | 15 |
| 2     | 6 | 2      | 14 |
| 3     | 3 | 3      | 13 |
| 4     | 5 | 4      | 12 |
| 5     | 2 | 5      | 11 |
| 6     | 1 | 6      | 10 |
1. LO GND - BLK
  2. LINE CLOCK - BRN
  3. DC LO - VIO
  4. AC LO - YEL
  5. SPARE 4
  6. SPARE 5
  1. +5V TO 7.5A - RED
  2. +15V TO 3.0A - GRY
  3. +20V TO 8A - ORN
  4. +5V TO 7.5A - RED
  5. GROUND - BLK
  6. SPARE #1
  7. GROUND - BLK
  8. GROUND - BLK
  9. GROUND - BLK
  10. SPARE #2
  11. GROUND - BLK
  12. SPARE #3
  13. -15V TO 10A - BLU
  14. -5V TO 8A - BRN
  15. SPARE #3

USE #14 WIRE FOR +5, GROUND, ALL OTHERS CAN BE #18. (EXCEPT ON MEMORIES)



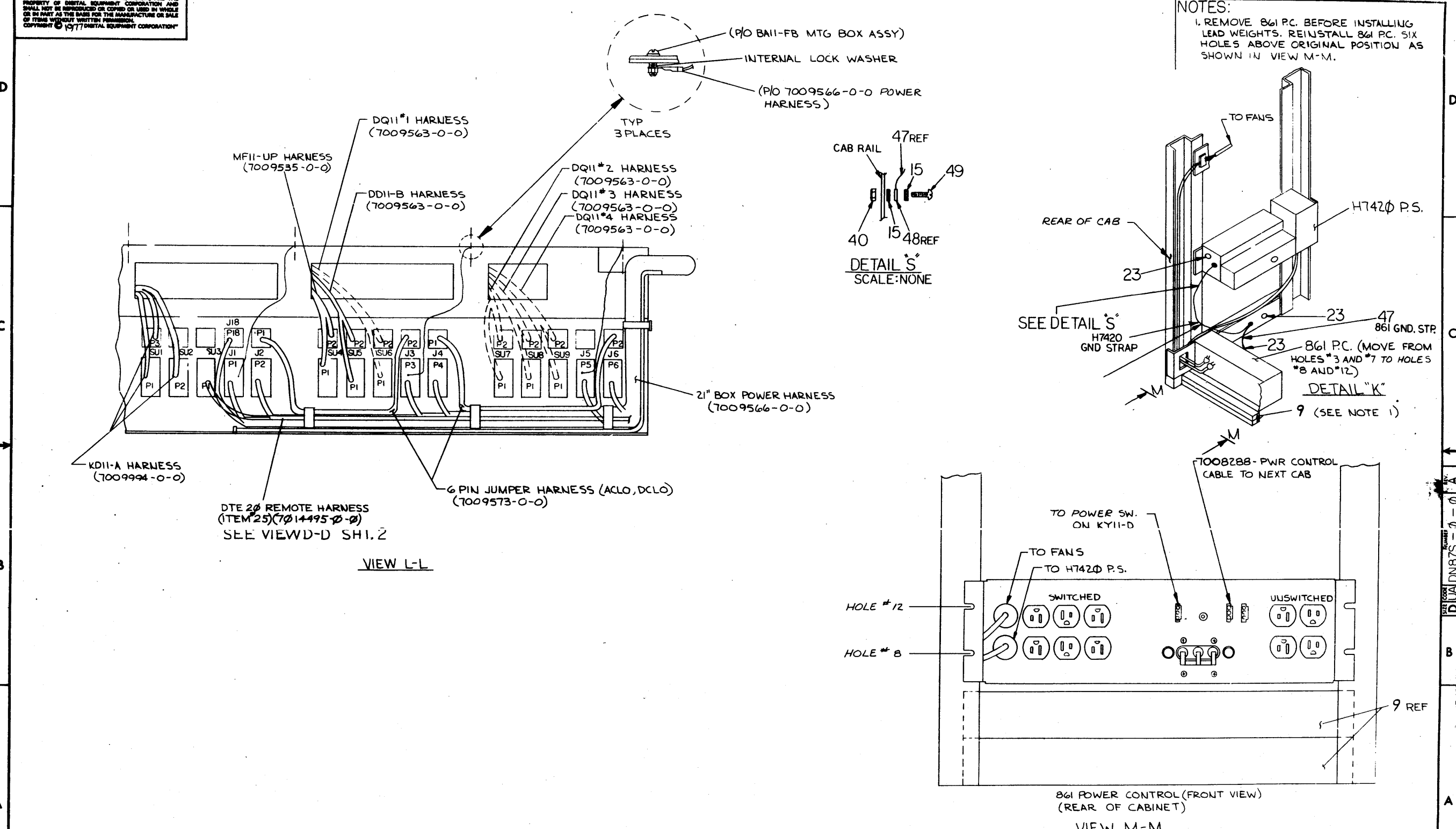
FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DN87S		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	DATE	digital EQUIPMENT CORPORATION	
XXX - 006	±0°30'	DATE	UNIVERSAL COMM SYSTEM FRONT END	
XX - 02		DATE		
X - 1		DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY	SIZE CODE	NUMBER	REV
FINISH	B-DD-DN87S-0	DUA	DN87S-0-0	A
SHEET 3 OF 3		DIST.		



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UNIVERSAL COMM SYSTEM FRONT END  
 3002 1219

NOTES:  
 1. REMOVE 861 P.C. BEFORE INSTALLING LEAD WEIGHTS. REINSTALL 861 P.C. SIX HOLES ABOVE ORIGINAL POSITION AS SHOWN IN VIEW M-M.



REVISIONS		
CHK	CHANGE NO.	REV.

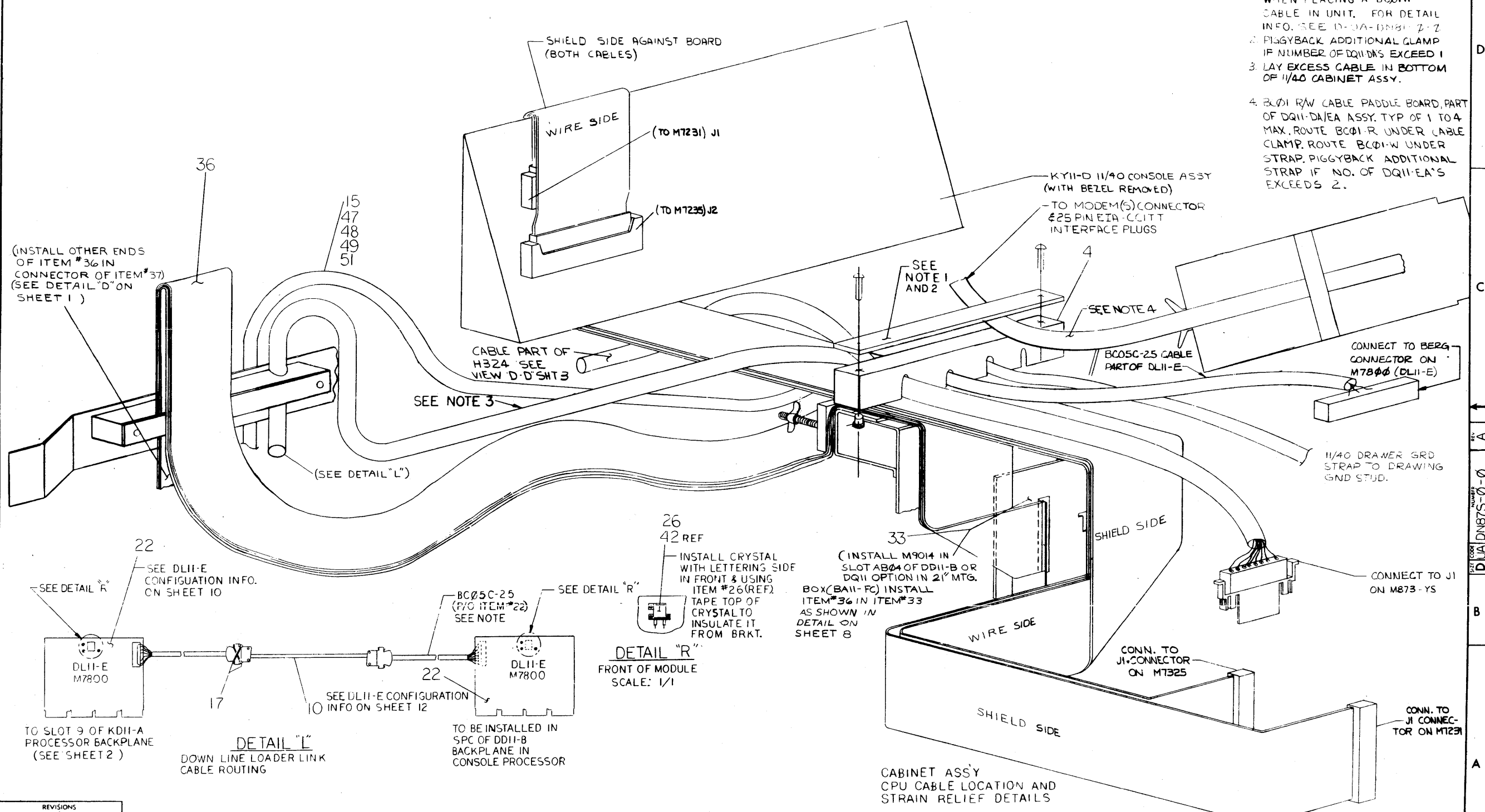
TITLE UNIVERSAL COMM SYSTEM FRONT END  
 SCALE SHEET 4 OF 13  
 SIZE CODE DUA  
 NUMBER DN87S - 0 - 0  
 REV. A

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**DETAIL "J" (FROM SHT. 1)**  
(USED ON ALL CONFIGURATION)

**NOTES:**

1. USE EXISTING STRAIN RELIEF WHEN PLACING A BC01W CABLE IN UNIT. FOR DETAIL INFO. SEE D-0A-DN81-2-2
2. PIGGYBACK ADDITIONAL CLAMP IF NUMBER OF DQ11DS EXCEED 1
3. LAY EXCESS CABLE IN BOTTOM OF 1/40 CABINET ASSY.
4. BC01 RW CABLE PADDLE BOARD, PART OF DQ11-DA/EA ASSY. TYP OF 1 TO 4 MAX. ROUTE BC01-R UNDER CABLE CLAMP. ROUTE BC01-W UNDER STRAP. PIGGYBACK ADDITIONAL STRAP IF NO. OF DQ11-EA'S EXCEEDS 2.

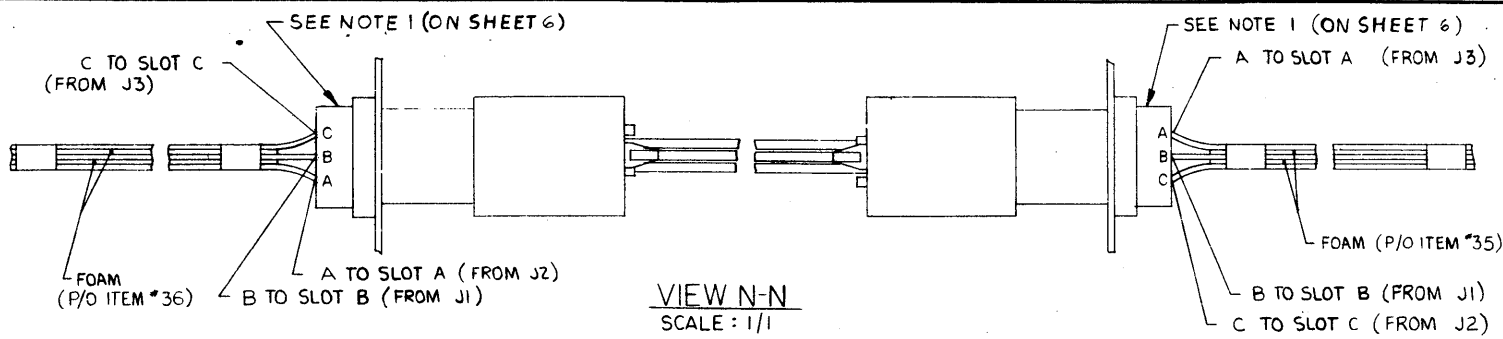


REVISIONS		
CHK	CHANGE NO	REV

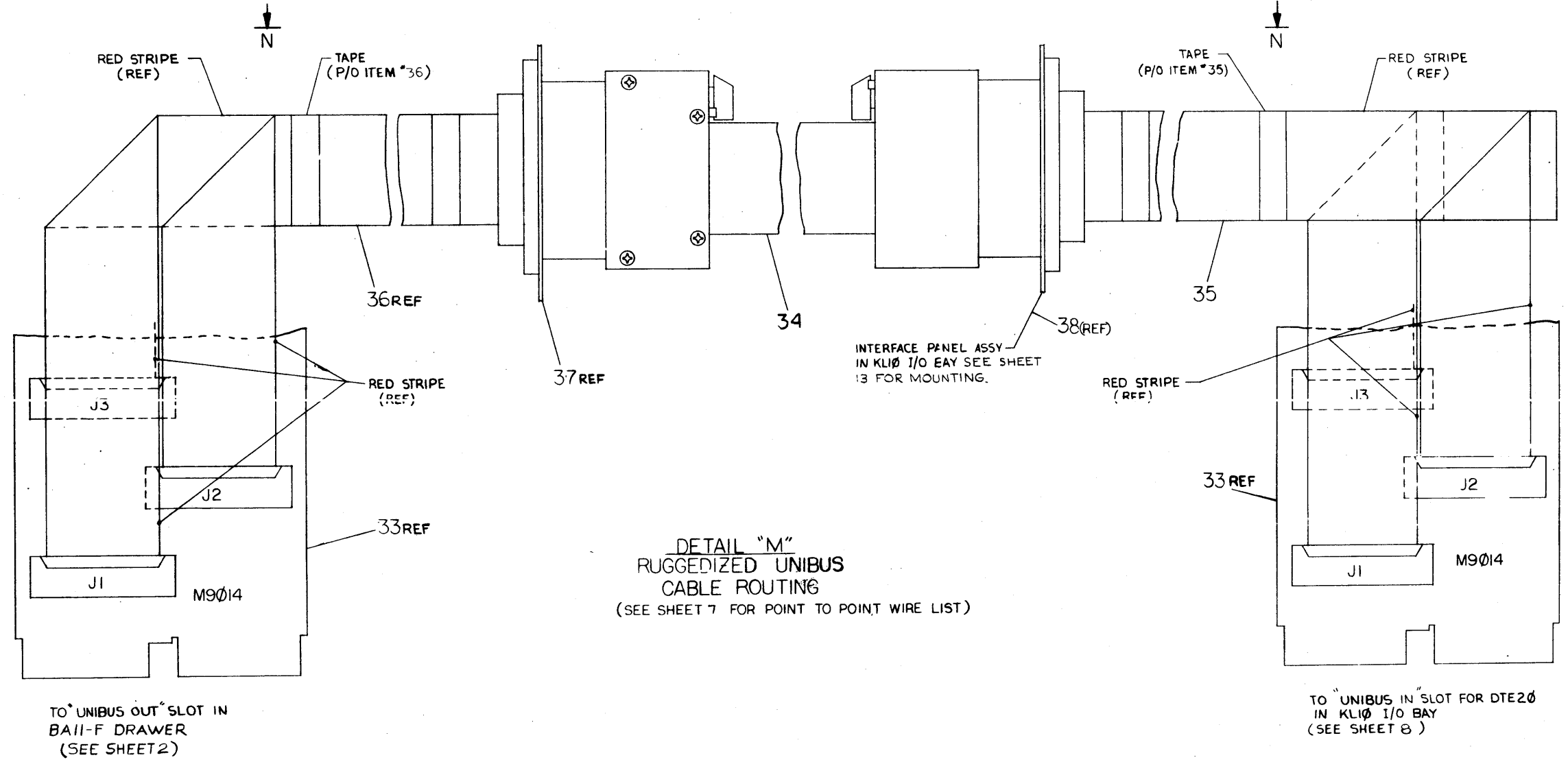
TITLE	UNIVERSAL COMM SYSTEM FRONT END	SIZE	CODE	NUMBER	REV.
SCALE		D	UA	DN87S-0-0	A
SHEET	5 OF 13	DIST			

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0-0-S280 2



NOTES:  
 1. THE BERG CONNECTORS ON THE INTERNAL UNIBUS ASSEMBLY CAN EASILY BE INSERTED INTO THE MASS BUS HOUSING INCORRECTLY (EITHER SHIFTED UP OR DOWN ONE ROW OF PINS). CAUTION SHOULD BE EXERCISED WHEN INSERTING THESE CONNECTORS TO GUARANTEE THAT THEY ARE INSERTED CORRECTLY.



DETAIL "M"  
 RUGGEDIZED UNIBUS  
 CABLE ROUTING  
 (SEE SHEET 7 FOR POINT TO POINT WIRE LIST)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE UNIVERSAL COMM SYSTEM, FRONT END  
 SCALE 1/1 SHEET 6 OF 13  
 SIZE CODE DUA DN87S-Ø-Ø  
 NUMBER 1  
 REV. A

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0-0-528 NO. 2  
A38

RUGGEDIZED  
UNIBUS CABLE ROUTING  
POINT TO POINT  
WIRE LIST

UNIBUS SIGNAL NAME	FRONT END UNIBUS P.I.N. ASSIGNMENT	FRONT END TRANSITION CONNECTOR (PN700986)		FRONT END TRANSITION CONNECTOR (PN700986)		FRONT END TRANSITION CONNECTOR (PN700986)		KLI9 UNIBUS P.I.N. ASSIGNMENT
		JACK P.I.N.	SLOT P.I.N.	JACK P.I.N.	SLOT P.I.N.	JACK P.I.N.	SLOT P.I.N.	
AB0 L	BH2	J1 D	B 4	B 4	B 4	J1 D	B 4	BH2
AB1 L	BH1	J1 B	B 2	B 2	B 2	J1 B	B 2	BH1
AB2 L	BJ2	J1 J	B 8	B 8	B 8	J1 J	B 8	BJ2
AB3 L	BJ1	J1 F	B 6	B 6	B 6	J1 F	B 6	BJ1
AB4 L	BK2	J1 N	B 12	B 12	B 12	J1 N	B 12	BK2
AB5 L	BK1	J1 L	B 10	B 10	B 10	J1 L	B 10	BK1
AB6 L	BL2	J1 T	B 16	B 16	B 16	J1 T	B 16	BL2
AB7 L	BL1	J1 R	B 14	B 14	B 14	J1 R	B 14	BL1
AB8 L	BW2	J1 X	B 20	B 20	B 20	J1 X	B 20	BW2
AB9 L	BW1	J1 V	B 18	B 18	B 18	J1 V	B 18	BW1
AB0 L	BX2	J1 BB	B 24	B 24	B 24	J1 BB	B 24	BX2
AB1 L	BX1	J1 Z	B 22	B 22	B 22	J1 Z	B 22	BX1
AB2 L	BP2	J1 FF	B 28	B 28	B 28	J1 FF	B 28	BP2
AB3 L	BP1	J1 DD	B 26	B 26	B 26	J1 DD	B 26	BP1
AB4 L	BR2	J1 LL	B 32	B 32	B 32	J1 LL	B 32	BR2
AB5 L	BR1	J1 JJ	B 30	B 30	B 30	J1 JJ	B 30	BR1
AB6 L	BS2	J1 RR	B 36	B 36	B 36	J1 RR	B 36	BS2
AB7 L	BS1	J1 NN	B 34	B 34	B 34	J1 NN	B 34	BS1
AB8 L	BF1	J2 VV	A 40	C 40	C 40	J2 VV	A 40	BF1
AB9 L	AP2	J3 BB	C 24	A 24	A 24	J3 BB	C 24	AP2
AB0 L	BE2	J3 X	C 20	A 20	A 20	J3 X	C 20	BE2
AB1 L	BB1	J3 T	C 16	A 16	A 16	J3 T	C 16	BB1
AB2 L	BA1	J3 N	C 12	A 12	A 12	J3 N	C 12	BA1
AB3 L	AV1	J3 J	C 8	A 8	A 8	J3 J	C 8	AV1
AB4 L	BD2	J3 V	C 18	A 18	A 18	J3 V	C 18	BD2
AB5 L	BC1	J3 R	C 14	A 14	A 14	J3 R	C 14	BC1
AB6 L	AU2	J3 L	C 10	A 10	A 10	J3 L	C 10	AU2
AB7 L	AT2	J3 F	C 6	A 6	A 6	J3 F	C 6	AT2
AB8 L	BU2	J3 NN	C 34	A 34	A 34	J3 NN	C 34	BU2
AB9 L	BT2	J1 TT	B 38	B 38	B 38	J1 TT	B 38	BT2
AB0 L	AC1	J2 B	A 2	C 2	C 2	J2 B	A 2	AC1
AB1 L	AD2	J2 F	A 6	C 6	C 6	J2 F	A 6	AD2
AB2 L	AD1	J2 D	A 4	C 4	C 4	J2 D	A 4	AD1
AB3 L	AE2	J2 L	A 10	C 10	C 10	J2 L	A 10	AE2
AB4 L	AE1	J2 J	A 8	C 8	C 8	J2 J	A 8	AE1
AB5 L	AF2	J2 R	A 14	C 14	C 14	J2 R	A 14	AF2
AB6 L	AF1	J2 N	A 12	C 12	C 12	J2 N	A 12	AF1
AB7 L	AH2	J2 V	A 18	C 18	C 18	J2 V	A 18	AH2
AB8 L	AH1	J2 T	A 16	C 16	C 16	J2 T	A 16	AH1
AB9 L	AJ2	J2 X	A 22	C 22	C 22	J2 X	A 22	AJ2
AB0 L	AJ1	J2 X	A 20	C 20	C 20	J2 X	A 20	AJ1
AB1 L	AK2	J2 DD	A 26	C 26	C 26	J2 DD	A 26	AK2
AB2 L	AK1	J2 BB	A 24	C 24	C 24	J2 BB	A 24	AK1
AB3 L	AL2	J2 JJ	A 30	C 30	C 30	J2 JJ	A 30	AL2
AB4 L	AL1	J2 FF	A 28	C 28	C 28	J2 FF	A 28	AL1
AB5 L	AM2	J2 NN	A 34	C 34	C 34	J2 NN	A 34	AM2
GROUND	AB2	THE FOLLOWING PINS ON SLOTS A, B AND C ARE GROUNDED.		THE FOLLOWING PINS ON SLOTS A, B AND C ARE GROUNDED.		THE FOLLOWING PINS ON SLOTS A, B AND C ARE GROUNDED.		AB2
GROUND	AC2	THE FOLLOWING PINS ON SLOTS A, B AND C ARE GROUNDED.		THE FOLLOWING PINS ON SLOTS A, B AND C ARE GROUNDED.		THE FOLLOWING PINS ON SLOTS A, B AND C ARE GROUNDED.		AC2
GROUND	AN1	A S	HH	1	15	29	A S	HH
GROUND	AP1	A U	MM	3	17	31	A U	MM
GROUND	AR1	A V	NN	5	19	33	A V	NN
GROUND	AS1	A H	PP	7	21	35	A H	PP
GROUND	AT1	A K	SS	9	23	37	A K	SS
GROUND	AV2	A M	UU	11	25	39	A M	UU
GROUND	BB2	A P	EE	13	27	41	A P	EE
GROUND	BC2	J1 VV	B 40	B 40	B 40	J1 VV	B 40	BC2
GROUND	BD1	J2 TT	C 38	C 38	C 38	J2 TT	C 38	BD1
GROUND	BE1	J3 DD	A 26	A 26	A 26	J3 DD	A 26	BE1
GROUND	BT1	J3 RR	A 36	A 36	A 36	J3 RR	A 36	BT1
GROUND	BY2	J3 Z	A 22	A 22	A 22	J3 Z	A 22	BY2
INTR L	AA1	J3 FF	A 28	A 28	A 28	J3 FF	A 28	AA1
INTR L	AB1	J3 LL	A 32	A 32	A 32	J3 LL	A 32	AB1
MSYN L	BV1	J3 D	A 4	A 4	A 4	J3 D	A 4	BV1
NPG H	AU1	J3 B	A 2	A 2	A 2	J3 B	A 2	AU1
NPR L	AS2	J2 LL	C 32	C 32	C 32	J2 LL	C 32	AS2
PA L	AM1	J2 RR	A 36	A 36	A 36	J2 RR	A 36	AM1
PB L	AN2	J2 RR	A 36	A 36	A 36	J2 RR	A 36	AN2
+5V	AA2							AA2
+5V	BA2							BA2
SACK L	AR2	J3 TT	C 38	C 38	C 38	J3 TT	C 38	AR2
DCL0 L	BF2	J3 VV	C 40	C 40	C 40	J3 VV	C 40	BF2
SSYN L	BU1	J3 JJ	C 30	C 30	C 30	J3 JJ	C 30	BU1

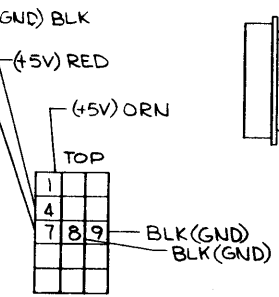
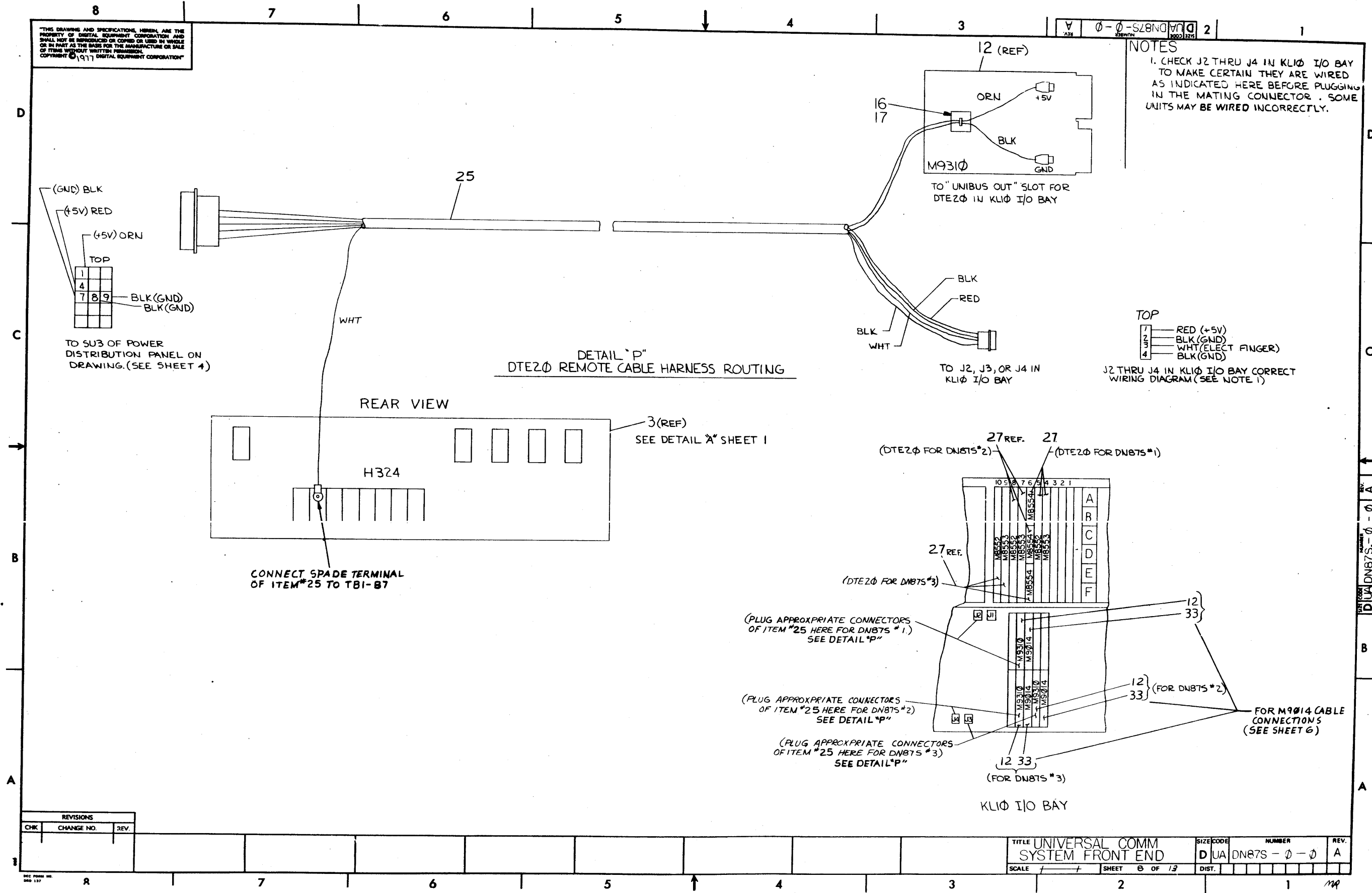
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE UNIVERSAL COMM SYSTEM FRONT END  
SCALE NONE SHEET 7 OF 13  
SIZE CODE NUMBER DUA DN87S-0-0  
REV. A

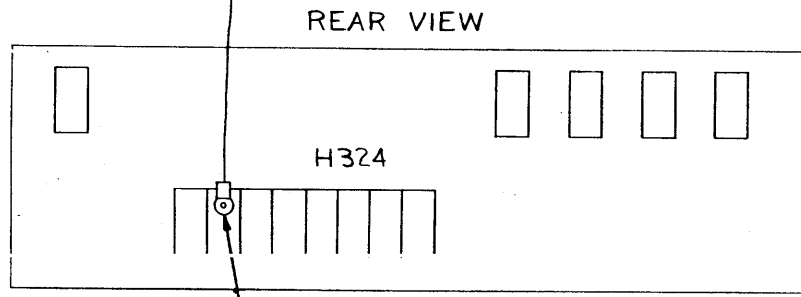
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0-0-SZ8NDVND 2

NOTES  
 1. CHECK J2 THRU J4 IN KLIØ I/O BAY TO MAKE CERTAIN THEY ARE WIRED AS INDICATED HERE BEFORE PLUGGING IN THE MATING CONNECTOR. SOME UNITS MAY BE WIRED INCORRECTLY.



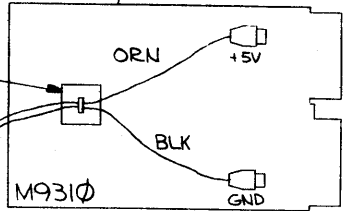
TO SUB OF POWER DISTRIBUTION PANEL ON DRAWING. (SEE SHEET 4)



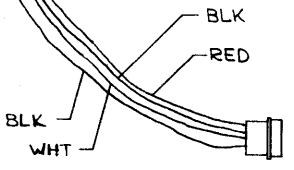
CONNECT SPADE TERMINAL OF ITEM #25 TO TBI-B7

DETAIL "P"  
 DTEZØ REMOTE CABLE HARNESS ROUTING

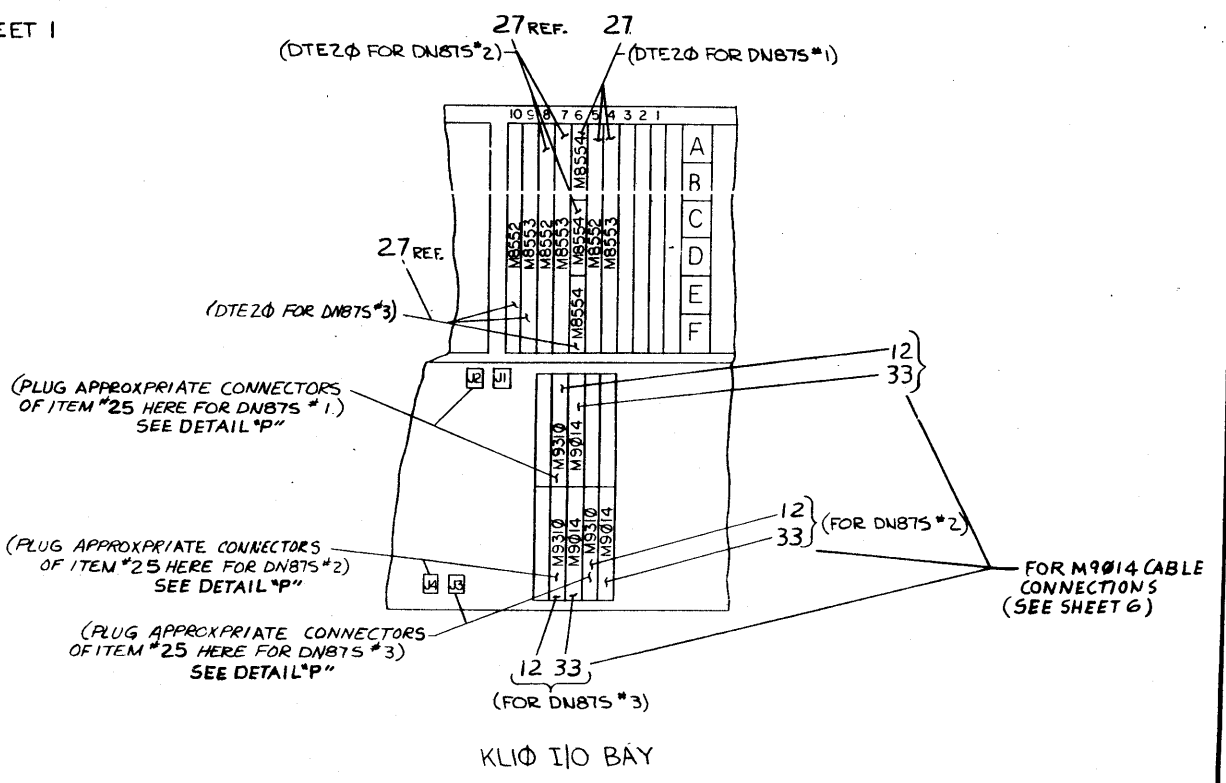
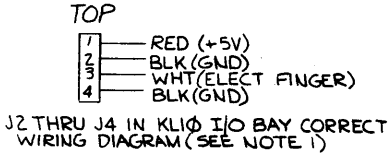
3 (REF)  
 SEE DETAIL "X" SHEET 1



TO "UNIBUS OUT" SLOT FOR DTEZØ IN KLIØ I/O BAY



TO J2, J3, OR J4 IN KLIØ I/O BAY



(PLUG APPROPRIATE CONNECTORS OF ITEM #25 HERE FOR DN875\*1) SEE DETAIL "P"

(PLUG APPROPRIATE CONNECTORS OF ITEM #25 HERE FOR DN875\*2) SEE DETAIL "P"

(PLUG APPROPRIATE CONNECTORS OF ITEM #25 HERE FOR DN875\*3) SEE DETAIL "P"

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	UNIVERSAL COMM SYSTEM FRONT END	SIZE CODE	DUA	NUMBER	DN875-Ø-Ø	REV.	A
SCALE	1" = 1'	SHEET	Ø	OF	13	DIST.	

DEC FORM 100 280 117

119

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CSR ADDRESSES AND VECTOR VALUES FOR DQ11'S, DH11'S, DM11-BB'S AND DN11'S.  
 ALL CONFIGURATIONS

DQ11 CSR ADDRESSES AND VECTOR VALUES

NUMBER OF DQ11'S	1	2	3	4	5	6	7	8	9	10	11	12
DQ11-DA #1	760230 520	760230 520	760230 520	760230 520	760230 520	760230 520	760230 520	760230 520	760230 520	760230 520	760230 520	760230 520
#2		760240 530	760240 530	760240 530	760240 530	760240 530	760240 530	760240 530	760240 530	760240 530	760240 530	760240 530
#3			760250 540	760250 540	760250 540	760250 540	760250 540	760250 540	760250 540	760250 540	760250 540	760250 540
#4				760260 550	760260 550	760260 550	760260 550	760260 550	760260 550	760260 550	760260 550	760260 550
#5					760270 560	760270 560	760270 560	760270 560	760270 560	760270 560	760270 560	760270 560
#6						760300 570	760300 570	760300 570	760300 570	760300 570	760300 570	760300 570
#7							760310 600	760310 600	760310 600	760310 600	760310 600	760310 600
#8								760320 610	760320 610	760320 610	760320 610	760320 610
#9									760330 620	760330 620	760330 620	760330 620
#10										760340 630	760340 630	760340 630
#11											760350 640	760350 640
#12												760360 650

CSR ADDRESS & VECTOR VALUES, JUMPER MODIFICATIONS: ASYNC & SYNC/ASYNC CONFIGURATIONS  
 FOR DH11-AA, DM11-BB; 115V, W/CAB OR DH11-AC, DM11-BB; 230V, W/CAB AND/OR  
 ADDITIONAL DH11-AA, DM11-BB OR DH11-AC, DM11-BB ASYNC LINE MUX EXPANSIONS.

NUMBER OF DH11'S	1	2	3	4	5	6	7	8
DH11 #1	760020 330	760020 330	760020 330	760020 330	760020 330	760020 330	760020 330	760020 330
#2		760040 350	760040 350	760040 350	760040 350	760040 350	760040 350	760040 350
#3			760060 370	760060 370	760060 370	760060 370	760060 370	760060 370
#4				760100 410	760100 410	760100 410	760100 410	760100 410
#5					760120 430	760120 430	760120 430	760120 430
#6						760140 450	760140 450	760140 450
#7							760160 470	760160 470
#8								760200 510

NUMBER OF DM11-BB'S	1	2	3	4	5	6	7	8
DM11-BB #1	770500 320	770500 320	770500 320	770500 320	770500 320	770500 320	770500 320	770500 320
#2		770510 340	770510 340	770510 340	770510 340	770510 340	770510 340	770510 340
#3			770520 360	770520 360	770520 360	770520 360	770520 360	770520 360
#4				770530 400	770530 400	770530 400	770530 400	770530 400
#5					770540 420	770540 420	770540 420	770540 420
#6						770550 440	770550 440	770550 440
#7							770560 460	770560 460
#8								770570 500

DN11 CSR ADDRESSES AND VECTOR VALUES

NUMBER OF DN11'S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
DN11 #1	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660
#2		775210 664	775210 664	775210 664	775210 664	775210 664	775210 664	775210 664	775210 664	775210 664	775210 664	775210 664	775210 664	775210 664	775210 664	775210 664
#3			775220 670	775220 670	775220 670	775220 670	775220 670	775220 670	775220 670	775220 670	775220 670	775220 670	775220 670	775220 670	775220 670	775220 670
#4				775230 674	775230 674	775230 674	775230 674	775230 674	775230 674	775230 674	775230 674	775230 674	775230 674	775230 674	775230 674	775230 674
#5					775240 700	775240 700	775240 700	775240 700	775240 700	775240 700	775240 700	775240 700	775240 700	775240 700	775240 700	775240 700
#6						775250 704	775250 704	775250 704	775250 704	775250 704	775250 704	775250 704	775250 704	775250 704	775250 704	775250 704
#7							775260 710	775260 710	775260 710	775260 710	775260 710	775260 710	775260 710	775260 710	775260 710	775260 710
#8								775270 714	775270 714	775270 714	775270 714	775270 714	775270 714	775270 714	775270 714	775270 714
#9									775300 720	775300 720	775300 720	775300 720	775300 720	775300 720	775300 720	775300 720
#10										775310 724	775310 724	775310 724	775310 724	775310 724	775310 724	775310 724
#11											775320 730	775320 730	775320 730	775320 730	775320 730	775320 730
#12												775330 734	775330 734	775330 734	775330 734	775330 734
#13													775340 740	775340 740	775340 740	775340 740
#14														775350 744	775350 744	775350 744
#15															775360 750	775360 750
#16																775370 754

NOTES ON ADDRESS/VECTOR STRAPPING:

- THE TOTAL NUMBER OF DQ11-DA OPTIONS THAT CAN BE INSTALLED IN A SYNC/ASYNC SYSTEM IS SHOWN BELOW.
  - THE MAXIMUM NUMBER OF DH11-A AND DM11-BB OPTIONS THAT CAN BE INSTALLED IN A SYNC/ASYNC SYSTEM IS SHOWN BELOW.
- |          |                      |
|----------|----------------------|
| # DQ11'S | # DH11'S & DM11-BB'S |
| 1-4      | 4                    |
| 5-8      | 2                    |

REVISIONS		
CHK	CHANGE NO	REV

TITLE	UNIVERSAL COMM. SYSTEM FRONT END	SIZE CODE	DUA DN875-0-0	NUMBER		REV.	A
SCALE		SHEET	9 OF 13	DIST.			

DUA DN875-0-0

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**PDPII BIT TO OCTAL DIGIT CORRESPONDENCE**

BIT ORDER	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EXAMPLE	6TH			5TH			4TH			3RD			2ND			1ST		
OCTAL DIGIT	7			6			0			0			2			0		
BINARY VALUE	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0

**OCTAL TO JUMPER CONVERSIONS FOR DH11 AND DM11-BB**  
**M7821 INTERRUPT MODULE**  
 FOR DM11-BB & DH11-AA, AC  
 MU LOC FOR DM11-BB = F81; FOR DH11-AA, AC = A86

**JUMPER ETCH MARKS**

	W8	W7	W6	W5	W4	W3	W2*
320	OUT	IN	IN	OUT	IN	OUT	IN
330	OUT	IN	IN	OUT	IN	OUT	IN
340	OUT	IN	IN	OUT	IN	OUT	IN
350	OUT	IN	IN	OUT	IN	OUT	IN
360	OUT	IN	IN	OUT	IN	OUT	IN
370	OUT	IN	IN	OUT	IN	OUT	IN
400	IN	OUT	OUT	OUT	OUT	OUT	IN
410	IN	OUT	OUT	OUT	OUT	OUT	IN
420	IN	OUT	OUT	OUT	OUT	OUT	IN
430	IN	OUT	OUT	OUT	OUT	OUT	IN
440	IN	OUT	OUT	IN	OUT	OUT	IN
450	IN	OUT	OUT	IN	OUT	OUT	IN
460	IN	OUT	OUT	IN	OUT	OUT	IN
470	IN	OUT	OUT	IN	OUT	OUT	IN
500	IN	OUT	IN	OUT	OUT	OUT	IN
510	IN	OUT	IN	OUT	OUT	OUT	IN

SEE SHEET 16 FOR DM11-BB & DH11-AA, AC VECTOR VALUES  
 OUT = 0  
 IN = 1

**NPR CONTROL**  
 ALL JUMPERS ARE "DON'T CARE" (IN OR OUT)  
**NPR SPEED UP**  
 W9: IN

**M7277: MU LOC ABCDEF#4**  
 DH11-A: ADDRESS: OUT = 1 IN = 0

**JUMPER ETCH MARKS**

	Z7	Z6	Z5	Z4	
760	020	IN	IN	IN	OUT
040	IN	IN	OUT	IN	
060	IN	IN	OUT	OUT	
100	IN	OUT	IN	IN	
120	IN	OUT	IN	OUT	
140	IN	OUT	OUT	IN	
160	IN	OUT	OUT	OUT	
200	OUT	IN	IN	IN	

**DH11-A: G736# PRIORITY SEL BOARD: LOC A87**  
 BR LEVEL SEL PLUGS SHOULD BE P/N 5409778 (LEVEL 5).

**M185: MU LOC E81**  
 DM11-BB ADDRESS: OUT = 1 IN = 0  
 BITS 6, 8 & 12 ARE ALL OUT  
 BITS 7, 9, 10 & 11 ARE ALL IN

**JUMPER ETCH MARKS**

	W5	W4	W3	
770	500	IN	IN	IN
510	IN	IN	OUT	
520	IN	OUT	IN	
530	IN	OUT	OUT	
540	OUT	IN	IN	
550	OUT	IN	OUT	
560	OUT	OUT	IN	
570	OUT	OUT	OUT	

**DQ11-DA OCTAL TO JUMPER CONVERSION, VECTOR VALUES**  
 M7821 (LOC C84) W9-NPR LATENCY ALWAYS IN  
 JUMPER ETCH MARKS: OUT = 0 IN = 1

W8	W7	W6	W5	W4	W3	W2	DQ11 VECTOR VALUE
IN	OUT	IN	OUT	IN	OUT	IN	520
IN	OUT	IN	OUT	IN	IN	IN	530
IN	OUT	IN	IN	OUT	OUT	IN	540
IN	OUT	IN	IN	OUT	IN	IN	550
IN	OUT	IN	IN	IN	OUT	IN	560
IN	OUT	IN	IN	IN	IN	IN	570
IN	IN	OUT	OUT	OUT	OUT	IN	600
IN	IN	OUT	OUT	OUT	IN	IN	610
IN	IN	OUT	OUT	IN	OUT	IN	620
IN	IN	OUT	OUT	IN	IN	IN	630
IN	IN	OUT	OUT	OUT	OUT	IN	640
IN	IN	OUT	OUT	OUT	IN	IN	650

**DQ11-DA/EA SWITCH/STRAP PROTOCOL & INTERFACE OPTIONS SELECTION SYNC/ASYNC CONFIGURATION**

(SYNC/ASYNC CONFIGURATIONS)  
**M7812 MODULE (MU LOC ABCDEF#2) (CSR BUS SELECTORS & SHIFT REGISTERS DQ11 DWG D4-3)**  
 SWITCH PACKAGE S1  
 SW1 → ON (EXT CLOCK TO MODEM INTERFACE)  
 SW2 → OFF (SCT → SCTE) ("ON" IF COMM. TO BELL 308 T1 CARRIER IS USED).  
 SW3 → OFF (±16; USE WITH DQ11-KA OR DN83 SYNC NULL MODEM; THEN SET TO ON)  
 SW4 → OFF (±2; USE WITH DQ11-KA OR DN83 SYNC NULL MODEM; THEN SET TO ON)  
 SET SW5 → OFF IF DQ11-DA IS CONNECTED TO BELL 201 A/B MODE, OR IF EXT CLOCK DQ11-KA OR DN83 IS INSTALLED.  
 SET SW5 → ON WHEN USING FOR ALL OTHER CONDITIONS. MUST BE SET TO ON WHEN EXECUTING DIAGNOSTICS MD11-DZ80A THRU MD11-DZ80F.  
 SET SW4 → OFF OR ON: VRC NOT CHECKED FOR ODD/EVEN BITS/BYTES.

**M7813 MODULE (MU LOC ABCDEF#3) (CC/BA & SHIFT CONTROL DQ11 DWG D5-7)**  
 SW1 → ON (TWO OR MORE SYNC CHAR FROM FRAMING)  
 SW2 → ON (RCVR ACTIVE AFTER FRAME)  
 SW4 → OFF (ODD VRC CHAR)  
 SW4 → ON (EVEN VRC CHAR)  
 INSTALL BR5 PRIORITY PLUG P/N 5409778

**M7815 MODULE (MU LOC E81) (DATASET CONTROL DQ11 DWG D2-1)**  
 W1 → W4 NO CUTS  
 NO INTERRUPTS ON U813, U814  
 INHIBIT INIT RS AND DTR  
 INHIBIT INTERRUPTION RING APPEARANCE

**M7818 MODULE (LOC EF#4) (8 BIT ASCII, CHAR DETECT & INTERRUPT TRIGGER LOGIC DQ11 DWG D6-1)**  
 S1 SW1 → SW8 → ON (CHAR 0, LO BYTE)  
 S2 SW9 → SW16 → ON (CHAR 1, LO BYTE)  
 S3 SW17 → SW24 → ON (CHAR 2, LO BYTE)  
 S4 SW25 → SW32 → OFF, ON, OFF, ON, ON, ON, ON, ON (CHAR 0, HI BYTE, ENQ 805)  
 S6 SW49 → SW56 → ON, ON, ON, ON, OFF, ON, ON, OFF (CHAR 1, HI BYTE, DLE 220)  
 S7 SW41 → SW48 → OFF, ON, ON, ON, ON, ON, ON, OFF (CHAR 2, HI BYTE, SOH 201)  
 S5 SW33 → ON ENABLES HI BYTE CHAR 0  
 SW34 → ON ENABLES HI BYTE CHAR 1  
 SW35 → ON ENABLES HI BYTE CHAR 2  
 SW36 → OFF DISABLES LO BYTE CHAR 0  
 SW37 → OFF DISABLES LO BYTE CHAR 1  
 SW38 → OFF DISABLES LO BYTE CHAR 2  
 SW39 → OFF DISABLES SYNC COMPARE WHEN OFF  
 SW40 → ON ALLOWS SPEC. CHAR AND SYNC COMPARE INTERRUPTS WHEN ON

**DQ11-C CONSOLE TERMINAL CONTROLLER**  
 M7888-YA ASYNC. LINE INTERFACE LOCATION CDEF#8 (KD11-A BACKPLANE)

JUMPER	STATE	COMMENTS
J1	EITHER	EIA REQUEST TO SEND
J2	OUT	EIA FORCE BUSY
J3	EITHER	EIA REQUEST TO SEND CONTROL
J4	EITHER	EIA DATA LEADS ONLY
J5	IN	BREAK
J6	OUT	DATA SET INTERRUPTS
J7	OUT	DATA SET STATUS BITS
J8	IN	ERROR BITS
J9	OUT	STOP BITS
J10	IN	STOP BITS
J11	OUT	STOP BITS
J12	IN	STOP BITS
NP	OUT	PARITY BITS
NP	OUT	PARITY BITS
EPS	EITHER	PARITY BITS
NB1	OUT	DATA BITS
NB2	OUT	DATA BITS
N1	IN	NPR LATENCY
A3	IN	ADDRESS BIT #3
A4	OUT	ADDRESS BIT #4
A5	OUT	ADDRESS BIT #5
A6	OUT	ADDRESS BIT #6
A7	IN	ADDRESS BIT #7
A8	OUT	ADDRESS BIT #8
A9	OUT	ADDRESS BIT #9
A10	OUT	ADDRESS BIT #10
V3	OUT	VECTOR BIT #3
V4	IN	VECTOR BIT #4
V5	IN	VECTOR BIT #5
V6	OUT	VECTOR BIT #6
V7	OUT	VECTOR BIT #7
V8	OUT	VECTOR BIT #8

1 STOP BIT  
 NO HARDWARE PARITY  
 EIGHT DATA BITS  
 A3-A10 BASE ADDRESS 777560  
 V3-V8 VECTOR ADDRESS 60  
 OPERATING SPEED: 300 BAUD TX, 300 BAUD RX; SWITCH POSITION: #2 RX#2TX  
 CRYSTAL 1805501-7 (4.698 MHZ) SPEED GROUP 4  
 PRIORITY PLUG 5408776-0-0 (BR4)

**BM873-YG BOOTSTRAP ROM LOADER (SEE NOTE)**  
 M7873-YG RESTART LOADER LOCATION CDEF#2 (DQ11-B BACKPLANE)

LOWEST ACCEPTABLE REVISION ETCH REV D, CS REV F  
 DIODE INSTALLATION TABLE

DIODE	STATE	COMMENTS
D1	OUT	BIT 1, WORD 1
D2	OUT	BIT 1, WORD 2
D3	OUT	BIT 1, WORD 3
D4	OUT	BIT 1, WORD 4
D5	OUT	BIT 2, WORD 1
D6	OUT	BIT 2, WORD 2
D7	OUT	BIT 2, WORD 3
D8	IN	BIT 2, WORD 4
D9	OUT	BIT 3, WORD 1
D10	IN	BIT 3, WORD 2
D11	OUT	BIT 3, WORD 3
D12	IN	BIT 3, WORD 4
D13	OUT	BIT 4, WORD 1
D14	IN	BIT 4, WORD 2
D15	IN	BIT 4, WORD 3
D16	IN	BIT 4, WORD 4
D17	OUT	BIT 5, WORD 1
D18	OUT	BIT 5, WORD 2
D19	OUT	BIT 5, WORD 3
D20	IN	BIT 5, WORD 4
D21	OUT	BIT 6, WORD 1
D22	OUT	BIT 6, WORD 2
D23	OUT	BIT 6, WORD 3
D24	IN	BIT 6, WORD 4
D25	OUT	BIT 7, WORD 1
D26	OUT	BIT 7, WORD 2
D27	OUT	BIT 7, WORD 3
D28	OUT	BIT 7, WORD 4
D29	OUT	BIT 8, WORD 1
D30	OUT	BIT 8, WORD 2
D31	OUT	BIT 8, WORD 3
D32	IN	BIT 8, WORD 4

**NOTE:**  
 BM873-YG INFORMATION IS FOR REFERENCE PURPOSES ONLY, BM873-YJ INFORMATION AVAILABLE ON SHEET 12. OLDER MACHINES MAY HAVE BM873-YG INSTALLED. SEE LEGEND ON SHEET 2 FOR DETAILS OF DIFFERENCES IF BM873-YJ IS INSTALLED.

CONTINUED ON SHEET 11

**REVISIONS**

CHK	CHANGE NO	REV



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CONTINUED FROM SHEET 17

M873-YG RESTART LOADER CONTINUED

JUMPER TABLE

JUMPER	STATE	COMMENTS
W1	IN	IN FOR 11/43 USE
W2	OUT	IN FOR 11/45 AND 11/45 USE
W3	OUT	ENABLE OFFSET ROMS

RESISTOR R3 MUST BE REMOVED

INPUT #1 OFFSET ADDRESS 820 (DIAG. BOOT)  
 INPUT #2 OFFSET ADDRESS 830 (NOT USED)  
 INPUT #3 OFFSET ADDRESS 820 (NOT USED)  
 INPUT #4 OFFSET ADDRESS 514 (DTE2B)

DL11-E DOWN LINE LOAD (11/40 CTY DL11-E SEE DETAIL "L") LINK CONTROLLER

M7800 ASYNC. LINE INTERFACE LOCATION CDEF#3 BACKPLANE)

JUMPER	STATE	COMMENTS
J1	IN	EIA REQUEST TO SEND
J2	OUT	EIA FORCE BUSY
J3	IN	EIA REQUEST TO SEND CONTROL
J4	OUT	EIA DATA LEADS ONLY
J5	IN	BREAK
J6	IN	DATA SET INTERRUPTS
J7	IN	DATA SET STATUS BITS
J8	IN	ERROR BITS
J9	OUT	STOP BITS
J10	IN	STOP BITS
J11	OUT	STOP BITS
23B	IN	STOP BITS
NP	OUT	PARITY BITS
EPS	EITHER	PARITY BITS
NB1	OUT	DATA BITS
NB2	OUT	DATA BITS
N1	IN	NPR LATENCY
A3	IN	ADDRESS BIT #3
A4	OUT	ADDRESS BIT #4
A5	OUT	ADDRESS BIT #5
A6	OUT	ADDRESS BIT #6
A7	IN	ADDRESS BIT #7
A8	OUT	ADDRESS BIT #8
A9	OUT	ADDRESS BIT #9
A10	OUT	ADDRESS BIT #10
V3	OUT	VECTOR BIT #3
V4	IN	VECTOR BIT #4
V5	IN	VECTOR BIT #5
V6	OUT	VECTOR BIT #6
V7	OUT	VECTOR BIT #7
V8	OUT	VECTOR BIT #8

1 STOP BIT  
 NO HARDWARE PARITY  
 EIGHT DATA BITS  
 A3-A10 BASE ADDRESS 777560  
 V3-V8 VECTOR ADDRESS 60  
 OPERATING SPEED: R SWITCH=POSITION 8 (RECEIVING SPEED=9600 BAUD)  
 T SWITCH=POSITION 2 (TRANSMITTING SPEED=300 BAUD)  
 CRYSTAL: 1805501-7 (4.608 MHZ. SPEED GROUP 4)  
 PRIORITY PLUG: 5498776-0-0 (BR4)

KG11-A COMMUNICATIONS ARITHMETIC OPTION

M7251 XOR & CRC BLOCK CHECK LOCATION CDEF#1 (DD11-B BACKPLANE)

ADDRESS	REGISTER NAME
770700	STATUS
770702	REC
770704	DATA

DD11-DA/EA OCTAL TO JUMPER CONVERSION/OSP VALUES

JUMPER										DEVICE
12	11	10	9	8	7	6	5	4	3	ADDRESS
IN	IN	IN	IN	IN	OUT	IN	IN	OUT	OUT	760230
IN	IN	IN	IN	IN	OUT	IN	OUT	IN	IN	760240
IN	IN	IN	IN	IN	OUT	IN	OUT	IN	OUT	760250
IN	IN	IN	IN	IN	OUT	IN	OUT	OUT	IN	760260
IN	IN	IN	IN	IN	OUT	IN	OUT	OUT	OUT	760270
IN	IN	IN	IN	IN	OUT	OUT	IN	IN	IN	760300
IN	IN	IN	IN	IN	OUT	OUT	IN	OUT	IN	760310
IN	IN	IN	IN	IN	OUT	OUT	IN	OUT	IN	760320
IN	IN	IN	IN	IN	OUT	OUT	IN	OUT	OUT	760330
IN	IN	IN	IN	IN	OUT	OUT	OUT	IN	IN	760340
IN	IN	IN	IN	IN	OUT	OUT	OUT	IN	OUT	760350
IN	IN	IN	IN	IN	OUT	OUT	OUT	OUT	IN	760360

M873-YJ (LOWEST ACCEPTABLE CS REV. H)  
 THE M873-YJ MODULE SHOULD ALREADY BE CONFIGURED CORRECTLY. HOWEVER, AS A QUICK VERIFY THE MODULE MAY BE COMPARED AGAINST THE FOLLOWING TABLES.

DIODE FIELD

BOOT FUNCTION	STARTING ADDRESS	BIT 8	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1
S/R	773000	D29	D25	D21	D17	D13	D9	D5	D1
DISK	773030	D30	D26	D22	D18	D14	D10	D6	D2
RX01	773020	D31	D27	D23	D19	D15	D11	D7	D3
DL11		OUT	OUT	OUT	OUT	IN	OUT	OUT	OUT
DTE20	773230	D32	D28	D24	D20	D16	D12	D8	D4
		OUT	IN	OUT	OUT	IN	IN	OUT	OUT

ROM PART NOS.

LOCATION	PART NUMBER
E16	23412A2
E17	23413A2
E19	23414A2
E20	23415A2

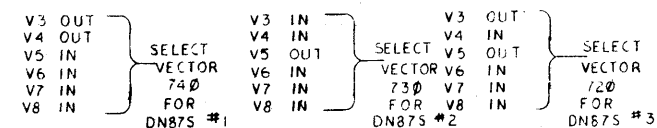
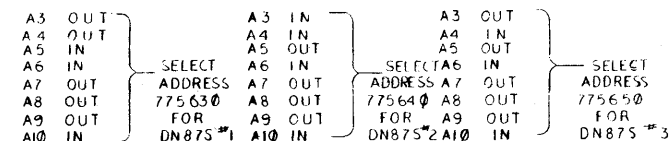
JUMPER CONFIG.

W1 = IN  
 W2 = OUT  
 W3 = OUT  
 RESISTOR R3 SHOULD BE REMOVED.

M7800(DL11-E) (LOWEST ACCEPTABLE CS REV. P) (LOCATED IN Y110 CONSOLE PROGRAM THE JUMPERS AND SWITCHES FOR THE M7800 (DL11-E) MODULE ARE TO BE CONFIGURED ACCORDING TO THE FOLLOWING TABLE.

JUMPERS

- J1 IN (TIES EIA DRIVER TO REQUEST TO SEND LEAD)
- J2 OUT (TIES EIA DRIVER TO FORCE BUSY LEAD)
- J3 IN (ALLOWS REQUEST TO SEND TO BE CONTROLLED BY BIT 2 OF THE RECEIVER STATUS REGISTER)
- J4 OUT (FORCES DATA LEADS ONLY MODE OF EIA OPERATION)
- J5 IN (ALLOWS BREAK BIT TO FUNCTION)
- J6 IN (ALLOWS DSET INT TO CAUSE INTERRUPTS)
- J7 IN (ALLOWS DATASET CONTROL BIT TO BE READ AS PART OF RECEIVER STATUS REGISTER)
- J8 IN (ALLOWS ERROR BITS TO BE READ AS PART OF THE RECEIVER DATA REGISTER)



N1 IN - ALWAYS IN FOR 11/40 CPU

- NB2 OUT - 8 BITS
- NB1 OUT - 8 BITS
- NP OUT - NO PARITY
- EPS OUT - NO PARITY
- 25B IN - 1 STOP BIT
- J9 OUT - 1 STOP BIT
- J10 IN - 1 STOP BIT
- J11 OUT - 1 STOP BIT

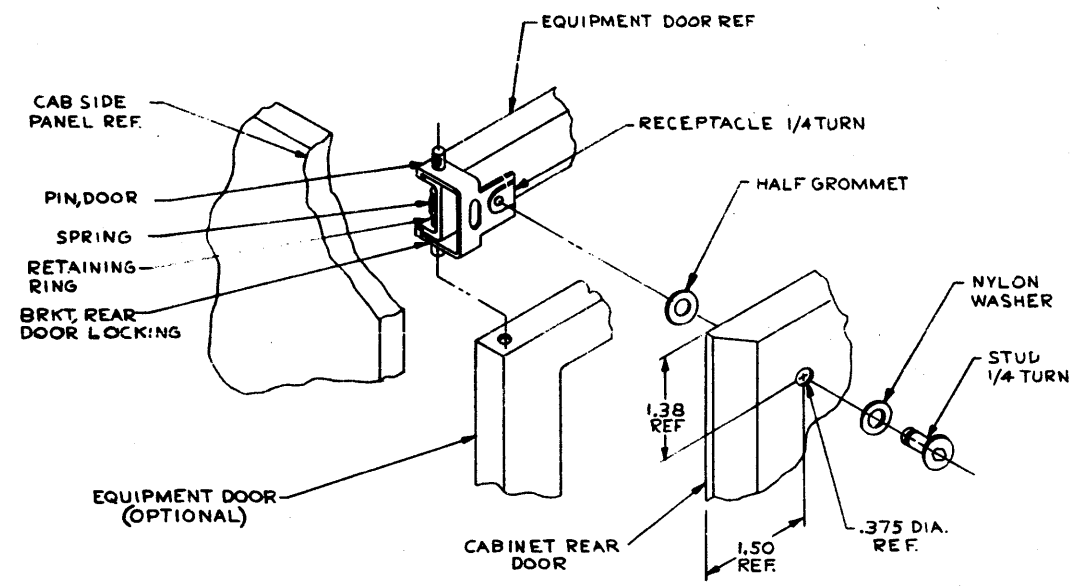
SWITCHES

R SWITCH = POSITION 2 (RECEIVER SPEED=300 BAUD)  
 T SWITCH = POSITION 8 (TRANSMIT SPEED=9600 BAUD)  
 SWITCH POSITION=1 IS THE MOST COUNTER CLOCKWISE POSITION FOR BOTH OF THE ABOVE ROTARY TYPE SWITCHES.  
 A 4.608 MHZ CRYSTAL (PN 18-05501-7) MUST BE INSTALLED AT POSITION Y1 OF THE MODULE.  
 BR PRIORITY LEVEL=4 (PRIORITY JUMPER PN 5408776)

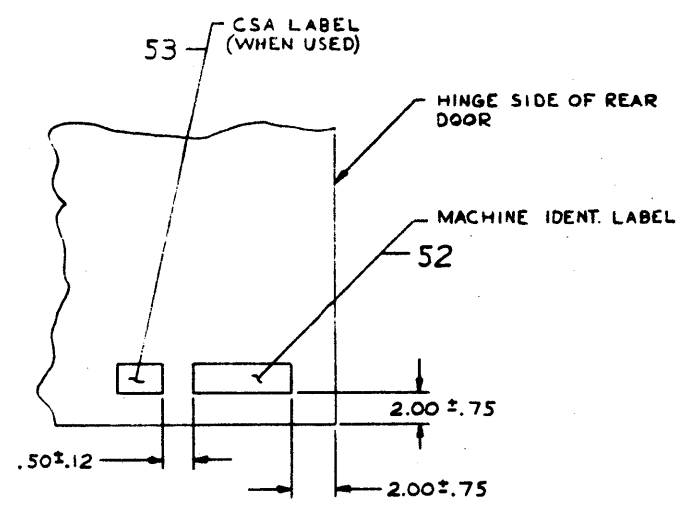
REV.	CHANGE NO.	REV.

TITLE	UNIVERSAL COMM SYSTEM FRONT END	SIZE/CODE	DUA	NUMBER	DN875-0-0	REV.	A
SCALE	1:1	SHEET	11	OF	13	DIST.	

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DETAIL B-B  
 SCALE: NONE



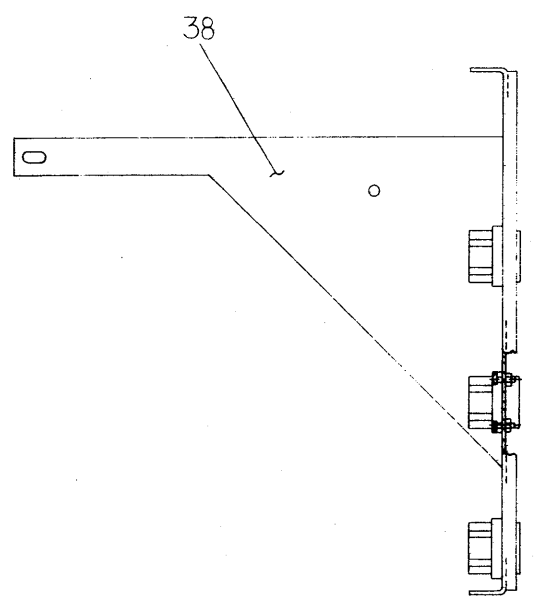
DETAIL A-A  
 SCALE: NONE

REVISIONS		
CHK	CHANGE NO.	REV.

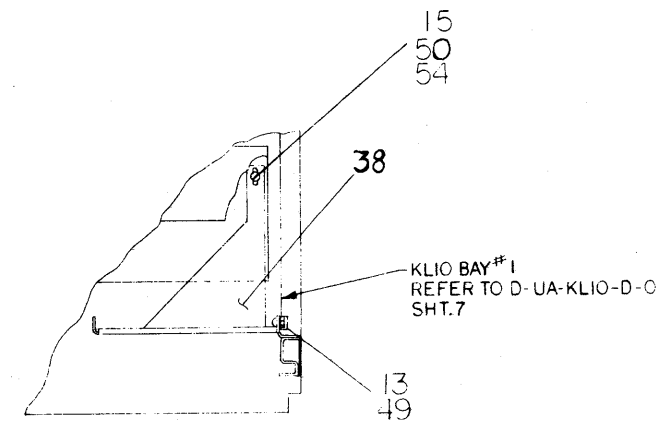
TITLE	UNIVERSAL COMM SYSTEM FRONT END	SIZE/COOR	DJA	NUMBER	DN87S-0-0	REV.	A
SCALE	---	SHEET	12	OF	13	DIST.	

SIZE CODE NUMBER  
D UA DN87S-0-0 2

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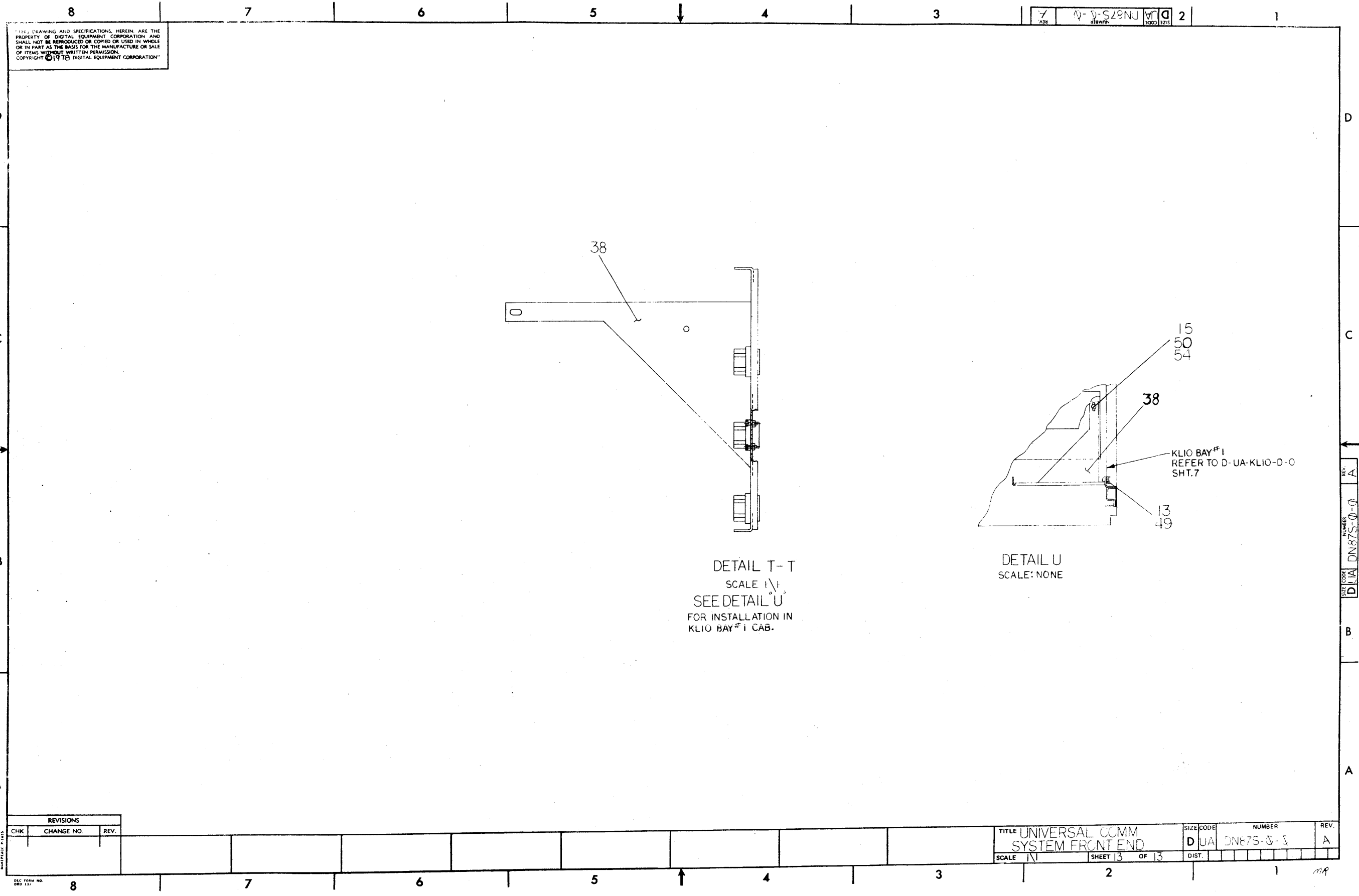
DETAIL T-T  
SCALE 1/1  
SEE DETAIL U  
FOR INSTALLATION IN  
KLIO BAY #1 CAB.



DETAIL U  
SCALE: NONE

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE UNIVERSAL COMM SYSTEM FRONT END		SIZE CODE D UA	NUMBER DN87S-0-0	REV. A
SCALE 1/1	SHEET 13 OF 13	DIST.		



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

MADE BY *T M Callahan*  
 DATE *23 Mar 78*  
 ENG *Stephen R Helms*  
 DATE *5-18-78*

CHECKED *[Signature]*  
 DATE *5/1/78*  
 PROD *[Signature]*  
 DATE *5/1/78*

SECTION 1  
 ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	D-AD-7009711-1-0	BASIC ASSY 11/40AK-PDP10 115V	1 -
2	D-AD-7009711-2-0	BASIC ASSY 11/40AL-PDP10 230V	- 1 -
3	D-UA-H324-0-0	SWITCH PANEL	1 1 1
4	C-PS-1211215-0-0	CABLE CLAMP & STRAP	1 1 1
5	D-UA-H950-BC-0	H950-B FULL LENGTH DOOR R.H.(BLAZI BLU)	1 1 1
6	D-UA-H952-AC-0	H950-A END PANEL (#68 GREY)	2 2 -
7	D-UA-H956-HJ-0	H956-H SHORT DOOR 57.75" (BLASI BLU)	1 1 -
8	A-PL-KG11-A-0	X-OR & CRC OPTION	1 1 -
9	C-MD-7413732-0-0	COUNTER WEIGHT, LEAD (REWORK)	2 2 -
10	D-UA-BC03M-01-0	CABLE MODEM	1 1 1
11	D-CS-M873-YJ-1	ROM RESTART LOADER	1 1 1
12	B-PL-M9310-0-0	UNIBUS TERMINATOR	1 1 1
13	9007786	NUT, TINNERMAN #10-32	10 10 -
14	9006074-1	SCREW, PHL PAN HD #10-32 x .62 LG	12 12 -
15	9007651	WASHER, EXT. TOOTH LOCK #10	42 42 -
16	9008264	MOUNT, CABLE TIE ADHESIVE BACK	30 30 30
17	9007880	CABLE TIES	50 50 50
18	9006077-1	SCREW, PHL PAN HD #10-32 x 1.0 LG	6 6 -
19	9006051-1	SCREW, PHL PAN HD #8-32 x 3.0 LG	2 2 -
20	9007036	GROMMET, CATARPILLAR	1FT1FT -
21	9107253-09	WET 3/4" SHRINK SLEEVING	1FT1FT -
22	A-PL-DL11-E-0	ASYNC LINE INTERFACE	2 2 2

TITLE UNIVERSAL COMM SYSTEM FRONT END  
 SIZE CODE **A PL**  
 ASSY NO. D-UA-DN87S-0-0  
 SHEET 1 OF 3  
 NUMBER DN87S-0-0  
 REV. P  
 ECO NO. DN87S-MR001

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

*MR*

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

MADE BY *T M Callahan*  
 DATE *23 Mar 78*  
 ENG *Stephen R Helms*  
 DATE *5-18-78*

CHECKED *[Signature]*  
 DATE *5/1/78*  
 PROD *[Signature]*  
 DATE *5/1/78*

SECTION 1  
 ISSUED SECT. 1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY VARIATION
23	3613272	LABEL GROUND	14 14 -
24	DEC(378)1638-N573	STICKER (11/40 PROC. BOX COFIG.)	1 1 -
25	E-IA-7015831-0-0	DTE REMOTE HARNESS ASSY	1 1 1
26	A-PS-1805501-7-0	CRYSTAL (4.608 MHZ)	2 2 2
27	A-PL-DTE20-0-0	PDP10/PDP11 INTERFACE	1 1 1
28	A-PL-KT11-D-0	MEMORY MANAGEMENT	1 1 1
29	A-PL-MM11-UP-0	16K MEMORY EXPANSION	1 1 -
30	D-UA-M9202-0-0	CABLE, UNIBUS JUMPER	1 1 -
31	1211386	FOP PANEL MTG BRKT	2 2 1
32	9008881	VINYL FOAM	A/RA/RA/R
33	D-CS-M9014-0-1	UNIBUS TO H854 ADAPTER BOARD	2 2 2
34	D-AD-7014211-24-0	CABLE, RUGGEDIZED UNIBUS	1 1 1
35	D-AD-7014002-4-0	CABLE, ASSY INTERNAL UNIBUS (4 FT)	1 1 1
36	D-AD-7014246-11-0	CABLE ASSY, INTERNAL UNIBUS (11 FT)	1 1 1
37	D-AD-7010311-0-0	PLATE, CABLE CONVERSION ASSY	1 1 1
38	D-AD-7014044-0-0	PANEL ASSY, INTERFACE	1 1 1
39	9007930	TERMINAL, RING TONGUE (22-16) GA	1 1 -
40	9006565	NUT, KEPS #10-32	1 1 -
41	D-MD-7411606-0-0	SCREEN, BOTTOM	1 1 -
42	9008269	TAPE .75 WIDE TRANSPARENT	1 1 -
43	B-CS-KM11-0-MB	MAINT. MODULES #1 AND #2	A/RA/RA/R
44	B-CS-W982-0-1	SINGLE HEIGHT MODULE EXTENDER	1 1 -

TITLE UNIVERSAL COMM SYSTEM FRONT END  
 SIZE CODE **A PL**  
 ASSY NO. D-UA-DN87S-0-0  
 SHEET 2 OF 3  
 NUMBER DN87S-0-0  
 REV. A  
 ECO NO.

DEC FORM  
 DRA 110

*MR*

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

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS PARTS LIST			QUANTITY VARIATION																	
MADE BY <i>T.M. Kuller</i>		CHECKED <i>[Signature]</i>	SECTION 1		DN87S-AA	DN87S-AB	DN87S-U													
DATE <i>23 Mar 78</i>		DATE <i>3 Mar 78</i>	ISSUED SECT. 1																	
ENG <i>Stephen R. Holman</i>		PROD <i>Lot # [unclear]</i>																		
DATE <i>5-18-78</i>		DATE <i>5/18/78</i>																		
ITEM NO.	DWG NO./PART NO.	DESCRIPTION																		
45	C-CS-W900-0-1	DOUBLE HEIGHT MODULE EXTENDER		1	1	-														
46	C-CS-W987-0-1	QUAD HEIGHT MODULE EXTENDER		1	1	-														
47	9107779-54	1Ø AWG GRN/YEL		A	RA	RA	R													
48	9007926-01	TERMINAL, RING #HOLE		14	14	14														
49	9006073-03	SCR, PHL TRUSS HD #10-32 x .50 LG		7	7	7														
50	9006676	WASHER, FLAT .281 I.D. X .625 O.D. X.062		1	1	1														
51	H952-LB	REAR LOCK DOOR KIT		1	1	-														
52	3615180-00	MACHINE IDENT LABEL		2	2	-														
53	3613211-00	CSA LABEL		REF	REF	-														
54	9006075-03	SCR, TRUSS HD PHL 10-32 X .75		1	1	1														
55	9006074-03	SCREWS, 10-32 x .62		2	2	2														
56	3612449	U/L LABEL		REF	REF	-														
57																				
58																				
59																				
60																				
TITLE			ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.												
UNIVERSAL COMM SYSTEM FRONT END			D-UA-DN87S-0-0	A	PL	DN87S-0-0	A													
			SHEET 3 OF 3	DIST																

*MR*

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS PARTS LIST					QUANTITY VARIATION																			
MADE BY <i>T M Callough</i>		CHECKED		SECTION	DN87S-AA	DN87S-AB	DN87S-U																	
DATE <i>23 Nov 78</i>		DATE		1																				
ENG <i>Stephen R. Hobbins</i>		PROD		ISSUED SECT.																				
DATE <i>5-18-78</i>		DATE		1																				
ITEM NO.	DWG NO./PART NO.	DESCRIPTION																						
1	EK-11/40-TM-002	PDP-11/40 SYSTEMS MANUAL		1	1	-																		
2	EB-00973-2908	PDP11 PERIPHERALS HANDBOOK		1	1	-																		
3	EK-KD11A-MM-001	KD11 PROCESSOR MAINT. MANUAL		1	1	-																		
4	EK-861AB-MM-002	861 POWER CONTROLLER MANUAL		1	1	-																		
5	EK-KG11A-TM-002	KG11A MAINT. MANUAL		1	1	-																		
6	EK-MF11U-MM-003	MF11-U/UP MAINT. MANUAL		1	1	-																		
7	G727	GRANT CONTINUITY CARD		1	1	-																		
8	B-DD-DD11-B	SMALL PERIPHERALS MTC PANEL		1	1	-																		
9	EK-KW11-L-TM-002	KW11-L LINE FREQ. MAINT.		1	1	-																		
10	EK-DL11-TM-002	DL11 MAINT. MANUAL		1	1	-																		
11	EK-BM873-TM-005	BM873 RESTART LOADER MAINT. MANUAL		1	1	1																		
12	EK-KT11D-TM-002	MEMORY MAINT. OPTION MANUAL, KT11-D		1	1	1																		
13	B-DD-KT11-D	KT11-D PRINT SET		1	1	-																		
14	C-SS-5509081-12	MAINT. MODULE OVERLAY (KD11-A)		1	1	-																		
15	C-SS-5509081-13	MAINT. MODULE OVERLAY (KD11-D)		1	1	-																		
16	MP00109	DN87S PRINT SET		1	1	1																		
17	3700046-00	PACKAGING INSTRUCTIONS, U.S. CANADA		1	1	-																		
18	3700046-08	PACKAGING INSTRUCTIONS, OVER SEAS		1	1	-																		
19	3700371-0-0	PACKAGING INSTRUCTIONS, DN87S-U		-	-	1																		
TITLE DN87S ACCESSORY SHIP LIST				ASSY NO. B-DD-DN87S-0-0	SIZE A	CODE PL	NUMBER DN87S-0-3			REV A	ECO NO. DN87S- MR001													
SHEET 1 OF 1				DIST																				

DEC FORM  
DRA 110

8 7 6 5 4 3 2 1

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PARTS REFERENCE

ITEM NO	DRAWING REFERENCE	DESCRIPTION	PART NUMBER	QUANTITY
1.	E6, E24, E34	IC DEC 74H50	1909060	3
2.	E2, E8, E14, E20, E30, E37, E38, E39, E44, E48	IC DEC 8640	19-11469	10
3.	E3, E4, E9, E10, E15, E16, E21, E22, E27	IC DEC 8271	1909615	9
4.	E36	IC DEC 74H74	1909667	1
5.	E1, E7, E13, E19, E25, E26, E41	IC DEC 8881	1909705	7
6.	E40, E45, E49	IC DEC 8242	1909712	3
7.	E46, E47	IC DEC 8815	1909717	2
8.	E29	IC DEC 7416	1909928	1
9.	E5, E17, E23, E33	IC DEC 74HC4	1909954	4
10.	E11	IC DEC 8266	1909934	1
11.	E12, E28	IC DEC 7486	1910011	2
12.	E32	IC DEC 74197	1910035	1
13.	E43	IC DEC 7455	1969024	1
14.	E18, E31, E42	IC DEC 74H00	1909056	3
15.	E35	IC DEC 74H00	1909057	1
16.	C53, C54	CAP 120PF 100V 5%	1000018	2
17.	C56	CAP 470PF 100V 5%	1000024	1
18.	C50 - C52, C57	CAP 68MF 35V 20%	1000067	4
19.	C1 - C49, C55	CAP 01 MF 100V 20%	1001610	50
20.	R26	RES 100 1/4W 5%	1300229	1
21.	R7, R8	RES 220 1/4W 5%	1300271	2
22.	R6, R9	RES 330 1/4W 5%	1300295	2
23.	R13 - R25	RES 1K 1/4W 5%	1300365	13
24.	R1 - R5, R8, R10, R11	RES 750 1/4W 5%	1301401	8

COMPONENT PLACEMENT

PIN NOMENCLATURE

MODULE	LOGIC LOCATION
A	
B	
C	
D	

NOTES:

1. DETAILS ON COMPONENTS ARE NOTED IN THE PARTS REFERENCE. PLACEMENT IS NOTED IN THE COMPONENT PLACEMENT DIAGRAM.  
 2. GND AND +5V ARE USUALLY PIN 7 AND PIN 14, RESPECTIVELY. EXCEPTIONS ARE:

IC TYPE	GND	+5V
DEC 74H74	PIN 11	PIN 4
DEC 74H50	PIN 11	PIN 4
DEC 74H04	PIN 11	PIN 4
DEC 8271	PIN 8	PIN 16
DEC 8640	PIN 1	PIN 8

3. UNLESS OTHERWISE NOTED: RESISTANCE IS IN OHMS, CAPACITANCE IS IN PICOFARADS. CAPACITORS WITHOUT ANY NOTED VALUES ARE .01 MFD.  
 4. DEC 8640 REPLACES OBSOLETE DEC 380

REV	CHANGE NO	DATE	BY	CHK
1				
2				
3				
4				
5				
6				
7				
8				

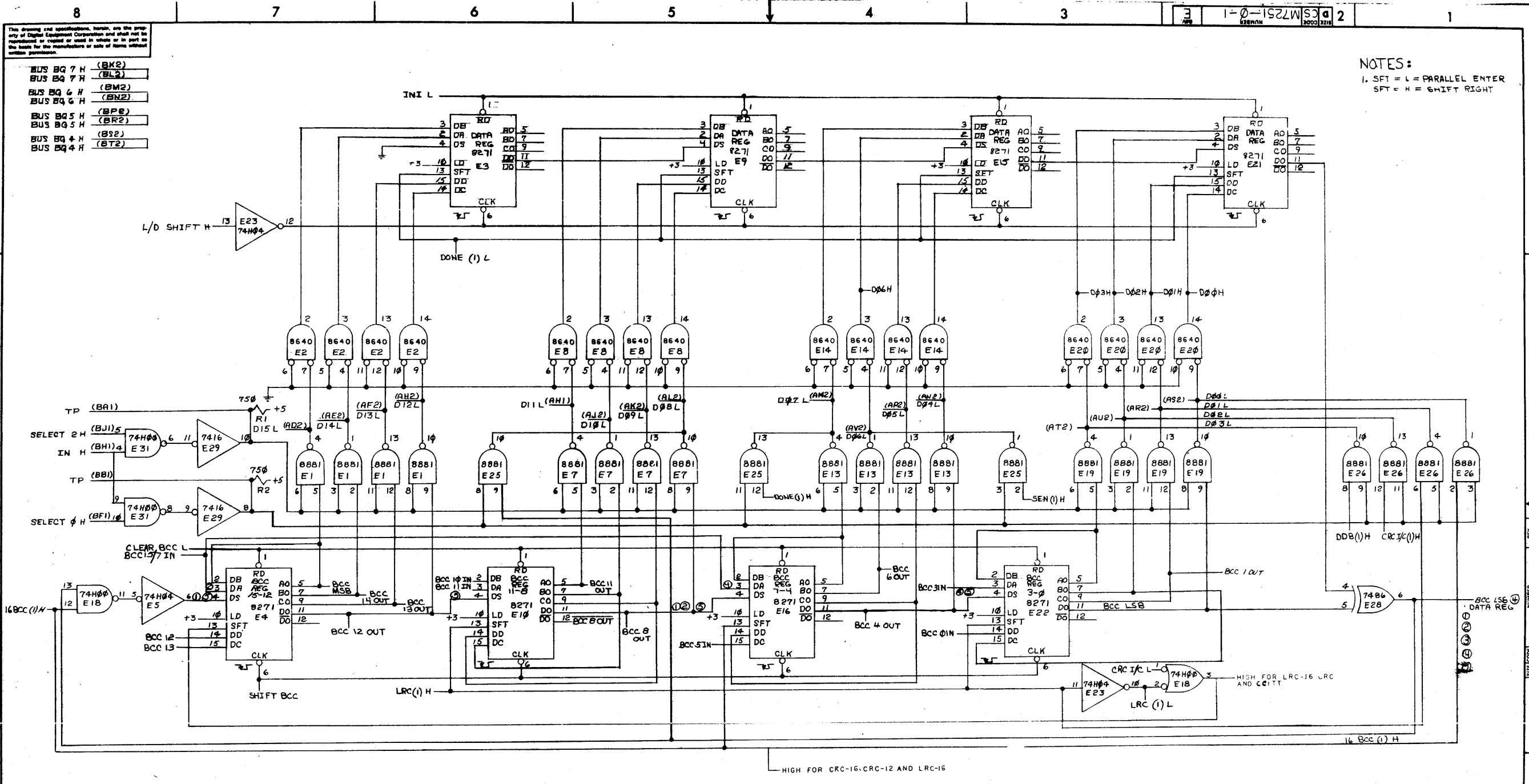
FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
KG11 - A				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED				
ORIGIN: <i>M. Pierce</i> DATE: <i>9/24/71</i>				
CHECKED: <i>W.C.</i> DATE: <i>10/29/71</i>				
ENGINEER: <i>R. ...</i> DATE: <i>10/29/71</i>				
PROJECT ENGINEER: <i>R. ...</i> DATE: <i>10/29/71</i>				
PRODUCTION: <i>...</i> DATE: <i>11/1/71</i>				
MATERIAL: <i>...</i>				
FINISH: <i>...</i>				
TITLE: <b>digital EQUIPMENT CORPORATION</b>				
X-OR & CRC BLOCK CHECK OPTION				
SIZE CODE: <b>D</b> NUMBER: <b>M7251-0-1</b> REV: <b>E</b>				
SCALE: <i>NONE</i> SHEET: <i>1</i> OF <i>4</i>				

DEC FORM NO. DRD 102 A

8 7 6 5 4 3 2 1







NOTES:  
 1. SFT = L = PARALLEL ENTER  
 SFT = H = SHIFT RIGHT

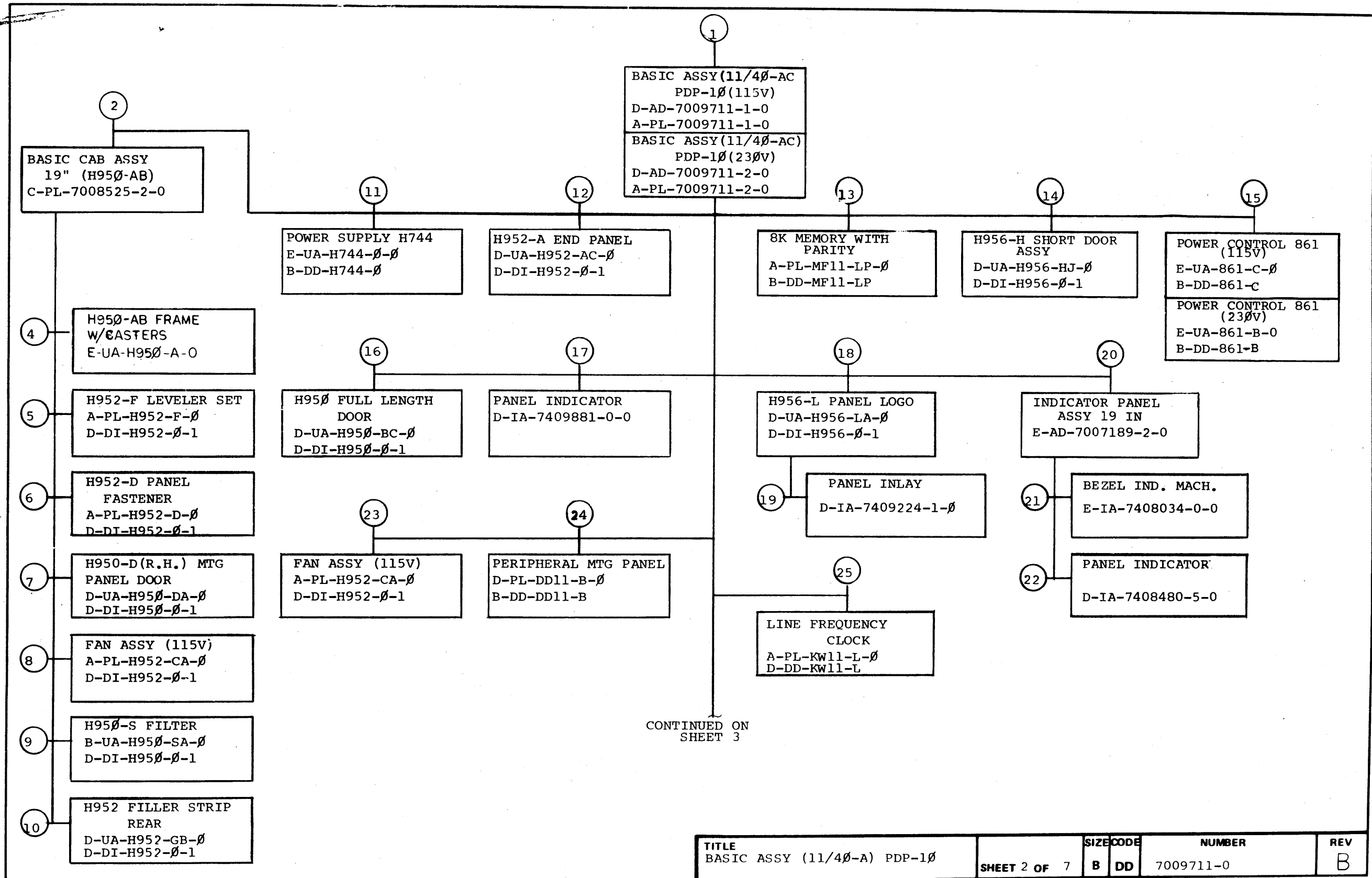
- BUS BQ 7 H (BK2)
- BUS BQ 7 H (BL2)
- BUS BQ 6 H (BM2)
- BUS BQ 6 H (BN2)
- BUS BQ 5 H (BP2)
- BUS BQ 5 H (BR2)
- BUS BQ 4 H (BS2)
- BUS BQ 4 H (BT2)

REVISIONS  
 CHANGE NO.  
 REV  
 CHK

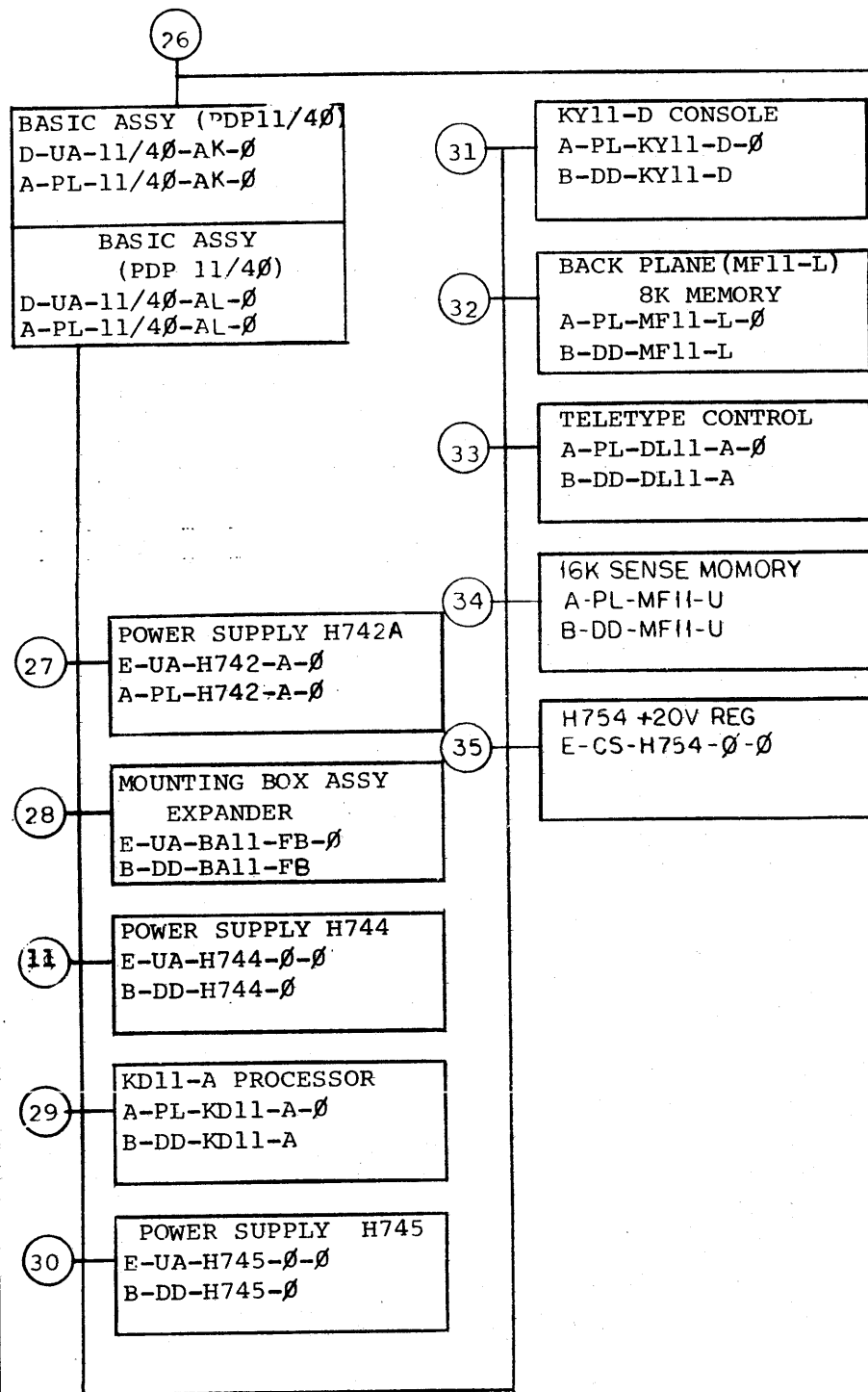
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
KG 11-A		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN: <i>Morgan E</i> DATE: 9-22-71	 <b>digital EQUIPMENT CORPORATION</b> BAYLAND MASSACHUSETTS  <b>TITLE</b> X-OR & CRC BLOCK CHECK OPTION		
DECIMALS	CHG: <i>[Signature]</i> DATE: 10-27-71			
ANGLES	ENG: <i>[Signature]</i> DATE: 10-27-71			
.XXX - .005 .XX - .02 .X - .1	PROJ. ENG: <i>[Signature]</i> DATE: 10-27-71			
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD: <i>[Signature]</i> DATE: 10-27-71	SIZE CODE: DCS M7251-0-1 NUMBER: 1 REV: E		
MATERIAL	NEXT HIGHER ASSY.	SCALE: SHEET 3 OF 4		
FINISH		DIST.:		







CONTINUED FROM SHEET 2



TITLE	SIZE CODE	NUMBER	REV
BASIC ASSY (11/40-A) PDP-10	B DD	7009711-0	B
SHEET 3 OF 7			

CUSTOMER PRINT SET		ELECTRICAL					CUSTOMER PRINT SET		ELECTRICAL						
1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE	1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
		1	D-AD-7009711-1-0		4	BASIC ASSY(11/4ØA) PDP-10 115V				30	B-DD-H745-Ø		2	H745 DRAWING DIRECTORY	
			D-AD-7009711-2-0		4	BASIC ASSY(11/4ØA) PDP-10 230V									
		11	B-DD-H744-0		2	H744 DRAWING DIRECTORY				31	B-DD-KY11-D		3	KY11-D DRAWING DIRECTORY	
		13	B-DD-MF11-LP-Ø		3	MF11-LP DRAWING DIRECTORY				32	B-DD-MF11-L		3	MF11-L DRAWING DIRECTORY	
		15	B-DD-861-Ø		3	861 DRAWING DIRECTORY				33	B-DD-DL11-A		3	DL11-A DRAWING DIRECTORY	
		24	B-DD-DD11-B		3	DD11-B DRAWING DIRECTORY				34	B-DD-MF11-U		3	16K SENSE MEMORY	
		25	B-DD-KW11-L		3	KW11-L DRAWING DIRECTORY				35	E-CS-H754-Ø-Ø		2	H754+2ØV REGULATOR	
		26	D-UA-11/40-AC-Ø		6	BASIC ASSY 11/40 115V									
			D-UA-11/40-AD-Ø		6	BASIC ASSY 11/40 230V									
			D-UA-11/40-AE-Ø		6	BASIC ASSY 11/40 115V									
			D-UA-11/40-AF-Ø		6	BASIC ASSY 11/40 230V									
		27	C-CS-H742-Ø-1		1	CIRCUIT SCHEMATIC									
		28	B-DD-BA11-FB		3	BA11-F DRAWING DIRECTORY									
		29	B-DD-KD11-A		3	KD11-A DRAWING DIRECTORY									

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: BASIC ASSY(11/4Ø-A) PDP-1Ø  
SHEET 4 OF 7  
SIZE CODE: B DD  
NUMBER: 7009711-0  
REV: B





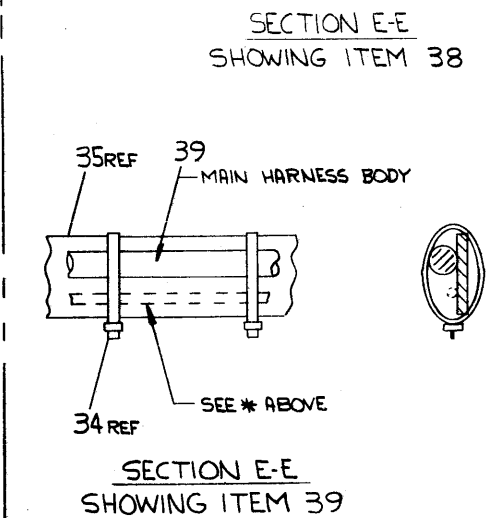
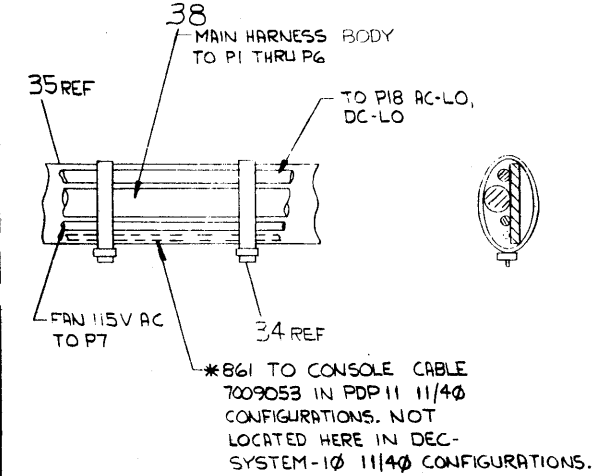
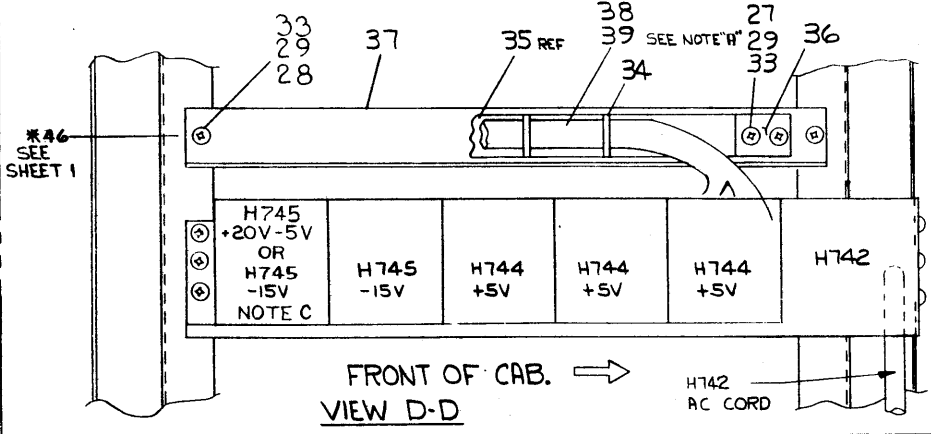
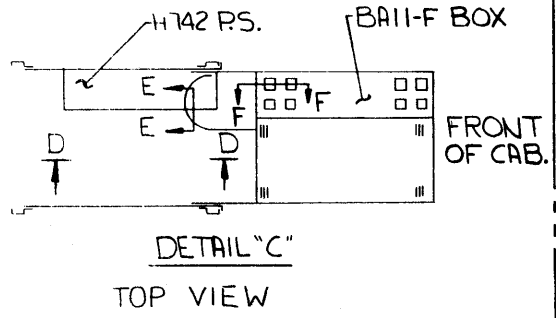


CUSTOMER PRINT SET		MECHANICAL					CUSTOMER PRINT SET		MECHANICAL						
	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE		MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
		23	A-PL-H952-CA-Ø		1	H952-C FAN (PL)				30	E-UA-H745-Ø-Ø		1	H745 POWER SUPPLY	
			D-DI-H952-Ø-1		1	H952 DRAWING INDEX LIST					B-DD-H745-Ø		2	H745 DRAWING DIRECTORY	
											A-SP-H745-Ø-8		2	MFG SPEC	
		24	A-PL-DD11-B-Ø		1	DD11-B PERIPHERAL MTG PANEL				31	A-PL-KY11-D-Ø		1	KY11-D CONSOLE (PL)	
			B-DD-DD11-B		3	DD11-B DRAWING DIRECTORY					B-DD-KY11-D		3	KY11-D DRAWING DIRECTORY	
		25	A-PL-KW11-L-Ø		1	LINE FREQ. CLOCK (PL)				32	D-UA-MF11-L-Ø		1	MF11-L MEMORY	
			B-DD-KW11-L		3	DRAWING DIRECTORY					A-PL-MF11-L-Ø		1	MF11-L BK. PLANE 8K MEM PL	
											B-DD-MF11-L		3	MF11-L DRAWING DIRECTORY	
		26	E-IA-7008754-0-0		1	HARNESS POWER (EXPANDER)				33	A-PL-DL11-A-Ø		1	TELETYPE CONTROL (PL)	
			D-IA-7009103-0-0		1	FIRST MEMORY 11/4Ø POWER HARNESS					B-DD-DL11-A		3	DRAWING DIRECTORY	
			D-IA-7009046-0-0		1	11/4Ø PROC POWER HARNESS				34	D-MU-MF11-U		1	MODULE UTILIZATION (MF11-U)	
			C-IA-7009053-0-0		1	CONS TO POWER CONTROL HARNESS					B-DD-MF11-U		3	DRAWING DIRECTORY	
			D-UA-11/4Ø-AK-Ø		2	BASIC ASSY 11/4Ø 115V				35	E-CS-H754		2	+20V REGULATOR	
			A-PL-11/4Ø-AK-Ø		4	BASIC ASSY 11/4Ø (PL)									
			D-UA-11/4Ø-AL-Ø		6	BASIC ASSY 11/4Ø 230V									
			A-PL-11/4Ø-AL-Ø		4	BASIC ASSY 11/4Ø (PL)									
		27	E-UA-H742-A-Ø		3	H742-A POWER SUPPLY 115V									
			A-PL-H742-A-Ø		3	H742-A POWER SUPPLY (PL)									
		28	E-UA-BALL-FB-Ø			MTG BOX EXPANDER									
			B-DD-BALL-F		3	BALL-F DRAWING DIRECTORY									
		29	A-PL-KD11-A		1	KD11-A PROCESSOR (PL)									
			B-DD-KD11-A		3	KD11-A DRAWING DIRECTORY									
CUSTOMER PRINT SET CODES		X = PRINT OF DOCUMENT INCLUDED IN PRINT SET					TITLE		SIZE CODE		NUMBER		REV		
		C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT					BASIC ASSY (11/4Ø-A) PDP-1Ø		B DD		7009711-0		B		
		S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED					SHEET 7 OF 7								

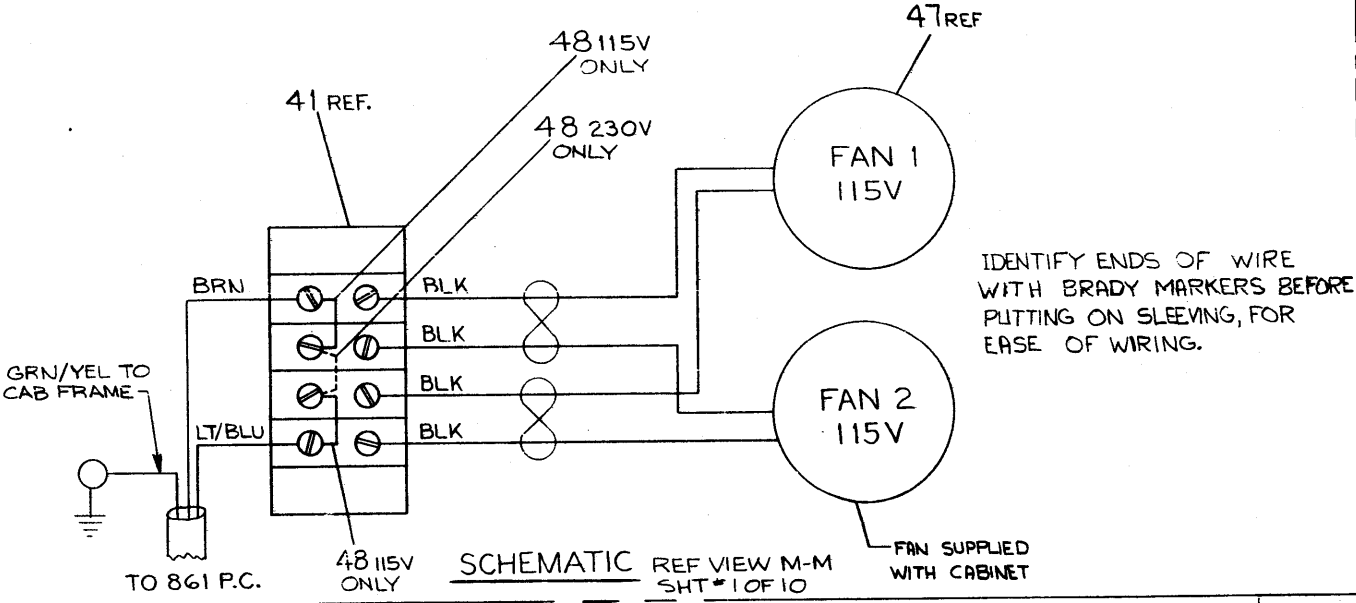


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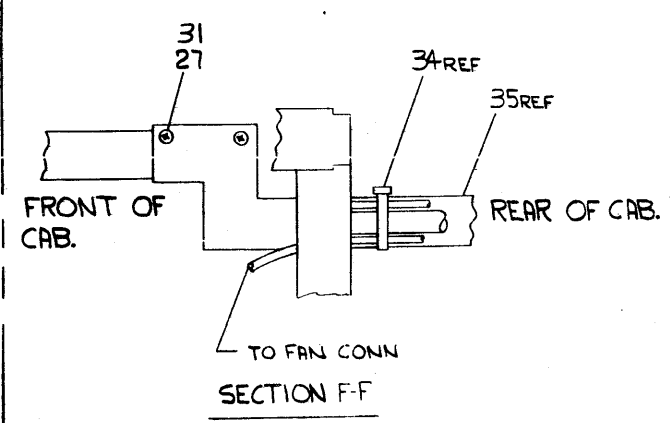
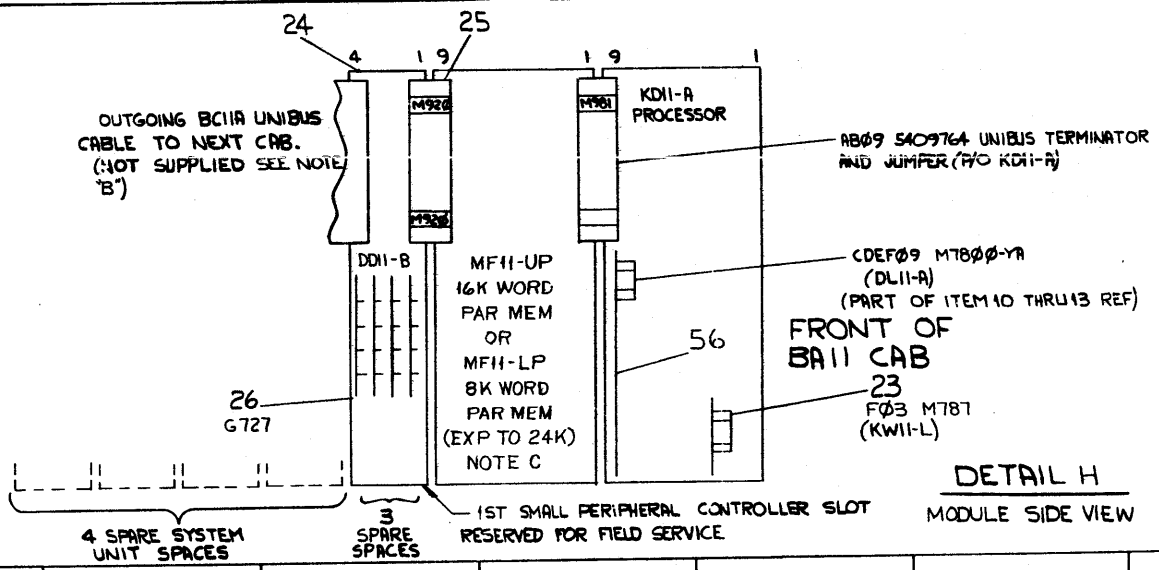
0-0-11/600Z 07D 2



- NOTES:
- A. THE 7008754 HARNESS IS USED WHEN THE BAI-F BOX IS EQUIPED WITH 5409944 EXPANDER BOX POWER DISTRIBUTION BOARDS (9-PIN PLUGS) I.E. 11/40 SERIAL 5999 OR BELOW. THE 7009566 HARNESS IS USED WHEN THE BAI-F BOX IS EQUIPED WITH 5410590 SYSTEM UNIT POWER DISTRIBUTION BOARDS (15 PIN & 6 PIN PLUGS) I.E. 11/40 SERIAL 6000 OR ABOVE.
  - B. REMOVE M930 UNIBUS TERMINATOR FROM SLOT AB09 OF THE MF11-LP/L. INSTALL IN SLOT AB04 OF THE DD11-B WHEN THIS ASSY IS STOCKED OR SHIPPED ALONE. INSTALL AT THE END OF THE UNIBUS, WHEN THIS ASSY IS PART OF A LARGER SYSTEM.
  - C. MF11-LP CORE MEMORY SYSTEM UNIT AND H754 (+20,-5 VOLT) REGULATOR USED ON LATER MODELS OF THIS ASSY; UNITS BUILT TO REV B OF THIS DWG. MF11-LP CORE MEMORY AND H745 (-15 VOLT) REGULATOR USED ON EARLY MODELS OF THIS ASSY DWG; UNITS BUILT TO REV. A AND EARLIER REVISIONS OF THIS DWG.



IDENTIFY ENDS OF WIRE WITH BRADY MARKERS BEFORE PUTTING ON SLEEVING, FOR EASE OF WIRING.



REVISIONS		
CHK	CHANGE NO	REV

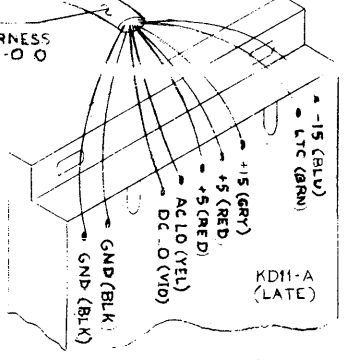
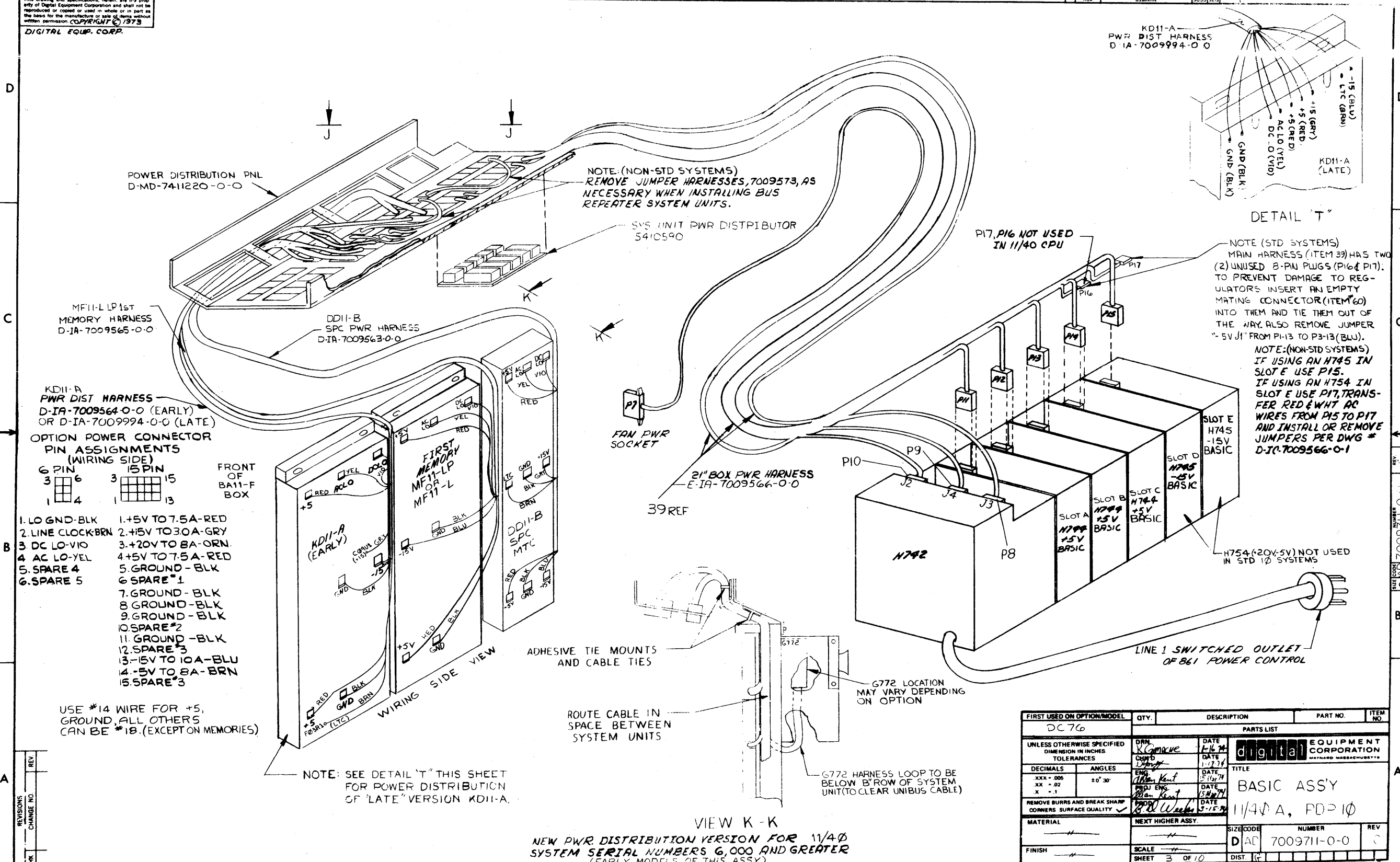
TITLE	BASIC ASSY 11/40 A, PDP 10	SIZE CODE	D AD	NUMBER	7009711-0-0	REV.	C
SCALE		SHEET	2 OF 10	DIST			

DRAWING NUMBER 7009711-0-0

MR

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0-0-112600Z  
3000 2715



POWER DISTRIBUTION PNL  
D-MD-7411220-0-0

NOTE: (NON-STD SYSTEMS)  
REMOVE JUMPER HARNESSES, 7009573, AS  
NECESSARY WHEN INSTALLING BUS  
REPEATER SYSTEM UNITS.

SYS UNIT PWR DISTRIBUTOR  
5410590

P17, P16 NOT USED  
IN 11/40 CPU

NOTE (STD SYSTEMS)  
MAIN HARNESS (ITEM 39) HAS TWO  
(2) UNUSED 8-PIN PLUGS (P16 & P17).  
TO PREVENT DAMAGE TO REG-  
ULATORS INSERT AN EMPTY  
MATING CONNECTOR (ITEM 60)  
INTO THEM AND TIE THEM OUT OF  
THE WAY. ALSO REMOVE JUMPER  
"-5V J1" FROM P1-13 TO P3-13 (BLU).

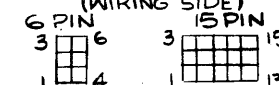
NOTE: (NON-STD SYSTEMS)  
IF USING AN H745 IN  
SLOT E USE P15.  
IF USING AN H754 IN  
SLOT E USE P17, TRANS-  
FER RED & WHT AC  
WIRES FROM P15 TO P17  
AND INSTALL OR REMOVE  
JUMPERS PER DWG #  
D-JC-7009566-0-1

MF11-LP 1st  
MEMORY HARNESS  
D-IA-7009565-0-0

DD11-B  
SPC PWR HARNESS  
D-IA-7009563-0-0

KD11-A  
PWR DIST HARNESS  
D-IA-7009564-0-0 (EARLY)  
OR D-IA-7009994-0-0 (LATE)

OPTION POWER CONNECTOR  
PIN ASSIGNMENTS  
(WIRING SIDE)



- 1. LO GND-BLK
- 2. LINE CLOCK-BRN
- 3. DC LO-VIO
- 4. AC LO-YEL
- 5. SPARE 4
- 6. SPARE 5
- 7. GROUND-BLK
- 8. GROUND-BLK
- 9. GROUND-BLK
- 10. SPARE\*2
- 11. GROUND-BLK
- 12. SPARE\*3
- 13. -15V TO 10A-BLU
- 14. -5V TO 8A-BRN
- 15. SPARE\*3

USE #14 WIRE FOR +5,  
GROUND, ALL OTHERS  
CAN BE #18. (EXCEPT ON MEMORIES)

NOTE: SEE DETAIL T THIS SHEET  
FOR POWER DISTRIBUTION  
OF LATE VERSION KD11-A.

FAN PWR  
SOCKET

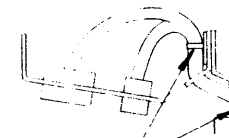
21" BOX PWR HARNESS  
E-IA-7009566-0-0

39 REF

ADHESIVE TIE MOUNTS  
AND CABLE TIES

ROUTE CABLE IN  
SPACE BETWEEN  
SYSTEM UNITS

21" BOX PWR HARNESS  
E-IA-7009566-0-0



VIEW K-K

NEW PWR DISTRIBUTION VERSION FOR 11/40  
SYSTEM SERIAL NUMBERS 6,000 AND GREATER  
(EARLY MODELS OF THIS ASSY)

G772 LOCATION  
MAY VARY DEPENDING  
ON OPTION

G772 HARNESS LOOP TO BE  
BELOW B'ROW OF SYSTEM  
UNIT (TO CLEAR UNIBUS CABLE)

LINE 1 SWITCHED OUTLET  
OF 861 POWER CONTROL

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.																				
DC 76																								
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES																								
DECIMALS .XXX - .005 .XX - .02 X - .1	ANGLES ±0° 30'		PARTS LIST																					
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		<table border="1"> <tr> <td>DRN K. Comroe</td> <td>DATE 1-12-74</td> <td rowspan="4"> <b>digital EQUIPMENT CORPORATION</b>  <small>MILITARY MARKING</small> </td> </tr> <tr> <td>APP'D Alan Kent</td> <td>DATE 5-16-74</td> </tr> <tr> <td>PROJ ENG Alan Kent</td> <td>DATE 5-16-74</td> </tr> <tr> <td>PROJ G. D. Wheeler</td> <td>DATE 5-16-74</td> </tr> </table>			DRN K. Comroe	DATE 1-12-74	<b>digital EQUIPMENT CORPORATION</b> <small>MILITARY MARKING</small>	APP'D Alan Kent	DATE 5-16-74	PROJ ENG Alan Kent	DATE 5-16-74	PROJ G. D. Wheeler	DATE 5-16-74											
DRN K. Comroe	DATE 1-12-74	<b>digital EQUIPMENT CORPORATION</b> <small>MILITARY MARKING</small>																						
APP'D Alan Kent	DATE 5-16-74																							
PROJ ENG Alan Kent	DATE 5-16-74																							
PROJ G. D. Wheeler	DATE 5-16-74																							
TITLE BASIC ASS'Y 11/40 A, PD=10		<table border="1"> <tr> <td>MATERIAL</td> <td>NEXT HIGHER ASSY.</td> <td>SIZE CODE</td> <td>NUMBER</td> <td>REV</td> </tr> <tr> <td></td> <td></td> <td>D AC</td> <td>7009711-0-0</td> <td>C</td> </tr> <tr> <td>FINISH</td> <td>SCALE</td> <td>SHEET</td> <td>OF</td> <td>DIST</td> </tr> <tr> <td></td> <td></td> <td>3</td> <td>OF 10</td> <td></td> </tr> </table>			MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV			D AC	7009711-0-0	C	FINISH	SCALE	SHEET	OF	DIST			3	OF 10	
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV																				
		D AC	7009711-0-0	C																				
FINISH	SCALE	SHEET	OF	DIST																				
		3	OF 10																					

DEC FORM NO  
ORD 100-A

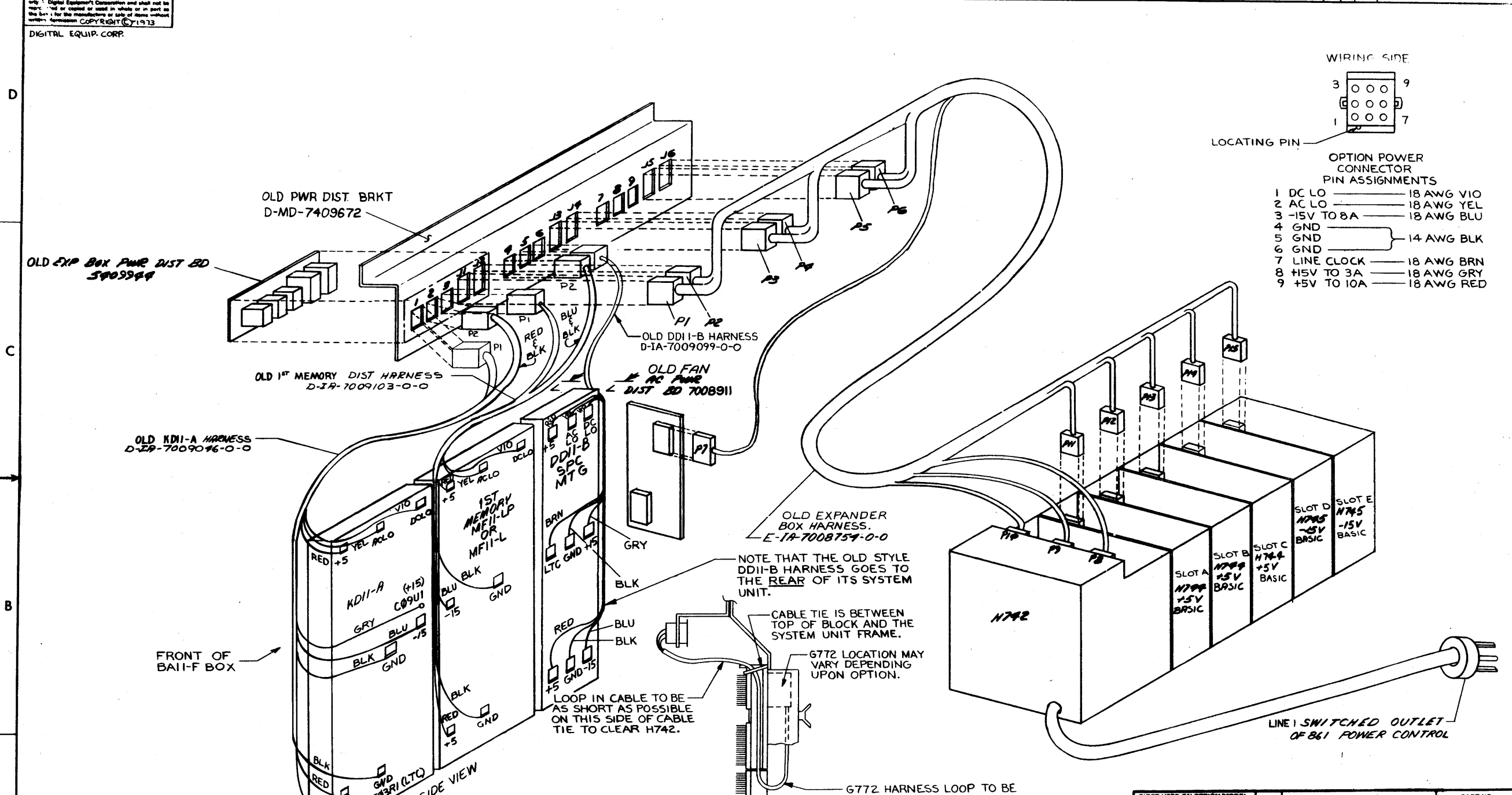
PART NUMBER  
D-AD-7009711-0-0





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0-0-112600Z 2



WIRING SIDE

LOCATING PIN

OPTION POWER CONNECTOR PIN ASSIGNMENTS

1	DC LO	18 AWG VIO
2	AC LO	18 AWG YEL
3	-15V TO 8A	18 AWG BLU
4	GND	14 AWG BLK
5	GND	
6	GND	
7	LINE CLOCK	18 AWG BRN
8	+15V TO 3A	18 AWG GRY
9	+5V TO 10A	18 AWG RED

FRONT OF BAIIF BOX

WIRING SIDE VIEW

VIEW L-L

OLD PWR DISTRIBUTION VERSION FOR 11/40 SYSTEM SERIAL NUMBERS 5999 AND LOWER. (EARLY MODELS OF THIS ASSEMBLY)

NOTE THAT THE OLD STYLE DDI-B HARNESS GOES TO THE REAR OF ITS SYSTEM UNIT.

CABLE TIE IS BETWEEN TOP OF BLOCK AND THE SYSTEM UNIT FRAME.

G772 LOCATION MAY VARY DEPENDING UPON OPTION.

LOOP IN CABLE TO BE AS SHORT AS POSSIBLE ON THIS SIDE OF CABLE TIE TO CLEAR H742.

G772 HARNESS LOOP TO BE BELOW 'B' ROW OF SYSTEM UNIT TO CLEAR UNIBUS CABLE.

LINE SWITCHED OUTLET OF B61 POWER CONTROL

REV	
CHK	
CHANGE NO.	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.	DRW	DATE	EQUIPMENT CORPORATION	
TOLERANCES	W. Honey	1-10-74	MAYNARD MASSACHUSETTS	
DECIMALS	0.001	DATE	TITLE	
ANGLES	10° 30'	1-17-74	BASIC ASSY	
XXX - 000		DATE	11/40 A, PDP 10	
.XX - 02		DATE		
.X - 1		DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE		
MATERIAL	NEXT HIGHER ASSY.	DATE		
FINISH	SCALE	DATE		
	SHEET 5 OF 10	DIST.		

DEC FORM NO. DRD 100-A

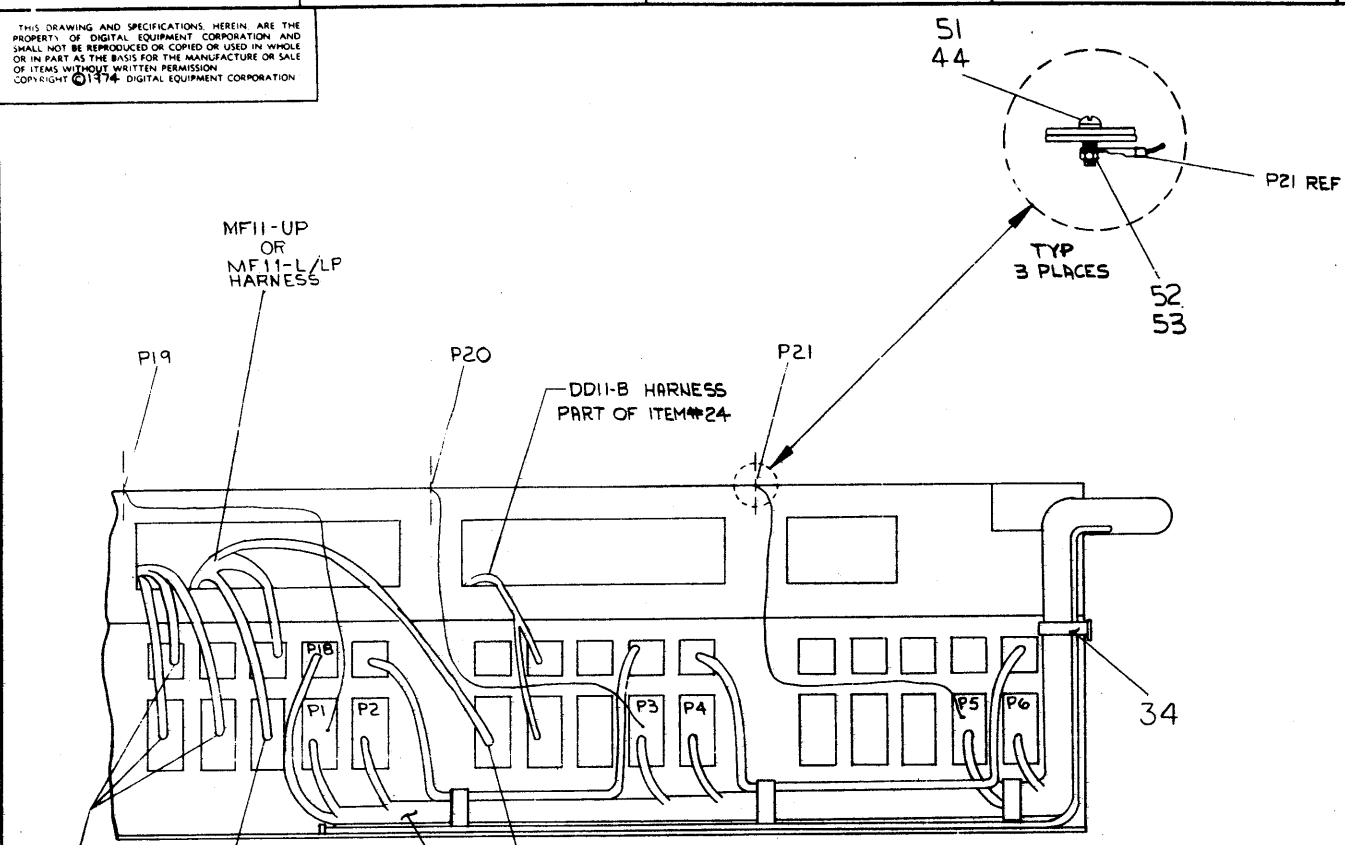
REV. C  
D AD 7009711-0-0

REV. C

MR

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8 7 6 5 4 3 2 1



KD11-A HARNESS

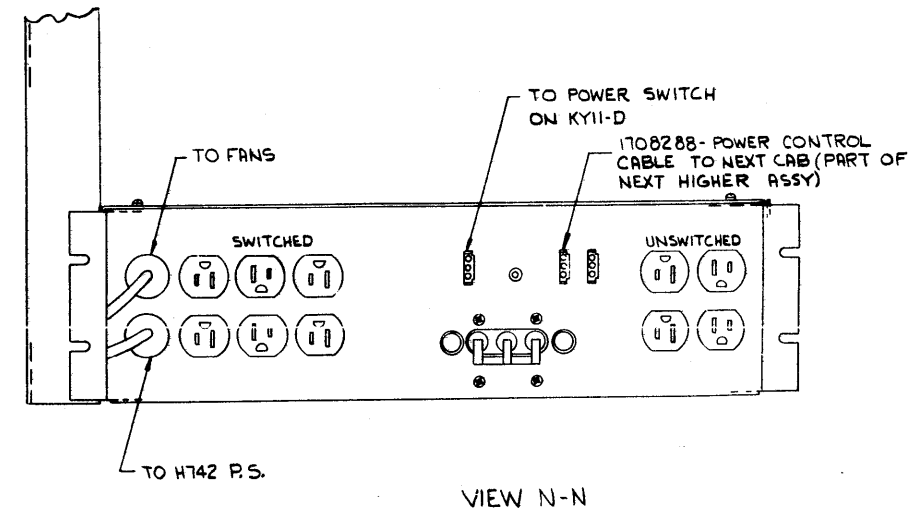
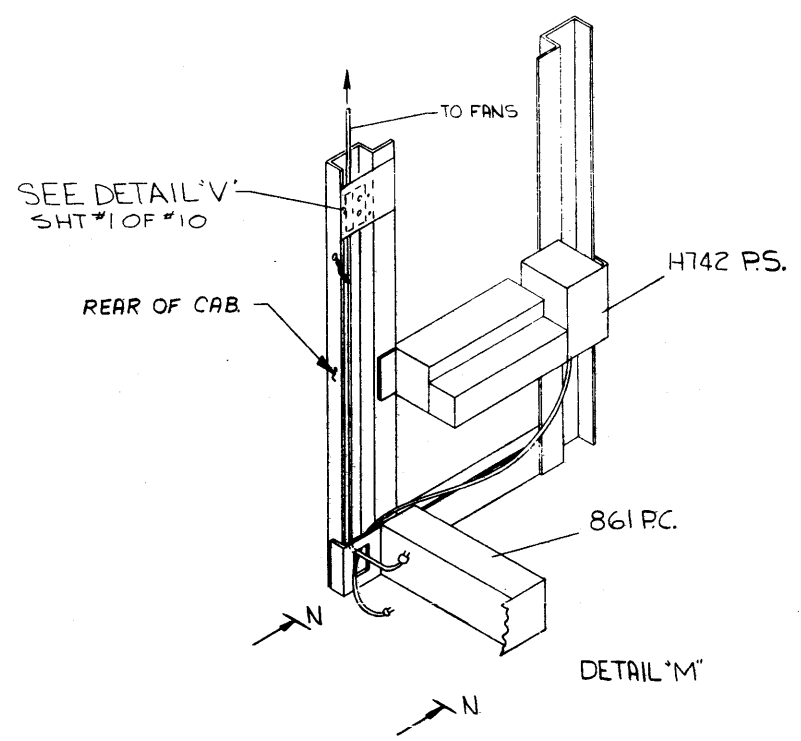
38 REF

-15V FIRST MEMORY PLUG (BLK/BLU WIRES)  
 MF11-L/LP (EARLY MODELS)  
 +20,-5V FIRST MEMORY PLUG (ORN BRN/BLK WIRES)  
 MF11-UP (LATER MODELS)

+5V FIRST MEMORY PLUG (BLK/RED WIRES)

VIEW J-J (ENLARGED VIEW)

EXCEPT AS NOTED, ALL PARTS SHOWN ARE PROVIDED AS PART OF ITEM #12#13 (11/40-A)



REVISIONS		
CHK	CHANGE NO	REV

TITLE BASIC ASSY 11/40 A,  
 PDP 10

SIZE CODE D AD

NUMBER 7009711-0-0

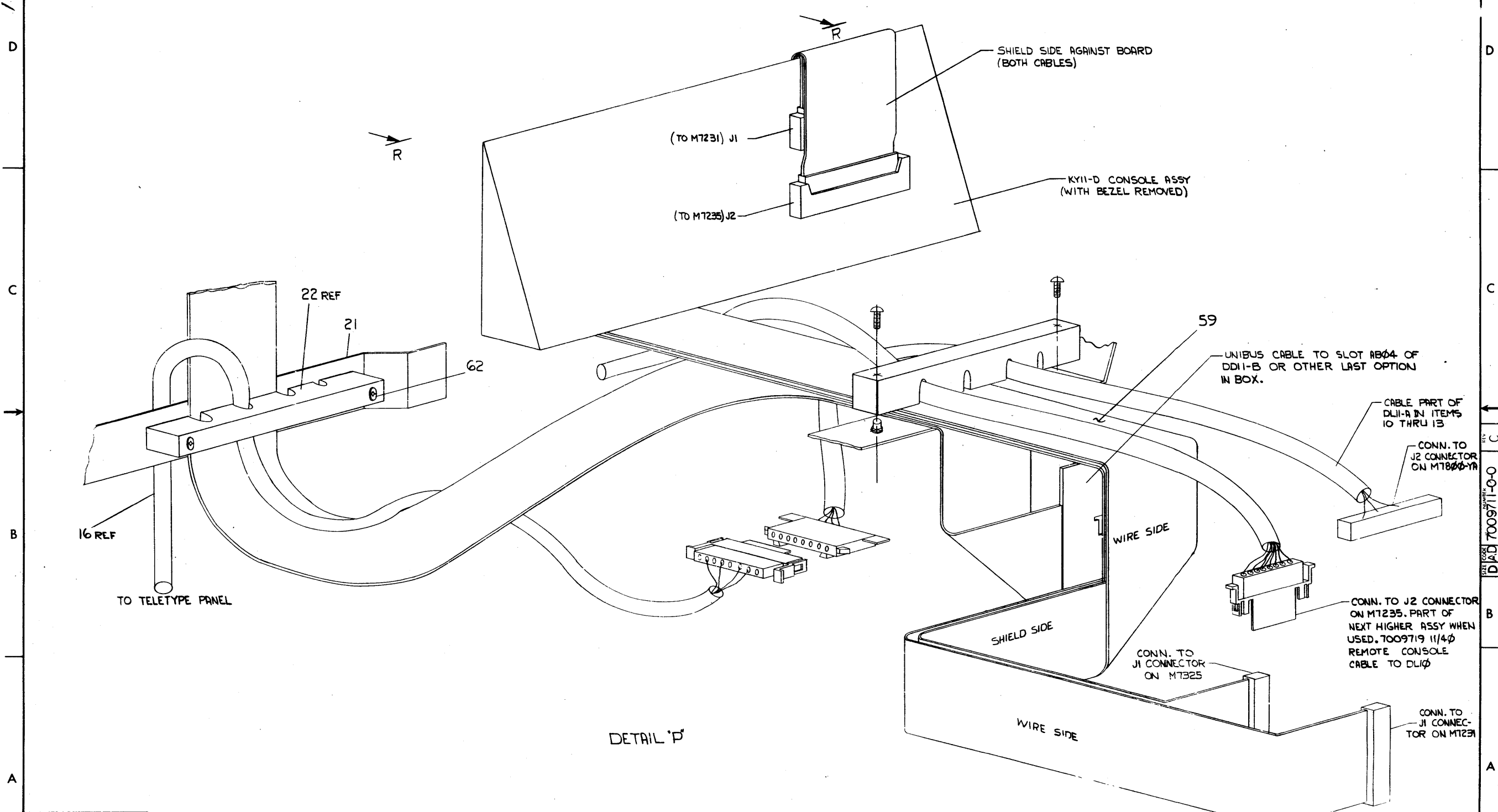
REV. C

SCALE SHEET 6 OF 10

8 7 6 5 4 3 2 1

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0-0-112600Z (D) 2



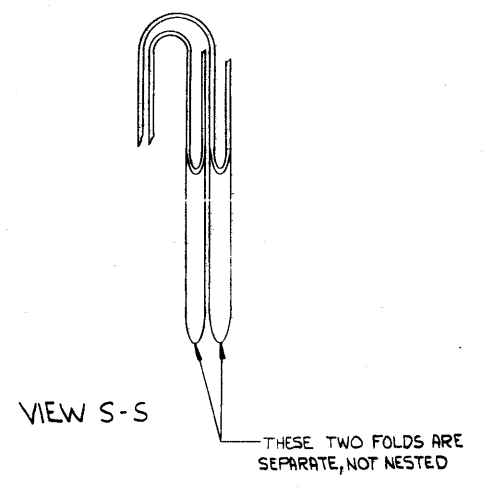
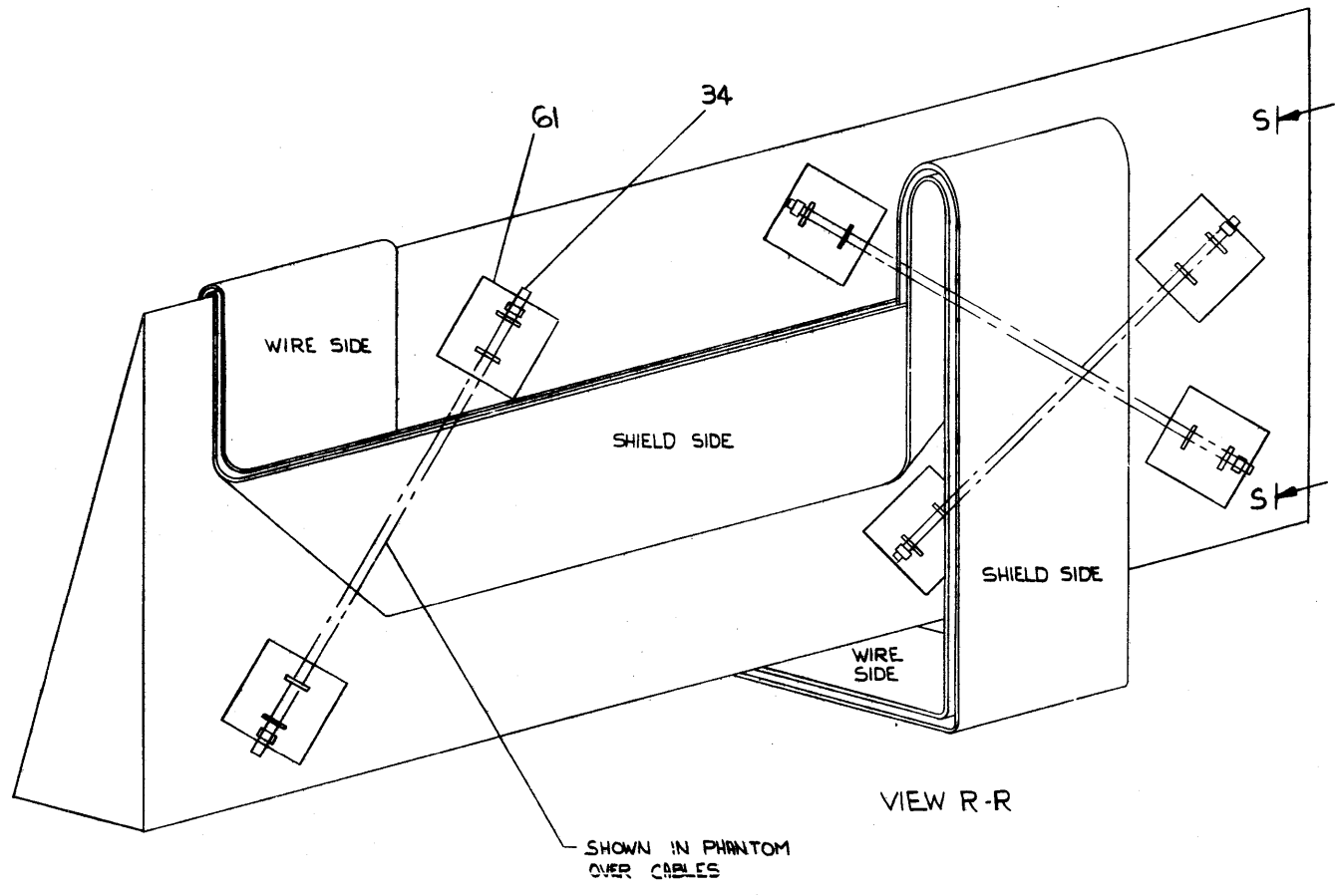
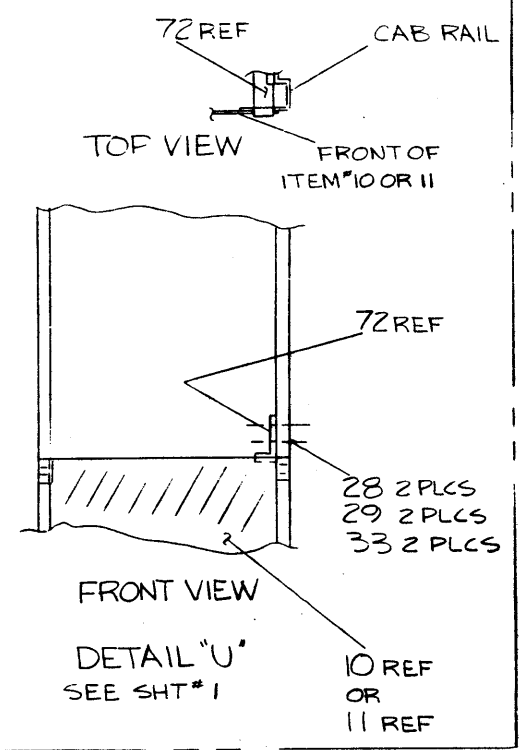
DETAIL 'P'

REVISIONS		
CHK	CHANGE NO	REV

TITLE BASIC ASSY 11/4φ A.  
 PDP 10  
 SCALE 1/4" = 1"  
 SHEET 7 OF 10  
 SIZE CODE D AD  
 NUMBER 7009711-0-0  
 REV C

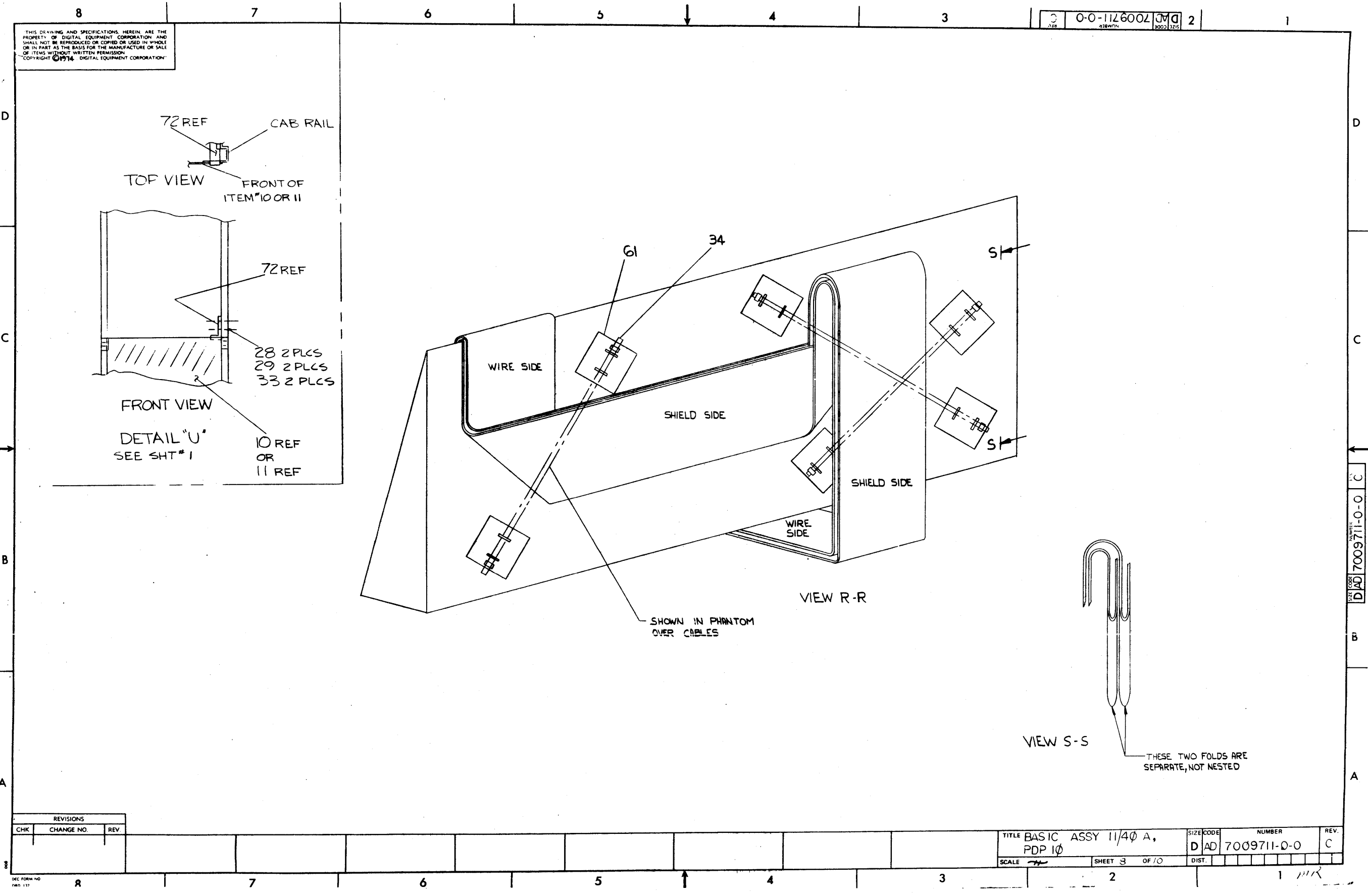
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0-0-112600Z DAD 2



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	BASIC ASSY 11/4 Ø A, PDP 10	SIZE CODE	D AD	NUMBER	7009711-0-0	REV.	C
SCALE		SHEET	3	OF	10	DIST.	



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D  
C  
B  
A  
REV  
CHANGE NO.  
CHK

**KD11-A 11/40 PROCESSOR**  
M7231 (CS REV B ETCH REV C) DATA PATHS ABCDEF#4

NO KT11-D OPTION (K1-7) W1 IN  
 NO KT11-D OPTION (K1-7) W2 { IN TOWARD PINS  
 NO KJ11-A OPTION } { OUT TOWARD HANDLE

NO KT11-D OPTION (K1-7) W3 IN  
 NO KT11-D OPTION (K1-7) W4 IN  
 NO KT11-D OPTION (K1-8) W5 IN  
 NO KT11-D OPTION (K1-8) W6 IN  
 NO KT11-D OPTION (K1-9) W7 IN  
 NO KT11-D OPTION (K1-9) W8 IN  
 NO KT11-D OPTION (K1-8) W9 IN  
 NO KT11-D OPTION (K1-6) W10 { OUT TOWARD PINS  
 { IN TOWARD HANDLE

BOARD IS NORMALLY RECEIVED IN CORRECT CONFIGURATION.

M7232 MICRO WORD ABCDEF#3  
(ETCH REV D CS REV D)  
NO JUMPERS  
CABLE SOCKETS J1, J2, & J3  
ARE EMPTY -- NO EXTENDED  
ORDER CODE OPTIONS

M7233 IR DECODE ABCDEF#5  
(ETCH REV C CS REV C)

NO KELL-E OPTION (K3-8) W1 IN  
 NO ESALUM INPUT (K3-8) W2 IN  
 BOARD IS NORMALLY RECEIVED IN CORRECT CONFIGURATION

M7234 TIMING ABCDEF#7  
(ETCH REV D CS REV D)

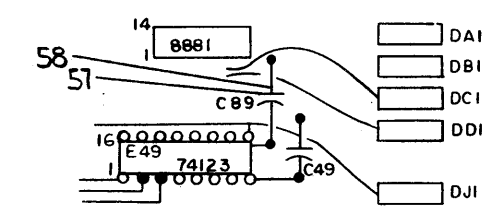
NO KJ11-A OPTION (K4-4) W1 { OUT TOWARD PINS  
 { IN TOWARD HANDLE }  
 NO KT11-D OPTION (K4-4) W2 { IN TOWARD PINS  
 { OUT TOWARD HANDLE }  
 NOT ON XOR TESTER (K4-2) { W3 IN  
 { W4 IN

NORMALLY RECEIVED IN CORRECT CONFIGURATION

PARITY MEMORY (K4-3) W5 \* { IN FOR NO PARITY MEMORIES  
 { OUT FOR ONE OR MORE PARITY MEMORIES

TIMING ADJUSTMENTS (K4-2) S1 NOT NORMALLY CHANGED  
 SEE CIRCUIT SCHEMATIC  
 \*DOES NOT EXIST ON ETCH REV C OR EARLIER

NOTE: M7234 ETCH REV D OR LATER IS REQUIRED FOR PARITY MEMORY  
 BUS TIMEOUT 50µs NOMINAL 37µs MINIMUM  
 REPLACE C89 120µF +5% MICA CAPACITOR WITH 50µF +20% CERAMIC CAPACITOR  
 DEC PN 1001765. SLEEVE LEADS.



TAG MODULE WITH TAG WHICH SAYS "MODIFIED MODULE--C89 CHANGED TO 50µF FOR 50µs BUS TIMEOUT FOR DLL"

M7235 STATUS ABCDEF#6  
(CS REV C ETCH REV D)  
NO KJ11-A OPTION (K5-4) W1

POWER FAIL VECTOR 24 STD  
 "1"=IN TOWARD PINS OUT TOWARD HANDLE  
 "0"=OUT TOWARD PINS IN TOWARD HANDLE

PARITY MEMORY (K5-5)

BIT 2 W2 { OUT TOWARD PINS  
 { IN TOWARD HANDLE }  
 BIT 3 W3 { OUT TOWARD PINS  
 { IN TOWARD HANDLE }  
 BIT 4 W4 { OUT TOWARD PINS  
 { IN TOWARD HANDLE }  
 BIT 5 W5 { OUT TOWARD PINS  
 { IN TOWARD HANDLE }  
 BIT 6 W6 { OUT TOWARD PINS  
 { IN TOWARD HANDLE }  
 BIT 7 W7 { OUT TOWARD PINS  
 { IN TOWARD HANDLE }  
 W8 { IN FOR NO PARITY MEMORIES  
 { OUT FOR ONE OR MORE PARITY MEMORIES

NORMALLY RECEIVED IN CORRECT FIGURATION

KH11-L LINE CLOCK (M787) REGISTER INT. VECTOR PRIORITY  
 CLOCK STATUS (LKS) 777546 1# BR6  
 REG. (FIXED BACKPLANE WIRING)

KD11-A BACKPLANE  
 REMOVE WIRE FROM F#3R2 TO F#3V2  
 (BG 6 H) TO INSTALL CLOCK

PC11 HIGH SPEED READER/PUNCH  
 (NOT PART OF STANDARD DC76 CONFIGURATION)  
 INSTALL BR4 PRIORITY PLUG 54#8776  
 (NORMALLY SUPPLIED)

JUMPERS

REGISTER ADDRESSES 77755#  
 IN FOR "0"  
 OUT FOR "1"

VECTOR ADDRESSES #7#  
 OUT FOR "0"  
 IN FOR "1"

NPR SPEEDUP

A3 OUT }  
 A4 IN } 5  
 A5 OUT }  
 A6 OUT }  
 A7 IN } 5  
 A8 OUT }  
 A9 OUT }  
 A10 OUT } 7  
 A11 OUT }  
 A12 OUT } 7  
 V3 IN }  
 V4 IN } 7  
 V5 IN }  
 V6 OUT }  
 V7 OUT }  
 V8 OUT }  
 N1 IN

EXCEPT WHEN 11/15 (KC11) OR 11/20 (KA11) PROCESSOR WITHOUT KH11 OPTION IS USED. THEN OUT.

REV C  
 NUMBER  
 SIZE CODE  
 CAD 7009711-0-0  
 B

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DC76				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES		DRN. <i>W. Hart</i>	DATE 1-1-74	
TOLERANCES		CHK'D. <i>W. Hart</i>	DATE 2-4-74	
DECIMALS .xxx = .005	ANGLES ±0° 30'	ENG. <i>Allen Kent</i>	DATE 15 Nov 74	
.xx = .02		PROJ. ENG. <i>Allen Kent</i>	DATE 15 Nov 74	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		PROB. <i>W. Hart</i>	DATE 3-15-74	TITLE
MATERIAL		NEXT HIGHER ASSY.		
FINISH		SCALE		
		SHEET 9 OF 10		
		SIZE CODE	NUMBER	REV.
		CAD	7009711-0-0	C
		DIST.		

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DL11-A CONSOLE TTY (M7800-YA)

RCVR STATUS (RCSR) 777560 } 60 BR4  
 RCVR DATA (RBVF) 777562 }

TRANS STATUS (XCSR) 777564 } 64 BR4  
 TRANS DATA (XBUF) 777566 }

JUMPERS (REF A-SP-DL11-0-2)  
 ADDRESS

A10 OUT  
 A9 OUT  
 A8 OUT  
 A7 IN  
 A6 OUT  
 A5 OUT  
 A4 OUT  
 A3 IN

VECTOR PRIORITY PLUG  
 V8 OUT BR4  
 V7 OUT 5408776-0-0  
 V6 OUT  
 V5 IN  
 V4 IN  
 V3 OUT

OTHERS  
 EIA REQ TO SEND J1 DON'T CARE  
 FORCE BUSY J2 OUT  
 REQ TO SEND J3 DON'T CARE  
 CONTROL J4  
 EIA DATA LEADS J5 DON'T CARE  
 ONLY J6  
 BREAK J7  
 DATA SET J8  
 INTERRUPTS J9 OUT  
 DATA SET BITS J10 OUT  
 ERROR BITS J11 OUT  
 SPECIAL NPR N1 IN EXCEPT IN 11/15 & 11/20 WITHOUT KH11

DATA FORMAT  
 8 BITS { NB2 OUT  
 { NB1 OUT  
 NO PARITY { NP OUT  
 { EPS DON'T CARE  
 2SB OUT  
 TWO STOP BITS { J9 OUT  
 { J10 IN  
 { J11 OUT

110 BAUD { SPEED GROUP 1  
 { CRYSTAL=844.8KHZ DEC P.N. 1810245-1\* ITEM 56  
 { SWITCH POSITION 3

\* USE A OR C CUT CRYSTALS ONLY.  
 DO NOT USE CRYSTALS MARKED NE-6D

MF11-L OR -LP MEMORY  
 MM11-L OR -LP

G231  
 8K STACKS { J3 OUT\*  
 { J4 IN\*  
 CURRENT TEST LOOPS { J5 IN\*  
 { J6 IN\*  
 REFERENCE { J1 ADJUSTED IN\*  
 SUPPLY { J2 MEMORY TEST DO NOT CHANGE

(REF D-BD-MM11-S-2 OR B-BD-MM11-LP-2  
 \*NO CHANGE NORMALLY REQUIRED

G109 OR G110  
 PARITY NON PARITY  
 8K STACKS { W5 IN\*  
 { W9 OUT\*  
 { W10 IN\*

1st 8K ADDRESSES { A17 W2 IN  
 { A16 W3 IN  
 { A15 W4 IN  
 { A14 W6 IN

2nd 8K ADDRESSES { A17 W2 IN  
 { A16 W3 IN  
 { A15 W4 IN  
 { A14 W6 OUT

NO INTERLEAVING { W8 IN\* } STRAIGHT ACROSS  
 { W7 IN\* }

NO WRITE PROTECT W11 OUT\*  
 MSEL TEST POINT W1 IN\*

\* NO CHANGE NORMALLY REQUIRED

M7259 PARITY CHECKER  
 REF B-BD-MF11-LP-13  
 D-CS-M7259-0-1

CSR ADDRESS OF IN FOR "0"  
 1st MF11-LP OUT FOR "1"  
 772100 A04 W1 IN  
 A03 W2 IN  
 A02 W3 IN  
 A01 W4 IN  
 W5 OUT  
 W6 OUT  
 W7 IN

LONG TIMING CAPACITOR W5 OUT  
 NOT MM11-V MEMORY W6 OUT  
 DON'T HANG BUS ON PAR ERR W7 IN

PC2 SSYN DLY (1) L

R1 ADJUST TO SPEC SEE 'CS'

NORMALLY RECEIVED IN CORRECT CONFIGURATION

MF11-U/UP MEMORY  
 G235 X-Y DRIVE MODULE (LOC A-F-5,6)  
 JUMPERS W1 thru W7 are FACTORY ADJUSTED.  
 DO NOT MAKE ANY CHANGES AT SYSTEM TEST  
 OR IN FIELD. RETURN ANY DEFECTIVE  
 MODULE FOR REPAIR OR REPLACEMENT.

M8293 16K UNIBUS TIMING (LOC C-F 09)  
 ADDRESS DEVICE SELECTION (NON INTERLEAVED)

START ADDRESS (OCTAL)	CORE BANK (OCTAL)	JUMPER (A17)	W3	W4	CONVERSION (A15)	W5	W6	W7
000000	0	IN	IN	IN	IN	IN	IN	IN
100000	1	IN	IN	OUT	IN	IN	IN	IN

NORMALLY RECEIVED WITH ALL JUMPERS IN AND SET UP FOR NON-INTERLEAVED OPERATION. FOR DIFFERENT START ADDRESSES SEE DEC MAINTENANCE MANUAL DEC-11-HMPMA-#-D pgs 2-16 TABLE 2-4.

M7259 PARITY CHECK MODULE

PARITY REG ADDRESS OCTAL	CORE BANK	JUMPER W1	W2	CONVERSION W3	W4
772100	0	IN	IN	IN	IN
772104	1	IN	IN	OUT	IN

R16 PCL SSYN DLY (L) ADJUSTMENT SET FOR 135 NSEC. SEE pp 5-8 & 5-9 OF MAINT. MANUAL DEC-11-HMPMA-#-D

THE FOLLOWING ECO'S OR INDICATED REVISIONS OR HIGHER ARE REQUIRED IN THE DC76 (FOR PARITY MEMORY)  
 KD11-A ECOs #E0005 WL REV D (13 ADDS/DELETES)  
 & #C0006

M7234 ECO #E0003 CS REV D ETCH REV D  
 M7235 ECO #00002 CS REV C ETCH REV

REV	
CHANGE NO.	
CHK	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DC76				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DRN. W. H. 1-16-74	DATE	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
TOLERANCES	CHK'D. W. H. 1-17-74	DATE	TITLE JUMPER SHEET	
DECIMALS .xxx = .005	ENG. Alan Kent 15 Mar 74	DATE	11/40 A, PDPI0 ASSY	
ANGLES ±0° 30'	PROJ. ENG. Alan Kent 15 Mar 74	DATE	SIZE CODE NUMBER REV.	
.xx = .02	PROD. B. H. Weeks 3-15-74	DATE	C AD	7009711-0-0 C
.x = .1				
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY 1				
MATERIAL	NEXT HIGHER ASSY.			
FINISH	D-11A-DC76-0-0			
	SCALE			
	SHEET 10 OF 10			

REV. NUMBER  
 C AD 7009711-0-0  
 SIZE CODE

# DIGITAL EQUIPMENT CORPORATION

MAYNARD, MASSACHUSETTS

## PARTS LIST

MADE BY Bill Hovey  
 DATE 1-21-74  
 ENG Allen Kent  
 DATE 15 March 74

CHECKED *[Signature]*  
 DATE 2-12-74  
 PROD *[Signature]*  
 DATE 3-15-74

SECTION 1  
 ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	C-PL-7008525-2-0	BASIC CAB ASSY H95Ø-AB	1 1 7009711-1 (115V)
2	D-UA-H956-IA-Ø	PANEL, LOGO H956-IA (PDP-1Ø BLUE)	1 1
3	E-AD-7007189-2-0	INDICATOR PANEL ASSY 19 IN (BLANK)	1 1
4	D-MD-7411583-0-0	BEZEL MOUNTING BRKT	2 2
5	E-IA-7409305-2-0	BEZEL REWORK	1 1
6	D-IA-7409881-2-0	PANEL, INDICATOR (PDP-11/4Ø)	1 1
7	D-UA-H956-HJ-Ø	H956 SHORT DOOR ASSY (57.75 IN BLUE)	1* 1*
8	D-UA-H952-AC-Ø	H952 END PANEL (GREY #68)	2* 2*
9	D-UA-H95Ø-BC-Ø	FULL DOOR (BLASI BLUE)	1* 1*
10	D-UA-11/4Ø-AK-Ø	BASIC ASSY 11/4Ø (1ØK WITH PARITY 115V)	1 -
11	D-UA-11/4Ø-AL-Ø	BASIC ASSY 11/4Ø (1ØK WITH PARITY 23ØV)	- 1
<del>12</del>	<del>D-UA-11/4Ø-AC-Ø</del>	<del>BASIC ASSY 11/4Ø (ØK W/O PARITY 115V)</del>	<del>1*</del>
<del>13</del>	<del>D-UA-11/4Ø-AD-Ø</del>	<del>BASIC ASSY 11/4Ø (ØK W/O PARITY 23ØV)</del>	<del>1*</del>
<del>14</del>	<del>A-PL-1111-P-Ø</del>	<del>ØK MEMORY WITH PARITY</del>	<del>1*</del>
15	E-UA-H744-Ø-Ø	REGULATOR +5V (SEE %)	AR AR
16	D-IA-7009717-0-0	CABLE, TELETYPE ADAPTER	1 1
17	D-UA-861-C-Ø	POWER CONTROL 115 V-1 PHASE	1 -
18	D-UA-861-B-Ø	POWER CONTROL 23Ø V-1 PHASE	- 1
19	C-MD-7409312-0-0	BRACKET SHIPPING (BALL-F)	1 1
20	C-IA-7409870-0-0	BRACKET SHIPPING (INDICATOR PANEL)	1 1
21	C-IA-7410581-0-0	BRACKET, CABLE HOLD-DOWN	1 1
22	D-PS-1211215-0-0	CABLE CLAMP AND STRAP	1 1

TITLE BASIC ASSY (11/4Ø-A) PDP-1Ø  
 ASSY NO. D-AD-7009711-0-0  
 SIZE CODE A PL  
 SHEET 1 OF 5  
 NUMBER 7009711-0-0  
 REV. C  
 ECO NO. 7009711  
 MROO2

DEC FORM DEC 16 (325)-1031-NR70  
 DRA 110

# DIGITAL EQUIPMENT CORPORATION

MAYNARD, MASSACHUSETTS

## PARTS LIST

MADE BY Bill Hovey  
 DATE 1-21-74  
 ENG Allen Kent  
 DATE 15 March 74

CHECKED *[Signature]*  
 DATE 2-26-74  
 PROD *[Signature]*  
 DATE 3-15-74

SECTION 1  
 ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
23	A-PL-KW11-L-Ø	LINE FREQUENCY CLOCK	1 1
24	A-PL-DD11-B-Ø	SMALL PERIPHERAL MTG PANEL (11/4Ø)	1 1
25	M92Ø	UNIBUS JUMPER ASSY	1Ø 1Ø
26	G727	GRANT CONTINUITY BOARD	4Ø 4Ø
27	ØØ06073-1	SCREW, PHL PAN HD #10-32 X .50 LG	4 4
28	ØØ06074-1	SCREW, PHL PAN HD #10-32 X .62 LG	AR AR
29	ØØ07651	WASHER, EXT TOOTH LOCK #10	AR AR
30	1700015-9	POWER CORD, 3 COND #18 NEMA (9 FT) 5-15 P	1 -
31	ØØ06565	NUT, KEPS #10-32	6 6
32	1700016-9	POWER CORD, 3 COND #18 NEMA (9 FT) 6-15 P	- 1
33	ØØ07786	NUT, TINNERMAN #10-32	AR AR
34	ØØ07880	CABLE TIE, NYLON SST-1.5M	AR AR
35	D-IA-7409446-0-0	SUPPORT HARNESS	1 1
36	B-MD-7409447-0-0	PLATE, SUPPORT	1 1
37	D-MD-7409445-0-0	BRACKET, HARNESS SUPPORT	1 1
38	E-IA-7008754-0-0	HARNESS, POWER EXPANDER (REF PART OF ITEM #12 & 13)	1& 1&
39	E-IA-7009566-0-0	POWER HARNESS: BOX, 21 IN (REF PART OF ITEM 12 & 13)	1& 1&
<del>40</del>	<del>ØØ06857</del>	<del>SPACER, HEX #Ø-32 X .62 LG</del>	<del>4</del>
41	ØØ06899	TERM STRIP (4 CONTACT)	1 1
42	C-MD-7407607-0-0	PLATE, TERM STRIP MTG	1 1
43	C-MD-7408463-4-0	COVER, TERM STRIP	1 1
44	ØØ06633	WASHER, INT TOOTH LOCK #6	6 6

TITLE BASIC ASSY (11/4Ø-A) PDP-1Ø  
 ASSY NO. D-AD-7009711-0-0  
 SIZE CODE A PL  
 SHEET 2 OF 5  
 NUMBER 7009711-0-0  
 REV. C  
 ECO NO. 7009711  
 MROO2

DEC FORM DEC 16 (325)-1031-NR70

DIGITAL EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY BILL HOVEY  
DATE 1/21/74  
ENG Allan Kent  
DATE 15 March 74  
CHECKED W. Hovey  
DATE 2-6-74  
PROD A.D. Weeks  
DATE 3-15-74  
SECTION 1  
ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	SIZE CODE	ASSY NO.	REV	ECO NO.
45	9006026-1	SCREW, PHL PAN HD #6-32 X .75 LG	A	D-AD-7009711-0-0	C	
46	9006022-1	SCREW, PHL PAN HD #6-32 X .38 LG	PL			
47	D-UA-H952-CA-0	FAN ASSY 115V CARAVEL				
48	9009002	JUMPER CINCH 141 J				
49	9107246	TUBING, 1/2 IN. BLACK				
50	9007930	CONN, SOLDERLESS #6 HOLE #18-22 AWG (RED)				
51	9006025-1	SCREW, PHL PAN HD 6-32 X .62 LG				
52	9006666	WASHER, FLAT #6				
53	9006558	NUT, HEX #6-32				
54	1205724-00	GROUND STRAP 740F-34-44				
55	9006558	NUT, KEPS 5/16-18				
56	<del>1810245-1</del>	<del>CRYSTAL 1.152MHZ</del>				
57	1001765	CAPACITOR, CERAMIC 500pF ± 20%				
58	9107256-09	TUBING #22, THINWALL (WHT)				
59	C-UA-BC08R-06	BC08R-6 FEET				
60	1209340-00	8 PIN MATE-N-LOK FEMALE				
61	9008264	TIE WRAP MOUNT				
62	9008905-1	SCREW, PHL PAN HD #8-32 X 1 1/8 LG				
63	9008888	TERM, BURNDY #QA4C-B7 (FOR #4 AWG)				
64	9107674	#4 AWG				
65	9008264	MOUNT, CABLE TIE ADHESIVE BACK				
66	9007880	CABLE TIE SST 1.5 M				

TITLE BASIC ASSY (11/40 A) PDP-10  
ASSY NO. D-AD-7009711-0-0  
SIZE CODE A PL  
SHEET 3 OF 5  
NUMBER 7009711-0-0  
REV C  
ECO NO.

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

DIGITAL EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY BILL HOVEY  
DATE 1-21-74  
ENG ALLAN KENT  
DATE 3-15-74  
CHECKED W. HOVEY  
DATE 2-12-74  
PROD B. D. WEEKS  
DATE 3-15-74  
SECTION 1  
ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	SIZE CODE	ASSY NO.	REV	ECO NO.
67	1810245-1	CRYSTAL 1.152MHZ	I+	D-AD-7009711-1 (115V)	I+	
68	9006851-00	SPACER, HEX #6-32x.50LG	4		4	
69	3612680-00	DECAL, GROUND	1		1	
70	3610267-00	LABEL, HIGH VOLTAGE	1		1	
71	A-DC-7406789-00	DECAL, PWR. MARKING	1		1	
72	C-MD-7418889-1-0	BRACKET, LOCKING	1		1	
73	D-MD-7420396-0-0	SCREEN	1		1	
74	9006999-00	CONN. SOLD.#10 HOLE FOR 18-22 AWG	1		1	

TITLE BASIC ASSY (11/40-A) PDP-10  
ASSY NO. D-AD-7009711-0-0  
SIZE CODE A PL  
SHEET 4 OF 5  
NUMBER 7009711-0-0  
REV C  
ECO NO.

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



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\* End panels and doors are normally not supplied with this assy but at the next higher assy. Supply these items only when this assy itself is ordered by customer.

~~# Use items 12 and 14 if item 10 is not available for 115 V. Use items 13 and 14 if item 11 is not available for 230 V. In this case remove the MP11-L from the 11/40 AC or 11/40 AD and return it to the stock room for credit.~~

% If 11/40 assy is supplied with only two H744 power supplies a third one must be added in slot "C" of the H742.

\$ Items 25 and 26 (M920 and G727) are normally supplied with the DD11-B item #24.

& The 7008754 harness is used when the BA11-F box is equipped with 5409944 expander box power distribution boards (9-pin plugs) I.E. 11/40 serial 5999 or below. The 7009566 harness is used when the BA11-F box is equipped with 5410590 system unit power distribution boards (15-pin and 6-pin plugs) I.E. 11/40's serial 6000 or above.

+ Use A or C cut Crystals only. Do not use crystals marked NE-6D. Use item 67 for LA36 CTY or later models of this assy.

ç The 6 foot BC08R's are required when the 11/40 is supplied with 3 foot cables (after ECO #KY11D-00002).

REV C  
NUMBER 7009711-0-0  
SIZE CODE A PL

REVISIONS	REV.		<b>DO NOT SCALE DRAWING</b>		DRN. B.HOVEY	DATE 1-21-74	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	TITLE BASIC ASSY  (11/40-A) PDP-10	SIZE CODE A PL	NUMBER 7009711-0-0	REV. C
	CHANGE NO.		UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	CHK'D. <i>W. King</i>	DATE 2-6-74						
			TOLERANCES DECIMALS FRACTIONS ANGLES ± .005 ± 1/64 ± 0°30'	ENG. <i>Alan Karp</i>	DATE 15 Nov 74						
	CHK		FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	PROJ. ENG. <i>Alan Karp</i>	DATE 15 Nov 74						
		MATERIAL		PROD. <i>B.H. Webb</i>	DATE 3-15-74						
		FINISH		FIRST USED ON							
				SCALE							
				SHEET 5 OF 5							

DEC 16-(325)-1080-N572  
DRA 100

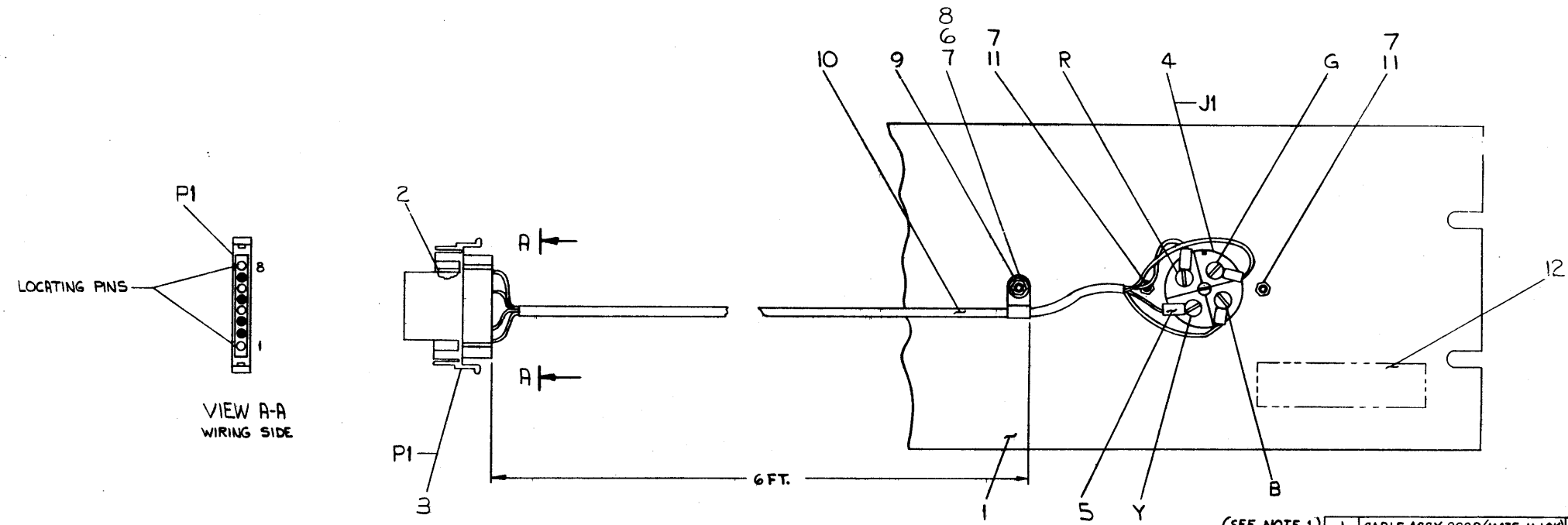
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8 7 6 5 4 3 2 1

WIRE TABLE							
ITEM NO.	DESCRIPTION	FROM	TO	SIGNAL			
NO.	AWG	COLOR	CONNECTION	WITH	CONNECTION	WITH	SIGNAL
10	22	GRN	J1-G	ITEM 5	P1-7	ITEM 2	KEYBOARD +
10	22	RED	J1-R	ITEM 5	P1-3	ITEM 2	KEYBOARD -
10	22	BLK	J1-B	ITEM 5	P1-5	ITEM 2	PRINTER +
10	22	WHT	J1-Y	ITEM 5	P1-2	ITEM 2	PRINTER -

NOTES:  
 1. USE ITEM \*13 TO CONNECT A TERMINAL WITH STANDARD MATE-N-LOK CONNECTOR TO ITEM \*4. ASSEMBLE WITH ITEM \*13 CONNECTED TO ITEM \*4.



QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	CABLE ASSY, 2838 (MATE-N-LOK)	D-IA-7014490-20	13
1	LABEL, PRODUCTION	9009255	12
2	SCREW, PHL FLAT HD 6-32x3/4	9006021-2	11
R/R	CABLE, 4 COND	9107706	10
1	CABLE CLAMP 1/8 ID	9007079	9
1	WASHER, FLAT	9006653	8
3	NUT, KEPS 6-32	9006560	7
1	SCREW, PHL PAN HD 6-32x7/16	9006023-1	6
4	TERMINAL, SOLDERLESS #34142	9006781	5
1	CONN, 548A-50	1205857-3	4
1	HSG, CONNECTOR 8 PIN	1209340-01	3
4	PIN, CONN. MALE	1209378-1	2
1	TELETYPE ADAPTER PANEL	C-MD-7411609-0-0	1

FIRST USED ON OPTION/MODEL DC76	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DRN. <i>W. B. King</i>	DATE 12-1-73	DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
TOLERANCES	CHK'D. <i>F. P. King</i>	DATE 1-8-74	TITLE	
DECIMALS .XXX - .005	ENG. <i>W. B. King</i>	DATE 2-15-74	CABLE, TELETYPE ADAPTER	
.XX - .02	PROJ. ENG. <i>W. B. King</i>	DATE 12-6-73		
.X - .1	FRD. <i>W. B. King</i>	DATE 2/13/74		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.			
SEE PARTS LIST	D-RD-7009711-0-0	SIZE CODE	NUMBER	REV.
FINISH	SCALE NONE	D-IA-7009717-0-0		B
	SHEET 1 OF 1	DIST.		

REVISIONS	CHK	CHANGE NO.	REV.
1	<i>W. B. King</i>	7009717-00001 A	1
2	<i>W. B. King</i>	7009717-00002 B	2
3	<i>W. B. King</i>	7009717-00003 C	3
4	<i>W. B. King</i>	7009717-00004 D	4
5	<i>W. B. King</i>	7009717-00005 E	5
6	<i>W. B. King</i>	7009717-00006 F	6
7	<i>W. B. King</i>	7009717-00007 G	7
8	<i>W. B. King</i>	7009717-00008 H	8
9	<i>W. B. King</i>	7009717-00009 I	9
10	<i>W. B. King</i>	7009717-00010 J	10
11	<i>W. B. King</i>	7009717-00011 K	11
12	<i>W. B. King</i>	7009717-00012 L	12
13	<i>W. B. King</i>	7009717-00013 M	13
14	<i>W. B. King</i>	7009717-00014 N	14
15	<i>W. B. King</i>	7009717-00015 O	15
16	<i>W. B. King</i>	7009717-00016 P	16
17	<i>W. B. King</i>	7009717-00017 Q	17
18	<i>W. B. King</i>	7009717-00018 R	18
19	<i>W. B. King</i>	7009717-00019 S	19
20	<i>W. B. King</i>	7009717-00020 T	20
21	<i>W. B. King</i>	7009717-00021 U	21
22	<i>W. B. King</i>	7009717-00022 V	22
23	<i>W. B. King</i>	7009717-00023 W	23
24	<i>W. B. King</i>	7009717-00024 X	24
25	<i>W. B. King</i>	7009717-00025 Y	25
26	<i>W. B. King</i>	7009717-00026 Z	26
27	<i>W. B. King</i>	7009717-00027 AA	27
28	<i>W. B. King</i>	7009717-00028 AB	28
29	<i>W. B. King</i>	7009717-00029 AC	29
30	<i>W. B. King</i>	7009717-00030 AD	30
31	<i>W. B. King</i>	7009717-00031 AE	31
32	<i>W. B. King</i>	7009717-00032 AF	32
33	<i>W. B. King</i>	7009717-00033 AG	33
34	<i>W. B. King</i>	7009717-00034 AH	34
35	<i>W. B. King</i>	7009717-00035 AI	35
36	<i>W. B. King</i>	7009717-00036 AJ	36
37	<i>W. B. King</i>	7009717-00037 AK	37
38	<i>W. B. King</i>	7009717-00038 AL	38
39	<i>W. B. King</i>	7009717-00039 AM	39
40	<i>W. B. King</i>	7009717-00040 AN	40
41	<i>W. B. King</i>	7009717-00041 AO	41
42	<i>W. B. King</i>	7009717-00042 AP	42
43	<i>W. B. King</i>	7009717-00043 AQ	43
44	<i>W. B. King</i>	7009717-00044 AR	44
45	<i>W. B. King</i>	7009717-00045 AS	45
46	<i>W. B. King</i>	7009717-00046 AT	46
47	<i>W. B. King</i>	7009717-00047 AU	47
48	<i>W. B. King</i>	7009717-00048 AV	48
49	<i>W. B. King</i>	7009717-00049 AW	49
50	<i>W. B. King</i>	7009717-00050 AX	50
51	<i>W. B. King</i>	7009717-00051 AY	51
52	<i>W. B. King</i>	7009717-00052 AZ	52
53	<i>W. B. King</i>	7009717-00053 BA	53
54	<i>W. B. King</i>	7009717-00054 BB	54
55	<i>W. B. King</i>	7009717-00055 BC	55
56	<i>W. B. King</i>	7009717-00056 BD	56
57	<i>W. B. King</i>	7009717-00057 BE	57
58	<i>W. B. King</i>	7009717-00058 BF	58
59	<i>W. B. King</i>	7009717-00059 BG	59
60	<i>W. B. King</i>	7009717-00060 BH	60
61	<i>W. B. King</i>	7009717-00061 BI	61
62	<i>W. B. King</i>	7009717-00062 BJ	62
63	<i>W. B. King</i>	7009717-00063 BK	63
64	<i>W. B. King</i>	7009717-00064 BL	64
65	<i>W. B. King</i>	7009717-00065 BM	65
66	<i>W. B. King</i>	7009717-00066 BN	66
67	<i>W. B. King</i>	7009717-00067 BO	67
68	<i>W. B. King</i>	7009717-00068 BP	68
69	<i>W. B. King</i>	7009717-00069 BQ	69
70	<i>W. B. King</i>	7009717-00070 BR	70
71	<i>W. B. King</i>	7009717-00071 BS	71
72	<i>W. B. King</i>	7009717-00072 BT	72
73	<i>W. B. King</i>	7009717-00073 BU	73
74	<i>W. B. King</i>	7009717-00074 BV	74
75	<i>W. B. King</i>	7009717-00075 BU	75
76	<i>W. B. King</i>	7009717-00076 BV	76
77	<i>W. B. King</i>	7009717-00077 BW	77
78	<i>W. B. King</i>	7009717-00078 BX	78
79	<i>W. B. King</i>	7009717-00079 BY	79
80	<i>W. B. King</i>	7009717-00080 BZ	80
81	<i>W. B. King</i>	7009717-00081 CA	81
82	<i>W. B. King</i>	7009717-00082 CB	82
83	<i>W. B. King</i>	7009717-00083 CC	83
84	<i>W. B. King</i>	7009717-00084 CD	84
85	<i>W. B. King</i>	7009717-00085 CE	85
86	<i>W. B. King</i>	7009717-00086 CF	86
87	<i>W. B. King</i>	7009717-00087 CG	87
88	<i>W. B. King</i>	7009717-00088 CH	88
89	<i>W. B. King</i>	7009717-00089 CI	89
90	<i>W. B. King</i>	7009717-00090 CJ	90
91	<i>W. B. King</i>	7009717-00091 CK	91
92	<i>W. B. King</i>	7009717-00092 CL	92
93	<i>W. B. King</i>	7009717-00093 CM	93
94	<i>W. B. King</i>	7009717-00094 CN	94
95	<i>W. B. King</i>	7009717-00095 CO	95
96	<i>W. B. King</i>	7009717-00096 CP	96
97	<i>W. B. King</i>	7009717-00097 CQ	97
98	<i>W. B. King</i>	7009717-00098 CR	98
99	<i>W. B. King</i>	7009717-00099 CS	99
100	<i>W. B. King</i>	7009717-00100 CT	100

8 7 6 5 4 3 2 1

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WIRE TABLE

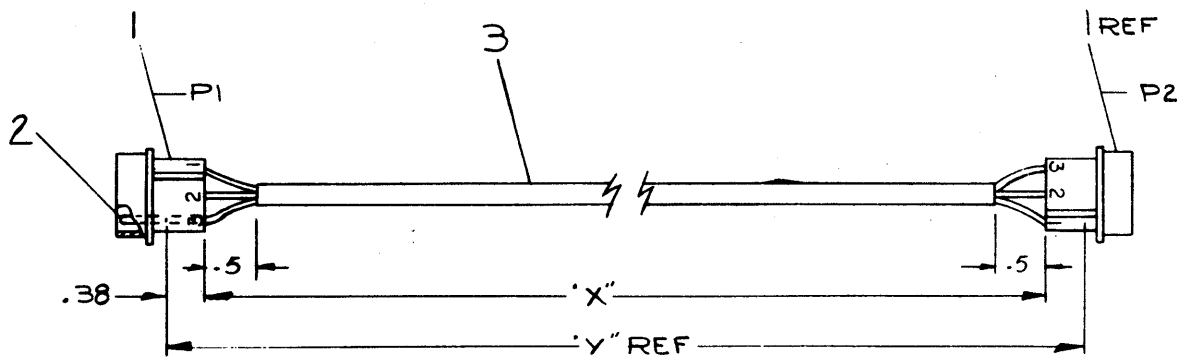
ITEM NO	DESCRIPTION			FROM		TO	
	AWG	COLOR	CONNECTION	WITH	CONNECTION	WITH	
3	22	RED	PI-1	2	P2-1	2	
3	22	BLK	PI-2	2	P2-2	2	
3	22	GRN	PI-3	2	P2-3	2	

LEGEND

NUMBER	DIM X VARIATION	DIM Y (PRECUT) REF
7008288-3F	3FT. 6IN ± 1IN.	3FT. 6.8IN ± 1IN.
7008288-8F	8FT. 6IN ± 2IN.	8FT. 6.8IN ± 2IN.
7008288-06	6FT. ± 2IN.	6FT. 0.8IN ± 2IN.
7008288-12	12FT. ± 3IN.	12FT. 0.8IN ± 3IN.
7008288-05	5FT. ± 1IN.	5FT. 0.8IN ± 2IN.
7008288-10	10FT. ± 2IN.	10FT. 0.8IN ± 3IN.
7008288-15	15FT. ± 3IN.	15FT. 0.8IN ± 3IN.
7008288-08	8FT. ± 2IN.	8FT. 0.8IN ± 2IN.
7008288-30	30FT. ± 7IN.	30FT. 0.8IN ± 7IN.
7008288-40	40FT. ± 10IN.	40FT. 0.8IN ± 10IN.

NOTES:

~~THE REMAINING BLK WIRE IS TO BE CUT BACK AT JACKET (BOTH ENDS.)~~



REV.	CHANGE NO.	DATE	BY	CHK'D
A	7008288-00001	10-25-72	R. BURTON	
B	7008288-00002	11-14-72	D. LEWIS	
C	7008288-00003	3-27-75	B. MINOR	
D	7008288-00004	3-18-75	J. PROVIDENT	
E	7008288-00005	5-13-75	F. DOLL	
F	7008288-00006	5-18-76	J. MCINTYRE	
H	7012401-00003	23-APR-76	I. MORRIS	
I	7012401-00003	23 May 77		
J	7012401-00003	23 May 77		

FIRST USED ON OPTION/MODEL  
PDP/11

UNLESS OTHERWISE SPECIFIED  
DIMENSION IN INCHES  
TOLERANCES  
ANGLES ± 0°30'

FINAL SURFACE QUALITY  
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL  
SEE PARTS LIST

FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.
A/R	WIRE, 3 COND #22AWG	9107756	3
G	PIN MALE #G0620-1	1209378-03	2
Z	PIN HOUSING #1-480305-0	1209351-03	1

PARTS LIST

DRN. *J. Burden* DATE 3/22/71  
CHK'D. *J. Burden* DATE 3/31/71  
ENG. *E. R. Blawie* DATE 4-7-71  
PROJ. ENG. *E. R. Blawie* DATE 4-9-71  
PROD. *Call* DATE 4/2/74

digital EQUIPMENT CORPORATION  
MAYNARD MASSACHUSETTS

TITLE  
CABLE ASSY

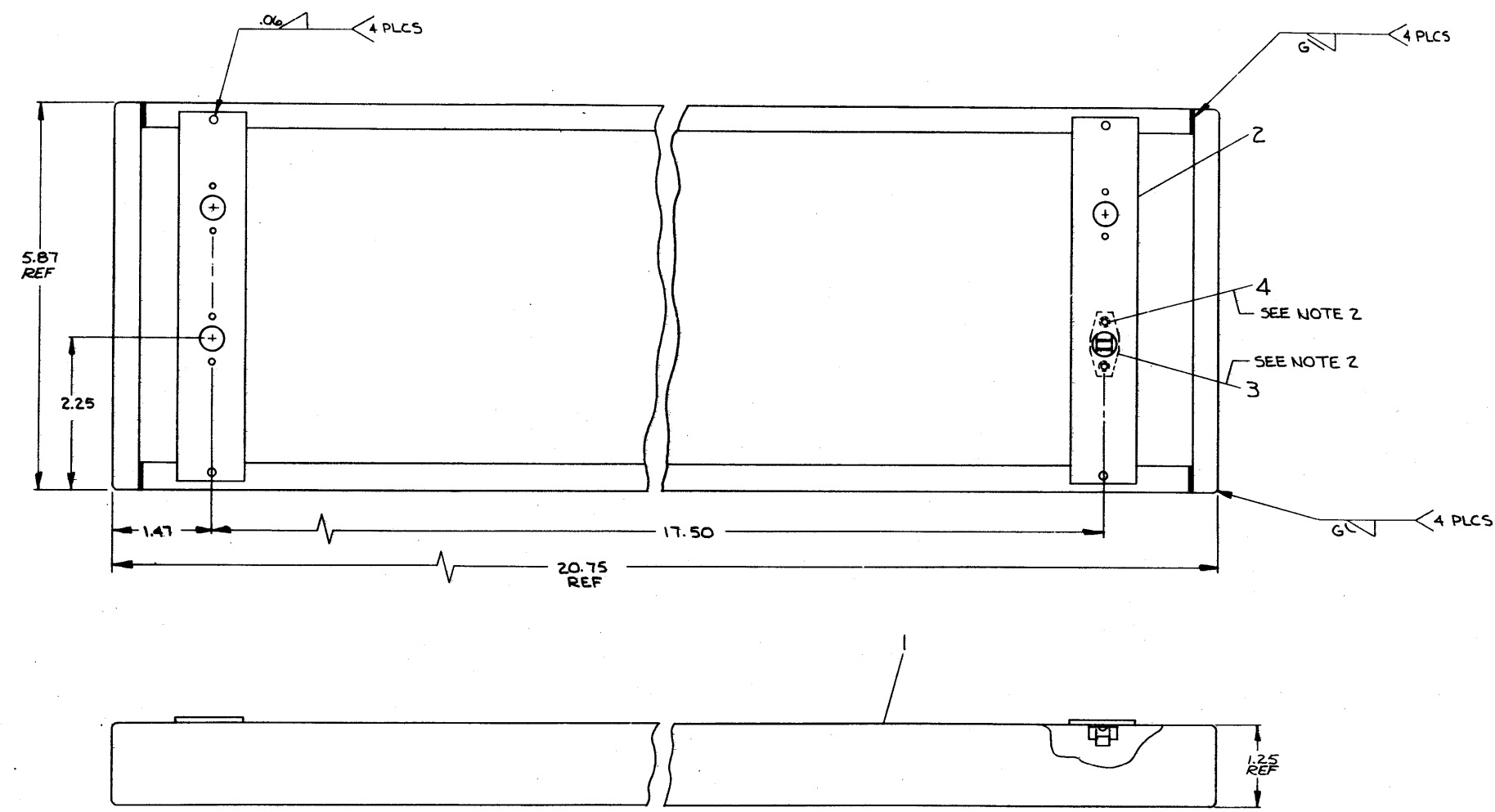
SIZE CODE NUMBER REV.  
CIA 7008288-0-0 H

SCALE 11  
SHEET 1 OF 1

REV. H  
7008288-0-0  
REV. H

0-0-667101 2

NOTES:  
 1. WELD PER A.W.S. A2.0-68.  
 2. INSTALL ITEM #3+4 AFTER PAINTING.



8	POP RIVET	9006459	4
4	RETAINER	9007186	3
2	BRACKET	B-MD-7419793-0-0	2
1	PANEL FILLER (TOP LEFT)	D-MD-7419792-0-0	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
ANGLES 45° 30'	CLASS OF ACCURACY (CHECK ONE)
SURFACE QUALITY IN MICROINCHES	PREFERRED
QUANTITY & VARIATION	FIRST USED ON
THIRD ANGLE PROJECTION	TITLE
REMOVE BURRS AND BREAK SHARP CORNERS	DO NOT SCALE DWG
MATERIAL SEE PARTS LIST	SCALE
FINISH 9200151-47	SHEET

D LA 7014495-0-0

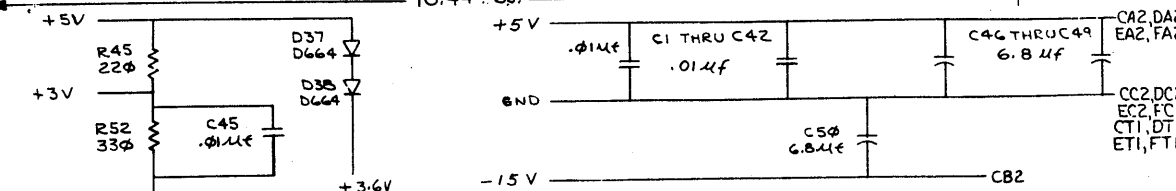
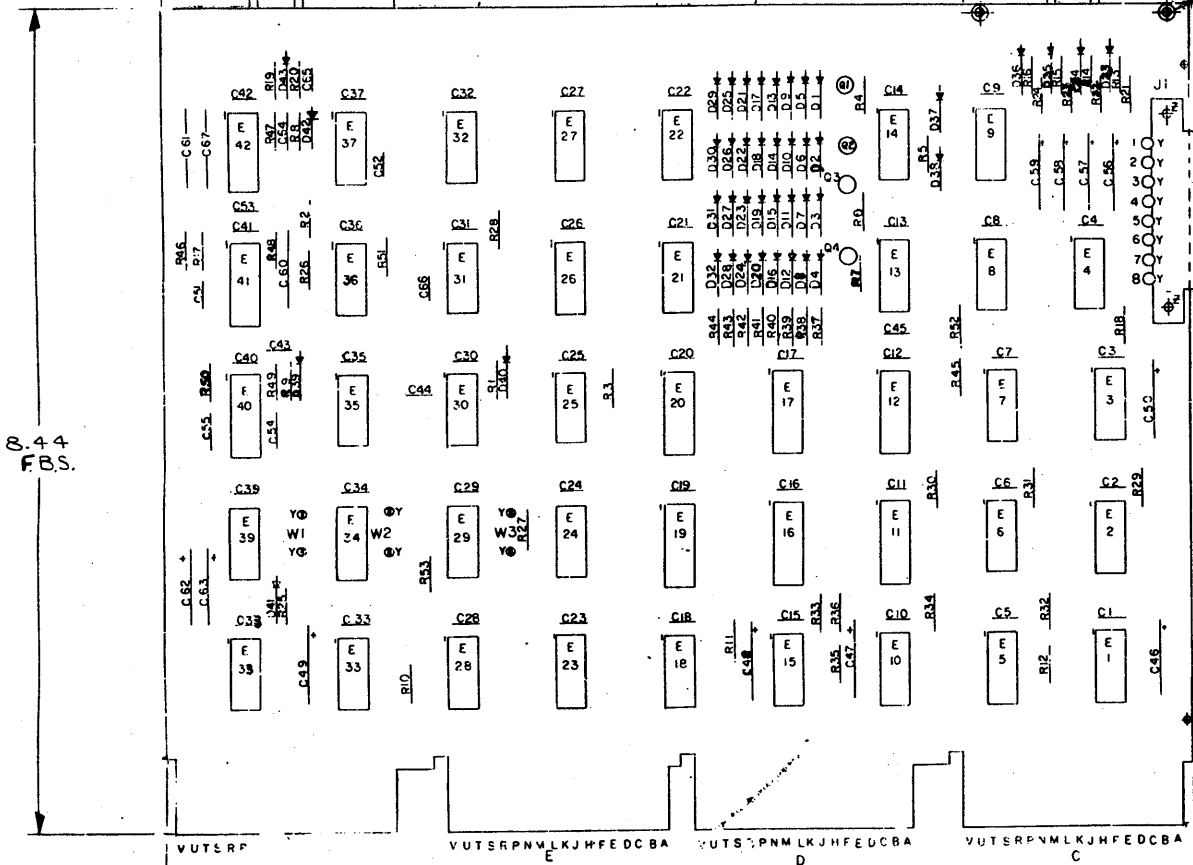




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**NOTES:**

- E4 MUST BE AN 11380 PART NO. 19-11113.
- R3 WILL NOT BE USED IN THE YD, YF, Y6, YH OR YJ VARIATIONS.
- D6, D7, D8, D11, D12, D16, D22, D24, D26, D32, D33-D43 ONLY ARE IN YD VARIATION.
- D8, D10, D12, D14, D15, D16, D20, D24, D32-D43 ONLY ARE IN YF AND YG VARIATIONS.
- D8, D10, D12, D14, D15, D20, D24, D32-D43 ONLY ARE IN YH VARIATION.
- D10, D12, D14, D15, D16, D28, D33-D43 ONLY ARE IN YJ VARIATION.



IC TYPE	GND	+5V
3246	1	8
74175	8	16
1138C	1	8
74123	8	16
74187	8	16

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

IC PIN LOCATIONS

REV	DATE	BY	CHKD
1	11-1-77	R. DIETER	
2	11-1-77	R. DIETER	
3	11-1-77	R. DIETER	
4	11-1-77	R. DIETER	
5	11-1-77	R. DIETER	
6	11-1-77	R. DIETER	
7	11-1-77	R. DIETER	
8	11-1-77	R. DIETER	
9	11-1-77	R. DIETER	
10	11-1-77	R. DIETER	
11	11-1-77	R. DIETER	
12	11-1-77	R. DIETER	
13	11-1-77	R. DIETER	
14	11-1-77	R. DIETER	
15	11-1-77	R. DIETER	
16	11-1-77	R. DIETER	
17	11-1-77	R. DIETER	
18	11-1-77	R. DIETER	
19	11-1-77	R. DIETER	
20	11-1-77	R. DIETER	
21	11-1-77	R. DIETER	
22	11-1-77	R. DIETER	
23	11-1-77	R. DIETER	
24	11-1-77	R. DIETER	
25	11-1-77	R. DIETER	
26	11-1-77	R. DIETER	
27	11-1-77	R. DIETER	
28	11-1-77	R. DIETER	
29	11-1-77	R. DIETER	
30	11-1-77	R. DIETER	
31	11-1-77	R. DIETER	

QTY	REF	DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	REF		X-Y COORDINATE HOLE LOCATION	K-CO-M873-0-4	1
1	REF		ASSY/DRILLING HOLE LAYOUT	D-4H-M873-0-5	2
1	REF		MODULE ECO HISTORY	8-MH-M873-0-6	3
1	1		ETCHED CKT BRD	5010703	4
1	1		CAP 33 PF 100V DM	1000009	5
1	1		CAP 100 PF 100V DM	1000016	6
2	2		CAP 470 PF 100V DM	1000024	7
46	46		CAP .01 UF 50V 20% DISC	1001610-01	8
1	1		CAP .15 UF 35V 20% TANT	1002180	9
2	2		CAP 1 UF 35V 10% TANT	1001776	10
4	4		CAP 2.2 UF 35V 10% TANT	1002431	11
2	2		CAP 3.3 UF 20V 10% TANT	1005334	12
5	5		CAP 6.8 UF 35V 10% TANT	1005306	13
3	3		CAP 39 UF 10V 10% TANT	1000076	14
17	17		DIODE D664 (SEE NOTES 3,4,5,6)	1100114	15
1	1		CONNECTOR	1209340-00	16
5	5		PINS CONTACT	1209456-01	17
1	1		RES 100 1/4W 5%	1300229	18
9	9		RES 220 1/4W 5%	1300271	19
1	1		RES 330 1/4W 5%	1300285	20
8	8		RES 470 1/4W 5%	1300316	21
12	12		RES 1K 1/4W 5% (SEE NOTE 2)	1300365	22
8	8		RES 4.7K 1/4W 5%	1300447	23
8	8		RES 10K 1/4W 5%	1300479	24
5	5		RES 18K 1/4W 5%	1302485	25
4	4		TRANS MXA55	1510706	26
2	2		SCREW NYLON	9006401-4	27
2	2		NUT HEX NYLON	9007992	28
6	6		SPLIT LUG	9008735	29
8	8		EYELET	9006732	30
4	4		HANDLE FLIP/CHIP MAGENTA	9008331-06	31
5	5		I.C. 7400	1905575	32
1	1		I.C. 7404	1909686	33
1	1		I.C. 7410	1905576	34
1	1		I.C. 7430	1905578	35
4	4		I.C. 7474	1905547	36
3	3		I.C. 74123	1810436	37
2	2		I.C. 74175	1910651	38
8	8		I.C. 8881	1909705	39
5	5		I.C. 8815	1909713	40
1	1		I.C. 11380	1911113	41
1	1		I.C. 74187	23044-A2	42
1	1		I.C. 74187	23045-A2	43
1	1		I.C. 74187	23089-A2	44
1	1		I.C. 74157	23090-A2	45
1	1		I.C. 74187	23091-A2	46

FIRST USED ON OPTION MODEL PDP 11

ETCH BOARD REV D

DRN: R. DIETER DATE: 11-1-77

CHKD: DATE: 11-1-77

ENG: DATE: 11-1-77

PROJ. ENG. DATE: 11-1-77

PROD. DATE: 11-1-77

NEXT HIGHER ASSY: R-DD-EM873-0

SCALE: N O N M

SHEET 1 OF 4

SEMICONDUCTOR CONVERSION CHART

digital EQUIPMENT CORPORATION  
NATICK MASSACHUSETTS

TITLE: RESTART LOADER

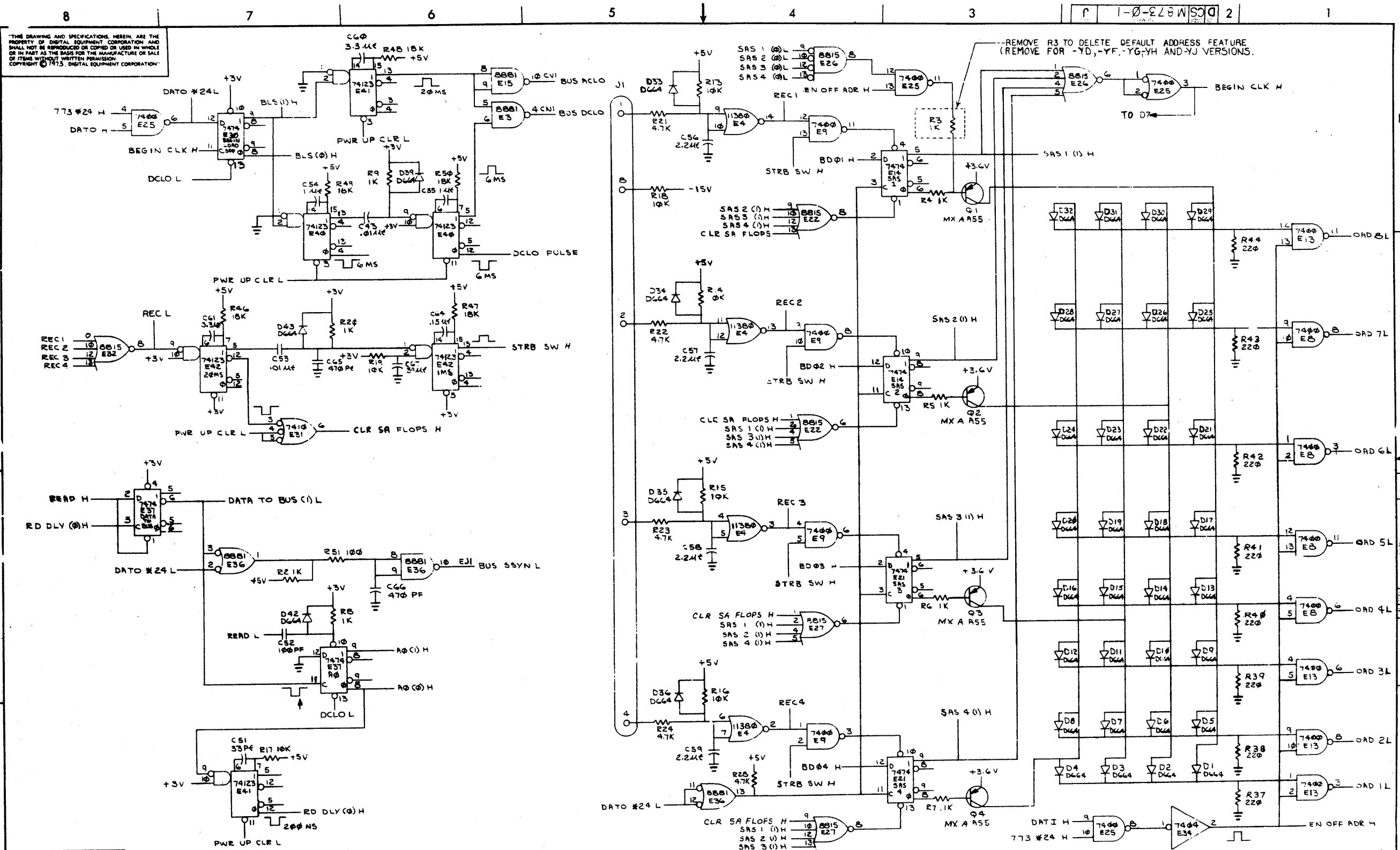
SIZE CODE: DC5M873-0-1

NUMBER: J

REV. NO.



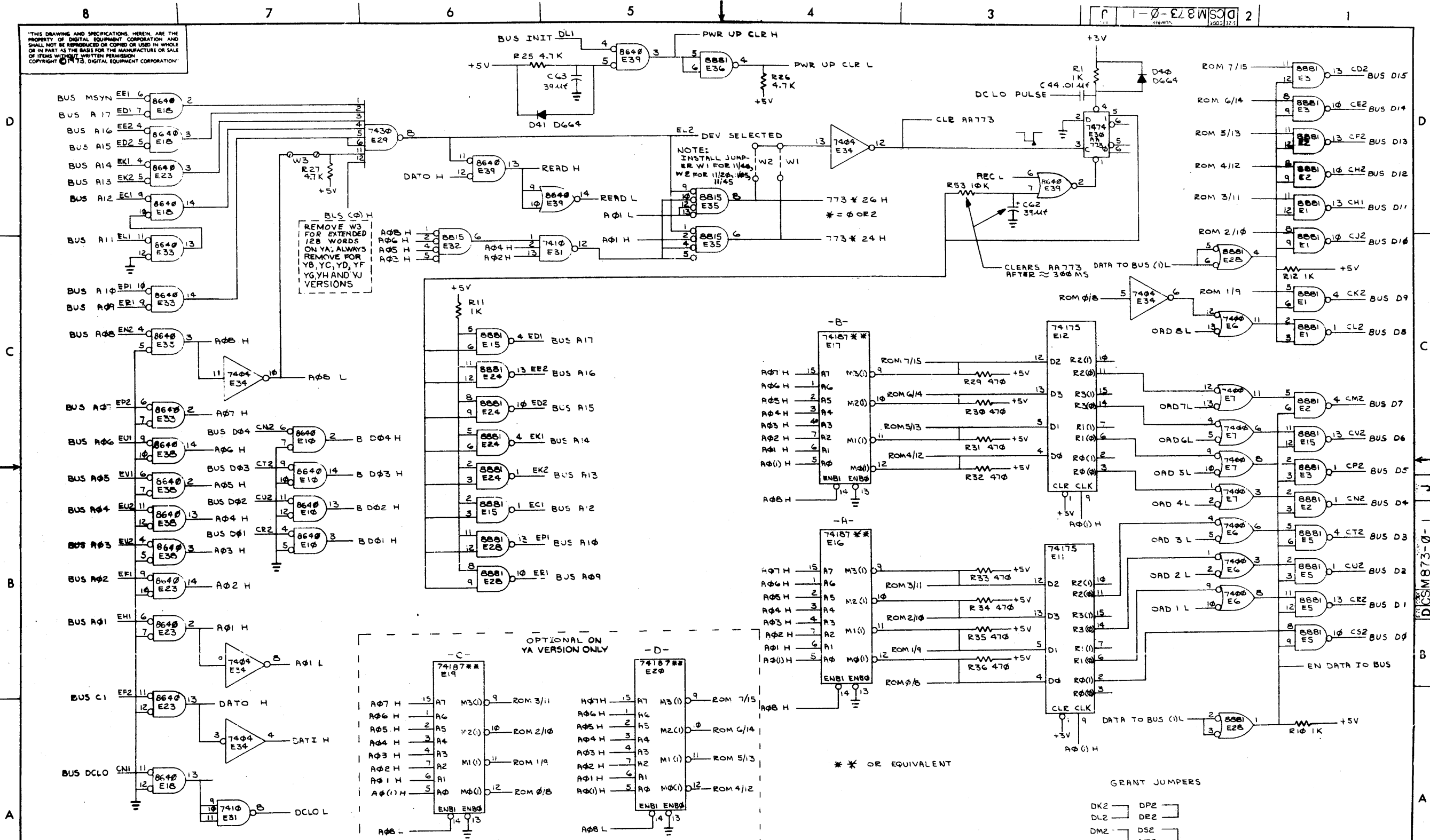




REVISIONS		
CHK	CHANGE NO	REV

TITLE	RESTART LOADER	SIZE CODE	DCSM873-0-1	NUMBER	J
SCALE		SHEET	3 OF 4	DIST.	
			MK		

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CHK	CHANGE NO	REV

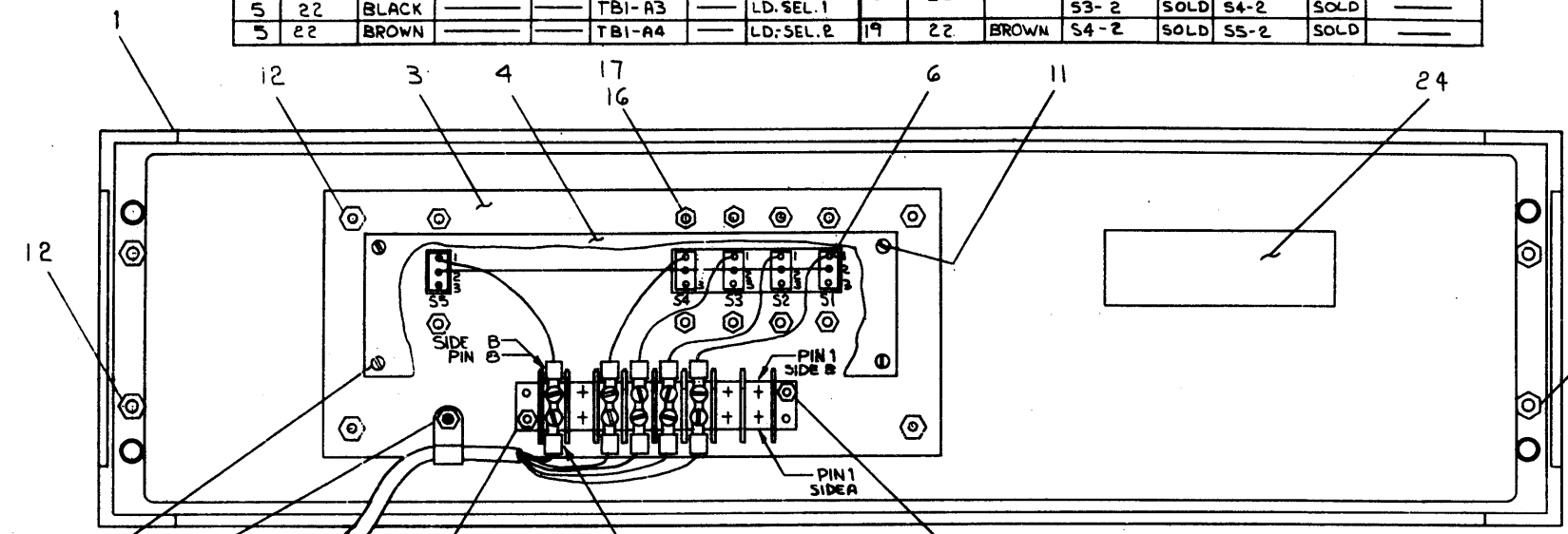
TITLE	RESTART/LOADER	SIZE CODE	DCS M873-0-1	NUMBER	1	REV	J
SCALE	1/1	SHEET	4	OF	4	DIST	

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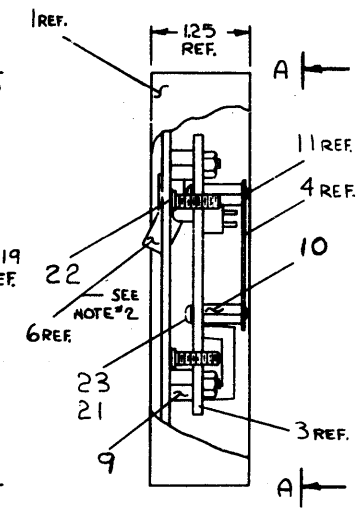
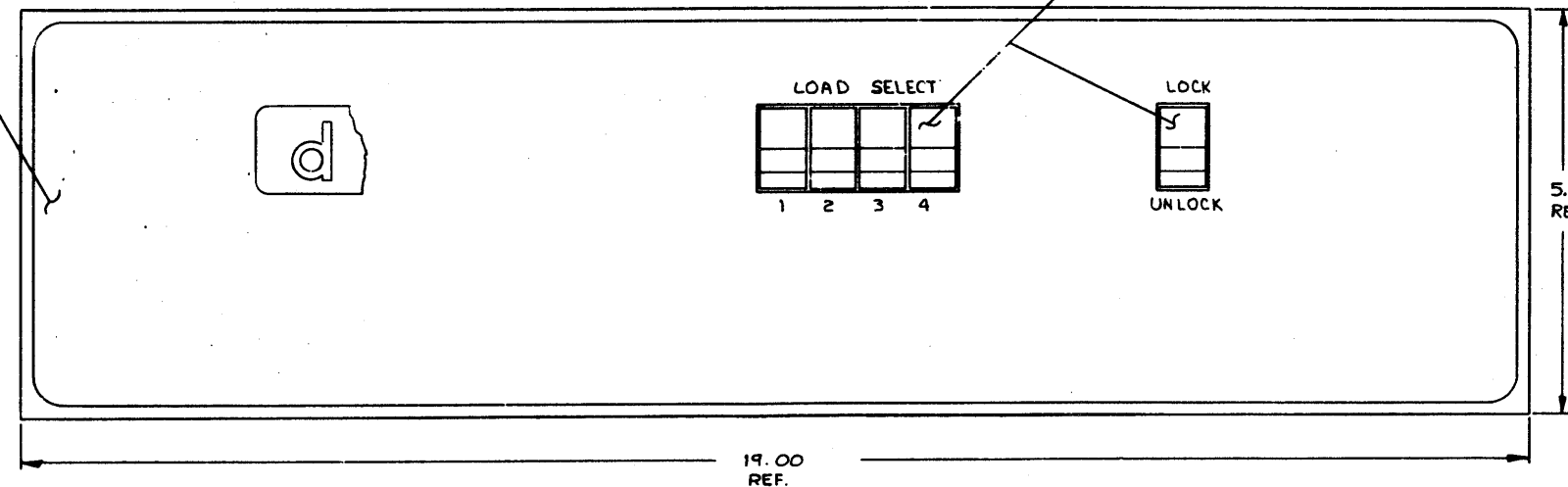
WIRE TABLE								WIRE TABLE							
ITEM NO	DESCRIPTION	FROM	TO	SIGNAL	ITEM NO	DESCRIPTION	FROM	TO	SIGNAL						
19	22 BROWN	TBI-B3	S1-1	SOLD	5	22 RED	TBI-A5	LD SEL. 3							
19		TBI-B4	S2-1		5	22 GREEN	TBI-A6	LD SEL. 4							
19		TBI-B5	S3-1		5	22 WHITE	TBI-A7	LOCK-UNLOCK							
19		TBI-B6	S4-1		20	22 BUSWIRE	S1-2	SOLD	S2-2						
19	22 BROWN	TBI-B8	S5-1	SOLD	20	22 BUSWIRE	S2-2	SOLD	S3-2						
5	22 BLACK		TBI-A3		20	22 BUSWIRE	S3-2	SOLD	S4-2						
5	22 BROWN		TBI-A4		19	22 BROWN	S4-2	SOLD	S5-2						

H324 TEST PROCEDURE			
CONNECT OHMMETER TO MATE+LOCK PLUG ON CABLE			
OHMMETER CONNECTIONS	PRESS SWITCHES	OHMMETER READING	
8 1	1 AND 5	SHORT CKT.	
8 2	2 AND 5	SHORT CKT.	
8 3	3 AND 5	SHORT CKT.	
8 4	4 AND 5	SHORT CKT.	

NOTES:  
 1. STANDARD LENGTH FOR ITEM #5 IS 12 FT.  
 2. SWITCHES (ITEM#6) TO BE INSTALLED AS SHOWN



VIEW A-A SCALE: 1:1 (REAR VIEW)



QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	LABEL	9009255	24
4	SCR PHL HD PAN #4-40X.38	9006011-1	23
4	WASHER SHOULDER (2136)	9008077	22
4	WASHER INT TOOTH #4	9006632	21
A/R	BUS WIRE #22 AWG	9107560-01	20
A/R	WIRE #22 AWG LPVC. BRN	9107350-11	19
5	TERMINAL BRASS	9007927	18
10	NUT KEP #4-40	9006557	17
10	SCR PHL HD PAN #4-40X.31	9006010-1	16
3	NUT KEP #6-32	9008185	15
1	SCR PHL HD PAN #6-32X.38	9006022-1	14
2	SCR. PHL. HD PAN #6-32X.56	9007793-1	13
8	NUT KEP #8-32	9006563	12
4	SCREW NYLON 4-40X.25IG	9006407-5	11
4	SPACER 1/4 X 1/2 4-40HOLE	9006849	10
4	SPACER 3/8 X 1/4 #8 HOLE	9006818	9
1	CABLE CLAMP .18	9007080	8
1	TERMINAL STRIP #8-140	9006908	7
5	SWITCH	1210890	6
1	CABLE, RESTART LOADER	D-1A-7004402-0-0	5
1	COVER SW MOUNTING	C-MD-7411915-0-0	4
1	PANEL, SW MOUNTING	C-MD-7411913-0-0	3
1	PANEL, INLAY	D-MD-7411914-0-0	2
1	5.25 SNAP ON BEZEL	D-BC-1209226-0-0	1

FIRST USED ON OPTION/MODEL H324		QTY.		DESCRIPTION		PART NO.		ITEM NO.	
PARTS LIST									
DIMENSIONAL TOLERANCE									
DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE SPECIFIED									
MILLIMETERS		INCHES		ANGLES					
X,XX	±0.10	XX	±0.005	XX	±0.005				
XX	±0.05	X	±0.002	X	±0.1				
X	±0.2								
THIRD ANGLE PROJECTION		REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		NEXT HIGHER ASSY.					
MATERIAL		FINISH		B-DD-H324-0		SIZE CODE		NUMBER	
						D UA		H324-0-0	
SCALE		SHEET		OF		DIST.			



TITLE  
UNIT ASSY  
H324

REVISIONS  
 CHANGE NO. REV.

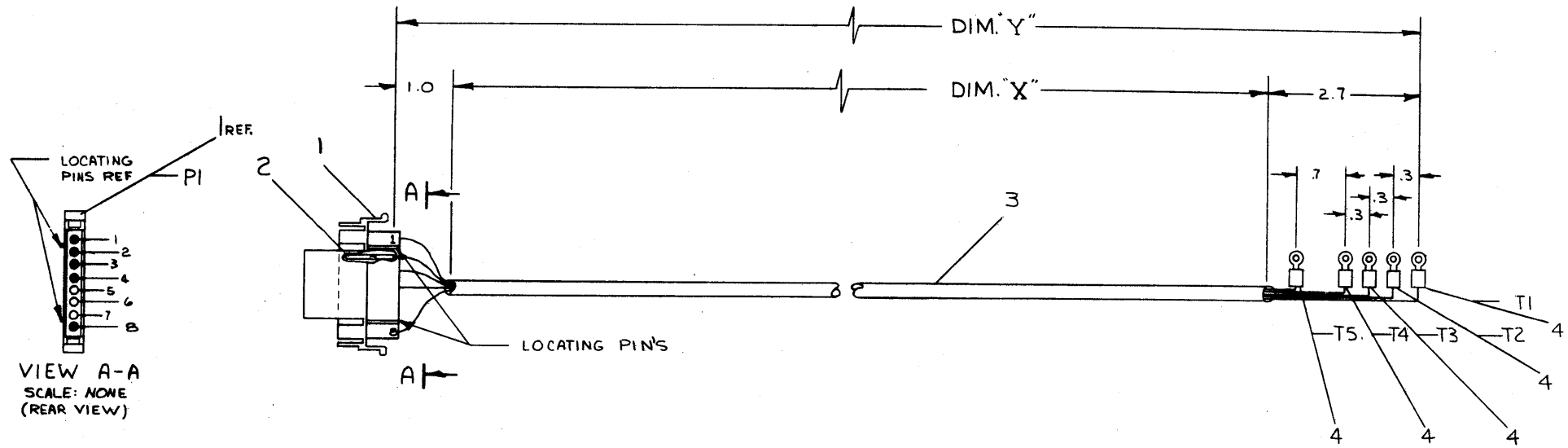
DUA H324-0-0

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WIRE TABLE							
ITEM NO.	DESCRIPTION		FROM		TO		REMARKS
	AWG	COLOR	CONNECTION	WITH	CONNECTION	WITH	
3	22	BLACK	PI-1	2	T1	4	
↑	↑	BROWN	PI-2	2	T2	4	
↑	↑	RED	PI-3	2	T3	4	
↑	↑	GREEN	PI-4	2	T4	4	
3	22	WHITE	PI-B	2	T5	4	

LEGEND		
NUMBER	DIM X VARIATION	DIM Y (PRECUT) REF
7009902-08	8 FEET	8 FEET-3.75 IN
7009902-12	12 FEET	12 FEET-3.75 IN
7009902-24	24 FEET	24 FEET-3.75 IN

NOTES:  
1. STANDARD CABLE FOR H324 IS 7009902-12



REV.	A
CHANGE NO.	7009902-00001
DESIGNER	N. HACKLER

5	TERM BRASS	9007929	4
A/R	CABLE 5 COND	9107680	3
5	PIN MALE MATE-N-LOCK	1209378-03	2
1	CONN MALE MATE-N-LOCK	1209340-01	1

FIRST USED ON OPTION/MODEL		H324																	
DIMENSIONAL TOLERANCE		PARTS LIST																	
DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE SPECIFIED		<table border="1"> <tr> <td>DATE</td> <td>6/12/74</td> </tr> <tr> <td>DATE</td> <td>6/12/74</td> </tr> <tr> <td>DATE</td> <td>6/12/74</td> </tr> <tr> <td>DATE</td> <td>6/12/74</td> </tr> </table>		DATE	6/12/74	DATE	6/12/74	DATE	6/12/74	DATE	6/12/74								
DATE	6/12/74																		
DATE	6/12/74																		
DATE	6/12/74																		
DATE	6/12/74																		
<table border="1"> <tr> <td>MILLIMETERS</td> <td>INCHES</td> <td>ANGLES</td> </tr> <tr> <td>XJX = ±0.10</td> <td>JXX = ±.008</td> <td>30° 30'</td> </tr> <tr> <td>XJX = ±0.5</td> <td>JXX = ±.02</td> <td></td> </tr> <tr> <td>X = ±2</td> <td>X = ±.1</td> <td></td> </tr> </table>		MILLIMETERS	INCHES	ANGLES	XJX = ±0.10	JXX = ±.008	30° 30'	XJX = ±0.5	JXX = ±.02		X = ±2	X = ±.1		<table border="1"> <tr> <td>PROJ. ENG.</td> <td>DATE</td> </tr> <tr> <td>PROJ. DATE</td> <td>DATE</td> </tr> </table>		PROJ. ENG.	DATE	PROJ. DATE	DATE
MILLIMETERS	INCHES	ANGLES																	
XJX = ±0.10	JXX = ±.008	30° 30'																	
XJX = ±0.5	JXX = ±.02																		
X = ±2	X = ±.1																		
PROJ. ENG.	DATE																		
PROJ. DATE	DATE																		
THIRD ANGLE PROJECTION		TITLE																	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		digital																	
MATERIAL		RESTART LOADER CABLE																	
FINISH		DIA 7009902-0-0																	
NEXT HIGHER ASSY.		REV. A																	
SCALE		NUMBER																	
SHEET OF		DIA 7009902-0-0																	

DIA 7009902-0-0

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<b>DIGITAL EQUIPMENT CORPORATION</b>						
MAYNARD, MASSACHUSETTS						
<b>ENGINEERING SPECIFICATION</b>					DATE 24 MAR 78	
TITLE DN87S-A, DN81-E UNIT TEST SPECIFICATION						
REVISIONS						
REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	REVISED & REDRAWN	DN87S-MR001	SRH	3-24-78	S.R. Hol	5-11-78

ENG S.R. Hol	APPD Bob Johnson	SIZE A	CODE SP	NUMBER DN87S-0-2	REV A
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DEC 16-(392)-1079-N971  
DRA 107

1 of 10 MR

<b>ENGINEERING SPECIFICATION</b>	CONTINUATION SHEET				
TITLE DN87S-A, DN81-E UNIT TEST SPECIFICATION					
<p>1.0 INTRODUCTION</p> <p>The DN87S is a communications front end system on the PDP-10. The system variation designations are given below:</p> <p>DN87S-AA PDP-11/40 assembly with 32K parity memory. Includes mainframe (115v, 60Hz), power supply, doors, panels, miscellaneous hardware, a DTE-20, 2-DL11-E, a KG11, BM873-YJ, an H324 ROM switch panel, and a ruggedized Unibus cable assembly.</p> <p>DN87S-AB Same as AA except 230v, 50Hz.</p> <p>DN87S-U DN87 to DN87S upgrade kit (see DN87S-0-5 for checkout and installation of DN87S-U option).</p> <p><u>Asynchronous Options</u></p> <p>DN81-EA Expander cabinet for asynchronous communication interfaces. Includes one DM11, 16 line multiplexer with distribution panel, power supply and DM11-BB modem control multiplexer.</p> <p>DN81-EB Same as EA, except 230v, 50Hz.</p> <p>DN81-EC Additional DH11 16 line multiplexer with distribution panel, power supply and DM11-BB modem control multiplexer.</p> <p>DN81-ED Same as EC, except 230v, 50Hz.</p> <p>DN81-FA Line adapter for eight 20 ma teletype lines (data only). Includes 2 DM11-DA's, telephone panel connector block and miscellaneous hardware.</p> <p>DN81-FB Line adapter for eight EIA/CCITT lines (data only). Includes two DM11-DB's with 25 ft. cables and null modems.</p> <p>DN81-FC Line adapter for eight EIA/CCITT - compatible lines equipped with data set control features. Consists of two DM11-DC's.</p>					
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">SIZE A</td> <td style="width: 15%;">CODE SP</td> <td style="width: 20%;">NUMBER DN87S-0-2</td> <td style="width: 10%;">REV A</td> </tr> </table>	SIZE A	CODE SP	NUMBER DN87S-0-2	REV A
SIZE A	CODE SP	NUMBER DN87S-0-2	REV A		

DEC FORM NO EN-01022-16-N370-(381)  
DRA 108

SHEET 2 OF 10

**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE DN87S-A, DN81-E UNIT TEST SPECIFICATION

Page 2

DN81-FD Eight internal answer/only modems. Converts FSK tone signals to TTL compatible signals. Consists of eight DF11-BB's.

DN81-FE Two intergral originate only modems. Consists of two DF11-BA's.

DN81-FF Automatic calling Unit Interface. Consists of one DN11-AA prewired system unit for up to four Bell 801 Auto Calling Unit Interfaces, and two DN11-DA's (line interfaces for Bell 801 Auto Calling Unit. Consists of two DN11-DA's.

Synchronous Options

DN81-EE Expander cabinet for NPR synchronous line interfaces, includes main frame and power supplies (115v, 60Hz) and one DQ11.

DN81-EF Same as EE, except 230v, 50Hz.

DN81-H NPR Synchronous Line control interface (DQ11-DA) EIA/CCITT up to 10K baud.

DN81-J Same as above except DQ11-EA, TTL to Bell system equivalent modem, up to 1M baud.

This procedure covers the checkout of the DN87S-AA/AB and the DN81-EA/EB. The DN87S-AA/AB will have one DN81-H/J installed assembly at system integration.

2.0 DOCUMENTATION REQUIRED

The following print sets and manuals:

- a. 11/40 systems
- b. DN87S Universal Communication Systems Front End (prints) (order #MP00109)
- c. DL11
- d. MF11-UP
- e. DD11
- f. DB11
- g. KW11-L
- h. KG11
- i. DH11

SIZE A	CODE SP	NUMBER DN87S-0-2	REV A
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SHEET 3 OF 10 MR

**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE DN87S-A, DN81-E UNIT TEST SPECIFICATION

Page 3

- j. DM11-BB
- k. BM873
- l. KT11-D

The following diagnostics and listings:

- a. MAINDEC-11-DCQKC (11/40 instruction exerciser)
- b. MAINDEC-11-DZMMI (Random Data)
- c. MAINDEC-11-DZMMG (Worst noise)
- d. MAINDEC-11-DCMFA (Parity Memory Test)
- e. MAINDEC-11-DBKTA (KT11-D Basic Logic Test)
- f. MAINDEC-11-DBKTB (KT11-D Access Keys Test)
- g. MAINDEC-11-DBKTD (KT11-D Processor States Test)
- h. MAINDEC-11-DBGTG (KT11-D Exerciser)
- i. MAINDEC-11-DZDLA (DL11 Test)
- j. MAINDEC-11-DXKWA (KW11-L Test)
- k. MAINDEC-11-DZKGA (KG11 Test)
- l. MAINDEC-11-DZDHA (Static Logic Test)
- m. MAINDEC-11-DZDHB (Memory Test)
- n. MAINDEC-11-DZDHC (RX and TX Logic Test)
- o. MAINDEC-11-DZDHD (Speed Selection Test)
- p. MAINDEC-11-DZDHE (Character Length and Data Test)
- q. MAINDEC-11-DZDHF (Single Line Data Test)
- r. MAINDEC-11-DZDHG (Multi-line Data Test)
- s. MAINDEC-11-DZDHH (Auto-Echo Test)
- t. MAINDEC-11-DZDHI (Break and Half-duplex Test)
- u. MAINDEC-11-DZDHJ (Echo Test)
- v. MAINDEC-11-DZDMD (DM11-BB Test)
- w. MAINDEC-11-DZDLB (DL11 Test)
- x. MAINDEC-11-DBQEA (11/40)
- y. MAINDEC-11-DZQMC (Memory Test)
- x. MAINDEC-11-DZBMD (BM873 Diagnostic)

3.0 HARDWARE REQUIRED

- a. Tektronix 454 scope or better.
- b. Digital voltmeter (1% accuracy or better).
- c. Console teletype (DEC EIA terminal).
- d. W984A extender boards
- e. 16 M594 modules
- f. 16 H315 test connectors (the H315 must be modified to fit into the distribution panel. This is done by removing the 24 pin cinch connector from the etch board, and then using only the etch in each slot).

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SHEET 1 OF 10 MR

4.0 VISUAL INSPECTION AND SET UP

## a. Visual

1. Check power supply wiring for correct polarity and any poor connections. Check that the cabs are wired correctly for voltage and frequency.
2. Blow out all logics with an air hose.
3. Check DC wiring on all logics for shorts using a VOM.
4. Check all logics, modules and ECO status sheets to insure they are up to latest rev.
5. Check all remote turn on cables for proper location.

## b. KD11 Set Up

Check to see if there is a wire from F03R2 to F03V2 on the KD11 (11/40) logic. This wire must be removed to run KW11-L. Also, install M787 in slot F03 of KD11 (11/40) logic if not already done. See KT11-D setup for additional changes.

## c. MF11-UP and MM11-UP Set Up

MF11-UP memory preliminary adjustment and tests.

1. Jumper Selection - M7259 Parity Control Module.

Jumpers W1 thru W7 on the Parity Control Module are normally received from the factory with all jumpers in. These should be left in. Their functions are described in Paragraph 4.4.3 of the MF11-UP, MF11-U Memory Maintenance Manual (DEC-11-HMFMA-#-D).

2. Parity Check Delay (See Paragraph 5.4.3 of MF11-UP Memory Maintenance Manual).

In order to provide sufficient time for the parity check logic on the M7259 module to operate correctly a 135 nano second delay is added to the INT SSYN signal from the core memory indicates that data has been read from core. Using the dual channel display facilities of a Tektronix 453 or 475 oscilloscope, and waveforms shown in Figure 5-4 of the MF11-MM11-UP Memory Maintenance Manual (on page 5.9), adjust R16 on the M7259 module for the requisite delay between the leading edge of SSYN INT and lagging edge of PCL SSYN

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at the back plane pins specified in Figure 5-4.

## d. DL11 Set Up

Refer to DN87S print set for set up of DL11-E.

## e. DH11 Set Up

1. If not already installed, put a 100pf (P/N 10-00016) across the split lugs on the M796.
2. Install DM11-BB modules into DH11 logic refer to print D-MU-DH11-0-3 for correct slots.
3. Cut the address and vector for the DH11 and DM11-BB. Consult prints D-UA-DN87S-0-0 for correct jumpers.
4. Install 16 M594 modules into the distribution panel slots A6 thru A21 and install 16 modified H315's into slots B6 thru B21. NOTE: These are used for test only. Do not ship M594's and modified H315's.

## f. KT11-D Set Up

The installation procedure for the KT11-D Memory Management Unit option is included as part of the complete PDP-11 system installation procedure described in Chapter 2 of the PDP-11/40, PDP-11/35 System Manual (21 Inch Chassis). Specific procedures for wiring changes to the Processor are given below with descriptions of operations that require no wiring changes. The M7236 module is installed in slot 8, rows A-F of the CPU backplane assembly. The M7237 module is installed in slot 3, row E of the CPU backplane assembly.

The wiring modifications to the KD11-A Processor that are necessary are as follows:

1. Refer to Processor Block Schematic K1-6, location A-6, and move jumper W10 to the ground inputs of the 8881 gates. This change disables the KD11-A from giving an address to the Unibus (Figure 4-1).
2. Refer to Processor Block Schematic K1-8, location C/D-8 and remove jumpers W5, W6 and W9. This change enables the correct selection of User and Kernel stacks in either explicit or implicit operations (Figure 4-2).
3. Refer to Processor Block Schematic K1-7, location

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C/D-3, and remove jumpers W1, W2, W3, and W4. This change enables the KT11-D to use an 18-bit virtual address to decode all internal register addressing (Figure 4-3).

4. Refer to Processor Block Schematic K4-4, location C-5. Remove jumper W2 and connect jumper W2A. This change connects pins 10, 11, and 12 of 74H55 gate at location E-6 to A07H2 (KT-3 FAULT H). This change enables the KT11-D to start a trap sequence for a KT Abort condition (Figure 4-4).
5. Refer to Processor Block Schematic K1-9, location D-5. Remove jumpers W7 and W8. This change disables automatic operation of console address lights BA (17:16) on assertion of K1-6 BA (17:16) from the Processor (Figure 4-5).
6. Refer to Processor Block Schematic K4-4, location C-4. Add capacitor C113 (680 mmf, 100 VDC) DEC Part Number 10-00026). This change extends the CLK MSYN H delay from 150 ns to enable memory management logic to propagate a new address to the Unibus while retaining bus specifications (Figure 4-6).
7. Refer to Processor Block Schematic K4-4, location D-4. Add capacitor C114 (560 mmf, 100 WVDC) DEC Part Number 10-00025. This change increases the delay of fast MSYN in the Processor from 75 ns to 225 ns (Figure 4-6).
8. Refer to Processor Block Schematic K4-4, location C-5. Remove jumper W1 and connect jumper W1A. This change connects pin 10 of 74H50 gate at location E16 to B07F2 (KJ-2 EOVL STOP H) instead of B07F1. It allows a red stack violation error signal to come from a programmable register in the KJ11-A rather than from a fixed value in the KD11-A.
9. Refer to Processor Block Schematic K5-4, location D-3. Remove jumper W1 and connect jumper W1A. This change connects pin 01 of 7410 gate at location E-5 to D06R2 (KJ-2 EOVL L) instead of F26S1. It allows a yellow stack violation error signal to come from a programmable register in the KJ11-A rather than from a fixed value in the KD11-A.
10. KG11 Set Up

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Install KG11 according to DN87S print set.

11. DTE Remote Harness Assembly/Ruggedized Unibus Cable Assembly Set Up

Install 7010311 Cable Conversion Panel as shown on sheet 2 of D-UA-DN87S-0-0. Insert 7014246-11 Internal Unibus Cable Assembly in an M9014 and the M9014 into the slot AB04 (or AB09) of the last option on the Unibus of the DN87S being configured. Insert other end of 701426-11 Cable Assembly into connector on 7010311 Panel (See Sheet 7 of D-UA-DN87S-0-0). Remove M9014 and install M930 terminator while testing is in process.

Install 12-pin Mate-n-LOK on DTE Remote Harness assembly in SU3 power harness plug on the BALL power distribution panel. Before turning on power connect fast-on tabs on remote end of cable to M9310 terminator. Connect orange wire to +5v tab and black wire to ground. Turn on power and check for +5v between +5 and ground fastons on M9310. Check for +5 volts between pins 1 and 2 (1 +5, 2 gnd) of 4-pin Mate-n-LOK on remote end of DTE harness assembly. Shut down system power and remove the DTE remote harness assembly power harness plug SU3 from BALL power distribution panel.

## 5.0 PROCESSOR AND MEMORY CHECKOUT

The DN87S system does not have any tape loading device other than the console (if an ASR TTY is used for test). Therefore, to speed up checkout, some loading medium must be used. It may be a high speed reader, dectape, or mother-daughter set-up, etc. This loading device is specified by the particular group testing these systems.

\* NOTE: To utilize DL11-E (console DL11-E) as a console TTY, connect BC03M cable to a DEC EIA terminal. This method assumes that checkout is being conducted without the use of the console processor or APT10.

- a. Power up the processor cab and check that voltages are within 1% of their specified value, adjust if necessary. Leave power off on the expander cab at this

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time.

- b. Processor and memory test. Load and run the following programs 15 minutes each with iterations. No errors are acceptable.
1. MAINDEC-11-DCMFA
  2. MAINDEC-11-DXMMG
  3. MAINDEC-11-DZMMI
  4. MAINDEC-11-DZKWA
  5. MAINDEC-11-DCQKC
  6. Check that power fail works by powering down and then turning power back on while running DCQKC. The program should type out the power fail re-start message and continue testing.
  7. MAINDEC-11-DZKLA programs 2,4, and 7.
  8. MAINDEC-11-DZKGA
  9. MAINDEC-11-DBQEA
  10. MAINDEC-11-DZQMC
  11. MAINDEC-11-DZBMD
  12. MAINDEC-11-DZDLB
  13. MAINDEC-11-DBKTA
  14. MAINDEC-11-DBKTB
  15. MAINDEC-11-DBKTD
  16. MAINDEC-11-DBKTG

#### 6.0 EXPANDER CAB CHECKOUT

- a. Remove the M930 terminator from the DD11 logic and install it at the end of the Unibus.
- b. Connect the DH11 slot AB01 in the expander cab to the DD11 slot AB04 in the processor cab with a 15 ft. BC11-A. The ruggedized Unibus may be checked for electrical continuity at this point by substituting the rugged Unibus for the BC11-A cable. If only a DN87S is being checked out it is suggested that one M9202 be substituted with the rugged Unibus to check electrical continuity.
- c. Power up the expander cab and check that voltages are within 1% of their specified value, adjust is necessary.
- d. Load and run MAINDEC-11-DZDHA thru DZDHI. Run two passes of each test with iterations except DZDHF for one pass with iterations. No errors are acceptable.
- e. Load and run MAINDEC-11-DZDMD test group 0 with

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iterations for two passes. No errors are acceptable.

#### 7.0 VIBRATION

Load DECX/11 and run with KW11, DH11, DM11-BB, DL11's BM873-YJ and KG11 selected. Vibrate all modules, at least once in each direction, using a teflon rod 8 inches long by 3/8 inches diameter. Six inches of the rod should be exposed while vibrating. Refer to individual device diagnostic for trouble shooting if errors occur.

#### 8.0 RELIABILITY

Load DECX/11 and run with all devices selected. Run for 8 hours error free. Remove M594 modules and modified H315 test connectors from the distribution panel.

END OF TEST.

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<b>DIGITAL EQUIPMENT CORPORATION</b>						
MAYNARD, MASSACHUSETTS						
<b>ENGINEERING SPECIFICATION</b>					DATE 24 MAR 78	
TITLE ACCEPTANCE TEST DN87S						
REVISIONS						
REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	REVISED & REDRAWN	DN87S-MROOI	SRH	3-24-78	<i>S.R. Holmes</i>	5-15-78

ENG <i>S.R. Holmes</i>	APPD <i>Bob Johnson</i>	SIZE <b>A</b>	CODE SP	NUMBER DN87S-0-4	REV <b>A</b>
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<b>ENGINEERING SPECIFICATION</b>	CONTINUATION SHEET		
TITLE ACCEPTANCE TEST DN87S			
<p><b>1.0 INTRODUCTION</b></p> <p>The DN87S is a communications front end system on DECsystem-10. The system variation designations are given below:</p> <p><b>DN87S-AA</b> PDP-11/40 assembly with 32K parity memory. Includes mainframe (115V, 60Hz), power supply, doors, panels, miscellaneous hardware, DTE-20, DL11-E, KG11, BM873-YJ, an H324 ROM switch panel, and a ruggedized Unibus Cable Assy.</p> <p><b>DN87S-AB</b> Same as AA except 230V, 50 Hz.</p> <p><b>DN87S-U</b> DN87 to DN87S upgrade kit (see A-SP-DN87S-0-5 for checkout and installation of DN87S-U option).</p> <p><b>Asynchronous Options</b></p> <p><b>DN81-EA</b> Expander cabinet for asynchronous communication interfaces. Includes one DH11 16 line multiplexer with distribution panel, power supply and DM11-BB modem control multiplexer.</p> <p><b>DN81-EB</b> Same as EA, except 230V, 50 Hz.</p> <p><b>DN81-EC</b> Additional DH11 16 line multiplexer with distribution panel, power supply and DM11-BB modem control multiplexer.</p> <p><b>DN81-ED</b> Same as EC, except 230V, 50 Hz.</p> <p><b>DN81-FA</b> Line adapter for eight 20 ma Teletype lines (data only). Includes two DM11-DA's,</p>			
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telephone panel connector block and miscellaneous hardware.

DN81-FB Line adapter for eight EIA/CCITT lines (data only). Includes two DM11-DB's with 25 ft. cables and null modems.

DN81-FC Line adapter for eight EIA/CCITT compatible lines equipped with data set control features. Consists of two DM11-DC's.

DN81-FD Eight internal answer only modems. Converts FSK tone signals to TTL compatible signals. Consists of eight DF11-BB's.

DN81-FE Two internal originate only modems. Consists of two DF11-BA's.

DN81-FF Automatic calling Unit interface. Consists of one DN11-AA pre-wired system unit for up to four Bell 801 auto calling unit interfaces, and two DN11-DA's (line interfaces for Bell 801 and 25 ft. cables).

DN81-FG Two line interfaces for Bell 801 auto, calling unit. Consists of two DN11-DA's.

Synchronous Options

DN81-EE Expander cabinet for NPR synchronous line interfaces, includes main frame and power supplies (115V, 60 Hz) and one DQ11-DA/EA.

DN81-EF Same as EE except 230V, 50 Hz.

DN81-H NPR Synchronous line control interface (DQ11-DA) EIA/CCITT up to 10K baud.

DN81-J Same as above except DQ11-EA, TTL to Bell system equivalent modem up to 1M baud.

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In general three configurations are possible using the above DN87S options:

Asynchronous - PDP-11/40 cabinet and asynchronous expansion cabinets, for up to 128 asynchronous lines.

Synchronous - PDP-11/40 cabinet with up to four synchronous lines and an expansion cabinet with up to eight more synchronous lines.

Synchronous/Asynchronous (Universal) - PDP-11/40 cabinet with synchronous line controllers and expansion cabinets for asynchronous lines and/or more synchronous lines.

This procedure gives the checkout procedures for the Asynchronous and Synchronous configurations. The procedure for checkout of the Universal configuration can be accomplished by performing both procedures mentioned above. This procedure does not cover the checkout of the PDP-11/40 processor, memory, etc. (for this checkout see A-SP-DN87S-0-2). This checkout is performed when the processor cabinet is assembled. This procedure also does not cover the complete checkout of the DTE-20.

2.0 Documentation Required

The following print sets and manuals:

- a. 11/40 systems
- b. DN87S Universal Communications System (Print Set) (order #MP00109)
- c. DH11
- d. DM11-BB
- e. DTE-20
- f. DQ11
- g. DN87S-A, DN81-E Unit Test Specification (A-SP-DN87S-0-2)

The following diagnostic and listings:

- a. MAINDEC-11-DZDQG (DQ11 Trial Parameter Program)
- b. MAINDEC-11-DZDQA (Basic Logic Test)

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- c. MAINDEC-11-DZDQB (Basic Logic Test, Part 2)
- d. MAINDEC-11-DZDQC (DQ11 Interrupt Logic Test)
- e. MAINDEC-11-DZDQD (Receiver and Transmitter Tests)
- f. MAINDEC-11-DZDQE (Misc. RX/TX and BCC Tests)
- g. MAINDEC-11-DZDQF (DQ11 Diagnostic)
- h. MAINDEC-11-DZDQH (DQ11 Diagnostic)
- i. MAINDEC-11-DZDHA (1) (Static Logic Test)
- j. MAINDEC-11-DZDHB (1) (Memory Test)
- k. MAINDEC-11-DZDHC (1) (RX and TX Logic Test)
- l. MAINDEC-11-DZDHD (1) (Speed Selection Test)
- m. MAINDEC-11-DZDHE (1) (Character Length and Data Test)
- n. MAINDEC-11-DZDHF (1) (Single Line Data Test)
- o. MAINDEC-11-DZDHG (1) (Multi-line Data Test)
- p. MAINDEC-11-DZDHH (1) (Auto-Echo Test)
- q. MAINDEC-11-DZDHI (1) (Break and Half-duplex Test)
- r. MAINDEC-11-DZDHJ (1) (Echo Test)
- s. DEC-11-LPPA-D (Bootstrap and Absolute Loader)
- t. DEC-11-L2PC-PO (Absolute Loader V006A)
- u. MAINDEC-10-KLDCP.BIN (KL10 Diagnostic Console Rev 15)
- v. MAINDEC-10-DGQEA.BIN (DN2X Bootstrap Loader Program)
- w. MAINDEC-10-DGQDF.ALL (DN2X Front End Loader Utility)
- x. MAINDEC-10-DGQDG.ALL (DN2X Secondary F/E Monitor)

**3.0 HARDWARE REQUIRED**

- a. Console Teletype (EIA DEC terminal)
- b. W984A extender boards
- c. 16 M594 Modules
- d. 16 H315 test connectors (the H315 must be modified to fit into the distribution panel. This is done by removing the 24 pin cinch connector from the etch board, and then using only the etch in each slot).
- e. Special test set for DN81-J checkout.

**4.0 ASYNCHRONOUS CONFIGURATION CHECKOUT**

**4.1 Visual Inspection and Setup**

- a. Check power supply wiring for correct polarity and any bad connections. Check that the cabs are wired correctly for line voltage and frequency.
- b. Check all logics, modules, and ECO status sheets to insure they are up to latest rev.
- c. Check all remote cables for proper location.

(1) These diagnostics are replaced with DZDHN, DZDHM, DZDHK.

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**4.2 DH11 Set Up**

- a. Install 16 M594 modules into the distribution panel slots A6 thru A21 and install 16 modified H315's into slots B6 thru B21. Note: these are used for test only. Do not ship M594's and modified H315's.

**4.3 DTE Remote Harness Assembly/Ruggedized Unibus Cable Assembly Set Up.**

Perform complete DTE-20 checkout procedures. Insert 12 pin Mate-n-LOK on DTE remote harness assembly in SU3 power harness plug in BA11 power distribution panel. Select appropriate DTE-20 and insert 4 pin Mate-n-LOK on remote end of DTE remote harness assembly in slot J2, J3 or J4 (depending on DTE selection) in RH20-DTE20 wired assembly (7009429). (REF. KL10 print set volume 1). Insert 7014002-4 Internal Unibus Cable Assy into an M9014. Depending on the DTE20 selected, insert the M9014 into slots HJ06, KL04 or KL06 of the RH20-DTE20 assembly. Insert the M9310 Unibus terminator into corresponding slots HJ07, KL05 or KL07 of the same assembly. Make sure orange wire to M9310 is connected to the fast on tab labeled +5 volts, and black wire is connected to the fast on tab labeled GND. Install 7014044 Panel Interface Assembly into the KL10 I/O Bay (if not already installed) and insert other end of 7014002-4 Cable Assy into appropriate connector #1, #2, #3. (See D-MU-KL10-RHDT and D-UA-DN87S-0-0, Sheet 9.) Connect 7014211-24 Ruggedized Unibus Cable Assembly between the 7014044 Panel in the KL10 and the 7010311 Cable Conversion Panel in the DN87S.

**4.4 Down Line Load Link Quick Verify Test**

To test remote diagnostic loading capability in console front end connect DL11-E cable (with BC03M null modem cable attached) in DN87S to cable from DL11-E (see D-UA-DN87S-0-0) in console processor. All diagnostics for the following tests which run in the DN87S secondary front end are to be loaded into the DN87S communications subsystem via the DL11-E/DL11-E down line load link using the following monitors and loaders.

MAINDEC-10-KLDCP.BIN KL10 Diagnostic Console (minimum Rev 15)

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MAINDEC-10-DGQEA.BIN DN2X Bootstrap Loader Program  
 MAINDEC-10-DGQDF.All DN2X Front End Loader Utility  
 MAINDEC-10-DGQDG.All DN2X Secondary Front End Monitor  
 Refer to the applicable listings for detailed information.

This test manually transmits a character over the DL11-E to DL11-E "Down Line Load Link" in both directions and enables the operator to determine if the character was correctly transmitted. Successful completion of this test will offer some assurance that the "Down Line Load Link" is operational.

At the 11/40 Console Processor Front End

1. Depress "HLT"
2. Depress "START"

At the 11/40 DN87S Front End

1. Depress "HLT"
2. Depress "START"
3. Enter 777564 Display = 777564
4. Depress "LAD" Display = 777564
5. Depress "EXAM" Display = 000200
6. Depress "EXAM" Display = 000000
7. Enter (any ASCII char) Display = 000XXX}ASCII
8. Depress "DEP" Display = 000XXX}Char

At the 11/40 Console Processor Front End

- \*1. Enter 775632 (For FE#1)
2. Depress "LOAD ADRS"
3. Depress "EXAM" Display = 000XXX}ASCII Char.
4. Depress "EXAM" Display = 000200
5. Depress "EXAM" Display = 000000
6. Enter (Any ASCII char) Display = 000YYY}ASCII
7. Depress "DEP" Display = 000YYY}Char

At the 11/40 DN87S Front End

1. Enter 777562 Display = 777562
2. Depress "LAD" Display = 000000
3. Depress "EXAM" Display = 000YYY (ASCII Char)

\* See the DN87S UA drawings for addresses of DN87S configured other than FE no.1.

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NOTE: If a CPU other than an 11/40 is substituted for the console processor front end, then this test must be modified accordingly.

4.5 Loading Secondary Front End Diagnostics via "Downline Load" Link.

Assumptions:

- :Exec mode operation; TOPS-10 not running.
- :A DN87S system (with BM873-YJ Boot Loader) in operating condition having passed successfully all 11/40 diagnostics.
- :KLAD Pack is available to the operator with the following exec mode loaders
  - DGQEA.BIN 4-May-77
  - DGQDF.BIN 4-May-77
  - DGQDG.All 4-May-77
- :KLDCP (Diagnostic Console) has been loaded into the KL10's 11/40 Front End Processor, and the KLAD has been selected as the input device (usually RPO).
- :The M8552, the M8553 and the M8554 modules installed in the -10 for second DTE.
- :all known DTE and "Doorbell" backplane wiring problems have been corrected.
- :The ruggedized Unibus and the doorbell cables are connected from the DN87S to the DTE.

The CTY should prompt:

The operator types: P DGQDF <CR>  
 The CTY prompts with DGQDF.All Ver 0.1 26-JUN-77  
 The operator responds with: SED <CR>  
 The CTY prompts with: \*DGQDF - DN2X Front End Loader program Ver 0.1\* Do you wish to boot the secondary front end Y or N  
 The operator responds with: Y  
 The CTY prompts with: Load address 773020 into the secondary front end and start. Type an altmode when ready.  
 The operator responds with: \$(altmode key)  
 The CTY prompts with: DGQEA being loaded

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DGQEA being transmitted  
 DGQDG being transmitted  
 Transmission completed  
 Secondary F.E. Monitor M-10-DGQDG-A 28K  
 Restart ADDR:154134

TYPE: F<CR> to set console fill count  
 R Filename <CR> to run a program  
 L Filename <CR> to load a program  
 S <CR> to start the program just loaded  
 C Filename <CR> to run a chain  
 C Filename/QV <CR> to run a chain in quick verify mode  
 Refer to XXDP user manual MD-11-DZXQA for additional help

The operator responds with:  
 L DGDTE <CR>  
 The CTY prompts with:  
 DGDTE being transmitted  
 Transmission complete.

At this point, the diagnostic DGDTE has been loaded into the DN20 Front End, but has not been started.

The CTY has prompted with:

The operator now responds with:  
 R KLDCP <CR>

The CTY prompts with:  
 KLDCP being transmitted  
 Transmission complete

DECsystem diagnostic console  
 Version 0.15  
 SWR = 000000 DTE #1  
 CMD:  
 FE1>

The operator responds with:  
 SED <CR>  
 The CTY will now print the identifying header and the diagnostic will begin its testing.

If, at any time the operator wished to return to KLDCP at the secondary front end level, he has two choices; physically restart KLDCP in the DN87S by: stopping the

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**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE ACCEPTANCE TEST DN87S

Page 9

current program via 11/40 halt SW, loading address 100000 via 11/40 console switches, and starting; or waiting until the current program has stopped and typing a control C (^C) on CTY.

4.6 Diagnostics

Run 15 minutes each, MAINDEC-11-DZDHN, DZDHM, DZDHK on all DH11/DM11s installed. (Refer to diagnostic listings) See section 4.4, 4.5 for diagnostic loading procedures.

4.7 System Tests

Load system software into DN87S. Test each asynchronous line by removing test connector and connecting a terminal. Run SYSDPY on each line. If no failure occurs, test is complete. If a failure occurs, perform DN87S-A, DN81-E Unit Test. Correct malfunction and repeat system test (See Section 4.4, 4.5).

5.0 SYNCHRONOUS CONFIGURATION

5.1 Visual Inspection and Setup

- a. check power supply wiring for correct polarity and any bad connections. Check that the cabs are wired correctly for line voltage and frequency.
- b. Check all logics, modules and ECO status sheets to insure they are up to the latest rev.
- c. Check all remote turn on cables for proper location.

6.0 SYSTEM TESTS

6.1 Preliminary Steps

Connect Unibus jumper module (M9202) or Unibus cable BC11 to adjacent system units.

SIZE A	CODE SP	NUMBER DN87S-0-4	REV A
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Before turning power on to the DN87S equipment, connect modem cable to M970 module or plug BC01-R/W paddle board into slot C01 of DQ11-DA/EA and terminate the modem end of cable with an H315 test connector assembly for a DN81-H, or to the special test set for a DN81-J.

## 6.2 Diagnostics

Load trial parameter program MAINDEC-11-DZDQG . This program permits the operator to specify to the diagnostic program the installed jumper switch-selected options for each DN81-H/J. Illustrative examples of all the following programs are contained in A-SP-DAS78-0-ATP.

Run the following diagnostics:

a.	MAINDEC-11-DZDQG	1 pass
b.	MAINDEC-11-DZDQA	8 passes
c.	MAINDEC-11-DZDQB	8 passes
d.	MAINDEC-11-DZDQC	8 passes
e.	MAINDEC-11-DZDQD	8 passes
f.	MAINDEC-11-DZDQE	8 passes
g.	MAINDEC-11-DZDQH	8 passes
h.	MAINDEC-11-DZDQF	8 passes

Checkout complete if no errors. If errors occur, run A-SP-DN87S-0-2 Test procedures, correct malfunction and rerun System Test.

END OF TEST

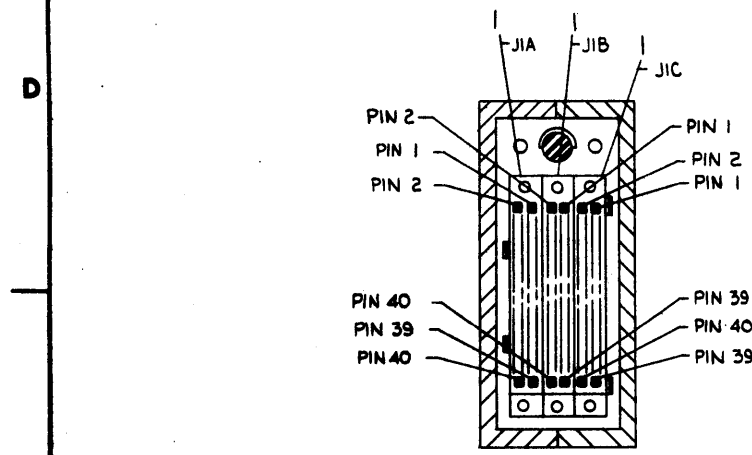
SIZE	CODE	NUMBER	REV
A	SP	DN87S-0-4	A



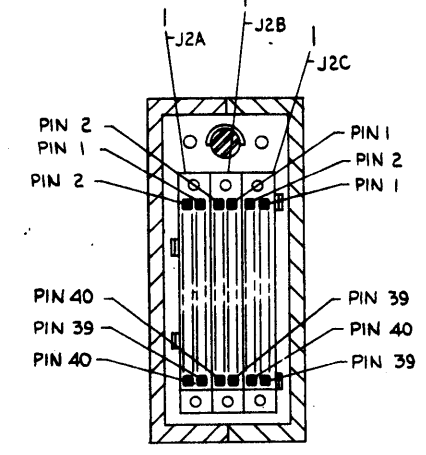


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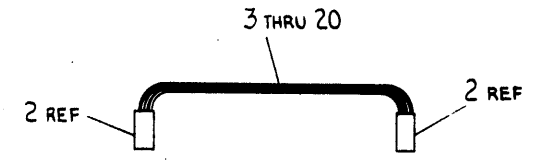
0-0-1124102 DAD 2



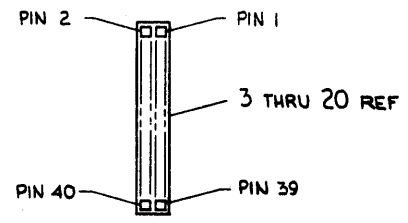
SECTION A-A  
SCALE: NONE  
(SEE NOTE 1)



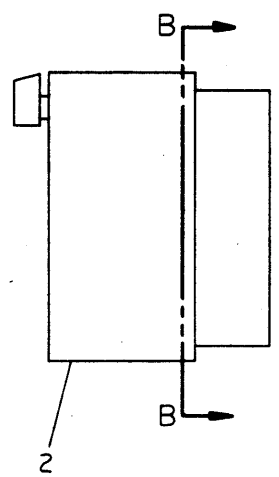
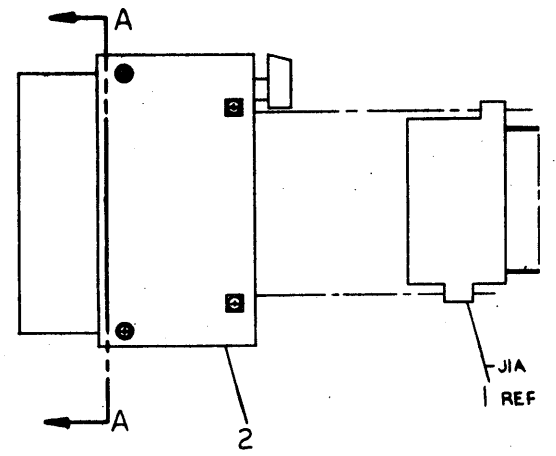
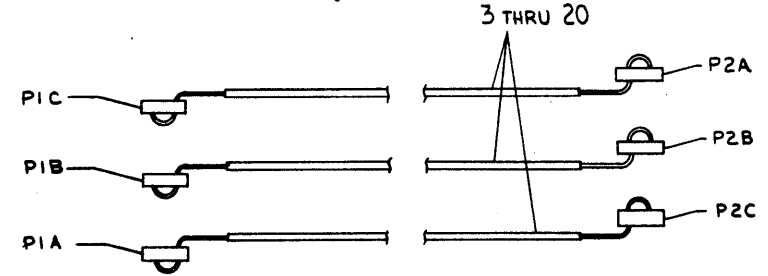
SECTION B-B  
SCALE: NONE  
(SEE NOTE 1)



DETAIL 'D'  
SEE NOTE 2  
SCALE: NONE



VIEW C-C  
SCALE: NONE  
(SEE NOTE 1)  
(3 PLACES)



- NOTES:
1. CONNECT PLUGS OF BCØ3U I/O CABLE ASSY. (ITEM #3 THRU #20) AS FOLLOWS: P1A TO J1A, P1B TO J1B, P1C TO J1C, P2A TO J2A, P2B TO J2B, P2C TO J2C. VIEW C-C SHOWS THE PIN NO. ON THE BCØ3U CABLE, SHOWN HERE FOR REF ONLY. DO NOT USE THESE NUMBERS THEY ARE DIFFERENT FROM SECTION A-A & B-B.
  2. BEFORE FINAL ASSEMBLY "CABLES" (ITEM #3 THRU #20) TO LAY FLAT SO THAT ANY SLACK WILL BE REMOVED BEFORE "CABLE CLAMP" (PART OF ITEM #2) IS TIGHTENED. THIS CAUSES A PERMANENT BEND TO OCCUR. (SEE DETAIL 'D')
  3. "PLUG HOUSING" (-02) & "TERMINATOR PLUG ASSY" (ITEM #1) TO BE ASSEMBLED PRIOR TO THE INSTALLATION OF "CABLES" (ITEM #3 THRU #20)
  4. INSERTS PROVIDED IN "CABLE PLUG KIT" (ITEM #2) ARE NOT USED IN THIS ASSY.

CAUTION:  
OFF SHEET PARTS LIST EXIST  
C-PL-7014211-0-0

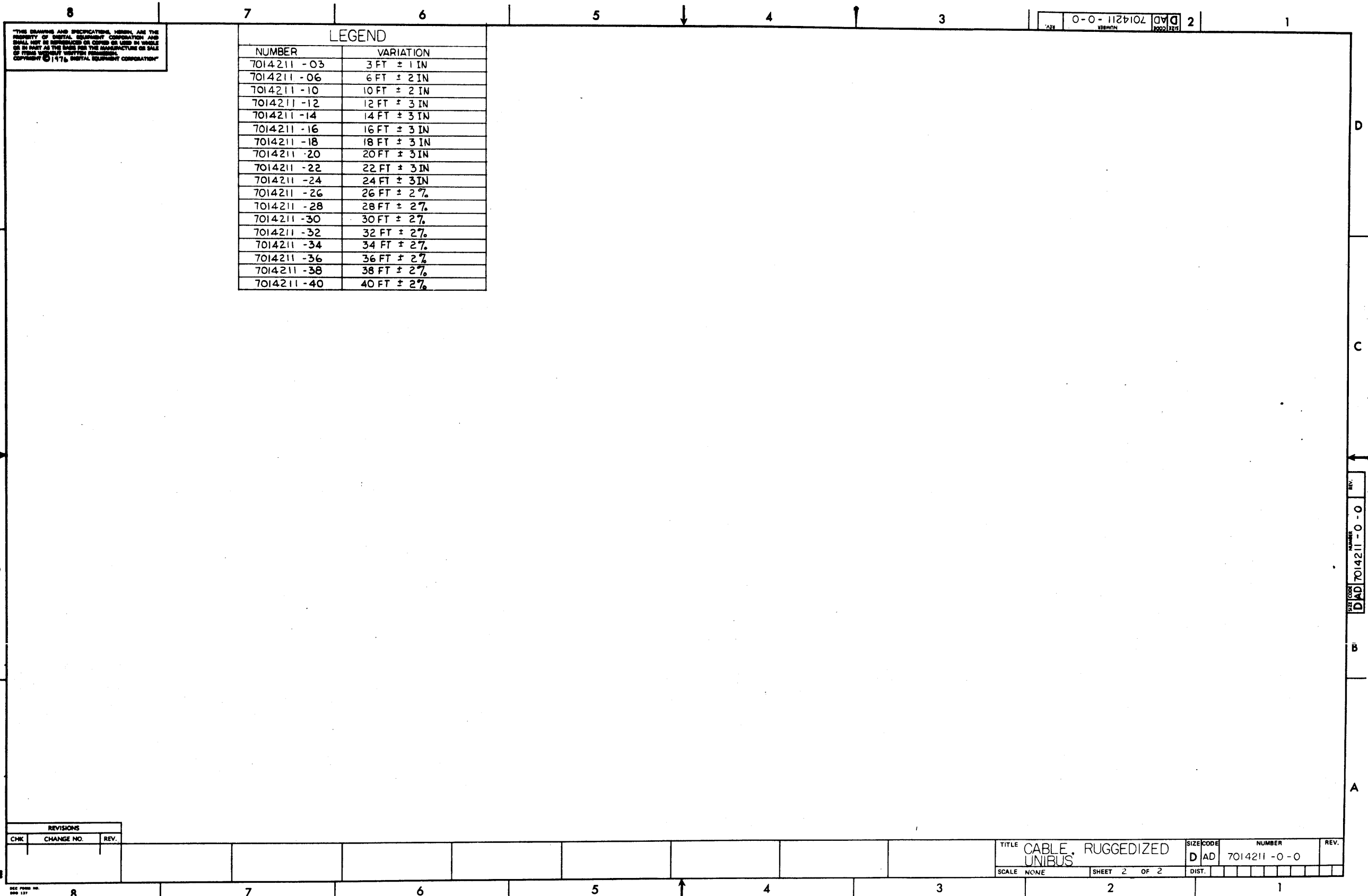
REV.	REV.
CHANGE NO.	REV.
CHK	CHK
REV	REV

DESCRIPTION	DWG./PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		
ANGLES 45° 30°	CLASS OF ACCURACY	NOMINAL DIMENSION RANGE
SURFACE QUALITY	(CHECK ONE)	OVER 12.0 TO 30.0
QUANTITY & VARIATION	MEDIUM	1.004 1.008 1.012 1.016 1.020 1.024
THIRD ANGLE PROJECTION	DRN. M. [Signature] 22 Dec 76	FIRST USED ON
REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D [Signature] 12 May 77	DN20
DO NOT SCALE DWG	PROJ. ENG. P. [Signature] 7 May 77	TITLE
MATERIAL SEE PARTS LIST	PROD. [Signature] 7 Jun 77	CABLE, RUGGEDIZED UNIBUS
FINISH	NEXT HIGHER ASSY.	SIZE CODE NUMBER
	D-UA-DN20-0-0	D AD 7014211-0-0
	SCALE NONE	SHEET 1 OF 2
		DIST.

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LEGEND	
NUMBER	VARIATION
7014211 - 03	3 FT ± 1 IN
7014211 - 06	6 FT ± 2 IN
7014211 - 10	10 FT ± 2 IN
7014211 - 12	12 FT ± 3 IN
7014211 - 14	14 FT ± 3 IN
7014211 - 16	16 FT ± 3 IN
7014211 - 18	18 FT ± 3 IN
7014211 - 20	20 FT ± 3 IN
7014211 - 22	22 FT ± 3 IN
7014211 - 24	24 FT ± 3 IN
7014211 - 26	26 FT ± 2 7/8
7014211 - 28	28 FT ± 2 7/8
7014211 - 30	30 FT ± 2 7/8
7014211 - 32	32 FT ± 2 7/8
7014211 - 34	34 FT ± 2 7/8
7014211 - 36	36 FT ± 2 7/8
7014211 - 38	38 FT ± 2 7/8
7014211 - 40	40 FT ± 2 7/8

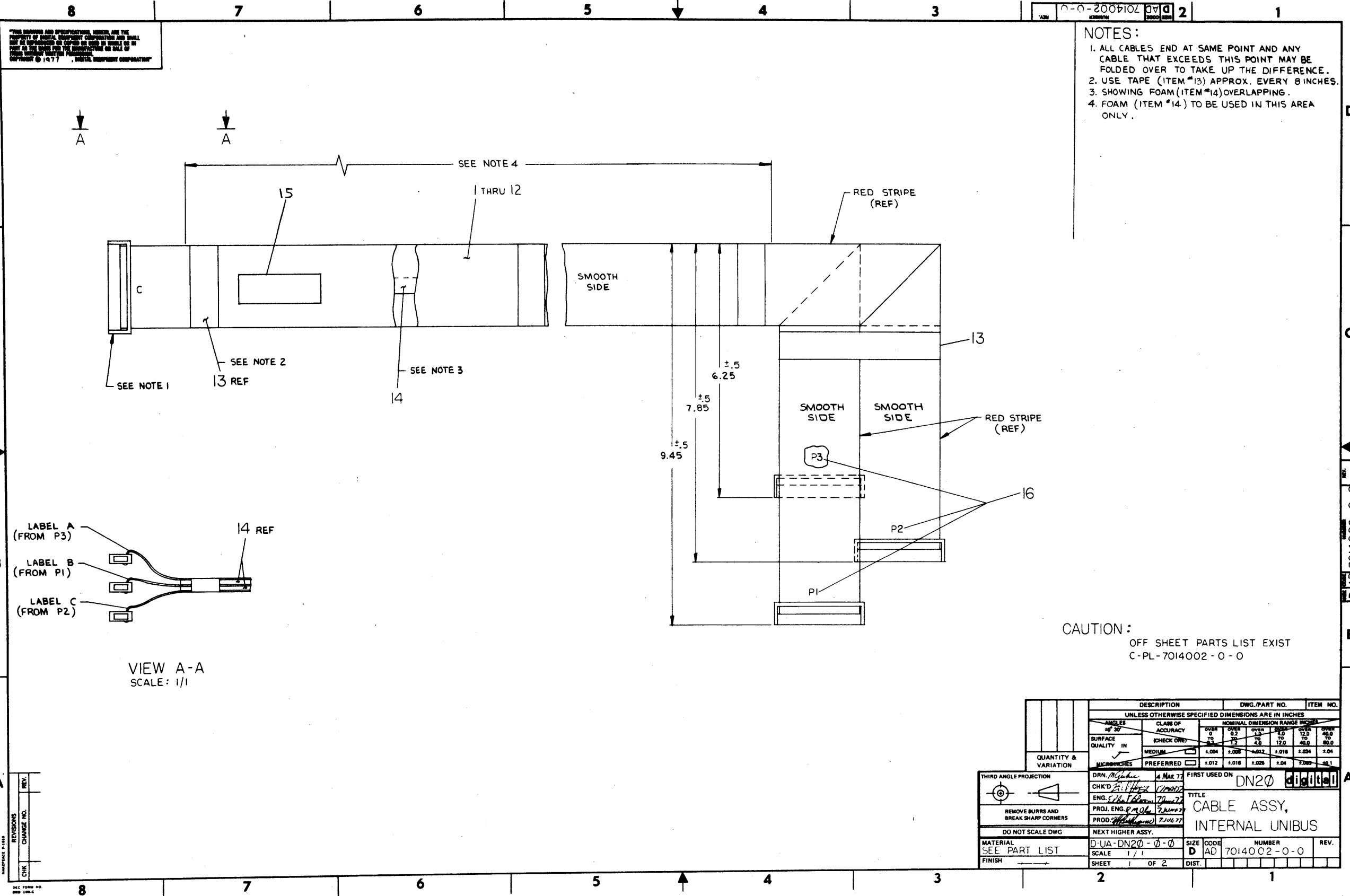
REV. 2  
D AD 7014211 - 0 - 0  
NUMBER



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE CABLE, RUGGEDIZED  
UNIBUS  
SCALE NONE SHEET 2 OF 2 DIST.      SIZE CODE D AD NUMBER 7014211 - 0 - 0 REV.

REV. 2  
D AD 7014211 - 0 - 0  
NUMBER



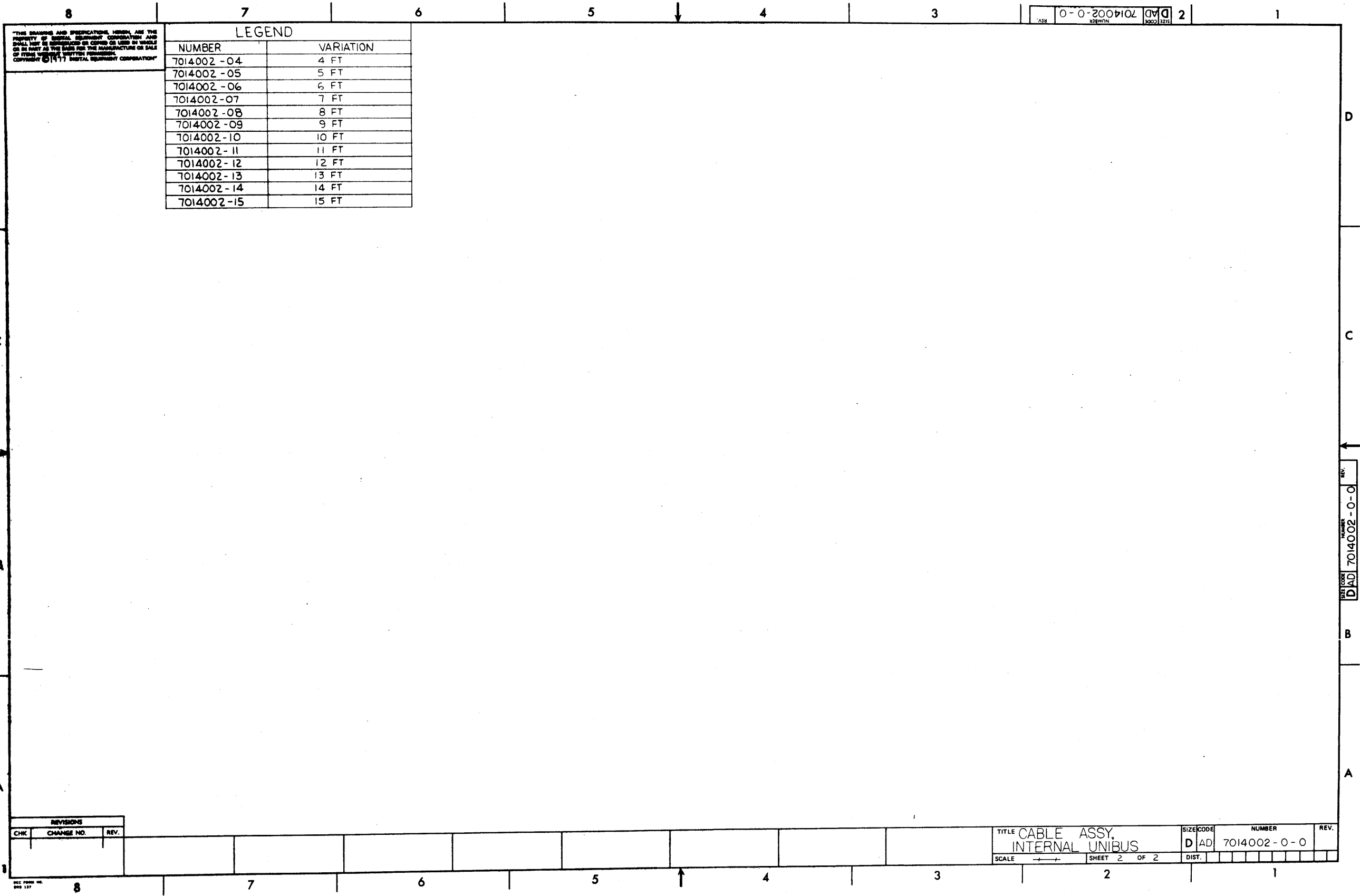
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- NOTES:
1. ALL CABLES END AT SAME POINT AND ANY CABLE THAT EXCEEDS THIS POINT MAY BE FOLDED OVER TO TAKE UP THE DIFFERENCE.
  2. USE TAPE (ITEM #13) APPROX. EVERY 8 INCHES.
  3. SHOWING FOAM (ITEM #14) OVERLAPPING.
  4. FOAM (ITEM #14) TO BE USED IN THIS AREA ONLY.

CAUTION: OFF SHEET PARTS LIST EXIST  
C-PL-7014002-0-0

REV.	CHANGE NO.

DESCRIPTION		DWG./PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES			
ANGLES	CLASS OF ACCURACY	NOMINAL DIMENSION RANGE INCHES	
10° 30'	(CHECK ONE)	OVER 0 TO 1.25	OVER 1.25 TO 4.00
SURFACE QUALITY	MEDIUM	OVER 4.00 TO 12.00	OVER 12.00 TO 48.00
IN	PREFERRED	±.004 ±.008 ±.012 ±.018 ±.024 ±.04	±.004 ±.008 ±.012 ±.018 ±.024 ±.04
QUANTITY & VARIATION	MICROINCHES	±.012 ±.018 ±.025 ±.04	±.012 ±.018 ±.025 ±.04
THIRD ANGLE PROJECTION	DRN. <i>M. Cohen</i> 4 MAR 77	FIRST USED ON	DN20 digital
REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D <i>E. J. Hertz</i> 11/20/77	TITLE	
DO NOT SCALE DWG	PROJ. ENG. <i>P. M. O'Neil</i> 7/2/77	CABLE ASSY, INTERNAL UNIBUS	
MATERIAL SEE PART LIST	PROD. <i>M. Cohen</i> 7/2/77	NEXT HIGHER ASSY.	
FINISH	D-UA-DN20-0-0	SCALE	1/1
	SHEET 1 OF 2	SIZE	D
		CODE	AD
		NUMBER	7014002-0-0
		REV.	



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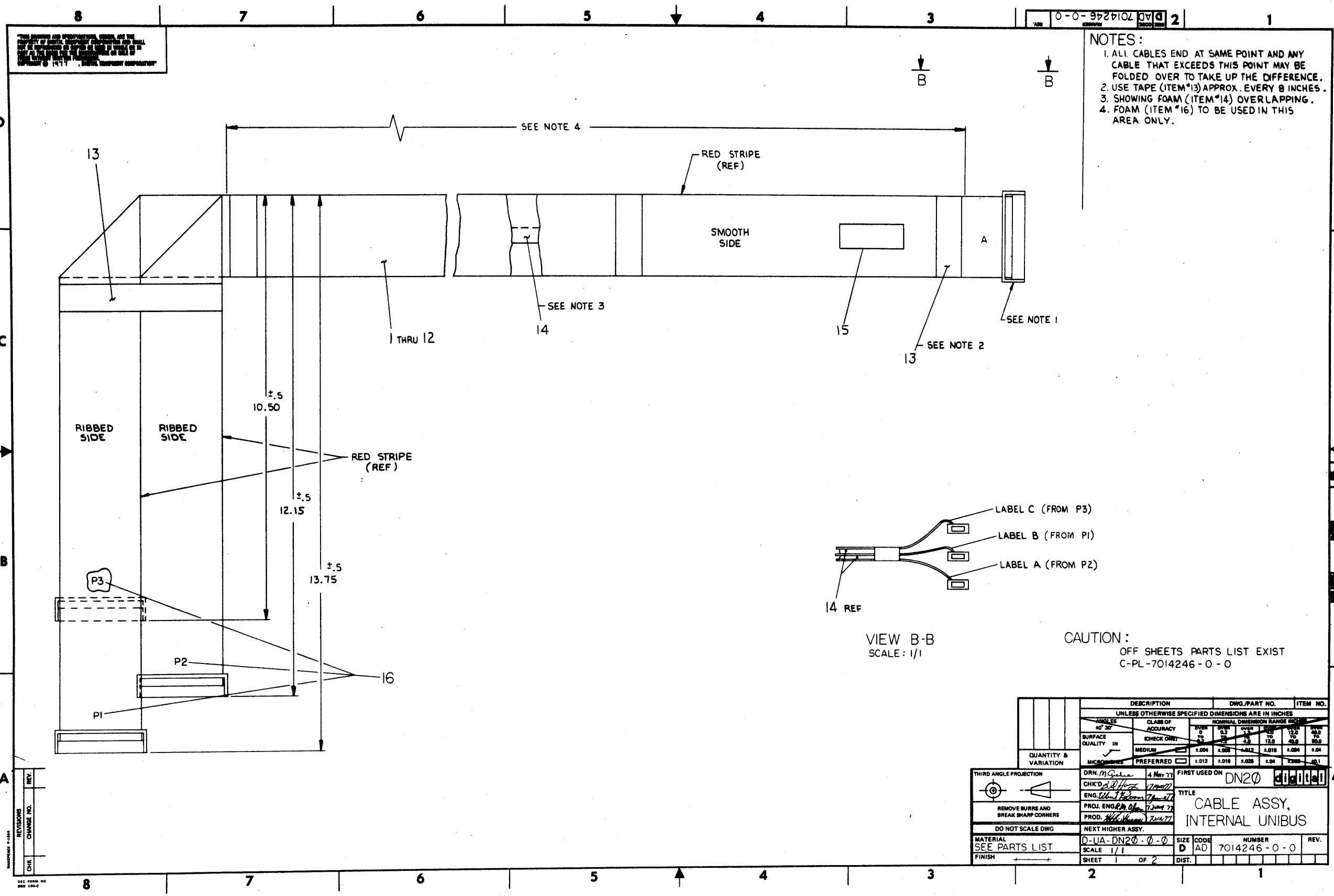
LEGEND	
NUMBER	VARIATION
7014002-04	4 FT
7014002-05	5 FT
7014002-06	6 FT
7014002-07	7 FT
7014002-08	8 FT
7014002-09	9 FT
7014002-10	10 FT
7014002-11	11 FT
7014002-12	12 FT
7014002-13	13 FT
7014002-14	14 FT
7014002-15	15 FT

REVISIONS		
CHK	CHANGE NO.	REV.

REV: 0-0-200107 D AD 7014002-0-0 2

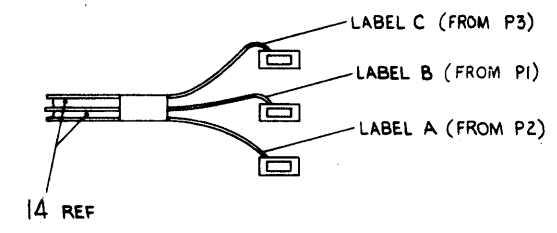
REV: 0-0-200107 D AD 7014002-0-0

TITLE CABLE ASSY, INTERNAL UNIBUS  
 SCALE: SHEET 2 OF 2  
 SIZE CODE: D AD  
 NUMBER: 7014002-0-0  
 REV: DIST.



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- NOTES:
1. ALL CABLES END AT SAME POINT AND ANY CABLE THAT EXCEEDS THIS POINT MAY BE FOLDED OVER TO TAKE UP THE DIFFERENCE.
  2. USE TAPE (ITEM #13) APPROX. EVERY 8 INCHES.
  3. SHOWING FOAM (ITEM #14) OVERLAPPING.
  4. FOAM (ITEM #16) TO BE USED IN THIS AREA ONLY.



VIEW B-B  
SCALE: 1/1

CAUTION:  
OFF SHEETS PARTS LIST EXIST  
C-PL-7014246-0-0

REV.	
CHANGE NO.	
CHK	

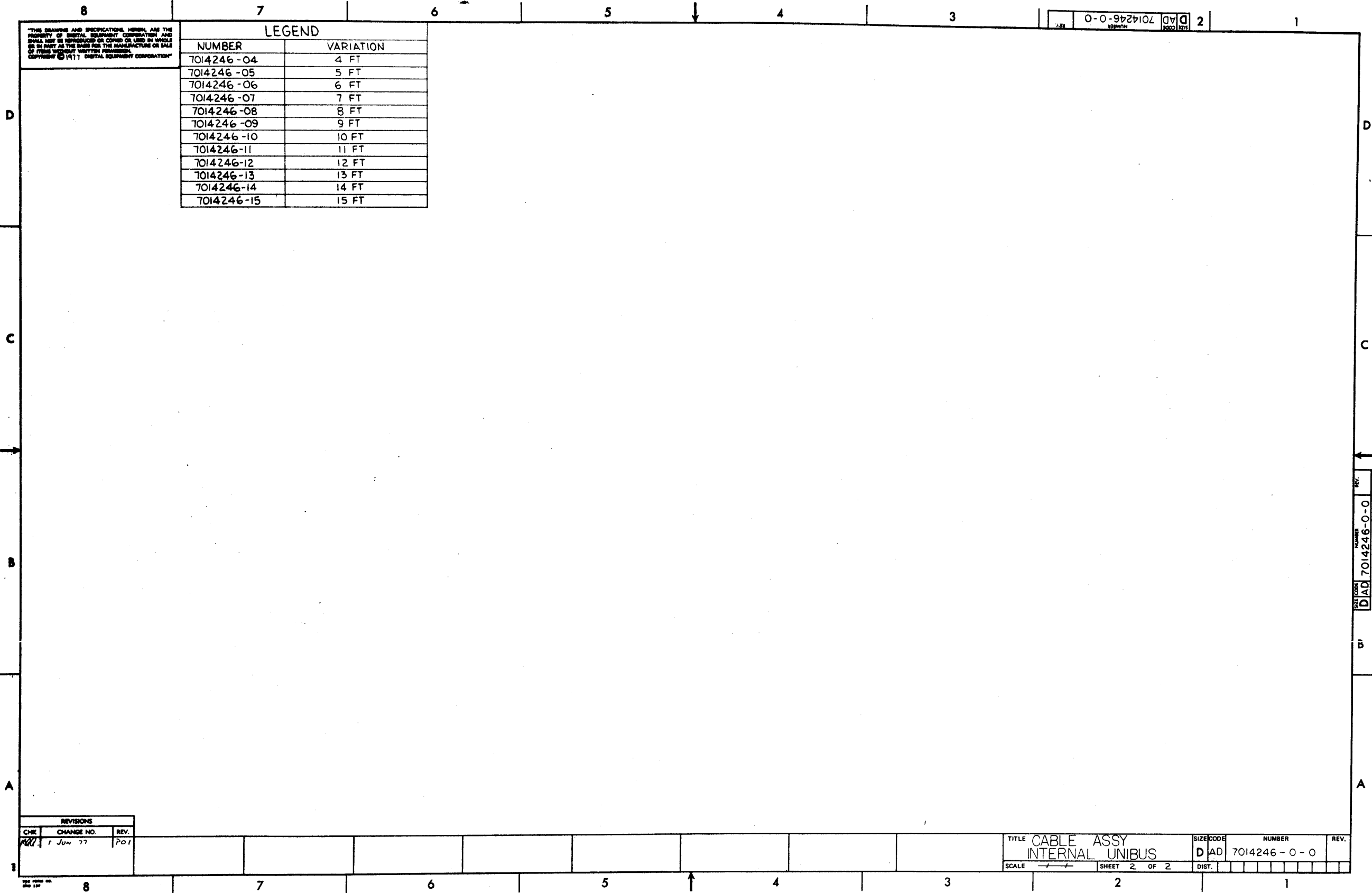
THIRD ANGLE PROJECTION	DRN. <i>M. G. Quinn</i>	4 May 77	FIRST USED ON	DN20
	CHK'D <i>D. J. Hays</i>	7 May 77	TITLE	
REMOVE BURRS AND BREAK SHARP CORNERS	ENG. <i>E. J. Brown</i>	7 June 77	CABLE ASSY, INTERNAL UNIBUS	
DO NOT SCALE DWG	PROJ. ENG. <i>P. A. O'Neil</i>	7 June 77	MATERIAL	
SEE PARTS LIST	NEXT HIGHER ASSY.		D-UA-DN20-0-0	
FINISH			SIZE	CODE
			D	AD
			NUMBER	REV.
			7014246-0-0	
			SHEET	DIST.
			1	

D AD 7014246-0-0

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LEGEND	
NUMBER	VARIATION
7014246-04	4 FT
7014246-05	5 FT
7014246-06	6 FT
7014246-07	7 FT
7014246-08	8 FT
7014246-09	9 FT
7014246-10	10 FT
7014246-11	11 FT
7014246-12	12 FT
7014246-13	13 FT
7014246-14	14 FT
7014246-15	15 FT

DATE CODE: DAD 7014246-0-0 2



DATE CODE: DAD 7014246-0-0

REVISIONS		
CHK	CHANGE NO.	REV.
ML	1 Jun 77	201

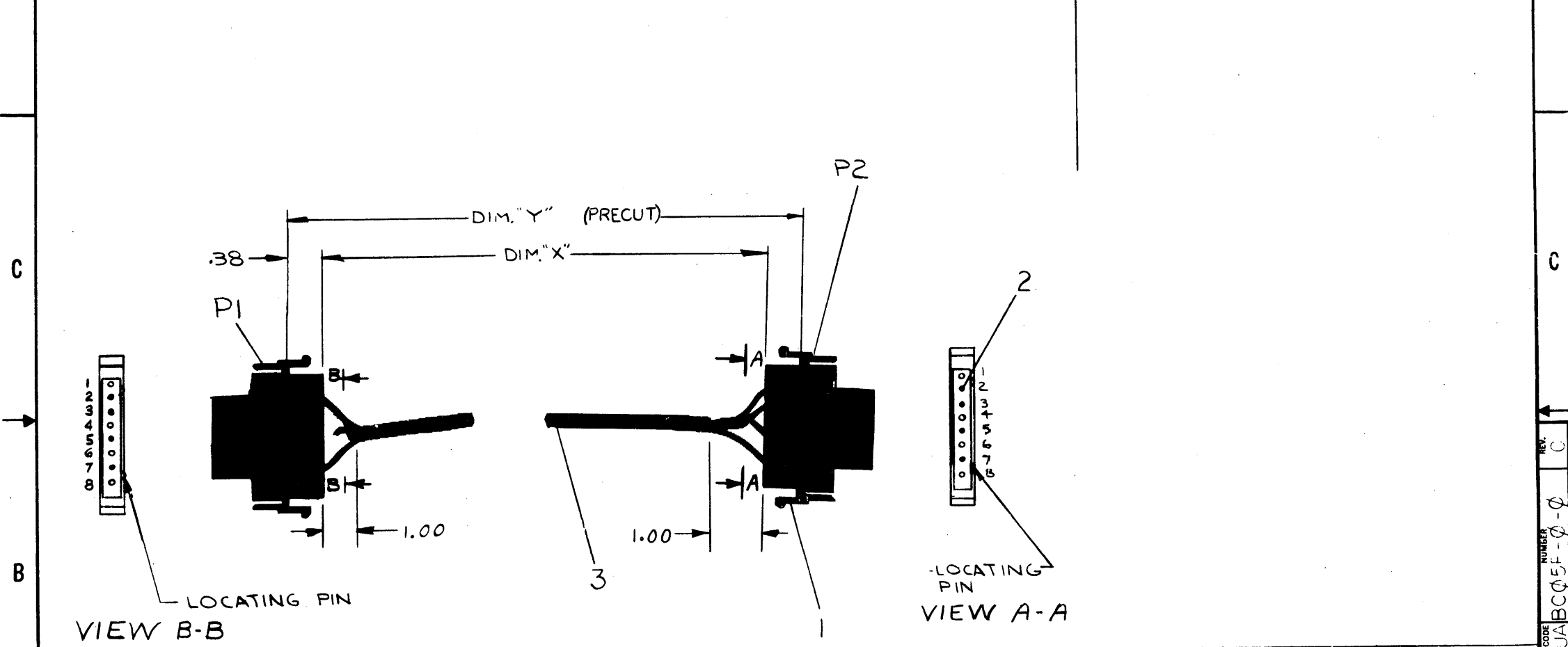
TITLE: CABLE ASSY INTERNAL UNIBUS  
 SIZE CODE: DAD NUMBER: 7014246-0-0  
 SCALE: DIST. SHEET 2 OF 2

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**LEGEND**

NUMBER	DIM "X" VARIATION	DIM "Y" (PRECUT) REF
BC05F-15	15 FT. ± 3 IN.	15 FT. .75 IN. ± 3 IN.
BC05F-9	9 FT. ± 3 IN.	9 FT. .75 IN. ± 3 IN.

WIRE TABLE				
ITEM NO	DESCRIPTION	FROM	TO	
3	22	BLK	P1-2	P2-3
3	22	RED	P1-3	P2-2
3	22	WHT	P1-5	P2-7
3	22	GRN	P1-7	P2-5



REVISIONS	CHANGE NO.	REV.
CHK	BC05F-00001	A
	11-8-71	
	R. FITCH	
	11-9-71	
	Robert Fitch	
	LA36-00119	B
	7-17-75	
	J. BITTO	
	7-18-75	
	BC05F-00002	C
	R. FITCH	
	22 JUN 76	

AR	CABLE 4 CONDUCTOR	9107706	3
B	SOCKET (MALE)	120937B-03	2
2	MATE-N-LOCK (MALE)	1209390-C1	1

QTY.	DESCRIPTION	PART NO	ITEM NO.

UNLESS OTHERWISE SPECIFIED  
DIMENSION IN INCHES  
TOLERANCES  
DECIMALS ± .005  
FRACTIONS ± 1/64  
ANGLES ± 0°30'

FINAL SURFACE QUALITY  
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: \_\_\_\_\_

FINISH: \_\_\_\_\_

DRN: *A. J. London* DATE: *10/8/71*

CHK'D: *P. Milan* DATE: *10/8/71*

ENG: *Robert Fitch* DATE: *10/9/71*

PROJ. ENG.: *Robert Fitch* DATE: *10/9/71*

PROD: *Paul Ingram* DATE: *10/9/71*

NEXT HIGHER ASSY: *#*

SCALE: \_\_\_\_\_ OF \_\_\_\_\_

SHEET 1 OF 1

**digital** EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

TITLE: CABLE INTERFACE  
BC05F

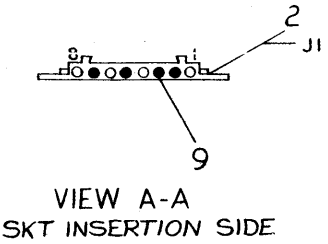
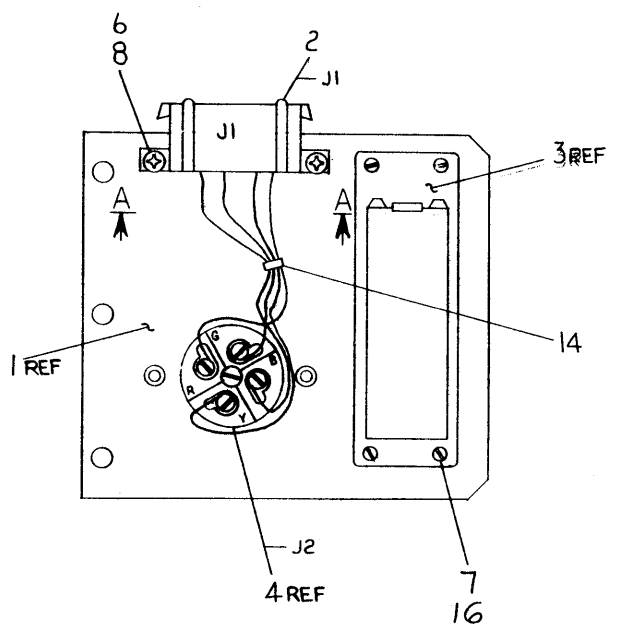
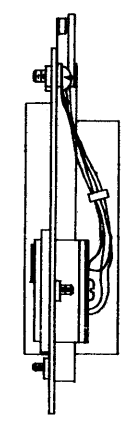
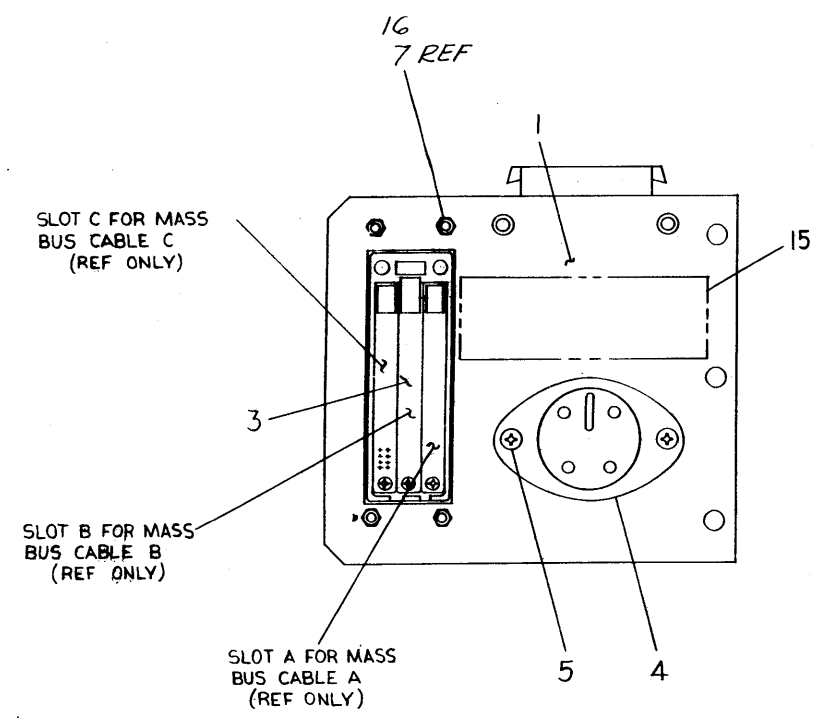
SIZE CODE: CUA  
NUMBER: BC05F-0-0  
REV: C

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WIRE TABLE							
ITEM NO.	AWG	COLOR	FROM		TO		REMARKS
			CONN	WITH	CONN	WITH	
11	22	BLK	J1-7	ITEM*9	J2-B	---	
13	22	RED	J1-2	ITEM*9	J2-R	---	
10	22	WHT	J1-3	ITEM*9	J2-Y	---	
12	22	GRN	J1-5	ITEM*9	J2-G	---	

DO NOT SCALE DRAWING

NOTES:  
 1. USE ITEM #17 TO CONNECT A TERMINAL WITH STANDARD MATE'N'LOK CONNECTOR TO ITEM#4. ASSEMBLE WITH ITEM 17 CONNECTED TO ITEM 4.



(SEE NOTE 1)

QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	CABLE ASSY, 283B/MATE'N'LOK	D-IA-7014490-2-0	17
4	NUT, KEPS #4-40	9006557	16
1	LABEL, ADHESIVE BACKED	9009255	15
1	TIE CABLE	9007031-0-0	14
4 IN	WIRE *22 AWG STRD (RED)	9107350-22	13
4 IN	WIRE *22 AWG STRD (GRN)	9107350-55	12
4 IN	WIRE *22 AWG STRD (BLK)	9107350-00	11
4 IN	WIRE *22 AWG STRD (WHT)	9107350-99	10
4	TERMINAL SKT CONTACT	1209379-03	9
2	WASHER, INT. TOOTH LOK #6	9006633	8
4	SCR, SLOTTED FIL HD #4-40x.38	9006390-6	7
2	SCR, PHL PAN HD 6-32x.31	9006021-1	6
2	SCR, PHL FLAT HD 6-32x.25	9006020-2	5
1	PHONE JACK	1205857-3	4
1	HOUSING ASSY, RECEPTACLE	D-AD-7009861-00	3
1	HSG B SKT MATE-N-LOK	1209340-00	2
1	PLATE, CONN.	C-1A-7412711-0-0	1

FIRST USED ON OPTION/MODEL		KLI0	
DIMENSIONAL TOLERANCE		DRN: M. Glick DATE: 10-3-74	
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED		DATE: 10-24-74	
MILLIMETERS	INCHES	ANGLES	
X.XX ±0.10	.XX ±.005	90° 30'	
X.X ±0.5	.X ±.02		
X ±.2	X ±.1		
THIRD ANGLE PROJECTION	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	NEXT HIGHER ASSY.	
MATERIAL SEE PARTS LIST	FINISH	D-UA-KLI000	SIZE CODE: D AD
		SCALE: 1/1	NUMBER: 7010311-0-0
		SHEET: 1 OF 1	REV: A

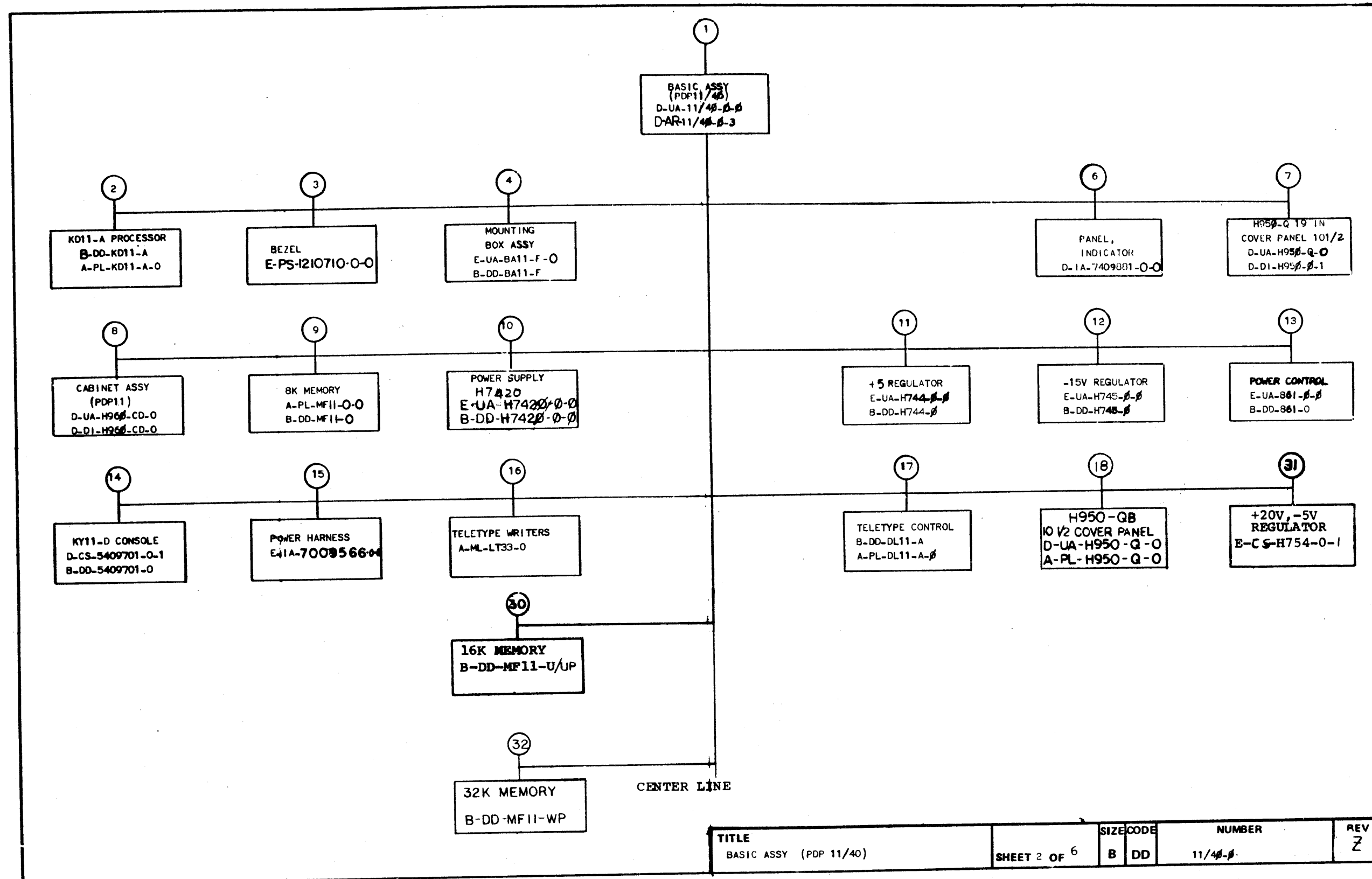
REV.	BY	DATE
1	S.R. HOLMES	10/24/74
2	S.R. HOLMES	10/24/74

REV. NUMBER





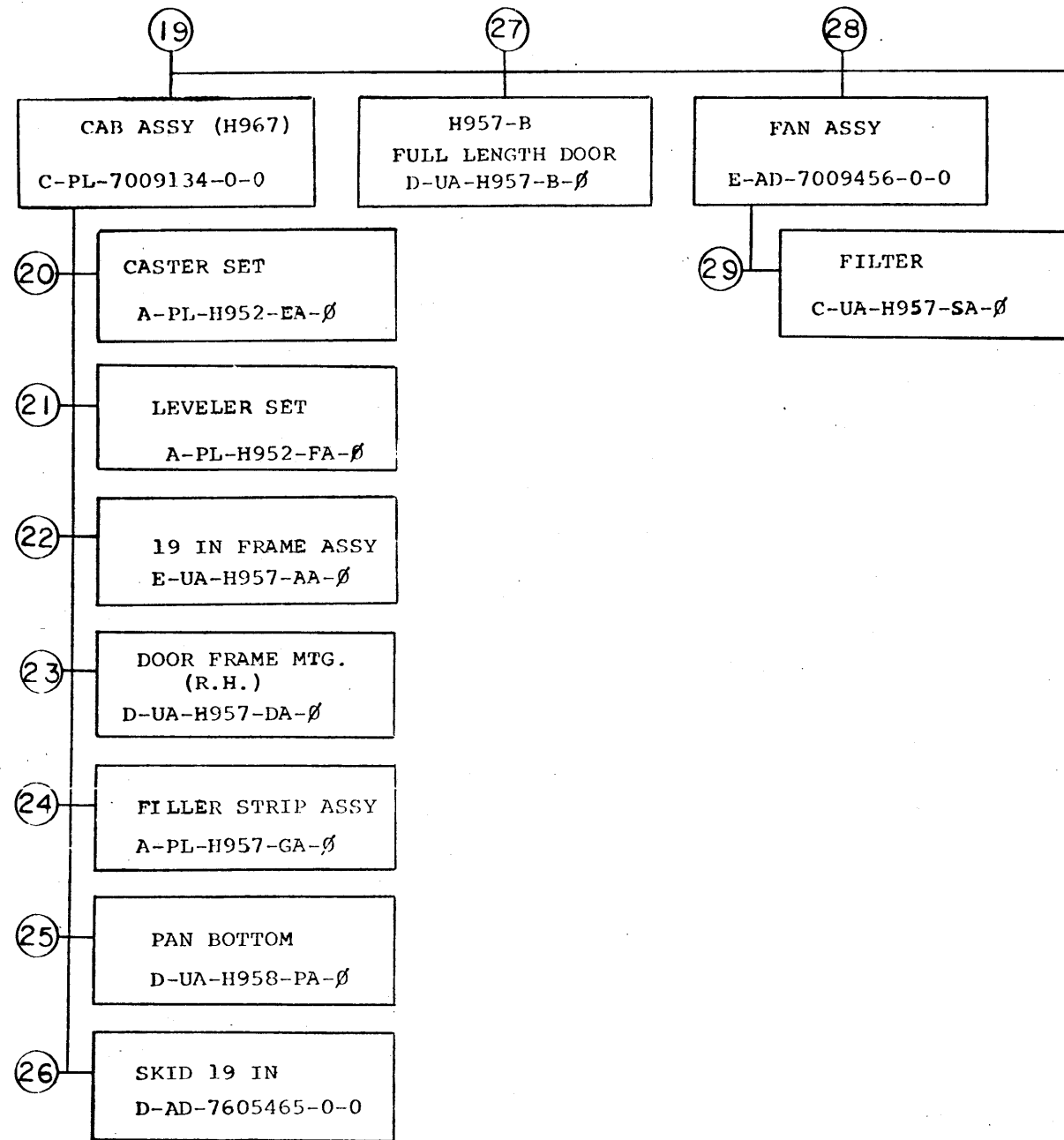




TITLE	SIZE CODE	NUMBER	REV
BASIC ASSY (PDP 11/40)	B DD	11/40-0	Z
SHEET 2 OF 6			

Center Line

Used for 11/40-<sup>CS</sup><sub>CT</sub> Only



TITLE	BASIC ASSY (PDP 11/40)	SHEET 3 OF 6	SIZE CODE	B DD	NUMBER	11/40-Ø	REV	Z
-------	------------------------	--------------	-----------	------	--------	---------	-----	---

CUSTOMER PRINT SET				ELECTRICAL					CUSTOMER PRINT SET				ELECTRICAL								
11/40-1				MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.	11/40-1				MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X					1	D-UA-11/40-0-0	U	5	BASIC ASSY (11/40)		C					12	B-DD-H745-0	#	3	-15V REGULATOR DRAWING DIRECTORY	
X						C-PL-11/40-0-0	U	1	BASIC ASSY (11/40) P.L.												
X						D-IC-11/40-0-1	A	1	A.C. DISTRIBUTION (11/40)												
X						D-AR-11/40-0-3	#	7	ASSY CONFIGURATION (11/40)												
X						A-AL-11/40-0-4	B	1	ACCESSORY LIST (11/40)		C					13	B-DD-861-0	#	2	POWER CONTROL DRAWING DIRECTORY	
X						A-SL-11/40-0-5	*	1	SOFTWARE LIST (11/40)												
X						C-IA-7009053-0-0	#	1	861 CONSOLE TO PWR CONTROL HARNESS												
				X		A-SP-11/40-0-6	A	43	PDP11/35E11/40 BASIC BUILD AND ACCEPTANCE PROCEDURE		C					14	B-DD-KY11-D	#	2	DRAWING DIRECTORY	
				X		A-SR11/40-0-7		49	PDP11/35E11/40 SYSTEM BUILD AND ACCEPTANCE PROCEDURE		X						D-CS-5409701-0-1	#	3	KY11-D CONSOLE	
X						D-IC-7009566-0-1		1	EXPANDER BOX POWER HARNESS												
X						D-IC-7008754-0-3		1	POWER HARNESS												
X						D-IA-7009994-0-0		1	KD11-A POWER HARNESS												
X						D-IA-7009573-0-0		1	6-PIN JUMPER HARNESS		X					15	E-IA-7009566-0-0	#	1	EXPANDER POWER HARNESS	
C						B-DD-KD11-A	#	2	KD11-A PROCESSOR DRAWING DIRECTORY		C						K-WL-7009566-0-2	#	1	WIRE LIST	
				X	4	B-DD-BALL-F	#	3	MOUNTING BOX ASSY DRAWING DIRECTORY		C					16	A-ML-LT33-0	#	2	TELETYPE WRITERS	
X						E-UA-BALL-F-0	#	1	MOUNTING BOX ASSY												
X						D-IA-7009177-0-0	#	1	POWER DISTRIBUTION CABLE												
											C					17	B-DD-DL11-A	#	3	ASYNCHRONOUS LINE INTERFACE	
											C					30	B-DD-MF11-U/UP			16K MEMORY DRAWING DIRECTORY	
											X					31	ECS-H754-0-1	#		+20V, -5V REGULATOR	
					9	B-DD-MF11-L	#	3	8K MEMORY DRAWING DIRECTORY		C					32	B-DD-MF11-WP			32K MEMORY DRAWING DIRECTORY	
X						D-IA-7009565-0-0			MF11-L/LP FIRST MEMORY POWER HARNESS												
C					10	B-DD-H742-0	#		H7420 POWER SUPPLY DRAWING DIRECTORY												
C					11	B-DD-H744-0	#	3	+5 REGULATOR DRAWING DIRECTORY												

TITLE BASIC ASSY (11/40) SHEET 4 OF 6 SIZE CODE B DD NUMBER 11/40-0 REV 2

C



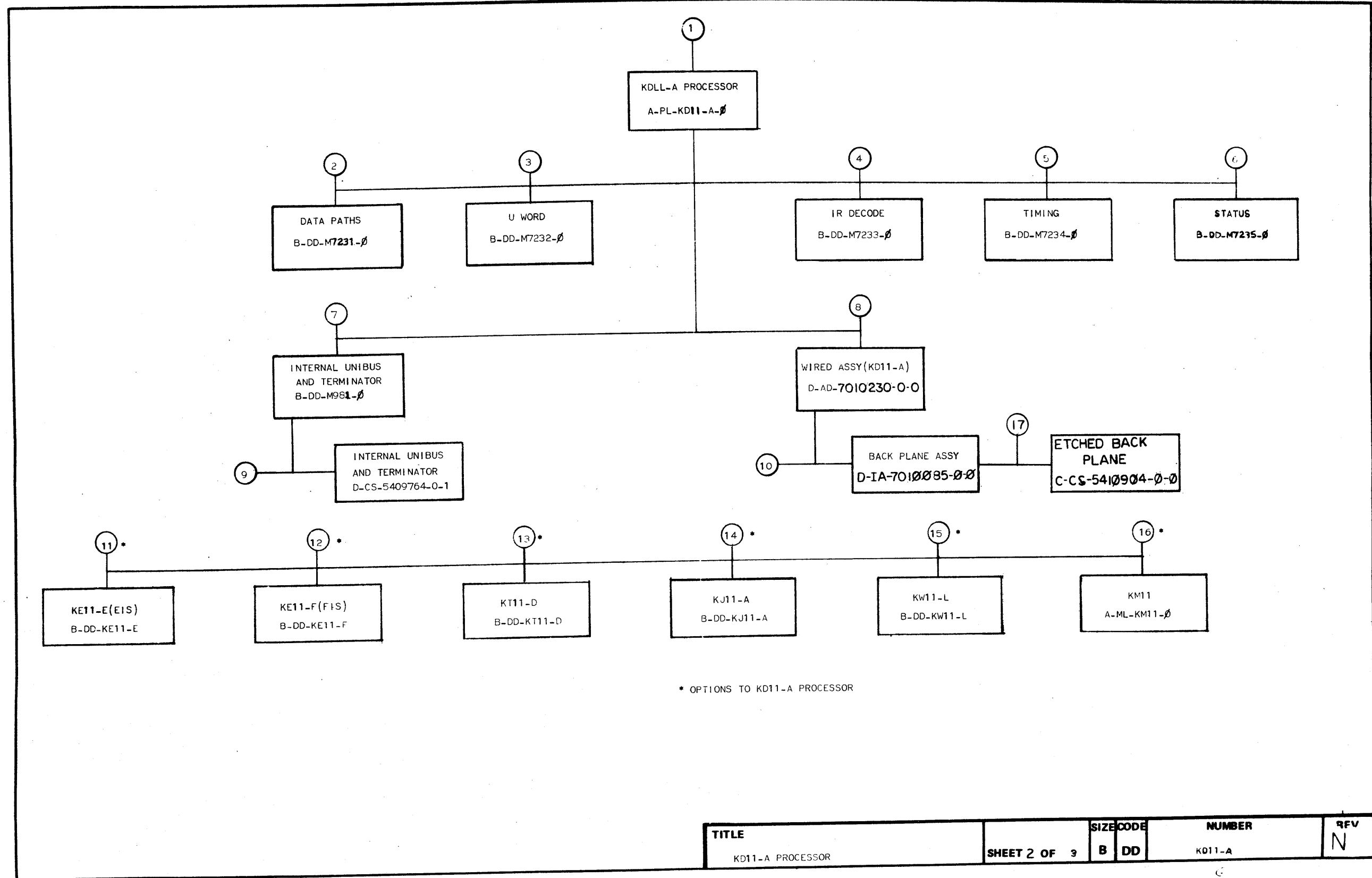
CUSTOMER PRINT SET		MECHANICAL					CUSTOMER PRINT SET		MECHANICAL						
MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE		
	19	C-PL-7009134-0-0		1	CAB ASSY (H967)										
		A-PS-1211442-0-0		1	COUNTER-WEIGHT										
		B-DD-MF11-U			16K MEMORY DRAWING DIRECTORY										
	20	A-PL-H952-EA-Ø		1	CASTER SET										
		B-DD-H754-0			+20V; -5V REGULATOR DRAWING DIRECTORY										
	21	A-PL-H952-FA-Ø		1	LEVELER SET										
	22	E-UA-H957-AA-Ø		4	19 IN FRAME ASSY										
	23	D-UA-H957-DA-Ø		1	DOOR FRAME MTG (R.H.)										
	24	A-PL-H957-CA-Ø		1	FILLER STRIP ASSY										
	25	D-UA-H958-PA-Ø		1	PAN BOTTOM										
	26	D-AD-7605465-0-0		1	SKID 19 IN										
	27	D-UA-H957-B-Ø		1	FULL LENGTH DOOR										
	28	D-AD-7009456-0-0		1	FAN ASSY										
		D-IA-7409126-0-0		1	PANEL FAN										
		A-PS-1210165-0-0		1	FAN (115V)										
		A-PS-1209175-0-0		1	FINGER GUARD										
		A-PS-1209798-0-0		1	FAN CARAVEL (230V)										
	29	C-UA-H957-SA-Ø		1	FILTER										
	30	B-DD-MF11-U			16K MEMORY DRAWING DIRECTORY										
	31	E-CS-H754-0-1			+20V, -5V REGULATOR										
	32	B-DD-MF11-WP			32K MEMORY DRAWING DIRECTORY										
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		SHEET 6 OF 6		SIZE CODE B DD		NUMBER 11/4Ø-Ø		REV Z

DRB 108

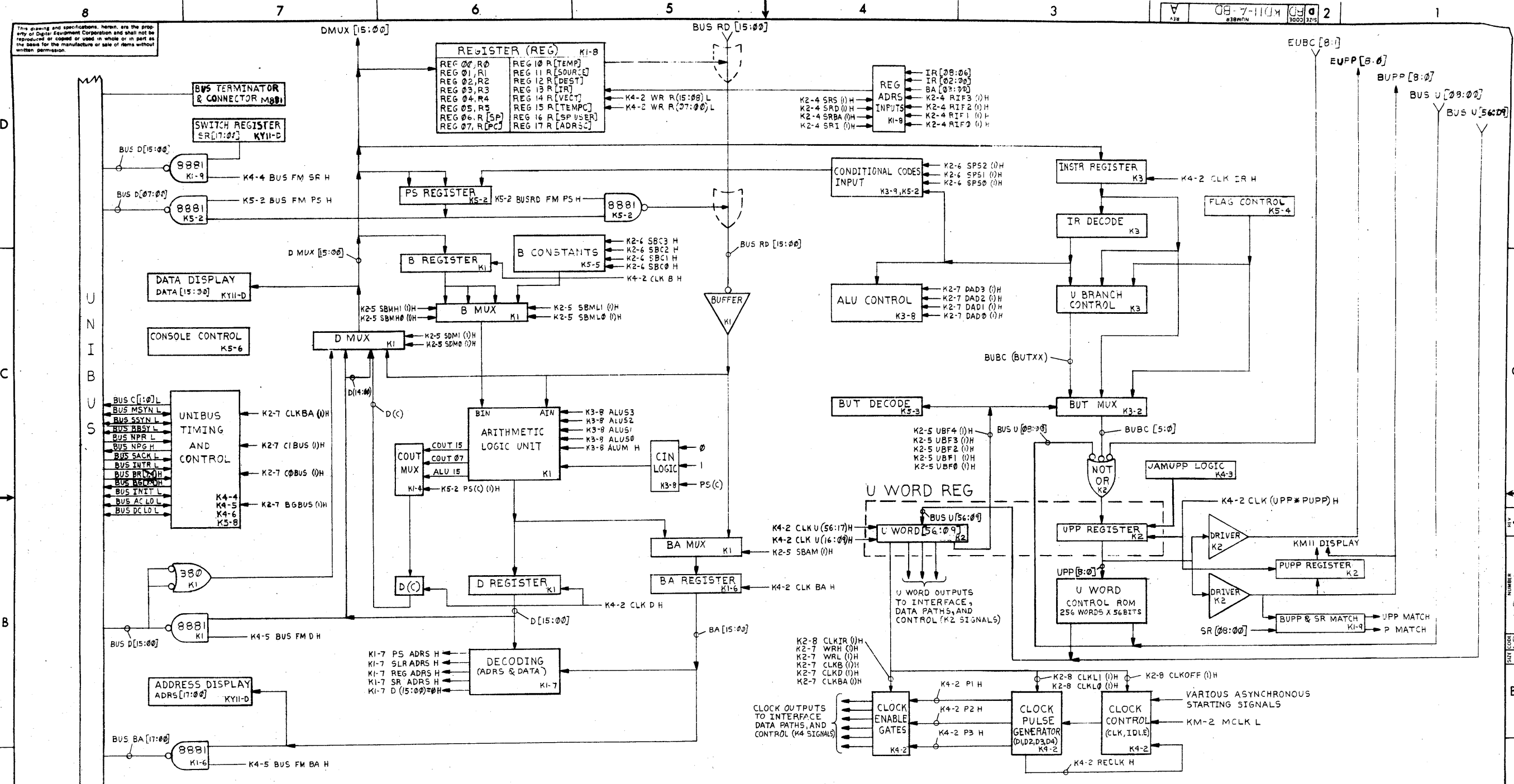
DEC 16 (325)-1062-2B-R972











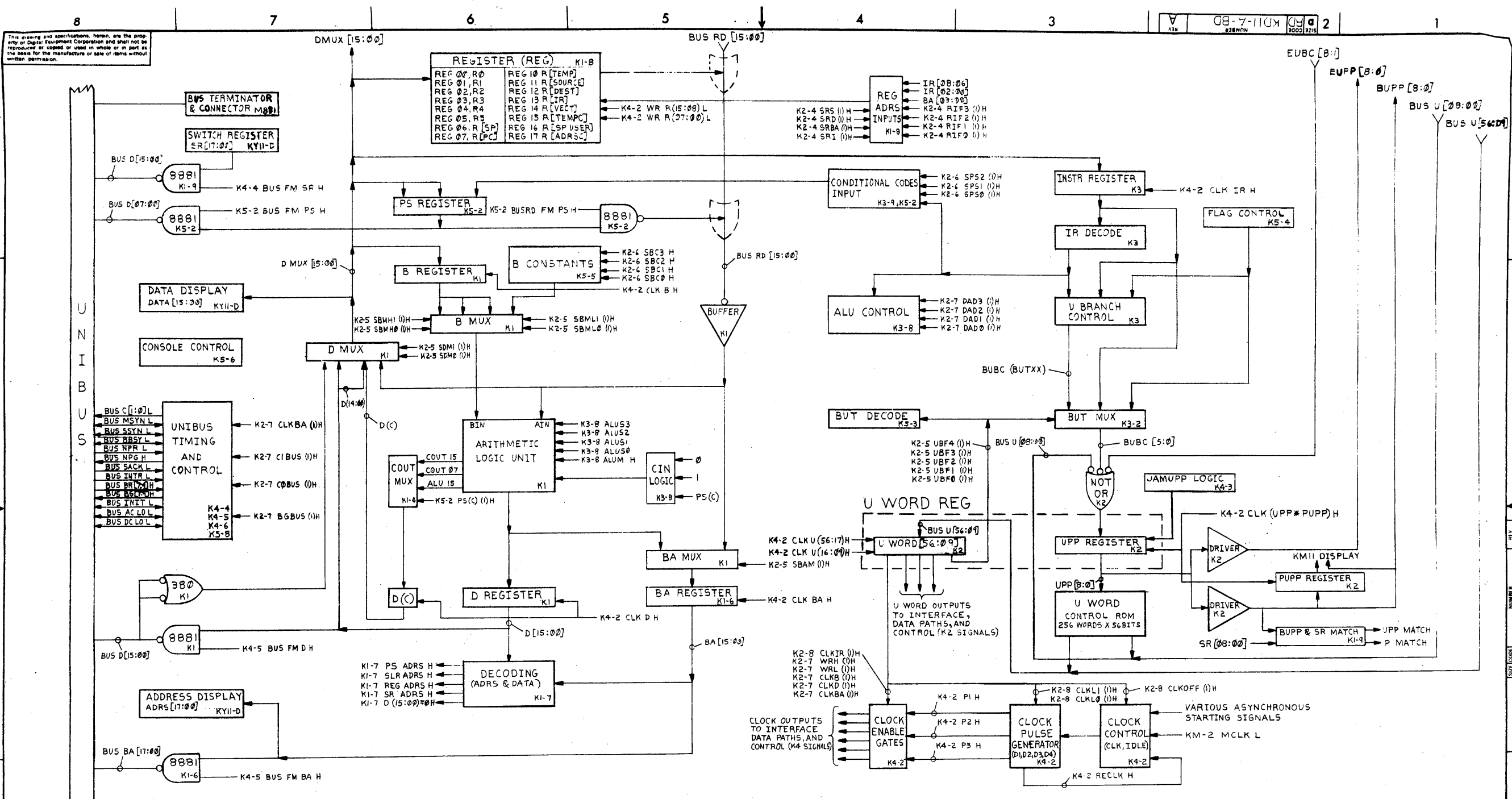
REVISIONS

CHK	CHANGE NO	REV	DATE
1	1	A	2-14-72

DESIGNED BY: O. LOUGHLIN  
 DRAWN BY: J. W. BROWN  
 CHECKED BY: J. W. BROWN  
 DATE: 2-14-72

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
POP II		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN: [Signature]	DATE: 7-21-72	digital EQUIPMENT CORPORATION MAYFIELD MASSACHUSETTS	
DECIMALS: .005	CHK'D: [Signature]	DATE: 9-25-72	TITLE: K11-A PROCESSOR (BLOCK DIAGRAM)	
ANGLES: ±0°30'	ENG: [Signature]	DATE: 9-25-72	MATERIAL: NEXT HIGHER ASSY.	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ ENG: [Signature]	DATE: 9-25-72	MATERIAL: B-DD-K11-A	
	REV: [Signature]	DATE: 9-25-72	FINISH: NONE	
			SCALE: NONE	
			SHEET: OF 2	

CUSTOMER PRINT SET				ELECTRICAL					CUSTOMER PRINT SET				MECHANICAL						
KD11-A	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.	KD11-A	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.				
																X		1	D-BD-KD11-A-BD
X			D-FD-KD11-A-FD	B	12	FLOW DIAGRAM		X		Ø	A-WF-7010230-0	#	1	AWT REVISION STATUS					
X			D-MU-KD11-A-MU	A	1	MODULE UTILIZATION				10	D-1A 7010085-0-0		1	BACK PLANE ASSY					
C			K-WL-KD11-A-WL	N	33	WIRE & ETCH LIST (COMPLETE)													
X		17	C-CS-541Ø9Ø4-Ø-1	#	1	CIRCUIT SCHEMATIC BACK PLANE					B-DD-2338-0		4	XOR TESTERS					
		2	B-DD-M7231-Ø		2	DATA PATHS													
X			D-CS-M7231-Ø-1	#	9	DATA PATHS CIRCUIT SCHEMATIC													
		3	B-DD-M7232-Ø		2	U WORD													
X			D-CS-M7232-Ø-1	#	12	U WORD CIRCUIT SCHEMATIC													
		4	B-DD-M7233-Ø		2	IR DECODE													
X			D-CS-M7233-Ø-1	#	9	IR DECODE CIRCUIT SCHEMATIC													
		5	B-DD-M7234-Ø		2	TIMING													
X			D-CS-M7234-Ø-1	#	6	TIMING CIRCUIT SCHEMATIC													
		6	B-DD-M7235-Ø		2	STATUS													
X			D-CS-M7235-Ø-1	#	8	STATUS CIRCUIT SCHEMATIC													
		7	B-DD-M981-Ø		2	INTERNAL UNIBUS AND TERMINATOR													
X		8	D-CS-54Ø9764-Ø-1	#	2	INTERNAL UNIBUS AND TERMINATOR CIRCUIT SCHEMATIC													
			B-DD-KY11-D	REF	2	KY11-D CONSOLE													
		11	B-DD-KE11-E	REF	2	KE11-E (EIS)													
		12	B-DD-KE11-F	REF	2	KE11-F (FIS)													
		13	B-DD-KT11-D	REF	2	MEMORY MANAGEMENT													
C		14	B-DD-KJ11-A	#	2	STACK LIMIT REGISTER													
C		15	B-DD-KW11-L	#		LINE FREQUENCY CLOCK													
		16	A-ML-KM11-Ø	REF	1	MAINTENANCE PANEL (W130, W131)													
X			D-BS-KM11-Ø-MB	#	3	MAINTENANCE BOARD (1&2)													
X			A-SS-5509081-0-1	#	1	SILK SCREEN (KD11-A)													
X			A-SS-5509081-0-1	#	1	SILK SCREEN (KT11-D, KE11-E, F)													
										TITLE		SHEET 3 OF 3		SIZE CODE		NUMBER		REV	
										KD11-A PROCESSOR		B DD		KD11-A		N			



INTERFACE DATA PATHS MICROCONTROL

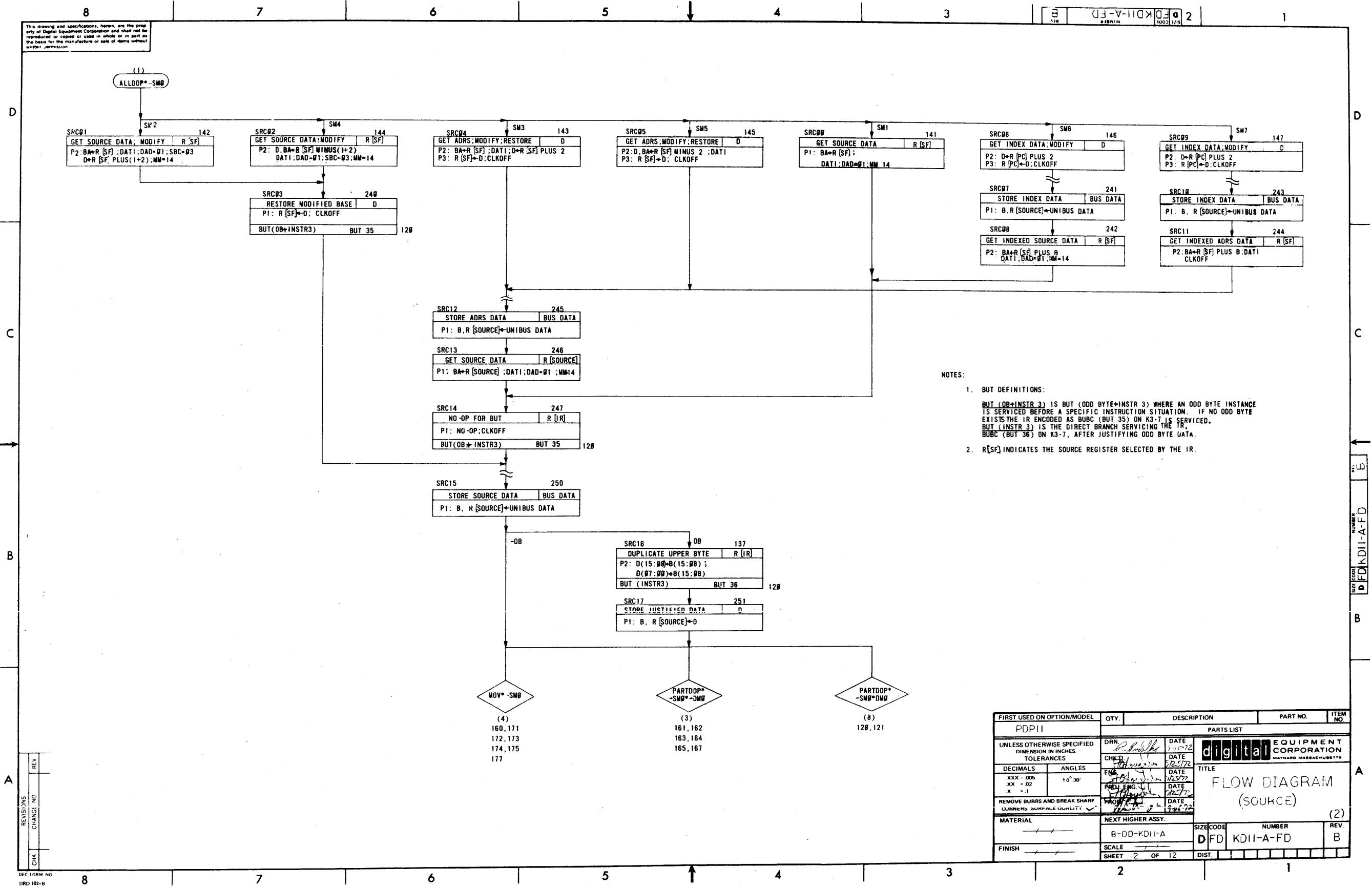
REVISIONS

REV	CHANGE NO	DATE
1	MDIA-00005	2-14-73

DEC FORM NO. DRD 102-B

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
POP II		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN	DATE	digital EQUIPMENT CORPORATION
DECIMALS	ANGLES	CHKD	DATE	
XXX - .005	± 0° 30'	ENG	DATE	TITLE
X - .1		PROJ. ENGR	DATE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		APPROV	DATE	(BLOCK DIAGRAM)
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE NUMBER REV		
FINISH	B-DD-KDII-A	D BD	KDII-A-80	A
SCALE NONE		SHEET OF 2		

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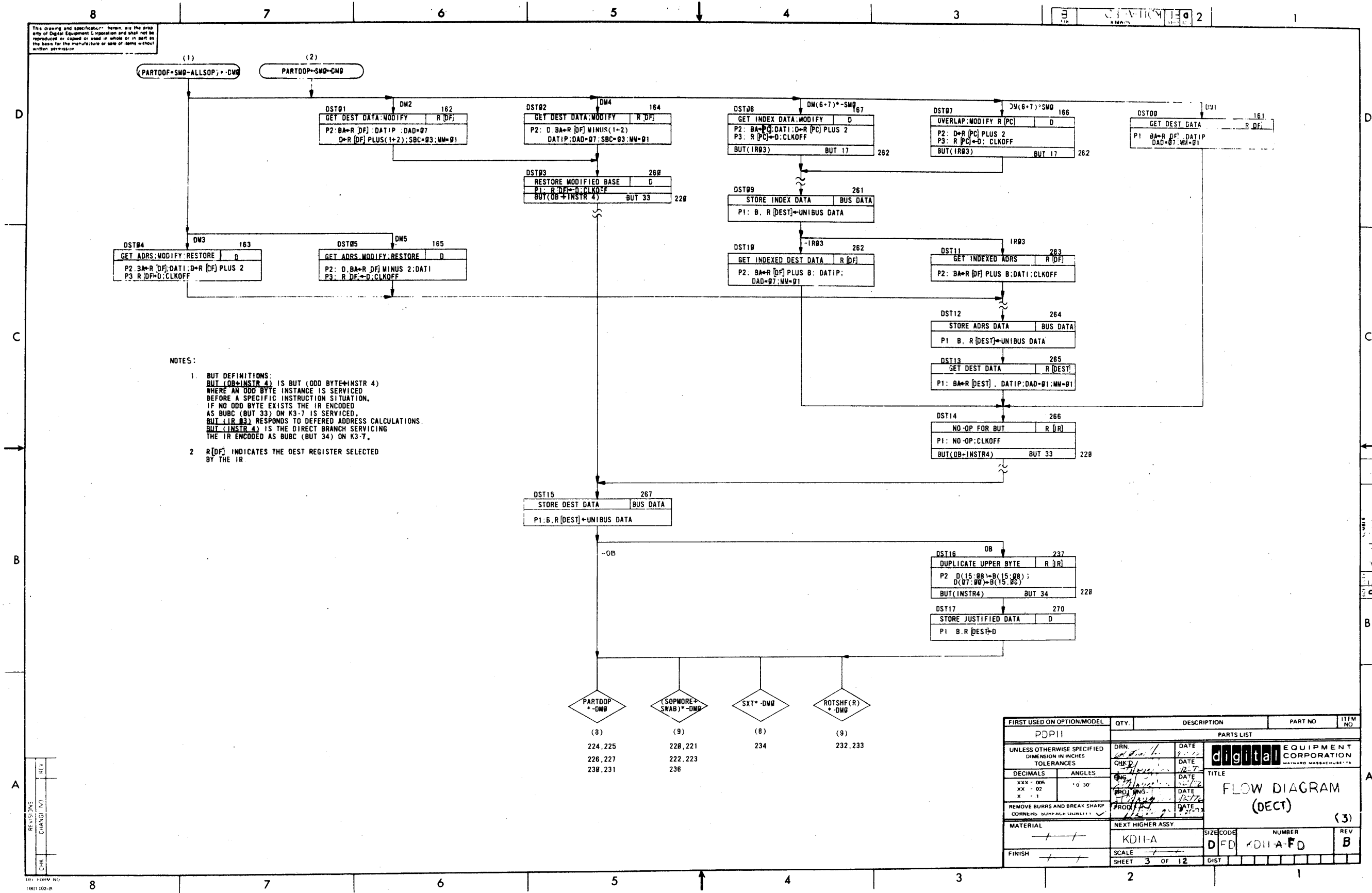
NOTES:

- BUT DEFINITIONS:  
 BUT (OB+INSTR 3) IS BUT (ODD BYTE+INSTR 3) WHERE AN ODD BYTE INSTANCE IS SERVICED BEFORE A SPECIFIC INSTRUCTION SITUATION. IF NO ODD BYTE EXISTS THE IR ENCODED AS BUBC (BUT 35) ON K3-7 IS SERVICED.  
 BUT (INSTR 3) IS THE DIRECT BRANCH SERVICING THE IR.  
 BUBC (BUT 36) ON K3-7, AFTER JUSTIFYING ODD BYTE DATA.
- R[SF] INDICATES THE SOURCE REGISTER SELECTED BY THE IR.

REV	
CHG	
CHK	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDPII		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.	DRN	DATE	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
TOLERANCES	CHKD	DATE	TITLE	
DECIMALS	ENG	DATE	FLOW DIAGRAM	
ANGLES	PRG	DATE	(SOURCE)	
XXX - .005	PROV	DATE	(2)	
XX - .02		DATE		
X - .1		DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE		
MATERIAL	NEXT HIGHER ASSY.	DATE		
FINISH	B-DD-KDII-A	DATE		
SCALE	SIZE CODE	NUMBER	REV.	
SHEET 2 OF 12	D	FD	KDII-A-FD	B

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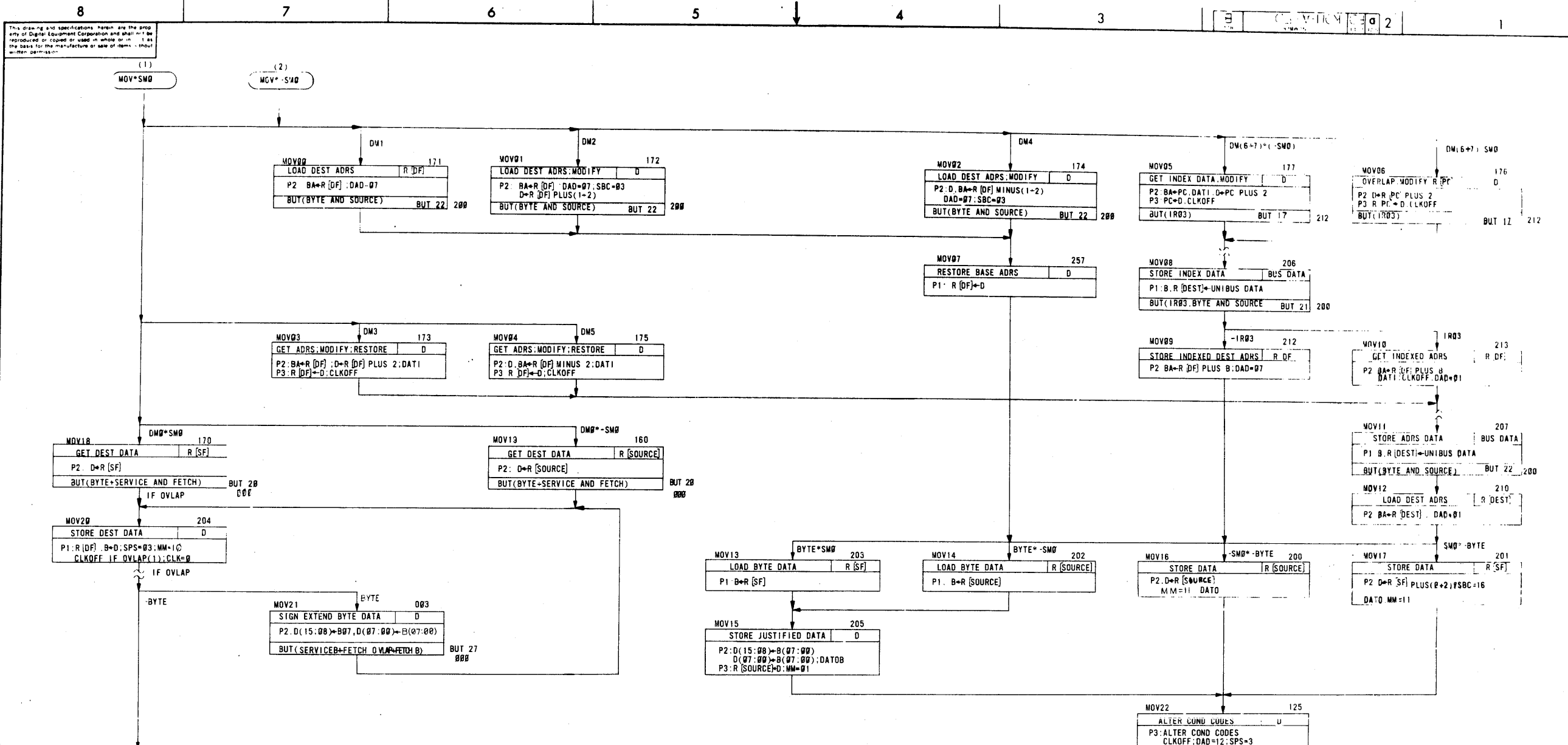


(8)	(9)	(8)	(9)
224, 225	228, 221	234	232, 233
226, 227	222, 223		
238, 231	236		

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
PD11		PARTS LIST		
UNLESS OTHERWISE SPECIFIED				
DRN	DATE	digital EQUIPMENT CORPORATION		
CHK'D	DATE	MAINTAIN MASSACHUSETTS		
DECIMALS	ANGLES	TITLE		
XXX - 005	1.0 30	FLOW DIAGRAM		
XX - 02		(DECT)		
X - 1		(3)		
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY	SIZE CODE	NUMBER	REV
+	KD11-A	D	KD11-A-FD	B
FINISH	SCALE	SHEET	DIST	
+		3 OF 12		

REV	NO
CHG	NO
CHK	NO

101-104M-NO  
1001-102-R



NOTE:  
 1. BUT DEFINITIONS:  
 BUT (BYTE AND SOURCE) = BUT (BYTE \* (SMB+ - SMB) + - BYTE (SMB+ - SMB))  
 WITH THE BYTE AND SOURCE MODE INTERACTING TO PROVIDE A FOUR WAY BRANCH.  
 BUT (IR #3) RESPONDS TO DEFERED ADDRESS CALCULATIONS.  
 BUT (IR #3, BYTE AND SOURCE) COMBINES ABOVE BUTS AS BUTC (BUT21) ON K3-7.  
 BUT (SERVICE B+FETCH OVLAP+FETCH B) RESPONDS TO ANY SERVICE REQUEST OVER A FETCH OVERLAP OVER A USUAL FETCH CYCLE REENTRY.  
 BUT (BYTE+SERVICE+FETCH) WILL JUSTIFY BYTE DATA PRIOR TO THE SERVICE OR FETCH BUT NOTED ABOVE.

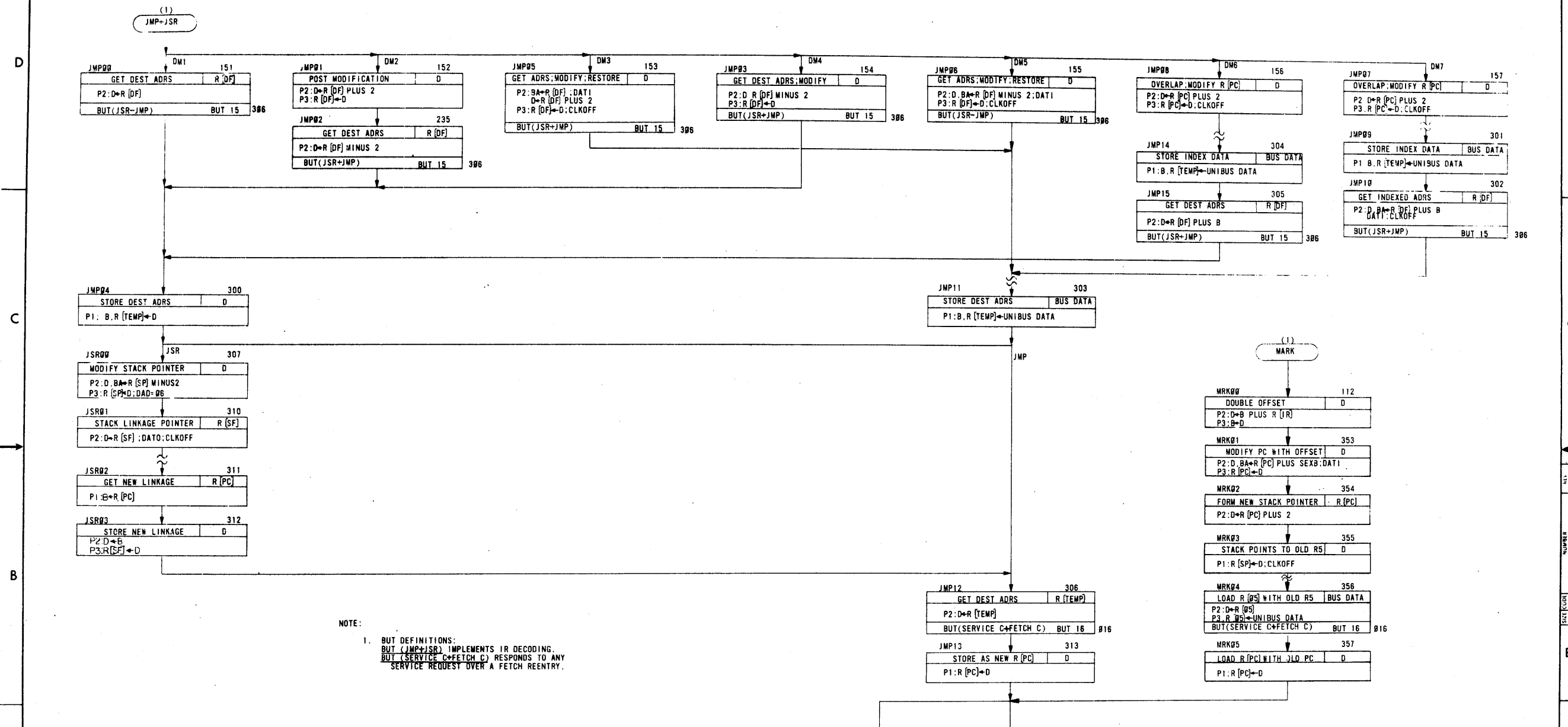
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.	
PDP 11					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN. DATE	DATE	<b>digital</b> EQUIPMENT CORPORATION <small>WALTHAM MASSCH081111</small>		
DECIMALS ANGLES	CHK'D DATE	DATE			
xxx = 005 xx = 02 x = .1	1'0"30"	ENG. DATE			TITLE
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ. ENG. DATE	DATE			<b>FLOW DIAGRAM (MOV)</b> (4)
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV	
FINISH	B-00-K011-A	DFD	K011-A-FD	B	
SCALE	SHEET 4 OF 12	DIST			

REV. NO.	REV.
CHANGE NO.	
CHK	



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8 7 6 5 4 3 2 1



NOTE:  
 1. BUT DEFINITIONS:  
 BUT (JMP+JSR) IMPLEMENTS IR DECODING.  
 BUT (SERVICE C+FETCH C) RESPONDS TO ANY SERVICE REQUEST OVER A FETCH REENTRY.

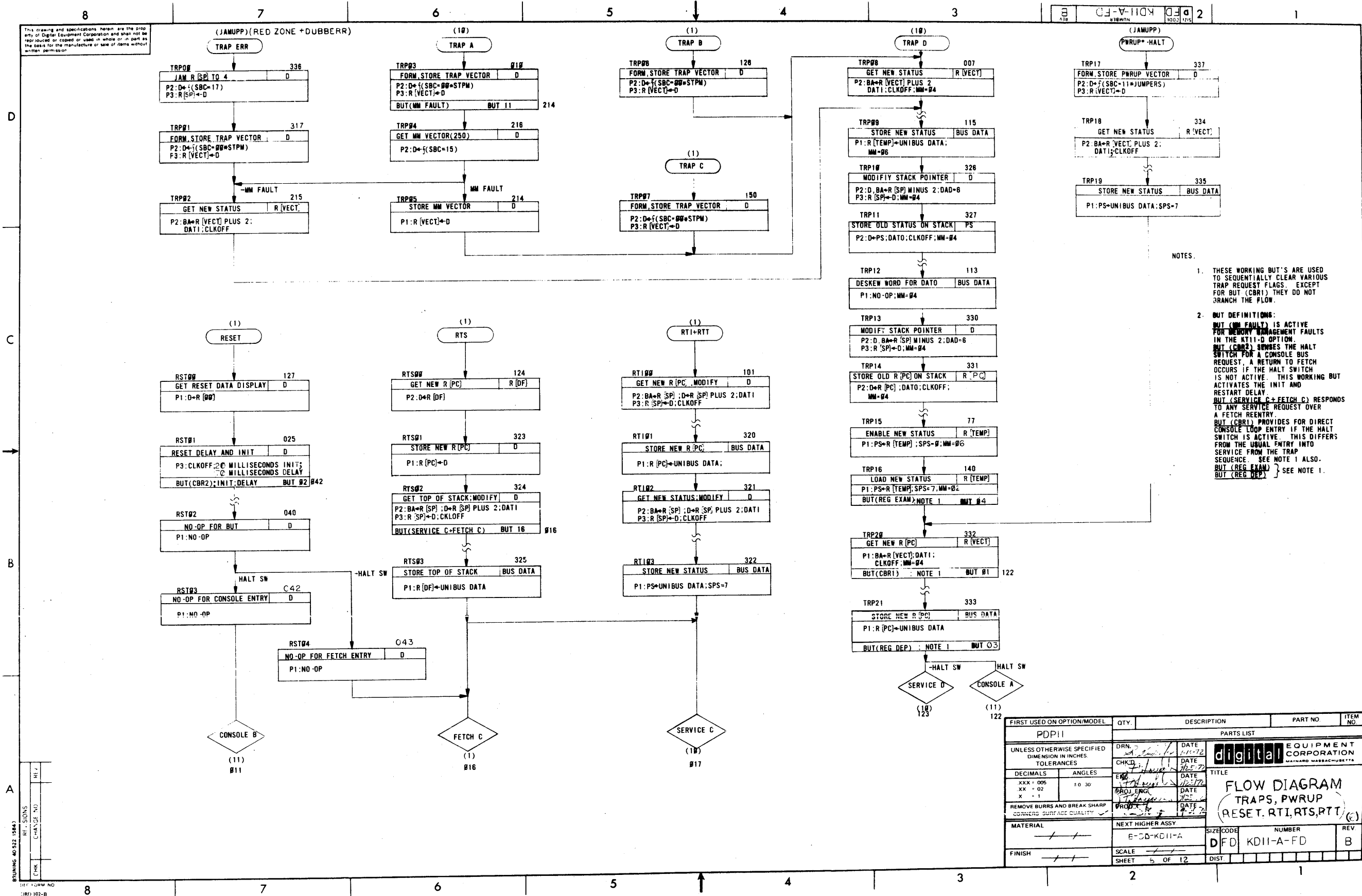
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDPII		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DRM	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
TOLERANCES	CMK D	DATE	TITLE	
DECIMALS	XXX - .005	DATE	FLOW DIAGRAM	
ANGLES	.XX - .02	DATE	(JMP, JSR, MARK)	
	.X - .1	DATE	(5)	
REMOVE BURRS AND BREAK SHARP LUNERS SURFACE QUALITY	PROJ. ENG.	DATE	MATERIAL	
	PROJ. MGR.	DATE	NEXT HIGHER ASSY.	
			B-DD-KCII-A	
			SIZE CODE	NUMBR
			D FD	KDII-A-FD
			SCALE	REV
			SHEET 5 OF 12	B

REV	CHG	NO

DEC 1966 NO. DRP 102-B

8 7 6 5 4 3 2 1

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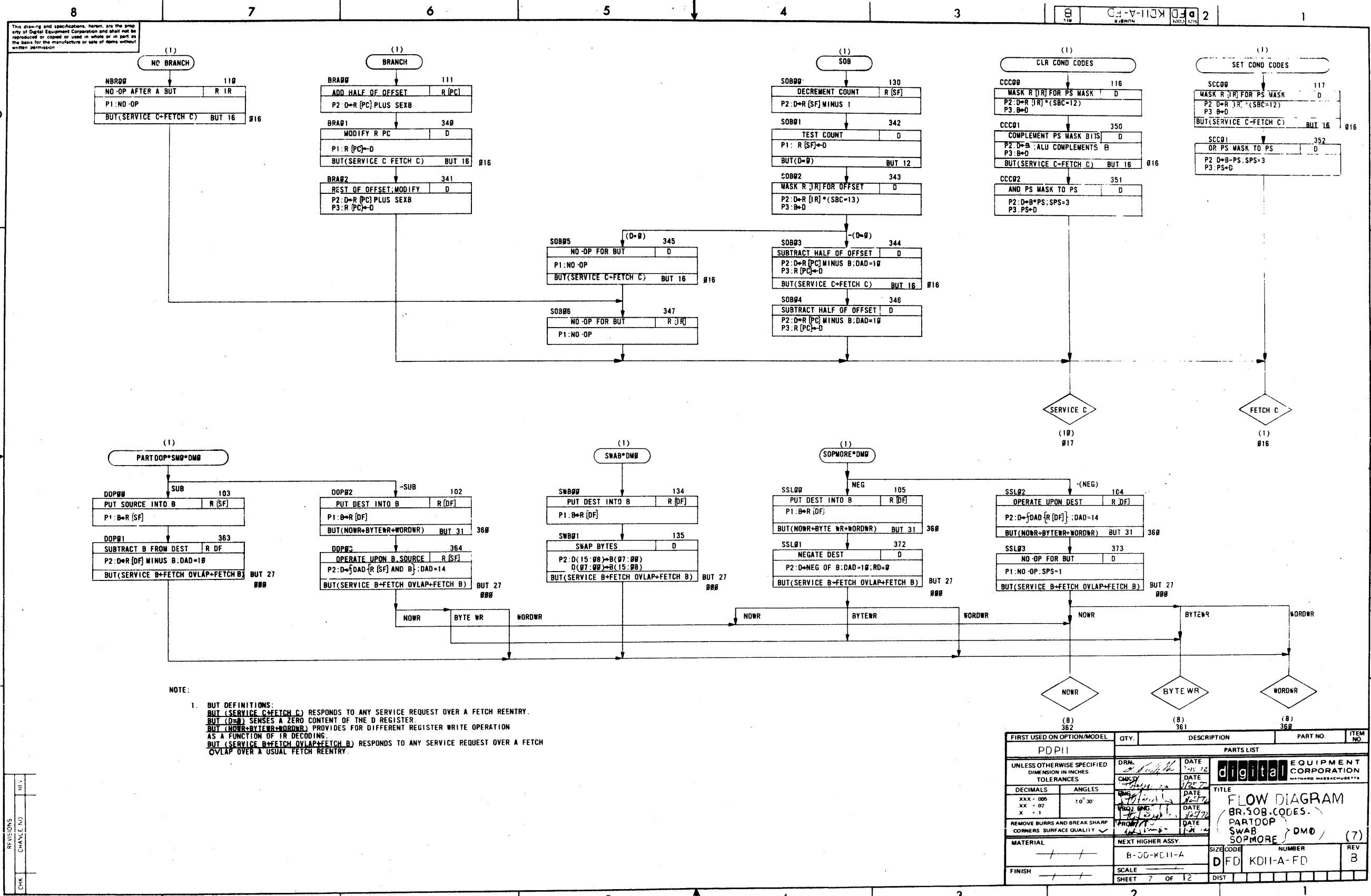
NOTES:

1. THESE WORKING BUT'S ARE USED TO SEQUENTIALLY CLEAR VARIOUS TRAP REQUEST FLAGS. EXCEPT FOR BUT (CBR1) THEY DO NOT BRANCH THE FLOW.
2. BUT DEFINITIONS:  
 BUT (MM FAULT) IS ACTIVE FOR MEMORY MANAGEMENT FAULTS IN THE K111-D OPTION.  
 BUT (CBR0) SERVES THE HALT SWITCH FOR A CONSOLE BUS REQUEST. A RETURN TO FETCH OCCURS IF THE HALT SWITCH IS NOT ACTIVE. THIS WORKING BUT ACTIVATES THE INIT AND RESTART DELAY.  
 BUT (SERVICE C+FETCH C) RESPONDS TO ANY SERVICE REQUEST OVER A FETCH REENTRY.  
 BUT (CBR1) PROVIDES FOR DIRECT CONSOLE LOOP ENTRY IF THE HALT SWITCH IS ACTIVE. THIS DIFFERS FROM THE USUAL ENTRY INTO SERVICE FROM THE TRAP SEQUENCE. SEE NOTE 1 ALSO.  
 BUT (REG EXAM) } SEE NOTE 1.  
 BUT (REG DEP) }

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	TITLE		
XXX = 005	± 30	<b>digital</b> EQUIPMENT CORPORATION FLOW DIAGRAM TRAPS, PWRUP (RESET, RTI, RTS, RTT)		
XX = 02				
X = 1				
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY	SIZE CODE	NUMBER	REV
FINISH	SCALE	5-00-KD11-A	D F D	B
	SHEET	5 OF 12	DIST.	

REV. SIONS  
 CHG. NO.  
 DATE

NUMBER  
 D F D  
 K D I I - A - F D

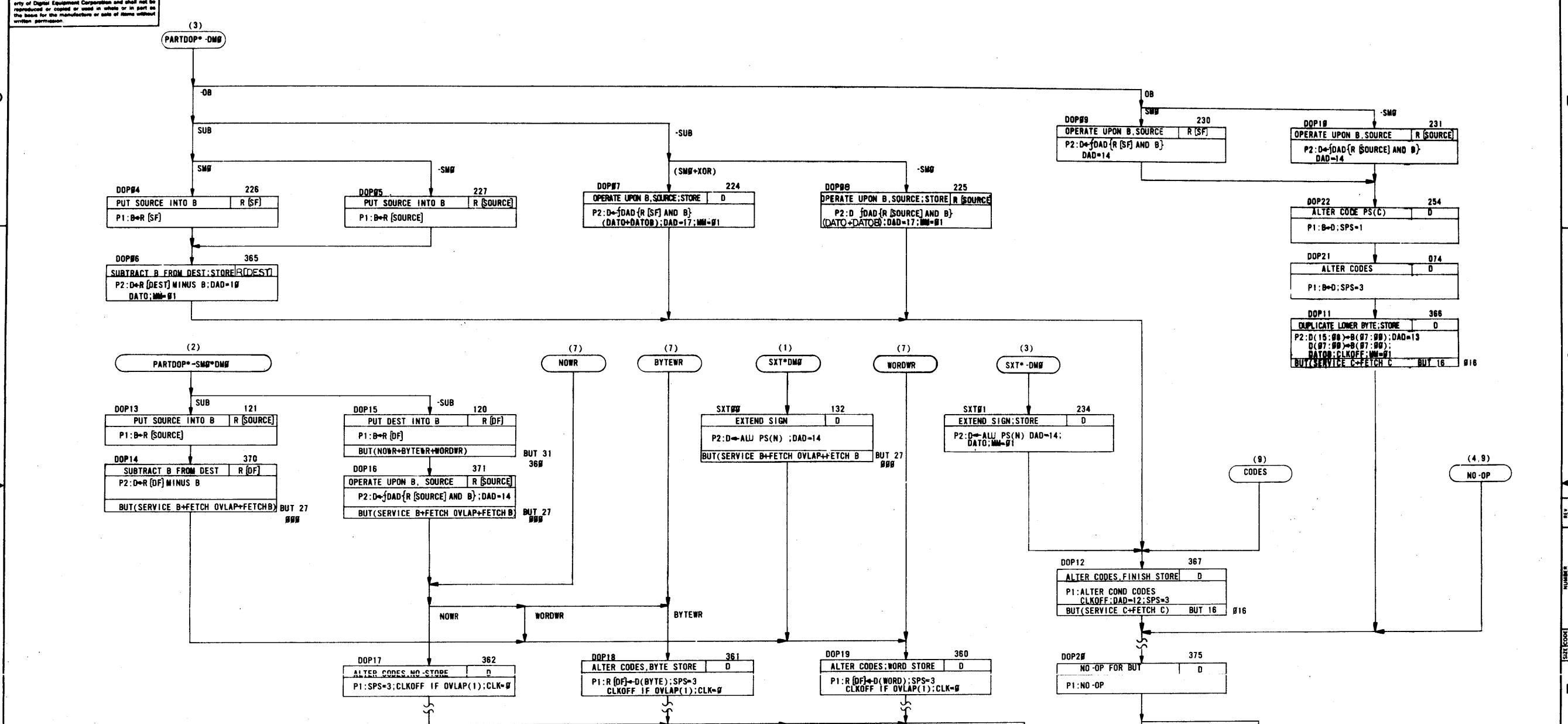


NOTE:  
 1. BUT DEFINITIONS:  
 BUT (SERVICE C-FETCH C) RESPONDS TO ANY SERVICE REQUEST OVER A FETCH REENTRY.  
 BUT (D=0) SENSES A ZERO CONTENT OF THE D REGISTER.  
 BUT (NOWR+BYTEWR+WORDWR) PROVIDES FOR DIFFERENT REGISTER WRITE OPERATION AS A FUNCTION OF IR DECODING.  
 BUT (SERVICE B-FETCH OVLAP-FETCH B) RESPONDS TO ANY SERVICE REQUEST OVER A FETCH OVLAP OVER A USUAL FETCH REENTRY.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDPII				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DATE 1/15/72	DATE 1/25/72	<b>digital</b> EQUIPMENT CORPORATION NAYARD MASSACHUSETTS TITLE BR:SOB.CODES. PARTDOP SWAB SOPMORE DM0 (7)	
DECIMALS ANGLES	DATE 1/25/72	DATE 1/25/72		
XXX = .005 XX = .02 X = .1	DATE 1/25/72	DATE 1/25/72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE 1/25/72	DATE 1/25/72		
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
FINISH	B-30-KC11-A		D FD	KDII-A-FD
	SCALE			REV B
	SHEET 7 OF 12	DIST		

REVISIONS  
 CHANGE NO. 111

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NOTE:  
 1. BUT DEFINITIONS:  
 BUT (SERVICE C+FETCH C) RESPONDS TO ANY SERVICE REQUEST OVER A FETCH REENTRY.  
 BUT (SERVICE B+FETCH OVLAP+FETCH B) RESPONDS TO ANY SERVICE REQUEST OVER A FETCH OVLAP OVER A USUAL FETCH REENTRY.  
 BUT (NOWR+BYTEWR+WORDWR) PROVIDES FOR DIFFERENT REGISTER WRITE OPERATION AS A FUNCTION OF IR DECODING.

REVISIONS  
 CHANGE NO. REV.  
 CHK

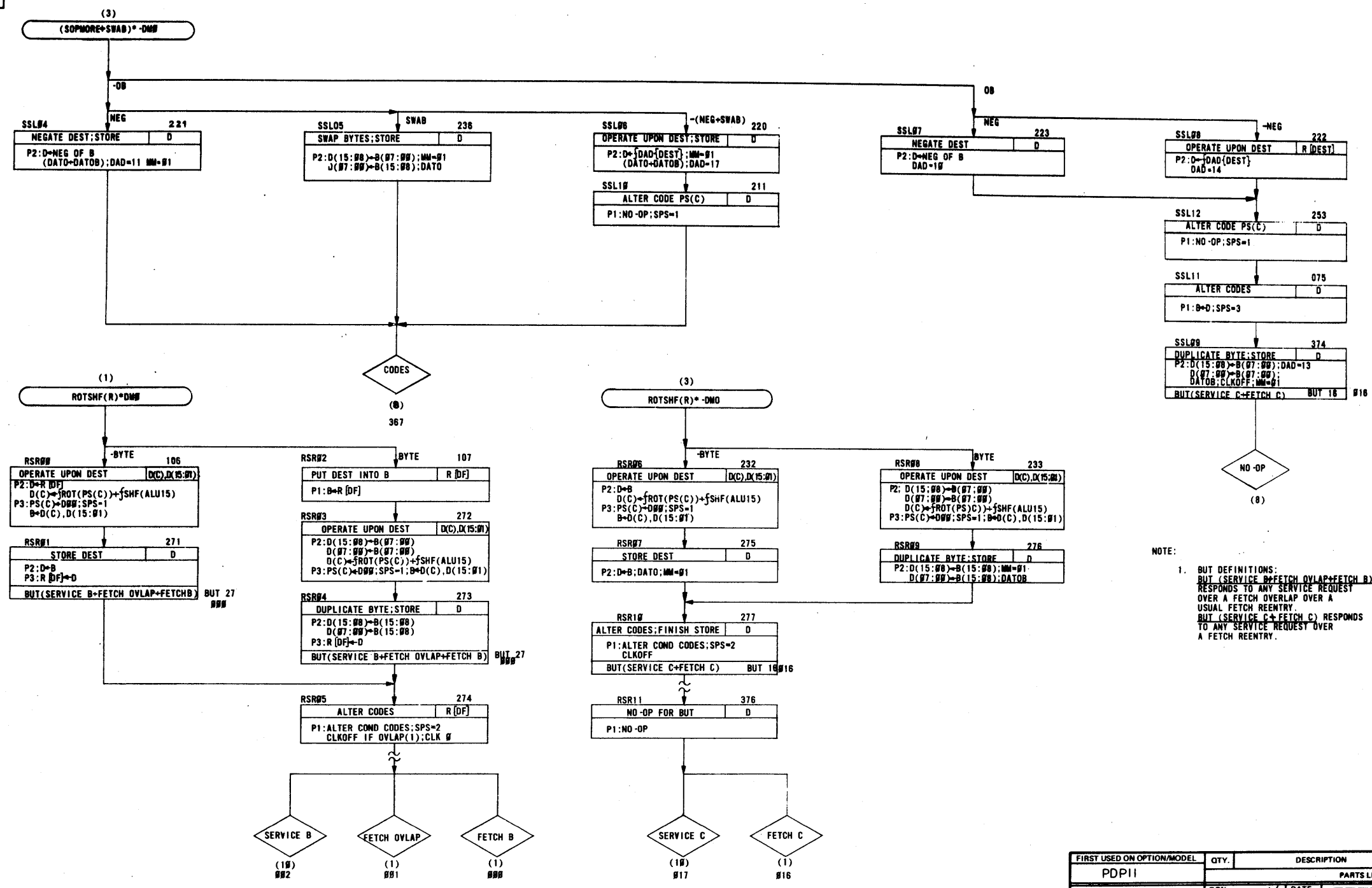
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
<b>PDP11 PARTS LIST</b>				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS	ANGLES	DATE	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
.XXX ± .005	10° 30'	DATE	TITLE FLOW DIAGRAM (PARTDOP, SXT)	
.XX ± .02		DATE		
.X ± .1		DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL		NEXT HIGHER ASSY.		
FINISH		SCALE		
		SHEET 8 OF 12		
		SIZE CODE NUMBER REV. D FD KD11-A-FD B		
		DIST.		

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8 FD KDI1-A-FD 2

D  
C  
B  
A

D  
C  
B  
A



NOTE:  
1. BUT DEFINITIONS:  
BUT (SERVICE B+FETCH OVLAP+FETCH B)  
RESPONDS TO ANY SERVICE REQUEST  
OVER A FETCH OVERLAP OVER A  
USUAL FETCH REENTRY.  
BUT (SERVICE C+FETCH C) RESPONDS  
TO ANY SERVICE REQUEST OVER  
A FETCH REENTRY.

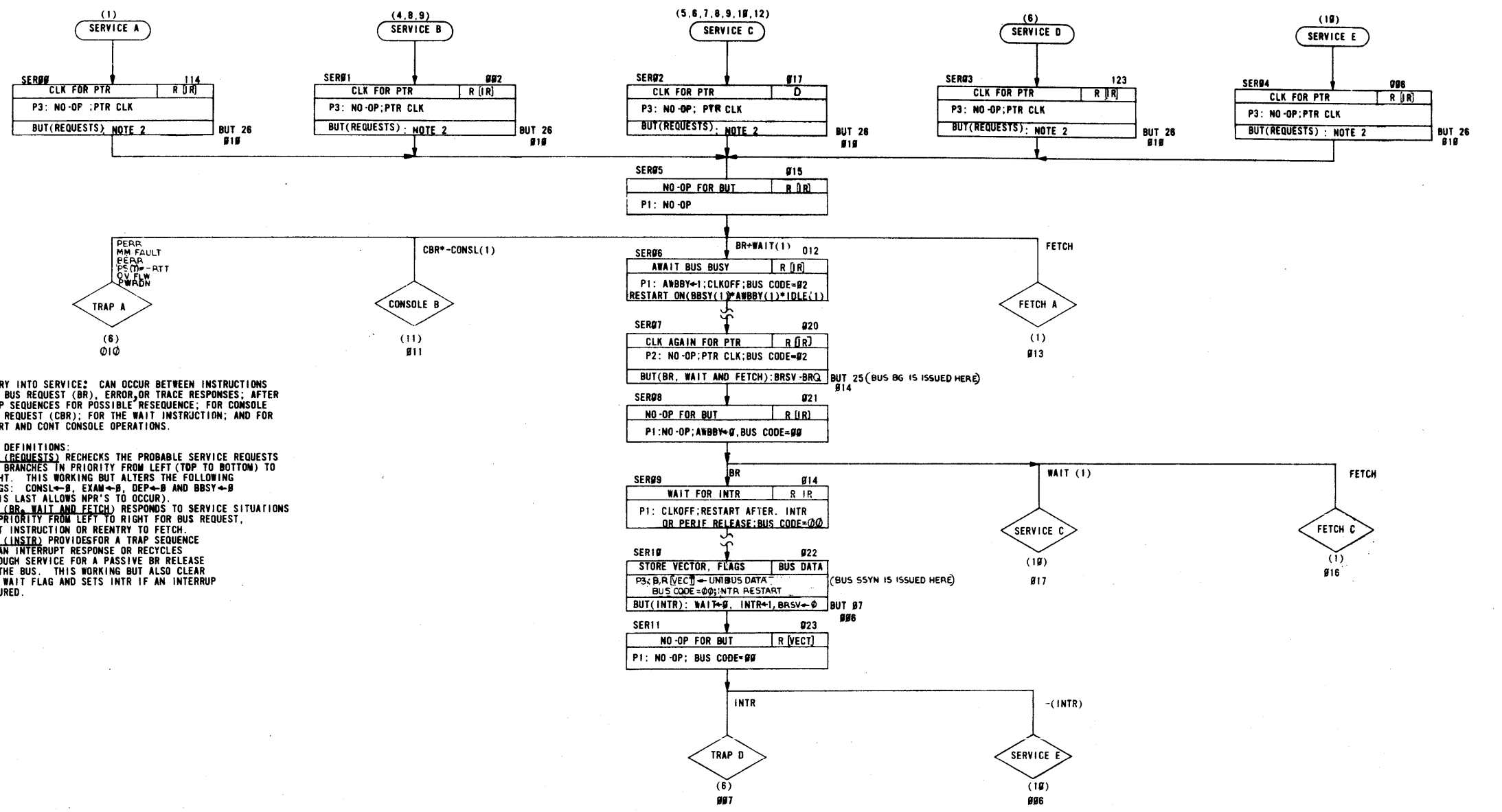
REV	
CHANGE NO	
CHK	

DEC FORM NO DRD 102-B

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDPII				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES	DRN CHKD DATE 9-15-76	DATE 9-25-77	 EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS .0005 ANGLES ±0°30'	DATE 9-25-77	DATE 9-25-77		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE 9-25-77	DATE 9-25-77	TITLE FLOW DIAGRAM (SOFMORE+SWAB)*-DMO (ROTSHF(R)) (9)	
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV
FINISH	SCALE	B-DD-KDII-A	DFD	KDII-A-FD
	SHEET 9 OF 12	DIST		B

8 7 6 5 4 3 2 1

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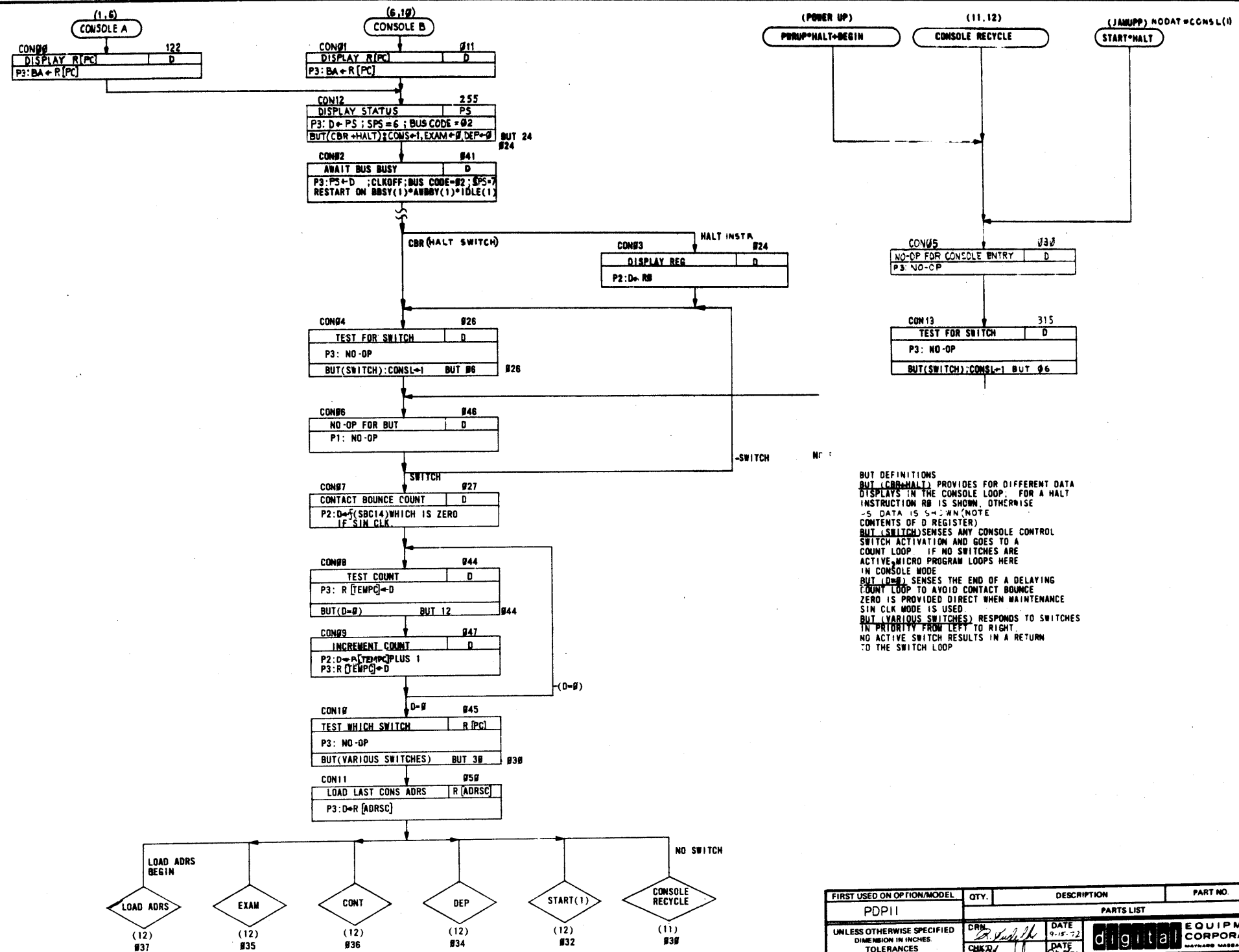
NOTES:

- ENTRY INTO SERVICE: CAN OCCUR BETWEEN INSTRUCTIONS FOR BUS REQUEST (BR), ERROR, OR TRAP RESPONSES; AFTER TRAP SEQUENCES FOR POSSIBLE RESEQUENCE; FOR CONSOLE BUS REQUEST (CBR); FOR THE WAIT INSTRUCTION; AND FOR START AND CONT CONSOLE OPERATIONS.
- BUT DEFINITIONS:  
 BUT (REQUESTS) RECHECKS THE PROBABLE SERVICE REQUESTS AND BRANCHES IN PRIORITY FROM LEFT (TOP TO BOTTOM) TO RIGHT. THIS WORKING BUT ALTERS THE FOLLOWING FLAGS: CONSL←B, EXAM←B, DEP←B AND BBSY←B (THIS LAST ALLOWS MPR'S TO OCCUR).  
 BUT (BR, WAIT AND FETCH) RESPONDS TO SERVICE SITUATIONS IN PRIORITY FROM LEFT TO RIGHT FOR BUS REQUEST, WAIT INSTRUCTION OR REENTRY TO FETCH.  
 BUT (INTR) PROVIDES FOR A TRAP SEQUENCE AS AN INTERRUPT RESPONSE OR RECYCLES THROUGH SERVICE FOR A PASSIVE BR RELEASE OF THE BUS. THIS WORKING BUT ALSO CLEAR THE WAIT FLAG AND SETS INTR IF AN INTERRUPT OCCURED.

REVISIONS  
 CHANGE NO  
 REV

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP11				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.		DRN: <i>[Signature]</i> DATE: 9-15-72	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
TOLERANCES		CHK'D: <i>[Signature]</i> DATE: 9/25/72		
DECIMALS	ANGLES	DATE: 9/25/72	TITLE <b>FLOW DIAGRAM (SERVICE)</b> (10)	
.XXX - .006	±0° 30'	DATE: 9/25/72		
.XX - .02		DATE: 9/25/72	MATERIAL	
.X - .1		DATE: 9/25/72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROJ: <i>[Signature]</i> DATE: 9/25/72	NEXT HIGHER ASSY.	
			B-DD-KD11-A	
			SIZE CODE	
			D FD	
			NUMBER	
			KD11-A-FD	
			REV.	
			B	
			SCALE	
			SHEET 10 OF 12	
			DIST.	

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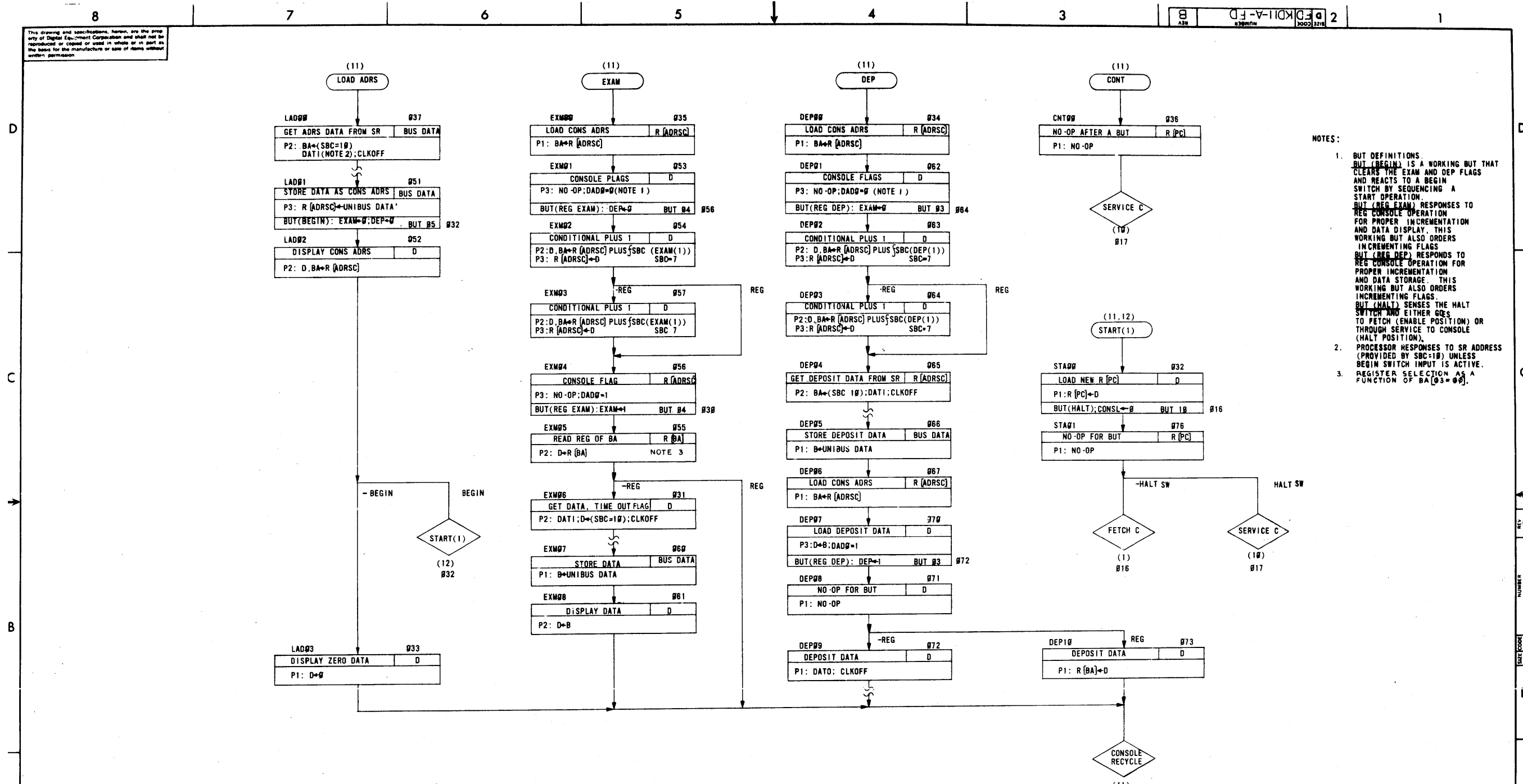


BUT DEFINITIONS  
 BUT (CBR+HALT) PROVIDES FOR DIFFERENT DATA DISPLAYS IN THE CONSOLE LOOP; FOR A HALT INSTRUCTION RB IS SHOWN, OTHERWISE -S DATA IS SHOWN (NOTE CONTENTS OF D REGISTER)  
 BUT (SWITCH) SENSES ANY CONSOLE CONTROL SWITCH ACTIVATION AND GOES TO A COUNT LOOP. IF NO SWITCHES ARE ACTIVE, MICRO PROGRAM LOOPS HERE IN CONSOLE MODE.  
 BUT (D=#) SENSES THE END OF A DELAYING COUNT LOOP TO AVOID CONTACT BOUNCE. ZERO IS PROVIDED DIRECT WHEN MAINTENANCE SIN CLK MODE IS USED.  
 BUT (VARIOUS SWITCHES) RESPONDS TO SWITCHES IN PRIORITY FROM LEFT TO RIGHT. NO ACTIVE SWITCH RESULTS IN A RETURN TO THE SWITCH LOOP.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP11				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DATE 9-15-72	TITLE FLOW DIAGRAM (CONSOLE LOOP)		
TOLERANCES	DATE 2/23/72			
DECIMALS ANGLES	DATE 3/15/72			
XXX - .006 XX - .02 X - .1	DATE 2/27/72			
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE 9-21-72			
MATERIAL	NEXT HIGHER ASSY	SIZE CODE	NUMBER	REV.
FINISH	B-00-KD11-A	D	FD	B
	SCALE			
	SHEET 11 OF 12			

REV	CHANGI. NO.	REVISIONS

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- NOTES:
- BUT DEFINITIONS:  
 BUT (BEGIN) IS A WORKING BUT THAT CLEARS THE EXAM AND DEP FLAGS AND REACTS TO A BEGIN SWITCH BY SEQUENCING A START OPERATION.  
 BUT (REG EXAM) RESPONDES TO REG CONSOLE OPERATION FOR PROPER INCREMENTATION AND DATA DISPLAY. THIS WORKING BUT ALSO ORDERS INCREMENTING FLAGS.  
 BUT (REG DEP) RESPONDES TO REG CONSOLE OPERATION FOR PROPER INCREMENTATION AND DATA STORAGE. THIS WORKING BUT ALSO ORDERS INCREMENTING FLAGS.  
 BUT (HALT) SENSES THE HALT SWITCH AND EITHER GOES TO FETCH (ENABLE POSITION) OR THROUGH SERVICE TO CONSOLE (HALT POSITION).
  - PROCESSOR RESPONDES TO SR ADDRESS (PROVIDED BY SBC-10) UNLESS BEGIN SWITCH INPUT IS ACTIVE.
  - REGISTER SELECTION AS A FUNCTION OF BA(03=00).

REV	NO	CHG

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP11			PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.		DRN	DATE	digital EQUIPMENT CORPORATION	
TOLERANCES		CHK'D	DATE	MAYLAND MASSACHUSETTS	
DECIMALS	ANGLES	DATE	DATE	TITLE	
XXX - .006	XX - .02	DATE	DATE	FLOW DIAGRAM	
X - .1	± 0° 30'	DATE	DATE	(CONSOLE SWITCHES)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE	DATE		
MATERIAL		NEXT HIGHER ASSY.		SIZE CODE	NUMBER
FINISH		B-DD-KD11-A		DFD	KD11-A-FD
SCALE		SHEET 12 OF 12		DIST.	



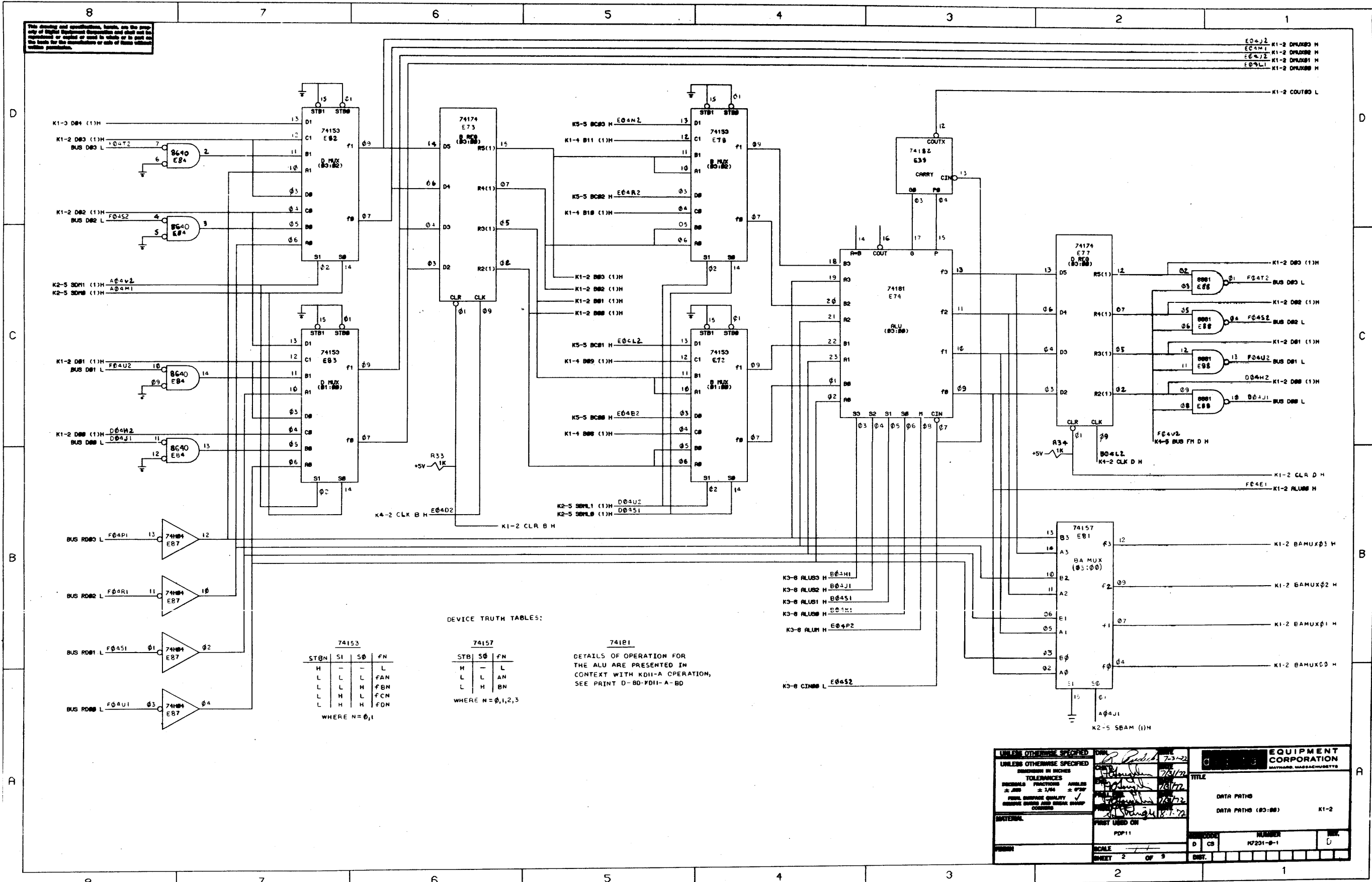
DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS				QUANTITY VARIATION																		
PARTS LIST																						
MADE BY R. PUDELKO		CHECKED JFC Dougherty		SECTION																		
DATE 9/15/72		DATE 9/27/72																				
ENG JFC Dougherty		PROD JFC Dougherty		ISSUED SECT.																		
DATE 9/27/72		DATE 9/27/72																				
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION		KD11-A																		
1	D-AD-7010230-0-0	WIRED ASSY (KD11-A)		1																		
2	D-CS-M7231-0-1	DATA PATHS		1																		
3	D-CS-M7232-0-1	U WORD		1																		
4	D-CS-M7233-0-1	IR DECODE		1																		
5	D-CS-M7234-0-1	TIMING		1																		
6	D-CS-M7235-0-1	STATUS		1																		
7	D-UA-M981-0-0	INTERNAL UNIBUS ASSY		1																		
8	D-MU-KD11-A-MU	MODULE UTILIZATION		REF																		
9	A-PL-KT11-D-0	MEMORY MANAGEMENT		REF																		
10	A-PL-KJ11-A-0	STACK LIMIT REGISTER		REF																		
11	D-UA-KE11-E-0	KE11-E ASSY		REF																		
12	D-PL-KE11-F-0	KE11-F ASSY		REF																		
13	A-PL-KW11-L-0	LINE FREQUENCY CLOCK		REF																		
14	A-PL-KM11-0-0	MAINTENANCE PANEL (W130, W131)		REF																		
15	A-SS-5509081-0-12	SILK SCREEN (KD11-A)		REF																		
16	A-SS-5509081-0-13	SILK SCREEN (KT11-D, KE11-E, F)		REF																		
17	A-PL-KY11-D-0	KY11-D CONSOLE		REF																		
18	C-CS-M930-0-1	BUS TERMINATOR M930		1																		
TITLE		ASSY NO. 74		SIZE	CODE	NUMBER		REV	ECO NO													
KD11-A PROCESSOR				A	PL	KD11-A-0		A	KD11A-0001													
SHEET 1 OF 1				DIST	C																	





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E04J2 K1-2 DPLU03 H  
 ECAM1 K1-2 DPLU02 H  
 E04J2 K1-2 DPLU01 H  
 E04L1 K1-2 DPLU00 H



DEVICE TRUTH TABLES:

74153			
STB <sub>N</sub>	S <sub>1</sub>	S <sub>0</sub>	F <sub>N</sub>
H	-	-	L
L	L	L	FAN
L	L	H	FBN
L	H	L	FCN
L	H	H	FON

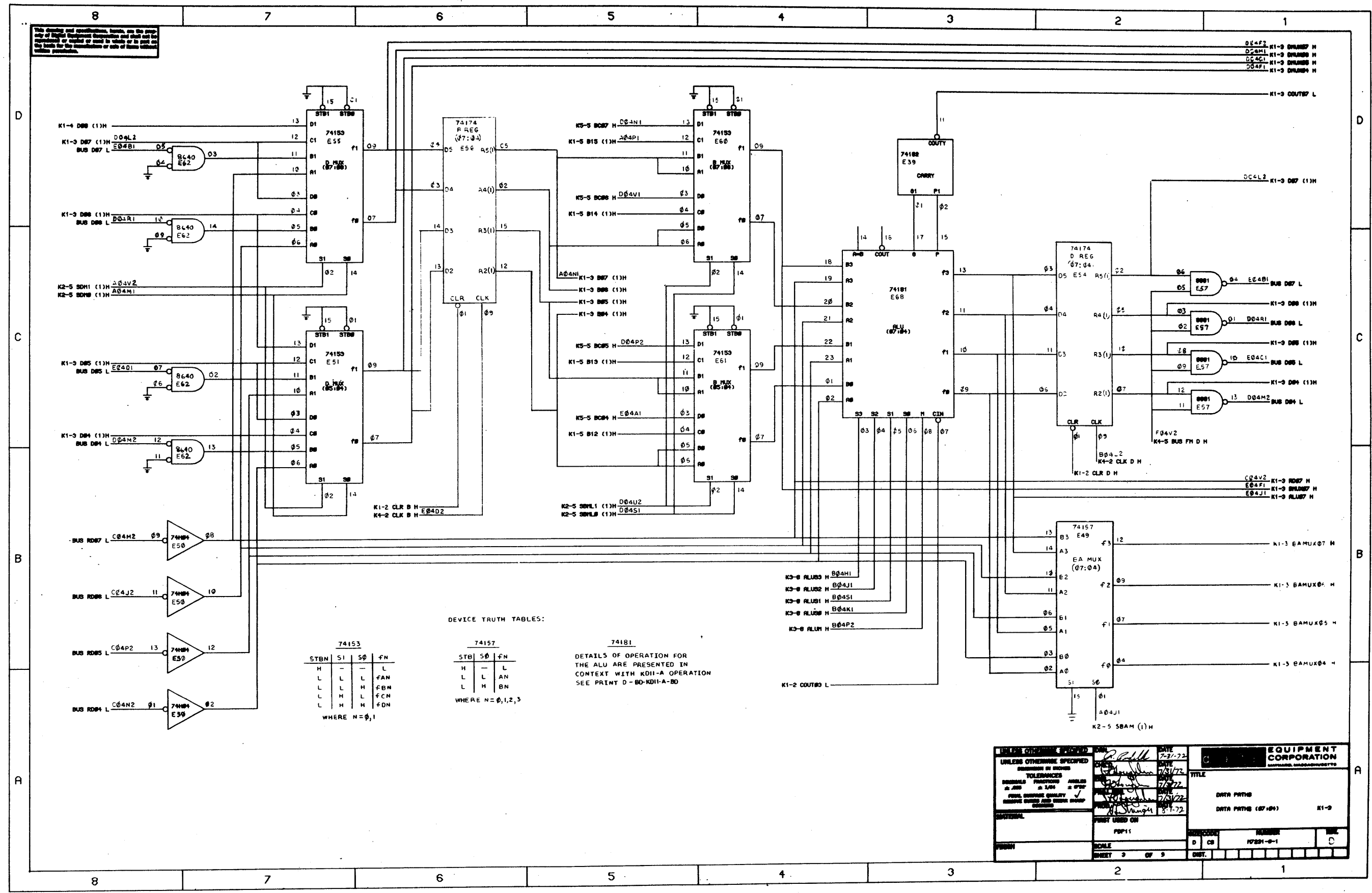
WHERE N = 0,1

74157		
STB	S <sub>0</sub>	F <sub>N</sub>
H	-	L
L	L	AN
L	H	BN

WHERE N = 0,1,2,3

74181  
 DETAILS OF OPERATION FOR THE ALU ARE PRESENTED IN CONTEXT WITH KD11-A OPERATION, SEE PRINT D-BD-7D11-A-BD

UNLESS OTHERWISE SPECIFIED		DATE: 7-3-72		EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DIMENSIONS IN INCHES		DRAWN: [Signature]		TITLE: DATA PATHS	
TOLERANCES		CHECKED: [Signature]		DATA PATHS (83:88) K1-2	
FRACTIONS	DECIMALS	DATE: 7/3/72		NUMBER: N7201-9-1	
±.001	±.005	DATE: 7/3/72		D CS	
±.002	±.010	DATE: 7/3/72		SHEET 2 OF 3	
±.005	±.020	DATE: 7/3/72		DST.	
±.010	±.050	DATE: 7/3/72		DST.	
±.020	±.100	DATE: 7/3/72		DST.	
±.050	±.200	DATE: 7/3/72		DST.	
±.100	±.500	DATE: 7/3/72		DST.	
±.200	±.1000	DATE: 7/3/72		DST.	
±.500	±.1000	DATE: 7/3/72		DST.	
±.1000	±.1000	DATE: 7/3/72		DST.	



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064F2 K1-3 D04M7 H  
 064M1 K1-3 D04M8 H  
 064M2 K1-3 D04M9 H  
 064J1 K1-3 D04M4 H

DEVICE TRUTH TABLES:

STBN	S1	S0	FN
H	-	-	L
L	L	L	FAN
L	L	H	FBN
L	H	L	FCN
L	H	H	FON

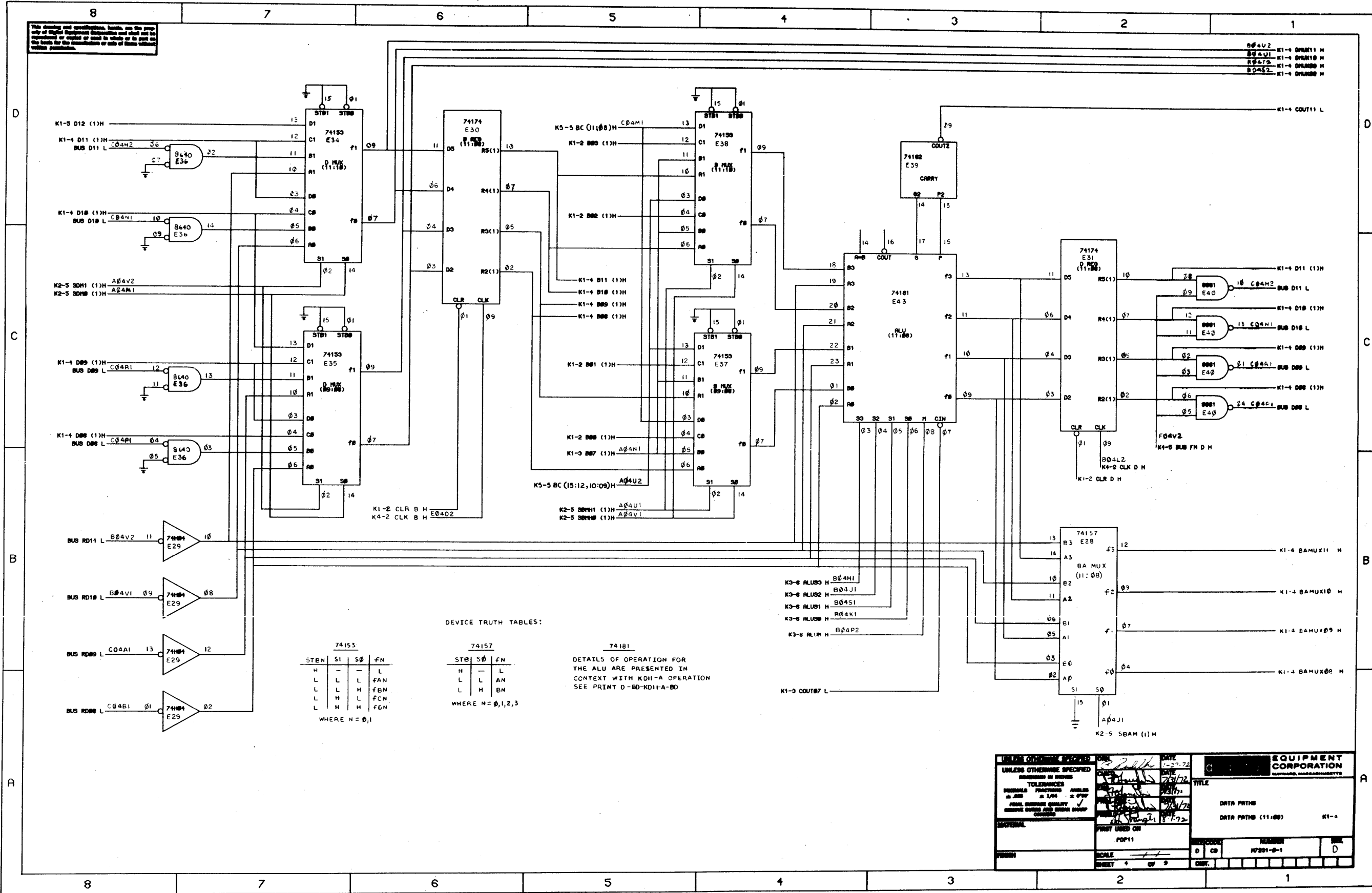
WHERE N = 0, 1

STB	S0	FN
H	-	L
L	L	AN
L	H	BN

WHERE N = 0, 1, 2, 3

74181  
 DETAILS OF OPERATION FOR THE ALU ARE PRESENTED IN CONTEXT WITH K011-A OPERATION SEE PRINT D - 80-K011-A-BD

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES DECIMALS FRACTIONS ANGLES $\pm .005$ $\pm .004$ $\pm 1/16$ FINE SURFACE QUALITY REMOVE BURRS AND SHARP EDGES FINISH	DATE 7-31-72	<b>EQUIPMENT CORPORATION</b> 1400 W. 10TH AVENUE DENVER, COLORADO 80202	
	DESIGNED BY R. J. ...		TITLE DATA PATHS
	CHECKED BY ...		DATA PATHS (07:04) K1-3
	DATE 7-31-72		NUMBER 17201-0-1
FIRST USED ON PDP-11	SCALE SHEET 3 OF 5	DWT.	



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DEVICE TRUTH TABLES:

74153			
STB	S1	S0	FN
H	-	-	L
L	L	L	FAN
L	L	H	FCN
L	H	L	FCN
L	H	H	FCN

WHERE N = 0,1

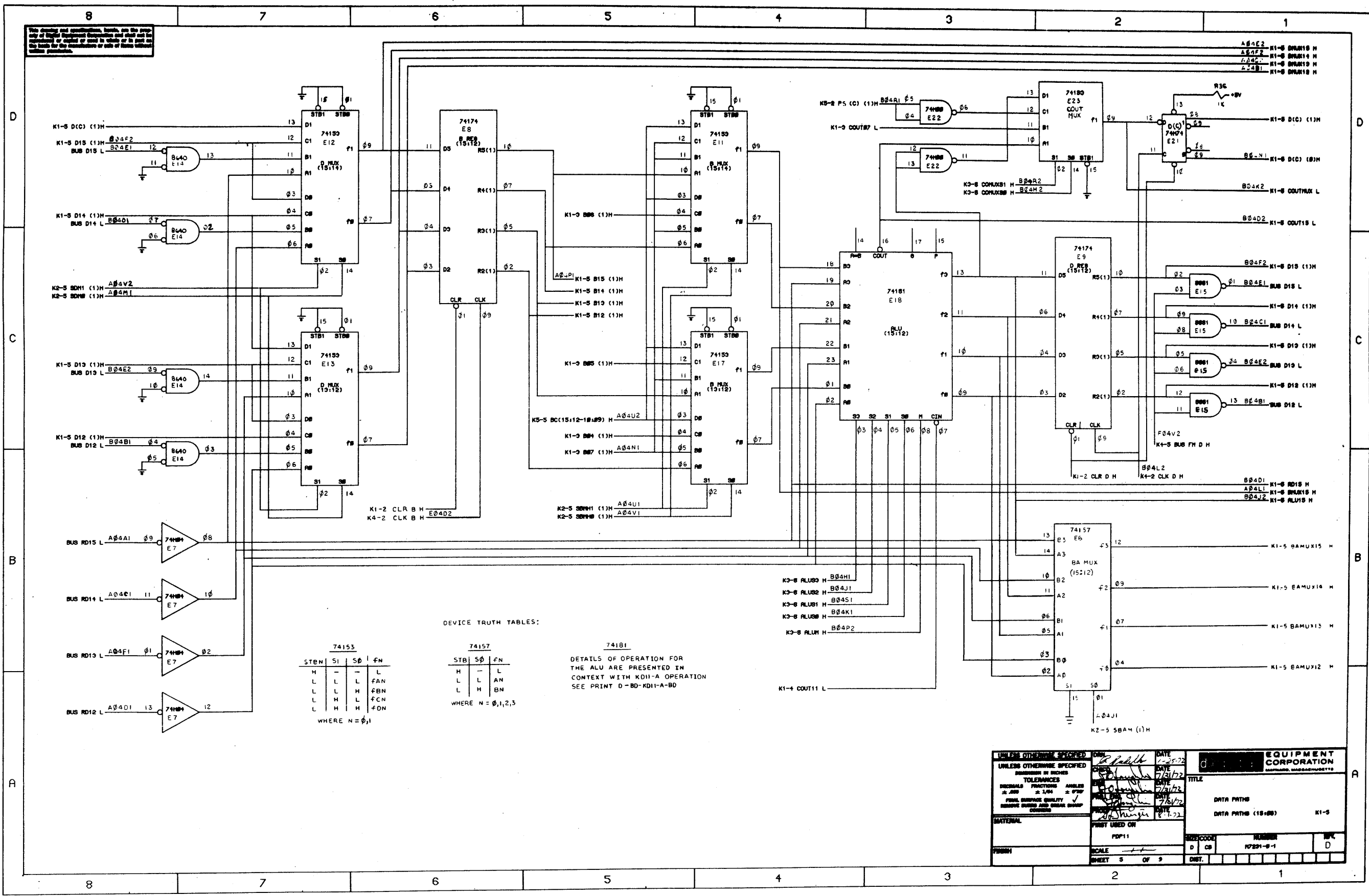
74157		
STB	S0	FN
H	-	L
L	L	AN
L	H	BN

WHERE N = 0,1,2,3

74181  
 DETAILS OF OPERATION FOR THE ALU ARE PRESENTED IN CONTEXT WITH KDII-A OPERATION SEE PRINT D-BD-KDII-A-BD

UNLESS OTHERWISE SPECIFIED TOLERANCES DIMENSIONAL FINISHES MATERIAL FINISH		DATE 7/31/72 DATE 7/31/72 DATE 7/31/72 DATE 7/31/72	EQUIPMENT CORPORATION HARTFORD, CONNECTICUT
TITLE DATA PATHS		NUMBER N0201-0-1	
SCALE SHEET 4 OF 9		REV. D	

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DEVICE TRUTH TABLES:

STEN	S1	S0	FN
H	-	-	L
L	L	L	FAN
L	L	H	FBN
L	H	L	FCN
L	H	H	FON

WHERE N = 0,1

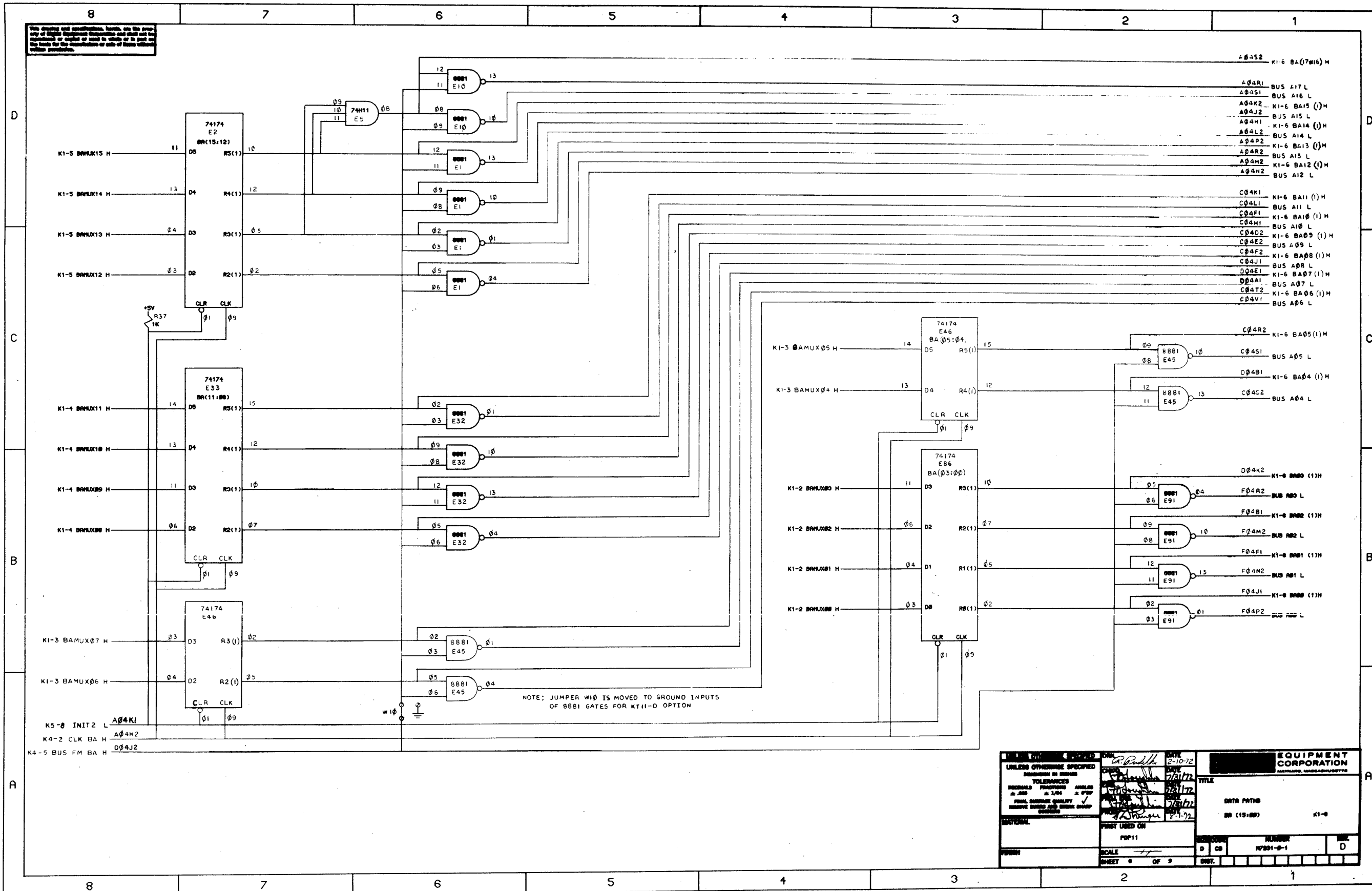
STB	S0	FN
H	-	L
L	L	AN
L	H	BN

WHERE N = 0,1,2,3

74181  
 DETAILS OF OPERATION FOR THE ALU ARE PRESENTED IN CONTEXT WITH K011-A OPERATION SEE PRINT D-BD-K011-A-BD

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES	DATE 7/25/72	EQUIPMENT CORPORATION MILWAUKEE, WISCONSIN 53201
TOLERANCES DECIMAL FRACTIONS ANGLES ± .005 ± .004 ± .020	TITLE DATA PATHS	
FULL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	DATE 7/21/72	DATA PATHS (15-88) K1-5
MATERIAL	FIRST USED ON POP11	REVISION D CB
FINISH	SCALE SHEET 5 OF 9	NUMBER 17201-8-1

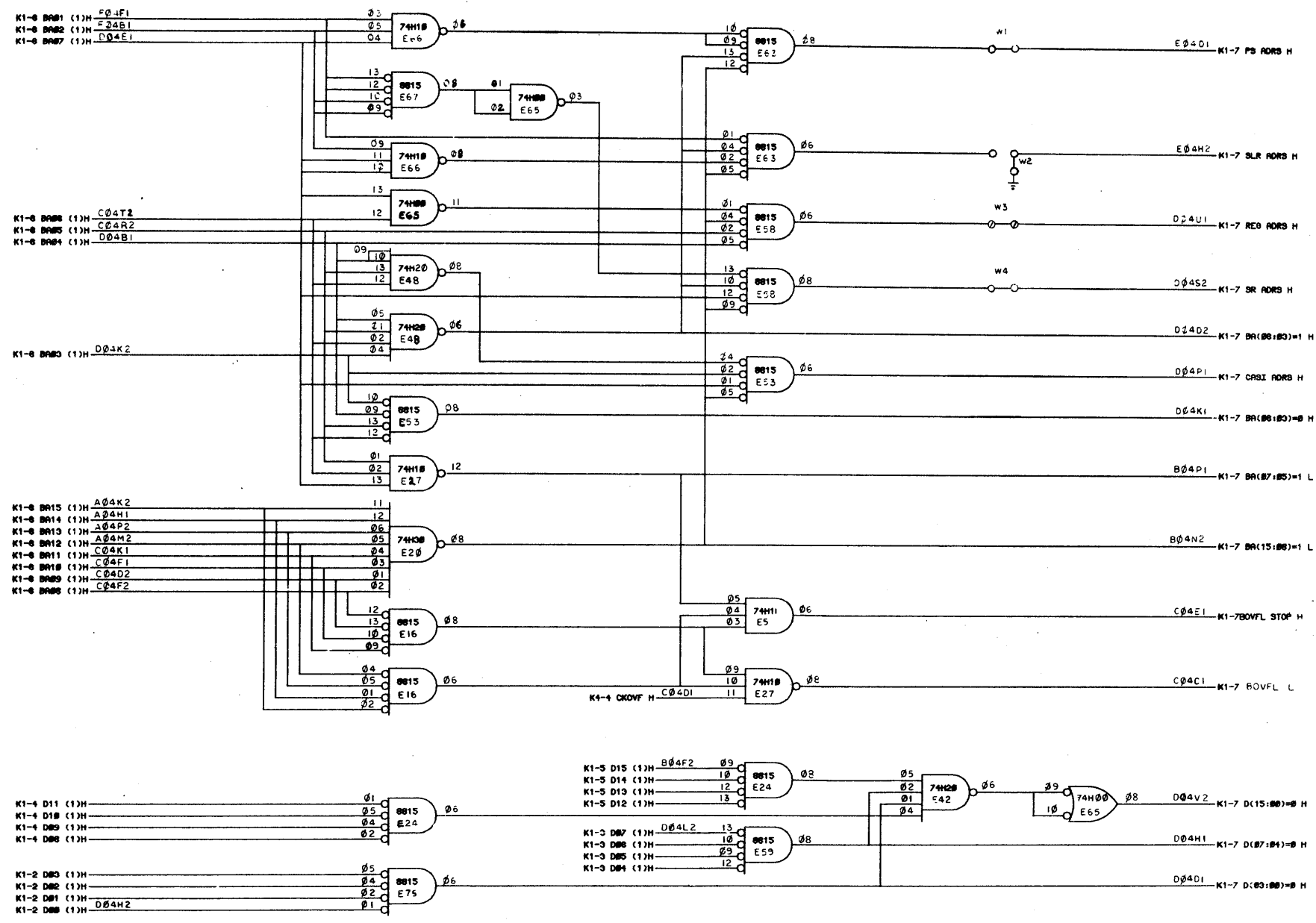
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UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES		DATE 2-10-72	EQUIPMENT CORPORATION MAYFIELD, MASSACHUSETTS	
TOLERANCES	DATE 7/31/72	DATE 7/31/72	TITLE	
FRACTIONS 25 AND 25.000 ± .005	DATE 7/31/72	DATE 7/31/72	DATA PATH	
FULL DIMENSION QUALITY MACHINE DRIVEN AND MACHINERY CHECKED	DATE 7/31/72	DATE 7/31/72	DR (15:00) K1-6	
INTERNAL	PART USED ON POP11	REVISION	NUMBER 10201-0-1	REV. D
SCALE SHEET 0 OF 9	DATE	DATE		



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PROCESSOR ADDRESSES

NAME & MNEMONICS	ADDRESS																								
PROCESSOR STATUS	PS 777776																								
STACK LIMIT REGISTER	SLR 777774																								
GENERAL REGISTERS																									
REGISTERS USED TO IMPLEMENT MICROFLOW	<table border="1"> <tr><td>R [ADRS]</td><td>REG 17</td><td>777717</td></tr> <tr><td>R [P USE]</td><td>REG 16</td><td>777716</td></tr> <tr><td>R [TEMPC]</td><td>REG 15</td><td>777715</td></tr> <tr><td>R [VECT]</td><td>REG 14</td><td>777714</td></tr> <tr><td>R [IA]</td><td>REG 13</td><td>777713</td></tr> <tr><td>R [DEST]</td><td>REG 12</td><td>777712</td></tr> <tr><td>R [SOURCE]</td><td>REG 11</td><td>777711</td></tr> <tr><td>R [TEMP]</td><td>REG 10</td><td>777710</td></tr> </table>	R [ADRS]	REG 17	777717	R [P USE]	REG 16	777716	R [TEMPC]	REG 15	777715	R [VECT]	REG 14	777714	R [IA]	REG 13	777713	R [DEST]	REG 12	777712	R [SOURCE]	REG 11	777711	R [TEMP]	REG 10	777710
R [ADRS]	REG 17	777717																							
R [P USE]	REG 16	777716																							
R [TEMPC]	REG 15	777715																							
R [VECT]	REG 14	777714																							
R [IA]	REG 13	777713																							
R [DEST]	REG 12	777712																							
R [SOURCE]	REG 11	777711																							
R [TEMP]	REG 10	777710																							
REGISTERS USE IN INSTRUCTIONS FOR PDP-11	<table border="1"> <tr><td>R [SP], R6</td><td>REG 06</td><td>777706</td></tr> <tr><td>R5</td><td>REG 05</td><td>777705</td></tr> <tr><td>R4</td><td>REG 04</td><td>777704</td></tr> <tr><td>R3</td><td>REG 03</td><td>777703</td></tr> <tr><td>R2</td><td>REG 02</td><td>777702</td></tr> <tr><td>R1</td><td>REG 01</td><td>777701</td></tr> <tr><td>R0</td><td>REG 00</td><td>777700</td></tr> </table>	R [SP], R6	REG 06	777706	R5	REG 05	777705	R4	REG 04	777704	R3	REG 03	777703	R2	REG 02	777702	R1	REG 01	777701	R0	REG 00	777700			
R [SP], R6	REG 06	777706																							
R5	REG 05	777705																							
R4	REG 04	777704																							
R3	REG 03	777703																							
R2	REG 02	777702																							
R1	REG 01	777701																							
R0	REG 00	777700																							
CONSOLE SWITCH REGISTER	SR 777570																								

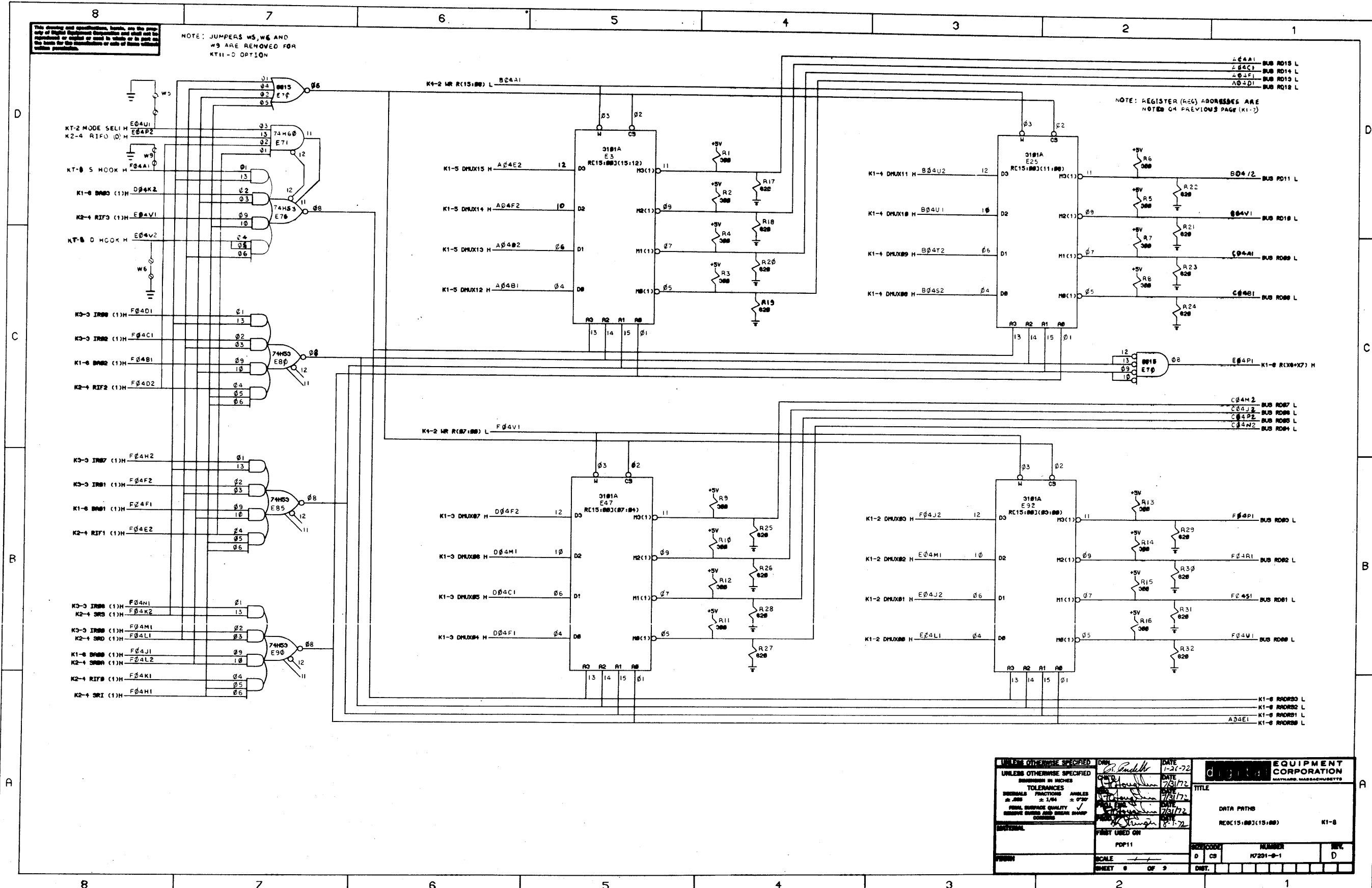
- NOTES:
- JUMPERS W1, W3 AND W4 ARE REMOVED FOR K11-D OPTION.
  - JUMPER W2 IS MOVED TO CONNECT E63 PIN 06 TO E04H2 FOR K11-A OPTION ALONE. JUMPER IS COMPLETELY REMOVED FOR K11-D OPTION.

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES DECIMALS FRACTIONS ANGLES ±.005 ±.004 ±0°30' FINISH SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	DRN	DATE		TITLE		
	CHKD	DATE			DATA PATH	
	DES	DATE				ADRS DECODE K1-7
	APP'D	DATE				
MATERIAL	FIRST USED ON	SCALE	SIZE CODE	NUMBER		
FINISH	PDP-11	SHEET 7 OF 9	D CS	N7231-0-1	REV D	

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NOTE: JUMPERS W5, W6 AND W9 ARE REMOVED FOR K711-0 OPTION

NOTE: REGISTER (REG) ADDRESSES ARE NOTED ON PREVIOUS PAGE (K1-7)

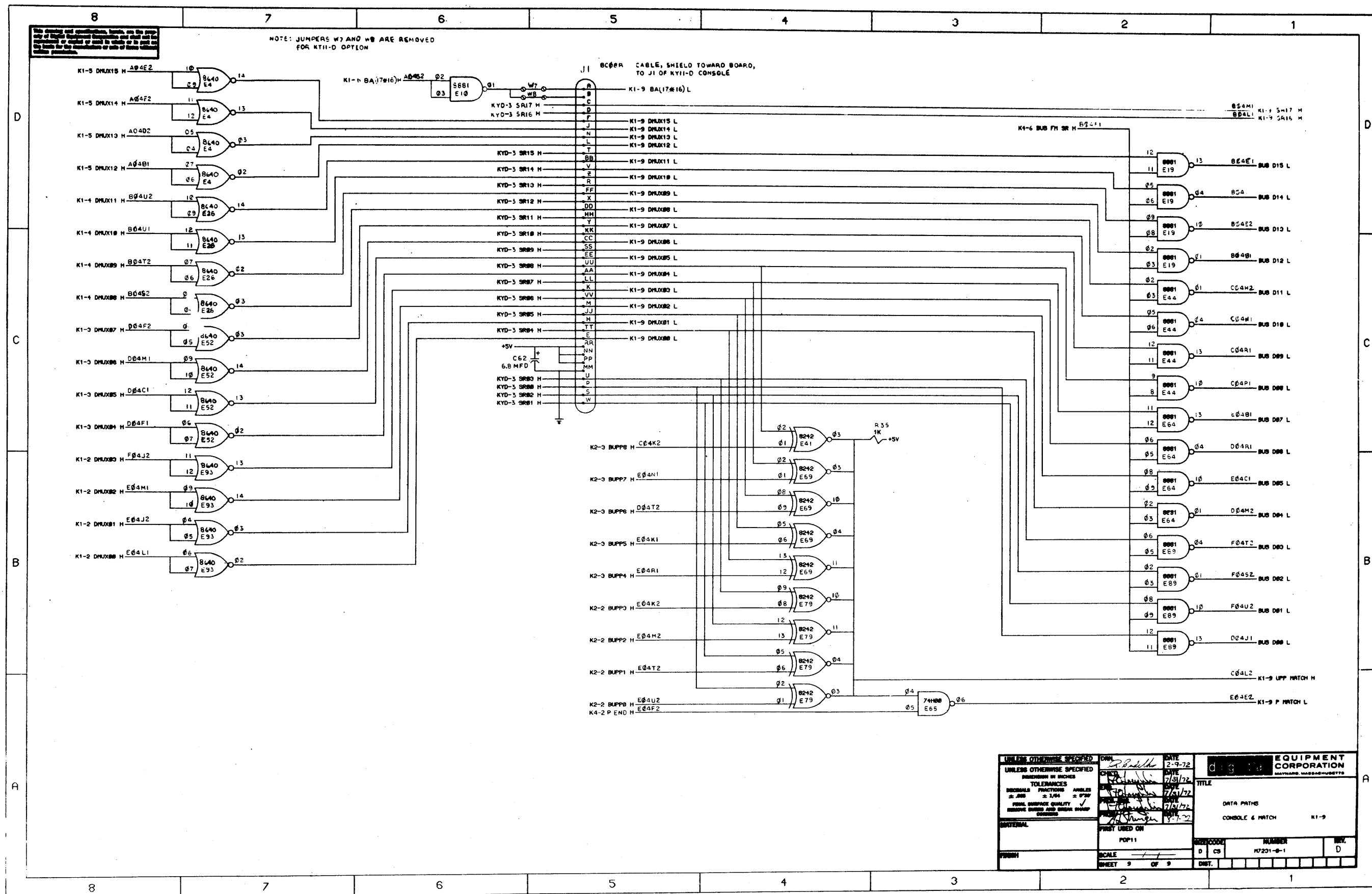


UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES		DATE 1-21-72	EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
TOLERANCES DIMENSIONS IN INCHES FRACTIONS ANGLES ± .005 ± 1/64 ± 0°30'		DATE 7/31/72	
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS		DATE 7/31/72	TITLE DATA PATHS
FIRST USED ON PDP11		DATE 8-1-72	REG15:003(15:00) K1-8
SCALE SHEET 6 OF 9	SIZE/CODE D C9	NUMBER K7201-0-1	REV. D

See drawing and specifications, locate on the drawing all dimensions in inches and all tolerances. All dimensions are to be in inches unless otherwise specified.

NOTE: JUMPERS W7 AND W8 ARE REMOVED FOR K111-D OPTION

BC628 CABLE, SHIELD TOWARD BOARD, TO J1 OF K111-D CONSOLE

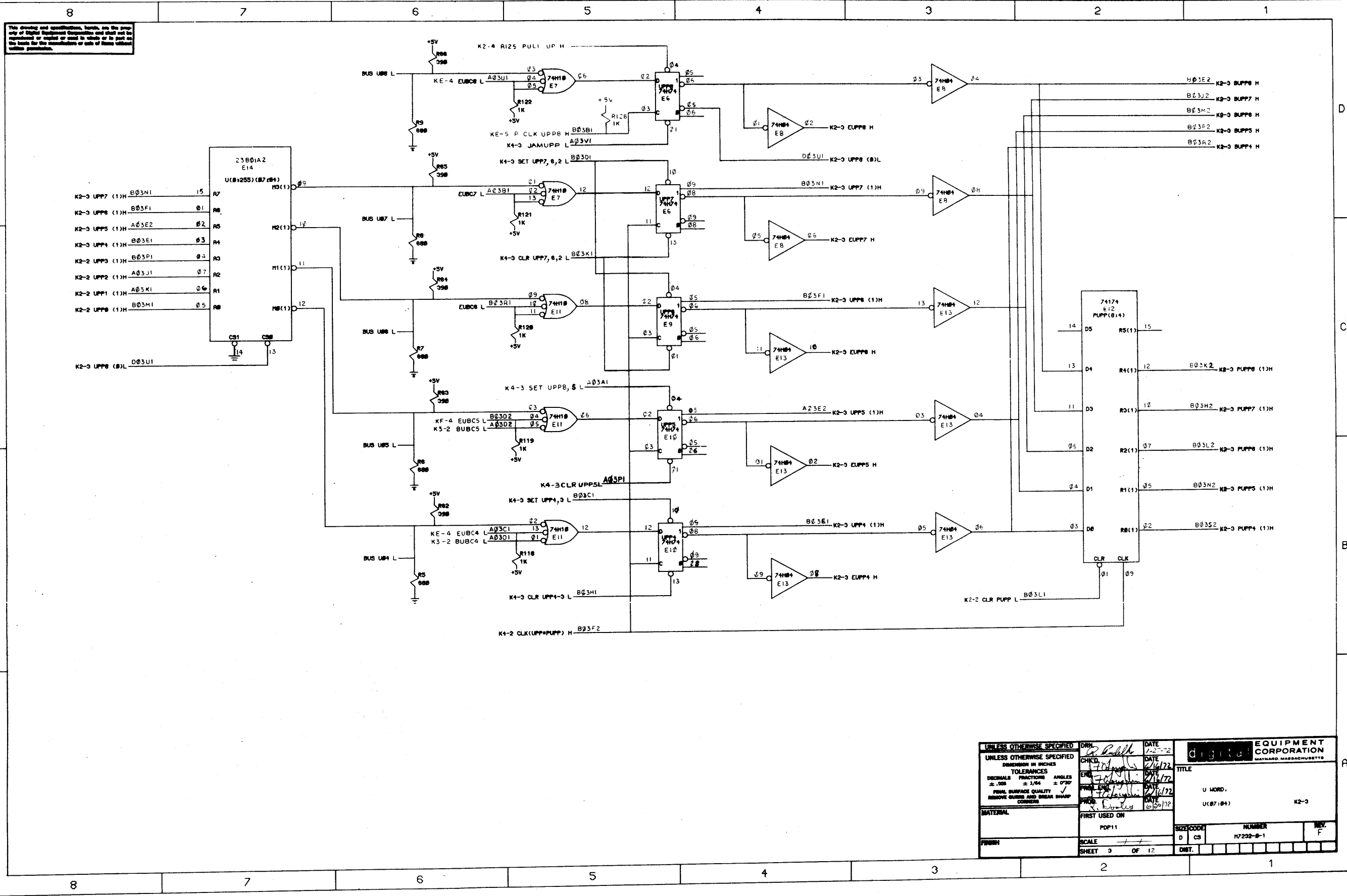


UNLESS OTHERWISE SPECIFIED		DATE	EQUIPMENT CORPORATION MAYFIELD, MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED		DATE	TITLE	
DIMENSIONS IN INCHES		DATE	DATA PATHS	
TOLERANCES		DATE	CONSOLE & MATCH	
DECIMALS FRACTIONS ANGLES		DATE	K1-9	
± .001 ± .004 ± .010		DATE		
FINISH SURFACE QUALITY		DATE		
REMOVE DIMENSIONS AND BREAK SWAMP DIMENSIONS		DATE		
MATERIAL		DATE		
FIRST USED ON		DATE		
POP11		DATE		
SCALE		DATE		
SHEET 9 OF 9		DATE		



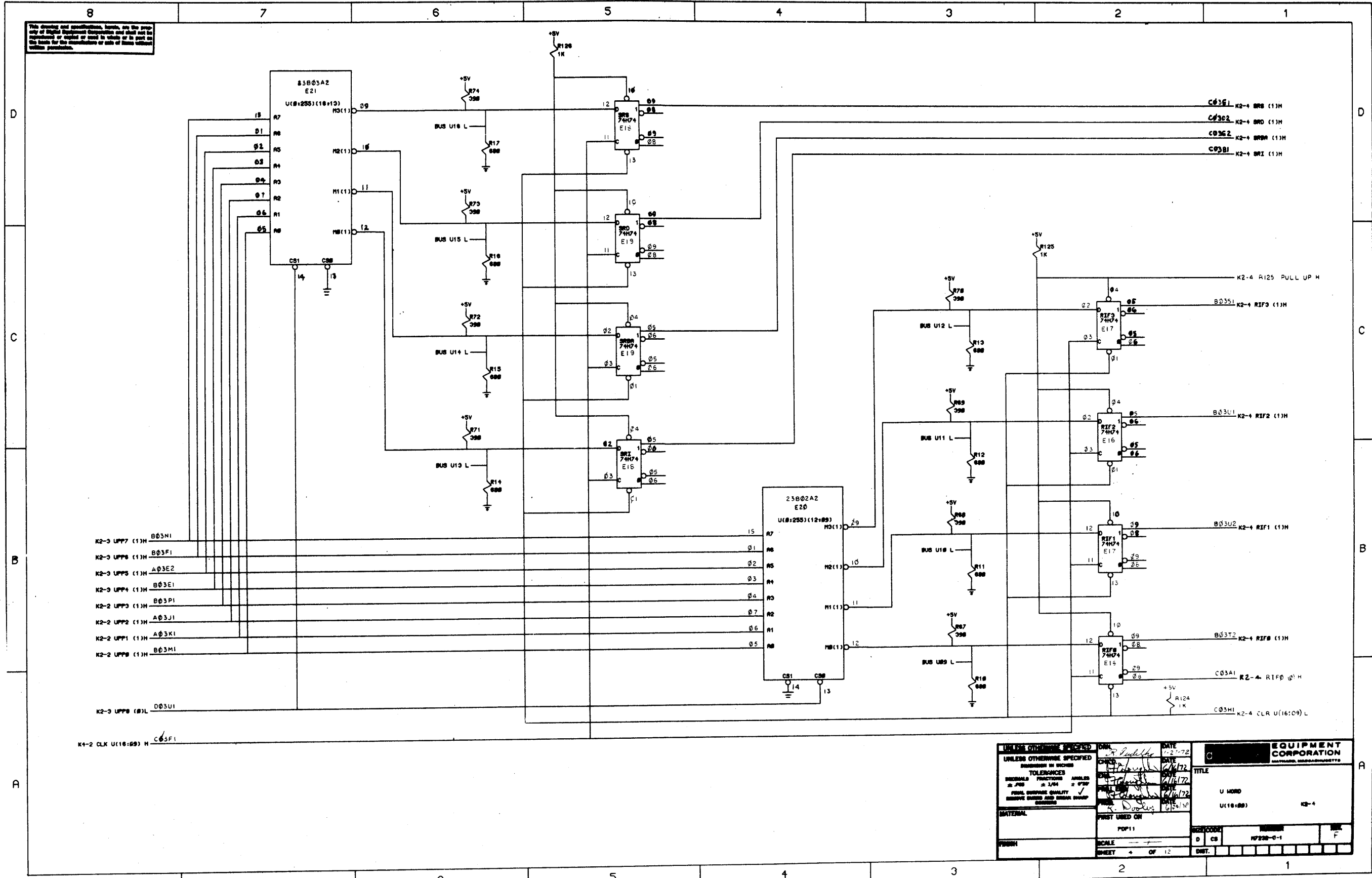


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UNLESS OTHERWISE SPECIFIED		DRN	DATE	DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
DIMENSION IN INCHES		CHKD	DATE	
TOLERANCES		ENG	DATE	TITLE U WORD U(87:84) K2-3
DECIMALS	FRACTIONS	PROJ	DATE	
±.005	± 1/64	FILE	DATE	NUMBER N7232-B-1
FINISH		FIRST USED ON	REV.	
SCALE		POP11	D	F
SHEET 3 OF 12		DWT.		

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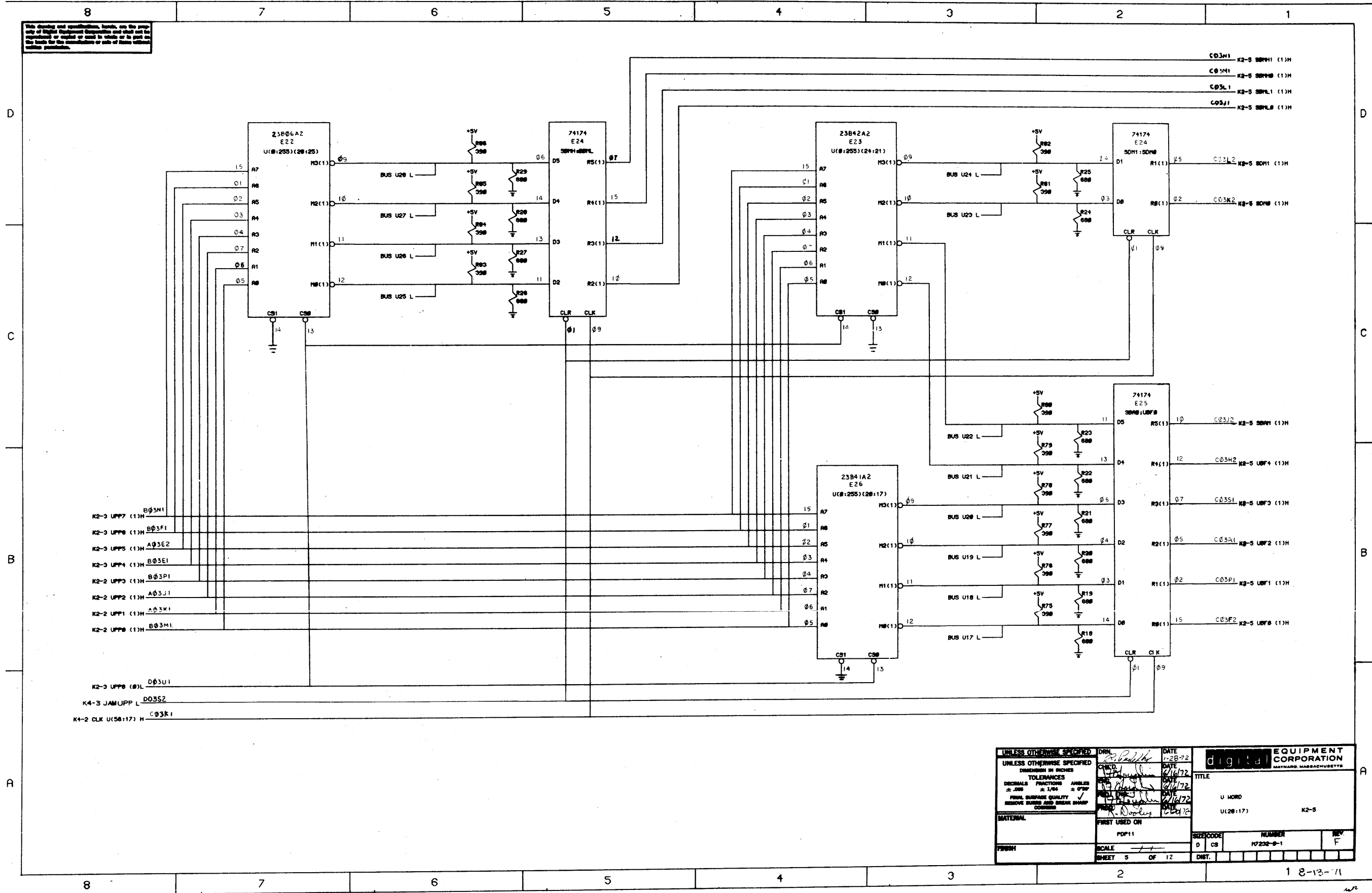


- K2-3 UPP7 (11H) B03N1
- K2-3 UPP6 (11H) B03F1
- K2-3 UPP5 (11H) A03E2
- K2-3 UPP4 (11H) B03E1
- K2-2 UPP3 (11H) B03P1
- K2-2 UPP2 (11H) A03J1
- K2-2 UPP1 (11H) A03K1
- K2-2 UPP0 (11H) B03M1
- K2-3 UPP0 (03L) D03U1
- K4-2 CLK U(10:00) H C03F1

UNLESS OTHERWISE SPECIFIED		DATE	12-72
UNLESS OTHERWISE SPECIFIED		CHKD	J. D. Kelly
DIMENSIONS IN INCHES		DATE	11/72
TOLERANCES		DATE	11/72
DECIMAL FRACTIONS		DATE	11/72
ANGLES		DATE	11/72
FRACTIONS		DATE	11/72
FINAL SURFACE QUALITY		DATE	11/72
RESERVE DIMS AND SERIAL NUMB		DATE	11/72
RESERVE DIMS AND SERIAL NUMB		DATE	11/72
MATERIAL		DATE	11/72
FIRST USED ON		DATE	11/72
POP11		DATE	11/72
SCALE		DATE	11/72
SHEET 4 OF 12		DATE	11/72
DWT.		DATE	11/72

EQUIPMENT CORPORATION	
TITLE	
U WORD	K2-4
U(10:00)	
10720-0-1	

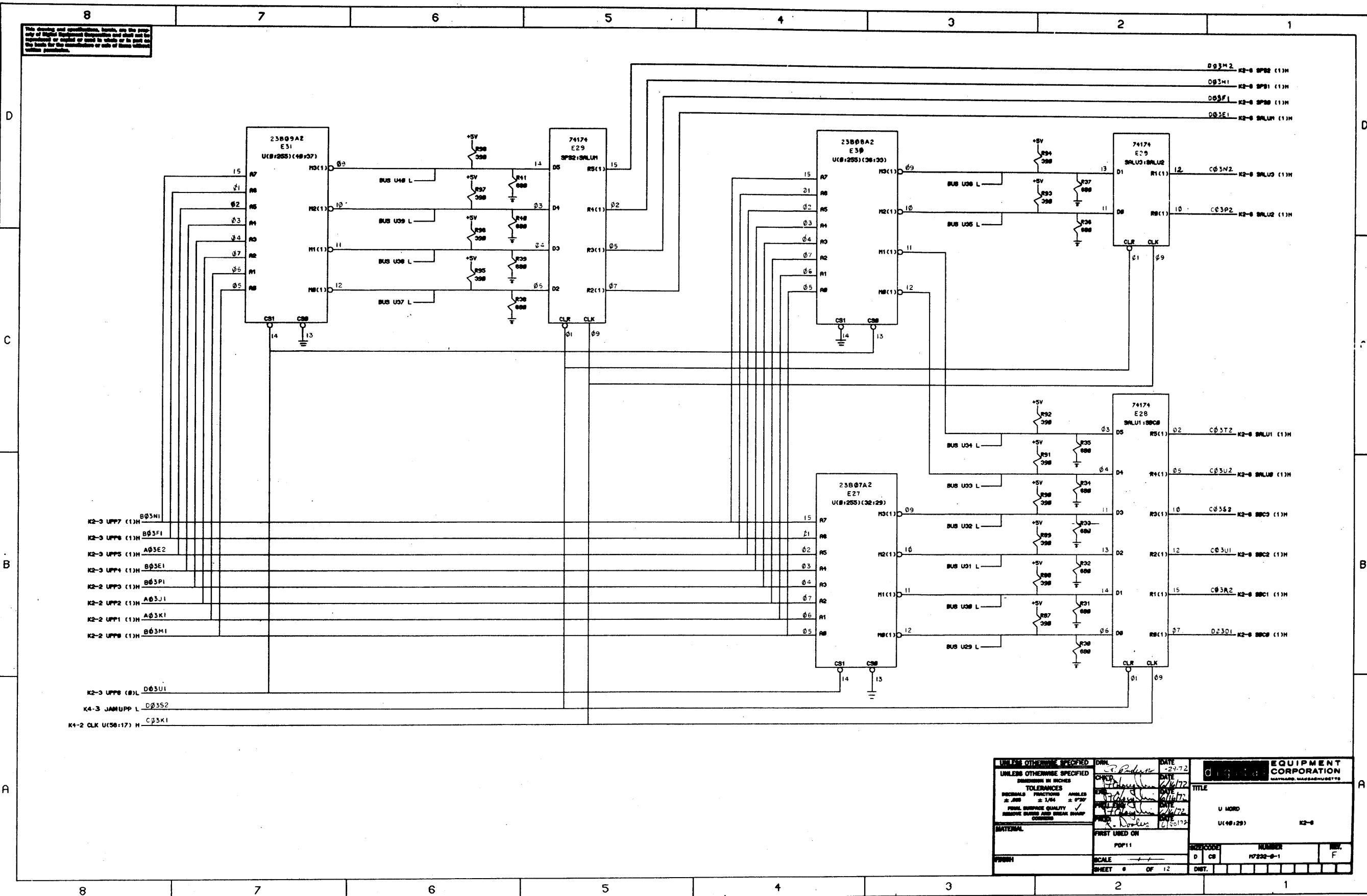
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UNLESS OTHERWISE SPECIFIED		DRN	DATE	DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED		DATE	DATE	
DIMENSIONS IN INCHES		DATE	DATE	TITLE
TOLERANCES		DATE	DATE	U WORD
DECIMALS	FRACTIONS	DATE	DATE	U(20:17)
± .005	± 1/64	DATE	DATE	K2-5
FINISH: SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS		DATE	DATE	
MATERIAL	FIRST USED ON	DATE	DATE	
	PDP11			
FINISH	SCALE	SIZE/CODE	NUMBER	REV
	1/8"	D	CS	F
	SHEET 5 OF 12	DIST.		



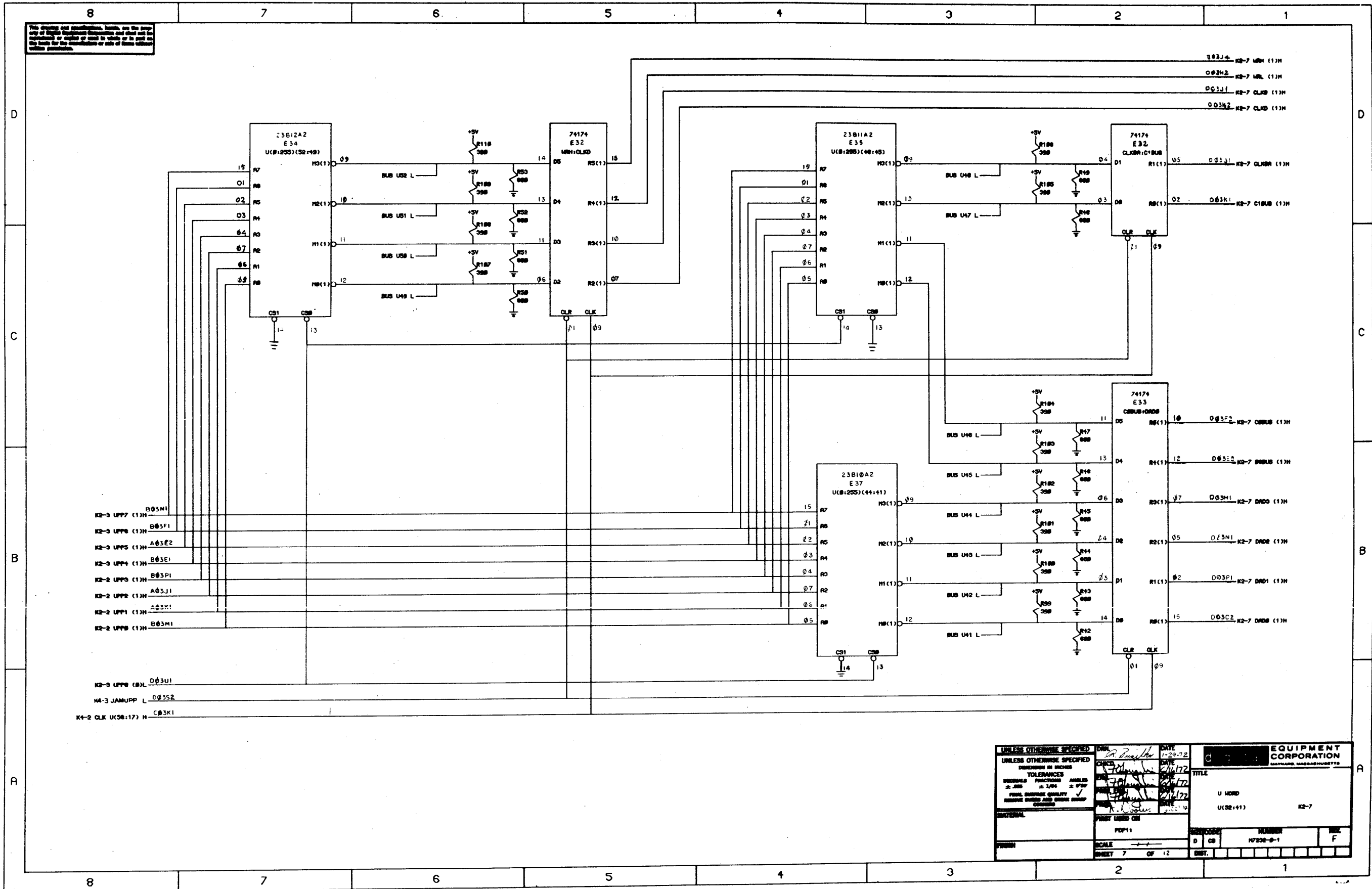
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- K2-3 UPP7 (1)H B03M1
- K2-3 UPP6 (1)H B03F1
- K2-3 UPP5 (1)H A03E2
- K2-3 UPP4 (1)H B03E1
- K2-2 UPP3 (1)H B03P1
- K2-2 UPP2 (1)H A03J1
- K2-2 UPP1 (1)H A03K1
- K2-2 UPP0 (1)H B03M1
- K2-3 UPP8 (0)L D03U1
- K4-3 JAMUPP L D03S2
- K4-2 CLK U(56:17) H C23K1

UNLESS OTHERWISE SPECIFIED		DATE	EQUIPMENT CORPORATION MAYFIELD, MASSACHUSETTS	
DIMENSION IN INCHES		DATE	TITLE	
TOLERANCES		DATE	U WORD	
DECIMALS FRACTIONS	ANGLES	DATE	U(48:29) K2-0	
±.005 ±.004 ±.003	±.001 ±.002	DATE	NUMBER	
FINAL SURFACE QUALITY		DATE	D CS 10232-0-1	
REMOVE BURRS AND BREAK SHARP CORNERS		DATE	REV. F	
MATERIAL		DATE	SHEET CODE	
FIRST USED ON		DATE	D CS	
POP11		DATE	D ET.	
SCALE		DATE	SHEET 0 OF 12	

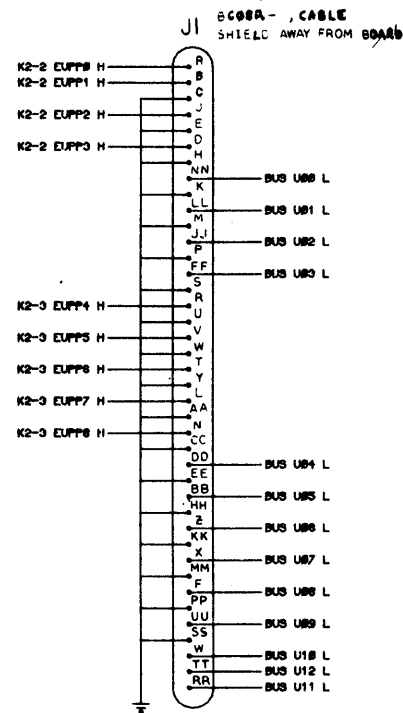
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- K2-3 UPP7 (1)H B03M1
- K2-3 UPP6 (1)H B03F1
- K2-3 UPP5 (1)H A03E2
- K2-3 UPP4 (1)H B03E1
- K2-3 UPP3 (1)H B03P1
- K2-2 UPP2 (1)H A03J1
- K2-2 UPP1 (1)H A03K1
- K2-2 UPP0 (1)H B03M1
- K2-3 UPP0 (0)H D03U1
- K4-3 JAMUPP L D03S2
- K4-2 CLK U(58:17) H C03K1

UNLESS OTHERWISE SPECIFIED		DATE	EQUIPMENT CORPORATION MAYFIELD, MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED		1-29-72	TITLE	
DIMENSIONS IN INCHES		DATE	U 46RD	
TOLERANCES		2/1/72	U(58:41) K2-7	
DECIMALS FRACTIONS ANGLES		2/1/72	DRAWN	
±.005 ±.004 ±.002		2/1/72	CHECKED	
FULL, BUSINESS QUALITY		2/1/72	DATE	
ENGINEERING AND DESIGN DEPT.		2-2-72	DATE	
MATERIAL			FIRST USED ON	
POP11			POP11	
SCALE			D CB F	
SHEET 7 OF 12			NUMBER	
			17208-9-1	
			REV. F	

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FLOWS STATE ADR CLK CIR WR CB CD CBA BUS DAD SPS ALU SBC SBM SDM SRA UBF SRX RIF UPF  
 01 FET01 000 3 0 0 0 0 0 1 00 0 00 00 0 1 00 01 07 001  
 01 FET02 001 2 1 3 1 0 0 0 00 00 00 1 0 00 01 13 004  
 10 SER01 002 6 0 0 0 0 0 0 00 00 00 0 0 26 01 13 015  
 04 MOV21 003 4 0 0 0 1 0 0 00 0 32 00 05 2 0 27 00 00 204  
 01 FET04 004 4 0 0 0 0 0 1 1 00 0 11 02 17 0 0 37 01 07 005  
 01 FET05 005 2 0 3 0 0 0 0 00 0 00 00 2 0 00 01 07 100  
 10 SER04 006 6 0 0 0 0 0 0 00 0 00 00 0 0 26 01 13 015  
 06 TRP06 007 5 0 0 0 0 0 1 1 00 0 11 02 17 0 0 00 01 14 115  
 06 TRP09 010 6 0 0 0 0 0 1 0 00 0 32 00 17 2 0 11 01 14 216  
 11 CON01 011 6 0 0 0 0 0 1 0 00 0 00 00 2 1 00 01 07 205  
 10 SER06 012 3 0 0 0 0 0 2 0 00 0 00 00 0 0 00 01 13 020  
 01 FET09 013 3 0 0 0 0 0 1 1 00 0 00 00 0 0 00 01 07 001  
 10 SER09 014 3 0 0 0 0 0 0 0 00 0 00 00 0 0 00 01 13 022  
 10 SER05 015 2 0 0 0 0 0 0 0 00 0 00 00 0 0 00 01 13 010  
 01 FET02 016 3 0 0 0 0 0 1 1 00 0 00 00 0 0 00 01 07 001  
 10 SER02 017 6 0 0 0 0 0 0 0 00 0 00 00 2 0 26 01 13 015  
 10 SER07 020 4 0 0 0 0 0 0 2 00 0 00 00 0 0 25 01 13 021  
 10 SER08 021 2 0 0 0 0 0 0 0 00 0 00 00 0 0 00 01 13 014  
 10 SER10 022 6 0 3 1 0 0 0 0 00 0 00 00 1 0 07 01 14 023  
 10 SER11 023 2 0 0 0 0 0 0 0 00 0 00 00 0 0 00 01 14 006  
 11 CON03 024 4 0 0 0 0 0 1 0 00 0 00 00 2 0 00 01 00 036  
 06 RST01 025 7 0 0 0 0 0 0 0 00 0 00 00 2 0 02 00 00 040  
 11 CON04 026 6 0 0 0 0 0 0 0 00 0 00 00 2 0 06 00 00 046  
 11 CON07 027 4 0 0 0 0 0 1 0 00 0 32 14 17 2 0 00 00 00 044  
 11 CON09 030 6 0 0 0 0 0 0 0 00 0 00 00 2 0 00 00 00 315  
 12 EXM06 031 5 0 0 0 0 0 1 0 00 0 32 10 17 2 0 00 00 00 060  
 12 STA06 032 6 0 3 0 0 0 0 0 00 0 00 00 2 0 10 01 07 076  
 12 LAD09 033 4 0 0 0 0 0 1 0 00 0 23 00 00 2 0 00 00 00 030  
 12 DEP09 034 2 0 0 0 0 0 0 1 0 00 0 00 00 0 0 00 01 17 062  
 12 EXM08 035 2 0 0 0 0 0 0 0 00 0 00 00 0 0 00 01 17 053  
 12 EXM09 036 2 0 0 0 0 0 0 0 00 0 00 00 0 0 00 01 07 017  
 12 LAD09 037 5 0 0 0 0 0 0 1 1 00 0 32 10 17 1 0 00 00 00 051

NOTE: THE COMPLEMENT OF THE ACTUAL ROM OUTPUT FOR THE UPF FIELD IS LISTED HERE FOR CLARITY.

FLOWS STATE ADR CLK CIR WR CB CD CBA BUS DAD SPS ALU SBC SBM SDM SRA UBF SRX RIF UPF  
 06 RST02 040 2 0 0 0 0 0 0 0 00 0 00 00 2 0 00 00 00 042  
 11 CON02 041 7 0 0 0 0 0 0 2 00 0 00 00 2 0 00 00 00 024  
 06 RST04 042 2 0 0 0 0 0 0 0 00 0 00 00 2 0 00 00 00 011  
 06 RST03 043 2 0 0 0 0 0 0 0 00 0 00 00 2 0 00 00 00 016  
 11 CON08 044 6 0 3 0 0 0 0 0 00 0 00 00 2 0 12 01 15 047  
 11 CON10 045 6 0 0 0 0 0 2 0 00 0 00 00 0 0 30 01 07 050  
 11 CON06 046 2 0 0 0 0 0 0 0 00 0 00 00 2 0 00 00 00 026  
 11 CON09 047 6 0 3 0 0 0 1 0 00 0 11 01 17 2 0 00 01 15 044  
 11 CON11 050 6 0 0 0 0 0 1 0 00 0 00 00 0 0 00 01 17 030  
 12 LAD01 051 6 0 3 0 0 0 0 0 00 0 00 00 0 1 0 05 01 17 052  
 12 LAD02 052 4 0 0 0 0 0 1 1 0 00 0 00 00 2 1 00 01 17 032  
 12 EXM01 053 6 0 0 0 0 0 0 0 00 0 00 00 2 0 04 00 00 036  
 12 EXM02 054 6 0 0 3 0 0 1 1 0 00 0 11 07 17 2 0 00 01 17 056  
 12 EXM03 055 4 0 0 0 0 0 1 0 00 0 00 00 0 0 00 02 00 030  
 12 EXM04 056 6 0 0 0 0 0 0 0 00 0 00 00 0 0 04 01 17 035  
 12 EXM03 057 6 0 0 3 0 0 1 1 0 00 0 11 07 17 2 0 00 01 17 056  
 12 EXM07 060 2 0 0 0 0 0 1 0 00 0 00 00 0 0 00 00 00 061  
 12 EXM08 061 4 0 0 0 0 0 0 0 00 0 32 00 00 2 0 00 00 00 030  
 2 DEP01 062 6 0 0 0 0 0 0 0 00 0 00 00 2 0 03 00 00 033  
 12 DEP02 063 6 0 0 3 0 0 1 1 0 00 0 11 07 17 2 0 00 01 17 064  
 12 DEP05 064 6 0 0 3 0 0 1 1 0 00 0 11 07 17 2 0 00 01 17 065  
 12 DEP04 065 5 0 0 0 0 0 0 1 1 00 0 32 10 17 0 0 00 01 17 066  
 12 DEP03 066 2 0 0 0 0 0 1 0 0 00 0 00 00 0 0 00 00 00 087  
 12 DEP06 067 2 0 0 0 0 0 0 0 0 00 0 00 00 0 0 00 01 17 070  
 12 DEP07 070 6 0 0 0 0 0 0 1 0 00 0 32 00 00 2 0 03 00 00 071  
 12 DEP08 071 2 0 0 0 0 0 0 0 0 00 0 00 00 2 0 00 00 00 072  
 12 DEP09 072 3 0 0 0 0 0 0 0 0 00 0 00 00 2 0 00 00 00 030  
 12 DEP10 073 2 0 0 3 0 0 0 0 0 00 0 00 00 2 0 00 02 00 030  
 08 DEP21 074 2 0 0 0 0 0 1 0 0 00 0 30 00 00 2 0 00 00 00 366  
 9 SSL11 075 2 0 0 0 0 0 1 0 0 00 0 30 00 00 2 0 00 00 00 374  
 12 STA01 076 2 0 0 0 0 0 0 0 0 00 0 00 00 0 0 00 01 07 016  
 06 TRP15 077 2 0 0 0 0 0 0 0 0 00 0 00 00 0 0 00 01 10 140

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DRN	DATE	TITLE
<i>A. P. Fiddler</i>	6-15-72	U WORD
CHK'D	DATE	
<i>[Signature]</i>	7/1/72	
DESIGNED	DATE	
<i>[Signature]</i>	7/1/72	
APPROV'D	DATE	
<i>[Signature]</i>	6/21/72	
SHEET	9	OF 12
	SIZE CODE	NUMBER
	K CS	M7232-0-1
	DIST.	REV.
		F



FLOWS STATE ADR CLK CIR WR CB CD CBA BUS DAD SPS ALU SBC SBH SDH SRA UBF SRX RIF UPF

04 MOV10 200 4 0 0 0 1 0 5 00 0 20 00 00 0 0 00 01 11 125  
04 MOV17 201 4 0 0 0 1 0 5 00 0 11 16 17 0 0 00 10 00 125  
04 MOV14 202 2 0 0 0 1 0 0 00 0 00 00 00 0 0 00 01 11 205  
04 MOV13 203 2 0 0 0 1 0 0 00 0 00 00 00 0 0 00 10 00 205  
04 MOV20 204 0 0 0 3 1 0 0 00 0 3 00 00 00 2 0 00 04 00 000  
04 MOV19 205 6 0 0 3 0 1 0 7 00 0 32 00 10 2 0 00 01 11 125  
04 MOV08 206 2 0 0 3 1 0 0 00 0 00 00 00 1 0 01 01 12 212  
04 MOV11 207 2 0 0 3 1 0 0 00 0 00 00 00 1 0 02 01 12 210  
04 MOV12 210 2 0 0 0 0 0 1 0 01 0 00 00 00 0 1 00 01 12 200  
09 SSL10 211 2 0 0 0 0 0 1 0 00 0 1 00 00 00 2 0 00 00 00 367  
04 MOV09 212 4 0 0 0 0 1 0 07 0 11 00 00 00 0 00 04 00 200  
04 MOV10 213 5 0 0 0 0 0 1 0 01 0 11 00 00 00 0 00 04 00 207  
06 TRP03 214 2 0 0 3 0 0 0 0 00 0 0 00 00 00 2 0 00 01 14 007  
06 TRP02 215 5 0 0 0 0 0 1 0 00 0 11 02 17 0 0 00 01 14 115  
04 TRP04 216 4 0 0 0 0 0 1 0 00 0 0 32 15 17 2 0 00 00 00 214  
01 FET08 217 6 1 0 0 0 0 1 0 00 0 0 00 00 00 0 00 00 00 232  
09 SSL06 220 4 0 0 0 0 0 1 0 05 17 0 00 00 00 2 0 00 01 12 211  
09 SSL04 221 4 0 0 0 0 0 1 0 05 11 0 06 00 00 2 0 00 00 12 367  
09 SSL08 222 4 0 0 0 0 0 1 0 00 14 0 00 00 00 0 0 00 01 12 253  
09 SSL07 223 4 0 0 0 0 0 1 0 00 10 0 06 00 00 2 0 00 00 00 293  
08 DOP07 224 4 0 0 0 0 0 1 0 05 17 0 00 00 00 0 0 00 10 00 367  
08 DOP03 225 4 0 0 0 0 0 1 0 05 17 0 00 00 00 0 0 00 01 11 367  
08 DOP04 226 2 0 0 0 0 1 0 00 00 0 00 00 00 0 0 00 10 00 305  
08 DOP05 227 2 0 0 0 0 1 0 00 00 0 00 00 00 0 0 00 11 365  
08 DOP09 230 4 0 0 0 0 0 1 0 00 14 0 00 00 00 0 0 00 10 00 294  
08 DOP10 231 4 0 0 0 0 0 1 0 00 14 0 00 00 00 0 0 00 01 11 294  
09 RSR08 232 6 0 0 0 0 1 0 00 00 0 32 00 00 3 0 00 00 00 275  
09 RSR09 233 6 0 0 0 0 1 0 00 00 0 32 00 10 3 0 00 00 00 276  
08 SYT01 234 4 0 0 0 0 0 1 0 05 14 0 03 00 00 2 0 00 00 00 367  
05 JMP02 235 4 0 0 0 0 0 1 0 00 00 0 06 01 17 0 0 00 15 04 000  
09 SSL09 236 4 0 0 0 0 0 1 0 05 00 0 32 00 12 2 0 00 00 00 367  
03 DST16 237 4 0 0 0 0 0 1 0 00 00 0 32 00 02 0 0 00 01 13 270

NOTE: THE COMPLEMENT OF THE ACTUAL  
ROM OUTPUT FOR THE UPF FIELD  
IS LISTED FOR CLARITY.

FLOWS STATE ADR CLK CIR WR CB CD CBA BUS DAD SPS ALU SRC SBH SDH SRA UBF SRX RIF UPF

02 SRC03 240 3 0 0 3 0 0 0 0 00 0 00 00 00 2 0 35 10 00 200  
02 SRC07 241 2 0 0 3 1 0 0 0 00 0 00 00 00 1 0 00 01 11 242  
02 SRC08 242 4 0 0 0 0 0 1 0 01 0 11 00 00 0 0 00 10 00 247  
02 SRC10 243 2 0 0 3 1 0 0 0 00 0 00 00 00 1 0 00 01 11 244  
02 SRC11 244 5 0 0 0 0 0 0 1 00 0 11 02 00 0 0 00 10 00 245  
02 SRC12 245 2 0 0 3 1 0 0 0 00 0 00 00 00 1 0 00 01 11 246  
02 SRC13 246 2 0 0 0 0 0 1 0 01 0 00 00 00 0 1 00 01 11 247  
02 SRC14 247 3 0 0 0 0 0 0 0 00 0 00 00 00 0 0 35 01 13 250  
02 SRC15 250 2 0 0 3 1 0 0 0 00 0 00 00 00 1 0 00 01 11 120  
02 SRC17 251 2 0 0 3 1 0 0 0 00 0 00 00 00 2 0 00 01 11 120  
01 FET09 252 2 0 0 3 1 0 0 0 00 0 00 00 00 2 0 00 01 13 004  
09 SSL12 253 2 0 0 0 0 0 0 0 00 0 00 00 00 2 0 00 00 00 075  
08 DOP22 254 2 0 0 0 0 0 0 0 00 0 1 00 00 00 2 0 00 00 00 074  
11 CON12 255 6 0 0 0 0 0 1 0 02 00 6 00 00 00 0 0 24 00 00 041  
08 MOV07 257 2 0 0 3 0 0 0 0 00 0 00 00 00 2 0 00 04 00 200  
03 DST03 260 3 0 0 3 0 0 0 0 00 0 00 00 00 2 0 33 04 00 267  
03 DST09 261 2 0 0 3 1 0 0 0 00 0 00 00 00 1 0 00 01 12 262  
03 DST10 262 4 0 0 0 0 0 0 1 0 07 0 11 00 00 0 0 00 04 00 266  
03 DST11 263 5 0 0 0 0 0 0 1 0 00 0 11 00 00 0 0 00 04 00 264  
03 DST12 264 2 0 0 3 1 0 0 0 00 0 00 00 00 1 0 00 01 12 265  
03 DST13 265 2 0 0 0 0 0 0 1 0 01 0 00 00 00 0 1 00 01 12 266  
03 DST14 266 3 0 0 0 0 0 0 0 00 0 00 00 00 0 0 33 01 13 267  
03 DST15 267 2 0 0 3 1 0 0 0 00 0 00 00 00 1 0 00 01 12 220  
03 DST17 270 2 0 0 3 1 0 0 0 00 0 00 00 00 2 0 00 01 12 220  
09 RSR01 271 6 0 0 3 0 0 0 1 0 00 0 32 00 00 2 0 27 04 00 274  
09 RSR03 272 6 0 0 0 0 0 1 0 00 0 00 00 10 3 0 00 00 00 273  
09 RSR04 273 6 0 0 1 0 0 0 0 00 0 32 00 02 2 0 27 04 00 274  
09 RSR05 274 0 0 0 0 0 0 0 0 00 0 00 00 00 0 0 00 04 00 000  
09 RSR07 275 4 0 0 0 0 0 1 0 05 00 0 32 00 00 2 0 00 00 00 277  
09 RSR09 276 4 0 0 0 0 0 0 0 00 0 32 00 02 2 0 00 00 00 277  
09 RSR10 277 3 0 0 0 0 0 0 0 00 0 00 00 00 2 0 00 00 00 376

DRN	DATE	TITLE
CHKD	6-15-72	U WORD
ENG	DATE	NUMBER
DESIGNED	6/16/72	M7232-0-1
RECD	DATE	SIZE CODE
DATE	6/16/72	KCS
DATE	6/16/72	DIST.
SHEET 11 OF 12		REV. F

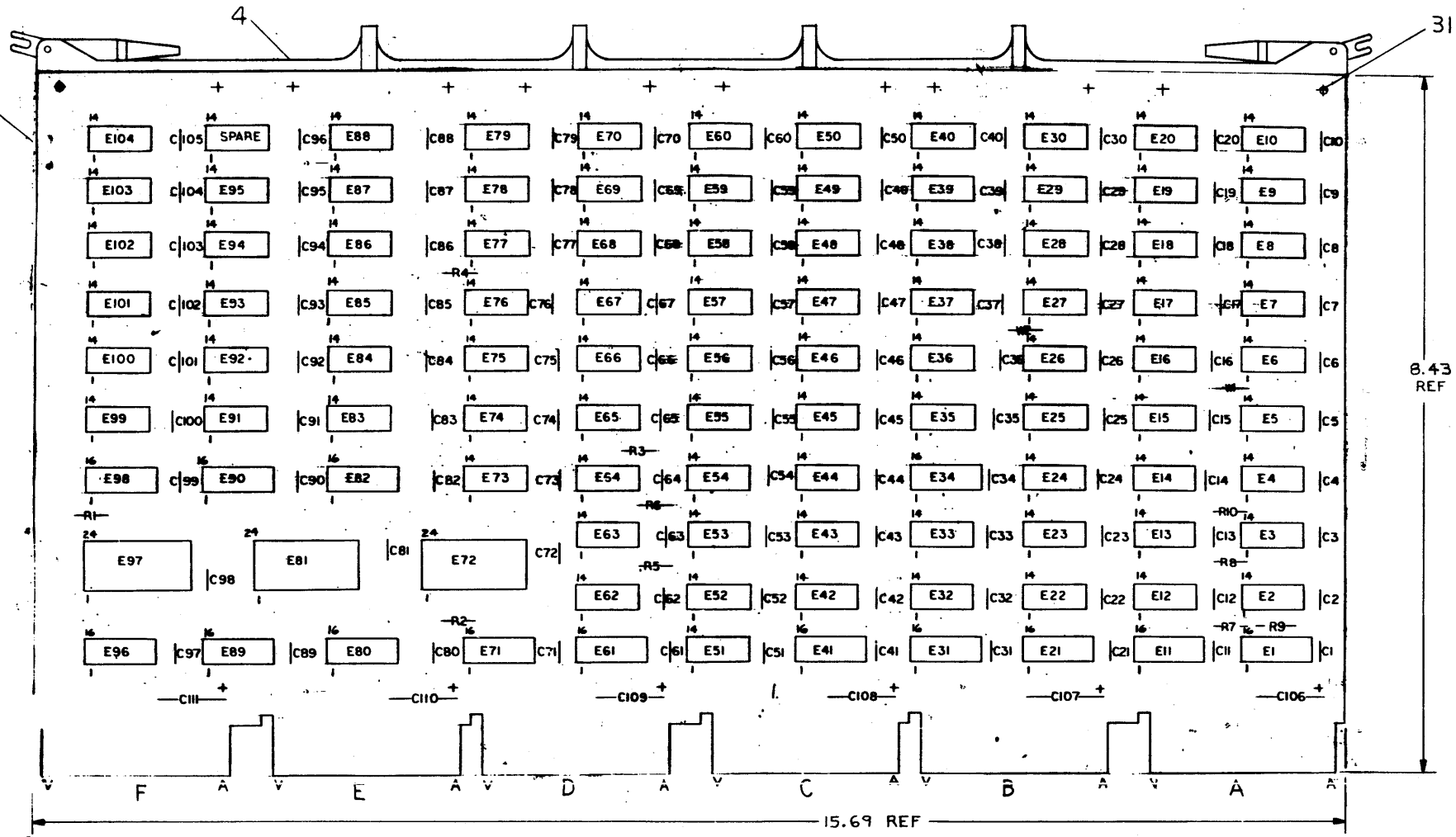
(ADR 200-277)

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**NOTES:**

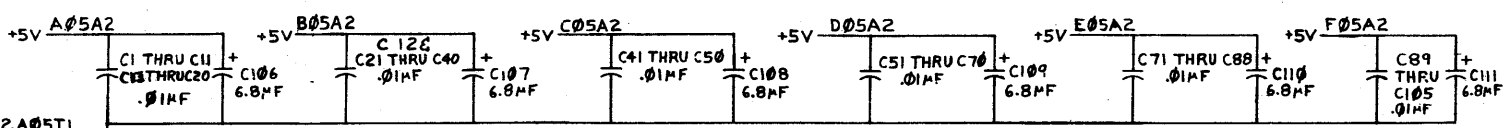
- PIN NOTATION THROUGHOUT IS ORDERED UPON MODULE PLACEMENT IN THE KD11-A PROCESSOR. MODULE REFERENCE ALONE IS OBTAINED BY DELETING THE NUMBER (SLOT LOCATION) AFTER THE FIRST LETTER.
- ALL SIGNALS THAT HAVE MODULE PINS ARE SO NOTED. OUTPUT SIGNALS WITH MODULE PINS ARE BROUGHT TO THE RIGHT SIDE OF THE PRINT.
- PROCESSOR SIGNAL PREFIX NOTATION (K2-1 FOR EXAMPLE) IDENTIFIES THE SIGNAL SOURCE (PRINT AND MODULE). THE FIRST NUMBER AFTER THE K INDICATES THE MODULE PRINT SET, WHILE THE SECOND INDICATES THE SHEET WITHIN THE SET. SIGNALS WITH A "BUS" PREFIX REPRESENT A "WIRED OR" SITUATION, AND MULTIPLE SOURCES FOR THE SIGNAL CAN EXIST.
- UNLESS OTHERWISE NOTED: RESISTANCE IS IN OHMS; CAPACITANCE IS IN PICOFARRADS.



QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
2	W1, W2	INSULATED JUMPER	9009185	32
12		EYELET	9006732	31
1	E1	I.C. DEC 74157	1910655	30
4	E21, E71, E96, E41	I.C. DEC 74175	1910651	29
3	E81, E97, E72	I.C. DEC 74150	1910153	28
1	E82	I.C. DEC 74155	1909937	27
2	E90, E98	I.C. DEC 74151	1909936	26
11	E5, E8, E29, E33, E37, E45, E62, E75, E84, E92, E95	I.C. DEC 74HC4	1909931	25
6	E11, E31, E34, E61, E80, E89	I.C. DEC 8251	1909594	24
6	E20, E22, E23, E27, E32, E56	I.C. DEC 8815	1909713	23
7	E14, E36, E51, E79, E83, E84, E59	I.C. DEC 74-111	1909267	22
1	E26	I.C. DEC 74H61	1909065	21
2	E6, E7	I.C. DEC 74H60	1909064	20
3	E39, E17, E57	I.C. DEC 74H53	1909062	19
5	E9, E28, E52, E53, E54	I.C. DEC 74H52	1909061	18
3	E87, E49, E19	I.C. DEC 74H50	1909060	17
5	E24, E67, E68, E69, E70	I.C. DEC 74H30	1909059	16
4	E12, E13, E38, E102	I.C. DEC 74H21	1909058	15
8	E15, E40, E42, E64, E77, E104, E47, E101	I.C. DEC 74H10	1909057	14
14	E2, E3, E18, E35, E43, E48, E58, E73, E76, E78, E85, E88, E93, E99	I.C. DEC 74H00	1909056	13
7	E9, E10, E16, E44, E60, E100, E103	I.C. DEC 7402	1909004	12
7	E25, E30, E46, E55, E65, E66, E94	I.C. DEC 74H20	1905635	11
1	E50	I.C. DEC 74H40	1905586	10
3	E63, E74, E91	I.C. DEC 7400	1905575	6
10	R1 THRU R10	RES. 1K 1/4W ±5%	1300365	5
1		HANDLE MODULE	1210711-Q2	4
105	C1 THRU C105	CAP. 0.1µF 100V ±20% DISC	1001610	3
6	C106 THRU C111	CAP. 6.8µF 35V ±20% STANT	1000067	2
1		ETCHED CIRCUIT BOARD	5009982	1

IC TYPE	QTY	REF
DEC 74157	8	16
DEC 74175	8	16
DEC 74150	12	24
DEC 74153	8	16
DEC 74151	8	16
DEC 8251	8	16
IC TYPE	GND	+5V

A05C2, A05T1  
B05C2, B05T1  
C05C2, C05T1  
D05C2, D05T1  
E05C2, E05T1  
F05C2, F05T1



REV	DATE	BY	CHK
1	5-15-74	J. J. O'LOUGHLIN	
2	4-22-74	J. J. O'LOUGHLIN	
3	4-22-74	J. J. O'LOUGHLIN	
4	4-22-74	J. J. O'LOUGHLIN	
5	4-22-74	J. J. O'LOUGHLIN	
6	4-22-74	J. J. O'LOUGHLIN	
7	4-22-74	J. J. O'LOUGHLIN	
8	4-22-74	J. J. O'LOUGHLIN	
9	4-22-74	J. J. O'LOUGHLIN	
10	4-22-74	J. J. O'LOUGHLIN	
11	4-22-74	J. J. O'LOUGHLIN	
12	4-22-74	J. J. O'LOUGHLIN	
13	4-22-74	J. J. O'LOUGHLIN	
14	4-22-74	J. J. O'LOUGHLIN	
15	4-22-74	J. J. O'LOUGHLIN	
16	4-22-74	J. J. O'LOUGHLIN	
17	4-22-74	J. J. O'LOUGHLIN	
18	4-22-74	J. J. O'LOUGHLIN	
19	4-22-74	J. J. O'LOUGHLIN	
20	4-22-74	J. J. O'LOUGHLIN	
21	4-22-74	J. J. O'LOUGHLIN	
22	4-22-74	J. J. O'LOUGHLIN	
23	4-22-74	J. J. O'LOUGHLIN	
24	4-22-74	J. J. O'LOUGHLIN	
25	4-22-74	J. J. O'LOUGHLIN	
26	4-22-74	J. J. O'LOUGHLIN	
27	4-22-74	J. J. O'LOUGHLIN	
28	4-22-74	J. J. O'LOUGHLIN	
29	4-22-74	J. J. O'LOUGHLIN	
30	4-22-74	J. J. O'LOUGHLIN	
31	4-22-74	J. J. O'LOUGHLIN	
32	4-22-74	J. J. O'LOUGHLIN	
33	4-22-74	J. J. O'LOUGHLIN	
34	4-22-74	J. J. O'LOUGHLIN	
35	4-22-74	J. J. O'LOUGHLIN	
36	4-22-74	J. J. O'LOUGHLIN	
37	4-22-74	J. J. O'LOUGHLIN	
38	4-22-74	J. J. O'LOUGHLIN	
39	4-22-74	J. J. O'LOUGHLIN	
40	4-22-74	J. J. O'LOUGHLIN	
41	4-22-74	J. J. O'LOUGHLIN	
42	4-22-74	J. J. O'LOUGHLIN	
43	4-22-74	J. J. O'LOUGHLIN	
44	4-22-74	J. J. O'LOUGHLIN	
45	4-22-74	J. J. O'LOUGHLIN	
46	4-22-74	J. J. O'LOUGHLIN	
47	4-22-74	J. J. O'LOUGHLIN	
48	4-22-74	J. J. O'LOUGHLIN	
49	4-22-74	J. J. O'LOUGHLIN	
50	4-22-74	J. J. O'LOUGHLIN	
51	4-22-74	J. J. O'LOUGHLIN	
52	4-22-74	J. J. O'LOUGHLIN	
53	4-22-74	J. J. O'LOUGHLIN	
54	4-22-74	J. J. O'LOUGHLIN	
55	4-22-74	J. J. O'LOUGHLIN	
56	4-22-74	J. J. O'LOUGHLIN	
57	4-22-74	J. J. O'LOUGHLIN	
58	4-22-74	J. J. O'LOUGHLIN	
59	4-22-74	J. J. O'LOUGHLIN	
60	4-22-74	J. J. O'LOUGHLIN	
61	4-22-74	J. J. O'LOUGHLIN	
62	4-22-74	J. J. O'LOUGHLIN	
63	4-22-74	J. J. O'LOUGHLIN	
64	4-22-74	J. J. O'LOUGHLIN	
65	4-22-74	J. J. O'LOUGHLIN	
66	4-22-74	J. J. O'LOUGHLIN	
67	4-22-74	J. J. O'LOUGHLIN	
68	4-22-74	J. J. O'LOUGHLIN	
69	4-22-74	J. J. O'LOUGHLIN	
70	4-22-74	J. J. O'LOUGHLIN	
71	4-22-74	J. J. O'LOUGHLIN	
72	4-22-74	J. J. O'LOUGHLIN	
73	4-22-74	J. J. O'LOUGHLIN	
74	4-22-74	J. J. O'LOUGHLIN	
75	4-22-74	J. J. O'LOUGHLIN	
76	4-22-74	J. J. O'LOUGHLIN	
77	4-22-74	J. J. O'LOUGHLIN	
78	4-22-74	J. J. O'LOUGHLIN	
79	4-22-74	J. J. O'LOUGHLIN	
80	4-22-74	J. J. O'LOUGHLIN	
81	4-22-74	J. J. O'LOUGHLIN	
82	4-22-74	J. J. O'LOUGHLIN	
83	4-22-74	J. J. O'LOUGHLIN	
84	4-22-74	J. J. O'LOUGHLIN	
85	4-22-74	J. J. O'LOUGHLIN	
86	4-22-74	J. J. O'LOUGHLIN	
87	4-22-74	J. J. O'LOUGHLIN	
88	4-22-74	J. J. O'LOUGHLIN	
89	4-22-74	J. J. O'LOUGHLIN	
90	4-22-74	J. J. O'LOUGHLIN	
91	4-22-74	J. J. O'LOUGHLIN	
92	4-22-74	J. J. O'LOUGHLIN	
93	4-22-74	J. J. O'LOUGHLIN	
94	4-22-74	J. J. O'LOUGHLIN	
95	4-22-74	J. J. O'LOUGHLIN	
96	4-22-74	J. J. O'LOUGHLIN	
97	4-22-74	J. J. O'LOUGHLIN	
98	4-22-74	J. J. O'LOUGHLIN	
99	4-22-74	J. J. O'LOUGHLIN	
100	4-22-74	J. J. O'LOUGHLIN	
101	4-22-74	J. J. O'LOUGHLIN	
102	4-22-74	J. J. O'LOUGHLIN	
103	4-22-74	J. J. O'LOUGHLIN	
104	4-22-74	J. J. O'LOUGHLIN	
105	4-22-74	J. J. O'LOUGHLIN	
106	4-22-74	J. J. O'LOUGHLIN	
107	4-22-74	J. J. O'LOUGHLIN	
108	4-22-74	J. J. O'LOUGHLIN	
109	4-22-74	J. J. O'LOUGHLIN	
110	4-22-74	J. J. O'LOUGHLIN	
111	4-22-74	J. J. O'LOUGHLIN	

FIRST USED ON OPTION MODEL: PDP 11

ETCH BOARD REV: C D

DATE: 6-13-72

TITLE: IR DECODE

EQUIPMENT CORPORATION

MAVHARD, MASSACHUSETTS

SCALE: 1 OF 9

SHEET: 1 OF 9

SEMICONDUCTOR CONVERSION CHART

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

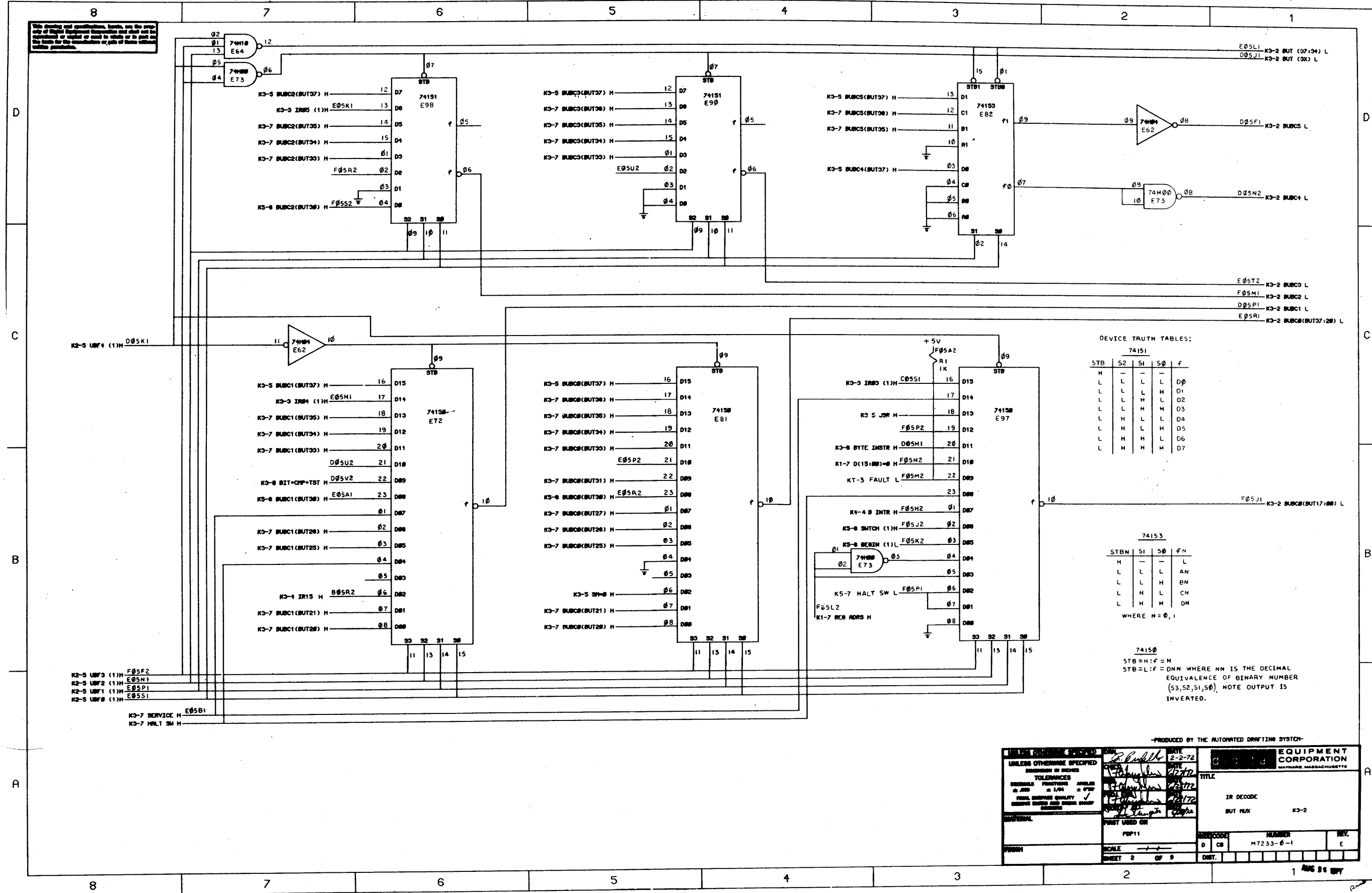
SIZE CODE: DCS NUMBER: M7233-0-1 REV: E

D  
C  
B  
A

M7233-0-1



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DEVICE TRUTH TABLES:

74151					
STB	S2	S1	S0	f	
H	-	-	-	-	D0
L	L	L	L	H	D1
L	L	L	H	L	D2
L	L	H	L	L	D3
L	H	L	L	L	D4
L	H	L	H	L	D5
L	H	H	L	L	D6
L	H	H	H	L	D7

74153				
STBN	S1	S0	FN	
H	-	-	-	L
L	L	L	L	AN
L	L	L	H	BN
L	L	H	L	CN
L	H	L	L	DN

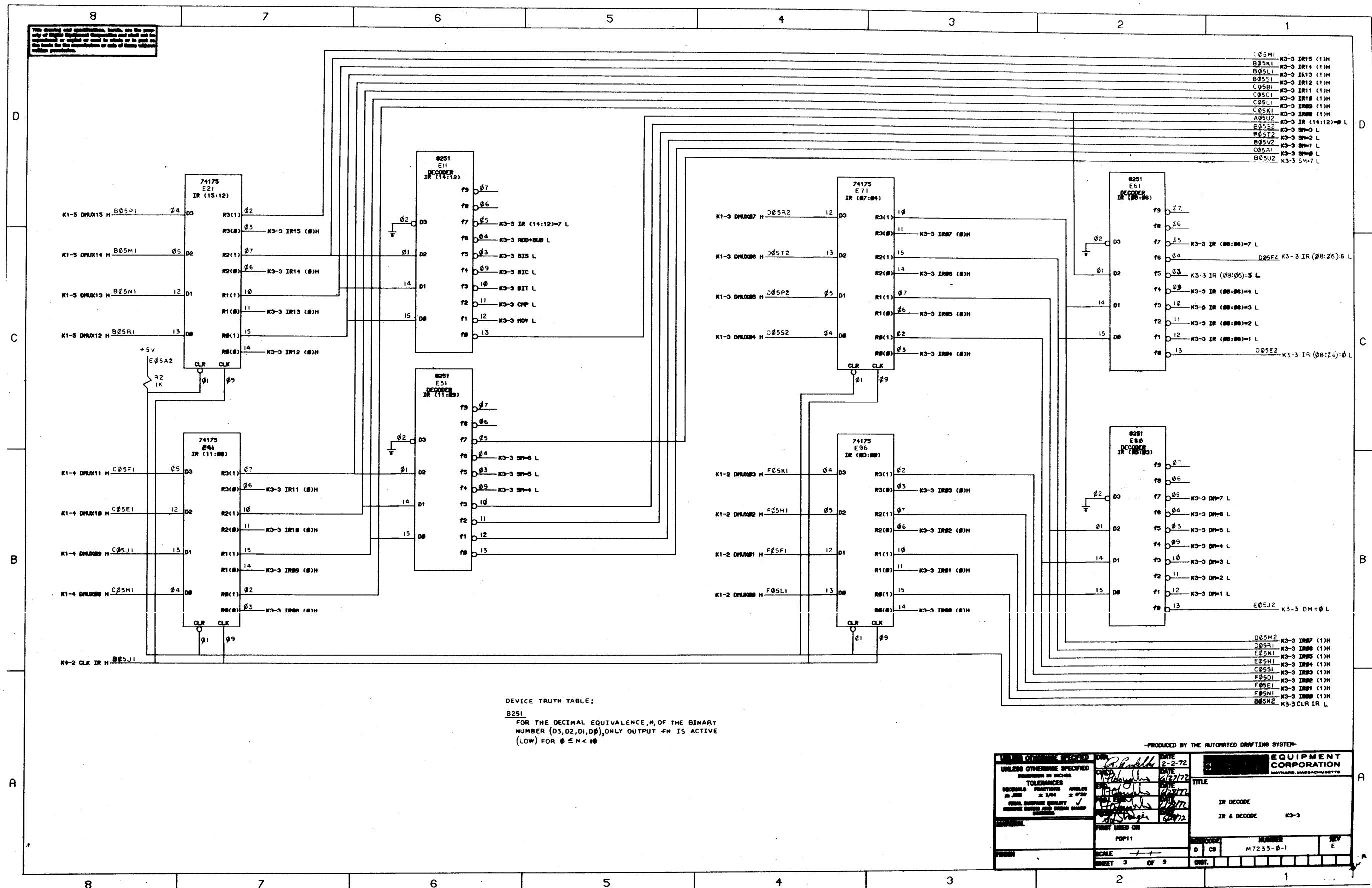
WHERE N = 0, 1

74150  
 STB = H : f = H  
 STB = L : f = DNN WHERE NN IS THE DECIMAL EQUIVALENCE OF BINARY NUMBER (S3, S2, S1, S0). NOTE OUTPUT IS INVERTED.

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES FRACTIONS DECIMALS ANGLES ±.005 ±.004 ±.002 FINE SURFACE QUALITY REMOVE BURRS AND BREAK SHARP EDGES	DATE: 2-2-72 DRAWN: [Signature] CHECKED: [Signature] APPROVED: [Signature]	TITLE: IR DECODE BUT FLUX K3-2
	FIRST USED ON: PDP11	NUMBER: M7233-6-1
SCALE: 1:1 SHEET 2 OF 9	DWT.	1 AUG 84 1972

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DEVICE TRUTH TABLE:  
 8251  
 FOR THE DECIMAL EQUIVALENCE, N, OF THE BINARY NUMBER (D3,D2,D1,D0), ONLY OUTPUT FN IS ACTIVE (LOW) FOR 0 ≤ N < 10

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES HORIZONTAL FRACTIONS ANGLES ±.010 ±.004 ±.010 FULL SURFACE QUALITY REMOVE BURRS AND DEBRIS GROUP EXCEPTED	DATE 2-2-72 DRAWN BY [Signature] CHECKED BY [Signature] DATE 2/2/72 APPROVED BY [Signature] DATE 2/2/72	<b>EQUIPMENT CORPORATION</b> MARYLAND, MASSACHUSETTS
	TITLE IR DECODE IR 4 DECODE K3-3	
SHEET 3 OF 9	NUMBER M7253-0-1	REV E

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K3-3 IR14 (1)H B05K1  
K3-3 IR13 (1)H B05L1  
K3-3 IR12 (1)H B05S1  
K3-3 IR10 (1)H C05C1  
K3-3 IR11 (1)H C05B1  
K3-3 IR00 (1)H C05L1  
K3-3 IR06 (1)H C05K1

K3-3 IR07 (1)H D05M2

K3-3 IR08 (1)H D05R1

K3-3 IR02 (1)H F05D1

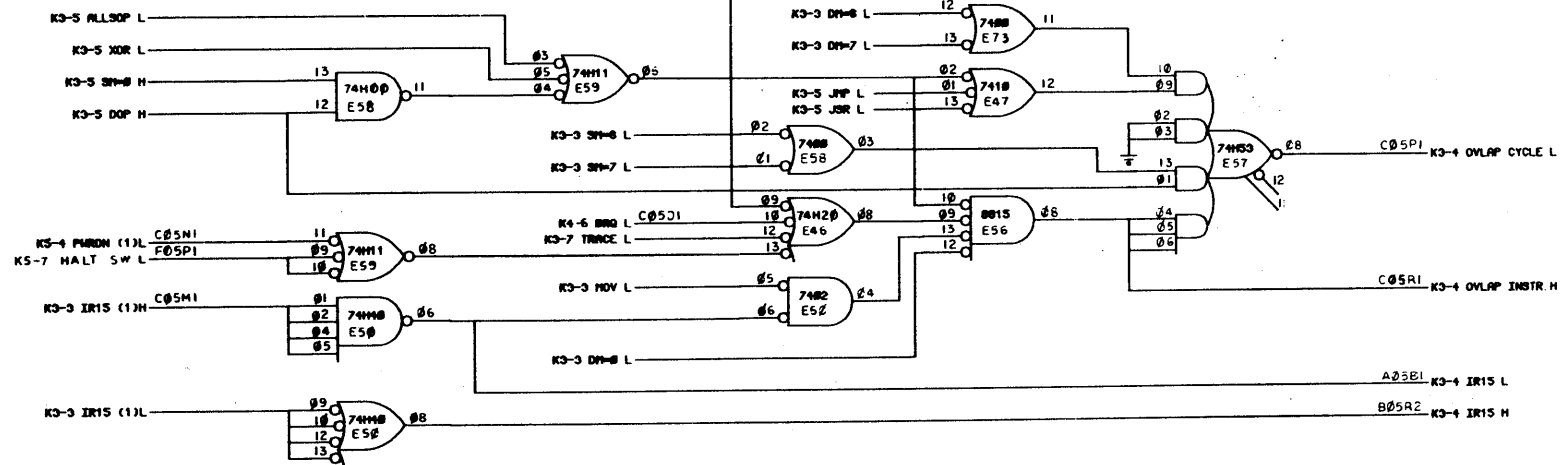
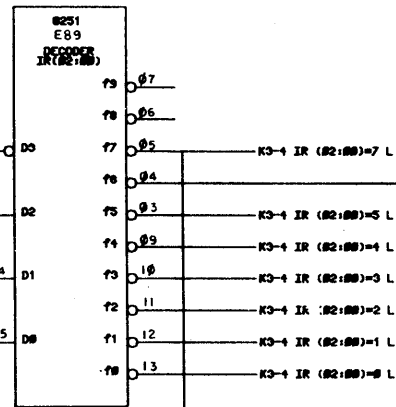
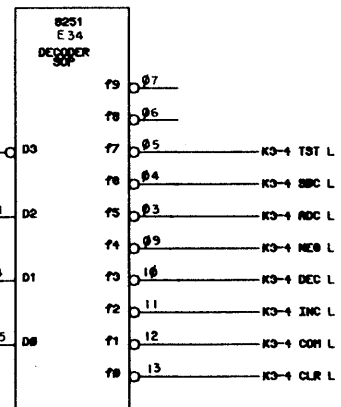
K3-3 IR01 (1)H F05E1

K3-3 IR00 (1)H F05M1

DEVICE TRUTH TABLE:

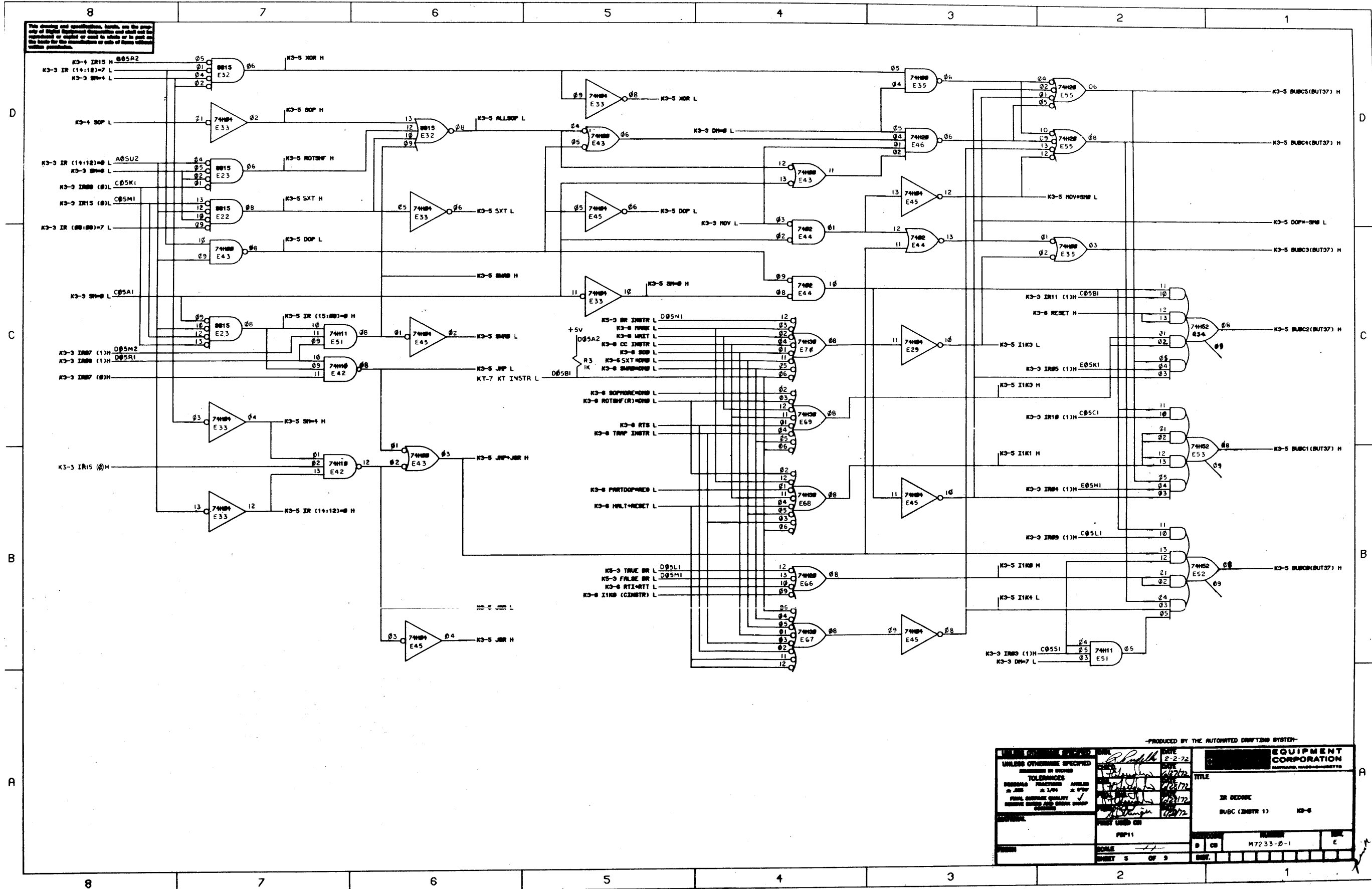
B251

FOR THE DECIMAL EQUIVALENCE, N, OF THE BINARY NUMBER (D3,D2,D1,D0), ONLY OUTPUT N IS ACTIVE (LOW) FOR 0 ≤ N < 10



-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

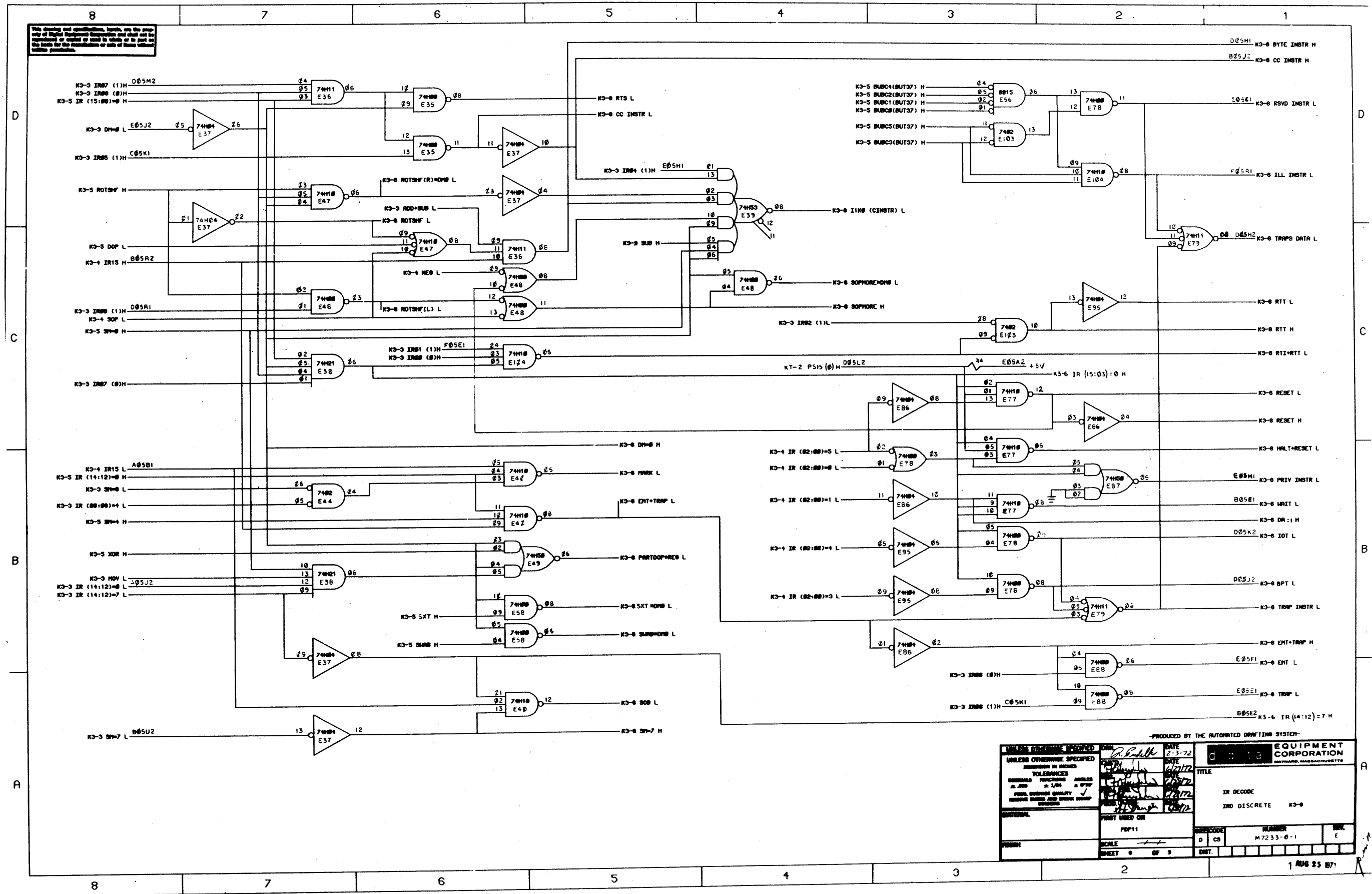
UNLESS OTHERWISE SPECIFIED		DATE	2-2-72
DIMENSIONS IN INCHES		DATE	1/21/72
TOLERANCES		DATE	1/21/72
HOLE POSITION ± 0.010		DATE	1/21/72
HOLE SIZE ± 0.005		DATE	1/21/72
FILL SURFACE QUALITY			
REMOVE BURRS AND SHARP EDGES			
MATERIAL		PART USED ON	
FINISH		POP11	
SCALE		SCALE	
SHEET 4 OF 9		SHEET	
DWT.		DWT.	
TITLE		NUMBER	
IR DECODE		M7253-B-1	
K3-4		REV	
E		E	



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-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES FRACTIONS DECIMALS ± .010 ± .004 FULL SURFACE FINISH REMOVE BURRS AND SHARP EDGES		DATE 2-2-72 2/2/72 2/2/72 2/2/72	<b>EQUIPMENT CORPORATION</b> 10000 WILSON BLVD WASHINGTON, D.C. 20015
TITLE IR RECORD BUBC (INSTR 1) K3-5		NUMBER M7233-B-1	
SHEET 5 OF 9		DRAWN BY DATE	

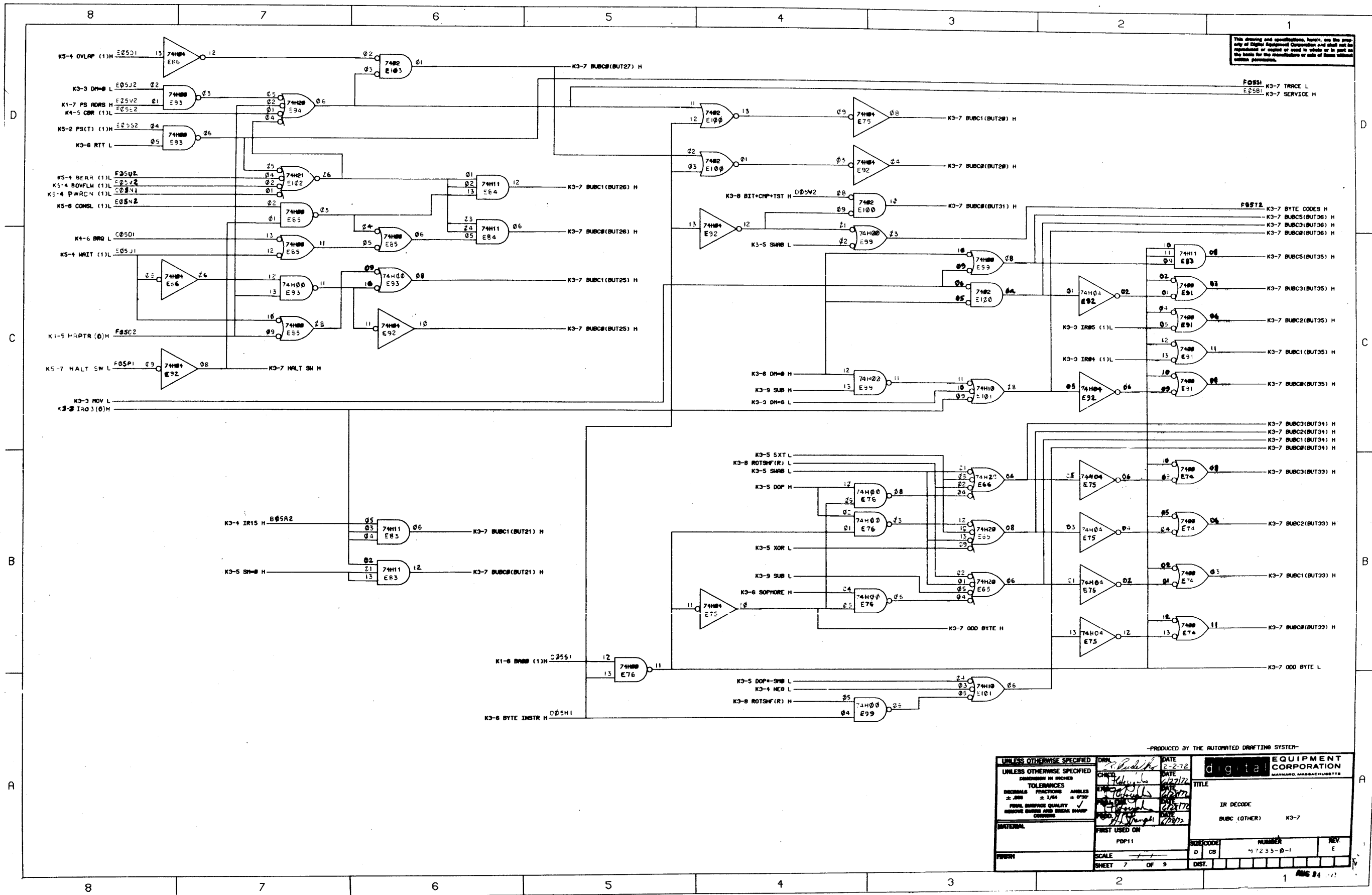


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-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED		DATE	2-3-72	EQUIPMENT CORPORATION MAYFIELD, MASSACHUSETTS	
DIMENSIONS IN INCHES		DATE	6/27/72	TITLE	
TOLERANCES		DATE	6/27/72	IR DECODE	
FRACTIONS ± .005		DATE	6/27/72	IR DISCRETE K3-6	
DECIMALS ± .004		DATE	6/27/72	FIRST USED ON	
POOR SURFACE QUALITY		DATE	6/27/72	POP11	
RESURFACE SURFACE AND DIMENSIONS		DATE	6/27/72	SCALE	
GENERAL		DATE	6/27/72	SHEET 6 OF 9	
FIRST USED ON		DATE	6/27/72	DWT.	
POP11		DATE	6/27/72	NUMBER	
SCALE		DATE	6/27/72	M7233-0-1	
SHEET 6 OF 9		DATE	6/27/72	REV.	
		DATE	6/27/72	E	

1 AUG 25 1971



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FOSS1 K3-7 TRACE L  
E25B1 K3-7 SERVICE H

FOSS2 K3-7 BYTE CODES H  
K3-7 BUBC5(BUT36) H  
K3-7 BUBC3(BUT36) H  
K3-7 BUBC2(BUT36) H

K3-7 BUBC3(BUT34) H  
K3-7 BUBC2(BUT34) H  
K3-7 BUBC1(BUT34) H  
K3-7 BUBC0(BUT34) H

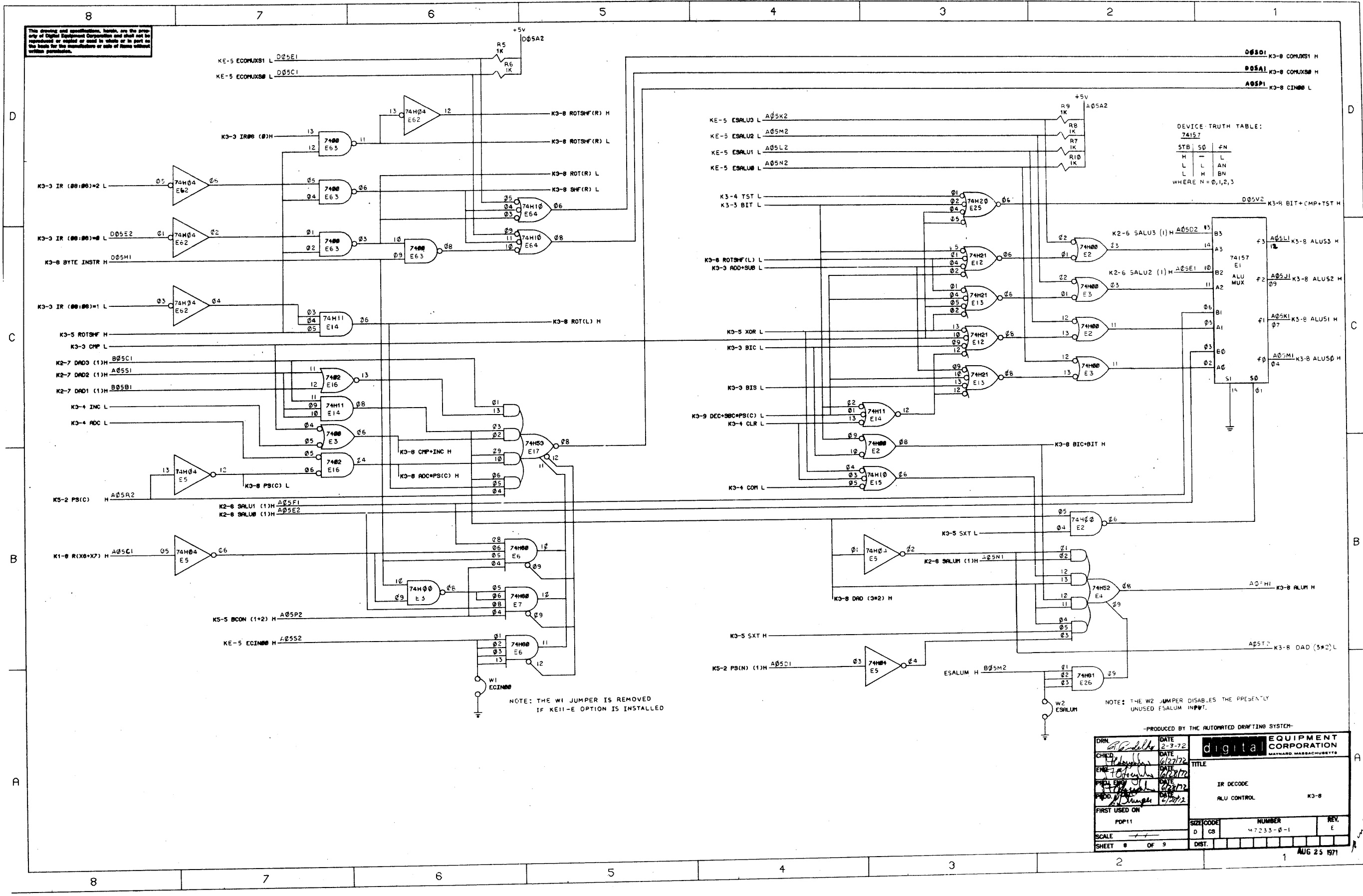
K3-7 BUBC3(BUT33) H  
K3-7 BUBC2(BUT33) H  
K3-7 BUBC1(BUT33) H  
K3-7 BUBC0(BUT33) H

K3-7 ODD BYTE H  
K3-7 ODD BYTE L

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED		DATE	2-2-72
UNLESS OTHERWISE SPECIFIED		DATE	6/27/72
DIMENSIONS IN INCHES		DATE	6/28/72
TOLERANCES		DATE	6/28/72
DECIMALS FRACTIONS ANGLES		DATE	6/28/72
± .005 ± .004 ± .002		DATE	6/28/72
FORM SURFACE QUALITY		DATE	6/28/72
REMOVE BURRS AND BREAK SHARP CORNERS		DATE	6/28/72
MATERIAL		DATE	6/28/72
FIRST USED ON		DATE	6/28/72
POP11		DATE	6/28/72
SCALE		DATE	6/28/72
SHEET 7 OF 9		DATE	6/28/72
TITLE		DATE	6/28/72
IR DECODE		DATE	6/28/72
BUBC (OTHER) K3-7		DATE	6/28/72
SIZE CODE		DATE	6/28/72
NUMBER		DATE	6/28/72
REV		DATE	6/28/72
D CS		DATE	6/28/72
1 7233-0-1		DATE	6/28/72
DIST.		DATE	6/28/72

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DEVICE TRUTH TABLE:  
74157

STB	S0	#N
H	-	L
L	L	AN
L	L	BN

WHERE N = 0,1,2,3

NOTE: THE W1 JUMPER IS REMOVED IF KE11-E OPTION IS INSTALLED

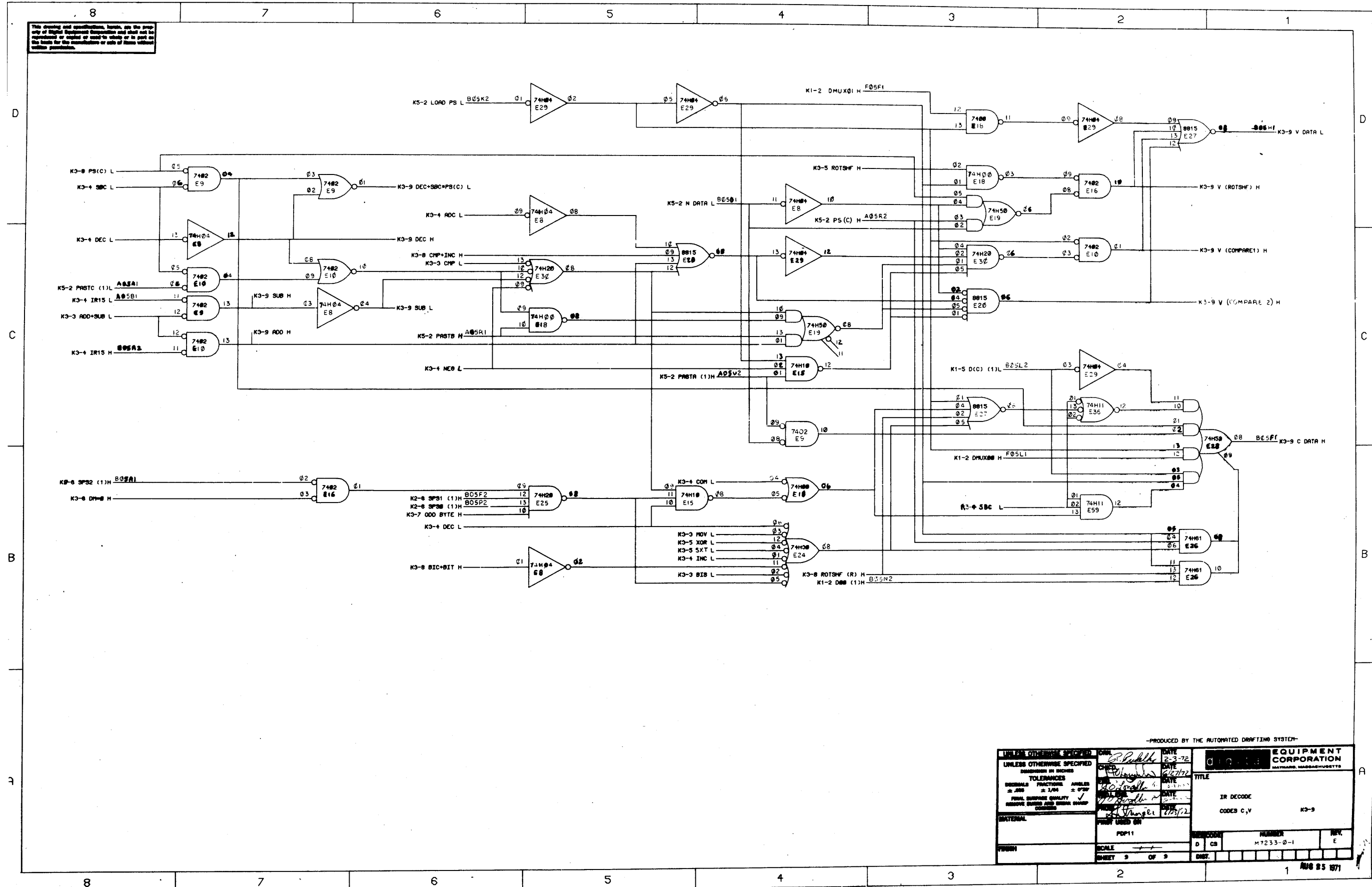
NOTE: THE W2 JUMPER DISABLES THE PRESENTLY UNUSED ESALUM INPUT.

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

DRN	DATE	2-3-72	 <b>DIGITAL EQUIPMENT CORPORATION</b> MAYNARD, MASSACHUSETTS
CHKD	DATE	6/27/72	
ENG	DATE	6/28/72	
FRS	DATE	6/28/72	
PRD	DATE	6/28/72	
TITLE		IR DECODE	
FIRST USED ON		ALU CONTROL	
PDP11		NUMBER	K3-8
SCALE	SIZE CODE	D CS	47233-0-1
SHEET 8 OF 9	DIST.		

AUG 25 1971

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-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES		DATE 2-3-72	EQUIPMENT CORPORATION MAYFIELD, MASSACHUSETTS	
TOLERANCES UNLESS OTHERWISE SPECIFIED DIMENSIONAL FRACTIONS ± .005 ± .005 ± .005 FULL BUSINESS QUALITY RESUME DIMENSIONS AND OTHER GROUP DIMENSIONS		DATE 6/27/72	TITLE IR DECODE	
DRAWN CHECKED DATE DATE DATE DATE		DATE 2/25/72	CODES C,V K3-9	
MATERIAL		POP11	NUMBER M7233-0-1	REV. E
FINISH		SCALE 1/8" = 1"	DWG. NO.	
SHEET 9 OF 9		1 AUG 25 1971		



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NOTES:

- 1. PIN NOTATION THROUGHOUT IS ORDER UPON MODULE PLACEMENT IN THE KDI-A PROCESSOR. MODULE REFERENCE ALONE IS OBTAINED BY DELETING THE NUMBER (SLOT LOCATION) AFTER THE FIRST LETTER.
2. ALL SIGNALS THAT HAVE MODULE PINS ARE SO NOTED. OUTPUT SIGNALS WITH MODULE PINS ARE BROUGHT TO THE RIGHT SIDE OF THE PRINT.
3. PROCESSOR SIGNAL PREFIX NOTATION (K2-1 FOR EXAMPLE) IDENTIFIES THE SIGNAL SOURCE (PRINT AND MODULE). THE FIRST NUMBER AFTER THE K INDICATES THE MODULE PRINT SET, WHILE THE SECOND INDICATES THE SHEET WITHIN THE SET. SIGNALS WITH A "BUS" PREFIX REPRESENTS A "WIRED OR" SITUATION, AND MULTIPLE SOURCES FOR THE SIGNAL CAN EXIST.
4. UNLESS OTHERWISE NOTED: RESISTANCE IS IN OHMS; CAPACITANCE IS IN PICOFARRADS.
5. C113 AND C114 INSERTED WHEN KTII-D OPTION IS INSTALLED.

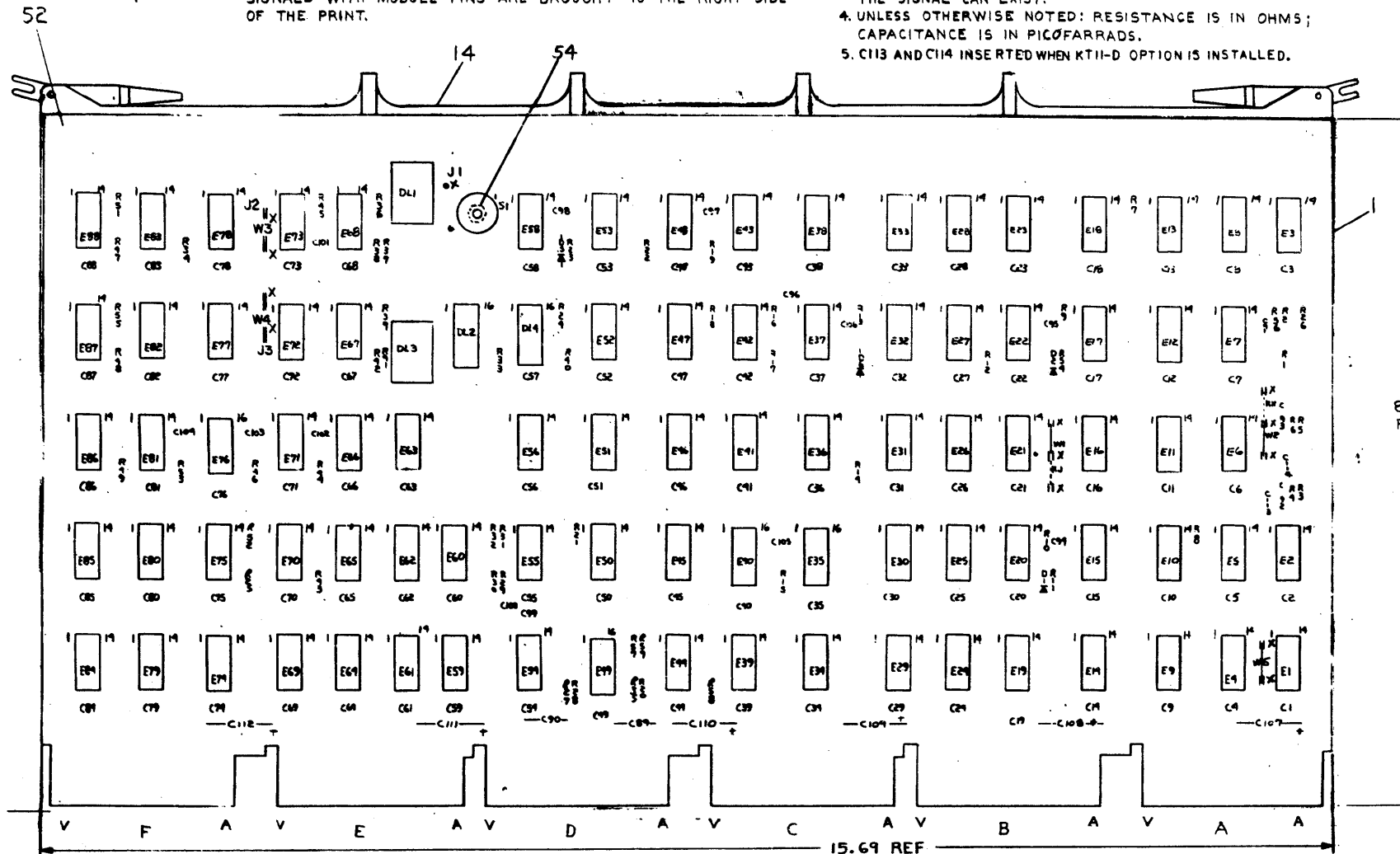
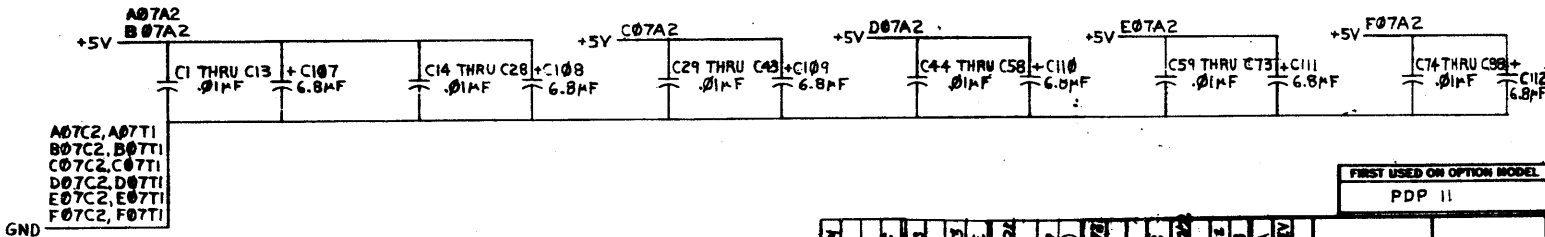


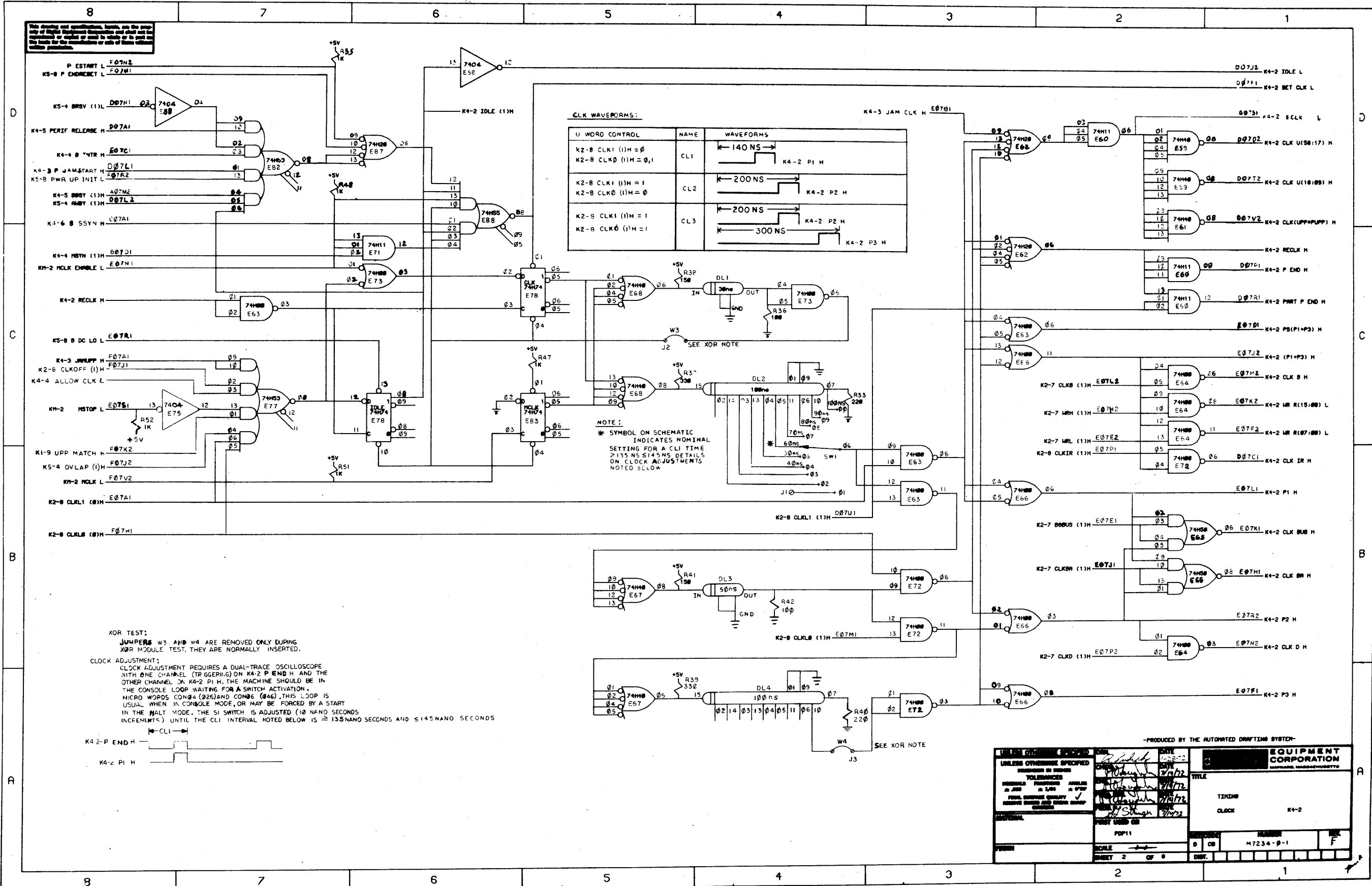
Table with 3 columns: IC TYPE, GND, +5V. Lists IC types like DEC 74175, DEC 74123, DEC 8640.



Parts list table with columns: QTY, REF DESIGNATION, DESCRIPTION, PART NO., ITEM NO. Lists components like INSULATED JUMPER, HEX NYLON NUT, SPLIT LUGS, etc.

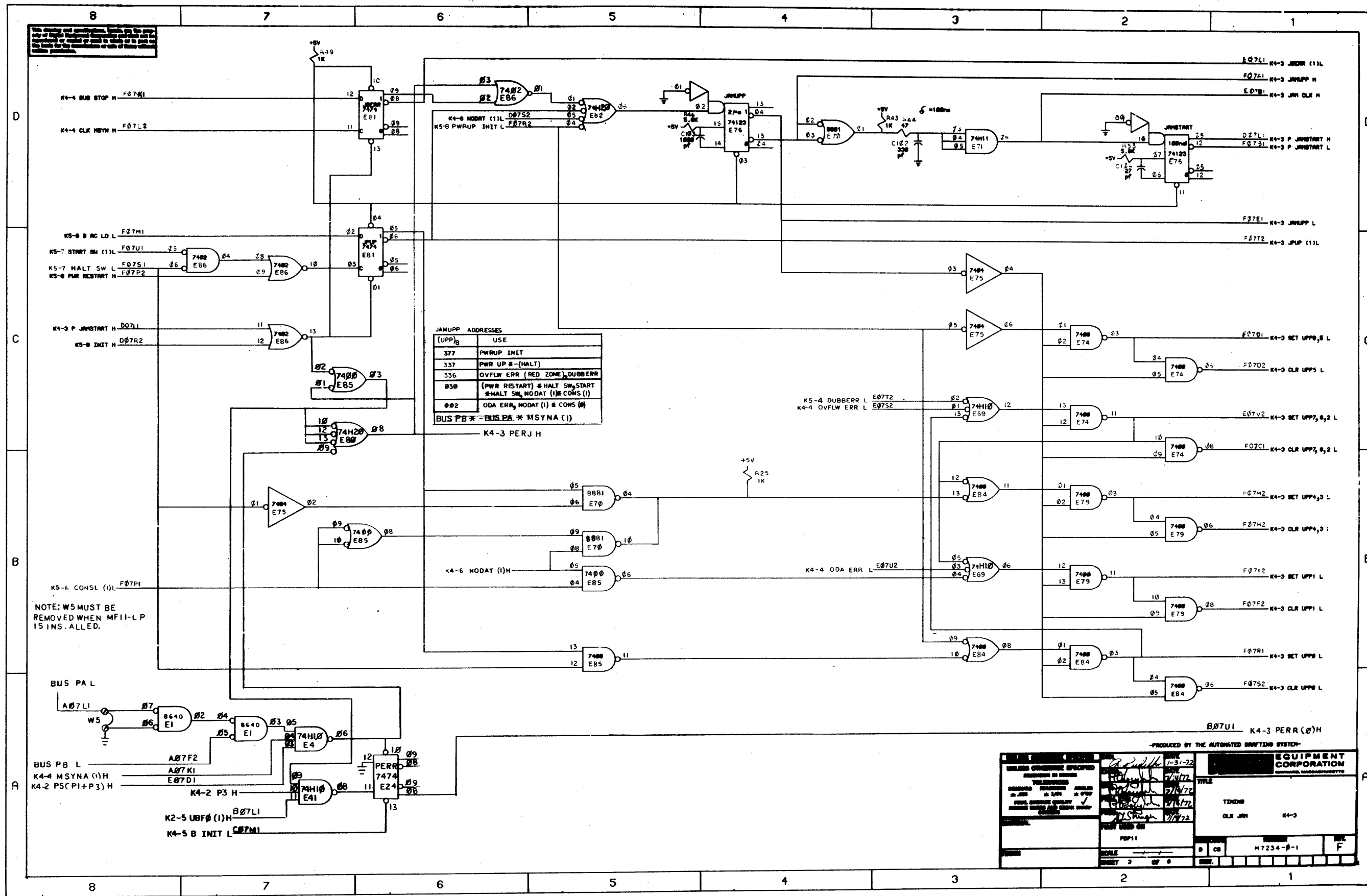
Administrative and technical blocks including: FIRST USED ON OPTION MODEL (PDP 11), ETCH BOARD REV, EQUIPMENT CORPORATION logo, TITLE (TIMING), DATE, SCALE, SHEET 1 OF 6, SEMICONDUCTOR CONVERSION CHART, and various revision notes.

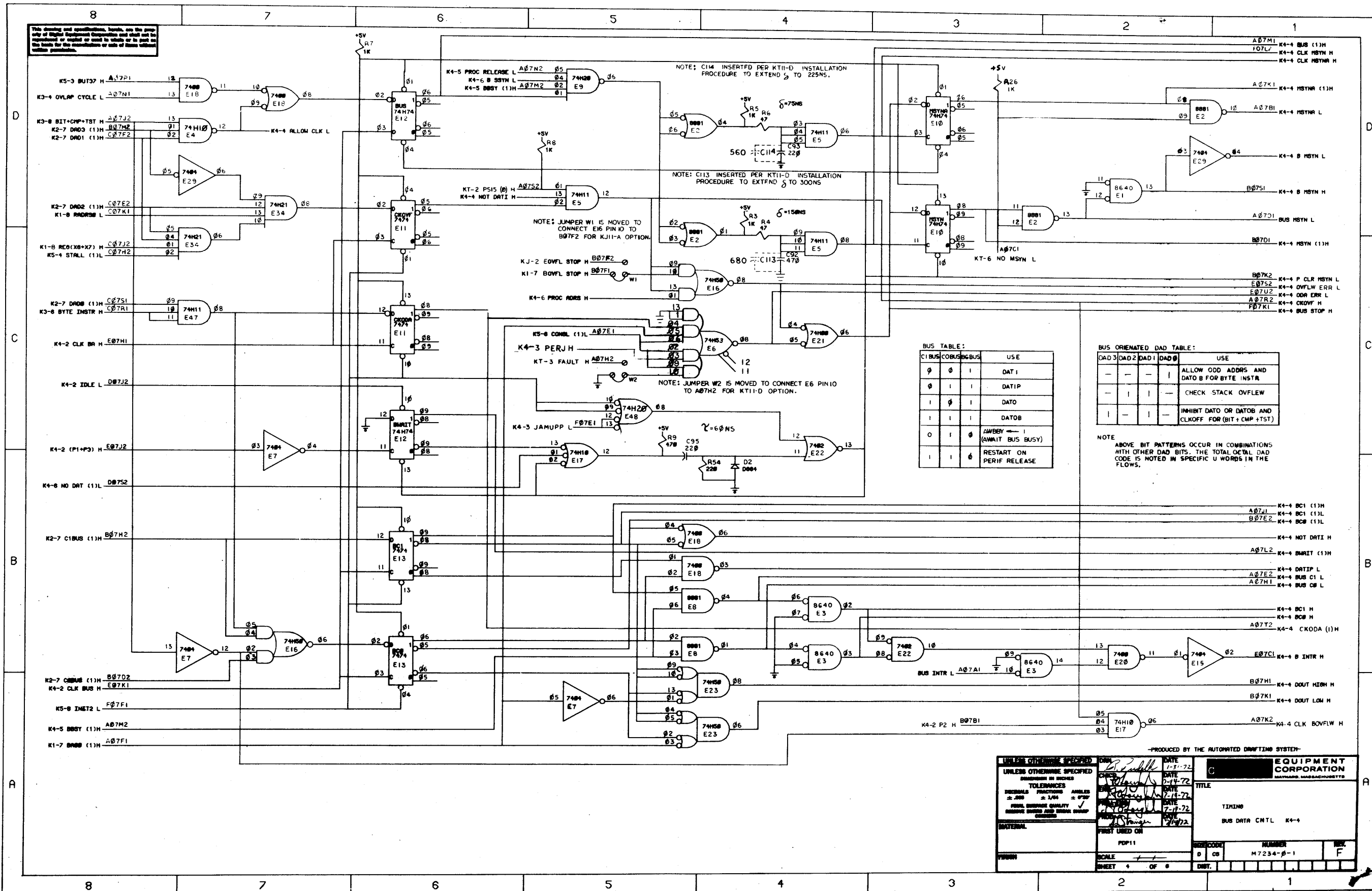
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-PRODUCED BY THE AUTOMATED DRAWING SYSTEM-

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES	DATE: 7/27/72	EQUIPMENT CORPORATION MILWAUKEE, WISCONSIN 53207
TOLERANCES FRACTIONS ± .005 DECIMALS ± .001 HOLE DIMENSIONS ± .001 HOLE LOCATIONS ± .005	DATE: 7/27/72	
DATE: 7/27/72	TITLE: CLOCK	K4-2
DATE: 7/27/72	TITLE: CLOCK	
DATE: 7/27/72	SCALE: 1:1	NUMBER: M7234-9-1
DATE: 7/27/72	SHEET: 2 OF 8	REV: F





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NOTE: C114 INSERTED PER KTII-D INSTALLATION PROCEDURE TO EXTEND  $t_{\text{OFF}}$  TO 225NS.

NOTE: C113 INSERTED PER KTII-D INSTALLATION PROCEDURE TO EXTEND  $t_{\text{OFF}}$  TO 300NS

NOTE: JUMPER W1 IS MOVED TO CONNECT E16 PIN 10 TO B07F2 FOR KJ11-A OPTION.

NOTE: JUMPER W2 IS MOVED TO CONNECT E6 PIN 10 TO A07H2 FOR KTII-D OPTION.

BUS TABLE:

CIBUS	COBUS	DBUS	USE
0	0	1	DATI
0	1	1	DATIP
1	0	1	DATO
1	1	1	DATOB
0	1	0	DMVBY (AWAIT BUS BUSY)
1	1	0	RESTART ON PERIF RELEASE

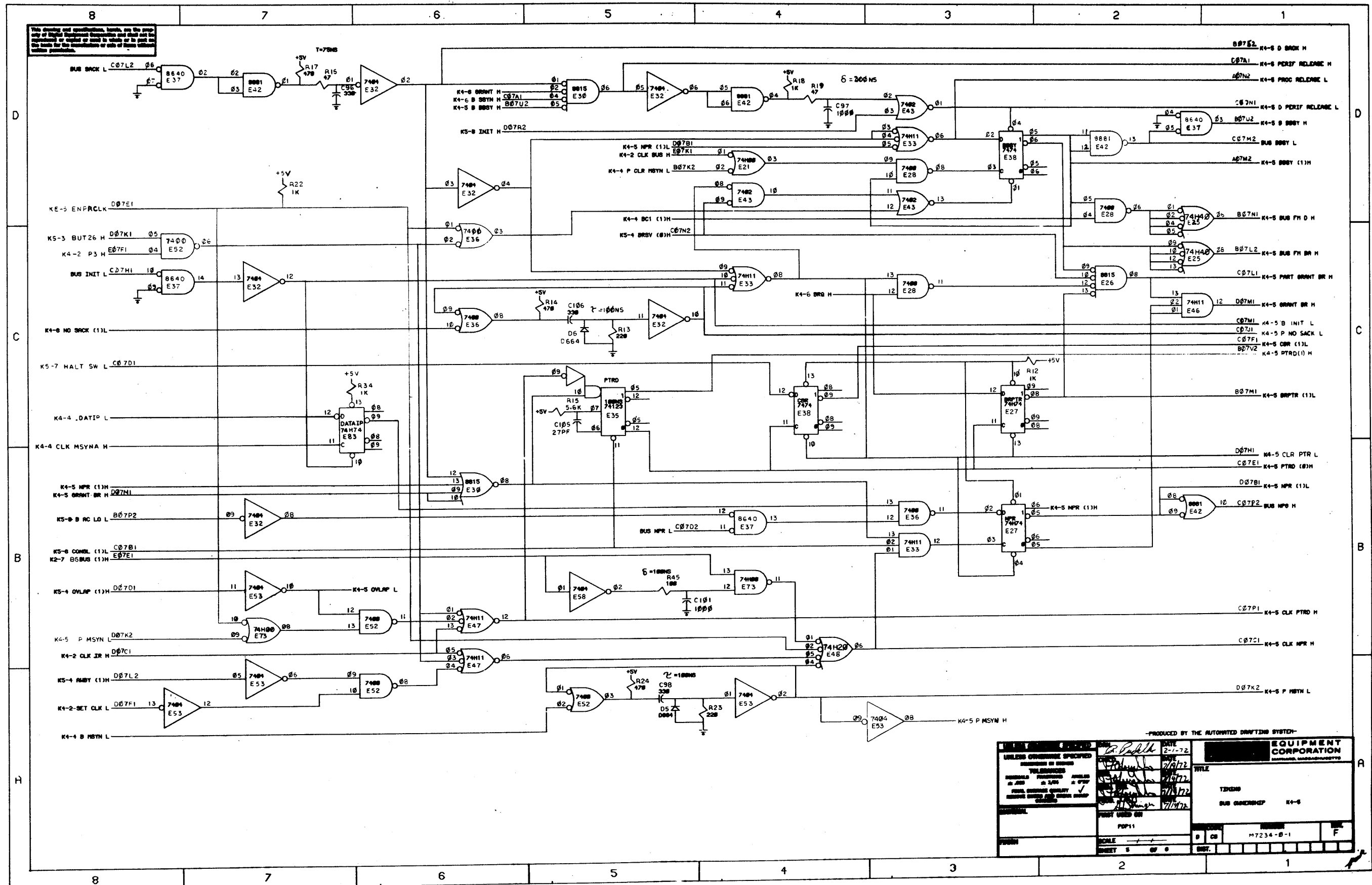
BUS ORIENTED DAD TABLE:

DAD 3	DAD 2	DAD 1	DAD 0	USE
-	-	-	1	ALLOW ODD ADDRS AND DATO B FOR BYTE INSTR
-	1	1	-	CHECK STACK OVFLEW
1	-	1	-	INHIBIT DATO OR DATOB AND CLKOFF FOR (BIT+CMP+TST)

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

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES	DATE 1-31-72	EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
TOLERANCES FEDERAL FRACTIONS ANGLES ±.005 ±.004 ±.002 FINAL DIMENSION QUALITY REMOVE DIMS AND BREAK GROUP DIMENSIONS	DATE 2-14-72	
MATERIAL	DATE 7-15-72	TITLE TIMING
DESIGNER	DATE 7-17-72	BUS DATA CNTL K4-4
DRAWN	DATE 7-19-72	
SCALE SHEET 4 OF 6	REV. CODE D CS	NUMBER M7234-β-1
	DIST.	REV. F

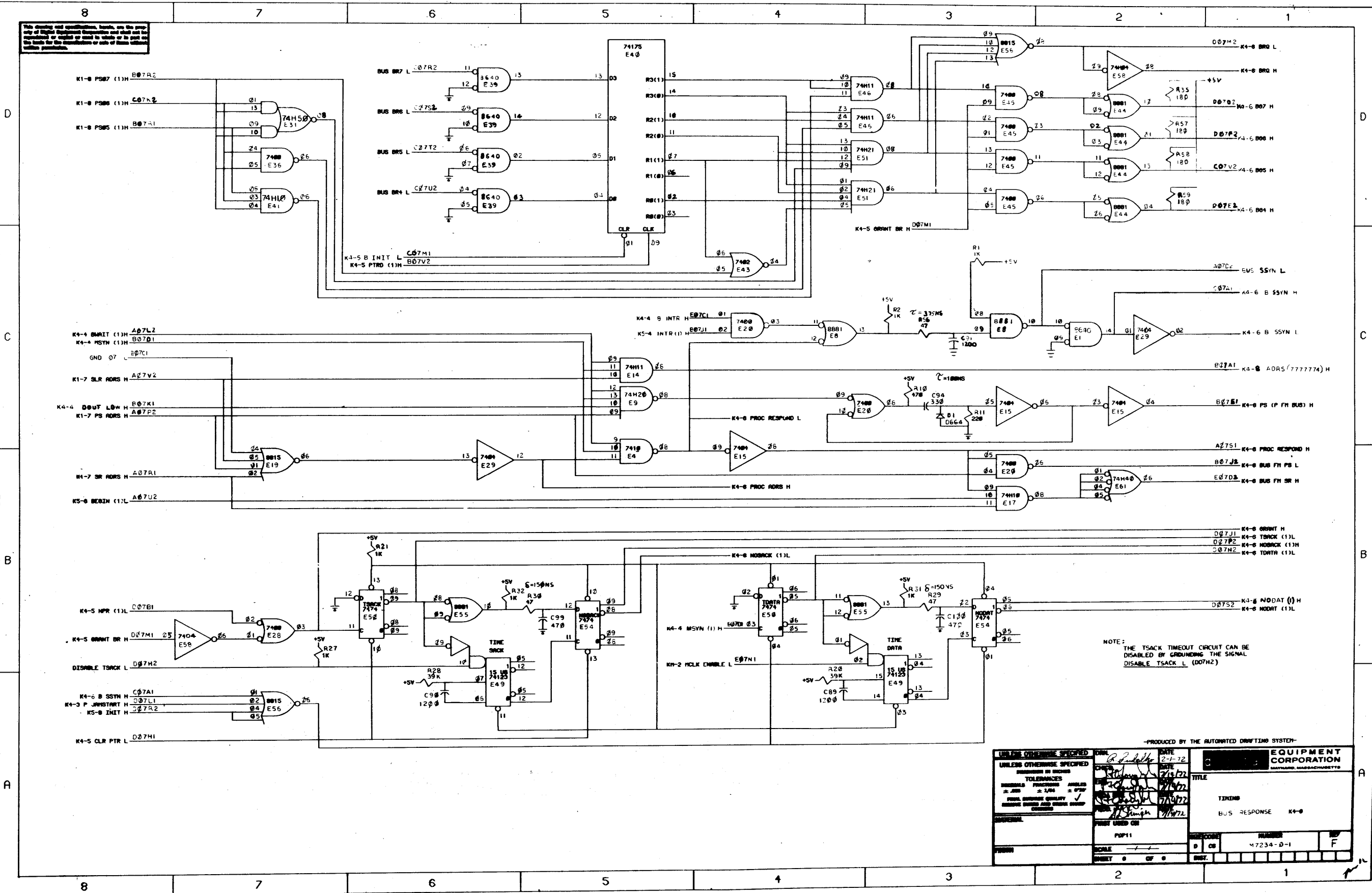


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-PRODUCED BY THE AUTORIZED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES FRACTIONS DECIMALS ANGLES ±.005 ±.010 ±.015 ±.020 FINISH SURFACE TEXTURE SEE DRAWING FOR DETAILS	DATE 2-1-72	TITLE BUS CONTROLLER
	DESIGNED BY R. B. B. / 2/1/72	
APPROVED BY [Signature]	CHECKED BY [Signature]	SCALE AS SHOWN
DATE 2/1/72	BY [Signature]	SHEET 5 OF 8

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NOTE: THE TSACK TIMEOUT CIRCUIT CAN BE DISABLED BY GROUNDING THE SIGNAL DISABLE TSACK L (D07H2)

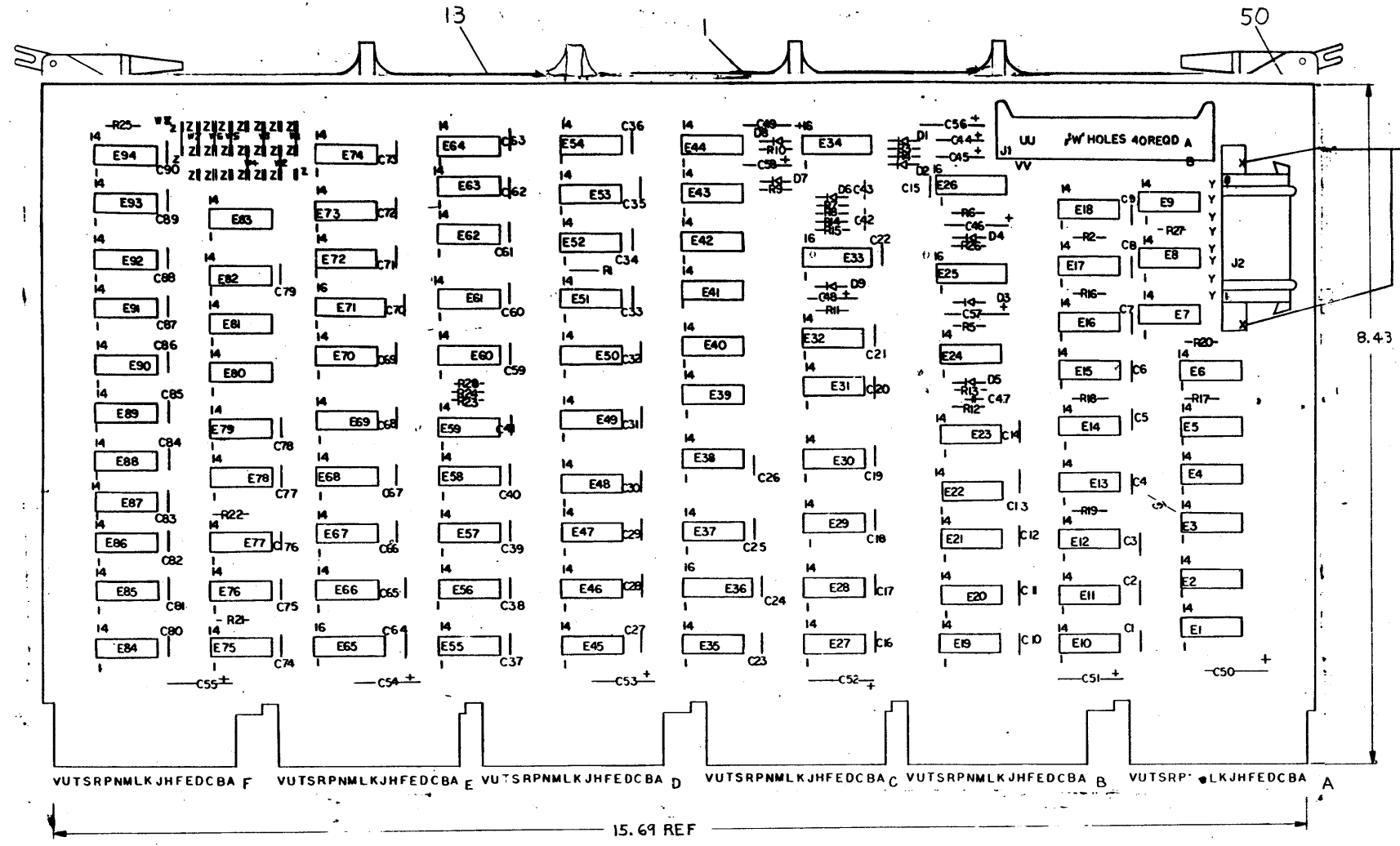
-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED	DATE	2-1-72	EQUIPMENT CORPORATION MAYFARL, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED	DATE	2/1/72	
TOLERANCES	TITLE		
FRACTIONS	BUS RESPONSE K4-8		
DECIMALS	DRAWING NUMBER		
PERCENTS	M7234-D-1		
ANGLES	SCALE		
±.001	SHEET 0 OF 0		
±.005	DWT.		
±.010	DWT.		
±.015	DWT.		
±.020	DWT.		
±.030	DWT.		
±.040	DWT.		
±.050	DWT.		
±.060	DWT.		
±.070	DWT.		
±.080	DWT.		
±.090	DWT.		
±.100	DWT.		

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**NOTES:**

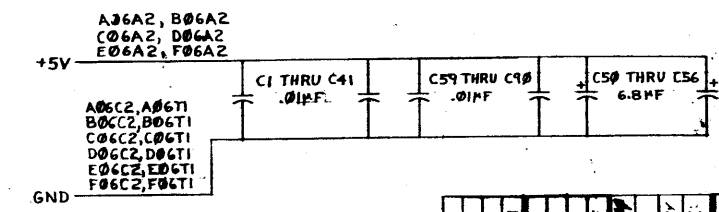
- PIN NOTATION THROUGHOUT IS ORDERED UPON MODULE PLACEMENT IN THE K011-A PROCESSOR. MODULE REFERENCE ALONE IS OBTAINED BY DELETING THE NUMBER (SLOT LOCATION) AFTER THE LETTER.
- ALL SIGNALS THAT HAVE MODULE PINS ARE SO NOTED. OUTPUT SIGNALS WITH MODULE PINS ARE BROUGHT TO THE RIGHT SIDE OF THE PRINT.
- PROCESSOR SIGNAL PREFIX NOTATION (K2-1, FOR EXAMPLE) IDENTIFIES THE SIGNAL SOURCE (PRINT AND MODULE). THE FIRST NUMBER AFTER THE K INDICATES THE MODULE, PRINT, SET, WHILE THE SECOND INDICATES THE SHEET WITHIN THE SET. SIGNALS WITH A "BUS" PREFIX REPRESENT A "WIRED OR" SITUATION, AND MULTIPLE SOURCES FOR THE SIGNAL CAN EXIST.
- UNLESS OTHERWISE NOTED: RESISTANCE IS IN OHMS; CAPACITANCE IS IN PICOFARADS.



QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	C91	TEE THIN WALL EXTRUDED TUBING	9107256	55
8		CAP. 270PF 100V 5%	1000022	54
2		INSULATED JUMPER L-2207-1	9087185	53
2		HEX NUT NYLON	9007992	52
23		SPLIT LUG	9006735	51
12		EYELET	9006732	50
2		SHOULDER WASHER FIBER (BLK)	9006693	49
2		SCREW NYLON	9006401-4	48
1	E65	I.C. DEC 74157	1910655	47
4	E25, E26, E33, E34	I.C. DEC 74123	1910436	46
4	E24, E45, E60, E82	I.C. DEC 74H04	1909931	45
5	E13, E37, E58, E70, E81	I.C. DEC 8815	1909713	44
5	E16, E84, E85, E88, E89	I.C. DEC 8881	1909705	43
7	E1 THRU E4, E20, E29, E41	I.C. DEC 7404	1909686	42
1	E52	I.C. DEC 74H74	1909667	41
2	E36, E71	I.C. DEC 8251	1909594	40
1	E15	I.C. DEC 8640	1911469	39
4	E14, E40, E48, E72	I.C. DEC 74H11	1909267	38
1	E55	I.C. DEC 74H61	19091065	37
1	E66	I.C. DEC 74H60	19091064	36
1	E59	I.C. DEC 74H55	19091063	35
2	E91, E92	I.C. DEC 74H53	19091062	34
2	E63, E67	I.C. DEC 74H52	19091061	33
4	E47, E56, E69, E87	I.C. DEC 74H50	19091060	32
1	E62	I.C. DEC 74H21	1909058	31
4	E7, E68, E80, E83	I.C. DEC 74H10	1909057	30
2	E57, E90	I.C. DEC 74H00	1909056	29
7	E5, E27, E28, E35, E39, E49, E54	I.C. DEC 7402	1909004	28
1	E46	I.C. DEC 74H20	1905635	27
3	E17, E18, E86	I.C. DEC 74H40	1905586	26
2	E31, E64	I.C. DEC 7450	1905580	25
				24
2	E9, E94	I.C. DEC 7430	1905578	23
4	E8, E19, E43, E93	I.C. DEC 7420	1905577	22
3	E38, E51, E53	I.C. DEC 7410	1905576	21
7	E11, E21, E22, E30, E73, E74	I.C. DEC 7400	1905575	20
15	E6, E10, E12, E32, E42, E44, E50, E61, E75 THRU E79	I.C. DEC 7474	1905547	19
				18
4	R3, R4, R5, R6	RES 18K 1/4W 5%	1302465	18
4	R9, R10, R11, R15	RES 12K 1/4W 5%	1300488	17
16	R1, R2, R14, R16 THRU R28	RES 1K 1/4W 5%	1300363	16
2	R8, R12	RES 470 1/4W 5%	1300316	15
2	R7, R13	RES 220 1/4W 5%	1300271	14
				13
1		HANDLE MODULE	1210711-02	13
8		PINS SOCKET AMP	1209456	12
1	J1	CONN RIGHT ANGLE HEADER	1209441	11
1	J2	CONN PIN HOUSING	1209340	10
				9
9	DI THRU D9	DIODE D664	1100114	9
				8
7	C50 THRU C56	CAP 6.8MF 35V 10% TANT	1005306	8
2	C46, C57	CAP 15MF 20V 10% TANT	1004812	7
1	C48	CAP 2.2MF 20V 10% TANT	1002627	6
1	C58	CAP 1MF 35V 10% TANT	1001776	5
				4
73	C1 THRU C41, C59 THRU C90	CAP .01MF 100V 20% DISC	1001610	4
				3
3	C44, C45, C49	CAP 3.9MF 10V 10% TANT	1000064	3
3	C42, C43, C47	CAP 680PF 100V 5% D.M.	1000026	2
				1
1		ETCH CIRCUIT BOARD	5009984	1

IC TYPE	GND	+5V
DEC 74157	8	16
DEC 74123	8	16
DEC 8251	8	16
DEC 8640	1	8

IC PIN LOCATIONS



APPROVED: J. ROGERS  
 M7235-0000 H  
 J. ROGERS  
 M7235-0000 F  
 J. ROGERS  
 M7235-0000 E  
 J. SOEIN  
 M7235-0000 D  
 J. ROGERS  
 M7235-0000 C  
 J. ROGERS  
 M7235-0000 B  
 J. ROGERS  
 M7235-0000 A

FIRST USED ON OPTION MODEL PDP 11

ETCH BOARD REV E

DATE 7-25-72  
 DRAWN J. ROGERS  
 CHECKED J. ROGERS  
 TITLE STATUS

EQUIPMENT CORPORATION  
 MILFORD, MASSACHUSETTS

SCALE NONE  
 SHEET 1 OF 8

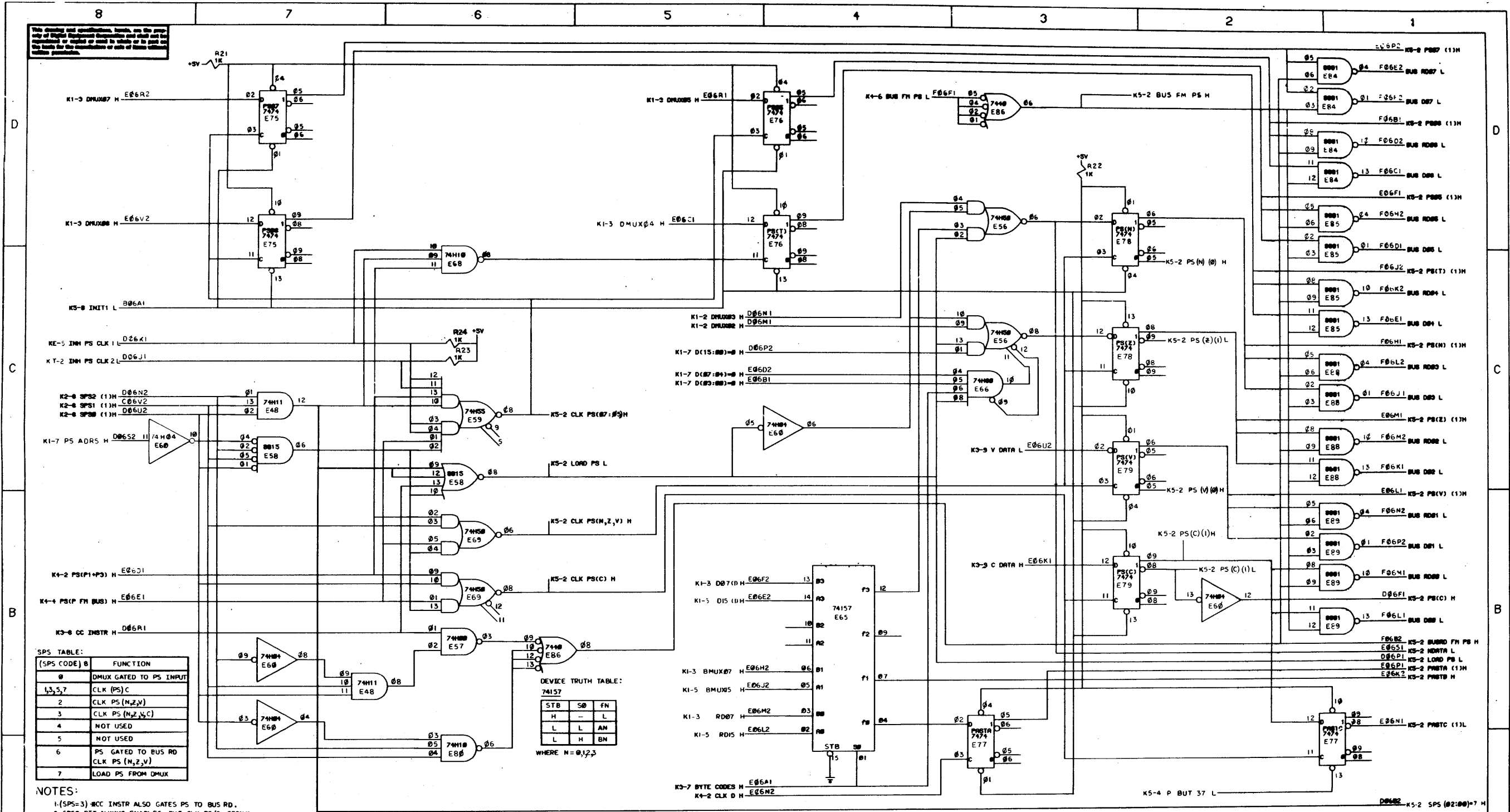
SEMICONDUCTOR CONVERSION CHART

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

D664 IN3606  
 K011-A

SIZE CODE NUMBER REV.  
 DCS M7235-0-1 H

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SPS TABLE:

(SPS CODE) B	FUNCTION
0	DMUX GATED TO PS INPUT
1,3,5,7	CLK (PS) C
2	CLK PS (N <sub>2</sub> ,V)
3	CLK PS (N <sub>2</sub> ,V,C)
4	NOT USED
5	NOT USED
6	PS GATED TO BUS RD CLK PS (N <sub>2</sub> ,V)
7	LOAD PS FROM DMUX

DEVICE TRUTH TABLE:  
74157

STB	SB	FN
H	-	L
L	L	AN
L	H	BN

WHERE N = 0,1,2,3

NOTES:  
1. (SPS=3) #CC INSTR ALSO GATES PS TO BUS RD.  
2. SPS# BIT ALWAYS ENABLES THE CLK PS(C) SIGNAL.  
3. SPS1 BIT ALWAYS ENABLES THE CLK PS(N<sub>2</sub>,V) SIGNAL.

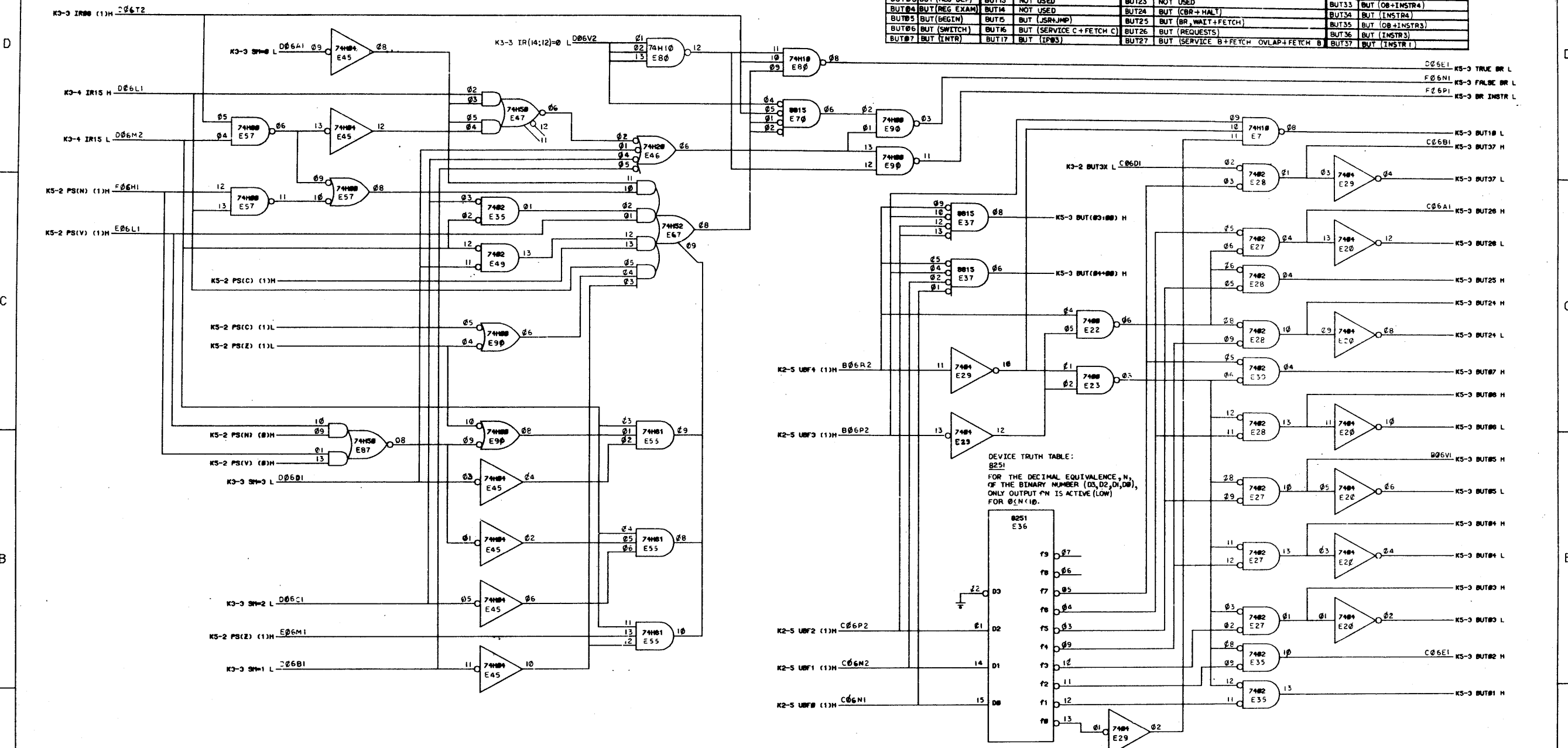
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES DIMENSIONAL FINISHES ±.005 ±.002 ±.001 ±.005 ±.002 ±.001 ±.005 ±.002 ±.001 ±.005 ±.002 ±.001	DATE 2-4-72 DRAWN CHECKED APPROVED DATE 7/26/72 DATE 7/27/72 DATE 7-7-72	EQUIPMENT CORPORATION MILWAUKEE, WISCONSIN 53201
TITLE PS (87-88) K5-2	STATUS PS (87-88) K5-2	REVISION M7235-8-1
DESIGNED BY FIRST USED ON SCALE SHEET 2 OF 8	DATE DRAWN CHECKED APPROVED	DATE DRAWN CHECKED APPROVED



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BUT TABLE (NUMERICAL & MNEMONIC CORRESPONDENCE):

BUT00	NO OP	BUT10	BUT (HALT)	BUT20	BUT (BYTE+SERVICE+FETCH)	BUT30	BUT (VARIOUS SWITCHES)
BUT01	BUT (CBR)	BUT11	BUT (MM FAULT)	BUT21	BUT (IR03, BYTE+SOURCE)	BUT31	BUT (NOWR+BYTEWR+WORDWR)
BUT02	BUT (CRR2)	BUT12	BUT (D=0)	BUT22	BUT (BYTE+SOURCE)	BUT32	NOT USED
BUT03	BUT (REG DEP)	BUT13	NOT USED	BUT23	NOT USED	BUT33	BUT (OB+INSTR4)
BUT04	BUT (REG EXAM)	BUT14	NOT USED	BUT24	BUT (CBR+HALT)	BUT34	BUT (INSTR4)
BUT05	BUT (BEGIN)	BUT15	BUT (JRN+JMP)	BUT25	BUT (BR, WAIT+FETCH)	BUT35	BUT (OB+INSTR3)
BUT06	BUT (SWITCH)	BUT16	BUT (SERVICE C+FETCH C)	BUT26	BUT (REQUESTS)	BUT36	BUT (INSTR3)
BUT07	BUT (INTR)	BUT17	BUT (IR03)	BUT27	BUT (SERVICE B+FETCH OVLAP+FETCH B)	BUT37	BUT (INSTR1)



DEVICE TRUTH TABLE:  
E251  
FOR THE DECIMAL EQUIVALENCE, N,  
OF THE BINARY NUMBER (D3,D2,D1,D0),  
ONLY OUTPUT 'N' IS ACTIVE (LOW)  
FOR 0 ≤ N < 16.

0251	E36
f9	07
f8	06
f7	05
f6	04
f5	03
f4	02
f3	01
f2	11
f1	12
f0	13
z2	03
e1	02
d1	01
c0	00

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS IN INCHES  
TOLERANCES  
FRACTIONS ANGLES  
±.005 ±.004 ±.007  
FURNISH TO QUALITY  
REQUIREMENTS AND OTHER SPECIFICATIONS  
AS SHOWN ON DRAWING

DATE 2-4-72  
DATE 3/3/72  
DATE 3/1/72  
DATE 3/1/72  
DATE 3/1/72  
DATE 3/1/72

STATUS  
BUT & BRANCH KS-3

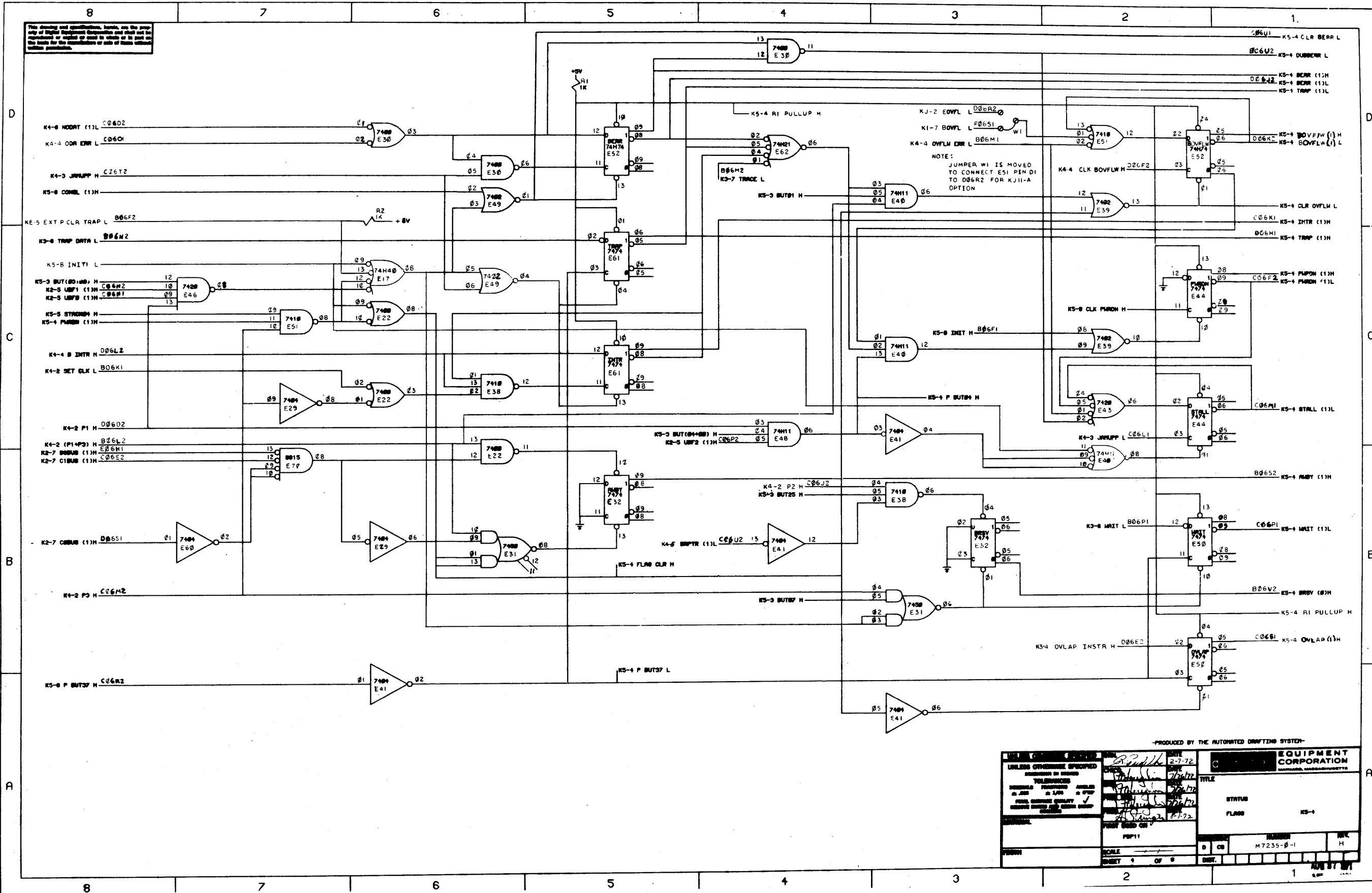
NUMBER  
M7235-0-1

REV.  
M

SCALE  
SHEET 3 OF 8

PRODUCED BY THE AUTOMATED DRAFTING SYSTEM

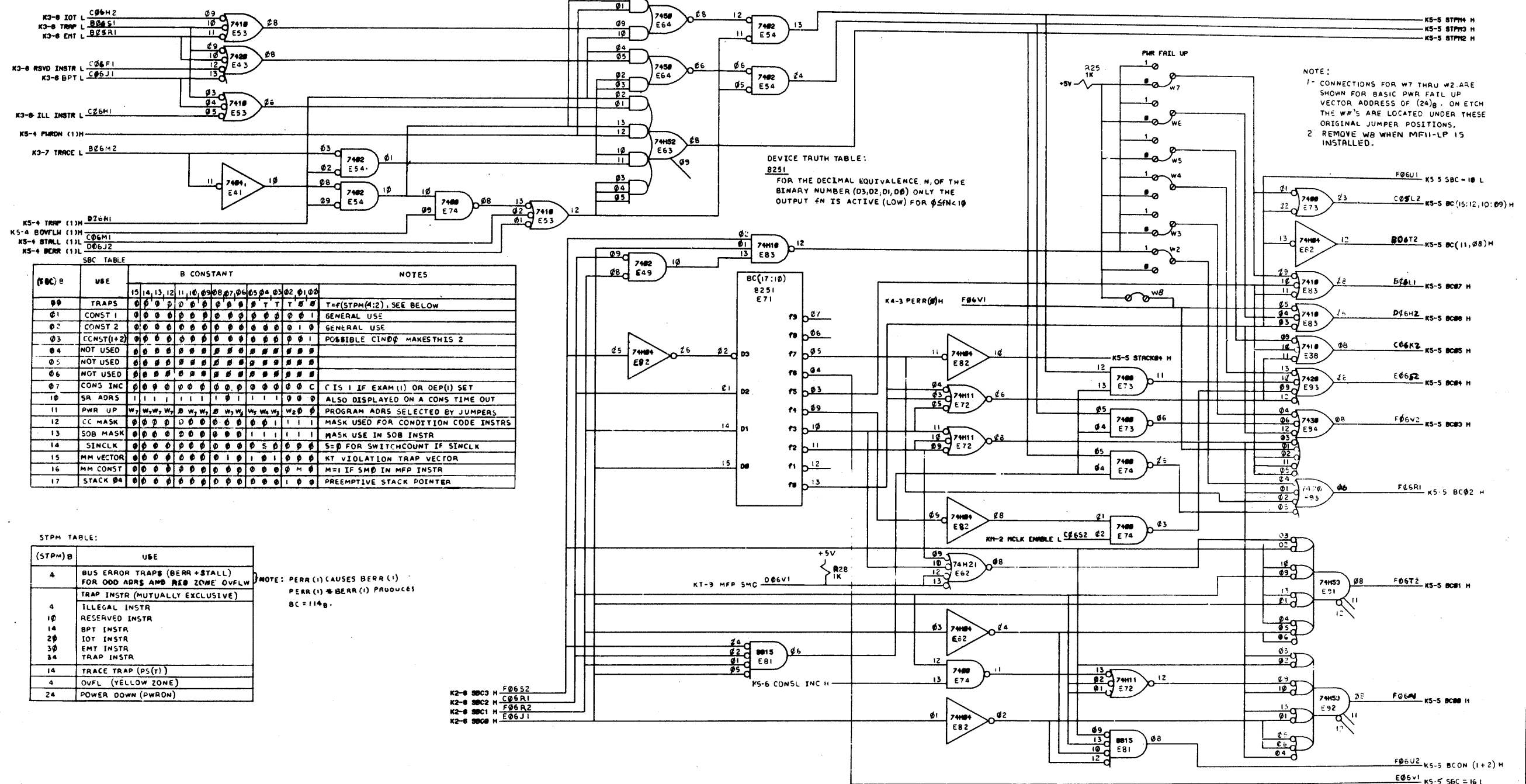
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PRODUCED BY THE AUTOMATED DRAFTING SYSTEM

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES .125 ± .002 .250 ± .002 .500 ± .002 1.000 ± .002 1.500 ± .002 2.000 ± .002 2.500 ± .002 3.000 ± .002 4.000 ± .002 5.000 ± .002 6.000 ± .002 8.000 ± .002 10.000 ± .002 12.000 ± .002 15.000 ± .002 20.000 ± .002 25.000 ± .002 30.000 ± .002 40.000 ± .002 50.000 ± .002 60.000 ± .002 70.000 ± .002 80.000 ± .002 90.000 ± .002 100.000 ± .002 125.000 ± .002 150.000 ± .002 200.000 ± .002 250.000 ± .002 300.000 ± .002 400.000 ± .002 500.000 ± .002 600.000 ± .002 700.000 ± .002 800.000 ± .002 900.000 ± .002 1000.000 ± .002	DATE 2-7-72 DRAWN BY P. J. H. CHECKED BY P. J. H. PROJECT PDP11 SCALE 1" = 1"	EQUIPMENT CORPORATION STATUS CLASS K5-4 NUMBER M7235-0-1 REV H
	SHEET 4 OF 8 DATE BY P. J. H.	PRODUCED BY THE AUTOMATED DRAFTING SYSTEM

Map of signal and control lines, based on the map of bus signals, are shown. The map is for the purpose of showing the location of signals and is not to be used for the identification of any of these signals.



DEVICE TRUTH TABLE:  
8251  
FOR THE DECIMAL EQUIVALENCE N, OF THE BINARY NUMBER (D3,D2,D1,D0) ONLY THE OUTPUT FN IS ACTIVE (LOW) FOR 0 ≤ FN < 10

SBC TABLE		B CONSTANT																NOTES
(SBC) B	USE	15	14	13	12	11	10	09	08	07	06	05	04	03	02	01	00	
00	TRAPS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	T=F(STPM(4:2), SEE BELOW)
01	CONST 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	GENERAL USE
02	CONST 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	GENERAL USE
03	CCNST(1+2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	POSSIBLE CIND0 MAKES THIS 2
04	NOT USED	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
05	NOT USED	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06	NOT USED	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07	CONS INC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C	C IS 1 IF EXAM(1) OR DEP(1) SET
10	SR ADAS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	ALSO DISPLAYED ON A CONS TIME OUT
11	PWR UP	W <sub>7</sub>	W <sub>6</sub>	W <sub>5</sub>	W <sub>4</sub>	W <sub>3</sub>	W <sub>2</sub>	W <sub>1</sub>	W <sub>0</sub>	W <sub>7</sub>	W <sub>6</sub>	W <sub>5</sub>	W <sub>4</sub>	W <sub>3</sub>	W <sub>2</sub>	0	0	PROGRAM ADRS SELECTED BY JUMPERS
12	CC MASK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	MASK USED FOR CONDITION CODE INSTRS
13	SOB MASK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	MASK USE IN SOB INSTR
14	SINCLK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	S=0 FOR SWITCHCOUNT IF SINCLK
15	MM VECTOR	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	KT VIOLATION TRAP VECTOR
16	MM CONST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	M	0	M=1 IF SMD IN MFP INSTR
17	STACK 04	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	PREEMPTIVE STACK POINTER

(STPM) B	USE
4	BUS ERROR TRAPS (BERR+STALL) FOR ODD ADRS AND RES ZONE OVFLW TRAP INSTR (MUTUALLY EXCLUSIVE)
4	ILLEGAL INSTR
10	RESERVED INSTR
14	BPT INSTR
20	IOT INSTR
30	EMT INSTR
34	TRAP INSTR
14	TRACE TRAP (PS(T))
4	OVFL (YELLOW ZONE)
24	POWER DOWN (PWRDN)

NOTE: PERR(1) CAUSES BERR(1) FOR ODD ADRS AND RES ZONE OVFLW. PERR(1) + BERR(1) PRODUCES BC=1140.

- K2-0 SBC3 H F0652
- K2-0 SBC2 H C06R1
- K2-0 SBC1 H F06R2
- K2-0 SBC0 H E06J1

NOTE:  
1- CONNECTIONS FOR W7 THRU W2 ARE SHOWN FOR BASIC PWR FAIL UP VECTOR ADDRESS OF (24)0. ON ETCH THE W'S ARE LOCATED UNDER THESE ORIGINAL JUMPER POSITIONS.  
2- REMOVE WB WHEN MFI1-LP IS INSTALLED.

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN DECIMALS TOLERANCES: DIMENSIONS IN PARENTHESIS ARE ±.1/20 ±.007

DATE: 2-7-72

TITLE: CONSTANTS K5-5

STATUS: H

NUMBER: M7235-0-1

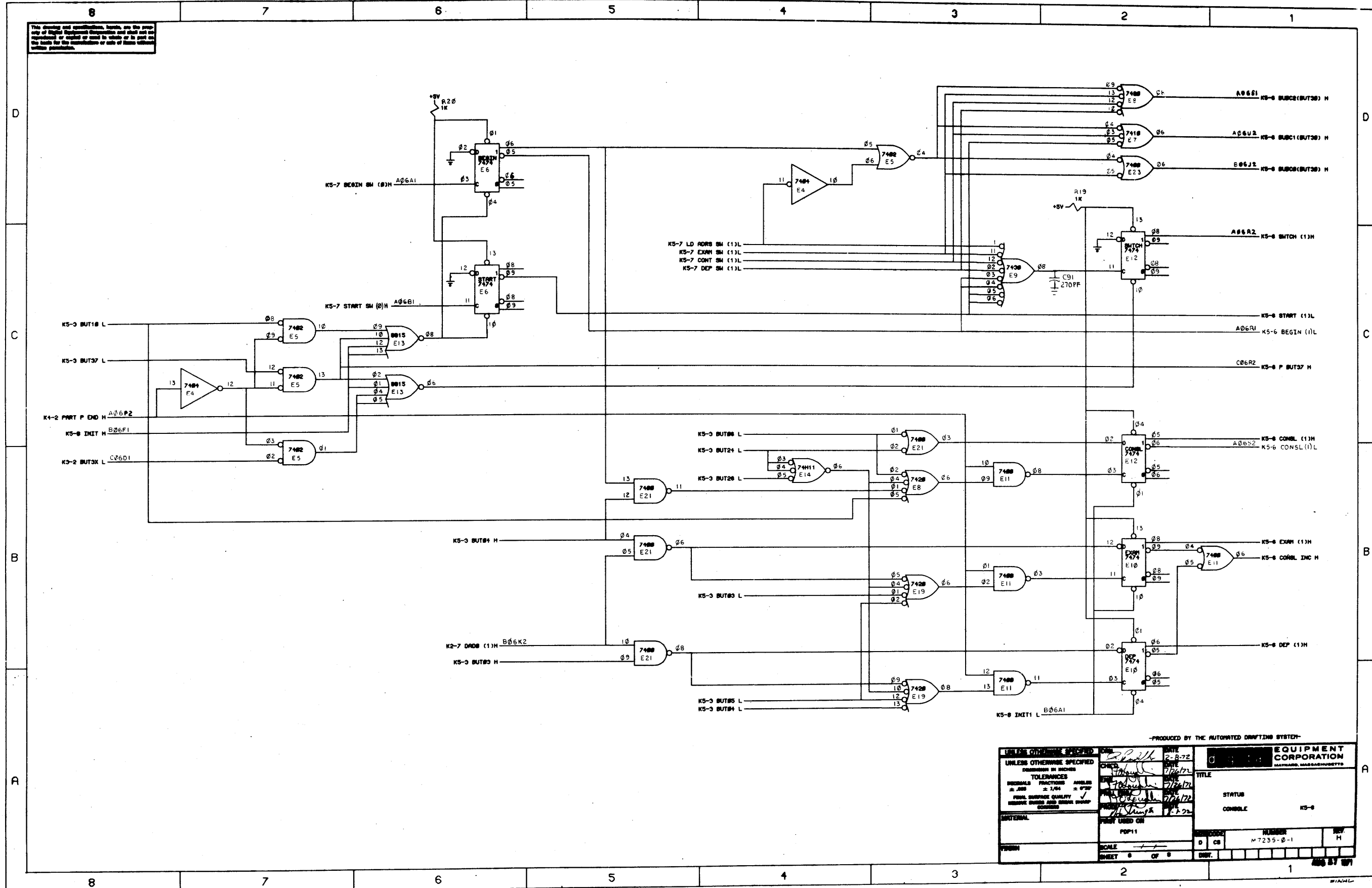
REV: H

SCALE: 1:1

SHEET 5 OF 8

AUG 27 1971

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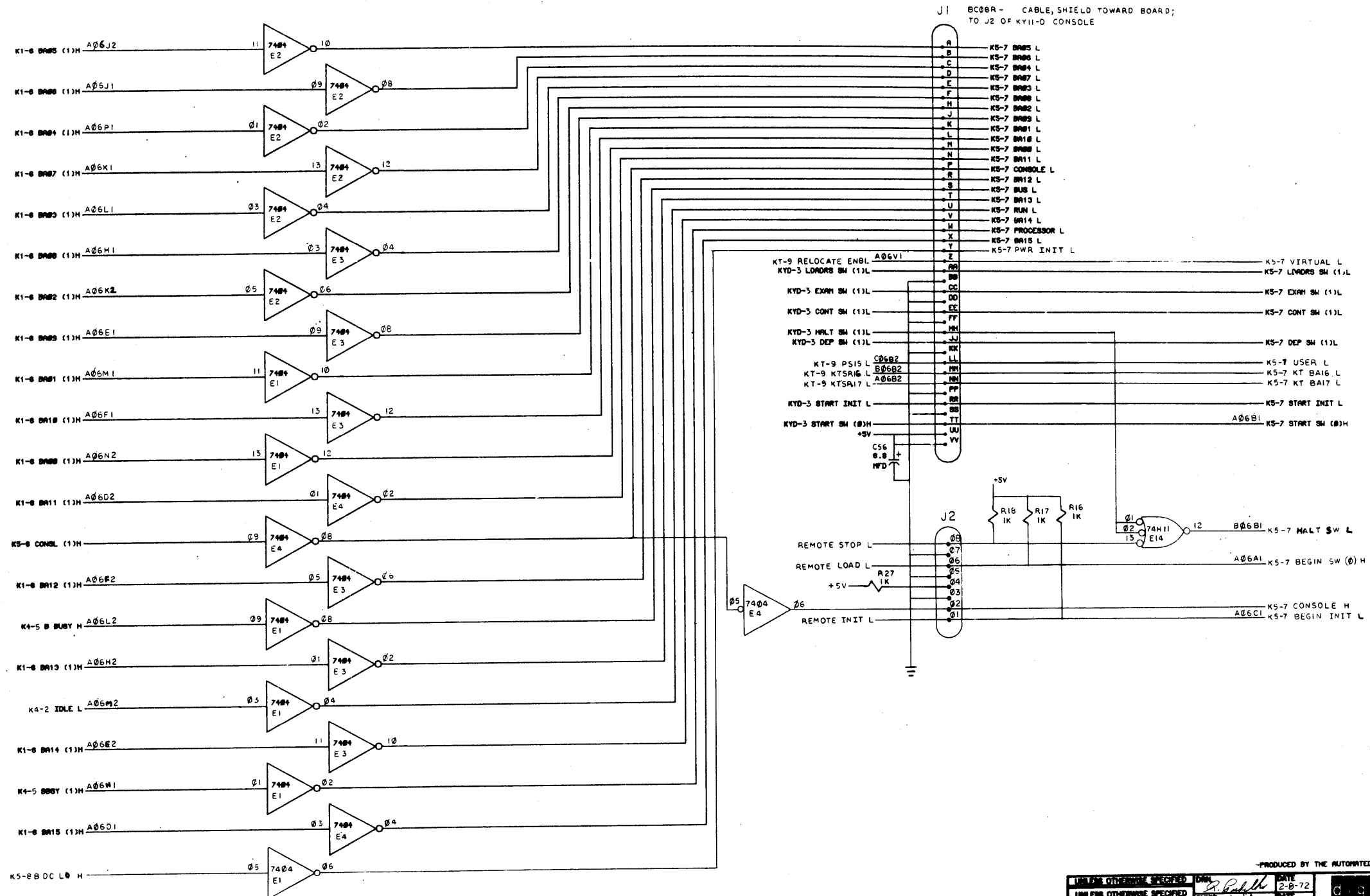


-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES		DATE 2-8-72		EQUIPMENT CORPORATION MAYFIELD, MASSACHUSETTS	
TOLERANCES DIMENSIONS ± .005 ANGLES ± .100 HOLE DIA ± .005 HOLE POSITION ± .010 HOLE DEPTH ± .010		CHECKED DATE 7/26/72		TITLE	
DRAWN DATE 7/26/72		APPROVED DATE 7/26/72		STATUS CONSULC	
MATERIAL		PART USED ON PDP-11		NUMBER M7235-0-1	
FORM		SCALE		REV H	
SHEET 8 OF 8		DWT.		REV. H	

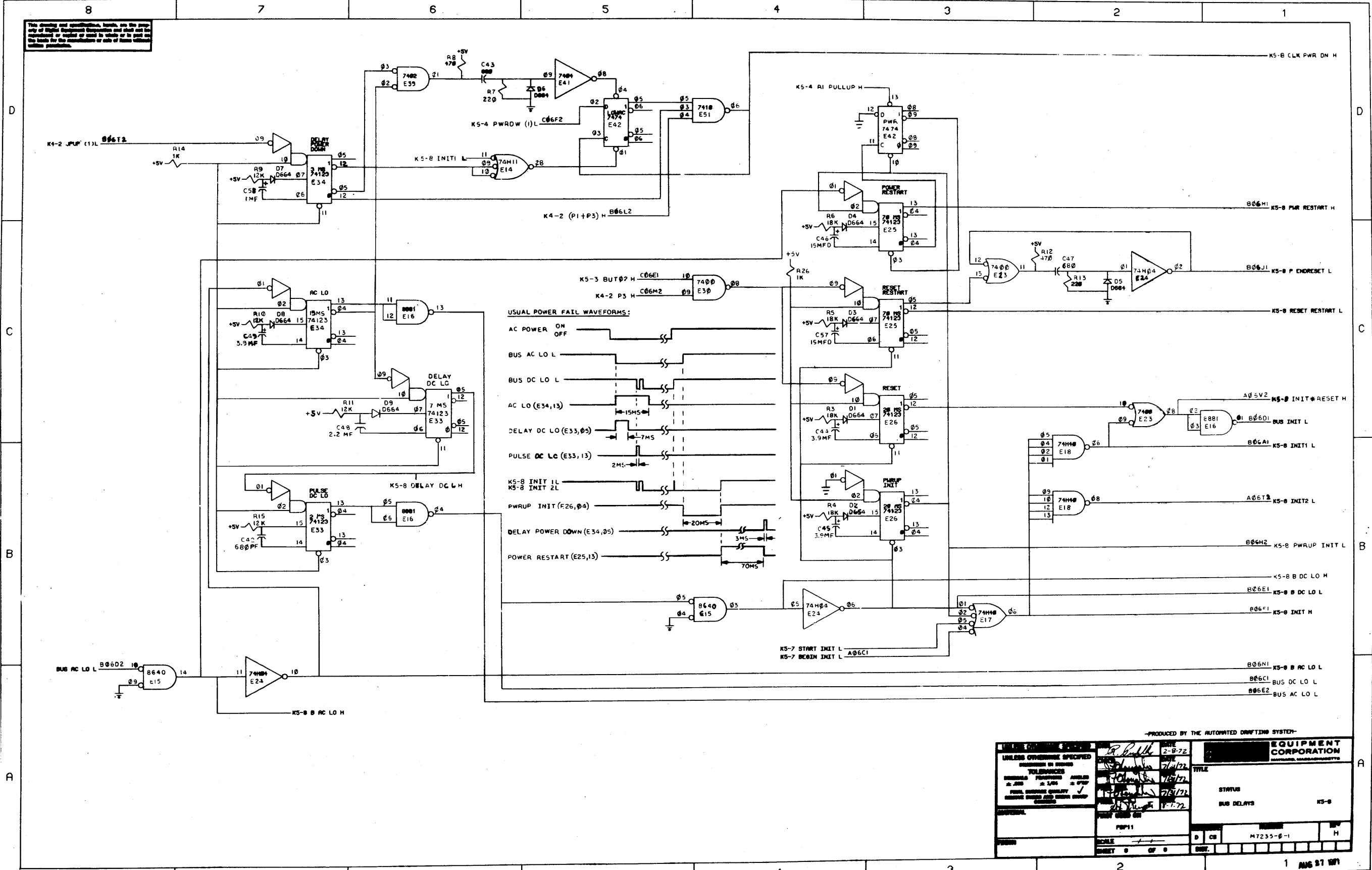
FINAL

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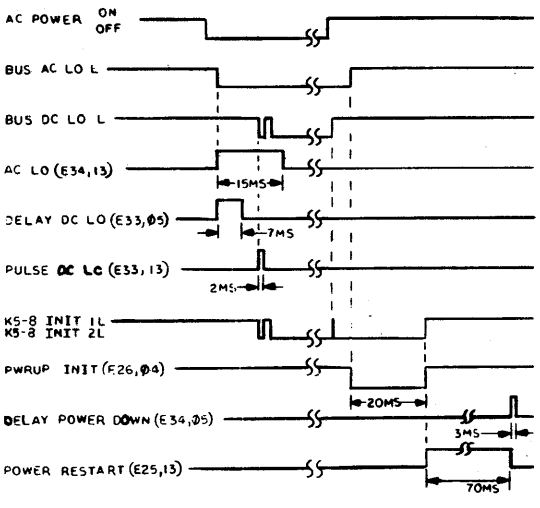
PRODUCED BY THE AUTOMATED DRAWING SYSTEM

UNLESS OTHERWISE SPECIFIED		DATE	EQUIPMENT CORPORATION	
UNLESS OTHERWISE SPECIFIED		2-8-72	MAYFORD, MASSACHUSETTS	
DIMENSIONS IN INCHES		DATE	TITLE	
TOLERANCES		7/26/72	CABLES	
DECIMALS FRACTIONS ANGLES		7/26/72	STATUS	
± .010 ± .004 ± .001		7/26/72	K5-7	
FINISH SURFACE QUALITY		7/26/72	REV.	
RESISTIVE SURFACES AND DRILL SWAMP		7-7-72	H	
MATERIAL		FIRST LISTED ON	SCALE	
PUSH		PDP11	D CB	
SHEET 7 OF 8		NUMBER	M7235-0-1	
		DIST.		



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USUAL POWER FAIL WAVEFORMS:

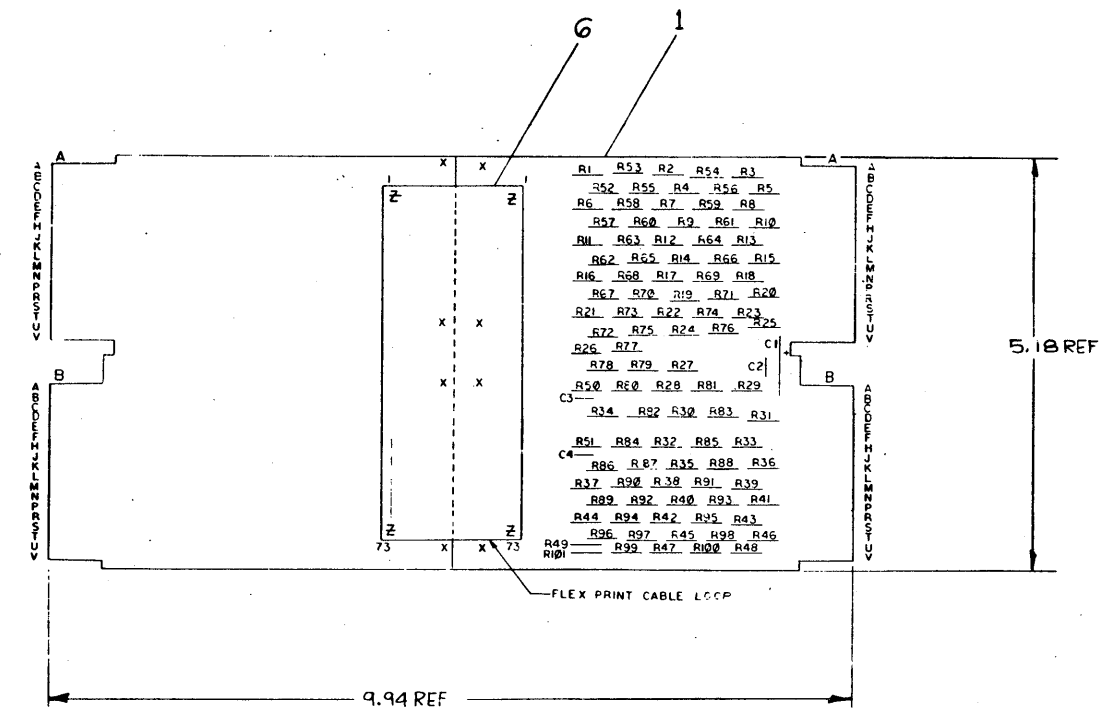


-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED	DATE: 2-8-72	EQUIPMENT CORPORATION	
DRAWING IN INCHES	DATE: 7/2/72	MILWAUKEE, WISCONSIN 53211	
TOLERANCES	DATE: 7/2/72	TITLE	
FRACTIONS ± .005	DATE: 7/2/72	STATUS	
DECIMALS ± .001	DATE: 7/2/72	BUS DELAYS	
ANGLES ± 1/32	DATE: 7/2/72	K5-8	
FULL DIMENSION QUALITY	DATE: 1-7-72	DRAWN BY	
REMOVE DIMENSIONS AND OTHER DATA	DATE:	CHECKED BY	
APPROVAL:	DATE:	SCALE	
DESIGNED BY	DATE:	SHEET 0 OF 0	
DRAWN BY	DATE:	M7235-0-1	
CHECKED BY	DATE:	H	
DATE:	DATE:	1 AUG 31 1971	

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- NOTES:**
1. CONNECTOR MODULE, M981 INTERCONNECTS THE KD11-A PROCESSOR WITH A NEXT UNIBUS DEVICE. RESISTIVE TERMINATION OF THE UNIBUS IS ALSO PROVIDED.
  2. COMPONENTS ARE LOCATED IN AND POWERED FROM THAT PORTION OF THE MODULE IN THE NEXT DEVICE. GROUND IS CONNECTED BETWEEN THE KD11-A AND THE NEXT DEVICE.
  3. SIGNALS ON THE LEFT OF THE CONNECTORS ONLY OUTPUT FROM THE KD11-A. SIGNALS TO THE RIGHT OF THE CONNECTORS ARE RECEIVED AND TRANSMITTED FROM THE KD11-A.



IC TYPE	GND	+5V

IC PIN LOCATIONS

DEC FORM NO. DRP-135A

AR	REF DESIGNATION	DESCRIPTION	PART NO.	QTY	ITEM NO.
50	R52 THRU R101	RES. 178 1/4W. 1%	1311422	1	5
51	R1 THRU R51	RES. 383 1/4W 1%	1305125	1	4
1	C1	CAP. 39 MFD 10V 10%	1000076	1	3
3	C2, C3, C4	CAP. 1000 MMF 1000V 20%	1000043	3	2
1		ETCHED CIRCUIT BOARD	5009763	1	1

FIRST USED OR OPTION MODEL: KD11-A

ETCH BOARD REV: F		DATE: 2/13/72	
DATE: 2/13/72		DATE: 2/13/72	
DATE: 2/13/72		DATE: 2/13/72	
DATE: 2/13/72		DATE: 2/13/72	

NEXT HIGHER ASSY: D-UA-M981-C-0

SCALE: SHEET 1 OF 2

SEMICONDUCTOR CONVERSION CHART

REV	DATE	DESCRIPTION	BY	CHK
1	2/13/72	ORIGINAL	J. BUNYNSKI	
2	2/13/72	REVISIONS	J. BUNYNSKI	
3	2/13/72	REVISIONS	J. BUNYNSKI	
4	2/13/72	REVISIONS	J. BUNYNSKI	
5	2/13/72	REVISIONS	J. BUNYNSKI	
6	2/13/72	REVISIONS	J. BUNYNSKI	
7	2/13/72	REVISIONS	J. BUNYNSKI	
8	2/13/72	REVISIONS	J. BUNYNSKI	

**digital** EQUIPMENT CORPORATION  
MAYFIELD MASSACHUSETTS

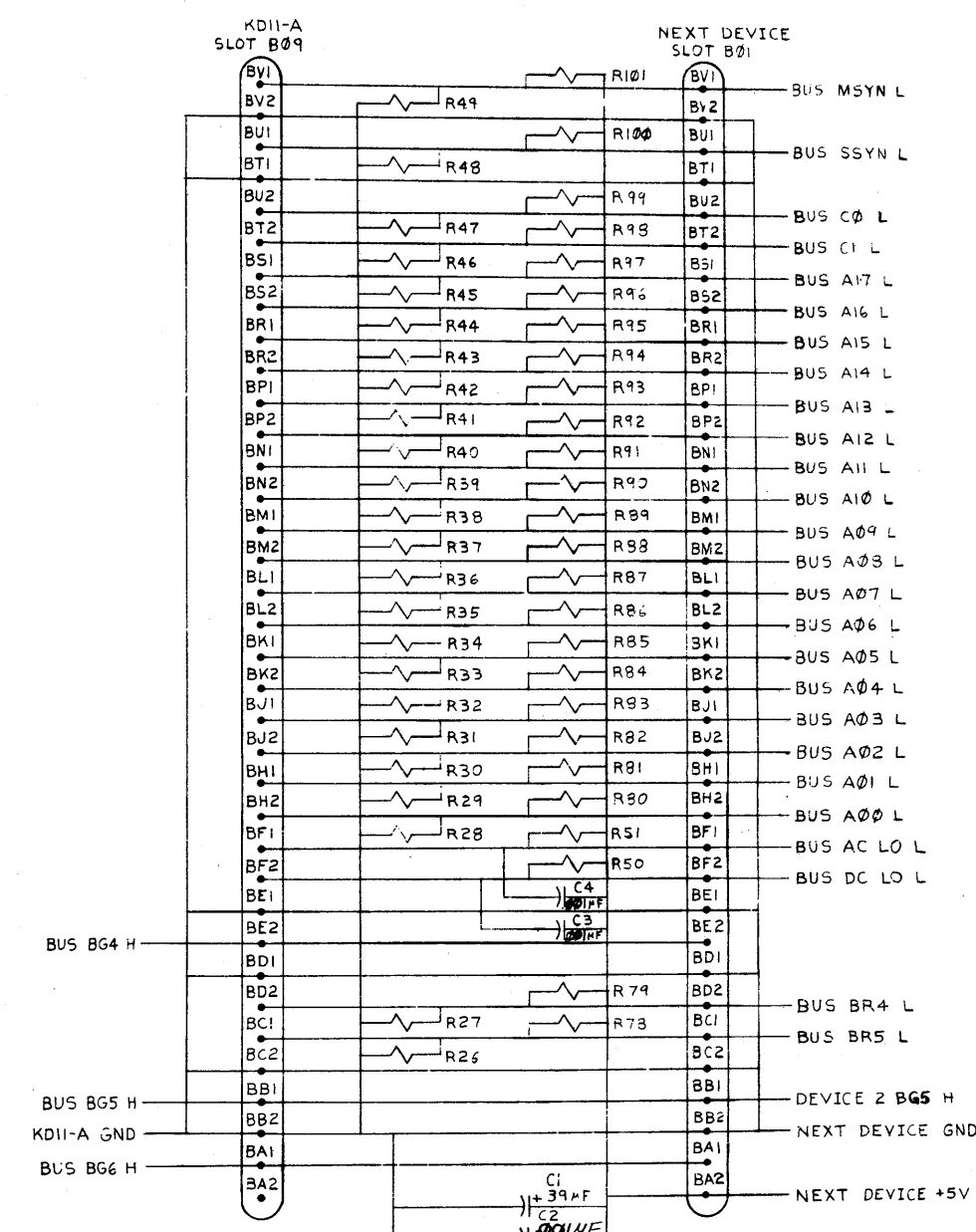
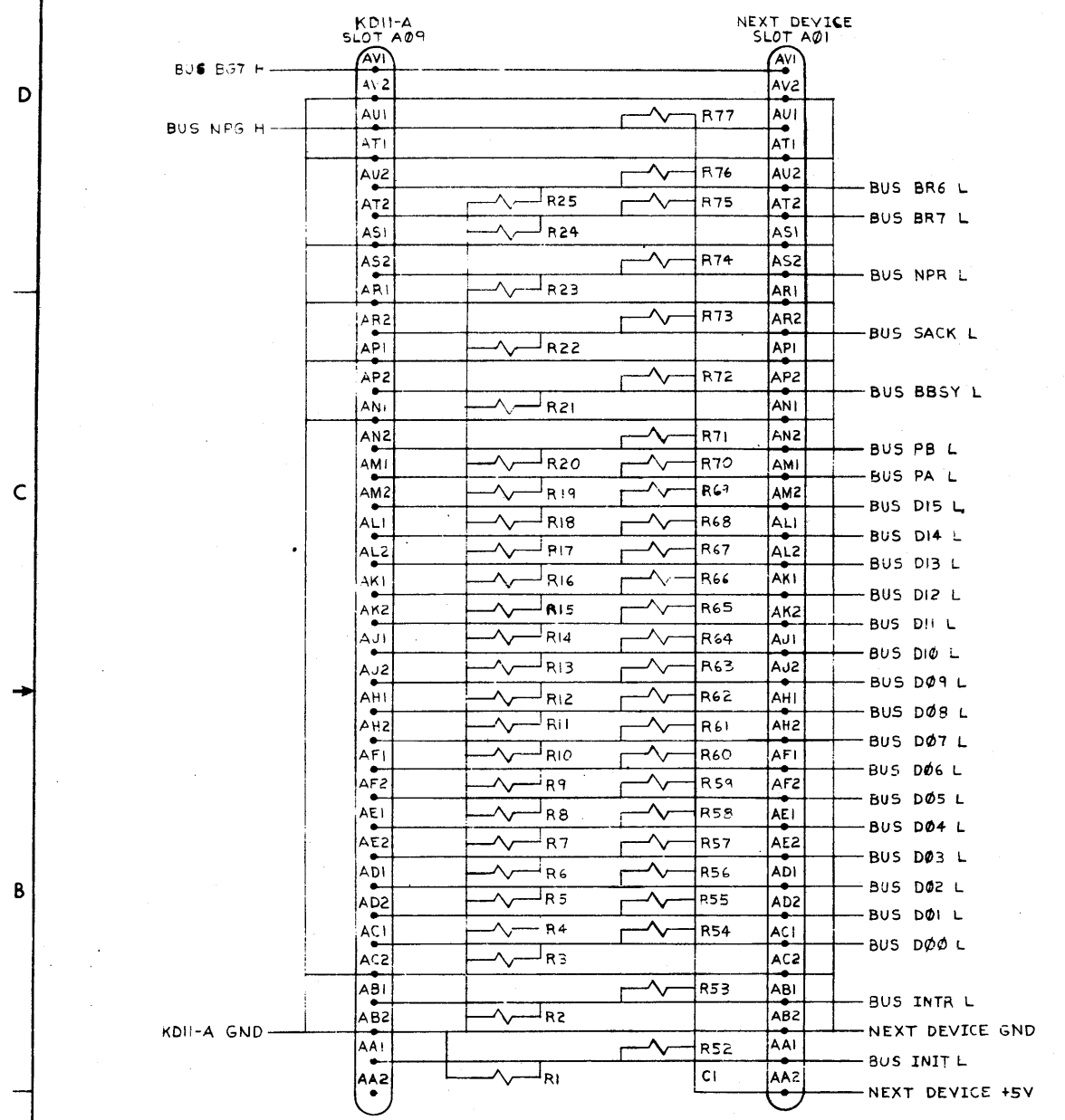
TITLE: INTERNAL UNIBUS AND TERMINATOR

DATE CODE: DICS 5409764-0-1

REVISION: J

DIGITAL EQUIPMENT CORPORATION  
5409764-0-1 J

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NOTE:  
RESISTOR VALUES ARE:  
R1 THRU R51 ARE 383Ω  
R52 THRU R101 ARE 178Ω

REV. NO. 1  
CHK. CHANGE NO.  
REVISIONS  
DEC FORM NO. DRD 102-B

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
KD11-A				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DATE 6-15-72	<b>digital</b> EQUIPMENT CORPORATION MAYFIELD MASSACHUSETTS		
DECIMALS .XXX - .005 .XX - .02 .X - .1	DATE 7/14/72			
ANGLES ±0° 30'	DATE 7/14/72	TITLE <b>INTERNAL UNIBUS AND TERMINATOR</b>		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE 7/14/72			
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
FINISH	SCALE NONE	D-UA-M981-0-0	DICS 5409764-0-1	J
	SHEET 2 OF 2	DIST.		

DRAWING NUMBER 5409764-0-1 J






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WIRE LIST CHARACTERISTICS:

1. SIGNAL NAMES ARE LISTED WITHOUT THEIR PRINT SOURCE PREFIX. THIS AIDS ALPHABETICAL SEARCHES.
2. THE PRINT OR PRINTS UPON WHICH A GIVEN PIN ENTRY APPEARS IS NOTED IN THE "DRAW" COLUMN. MULTIPLE SHEET ENTRIES ARE NOTED WITHOUT COMMA'S WITH THE PRINT DESIGNATORS. FOR EXAMPLE "K4-235", INDICATES ENTRIES ON SHEETS 2, 3 and 5 IN THE K4 MODULE PRINTS, NO PRINT SETS HAVE MORE THAN NINE PAGES.
3. THE PRINT PREFIX AND THE ORIGIN OF THE SIGNAL CAN BE DETERMINED BY THE SOURCE NOTATION IN THE "REMARK" COLUMN. THIS SOURCE ENTRY, PRINT PREFIX IS USED BEFORE THE SIGNAL NAME ON ALL DRAWINGS. MULTIPLE SHEET ENTRIES HAVE THE SPECIFIC PRINT NOTED.
4. BUS SIGNALS WHICH OFTEN HAVE MULTIPLE (WIRED OR) SOURCES DO NOT HAVE PRINT PREFIXES. THE USE OF "BUS" IN THE NAME IDENTIFIES THESE SIGNALS, SIGNALS FOR +5V AND GND ALSO HAVE NO PRINT PREFIX.
5. THE WIRE LIST CONTAINS ETCH BACKPANEL CONNECTIONS AS WELL AS WIRE WRAP CONNECTIONS. ETCH IS IDENTIFIED BY AN "H" IN THE "Q" COLUMN AND A "P" IN THE "REMARK" COLUMN. "EXCEPTION" COLUMN NOTATIONS FOR ETCH CONNECTIONS SHOULD BE IGNORED. THE WIRE LIST ALSO CONTAINS TWISTED PAIR CONNECTIONS WHICH ARE IDENTIFIED BY AN "H" IN THE "Q" COLUMN AND "TWP" IN THE "REMARKS" COLUMN.

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 11				
PARTS LIST				
DRN: 70/...	DATE: 7/31/72	 <b>EQUIPMENT CORPORATION</b> MAYNARD, MASSACHUSETTS  <b>BACK PLANE</b> (KDII-A PROCESSOR)		
CHK'D: 70/...	DATE: 7/31/72			
ENG: 70/...	DATE: 7/31/72			
PROJ. ENG: 70/...	DATE: 7/31/72			
PRD. 70/...	DATE: 2-2-72			
NEXT HIGHER ASSEMBLY				
D-AD-7010230-0-0		SIZE CODE	NUMBER	REV.
SCALE		K WL	KDII-A-WL	N
SHEET 1 OF 1		DIST.		

REVISIONS		CHANGE NO.	REV.
CHK	KP	KDIIA-00013	L
	KT	KDIIA-00014	M
	...	KDIIA-00015	N

RD11A,N RUN NAME	WRAPD .V35(102)=1 A/P PIN ORDER PYN	03-JUN-77 BAY - G DRAW OPT	27-OCT-77 REMARKS	161:17 PAGE 1 NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
(P1+P3)	H R0612	1-01 *		N 6-1/8	1
(P1+P3)	H D0801	1-02 *		N 3-1/8	1
(P1+P3)	H E07J2	1-03 *	SOURCE (K4-2)	9-2/8	1
+15V	C09U1	P		1-PIN RUN	2
+5V	A01A2	1-01 *		1	3
+5V	A02A2	1-02 *		1	3
+5V	A03A2	1-03 *		1	3
+5V	A04A2	1-04 *		1	3
+5V	A05A2	1-05 *		1	3
+5V	A06A2	1-06 *		1	3
+5V	A07A2	1-07 *		1	3
+5V	A08A2	1-08 *		1	3
+5V	A09A2	1-09 *		3-2/8	3
+5V	B09A2	1-10 *		1	3
+5V	B08A2	1-11 *		1	3
+5V	B07A2	1-12 *		1	3
+5V	B06A2	1-13 *		1	3
+5V	B05A2	1-14 *		1	3
+5V	B04A2	1-15 *		1	3
+5V	B03A2	1-16 *		1	3
+5V	B02A2	1-17 *		1	3
+5V	B01A2	1-18 *		1	3
+5V	C01A2	1-19 *		1	3
+5V	C02A2	1-20 *		1	3
+5V	B03V1	1-21 *		0-5/8	3
+5V	C03A2	1-22 *		0-5/8	3
+5V	C04A2	1-23 *		1	3
+5V	C05A2	1-24 *		1	3
+5V	C06A2	1-25 *		1	3
+5V	C07A2	1-26 *		1	3
+5V	C08A2	1-27 *		1	3
+5V	C09A2	1-28 *		3-2/8	3
+5V	D09A2	1-29 *		1	3
+5V	D08A2	1-30 *		1	3
+5V	D07A2	1-31 *		1	3
+5V	D06A2	1-32 *		1	3
+5V	D05A2	1-33 *		1	3
+5V	D04A2	1-34 *		1	3
+5V	D03A2	1-35 *		1	3
+5V	D02A2	1-36 *		1	3
+5V	D01A2	1-37 *		1	3
+5V	C03V1	1-38 *		1-5/8	3
+5V	D03V1	1-39 *		3-2/8	3
+5V	E02A2	1-40 *		0-5/8	3
+5V	E01R1	1-41 *		1-1/8	3
+5V	E01A2	1-42 *		0-1/8	3
+5V	E03A2	1-43 *		1-4/8	3
+5V	E04A2	1-44 *		1	3
+5V	E05A2	1-45 *		1	3
+5V	E06A2	1-46 *		1	3
+5V	E07A2	1-47 *		1	3
+5V	E08A2	1-48 *		1	3
+5V	E09A2	1-49 *		3-2/8	3

KT11A.N RUN NAME	WRAPD .V35(102)=1 A/P PIN ORDER PIN	03-JUN-77 RAY - Q DRAW RV RG Y X Z	27-Oct-77	PAGE 2 16117 NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
+5V	F09A2	1-50 * P		1	3
+5V	F08A2	1-51 * P		1	3
+5V	F07A2	1-52 * P		1	3
+5V	F06A2	1-53 * P		1	3
+5V	F05A2	1-54 * P		1	3
+5V	F04A2	1-55 * P		1	3
+5V	F03A2	1-56 * P		1	3
+5V	F02A2	1-57 * P		0-1/8	3
+5V	F01A2	1-58 * P		67-3/8	3
+5V	F01R1	1-59 *			3
-15V	C09R2	1-01 * P		3-2/8	4
-15V	D09B2	1-02 * P		3	4
-15V	F09R2	1-03 * P		3-2/8	4
-15V	F09B2	1-04 *		9-4/8	4
-15V					4
A INTR DONE	F09L2	1-01 *	DD	N 1	5
A INTR DONE	F09R1	1-02 *	DD	1-0/8	5
A INTR DONE					5
A MASTER	F09D2	1-01 *	DD	N 1-6/8	6
A MASTER	F09R2	1-02 *	DD	N 0-4/8	6
A MASTER	F09N1	1-03 *	DD	2-2/8	6
A MASTER					6
ADRS (777774)	B07A1	1-01 *	K4-6	N 12-1/8	7
ADRS (777774)	B03U1	1-02 *	KJ-2	12-1/8	7
ADRS (777774)					7
ALU00	C02P2	1-01 *	KE-26	N 8-1/8	8
ALU00	F04F1	1-02 *	K1-2	8-1/8	8
ALU00					8
ALU07	B04J1	1-01 *	K1-3	1-PIN RUN	9
ALU15	B04J2	1-02 *	K1-5	1-PIN RUN	10
ALU04	A05H1	1-01 *	K3-8	N 4-1/8	11
ALU04	B04P2	1-02 *	K1-2345	4-1/8	11
ALU04					11
ALU08	A05M1	1-01 *	K3-8	N 3-3/8	12
ALU08	B04K1	1-02 *	K1-2345	3-3/8	12
ALU08					12
ALU01	A05K1	1-01 *	K3-8	N 4-3/8	13
ALU01	B04S1	1-02 *	K1-2345	4-3/8	13
ALU01					13
ALU02	A05J1	1-01 *	K3-8	N 3-5/8	14
ALU02	B04J1	1-02 *	K1-2345	3-5/8	14
ALU02					14
KT11A.N	WRAPD .V35(102)=1	03-JUN-77	27-Oct-77	PAGE 3 16117 NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
B ALU03	A05L1	1-01 *	K3-8	N 3-3/8	15
B ALU03	B04H1	1-02 *	K1-2345	3-3/8	15
B ALU03					15
B ARG4 (1)	A01K1	1-01 *	KE-4	N 9-1/8	16
B ARG4 (1)	D02L1	1-02 *	KE-9	9-1/8	16
B ARG4 (1)					16
B ASH	A02P2	1-01 *	KE-4	1-PIN RUN	17
B ASHC	A02P2	1-02 *	KE-24	1-PIN RUN	18
B AWY (1)	B06S2	1-01 *	K5-4	N 5-5/8	19
B AWY (1)	D07L2	1-02 *	K4-25	5-5/8	19
B AWY (1)					19
B AC LO	B06N1	1-01 *	K5-8	N 1-1/8	20
B AC LO	B07P2	1-02 *	K4-5	N 10-7/8	20
B AC LO	F07M1	1-03 *	K4-3	12-0/8	20
B AC LO					20
B BPSY	A06L2	1-01 *	K5-7	N 4-3/8	21
B BPSY	B07U2	1-02 *	K4-5	4-3/8	21
B BPSY					21
B DC LO	B06E1	1-01 *	K5-8	N 9-7/8	22
B DC LO	E07R1	1-02 *	K4-2	9-7/8	22
B DC LO					22
B EUPP8A	C02R2	1-01 *	KE-4	1-PIN RUN	23
B EUPP8B	D02D2	1-01 *	KE-4	N 3-5/8	24
B EUPP8B	C01H1	1-02 *	KE-4	3-5/8	24
B EUPP8B					24
B INIT	C08T2	1-01 *	K1-2	N 1-5/8	25
B INIT	C07M1	1-02 *	K4-6	N 7-3/8	25
B INIT	E03L1	1-03 *	KJ-2	9-0/8	25
B INIT					25
B INTF	D06L2	1-01 *	K5-4	N 2-1/8	26
B INTR	E07C1	1-02 *	K4-24	N 4-3/8	26
B INTR	F05H2	1-03 *	K3-2	6-4/8	26
B INTP					26
B INTP DONE	F09M2	1-01 *	DD	N 1	27
B INTR DONE	F09S1	1-02 *	DD	1-0/8	27
B INTR DONE					27
B MASTER	F09P2	1-01 *	DD	N 0-4/8	28
B MASTER	F09S2	1-02 *	DD	0-4/8	28
B MASTER					28
B MSYN	B07B1	1-01 *	K4-4	N 12-5/8	29
B MSYN	F01E1	1-02 *	KN-2	12-5/8	29
B MSYN					29



KD11A,N WRAPD .V35(102)=1 03-JUN-77

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NC LENGTH EXCEPTIONS  
FLAG

RUN NAME	A/P	PIN NAME	ORDER	PIN	BAY	Q	DRAW	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BA15 (1)	H	A04K2	1-01 *				K1-67					2	SOURCE (K1=6)	N	1-5/8	54
BA15 (1)	H	A06D1	1-02 *				K5-7					1		N	6-7/8	54
BA15 (1)	H	C08D2	1-03 *				K1-85					2		N	8-3/8	54
BA15 (1)	H	E03E2	1-04 *				KJ-2					1			16-7/8	54
BA15 (1)	H											1				
BRSY (1)	H	A06N1	1-01 *				K5-7					1	SOURCE (K4=5)	N	1-1/8	55
BRSY (1)	H	A07M2	1-02 *				K4-245					1			1-1/8	55
BRSY (1)	H											1				
BC(11,98)	H	C04M1	1-01 *				K1-4					1	SOURCE	N	7-5/8	56
BC(11,98)	H	E06T2	1-02 *				K5-5					1			7-5/8	56
BC(11,98)	H											1				56
BC(15:12,10109)	H	A04U2	1-01 *				K1-45					1	SOURCE	N	5-7/8	57
BC(15:12,10109)	H	C06L2	1-02 *				K5-5					1			5-7/8	57
BC(15:12,10109)	H											1				57
BC00	H	E04R2	1-01 *				K1-2					1	SOURCE	N	3-5/8	58
BC00	H	F06A1	1-02 *				K5-5					1			3-5/8	58
BC00	H											1				58
BC00 (0)	H	B07E2	1-01 *				K4-4					1	SOURCE	N	1-5/8	59
BC00 (0)	H	B08N1	1-02 *				K1-36					1			1-5/8	59
BC00 (0)	H											1				59
BC01	H	E04L2	1-01 *				K1-2					1	SOURCE	N	4-7/8	60
BC01	H	F06T2	1-02 *				K5-5					1			4-7/8	60
BC01	H											1				60
BC01 (0)	H	A07J1	1-01 *				K4-4					2	SOURCE	N	4-5/8	61
BC01 (0)	H	B08P2	1-02 *				K1-36					1			11-1/8	61
BC01 (0)	H	E03V2	1-03 *				KJ-2					1			15-6/8	61
BC01 (0)	H											1				61
BC02	H	E04R2	1-01 *				K1-2					1	SOURCE	N	3-7/8	62
BC02	H	F06R1	1-02 *				K5-5					1			3-7/8	62
BC02	H											1				62
BC03	H	E04N2	1-01 *				K1-2					1	SOURCE	N	4-7/8	63
BC03	H	F06V2	1-02 *				K5-5					1			4-7/8	63
BC03	H											1				63
BC04	H	E04A1	1-01 *				K1-3					1	SOURCE	N	2-7/8	64
BC04	H	F06S2	1-02 *				K5-5					1			2-7/8	64
BC04	H											1				64
BC05	H	C06K2	1-01 *				K5-5					1	SOURCE	N	4-5/8	65
BC05	H	D04P2	1-02 *				K1-3					1			4-5/8	65
BC05	H											1				65
BC06	H	D04V1	1-01 *				K1-3					1	SOURCE	N	2-2/8	66
BC06	H	D06H2	1-02 *				K5-5					1			2-2/8	66
BC06	H											1				66

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NC LENGTH EXCEPTIONS  
FLAG

RUN NAME	A/P	PIN NAME	ORDER	PIN	BAY	Q	DRAW	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BC07	H	B06L1	1-01 *				K5-5					1	SOURCE	N	6-7/8	67
BC07	H	D04N1	1-02 *				K1-3					1			6-7/8	67
BC07	H											1				67
BC04 (1+2)	H	A05P2	1-01 *				K3-8					1	SOURCE	N	14-5/8	68
BC04 (1+2)	H	F06U2	1-02 *				K5-5					1			14-5/8	68
BC04 (1+2)	H											1				68
BEGIN (1)	L	A07U2	1-01 *				K4-6					2	SOURCE	N	1-2/8	69
BEGIN (1)	L	A06R1	1-02 *				K5-6					1			13-3/8	69
BEGIN (1)	L	F05K2	1-03 *				K3-2					1				69
BEGIN (1)	L											1				69
BEGIN INIT	L	A06C1					K5-7					1	SOURCE		1-PIN RUN	70
BEGIN SW (0)	H	A06A1					K5-7					1	SOURCE		1-PIN RUN	71
BERP (0)	H	D06J2	1-01 *				K5-4					1	SOURCE	N	7-3/8	72
BERP (0)	H	F05U2	1-02 *				K3-7					1			7-3/8	72
BERP (0)	H											1				72
BG BETWEEN	H	F09F1	1-01 *				DD					1	SOURCE	N	2-3/8	73
BG BETWEEN	H	F09V2	1-02 *				DD					1			2-3/8	73
BG BETWEEN	H											1				73
BG IN	H	D09U2	1-01 *				DD					1	SOURCE	N	3-7/8	74
BG IN	H	F09B1	1-02 *				DD					1			3-7/8	74
BG IN	H											1				74
BG OUT	H	D09V2	1-01 *				DD					1	SOURCE	N	3-7/8	75
BG OUT	H	F09A1	1-02 *				DD					1	SOURCE	N	3-7/8	75
BG OUT	H											1				75
BG4	H	D07E2	1-01 *				K4-6					1	SOURCE	N	2-1/8	76
BG4	H	D09S2	1-02 *				DD					1			2-1/8	76
BG4	H											1				76
BG5	H	C07V2	1-01 *				K4-6					1	SOURCE	N	3-3/8	77
BG5	H	D09P2	1-02 *				DD					1			3-3/8	77
BG5	H											1				77
BG6	H	D07F2	1-01 *				K4-6					1	SOURCE	N	8-5/8	78
BG6	H	F03R2	1-02 *				KM-2					2				78
BG6	H	F03V2	1-03 *				KM-2					1	SOURCE	N	9-3/8	78
BG6	H	D09M2	1-04 *				DD					1				78
BG6	H											1			19-0/8	78
BG7	H	D07D2	1-01 *				K4-6					1	SOURCE	N	1-5/8	79
BG7	H	D09K2	1-02 *				DD					1			1-5/8	79
BG7	H											1				79
BGBUS (1)	H	D03E2	1-01 *				K2-7					2				80
BGBUS (1)	H	E06H1	1-02 *				K5-4					1				80
BGBUS (1)	H	E07E1	1-03 *				K4-25					1				80
BGBUS (1)	H											1			5-3/8	80







RUN NAME	A/P	PIN NAME	ORDER PIN	BAY ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	1-PIN RUN	RUN NUMBER
BUS A01	H	A07M1					K4-4					SOURCE				127
BUS A02	L	B09H2		1-01 *			DD			1		SOURCE	N	8-2/8		128
BUS A03	L	F09H2		1-02 *			DD			2		SOURCE	N	5-7/8		128
BUS A04	L	F04P2		1-03 *			K1-6					SOURCE		14-1/8		128
BUS A05	L	B09H1		1-01 *			DD			1		SOURCE	N	8-2/8		129
BUS A06	L	F09H1		1-02 *			DD			2		SOURCE	N	4-6/8		129
BUS A07	L	F03E1		1-03 *			KW-2			1		SOURCE	N	1-6/8		129
BUS A08	L	F04N2		1-04 *			K1-6					SOURCE		14-6/8		129
BUS A09	L	B09J2	E09F1	1-01 *			DD			1		SOURCE	N	8-1/8		130
BUS A10	L	E09F1		1-02 *			DD			2		SOURCE	N	5		130
BUS A11	L	F03L2		1-03 *			KW-2			1		SOURCE	N	0-5/8		130
BUS A12	L	F04M2		1-04 *			K1-6					SOURCE		13-6/8		130
BUS A13	L	B09J1		1-01 *			DD			1		SOURCE	N	9-5/8		131
BUS A14	L	E09V2		1-02 *			DD			2		SOURCE	N	3-7/8		131
BUS A15	L	F04R2		1-03 *			K1-6			1		SOURCE	N	1-5/8		131
BUS A16	L	F03M1		1-04 *			KW-2					SOURCE		15-1/8		131
BUS A17	L	B09K2		1-01 *			DD			2		SOURCE	N	5-2/8		132
BUS A18	L	C04S2		1-02 *			K1-6			1		SOURCE	N	7-7/8		132
BUS A19	L	F03J2		1-03 *			KW-2			2		SOURCE	N	4-7/8		132
BUS A20	L	F09U2		1-04 *			DD					SOURCE		18-0/8		132
BUS A21	L	B09K1		1-01 *			DD			2		SOURCE	N	5-2/8		133
BUS A22	L	C04S1	F03J1	1-02 *			K1-6			1		SOURCE	N	7-7/8		133
BUS A23	L	F03J1		1-03 *			KW-2			2		SOURCE	N	4-7/8		133
BUS A24	L	F09V1		1-04 *			DD					SOURCE		18-0/8		133
BUS A25	L	A08S1		1-01 *			KT-4			1		SOURCE	N	3-3/8		134
BUS A26	L	B09L2		1-02 *			DD			2		SOURCE	N	5-5/8		134
BUS A27	L	C04V1		1-03 *			K1-6			1		SOURCE	N	7-7/8		134
BUS A28	L	F03K1		1-04 *			KW-2			2		SOURCE	N	5-1/8		134
BUS A29	L	F09U1		1-05 *			DD					SOURCE		22-0/8		134
BUS A30	L	A08R2		1-01 *			KT-4			2		SOURCE	N	2-7/8		135
BUS A31	L	B09L1		1-02 *			DD			1		SOURCE	N	7-1/8		135
BUS A32	L	D04A1		1-03 *			K1-6			2		SOURCE	N	6-7/8		135
BUS A33	L	F03K2		1-04 *			KW-2			1		SOURCE	N	5		135
BUS A34	L	F09P2		1-05 *			DD					SOURCE		21-7/8		135

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	1-PIN RUN	RUN NUMBER
BUS A08	L	A08P1		1-01 *			KT-4			1		SOURCE	N	3-5/8		136
BUS A09	L	B09M2		1-02 *			DD			2		SOURCE	N	4-1/8		136
BUS A10	L	C04J1	E09V2	1-03 *			K1-6			1		SOURCE	N	8-7/8		136
BUS A11	L	E09N2		1-04 *			DD			2		SOURCE	N	5-2/8		136
BUS A12	L	F03L1		1-05 *			KW-2					SOURCE		21-7/8		136
BUS A13	L	A08N2		1-01 *			KT-4			1		SOURCE	N	3-1/8		137
BUS A14	L	B09M1		1-02 *			DD			2		SOURCE	N	3-5/8		137
BUS A15	L	C04F2	E09R1	1-03 *			K1-6			1		SOURCE	N	9-1/8		137
BUS A16	L	E09R1		1-04 *			DD			2		SOURCE	N	4-4/8		137
BUS A17	L	F03V2		1-05 *			KW-2					SOURCE		20-3/8		137
BUS A18	L	B09N2		1-01 *			DD			1		SOURCE	N	1-7/8		138
BUS A19	L	B08D2		1-02 *			KT-4			2		SOURCE	N	4-4/8		138
BUS A20	L	C04H1		1-03 *			K1-6			1		SOURCE	N	8-1/8		138
BUS A21	L	F03A1		1-04 *			KW-2			2		SOURCE	N	4-5/8		138
BUS A22	L	E09P1		1-05 *			DD					SOURCE		19-1/8		138
BUS A23	L	B08C1		1-01 *			KT-4			1		SOURCE	N	2		139
BUS A24	L	B09N1		1-02 *			DD			2		SOURCE	N	3-7/8		139
BUS A25	L	C04L1		1-03 *			K1-6			1		SOURCE	N	7-7/8		139
BUS A26	L	F03R1		1-04 *			KW-2			2		SOURCE	N	5-1/8		139
BUS A27	L	F09L1		1-05 *			DD					SOURCE		18-7/8		139
BUS A28	L	A04N2		1-01 *			K1-6			1		SOURCE	N	2-5/8		140
BUS A29	L	A08U1		1-02 *			KT-4			2		SOURCE	N	3-3/8		140
BUS A30	L	B09P2		1-03 *			DD			1		SOURCE	N	7-1/8		140
BUS A31	L	E09C1		1-04 *			DD			2		SOURCE	N	4-5/8		140
BUS A32	L	F03C1		1-05 *			KW-2					SOURCE		17-6/8		140
BUS A33	L	A04P2		1-01 *	1		K1-6			1		SOURCE	N	2-6/8		141
BUS A34	L	B08A1		1-02 *			KT-4			2		SOURCE	N	2-3/8		141
BUS A35	L	B09P1		1-03 *			DD			1		SOURCE	N	7-7/8		141
BUS A36	L	E09R2		1-04 *			DD			2		SOURCE	N	5-3/8		141
BUS A37	L	F03D1		1-05 *			KW-2					SOURCE		18-3/8		141
BUS A38	L	A04L2		1-01 *			K1-6			1		SOURCE	N	5-2/8		142
BUS A39	L	B09P2		1-02 *			DD			2		SOURCE	N	1		142
BUS A40	L	B08T2		1-03 *			KT-4			1		SOURCE	N	7-3/8		142
BUS A41	L	E09K1	E09K1	1-04 *			DD			2		SOURCE	N	4-3/8		142
BUS A42	L	F03E2		1-05 *			KW-2					SOURCE		18-0/8		142
BUS A43	L	A04J2		1-01 *			K1-6			1		SOURCE	N	6-1/8		143
BUS A44	L	B09R1		1-02 *			DD			2		SOURCE	N	1-7/8		143
BUS A45	L	C08B1	E09D2	1-03 *			KT-4			1		SOURCE	N	6-5/8		143
BUS A46	L	E09D2		1-04 *			DD			2		SOURCE	N	4-6/8		143
BUS A47	L	F03F2		1-05 *			KW-2					SOURCE		19-3/8		143

RD11A.N RUN NAME	A/P PIN	ORDER PIN	RAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	16117 NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BUS A16	L	A04S1	1-01 *	2	K1-6						SOURCE	N	4-3/8	144
BUS A16	L	B09S2	1-02 *		DD						SOURCE	N	0-5/8	144
BUS A16	L	E09F2	1-03 *		KT-4						SOURCE	N	6-7/8	144
BUS A16	L	E09E2	1-04 *		DD							N	4-6/8	144
BUS A16	L	F03H2	1-05 *		KW-2							16-5/8	144	144
BUS A17	L	A04R1	1-01 *	1	K1-6						SOURCE	N	4-3/8	145
BUS A17	L	B08P1	1-02 *		KT-4						SOURCE	N	1	145
BUS A17	L	B09S1	1-03 *		DD						SOURCE	N	6-7/8	145
BUS A17	L	E09D1	1-04 *		DD						SOURCE	N	4-3/8	145
BUS A17	L	F03D2	1-05 *		KW-2							16-5/8	145	145
BUS AC L0	L	B06D2	1-01 *		K5-8						SOURCE TWP	N	0-1/8	146
BUS AC L0	L	B06E2	1-02 *	H	K5-8						SOURCE, EICH TO CON	1-7/8	146	146
BUS AC L0	L	B09F1	1-03 *		DD							2-0/8	146	146
BUS BR5Y	L	A09P2	1-01 *	H	K4-5						SOURCE TWP	6-3/8	147	147
BUS BR5Y	L	C07M2	1-02 *	H	PD						SOURCE TWP	8-3/8	147	147
BUS BR5Y	L	F09D1	1-03 *	H	KW-2						SOURCE TWP	4-5/8	147	147
BUS BR5Y	L	F03T2	1-04 *		DD						SOURCE	19-3/8	147	147
BUS BG4	H	B09E2	1-01 *	H	DD						TWP	7-1/8	148	148
BUS BG4	H	D09T2	1-02 *								SOURCE	7-1/8	148	148
BUS BG5	H	B09R1	1-01 *	H	DD						TWP	7-3/8	149	149
BUS BG5	H	L09R2	1-02 *								SOURCE	7-3/8	149	149
BUS BG6	H	B09A1	1-01 *	H	DD						TWP	7-3/8	150	150
BUS BG6	H	D09N2	1-02 *								SOURCE	7-3/8	150	150
BUS BG7	H	A09V1	1-01 *	H	DD						TWP	7-5/8	151	151
BUS BG7	H	D09L2	1-02 *								SOURCE	7-5/8	151	151
BUS BR4	L	B09D2	1-01 *	H	K4-6						SOURCE TWP	5-5/8	152	152
BUS BR4	L	C07U2	1-02 *	H	DD						SOURCE TWP	2-5/8	152	152
BUS BR4	L	D09K2	1-03 *									8-2/8	152	152
BUS BR5	L	B09C1	1-01 *	H	K4-6						SOURCE TWP	5-1/8	153	153
BUS BR5	L	C07T2	1-02 *	H	DD						SOURCE TWP	2-5/8	153	153
BUS BR5	L	D09F2	1-03 *									7-6/8	153	153
BUS BR6	L	A09U2	1-01 *	H	K4-6						SOURCE TWP	6-3/8	154	154
BUS BR6	L	C07S2	1-02 *	H	DD						SOURCE TWP	2-5/8	154	154
BUS BR6	L	D09F2	1-03 *	H	DD						SOURCE TWP	10-3/8	154	154
BUS BR6	L	F03U1	1-04 *		KW-2						SOURCE	19-3/8	154	154

RD11A.N RUN NAME	A/P PIN	ORDER PIN	RAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	16117 NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BUS BR7	L	A09T2	1-01 *	H	K4-6						SOURCE TWP	6-3/8	155	155
BUS BR7	L	C07R2	1-02 *	H	DD						TWP	2-5/8	155	155
BUS BR7	L	D09D2	1-03 *									9-0/8	155	155
BUS C0	L	A07H1	1-01 *	H	K4-4						SOURCE TWP	5-5/8	156	156
BUS C0	L	B09U2	1-02 *	H	DD						SOURCE TWP	7-1/8	156	156
BUS C0	L	E09J2	1-03 *									12-6/8	156	156
BUS C1	L	A07E2	1-01 *	H	K4-4						SOURCE TWP	5-5/8	157	157
BUS C1	L	B09T2	1-02 *	H	DD						TWP	7	157	157
BUS C1	L	F09F2	1-03 *	H	DD						SOURCE TWP	5-2/8	157	157
BUS C1	L	F03N1	1-04 *		KW-2							17-7/8	157	157
BUS D00	L	A09C1	1-01 *								SOURCE	N	1-3/8	158
BUS D00	L	A08K1	1-02 *		KT-8						SOURCE	N	7-1/8	158
BUS D00	L	C09S2	1-03 *		DD						SOURCE	N	4-3/8	158
BUS D00	L	D04J1	1-04 *		K1-29						SOURCE (K1-29)	N	6-7/8 BIN-COD ER	158
BUS D00	L	F06L1	1-05 *		K5-2						SOURCE	19-6/8	158	158
BUS D01	L	A08F1	1-01 *		KT-8						SOURCE	N	1-3/8	159
BUS D01	L	A09D2	1-02 *		DD						SOURCE	N	7	159
BUS D01	L	C09R2	1-03 *		DD						SOURCE	N	9-7/8	159
BUS D01	L	F06P2	1-04 *		K5-2						SOURCE	N	1-7/8	159
BUS D01	L	F04U2	1-05 *		K1-29						SOURCE (K1-29)	20-1/8	159	159
BUS D02	L	A09D1	1-01 *								SOURCE	N	1-3/8	160
BUS D02	L	A08L2	1-02 *		KT-8						SOURCE	N	6-7/8	160
BUS D02	L	C09U2	1-03 *		DD						SOURCE	N	7	160
BUS D02	L	F09E2	1-04 *		DD						SOURCE	N	7-7/8	161
BUS D02	L	F06K1	1-05 *		K5-2						SOURCE	N	2-1/8	161
BUS D02	L	F04S2	1-06 *		K1-29						SOURCE (K1-29)	N	1-4/8	160
BUS D02	L	F04T2	1-06 *		K1-29						SOURCE (K1-29)	19-3/8	160	160
BUS D03	L	A08H1	1-01 *		KT-8						SOURCE	N	1-3/8	161
BUS D03	L	A09E2	1-02 *		DD						SOURCE	N	7-1/8	161
BUS D03	L	F09L1	1-04 *		DD						SOURCE	N	7-7/8	161
BUS D03	L	F06J1	1-05 *		K5-2						SOURCE	N	2-1/8	161
BUS D03	L	F04T2	1-06 *		K1-29						SOURCE (K1-29)	N	1-6/8	161
BUS D03	L	F04T2	1-06 *		K1-29						SOURCE (K1-29)	20-2/8	161	161
BUS D04	L	A09E1	1-01 *		KT-8						SOURCE	N	3-5/8	162
BUS D04	L	B08F1	1-02 *		DD						SOURCE	N	4-3/8	162
BUS D04	L	C09N2	1-03 *		DD						SOURCE	N	4-1/8	162
BUS D04	L	D04M2	1-04 *		K1-39						SOURCE (K1-39)	N	5-5/8 BIN-COD ER	162
BUS D04	L	F06E1	1-05 *		K5-2						SOURCE	N	3-1/8	162
BUS D04	L	F09N2	1-06 *		DD						SOURCE	20-7/8	162	162

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NC LENGTH EXCEPTIONS FLAG	REMARKS	X	Z	RV	RG	Y	X	Z	PUN NUMBER
N 4-1/8	SOURCE	1							163
N 4-3/8	SOURCE	2		KT-8					163
N 6-7/8	SOURCE	1		DD					163
N 4-3/8 BIN-COD ER	SOURCE (K1-39)	2		K1-39					163
N 2-1/8	SOURCE	1		K5-2					163
21-7/8	SOURCE			DD					163
N 3-5/8	SOURCE	2							164
N 4-5/8	SOURCE	1		KT-8					164
N 4-3/8	SOURCE	2		DD					164
N 6-1/8 BIN-COD ER	SOURCE (K1-39)	1		K1-39					164
N 2-4/8	SOURCE	2		KW-2					164
N 2-5/8	SOURCE	1		K5-2					164
23-7/8	SOURCE			DD					164
N 3-5/8	SOURCE	1							165
N 3-7/8	SOURCE	2		KT-8					165
N 7-1/8	SOURCE	1		DD					165
N 5-3/8 BIN-COD ER	SOURCE (K1-39)	2		K1-39					165
N 3-3/8	SOURCE	1		KW-2					165
N 1-5/8	SOURCE	2		K5-2					165
25-0/8	SOURCE			DD					165
N 5-5/8	SOURCE	1							166
N 1-4/8	SOURCE	2		KT-9					166
N 3-5/8	SOURCE	1		DD					166
N 5-1/8 BIN-COD ER	SOURCE (K1-49)	2		K1-49					166
N 4-7/8	SOURCE	1		KJ-2					166
29-6/8	SOURCE			DD					166
N 4-3/8	SOURCE	2		KT-9					167
N 2-7/8	SOURCE	1		DD					167
N 3-5/8	SOURCE	2		DD					167
N 5-1/8 BIN-COD ER	SOURCE (K1-49)	1		K1-49					167
16-0/8	SOURCE			KJ-2					167
N 4-1/8	SOURCE	2							168
N 3-3/8	SOURCE	1		KT-9					168
N 3-5/8	SOURCE	2		DD					168
N 5-3/8 BIN-COD ER	SOURCE (K1-49)	1		K1-49					168
16-4/8	SOURCE			KJ-2					168
N 4-3/8	SOURCE	2		KT-9					169
N 2-3/8	SOURCE	1		DD					169
N 2-6/8	SOURCE	2		DD					169
N 6-1/8 BIN-COD ER	SOURCE (K1-49)	1		K1-49					169
15-5/8	SOURCE			KJ-2					169

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NC LENGTH EXCEPTIONS FLAG	REMARKS	X	Z	RV	RG	Y	X	Z	PUN NUMBER
N 3-7/8	SOURCE	2							170
N 4-7/8 BIN-COD ER	SOURCE (K1-59)	1		K1-59					170
N 1-4/8	SOURCE	2		DD					170
N 7-7/8	SOURCE	1		KT-29					170
18-1/8	SOURCE			KJ-2					170
N 4-1/8	SOURCE	2							171
N 4-1/8 BIN-COD ER	SOURCE (K1-59)	1		K1-59					171
N 1-3/8	SOURCE	2		DD					171
N 8-1/8	SOURCE	1		KT-29					171
17-6/8	SOURCE			KJ-2					171
N 4-3/8	SOURCE	2							172
N 4-3/8 BIN-COD ER	SOURCE (K1-59)	1		K1-59					172
N 1-3/8	SOURCE	2		DD					172
N 9-3/8	SOURCE	1		KT-29					172
19-4/8	SOURCE			KJ-2					172
N 4-5/8	SOURCE	2							173
N 4-4/8 BIN-COD ER	SOURCE (K1-59)	1		K1-59					173
N 1-3/8	SOURCE	2		DD					173
N 8-7/8	SOURCE	1		KT-29					173
19-3/8	SOURCE			KJ-2					173
N 2-5/8	SOURCE	1							174
N 3-7/8 BIN-COD ER	SOURCE, ETCH TO COM	2		K5-8					174
6-4/8	SOURCE								174
N 2-7/8	SOURCE	2		KT-4					175
N 6-7/8	SOURCE	1		K4-5					175
9-6/8	SOURCE			K1-6					175
N 12-7/8	SOURCE	1		K4-5					176
12-7/8	SOURCE			K1-2345					176
N 5-3/8	SOURCE	2		K4-6					177
N 6-7/8	SOURCE	1		KT-2					177
12-2/8	SOURCE			K5-2					177
N 9-5/8	SOURCE	1		K1-9					178
9-5/8	SOURCE			K4-6					178





KT11A,N	WRAPD .V35(102)-1	03-JUN-77	27-OCT-77	16117	PAGE 22	RUN
RUN NAME	A/P PIN ORDER PIN	BAY - Q	DRAW RV RG Y X Z	REMARKS	NC LENGTH EXCEPTIONS	NUMBER
NAME	NAME	ORDER	OPT	REMARKS	FLAG	
CIN00	L A05P1	1-01 *	K3-8	1 SOURCE	N 11-3/8	221
CIN00	L E04S2	1-02 *	K1-2	1	11-3/8	221
CIN00	L	1				221
CKODA (1)	H A07T2	1-01 *	K4-4	1	N 14-3/8	222
CKODA (1)	H F08V2	1-02 *	K1-3	1	14-3/8	222
CKODA (1)	H	1				222
CKOVF	H A07R2	1-01 *	K4-4	2 SOURCE	N 6-1/8	223
CKOVF	H C04D1	1-02 *	K1-7	1	N 7-5/8	223
CKOVF	H E03U2	1-03 *	KU-2	1	13-6/8	223
CKOVF	H	1				223
CLK (UPP*PUPP)	H B03F2	1-01 *	K2-23	1 SOURCE	N 9-1/8	224
CLK (UPP*PUPP)	H D07V2	1-02 *	K4-2	1	9-1/8	224
CLK (UPP*PUPP)	H	1				224
CLK B	H E04D2	1-01 *	K1-2345	1 SOURCE	N 2-3/8	225
CLK B	H E07M2	1-02 *	K4-2	1	2-3/8	225
CLK B	H	1				225
CLK B (1)	H D03J1	1-01 *	K2-7	1 SOURCE	N 4-3/8	226
CLK B (1)	H E07L2	1-02 *	K4-2	1	4-3/8	226
CLK B (1)	H	1				226
CLK BA	H A04H2	1-01 *	K1-6	1 SOURCE (K4-2)	N 12-1/8	227
CLK BA	H E07H1	1-02 *	K4-24	1	12-1/8	227
CLK BA	H	1				227
CLK RA (1)	H B08U1	1-01 *	K1-9	2 SOURCE	N 7-1/8	228
CLK RA (1)	H D03L1	1-02 *	K2-7	1	N 3-4/8	228
CLK RA (1)	H E07J1	1-03 *	K4-2	1	10-5/8	228
CLK RA (1)	H	1				228
CLK BOVFLW	H A07K2	1-01 *	K4-4	1 SOURCE	N 8-3/8	229
CLK BOVFLW	H D06F2	1-02 *	K5-4	1	8-3/8	229
CLK BOVFLW	H	1				229
CLK BUS	H D08H1	1-01 *	K2-3	1 SOURCE (K4-2)	N 3-5/8	230
CLK BUS	H E07K1	1-02 *	K4-245	1	3-5/8	230
CLK BUS	H	1				230
CLK D	H E04L2	1-01 *	K1-2345	1	N 9-3/8	231
CLK D	H E06N2	1-02 *	K5-2	2	N 1	231
CLK D	H E07N2	1-03 *	K4-2	1	10-3/8	231
CLK D	H	1				231
CLK D (1)	H A01K2	1-01 *	K1-4	1 SOURCE	N 9-3/8	232
CLK D (1)	H D03K2	1-02 *	K2-7	2	N 5-2/8	232
CLK D (1)	H E07P2	1-03 *	K4-2	1	14-5/8	232
CLK D (1)	H	1				232
CLK EPS(C)	H B02S2		KE-5	1 SOURCE	1-PIN RUN	233

KT11A,N	WRAPD .V35(102)-1	03-JUN-77	27-OCT-77	16117	PAGE 23	RUN
RUN NAME	A/P PIN ORDER PIN	BAY - Q	DRAW RV RG Y X Z	REMARKS	NC LENGTH EXCEPTIONS	NUMBER
NAME	NAME	ORDER	OPT	REMARKS	FLAG	
CLK EPS(N,Z)	H A01D2	1-01 *	K1-4	1 SOURCE	N 8-1/8	234
CLK EPS(N,Z)	H D02A1	1-02 *	YE-5	1	8-1/8	234
CLK EPS(N,Z)	H	1				234
CLK EPS(V)	H C02L2		YE-6	1-PIN RUN		235
CLK EU(86157)	H C01U2	1-01 *	K1-4	1 SOURCE (KE-5)	N 1-3/8	236
CLK EU(86157)	H C02N2	1-02 *	KE-457	1	1-3/8	236
CLK EU(86157)	H	1				236
CLK IR	H B05J1	1-01 *	K3-3	2 SOURCE	N 5-7/8	237
CLK IR	H D07C1	1-02 *	K4-25	1	N 7-7/8	237
CLK IR	H F08R2	1-03 *	K1-78	1	13-6/8	237
CLK IR	H	1				237
CLK MSYN	H E08M1	1-01 *	K1-56	1 SOURCE (K4-4)	N 3-1/8	238
CLK MSYN	H F07L2	1-02 *	K4-34	1	3-1/8	238
CLK MSYN	H	1				238
CLK NDR	H C07C1		K4-5	1-PIN RUN		239
CLK PTRD	H C07P1		K4-5	1-PIN RUN		240
CLK U(16109)	H C03F1	1-01 *	K2-4	1 SOURCE	N 6-5/8	241
CLK U(16109)	H D07T2	1-02 *	K4-2	1	6-5/8	241
CLK U(16109)	H	1				241
CLK U(56117)	H C03K1	1-01 *	K2-5678	1 SOURCE	N 4-2/8	242
CLK U(56117)	H D08K1	1-02 *	K1-2	2	N 1-5/8	242
CLK U(56117)	H D07U2	1-03 *	K4-2	1	5-7/8	242
CLK U(56117)	H	1				242
CLKTR (1)	H D03T2	1-01 *	K2-8	1 SOURCE	N 3-4/8	243
CLKTR (1)	H E07P1	1-02 *	K4-2	2	N 3-1/8	243
CLKTR (1)	H F08K1	1-03 *	K1-7	1	6-5/8	243
CLKTR (1)	H	1				243
CLKL1 (0)	H D03M2	1-01 *	K2-8	1 SOURCE	N 2-7/8	244
CLKL1 (0)	H E07A1	1-02 *	K4-2	1	2-7/8	244
CLKL1 (0)	H	1				244
CLKL1 (1)	H D03N2	1-01 *	K2-8	1 SOURCE	N 2-5/8	245
CLKL1 (1)	H D07U1	1-02 *	K4-2	1	2-5/8	245
CLKL1 (1)	H	1				245
CLKLO (0)	H D03R1	1-01 *	K2-8	1 SOURCE	N 6-5/8	246
CLKLO (0)	H F07H1	1-02 *	K4-2	1	6-5/8	246
CLKLO (0)	H	1				246
CLKLO (1)	H D03L2	1-01 *	K2-8	1 SOURCE	N 4-5/8	247
CLKLO (1)	H E07M1	1-02 *	K4-2	1	4-5/8	247
CLKLO (1)	H	1				247
CLKOFF (1)	H D03U2	1-01 *	K5-8	1 SOURCE	N 6-3/8	248
CLKOFF (1)	H F07J1	1-02 *	K4-2	1	6-3/8	248
CLKOFF (1)	H	1				248

KTJIA.N RUN NAME	WRAPD .V35(102)=1 A/P PIN ORDER PIN	03-JUN-77 RAY - Q DRAW OPT	27-Oct-77	16117 NC LENGTH EXCEPTIONS FLAG	PAGE 24	RUN NUMBER
CLR BERR	L C06W1	K5-4	SOURCE	1-PIN RUN	249	
CLR IP	L B05H2	K3-3	SOURCE	1-PIN RUN	250	
CLR PTF	L D07H1	K4-56	SOURCE (K4=5)	1-PIN RUN	251	
CLR PUPP	L B03L1	K2-23	SOURCE (K2=2)	1-PIN RUN	252	
CLR U(16109)	L C03H1	K2-4	SOURCE	1-PIN RUN	253	
CLR UPP0	L A03F2	K2-2	SOURCE	N 16-5/8	254	
CLR UPP0	L F07S2	K4-3	SOURCE	16-5/8	254	
CLR UPP1	L A03H2	K2-2	SOURCE	N 15-5/8	255	
CLR UPP1	L F07F2	K4-3	SOURCE	15-5/8	255	
CLR UPP4,3	L B03H1	F2-23	SOURCE	N 13-1/8	256	
CLR UPP4,3	L F07H2	K4-3	SOURCE	13-1/8	256	
CLR UPP7,612	L B03K1	K2-23	SOURCE	N 12-1/8	257	
CLR UPP7,612	L F07C1	K4-3	SOURCE	12-1/8	257	
CLR UPP8,5	L A03P1	K2-3	SOURCE	N 14-7/8	258	
CLR UPP8,5	L F07D2	K4-3	SOURCE	14-7/8	258	
COMUX0	H B04H2	K1-5	SOURCE	N 5-1/8	259	
COMUX0	H D05A1	K3-8	SOURCE	5-1/8	259	
COMUX1	H B04R2	K1-5	SOURCE	N 4-5/8	260	
COMUX1	H D05D1	K3-8	SOURCE	4-5/8	260	
CONSL (0)	H A07E1	K4-4	SOURCE	N 1-7/8	261	
CONSL (0)	H A06S2	K5-6	SOURCE	N 4-3/8	261	
CONSL (0)	H C07R1	K4-5	SOURCE	N 2-3/8	261	
CONSL (0)	H C08P2	KT-39	SOURCE	N 6-7/8	261	
CONSL (0)	H E05N2	K3-7	SOURCE	N 3-7/8	261	
CONSL (0)	H F07P1	K4-3	SOURCE	19-3/8	261	
COUNT0 (1)	H B01H2	KF-4	SOURCE	N 7-1/8	262	
COUNT0 (1)	H D02R2	KE-6	SOURCE	7-1/8	262	
COUNT1 (1)	H B01H1	KF-4	SOURCE	N 7-1/8	263	
COUNT1 (1)	H D02R1	KE-6	SOURCE	7-1/8	263	

KTJIA.N RUN NAME	WRAPD .V35(102)=1 A/P PIN ORDER PIN	03-JUN-77 RAY - Q DRAW OPT	27-Oct-77	16117 NC LENGTH EXCEPTIONS FLAG	PAGE 25	RUN NUMBER
COUNT2 (1)	H B01F1	KF-4	SOURCE	N 6-7/8	264	
COUNT2 (1)	H D02N1	KE-6	SOURCE	6-7/8	264	
COUNT3 (1)	H B01P2	KF-4	SOURCE	N 5-7/8	265	
COUNT3 (1)	H D02N2	YE-6	SOURCE	5-7/8	265	
COUNT4 (1)	H B01S2	KF-4	SOURCE	N 7-3/8	266	
COUNT4 (1)	H F02D2	KE-6	SOURCE	7-3/8	266	
COUNT5 (1)	H B01T2	KF-4	SOURCE	N 6-5/8	267	
COUNT5 (1)	H E02C1	KE-6	SOURCE	6-5/8	267	
COUNT6 (1)	H B01U2	KF-4	SOURCE	N 7-1/8	268	
COUNT6 (1)	H E02E2	KE-6	SOURCE	7-1/8	268	
COUNT7 (1)	H B01V2	KF-4	SOURCE	N 6-5/8	269	
COUNT7 (1)	H E02D1	KE-6	SOURCE	6-5/8	269	
COUNT8	H D02P2	KE-6	SOURCE	1-PIN RUN	270	
COUT 15	L B04D2	K1-5	SOURCE	N 5-1/8	271	
COUT 15	L C02N1	KE-6	SOURCE	5-1/8	271	
COUT MUX	L B04K2	K1-5	SOURCE	1-PIN RUN	272	
D HOOK	H E04V2	K1-8	SOURCE	N 3-4/8	273	
D HOOK	H E08J2	KT-9	SOURCE	3-4/8	273	
D PERT RELEASE	L C07N1	K4-5	SOURCE	1-PIN RUN	274	
D SACK	H B07S2	K4-5	SOURCE	1-PIN RUN	275	
D(03100)=0	H D04D1	K1-7	SOURCE	N 3-5/8	276	
D(03100)=0	H E06B1	K5-2	SOURCE	3-5/8	276	
D(07104)=0	H D04H1	K1-7	SOURCE	N 3-6/8	277	
D(07104)=0	H E06D2	K5-2	SOURCE	3-6/8	277	
D(15100)=0	H B02U2	KE-46	SOURCE	N 4-5/8	278	
D(15100)=0	H D01F2	KF-4	SOURCE	N 2-5/8	278	
D(15100)=0	H D04V2	K1-7	SOURCE	N 1-5/8	278	
D(15100)=0	H D06P2	K5-2	SOURCE	N 5-7/8	278	
D(15100)=0	H F05N2	K3-2	SOURCE	14-6/8	278	





RUN NAME	A/F	PIN NAME	ORDER	BAY	Q	DRAW	OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH	EXCEPTIONS	FLAG	RUN NUMBER
DMUX08	H	B08J1	1-01 *					KT-4				1	SOURCE (K1-4)	N	3-1/8		300
DMUX09	H	B04S2	1-02 *					K1-489				2		N	2-1/8		300
DMUX0A	H	C05H1	1-03 *					K3-3				1		N	6-5/8		300
DMUX0B	H	E03H1	1-04 *					KJ-2				2		N	3-7/8		300
DMUX0C	H	F02N2	1-05 *					KE-2				1			15-6/8		300
DMUX0D	H	B08K2	1-01 *					KT-4				1	SOURCE (K1-4)	N	3-1/8		301
DMUX0E	H	B04T2	1-02 *					K1-489				2		N	2-1/8		301
DMUX0F	H	C05J1	1-03 *					K3-3				1		N	6-5/8		301
DMUX0G	H	E03J1	1-04 *					KJ-2				2		N	3-3/8		301
DMUX0H	H	F02J2	1-05 *					KE-2				1			15-2/8		301
DMUX0I	H	C08J2	1-01 *					KT-4				1	SOURCE (K1-4)	N	2-5/8		302
DMUX10	H	C05E1	1-02 *					K3-3				2		N	1-7/8		302
DMUX11	H	B04U1	1-03 *					K1-489				1		N	7-5/8		302
DMUX12	H	E03K1	1-04 *					KJ-2				2		N	3-5/8		302
DMUX13	H	F02K1	1-05 *					KE-2				1			15-6/8		302
DMUX14	H	B08L2	1-01 *					KT-4				1	SOURCE (K1-4)	N	3-3/8		303
DMUX15	H	B04U2	1-02 *					K1-489				2		N	1-7/8		303
DMUX16	H	C05F1	1-03 *					K3-3				1		N	7-3/8		303
DMUX17	H	E03M1	1-04 *					KJ-2				2		N	3-1/8		303
DMUX18	H	F02K2	1-05 *					KE-2				1			15-6/8		303
DMUX19	H	A04B1	1-01 *					F1-589				1	SOURCE (K1-5)	N	5-1/8		304
DMUX20	H	B05P1	1-02 *					K3-3				2		N	5-1/8		304
DMUX21	H	C08V2	1-03 *					KT-2				1		N	7-5/8		304
DMUX22	H	F03N1	1-04 *					KJ-2				2		N	2-5/8		304
DMUX23	H	F02D1	1-05 *					KE-2				1			20-4/8		304
DMUX24	H	A04D2	1-01 *				2	K1-589				2	SOURCE (K1-5) 3=0	N	6-5/8		305
DMUX25	H	B05N1	1-02 *					K3-3				1		N	6-3/8		305
DMUX26	H	D08E2	1-03 *					KT-2				2		N	5-5/8		305
DMUX27	H	E03F1	1-04 *					KJ-2				1		N	2-5/8		305
DMUX28	H	F02E1	1-05 *					KE-2				1			21-2/8		305
DMUX29	H	A04F2	1-01 *					K1-589				2	SOURCE (K1-5)	N	3-7/8		306
DMUX30	H	B05M1	1-02 *					K3-3				1		N	6-5/8		306
DMUX31	H	D08D2	1-03 *					KT-2				2		N	6-4/8		306
DMUX32	H	F03S1	1-04 *					KJ-2				1		N	2-3/8		306
DMUX33	H	F02F1	1-05 *					KE-2				1			19-3/8		306
DMUX34	H	A04E2	1-01 *					K1-589				1	SOURCE (K1-5)	N	4-3/8		307
DMUX35	H	B05P1	1-02 *					K3-3				2		N	5-1/8		307
DMUX36	H	C08U2	1-03 *					KT-2				1		N	7-7/8		307
DMUX37	H	E03R1	1-04 *					KJ-2				2		N	2-1/8		307
DMUX38	H	F02B1	1-05 *					KE-2				1			19-4/8		307

RUN NAME	A/P	PIN NAME	ORDER	BAY	Q	DRAW	OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH	EXCEPTIONS	FLAG	RUN NUMBER
DP00 HIGH	H	B07H1	1-01 *					K4-4				1	SOURCE	N	8-3/8		308
DP00 LOW	H	E08E1	1-02 *					KT-26				2		N	4-1/8		308
DP01 HIGH	H	E03V1	1-03 *					KJ-2				1			12-4/8		308
DP01 LOW	H	B07K1	1-01 *					K4-4				1	SOURCE	N	8-3/8		309
DP02 HIGH	H	E08F1	1-02 *					KT-6				1			8-3/8		309
DP02 LOW	H	A02L1	1-01 *					KE-5				1	SOURCE		1-PIN RUN		310
DP03 (1)	H	B02R1	1-01 *					KE-23456				2	SOURCE (KE-2)	N	2-3/8		311
DP03 (2)	H	B01R1	1-02 *					KF-2				1		N	8-1/8		311
DP03 (3)	H	E01N2	1-03 *					KM-2				1			10-4/8		311
DP04 (1)	H	C01H2	1-01 *					KF-3				1	SOURCE (KE-2)	N	6-1/8		312
DP04 (2)	H	E02F2	1-02 *					KE-23				1			6-1/8		312
DP05 (1)	H	C01B1	1-01 *					KF-3				1	SOURCE (KE-2)	N	6-5/8		313
DP05 (2)	H	E02F1	1-02 *					KE-23				1			6-5/8		313
DP06 (1)	H	B01S1	1-01 *					KF-3				1	SOURCE (KE-2)	N	9-3/8		314
DP06 (2)	H	E02V2	1-02 *					KE-23				1			9-3/8		314
DP07 (1)	H	B01D1	1-01 *					KF-3				1	SOURCE (KE-2)	N	9-3/8		315
DP07 (2)	H	E02M1	1-02 *					KE-23				1			9-3/8		315
DP08 (1)	H	A01N1	1-01 *					KF-3				1	SOURCE (KE-2)	N	11-5/8		316
DP08 (2)	H	E02R1	1-02 *					KE-23				1			11-5/8		316
DP09 (1)	H	A01F2	1-01 *					KF-3				1	SOURCE (KE-2)	N	12-3/8		317
DP09 (2)	H	E02R2	1-02 *					KE-23				1			12-3/8		317
DP10 (1)	H	E02P1	1-01 *					KE-23				1	SOURCE (KE-2)		1-PIN RUN		318
DP10 (2)	H	A01P2	1-01 *					KF-4				1	SOURCE (KE-2)	N	11-7/8		319
DP10 (3)	H	E02V1	1-02 *					KE-23				1			11-7/8		319
DP11 (1)	H	A01R2	1-01 *					KF-4				1	SOURCE (KE-2)	N	9-6/8		320
DP11 (2)	H	E01D2	1-02 *					KM-2				2		N	3-7/8		320
DP11 (3)	H	F02J1	1-03 *					KE-23				1	SOURCE (KE-2)		13-5/8		320
DP12 (1)	H	F02H2	1-01 *					KE-23				1	SOURCE (KE-2)		1-PIN RUN		321
DP12 (2)	H	E02T2	1-02 *					KE-23				1	SOURCE (KE-2)		1-PIN RUN		322





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RUN NAME	A/F P/LN ORDER PIN	RAY - Q DRAW PV PG Y X Z	REMARKS	NC LENGTH EXCEPTIONS	RUN NUMBER
	NAME	ORDEP		FLAG	
GND AR		1		41-3/R	370
GND CD	C01C2	1-01 *	P	1	371
GND CD	C02C2	1-02 *	P	0-4/H	371
GND CD	C03C1	1-03 *	P	0-4/H	371
GND CD	C03C1	1-03 *	P	0-4/H	371
GND CD	C03C1	1-04 *	P	1	371
GND CD	C04C2	1-05 *	P	1-4/H	371
GND CD	C05C2	1-06 *	P	1	371
GND CD	C07C2	1-07 *	P	2-1/H	371
GND CD	C06C2	1-08 *	P	1	371
GND CD	C06T1	1-09 *	P	1	371
GND CD	C05T1	1-10 *	P	1	371
GND CD	C04T1	1-11 *	P	0-4/H	371
GND CD	C03T1	1-12 *	P	1-3/H	371
GND CD	C03V2	1-13 *	P	1	371
GND CD	C02T1	1-14 *	P	5-5/H	371
GND CD	C01T1	1-15 *	P	1	371
GND CD	C08C2	1-16 *	P	2-1/H	371
GND CD	C09C2	1-17 *	P	1	371
GND CD	C08T1	1-18 *	P	1	371
GND CD	C07T1	1-19 *	P	1	371
GND CD	D09C2	1-20 *	P	2	371
GND CD	D08C2	1-21 *	P	1	371
GND CD	D07C2	1-22 *	P	1	371
GND CD	D06C2	1-23 *	P	31	371
GND CD	D05C2	1-24 *	P	32	371
GND CD	D04C2	1-25 *	P	1	371
GND CD	D03C1	1-26 *	P	0-4/H	371
GND CD	D02C2	1-27 *	P	0-4/H	371
GND CD	D01C1	1-28 *	P	1	371
GND CD	D01C2	1-29 *	P	2-1/H	371
GND CD	D01T1	1-31 *	P	1	371
GND CD	D02T1	1-32 *	P	1	371
GND CD	D03T1	1-33 *	P	0-4/H	371
GND CD	D03V2	1-34 *	P	0-4/H	371
GND CD	D04T1	1-35 *	P	1	371
GND CD	D05T1	1-36 *	P	1	371
GND CD	D06T1	1-37 *	P	1	371
GND CD	D07T1	1-38 *	P	1	371
GND CD	D08T1	1-39 *	P	1	371
GND CD	D09T1	1-40 *	P	106-3/R	371

GND AR  
GND CD,EF  
ARE  
PHYSICALLY  
TIED  
TOGETHER  
BY FTCH

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RUN NAME	A/F P/LN ORDER PIN	RAY - Q DRAW PV PG Y X Z	REMARKS	NC LENGTH EXCEPTIONS	RUN NUMBER
	NAME	ORDEP		FLAG	
GND EF	E09C2	1-01 *	P	0-4/H	372
GND EF	E09A1	1-02 *	P	0-4/H	372
GND EF	E08C2	1-03 *	P	1	372
GND EF	E07C2	1-04 *	P	1	372
GND EF	E06C2	1-05 *	P	1	372
GND EF	E05C2	1-06 *	P	1	372
GND EF	E04C2	1-07 *	P	1	372
GND EF	E03C2	1-08 *	P	1	372
GND EF	E02C2	1-09 *	P	2-1/H	372
GND EF	E01C2	1-10 *	P	1	372
GND EF	E01T1	1-11 *	P	1	372
GND EF	E02T1	1-12 *	P	1	372
GND EF	E03T1	1-13 *	P	1	372
GND EF	E04T1	1-14 *	P	1	372
GND EF	E05T1	1-15 *	P	1	372
GND EF	E06T1	1-16 *	P	1	372
GND EF	E07T1	1-17 *	P	1	372
GND EF	E08T1	1-18 *	P	1	372
GND EF	E09T1	1-19 *	P	1	372
GND EF	F09C2	1-20 *	P	1-5/H	372
GND EF	F08C2	1-21 *	P	1	372
GND EF	F07C2	1-22 *	P	1	372
GND EF	F06C2	1-23 *	P	1	372
GND EF	F05C2	1-24 *	P	1	372
GND EF	F04C2	1-25 *	P	1	372
GND EF	F03C2	1-26 *	P	1	372
GND EF	F02C2	1-27 *	P	2-1/H	372
GND EF	F01C2	1-28 *	P	1	372
GND EF	F01T1	1-29 *	P	1	372
GND EF	F02T1	1-30 *	P	1	372
GND EF	F03T1	1-31 *	P	1	372
GND EF	F04T1	1-32 *	P	1	372
GND EF	F05T1	1-33 *	P	1	372
GND EF	F06T1	1-34 *	P	1	372
GND EF	F07T1	1-35 *	P	1	372
GND EF	F08T1	1-36 *	P	1	372
GND EF	F09T1	1-37 *	P	1-5/H	372
GND EF	F09V2	1-38 *	P	39-4/H	372
GPC=1	A01N2	1-01 *		1-7/H	373
GPC=1	A02A1	1-02 *		1-7/H	373
GPC=1	A02A1	1-02 *		1-7/H	373
GPC=2	A02F1	1-01 *		9-5/H	374
GPC=2	D01N1	1-02 *		9-5/H	374
GPC=2	D01N1	1-02 *		9-5/H	374
GPC=5	A02J1	1-01 *		6-7/H	375
GPC=5	C01T2	1-02 *		6-7/H	375
GPC=5	C01T2	1-02 *		6-7/H	375
GPC=6	A02K2	1-01 *		9-5/H	376
GPC=6	D01R1	1-02 *		9-5/H	376
GPC=6	D01R1	1-02 *		9-5/H	376

GND AR  
GND CD  
AND GND EF  
ARE  
PHYSICALLY  
TIED  
TOGETHER  
BY FTCH

YF=4  
YF=5  
KE=5  
KF=4  
KE=25  
KF=2  
KE=5  
KF=4

KT11A	WHAPO	03-JUN-77	27-OCT-77	16:17	PAGE 36	RUN	
NAME	ORDER	BAY	REMARKS	NC LENGTH	EXCEPTIONS	NUMREP	
A/P	PIN	ORDER	RV	RG	Y	X	Z
NAME	NAME	PIN	OPT	OPT	FLAG		
GPC#7	A0212	1-01 *	KE-5				1
GPC#7	D01T2	1-02 *	KF-4				1
GPC#7							
GRAT HP	D07M1		K4-56				1
HAUT SA	R06E1	1-01 *	K5-7				2
HAUT SA	C07D1	1-02 *	K4-5				1
HAUT SA	F07S1	1-03 *	K4-3				2
HAUT SA	F05P1	1-04 *	K3-247				1
HAUT SA							
HSR#1 (1)	C01A2	1-01 *	KF-2				1
HSR#1 (1)	C02S1	1-02 *					1
HSR#1 (1)							
HSR#1 (1)	C01P1		KF-2				1
HSR#2 (1)	C01P1		KF-2				1
HSR#3 (1)	C01R1		KF-2				1
HSR#4 (1)	R01C1		KF-2				1
HSR#5 (1)	A01P1		KF-2				1
HSR#6 (1)	A01L1		KF-2				1
HSR#7 (1)	A01P1		KF-2				1
HSR#8 (1)	C01S2		KF-2				1
HSR#9 (1)	C01R2		KF-2				1
HSR#10 (1)	C01P2		KF-2				1
HSR#11 (1)	C01S1		KF-2				1
HSR#12 (1)	R01F2		KF-2				1
HSR#13 (1)	R01E2		KF-2				1
HSR#14 (1)	R01D2		KF-2				1
HSR#15 (1)	A01H1	1-01 *	KF-2				1
HSR#15 (1)	C02A1	1-02 *	KF-2				1
HSR#15 (1)							
HSR#15 (1)	R01E1		KF-2				1
INDP	A06K2	1-01 *	K5-7				1
INDP	D07J2	1-02 *	K4-24				1
INDP							

KT11A	WHAPO	03-JUN-77	27-OCT-77	16:17	PAGE 37	RUN	
NAME	ORDER	BAY	REMARKS	NC LENGTH	EXCEPTIONS	NUMREP	
A/P	PIN	ORDER	RV	RG	Y	X	Z
NAME	NAME	PIN	OPT	OPT	FLAG		
ILL LSTS	C06H1	1-01 *	K5-5				1
ILL LSTS	F05R1	1-02 *	K3-6				1
ILL LSTS							
INT	L09H1	1-01 *	DD				1
INT	R09M1	1-02 *	DD				1
INT							
INT PS CLK 1	L02E2	1-01 *	KE-5				2
INT PS CLK 1	D06K1	1-02 *	KT-2				1
INT PS CLK 1	E06P2	1-03 *	KT-2				1
INT PS CLK 1							
INT PS CLK 2	C06M2	1-01 *	KT-2				1
INT PS CLK 2	D06J1	1-02 *	KT-2				1
INT PS CLK 2							
INT	R06F1	1-01 *	K5-468				1
INT	D07E2	1-02 *	K4-35				1
INT							
INT PS CLK 1	A06V2		K5-8				1
INT PS CLK 1	F06A1		K5-246A				1
INT PS CLK 1							
INT PS CLK 1	A06T2	1-01 *	K4-3				2
INT PS CLK 1	A06T2	1-02 *	K5-8				1
INT PS CLK 1	F07F1	1-03 *	K4-4				1
INT PS CLK 1							
INT PS CLK 1	R07J1	1-01 *	K4-4				1
INT PS CLK 1	C06K1	1-02 *	K5-4				1
INT PS CLK 1							
INT PS CLK 1	D06J1	1-01 *	DD				1
INT PS CLK 1	F09H1	1-02 *	DD				1
INT PS CLK 1							
INT PS CLK 1	C09J1	1-01 *	DD				1
INT PS CLK 1	F09K2	1-02 *	DD				1
INT PS CLK 1							
INT PS CLK 1	L09H1	1-01 *	DD				1
INT PS CLK 1	F09V1	1-02 *	DD				1
INT PS CLK 1							
INT PS CLK 1	C09L1	1-01 *	DD				1
INT PS CLK 1	F09R2	1-02 *	DD				1
INT PS CLK 1							
INT PS CLK 1	C06H2	1-01 *	K5-5				1
INT PS CLK 1	L05K2	1-02 *	K3-6				1
INT PS CLK 1							



KTLLA# RUN NAME	WHARD A/P FIN NAME	ORDER PIN	03-JUN-77 RAY - Q	27-OCT-77	16117 NC LENGTH FLAG	PAGE 40 EXCEPTIONS	RUN NUMBER
KTLLA# RUN NAME	WHARD A/P FIN NAME	ORDER PIN	03-JUN-77 RAY - Q	27-OCT-77	16117 NC LENGTH FLAG	PAGE 41 EXCEPTIONS	RUN NUMBER
IR=75XXX IR=75XXX IR=75XXX	L A02U2 L DMTL1 L	A03V1	1-01 * 1-02 * 1	KE-4 KF-4 K4-23	N 8-1/8 8-1/8	1-PIN RUN	435 435 435
JAN CTK	H A07R1			K4-23		1-PIN RUN	436
JANREP	H C06T2 H F07R1		1-01 * 1-02 *	K5-4 K4-23	N 6-5/8 6-5/8		437 437 437
JANREP	L A03S2 L A03V1 L C06L1 L F07F1	A03V1	1-01 * 1-02 * 1-03 * 1-04 *	K2-5678 K2-3 K5-4 K4-3	N 8-1/8 N 8-1/8 N 8-1/8		438 438 438 438 438 438
JANREP	L F07L1		1-01 *	K4-3	22-3/8	1-PIN RUN	439
JREF (C)	H F06T2 H F07T2		1-01 * 1-02 *	K5-8 K4-3	N 11-3/8 11-3/8		440 440 440
KT INSTD KT INSTD KT INSTD	L L05B1 L F08N1		1-01 * 1-02 *	K3-5 KI-7	N 5-5/8 5-5/8		441 441 441
KTSP14 KTSP14 KTSP14	L B06R2 L C08K1		1-01 * 1-02 *	K5-7 KI-9	N 4-3/8 4-3/8		442 442 442
KTSP17 KTSP17 KTSP17	L A06P2 L C08L2		1-01 * 1-02 *	K5-7 KI-9	N 7-5/8 7-5/8		443 443 443
LOAD PS LOAD PS LOAD PS	L B05K2 L D06P1		1-01 * 1-02 *	K3-9 K5-2	N 6-3/8 6-3/8		444 444 444
LTC LTC LTC	L F03P1 L C09D1	C09D1	1-01 * 1-02 *	KW-2 DD	N 12-5/8 12-5/8		445 445 445
MCLA MCLA MCLA	L F01D1 L F07V2		1-01 * 1-02 *	KM-2 K4-2	N 3-7/8 3-7/8		446 446 446
MCLA FRABTE MCLA FRABTE MCLA FRABTE MCLA FRABTE	L C06S2 L E07N1 L F01V2	E07N1	1-01 * 1-02 * 1-03 *	K5-5 K4-26 KM-2	N 5-5/8 5-5/8 11-2/8		447 447 447 447
MFP SMO MFP SMO MFP SMO	L D06V1 L F08C1		1-01 * 1-02 *	K5-5 VI-9	N 3-1/8 3-1/8		448 448 448
MFP (1)	H L08H2			KI-7		1-PIN RUN	449
MOOP SP11 MOOP SP11 MOOP SP11	H E04U1 H E08A1		1-01 * 1-02 *	K1-8 VI-2	N 3-2/8 3-2/8		450 450 450
MSMAY MSMAY MSMAY	L A02L2 L D01V2		1-01 * 1-02 *	KF-5 KF-2	N 9-1/8 9-1/8		451 451 451
MSY (1) MSY (1) MSY (1) MSY (1)	H A02F2 H D01P2 H E01H2		1-01 * 1-02 * 1-03 *	K6-5 KF-2 VM-2	N 9-7/8 2-2/8 12-1/8		452 452 452 452
MSM1 (1) MSM1 (1) MSM1 (1)	H B01K2 H F01J2		1-01 * 1-02 *	KF-24 KM-2	N 8-1/8 8-1/8		453 453 453
MSY (1) MSY (1) MSY (1) MSY (1)	H B07D1 H F08P2 H E06D2		1-01 * 1-02 * 1-03 *	K4-246 KI-2 KT-256	N 9-7/8 8-1/8 10-8/8		454 454 454 454
MSY (1)	H A07R1			K4-4		1-PIN RUN	455
MSY (1)	H A07K1			K4-4		1-PIN RUN	456
MTE1 (1)	H E08T2			KT-7		1-PIN RUN	457
MTE1 (1)	L C02D1			PE-245		1-PIN RUN	458
N DATA N DATA N DATA	L B05D1 L E06S1		1-01 * 1-02 *	K3-9 K5-2	N 9-7/8 9-7/8		459 459 459
NO INSTOP NO INSTOP NO INSTOP	L F07S1 L F01R2		1-01 * 1-02 *	K4-2 KM-2	N 4-1/8 4-1/8		460 460 460
NO ISYB NO ISYB NO ISYB	L A07C1 L D08R2		1-01 * 1-02 *	K4-4 KI-6	N 10-5/8 10-5/8		461 461 461
NOIST (X) NOIST (X) NOIST (X)	H C06D2 H D07S2		1-01 * 1-02 *	K5-4 K4-346	N 4-7/8 4-7/8		462 462 462
NOISC (1)	H D07P2			K4-6		1-PIN RUN	463
NPH (X)	H D07H1			K4-56		1-PIN RUN	464
ODA ERF ODA ERF ODA ERF	L C06C1 L E07U2		1-01 * 1-02 *	K5-4 K4-34	N 8-1/8 8-1/8		465 465 465

QVL NAME	A/F	PIN NAME	ORDER PIN	PAY ORDER	Q	DRAW	OPT	PV	RG	Y	X	Z	REMARKS	RUN NUMBER
OUT HIGH	H	D09K1		1-01 *			DD					1	SOURCE	466
OUT HIGH	H	E09M2		1-02 *			DD					1	SOURCE	466
OUT LOW	H	D09D1		1-01 *			DD					1	SOURCE	467
OUT LOW	H	F09N1		1-02 *			DD					1	SOURCE	467
OVFL	H	A02V2		1-01 *			KE-4					1	SOURCE	468
OVFL	H	D01H2	E01E1	1-02 *			KF-4					2	SOURCE	468
OVFL	H	F01E1		1-03 *			KM-2					1	SOURCE	468
OVFL	H											1	SOURCE	468
OVFLA EPR	L	K06M1		1-01 *			K5-4					1	SOURCE (K4-4)	469
OVFLA FRP	L	E07S2		1-02 *			K4-34					1	SOURCE	469
OVFLA EPR	L											1	SOURCE	469
OVFLA I/F	L	F03R2					KJ-2					1	1-PIN RUN	470
OVLAP (1)	H	C06S1		1-01 *			K5-4					2	SOURCE	471
OVLAP (1)	H	D07D1		1-02 *			K4-5					1	SOURCE	471
OVLAP (1)	H	E05D1		1-03 *			K3-7					2	SOURCE	471
OVLAP (1)	H	F07J2		1-04 *			K4-2					1	SOURCE	471
OVLAP (1)	H											1	SOURCE	471
OVLAP CYCLE	L	A07N1		1-01 *			K4-4					1	SOURCE	472
OVLAP CYCLE	L	C05P1		1-02 *			K3-4					1	SOURCE	472
OVLAP INSTR	H	C05P1		1-01 *			K3-4					1	SOURCE	473
OVLAP INSTR	H	D06P2		1-02 *			K5-4					1	SOURCE	473
OVLAP INSTR	H											1	SOURCE	473
P PUT 37	H	C06P2					K5-46					1	SOURCE (K5-6)	474
P CLK UPPER	H	F03R1		1-01 *			K4-2					1	SOURCE	475
P CLK UPPER	H	C02V1		1-02 *			KE-5					1	SOURCE	475
P CLK UPPER	H											1	SOURCE	475
P CLK MSYN	L	E07K2		1-01 *			K4-45					1	SOURCE (K4-4)	476
P CLK MSYN	L	D08V1		1-02 *			KT-9					1	SOURCE	476
P CLK MSYN	L											1	SOURCE	476
P END	H	C02P1		1-01 *			PE-59					1	SOURCE	477
P END	H	L07P1	E04P2	1-02 *			K4-2					2	SOURCE	477
P END	H	E04P2		1-03 *			K1-9					1	SOURCE	477
P END	H											1	SOURCE	477
P ADDRESS	L	H06J1		1-01 *			K5-8					1	SOURCE	478
P ADDRESS	L	F07M1		1-02 *			K4-2					1	SOURCE	478
P ADDRESS	L											1	SOURCE	478
P ESTAB	L	F07K2					K4-2					1	1-PIN RUN	479
P JAMSTAB	H	D07L1					K4-236					1	1-PIN RUN	480

QVL NAME	A/F	PIN NAME	ORDER PIN	PAY ORDER	Q	DRAW	OPT	PV	RG	Y	X	Z	REMARKS	RUN NUMBER
P JAMSTAB	L	F07E1					K4-3					1	SOURCE (K4-3)	481
P PATCH	L	F04E2					K1-9					1	SOURCE	482
P MSYN	L	D07K2					K4-5					1	SOURCE	483
P NO SACK	L	C07J1					K4-5					1	SOURCE	484
P1	H	A01J2		1-01 *			KF-4					2	SOURCE	485
P1	H	B02V2		1-02 *			KE-5					1	SOURCE	485
P1	H	D06D2		1-03 *			K5-4					2	SOURCE	485
P1	H	E07L1		1-04 *			K4-2					1	SOURCE	485
P1	H											1	SOURCE	485
P2	H	B02V1		1-01 *			KE-5					2	SOURCE	486
P2	H	C06J2		1-02 *			K5-4					1	SOURCE	486
P2	H	F07R2	H07H1	1-03 *			K4-2					2	SOURCE	486
P2	H	B07H1	D08U1	1-04 *			K4-4					1	SOURCE	486
P2	H	D08U1		1-05 *			KT-9					1	SOURCE	486
P2	H											1	SOURCE	486
P3	H	C02C1		1-01 *			KE-5					2	SOURCE	487
P3	H	C06M2		1-02 *			K5-48					1	SOURCE	487
P3	H	F07F1		1-03 *			K4-25					1	SOURCE (K4-2)	487
P3	H											1	SOURCE	487
PART GRANT M	H	C07L1					K4-5					1	SOURCE	488
PART P END	H	A00P2		1-01 *			K5-6					1	SOURCE	489
PART P END	H	C02U2		1-02 *			KE-5					2	SOURCE	489
PART P END	H	D07R1		1-03 *			K4-2					1	SOURCE	489
PART P END	H											1	SOURCE	489
PASTA (1)	H	A05V2		1-01 *			K3-9					1	SOURCE	490
PASTA (1)	H	E06P1		1-02 *			K5-2					1	SOURCE	490
PASTA (1)	H											1	SOURCE	490
PASTH	H	A05F1		1-01 *			K3-9					1	SOURCE	491
PASTH	H	F06K2		1-02 *			K5-2					1	SOURCE	491
PASTH	H											1	SOURCE	491
PASTIC (0)	H	A05A1		1-01 *			K3-9					1	SOURCE	492
PASTIC (0)	H	E06M1		1-02 *			K5-2					1	SOURCE	492
PASTIC (0)	H											1	SOURCE	492
PRA06	H	A00P1		1-01 *			KT-4					1	SOURCE	493
PRA06	H	F08F2		1-02 *			KT-6					2	SOURCE	493
PRA06	H	E01P1		1-03 *			KM-2					1	SOURCE	493
PRA06	H											1	SOURCE	493
PRA07	H	A00P2		1-01 *			KT-4					1	SOURCE	494
PRA07	H	E08L2		1-02 *			KT-6					2	SOURCE	494
PRA07	H	E01K1		1-03 *			KM-2					1	SOURCE	494
PRA07	H											1	SOURCE	494











CD11A.N RUN NAME	A/P	PIN NAME	ORDER PIN	BAY ORDER	Q DRAW OPT	RV RG Y X Z	REMARKS	27-Oct-77	16:17 NC LENGTH EXCEPTIONS FLAG	PAGE 52	RUN NUMBER
STATL (0)	H	C06M1	1-01 *	1-01 *		K5-4	SOURCE		N 1-3/H		606
STATL (0)	H	C07P2	1-02 *	1-02 *		K4-4	SOURCE		N 3-3/8		606
STATL (0)	H	D08F1	1-03 *	1-03 *		K1-3	SOURCE		4-6/8		606
START SW (0)	H	A06R1	1-01 *	1-01 *		K5-7	SOURCE		N 15-7/8		607
START SW (0)	H	F07U1	1-02 *	1-02 *		K4-3	SOURCE		15-7/8		607
SWICH (1)	H	A06R2	1-01 *	1-01 *		K5-6	SOURCE		N 13-3/8		608
SWICH (1)	H	F05U2	1-02 *	1-02 *		K3-2	SOURCE		13-3/8		608
T14 (1)	H	D08A1	1-01 *	1-01 *		K1-2	SOURCE	1-PIN RUN			609
T15 (1)	H	D06F1	1-02 *	1-02 *		K1-2	SOURCE	1-PIN RUN			610
IDATA (0)	H	D07N2	1-01 *	1-01 *		K4-6	SOURCE	1-PIN RUN			611
IPACE	L	H06M2	1-01 *	1-01 *		K5-45	SOURCE		N 12-1/8		612
IPACE	L	F05S1	1-02 *	1-02 *		K3-7	SOURCE		12-1/8		612
TRAF (1)	L	H06S1	1-01 *	1-01 *		K5-5	SOURCE		N 7-3/8		613
TRAF (1)	L	F05E1	1-02 *	1-02 *		K3-6	SOURCE		7-3/8		613
TRAF (1)	H	D06H1	1-01 *	1-01 *		K5-4	SOURCE		N 7-5/8		614
TRAF (1)	H	F01D1	1-02 *	1-02 *		KM-2	SOURCE		7-5/8		614
TRAFS DATA	L	H06N2	1-01 *	1-01 *		K5-4	SOURCE		N 5-5/8		615
TRAFS DATA	L	D05H2	1-02 *	1-02 *		K3-6	SOURCE		5-5/8		615
TRAFS DELTA	L	D05L1	1-01 *	1-01 *		K3-5	SOURCE		N 1-2/8		616
TRAFS DELTA	L	F06F1	1-02 *	1-02 *		K5-3	SOURCE		1-2/8		616
TRU RR	L	D07J1	1-01 *	1-01 *		K4-6	SOURCE	1-PIN RUN			617
TRU RR	L	C03F2	1-01 *	1-01 *		K2-5	SOURCE		N 2-2/8		618
TRU RR	L	F05S1	1-02 *	1-02 *		K5-34	SOURCE		N 6-5/8		618
URF1 (1)	H	C03P1	1-01 *	1-01 *		K2-5	SOURCE		N 2-3/8		619
URF1 (1)	H	E05P1	1-02 *	1-02 *		K5-34	SOURCE		N 6-5/8		619
URF1 (1)	H	C03R1	1-01 *	1-01 *		K2-5	SOURCE		9-0/8		619
URF1 (1)	H	C06P2	1-02 *	1-02 *		K2-5	SOURCE		U 2-1/8		620
URF1 (1)	H	F05N1	1-03 *	1-03 *		K5-34	SOURCE		N 6-1/8		620
URF2 (1)	H	C03R1	1-01 *	1-01 *		K2-5	SOURCE		8-2/8		620
URF2 (1)	H	C06P2	1-02 *	1-02 *		K5-34	SOURCE				620
URF2 (1)	H	F05N1	1-03 *	1-03 *		K3-2	SOURCE				620

CD11A.N RUN NAME	A/P	PIN NAME	ORDER PIN	BAY ORDER	Q DRAW OPT	RV RG Y X Z	REMARKS	27-Oct-77	16:17 NC LENGTH EXCEPTIONS FLAG	PAGE 53	RUN NUMBER
URF3 (1)	H	H06P2	1-01 *	1-01 *		K5/3	SOURCE		N 4-7/8		621
URF3 (1)	H	C03S1	1-02 *	1-02 *		K2-5	SOURCE		N 8-5/8		621
URF3 (1)	H	F05F2	1-03 *	1-03 *		K3-2	SOURCE		13-4/8		621
URF4 (1)	H	H06P2	1-01 *	1-01 *		K5-3	SOURCE		N 2-6/8		622
URF4 (1)	H	C03H2	1-02 *	1-02 *		K2-5	SOURCE		N 4-1/8		622
URF4 (1)	H	D05K1	1-03 *	1-03 *		K3-2	SOURCE		6-7/8		622
UNFL	H	A01L2	1-01 *	1-01 *		KE-4	SOURCE		N 3-7/8		623
UNFL	H	H02N2	1-02 *	1-02 *		KE-4	SOURCE		N 7-7/8		623
UNFL	H	F01F2	1-03 *	1-03 *		KM-2	SOURCE		11-6/8		623
UPP MATCH	H	C04T2	1-01 *	1-01 *		K1-9	SOURCE		N 9-5/8		624
UPP MATCH	H	F07K2	1-02 *	1-02 *		K4-2	SOURCE		9-5/8		624
V DATA	L	H05H1	1-01 *	1-01 *		K3-9	SOURCE		N 10-1/8		625
V DATA	L	E06U2	1-02 *	1-02 *		K5-2	SOURCE		10-1/8		625
WALT	L	H05E1	1-01 *	1-01 *		K3-6	SOURCE		N 1-7/8		626
WALT	L	E06P1	1-02 *	1-02 *		K5-4	SOURCE		1-7/8		626
WALT (0)	H	C06P1	1-01 *	1-01 *		K5-4	SOURCE		N 5-3/8		627
WALT (0)	H	E05U1	1-02 *	1-02 *		K3-7	SOURCE		5-3/8		627
WR F(15:00)	L	E07F2	1-01 *	1-01 *		K4-2	SOURCE		N 6-3/8		628
WR F(15:00)	L	F04V1	1-02 *	1-02 *		K1-8	SOURCE		6-3/8		628
WR F(15:00)	L	H04A1	1-01 *	1-01 *		K1-8	SOURCE		N 10-7/8		629
WR F(15:00)	L	E07K2	1-02 *	1-02 *		K4-2	SOURCE		10-7/8		629
WRH (1)	H	D03J2	1-01 *	1-01 *		K2-7	SOURCE		N 3-7/8		630
WRH (1)	H	E07H2	1-02 *	1-02 *		K4-2	SOURCE		3-7/8		630
WRH (1)	H	D03H2	1-01 *	1-01 *		K2-7	SOURCE		N 3-4/8		631
WRH (1)	H	E07E2	1-02 *	1-02 *		K4-2	SOURCE		3-4/8		631
ZR (1)	H	A01F1	1-01 *	1-01 *		KE-4	SOURCE		N 1-3/8		632
ZR (1)	H	A02P1	1-02 *	1-02 *		KE-4	SOURCE		1-3/8		632
ZR+FPS(Z)	H	A01J1	1-01 *	1-01 *		KE-4	SOURCE		N 3-7/8		633
ZR+FPS(Z)	H	B02K2	1-02 *	1-02 *		KE-4	SOURCE		3-7/8		633

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DRAWING NUMBER	INIT REL	AUTOMATIC WIRE TESTER (AWT) REVISION STATUS														REV			
		H	J	K	L	M	N	P											
K-WL-KD11-A-WL	H	J	J	K	L	M	N												
D-AD-7010230-0-0		*	*	A	B	B	C												
C-CS-5410904-0-1	B	B	C	C	C	C	C												

REV P  
NUMBER 7010230-0  
SIZE CODE A WT

REVISIONS		REV.
CHK	CHANGE NO.	J
-	KD11A-00011	
	ORIGINATED	
	5410904-1	K
	KD11A-00012	L
KP	KD11A-00013	M
A.T.	KD11A-00014	N
B.C.	KD11A-00015	P

DRN. <i>E. KENNEDY</i>	DATE 8-29-74	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. <i>R. Gilbert</i>	DATE 8-29-74	
ENG. <i>J.P.</i>	DATE 7-5-74	TITLE
PROJ. ENG. <i>J.P.</i>	DATE 7-5-74	KD11-A
PROD. <i>J.P.</i>	DATE 7-5-74	AWT REVISION STATUS
FIRST USED ON KD11-A	SIZE CODE A WT	NUMBER 7010230-0
SCALE 1/1		REV. P
SHEET 1 OF 1	DIST.	



# DRAWING DIRECTORY

## CUSTOMER PRINT SET INDEX

	SEQUENCE		SEQUENCE
DRAWING DIRECTORY	B-DD-KJ11-A	(SHEET1 ONLY)	
PARTS LIST	A-PL-KJ11-A-Ø		
STACK LIMIT REGISTER	D-CS-M7237-Ø-1		
SOFTWARE LIST	A-SL-KJ11-A-SL		

THIS IS PRINT SET

UNIT VARIATIONS		PRINT SET TYPE			
VARIATION	TITLE	KJ11-A			
KJ11-A	STACK LIMIT REGISTER	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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REVISIONS	DATE	9-74	KJ11A-1	REV	A	USED ON OPTION/MODEL KD11-A	DRN.	J. Coughlin	DATE	9/26/72	TITLE STACK LIMIT REGISTER
	CHG. NO.						CHK'D.	J. Coughlin	DATE	9/27/72	
							PROJ ENG.	J. Coughlin	DATE	9/27/72	
							PROP.	J. Coughlin	DATE	9/27/72	
							FIELD SERV.	J. Coughlin	DATE	9/27/72	
				SIZE CODE B DD		NUMBER KJ11-A		REV A			
				DIST		SHEET 1 OF 2					



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

MADE BY <i>J. J. Dougherty</i>	CHECKED <i>J. J. Dougherty</i>	SECTION
DATE <i>9/26/72</i>	DATE <i>9/27/72</i>	
ENG <i>J. J. Dougherty</i>	PROD <i>J. J. Dougherty</i>	ISSUED SECT.
DATE <i>9/27/72</i>	DATE <i>9-27-72</i>	

QUANTITY / VARIATION

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	KJ11-A																
1	D-CS-M7237-Ø-1	STACK LIMIT REGISTER	1																
2	D-MU-KJ11-A-MU	MODULE UTILIZATION	REF																

TITLE STACK LIMIT REGISTER (PL)	ASSY NO. <i>X</i>	SIZE <b>A</b>	CODE <b>PL</b>	NUMBER KJ11-A-Ø	REV.	ECO NO.
SHEET 1 OF 1		DIST. <i>✓</i>				

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**PARTS REFERENCE**

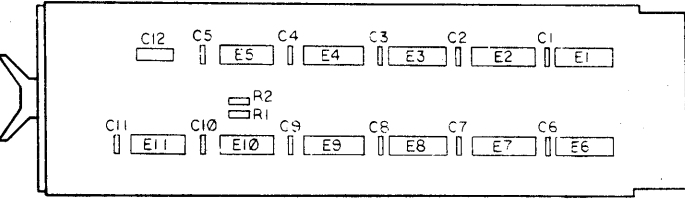
ITEM NO	DRAWING REFERENCE	DESCRIPTION	PART NUMBER	QUANTITY
1	RI R6	DEC 5384	IC 1910394	2
2	RI R7	DEC 74175	IC 1910651	2
3	RI R8	DEC 8481	IC 1909705	2
4	RI R9	DEC 7485	IC 1910224	2
5	RI R10	DEC 74H00	IC 1909056	1
6	RI R11	DEC 74H20	IC 1905635	1
7	RI R12	DEC 7408	IC 1910155	1
8	CI THRU C11	.01 MFD 100V 20% CAP	1001610	11
9	C12	5.8 MFD 35V 20% CAP	1000067	1
10	RI R2	TK 174W 5% RES	1300365	2
REF	STACK LIMIT REGISTER	APL-M7237-0-0		

**NOTES:**

- PIN NOTATION THROUGHOUT IS ORDERED UPON MODULE PLACEMENT IN THE PROCESSOR. MODULE REFERENCE ALONE IS OBTAINED BY DELETING THE NUMBER (SLOT LOCATION) AFTER THE FIRST LETTER, AND CONVERTING THE FIRST LETTER ACCORDING TO THE PIN NOMENCLATURE CHART AT RIGHT.
- ALL SIGNALS THAT HAVE MODULE PINS ARE SO NOTED; MULTIPLE NOTATIONS OF THE SAME SIGNALS WITHIN A MODULE HAVE THE PIN NOTED ON EACH. AN INPUT SIGNAL IS NOTED ONLY ONCE PER SHEET UNLESS SEPERATE PINS ARE USED; MULTIPLE INPUTS ARE CONNECTED. MODULE OUTPUT SIGNALS ARE BROUGHT TO THE EXTREME RIGHT OF EACH SHEET.
- KJ11 SIGNAL SOURCE NOTATION (K1-2, FOR EXAMPLE) IDENTIFIES THE SIGNAL SOURCE FROM THE PROCESSOR. FIRST NUMBER AFTER THE K INDICATES THE MODULE PRINT SET, WHILE THE SECOND INDICATES THE SHEET WITHIN THE SET. SIGNALS WITH A "BUS" PREFIX REPRESENT A "WIRED OR" SITUATION, AND MULTIPLE SOURCES FOR THESE SIGNALS CAN EXIST.
- UNLESS OTHERWISE SPECIFIED: RESISTANCE IS IN OHMS.
- DETAILS ON COMPONENTS ARE NOTED IN THE PARTS REFERENCE, PLACEMENT IS NOTED IN THE COMPONENT PLACEMENT DIAGRAM. CAPACITORS WITHOUT NOTED VALUES ARE .01 MFD.
- GND AND +5V ARE USUALLY PIN 7 AND PIN 14, RESPECTIVELY. EXCEPTIONS ARE:

IC TYPE	GND	+5V
DEC 5384	PIN 1	PIN 8
DEC 74175	PIN 8	PIN 16

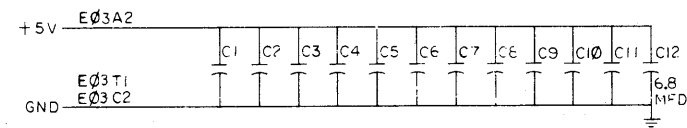
**COMPONENT PLACEMENT**



**PIN NOMENCLATURE**

MODULE PROCESSOR

A E03

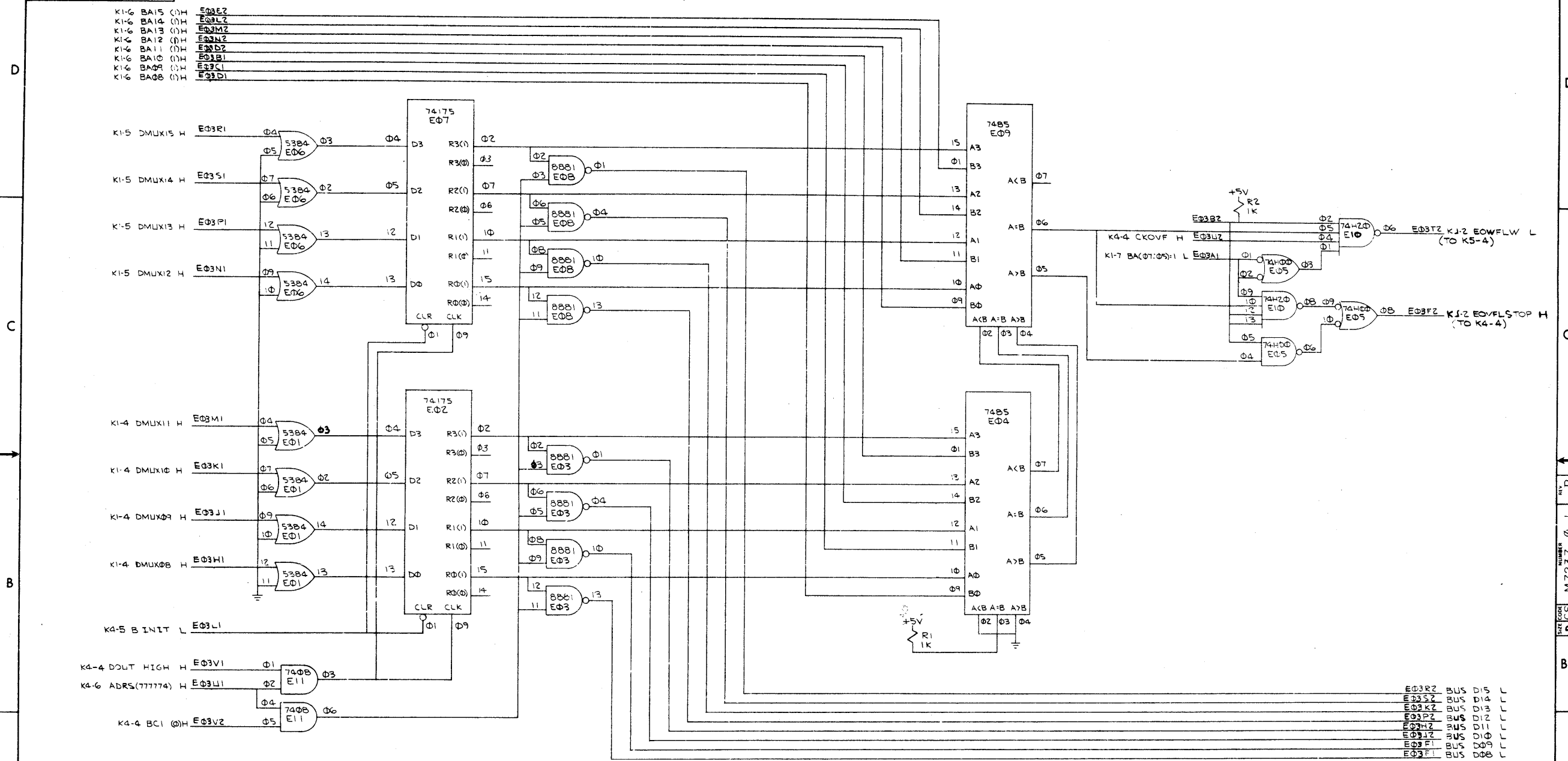


REV	CHG	NO	DATE	BY
B				
A				

FIRST USED ON OPTION / MODEL PDP 11/35	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DRN	DATE	digital EQUIPMENT CORPORATION LAWRENCE, MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED	CHKD	DATE	TITLE	
DIMENSION IN INCHES	EMP	DATE	STACK LIMIT REGISTER	
TOLERANCES	PRD	DATE	M7237	
DECIMALS FRACTIONS ANGLES			NUMBER KJ-1	
± .005 ± 1/64 ± 0°30'			D/CS M7237-0-1	
FINAL SURFACE QUALITY			REV B	
REMOVE BURRS AND BREAK SHARP CORNERS			SHEET 1 OF 2	
MATERIAL	NEXT HIGHER ASSY	A-ML-KJ11-A		
FINISH	SCALE	D/CS M7237-0-1		

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8 1-0-282LM CS 2 1



- E03R2 BUS D15 L
- E03S2 BUS D14 L
- E03K2 BUS D13 L
- E03P2 BUS D12 L
- E03H2 BUS D11 L
- E03J2 BUS D10 L
- E03F1 BUS D09 L
- E03E1 BUS D08 L

REV	CHANGE NO

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 11/35				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	DATE		
XXX + 006	± 0° 30'	DRN	W. MAJOR	7-22-71
XX - 02		CHKD		DATE
X - 1		ENG		2-7-72
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL				
NEXT HIGHER ASSY.				
FINISH				

PARTS LIST		TITLE	
digital	EQUIPMENT CORPORATION	STACK LIMIT REGISTER	
M7237	KJ-2		
SIZE CODE	NUMBER	REV	
D CS	M7237-0-1	B	
SCALE	SHEET 2 OF 2	DIST	

DWG FORM NO DRD 102-B

PART NO. M7237-0-1  
 SIZE CODE D CS  
 REV B

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS			LEGEND			QUANTITY / VARIATION														
SOFTWARE LIST			D	DOCUMENT	KJ11-A															
MADE BY <i>J. Dougherty</i>	CHECKED <i>J. Dougherty</i>	SECTION	DN	DOCUMENT CHANGE NOTICE											KIT CHECK	BY	DATE	INSTALLATION CHECK	BY	DATE
DATE <i>9/26/72</i>	DATE <i>9/27/72</i>		PA	PAPER TAPE ASCII																
ENG <i>J. Dougherty</i>	PROD <i>J. Dougherty</i>	ISSUED SECT.	PB	PAPER TAPE BINARY																
DATE <i>9/27/72</i>	DATE <i>7-28-72</i>		PM	PAPER TAPE READ-IN-MODE																
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION																		
1	MAINDEC-11-DCKBF-A-D	STACK LIMIT TEST																		
2	MAINDEC-11-DCKBF-A-PB	STACK LIMIT TEST																		
TITLE STACK LIMIT REGISTER			ASSY. NO. <i>H</i>			SIZE CODE <b>A SL</b>			NUMBER KJ11-A-SL			REV.			ECO NO					
SHEET 1 OF 1			D:ST.																	



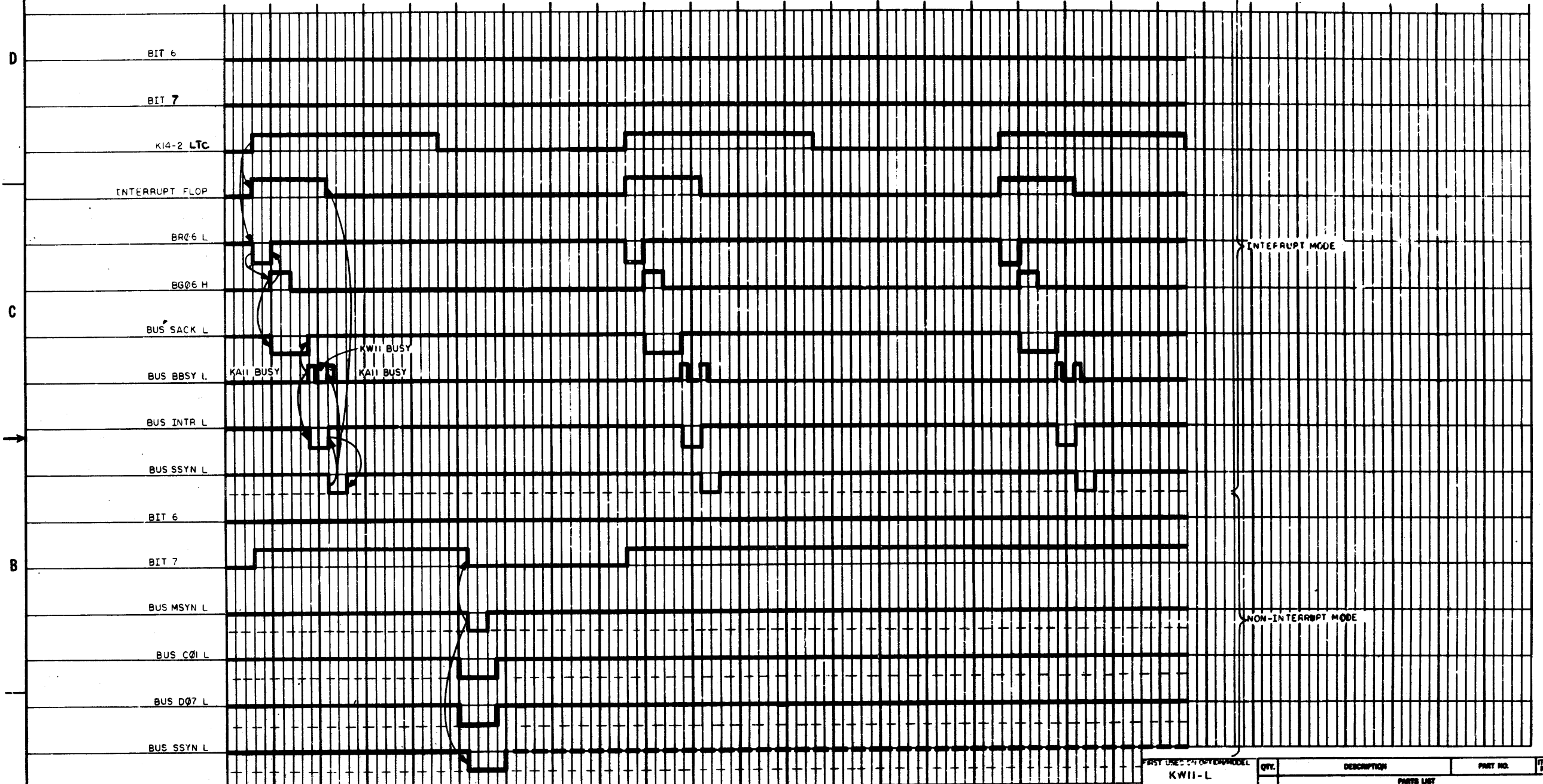




8 7 6 5 4 3 2 1

20-11M-KWII-L-02

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D TD-KWII-L-02

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  
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REV. 41  
REV. 42  
REV. 43  
REV. 44  
REV. 45  
REV. 46  
REV. 47  
REV. 48  
REV. 49  
REV. 50

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
	EQUIPMENT CORPORATION		
	TITLE		
	TIMING DIAGRAM (KWII-L)		
	DRAWING NO. D TD KWII-L-02		
	REV.		
	DATE		

8 7 6 5 4 3 2 1



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PARTS REFERENCE

ITEM NO.	DRAWING REFERENCE	DESCRIPTION	PART NUMBER	QUANTITY
1	R1 R3	300 1/4 W 5% CC	1300300	2
2	R2, R6 - R11	1K 1/4 W 5% CC	1300305	7
3	R4, R5	100 1/4 W 5% CC	1301322	2
4	R12	2.4K 1/4 W 5% CC	1303177	1
5	C1 - C15, C18, C19	01 MFD 100V 20% DISC	1001810	17
6	C16, C17	500 MFD 100V 5% U.M.	1000075	2
7	Q1, Q2	TRANSISTOR DEC 3009 B.S.	1801100	2
8	E1, E5, E9, E6, E10	I.C. DEC 380	1800485	6
9	E2	I.C. DEC 7430	1800578	1
10	E3	I.C. DEC 8875	1800713	1
11	E4	I.C. DEC 7400	1800575	1
12	E6, E7, E13	I.C. DEC 7474	1800547	3
13	E11	I.C. DEC 7404	1800888	1
14	E12, E14, E15	I.C. DEC 8881	1800705	3

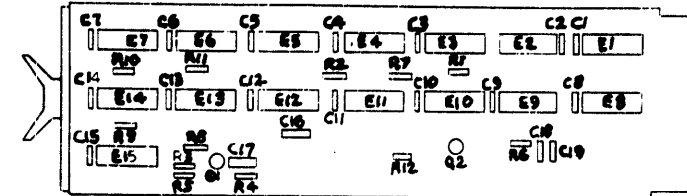
NOTES

- PIN NOTATION THROUGHOUT IS ORDERED UPON MODULE PLACEMENT IN THE KAI1 PROCESSOR. MODULE REFERENCE ALONE IS OBTAINED BY DELETING THE NUMBER (SLOT LOCATION) AFTER THE FIRST LETTER, AND CONVERTING THE FIRST LETTER ACCORDING TO THE PIN NOMENCLATURE CHART AT RIGHT.
- ALL SIGNALS THAT HAVE MODULE PINS ARE SO NOTED. MULTIPLE NOTATIONS OF THE SAME SIGNALS WITHIN A MODULE HAVE THE PIN NOTED ON EACH. AN INPUT SIGNAL IS NOTED ONLY ONCE PER SHEET UNLESS SEPERATE PINS ARE USED. MULTIPLE INPUTS ARE CONNECTED. MODULE OUTPUT SIGNALS ARE BROUGHT TO THE EXTREME RIGHT OF EACH SHEET.
- PROCESSOR SIGNAL SOURCE NOTATION (K10-2, FOR EXAMPLE) IDENTIFIES THE SIGNAL SOURCE (PRINT AND MODULE). THE FIRST NUMBER AFTER THE K INDICATES THE MODULE PRINT SET WHILE THE SECOND INDICATES THE SHEET WITHIN THE SET. IF ON A PRINT, THE FIRST NUMBER OF THE K PREFIXES COINCIDE FOR A SIGNAL NAME AND THE PRINT (SEE TITLE BLOCK). THE SIGNAL IS GENERATED ON THE MODULE. A DIFFERENCE IN THE FIRST NUMBER OF THE K PREFIXES INDICATES A SIGNAL GENERATED OFF THE MODULE. SIGNALS WITH A "BUS" PREFIX REPRESENT A "WIRED OR" SITUATIONS AND MULTIPLE SOURCES FOR THE SIGNAL CAN EXIST.
- DETAILS ON COMPONENTS ARE NOTED IN THE PARTS REFERENCE. PLACEMENT IS NOTED IN THE COMPONENT PLACEMENT DIAGRAM.
- GND AND +5V ARE USUALLY PIN 7 AND PIN 14, RESPECTIVELY. EXCEPTIONS ARE

IC TYPE	GND	+5V
DEC 7401	PIN 10	PIN 4
DEC 7402	PIN 11	PIN 4
DEC 8251	PIN 8	PIN 16
DEC 8271	PIN 8	PIN 16
DEC 380	PIN 1	PIN 8
DEC 384	PIN 1	PIN 8

- UNLESS OTHERWISE NOTED - RESISTANCE IS IN OHMS; CAPACITANCE IS IN MICRO MICRO FARADS. CAPACITORS WITHOUT ANY NOTED VALUES ARE 01MFD.

COMPONENT PLACEMENT

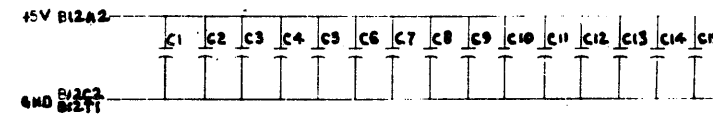


PIN NOMENCLATURE

MODULE	PROCESSOR
A	B

INSTALLATION PROCEDURE

- REMOVE JUMPER FROM B12V2 TO B12R2
- INSTALL 1MHz LINE FREQUENCY CLOCK MODULE IN KAI1 SLOT #12
- RUN MAINDEC DEC-11-02DA LINE FREQUENCY CLOCK TEST



REV	CHG	NO
A		

DEC FORM NO. DRD 100

QTY.	DESCRIPTION	PART NO.	ITEM NO.

FIRST USED ON OPTION/MODEL: KW11-L  
 DO NOT SCALE DIMENSIONS UNLESS OTHERWISE SPECIFIED  
 DIMENSIONS IN INCHES  
 TOLERANCES: DECIMALS FRACTIONS ANGLES  
 ± .005 ± .001 ± 1/16 ± 1/32  
 FINAL SURFACE QUALITY: REMOVE BURRS AND BREAK SHARP CORNERS  
 MATERIAL: NEXT HIGHER ASSY: A-M-L-KW11-L  
 FINISH: SCALE: SHEET 1 OF 2

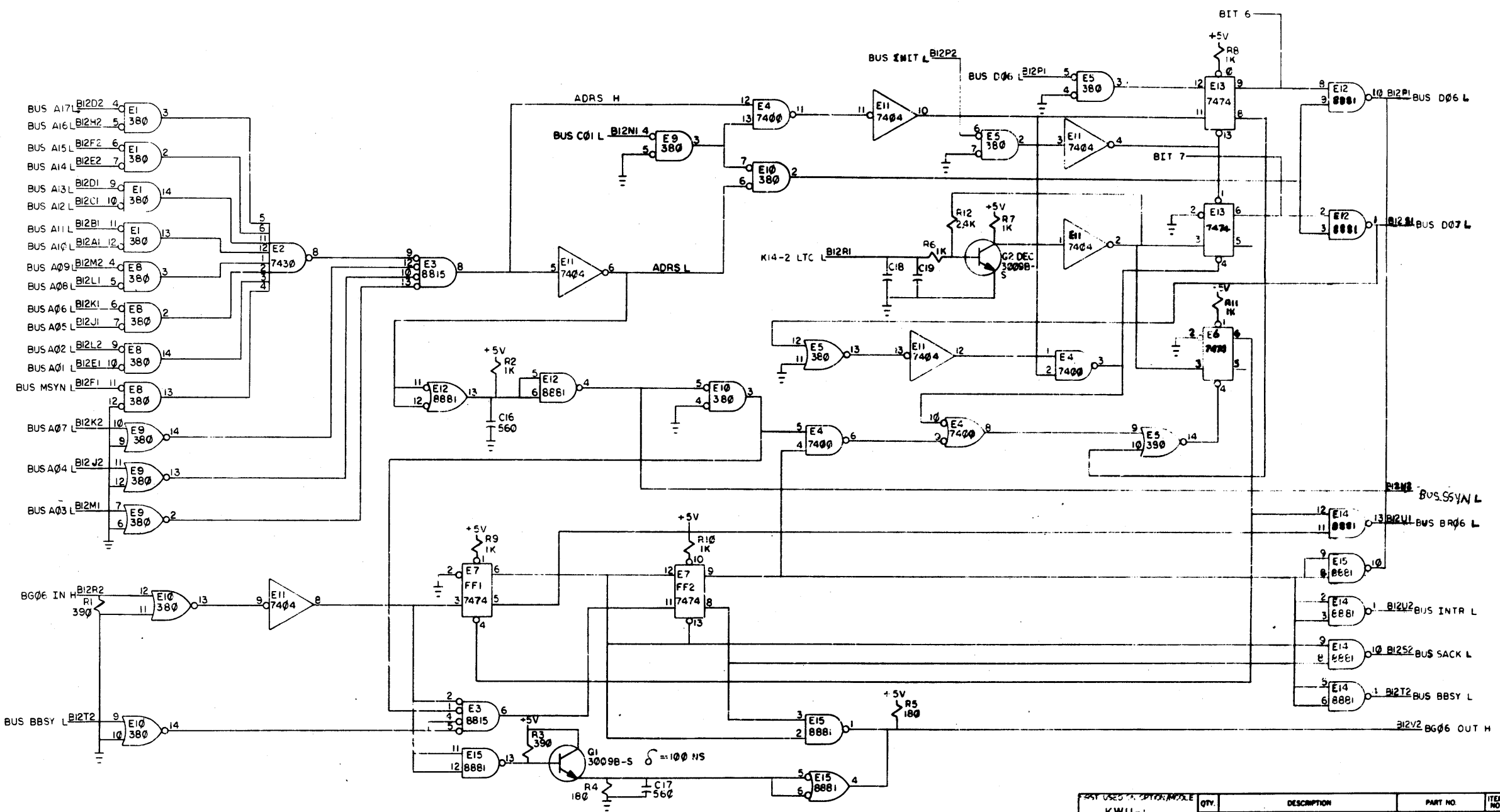
DRN: DATE: 2/2/70  
 CHK: DATE: 2/2/70  
 ENR: DATE: 2/2/70  
 PROJ. ENG: DATE: 2/2/70  
 Mfg. Date: 2/2/70

**digital EQUIPMENT CORPORATION**  
**LINE FREQUENCY INTERVAL CLOCK**  
 PART NO. KW11-L-01  
 SHEET 1 OF 2

REV A  
 NUMBER DBS KW11-L-01  
 SHEET CODE DBS

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10-111MKS 2



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

REV	NO.	DESCRIPTION	PART NO.	ITEM NO.
1	1	LINE FREQUENCY INTERVAL CLOCK	A-ML-KW11-L	A

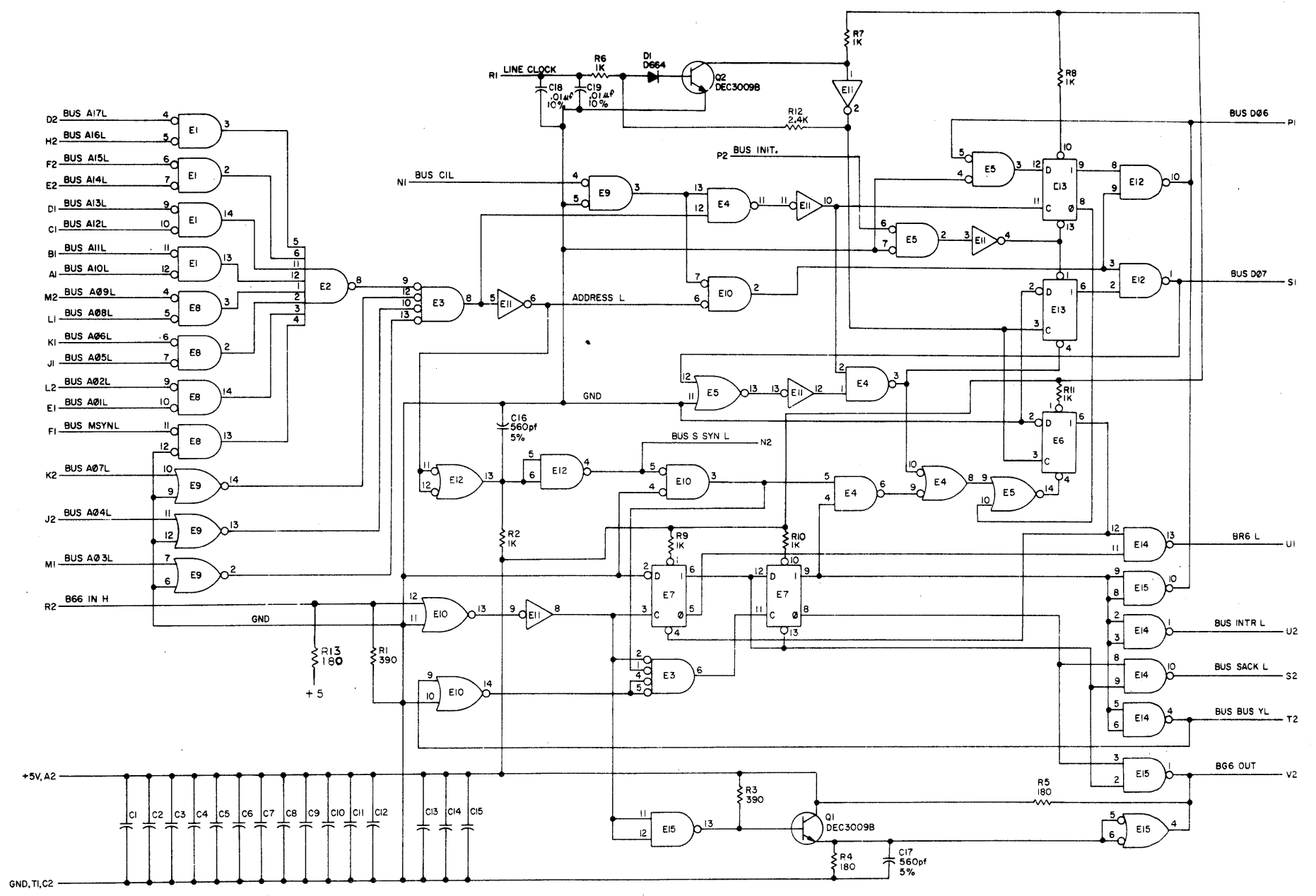
UNLESS OTHERWISE SPECIFIED	DATE	BY
TOLERANCES	12/1/70	W. J. D.
DECIMAL FRACTIONS	12/1/70	W. J. D.
ANGLES	12/1/70	W. J. D.
FINAL SURFACE QUALITY	12/1/70	W. J. D.
REMOVE BURRS AND BREAK SHARP CORNERS	12/1/70	W. J. D.

SCALE	SHEET	OF	TOTAL SHEETS
	2	OF	2

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1-0-82JM SC D  
REV. 1/75



UNLESS OTHERWISE INDICATED:  
RESISTORS ARE 1/4W, 5%  
CAPACITORS ARE .01uF, 100V, 20%  
DEC6640 = E1, E5, E8, E10, E9  
DEC7430 = E2  
DEC8815 = E3  
DEC7400 = E4  
DEC7404 = E11  
DEC8881 = E15, E12, E14  
DEC7474 = E6, E7, E13

PIN 1 = GND  
PIN 8 = +5V ON E1, E8, E9, E10, E5  
PIN 7 = GND ON E2, E3, E4, E11, E12, E14, E13, E7, E15, E6  
PIN 14 = +5V

NOTES  
1 DEC 8640 REPLACES THE OBSOLETE DEC 380

REV. 1	DATE	BY	CHKD.
1	10/27/70	OUTLER	
2	11/11/70		
3	11/11/70		
4	11/11/70		
5	11/11/70		
6	11/11/70		
7	11/11/70		
8	11/11/70		
9	11/11/70		
10	11/11/70		
11	11/11/70		
12	11/11/70		
13	11/11/70		
14	11/11/70		
15	11/11/70		

TRANSISTOR & DIODE CONVERSION CHART			
DEC	ISA	DEC	ISA
DEC3009B	2N3009B	8884	11J808

EQUIPMENT CORPORATION		SAITLAND, MASSACHUSETTS	
REV. D	CODE CS	NUMBER M787-0-1	REV. E
PRINTED CIRCUIT REV. CDE			

DEC FORM NO. 985 110

M0140 12

REV. E  
M787-0-1



DIGITAL EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

SOFTWARE LIST

LEGEND

- D DOCUMENT
- DN DOCUMENT CHANGE NOTICE
- PA PAPER TAPE ASCII
- PB PAPER TAPE BINARY
- PM PAPER TAPE READ-IN-MODE

QUANTITY/VARIATION

MADE BY	M. Buczynski	CHECKED	<i>[Signature]</i>	SECTION
DATE	6-15-72	DATE	7/28/72	
ENG	M. Buczynski	PROD	<i>[Signature]</i>	ISSUED SECT.
DATE	6-15-72	DATE	6/15/72	

ITEM NO.	DWG NO./ PART NO.	DESCRIPTION	QUANTITY/VARIATION										KIT CHECK BY DATE	INSTALLATION CHECK BY DATE		
1	MAINDEC 11-DZDA-PB	LINE FREQUENCY CLOCK TEST	1													
2	MAINDEC 11-D2DA-D	LINE FREQUENCY CLOCK TEST	1													

TITLE	ASSY. NO.	SIZE CODE	NUMBER	REV.	ECO NO
LINE FREQUENCY CLOCK (KW11-L)		A SL	KW11-L-28	*	
SHEET 1 OF 1		DIST.			

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W130 PARTS REFERENCE

ITEM NO	DRAWING REFERENCE	DESCRIPTION	PART NUMBER	QUANTITY
1	R1,R3,R5,R7,R9,R11,R13,R15,R17,R19,R21,R23,R25,R27,R29,R31,R33,R35,R37,R39,R41,R43,R45,R47,R49,R51,R53,R55	15K, 1/4W, 5%	RES. 1300496	28
2	R2,R4,R6,R8,R10,R12,R14,R16,R18,R20,R22,R24,R26,R28,R30,R32,R34,R36,R38,R40,R42,R44,R46,R48,R50,R52,R54,R56	470, 1/4W, 5%	RES. 1300316	28
3	Q1-Q56	DEC 3009B TRANSISTOR	1503100	56
4	PI	H607 BLOCK, CONNECTOR	1209123	1

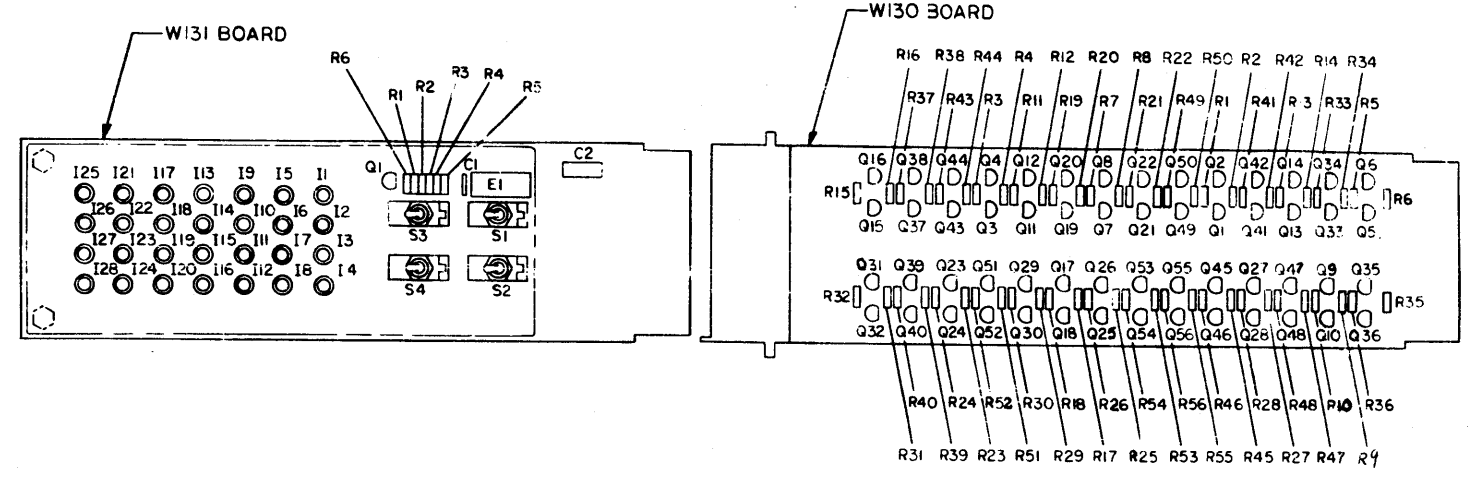
W131 PARTS REFERENCE

ITEM NO	DRAWING REFERENCE	DESCRIPTION	PART NUMBER	QUANTITY
1	E1	DEC 7400N IC	1905575	1
2	C1	.01 MFD, 100V, 20% DC CAP.	1001610	1
3	C2	6.8 MFD, 35V, 20% ST. CAP.	1000067	1
4	R1,R2,R3,R4,R5	3K, 1/4W, 5%	RES. 1300432	5
5	R6	330, 1/4W, 5%	RES. 1300295	1
6	Q1	DEC 3009B TRANSISTOR	1503100	1
7	I1-I28	LAMP HUDSON, BLUE *2309G	1209219	28
8	S1-S4	SWITCH, TOGGLE, SPST, 6ATT-12	1201163	4

NOTES:

- THE KM11 IS A TWO MODULE (#130, W131) OPTION TO THE KA11 TO AID MAINTENANCE. THIS PREWIRED OPTION IS INSTALLED BY INSERTING THE W130 MODULE INTO LOCATION B02 AND INSERTING THE W131 MODULE INTO THE W130. NOTE THAT THE SWITCHES AND LIGHTS FACE TOWARD AND EXTEND BELOW THE CONSOLE. THE BOTTOM COVER MUST BE REMOVED WITH THE CHASSIS EXTERNAL TO THE CABINET.
- LABELS FOR THE INTERNAL MACHINE STATES LAMPS ARE NOTED ON THE W131 ETCH BOARD. SWITCHES PROVIDE A MANUAL CLOCK AND BUS RESPONSE AND ARE ACTIVE WHEN THE TOGGLE IS TOWARD THE NAME. NORMAL MACHINE OPERATION REQUIRES THAT ALL SWITCHES BE IN THE OFF POSITION.
- "M CLK ENABLE" AND "M CLK" PROVIDE A MANUAL CLOCK FOR THE KA11. "M CLK ENABLE" IS ACTIVATED WHILE THE PROCESSOR IS HALTED. EACH TOGGLE OF "M CLK" THEN STEPS THE PROCESSOR THROUGH THE SMALLEST PROCESSOR CLOCK INTERVALS. THE R/W STATES, THE NEXT HIGHEST CLOCK INTERVAL (S CLK) IS PROVIDED BY FOUR TOGGLES (2 COMPLETE SWITCH CYCLES) AND INDICATED BY THE R/W2 LAMP. R/W2 IS THE LAST (OR REST) R/W STATE IN A "S CLK" INTERVAL, NORMAL OPERATION IS RESUMED WHEN "M CLK" AND THEN "M CLK ENABLE" ARE RETURNED TO OFF.
- "NO TIME OUT" AND "SSYN" PROVIDE A MANUAL BUS RESPONSE TO THE PROCESSOR. IT IS USED WHEN OTHER DEVICES ARE NOT AVAILABLE. "NO TIME OUT" IS ACTIVATED, WHILE THE PROCESSOR IS HALTED, TO ELIMINATE AN ERROR TRAP ON MANUAL "SSYN". AT THE APPROPRIATE TIMES IN A BUS TRANSFER "SSYN" IS ACTIVATED AND DEACTIVATED.

COMPONENT PLACEMENT



REV.	CHG.	CHANGE NO.

FIRST USED ON OPTION / MODEL PDP11	DO NOT SCALE DRAWING UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES DECIMALS FRACTIONS ANGLES ± .005 ± .002 ± .001 FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	DATE 12/23/70 DATE 1/17/71 DATE 5/17/70 DATE 6/17/70 DATE 8/2/70	DATE 12/23/70 DATE 1/17/71 DATE 5/17/70 DATE 6/17/70 DATE 8/2/70	DATE 12/23/70 DATE 1/17/71 DATE 5/17/70 DATE 6/17/70 DATE 8/2/70	DATE 12/23/70 DATE 1/17/71 DATE 5/17/70 DATE 6/17/70 DATE 8/2/70
MATERIAL + +		NEXT HIGHER ASSY A-ML-KM11-0		SCALE 1/1	
FINISH + +		SHEET 1 OF 3		DIST.	

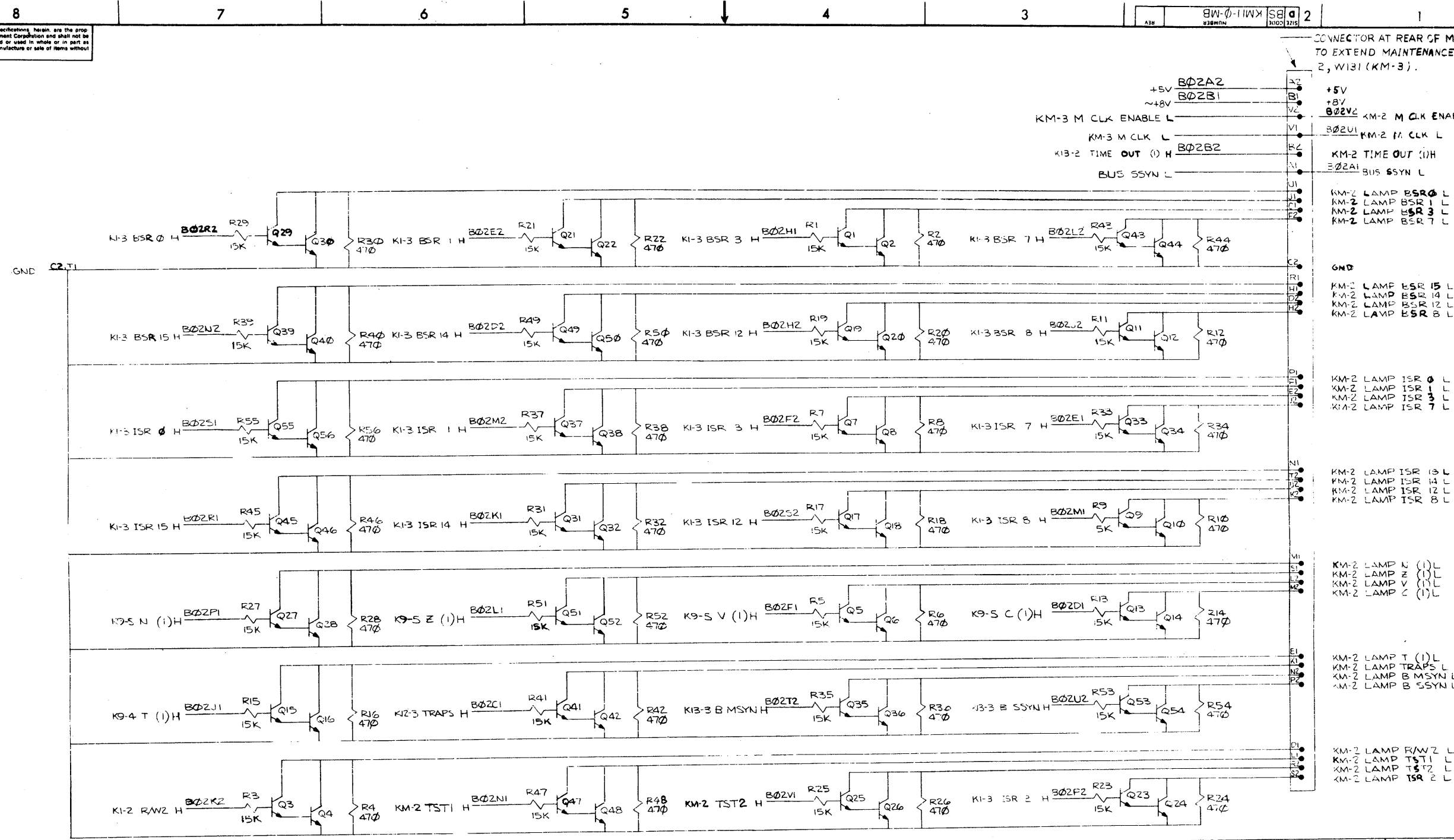
QTY.	DESCRIPTION	PART NO.	ITEM NO.

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	TITLE MAINTENANCE BOARD (182) KM-1
SIZE/SCALE D/BS/KM11-0-MB	NUMBER REV.

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8W-0-11MK 2

CONNECTOR AT REAR OF MODULE TO EXTEND MAINTENANCE BOARD 2, WI31 (KM-3).

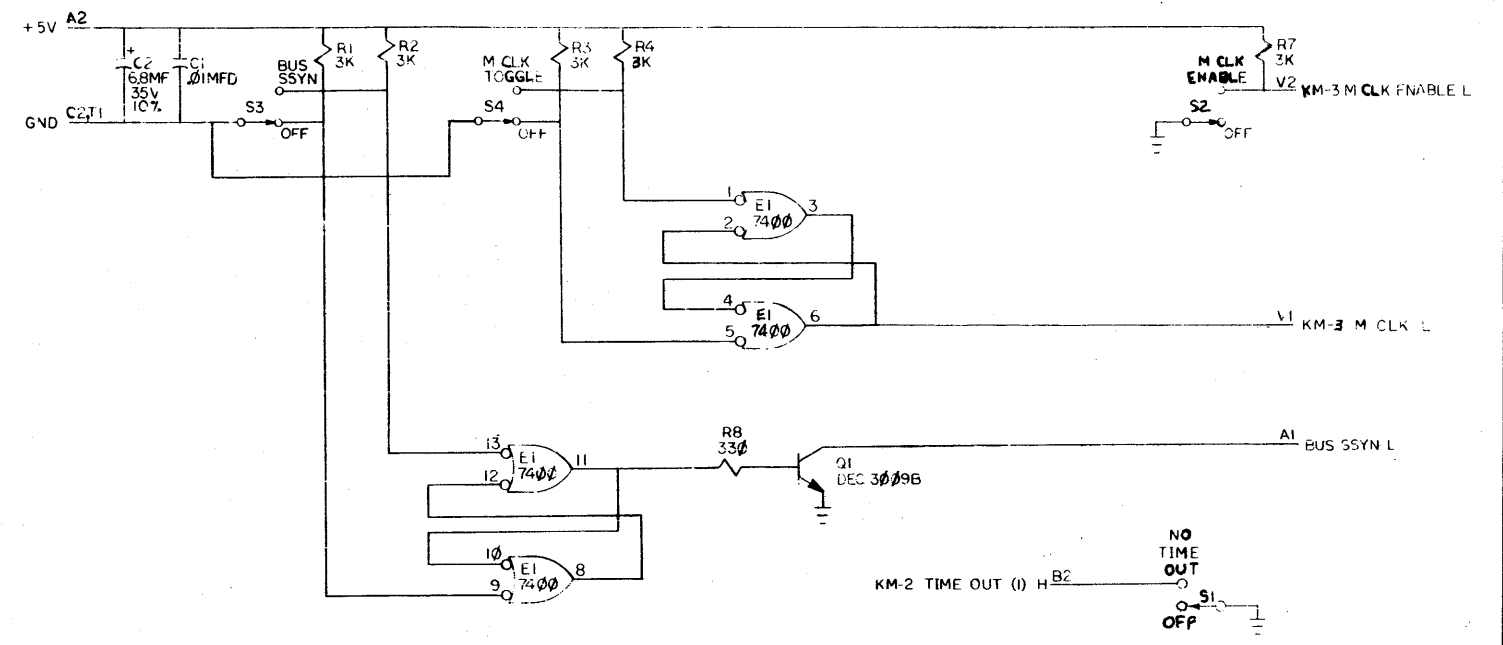
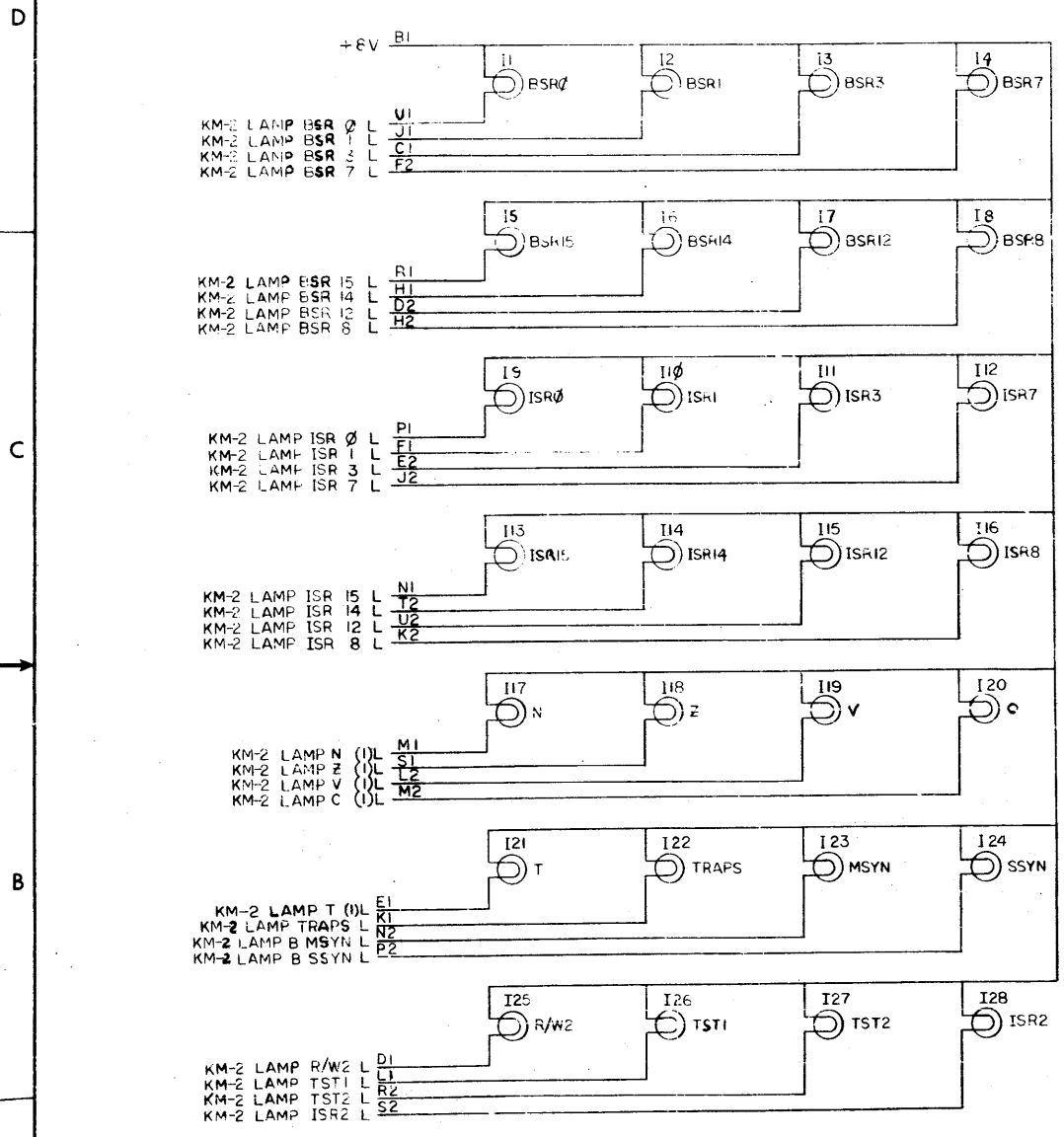


FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
PDP 11				
UNLESS OTHERWISE SPECIFIED	DRN	DATE	PARTS LIST	
UNLESS OTHERWISE SPECIFIED	DATE	DATE	digital EQUIPMENT CORPORATION	
DIMENSION IN INCHES	CHKD	DATE	TITLE	
TOLERANCES	ENG	DATE	MAINTENANCE BOARD (I)	
DECIMALS FRACTIONS ANGLES	PROJ. ENG.	DATE	WI30 KM-2	
= .005 = 1/64 = 0°30'	PRD	DATE	SIZE CODE NUMBER	
FINAL SURFACE QUALITY			DES KM11 0 MB	
REMOVE BURRS AND BREAK SHARP CORNERS			SCALE NONE	
MATERIAL			SHEET 2 OF 3	
FINISH			DIST	

REV	CHANGE NO

DEC FORM NO 080 102A

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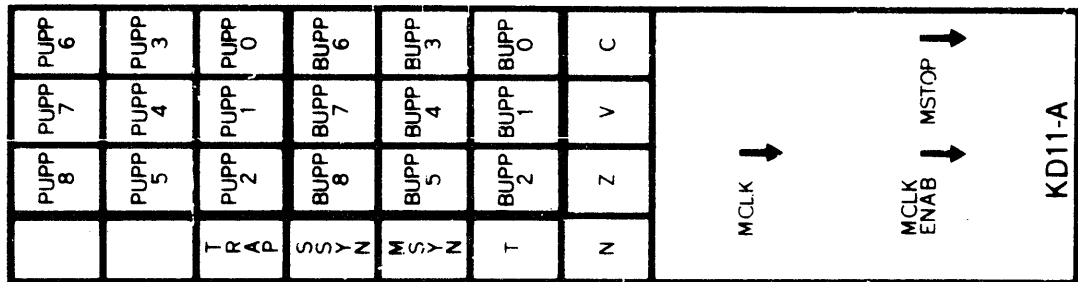


REV	CHANGE NO	NO

FIRST USED ON OPTION/MODEL PDP-11	QTY.	DESCRIPTION	PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DRN J. Rudis	DATE 2-17-69	PARTS LIST	
UNLESS OTHERWISE SPECIFIED TOLERANCES	CHKD J. Rudis	DATE 4-29-72	digital EQUIPMENT CORPORATION	
DECIMALS FRACTIONS ANGLES	ENG J. Rudis	DATE 3-26-72	TITLE	
± 0.005 ± 1/64 ± 0°30'	PROJ ENG J. Rudis	DATE 3-2-74	MAINTENANCE BOARD(2)	
FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS	PROJ J. Rudis	DATE 3-5-70	W131 KM-3	
MATERIAL	NEXT HIGHER ASSEMBLY		SIZE/CODE	NUMBER
FINISH	A-ME-KM11-0		DBS	KM11-0 MB
SCALE NONE	SHEET 3 OF 3		DIST.	1



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FIRST USED ON OPT / MOD  
KD11A

REVISIONS	
CHANGE NO.	REV.

SPEC # 9200100-94 (BLACK)

DRN <i>D. Mattson</i>	DATE 6-9-72	<b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. <i>BW</i>	DATE 7/7/72	
ENG. <i>S.E. Frigo</i>	DATE 7/7/72	
PROJ. ENG. <i>Flour...</i>	DATE 7/7/72	
PROD. <i>A. Singer</i>	DATE 7/31/72	
TITLE MAINT MODULE OVERLAY (KD11-A)		
NEXT HIGHER ASSY C.MD-5509081-0-0		SIZE CODE ASS
SCALE		NUMBER 5509081-0-12
SHEET OF		REV.
DIST.		


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KE11-E,F				KT11-D			
EXP OVL	MSR 01	EPS (N)	ROM D	EXP OVL	MSR 00	EPS (Z)	ROM A
EXP UNFL	MSR 00	EPS (Z)	PBA 08	EXP UNFL	MSR 00	EPS (Z)	PBA 17
ECN 00	DRO9	EPS (V)	PBA 07	ECN 00	DRO9	EPS (V)	PBA 16
B 15	DRO0	EPS (C)	PBA 06	B 15	DRO0	EPS (C)	PBA 15
							PBA 14
							PBA 13
							PBA 12
							PBA 11
							PBA 10
							PBA 09
							PBA 08
							PBA 07
							PBA 06
							PBA 05
							PBA 04
							PBA 03
							PBA 02
							PBA 01
							PBA 00

First used on opt/mod  
KT11-D  
KE11-E,F

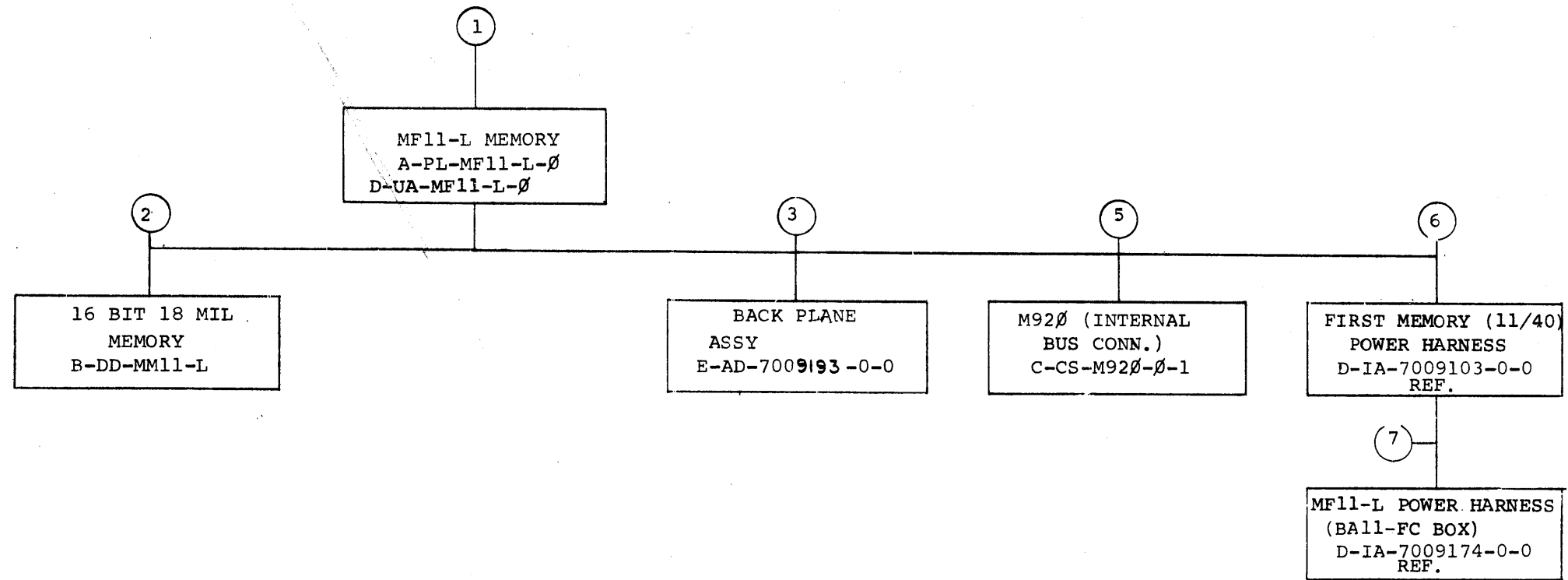
REVISIONS	REV.
	CHANGE NO.
CHK	

SPEC # 9200101-94 (BLACK)

DRN. <i>S. Dennis</i>	DATE 7-12-72	 <b>DIGITAL</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. <i>BW</i>	DATE 7-12-72	
ENG. <i>F. Blough</i>	DATE 7/25/72	
PROJ. ENG. <i>K. Blough</i>	DATE 7/25/72	
PROD. <i>A. Stanger</i>	DATE 7/31/72	TITLE
NEXT HIGHER ASSY		Maint. module OVERLAY (KT11-D KE11-E,F)
C-MD-5509081-0-0	SIZE CODE ASS	NUMBER 5509081-0-13
SCALE	SHEET	REV.
OF	DIST. G	







TITLE	SHEET	OF	SIZE	CODE	NUMBER	REV
BACK PLANE MF11-L	2	OF 3	B	DD	MF11-L	M

CUSTOMER PRINT SET		ELECTRICAL					CUSTOMER PRINT SET		MECHANICAL									
MF11-L	SET	NO.	FIND NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE	MF11-L	SET	NO.	FIND NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE			
X			1	A-PL-MF11-L-0	E	1	MF11-L MEMORY (PL)				1	A-PL-MF11-L-0	E	1	MF11 L MEMORY (PL)			
X				D-UA-MF11-L-0	E	1	MF11-L MEMORY							D-UA-MF11 L 0	E	1	MF11 L MEMORY	
X				D-MU-MF11-L-MU	C	1	MODULE UTILIZATION							C-PS-1210698-0-0		1	GUIDE CARD CENTER	
X				D-IA-7009560-0-0	#	1	MF11-L/LP OPTION HARNESS							D-IA-7009560-0-0	#	1	MF11 L/LP OPTION HARNESS	
			2	E-DD-MM11-L	#	3	16 BIT 18 MIL MEMORY				2	B-DD-MM11-L	#	3	16 BIT 18 MEL MEMORY			
X			3	E-AD-7009193-0-0		1	BACK PLANE ASSY				3	E-AD-7009193 0-0		1	BACK PLANE ASSY			
C				K-WL-7009193-0-1		1	ETCH/WIRE LIST							E PS 1210258 0-0		1	288 PIN CONN (H863)	
				A-WT-7009193-0		1	AWT REVISION STATUS							D-SC 1210834 0-0		1	360 PIN CONN	
X			4	D-CS-5410331-0-1	#	2	BACK PANEL ASSY							E-PS 1211459 0-0		1	LOGIC FRAME	
				K-CO-5410331-0-4			X-Y COORDINATE HOLE LOC.											
				D-AH-5410331-0-5			ASSY/DRILLING HOLE LAYOUT											
				B-MH-5410331-0-6			MODULE ECO HISTORY											
				K-WL-7009193-0-1	#	1	ETCH/WIRE LIST											
			5	C-CS-M920-0-1		1	CIRCUIT SCHEMATIC (INTERNAL BUS CONN)											
			6	D-IA-7009103-0-0	#	1	FIRST MEMORY (11/40) POWER HARNESS (OLD-REF.)				5	C-CS-M920-0-1		1	CIRCUIT SCHEMATIC			
			7	D-IA-7009174-0-0	#	1	MF11-L POWER HARNESS (BALL-FC BOX) (OLD-REF)				6	D-IA-7009103-0-0		1	FIRST MEMORY (11/40) POWER HARNESS (OLD REF)			
			8	D-IA-7009565-0-0	#	1	FIRST MEMORY - 11/40 HARNESS (REF.)				7	D-IA-7009174-0-0		1	MF11-L POWER HARNESS (BALL FC BOX) (OLD REF)			
											8	D-IA-7009565-0-0	#	1	First Memory 11/40 HARNESS (REF)			

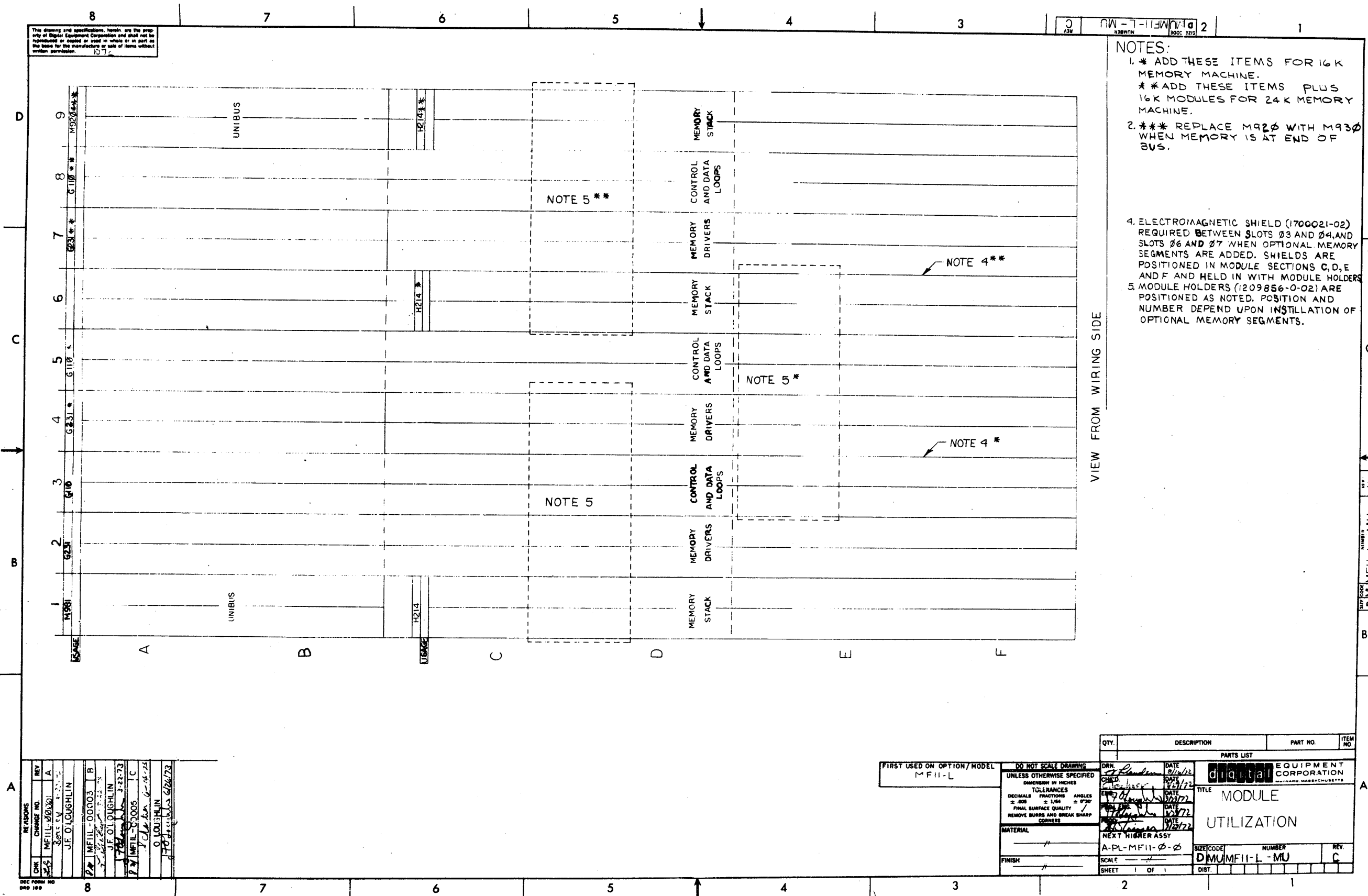
CUSTOMER PRINT SET CODES  
X = PRINT OF DOCUMENT INCLUDED IN PRINT SET  
C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT  
S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE MF11 L MEMORY (8K to 24K 16 BIT)

SHEET 3 OF 3 SIZE CODE B DD NUMBER MF11-L REV M

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DMUMF11-L-MU 2



NOTES:  
 1. \* ADD THESE ITEMS FOR 16 K MEMORY MACHINE.  
 \*\*ADD THESE ITEMS PLUS 16K MODULES FOR 24 K MEMORY MACHINE.  
 2. \*\*\* REPLACE M920 WITH M930 WHEN MEMORY IS AT END OF BUS.

4. ELECTROMAGNETIC SHIELD (1700021-02) REQUIRED BETWEEN SLOTS 03 AND 04, AND SLOTS 06 AND 07 WHEN OPTIONAL MEMORY SEGMENTS ARE ADDED. SHIELDS ARE POSITIONED IN MODULE SECTIONS C, D, E AND F AND HELD IN WITH MODULE HOLDERS  
 5. MODULE HOLDERS (1209856-0-02) ARE POSITIONED AS NOTED. POSITION AND NUMBER DEPEND UPON INSTALLATION OF OPTIONAL MEMORY SEGMENTS.

VIEW FROM WIRING SIDE

REVISIONS	REV	DATE	BY
CHANGE NO.	A	12/22/72	J.E. O'LOUGHLIN
CHK	J.E. O'LOUGHLIN		
DRN	J.E. O'LOUGHLIN		
DATE	12/22/72		
BY	J.E. O'LOUGHLIN		
DATE	12/22/72		
BY	J.E. O'LOUGHLIN		
DATE	12/22/72		
BY	J.E. O'LOUGHLIN		
DATE	12/22/72		
BY	J.E. O'LOUGHLIN		

FIRST USED ON OPTION/MODEL  
MFI1-L

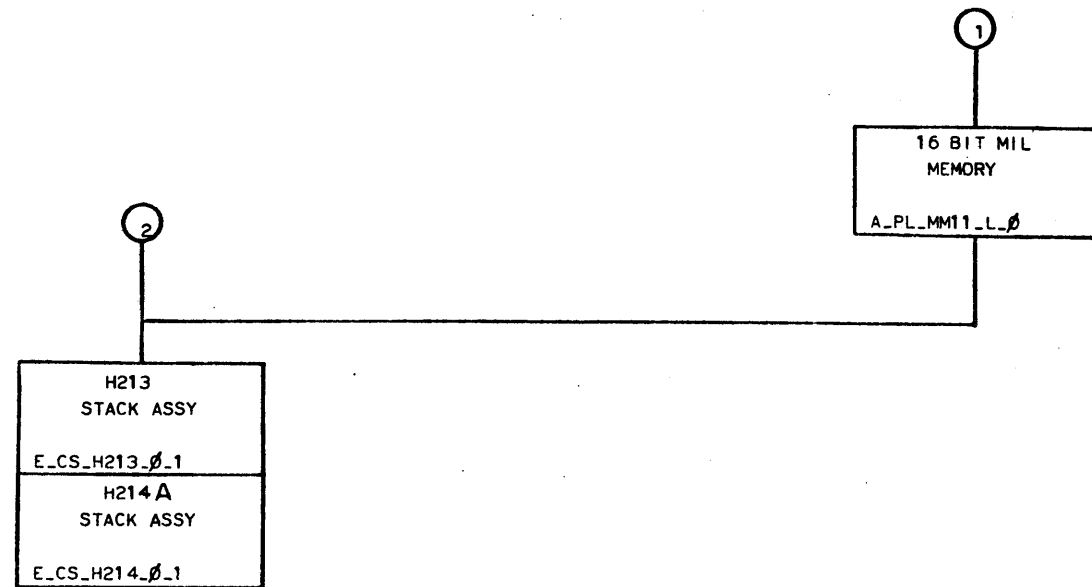
DO NOT SCALE DRAWING  
 UNLESS OTHERWISE SPECIFIED  
 DIMENSIONS IN INCHES  
 TOLERANCES  
 DECIMALS FRACTIONS ANGLES  
 ±.005 ± 1/64 ± 0°30'  
 FINAL SURFACE QUALITY  
 REMOVE BURRS AND BREAK SHARP CORNERS

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
	digital EQUIPMENT CORPORATION		
	TITLE: MODULE UTILIZATION		
	NEXT HIGHER ASSY: A-PL-MFI1-0-0		
	SCALE: 1 OF 1	SIZE/CODE: DMUMF11-L-MU	REV: C
	SHEET	DIST.	

DEC FORM NO 100





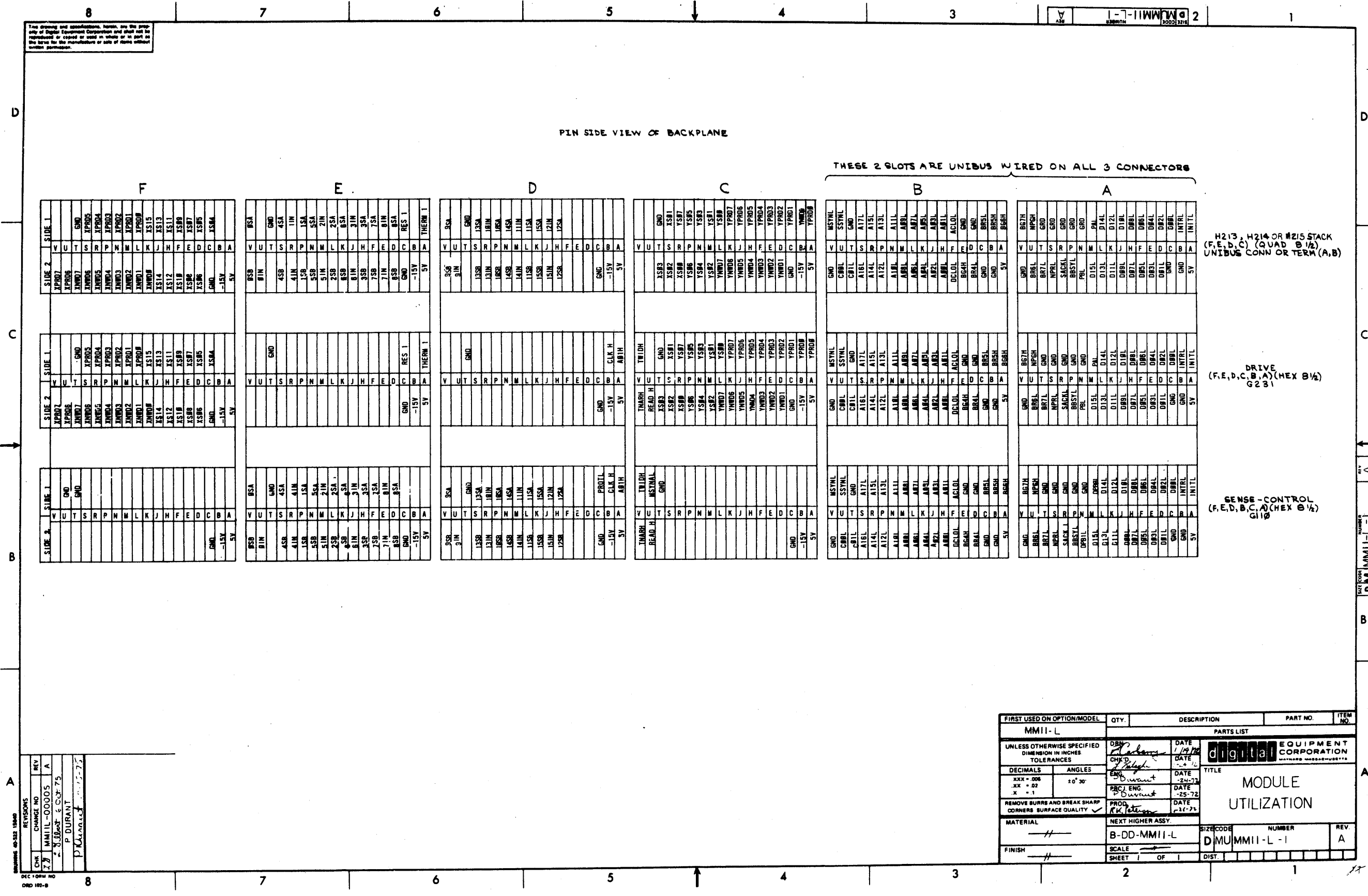


TITLE	SHEET	SIZE	CODE	NUMBER	REV
16 BIT 18 MIL MEMORY	2 OF 3	B	DD	MM11_L	J

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	A	1	MODULE UTILIZATION							1	A_PL_MM11-L-0	A	1	MEMORY	
X						D_BD_MM11-L-2	A	1	BLOCK DIAGRAM												
X						D_TD_MM11-L-3	*	1	TIMING DIAGRAM								A_PS_3010654_0_0			PURCHASE SPEC	
X						E_CS_G231-0-1	#	5	MEMORY DRIVER												
X						E_CS_G110-0-1	#	5	CONTROL & DATA LOOPS												
X						D_BD_MM11-S-2	#	2	BLOCK DIAGRAM												
X						A_PL_MM11-L-0		1	8K MEMORY							2	B_DD_H214-0-1	#	2	STACK SCHEMATIC	
						A-SP-MM11-1-7	A	4	PRELIM. ENG. SPEC. FOR MM11-K,L								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 & A-SP MFG. TEST SPEC.												
				X		A-SP-MM11-L-5		29	MFG. TEST PRO. MM11/K,L,M,S & SP												

TITLE	SIZE	CODE	NUMBER	REV
16 BIT 18 MIL MEMORY	B	DD	MM11-L	J

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REV	NO	DATE	BY
1	1	1/13/72	...
2	2	2/14/72	...

DEC 100-8

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MM11-L				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	TITLE		
XXX + 0.08	± 0° 30'	MODULE UTILIZATION		
.XX + .02		SIZE CODE		
.X + .1		B-DD-MM11-L		
MATERIAL		NEXT HIGHER ASSY.		REV
FINISH		SCALE		A
		SHEET OF		

H213, H214 OR H215 STACK  
(F, E, D, C) (QUAD B 1/2)  
UNIBUS CONN OR TERM (A, B)

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

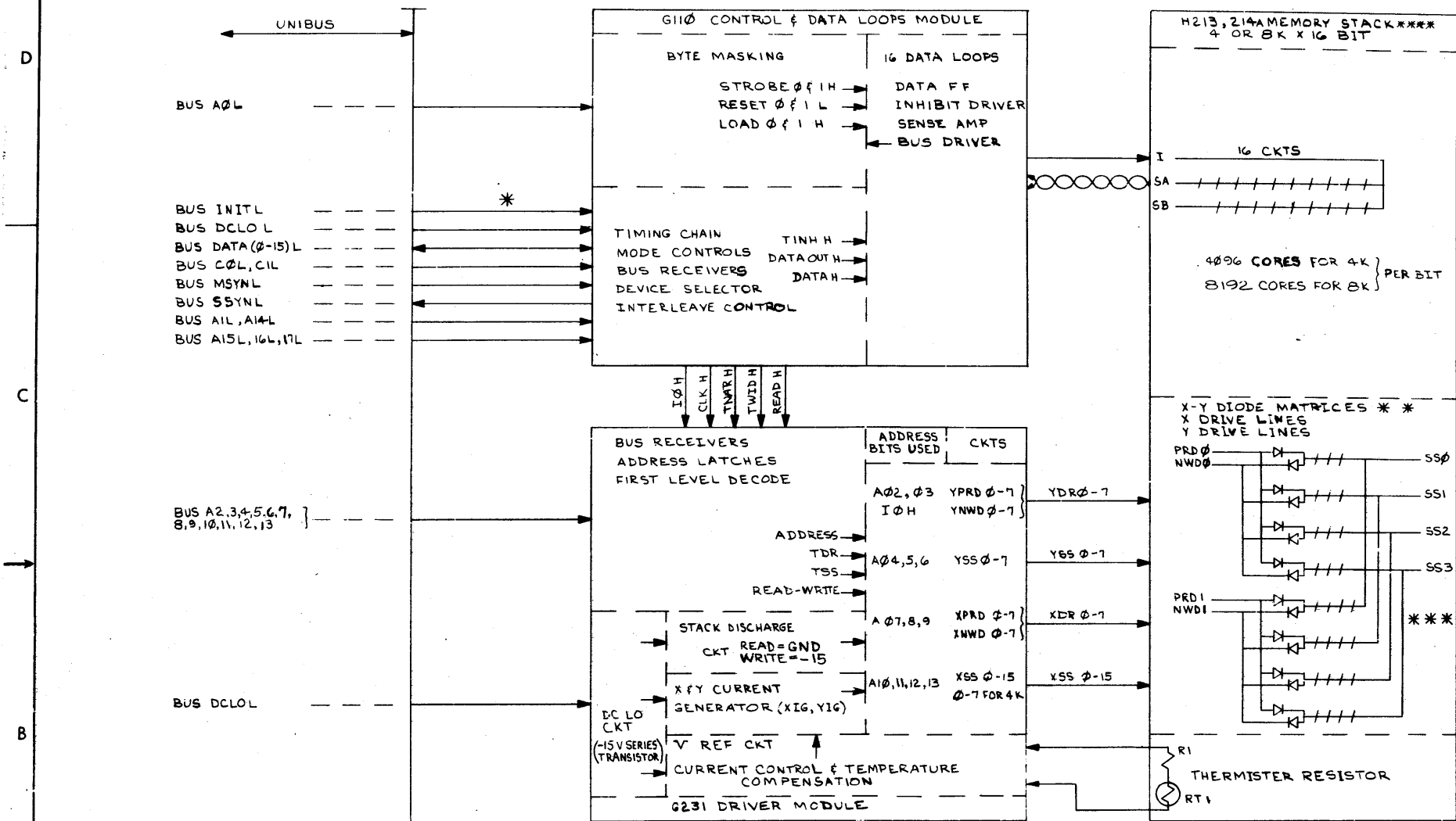
SENSE-CONTROL  
(F, E, D, B, C, A) (HEX B 1/2)  
G110

PART CODE DMM11-L-1

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2-7-11MM108 2

NOTE 5:  
 \*1. ALL ARROWS SHOW SIGNAL FLOW DIRECTION.  
 \*\*2. MATRIX SHOWN IS FOR ILLUSTRATION ONLY.  
 \*\*\*3. ACTUAL MATRIX HAS { Y AXIS 8PRD, 8NRD, 865  
 X AXIS 4K 8PRD, 8NRD, 855  
 X AXIS 8K 8PRD, 8NRD, 1666  
 \*\*\*\*4. H214A IS A DESIGNATOR FOR EITHER AN H214 OR  
 H215 MEMORY STACK, SEE E-CS-H214-0-1



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MM11-L		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.		DRN	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
TOLERANCES		CHK'D	DATE	
DECIMALS	ANGLES	ENG.	DATE	TITLE BLOCK DIAGRAM
.xxx - .005	$\pm 0^{\circ} 30'$	PROJ. ENG.	DATE	
.xx - .02		PROJ.	DATE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROJ.	DATE	
MATERIAL	NEXT HIGHER ASSY.	(MM11-L)		
FINISH	SCALE	SIZE CODE	NUMBER	REV.
	SHEET OF 1	DBD	MM11-L-2	A

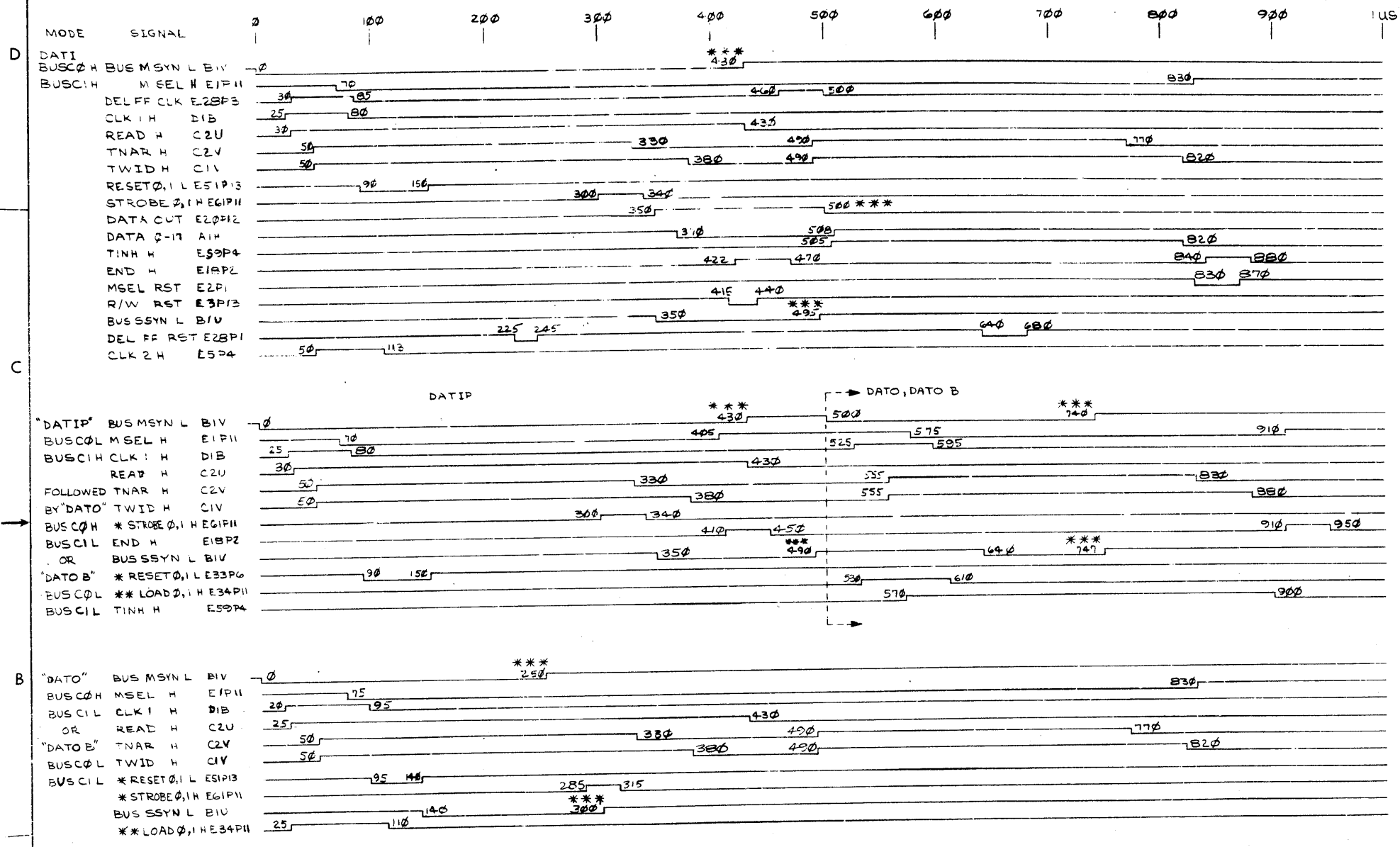
REV.	CHANGE NO.	DATE	BY
1	MM11-L-00005	1-25-71	A
2	MM11-L-00075	1-25-71	A
3	MM11-L-00175	1-26-72	A

DESIGNED BY: P. DURANT  
 DRAWN BY: P. DURANT  
 CHECKED BY: P. DURANT

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2-111MM-L-3

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 6109 OR 610 MODULE



BRUNING 40-522 15840  
 117 FORM 11  
 (10/102-R)

REV	CHG	NO	DATE

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MMH-L		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN <i>J. Carbery</i>	DATE 12/3/71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS ANGLES	CHK'D <i>J. Carbery</i>	DATE 1-27-72	TITLE TIMING DIAGRAM	
XXX - 00F ±0.30 XX - 02 X - 1	ENG <i>J. Carbery</i>	DATE 1-25-72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ. ENG. <i>J. Carbery</i>	DATE 1-25-72		
MATERIAL	PROD. <i>K. Peterson</i>	DATE 1-27-72		
FINISH	NEXT HIGHER ASSY		(MMH-L, MMH-K)	
	B-DD-MMH-L	SIZE CODE	NUMBER	REV
	SCALE	DITD MMH-L-3		
	SHEET 1 OF 1	DIST		

DITD MMH-L-3



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D  
C  
B  
A

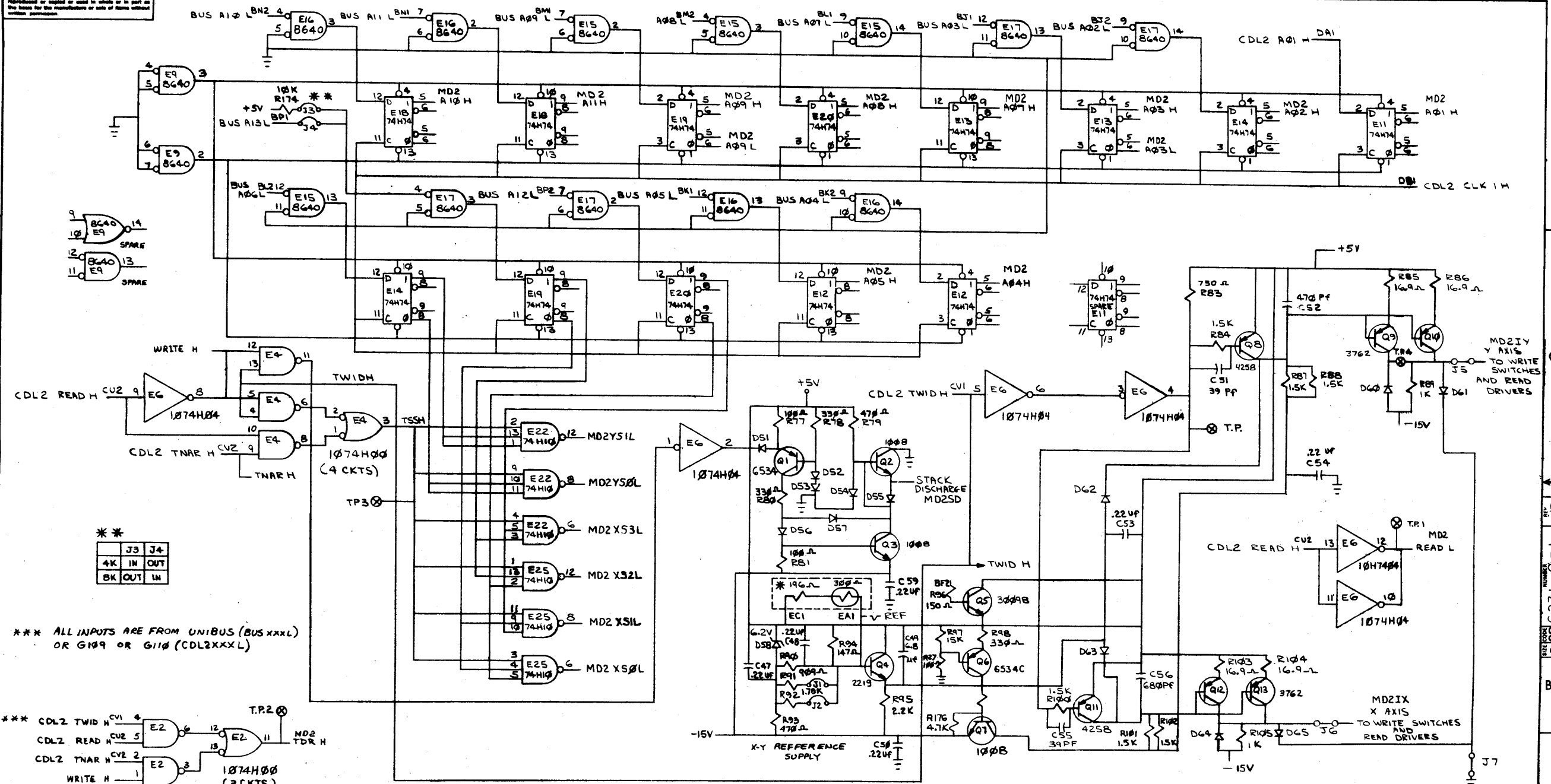
QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
		SCREW, NYLON, #6 - 32	9008212	55
1	C127	CAP., 39 UF, 10V	1000076	56
1	C56	CAP., 680 PF, 100V, 5%	1000026	57
1	C52	CAP., 470 PF, 100V, 5%	1000024	58
2	J7, J8	JUMPER MACH. INSERTED	9009185	59
1	R176	RES., 4.7K, 1/4W, 5%	1300447	60
2	J5, J6	#22 AWG., STRANDED TEFLON INSULATED	1700035-00	61

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
		X-Y COORDINATE HOLE LOCATION	K-CO-G231-04	1
		ASSY DRILLING HOLE LAYOUT	E-4H-G231-05	2
		MODULE ECO HISTORY	B-4H-G231-06	3
		ETCHED CIRCUIT BOARD	5889788	4
2	C51, C55	CAP., 39PF, 100V, 5% DM	1009010	5
A/R		WIRE JUMPER AWG #22 SOLID	9107560-01	6
80	C36-C45, C57, C58, C68-C73, C75-C186, C189-C124	CAP. 1000PF, 100V 5% DM	1009042	7
36	C6-C29, C46, C47, C48, C50, C53, C54, C74, C187, C188, C125, C126, C59	CAP., 22UF, 50V, -20%, 8P.	1010274	8
6	C1-C5, C49	CAP., 6.8 MFD, 35V, 20%	1000067	9
88	D1-D16, D19-D54, D56, D57, D62, D63, D68-D99	DIODE, D664	1100114	10
25	D17, D18, D55, D68, D61, D64-D67, D181-D116	DIODE, D672	1105275	11
1	D58	DIODE, 1N823, ZENOR	1105508	12
				13
41	R1-R8, R28-R35, R53-R60, R96, R197-R114, R142-R149	RES., 150, 1/4W, 5%	1300250	14
3	R78, R88, R98	RES., 330, 1/4W, 5%	1300295	15
1	Q6	TRANS., 6534C	1503408-2	16
1	R93	RES., 470, 1/4W, 5%	1300315	17
3	R84, R99, R108	RES., 1.5K, 1/4W, 5%	1300391	18
1	R79	RES., 470, 1/4W, 10%	1300317	19
4	R87, R88, R101, R102	RES., 1.5K, 1/4W, 5%	1300394	20
1	R95	RES., 2.2K, 1/4W, 5%	1300417	21
1	R174	RES., 10K, 1/4W, 5%	1300479	22
1	R97	RES., 15K, 1/4W, 5%	1300496	23
3	R36, R139, R148	RES., 5.1, 1/4W, 5%	1309422	24
1	R83	RES., 750, 1/4W, 5%	1301401	25
4	R9, R18, R186, R141	RES., 680, 1/4W, 5%	1301424	26
2	R89, R185	RES., 2K, 1/4W, 5%	1302387	27
2	R98, R94	RES., 147, 1/8W, 1%	1302874	28
1	R91	RES., 909, 1/8W, 1%	1302685	29
1	R92	RES., 1.78K, 1/8W, 1%	1302612	30
4	R85, R86, R184, R103	RES., 16.9, 6W, 1%	1310032	31
1	Q4	TRANSISTOR, 2219	1501881	32
3	Q2, Q3, Q7	TRANSISTOR, 1888	1502155	33
1	Q5	TRANSISTOR, 3888 B	1503100	34
1	U1	TRANSISTOR, 6534 D	1503409	35
2	Q8, Q11	TRANSISTOR, 294258	1505321	36
4	Q9, Q19, Q12, Q13	TRANSISTOR, 293762	1509649	37
20	E1, E5, E7, E18, E21, E24, E26, E28, E39, E32, E33, E35, E36, E38, E39, E41, E42, E44, E45, E47	IC, 4011 QUAD TRANSISTOR	1511102 *	38
4	E9, E15, E16, E17	IC, DEC, 8640	1911469	39
20	T1-T28	TRANSFORMER	1609996	40
2	E22, E25	IC, 74H10	1909057	41
3	E2, E4, E27	IC, 1974H08	1918462 *	42
10	E3, E8, E23, E28, E31, E34, E37, E48, E43, E46	IC, 8251-1	1909854	43
1	L6	IC, 1974H04	1910463 *	44
7	E11-E14, E18, E19, E28	IC, 74H74	1909867	45
4		HEAT SINK	1210001	46
12		SPLIT LUGS	9006735	47
1		HANDLE	1210711-02	48
12		EYELET, #6SA-7, E. B. STIMPSON	9006732	49
4		TRANSIPAD	9007200	50
				51
				52
83	R11-R26, R37-R52, R61-R76, R123-R138, R158-R173, R77, R81, R27	RES., 100, 1/4W, 5%	1300229	53
4	W1-W4	STANDOFF THREADED, INSULATED 1/4 X 3/8 LG.	9008213	54

D  
C  
B  
A

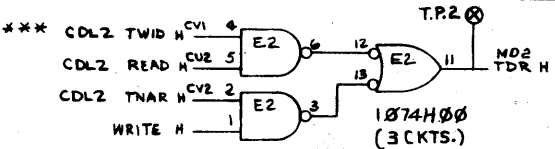
TITLE: PDP-11 MEMORY DRIVER  
 SIZE CODE: DCS  
 NUMBER: G231-0-1  
 SCALE: SHEET 2 OF 5  
 DIST.:

REVISIONS		
CHK	CHANGE NO.	REV.



\*\*\* ALL INPUTS ARE FROM UNIBUS (BUS XXXL) OR G109 OR G110 (CDL2XXXL)

J3	J4
4K	IN OUT
BK	OUT IN



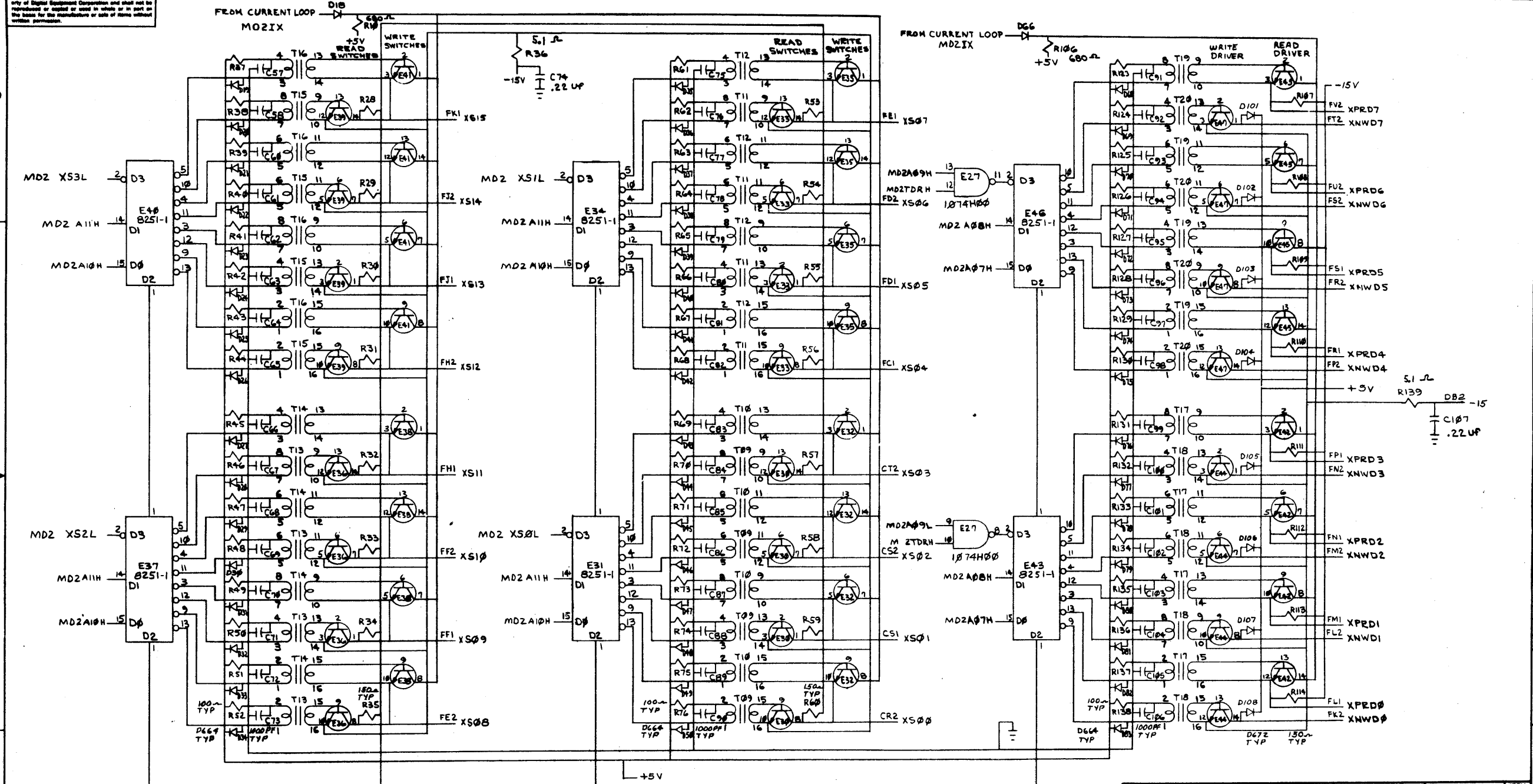
\* THIS CIRCUIT IS ON STACK BOARD

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED, DIMENSION IN INCHES, TOLERANCES:				
DECIMALS	ANGLES	DATE 9-29-71		
.XXX - .005	±0°30'	DATE 1-21-72		
.XX - .02		DATE 6-29-72		
.X - .1		DATE 1-25-72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE 1-2-72		
MATERIAL	NEXT HIGHER ASSY.	TITLE PDP-11 MEMORY DRIVER		
FINISH	SCALE	SIZE CODE DCS	NUMBER G231-0-1	REV. R
	SHEET 3 OF 5	DIST.		



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10-127950 2



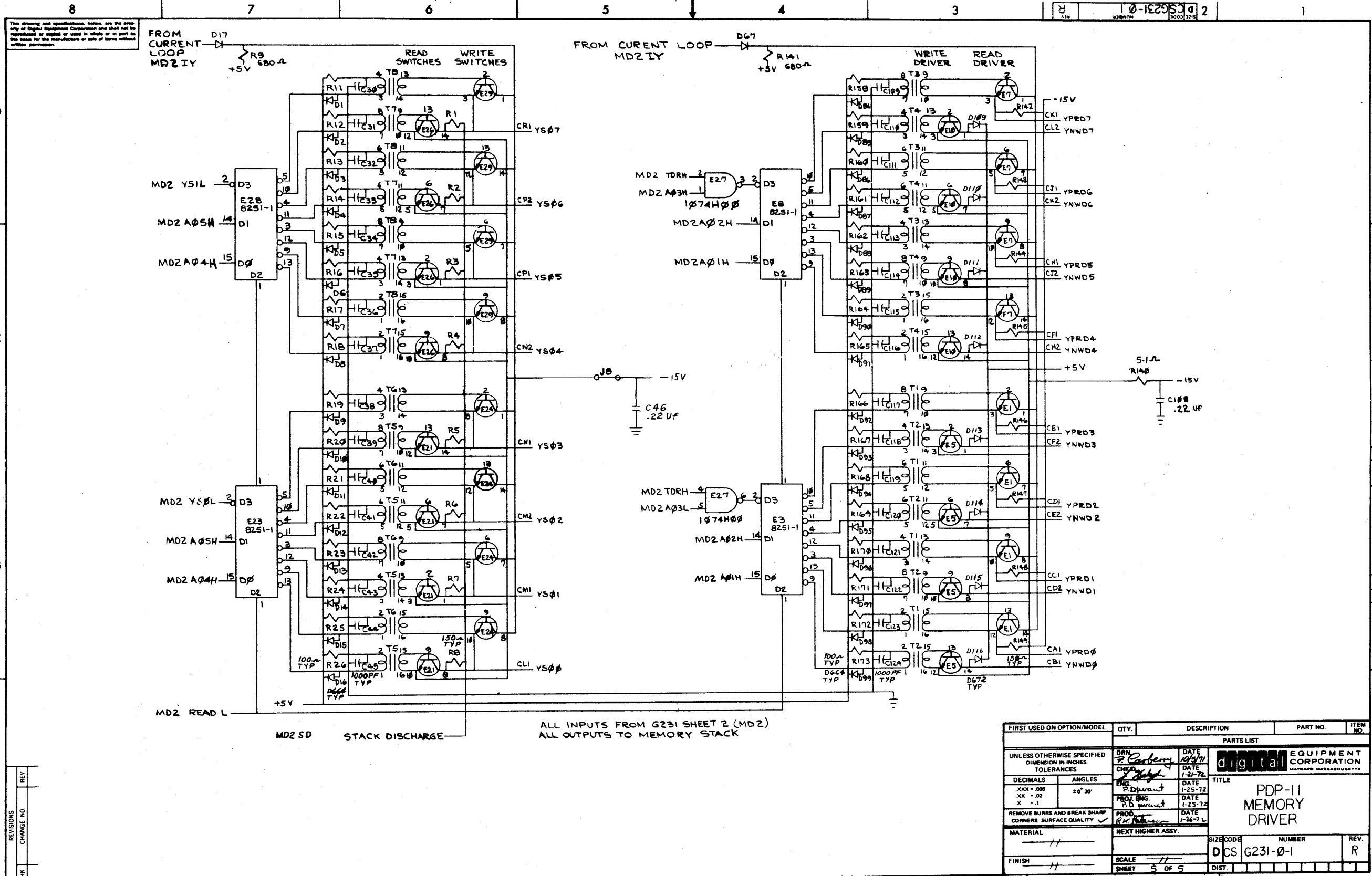
MD2SD STACK DISCHARGE

MD2 READ L

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

REV	
CHG	
CHK	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRY 2/2/71	DATE	PARTS LIST	
DECIMALS .XXX - .005	CHKD 1/21/72	DATE	DIGITAL EQUIPMENT CORPORATION	
ANGLES 10° 30'	ENG. 1/25/72	DATE	TITLE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ. ENG. 1-25-72	DATE	PDP-11 MEMORY DRIVER	
MATERIAL	PROD. 1-26-72	DATE	SIZE/NUMBER	
FINISH	NEXT HIGHER ASSY.		DCS G231-01	
	SCALE		REV	
	SHEET 4 OF 5		R	

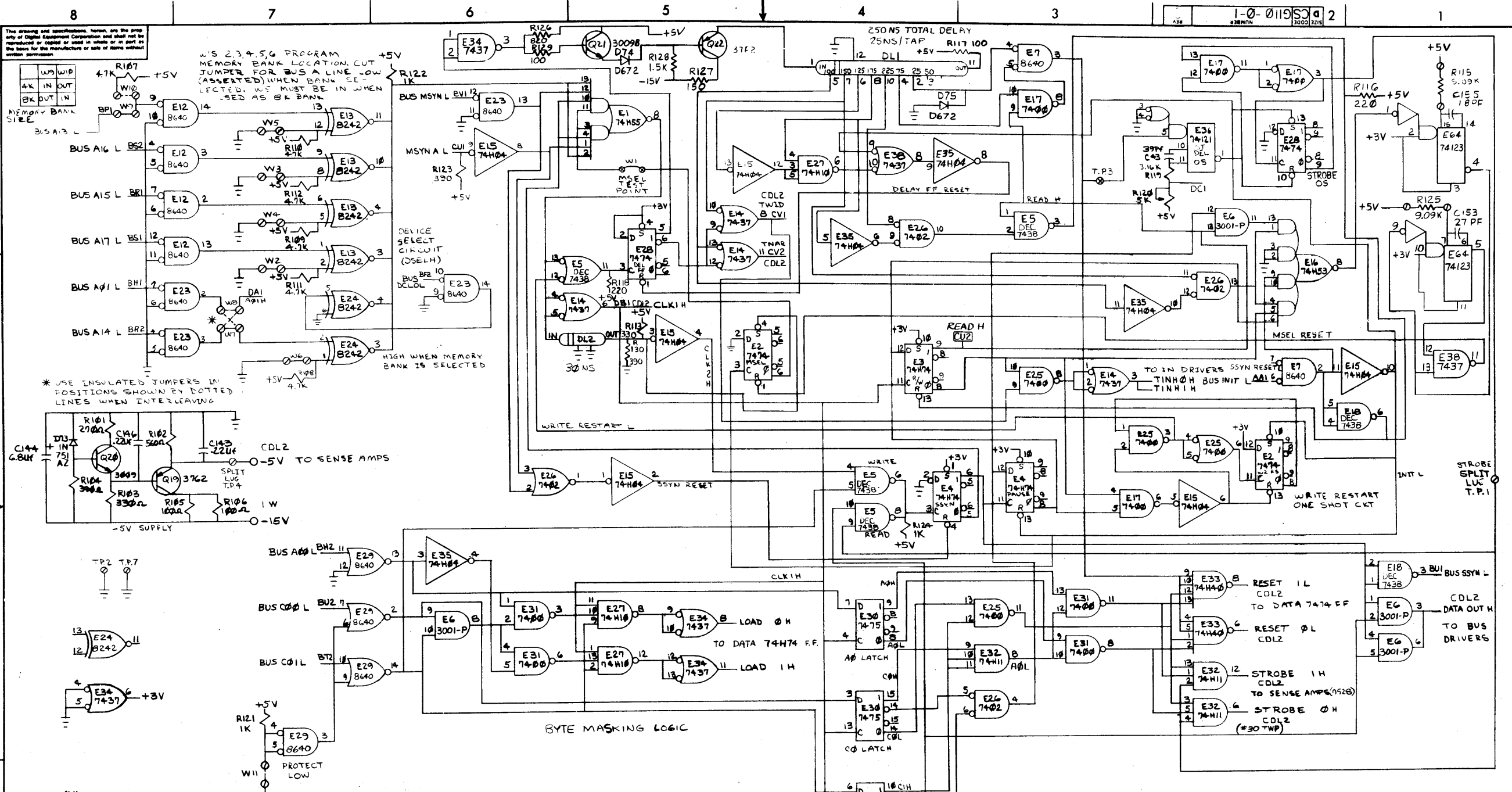


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FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN <i>Z. Carberry</i> DATE 10/27/71	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .xxx - .006	ANGLES 20° 30'	CHKD <i>[Signature]</i> DATE 1-21-72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		ENG. <i>[Signature]</i> DATE 1-25-72	TITLE <b>PDP-11 MEMORY DRIVER</b>	
		PROJ. ENG. <i>[Signature]</i> DATE 1-25-72		
MATERIAL		PROD. <i>[Signature]</i> DATE 1-26-72	SIZE CODE NUMBER REV. DCS G231-0-1 R	
FINISH				
NEXT HIGHER ASSY.		SCALE		
		SHEET 5 OF 5		

REVISIONS	REV.
CHANGE NO.	
CHK	





REVISIONS

REV	CHANGE NO.	DESCRIPTION

CHK

AVI — TP5  
AUI — TP6

	W12	W13	W14	W15	W16	W17
G110	OUT	OUT	OUT	OUT	IN	IN

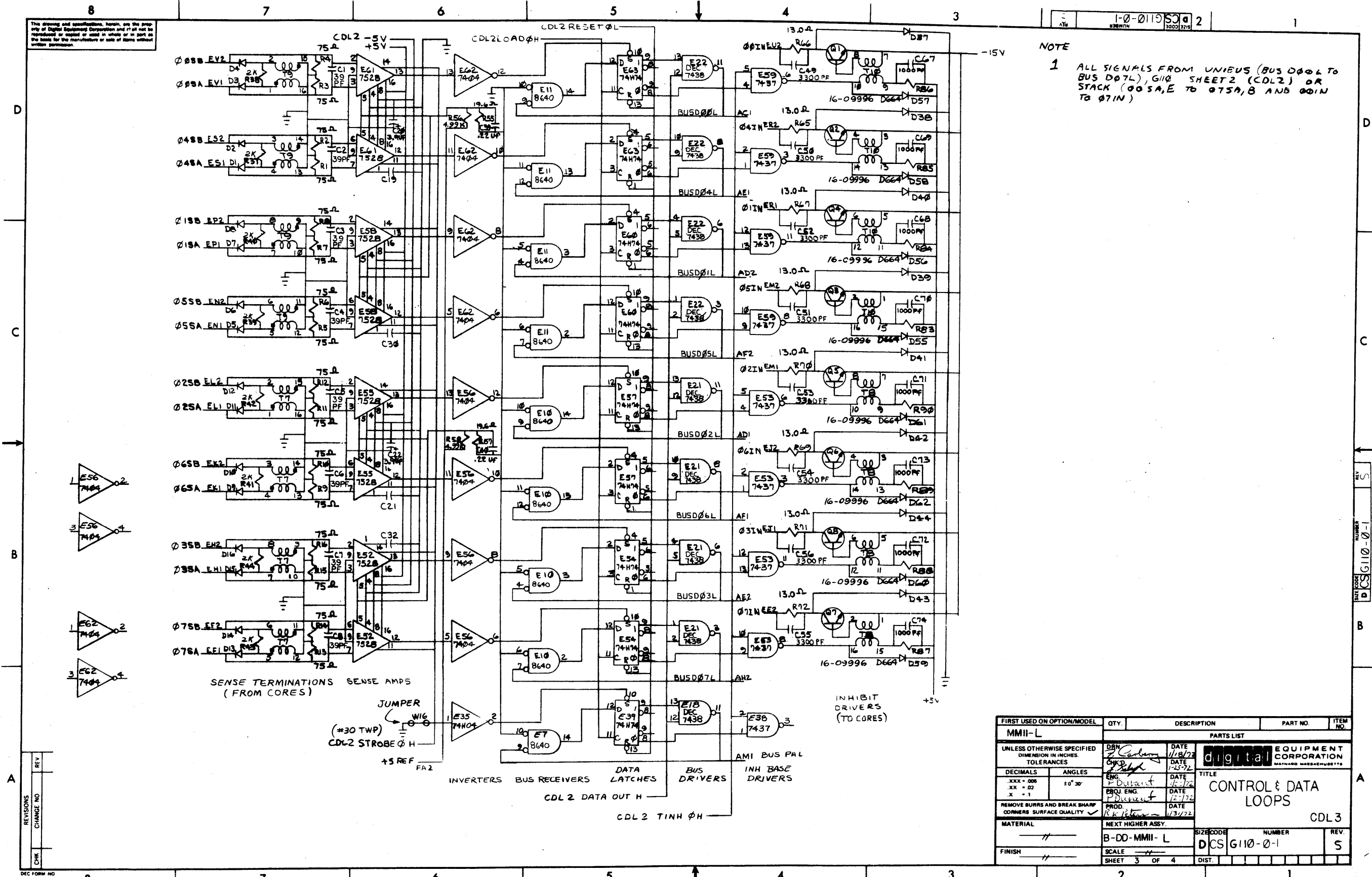
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MM11-L		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	TITLE		
.XXX - .006	±0°30'	CONTROL & DATA LOOPS		
.XX - .02		CDL 2		
.X - .1		REV. S		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
FINISH	B-00-MM11-L	DCS	G110-0-1	S
SHEET 2 OF 4		DIST.		

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1-0-0119 SCD 2

NOTE

1 ALL SIGNALS FROM UNIEUS (BUS D004 TO BUS D07L), G10 SHEET 2 (CDL2) OR STACK (005A, E TO 075A, B AND 001N TO 071N)



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MM11-L		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DATE	EQUIPMENT	
DECIMALS	ANGLES	1/18/72	digital CORPORATION	
.XX + .005	± 0° 30'	DATE	MAYFIELD MASSACHUSETTS	
.XX - .02		1-23-72		
.X - .1		DATE	TITLE	
		16-1-72	CONTROL & DATA	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE	LOOPS	
		12-1-72	CDL3	
MATERIAL	NEXT HIGHER ASSY.	DATE		
FINISH	B-DD-MM11-L	1/31/72	SIZE CODE	NUMBER
			DCS G110-0-1	REV. S
	SCALE		DIST.	
	SHEET 3 OF 4			

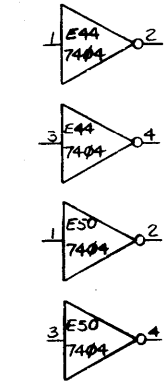
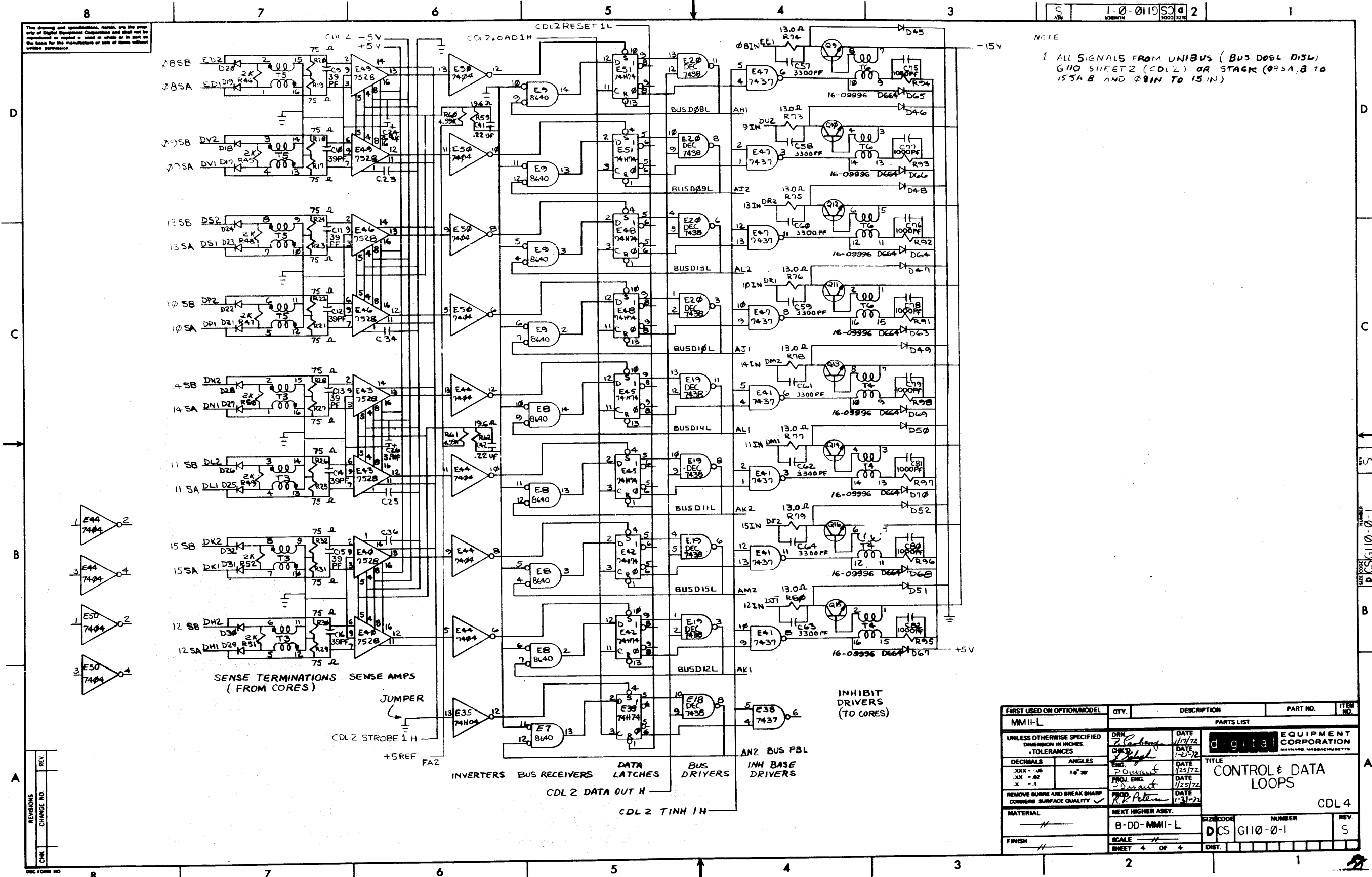
REVISIONS  
CHANGE NO. REV.

REV. S  
NUMBER  
DCS G110-0-1

DEC FORM NO. 2

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NOTE  
 1 ALL SIGNALS FROM UNIBUS (BUS D08L D15L) GIO SHEETZ (CDL2) OR STACK (09SA, B TO 15SA B AND 09IN TO 15IN)



SENSE TERMINATIONS (FROM CORES)  
 SENSE AMPS

JUMPER

INVERTERS BUS RECEIVERS DATA LATCHES BUS DRIVERS AN2 BUS PBL INH BASE DRIVERS

INHIBIT DRIVERS (TO CORES)

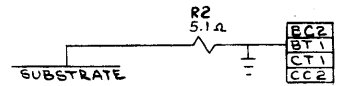
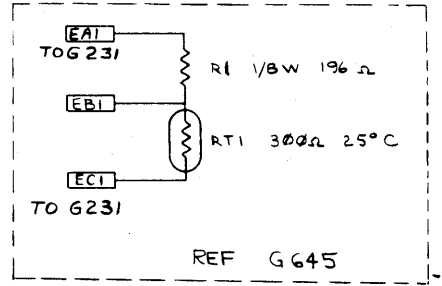
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MM11-L		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES .TOLERANCES				
DECIMALS	ANGLES	TITLE		
.XXX - .05	10° 30'	CONTROL & DATA LOOPS		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE		
MATERIAL		DATE		
FINISH		DATE		
NEXT HIGHER ASSEMBLY		CDL 4		
B-DD-MM11-L		SIZE CODE	NUMBER	REV.
SCALE		DCS	GI10-0-1	S
SHEET 4 OF 4		DST.		

REV.	CHANGE NO.



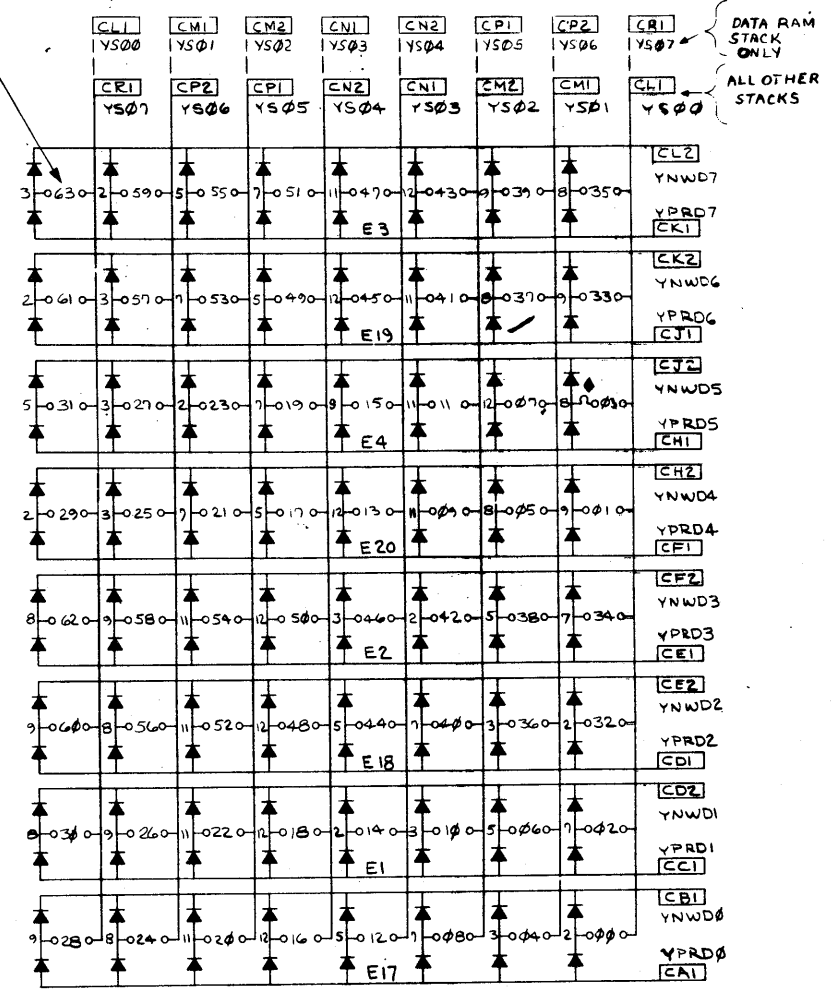
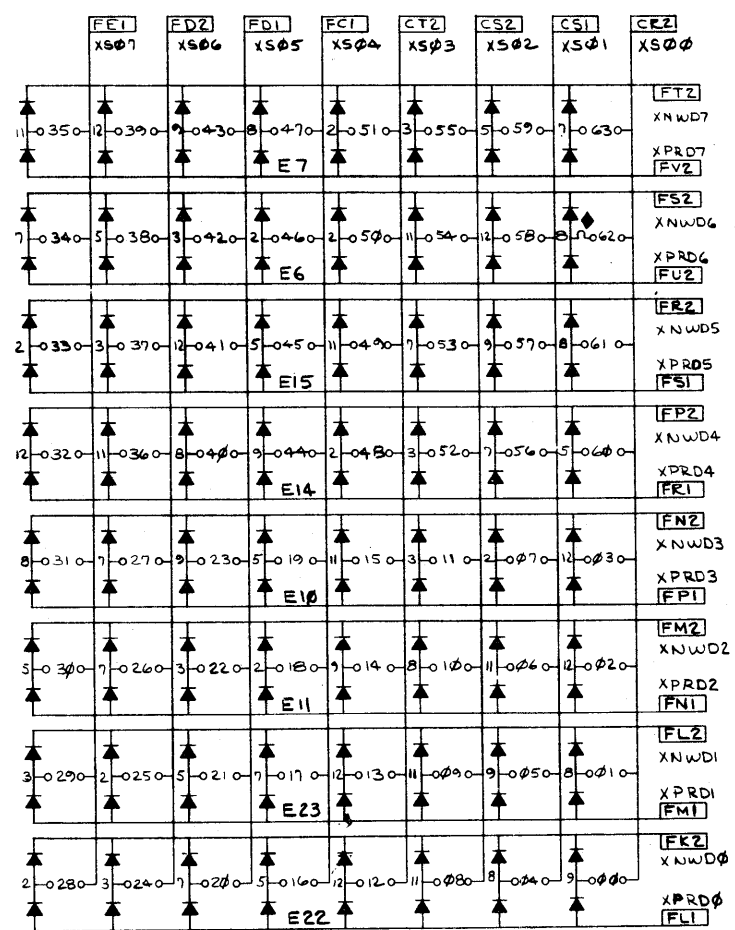


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NOTES  
 1. UNLESS OTHERWISE SPECIFIED:  
 IC'S ARE TO BE DEC PART # 1710010  
 2. INDICATES STACK LINE NUMBER. (TYP)  
 3. INDICATES CURRENT LOOP.  
 4. INDICATES MAGNET WIRE TERMINATION (SOLDERED TO P.C. PAD).

- EV2 - OIN } BIT 0
- EV2 - OSB }
- EV1 - OSA }
- ER2 - OIN } BIT 4
- ER2 - OSB }
- ES1 - OSA }
- ER1 - OIN } BIT 1
- EP2 - OSB }
- EP1 - OSA }
- EM2 - OIN } BIT 5
- EN2 - OSB }
- EN1 - OSA }
- EM1 - OIN } BIT 2
- EL2 - OSB }
- EL1 - OSA }
- EJ2 - OIN } BIT 6
- EK2 - OSB }
- EK1 - OSA }
- EJ1 - OIN } BIT 3
- EH2 - OSB }
- EH1 - OSA }
- EE2 - OIN } BIT 7
- EP2 - OSB }
- EP1 - OSA }
- EE1 - OIN } BIT 8
- ED2 - OSB }
- ED1 - OSA }
- DU2 - OIN } BIT 9
- DV2 - OSB }
- DV1 - OSA }
- DR2 - OIN } BIT 13
- DS2 - OSB }
- DS1 - OSA }
- DE1 - OIN } BIT 0
- DP2 - OSB }
- DP1 - OSA }
- DM2 - OIN } BIT 14
- DN2 - OSB }
- DN1 - OSA }
- DL1 - OIN } BIT 11
- DL2 - OSB }
- DL1 - OSA }
- DJ2 - OIN } BIT 15
- DK2 - OSB }
- DK1 - OSA }
- DH1 - OIN } BIT 12
- DH2 - OSB }
- DH1 - OSA }



SEE NOTE 4

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MM11-L				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES				
TOLERANCES				
DECIMALS	ANGLES	TITLE		
.XX - .000	± 0° 30'	<b>digital EQUIPMENT CORPORATION</b> NAYLOR, MASSACHUSETTS <b>STACK SCHEMATIC</b> <b>4K X 16 BIT</b>		
.XX - .02				
.XX - .1				
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
FINISH		B-DD-MM11-L-0	DCS H213-0-1	J
		SCALE		
		SHEET 2 OF 2	DIST.	

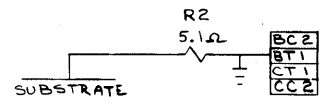
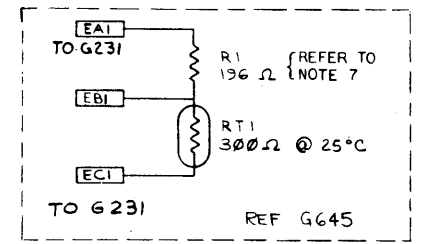
REV. 1  
 CHANGE NO.  
 DEC FORM NO. DRD 100-B





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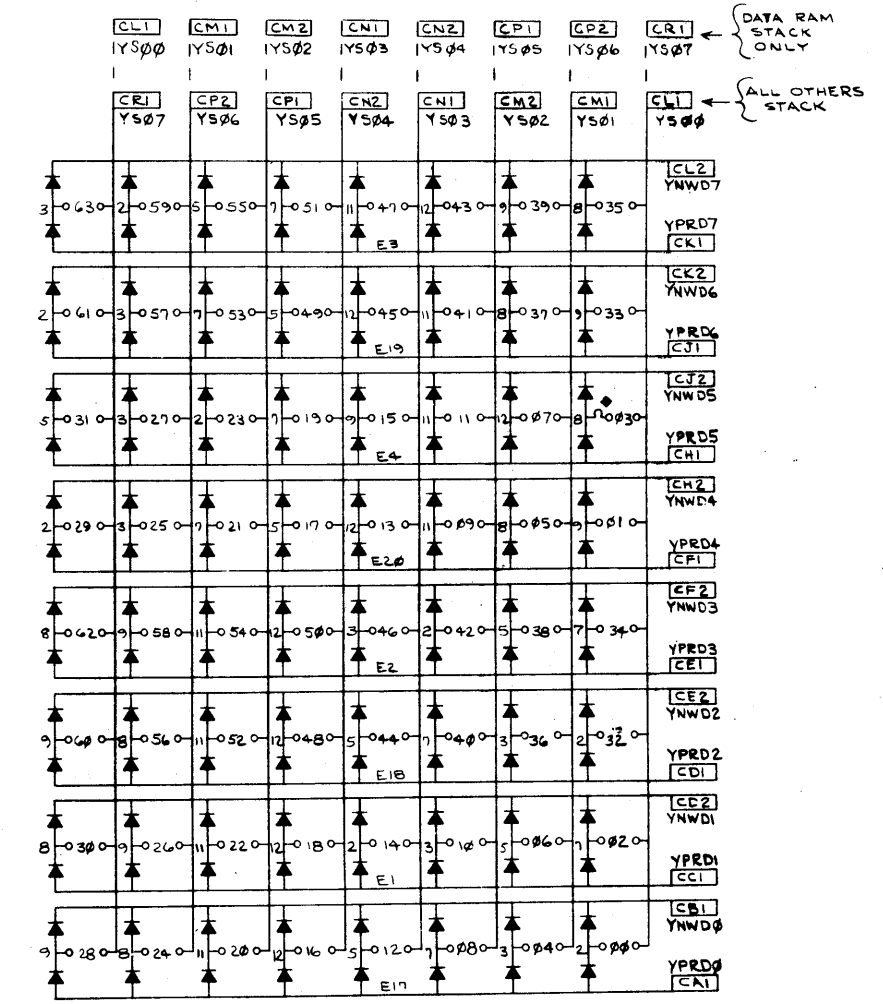
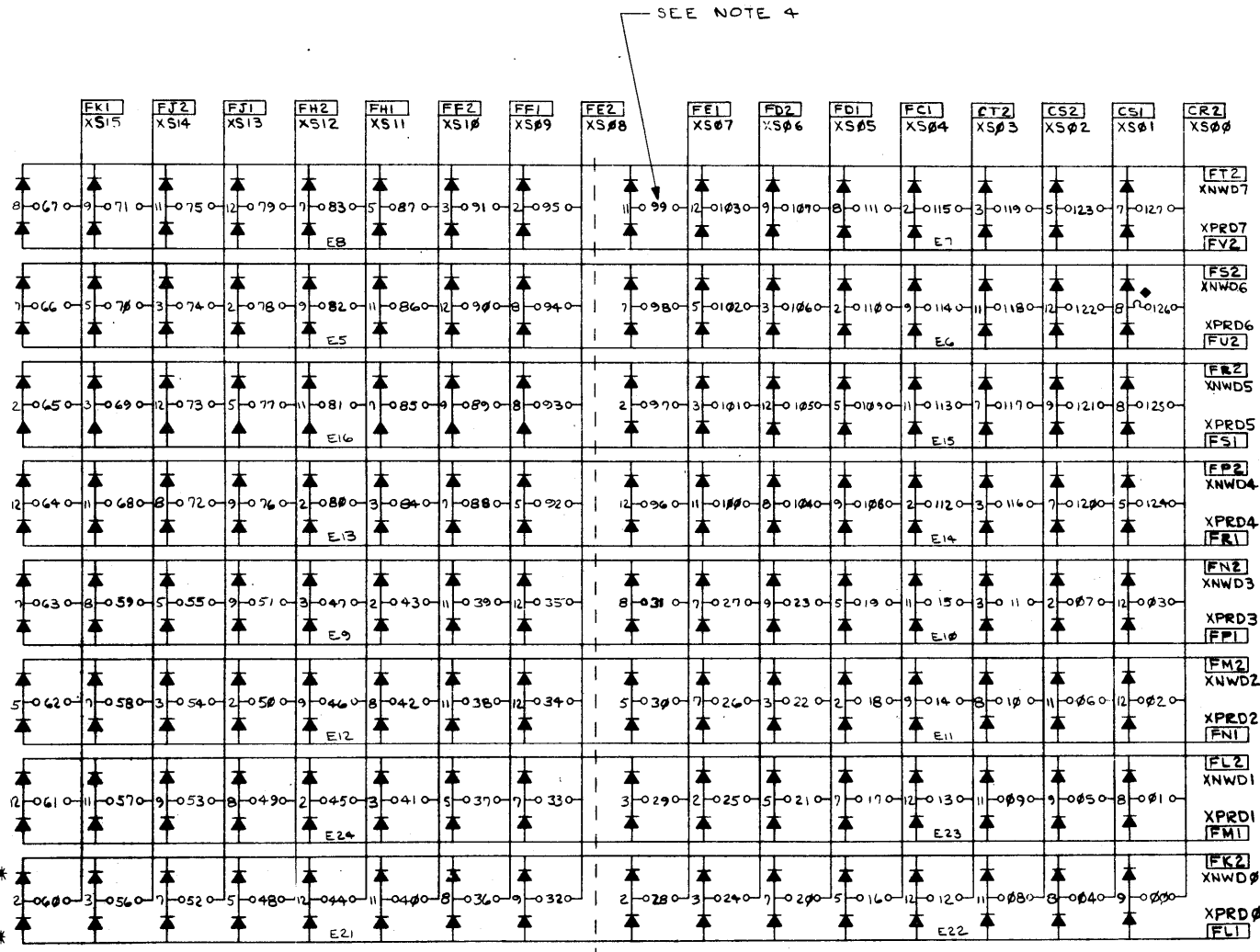
- BIT 0: EV2 OIN, EV2 OSB, EV1 OSA
- BIT 4: ER2 OIN, ER2 OSB, ER1 OSA
- BIT 1: EP2 OIN, EP2 OSB, EP1 OSA
- BIT 5: EM2 OIN, EM2 OSB, EM1 OSA
- BIT 2: EI2 OIN, EI2 OSB, EI1 OSA
- BIT 6: ET2 OIN, ET2 OSB, ET1 OSA
- BIT 3: EH2 OIN, EH2 OSB, EH1 OSA
- BIT 7: EF2 OIN, EF2 OSB, EF1 OSA
- BIT 8: EE2 OIN, EE2 OSB, EE1 OSA
- BIT 9: DV2 OIN, DV2 OSB, DV1 OSA
- BIT 13: DR2 OIN, DR2 OSB, DR1 OSA
- BIT 10: DP2 OIN, DP2 OSB, DP1 OSA
- BIT 14: DM2 OIN, DM2 OSB, DM1 OSA
- BIT 11: DL2 OIN, DL2 OSB, DL1 OSA
- BIT 15: DJ2 OIN, DJ2 OSB, DJ1 OSA
- BIT 12: DW2 OIN, DW2 OSB, DW1 OSA
- BIT P0\*: DF2 OIN, DF2 OSB, DF1 OSA
- BIT P1\*: DE2 OIN, DE2 OSB, DE1 OSA
- BIT 18\*: DA2 OIN, DA2 OSB, DA1 OSA



7: FOR AMPEX STACKS H214, H215, AND H216 WITH CORE TYPE 324-1899, R1 SHOULD BE 121 OHMS.

8: AN H214A IS DEFINED TO BE EITHER AN H214 OR H215 MODULE.

- 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.

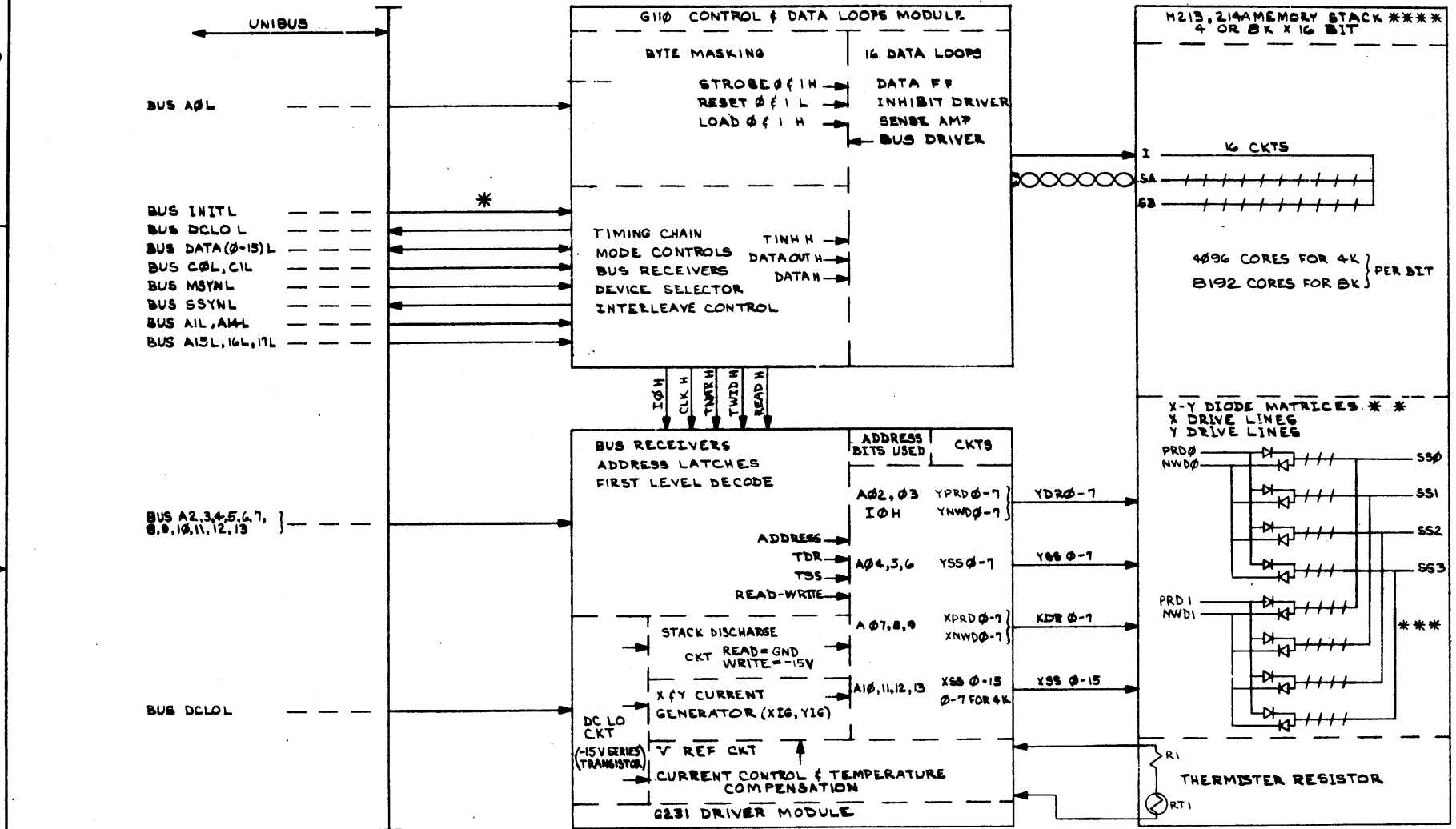


REV	CHANGE NO

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MM11-L		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	TITLE		
XXX + .005	± 0° 30'	STACK SCHEMATIC		
XX - .02		(H214-8K X 16 BIT)		
X - .1		(H214A-8K X 16 BIT)		
		(H215-8K X 18 BIT)		
		(H216-8K X 19 BIT)		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL				
NEXT HIGHER ASSY.				
FINISH				
SCALE				
SHEET 2 OF 2				
B-DD-MM11-L-0		SIZE CODE	NUMBER	REV.
DIST.		DCS H214-0-1		L

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- 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  
 \*\*\*\*4.H214A IS A DESIGNATOR FOR EITHER AN H214 OR H215 MEMORY STACK, SEE E-CS-H214-0-1.



REV.	NO.	DATE	BY
A	1	1/19/72	...

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MM11-S		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES. TOLERANCES		DATE	EQUIPMENT CORPORATION	
DECIMALS	ANGLES	DATE	BLOCK DIAGRAM	
.XXX = .000	.XX = .00	DATE		
.X = .1		DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE		
MATERIAL	NEXT HIGHER ASSY.	DATE		
FINISH	B-DD-MM11-S	DATE		
	SCALE	DATE		
	SHEET 1 OF 2	DATE		

REV. A

A

JXX

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MEMORY BANK	MACHINE ADDRESS	W1 * A13	W5 A13 Δ	W6 □ A14 OR A1	W4 A15	W3 A16	W2 A17L	Δ W9 4K-8K W10	W7-8 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	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	

WHEN USED AS A 4K OR A NON INTER-LEAVED 8K JUMPERS ARE



WHEN USED AS AN 8K INTERLEAVED (2-8K BANKS REQUIRED) JUMPERS ARE



WHEN W11 IS INSTALLED IT MAKES THE MEMORY DO A DATA REGARDLESS OF THE STATE OF THE CDB AND CBI LINES

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 INTER-LEAVED (SOLID JUMPERS ON W7 AND W8) THE DEVICE SELECT IS AS SHOWN IN TABLE 1 USING A14. WHEN TWO 8K BANKS ARE INTER-LEAVED W7 AND W8 MUST BE AS SHOWN IN DOTTED LINES IN TABLE 1. ALSO IN TABLE 1, A01 NOW GOES 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 D-CS-G110-0-1.

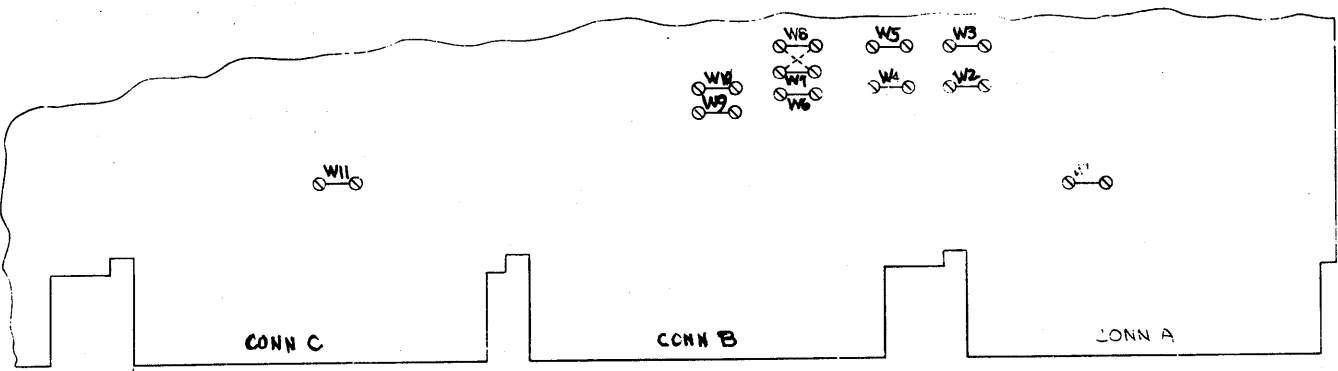


FIGURE 1  
G110 JUMPER PHYSICAL LOCATION  
SEE NOTE 4

FIRST USE ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MMII-S		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.	DRN	DATE	digital EQUIPMENT CORPORATION	
TOLERANCES	CHKD.	DATE	MILBROUOK MASSACHUSETTS	
DECIMALS	ENG.	DATE	TITLE	
.XX - .005			BLOCK DIAGRAM	
.XX - .02	PROJ. ENG.	DATE	(DEVICE DECODING)	
X - .1	PROD.	DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
	F-DI-MMII-S-0	D	BD MMII-S-2	A
FINISH	SCALE	SHEET	DIST.	
	25	2 OF 2		

REVISIONS  
CHANGE NO.  
REV.



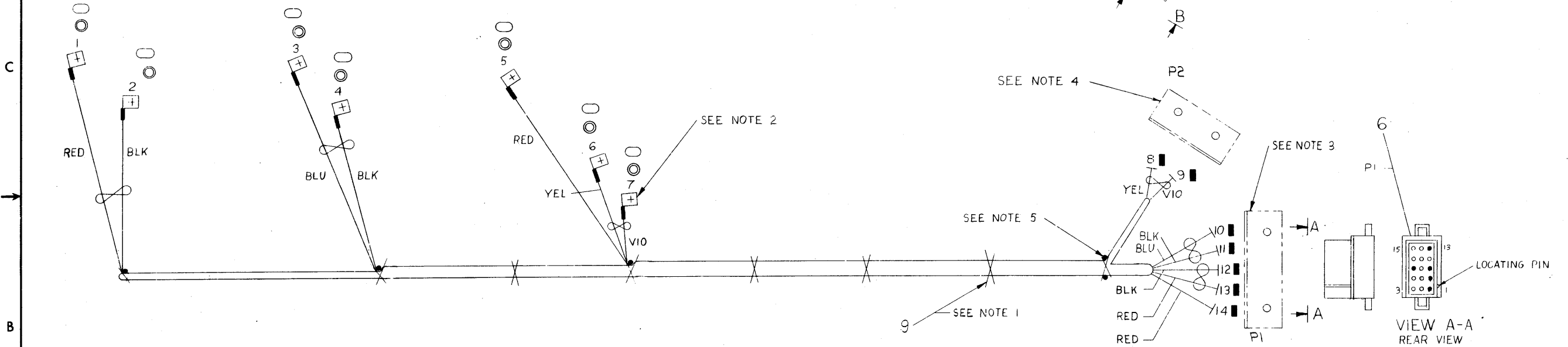
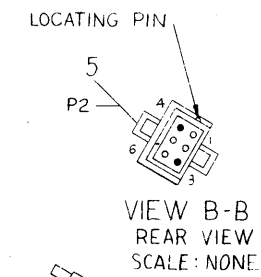


DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS <b>PARTS LIST</b>				QUANTITY / VARIATION																	
MADE BY L. D. ANDERSON		CHECKED J. O'LOUGHLIN		SECTION																	
DATE 9-29-72		DATE 9-29-72		1																	
ENG J. O'LOUGHLIN		PROD G.L. STRINGER		ISSUED SECT.																	
DATE 9-29-72		DATE 9-29-72		1																	
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION				MF11-L															
1	A-PL-MM11-L-0	16 BIT 18 MIL MEMORY				1															
2	E-AD-7008872-0-0	BACK PLANE ASSY				1															
3	A-PL-M920-0-0	INTERNAL BUS CONN ASSY				1															
4	9009168	SCREW, PAN HD. "NYLOC" #6-32				1															
<del>5</del>	<del>C-MD-7410871-0-0</del>	<del>SUPPORT BAR, RIGHT</del>				<del>1</del>															
<del>6</del>	<del>C-MD-7410870-0-0</del>	<del>BRKT, CONN BLOCK TOP</del>				<del>1</del>															
7	C-PS-120698-0	GUIDE CARD CENTER				6															
8	9009070	SCR PHIL FLAT HD #8-32 X .81				12															
9	9107688-0-0	24 AWG SOLID WIRE BLK.				A/R															
10	9006766	LOCKING TERMINAL				1															
11	1209856-02	MODULE HOLDER				A/R															
12	1700021-02	ELECTRO MAGNETIC SHIELD				A/R															
13*	D-IA-7009560	MF11-L/LP OPTION HARNESS *				1															
14	D-IA-7010167-0-0	SUPPORT, HARNESS				1															
15	9006037-1	SCREW PAN HD PHL 8-32 x 3/8				4															
16	9008072	EXTC LK WASHER*8				4															
NOTE: * IF FIRST MEMORY IN 11/35-11/40 USE 7009565.																					
FOR 11/45-11/50 WITH SERIAL NO. LESS THAN 2000 USE HARNESS																					
7009242. FOR 11/35-11/40 WITH SERIAL NO. LESS THAN 6000																					
USE 7009103 (FIRST MEMORY) OR 7009174. FOR H960-D,E WITH																					
NO. LESS THAN 7000 USE HARNESS 7009174.																					
TITLE		ASSY NO.		SIZE	CODE	NUMBER				REV.	ECO NO.										
MF11-L MEMORY (PL)		D-UA-MF11-L-0		A	PL	MF11-L-0				E	MF11-L-00009										
		SHEET 1 OF 1		DIST.																	

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ITEM NO	DESCRIPTION	FROM				TO			
		AWG	COLOR	POINT	CONNECTION	TERM	POINT	CONNECTION	TERM
3	14	RED	1		8, 10	13	P1-4	7	+5
TWP	14	BLK	2			12	P1-7		GND
2	14	BLU	3			10	P1-13		-15
TWP	14	BLK	4			11	P1-9		GND
4	14	RED	5			14	P1-1		+5
1	18	YEL	6			8	P2-4		AC LO
TWP	18	VIO	7		8, 10	9	P2-3	7	DC LO

- NOTES:
- USE TIE WRAP ITEM #9 APPROXIMATELY EVERY THREE (3) INCHES WHEN NECESSARY, AND AT EVERY BREAKOUT POINT.
  - ATTACH MALE FASTON DEC # (9008219-0) WITH #4 WOOD SCREWS (7 PLACES).
  - USE CONN. BRKT. # C-MD-9305761-H15-0, MOUNT WITH #6 WOOD SCREWS. USE MATING CONN. 1209350-15.
  - USE CONN. BRKT. # C-MD-9305761-H6-0, MOUNT WITH #6 WOOD SCREWS. USE MATING CONN. 1209350-06.
  - DOT (•) INDICATES NAIL LOCATIONS FOR ASSEMBLY USE ONLY. COVER NAILS WITH SHRINK TUBING TO PREVENT CUTTING HARNESS.



○	A/R TUBING, SHRINKABLE 3/16 ID. 19/16	9107305-02	10
⊗	A/R WRAP, TIE	9007031	9
○	7 CONN, SOLDERLESS	9009262-0	8
■	7 PIN, MALE	1209378-00	7
	1 HOUSING, CONN 15 PIN	1209351-15	6
	1 HOUSING, CONN 6 PIN	1209351-06	5
	A/R WIRE #14 AWG RED	9107370-22	4
	A/R WIRE #14 AWG TWP BLK/RED	9107440-02	3
	A/R WIRE #14 AWG TWP BLK/BLU	9107440-06	2
	A/R WIRE #18 AWG TWP YEL/VIO	9107430-47	1

FIRST USED ON OPT / MOD	SYM	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES		DRN: <i>[Signature]</i>	DATE: 9-26-73	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
TOLERANCES		CHKD: <i>[Signature]</i>	DATE: 10/1/73		
DECIMALS	ANGLES	ENG: <i>[Signature]</i>	DATE:	TITLE MF11-L/LP POWER HARNESS	
.xxx = .005	±0° 30'	PROJ. ENG:	DATE:		
.xx = .02		PROD. <i>[Signature]</i>	DATE: 10/1/73	SIZE CODE: D IA NUMBER: 7009560-0-0 REV. A	
.x = .1		REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY Y			
MATERIAL		NEXT HIGHER ASSY.		SCALE: 1/1 SHEET 1 OF 1	
SEE PARTS LIST					
FINISH					

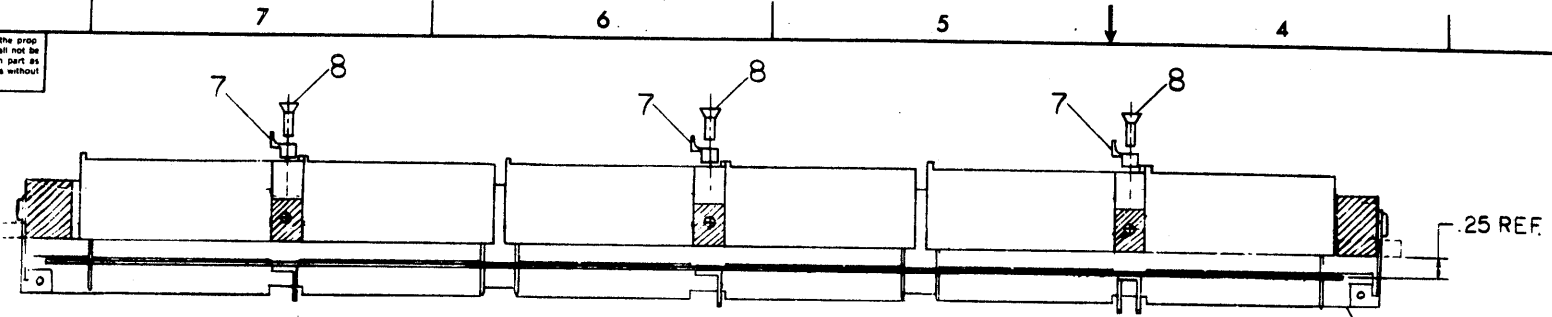
REV	CHANGE NO	DATE	BY	CHK
A	7009560-00001	8-22-74	B. MINOR	



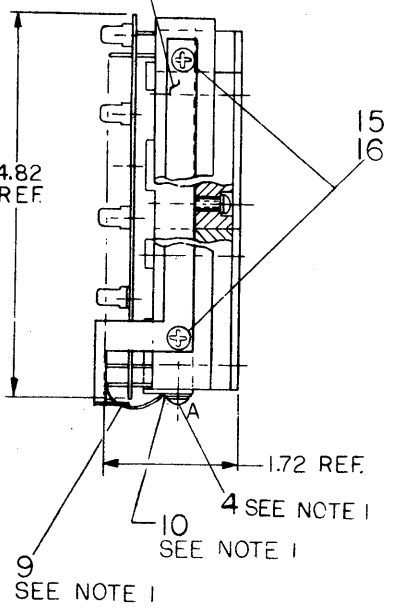
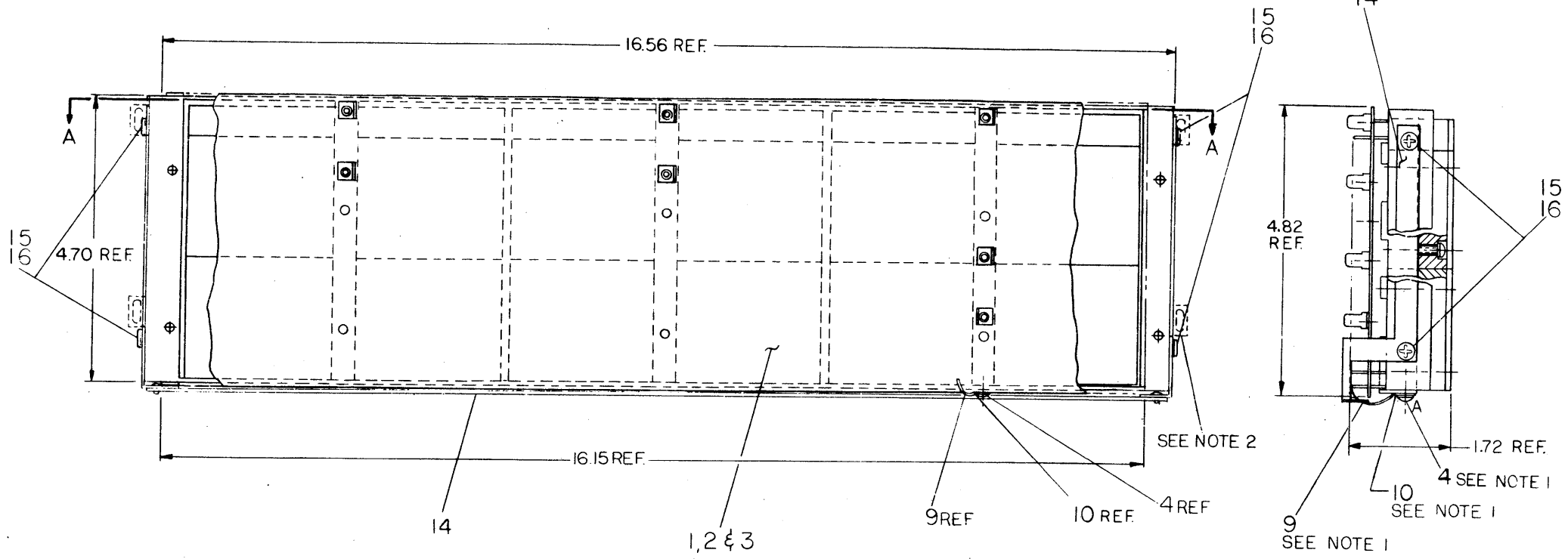
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0-7-113W 2

- NOTES:
1. WIRE WRAP ONE END OF ITEM #9 TO PIN B09C2 AND SOLDER THE OTHER END TO ITEM #10 WHICH IS MOUNTED AS SHOWN.
  2. IF LOGIC FRAMES DEC P/N 1210103 OR 1210391 ARE USED, THE MOUNTING EARS ARE TO BE MACHINED OFF FLUSH WITH THE SIDES OF THE CASTING.



SECTION A-A



REV	CHG	NO	DATE	BY	DESCRIPTION
A					ORIGINATED
B					
C					
D					
E					

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
MFII-L				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN 30/2/24	DATE 2-28-73	digital EQUIPMENT CORPORATION	
DECIMALS .005	CHK'D	DATE	TITLE	
ANGLES ±0° 30'	ENG	DATE 3-4-73	MFII-L	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD ENGR	DATE 2-16-73	MEMORY	
MATERIAL	MOD	DATE 3-16-73	SIZE CODE	NUMBER
FINISH	NEXT HIGHER ASSY		DUA	MFII-L-0
	B-DD-MFII-L			REV
	SCALE 1/1			E
	SHEET 1 OF 1			

1973 100-A

REV E  
NUMBER MFII-L-0  
SIZE CODE DUA

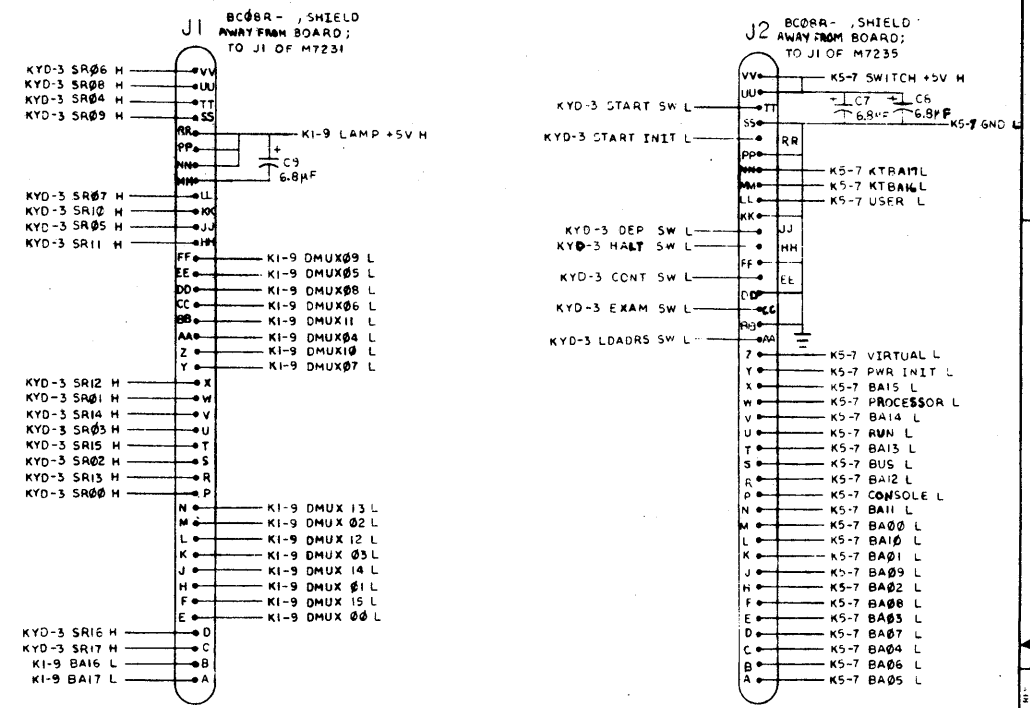
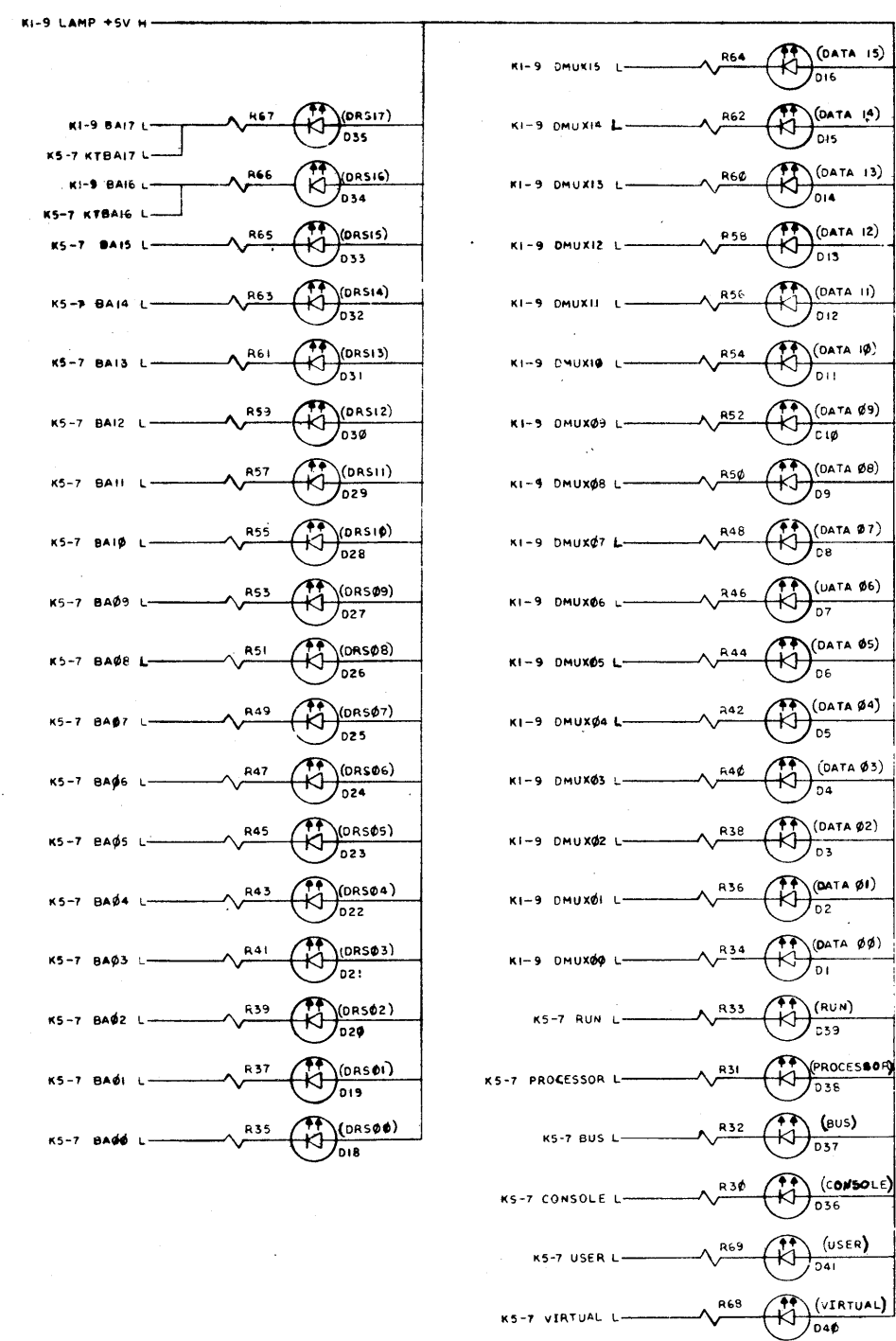






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1-0-1046015 53 0 2  
1003 1215



NOTES:  
1. CONSOLE LABELS ARE NOTED IN PARENTHESIS.  
2. CABLE CONNECTION INFORMATION IS NOTED ON SCHEMATIC AND ETCHED BOARD, CABLES MUST BE CONNECTED WITH SHIELD AWAY FROM BOARD.

REV	NO
CHK	CHANGE NO
DEC 1 FORM NO	DRD 100-B

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
PDP 11				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN	DATE 2-20-72	PARTS LIST
DECIMALS	ANGLES	DATE 6/21/72	DATE 6/21/72	
XXX - .005		DATE 6/21/72	DATE 6/21/72	TITLE KY11-D CONSOLE
XX - .02	± 0° 30'	DATE 6/21/72	DATE 6/21/72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE 6/21/72	DATE 6/21/72	DISPLAY
MATERIAL	NEXT HIGHER ASSY	SIZE CODE	NUMBER	REV
FINISH	SCALE	D/C/S	54C9701-0-1	L
SHEET 2 OF 3		DIST		

NUMBER  
54C9701-0-1

B

A

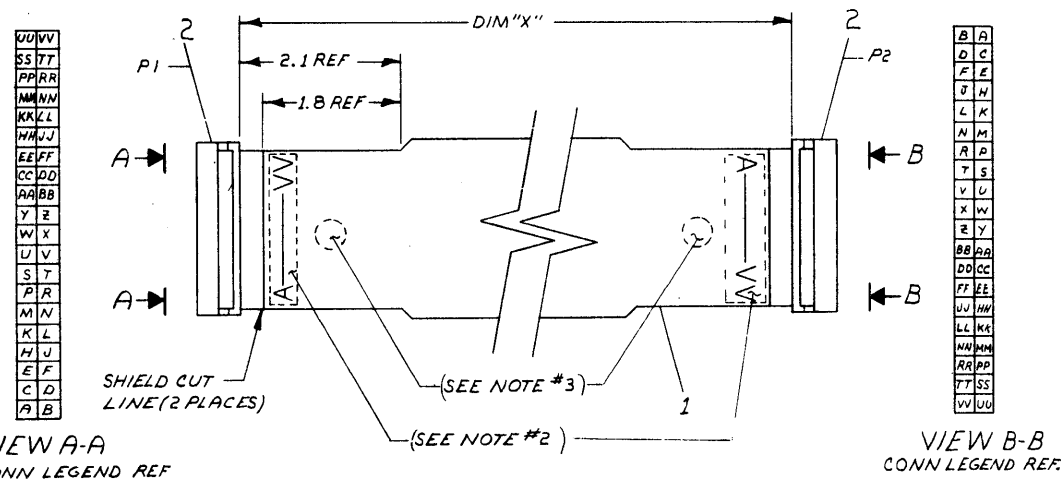


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WIRE TABLE			
FROM	TO	FROM	TO
P1-A	P2-VV	P1-Y	P2-X
P1-B	P2-UU	P1-Z	P2-W
P1-C	P2-TT	P1-AA	P2-V
P1-D	P2-SS	P1-BB	P2-U
P1-E	P2-RR	P1-CC	P2-T
P1-F	P2-PP	P1-DD	P2-S
P1-H	P2-NN	P1-EE	P2-R
P1-J	P2-MM	P1-FF	P2-P
P1-K	P2-LL	P1-HH	P2-N
P1-L	P2-KK	P1-JJ	P2-M
P1-M	P2-JJ	P1-KK	P2-L
P1-N	P2-HH	P1-LL	P2-K
P1-P	P2-FF	P1-MM	P2-J
P1-R	P2-EE	P1-NN	P2-H
P1-S	P2-DD	P1-PP	P2-F
P1-T	P2-CC	P1-RR	P2-E
P1-U	P2-BB	P1-SS	P2-D
P1-V	P2-AA	P1-TT	P2-C
P1-W	P2-Z	P1-UU	P2-B
P1-X	P2-Y	P1-VV	P2-A

LEGEND		
NUMBER	DIM "X"	PRECUT LENGTH
BC08R-01	1.00 FT.	1.00 FT. 1.5 IN ± 1.00 IN
BC08R-02	2.00 FT.	2.00 FT. 1.5 IN ± 1.00 IN
BC08R-03	3.00 FT.	3.00 FT. 1.5 IN ± 1.00 IN
BC08R-04	4.00 FT.	4.00 FT. 1.5 IN ± 1.00 IN
BC08R-05	5.00 FT.	5.00 FT. 1.5 IN ± 1.00 IN
BC08R-06	6.00 FT.	6.00 FT. 1.5 IN ± 2.00 IN
BC08R-07	7.00 FT.	7.00 FT. 1.5 IN ± 2.00 IN
BC08R-08	8.00 FT.	8.00 FT. 1.5 IN ± 2.00 IN
BC08R-09	9.00 FT.	9.00 FT. 1.5 IN ± 2.00 IN
BC08R-10	10.00 FT.	10.00 FT. 1.5 IN ± 2.00 IN
BC08R-11	11.00 FT.	11.00 FT. 1.5 IN ± 3.00 IN
BC08R-12	12.00 FT.	12.00 FT. 1.5 IN ± 3.00 IN
BC08R-13	13.00 FT.	13.00 FT. 1.5 IN ± 3.00 IN
BC08R-14	14.00 FT.	14.00 FT. 1.5 IN ± 3.00 IN
BC08R-15	15.00 FT.	15.00 FT. 1.5 IN ± 3.00 IN
BC08R-16	16.00 FT.	16.00 FT. 1.5 IN ± 3.00 IN
BC08R-17	17.00 FT.	17.00 FT. 1.5 IN ± 3.00 IN
BC08R-18	18.00 FT.	18.00 FT. 1.5 IN ± 3.00 IN
BC08R-19	19.00 FT.	19.00 FT. 1.5 IN ± 3.00 IN
BC08R-20	20.00 FT.	20.00 FT. 1.5 IN ± 3.00 IN
BC08R-25	25.00 FT.	25.00 FT. 1.5 IN ± 3.00 IN
BC08R-30	30.00 FT.	30.00 FT. 1.5 IN ± 6.00 FT
BC08R-35	35.00 FT.	35.00 FT. 1.5 IN ± 9.00 FT
BC08R-50	50.00 FT.	50.00 FT. 1.5 IN ± 1.00 FT
BC08R-60	60.00 FT.	60.00 FT. 1.5 IN ± 1.20 FT
BC08R-75	75.00 FT.	75.00 FT. 1.5 IN ± 1.50 FT
BC08R-A0	100.00 FT.	100.00 FT. 1.5 IN ± 2.00 FT
BC08R-A3	130.00 FT.	130.00 FT. 1.5 IN ± 2.00 FT
BC08R-A6	160.00 FT.	160.00 FT. 1.5 IN ± 2.00 FT

1. ASSEMBLE THIS CABLE PER PROCESS SPEC #7606485-0-0.
2. CONNECTOR LEGEND IDENTIFICATION TO BE PLACED ON SHIELD SIDE OF CABLE IN THIS AREA AS SHOWN.
3. INSPECTION & TEST STAMPS TO BE PLACED AT EACH END OF THE CABLE ASSY.
4. STRIP LENGTH SHOULD BE .62 ± 4/32.



VIEW A-A  
CONN LEGEND REF

VIEW B-B  
CONN LEGEND REF

REV.	CHG. NO.	REVISED BY	DATE
1	1	S. HOLMES	12/23/76
2	1	P. GARDNER	12/24/76

2	CONNECTOR, 40 SOCKET	12/12/76	2				
1	AIR CABLE, 40 COND. FLAT W/SHIELD	1700004	1				
DESCRIPTION		DWG. PART NO.	ITEM NO.				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES							
ANGLES 10° 30'	CLASS OF ACCURACY	NOMINAL DIMENSION RANGE INCHES					
SURFACE QUALITY IN	(CHECK ONE)	OVER 0 TO 0.2	OVER 0.2 TO 1.2	OVER 1.2 TO 4.0	OVER 4.0 TO 12.0	OVER 12.0 TO 40.0	OVER 40.0 TO 100.0
		±.004	±.008	±.012	±.016	±.024	±.04
QUANTITY & VARIATION	MICROINCHES	±.012	±.016	±.025	±.04	±.063	±.1
THIRD ANGLE PROJECTION	DRND. FONTAINE	5-28-70	FIRST USED ON				
REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D: FLEMING	12-23-76	TITLE				
DO NOT SCALE DWG	ENG: GARDNER	12-24-76	BC08R				
MATERIAL	PROJ. ENG: GARDNER	12-24-76	10 CABLE				
FINISH	PROD. DIZAL	12-24-76					
	NEXT HIGHER ASSY.						
	SCALE	SIZE	CODE				
	SHEET 1 OF 1	D	UA				
		NUMBER	REV.				
		BC08R-00	M				

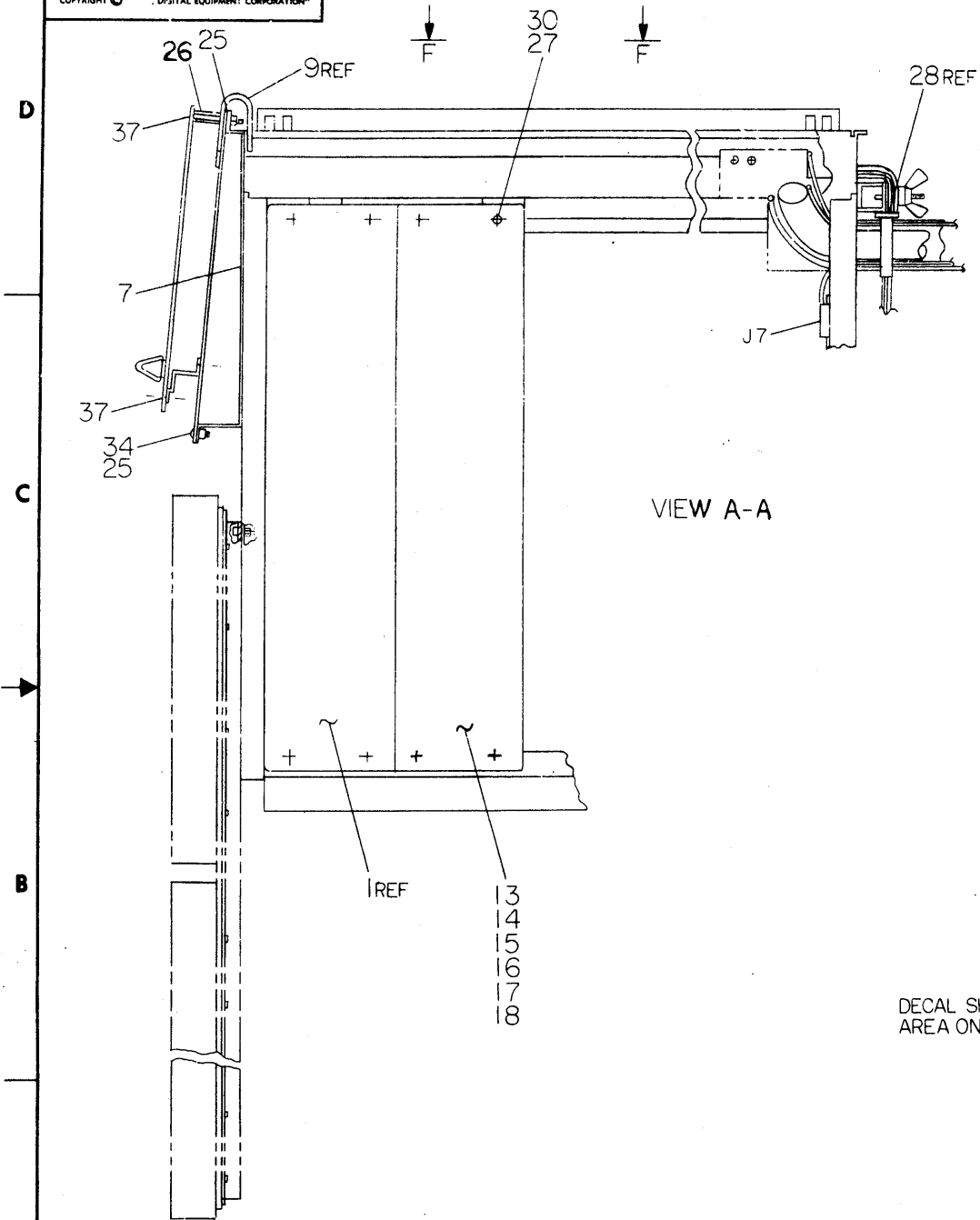




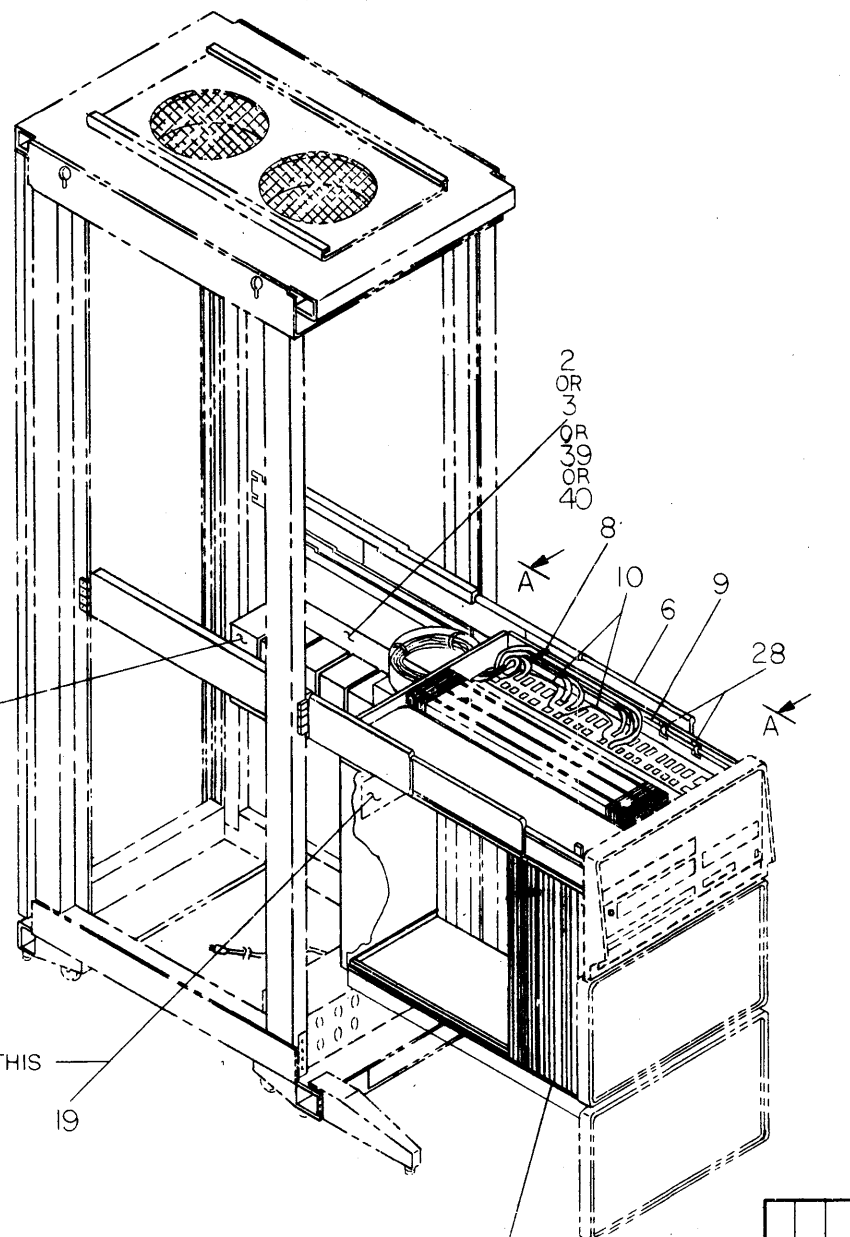
8 7 6 5 4 3 2 1  
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**NOTES**

- 1 MAIN HARNESS (ITEM 8) HAS TWO (2) UNUSED 8-PIN PLUGS (P16 AND EITHER P15 OR P17). TO PREVENT DAMAGE TO REGULATORS INSERT AN EMPTY MATING CONN (ITEM 23) INTO THEM AND TIE THEM OUT OF THE WAY, ALSO ADD OR REMOVE JUMPERS PER D-IC-7009566-0-1.
- 2 PARTS SHOWN IN PHANTOM LINES ARE NOT PART OF THIS ASSEMBLY AND ARE SHOWN FOR REFERENCE ONLY.



VIEW A-A



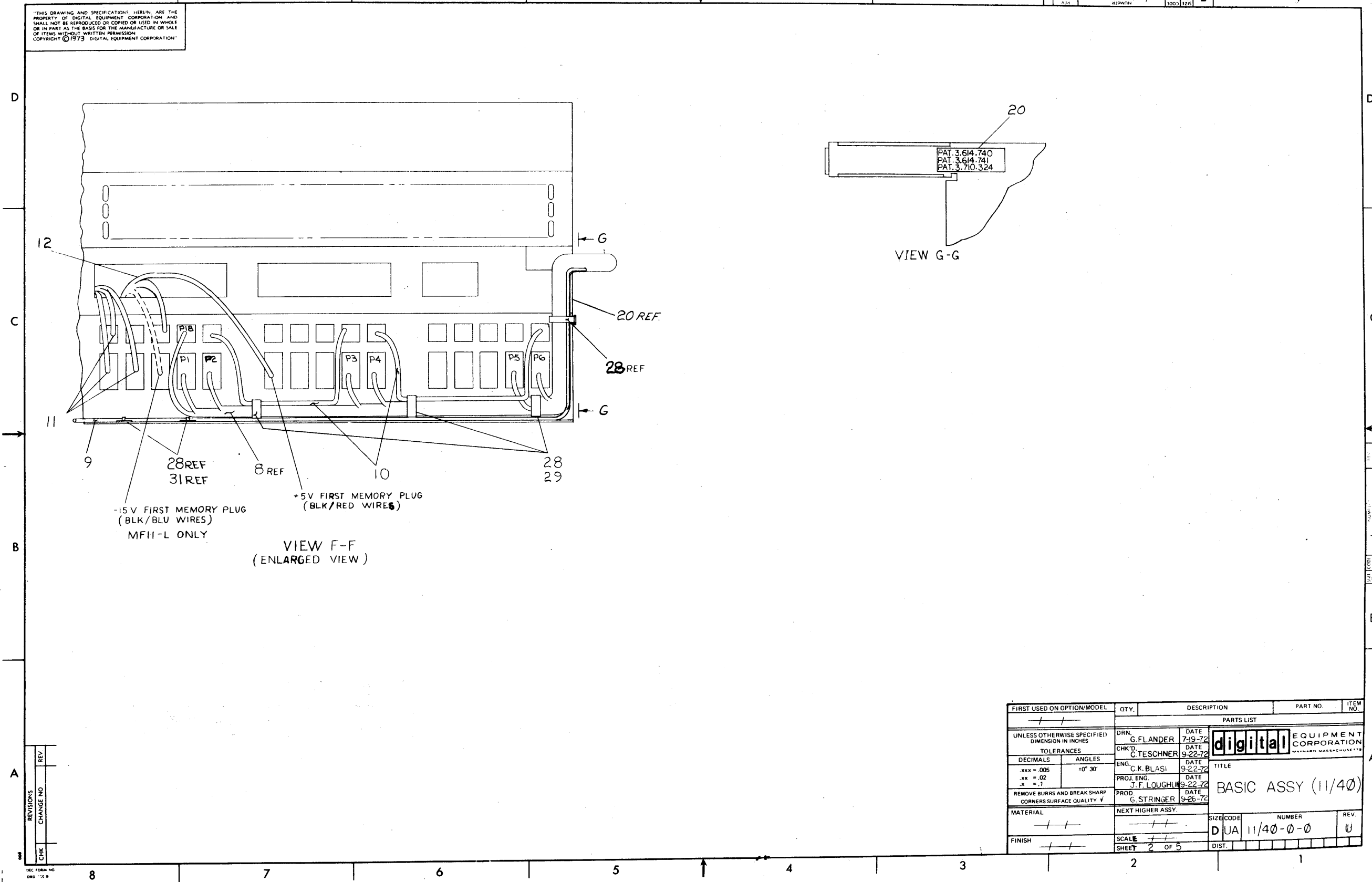
DECAL SHOWN APPROX. THIS AREA ON BACK SIDE.

REV.	DATE	BY	CHK.	DESCRIPTION
1	11/40-00017	REVISOR	REVISOR	REVISIONS
2	11/40-00018	G. REMONDOS-82	G. REMONDOS-82	REVISIONS
3	11/40-00019	A. C. [unclear]	A. C. [unclear]	REVISIONS
4	11/40-00020	B. MINOR	B. MINOR	REVISIONS
5	11/40-00021	B. MINOR	B. MINOR	REVISIONS
6	11/40-00022	K. POON	K. POON	REVISIONS
7	11/40-00023	R. VALLER	R. VALLER	REVISIONS
8	11/40-00024	K. POON	K. POON	REVISIONS

<table border="1"> <tr> <td>QUANTITY &amp; VARIATION</td> <td>MICROINCHES</td> <td>PREFERRED</td> <td>±0.012</td> <td>±0.016</td> <td>±0.025</td> <td>±0.04</td> <td>±0.063</td> <td>±0.1</td> </tr> </table>	QUANTITY & VARIATION	MICROINCHES	PREFERRED	±0.012	±0.016	±0.025	±0.04	±0.063	±0.1	<table border="1"> <tr> <th>CLASS OF ACCURACY (CHECK ONE)</th> <th>OVER TO</th> <th>OVER TO</th> <th>OVER TO</th> <th>OVER TO</th> </tr> <tr> <td><input type="checkbox"/> MEDIUM</td> <td>0</td> <td>0.2</td> <td>1.2</td> <td>4.0</td> </tr> <tr> <td><input type="checkbox"/> FINE</td> <td>0</td> <td>0.2</td> <td>1.2</td> <td>12.0</td> </tr> <tr> <td><input type="checkbox"/> EXTRA FINE</td> <td>0</td> <td>0.2</td> <td>1.2</td> <td>48.0</td> </tr> </table>	CLASS OF ACCURACY (CHECK ONE)	OVER TO	OVER TO	OVER TO	OVER TO	<input type="checkbox"/> MEDIUM	0	0.2	1.2	4.0	<input type="checkbox"/> FINE	0	0.2	1.2	12.0	<input type="checkbox"/> EXTRA FINE	0	0.2	1.2	48.0	<table border="1"> <tr> <th>NOMINAL DIMENSION RANGE INCHES</th> <th>OVER TO</th> <th>OVER TO</th> <th>OVER TO</th> </tr> <tr> <td><input type="checkbox"/> ±0.004</td> <td>0</td> <td>0.2</td> <td>1.2</td> </tr> <tr> <td><input type="checkbox"/> ±0.008</td> <td>0</td> <td>0.2</td> <td>4.0</td> </tr> <tr> <td><input type="checkbox"/> ±0.012</td> <td>0</td> <td>0.2</td> <td>12.0</td> </tr> <tr> <td><input type="checkbox"/> ±0.016</td> <td>0</td> <td>0.2</td> <td>48.0</td> </tr> </table>	NOMINAL DIMENSION RANGE INCHES	OVER TO	OVER TO	OVER TO	<input type="checkbox"/> ±0.004	0	0.2	1.2	<input type="checkbox"/> ±0.008	0	0.2	4.0	<input type="checkbox"/> ±0.012	0	0.2	12.0	<input type="checkbox"/> ±0.016	0	0.2	48.0
	QUANTITY & VARIATION	MICROINCHES	PREFERRED	±0.012	±0.016	±0.025	±0.04	±0.063	±0.1																																										
CLASS OF ACCURACY (CHECK ONE)	OVER TO	OVER TO	OVER TO	OVER TO																																															
<input type="checkbox"/> MEDIUM	0	0.2	1.2	4.0																																															
<input type="checkbox"/> FINE	0	0.2	1.2	12.0																																															
<input type="checkbox"/> EXTRA FINE	0	0.2	1.2	48.0																																															
NOMINAL DIMENSION RANGE INCHES	OVER TO	OVER TO	OVER TO																																																
<input type="checkbox"/> ±0.004	0	0.2	1.2																																																
<input type="checkbox"/> ±0.008	0	0.2	4.0																																																
<input type="checkbox"/> ±0.012	0	0.2	12.0																																																
<input type="checkbox"/> ±0.016	0	0.2	48.0																																																
<table border="1"> <tr> <td>THIRD ANGLE PROJECTION</td> <td> </td> </tr> <tr> <td>REMOVE BURRS AND BREAK SHARP CORNERS</td> <td> <input checked="" type="checkbox"/> </td> </tr> <tr> <td>DO NOT SCALE DWG</td> <td> <input checked="" type="checkbox"/> </td> </tr> <tr> <td>MATERIAL</td> <td>D-AR-11/40-3</td> </tr> <tr> <td>FINISH</td> <td></td> </tr> </table>	THIRD ANGLE PROJECTION		REMOVE BURRS AND BREAK SHARP CORNERS	<input checked="" type="checkbox"/>	DO NOT SCALE DWG	<input checked="" type="checkbox"/>	MATERIAL	D-AR-11/40-3	FINISH		<table border="1"> <tr> <td>DESCRIPTION</td> <td>BASIC ASSY (11/40)</td> </tr> <tr> <td>DWG. PART NO.</td> <td>D-AR-11/40-3</td> </tr> <tr> <td>ITEM NO.</td> <td>1</td> </tr> <tr> <td>DRN. G. FLANDER 7-19-72</td> <td>FIRST USED ON</td> </tr> <tr> <td>CHK. D.C. TESCHNER 9-22-72</td> <td></td> </tr> <tr> <td>ENG. C.K. BLASI 9-22-72</td> <td></td> </tr> <tr> <td>PROJ. ENG. J.E.L. 9-22-72</td> <td></td> </tr> <tr> <td>PROD. G. STRINGER 9-23-72</td> <td></td> </tr> </table>	DESCRIPTION	BASIC ASSY (11/40)	DWG. PART NO.	D-AR-11/40-3	ITEM NO.	1	DRN. G. FLANDER 7-19-72	FIRST USED ON	CHK. D.C. TESCHNER 9-22-72		ENG. C.K. BLASI 9-22-72		PROJ. ENG. J.E.L. 9-22-72		PROD. G. STRINGER 9-23-72																									
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0-0-0-0/11/40 2



-15V FIRST MEMORY PLUG  
(BLK/BLU WIRES)  
MFII-L ONLY

+5V FIRST MEMORY PLUG  
(BLK/RED WIRES)

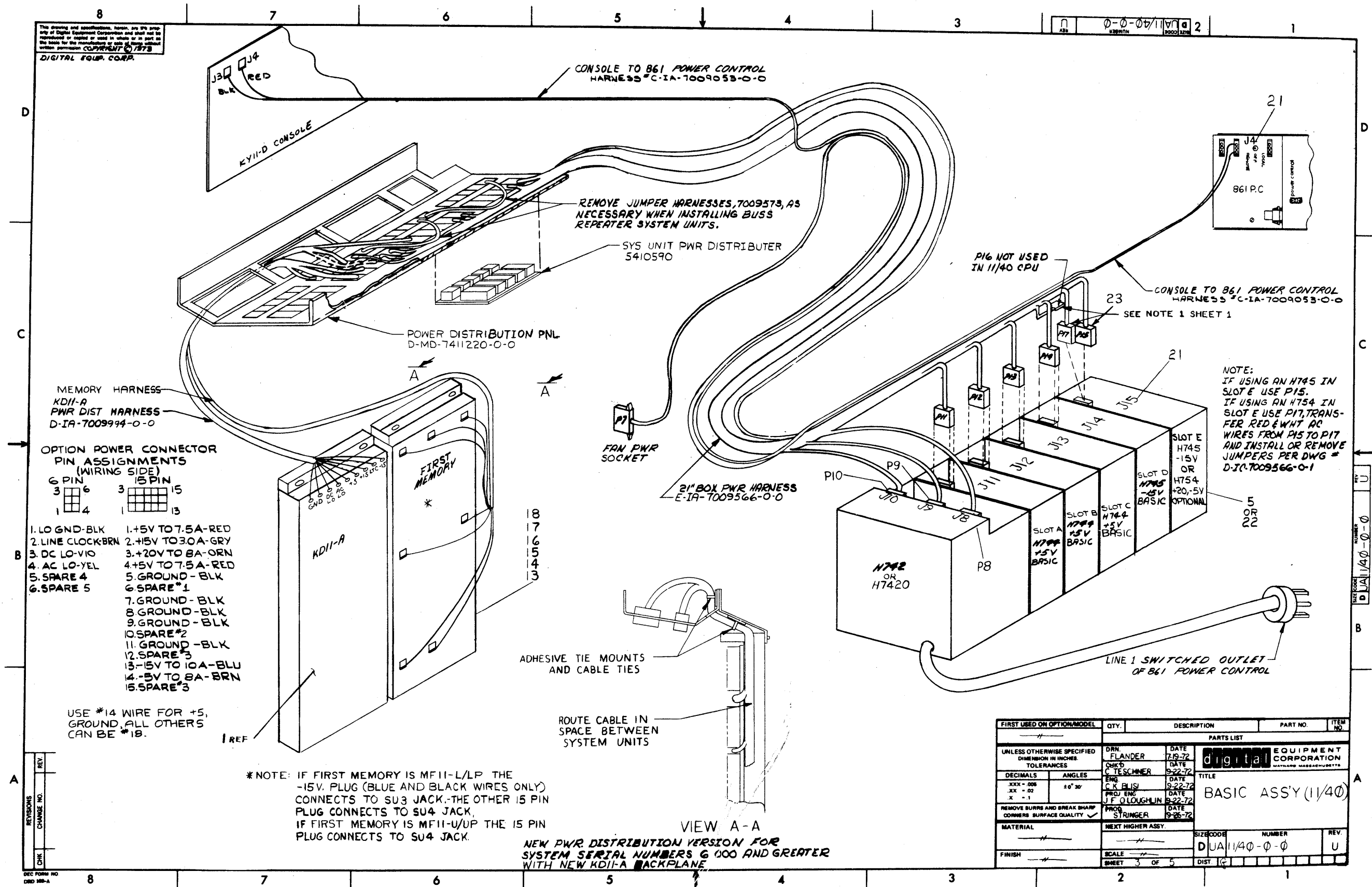
VIEW F-F  
(ENLARGED VIEW)

VIEW G-G

REV	
CHANGE NO	
CHK	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DRN. G. FLANDER	DATE 7-19-72	<b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
TOLERANCES	CHK'D C. TESCHNER	DATE 9-22-72		
DECIMALS .xxx = .005	ENG. C. K. BLASI	DATE 9-22-72	TITLE BASIC ASSY (11/40)	
ANGLES ±0° 30'	PROJ. ENG. J. F. LOUGHLIN	DATE 9-22-72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY Y	PROD. G. STRINGER	DATE 9-26-72		
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
FINISH	SCALE	DUA	11/40-0-0	U
	SHEET 2 OF 5	DIST.		

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NOTE:  
IF USING AN H745 IN SLOT E USE P15.  
IF USING AN H754 IN SLOT E USE P17, TRANSFER RED & WHT AC WIRES FROM P15 TO P17 AND INSTALL OR REMOVE JUMPERS PER DWG # D-JC-7009566-0-1

- OPTION POWER CONNECTOR PIN ASSIGNMENTS (WIRING SIDE)
- | 6 PIN |   | 15 PIN |    |
|-------|---|--------|----|
| 3     | 6 | 3      | 15 |
| 1     | 4 | 1      | 13 |
1. LO GND-BLK
  2. LINE CLOCK-BRN
  3. DC LO-VIO
  4. AC LO-YEL
  5. SPARE 4
  6. SPARE 5
  1. +5V TO 7.5A-RED
  2. +15V TO 3.0A-GRY
  3. +20V TO 8A-ORN
  4. +5V TO 7.5A-RED
  5. GROUND-BLK
  6. SPARE\*1
  7. GROUND-BLK
  8. GROUND-BLK
  9. GROUND-BLK
  10. SPARE\*2
  11. GROUND-BLK
  12. SPARE\*3
  13. -15V TO 10A-BLU
  14. -5V TO 8A-BRN
  15. SPARE\*3

USE \*14 WIRE FOR +5, GROUND, ALL OTHERS CAN BE \*18.

\*NOTE: IF FIRST MEMORY IS MF11-L/FP THE -15V. PLUG (BLUE AND BLACK WIRES ONLY) CONNECTS TO SU3 JACK. THE OTHER 15 PIN PLUG CONNECTS TO SU4 JACK, IF FIRST MEMORY IS MF11-U/UP THE 15 PIN PLUG CONNECTS TO SU4 JACK.

ADHESIVE TIE MOUNTS AND CABLE TIES

ROUTE CABLE IN SPACE BETWEEN SYSTEM UNITS

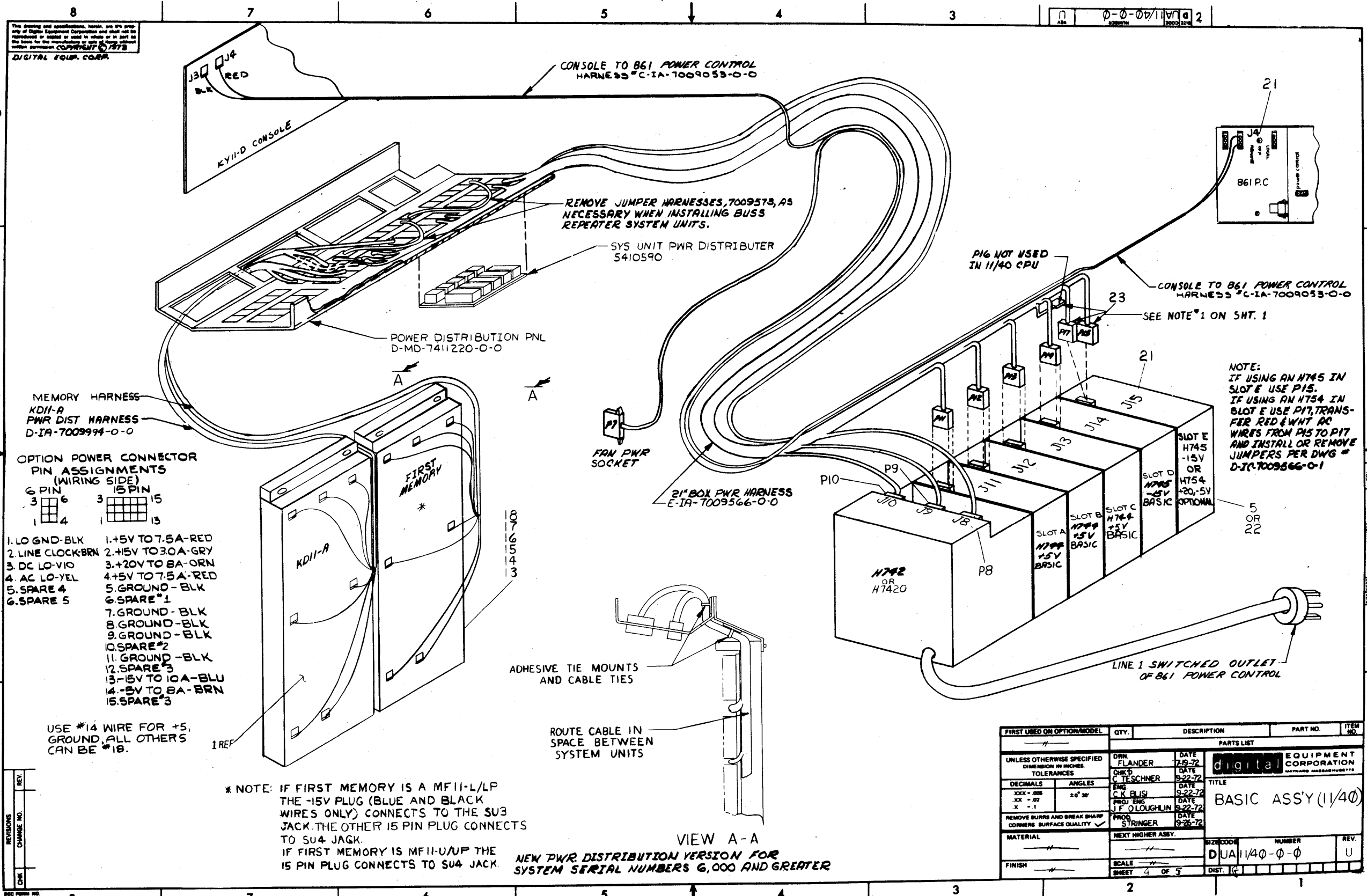
VIEW A-A

NEW PWR DISTRIBUTION VERSION FOR SYSTEM SERIAL NUMBERS 6 000 AND GREATER WITH NEW KD11-A BACKPLANE

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DRN FLANDER	DATE 7-19-72	DIGITAL EQUIPMENT CORPORATION MAYFIELD MASSACHUSETTS	
TOLERANCES	CHK'D	DATE 8-22-72		
DECIMALS	C. TESCHNER	DATE 8-22-72	TITLE BASIC ASS'Y (11/40)	
ANGLES	ENG	DATE 9-22-72		
XXX - 008	C. X. BLIS	DATE 9-22-72	SIZE CODE NUMBER REV. DUA11/40-0-0 U	
.XX - 02	PROJ. ENG	DATE 9-22-72		
.X - 1	J. F. O'LOUGHLIN	DATE 9-22-72	SCALE SHEET 3 OF 5	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD. STRINGER	DATE 9-25-72		
MATERIAL	NEXT HIGHER ASSY.		DIST	
FINISH				

REV.	CHANGE NO.	DATE

DEC FORM NO. 080 100-1



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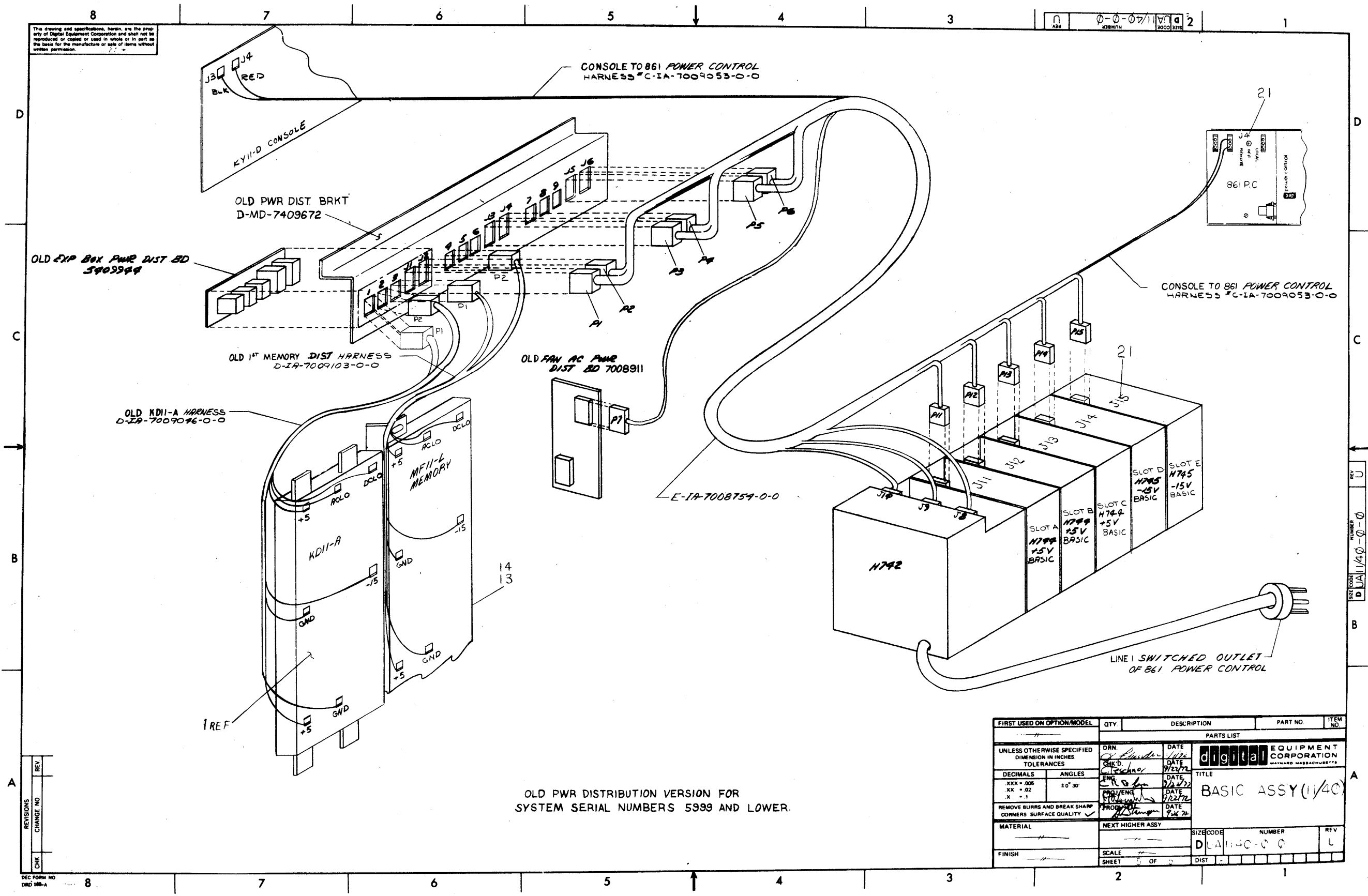
- OPTION POWER CONNECTOR PIN ASSIGNMENTS (WIRING SIDE)
- |       |        |
|-------|--------|
| 6 PIN | 15 PIN |
| 3 6   | 3 15   |
| 1 4   | 1 13   |
1. 0 GND-BLK
  2. LINE CLOCK-BRN
  3. DC LO-VIO
  4. AC LO-YEL
  5. SPARE 4
  6. SPARE 5
  7. GROUND-BLK
  8. GROUND-BLK
  9. GROUND-BLK
  10. SPARE\*2
  11. GROUND-BLK
  12. SPARE\*3
  13. -15V TO 10A-BLU
  14. -5V TO 8A-BRN
  15. SPARE\*3
1. +5V TO 7.5A-RED  
 2. +15V TO 3.0A-GRY  
 3. +20V TO 8A-ORN  
 4. +5V TO 7.5A-RED  
 5. GROUND-BLK  
 6. SPARE\*1  
 7. GROUND-BLK  
 8. GROUND-BLK  
 9. GROUND-BLK  
 10. SPARE\*2  
 11. GROUND-BLK  
 12. SPARE\*3  
 13. -15V TO 10A-BLU  
 14. -5V TO 8A-BRN  
 15. SPARE\*3
- USE #14 WIRE FOR +5, GROUND, ALL OTHERS CAN BE #18.

\* NOTE: IF FIRST MEMORY IS A MF11-L/LP THE -15V PLUG (BLUE AND BLACK WIRES ONLY) CONNECTS TO THE SU3 JACK. THE OTHER 15 PIN PLUG CONNECTS TO SU4 JACK. IF FIRST MEMORY IS MF11-U/UP THE 15 PIN PLUG CONNECTS TO SU4 JACK.

NEW PWR DISTRIBUTION VERSION FOR SYSTEM SERIAL NUMBERS 6,000 AND GREATER

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN FLANDER	DATE 7-19-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS	CHK'D C TESCHNER	DATE 8-22-72		
.XX - .005	ENG C.K. BLISI	DATE 8-22-72	TITLE BASIC ASS'Y (11/40)	
.X - .02	PROJ ENG J.F. O'LOUGHLIN	DATE 8-22-72		
.X - .1	PROG STRINGER	DATE 9-25-72	MATERIAL	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
NEXT HIGHER ASSY.			SIZE CODE	NUMBER
FINISH			DUA11/40-0-0	REV. U
SCALE			SHEET 4 OF 5	
DIST. (C)			1	

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OLD PWR DISTRIBUTION VERSION FOR SYSTEM SERIAL NUMBERS 5999 AND LOWER.

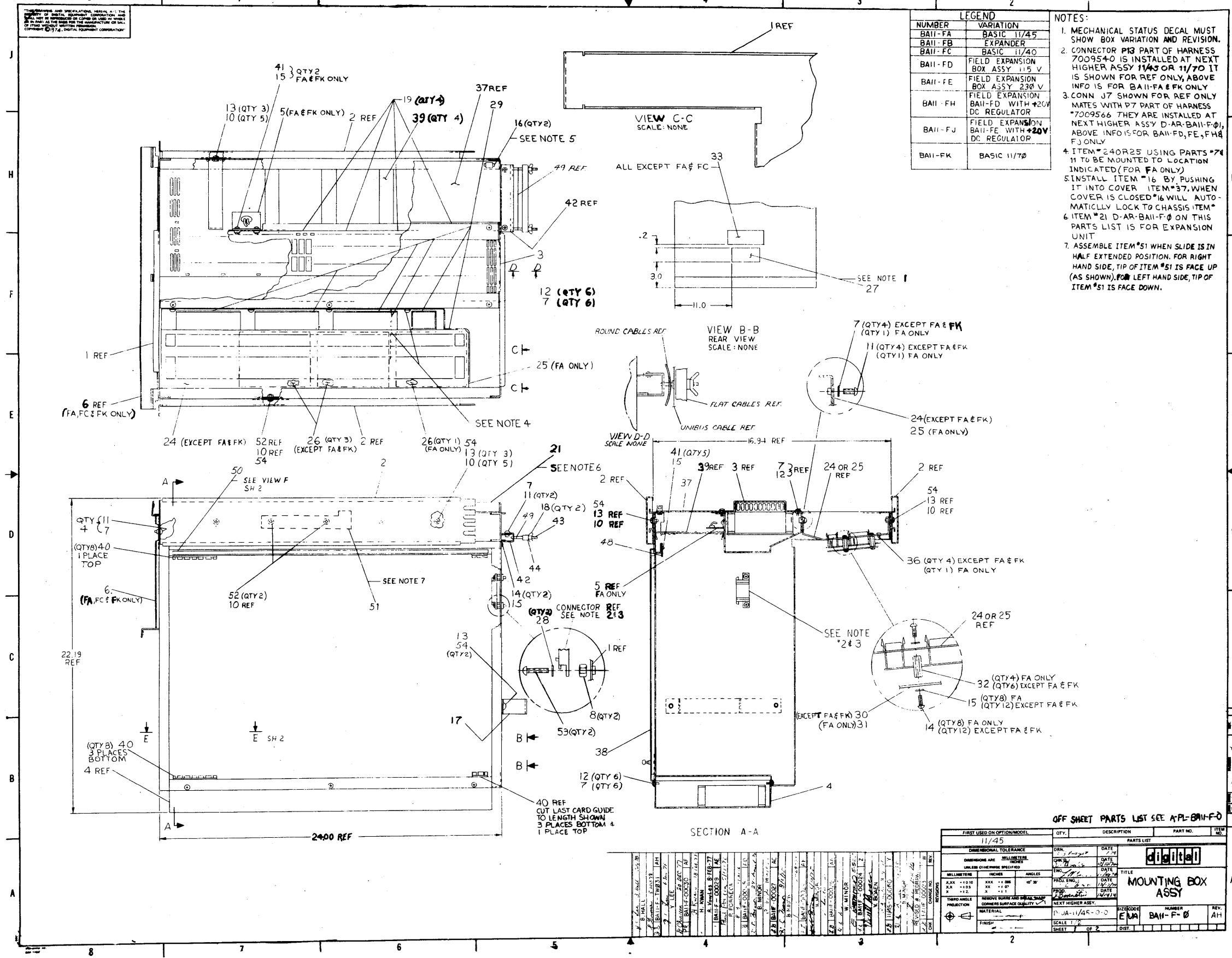
FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN <i>[Signature]</i>	DATE 9/21/72	<b>digital EQUIPMENT CORPORATION</b> <small>MAYNARD MASSACHUSETTS</small>	
DECIMALS	CHK'D <i>[Signature]</i>	DATE 9/21/72		
ANGLES	ENG <i>[Signature]</i>	DATE 9/21/72		
.XXX - .005 XX - .02 X - .1	PROJ/ENG <i>[Signature]</i>	DATE 9/21/72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD <i>[Signature]</i>	DATE 9/21/72	<b>TITLE</b> <b>BASIC ASSY (11/40)</b>	
MATERIAL	NEXT HIGHER ASSY	DATE		
FINISH	SCALE	DATE		
SIZE CODE		NUMBER	REV	
DUA1140-00		1	L	
SHEET 0 OF 5		DIST		

REV	
CHANGE NO	
CHK	

DEC FORM NO DWD 100-A

REV U  
NUMBER  
DUA1140-0-0

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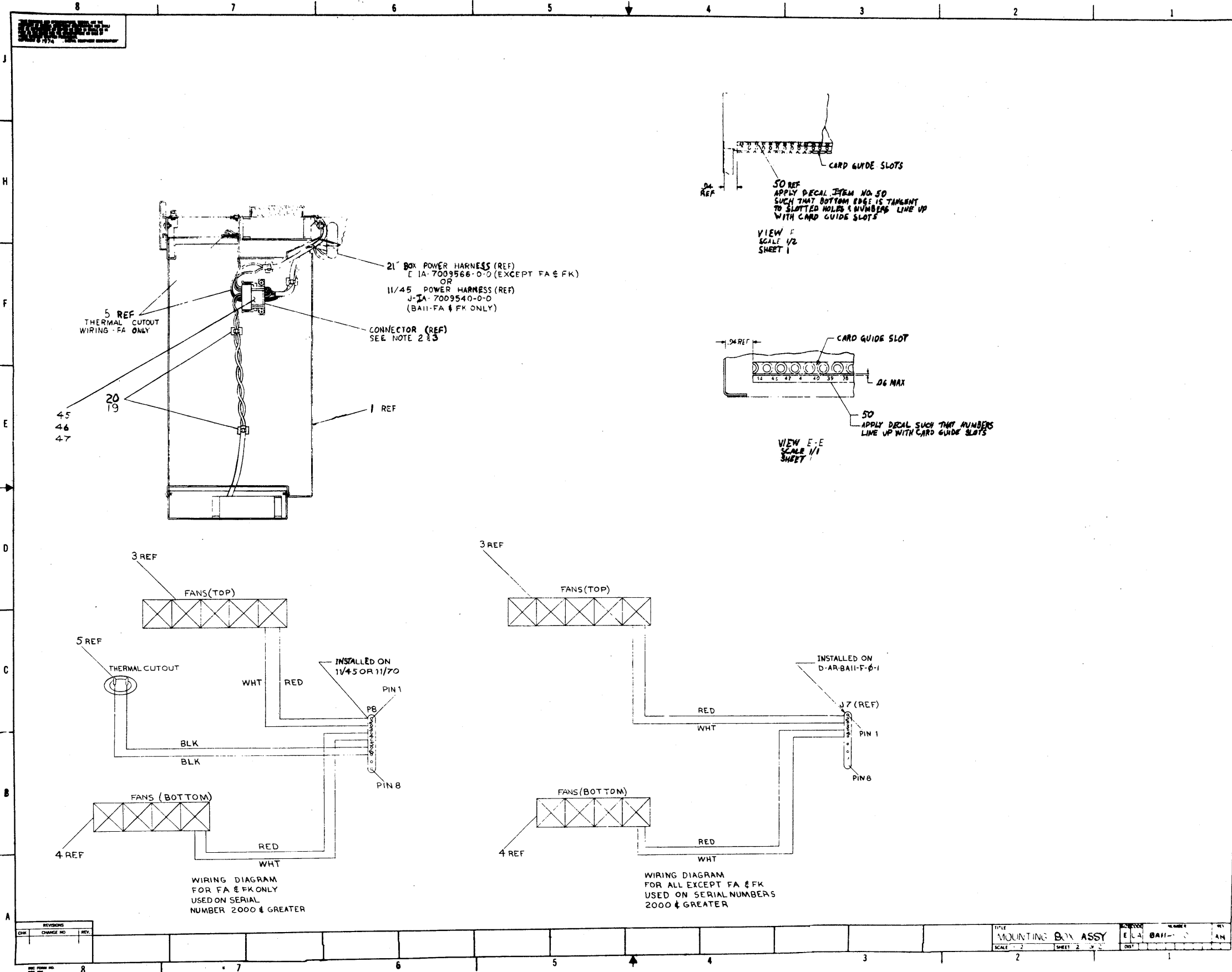
NUMBER	VARIATION
B111-FA	BASIC 11/45
B111-FB	EXPANDER
B111-FC	BASIC 11/40
B111-FD	FIELD EXPANSION BOX ASSY 115 V
B111-FE	FIELD EXPANSION BOX ASSY 230 V
B111-FH	FIELD EXPANSION B111-FD WITH +20V DC REGULATOR
B111-FJ	FIELD EXPANSION B111-FE WITH +20V DC REGULATOR
B111-FK	BASIC 11/70

- NOTES:
- MECHANICAL STATUS DECAL MUST SHOW BOX VARIATION AND REVISION.
  - CONNECTOR P13 PART OF HARNESS 7009540 IS INSTALLED AT NEXT HIGHER ASSY 1145 OR 1170 IT IS SHOWN FOR REF ONLY, ABOVE INFO IS FOR B111-FA & FK ONLY.
  - CONN J7 SHOWN FOR REF ONLY MATES WITH P7 PART OF HARNESS \*7009566 THEY ARE INSTALLED AT NEXT HIGHER ASSY D-AR-B111-F0, ABOVE INFO IS FOR B111-FD, FE, FH & FJ ONLY.
  - ITEM \*24 OR 25 USING PARTS \*74 11 TO BE MOUNTED TO LOCATION INDICATED (FOR FA ONLY).
  - INSTALL ITEM \*16 BY PUSHING IT INTO COVER ITEM \*37, WHEN COVER IS CLOSED \*16 WILL AUTOMATICALLY LOCK TO CHASSIS ITEM \*7.
  - ITEM \*21 D-AR-B111-F0 ON THIS PARTS LIST IS FOR EXPANSION UNIT.
  - ASSEMBLE ITEM \*51 WHEN SLIDE IS IN HALF EXTENDED POSITION. FOR RIGHT HAND SIDE, TIP OF ITEM \*51 IS FACE UP (AS SHOWN), FOR LEFT HAND SIDE, TIP OF ITEM \*51 IS FACE DOWN.

REV	DATE	BY	CHK	DESCRIPTION
1	11/45			ISSUED FOR PRODUCTION
2				REVISION
3				REVISION
4				REVISION
5				REVISION
6				REVISION
7				REVISION
8				REVISION
9				REVISION
10				REVISION
11				REVISION
12				REVISION
13				REVISION
14				REVISION
15				REVISION
16				REVISION
17				REVISION
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44				REVISION
45				REVISION
46				REVISION
47				REVISION
48				REVISION
49				REVISION
50				REVISION
51				REVISION
52				REVISION
53				REVISION
54				REVISION
55				REVISION

FIRST USED ON OPTION/MODEL		QTY	DESCRIPTION	PART NO.	ITEM NO.
11/45					
DIMENSIONAL TOLERANCE					
DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED					
MILLIMETERS INCHES ANGLES					
±0.10	±0.005	±0.005	±0.005	±0.005	±0.005
±0.20	±0.010	±0.010	±0.010	±0.010	±0.010
±0.30	±0.015	±0.015	±0.015	±0.015	±0.015
THIRD ANGLE PROJECTION					
NEEDLE POINT AND SPHERICAL END					
CONFORM TO SURFACE QUALITY					
NEXT HIGHER ASSY					
MATERIAL		FINISH		SIZE CODE	NUMBER
N-JA-11/45-0-0				E1A	B111-F-0
SCALE 1/2		SHEET 1 OF 2		REV. AH	

OFF SHEET PARTS LIST SEE A-PL-B111-F-0



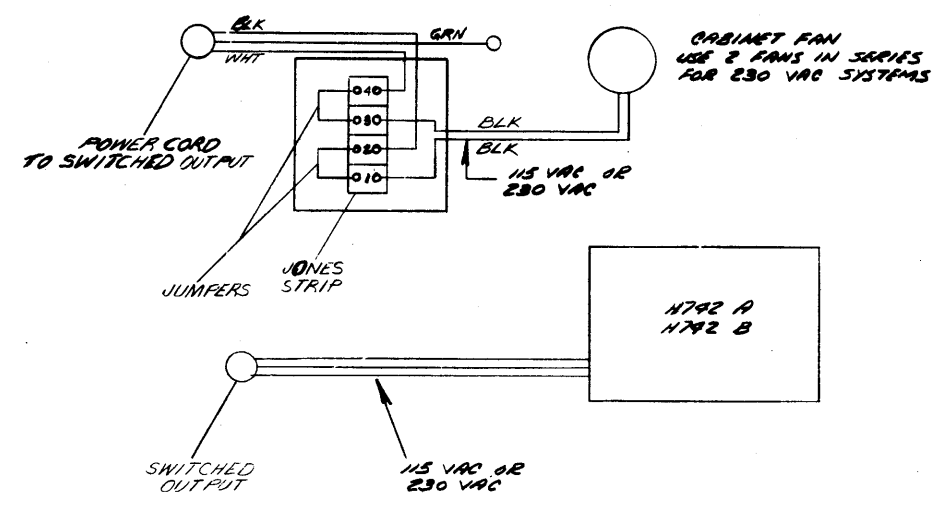
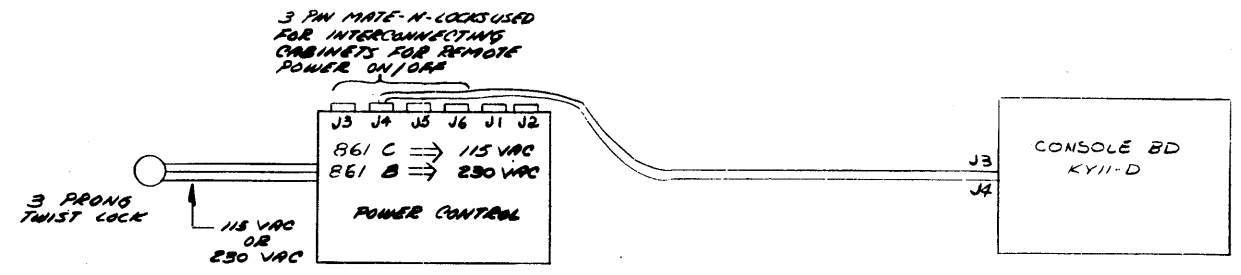
REVISIONS	
CHG	REV.

TITLE	MOUNTING BOX ASSY	DESIGNED BY	E. LA.	NO. SHEETS	3	REV.	AM
SCALE	2	SHEET	2	DIST.	1		

D-AR-BAIL-F-0-1

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1-0-0-11 2



REV.	CHANGE NO.	DATE	BY
1	11/40-00004	A	
2			
3			

W. MINOR

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/40				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	PARTS LIST		
XXX - .005	±0° 30'	DRN C. J. Sander	DATE 11/22	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
XX - .02		CHK'D C. J. Sander	DATE 9/24/72	
X - .1		ENG. C. J. Sander	DATE 9/24/72	
		PRD. ENG. C. J. Sander	DATE 9/24/72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
NEXT HIGHER ASSY.				
MATERIAL		SCALE		SIZE CODE
		SHEET 1 OF 1		DIC 11/40-0-1
FINISH		DIST.		NUMBER
				1
				REV
				A

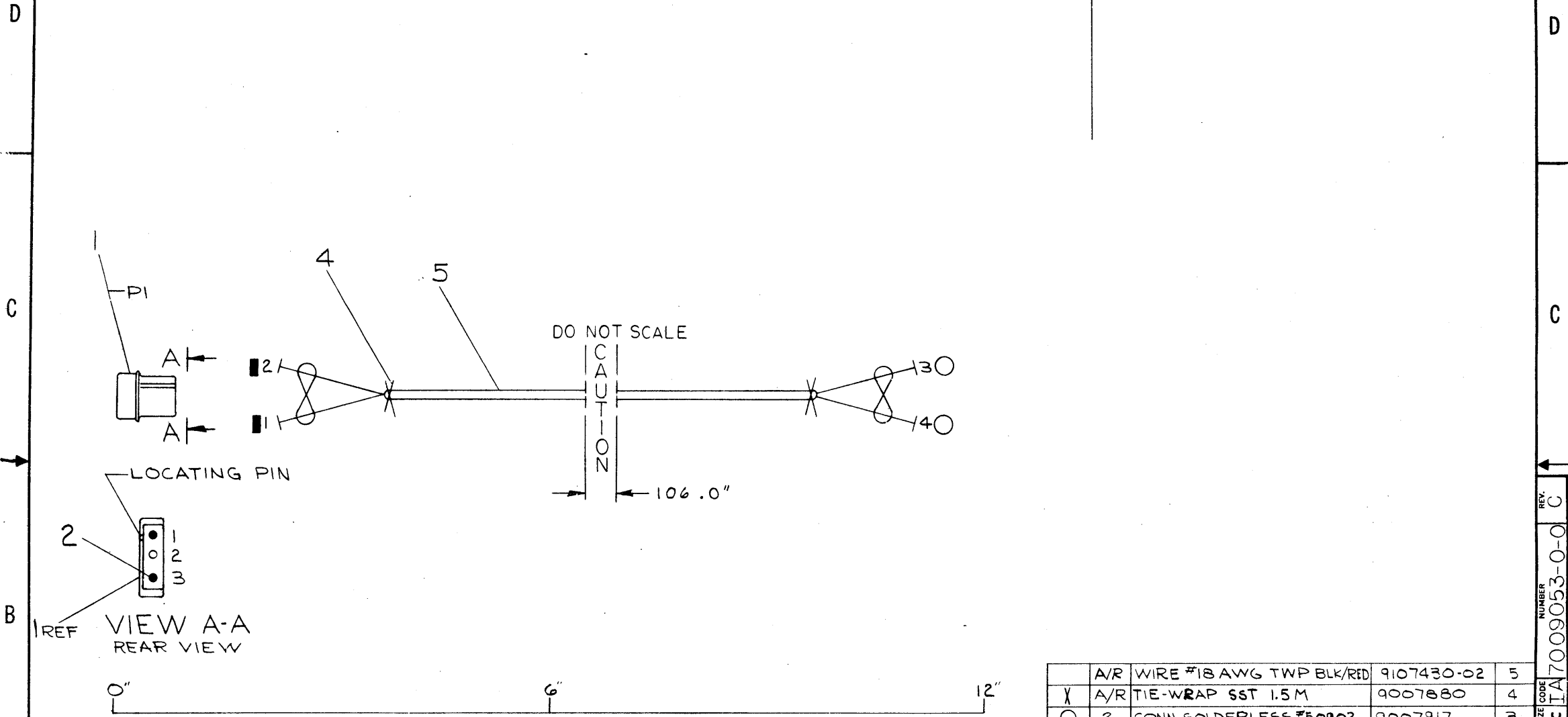
DIC FORM NO. 100-1



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WIRE TABLE								
ITEM NO	DESCRIPTION	FROM			TO			
		AWG	COLOR	POINT	CONNECTION	TERM	POINT	CONNECTION
5	18	BLK	1	PI-3	2	3	—	3
		RED	2	PI-1	2	4	—	3

NOTES:  
1. USE TIE WRAPS(X) ITEM #4 AT END BREAKOUT POINTS.



SYMBOL	DESCRIPTION	PART NO.	QTY.
A/R	WIRE #18 AWG TWP BLK/RED	9107430-02	5
X	TIE-WRAP SST 1.5M	9007880	4
○	CONN SOLDERLESS #30902	9007917	3
■	MATE-N-LOCK TERM (MALE)	1209378-01	2
SYM	CONN MATE-N-LOCK (3 PIN)	1209351-03	1

REV.	CHG	NO.	DATE	BY
A		7009053-00001	4.3.73	C.F. Blasi
B		7009053-00002	4-2-73	C.R. Blasi
C		7009053-00003	6-21-74	B. Minor
		7009053-00004	7-3-74	B. Minor
		7009053-00005	11-13-74	B. Minor
		7009053-00006	11-14-74	B. Minor

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/4φ				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS	ANGLES		PARTS LIST	
.XXX = .005	±0° 30'		DRN. DATE 5/11/72	
.XX = .02			CHK'D. DATE 9/22/72	
.X = .1			ENG. DATE 7/22/72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓			PROL. ENG. DATE 9/22/72	
			PROD. DATE 7-26-72	
MATERIAL	NEXT HIGHER ASSY.		TITLE	
SEE PARTS LIST	D-UA-11/4φ-φ-φ		digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
FINISH	SCALE 1/1		CONSOLE TO POWER CONTROL HARNESS	
	SHEET 1 OF 1		SIZE CODE NUMBER REV.	
	DIST. G		C IA 7009053-0-0 C	

BRUNING 40-107 15968

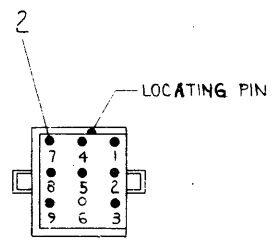
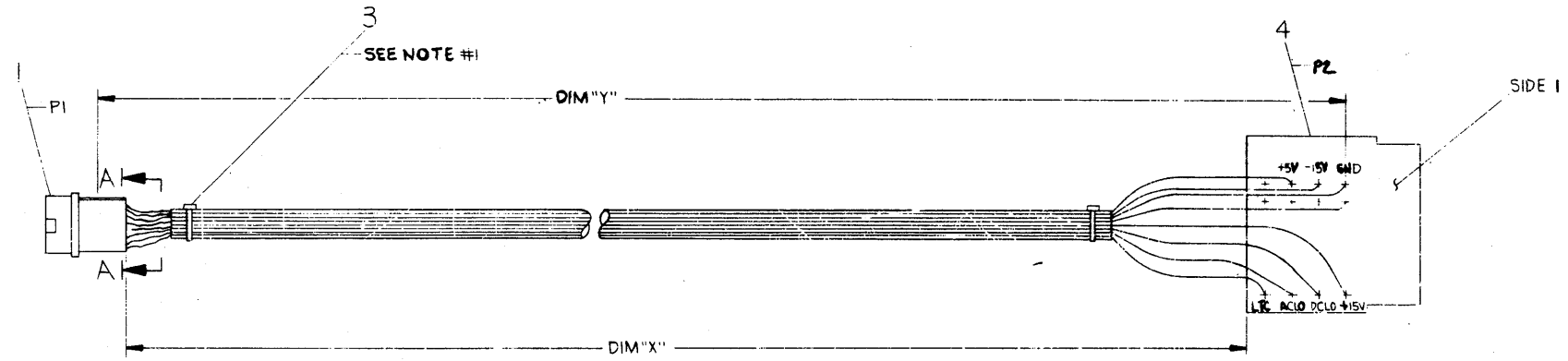
DEC FORM NO.

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WIRE TABLE					
ITEM NO.	DESCRIPTION	FROM	TO	REMARKS	
5	#8 VIO	P1-1	P2-DCL0		
6	#14 BLK	P1-4	P2-GND		
7	#18 BRN	P1-7	P2-LTC		
8	#18 YEL	P1-2	P2-ACLO		
6	#14 BLK	P1-5	P2-GND		
9	#14 GRV	P1-8	P2-+15V		
10	#18 BLU	P1-3	P2-+15V		
11	#14 RED	P1-9	P2-+5V		

NUMBER	DIM "X" VARIATION	DIM "Y" (PRECUT) REF.
7009177-02	2 FEET	2 FEET 2 INCHES

NOTES:  
 1. USE TIE WRAPS ITEM #3 APPROXIMATELY EVERY THREE (3) INCHES WHEN NECESSARY, AND AT EVERY BREAKOUT POINT



SECTION A-A  
 RIGHT-HAND VIEW  
 P1

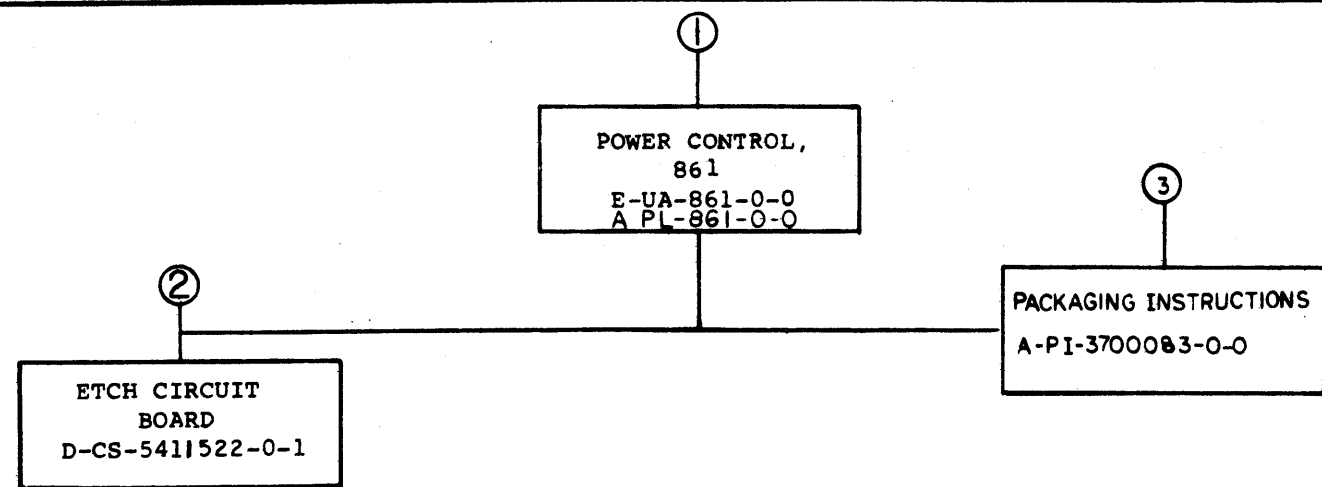
A/R	WIRE #	AWG	COLOR	QTY	ITEM NO.
	14		RED	9107370-22	11
	14		BLU	9107360-66	10
	14		GRV	9107370-38	9
	18		YEL	9107360-44	8
	18		BRN	9107360-11	7
	14		BLK	9107370-00	6
	18		VIO	9107360-77	5
				A-PL-6772-0-0	4
				9007880	3
				1209370-01	2
				1209351-09	1

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
11/40				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN: <i>Robert</i> DATE: 10/16/72	digital EQUIPMENT CORPORATION		
DECIMALS .005	CHKD: <i>C. Eschner</i> DATE: 10/15/72	MADE IN MASSACHUSETTS		
ANGLES .0° 30'	ENG: <i>C.R.E.</i> DATE: 10/17/72	TITLE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ. ENG: <i>C.R.E.</i> DATE: 10/27/72	POWER DISTRIBUTION CABLE		
MATERIAL SEE PARTS LIST	NEXT HIGHER ASSY: D-JA-11-8-3-2	SIZE CODE: DIA	NUMBER: 7009177-0-0	REV: 2
FINISH	SCALE	DIST		

REVISIONS  
 CHANGE NO. REV.  
 DTC FORM NO. 7480 100-A



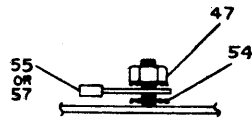




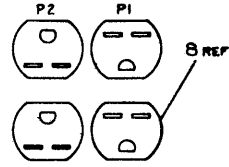
TITLE	SHEET 2 OF 3	SIZE CODE	NUMBER	REV
POWER CONTROL		B DD	861-0	M



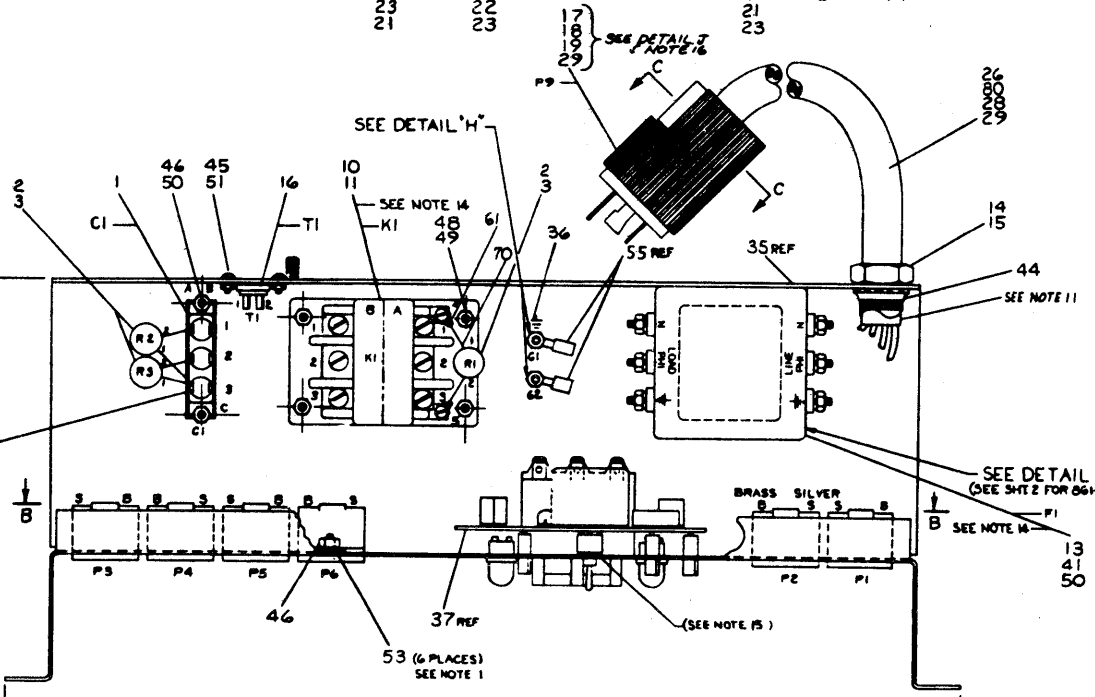
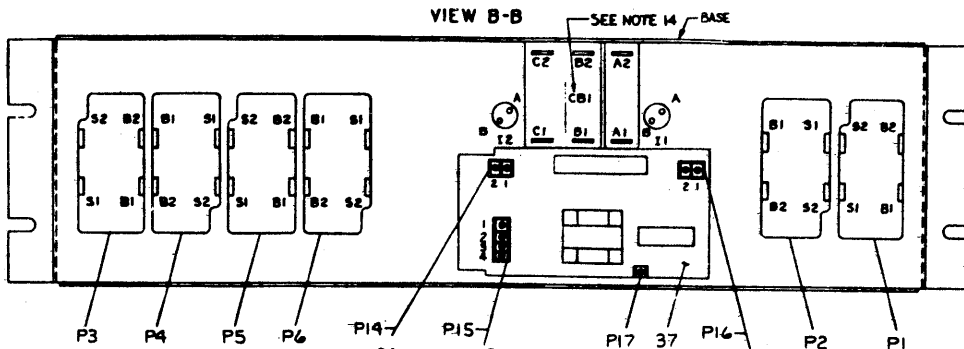
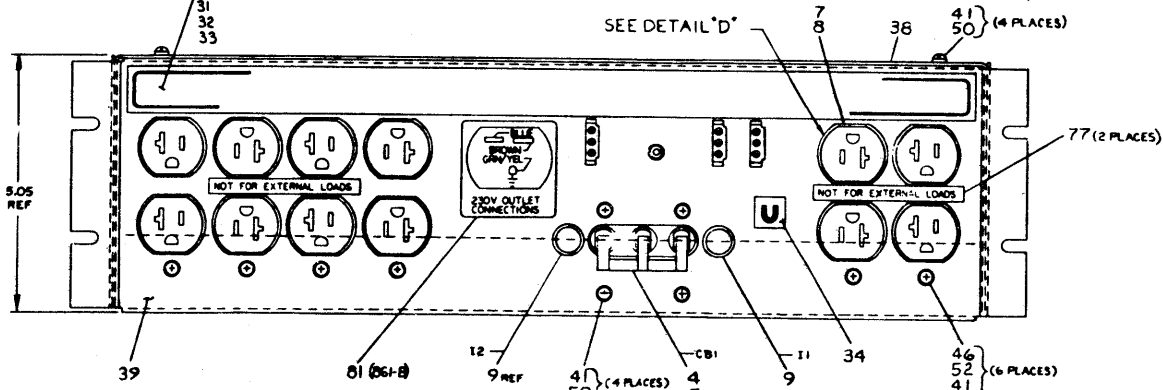
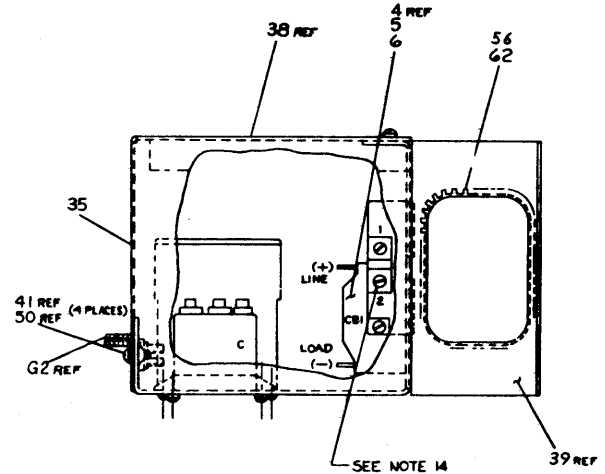
LEGEND			
DWG. NO.	VAC OUT	PHASES	AMP OUT
861-A	120	2	32
861-B	240	1	16
861-C	120	1	24
861-F	120	1	12



DETAIL H  
SCALE: NONE



DETAIL D  
RECEPTALS FOR  
VAR. 861-B ONLY



NOTES:

- ITEM 53 1/2" EXT WASHER MUST BE BETWEEN CHASSIS AND MOUNTING TAB OF RECEPTACLE (P1-P6).
- RECOMMENDED TORQUE LEVELS FOR CONNECTIONS:
- USE TIE WRAPS (ITEM 43) A/R.
- POWER CORD TO EXTEND APPROX. 30IN. BEYOND LOCKNUT (ITEM 44) FOR ITEMS 27 & 29. ITEMS 26 & 28 TO REMAIN FLUSH WITH LOCKNUT.
- RECOMMENDED TORQUE LEVELS FOR CONNECTIONS:
- REF. WIRE LIST. THESE CONNECTIONS HAVE THREE RING TERMINALS AND REQUIRE (ITEM 82) SCREW 8-32 x 1/4" WITH (ITEM 40) LOCKWASHER.
- REQUIRED TORQUE LEVELS FOR CERTAIN ELECTRO-MECHANICAL CONNECTIONS.
  - A 18:2 IN-LBS FOR TERMINALS ON F1 (ITEMS 12 & 13), THE G LUG BOXES ON K1 (ITEMS 10 & 11) AND NUTS ON GROUND STUD G1.
  - B 16:2 IN-LBS FOR 8-32 SCREW CONNECTIONS ON OUTLETS P1 THRU P6 (ITEMS 7 & 8).
  - C 12:2 IN-LBS ON 8-32 SCREW CONNECTIONS ON CIRCUIT BREAKER CONNECTIONS CB1 (ITEMS 4, 5 & 6).
- USE NO MOUNTING HARDWARE FOR SWITCH.
- STRAIN RELIEF SPACERS: (L)

861 A	8"
861 B	0"
861 C	8"
861 F	0"

FOR PARTS LIST SEE  
A-PL-861-0-0

PARTS LIST			QTY.	DESCRIPTION	PART NO.
861-PC					
DESIGNED BY: D. SCHMIDT					
CHECKED BY: J. A. AGH					
DATE: 11/10/50					
DRAWN BY: G. BERLIN					
DATE: 11/10/50					
TITLE: POWER CONTROL					
861					
PROJECT: P. FAZIO					
DATE: 11/10/50					
DESIGNED BY: D. SCHMIDT					
DATE: 11/10/50					
DRAWN BY: G. BERLIN					
DATE: 11/10/50					
PARTS LIST					
B DD 861-0-0					
EUA 861-0-0					
REV. M					

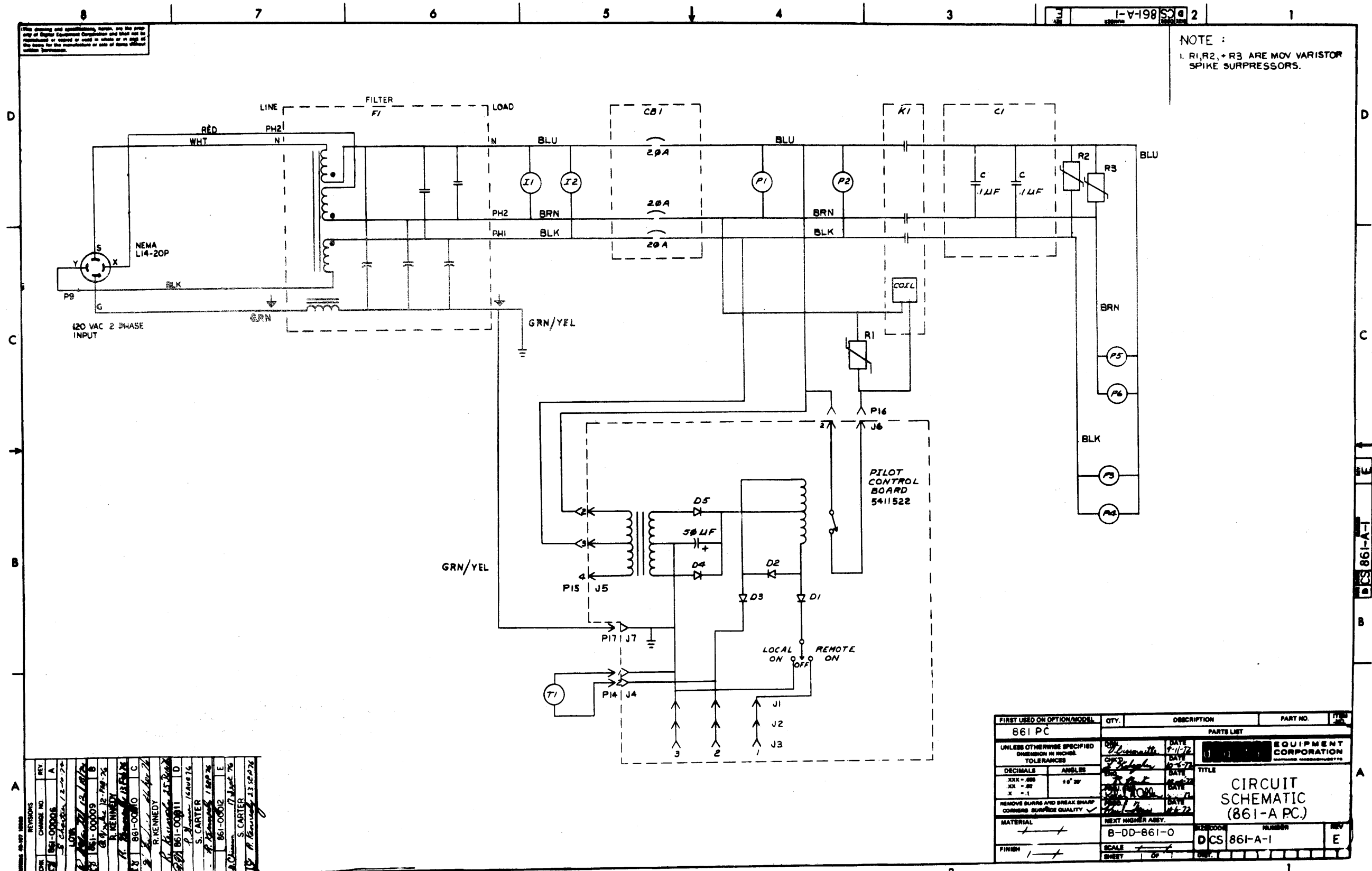






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NOTE :  
1. R1, R2, + R3 ARE MOV VARISTOR SPIKE SUPPRESSORS.



REV	CHG	NO	DATE	BY
1	1	00000	12-1-72	R. KENNEDY
2	1	00009	12-1-72	R. KENNEDY
3	1	00010	12-1-72	R. KENNEDY
4	1	00011	12-1-72	R. KENNEDY
5	1	00012	12-1-72	R. KENNEDY
6	1	00013	12-1-72	R. KENNEDY
7	1	00014	12-1-72	R. KENNEDY
8	1	00015	12-1-72	R. KENNEDY
9	1	00016	12-1-72	R. KENNEDY
10	1	00017	12-1-72	R. KENNEDY
11	1	00018	12-1-72	R. KENNEDY
12	1	00019	12-1-72	R. KENNEDY
13	1	00020	12-1-72	R. KENNEDY
14	1	00021	12-1-72	R. KENNEDY
15	1	00022	12-1-72	R. KENNEDY
16	1	00023	12-1-72	R. KENNEDY
17	1	00024	12-1-72	R. KENNEDY
18	1	00025	12-1-72	R. KENNEDY
19	1	00026	12-1-72	R. KENNEDY
20	1	00027	12-1-72	R. KENNEDY
21	1	00028	12-1-72	R. KENNEDY
22	1	00029	12-1-72	R. KENNEDY
23	1	00030	12-1-72	R. KENNEDY
24	1	00031	12-1-72	R. KENNEDY
25	1	00032	12-1-72	R. KENNEDY
26	1	00033	12-1-72	R. KENNEDY
27	1	00034	12-1-72	R. KENNEDY
28	1	00035	12-1-72	R. KENNEDY
29	1	00036	12-1-72	R. KENNEDY
30	1	00037	12-1-72	R. KENNEDY
31	1	00038	12-1-72	R. KENNEDY
32	1	00039	12-1-72	R. KENNEDY
33	1	00040	12-1-72	R. KENNEDY
34	1	00041	12-1-72	R. KENNEDY
35	1	00042	12-1-72	R. KENNEDY
36	1	00043	12-1-72	R. KENNEDY
37	1	00044	12-1-72	R. KENNEDY
38	1	00045	12-1-72	R. KENNEDY
39	1	00046	12-1-72	R. KENNEDY
40	1	00047	12-1-72	R. KENNEDY
41	1	00048	12-1-72	R. KENNEDY
42	1	00049	12-1-72	R. KENNEDY
43	1	00050	12-1-72	R. KENNEDY
44	1	00051	12-1-72	R. KENNEDY
45	1	00052	12-1-72	R. KENNEDY
46	1	00053	12-1-72	R. KENNEDY
47	1	00054	12-1-72	R. KENNEDY
48	1	00055	12-1-72	R. KENNEDY
49	1	00056	12-1-72	R. KENNEDY
50	1	00057	12-1-72	R. KENNEDY
51	1	00058	12-1-72	R. KENNEDY
52	1	00059	12-1-72	R. KENNEDY
53	1	00060	12-1-72	R. KENNEDY
54	1	00061	12-1-72	R. KENNEDY
55	1	00062	12-1-72	R. KENNEDY
56	1	00063	12-1-72	R. KENNEDY
57	1	00064	12-1-72	R. KENNEDY
58	1	00065	12-1-72	R. KENNEDY
59	1	00066	12-1-72	R. KENNEDY
60	1	00067	12-1-72	R. KENNEDY
61	1	00068	12-1-72	R. KENNEDY
62	1	00069	12-1-72	R. KENNEDY
63	1	00070	12-1-72	R. KENNEDY
64	1	00071	12-1-72	R. KENNEDY
65	1	00072	12-1-72	R. KENNEDY
66	1	00073	12-1-72	R. KENNEDY
67	1	00074	12-1-72	R. KENNEDY
68	1	00075	12-1-72	R. KENNEDY
69	1	00076	12-1-72	R. KENNEDY
70	1	00077	12-1-72	R. KENNEDY
71	1	00078	12-1-72	R. KENNEDY
72	1	00079	12-1-72	R. KENNEDY
73	1	00080	12-1-72	R. KENNEDY
74	1	00081	12-1-72	R. KENNEDY
75	1	00082	12-1-72	R. KENNEDY
76	1	00083	12-1-72	R. KENNEDY
77	1	00084	12-1-72	R. KENNEDY
78	1	00085	12-1-72	R. KENNEDY
79	1	00086	12-1-72	R. KENNEDY
80	1	00087	12-1-72	R. KENNEDY
81	1	00088	12-1-72	R. KENNEDY
82	1	00089	12-1-72	R. KENNEDY
83	1	00090	12-1-72	R. KENNEDY
84	1	00091	12-1-72	R. KENNEDY
85	1	00092	12-1-72	R. KENNEDY
86	1	00093	12-1-72	R. KENNEDY
87	1	00094	12-1-72	R. KENNEDY
88	1	00095	12-1-72	R. KENNEDY
89	1	00096	12-1-72	R. KENNEDY
90	1	00097	12-1-72	R. KENNEDY
91	1	00098	12-1-72	R. KENNEDY
92	1	00099	12-1-72	R. KENNEDY
93	1	00100	12-1-72	R. KENNEDY

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	REV
861 PC				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS		ANGLES		
.XXX - .999		± 0° 30'		
.XX - .99				
.X - .9				
REMOVES BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL		NEXT HIGHER ASSY.		
FINISH		SCALE		
		SHEET		

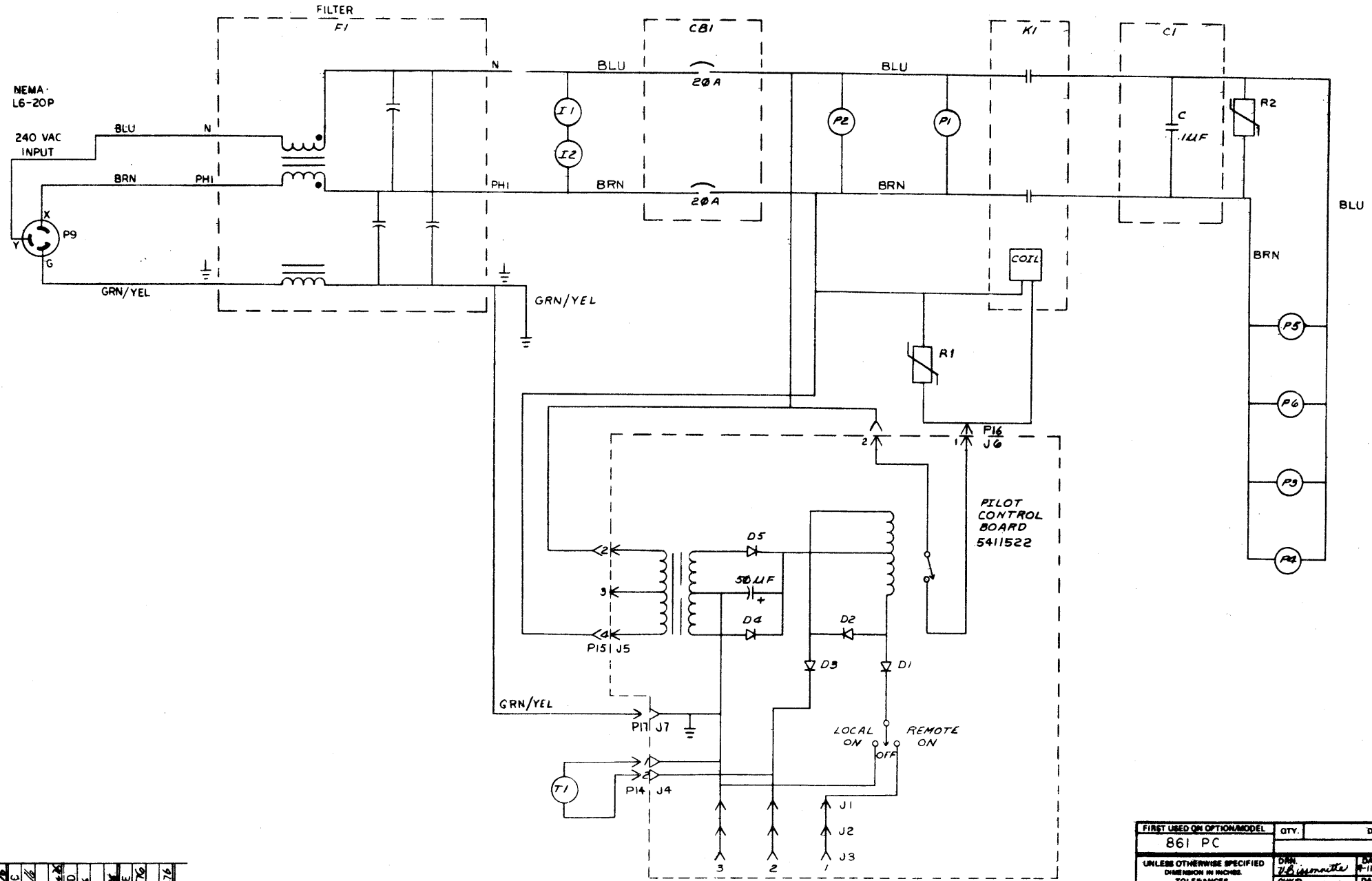
TITLE  
CIRCUIT SCHEMATIC (861-A PC.)

NUMBER  
DCS 861-A-1

REV  
E

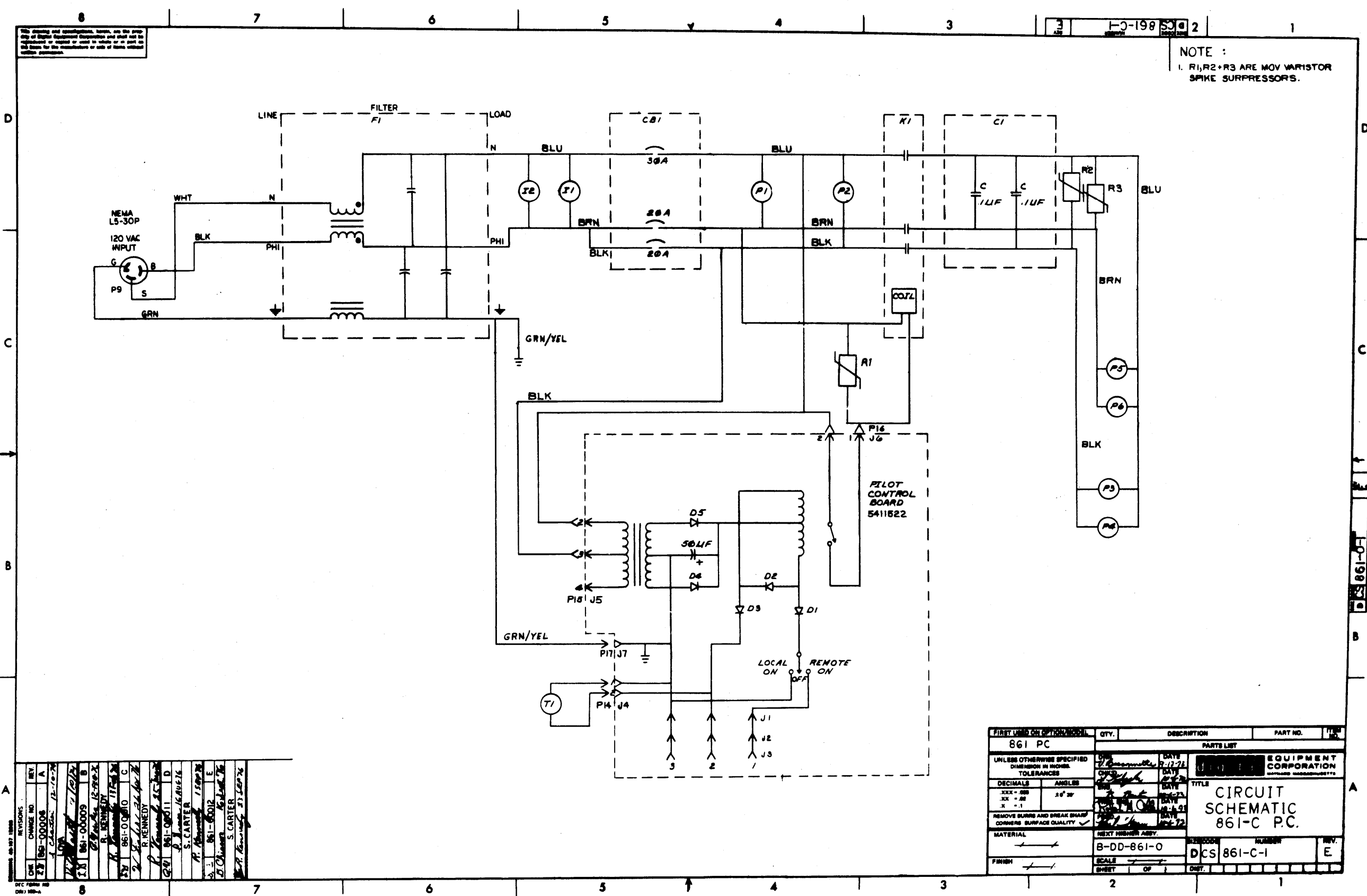
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NOTE :  
1. R1+R2 ARE MOV VARISTOR SPIKE SURPRESSORS.



REV	CHANGE NO	REV
A	861-00006	A
B	861-00009	B
C	861-00010	C
D	861-00011	D
E	861-00012	E

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
861 PC				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES		DIGITAL EQUIPMENT CORPORATION		
DECIMALS	ANGLES	TITLE		
XXX - .008	30°-30'	CIRCUIT SCHEMATIC (861-B-PC)		
XX - .02		DRAWN: [Signature] DATE: 11-72		
X - .1		CHK'D: [Signature] DATE: 11-72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		ENGR: [Signature] DATE: 11-72		
MATERIAL		PROD: [Signature] DATE: 11-72		
FINISH		NEXT HIGHER ASSY.		
		B-DD-861-0		
		DCS 861-B-1		
		SCALE		
		SHEET OF		
		DIST		



NOTE :  
 1. R1, R2 + R3 ARE MOV VARISTOR  
 SPIKE SURPRESSORS.

REV.	CHANGE NO.	DATE	BY	CHKD.
1	861-00008	12-78-78	J. C. ...	
2	861-00009	12-78-78	J. C. ...	
3	861-00010	12-78-78	J. C. ...	
4	861-00011	12-78-78	J. C. ...	
5	861-00012	12-78-78	J. C. ...	
6	861-00013	12-78-78	J. C. ...	
7	861-00014	12-78-78	J. C. ...	

FIRST USED ON OR FROM MODEL		QTY.	DESCRIPTION	PART NO.	TITLE
861 PC					
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES					
DECIMALS	ANGLES				
.XX - .005	± 0° 30'				
.X - .01					
REMOVES BURRS AND BREAK SHARP CORNERS SURFACE QUALITY					
MATERIAL		NEXT NUMBER ASSEMBLY			
FINISH		B-DD-861-0			
		SCALE			
		SHEET	OF	DIST.	

EQUIPMENT CORPORATION  
 TITLE  
**CIRCUIT SCHEMATIC**  
**861-C PC.**

DCS 861-C-1

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DIGITAL EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
<b>PACKAGING INSTRUCTION</b>	REV: <u>A</u> DATE: <u>4/73</u> <u>B</u> <u>8/78</u>
TITLE	INSTR PKG POWER CONTROL 861, ATR 16

MATERIAL REQUIREMENTS

QUANTITY	PURCHASE SPECIFICATIONS NO.	DESCRIPTION
1	9905229	Full Overlap Carton
2	9905228	Expanded Polystyrene Foam Insert
A/R		3-inch wide Glasflex Tape

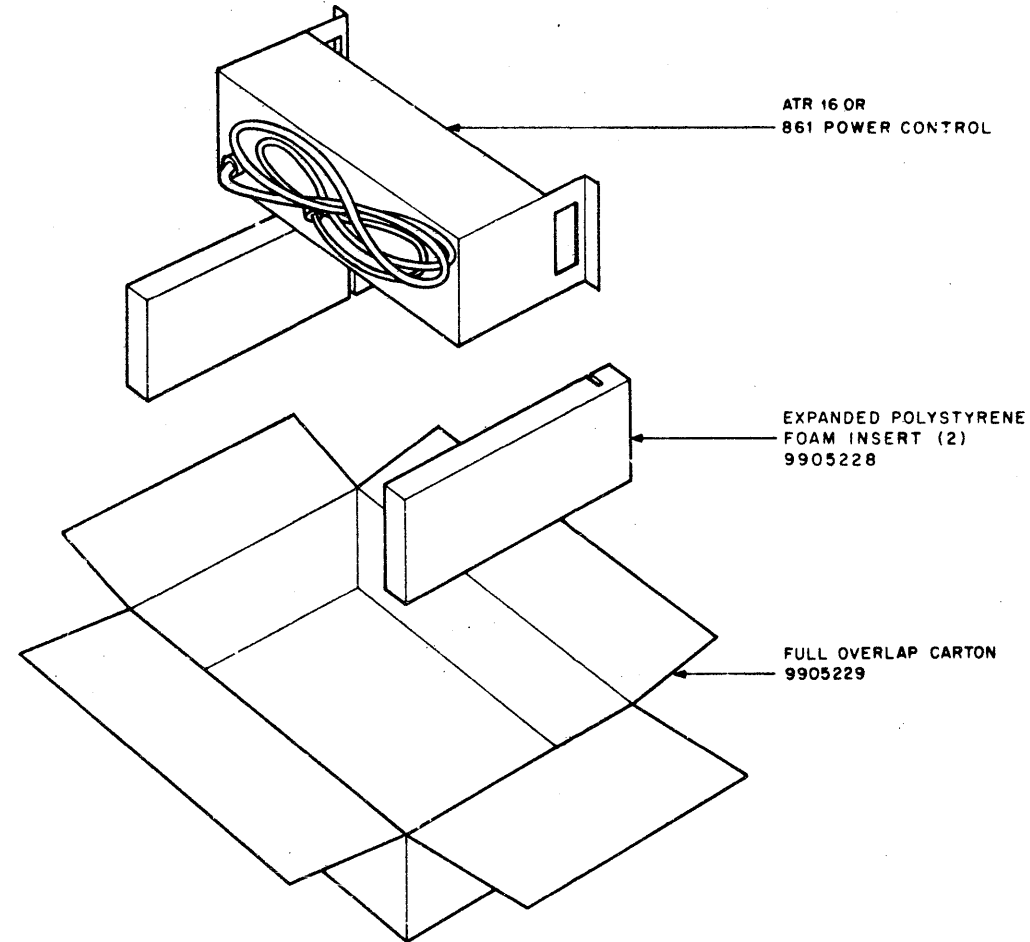
PACKAGING INSTRUCTIONS

STEP	PROCEDURE
1.	Set up the Full Overlap Carton (9905229) using one strip of tape across the bottom and extending up the sides approximately three inches. See Figure 1.
2.	Place one expanded Polystyrene Foam Insert (9905228) in each end of the carton with the slots in the foam facing inward.
3.	Place the 861 or ATR 16 Power Control in the carton with the ears of the upright sliding into the slots in the foam.
4.	Coil the Power Cord so that it fits into the cavity in the rear of the Power Control.
5.	Close and seal the carton with one piece of tape across the top of the carton and extending down the sides approximately three inches.

ENG <i>W. West</i>	APPD <i>K. Bell</i>	DATE <i>2/14/78</i>	SIZE <b>A</b>	CODE SP	NUMBER 3700083-0-0	REV <b>B</b>
-----------------------	------------------------	------------------------	------------------	------------	-----------------------	-----------------

<b>PACKAGING INSTRUCTION</b>	REV: <u>A</u> DATE: <u>4/73</u> <u>B</u> <u>8/78</u>
TITLE	INSTR PKG POWER CONTROL 861, ATR 16

FIGURE 1

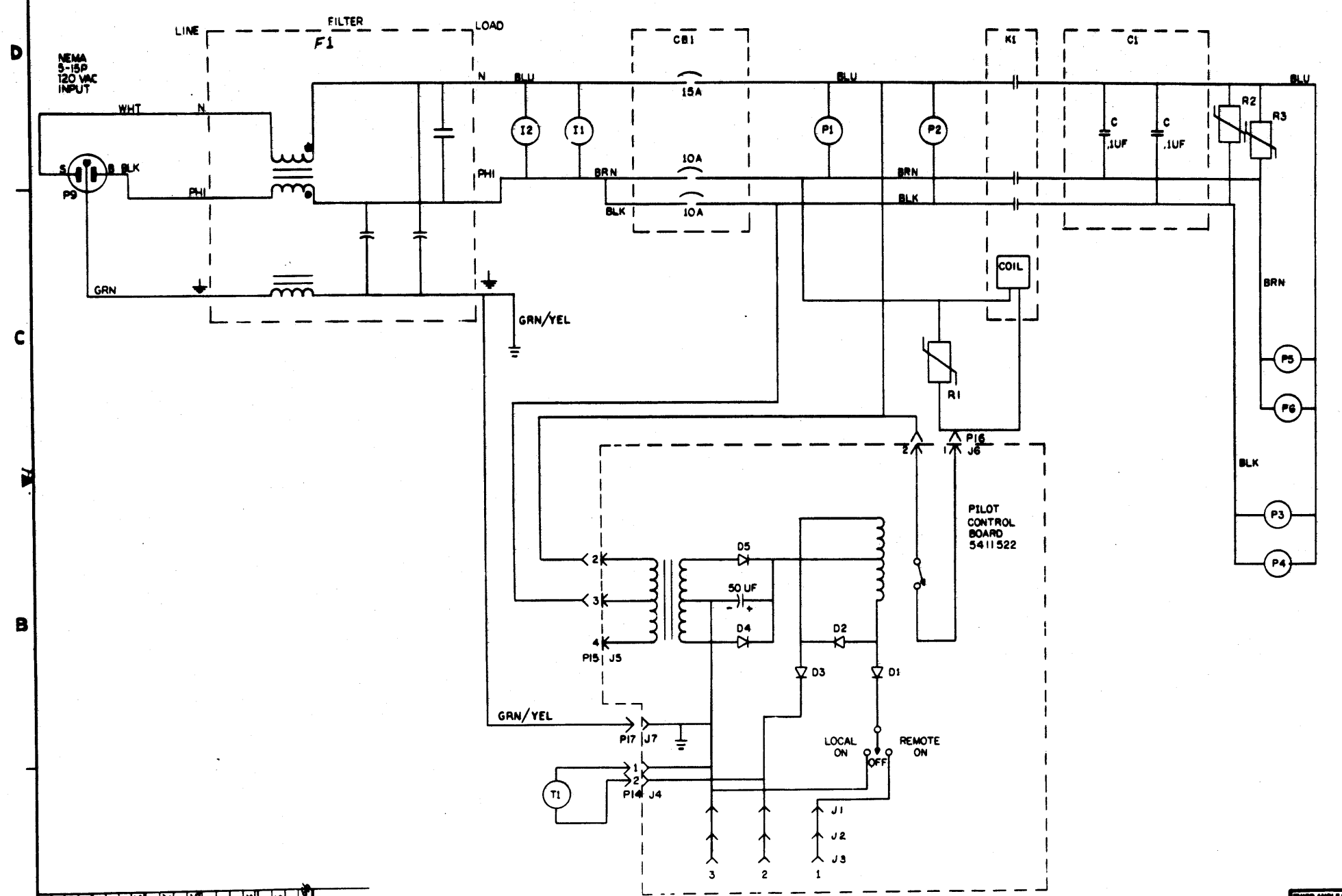


NOTE  
Make changes to the "C" size original only and rephotograph.

ENG. <i>W. West</i>	APPD. <i>K. Bell</i>	DATE <i>2/14/78</i>	SIZE <b>A</b>	CODE SP	NUMBER 3700083-0-0	REV <b>B</b>
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NOTE :  
R1 R2 + R3 ARE MOV VARISTOR SPIKE SURPRESSORS.



REV.	BY	DATE	DESCRIPTION
1	R. KENNEDY	12-19-74	ORIGINAL
2	R. KENNEDY	1-10-75	REVISED
3	R. KENNEDY	1-10-75	REVISED
4	R. KENNEDY	1-10-75	REVISED
5	R. KENNEDY	1-10-75	REVISED
6	R. KENNEDY	1-10-75	REVISED
7	R. KENNEDY	1-10-75	REVISED

QUANTITY & VARIATION	DESCRIPTION	DRWG. PART NO.	ITEM NO.
	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		
	ANGLE OF SURFACE QUALITY	CLASS OF ACCURACY	TOLERANCE RANGES
	FINISH	PREPARED	861-F-1
	DO NOT SCALE DRWG	NEXT HIGHER ASSY:	B-DD-861-0
	MATERIAL	SCALE	861-F-1
	FINISH	DRWG. NO.	861-F-1
		REV.	5









S  
REV.  
11744-0  
NUMBER  
B  
DD  
SIZE  
CODE

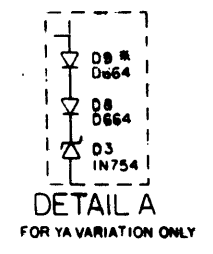
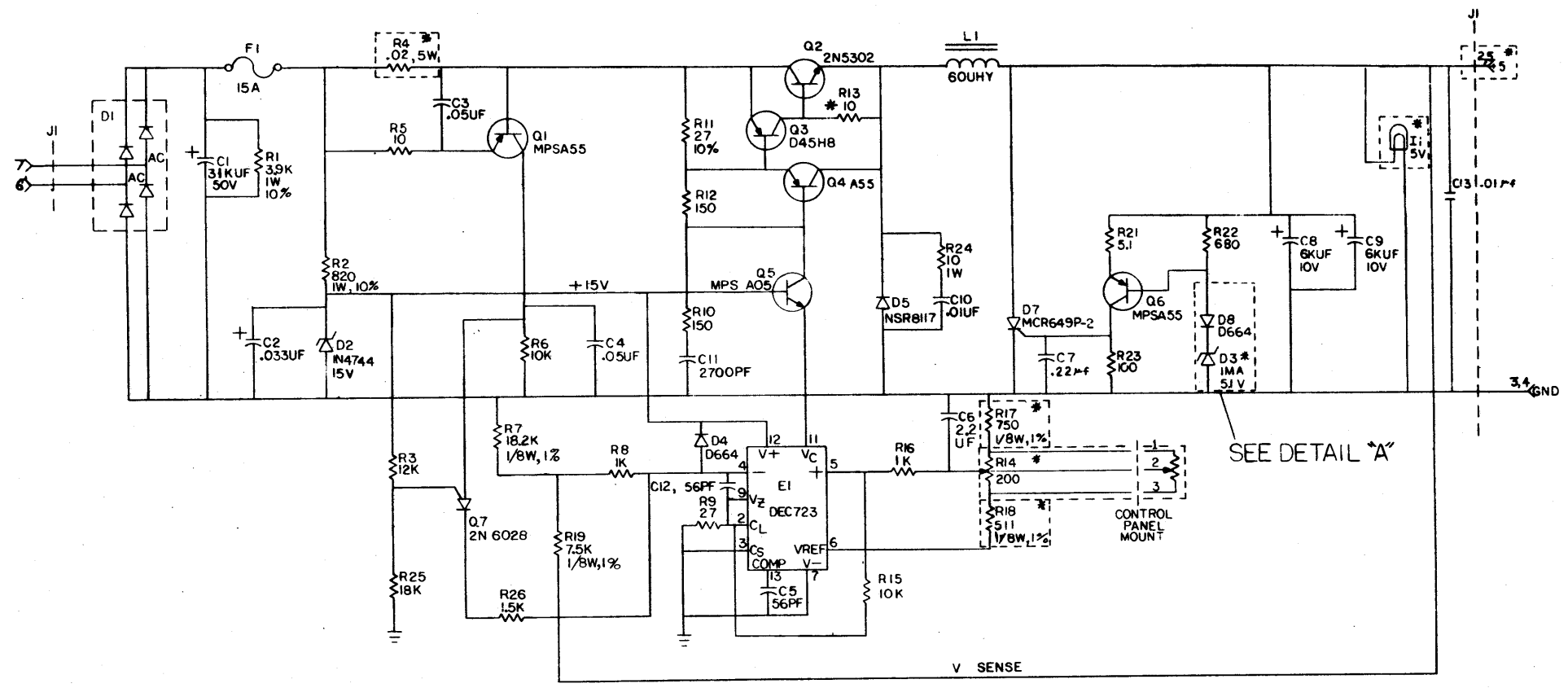
DRAWING NO.	NO. OF SHTS	PART NO.	DESCRIPTION	REVISIONS																			
D-AH-H744-0-5			ASSY DRILLING/HOLE LAYOUT	Y	Y																		
E-UA-H744-0-0	1		UNIT ASSY	W	W1																		
D-CS-H744-0-1	1		CIRCUIT SCHEMATIC	W	W1																		
B-MH-H744-0-6	4		MODULE ECO HISTORY	AC	AE																		
		5009725	ETCHED BOARD	H	H																		
A-SP-H744-0-3			TEST PROCEDURE	REF																			
A-SP-H744-0-8			MFG SPEC	REF																			
D-PS-1210737-0-0	1		HEAT SINK	REF																			
D-IA-5309756-0-0	1		REGULATOR BRK'T	REF																			
C-MD-5309760-0-0	1		COMPONENT COVER	REF																			
C-MD-5309759-0-0	1		CAPACITOR STRAP	REF																			
A-PI-3700074-0-0	2		PACKAGING INSTRUCTION	REF																			
A-PS-9905211-0-0	2		OUTER CARTON	REF																			
A-PS-9905212-0-0	2		INNER PACKAGING	REF																			
C-IA-7412388-0-0			2.5 CAP HOLDER	REF																			
C-MD-7419952-0-0			COMPONENT COVER	REF																			

NOTES:	REVISIONS	DATE	CHG NO	REV																			
		2-77	00017	R																			
			00019																				

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		11/45	CHK'D	D. FONTAINE	2-4-72			
			ENG.	G. POTTER	2-24-72	SIZE CODE	NUMBER	REV.
			PROD.	A. HIRSCH	2-24-72	B DD	H744-0	S



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\* FUSIBLE RESISTOR

- FOR YA VARIATION COMPONENT VALUES ARE AS FOLLOWS:
- R4 - .06 5W
  - R14 - 1K 10 TURN
  - R17 - 300 1/8W 1%
  - R19 - 150 1/4W 5%
  - D3 - IN754
  - I1 - 15V
  - J1-2,5 - +2.0-8.0V

\* D9 - D664 ADDED FOR YA VARIATION ONLY

UNLESS OTHERWISE INDICATED:  
RESISTORS ARE 1/4W, 5%

1	D. MARTEL	1-7-75
2	H744-00018	Y
3	A. BARON	5-30-74
4	H744-00016	W
5	A. BARON	2-3-74
6	H744-00015	V
7	A. BARON	9-17-74
8	H744-00014	U
9	A. BARON	5-29-74
10	H744-00013	T
11	A. BARON	7-7-75
12	H744-00012	S
13	A. BARON	1-12-75
14	H744-00011	R
15	D. MARTEL	1-7-75
16	H744-00010	P
17	A. BARON	11-17-74
18	H744-00009	N
19	D. MARTEL	7-17-74
20	H744-00008	M
21	A. BARON	8-29-74
22	H744-00007	L
23	A. BARON	8-29-74
24	H744-00006	K
25	A. BARON	8-29-74
26	H744-00005	J
27	A. BARON	8-29-74
28	H744-00004	I
29	A. BARON	8-29-74
30	H744-00003	H
31	A. BARON	8-29-74
32	H744-00002	G
33	A. BARON	8-29-74
34	H744-00001	F
35	A. BARON	8-29-74
36	H744-00000	E

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
	ETCH BOARD REV	F H		
	IN964A	SAME	MPSA55	
	D664	IN3606	2N5302	
	MCR649P-2		D45H8	
	IN751A	SAME	MPSA05	
	IN4744	SAME		
	NSR8117			
	2N6028			
DEC NO.		EIA NO.		FILE
SEMICONDUCTOR CONVERSION CHART		PAGE		1 OF 1

**EQUIPMENT CORPORATION**

TITLE  
**5V REGULATOR**

DRAWN BY  
**D. MARTEL**

DATE  
**1-2-75**

CHECKED BY  
**G. POTTER**

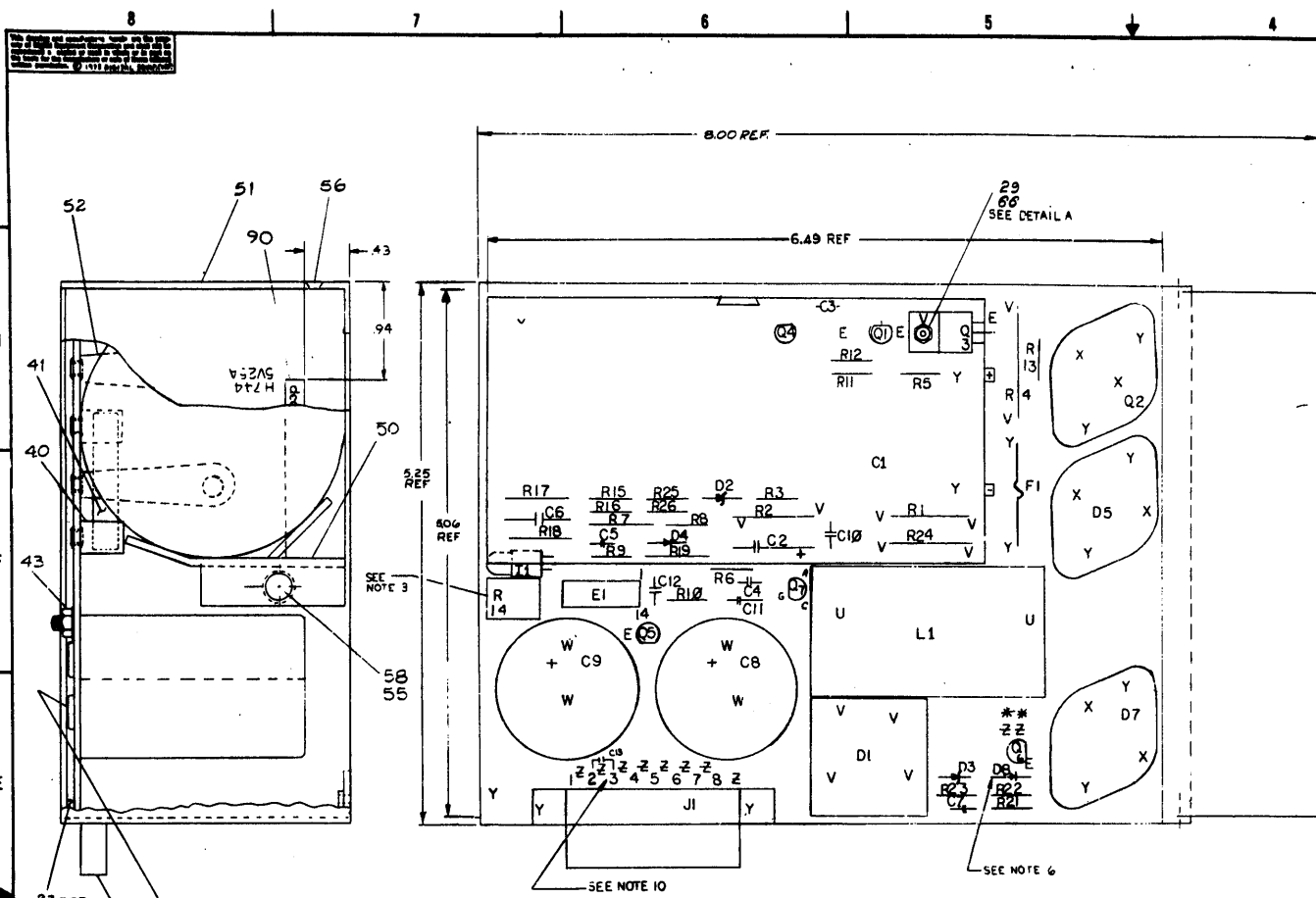
DATE  
**1-5-75**

DESIGNED BY  
**D. MARTEL**

DATE  
**1-2-75**

NEXT ENGINEER ASSY

D/C S H744-0-1

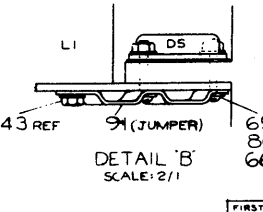
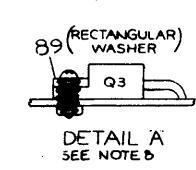
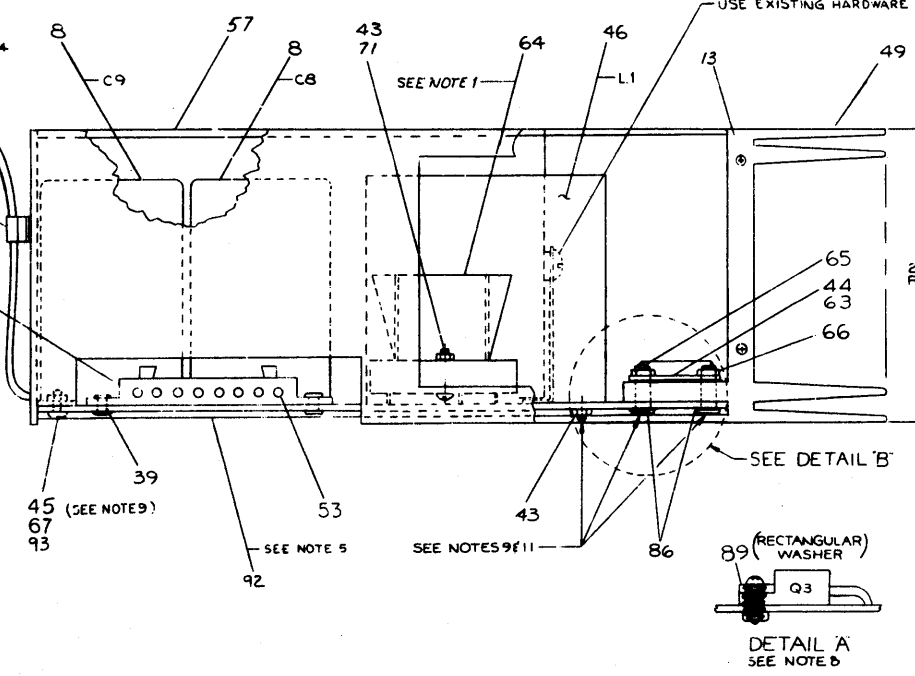


QTY	REF	DESCRIPTION	QTY	REF	DESCRIPTION	QTY	REF	DESCRIPTION
1	R1	RES 680 1/4W 5%	1	R2	RES 10 1/4W 5%	1	R3	RES 10 1/4W 5%
1	R4	RES 820 1W 10%	1	R5	RES 820 1W 10%	1	R6	RES 820 1W 10%
1	R7	RES 511 1/8W 1%	1	R8	RES 511 1/8W 1%	1	R9	RES 511 1/8W 1%
1	R10	RES 10 1/4W 5%	1	R11	RES 10 1/4W 5%	1	R12	RES 10 1/4W 5%
1	R13	RES 10 1/4W 5% FUSIBLE	1	R14	POT, 10 TURN, 1K	1	R15	RES 180 1/4W 5%
1	R16	RES 300 1/4W 5%	1	R17	RES 300 1/4W 5%	1	R18	RES 300 1/4W 5%
1	R19	RES 10 1/4W 5%	1	R20	RES 10 1/4W 5%	1	R21	RES 10 1/4W 5%
1	R22	RES 100 1/4W 5%	1	R23	RES 100 1/4W 5%	1	R24	RES 10 1/4W 5%
1	R25	RES 10K 1/4W 5%	1	R26	RES 10K 1/4W 5%	1	R27	RES 27 1/4W 10%
1	R28	RES 750 1/8W 1%	1	R29	RES 750 1/8W 1%	1	R30	RES 27 1/4W 10%
1	R31	RES 18.2K 1/8W 1%	1	R32	RES 1K 1/4W 5%	1	R33	RES 511 1/8W 1%
1	R34	RES 18K 1/4W 5%	1	R35	RES 18K 1/4W 5%	1	R36	RES 10K 1/4W 5%
1	R37	RES .02 5W 3%	1	R38	RES .02 5W 3%	1	R39	RES 820 1W 10%
1	R40	RES 820 1W 10%	1	R41	RES 820 1W 10%	1	R42	RES 3.9K 1W 10%
1	R43	RES 10 1/4W 5%	1	R44	RES 10 1/4W 5%	1	R45	RES 10 1/4W 5%
1	R46	RES 150 1/4W 5%	1	R47	RES 150 1/4W 5%	1	R48	RES 150 1/4W 5%
1	R49	DIODE ZENER 1MA, 5.1V	1	R50	DIODE ZENER 1MA, 5.1V	1	R51	DIODE ZENER 1MA, 5.1V
1	R52	DIODE ZENER 1MA, 5.1V	1	R53	DIODE ZENER 1MA, 5.1V	1	R54	DIODE ZENER 1MA, 5.1V
1	R55	DIODE ZENER 1MA, 5.1V	1	R56	DIODE ZENER 1MA, 5.1V	1	R57	DIODE ZENER 1MA, 5.1V
1	R58	DIODE ZENER 1MA, 5.1V	1	R59	DIODE ZENER 1MA, 5.1V	1	R60	DIODE ZENER 1MA, 5.1V
1	R61	DIODE ZENER 1MA, 5.1V	1	R62	DIODE ZENER 1MA, 5.1V	1	R63	DIODE ZENER 1MA, 5.1V
1	R64	DIODE ZENER 1MA, 5.1V	1	R65	DIODE ZENER 1MA, 5.1V	1	R66	DIODE ZENER 1MA, 5.1V
1	R67	DIODE ZENER 1MA, 5.1V	1	R68	DIODE ZENER 1MA, 5.1V	1	R69	DIODE ZENER 1MA, 5.1V
1	R70	DIODE ZENER 1MA, 5.1V	1	R71	DIODE ZENER 1MA, 5.1V	1	R72	DIODE ZENER 1MA, 5.1V
1	R73	DIODE ZENER 1MA, 5.1V	1	R74	DIODE ZENER 1MA, 5.1V	1	R75	DIODE ZENER 1MA, 5.1V
1	R76	DIODE ZENER 1MA, 5.1V	1	R77	DIODE ZENER 1MA, 5.1V	1	R78	DIODE ZENER 1MA, 5.1V
1	R79	DIODE ZENER 1MA, 5.1V	1	R80	DIODE ZENER 1MA, 5.1V	1	R81	DIODE ZENER 1MA, 5.1V
1	R82	DIODE ZENER 1MA, 5.1V	1	R83	DIODE ZENER 1MA, 5.1V	1	R84	DIODE ZENER 1MA, 5.1V
1	R85	DIODE ZENER 1MA, 5.1V	1	R86	DIODE ZENER 1MA, 5.1V	1	R87	DIODE ZENER 1MA, 5.1V
1	R88	DIODE ZENER 1MA, 5.1V	1	R89	DIODE ZENER 1MA, 5.1V	1	R90	DIODE ZENER 1MA, 5.1V
1	R91	DIODE ZENER 1MA, 5.1V	1	R92	DIODE ZENER 1MA, 5.1V	1	R93	DIODE ZENER 1MA, 5.1V
1	R94	DIODE ZENER 1MA, 5.1V	1	R95	DIODE ZENER 1MA, 5.1V	1	R96	DIODE ZENER 1MA, 5.1V
1	R97	DIODE ZENER 1MA, 5.1V	1	R98	DIODE ZENER 1MA, 5.1V	1	R99	DIODE ZENER 1MA, 5.1V
1	R100	DIODE ZENER 1MA, 5.1V	1	R101	DIODE ZENER 1MA, 5.1V	1	R102	DIODE ZENER 1MA, 5.1V

NOTES:  
1. APPLY ITEM #63 (COMPOUND) BETWEEN TRANSISTOR (Q2), DIODES (D5, D7) AND ITEM #44 (WASHER) ALSO BETWEEN ITEM #44 (WASHER) AND HEAT SINK (ITEM #42). ALSO APPLY ITEM #63 (COMPOUND) BETWEEN ITEM #9 (DIODE BRIDGE) AND ITEM #64 (HEAT SINK BRIDGE).

NOTES:  
3. R14 - 200Ω VARIABLE IN THIS LOCATION DELETED ONLY FOR YA VARIATION.  
4. ITEMS #79, 80, 81 ADDED ONLY FOR YA VARIATION.  
5. ITEM #2A ADDED ONLY FOR YA VARIATION.  
6. RELOCATING D8 AND ADDITION OF D9 ONLY FOR YA VARIATION.  
7. USE D9 IN YA VARIATION ONLY.

NOTES CONT:  
NOTE 8:  
(1) Q3 SCREW HEAD SHOULD BE ON TOP OF FLAT RECTANGULAR WASHER AS SHOWN. APPLY 6 INCH LBS. OF TORQUE WHEN SECURING Q3 TO CKT. BOARD BEFORE SOLDERING.  
NOTE 9: TORQUE APPLICATION  
(1) APPLY 12 INCH LBS. OF TORQUE TO THE SCREWHEAD OF #4 HARDWARE EXCEPT Q3.  
(2) APPLY 12 INCH LBS. OF TORQUE TO #6 HARDWARE ON L1.  
(3) APPLY 16 INCH LBS. OF TORQUE TO ALL #6 AND #10 HARDWARE EXCEPT ON L1.  
(4) ALL HARDWARE TO BE TORQUED BEFORE SOLDERING.  
NOTE 10:  
INSERT C13 INTO ETCH PAD HOLES CONNECTED TO J1 TERMINALS, 2-3.  
NOTE 11:  
MIN TORQUE REQUIRED FOR SCREW HEADS (Q3):  
8 INCH LBS. FOR #4 HARDWARE;  
12 INCH LBS. FOR #6 AND #10 HARDWARE  
\*SEE NOTE 7



IC TYPE	QTY	QTY	FROM PT	TO PT
7418	1			
7419	1			
7420	1			
7421	1			
7422	1			
7423	1			
7424	1			
7425	1			
7426	1			
7427	1			
7428	1			
7429	1			
7430	1			
7431	1			
7432	1			
7433	1			
7434	1			
7435	1			
7436	1			
7437	1			
7438	1			
7439	1			
7440	1			
7441	1			
7442	1			
7443	1			
7444	1			
7445	1			
7446	1			
7447	1			
7448	1			
7449	1			
7450	1			
7451	1			
7452	1			
7453	1			
7454	1			
7455	1			
7456	1			
7457	1			
7458	1			
7459	1			
7460	1			

QTY	REF	DESCRIPTION	QTY	REF	DESCRIPTION
1	D1	DIODE BRIDGE	1	D2	DIODE ZENER IN4744
1	D3	DIODE ZENER 1MA, 5.1V	1	D4, D8 D9	DIODE ZENER 1MA, 5.1V
1	D5	DIODE ZENER 1MA, 5.1V	1	D6	DIODE ZENER 1MA, 5.1V
1	D7	DIODE ZENER 1MA, 5.1V	1	D8	DIODE ZENER 1MA, 5.1V
1	D9	DIODE ZENER 1MA, 5.1V	1	D10	DIODE ZENER 1MA, 5.1V
1	D11	DIODE ZENER 1MA, 5.1V	1	D12	DIODE ZENER 1MA, 5.1V
1	D13	DIODE ZENER 1MA, 5.1V	1	D14	DIODE ZENER 1MA, 5.1V
1	D15	DIODE ZENER 1MA, 5.1V	1	D16	DIODE ZENER 1MA, 5.1V
1	D17	DIODE ZENER 1MA, 5.1V	1	D18	DIODE ZENER 1MA, 5.1V
1	D19	DIODE ZENER 1MA, 5.1V	1	D20	DIODE ZENER 1MA, 5.1V
1	D21	DIODE ZENER 1MA, 5.1V	1	D22	DIODE ZENER 1MA, 5.1V
1	D23	DIODE ZENER 1MA, 5.1V	1	D24	DIODE ZENER 1MA, 5.1V
1	D25	DIODE ZENER 1MA, 5.1V	1	D26	DIODE ZENER 1MA, 5.1V
1	D27	DIODE ZENER 1MA, 5.1V	1	D28	DIODE ZENER 1MA, 5.1V
1	D29	DIODE ZENER 1MA, 5.1V	1	D30	DIODE ZENER 1MA, 5.1V
1	D31	DIODE ZENER 1MA, 5.1V	1	D32	DIODE ZENER 1MA, 5.1V
1	D33	DIODE ZENER 1MA, 5.1V	1	D34	DIODE ZENER 1MA, 5.1V
1	D35	DIODE ZENER 1MA, 5.1V	1	D36	DIODE ZENER 1MA, 5.1V
1	D37	DIODE ZENER 1MA, 5.1V	1	D38	DIODE ZENER 1MA, 5.1V
1	D39	DIODE ZENER 1MA, 5.1V	1	D40	DIODE ZENER 1MA, 5.1V
1	D41	DIODE ZENER 1MA, 5.1V	1	D42	DIODE ZENER 1MA, 5.1V
1	D43	DIODE ZENER 1MA, 5.1V	1	D44	DIODE ZENER 1MA, 5.1V
1	D45	DIODE ZENER 1MA, 5.1V	1	D46	DIODE ZENER 1MA, 5.1V
1	D47	DIODE ZENER 1MA, 5.1V	1	D48	DIODE ZENER 1MA, 5.1V
1	D49	DIODE ZENER 1MA, 5.1V	1	D50	DIODE ZENER 1MA, 5.1V
1	D51	DIODE ZENER 1MA, 5.1V	1	D52	DIODE ZENER 1MA, 5.1V
1	D53	DIODE ZENER 1MA, 5.1V	1	D54	DIODE ZENER 1MA, 5.1V
1	D55	DIODE ZENER 1MA, 5.1V	1	D56	DIODE ZENER 1MA, 5.1V
1	D57	DIODE ZENER 1MA, 5.1V	1	D58	DIODE ZENER 1MA, 5.1V
1	D59	DIODE ZENER 1MA, 5.1V	1	D60	DIODE ZENER 1MA, 5.1V
1	D61	DIODE ZENER 1MA, 5.1V	1	D62	DIODE ZENER 1MA, 5.1V
1	D63	DIODE ZENER 1MA, 5.1V	1	D64	DIODE ZENER 1MA, 5.1V
1	D65	DIODE ZENER 1MA, 5.1V	1	D66	DIODE ZENER 1MA, 5.1V
1	D67	DIODE ZENER 1MA, 5.1V	1	D68	DIODE ZENER 1MA, 5.1V
1	D69	DIODE ZENER 1MA, 5.1V	1	D70	DIODE ZENER 1MA, 5.1V
1	D71	DIODE ZENER 1MA, 5.1V	1	D72	DIODE ZENER 1MA, 5.1V
1	D73	DIODE ZENER 1MA, 5.1V	1	D74	DIODE ZENER 1MA, 5.1V
1	D75	DIODE ZENER 1MA, 5.1V	1	D76	DIODE ZENER 1MA, 5.1V
1	D77	DIODE ZENER 1MA, 5.1V	1	D78	DIODE ZENER 1MA, 5.1V
1	D79	DIODE ZENER 1MA, 5.1V	1	D80	DIODE ZENER 1MA, 5.1V
1	D81	DIODE ZENER 1MA, 5.1V	1	D82	DIODE ZENER 1MA, 5.1V
1	D83	DIODE ZENER 1MA, 5.1V	1	D84	DIODE ZENER 1MA, 5.1V
1	D85	DIODE ZENER 1MA, 5.1V	1	D86	DIODE ZENER 1MA, 5.1V
1	D87	DIODE ZENER 1MA, 5.1V	1	D88	DIODE ZENER 1MA, 5.1V
1	D89	DIODE ZENER 1MA, 5.1V	1	D90	DIODE ZENER 1MA, 5.1V
1	D91	DIODE ZENER 1MA, 5.1V	1	D92	DIODE ZENER 1MA, 5.1V
1	D93	DIODE ZENER 1MA, 5.1V	1	D94	DIODE ZENER 1MA, 5.1V
1	D95	DIODE ZENER 1MA, 5.1V	1	D96	DIODE ZENER 1MA, 5.1V
1	D97	DIODE ZENER 1MA, 5.1V	1	D98	DIODE ZENER 1MA, 5.1V
1	D99	DIODE ZENER 1MA, 5.1V	1	D100	DIODE ZENER 1MA, 5.1V

EQUIPMENT CORPORATION  
5V REGULATOR



FIND NO.	DRAWING NO.	DESCRIPTION	TYPE	FIND NO.	DRAWING NO.	DESCRIPTION	TYPE
1	E-UA-H745-Ø-Ø	UNIT ASSY	E/M				
	D-CS-H745-Ø-1	CIRCUIT SCHEMATIC	E				
	D-AH-H745-Ø-5	ASSY/DRILLING HOLE LAYOUT	E				
	B-MH-H745-Ø-6	MODULE ECO HISTORY	E				
	A-SP-H745-Ø-8	MFG SPEC	E				
	A-SP-11/45-TA-2	TEST PROCEDURE	E				
	D-PS-1210737-0-0	HEAT SINK	M				
	D-IA-5309756-0-0	REGULATOR BRACKET	M				
	C-IA-5309761-0-0	2-5 CAP BRACKET	M				
	C-MD-5309759-0-0	CAPACITOR STRAP	M				
2	A-PI-3700074-0-0	PACKAGING INSTRUCTIONS	M				
	A-PS-9905211-0-0	OUTER CARTON	M				
	A-PS-9905212-0-0	INNER PACKAGE	M				

TYPE: E ELECTRICAL  
M MECHANICAL  
E/M ELECTRO/MECHANICAL



TITLE -15V REGULATOR

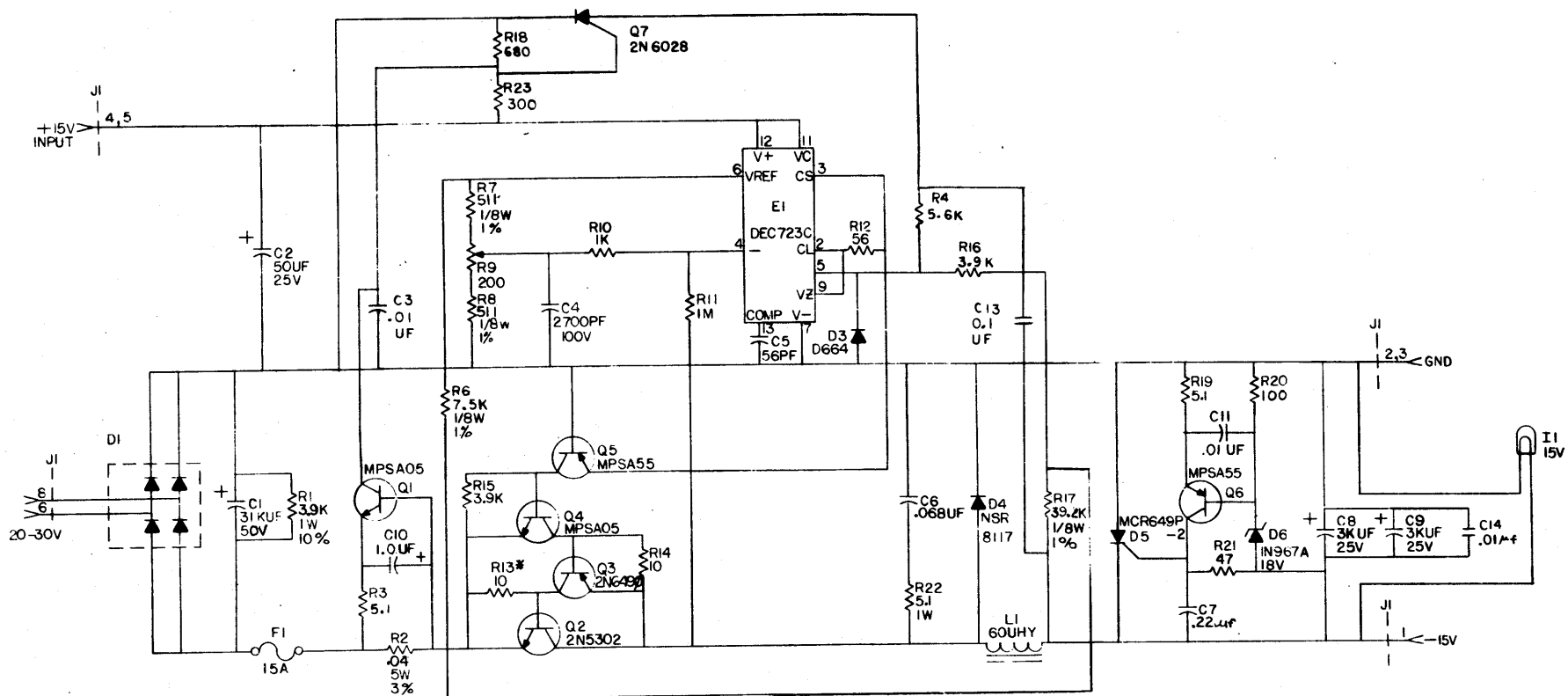
SHEET 2 OF 2

SIZE CODE  
**B DD**

NUMBER  
H745-Ø

REV  
R

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\* FUSIBLE  
UNLESS OTHERWISE INDICATED:  
RESISTORS = 1/4W, 5%

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
	ETCH BOARD REV	E		
	D664	IN 3606	D45H8	
	NSR 8117		2N 6028	
	MCR649P - 2			
	IN 967A	SAME		
	2N 5302			
	MPS A05			
	MPS A55			
	DEC NO.	EIA NO.	DEC NO.	EIA NO.
SEMICONDUCTOR CONVERSION CHART				
DRN. POWER J DATE 11-8-71			<div style="display: flex; align-items: center;"> <div style="margin-left: 10px;"> <p><b>digital EQUIPMENT CORPORATION</b> MAYNARD MASSACHUSETTS</p> <p>TITLE: <b>-15V REG.</b></p> <p>SIZE CODE: <b>DCS</b> NUMBER: <b>H745-0-1</b></p> </div> </div>	
CHK'D. JAMES MOORE DATE 1-9-71	DATE 11-8-71			
ENGR. J. MOORE DATE 1-9-71	DATE 1-9-71			
PROJ. M. MOORE DATE 1-9-71	DATE 1-9-71			
FRY. J. MOORE DATE 11-3-72	DATE 11-3-72			
NEXT HIGHER ASSY			SCALE: SHEET 1 OF 1	

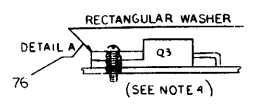
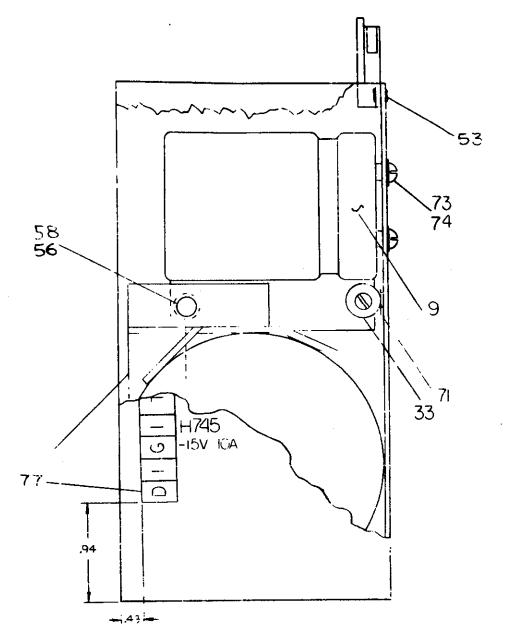
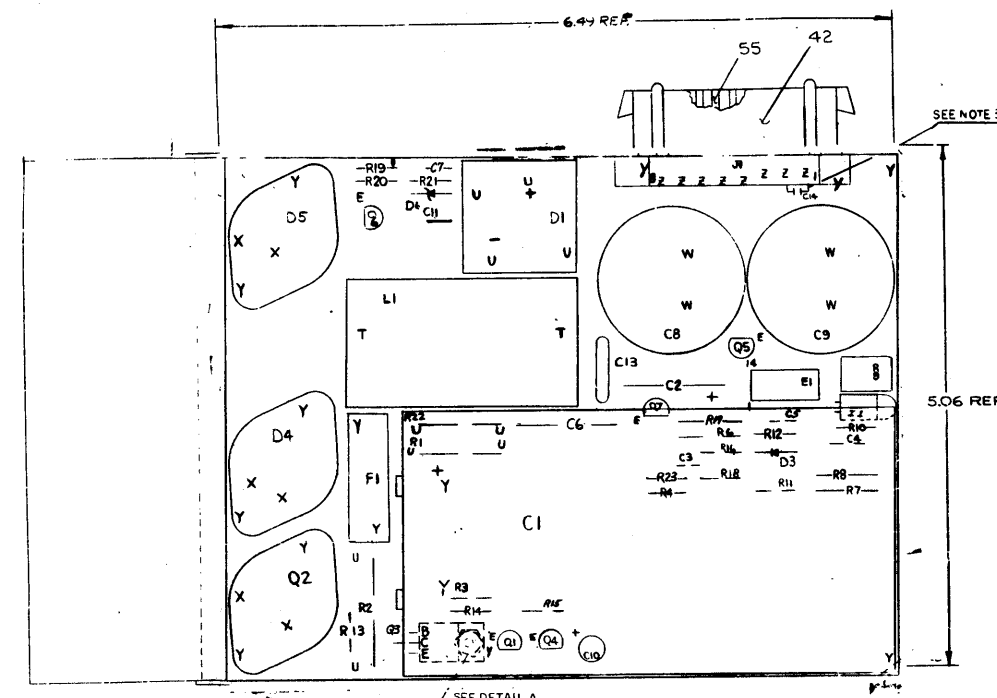
DATE CODE DCS H745-0-1



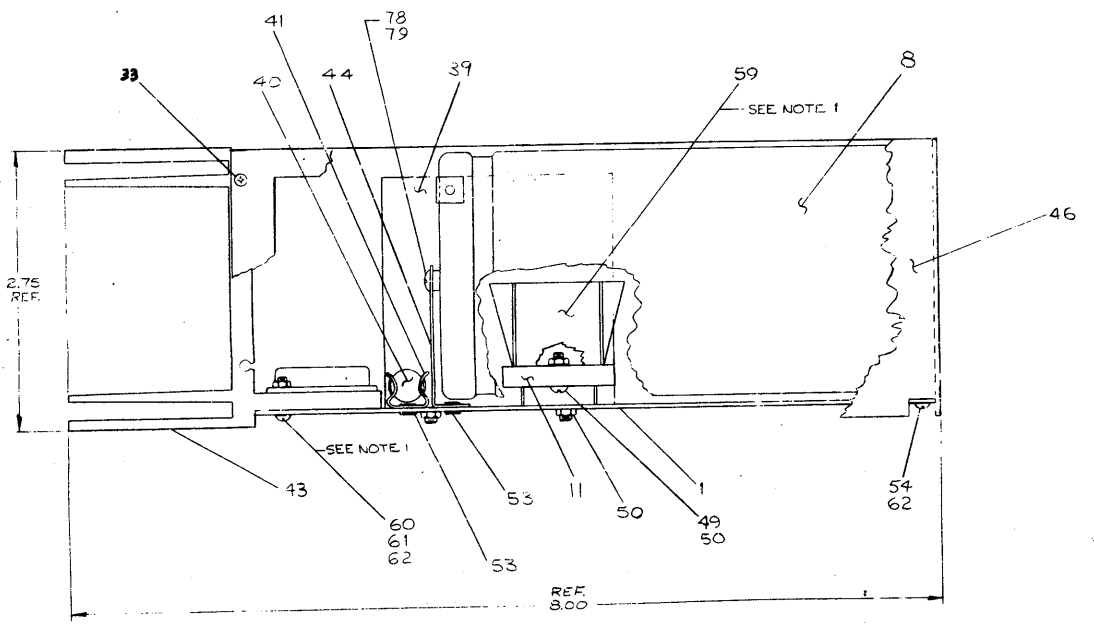
1. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.  
2. DIMENSIONS TO CENTER UNLESS OTHERWISE SPECIFIED.  
3. DIMENSIONS TO FACE UNLESS OTHERWISE SPECIFIED.

NOTE:  
3. INSERT C14 INTO ETCH PAD HOLES CONNECTED TO J1 TERMINALS 1-2.

NOTE:  
1. APPLY ITEM # 5 (THERMAL COMPOUND) BETWEEN TRANSISTOR AND INSULATOR WASHER (ITEM # 52) ALSO BETWEEN WASHER & HEAT SINK FOR Q2 & Q3. ALSO APPLY ITEM # 51 (COMPOUND) BETWEEN ITEM # 11 (DIODE BRIDGE AND ITEM # 59 (HEAT SINK).  
2. 1010621 MAY BE SUBSTITUTED FOR C13 (1000030).



NOTE 4:  
Q3 SCREW HEAD SHOULD BE ON TOP OF FLAT RECTANGULAR WASHER AS SHOWN. APPLY 6 INCH LBS OF TORQUE WHEN SECURING Q3 TO CKT. BOARD BEFORE SOLDERING.  
NOTE 5: TORQUE APPLICATION  
(1) APPLY 12 INCH LBS. OF TORQUE TO ALL #4 HARDWARE EXCEPT Q3.  
(2) APPLY 16 INCH LBS. OF TORQUE TO ALL #6 AND #10 HARDWARE.  
(3) ALL HARDWARE TO BE TORQUED BEFORE SOLDERING.



IC TYPE	QND	QBY	ITEM NO.	AWG	FROM PT.	TO PT.
JUMPER LIST						
IC PIN LOCATIONS						

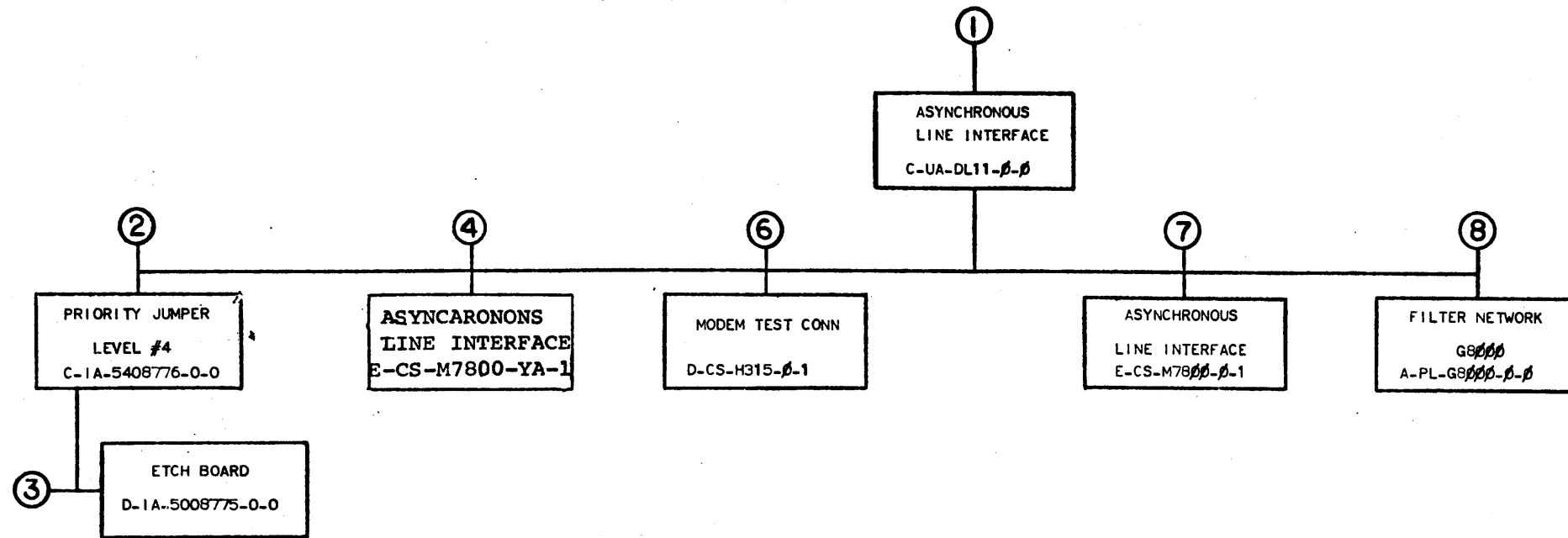
ITEM NO.	DESCRIPTION	QTY	REF. DESIGNATION	QTY	REF. DESIGNATION
1	DECAL (H745)	80	7416945-02	1	C2
2	WASHER INT. TOOTH #10	79	9006635	1	C8
3	SCREW PAN 10-32 x 5/16 LG	78	9009669-01	1	C4
4	CAP .22 uF 50V	77	1010274	1	C7
5	WASHER, RECTANGULAR	76	9009769	1	C13
6	RES 10M, FUSIBLE	75	1312495-00	1	R2
7	LOCKWASHER #10 INT	74	9006635	1	R13
8	SCR #10-32x31 SLOTTED PIN HD.	73	9009645-01	1	R11

ITEM NO.	DESCRIPTION	QTY	REF. DESIGNATION	QTY	REF. DESIGNATION
1	ASSY/DRILLING HOLE LAYOUT	70	D-44-H745-0-5	1	
2	PACKING INSTRUCTIONS	69	API-3700074-0-0	1	
3	RES .680 1/4W 5%	68	1301524	1	R18
4	RES .30G 1/4W 5%	67	1301625	1	P23
5	C14 (SEE NOTE 2)	66	1010274	1	C14
6	SCR PIN HD 10-32 x 5/16 LG	65	9009645-01	1	R14
7	LAMP 15V	64	1214356	1	Z1
8	SCR PIN MAX S/WELD, SELF TAPPING	63	9009642	1	R1
9	WASHER #4	62	9006635	1	R10
10	HEAT SINK #4-40	61	9006631	1	R8
11	SCR PIN HD 10-32 x 1 1/2 LG	60	9009645-01	1	R9
12	HEAT SINK BRIDGE RECT	59	1310001	1	L1
13	SCR PIN HD 10-32 x 1 1/2 LG	58	9009645-01	1	R12
14	SCR PIN HD 10-32 x 1 1/2 LG	57	9009645-01	1	R16
15	WASHER LOCK #4	56	9006635	1	R1
16	CONTACT FEMALE	55	1209498	1	R4
17	SCR PIN HD 10-32 x 1 1/2 LG	54	9009645-01	1	R15
18	EYELET OS-4-5	53	9009640	1	R6
19	INSULATOR WASHER	52	9007121	1	R3
20	THERMAL COMPOUND	51	9009640	1	
21	HEAT SINK #4-40	50	9006631	1	R5
22	SCR PIN HD 10-32 x 1 1/2 LG	49	9009645-01	1	R7
23	SCR PIN HD 10-32 x 1 1/2 LG	48	9009645-01	1	R17
24	INSULATOR BRKT	47	1311382-01	1	R3
25	2.5 MFD POLY CAPACITOR	46	1311382-01	1	C1
26	STRAP CAPACITOR	45	1311382-01	1	C3
27	HEAT SINK	44	9006631	1	R1
28	20M 1/2W 5% RES	43	1309498	1	R11
29	FUSE CLIP	42	9007209	1	F1
30	FUSE	41	1212327-01	1	F1
31	REACTOR NO LHY	40	1310001	1	L1
32	INTERMATED CIRCUIT BRIDGE	39	1310001	1	E1
33	TRANSISTOR 2N4409	38	1312495-01	1	Q2
34	TRANSISTOR 400	37	1310001	1	Q1
35	TRANSISTOR 400	36	1310001	1	Q3
36	TRANSISTOR 400	35	1310001	1	Q4
37	TRANSISTOR 400	34	1310001	1	Q5
38	RES 5.6K 1/4W 5%	33	1309498	1	R1
39	RES 1.5K 1/4W 5%	32	1309498	1	R2
40	RES 5.6K 1/4W 5%	31	1309498	1	R3
41	RES 5.6K 1/4W 5%	30	1309498	1	R4
42	RES 3.9K 1/4W 5%	29	1309498	1	R5
43	RES 5.1K 1/4W 5%	28	1309498	1	R6
44	RES 3.9K 1/4W 5%	27	1309498	1	R7
45	RES 10K 1/4W 5%	26	1309498	1	R8
46	RES 47K 1/4W 5%	25	1309498	1	R9
47	RES 39K 1/4W 5%	24	1309498	1	R10
48	RES 10K 1/4W 5%	23	1309498	1	R11
49	RES 7.5K 1/4W 5%	22	1309498	1	R12
50	RES 1.5K 1/4W 5%	21	1309498	1	R13
51	RES 5.1K 1/4W 5%	20	1309498	1	R14
52	RES 10K 1/4W 5%	19	1309498	1	R15
53	RES 7.5K 1/4W 5%	18	1309498	1	R16
54	RES 5.1K 1/4W 5%	17	1309498	1	R17
55	RES 5.1K 1/4W 5%	16	1309498	1	R18
56	RES 5.1K 1/4W 5%	15	1309498	1	R19
57	RES 5.1K 1/4W 5%	14	1309498	1	R20
58	RES 5.1K 1/4W 5%	13	1309498	1	R21
59	RES 5.1K 1/4W 5%	12	1309498	1	R22
60	RES 5.1K 1/4W 5%	11	1309498	1	R23
61	RES 5.1K 1/4W 5%	10	1309498	1	R24
62	RES 5.1K 1/4W 5%	9	1309498	1	R25
63	RES 5.1K 1/4W 5%	8	1309498	1	R26
64	RES 5.1K 1/4W 5%	7	1309498	1	R27
65	RES 5.1K 1/4W 5%	6	1309498	1	R28
66	RES 5.1K 1/4W 5%	5	1309498	1	R29
67	RES 5.1K 1/4W 5%	4	1309498	1	R30
68	RES 5.1K 1/4W 5%	3	1309498	1	R31
69	RES 5.1K 1/4W 5%	2	1309498	1	R32
70	RES 5.1K 1/4W 5%	1	1309498	1	R33

DECAL (H745) 7416945-02 80  
 WASHER INT. TOOTH #10 9006635 79  
 SCREW PAN 10-32 x 5/16 LG 9009669-01 78  
 CAP .22 uF 50V 1010274 77  
 WASHER, RECTANGULAR 9009769 76  
 RES 10M, FUSIBLE 1312495-00 75  
 LOCKWASHER #10 INT 9006635 74  
 SCR #10-32x31 SLOTTED PIN HD. 9009645-01 73  
 REF DESIGNATION QTY

TRANSIPAD 9008206 71  
 ETCH BOARD REV E  
 0664 IN 3606  
 DEC. NO. EIA NO. DEC. NO. EIA NO.  
 EQUIPMENT CORPORATION  
 -15 REGULATOR  
 E UA H745-0-0

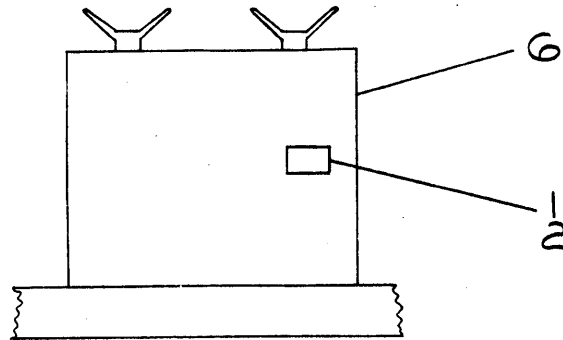




TITLE	ASYNCHRONOUS LINE INTERFACE	SHEET 2 OF 3	SIZE CODE	B DD	NUMBER	DL11-Ø	REV	L
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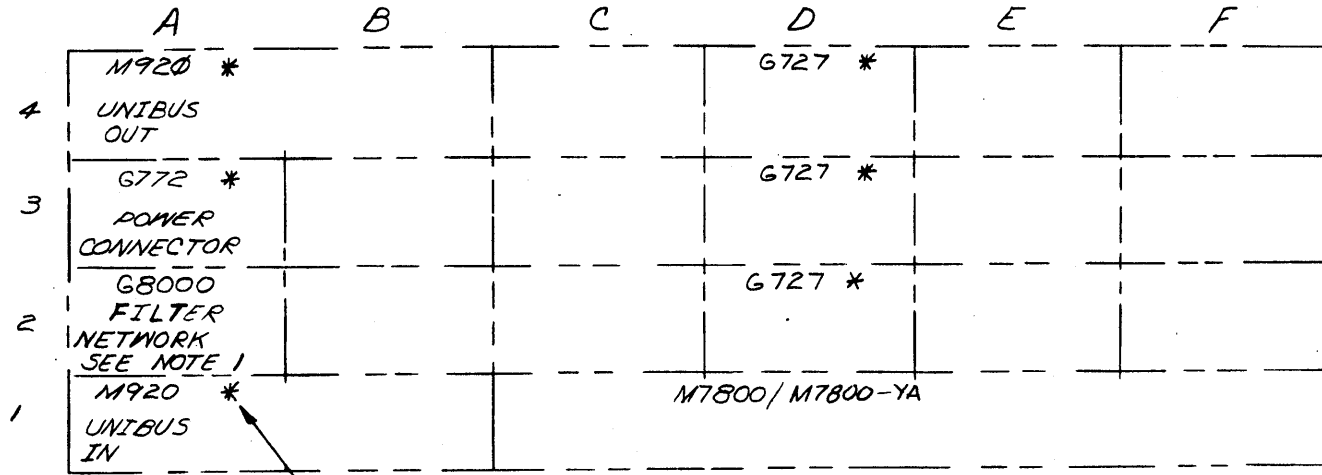


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1972



NOTES:

- G 8000 IS REQUIRED ONLY IN PDP 11 SYSTEMS WHERE +15V IS NOT AVAILABLE. THE INSTALLATION REQUIRES 2 WIRES TO BE ADDED.  
A03V2-A02V2  
A02N2-CXXU1  
WHERE (XX) IS THE SLOT NUMBER CONTAINING THE DLII.
- ITEMS INDICATED WITH ASTERISK (\*) ARE SHOWN FOR REFERENCE ONLY AND ARE NOT PART OF THIS UNIT.



SEE NOTE 2

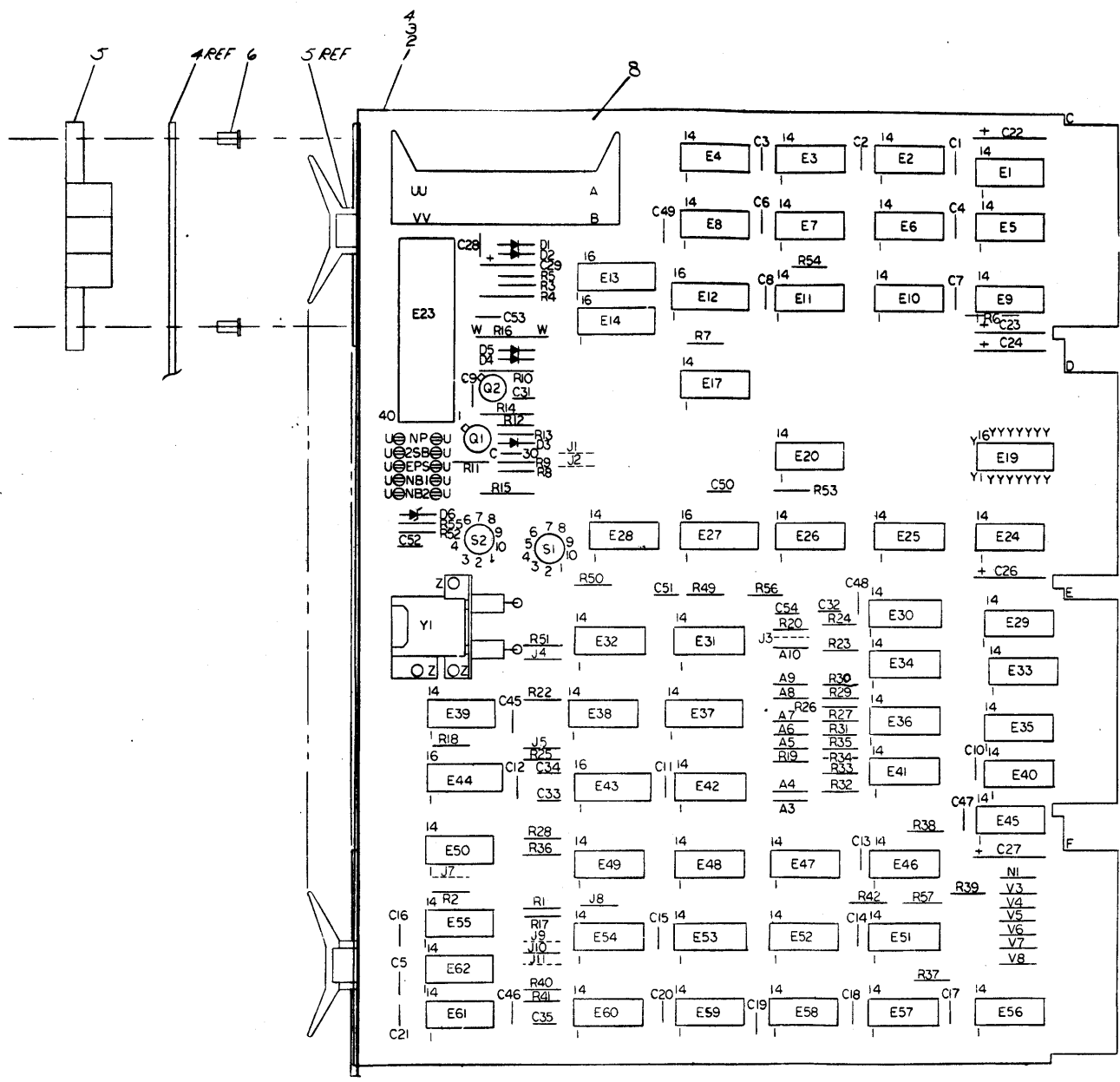
REV.	CHANGE NO.	CHK	DATE
A	DLII-00001	PM	2-18-72
B	DLII-00002	PS	7-19-72
C	DLII-00005	PM	12-5-72
D	DLII-00006	PS	1-19-73
E	DLII-00008	PS	4-17-73
F	DLII-00009	PS	12-FEB-76
H	DLII-00010	JA	23-MAR-78

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP-11				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN. M. Rice	DATE 2/18/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS .XXX = .005 .XX = .02 .X = .1	CHK'D. J. F. Janson	DATE 4-29-72	TITLE ASYNCHRONOUS LINE INTERFACE	
ANGLES ±0° 30'	ENG. P. E. Janson	DATE 5-11-72	REV. H	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROB'G. P. E. Janson	DATE 5-11-72	SIZE CODE CUA	
MATERIAL + +	PROD. J. M. Janson	DATE 5-15-72	NUMBER DLII-0-0	
FINISH + +	NEXT HIGHER ASSY. B-DD-DLII-0	SCALE NONE	SHEET 1 OF 1	

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS <b>PARTS LIST</b>			QUANTITY / VARIATION																	
MADE BY M. PIERCE		CHECKED J. FERGUSON	SECTION																	
DATE 4/27/72		DATE 4/27/72	1																	
ENG P. E. JANSON		PROD <i>J. Mc. Gilly</i>	ISSUED SECT.																	
DATE 5/11/72		DATE 5/15/72	1																	
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	DL11-A	DL11-B	DL11-C	DL11-D	DL11-E													
1	C-IA-5408776-0-0	PRIORITY JUMPER LEVEL #4	1	1	1	1	1													
3	D-UA-BC05C-25	CABLE MODEM BC05C	-	1	-	1	1													
4	D-IA-7008360-0-0	CABLE ASSEMBLY (KL8E)	1	-	1	-	-													
<del>5</del>	<del>D-CS-H315-0-1</del>	<del>MODEM TEST CONNECTOR</del>																		
6	E-CS-M7800-0-1	ASYNCHRONOUS LINE INTERFACE	-	1	-	1	1													
7	<del>A-PL-G8000-0-0</del>	<del>FILTER NETWORK</del>																		
8		CRYSTAL	A/R	RA	RA	RA	RA	R												
9	E-CS-M7800-YA-1	ASYNCHRONOUS LINE INTERFACE	1	-	1	-	-													
10	9008269	TRANSPARENT VINYL TAPE	A/R																	
NOTES:																				
1. G8000 IS REQUIRED ONLY IN PDP11 SYSTEMS WHERE +15V IS NOT AVAILABLE. ONE PER DD11-A																				
<del>2. ONE H315 PER PDP11 SYSTEM</del>																				
3. CRYSTAL FREQUENCY DEFINED BY CUSTOMER SPECIFIED BAUD RATE OR BY THE DOCUMENTATION OF AN OPTION WHICH USES THE DL11.																				
4. APPLY TAPE TO TOP SURFACES OF CRYSTAL AND MOUNTING BRACKETS TO INSULATE FROM ADJACENT MODULES.																				
5. PRIORITY LEVELS 5, 6, or 7 MAY BE SPECIFIED BY THE CUSTOMER OR THE DOCUMENTATION OF AN OPTION WHICH USES THE DL11.																				
TITLE ASYNCHRONOUS LINE INTERFACE			ASSY NO. C-UA-DL11-0-0		SIZE CODE A PL		NUMBER DL11-0-0				REV. H		ECO NO. DL11-00010							
SHEET 1 OF 1			DIST.																	

DIGITAL EQUIPMENT CORPORATION

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, J4-J5, J8, J10, V3-V8, AND N1.  
 3.) LETTERS ENCLOSED IN PARENTHESIS REFER TO PINS ON THE BERG CONNECTOR. EXAMPLE: (X).  
 4.) DEC B6405 WERE PHASED IN AS 380 REPLACEMENTS ANY 380 FAILURE SHOULD BE REPLACED BY B6405, EXCEPT E28, E29 MUST BE REPLACED WITH A 7382 CHIP.

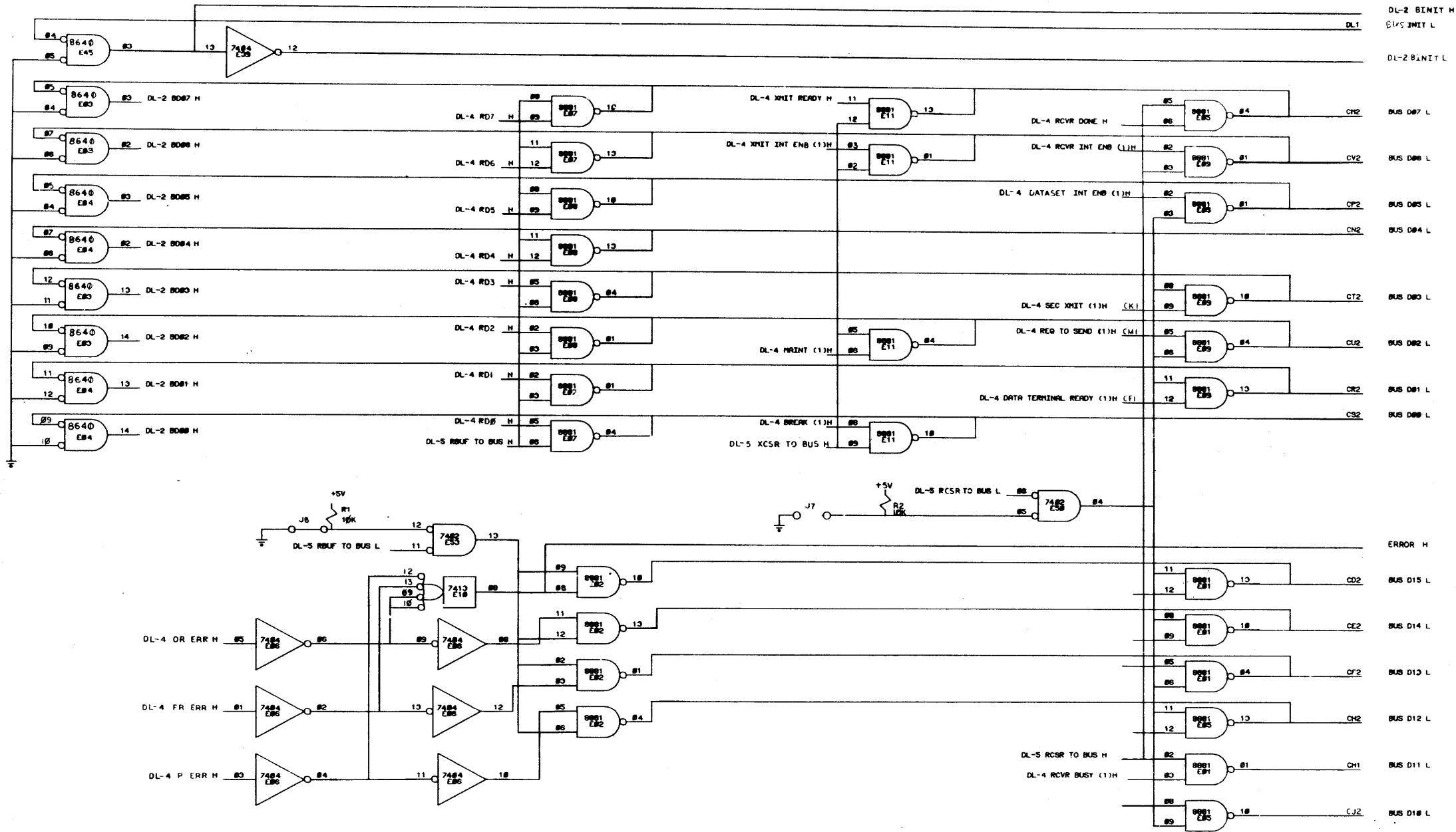


PIN NOMENCLATURE  
 MODULE SYSTEM UNIT

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	E28	IC DEC 7380	9004631	70
1	E29	IC DEC 7380	190390	69
19	J17	JUMPER INSULATED	9009185	68
1	R3	RES 750R 1/4W 5%	1301401	47
1	R3B	RES 390R 1/4W 5%	1300309	46
1	D6	DIODE 1N746A	1104860	45
2	C1, C2	TAN 100P 100V 5% BAP	1034400	44
1	C3	CAP 100P 100V 5% BAP	1030016	43
1	C4	CAP 500P 100V 5% BAP	1000023	42
2	C5, C51	CAP .047MF CERAMIC	1004678	41
2	C23	IC DEC 74161	190650	40
1	C25, C35	OP 330P 100V 5% DIPD MCA	1000033	39
1	C32	OP 100P 100V 5% DIPD MCA	1000024	38
1	C37	OP 100P 100V 5% DIPD MCA	1000022	37
29	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56	RES 15K 1/4W 5%	1300396	36
1	R14, R15	RES 15K 1/4W 5%	1300396	35
1	R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56	RES 15K 1/4W 5%	1300396	34
1	R10	RES 68R 1/4W 5%	1304405	33
1	R9	RES 82R 1/4W 5%	1304477	32
1	R8	RES 100R 1/4W 5%	1300249	31
1	R7	RES 300R 1/4W 5%	1300259	30
1	R6	RES 180R 1/4W 5%	1303522	29
1	R5	RES 220R 1/4W 5%	1300271	28
1	D1-D5	DIODE 064 60V 100MA	1100114	27
1	R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56	RES 300R 1/4W 5%	1300396	26
1	R16	NUT HEX 2-56	9006555	25
1	R16	RES 750R 1/4W 5%	1302385	24
24	R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56	RES 10R 1/4W 5%	1300479	23
1	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56	RES 15K 1/4W 5%	1300396	22
1	C28	IC UNK	21413750	21
1	C29	IC UNK	1903547	20
1	C30	IC UNK	1909712	19
1	C31	IC UNK	1910135	18
1	C32	IC UNK	1909889	17
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1	C35	IC UNK	1909004	14
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1	C232</			

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REVISIONS		
CHK.	CHANGE NO.	REV.
01	M7800-YA-00008	J
90. Harold 18 OCT 76		
S. MASAND		
S. Masand 11/7/76		
02	M7800YA-MK009	K
L. Sullivan 2/1/77		
R. HARRINGTON		
P. Harrington 2 AUG 76		

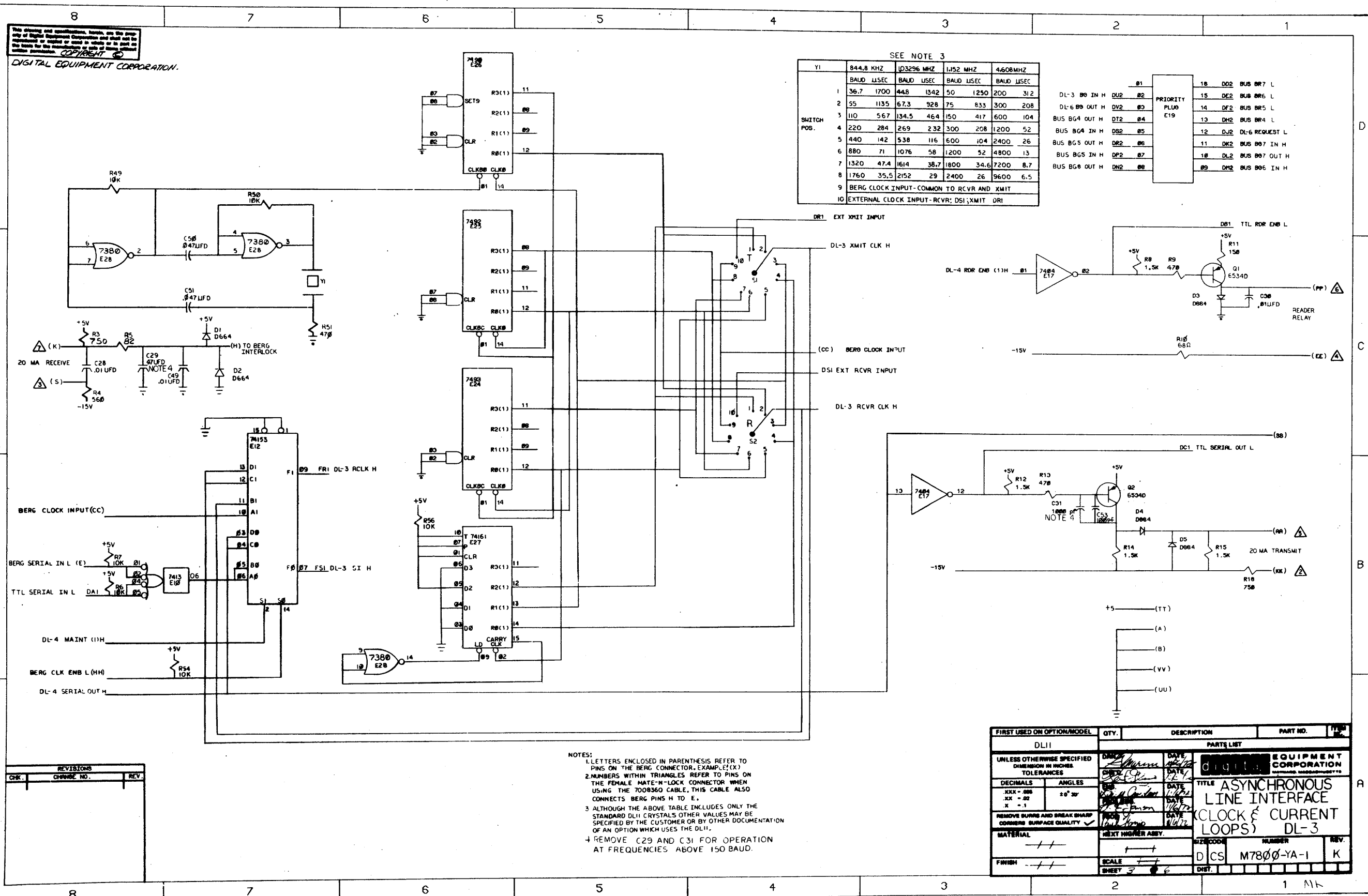
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DL11				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN MILLIMETERS TOLERANCES				
DECIMALS	ANGLES	DATE	PARTS LIST	
.XXX - .008	±0° 30'	DATE	EQUIPMENT CORPORATION	
.XX - .002		DATE	TITLE ASYNCHRONOUS LINE INTERFACE (BUS RECEIVERS & DRIVERS) DL-2	
.X - .1		DATE	D CS M7800-YA-1 K	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
FINISH	SCALE	SHEET	OF	DIST.



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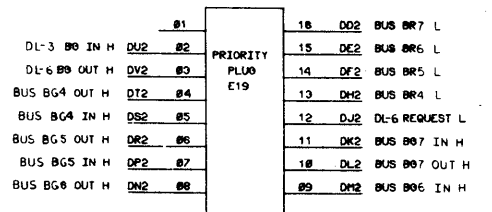
DIGITAL EQUIPMENT CORPORATION.

D  
C  
B  
A



SEE NOTE 3

Y1	844.8 KHZ	103296 MHZ	1452 MHZ	4608MHZ				
BAUD	USEC	BAUD	USEC	BAUD	USEC			
1	36.7	1700	44.8	1342	50	1250	200	31.2
2	55	1135	67.3	928	75	833	300	208
3	110	567	134.5	464	150	417	600	104
4	220	284	269	232	300	208	1200	52
5	440	142	538	116	600	104	2400	26
6	880	71	1076	58	1200	52	4800	13
7	1320	47.4	1614	38.7	1800	34.6	7200	8.7
8	1760	35.5	2152	29	2400	26	9600	6.5
9	BERG CLOCK INPUT-COMMON TO RCVR AND XMIT							
10	EXTERNAL CLOCK INPUT-RCVR; DS1; XMIT DRI							



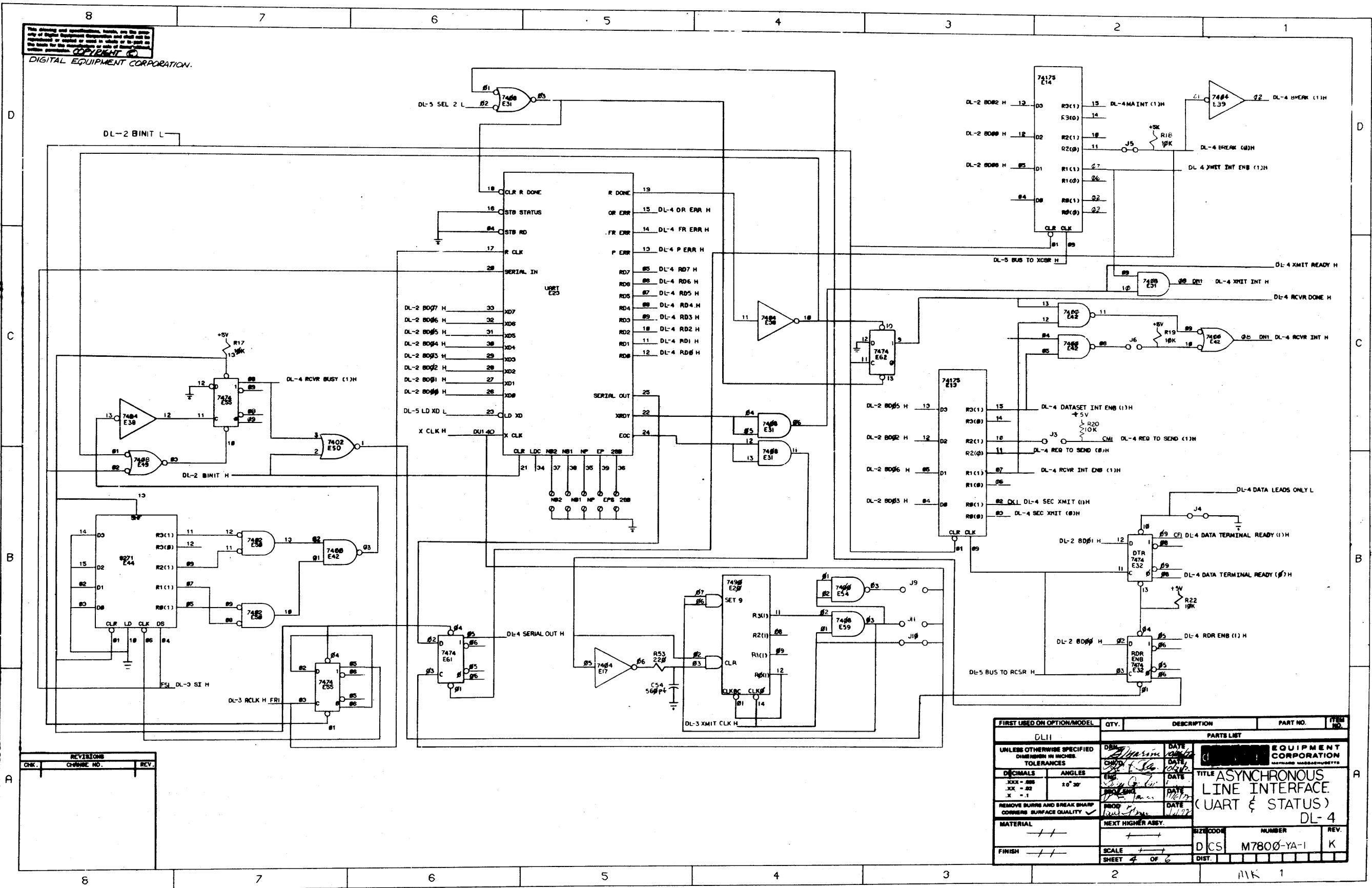
- NOTES:
- LETTERS ENCLOSED IN PARENTHESIS REFER TO PINS ON THE BERG CONNECTOR. EXAMPLE: (X)
  - NUMBERS WITHIN TRIANGLES REFER TO PINS ON THE FEMALE MATE-N-LOCK CONNECTOR WHEN USING THE 7008360 CABLE. THIS CABLE ALSO CONNECTS BERG PINS H TO E.
  - ALTHOUGH THE ABOVE TABLE INCLUDES ONLY THE STANDARD DL11 CRYSTALS OTHER VALUES MAY BE SPECIFIED BY THE CUSTOMER OR BY OTHER DOCUMENTATION OF AN OPTION WHICH USES THE DL11.
  - REMOVE C29 AND C31 FOR OPERATION AT FREQUENCIES ABOVE 150 BAUD.

REVISIONS	
CHK.	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	TYPE
DL11		PARTS LIST		
UNLESS OTHERWISE SPECIFIED		EQUIPMENT CORPORATION		
DIMENSION IN INCHES		TITLE ASYNCHRONOUS		
TOLERANCES		LINE INTERFACE		
DECIMALS	ANGLES	CLOCK & CURRENT		
.XXX - .000	±0° 30'	LOOPS DL-3		
.XX - .02		MATERIAL		
.X - .3		FINISH		
REMOVE BURNS AND BREAK SHARP CORNERS SURFACE QUALITY		NEXT HIGHER ASSY.		
MATERIAL		SCALE		
FINISH		SHEET		

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DIGITAL EQUIPMENT CORPORATION.



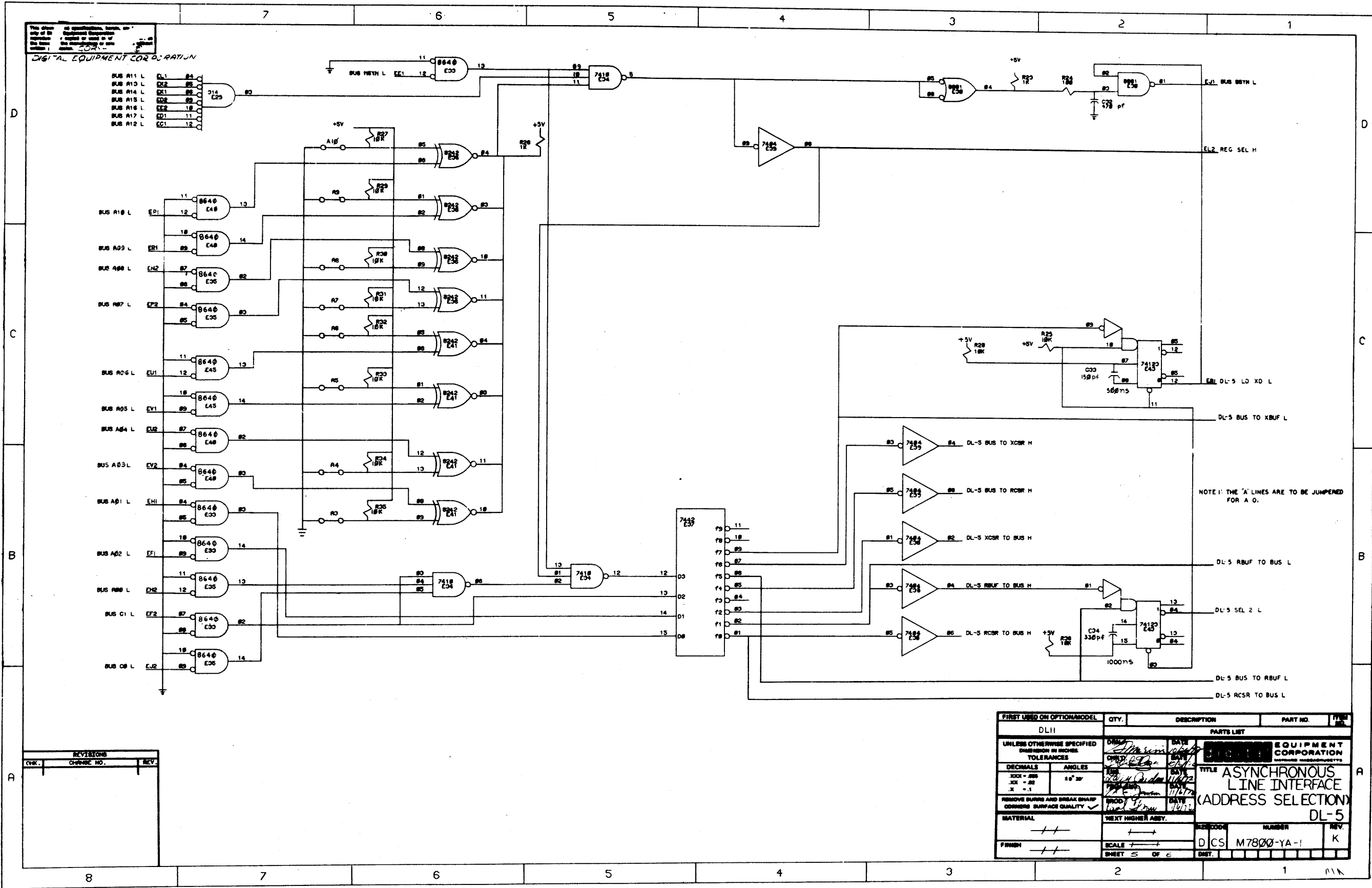
REVISIONS		
CHK.	CHANGE NO.	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DL11				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DIMINALS				
.XX - .99	±0.005			
.XX - .92	±0.004			
.X - .1	±0.003			
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL		NEXT HIGHER ASSY.		
FINISH		SCALE		
		SHEET 4 OF 6		

PARTS LIST		EQUIPMENT CORPORATION	
TITLE ASYNCHRONOUS LINE INTERFACE (UART & STATUS) DL-4			
SIZE CODE	NUMBER	REV.	
DCS	M7800-YA-1	K	
DIST.			

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DIGITAL EQUIPMENT CORPORATION

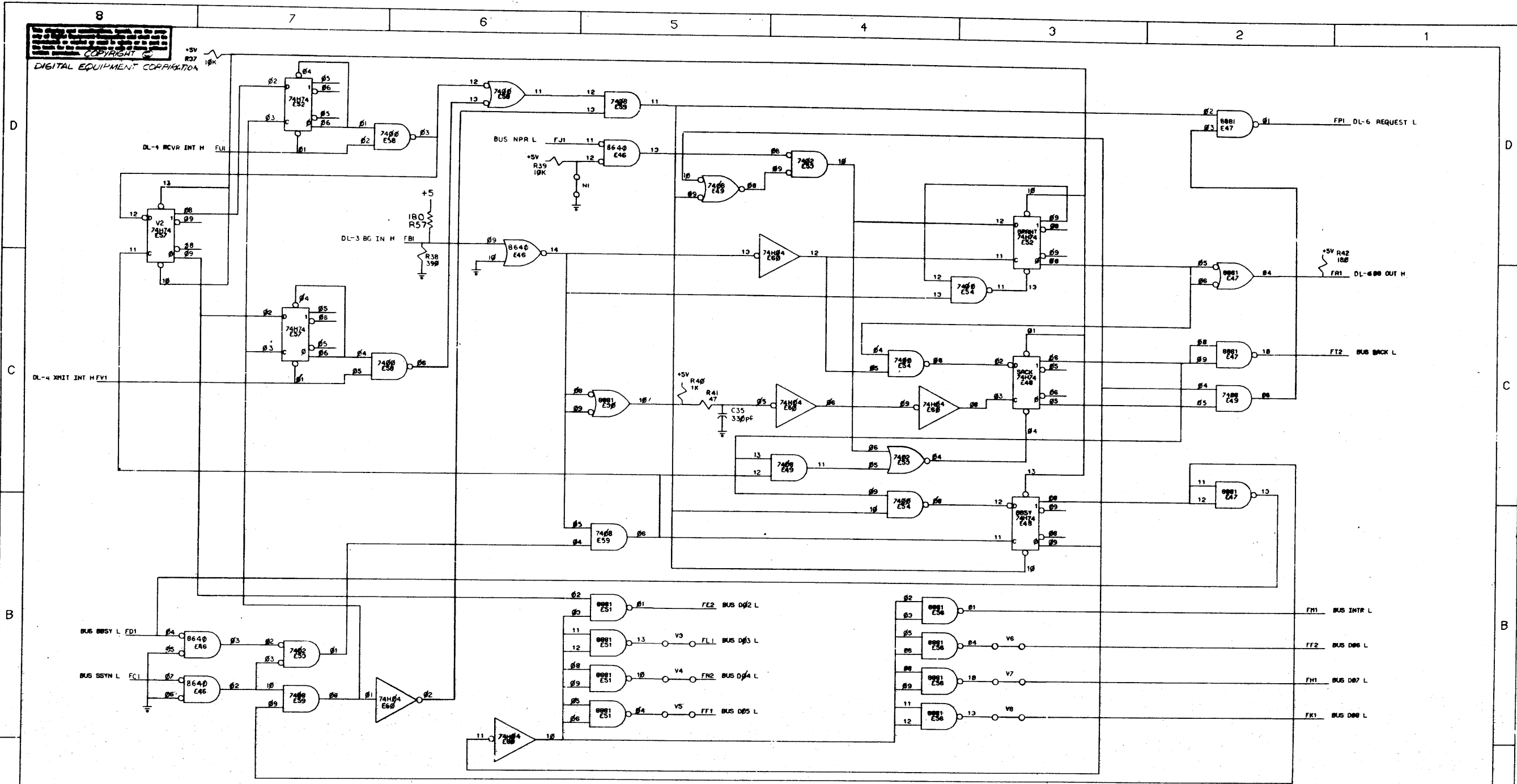


REVISIONS		
CHK.	CHANGE NO.	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	REV. NO.
DL11				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS		ANGLES	PARTS LIST	
.XXX - .000		± 0° 30'	DIGITAL EQUIPMENT CORPORATION	
.XX - .00		± 1°	TITLE ASYNCHRONOUS LINE INTERFACE (ADDRESS SELECTION) DL-5	
REMOVE BURRS AND BREAK SHARP EDGES TO IMPROVE SURFACE QUALITY				
MATERIAL		NEXT HIGHER ASSY.	SIZE CODE	NUMBER
			DCS	M7800-YA-1
FINISH		SCALE	SHEET	OF
			5	8

8  
 7  
 6  
 5  
 4  
 3  
 2  
 1

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NOTE: THE V LINES ARE TO BE JUMPED FOR A L.

REVISIONS		
CHG.	CHANGE NO.	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	FILE
DL11		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN MICRONS		DATE	DIGITAL EQUIPMENT CORPORATION	
TOLERANCES		DATE	TITLE ASYNCHRONOUS LINE INTERFACE (INTERRUPT CONTROL) DL-6	
DECIMALS	ANGLES	DATE	REV. K	
.XX - .00	± 0° 30'	DATE	D I C S M7800-YA-1	
.X - .1		DATE	SHEET 6 OF 6	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	✓	DATE	D I C S M7800-YA-1	
MATERIAL	FINISH	SCALE	D I C S M7800-YA-1	
++	++	SHEET	D I C S M7800-YA-1	





DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS			LEGEND		QUANTITY / VARIATION										
ACCESSORY LIST			D	DOCUMENT	DL11-A	DL11-B	DL11-C	DL11-D	DL11-E						
MADE BY E. PELLEGRINI	CHECKED P. JANSON	SECTION	PA	PAPER TAPE ASCII											
DATE JUNE 26, 1972	DATE 8-8-72		PB	PAPER TAPE BINARY											
ENG PAUL JANSON	PROD	ISSUED SECT.	PM	PAPER TAPE READ-IN-MODE											
DATE JUNE 26, 1972	DATE 8-8-72														
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	DL11-A	DL11-B	DL11-C	DL11-D	DL11-E			KIT CHECK	BY	DATE	INSTALLATION CHECK	BY	DATE
1	M7800	ASYNCHRONOUS LINE INTERFACE (EIA)	-	1	-	1	1								
2	G8000	FILTER NETWORK	0	A/R	0	A/R	0	0							
3	M7800-YA	ASYNCHRONOUS LINE INTERFACE (CURRENT LOOP)	1	0	1	0	0								
4	5408776	PRIORITY JUMPER LEVEL #4	1	1	1	1	1								
5	BC05-C-25	MODEM CABLE	0	1	0	1	1								
6	7008360	TTY CABLE	1	0	1	0	0								
7		CRYSTAL	1	1	1	1	1								
8		DL11 ENGINEERING DRAWINGS	1	1	1	1	1								
9	DEC-11-HDLAA-A-D	DL11 ASYNCHRONOUS LINE INTERFACE MANUAL	1	1	1	1	1								
10	LIBKIT-11-KL11-04	KL11 MAINDEC	1	1	0	0	0								
11	LIBKIT-11-DL11C-A-K	DL11 MAINDEC	0	0	1	1	0								
12	LIBKIT-11-DL11E-A-K	DL11 MAINDEC	0	0	0	0	1								
13	H315	MODEM TEST CONNECTOR	0	A/R	0	A/R	0	A/R		SEE	NOTE # 3				
NOTES: 1. G8000 IS REQUIRED ONLY IN PDP-11 SYSTEMS WHERE +15V IS NOT AVAILABLE. ONE PER DD11-A.															
2. CRYSTAL FREQUENCY DEFINED BY CUSTOMER SPECIFIED BAUD RATE.															
3. ONE H315 PER PDP11 SYS. OR ONE PER DL11 B D OR E LOOSE PIECE/ADD ON.															
4. INSURE THAT TRANSPARENT VINYL TAPE HAS BEEN APPLIED TO THE TOP SURFACE OF THE CRYSTAL AND MOUNTING BRACKET.															
TITLE DL11 CHECK LIST		ASSY. NO.	SIZE CODE A AL	NUMBER DL11-0-5			REV. D	ECO NO DL11-CCOIC							
SHEET 1 OF 1		DIST.													

DEC FORM NO.  
DRA 121

MK

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<b>DIGITAL EQUIPMENT CORPORATION</b>						
MAYNARD, MASSACHUSETTS						
DATE 6-21-72						
TITLE DL11 INSTALLATION PROCEDURE						
REVISIONS						
REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
C	CHANGE PER ECO	DL11-4	JANSON	3/73	<i>P. Janson</i>	4-6-73
D	CHANGE PER ECO	DL11-5	CONDON	7/73	<i>P. Condon</i>	11-1-73
E	CHANGE PER ECO	DL11-7	CONDON	8/74	<i>P. Condon</i>	11-1-74
F	CHANGE PER ECO	DL11-8	CONDON	4-75	<i>P. Condon</i>	4/18/75
H	CHANGE PER ECO	DL11-10	HARRINGTON	3-76	<i>P. Harrington</i>	25 APR 76
ENG	APPD	SIZE	CODE	NUMBER	REV	
PAUL F. JANSON	<i>Paul F. Janson</i>	A	SP	DL11-0-2	H	

<b>ENGINEERING SPECIFICATION</b>	CONTINUATION SHEET		
TITLE DL11 INSTALLATION PROCEDURE			
DL11 INSTALLATION PROCEDURE:			
Installation of the M7800 module or its variation as a DL11-A through DL11-E option consists of the following preparations:			
<ol style="list-style-type: none"> <li>1. Jumper insertion/deletion for selection of operation mode (A, B, C, D, or E, TO MEET CUSTOMER'S REQUIREMENT'S).</li> <li>2. Register address assignment.</li> <li>3. Vector address assignment.</li> <li>4. Priority assignment.</li> <li>5. Special NPR jumper insertion/deletion.</li> <li>6. Selection of data format (data bits, stop bits, parity).</li> <li>7. Selection of crystal for baud rate.</li> <li>8. Installation of G8000 in systems where +15v is not available.</li> <li>9. Filter capacitor selection for high baud rate current-loop.</li> </ol>			
A. OPERATION MODE:			
The following describes the jumpers associated with controlling the mode of operation (A,B,C,D, or E):			
<ol style="list-style-type: none"> <li>J1. Ties EIA driver to REQUEST-TO-SEND lead (pin 4) of dataset cable. IN for DL11-B,D, and E; does not affect DL11-A and C. Drawing DL-7.</li> <li>J2. Ties EIA driver, normally used for the REQUEST-TO-SEND lead, to FORCE BUSY lead (pin 25) for use with Bell 103E. This is a customer option. If not specified, jumper is OUT for all DL11's. Drawing DL-7.</li> <li>J3. When inserted, allows REQUEST-TO-SEND lead (pin 4) to be controlled by bit 2 of the receiver status register. OUT for DL11-B and D; IN for DL11-E; does not affect DL11-A and C. Drawing DL-4.</li> <li>J4. When inserted, forces "DATA LEADS ONLY" mode of EIA operation. Turns DATA TERMINAL READY (pin 20) and REQUEST-TO-SEND (pin 4) on. IN for DL11-B and D; OUT for DL11-E; does not affect DL11-A and C. Drawing DL-4.</li> <li>J5. When inserted, allows the BREAK bit to function. OUT for DL11-A and B; IN for DL11-C,D, and E. Drawing DL-4.</li> <li>J6. When inserted, allows DSET INT to cause interrupts. OUT for DL11-A,B,C and D; IN for DL11-E. Drawing DL-4.</li> <li>J7. When inserted, allows dataset control bits to be read as part of the receiver status register.</li> </ol>			
SIZE	CODE	NUMBER	REV
A	SP	DL11-0-2	H



**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE DL11 INSTALLATION PROCEDURE

J7. (con't)

OUT for DL11-A,B,C and D; IN for DL11-E.  
Drawing DL-2.

J8. When inserted, allows error bits to be read as part of the receiver data register. OUT for DL11-A and B; IN for DL11-C,D and E.  
Drawing DL-2.

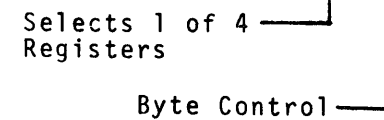
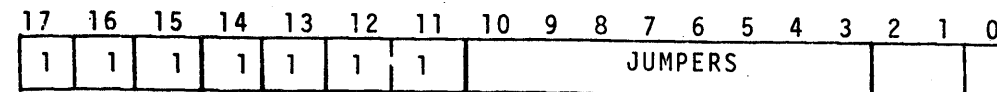
Summary of mode control jumpers:

JUMPER	A	B	C	D	E	DRAWING
J1	*	IN	*	IN	IN	DL-7
J2	OUT	OUT	OUT	OUT	OUT	DL-7
J3	*	OUT	*	OUT	IN	DL-4
J4	*	IN	*	IN	OUT	DL-4
J5	OUT	OUT	IN	IN	IN	DL-4
J6	OUT	OUT	OUT	OUT	IN	DL-4
J7	OUT	OUT	OUT	OUT	IN	DL-2
J8	OUT	OUT	IN	IN	IN	DL-2

\*= don't care

**B. REGISTER ADDRESS ASSIGNMENTS:**

The DL11 can respond to addresses with the following format:



Bits 10 through 3 are controlled by jumpers A10 to A3. A jumper inserted indicates a zero.

For the DL11-A and B used as the console device, address 777560 is assigned. For additional units, assign 776XX0, where XX=50 for the first additional unit and XX=67 for the 16th unit.

For the DL11-C,D and E assign address 77XXX0, where XXX=561 for the first line, and XXX=617 for the 31st line. Assign all C's first, then D's, and then E's.

SIZE	CODE	NUMBER	REV
A	SP	DL11-0-2	H

**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE DL11 INSTALLATION PROCEDURE

**C. VECTOR ADDRESS ASSIGNMENT:**

Jumpers V8 through V3 control the interrupt vector. A jumper inserted provides a vector bit of one. Vectors can be produced in the form XX0 and XX4 where XX ranges from 00 to 77.

For the DL11-A and B used as a console device the vector address is 060/064. For additional units vectors are floating.

For the DL11-C,D, and E vector addresses are floating. Assign all C's first, then D's, then E's.

**D. PRIORITY ASSIGNMENT:**

Interrupt priority is established by inserting a "priority plug" in the socket at IC location E19. For DL11-A B,C,D and E use level 4, for the standard assignment or level 5-7 as specified by the customer or the documentation of an option which uses the DL11.

**SUMMARY OF REGISTER, VECTOR AND PRIORITY ASSIGNMENTS:**

	ADDRESS	VECTOR	PRIORITY
DL11-A,B CONSOLE	777560 777562 777564 777566	60/64	BR4
DL11-A,B ADDITIONAL UNITS	776XX0 776XX2 776XX4 776XX6	FLOATING	BR4

Where XX= 50 for line #1  
and XX= 67 for line #16

	ADDRESS	VECTOR	PRIORITY
DL11-C,D,E	77XXX0 77XXX2 77XXX4 77XXX6	Floating	4

Where XXX= 561 for line #1  
and XXX= 617 for line #31

SIZE	CODE	NUMBER	REV
A	SP	DL11-0-2	H

**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE DL11 INSTALLATION PROCEDURE

**E. SPECIAL NPR JUMPER:**

Jumper N1, shown on drawing DL-6, controls the response of the interrupt circuit to an NPR request. The jumper should normally be IN, except for 11/20 and 11/15 systems without the KH11 option.

**F. SELECTION OF DATA FORMAT:**

**1. Data Bits**

Split lug pairs NB2 and NB1 control the number of data bits in the serial character as follows:

NB2	NB1	# OF DATA BITS
OUT	OUT	8
OUT	IN	7
IN	OUT	6
IN	IN	5

**2. Parity**

Parity is controlled by split lug pairs NP and EPS as follows:

NP	EPS	PARITY
OUT	OUT	OFF
OUT	IN	OFF
IN	OUT	EVEN
IN	IN	ODD

**3. Stop Bits**

Split lug pair 2SB and jumpers J9, J10 and J11 control the number of stop bits in the serial character as follows:

2SB	J9	J10	J11	# OF STOP BITS
OUT	OUT	IN	OUT	2
IN	OUT	IN	OUT	1
IN	OUT	OUT	IN	1.5 for TI, GI, and SMC UARTS
IN	IN	OUT	OUT	1.5 for WD UARTS

SEE FIGURE 1  
PAGE 11

**G. CRYSTAL SELECTION:**

The clocking scheme of the DL11 consists of a single crystal oscillator feeding a divider network, with two 10-position switches tapping various points to feed into the UART's

SIZE	CODE	NUMBER	REV
A	SP	DL11-0-2	H

**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE DL11 INSTALLATION PROCEDURE

**G. Con't**

transmitter and receiver sections. Thus, for a given crystal frequency, 8 baud rates are independently selectable for transmit and receive. The two addition switch positions select external clocks.

SPEED GROUP		1	2	3	4
		CRYSTAL (HZ)			
POSITION	FACTOR	844.8K	1.03296M	1.152M	4.608M
1*	23040	36.7	44.8	50	200
2	15360	55	67.3	75	300
3	7680	110	134.5	150	600
4	3840	220	269	300	1200
5	1920	440	538	600	2400
6	960	880	1076	1200	4800
7	640	1320	1614	1800	7200
8	480	1760	2152	2400	9600

\*Most counter-clock wise position.

To determine a crystal frequency for a non-standard baud rate, pick the position of the closest baud rate in the 1.152MHz column, and then multiply the non-standard baud rate by the factor for that position. For example, if the customer specifies 1050 baud, this is closest to 1200 baud, position 6.

$$1050 \times 960 = 10080000 = 1.008\text{MHz.}$$

The crystal frequency should not fall outside the range of the standard crystals. Although the above table includes only the standard DL11 crystals other values may be specified by the customer or by other documentation of an option which uses the DL11.

DEC part number for the standard crystals are as follows:

844.8 KHz	18-10245-1*
1.03296 MHz	18-05501-6
1.152 MHz	18-05501-5
4.608 MHz	18-05501-7

\*Use A or C cut crystals only. Do not use crystals marked NE-6D.

When ordering a special crystal, refer to purchase specification 18-05501 for crystal specification.

Insure that transparent vinyl tape (9008269) is applied to the top surfaces of the crystal and mounting brackets to insulate from adjacent modules.

SIZE	CODE	NUMBER	REV
A	SP	DL11-0-2	H

**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE DL11 INSTALLATION PROCEDURE

**H. G8000 INSTALLATION:**

For DL11-B, D, and E a positive voltage is required between 9 and 15 volts to operate the EIA drivers. For PDP-11/20 and PDP-11/15 systems with the H720 power supply, a G8000 module must be installed to provide this voltage. Using a filter network, this module converts the full-wave rectified "+8V" signal to a positive DC voltage.

1. Install G8000 into slot A02 of DD11-A.
2. Wire A03V2 to A02V2.
3. Wire A02N2 to CXXU1 where XX is the slot location of the M7800.

Refer to diagram 1.

**I. FILTER CAPACITOR SELECTION:**

For DL11-A's and DL11-C's, which operate with 20ma current loops, capacitors are used to filter the receive line and slow the switching time of the transmit line. To avoid excessive distortion above 150 baud, the capacitance in each of these two circuits must be reduced. This is accomplished by clipping C29 (.47 mfd) and C31 (1000 pf), both shown on drawing DL-3.

**J. DL11-B,D,E in Systems with +15V available using DD11-A**  
 There is a special situation of using a DD11-A to mount a DL11-B, D, Or E in systems with +15V available. These systems have +15V available and it appears at pin A03V2 of the DD11-A when using power harness such as 7009177, 7008855, or 7008909. In this situation, no G8000 is necessary, and +15V can be wired directly from A03V2 to CXXU1, where XX is the slot number of the DL11.  
 NOTE: this does not apply to DL11-A or C or DD11-B.

**K.** When using the DL11-B,D,E in an 11/05 processor pin CXXU1 has +15V available on it so no G8000 or no jumpers are required.

SIZE	CODE	NUMBER	REV
A	SP	DL11-0-2	H

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

SHEET 7 OF 11

**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE DL11 INSTALLATION PROCEDURE

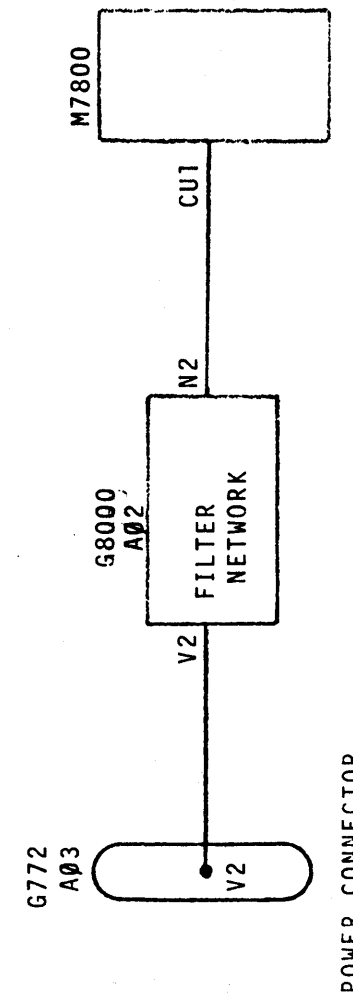


DIAGRAM 1. G8000 INSTALLATION

SIZE	CODE	NUMBER	REV
A	SP	DL11-0-2	H

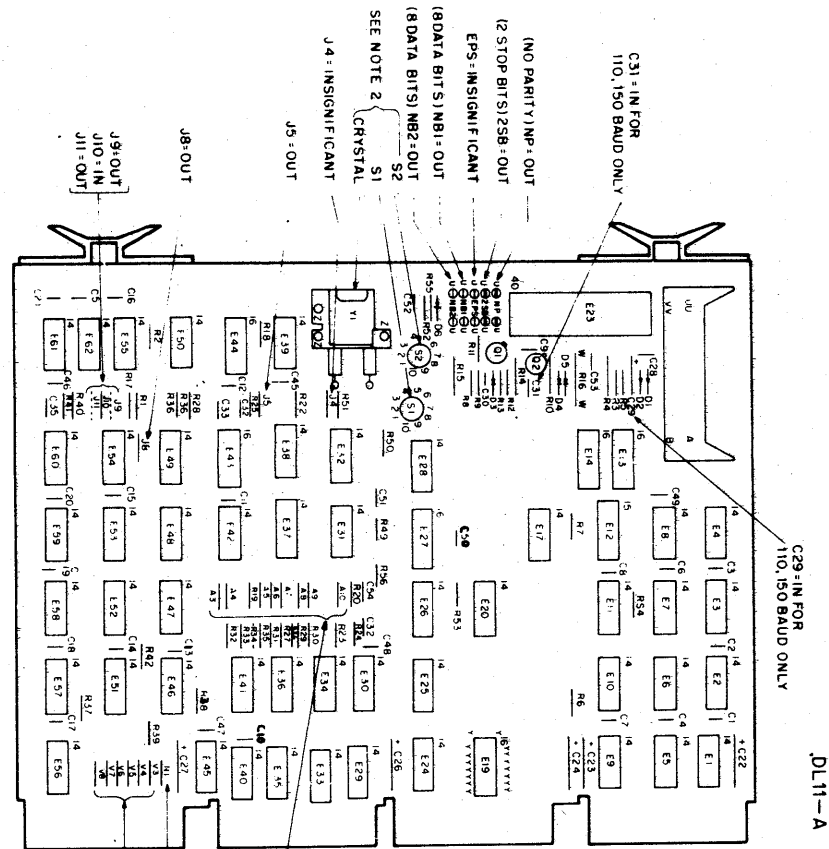
DEC FORM NO DEC 16-(381)-1022-N370  
 DRA 108

SHEET 8 OF 11

**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE DL11 INSTALLATION PROCEDURE



NOTES:

- For further information on the DL11-A configuration or the installation of DL11-B, DL11-C, DL11-D or DL11-E refer to:
  - DL11 Asynchronous Line Interface Manual
  - A-SP-DL11-0-3 (DL11 installation procedure) in the DL11 Engineering Drawings.

2. SPEED GROUP

CRYSTAL FREQ (MHz)	BAUD RATE	1	2	3	4
36.7	44.8	50	200		
55	67.3	75	300		
110	134.5	150	600		
220	269	300	1200		
440	538	600	2400		
880	1076	1200	4800		
1320	1614	1800	7200		
1760	2152	2400	9600		

SIZE **A** CODE SP NUMBER DL11-0-2 REV H

**ENGINEERING SPECIFICATION**

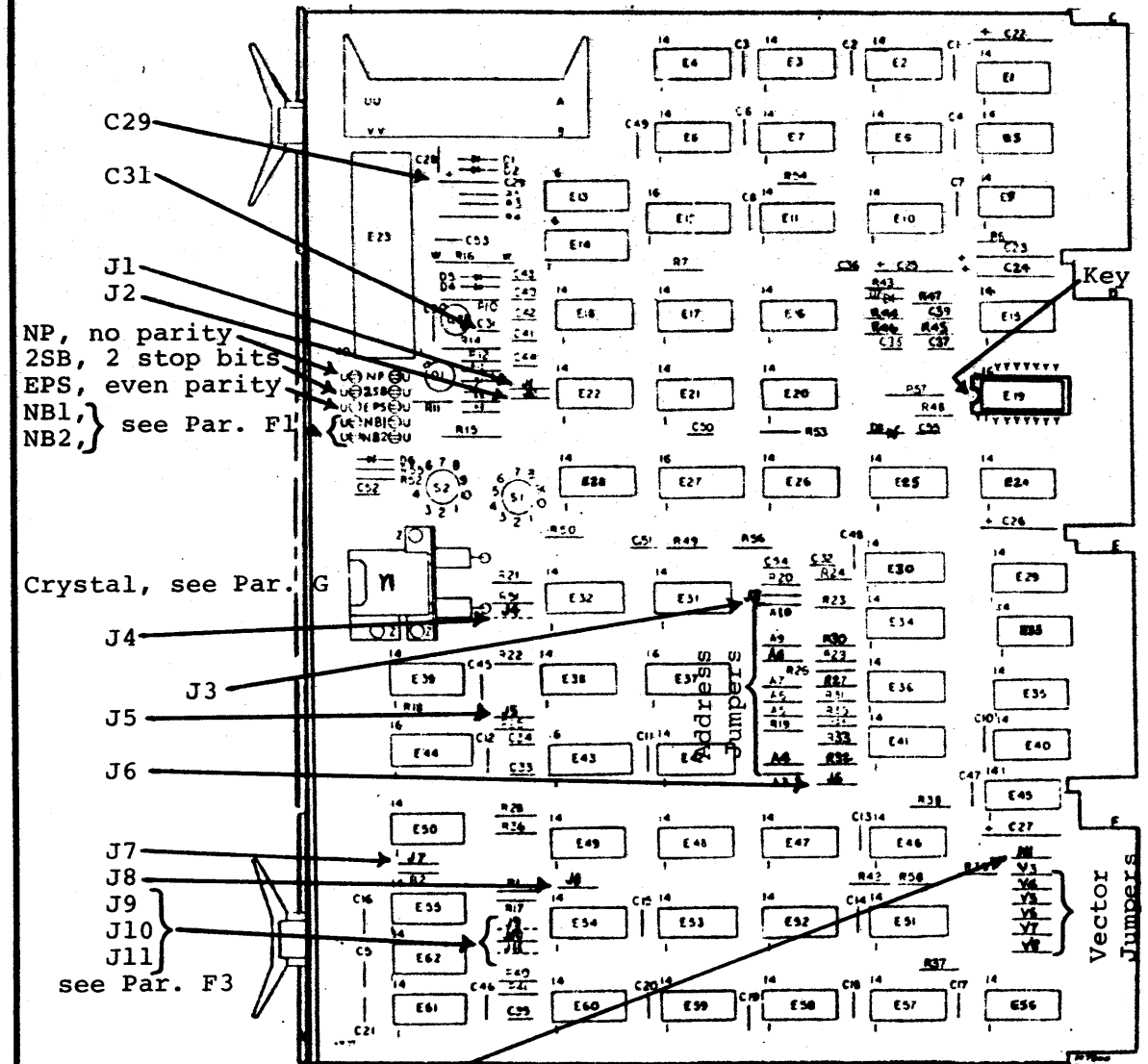
CONTINUATION SHEET

TITLE DL11 INSTALLATION PROCEDURE

DL11-B/D/E  
(M7800)

NOTE: For jumper configuration of DL11-B/D/E refer to page 3&5.

C29 and C31 are required for DL11-A and C at 150 BAUD or less, DL11-B,D&E don't care.



N1 ( in except for 11/20 and 11/15 without KH11 )

SIZE **A** CODE SP NUMBER DL11-0-2 REV H

TITLE DL11 INSTALLATION PROCEDURE

Figure 1  
Identifying Marks for UART (19 10459) Vendors

STANDARD  
MICROSYSTEMS



GENERAL  
INSTRUMENT



TEXAS  
INSTRUMENTS



ADVANCED  
MICRO DEVICES



WESTERN DIGITAL



SIZE A	CODE SP	NUMBER DL11-0-2	REV H
-----------	------------	--------------------	----------

## CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

	SEQUENCE
DRAWING DIRECTORY LT33 Series	B-DD-LT33-0
SETUP & REWORK PROC. FOR 3300	
SERIES TTY WRITERS (PL)	C-PL-LT33-0-0
SETUP & REWORK PROC. FOR 3300	
SERIES TTY WRITERS	D-UA-LT33-0-0
ACCESSORY LIST LT33 Series	A-AL-LT33-0-12
RECOMMENDED SPARE PARTS	A-PL-LT33-SB-0
MAINTENANCE TOOL KIT	A-PL-LT33-ST-0
PACKING PROCEDURE	A-SP-LT33-0-10
INSTALLATION PROCEDURE	A-SP-LT33-0-11
TELETYPE INSPECTION PROC. & ADJ.	A-SP-LT33-0-13
TELETYPE READER CONTROL	B-CS-4915-0-1
READER CONTROL CIRCUITS	D-BS-LT33-B-CONT
PDP10 TELETYPE MODEL 33KSR	D-IC-LT33A-0-1

UNIT VARIATIONS		PRINT SET	
VAR	TITLE		
LT33-AA	KSR 115 V 60 Hz 4-PIN PLUG	X	
-AB	KSR 240 V 50 Hz 4-PIN PLUG	X	
-BC	ASR 115 V 60 Hz 4-PIN X-ON	X	
-BD	ASR 240 V 50 Hz 4-PIN X-ON	X	
-CC	KSR 115 V 60 Hz MATE-N-LOK PLUG	X	
-CD	KSR 240 V 50 Hz MATE-N-LOK PLUG	X	
-CE	KSR 100 V 50 Hz MATE-N-LOK PLUG	X	
-DC	ASR 115 V 60 Hz MATE READER RUN	X	
-DD	ASR 240 V 50 Hz MATE READER RUN	X	
-DE	ASR 100 V 50 Hz MATE READER RUN	X	
-EA	ASR 115 V 60 Hz MATE MAN READER	X	
-EB	ASR 240 V 50 Hz MATE MAN READER	X	
-HC	ASR 115 V 60 Hz MATE X-ON	X	
-HD	ASR 240 V 50 Hz MATE X-ON	X	
-RA	ASR 115 V 60 Hz BURNDY READER RUN	X	
-RB	ASR 240 V 50 Hz BURNDY READER RUN	X	
-SB	SPARE PARTS KIT, ASR	X	
-ST	TCOL KIT	X	
-MA	MOD KIT ASR W076 READER RUN	X	
-MB	MOD KIT ASR MATE READER RUN	X	
-MC	MOD KIT KSR W076	X	
-MD	MOD KIT KSR MATE-N-LOK PLUG	X	

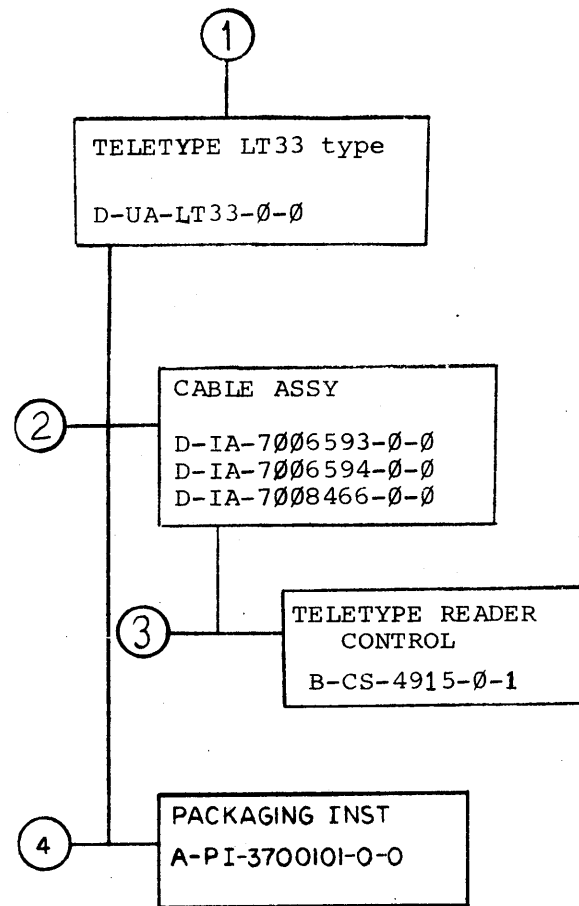
DEC 16 (3251-1062-1A-09)Z

DATE	CHG. NO.	REV
8/73		J
1/74		K
6/74		L

*Alvan Kent 19 Feb 74*  
*Alvan Kent 3 July 74*

USED ON OPTION/MODEL	DRN.	DATE	TITLE
SEE "VAR" ABOVE	ArKENT	21 AUG 73	TELETYPEWRITERS
	CHK'D.	DATE	LT33
	<i>Alvan Kent</i>	<i>21 Aug 73</i>	
	PROJ. ENG.	DATE	
	<i>Alvan Kent</i>	<i>21 Aug 73</i>	
	PROD.	DATE	
	FIELD SERV.	DATE	
	<i>Walter MacKenzie</i>	<i>8-22-73</i>	

SIZE	CODE	NUMBER	REV
B	DD	LT33 - 0	L
DIST			



TITLE	SHEET	OF	SIZE	CODE	NUMBER	REV
TELETYPEWRITERS LT33	2	3	B	DD	LT33 - 0	L





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FEATURES		-AA	-AB	-BA**	-BB**	-BC	-BD	-CA (OBS)	-CB (OBS)	-CC	-CD	-CE	-DA (OBS)	-DB (OBS)	-DC	-DD	-DE	-EA	-EB	-FA (OBS)	-FB (OBS)	-HA**	-HB**	-HC	-HD	-RA	-RB	
LINE VOLTAGE	1=115V 60HZ 2=230V 50HZ 3=100V 50HZ	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	
INTERFACE CONNECTOR	4=WECO 283B, W=76, M=MATE-N-LOCK, B=BUNDY	4	4	4	4	4	4	W	W	M	M	M	W	W	M	M	M	4	4	4	4	M	M	M	M	B	B	
KEYBOARD (UPPERCASE)	E=EVEN PARITY N=NO PARITY (8TH BIT MARKING)	E	E	E	E	E	E	N	N	E	E	E	N	N	N	N	N	E	E	E	E	E	E	E	E	N	N	
PRINTER	F=FRICITION FEED S=SPROCKET FEED	F	F	S	S	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	S	S	S	S	F	F		
PAPER TAPE RDR/PUNCH	Ø=NONE, R=RDR RUN MOD, A=AUTO, M=MANUAL	Ø	Ø	A	A	A	A	Ø	Ø	Ø	Ø	Ø	R	R	R	R	R	M	M	Ø	Ø	R	R	R	R	R	R	
ANSWERBACK	Ø=NONE, D=DISABLED, A=ANSWERBACK	A	A	A	A	A	A	D	D	A	A	A	D	D	D	D	A	A	Ø	Ø	D	D	A	A	A	A	D	D
1	A-PS-3Ø11294-Ø1	TELETYPE CAT. NO. 331Ø/3EA KSR 6Ø HZ	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1	A-PS-3Ø11294-Ø2	TELETYPE CAT. NO. 331Ø/3SA KSR 5Ø HZ	-	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SEE NOTE 1	
1	A-PS-3Ø11294-Ø3	TELETYPE CAT. NO. 3321/3JA MAN ASR 6Ø HZ	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	
1	A-PS-3Ø11294-Ø4	TELETYPE CAT. NO. 3321/3WD MAN ASR 5Ø HZ	-	-	-	-	-	-	-	-	-	-	-	1	1	-	1	-	-	-	-	-	-	-	-	-	1	
1	A-PS-3Ø11294-Ø5	TELETYPE CAT. NO. 332Ø/3JA MAN ASR 6Ø HZ	-	-	-	-	-	-	-	-	-	-	-	*	-	-	*	-	-	-	-	-	-	-	-	*	-	
1	A-PS-3Ø11294-Ø6	TELETYPE CAT. NO. 332Ø/3WA MAN ASR 5Ø HZ	-	-	-	-	-	-	-	-	-	-	-	*	*	-	*	-	-	-	-	-	-	-	-	-	SEE NOTE 1&2	
1	A-PS-3Ø11294-Ø7	TELETYPE CAT. NO. 332Ø/5JA AUTO ASR 6Ø HZ	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	
1	A-PS-3Ø11294-Ø8	TELETYPE CAT. NO. 332Ø/5WA AUTO ASR 5Ø HZ	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	SEE NOTE 1	
1A	1211394	"TD" TYPEWHEEL TELETYPE P.N. 1855Ø8	1	1	-	1	1	-	1	1	1	-	*	*	*	*	*	-	-	-	-	-	-	1	1	-	*	*
2	A-PS-1205693	CORD 4 COND	1	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	A-PS-1205857-01	TELEPHONE PLUG 283B-5Ø	1	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	A-PS-1205857-02	TELEPHONE JACK 4Ø4B-5Ø	1	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	D-IA-7ØØ6593-1-Ø	4915 TO MATE-N-LOCK ASSY (12 FT) 6 COND	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	
5	D-IA-7ØØ8466-12-Ø	4915 TO BURNDY CABLE ASSY (12 FT)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	
5	D-IA-7ØØ6594-1-Ø	TTY TO MATE-N-LOCK ASSY (12 FT) 4 COND	-	-	-	-	-	1	1	1	-	-	-	-	-	-	1	1	-	-	-	-	1	1	-	-	-	
6	2911459	PIN TELETYPE 1Ø2644	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	1	1	
7	9ØØ7929	SOLDERLESS TERM #6 RING 18-22 AWG	5	5	-	5	5	3	3	3	-	-	5	5	5	3	3	-	-	-	-	-	-	-	-	5	5	
8	11ØØ1Ø6	THYRECTOR G.E. 6RS2ØSP4B4	2	2	-	2	2	2	2	2	-	-	2	2	2	2	2	-	-	-	-	-	-	2	2	-	-	
9	1ØØØØ63	CAPACITOR 1ØF + 10% 15ØV	1	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	9ØØ6Ø2Ø-1	SCREW PH. HD PAN 6-32 x 1/4	-	-	-	-	-	-	-	-	-	-	2	2	2	-	-	-	-	-	-	-	-	-	-	2	2	
11	9ØØ7Ø32	CABLE TIE 3/16 x 6-3/4 LG SST2-M	-	-	-	-	-	2	2	2	-	-	2	2	2	2	2	-	-	-	-	-	-	2	2	-	-	
12	9ØØ7Ø31	CABLE TIE 3/32 x 3-3/4 LG SST1-M	-	-	-	-	-	-	-	-	-	-	15	15	15	-	-	-	-	-	-	-	-	-	-	15	15	
13	A-PS-16Ø9313	AUTOTRANSFORMER 3 AMP	-	1	-	1	-	-	1	1	-	-	-	1	1	-	1	-	-	-	-	-	-	-	1	-	1	
14	9ØØ6Ø37-1	SCREW PH. HD. PAN 8-32 x 3/8	-	4	-	4	-	-	4	4	-	-	-	4	4	-	4	-	-	-	-	-	-	-	-	4	4	
15	9ØØ669Ø	LOCK WASHER #8	-	4	-	4	-	-	4	4	-	-	-	4	4	-	4	-	-	-	-	-	-	-	-	4	4	
16	9ØØ6661	FLAT WASHER #8	-	4	-	4	-	-	4	4	-	-	-	4	4	-	4	-	-	-	-	-	-	-	-	4	4	
17	9ØØ6561	HEX NUT 8-32 x 5/16 x 1/8	-	4	-	4	-	-	4	4	-	-	-	4	4	-	4	-	-	-	-	-	-	-	-	4	4	
18	91Ø7673-12	CORD SET 12 FT	-	1	-	1	-	-	1	1	-	-	-	1	1	-	1	-	-	-	-	-	-	-	-	1	1	
19	9ØØ7928	SOLDERLESS TERM #1Ø RING 14-16 AWG	-	2	-	2	-	-	2	2	-	-	-	2	2	-	2	-	-	-	-	-	-	-	-	2	2	
2Ø	9ØØ8853	CAP 23ØV NEMA 6-15P	-	1	-	1	-	-	1	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	1	-	
2Ø	A-PS-121Ø561	CAP HUBBELL #7594 (115V)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	
2Ø	A-PS-121Ø564	CAP HUBBELL #7485 (23ØV)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	

† NO KNOWN USAGE  
 \*\* WILL BECOME OBSOLETE WHEN PRESENT STOCK IS EXHAUSTED (SPROCKET FEED)  
 \* SEE NOTE 2

REV.	CHANGE NO.	ORIGINATED	DATE
1	LT33-0008	A	1-29-71
2	LT33-0009	A	2-9-71
3	LT33-0010	B	2-19-71
4	LT33-0011	B	3-25-71
5	LT33-0012	B	3-25-71

FIRST USED ON OPTION/MODEL

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: +-----+  
 UNLESS OTHERWISE SPECIFIED  
 DATE: 4-20-73  
 CHK'D: [Signature]  
 ENG: [Signature]  
 PROJ. ENG: [Signature]  
 PROD: [Signature]  
 DATE: 3-21-73  
 NEXT HIGHER ASSY: D-UA-LT33 Ø  
 SCALE: +-----+  
 SHEET: 1 OF 3

**digital EQUIPMENT CORPORATION**  
 MAYNARD, MASSACHUSETTS  
 TITLE: SET UP & REWORK PROCEDURE FOR TTY3300 SERIES TTY WRITERS  
 SIZE CODE: C PL  
 NUMBER: LT33-0-0  
 REV. B



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NOTES TO PARTS LIST

- IN ALL CASES 60 HZ MACHINES CAN BE REWORKED FOR 50 HZ OPERATION INSTEAD OF STOCKING 50 HZ UNITS. ON THE BASIS OF EXPECTED VOLUME, INITIAL 50 HZ STOCKING IS EXPECTED TO BE AS FOLLOWS (REWORK PROCEDURE I)

DESC	50 HZ P.N.	STATUS	ALTERNATIVE
KSR	3011294-02	REWORK 3011294-01	STOCK
MAN ASR(TD)	3011294-04	STOCK	REWORK 3011294-03
MAN ASR(TV)	3011294-06	REWORK 3011294-05	SEE NOTE 2
AUTO ASR	3011294-08	REWORK 3011294-07	STOCK

- WITH THE EXCEPTION OF 3011294-03 (60 HZ) AND 3011294-04 (50 HZ) (BOTH MANUAL ASR WITH "TD" TYPEWHEEL) ALL UNITS MUST BE REWORKED BY REPLACING THE "TV" TYPEWHEEL SUPPLIED WITH A "TD" TYPEWHEEL. THE -03 AND -04 MACHINES ARE SPECIALS AND MAY SOMETIMES BE IN SHORT SUPPLY. THE -05 AND -06 MACHINES MAY BE SUBSTITUTED AS FOLLOWS:

DESCRIPTION	PART NO. NEEDED	ALTERNATIVES
MAN ASR (TD) 60 HZ	3011294-03	REWORK (IX) 3011294-05
MAN ASR (TD) 50 HZ	3011294-04	REWORK (IX) 3011294-06 OR REWORK (I & IX) 3011294-05

MODIFICATION KITS

- LT33-MA "ASR for 8, 8/I, 8/L, 8/S"  
USE PARTS LIST FOR LT33-DC OMITTING ITEMS 1, 1A, AND 5. IN ADDITION, ONE CABLE ASSY 4915 TO W076 P.N. 7005676-1 IS REQUIRED. FOLLOW PROCEDURES FOR LT33-DC.
- LT33-MB "ASR for 8/E, 11, 15"  
USE PARTS LIST FOR LT33-DC OMITTING ITEMS 1 AND 1A. FOLLOW PROCEDURES FOR LT33-DC.
- LT33-MC "KSR for 8, 8/I, 8/L, 8/S"  
USE PARTS LIST FOR LT33-CC OMITTING ITEMS 1, 1A, AND 5. IN ADDITION, ONE CABLE ASSY TTY TO W076 P.N. 7005011-1 IS REQUIRED. FOLLOW PROCEDURES FOR LT33-CC.
- LT33-MD "KSR for 8/E, 11, 15"  
(Also for LT33-E or -H type.)  
USE PARTS LIST FOR LT33-CC OMITTING ITEMS 1 AND 1A. FOLLOW PROCEDURES FOR LT33-CC.

ALTERNATIVELY, A W078 ADAPTER MODULE ADDED TO AN LT33-MB OR LT33-MD KIT CAN BE USED WHEN AN LT33-MA OR LT33-MC KIT IS REQUIRED.

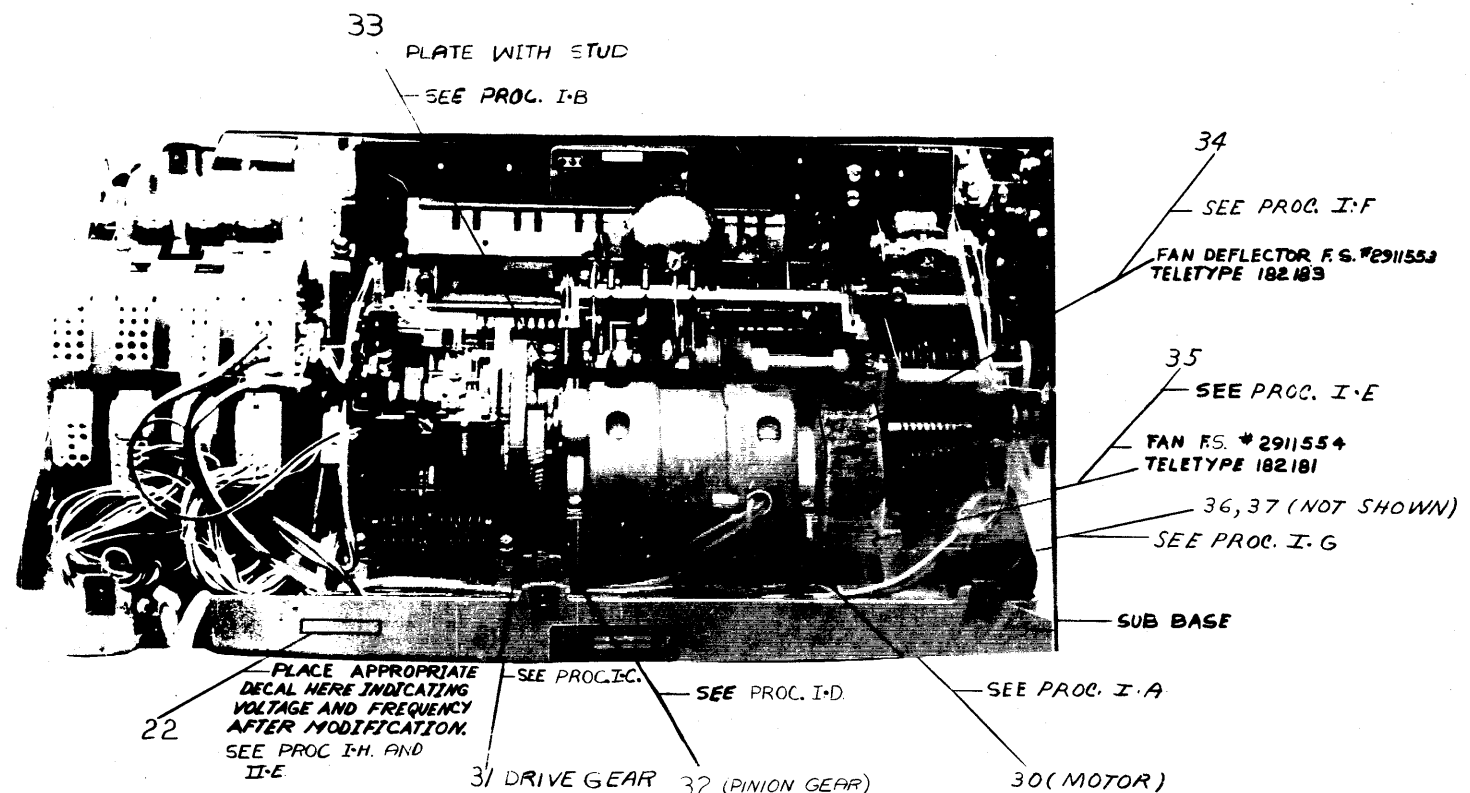
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN <i>S. Chartier</i>	DATE 4-20-73	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .XXX = .005 .XX = .02 .X = .1	CHK'D <i>S. Chartier</i>	DATE 8-22-73		
ANGLES ±0° 30'	ENG. <i>Allen Kent</i>	DATE 4 June 73	TITLE SET UP & REWORK PROCEDURE FOR TTY3300 SERIES TTY WRITERS	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROJ. ENG. <i>Allen Kent</i>	DATE 22 Aug 73		
MATERIAL	PROP. <i>Tom Hartman</i>	DATE 8-22-73		
FINISH	NEXT HIGHER ASSY.		SIZE CODE C   PL	NUMBER LT33-0-0
	SCALE			REV. B
	SHEET 3 OF 3		DIST.	

REV.	
CHANGE NO.	
CHK	

REV. B  
NUMBER LT33-0-0  
SIZE CODE C

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8 0-0-5517 110 2



- PROCEDURE I**  
(CONVERT 60 HZ MACHINE TO 50 HZ  
SEE DETAIL A & B)
- REMOVE 182241 SPLIT-PHASE START MOTOR AND REPLACE WITH ITEM #30 (NOT NECESSARY IF MOTOR IS ALREADY RATED 50/60 HZ ON NAME PLATE) IF 181870 CAPACITOR START MOTOR IS ENCOUNTERED MOTOR START CAPACITOR MUST ALSO BE REMOVED WHEN INSTALLING ITEM #30. SEE 1180 SD-B10 AND 4405 WD. (TELETYPE DRAWINGS)
  - REMOVE 181416 PLATE WITH STUD AND REPLACE WITH ITEM #33 (NOT NECESSARY WHEN 181850 PLATE WITH STUD (UNIVERSAL) IS SUPPLIED (NOW STANDARD). 181850 PART IS IDENTIFIED BY LONG ADJUSTMENT SLOT.)
  - REMOVE 181420 DRIVE GEAR AND REPLACE WITH ITEM #31
  - REMOVE 181411 PINION GEAR AND REPLACE WITH ITEM #32
  - REMOVE 181151 FAN (2 1/2 INCH DIA) AND REPLACE WITH ITEM #35 (3 INCH DIA. FAN). (NOT NECESSARY) IF 3 INCH DIA. FAN ALREADY SUPPLIED.
  - ADD AIR DEFLECTOR ITEM #34 OVER FAN
  - REPLACE MOTOR FUSE (2 OR 2 1/4 AMP) WITH 1.8 AMP SLO-BLO ITEM #36. CHANGE FUSE LABEL TO ITEM #37.
  - PLACE APPROPRIATE FREQUENCY DECAL ITEM #22 ON REAR OF MACHINE

22 PLACE APPROPRIATE DECAL HERE INDICATING VOLTAGE AND FREQUENCY AFTER MODIFICATION. SEE PROC. I.H. AND I.I-E

31 DRIVE GEAR 32 (PINION GEAR) 30 (MOTOR)

33 PLATE WITH STUD - SEE PROC. I-B

34 FAN DEFLECTOR F.S.#291155 TELETYPE 182183

35 FAN F.S.#291155 TELETYPE 182181

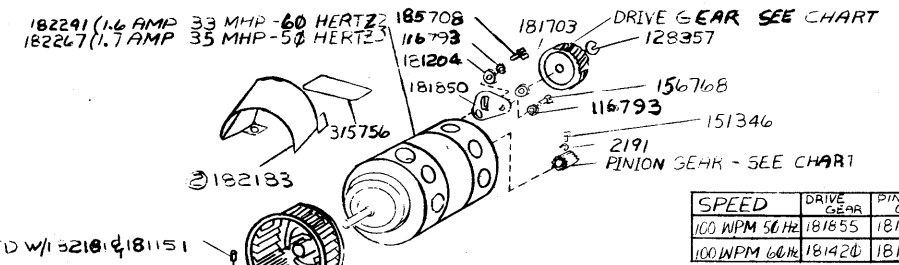
36, 37 (NOT SHOWN) - SEE PROC. I-G

SUB BASE

22 - PLACE APPROPRIATE DECAL HERE INDICATING VOLTAGE AND FREQUENCY AFTER MODIFICATION. SEE PROC. I.H. AND I.I-E

31 DRIVE GEAR 32 (PINION GEAR) 30 (MOTOR)

SEE PROC. I.C. SEE PROC. I.D. SEE PROC. I.A



SPEED	DRIVE GEAR	PINION GEAR
100 RPM 50 HZ	181855	181851
100 RPM 60 HZ	181420	181411

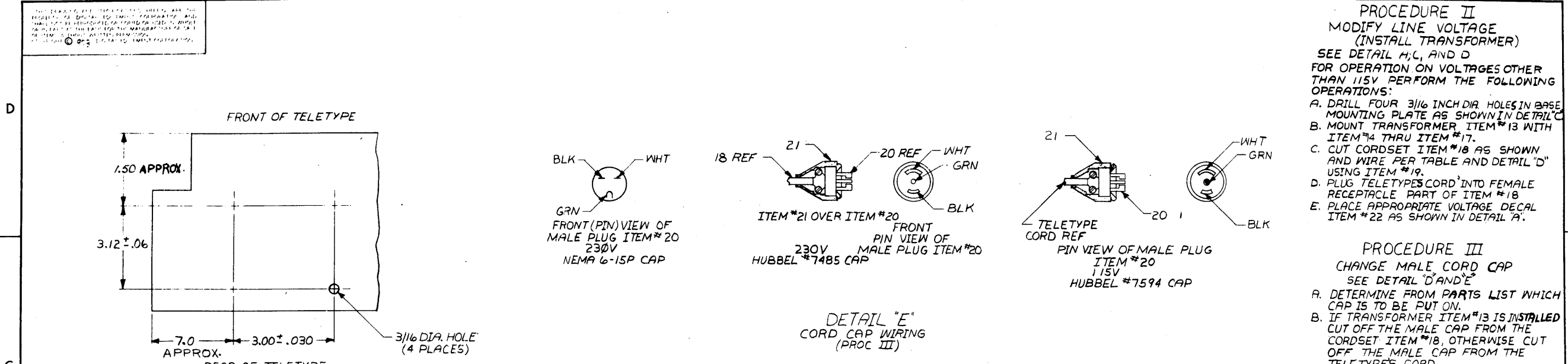
- THE 181151 FAN (2 1/2" DIA.) IS USED WITH THE 181870 AND 182241 MOTORS.
- THE 182181 FAN (3" DIA.) AND THE 182183 AIR DEFLECTOR ARE USED WITH THE 182267 MOTOR.

**DETAIL "B"**  
MOTOR ASSY EXPLODED VIEW  
(TAKEN FROM TELETYPE  
SEC. 574-122-8007C  
ISS. 7 PAGE 35)

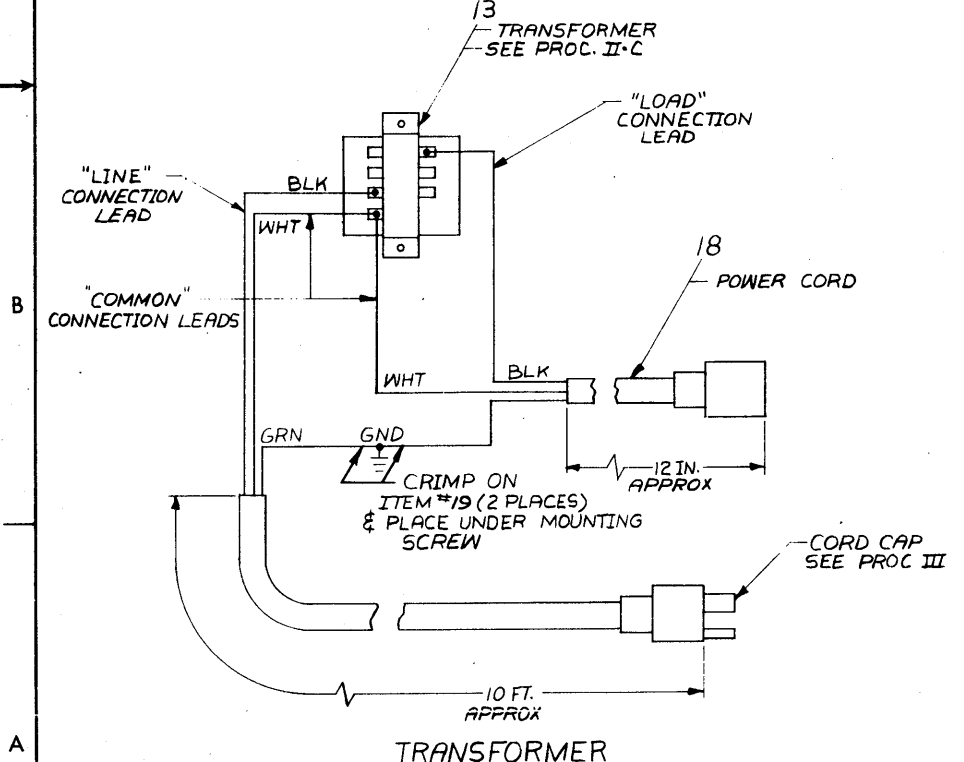
REV.	CHG.	NO.	REV.
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8

NEXT HIGHER ASSY B-DD-LT33-0	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED		DATE	EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED		DATE	TITLE	
DIMENSION IN INCHES		DATE	SET-UP & REWORK	
TOLERANCES		DATE	PROCEDURE FOR TTY	
DECIMALS FRACTIONS ANGLES		DATE	3300 SERIES TTY	
± .008 ± .104 ± .07		DATE	WRITERS	
REMOVE BURRS AND BREAK SHARP CORNERS		DATE	SIZE CODE NUMBER REV.	
FINISH		DATE	DUA LT33-0-0 B	
MATERIAL		DATE	SCALE NONE	
FIRST USED ON		DATE	SHEET 1 OF 8	
LT33 TYPE		DATE	DWT.	

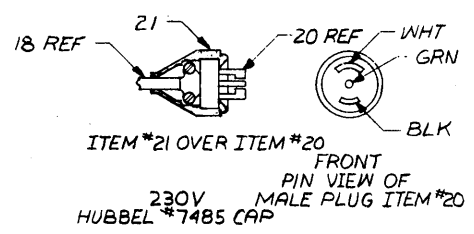
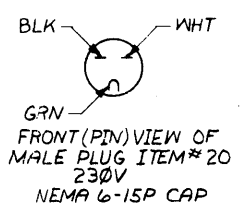
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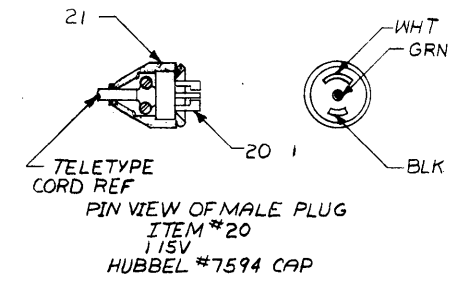
REAR OF TELETYPE  
SCALE: NONE  
HOLE DRILLING DIAGRAM FOR MOUNTING OF TRANSFORMER ITEM #5, TO PLATE INSIDE BOTTOM OF BASE. (PROC. II-A)  
DETAIL "C"



DETAIL "D"



DETAIL "E"  
CORD CAP WIRING  
(PROC III)



PROCEDURE II  
MODIFY LINE VOLTAGE  
(INSTALL TRANSFORMER)

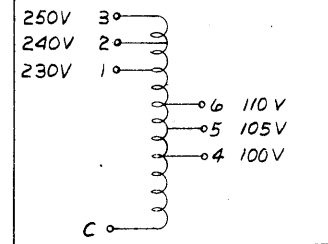
- SEE DETAIL A, C, AND D FOR OPERATION ON VOLTAGES OTHER THAN 115V PERFORM THE FOLLOWING OPERATIONS:
- DRILL FOUR 3/16 INCH DIA HOLES IN BASE MOUNTING PLATE AS SHOWN IN DETAIL C
  - MOUNT TRANSFORMER ITEM #13 WITH ITEM #4 THRU ITEM #17.
  - CUT CORDSET ITEM #18 AS SHOWN AND WIRE PER TABLE AND DETAIL "D" USING ITEM #19.
  - PLUG TELETYPE CORD INTO FEMALE RECEPTACLE PART OF ITEM #18
  - PLACE APPROPRIATE VOLTAGE DECAL ITEM #22 AS SHOWN IN DETAIL "A".

PROCEDURE III  
CHANGE MALE CORD CAP

- SEE DETAIL "D" AND "E"
- DETERMINE FROM PARTS LIST WHICH CAP IS TO BE PUT ON.
  - IF TRANSFORMER ITEM #13 IS INSTALLED CUT OFF THE MALE CAP FROM THE CORDSET ITEM #18, OTHERWISE CUT OFF THE MALE CAP FROM THE TELETYPE'S CORD.
  - SLIDE THE COVER ITEM #21 IF REQUIRED ONTO THE CORD AND WIRE THE CAP ITEM #20 AS SHOWN IN DETAIL "E".
  - FIT THE COVER IF USED OVER THE CAP AS SHOWN IN DETAIL "E".

NOTE:  
PDP-9 AND EARLY PDP-10 TELETYPE WERE SUPPLIED WITH A NEMA 5-15P (115V) CAP PAINTED RED WHEN WIRED FOR 190 TO 250 VOLTS

TRANSFORMER TAP TABLE



VOLTAGE	LINE	LOAD	COMMON	VOLTAGE	LINE	LOAD	COMMON
126	6	4	C	287	3	4	C
121	5	4	C	275	2	4	C
115	6	6	C	274	3	5	C
110	5	4	1	265	1	4	C
				263	2	5	C
				260	3	6	C
				252	1	5	C
				250	2	6	C
106	6	4	1	240*	1	6	C
100*	1	3	4	220	C	6	1
96	C	1	5	213	C	6	2
90	C	2	5	213	C	5	1
				206	C	6	3
85	C	3	6	204	C	5	2
82	C	2	4	203	C	4	1
77	C	3	4	198	C	5	3
				197	C	4	2
				193	C	4	3

\* INDICATES STD FACTORY CONNECTIONS  
THIS TABLE PROVIDES 115V TO THE LOAD AT THE NORMAL LINE VOLTAGE

REVISIONS		
CHK	CHANGE NO	REV

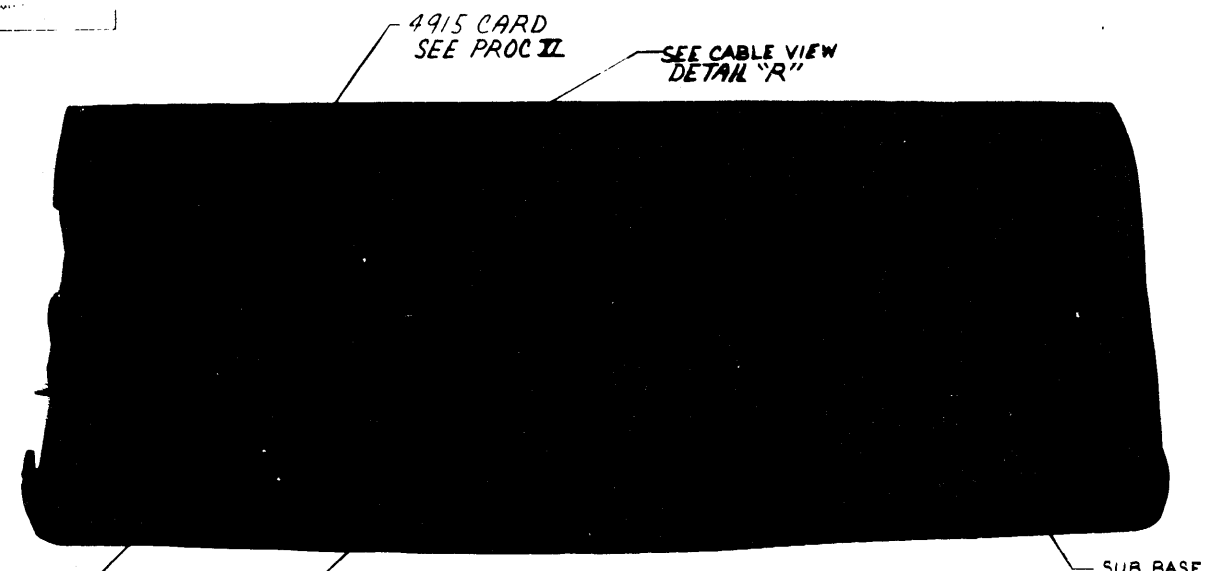
TITLE	SIZE CODE	NUMBER	REV
SET UP & REWORK PROCEDURE FOR TTY 3300 SERIES TTY WRITERS	DUA	LT33-0-0	5
SCALE NONE	SHEET 2 OF 8	DIST	

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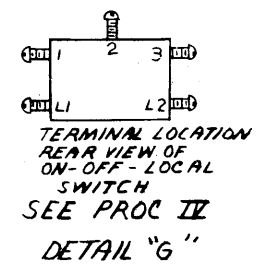
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**PROCEDURE IV  
INSTALL THYRECTORS**  
SEE DETAILS "F" & "G"  
A. CUT TUBING ITEM #24 AND PLACE ON LEADS OF THYRECTORS ITEM #8  
B. PULL BACK THE RUBBER BOOT WHICH COVERS THE TERMINALS ON THE LINE OFF-LOCAL SWITCH  
C. INSTALL THYRECTORS USING TERMINAL ITEM #7 PER TABLE IN DETAIL "G"  
D. IF RELAY CONTROLLED READER (READER RUN) MODIFICATION IS NOT GOING TO BE INSTALLED (PROCEDURE XI) REPLACE RUBBER BOOT SO ALL TERMINALS ARE COVERED.

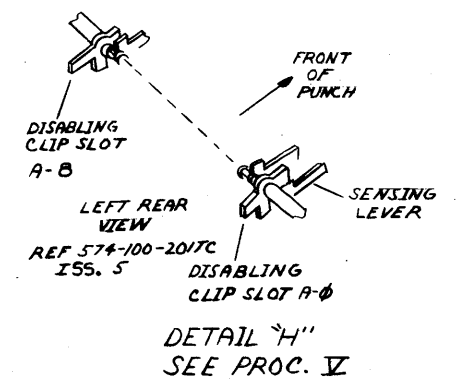
**PROCEDURE V  
ACTIVATE AUTOMATIC PUNCH**  
(CONTROLLED BY DC2 & DC4)  
SEE DETAIL "H"  
A. TO ACTIVATE THE AUTOMATIC PUNCH FEATURE (PUNCH CONTROLLED BY DC2 & DC4) REMOVE THE TWO DISABLING CLIPS SHOWN IN DETAIL "H"  
NOTE:  
TO INACTIVATE AUTO PUNCH FEATURE INSTALL TWO TELETYPE P/N 187001 CLIPS, ONE IN EACH SLOT SHOWN IN DETAIL "H" (RECEIVED WITH AUTO PUNCH INACTIVATED)



**DETAIL "F"**  
(RIGHT SIDE VIEW)



FROM	TERMINAL	COMPONENT	TO	TERMINAL
L2	ITEM#7	THYRECTOR ITEM#8	2	ITEM#7
1	ITEM#7	THYRECTOR ITEM#8		



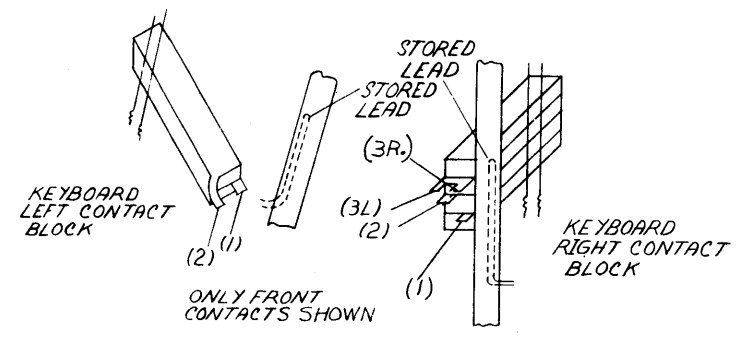
REVISIONS		
CHK	CHANGE NO	REV

TITLE SET-UP & REWORK PROCEDURE FOR TTY3300 SERIES TTY WRITERS  
SCALE SHEET 3 OF 8  
SIZE CODE DUA  
NUMBER LT33-0-0  
REV. B

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DUAL LT33-0-0

**KEYBOARD PARITY MODIFICATIONS**

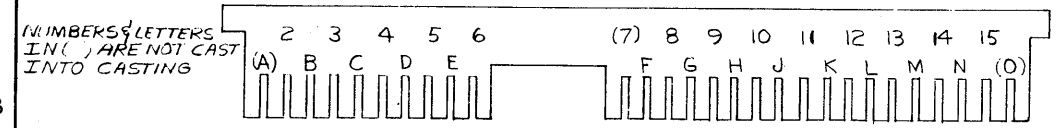


OPTION	LEFT CONTACT BLOCK			RIGHT CONTACT BLOCK				SLEEVE & STORE
	TERM1	TERM2	SLEEVE & STORE	TERM1	TERM2	TERM3R	TERM3L	
EVEN PARITY (9S RECEIVED)	WHT-BLK	RED-GRN	GRN	YEL	WHT-SLATE	WHT-BLK	-	GRN
8TH BIT MARKING	WHT-BLK	GRN	RED-GRN	YEL	WHT-SLATE	WHT-BLK	GRN	-
8TH BIT SPACING (NOT USED BY DE)	WHT-BLK	RED-GRN	GRN	YEL	-	WHT-BLK	-	WHT SLATE GRN

REFERENCES  
SEC 574-100-201 TC ISS-5  
9334 WD ISS-1

FUNCTION BOX CASTINGS (REF)

DETAIL "J"  
SEE PROC. VI



CODEBAR BASKET TIE BAR

TELETYPE P.N. 186782 STOP CLIP IN A SLOT TO DISABLE AUTO CR LF ON 72ND CHAR (RECEIVED DISABLED)

REFERENCE SECTION 574-100-10/TC ISS 2

NO CLIP IN "F" SLOT ENABLES RIGHT MARGIN BELL AND END-OF-LINE BELL (RECEIVED ENABLED)

TELETYPE P.N. 186781 STOP CLIP IN "15" SLOT TO DISABLE WRU (ENQ) ACTIVATED ANSWERBACK

NOTE: IT IS NOT NECESSARY TO REMOVE THE WRU STUNT BOX PAWL OR SPRING

DETAIL "K"  
SEE PROC. VII

**PROCEDURE VI  
CONVERT KEYBOARD TO 8TH BIT MARKING (1)**

- SEE DETAIL "J"
- LOCATE THE FRONT TAB CONNECTIONS ON THE CONTACT BLOCKS AT THE LEFT AND RIGHT ENDS OF THE KEYBOARD.
  - REMOVE THE RED-GRN LEAD FROM TERMINAL 2 OF THE LEFT CONTACT BLOCK. SLEEVE (INSULATE) THIS WIRE.
  - UNTIE AND UNSLEEVE THE GRN LEAD NEAR THE LEFT CONTACT BLOCK AND CONNECT TO TERMINAL 2.
  - TIE THE SLEEVED RED-GRN LEAD TO THE NEARBY BAR.
  - UNTIE AND UNSLEEVE THE GRN LEAD NEAR THE RIGHT CONTACT BLOCK AND CONNECT TO TERMINAL 3L.

NOTE:  
TO INSTALL PARITY OR 8TH BIT SPACING FOLLOW CHART IN DETAIL "J"

**PROCEDURE VII  
INHIBIT ANSWERBACK CAUSED BY ENQ (WRU)**

- SEE DETAIL "K"
- DO NOT REMOVE ENQ (WRU) STUNT BOX PAWL OR SPRING
  - LOCATE SLOT "15" IN CODEBAR BASKET TIE BAR
  - INSTALL SHORT FUNCTION LEVER STOP CLIP ITEM # 23 IN SLOT 15 TO INHIBIT ENQ (WRU) INITIATED ANSWERBACK

NOTE:  
ALSO VERIFY THAT SLOT "A" CONTAINS A LONG STOP CLIP TELETYPE P.N. 186782 AND THAT SLOT "F" DOES NOT CONTAIN A STOP CLIP.

REVISIONS		
CHK	CHANGE NO	REV

TITLE SET UP & REWORK PROCEDURE FOR TTY3300 SERIES TTY WRITERS  
SCALE NONE SHEET 4 OF 8  
SIZE CODE DUA NUMBER LT33-0-0  
REV 1

DUAL LT33-0-0

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**PROCEDURE VIII**  
 INSTALL "D" TYPEWHEEL  
 SEE DETAIL "L"

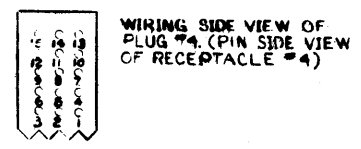
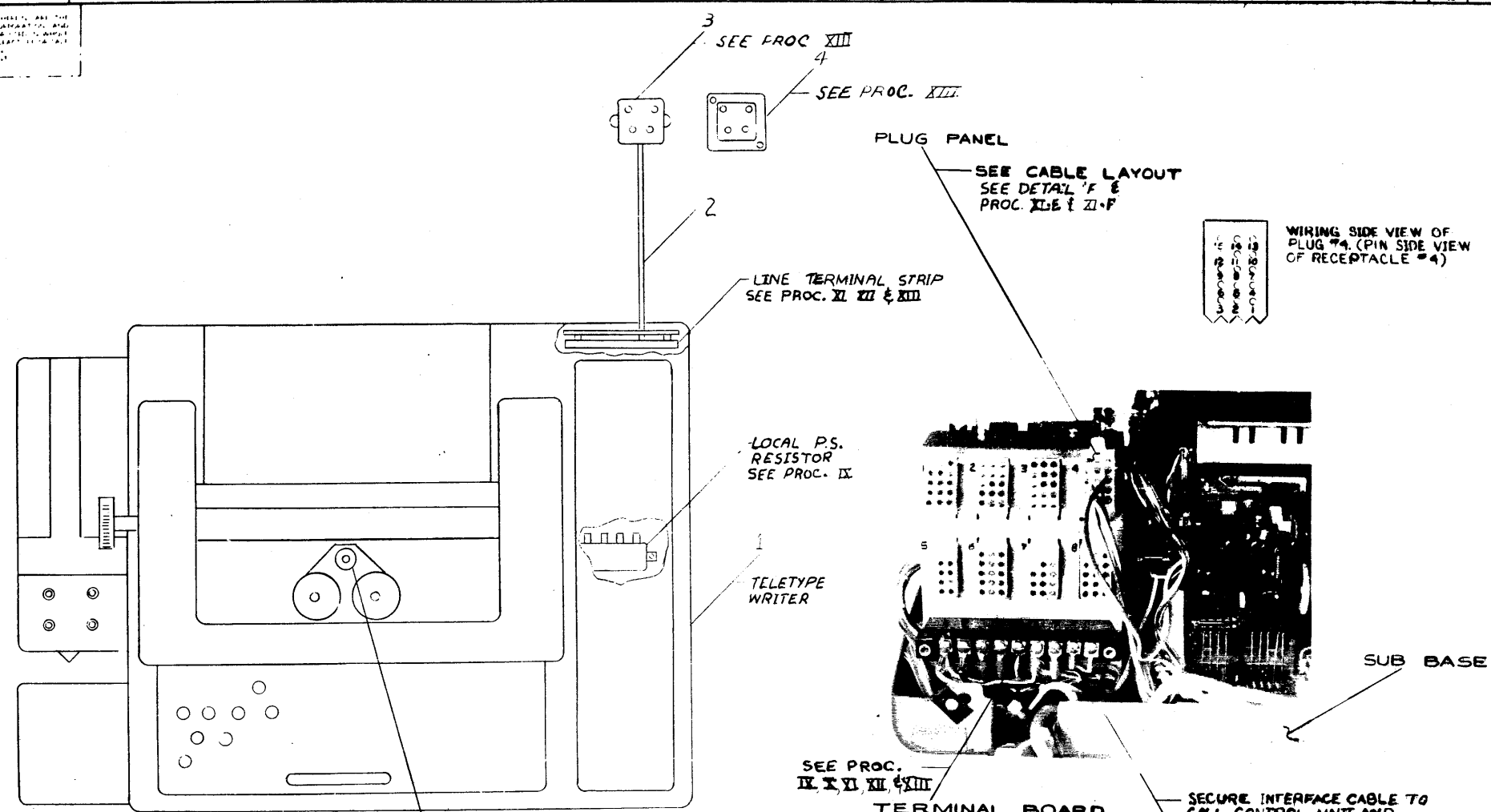
- REMOVE "V" TYPEWHEEL SUPPLIED (□ = LETTER OH; ○ = NUMERAL ZERO)
- INSTALL "D" TYPEWHEEL USING ADJUSTING TOOL TELETYPE P.N. 180500 (○ = LETTER OH, □ = NUMERAL ZERO)
- CHECK "FINAL PRINTING ALIGNMENT" AS SPECIFIED IN SECT. 574-122-700 TC AND REFINE ADJUSTMENTS AS NEEDED.

**PROCEDURE IX**  
 ARRANGE FOR 20mA FULL DUPLEX OPERATION  
 SEE DETAILS "F", "L", "M" AND "N"

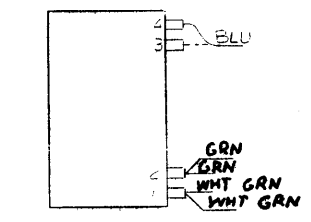
- REMOVE BRN/YEL WIRE FROM TERMINAL 3 OF THE LINE TERMINAL STRIP AND MOVE IT TO TERMINAL 5.
- REMOVE BLU/WHY WIRE FROM TERMINAL 4 AND MOVE TO TERMINAL 5.
- REMOVE PURPLE WIRE FROM TERMINAL 8 AND MOVE TO TERMINAL 4.
- MOVE THE BLUE WIRE FROM TERMINAL 3 OF THE LOCAL POWER SUPPLY POWER RESISTOR TO TERMINAL 4.

**PROCEDURE X**  
 INSTALL 1μF CAPACITOR  
 SEE DETAIL "M"

- CUT TUBING ITEM #24 AND PLACE ON LEADS OF CAPACITOR ITEM #9.
- INSTALL CAPACITOR BETWEEN TERMINALS 3 & 4 OF THE LINE TERMINAL STRIP USING TERMINAL LUGS ITEM #7.



DETAIL "L"



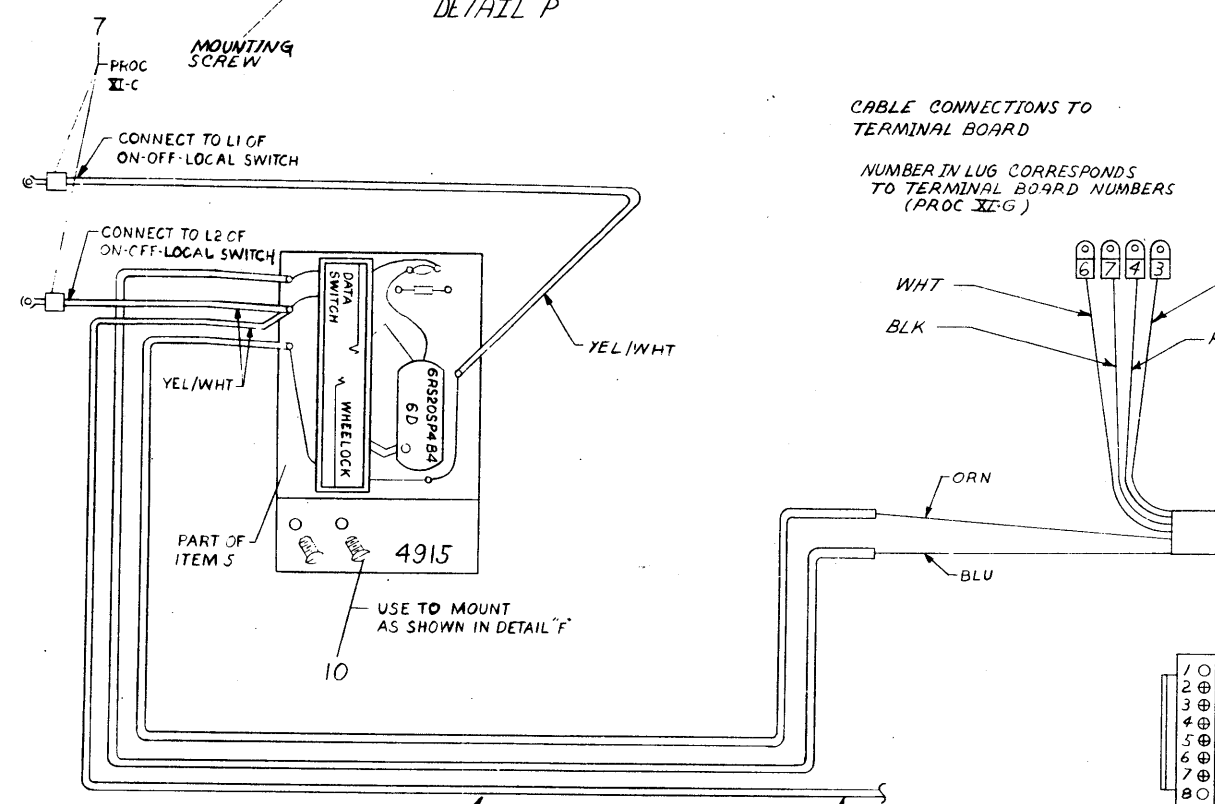
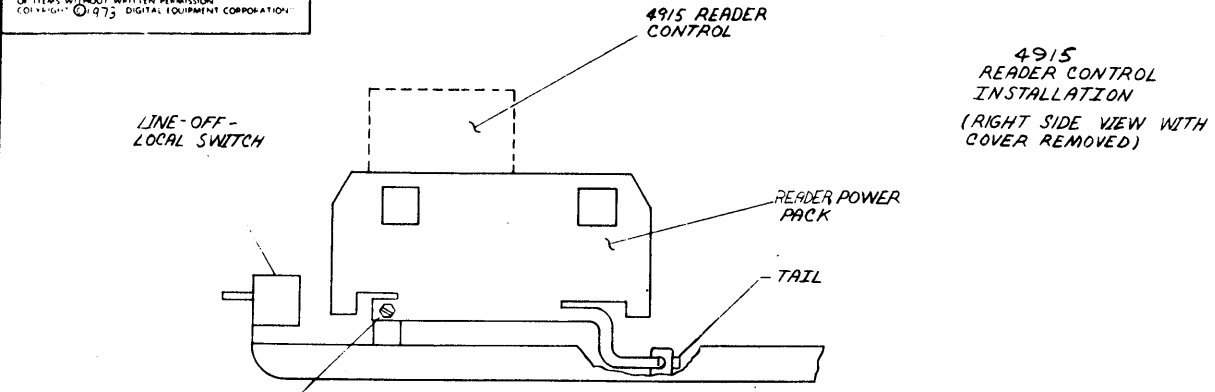
REVISIONS		
CHK	CHANGE NO	REV

TITLE SET-UP & REWORK PROCEDURE FOR TTY 3300 SERIES TTY WRITERS		SIZE CODE DUA	NUMBER LT3300	REV. 8
SCALE	SHEET 5 OF 8	DIST.		

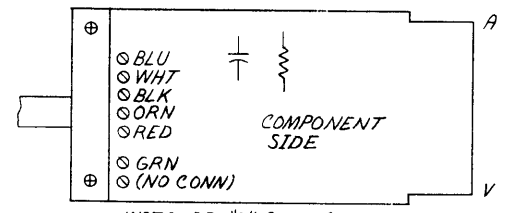
LT3300 E D



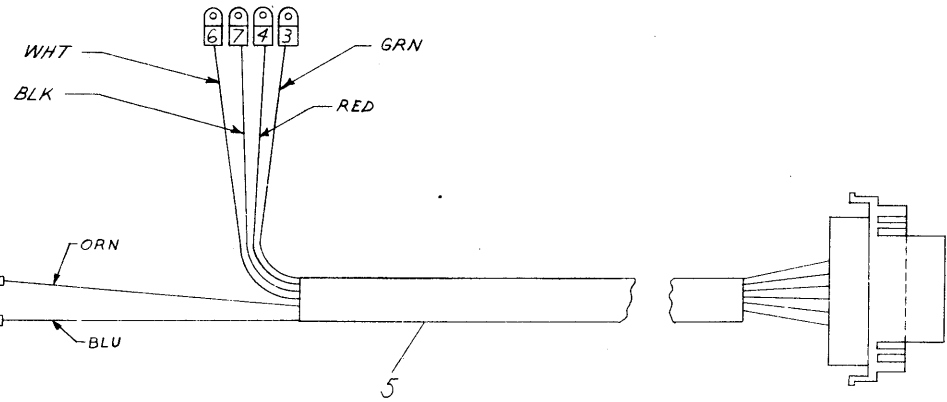
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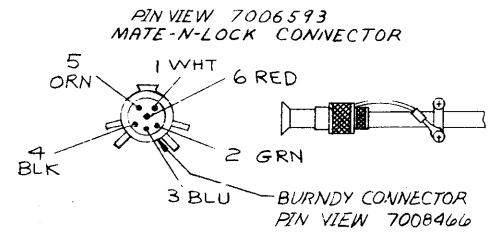
CABLE CONNECTIONS TO TERMINAL BOARD  
 NUMBER IN LUG CORRESPONDS TO TERMINAL BOARD NUMBERS (PROC XI-G)



W076 REV "D" CONN (7005676)  
 NOTE: YELLOW IS SOMETIMES USED INSTEAD OF WHITE  
 GRAY IS SOMETIMES USED INSTEAD OF GREEN



- 1 WHT PRINTER -
- 2 GRN KEYBOARD -
- 3 BLU READER RUN -
- 4 BLK PRINTER +
- 5 ORN READER RUN +
- 6 RED KEYBOARD +
- 7
- 8



TOOLS FOR BURNDY CONNECTOR  
 EXTRACTION TOOL RX24-3  
 INSERTION TOOL RTM24-3  
 CRIMPING TOOL M105-1  
 W/DIE SET S99 & STOP BUSHING SLB1

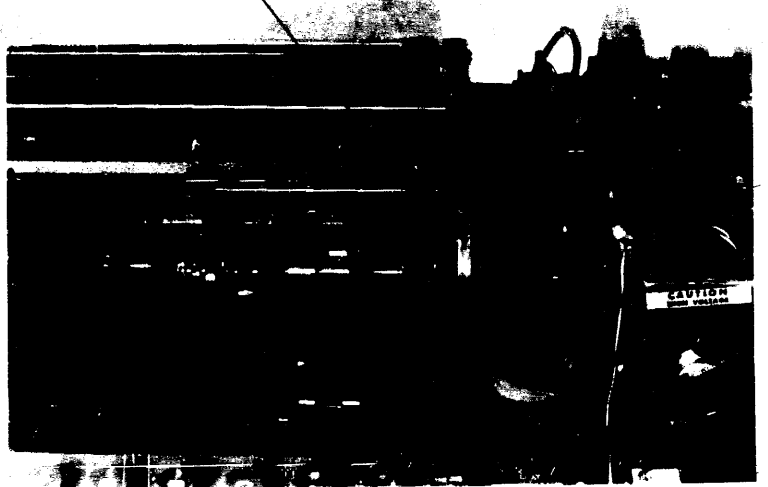
**PROCEDURE XI**  
 INSTALL READER RUN CONTROL (4915) AND INTERFACE CABLE ASSY  
 SEE DETAILS "F", "M", "P", "Q"  
 A REMOVE READER POWER PACK AND SET ASIDE AS FOLLOWS (DETAIL "P"):  
 1. REMOVE MOUNTING SCREW (SAVE)  
 2. LIFT READER PACK AND UNHOOK TAIL  
 3. SET POWER PACK ASIDE (UNPLUG IF DESIRED)  
 B INSTALL 4915 MODULE (PART OF ITEM #5) ON CALL CONTROL UNIT BRACKET AS SHOWN IN DETAIL "F" USING SCREWS ITEM #7  
 C INSTALL TWO YEL/WHT WIRES FROM 4915 ON LINE-OFF-LOCAL SWITCH AS INDICATED IN DETAIL "Q" USING TERMINAL LUG ITEM #7  
 D REPLACE RUBBER BOOT ON LINE-OFF-LOCAL SWITCH SO ALL TERMINALS ARE COVERED  
 E CONNECT YEL/WHT WIRE FROM 4915 TO LOCATION #7 OF RECEPTACLE #4 ON THE CALL CONTROL PANEL AS INDICATED IN DETAIL "Q" USING PIN ITEM #6  
 F MOVE BROWN WIRE FROM LOCATION #11 TO LOCATION #7 OF PLUG #4 (SEE DETAIL "M")  
 G INSTALL FOUR WIRES OF INTERFACE CABLE ON LINE TERMINAL STRIP:  
 GRN TERM #3  
 RED TERM #4  
 BLK TERM #7  
 WHT TERM #6  
 REPLACE TERMINAL STRIP COVER  
 H USING TIES ITEMS #11 AND #12 TIE WIRING AS SHOWN IN DETAIL "M" AND "R"  
 J REINSTALL READER POWER PACK AS FOLLOWS (DETAIL "P"):  
 1. PLUG POWER PACK CABLE INTO PACK IF REMOVED.  
 2. HOOK TAIL OF POWER PACK INTO BRACKET  
 3. INSTALL MOUNTING SCREW PREVIOUSLY REMOVED.

**ENGINEERING NOTE:**  
 TELETYPE DRAWINGS 6353WI (33TU) AND 7935WD (33TY) SPECIFY THAT TERMINAL 3 ON LINE TERMINAL STRIP IS - (NEGATIVE) AND TERMINAL 4 IS + (POSITIVE). TELETYPE DRAWING 1180 SD (3300) DOES NOT SPECIFY. IN LOCAL AND IN HALF DUPLEX OPERATION THE KEYBOARD IS OPERATED AS IF 3 WERE + (POS) AND 4 WERE - (NEG). SINCE NOTHING IN THE KEYBOARD, READER, DISTRIBUTOR AREA IS POLARITY SENSITIVE, THE CHOICE OF POLARITY DOES NOT MATTER. PROCEDURES XI AND XII ARE NOT CONSISTENT WITH PROCEDURE XIII IN THIS RESPECT.

REVISIONS		
CHK	CHANGE NO	REV

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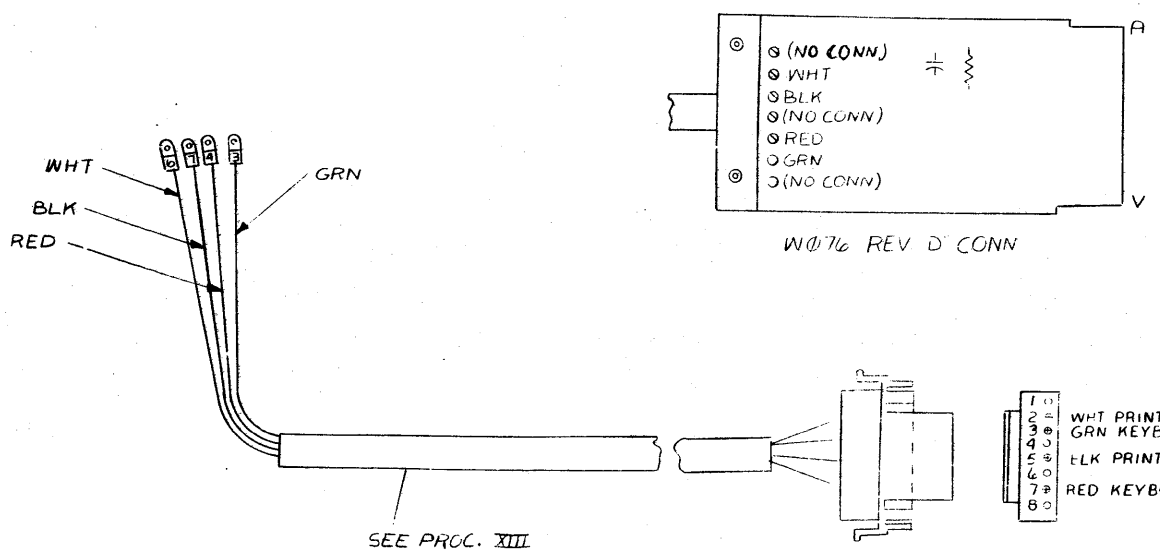
WRIU PAWL SPRING  
SEE PROC. VII-A  
DO NOT REMOVE PARTS



TIE WIRING  
PROC. XI-H

DETAIL "R"

CABLE CONNECTIONS TO  
TERMINAL BOARD NUMBER IN  
LUG CORRESPONDS TO TERMINAL  
BOARD NUMBER



SEE PROC. XIII

DETAIL "S"

**PROCEDURE XII**  
INSTALL MATE-N-LOCK INTERFACE CABLE

- SEE DETAILS M & S
- INSTALL FOUR WIRES OF INTERFACE CABLE ITEM #5 ON LINE TERMINAL STRIP.  
GRN TERM #3  
RED TERM #4  
BLK TERM #7  
WHT TERM #6
  - REPLACE TERMINAL STRIP COVER.
  - USING TIES ITEM #11 TIE INTERFACE CABLE AS SHOWN IN DETAIL "M"

**PROCEDURE XIII**  
INSTALL TELEPHONE PLUG & JACK

- SEE DETAIL L, M & T
- ASSEMBLE TELEPHONE CORDSET ITEM #2 TO TELEPHONE PLUG ITEM #3 BY WIRING THE SHORT WIRE END OF THE CORDSET AS FOLLOWS:

CORDSET WIRE	PLUG TERMINAL	SIGNAL
GREEN	GN	KEYBOARD +
RED	R	KEYBOARD -
BLACK	BK	PRINTER +
YELLOW	Y	PRINTER -

- BEND TERMINAL LUGS UP AND INSERT EARBAND HOOK TAB INTO CENTER HOLE OF PLUG (SEE VIEW A-A OF DETAIL T)
- ARRANGE WIRES TO CLEAR COVER MOUNTING POSTS AND PLACE COVER ON PLUG WITH RIDGE BETWEEN "R" & GN TERMINALS
- INSERT AND TIGHTEN THE TWO LONG SCREWS SUPPLIED WITH THE PLUG (DISCARD THE SHORT SCREW ALSO SUPPLIED)
- WIRE THE LONG WIRE END OF THE CORDSET ITEM #2 TO THE LINE TERMINAL STRIP (DETAIL "M") AS FOLLOWS:  
GREEN TERM #3  
RED TERM #4  
BLACK TERM #7  
YELLOW TERM #6
- PLACE S-HOOK UNDER SCREW NEAR LINE TERMINAL STRIP TO STRAIN RELIEVE CORDSET.
- AFTER TESTING INSERT TELEPHONE PLUG ITEM #3 INTO TELEPHONE JACK ITEM #4 AND PACK SO THAT THE JACK CAN NOT BE DISLODGED.

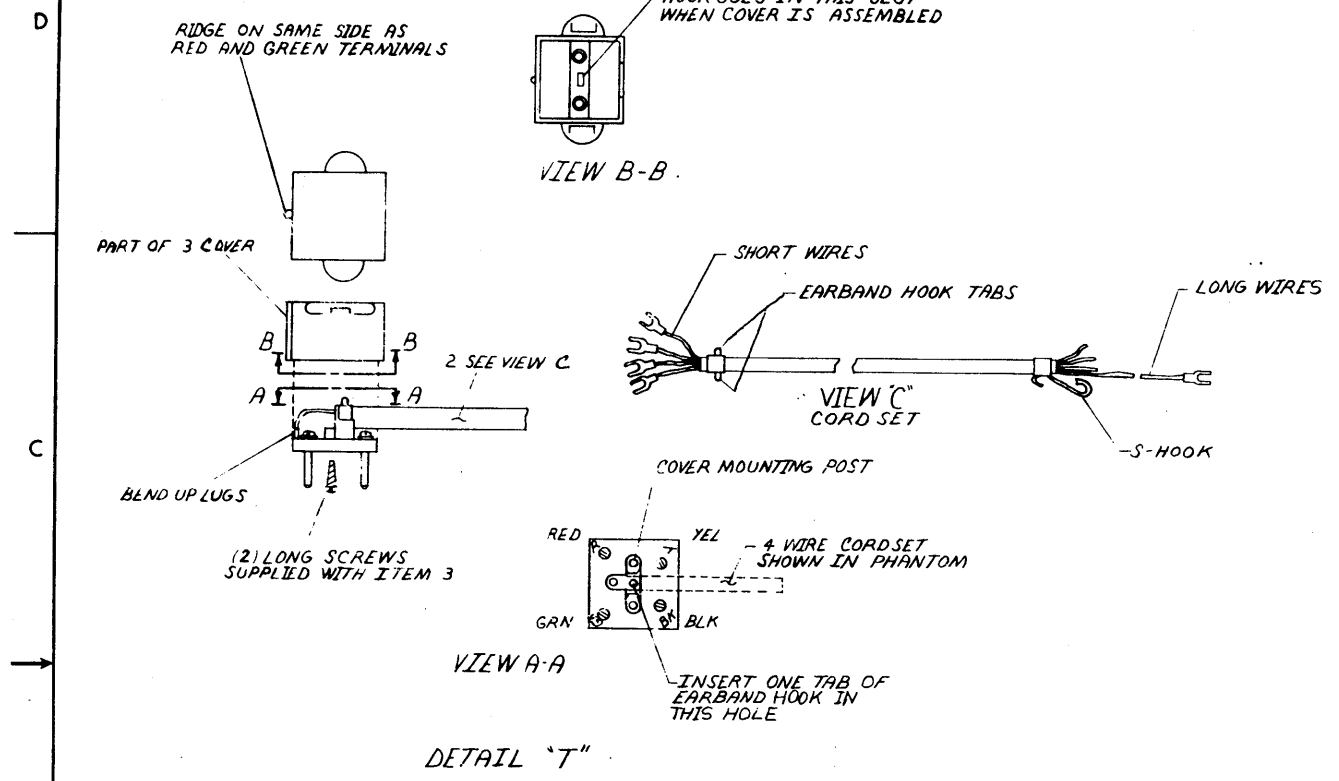
REVISIONS		
CHK	CHANGE NO	REV

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8 0-0-0017 DUA 2

**PROCEDURE XIV**  
 INSTALLATION ON STAND WHEN  
 INSTALLING ON STAND (AFTER  
 SHIPMENT.)  
 A. FOLLOW UNPACKING "PREPARATION  
 FOR INSTALLATION, MOUNTING  
 TYPING UNIT ON STAND" AND "FINAL  
 ASSEMBLY" PORTIONS OF SECT 5 "A-  
 10 (0-201 TC I SS. 5)  
 B. CONNECT GREEN WIRE SUPPLIED  
 BETWEEN SUB-BASE AND STAND  
 FRAME GROUND TERMINALS.

**NOTE PACKING**  
 A. PREPARE FOR SHIPMENT BY SECURING  
 MACHINE IN ACCORDANCE WITH  
 A-SP-LT33-0-10  
 B. PACK SOFTWARE LISTED ON SHIPPING  
 LIST A-AL-LT33-0-12 IN ACCORDANCE  
 WITH PACKAGING PROCEDURE  
 A-PI-3700/01-0-0.



REVISIONS		
CHK	CHANGE NO	REV

TITLE	SET UP & REWORK PROCEDURE FOR TTY3300 SERIES TTY WRITERS	SIZE CODE	DUA	NUMBER	LT33-0-0	REV	B
SCALE	NONE	SHEET	B	OF	B	DIST	

DUALI33-0-0 B B A







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DIGITAL EQUIPMENT CORPORATION						
MAYNARD, MASSACHUSETTS						
ENGINEERING SPECIFICATION					DATE 5/3/68	
TITLE PACKING PROCEDURE FOR TELETYPE WRITERS LT33 SERIES						
REVISIONS						
REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	CHANGED ECO	LT33-00002	A KENT	7-6-71	A. KENT	7-26-71
B	ECO CHANGE	LT33-00009	A KENT	11-73	<i>Allan Kent</i>	<i>19 Feb 74</i>

DISREGARD READER AND PUNCH INSTRUCTIONS ON KSR UNITS.

1. Put reader clip in holder; reader pins in upward position as originally received.
2. Use one tie wrap to hold carriage at left margin.
3. Mount printer unit to fiberboard platform with the eight (8) mounting screws and three (3) studs, originally provided.
4. Put chad box and copy holder in the box provided. On units where reader power pack is not already mounted inside of Teletype, also place reader power pack in the box provided.
5. Teletypes should have transformer (if previously mounted) left in base stand.
6. The four (4) mounting screws that mount the printer to the base stand should be put in a bag along with the on/off knob and the platen knob and then tied to the base stand.
7. Teletype AC cable and signal cable should be placed on the plastic cover where paper roll normally goes and wrapped in kim pack.
8. Tape down printer cover, punch paper-roller, printer paper-roller and cables of item 7 above. Additional tape should be used to secure whole cover to base.
9. Make sure that there are three (3) thumbscrews that hold teletype cover on, and four (4) screws in the front of the machine, also a screw in reader cover and one (1) face-plate for each machine.

ENG K. E. FITZGERALD	APPD	SIZE A	CODE SP	NUMBER LT33-0-10	REV B
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MAYNARD, MASSACHUSETTS						
ENGINEERING SPECIFICATION					DATE 5/3/68	
TITLE INSTALLATION PROCEDURE FOR TELETYPE MODEL LT33 SERIES						
REVISIONS						
REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	CHANGED ECO	LT33-00002	A.KENT	7-6-71	A KENT	7-26-71
B	ECO CHANGE	LT33-00009	A.KENT	11-73	<i>Alan Kent</i>	<i>19 Feb 74</i>

DISREGARD READER AND PUNCH INSTRUCTIONS ON KSR UNITS.  
 1. Remove all tape holding covers and cables.  
  
 2. Remove the whole cover and in the reader, remove clip which holds reader pins in an upward position before turning machine on.  
  
 3. On units with reader power pack shipped separately in the box, mount power supply for reader on basic stand and plug connector cable in. (Other Teletypes have reader power pack already mounted inside in the machine.)  
  
 4. Remove tie wrap being used to hold carriage at left hand margin.  
  
 5. Mount base to bottom of unit with screws provided.  
  
 6. Replace cover being sure that three (3) thumbscrews, four (4) panhead screws and one (1) special screw (for reader) are correctly installed before attaching face plate and knobs.

ENG K. E. FITZGERALD	APPD	SIZE A	CODE SP	NUMBER LT33-0-11	REV B
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<b>DIGITAL EQUIPMENT CORPORATION</b>						
MAYNARD, MASSACHUSETTS						
<b>ENGINEERING SPECIFICATION</b>					DATE 3/18/71	
TITLE TELETYPE INSPECTION PROCEDURES AND ADJUSTMENTS						
REVISIONS						
REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	CHANGE PER ECO	LT33-7	KENT	2/73	<i>Allen Kent</i>	11/1/73
ENG	APPD	SIZE	CODE	NUMBER	REV	
<i>W. Miller</i>	<i>W. Miller</i>	A	SP	LT33-0-13	A	

<b>ENGINEERING SPECIFICATION</b>	<b>DEC 1011a</b>	<b>CONTINUATION SHEET</b>
TITLE TELETYPE INSPECTION PROCEDURES AND ADJUSTMENTS		
1.0 <u>SCOPE</u>		
<p>This procedure outlines the procedures for inspection and acceptance of the ASR 33 Teletypes. By ignoring references to the reader and punch, it may also be used for KSR 33 Teletypes.</p> <p>1.1 These instructions specifically outline the requirements for DEC production standards and will be used as the basis for acceptance or rejection of vendor supplied equipment.</p>		
2.0 <u>EQUIPMENT REQUIRED</u>		
<p>2.1 Feeler gauges type TTY #117781, DEC 29-12520 or similar.</p> <p>2.2 DEC tape gauge type T18118.</p> <p>2.3 Reader gauge type TTY #TP183103.</p> <p style="text-align: center;">→ ALL CHECKS ARE MADE WITH POWER OFF ←</p>		
3.0 <u>KEYBOARD</u>		
<p>Section 574-121-700TC, ISSUE 3, JUNE 1969, VOL. 2, Technical Manual Type ASR33 Teletypewriter.</p> <p>3.1 Universal lever clearance. (Ref. Page 21)</p> <p>3.1.1 The three shipping bolts that tie down the shipping pallet and printer should be loosened due to a change of condition when making the "H" lever adjustment. The bolts in question cause a compressing of the four rubber feet that the printer rests on. When the linkage to the keyboard is made, a change of .015 of an inch or more in relationship to the universal reset level. In correction to this problem, the teletype unpacker should loosen all three bolts and, after completion of the teletype checkout, should retighten prior to reinsertion into the packing box.</p> <p>3.1.2 Minimum .014", maximum .030" clearance between latch lever and universal lever.</p>		
4.0 <u>TYPING UNIT</u>		
<p>Section 574-122-700TC, Issue 4, August 1969, Vol. 2, Technical Manual Type ASR33 Teletypewriter.</p> <p>* 4.1 Distributor shaft and play (Ref. Page 11)</p> <p>4.1.1 Minimum .001", maximum .012" clearance between left bearing and clutch gear assembly.</p>		
SIZE	CODE	NUMBER
A	SP	LT33-0-13
REV	A	

## ENGINEERING SPECIFICATION

digital

CONTINUATION SHEET

TITLE TELETYPE INSPECTION PROCEDURES AND ADJUSTMENTS

- \* 4.2 Distributor clutch adjustment. (Ref. Page 13)
- 4.2.1 With clutch released, leading edge of trip lever should come approximately in the center of the shoe lever.
- 4.2.2 With clutch latched, shoe lever should be minimum flush, maximum .015" beyond rearmost surface of trip lever.
- 4.2.3 With clutch latched, advance distributor brush holder in its driving direction until it stops and releases. It should restore to normal position.
- 4.3 selector cam end play. (Ref. Page 18)
- 4.3.1 Disengage selector clutch, move mainshaft toward the right, minimum .002", maximum .012" clearance measured between left end bearing and collar.
- \* 4.4 Code bar and function clutch adjustment. (Ref. Pages 22 to 24)
- 4.4.1 When disengaged, the upper surface of the trip lever and shoe lever should be approximately flush. When released, the leading edge of the shoe lever should come to the center of the notch on the trip lever.
- \* 4.5 Selector clutch adjustment. (Ref. Page 27)
- 4.5.1 When disengaged, the upper surface of the trip lever and shoe lever should be approximately flush. When released, the leading edge of the shoe lever should come to the center of the notch on the trip lever.
- \* NOTE: When all clutches are adjusted, reverse the rotation of the mainshaft by hand, with all clutches latched. The mainshaft should rotate freely, if it does not, the clutch adjustments must be measured according to the teletype manual.
- 4.6 Blocking lever adjustment. (Ref. Page 39)
- 4.6.1 Set range finder to 72, set up an all marking code combination in selector. Release code bar clutch, cycle by hand, all code bars should go marking and a slight vertical movement of some blocking levers should occur as the code bars pass beneath the blocking levers
- 4.7 Print Suppression. (Ref. Pages 37 and 47)
- 4.7.1 Print suppression latch horizontal clearance between right side of print suppression latch and print suppression code bar should be min. .010", max. .025" (machine in restored position.)

SIZE	CODE	NUMBER	REV
A	SP	LT33-0-13	A

## ENGINEERING SPECIFICATION

digital

CONTINUATION SHEET

TITLE TELETYPE INSPECTION PROCEDURES AND ADJUSTMENTS

- 4.7.2 Print suppression latch vertical clearance between upper part of print suppression latch and print suppression code bar should be min. .005", max. .020". (mach.in rest, pos).
- 4.8 Carriage freedom of horizontal movement. (Ref. Page 51)
- 4.8.1 The carriage should move freely side to side with no binding. Make any necessary roller and belt adjustments. (Ref. Pages 51, 52, 54 and 57)
- 4.9 Rear rail adjustments. (Ref. Page 53)
- 4.9.1 Set up number one code bar in marking position and move carriage side to side. There should be no visible difference between the number one shift slide and the right reset guide plate when in the right or left margins.
- 4.10 Front rail and print hammer trip lever release adjustments. (Ref. Page 62)
- 4.10.1 Clearance should be minimum .030", maximum .060" measured between print hammer trip lever and print bail.
- 4.10.2 Adjustments should remain constant in both margins to within .010".
- 4.11 Dash pot adjustment. (Ref. Page 80)
- 4.11.1 Typing unit piston should return freely into the dash pot cylinder from any position when moved toward the right margin and released by hand.
- 4.12 Line feed adjustment. (Ref. Pages 84 to 92)
- 4.12.1 Set up a line feed code in the selector. Release the code bar and clutch. Cycle by hand, while holding the platen detent pawl away from the ratchet until the platen is fully advanced by the feed pawl. At this point slowly release the detent pawl into the ratched gear. There should be very little rotation of the ratched gear as the pawl seats into the gear.
- 4.12.2 If adjustments are necessary, refer to Pages 84 to 92.
- APPLY POWER ←
- 4.13 Answer back mechanism, operation under power. (Ref. Pages 132 to 146)
- 4.13.1 Turn on punch, press "here is" key, see that punch punches blank tape. If not, refer to adjustments Pages 132 to 146.

SIZE	CODE	NUMBER	REV
A	SP	LT33-0-13	A

ENGINEERING SPECIFICATION CONTINUATION SHEET

TITLE TELETYPE INSPECTION PROCEDURES AND ADJUSTMENTS

→ TURN POWER OFF ←

5.0 READER

Section 524-124-700TC, Issue 3, June 1969, Vol. 2, Technical Manual Type ASR33 Teletypewriter.

- 5.1 Horizontal and vertical clearance between trip lever and armature extension. (Ref. Pages 6 and 7)
  - 5.1.1 With reader trip lever fully forward, clearance between reader trip lever and armature extension, should be minimum .008", maximum .020".
  - 5.1.2 With the armature held all the way down, clearance between reader trip lever and upper part of the armature, should be minimum .001", maximum .010" as the reader trip lever passes over the armature extension.
- 5.2 Reader trip contacts. (Ref. Page 8)
  - 5.2.1 The clearance should be minimum .025", maximum .040" when measured between the contacts when they are open.
- 5.3 Feed pawl and blocking pawl adjustments. (Ref. Pages 13 and 15)
  - 5.3.1 With the machine power on, energize reader armature by tripping reader trip solenoid. Insert TP183103 Gauge between upstop bracket and upstop shoulder screw. Gauge should enter friction tight, if not follow Teletype Manual for adjusting sequence.
  - 5.3.2 With the reader in the rest position, the clearance should be minimum .001", maximum .008" when measured between the feed pawl and the ratchet tooth.
  - 5.3.3 With the reader in rest position the clearance should be minimum .001", maximum .003" when measured between blocking pawl and the ratchet tooth.

SIZE	CODE	NUMBER	REV
A	SP	LT33-0-13	A

ENGINEERING SPECIFICATION CONTINUATION SHEET

TITLE TELETYPE INSPECTION PROCEDURES AND ADJUSTMENTS

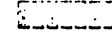
6.0 PUNCH

Section 574-125-700TC, Issue 4, June 1969, Vol 2, Technical Manual Type ASR33 Teletypewriter.

- 6.1 Sensing lever down stop.
  - 6.1.1 Check screws securing the punch drive arm assembly to the rocker shaft are tight.
  - 6.1.2 Push sensing levers down by hand, see that they limit on the down stop before they leave the guide post. Position guide post as required to attain this condition.
- 6.2 Tape nudger adjustments. (Ref. Page 8)
  - 6.2.1 Two screws that couple the rocker shaft and punch drive bail must be tightened during the checkout period and also be a quality control check item.
  - 6.2.2 Manually rotate the main shaft until the tape nudger is in the fully driven position, the clearance between the tape nudger and the rear roller should be minimum .030" and maximum .080".
- 6.3 Total punch operation in static state. (Ref. Pages 5 to 12)
  - 6.3.1 Put an all marking code in selector, cycle by hand until the feed pawl is fully rearward, at this point check the following:
    - A. With the feed wheel ratchet fully detented, move the feed pawl out of engagement with the gear, release slowly and see that it re-enters the gear with no perceptible clearance.
    - B. The clearance between the sensing levers and the function pawl should be minimum .005", maximum .020".
  - 6.3.2 Continue to cycle by hand until the punch drive link is fully forward. The clearance between the punch pin drive levers and the bottom surface of the punch die block assembly, should be minimum .017", maximum .037". (Ref. Page 9)
  - 6.3.3 Complete the cycle by hand, the clearance between the stripper bail and sensing pawl should be minimum .001", maximum .012". (Ref. Page 7)
- 6.4 Turn the power on, punch some tape and check for proper registration with DEC tape gauge T18118.

SIZE	CODE	NUMBER	REV
A	SP	LT33-0-13	A

**ENGINEERING SPECIFICATION**



CONTINUATION SHEET

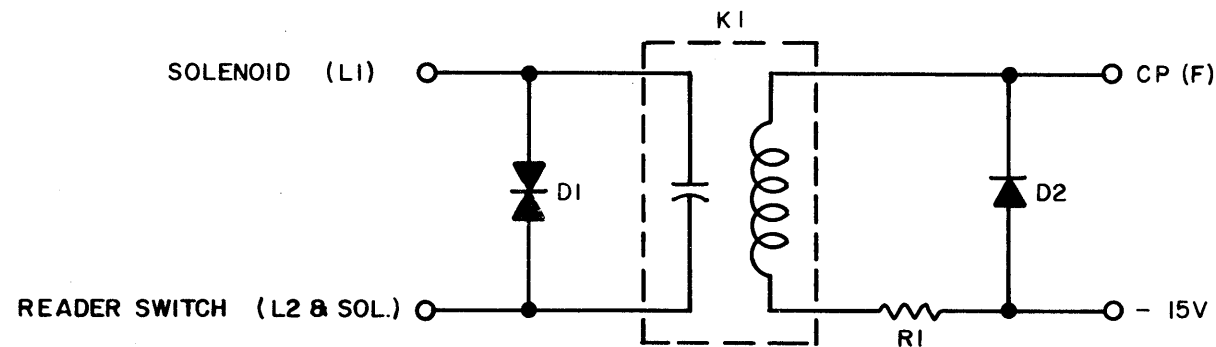
TITLE TELETYPE INSPECTION PROCEDURES AND ADJUSTMENTS

6.4.1 Adjust spring to obtain proper registration within one half hole over entire gauge. (Ref. Page 12)

SIZE A	CODE SP	NUMBER LT33-0-13	REV A
-----------	------------	---------------------	----------

REV B  
NUMBER 4915-0-1  
SIZE CODE B CS

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NOTE:  
K1 HAS NO OUTER SHIELD

4		LUG, SPLIT	9006735-0-0
	K1	RELAY, REED 12VDC #30002 1D1	1203193
	R1	RES. 120 1/4W 10% CC	1301418
	D2	DIODE D664	1100114
	D1	DIODE 6RS 20SP4B4	1100106
		PARTS LIST	A-PL-4915-0-0
QTY	REFERENCE DESIGNATION	DESCRIPTION	PART NO.

PARTS LIST

REVISIONS	CHK	CHG NO.	REV.
			A
			B

DRN. I. HAHN	DATE 5-11-65
CHK'D R. SILVERMAN	DATE 6-24-65
ENG. D.A. WHITE	DATE 5-24-65
PROD.	DATE

TRANSISTOR & DIODE CONVERSION CHART			
DEC		EIA	
D664		IN3606	
20SP4B4		SAME	

digital	
EQUIPMENT CORPORATION	
MAYNARD, MASSACHUSETTS	

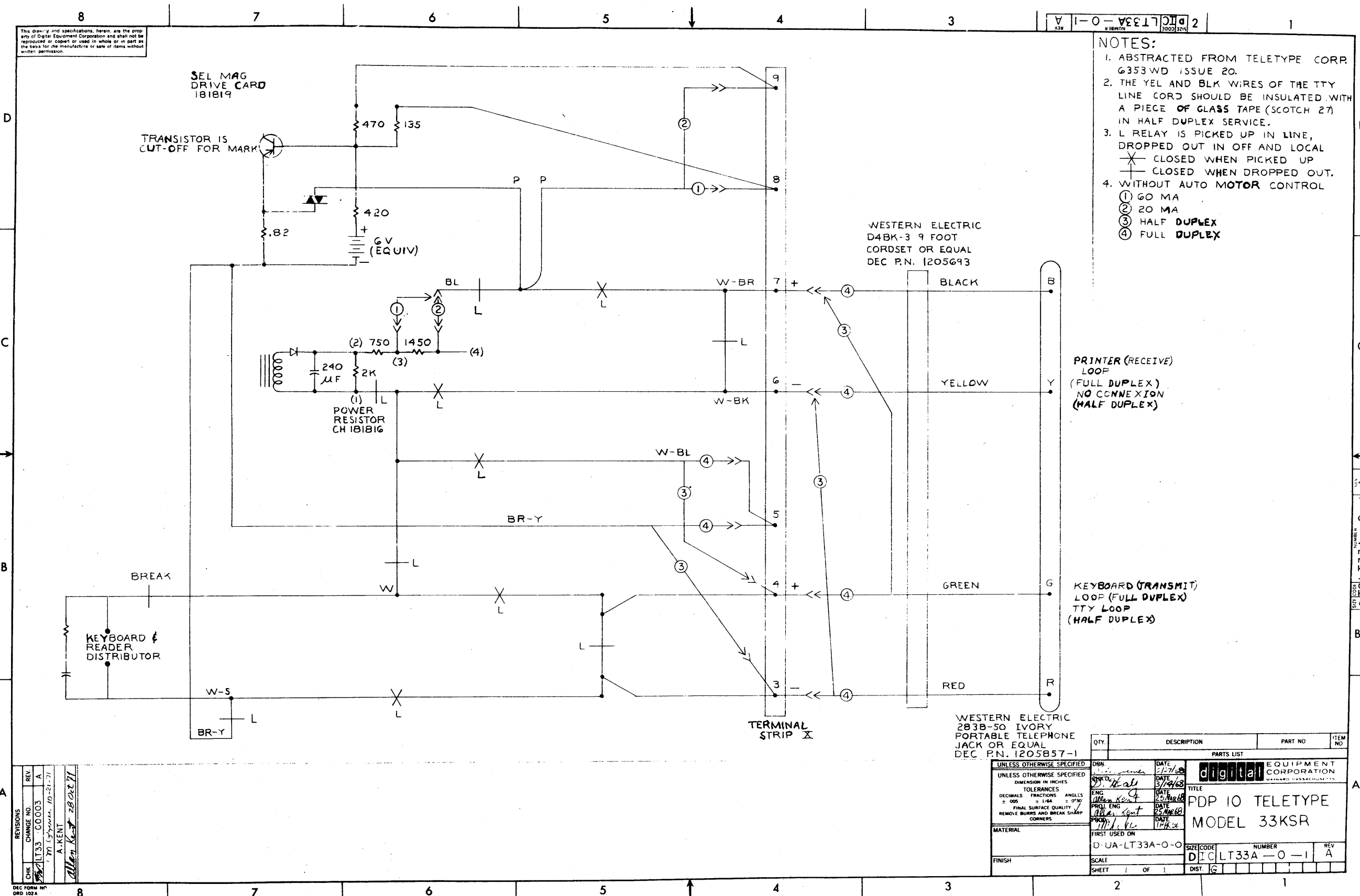
digital  
EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

TITLE TELETYPE READER CONTROL 4915			
SIZE B	CODE CS	NUMBER 4915-0-1	REV. B
PRINTED CIRCUIT REV.			D



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2 D I C L T 3 3 A - 0 - 1



- NOTES:
1. ABSTRACTED FROM TELETYPE CORR. 6353WD ISSUE 20.
  2. THE YEL AND BLK WIRES OF THE TTY LINE CORD SHOULD BE INSULATED WITH A PIECE OF GLASS TAPE (SCOTCH 27) IN HALF DUPLEX SERVICE.
  3. L RELAY IS PICKED UP IN LINE, DROPPED OUT IN OFF AND LOCAL  
 X CLOSED WHEN PICKED UP  
 + CLOSED WHEN DROPPED OUT.
  4. WITHOUT AUTO MOTOR CONTROL  
 ① 60 MA  
 ② 20 MA  
 ③ HALF DUPLEX  
 ④ FULL DUPLEX

PRINTER (RECEIVE) LOOP  
 (FULL DUPLEX)  
 NO CONNECTION  
 (HALF DUPLEX)

KEYBOARD (TRANSMIT) LOOP (FULL DUPLEX)  
 TTY LOOP (HALF DUPLEX)

WESTERN ELECTRIC  
 283B-50 IVORY  
 PORTABLE TELEPHONE  
 JACK OR EQUAL  
 DEC P.N. 1205857-1

REV.	CHG. NO.	DATE
A	0003	10-21-71
A. KENT		

UNLESS OTHERWISE SPECIFIED		DRN	DATE	<b>digital</b> EQUIPMENT CORPORATION TITLE <b>PDP 10 TELETYPE MODEL 33KSR</b>
DIMENSION IN INCHES		CHKD	DATE	
TOLERANCES		ENG	DATE	
DECIMALS FRACTIONS ANGLES		PRG. ENG	DATE	
= .005 = 1/64 = 0°30'		PROD.	DATE	
FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS		FIRST USED ON		
MATERIAL		D-UA-LT33A-0-0	SIZE CODE	NUMBER
FINISH		SCALE	D I C L T 3 3 A - 0 - 1	REV
		SHEET 1 OF 1	DIST. G	A

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS			LEGEND		QUANTITY / VARIATION											
ACCESSORY LIST			D	DOCUMENT	ALL MODELS	OPTIONAL					KIT CHECK	BY	DATE	INSTALLATION CHECK	BY	DATE
MADE BY DATE	CHECKED DATE	SECTION	DN	DOCUMENT CHANGE NOTICE												
ENG DATE	PROD DATE	ISSUED SECT.	PA	PAPER TAPE ASCII												
			PB	PAPER TAPE BINARY												
			PM	PAPER TAPE READ-IN-MODE												
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION														
1	LIBKIT-11/40-BASE-A-K	PDP-11/40 PROGRAM LIBRARY CHECK LIST AND KIT	1													
2	DEC-11-H40SA-A-D	PDP-11/40 SYSTEMS MANUAL	1													
3	DEC-11-HKDAA-A-D	KD11-A PROCESSOR MANUAL	1													
4	DEC-11-HKEFA-A-D	Kell INSTRUCTION SET OPTIONS MANUAL		1												
5	DEC-11-HKTDA-A-D	KT11-D MEMORY MANAGEMENT OPTION MANUAL		1												
6	DEC-11-HMELA-A-D	ME11-L CORE MEMORY MANUAL	1													
7	DEC-11-HDLAA-A-D	DL11 ASYNCHRONOUS LINE INTERFACE MANUAL	1													
8	B-DD-11/40-0	PDP-11/40 PRINT SET	1													
9	B-DD-Kell-E	Kell-E PRINT SET		1												
10	B-DD-Kell-F	Kell-F PRINT SET		1												
11	B-DD-KT11-D	KT11-D PRINT SET		1												
<del>12</del>	<del>D-1A-7009177-0-0</del>	<del>POWER DISTRIBUTION CABLES FOR UNUSED SYSTEM</del>														
		<del>UNIT PLACES IN BOX</del>														
TITLE ACCESSORY LIST (PDP-11/40)			ASSY. NO. <i>74</i>		SIZE	CODE	NUMBER			REV.	ECO NO					
			SHEET 1 OF 1		A	AL	11/40-0-4			B	11/40 00C13					
					DIST.											

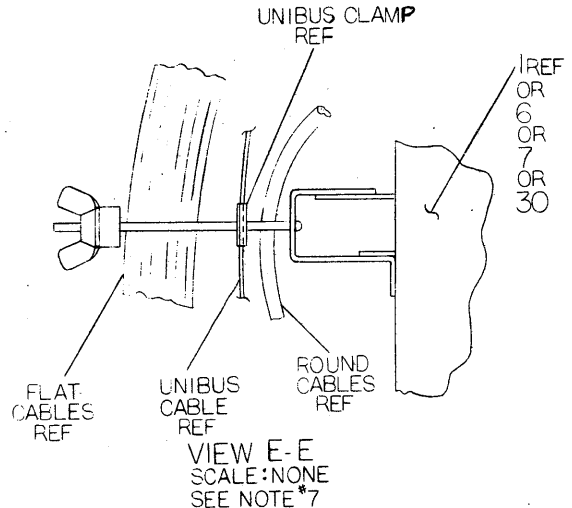
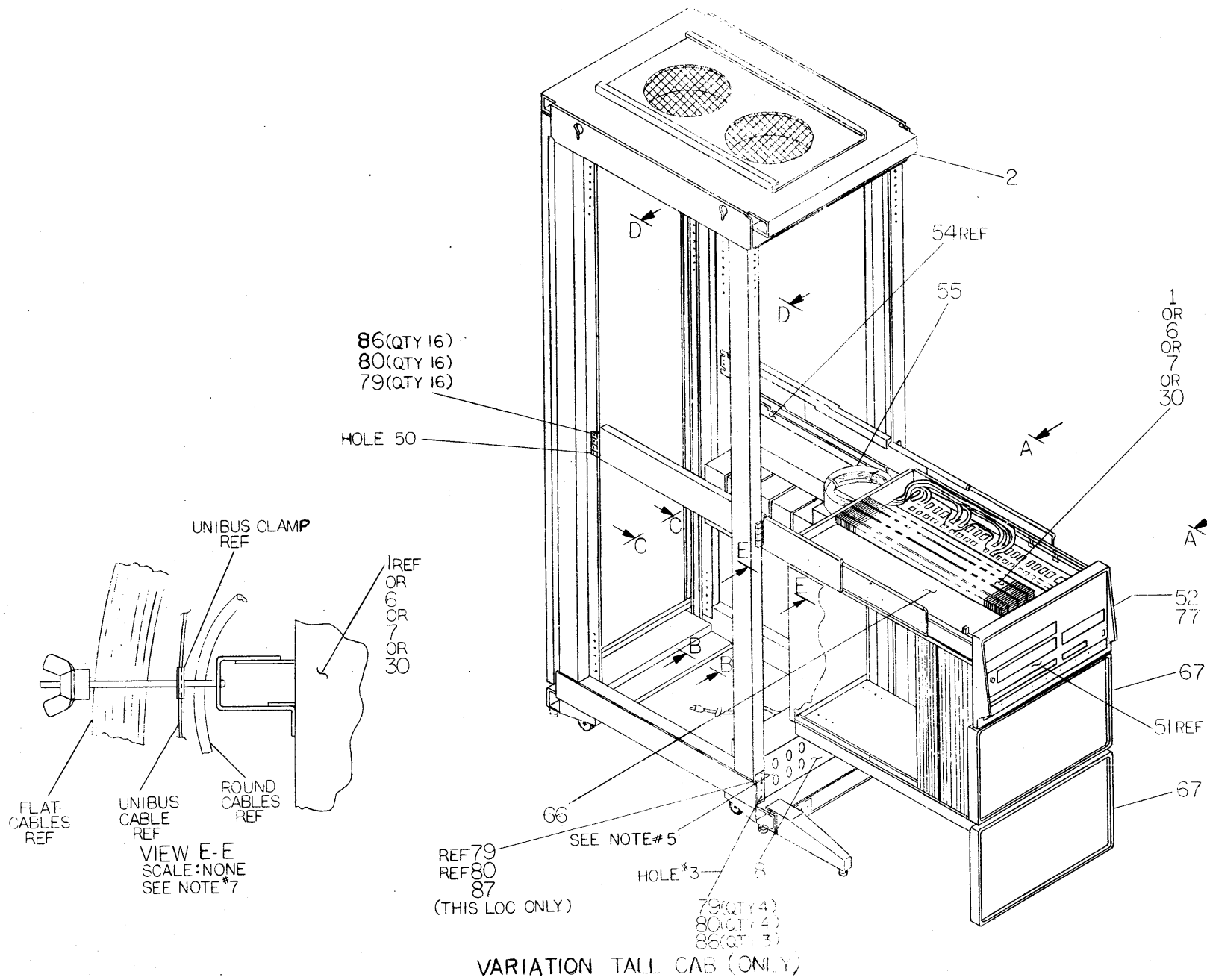




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NOTES

1. A.C. CONNECTION FOR CABINET FAN MAYBE ON BRACKET (VIEW D-D) OR ON JONES STRIP ON INTERIOR OF REAR SIDE OF CABINET MOUNTING CHANNEL.
2. FOR SYSTEMS CONFIGURATIONS REFER TO SHEETS 4, 5, 6 AND 7.
3. BEHIND EACH 10 1/2" PANEL INSTALL (4) 3/8" SPACERS.
4. FOR SHORT CABINET VARIATIONS SEE SHEET "3".
5. TOP OF CABINET FAN AND HT420A/HT420 POWER SUPPLY MUST BE PLUGGED INTO LINE 1 OUTLETS ON THE 361 POWER CONTROL.
6. USE CABLE GUIDE (P/N 1212064) WHERE NECESSARY.
7. WHEN MT6 CABLES IN THE CABLE CLAMP THEY SHALL BE MTD AGAINST CLAMP WALL IN THIS ORDER ONLY. ROUND CABLES FIRST, UNIBUS CABLE SECOND, & FLAT CABLES LAST. ANY DEVIATION COULD CAUSE FRACTURE OF UNIBUS CABLE, SEE VIEW E-E.



REF 79  
REF 80  
87  
(THIS LOC ONLY)

79(QTY 4)  
80(QTY 4)  
86(QTY 3)

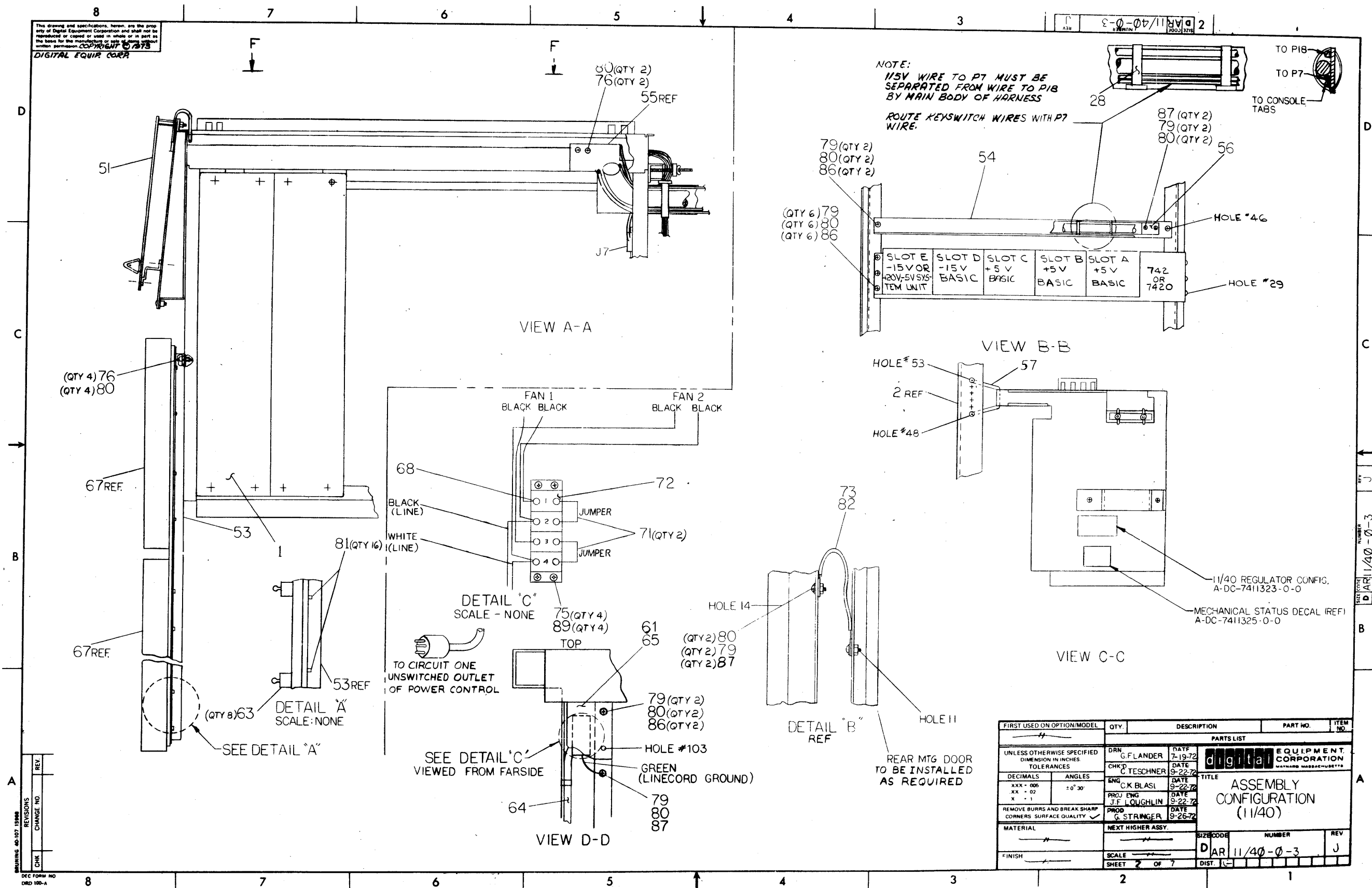
VARIATION TALL CAB (ONLY)

REV.	CHANGE NO.	DESCRIPTION
1	11/40-00017	REVISED AND REDRAWN
2	11/40-00018	B. MINOR
3	11/40-00019	B. MINOR
4	11/40-00020	B. MINOR
5	11/40-00022	B. MINOR
6		K. POON

QUANTITY & VARIATION	DESCRIPTION	DWG./PART NO.	ITEM NO.
	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		
	ANGLES 50° 30'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE INCHES
	SURFACE QUALITY IN MICROINCHES	MEDIUM	OVER 0 TO 0.2 ±.004 ±.008 ±.012 ±.016 ±.024 ±.04
		PREFERRED	0.2 TO 4.0 ±.012 ±.016 ±.025 ±.04 ±.063 ±.01
	THIRD ANGLE PROJECTION	DRN. G. FLANDER 7-9-72	FIRST USED ON
	REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D C. TESCHNER 9-27-72	
	DO NOT SCALE DWG	ENG. C. BLASI 9-27-72	TITLE ASSEMBLY CONFIGURATION (1/40)
		PROJ. ENG. J. FL 9-27-72	
		PROD. STRINGS 9-27-72	
		NEXT HIGHER ASSY.	
	MATERIAL	B-30-11/40	SIZE CODE D AR
	FINISH		NUMBER 11/40-0-3
		SHEET OF 7	DIST.

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2-0-07/11/40 2



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.	
<b>PARTS LIST</b>					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN G. FLANDER	DATE 7-19-72	<b>digital EQUIPMENT CORPORATION</b> MAYNARD MASSACHUSETTS		
DECIMALS .005 .010 .015 .020 .030 .040 .050 .060 .070 .080 .090 .100 .125 .150 .175 .200 .250 .300 .375 .450 .500 .625 .750 .875 .900 .950 .999	CHKD G. TESCHNER	DATE 9-22-72			TITLE
ANGLES 10° 30°	ENG C.K. BLASI	DATE 9-22-72			ASSEMBLY CONFIGURATION (11/40)
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ ENG J.F. LOUGHLIN	DATE 9-22-72			
MATERIAL	NEXT HIGHER ASSY.	SCALE	SIZE CODE	NUMBER	
FINISH		SHEET 2 OF 7	DAR 11/40-0-3	REV J	

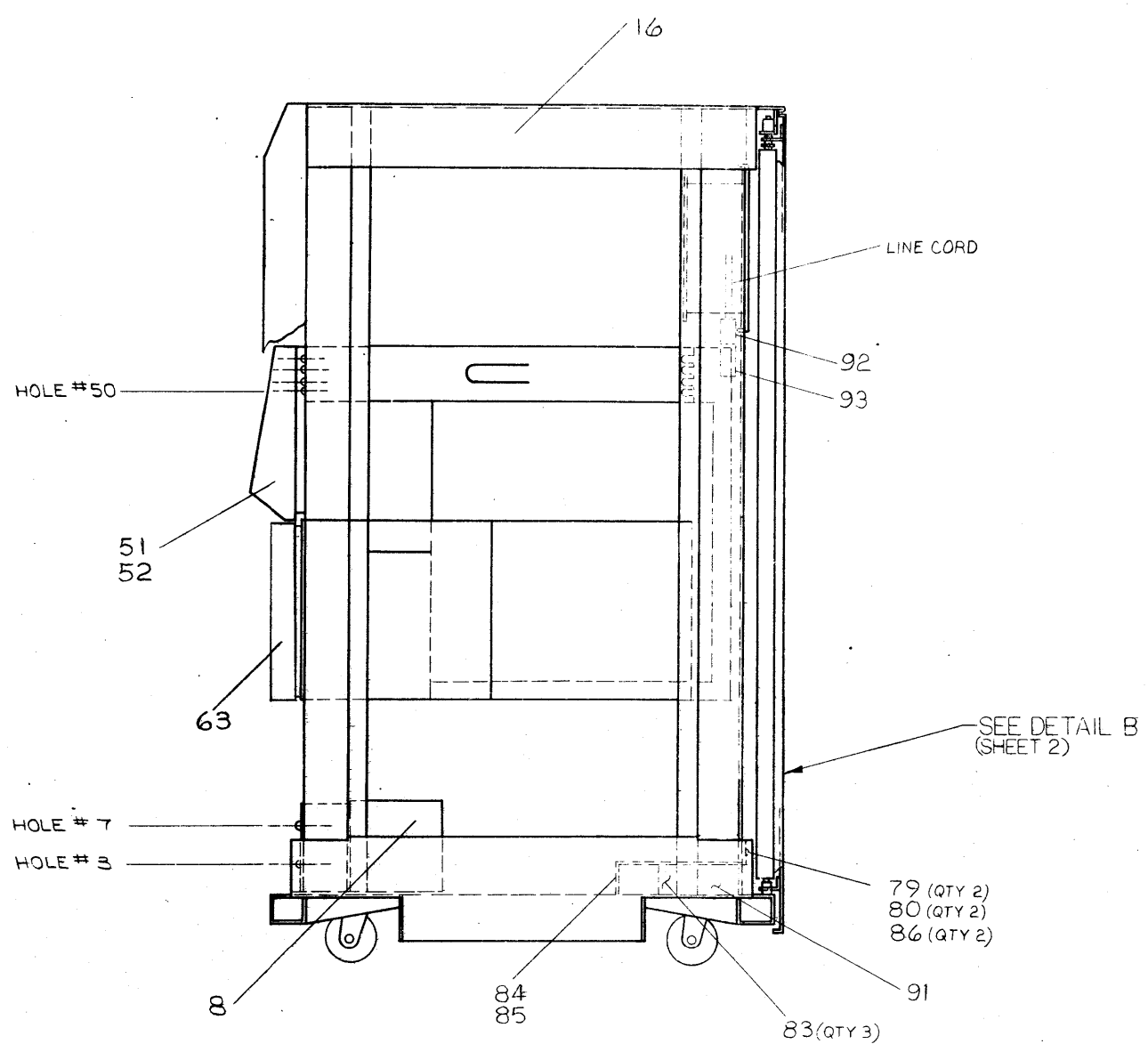
REVISIONS  
 CHANGE NO. REV.  
 DEC FORM NO. ORD 100-A

REV. J  
 NUMBER 11/40-0-3

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3-0-07/11  
11/40-0-3



VARIATION SHORT CAB (ONLY)

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
PDP 11/40				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN FLANDER CHK'D C TESCHNER ENG. BLASI PROJ. ENG. J.F. O'LOUGHLIN PROJ. STRINGER	DATE 7-19-72 DATE 9-22-72 DATE 9-22-72 DATE 9-22-72 DATE 9-26-72	 <b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS TITLE ASSEMBLY CONFIGURATION 11/40	
DECIMALS .XXX - .005 .XX - .02 .X - .1	ANGLES ±0° 30'	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		
MATERIAL	NEXT HIGHER ASSY.	B-DD-11/40	SIZE CODE	NUMBER
FINISH	SCALE	3 OF 7	DAR	11/40-0-3
	SHEET		DIST.	

REV. NO. 11/40-0-3

A

BRUNING 40-07 15586  
 DEC FORM NO DRD 100-A  
 REVISIONS  
 CHANGE NO  
 REV







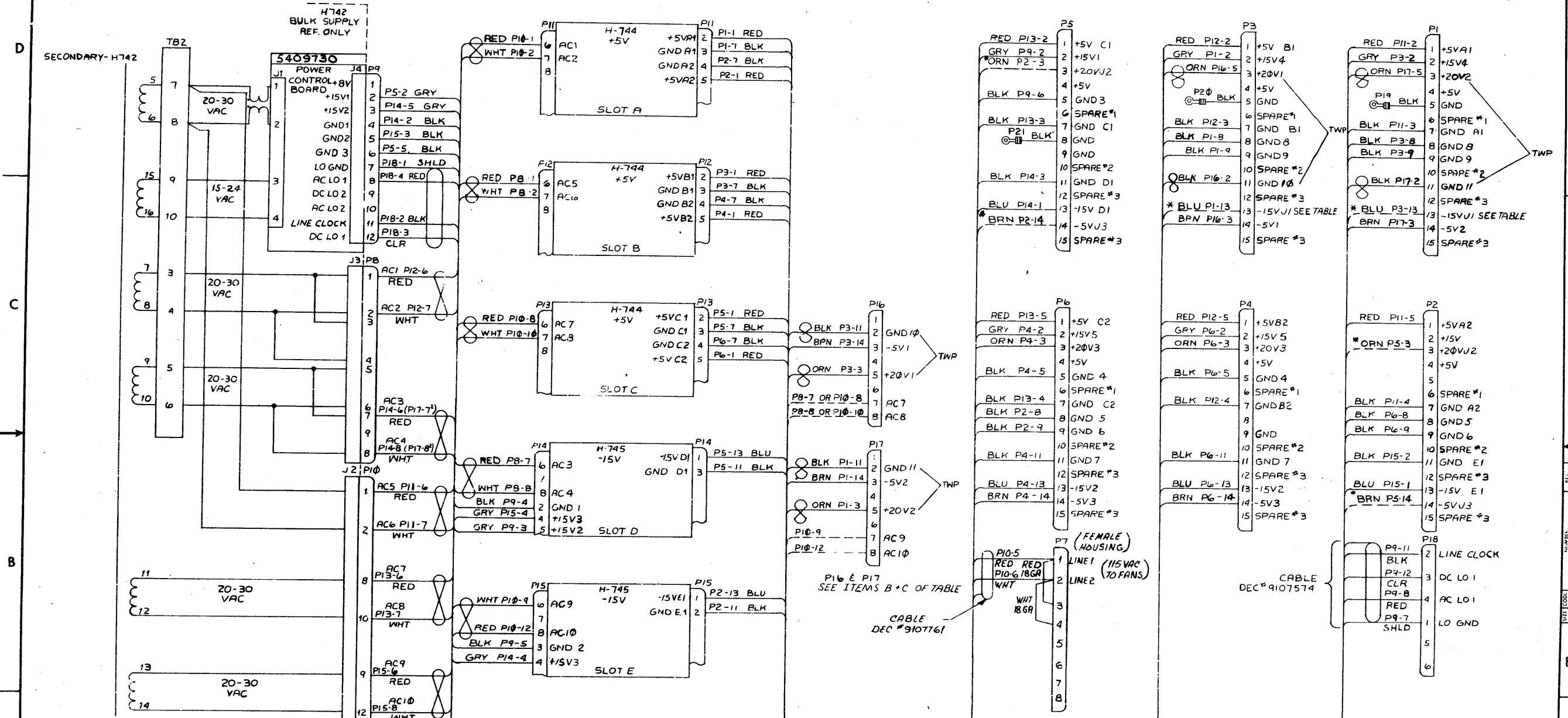






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1-0-9966002 2



NOTES: 1. ALL WIRES ARE 14 AWG UNLESS OTHERWISE SPECIFIED.  
 2. TO DETERMINE POWER SUPPLY CONFIGURATION REQUIREMENTS, REFER TO TABLE BELOW.  
 WARNING: TABLE MUST BE FOLLOWED TO PREVENT REGULATOR DAMAGE.

MEMORY	REGULATORS	JUMPERS	WHEN REMOVING JUMPERS REMOVE MALE PINS AT EACH END AND COVER WITH SHANK TUBING. FOLD THE WIRE BACK AT LEAST AN INCH AND THEN TIE WRAP IT TO THE HARNESS.
A	MFI-JUP H745 (-15V)	H745 (-15V)	PI-13 R3-13 OUT P2-3 R5-3 P2-14 R5-14
B	MFI-JUP UP TO 64K	H745 (-15V)	PI-13 R3-13 IN P2-3 R5-3 IN P2-14 R5-14 IN
C	MFI-JUP GREATER THAN 64K	H745 (-15V)	PI-13 R3-13 OUT P2-3 R5-3 OUT P2-14 R5-14 OUT

3. CAUTION: IF 2 H754 REGULATORS ARE INSTALLED THERE IS NO -15V AVAILABLE FOR OPTIONS THAT MAY REQUIRE IT.

REV	CHG	NO	DATE	BY	REASON
1	A	1	11-17-73	J. BOVEN	INITIAL DESIGN
2	B	1	11-17-73	J. BOVEN	REVISED FOR H742
3	C	1	11-17-73	J. BOVEN	REVISED FOR H742
4	D	1	11-17-73	J. BOVEN	REVISED FOR H742
5	E	1	11-17-73	J. BOVEN	REVISED FOR H742
6	F	1	11-17-73	J. BOVEN	REVISED FOR H742
7	G	1	11-17-73	J. BOVEN	REVISED FOR H742
8	H	1	11-17-73	J. BOVEN	REVISED FOR H742
9	I	1	11-17-73	J. BOVEN	REVISED FOR H742
10	J	1	11-17-73	J. BOVEN	REVISED FOR H742
11	K	1	11-17-73	J. BOVEN	REVISED FOR H742
12	L	1	11-17-73	J. BOVEN	REVISED FOR H742
13	M	1	11-17-73	J. BOVEN	REVISED FOR H742
14	N	1	11-17-73	J. BOVEN	REVISED FOR H742
15	O	1	11-17-73	J. BOVEN	REVISED FOR H742

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
H960-D/E				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES				
TOLERANCES				
DECIMALS	ANGLES	DATE 7-19-73		
.xxx = .006	10° 30'	DATE 8-2-73		
.xx = .02		DATE 8-2-73		
.x = .1		DATE 8-2-73		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY V				
NEXT HIGHER ASSY.				
MATERIAL				
FINISH				
SCALE NONE				
SHEET 1 OF 1				
TITLE				
21" BOX POWER HARNESS				
D I C 7009566-0-1 D				

D I C 7009566-0-1

REV. B  
NUMBER 7009566-0-2  
SIZE CODE K WL  
2

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FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
H960-D/E				
PARTS LIST				
DRN P. S. (E. B. ...)	DATE 9-10-75	<b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small> TITLE <h1 style="margin: 0;">WIRE LIST</h1>		
CHK'D. V. Boalen	DATE 1-17-73			
ENG. V. Boalen	DATE 11-11-73			
PROJ. ENG. VERELL BOALLEN	DATE 9-19-73			
PROD. John ...	DATE 9/19/73			
NEXT HIGHER ASSEMBLY E-IA-7009566-0-0		SIZE CODE K WL	NUMBER 7009566-0-2	REV. B
SCALE 1	OF 1	DIST.		

REVISIONS	
CHK	CHANGE NO.
22	7009566-00002 A
	12-19-73
	V. BOAEN
	12-26-73
	7009566-00005 B
	5-22-75
	K FANKER
	K. Boalen (P.S.) 5-27-75

4

3

2

1

B

B

A

A

4

3

2

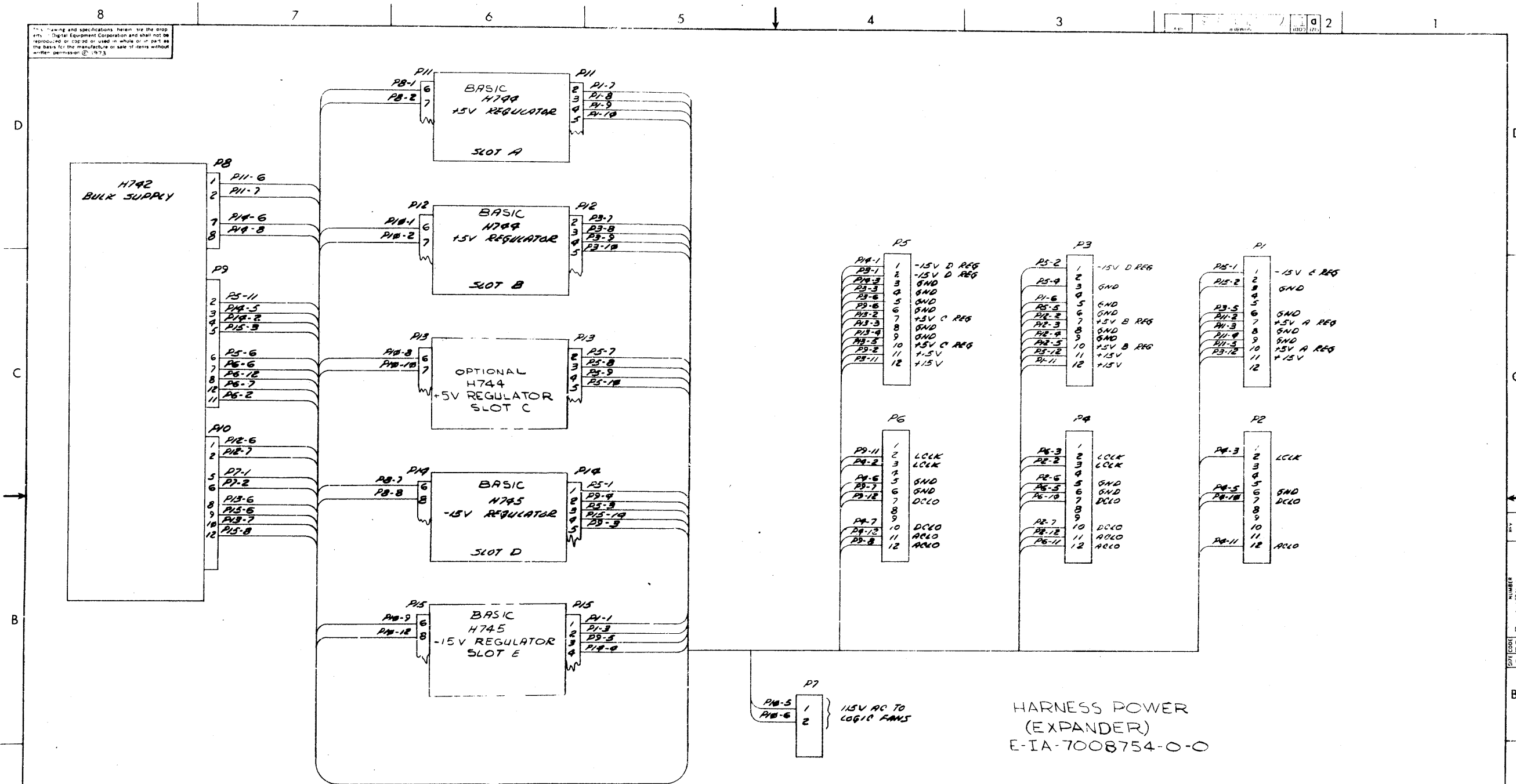
1

21-PA-TEL #/P	FILE NAME	ARI2V-SAV(20) PIN	27-FEB-75 RAY Q	NAME SORT DRAW RV RG Y X Z	27-MAY-75 REMARKS	1516 NEW RUN INDICATOR	PAGE 1 RUN NUM
		LOCATION	ORDER	LEVEL			
	SELL NOTE	NOTE			ALL WIRES #14 AWG	X	1
	SPE NOTE	NOTE			UNLESS OTHERWISE NOTED	X	1
	SFE NOTE	NOTE			WIRE LENGTH IS APPROX.	X	1
+15 V1		F5-2		GRY		X	2
+15 V1		F9-2					2
+15 V2		F14-5		GRY		X	3
+15 V2		F9-3					3
+15 V3		F14-4	1	GRY		X	4
+15 V3		F15-4					4
+15 V4		F1-2		GRY		X	5
+15 V4		F3-2					5
+15 V5		F4-2		GRY		X	6
+15 V5		F5-2	13				6
+20 V1		F16-5		ORN	ORN=BLK TWP(GND 10)	X	7
+20 V1		P3-3					7
+20 V2		P1-3		ORN	ORN=BLK TWP(GND 11)	X	8
+20 V2		P17-5					8
+20 V3		P4-3	1	ORN		X	9
+20 V3		F6-3					9
+20 VJ2		F7-3		ORN		X	10
+20 VJ2		P5-3					10
+5V A1		F1-1	6	RED		X	11
+5V A1		F11-2					11
+5V A2		F11-5		RED		X	12
+5V A2		F2-1					12
+5V B1		F12-2		RED		X	13
+5V B1		P3-1					13
+5V B2		P12-5		RED		X	14
+5V B2		F4-1					14
+5V C1		P13-2		RED		X	15
+5V C1		P5-1					15
+5V C2		P13-5		RED		X	16
+5V C2		F6-1					16
-15 V2		P4-13		BLU		X	17
-15 V2		P6-13					17
-15V D1		F14-1		BLU		X	18
-15V D1		F5-13					18



215A.MVD	WRI23.SAV(20)	27-FEB-75	NAME SORT	27-MAY-75	1516	PAGE 4
REF NAME	A/P	BAY Q	RV FG Y X Z	REMARKS	NEW RUN INDICATOR	RUN NUM
	LOCATION	OPDEF	LEVEL			
GMU C1	F13-3		BLK		X	55
GMU C1	F5-7		BLK			55
GMU C2	F13-4		BLK		X	56
GMU C2	P6-7					56
GMU D1	F14-3	56	BLK		X	57
GMU D1	P5-11					57
GMU E1	F15-2		BLK		X	58
GMU F1	P2-11	6				58
L1AF 1	P7-1		PED	#1R ANG	X	59
L1AF 1	P7-3					59
L1AF 2	F7-2		WHT	#1R ANG	X	60
L1AF 2	F7-4					60
L1AF 1	F1W-5		RED	CABLE PN 9107761	X	61
L1AF 1	F7-1					61
L1AF 2	F1W-6		WHT	CABLE PN 9107761	X	62
L1AF 2	F7-2					62
L1AF CLOCK	F18-2	6	BLK	CABLE PN 9107574	X	63
L1AF CLOCK	P9-11					63
LO GUT	F18-1	6	SHLD	CABLE PN 9107574	X	64
LO GUT	P9-7					64
SHIFUP	F10-4		SHLD	CABLE PN 9107761	X	65

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HARNESS POWER (EXPANDER) E-IA-7008754-0-0

OLD STYLE HARNESS FOR SYSTEMS WITH SERIAL NUMBERS 5999 AND LOWER

REV	1	11/40-C-0-0-0	INITIATED
CHK			

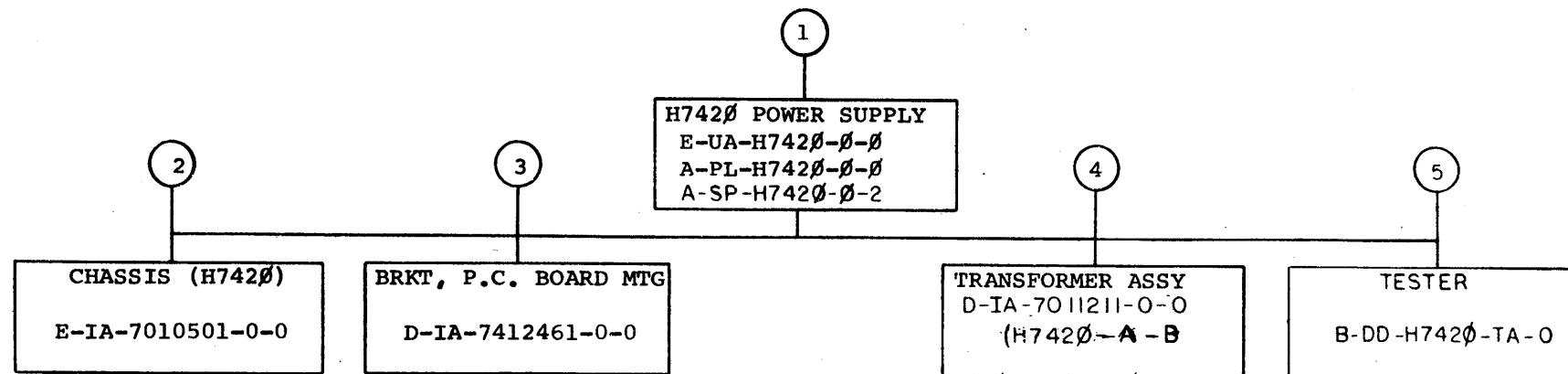
FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
11/40				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES				
DECIMALS	ANGLES	DRN	DATE	PARTS LIST
XX + .005	X .30	C. L. Landon	11/12	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		ENG	DATE	TITLE
		C. L. Landon	11/12	
MATERIAL		PROJ	DATE	NUMBER
		11/40	11/12	
FINISH		PRD	DATE	REV
		11/40	11/12	
NEXT HIGHER ASSY		SIZE CODE		
SCALE		DIST		
SHEET 1 OF 1		D I C 7008754-0-3		

PART NUMBER 7008754-0-3









TITLE	SHEET	SIZE	CODE	NUMBER	REV
H7420 POWER SUPPLY	2 OF 3	B	DD	H7420-0	J

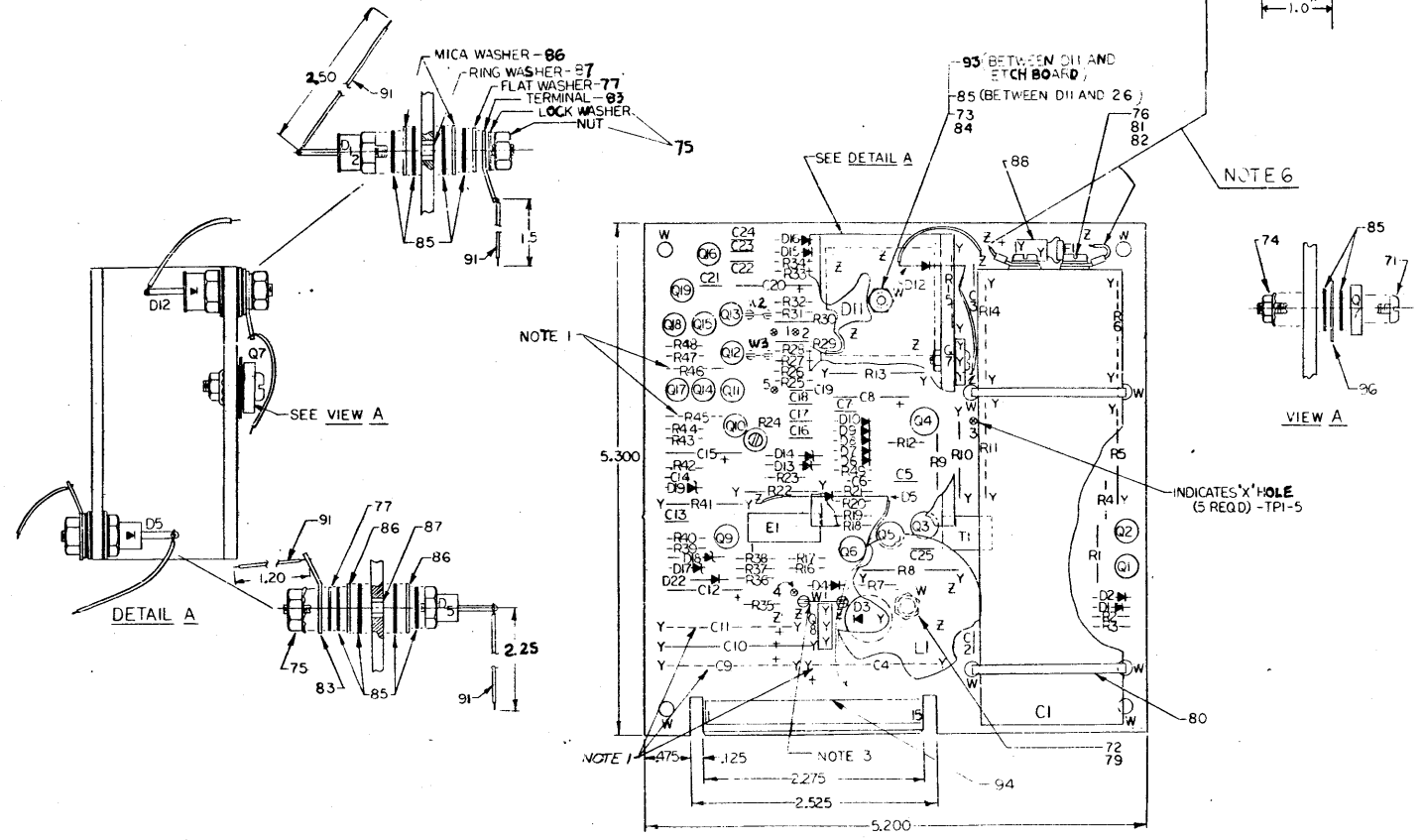




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- NOTES:**
1. R45, R46, C4, C9, C11 ARE NOT USED ON BASIC 5411086 BUT ARE RESERVED FOR PLANNED FUTURE MODULE VARIATIONS.
  2. \*\*\* TOTAL +15V AND +8V CURRENT NOT TO EXCEED 4.0 AMPERES.
  3. W1 (TEST JUMPER) MAYBE TEMPORARILY REMOVED WHILE TROUBLE-SHOOTING TO DETERMINE IF LOSS OF 15V IS DUE TO CROWBAR CIRCUITRY, BUT MUST BE IN THE BOARD FOR NORMAL OPERATION.
  4. ~~NON-ITEMIZED PARTS SUPPLIED WITH D12.~~
  - 4 YA VERSION DOES NOT CONTAIN +15VDC REG.

5. A) FOR STANDARD VERSION USE SHEETS 1, 2, 3 & 4 OF THIS DWG.  
B) FOR YA VERSION USE SHEETS 1, 2, & 3 OF THIS DWG.
6. WIRES MUST NOT EXTEND BEYOND THE DIMENSIONS OF THE BOARD.
7. JUMPERS (W2, W3) ARE 1/2" EACH OF ITEM #3.



REF	REF	X-Y COORDINATE	HOLE LOCATION	K CO	5411086-0-1	1
REF	REF		ASSY DRILLING HOLE LAYOUT		D-AH-5411086-0-1	2
REF	REF		MODULE ECO HISTORY		B-MH-5411086-0-1	3
1	1		ETCHED CIRCUIT BOARD		5011085	4
C	1	C2	CAPACITOR 56PF 100V 5%		1006012	5
4	4	L18, C17, C19, C21	CAPACITOR 330PF 100V 5%		1000023	6
3	5	C3, C13, C19, C22, C23	CAPACITOR .01uf 100V 20%		1001610 01	7
1	3	C6, C12, C15	CAPACITOR 2.2uf 35V 10%		1002431	8
2	2	C6, C25	CAPACITOR 18PF 100V 5%		1002608	9
1	1	C20	CAPACITOR 1.5uf 35V 10%		1009725	10
4	4	C5, C7, C14, C24	CAPACITOR .22uf 50V -20% +80%		1010274 01	11
0	1	C18	CAPACITOR 500uf 25V -10% +75%		1010509 01	12
1	1	C1	CAPACITOR 400uf 50V -10% +75%		1010951	13
1	2	D2, D19	DIODE 1N748A		1109122	14
0	1	D5	DIODE 1N2700		1100134	15
0	1	D3	DIODE M10338		1103341	16
7	8	D1, D6, D7, D8, D9, D15, D16, D22	DIODE D672		1105275	17
1	2	D18, D17	DIODE 1N4744		1105648	18
0	1	D4	DIODE 1N4004		1105796	19
0	1	D12	DIODE 1N3996		1109440	20
0	1	D18	DIODE 1N967A		1110068	21
2	2	D28, D31	DIODE MV5834-1 (LIGHT-EMITTING)		1110324	22
1	1	D11	DIODE BRIDGE 200V 20A		1110714	23
2	2	D13, D14	DIODE 1T12429		1110925	24
0	1	F1	FUSE PICO 5A		1205747	25
0	1		HEAT SINK		1211986	26
0	1	R23	RESISTOR 47 1/4W 5%		1300202	27
0	2	R7, R49	RESISTOR 100 1/4W 5%		1300229	28
0	1	R41	RESISTOR 100 1W 5%		1300232	29
1	3	R4, R12, R49	RESISTOR 220 1/4W 5%		1300271	30
0	1	R14	RESISTOR 220 2W 10%		1300278	31
0	1	R11	RESISTOR 680 2W 5%		1300349	32
2	2	R18, R20	RESISTOR 1K 1/4W 5%		1300365	33
0	1	R1	RESISTOR 1.5K 1/2W 5%		1300396	34
0	1	R10	RESISTOR 2.2K 1W 10%		1300420	35
1	1	R15	RESISTOR 3.3K 1W 10%		1300437	36
0	1	R3	RESISTOR 3.3K 1/4W 5%		1300439	37
2	2	R43, R47	RESISTOR 10K 1/4W 5%		1300479	38
0	1	R37	RESISTOR 10 1/4W 5%		1301317	39
2	3	R2, R44, R49	RESISTOR 750 1/4W 5%		1301401	40
0	1	R38	RESISTOR 680 1/4W 5%		1301424	41
0	1	R16	RESISTOR 22K 1/4W 5%		1301809	42
1	1	R13	RESISTOR 1K 2W 5%		1301952	43
0	1	R9	RESISTOR 27 1/2W 5%		1302253	44
2	2	R19, R21	RESISTOR 30K 1/4W 5%		1302394	45
0	1	R36	RESISTOR 511 1/4W 1%		1302411	46
0	1	R39	RESISTOR 909 1/4W 1%		1302685	47
1	1	R25	RESISTOR 3.16K 1/4W 1%		1303045	48
1	1	R8	RESISTOR 470 2W 5%		1303062	49
1	2	R17, R28	RESISTOR 1K 1/4W 1%		1303114	50
1	1	R31	RESISTOR 2.61K 1/4W 1%		1303303	51
0	1	R42	RESISTOR 10K 1/4W 1%		1303312	52
2	2	R33, R34	RESISTOR 5.11K 1/4W 1%		1304854	53
1	1	R30	RESISTOR 9.09K 1/4W 1%		1304855	54

**COMPONENT CHART - YA VERSION**

QTY	REF. DESIGNATION	ITEM
3	C19, C22, C23	7
1	C8	6
1	D19	14
7	D6, D7, D8, D9, D15, D16, D22	17
1	D10	18
1	R49	30
2	R44, R48	40
1	R28	50
4	Q3, Q5, Q10, Q19	63
4	Q11, Q12, Q13, Q16	66

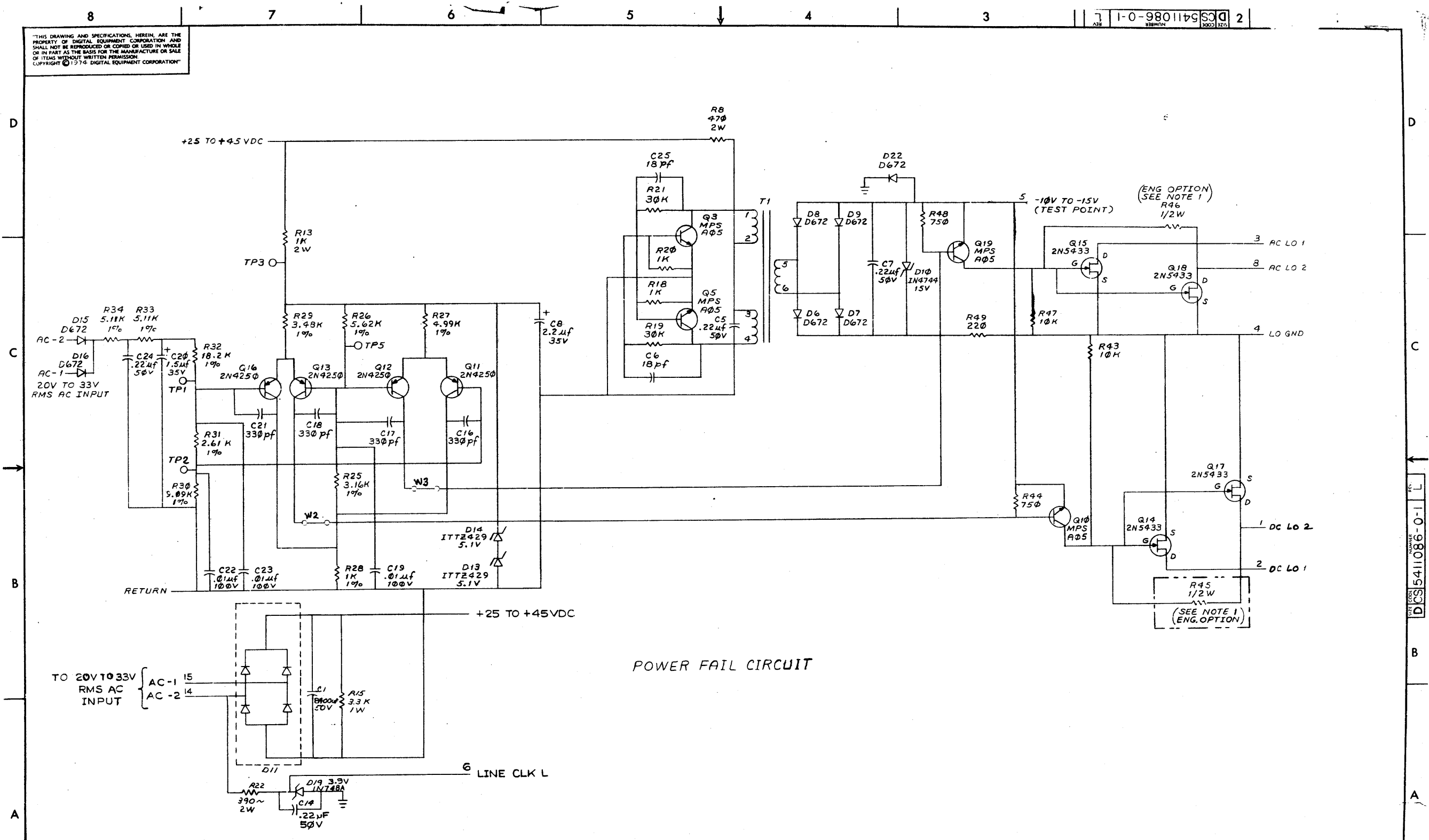
**REVISIONS**

REV	DATE	DESCRIPTION
1	7-29-77	CL BARON
2	8-1-77	A. BARON
3	8-1-77	5411086-010001
4	8-1-77	5411086-010002
5	8-1-77	5411086-010003
6	8-1-77	5411086-010004
7	8-1-77	5411086-010005
8	8-1-77	5411086-010006
9	8-1-77	5411086-010007
10	8-1-77	5411086-010008
11	8-1-77	5411086-010009
12	8-1-77	5411086-010010
13	8-1-77	5411086-010011
14	8-1-77	5411086-010012
15	8-1-77	5411086-010013
16	8-1-77	5411086-010014
17	8-1-77	5411086-010015
18	8-1-77	5411086-010016
19	8-1-77	5411086-010017
20	8-1-77	5411086-010018
21	8-1-77	5411086-010019
22	8-1-77	5411086-010020
23	8-1-77	5411086-010021
24	8-1-77	5411086-010022
25	8-1-77	5411086-010023
26	8-1-77	5411086-010024
27	8-1-77	5411086-010025
28	8-1-77	5411086-010026
29	8-1-77	5411086-010027
30	8-1-77	5411086-010028
31	8-1-77	5411086-010029
32	8-1-77	5411086-010030
33	8-1-77	5411086-010031
34	8-1-77	5411086-010032
35	8-1-77	5411086-010033
36	8-1-77	5411086-010034
37	8-1-77	5411086-010035
38	8-1-77	5411086-010036
39	8-1-77	5411086-010037
40	8-1-77	5411086-010038
41	8-1-77	5411086-010039
42	8-1-77	5411086-010040
43	8-1-77	5411086-010041
44	8-1-77	5411086-010042
45	8-1-77	5411086-010043
46	8-1-77	5411086-010044
47	8-1-77	5411086-010045
48	8-1-77	5411086-010046
49	8-1-77	5411086-010047
50	8-1-77	5411086-010048
51	8-1-77	5411086-010049
52	8-1-77	5411086-010050



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1-0-98814750 2



POWER FAIL CIRCUIT

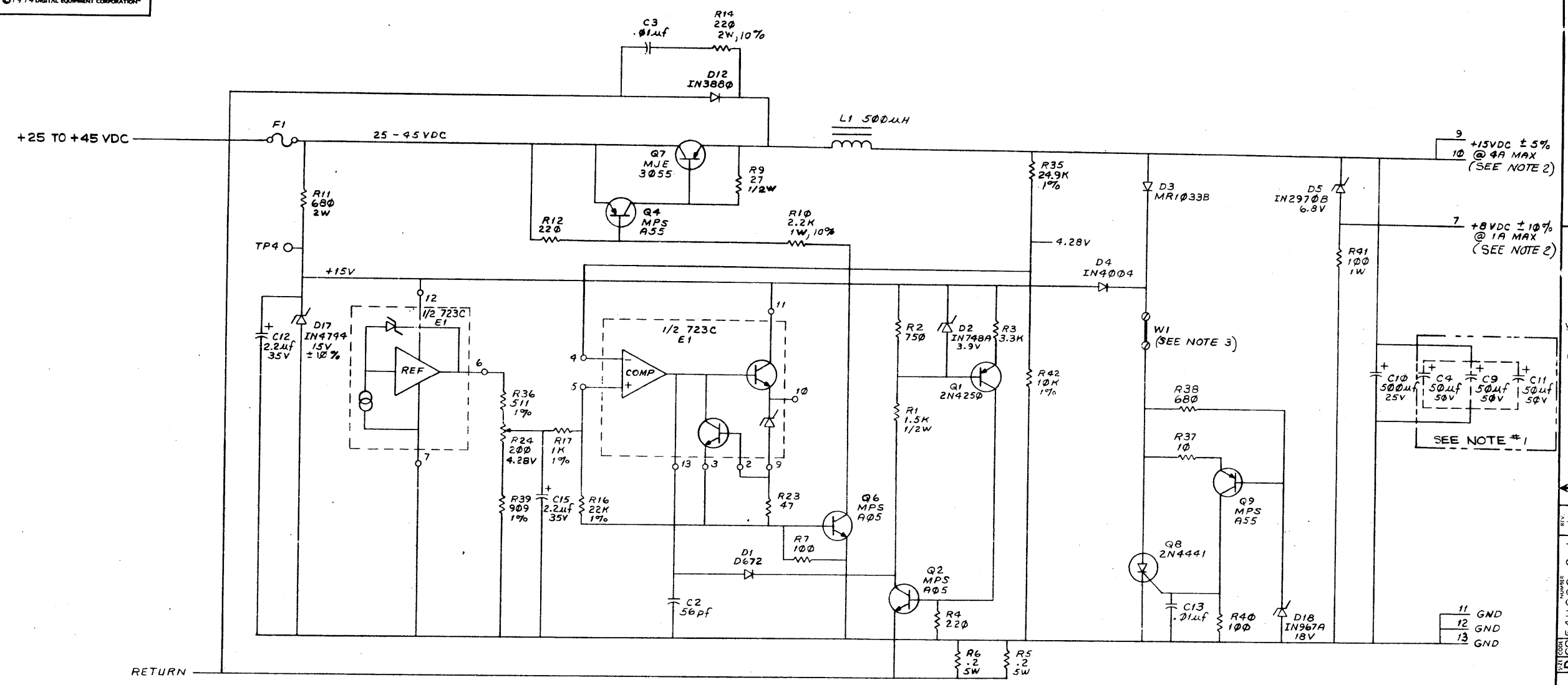
DCS 541086-0-1

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	PWR. LINE MONITOR/15V REG.	SIZE CODE	NUMBER	REV.
SCALE		SHEET	3 OF 4	L

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DCS 5411086-0-1 2



15V REGULATOR  
(SEE NOTE #4)

SEE NOTE #1

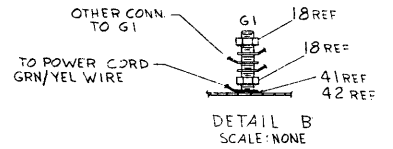
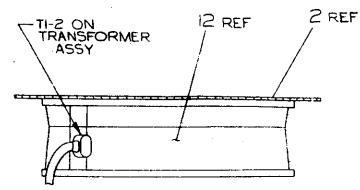
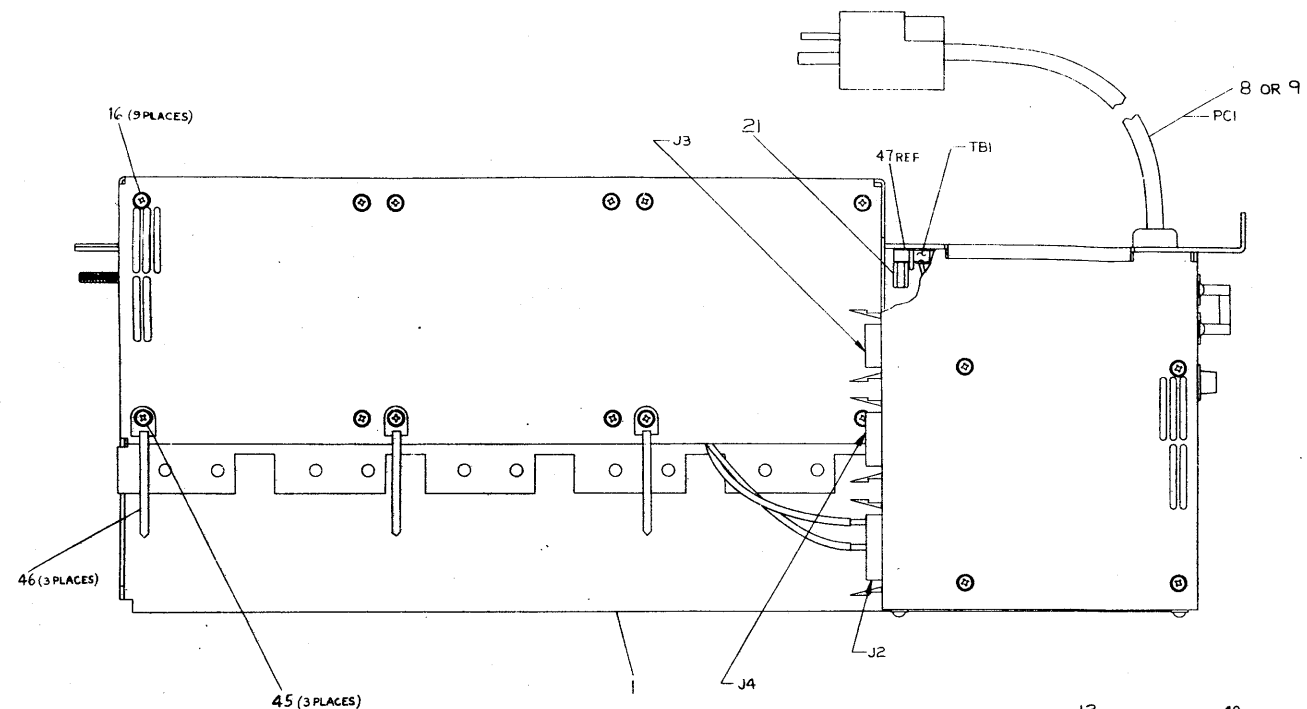
11 GND  
12 GND  
13 GND

REVISIONS		
CHK	CHANGE NO.	REV.

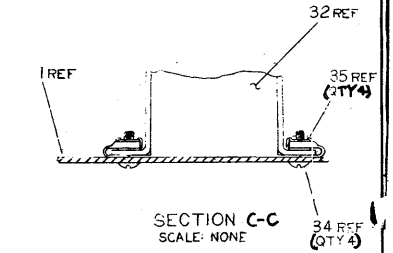
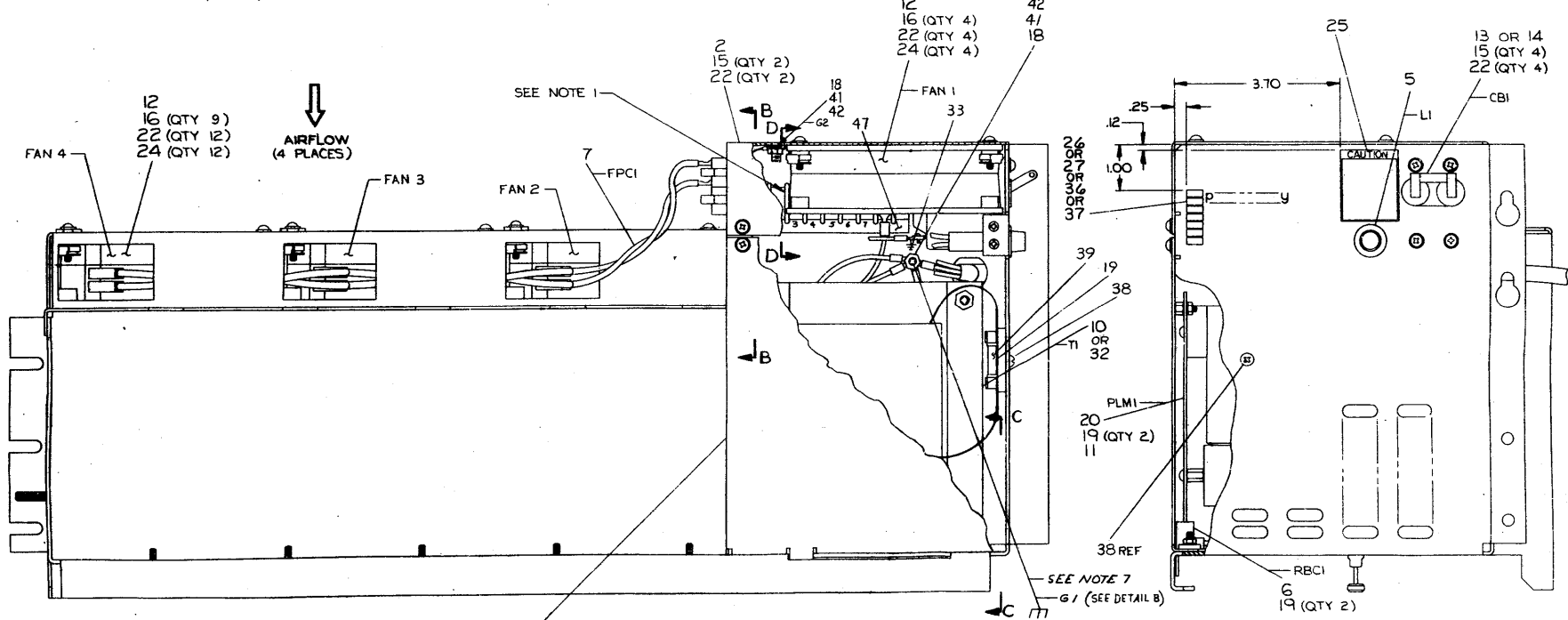
TITLE	PWR. LINE MONITOR/15V REG.	SIZE/CODE	NUMBER	REV.
SCALE	SHEET	OF	DIST.	

DCS 5411086-0-1

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- NOTES:
- AFTER TERMINAL BLOCK (PART OF TRANSFORMER ASSEMBLY) IS MOUNTED TO CHASSIS, CAPACITOR AND VARISTOR SHOULD BE BENT FORWARD TO ALLOW CLEARANCE FOR COVER.
  - REV. D- AND EARLIER TRANSFORMERS DO NOT HAVE THIS WIRE. H7420 E-F ONLY.
  - FILLER PANELS (D-1A-7413405-0-0) MAY BE USED IN UNFILLED REGULATOR SLOTS (REF).
  - CABLE TIE MOUNTS TO BE MOUNTED AFTER TRANSFORMER ASSEMBLY IS INSTALLED.
  - H7420-A-E ONLY
  - H7420 E-F ONLY
  - REMOVE PAINT MASK, APPLY CONDUCTIVE GREASE ITEM 42, PLACE ITEM 41, 8-32 EXT TOOTH WASHER NEXT TO CHASSIS BEFORE INSTALLING REMAINING HARDWARE. DO THIS AT G1 AND G2. MAKE SAFETY GROUND CONNECTIONS PER DETAIL B.



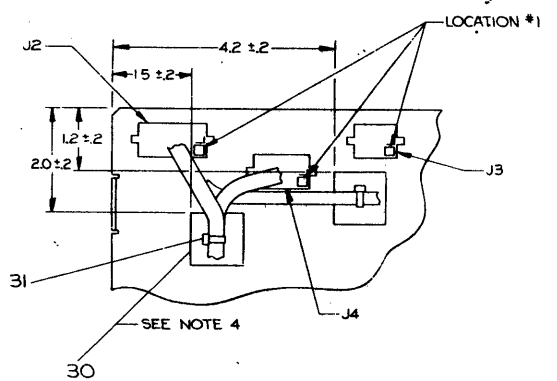
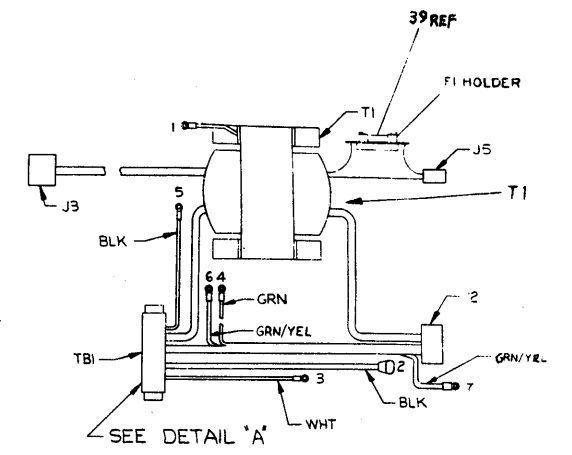
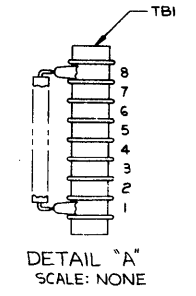
FIRST USED ON OPTION/MODEL		FOR PARTS LIST REFER TO A.P. H7420-L-0	
QTY.	DESCRIPTION	PART NO.	ITEM NO.
H7420			
DIMENSIONAL TOLERANCE		DATE 11/82	DATE 2/83
UNLESS OTHERWISE SPECIFIED		DATE 2/83	DATE 2/83
INCHES		DATE 2/83	DATE 2/83
MILLIMETERS		DATE 2/83	DATE 2/83
FINISH		DATE 2/83	DATE 2/83
MATERIAL		DATE 2/83	DATE 2/83
PRODUCTION		DATE 2/83	DATE 2/83
DRAWING		DATE 2/83	DATE 2/83
REVISION		DATE 2/83	DATE 2/83
APPROVED		DATE 2/83	DATE 2/83
CHECKED		DATE 2/83	DATE 2/83
DESIGNED		DATE 2/83	DATE 2/83
DRAWN		DATE 2/83	DATE 2/83
ENGR.		DATE 2/83	DATE 2/83
MGR.		DATE 2/83	DATE 2/83
TITLE		DATE 2/83	DATE 2/83
H7420		DATE 2/83	DATE 2/83
POWER SUPPLY		DATE 2/83	DATE 2/83
SCALE 1/1		DATE 2/83	DATE 2/83
SHEET 1 OF 2		DATE 2/83	DATE 2/83



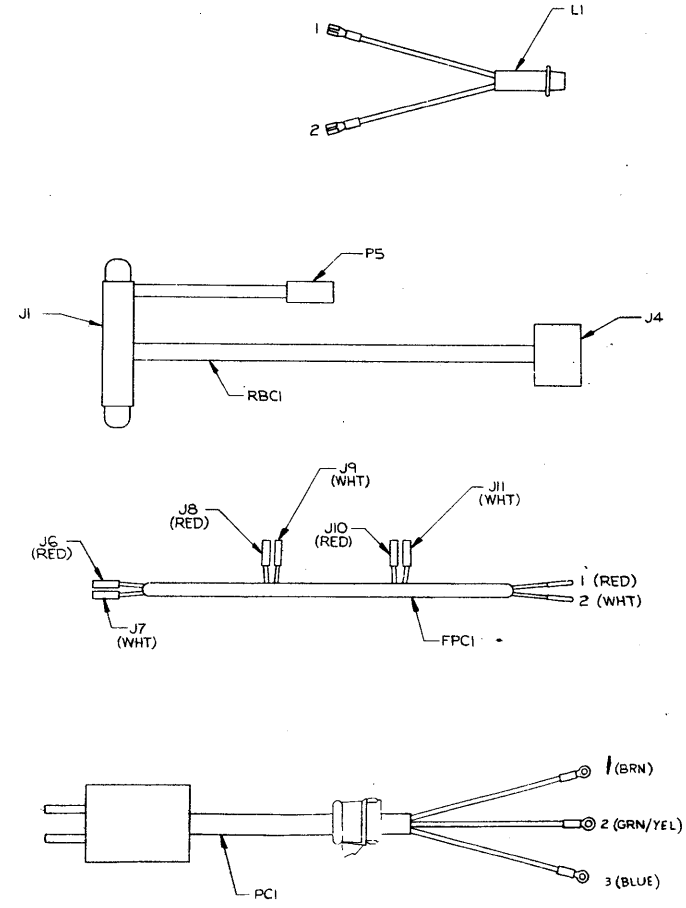
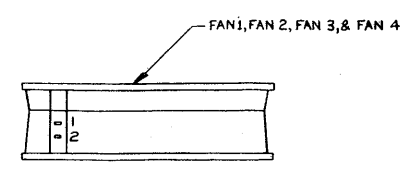
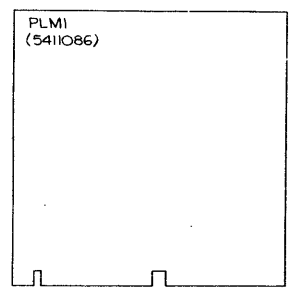
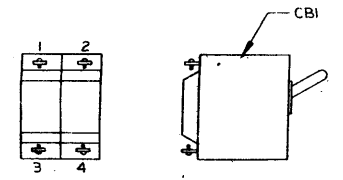
DO NOT SCALE DRAWING

WIRE TABLE					
ITEM NO	DESCRIPTION	FROM CONNECTION	TO CONNECTION	REMARKS	
10	14	GRN	T1-5	RBC1-P5	
14	GRN	T1-1	G1	SEE NOTE 2, 7	
14	BLK	T1-2	FAN1-E 2		
14	WHT	T1-3	CBI-1		
14	GRN	T1-4	G1	SEE NOTE 7	
10	14	BLK	T1-5	CBI-2	
5	22	BLK	L1-1	TBI-5	
5	22	BLK	L1-2	TBI-7	
7	18	RED	FPCI-J6	FAN 4-1	
		WHT	FPCI-J7	FAN 4-2	
		RED	FPCI-J8	FAN 3-1	
		WHT	FPCI-J9	FAN 3-2	
		RED	FPCI-J10	FAN 2-1	
		WHT	FPCI-J11	FAN 2-2	
		RED	FPCI-1	J2-3	
7	18	WHT	FPCI-2	J2-7	
8/9	14	BRN	PCI-1	CBI-4	
8/9	14	GRN/YEL	PCI-2	G1	SEE NOTE 7
8/9	14	BLU	PCI-3	CBI-3	
11	14	PLMI	RBC1-J1		
10	14	GRN/YEL	T1-6	G1	SEE NOTE 7
10	14	GRN/YEL	T1-7	G2	SEE NOTE 7

JUMPER TABLE						
ITEM NO	DESCRIPTION	FROM CONNECTION	TO CONNECTION	WITH CONNECTION	WITH CONNECTION	VARIATION
29	14	BLK	TBI-2		TBI-6	H7420E 1A
29	14	BLK	TBI-4		TBI-6	H7420E 1B



SECTION B-B  
SCALE: NONE



**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS

**PARTS LIST**

MADE BY R. THELLEN  
DATE 1/17/75  
ENG R. WOLF  
DATE 2/3/75

CHECKED P. CAPPABIANCA  
DATE 2/3/75  
PROD J. BORENSTEIN  
DATE 2/3/75

SECTION 1  
ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	E-IA-7010501-0-0	CHASSIS (H7420)	1 1
2	D-MD-7412459-0-0	COVER, CONTROL BOX	1 1
3	D-IA-7412461-0-0	BRKT, P.C. BOARD MTG.	1 1
4	<del>C-IA-7413125-0-0</del>	<del>PLATE, ADAPTER (H7420)</del>	
5	C-IA-7010730-0-0	POWER INDICATOR ASSEMBLY	1 1
6	D-IA-7010729-0-0	CABLE, REGULATOR BOARD	1 1
7	D-IA-7010728-0-0	CABLE, FAN POWER	1 1
8	C-IA-7010727-1-0	POWER CORD ASSY (120V)	-
9	C-IA-7010727-2-0	POWER CORD ASSY (240V)	-
10	C-IA-7010727-5-0	POWER CORD ASSY (120V)	1 1
11	D-CS-5411086-0-1	POWER LINE MONITOR	1 1
12	1209403-01	FAN	4 4
13	<del>1210191-06</del>	<del>CIRCUIT BREAKER (20A)</del>	
14	<del>1210191-03</del>	<del>CIRCUIT BREAKER (15A)</del>	
15	9006020-01	SCR, PHL PAN HD #6-32 x .25	8 8
16	9006025-01	SCR, PHL PAN HD #6-32 x .62	13 13
17	<del>9006565-00</del>	<del>NUT, KEP #10-32</del>	
18	9006563-00	NUT, KEP #8-32	3 3
19	9006185-00	NUT, KEP #6-32	5 5
20	9006840-00	SPACER, #6-32 x .19	2 2
21	9006851-00	SPACER, #6-32 x .50	2 2
22	9006833-00	WASHER, INT. TOOTH LOCK #6	24 24

TITLE POWER SUPPLY H7420

ASSY NO. E-UA-H7420-0-0

SIZE CODE A PL

NUMBER H7420-0-0

SHEET 1 OF 3

DIST.

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

**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS

**PARTS LIST**

MADE BY R. THELLEN  
DATE 1/17/75  
ENG R. WOLF  
DATE 2/3/75

CHECKED P. CAPPABIANCA  
DATE 2/3/75  
PROD J. BORENSTEIN  
DATE 2/3/75

SECTION 1  
ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
23	<del>9006509-00</del>	<del>RELIEF, STRAIN</del>	
24	9009165-00	CLIP, FAN MOUNTING	16 16
25	A-DC-7413184-0-0	POWER SUPPLY DECAL (H7420)	1 1
26	7420763-0-0	POWER SUPPLY DECAL (H7420H)	1 1
27	<del>A-DC-7413185-0-0</del>	<del>POWER SUPPLY DECAL (H7420F)</del>	
28	<del>9007969-00</del>	<del>TERMINAL, JACK CONNECT</del>	
29	7014353	JUMPER	2 1
30	9008264-00	MOUNT, CABLE TIE, ADHESIVE	2 2
31	9007880-00	TIE, CABLE	2 2
32	D-IA-7011211-0-0	TRANSFORMER ASSY	1 1
33	3612680-01	SAFETY GROUND DECAL	1 1
34	9006074-3	SCR, PH. HD. TRUSS 10x32x5/8	4 4
35	9006586	TINNERMAN SPEED NUT 10-32	4 4
36	A-DC-7413966-0-0	POWER SUPPLY DECAL (H7420A)	1 -
37	A-DC-7413967-0-0	POWER SUPPLY DECAL (H7420B)	- 1
38	9006021-1	SCR. PAN HD. 6-32x5/16	1 1
39	9007224	FUSE 7 AMP SLOW BLOW	1 1
40	<del>9009768-01</del>	<del>RELIEF, STRAIN</del>	
41	9008072	8-32 WASHER EXT. TOOTH	1 1
42	4901173-01	CONDUCTIVE GREASE	A/R
43	1212124-01	CIRCUIT BREAKER (20A) SCREW TERM	1 -
44	1212124-02	CIRCUIT BREAKER (15A) SCREW TERM	- 1

TITLE POWER SUPPLY H7420

ASSY NO. E-UA-H7420-0-0

SIZE CODE A PL

NUMBER H7420-0-0

SHEET 2 OF 3

DIST.

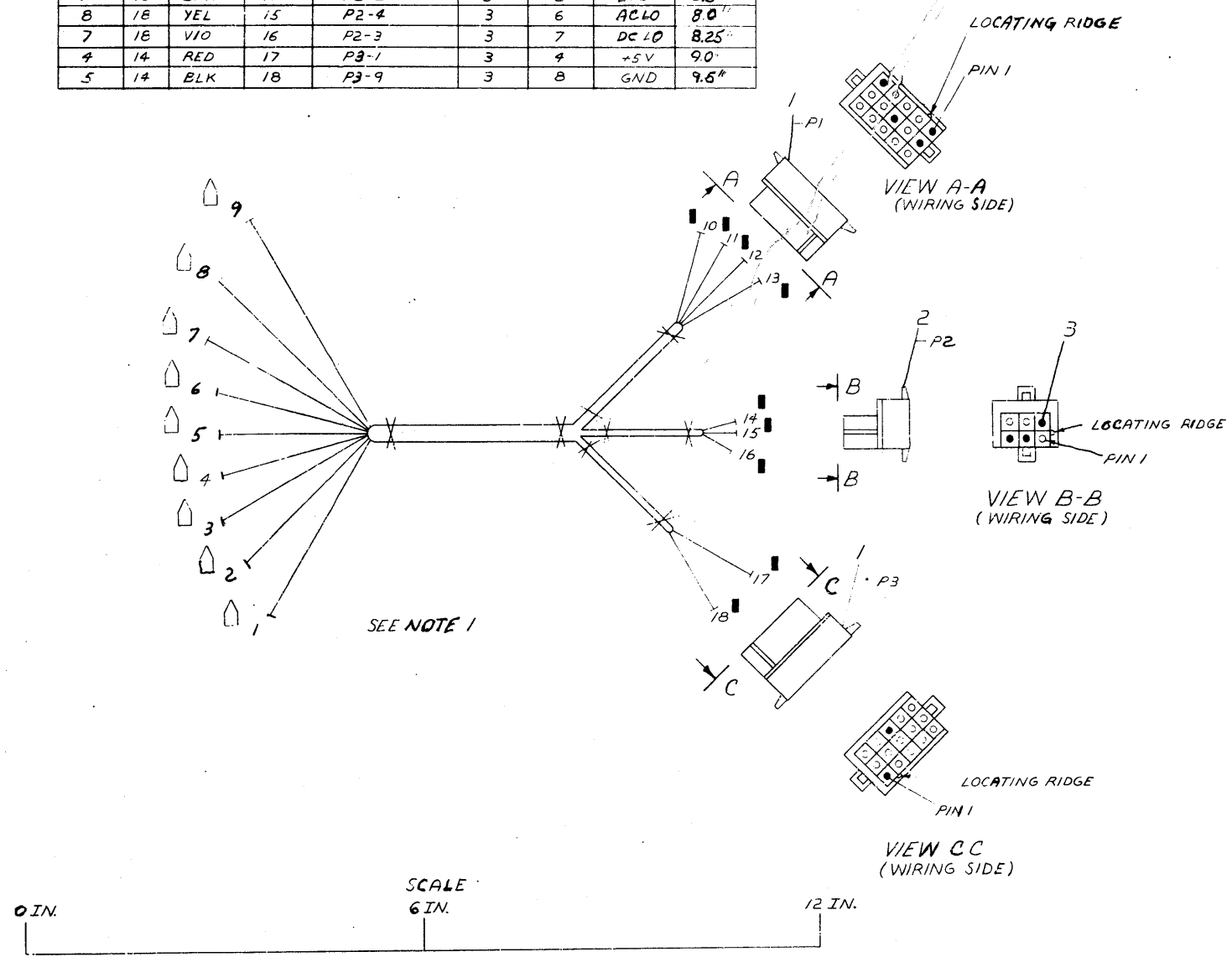
DEC FORM DEC 16-(325)-1031-N870  
DRA 110



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ITEM NO	DESCRIPTION			FROM		TO POINT	SIGNAL	WIRE LENGTHS
	AWG	COLOR	POINT	CONNECTION	WITH			
6	14	BLU	10	P1-13	3	1	-15V	10.0"
5	14	BLK	11	P1-8	3	9	GND	10.5"
4	14	RED	12	P1-1	3	5	-5V	9.0"
9	18	GRY	13	P1-2	3	3	+15V	9.25"
10	18	BRN	14	P2-2	3	2	LTC	8.5"
8	18	YEL	15	P2-4	3	6	ACL0	8.0"
7	18	VIO	16	P2-3	3	7	DC L0	8.25"
4	14	RED	17	P3-1	3	4	+5V	9.0"
5	14	BLK	18	P3-9	3	8	GND	9.5"

NOTES:  
 1. INSULATION AT POINT 1 THRU 9 SHOULD BE STRIPPED BACK 1/8 INCHES AND WIRES SOLDER TINNED.



QTY.	DESCRIPTION	PART NO.	ITEM NO.
X 8	TIE WRAP	9007031	11
175 FT	WIRE, 18 AWG BRN	9107360-11	10
1083 FT	WIRE, 18 AWG GRY	9107360-88	9
266 FT	WIRE, 18 AWG YEL	9107360-44	8
1075 FT	WIRE, 18 AWG VIO	9107360-77	7
1.0 FT	WIRE, 14 AWG BLU	9107370-66	6
175 FT	WIRE, 14 AWG BLK	9107370-00	5
15 FT	WIRE, 14 AWG RED	9107370-32	4
9	PIN, MALE	1209378-01	3
1	HOUSING, CONN, 6 PIN	1209351-06	2
2	HOUSING, CONN, 15 PIN	1209351-15	1

FIRST USED ON QTY. 11/40	SYN.	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DRN. 3/2/74	DATE 5-5-74	digital EQUIPMENT CORPORATION		
TOLERANCES	CHK'D.	DATE	TITLE		
DECIMALS .005	ENG.	DATE	11/40 CPU POWER HARNESS		
ANGLES .030	PROJ. ENG.	DATE	NUMBER		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY 1	PROD.	DATE	DIA 7009994-0-0		
MATERIAL	NEXT HIGHER ASSY.		SIZE	REV.	
SEE PARTS LIST	D-UA-11/40-C-0		1	8	
FINISH	SCALE	SHEET	DIST.		
	1 OF 1				

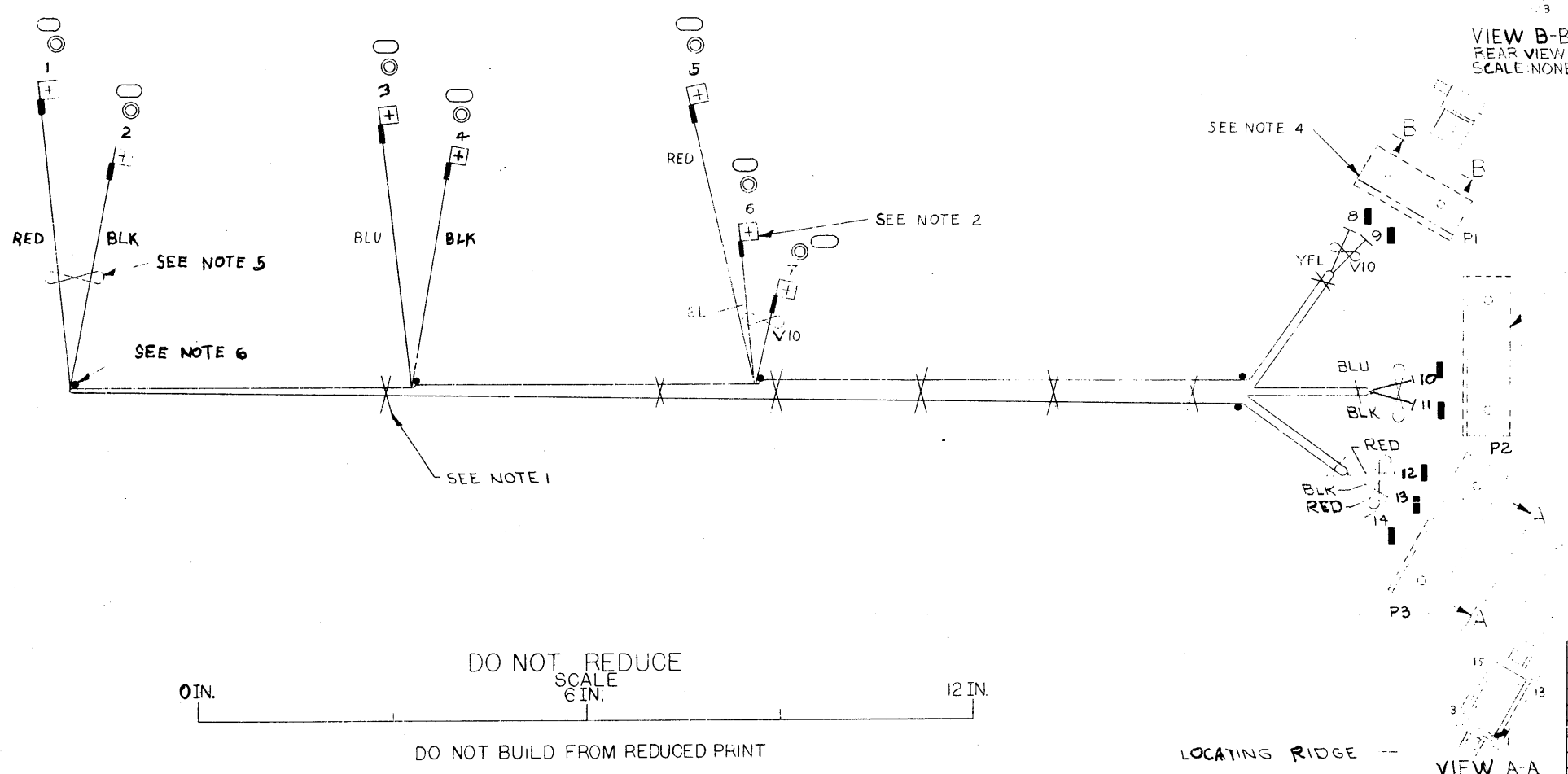
REVISIONS	CHANGE NO.	REV.	DATE	BY
ORIGINAL				
CHK.				

DIA 7009994-0-0 F.

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WIRE LIST										
ITEM NO	DESCRIPTION	COLOR	POINT	FROM			TO			SIGNAL
				CONNECTION	WITH	POINT	CONNECTION	WITH		
4	14 TWP	RED	1	---	8,9	12	P3-1	3	+5V	
		BLK	2	---	8,9	13	P3-8	3	GND	
5	14 TWP	BLU	3	---	8,9	10	P2-13	3	+5V	
		BLK	4	---	8,9	11	P2-6	3	GND	
6	14	RED	5	---	8,9	14	P3-4	3	+5V	
7	18 TWP	YEL	6	---	8,9	8	P1-4	3	AC LO	
		VIO	7	---	8,9	9	P1-3	3	DC LO	

- NOTES:**
- USE TIE WRAPS (X) ITEM 10 APPROXIMATELY EVERY THREE (3) INCHES WHEN NECESSARY AND AT EVERY BREAK-OUT POINT.
  - ATTACH MALE FASTON DEC # (9008219-0) WITH #4 WOOD SCREWS (7 PLACES).
  - USE CONN. BRKT C-MD-9305761-HIS-0 MOUNT WITH #6 WOOD SCREWS. USE MATING CONN. 1209350-15
  - USE CONN. BRKT C-MD-9305761-H6-0 MOUNT WITH #6 WOOD SCREWS. USE MATING CONN. 1209350-06
  - AT POINTS 1-7 UNTWIST WIRES BACK TO NAIL
  - DOT (•) DENOTES NAIL LOCATIONS FOR ASSEMBLY USE ONLY. COVER NAILS WITH SHRINK TUBING TO PREVENT CUTTING HARNESS.



SYM	QTY	DESCRIPTION	PART NO.	UNIT
1	A/R	WRAP TIE	9007031	10
2	A/R	TUBING, SHRINK	9107305 02	4
3	A/R	CONN, SOLDERLESS	9009262 0	8
4	A/R	WIRE #18 TWP YEL/VIO	9107430 47	7
5	A/R	WIRE #14 AWG RED	9107370 22	6
6	A/R	WIRE #14 TWP BLK/BLU	9107440 06	5
7	A/R	WIRE #14 TWP BLK/RED	9107440 02	4
8	7	PIN, MALE	1209351 01	3
9	2	HOUSING CONN. 15 PIN	1209351 15	2
10	1	HOUSING CONN. 6 PIN	1209351 06	1

FIRST USED ON OPTION MODEL		PARTS LIST	
MF11-L			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DRN: <i>[Signature]</i> DATE: 7/2/77	digital EQUIPMENT CORPORATION	
TOLERANCES	CHK'D: <i>[Signature]</i> DATE: 7/2/77	TITLE: MF11-L 1ST MEMORY (POWER HARNESS)	
DECIMALS: .005	ANGLES: 0 30'	EMP: <i>[Signature]</i> DATE: 7/2/77	SIZE CODE: D 1A
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY 1	PROC: <i>[Signature]</i> DATE: 7/2/77	NUMBER: 7009565-0-0	
MATERIAL	NEXT HIGHER ASSY:	REV: A	
SEP PARTS LIST	SCALE:	SHEET 1 OF 1	
FINISH	SHEET 1 OF 1	DIST: 1	

**CAUTION - DRAWING SIZE AND SCALE REDUCED FOR MICROFILM NOT TO BE USED FOR PRODUCTION**

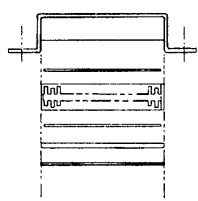
REV	DATE	DESCRIPTION
1	7/2/77	ISSUED FOR PRODUCTION
2	7/2/77	REVISED

D 1A 7009565-0-0

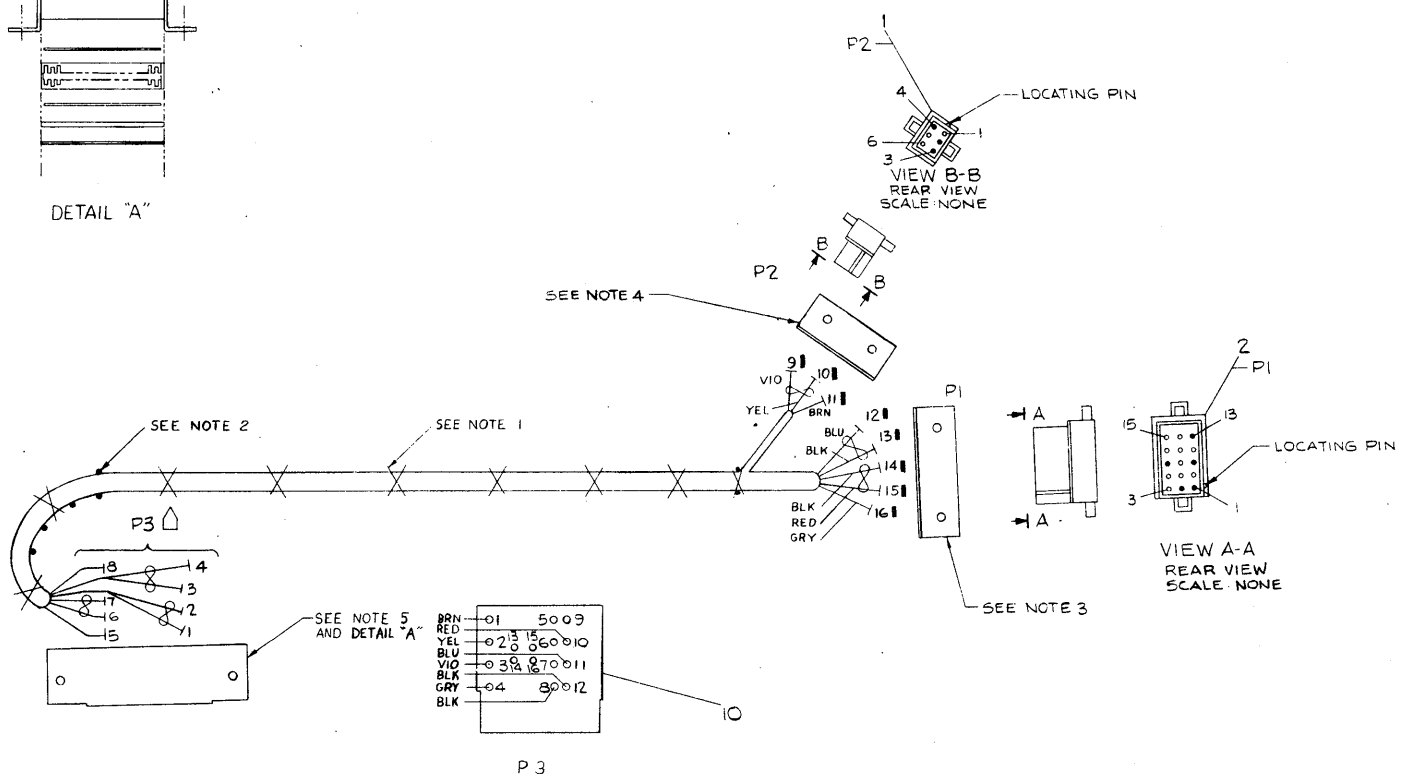


ITEM NO.	DESCRIPTION	FROM				TO				SIGNAL
		AWG	COLOR	POINT	CONNECTION	TERM	POINT	CONNECTION	TERM	
5	14 RED	3	P3-10	SOLD	15	P1-1	3	+5V		
9	14 TWP BLK	4	P3-8	SOLD	14	P1-7	3	GND		
9	14 GRY	5	P3-4	SOLD	16	P1-2	3	+5V		
6	14 BLK	1	P3-12	SOLD	13	P1-9	3	GND		
8	18 TWP BLU	2	P3-11	SOLD	12	P1-13	3	-15V		
8	18 BRN	8	P3-1	SOLD	11	P2-2	3	LTc		
7	18 TWP VIO	6	P3-3	SOLD	9	P2-3	3	DcLo		
7	18 TWP YEL	7	P3-2	SOLD	10	P2-4	3	AcLo		
11	22 -	-	P3-13	SOLD	-	P3-14	SOLD	DcLo		
11	22 -	-	P3-15	SOLD	-	P3-16	SOLD	AcLo		

- NOTES:**
- USE TIE WRAPS (X) ITEM #4 APPROXIMATELY EVERY THREE (3) INCHES WHEN NECESSARY AND AT EVERY BREAKOUT POINT.
  - DOT (•) INDICATES NAIL LOCATIONS FOR ASSEMBLY USE ONLY. COVER NAILS WITH SHRINK TUBING TO PREVENT CUTTING HARNESS.
  - USE CONN BRKT C-MD-9305761-H15-0 MOUNT WITH WOOD SCREWS USE MATING CONN 1209350-15.
  - USE CONN BRKT C-MD-9305761-H6-0 MOUNT WITH WOOD SCREWS USE MATING CONN 1209350-06.
  - USE CONN HOLD DOWN B-MD-9305767-0-0 WITH PLATE B-MD-9305767-0-1, USE TAPE DEC 900B734 & CONN HB07 DEC (1209123) REMOVE PINS & FLANGES AS SHOWN IN DETAIL "A". MOUNT WITH WOOD SCREWS.



DETAIL "A"



BRN	01	5009
RED	02	360010
YEL	03	360010
BLU	03	360010
VIO	03	360011
BLK	04	360011
GRY	04	360012
BLK	04	360012

SCALE 1/16 IN. = 12 IN.  
DO NOT REDUCE  
DO NOT BUILD FROM REDUCED PRINT

SYMBOL	DESCRIPTION	QTY	PART NO.	ITEM NO.
A/R	BUSS WIRE #22 AWG		9107560-01	11
I	POWER CONN		6772	10
A/R	WIRE #14 AWG GRY		9107410-05	9
A/R	WIRE #18 AWG BRN		9107360-11	8
A/R	WIRE #18 TWP YEL/VIO		9107430-47	7
A/R	WIRE #14 TWP BLK/BLU		9107440-06	6
A/R	WIRE #14 TWP BLK/RED		9107440-02	5
X	A/R WRAP TIE		9007031	4
I	S PIN MALE		1209378-00	3
I	HOUSING CONN 15 PIN		1209351-15	2
SYN	HOUSING CONN 6 PIN		1209351-06	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES	DECIMALS .010 .015 .030 .050 .100 .150 .300 .500 .750 1.000	ANGLES 1/2° 1° 1 1/2° 2° 3° 4° 5° 6° 8° 10° 15° 20° 25° 30° 45° 60° 90°	DATE	TITLE
REMOVE BURRS AND BREAK SHARP CORNERS. MAINTAIN QUALITY.	FINISH	MATERIAL	SCALE 1/16" = 12"	SHEET 1 OF 1
SEE PARTS LIST	7009562-0-0	7009562-0-0	7009562-0-0	7009562-0-0