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# FIELD MAINTENANCE PRINT SET

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MP00635	RLV11
MP00347	RL01 DISK DRIVE
A-PL-H9610-0-0	CABINET (H9610)
D-IA-7016462-0-0	CABLE, RL01/MNC
MP00596	MNCAG
MP00698	RL02 DISK DRIVE
MP00754	LA38-HA UNIT ASSY

UNIT VARIATIONS COVERED BY THIS PRINT SET
MDL23-AA
MDL23-AB
MDL23-AC
MDL23-AD
MDL23-AE
MDL23-AF
MDL23-BA
MDL23-BB
MDL23-BC
MDL23-BD
MDL23-BE
MDL23-BF
MDL23-CA
MDL23-CB
MDL23-CC
MDL23-CD
MDL23-CE
MDL23-CF

# MDL23

## Field Maintenance Print Set

### Digital Equipment Corporation

PRINT SET ORDER NO. MP01074

<b>REVISIONS</b>	REV.		USED ON OPTION/MODEL	MDL23	DRN. <i>Sigma</i>	DATE 7 80		TITLE: MDL23 FIELD MAINTENANCE PRINT SET		
	CHG. NO.				CHK'D J.M. HUSON	DATE 30 80				
	DATE				PROJ. ENG. <i>ACF</i>	DATE 3 JUN 80				
			SHEET 1 OF 2		FIELD SERV. St. Wryta	DATE 23 JUL 80	SIZE <b>B</b>	CODE <b>TC</b>	NUMBER MDL23-0-1	REV.

REV. NUMBER MDL23-0-1 SIZE CODE B TC

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MP00663  
MP00734  
MP00735  
D-IA-7015790-0-0  
MPO0616  
B-PL-MDL23-0-2

LA120- UNIT ASSY  
FIELD MAINT. PRINT SET KDF11-A  
FIELD MAINT. PRINT SET KEF11-A  
CABLE, CONSOLE INTERFACE (1700211)  
871 POWER CONTROLLER  
MDL23 SHIP LIST

TITLE	MDL23 FIELD MAINTENANCE PRINT SET	SHEET 2 OF 2	SIZE CODE BT	NUMBER MDL23-0-1	REV
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MR


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UNIT VARIATIONS	
VAR	TITLE
MNC11-AA	MNC11 UNIT ASSY
MNC11-BA	MNC11 UNIT ASSY
MNC11-BC	MNC11 UNIT ASSY
MNC11-BD	MNC11 UNIT ASSY
MNC11-CA	MNC11 UNIT ASSY
MNC11-CC	MNC11 UNIT ASSY
MNC11-CD	MNC11 UNIT ASSY
MNC11-DA	MNC11 UNIT ASSY
MNC11-BJ	MNC11 UNIT ASSY
MNCII-FA	MNCII UNIT ASSY (II/23) 120V RXV2I
MNCII-FB	MNCII UNIT ASSY (II/23) 240V RXV2I
MNCII-FC	MNCII UNIT ASSY (II/23 64KW) 120V RLVII
MNCII-FD	MNCII UNIT ASSY (II/23 64KW) 240V RLVII
MNCII-EA	MNCII SYSTEM 120V VT105 MA RX02M-MA
MNCII-ED	MNCII SYSTEM 240V VT105 MB RX02M-MD
MNCII-EJ	MNCII SYSTEM (MNCII-ED + MNCIT-AB)

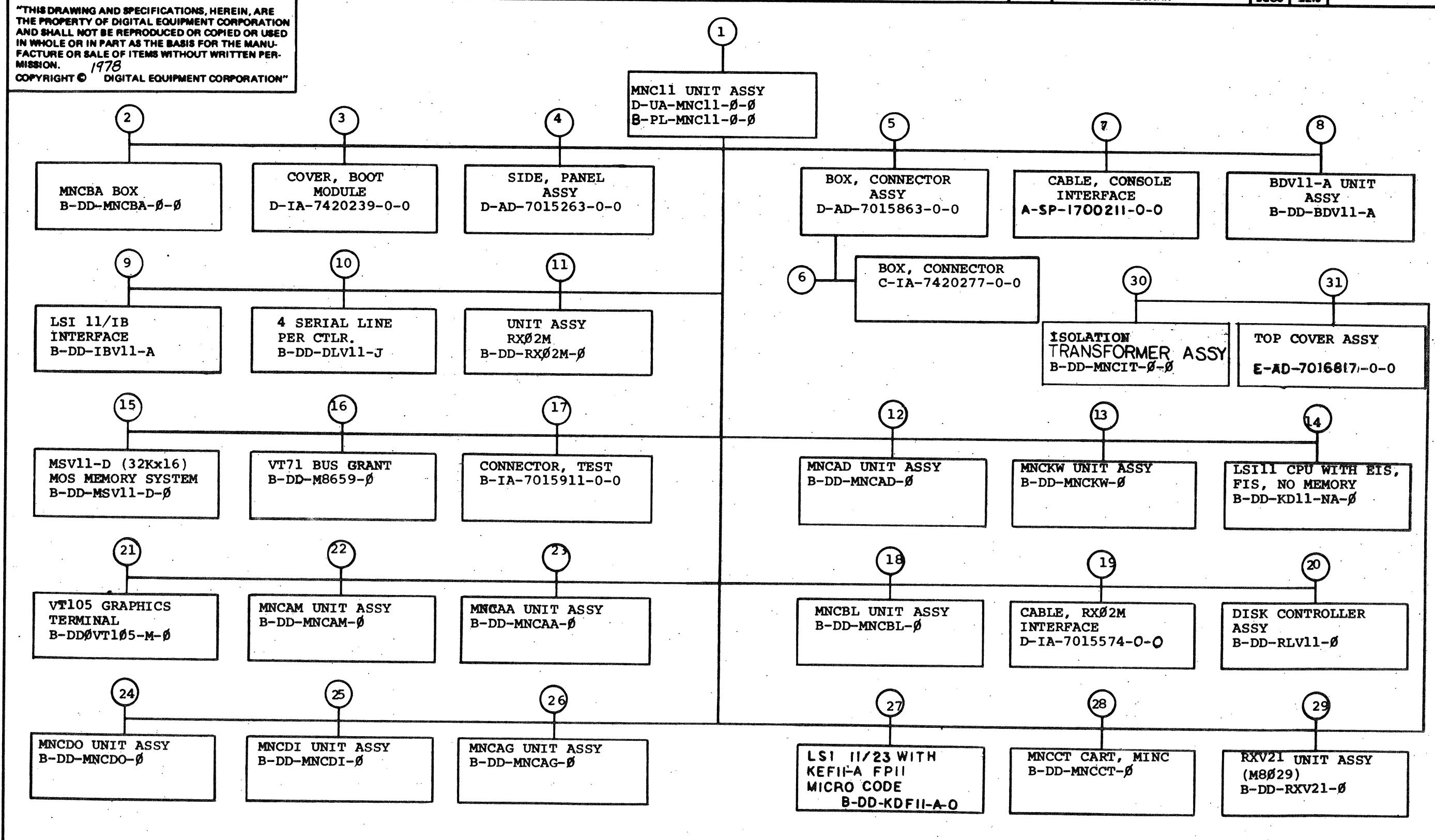
REVISIONS		CHK	CHANGE NO.	REV.
	RDP	MNC11	MRO01	A
	JH	MNC11	MRO03	B
	JH	MNC11	MRO04	C
	JH	MNC11	MRO05	D

USED ON OPTION/MODEL		DRN.	DATE	TITLE		
MNC11		G. Nowles	13-JUL-78	MNC11 UNIT ASSY		
		CHK'D.	DATE			
		J. Huson	14 July 78			
		PROJ. ENG.	DATE	SIZE	CODE	NUMBER
		A. P. H.	19 July 78	B	DD	MNC11-Ø
		PROD.	DATE	REV		
SHEET 1 OF 5		Bob Coole	7 July 78	D		
				DIST.		

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MR



TITLE	MNC11 UNIT ASSY	SHEET 2 OF 5	SIZE CODE	NUMBER	REV
			B DD	MNC11-0	-D

MR



MR

FIND NO.	DRAWING NO.	DESCRIPTION	TYPE	FIND NO.	DRAWING NO.	DESCRIPTION	TYPE
10	B-DD-DLV11-J	4 SERIAL LINE PER CTLR.		15	B-DD-MSV11-Ø-Ø	MSV11-D (32Kx16) MOS MEMORY SYSTEM	E/M
11	B-DD-RXØ2M-Ø	UNIT ASSY RXØ2M	E/M	16	B-DDØM8659-Ø	VT71 BUS GRANT	E/M
12	B-DD-MNCAD-Ø	MNCAD UNIT ASSY	E/M	17	B-IA-7015911-0-0 A-DC-7409873-2-0	CONNECTOR, TEST DECAL, PWR CONNECTOR	E/M M
13	B-DD-MNCKW-Ø	MNCKW UNIT ASSY	E/M	18	B-DD-MNCBL-Ø	MNCBL UNIT ASSY	E/M
14	B-DD-KD11-NA-Ø	LSI 11 CPU WITH EIS, FIS, NO MEMORY	E/M	19	D-IA-7015574-0-0 A-DC-7409872-2-0	CABLE, RXØ2M INTERFACE DECALS, PWR HARNESS	E/M M

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



TITLE MNCII UNIT ASSY

SHEET 4 OF 5

SIZE B CODE DD

NUMBER MNCII-Ø

REV D

DRB 108A

MR

MR

FIND NO.	DRAWING NO.	DESCRIPTION	TYPE	FIND NO.	DRAWING NO.	DESCRIPTION	TYPE
				25	B-DD-MNCDI-Ø	MNCDI UNIT ASSY	E/M
20	B-DD-RLV11-Ø	DISK CONTROLLER ASSY	E/M				
				26	B-DD-MNCAG-Ø	MNCAG UNIT ASSY	E/M
21	B-DD-VT1Ø5-M-Ø	VT1Ø5 GRAPHICS TERMINAL	E/M				
				27	B-DD-KDF11-A-0	LSI 11/23 WITH KEF11A FPII MICRO CODE.	
22	B-DD-MNCAM-Ø	MNCAM UNIT ASSY	E/M				
				28	B-DD-MNCCT-Ø	MNCCT CART, MINC	E/M
23	B-DD-MNCAA-Ø	MNCAA UNIT ASSY	E/M				
				29	B-DD-RXV21-Ø	RXV21 UNIT ASSY	E/M
24	B-DD-MNCDO-Ø-Ø	MNCDO UNIT ASSY	E/M	30	B-DD-MNCIT-Ø-Ø	ISOLATION TRANSFORMER ASSY	E/M
				31	E-AD-7016817-0-0	TOP COVER ASSY	M

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



TITLE MNC11 UNIT ASSY

SHEET 5 OF 5 SIZE CODE B DD

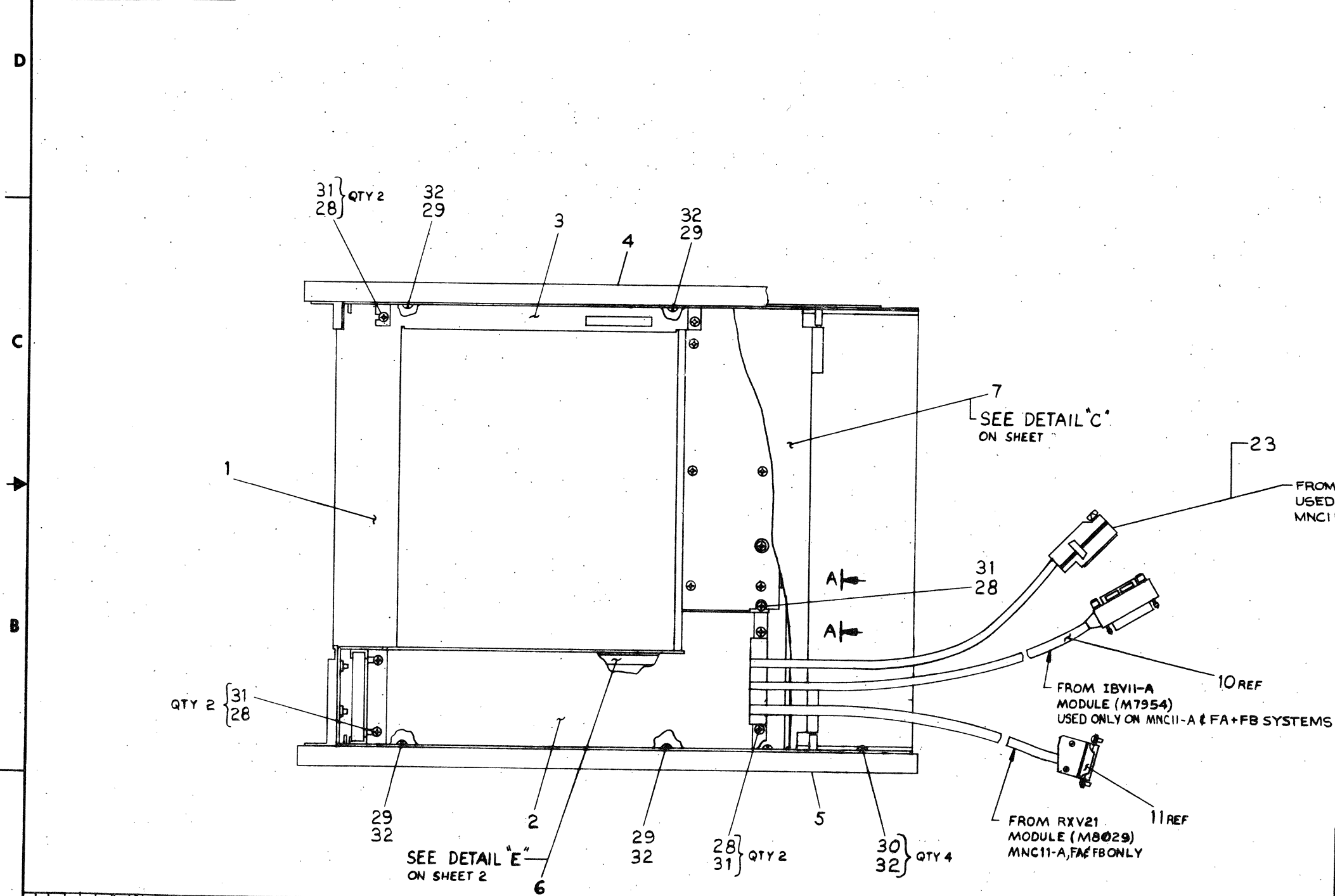
NUMBER MNC11-Ø

REV D

MR

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**NOTES:**  
 1. TO CHANGE LINE VOLTAGE SETTING REMOVE SWITCH PLATE AND SET SWITCH TO VOLTAGE SETTING DESIRED. REPLACE SWITCH PLATE TO INDICATE PROPER VOLTAGE SELECTED. (MNC11-AB UNIT & MNC11D UNIT WHEN USED ON 230V SYSTEMS).  
 2. ITEM 59647 WILL BE USED WITH BD, BJ, CD, ED & EJ SYSTEM TO REPLACE ITEM #35.



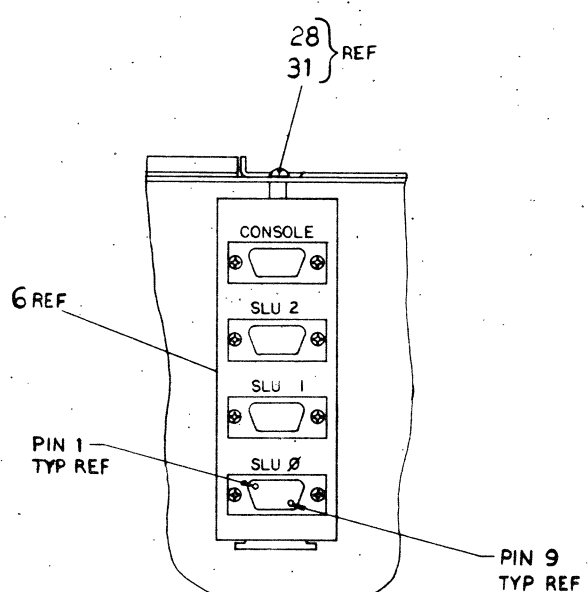
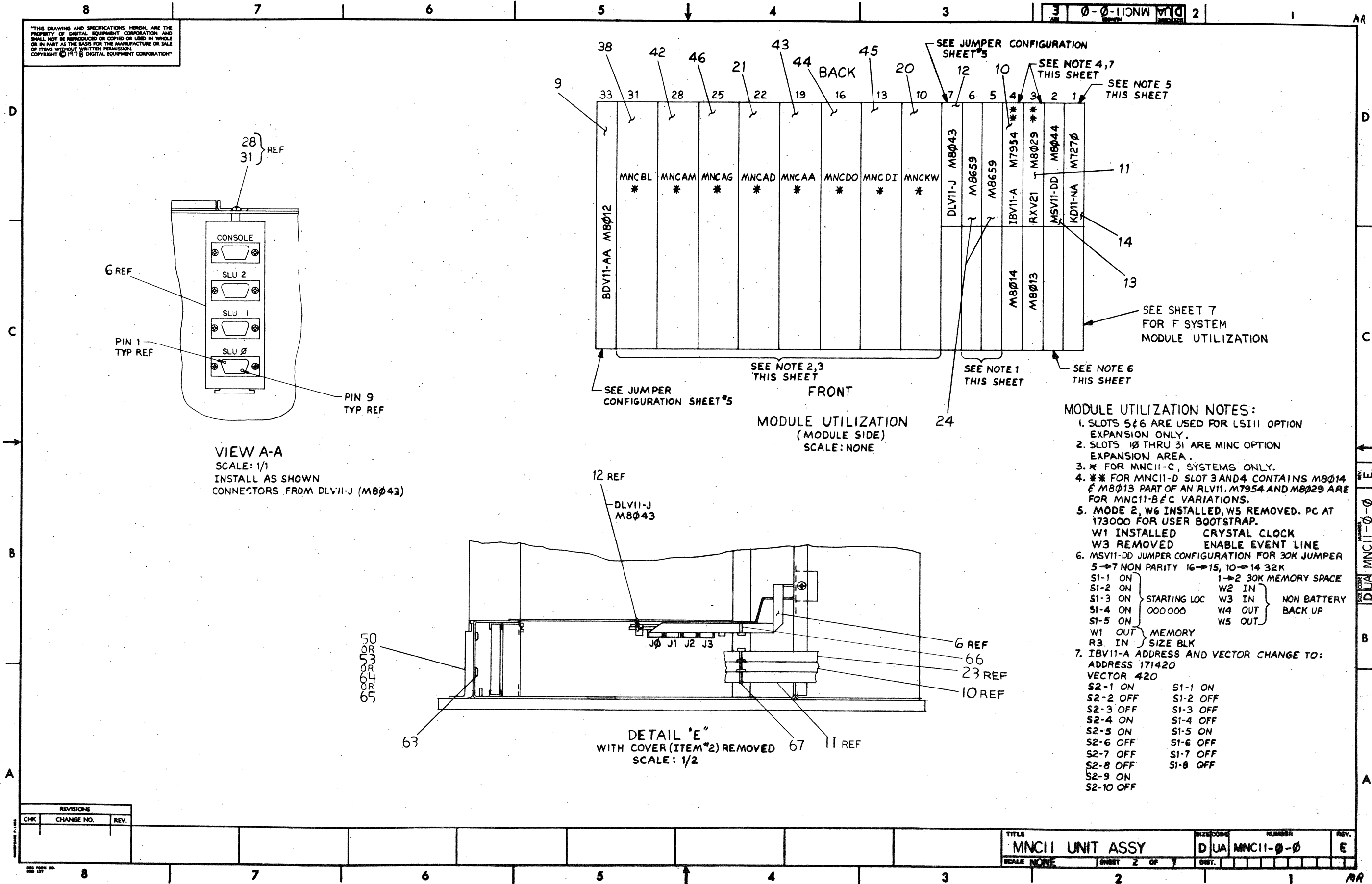
**CAUTION:**  
 OFF SHEETS PARTS LIST EXISTS SEE A-PL-MNC11-0-0

REV.	DESCRIPTION	DATE
1	MNC11-MRO01 A	13 Nov 78
2	A FILZ	7/4/79
3	MNC11-MRO02 B	1/3/80
4	A FILZ	7/29/79
5	MNC11-MRO03 C	5/7/80
6	A FILZ	7/29/79
7	MNC11-MRO04 D	8/20/80
8	A FILZ	7/29/79
9	MNC11-MRO05 E	8/11/81
10	A FILZ	7/29/79

DESCRIPTION		DWG. PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES			
ANGLES	CLASS OF ACCURACY	NOMINAL DIMENSION	
± 30°	(CHECK ONE)	0.001	0.002
SURFACE QUALITY	FINISH	0.004	0.008
IN		0.012	0.025
QUANTITY & VARIATION	PREFERRED	0.050	0.100
		0.200	0.500
		1.000	2.000
		5.000	10.000
		25.000	50.000
		100.000	500.000
		1000.000	5000.000
THIRD ANGLE PROJECTION	DRN. M. J. [Signature]	22-77	FIRST USED ON
REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D. [Signature]	12/1/78	MNC11 00-0000
DO NOT SCALE DWG	ENGR. [Signature]	12/3/78	TITLE
NEXT HIGHER ASSY.	PROD. [Signature]	12/3/78	MNC11 UNIT ASSY
MATERIAL	SEE PARTS LIST	B-00-MNC11-0	SIZE D UA
FRESH NONE	SCALE 1/2	SHEET 1 OF 2	DIST. 1

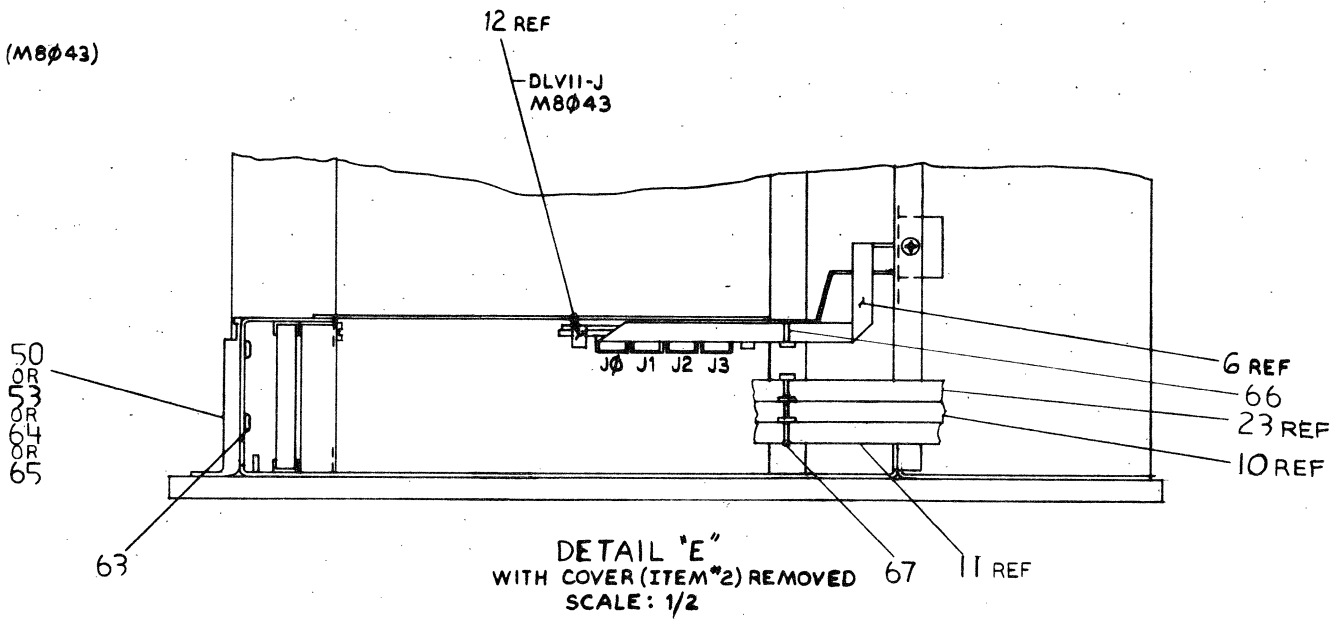


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VIEW A-A  
SCALE: 1/1  
INSTALL AS SHOWN  
CONNECTORS FROM DLV11-J (M8043)

MODULE UTILIZATION  
(MODULE SIDE)  
SCALE: NONE



DETAIL 'E'  
WITH COVER (ITEM #2) REMOVED  
SCALE: 1/2

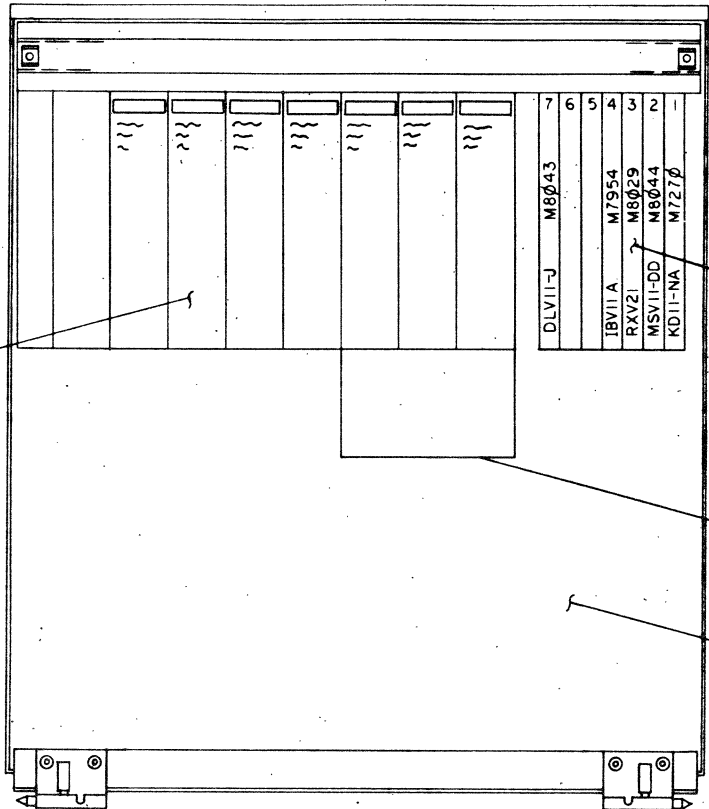
- MODULE UTILIZATION NOTES:
- SLOTS 5 & 6 ARE USED FOR LSIII OPTION EXPANSION ONLY.
  - SLOTS 10 THRU 31 ARE MINC OPTION EXPANSION AREA.
  - \* FOR MNC11-C, SYSTEMS ONLY.
  - \*\* FOR MNC11-D SLOT 3 AND 4 CONTAINS M8014 & M8013 PART OF AN RL11. M7954 AND M8029 ARE FOR MNC11-B & C VARIATIONS.
  - MODE 2, W6 INSTALLED, W5 REMOVED. PC AT 173000 FOR USER BOOTSTRAP.  
W1 INSTALLED CRYSTAL CLOCK  
W3 REMOVED ENABLE EVENT LINE
  - MSV11-DD JUMPER CONFIGURATION FOR 30K JUMPER  
5 → 7 NON PARITY 16 → 15, 10 → 14 32K  
S1-1 ON } 1 → 2 30K MEMORY SPACE  
S1-2 ON } W2 IN } NON BATTERY  
S1-3 ON } STARTING LOC W3 IN } BACK UP  
S1-4 ON } 000000 W4 OUT }  
S1-5 ON } W5 OUT }  
W1 OUT } MEMORY  
R3 IN } SIZE BLK
  - IBV11-A ADDRESS AND VECTOR CHANGE TO:  
ADDRESS 171420  
VECTOR 420  
S2-1 ON S1-1 ON  
S2-2 OFF S1-2 OFF  
S2-3 OFF S1-3 OFF  
S2-4 ON S1-4 OFF  
S2-5 ON S1-5 ON  
S2-6 OFF S1-6 OFF  
S2-7 OFF S1-7 OFF  
S2-8 OFF S1-8 OFF  
S2-9 ON  
S2-10 OFF

REVISIONS		
CHK	CHANGE NO.	REV.

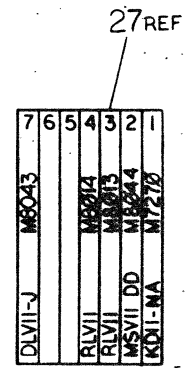
TITLE	MNC11 UNIT ASSY	SIZE CODE	DUA	NUMBER	MNC11-0-0	REV.	E
SCALE	NONE	SHEET	2 OF 7	DIST.			

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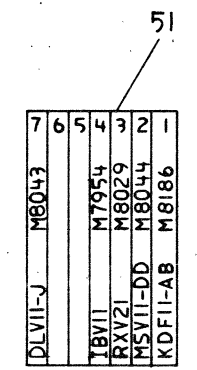
3 0-0-11CNW M D 2



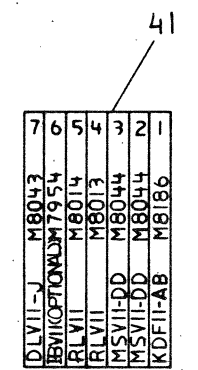
DETAIL 'C'  
BOTTOM SIDE OF ITEM \*7 SHOWN  
SCALE: 1/2



DETAIL 'D'  
SCALE: NONE  
FOR MNCII-DA ONLY



DETAIL 'E'  
FOR MNCII-FA,FB ONLY



DETAIL 'F'  
FOR MNCII-FC,FD ONLY

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE CODE	NUMBER	REV.
MNCII UNIT ASSY	D UA	MNCII-0-0	E
SCALE NONE	SHEET 3 OF 7	DIST.	

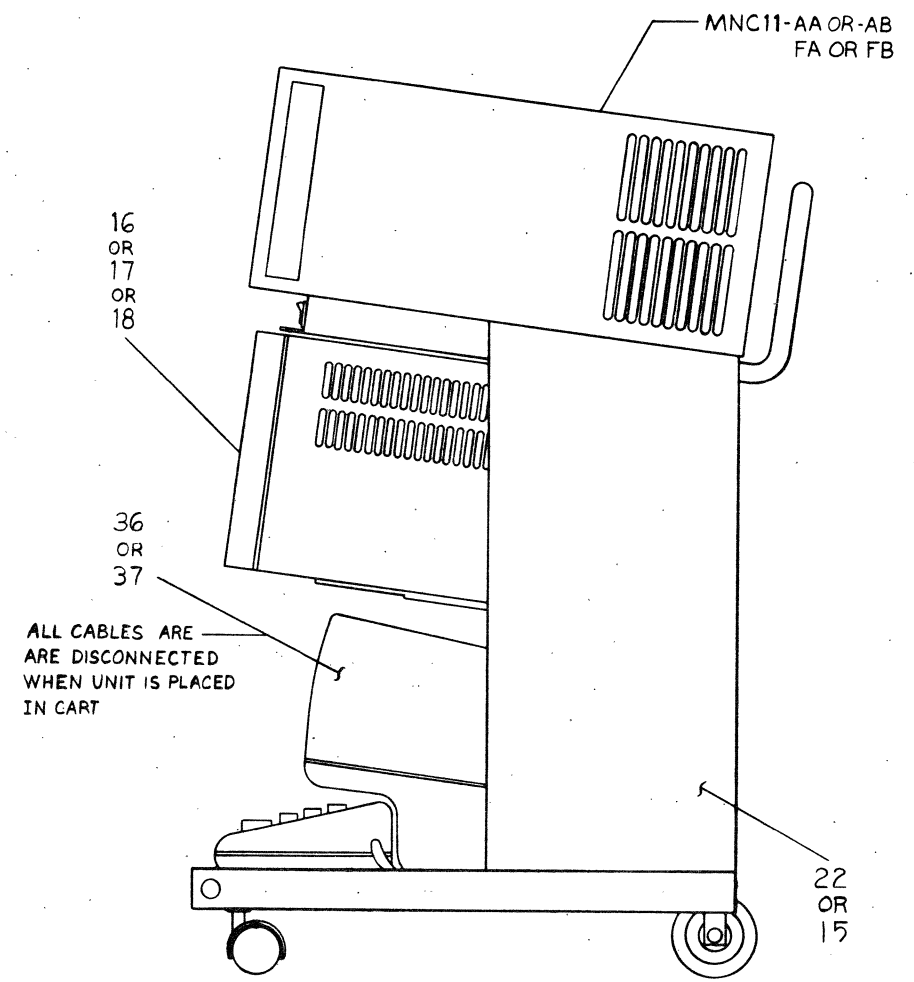
REV. E  
NUMBER D UA MNCII-0-0  
SIZE CODE



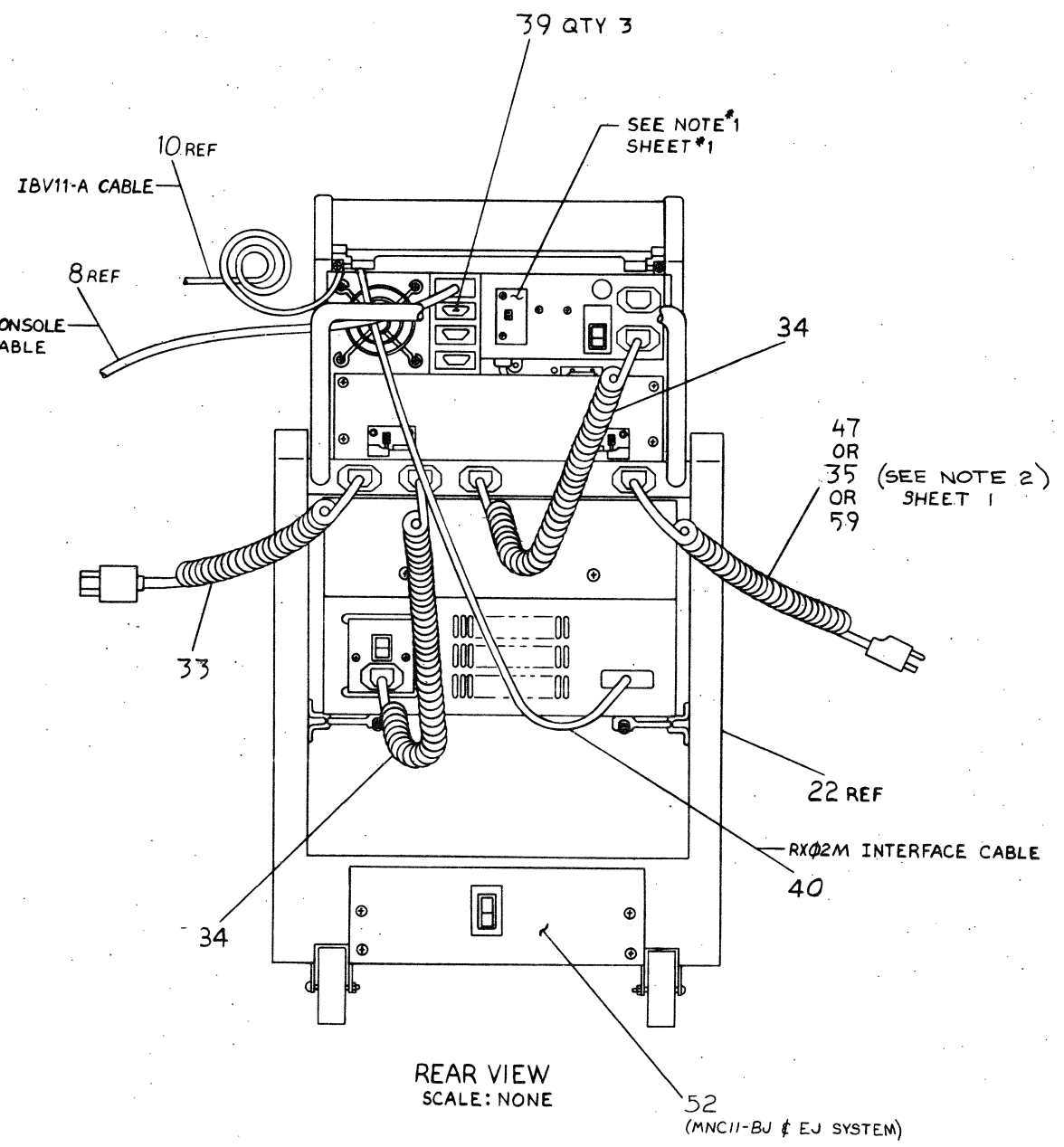
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D  
C  
B  
A

D  
C  
B  
A



RIGHT SIDE VIEW  
SCALE: NONE



REAR VIEW  
SCALE: NONE

REVISIONS		
CHK	CHANGE NO.	REV.

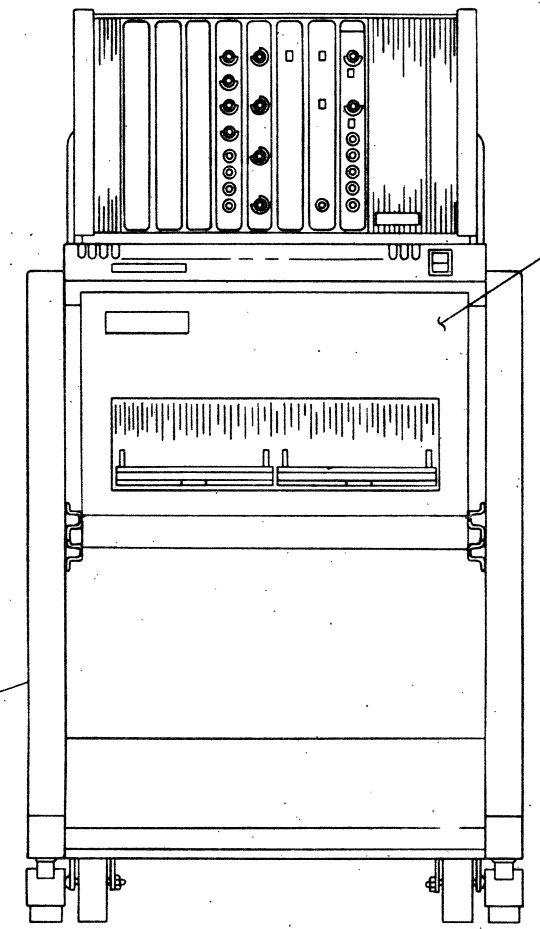
TITLE	SIZE CODE	NUMBER	REV.
MNC11 UNIT ASSY	D UA	MNC11-0-0	E
SCALE NONE	SHEET 4 OF 7	DIST.	

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JUMPER CONFIGURATION

D  
C  
B  
A

D  
C  
B  
A

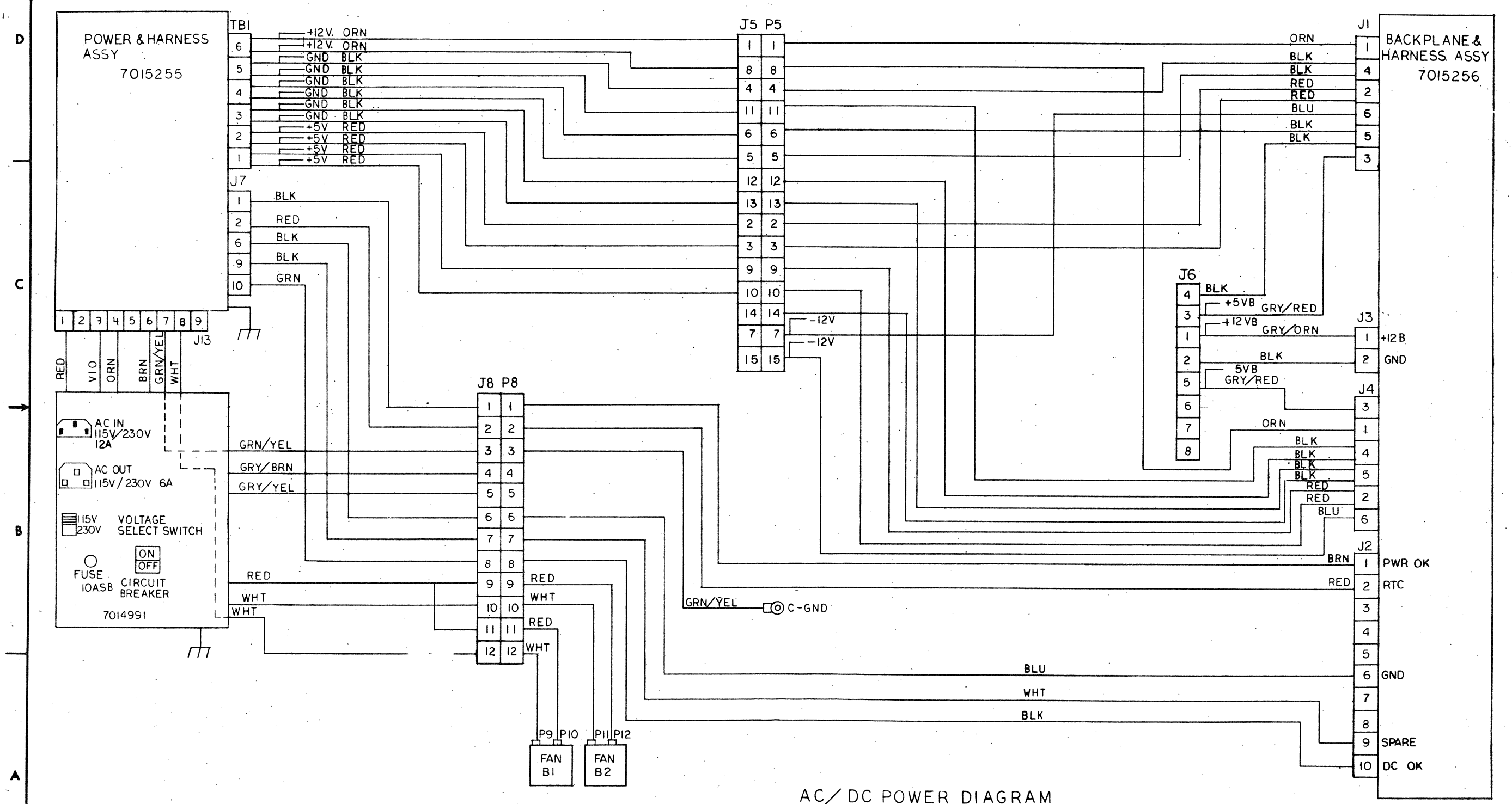


FRONT VIEW  
SCALE: NONE

- |  |  |  |   |
|--|--|--|---|
| <p><b>BDV11-AA (RXØ2M SYSTEM) MNC11-AA,AB,FA,FB</b></p> <ul style="list-style-type: none"> <li>A1 ON CPU TEST</li> <li>A2 ON MEMORY TEST</li> <li>A3 OFF</li> <li>A4 OFF</li> <li>A5 OFF A SWITCH-E15</li> <li>A6 ON</li> <li>A7 ON RXØ2</li> <li>A8 OFF</li> </ul> <p><b>B1 OFF</b></p> <p><b>B2 OFF</b></p> <p><b>B3 OFF B SWITCH-E21</b></p> <p><b>B4 OFF</b></p> <p><b>B5 ON</b></p> | <p><b>DLV11-J</b></p> <p>CONSOLE (J3)</p> <p>VECTOR 60</p> <p>V5 X→0</p> <p>V6 INSERTED</p> <p>V7 INSERTED</p> <p>ADDRESS 177560</p> <ul style="list-style-type: none"> <li>C1 X→1</li> <li>C2 X→1</li> <li>A12 X→1</li> <li>A11 X→1</li> <li>A10 X→1</li> <li>A9 X→0</li> <li>A8 X→1</li> <li>A7 REMOVED</li> <li>A6 INSTALLED</li> <li>A5 X→0</li> </ul> | <p><b>DLV11-J</b></p> <p>BAUD RATE 9600</p> <p>N→3</p> <p>JUMPER P X→1 NO PARITY</p> <p>JUMPER E X→0 ODD PARITY</p> <p>JUMPER D X→1 8 DATA BITS</p> <p>JUMPER S X→0 1 STOP BIT</p> <p>X→H HALT ON BREAK</p> <p>EIA RS423, RS232C</p> <p>JUMPER M3 X→3</p> <p>JUMPER N3 X→3</p> <p>JUMPER M INSERTED</p> <p><b>SLU0 (JØ)</b></p> <p>VECTOR 300</p> <p>ADDRESS 176500 (110 BAUD 20 MA)</p> <p>BAUD RATE 9600</p> <p>N→0</p> <p>JUMPER P X→1</p> <p>JUMPER E X→0</p> <p>JUMPER D X→1 8 DATA BITS</p> <p>JUMPER S X→0 1 STOP BITS</p> <p>JUMPER MØ X→3</p> <p>JUMPER NØ X→3</p> <p><b>SLU1 (J1)</b></p> <p>VECTOR 310</p> <p>ADDRESS 176510</p> <p>BAUD RATE 1200</p> <p>W→1</p> <p>JUMPER P X→1</p> <p>JUMPER E X→0</p> <p>JUMPER D X→1 8 DATA BITS</p> <p>JUMPER S X→0 1 STOP BITS</p> <p>JUMPER M1 X→3</p> <p>JUMPER N1 X→3</p> | <p><b>DLV11-J</b></p> <p><b>SLU2 (J2)</b></p> <p>VECTOR 320</p> <p>ADDRESS 176520</p> <p>BAUD RATE 300</p> <p>T→2</p> <p>JUMPER P X→1</p> <p>JUMPER E X→0</p> <p>JUMPER D X→1 8 DATA BITS</p> <p>JUMPER S X→0 1 STOP BITS</p> <p>JUMPER M2 X→3</p> <p>JUMPER N2 X→3</p> |
|--|--|--|---|

REVISIONS		
CHK	CHANGE NO.	REV.

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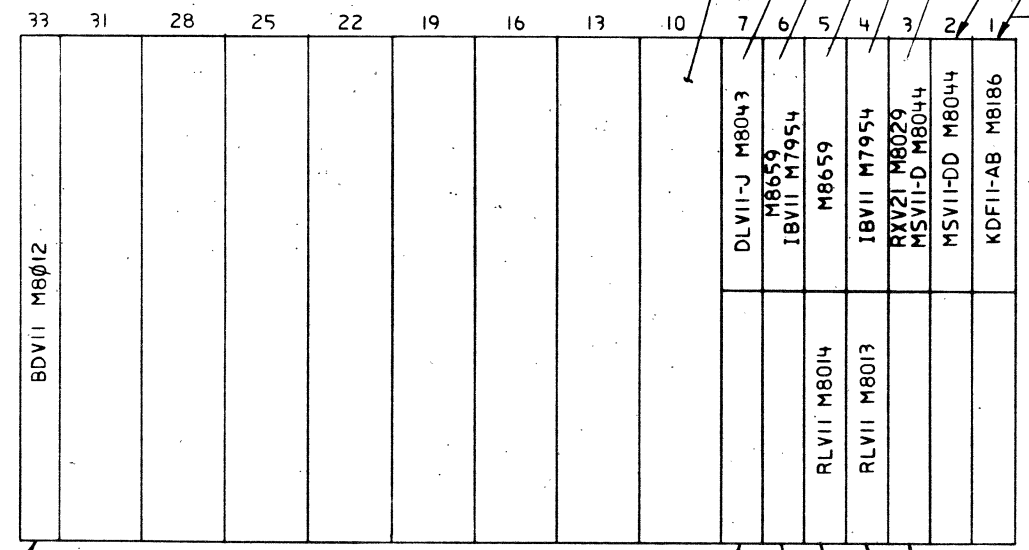


AC/DC POWER DIAGRAM

REVISIONS		
CHK	CHANGE NO.	REV.

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3 0-0-115NW DUA (3000 5278)



FRONT  
 MODULE UTILIZATION  
 FOR MNCII-F\* BOX

SEE JUMPER CONFIGURATION ON SHEET\*5  
 SEE NOTE 2 ON SHEET 2  
 SEE JUMPER CONFIGURATION ON SHEET\*5  
 SEE NOTE 2 THIS SHEET  
 SEE NOTE 3,4 THIS SHEET  
 SEE NOTE 5,6 THIS SHEET  
 SEE NOTE 6,7 THIS SHEET

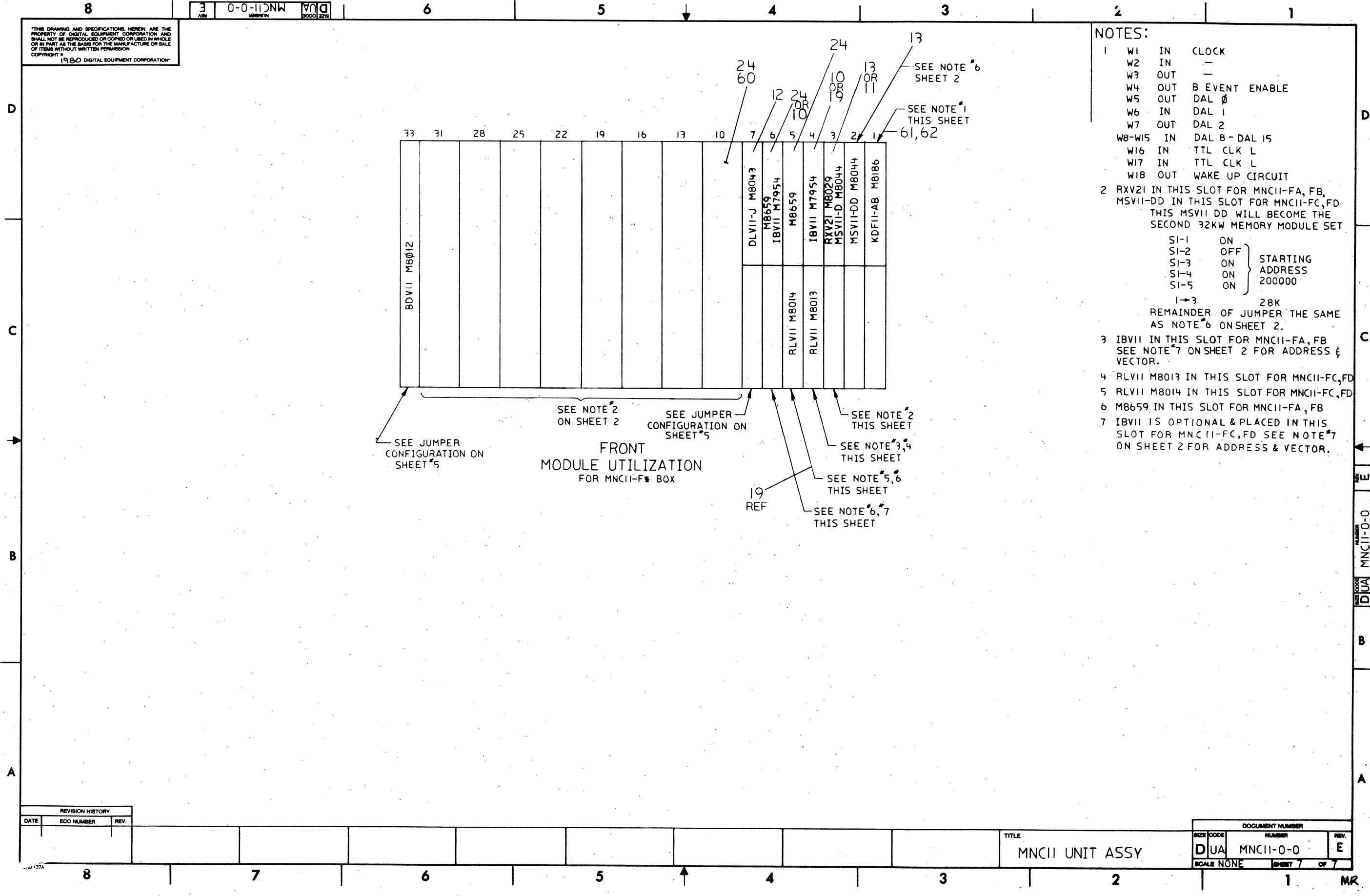
19 REF

- NOTES:
- W1 IN CLOCK  
 W2 IN —  
 W3 OUT —  
 W4 OUT B EVENT ENABLE  
 W5 OUT DAL 0  
 W6 IN DAL 1  
 W7 OUT DAL 2  
 W8-W15 IN DAL 8 - DAL 15  
 W16 IN TTL CLK L  
 W17 IN TTL CLK L  
 W18 OUT WAKE UP CIRCUIT
  - RXV21 IN THIS SLOT FOR MNCII-FA, FB, MSVII-DD IN THIS SLOT FOR MNCII-FC, FD THIS MSVII DD WILL BECOME THE SECOND 32KW MEMORY MODULE SET  
 SI-1 ON } STARTING ADDRESS  
 SI-2 OFF }  
 SI-3 ON }  
 SI-4 ON }  
 SI-5 ON }  
 1-3 28K  
 REMAINDER OF JUMPER THE SAME AS NOTE\*6 ON SHEET 2.
  - IBVII IN THIS SLOT FOR MNCII-FA, FB SEE NOTE\*7 ON SHEET 2 FOR ADDRESS & VECTOR.
  - RLVII M8013 IN THIS SLOT FOR MNCII-FC, FD
  - RLVII M8014 IN THIS SLOT FOR MNCII-FC, FD
  - M8659 IN THIS SLOT FOR MNCII-FA, FB
  - IBVII IS OPTIONAL & PLACED IN THIS SLOT FOR MNCII-FC, FD SEE NOTE\*7 ON SHEET 2 FOR ADDRESS & VECTOR.

REVISION HISTORY		
DATE	ECO NUMBER	REV.

TITLE  
 MNCII UNIT ASSY

DOCUMENT NUMBER			
SIZE	CODE	NUMBER	REV.
D	UA	MNCII-0-0	E
SCALE NONE		SHEET 7	OF 7



MR

# DIGITAL EQUIPMENT CORPORATION PARTS LIST

MADE BY <i>G. Valencia</i>	CHECKED <i>J. Huson</i>	SECTION <i>1</i>
DATE <i>13-JUL-78</i>	DATE <i>14 July 78</i>	
ENG <i>C.C. ff</i>	PROD <i>Box Coole</i>	ISSUED SECTION <i>1</i>
DATE <i>14-July-78</i>	DATE <i>19 July 78</i>	

QUANTITY / VARIATION										
MNC11-AA	MNC11-BA	MNC11-BC	MNC11-BD	MNC11-CA	MNC11-CC	MNC11-CD	MNC11-DA	MNC11-AB	MNC11-BJ	

NOTES:

---

REF DESIGNATION

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	MNC11-AA	MNC11-BA	MNC11-BC	MNC11-BD	MNC11-CA	MNC11-CC	MNC11-CD	MNC11-DA	MNC11-AB	MNC11-BJ	REF DESIGNATION
1	E-UA-MNCBA-0-0		MNCBA BOX ASSY	1	-	-	-	-	-	-	1	1	-	
2	D-MD-7420102-0-0	7420102-0	COVER, LOGIC COMPARTMENT	1	-	-	-	-	-	-	1	1	-	
3	D-MD-7420239-0-0	7420239-0	COVER, BOOT MODULE	1	-	-	-	-	-	-	1	1	-	
4	D-AD-7015263-0-0	7015263-0	PANEL, SIDE ASSY (RIGHT)	1	-	-	-	-	-	-	1	1	-	
5	D-AD-7015263-0-0	7015263-1	PANEL, SIDE ASSY (LEFT)	1	-	-	-	-	-	-	1	1	-	
6	D-AD-7015836-0-0	7015836-0	BOX, CONNECTOR ASSY	1	-	-	-	-	-	-	1	1	-	
7	E-AD-7016817-0-0	7016817-0	COVER, TOP ASSY	1	-	-	-	-	-	-	1	1	-	
8		1700211	CABLE, CONSOLE INTERFACE	1	-	-	-	-	-	-	1	-	-	
9	D-UA-BDV11-A-0		UNIT ASSY (BDV11) (M8012)	1	-	-	-	-	-	-	1	1	-	
10	A-PL-IBV11-A-0		LS111/IB INTERFACE (M7954)	1	-	-	-	-	-	-	1	-	-	
11	RXV21		RXV21 M8029	1	-	-	-	-	-	-	1	-	-	
12	A-PL-DLV11-J-0		4 SERIAL LINE PER CTRLR (M8043)	1	-	-	-	-	-	-	1	1	-	
13	A-PL-MSV11-D-0		32K-16 BIT MOS MEMORY SYSTEM (M8044)	1	-	-	-	-	-	-	1	1	-	
14	A-PL-KD11-NA		LS111 CPU WITH EIS, FIS, NO MEMORY	1	-	-	-	-	-	-	1	1	-	
15	D-UA-MNC11-AA		BASIC MINC (115V 60 HZ)	X	1	1	-	1	1	-	-	-	-	
16	E-UA-RX02M-MA		RX02M UNIT ASSY (115V 60HZ)	-	1	-	-	1	-	-	-	-	-	
17	E-UA-RX02M-MC		RX02M UNIT ASSY (115V 50HZ)	-	-	1	-	-	1	-	-	-	-	
18	E-UA-RX02M-MD		RX02M UNIT ASSY (230V 50HZ)	-	-	-	1	-	-	1	-	-	-	
19	E-UA-RLV11-0-0		DISK CONTROLLER ASSY (RLV11)	-	-	-	-	-	-	-	1	-	-	
20	D-UA-MNCKW-0-0		MNCKW UNIT ASSY	-	-	-	-	1	1	1	-	-	-	
21	D-UA-MNCAD-0-0		MNCAD UNIT ASSY	-	-	-	-	1	1	1	-	-	-	

E.C.O. NO.  
MNC11-MROO1  
MNC11-MROO2  
MNC11-MROO3

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		<p>SHEET <b>1</b> OF <b>3</b></p>	<p>INSERTION PARTS LIST DATA BASE REV</p>			

MR

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DIGITAL EQUIPMENT CORPORATION PARTS LIST				QUANTITY / VARIATION										NOTES:		
MADE BY <i>B. Navis</i> DATE <i>13-JUL-78</i>		CHECKED <i>J. Huson</i> DATE <i>14 July 78</i>		SECTION <i>1</i>		MNC11-AA	MNC11-BA	MNC11-BC	MNC11-BD	MNC11-CA	MNC11-CC	MNC11-CD	MNC11-DA		MNC11-AB	MNC11-BJ
ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION													
22	A-PL-MNCCT-0-0	MNCCT-AA	CART, MINC 120 V	-	1	1	-	1	1	-	-	-	-	-	-	
<del>23</del>	<del></del>	<del>9009672-00</del>	<del>SPACER PLASTIC .175 ID x 3/8 OD x 1/4 LG</del>	<del>4</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>4</del>	<del>4</del>	<del>-</del>	
24	D-UA-M8659-0-0		VT71 BUS GRANT	2	-	-	-	-	-	-	-	-	2	2	-	
25	A-DC-3615262-0-0	3615262-0	DECAL, PROCESSOR COMP	1	-	-	-	-	-	-	-	-	1	-	-	
26	D-DC-3615263-0-0	3615263-0	DECAL, USER INFO.	1	-	-	-	-	-	-	-	-	1	1	-	
27	A-DC-3615774-0-0	3615774-0	DECAL, PROCESSOR COMP ( MNC11-D)	-	-	-	-	-	-	-	-	-	1	-	-	
28		9006021-03	SCR, PHIL TRUSS HD6-32x.31	7	-	-	-	-	-	-	-	-	7	7	-	
29		9006037-03	SCR, PHIL TRUSS HD8-32x.38	4	-	-	-	-	-	-	-	-	4	4	-	
30		9006039-03	SCR, PHIL TRUSS HD8-32x.50	4	-	-	-	-	-	-	-	-	4	4	-	
31		9006633-00	WASHER, INT. TOOTH LOCK #6	7	-	-	-	-	-	-	-	-	7	7	-	
32		9006634-00	WASHER, INT. TOOTH LOCK #8	8	-	-	-	-	-	-	-	-	8	8	-	
<del>33</del>	<del>D-IA-BC21C-0-0</del>	<del>BC21C-10</del>	<del>EIA/PRINTER CABLE</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>-</del>	
34		1700150-01	LINE CORD IEC TO IEC	-	2	2	2	2	2	2	-	-	-	-	-	
35		1700156-0	LINE CORD 115V TO IEC	-	1	1	-	1	1	-	-	-	-	-	-	
36	E-UA-VT105-MA-0		VIDEO TERMINAL 115V/60HZ	-	1	1	-	1	1	-	-	-	-	-	-	
37	E-UA-VT105-MB-0		VIDEO TERMINAL 230V/50HZ	-	-	-	1	-	-	1	-	-	-	-	-	
38	D-UA-MNCBL-0-0		MNCBL UNIT ASSY	-	1	1	1	1	1	1	-	-	-	-	-	
*39	B-IA-7015911-0-0	7015911-0	CONNECTOR, TEST	REF	-	-	-	-	-	-	-	-	REF	REF	-	* THIS PART IS FOR TEST ONLY
40	D-IA-7015574-0-0	7015574-0	CABLE, RX02M INTERFACE	1	-	-	-	-	-	-	-	-	1	1	-	
41	D-UA-MNC11-AB		BASIC (230V 50HZ)	-	-	-	1	-	-	1	-	-	-	-	-	
42	D-UA-MNCAM-0-0		MNCAM UNIT ASSY	-	-	-	-	1	1	1	-	-	-	-	-	
ECO. NO.																
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MR



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DIGITAL EQUIPMENT CORPORATION PARTS LIST				QUANTITY / VARIATION										NOTES:		
MADE BY <i>B. Usaba</i>		CHECKED <i>J. Huson</i>		SECTION <i>1</i>		MNC11-AA	MNC11-BA	MNC11-BC	MNC11-BD	MNC11-CA	MNC11-CC	MNC11-CD	MNC11-DA	MNC11-AB	MNC11-BJ	REF DESIGNATION
DATE <i>13-JUL-78</i>		DATE <i>14 July 78</i>		ISSUED SECTION <i>1</i>												
ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION													
43	D-UA-MNCAA-0-0		MNCAA UNIT ASST	-	-	-	-	1	1	1	-	-	-			
44	D-UA-MNCDO-0-0		MNCDO UNIT ASSY	-	-	-	-	1	1	1	-	-	-			
45	D-UA-MNCDI-0-0		MNCDI UNIT ASSY	-	-	-	-	1	1	1	-	-	-			
46	D-UA-MNCAG-0-0		MNCAG UNIT ASSY	-	-	-	-	1	1	1	-	-	-			
47		7423844-01	PANEL FRONT BREATHER RLOI/MNC	-	-	-	-	-	-	-	1	-	-			
<del>48</del>	<del>E-UA-LA35-0-0</del>		<del>LA35-HH UNIT ASSY</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>1</del>	<del>-</del>	<del>-</del>	<del>-</del>			
<del>49</del>	<del>E-UA-LA35-0-0</del>		<del>LA35-HS UNIT ASSY</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>-</del>	<del>1</del>	<del>-</del>	<del>-</del>	<del>-</del>			
50		9009257	RING RETAINING	4	-	-	-	-	-	-	4	4	-			
51	D-UA-MNC11-0-0	MNC11-BD	MINC SYSTEM 230V 50HZ	-	-	-	-	-	-	-	-	-	1			
52	D-UA-MNCIT-0-0	MNCIT-AB	ISOLATION TRANSFORMER ASSY	-	-	-	-	-	-	-	-	-	1			
53		7423844-00	PANEL FRONT BREATHER (MNC11)	1	-	-	-	-	-	-	-	1	-			
54		3616098	CAUTION DECAL	1	-	-	-	-	-	-	1	1	-			
55	A-SP-3700358		MODULE PACKAGING INSTRUCTIONS	-	REF	REF	REF	REF	REF	REF	-	-	REF			
56	A-SP-3700359		MNC11-A PACKAGING INSTRUCTIONS	1	REF	REF	REF	REF	REF	REF	1	1	REF			
57	A-SP-3700324		VT105 PACKAGING INSTRUCTIONS	-	REF	REF	REF	REF	REF	REF	-	-	REF			
58	A-SP-3700312		RX02M PACKAGING INSTRUCTIONS	-	REF	REF	REF	REF	REF	REF	-	-	REF			
59	A-SP-3700366		MNCCT PACKAGING INSTRUCTIONS	-	REF	REF	REF	REF	REF	REF	-	-	REF			
60	A-SP-3700367		MINC-11 SYSTEM PACKAGING INS.	-	1	1	1	1	1	1	-	-	1			
61		1700090-02	CORD, POWER WITH TERMINATORS	-	-	-	-	-	-	-	-	1	-			
62		1700150-00	LINE CORD IEC TO IEC	-	1	1	1	1	1	1	-	-	-			
63	D-IA-7016462-00	7016462-06	CABLE REWORK RLOI/MNC	-	-	-	-	-	-	-	1	-	-			
64	A-PL-MNCCT-0-0	MNCCT-AB	CART MINC 240 V	-	-	-	1	-	-	1	-	-	-			

E.C.O. NO.

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TITLE  
MNC11 UNIT ASSY

ASSY NO.  
D-UA-MNC11-0-0

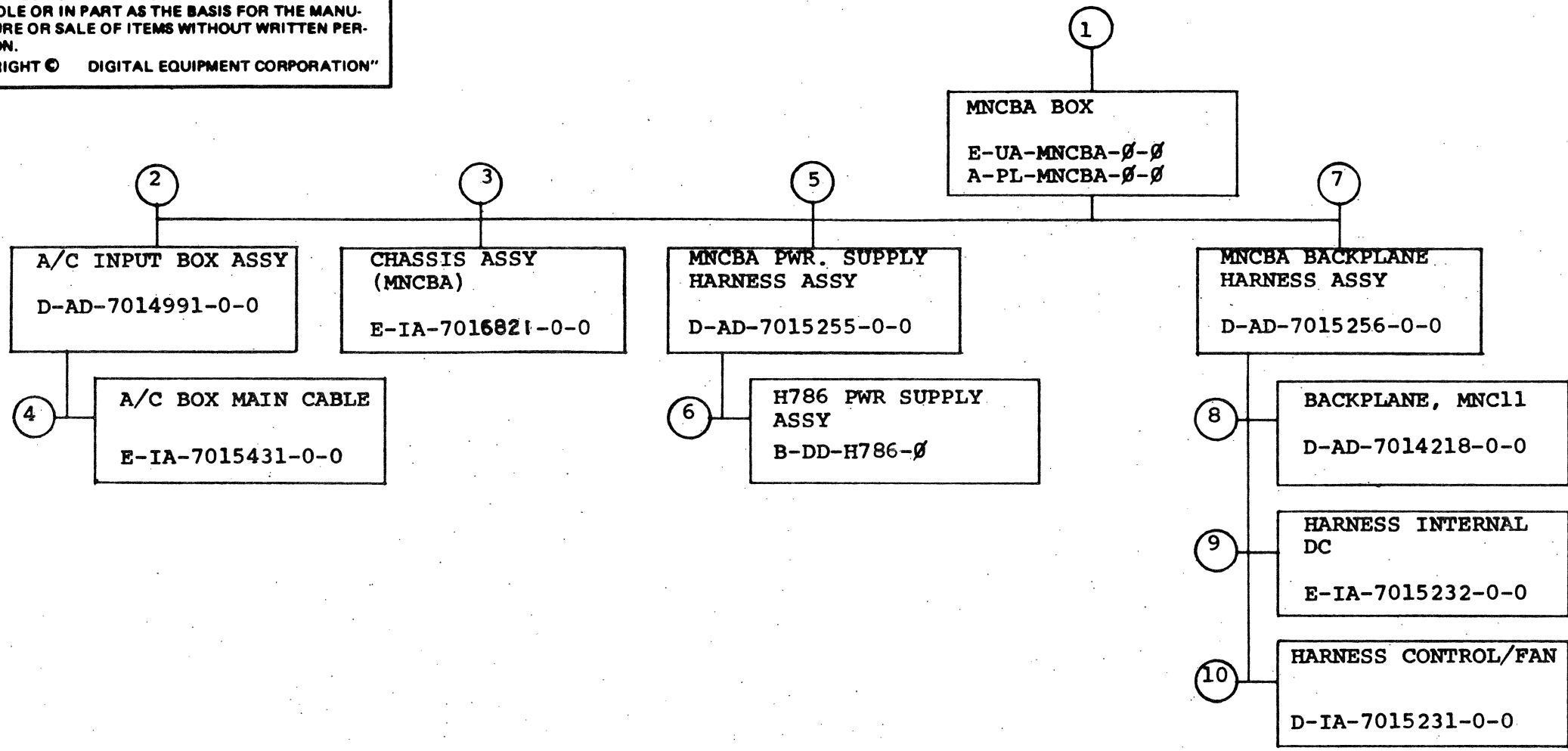
SIZE <b>B</b>	CODE <b>PL</b>	NUMBER MNC11-0-0	REV. <b>C</b>
SHEET <b>3</b> OF <b>3</b>		INSERTION PARTS LIST DATA BASE REV	

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TITLE	MNCBA BOX	SHEET 2 OF 4	SIZE CODE B DD	NUMBER MNCBA-0	REV A
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MR

FIND NO.	DRAWING NO.	DESCRIPTION	TYPE	FIND NO.	DRAWING NO.	DESCRIPTION	TYPE
1				4	E-IA-7015431-0-0	A/C BOX - MAIN CABLE	E/M
	E-UA-MNCBA-Ø-Ø	MNCBA BOX	E/M		A-DC-7409873-2-0	DECALS, POWER CONNECTOR	M
	A-PL-MNCBA-Ø-Ø	MNCBA BOX	E/M				
	D-IA-7423155-0-0	COVER, BOTTOM	M				
	<del>C-IA-7419895-0-0</del>	<del>PANEL, FRONT BREATHER</del>	<del>M</del>				
	<del>C-PS-4836637-0-0</del>	<del>EXTRUSION, FRONT BREATHER PANEL</del>	<del>M</del>				
	D-MD-7423155-0-0	FILLER, POWER SUPPLY	M				
	D-MD-7419877-0-0	SHELF, STRAIN RELIEF	M				
	D-MD-7423845-0-0	PANEL, FRONT CORNER	M	5	D-AD-7015255-0-0	MNCBA PWR. SUPPLY HARNESS ASSY	E/M
	<del>C-PS-4836637-0-0</del>	<del>EXTRUSION, FRONT PANEL CORNER</del>	<del>M</del>		D-IA-7015214-0-0	HARNESS POWER SUPPLY	E/M
2	D-AD-7014991-0-0	A/C INPUT BOX ASSY	E/M				
	D-IA-7419882-0-0	BOX, A/C INPUT	M	6	B-DD-H786-Ø	H786 POWER SUPPLY ASSY	E/M
	D-MD-7419884-0-0	COVER, A/C BOX	M				
	C-IA-7418378-0-0	PLATE, VOLTAGE SELECT	M				
	C-IA-7015432-0-0	VOLTAGE SWITCH ASSY	E/M				
	C-IA-7015521-0-0	CONN. PWR. RECP. (FEMALE)	E/M				
	C-IA-7015522-0-0	CONN. PWR. RECP. (MALE)	E/M				
				7	D-AD-7015256-0-0	MNCBA BACKPLANE HARNESS ASSY	E/M
3	E-IA-7016821-0-0	CHASSIS ASSY (MNCBA)	M				
	E-IA-7422787-0-0	SIDE PANEL, R.H	M				
	E-MD-7422788-0-0	SIDE PANEL, L.H	M				
	B-MD-7422789-0-0	CARD GUIDE SUPPORT, REAR	M				
	D-MD-7422790-0-0	LOGIC CARDGUIDE SUPPORT, REAR	M	8	D-AD-7014218-0-0	BACKPLANE	E/M
	D-IA-7422790-0-0	LOGIC CARDGUIDE SUPPORT, FRONT	M		5012292	ETCH BOARD	E/M
	D-IA-7422791-0-0	PARTITION, LOGIC	M		D-MD-7418990-0-0	MOUNTING BAR	M
	D-IA-7422792-0-0	SUPPORT, FRONT PANEL	M		B-MD-7417041-0-0	CONN BLOCK 288 PIN	M
	D-MD-7422793-0-0	CHASSIS, POWER SUPPLY	M		B-MD-7417042-0-0	CONN BLOCK 72 PIN	M
	E-MD-7423150-0-0	PIVOT POWER SUPPLY	M		A-SP-7014218-0-1	ASSY SPEC, BACKPLANE	REF
	B-MD-7423151-0-0	SINGLE CARDGUIDE SUPPORT, FRONT	M		D-DA-9505110-0-0	FIXTURE, MINC	REF
	D-IA-7423152-0-0	SUPPORT BKT, POWER SUPPLY			C-MD-7419331-0-0	MODULE, STIFFENER	REF
					A-DC-7411881-0-0	DECAL, LOGIC ASSY	E/M

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



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FIND NO.	DRAWING NO.	DESCRIPTION	TYPE	FIND NO.	DRAWING NO.	DESCRIPTION	TYPE
	A-WT-7014218-0-0 3700040	AWT REVISION STATUS PACKAGING INSTRUCTION	REF REF				
9	D-IA-7015232-0-0 A-DC-7409872-0-0 A-DC-7409873-0-0 B-IA-7419885-0-0	HARNESS INTERNAL D.C. DECALS PWR HARNESS DECALS PWR HARNESS BRT. BATT. BACKUP CONN.					
10	D-IA-7015231-0-0 A-DC-7409872-0-0	HARNESS CONTROL/FAN DECAL PWR HARNESS					

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



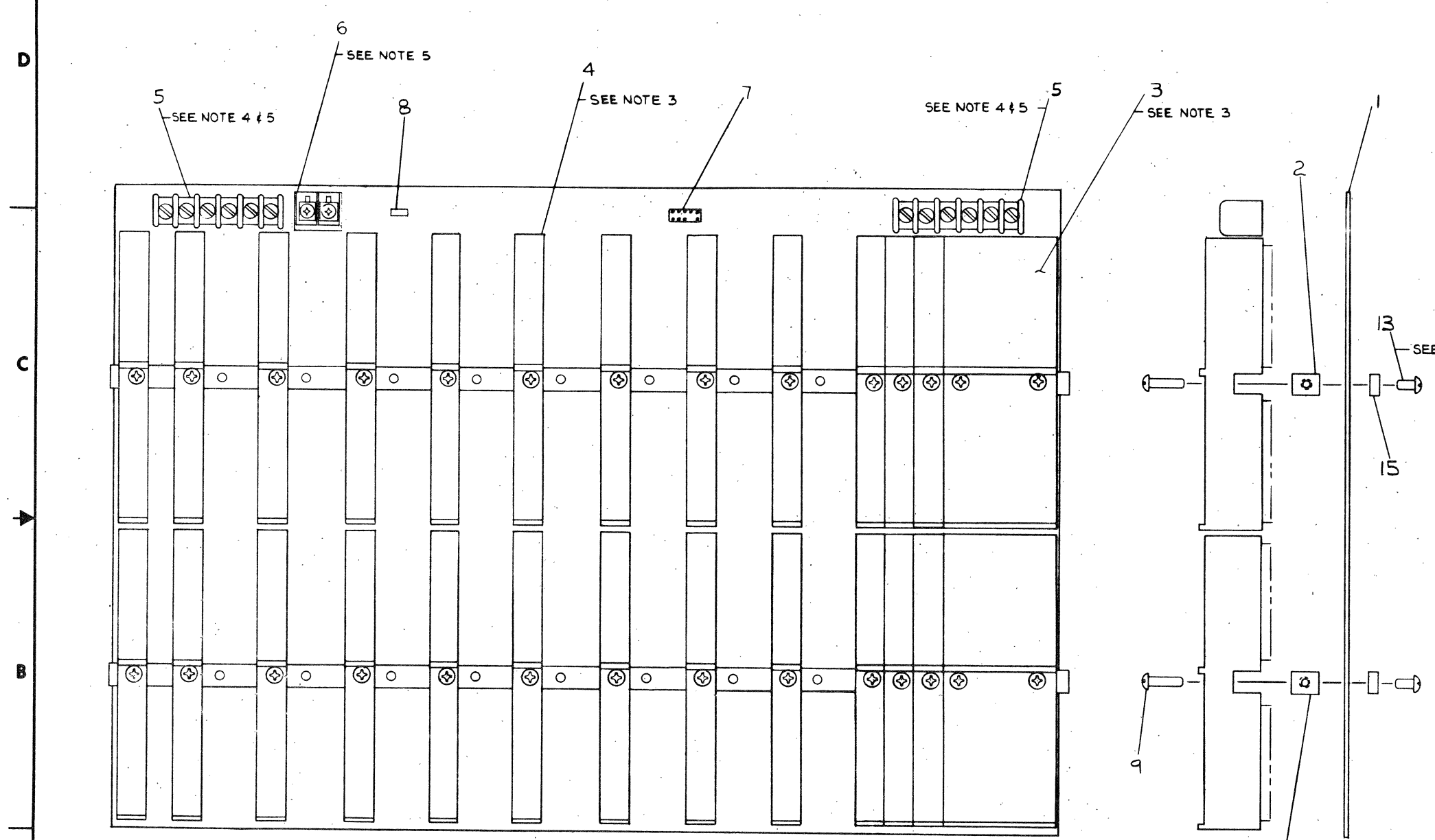
TITLE MNCBA BOX SHEET 4 OF 4 SIZE CODE B DD NUMBER MNCBA-8 REV A

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0-0-8-2702 2 1 MR

- NOTES:**
- ITEMS NO 13 + 15 TO BE USED BY MANUFACTURING ONLY. REMOVE BEFORE FINAL SHIPMENT.
  - PIN 4 ON ITEM NO.7 TO BE REMOVED
  - USE ONLY WIDE LEAD IN ANGLE CONNECTOR BLOCKS.
  - ITEM #5 TO BE MOUNTED WITH WRITING TOWARDS BLOCKS.
  - ON ITEMS #5 AND #6 CUT PINS BELOW THE HEIGHT OF THE PINS ON THE CONNECTOR BLOCKS.



CAUTION: OFF SHEET PARTS LIST EXISTS.  
 SEE K-PL-7014218-0-DBP.

REV.	DATE	BY	CHKD.	DESCRIPTION
1				
2				
3				
4				
5				
6				
7				
8				

QUANTITY & VARIATION		DESCRIPTION		DRWG. PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES					
ANGLES		CLASS OF ACCURACY			
SURFACE QUALITY		MICROMETERS			
THIRD ANGLE PROJECTION		DRN. <i>J. R. Rasmussen</i> 4/27/77		FIRST USED ON	
REMOVE BURRS AND BREAK SHARP CORNERS		CHK'D. <i>J. H. ...</i> 4/27/77		MNCII 301000	
DO NOT SCALE DRWG		PROJ. ENG. <i>J. ...</i> 4/27/77		TITLE	
MATERIAL		NEXT HIGHER ASSY.		BACKPLANE, MNCII	
SEE PARTS LIST		SCALE 1/1		SIZE CODE	
FINISH		SHEET 1 OF 1		NUMBER	
		DIST.		REV. B.	



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## UNIT VARIATIONS

VAR	TITLE
MRCAD	MRCAD UNIT ASSY

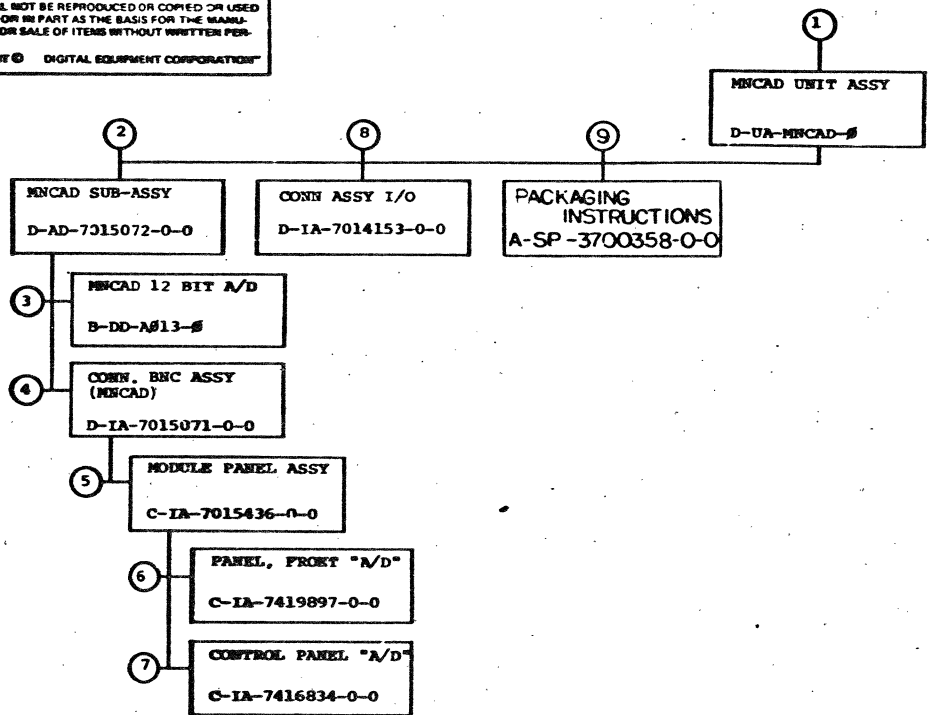
REVISIONS	CHANGE NO.	REV.
		A
		B

USED ON OPTION/MODEL	DRBL	DATE	TITLE	
MRCAD	<i>A. Sullivan</i>	29 Dec 77		
	CHK'D.	DATE		
	<i>J. M. King</i>	18 Feb 78	MRCAD UNIT ASSY	
	PROJ. ENG.	DATE		
	<i>A.C. King</i>	7/21/78	SIZE CODE	NUMBER
	PROD.	DATE	B DD	MRCAD-8
SHEET 1 OF 3	<i>A.C. King</i>	3/2/78	DIST.	REV B

DWG 105A

MR

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TITLE	MNCAD UNIT ASSY	SHEET 2 OF 3	SIZE CODE B DD	NUMBER MNCAD-8	REV B
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MR

PIND NO.	DRAWING NO.	DESCRIPTION	TYPE	PIND NO.	DRAWING NO.	DESCRIPTION	TYPE
1	MP6592	FIELD MAINTENANCE PRINT SET	-	5	C-IA-7015436-0-0	MODULE PANEL ASSY	M
	B-IC-MNCAD-β-1	FIELD MAINTENANCE PRINT SET	-				
	D-UA-MNCAD-β-β	MNCAD UNIT ASSY	E/M				
	C-MD-7419869-0-0	PLATE, COMP SIDE	M				
	C-MD-7419868-0-0	PLATE, ETCH SIDE	M				
	A-DC-3615260-0-0	DECAL, I/O SCHEMATIC	E/M				
	A-DC-3615264-0-0	DECAL, INFORMATION (MNCAD)	E/M				
	A-PL-MNCAD-β-5	PARTS LIST MNCAD	E/M				
	A-PL-MNCAD-β-SH	SHIP LIST MNCAD	E/M				
	A-SP-MNCAD-β-2	MNCAD ENGINEERING SP2C.	E/M				
	A-SP-MNCAD-β-3	CHECKOUT & ACCEPTANCE PROCEDURE	E/M	6	C-IA-7419897-0-0	PANEL, FRONT "A/D"	M
	A-SP-MNCAD-β-4	INSTALLATION & ACCEPTANCE PROCEDURE	E/M		C-PS-4830033-0-0	EXTRUSION, FRONT PANEL "A/D"	M
2	D-AD-7015072-0-0	MNCAD SUB-ASSY	M				
	B-MD-7420242-0-0	SPACER, MODULE	M				
	C-IA-7419864-0-0	SUB PANEL	M				
				7	C-IA-7416834-0-0	CONTROL PANEL "A/D"	M
					C-SS-7416834-01	CONTROL PANEL	M
					C-SS-7416834-02	CONTROL PANEL	M
					C-SS-7416834-03	CONTROL PANEL	M
					C-SS-7416834-04	CONTROL PANEL	M
					C-SS-7416834-05	CONTROL PANEL	M
3	B-DD-Aβ13-β	MNCAD 12 BIT A/D	E/M				
	A-PL-Aβ13-β-β	12 BIT A/D	E/M				
	D-UA-Aβ13-β-β	12 BIT A/D	E/M				
	D-CS-Aβ13-β-1	12 BIT A/D	E/M				
				8	D-IA-7014153-0-0	CORN ASSY I/O	E/M
					A-DC-7416836-0-0	DECAL, I/O CORN	E/M
					A-DC-7418934-0-0	DECAL, I.D. I/O CORN	E/M
4	D-IA-7015071-0-0	CORN. MNC ASSY (MNCAD)	E/M				
				9	A-SP-3700358-0-0	PACKAGING INSTRUCTIONS	M

TWE: E ELECTRICAL  
 M MECHANICAL  
 EM ELECTROMECHANICAL



TITLE: MNCAD UNIT ASSY  
 SHEET 3 OF 3  
 SIZE CODE: B DD  
 NUMBER: MNCAD-β  
 REV: B

MR



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123 (SEE 2)

119 (QTY 4)

118

0-15

0-18

0-19

0-22

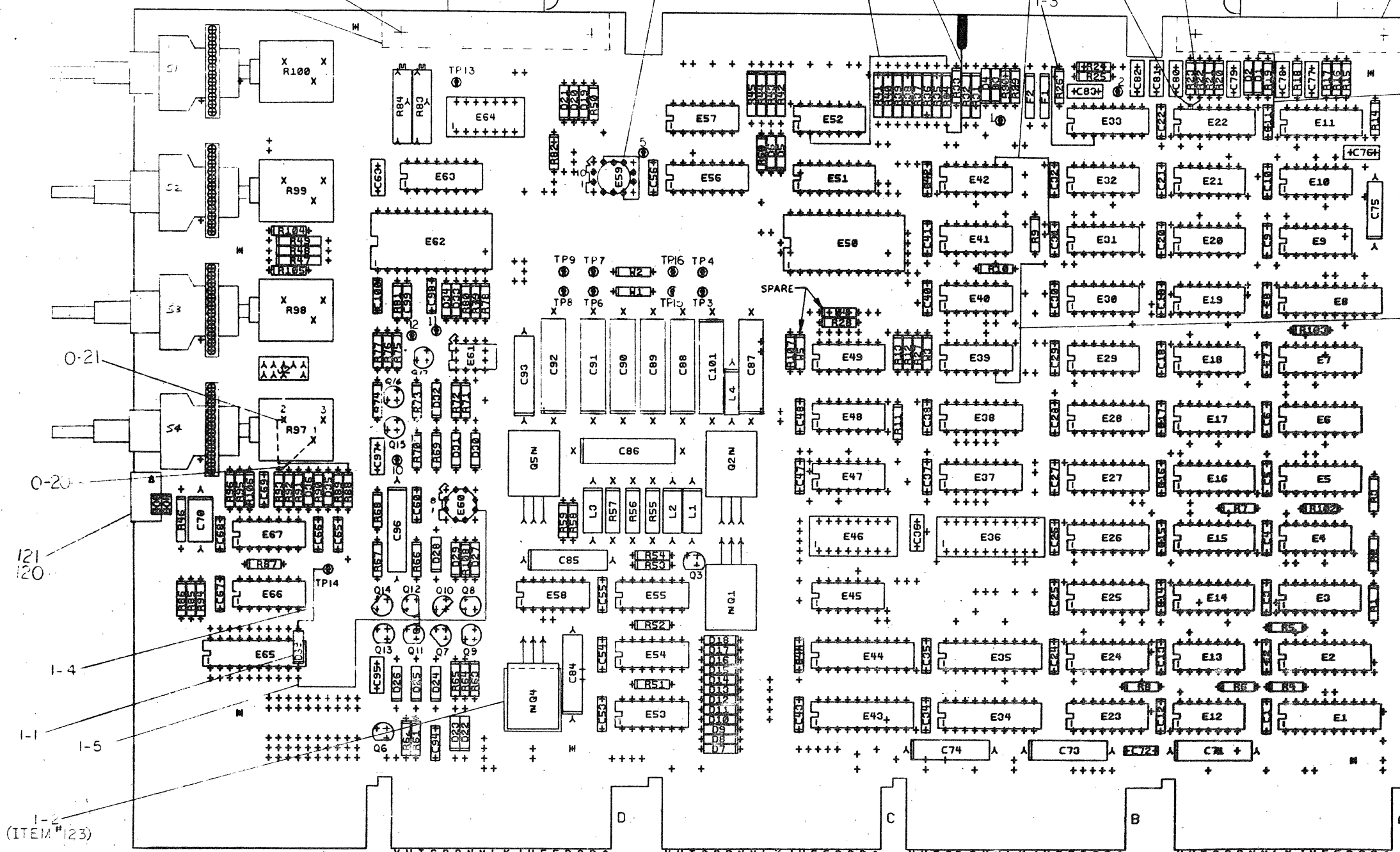
0-12

1-3

0-17

0-16

COMPONENT SIDE VIEW 123 (SEE 2)



NOTES:

CHANGE NO	REV
1	D
2	C
3	B
4	A

ETCH REV.	D
P.C. DESIGN DATA BASE REV.	A

SIGNATURES	DATE
DRN. E. WILSON	10/21/71
CHK. D. C. WILSON	10/21/71
ENG. G. C. WILSON	10/21/71
PROD. ENG. G. C. WILSON	10/21/71

digital

TITLE  
A-D FOR MINC

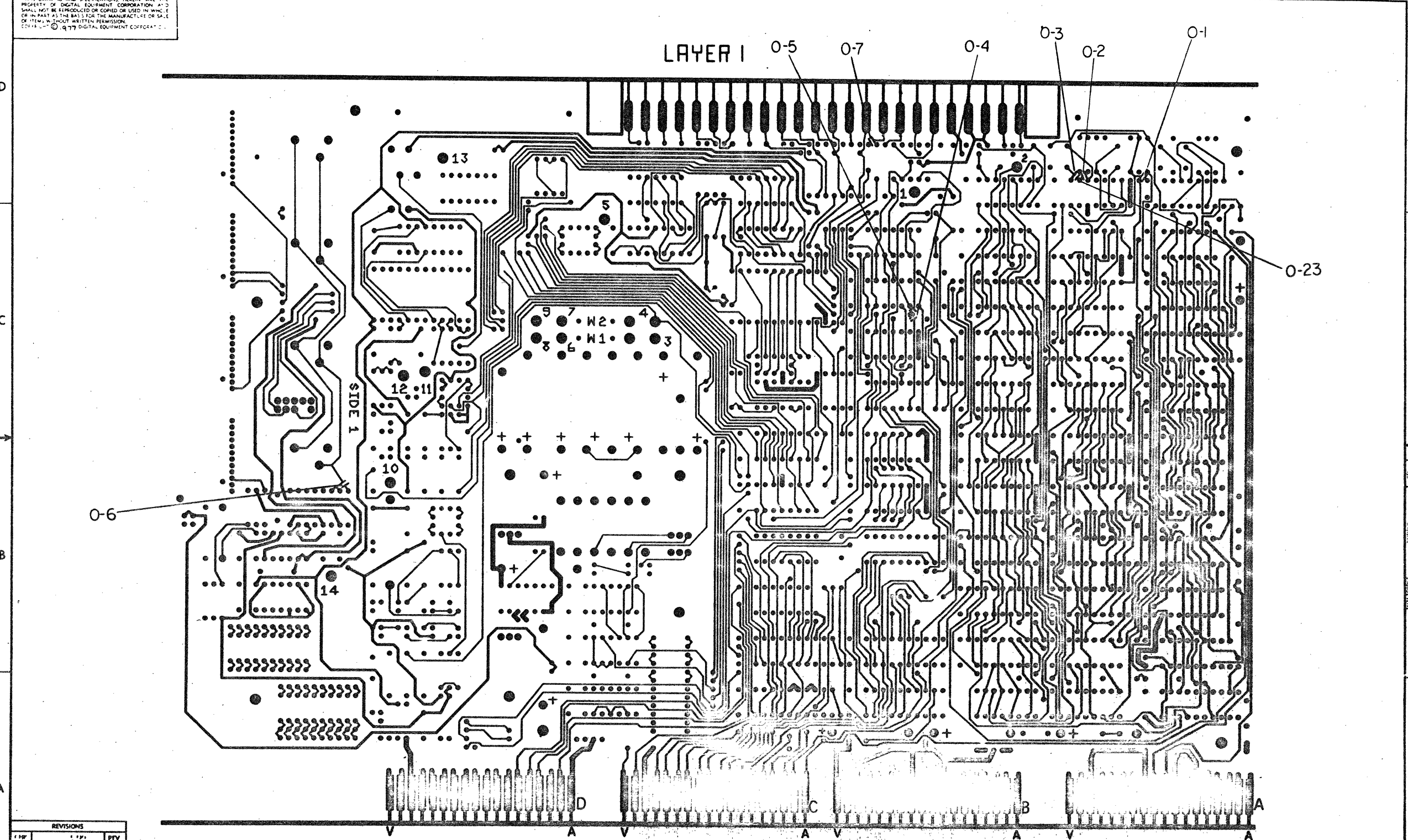
SCALE	2/A
SHT.	1 OF 4
NEXT HIGHER ASSY.	B-DD-A013-0

SIZE	CODE	NUMBER	REV
D	UA	A013-0-0	D

1 MS# 104409D

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DUA013-0-0 2 me 1

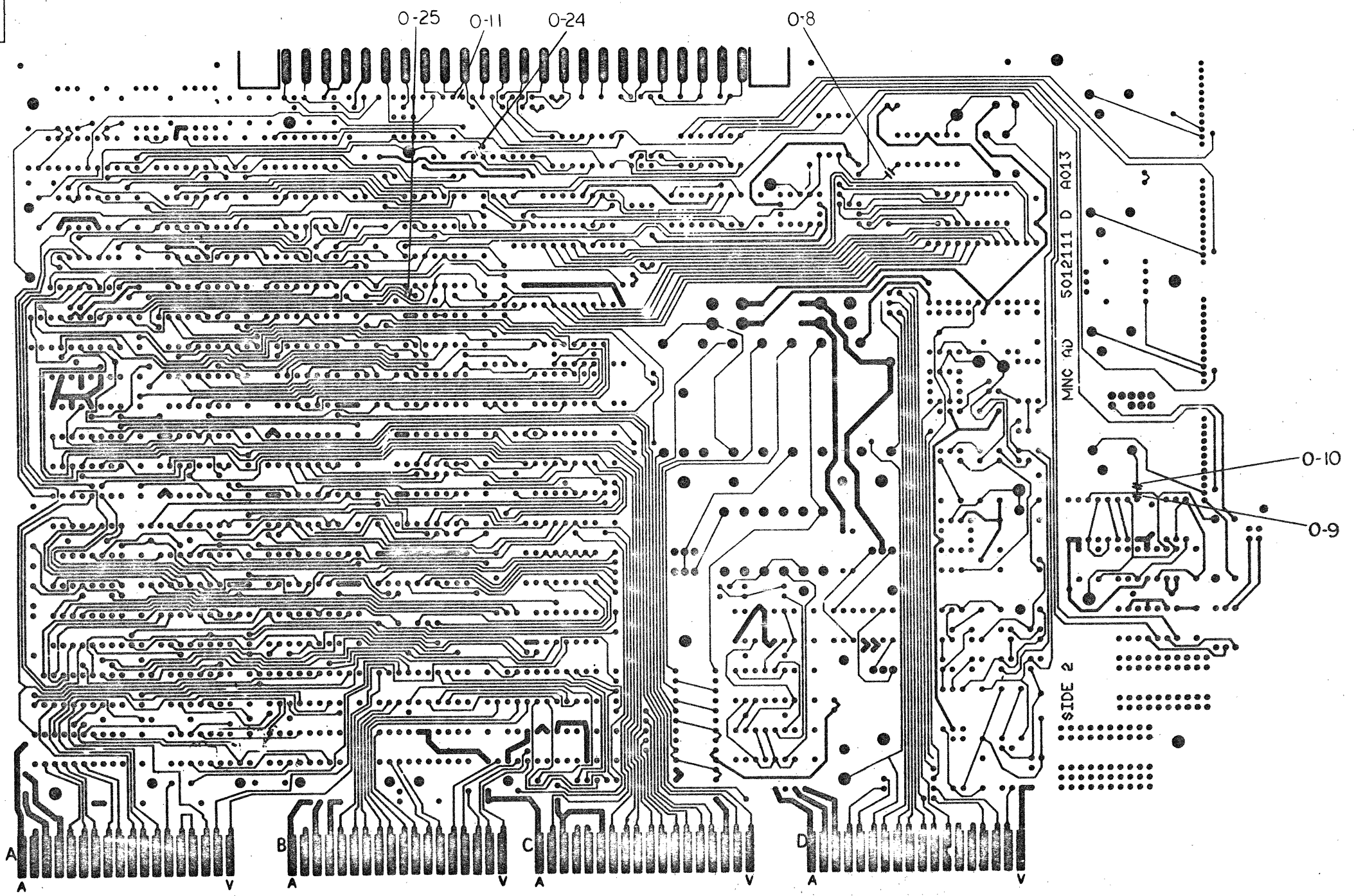


REVISIONS		
REV.	DATE	BY
1		PPV

TITLE A/D FOR MINC		SIZE CODE DUA013-0-0	NUMBER 2 OF 4	REV. D
DATE 2/1	DRW 2	DIST.		

8 7 6 5 4 3 2 1

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MNC AD S012111 D A013

SIDE 2

DUA A013-0-0

REVISIONS		
CHK	CHANGE NO	REV

TITLE	A-D FOR MNC	SIZE CODE	D UA	NUMBER	A013-0-0	REV.	D
SCALE	2/1	SHEET	3	OF	4	DIST.	

8 7 6 5 4 3 2 1

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REWORK INSTRUCTIONS  
 FIRST RELEASE

- ETCH CUTS, SIDE 1 (AS SHOWN)
- O-1 AT TOP OF C11
  - O-2, O-3 AT BOTH SIDES OF E22(15)
  - O-4, O-5 AT BOTH SIDES OF PTH BELOW E41(6)
  - O-6 AT TOP OF R88
  - O-7 AT TOP OF R53
- ETCH CUTS, SIDE 2 (AS SHOWN)
- O-8 AT E64(7)
  - O-9 AT TOP OF R93
  - O-10 ON ETCH RUNNING FROM R93 TO R97(2)
  - O-11 AT TOP OF R34
  - O-24 AT BOTTOM OF R34
  - O-25 AT PTH BELOW E41(6)
- WIRE ADDS, SIDE 1 (AS SHOWN)
- O-12 FROM E42(9) TO PTH TO THE RIGHT OF R9
  - O-13 FROM E39(6) TO PTH BELOW AND TO THE RIGHT OF R9
  - O-14 FROM TOP OF D1 TO PTH AT C11
  - O-15 FROM E59(4) TO E59(9)
  - O-16 LEFT PIN E22(15) AND ADD WIRE FROM E22(15) TO BOTTOM OF R22
  - O-17 FROM E22(15) TO BOTTOM OF C80
  - O-18 FROM E52(2) TO TOP OF R34
  - O-19 FROM BOTTOM OF R34 TO J11(6)
- WIRE ADDS SIDE 2 (AS SHOWN)
- O-20 FROM TOP OF R93 TO R97(1)
  - O-21 FROM TOP OF R88 TO R97(2)
  - O-22 FROM BOTTOM OF R34 TO J11(6)
- DRILLING
- O-23 DRILL OUT E22(15) (REF A-SP-7665169-0-0)

ECO #1

COMPONENT ADDS SIDE #1 (AS SHOWN)

- I-1 ADD DIODE (MCL1304) D39 IN LOCATION E65 BETWEEN PINS 10 AND 11. INSERT CATHODE IN PIN 10 HOLE AND ANODE LEAD IN OUTER HOLE ATTACHED TO PIN 11.
- I-2 ADD TAPE (ITEM 123) TO BOTTOM OF Q4. PLACE TAPE ON PART NOT ON THE BOARD.

WIRE ADDS SIDE #1 (AS SHOWN)

- I-3 FROM TOP R26 TO E33 PIN 3
- I-4 FROM TP14 TO ANODE END OF D39
- I-5 FROM CATHODE END OF D39 TO ECC PIN 4

REVISIONS	
CHK	CHANGE NO.

TITLE	A-D FOR MINC	SIZE CODE	D UA	NUMBER	A013-0-0	REV.	D
SCALE	1" = 1"	SHEET	4	OF	4	DIST.	



MR

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION	REFERENCE DESIGNATOR
1	1	D=MD=5012111-0=0	5012111=00	DRILL & ETCH BOARD	1	
2	2		1010274=01	.22 MFD 50V +80=20% Z5U CER	56	C1-C22,C24=C32,C34,C35,C37,C38, C40=C44,C47,C48,C53=C56,C60, C65=C69,C72,C94,C98,C100
3	3		1000042=00	1000.0 MMF 100V 5%200PPM MICA	2	C36,C80
4	4		1000027=00	820.0 MMF 100V 5%200PPM MICA	1	C63
5	5		1004812=00	15 MFD 20V 10% S.TANT	5	C71,C73,C74,C85,C93
6	6		1001776=00	1 MFD 35V 10% S.TANT	1	C75
7	7		1000026=00	580.0 MMF 100V 5%200PPM MICA	1	C76
8	8		1000021=00	220.0 MMF 100V 5%200PPM MICA	3	C77,C78,C79
9	9		1000020=00	180.0 MMF 100V 5%200PPM MICA	1	C81
10	10		1000022=00	270.0 MMF 100V 5%200PPM MICA	1	C82
11	11		1000024=00	470.0 MMF 100V 5%200PPM MICA	1	C83
12	12		1005306=00	6.8MFD 35V 10% S.TANT	1	C84
13	13		1005335=00	39 MFD 20V 10% S.TANT	4	C86,C87,C88,C89
14	14		1002433=00	22 MFD 35V 20% S.TANT	4	C90,C91,C92,C101
15	15		1005820=00	22.0 MMF 100V 5%200PPM MICA	1	C95
16	16		1009939=01	.0022 MFD 100V 10% POLYSTY	1	C96
17	17		1000016=00	100.0 MMF 100V 5%200PPM MICA	1	C97
18	18		1001610=00	.01 MFD 50V +80=20% Z5U CER	1	C99
19	19		1010031=03	.22 MFD 50V 10% M.POLYCARB	1	C70
20	20		1105275=00	D 672 TR= 15NS PIV= 60V SI	28	D1=D18,D19,D21,D29=D36
21	21		1109502=00	1N 4742 VZ= 12.0 10% 1W Y	1	D20
22	22		1109991=00	1N 754A VZ= 6.8 5% .40W	1	D22
23	23		1110232=00	MCL1304 CL84MA FROM10=80V	3	D23,D28,D39
24	24		1103041=00	DEC 777 QS=12PCB PIV= 8VS	3	D24,D25,D26
25	25		1104860=00	1N 746A VZ= 3.3 5%	1	D27
26	26		1211164=06	SW,DIP 1P 1A 10POS	1	E36
27	27		1211164=04	SW,DIP 1P 1A 8POS	1	E46
28	28		1213488=00	CONN 10POS HOUSING	1	J2

REVISION HISTORY			BASIC PART NO: QA013		DRN: E,WILSON	DATE: 12-DEC-77	DIGITALL			
ENG:	ECO NUMBER	REV	SECTION A OF A	CHK'D:	R,W,CAUNTER	DATE: 13-DEC-77	PARTS LIST			
---	INIT	C	SECTION VARIATION INDEX	DES.ENG:	G,SIROIS	DATE: 3-FEB-78	A/D FOR MING			
MN	MRO01	D	(A) 00	RESP.ENG.:	A,FILZ	DATE: 3-FEB-78	DOCUMENT NUMBER			
ACP	A013-MRO03	E	(B)	MFG.ENG.:	R,REBELLO	DATE: 3-FEB-78	SIZE:	CODE:	NUMBER	REV
			(C)	ASSEMBLY NUMBER:			K	PL	A013-0-DRP	E
			(D)	ID=UA=A013-0=0	TOP DOCUMENT NUMBER:					
			(E)		B=DD=A013-0=0	FILE NAME:				EDIT 8
			(F)			20545E,PLS				17
			(G)							
			(H)							
			(I)							
			(J)							
			(K)							
			(L)							
			(M)							
			(N)							

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LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY	PER VARIATION	REFERENCE DESIGNATOR
					00		
29	29		1214352=00	SW,ROT 1P 4A 3POS	4		S1,S2,S3,S4
30	30		1300295=00	330.0 .25 W 5.0 %	2	CC	R1,R4
31	31		1301424=00	680.0 .25 W 5.0 %	2	CC	R2,R6
32	32		1300365=00	1.0 K .25 W 5.0 %	34	CC	R3,R5,R7=R14,R16,R20,R23,R26, CONT R27,R28,R33,R107,R102=R106,R29, CONT R30,R50=R93,R62,R66,R82,R85,R86
33	33		1302388=00	2.0 K .25 W 5.0 %	1	CC	R15
34	34		1304870=00	6.81 K .25 W 1.0 %	2	RN55D=F10	R17,R18
35	35		1300271=00	220.0 .25 W 5.0 %	1	CC	R19
36	36		1304854=00	5.11 K .25 W 1.0 %	1	RN55D=F10	R21
37	37		1309416=00	31.60 K .25 W 1.0 %	1	RN55D=F10	R22
38	38		1300479=00	10.0 K .25 W 5.0 %	6	CC	R24,R25,R61,R81,R87,R96
39	39		1310881=00	1.0 K .25 W 1.0 %	16	FUSE	R34=R49
40	40		1310881=02	47.0 .25 W 1.0 %	2	FUSE	R31,R32
41	41		1300250=00	150.0 .25 W 5.0 %	1	CC	R54
42	42		1300315=00	470.0 .50 W 5.0 %	2	CC	R55,R57
43	43		1301781=00	82.0 .50 W 5.0 %	1	CC	R56
44	44		1309422=00	5.10 .25 W 5.0 %	2	CC	R58,R59
45	45		1301425=00	300.0 .25 W 5.0 %	1	CC	R60
46	46		1300496=00	15.0 K .25 W 5.0 %	1	CC	R64
47	47		1300229=00	100.0 .25 W 5.0 %	2	CC	R63,R65
48	48		1303178=00	620.0 .25 W 5.0 %	1	CC	R67
49	49		1300426=00	2.70 K .25 W 5.0 %	2	CC	R68,R69
50	50		1300432=00	3.0 K .25 W 5.0 %	2	CC	R70,R108
51	51		1302685=00	909.0 .25 W 1.0 %	3	RN55D=F10	R71,R88,R93
52	52		1305114=00	3.48 K .25 W 1.0 %	1	RN55D=F10	R72
53	53		1302955=00	750.0 .25 W 1.0 %	1	RN55D=F10	R73
54	54		1305516=00	128.0 K .25 W .10 %	1	RN55E=B 2	R74
55	55		1302379=00	75.0 .25 W 5.0 %	2	CC	R75,R76
56	56		1302859=00	5.76 K .25 W 1.0 %	1	RN55D=F10	R77
57	57		1302899=00	30.10 .25 W 1.0 %	1	RN55D=F10	R78
58	58		1303313=00	12.10 K .25 W 1.0 %	1	RN55D=F10	R79
59	59		1303038=00	133.0 .25 W 1.0 %	1	RN55D=F10	R80
60	60		1309143=13	50.0 K .75 W10.0 %	1	POT	R83
61	61		1309143=05	200.0 K .75 W10.0 %	1	POT	R84
62	62		1302396=00	150.0 K .25 W 5.0 %	1	CC	R90
63	63		1300488=00	12.0 K .25 W 5.0 %	2	CC	R94,R95
64	64		1314457=00	5.0 K 1.0 W 5.0 %	4	POT	R97,R98,R99,R100
65	65		1300005=01	R NETWORK 13=1K 5.0 % 14PIN	2		E41,E48
66	66		1315012=00	300.0 K .25 W 5.0 %	1	CC	R89
67	67		1303312=00	10.0 K .25 W 1.0 %	1	RN55D=F10	R92
68	68		1309418=00	24.30 K .25 W 1.0 %	1	RN55D=F10	R91
69	69		1510414=00	D 45C6 PNP 30WT SI 45 20 Y	1		Q1
70	70		1510171=00	D 44C3 NPN 30WT SI 30 20 Y	3		Q2,Q4,Q5
71	71		1503409=00	DEC6534D PNP 310MW SI 40 90	1		Q3
72	72		1509587=00	SE 4020 NPN 200MW SI 60120 M	5		Q6,Q9,Q11,Q13,Q15
73	73		1509681=00	2N 5245 FET 360MW SIN CHNWL	1		Q7
74	74		1509142=00	DEC4250 PNP 200MW SI 40250	4		Q8,Q12,Q16,Q17

D	I	G	I	T	A	L	TITLE	A/D FOR MINC	SECTION A	OF A	SIZE	CODE	DOCUMENT NUMBER	REV
											K	PL	A013-0-DBP	E

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LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION	REFERENCE DESIGNATOR
					00	
75	75		1509525-00	2N 3906 PNP 310MW SI 40100 Y	2	Q10,Q14
76	76		1603377-00	.22UH 10% 2.7A #WEE.22	2	L1,L2
77	77		1602254-00	22. UH 10% 430MA #RFS22	1	L3
78	78		1610662-00	100.0 UH 10% 165MA #DD1 00	1	L4
79	79		9009122-00	FUSE,SUB-MINI 1/16A,125V GLASS	2	F1,F2
80	80		1912729-00	DC 004 PROTOCOL,REG. SELECT	1	E1
81	81		1912730-00	DC 003 INTERRUPT,2 CIRCUIT	1	E2
82	82		1912951-00	DM 8556 COUNTER,BINARY,4BIT	3	E3,E15,E26
83	83		1905547-00	7474 FF-D DUAL,EDGE TRIGG	3	E4,E20,E30
84	84		1910652-00	74174 FF-D HEX	2	E5,E25
85	85		1911527-00	8097 BUFFER GATE=HEX 2INP	3	E6,E7,E14
86	86		1910155-00	DEC 7408 AND GATE,POS,QUAD 2I	3	E9,E32,E45
87	87		1909686-00	7404 INVERTER GATE=HEX 1I	5	E10,E12,E18,E29,E31
88	88		1912858-00	LS221 ONE SHOT=DUAL,SCHMIT	1	E11
89	89		1909004-00	DEC 7402 NOR GATE=QUAD 2IN	2	E13,E21
90	90		1911330-00	74173 FF-D QUAD,TRISTATE	6	E16,E17,E27,E28,E37,E38
91	91		1905590-00	DEC 7401 NAND GATE=QUAD 2IN,0	1	E19
92	92		1910436-00	DEC 74123 ONE SHOT=DUAL,RETRIG	2	E22,E33
93	93		1911116-00	DEC 8837 RECEIVER,BUS,HEX,UN	1	E23
94	94		1909934-00	8266 MUS 1 OF 2 (QUAD)	1	E24
95	95		1913040-00	DC 005 TRANSCIVER 4BIT	4	E34,E35,E43,E44
96	96		1905580-00	DEC 7450 A=0=I XPNDBLE GATE=D	1	E39
97	97		1909705-00	DEC 8881 NAND GATE=QUAD 2IN 0	1	E40
98	98		1905575-00	7400 NAND GATE=QUAD 2IN	1	E42
99	99		1910741-00	7406 INVERTER GATE=HEX 1I	3	E47,E53,E66
100	100		1909490-00	DEC 8281 COUNTER,ASYNCH UP,BI	2	E49,E55
101	101		1911628-00	AM 2504 SUCCESSIVE APPROX REG	1	E50
102	102		1911598-00	801C MUX,SCHNL,ANALOG	2	E51,E56
103	103		1910010-00	DEC 2801 16 DIODE ARRAY,CORE	2	E52,E57
104	104		1905576-00	7410 NAND GATE=TRIPLE 3IN	1	E54
105	105		1913218-00	325 VOLT REG FIX +/-15V	1	E58
106	106		2111285-02	HI 200-5 DUAL ANALOG SW,CMOS	1	E59
107	107		1911144-00	2505 OP AMP .1% SETTLE	1	E60
108	108		1910235-01	310D OP AMP UNITY GAIN VO	1	E61
109	109		1912401-00	AD562 DAC,12BIT,MULT	1	E62
110	110		1911629-00	1408L8 DAC, 8BIT	1	E63
111	111		1913219-00	AD 2700/L ANALOG SWITCH 10V PR	1	E64
112	112		1912107-00	324 OP AMP,QUAD	1	E67
113	113		9006735-00	EYELET, FUNNEL FLANGE, .059 OD X	16	TP1=TP160031010
114	114		9009185-00	*** THIS ITEM IS NOT USED ***		
115	115		1114494-00	LED 1.0MCD@20MA	2	D37,D38
116	116		2304081-00	B1=01	1	E8
117	117	C=MD=7420191-0=0	7420191-00	HANDLE	1	
118	118	C=MD=7420192-0=0	7420192-00	HANDLE RETAINER	2	
119	119		9006732-00	EYELET,ROLL FLANGE .121ODX .219	4	
120	120		9009783-00	SCREW, SLOTTED ROUND HD. 2-56 X	1	
121	121		1215265-00	HOLDER,LED	1	
122	122	A=SP=7665169-0=0		MULTILAYER REWORK STANDARD	REF	

D	I	G	I	T	A	L	TITLE	A/D FOR MING	SECTION A OF A	SIZE	CODE	DOCUMENT NUMBER	REV
										K	PL	A013=0=0BP	E

MR

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AUTOMATED BY PRILST.1D(1)

P A R T S L I S T

SHEET A4 OF A4

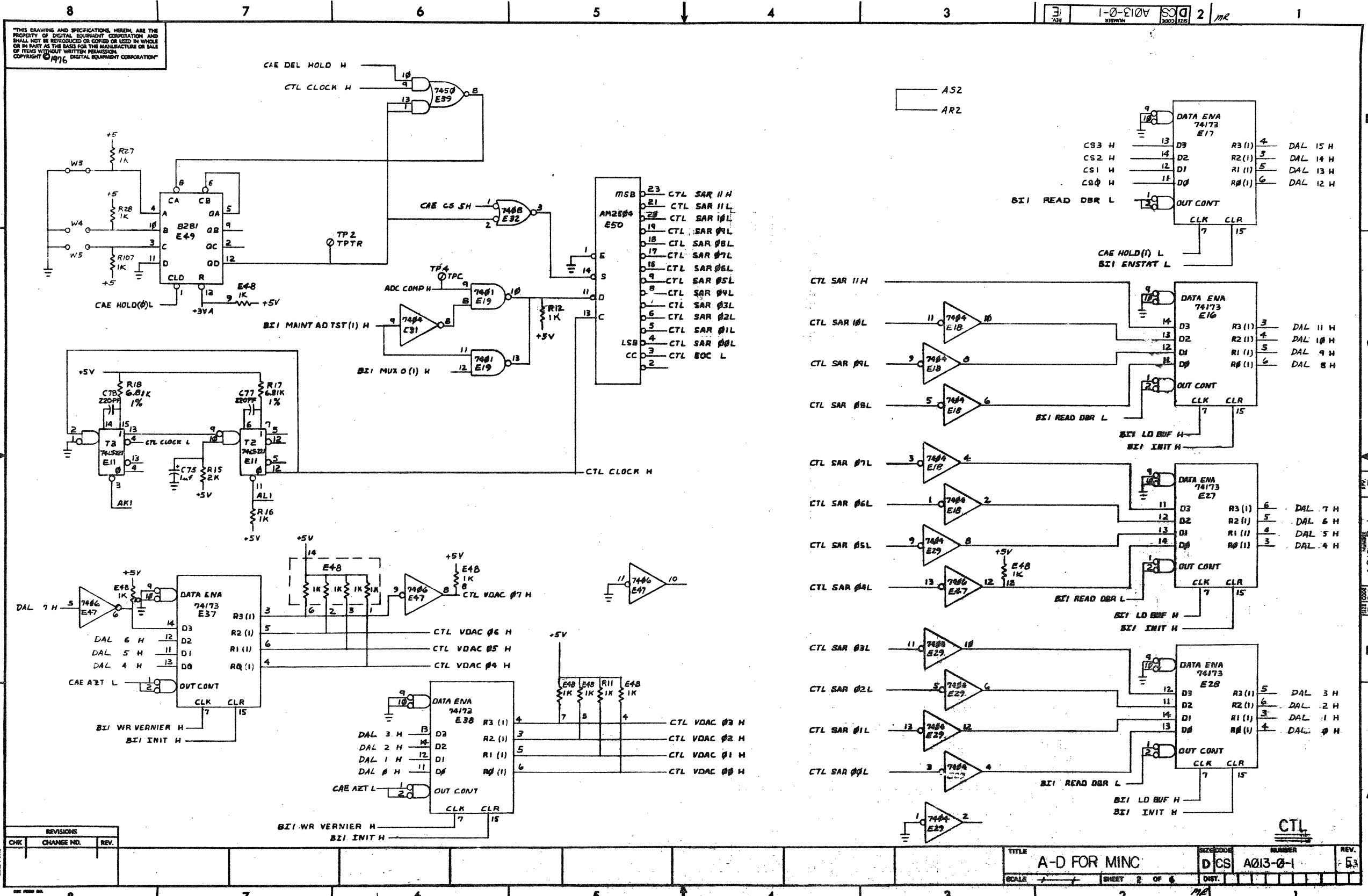
LINE ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION	REFERENCE DESIGNATOR
123	123	9009507-00	TAPE, VINYL, ELECTRICAL, 3/4 X 6	A/R	

D	I	G	I	T	A	L	TITLE	A/D FOR MINC	SECTION A OF A	SIZE	CODE	DOCUMENT NUMBER	REV
										K	PL	A013-0-DBP	E

MK







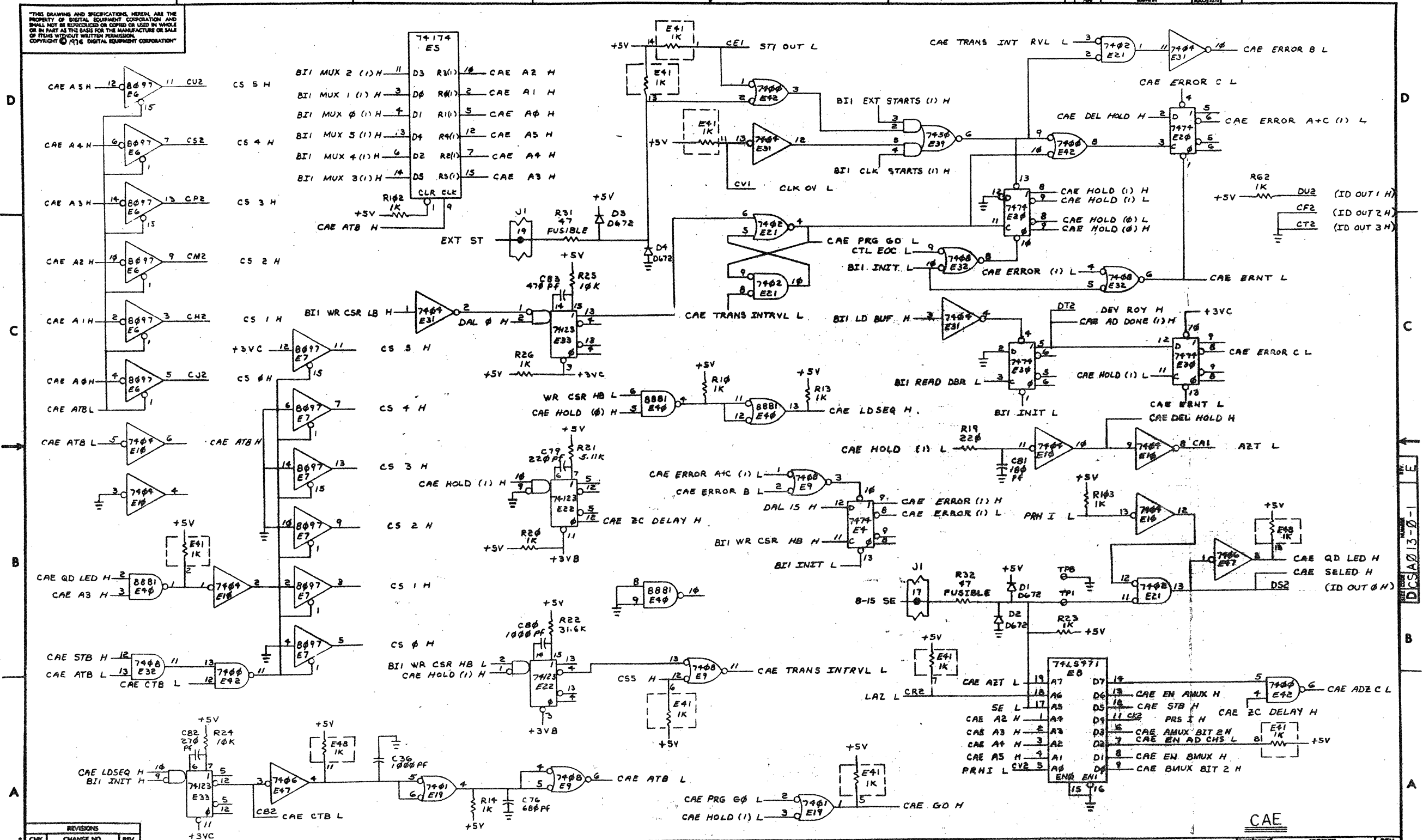
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REV. 1-0-1  
 DCS A013-0-1  
 2 MK

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	A-D FOR MINC	SIZE/DWG	NUMBER	REV.
SCALE	SHEET 2 OF 6	DCS	A013-0-1	E3

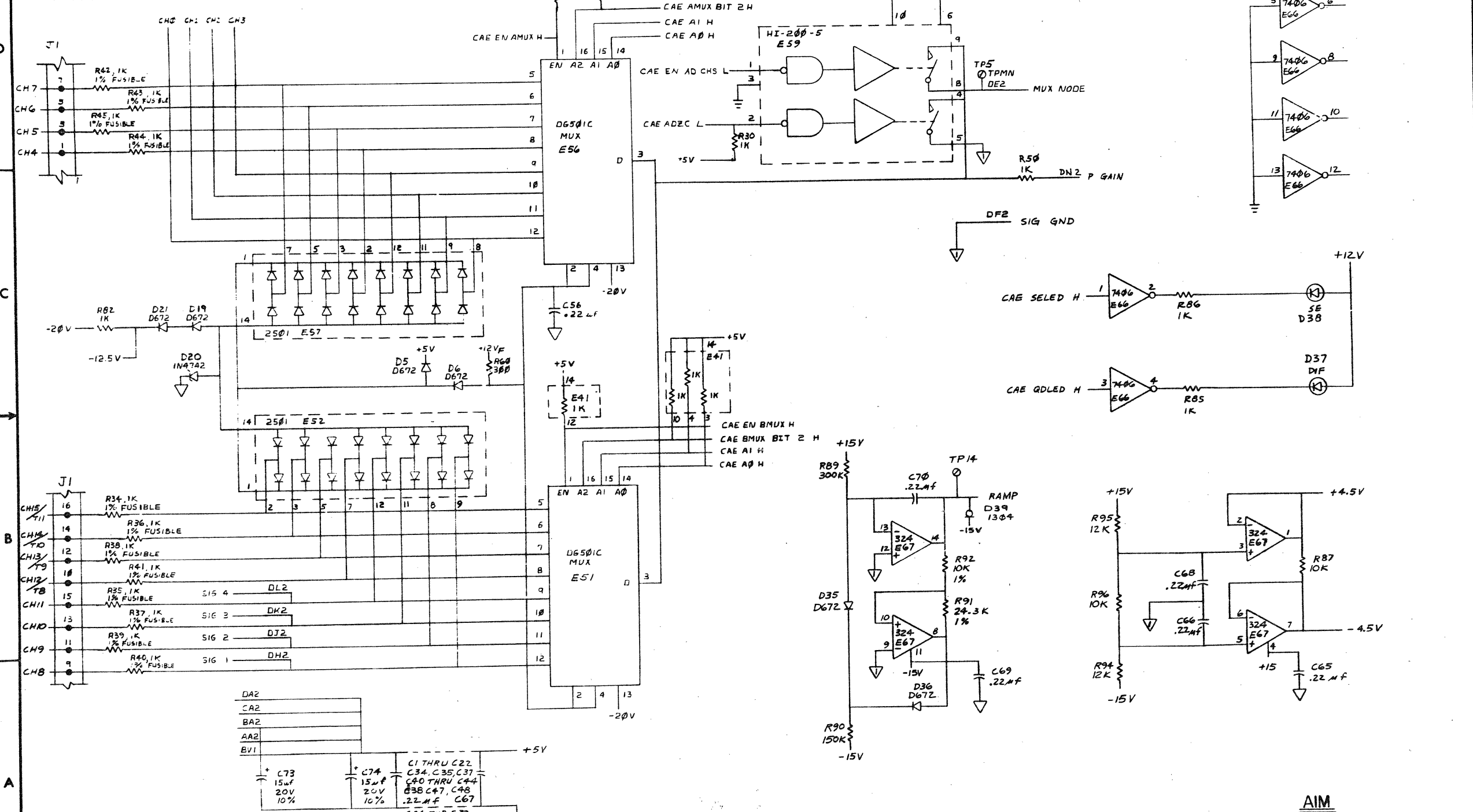
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REV.	CHANGE NO.	CHK.

TITLE	A-D FOR MINC	NUMBER	DCSA013-0-1	REV.	E
SCALE	NONE	SHEET	3 OF 6	DATE	

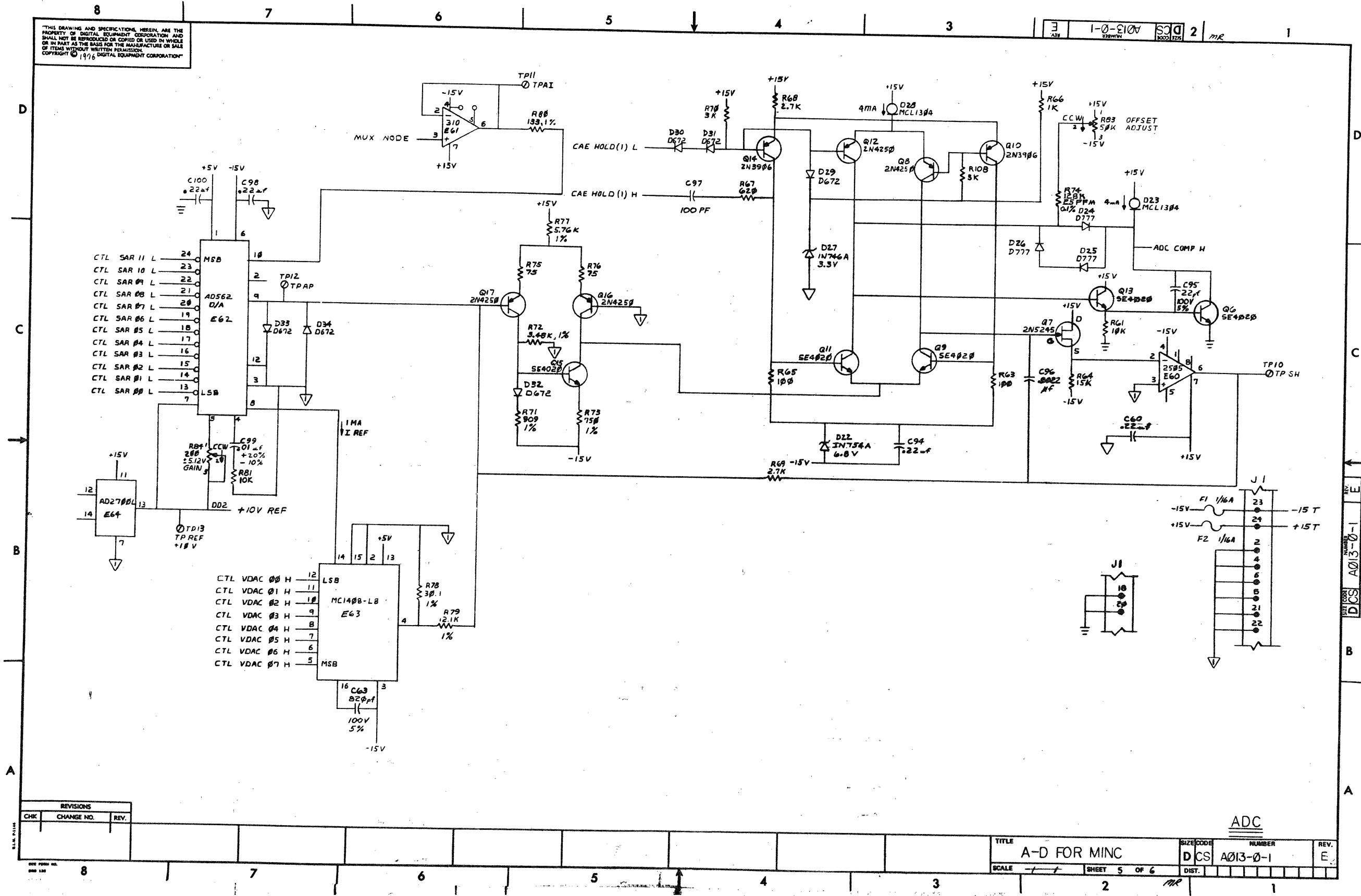
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REVISIONS		
CHK	CHANGE NO.	REV.

C1 THRU C22		C34, C35, C37		C38, C47, C48		C24 THRU C32		C53, C54, C55	
DA2		CA2		BA2		AA2		BV1	
C73		C74		C75		C76		C77	
15µF		15µF		20V		20V		10%	
20V		20V		20V		20V		10%	
10%		10%		10%		10%		10%	

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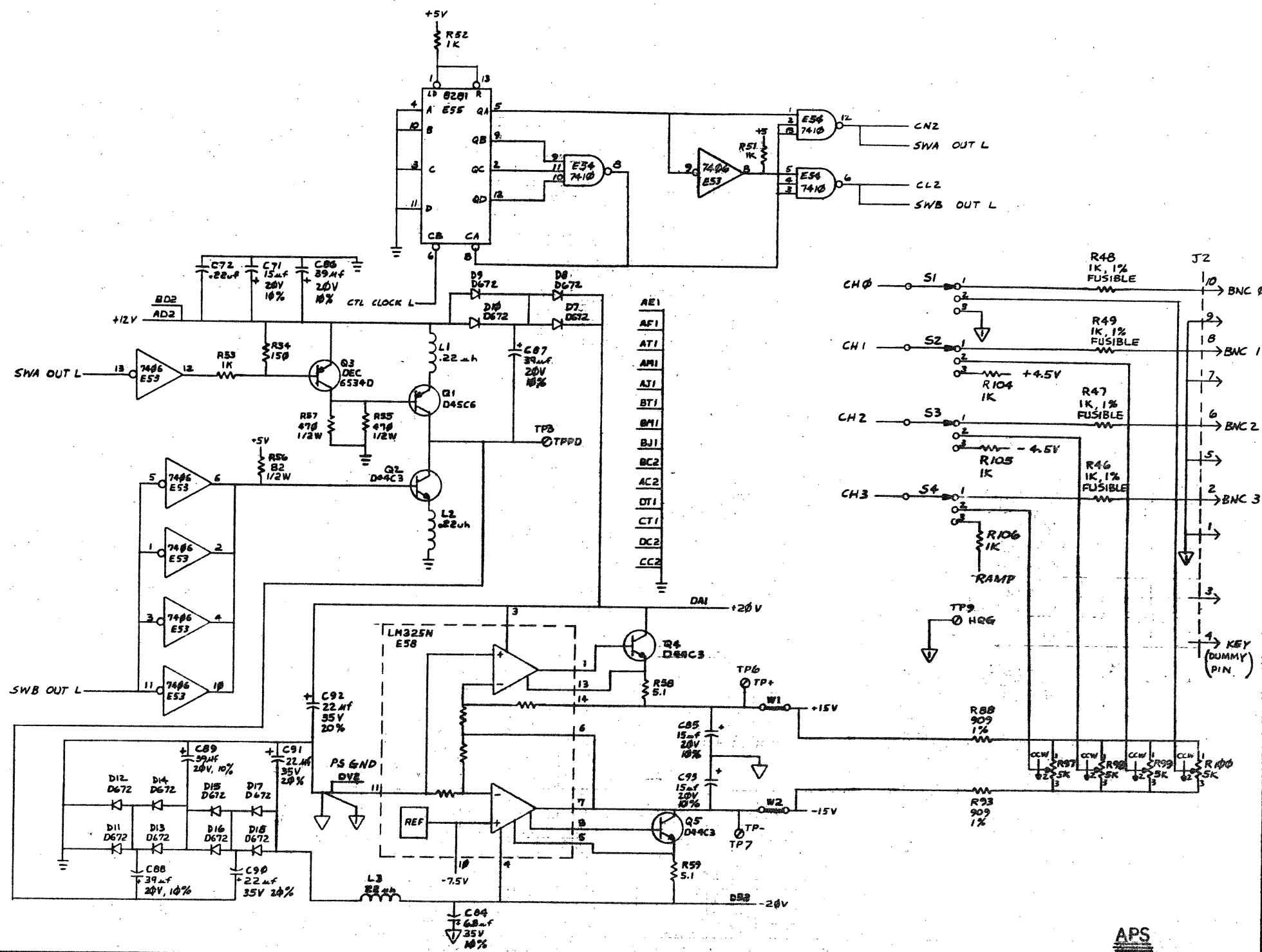
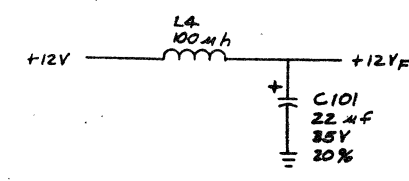


REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		ADC	
A-D FOR MINC		SIZE CODE	NUMBER
SCALE		D CS	A013-0-1
SHEET 5 OF 6		DIST.	

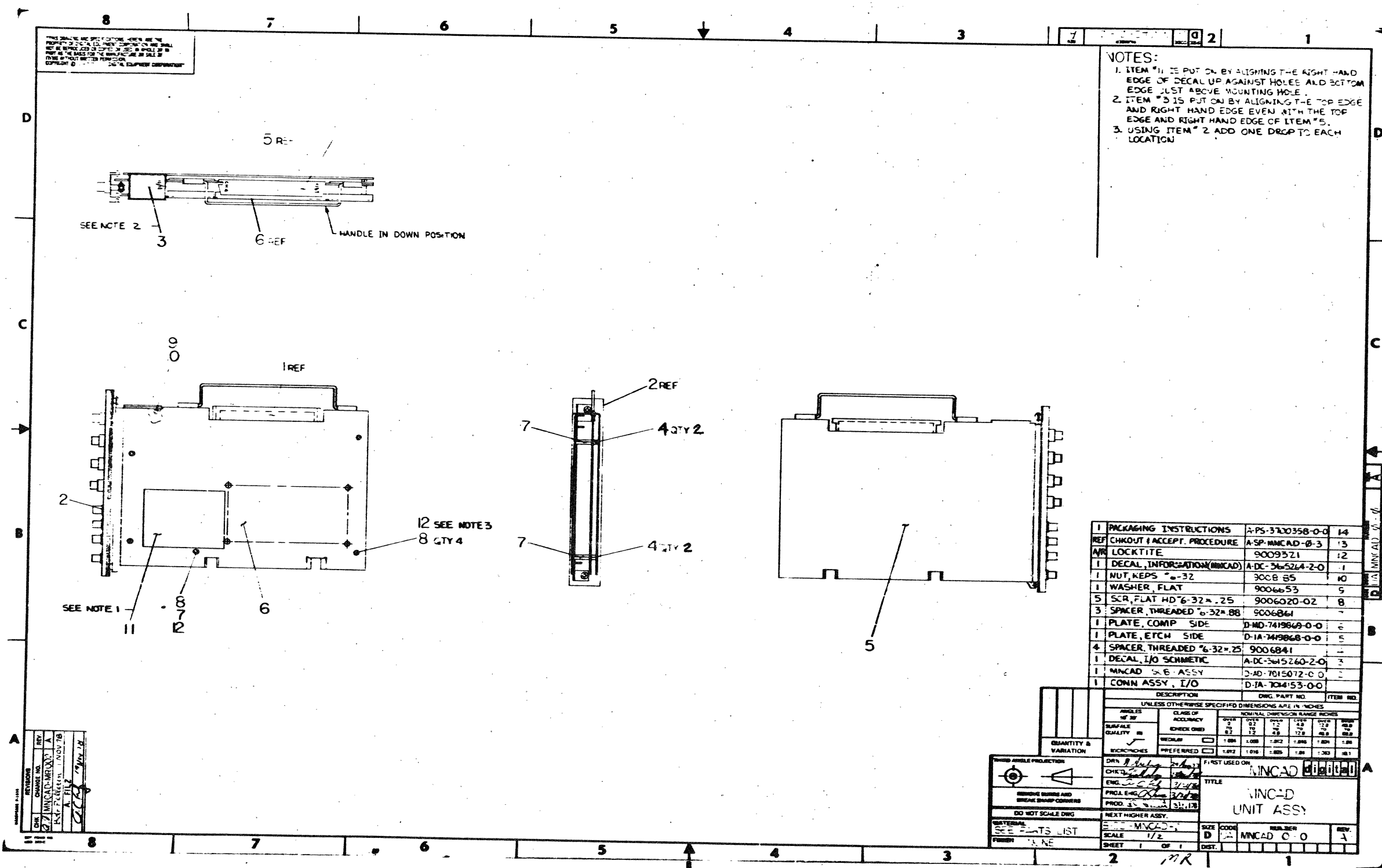
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D  
C  
B  
A



REVISIONS		
CHK	CHANGE NO.	REV.





**NOTES:**

- ITEM #1 IS PUT ON BY ALIGNING THE RIGHT HAND EDGE OF DECAL UP AGAINST HOLES AND BOTTOM EDGE JUST ABOVE MOUNTING HOLE.
- ITEM #3 IS PUT ON BY ALIGNING THE TOP EDGE AND RIGHT HAND EDGE EVEN WITH THE TOP EDGE AND RIGHT HAND EDGE OF ITEM #5.
- USING ITEM #2 ADD ONE DROP TO EACH LOCATION.

DESCRIPTION	QTY	ITEM NO.
1 PACKAGING INSTRUCTIONS	A-PS-3700358-0-0	14
REF CHECKOUT / ACCEPT. PROCEDURE	A-SP-MNCAD-0-3	13
LOCKTITE	9009321	12
1 DECAL, INFORMATION (MNCAD)	A-DC-365264-2-0	1
1 NUT, KEPS #6-32	300855	10
1 WASHER, FLAT	9006653	9
5 SCR, FLAT HD #6-32 x .25	9006020-02	8
3 SPACER, THREADED #6-32 x .88	9006841	7
1 PLATE, COMP SIDE	D-MD-7419869-0-0	6
1 PLATE, ETCH SIDE	D-IA-7419868-0-0	5
4 SPACER, THREADED #6-32 x .25	9006841	4
1 DECAL, I/O SCHMATIC	A-DC-345260-2-0	3
1 MNCAD S.E. ASSY	D-AD-7015072-0-0	2
1 CONN ASSY, I/O	D-IA-704153-0-0	1

QUANTITY & VARIATION		FIRST USED ON																									
QUANTITY	VARIATION	DATE	BY																								
1	1	3/1/78	WJR																								
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		TITLE																									
<table border="1"> <thead> <tr> <th>ANGLES</th> <th>CLASS OF ACCURACY</th> <th colspan="4">NOMINAL DIMENSION RANGE INCHES</th> </tr> <tr> <th>OF 90°</th> <th>CHECK ONE</th> <th>0.001 - 0.250</th> <th>0.250 - 0.499</th> <th>0.500 - 0.999</th> <th>1.000 - 1.999</th> </tr> </thead> <tbody> <tr> <td>±0.005</td> <td><input checked="" type="checkbox"/> REGULAR</td> <td>±0.005</td> <td>±0.005</td> <td>±0.005</td> <td>±0.005</td> </tr> <tr> <td>±0.002</td> <td><input type="checkbox"/> PREFERRED</td> <td>±0.002</td> <td>±0.002</td> <td>±0.002</td> <td>±0.002</td> </tr> </tbody> </table>		ANGLES	CLASS OF ACCURACY	NOMINAL DIMENSION RANGE INCHES				OF 90°	CHECK ONE	0.001 - 0.250	0.250 - 0.499	0.500 - 0.999	1.000 - 1.999	±0.005	<input checked="" type="checkbox"/> REGULAR	±0.005	±0.005	±0.005	±0.005	±0.002	<input type="checkbox"/> PREFERRED	±0.002	±0.002	±0.002	±0.002	MNCAD 010101	
ANGLES	CLASS OF ACCURACY	NOMINAL DIMENSION RANGE INCHES																									
OF 90°	CHECK ONE	0.001 - 0.250	0.250 - 0.499	0.500 - 0.999	1.000 - 1.999																						
±0.005	<input checked="" type="checkbox"/> REGULAR	±0.005	±0.005	±0.005	±0.005																						
±0.002	<input type="checkbox"/> PREFERRED	±0.002	±0.002	±0.002	±0.002																						
DO NOT SCALE DWG		MNCAD UNIT ASSY																									
SEE PARTS LIST		SCALE	1/2																								
FINISH		SHEET	1 OF 1																								

REV	DATE	BY	CHKD
1	NOV 78	WJR	WJR



DIGITAL EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 7/10/78

TITLE MNCAD INSTALLATION/ACCEPTANCE PROCEDURE

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

ENG	APPD	SIZE	CODE	NUMBER	REV
<i>John...</i>	<i>...</i>	A	SP	MNCAD-0-4	1

DEC 10-10807-1070A-R075  
DRA 107A

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE MNCAD INSTALLATION/ACCEPTANCE PROCEDURE

1.0 GENERAL

1.1 SCOPE

This document describes the procedures for the installation and field acceptance of the MNCAD (A/D converter) option for the MINC-11 System. This procedure will be used for in-house FA&T, field add-on and new system installation, and periodic verification testing.

1.2 EQUIPMENT

MINC-11	System
MNCAD-TA.	Test Module (Optional)
7014153-0-0	I/O Connector
Reference	Precision Voltage Source

1.3 DOCUMENTATION

MD-11-DVMNA	MNCAD Diagnostic Program
D-C8-A013-0-1	Circuit Schematics
AA-0572A-TC	Manual - "Working with MINC Devices"

SIZE	CODE	NUMBER	REV
A	SP	MNCAD-0-4	1

DEC FORM NO EN-01000-10-N070-1001  
DRA 100

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE MNCAD INSTALLATION/ACCEPTANCE PROCEDURE

2.0 INSTALLATION

2.1 ADDRESS & VECTOR

The DONE interrupt vector and CSR address are selected through two switch packs mounted on the PC board and accessible through the right cover.

The DONE interrupt vector is set on the eight switch pack (ref. figure 2.1). An OFF switch is decoded as "0" and an ON switch is decoded as "1". The ERROR interrupt vector is always 4 octal higher than the DONE vector.

DONE vector:  
Octal Vector = XY0

ERROR vector:  
Octal vector = XY0+4

The CSR address is set on the ten switch pack. The DBR address is always 2 octal higher than the CSR address.

CSR address:  
Octal address = 17WXYE,  
where E = 0 or 4 octal

DBR address:  
Octal address = 17WXYE+2,  
where E = 0 or 4 octal

Select and set the DONE vector and CSR address.  
The default address is 171000 and vector is 400.

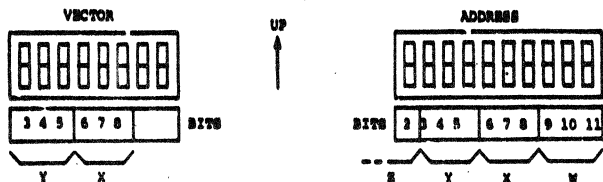


FIGURE 2.1 - VECTOR AND ADDRESS SWITCH PACKS

SIZE	CODE	NUMBER	REV
A	SP	MNCAD-0-4	1

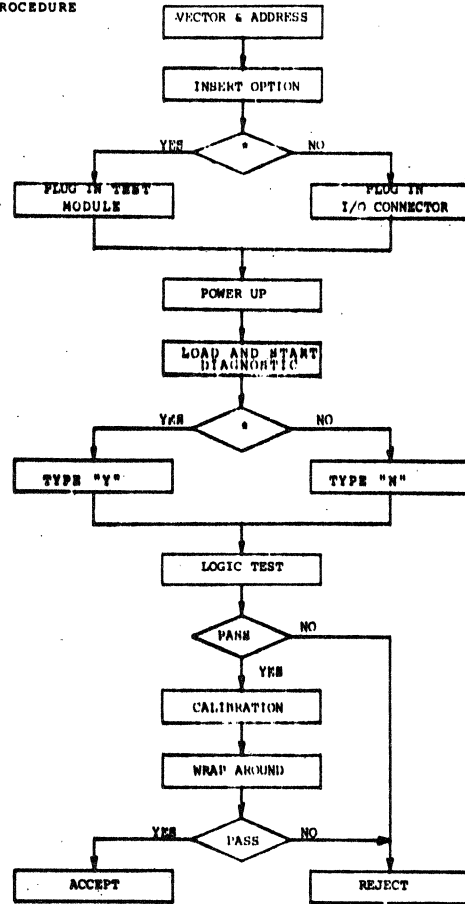
DEC FORM NO EN-01000-10-N070-1001  
DRA 100

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE MNCAD INSTALLATION/ACCEPTANCE PROCEDURE

1.4 PROCEDURE



\* Test Module Available

SIZE	CODE	NUMBER	REV
A	SP	MNCAD-0-4	1

DEC FORM NO EN-01000-10-N070-1001  
DRA 100

MR

ENGINEERING SPECIFICATION	CONTINUATION SHEET
TITLE MNCAD INSTALLATION/ACCEPTANCE PROCEDURE	
<p>2.2 LOCATION</p> <p>The MNCAD acts as the partition separating the analog options from the digital options and the MNCAA option. When selecting the MNCAD slot, sufficient room should be left on either side of the MNCAD for the desired number of each group of options. Analog options are inserted to the left of the MNCAD; digital options and MNCAA options are inserted to the right of the MNCAD. No empty slot should be allowed to the right of the MNCAD. With power off, insert the MNCAD option into the selected slot.</p>	
<p>2.3 TEST MODULE</p> <p>If the MNCAD test module is available it should be plugged onto the I/O connector fingers on the MNCAD at this point, before power to the system is applied. If no test module is present plug-on the I/O connector with pins 17 and 18 wired together.</p>	
<p>2.4 POWER UP</p> <p>All other options to be tested and any of their test modules should be mounted in the system, then power may be applied. Allow a 5 minute warm-up period before continuing.</p>	
<p>2.5 DIAGNOSTIC</p> <p>The MNCAD diagnostic program should now be loaded into the processor and started at location 200. The diagnostic heading will be typed followed by:</p> <p>"SWR = 000000 NEW = "</p> <p>Type "RETURN". The program will ask if a test module is connected; type "N" for no if one is not present or "Y" for yes if one is present, followed by a "RETURN".</p>	
<p>3.0 ACCEPTANCE</p> <p>3.1 The diagnostic will list the MNCAD tests. If the CSR address switch pack was set for an address other than 171000 or if the DONE vector switch pack was set for an address other than 400, type "B" followed by "RETURN" at the end of the test list. The diagnostic will now type:</p> <p>"MNCAD (A/D) BASE ADDRESS &lt;171000&gt; ?</p> <p>Enter the CSR address followed by "RETURN". The diagnostic will respond:</p> <p>"MNCAD (A/D) VECTOR ADDRESS &lt;400&gt; ?</p> <p>Enter the DONE vector address followed by "RETURN".</p> <p>3.2 Type "L" to start the logic test, and then "RETURN". The program will type the number of MNCAD's it detected in the system.</p>	
SIZE CODE	NUMBER REV
A SP	MNCAD-0-4
MNCAD SHEET 5 OF 8	
DEC FORM NO EN-01000-10-N370-(001) DRA 100	

MR

ENGINEERING SPECIFICATION	CONTINUATION SHEET
TITLE MNCAD INSTALLATION/ACCEPTANCE PROCEDURE	
<p>If the test module is not present the diagnostic will indicate "ENDPASS" and "GOOD UNITS" and will continue to loop on the logic test indicating "ENDPASS" and "GOOD UNITS" on subsequent runs.</p> <p>When the test module is present the diagnostic will type:</p> <p>"PRESS INTERNAL START ON MNCAD AT ADDRESS"</p> <p>"DEPRESS 'RETURN' WHEN READY"</p> <p>Press the push button switch on the test module on the MNCAD at the indicated address, then type "RETURN". If there is no error the diagnostic will indicate "ENDPASS" and "GOOD UNITS" and will continue to loop on the logic test indicating "ENDPASS" and "GOOD UNITS" on subsequent runs.</p> <p>To exit this test press the "C" key while holding the CNTL key down. The diagnostic will respond with:</p> <p>"TYPE THE 'TEST CHARACTER' THEN DEPRESS 'RETURN KEY'"</p>	
<p>3.3 Type "C" to start the calibration routine. The diagnostic will then respond:</p> <p>"TYPE CHANNEL &amp; DEPRESS 'RETURN'"</p> <p>Enter "8" and type "RETURN". The program will now instruct:</p> <p>"TYPE 'O' FOR OFFSET, 'G' FOR GAIN &amp; DEPRESS 'RETURN'"</p> <p>Type the letter "O" and then "RETURN".</p> <p>The diagnostic will now direct:</p> <p>"INPUT A GROUND ON THE CHANNEL"</p> <p>"DEPRESS 'RETURN' WHEN READY"</p> <p>Switch channel "8" on front panel of the MNCAD to TEST, then type "RETURN". The diagnostic will type:</p> <p>"ADJUST R83 FOR 0.00 LSB ERROR"</p> <p>"DEPRESS 'RETURN' WHEN ADJUSTED"</p> <p>Offset print outs will occur about every 12 seconds. Adjust R83 (50K pot) until the offset is within 0.04 LSB of 0.00 LSB. Note: the first print out after an adjustment will not be true since the value was varying while data was being taken. Therefore, wait for the second print out after each adjustment before making any subsequent adjustment.</p> <p>To exit this routine type "RETURN" or press the "C" key while holding the "CNTL" key down until the diagnostic responds:</p> <p>"TYPE THE 'TEST CHARACTER' THEN DEPRESS 'RETURN KEY'"</p>	
SIZE CODE	NUMBER REV
A SP	MNCAD-0-4
MNCAD SHEET 6 OF 8	
DEC FORM NO EN-01000-10-N370-(001) DRA 100	

MR

ENGINEERING SPECIFICATION	CONTINUATION SHEET
TITLE MNCAD INSTALLATION/ACCEPTANCE PROCEDURE	
<p>3.4 Type "C" again to start the calibration routine. The diagnostic will respond:</p> <p>"TYPE CHANNEL &amp; DEPRESS 'RETURN'"</p> <p>Type "7" and then "RETURN". If a test module is present, connect the +precision voltage source output to J3 &amp; the -output to J4; otherwise connect the +output to pin 7 (channel 7) on the I/O connector &amp; the -output to pin 8 (analog ground). The terminal shall have printed:</p> <p>"TYPE 'O' FOR OFFSET, 'G' FOR GAIN &amp; DEPRESS 'RETURN'"</p> <p>Type "G" and then "RETURN". The terminal will respond:</p> <p>"INPUT +5.115 VOLTS ON THE CHANNEL"</p> <p>"TYPE CR WHEN READY"</p> <p>Adjust the precision voltage source for +5.115 volts and type "RETURN". The program will respond:</p> <p>"ADJUST R84 FOR 0.00 LSB ERROR"</p> <p>"DEPRESS 'RETURN' WHEN ADJUSTED"</p> <p>Print outs will occur about every 12 seconds. Adjust R84 (200 ohm pot) until the error is within 0.04 LSB of 0.00 LSB. Note: the first print out after an adjustment will not be true since the value was varying while data was being taken. Therefore, wait for the second print out after each adjustment before making any subsequent adjustment.</p> <p>To exit this routine type "RETURN" or press the "C" key while holding the "CNTL" key down until the diagnostic responds:</p> <p>"TYPE THE 'TEST CHARACTER' THEN DEPRESS 'RETURN KEY'"</p>	
<p>3.5 If no graphics video display terminal (VT55, VT105, etc.) is used type "M" and then "RETURN"; if such a terminal is used:</p> <p>Type "G" and set the switch register to 2000, then type "RETURN". Now type the "TEST CHARACTER" "V" followed by "RETURN".</p>	
<p>3.5.1 Without Test Module</p> <p>The terminal will print the number of A/D's detected and then instruct:</p> <p>"SET MNCAD (A/D) FRONT PANEL SWITCHES TO 'TEST'"</p> <p>"DEPRESS 'RETURN' WHEN READY"</p> <p>Set all four front panel switches to the TEST position, then type "RETURN". The channel modes (single ended or differential) will be listed. This will be followed by the offset and then the noise test (rms and peak) on channels 0 through 3. After this, the settling test on channels 1 and 2 will be executed. Then the offset, noise, and settling tests will be repeated. The differential linearity test will be entered and will require approximately 14 minutes to complete. The last test will</p>	
SIZE CODE	NUMBER REV
A SP	MNCAD-0-4
MNCAD SHEET 7 OF 8	
DEC FORM NO EN-01000-10-N370-(001) DRA 100	

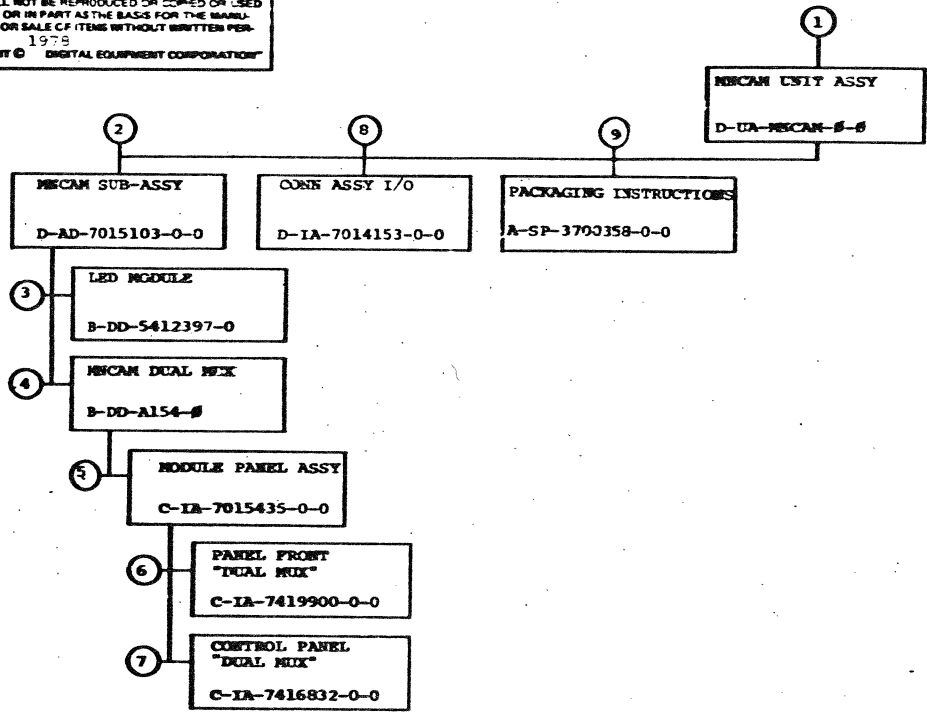
MR

ENGINEERING SPECIFICATION	CONTINUATION SHEET
TITLE MNCAD INSTALLATION/ACCEPTANCE PROCEDURE	
<p>be relative accuracy. To continue after a halt, press "p".</p>	
<p>3.5.2 With Test Module</p> <p>The terminal will print the number of A/D's detected and then instruct:</p> <p>"SET TEST MODULE(S) TO SINGLE ENDED"</p> <p>"SET MNCAD (A/D) FRONT PANEL SWITCHES TO 'TEST'"</p> <p>"DEPRESS 'RETURN' WHEN READY"</p> <p>Set the switch on the test module /or single ended operation and all four front panel switches to the TEST position, then type "RETURN". The channel modes (single ended for channels 00 (8) through 17 (8)) will be listed. The diagnostic will ask if channels 00 through 17 are to be tested by:</p> <p>"TESTING CHANNELS 0-7?"</p> <p>Type "Y" and then "RETURN".</p> <p>"TESTING CHANNELS 10-17?"</p> <p>Again type "Y" followed by "RETURN". The program will report the channels under test and then instruct:</p> <p>"SET TEST MODULE(S) ON CHANNELS UNDER TEST TO DIFFERENTIAL"</p> <p>"DEPRESS 'RETURN' WHEN READY"</p> <p>Set the switch on the test module for single ended operation and then type "RETURN". If no errors occur the following will be printed:</p> <p>"SET TEST MODULE(S) TO SINGLE ENDED"</p> <p>"DEPRESS 'RETURN' WHEN READY"</p> <p>Return the test module switch to single ended operation and type "RETURN". The offset will be printed followed by the noise test on channels 0 through 2, 4 through 6, and 10 through 17. After this, the settling test on channels 1 and 2 will be executed. Then the offset, noise and settling tests will be repeated. The differential linearity test will be entered and will require approximately 14 minutes to complete. The last test will be relative accuracy. To continue after a halt, press "p".</p>	
SIZE CODE	NUMBER REV
A SP	MNCAD-0-4
MNCAD SHEET 8 OF 8	
DEC FORM NO EN-01000-10-N370-(001) DRA 100	





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WFILE NRCAN UNIT ASSY	SHEET 2 OF 3	SIZE CODE B DD	NUMBER NRCAN-C	REV B
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MR

FIND NO.	DRAWING NO.	DESCRIPTION	TYPE	FIND NO.	DRAWING NO.	DESCRIPTION	TYPE
1	MP#591	FIELD MAINTENANCE PRINT SET					
	B-TC-MNCAM-β-1	FIELD MAINTENANCE PRINT SET					
	D-UA-MNCAM-β-β	MNCAM UNIT ASSY					
	C-MD-7415869-0-0	PLATE, COMP SIDE	E/M				
	C-MD-7415868-0-0	PLATE, ETCH SIDE	M				
	A-DC-3615260-0-0	DECAL, I/O SCHEMATIC	M				
	A-DC-3615264-0-0	DECAL, INFORMATION (MNCAM)	E/M				
	A-PL-MNCAM-β-5	PARTS LIST MNCAM	E/M	6	C-IA-7419900-0-0	PANEL FRONT "DUAL MUX"	M
	A-PL-MNCAM-β-SH	SHIP LIST MNCAM	E/M		C-PS-4830034-0-0	EXTRUSION FRONT PANEL "A"	M
	A-SP-MNCAM-β-2	MNCAM ENGINEERING SPEC.	E/M				
	A-SP-MNCAM-β-3	CHECKOUT & ACCEPTANCE PROCEDURE	E/M				
	A-SP-MNCAM-β-4	INSTALLATION & ACCEPTANCE PROCEDURE	E/M				
2	D-AD-7015103-0-0	MNCAM SUB-ASSY	M				
	B-MD-7420242-0-0	SPACER, MODULE	M				
	C-IA-7419863-0-0	SUB PANEL	M	7	C-IA-7416832-0-0	CONTROL PANEL "DUAL MUX"	M
					C-SS-7416831-01	CONTROL PANEL	M
					C-SS-7416831-02	CONTROL PANEL	M
					C-SS-7416831-03	CONTROL PANEL	M
3	B-DD-5412397-β	LED MODULE	E/M				
				8	D-IA-7014153-0-0	CONN ASSY I/O	E/M
					A-DC-7416836-0-0	DECAL, I/O CONN	E/M
					A-DC-7418934-1-0	DECAL, I.D. I/O CONN	E/M
4	B-DD-A154-β	MNCAM DUAL MUX					
	A-PL-A154-β-β	MNCAM MUX	E/M				
	D-UA-A154-β-β	MNCAM MUX	E/M	9	A-SP-3700358-0-0	PACKAGING INSTRUCTIONS	M
	D-CS-A154-β-1	MNCAM MUX	E/M				
			E/M				
5	C-IA-7015435-0-0	MODULE PANEL ASSY	M				

TYPE: E ELECTRICAL  
M MECHANICAL  
E/M ELECTROMECHANICAL



TITLE  
MNCAM UNIT ASSY

SHEET 3 OF 3

SIZE CODE  
B DD

NUMBER  
MNCAM-β

REV  
B

MR

MR

AUTOMATED BY PRTLS1,3L(40)

PARTS LIST

SHEET A1 OF A2

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION	REFERENCE DESIGNATOR
1	1	D=ND-5012277-0-0	5012277-00	A154	1	
2	2		1010274-01	.22 MFD 50V +80-20% Z5U CER	17	C1-C12,C35-C39
3	3		1002433-00	22 MFD 35V 20% S,TANT	8	C13-C16,C20-C23
4	4		1005335-00	39 MFD 20V 10% S,TANT	4	C17,C19,C18,C24
5	5		1001776-00	1 MFD 35V 10% S,TANT	1	C25
6	6		1000016-00	100.0 MNP 100V 5%200PPM WICA	1	C26
7	7		1000025-00	560.0 MNP 100V 5%200PPM WICA	1	C27
8	8		1002627-00	*** THIS ITEM IS NOT USED ***	-	
9	9		1004812-00	15 MFD 20V 10% S,TANT	7	C28-C34
10	10		1105275-00	D 672 TR= 15N3 PIV= 40V 5I	17	D1,D2,D4-D18
11	11		1109502-00	1N 4742 VZ= 12.0 10% 1W Y	1	D3
12	12		1212519-06	HEADER,150 11POS STRAIGHT	2	J2,J3
13	13		1310881-00	1.0 K .25 W 1.0 % FUSE	16	R1-R8,R10-R17
14	14		1300365-00	1.0 K .25 W 5.0 % CC	25	R9,R19-R31,R33-R35,R37,R49,R52, CONT R53,R60-R62,R81
15	15		1301425-00	300.0 .25 W 5.0 % CC	1	R18
16	16		1300488-00	12.0 K .25 W 5.0 % CC	1	R32
17	17		1300250-00	150.0 .25 W 5.0 % CC	1	R36
18	18		1300315-00	470.0 .50 W 5.0 % CC	2	R38,R39
19	19		1301781-00	82.0 .50 W 5.0 % CC	1	R40
20	20		1304938-00	43.0 K .25 W 5.0 % CC	3	R50,R79,R80
21	21		1301401-00	750.0 .25 W 5.0 % CC	20	R63-R78,R82-R85
22	22		1503409-00	DEC65340 PNP 310MW 5I 40 90	1	Q1
23	23		1510414-00	D 45C6 PNP 30MT 5I 45 20 Y	1	Q2
24	24		1510171-00	D 44C3 NPN 30KT 5I 30 20 Y	1	Q3
25	25		1602254-00	22. UH 10% 430MA 8RPCS22	3	L1,L4,L5
26	26		1603377-00	.22UH 10% 2.7A SWEET22	2	L2,L3
27	27		1912799-00	L800 NAND-GATE-QUAD 2IN,P	4	E1,E9,E29,E33
28	28		1912803-00	74LS04 INVERTER GATE,HEX	5	E3,E5,E8,E14,E28
29	29		1912805-00	L808 AND GATE-QUAD 2IN,PO	2	E4,E40

REVISION HISTORY		BASIC PART NO:	0A154	DRN:	E, WILSON	DATE:	7 OCT 77	D I G I T A L				
ENG:	ECO NUMBER	REV	SECTION A OF A	CHK'D:	R. W. CAUNTER	DATE:	10 OCT 77	TITLE				PARTS LIST
---	INITIAL	F	SECTION VARIATION INDEX	DES. ENG:	G. F. SIROIS	DATE:	20 OCT 77	DOCUMENT NUMBER				
ACF1	A154-AR004	H	(A) 00	RESP. ENG.:	G. F. SIROIS	DATE:	20 OCT 77	SIZE:	CODE:	NUMBER	REV	
AF	A154-AR005	J	(B)	MFG. ENG.:	DANA P. DUNCAN	DATE:	25 OCT 77	K	PL	A154-0-DBP	J	
			(C)	ASSEMBLY NUMBER:	ID-UA-A154-0-0	TOP DOCUMENT NUMBER:	IB-DD-A154-0-0	FILE NAME:		E0975J.PLS	EDIT	
			(D)								8	
			(E)									
			(F)									
			(G)									
			(H)									
			(I)									
			(J)									
			(K)									
			(L)									
			(M)									
			(N)									

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MR



AUTOMATED BY PRILST.3L(40)

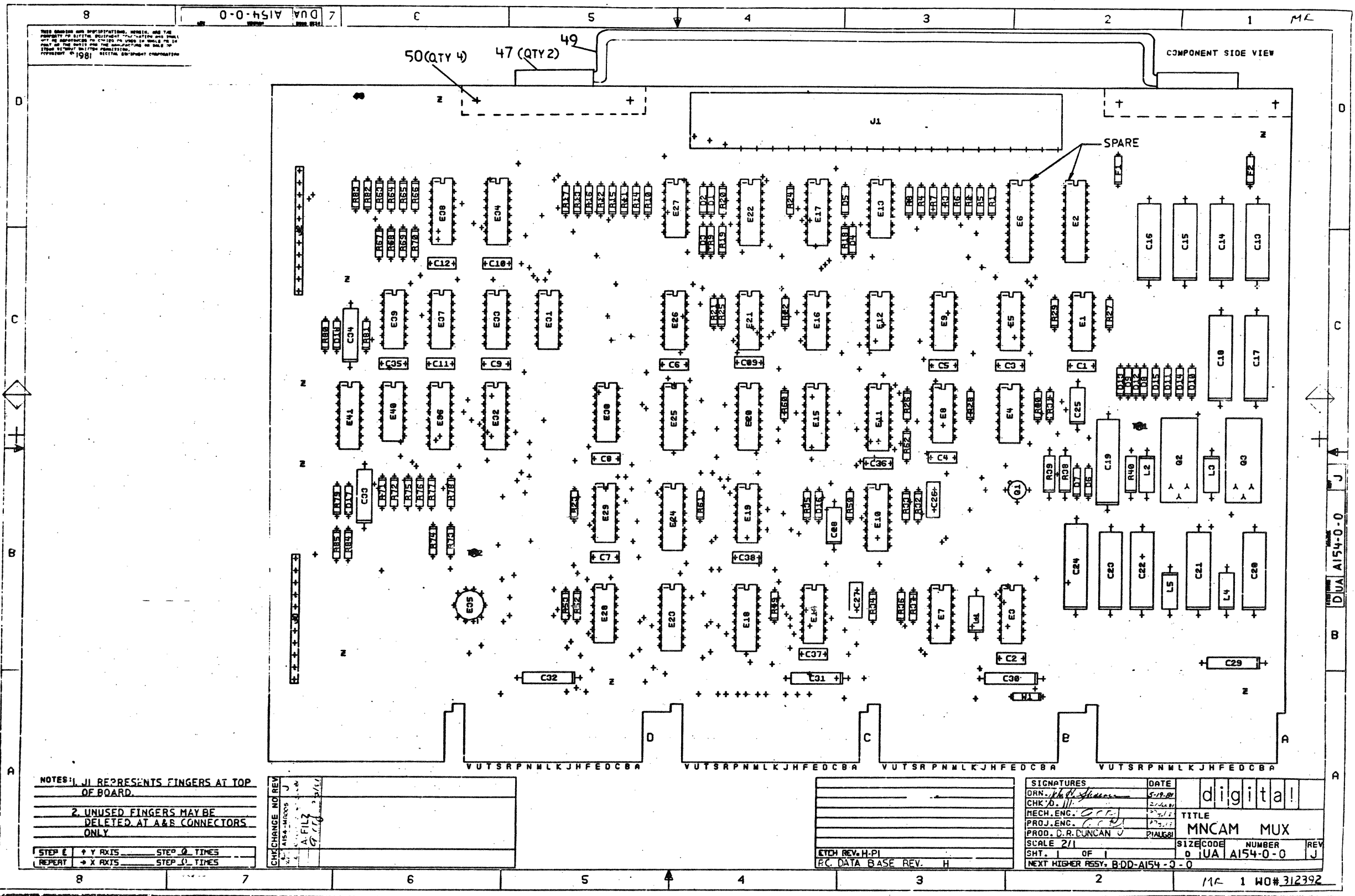
## P A R T S L I S T

SHEET A2 OF A2

LINE ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION	REFERENCE DESIGNATOR
				00	
30	30				
31	31	1910741-00	7406 INVERTER GATE-HEX 11	2	E7,E37
32	32	1912837-00	L8123 ONE SHOT-DUAL,RETRIG	2	E10,E41
33	33	1912827-00	L883 ADDERS-4BIT	5	E11,E15,E20,E24,E25
		1911521-00	7432 OR GATE-QUAD 2IN, PO	3	E12,E16,E31
34	34	1910010-00	DEC 2501 16 DIODE ARRAY,CORE	2	E13,E27
35	35	1911598-00	501C MUX,8CHNL,ANALOG	2	E17,E22
36	36	1911527-00	8097 BUFFER GATE-HEX 2INP	1	E18
37	37	1912807-00	L810 NAND GATE-TRIPLE 3IN	1	E19
38	38	1909712-00	DEC 8242 COMPARATOR-4BIT N,	1	E21
39	39	1910652-00	74174 FF-D HEX	1	E23
40	40	1905580-00	DEC 7450 A-0-1 KPNDBLE GATE-D	1	E26
41	41	1909705-00	DEC 8881 NAND GATE-QUAD 2IN O	1	E30
42	42	1912816-00	*** THIS ITEM IS NOT USED ***	-	
43	43	1910047-00	74165 DECODER&DRIVER	4	E32,E34,E36,E38
44	44	2111285-02	HI 200-5 DUAL ANALOG SW,CMOS	1	E35
45	45	1912901-00	L802 NOR-GATE-QUAD 2IN	1	E39
46	46	1910155-00	*** THIS ITEM IS NOT USED ***	-	
47	47	7420192-00	HANDLE RETAINER	2	
48	48	9006735-00	EYELET, FUNNEL FLANGE, .059 OD X	2	TP1,TP2
49	49	7420191-00	HANDLE	1	
50	50	9006732-00	EYELET,ROLL FLANGE .1210DX .219	4	
51	51	9009127-00	FUSE,SUB-MINI 1/16A,125V GLASS	2	F1,F2
52	52	1215899-01	CLIP,JUMPER,.400CENTPRS	1	W1
53	53	1215901-01	HEADER 2PIN STRAIGHT	1	

54 NOTES 1. SPARE LOCATIONS ARE E2 AND E6.

D	I	G	I	T	A	L	TITLE	MNCAM MUX	SECTION A OF A	SIZE:CODE	DOCUMENT NUMBER	REV
										K PL	A154-0-DBP	J



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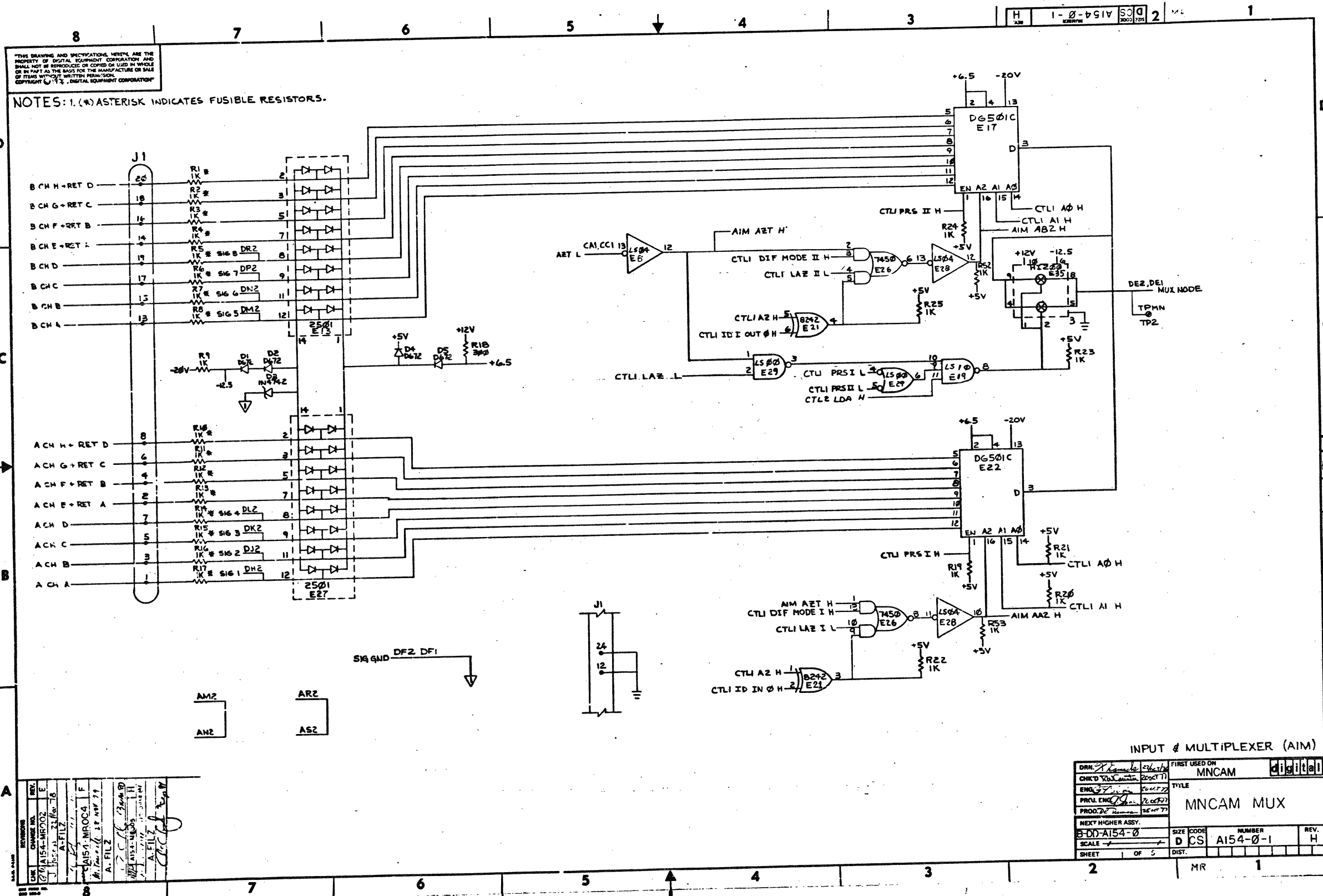
NOTES: 1. J1 REPRESENTS FINGERS AT TOP OF BOARD.  
 2. UNUSED FINGERS MAY BE DELETED AT A & B CONNECTORS ONLY.  
 STEP 1 -> Y AXIS STEP 0 TIMES  
 REPEAT -> X AXIS STEP 0 TIMES

CHANGE NO	REV	DATE	BY
1	A	5/11/81	HPI
2	B	5/11/81	HPI
3	C	5/11/81	HPI
4	D	5/11/81	HPI

ETCH REV. H-PI  
 PC DATA BASE REV. H

SIGNATURES	DATE	digital
DRN. <i>[Signature]</i>	5-11-81	
CHK'D. <i>[Signature]</i>	5-11-81	
MECH. ENG. <i>[Signature]</i>	5-11-81	
PROJ. ENG. <i>[Signature]</i>	5-11-81	
PROD. D.R. DUNCAN	PIANG81	TITLE
SCALE 2/1		MNCAM MUX
SHT. 1 OF 1		SIZE CODE NUMBER
NEXT HIGHER ASSY. B-DD-A154-0-0		01UA A154-0-0
		REV
		J

11A 1 W0# 312392

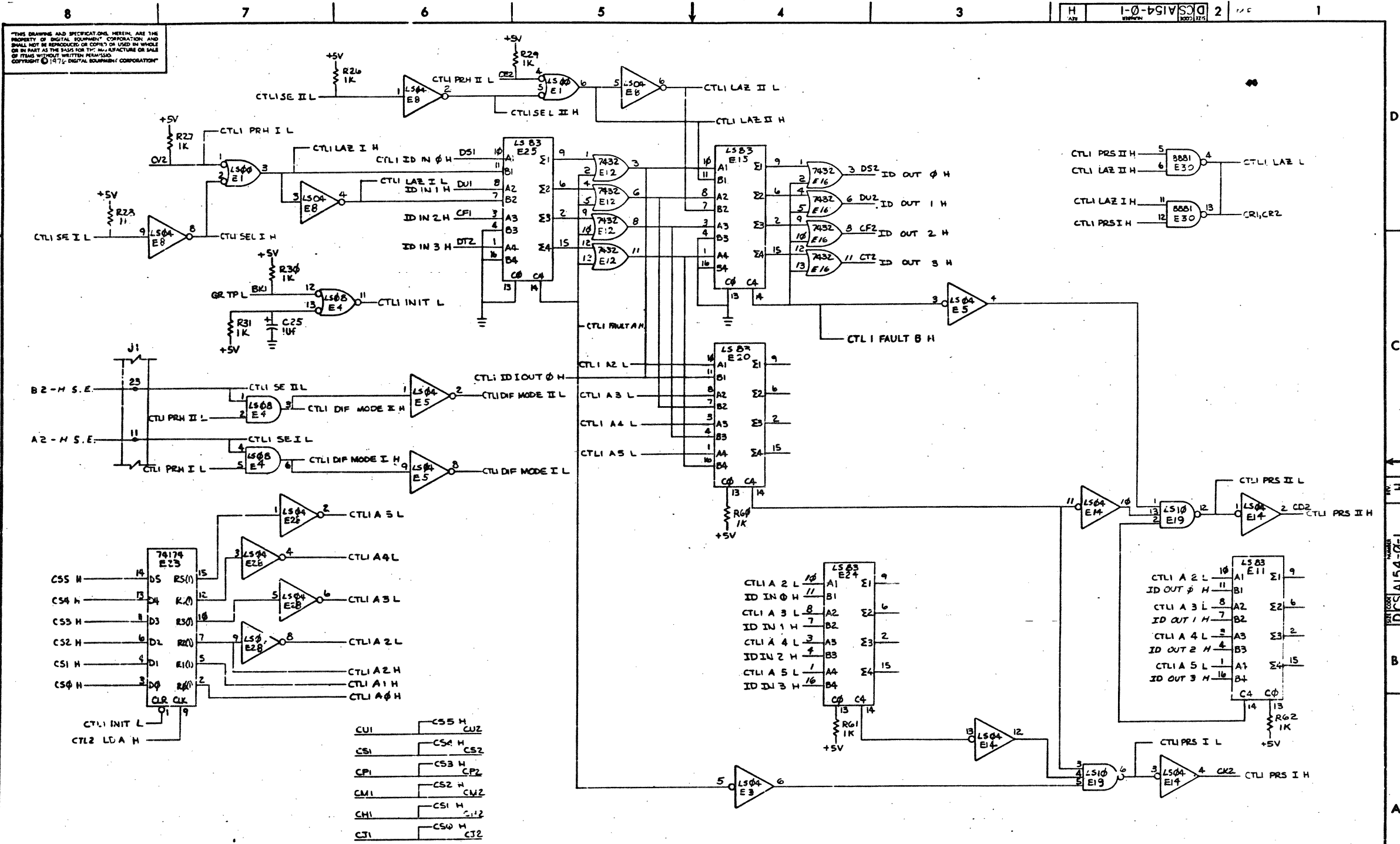


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NOTES: 1. (\*) ASTERISK INDICATES FUSIBLE RESISTORS.

REV.	DATE	BY	CHKD	APP'D
1	11/15/76	J. FILZ	J. FILZ	J. FILZ
2	12/10/76	J. FILZ	J. FILZ	J. FILZ
3	1/15/77	J. FILZ	J. FILZ	J. FILZ
4	2/15/77	J. FILZ	J. FILZ	J. FILZ
5	3/15/77	J. FILZ	J. FILZ	J. FILZ
6	4/15/77	J. FILZ	J. FILZ	J. FILZ
7	5/15/77	J. FILZ	J. FILZ	J. FILZ
8	6/15/77	J. FILZ	J. FILZ	J. FILZ

INPUT & MULTIPLEXER (AIM)	
DRN: <i>[Signature]</i>	FIRST USED ON: MNCAM
CHKD: <i>[Signature]</i>	TITLE: MNCAM MUX
ENGR: <i>[Signature]</i>	PROD. DATE: 12/10/76
PRVL. ENG: <i>[Signature]</i>	NEXT HIGHER ASSY: B-DD-A154-0
SCALE: 1:1	SIZE CODE: DCS
SHEET: 1	OF 5
DIST.:	MR 1



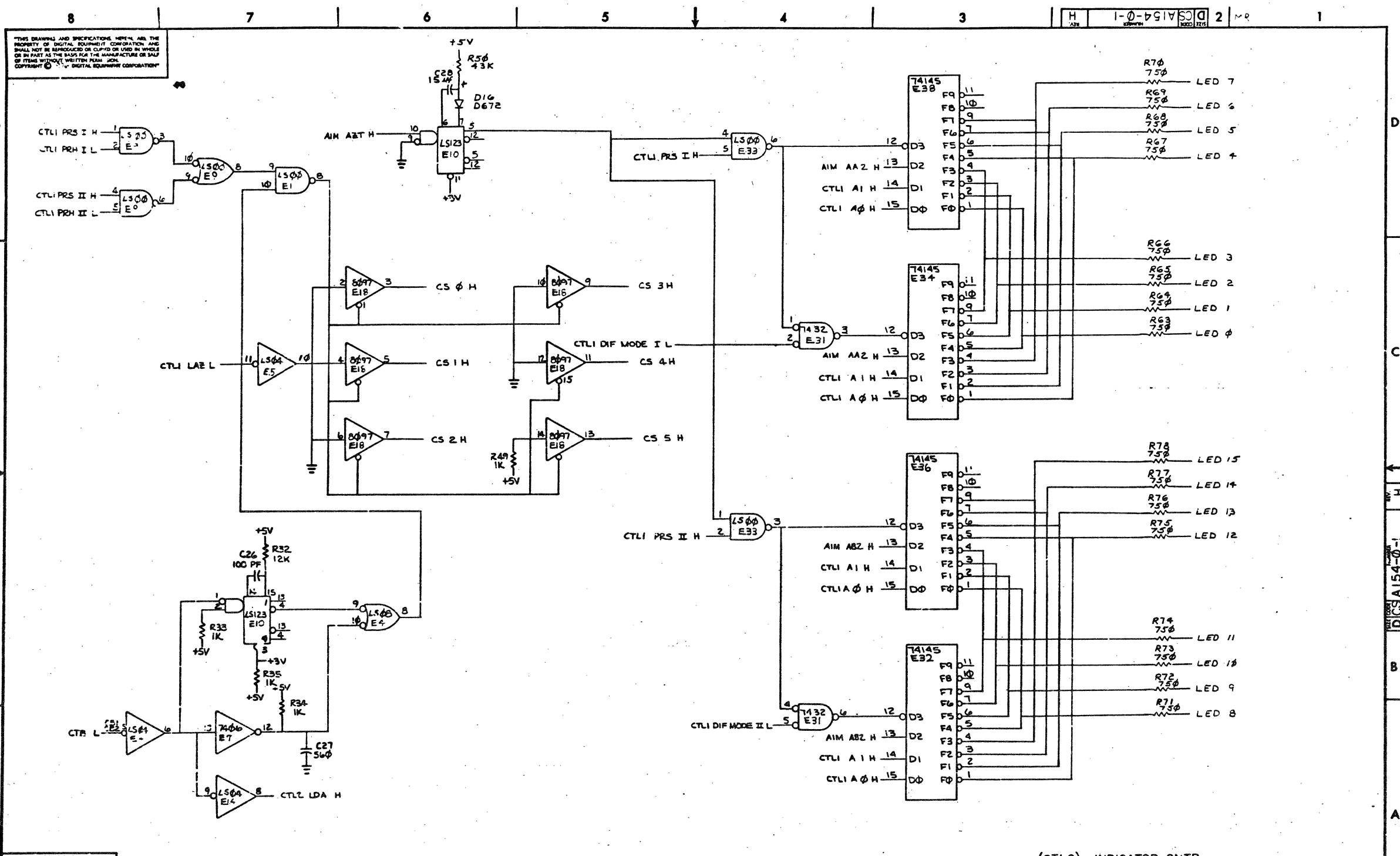
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DCS AI54-0-1 2 1

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE MNCAM MUX		SIZE CODE DCS AI54-0-1	NUMBER 2 OF 5	REV. H
SCALE	SHEET	DIST.	MR 1	

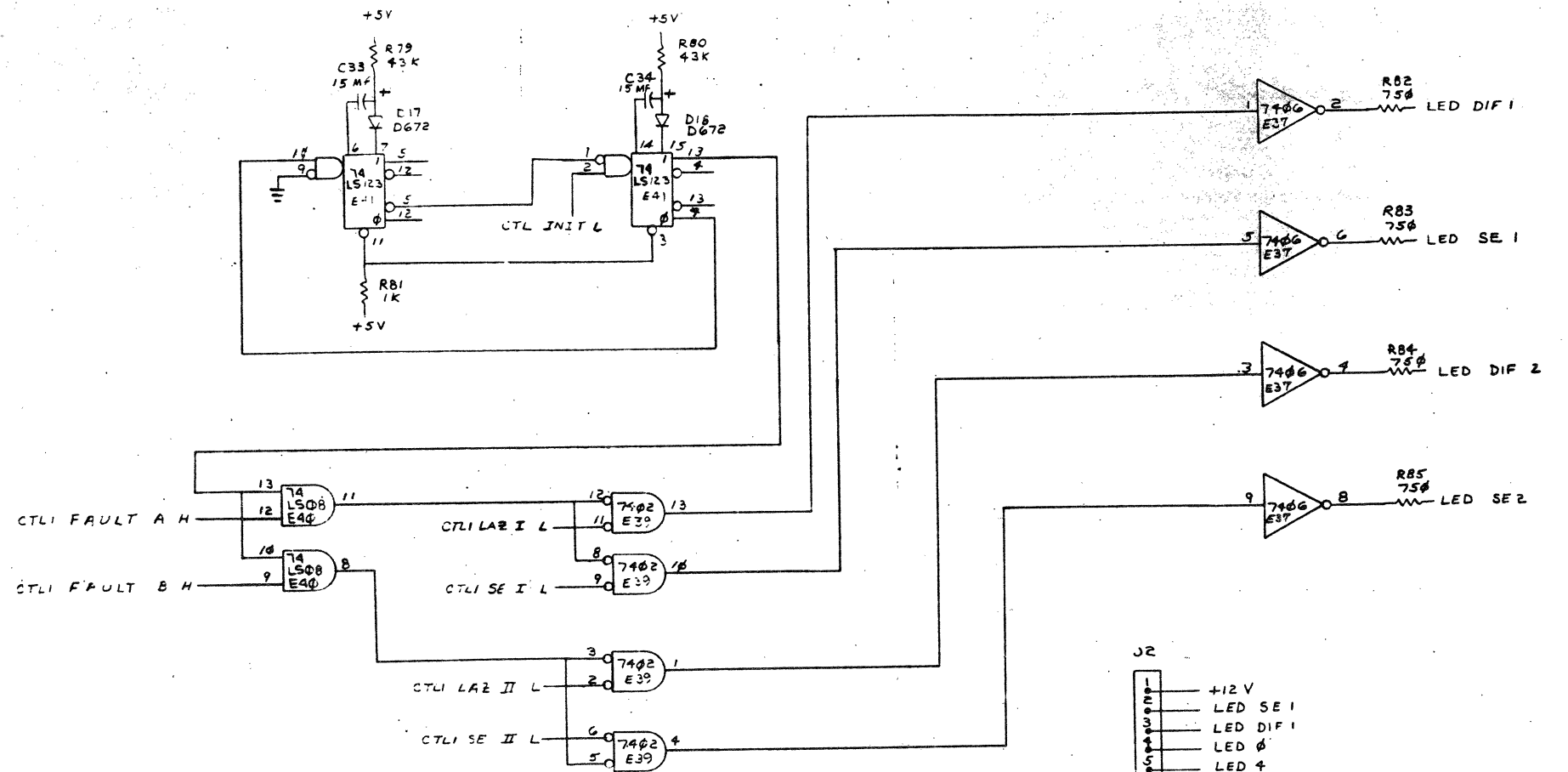
6 7 6 5 4 3 2 1



REVISIONS		
CHK	CHANGE NO.	REV.

(CTL2) INDICATOR CNTR		TITLE	SIZE/CODE	NUMBER	REV.
MNCAM MUX		D	CSA154-0-1	H	H
SCALE	SHEET 3 OF 5	DIST.			

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- J2
- 1 +12V
  - 2 LED SE 1
  - 3 LED DIF 1
  - 4 LED 4
  - 5 LED 4
  - 6 LED 1
  - 7 LED 5
  - 8 LED 6
  - 9 LED 7
  - 10 LED 2
  - 11 LED 3

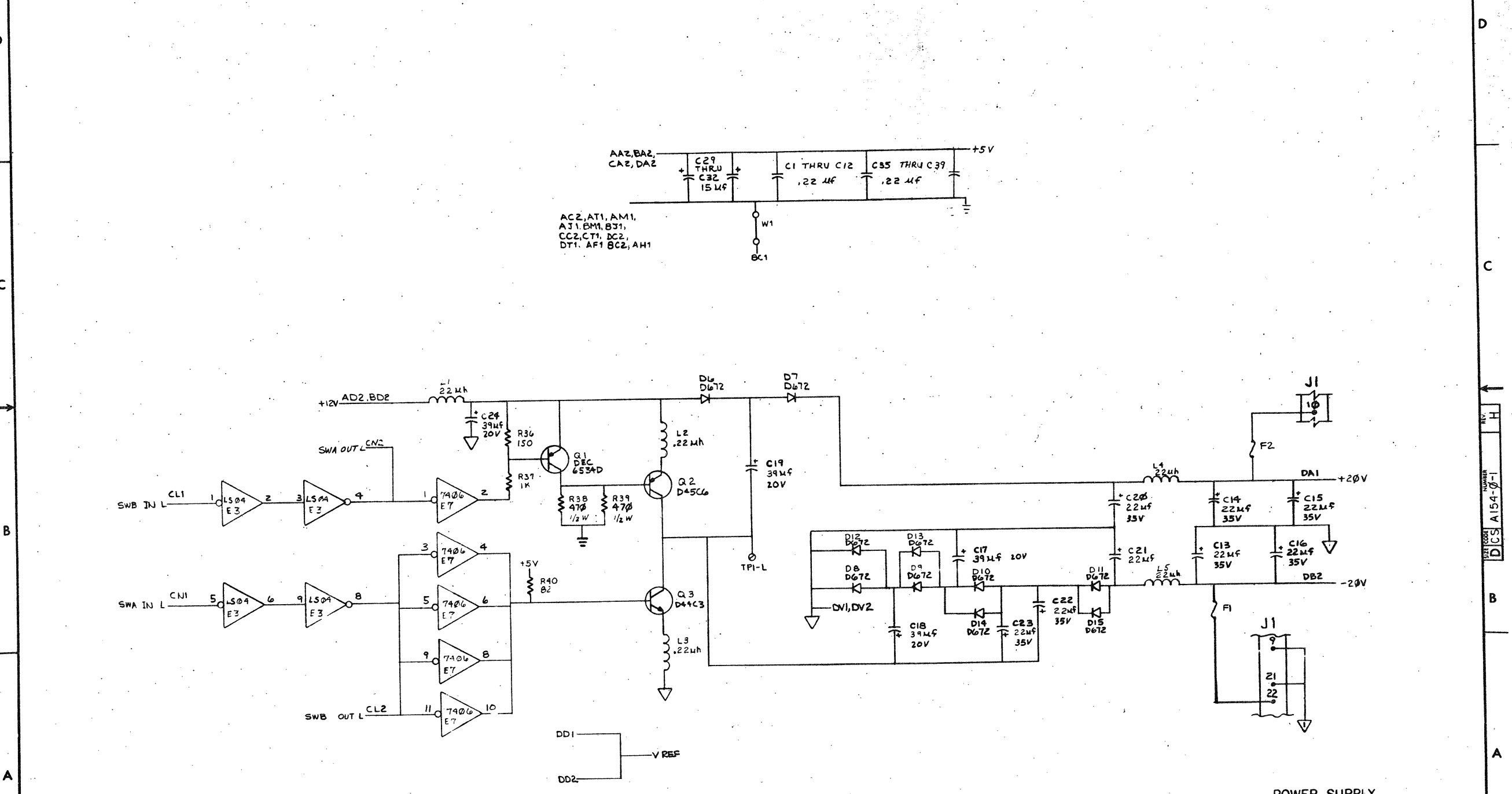
- J3
- 1 +12V
  - 2 LED 8
  - 3 LED SE 2
  - 4 LED DIF 2
  - 5 LED 12
  - 6 LED 9
  - 7 LED 13
  - 8 LED 14
  - 9 LED 15
  - 10 LED 10
  - 11 LED 11

REVISIONS		
CHK	CHANGE NO.	REV.

DCS A154-0-1

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NOTES: 1. W1 TO BE REMOVED AFTER MODULE TESTING IN MODULE TEST AREA.



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE MNCAM MUX	SIZE CODE D CS	NUMBER A154-0-1	REV. H
SCALE 1:1	SHEET 5	OF 5	DIST.



MR

DIGITAL EQUIPMENT CORPORATION

MAYNARD, MASSACHUSETTS

PARTS LIST

QUANTITY VARIATION

MADE BY	M. Archie	CHECKED	<i>A. Linden</i>	SECTION	
DATE	7 MARCH 78	DATE	17 MAY 78		1
ENG	OC PA	PROD	B Cook	ISSUED SECT.	
DATE	23-MY-78	DATE	23-MY-78		1

FORM NO.	DWG NO./PART NO.	DESCRIPTION
1	D-UA-MINCAM-B-B	MINCAM UNIT ASSY
2	MP#591	PRINT SET MINCAM
3	AA-D572A-TC	WORKING WITH MINC DEVICE

QUANTITY VARIATION													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1													
1													
1													

TITLE  
SHIP LIST MINCAM

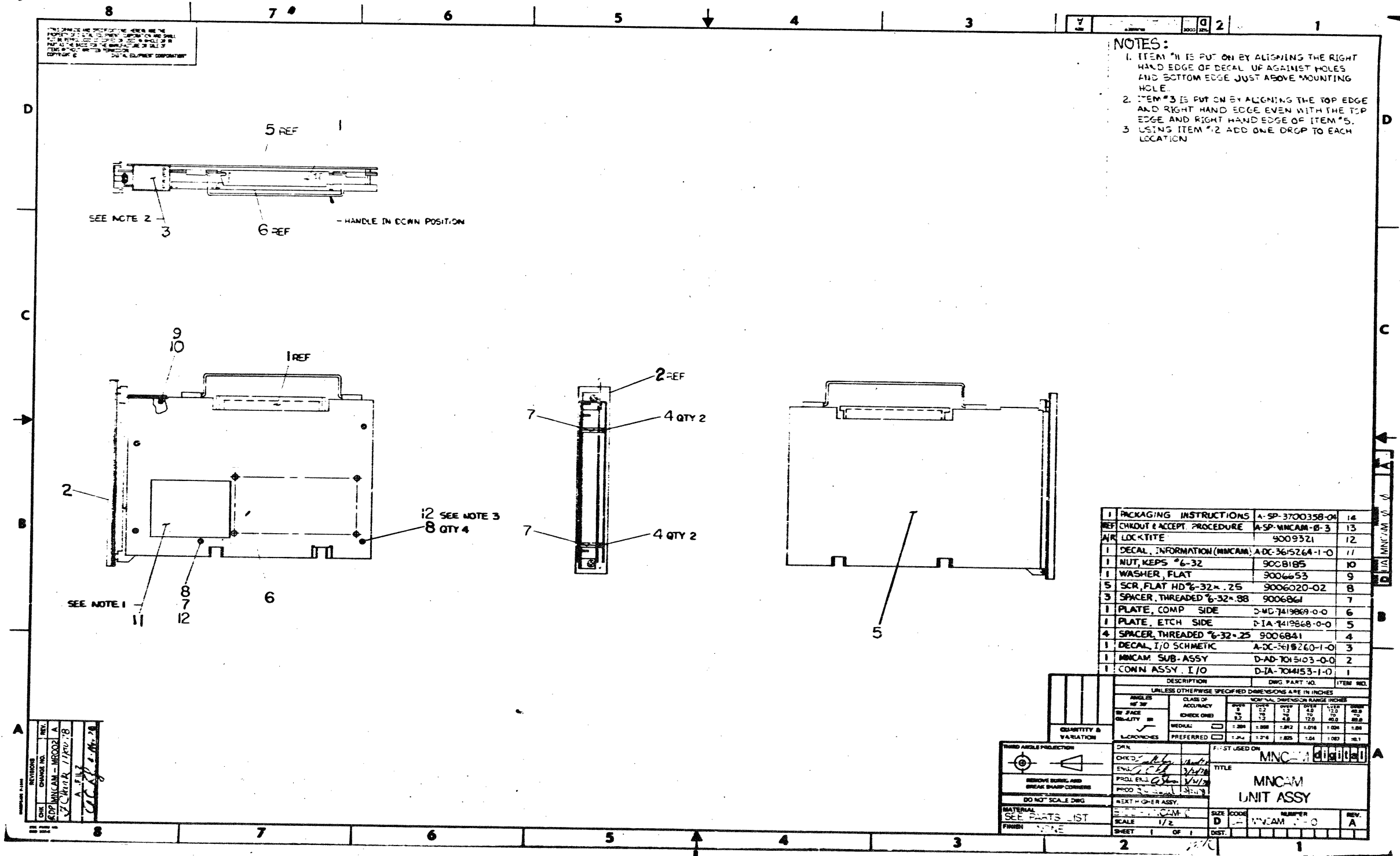
ASSY NO.  
*1 + 1*

SHEET 1 OF 1

SIZE CODE  
A PL

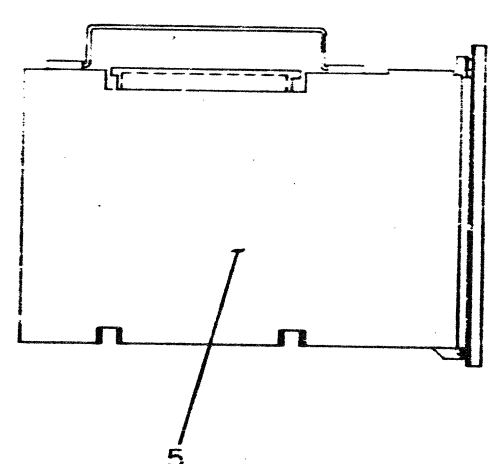
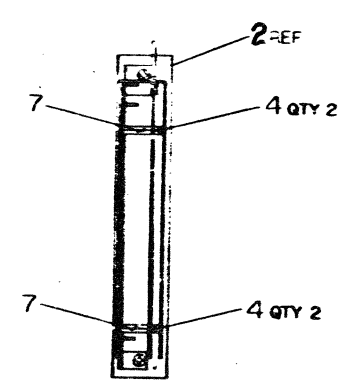
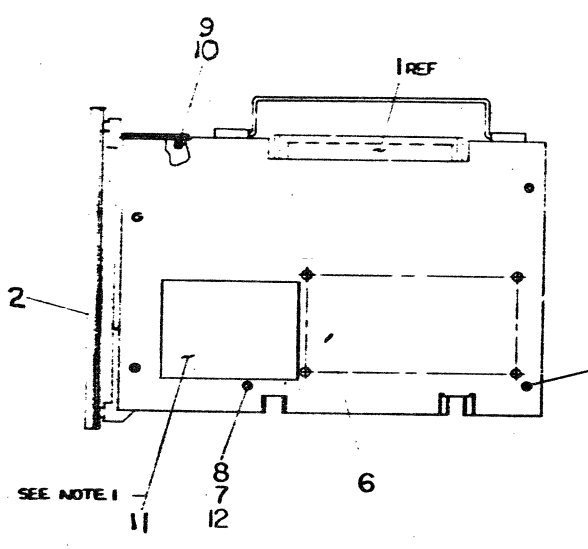
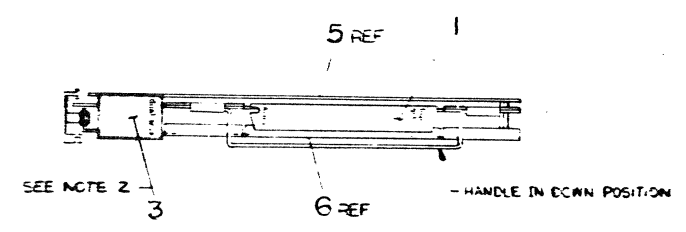
NUMBER  
MINCAM-B-SH

REV  
ECO NO.



**NOTES:**

- ITEM #1 IS PUT ON BY ALIGNING THE RIGHT HAND EDGE OF DECAL UP AGAINST HOLES AND BOTTOM EDGE JUST ABOVE MOUNTING HOLE.
- ITEM #3 IS PUT ON BY ALIGNING THE TOP EDGE AND RIGHT HAND EDGE EVEN WITH THE TOP EDGE AND RIGHT HAND EDGE OF ITEM #5.
- USING ITEM #2 ADD ONE DROP TO EACH LOCATION



DESCRIPTION	DRWG PART NO.	ITEM NO.
1 PACKAGING INSTRUCTIONS	A-SP-3700358-04	14
REF CHROUT & ACCEPT PROCEDURE	A-SP-MNCAM-B-3	13
AIR LOCK TITE	9009321	12
1 DECAL, INFORMATION (MNCAM)	A-DC-36/5264-1-0	11
1 NUT, KEPS #6-32	9008185	10
1 WASHER, FLAT	9006653	9
5 SCR, FLAT HD #6-32x.25	9006020-02	8
3 SPACER, THREADED #6-32x.88	9006861	7
1 PLATE, COMP SIDE	D-MD-7419869-0-0	6
1 PLATE, ETCH SIDE	D-IA-7419868-0-0	5
4 SPACER, THREADED #6-32x.25	9006841	4
1 DECAL, I/O SCHMETIC	A-DC-3618260-1-0	3
1 MNCAM SUB-ASSY	D-AD-7045103-0-0	2
1 CONN. ASSY. I/O	D-IA-704453-1-0	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES 45° 30°	CLASS OF ACCURACY	TOLERANCE DIMENSION RANGE INCHES					
		0.001	0.005	0.010	0.030	0.060	0.125
BY FACE	CHECK ONE	0.001	0.005	0.010	0.030	0.060	0.125
QUALITY	MEDICAL	0.001	0.005	0.010	0.030	0.060	0.125
QUANTITY & VARIATION	PREFERRED	0.001	0.005	0.010	0.030	0.060	0.125

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DRG

MATERIAL SEE PARTS LIST

FINISH NONE

QUANTITY & VARIATION

CLASS OF ACCURACY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

DESCRIPTION: MNCAM UNIT ASSY

DRWG PART NO.: MNCAM 010101

ITEM NO.: A

SCALE: 1/2

SHEET 1 OF 1

REV.	CHANGED BY	DATE
1	RPD/MNCAM-MR002	A
2	LC/Chen R	1/19/02
3	A. P. H.	
4	CCP	8/14/02

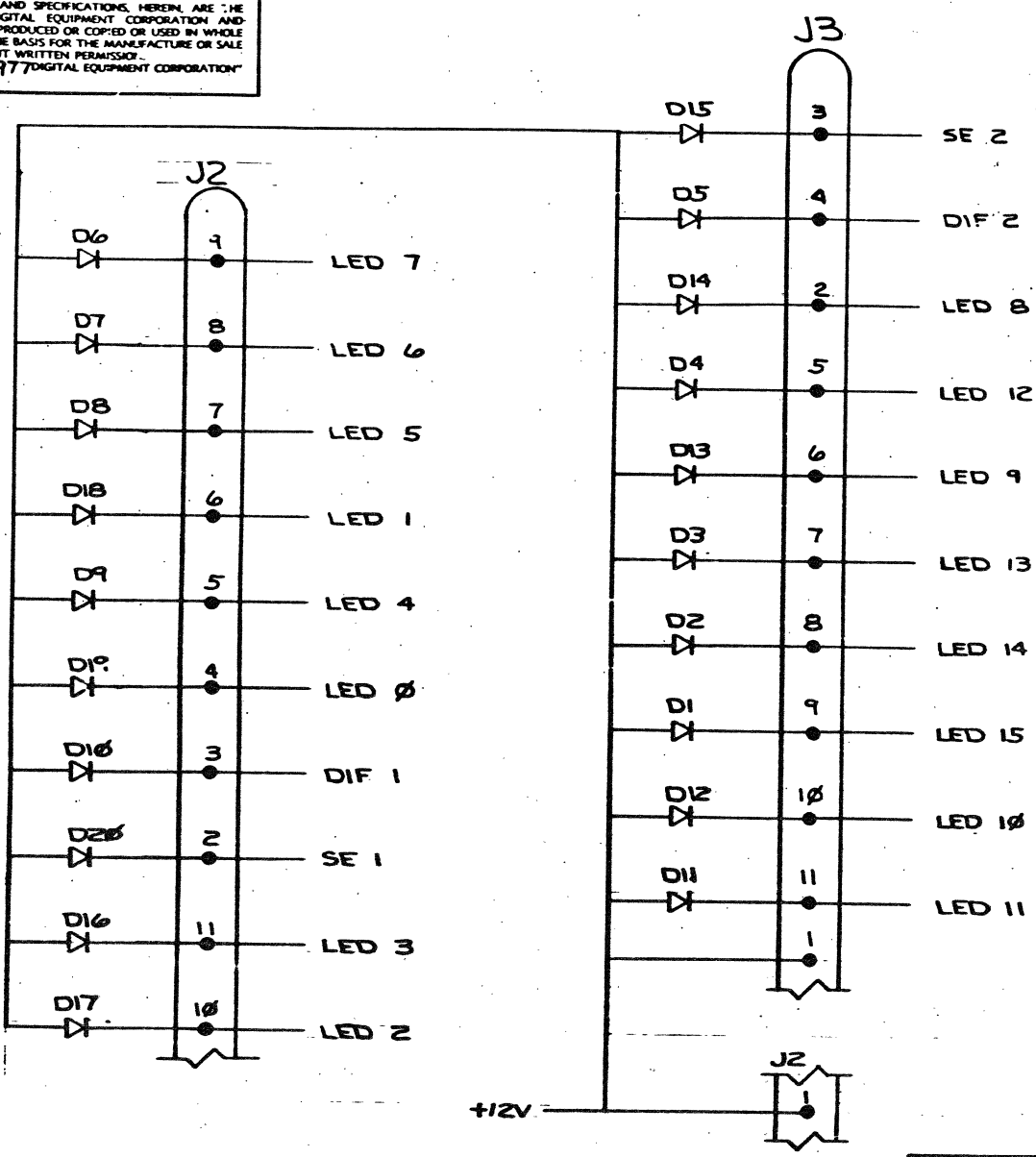
PARTS LIST

LINE ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION	REFERENCE DESIGNATOR
1	1	B-HB-5012396-0-0	5012396-00	1	
2	2		1211851-00	1	
3	3		1114494-00	2	J2, J3
4	4	B-IA-7419858-0-0	7419858-00	20	B1-B20
5	5		1215266-00	1	
6	6		9006010-01	4	
7	7		9006632-00	2	
8	8		9006655-00	2	

REVISION HISTORY		BASIC PART NO: 5412397		DIGITAL				
ENG	ECO NUMBER	REV	SECTION A OF A	DRN:	E. WILSON	DATE: 7-OCT-77	TITLE	PARTS LIST
MM	100002	F	SECTION VARIATION INDEX	CHK'D:	R. M. CAWTER	DATE: 7-OCT-77	LED MOUNT	
AF	5412397-HR003	H	(A) 00	DES. ENG:	A. FILZ	DATE: 8-DEC-77	DOCUMENT NUMBER	
			(B)	RESP. ENG.:	A. FILZ	DATE: 8-DEC-77	SIZE CODE: NUMBER	REV
			(C)	INFO. ENG.:	D. R. BAMA	DATE: 15-DEC-77	K PL	5412397-0-DBP H
			(D)	ASSEMBLY NUMBER:		TOP DOCUMENT NUMBER:	FILE NAME:	EBIT #
			(E)	ID-UA-5412397-0-0		INCAN	Z1940W.PLS	4
			(F)					
			(G)					
			(H)					
			(I)					
			(J)					
			(K)					
			(L)					
			(M)					
			(N)					

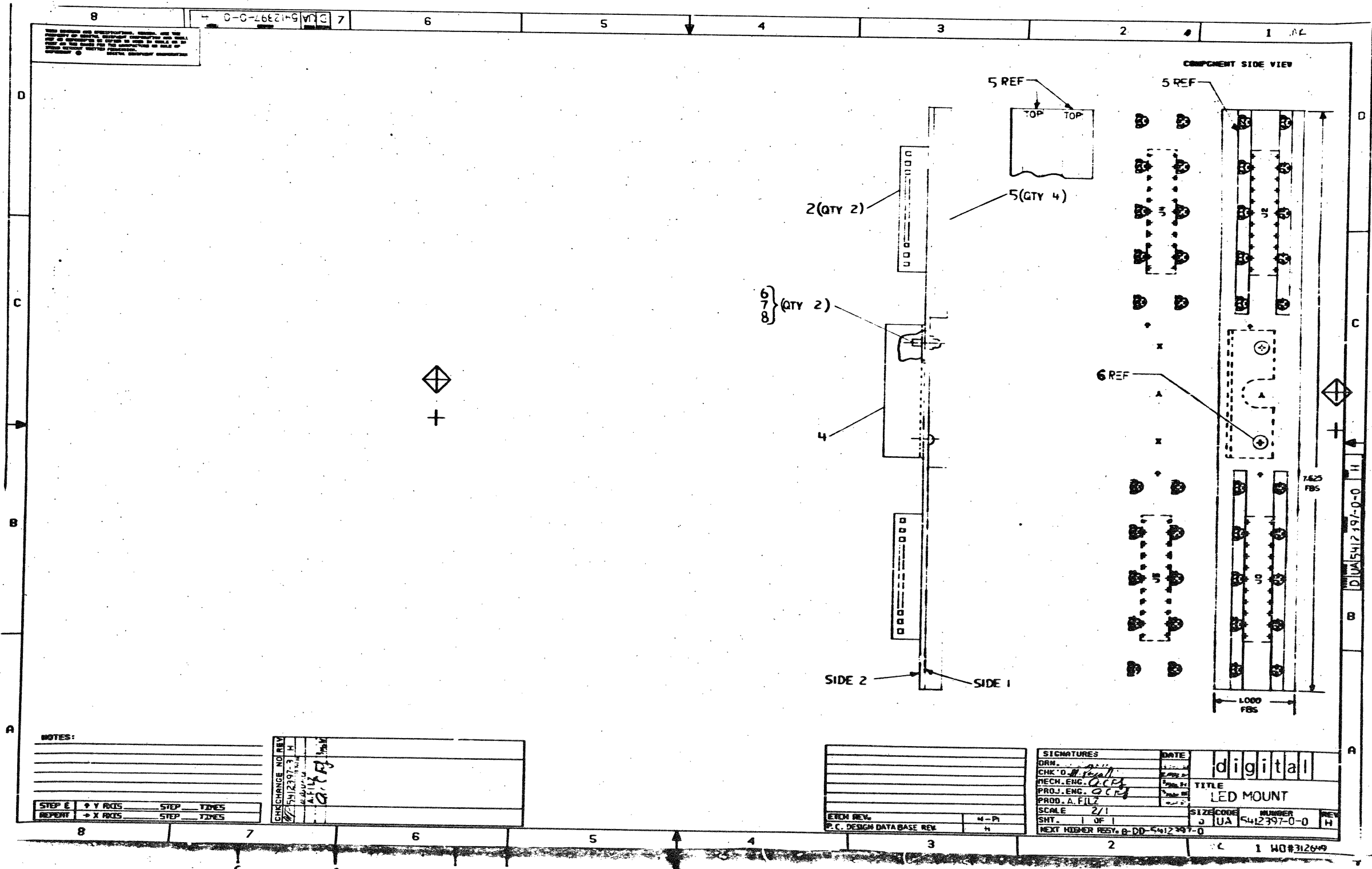
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REV.	
CHANGE NO.	
CHK	

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
-					
PARTS LIST					
DIMENSIONAL TOLERANCE		DATE		<b>digital</b>	
DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE SPECIFIED		2/1/77			
MILLIMETERS		DATE		<b>LED MOUNT</b>	
INCHES		8-Dec-77			
ANGLES		DATE			
THIRD ANGLE PROJECTION		DATE			
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE		TITLE	
MATERIAL		DATE		LED MOUNT	
FINISH		DATE		NEXT HIGHER ASSY.	
		15-Dec-77		B-DD-5412397-0	
				SCALE	
				SHEET	
				SIZE CODE	
				NUMBER	
				REV.	
				D	
				C CS 5412397-0-1	
				DIST.	



NOTES:

STEP	Y	RCIS	STEP	TDES
REPRT	→	X	RCIS	STEP

CHANGE NO	REV	
5412397-0	H	
DATE		
BY		
APP		
FILE		

ETCH REV.	4-P
P.C. DESIGN DATA BASE REV	H

SIGNATURES		DATE
DRW.		
CHK'D		
MECH. ENG.		
PROJ. ENG.		
PROB. A. FILZ		
SCALE	2/1	
SHT.	1 OF 1	
NEXT HIGHER REV. P-DD-5412397-0		

digital		
TITLE		
LED MOUNT		
SIZE	CODE	NUMBER
9	UA	5412397-0-0
REV		
H		

DIGITAL EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

DATE 7/10/78

TITLE MNCAM INSTALLATION/ACCEPTANCE PROCEDURE

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

ENG *[Signature]* APPD *[Signature]* 7-11-78 SIZE CODE NUMBER REV  
DEC FORM NO. 108 1074 MNCAM-0-4

MR SHEET 1 OF 4

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE MNCAM INSTALLATION/ACCEPTANCE PROCEDURE

1.0 GENERAL

1.1 SCOPE

This document describes the procedures for the installation and field acceptance of the MNCAM (Analog Multiplexer) option for the MINC-11 system. This procedure will be used for in-house FAST, field add-on and new system installation, and periodic verification testing.

1.2 EQUIPMENT

MINC-11	System
MNCAM-TA	Test Module (optional)
7014153-1-D	I/O Connector
MNCAD	A/D Option
REFERENCE	Precision Voltage Source (optional)

1.3 DOCUMENTATION

MD-11-DVHNA	MNCAD Diagnostic Program
D-CB-A154-0-1	Circuit Schematics
AA-D572A-TC	Manual- "Work with MINC Devices"
A-SP-MNCAD-0-4	MNCAD Installation/Acceptance Procedure

DEC FORM NO. 108 1081 MNCAM-0-4

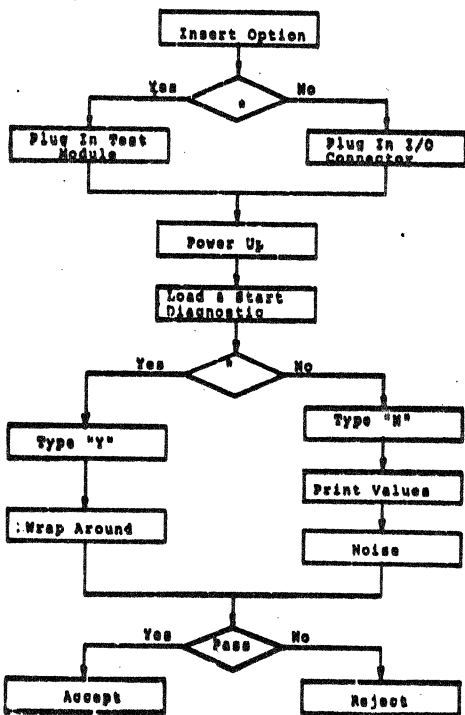
MR SHEET 2 OF 4

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE MNCAM INSTALLATION/ACCEPTANCE PROCEDURE

1.4 PROCEDURE



\*Test Module Available

SIZE CODE NUMBER REV  
BY MNCAM-0-4

MR SHEET 3 OF 4

DEC FORM NO. 108 1081

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE MNCAM INSTALLATION/ACCEPTANCE PROCEDURE

2.0 INSTALLATION

2.1 LOCATION

The MNCAM must be inserted into a slot that is to the left of the MNCAD (A/D option) and there must be no empty slots in-between. With power off, insert the MNCAM option(s) into the selected slot(s).

2.2 TEST MODULE

If the MNCAM-TA test module is available it should be plugged onto the I/O connector fingers on the top of the MNCAM at this point, before power to the System is applied. Both SM pins on the I/O connector should be tied to logic ground.

2.3 POWER UP

All other options to be tested and any of their test modules, should be mounted in the system, then power may be applied. Allow a 5 minute warm-up period before continuing.

2.4 DIAGNOSTIC

The MNCAD diagnostic is used to test the MNCAM option and should now be loaded into the processor and started at location 200. The diagnostic heading will be typed followed by:

"SWR = 000000 NEW = "

Type "RETURN". The program will ask if a test module is connected; type "N" for no if one is not present or "Y" for yes if one is present, followed by a "RETURN".

3.0 ACCEPTANCE

3.1 If the test module is present enter the wrap-around test (W) for only those channels to be tested. (Use "V" and SWR = 2000 for video graphics terminals; VT55 or VT105).

3.2 If no test module is present, input voltage through the I/O connector and enter the print values (P) routine, addressing only those channels to be tested, and then the noise test (N).

TABLE 3-1: INPUT VOLTAGE CODING

OCTAL CODE	INPUT (VOLTS)	
7777	+5.1175	+PB -1 LSB
7000	+1.8400	+3/4 FS
6000	+2.3600	+1/2 FS
5000	+1.3800	+1/4 FS
4000	0.0000	0
3000	-1.3800	-1/4 FS
2000	-2.3600	-1/2 FS
1000	-3.8400	-3/4 FS
0000	-5.1200	-FS

SIZE CODE NUMBER REV  
BY MNCAM-0-4

MR SHEET 4 OF 4

DEC FORM NO. 108 1081

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# FIELD MAINTENANCE PRINT SET

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## TABLE OF CONTENTS


D-TC-MNCKW-8-1	MNCKW FIELD MAINTENANCE PRINT SET
	TABLE OF CONTENTS
D-DD-MNCKW-8	MNCKW UNIT ASSY
D-UA-M7953-8-8	REAL TIME CLOCK
K-PL-M7953-8-8	REAL TIME CLOCK
D-CS-M7953-8-1	REAL TIME CLOCK
A-PL-MNCKW-8-SH	SHIP LIST MNCKW
D-UA-MNCKW-8-8	MNCKW UNIT ASSY
A-SF-MNCKW-8-4	INSTALLATION & ACCEPTANCE PROCEDURES

UNIT VARIATIONS COVERED BY THIS PRINT SET
MNCKW

**MNCKW**  
**Field Maintenance Print Set**

**Digital Equipment Corporation**

PRINT SET ORDER NO.  
**MF#593**

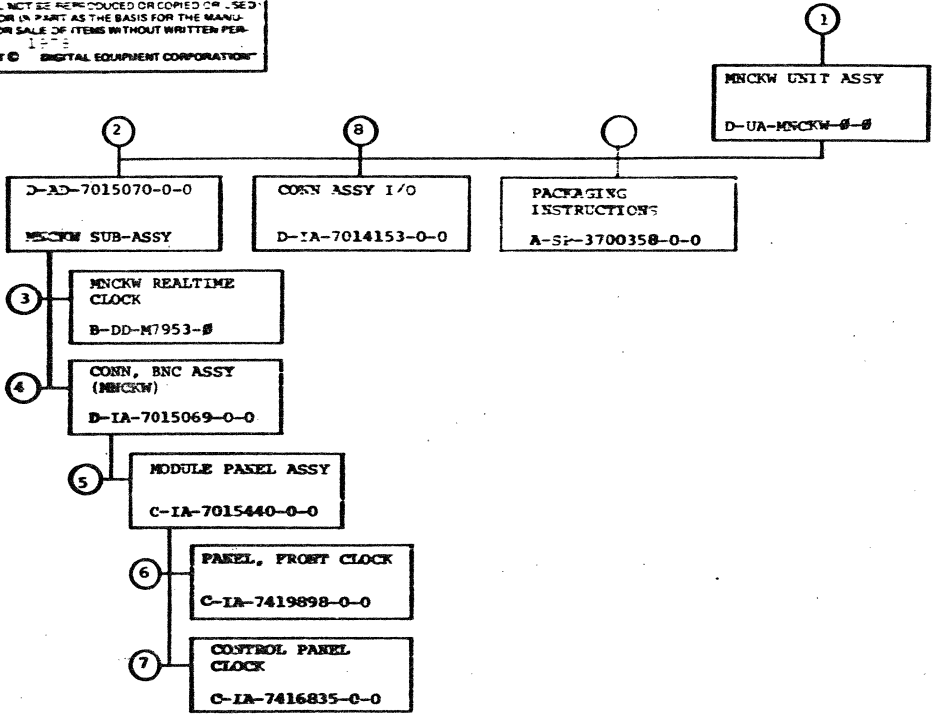
REVISIONS	CHG. NO.	REV.	USED ON OPTION/MODEL	DRM	DATE	TITLE	 MNCKW UNIT ASSY			
	DATE									
			MNCKW	<i>Q. Sauer</i>	20-NOV-78					CHK'D
				<i>[Signature]</i>	<i>1/11/80</i>	PROJ. ENG.	DATE			
				<i>[Signature]</i>	<i>23-NOV-78</i>	FIELD SERV.	DATE	SIZE	CODE	NUMBER
				<i>[Signature]</i>	<i>25 May 78</i>			D	TC	MNCKW-8-1
								DIST.		REV.
			SHEET 1 OF 1							

REV. 100 TC MNCKW-8-1





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TITLE <b>MNCKW UNIT ASSY</b>	SHEET 2 OF 3	SIZE CODE <b>B DD</b>	NUMBER <b>MNCKW-0</b>	REV <b>B</b>
---------------------------------	--------------	--------------------------	--------------------------	-----------------

MR

FIND NO.	DRAWING NO.	DESCRIPTION	TYPE	FIND NO.	DRAWING NO.	DESCRIPTION	TYPE
1	MP#0593	FIELD MAINTENANCE PRINT SET	-				
	B-TC-MNCKW-0-1	FIELD MAINTENANCE PRINT SET	-	5	C-IA-7015440-0-0	MODULE PANEL ASSY	E/M
	D-UA-MNCKW-0-0	MNCKW UNIT ASSY	E/M				
	C-MD-7419869-0-0	PLATE, COMP SIDE	M				
	C-MD-7419868-0-0	PLATE, BTCH SIDE	M				
	A-DC-3615260-0-0	DECAL, I/O SCHEMATIC	E/M				
	A-DC-3615264-0-0	DECAL, INFORMATION (MNCKW)	E/M				
	A-PL-MNCKW-0-5	PARTS LIST MNCKW	E/M				
	A-PL-MNCKW-0-SH	SHP LIST MNCKW	E/M				
	A-SP-MNCKW-0-2	MNCKW ENGINEERING SPEC.	E/M	6	C-IA-7419898-0-0	PANEL, FROST CLOCK	M
	A-SP-MNCKW-0-3	CHECKOUT & ACCEPTANCE PROCEDURE	E/M		C-PS-4830032-0-0	EXTRUSION, FROST PANEL "D"	M
	A-SP-MNCKW-0-4	INSTALLATION & ACCEPTANCE PROCEDURE	E/M				
2	D-AD-7015070-0-0	MNCKW SUB-ASSY	E/M				
	B-MD-7420242-0-0	SPACER, MODULE	M				
	C-IA-7419861-0-0	SUB-PANEL	M				
	B-IA-7420635-0-0	BUTTON SWITCH (MODIFIED)	M				
				7	C-IA-7416835-0-0	CONTROL PANEL CLOCK	M
					C-SS-7416835-01	CONTROL PANEL	M
					C-SS-7416835-02	CONTROL PANEL	M
					C-SS-7416835-03	CONTROL PANEL	M
					C-SS-7416835-04	CONTROL PANEL	M
					C-SS-7416819-02	CONTROL PANEL	M
3	B-DD-M7953-0	MNCKW REALTIME CLOCK	E/M				
	A-PL-M7953-0-0	REAL TIME CLOCK	E/M				
	D-UA-M7953-0-0	REAL TIME CLOCK	E/M				
	D-CS-M7953-0-1	REAL TIME CLOCK	E/M				
				8	D-IA-7014153-0-0	CORN ASSY I/O	E/M
					A-DC-7416886-0-0	DECAL, I/O CORN	E/M
					A-DC-7418934-4-0	DECAL, I.D. I/O CORN	E/M
4	D-IA-7015069-0-0	CORN, BNC ASSY (MNCKW)	E/M				
				9	A-SP-3700358-0-0	PACKAGING INSTRUCTIONS	M

TYPE: E ELECTRICAL  
M MECHANICAL  
E/M ELECTROMECHANICAL



TITLE  
MNCKW UNIT ASSY

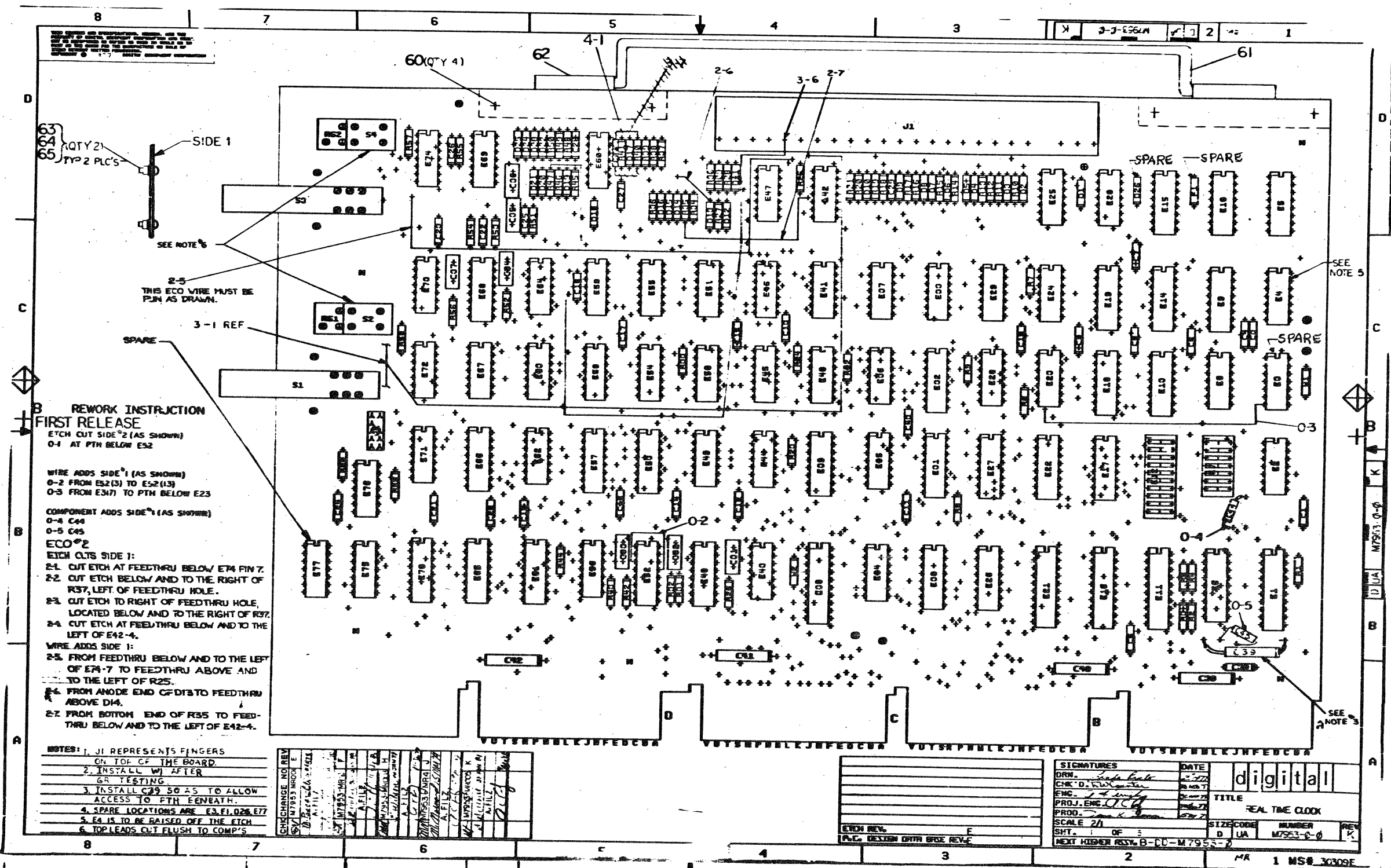
SHEET 3 OF 3

SIZE CODE  
B DD

NUMBER  
MNCKW-0

REV  
B

MR



8 7 6 5 4 3 2 1  
K M7953-0-0

60 (QTY 4)  
61  
SIDE 1  
6643 (QTY 2)  
665 (QTY 2)  
TYP 2 PLCS

SEE NOTE 5  
2-5 THIS ECO WIRE MUST BE FLUSH AS DRAWN.  
3-1 REF  
SPARE

**REWORK INSTRUCTION**  
**FIRST RELEASE**  
ETCH CUT SIDE 2 (AS SHOWN)  
0-1 AT PTH BELOW E52

WIRE ADDS SIDE 1 (AS SHOWN)  
0-2 FROM E52(3) TO E52(13)  
0-3 FROM E347 TO PTH BELOW E23

COMPONENT ADDS SIDE 1 (AS SHOWN)  
0-4 C44  
0-5 C45

ECO #2  
ETCH CUTS SIDE 1:

2-1 CUT ETCH AT FEEDTHRU BELOW E74 PIN 7.  
2-2 CUT ETCH BELOW AND TO THE RIGHT OF R37, LEFT OF FEEDTHRU HOLE.  
2-3 CUT ETCH TO RIGHT OF FEEDTHRU HOLE, LOCATED BELOW AND TO THE RIGHT OF R37.  
2-4 CUT ETCH AT FEEDTHRU BELOW AND TO THE LEFT OF E42-4.

WIRE ADDS SIDE 1:  
2-5 FROM FEEDTHRU BELOW AND TO THE LEFT OF E74-7 TO FEEDTHRU ABOVE AND TO THE LEFT OF R25.  
2-6 FROM ANODE END OF D13 TO FEEDTHRU ABOVE D14.  
2-7 FROM BOTTOM END OF R35 TO FEEDTHRU BELOW AND TO THE LEFT OF E42-4.

NOTES: 1. J1 REPRESENTS FINGERS ON TOP OF THE BOARD.  
2. INSTALL W AFTER GR TESTING.  
3. INSTALL C49 SO AS TO ALLOW ACCESS TO PTH BENEATH.  
4. SPARE LOCATIONS ARE E3, E1, 026, E77  
5. E4 IS TO BE RAISED OFF THE ETCH  
6. TOPLEADS CUT FLUSH TO COMPS

CHANGE NO	REV	DESCRIPTION
1	1	INITIAL RELEASE
2	1	REWORK INSTRUCTION
3	1	REWORK INSTRUCTION
4	1	REWORK INSTRUCTION
5	1	REWORK INSTRUCTION
6	1	REWORK INSTRUCTION
7	1	REWORK INSTRUCTION
8	1	REWORK INSTRUCTION
9	1	REWORK INSTRUCTION
10	1	REWORK INSTRUCTION

DATE	DATE
DESIGNER	DATE
CHK'D	DATE
PROJ. ENG	DATE
PROJ. MGR	DATE
SCALE 2/1	DATE
SHT. OF 3	DATE
NEXT HIGHER REV. B-00-M7953-0	DATE

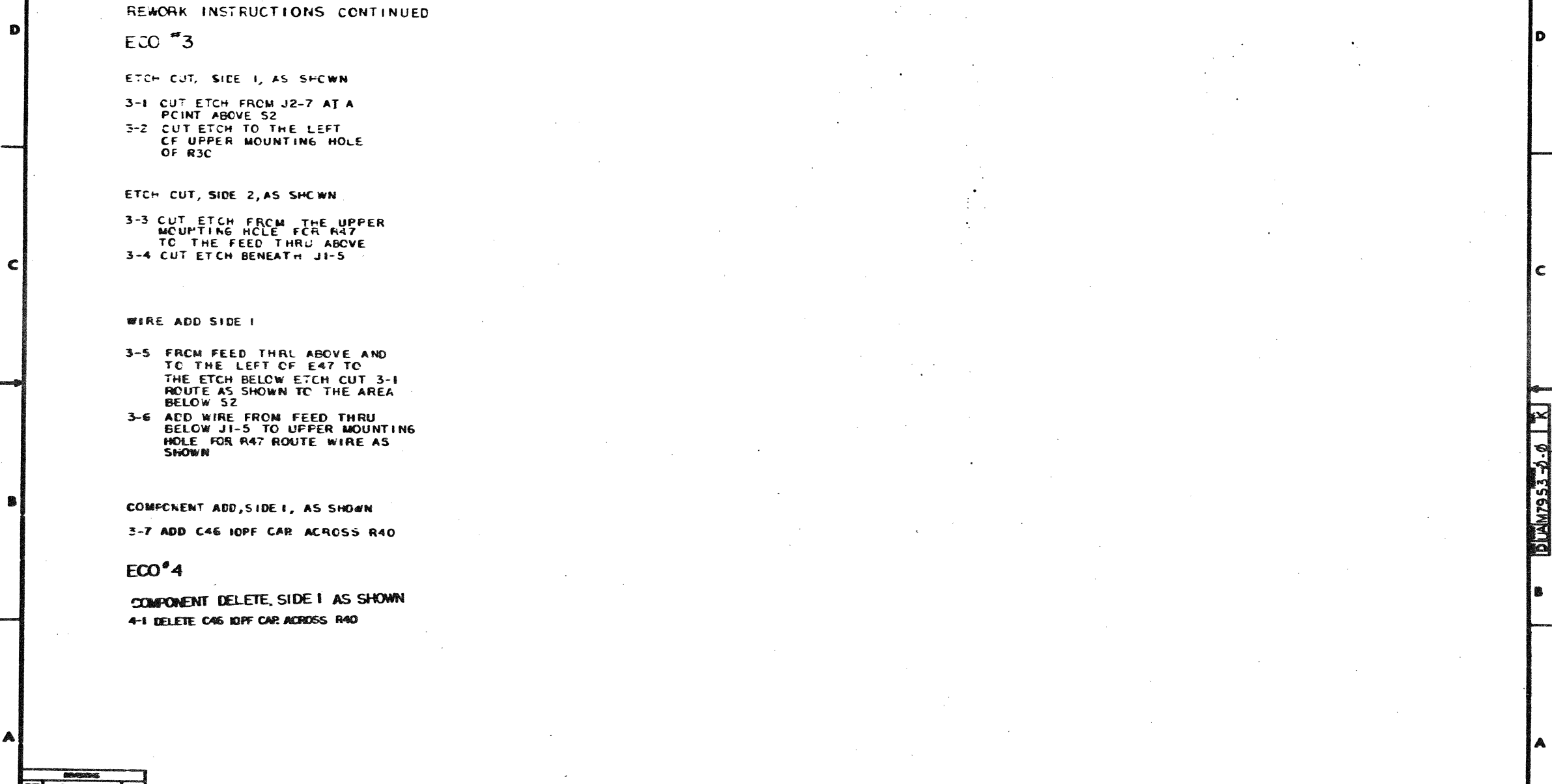
SIGNATURES	DATE	digital
DRW.	DATE	TITLE
CHK'D	DATE	REAL TIME CLOCK
PROJ. ENG	DATE	SIZE CODE
PROJ. MGR	DATE	NUMBER
SCALE 2/1	DATE	REV
SHT. OF 3	DATE	K
NEXT HIGHER REV. B-00-M7953-0	DATE	

MR 1 MS# 30309E

8 7 6 5 4 3 2 1

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DLAM7953-C-0 2



REWORK INSTRUCTIONS CONTINUED

ECO #3

ETCH CUT, SIDE 1, AS SHOWN

- 3-1 CUT ETCH FROM J2-7 AT A POINT ABOVE S2
- 3-2 CUT ETCH TO THE LEFT OF UPPER MOUNTING HOLE OF R3C

ETCH CUT, SIDE 2, AS SHOWN

- 3-3 CUT ETCH FROM THE UPPER MOUNTING HOLE FOR R47 TO THE FEED THRU ABOVE
- 3-4 CUT ETCH BENEATH J1-5

WIRE ADD SIDE 1

- 3-5 FROM FEED THRU ABOVE AND TO THE LEFT OF E47 TO THE ETCH BELOW ETCH CUT 3-1 ROUTE AS SHOWN TO THE AREA BELOW S2
- 3-6 ADD WIRE FROM FEED THRU BELOW J1-5 TO UPPER MOUNTING HOLE FOR R47 ROUTE WIRE AS SHOWN

COMPONENT ADD, SIDE 1, AS SHOWN

- 3-7 ADD C46 10PF CAP ACROSS R40

ECO #4

COMPONENT DELETE, SIDE 1 AS SHOWN

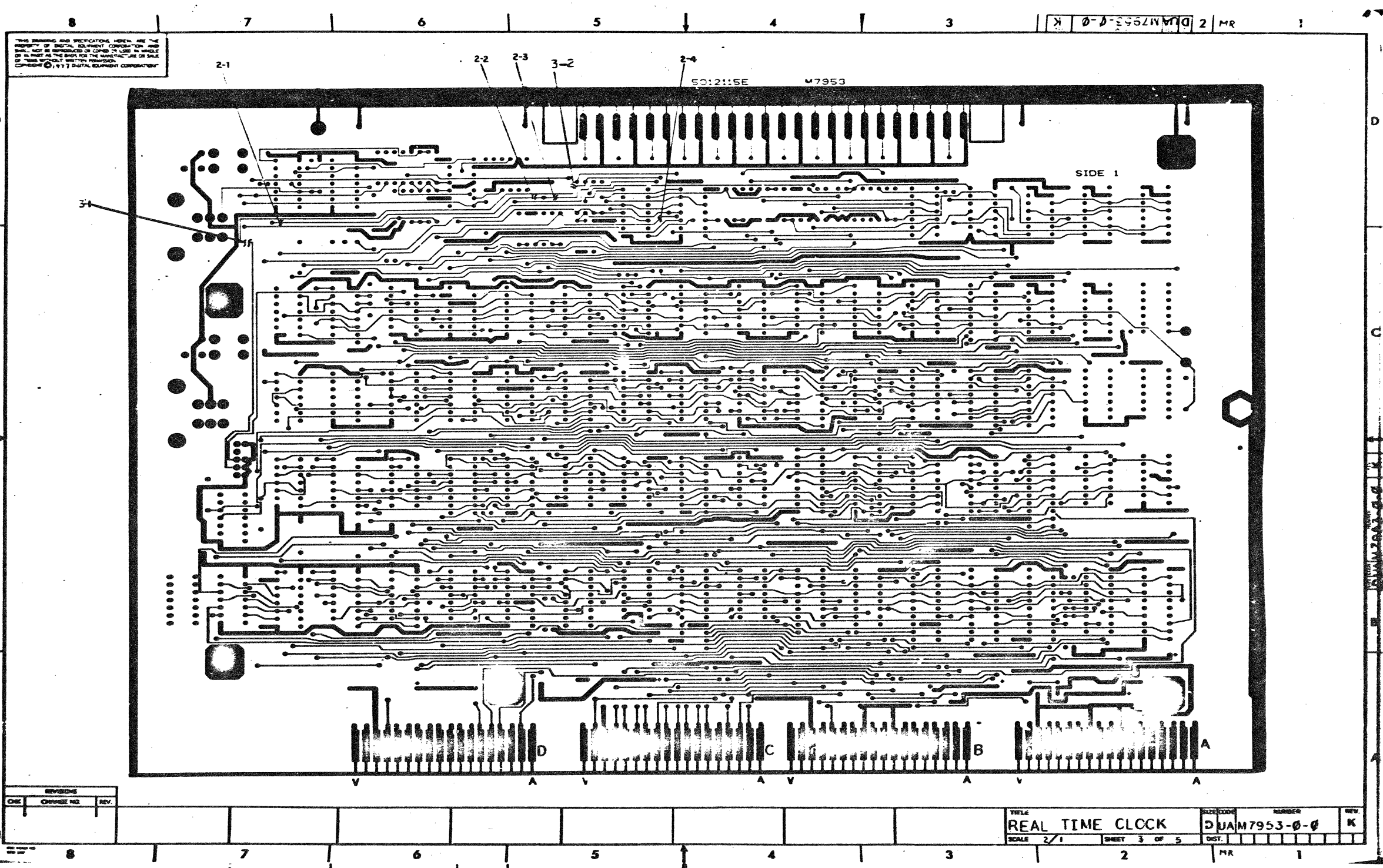
- 4-1 DELETE C46 10PF CAP ACROSS R40

REV.	DATE	DESCRIPTION

TITLE		DLAM7953-C-0		REV.	K
SCALE		2/1		SHEET 2 OF 5	

8 7 6 5 4 3 2 1

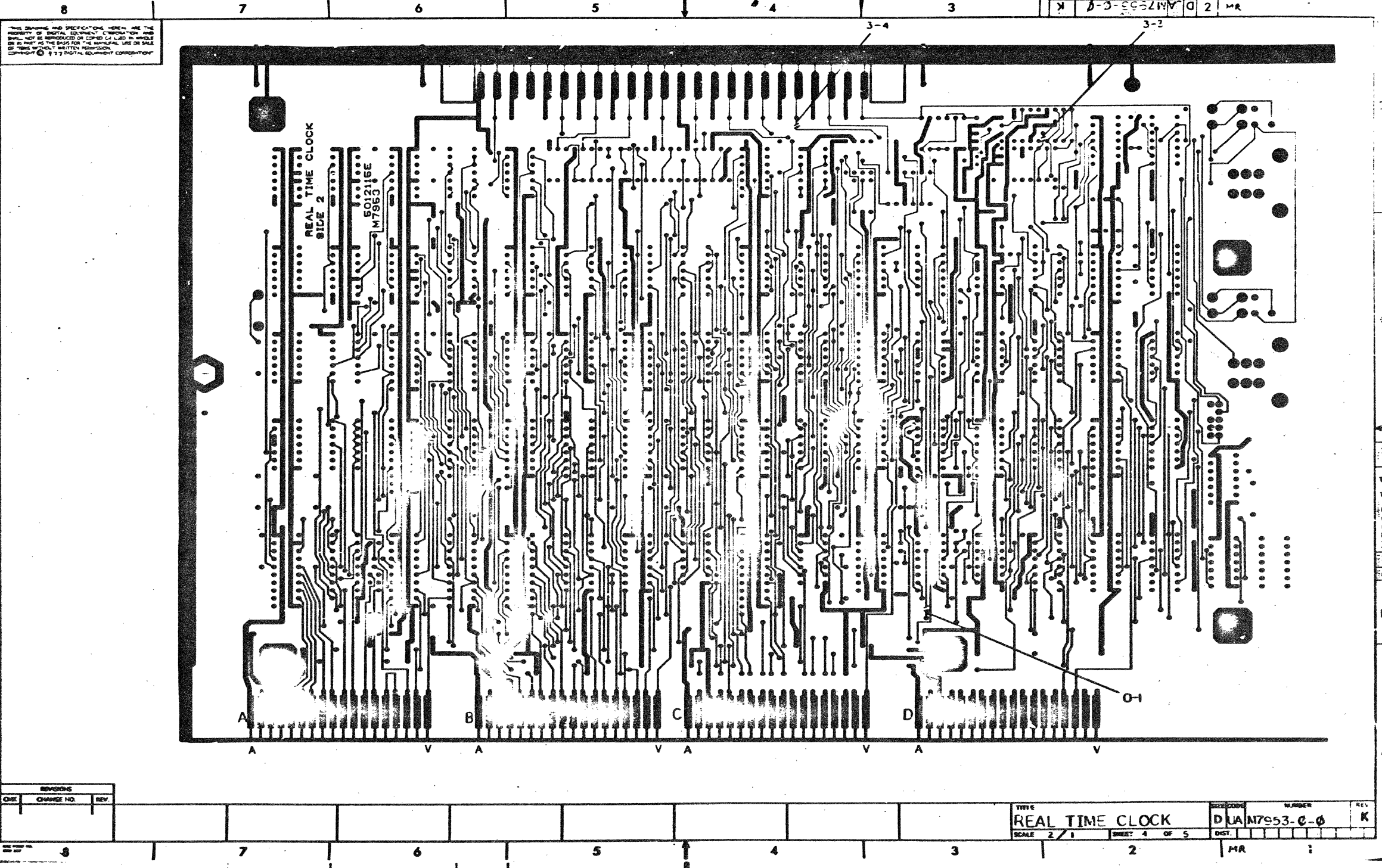
DLAM7953-C-0 K



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REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	NUMBER	REV.
REAL TIME CLOCK	DUAL M7953-0-0	K
SCALE 2/1	SHEET 3 OF 5	DIST.
		MR



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REVISIONS		
ONE	CHANGE NO.	REV.

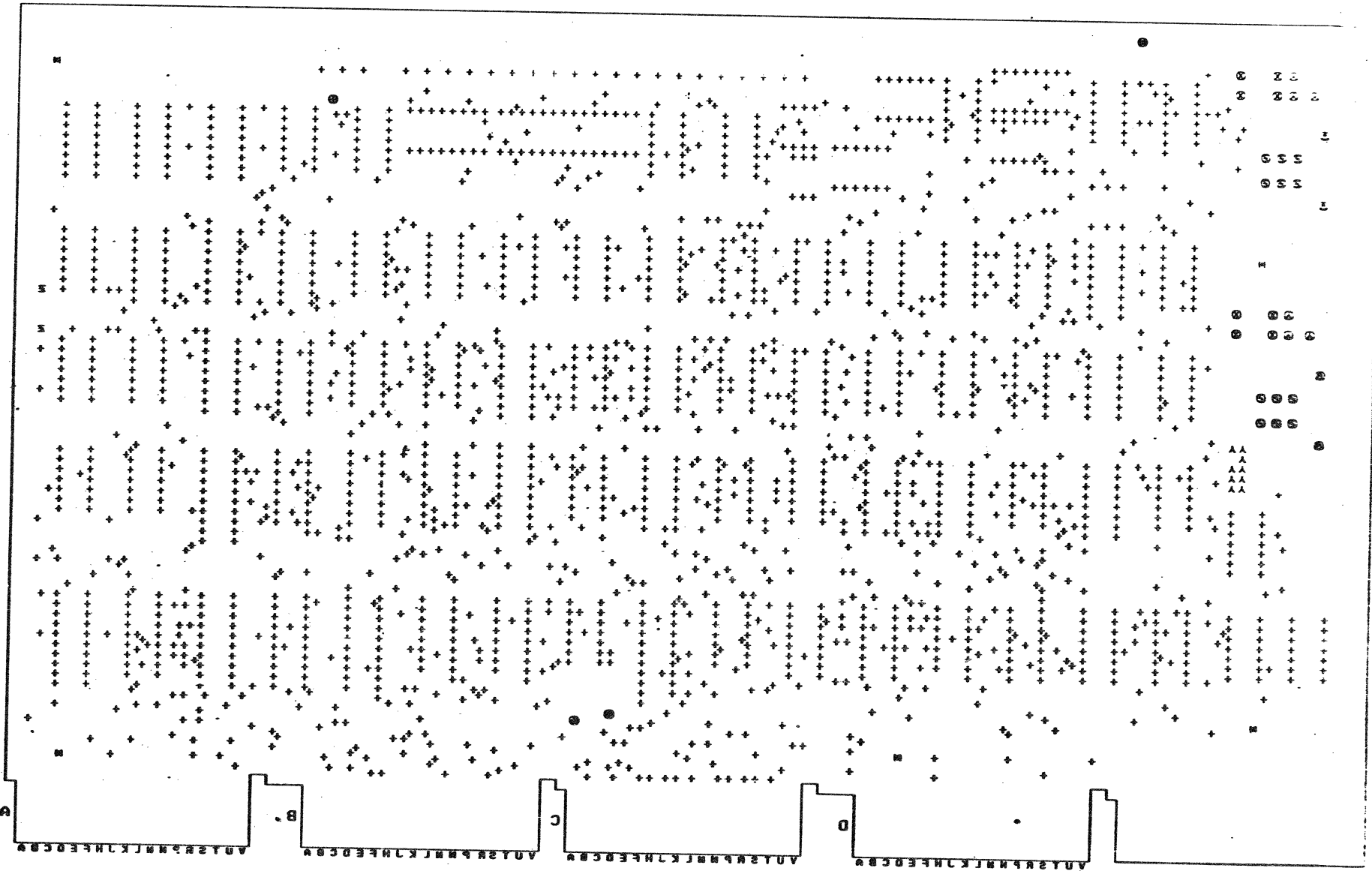
TITLE		NUMBER		REV.
REAL TIME CLOCK		DUA M7953-C-0		K
SCALE	2/1	SHEET	4 OF 5	DIST.

DUA M7953-C-0 K



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D-0-0-995ZNM 2 K



REVISIONS		
DATE	CHANGE NO.	REV.

TITLE: REAL TIME CLOCK  
 SCALE: 2/1 SHEET: 5 OF 5  
 NUMBER: D-LA1M7953-0-0  
 REV.: K

D-LA1M7953-0-0 K

LINE ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION	REFERENCE DESIGNATOR
1	1	D-982-5012115-0-0	87953	1	
2	2	1012784-00	.047 MFD 50V +00-20%	30	C1,C3-C30,C43
3	3	1000014-00	68.0 MHF 100V 50200PPM	1	C31
4	4	1000021-00	220.0 MHF 100V 50200PPM	6	C32-C37
5	5	1004012-00	15 WFD 20V 10%	8	C38-C42
6	6	1000019-00	150.0 MHF 100V 50200PPM	2	C44,C45
7	7	1105796-00	1# 4004 PIV=400 I= 1A D=41 SP	16	D1-D18,D19
8	8	1100114-00	D 664 Q517SPCB PIV= 35V SP	8	D16,D17,D19-D21,D23-D25
9	9	1110232-00	NCL1104 CLO(MA FROM)10-00V	1	D22
10	10	1300368-00	1.0 K .25 W 5.0 %	23	R1,R6-R9,R10,R21-R25,R31,R33, R41-R43,R49,R55-R56
11	11	131024-00	680.0 .25 W 5.0 %	2	CONF R2,R4
12	12	1300299-00	330.0 .25 W 5.0 %	2	R3,R5
13	13	1310801-02	47.0 .25 W 1.0 % FUSE	8	R10,R12,R13,R16,R19,R29,R30,R34
14	14	1300316-00	470.0 .25 W 5.0 %	7	R11,R14,R15,R17,R20,R20,R25
15	15	1301074-00	5.00 K .25 W 5.0 %	2	R20,R22
16	16	1303179-00	0.20 K .25 W 5.0 %	3	R40,R22,R24
17	17	1302308-00	2.0 K .25 W 5.0 %	3	R27,R30,R30
18	18	1302406-00	100.0 K .25 W 5.0 %	2	R37,R47
19	19	1305595-00	1.0 W .25 W 5.0 %	2	R40,R48
20	20	1300426-00	2.70 K .25 W 5.0 %	2	R51,R53
21	21	1314355-00	50.0 K 10.0 W10.0 % POT	2	R61,R62
22	22	1011640-01	OSCILLATOR, XTAL 10.000 MHz	1	X4
23	23	1211164-03	SW,DIP 1P 1A 1P08	1	E7
24	24	1211164-06	SW,DIP 1P 1A 10P08	1	E3
25	25	1213400-00	CONN 10POS HOUSING	1	J2
26	26	1214937-00	SW,PD 2P PUSH PUSH	2	S1-S3
27	27	1912729-00	DC 004 PROTOCOL,REG, SELECT	1	E1
28	28	1912824-00	LS74 FF-D DUAL,EDGE TRIG	9	E2,E30,E40,E42,E46,E49,E50,E71, CONF E72

REVISION HISTORY		BASIC PART NO. 87953		DRN.	DATE	D I G I T A L			
ENG	ECO NUMBER	REV	SECTION, A OF A	ENG. NO.	DATE	PARTS LIST			
			SECTION, VARIATION INDEX			REAL TIME CLOCK			
ENG	HR001	D	[A] 00	REQ. ENG.	DATE	DOCUMENT NUMBER			
ENR	HR002	F	[B]	REQ. ENG.	DATE	SIZE, CODE, NUMBER			
ENR	HR003	F	[C]	REQ. ENG.	DATE	REV			
AP	HR004	J	[D]	REQ. ENG.	DATE	FILE NO.			
AP	87953-82005	K	[E]	REQ. ENG.	DATE	ASSEMBLY NUMBER			
			[F]			TOP DOCUMENT NUMBER			
			[G]			FILE NAME			
			[H]			EDIT NO.			
			[I]						
			[J]						
			[K]						
			[L]						
			[M]						
			[N]						

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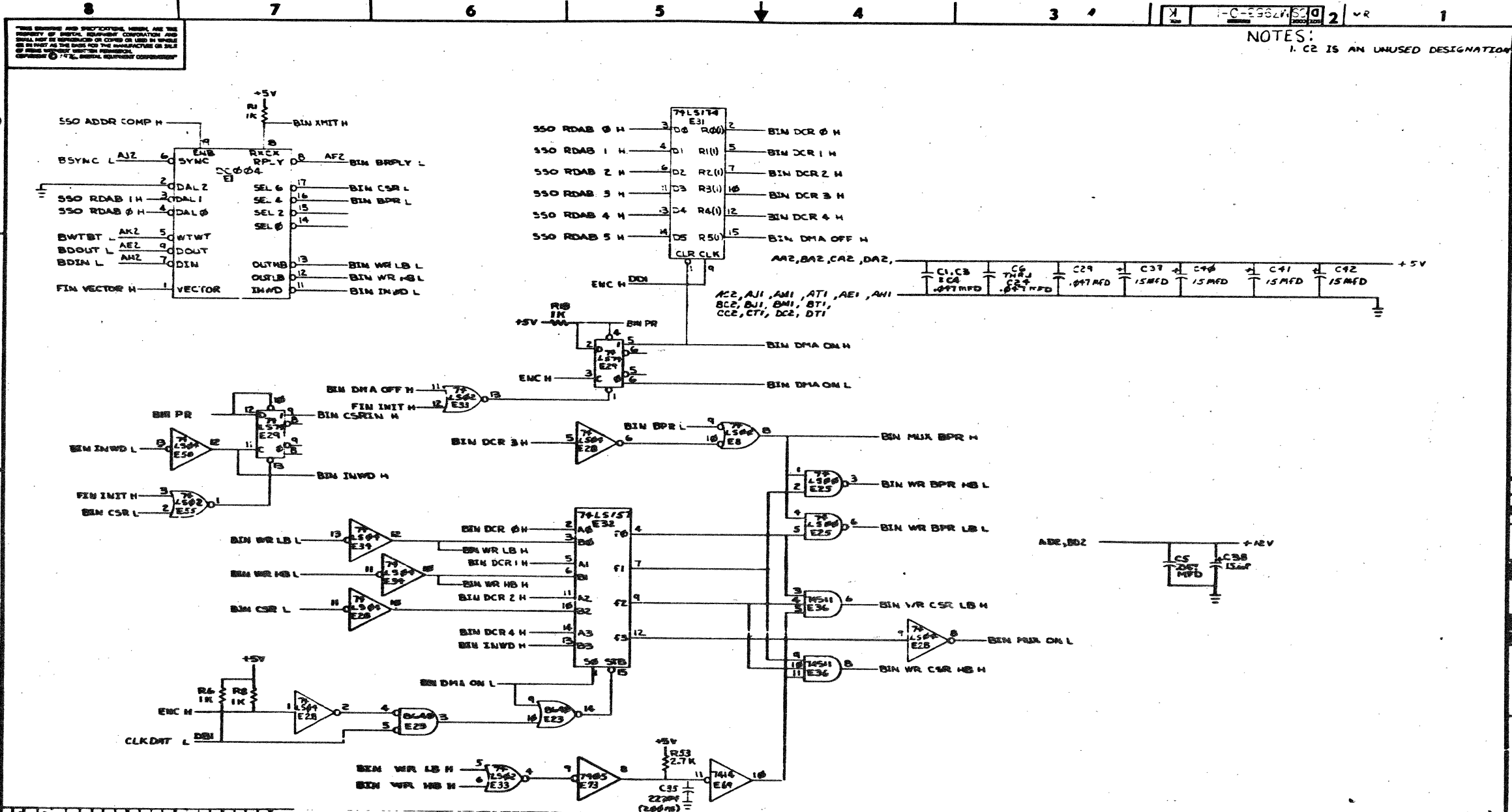
ESTIMATED BY PRTLST,20(11)

P A R T S L I S T

SHEET A2 OF A2

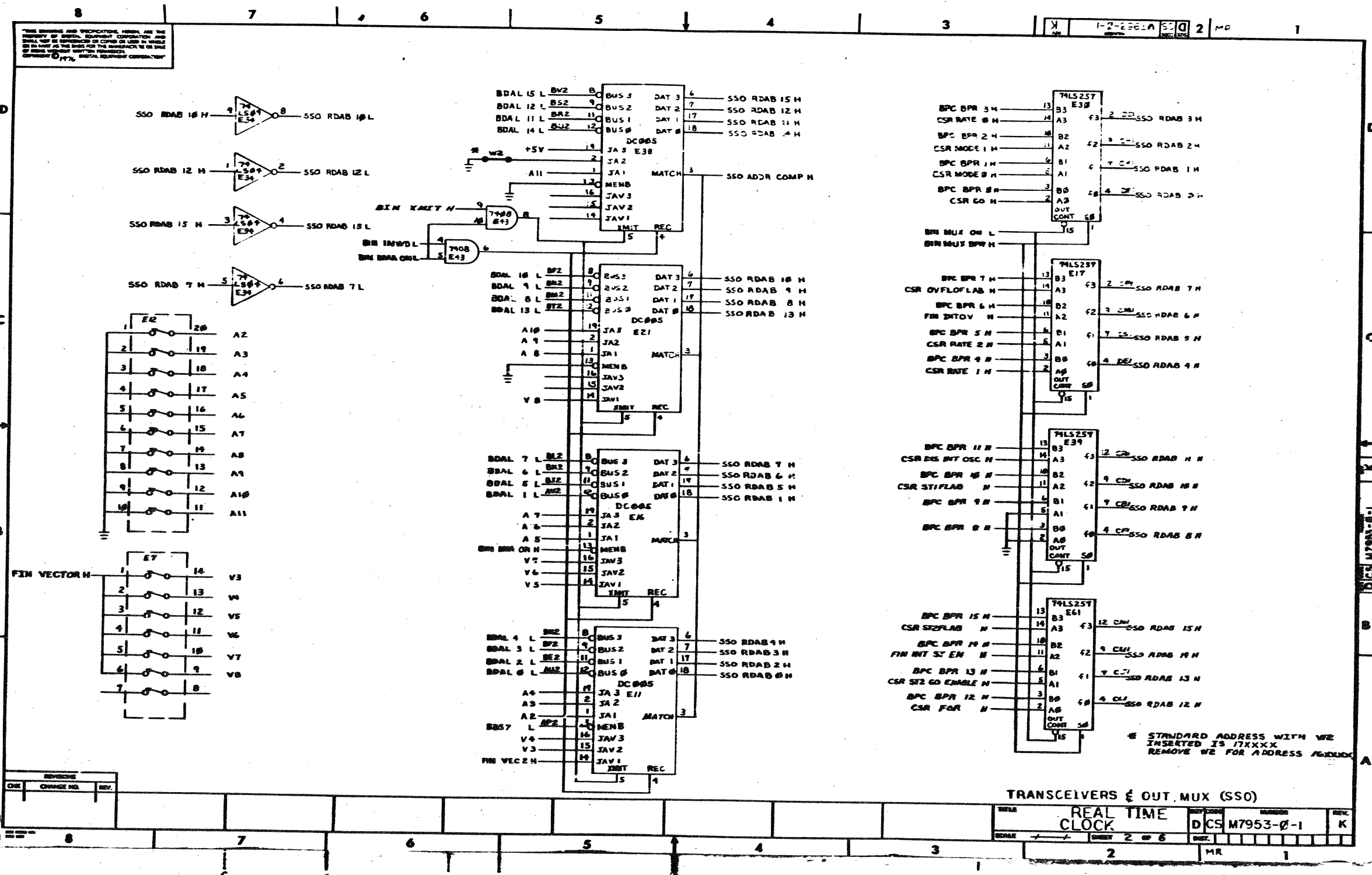
LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION	REFERENCE DESIGNATOR
29	29		1914127-00	74LS190 COUNTER, SYNCHR UP/DN	3	E3, E9, E10, E14, E15
30	30		1912710-00	DC 003 INTERRUPT, 2 CIRCUIT	1	E4
31	31		1912799-00	L500 NAND-GATE-GUAD 2IN, P	4	E8, E25, E37, E75
32	32		1913040-00	DC 005 TRANSCIVER 4BIT	4	E11, E16, E21, E30
33	33		1912807-00	LS298 NUX 1 OF 4, 2IN W/S	4	E13, E27, E57, E63
34	34		1912647-00	LS297 NUX 1 OF 2 (GUAD)	4	E17, E30, E39, E61
35	35		1912834-00	LS193 COUNTER, SYNCHR, 4BIT,	4	E18, E22, E53, E66
36	36		1912840-00	LS151 NUX 1 OF 8 & DATA	1	E19
37	37		1909705-00	DEC 8081 NAND GATE-GUAD 2IN 0	2	E20, E47
38	38		1911464-00	DEC 8640 RECEIVER, BUS, GUAD, U	1	E23
39	39		1910532-00	74S00 NAND GATE-GUAD 2IN	1	E24
40	40		1910530-00	74S174 FF-0 HEX	1	E26
41	41		1912593-00	LS150 INVERTER GATE, HEX	3	E28, E34, E38
42	42		1912847-00	LS157 NUX 1 CF 2(GUAD)	1	E32
43	43		1912801-00	LS402 NOR-GATE-GUAD 2IN	5	E33, E41, E55, E63, E66
44	44		1912807-00	LS10 NAND GATE-TRIPLE 3IN	1	E35
45	45		1910537-00	74S11 AND GATE-TRIPLE 3INP	1	E36
46	46		1913193-00	DEC 74S08 AND GATE, POS, GUAD 2I	1	E43
47	47		1912803-00	LS408 AND GATE-GUAD 2IN, PG	2	E45, E62
48	48		1909680-00	7404 INVERTER GATE-HEX 1I	2	E46, E47
49	49		1910991-00	9602 ONE SHOT-DUAL	3	E48, E52, E58
50	50		1912816-00	LS132 OR GATE-GUAD 2IN, POS	2	E51, E56
51	51		1910644-00	74S74 FF-0 DUAL, EDGE TRIGG	2	E54, E59
52	52		1912108-00	339 VOLT CMPTN, GUAD	1	E60
53	53		1911324-00	7414 INVERTER, HEX 1IN SCH	2	E69, E76
54	54		1912846-00	LS155 DECODER, 2 CF 4(DUAL)	1	E78
55	55		1909930-00	7405 INVERTER GATE-HEX 1I	1	E73
56	56		1912857-00	L506 3-OR GATE-GUAD 2IN	1	E74
57	57		1912857-00	LS174 FF-0 HEX W/CLEAR	1	E31
58	58		9009193-00	JUNPER, WIRE, INSULATED, BLACK 8	2	W1, W2
59	59		9000733-00	EYELET, FUNNEL FLANGE, .039 OD X	2	
60	60		9000733-00	EYELET, ROLL FLANGE .1210X .219	4	
61	61	C-8B-7420191-0-00	7420191-00	HANDLE	1	
62	62	C-8B-7420193-0-00	7420193-00	HANDLE RETAINER	2	
63	63		9004000-01	SCREW, PAN, PHIL 2-64X 3/16 SS	4	
64	64		9006093-00	NUT, HEX 2-64X3/16X 1 I/	4	
65	65		9006040-00	WASHER, LOCK, S.S. 62	4	
66	66		1313096-00	20.0 K .25 W 1.0 S RFS50-710	4	R30, R39, R46, R50
67	67		9107236-11	TUBING, THIN WALL, .077ID UL	A/R	
68	68		1800001-00	*** THIS ITEM IS NOT USED ***	0	

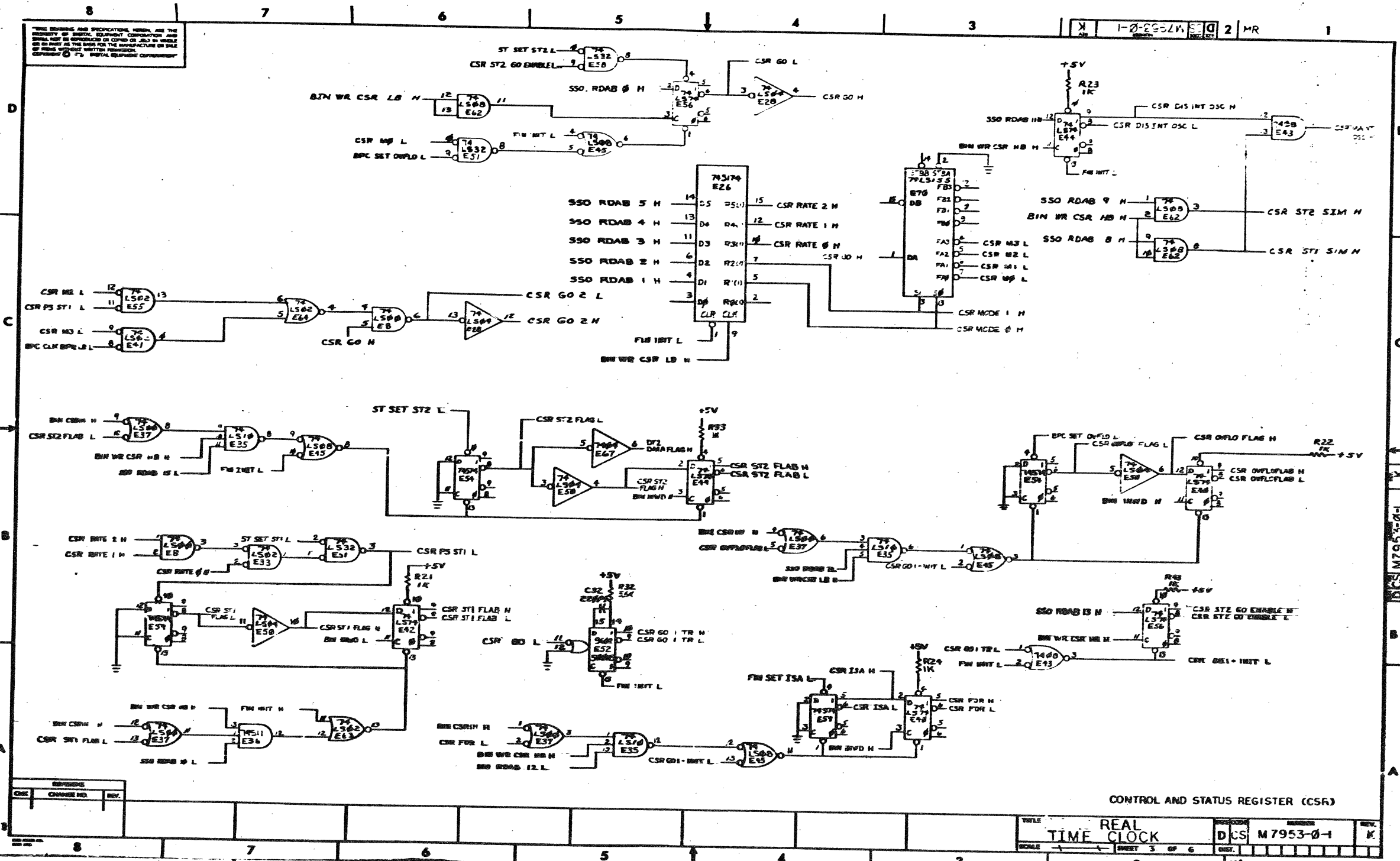
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DIGIT A										TITLE										REAL TIME CLOCK										SECTION A OF A										ISL# CODE										DOCUMENT NUMBER										REV																																							
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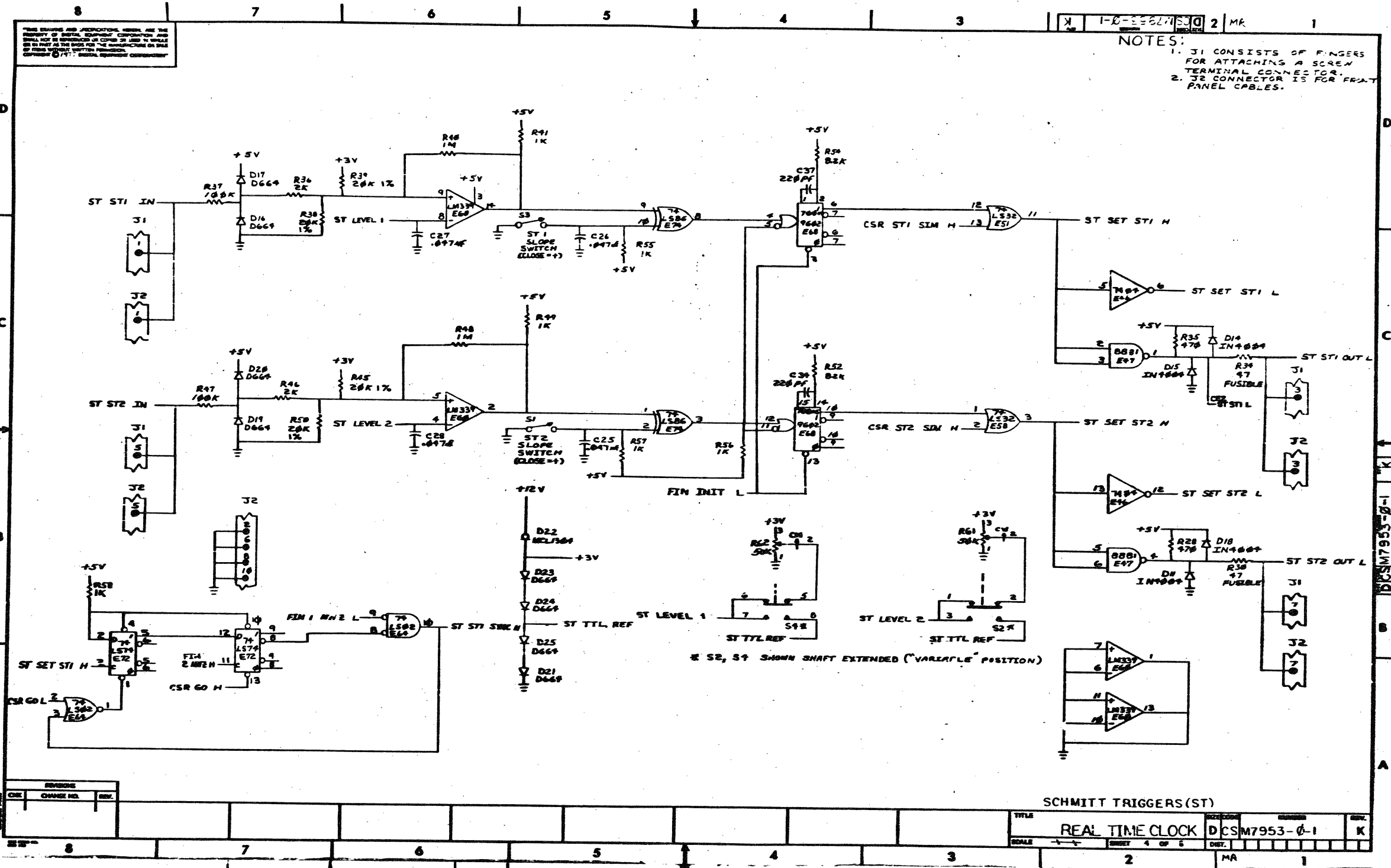


REV	DATE	BY	CHKD	APP'D
1	11/13/77	W. J. MOORE		
2	11/13/77	W. J. MOORE		
3	11/13/77	W. J. MOORE		
4	11/13/77	W. J. MOORE		
5	11/13/77	W. J. MOORE		
6	11/13/77	W. J. MOORE		
7	11/13/77	W. J. MOORE		
8	11/13/77	W. J. MOORE		

BUS INTERFACE (BIN)	
DATE	11/13/77
DESIGNED BY	M. C. K. W.
TITLE	REAL TIME CLOCK
SCALE	D
SHEET	1 OF 1
REV.	K





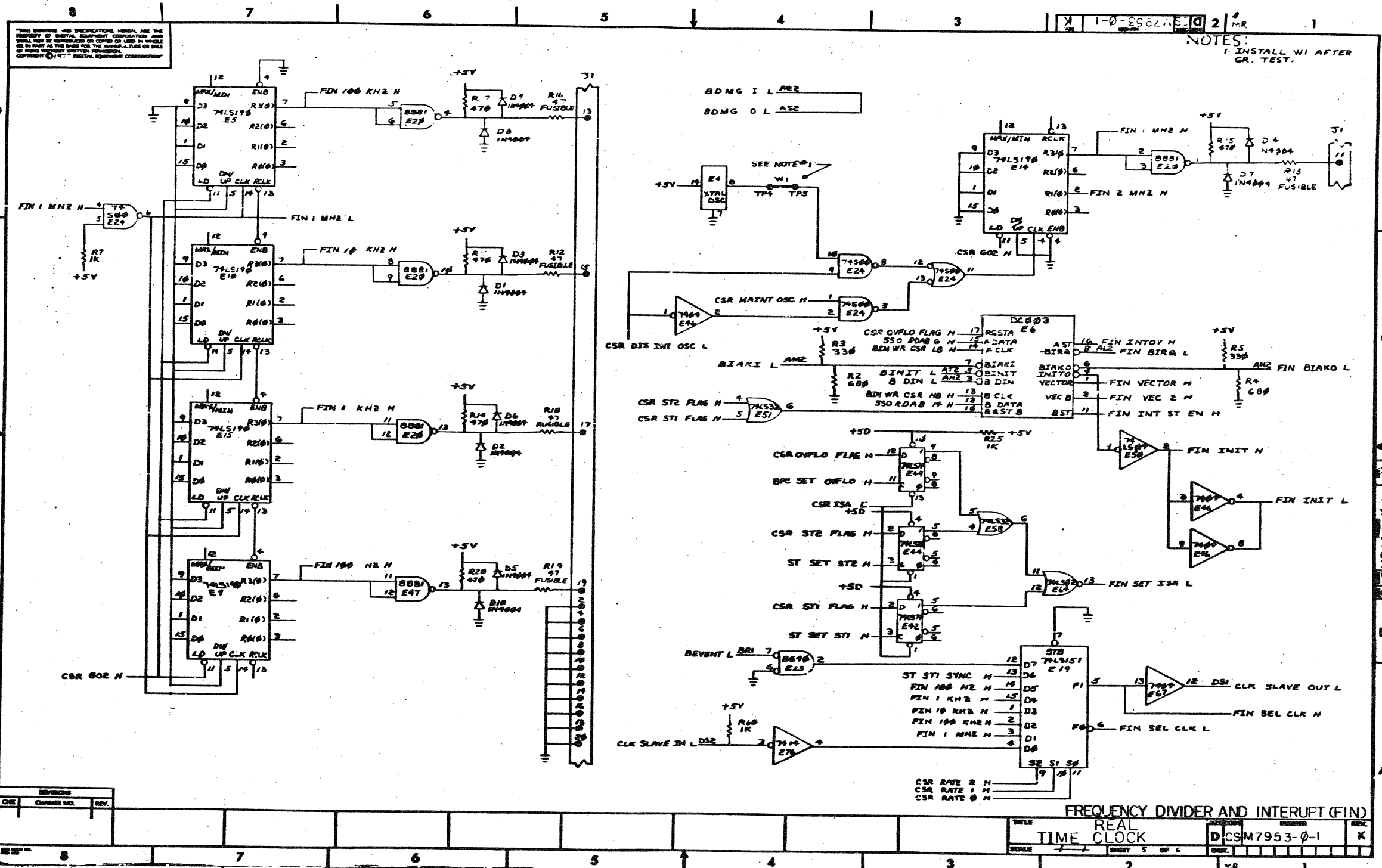


NOTES:  
 1. J1 CONSISTS OF FINGERS FOR ATTACHING A SCREW TERMINAL CONNECTOR.  
 2. J2 CONNECTOR IS FOR FRONT PANEL CABLES.

REV.	CHANGE NO.	REASON

TITLE		DCSM7953-0-1		K	
REAL TIME CLOCK		DCSM7953-0-1		K	
SHEET 4 OF 5		DIST.		MA	





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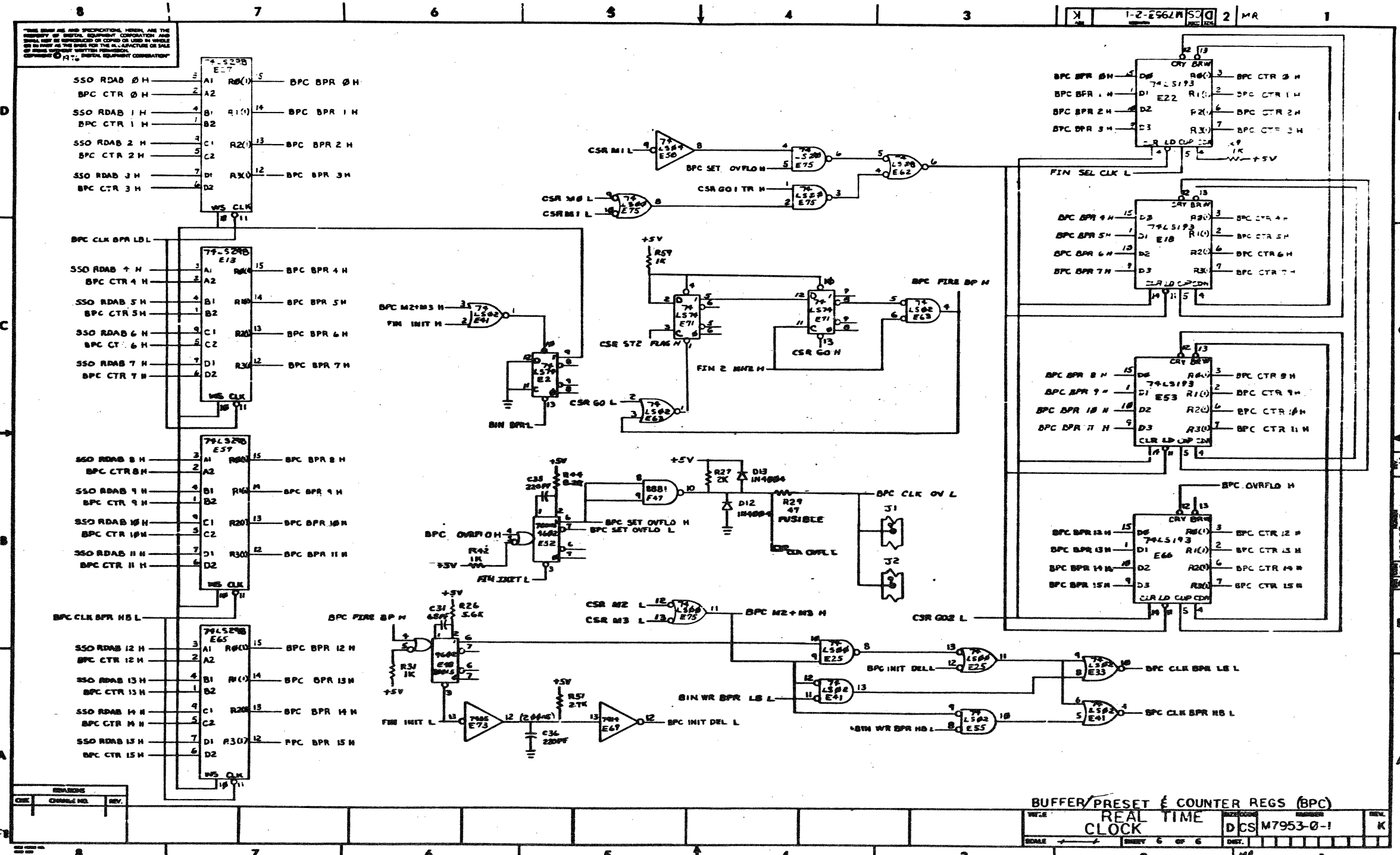
NOTES:  
1. INSTALL W1 AFTER GR. TEST.

REVISION		TITLE		NUMBER		REV.	
CHK	CHANGE NO.	REV.	REAL TIME CLOCK	D	DCSM7953-0-1	K	
				SHEET 5 OF 6			

8	7	6	5	4	3	2	1
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8	7	6	5	4	3	2	1
---	---	---	---	---	---	---	---

DCSM7953-0-1 K



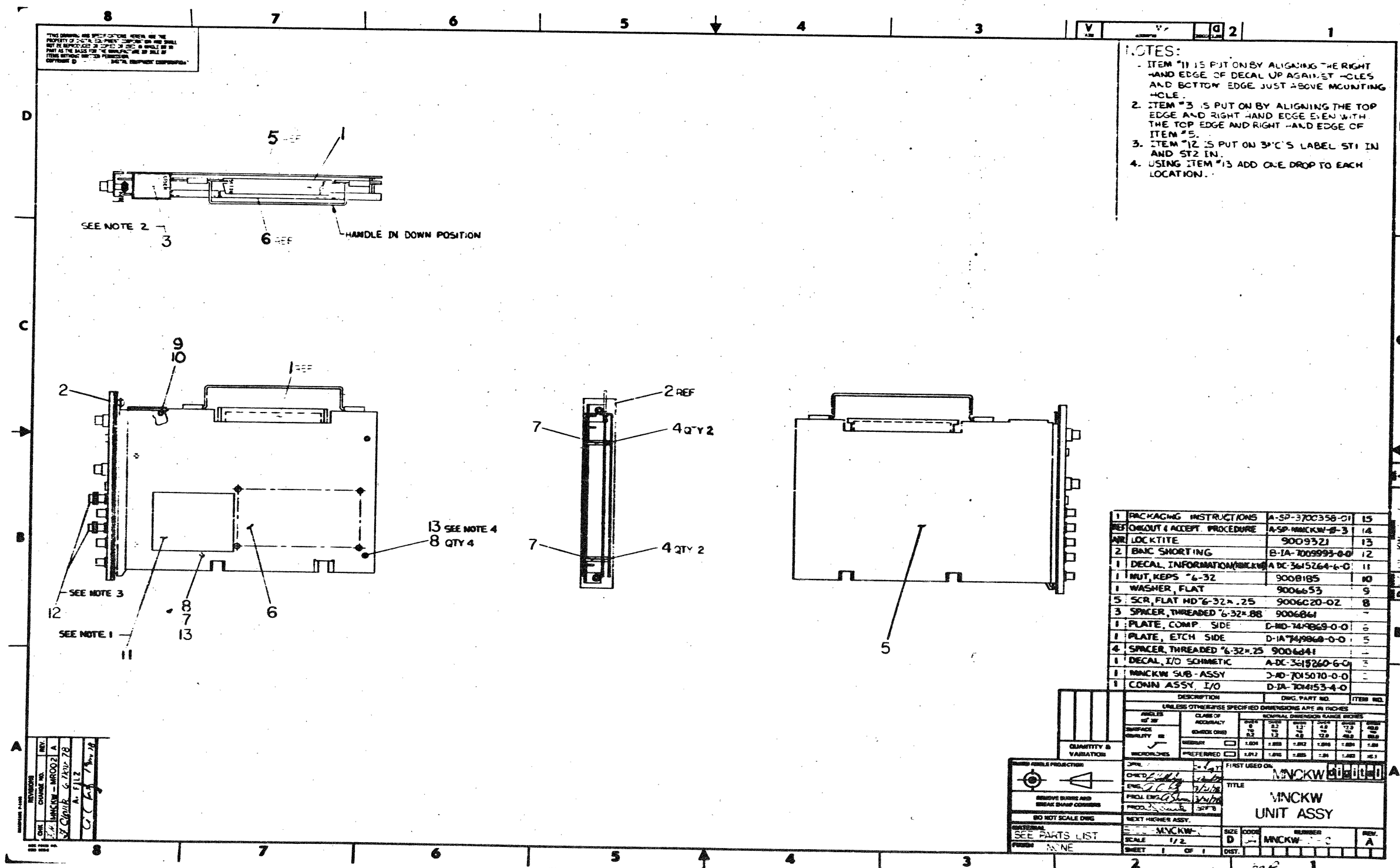
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REV.	CHG.	CHANGE NO.	REVISIONS

TITLE		DRAWING NO.		REV.	
BUFFER/PRESET & COUNTER REGS (BPC)		REAL TIME CLOCK		DCS M7953-0-1	
SHEET 6 OF 6		DATE		DRAWN	



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- NOTES:
- ITEM #11 IS PUT ON BY ALIGNING THE RIGHT HAND EDGE OF DECAL UP AGAINST HOLES AND BOTTOM EDGE JUST ABOVE MOUNTING HOLE.
  - ITEM #3 IS PUT ON BY ALIGNING THE TOP EDGE AND RIGHT HAND EDGE EVEN WITH THE TOP EDGE AND RIGHT HAND EDGE OF ITEM #5.
  - ITEM #12 IS PUT ON 3"X3" LABEL ST1 IN AND ST2 IN.
  - USING ITEM #13 ADD ONE DROP TO EACH LOCATION.

1	PACKAGING INSTRUCTIONS	A-SP-3700358-01	15
REF	ROUTING ACCEPT. PROCEDURE	A-SP-MNCKW-B-3	14
1	LOCTITE	9009521	13
2	BMC SHORTING	B-IA-7009993-0-0	12
1	DECAL INFORMATION/MNCKW	A-DC-3615264-6-C	11
1	NUT, KEPS #6-32	9008185	10
1	WASHER, FLAT	9006653	9
5	SCR, FLAT HD #6-32x.25	9006620-02	8
3	SPACER, THREADED #6-32x.88	9006641	-
1	PLATE, COMP. SIDE	D-ND-749869-0-0	6
1	PLATE, ETCH SIDE	D-IA-749869-0-0	5
4	SPACER, THREADED #6-32x.25	9006641	-
1	DECAL, I/O SCHEMATIC	A-DC-3615260-6-C	3
1	MNCKW SUB-ASSY	D-ND-7015070-0-0	-
1	CONN ASSY, I/O	D-IA-7014153-4-0	-

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES OF 90°	CLASS OF SURFACE FINISH	NORMAL FINISHES RANGE INCHES							
		0.005	0.010	0.015	0.020	0.030	0.040	0.050	0.060
FINISH	FINISH	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
FINISH	FINISH	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

QUANTITY & VARIATION

DO NOT SCALE DIMS

REMOVE BURRS AND BREAK SHARP CORNERS

SEE PARTS LIST

FORM NAME

DATE

SCALE

SHEET

OF

DIST.

FIRST USED ON

TITLE

MNCKW UNIT ASSY

REV. A

REV.	DATE	BY
1	11/17	...
2	11/17	...
3	11/17	...
4	11/17	...

**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS

**ENGINEERING SPECIFICATION** DATE 7/19/78

TITLE MNCKW Installation/Acceptance Procedure

REVISIONS						
REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

ENG	APPD	DATE	CHKD	CODE	NUMBER	REV
<i>D. J. Quinn</i>	<i>R. J. Quinn</i>	24-226-78	A	SP	MNCKW-0-4	

DEC 16(1000)-1670A-R673  
DRA 107A

SHEET 1 OF 1 MR

**ENGINEERING SPECIFICATION** CONTINUATION SHEET

TITLE MNCKW Installation/Acceptance Procedure

**1.0 GENERAL**

**1.1 SCOPE**  
This document describes the procedures for the installation and field acceptance of the MNCKW (Programmable Real-Time Clock) option for the MINC-11 system. This procedure will be used for in-house FA&T, field add-on and new system installation, and periodic verification testing.

**1.2 EQUIPMENT**

MINC-11	System
MNCKW	Clock Option
MNCKW-TA	Test Module (Optional)
7014153-4-0	I/O Connector

**1.3 DOCUMENTATION**

MAINDEC-11-DVNMC-B	Diagnostic Program
A-SP-MNCKW-0-2	MNCKW Engineering Specification
MPO0593	Print Set
AA-D572A-TC	"Working With MINC Devices"

**2.0 INSTALLATION**

**2.1 INITIAL SET-UP**  
The address and vector switches on the MNCKW board must be set properly as indicated in the manual "Working With MINC Devices"

**2.2 LOCATION**  
The MNCKW may be inserted into any of the 8 possible MINC slots. However, if the MINC-11 system includes an MNCAD A/D converter, then the MNCKW should be installed to the right of the MNCAD. It may be installed to the immediate right or with one or more digital options (MNCAA, MNCDO, MNCDI) between the MNCKW and MNCAD.

**2.3 TEST MODULE**  
If the MNCKW-TA test module is available it should be plugged into the I/O connector fingers on the top of the MNCKW. If no test module is available plug the standard I/O connector into the fingers.

**2.4 POWER UP**  
All other options to be tested and any of their test modules should be mounted in the system. Power may then be applied.

SIZE	CODE	NUMBER	REV
A	SP	MNCKW-0-4	

DEC FORM NO EN-01022-10-M370(101)  
DRA 108

SHEET 2 OF 3 MR

**ENGINEERING SPECIFICATION** CONTINUATION SHEET

TITLE MNCKW Installation/Acceptance Procedure

**3.0 ACCEPTANCE**

Refer to the diagnostic documentation for instructions on loading the diagnostic. Start at location 200. Location 204 is used for restarting after a program halt.

Follow the type out concerning front panel switch settings. The diagnostic will type out the current (old) software switch register and wait for the operator to type in a new value. Switch register functions are described in the documentation. Simply type a carriage return to leave the switch register unchanged.

The diagnostic will then type a menu of tests. Select the logic test with or without the test module (dwarf). When the test module is available, more complete testing of the MNCKW I/O signals can be done. The program will type instructions when required concerning switch settings on the MNCKW front panel and the test module.

At the start of the logic test, the program will type out the number of clock modules detected on the MINC system. All clocks will be tested unless this feature is inhibited (see the diagnostic documentation).

No errors are allowable for MNCKW acceptance.

SIZE	CODE	NUMBER	REV
A	SP	MNCKW-0-4	

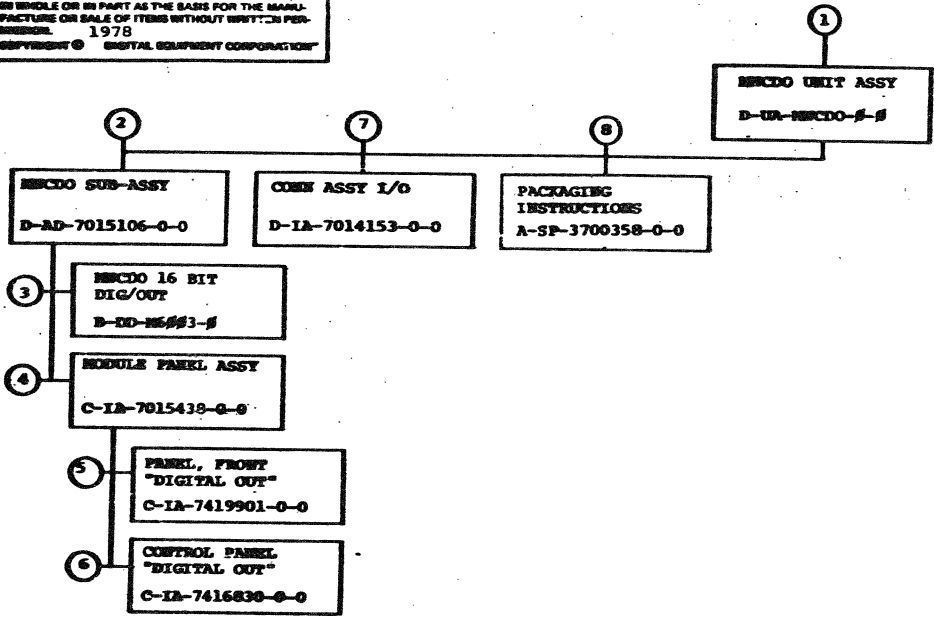
DEC FORM NO EN-01022-10-M370(101)  
DRA 108

SHEET 3 OF 3 MR





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TITLE	MERCDO UNIT ASSY	SHEET 2 OF 3	SIZE CODE B DD	NUMBER MERCDO-0	REV B
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MR.

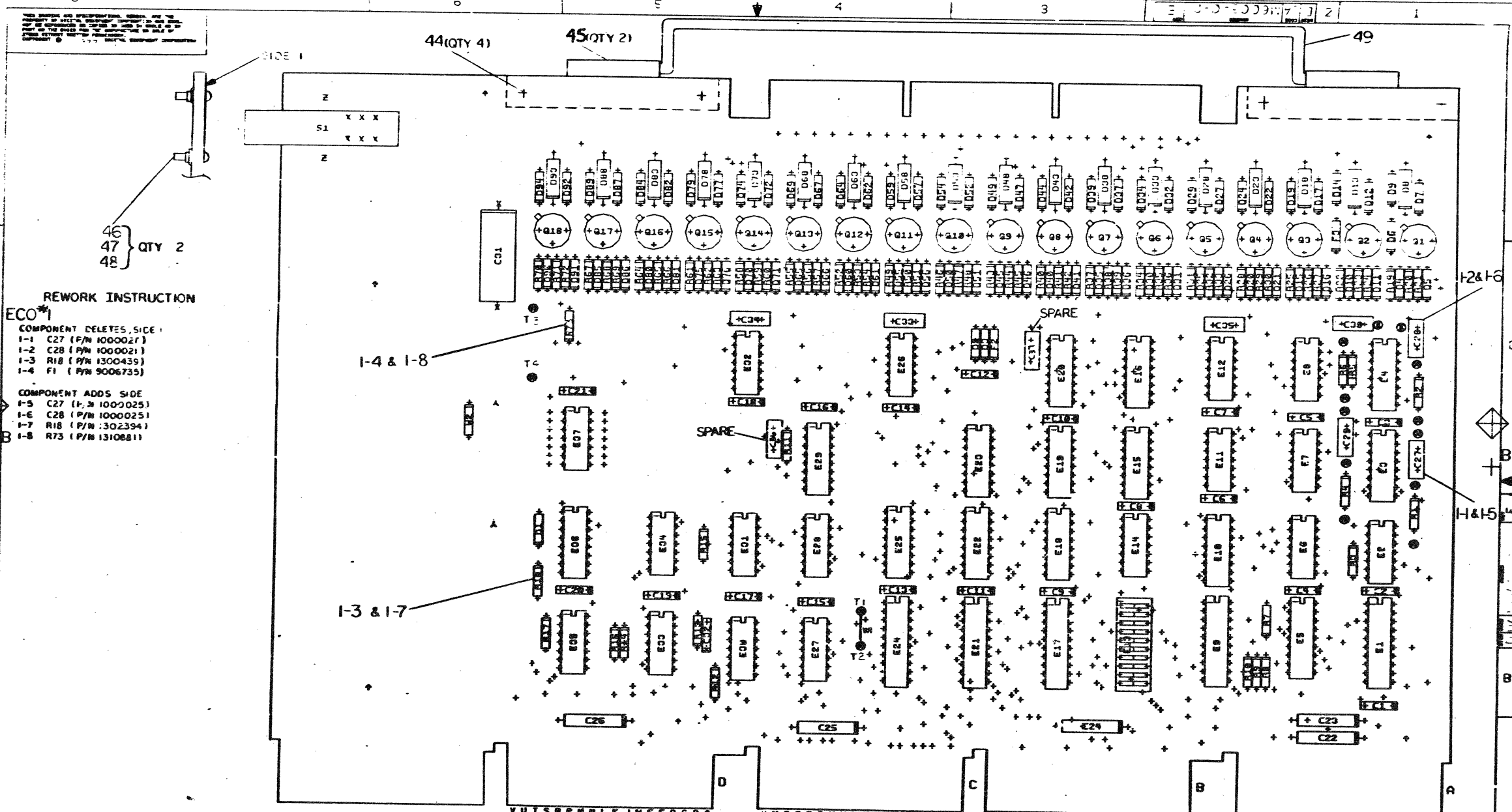


FIND NO.	DRAWING NO.	DESCRIPTION	TYPE	FIND NO.	DRAWING NO.	DESCRIPTION	TYPE
1	MS#594	FIELD MAINTENANCE PRINT SET	-	5	C-IA-7419901-0-0	PANEL, FRONT "DIGITAL OUT"	M
	B-TC-MSCDO-#-1	FIELD MAINTENANCE PRINT SET	-		C-PS-4830032-0-0	EXTRUSION, FRONT PANEL "D"	M
	D-UA-MSCDO-#-#	MSCDO UNIT ASSY	E/M				
	C-MD-7419869-0-0	PLATE, COMP SIDE	M				
	C-MD-7419869-0-0	PLATE, ETCH SIDE	M				
	A-DC-3615260-0-0	DECAL, I/O SCHEMATIC	E/M				
	A-DC-3615264-0-0	DECAL, INFORMATION (MSCDO)	E/M				
	A-PL-MSCDO-#-5	PARTS LIST MSCDO	E/M				
	A-PL-MSCDO-#-SH	SHIP LIST MSCDO	E/M				
	A-SP-MSCDO-#-2	MSCDO ENGINEERING SPEC.	E/M				
	A-SP-MSCDO-#-3	CHECKOUT & ACCEPTANCE PROCEDURE	E/M				
	A-SP-MSCDO-#-4	INSTALLATION & ACCEPTANCE PROCEDURE	E/M				
2	D-AD-7015106-0-0	MSCDO SUB-ASSY	M	6	C-IA-7416830-0-0	CONTROL PANEL "DIGITAL OUT"	M
	B-MD-7420242-0-0	SPACER, MODULE	M		C-SS-7416930-01	CONTROL PANEL	M
	C-IA-7419863-0-0	SUB PANEL	M		C-SS-7416830-02	CONTROL PANEL	M
	B-IA-7420635-0-0	BUTTON SWITCH (MODIFIED)	M		C-SS-7416830-03	CONTROL PANEL	M
					C-SS-7416819-02	CONTROL PANEL	M
				7	D-IA-7014153-0-0	CONN ASSY I/O	E/M
					A-DC-7416937-0-0	DECAL I/O CORN	E/M
					A-DC-7416934-5-0	DECAL I.D. I/O CORN	E/M
3	B-DD-MS#3-#	MSCDO 16 BIT DIG/OUT	E/M				
	A-PL-MS#3-#-#	DIGITAL OUTPUT	E/M				
	D-UA-MS#3-#-#	DIGITAL OUTPUT	E/M				
	D-CS-MS#3-#-1	DIGITAL OUTPUT	E/M				
				8	A-SP-3700358-0-0	PACKAGING INSTRUCTIONS	M
4	C-IA-7015438-0-0	MODULE PANEL ASSY	M				

TYPE: E ELECTRICAL  
 M MECHANICAL  
 EM ELECTROMECHANICAL



MR

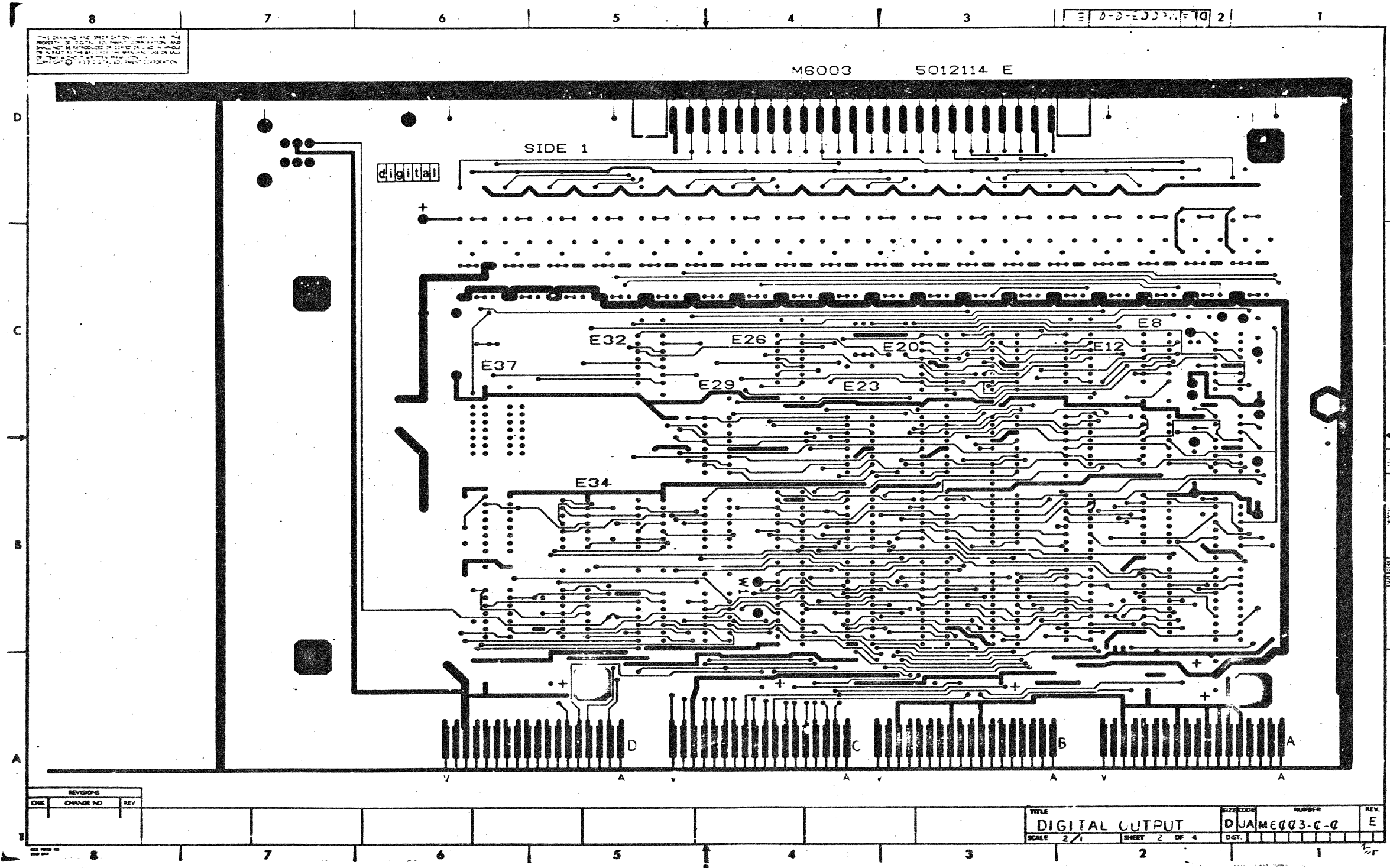


**REWORK INSTRUCTION**  
**ECO #1**  
**COMPONENT DELETES, SIDE 1**  
 I-1 C27 (P/N 1000021)  
 I-2 C28 (P/N 1000021)  
 I-3 R18 (P/N 1300439)  
 I-4 F1 (P/N 9006735)  
**COMPONENT ADDS, SIDE 1**  
 I-5 C27 (P/N 1000025)  
 I-6 C28 (P/N 1000025)  
 I-7 R18 (P/N 1302394)  
 I-8 R73 (P/N 1310881)

**NOTES:**


CHANGE NO	REV	DATE	BY	CHKD

<b>SIGNATURES</b>		<b>DATE</b>	<b>digital</b>
CHK'D	<i>[Signature]</i>		
ENG.	<i>[Signature]</i>		
PROJ. ENG.	<i>[Signature]</i>		
SCALE	2/1	SIZE CODE	D
SHT.	1 OF 4	NUMBER	M6003-0-0
NEXT NUMBER RFLY. B-00-M6003-0-0		REV	E



7927  
 2 3 4 5 6 7 8  
 1 2 3 4 5 6 7 8

DIAGRAM 03-0-0

M6003 5012114 E

SIDE 1

digital

E37

E32

E26

E20

E8

E12

E29

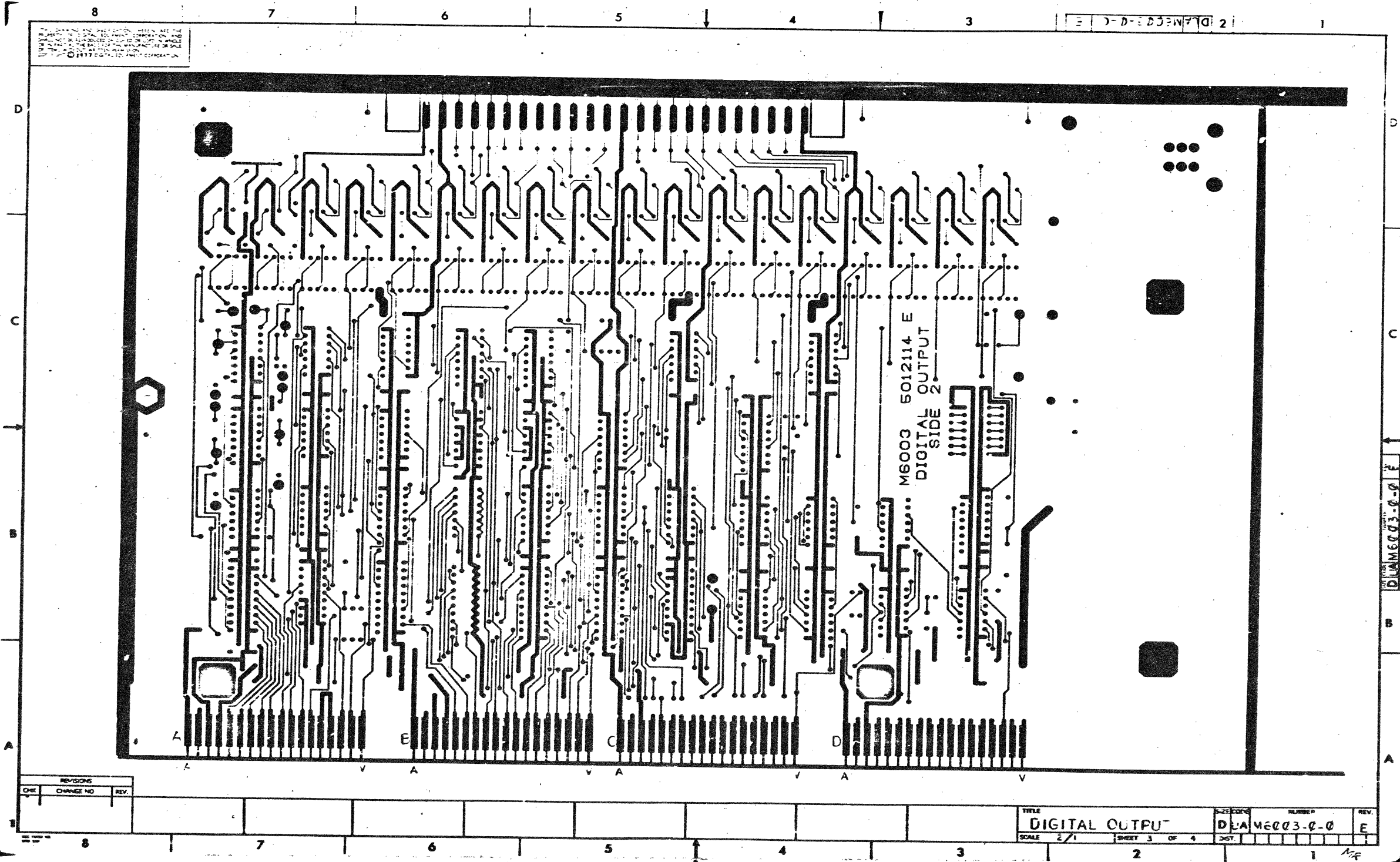
E23

E34

REVISIONS		
CHK	CHANGE NO	REV

TITLE	DIGITAL OUTPUT	SIZE CODE	D JAME003-C-0	NUMBER		REV.	E
SCALE	2/1	SHEET	2 OF 4	DIST.			

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS.  
 DIMENSIONS IN PARENTHESES ARE FOR INFORMATION ONLY.  
 DIMENSIONS IN SQUARE BRACKETS ARE FOR INFORMATION ONLY.  
 DIMENSIONS IN BRACKETS ARE FOR INFORMATION ONLY.



REVISIONS		
CHG	CHANGE NO	REV.

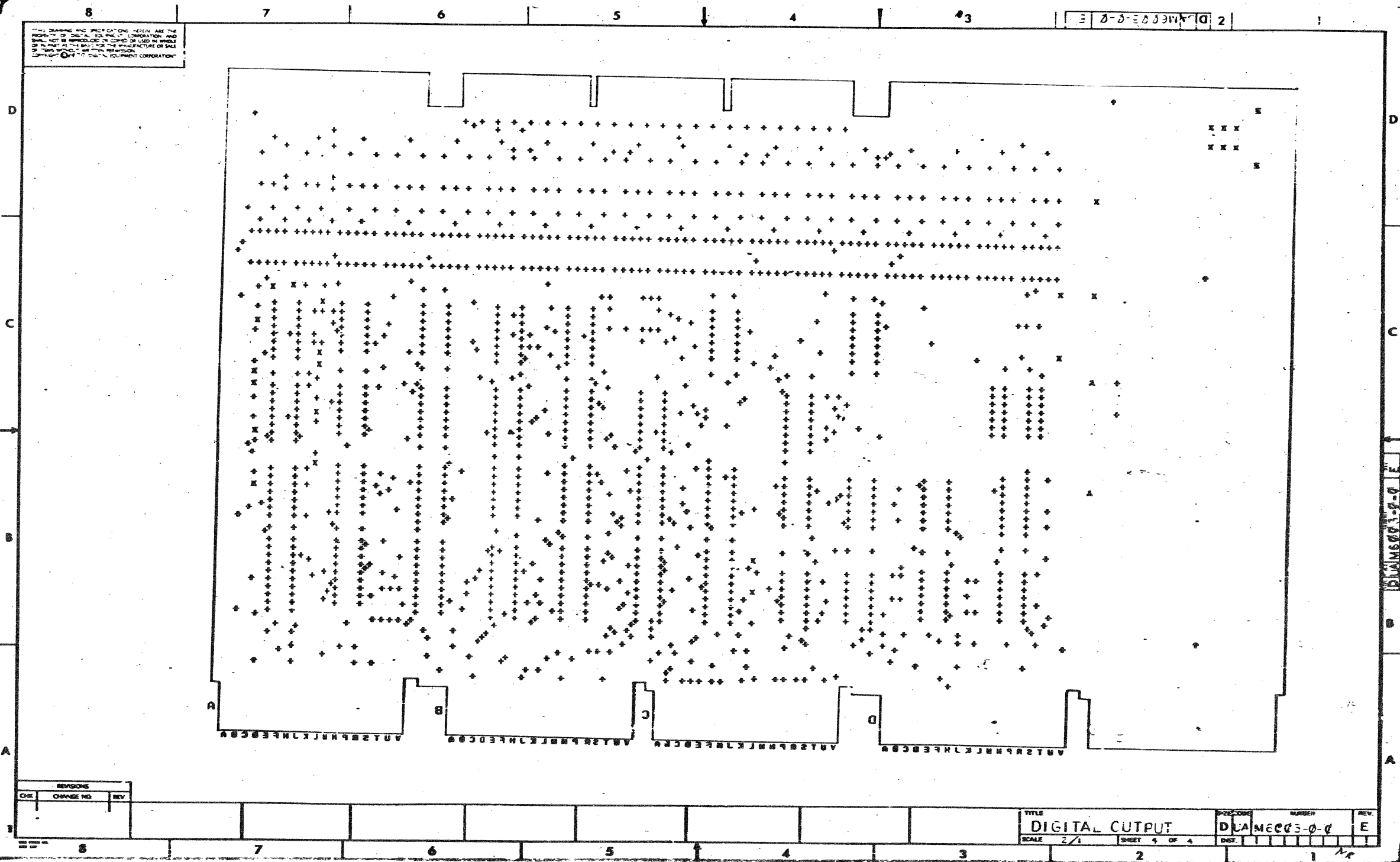
TITLE	DIGITAL OUTPUT	SIZE CODE	NUMBER	REV.
SCALE	2/1	SHEET	3 OF 4	E

DLA ME003-0-0 E

DLA ME003-0-0 E

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0-0-00000002



REVISIONS		
DATE	CHANGE NO.	REV.

TITLE	NUMBER	REV.
DIGITAL OUTPUT	DUALMECC03-0-0	E
SCALE 2/1	SHEET 4 OF 4	DIST.

DUALMECC03-0-0

# DIGITAL EQUIPMENT CORPORATION PARTS LIST

## QUANTITY / VARIATION

## NOTES:

1. SPARE LOCATIONS ARE: C36, C37, E37

MADE BY DATE	CHECKED DATE	SECTION 1
ENG DATE	PROD DATE	ISSUED SECTION 1

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	QTY	VARIATION	QTY	VARIATION	QTY	VARIATION	QTY	VARIATION	QTY	VARIATION	QTY	VARIATION	QTY	VARIATION
1	D-MD-5012114-0-0	5012114	ETCHED CIRCUIT BOARD	1													
2		1012784	CAP. .047 MFD, 50V	22													
3		1004812	CAP. 15 MFD, 20V	5													
4		MOCC025-00	CAP. 560 PF, 100V, 5%	2													
5		1000012	CAP. 56 PF, 100V, 5%	2													
6		1002839	CAP. 20 UF, 50V	1													
7		1010274-01	CAP. .22 UF, 50V	3													
8																	
9		1109943	DIODE 1B4733A	1													
10		1105796	DIODE 1B4004	75													
11		1110232	DIODE MCL1304	18													
12		1210929-04	FUSE 250 MA	1													
13		1211164-03	SWITCH PACK 7POS	1													
14		1211164-06	SWITCH PACK 10POS	1													
15		1301874	RES. 5.6K, 5%, 1/4W	4													
16		1300365	RES. 1K, 5%, 1/4W	27													

REF DESIGNATION
C1 THRU C21, C32
C22 THRU C26
C27, C28
C29, C30
C31
C33, C34, C35
D2
D2 THRU D7, D9 THRU D12, D14 THRU D17, D19 THRU D22, D24 THRU D27, D29 THRU D32, D34 THRU D37, D39 THRU D42, D44 THRU D47, D49 THRU D52, D54 THRU D57, D59 THRU D62, D64 THRU D67, D69 THRU D72, D74 THRU D77, D79 THRU D82, D84 THRU D87, D89 THRU D92, D94
D8, D13, D18, D23, D28, D33, D38, D43, D48, D53, D58, D63, D68, D73, D78, D83, D88, D93
F3
E14
E13
R1, R2, R4, R6
R3, R5, R11 THRU R17, R19, R22, R25, R28, R31, R34, R37, R40, R43, R46, R49, R52, R55, R58, R61, R64, R67, R70

E.C.O. NO. 19701

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TITLE  
**DIGITAL OUTPUT**

ASSY NO.  
**D-UA-M603-0-0**  
SHEET 1 OF 3

SIZE	CODE	NUMBER	REV.
B	PL	15053-0-0	E

HR



# DIGITAL EQUIPMENT CORPORATION PARTS LIST

QUANTITY / VARIATION

NOTES:

MADE BY <i>E. J. Smith</i>	CHECKED <i>K. J. Smith</i>	SECTION
DATE <i>12/5/77</i>	DATE <i>5/1/77</i>	1
ENG <i>A. A. Smith</i>	PROD <i>J. K. Smith</i>	ISSUED SECTION
DATE <i>24/05/77</i>	DATE <i>25/07/77</i>	1

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	QTY	VAR	REF DESIGNATION
17		1301424	RES. 600, 5%, $\frac{1}{2}$ "	2		R7, R18
18		1300295	RES. 330, 5%, $\frac{1}{2}$ "	20		R8, R9, R21, R24, R27, R38, R33, R36, R39, R42, R45, R48, R51, R54, R57, R68, R63, R66, R69, R72
19		1302394-C0	RES. 30K 5%, $\frac{1}{2}$ "	1		R18
20		1310881-01	RES. 330, 1%, $\frac{1}{2}$ " FUSIBLE	18		R28, R23, R26, R29, R32, R35, R38, R41, R44, R47, R58, R53, R56, R59, R62, R65, R68, R71
21		1310881-00	RES 1K, $\frac{1}{4}$ " $\frac{1}{2}$ " FUSIBLE	1		R73
22		15C9632	TRANS. DEC 2887	18		Q1 THRU Q18
23		1912729	I.C. DEC DC884	1		E1
24		1910155	I.C. DEC 7402	2		E2, E27
25		1910951	I.C. DEC 9602	2		E3, E4
26		1912730	I.C. DEC DC883	1		E5
27		1912801	I.C. DEC 74L882	2		E6, E8,
28		1909686	I.C. DEC 7404	2		E7, E35
29		1913040	I.C. DEC DC885	4		E9, E17, E21, E24
30		1909934	I.C. DEC 8266	1		E18
31		1912816	I.C. DEC 74L632	2		E11, E31
32		1909929	I.C. DEC 7417	3		E12, E26, E32
33		1911527	I.C. DEC 8097	3		E15, E19, E25
34		1912951	I.C. DEC 8556	4		E16, E28, E23, E29
35		1912697	I.C. DEC 74L6174	1		E18
36		1912853	I.C. DEC 74L6175	1		E22

E.O. NO.

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TITLE  
**DIGITAL OUTPUT**

ASSY NO.  
D-1A-M5663-8-8  
SHEET 2 OF 3

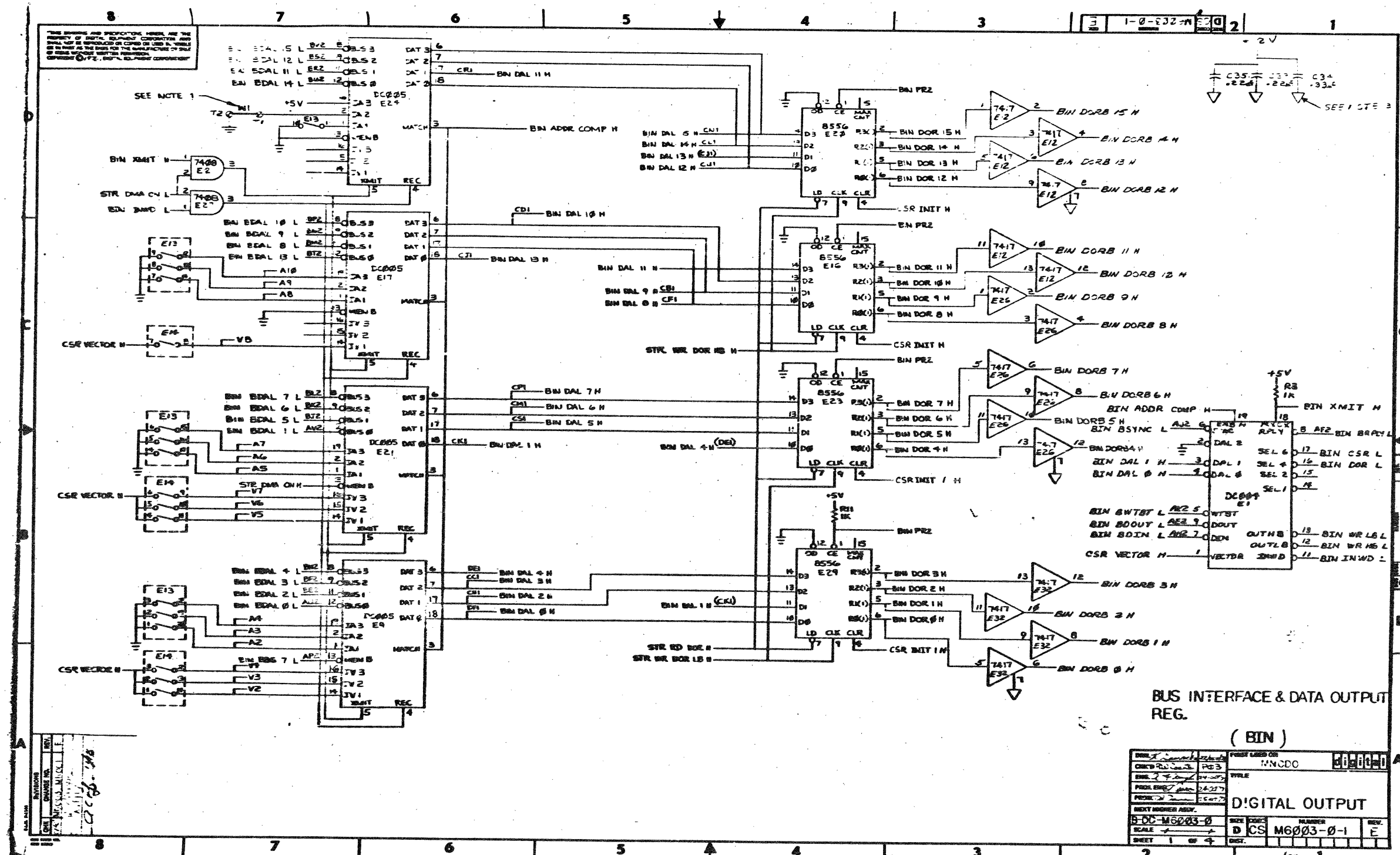
SIZE	CODE	NUMBER	REV.
B	PL	M5663-8-8	E

SECTION PARTS LIST DATA BASE REV

*MR*



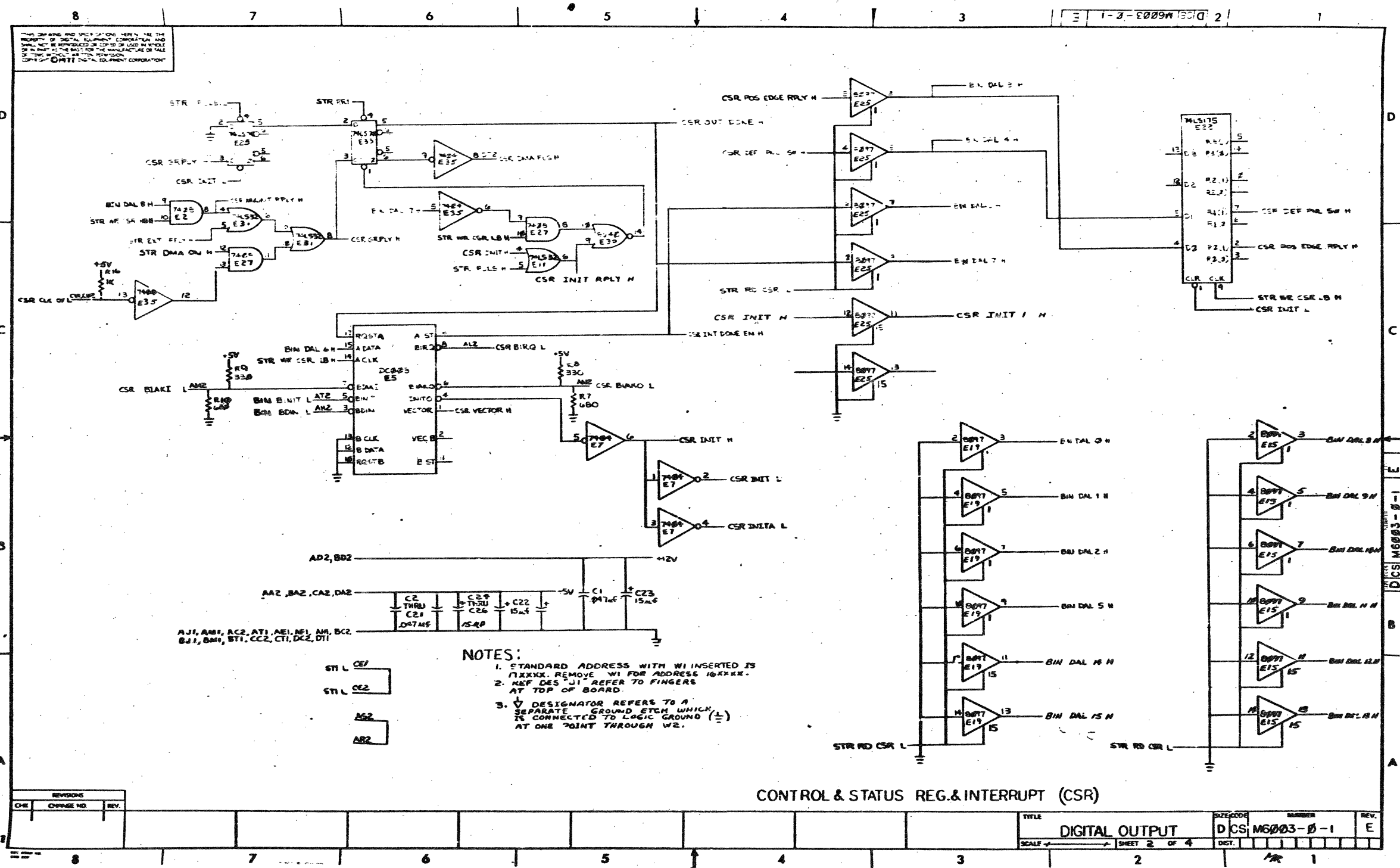




BUS INTERFACE & DATA OUTPUT REG.

(BIN)

DATE	DESIGNED BY	APPROVED BY	DATE
10/1/77	J. J. ...	J. J. ...	10/1/77
PROJECT		TITLE	
D CS M6003-0-1		DIGITAL OUTPUT	
NEXT HIGHER ASSY.		REV.	
D CS M6003-0		E	
SCALE		SHEET	
1		1 OF 4	



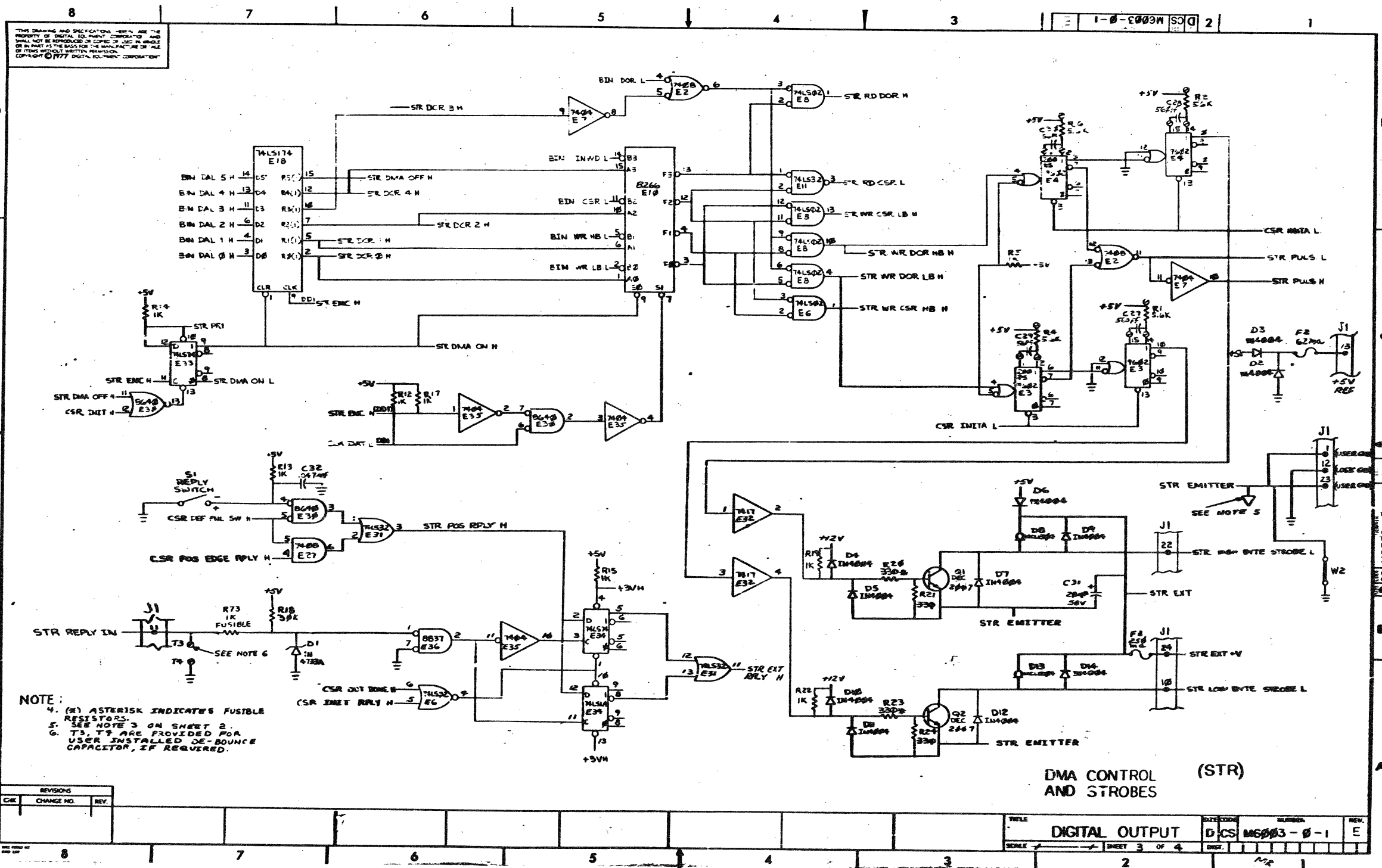
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NOTES:  
 1. STANDARD ADDRESS WITH W1 INSERTED IS 17XXX. REMOVE W1 FOR ADDRESS 16XXX.  
 2. REF DES 'J1' REFER TO FINGERS AT TOP OF BOARD.  
 3. DESIGNATOR REFERS TO A SEPARATE GROUND ETCH WHICH IS CONNECTED TO LOGIC GROUND (1/2) AT ONE POINT THROUGH W2.

CONTROL & STATUS REG.& INTERRUPT (CSR)

REVISIONS		
CHK	CHANGE NO.	REV.

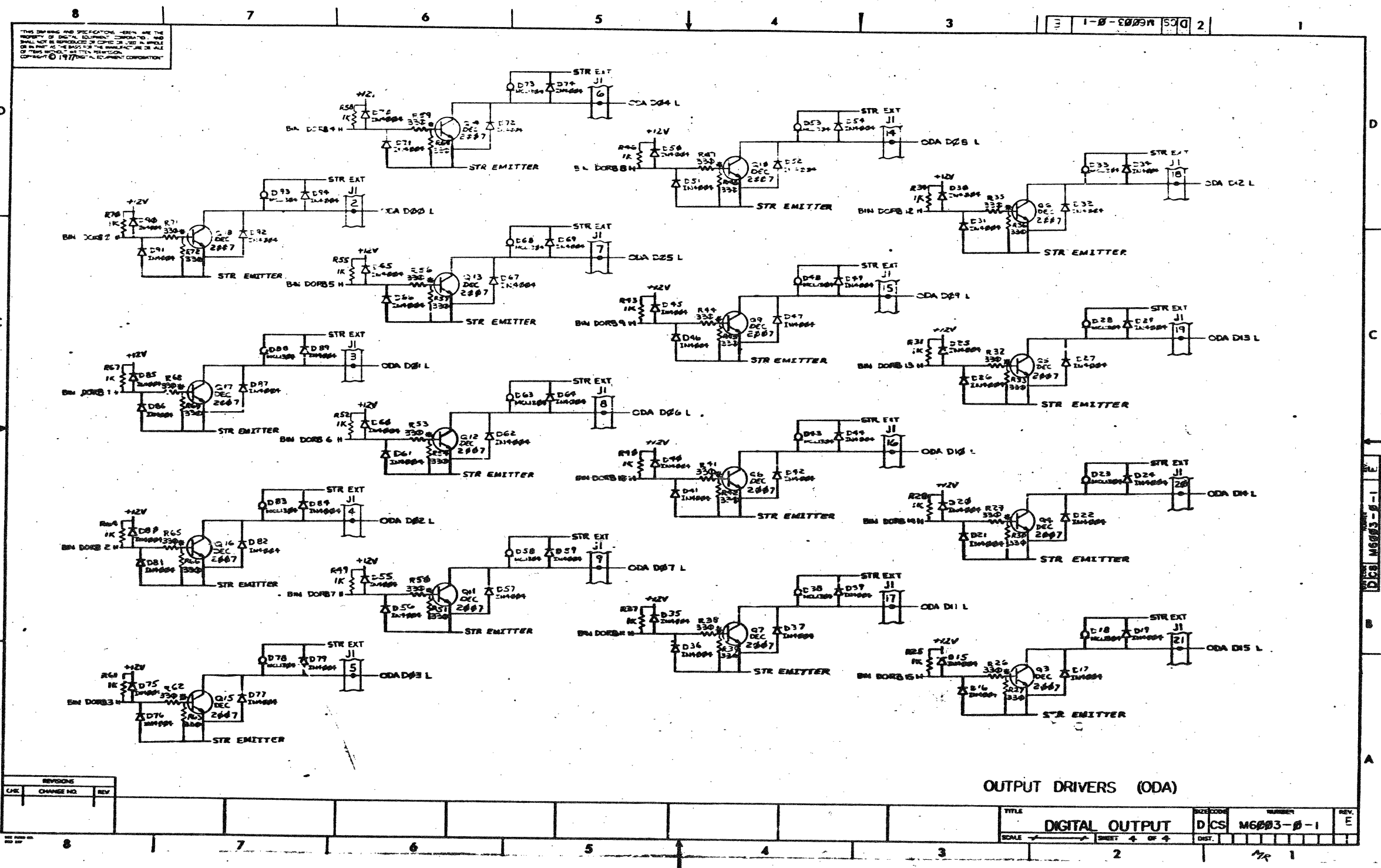
TITLE	DIGITAL OUTPUT	SIZE CODE	DCS M6003-0-1	NUMBER		REV.	E
SCALE	SHEET 2 OF 4	DIGT.					



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NOTE:  
 4. (\*) ASTERISK INDICATES FUSIBLE RESISTORS.  
 5. SEE NOTE 3 ON SHEET 2.  
 6. T3, T4 ARE PROVIDED FOR USER INSTALLED DEBOUNCE CAPACITOR, IF REQUIRED.

REVISIONS		
CHK	CHANGE NO.	REV.



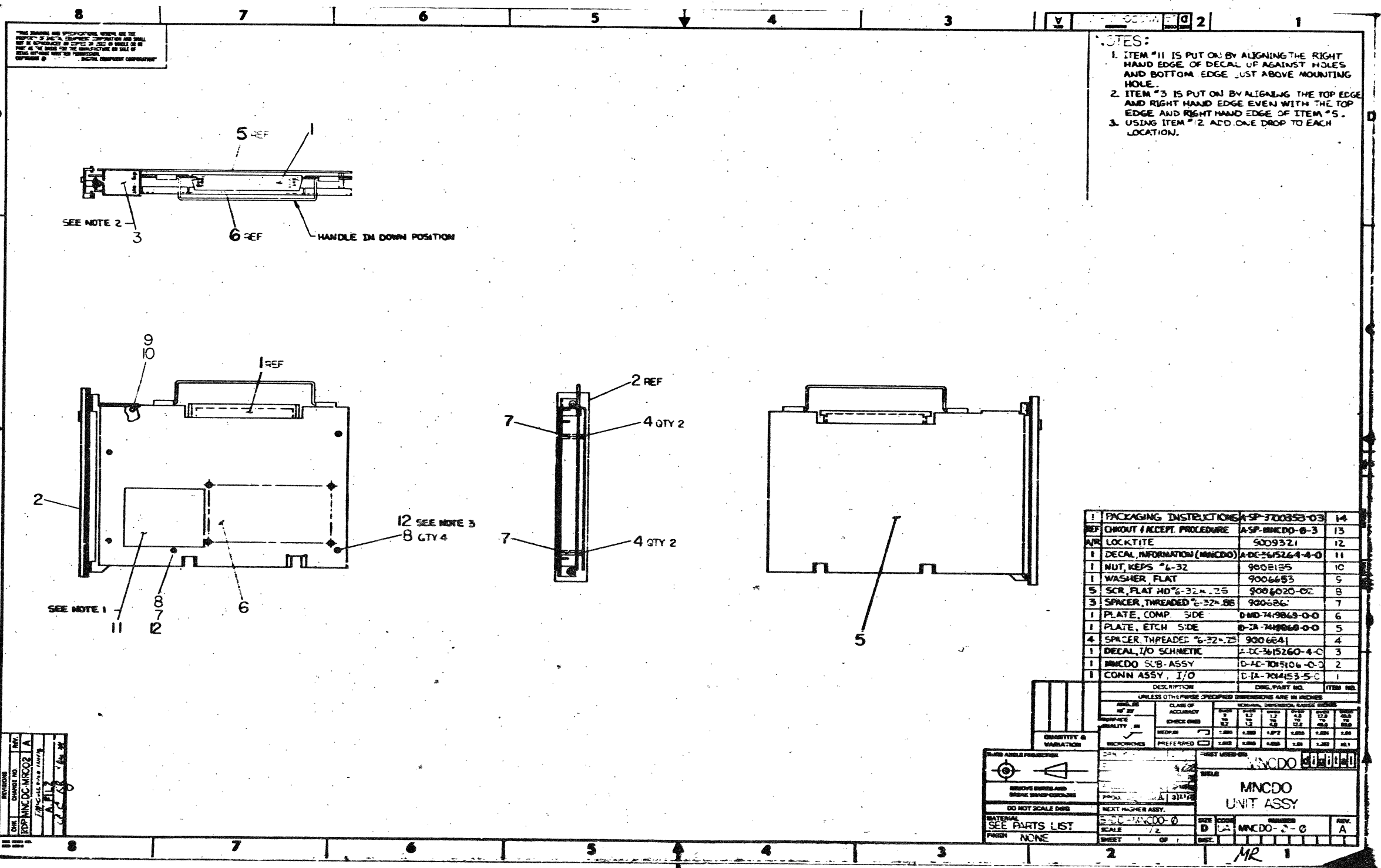
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1-8-6000W 50 Q 2

REVISIONS		
CHK	CHANGE NO.	REV

TITLE		SIZE/SCALE	NUMBER	REV.
DIGITAL OUTPUT		D CS	M6003-0-1	E
SCALE	SHEET	OF		
	4	4		





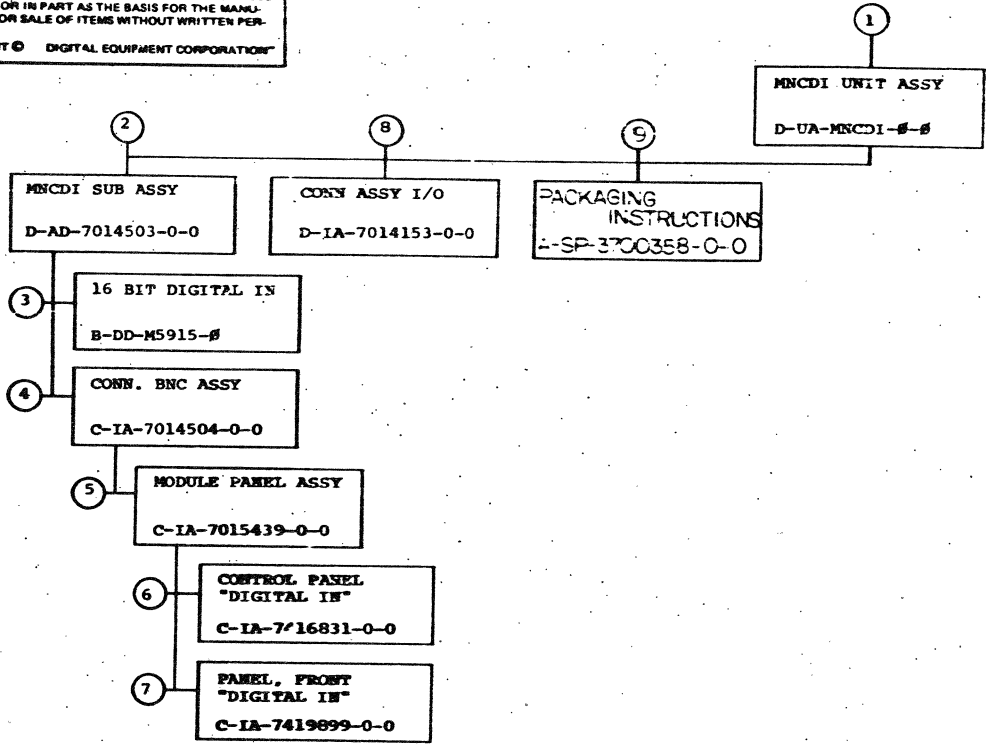








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MR

FIND NO.	DRAWING NO.	DESCRIPTION	TYPE	FIND NO.	DRAWING NO.	DESCRIPTION	TYPE
1	MP00595	FIELD MAINTENANCE PRINT SET	-				
	B-TC-MNCDI-0-1	FIELD MAINTENANCE PRINT SET	-	5	C-IA-7015439-0-0	MODULE PANEL ASSY	M
	D-UA-MNCDI-0-0	MNCDI UNIT ASSY	E/M				
	C-MD-7419869-20	PLATE, COMP SIDE	M				
	C-MD-7419868-0-0	PLATE, ETCH SIDE	M				
	A-DC-3615260-0-0	DECAL, I/O SCHEMATIC	E/M				
	A-DC-3615264-0-0	DECAL, INFORMATION (MNCDI)	E/M				
	A-PL-MNCDI-0-5	PARTS LIST MNCDI	E/M				
	A-PL-MNCDI-0-SH	SHEP LIST MNCDI	E/M				
	A-SP-MNCDI-0-2	MNCDI ENGINEERING SPEC.	E/M	6	C-IA-7416831-0-0	CONTROL PANEL "DIGITAL IN"	M
	A-SP-MNCDI-0-3	CHECKOUT & ACCEPTANCE PROCEDURE	E/M		C-SS-7416831-01	CONTROL PANEL	M
	A-SP-MNCDI-0-4	INSTALLATION & ACCEPTANCE PROCEDURE	E/M		C-SS-7416831-02	CONTROL PANEL	M
					C-SS-7416831-03	CONTROL PANEL	M
					C-SS-7416819-02	CONTROL PANEL	M
2	D-AD-7014503-0-0	MNCDI SUB-ASSY	E/M				
	C-IA-7419863-0-0	SUB PANEL DI	M				
	B-MD-7420242-0-0	SPACER, MODULE	M				
	B-IA-7420635-0-0	BUTTON SWITCH (MODIFIED)	M				
				7	C-IA-7419899-0-0	PANEL, FRONT "DIGITAL IN"	M
					C-PS-4830032-0-0	EXTRUSION, FRONT PANEL "D"	M
3	B-DD-05915-0	16 BIT DIGITAL IN	E/M				
	A-PL-05915-0-0	DIGITAL INPUT	E/M				
	D-UA-05915-0-0	DIGITAL INPUT	E/M				
	D-CS-05915-0-1	DIGITAL INPUT	E/M				
				8	D-IA-7014153-0-0	CONN ASSY I/O	E/M
					A-DC-7417640-0-0	DECAL, I/O CONNECTOR	E/M
					A-DC-7418934-6-0	DECAL, I.D. I/O CONNECTOR	E/M
4	C-IA-7014504-0-0	CONN. SSC ASSY (MNCDI)	E/M				
				9	A-SP-3700358-0-0	PACKAGING INSTRUCTIONS	M

TYPE: E ELECTRICAL  
M MECHANICAL  
EM ELECTROMECHANICAL



TITLE

MNCDI UNIT ASSY

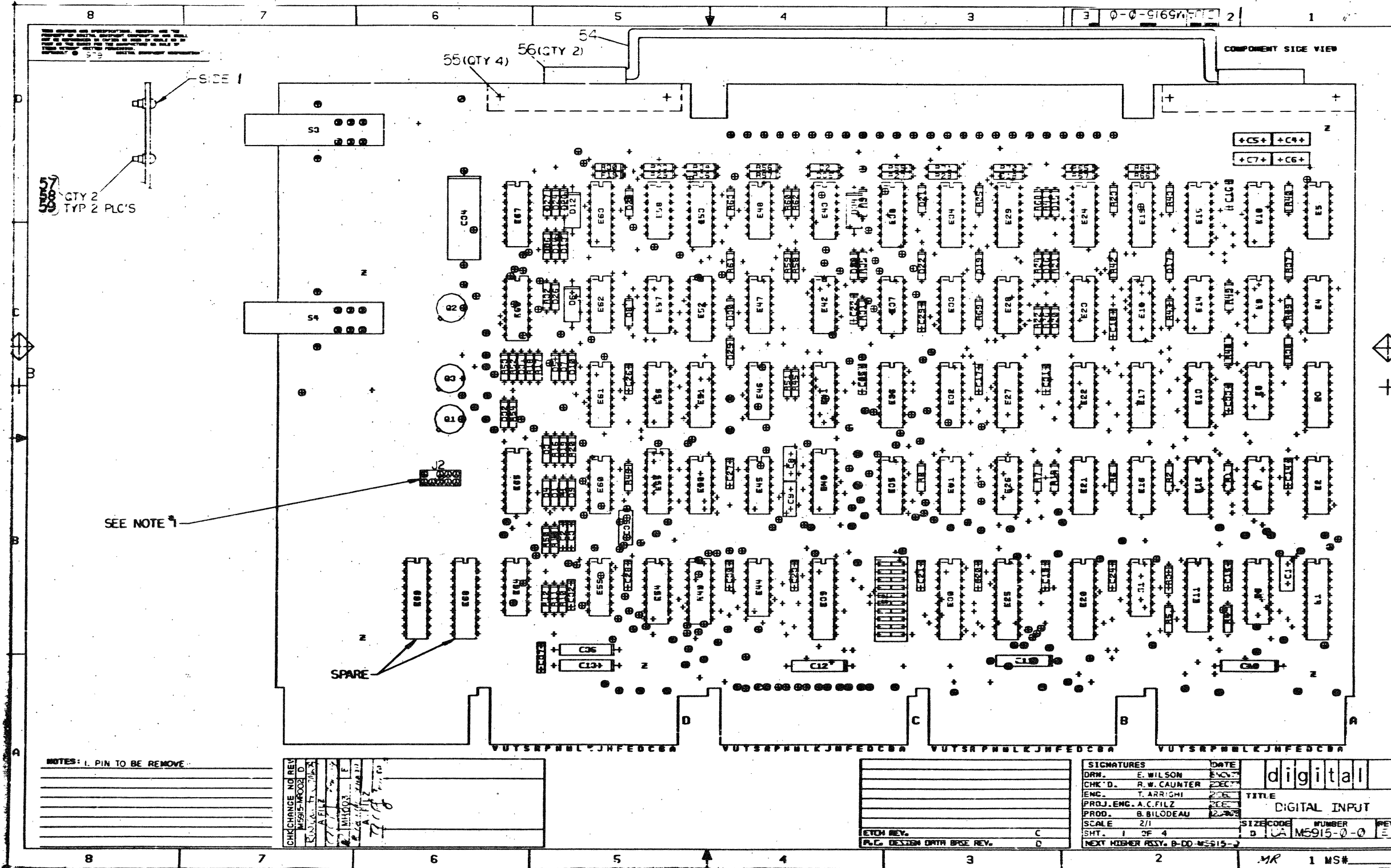
SHEET 3 OF 3

SIZE CODE  
B DD

NUMBER  
MNCDI-0

REV  
B

MR



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SEE NOTE 1

SPARE

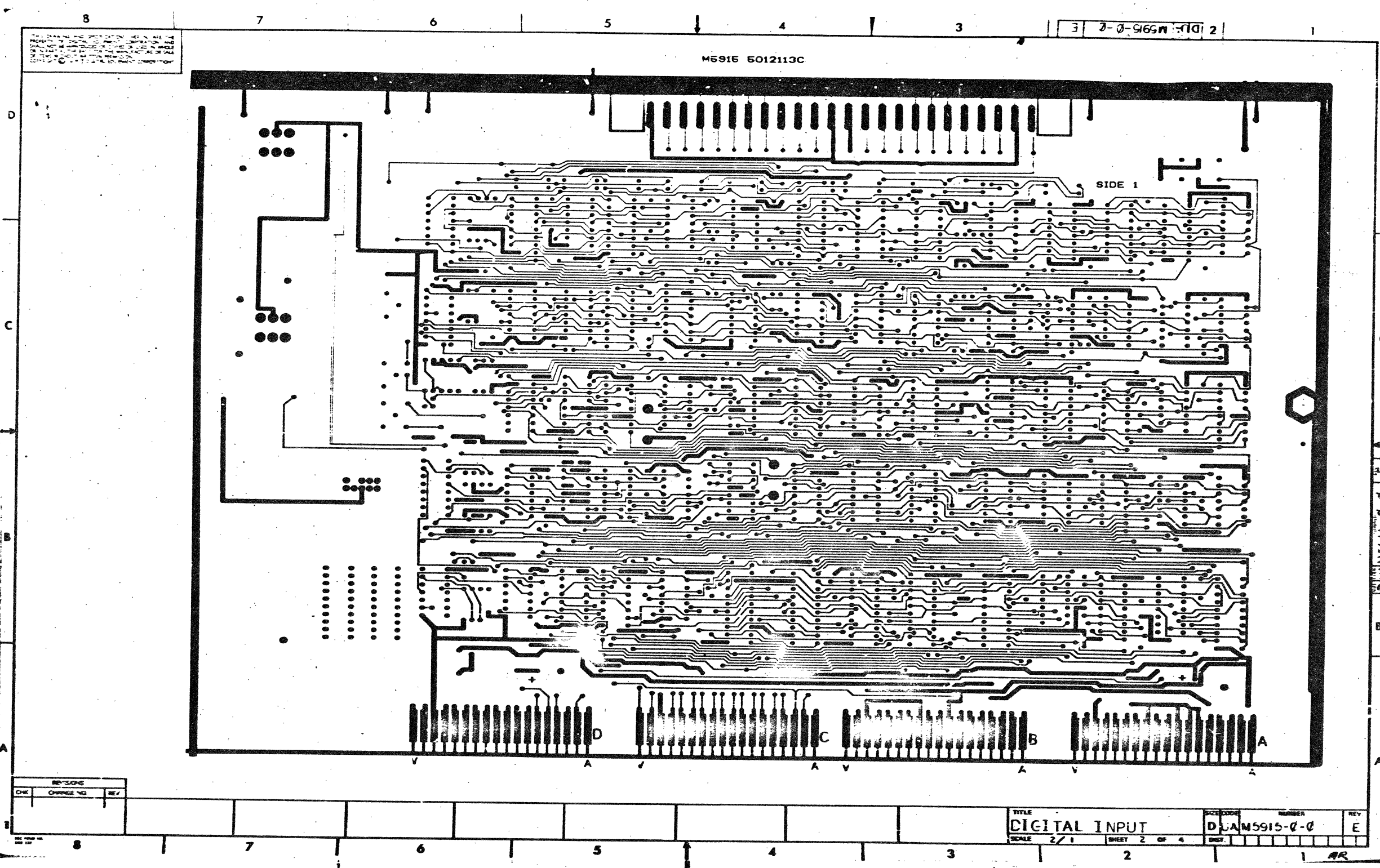
NOTES: 1. PIN TO BE REMOVE

CHANGE NO	REV	DATE	BY	CHK'D
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3	1			
4	1			
5	1			
6	1			
7	1			
8	1			
9	1			
10	1			

ETCH REV.	DATE	BY
1		
2		
3		
4		

SIGNATURES	DATE	TITLE
DRW. E. WILSON	DEC 1968	DIGITAL
CHK'D. R. W. CAUNTER	DEC 1968	DIGITAL INPUT
ENC. T. ARRIGHI	DEC 1968	
PROJ. ENG. A. C. FILZ	DEC 1968	
PROD. B. BILODEAU	DEC 1968	
SCALE 2/1		
SHT. 1 OF 4		
NEXT HIGHER ASSY. B-DD-M5915-2		

MR 1 MS#



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M5915 5012113C

SIDE 1

DIA M5915-0-0

REVISIONS		
CHK	CHANGE NO	REV

TITLE		NUMBER		REV
DIGITAL INPUT		D A M 5915-0-0		E
SCALE	SHEET	OF		REV
2/1	2	4		
				AR







LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY	PER VARIATION	REFERENCE DESIGNATOR
1	1	D-WO-9912111-0-0	5012111-0-0	M5915	1		
2	2		100002-0-0	180.0 MHF 100V 54200PPM DM155	1		C1
3	3		101278-0-0	.047 MFD 50V -20-80 CER	23		C2,C3,C14-C33,C37
4	4		1000020-0-0	690.0 MHF 100V 54200PPM DM155	4		C4-C7
5	5		1000014-0-0	69.0 MHF 100V 54200PPM DM155	1		C8
6	6		1000021-0-0	220.0 MHF 100V 54200PPM DM155	1		C9
7	7		1004812-0-0	15 MFD 20V 108 8.7ANT	5		C39
8	8		110579-0-0	1N 4004 PI7400 1n 1A D041 8P	14		C10-C13,C36 D1,D3,D4,D9,D7-D10,D13,D14,D31.
9	9		1109943-0-0	1N 4733A VIm 5.1 54 1N Y	17		CONT D32,D25,D30
10	10		1110232-0-0	MCL1304 CL04NA FRO10-80V	3		D2,D15-D30
11	11		1211164-0-0	SW,DIP 1P 1A 1CPOS	1		D6,D12,D34
12	12		1211164-0-0	SW,DTP 1F 1A 7POS	1		S2
13	13		1300365-0-0	1.0 K .25 W 5.0 Ω	1		S1
14	14		1300399-0-0	330.0 .25 W 5.0 Ω	14		CONT R1,R6-R8,R10,R19,R20,R41-R43, R46-R49
15	15		1301424-0-0	690.0 .25 W 5.0 Ω	8		R2,R6,R10,R12,R14,R18,R32,R34
16	16		1302394-0-0	30.0 K .25 W 5.0 Ω	2		R2,R5
17	17		13100F1-0-1	330.0 .25 W 1.0 Ω	17		R9,R21-R36
18	18		1300488-0-0	12.0 K .25 W 5.0 Ω	3		R11,R17,R53
19	19		1300271-0-0	220.0 .25 W 5.0 Ω	1		R13
20	20		1301074-0-0	5.6 K .25 W 5.0 Ω	4		R37-R40
21	21		1300349-0-0	390.0 .25 W 5.0 Ω	2		R45,R51
22	22		1300005-0-1	R NETWORK 13-1K 5.0 Ω 14PIN	1		R50
23	23		1502155-0-0	DEC1008 NPN 5MC SI 49 25 W	1		E08
24	24		1912729-0-0	DC 004 PROTOCOL,REG. SELECT	3		E1,E2,E3
25	25		1912801-0-0	LS02 NOR-GATE-QUAD 2IN	1		E1
26	26		1912991-0-0	DN 8556 COUNTER,BINARY,4BIT	2		E2,E7
27	27		190908-0-0	7404 INVERTER GATE-HEX 1X	4		E3,E27,E36,E56
28	28		1912879-0-0	LS86 X-OR GATE-QUAD 2IN	1		E4
29	29				1		E5

REVISION HISTORY		BASIC PART NO		M5915	
REV	ECO NUMBER	REV	SECTION A OF A	DRN	DATE
	INIT	D	SECTION VARIATION INDEX	E, WILSON	8-NOV-77
	ER 100001	C	(A) 00	R, M, CAUNTER	2-DEC-77
	AF 110002	D	(B)		
	ACT M5915-0003	E	(C)	T, ARRIGHI	3-DEC-77
			(D)		
			(E)		
			(F)		
			(G)	A, FILE	3-DEC-77
			(H)		
			(I)		
			(J)		
			(K)		
			(L)	B, BILBEAY	13-JAN-78
			(M)		
			(N)		

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AUTOMATED BY PRTLSY.2D(12)

PARTS LIST

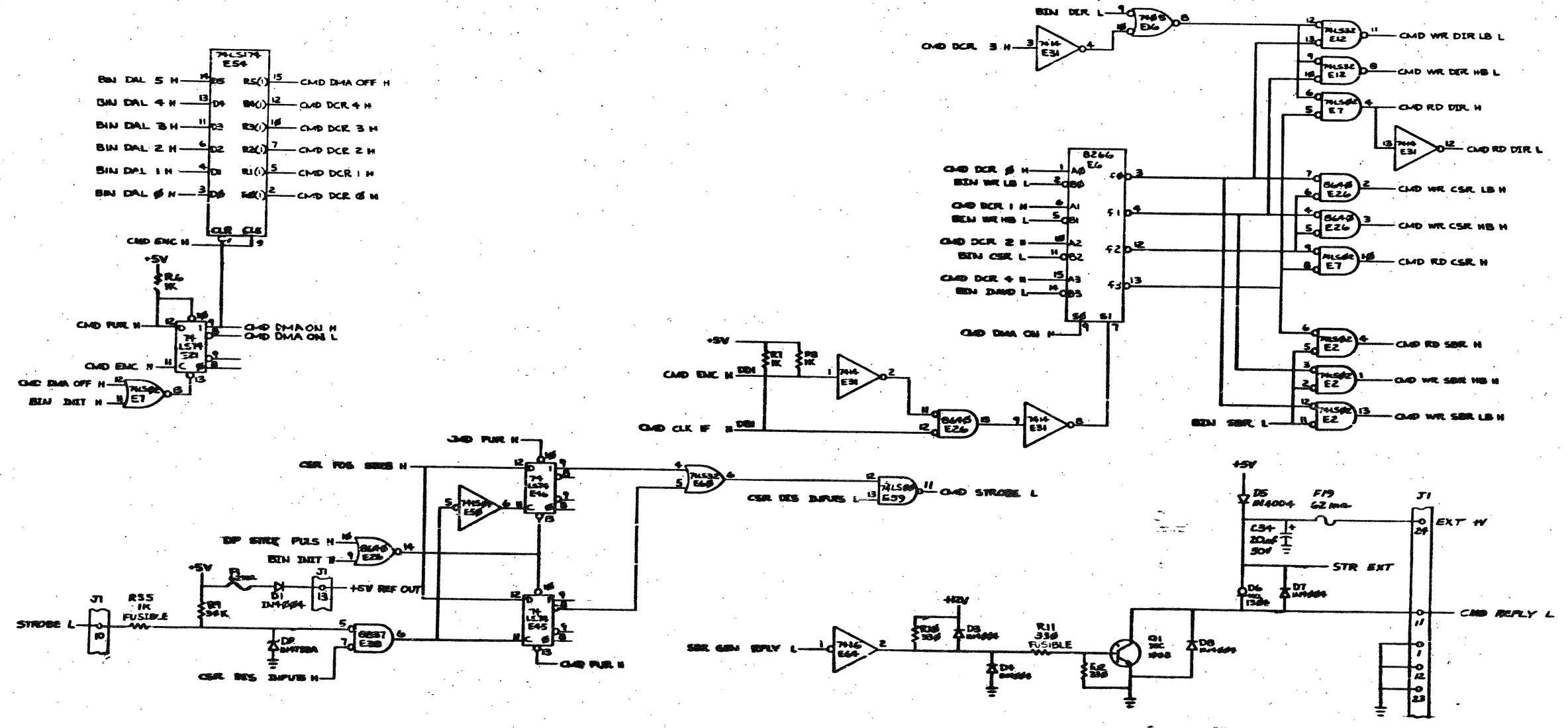
LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY	PER VARIATION	REFERENCE DESIGNATOR
29	29		1909934-00	9266 MUX 1 OF 2 (QUAD)	11		E6,E10,E15,E22,E23,E29,E41,E51, E63,E45,E66
30	30		1912800-00	L801 HAND-GATE-QUAD 2IN,P	4	CONT	E8,E28,E42,E57
31	31		1912824-00	L874 FF-D DUAL,EDGE TRIGG	11		E9,E14,E21,E33,E37,E43,E45,E46, E47,E50,E62
32	32		1912730-00	DC 001 INTERRUPT,2 CIRCUIT	1	CONT	E11
33	33		1912810-00	L832 OR GATE-QUAD 2IN,POS	2		E12,E60
34	34		1912647-00	L8257 MUX 1 OF 2 (QUAD)	4		E13,E18,E32,E61
35	35		1916195-00	DEC 7408 AND GATE,POS,QUAD 2I	1		E16
36	36		1910651-00	DEC 74175 FF-D QUAD	1		E17
37	37		1909935-00	8235 MUX 1 OF 2 (QUAD)	4		E19,E34,E52,E53
38	38		1913040-00	DC 605 TRANSCIVER 4BIT	4		E20,E25,E30,E39
39	39		1911110-00	DEC 8837 RECEIVER,BUS,HEX,UN	3		E24,E38,E67
40	40		1911469-00	DEC 8640 RECEIVER,BUS,QUAD,U	1		E28
41	41		1911324-00	7414 INVERTER,HEX 1IN SCH	1		E31
42	42		1912799-00	L800 HAND-GATE-QUAD 2IN,P	2		E35,E59
43	43		1910951-00	9602 ONE SHOT-DUAL	1		E40
44	44		1912885-00	L808 AND GATE-QUAD 2IN,PO	1		E46
45	45		1912697-00	L8174 FF-D HEX W/CLEAR	2		E49,E54
46	46		1912601-00	L804 INVERTER GATE-HEX 1I	1		E50
47	47		1912845-00	L8153 MUX 1 OF 4 (DUAL)	1		E55
48	48		1909928-00	7416 INVERTER GATE-HEX 1I	1		E64
49	49		1213484-00	CONN 10POS HOUSING	1		J2
50	50		1902839-00	20 MFD 50V 5% JOD AL EL	1		C36
51	51		9006735-00	EYELET, FUNNEL FLANGE, .059 OD X	4		
52	52		9009122-00	FUSE, SUB-MINI, .062A, 125V, A	2		F1,F19
53	53		1214937-00	SW,PS 2P PUSH PUSH	2		S3,S4
54	54	C-7420191-0-0	7420191-00	HANDLE	1		
55	55		9026732-00	EYELET, ROLLED FLANGE, .121 OD X	4		
56	56	C-7420191-0-0	7420192-00	HANDLE RETAINER	2		
57	57		9006000-01	SCREW,PAN,PHIL, 2-56X 3/16 S	4		
58	58		9006555-00	NUT,HEX 2-56X3/16AF X 1/4	4		
59	59		9006686-00	WASHER, LOCK, 3.5, S2	4		
60	60		1310081-00	1.0 K .25 W 1.0 % FUSE	17		R55-R71
61	61		1000025-00	960.0 MWF 100V 53200PPM DR,SS	1		C9
							RELEASABLE

D	I	G	I	T	A	L	TITLE	DIGITAL INPUT	SECTION	A	OF	A	SIZE	CODE	DOCUMENT NUMBER	REV
													K	PL	W5915-0-00P	E



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1-0-9169A-S-02



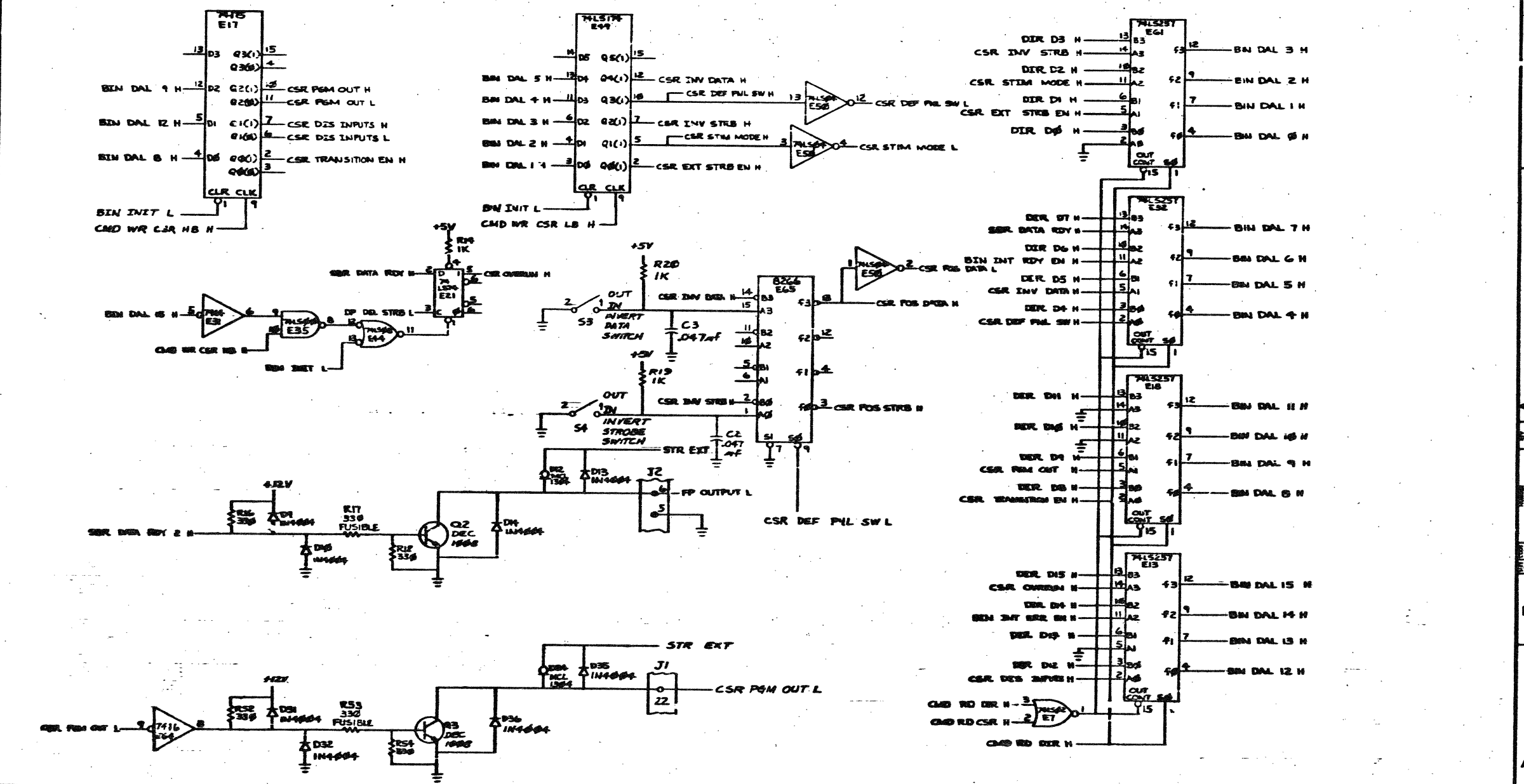
REV.	CHANGE NO.	REV.

CMD: COMMAND CONTROL

TITLE	DIGITAL INPUT	DESIGN CODE	D CS M5915-0-1	REVISION		DATE	
SCALE	SHEET 2 OF 7		DRGT.				

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1-0-9165W 30 2



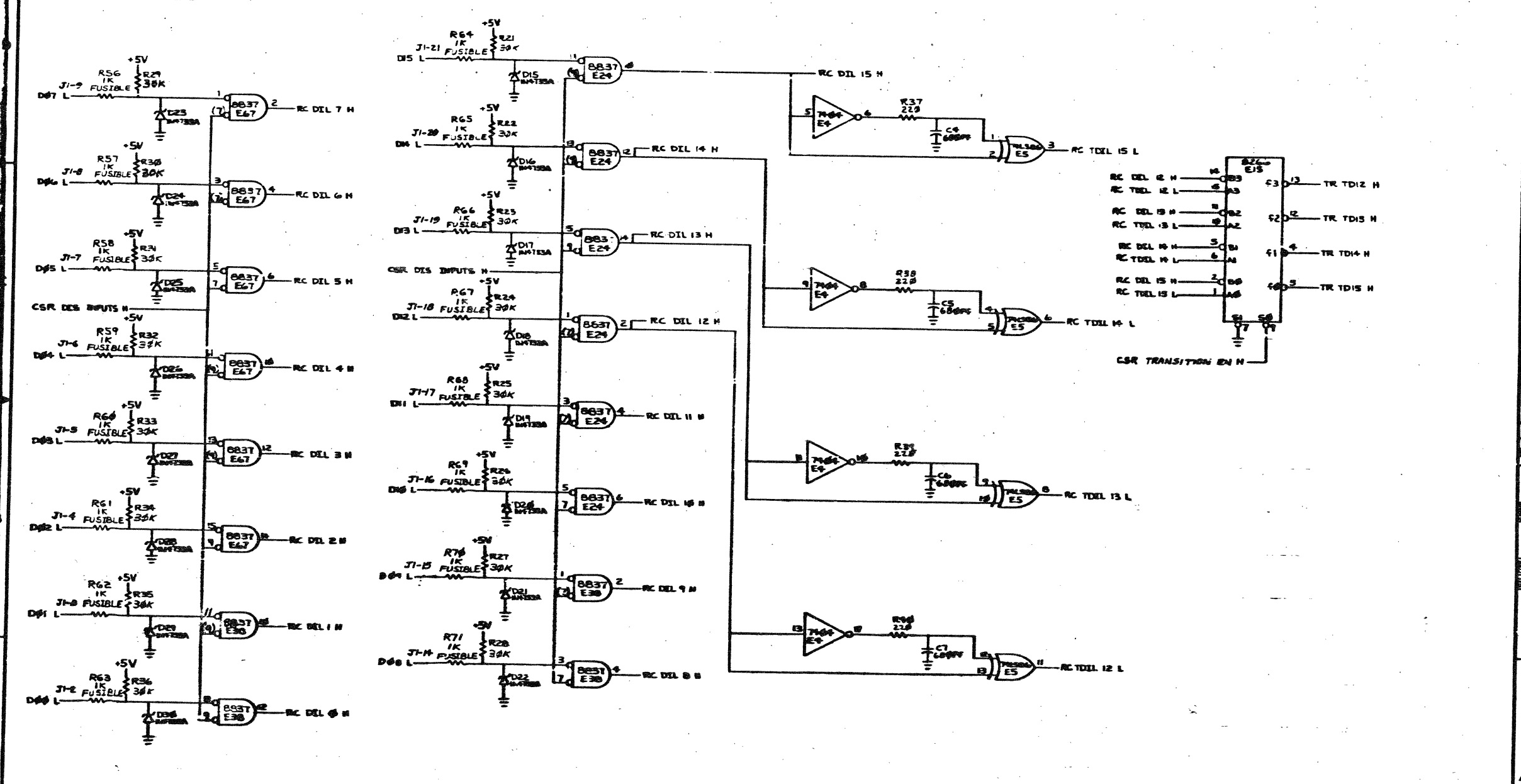
CSR: CONTROL & STATUS REGISTER

REV.	CHANGE NO.	DESCRIPTION

TITLE	DIGITAL INPUT	DESIGN	DCS	REVISION	M5915-0-1	REV.	3
SCALE	1:1	SHEET	3	OF	7	DATE	

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1-0-965MSQ 2



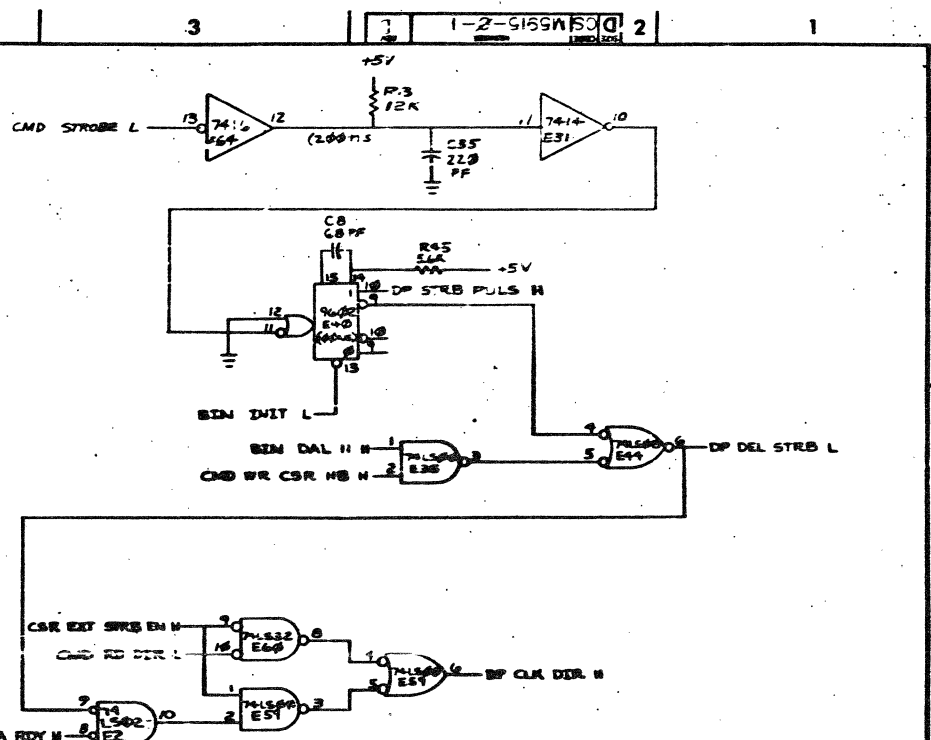
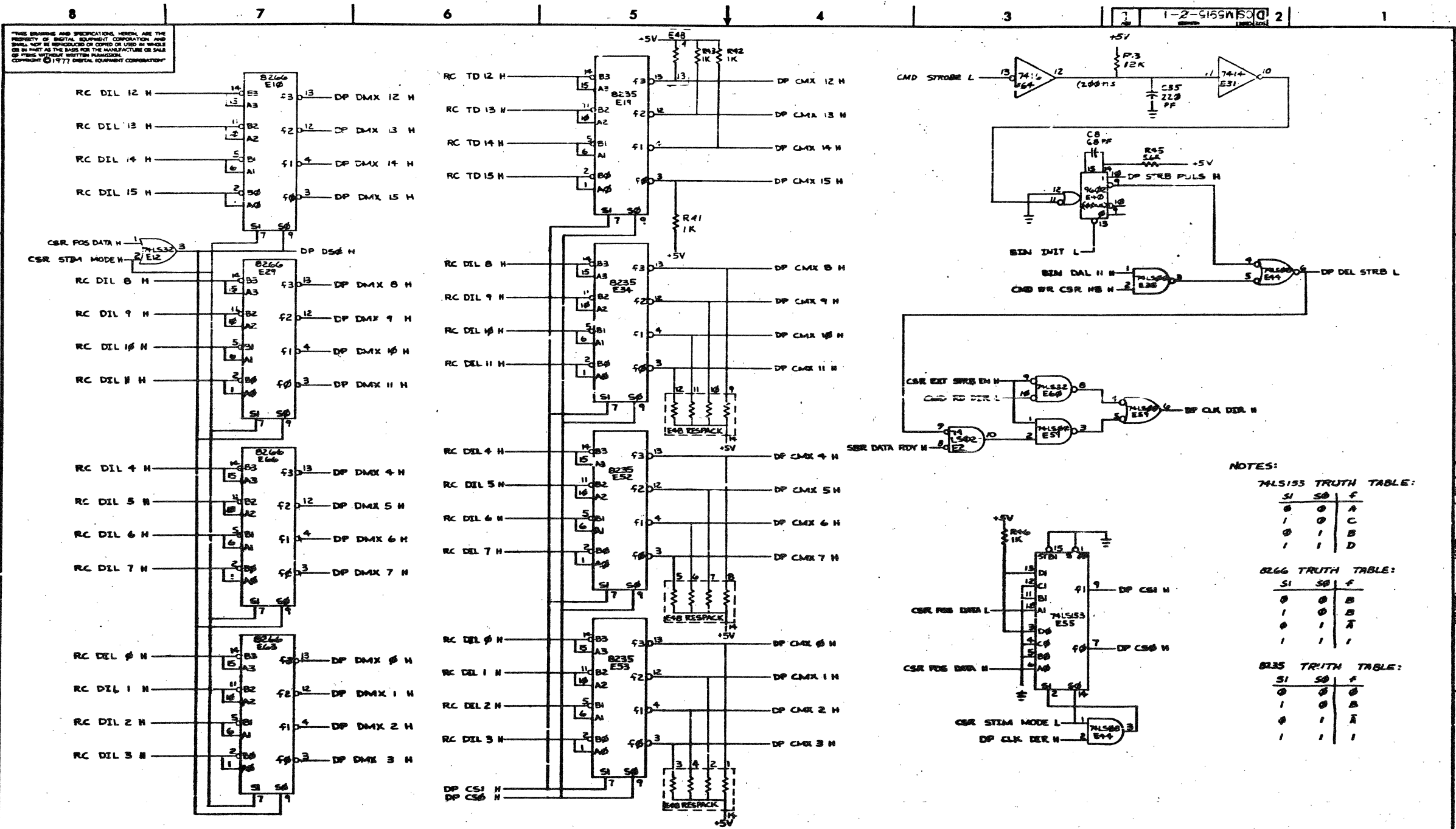
REV.	CHANGE NO.	REV.

RC: RECEIVERS & TR: TRANSITION DETECTORS

TITLE	DIGITAL INPUT	REVISION	DCS M5915-0-1	REV.	D
SCALE	CASE 4 OF 7	DATE			

8 7 6 5 4 3 2 1

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NOTES:

74153 TRUTH TABLE:

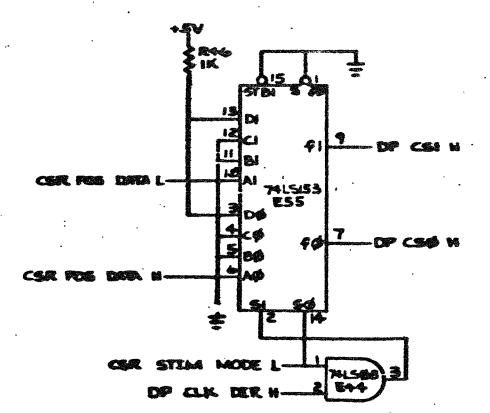
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0	0	A
1	0	C
0	1	B
1	1	D

8266 TRUTH TABLE:

S1	S0	F
0	0	B
1	0	B
0	1	A
1	1	I

8235 TRUTH TABLE:

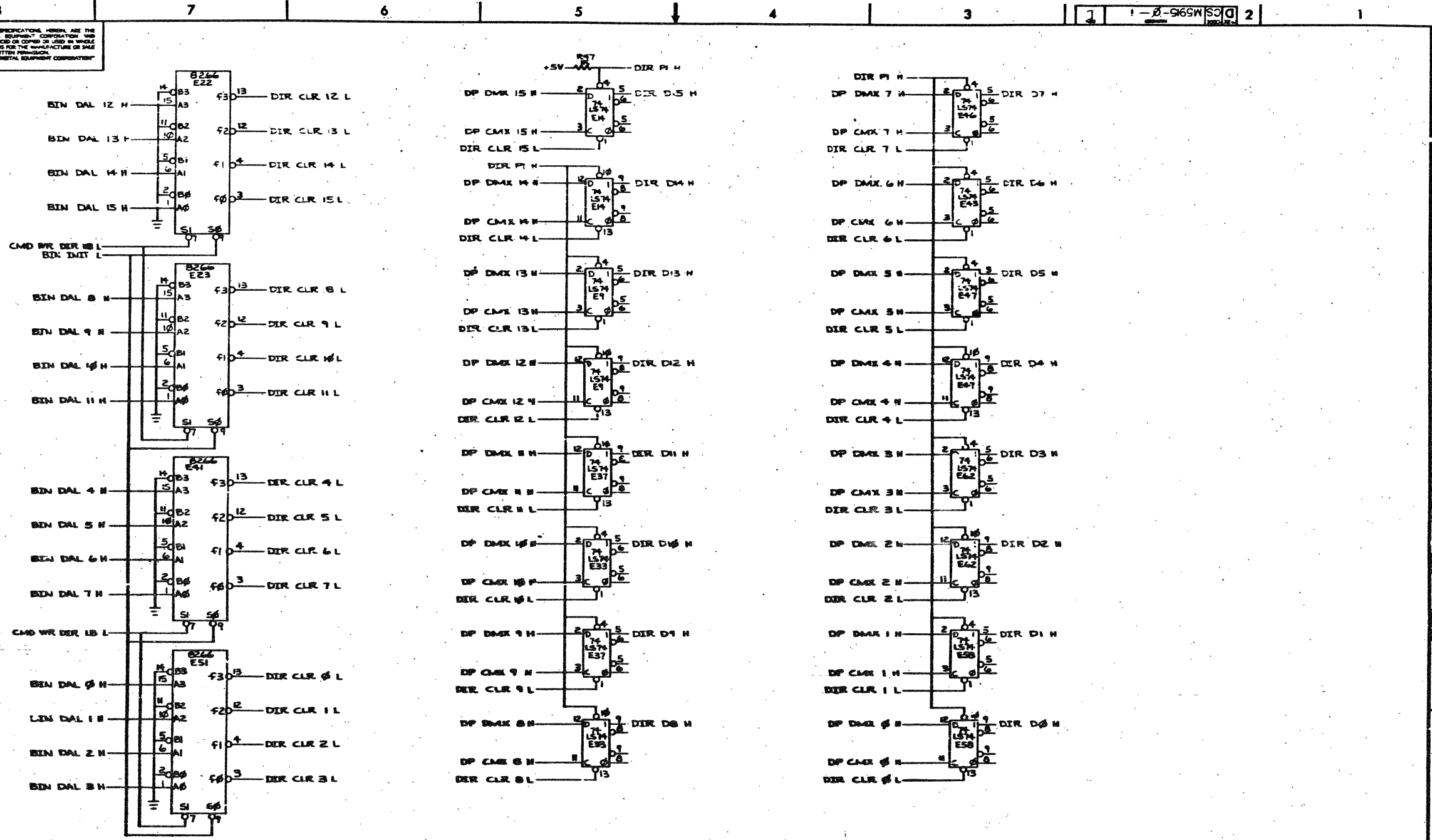
S1	S0	F
0	0	B
1	0	B
0	1	A
1	1	I



DP: DATA INPUT PATH

REV.	CHANGE NO.	REV.	TITLE	DATE CODE	REVISION	REV.
			DIGITAL INPUT	D/CS	M5915-0-1	D
			SCALE		SHEET 5 OF 7	

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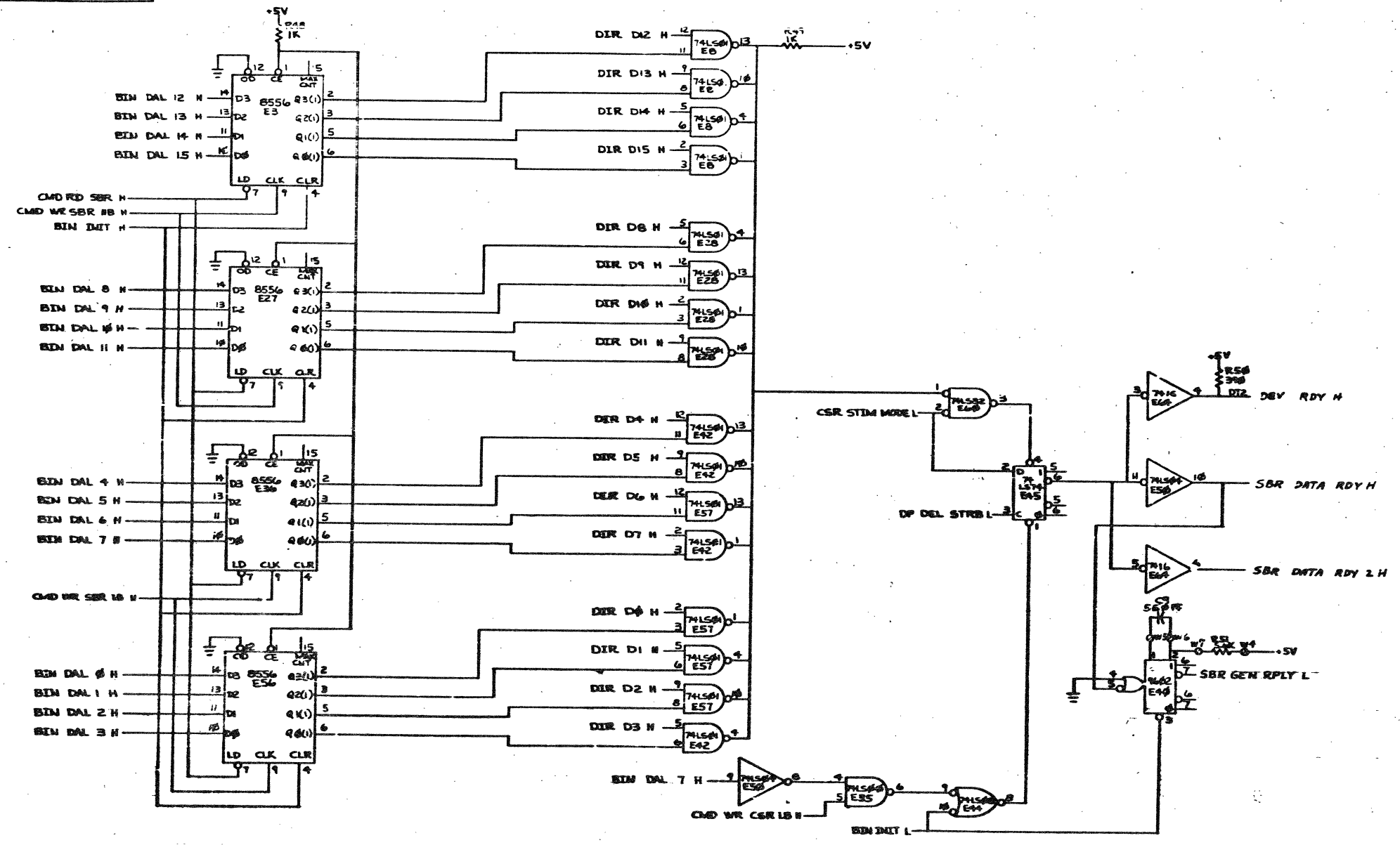
DIR: DATA INPUT REGISTER

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	DIGITAL INPUT	REVISION	D CS	NUMBER	M5915-0-1	REV.	D
SCALE	SHEET 6 OF 7		DATE				

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D CS M5915-0-1 2



REVISIONS		
CHK	CHANGE NO.	REV.

SBR: STIMULUS BIT REGISTER

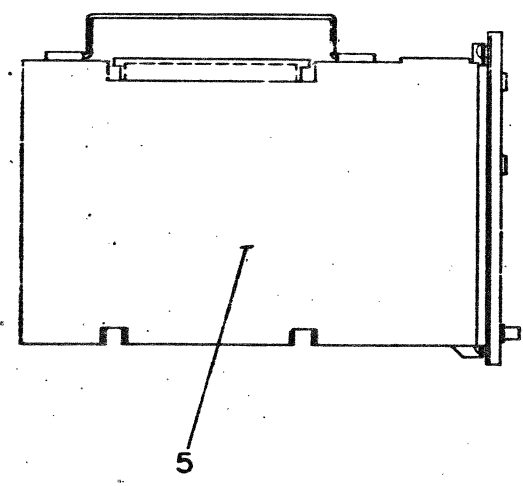
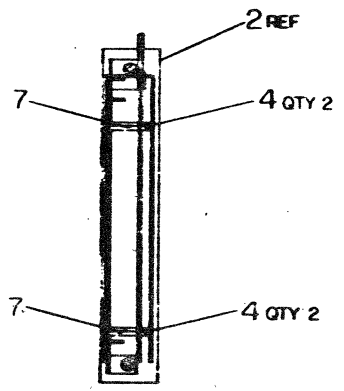
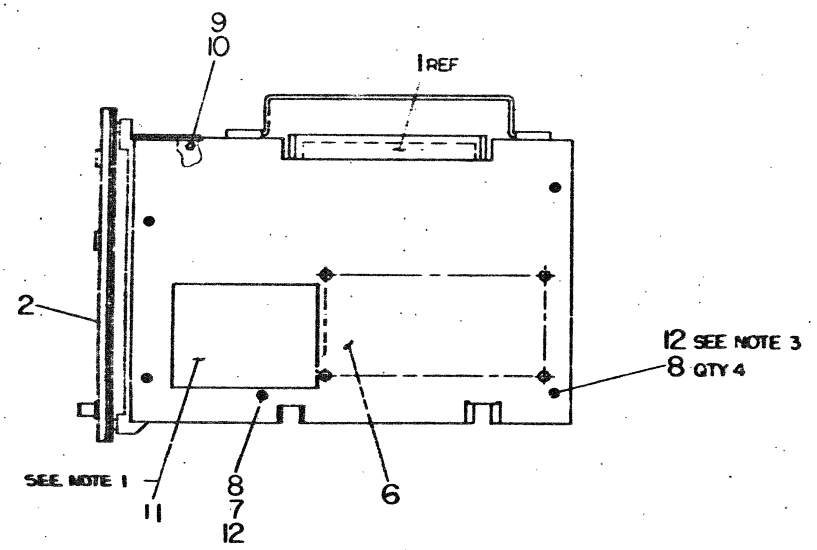
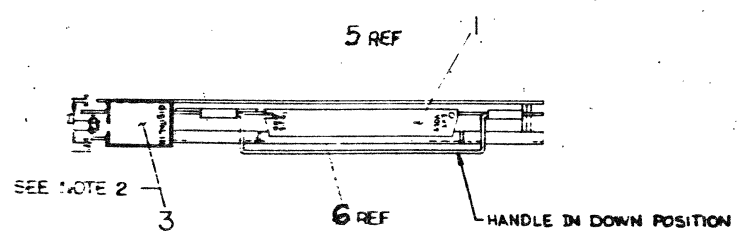
TITLE	D CS M5915-0-1	NUMBER	REV.
DIGITAL INPUT			0
SCALE	SHEET 7 OF 7	DIST.	





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- NOTES**
- ITEM #11 IS PUT ON BY ALIGNING THE RIGHT HAND EDGE OF DECAL UP AGAINST HOLES AND BOTTOM EDGE JUST ABOVE MOUNTING HOLE.
  - ITEM #3 IS PUT ON BY ALIGNING THE TOP EDGE AND RIGHT HAND EDGE EVEN WITH THE TOP EDGE AND RIGHT HAND EDGE OF ITEM #5.
  - USING ITEM #12 ADD ONE DROP TO EACH LOCATION.



DESCRIPTION	DRG. PART NO.	ITEM NO.
PACKAGING INSTRUCTIONS	A-PS-3700358-02	14
REF. CHECKOUT & ACCEPT. PROCEDURE	A-SP-MNCDI-3-3	13
APL LOCKTITE	9009321	12
DECAL INFORMATION (MNCDI)	A-DC-3615264-5-0	11
NUT KEPS #4-32	9008185	10
WASHER, FLAT	9006653	9
SCR, FLAT HD #2-32 x .25	9006620-02	8
SPACER, T-READED #6-32 x .86	9006864	7
PLATE, COMP. SIDE	D-MD-749265-0-0	6
PLATE, ETCH SIDE	D-IA-749360-0-0	5
SPACER, T-READED #6-32 x .25	9006841	4
DECAL I/O SCHEMATIC	A-DC-3615260-5-0	3
MNCDI SLB- ASSY	D-AD-704503-0-0	2
CONN ASSY, I/O	C-IA-704158-6-0	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES BY 20	CLASS OF ACCURACY	GENERAL DIMENSION TOLERANCE RANGES					
		0-1/16	1/16-1/8	1/8-1/4	1/4-3/8	3/8-1	1-2
ASSEMBLY	CHECK ONE	±.005	±.005	±.005	±.005	±.005	±.005
FINISH	CHECK ONE	±.002	±.002	±.002	±.002	±.002	±.002
QUANTITY & VARIATION	CHECK ONE	±.001	±.001	±.001	±.001	±.001	±.001

REMOVE BURRS AND SPRAE SHARP CORNERS

DC: NOT SCALE DRG

SEE PARTS LIST

PUSH NONE

DRG. PART NO. 11001

FIRST USED ON

TITLE: MNCDI UNIT ASSY

SIZE: D

CODE: 0

REVISION: 1

DATE: 11/78

SHEET: 1

REVISIONS

NO.	DATE	DESCRIPTION
1	11/78	INITIAL RELEASE

**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS

**ENGINEERING SPECIFICATION** DATE 7/27/78

TITLE MNCDI Installation/Acceptance Procedure

REVISIONS						
REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

ENG <i>D.F. Smith</i>	APPD <i>D. Skinner</i>	DATE 7-31-78	SIZE A	CODE SP	NUMBER MNCDI-0-4	REV
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SHEET 1 OF 4

**ENGINEERING SPECIFICATION** CONTINUATION SHEET

TITLE MNCDI Installation/Acceptance Procedure

**1.0 GENERAL**

**1.1 SCOPE**  
This document describes the procedures for the installation and field acceptance of the MNCDI (Digital Input) option for the MINC-11 System. This procedure will be used for in-house FA&T, field add-on and new system installation, and periodic verification testing.

**1.2 EQUIPMENT**

MINC-11	System
MNCDI	Digital Input Option
MNCDI-TA	Test Module (optional)
BC088	Wrap-Around Cable (optional)
7014153-6-0	I/O Connector

**1.3 DOCUMENTATION**

MAINDEC-11-DVMNB-A	Diagnostic Program
A-SP-MNCDI-0-2	MNCDI Engineering Specification
MPO0595	Print Set
AA-D572A-7C	"Working With MINC Devices"

**2.0 INSTALLATION**

**2.1 INITIAL SET-UP**  
The address and vector switches on the MNCDI board must be set properly as indicated in the manual "Working With MINC Devices".

**2.2 LOCATION**  
The MNCDI may be inserted into any of the 8 possible MINC slots. However, if the MINC-11 System includes an MNCAD A/D converter, then the MNCDI should be installed to the right of the MNCAD (but not necessarily adjacent to it).

**2.3 TEST MODULE**  
If the MNCDI-TA test module is available it should be plugged into the I/O connector fingers on the top of the MNCDI. If no test module is available plug the standard I/O connector into the fingers.

**2.4 POWER UP**  
All other options to be tested and any of their test modules should be mounted in the system. Power may then be applied.

SIZE A	CODE SP	NUMBER MNCDI-0-4	REV
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SHEET 2 OF 4

**ENGINEERING SPECIFICATION** CONTINUATION SHEET

TITLE MNCDI Installation/Acceptance Procedure

**3.0 ACCEPTANCE**

The bold line is the preferred path in the flow diagram. It is the only path to follow for in-house FA&T.

SIZE A	CODE SP	NUMBER MNCDI-0-4	REV
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SHEET 3 OF 4

**ENGINEERING SPECIFICATION** CONTINUATION SHEET

TITLE MNCDI Installation/Acceptance Procedure

Refer to the diagnostic documentation for instructions on loading the diagnostic. Start at location 200. Location 204 is used for restarting after a program halt.

Follow the type out concerning front panel switch settings. The diagnostic will type out the current (old) software switch register and wait for the operator to type in a new value. Switch register functions are described in the documentation. Simply type a carriage return to leave the switch register unchanged.

**3.1 LOGIC TEST**  
The diagnostic will type a menu of tests. Select the "LOGIC TEST". This test checks as much of the control logic and data paths as possible without making external connections. At the start of the logic test the program will type out the number of MNCDI modules detected on the MINC system. All modules will be tested unless this feature is inhibited (see the diagnostic documentation). No errors are allowable for MNCDI acceptance.

**3.2 WRAP-AROUND LOGIC AND DATA TEST**  
When the diagnostic types a menu of tests, select the "WRAP-AROUND LOGIC AND DATA TEST". This test incorporates all of the logic test and, in addition, thoroughly checks the digital input paths and handshaking signals with the MNCDO digital input module.  
The MNCDI-TA and MNCDO-TA test modules should already be installed in their respective options. The BC088 cable must be connected from one test module to the other, connecting like pin numbers of each connector.  
Be sure to observe the proper switch positions on the front panel of each module, as specified by the type-out.  
If the MNCDI passes this test, acceptance is completed. If it fails a logic test repair or replace the MNCDI using established procedures. If one of the wrap-around data tests is failed, section 3.3 may be performed to determine if the failure is in the MNCDI as opposed to the cable or MNCDO.

**3.3 TYPEOUT LOOP FOR INPUT DWARK SWITCHES**  
This loop allows verification of the cable connector input (J1) without the use of a MNCDO. When a push-button on the test module is depressed, the program reads the switch pack on the test module through the MNCDI and displays the value in octal and binary. By changing the switch positions on the test module and again depressing the button, a new data pattern is read by the program. All sixteen data lines can thus be checked by changing the switch positions. The push-button utilizes the strobe input.

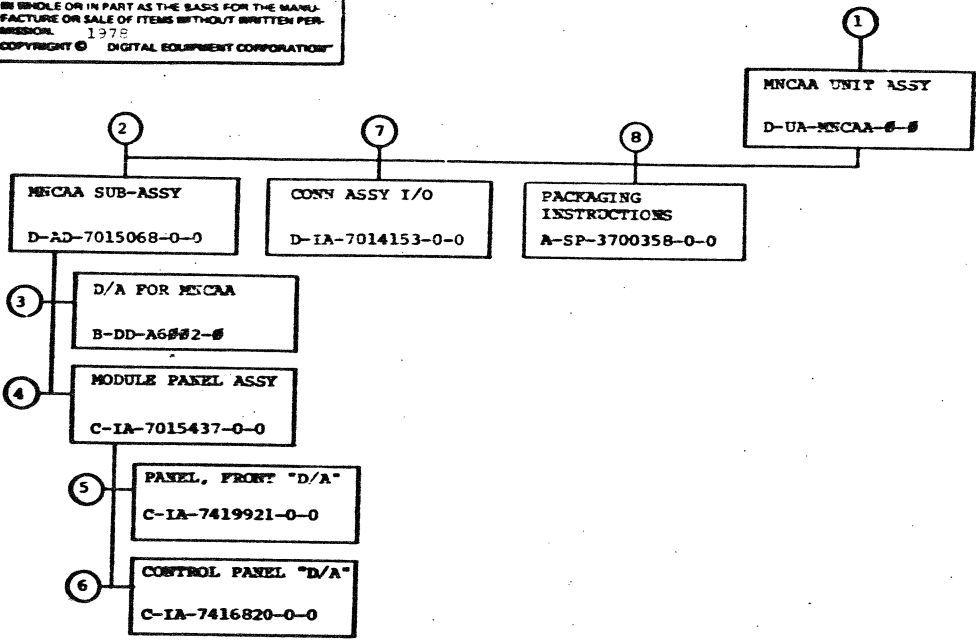
SIZE A	CODE SP	NUMBER MNCDI-0-4	REV
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SHEET 4 OF 4





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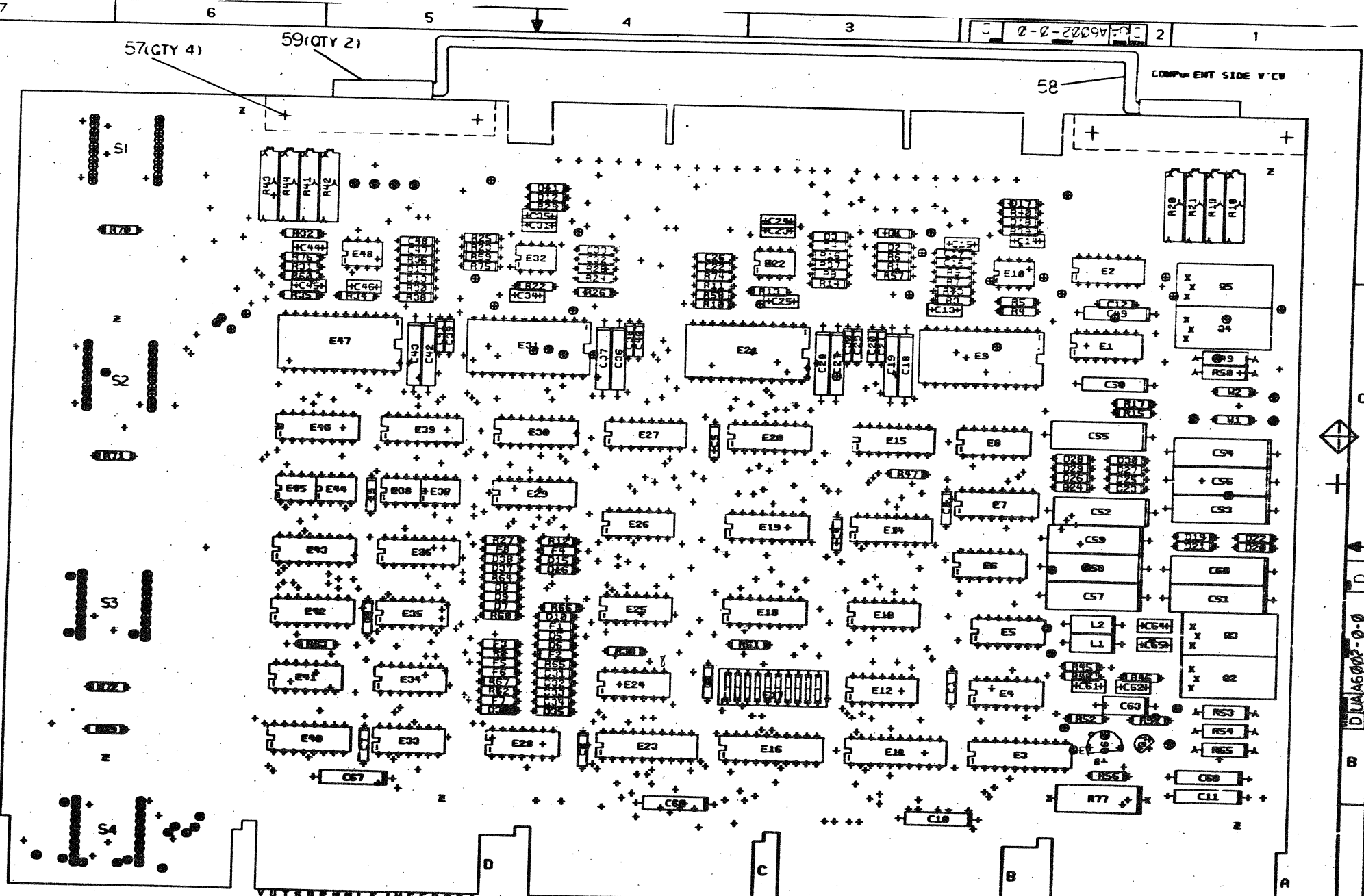
TITLE	MNCAA UNIT ASSY	SIZE CODE	BDD	NUMBER	MNCAA-0	R.V	B
SHEET 2 OF 3							

MR



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0-0-2009A



NOTES: 1. DO NOT INSERT R73 THRU R76, SPARES

STEP #	Y AXIS	STEP	TIMES
REPORT	X AXIS	STEP	TIMES

CHANGE NO. REV. 1/12/80

ETD REV.	E
----------	---

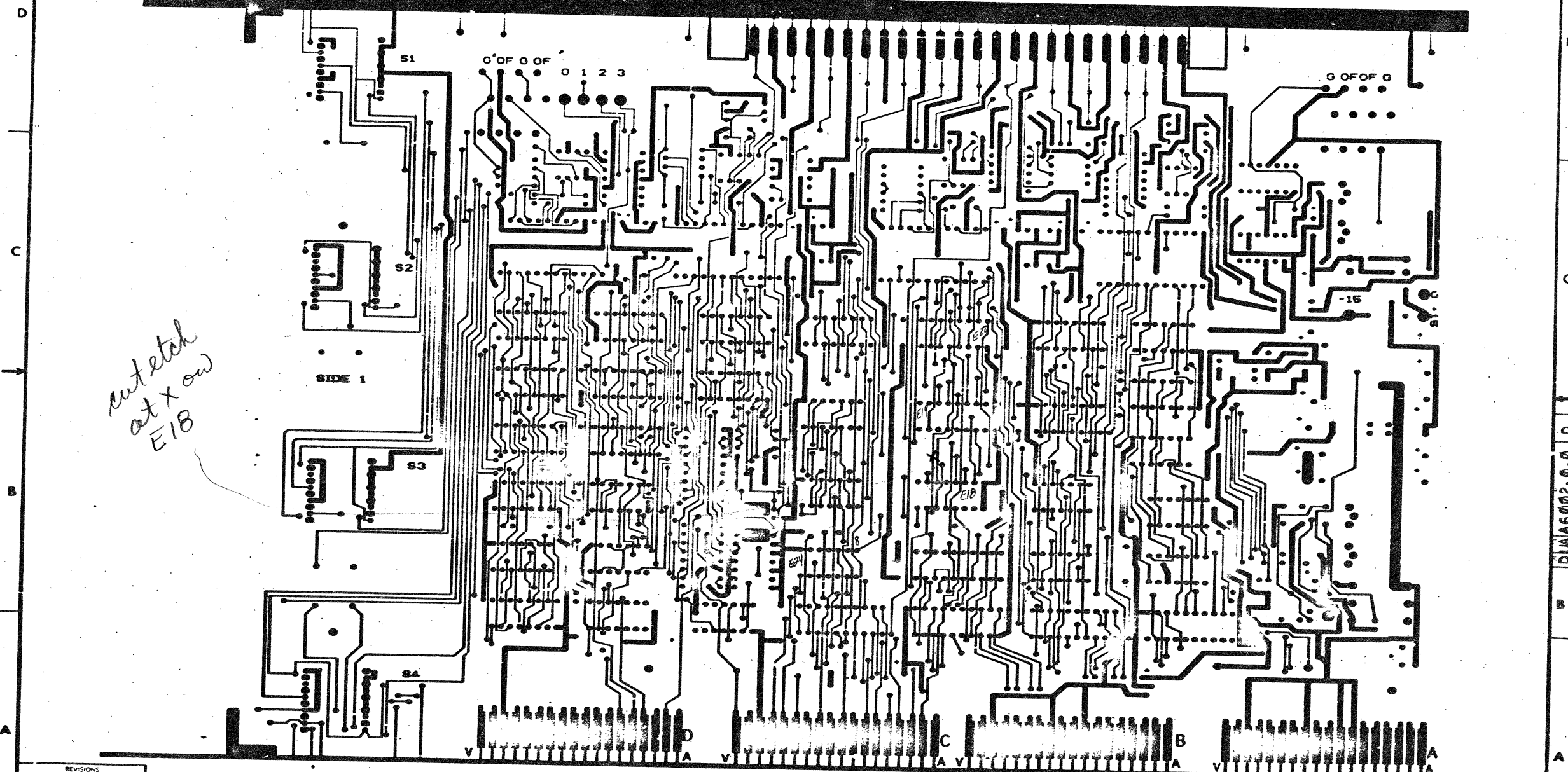
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DRN. <i>[Signature]</i>		
CHK'D <i>[Signature]</i>		
TECH. ENG.		
PROJ. ENG.		
PROD.		
SCALE 2/1		
SMT. 1 OF 2		
NEXT NUMBER REV. 8-DO-A6332-2		

digital	
TITLE D/A	
SIZE COOR	NUMBER
D A	A6302-0-0
1 MS#	

DUAAG00-0-0



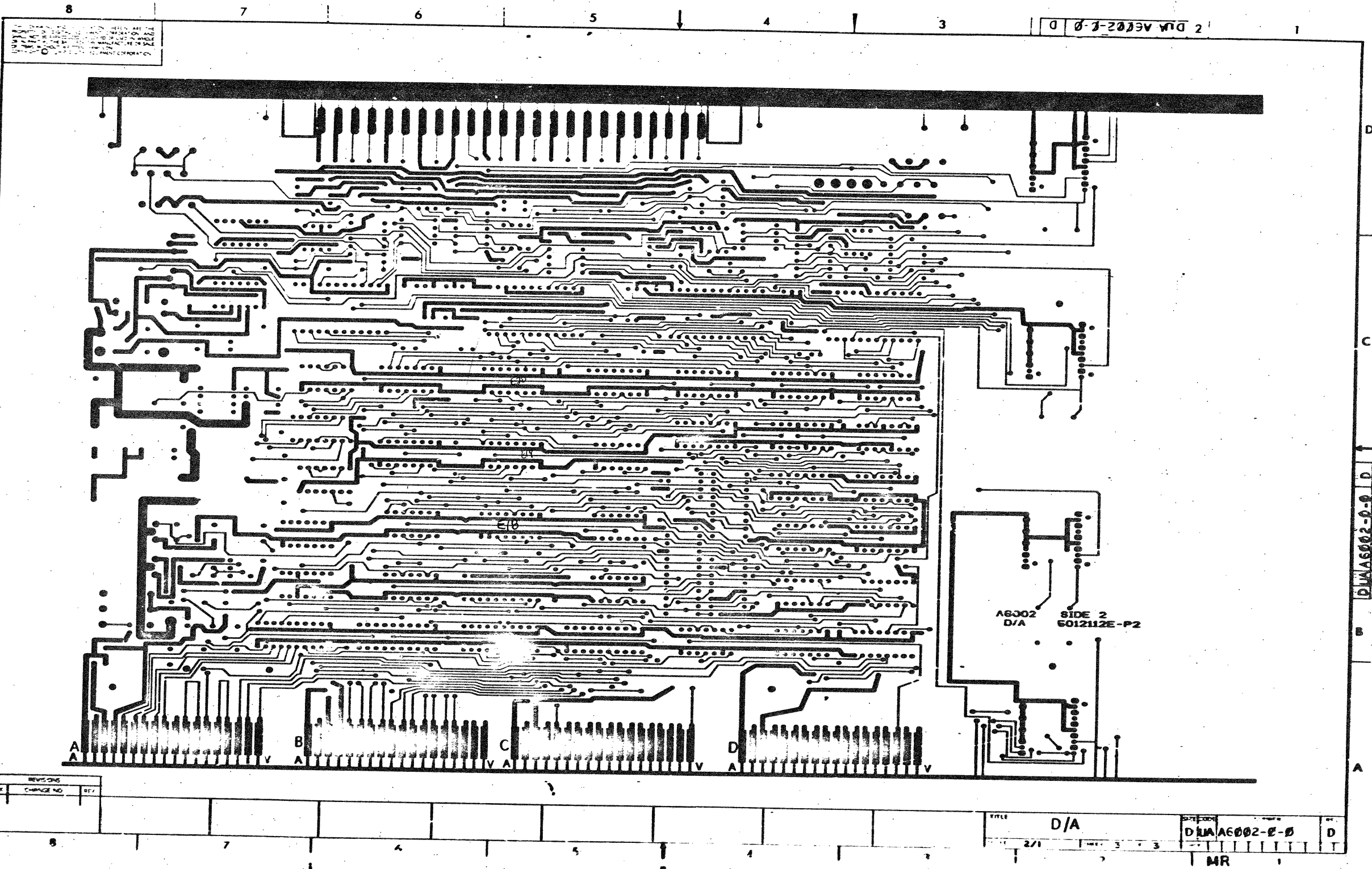
AE002 5012112E-P2



*cut etch  
at X on  
E18*

REVISIONS		
CHK	CHANGE NO	REV

DUA6002-0-0 D



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0 0-3-2009V W/D 2 1

A6302 D/A SIDE 2 6012112E-P2

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	D/A	PART NO	DUAAG002-E-D	REV	D
REV	2/1	DATE	3-3	MR	1

DUAAG002-E-D

PARTS LIST

LINE	ITEM	QUANTITY	NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION	REFERENCE DESIGNATOR
1	1	1	00-D-512112-000	5012112-000	ETCH OF (A6002)	1	
2	2			141270-000	.047 VFD 50V -20+00 CER	26	
3	3			1024912-000	15 VFD 20V 100 S,TANT	15	C1-C9,C12,C16,C17,C20,C21,C22,C26,C29,C30,C32,C33,C36,C39,C40,C41,C47,C48
4	4			1021610-001	.051 VFD 100V -20+00 Z5U DISC	10	C10,C11,C18,C19,C27,C28,C36,C37,C62,C43,C49,C50,C60,C67,C68
5	5			1024915-000	82.0 MWF 100V 5020PPH DR15S	4	C13,C15,C24,C25,C34,C35,C44,C49,C64,C65
6	6			1024915-000	22 VFD 35V 200 S,TANT	4	C16,C23,C31,C46
7	7			1025335-000	33 VFD 20V 100 S,TANT	6	C51,C52,C54,C55,C59,C60
8	8			1024915-000	390.0 MWF 100V 5020PPH DR15S	4	C33,C56,C57,C58
9	9			1021770-000	1 VFD 35V 100 S,TANT	2	C61,C62
10	10			1025275-000	D 672 TR0 150S PIV= 60V 51	1	C63
11	11			1049512-000	10 4702 VZ= 12.0 1P 10 I	36	D1-D10,D19-D30
12	12			1043220-000	60.1 1/4W 10 RM550-F 10PPH	7	D17,D18
13	13			1043505-000	1 R 1/4W 50 CC	8	R1-R10,R23,R30,R69-R72
14	14			1024915-000	10 R 1/4W 50 CC	18	R2,R12,P27,R33,R39,R40,R45,R47
15	15			1024915-000	50 1/4W 10 RM550-F 10PPH	6	R51,R50,R61-R68
16	16			1021610-001	2.15 R 1/4W 10 RM550-F 10PPH	4	R3,R19,R22,R25,R46,R48
17	17			1021610-001	47 1/4W 10 FUSIBLE	4	R6,R11,R25,R31
18	18			1023390-000	470 R 1/4W 50 CC	4	R5,R16,R20,R32
19	19			1025995-000	1 R 1/4W 50 CC	4	R6,R16,R20,R36
20	20			1024915-000	1 R 1/4W 10 FUSIBLE	4	R7,R24,R30,R37
21	21			1029143-000	200 3/4W100 POT 10PPH	2	R8,R9,R20,R30
22	22			1029143-000	20 R 3/4W200 POT 10PPH	4	R15,R17
23	23			1029444-000	2.7 1/2W 100 CC	4	R18,R20,R41,R43
24	24			1024915-000	152 1/4W 50 CC	2	R19,R21,R42,R44
25	25			1024915-000	470 1/2W 50 CC	1	R49,R50
						2	R52
							R53,R54

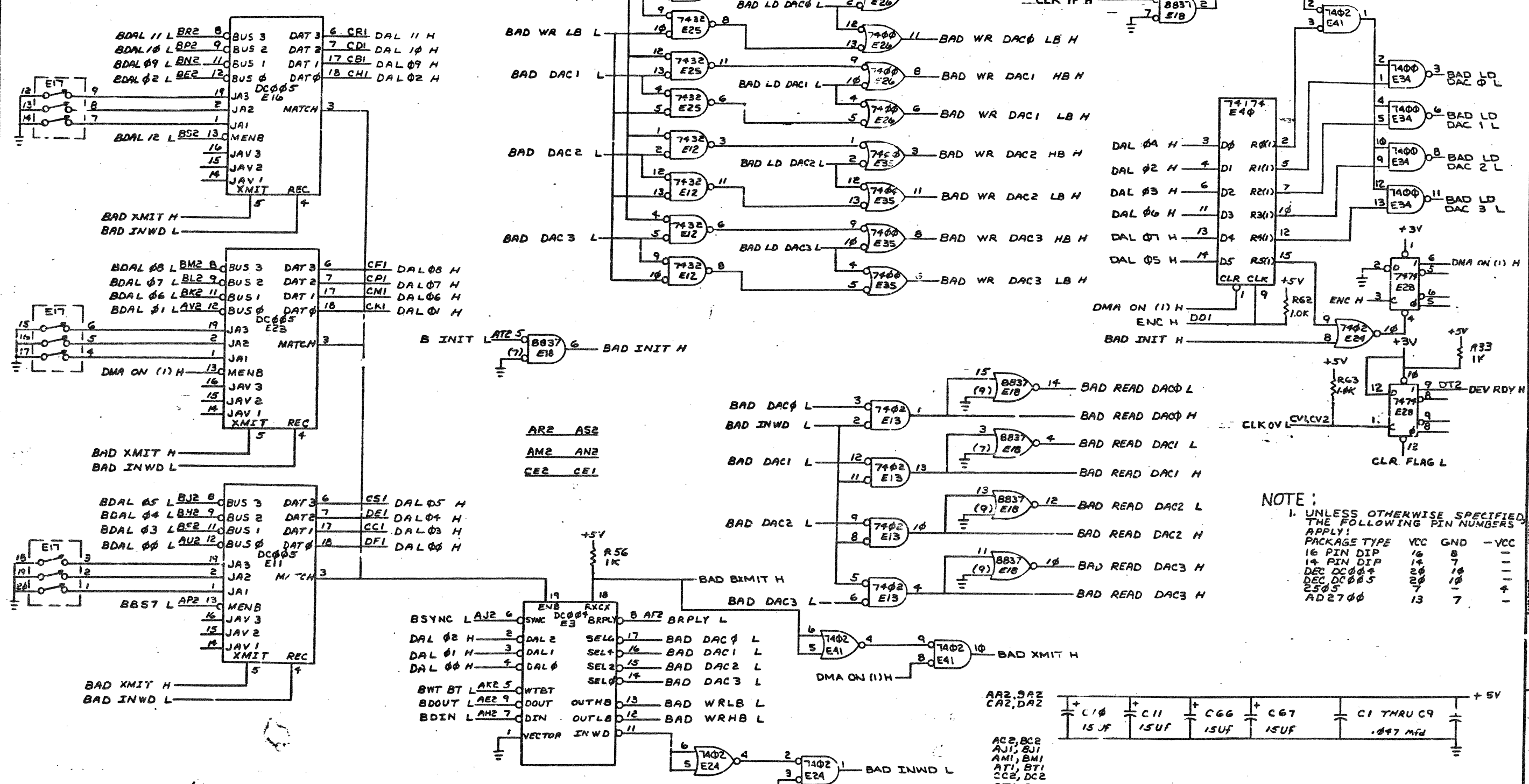
REVISION HISTORY		SPECIFIC PART #		A6002										
ENG	ECO NUMBER	REV	SECTION A OF B	DRWG	DATE	16-FEB-70	I D I G I I Y I A I L							
ENG	1001	IC	SECTION VARIATION	INDEX	ICR#D	R.V. CAUSTER	DATE	16-FEB-70	PARTS LIST					
		ID	(A) 20						D/A					
			(B)											
			(C)		DES.ENG.	A.E. FILE	DATE	29-MAR-70						
			(D)											
			(E)											
			(F)		REP.ENG.	A.E. FILE	DATE	29-MAR-70	DOCUMENT NUMBER					
			(G)											
			(H)											
			(I)		INFO.ENG.	R. REBELLO	DATE	29-MAR-70	SIZE	CODE	NUMBER	REV		
			(J)											
			(K)											
			(L)											
			(M)		ASSEMBLY NUMBER:		TOP DOCUMENT NUMBER:		FILE NAME:		EDIT			
			(N)		10-UA-A6002-0-0				202200.PLS		9			

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ME

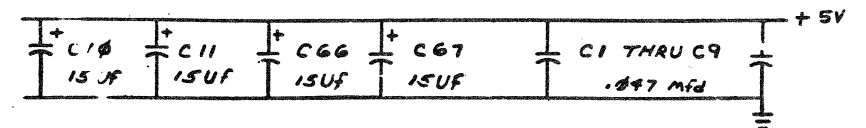


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NOTE:  
 1. UNLESS OTHERWISE SPECIFIED, THE FOLLOWING PIN NUMBERS APPLY:  

PACKAGE TYPE	VCC	GND	-VCC
16 PIN DIP	16	8	7
14 PIN DIP	14	7	6
DEC DC005	20	10	19
DEC DC005	20	7	10
2505	27	7	4
AD2700	13	7	1



BUS ADDRESS DATA

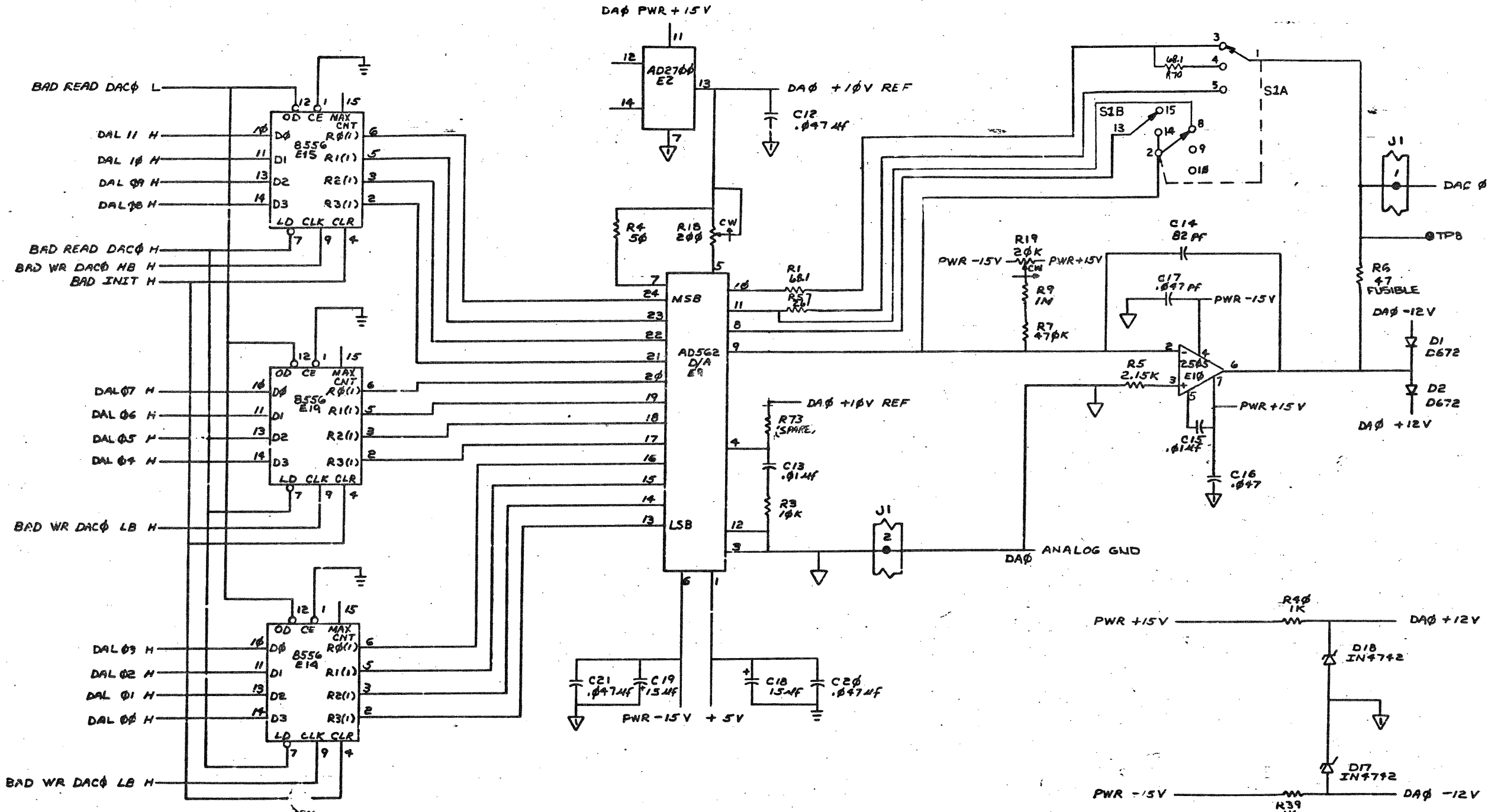
DRG: Wilson	5 OCT 76	FIRST USED ON	digital
CHK'D: [Signature]	[Signature]	TITLE	4 CHANNEL D-A
ENG: [Signature]	2/10/76		(BAD)
PROJ. ENG: [Signature]	2/10/76		
PROD. [Signature]	3/17/76		
NEXT HIGHER ASSY.		SIZE CODE	NUMBER
B-DD-A6002-0		D	CSA6002-0-1
SCALE NONE		DIST.	
SHEET 1	OF 7		

REV.	REV.
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8



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1-0-2009ASD 2

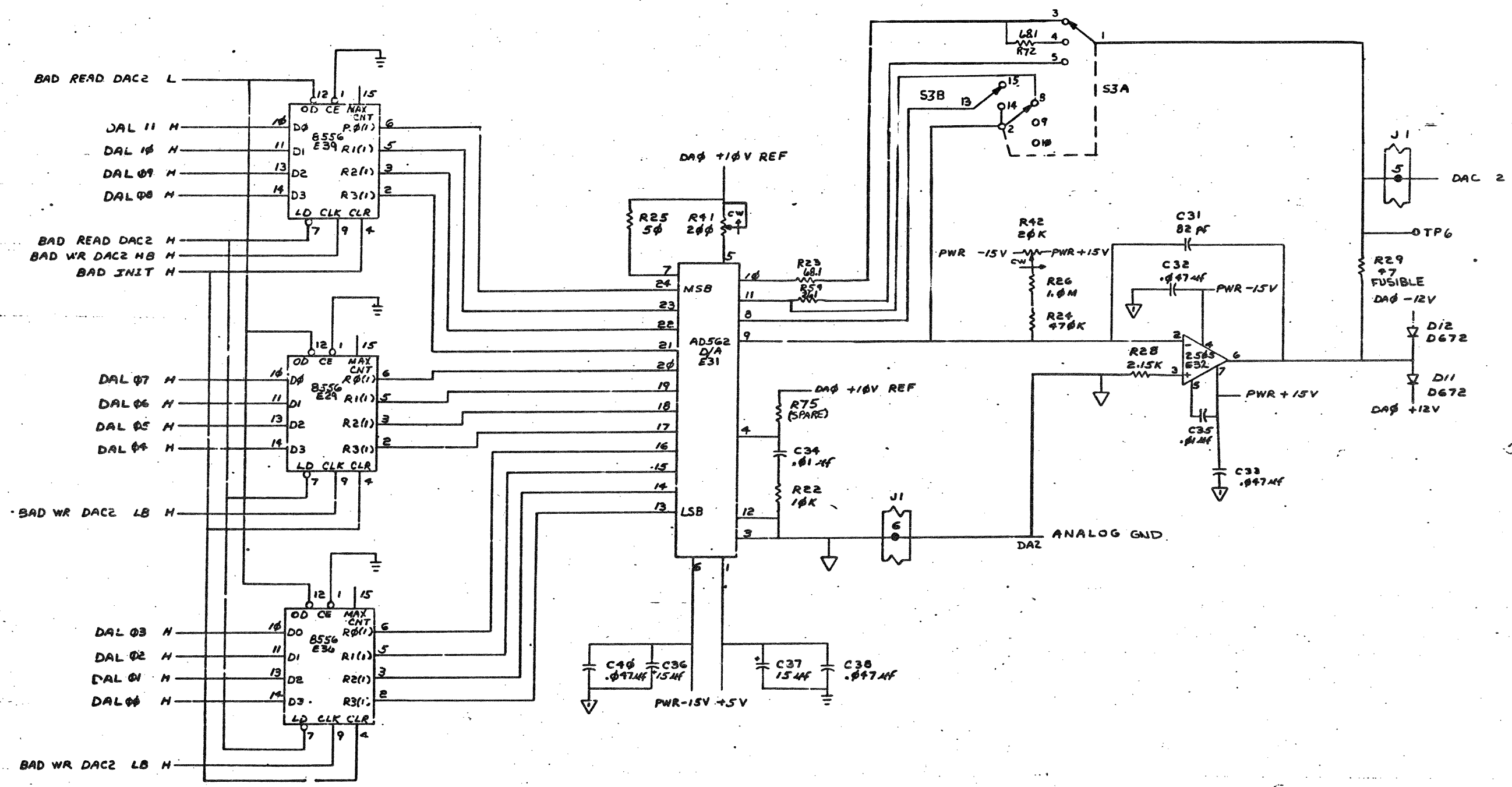


REVISIONS	CHANGE NO.	REV.

TITLE	4 CHANNEL D-1 (DAD1)	SIZE CODE	NUMBER	REV.
SCALE	SHEET 2 OF 7	DIST.	DCS A6002-0-1	D



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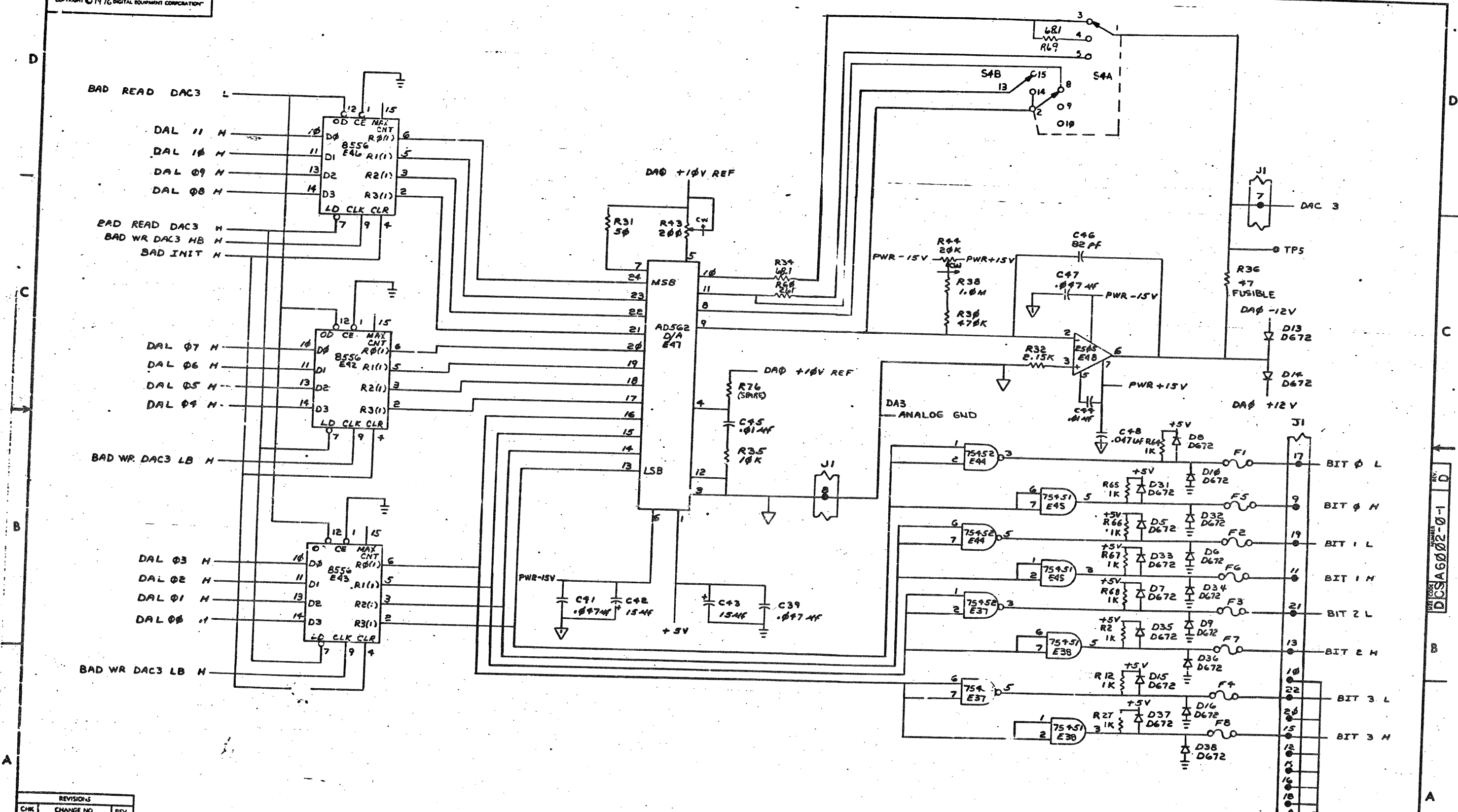
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		DA2 CHANNEL D/A (DAY1)		SIZE CODE	NUMBER	REV.
SCALE		SHEET 4 OF 7		DIST.	DCS A6002-01	D



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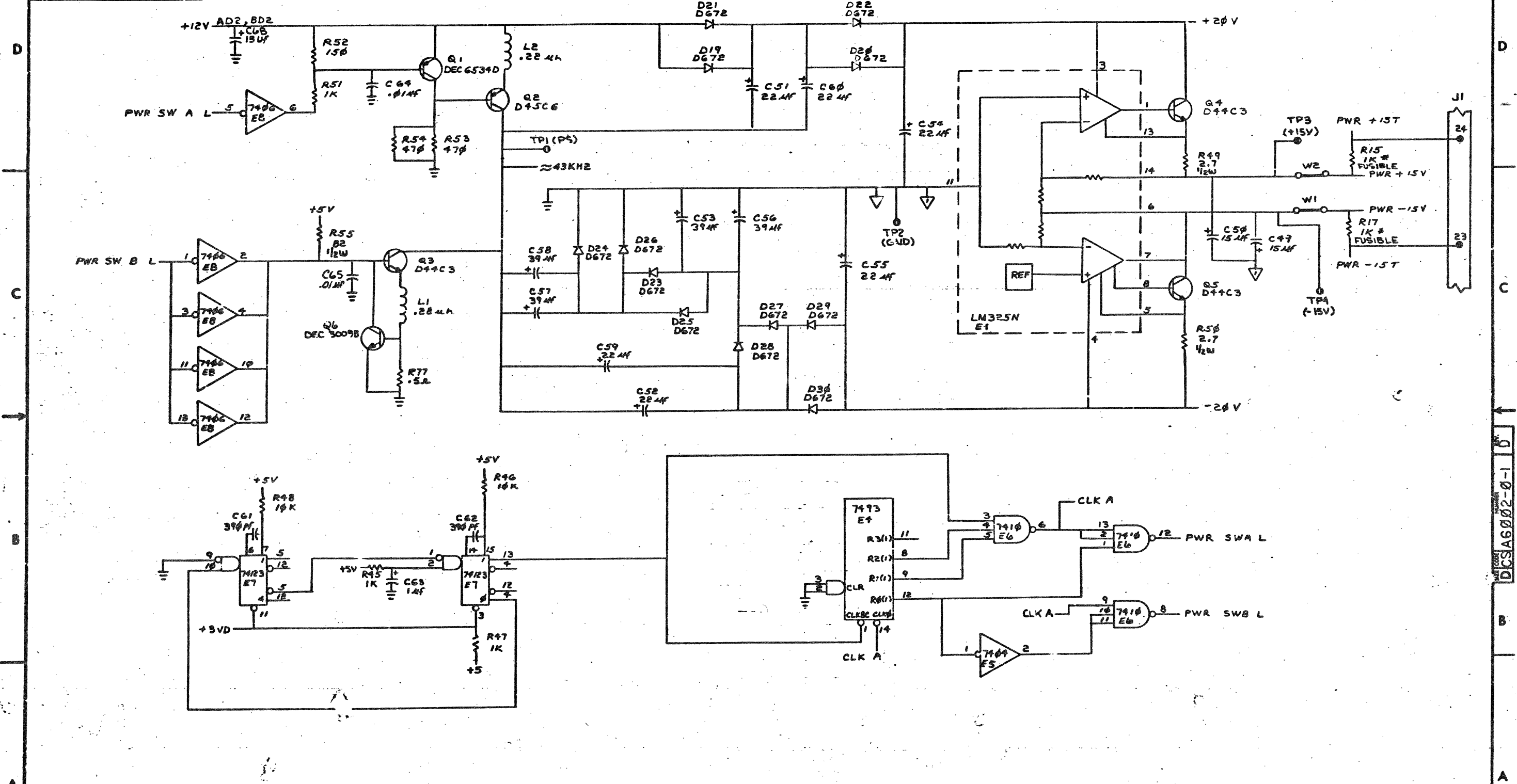
DCSA6002-0-1 2



REVISIONS		
CHK	CHANGE NO	REV.

DA3  
4 CHANNEL  
D-A  
SCALE  
SHEET 5 OF 7  
SIZE CODE  
DCSA6002-0-1  
NUMBER  
REV. D  
DIST.

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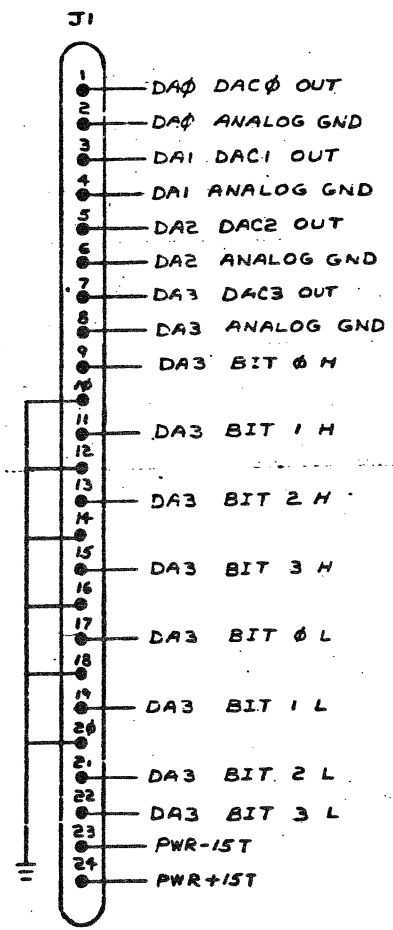


REVISIONS		
CHK	CHANGE NO.	REV.

TITLE 4 CHANNEL		SIZE CODE	NUMBER	REV.
D-1		D	DCSA6002-0-1	D
SCALE	SHEET 6 OF 7	DIST.		

DCSA6002-0-1 D

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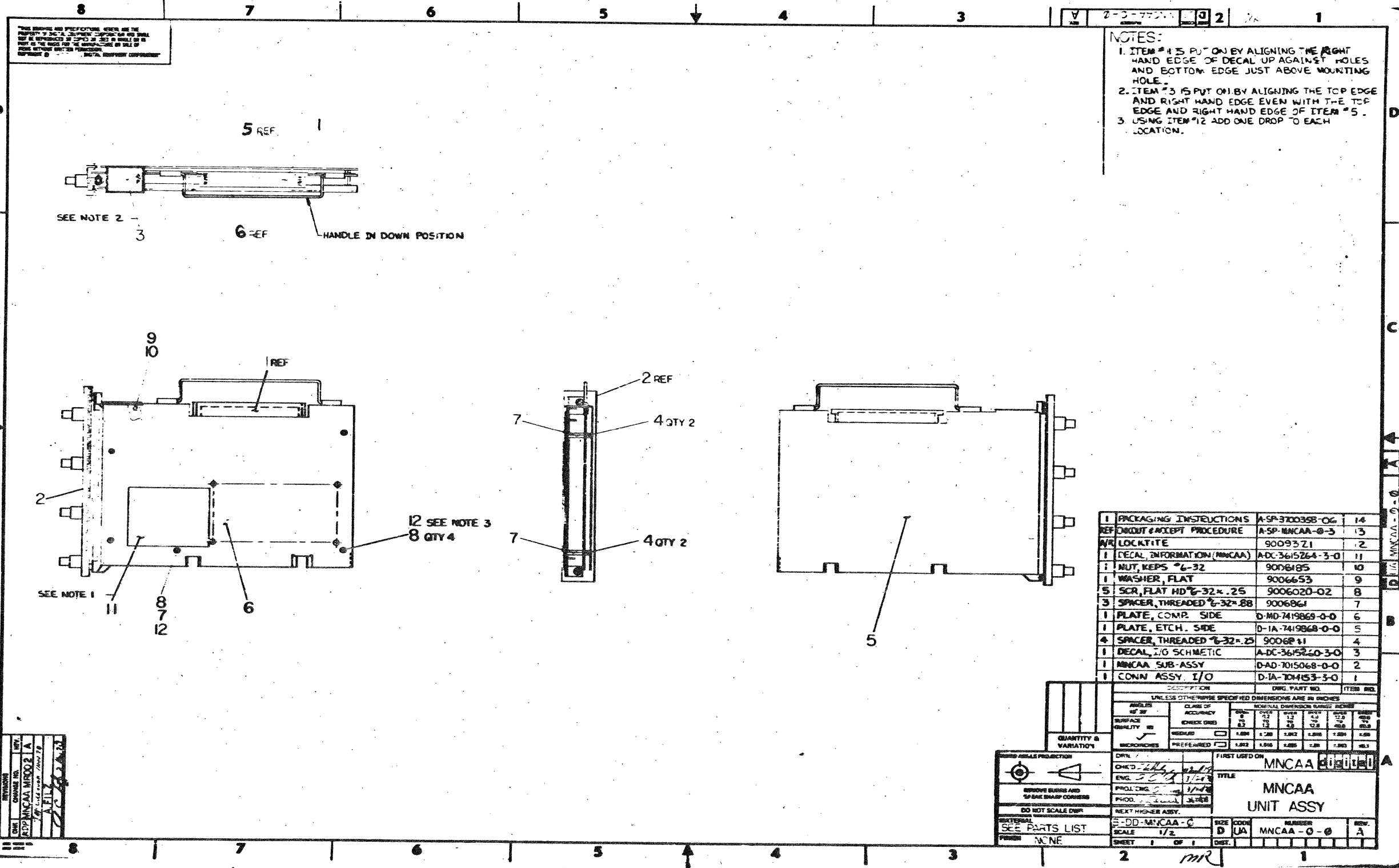


REVISIONS		
CHK	CHANGE NO	REV.

TITLE	4 CHANNEL D-A	SIZE CODE	DCS A6002-0-1	NUMBER		REV.	D
SCALE		SHEET	7 OF 7	DIST.			

DCS A6002-0-1 D





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- NOTES:**
- ITEM #1 IS PUT ON BY ALIGNING THE RIGHT HAND EDGE OF DECAL UP AGAINST HOLES AND BOTTOM EDGE JUST ABOVE MOUNTING HOLE.
  - ITEM #3 IS PUT ON BY ALIGNING THE TOP EDGE AND RIGHT HAND EDGE EVEN WITH THE TOP EDGE AND RIGHT HAND EDGE OF ITEM #5.
  - USING ITEM #12 ADD ONE DROP TO EACH LOCATION.

REF	DESCRIPTION	QTY	ITEM NO.
1	PACKAGING INSTRUCTIONS	1	A-SP-3700358-06
2	REF	1	A-SP-MNCAA-0-3
3	LOCKWASHER	1	9009321
4	DECAL INFORMATION (MNCAA)	1	A-DC-3615264-3-0
5	NUT, KEPS #6-32	10	9006485
6	WASHER, FLAT	9	9006653
7	SCR, FLAT HD #6-32 x .25	8	9006020-02
8	SPACER, THREADED #6-32 x .88	7	9006861
9	PLATE, COMP. SIDE	6	D-MD-7419869-0-0
10	PLATE, ETCH. SIDE	5	D-IA-7419868-0-0
11	SPACER, THREADED #6-32 x .25	4	9006811
12	DECAL I/O SCHEMATIC	3	A-DC-3615260-3-0
13	MNCAA SUB-ASSY	2	D-AD-7015068-0-0
14	CONN ASSY. I/O	1	D-IA-704153-3-0

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
FINISH	DRILL
QUALITY	INSPECTION
DATE	SCALE
TITLE: MNCAA UNIT ASSY	
PARTS LIST: SEE PARTS LIST	
SHEET 1 OF 1	

REV	DESCRIPTION	DATE
1	INITIAL	
2	REVISION	

ENGINEERING SPECIFICATION

DATE 6/30/78

TITLE MNCAA INSTALLATION/ACCEPTANCE PROCEDURE

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

ENG	J.P. [Signature]	DATE	6-24-78	APPD	[Signature]	DATE	7-1-78	SIZE	A	CODE	BP	NUMBER	MNCAA-0-4	REV	
-----	------------------	------	---------	------	-------------	------	--------	------	---	------	----	--------	-----------	-----	--

TITLE MNCAA INSTALLATION/ACCEPTANCE PROCEDURE

Table of Contents

1. General
  - 1.1 Scope
  - 1.2 Equipment
  - 1.3 Documentation
  - 1.4 Flow Diagram
- 2.0 Installation
  - 2.1 Address
  - 2.2 Location
  - 2.3 Test Module
  - 2.4 Power Up
  - 2.5 Diagnostics
- 3.0 Acceptance With Test Module
  - 3.1 General Information
  - 3.2 Logic Test
  - 3.3 Output Test
  - 3.4 Ramp Test
  - 3.5 Calibration Test
  - 3.6 Dynamic Test
- 4.0 Acceptance Without Test Module

TITLE MNCAA INSTALLATION/ACCEPTANCE PROCEDURE

1.0 GENERAL

1.1 Scope

This document describes the procedures for the installation and field acceptance of the MNCAA (4 Channel D/A Converter) option for the MINC-11 System. This procedure will be used for in-house FAST, field add-on and new system installation, and periodic verification testing.

1.2 Equipment

MINC-11	System
MNCAA-TA	Test Module (optional)
7014153-3-0	I/O Connector
Reference	Precision Digital Voltage Meter

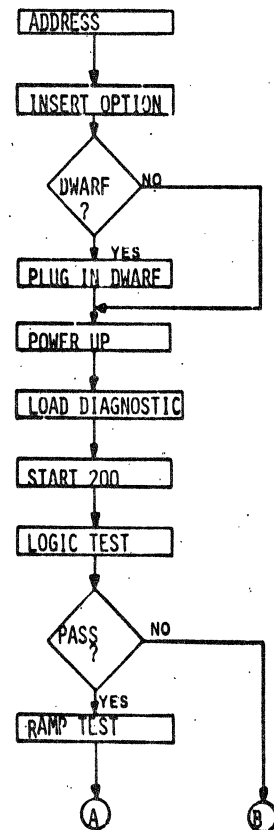
1.3 Documentation

MAIN DEC-11-DVMD-A	Diagnostic Program
MP00590	Print Set
AA-D572A-7C	Working with MINC Devices

SIZE	A	CODE	BP	NUMBER	MNCAA-0-4	REV	
------	---	------	----	--------	-----------	-----	--

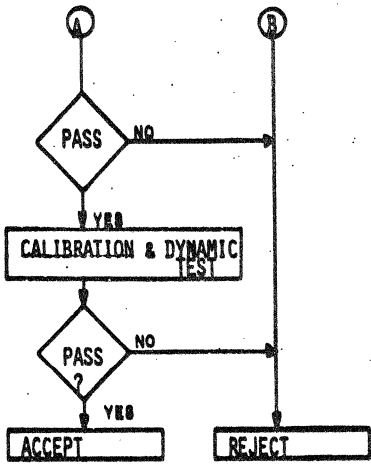
TITLE MNCAA INSTALLATION/ACCEPTANCE PROCEDURE

1.4 Flow Diagram



SIZE	A	CODE	BP	NUMBER	MNCAA-0-4	REV	
------	---	------	----	--------	-----------	-----	--

TITLE MNCAA INSTALLATION/ACCEPTANCE PROCEDURE



SIZE	CODE	NUMBER	REV
A	SP	MNCAA-0-4	

TITLE MNCAA INSTALLATION/ACCEPTANCE PROCEDURE

2.0 INSTALLATION

2.1 Address

The four DAC addresses are selected through the single switch pack mounted on the PC board and accessible through the component side cover.

The four addresses are consecutive and are set by selecting the front address on the 10 position switch pack. Each remaining address is always 2 octals higher than the previous address.

Base Address:

- DAC0 Octal Address 17WXY0
- DAC1 Octal Address 17WXY2
- DAC2 Octal Address 17WXY4
- DAC3 Octal Address 17WXY6

Select and set the Base Address, refer to decal on component side cover.

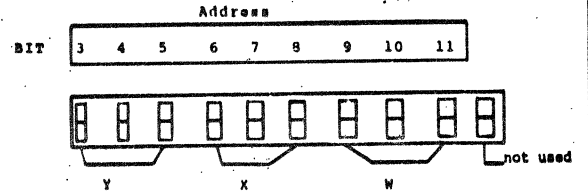


Figure 2.1 Address Switch Pack

SIZE	CODE	NUMBER	REV
A	SP	MNCAA-0-4	

TITLE MNCAA INSTALLATION/ACCEPTANCE PROCEDURE

2.2 Location

The MNCAA is considered a digital option and can be inserted into any of the 8 available MINC slots. Up to 8 MNCAA options can be plugged into the MINC-11 system. With power off insert the MNCAA option into the selected slot.

If any MNCAD option is in the MINC-11 system then the MNCAA option must be inserted to the right of the MNCAD option.

2.3 Test Module

If the MNCAA test module is available, it should be plugged into the I/O connector fingers on the top of the MNCAA, at this point before power to the MINC-11 is applied.

2.3.1 No Test module

If no test module is available, plug the standard I/O connector into the I/O fingers.

2.4 Power Up

All other options to be tested and any of their test modules should be mounted in the system, then power may be applied.

2.5 Diagnostics

The MNCAA Diagnostic (DVHND-A) should now be loaded into memory (refer MAINDEC11-DVHND-A). There are 2 starting locations. Starting location 300 is used for initial start up, and location 204 is used for restarting program after a halt.

SIZE	CODE	NUMBER	REV
A	SP	MNCAA-0-4	

TITLE MNCAA INSTALLATION/ACCEPTANCE PROCEDURE

3.0 ACCEPTANCE

3.1 General Information

Upon loading the diagnostic and starting at 200, the diagnostic will type out the old software switch register and what the new software switch register should be. Refer to DVHND-A for explanation of software switches. After inputting the desired switch settings and pressing a carriage return the program will then type the following menu:

- L = LOGIC TEST
- R = RAMP OUTPUT TEST
- S = STATIC CALIBRATION TEST
- D = DYNAMIC CALIBRATION TEST
- B = BASE ADDRESS CHANGE
- O = OUTPUT DWARD LED LOOP
- G = GET NEW SWITCH REGISTER VALUE
- H = HELP THE OPERATOR AND RETYPE THIS LIST

A CTRL C is used to abort the run of any of the above tests and get the user back to the statement "Type the Test Character" then depress "return key".

A CTRL Q is used at any time during the running of a test to change the software switch register.

3.2 Logic Test

Type "L" to start the Logic Test. The following message will be typed:

PROGRAM DETECTED "X" MNCAA(D/A)'s

At this point X will be a numeric value from 1 to 8 depending on how many MNCAAs are in the MNC-11 system. If no errors are detected then the following will be typed:

END PAGE 8 A; TOTAL ERROR CCUNT = Y

A = Pass Number

Y = Total Errors Detected

SIZE	CODE	NUMBER	REV
A	SP	MNCAA-C-4	

TITLE MNCAA INSTALLATION/ACCEPTANCE PROCEDURE

A minimum of 10 passes should be run to ensure that the Logic section of the MNCAA is working properly.

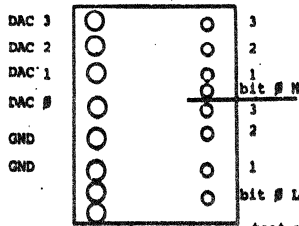
3.3 Output Test

Upon completion of Logic Test type a CNTRL C. The following message will then be typed out:

"TYPE THE "TEST CHARACTER" THEN DEPRESS "RETURN KEY"

3.3.1 Type "0" and carriage return. This will check out the 4 data bits of DAC3 that are brought out to the I/O converter.

There are 8 LED's mounted on top of the MNCAA module. See Figure 1 below.



3.3.2 The diagnostic will turn Bit # L off and Bit # H on. The program will then go to Bit 1 then 2 then 3 and then repeat itself. After running this test and insuring the 4 data bits High and Low are working properly, type CNTRL C.

3.4 Ramp Test

Type "R" and carriage return. The program is now ready to run the Ramp Output Loop.

3.4.1 Set all front panel switches, large knob to 5 and small knob to 1.

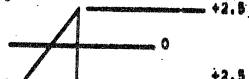
SIZE	CODE	NUMBER	REV
A	SP	MNCAA-0-4	

TITLE MNCAA INSTALLATION/ACCEPTANCE PROCEDURE

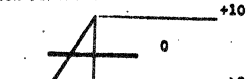
3.4.2 The program generates a  $\pm 5$  volt ramp on all four D/A's. To observe the ramp connect an oscilloscope to DAC# (yellow plug) and the end strap to gnd (black plug). The ramp should look as shown -



3.4.3 Set large knob to "2.5" small knob to "1" repeat 3.4.2. The ramp should look as shown.



3.4.4 Set large knob to "10" small knob to "1" repeat 3.4.2. The ramp should look as shown.



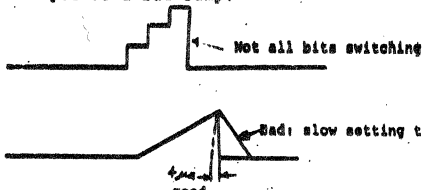
3.4.5 Set large knob to "0-5", set small knob to "+". Repeat 3.4.2. The ramp should look as shown.



3.4.6 Set large knob to "0-10". Set small knob to "+". Repeat 3.4.2. The ramp should look as shown.



3.4.7 Example of a bad ramp.



SIZE	CODE	NUMBER	REV
A	SP	MNCAA-0-4	

TITLE MNCAA INSTALLATION/ACCEPTANCE PROCEDURE

3.4.8 Set all front panel switches; large knob to "5"; small knob to "1".

3.5 Calibration Test

After completing the ramp test to insure that all channels are working properly, type a "CNTRL C". Type a "8" carriage return in response to the question type on the terminal.

This test loads the octal number generated in the software switch register, by use of CNTRL G, into the 4 D/A's. To monitor the D/A output range use a five digit DVM, (refer to Figure 1 for proper connection to DAC outputs), to measure the DAC output.

NOTE: All voltages monitored at test jack on test module (if test module is not available refer to Table 1 for pin assesment).

3.5.1 To adjust the D/A converter, type CNTRL G, then type the appropriate octal number as shown in Table 2 and adjust the proper potentiometer to the desired voltage as shown.

SIZE	CODE	NUMBER	REV
A	SP	MNCAA-0-4	

TITLE MNCAA INSTALLATION/ACCEPTANCE PROCEDURE

TABLE 1

Signal Name	I/O Connector
DAC #	1
Analog Gnd	2
DAC 1	3
Analog Gnd	4
DAC 2	5
Analog Gnd	6
DAC 3	7
Analog Gnd	8
Bit # H	9
Logic Gnd	10
Bit 1 H	11
Logic Gnd	12
Bit 2 H	13
Logic Gnd	14
Bit 3 H	15
Logic Gnd	16
Bit # L	17
Logic Gnd	18
Bit 1 L	19
Logic Gnd	20
Bit 2 L	21
Bit 3 L	22
-15V	23
+15V	24

SIZE	CODE	NUMBER	REV
A	SP	MNCAA-0-4	



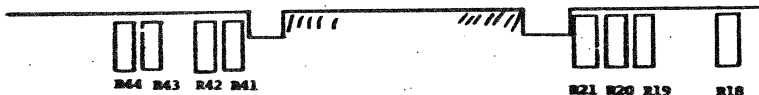
**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE **HECAA INSTALLATION/ACCEPTANCE PROCEDURE**

TABLE 2

IN	LOAD	DACS	DAC1	ADJUST	DAC2	DAC3	FOR.
Offset	Adj	0000	R19	R21	R42	R44	-5.1200
Gain	Adj	7777	R18	R20	R41	R43	+5.1175



The output should be adjusted to the desired voltage with a tolerance better than  $\pm 1mV$ .

**3.6 Dynamic Test**

After completing the Calibration Test type a "CTRL C". Type "D" carriage return in response to the question typed on the terminal.

3.6.1 This test checks for settling errors of the 4 D/A's.

3.6.2 Type "CTRL C" - type 7777 in response to question and then a carriage return.

3.6.3 Connect an oscilloscope to the output of the D/A's (refer to Figure 1).

3.6.4 The output signal should be switching from -5.12V to +5.12V.



SIZE	CODE	NUMBER	REV
A	SP	HECAA-0-4	

**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE **HECAA INSTALLATION/ACCEPTANCE PROCEDURE**

**4.0 ACCEPTANCE WITHOUT TEST MODULE**

If HECAA-TA Test Module is not available, use the I/O connector 7014153-3-0 supplied with option. Refer to Table 1 for correct pin locations. Repeat Section 3.0 using the I/O connector.

4.1 When implementing Section 3.3.1 use an oscilloscope to check that the data bits at switching.

SIZE	CODE	NUMBER	REV
A	SP	HECAA-0-4	

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LEGEND

NUMBER	DIM. 'X' VAR.	DIM. 'Y' VAR. PRECUT
7015575-00	1 FT. 1 IN. ±.5 IN.	1 FT. 2 IN. ±.5 IN.
7015575-01	1 FT. ±.5 IN.	1 FT. 1 IN. ±.5 IN.
7015575-02	11 INCH ±.5 IN.	1 FT. ±.5 IN.
7015575-03	10 INCH ±.5 IN.	11 IN ±.5 IN.

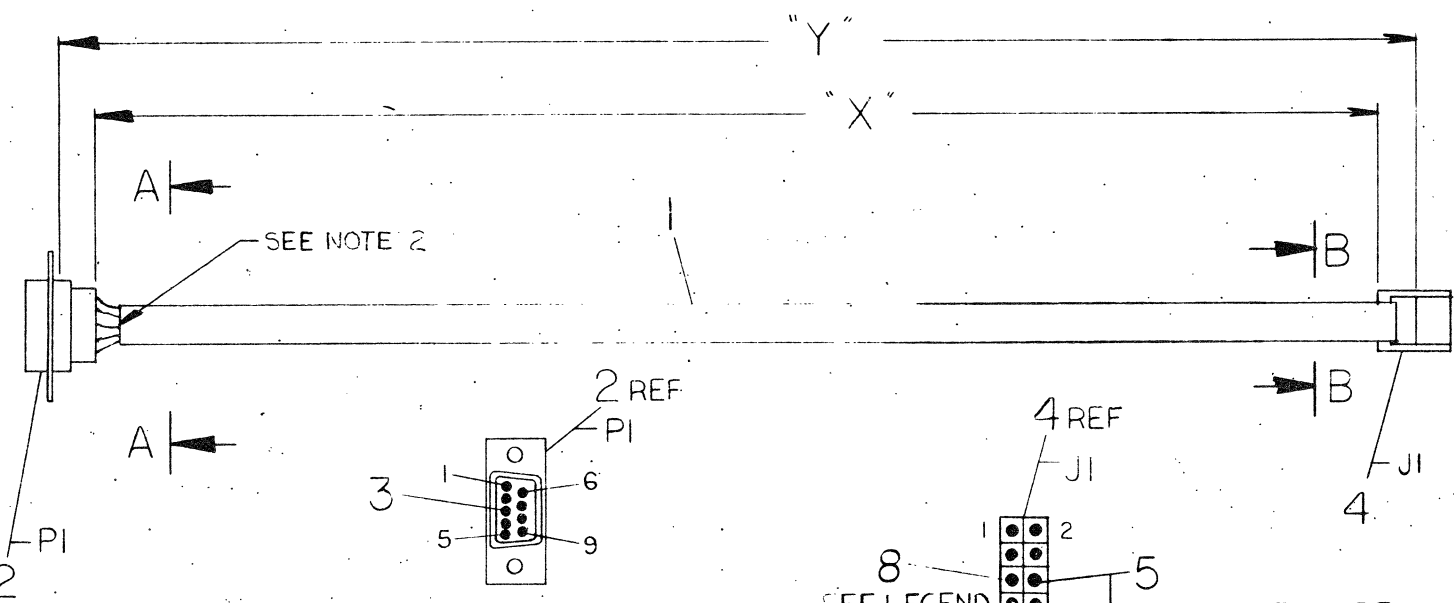
DECAL LEGEND

NUMBER	DECAL
7015575-00	J0
7015575-01	J1
7015575-02	J2
7015575-03	J3

WIRE TABLE

ITEM NO.	DESCRIPTION		FROM		TO		REMARKS
	AWG	COLOR	CONN	WITH	CONN	WITH	
1	28	BRN	PI-1	3	J1-1	---	
	↑	BLK	PI-2	↑	J1-10	---	
		RED	PI-3		J1-2	---	
		ORN	PI-4		J1-3	---	
		YEL	PI-5		J1-4	---	
		WHT	PI-6		J1-9	---	
		GRY	PI-7		J1-8	---	
	↓	VIO	PI-8	↓	J1-7	---	
	28	GRN	PI-9	3	J1-5	---	

NOTES:  
 1. USING ITEM #1 20 CONDUCTOR CABLE, PEEL INTO TWO, 10 WIRE STRIPS, PER VARIATION OF LENGTHS.  
 2. CUT BLU WIRE BACK 1.50 INCHES.



QTY	DESCRIPTION	DWG./PART NO.	ITEM NO.
1	DECAL, PWR CONNECTOR	7409873-1-0	8
2	CABLE TIE	9007031	7
1	CABLE, CABLE IDENT.	9009532	6
1	TERMINAL, DUMMY	1216967	5
1	CONN, HOUSING 10 PIN	1211206-02	4
9	CONTACT, PIN	9009763	3
1	CONN, RECEPTACLE 9 PIN	1212700-01	2
A/R	CABLE, RIBBON 20 COND.	1700052-02	1

QUANTITY & VARIATION	DESCRIPTION	DWG./PART NO.	ITEM NO.	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES							
				ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE INCHES					
7015575-03				SURFACE QUALITY IN MICROINCHES	MEDIUM <input type="checkbox"/>	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 80.0
7015575-02						±.004	±.008	±.012	±.016	±.024	±.04
7015575-01					PREFERRED <input checked="" type="checkbox"/>	±.012	±.016	±.025	±.04	±.063	±0.1

REVISIONS

REV.	CHANGE NO.	DESCRIPTION
A	7015575-ARC01	A.FILZ
B	7015575-MR002	M. 7015575-MR002 B M.C. 11/17/77 A.FILZ G.C.H. 2 Jul 78

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL: SEE PARTS LIST

FINISH: ---

DRN: M. Ankeas 1 FEB 78

CHK'D: J. Kalleby 13 FEB 78

ENG: J. Jodice 10 MAR 78

PROJ. ENG: A.C. 21 FEB 78

PROD: J.F. 21 FEB 78

FIRST USED ON: MNCII digital

TITLE: CABLE, SLU INTERFACE

SIZE: C

CODE: IA

NUMBER: 7015575-0-0

REV: B

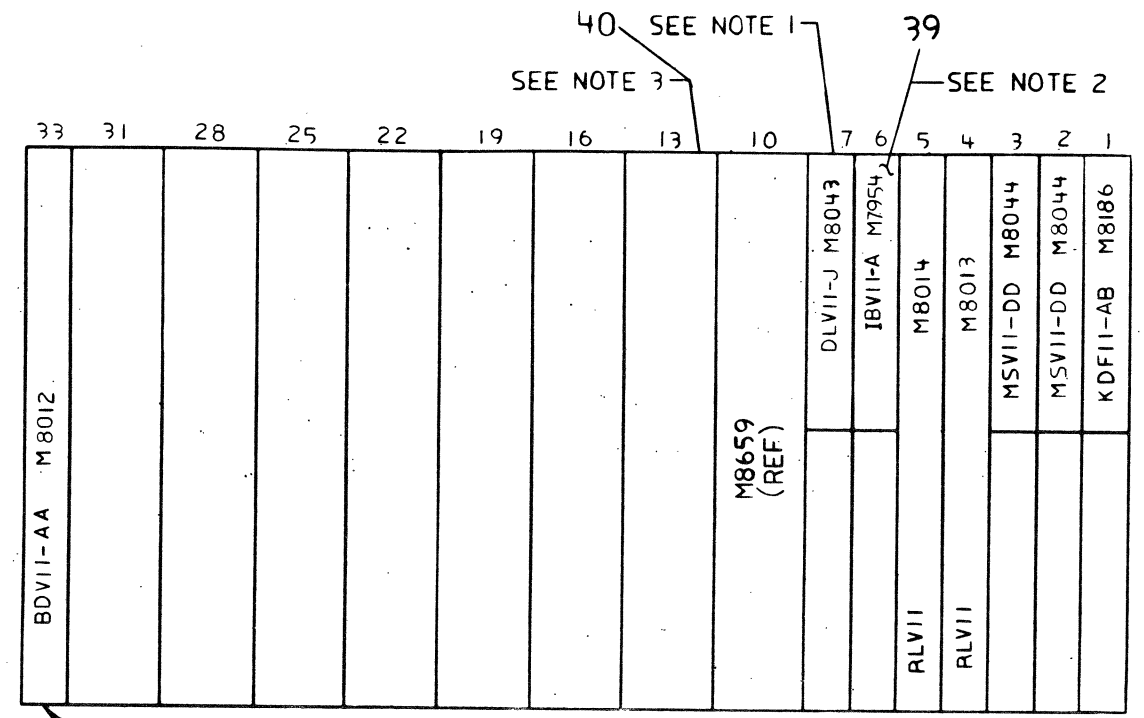
SHEET 1 OF 1

DIST.:

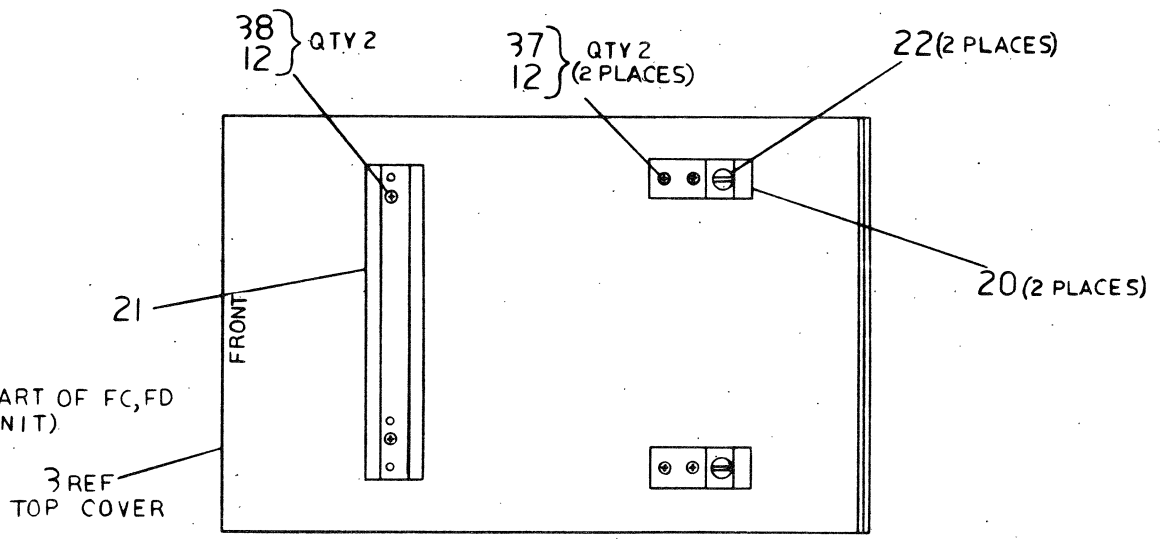
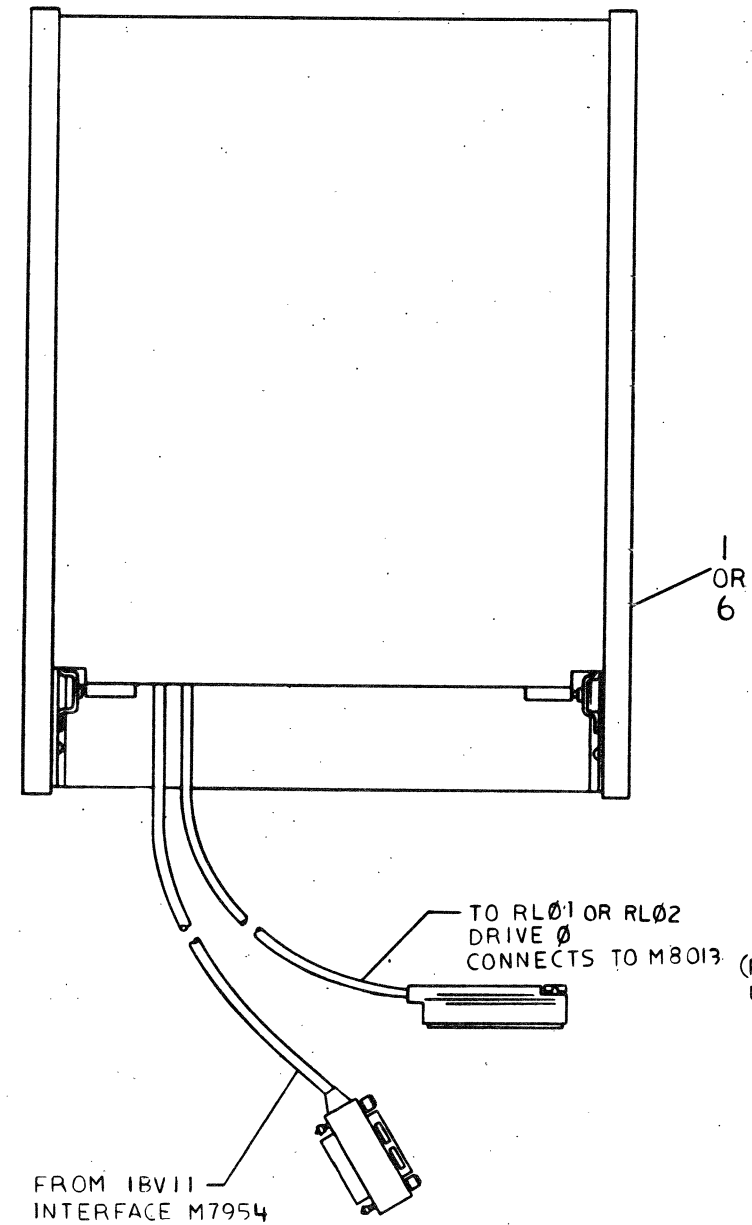
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**NOTE:**  
**TERMINAL SET-UP CONFIGURATION**

- FOR MDL23-AA, AB, BA, BB, CA, & CB  
 DLVII-J IS PREWIRE FOR 9600 BAUD.  
 FOR MDL23-AC, AD, BC, BD, CC & CD  
 CHANGE BAUD RATE JUMPER ON DLVII-J  
 CHANNEL 3 FROM N → 3 TO T → 3 (300 BAUD  
 FOR MDL23-AE, AF, BE, BF, CE, & CF  
 CHANGE BAUD RATE JUMPER FROM N → 3  
 TO W → 3 (1200 BAUD).
  - IBVII USED ONLY IN MDL23-A, B SYSTEMS  
 ADDRESS: 171420  
 VECTOR: 420  
 S2-1 ON                      SI-1,50N  
 S2-2,3 OFF                SI-2,3,4 OFF  
 S2-4,5 ON                SI-6,7,8 OFF  
 S2-6,7,8 OFF  
 S2-9 ON  
 S2-10 OFF
- C VARIATION CONTAINS M8659 GRANT CARD
- 3 FILL UP ALL UNUSED MINC SLOTS WITH  
 ITEM 40. TOTAL NUMBER OF MNCBL'S SHOULD  
 BE EQUAL TO 1 MORE THAN NUMBER REQUIRED  
 TO FILL UP UNUSED MINC SLOTS.



**MODULE UTILIZATION**  
 REFER TO D-UA-MNCII-0-0  
 FOR JUMPER CONFIGURATION



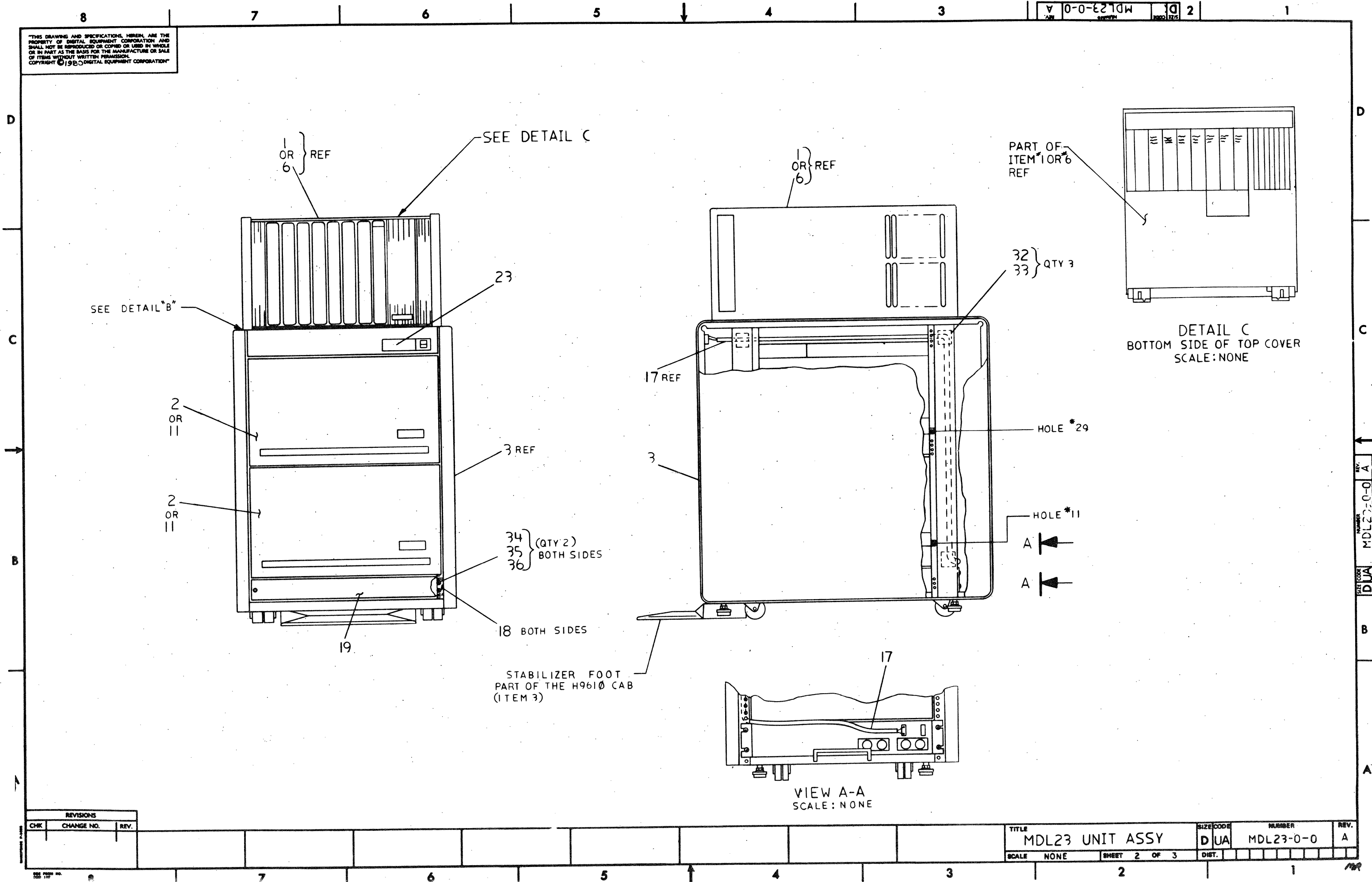
**DETAIL "B"**  
 THIS DETAIL SHOWS THE TOP OF THE  
 H9610 CAB (ITEM 3) WITH THE MOUNTING  
 HARDWARE FOR THE MINC (ITEM 1)

CAUTION: OFF SHEET PARTS LIST  
 EXISTS K-PL-MDL23-0-DBP

REV.	DATE	BY	CHK'D	DESCRIPTION
A		A. FILZ		MDL23-MR001 A
B				
C				

THIRD ANGLE PROJECTION		DESCRIPTION		DWG. PART NO.		ITEM NO.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES							
ANGLES 30° 30'		CLASS OF ACCURACY		NOMINAL DIMENSIONS RANGE INCHES			
SURFACE QUALITY IN		(CHECK ONE)		SPER	SPER	SPER	SPER
MICROMETERS		PREFERRED		0 TO 1.25	1.25 TO 3.0	3.0 TO 12.5	12.5 TO 48.0
DO NOT SCALE DWG		NEXT HIGHER ASSY.		2.004	2.008	2.012	2.016
MATERIAL SEE PARTS LIST		SCALE NONE		2.012	2.016	2.020	2.024
FINISH NONE		SHEET OF 3		2.012	2.016	2.020	2.024
REMOVE BURRS AND BREAK SHARP CORNERS		DO NOT SCALE DWG		2.012	2.016	2.020	2.024
DRN Jim Secord		CHK'D J. M. Husar		FIRST USED ON			
ENG. R. C. [Signature]		PROJ. ENG. [Signature]		TITLE			
PROD. J. [Signature]		NEXT HIGHER ASSY.		MDL23 UNIT ASSY			
MATERIAL SEE PARTS LIST		SCALE NONE		SIZE CODE		NUMBER	
FINISH NONE		SHEET OF 3		D UA		MDL23-0-0	

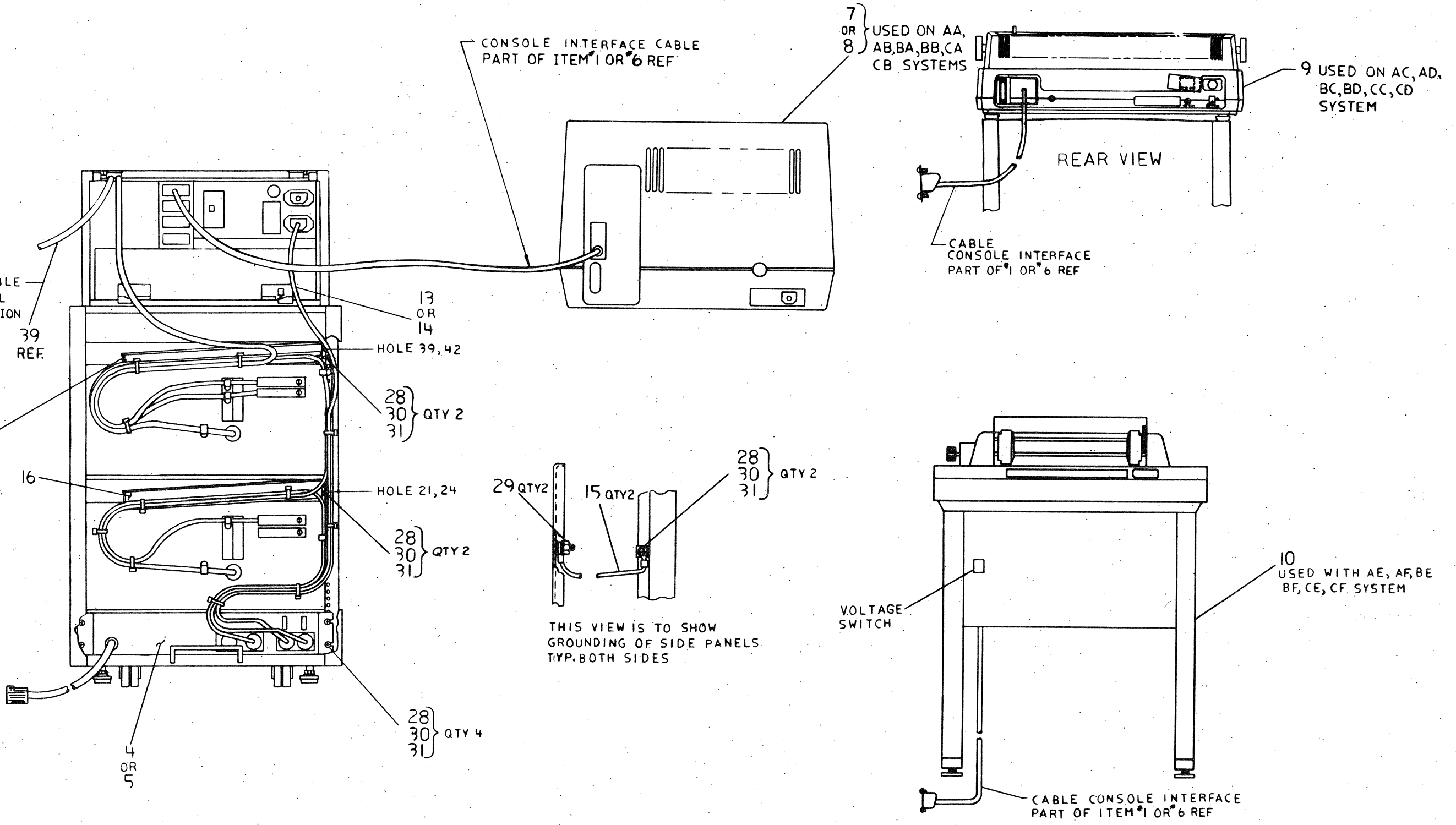
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REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	MDL23 UNIT ASSY	SIZE CODE	DUA	NUMBER	MDL23-0-0	REV.	A
SCALE	NONE	SHEET	2 OF 3	DIST.			

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REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	MDL23 UNIT ASSY	SIZE CODE	DJA	NUMBER	MDL23-0-0	REV.	A
SCALE	NONE	SHEET	3 OF 3	DIST.			

LINE ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANTITY PER VARIATION													
				AA	AB	AC	AD	AE	AF	BA	BB	BC	BD	BE	BF		
1	D-UA-MNC11-0-0	MNC11-FC	MNC11-FA EXCEPT 2 MSV11-D, RLV11,	1		1		1		1		1		1		1	
2	E-UA-RL01-0-0	ORL01-AK	RL01-A + RL01K-DC, 115/230V	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	E-UA-H9610-0-0	H9610-BC	CABINET	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	E-UA-871-0-0	00871-B	240V 8A POWER CONTROL, UNFILTERED		1		1		1		1		1		1		1
5	E-UA-871-0-0	00871-C	120V 16A POWER CONTROL, UNFILTERED	1		1		1		1		1		1		1	
6	D-UA-MNC11-0-0	MNC11-FD	MNC11-FA EXCEPT 2 MSV11-D, RLV11,		1		1		1		1		1		1		1
7	E-UA-VT105-0-0	VT105-MA	VT100-AA, VT1XX-AB, WAVEFORM GRAPH	1							1						
8	E-UA-VT105-0-0	VT105-MB	VT100-AB, VT1XX-AB, WAVEFORM GRAPH		1							1					
9	B-PL-LA38-HA-0	OLA38-HA	LA38-GA WITH LAX34-SL STAND			1	1						1	1			
10	E-UA-LA120-0-0	LA120-DA	LA120-BA W H7150 UNIVERSAL POWER					1	1							1	1
11	E-UA-RL02-AK-0	ORL02-AK	RL02-A + RL02K-DC, 120V/240V								2	2	2	2	2	2	2
12		9006563-00	NUT, KEP, 8-32 X11/32AF	6	6	6	6	6	6	6	6	6	6	6	6	6	6
13		1700083-02	PWR CORD, TERM, 75IN, 14-3, 125V 15	1		1		1		1		1		1		1	
14		1700083-01	PWR CORD, TERM, 75IN, 14-3, 250V 6		1		1		1		1		1		1		1
15	C-IA-7013059-0-0	7013059-05	GROUND STRAP	2	2	2	2	2	2	2	2	2	2	2	2	2	2
16	A-PS-1213958-0-0	1213958-01	CABLE RETRACTOR	2	2	2	2	2	2	2	2	2	2	2	2	2	2
17	D-IA-7016461-0-0	7016461-7B	SWITCH ASSY	1	1	1	1	1	1	1	1	1	1	1	1	1	1
18	B-AD-7011231-0-0	7011231-00	BRACKET BEZEL RETAINER ASSY	2	2	2	2	2	2	2	2	2	2	2	2	2	2
19	D-AD-7011616-0-0	7011616-01	BEZEL ASSY	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20	B-IA-7421315-0-0	7421315-00	ADAPTER, REAR	2	2	2	2	2	2	2	2	2	2	2	2	2	2
21	C-IA-7421314-0-0	7421314-00	ADAPTER, FRONT	1	1	1	1	1	1	1	1	1	1	1	1	1	1
22	C-MD-7414318-0-0	7414318-00	KEY BUTTON	2	2	2	2	2	2	2	2	2	2	2	2	2	2
23	A-PS-3616154-0-0	3616154-01	LABEL, DIGITAL LOGO, SHORT	1	1	1	1	1	1	1	1	1	1	1	1	1	1
24	A-SP-3700359-0-0	3700359-00	INSTR PKG MNC11-A	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF
25	A-SP-3700358-0-0	3700358-00	INSTR PKG MODULE MNCAD	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF
26	A-SP-3700324-0-0	3700324-00	INSTR PKG DISPLAY VT100 CHASSIS	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF
27	A-SP-3700372-0-0	3700372-00	INSTR PKG CAB H9510/H9610 ASSEMB	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF
28		9006075-03	SCREW, TRUS, PHIL, 10-32X 3/4	10	10	10	10	10	10	10	10	10	10	10	10	10	10
29		9006565-00	NUT, KEP, 10-32X 3/8 AF	2	2	2	2	2	2	2	2	2	2	2	2	2	2
30		9006586-00	NUT, U-SHAPED, TINNEMAN, SPRING	10	10	10	10	10	10	10	10	10	10	10	10	10	10

REVISION HISTORY			BASIC PART NO: MDL23		DRN: JIM SICARD		DATE: 03-APR-80		DIGITAL	
ENG	ECO NUMBER	REV	SECTION A OF B	CHK'D	J. HUSON	DATE	30-MAY-80	TITLE		PARTS LIST
AF	MDL23-MR001	A	SECTION, VARIATION INDEX					MDL23 UNIT ASSY		
			(A) AA, AB, AC, AD, AE, AF, BA, BB, BC, BD, BE, BF	DES, ENG, J. A. C. FILZ		DATE	3-JUN-80	DOCUMENT NUMBER		
			(B) CA, CB, CC, CD, CE, CF	RESP, ENG, J. A. C. FILZ		DATE	3-JUN-80	SIZE	CODE	NUMBER
			(C)	MFG, ENG, J. G. CONTOS		DATE	11-JUN-80	K	PL	MDL23-0-DBP
			(D)	ASSEMBLY NUMBER:		TOP DOCUMENT NUMBER:		FILE NAME:		EDIT #
			(E)	D-UA-MDL23-0-0		B-DD-MDL23-00-0		21159A.PLS		21
			(F)							

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AUTOMATED BY PRTLST.3M(41)

PARTS LIST

SHEET A2 OF A2

LINE ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANTITY PER VARIATION						SHEET A2 OF A2				
				AA	AB	AC	AD	AE	AF	BA	BB	BC	BD	BE
31	31	9006635-00	WASHER, LOCK, INT, .3100D X .200ID	10	10	10	10	10	10	10	10	10	10	10
32	32	9007031-00	TIE, CABLE BUNDL, DIA 0= 3/4"=101	3	3	3	3	3	3	3	3	3	3	3
33	33	9008264-00	MOUNT, CABLE TIE, ADHESIVE BACKE	3	3	3	3	3	3	3	3	3	3	3
34	34	9006073-03	SCREW, TRUS, PHIL, 10-32X 1/2	4	4	4	4	4	4	4	4	4	4	4
35	35	9007906-00	WASHER, LOCK S.S. #10	4	4	4	4	4	4	4	4	4	4	4
36	36	9007786-00	RETAINER, U-NUT, 10-32	4	4	4	4	4	4	4	4	4	4	4
37	37	9006037-01	SCREW, PAN, PHIL, 8-32X 3/8 SS	4	4	4	4	4	4	4	4	4	4	4
38	38	9006039-02	SCREW, FLAT, PHIL, 8-32X 1/2	2	2	2	2	2	2	2	2	2	2	2
39	39	IBV11-A	IEC GEN PURPOSE INTERFACE (M7954	1	1	1	1	1	1	1	1	1	1	1
40	40	D-UA-MNCBL-0=0 MNCBL=00	BLANK CONT PANEL ASSY	5	5	5	5	5	5	5	5	5	5	5

D	I	G	I	T	A	L	TITLE	MDL23 UNIT ASSY	SECTION A OF B
---	---	---	---	---	---	---	-------	-----------------	----------------

SIZE	CODE	DOCUMENT NUMBER	REV
K	PL	MDL23-0-DBP	A



LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANTITY PER VARIATION					
					CA	CB	CC	CD	CE	CF
1	1	D-UA-MNC11-0-0	MNC11-FC	MNC11-FA EXCEPT 2 MSV11-D,RLV11,	1		1		1	
2	2	E-UA-RL01-0-0	ORL01-AK	*** THIS ITEM IS NOT USED ***						
3	3	E-UA-H9610-0-0	H9610-BC	CABINET	1	1	1	1	1	1
4	4	E-UA-871-0-0	00871-B	240V 8A POWER CONTROL,UNFILTERED		1		1		1
5	5	E-UA-871-0-0	00871-C	120V 16A POWER CONTROL,UNFILTERED	1		1		1	
6	6	D-UA-MNC11-0-0	MNC11-FD	MNC11-FA EXCEPT 2 MSV11-D,RLV11,		1		1		1
7	7	E-UA-VT105-0-0	VT105-MA	VT100-AA,VT1XX-AB,WAVEFORM GRAPH	1					
8	8	E-UA-VT105-0-0	VT105-MB	VT100-AB,VT1XX-AB,WAVEFORM GRAPH		1				
9	9	B-PL-LA38-HA=0	LA38-HA	LA38-GA WITH LAX34-SL STAND			1	1		
10	10	E-UA-LA120-0-0	LA120-DA	LA120-BA W H7150 UNIVERSAL POWER					1	1
11	11	E-UA-RL02-AK=0	ORL02-AK	RL02-A + RL02K-DC, 120V/240V	2	2	2	2	2	2
12	12		9006563-00	NUT,KEP, 8-32 X11/32AF	6	6	6	6	6	6
13	13		1700083-02	PWR CORD,TERM, 75IN,14-3,125V 15	1		1		1	
14	14		1700083-01	PWR CORD,TERM, 75IN,14-3,250V 6		1		1		1
15	15	C-IA-7013059-0-0	7013059-05	GROUND STRAP	2	2	2	2	2	2
16	16	A-PS-1213958-0-0	1213958-01	CABLE RETRACTOR	2	2	2	2	2	2
17	17	D-IA-7016461-0-0	7016461-7B	SWITCH ASSY.	1	1	1	1	1	1
18	18	B-AD-7011231-0-0	7011231-00	BRACKET BEZEL RETAINER ASSY	2	2	2	2	2	2
19	19	D-AD-7011616-0-0	7011616-01	BEZEL ASSY	1	1	1	1	1	1
20	20	B-IA-7421315-0-0	7421315-00	ADAPTER,REAR	2	2	2	2	2	2
21	21	C-IA-7421314-0-0	7421314-00	ADAPTER,FRONT	1	1	1	1	1	1
22	22	C-MD-7414318-0-0	7414318-00	KEY BUTTON	2	2	2	2	2	2
23	23	A-PS-3616154-0-0	3616154-01	LABEL,DIGITAL LOGO,SHORT	1	1	1	1	1	1
24	24	A-SP-3700359-0-0	3700359-00	INSTR PKG MNC11-A	REF	REF	REF	REF	REF	REF
25	25	A-SP-3700358-0-0	3700358-00	INSTR PKG MODULE MNCAD	REF	REF	REF	REF	REF	REF
26	26	A-SP-3700324-0-0	3700338-00	INSTR PKG DISPLAY VT100 CHASSIS	REF	REF	REF	REF	REF	REF
27	27	A-SP-3700372-0-0	3700372-00	INSTR PKG CAB H9510/H9610 ASSEMB	REF	REF	REF	REF	REF	REF
28	28		9006075-03	SCREW,TRUS,PHIL, 10-32X 3/4	10	10	10	10	10	10
29	29		9006565-00	NUT,KEP, 10-32X 3/8 AF	2	2	2	2	2	2
30	30		9006586-00	NUT, U-SHAPED, TINNERMAN, SPRING	10	10	10	10	10	10

REVISION HISTORY			BASIC PART NO: MDL23	DRN: JIM SICARD	DATE: 03-APR-80	DIGITAL			
ENG:	ECO NUMBER	REV	SECTION B OF B	CHK'D: J. HUBSON	DATE: 30-MAY-80	PARTS LIST			
AF	MDL23-MR001	A	SECTION, VARIATION INDEX (A) AA,AB,AC,AD,AE,AF, BA,BB,BC,BD,BE,BF (B) CA,CB,CC,CD,CE,CF (C) (D) (E) (F)	DES.ENG.: A,C,FILZ	DATE: 3-JUN-80	DOCUMENT NUMBER			
				RESP.ENG.: A,C,FILZ	DATE: 3-JUN-80	SIZE:	CODE:	NUMBER:	REV:
				MFG.ENG.: G,CONTOS	DATE: 11-JUN-80	K:	PL:	MDL23-0-DBP	A.
				ASSEMBLY NUMBER: D-UA-MDL23-0-0	TOP DOCUMENT NUMBER: B-DD-MDL23-00-0	FILE NAME:		EDIT #:	
						Z1159A.PLS		21	

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LINE ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANTITY PER VARIATION					
				CA	CB	CC	CD	CE	CF
31	31	9006635-00	WASHER, LOCK, INT, .3100D X .200ID	10	10	10	10	10	10
32	32	9007031-00	TIE, CABLE BUNDL, DIA 0- 3/4"=101	3	3	3	3	3	3
33	33	9008264-00	MOUNT, CABLE TIE, ADHESIVE BACKE	3	3	3	3	3	3
34	34	9006073-03	SCREW, TRUS, PHIL, 10-32X 1/2	4	4	4	4	4	4
35	35	9007906-00	WASHER, LOCK S.S. #10	4	4	4	4	4	4
36	36	9007786-00	RETAINER, U=NUT, 10-32	4	4	4	4	4	4
37	37	9006037-01	SCREW, PAN, PHIL 8-32X 3/8 SS	4	4	4	4	4	4
38	38	9006039-02	SCREW, FLAT, PHIL, 8-32X 1/2	2	2	2	2	2	2
39	39	IBV11-A	*** THIS ITEM IS NOT USED ***	-	-	-	-	-	-
40	40	D-UA-MNCBL-0-0 MNCBL-00	BLANK CONT PANEL ASSY	5	5	5	5	5	5

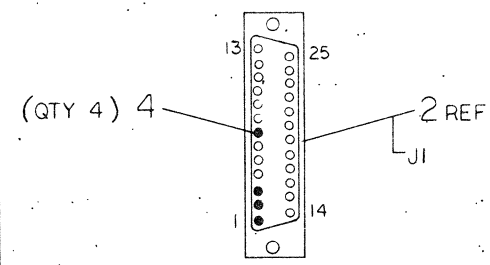
D	I	G	I	T	A	L	TITLE	MDL23 UNIT ASSY	SECTION B OF B	SIZE	CODE	DOCUMENT NUMBER	REV
										K	PL	MDL23-0-DBP	A

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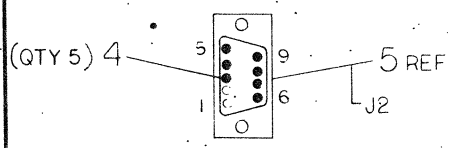
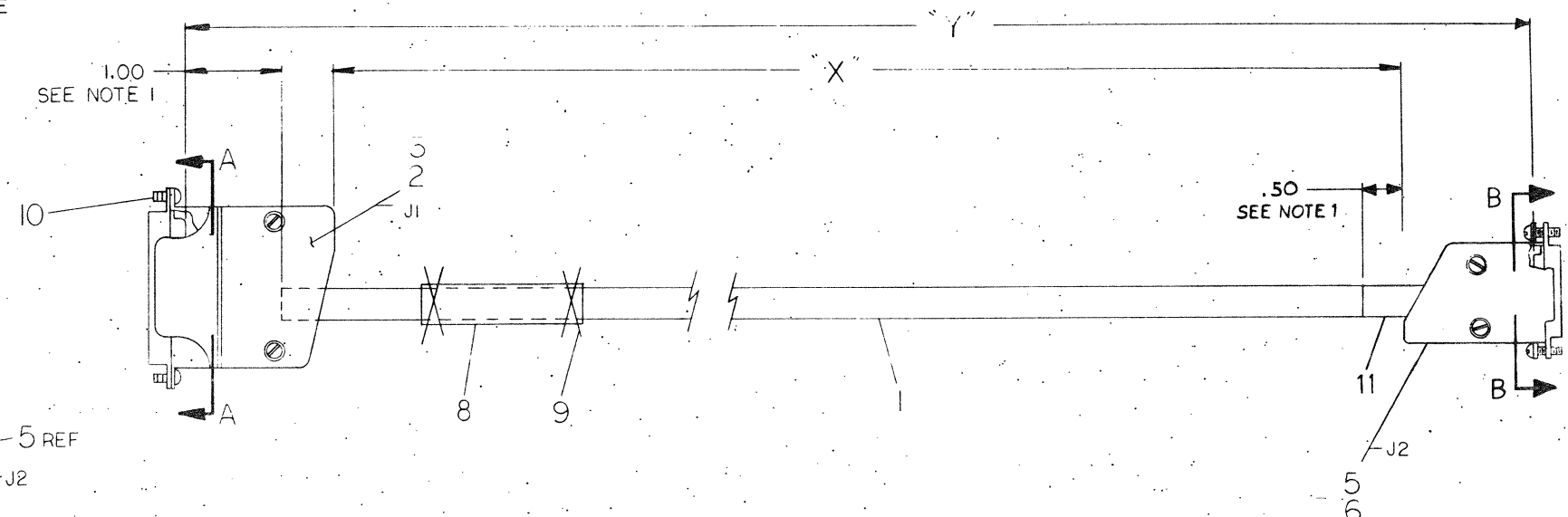
WIRE TABLE							
ITEM NO	DESCRIPTION	FROM	TO	REMARKS	NUMBER	DIM "X" VAR.	DIM "Y" PRECUT VAR.
1	22	BLK	J1-7	ITEM #4	J2-6	ITEM #4	SIGNAL GND
		WHT	J1-2	ITEM #4	J2-7	ITEM #4	XMITT
		SHIELD	J1-1	ITEM #4			A GND
		RED	J1-3	ITEM #4	J2-4	ITEM #4	RECT DATA
		BLK			J2-9	ITEM #4	
	22	SHIELD			J2-3	ITEM #4	
12	22	BLK	J2-8	ITEM #4	J2-5	ITEM #4	3.0 LG ± 1/8

LEGEND		
NUMBER	DIM "X" VAR.	DIM "Y" PRECUT VAR.
7015790-0	9 FEET-9 IN ± .5 IN.	10 FEET ± .5 IN.

NOTES:  
 1. CUT BACK OUTER JACKET OF CABLE ITEM #1 TO DIMENSIONS INDICATED. ADD APPROX. 1/2-2 INCHES OF SHRINK TUBING ITEM #11 TO J2 ONLY.



SECTION A-A  
SKT INSERTION SIDE  
SCALE: NONE



SECTION B-B  
SKT INSERTION SIDE  
SCALE: NONE

QTY	DESCRIPTION	DWG. PART NO.	ITEM NO.
A/B	22 AWG (BLK) STRAND	9107350-00	12
A/R	TUBING, SHRINK	9107252	11
2	SCR, RETAINER MALE	1210493-51	10
1	CABLE TIE	9007031	9
1	LABEL, CABLE IDENT.	9009532	8
A/R	DECALS, PWR CONNECTOR	A-DC-7409873-2-0	7
1	HOOD, 9 POSITION	1215244-01	6
1	HOUSING, 9 SKT	1211244-01	5
11	CONTACT, SKT	9009762	4
1	HOOD, 25 POSITION	1210493-50	3
1	RECEPTACLE ASSY	1211354	2
A/R	CABLE, 6 CONDUCTOR	9107723	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
ANGLES 30°/30°	CLASS OF ACCURACY
SURFACE QUALITY IN	(CHECK ONE)
QUANTITY & VARIATION	MEDIUM <input type="checkbox"/> PREFERRED <input type="checkbox"/>
MICROINCHES	PREFERRED <input type="checkbox"/>

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL SEE PART LIST

FINISH NONE

DRN. *[Signature]*

CHK'D *[Signature]*

ENG. *[Signature]*

PROJ. ENG. *[Signature]*

PROD. *[Signature]*

FIRST USED ON MNC11

TITLE CABLE, CONSOLE INTERFACE

D-UA-MNC11-0-0

SCALE NONE

SHEET OF 1

SIZE CODE D IA

NUMBER 7015790-0-0

REV. C

REV.	CHANGE NO.	BY	DATE
A			
B			
C			

REVISIONS

CHG. 17015790-MR001 A

17015790-MR002 B

17015790-MR003 C

A. FILZ

ARTHUR FILZ

D.C.P. 11/18/80

# DIGITAL EQUIPMENT CORPORATION PARTS LIST

MADE BY <i>Jim Ricard</i>	CHECKED <i>J. Huson</i>	SECTION <i>1</i>
DATE <i>12-JUNE-80</i>	DATE <i>9 July 80</i>	
ENG <i>A.C. Rj</i>	PROD <i>GREG CONTOS</i>	ISSUED SECTION <i>2</i>
DATE <i>16 Jul 80</i>	DATE <i>29 Jul 80</i>	

## QUANTITY / VARIATION

NOTES:

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	MDL23-AA	MDL23-AB	MDL23-AC	MDL23-AD	MDL23-AE	MDL23-AF	MDL23-BA	MDL23-BB	MDL23-BC	MDL23-BD	MDL23-BE	MDL23-BF	REF DESIGNATION
1	D-UA-MDL23-Ø-Ø	MDL23-AA	MDL23 (12ØV) / RLØ1-AK / VT1Ø5-MA	1	-	-	-	-	-	-	-	-	-	-	-	<p><b>** LATEST REV LEVEL ( )</b>                      NOTE: * FILL UP ALL UNUSED MINCSLOTS WITH ITEM #21. TOTAL NUMBER OF MNCBL'S SHOULD BE EQUAL TO 1 MORE THAN NUMBER REQUIRED TO FILL UP UNUSED MINC SLOTS.</p>
2	D-UA-MDL23-Ø-Ø	MDL23-AB	MDL23 (24ØV) / RLØ1-AK / VT1Ø5-MB	-	1	-	-	-	-	-	-	-	-	-	-	
3	D-UA-MDL23-Ø-Ø	MDL23-AC	MDL23 (12ØV) / RLØ1-AK / LA38-HA	-	-	1	-	-	-	-	-	-	-	-	-	
4	D-UA-MDL23-Ø-Ø	MDL23-AD	MDL23 (24ØV) / RLØ1-AK / LA38-HA	-	-	-	1	-	-	-	-	-	-	-	-	
5	D-UA-MDL23-Ø-Ø	MDL23-AE	MDL23 (12ØV) / RLØ1-AK / LA12Ø-DA	-	-	-	-	1	-	-	-	-	-	-	-	
6	D-UA-MDL23-Ø-Ø	MDL23-AF	MDL23 (24ØV) / RLØ1-AK / LA12Ø-DA	-	-	-	-	-	1	-	-	-	-	-	-	
7	D-UA-MDL23-Ø-Ø	MDL23-BA	MDL23 (12ØV) / RLØ2-AK / VT1Ø5-MA	-	-	-	-	-	-	1	-	-	-	-	-	
8	D-UA-MDL23-Ø-Ø	MDL23-BB	MDL23 (24ØV) / RLØ2-AK / VT1Ø5-MA	-	-	-	-	-	-	-	1	-	-	-	-	
9	D-UA-MDL23-Ø-Ø	MDL23-BC	MDL23 (12ØV) / RLØ2-AK / LA38-HA	-	-	-	-	-	-	-	-	1	-	-	-	
10	D-UA-MDL23-Ø-Ø	MDL23-BD	MDL23 (24ØV) / RLØ2-AK / LA38-HA	-	-	-	-	-	-	-	-	-	1	-	-	
11	D-UA-MDL23-Ø-Ø	MDL23-BE	MDL23 (12ØV) / RLØ2-AK / LA12Ø-DA	-	-	-	-	-	-	-	-	-	-	1	-	
12	D-UA-MDL23-Ø-Ø	MDL23-BF	MDL23 (24ØV) / RLØ2-AK / LA12Ø-DA	-	-	-	-	-	-	-	-	-	-	-	1	
13	D-UA-MDL23-Ø-Ø	MDL23-CA	MDL23 (12ØV) / RLØ2-AK / VT1Ø5-MA	-	-	-	-	-	-	-	-	-	-	-	-	
14	D-UA-MDL23-Ø-Ø	MDL23-CB	MDL23 (24ØV) / RLØ2-AK / VT1Ø5-MB	-	-	-	-	-	-	-	-	-	-	-	-	
15	D-UA-MDL23-Ø-Ø	MDL23-CC	MDL23 (12ØV) / RLØ2-AK / LA38-HA	-	-	-	-	-	-	-	-	-	-	-	-	
16	D-UA-MDL23-Ø-Ø	MDL23-CD	MDL23 (24ØV) / RLØ2-AK / LA38-HA	-	-	-	-	-	-	-	-	-	-	-	-	
17	D-UA-MDL23-Ø-Ø	MDL23-CE	MDL23 (12ØV) / RLØ2-AK / LA12Ø-DA	-	-	-	-	-	-	-	-	-	-	-	-	
18	D-UA-MDL23-Ø-Ø	MDL23-CF	MDL23 (24ØV) / RLØ2-AK / LA12Ø-DA	-	-	-	-	-	-	-	-	-	-	-	-	
19		MPØ1Ø74	MDL23 FIELD MAINT. PRINT SET	1	1	1	1	1	1	1	1	1	1	1	1	
20	**	AX-E38Ø ( ) MC	DIAGNOSTIC PACK RLØ1	1	1	1	1	1	1	-	-	-	-	-	-	
21	D-UA-MNCBL-Ø-Ø*	MNCBL-ØØ	BLANK MODULES	-	-	-	-	-	-	-	-	-	-	-	-	

E.C.O. NO. MDL23 MRO01

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---	---	--------------------------	---	--	--

MR



# DIGITAL EQUIPMENT CORPORATION PARTS LIST

MADE BY <u>JIM SICARD</u>	CHECKED DATE <u>J. HUSON</u>	SECTION <u>1</u>
DATE <u>12-JUN-80</u>	DATE <u>29 JUL 80</u>	ISSUED SECTION <u>2</u>
ENG <u>Co</u>	PROD <u>GREG CONTOS</u>	
DATE <u>16-JUL-80</u>	DATE <u>29 JUL 80</u>	

## QUANTITY / VARIATION

NOTES:

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	MDL23-AA	MDL23-AB	MDL23-AC	MDL23-AD	MDL23-AE	MDL23-AF	MDL23-BA	MDL23-BB	MDL23-BC	MDL23-BD	MDL23-BE	MDL23-BF	REF DESIGNATION
22	**	BC-F916( )-MC	DIAGNOSTIC PACK RL02	-	-	-	-	-	-	1	1	1	1	1	1	
23		QJ738-AH	RSX11-M OPERATING SYS. V3.2	-	-	-	-	-	-	-	-	-	-	-	-	
24		QJV32-AH	RT/FEP FOR MINC V1.0 OR GREATER	-	-	-	-	-	-	-	-	-	-	-	-	
25		QJV32-AQ	RT/FEP FOR MINC V1.1 OR GREATER	1	1	1	1	1	1	-	-	-	-	-	-	
26		EB-15836-18	MICROCOMPUTER PROCESSOR HANDBOOK	1	1	1	1	1	1	1	1	1	1	1	1	
27		EB-17723-20	MICROCOMPUTER INTERFACE HANDBOOK	1	1	1	1	1	1	1	1	1	1	1	1	
28	**	EK-VT105-UG	VT105 USER GUIDE	1	1	-	-	-	-	1	1	-	-	-	-	
29	**	EK-MNC11-UG	DEC LAB/11 MNC USER GUIDE	1	1	1	1	1	1	1	1	1	1	1	1	

E.C.O. NO. \_\_\_\_\_

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INSERTION PARTS LIST DATA BASE REV					

MR

