

FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

**UNIT VARIATIONS
COVERED BY THIS
PRINT SET**

PRINT SET ORDER NO
MP00490

DRAWING DIRECTORY

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UNIT VARIATIONS

[illegible]

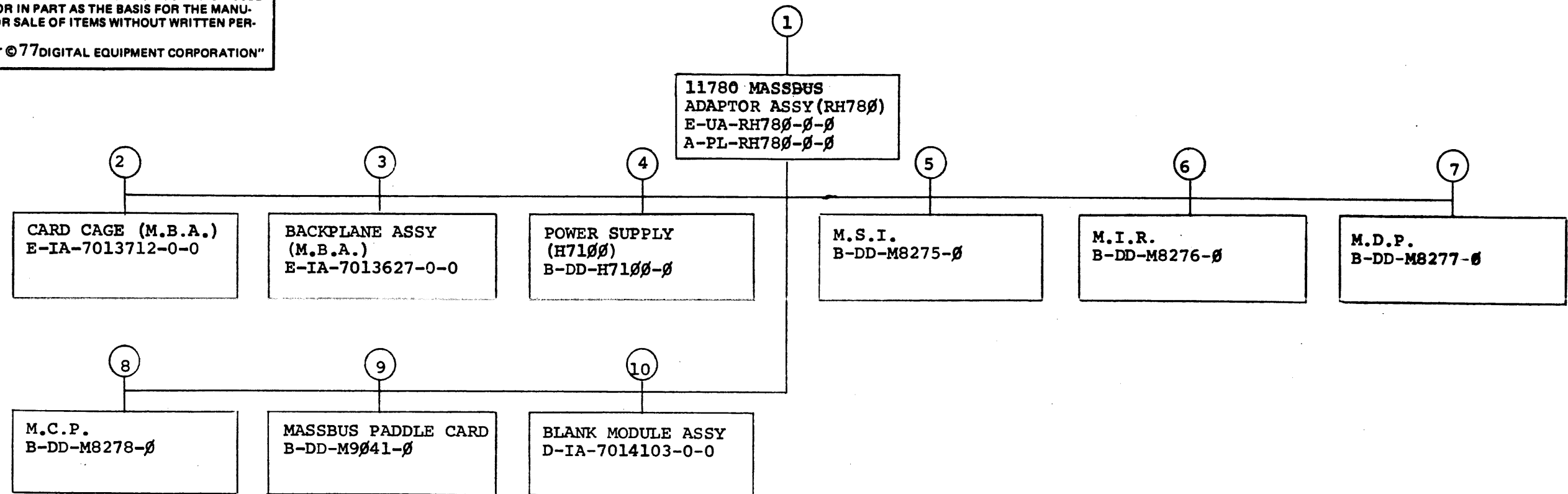
REVISIONS		CHANGE NO.	REV.
CHK	RH780-0000B	A	
<i>11/17/77</i> <i>K. OKIN</i> <i>PG</i>			
PG	RH780-00002	B	
	RH780-3	C	

USED ON OPTION/MODEL		DRN.	DATE	<div style="border: 1px solid black; padding: 2px; display: inline-block;">digital</div>									
11780		P. BOUDREAU	SEP 77										
		CHK'D.	DATE	11780 MASSBUS ADAPTOR ASSY (RH780)									
		D. HEALY	NOV 77										
		PROJ. ENG.	DATE	SIZE CODE NUMBER REV B DD RH780-0 C									
		<i>K. OKIN 9725</i>	15 NOV 77										
		PROD.	DATE	DIST.									
SHEET 1 OF 3		<i>Grant Lee</i>	11/17/77										

Tw

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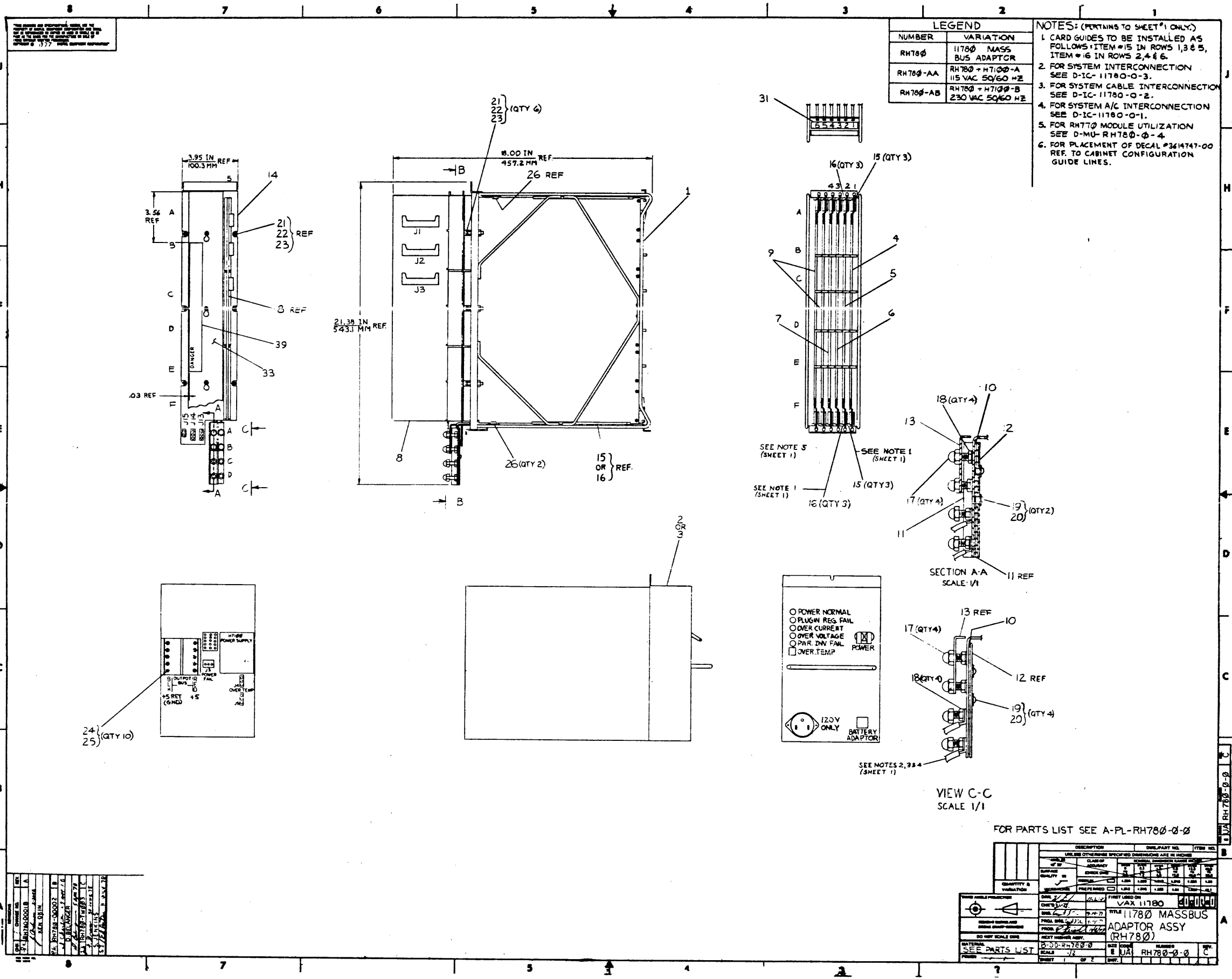
REV. C
NUMBER 11780-0
SIZE B
CODE DD



TITLE	SIZE	CODE	NUMBER	REV
11780 MASSBUS ADAPTOR ASSY (RH780)	B	DD	RH780-0	C
SHEET 2 OF 3				

FIND NO.	DRAWING NO.	DESCRIPTION	TYPE	FIND NO.	DRAWING NO.	DESCRIPTION	TYPE
1	MP00497	11780 MASSBUS ADAPTOR ASSY (RH780) (MP)	-		C-MD-7411399-0-0	STRIP, FIBERGLASS	M
	B-TC-RH780-0-1	11780 MASSBUS ADAPTOR ASSY (RH780) (TC)	-		A-DC-7411881-0-0	DECAL AWT REV. STATUS	M
	E-UA-RH780-0-0	11780 MASSBUS ADAPTOR ASSY (RH780)	E/M				
	A-PL-RH780-0-0	11780 MASSBUS ADAPTOR ASSY (RH780) (PL)	E/M				
	B-IA-7418902-0-0	PLATE, STUD	M				
	B-MD-7418903-0-0	"U" BAR	M		K-WL-7013627-0-1	WIRE LIST M.B.A.	E
	B-MD-7419084-0-0	PLATE, HOLDING	M		A-WT-7013627-0	A.W.T. REV. STATUS	E
	B-MD-7419485-0-0	COVER, BUS BAR	M				
	D-IC-11780-0-1	11780 SYSTEM POWER DIAGRAM	E/M				
	D-IC-11780-0-2	11780 SYSTEM INTERCONNECT DIAGRAM	E/M				
	D-IC-11780-0-3	11780 SUB SYSTEM INTERCONNECT	E/M				
	D-MU-RH780-0-2	MODULE UTILIZATION MASSBUS ADAPTOR	E/M	4	B-DD-H7100-0	POWER SUPPLY (H7100)	E/M
	D-TD-RH780-0-4	M.B.A. TIMING DIAGRAM	E				
	D-FD-RH780-0-5	M.B.A. FLOW DIAGRAM	E				
	D-IA-7014212-0-0	CABLE, AC, DC LO	E/M				
	D-IA-7014530-0-0	CABLE, POWER (RED)	E/M	5	B-DD-M8275-0	M.S.I.	E/M
	D-IA-7014249-0-0	CABLE, POWER (BLACK)	E/M				
	C-MD-7419450-0-0	COVER, M.B.A. BACKPLANE	M				
	D-IA-1700087-00	CABLE, COAX RIBBON	F/M				
	D-IA-BC06R-10	BC06R I/O CABLE (10 ft)	E/M				
	D-IA-7014213-0K	CABLE, OVER TEMP.	E/M	6	B-DD-M8276-0	M.I.R.	E/M
				7	B-DD-M8277-0	M.D.P.	E/M
2	E-IA-7013712-0-0	CARD CAGE (M.B.A.)	M				
	C-MD-7417930-0-0	MTG. BAR VERTICAL	M				
	C-MD-7417966-0-0	BRACKET BOTTOM REAR	M				
	B-MD-7417963-0-0	BRACKET CARD GUIDE	M				
	C-MD-7417967-0-0	BRACKET BOTTOM CARD GUIDE	M	8	B-DD-M8278-0	M.C.P.	E/M
	C-MD-7417964-0-0	BRACKET TOP CARD GUIDE	M				
	C-MD-7417942-0-0	HANDLE, CARD CAGE	M				
	C-MD-7417965-0-0	BRACKET TOP REAR	M				
	C-MD-7418194-0-0	STIFFENER, CARD CAGE	M				
	C-MD-7418181-0-0	STIFFENER, CORNER	M	9	B-DD-M9041-0	MASSBUS PADDLE CARD	E/M
3	E-IA-7013627-0-0	BACKPLANE ASSY (M.B.A.)	M	10	D-IA-7014103-0-0	BLANK MODULE ASSY	M
	E-MD-5012867-0-0	BOARD DRILL AND ETCH. M.B.A.	M		E-MD-7418172-0-0	BLANK MODULE	M
	B-MD-7417973-0-0	BLOCK SPACER	M				
	C-MD-7417866-0-0	BAR MOUNTING	M				
	B-MD-7419254-0-0	REWORK, CONN. BLOCK	M				
	D-PS-1214348-0-0	BUS BAR	M				
TYPE: E ELECTRICAL M MECHANICAL E/M ELECTRO/MECHANICAL				TITLE 11780 MASSBUS ADAPTOR ASSY (RH780)		SHEET 3 OF 3 SIZE B DD	CODE DD NUMBER RH780-0 REV C

TW

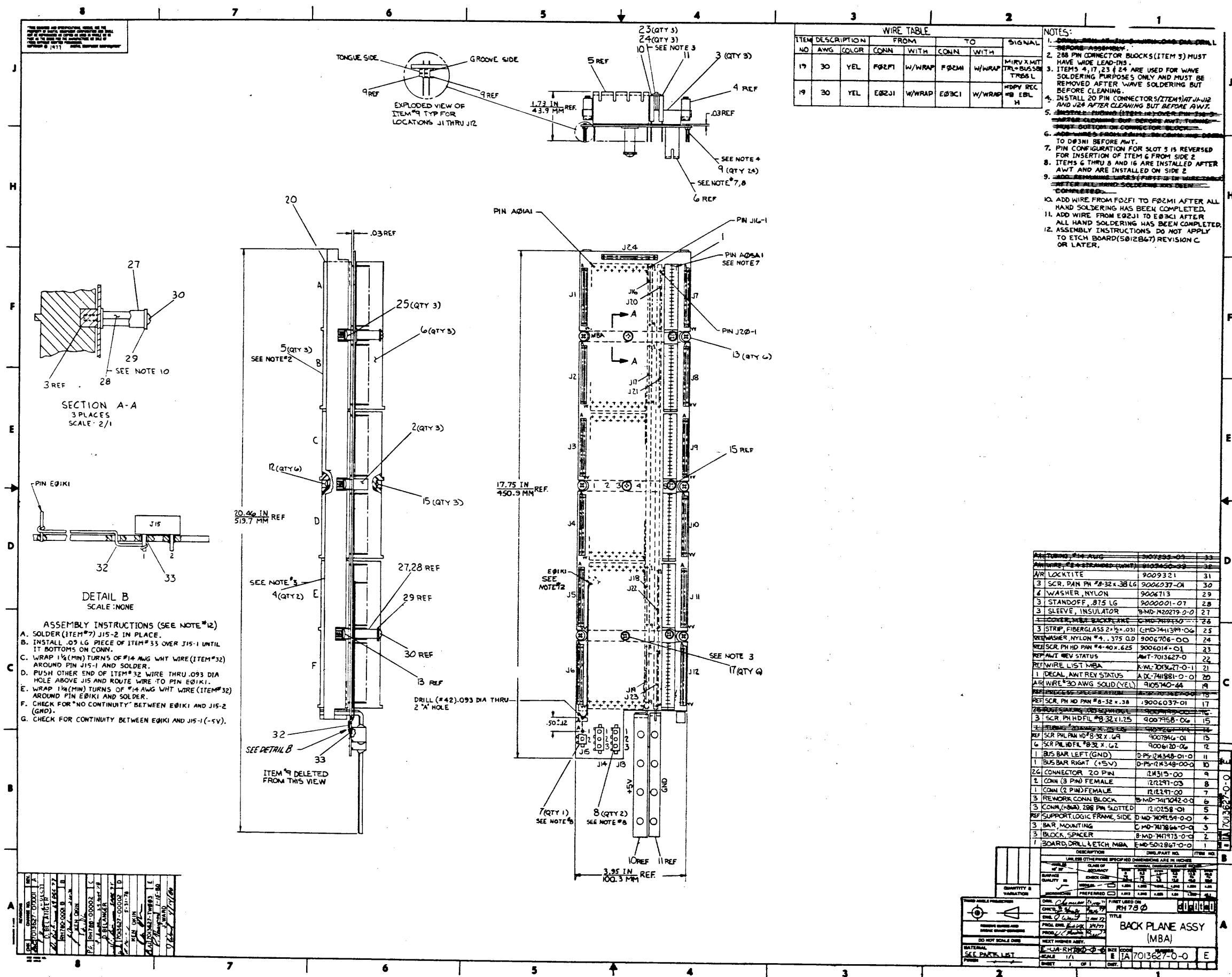


DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS									
PARTS LIST									
MADEBY W. FISHER		CHECKED D. HEALY		SECTION					
DATE 11 JUL 77		DATE 26 JUL 77		1					
ENG <i>James A Olin</i>		PROD <i>E. J. P. P.</i>		ISSUED SECT.					
DATE 9/14/77		DATE 11/9/77		1					
ITEM NO.	DWG NO./PART NO.	DESCRIPTION				QUANTITY VARIATION			
1	E-IA-7013712-0-0	CARD CAGE (MBA)				RH780-AA	RH780-AB		
2	E-UA-H7100-A-0	H7100-A POWER SUPPLY 115V AC				- 1	-		
3	E-UA-H7100-B-0	H7100-B POWER SUPPLY 230V AC				-	- 1		
4	E-UA-M8275-0-0	MSI				1 1 1	1		
5	E-UA-M8276-0-0	MIR				1 1 1	1		
6	D-UA-M8277-0-0	MCP				1 1 1	1		
7	E-UA-M8278-0-0	MCP				1 1 1	1		
8	D-UA-M9041-0-0	MASS BUS PADDLE CARD				1 1 1	1		
9	D-IA-7014103-0-0	BLANK MODULE ASSY				2 2 2	2		
10	B-IA-7418902-0-0	PLATE, STUD				2 2 2	2		
11	B-MD-7418903-0-0	"U" BAR				1 1 1	1		
12	B-MD-7419034-0-0	PLATE, HOLDING				1 1 1	1		
13	B-MD-7419485-0-0	COVER, BUS BAR				1 1 1	1		
14	E-IA-7013627-0-0	BACK PLANE ASSY (MBA)				1 1 1	1		
15	1212405-00	CARD GUIDE SINGLE (NATURAL)				6 6 6	6		
16	1212405-01	CARD GUIDE SINGLE (MAGENTA)				6 6 6	6		
17	9006610-00	NUT, CAP RELOCK #10-32				8 8 8	8		
18	9006565-00	NUT, KEP #10 - 32				8 8 8	8		
19	9008032-01	SCR PH HD PAN #4 - 40 x .19				4 4 4	4		
20	9006655-00	WASH, FLAT, .31 o.d. x .12 id. x .03				4 4 4	4		
21	9006043-01	SCR PH HD PAN 8 - 32 x 1.00				6 6 6	6		
22	9006660-00	WASH. FLAT, .038 o.d. x .19 id. x .06				6 6 6	6		
TITLE 11780 MASSBUS ADAPTOR ASSY (RH780)		ASSY NO. E-UA-RH780-0-0		SIZE A PL		CODE PL		NUMBER RH780-0-0	
		SHEET 1 OF 2		DIST		REV C		ECO NO. RH780-00003	

DEC FORM
DRA 110

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS									
PARTS LIST									
MADEBY W. FISHER		CHECKED D. HEALY		SECTION					
DATE 11 JUL 77		DATE 26 JUL 77		1					
ENG <i>James A Olin</i>		PROD <i>E. J. P. P.</i>		ISSUED SECT.					
DATE 9/14/77		DATE 11/9/77		1					
ITEM NO.	DWG NO./PART NO.	DESCRIPTION				QUANTITY VARIATION			
23	9006563-00	NUT, KEP #8 - 32				6 6 6	6		
24	9006073-01	SCR, PH HD PAN #10 - 32 x .50				10 10 10	10		
25	9007506-00	WASHER, LOCK SPLIT #10				10 10 10	10		
26	1211630-00	CARD GUIDE				2 2 2	2		
27	D-IC-11780-0-3	11780 SUB SYSTEM INTERCONNECT				REF REF REF	REF		
28	D-IC-11780-0-2	11780 SYSTEM INTERCONNECT DIAGRAM				REF REF REF	REF		
29	D-IC-11780-0-1	11780 SYSTEM POWER DIAGRAM				REF REF REF	REF		
30	D-MU-RH780-0-2	RH780 MODULE UTILIZATION				REF REF REF	REF		
31	3613281-03	LABEL, ADHESIVE BACKED PRINT (6 SLOT)				2 2 2	2		
32	7014212-0M	CABLE AC, DC IO				- 1 1	1		
33	C-MD-7419450-0-0	COVER, M.B.A. BACKPLANE				1 1 1	1		
34	7014530-0L	CABLE POWER (RED)				2 2 2	2		
35	7014249-0L	CABLE POWER (BLACK)				2 2 2	2		
36	1700087-0-0	COAX RIBBON CABLE (SBI) (4 in)				6 6 6	6		
37	7014212-0H	CABLE AC, DC IO				1 -	-		
38	1214314-00	PLUG, JUMPER				6 6 6	6		
39	3615087-02	LABEL, DANGER				1 1 1	1		
40	D-UA-BC06R-10-0	BC06R I/O CABLE (10 ft)				3 3 3	3		
41	7014213-0K	CABLE, OVER TEMP				- 1 1	1		
42	9009642-00	SCR SEMS PH HD PAN #832 x .25				4 5 5	5		
43	3614747-00	LABEL, MODULE UTILIZATION RH780				1 1 1	1		
TITLE 11780 MASSBUS ADAPTOR ASSY (RH780)		ASSY NO. E-UA-RH780-0-0		SIZE A PL		CODE PL		NUMBER RH780-0-0	
		SHEET 2 OF 2		DIST		REV C		ECO NO. RH780-00003	

DEC FORM
DRA 110



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SEE NOTE 1

SBI IN

SBI OUT

SBI IN

SBI OUT

SBI IN

SBI OUT

SBI IN

SBI OUT

SBI IN

SBI OUT

SFT
OR
PANEL

J1

J2

J3

J4

J5

J6

RH780
OPTIONAL
OR
PANEL

J1

J2

J3

J4

J5

J6

J7

J8

J9

J10

J11

J12

RH780-A
OPTIONAL
OR
PANEL

J1

J2

J3

J4

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MS780

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KA780-A

SEE NOTE 2

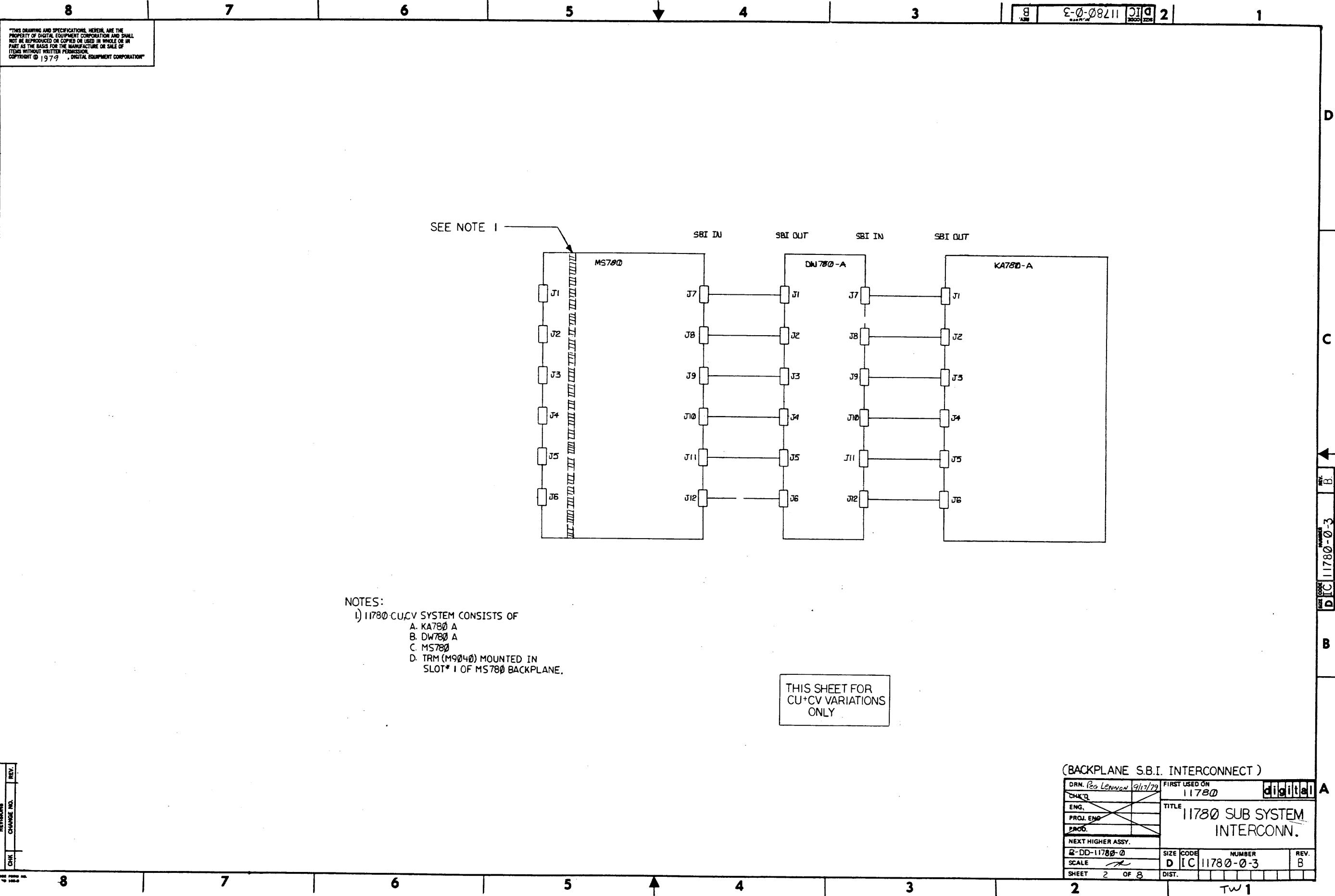
NOTES:

- 11780-C SYSTEM CONSISTS OF
 - KA780-A
 - DW780-A
 - MS780
 - SFT (# M9043)
 - 2 DUMMY PANELS (# 7418973)
- 11780-D SYSTEM CONSISTS OF
 - KA780-A
 - DW780-A
 - MS780
 - RH780-A
 - RH780
 - SFT
- SBI CABLE CONNECTIONS TO SFT FROM ADJACENT BACKPLANE ARE ALWAYS 1700087-1 (QUANTITY 6) OTHER SBI CABLES ARE 1700087-0

(BACKPLANE S.B.I. INTERCONNECT)

DRN. E. TAYLOR	24 JUL 77	FIRST USED ON	11780	Digital
CHK'D D. XEROX	1 AUG 77	TITLE	11780 SUB SYSTEM INTERCONN.	
ENG'D D. A. D.	30 JUL 77	PROJ. ENG. J. H. H.	11-8-77	
PROD. R. J. W.	11-8-77	NEXT HIGHER ASSY.		
B-DD-11780-0	SCALE	SIZE CODE	NUMBER	REV.
SHEET 1 OF 8	DIST.	D I C	11780-0-3	B

TW 1



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D

C

B

A

REVISIONS
CHK CHANGE NO. REV.

MANUFACTURE P-1001

BUS SBI B00 L
BUS SBI B01 L

BUS SBI B02 L

BUS SBI B03 L

BUS SBI B04 L

BUS SBI B07 L

BUS SBI B05 L

BUS SBI B06 L

BUS SBI B08 L

BUS SBI B09 L

BUS SBI B10 L

BUS SBI B11 L

BUS SBI B12 L

BUS SBI B14 L

BUS SBI B13 L

BUS SBI B15 L

BUS SBI B16 L

BUS SBI B17 L

BUS SBI B18 L

BUS SBI B19 L

BUS SBI B20 L

BUS SBI B23 L

BUS SBI B22 L

BUS SBI B24 L

BUS SBI B27 L

BUS SBI B25 L

BUS SBI B28 L

BUS SBI B26 L

BUS SBI B29 L

BUS SBI B30 L

BUS SBI FAIL L

BUS SBI B31 L

BUS SBI M0 L

BUS SBI DEAD L

BUS SBI M1 L

BUS SBI M3 L

BUS SBI M2 L

BUS SBI P0 L

BUS SBI SPARE 0

BUS SBI P1 L

BUS SBI SPARE 1

BUS SBI TAG0 L

BUS SBI ID0 L

BUS SBI TAG1 L

BUS SBI ID1 L

BUS SBI TAG2 L

BUS SBI ID2 L

BUS SBI ID3 L

BUS SBI ID4 L

BUS SBI REQ4 L

BUS SBI REQ7 L

BUS SBI REQ5 L

BUS SBI TP L

BUS SBI REQ6 L

BUS SBI PCLK H

BUS SBI TP H

BUS SBI PDCLK H

BUS SBI PDCLK L

BUS SBI PDCLK L

BUS SBI MP2 L

BUS SBI MPI L

BUS SBI ALERT L

BUS SBI UNJAM L

BUS SBI CNF0 L

BUS SBI FAULT L

BUS CNFI L

BUS SBI INTLK L

BUS SBI TR01 L

BUS SBI TR02 L

BUS SBI TR03 L

BUS SBI TR02 L

BUS SBI TR04 L

BUS SBI TR05 L

BUS SBI TR06 L

BUS SBI TR07 L

BUS SBI TR08 L

BUS SBI TR09 L

BUS SBI TR10 L

BUS SBI TR11 L

BUS SBI TR13 L

BUS SBI TR12 L

BUS SBI TR14 L

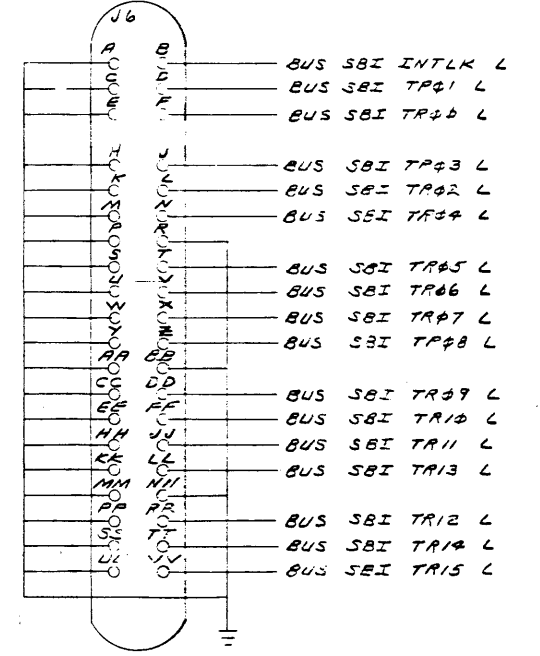
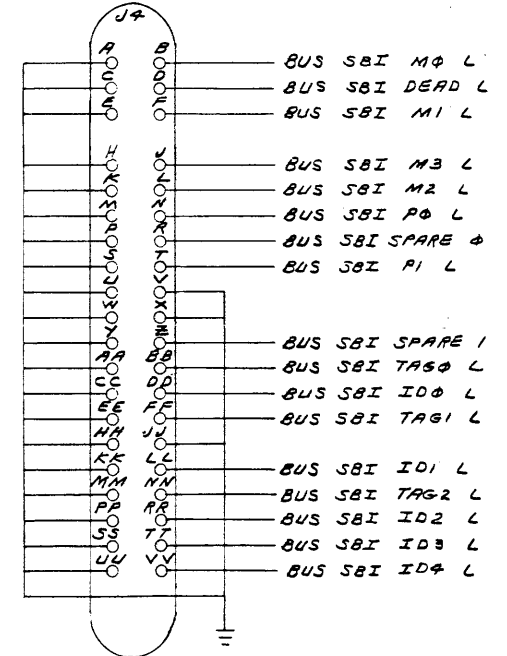
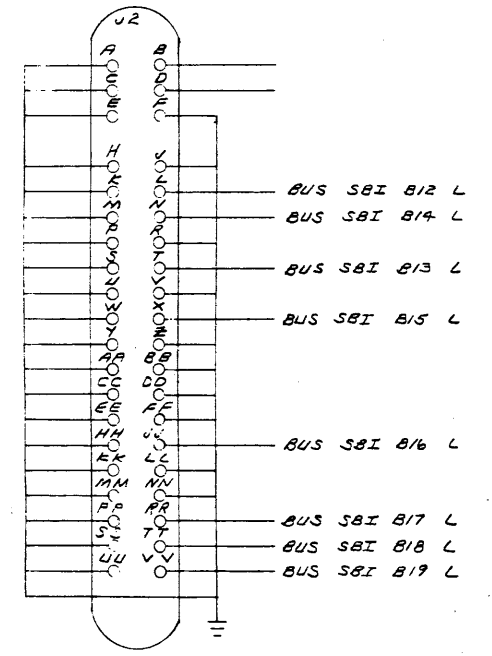
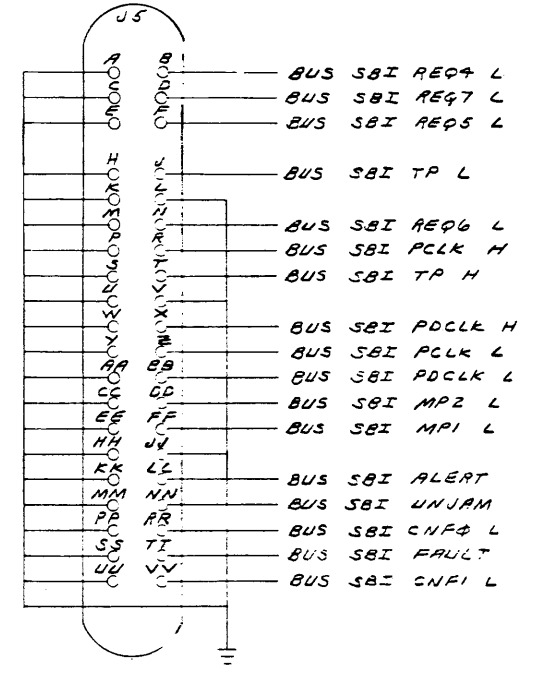
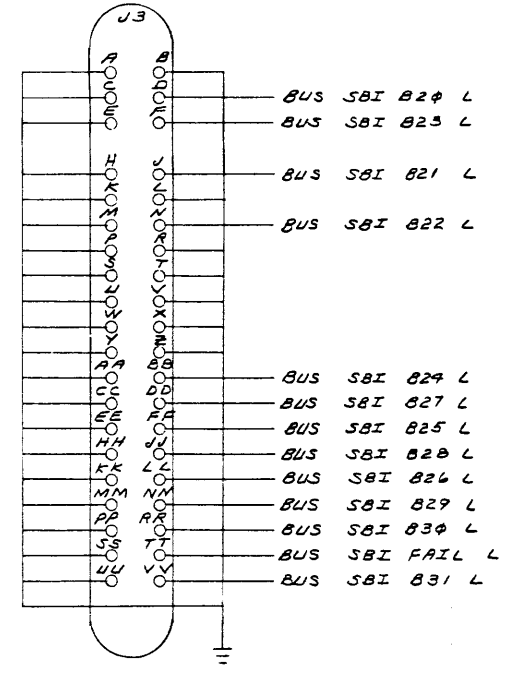
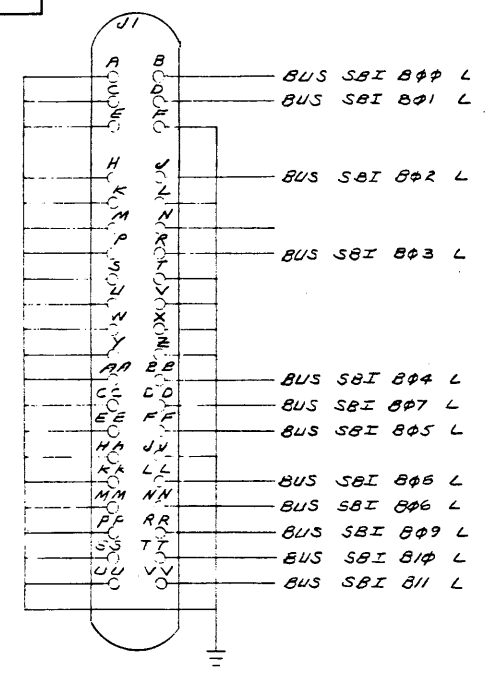
BUS SBI TR15 L

(SBI IN)

DRN. E. Taylor	25 JUL 77	FIRST USED ON	11780	digital
CHK'D. D. M. H.	16 AUG 77	TITLE	11780 SUB SYSTEM INTERCONNECT	
ENG. Ed. D. M. H.	16 SEP 77	SIZE	D	
PROJ. ENG. A. L. H.	16 SEP 77	CODE	IC	
PROD. R. R. H.	11-18-77	NUMBER	11780-0-3	REV. B
NEXT HIGHER ASSY.		SCALE	1:1	
B-DD-11780		SHEET	3 OF 3	
		DIST.		

TW 1

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(SBI OUT)

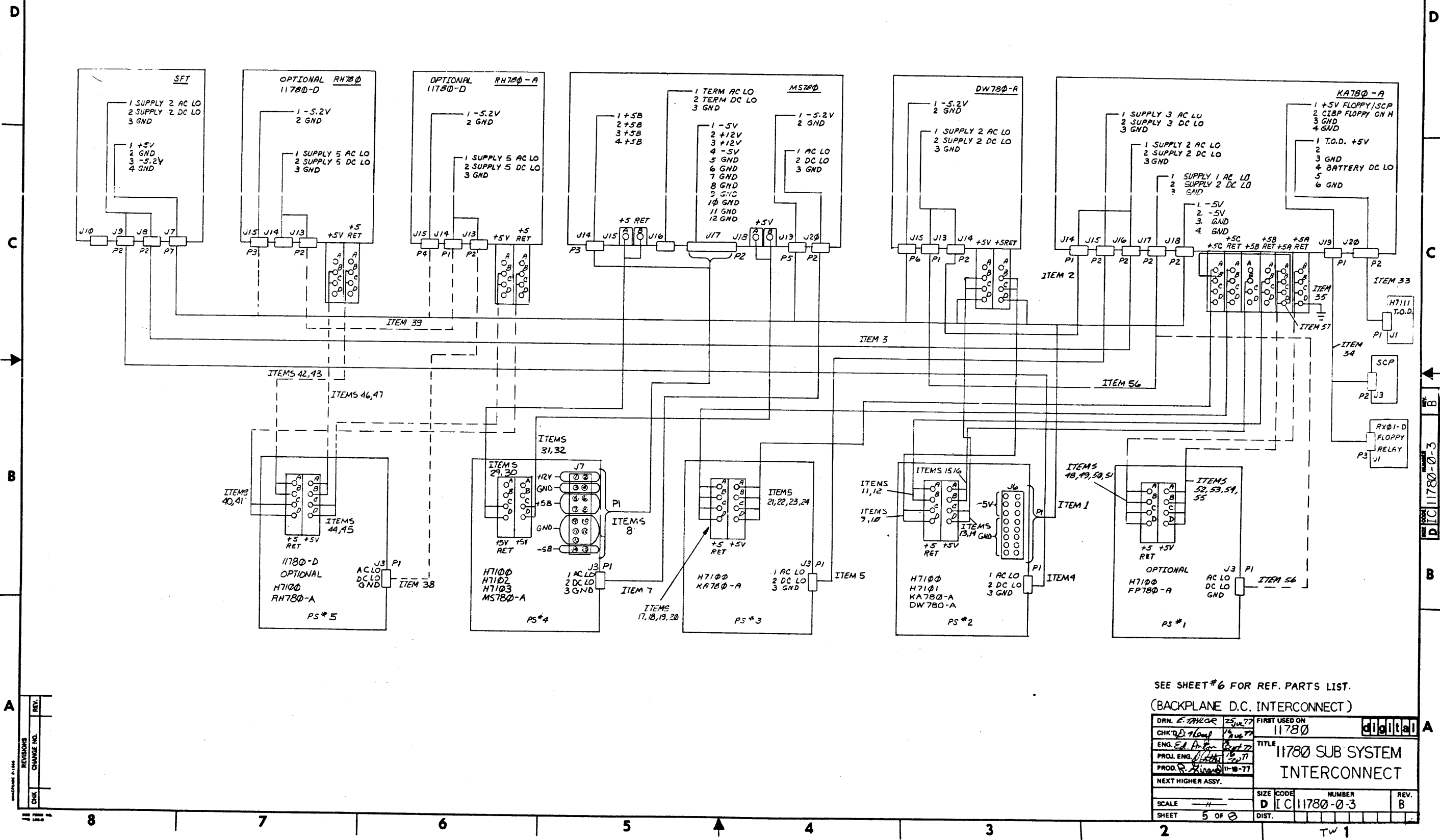
DRN. E. TAYLOR	25 JUL 77	FIRST USED ON	11780	digital	
CHK'D. S. J. LEE	16 AUG 77	TITLE	11730 SUB SYSTEM INTERCONNECT		
ENG. S. J. LEE	16 AUG 77	PROD. R. J. LEE	11-18-77		
PROJ. ENG. S. J. LEE	16 AUG 77	NEXT HIGHER ASSY.			
SCALE			SIZE CODE		NUMBER
SHEET 4 OF 5			D IC	11780-03	B

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NOTES:

- ITEM # 5 ARE SHOWN FOR REFERENCE IN LOCATING CABLE DESTINATIONS ONLY USING SHEET 6 D-11780-0-3



SEE SHEET #6 FOR REF. PARTS LIST.

(BACKPLANE D.C. INTERCONNECT)

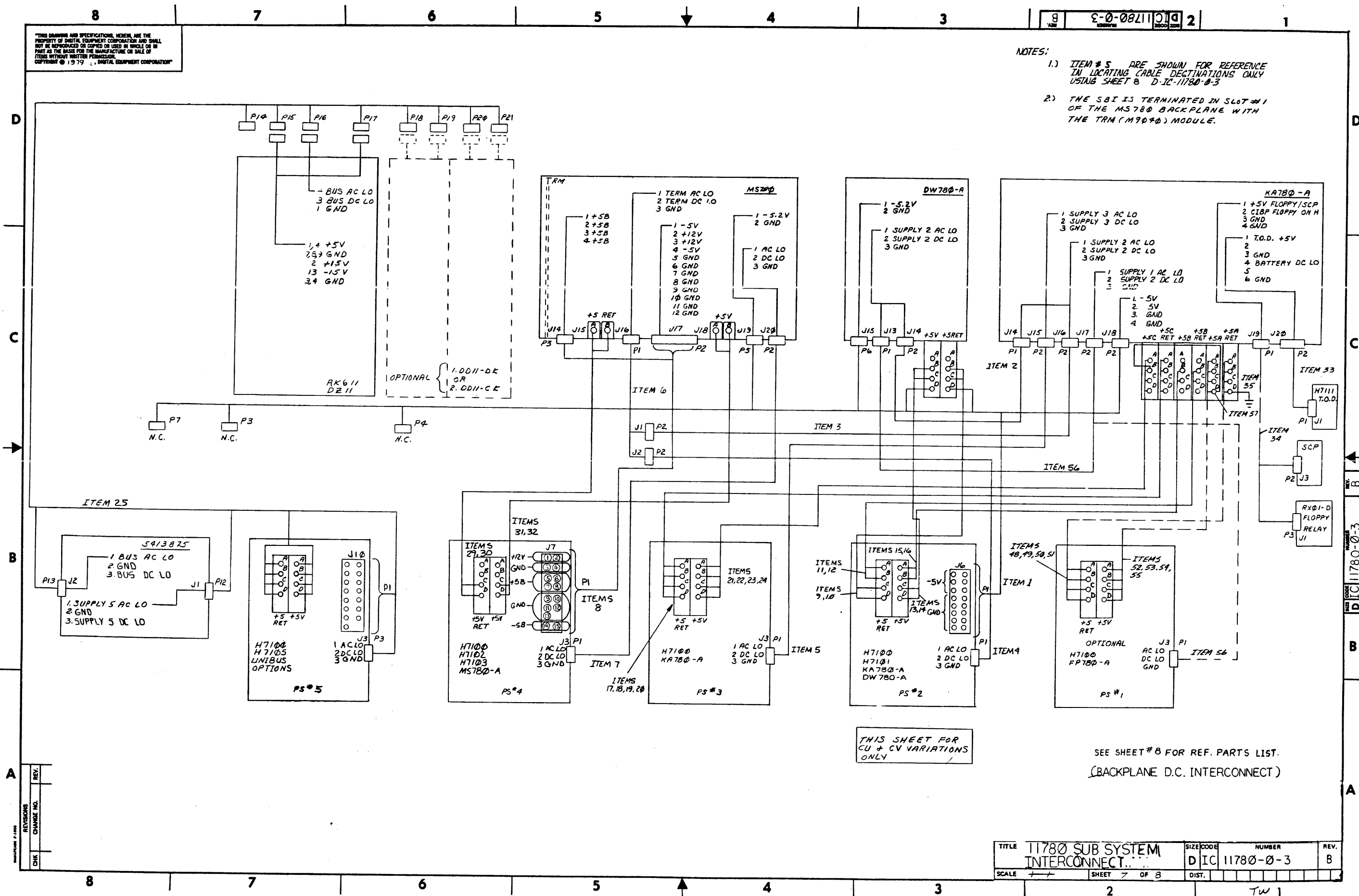
DRN. E. THOR 25 JUL 77	FIRST USED ON	11780	Digital
CHKD. J. H. 1 AUG 77	DATE	1 AUG 77	
ENG. E. A. 1 SEP 77	TITLE	11780 SUB SYSTEM	
PROJ. ENG. J. H. 1 SEP 77	INTERCONNECT		
PROD. R. 1 SEP 77			
NEXT HIGHER ASSY.			
SCALE	SIZE	CODE	NUMBER
SHEET 5 OF 8	D	IC	11780-0-3
			REV. B

TW 1

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NOTES:

- ITEM #5 ARE SHOWN FOR REFERENCE IN LOCATING CABLE DESTINATIONS ONLY USING SHEET B D-IC-11780-0-3
- THE SBI IS TERMINATED IN SLOT #1 OF THE MS780 BACKPLANE WITH THE TRM (M900) MODULE.



TITLE	11780 SUB SYSTEM INTERCONNECT	SIZE CODE	DIC	NUMBER	11780-0-3	REV.	B
SCALE	1:1	SHEET	7	OF	8	DIST.	

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11780-CU/CV

11780-CU/CV

REF ITEM NUMBER	PART NUMBER	DESCRIPTION	FROM	TO	REMARKS
1	7015073-0-0	HARNESS-SV TERMINATOR	HARNESS - P1	PS #2 - J6	-5V GND
			HARNESS - P2	KA780-J18	
			HARNESS - P5	MS780-J19	
			HARNESS - P6	DW780-J15	-5V GND
			HARNESS - P7	N.C.	+5V GND
			HARNESS RING TERM. (RED WIRE)	DW780+5V-D	+5V
	7015073-0-0	HARNESS-SV TERMINATOR	HARNESS RING TERM. (BLK WIRE)	DW780+5V-RT-D	+5V RETURN
2	7014212-0-H	CABLE AC DC LOW	CABLE - P1	KA780-J14	AC,DC LOW+GND
			CABLE - P2	DW780-J14	
3	7014212-2-M	CABLE AC DC LOW	CABLE - P1	KA780-J16	AC,DC LOW+GND
			CABLE - P2	ITEM #6-J1	
4	7014212-2-M	CABLE AC DC LOW	CABLE - P1	PS #2 - J3	AC,DC LOW+GND
			CABLE - P2	ITEM #6-J2	
5	7014212-0-M	CABLE AC DC LOW	CABLE - P1	PS #3 - J3	AC,DC LOW+GND
			CABLE - P2	KA780-J15	
6	7014212-0-J	AC DC LOW WYE CABLE	CABLE - P1	MS780-J16	AC,DC LOW+GND
			CABLE - J1	ITEM #3-P2	
			CABLE - J2	ITEM #4-P2	
7	7014212-1-C	CABLE AC DC LOW	CABLE - P1	PS #4 - J3	AC,DC LOW+GND
			CABLE - P2	MS780-J20	
8	7014212-0-K	CABLE ±5B + ±12V	CABLE - P1	PS #4 - J7	±5B + ±12V + GND
			CABLE - P2	MS780-J17	
			CABLE - P3	MS780-J14	
9	7014249-1-A	CABLE POWER (BLK)	PS #2 +5 RET -D	DW780+5 RET-B	PS #2 +5 RETURN
10	7014249-1-A	CABLE POWER (BLK)	PS #2 +5 RET -C	DW780+5 RET-C	
11	7014249-1-C	CABLE POWER (BLK)	PS #2 +5 RET -B	KA780+5B RET-B	
12	7014249-1-C	CABLE POWER (BLK)	PS #2 +5 RET -A	KA780+5B RET-C	PS #2 +5 RETURN
13	7014530-1-A	CABLE POWER (RED)	PS #2 +5V -D	DW780+5V-B	PS #2 +5V
14	7014530-1-A	CABLE POWER (RED)	PS #2 +5V -C	DW780+5V-C	
15	7014530-1-A	CABLE POWER (RED)	PS #2 +5V -B	KA780+5B-C	
16	7014530-1-A	CABLE POWER (RED)	PS #2 +5V -A	KA780+5B-B	PS #2 +5V
17	7014249-1-J	CABLE POWER (BLK)	PS #3 +5V RET -D	KA780+5C RET-D	
18			-C	-C	
19			-B	-B	
20	7014249-1-J	CABLE POWER (BLK)	PS #3 +5V RET -A	KA780+5C RET-A	PS #3 +5 RETURN
21	7014530-1-E	CABLE POWER (RED)	PS #3 +5V -D	KA780+5C -D	PS #3 +5 RETURN
22			-C	-C	
23			-B	-B	
24	7014530-1-E	CABLE POWER (RED)	PS #3 +5V -A	KA780+5C -A	
25	7016951-0-0	UNIBUS PWR HARNESS	HARNESS - P1	PS #5 - J10	PS #5 +15V, -15V + GND
			HARNESS RING TERM. (BLK WIRE) -P2	PS #5 +5 RET -D	PS #5 +5 RETURN
			HARNESS - P3	PS #5 - J3	AC,DC LOW + GND
			HARNESS RING TERM. (RED WIRE) -P4	PS #5 +5V -D	PS #5 +5V
			-P5	-C	
			-P6	-B	
			HARNESS RING TERM. (RED WIRE) -P7	PS #5 +5V -A	
			HARNESS RING TERM. (BLK WIRE) -P8	PS #5 +5 RET-D	PS #5 +5 RETURN
			-P9	-C	
			-P10	-B	
			HARNESS RING TERM. (BLK WIRE) -P11	PS #5 +5 RET-A	
	7016951-0-0	UNIBUS PWR HARNESS	HARNESS - P12	ADAPTER BOARD-J1	AC,DC LOW + GND

REF ITEM NUMBER	PART NUMBER	DESCRIPTION	FROM	TO	REMARKS
25	7016951-0-0	UNIBUS PWR HARNESS	HARNESS - P13	ADAPTER BOARD-J2	ADAPT. AC,DC LOW+GND
			-P14	N.C.(OPTIONAL)	
			-P15	RK611 - P2	
			-P16	RK611 - P3	
			-P17	RK611 - P4	
			-P18	NC(OPTIONAL)	
			-P19		
			-P20		
	7016951-0-0	UNIBUS PWR HARNESS	HARNESS - P21	NC.(OPTIONAL)	
29	7014250-0-K	CABLE POWER RTR MEMORY (BLK)	PS #4 +5V RET -C	MS780-J15-A	PS #4 +5 RETURN
30			-D	-B	
31	7014529-0-K	CABLE POWER +5 MEMORY (RED)	PS #4 +5V -C	MS780-J18-A	PS #4 +5V
32			-D	-B	
33	7014243-3-M	CABLE TO T.Q.D. BAT.	HARNESS - P2	KA780-J20	
			-P1	H7111-J1	
34	7014243-2-I	FLOPPY RELAY SC PWR HARNESS	HARNESS - P1	KA780-J19	
			-P2	SCP - J3	
			-P3	RX01 - J1	
35	7014249-0-L	CABLE POWER (BLK)	KA780+5A RET-D	FRAME	
56	7014212-0-M	CABLE AC/DC LO	CABLE - P1	DW780-J13	SEE NOTE #3
			CABLE - P2	KA780-J17	

FP780
OR
FP780 + KU780

SEE NOTE

48	7014249-0-L	POWER CABLE (BLK)	PS #1 +5A RET -D	KA780+5A RET-D	PS #1 +5 RETURN
49			-C	-C	
50			-B	-B	
51	7014249-0-L	POWER CABLE (BLK)	PS #1 +5A RET -A	KA780+5A RET-A	
52	7014530-0-L	POWER CABLE (RED)	PS #1 +5V -D	KA780+5A -D	PS #1 +5A
53			-C	-C	
54			-B	-B	
55	7014530-0-L	POWER CABLE (RED)	PS #1 +5V -A	KA780+5A -A	
56	7014212-0-M	CABLE AC DC LO	CABLE - P1	PS #1 - J3	AC,DC LOW+GND
			CABLE - P2	KA780-J17	

OPTIONAL
SEE NOTE 3

KC780 or KU780

SEE NOTE 2

57	7014530-0-L	CABLE POWER (RED)	KA780 +5A -D	KA780+5C -B	PS #2 +5V
----	-------------	-------------------	--------------	-------------	-----------

NOTES:

1. REFER TO E-UA-KA780 FOR INSTRUCTIONS OF JUMPER REMOVAL IN CONFIGURATIONS USING PS #1
2. IF THE FP780 IS INSTALLED, REMOVE ITEM 57.
3. IF THE FP780 IS INSTALLED: ITEM #56 P1 CONNECTS TO PS #1-J3 OTHERWISE IT IS CONNECTED TO DW780-J13.

THIS SHEET FOR
CU+CV VARIATION
ONLY

REVISION HISTORY		
DATE	ECO NUMBER	REV.

ORD 137A

8

7

6

5

4

3

2

1

TITLE 11780 SUB-SYSTEM
INTERCONNECT

DOCUMENT NUMBER		
SIZE CODE	NUMBER	REV.
DIC	11780-0-3	B
SCALE	SHEET 8 OF 8	

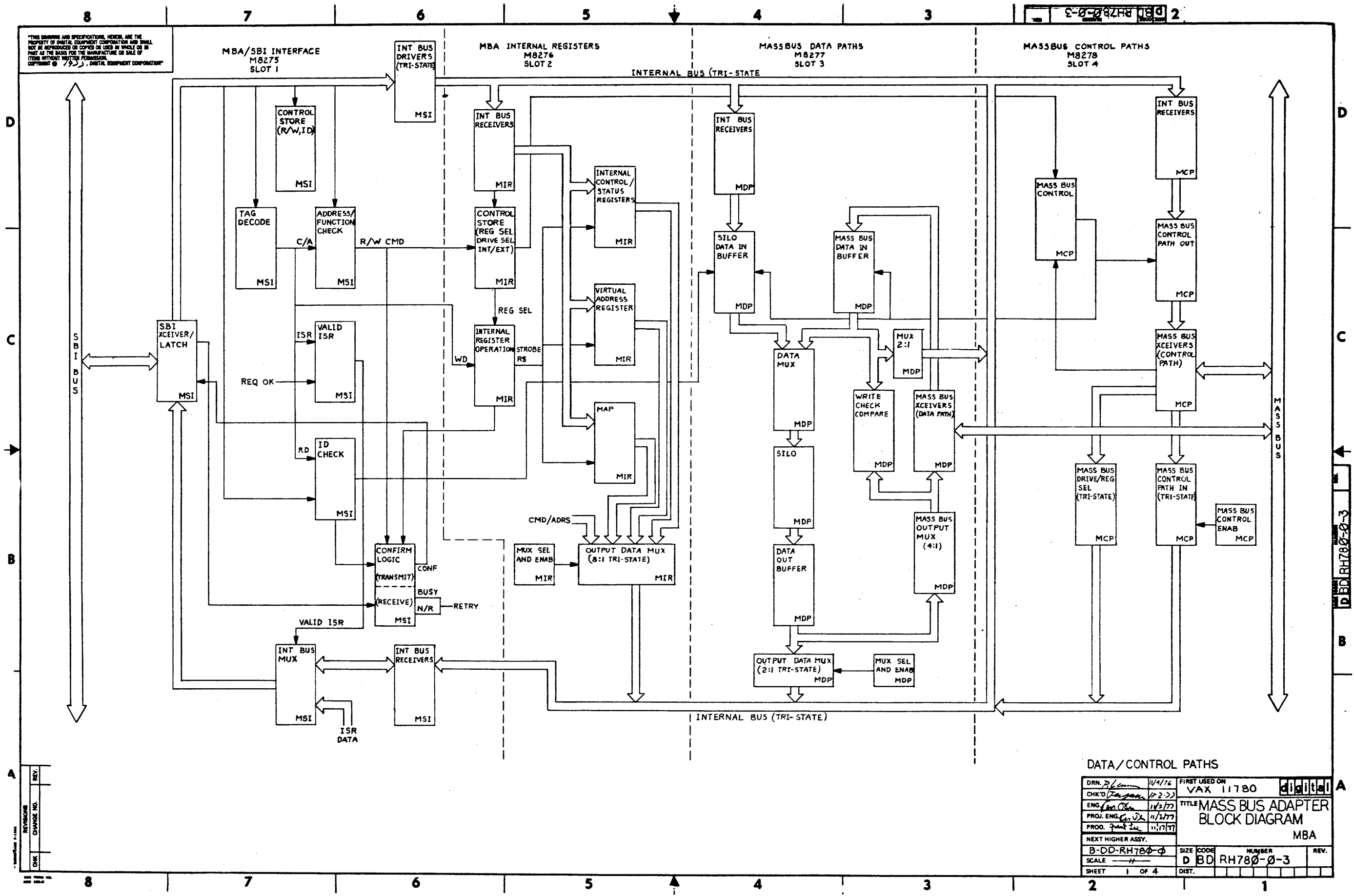
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VIEW FROM SIDE 2

1	2	3	4	5	6
M8275	M8276	M8277	M8278		M9041
MSI	MIR	MDP	MCP		MASSBUS

NOTE: 1) M904 PLUGS IN ON SIDE 2
2) TWO BLANK MODULES ARE
INSERTED IN SLOTS 5 AND 6
FROM SIDE 2

DRN. AFM	10-125	FIRST USED ON	VAX 11780
CHK'D	10-125	TITLE	MODULE UTILIZATION
ENG.	10/1/77		MASSBUS ADAPTOR
PROJ. ENG.	10/1/77		
PROD.	10/1/77		
NEXT HIGHER ASSY.			
B-DD-RH780-2		SIZE CODE	D MUR H780-2
SCALE	1:1		
SHEET	1 OF 1	DIST.	



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MBA CONFIGURATION/STATUS REGISTER (REG 0)

PROGRAM ADDRESS = 200XY000

SBI PARITY ERROR
WRITE DATA SEQUENCE ERROR
UNEXPECTED READ DATA ERROR
MULTIPLE TRANSMITTER ERROR
TRANSMITTER DURING FAULT
ADAPTOR POWER DOWN
ADAPTOR POWER UP
OVER TEMPERATURE
(NOT IMPLEMENTED)

NOTE:
WRITE 1 TO CLEAR BITS IN THIS REGISTER

ADAPTOR CODE

MBA CONTROL REGISTER (REG 1)

PROGRAM ADDRESS = 200XY004

NOTE
ALL BITS ARE READ/WRITE EXCEPT INITIALIZE WHICH ALWAYS READS AS 0

MBA STATUS REGISTER (REG 2)

PROGRAM ADDRESS = 200XY008

DATA TRANSFER BUSY
NO RESPONSE CONFIRMATION
CORRECTED READ DATA

PROGRAMMING ERROR
NOW EXISTENT DRIVE
MASSBUS CONTROL PARITY ERROR
MASSBUS ATTENTION
DATA TRANSFER COMPLETE
DATA TRANSFER ABORT
DATA TRANSFER LATE
WRITE CHECK - UPPER ERROR
WRITE CHECK - LOWER ERROR
MISSED TRANSFER
MASSBUS EXCEPTION
MASSBUS DATA PARITY ERROR
MAP PARITY ERROR
INVALID MAP
ERROR CONFIRMATION
READ DATA SUBSTITUTE
INTERFACE SEQUENCE TIMEOUT
READ DATA TIMEOUT

NOTES:
1) IF AN EXTERNAL REGISTER IS READ THE CONTENTS OF THE EXTERNAL REGISTER ARE RETURNED IN BITS 0-15. BITS 16-31 ARE THE CORRESPONDING BITS FROM THE STATUS REGISTER.

2) WRITE 1 TO CLEAR BITS IN THIS REGISTER EXCEPT BIT 31 WHICH IS READ ONLY

MBA VIRTUAL ADDRESS REGISTER (REG 3)

PROGRAM ADDRESS = 200XY00C

NOTE:
BITS 0 THRU 16 ARE READ/WRITE

MBA BYTE COUNT REGISTER (REG 4)

PROGRAM ADDRESS = 200XY010

MASSBUS BYTE COUNTER
(READ ONLY)

SBI BYTE COUNTER
(READ/WRITE)
2'S COMPLEMENT OF NUMBER OF BYTES TO BE TRANSFERRED

NOTE:
DATA WRITTEN INTO SBI BYTE COUNTER IS COPIED INTO MASSBUS BYTE COUNTER

MBA DIAGNOSTIC MASSBUS CONTROL/STATUS REGISTER (REG 5)

PROGRAM ADDRESS = 200XY014

INVERT MASSBUS DATA PARITY
INVERT MASSBUS CONTROL PARITY
INVERT MAP PARITY
BLOCK SENDING COMMAND TO SBI
SIMULATE SCLK
SIMULATE EBL
SIMULATE OCC
SIMULATE ATTN
MDIB SELECT
MASSBUS FAIL (READ ONLY)
MASSBUS RUN (READ ONLY)
MASSBUS WCLK (READ ONLY)
MASSBUS EDC (READ ONLY)
MASSBUS CTOD (READ ONLY)
MASSBUS DRIVE SELECT (READ ONLY)
MASSBUS REGISTER SELECT (READ ONLY)
SELECTED MDIB (READ ONLY)
(VALID DURING MAINTENANCE MODE ONLY)

NOTE:
BITS 21 AND 22 ARE READ/WRITE FOR DIAGNOSTIC TEST PURPOSES ONLY

MBA MAP REGISTERS

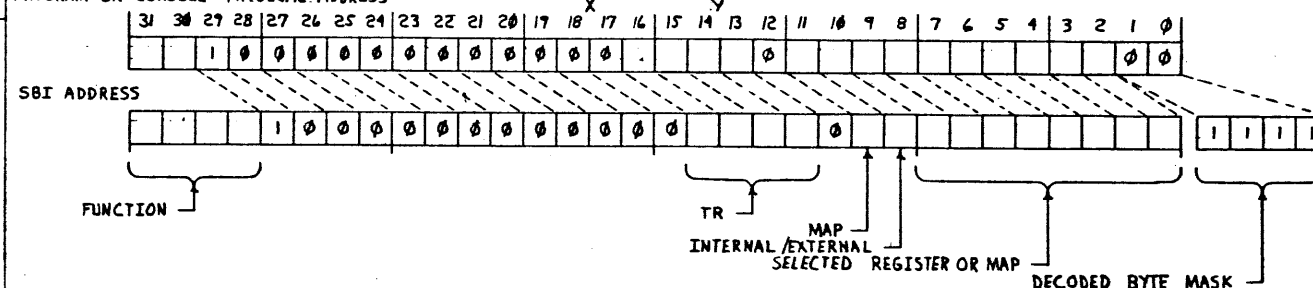
PROGRAM ADDRESSES = 200XY800 THRU 200XY8FF

VALID BIT

PHYSICAL PAGE FRAME NUMBER

MBA ADDRESSING

PROGRAM OR CONSOLE PHYSICAL ADDRESS



MAP SBI B<7>	INT/EXT SBI B<8>	SELECTED REGISTER OR MAP SBI B<7:0>
0	0	INTERNAL REGISTER <5:0>
0	1	EXTERNAL REGISTER <31:0>
1	1	MAP REGISTER <256:0>
		NO RESPONSE

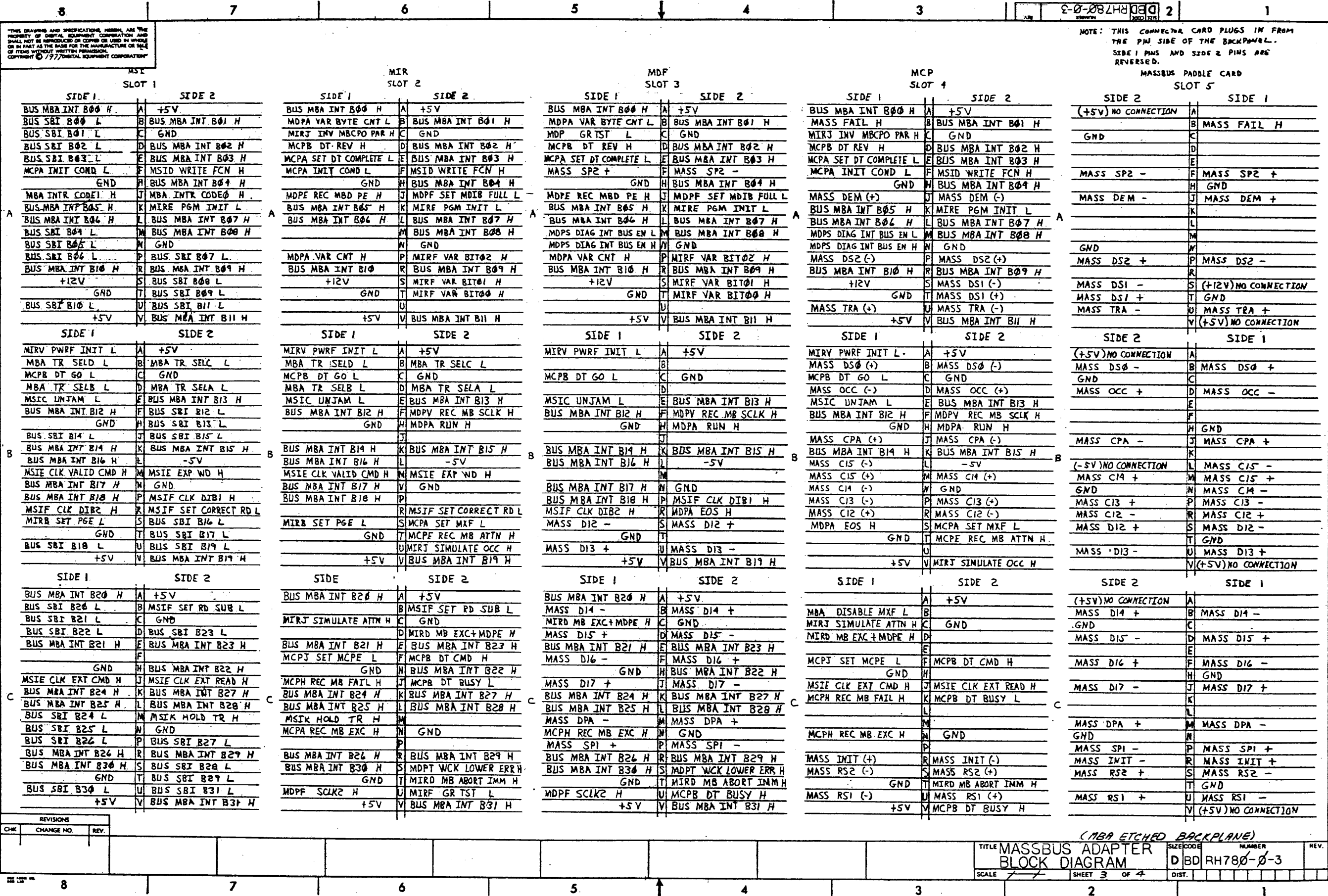
EXTERNAL REGISTER AND DRIVE SELECT

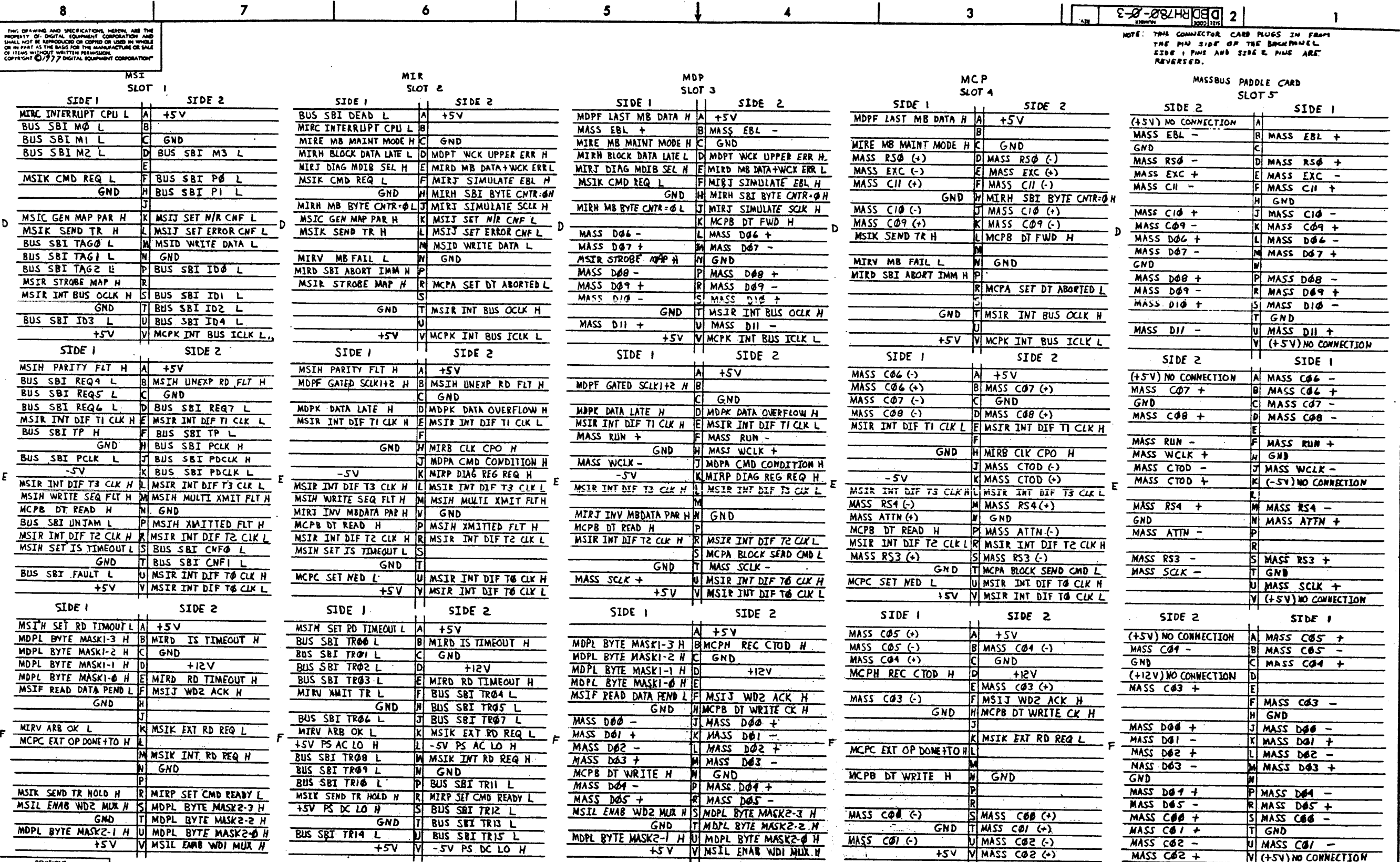
SBI ADDRESS	7	6	5	4	3	2	1	0
DS2	DS1	DS0	RS4	RS3	RS2	RS1	RS0	

(MBA INTERNAL REG. & MAP BIT ASSIGNMENTS)

MASSBUS ADAPTER BLOCK DIAGRAM

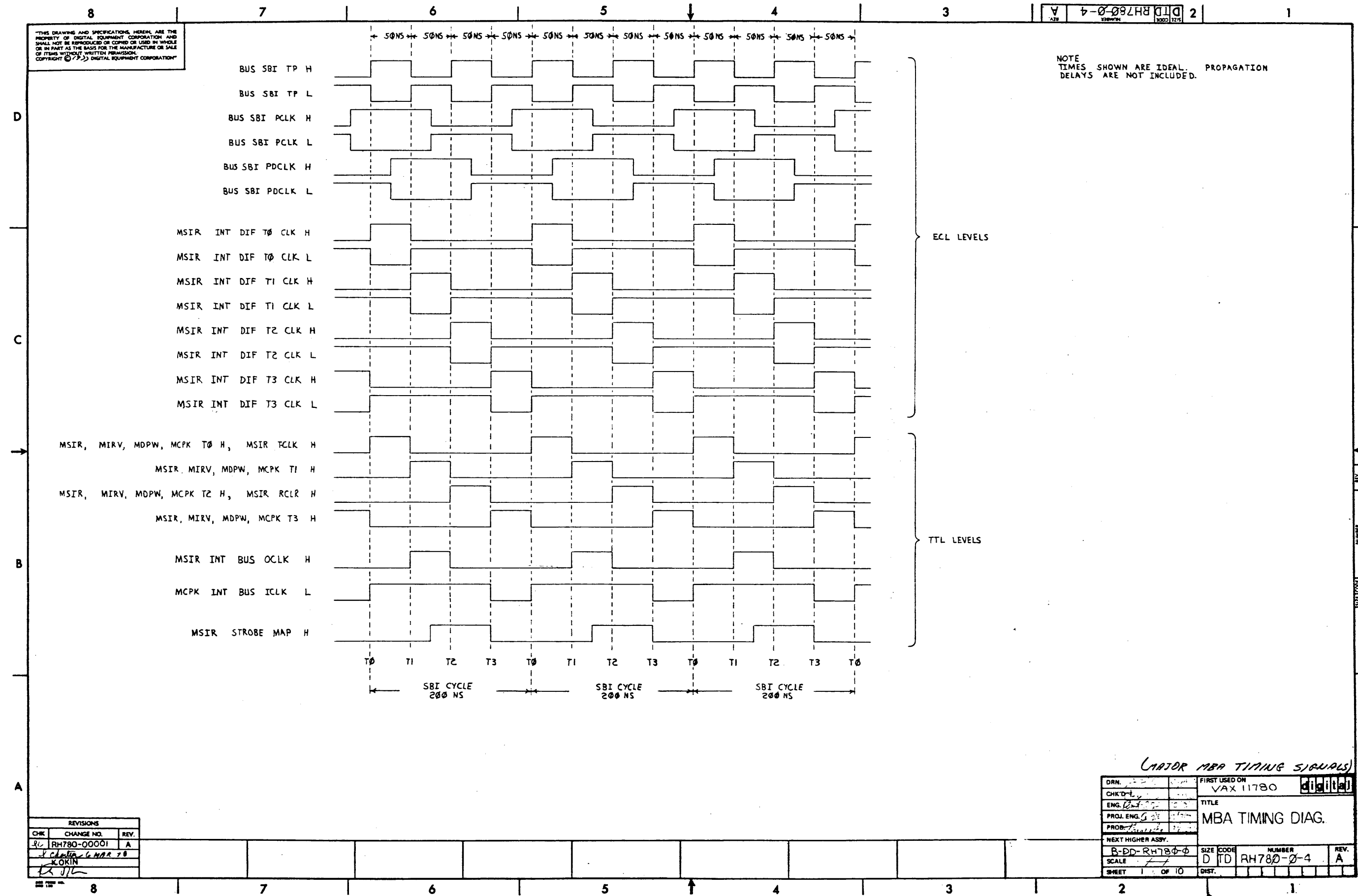
SIZE CODE	NUMBER	REV.
DBD RH780-0-3		
SCALE	SHEET 2 OF 4	DIST.





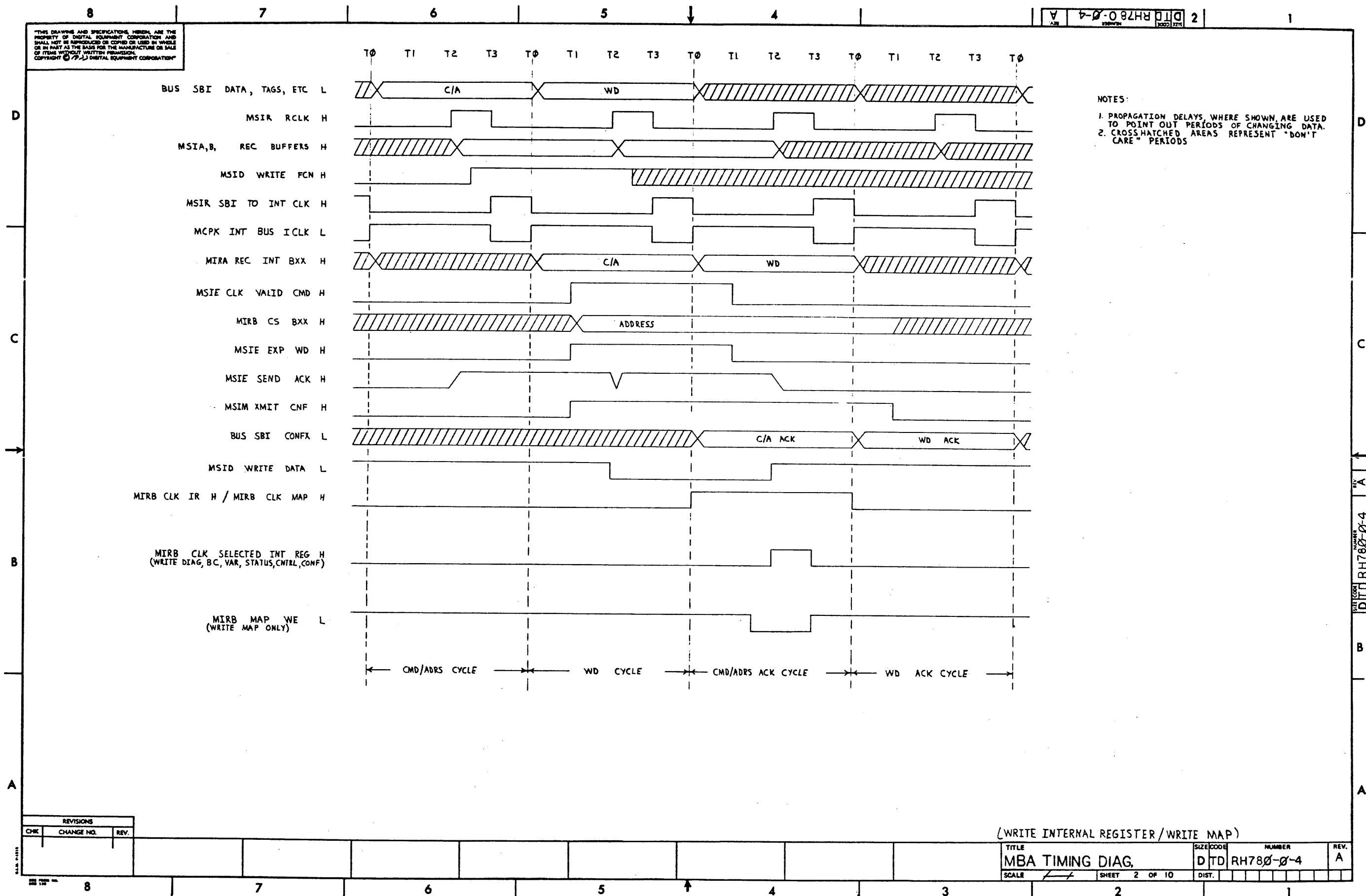
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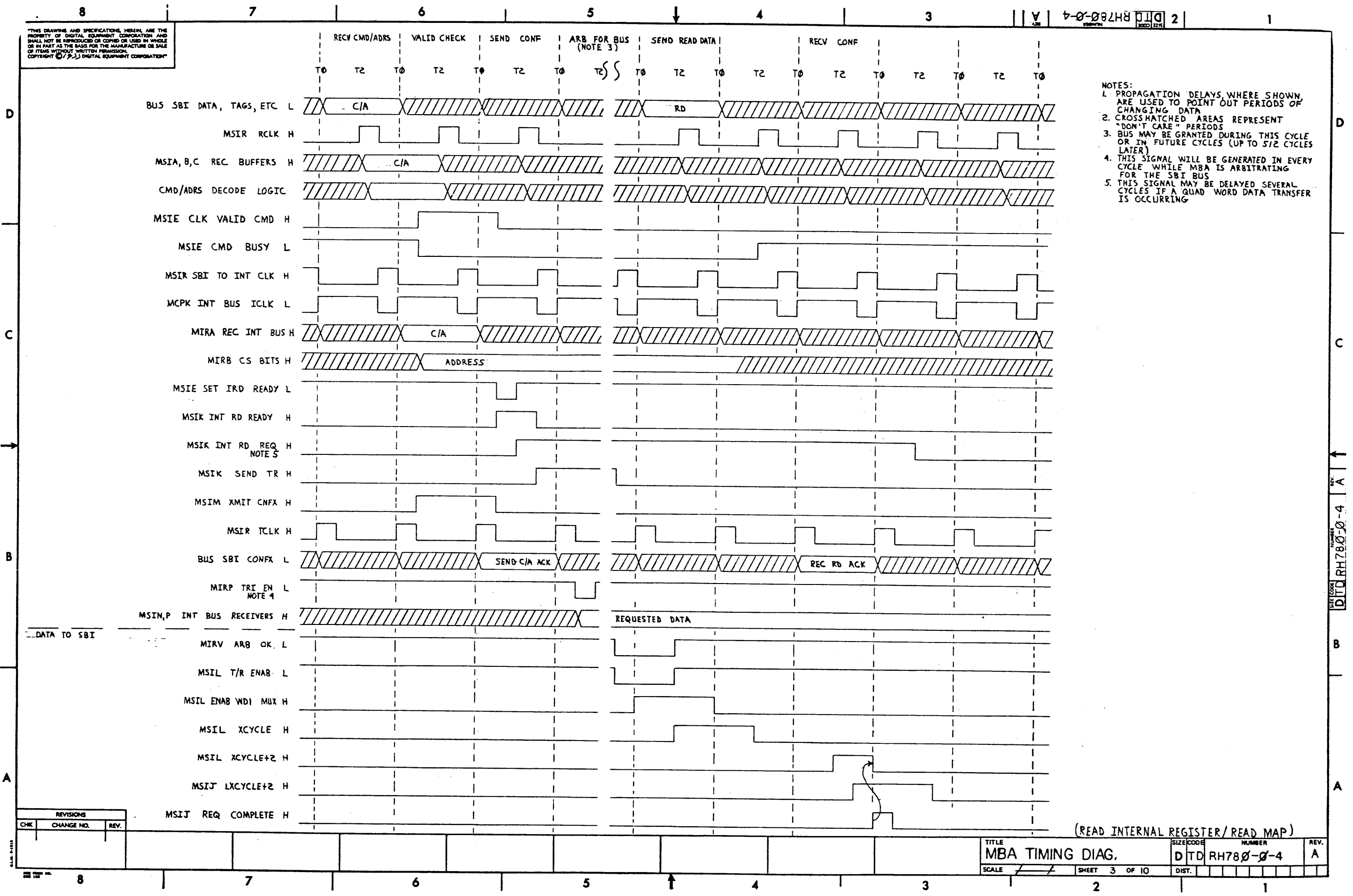
NOTE
TIMES SHOWN ARE IDEAL. PROPAGATION
DELAYS ARE NOT INCLUDED.



REVISIONS		
CHK	CHANGE NO.	REV.
RL	RH780-00001	A
KOKIN		

DRN. <i>[Signature]</i>		FIRST USED ON VAX 11780	
CHK'D <i>[Signature]</i>		TITLE MBA TIMING DIAG.	
ENG. <i>[Signature]</i>		SIZE CODE DITD	
PROJ. ENG. <i>[Signature]</i>		NUMBER RH780-0-4	
PROB. <i>[Signature]</i>		REV. A	
NEXT HIGHER ASSY. B-DD-RH780-0		SHEET 1 OF 10	





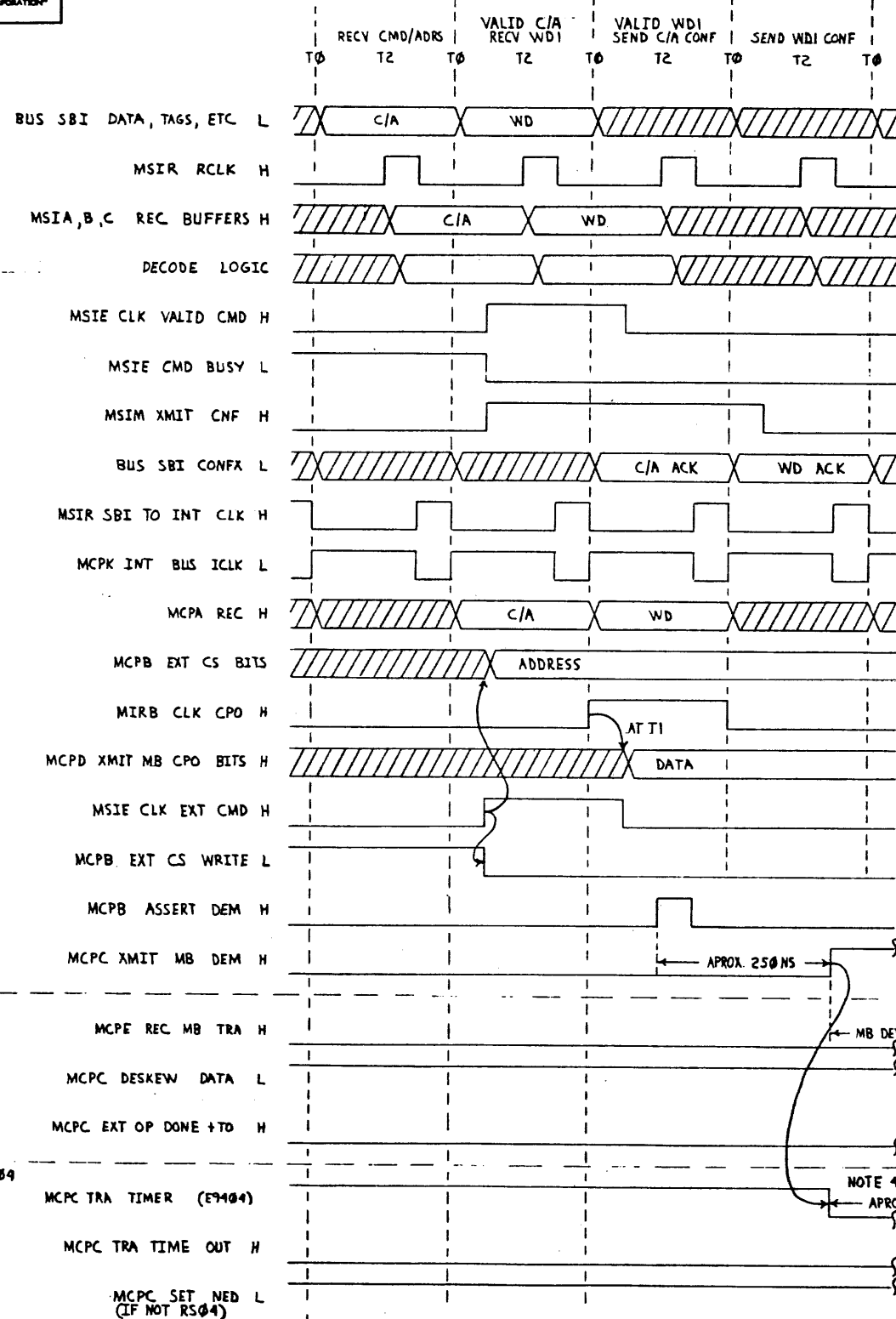
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D

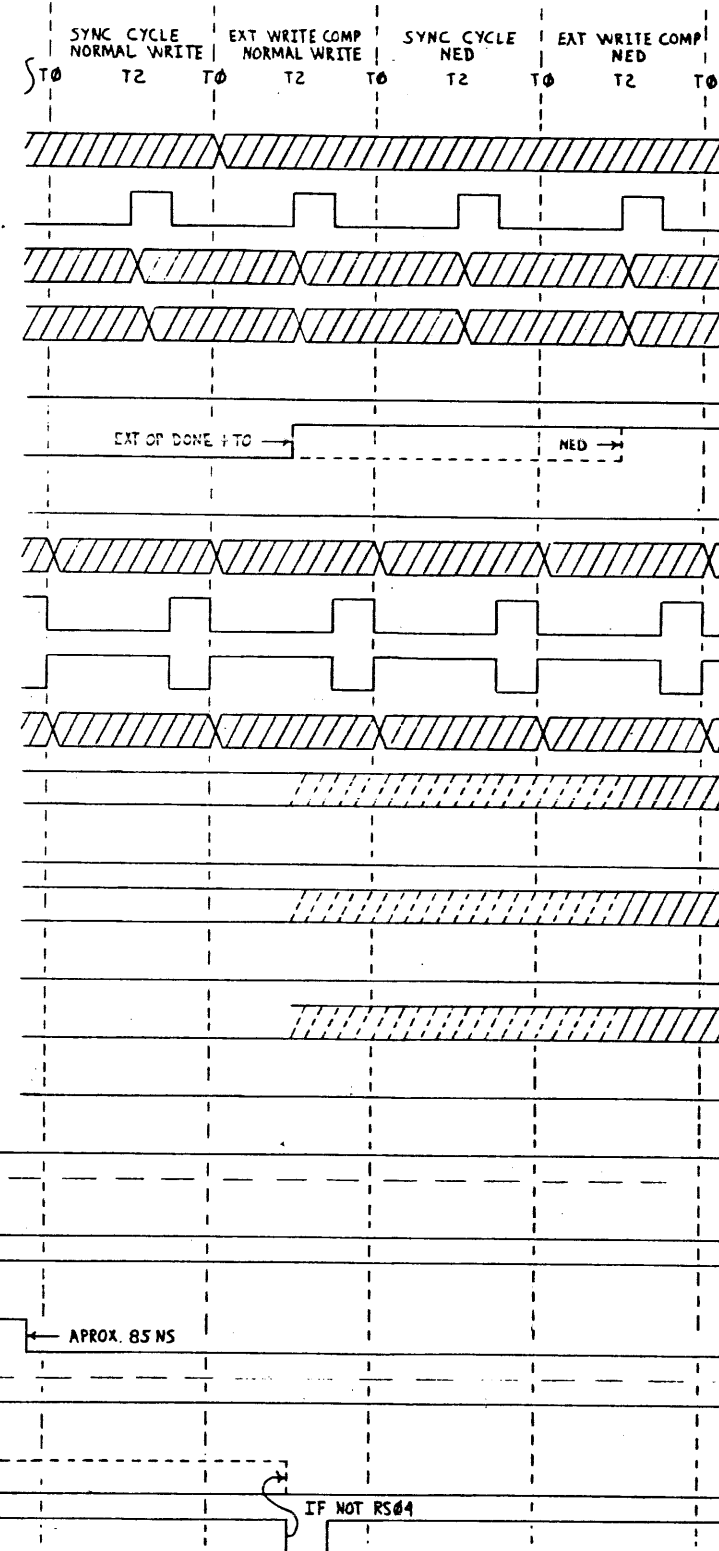
C

B

A



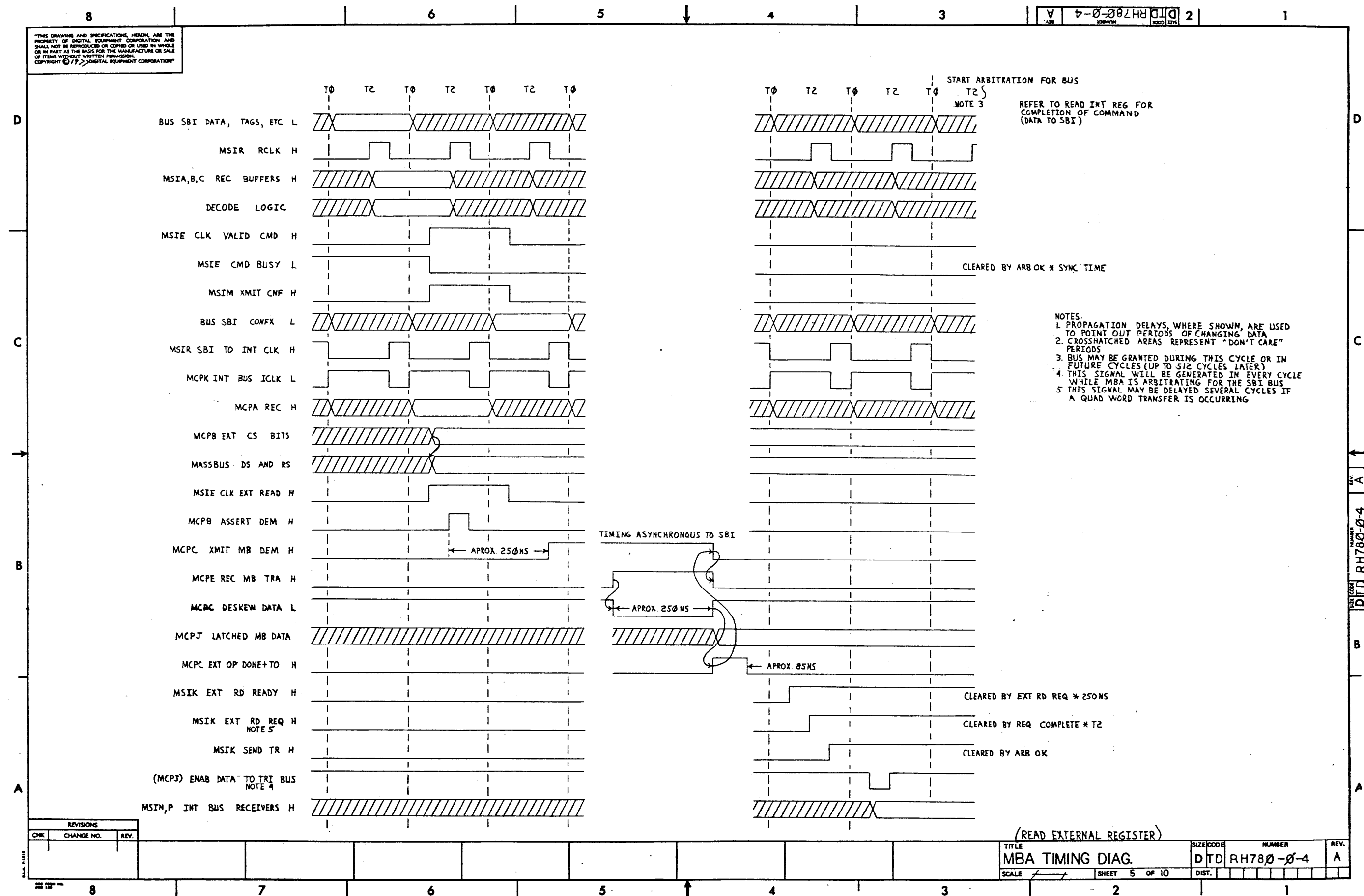
- NOTES:
1. PROPAGATION DELAYS, WHERE SHOWN, ARE USED TO POINT OUT PERIODS OF CHANGING DATA.
 2. CROSSHATCHED AREAS REPRESENT "DON'T CARE" PERIODS.
 3. BROKEN CROSSHATCHED AREAS REPRESENT VALID DATA UNTIL DEASSERTION OF CMD BUSY.
 4. MCPC TRA TIMER WILL BE CLEARED BY REC MB TRA FOR NORMAL EXT REG WRITES (EXCEPT ATTENTION SUMMARY REG - RS04) BEFORE IT TIMES OUT OR NED ERROR OCCURS.

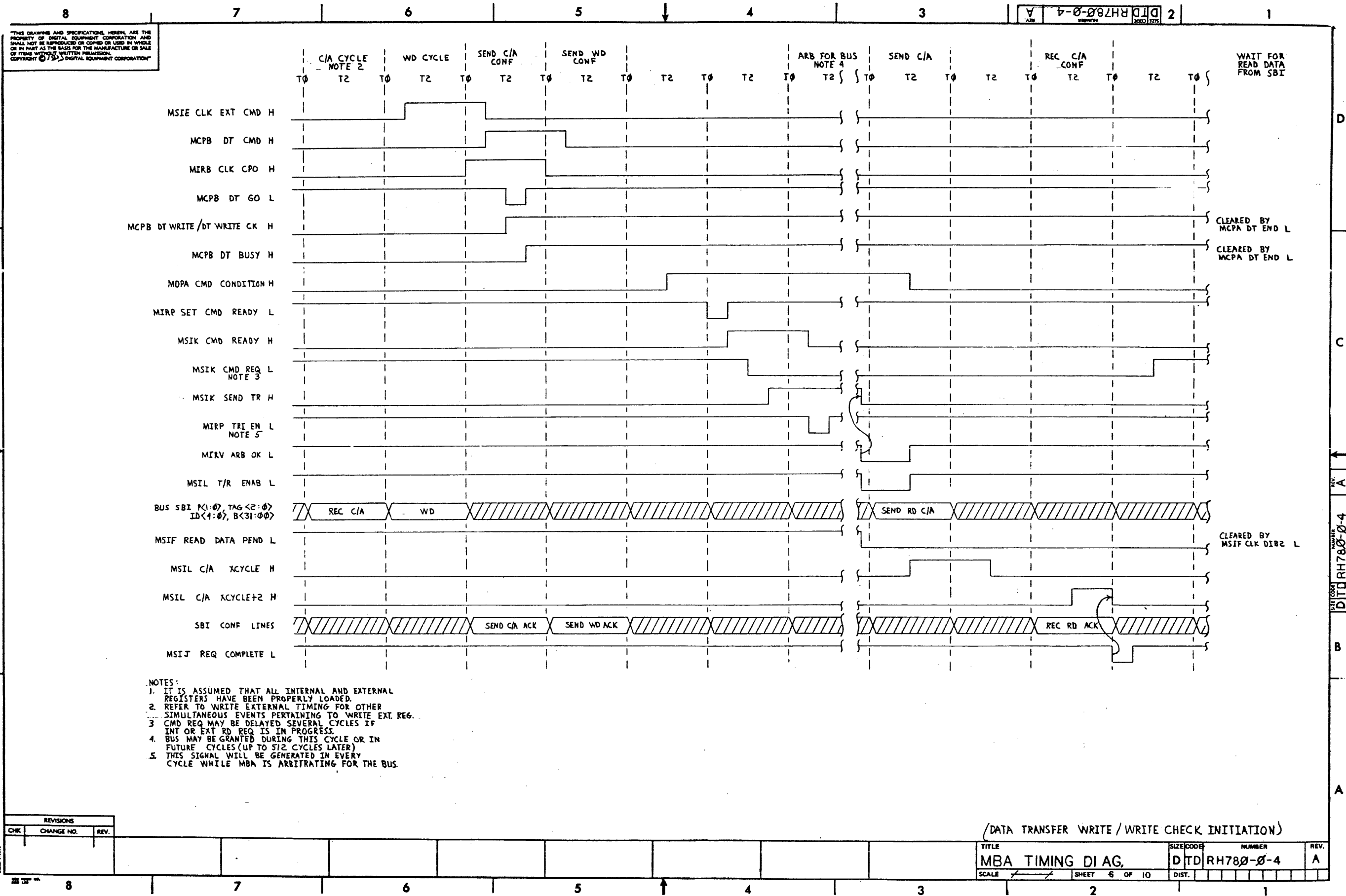


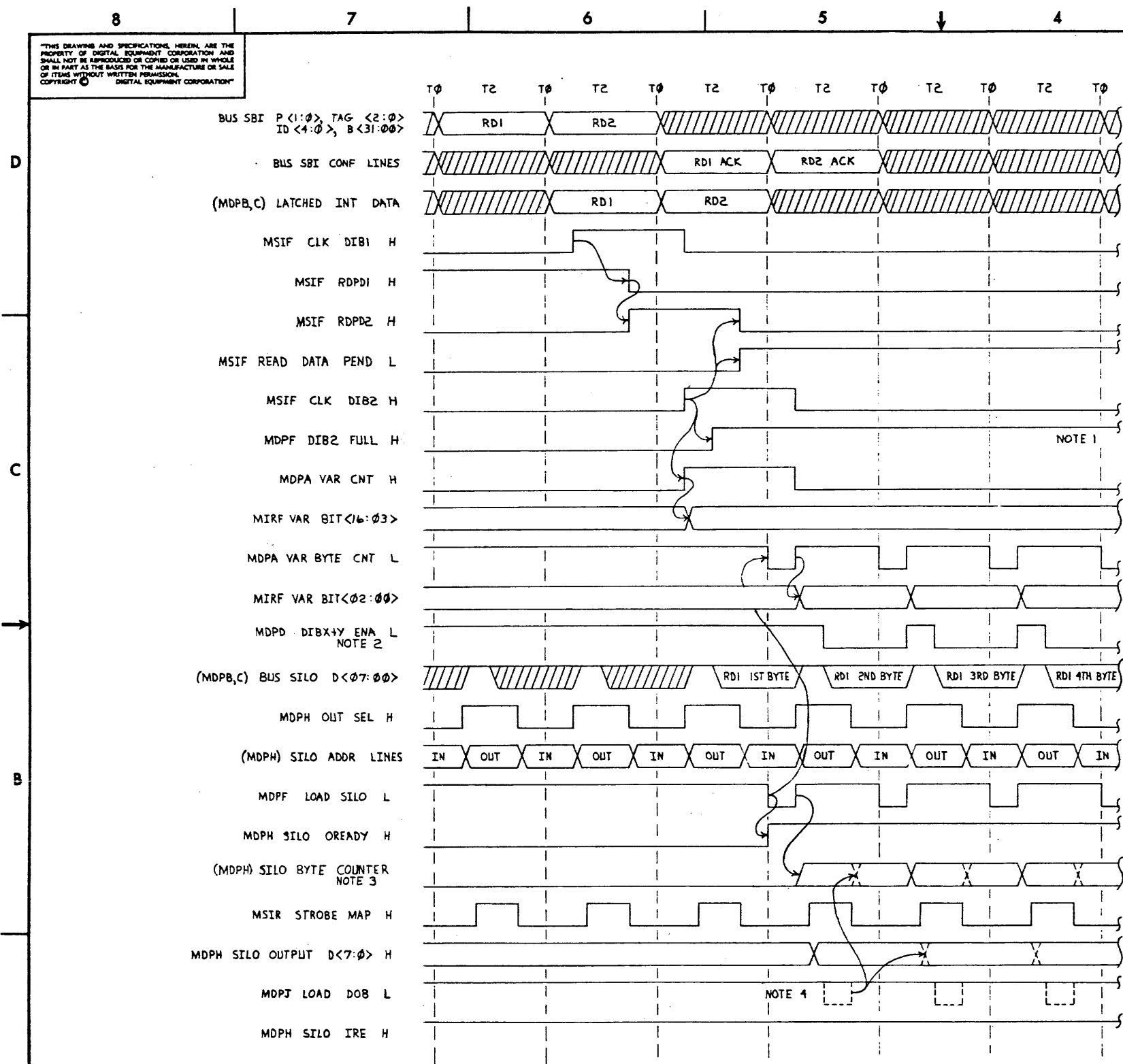
(WRITE EXT REG / WRITE RS04 / NED)

REVISIONS		
CHK	CHANGE NO.	REV.

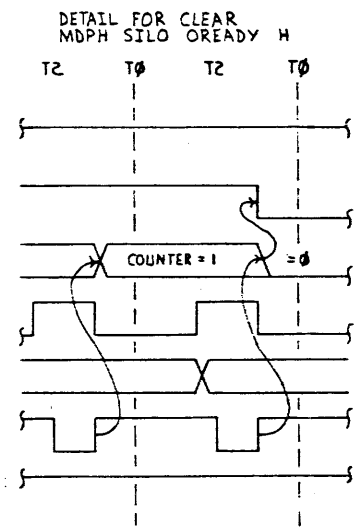
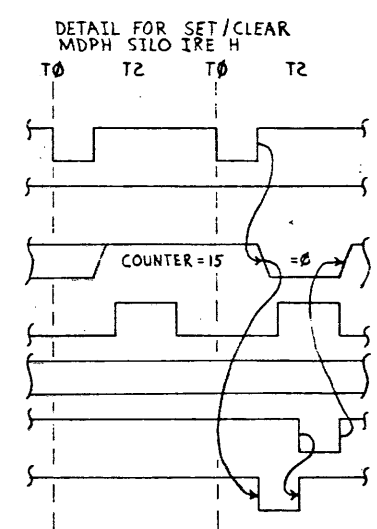
TITLE		SIZE CODE	NUMBER	REV.
MBA TIMING DIAG.		D TD	RH780-0-4	A
SCALE	SHEET 4 OF 10	DIST.		







- NOTES:
1. DIB2 FULL IS CLEARED ON THE LOAD SILO PULSE FOLLOWING VAR BIT<2:0> GOING TO 7 (DT FWD) OR 0 (DT REV).
 2. ENABLE SELECTED DIB PER VAR BIT<2:0>.
 3. SIGNAL REPRESENTS THE OR OF ALL 4 COUNTER LINES.
 4. LOAD DOB WILL ONLY BE TRUE WHEN NEXT DOB IS EMPTY. RELATED DASHED ARE ACTIONS DEPENDENT ON THE LOAD DOB SIGNAL.

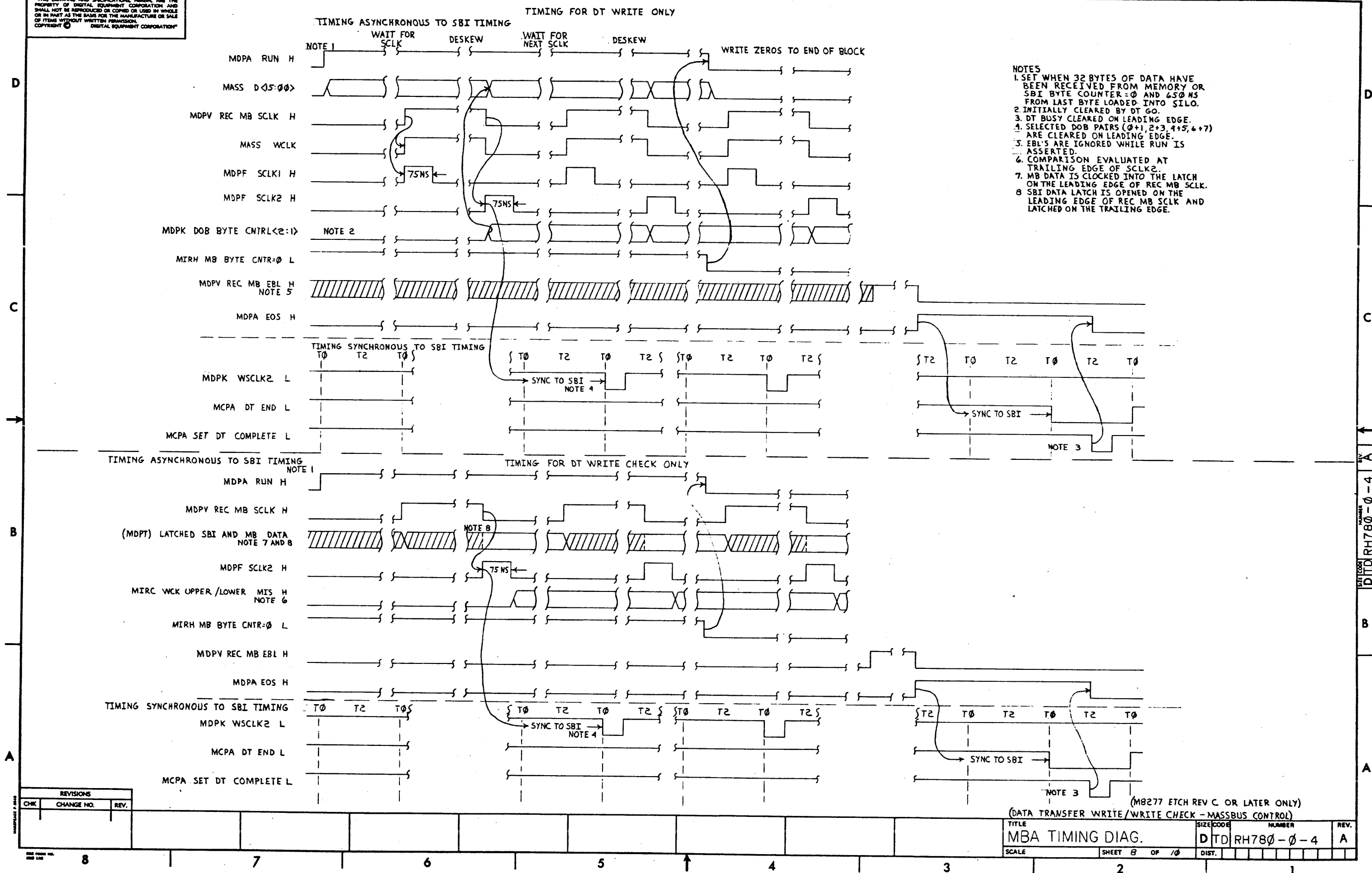


(M8277 ETCH REV C OR LATER)

(DATA TRANSFER WRITE/WRITE CHECK-SILO CONTROL)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE/CODE	NUMBER	REV.
MBA TIMING DIAG.	D	TD RH780-0-4	A
SCALE	SHEET 7 OF 10	DIST.	



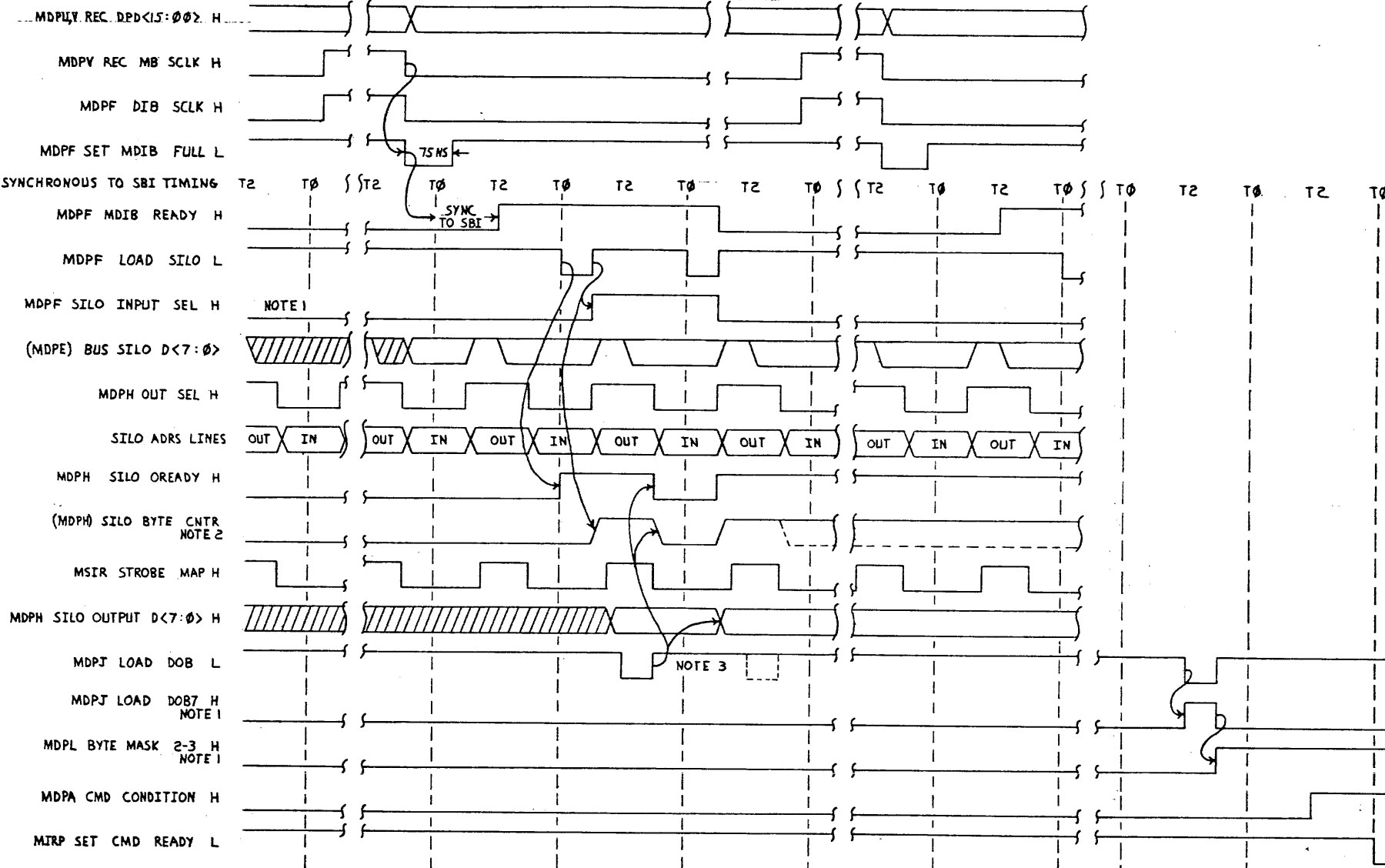
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TIMING ASYNCHRONOUS TO SBI TIMING

WAIT FOR
NEXT
SCLK

- NOTES:
1. FOR READ REVERSE, SILO INPUT SEL WILL INITIALLY BE SET HIGH; LOAD DOB0 WILL CAUSE BYTE MASK 1-0 TO BECOME TRUE AND BYTE MASK 1-0 WILL INITIATE CMD CONDITION.
 2. SIGNAL REPRESENTS THE OR OF ALL 4 COUNTER LINES
 3. LOAD DOB WILL ONLY OCCURE WHEN NEXT DOB IS EMPTY

TIMING SYNCHRONOUS TO SBI TIMING



CLEARED BY MSIJ WD2 ACK H

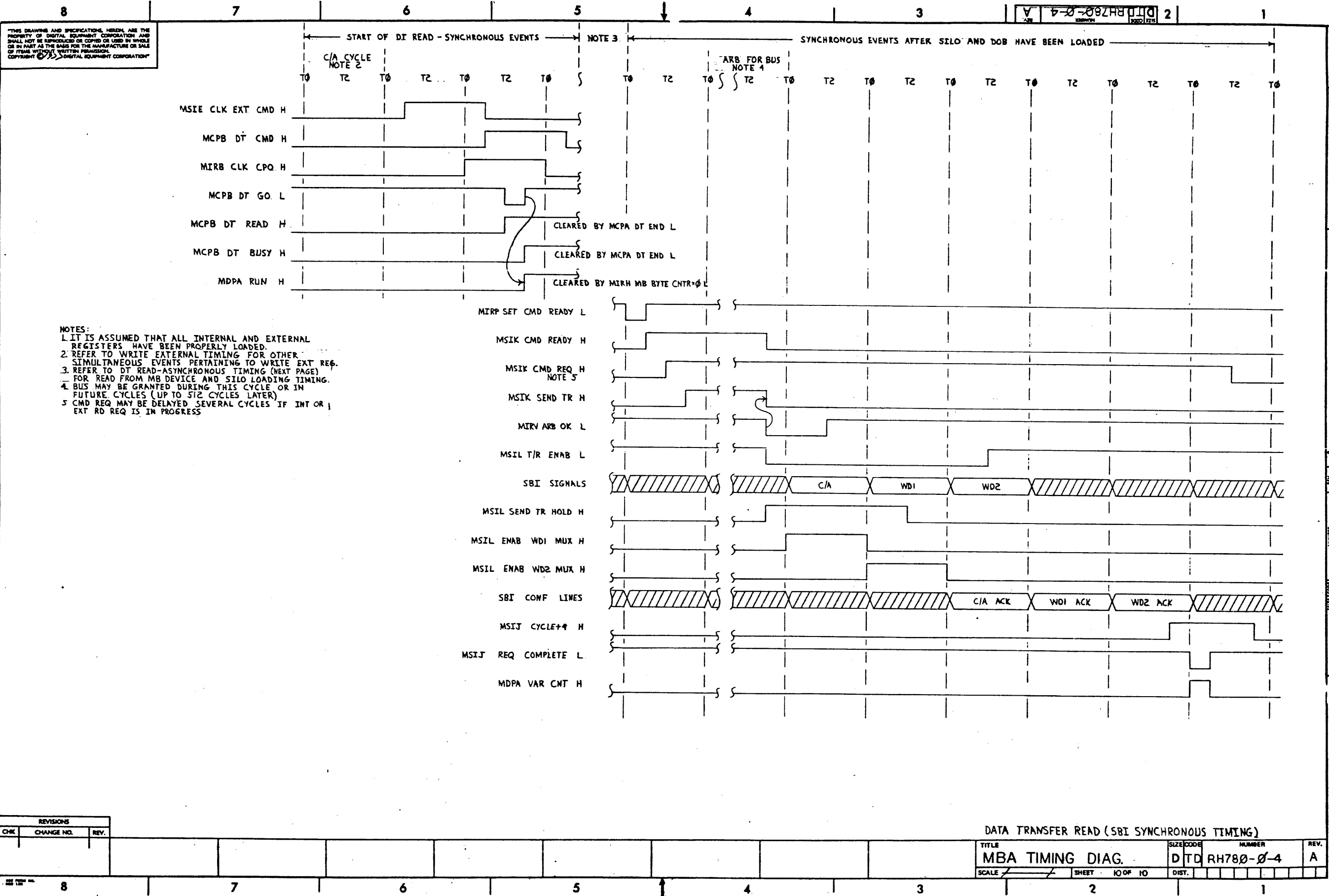
CLEARED AT T0 AFTER MSIK CMD REQ L

REFER BACK TO DT READ-SYNCHRONOUS
TIMING FOR COMPLETION OF CYCLE

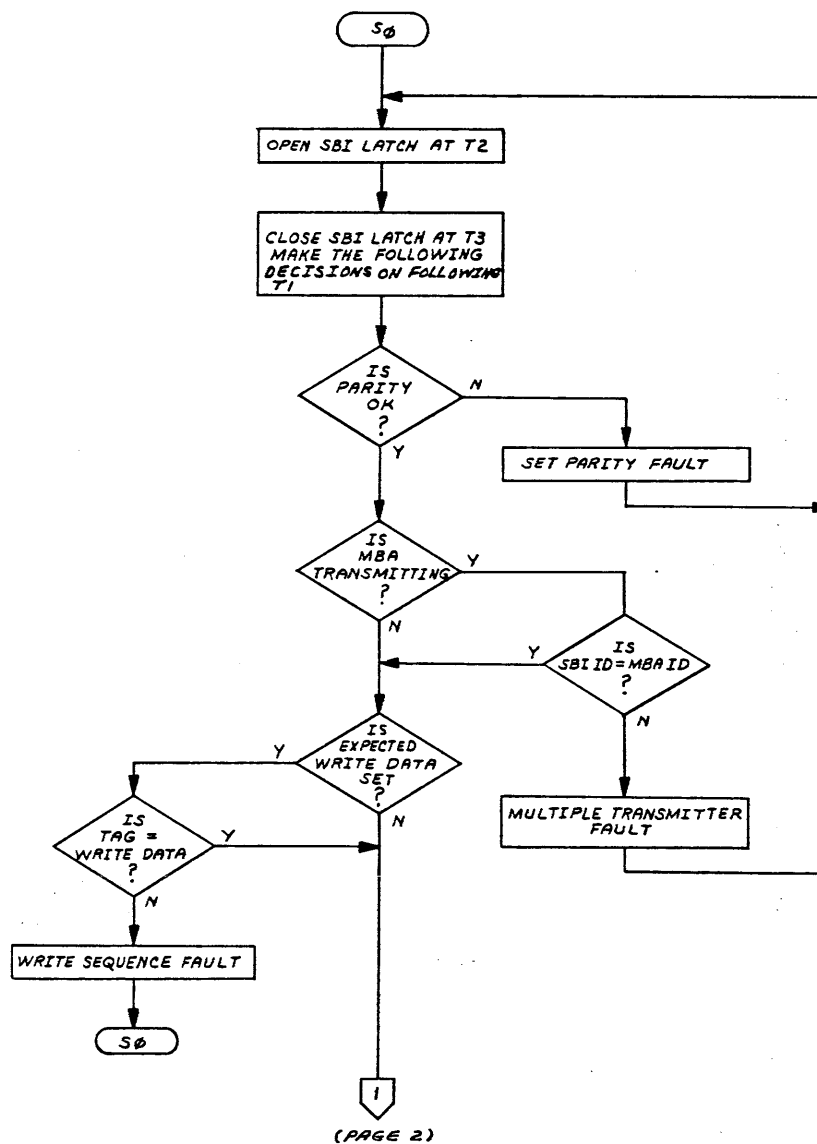
REVISIONS		
CHK	CHANGE NO.	REV.

(M8277 ETCH REV C OR LATER)
(DATA TRANSFER READ - SILO CONTROL, LOAD DOB)

TITLE	SIZE/COORD	NUMBER	REV.
MBA TIMING DIAG.	DITD	RH780-0-4	A
SCALE	SHEET	OF	DIST.
	7	10	



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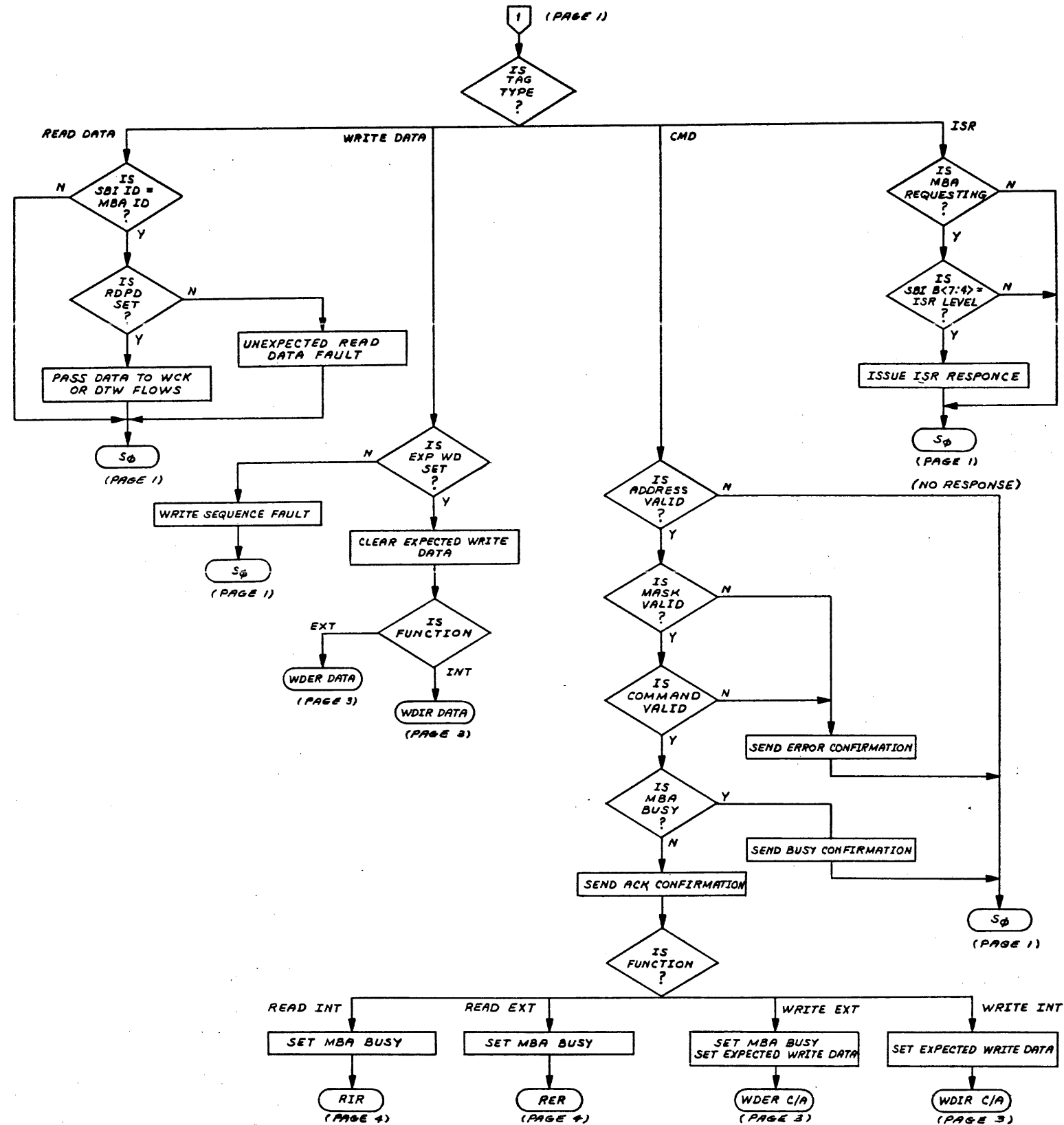
(SBI DECODE & VALID CHECK)

DRN. 11780	3/77	FIRST USED ON	VAX 11780	digital
CHK'D. [Signature]	6/77	TITLE	MBA FLOW DIAG.	
ENG. [Signature]	8/77	PROD. ENG. [Signature]	10/77	
PROD. [Signature]	4/77			
NEXT HIGHER ASSY.		SIZE CODE	NUMBER	REV.
B-DD-RH780-0		D	FD RH780-0-5	
SCALE 1/1		SHEET 1 OF 8	DIST.	

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NOTE:

THERE ARE 2 BUSY FLOPS
DT BUSY = DATA TRANSFER IN PROGRESS
MBA BUSY = MBA'S SBI INTERFACE
IS IN THE MIDDLE OF AN SBI
OPERATION.



(SBI DECODE AND VALID CHECK)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE CODE	NUMBER	REV.
MBA FLOW DIAG.		D FD	RH780-0-5	
SCALE		SHEET	2 OF 8	DIST.

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WRITE EXTERNAL REG - C/A

WDER C/A (PAGE 2)

CLOCK EXT COMMAND
REG, DRIVE SEL ← INT BUS

Sφ
(PAGE 1)

WRITE EXTERNAL REG - DATA

WDER DATA (PAGE 2)

CLOCK CPO
DATA BUFFER ← INT BUS

DT
COMMAND W/
GO BIT AND
RS = 0?

DT IN
PROGRESS?

SET PGE, CLEAR MBA BUSY

Sφ
(PAGE 1)

SET DT BUSY

PARALLEL
OPERATION

ASSERT MASS C<15 00, RS,
DS, AND CTOD

250NS DESKEW

ASSERT DEM

IS
RS=04?

RFD
READ FROM DEVICE
(PAGE 0)

WTD
WRITE TO DEVICE
(PAGE 5)

WCK
WRITE CHECK
(PAGE 5)

TIMEOUT?

NEGATE DEM
CLEAR MBA BUSY

Sφ
(PAGE 1)

250NS DESKEW

TRA
RECEIVED?

TIMEOUT?

SET NED

WRITE INTERNAL REG - C/A

WDIR C/A (PAGE 2)

CLOCK VALID COMMAND
CONTROL STORE ← INT BUS

Sφ
(PAGE 1)

WRITE INTERNAL REG - DATA

WDIR DATA (PAGE 2)

DATA BUFFER ← INT BUS

IS
DT BUSY?

IS
WRITE
ALLOWED TO
THIS
REGISTER?

SET PGE

WRITE DATA TO REG

Sφ
(PAGE 1)

(WRITE EXTERNAL/WRITE INTERNAL REGISTER)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE CODE	NUMBER	REV.
MBA FLOW DIAG	DFD	RH780-0-5	
SCALE	SHEET	3 OF 8	DIST.

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READ EXTERNAL REG

RER (PAGE 2)

CLOCK EXT COMMAND
REG, DRIVE SEL ← INT BUS

NEGATE CTOD, ASSERT
RS AND DS

250 NS DESKEW

ASSERT DEM

IS
RS = 04 ?

Y

N

TRA
RECEIVED ?

Y

N

250 NS DESKEW

STROBE DATA INTO REG

IS
PARITY
OK ?

Y

N

SET MCPE

CLEAR DATA REGISTER

NEGATE DEM
SET EXTERNAL READ READY

IS
ANOTHER
REQUEST IN
PROGRESS ?

Y

N

ASSERT DATA ON INTERNAL
TRI-STATE BUS (T1-T2)

(A)

READ INTERNAL REG

RIR (PAGE 2)

CLOCK VALID COMMAND
SELECT REGISTER OR MAP

SET INTERNAL READ READY

IS
ANOTHER
REQUEST IN
PROGRESS ?

Y

N

ASSERT DATA ON INTERNAL
TRI-STATE BUS (T1-T2)

(A)

ARBITRATE FOR SBI BUS

SBI
GRANTED ?

Y

N

GATE DATA ONTO SBI BUS

TIMEOUT ?

Y

N

SET IS TIMEOUT

CLEAR MBA BUSY

S0

(PAGE 1)

(READ EXTERNAL / READ INTERNAL REGISTER)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE CODE	NUMBER	REV.
MBA FLOW DIAG.		DFD	RH780-0-5	
SCALE	SHEET	DIST.		
	4 OF 8			

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9-0-082480-5 2

WRITE TO DEVICE OR WRITE CHECK

WTD (PAGE 3)

WCK (PAGE 3)

INIT SILO INPUT CTR
CLEAR DIB2 FULL
CLEAR SILO
INIT SILO OUTPUT CONTROL
INIT MASSBUS DATA CNTRL

PARALLEL OPERATIONS

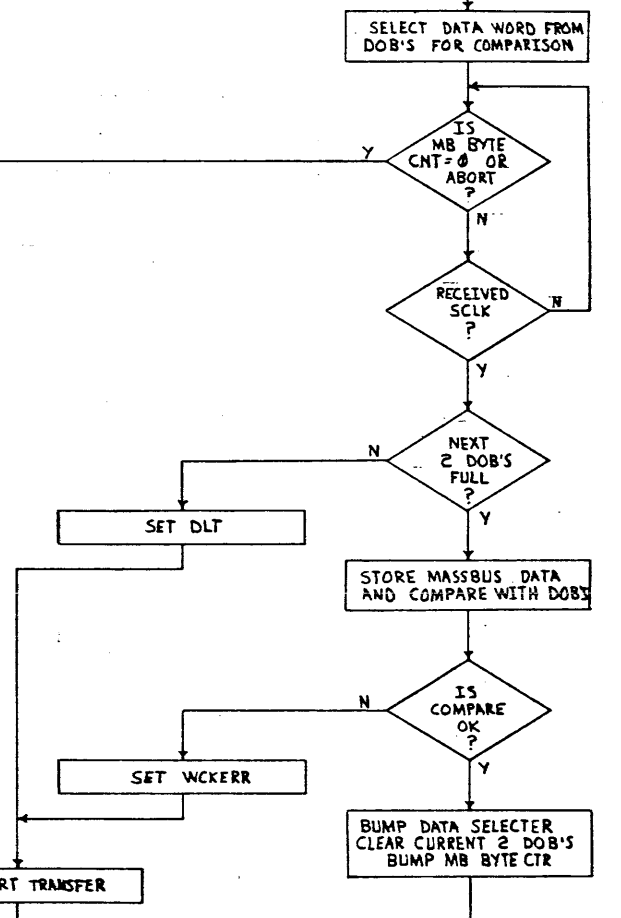
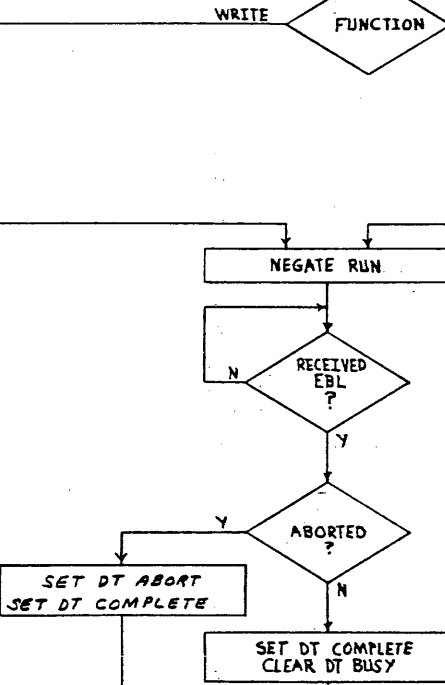
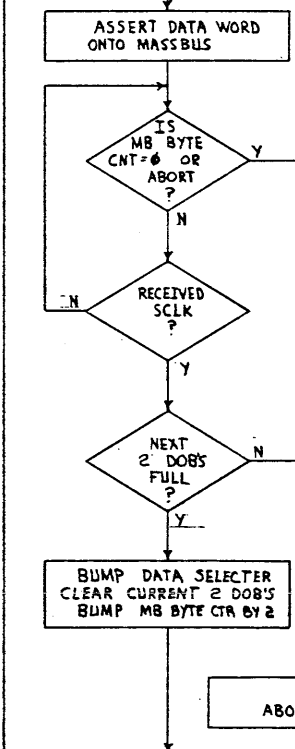
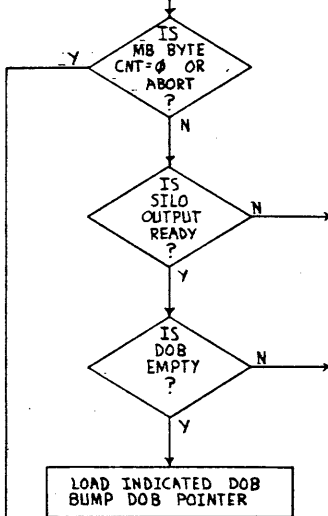
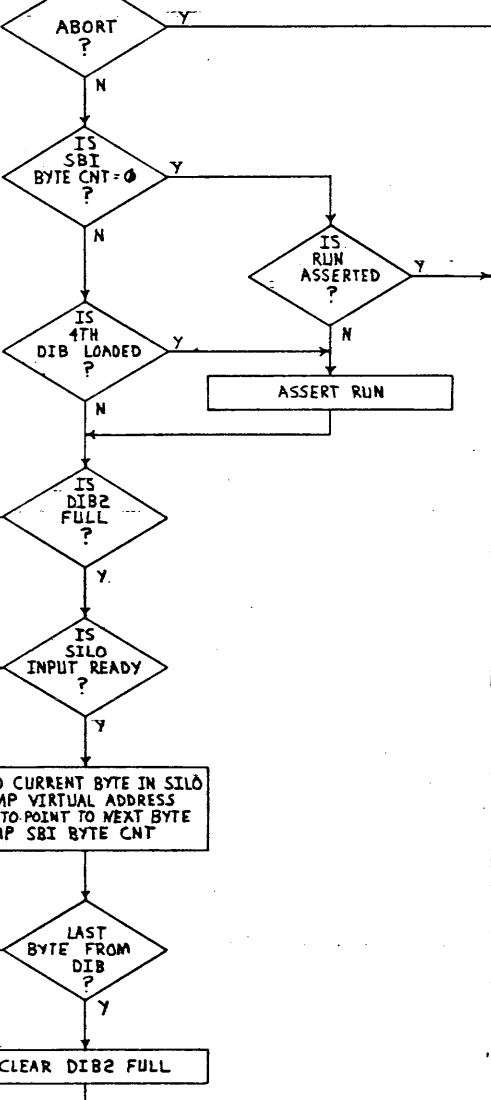
SILO INPUT CONTROL

SILO OUTPUT CONTROL

MASSBUS DATA CONTROL

SBI CONTROL

(PAGE 6)



50 (PAGE 1)

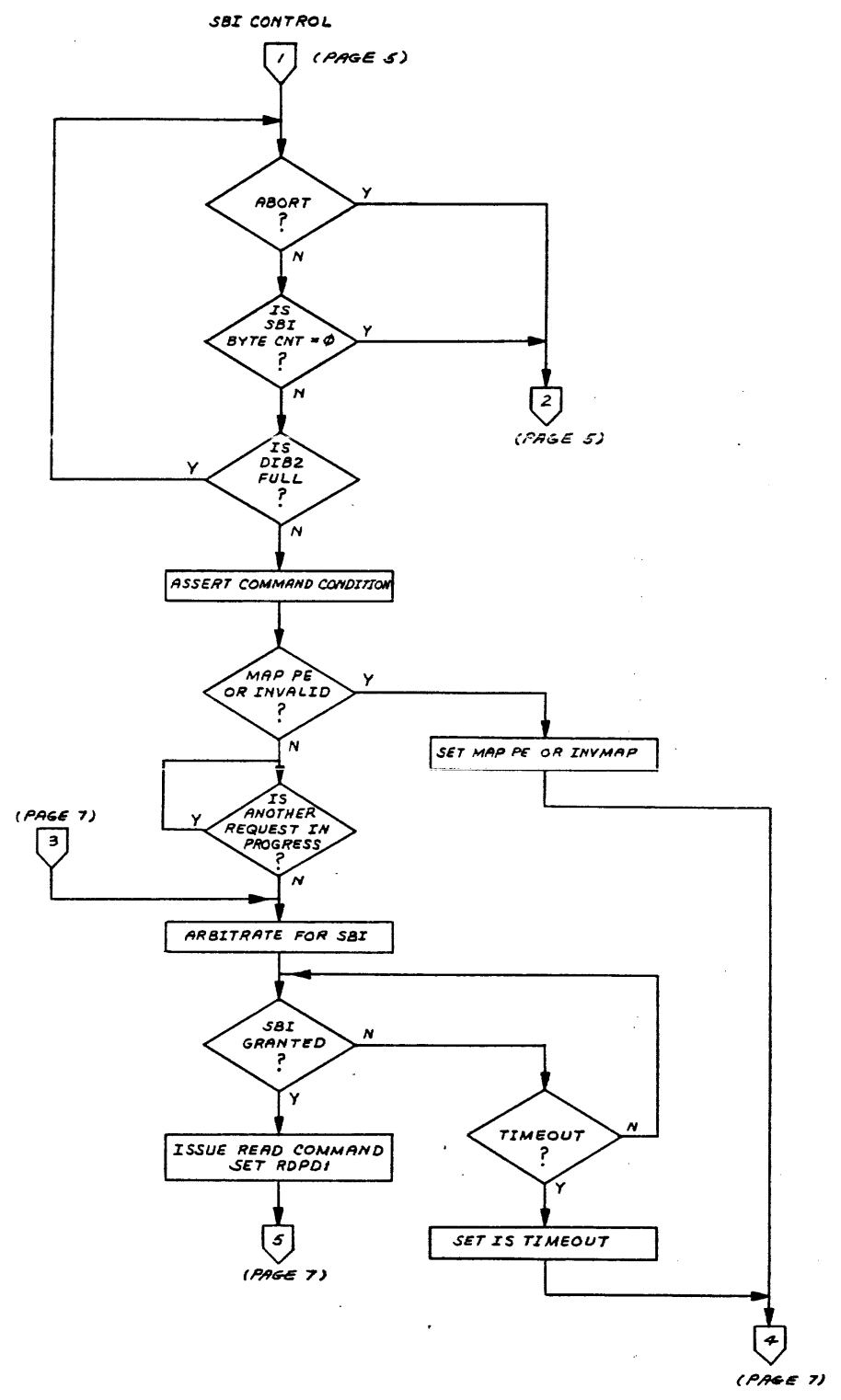
(PAGE 6,7)

(WRITE TO DEVICE/WRITE CHECK)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE/CODE	NUMBER	REV.
MBA FLOW DIAG.	DFD	RH780-0-5	
SCALE	SHEET 5 OF 8	DIST.	

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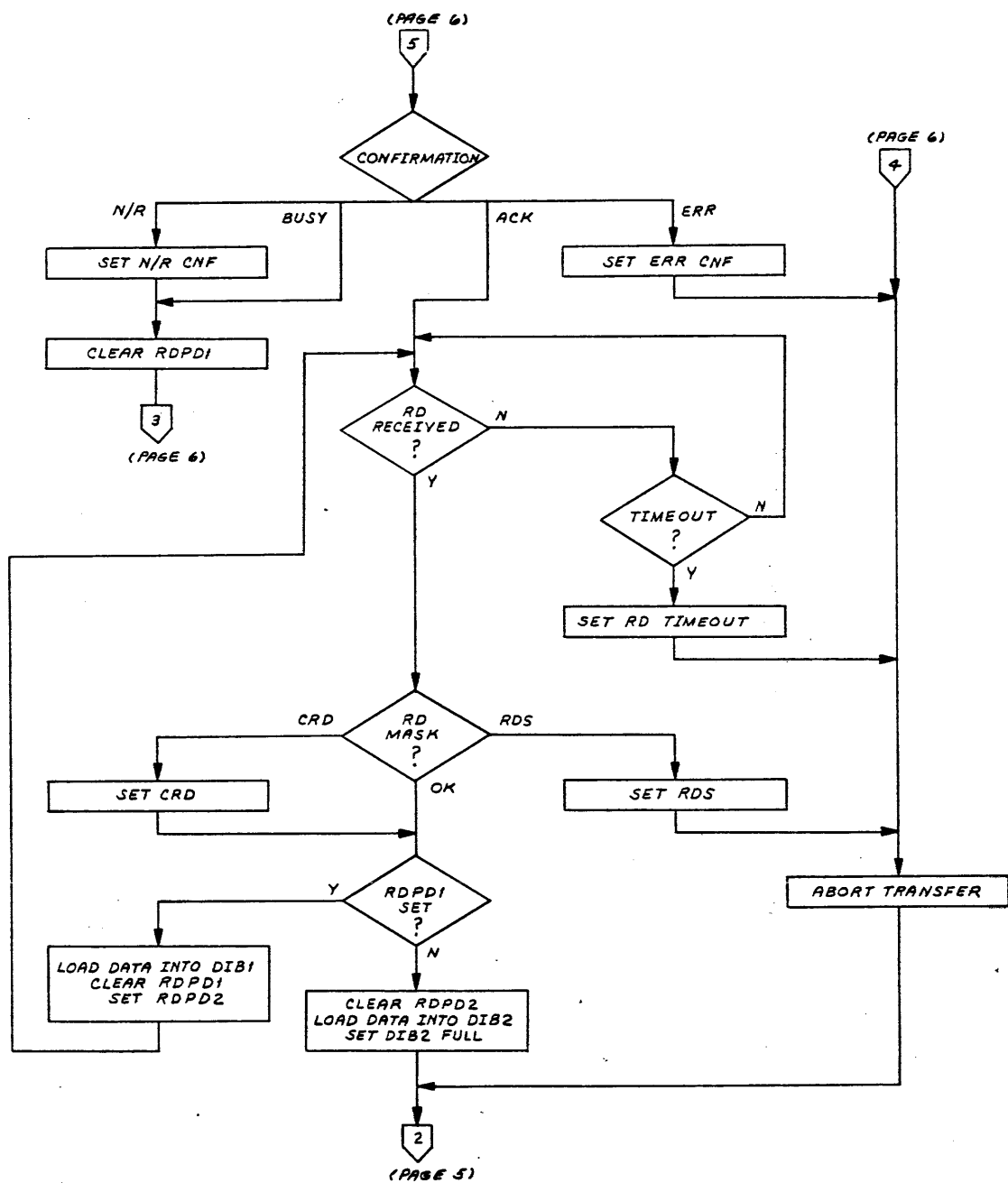


(WRITE TO DEVICE/WRITE CHECK (SBI CONTROL))

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE CODE	NUMBER	REV.
MBA FLOW DIAG.		D/FD	RH780-0-5	
SCALE	SHEET	6 OF 8	DIST.	

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(WRITE TO DEVICE/WRITE CHECK (SBI CONTROL))

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE CODE	NUMBER	REV.
MBA FLOW DIAG.		D	FD RH780-0-5	
SCALE		SHEET	7 OF 8	DIST.

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READ FROM DEVICE
(DT READ FWD OR REV)
RFD (PAGE 3)

INITIALIZE SILO
ASSERT RUN
INITIALIZE MDIB SEL
INITIALIZE DOB LOAD CNTL

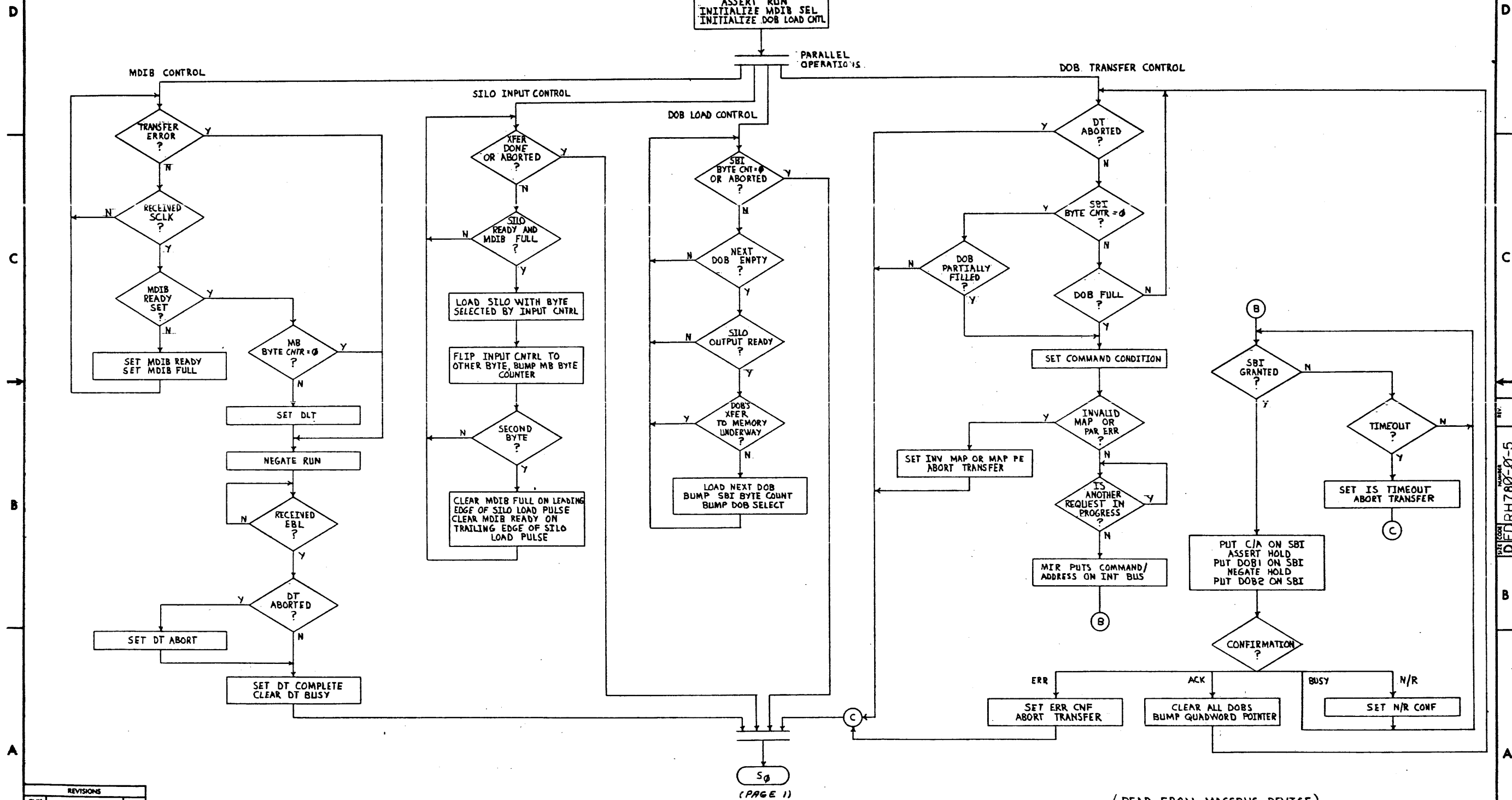
PARALLEL
OPERATIONS

MDIB CONTROL

SILO INPUT CONTROL

DOB LOAD CONTROL

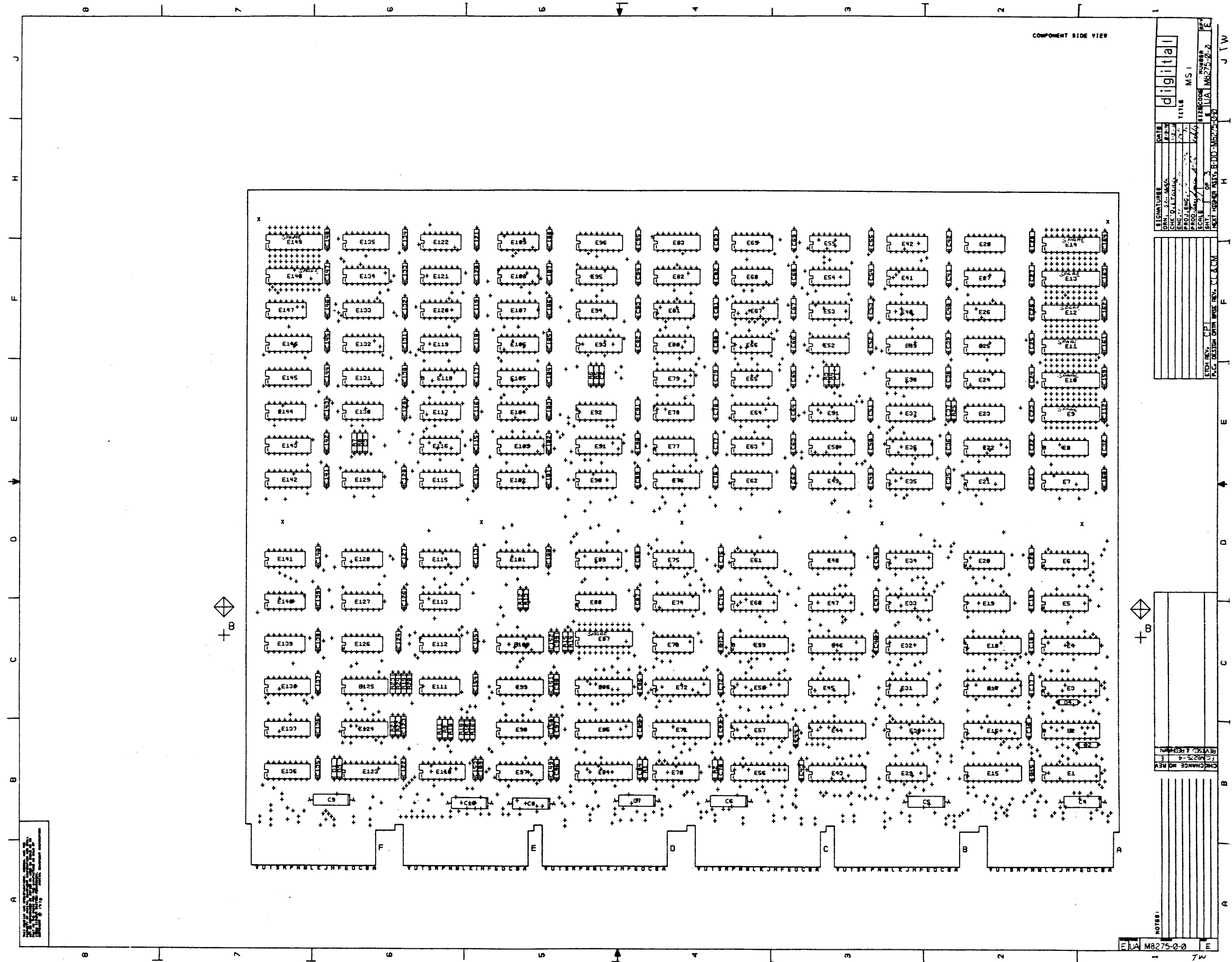
DOB TRANSFER CONTROL

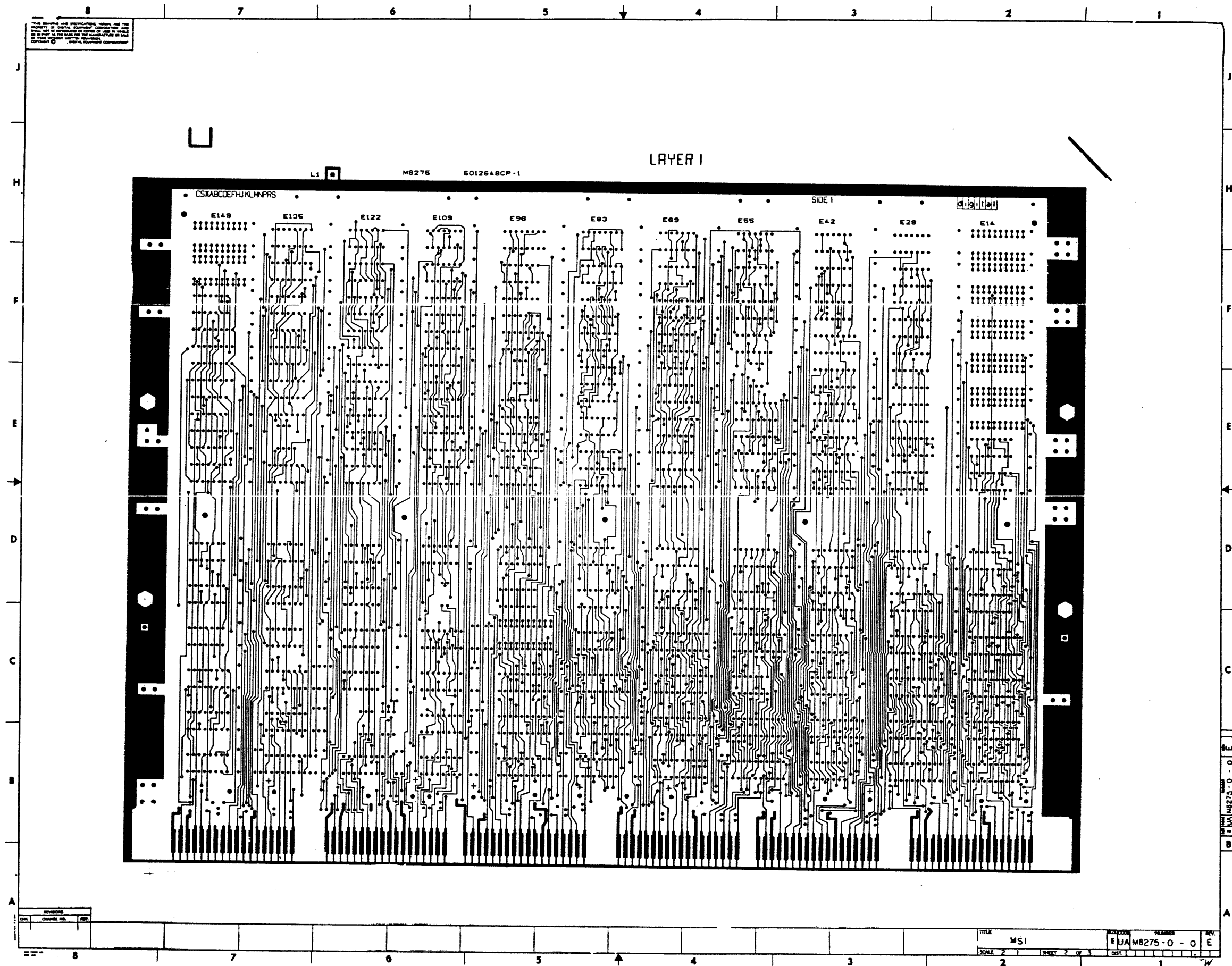


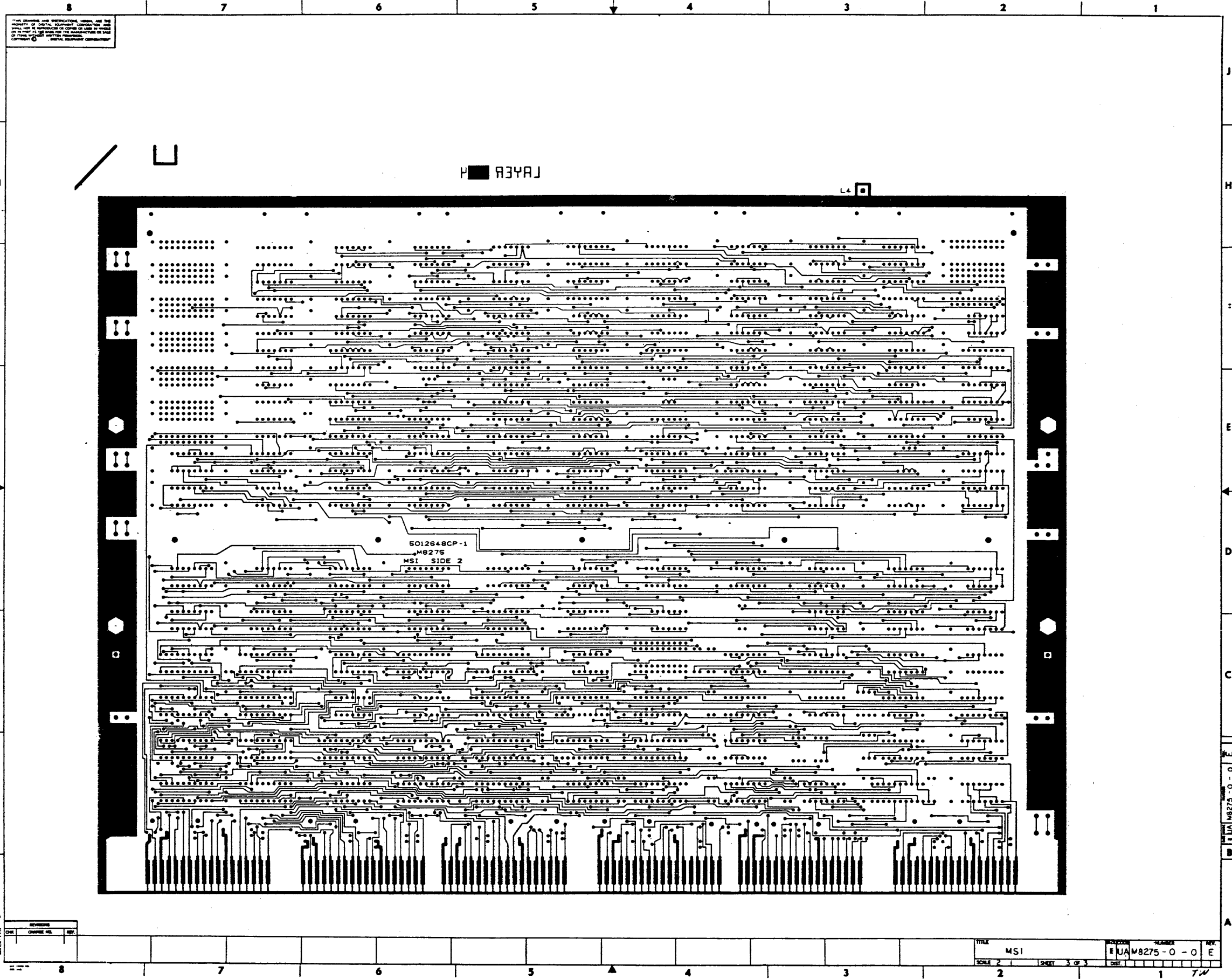
REVISIONS		
CHK	CHANGE NO.	REV.

(READ FROM MASSBUS DEVICE)

TITLE		SIZE CODE	NUMBER	REV.
MBA FLOW DIAG.		DFD	RH780-Q-5	
SCALE		SHEET	8 OF 8	DIST.







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REVISIONS
DATE CHANGE BY

TITLE
MSI
SCALE 2
SHEET 3 OF 3
REV. E
EUA M8275-0-0
T/M

AUTOMATED BY PRTLST.3L(32)

P A R T S L I S T

SHEET A1 OF A2

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
1	1	E-MD-5012648-0-0	5012648-00	M8275	1	
2	2		1012084-01	8 MFD 25V G% 30D AL EL	7	C4-C10
3	3		1012784-00	.047 MFD 50V -20+80 CER	135	C1-C3,C15-C28,C32,C35-C44, C46-C55,C62-C109,C112-C124, C126-C155,C159-C164
4	4		1103041-00	DEC 777 QS=12PCB PIV= 8VS	4	D1-D4
5	5		1300295-00	330 1/4W 5% CC	19	R3,R5,R7,R9-R24
6	6		1300365-00	1 K 1/4W 5% CC	2	R1,R2
7	7		1301424-00	680 1/4W 5% CC	3	R4,R6,R8
8	8		1910532-00	74S00 NAND GATE-QUAD 2IN	7	E26,E40,E68,E77,E104,E116,E132
9	9		1912388-00	74S02 NOR GATE-QUAD 2IN,PO	1	E41
10	10		1910534-00	74S04 INVERTER GATE-HEX 1I	7	E25,E52,E63,E90,E94,E102,E107
11	11		1912389-00	74S08 AND GATE-QUAD 2IN,PO	9	E23,E28,E55,E80,E101,E115,E128, E130,E144
12	12		1910536-00	74S10 NAND GATE-TRIPLE 3IN	4	E27,E113,E114,E139
13	13		1910537-00	74S11 AND GATE-TRIPLE 3INP	9	E54,E65,E53,E72,E120,E131,E126, E129,E108
14	14		1910539-00	74S20 NAND GATE-DUAL 4INPU	2	E24,E62
15	15		1912813-00	LS27 NOR GATE-TRIPLE 3IN	3	E20,E45,E75
16	16		1910542-00	74S64 A-O-I GATE 4-2-3-2	9	E106,E66,E105,E119,E121,E122, E133,E147,E81
17	17		1910544-00	74S74 FF-D DUAL,EDGE TRIGG	8	E69,E79,E141,E127,E117,E112, E140,E109
18	18		1912803-00	LS04 INVERTER GATE-HEX 1I	1	E21
19	19		1912089-00	74S85 CMPRTR-4BIT MAGNITUD	4	E22,E35,E37,E38
20	20		1910545-00	74S112 FF-JK DUAL,EDGE TRIG	4	E67,E118,E142,E145
21	21		1911983-00	74S133 NAND GATE-POSITIVE 1	1	E39
22	22		1911675-00	74S138 DECODER/DEMUX 3-8 LIN	3	E61,E74,E76
23	23		1910546-00	74S140 NAND GATE-DUAL 4INPU	3	E42,E78,E111
24	24		1910548-00	74S157 MUX 1 OF 2 (QUAD)	8	E5,E6,E19,E33,E34,E47,E48,E60

REVISION HISTORY			BASIC PART NO: M8275		DRN:	L.REYNOLDS	DATE: 12-JUL-79	D I G I T A L				
ENG!	ECO NUMBER		REV	SECTION A OF A				TITLE PARTS LIST				
---	INITIAL		D	SECTION VARIATION INDEX		CHK'D:	F.SMART	DATE: 12-JUL-79	MSI			
KO	TW003		D	[A] 00								
BS	TW004		E	[B]								
BS	TW004		E	[C]		DES.ENG:	K.OKIN	DATE: 12-JUL-79				
BS	TW004		E	[D]								
				[E]					DOCUMENT NUMBER			
				[F]		RESP.ENG.:	K.OKIN	DATE: 12-JUL-79				
				[H]					SIZE	CODE	NUMBER	REV
				[J]								
				[K]		MFG.ENG.:	M.TERILLO	DATE: 12-JUL-79	K	PL	M8275-0-DBP	E
				[L]								
				[M]		ASSEMBLY NUMBER:		TOP DOCUMENT NUMBER:	FILE NAME:		EDIT #	
				[N]		E-UA-M8275-0-0			Z0624E.PLS		6	

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AUTOMATED BY PRTLST.3L(32)

P A R T S L I S T

SHEET A2 OF A2

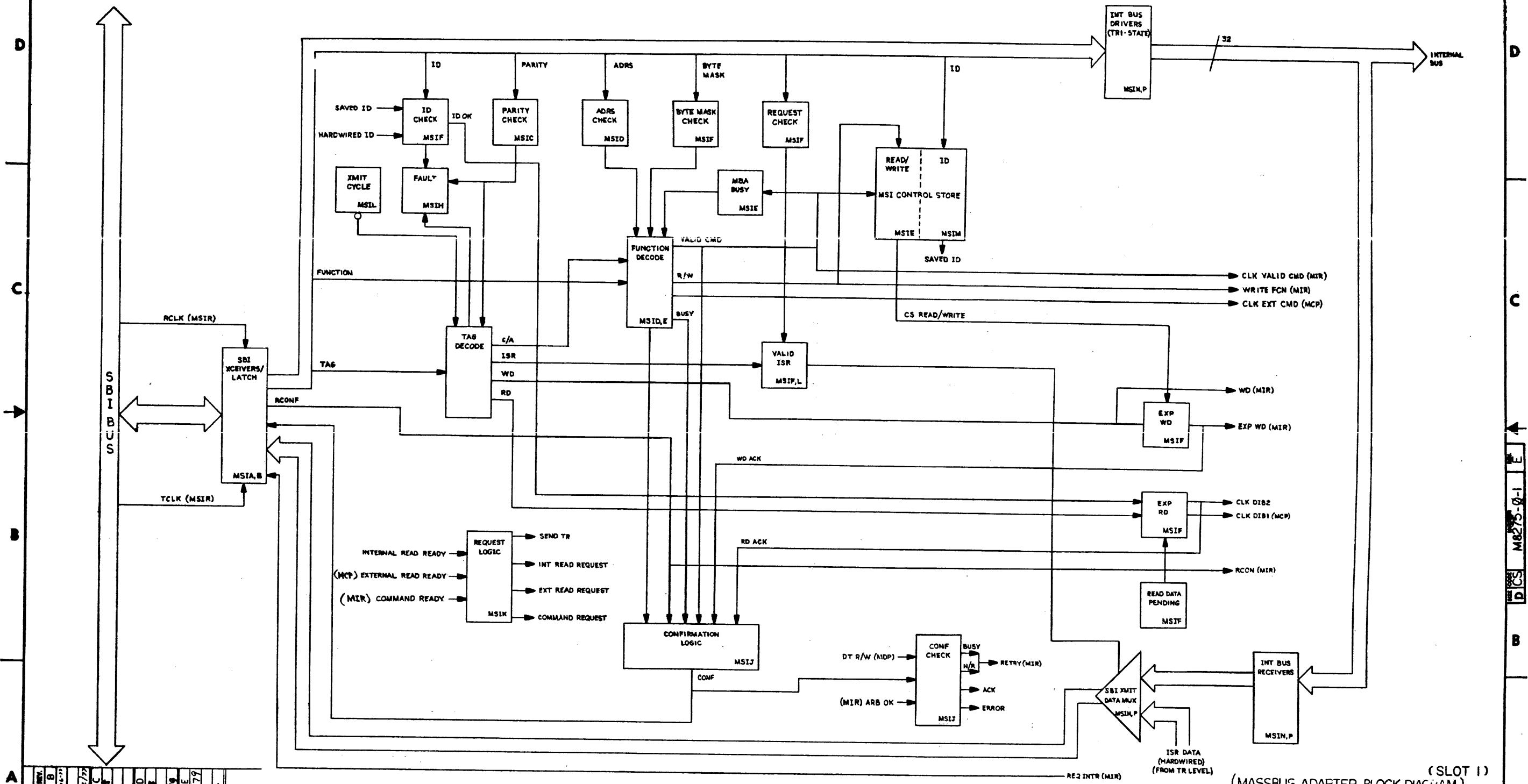
LINE ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
25	25	1910957-00	74S175 FF-D QUAD COMMON CLO	5	E89,E93,E103,E135,E143
26	26	1912824-00	LS74 FF-D DUAL,EDGE TRIGG	1	E95
27	27	1912847-00	LS157 MUX 1 OF 2(QUAD)	2	E136,E137
28	28	1910550-00	74S174 FF-D HEX	2	E64,E91
29	29	1912697-00	LS174 FF-D HEX W/CLEAR	1	E50
30	30	1912854-00	LS193 COUNTER,SYNCHR,4BIT,	2	E82,E83
31	31	1912855-00	LS195 SHIFT REG.,4BIT PARA	3	E96,E134,E146
32	32	1913493-00	74S241 OCTAL BUFFER,TRI-STA	4	E3,E17,E44,E57
33	33	1912860-00	LS259 LATCH 8BIT	3	E7,E36,E70
34	34	1911573-00	74S280 PARITY GEN/CHKR,9BIT	5	E29,E31,E32,E73,E88
35	35	1912867-00	LS298 MUX 1 OF 4,2IN W/S	3	E49,E51,E138
36	36	1913670-00	74S373 LATCH 8BIT TRASP TR	4	E4,E18,E46,E59
37	37	1911398-00	10101 OR/NOR GATE,4-2IN	2	E98,E110
38	38	1911402-00	10105 OR/NOR GATE,2-3-2	1	E124
39	39	1911415-00	10125 ECL TO TTL TRNSLTR	3	E99,E100,E125
40	40	1913220-00	10216 RECEIVER,TRIPLE LINE	1	E97
41	41	1912731-00	DEC 8646A TRANSCEIVER,4BIT BUS	14	E1,E2,E15,E16,E30,E43,E56,E58, E71,E72,E84,E85,E86,E123
42	42	1912865-00	LS283 ADDER-4BIT BINARY FU	1	E8
43	43	1210711-02	HANDLE,MODULE,HEX	1	
44	44	9000024-01	EYELET, ROLLED FLANGE, .121 OD X	12	
45	45	1300229-00	100 1/4W 5% CC	1	R25
46	46	9105740-55	*** THIS ITEM IS NOT USED ***	-	

0 NOTE: E9-E14,E87,E148,E149 ARE SPARE I.C.S.

D	I	G	I	T	A	L	TITLE	SECTION A OF A	SIZE	CODE	DOCUMENT NUMBER	REV
							MSI		K	PL	M8275-0-DBP	E

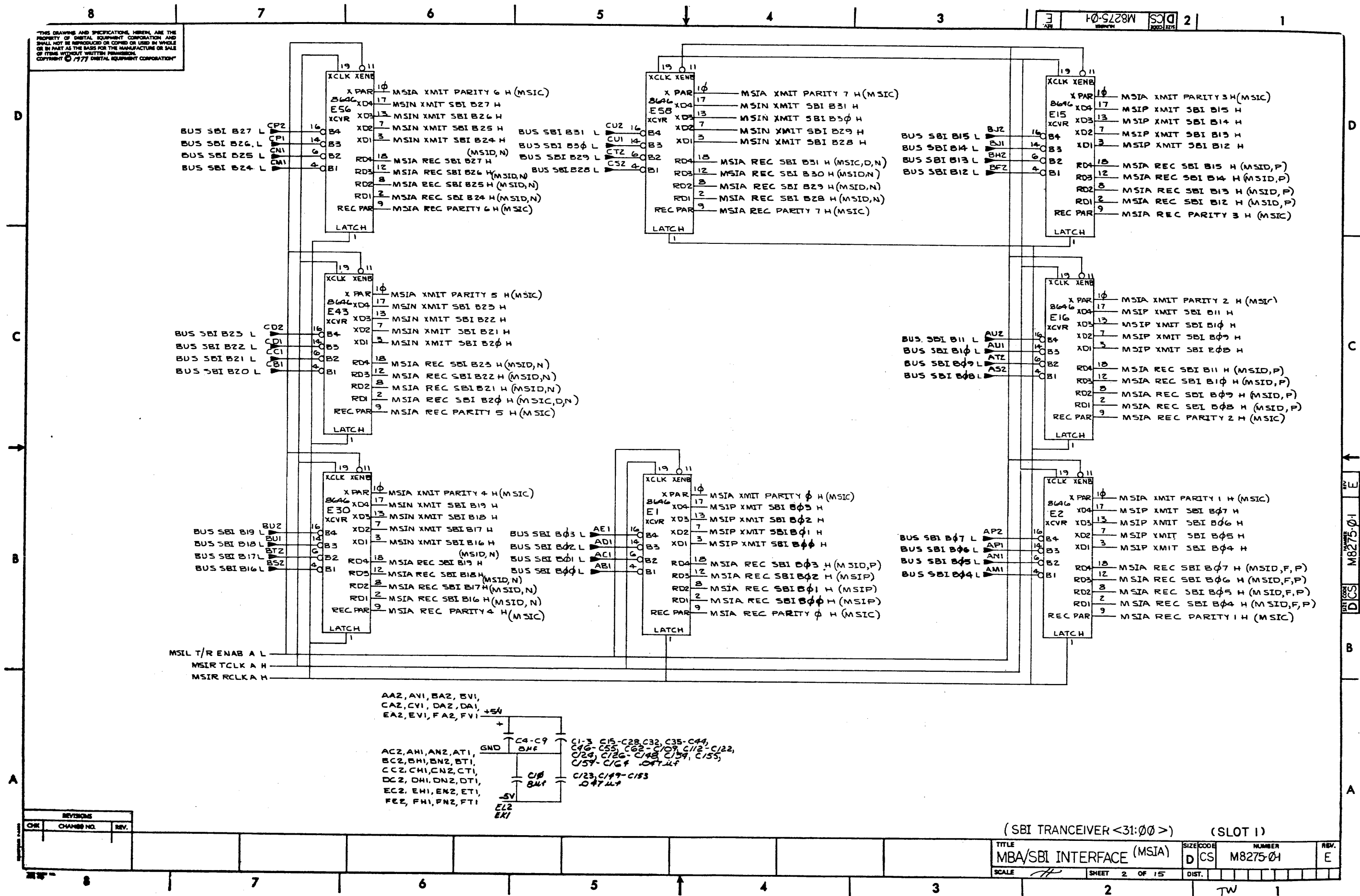
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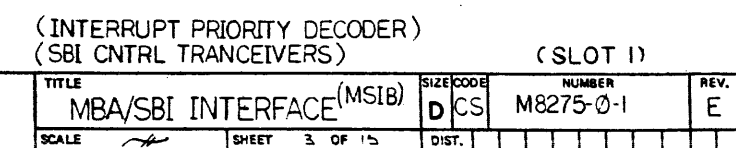
1-0-5128W
E 2



REV.	DATE	BY	CHKD.
1	8/2/77	K. OKIN	K. OKIN
2	8/2/77	K. OKIN	K. OKIN
3	8/2/77	K. OKIN	K. OKIN
4	8/2/77	K. OKIN	K. OKIN
5	8/2/77	K. OKIN	K. OKIN
6	8/2/77	K. OKIN	K. OKIN
7	8/2/77	K. OKIN	K. OKIN
8	8/2/77	K. OKIN	K. OKIN

DRN. E. LYNCH		5-11-77	FIRST USED ON	digital
CHKD. J. LYNCH		5-11-77	TITLE	
ENG. G. LYNCH		5-11-77	MBA/SBI INTERFACE	
PROJ. ENG. G. LYNCH		5-11-77	(MSI)	
PROD. G. LYNCH		5-11-77	SIZE CODE	
NEXT HIGHER ASSY.			D CS	
SCALE		1/1	NUMBER	
SHEET 1 OF 15			M8275-0-1	
			REV. E	





REVISIONS		
CHK	CHANGE NO.	REV.

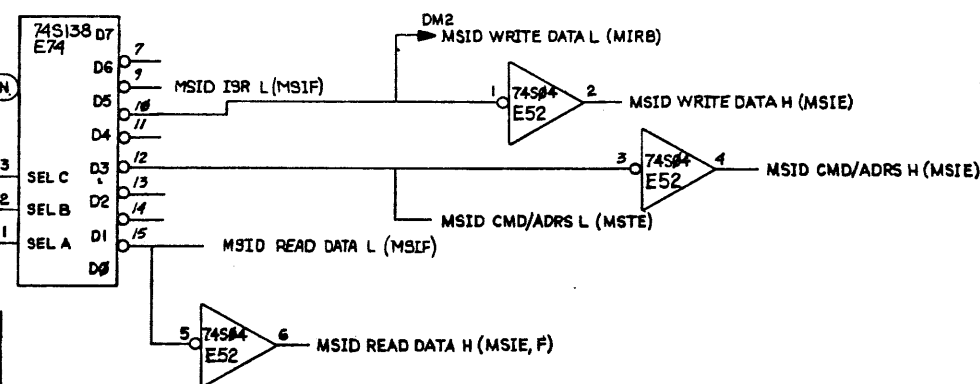
(SBI PARITY GEN/CHECK)				(SLOT 1)				
TITLE			SIZE		CODE		NUMBER	REV.
MBA/SBI INTERFACE			D		CS		M8275-0-1	E
(MSIC)								
SCALE		SHEET		OF		DIST.		
11		4		15				

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MSIF NOT USING SBI L
MSIL XCYCLE L
MSIC CNTRL PAR ERR H
MSIC DATA PAR ERR H

DATA TYPE	2	1	0
ISR	1	1	0
WRITE DATA	1	0	1
CMD/ADRS	0	1	1
READ DATA	0	0	1

74S85	
EQUALS	
A=B	IN OUT
Y	L L
N	L L
Y	H H
N	H H

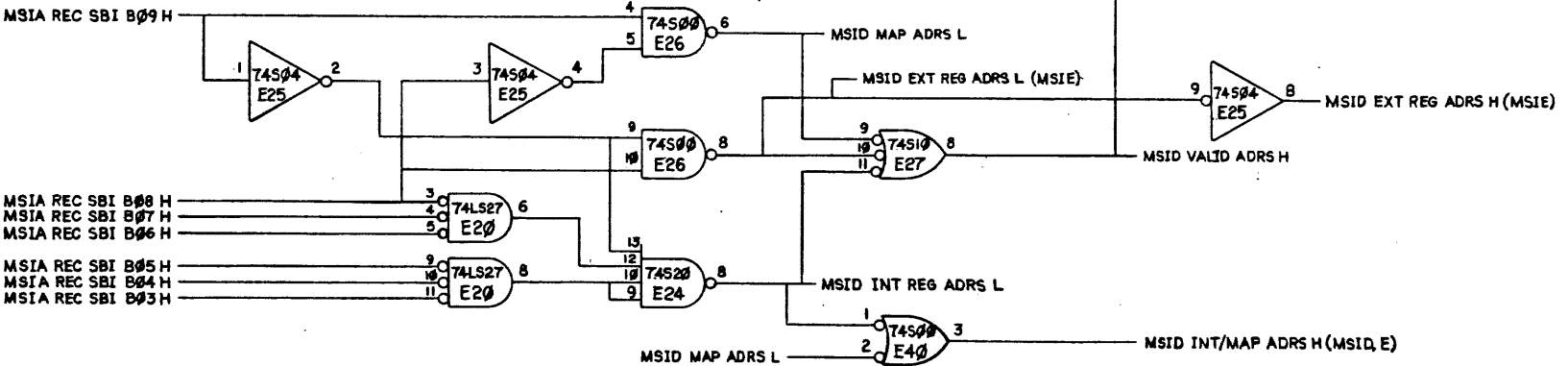
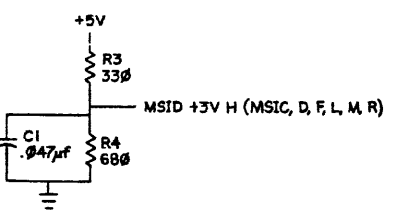
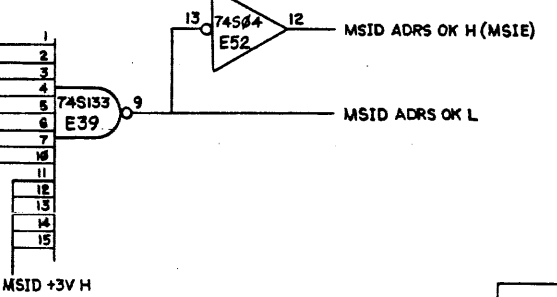
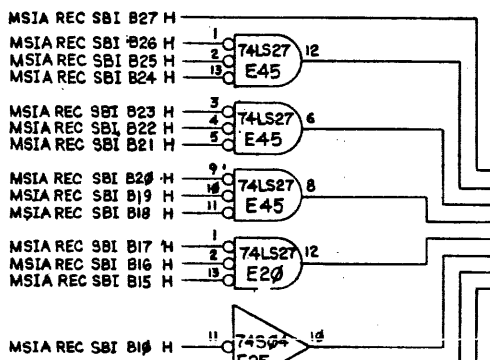
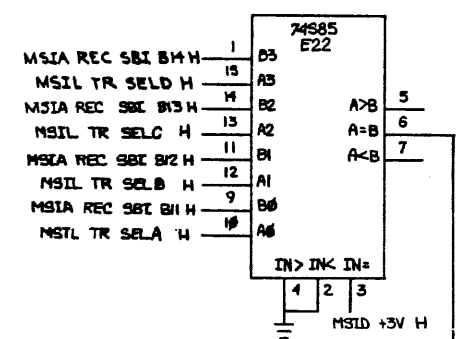


MSIB REC MASK 3 H
MSIB REC MASK 2 H
MSIB REC MASK 1 H
MSIB REC MASK 0 H

MSIA REC SBI B20 H
MSIA REC SBI B29 H
MSIA REC SBI B28 H

INTERLOCKED FUNCTIONS
TREATED AS NORMAL
READS AND WRITES

MSIA REC SBI BITS			
WRITE FCN	B31	B30	B29
WRITE FCN	0	1	1
WRITE FCN	0	0	1
READ FCN	0	0	1
READ FCN	0	1	0



MSIA REC SBI B09 H
MSIA REC SBI B08 H
MSIA REC SBI B07 H
MSIA REC SBI B06 H
MSIA REC SBI B05 H
MSIA REC SBI B04 H
MSIA REC SBI B03 H

MSID MAP ADRS L
MSID INT REG ADRS L
MSID INT/MAP ADRS H (MSID, E)

74S138													
ENABLE			SELECT			OUTPUT							
6	5	4	C	B	A	D0	D1	D2	D3	D4	D5	D6	D7
X	X	H	X	X	X	H	H	H	H	H	H	H	H
X	H	X	X	X	X	H	H	H	H	H	H	H	H
L	X	X	X	X	X	H	H	H	H	H	H	H	H
H	L	L	L	L	L	L	H	H	H	H	H	H	H
H	L	L	L	L	L	H	L	H	H	H	H	H	H
H	L	L	L	L	L	H	H	L	H	H	H	H	H
H	L	L	L	L	L	H	H	H	L	H	H	H	H
H	L	L	L	L	L	H	H	H	H	L	H	H	H
H	L	L	L	L	L	H	H	H	H	H	L	H	H
H	L	L	L	L	L	H	H	H	H	H	H	L	H

SIGNAL NAME		MSIA REC SBI BITS			
		B09	B08	B07-B03	B02-B00
MSID MAP ADRS L		1	0	X	X
MSID EXT REG ADRS L		0	1	X	X
MSID INT REG ADRS L		0	0	0	X

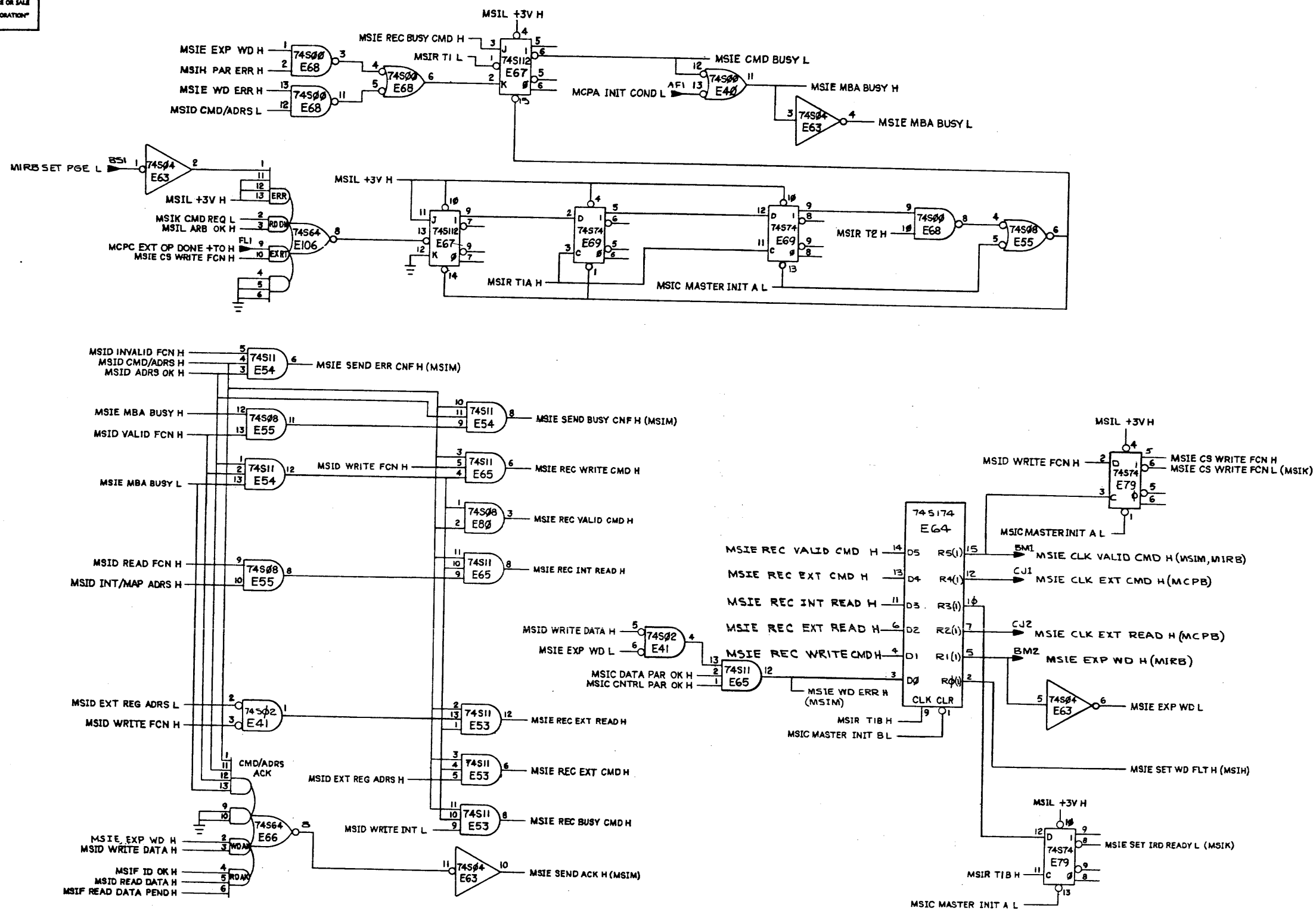
REVISIONS		
CHK	CHANGE NO.	REV.

(VALID ADRS/FUNCTION CHECK) (SLOT 1)

TITLE	SIZE CODE	NUMBER	REV.
MBA/SBI INTERFACE (MSID)	D CS	M8275-0-1	E
SCALE	SHEET	OF	DIST.
	5	15	

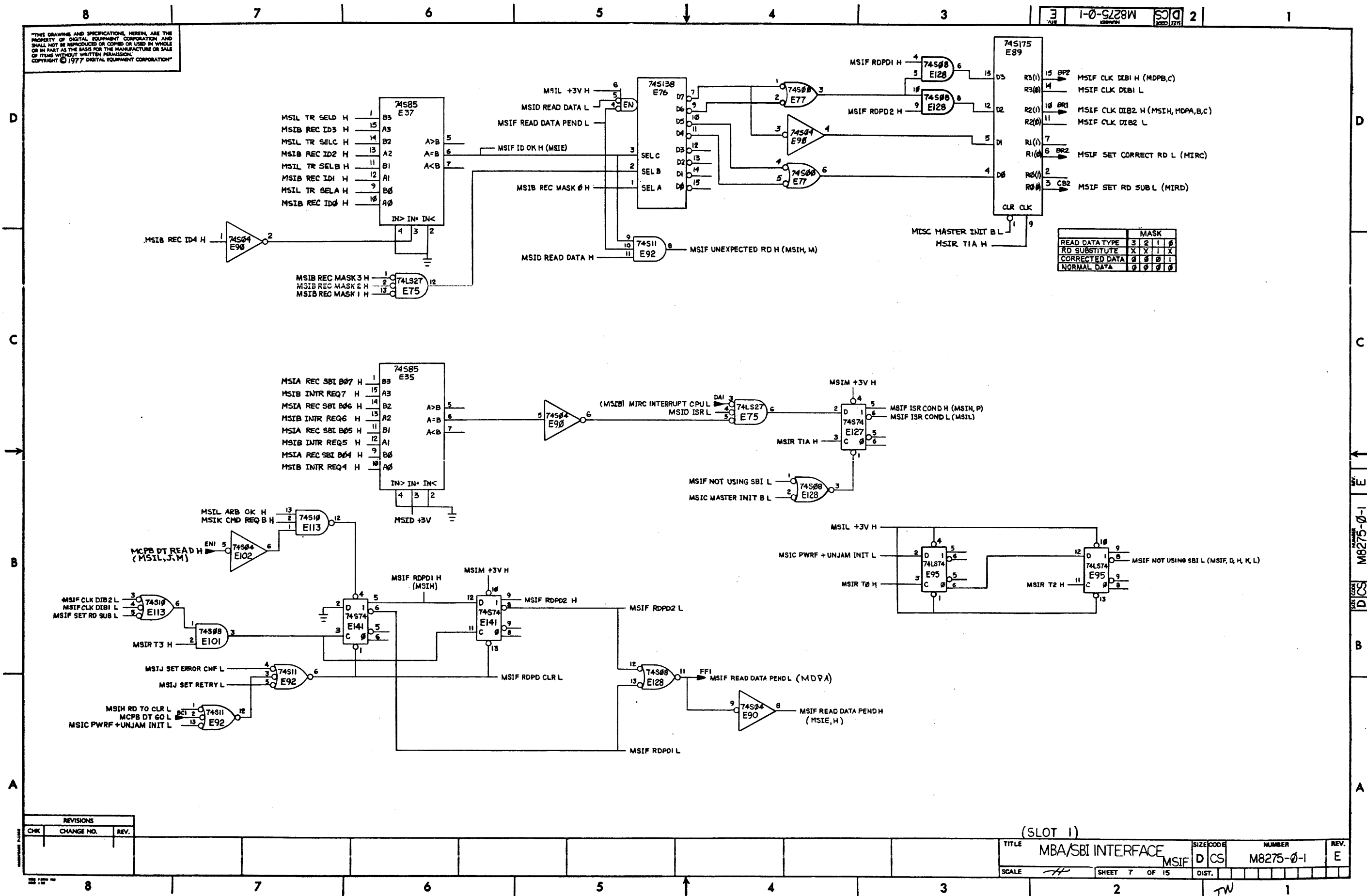
TW 1

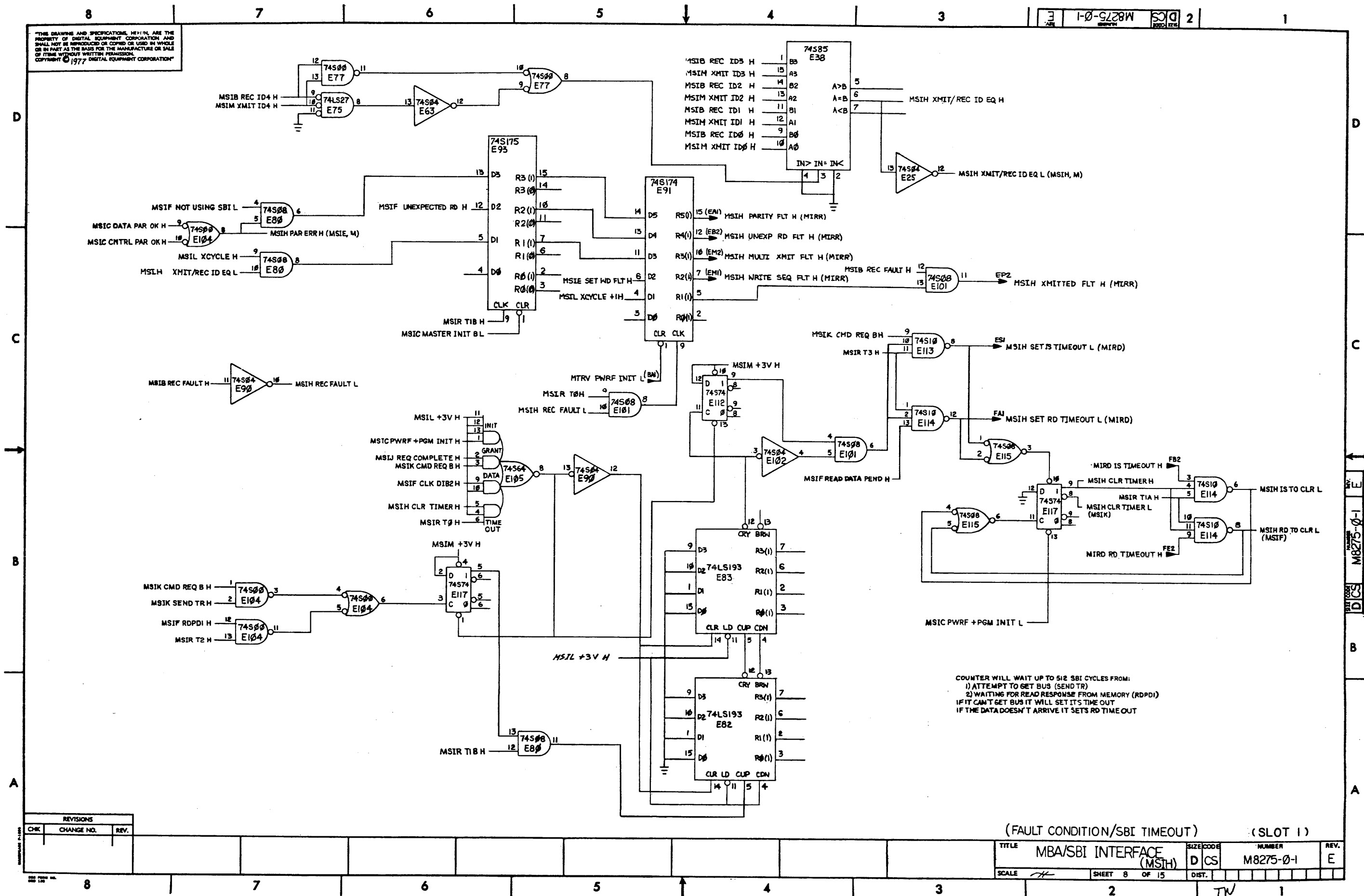
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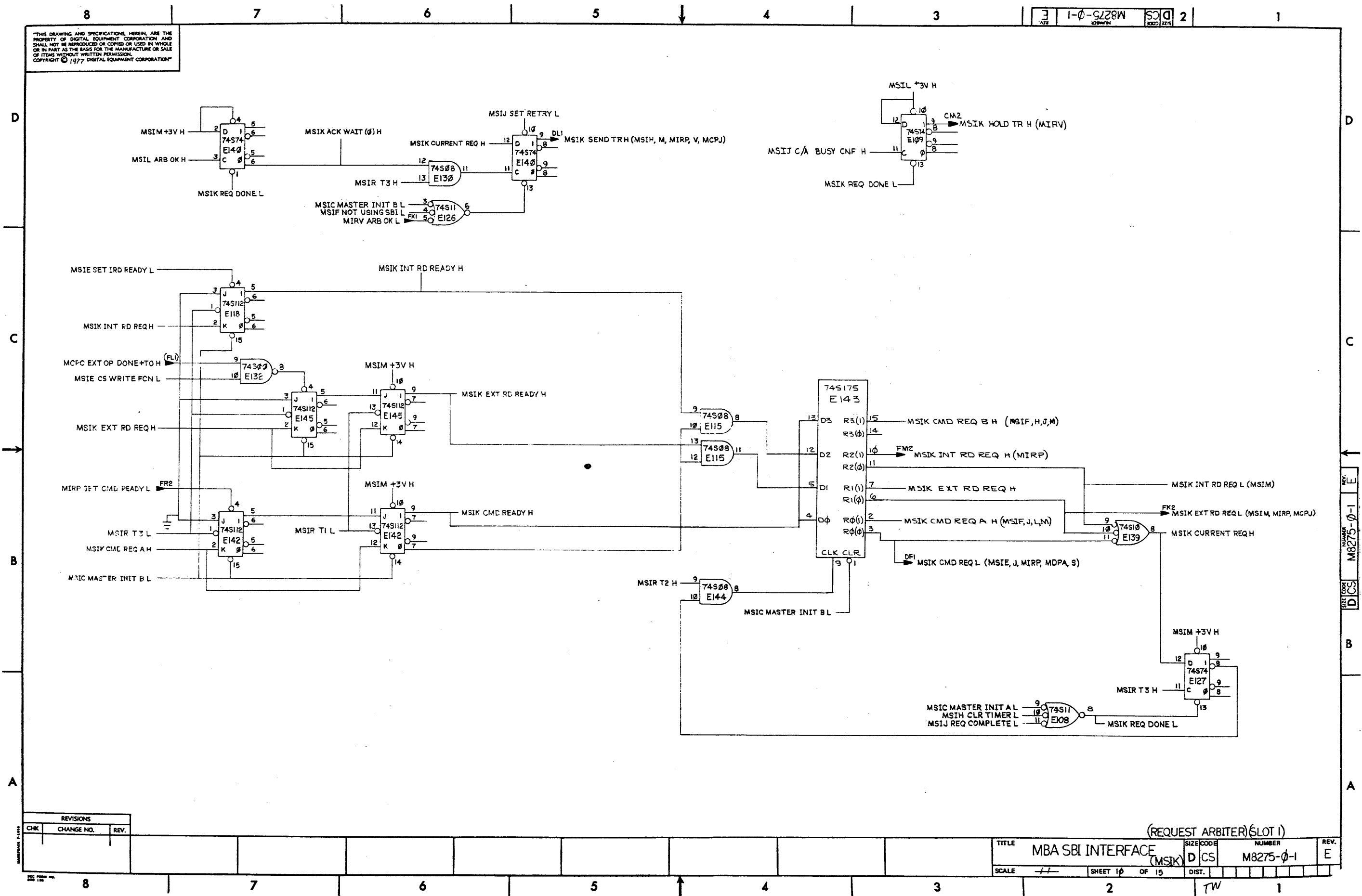
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		MBA/SSI INTERFACE (MSIE)		SIZE	CODE	NUMBER	REV.
SCALE		—H—		SHEET	6	OF 15	DIST.
				TW			

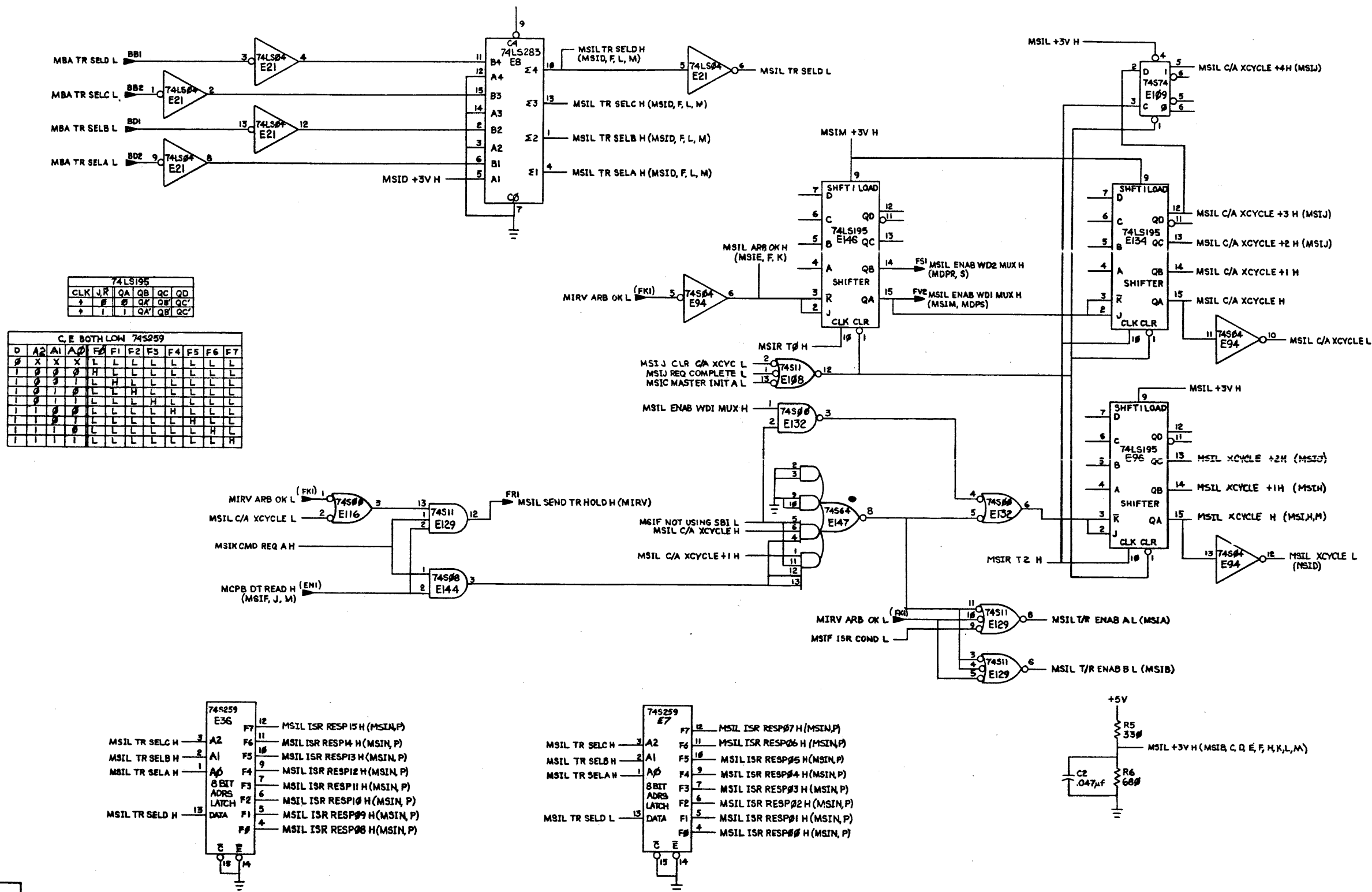




* NO ACK RECEIVED FOR FIRST LONG WORD
DATA WRITTEN TO MEMORY DURING A DT READ OPERATION
** NO ACK RECEIVED FOR SECOND LONG WORD
? CPU DID NOT ACK THE READ DATA IT REQUESTED



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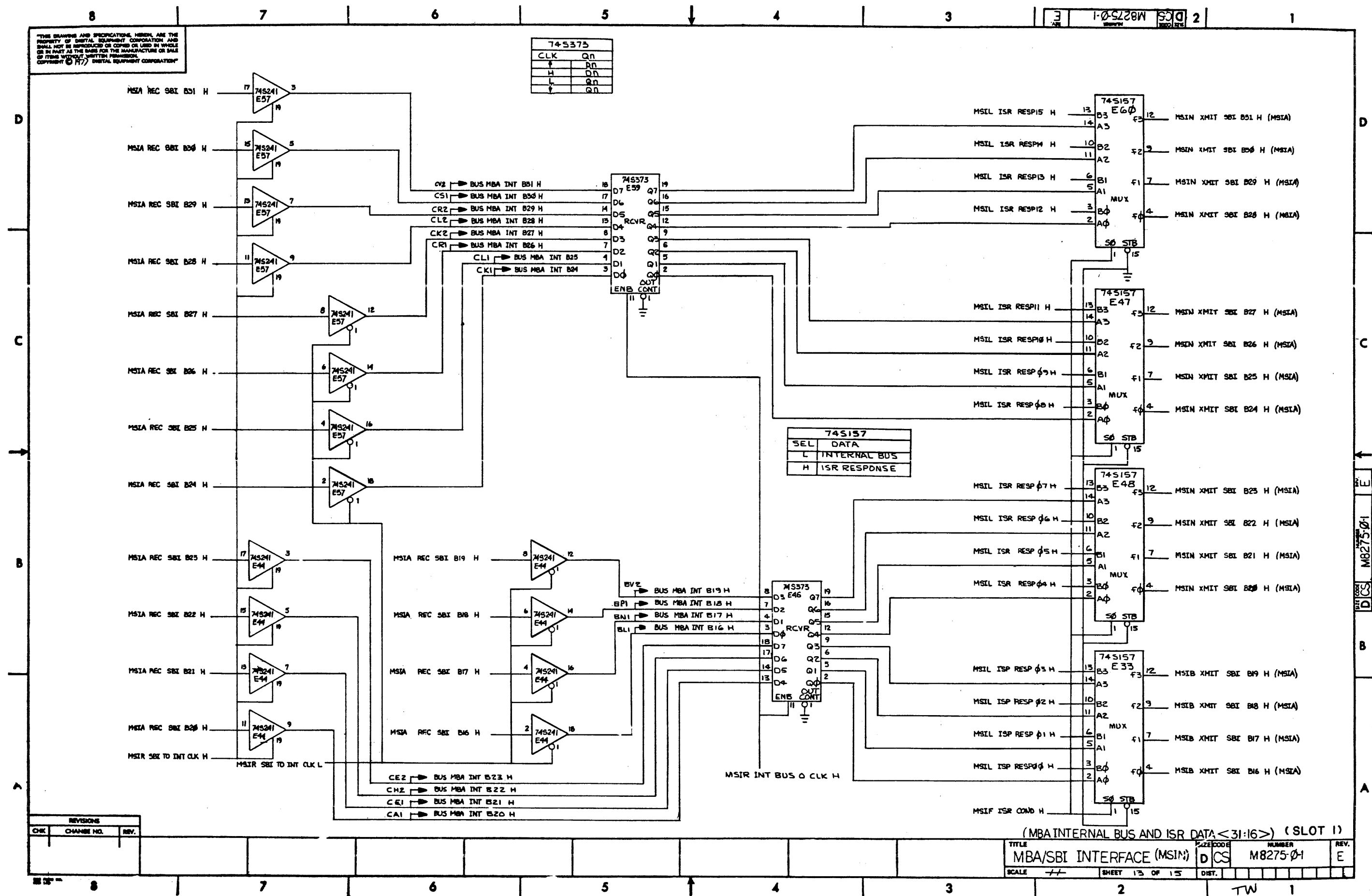


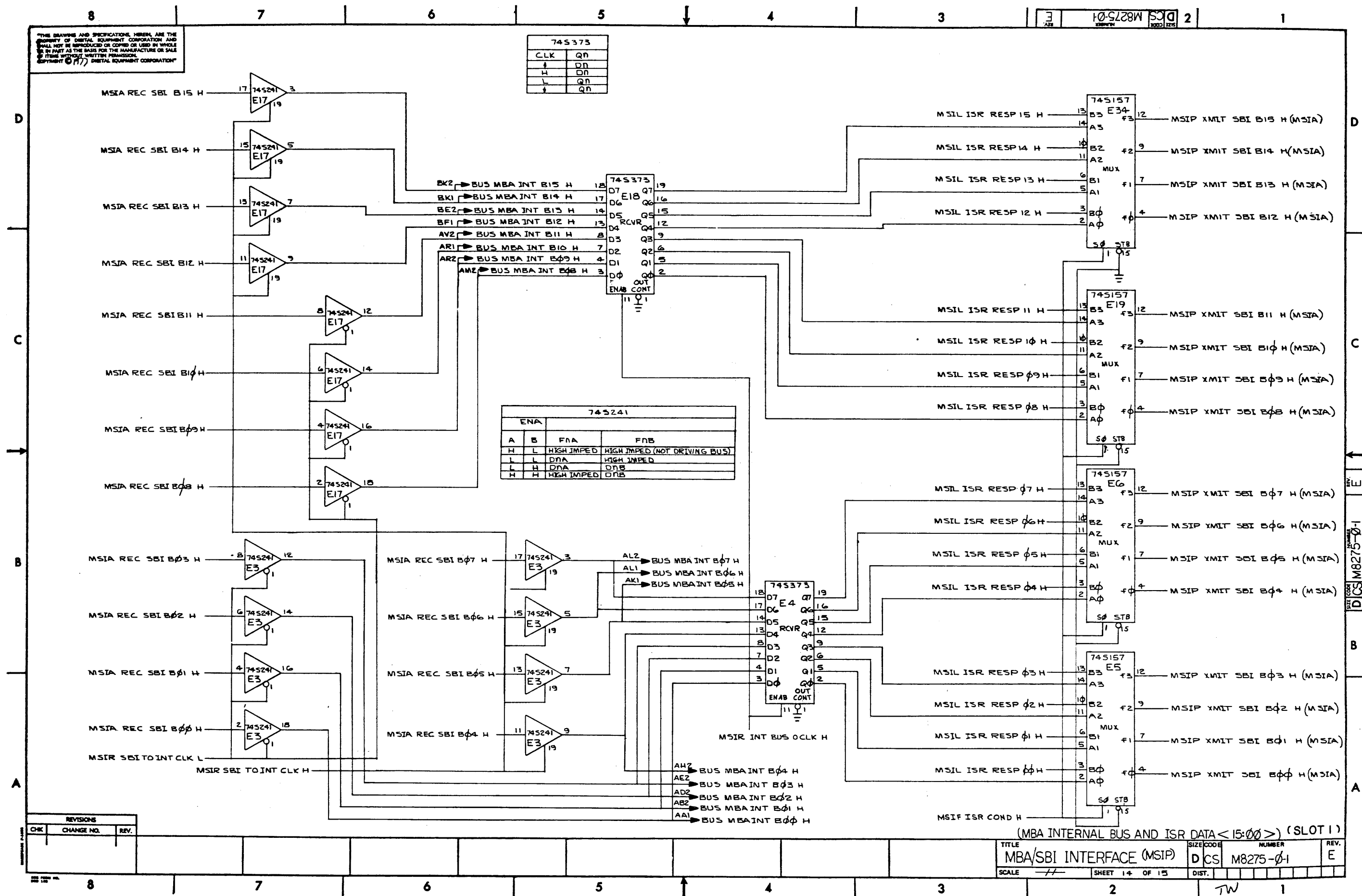
74LS195									
CLK	JR	QA	QB	QC	QD	QA'	QB'	QC'	QD'
0	0	0	0	0	0	1	1	1	1
1	1	1	1	1	1	0	0	0	0

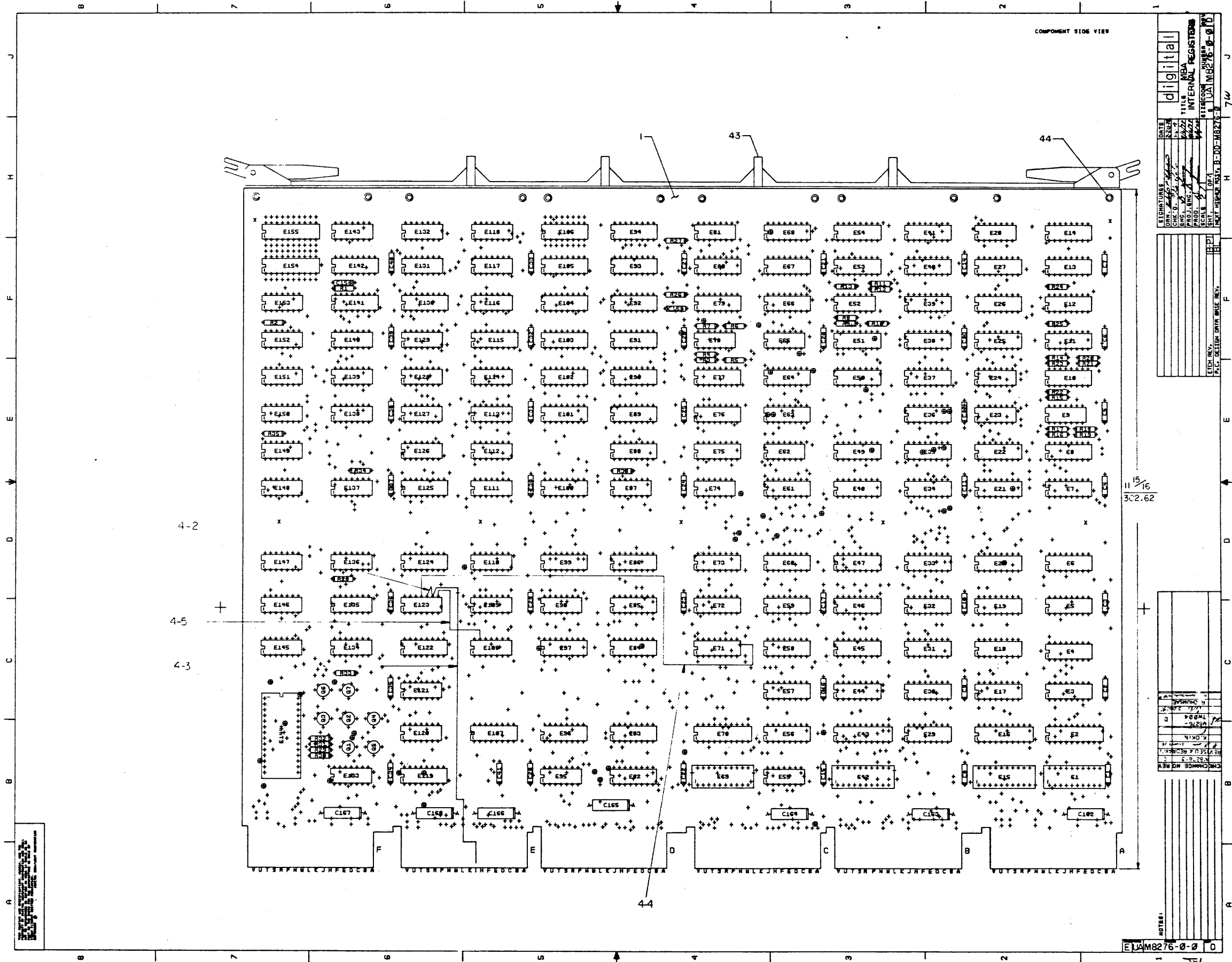
C, E BOTH LOW 74LS259									
D	A2	A1	A0	F0	F1	F2	F3	F4	F5
0	X	X	X	L	L	L	L	L	L
1	0	0	0	L	L	L	L	L	L
2	0	0	1	L	L	L	L	L	L
3	0	0	1	L	L	L	L	L	L
4	0	1	0	L	L	L	L	L	L
5	0	1	0	L	L	L	L	L	L
6	0	1	1	L	L	L	L	L	L
7	0	1	1	L	L	L	L	L	L
8	1	0	0	L	L	L	L	L	L
9	1	0	0	L	L	L	L	L	L
10	1	0	1	L	L	L	L	L	L
11	1	0	1	L	L	L	L	L	L
12	1	1	0	L	L	L	L	L	L
13	1	1	0	L	L	L	L	L	L
14	1	1	1	L	L	L	L	L	L
15	1	1	1	L	L	L	L	L	L

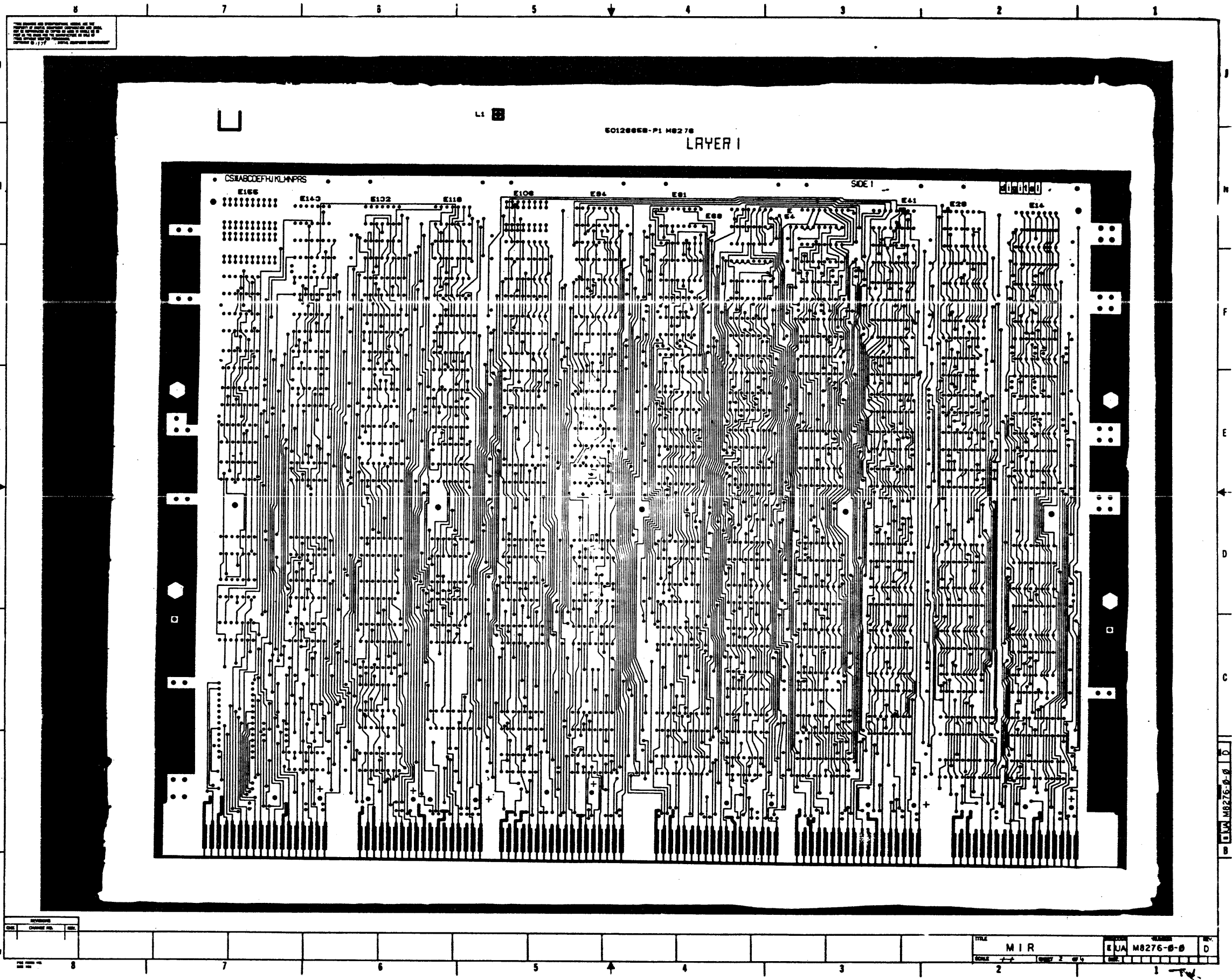
(ISR RESP GENERATOR TRANSMIT HISTORY)(SLOT 1)

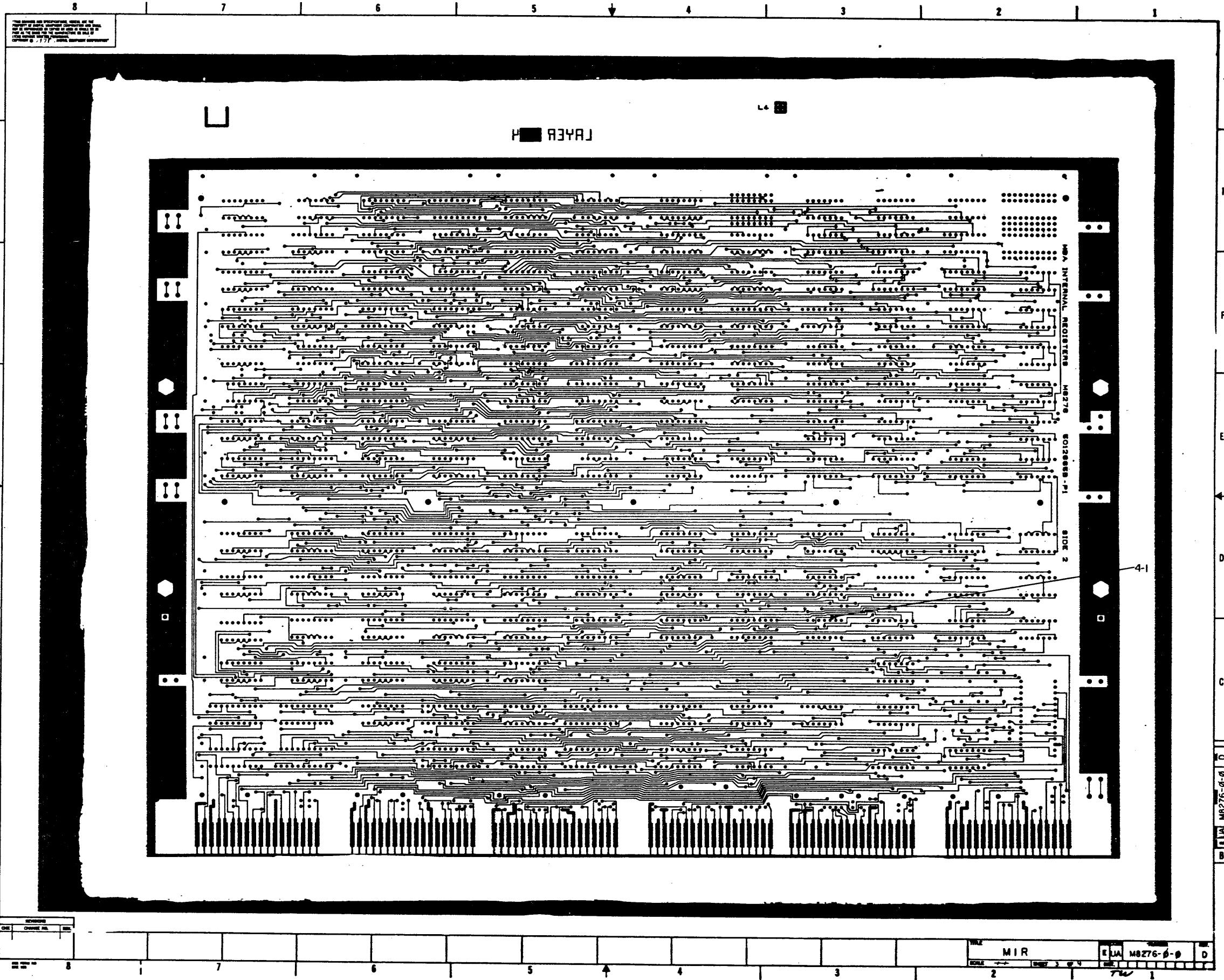
TITLE		SIZE	CODE	NUMBER	REV.
MBA SBI INTERFACE (MSIL)		D	CS	M8275-0-1	E
SCALE		SHEET 11 OF 15		DIST.	











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H 834AJ

HSA INTERNAL RESISTORS

M8276

RESISTORS - P1

SIDE 2

4-1

COMPONENT	VALUE	QTY
1	10K	1
2	10K	1
3	10K	1
4	10K	1
5	10K	1
6	10K	1
7	10K	1
8	10K	1

MIR
M8276-0-0
D

[illegible]

4-5. FROM EI23-8 TO EI08-13.

DOCUMENT NUMBER			
DATE	CODE	NUMBER	REV
E	JAM	8276-0-0	D
SCALE 11		SHEET 4 OF 4	

TW 1

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
1	1	E-MD-5012665-0-0	5012665-00	M.I.R.	1	
2	2		1012784-00	.047 MFD 50V +80-20% CER	41	C1-C17,C20-C41,C158,C159
3	3		1012084-01	8 MFD 25V +75-10% AL EL	7	C162-C168
4	4		1300295-00	330.0 .25 W 5.0 % CC	2	R1,R26
5	5		1301424-00	680.0 .25 W 5.0 % CC	2	R2,R27
6	6		1300365-00	1.0 K .25 W 5.0 % CC	30	R3-R25,R28-R33,R35
7	7		1300391-00	1.50 K .25 W 5.0 % CC	1	R38
8	8		1301874-00	5.60 K .25 W 5.0 % CC	1	R34
9	9		1511686-00	DEC5433 FET N 350MW 10 25 1A	6	Q1-Q4,Q6,Q7
10	10		1503014-00	DEC 3646 NPN 200MW SI 15 5 30	1	Q5
11	11		1910532-00	74S00 NAND GATE-QUAD 2IN	8	E110,E112-E114,E117,E120,E129, E148
12	12		1912388-00	74S02 NOR GATE-QUAD 2IN,PO	1	E143
13	13		1912389-00	74S08 AND GATE-QUAD 2IN,PO	5	E87,E98,E109,E127,E132
14	14		1910534-00	74S04 INVERTER GATE-HEX 1I	2	E126,E149
15	15		1912803-00	774LS04 INVERTER GATE, HEX	5	E9,E24,E52,E78,E108
16	16		1910536-00	74S10 NAND GATE-TRIPLE 3IN	5	E74,E111,E118,E134,E136
17	17		1910537-00	74S11 AND GATE-TRIPLE 3INP	5	E116,E121,E123,E128,E137
18	18		1910539-00	74S20 NAND GATE-DUAL 4INPU	1	E135
19	19		1913340-00	74S32 OR GATE-QUAD 2IN	1	E133
20	20		1912746-00	DEC 74S37 NAND GATE-QUAD 2IN	2	E28,E81
21	21		1910542-00	74S64 A-O-I GATE 4-2-3-2	1	E131
22	22		1910544-00	74S74 FF-D DUAL,EDGE TRIGG	4	E140,E150-E152
23	23		1912825-00	LS76 FF-JK DUAL W/PRESET	11	E82,E85,E86,E96,E99,E100,E107, E125,E141,E84,E122
24	24		1911983-00	74S133 NAND GATE-POSITIVE 1	3	E41,E97,E124
25	25		1911675-00	74S138 DECODER/DEMUX 3-8 LIN	1	E115
26	26		1910546-00	74S140 NAND GATE-DUAL 4INPU	4	E55,E138,E139,E147
27	27		1910548-00	74S157 MUX 1 OF 2 (QUAD)	2	E63,E77
28	28		1912844-00	LS151 MUX 1 OF 8 & DATA	32	E22,E33,E37,E44-E51,E53,E54,

REVISION HISTORY			BASIC PART NO: M8276		DRN: F. SMART		DATE: 06-OCT-78		D I G I T A L	
ENG	ECO NUMBER	REV	SECTION A OF A		CHK'D: F. SMART		DATE: 06-OCT-78		TITLE PARTS LIST	
---	INIT	C	SECTION VARIATION INDEX		CHK'D: F. SMART		DATE: 06-OCT-78		MBA INTERNAL REGISTERS	
S.J	M8276-TW004	D	[A] 00		DES.ENG: K. OKIN		DATE: 06-OCT-78			
			[B]							
			[C]		RESP.ENG.: K. OKIN		DATE: 06-OCT-78		DOCUMENT NUMBER	
			[D]							
			[E]							
			[F]		MFG.ENG.: M. TERILLO		DATE: 06-OCT-78		K PL M8276-0-DBP	
			[G]							
			[H]		ASSEMBLY NUMBER:		TOP DOCUMENT NUMBER:		FILE NAME:	
			[I]		D-UA-M8276-0-0				Z1845.PLS	
			[J]							
			[K]							
			[L]							
			[M]							
			[N]							

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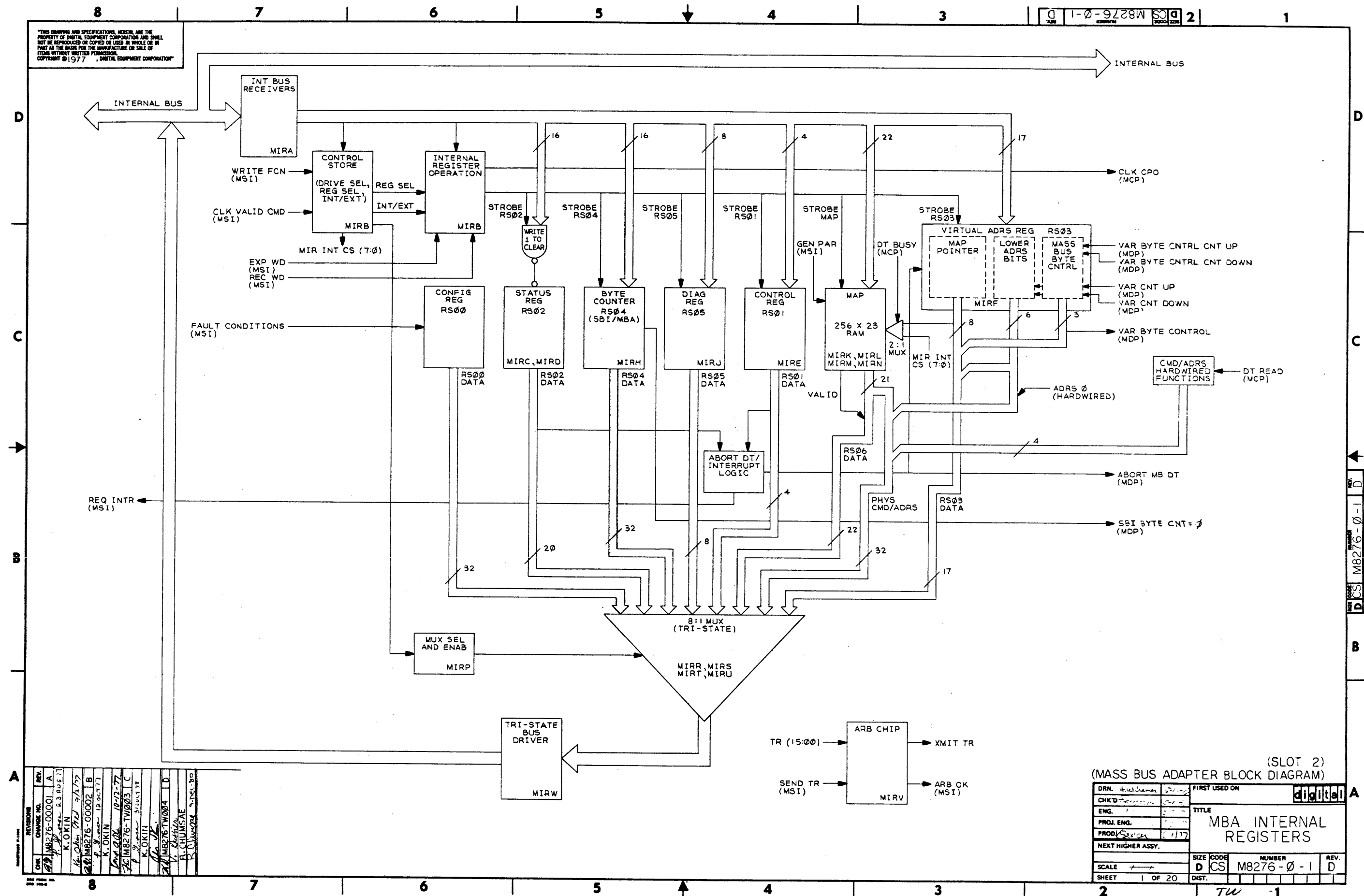
TW

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
29	29		1912697-00	LS174 FF-D HEX W/CLEAR	4	CONT E56-E60,E67,E68,E79,E80,E89, CONT E91-E94,E101-E105
30	30		1910957-00	74S175 FF-D QUAD COMMON CLO	1	E64,E71,E83,E90
31	31		1910096-00	DEC 74191 COUNTER,SYNCHR. UP/D	5	E142
32	32		1911573-00	74S280 PARITY GEN/CHKR,9BIT	3	E72,E73,E75,E76,E88
33	33		1913462-00	74S240 OCTAL BUFFER,INVERTI	4	E23,E62,E65
34	34		1912860-00	LS259 LATCH 8BIT	1	E1,E15,E42,E69
35	35		1913671-00	74S374 FF-D OCTAL TRISTATE	4	E130
36	36		1911469-00	DEC 8640 RECEIVER,BUS,QUAD,U	1	E2,E16,E43,E70
37	37		1911415-00	10125 ECL TO TTL TRNSLTR	1	E146
38	38		1913294-00	93S16 COUNTER,SYNCH UP BIN	8	E119
39	39		1913730-00	DC 101 PRIORITY ARBITRATOR	1	E34,E36,E38-E40,E61,E66,E35
40	40		1912069-00	MEMORY READ/WRITE,25	23	E144
41	41		1912824-00	LS74 FF-D DUAL,EDGE TRIGG	2	CONT E3-E8,E10-E14,E17-E21,E25-E27, CONT E29-E32
42	42		1912805-00	LS08 AND GATE-QUAD 2IN,PO	1	E95,E145
43	43		1210711-02	/REPLACED BY 12-16988-02	1	E153
44	44		9000024-01	EYELET, ROLLED FLANGE, .121 OD X	12	
45	45		9105740-55	WIRE(WRAP)30AWG UL1423	A/R	

46 NOTE: SPARE I.C.'S ARE E106,E154, & E155

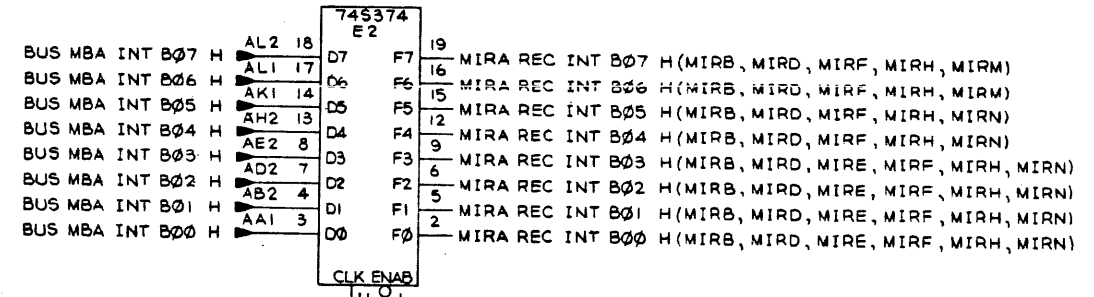
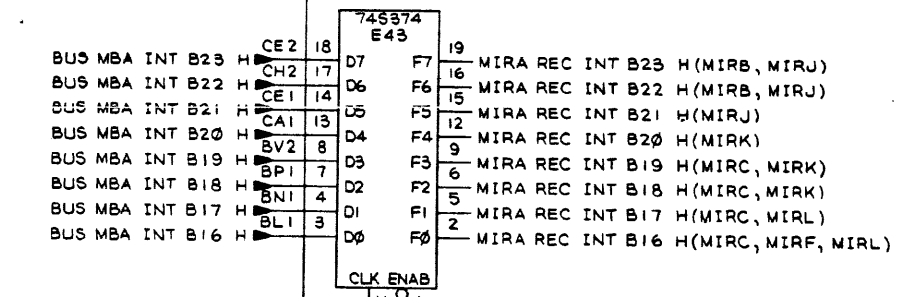
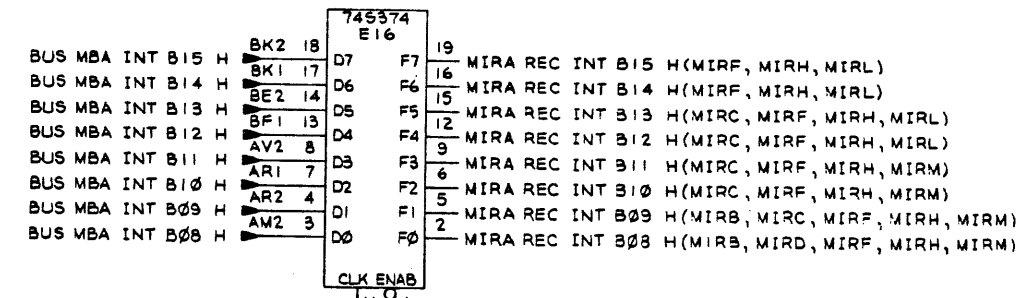
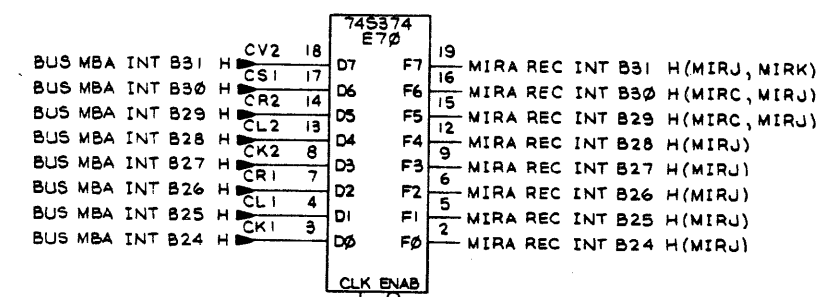
D	I	G	I	T	A	L	TITLE	SECTION A OF A	SIZE	CODE	DOCUMENT NUMBER	REV
							MBA INTERNAL REGISTERS		K	PL	M8276-0-DBP	D

TW



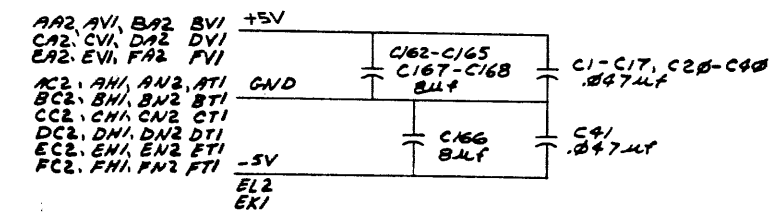
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1-0-9228W DCS M8276-0-1



MCPK INT BUS ICLK L DV2

ENAB	CLK	Fn
L	↑	Dn → Fn
L	H, L, ↑	Fn
H	X	HIGH IMPEDANCE BUT POSITIVE CLOCK TRANSITIONS WILL STROBE NEW DATA INTO ITS INTERNAL MEMORY WHICH WILL APPEAR AT Fn WHEN ENAB GOES LOW.

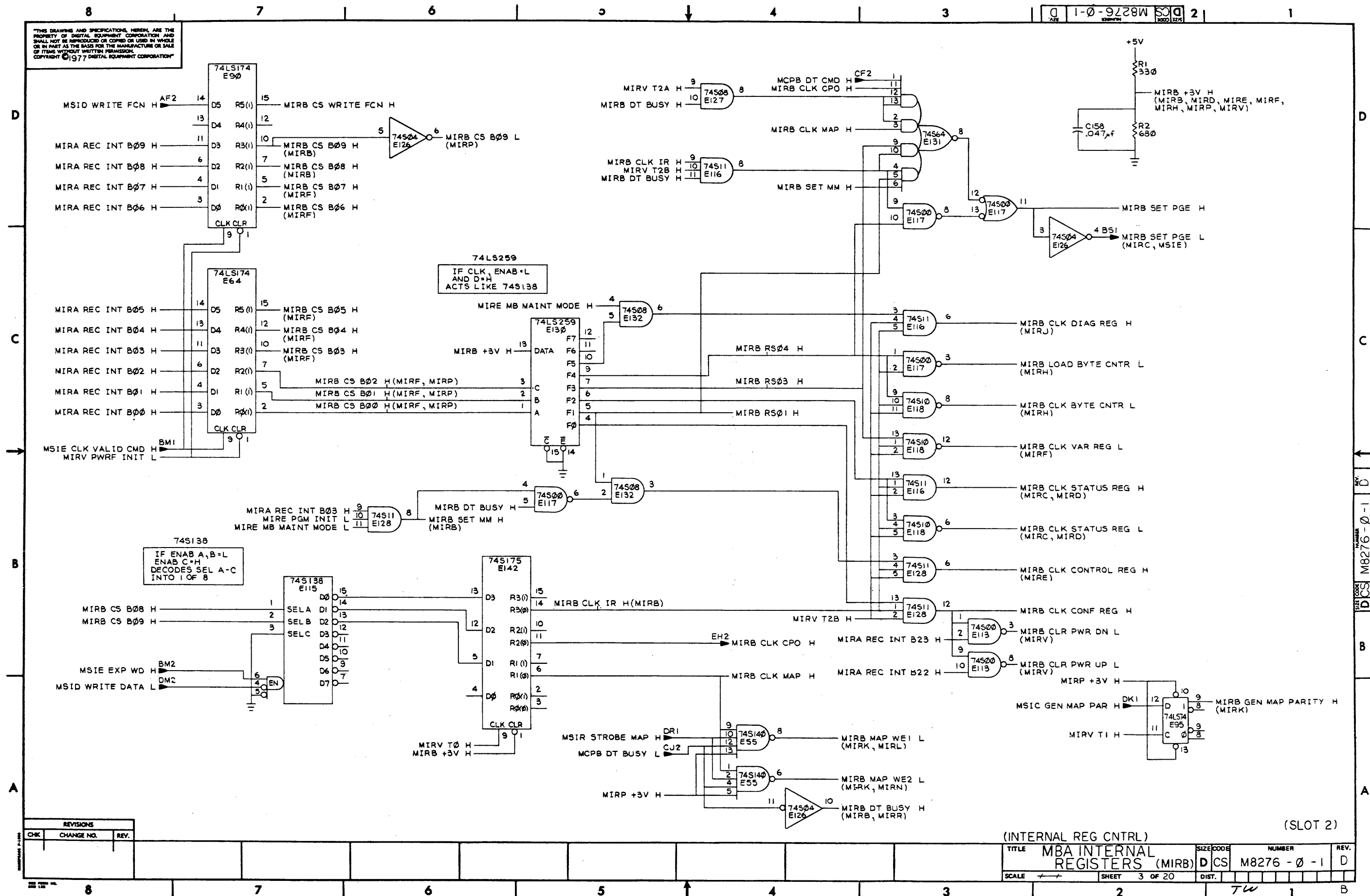


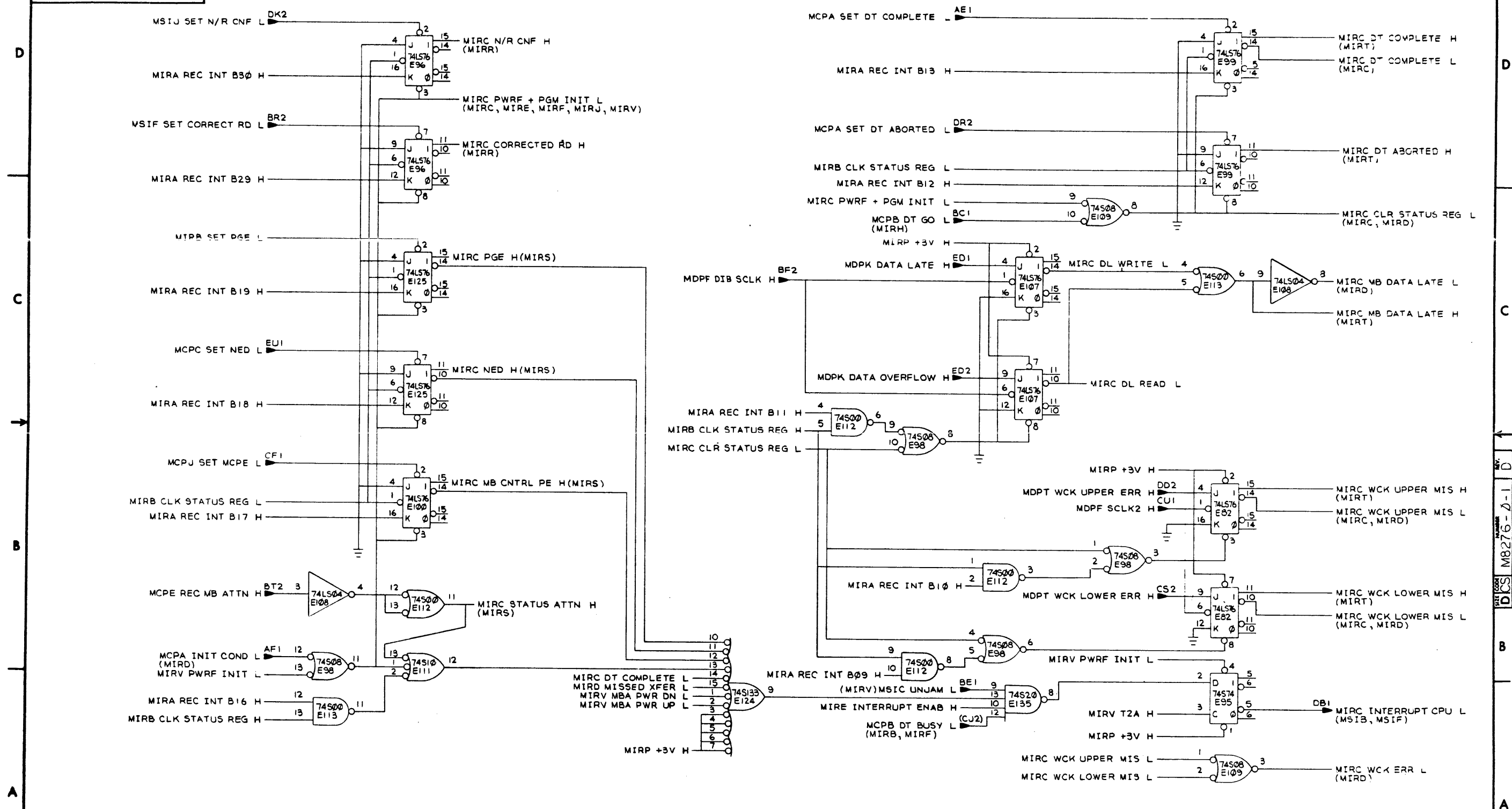
REVISIONS		
CHK	CHANGE NO.	REV.

(MBA INTERNAL BUS RECEIVERS) (SLOT 2)

TITLE	MBA INTERNAL REGISTERS (MIRA)	SIZE/CODE	NUMBER	REV.
SCALE	+	SHEET	2 OF 20	DIST.

DCS M8276-0-1





REVISIONS		
CHK	CHANGE NO.	REV.

(STATUS REGISTER)

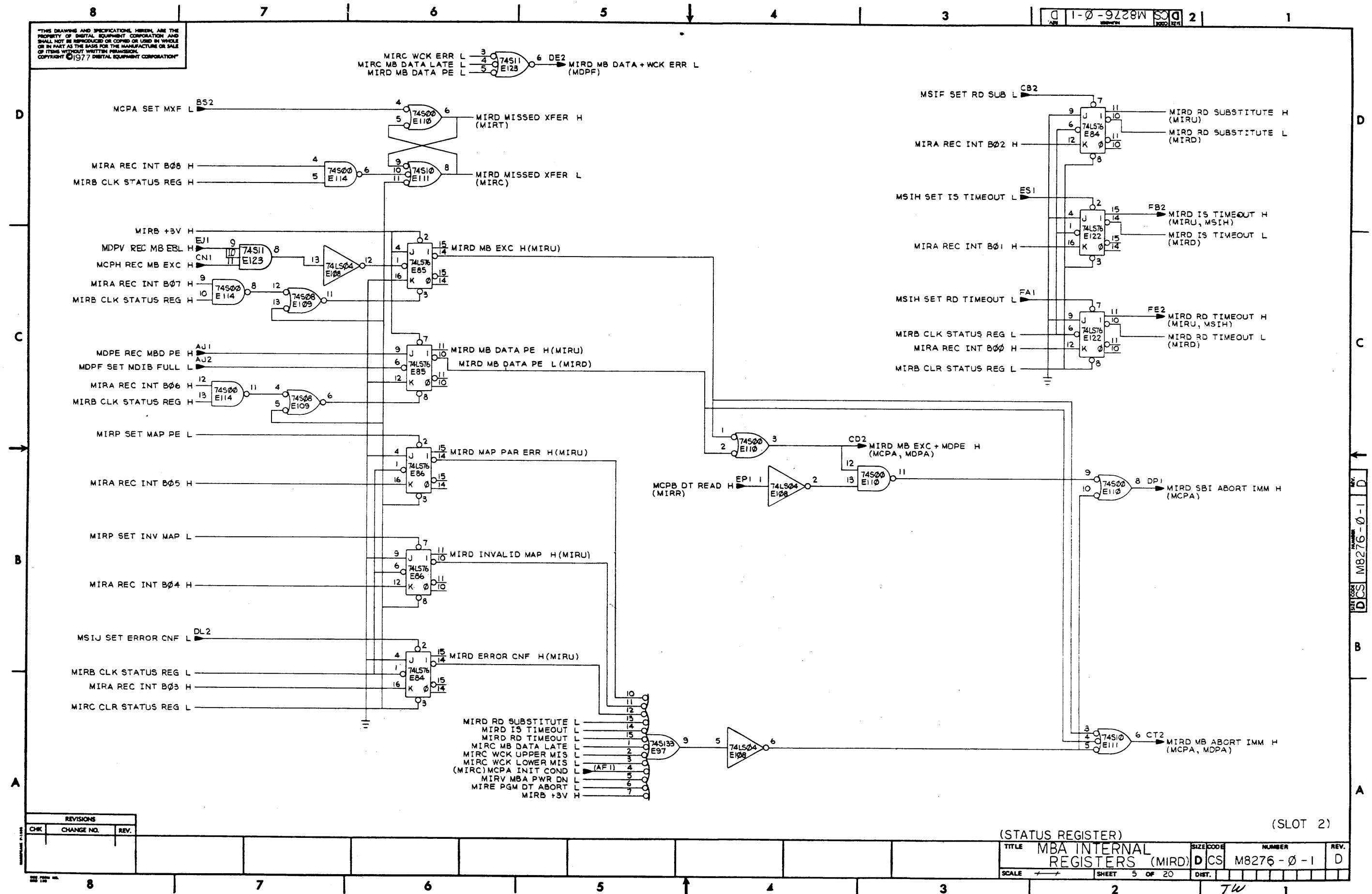
TITLE	MBA INTERNAL REGISTERS
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	SIZE	CODE
C)	D	CS

(SLOT 2)

NUMBER	DATE
276 - Ø - 1	11/1/68

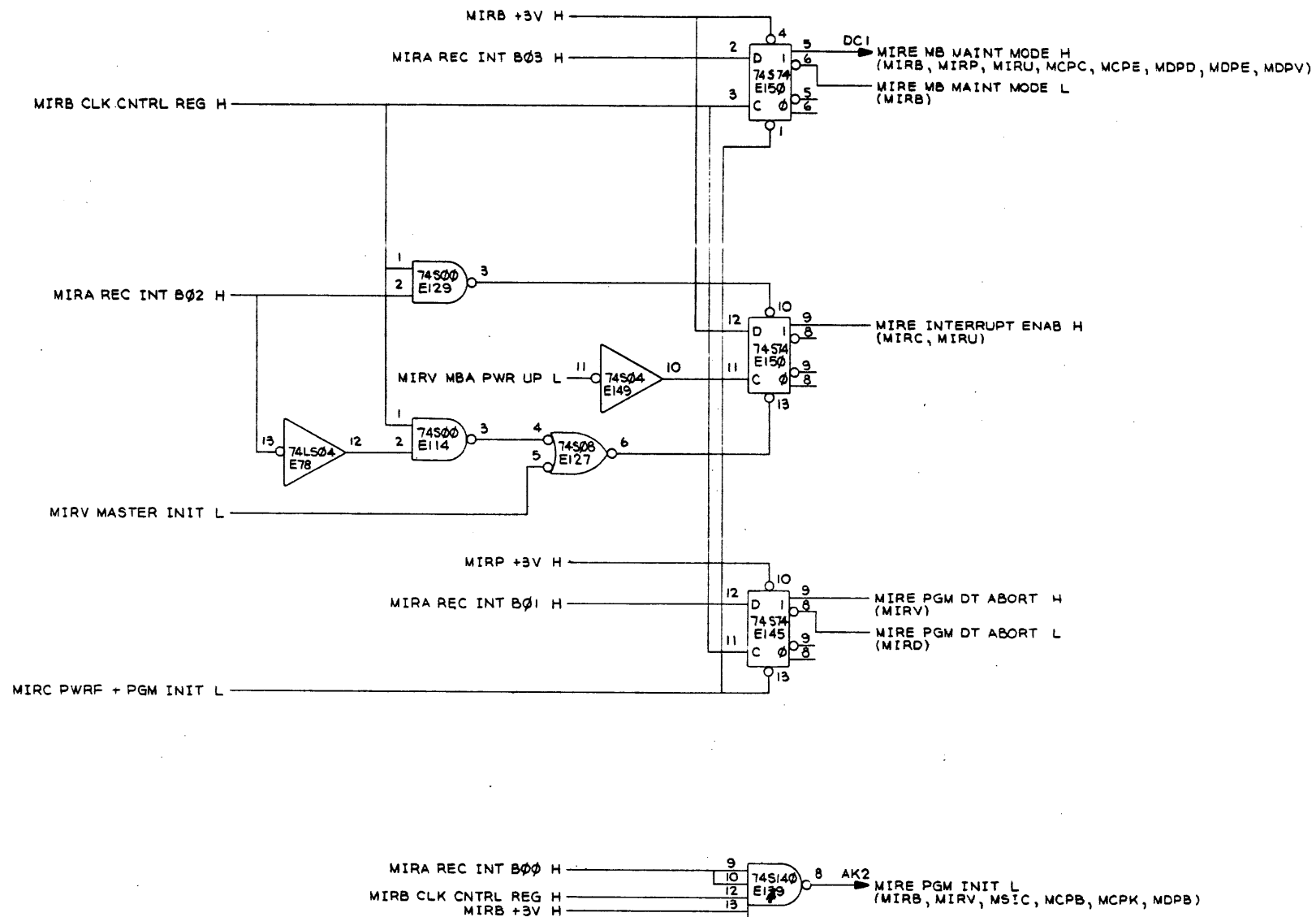
2	TU
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1-0-9228W

2

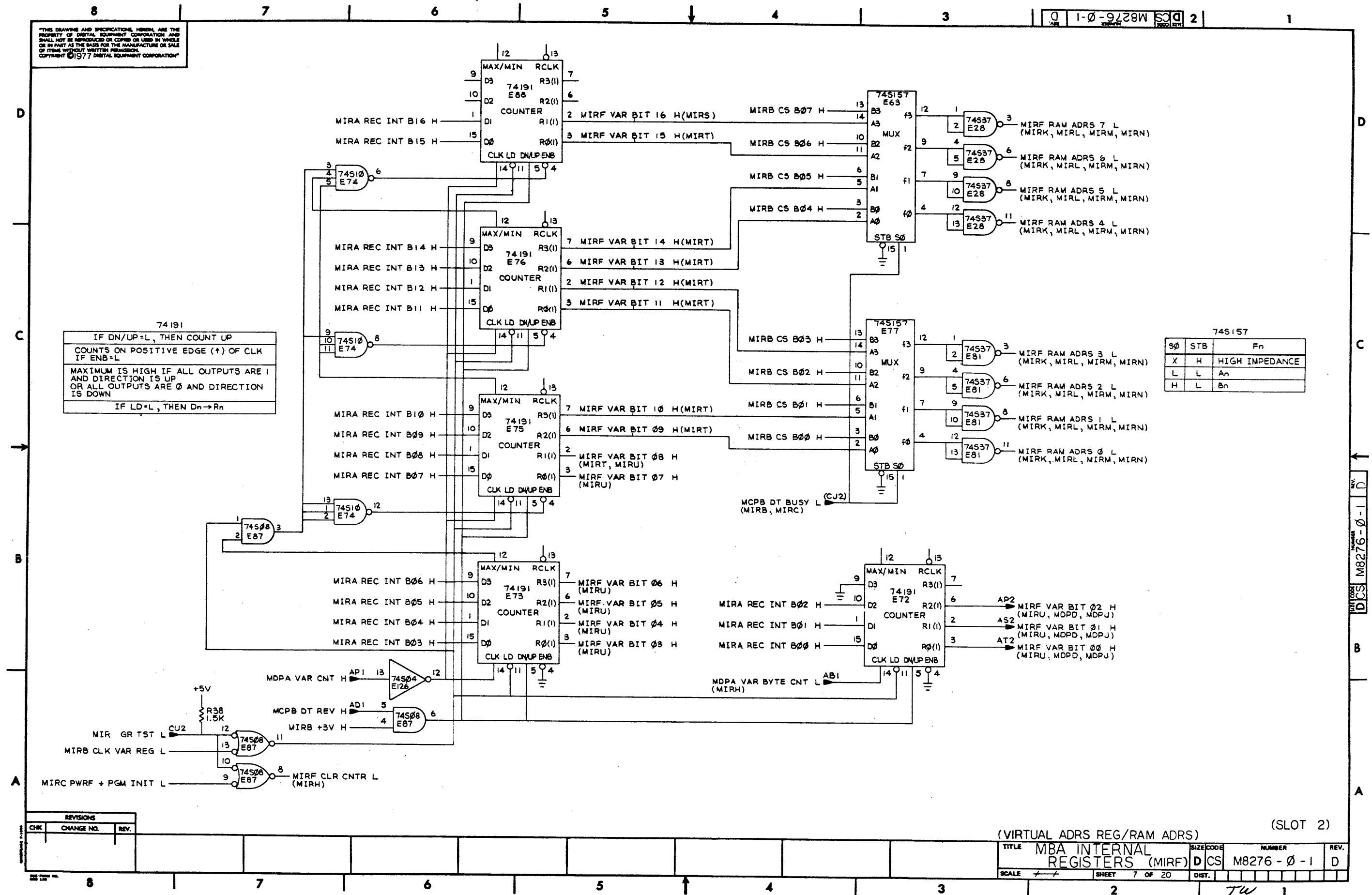


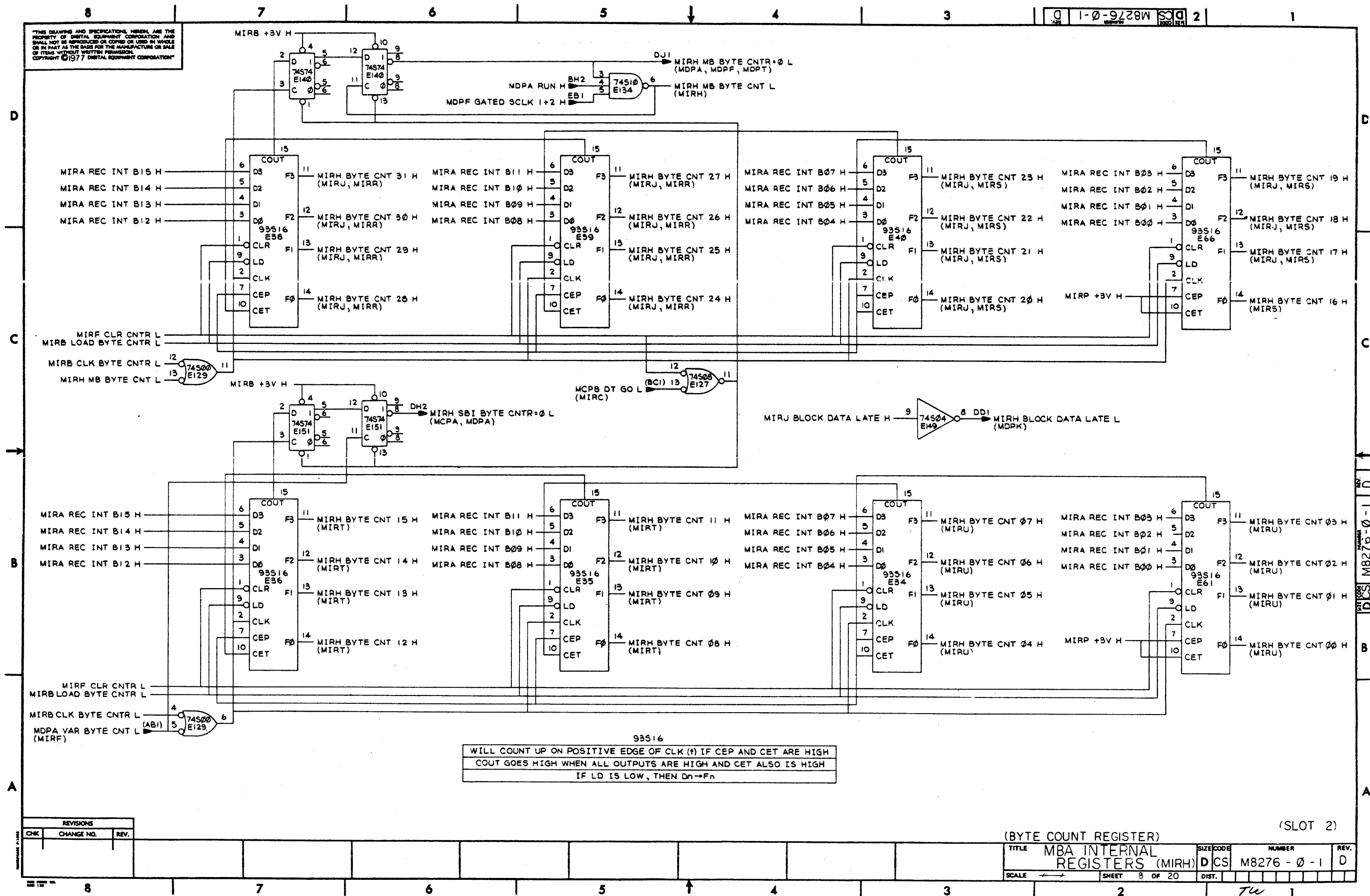
REVISIONS		
CHK	CHANGE NO.	REV.

(CONTROL REGISTER)

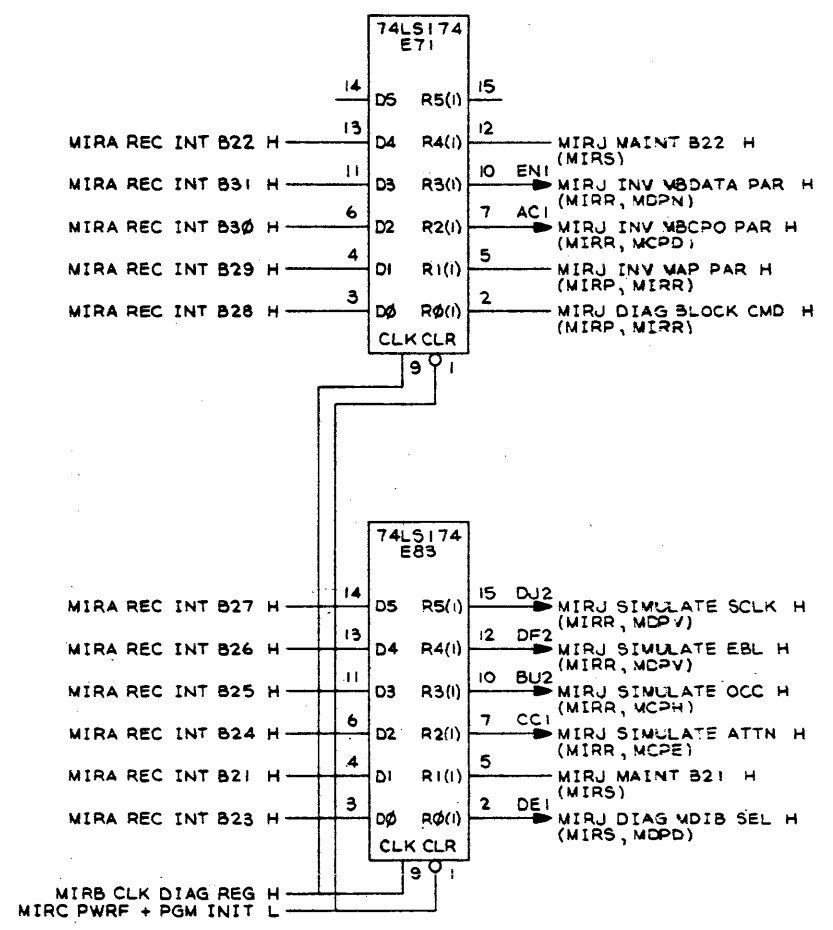
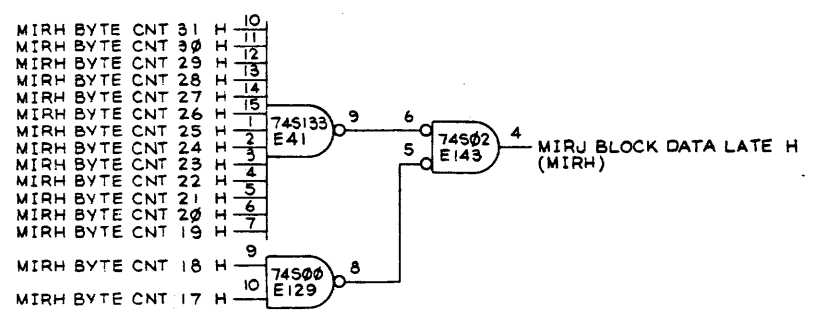
(SLOT 2)

TITLE	MBA INTERNAL REGISTERS (MIRE)	SIZE CODE	D CS	NUMBER	M8276-0-1	REV.	D
SCALE	+	SHEET	6 OF 20	DIST.			





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REVISIONS		
CHK	CHANGE NO.	REV.

(DIAGNOSTIC REG) (SLOT 2)

TITLE	MBA INTERNAL REGISTERS (MIRJ)	SIZE CODE	D CS	NUMBER	M8276 - 0 - 1	REV.	D
SCALE	1:1	SHEET	9 OF 20	DIST.			

Tu 1

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MIRF RAM ADRS 7 L
MIRF RAM ADRS 6 L
MIRF RAM ADRS 5 L
MIRF RAM ADRS 4 L
MIRF RAM ADRS 3 L
MIRF RAM ADRS 2 L
MIRF RAM ADRS 1 L
MIRF RAM ADRS 0 L
MIRF MAP WE 1 L

74S200 (19-12069 RAM)
WHEN CS ENABLED
(PINS 3, 4, 5 ALL LOW),
A-H SELECT MEMORY LOCATION
DISPLAYED BY DO
WHEN WE GOES LOW, THE DATA
IN DI IS WRITTEN INTO THE
LOCATION SELECTED BY A-H

D

C

B

A

D

C

B

B

A

(MAPPING REGISTER (20:18), VALID, PARITY) (SLOT 2)

TITLE	MBA INTERNAL REGISTERS (MIRK)	SIZE CODE	D CS	NUMBER	M8276-0-1	REV.	D
SCALE	+	SHEET	10 OF 20	DIST.			

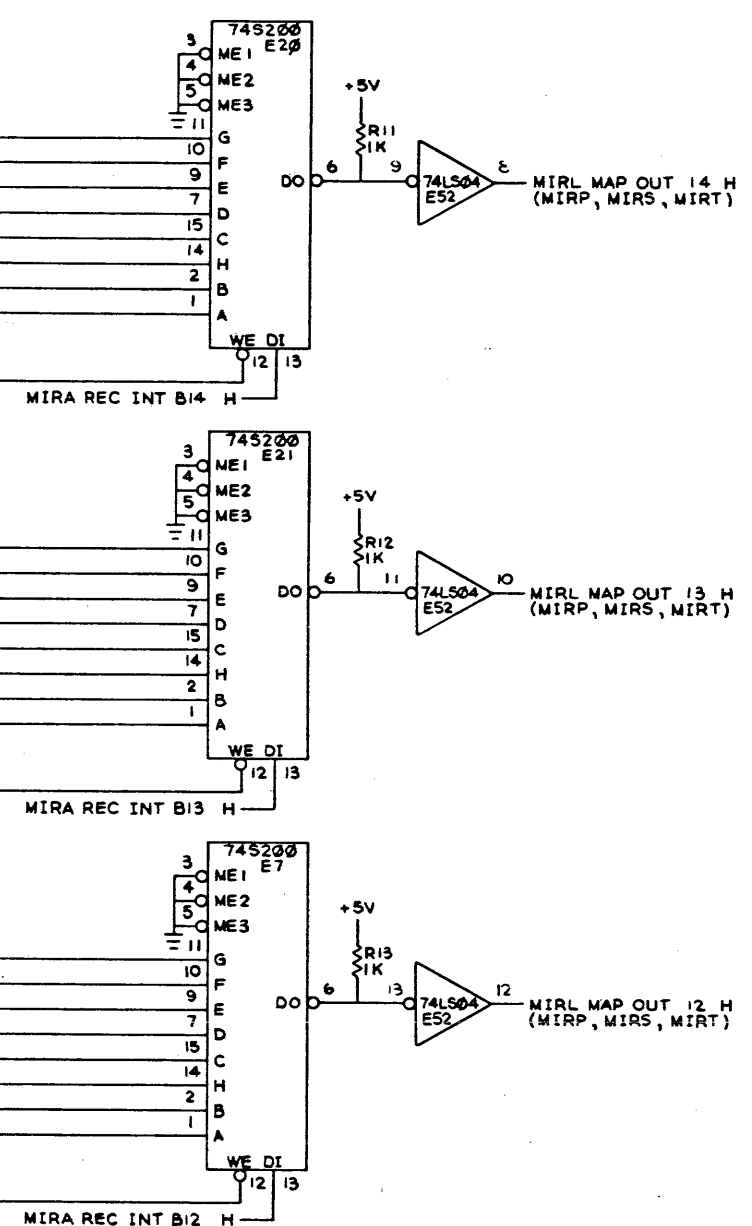
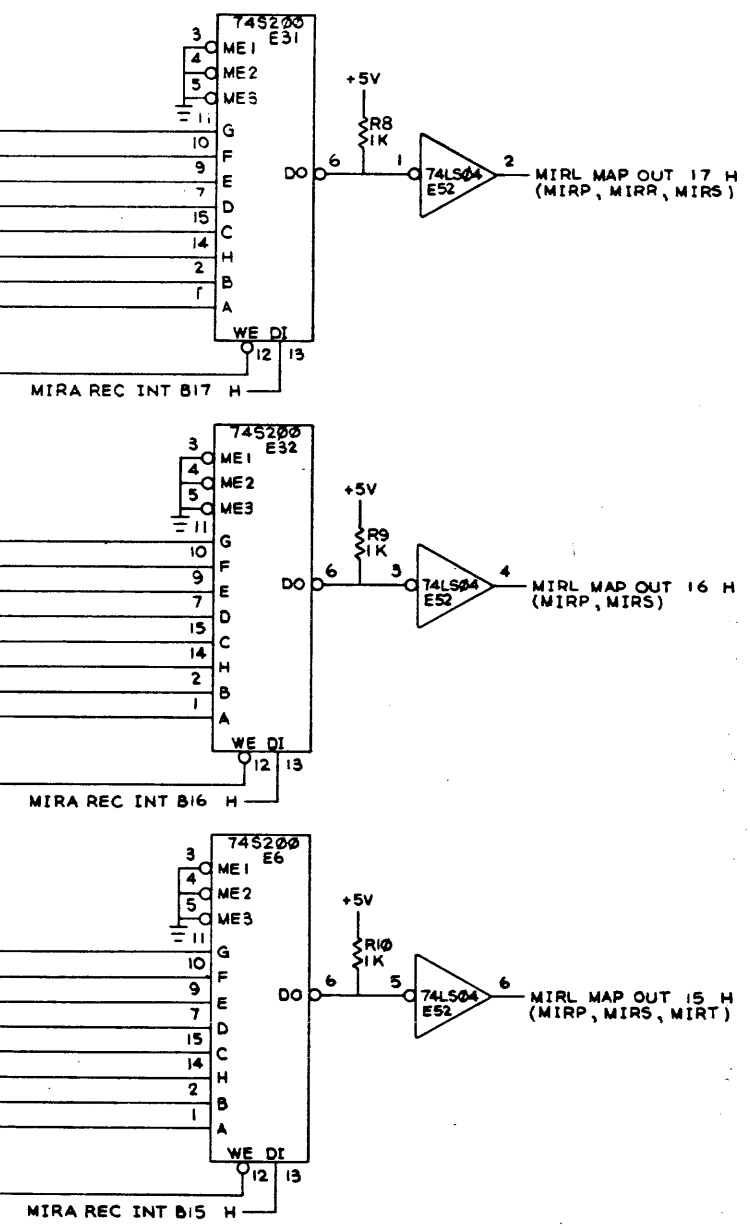
74

1

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1-0-9228W 2

MIRF RAM ADRS 7 L
MIRF RAM ADRS 6 L
MIRF RAM ADRS 5 L
MIRF RAM ADRS 4 L
MIRF RAM ADRS 3 L
MIRF RAM ADRS 2 L
MIRF RAM ADRS 1 L
MIRF RAM ADRS 0 L
MIRB MAP WE 1 L

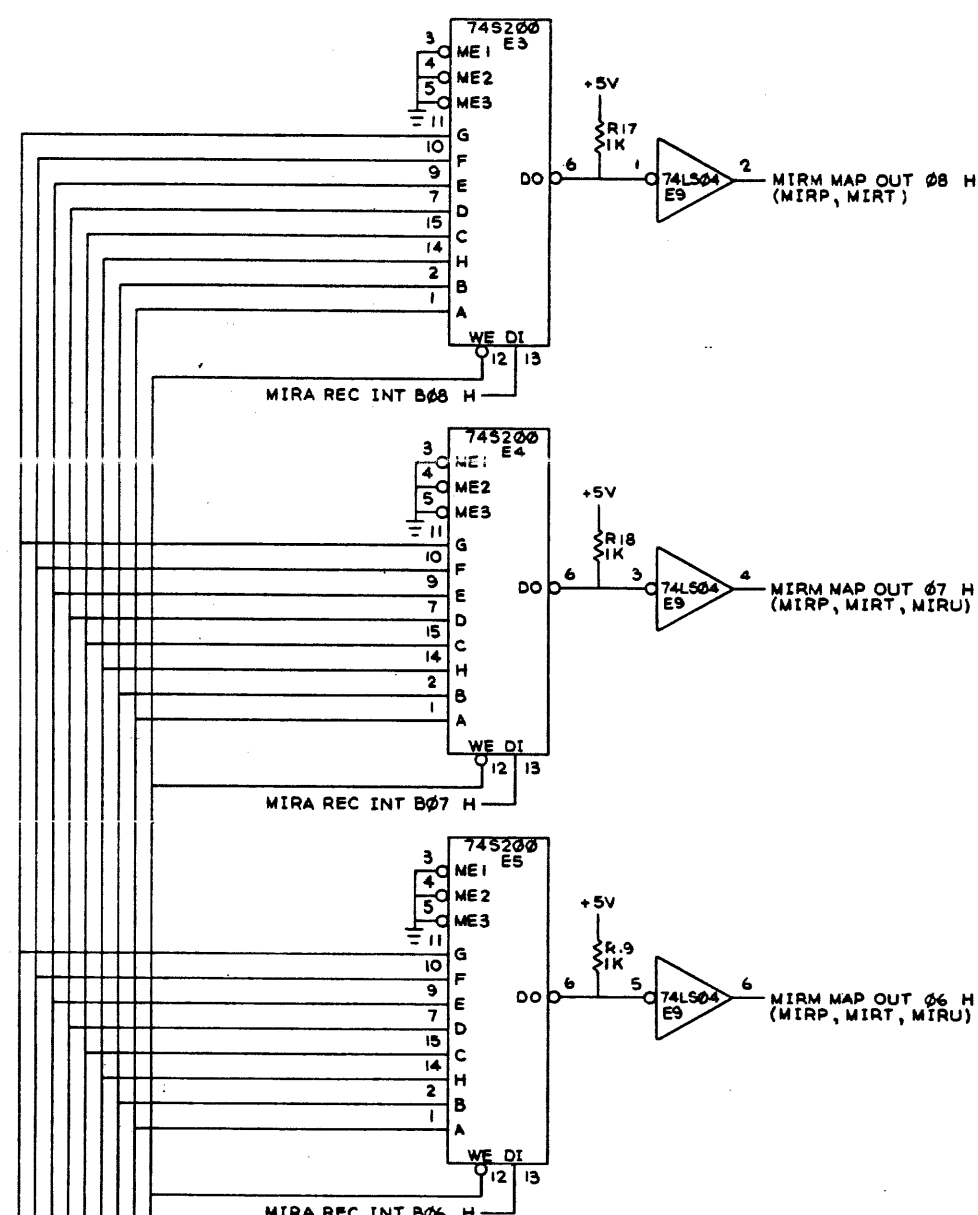
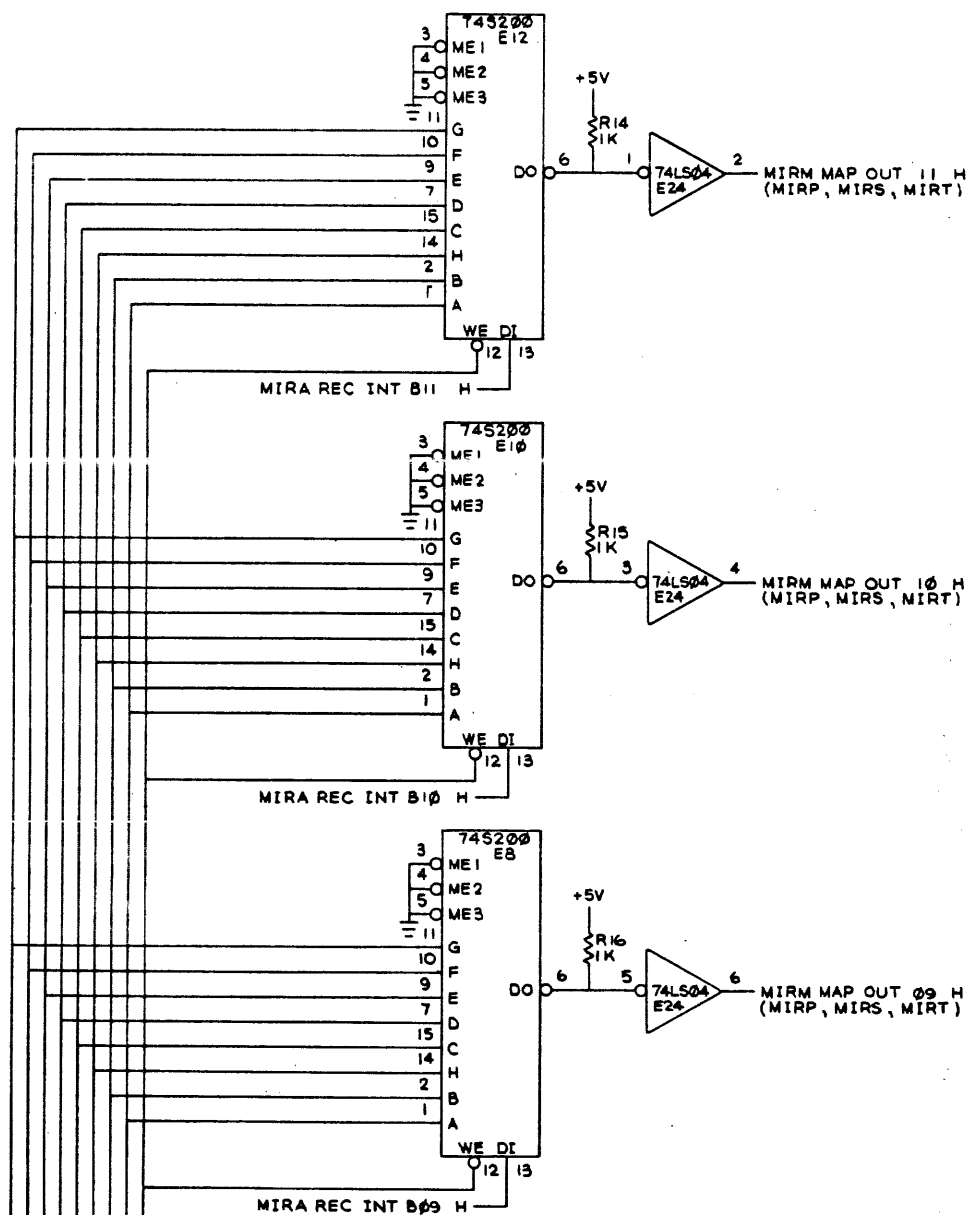


REVISIONS		
CHK	CHANGE NO.	REV.

(MAPPING REGISTER (17:12))				(SLOT 2)			
TITLE MBA INTERNAL REGISTERS (MIRL)				SIZE CODE DCS	NUMBER M8276-0-1	REV. D	
SCALE				SHEET 11 OF 20	DIST.		

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MIRF RAM ADRS 7 L
 MIRF RAM ADRS 6 L
 MIRF RAM ADRS 5 L
 MIRF RAM ADRS 4 L
 MIRF RAM ADRS 3 L
 MIRF RAM ADRS 2 L
 MIRF RAM ADRS 1 L
 MIRF RAM ADRS 0 L
 MIRB MAP WE 2 L



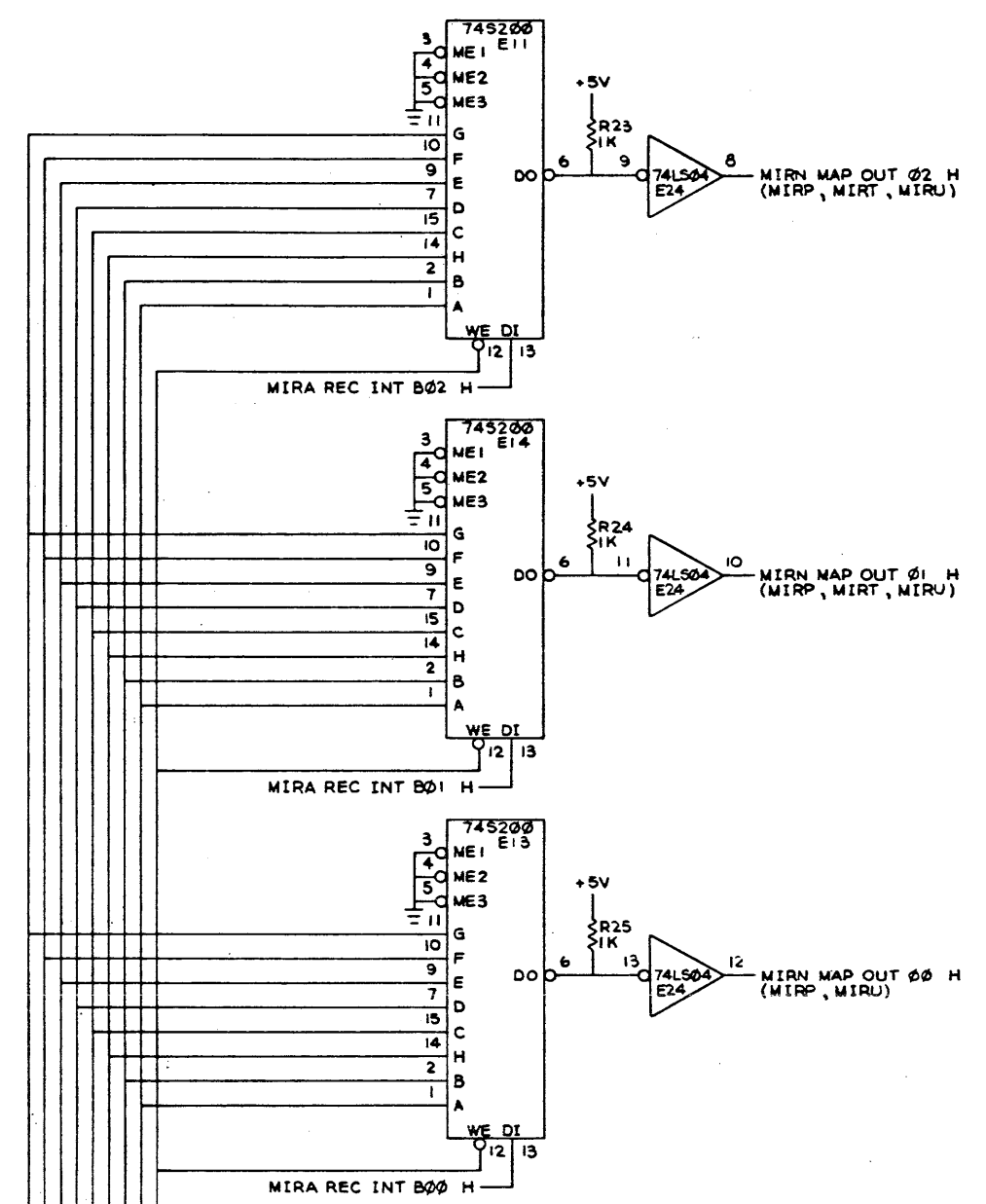
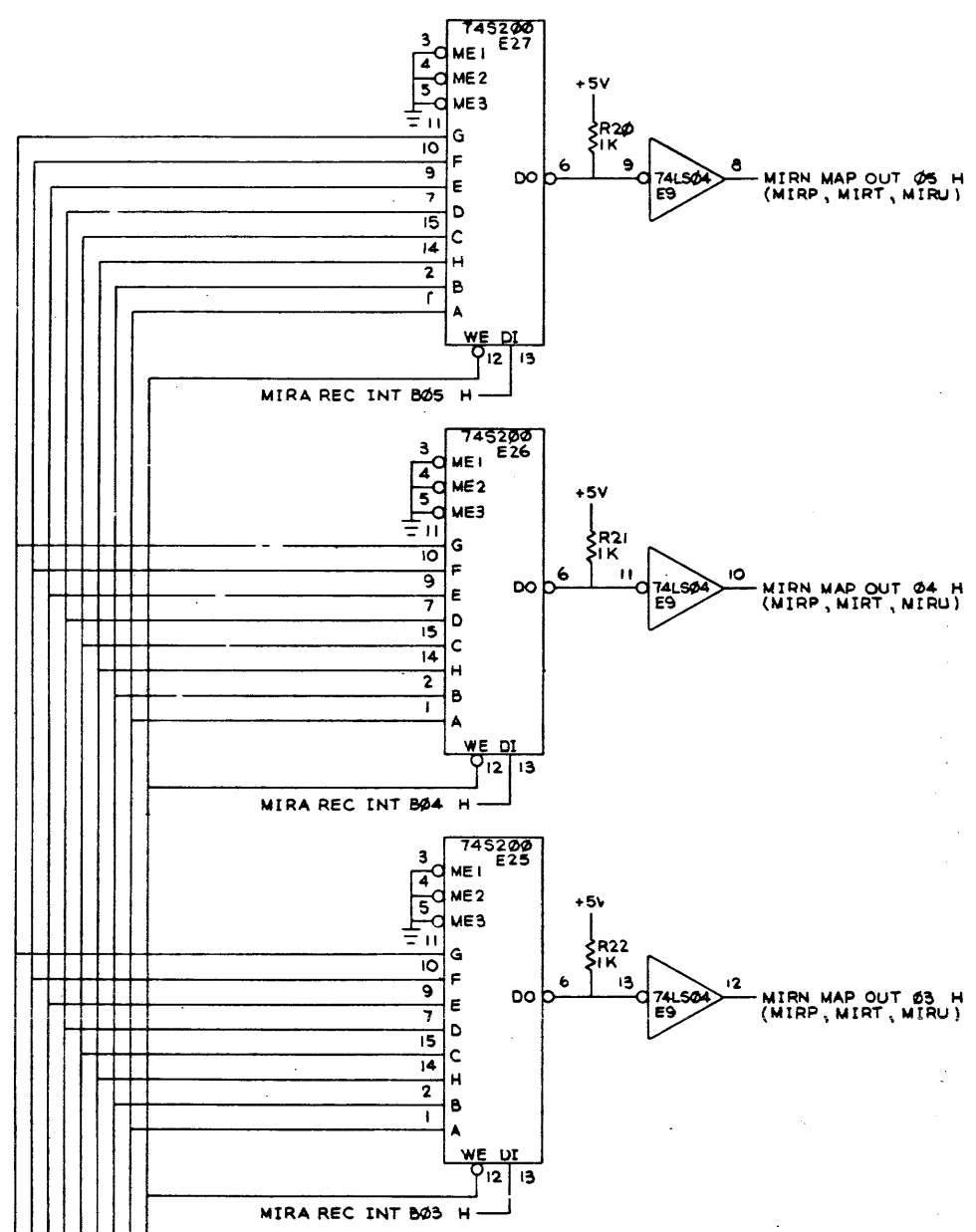
(MAPPING REGISTER (11:06))

(SLOT 2)

TITLE	SIZE/CODE	NUMBER	REV.
MBA INTERNAL REGISTERS (MIRM)	DCS	M8276-0-1	D
SCALE	SHEET 12 OF 20	DIST.	

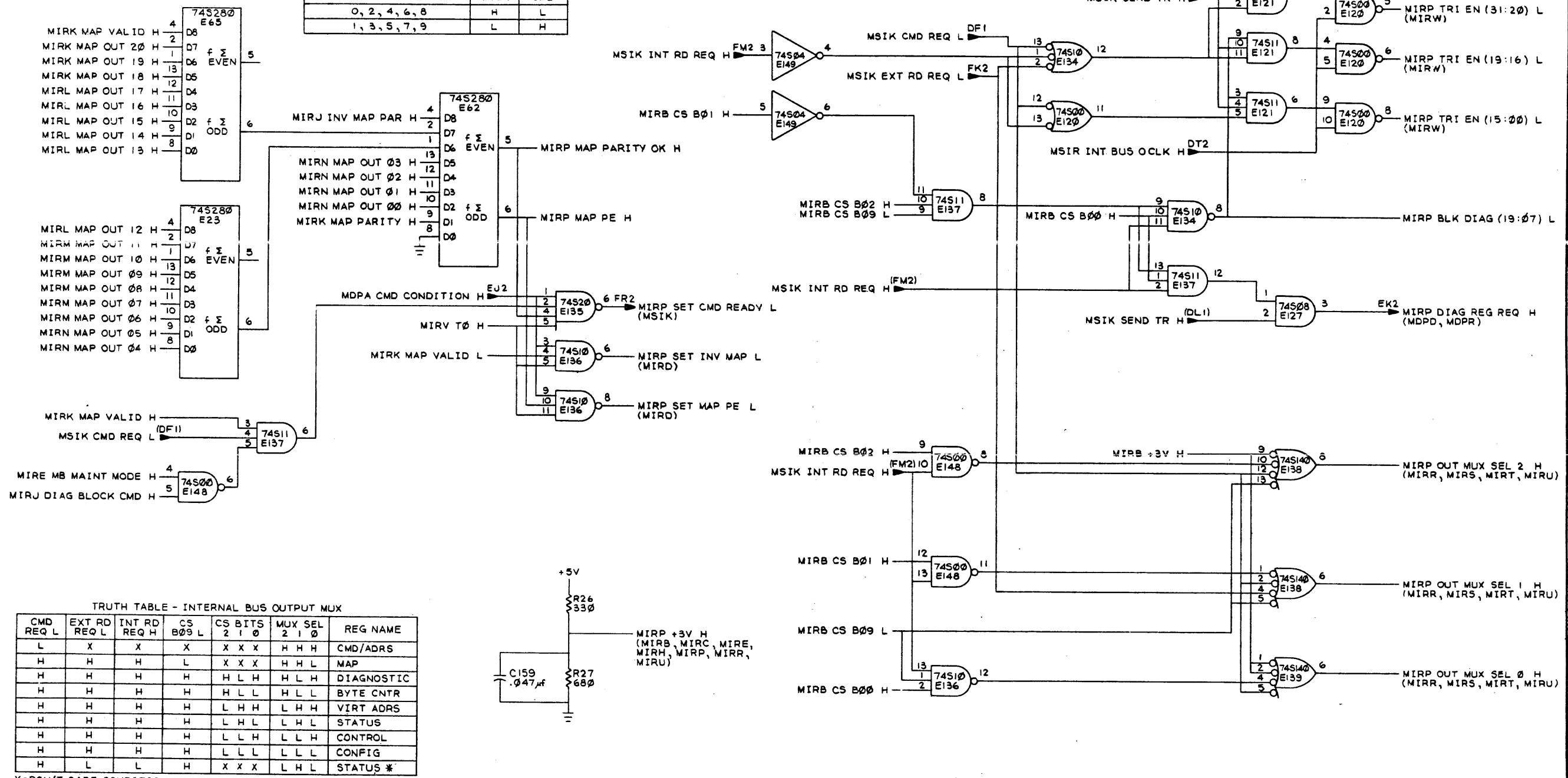
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MIRF RAM ADRS 7 L
MIRF RAM ADRS 6 L
MIRF RAM ADRS 5 L
MIRF RAM ADRS 4 L
MIRF RAM ADRS 3 L
MIRF RAM ADRS 2 L
MIRF RAM ADRS 1 L
MIRF RAM ADRS 0 L
MIRB MAP WE 2 L



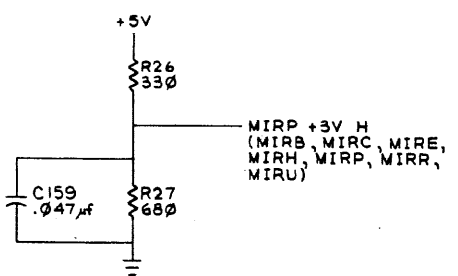
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74S280			
NUMBER OF INPUTS HIGH		EVEN	ODD
0, 2, 4, 6, 8		H	L
1, 3, 5, 7, 9		L	H



TRUTH TABLE - INTERNAL BUS OUTPUT MUX									
CMD REQ L	EXT RD REQ L	INT RD REQ H	CS B09 L	CS BITS 2 1 0	MUX SEL 2 1 0	REG NAME			
L	X	X	X	X X X	H H H	CMD/ADRS			
H	H	H	L	X X X	H H L	MAP			
H	H	H	H	H L H	H L H	DIAGNOSTIC			
H	H	H	H	H L L	H L L	BYTE CNTR			
H	H	H	H	L H H	L H H	VIRT ADRS			
H	H	H	H	L H L	L H L	STATUS			
H	H	H	H	L L H	L L H	CONTROL			
H	H	H	H	L L L	L L L	CONFIG			
H	L	L	H	X X X	L H L	STATUS *			

X=DON'T CARE CONDITION
*ONLY UPPER 16 BITS ENABLED, LOWER 16 BITS FROM MASS BUS CONTROL PATH



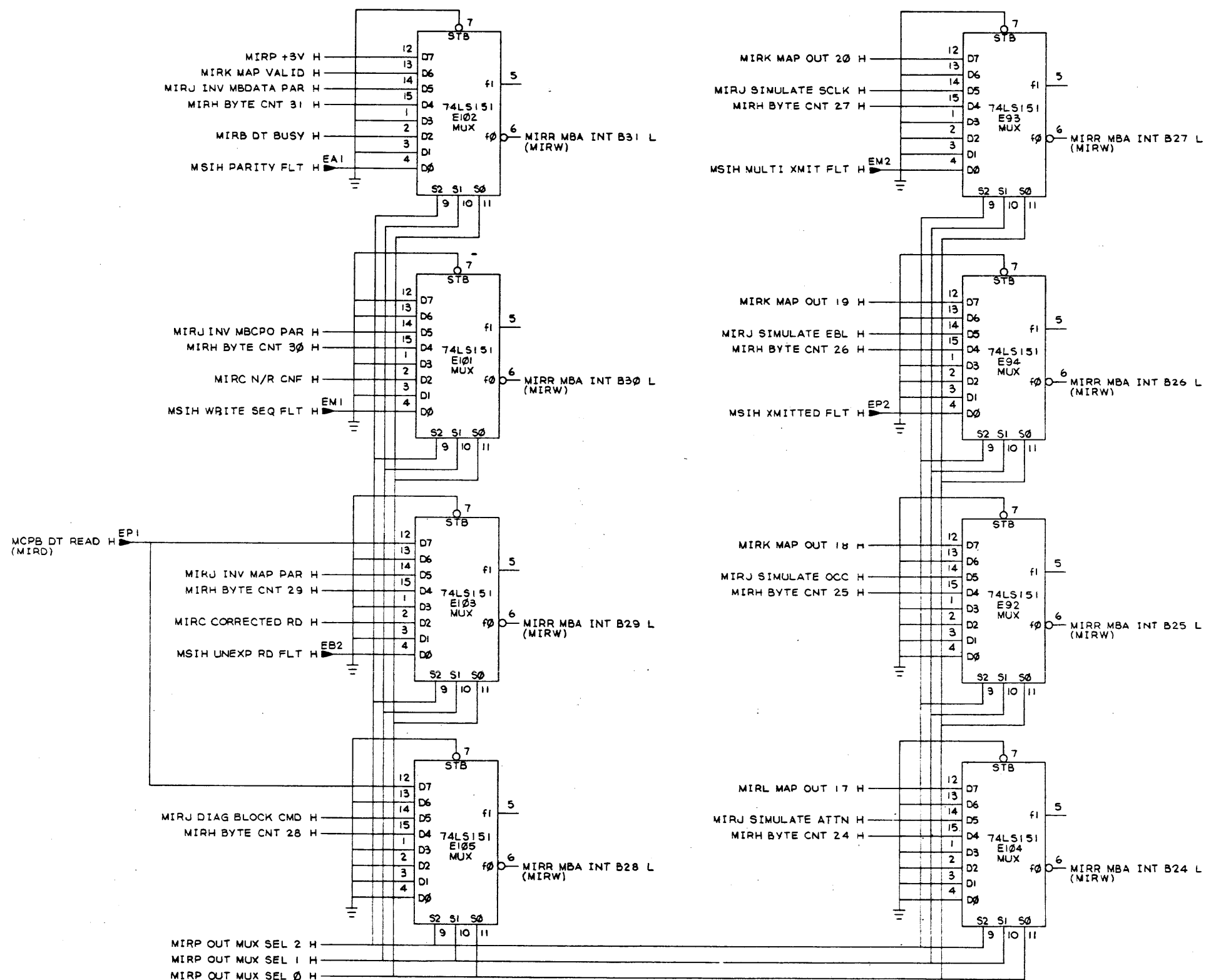
REVISIONS		
CHK	CHANGE NO.	REV.

(SLOT 2)
(MAP PAR CHECK, OUTPUT MUX SEL AND ENAB)

TITLE	MBA INTERNAL REGISTERS (MIRP)	SIZE CODE	D CS	NUMBER	M8276-0-1	REV.	D
SCALE	+	SHEET	14 OF 20	DIST.			

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74LS151					
SEL 2	SEL 1	SEL 0	ENAB	f1	f0
X	X	X	H	L	H
L	L	L	L	D0	D0
L	L	H	L	D1	D1
L	H	L	L	D2	D2
L	H	H	L	D3	D3
H	L	L	L	D4	D4
H	L	H	L	D5	D5
H	H	L	L	D6	D6
H	H	H	L	D7	D7



REVISIONS		
CHK	CHANGE NO.	REV.

(INTERNAL BUS OUTPUT MUX (31:24))			
TITLE		SIZE CODE	NUMBER
MBA INTERNAL		D CS	M8276-0-1
REGISTERS (MIRR)		REV.	D
SCALE		SHEET	15 OF 20
DIST.		Tu 1	

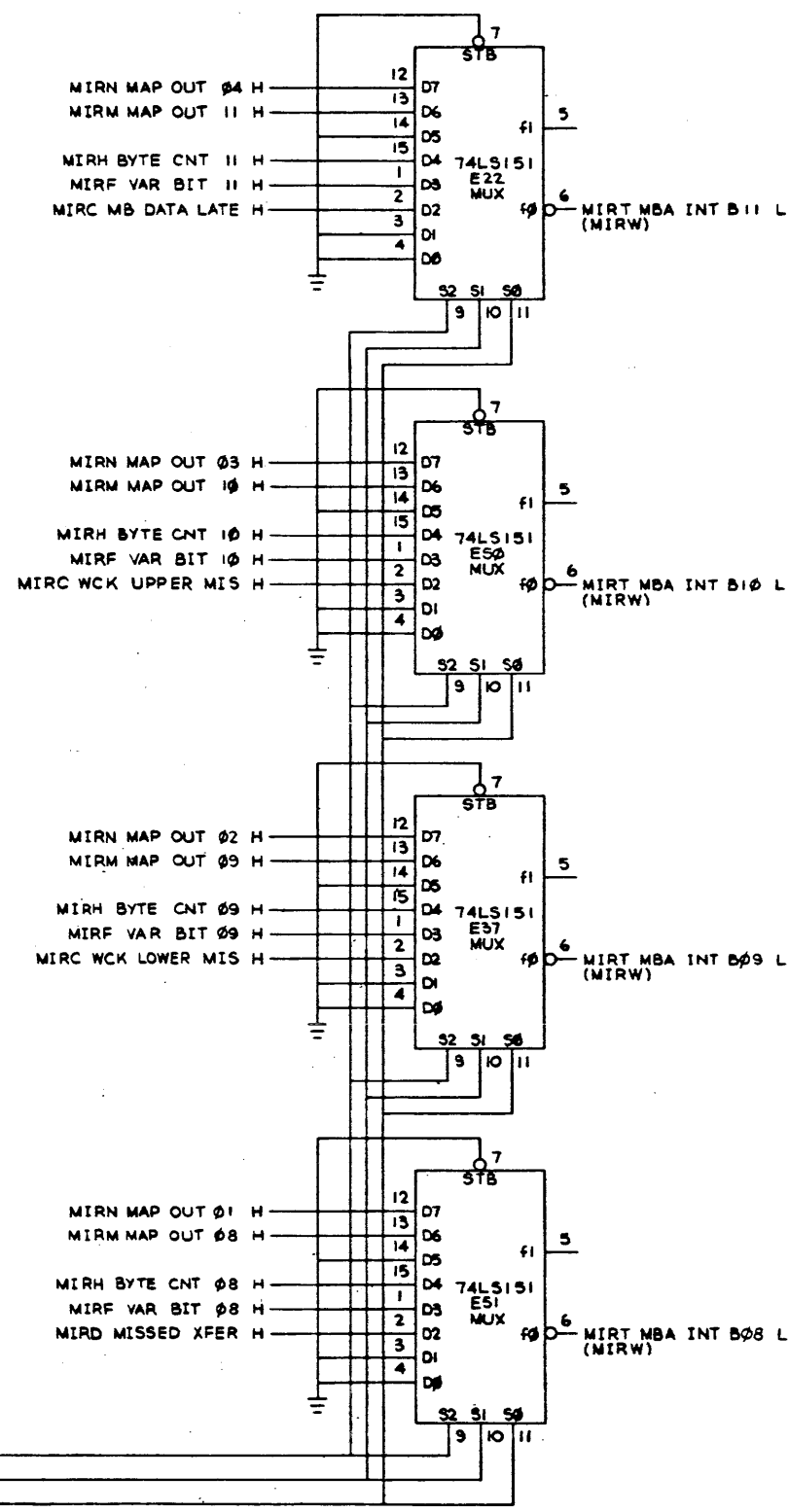
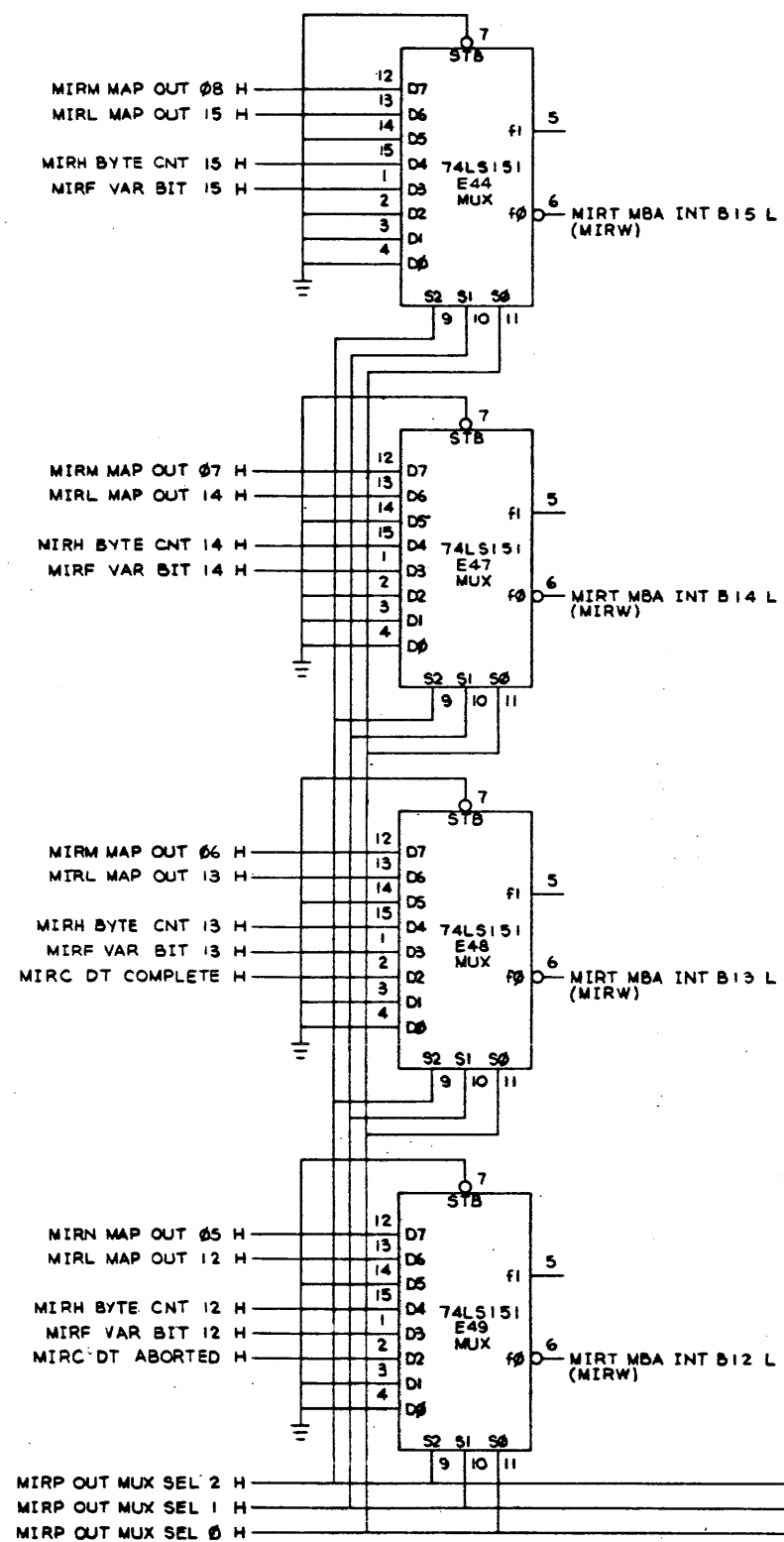
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REVISIONS													(INTERNAL BUS OUTPUT MUX (23:16))										(SLOT 2)									
CHK	CHANGE NO.	REV.											TITLE MBA INTERNAL REGISTERS (MIRS)										D CS M8276-0-1 D									
													SCALE										SHEET 16 OF 20									

TITLE	MBA INTERNAL REGISTERS (MIRS)	SIZE CODE	NUMBER	REV.
SCALE	1/4"	D CS	M8276 - Ø - 1	0
SHEET	16 OF 20	DIST.		

TITLE	MBA INTERNAL REGISTERS (MIRS)	SIZE CODE	NUMBER	REV.
SCALE	1/4"	D CS	M8276 - Ø - 1	0
SHEET	16 OF 20	DIST.		

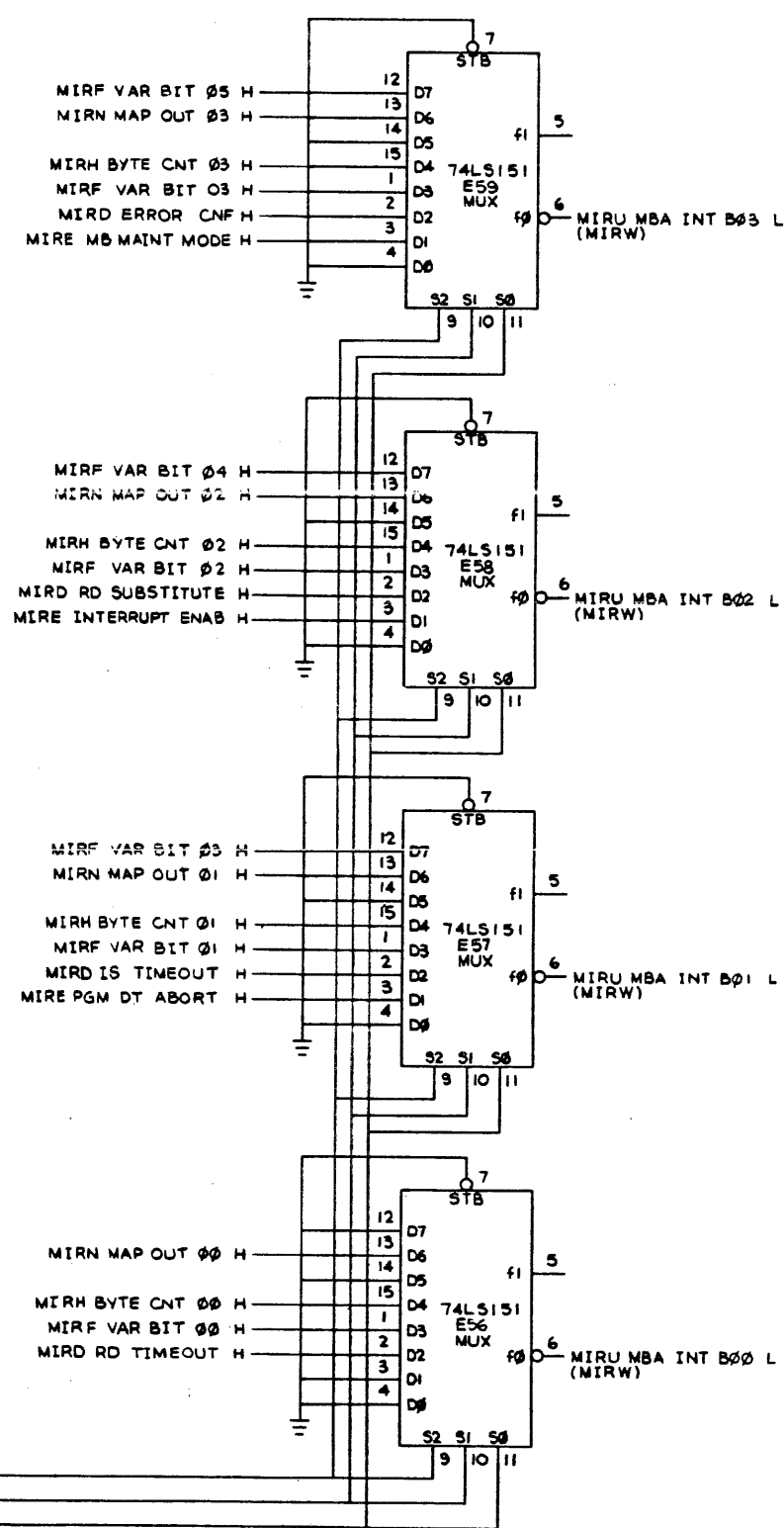
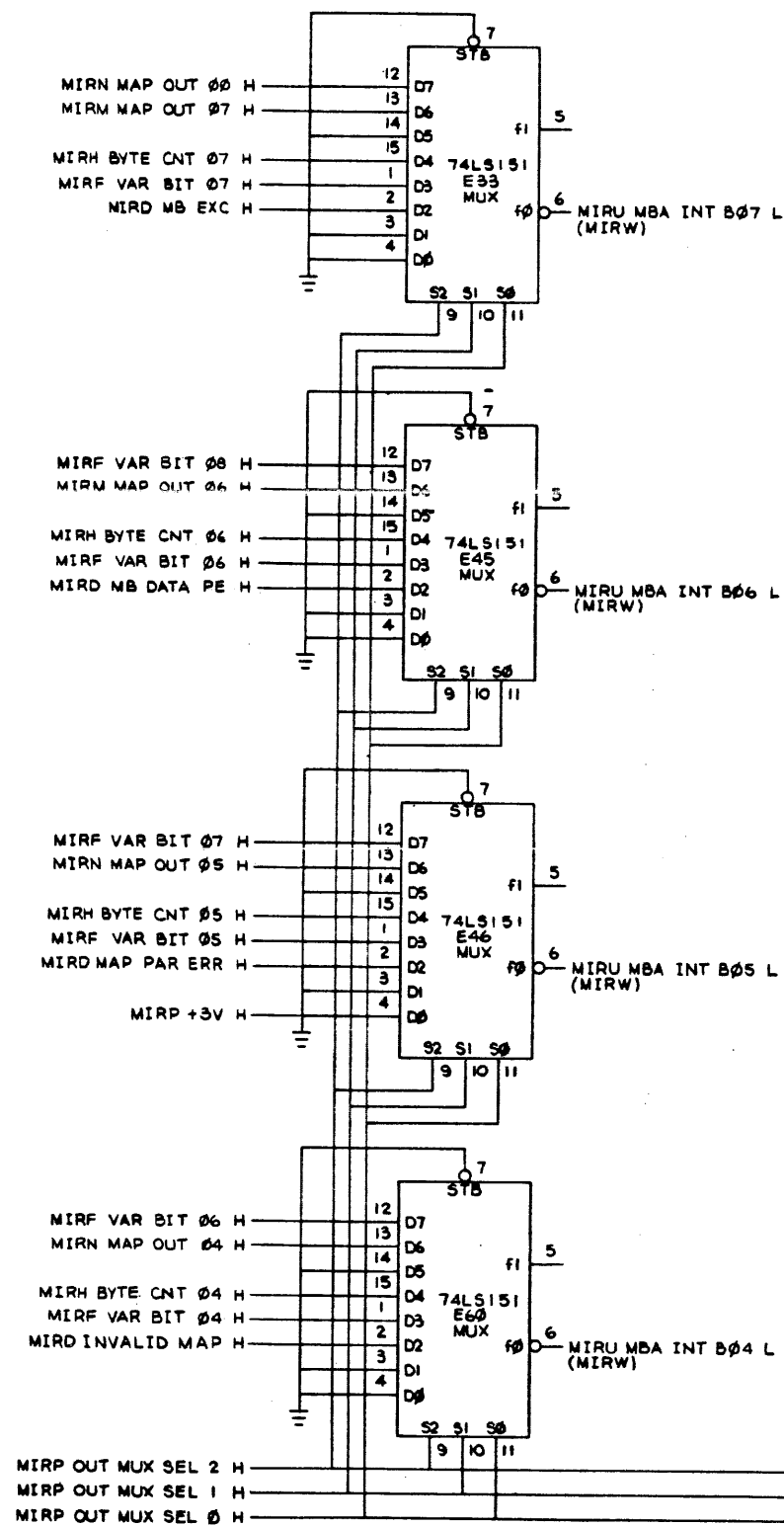
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REVISIONS		
CHK	CHANGE NO.	REV.

(INTERNAL BUS OUTPUT MUX (15:08))		(SLOT 2)	
TITLE	MBA INTERNAL REGISTERS (MIR)	NUMBER	D CS M8276-0-1
SCALE	1:1	SHEET	17 OF 20
DATE		DESIGN	

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(INTERNAL BUS OUTPUT MUX (07:00))

(SLOT 2)

TITLE		SIZE CODE	NUMBER	REV.
MBA INTERNAL REGISTERS (MIRU)		DCS	M8276-0-1	D
SCALE		SHEET	18 OF 20	DIST.
TW				

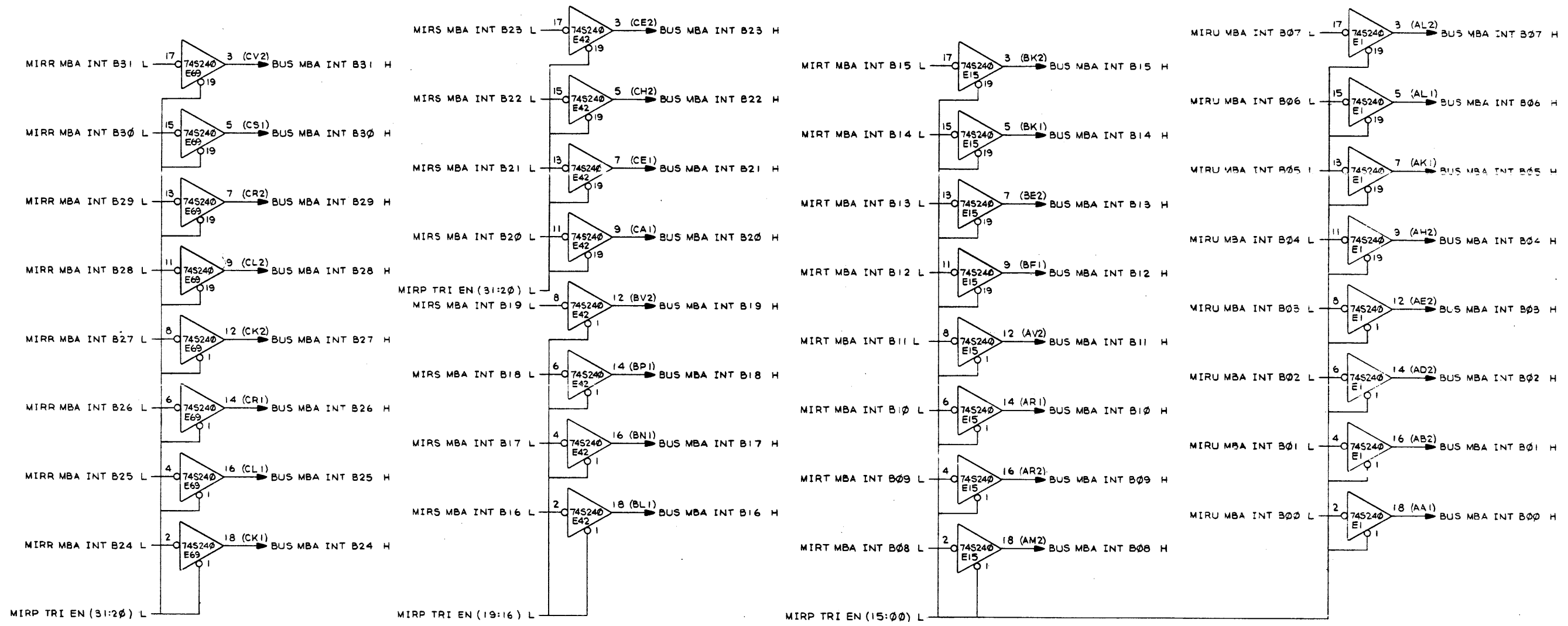
MSIK SEND TR H (DLI) 1
CMI 74532
MSIK SEND TR H 2 E133 3 MIRV SEND TR H

(SBI ARB. POWER FAIL. MIR CLOCKS)		(SLOT 2)	
TITLE	MBA INTERNAL REGISTERS (MIRV)	SIZE CODE	NUMBER
SCALE	19 OF 20	D CS	M8276 - 0 - 1
SHEET	19 OF 20	DIST.	REV. D

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D
C
B
A

D 1-0-9228W 2 1



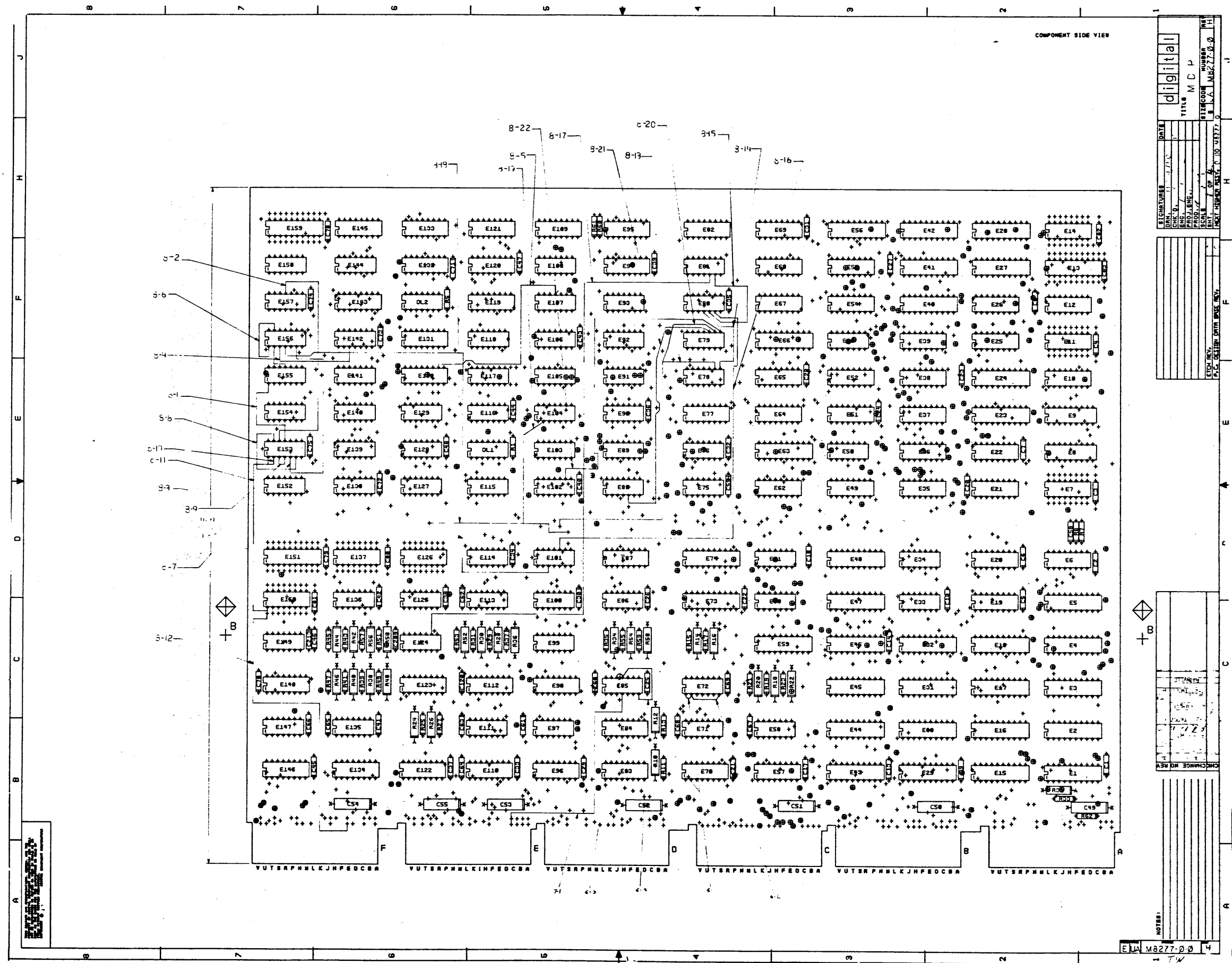
D 1-0-9228W 2 1

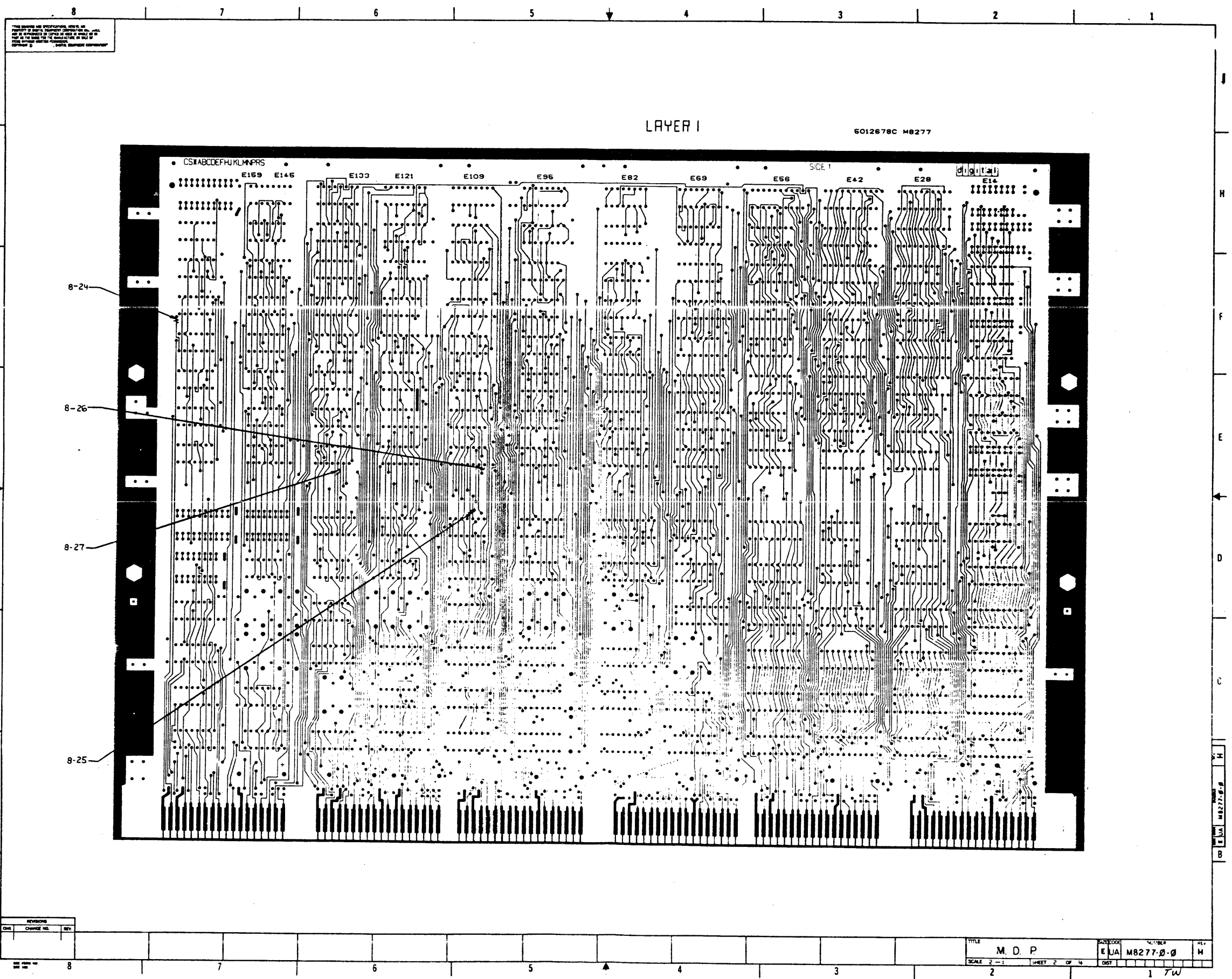
B
A

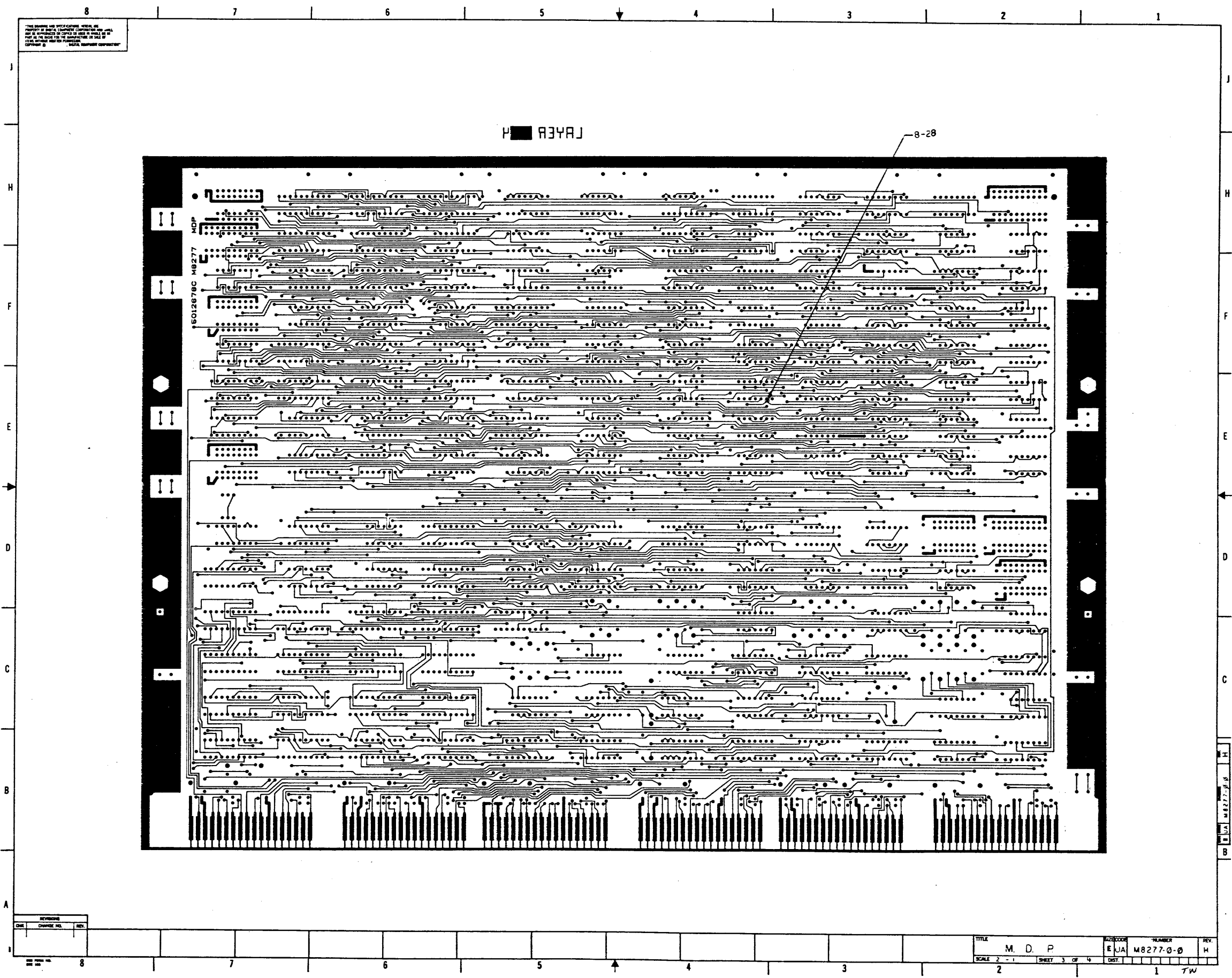
REVISIONS		
CHK	CHANGE NO.	REV.

(INT BUS DRIVER)		(SLOT 2)	
TITLE	MBA INTERNAL REGISTERS (MIRW)	SIZE CODE	D CS
NUMBER	M8276-0-1	REV.	D
SCALE	1:1	SHEET	20 OF 20
DIST.			

8 7 6 5 4 3 2 1







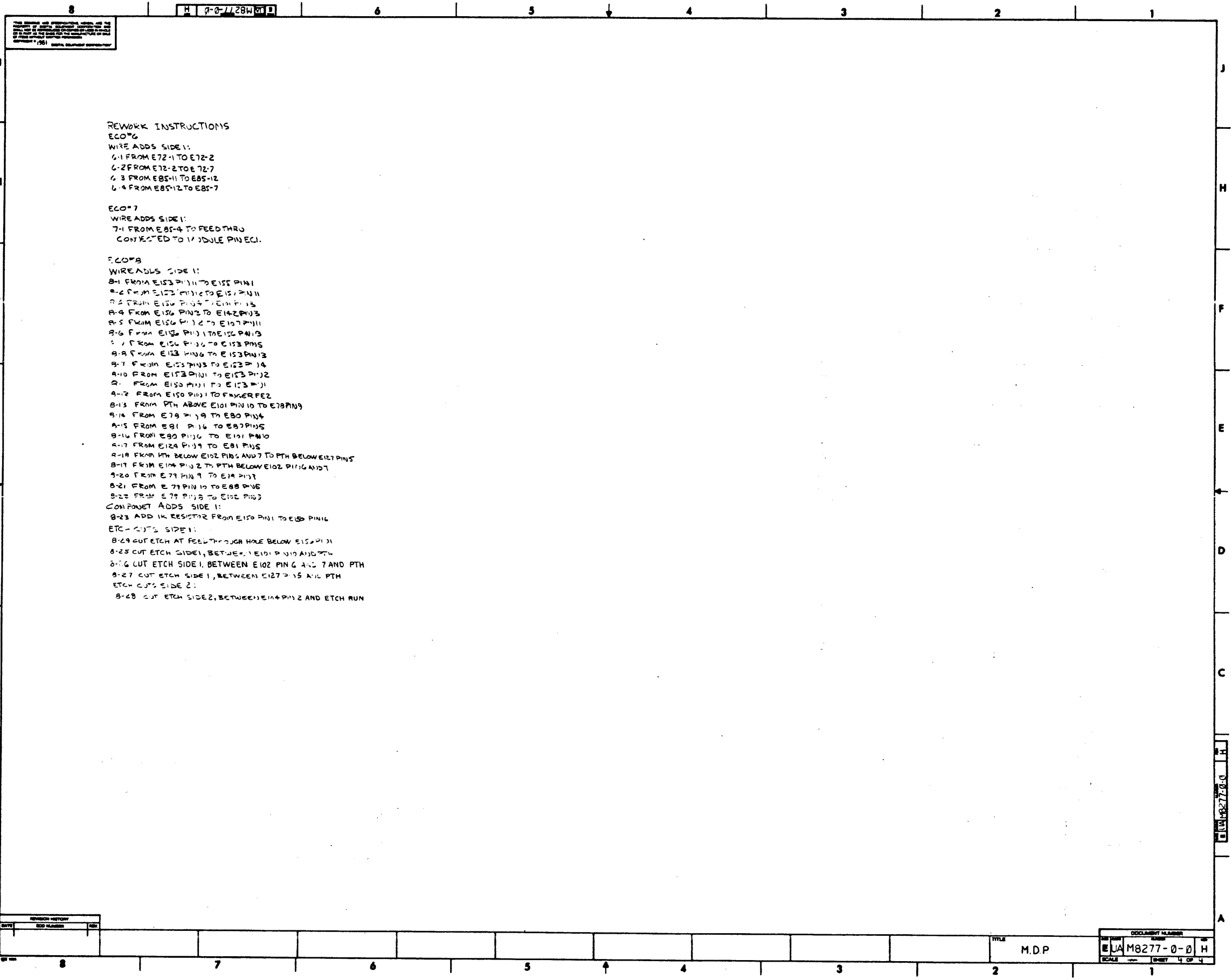
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4 834AJ

8-28

REVISIONS		
DATE	CHANGE NO.	REV.

TITLE		DRAWN		REVISION	
M. D. P.		E. J. A.		H	
SCALE 2 - 1		SHEET 3 OF 4		DIST.	
2		1		TW	



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REWORK INSTRUCTIONS

ECO-6
WIRE ADDS SIDE 1:
6-1 FROM E72-1 TO E72-2
6-2 FROM E72-2 TO E72-7
6-3 FROM E85-11 TO E85-12
6-4 FROM E85-12 TO E85-7

ECO-7
WIRE ADDS SIDE 1:
7-1 FROM E85-4 TO FEEDTHRU
CONNECTED TO MODULE PIN ECI.

ECO-8
WIRE ADDS SIDE 1:
8-1 FROM E153 PIN11 TO E153 PIN1
8-2 FROM E153 PIN12 TO E153 PIN11
8-3 FROM E156 PIN4 TO E156 PIN3
8-4 FROM E156 PIN3 TO E142 PIN3
8-5 FROM E156 PIN2 TO E156 PIN11
8-6 FROM E156 PIN1 TO E156 PIN3
8-7 FROM E156 PIN4 TO E153 PIN3
8-8 FROM E153 PIN3 TO E153 PIN13
8-9 FROM E153 PIN3 TO E153 PIN14
8-10 FROM E153 PIN1 TO E153 PIN12
8-11 FROM E150 PIN1 TO E153 PIN1
8-12 FROM E150 PIN1 TO E153 PIN1
8-13 FROM PTH ABOVE E101 PIN10 TO E78 PIN9
8-14 FROM E78 PIN9 TO E80 PIN4
8-15 FROM E81 PIN6 TO E87 PIN3
8-16 FROM E80 PIN6 TO E101 PIN10
8-17 FROM E124 PIN9 TO E81 PIN3
8-18 FROM PTH BELOW E102 PIN4 AND 7 TO PTH BELOW E127 PIN3
8-19 FROM E104 PIN2 TO PTH BELOW E102 PIN4 AND 7
8-20 FROM E79 PIN9 TO E14 PIN1
8-21 FROM E79 PIN10 TO E88 PIN3
8-22 FROM E79 PIN3 TO E102 PIN3
CONFORET ADDS SIDE 1:
8-23 ADD 1K RESISTOR FROM E150 PIN1 TO E80 PIN16
ETC - CUTS SIDE 1:
8-24 CUT ETCH AT FEEDTHRU HOLE BELOW E156 PIN1
8-25 CUT ETCH SIDE 1, BETWEEN E101 PIN10 AND PTH
8-26 CUT ETCH SIDE 1, BETWEEN E102 PIN4 AND 7 AND PTH
8-27 CUT ETCH SIDE 1, BETWEEN E127 PIN3 AND PTH
ETCH CUTS SIDE 2:
8-28 CUT ETCH SIDE 2, BETWEEN E104 PIN2 AND ETCH RUN

REVISION HISTORY		
DATE	ECO NUMBER	BY

TITLE
M.D.P

DOCUMENT NUMBER
EUA M8277-0-0 H
SCALE 1:1 SHEET 4 OF 4

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION	REFERENCE DESIGNATOR
					00	
1	1	D-MD-5012678-0-0	5012678-00	MDP	1	
2	2		1012784-00	.047 MFD 50V +80-20% CER	70	C1-C10,C13,C14,C17,C18,C20-C48, C58-C69,C70-C75,C78-C83,C120, C209,C213 C49-C55 R1,R5
3	3		1012084-01	8 MFD 25V +75-10% AL EL	7	
4	4		1300271-00	220.0 .25 W 5.0 % CC	2	
5	5		1210711-02	/REPLACED BY 12-16988-02	1	
6	6		9000024-01	EYELET,ROLL FLANGE .1210DX .192	12	
7	7		1300295-00	330.0 .25 W 5.0 % CC	2	R7,R60
8	8		1301424-00	680.0 .25 W 5.0 % CC	2	R8,R61
9	9		1611300-00	DELAY= 10-125NS,5TAPS FAST RISE	2	DL1,DL2
10	10		1910532-00	74S00 NAND GATE-QUAD 2IN	7	E80,E90,E91,E104,E114,E125,E140
11	11		1912799-00	LS00 NAND-GATE-QUAD 2IN,P	2	E101,E153
12	12		1912388-00	74S02 NOR GATE-QUAD 2IN,PO	2	E89,E107
13	13		1910534-00	74S04 INVERTER GATE-HEX 1I	3	E78,E81,E117
14	14		1912803-00	74LS04 INVERTER GATE,HEX	2	E86,E106
15	15		1912389-00	74S08 AND GATE-QUAD 2IN,PO	3	E75,E92,E105
16	16		1912805-00	LS08 AND GATE-QUAD 2IN,PO	2	E79,E144
17	17		1910536-00	74S10 NAND GATE-TRIPLE 3IN	2	E108,E141
18	18		1912807-00	LS10 NAND GATE-TRIPLE 3IN	1	E139
19	19		1910537-00	74S11 AND GATE-TRIPLE 3INP	3	E102,E118,E34
20	20		1912808-00	LS11 AND GATE-TRIPLE 3IN	2	E155,E138
21	21		1910539-00	74S20 NAND GATE-DUAL 4INPU	1	E127
22	22		1912746-00	DEC 74S37 NAND GATE-QUAD 2IN	1	E158
23	23		1912820-00	LS51 A-O-I GATE 2-WIDE 2I	1	E115
24	24		1910542-00	74S64 A-O-I GATE 4-2-3-2	5	E100,E113,E136,E152,E157
25	25		1910544-00	74S74 FF-D DUAL,EDGE TRIGG	5	E88,E93,E103,E128,E142
26	26		1912824-00	LS74 FF-D DUAL,EDGE TRIGG	2	E154,E156
27	27		1912825-00	LS76 FF-JK DUAL W/PRESET	4	E120,E121,E131,E132
28	28		1912089-00	74S85 CMPRTR-4BIT MAGNITUD	4	E62,E64,E65,E77

REVISION HISTORY			BASIC PART NO: M8277			DRN: K.FRIEDGEN			DATE: 11-SEP-79			D I G I T A L		
ENG	ECO NUMBER	REV	SECTION A OF A			CHK'D: F.SMART			DATE: 11-SEP-79			TITLE PARTS LIST		
---	INITIAL	D	SECTION VARIATION INDEX			DES.ENG: K.OKIN			DATE: 11-SEP-79			DOCUMENT NUMBER		
J.F	000006	E	[A] 00			RESP.ENG.: K.OKIN			DATE: 11-SEP-79			SIZE CODE NUMBER REV		
R.C	M8277-TW007	F	[B]			MFG.ENG.: M.TERELLA			DATE: 11-SEP-79			K PL M8277-0-DBP H		
D.R	M8277-TW008	H	[C]			ASSEMBLY NUMBER:			TOP DOCUMENT NUMBER:			FILE NAME:		
			[D]			ID-UA-M8277-0-0			ID-DD-M8277-0-0			Z0649.PLS		
			[E]											
			[F]											
			[G]											
			[H]											
			[I]											
			[J]											
			[K]											
			[L]											
			[M]											
			[N]											

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TW

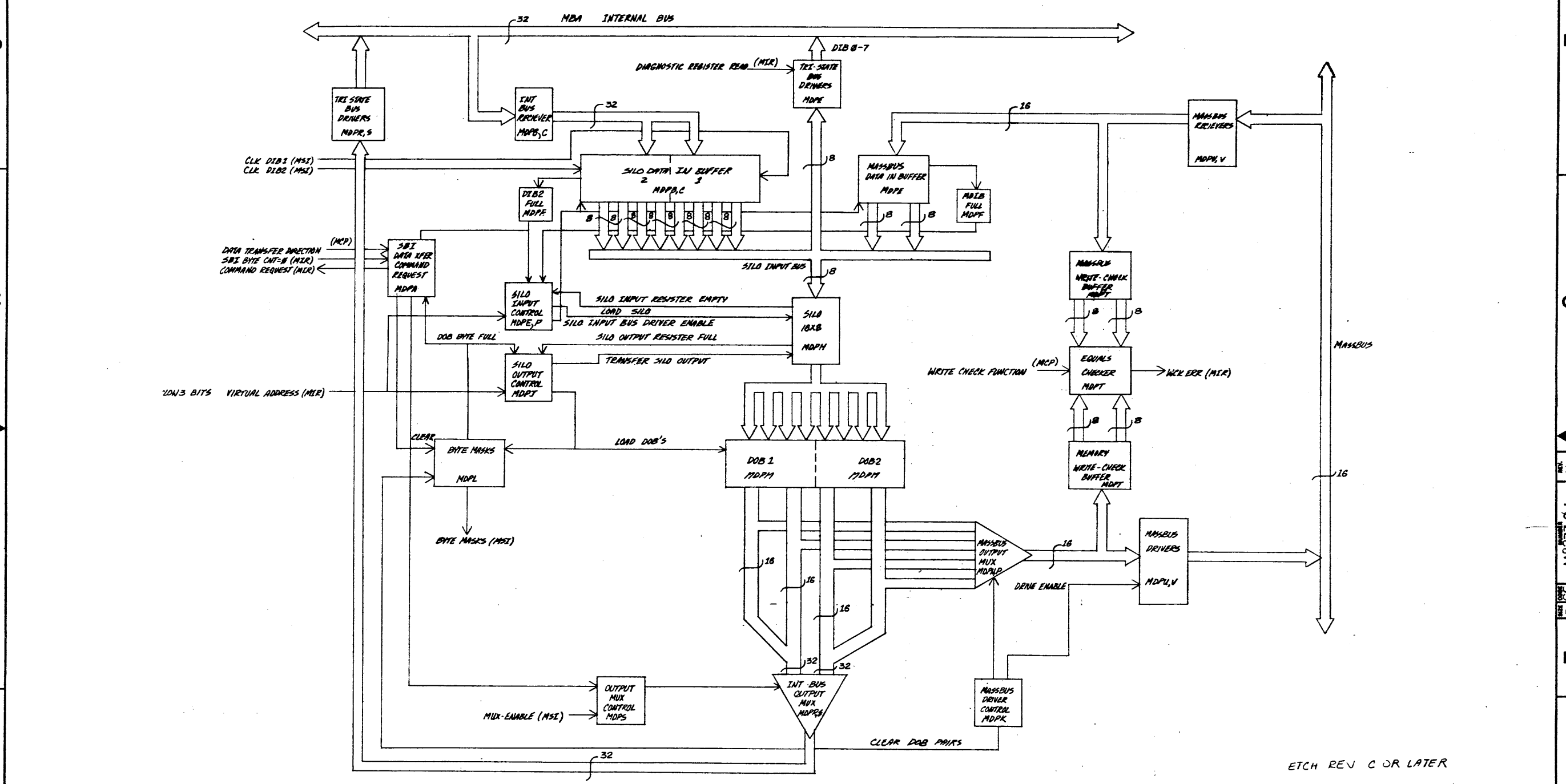
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					00		
29	29		1910545-00	74S112 FF-JK DUAL,EDGE TRIG	1		E143
30	30		1911712-00	74S51 AND-OR GATE-INVERT D	1		E76
31	31		1911675-00	74S138 DECODER/DEMUX 3-8 LIN	1		E19
32	32		1912843-00	LS139 DECODER, 2 OF 4(DUAL	1		E145
33	33		1910546-00	74S140 NAND GATE-DUAL 4INPU	3		E33,E116,E129
34	34		1912844-00	LS151 MUX 1 OF 8 & DATA	1		E130
35	35		1910547-00	74S153 MUX 1 OF 4 (DUAL)	9		E25,E36,E37,E38,E39,E52,E54,E55,
						CONT	E133
36	36		1910549-00	74S158 MUX 1 OF 2 (QUAD)	10		E10,E12,E21,E22,E26,E35,E49,E51,
						CONT	E68,E126
37	37		1910957-00	74S175 FF-D QUAD COMMON CLO	1		E20
38	38		1912853-00	LS175 FF-D QUAD	1		E109
39	39		1912854-00	LS193 COUNTER,SYNCHR,4BIT,	6		E67,E69,E82,E6,E94,E95
40	40		1913462-00	74S240 OCTAL BUFFER,INVERTI	4		E4,E18,E32,E46
41	41		1913493-00	74S241 OCTAL BUFFER,TRI-STA	2		E5,E59
42	42		1912860-00	LS259 LATCH 8BIT	1		E119
43	43		1911573-00	74S280 PARITY GEN/CHKR,9BIT	4		E50,E53,E60,E61
44	44		1913670-00	74S373 LATCH 8BIT TRASP TR	10		E23,E24,E27,E28,E40,E41,E42,E56,
						CONT	E73,E74
45	45		1913671-00	74S374 FF-D OCTAL TRISTATE	16		E1-E3,E15-E17,E29-E31,E43-E45,
						CONT	E47,E48,E63,E66
46	46		1910268-00	DEC 75107B RECEIVER,LINE,DUAL,	11		E58,E71,E72,E85,E97,E99,E135,
						CONT	E111,E124,E147,E149
47	47		1911341-00	75113 DRIVER,LINE,DUAL,MA	12		E57,E70,E83,E84,E96,E98,E110,
						CONT	E112,E123,E134,E146,E148
48	48		1911415-00	10125 ECL TO TTL TRNSLTR	1		E122
49	49		1912586-00	DM 85S68N REGISTER,64BIT EDGE	2		E8,E9
50	50		1300365-00	1.0 K .25 W 5.0 % CC	2		R62,R63
51	51		1301477-00	82.0 .25 W 5.0 % CC	25		R11,R13,R15,R17,R19,R21,R23,R25,
						CONT	R27,R29,R31,R33,R35,R37,R39,R41,
						CONT	R43,R45,R47,R49,R51,R53,R55,R57,
						CONT	R59
52	52		1301781-00	82.0 .50 W 5.0 % CC	25		R12,R14,R16,R18,R20,R10,R22,R24,
						CONT	R26,R28,R30,R32,R34,R36,R38,R40,
						CONT	R42,R44,R46,R48,R50,R52,R54,R56,
						CONT	R58
53	53		9105740-55	WIRE(WRAP)30AWG UL1423	A/R		

54 NOTE: I.C. SPARE LOCATIONS ARE: E7,E13,E14,E137,E150,E151,E159,E87,E11.

D	I	G	I	T	A	L	TITLE	SECTION A	OF A	SIZE	CODE	DOCUMENT NUMBER	REV
							M D P						
										K	FL	M8277-0-DBP	H

TW

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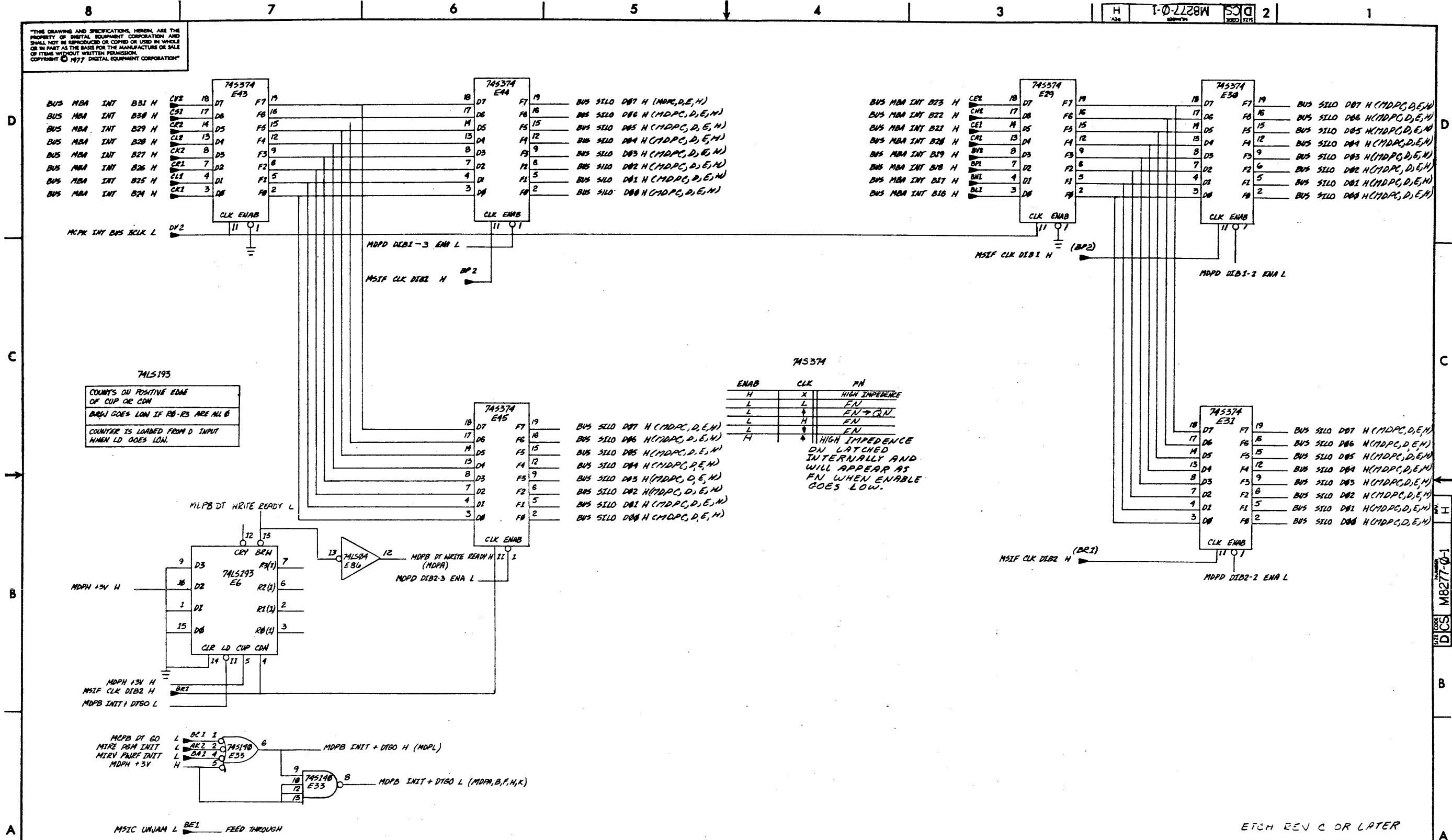
ETCH REV C OR LATER

(MASSBUS ADAPTER BLOCK DIAGRAM)(SLOT 3)

DRN <i>Chido</i>	11-15-77	FIRST USED ON	11780	digital
CHK'D <i>Chido</i>	11-15-77	TITLE	MASSBUS (MDP)	
ENG. <i>Chido</i>	11-15-77	NUMBER	DATA PATHS	
PROJ. ENG. <i>Chido</i>	11-15-77	REV.	H	
PROD. <i>Chido</i>	11-15-77	SIZE	D	
NEXT HIGHER ASSY.		CODE	CS	
SCALE <i>1:1</i>		DIST.		
SHEET 1 OF 20				

REV.	CHG.	NO.	DATE	BY	CHK.
1	1	1	11-15-77	Chido	Chido
2	2	2	11-15-77	Chido	Chido
3	3	3	11-15-77	Chido	Chido
4	4	4	11-15-77	Chido	Chido
5	5	5	11-15-77	Chido	Chido
6	6	6	11-15-77	Chido	Chido
7	7	7	11-15-77	Chido	Chido
8	8	8	11-15-77	Chido	Chido
9	9	9	11-15-77	Chido	Chido
10	10	10	11-15-77	Chido	Chido
11	11	11	11-15-77	Chido	Chido
12	12	12	11-15-77	Chido	Chido
13	13	13	11-15-77	Chido	Chido
14	14	14	11-15-77	Chido	Chido
15	15	15	11-15-77	Chido	Chido
16	16	16	11-15-77	Chido	Chido
17	17	17	11-15-77	Chido	Chido
18	18	18	11-15-77	Chido	Chido
19	19	19	11-15-77	Chido	Chido
20	20	20	11-15-77	Chido	Chido

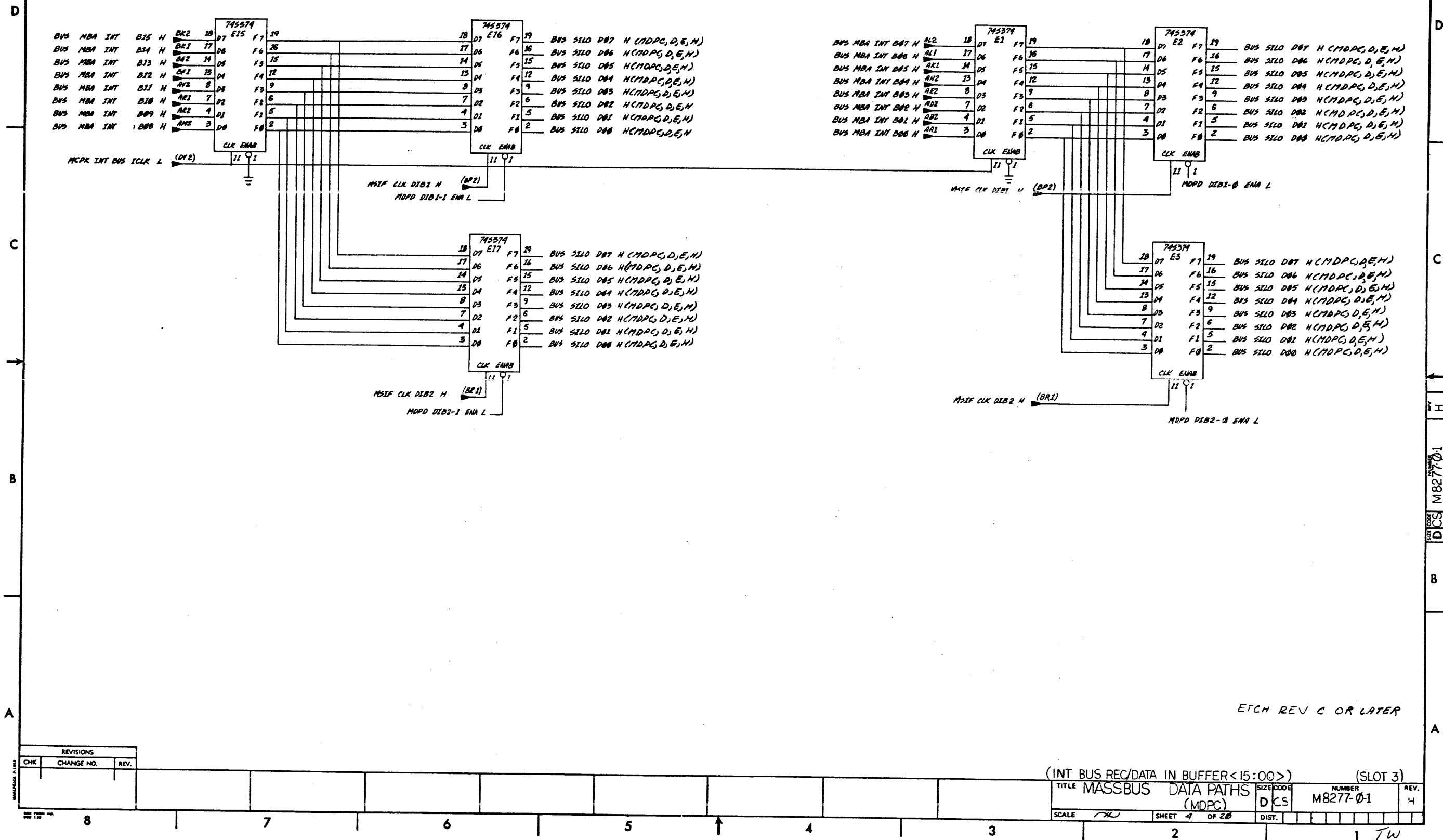
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REVISIONS		
CHK	CHANGE NO.	REV.

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H REV. 10-27-80 M8277-01 DCS 2 1



ETCH REV C OR LATER

REVISIONS		
CHK	CHANGE NO.	REV.

(INT BUS REC/DATA IN BUFFER<15:00>) (SLOT 3)

TITLE	MASSBUS DATA PATHS (MDPC)	SIZE CODE	D CS	NUMBER	M8277-01	REV.	H
SCALE	1/4	SHEET	4	OF 20	DIST.		

1 TW

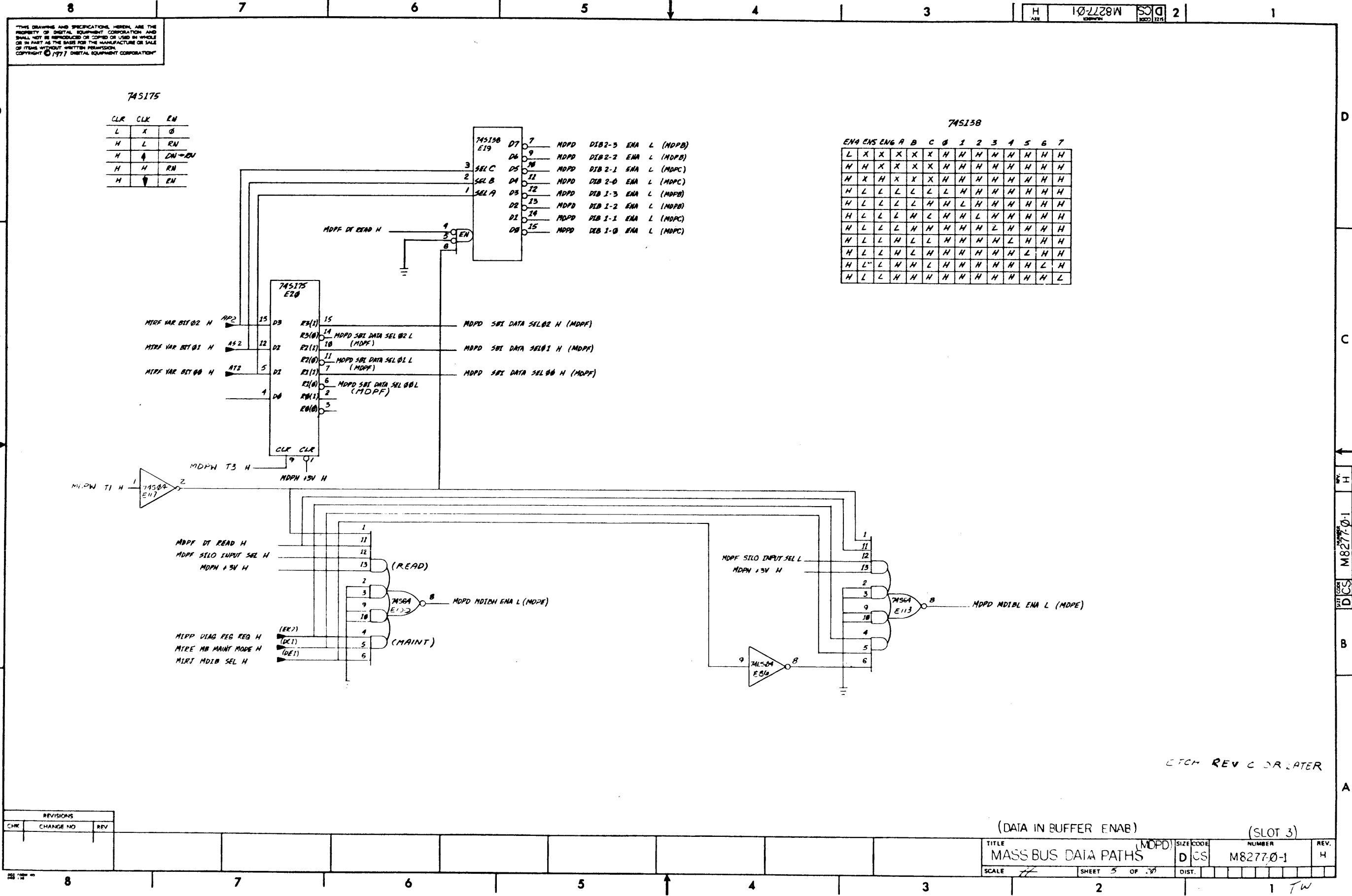
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74S175

CLR	CLK	EN
L	X	0
H	L	RN
H	↓	DN=DN
H	H	RN
H	↓	EN

74S138

EN4	EN5	EN6	A	B	C	0	1	2	3	4	5	6	7
L	X	X	X	X	X	X	H	H	H	H	H	H	H
H	H	X	X	X	X	X	H	H	H	H	H	H	H
H	X	H	X	X	X	X	H	H	H	H	H	H	H
H	L	L	L	L	L	L	H	H	H	H	H	H	H
H	L	L	L	L	L	H	H	L	H	H	H	H	H
H	L	L	L	H	L	H	H	L	H	H	H	H	H
H	L	L	L	H	H	H	H	L	H	H	H	H	H
H	L	L	H	L	L	H	H	H	L	H	H	H	H
H	L	L	H	L	H	H	H	H	L	H	H	H	H
H	L	L	H	L	H	H	H	H	H	L	H	H	H
H	L	L	H	H	H	H	H	H	H	H	L	H	H
H	L	L	H	H	H	H	H	H	H	H	H	L	H



ETCH REV C OR LATER

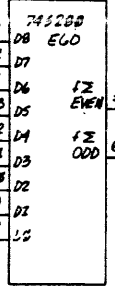
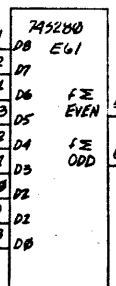
REVISIONS			TITLE		SIZE CODE		NUMBER		REV.	
CHK	CHANGE NO	REV	MASS BUS DATA PATHS (MDPD)		D CS		M8277-0-1		H	
			SCALE		SHEET 5 OF 20					

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H 1-0-7728W DCS 2

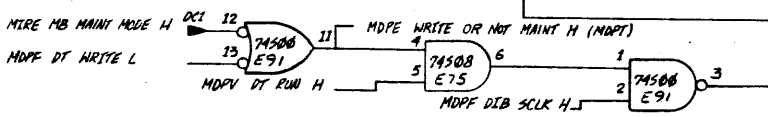
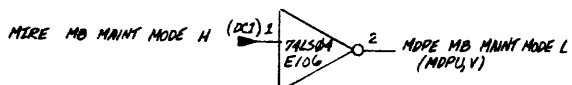
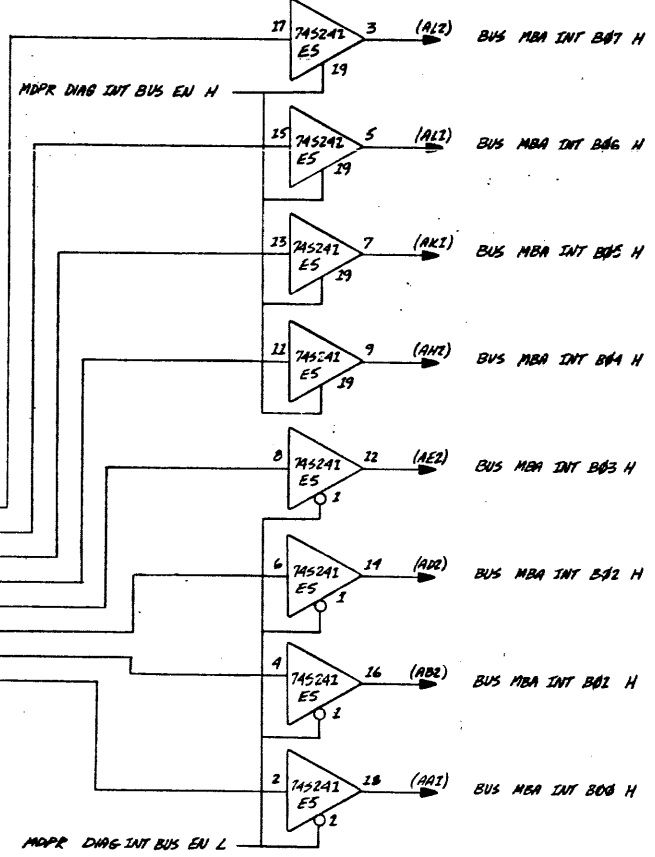
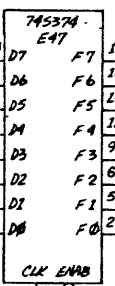
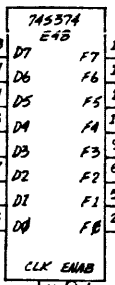
MDPV REC DATA PAR H
MDPU REC MB DPD15 H
MDPU REC MB DPD14 H
MDPU REC MB DPD13 H
MDPU REC MB DPD12 H
MDPU REC MB DPD11 H
MDPU REC MB DPD10 H
MDPU REC MB DPD09 H
MDPU REC MB DPD08 H

MDPV REC MB DPD07 H
MDPV REC MB DPD06 H
MDPV REC MB DPD05 H
MDPV REC MB DPD04 H
MDPV REC MB DPD03 H
MDPV REC MB DPD02 H
MDPV REC MB DPD01 H
MDPV REC MB DPD00 H



745280

# OF INPUTS HIGH	Σ EVEN	Σ ODD
0, 2, 4, 6, 8	H	L
1, 3, 5, 7, 9	L	H



ETCH REV C OR LATER

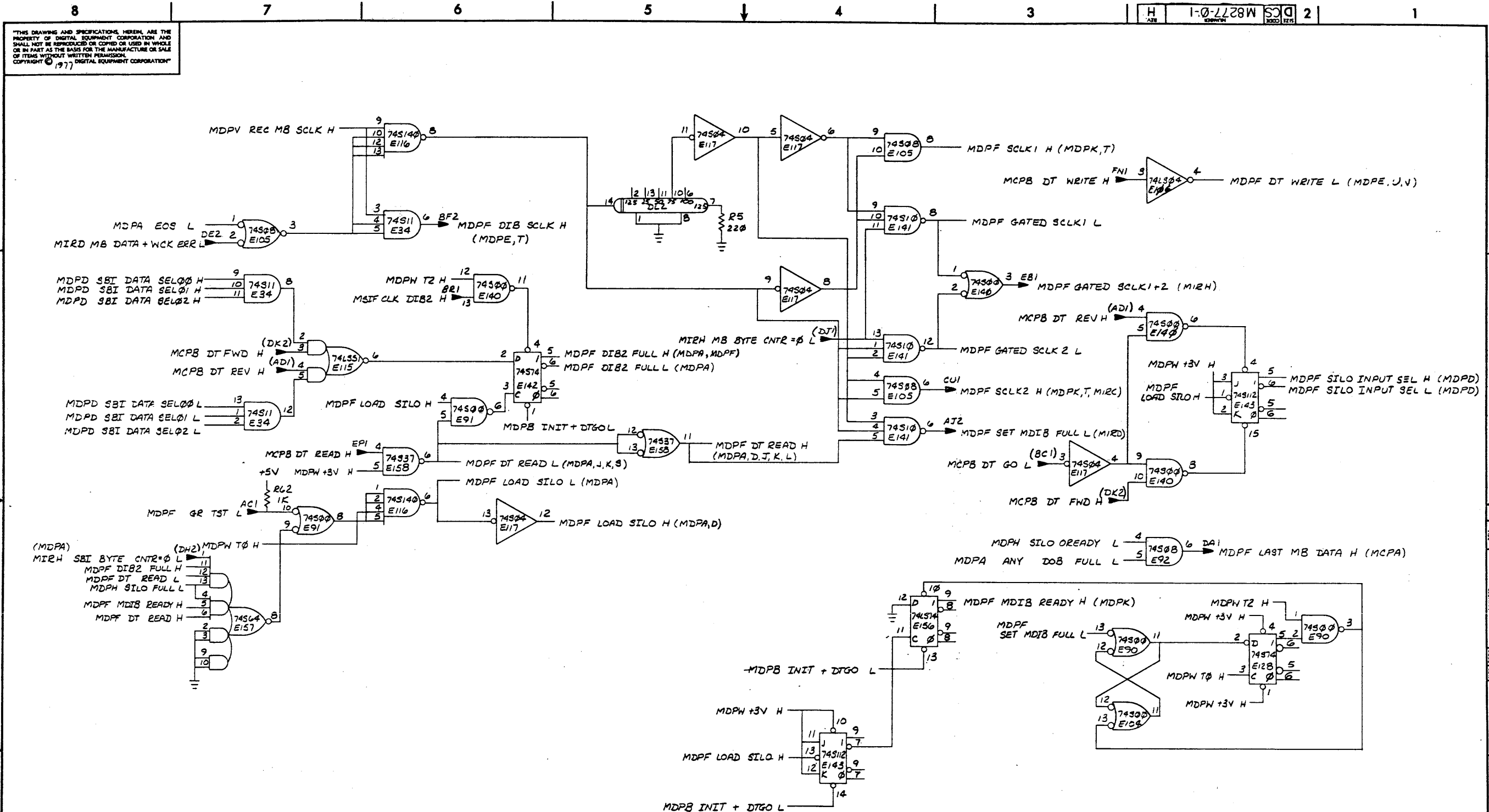
1 P.1035	REVISIONS		
	CHK	CHANGE NO.	REV.

(REC MB DATA/PAR CHK) (SLOT 3)

TITLE	MASS BUS DATA PATHS (MDPE)	SIZE CODE	D CS	NUMBER	M8277-0-1	REV.	H
SCALE	1X	SHEET	6 OF 20	DIST.			

1 TW

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REVISIONS		
CHK	CHANGE NO.	REV.

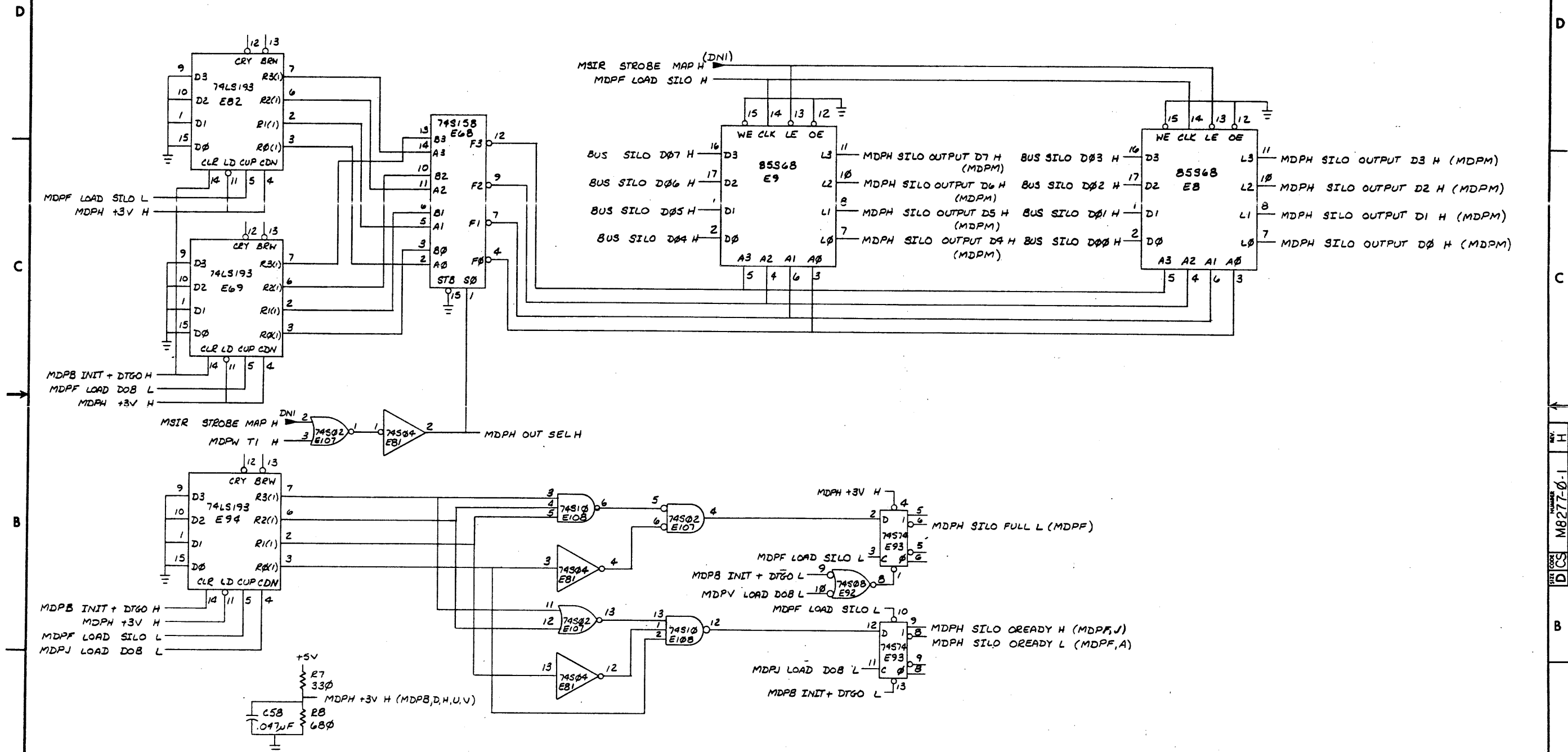
(SILO INPUT CONTROL)		(SLOT 3)	
TITLE	MASS BUS DATA PATHS (MDPF)	SIZE CODE	NUMBER
SCALE	+	DIST.	REV.

ETCH REV C OR LATER

REV. H
M8277-0-1
DCS

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H 1-0-2228W DCS M8277-0-1 2



ETCH REV C OR LATER

REVISIONS		
CHK	CHANGE NO.	REV.

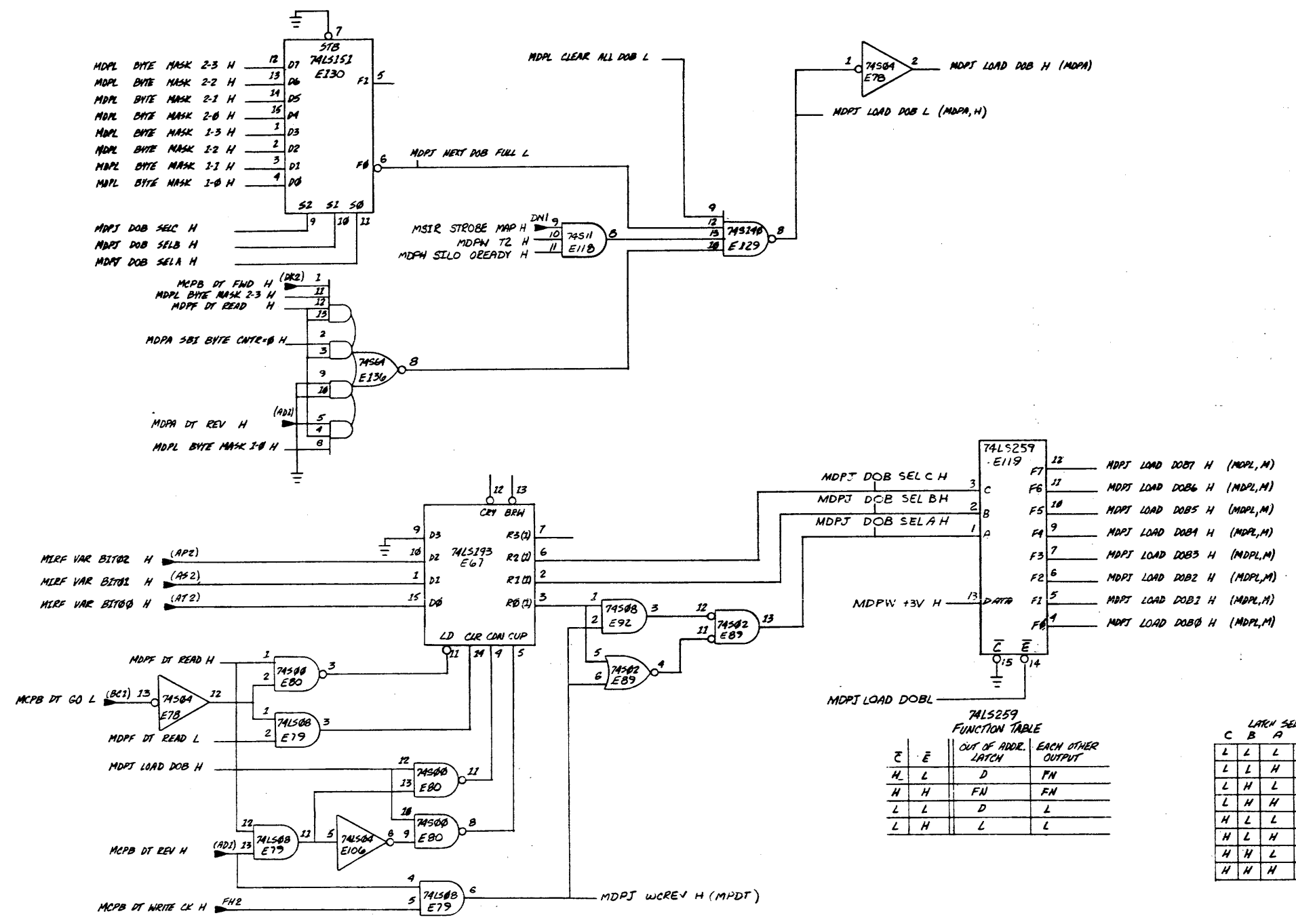
(SILO)		(SLOT 3)	
TITLE	MASS BUS DATA PATHS (MDPH)	SIZE CODE	D CS
NUMBER	M8277-0-1	REV.	H
SCALE	++	SHEET	8 OF 20

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1 2 3 4 5 6 7 8

74LS151
SEL

STB	S2	S1	S0	F1	F0
H	X	X	X	L	H
L	L	L	L	D0	D0
L	L	L	H	D1	D1
L	L	H	L	D2	D2
L	L	H	H	D3	D3
L	H	L	L	D4	D4
L	H	L	H	D5	D5
L	H	H	L	D6	D6
L	H	H	H	D7	D7



74LS259
FUNCTION TABLE

\bar{C}	\bar{E}	OUT OF ADDR. LATCH	EACH OTHER OUTPUT
H	L	D	FN
H	H	FN	FN
L	L	D	L
L	H	L	L

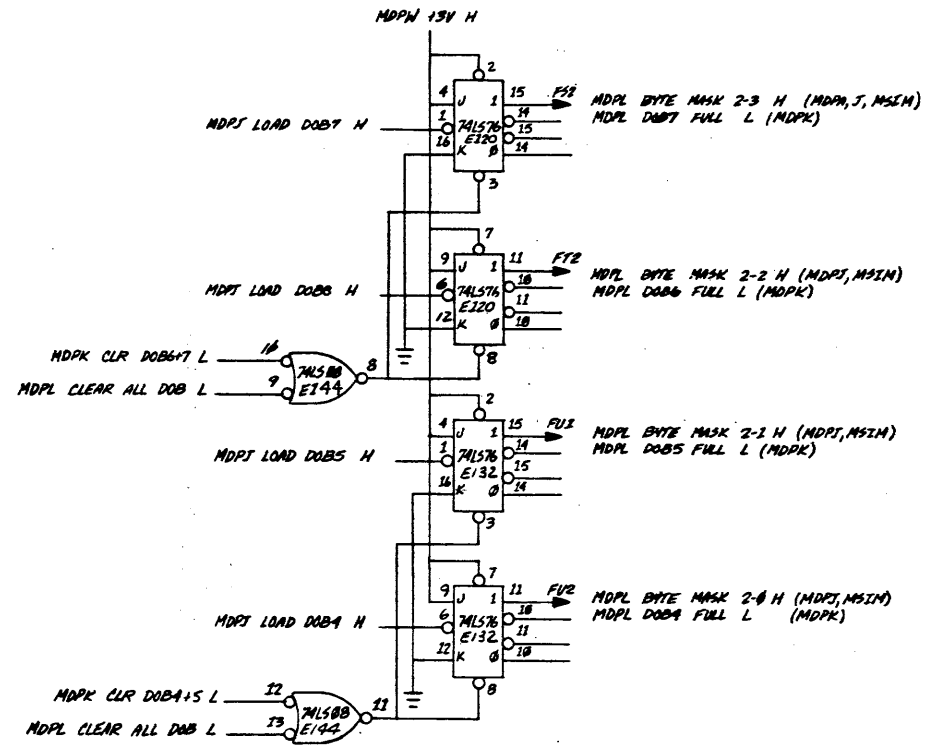
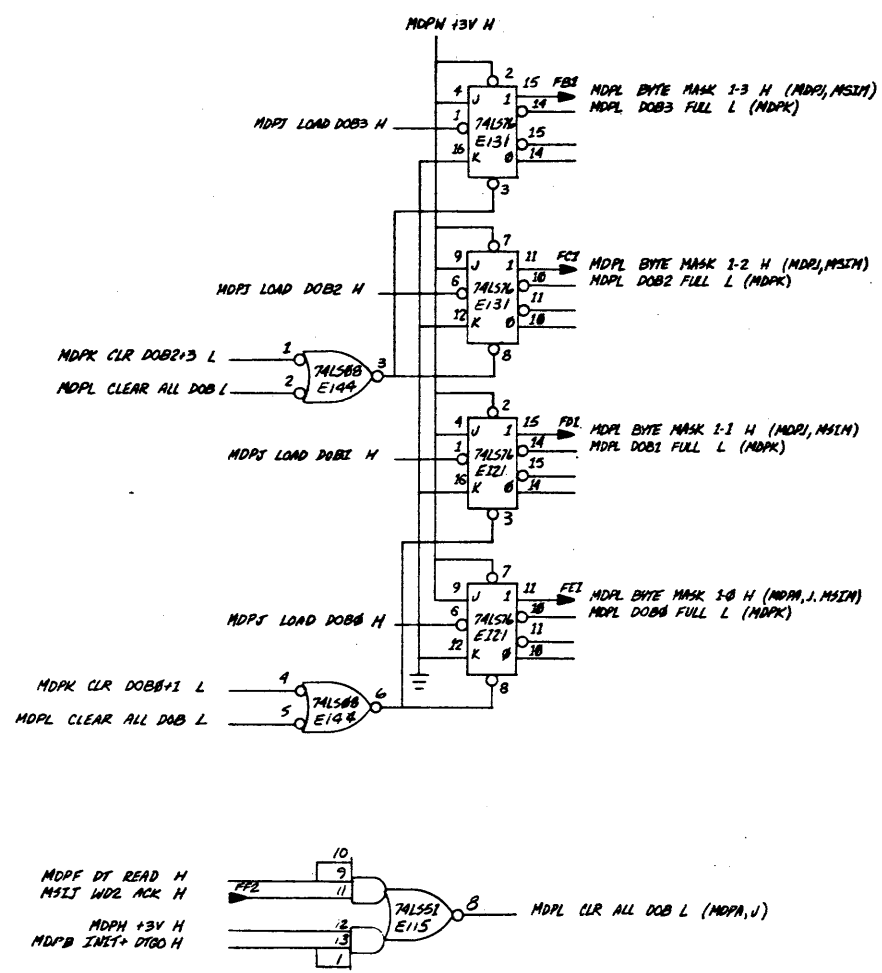
LATCH SELECTION TABLE

C	B	A	LATCH ADDRESSED
L	L	L	0
L	L	H	1
L	H	L	2
L	H	H	3
H	L	L	4
H	L	H	5
H	H	L	6
H	H	H	7

EACH REV C OR LATER

[illegible]

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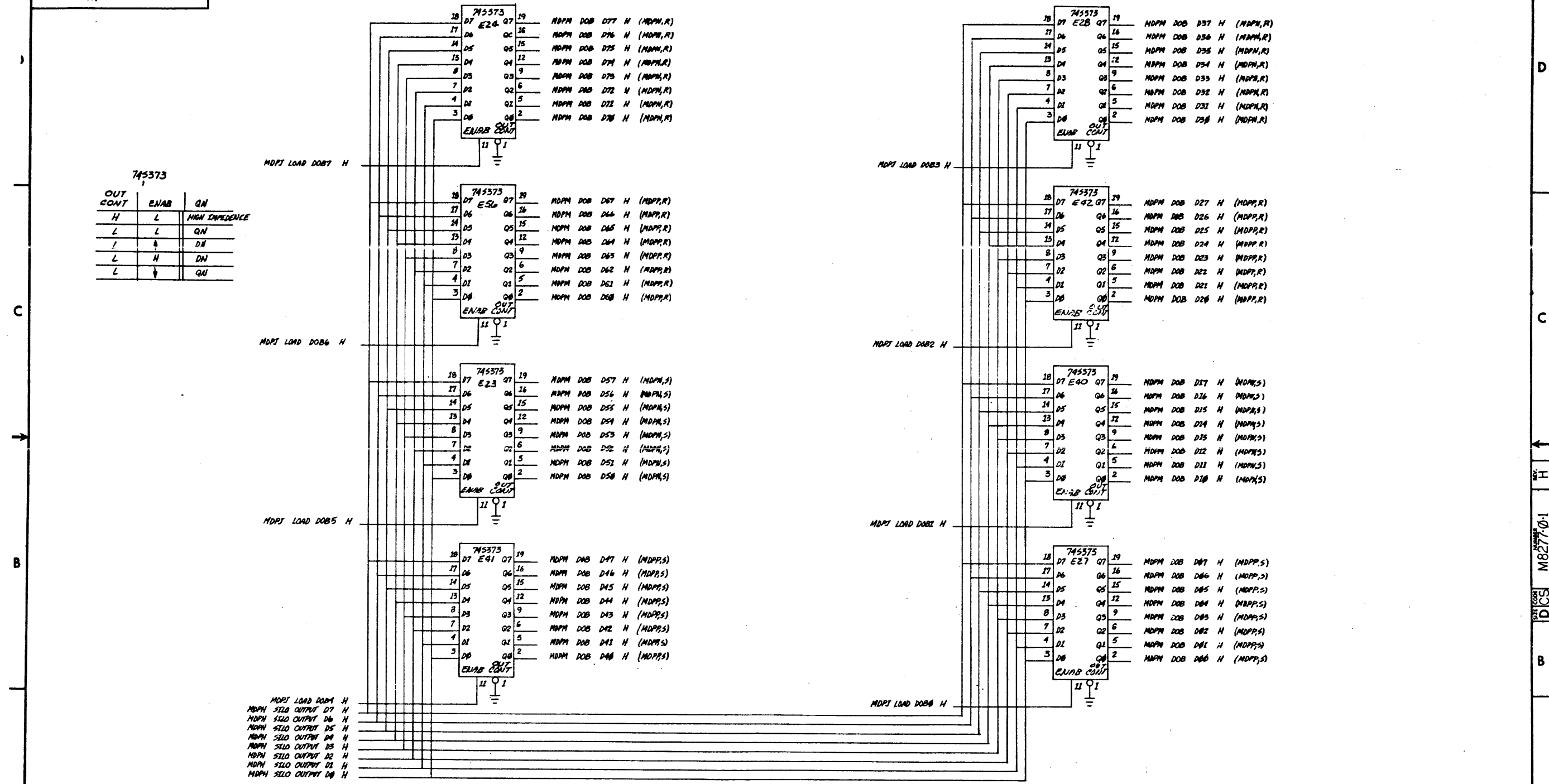
ETCH REV C OR LATER

REVISIONS		
CHK	CHANGE NO.	REV.

(BYTE MASK)		(SLOT 3)	
TITLE	MASSBUS DATA PATHS (MDPL)	SIZE CODE	D CS
NUMBER	M8277-01	REV.	H
SCALE	1/1	SHEET	11 OF 20

CS M8277-01

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ETCH REV C OR LATER

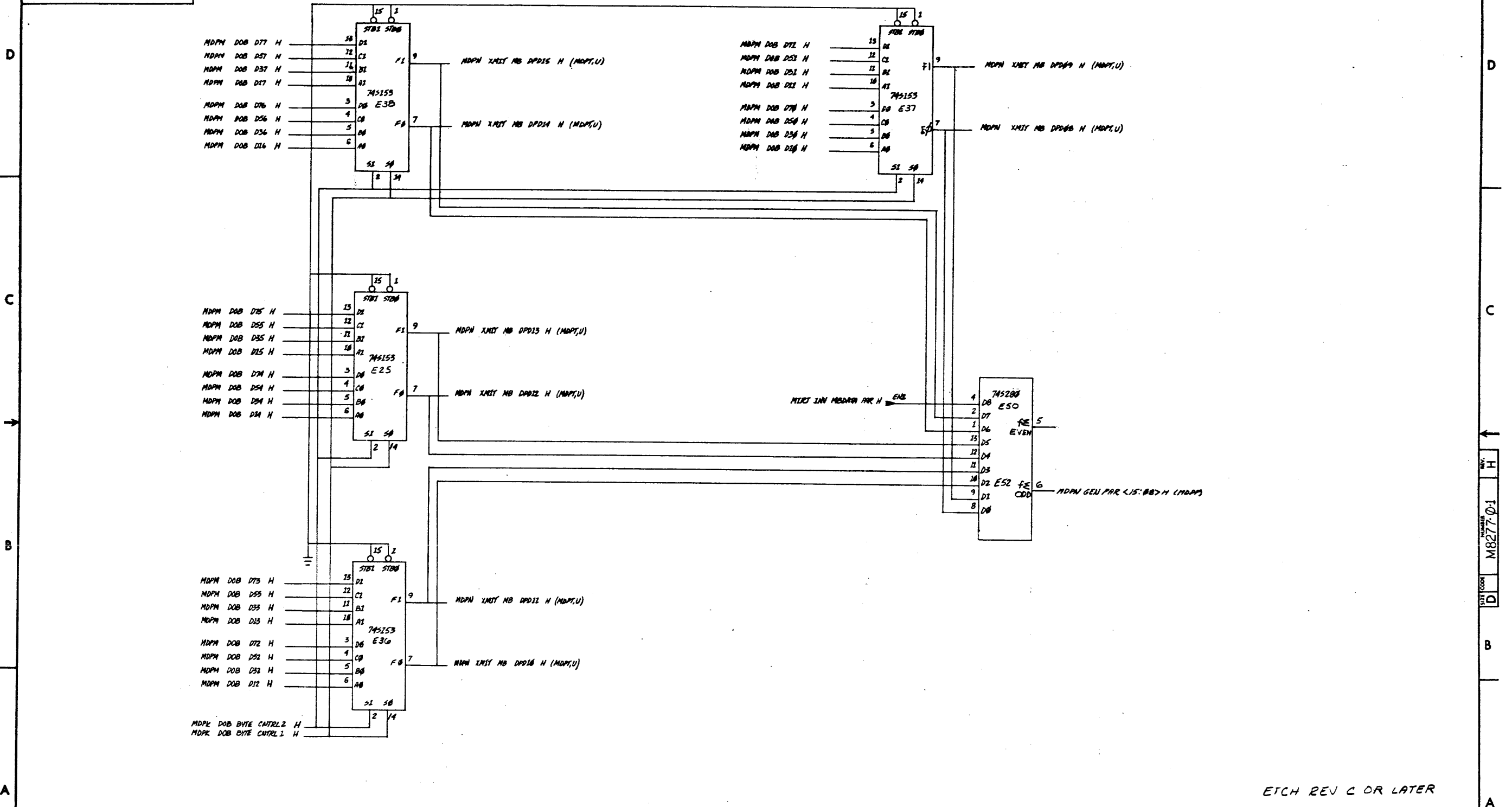
REVISIONS		
CHK	CHANGE NO.	REV.

(DATA OUTPUT BUFFER)				(SLOT 3)					
TITLE		SIZE		CODE		NUMBER		REV.	
MASSBUS. DATA PATHS (MDPM)		D		CS		M8277-01		H	
SCALE		SHEET		OF		DIST.			
H		12		20					

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H 1-0-228N 2

1



REVISIONS		
CHK	CHANGE NO.	REV.

(XMIT MB DATA <15:08> (PAR GEN))

SLOT 3

TITLE	SIZE/COO	NUMBER	REV.
MASSBUS DATA PATHS (MDPN)	D CS	M8277-01	H
SCALE	SHEET 13 OF 20	DIST.	

8

7

6

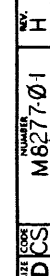
5

4

3

2

1 TW

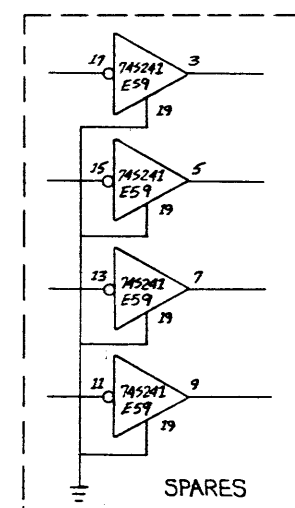
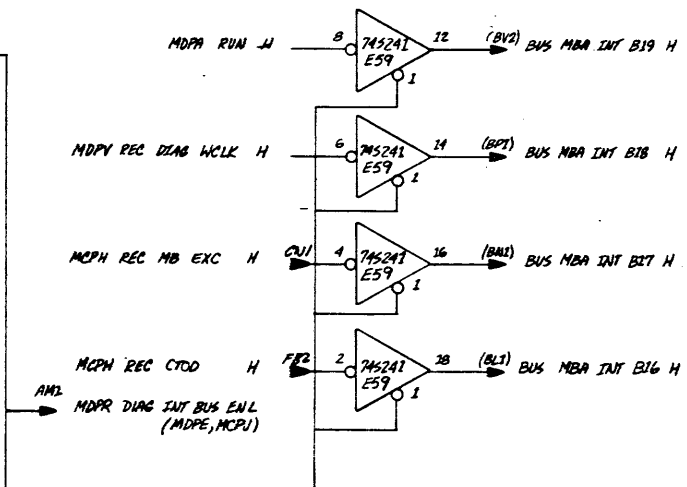
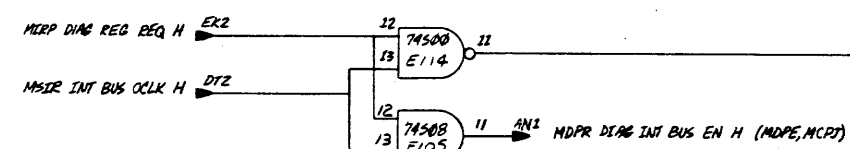
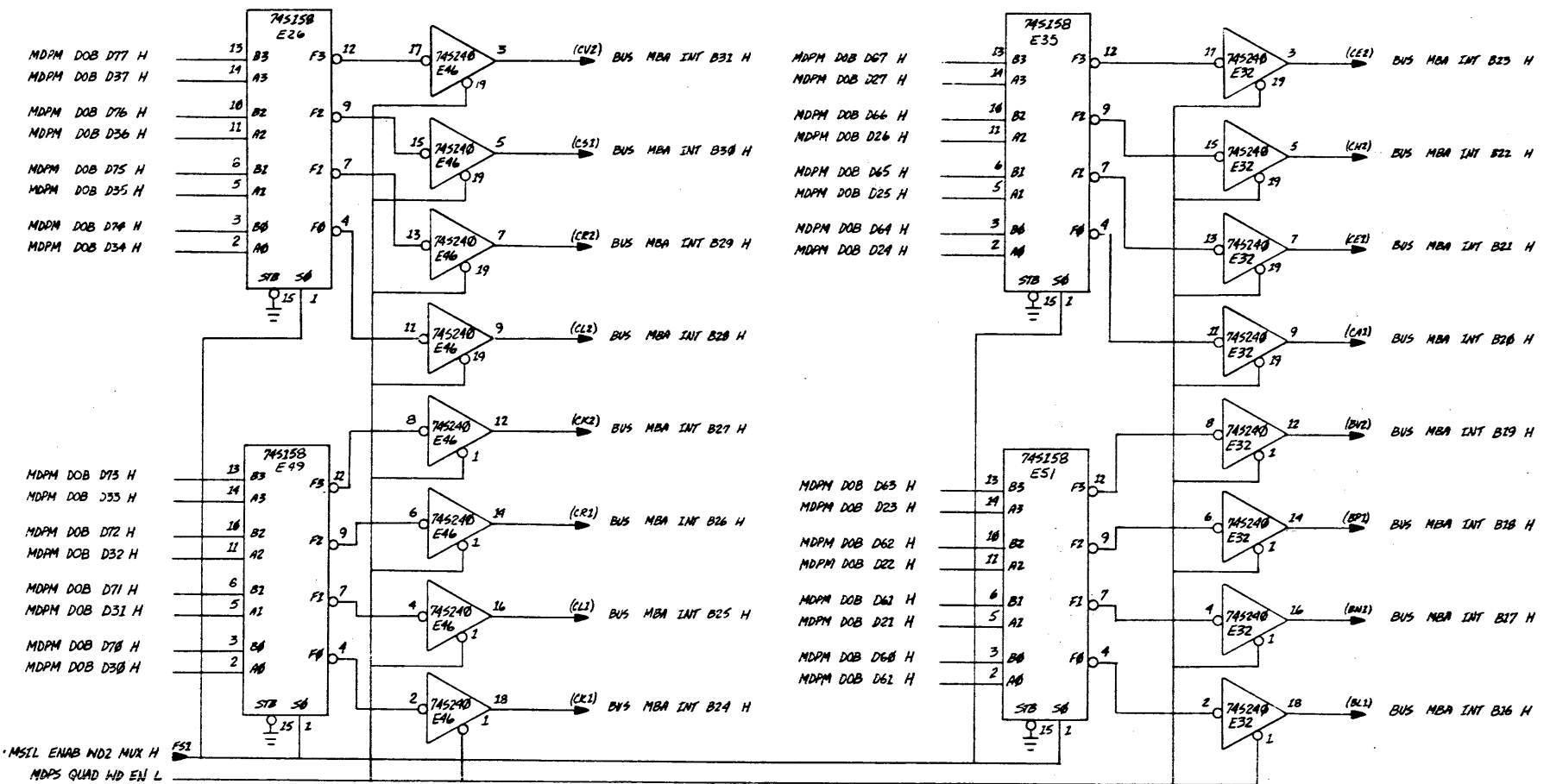


ETCH LEI COR LATER

(XMIT MB DATA < 07:00 > (PAR GEN))										(SLOT 3)									
TITLE MASSBUS DATA PATHS (MDPP)										SIZE CODE D CS		NUMBER M8277-01				REV H			
SCALE		SHEET 19		OF 20		DIST.													

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74S158		
STB	S0	FN
H	X	H
L	L	AN
L	H	BN



ETCH REV C OR LATER

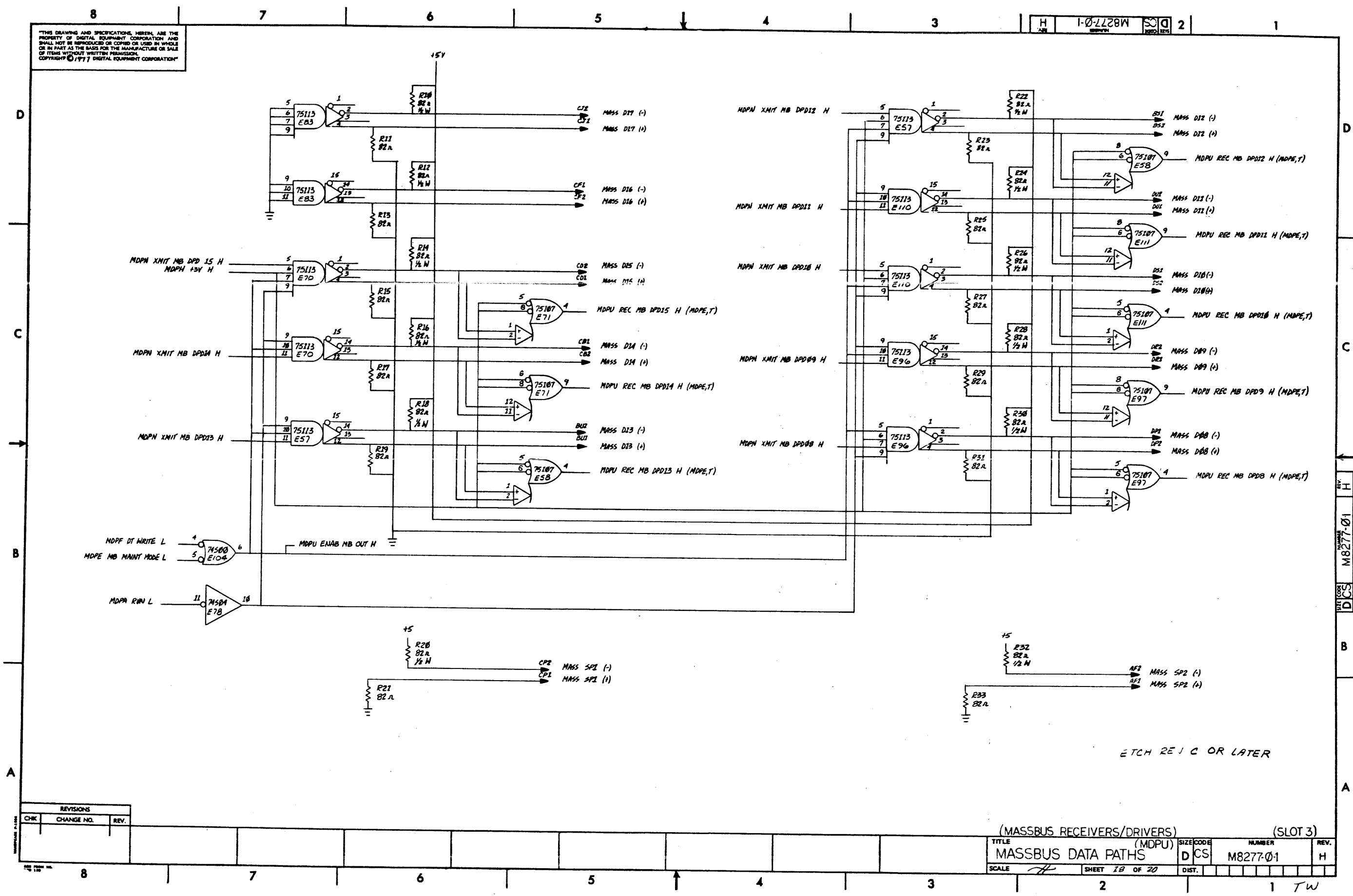
REVISIONS		
CHK	CHANGE NO.	REV.

(INT BUS DRIVERS < 31:16 >)			(SLOT 3)		
TITLE			NUMBER		
MASSBUS DATA PATHS (MDPE)			M8277-0-1		
SCALE			REV.		
SHEET 15 OF 20			H		

(INT BUS DRIVERS < 15:00 >)				(SLOT 3)			
TITLE		(MDPS)		SIZE	CODE	NUMBER	REV.
MASSBUS DATA PATHS				D	CS	M8277-0-1	H
SCALE	<i>7/8</i>	SHEET	16	OF	20	DIST.	
			2				1 <i>TW</i>

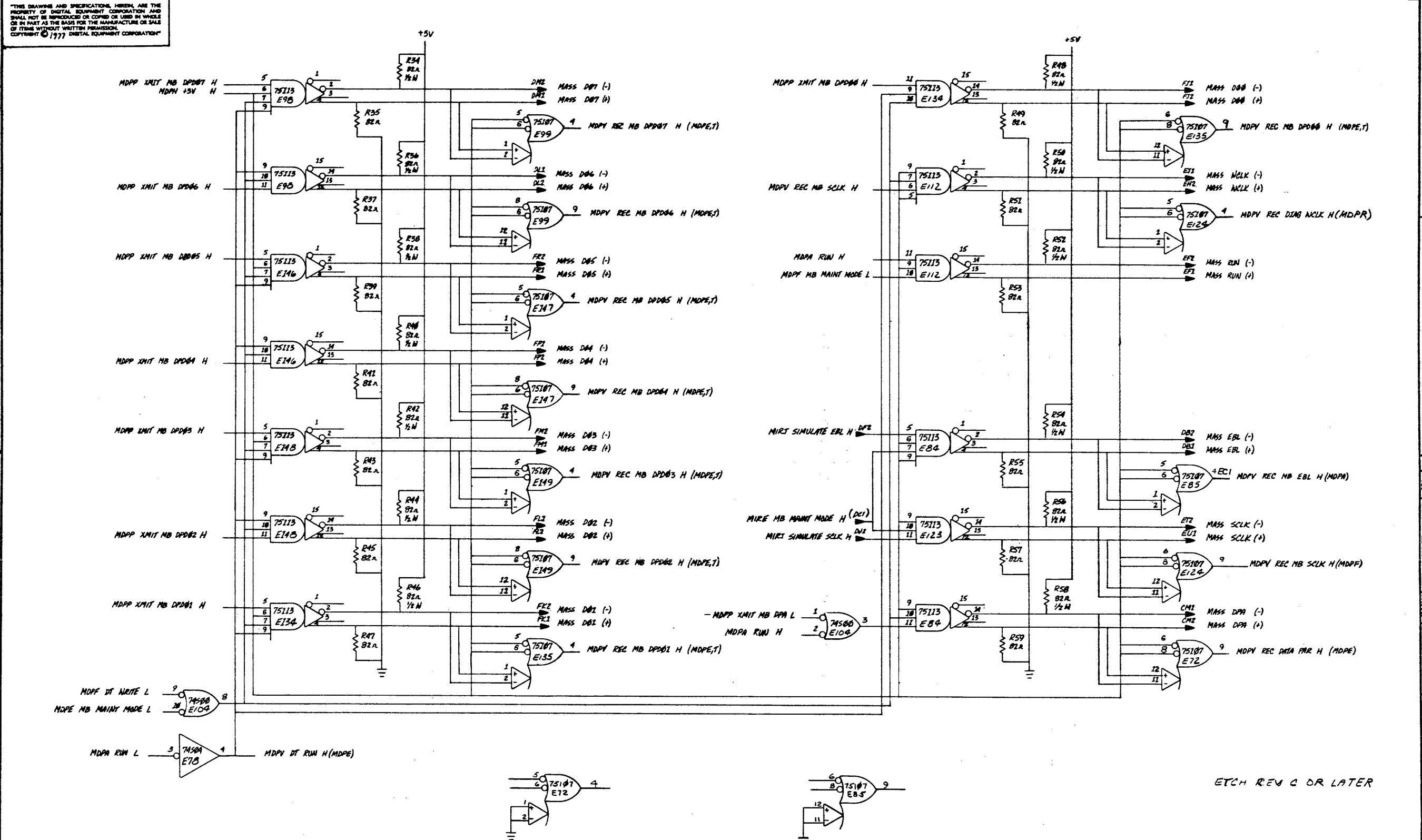
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H 1-0-1128W 2

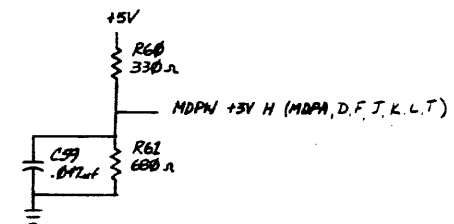
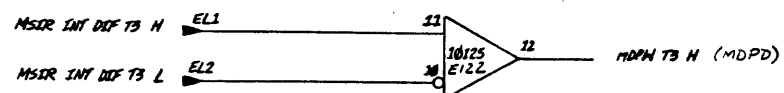
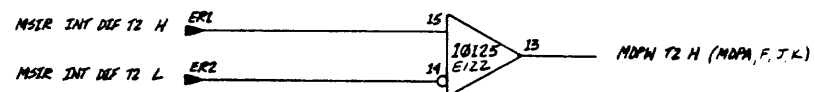
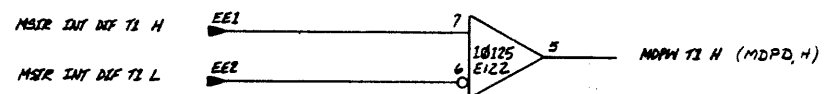
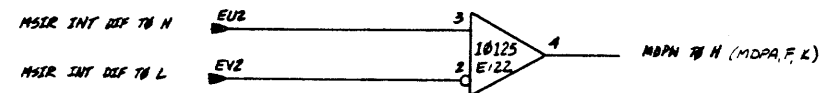


REVISIONS		
CHK	CHANGE NO.	REV.

(MASSBUS RECEIVERS/DRIVERS)		(SLOT 3)	
TITLE	MASSBUS DATA PATHS	SIZE CODE	NUMBER
SCALE	H	D CS	M8277-01
SHEET	18 OF 20	DIST.	



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ETCH REV C OR LATER

REVISIONS		
CHK	CHANGE NO.	REV.

(MDP CLOCKS)

(SLOT 3)

TITLE		SIZE/CODE	NUMBER	REV.
MASSBUS DATA PATH (MDPW)		D CS	M8277-01	H
SCALE	SHEET 20 OF 20	DIST.		

1 TW

PARTS LIST

LINE ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION	REFERENCE DESIGNATOR
				00	
1	1	E-MD-5012649-0-0	5012649-00 M8278	1	
2	2		1000019-00 150.0 MMF 100V 5%200PPM MICA	2	C144,C133
3	3		1005820-00 22.0 MMF 100V 5%200PPM MICA	1	C134
4	4		1011895-00 .15 MFD 35V 10% S.TANT	1	C135
5	5		1012121-00 220.0 MMF 100V 1%200PPM MICA	2	C130,C131
6	6		1012084-01 8 MFD 25V +75-10% AL EL	8	C136-C143
7	7	BLANK		0	
8	8		1100114-00 D 664 OS\75PCB PIV= 25V SP	2	D1,D2
9	9		1300220-00 100.0 .25 W 5.0 % CC	1	R97
10	10		1300488-00 12.0 K .25 W 5.0 % CC	1	R4
11	11		1300365-00 1.0 K .25 W 5.0 % CC	2	R5,R73
12	12		1301424-00 680.0 .25 W 5.0 % CC	3	R2,R31,R91
13	13		1301423-00 6.80 K .25 W 5.0 % CC	1	R3
14	14		1300295-00 330.0 .25 W 5.0 % CC	3	R1,R30,R90
15	15		1301477-00 82.0 .25 W 5.0 % CC	32	R20-R29,R42-R51,R63-R72,R93,R95
16	16		1305346-00 27.0 K .25 W 5.0 % CC	1	R7
17	17		1301781-00 82.0 .50 W 5.0 % CC	32	R10-R19,R32-R41,R53-R62,R92,R94
18	18		1301074-00 5.60 K .25 W 5.0 % CC	3	R6,R8,R9
19	19		1302957-00 121.0 .25 W 1.0 % RN55D-F10	8	R82-R89
20	20		1311422-00 178.0 .25 W 1.0 % RN55D-F10	8	R74-R81
21	21		1300439-00 3.30 K .25 W 5.0 % CC	1	R52
22	22		1312930-00 5.10 K .25 W 5.0 % CC	1	R96
23	23		1503014-00 DEC 3646 NPN 200MW SI 15 5 30	1	Q1
24	24		1910532-00 74S00 NAND GATE-QUAD 2IN	5	E71,E51,E102,E67,E68
25	25		1910534-00 74S04 INVERTER GATE-HEX 1I	3	E80,E41,E91
26	26		1912389-00 74S08 AND GATE-QUAD 2IN,PO	5	E81,E61,E49,E93,E98
27	27		1910536-00 74S10 NAND GATE-TRIPLE 3IN	2	E69,E40
28	28		1910537-00 74S11 AND GATE-TRIPLE 3IN	1	E50
29	29		1910539-00 74S20 NAND GATE-DUAL 4INPU	2	E70,E19
30	30		1910542-00 74S64 A-0-I GATE 4-2-3-2	1	E83

REVISION HISTORY		BASIC PART NO: M8278		DRN: K.FRIEDGEN		DATE: 11-SEP-79		D I G I T A L	
ENG	ECO NUMBER	REV	SECTION A OF A	CHK'D: F.GAROFALO		DATE: 11-SEP-79		TITLE PARTS LIST	
---	INITIAL	D	SECTION VARIATION INDEX	DES.ENG: K.OKIN		DATE: 11-SEP-79		MCP	
RC	TW005	E	[A] 00	RESP.ENG.: K.OKIN		DATE: 11-SEP-79		DOCUMENT NUMBER	
			[B]	MFG.ENG.: M.TERELLA		DATE: 11-SEP-79		SIZE CODE NUMBER REV	
			[C]	ASSEMBLY NUMBER:		TOP DOCUMENT NUMBER:		FILE NAME: EDIT #	
			[D]	E-UA-M8278-0-0				Z0650E,PLS 4	
			[E]						
			[F]						
			[G]						
			[H]						
			[I]						
			[J]						
			[K]						
			[L]						
			[M]						
			[N]						

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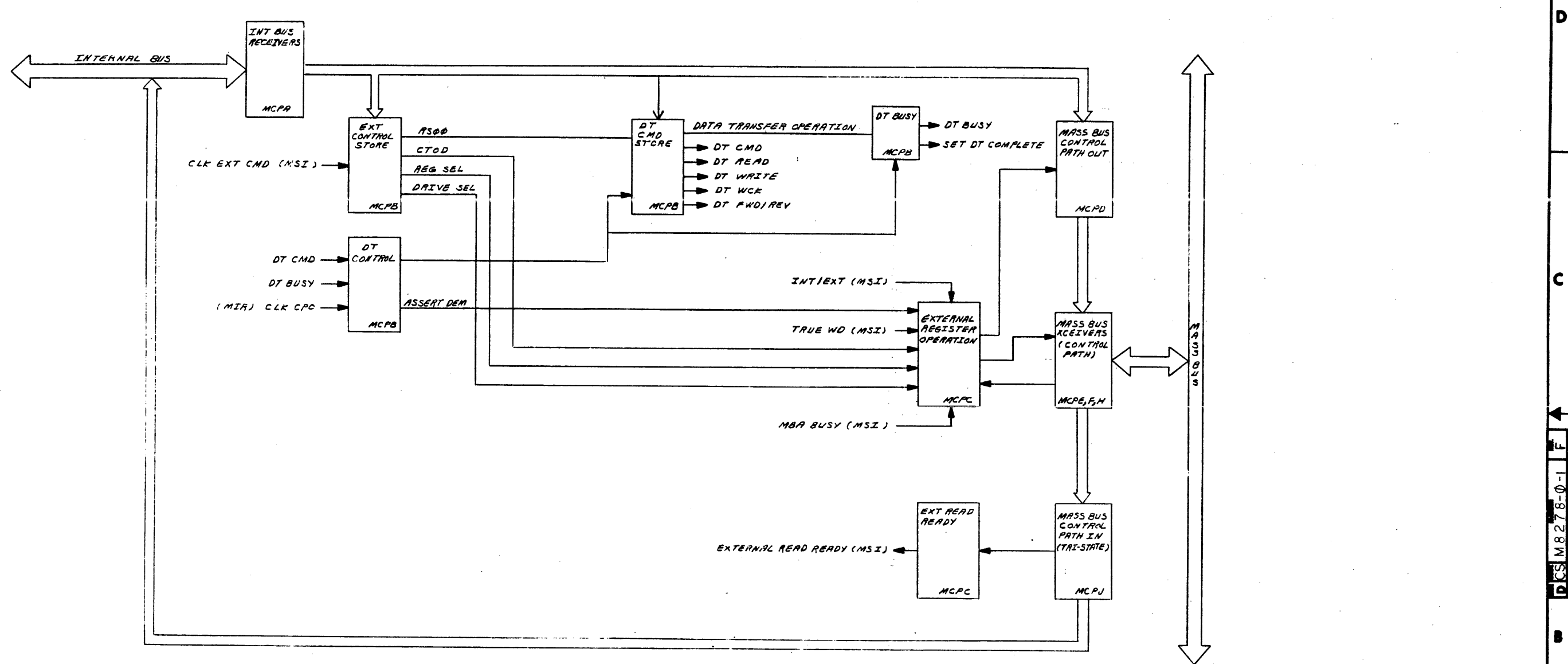
tw

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
31	31		1910544-00	74S74 FF-D DUAL,EDGE TRIGG	6	E72,E60,E62,E82,E92,E103
32	32		1905585-00	7476 FF-JK DUAL,MASTER SL	1	E52
33	33		1910436-00	DEC 74123 ONE SHOT-DUAL,RETRIG	3	E63,E94,E104
34	34		1911675-00	74S138 DECODER/DEMUX 3-8 LIN	1	E30
35	35		1910546-00	74S140 NAND GATE-DUAL 4INPU	2	E89,E38
36	36		1912697-00	LS174 FF-D HEX W/CLEAR	4	E17,E28,E16,E5
37	37		1910957-00	74S175 FF-D QUAD COMMON CLO	2	E18,E39
38	38		1913493-00	74S241 OCTAL BUFFER,TRI-STA	3	E26,E27,E4
39	39		1911573-00	74S280 PARITY GEN/CHKR,9BIT	4	E15,E7,E29,E8
40	40		1913671-00	74S374 FF-D OCTAL TRISTATE	4	E25,E3,E14,E6
41	41		1910268-00	DEC 75107B RECEIVER,LINE,DUAL,	16	E2,E48,E98,E46,E13,E35,E37,E57, CONT E66,E79,E77,E100,E108,E110,E24, CONT E88
42	42		1911341-00	75113 DRIVER,LINE,DUAL,MA	15	E1,E47,E97,E45,E12,E34,E36,E56, CONT E65,E78,E76,E99,E107,E109,E23 CONT E87
43	43		1911415-00	10125 ECL TO TTL TRNSLTR	1	
44	44		1216988-02	HANDLE,MODULE,HEX TWO EJECTORS	1	
45	45		9000024-01	EYELET, ROLLED FLANGE, .121 OD X	12	
46	46		9009185-00	JUMPER, WIRE, INSULATED, BLACK B	1	W1
47	47		1012784-00	.047 MFD 50V +80-20% CER	102	C1-C8,C12-C19,C23-C30,C34-C41, CONT C45-C52,C56-C63,C65-C72,C76-C83, CONT C87-C94,C97-C104,C107-C112, CONT C115-C129,C132

D	I	G	I	T	A	L	TITLE	SECTION A OF A	SIZE	CODE	DOCUMENT NUMBER	REV
							MCP		K	PL	M8278-0-DBP	E

tw

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(BLOCK DIAGRAM)

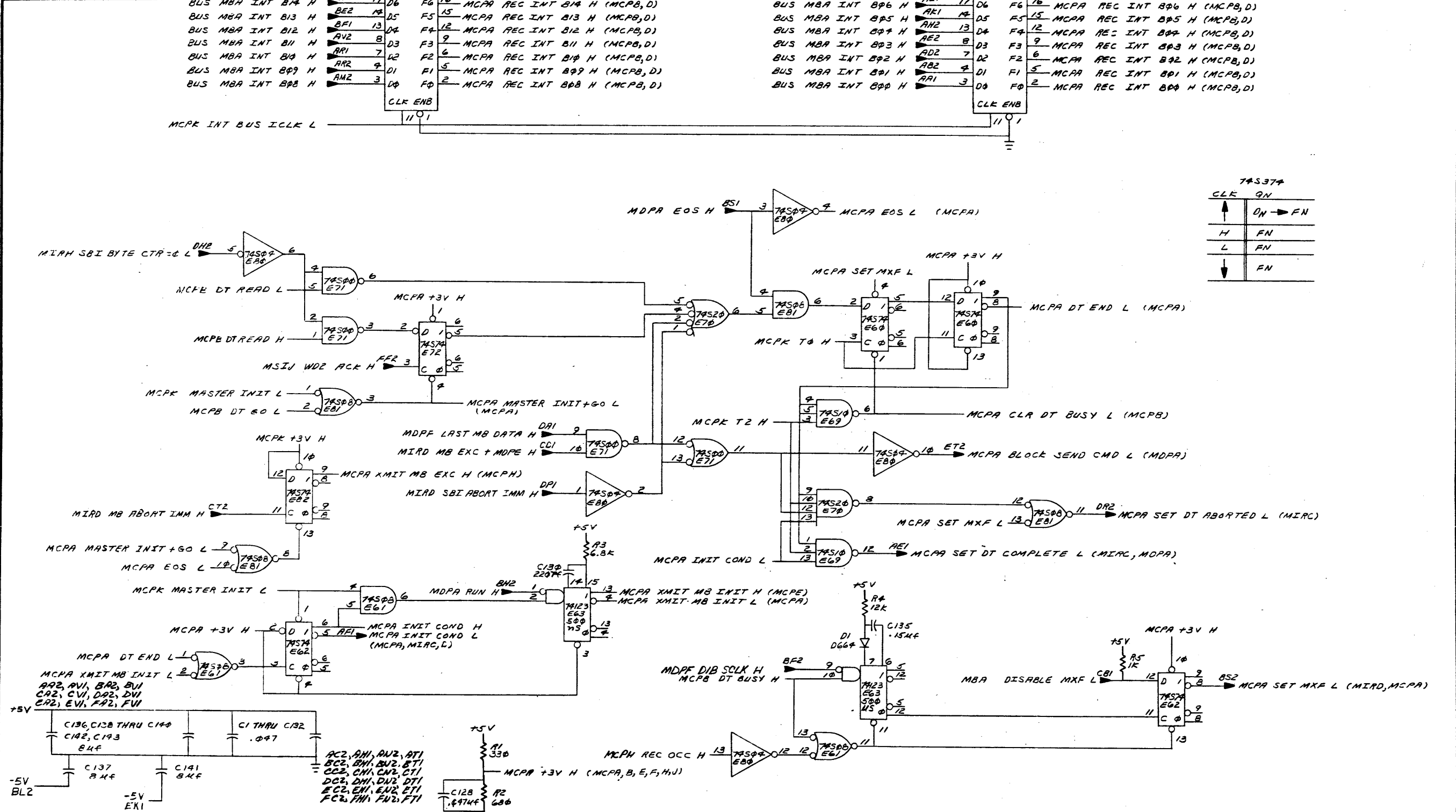
(SLOT 4)

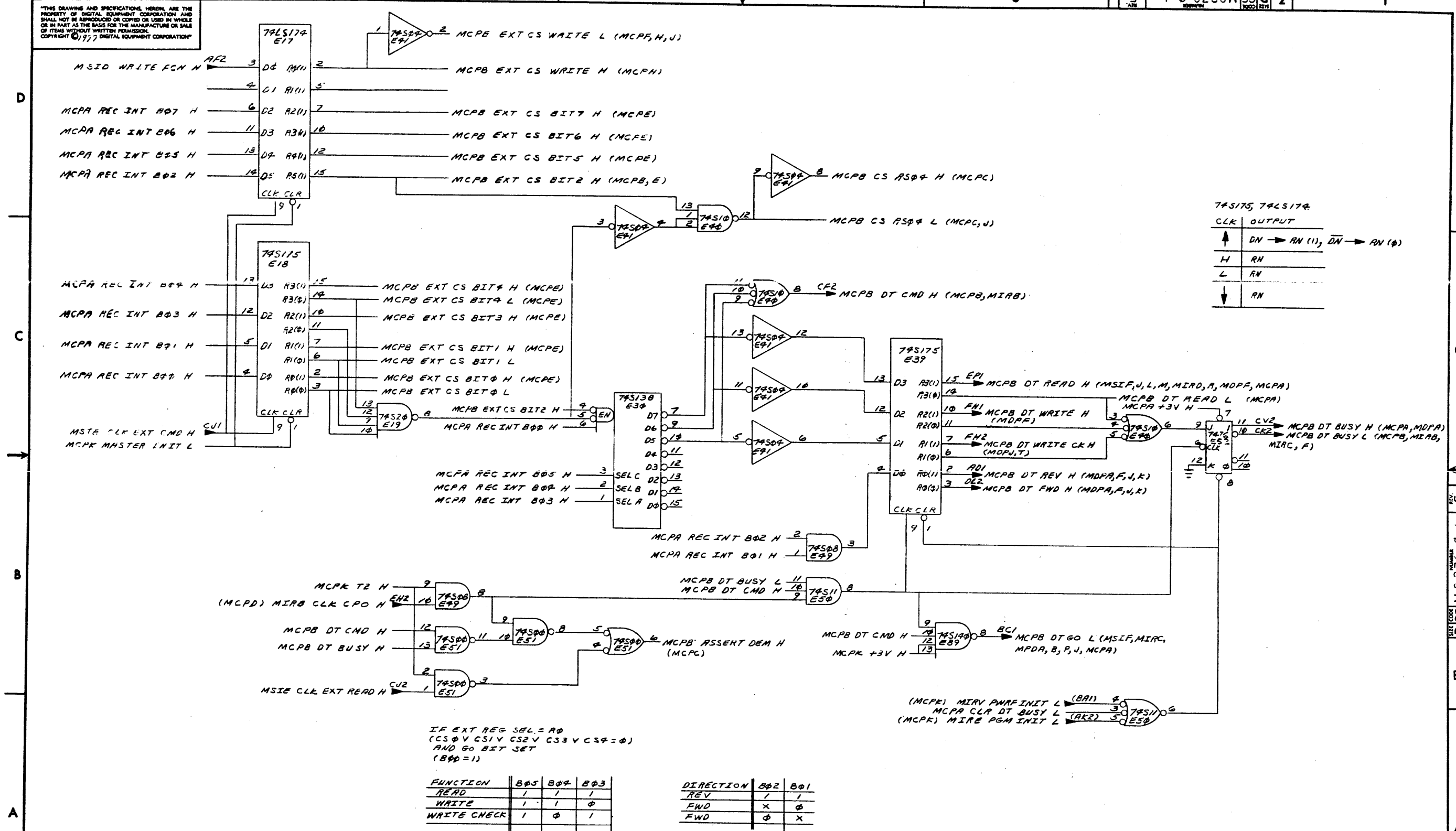
DRN. <i>Eng. Approval</i>	3-31-77	FIRST USED ON	<i>31000-01</i>
CHK'D <i>Eng. Review</i>	5-4-77	TITLE	MASSBUS CONTROL PATH (MCP)
ENG. <i>En. Rk</i>	5-12-77	SIZE	D
PROD. <i>En. Rk</i>	5-12-77	CODE	CS
PROJ. <i>En. Rk</i>	6-11-77	NUMBER	M8278-0-1
NEXT HIGHER ASSY.		REV.	F
SCALE	+	DIST.	
SHEET	1 OF 10		

1 TW

REV.	DATE	BY	CHKD	APPD
1	3-31-77	K. OKIN		
2	5-4-77	K. OKIN		
3	5-12-77	K. OKIN		
4	6-11-77	K. OKIN		
5	7-1-77	K. OKIN		
6	7-1-77	K. OKIN		
7	7-1-77	K. OKIN		
8	7-1-77	K. OKIN		
9	7-1-77	K. OKIN		
10	7-1-77	K. OKIN		
11	7-1-77	K. OKIN		
12	7-1-77	K. OKIN		
13	7-1-77	K. OKIN		
14	7-1-77	K. OKIN		
15	7-1-77	K. OKIN		
16	7-1-77	K. OKIN		
17	7-1-77	K. OKIN		
18	7-1-77	K. OKIN		
19	7-1-77	K. OKIN		
20	7-1-77	K. OKIN		

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74LS175, 74LS174

CLK	OUTPUT
↑	DN → RN (1), $\overline{\text{DN}} \rightarrow \text{RN} (\phi)$
H	RN
L	RN
↓	RN

FUNCTION	B05	B04	B03
READ	1	1	1
WRITE	1	1	0
WRITE CHECK	1	0	1

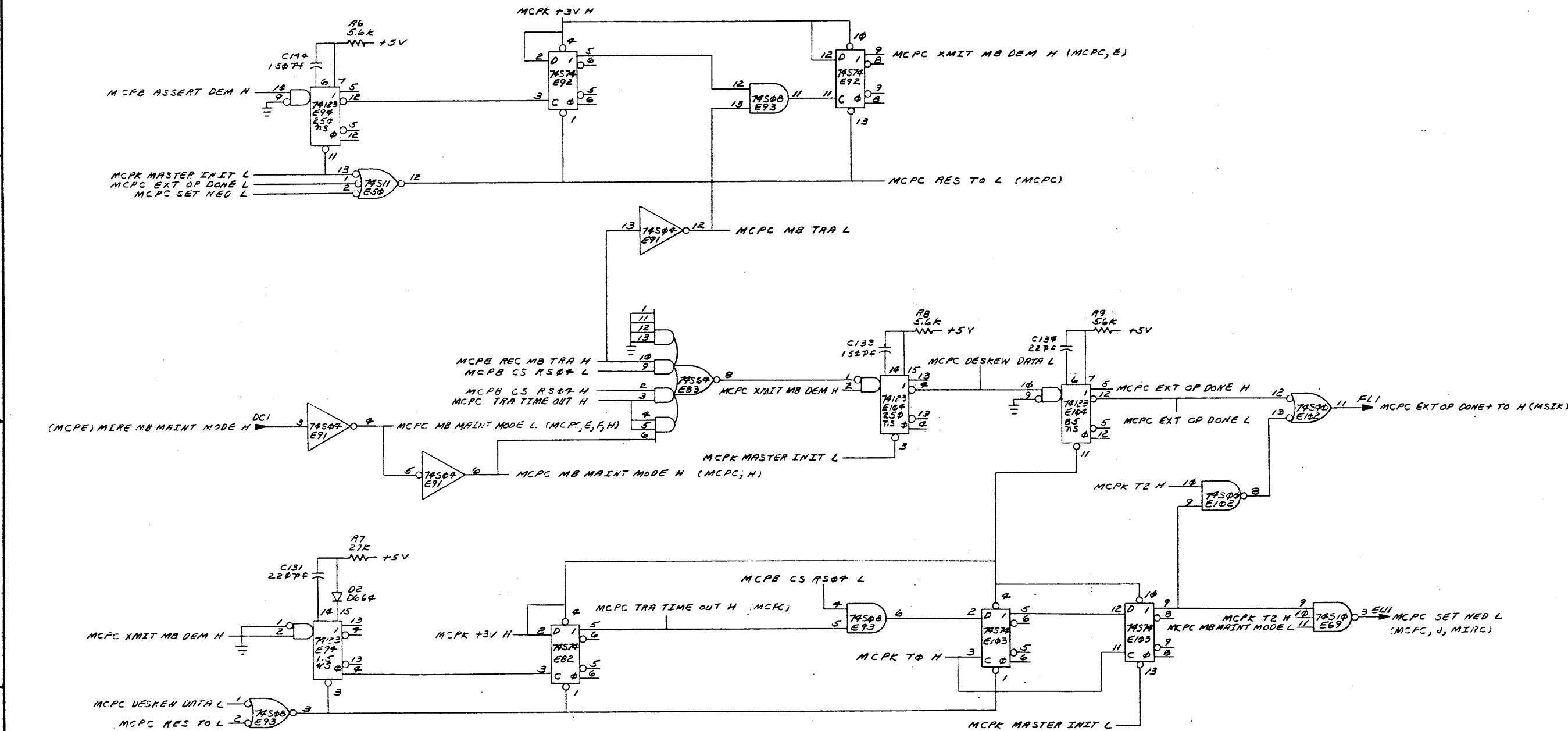
DIRECTION	B#2	B#1
REV	1	1
FWD	X	0
FWD	0	X

(RS/DS ADDRESS LATCH, DEM ASSERTION CONTROL, "GO BIT"
AND TRANSFER TYPE DECODE, DATA TRANSFER BUSY FLOP)

REVISIONS		
CHK.	CHANGE NO.	REV.

TITLE	MASSBUS CONTROL PATH (MCPB)		SIZE	CODE	NUMBER	REV.
			D	CS	M8278-0-1	F
SCALE	SHEET 3 OF 10		DIST.			

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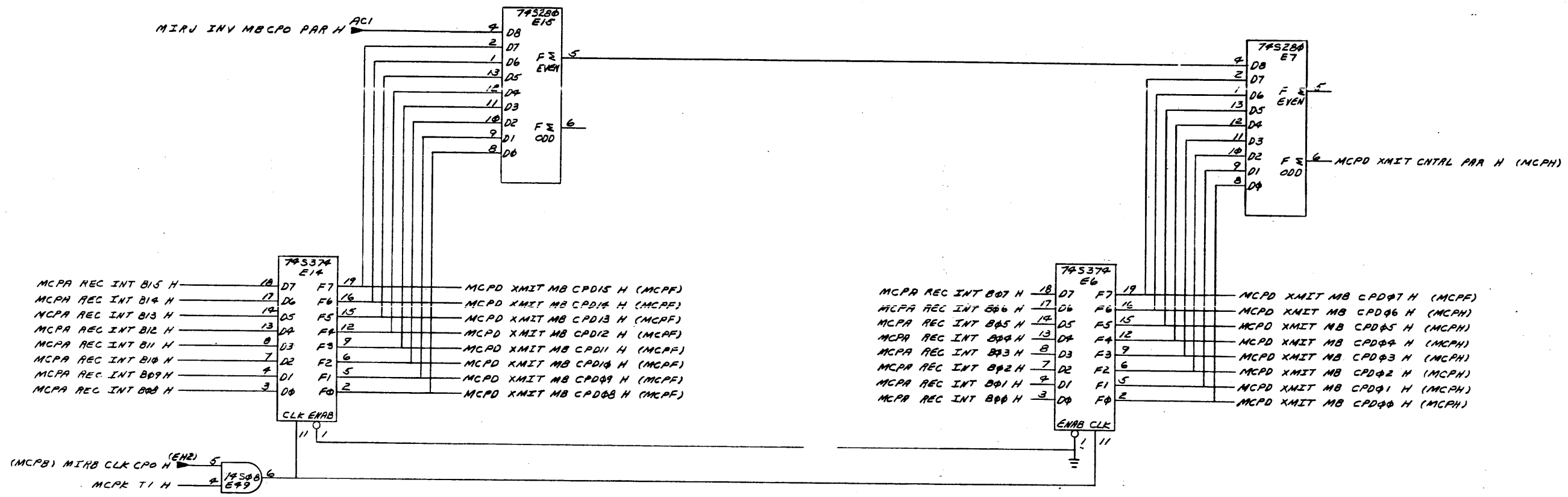


REVISIONS		
CHK	CHANGE NO.	REV.

(SLOT 4)
(DEM DESKEW ONE SHOT, TR A DESKEW ONE SHOT,
EXT OP DONE TIMEOUT ONE SHOT, SET NED)

TITLE	MASSBUS CONTROL (MCPC)	SIZE	CODE	NUMBER	REV.
SCALE	+	SHEET	4 OF 10	DIST.	1 TW

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74S280

# INPUTS HIGH	Σ E	Σ O
0, 2, 4, 6, 8	H	L
1, 3, 5, 7, 9	L	H

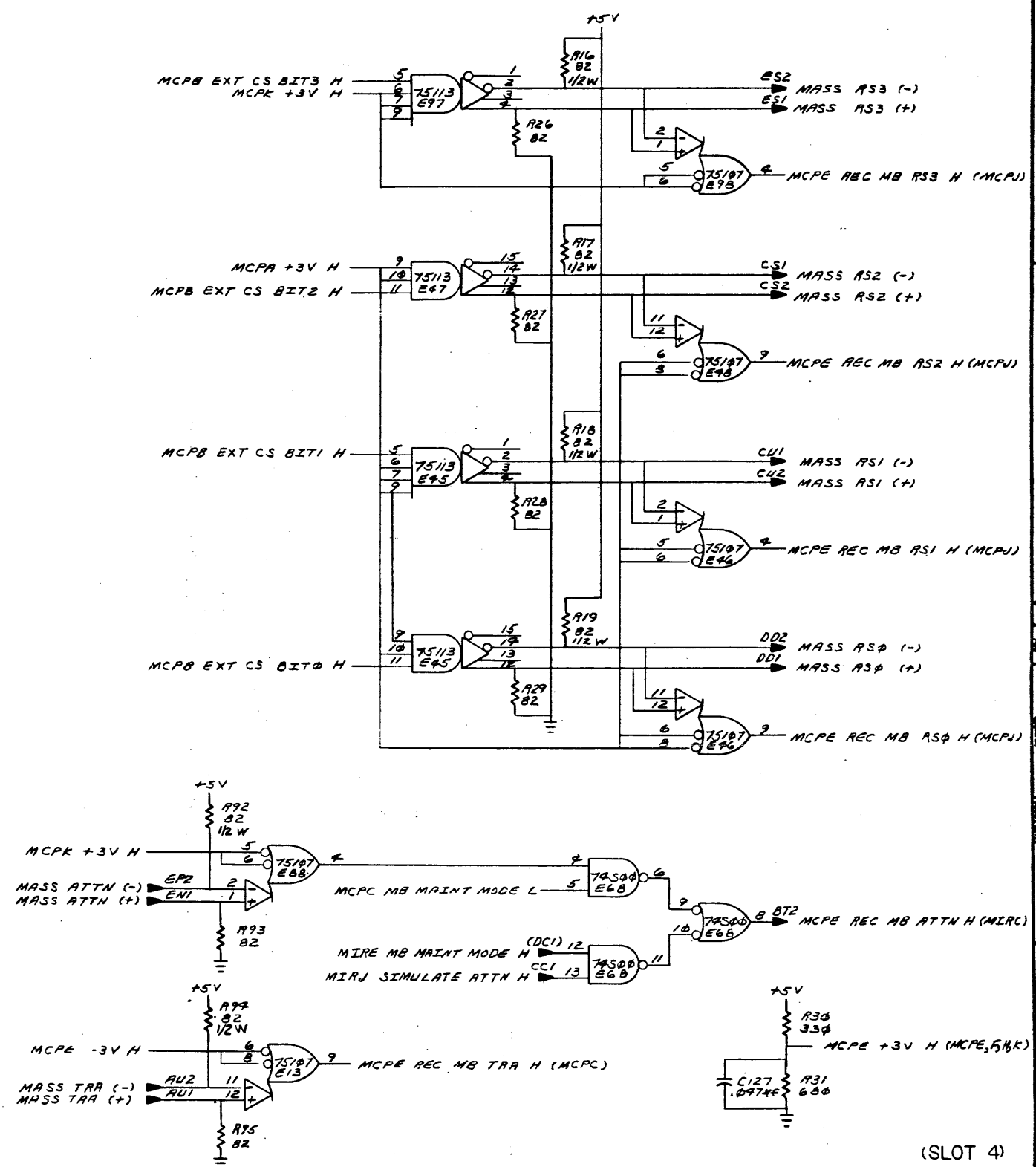
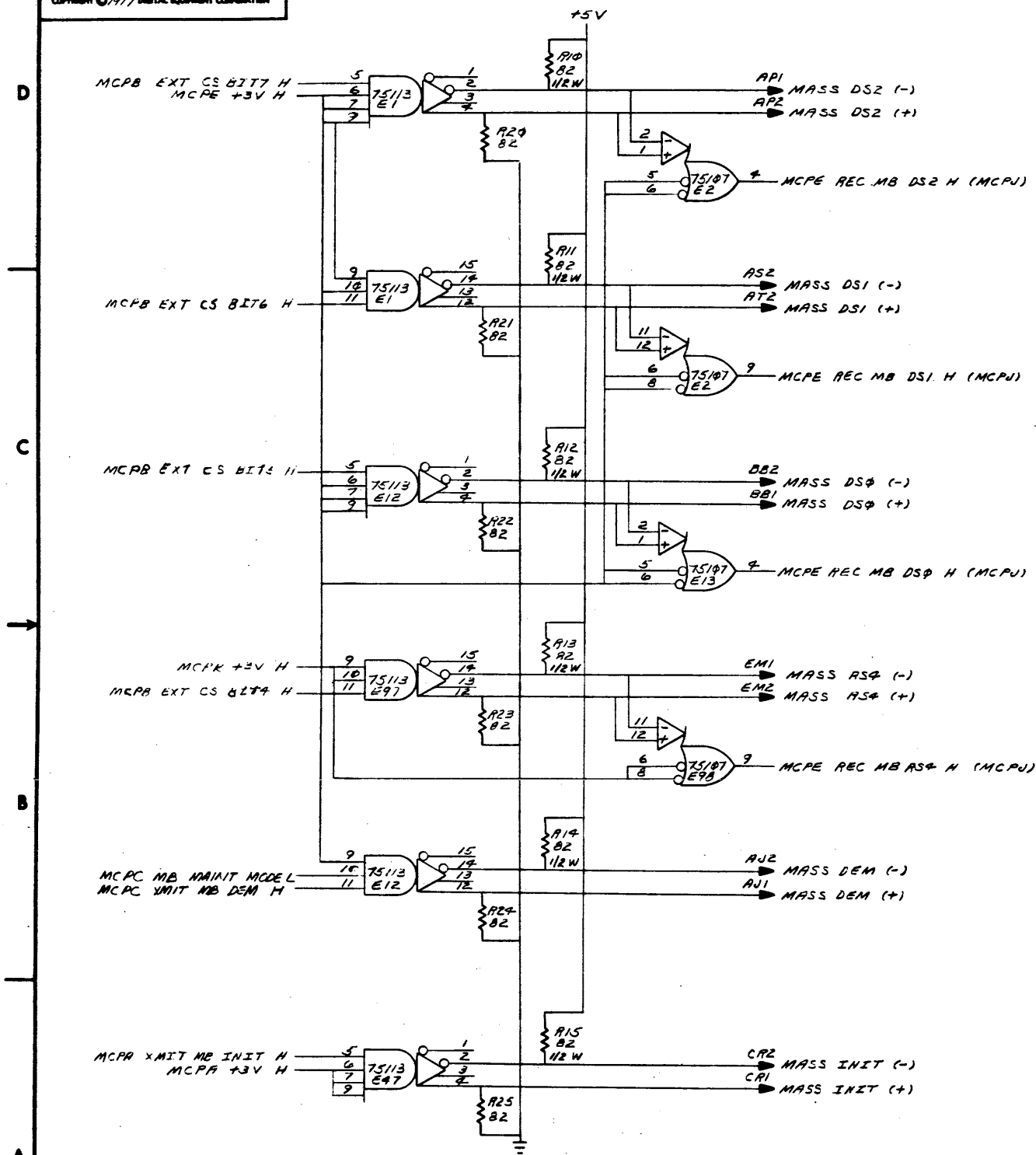
REVISIONS		
CHK	CHANGE NO.	REV.

(MASSBUS CONTROL PATH OUT DATA/PARITY) (SLOT 4)

TITLE	MASSBUS CONTROL PATH (MCPD)	SIZE/COO	DCS	NUMBER	M8278-0-1	REV.	F
SCALE		SHEET	5 OF 10	DIST.			

1 TW

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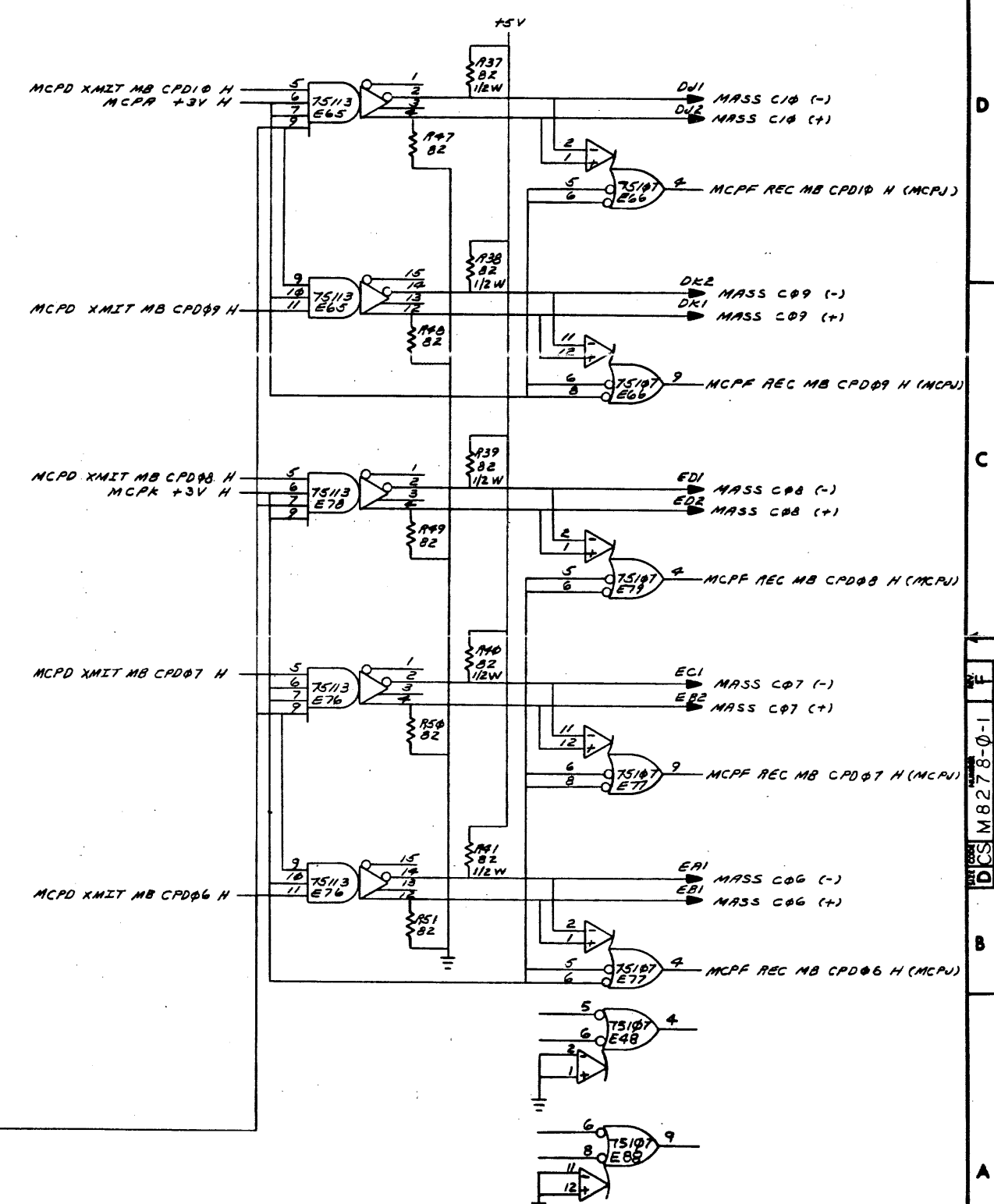
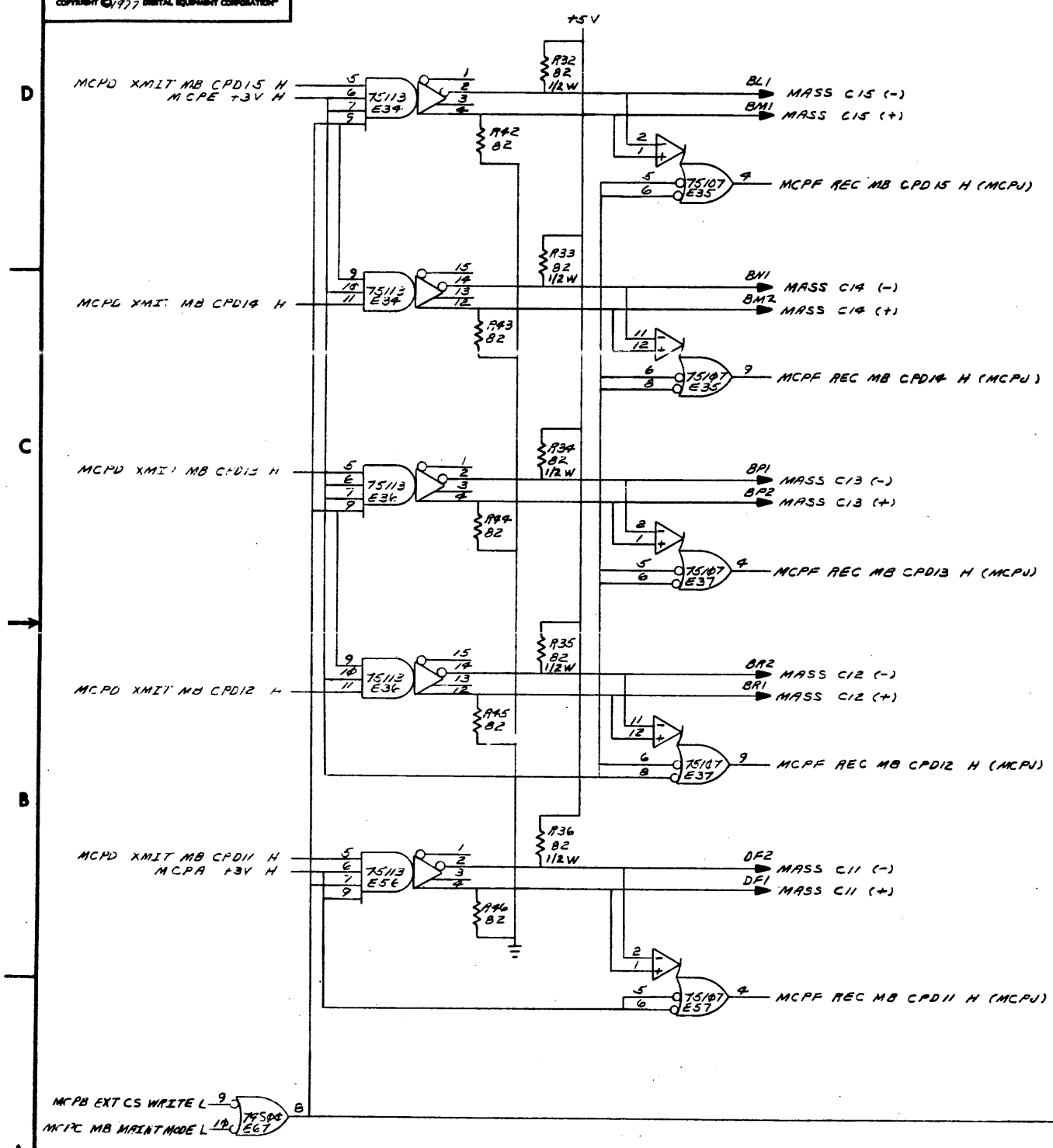


REVISIONS		
CHK	CHANGE NO.	REV.

(SLOT 4)
(MASSBUS RECEIVERS/DRIVERS DS,RS,TRA,DEM,ATTN,INIT)

TITLE		SIZE/COO	NUMBER	REV.
MASSBUS CONTROL PATH (MCPE)		D	CS M8278-0-1	F
SCALE	SHEET	6 OF 10	DATE	

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MCPB EXT CS WRITE L
MCPB MB MREINT MODE L

(MASSBUS RECEIVERS/DRIVERS DATA 06:15) (SLOT 4)

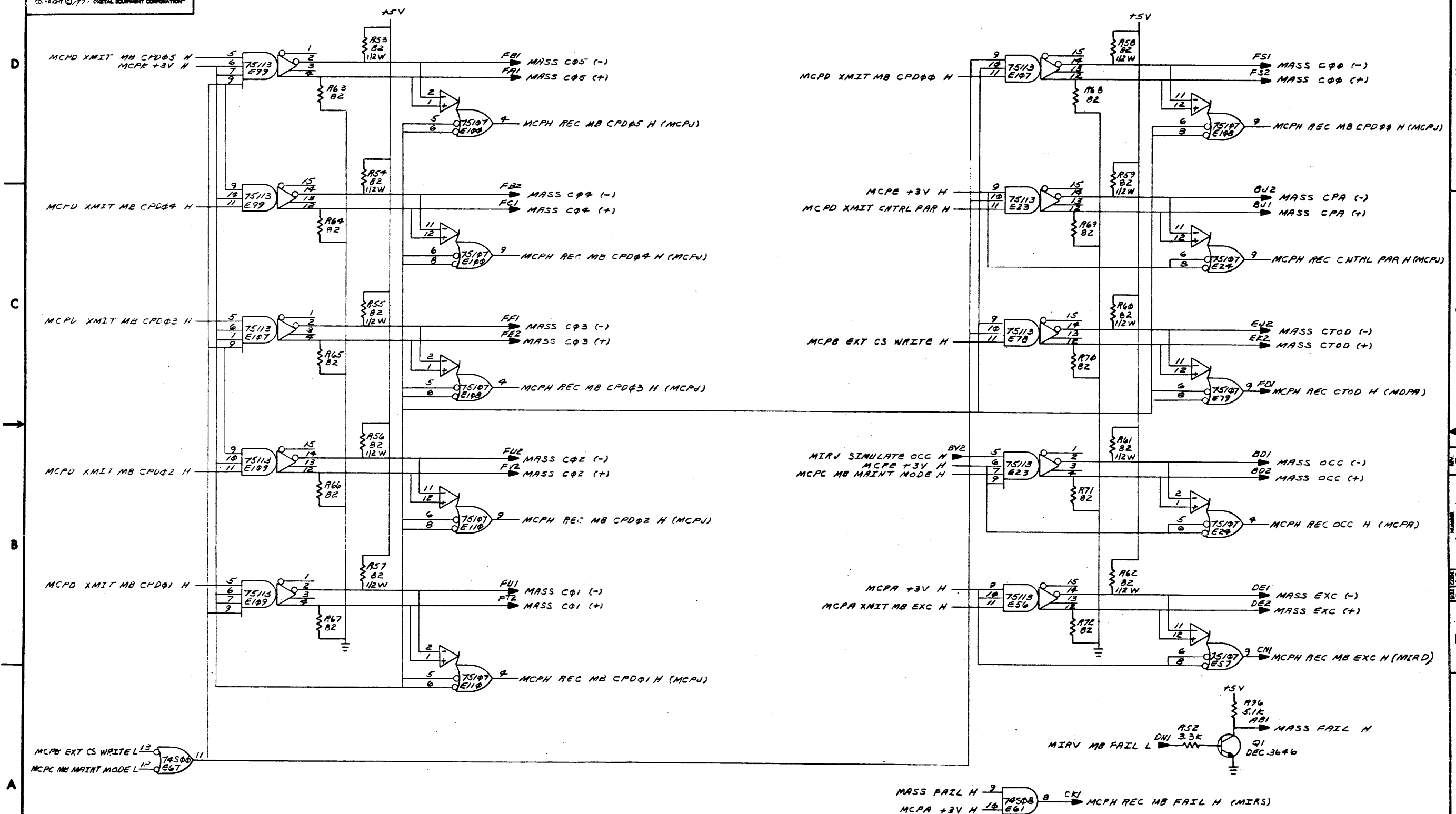
TITLE		MASSBUS CONTROL PATH (MCPF)	SIZE CODE	DCS	NUMBER	M8278-0-1	REV.	F
SCALE		1/16"	SHEET	7 OF 10	DIST.			

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1-0-8278-0-1

2

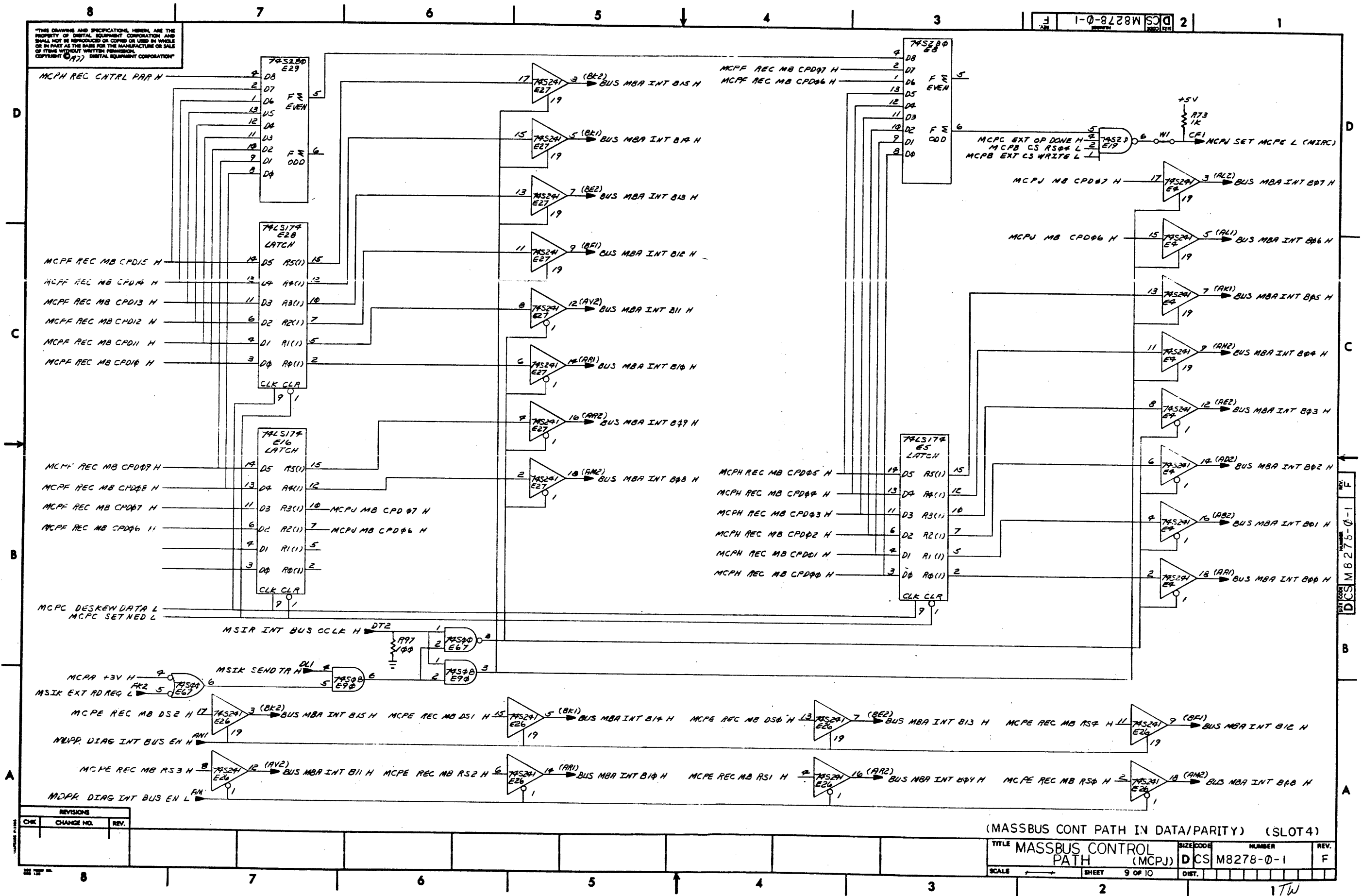
1



REVISIONS		
CHK	CHANGE NO.	REV.

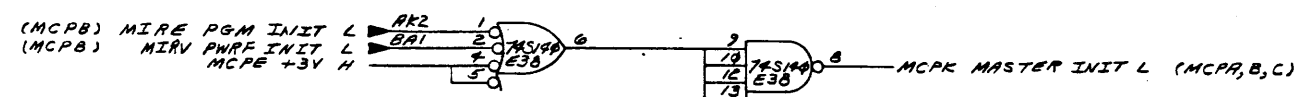
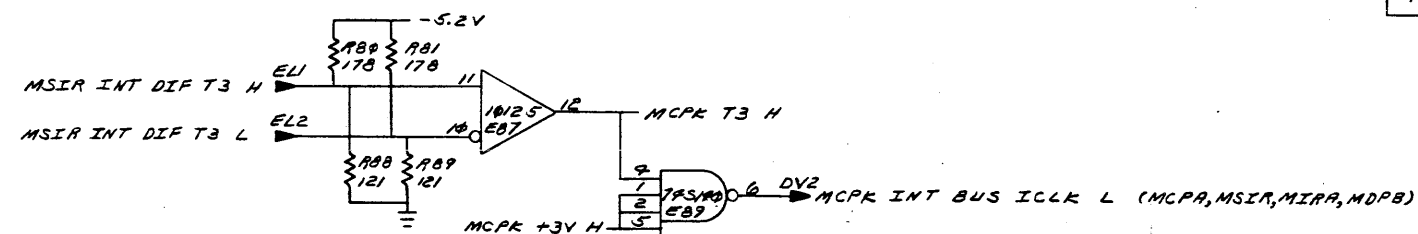
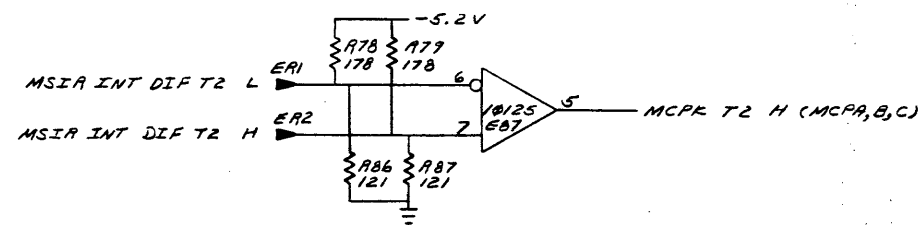
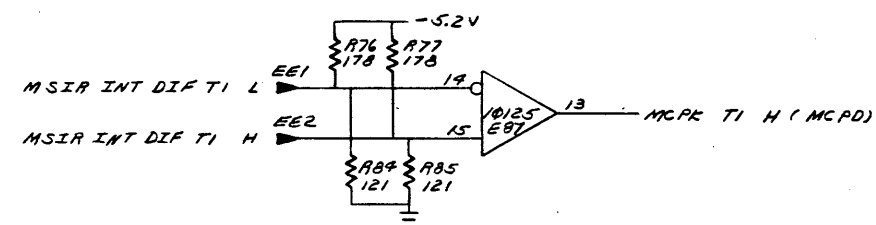
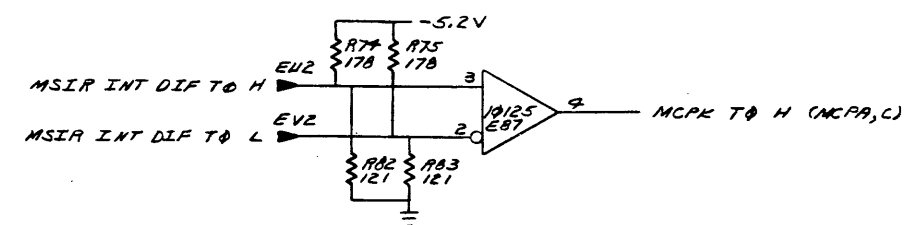
(SLOT 4)
(MASSBUS RECEIVERS/DRIVERS DATA 05:00,CPA,CTOD,OCC,EXC,FAIL)

TITLE		MASSBUS CONTROL (MCPH)	SIZE CODE	NUMBER	REV.
SCALE		1:1	D	CS M8278-0-1	F
SHEET		8 OF 10	1TW		

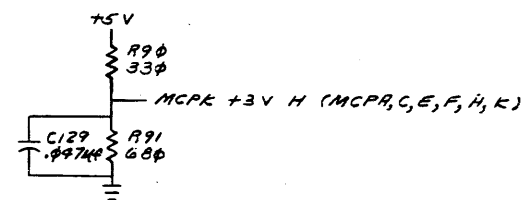


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DCS M8278-0-1



MSIC UNJAM L BE1 THIS SIGNAL NOT USED ON BOARD, BUT IS BROUGHT TO A FEED THRU.



REVISIONS		
CHK	CHANGE NO.	REV.

(MCP CLOCKS, INIT)				(SLOT 4)			
TITLE MASSBUS CONTROL PATH (MCPK)				SIZE CODE		NUMBER	
DCS M8278-0-1				10 OF 10		REV. F	
SCALE				SHEET		DIST.	

1TW

8

7

6

5

4

3

A

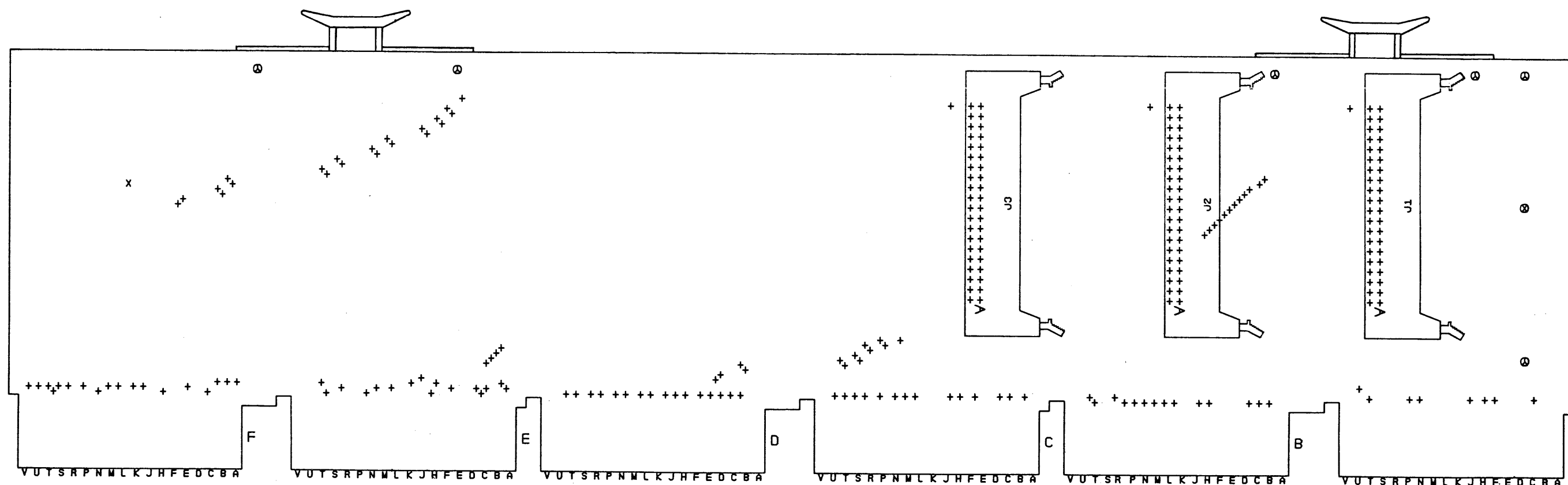
0-0-1405M9041-0-0

2

1

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COMPONENT SIDE VIEW



NOTES:

CHANGE NO	REV
M9041-1	A
13 MAR 78	
K. OKIN	
L. D. L.	

ETCH REV.	B
P.C. DESIGN DATA BASE REV.	B

SIGNATURES	DATE	digital		
DRN. <i>W. J. [unclear]</i>	4-4-78			
CHK'D. <i>A. [unclear]</i>	7-6-78			
ENG. <i>K. [unclear]</i>	5-23-78			
PROJ. ENG. <i>K. [unclear]</i>	5-23-78			
PROD. <i>Mike [unclear]</i>	7-5-78	TITLE		
MASSBUS PADDLE CARD				
SCALE 2/1	SIZE	CODE	NUMBER	REV
SHT. 1 OF 5	D	UA	M9041-0-0	A
NEXT HIGHER ASSY: B-DD-M9041-0				

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LAYER 1

SIDE 1
CS ABCDEF
5012612B
M8041

SIDE 1
CS ABCDEF
5012612B
M8041

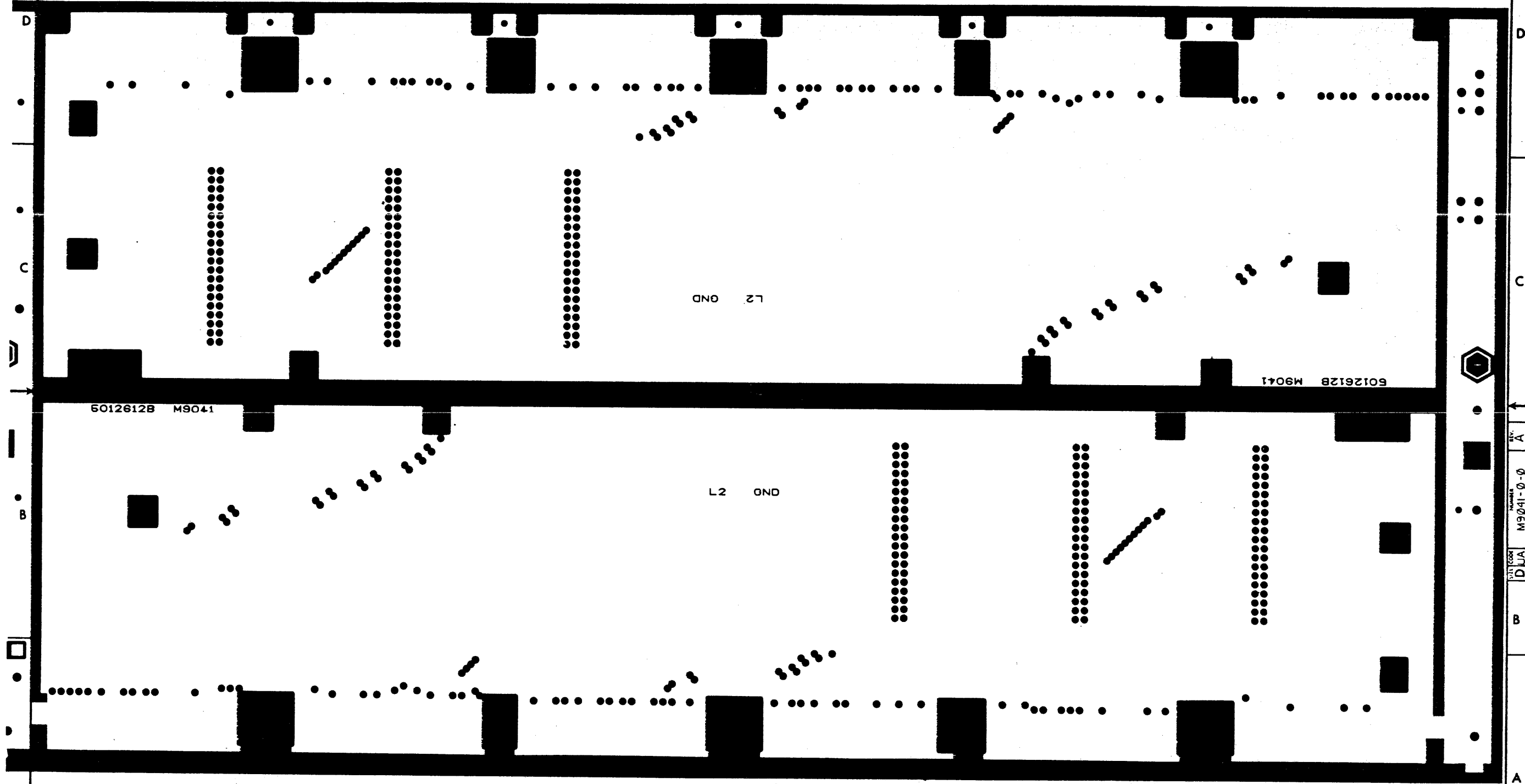
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE CODE	NUMBER	REV.
MASSBUS PADDLE CARD		D UA	M9041-0-0	A
SCALE	2-1	SHEET	2 OF 5	DIST.

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REV. A
DUA
M9041-0-0
2

LAYER 12



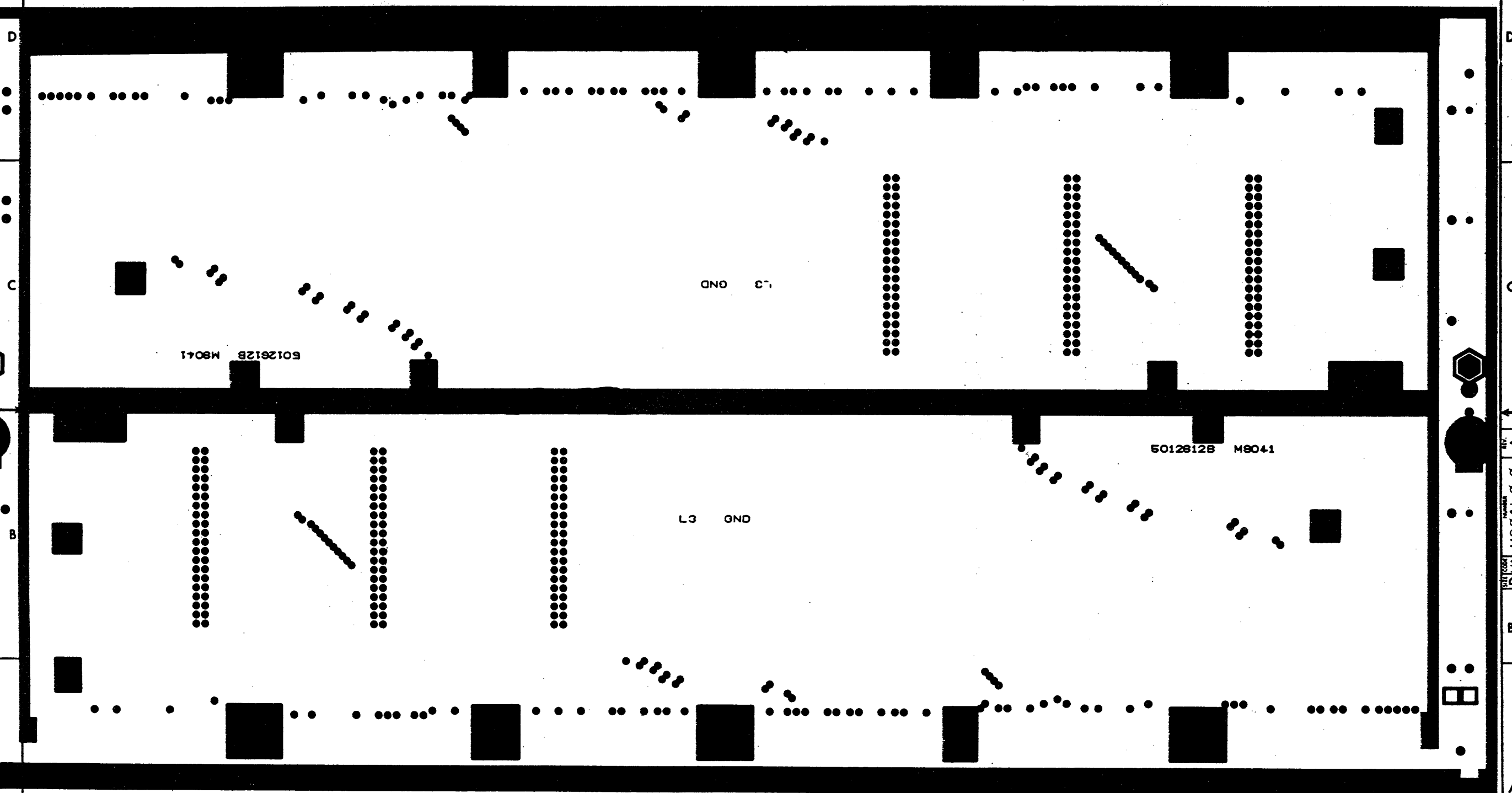
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE
MASSBUS PADDLE CARD
SCALE 2-1
SHEET 3 OF 5
SIZE CODE
DUA
NUMBER
M9041-0-0
REV.
A

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E R34AJ

0-0-1406W DUA M9041-0-0 2



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE CODE	NUMBER	REV.
MASSBUS PADDLE CARD		DUA	M9041-0-0	A
SCALE	2/1	SHEET	4 OF 5	DIST.

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AYER

0-0-1706W M9041 2

L4

MASSBUS PADDLE CARD
6012612B M9041
SIDE 2

MASSBUS PADDLE CARD
6012612B M9041
SIDE 2

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE CODE	NUMBER	REV.
MASSBUS PADDLE CARD		D UA	M9041-0-0	A
SCALE	2/1	SHEET	5 OF 5	DIST.

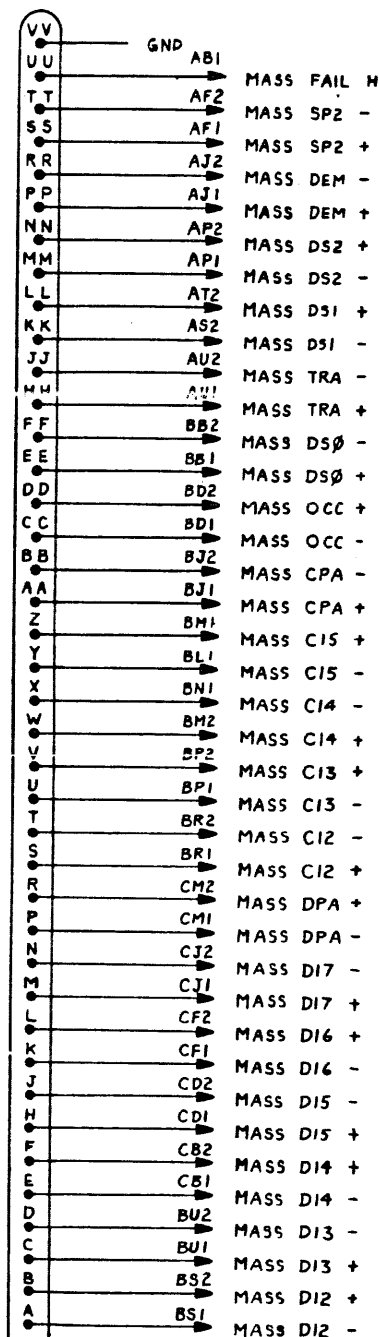
LINE	ITEM	DOCUMENT NO.	PART NO.	DESCRIPTION	QTY	REFERENCE DESIGNATORS
1	1	D-MD-5012612-0-0	5012612-00	M9041 PC BOARD	1	
2	2		1209941-02	HEADER 100 40FOS RT ANGLE	3	J1,J2,J3
3	3		9008337-06	HANDLE, FLIP CHIP, MAGENTA	2	
4	4		9006732-00	EYELET, ROLLED FLANGE, .121 OD X .219 LG	4	
5	5		1209941-03	HEADER RT ANGLE LEFT LATCH FOR	3	
6	6		1209941-04	HEADER RT ANGLE,RIGHT LATCH FOR	3	

7 NOTE: 104866

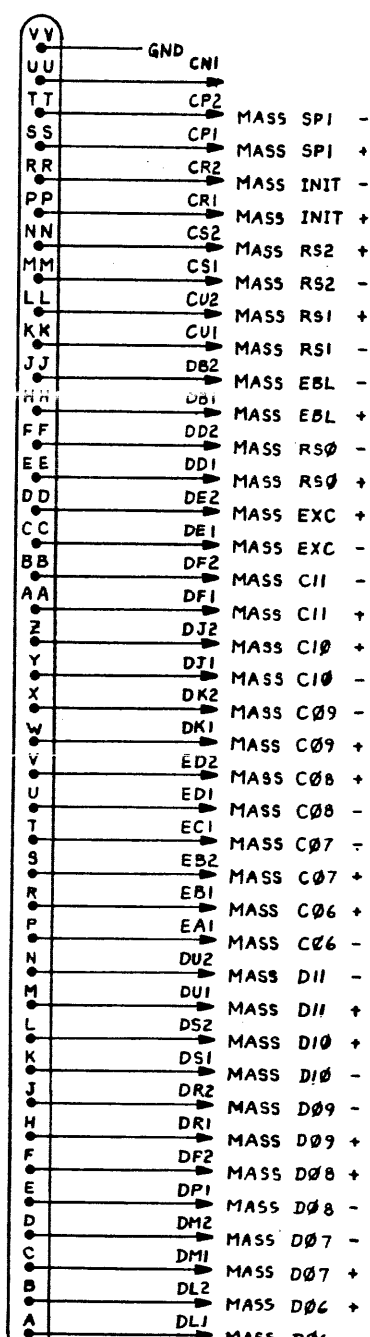
REVISION HISTORY			VARIATIONS FOR THIS ASSY.			FIRST USED ON:			DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS			
CHK	ECD NO	REV				MADE BY:	F.MULLIGAN	DATE:	13-MAR-78	TITLE		
P.G	00001	A			00	CHECKED:	L.GIAMMARINO	DATE:	13-MAR-78	PARTS LIST		
						DSN.ENG.:	K.OKIN	DATE:	13-MAR-78	MASSBUS PADDLE CARD		
						PROD.:	M.TERELLA	DATE:	13-MAR-78	SIZE CODE	DOCUMENT NUMBER	
						RESP.ENG.:	K.OKIN	DATE:	13-MAR-78	K PL	M9041-0-DBF	
									ASSY.NO.:	D-UA-M9041-0-0	REV.	A
											EDIT#	2
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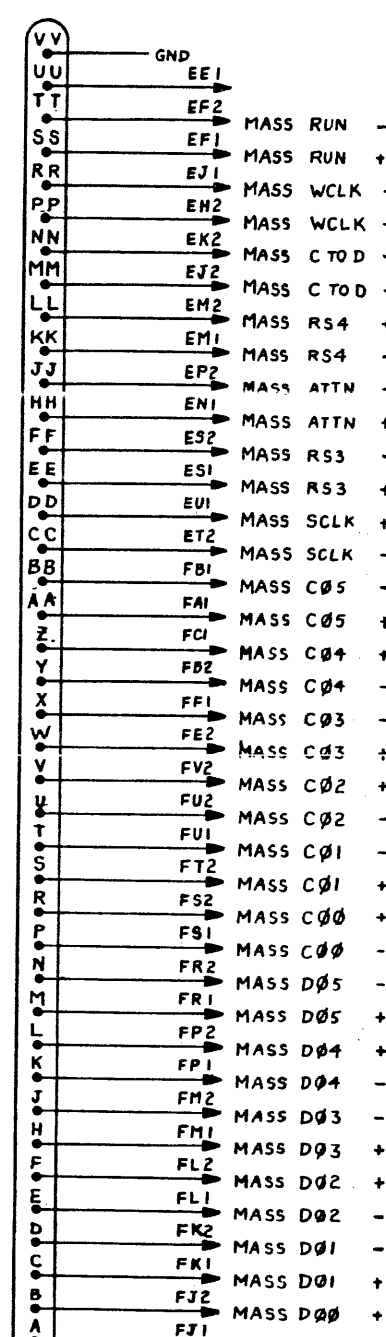
CABLE CONNECTOR 12-09941-02
3 REQUIRED



MASS BUS CABLE "C"



MASS BUS CABLE "B"

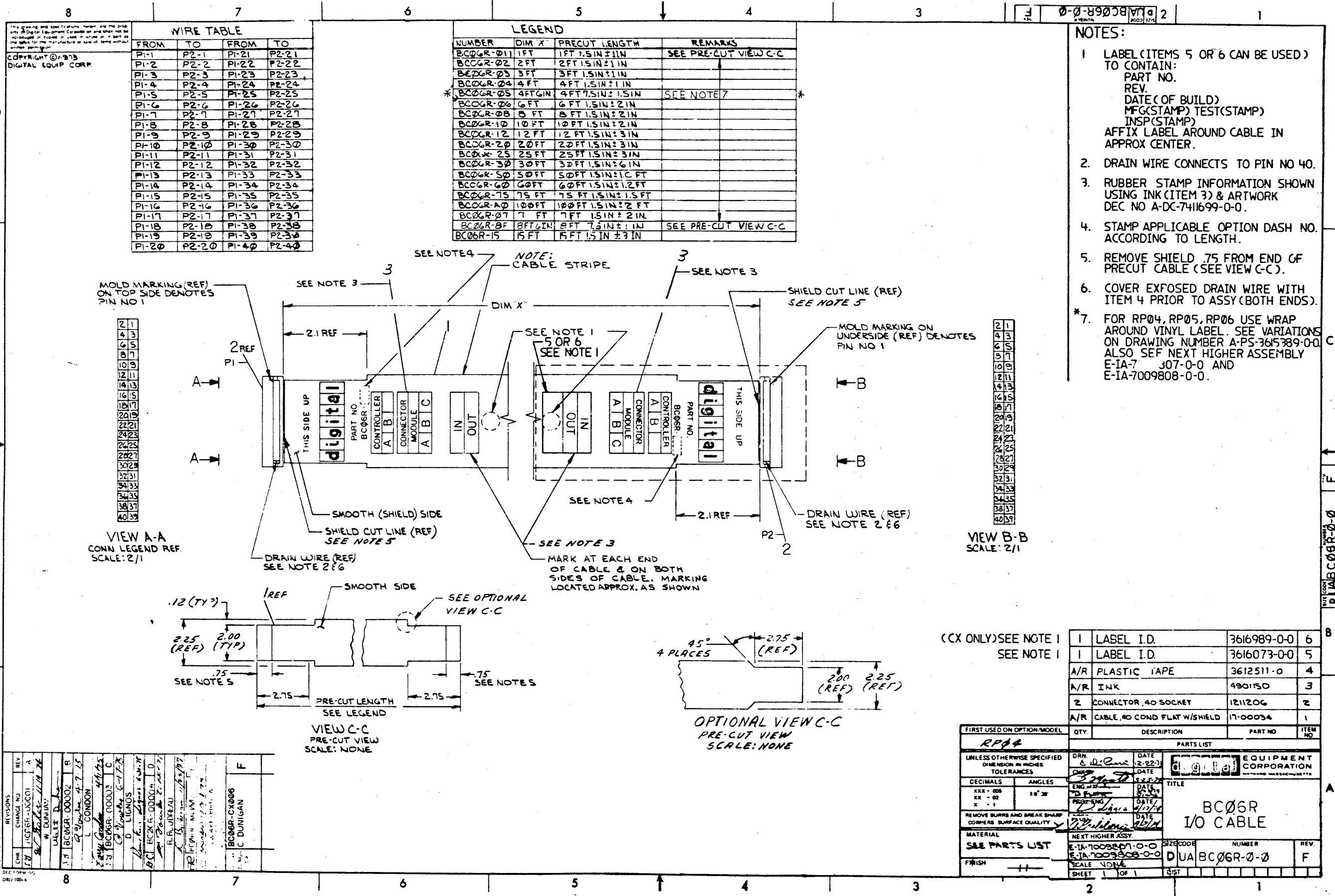


MASS BUS CABLE "A"

GND
AC2, BC2, CC2, DC2,
AH1, BH1, CH1, DH1,
AN2, BN2, CN2, DN2,
AT1, BT1, CT1, DT1,
EC2, FC2,
EH1, FH1,
EN2, FN2,
ET1, FT1

(SLOT 5)

DRN. 0776	4-20-77	FIRST USED ON	010101
CHK'D. J. J. J.	5-11-77	TITLE	MASSBUS PADDLE CARD
ENG. J. J. J.	5-11-77	SIZE	D
PROJ. ENG. J. J. J.	5-11-77	CODE	CSM9041-0-1
PROD. J. J. J.	6-1-77	NUMBER	A
NEXT HIGHER ASSY.			
SCALE	1 OF 1		
SHEET			



WIRE TABLE			
FROM	TO	FROM	TO
P1-1	P2-1	P1-21	P2-21
P1-2	P2-2	P1-22	P2-22
P1-3	P2-3	P1-23	P2-23
P1-4	P2-4	P1-24	P2-24
P1-5	P2-5	P1-25	P2-25
P1-6	P2-6	P1-26	P2-26
P1-7	P2-7	P1-27	P2-27
P1-8	P2-8	P1-28	P2-28
P1-9	P2-9	P1-29	P2-29
P1-10	P2-10	P1-30	P2-30
P1-11	P2-11	P1-31	P2-31
P1-12	P2-12	P1-32	P2-32
P1-13	P2-13	P1-33	P2-33
P1-14	P2-14	P1-34	P2-34
P1-15	P2-15	P1-35	P2-35
P1-16	P2-16	P1-36	P2-36
P1-17	P2-17	P1-37	P2-37
P1-18	P2-18	P1-38	P2-38
P1-19	P2-19	P1-39	P2-39
P1-20	P2-20	P1-40	P2-40

LEGEND			
NUMBER	DIM X	PRECUT LENGTH	REMARKS
BCØGR-Ø11	1 FT	1 FT 1.5 IN ± 1 IN	SEE PRE-CUT VIEW C-C
BCØGR-Ø2	2 FT	2 FT 1.5 IN ± 1 IN	
BCØGR-Ø3	3 FT	3 FT 1.5 IN ± 1 IN	SEE NOTE 7
BCØGR-Ø4	4 FT	4 FT 1.5 IN ± 1 IN	
BCØGR-Ø5	4 FT 6 IN	4 FT 7.5 IN ± 1.5 IN	
BCØGR-Ø6	6 FT	6 FT 1.5 IN ± 2 IN	
BCØGR-Ø8	8 FT	8 FT 1.5 IN ± 2 IN	
BCØGR-10	10 FT	10 FT 1.5 IN ± 2 IN	
BCØGR-12	12 FT	12 FT 1.5 IN ± 3 IN	
BCØGR-20	20 FT	20 FT 1.5 IN ± 3 IN	
BCØGR-25	25 FT	25 FT 1.5 IN ± 3 IN	
BCØGR-30	30 FT	30 FT 1.5 IN ± 6 IN	
BCØGR-50	50 FT	50 FT 1.5 IN ± 10 FT	
BCØGR-60	60 FT	60 FT 1.5 IN ± 12 FT	
BCØGR-75	75 FT	75 FT 1.5 IN ± 15 FT	
BCØGR-A0	100 FT	100 FT 1.5 IN ± 2 FT	
BCØGR-Ø7	7 FT	7 FT 1.5 IN ± 2 IN	SEE PRE-CUT VIEW C-C
BCØGR-Ø8	8 FT 6 IN	8 FT 7.5 IN ± 1 IN	
BCØGR-15	15 FT	15 FT 1.5 IN ± 3 IN	

- NOTES:
- 1 LABEL (ITEMS 5 OR 6 CAN BE USED) TO CONTAIN:
PART NO.
REV.
DATE (OF BUILD)
MFG (STAMP) TEST (STAMP)
INSP (STAMP)
AFFIX LABEL AROUND CABLE IN APPROX CENTER.
 - 2 DRAIN WIRE CONNECTS TO PIN NO 40.
 - 3 RUBBER STAMP INFORMATION SHOWN USING INK (ITEM 3) & ARTWORK DEC NO A-DC-7411699-0-0.
 - 4 STAMP APPLICABLE OPTION DASH NO. ACCORDING TO LENGTH.
 - 5 REMOVE SHIELD .75 FROM END OF PRECUT CABLE (SEE VIEW C-C).
 - 6 COVER EXPOSED DRAIN WIRE WITH ITEM 4 PRIOR TO ASSY (BOTH ENDS).
 - * 7 FOR RPØ4, RPØ5, RPØ6 USE WRAP AROUND VINYL LABEL. SEE VARIATIONS ON DRAWING NUMBER A-PS-3615389-0-0. ALSO SEE NEXT HIGHER ASSEMBLY E-1A-7 JØ7-0-0 AND E-1A-7ØØ98Ø8-0-0.

1	LABEL I.D.	3616989-0-0	6
1	LABEL I.D.	3616073-0-0	5
A/R	PLASTIC TAPE	3612511-0	4
A/R	INK	4901150	3
2	CONNECTOR, 40 SOCKET	1211206	2
A/R	CABLE, 40 COND FLAT W/SHIELD	17-00034	1
QTY.	DESCRIPTION	PART NO	ITEM NO

PARTS LIST			
DRN. <i>10-2-22-73</i>		DATE <i>12-22-73</i>	
CHK <i>10-2-22-73</i>		DATE <i>12-22-73</i>	
ENG <i>10-2-22-73</i>		DATE <i>12-22-73</i>	
PRES-ENG <i>10-2-22-73</i>		DATE <i>12-22-73</i>	
FINISH <i>10-2-22-73</i>		DATE <i>12-22-73</i>	
NEXT HIGHER ASSY.		DATE	
E-1A-7000000-0-0		12-22-73	
E-1A-7000000-0-0		DATE	
SCALE NONE		12-22-73	
SHEET 1 OF 1		DATE	

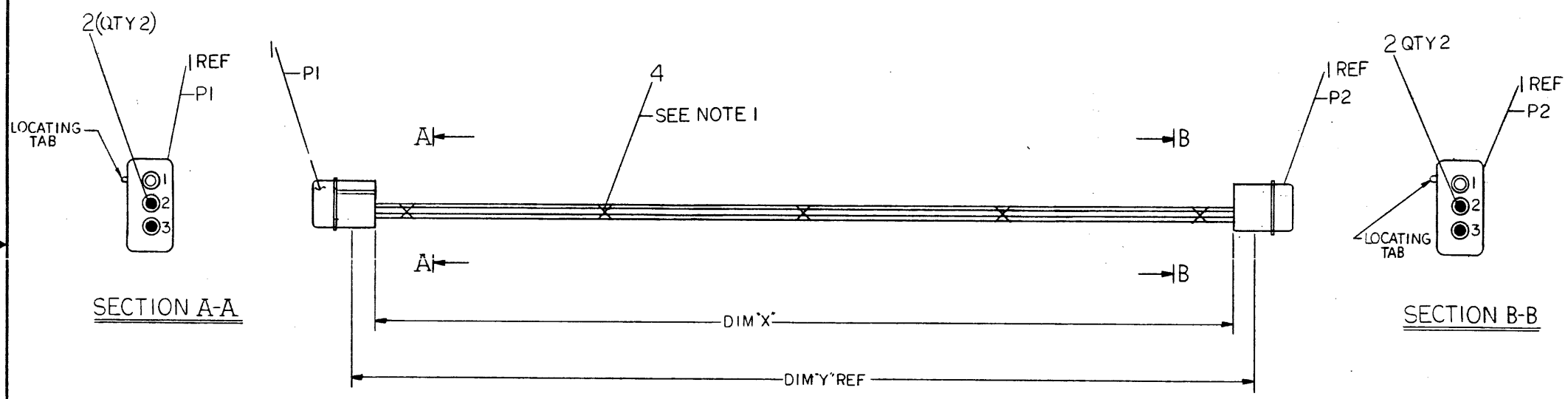
TITLE		DATE	
BCØGR I/O CABLE		12-22-73	
SIZE CODE		DATE	
NUMBER		12-22-73	
REV.		DATE	
DUA BCØGR-0-0		12-22-73	

EQUIPMENT CORPORATION		DATE	
17-00034-00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000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WIRE TABLE							LEGEND		
ITEM NO	AWG	COLOR	CONN	WITH	CONN	WITH	REMARKS	DIM 'X' VARIATION	DIM 'Y' (PRECUT) REF
6	18	GRY/WHY	PI-2	1#2	P2-2	1#2		ØFT-9IN ±.5IN	ØFT-10IN ±.5IN
3	18	GRAY	PI-3	1#2	P2-3	1#2		3FT-5IN ±.5IN	3FT-6IN ±.5IN
								4FT-1IN ±.5IN	4FT-2IN ±.5IN

NOTES:
1. USE CABLE TIES (ITEM #4) APPROXIMATELY EVERY THREE (3) INCHES WHEN NECESSARY.



REV	DATE	BY	CHK	DESCRIPTION
1	10/14/78	W. J. M. / J. M. S.		REVISED TO 11/78
2	11/17/78	W. J. M. / J. M. S.		REVISED TO 11/78

QTY	DESCRIPTION	DWG./PART NO.	ITEM NO.
1	WIRE, 18 AWG GRY/WHITE	9107360-89	6
1	LABEL, CABLE IDENT	9009532-00	1
1	TIE, CABLE	9007031-00	4
1	WIRE 18 AWG GRAY	9107360-88	3
4	PIN, CONTACT	1209378-00	2
2	CONNECTOR MATE N LOCK	1209351-03	1

CLASS OF ACCURACY	NOMINAL DIMENSION RANGE INCHES
ANGLES 30° 30'	OVER 0 TO 1.2
SURFACE QUALITY IN	OVER 1.2 TO 4.0
MICROINCHES	OVER 4.0 TO 12.0
	OVER 12.0 TO 40.0
	OVER 40.0 TO 80.0
	OVER 80.0 TO 160.0

THIRD ANGLE PROJECTION	REMOVE BURRS AND BREAK SHARP CORNERS	DO NOT SCALE DWG	MATERIAL SEE PARTS LIST	FINISH
DRN. W. J. M. / J. M. S.	CHK'D. W. J. M. / J. M. S.	ENG. W. J. M. / J. M. S.	PROD. W. J. M. / J. M. S.	
NEXT HIGHER ASSY.				
EUA-11780-0-0				
SCALE NONE				
SHEET 1 OF 1				

FIRST USED ON		VAX 11/780	
TITLE			
CABLE OVER TEMP			
SIZE	CODE	NUMBER	REV.
D	IA	7014213-0-0	B