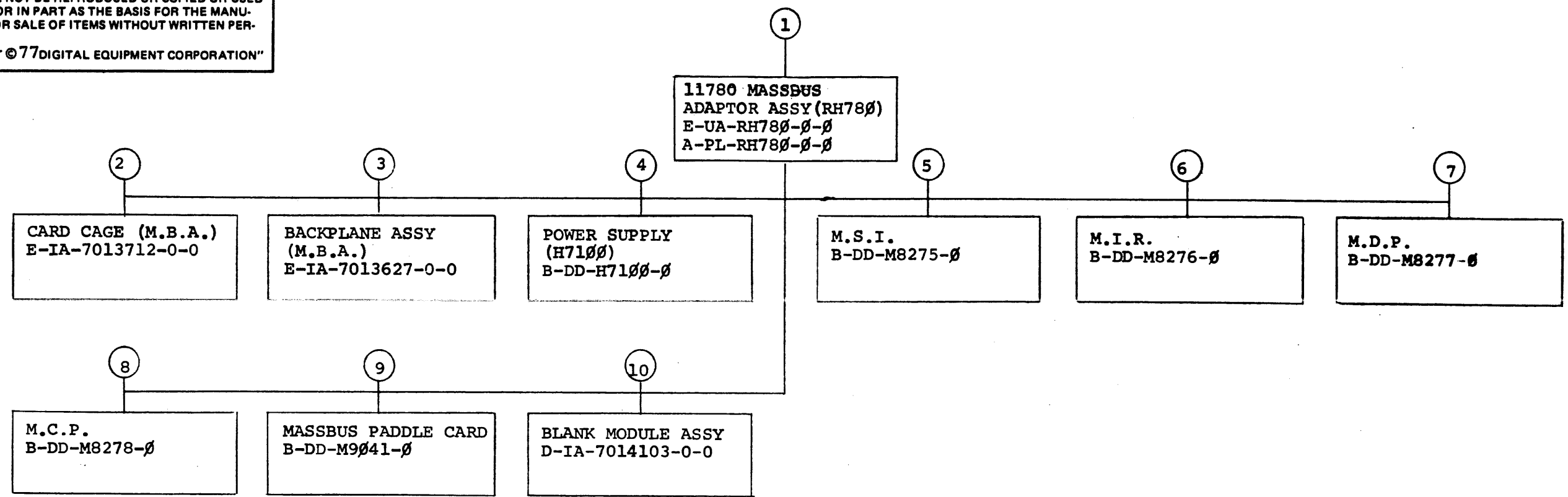






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TITLE	SIZE CODE	NUMBER	REV
11780 MASSBUS ADAPTOR ASSY (RH780)	B DD	RH780-0	C
SHEET 2 OF 3			

*TW*

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-OK	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

digital

TITLE 11780 MASSBUS ADAPTOR ASSY (RH780)

SHEET 3 OF 3

SIZE CODE B DD

NUMBER RH780-0

REV C

TW





**DIGITAL EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS**

**PARTS LIST**

MADE BY	W. FISHER	CHECKED	D. HEALY	SECTION	
DATE	11 JUL 77	DATE	26 JUL 77	ISSUED SECT.	1
ENG	<i>Ernest A. O'Keefe</i>	PROD	<i>E. Healy</i>		
DATE	9/14/77	DATE	11/9/77		

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY	VARIATION
1	E-IA-7013712-0-0	CARD CAGE (MBA)	1	
2	E-UA-H7100-A-0	H7100-A POWER SUPPLY 115V AC	- 1	RH780-AA
3	E-UA-H7100-B-0	H7100-B POWER SUPPLY 230V AC	-	RH782-AB
4	E-UA-M8275-0-0	MSI	1	
5	E-UA-M8276-0-0	MIR	1	
6	D-UA-M8277-0-0	MCP	1	
7	E-UA-M8278-0-0	MCP	1	
8	D-UA-M9041-0-0	MASS BUS PADDLE CARD	1	
9	D-IA-7014103-0-0	BLANK MODULE ASSY	2	
10	B-IA-7418902-0-0	PLATE, STUD	2	
11	B-MD-7418903-0-0	"U" BAR	1	
12	B-MD-7419084-0-0	PLATE, HOLDING	1	
13	B-MD-7419485-0-0	COVER, BUS BAR	1	
14	E-IA-7013627-0-0	BACK PLANE ASSY (MBA)	1	
15	1212405-00	CARD GUIDE SINGLE (NATURAL)	1	
16	1212405-01	CARD GUIDE SINGLE (MAGENTA)	6	
17	9006610-00	NUT, CAP RELOCK #10-32	6	
18	9006565-00	NUT, KEP #10 - 32	8	
19	9008032-01	SCR PH HD PAN #4 - 40 x .19	6	
20	9006655-00	WASH, FLAT, .31 o.d. x .12 id. x .03	4	
21	9006043-01	SCR PH HD PAN 8 - 32 x 1.00	4	
22	9006660-00	WASH. FLAT, .038 o.d. x .19 id. x .06	6	

TITLE	11780 MASSBUS ADAPTOR ASSY (RH780)	SIZE	A	PL	REV	C	ECO NO.	RH780-00003
ASSY NO.	E-UA-RH780-0-0	SHEET	1	OF	2	DIST		

DEC FORM  
DRA 110

**DIGITAL EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS**

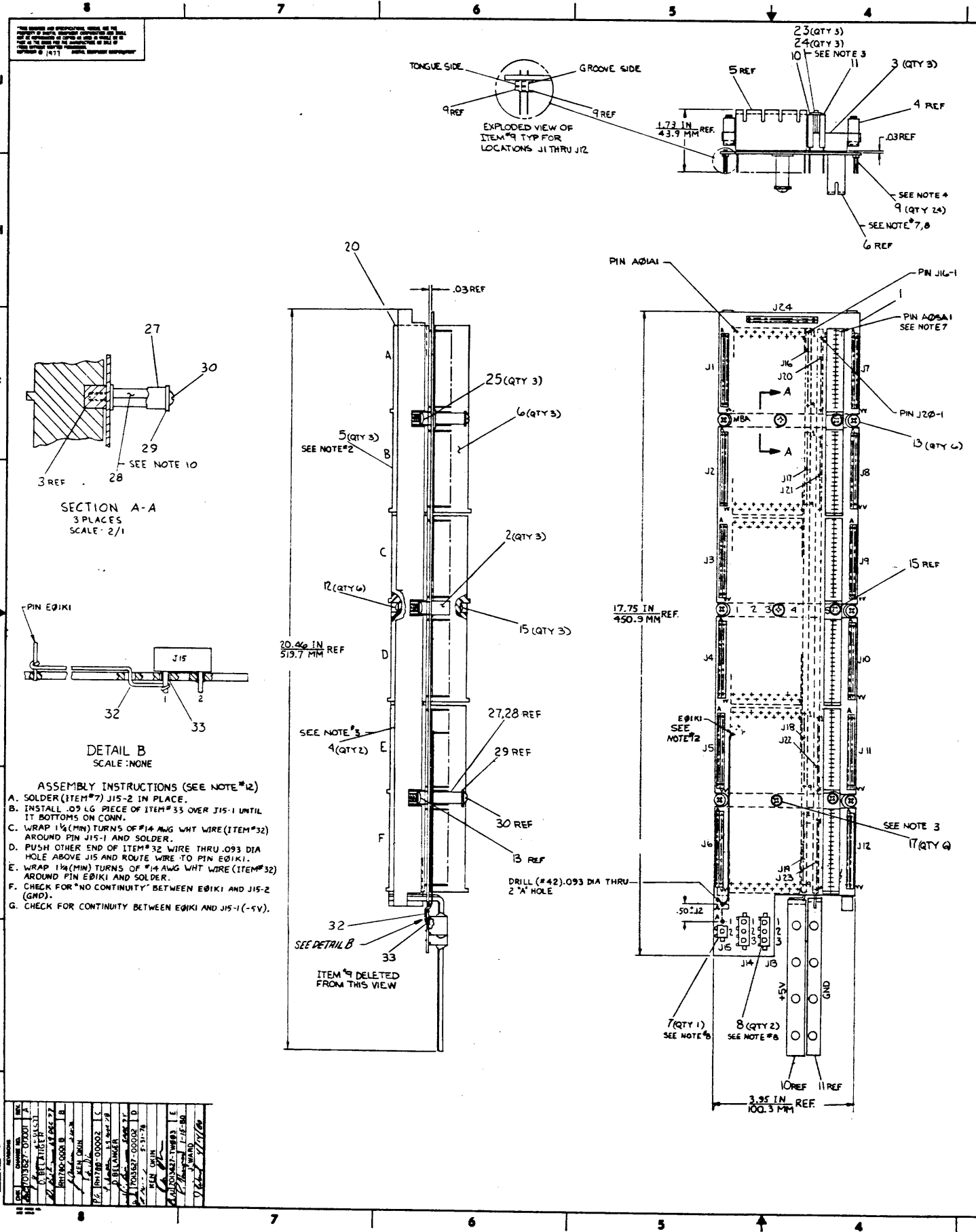
**PARTS LIST**

MADE BY	W. FISHER	CHECKED	D. HEALY	SECTION	
DATE	11 JUL 77	DATE	26 JUL 77	ISSUED SECT.	1
ENG	<i>Ernest A. O'Keefe</i>	PROD	<i>E. Healy</i>		
DATE	9/14/77	DATE	11/9/77		

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY	VARIATION
23	9006563-00	NUT, KEP #8 - 32	6	
24	9006073-01	SCR, PH HD PAN #10 - 32 x .50	10	
25	9007506-00	WASHER, LOCK SPLIT #10	10	
26	1211630-00	CARD GUIDE	2	
27	D-IC-11780-0-3	11780 SUB SYSTEM INTERCONNECT	REPR	
28	D-IC-11780-0-2	11780 SYSTEM INTERCONNECT DIAGRAM	REPR	
29	D-IC-11780-0-1	11780 SYSTEM POWER DIAGRAM	REPR	
30	D-MU-RH780-0-2	RH780 MODULE UTILIZATION	REPR	
31	3613281-03	LABEL, ADHESIVE BACKED PRINT (6 SLOT)	2	
32	7014212-0M	CABLE AC, DC IO	- 1	
33	C-MD-7419450-0-0	COVER, M.B.A. BACKPLANE	1	
34	7014530-0L	CABLE POWER (RED)	2	
35	7014249-0L	CABLE POWER (BLACK)	2	
36	1700087-0-0	COAX RIBBON CABLE (SDI) (4 in)	6	
37	7014212-0H	CABLE AC, DC IO	1	
38	1214314-00	PLUG, JUMPER	6	
39	3615087-02	LABEL, DANGER	1	
40	D-UA-BC06R-10-0	BC06R I/O CABLE (10 ft)	3	
41	7014213-0K	CABLE, OVER TEMP	- 1	
42	9009642-00	SCR SEMS PH HD PAN #832 x .25	4	
43	3614747-00	LABEL, MODULE UTILIZATION RH780	1	

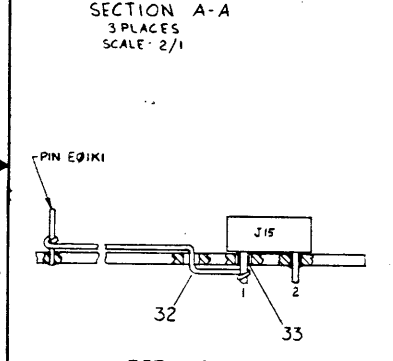
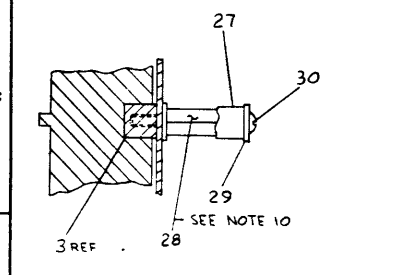
TITLE	11780 MASSBUS ADAPTOR ASSY (RH780)	SIZE	A	PL	REV	C	ECO NO.	RH780-00003
ASSY NO.	E-UA-RH780-0-0	SHEET	2	OF	2	DIST		

DEC FORM  
DRA 110



ITEM NO	DESCRIPTION	AWG	COLOR	CONN	FROM	WITH	CONN	TO	SIGNAL
19		30	YEL	F02F1	W/WRAP	F02M1	W/WRAP	MIRV X MIT TRL+BUSSE TR66 L	
19		30	YEL	E02J1	W/WRAP	E03C1	W/WRAP	HDPY REC #8 EBL H	

- NOTES:
1. ~~...~~
  2. 288 PIN CONNECTOR BLOCKS (ITEM 3) MUST HAVE WIDE LEAD-INS.
  3. ITEMS 4, 17, 23 & 24 ARE USED FOR WAVE SOLDERING PURPOSES ONLY AND MUST BE REMOVED AFTER WAVE SOLDERING BUT BEFORE CLEANING.
  4. INSTALL 20 PIN CONNECTORS (ITEM 1) AT J1-J12 AND J24 AFTER CLEANING BUT BEFORE AWT.
  5. ~~...~~
  6. ~~...~~
  7. TO D03N1 BEFORE AWT.
  8. PIN CONFIGURATION FOR SLOT 3 IS REVERSED FOR INSERTION OF ITEM 6 FROM SIDE 2.
  9. ITEMS 6 THRU 8 AND 16 ARE INSTALLED AFTER AWT AND ARE INSTALLED ON SIDE 2.
  10. ADD WIRE FROM F02F1 TO F02M1 AFTER ALL HAND SOLDERING HAS BEEN COMPLETED.
  11. ADD WIRE FROM E02J1 TO E03C1 AFTER ALL HAND SOLDERING HAS BEEN COMPLETED.
  12. ASSEMBLY INSTRUCTIONS DO NOT APPLY TO ETCH BOARD (5012B47) REVISION C OR LATER.



- ASSEMBLY INSTRUCTIONS (SEE NOTE #12)
- A. SOLDER (ITEM #7) J15-2 IN PLACE.
  - B. INSTALL .09 LG PIECE OF ITEM #33 OVER J15-1 UNTIL IT BOTTOMS ON CONN.
  - C. WRAP 1/4 (MIN) TURNS OF #14 AWG WHT WIRE (ITEM #32) AROUND PIN J15-1 AND SOLDER.
  - D. PUSH OTHER END OF ITEM #32 WIRE THRU .093 DIA HOLE ABOVE J15 AND ROUTE WIRE TO PIN EQIK1.
  - E. WRAP 1/4 (MIN) TURNS OF #14 AWG WHT WIRE (ITEM #32) AROUND PIN EQIK1 AND SOLDER.
  - F. CHECK FOR "NO CONTINUITY" BETWEEN EQIK1 AND J15-2 (GND).
  - G. CHECK FOR CONTINUITY BETWEEN EQIK1 AND J15-1 (-5V).

REV	DATE	BY	CHKD	DESCRIPTION
1	11/17/78	...	...	...
2	...	...	...	...

ITEM NO	DESCRIPTION	QTY	UNIT	ITEM NO	DESCRIPTION	QTY	UNIT
1	20 PIN CONNECTOR	1	EA	1	BOARD, DRILL & ETCH MBA	1	EA
2	288 PIN CONNECTOR BLOCK	1	EA	2	BAR, MOUNTING	1	EA
3	CONN (HBA) 288 PIN SLOTTED	1	EA	3	BLOCK, SPACER	1	EA
4	WASHER, NYLON	29	EA	4	SUPPORT LOGIC FRAME, SIDE	1	EA
5	STANDOFF, .875 LG	28	EA	5	CONN (HBA) 288 PIN SLOTTED	1	EA
6	SLEEVE, INSULATOR	27	EA	6	CONN (2 PIN) FEMALE	8	EA
7	CONN (2 PIN) FEMALE	8	EA	7	REWORK CONN BLOCK	7	EA
8	CONN (2 PIN) FEMALE	8	EA	8	CONN (HBA) 288 PIN SLOTTED	1	EA
9	CONN (2 PIN) FEMALE	8	EA	9	CONN (HBA) 288 PIN SLOTTED	1	EA
10	CONN (2 PIN) FEMALE	8	EA	10	CONN (HBA) 288 PIN SLOTTED	1	EA
11	CONN (2 PIN) FEMALE	8	EA	11	CONN (HBA) 288 PIN SLOTTED	1	EA
12	CONN (2 PIN) FEMALE	8	EA	12	CONN (HBA) 288 PIN SLOTTED	1	EA
13	CONN (2 PIN) FEMALE	8	EA	13	CONN (HBA) 288 PIN SLOTTED	1	EA
14	CONN (2 PIN) FEMALE	8	EA	14	CONN (HBA) 288 PIN SLOTTED	1	EA
15	CONN (2 PIN) FEMALE	8	EA	15	CONN (HBA) 288 PIN SLOTTED	1	EA
16	CONN (2 PIN) FEMALE	8	EA	16	CONN (HBA) 288 PIN SLOTTED	1	EA
17	CONN (2 PIN) FEMALE	8	EA	17	CONN (HBA) 288 PIN SLOTTED	1	EA
18	CONN (2 PIN) FEMALE	8	EA	18	CONN (HBA) 288 PIN SLOTTED	1	EA
19	CONN (2 PIN) FEMALE	8	EA	19	CONN (HBA) 288 PIN SLOTTED	1	EA
20	CONN (2 PIN) FEMALE	8	EA	20	CONN (HBA) 288 PIN SLOTTED	1	EA
21	CONN (2 PIN) FEMALE	8	EA	21	CONN (HBA) 288 PIN SLOTTED	1	EA
22	CONN (2 PIN) FEMALE	8	EA	22	CONN (HBA) 288 PIN SLOTTED	1	EA
23	CONN (2 PIN) FEMALE	8	EA	23	CONN (HBA) 288 PIN SLOTTED	1	EA
24	CONN (2 PIN) FEMALE	8	EA	24	CONN (HBA) 288 PIN SLOTTED	1	EA
25	CONN (2 PIN) FEMALE	8	EA	25	CONN (HBA) 288 PIN SLOTTED	1	EA
26	CONN (2 PIN) FEMALE	8	EA	26	CONN (HBA) 288 PIN SLOTTED	1	EA
27	CONN (2 PIN) FEMALE	8	EA	27	CONN (HBA) 288 PIN SLOTTED	1	EA
28	CONN (2 PIN) FEMALE	8	EA	28	CONN (HBA) 288 PIN SLOTTED	1	EA
29	CONN (2 PIN) FEMALE	8	EA	29	CONN (HBA) 288 PIN SLOTTED	1	EA
30	CONN (2 PIN) FEMALE	8	EA	30	CONN (HBA) 288 PIN SLOTTED	1	EA
31	CONN (2 PIN) FEMALE	8	EA	31	CONN (HBA) 288 PIN SLOTTED	1	EA
32	CONN (2 PIN) FEMALE	8	EA	32	CONN (HBA) 288 PIN SLOTTED	1	EA
33	CONN (2 PIN) FEMALE	8	EA	33	CONN (HBA) 288 PIN SLOTTED	1	EA

BACK PLANE ASSY (MBA)

DATE: 11/17/78

BY: [Signature]

CHKD: [Signature]

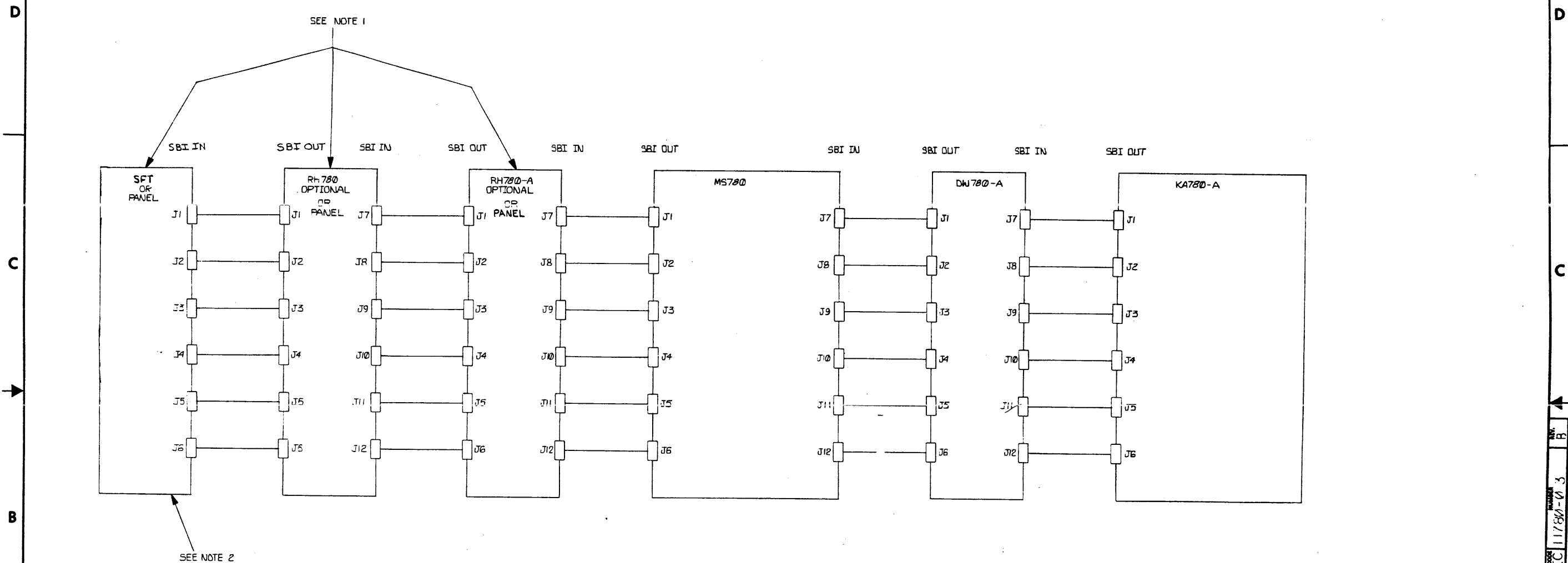
SCALE: 1/1

SHEET: 1 OF 1



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8 3-0-03 I C I 2



SEE NOTE 2

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

REV.	CHANGE NO.	DATE	BY	CHK
1	11780-1W1002	11/2/77	E. ANTON	
2	11780-1W006	11/2/77	R. CHUSMAE	

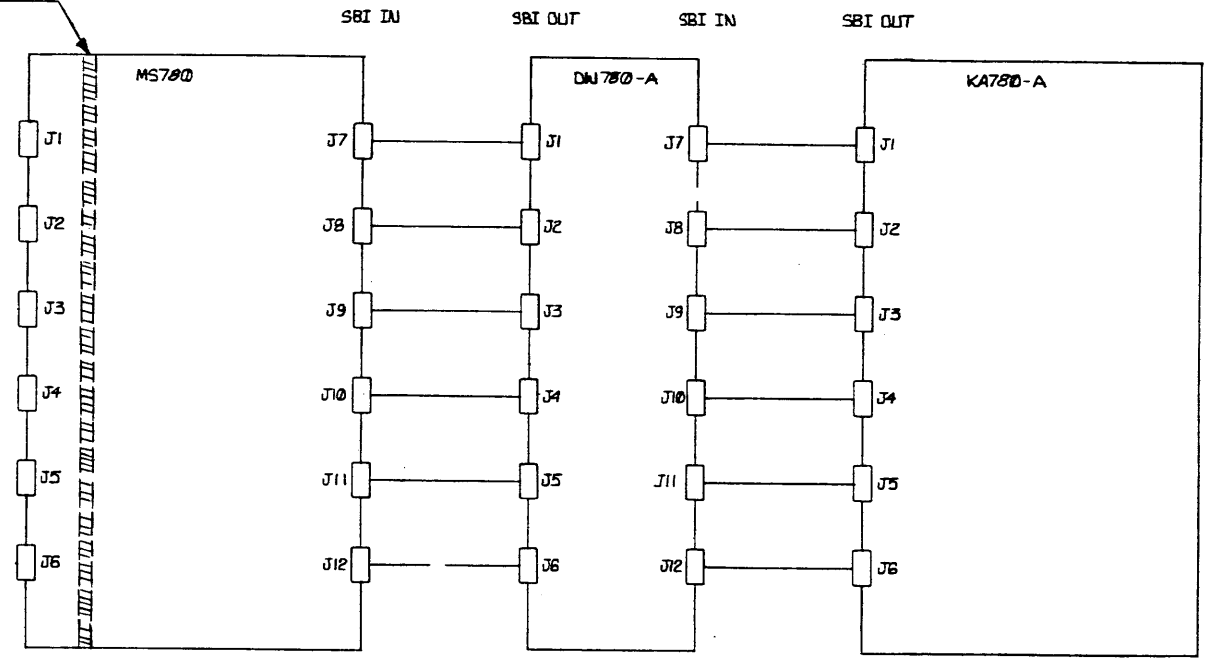
(BACKPLANE S.B.I. INTERCONNECT)

DRN. E. TAYLOR	26.10.77	FIRST USED ON	11780
CHK'D D. XANDY	19.10.77	TITLE	11780 SUB SYSTEM INTERCONN.
ENGR'D A. T. D.	18.10.77	PROD. R. CHUSMAE	11-8-77
PROJ. ENG. J. H. H.	15.10.77	SCALE	D I C 11780-0-3
NEXT HIGHER ASSY.		SIZE	CODE
R-DD-11780-0		NUMBER	REV.
SHEET 1 OF 8	DIST.		B

TW 1

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SEE NOTE 1



- NOTES:  
 1) 11780 CU+CV SYSTEM CONSISTS OF  
 A. KA780 A  
 B. DW780 A  
 C. MS780  
 D. TRM (M9040) MOUNTED IN SLOT\* 1 OF MS780 BACKPLANE.

THIS SHEET FOR  
 CU+CV VARIATIONS  
 ONLY

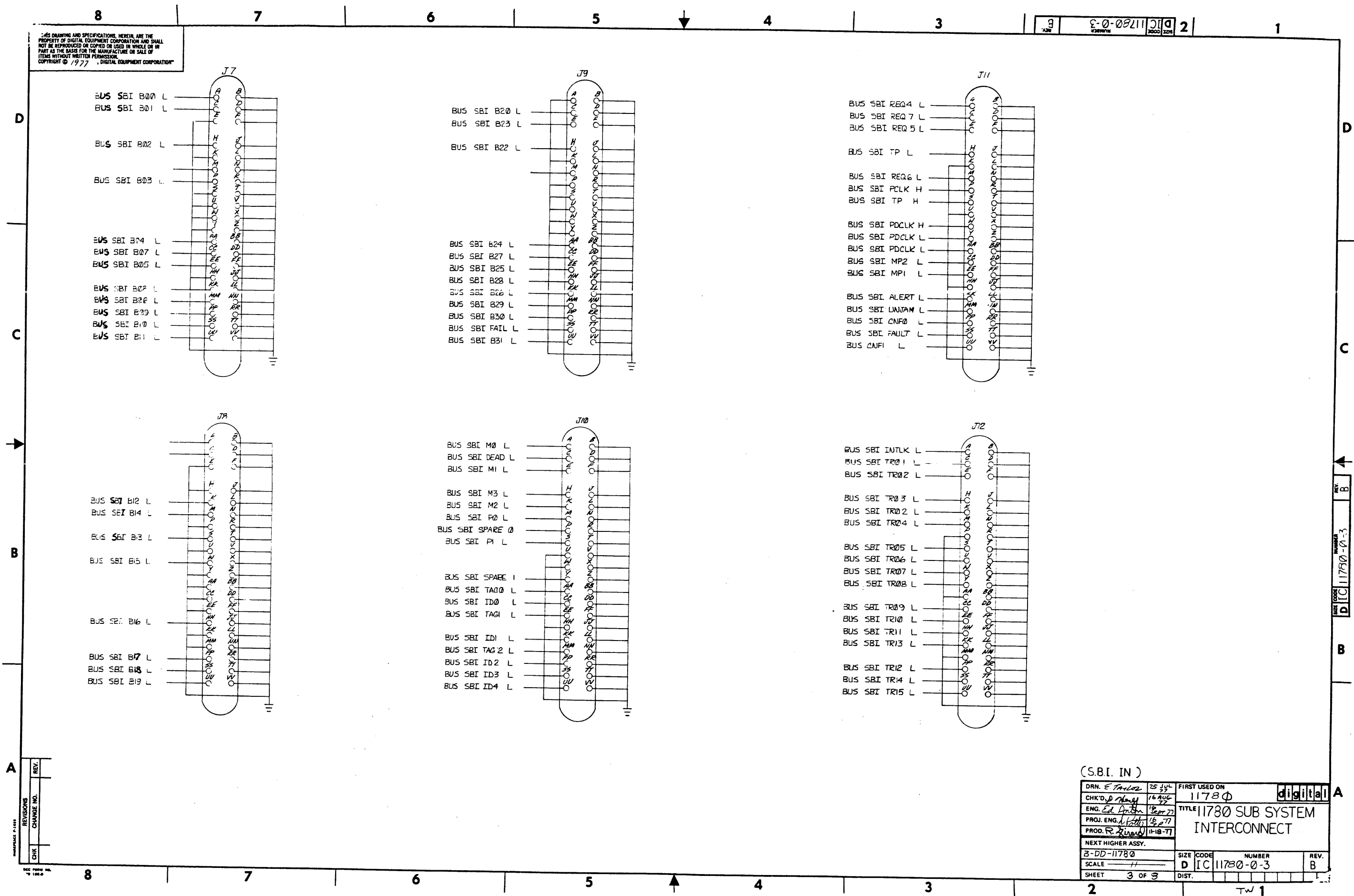
(BACKPLANE S.B.I. INTERCONNECT)

DRN. <i>Reg Lennon</i> 9/17/79	FIRST USED ON 11780	digital
CHK'D	TITLE 11780 SUB SYSTEM INTERCONN.	
ENG.	SIZE CODE D	NUMBER IC 11780-0-3
PROJ. ENG.	SCALE 1	REV. B
PROD.	NEXT HIGHER ASSY. R-DD-11780-0	SHEET 2 OF 8
DIST.		TW 1

REVISIONS  
 CHANGE NO.  
 REV.

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REV. B  
 NUMBER 11780-0-3  
 DATE CODE 2000 222



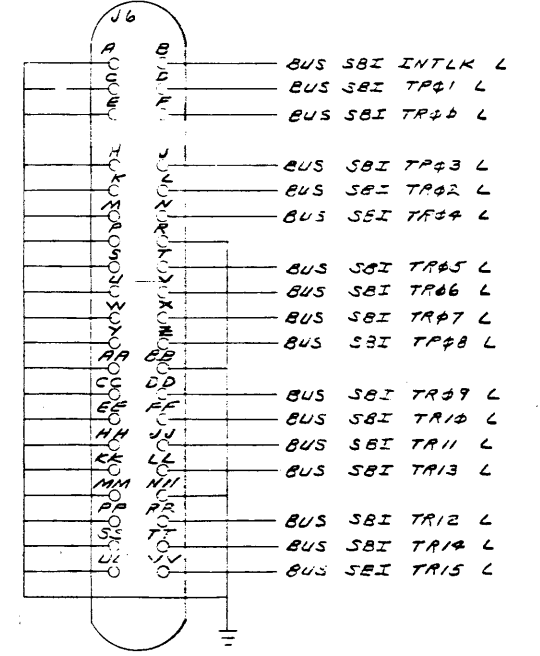
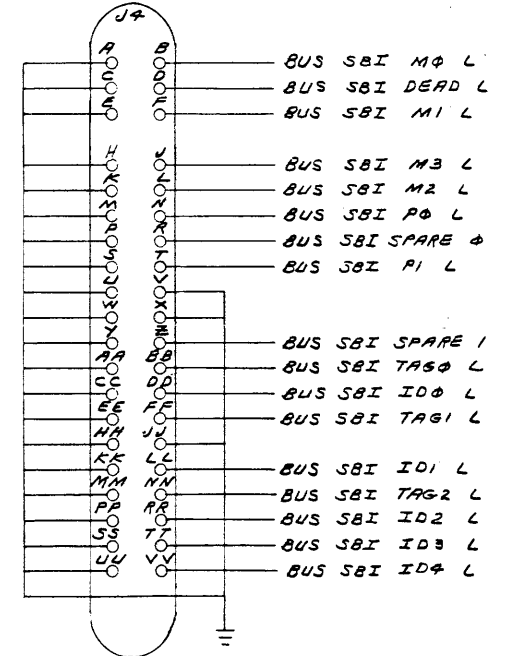
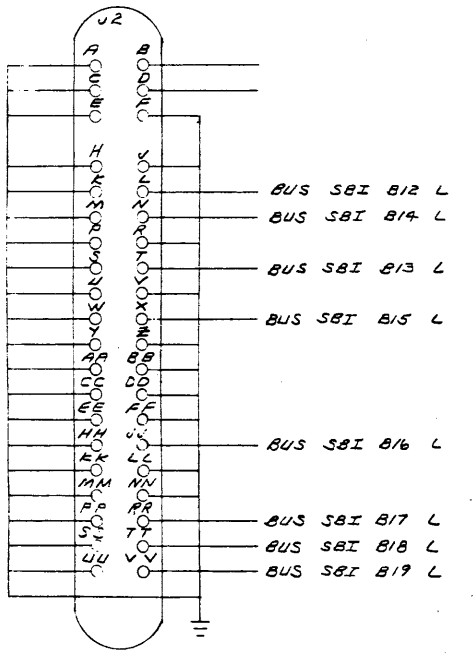
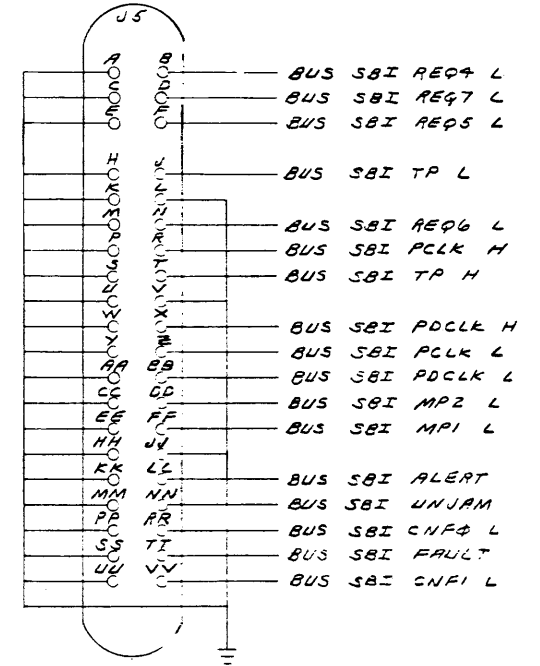
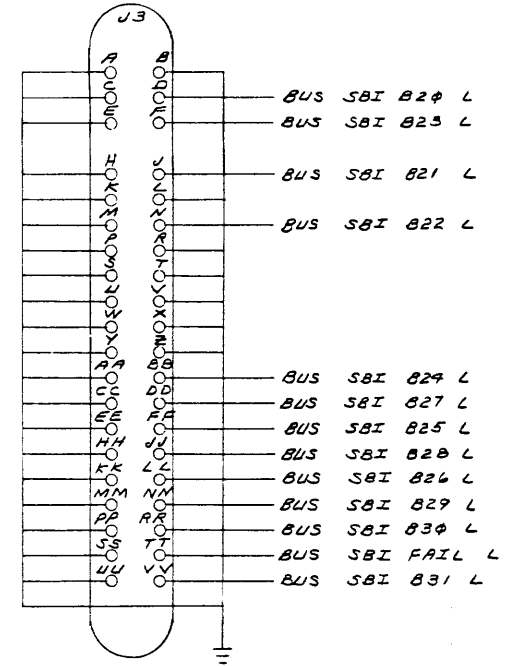
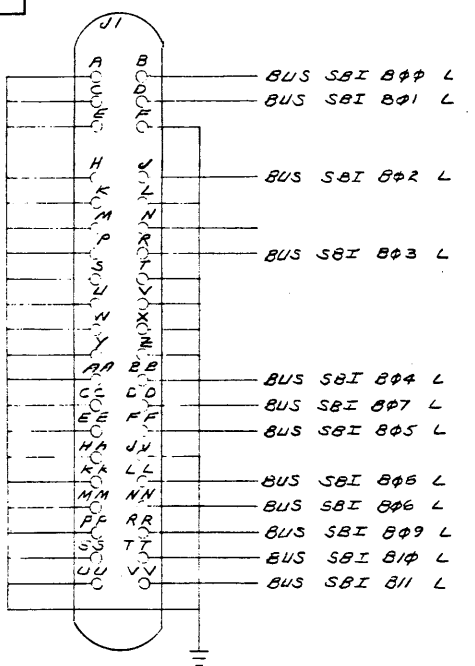
REV.	CHANGE NO.	CHK

(S.B.I. IN)

DRN. E Taylor	25 JUL 77	FIRST USED ON	11780	digital
CHK'D D. Mandy	16 AUG 77	TITLE	11780 SUB SYSTEM INTERCONNECT	
ENG. Ed. D. Smith	18 SEP 77			
PROJ. ENG. A. Kelly	15 OCT 77			
PROD. R. R. Quinn	11-18-77			
NEXT HIGHER ASSY.				
B-DD-11780		SIZE CODE	NUMBER	REV.
SCALE 1:1		D	IC 11780-0-3	B
SHEET 3 OF 3		DIST.		

TW 1

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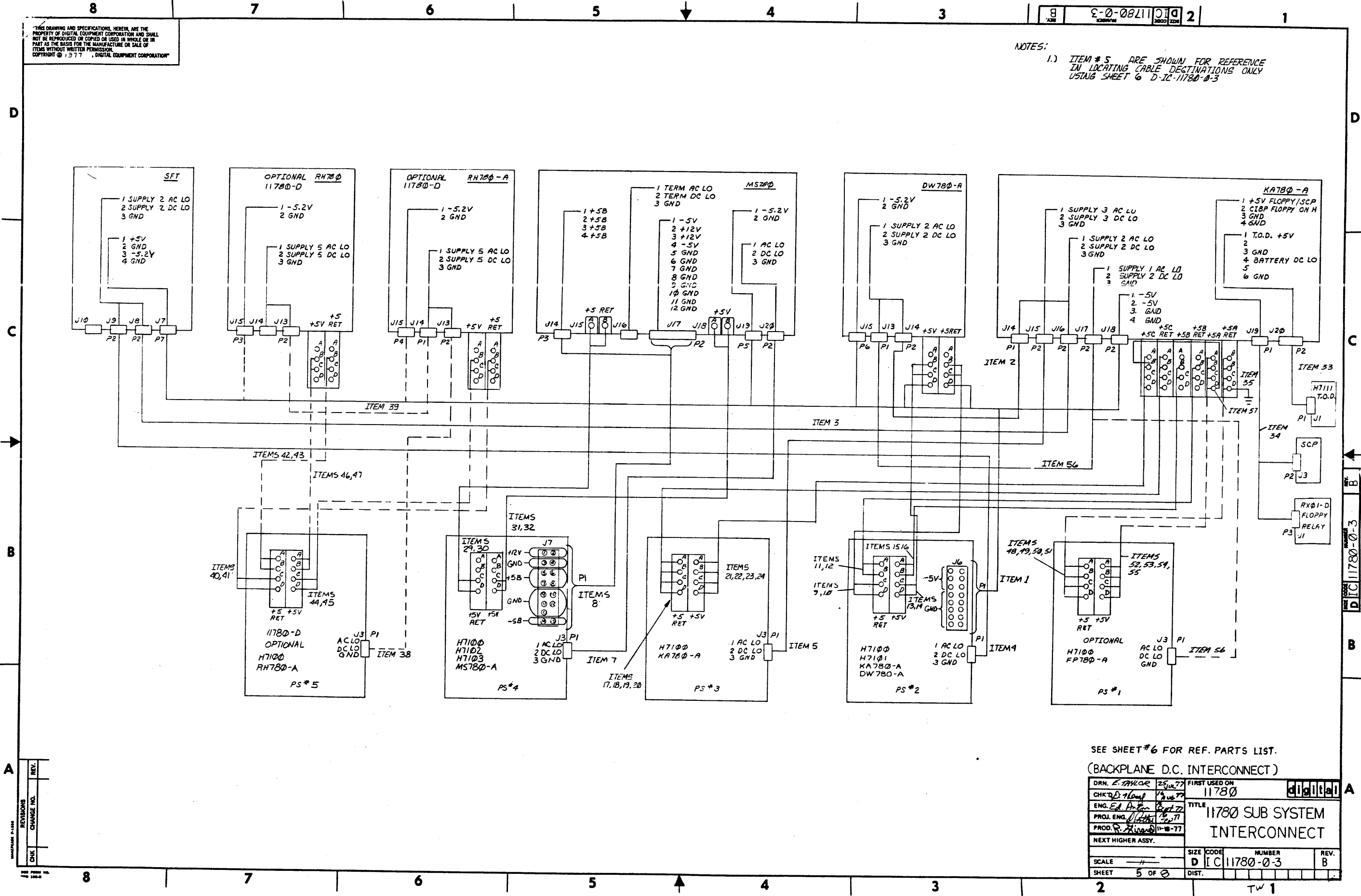


(SBI. OUT)		FIRST USED ON		digital
DRN. 6/2/77	25/06/77	11780		
CHK'D. D/1/77	16/06/77	TITLE		
ENG. S.D. Antti	18/06/77	11780 SUB SYSTEM INTERCONNECT		
PROJ. ENG. Antti	18/06/77	NEXT HIGHER ASSY.		
PROD. R. Zinn	11-18-77	SIZE	CODE	NUMBER
		D	IC	11780-0-3
SCALE	+	DIST.		REV. B
SHEET	4 OF 5			

REVISIONS	REV.
CHANGE NO.	
CHK	

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NOTES:  
 1.) ITEM # 5 ARE SHOWN FOR REFERENCE IN LOCATING CABLE DESTINATIONS ONLY USING SHEET 6 D-IC-11780-0-3



SEE SHEET #6 FOR REF. PARTS LIST.

(BACKPLANE D.C. INTERCONNECT)

DRN. E. MAKOR 25, 27	FIRST USED ON	digital
CHK'D. J. GARDNER 27	11780	
ENG. E. A. ...	TITLE	
PRG. ENG. ...	11780 SUB SYSTEM INTERCONNECT	
PROD. R. ...		
NEXT HIGHER ASSY.	SIZE CODE	NUMBER
SCALE	D	IC 11780-0-3
SHEET 5 OF 8	DIST.	REV. B

REV. NO.	REV.
CHANGE NO.	
CHK	

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11780 - C & D (SEE SHEETS 7&8 FOR CUCV VARIATIONS)

REF ITEM NUMBER	PART NUMBER	DESCRIPTION	FROM	TO	REMARKS
1	7015073-0-0	HARNESS-5V TERMINATOR	HARNESS P1	PS#2-J6	-5V GND
			HARNESS P2	KA780-J18	
			HARNESS P5	MS780-J19	
			HARNESS P6	DW780-J15	-5V, GND
			HARNESS P7	SFT-J7	±5V, GND
			HARNESS RING TERM (RES WIRE)	DW780+5V-D	+5V
2	7015073-0-0	HARNESS-5V TERM	HARNESS RING TERM (RES WIRE)	DW780+5VRT-D	+5V RETURN
			CABLE P1	KA780-J14	
3	7014212-0H	CABLE AC DC LOW	CABLE P2	DW780-J14	
			CABLE P1	KA780-J16	
4	7014212-2M	CABLE AC DC LOW	CABLE P2	SFT-J8	
			CABLE P1	PS#2-J3	AC DC LOW GND
5	7014212-0M	CABLE AC DC LOW	P2	SFT-J9	
			CABLE P1	PS#3-J3	AC DC LOW & GND
7	7014212-1C	CABLE AC DC LOW	P2	KA780-J15	
			CABLE P1	PS#4-J3	AC DC LOW & GND
8	7014234-0K	CABLE ±5B & ±12	P2	MS780-J20	
			CABLE P1	PS#4-J7	+5B & ±12
			P3	MS780-J17	
9	7014249-1A	CABLE POWER (BLK)	PS#2+5 RET-D	DW780+5 RET-B	PS#2+5 RETURN
			PS#2+5 RET-C	DW780+5 RET-C	
10	7014249-1A	CABLE POWER (BLK)	PS#2+5 RET-B	KA780+5B RET-B	
11	7014249-1C	CABLE POWER (BLK)	PS#2+5 RET-A	KA780+5B RET-C	PS#2+5 RETURN
12	7014249-1C	CABLE POWER (BLK)	PS#2+5 RET-A	KA780+5B RET-C	PS#2+5 RETURN
13	7014530-1A	CABLE POWER (RED)	PS#2+5 -D	DW780+5 -B	PS#2+5
14			C	DW780+5 -C	
15	7014530-1A	CABLE POWER (RED)	PS#2+5 B	KA780+5B C	
16	7014530-1A	CABLE POWER (RED)	PS#2+5 A	KA780+5B B	PS#2+5
17	7014249-1J	CABLE POWER (BLK)	PS#3+5 RET D	KA780+5C RET D	PS#3+5 RETURN
18			C	C	
19			B	B	
20	7014249-1J	CABLE POWER (BLK)	PS#3+5 RET A	KA780+5C - A	PS#3+5 RETURN
21	7014530-1E	CABLE POWER (RED)	PS#3+5 - D	KA780+5C - D	PS#3+5 RETURN
22			C	C	
23			B	B	
24	7014530-1E	CABLE POWER (RED)	PS#3+5 - A	KA780+5C - A	
29	7014250-0K	CABLE POWER	PS#4+5 RET C	MS780-J15 - A	PS#4+5 RETURN
30	7014250-0K	RTR MEMORY BLK	PS#4+5 RET D	MS780-J15 B	
31		CABLE POWER	PS#4+5 C	MS780-J18 - A	PS#4+5V
32	7014529-0K	+5 MEMORY (RED)	PS#4+5 D	MS780-J18 B	
33	7014248-3M	CABLE TO T.O.D. BAT.	HARNESS P2	KA780-J20	
			P1	H7111-J1	
			HARNESS P1	KA780-J19	
34	7014243-21	FLOPPY RELAY SC PWR HARNESS	P2	SCP-J3	
			P3	RX01-J1	
			FRAME		
35	7014249-0L	CABLE POWER (BLK)	KA780-A+5A RET D		
56	7014212-0M	CABLE AC/DC LO	CABLE P1	DW780-J13	SEE NOTE #3
			CABLE P2	KA780-J17	

11780-D

REF ITEM NUMBER	PART NUMBER	DESCRIPTION	FROM	TO	REMARKS
1	7015073-0-0	HARNESS-5V TERM.	HARNESS P3	RH780-J15	-5V GND
			HARNESS P4	RH780-A-J15	-5V GND
38	7014212-0M	CABLE AC DC LOW	CABLE P1	PS#5-J3	AC DC LO & GND
			CABLE P2	RH780-J13	AC DC LO & GND
39	7014212-0H	CABLE AC DC LOW	CABLE P1	RH780-A-J14	AC DC LO & GND
			CABLE P2	RH780-J13	AC DC LO & GND
40	7014249-0L	CABLE POWER (BLK)	PS#5+5 RET-D	RH780-A+5 RET-C	PS#5+5 RETURN
41			C	B	
42	7014249-0L	CABLE POWER (BLK)	PS#5+5 RET-B	RH780-A+5 -C	PS#5+5 RETURN
43			A	B	
44	7014530-0L	CABLE POWER (RED)	PS#5+5 - D	RH780-A+5 -C	PS#5+5V
45			C	B	
46	7014530-0L	CABLE POWER (RED)	PS#5+5 - B	RH780+5 -C	PS#5+5V
47			A	B	

FP780 OR FP780 & KU780 SEE NOTE 1

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

KC780 OR KU780 SEE NOTE 2

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

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

OPTIONAL SEE NOTE 3

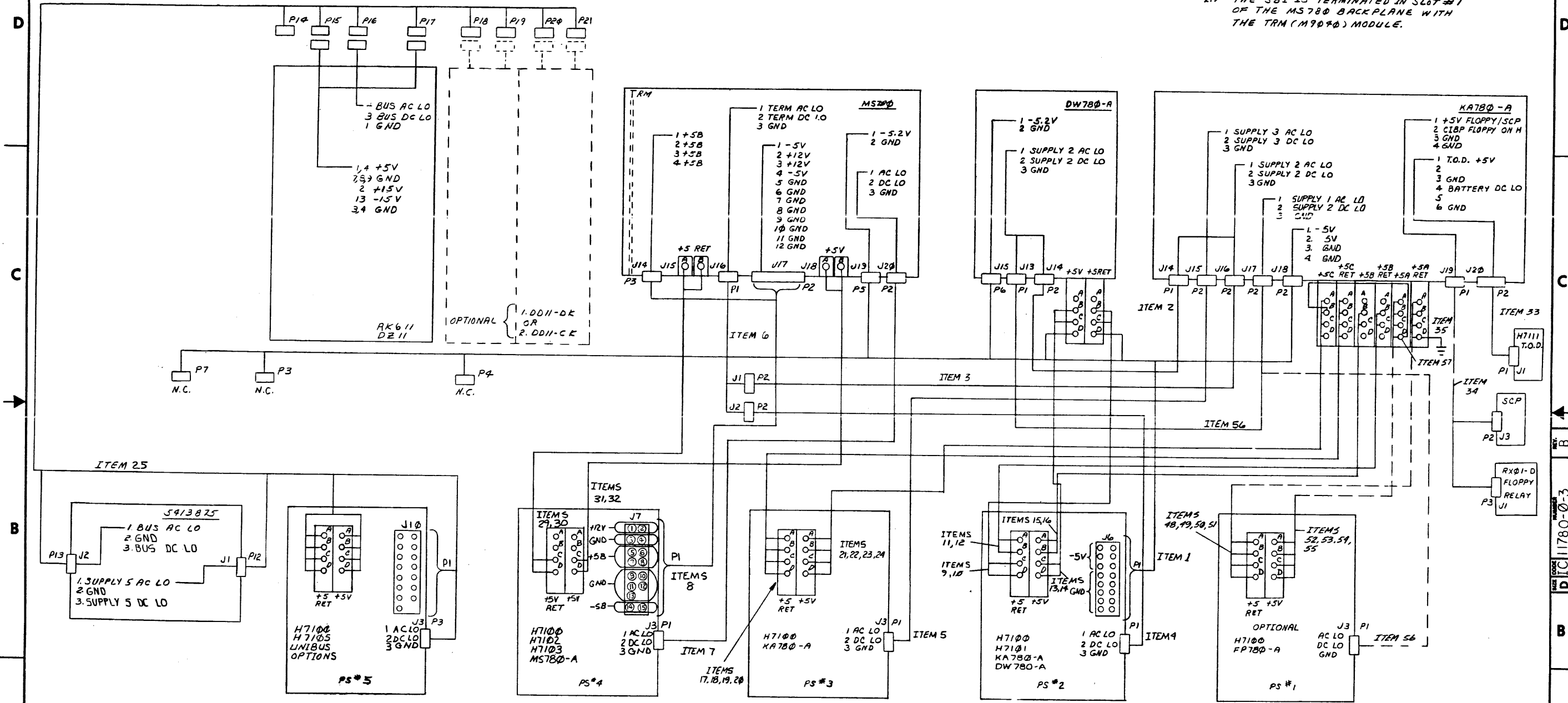
REV. B. NUMBER 11780-0-3

CHK	CHANGE NO.	REV.

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8 7 6 5 4 3 2 1  
D C B A  
D I C 11780-0-3

NOTES:  
1.) ITEM # 5 ARE SHOWN FOR REFERENCE IN LOCATING CABLE DESTINATIONS ONLY USING SHEET B D-IC-11780-0-3  
2.) THE SBI IS TERMINATED IN SLOT #1 OF THE MS780 BACKPLANE WITH THE TRM (M90\*0) MODULE.



THIS SHEET FOR CU + CV VARIATIONS ONLY

SEE SHEET # 8 FOR REF. PARTS LIST.  
(BACKPLANE D.C. INTERCONNECT)

REV.	
CHANGE NO.	
CHK	

TITLE	11780 SUB SYSTEM INTERCONNECT	SIZE CODE	D I C	NUMBER	11780-0-3	REV.	B
SCALE	+	SHEET	7	OF	8	DIST.	

TW 1

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11780-CU/CV

11780-CU/CV

D

REF ITEM NUMBER	PART NUMBER	DESCRIPTION	FROM	TO	REMARKS
1	7015073-0-0	HARNESS-5V 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-5V TERMINATOR	HARNESS RING TERM. (BLK WIRE)	DW780+5V-RT-D	+5V RETURN
2	7014212-0H	CABLE AC DC LOW	CABLE - P1	KA780-J14	AC,DC LOW+GND
			CABLE - P2	DW780-J14	
3	7014212-2M	CABLE AC DC LOW	CABLE - P1	KA780-J16	AC,DC LOW+GND
			CABLE - P2	ITEM #6-J1	
4	7014212-2M	CABLE AC DC LOW	CABLE - P1	PS #2 - J3	AC,DC LOW+GND
			CABLE - P2	ITEM #6-J2	
5	7014212-0M	CABLE AC DC LOW	CABLE - P1	PS #3 - J3	AC,DC LOW+GND
			CABLE - P2	KA780-J15	
6	70 - 0J	AC DC LOW WYE CABLE	CABLE - P1	MS780-J16	AC,DC LOW+GND
			CABLE - J1	ITEM #3-P2	
			CABLE - J2	ITEM #4-P2	
7	7014212-1C	CABLE AC DC LOW	CABLE - P1	PS #4 - J3	AC,DC LOW+GND
			CABLE - P2	MS780-J20	
8	7014212-0K	CABLE ±5B +12V	CABLE - P1	PS #4 - J7	±5B+12V+GND
			CABLE - P2	MS780-J17	
			CABLE - P3	MS780-J14	
9	7014249-1A	CABLE POWER (BLK)	PS #2 +5 RET -D	DW780+5 RET-B	PS #2+5 RETURN
10	7014249-1A	CABLE POWER (BLK)	PS #2 +5 RET -C	DW780+5 RET-C	
11	7014249-1C	CABLE POWER (BLK)	PS #2 +5 RET -B	KA780+5B RET-B	
12	7014249-1C	CABLE POWER (BLK)	PS #2 +5 RET -A	KA780+5B RET-C	PS #2 +5 RETURN
13	7014530-1A	CABLE POWER (RED)	PS #2 +5V -D	DW780+5V-B	PS #2 +5V
14	7014530-1A	CABLE POWER (RED)	PS #2 +5V -C	DW780+5V-C	
15	7014530-1A	CABLE POWER (RED)	PS #2 +5V -B	KA780+5B-C	
16	7014530-1A	CABLE POWER (RED)	PS #2 +5V -A	KA780+5B-B	PS #2 +5V
17	7014249-1J	CABLE POWER (BLK)	PS #3 +5V RET -D	KA780+5C RET-D	
18			-C	-C	
19			-B	-B	
20	7014249-1J	CABLE POWER (BLK)	PS #3 +5V RET -A	KA780+5C RET-A	PS #3 +5 RETURN
21	7014530-1E	CABLE POWER (RED)	PS #3 +5V -D	KA780+5C -D	PS #3 +5 RETURN
22			-C	-C	
23			-B	-B	
24	7014530-1E	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

C

B

A

D

C

B

A

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	7014250-0K	CABLE POWER RTR MEMORY (BLK)	PS #4 +5V RET -C	MS780-J15-A	PS #4 +5 RETURN
30			-D	-B	
31	7014529-0K	CABLE POWER +5 MEMORY (RED)	PS #4 +5V -C	MS780-J18-A	PS #4 +5V
32			-D	-B	
33	7014243-3M	CABLE TO T.Q.D. BAT.	HARNESS - P2	KA780-J20	
			-P1	H7111 - J1	
34	7014243-21	FLOPPY RELAY SC PWR HARNESS	HARNESS - P1	KA780-J19	
			-P2	SCP - J3	
			-P3	RX01 - J1	
35	7014249-0L	CABLE POWER (BLK)	KA780 +5A RET-D	FRAME	
56	7014212-0M	CABLE AC/DC LO	CABLE - P1	DW780 - J13	SEE NOTE #3
			CABLE - P2	KA780-J17	

FP780 OR FP780 + KU780

SEE NOTE

48	7014249-0L	POWER CABLE (BLK)	PS #1 +5A RET -D	KA780+5A RET-D	PS #1 +5 RETURN
49			-C	-C	
50			-B	-B	
51	7014249-0L	POWER CABLE (BLK)	PS #1 +5A RET -A	KA780+5A RET-A	
52	7014530-0L	POWER CABLE (RED)	PS #1 +5V -D	KA780+5A -D	PS #1 +5A
53			-C	-C	
54			-B	-B	
55	7014530-0L	POWER CABLE (RED)	PS #1 +5V -A	KA780+5A -A	
56	7014212-0M	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	7014530-0L	CABLE POWER (RED)	KA780 +5A -D	KA780+5C -B	PS #2 +5V
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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	ECD NUMBER	REV.

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



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Digital Equipment Corporation  
 B-DD-RH780-2

VIEW FROM SIDE 2

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

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

D  
C  
B  
A

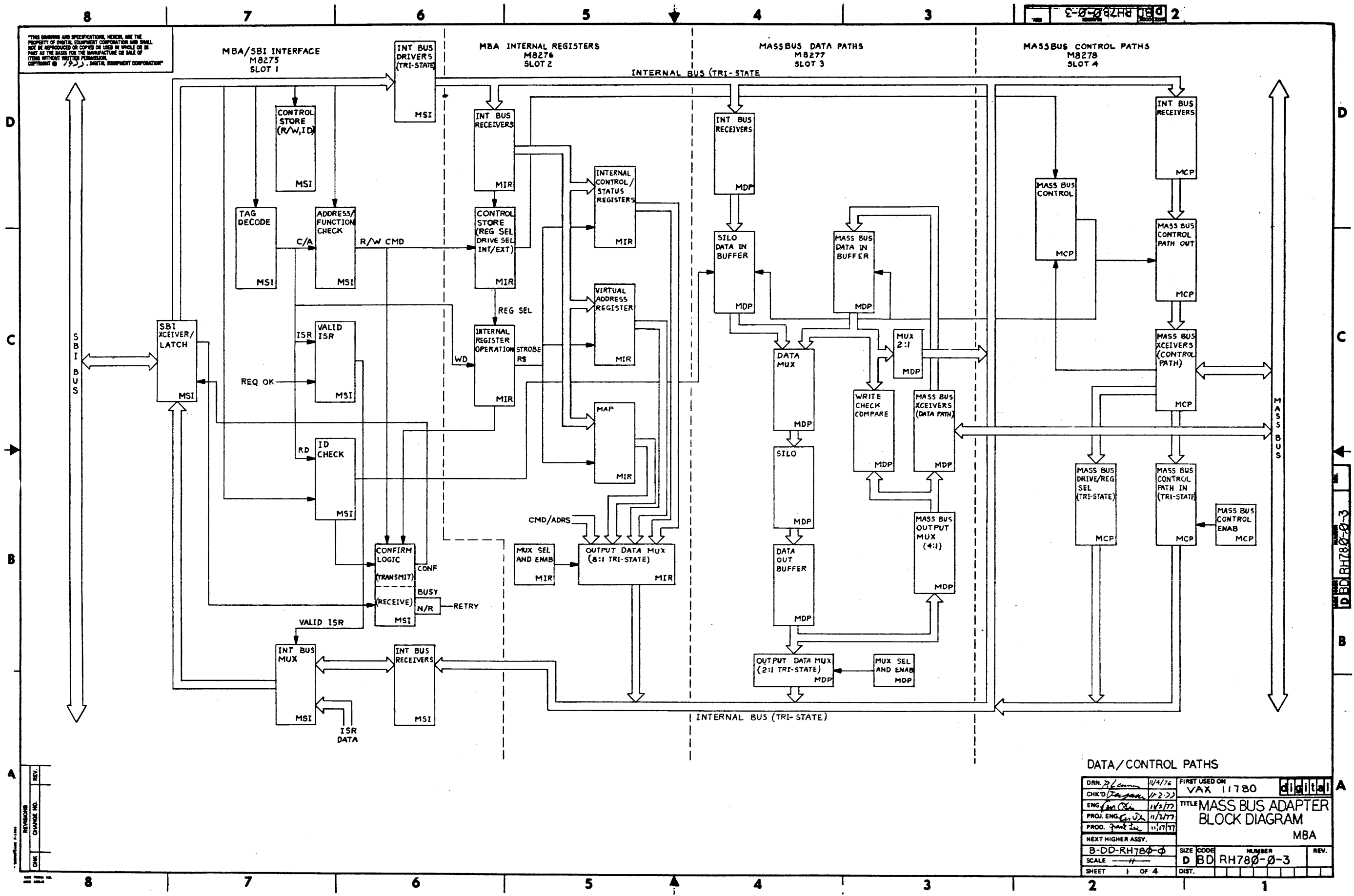
D  
C  
B  
A

Digital Equipment Corporation  
 B-DD-RH780-2

REV.	
CHG.	
CHK.	

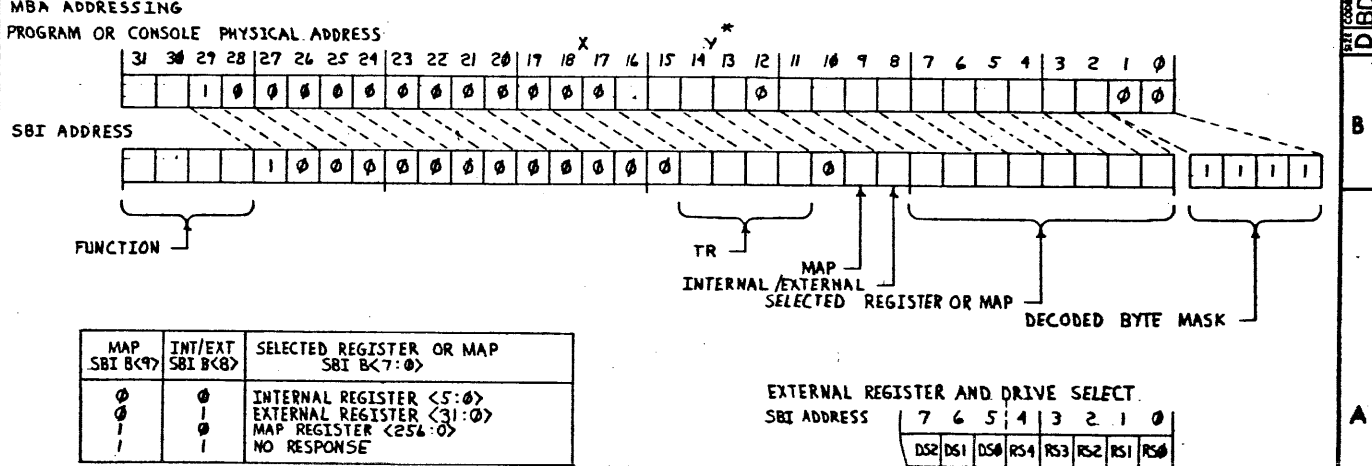
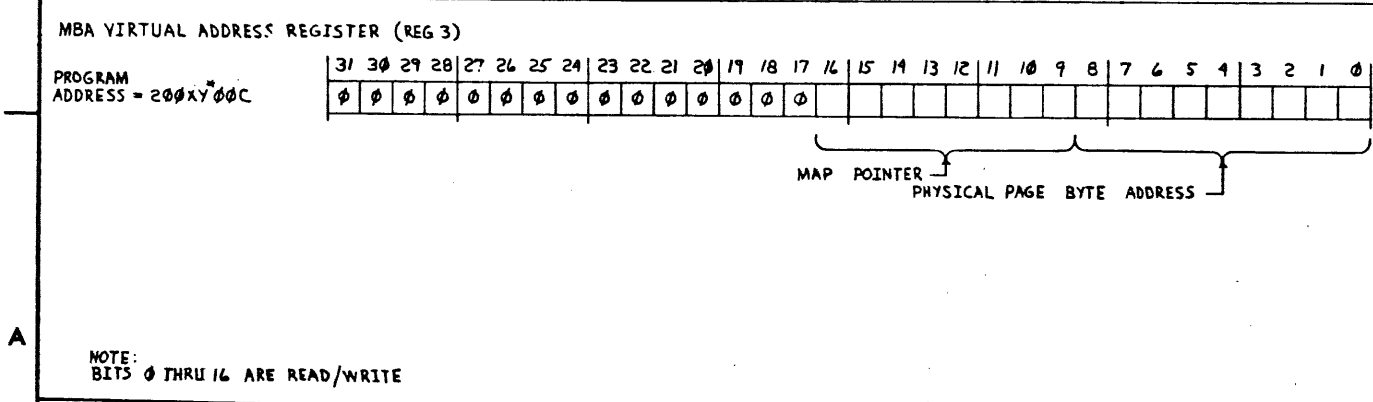
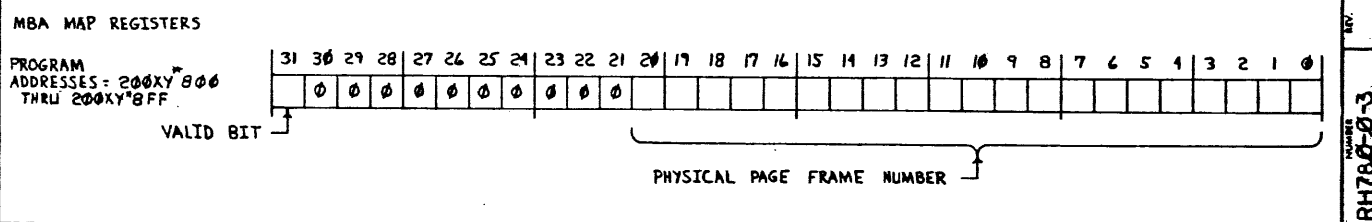
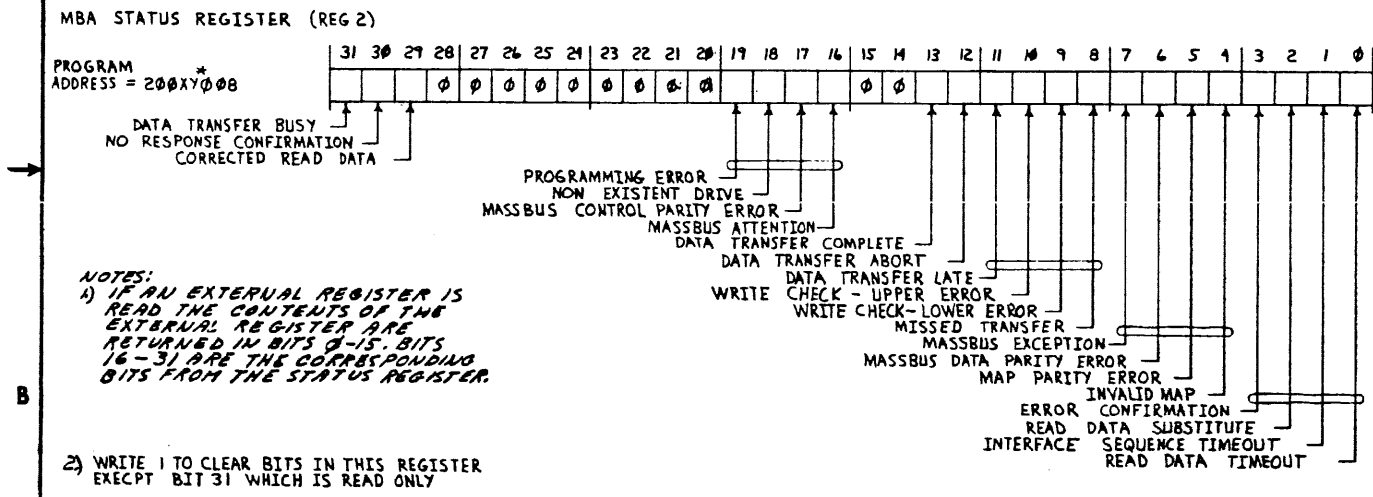
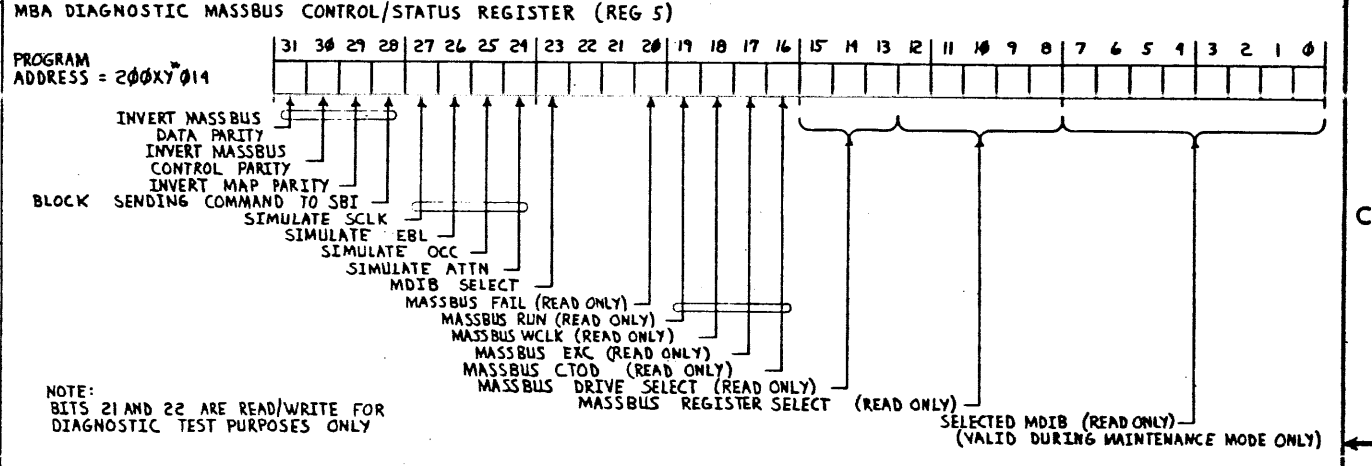
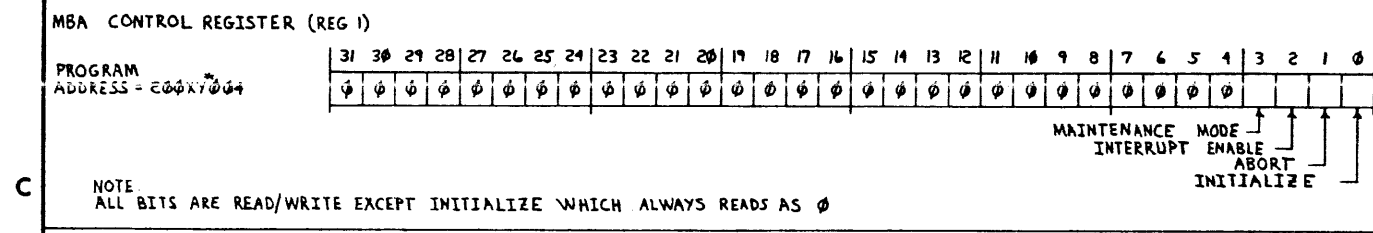
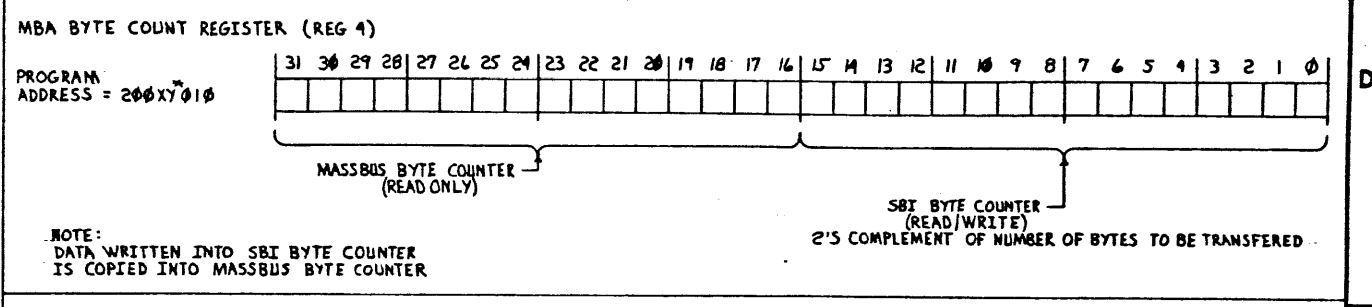
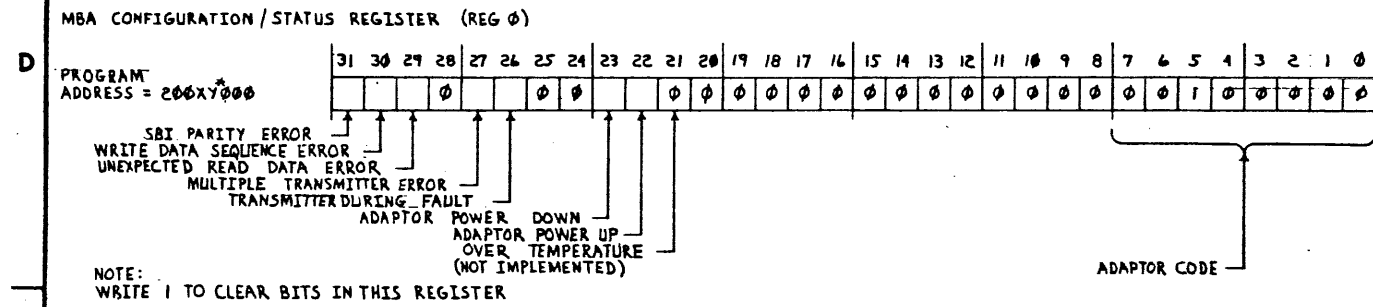
DRN. AFM	10-257	FIRST USED ON	VAX 11780	Digital
CHK'D	10-257	TITLE	MODULE UTILIZATION MASSBUS ADAPTOR	
ENG.	10/27/77	PROJ. ENG.	11/2/77	
PROD.	11/4/77	NEXT HIGHER ASSY.	B-DD-RH780-2	
SCALE	1:1	SIZE CODE	D	NUMBER
SHEET	1	OF	1	DIST.

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DATA/CONTROL PATHS			
DRN. 2/comm	11/17/76	FIRST USED ON	VAX 11780
CHK'D [Signature]	11/22/77	TITLE	MASS BUS ADAPTER BLOCK DIAGRAM
ENG. [Signature]	11/23/77		MBA
PROJ. ENG. [Signature]	11/17/77		
PROD. [Signature]	11/17/77		
NEXT HIGHER ASSY.			
B-DD-RH780-0	SIZE	CODE	NUMBER
SCALE	D	BD	RH780-0-3
SHEET 1 OF 4	DIST.		

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REVISIONS		
CHK	CHANGE NO.	REV.

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D BD RH780-0-3

NOTE: THIS CONNECTOR CARD PLUGS IN FROM THE PW SIDE OF THE BACKPLANE. SIDE 1 PINS AND SIDE 2 PINS ARE REVERSED.

MASSBUS PADDLE CARD SLOT 5



REVISIONS		
CHK	CHANGE NO.	REV.

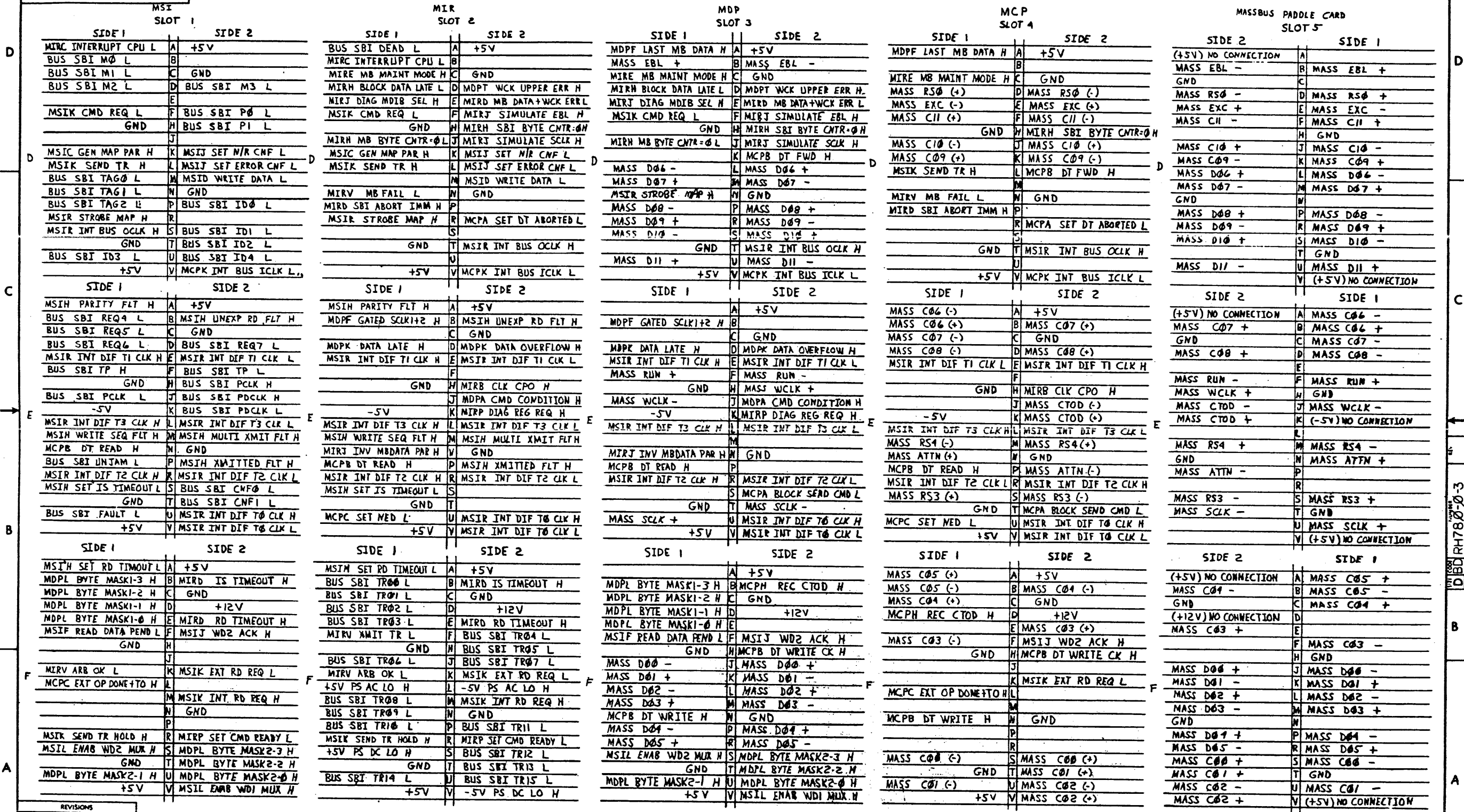
(MBA ETCHED BACKPLANE)

TITLE	MASSBUS ADAPTER BLOCK DIAGRAM	SIZE/CODE	D BD RH780-0-3	NUMBER		REV.	
SCALE		SHEET	3	OF	4	DIST.	

D BD RH780-0-3

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NOTE: THIS CONNECTOR CARD PLUGS IN FROM THE PIN SIDE OF THE BACKPLANE. SIDE 1 PINS AND SIDE 2 PINS ARE REVERSED.

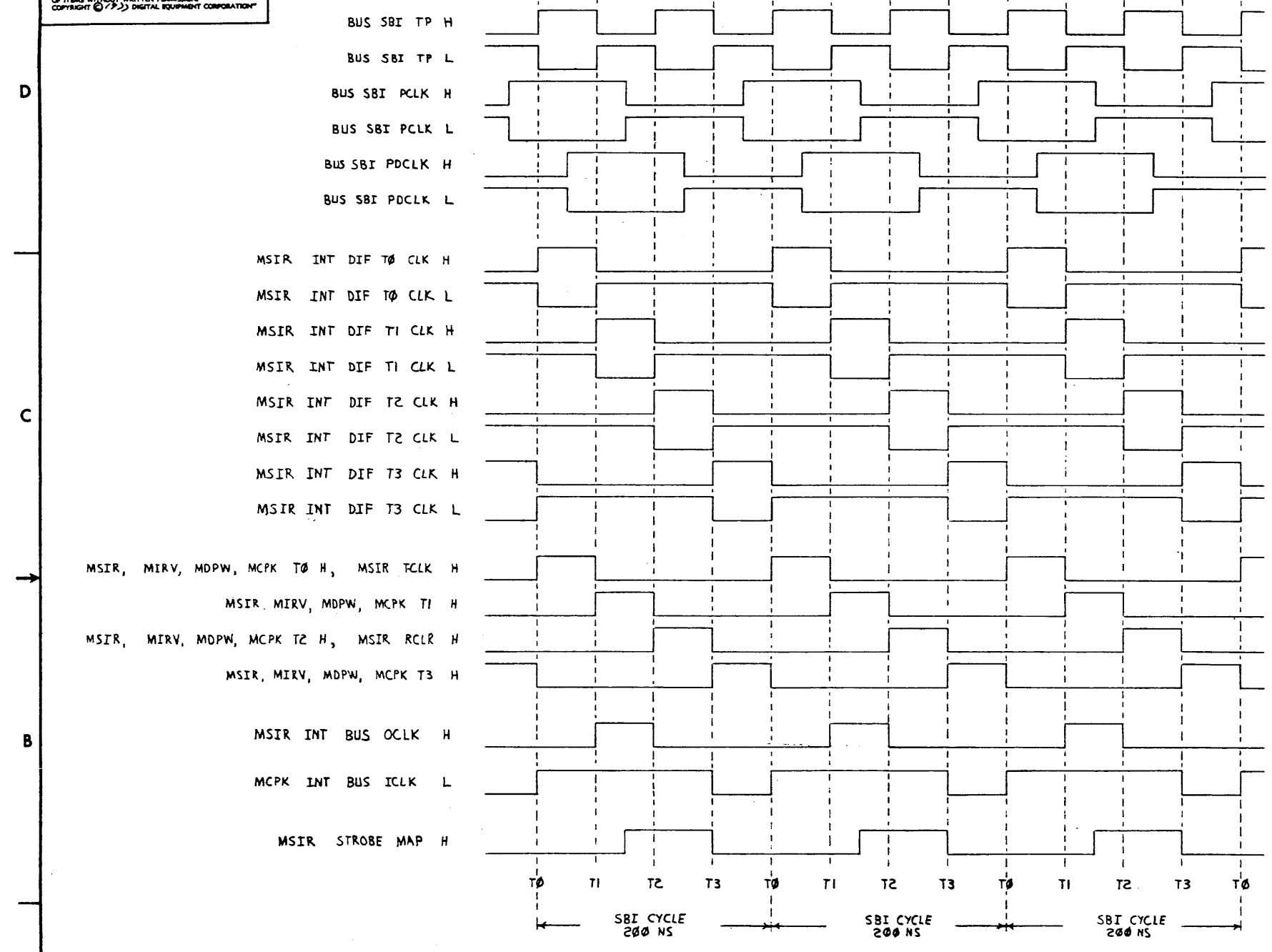


CHK	CHANGE NO	REV.

TITLE MASSBUS ADAPTER BLOCK DIAGRAM  
 SCALE 1/1 SHEET 4 OF 4  
 (MBA ETCHED BACKPLANE)  
 NUMBER D BD RH780-0-3  
 DIST. REV.

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



ECL LEVELS

TTL LEVELS

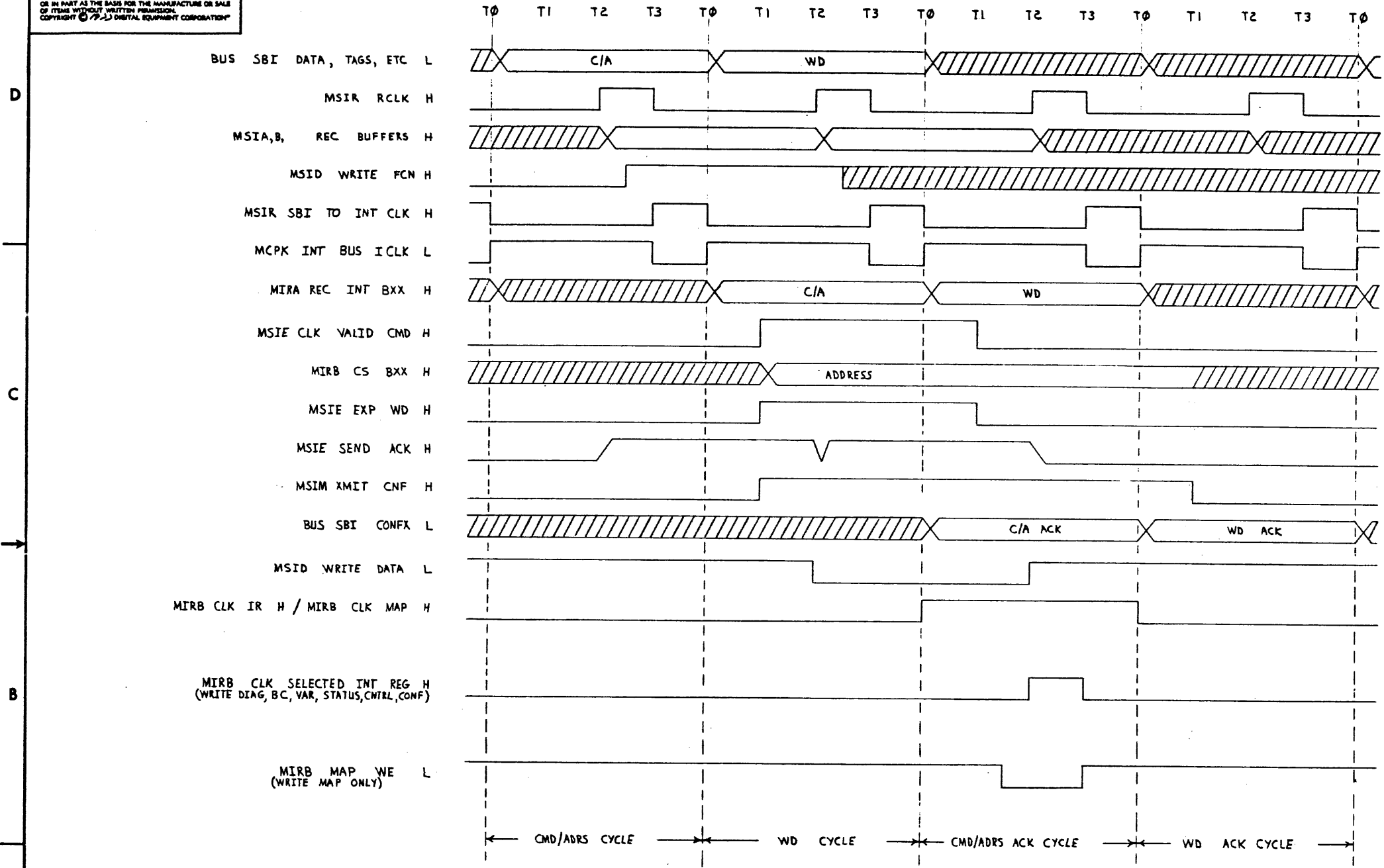
REVISIONS		
CHK	CHANGE NO.	REV.
RL	RH780-00001	A
J. CLARKE 6 MAR 78		
KORIN		

*(LATOR MBA TIMING SIGNALS)*

DRN.	CHK'D	ENG.	PROJ. ENG.	PROB.	FIRST USED ON	VAX 11780	<b>digital</b>	
					TITLE	MBA TIMING DIAG.		
NEXT HIGHER ASSY.					SIZE	CODE	NUMBER	REV.
B-DD-RH780-0					D	TD	RH780-0-4	A
SCALE					SHEET		OF 10	DIST.

REV. A  
 DTD RH780-0-4  
 NUMBER

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NOTES:  
 1. PROPAGATION DELAYS WHERE SHOWN, ARE USED TO POINT OUT PERIODS OF CHANGING DATA.  
 2. CROSS-HATCHED AREAS REPRESENT "DON'T CARE" PERIODS

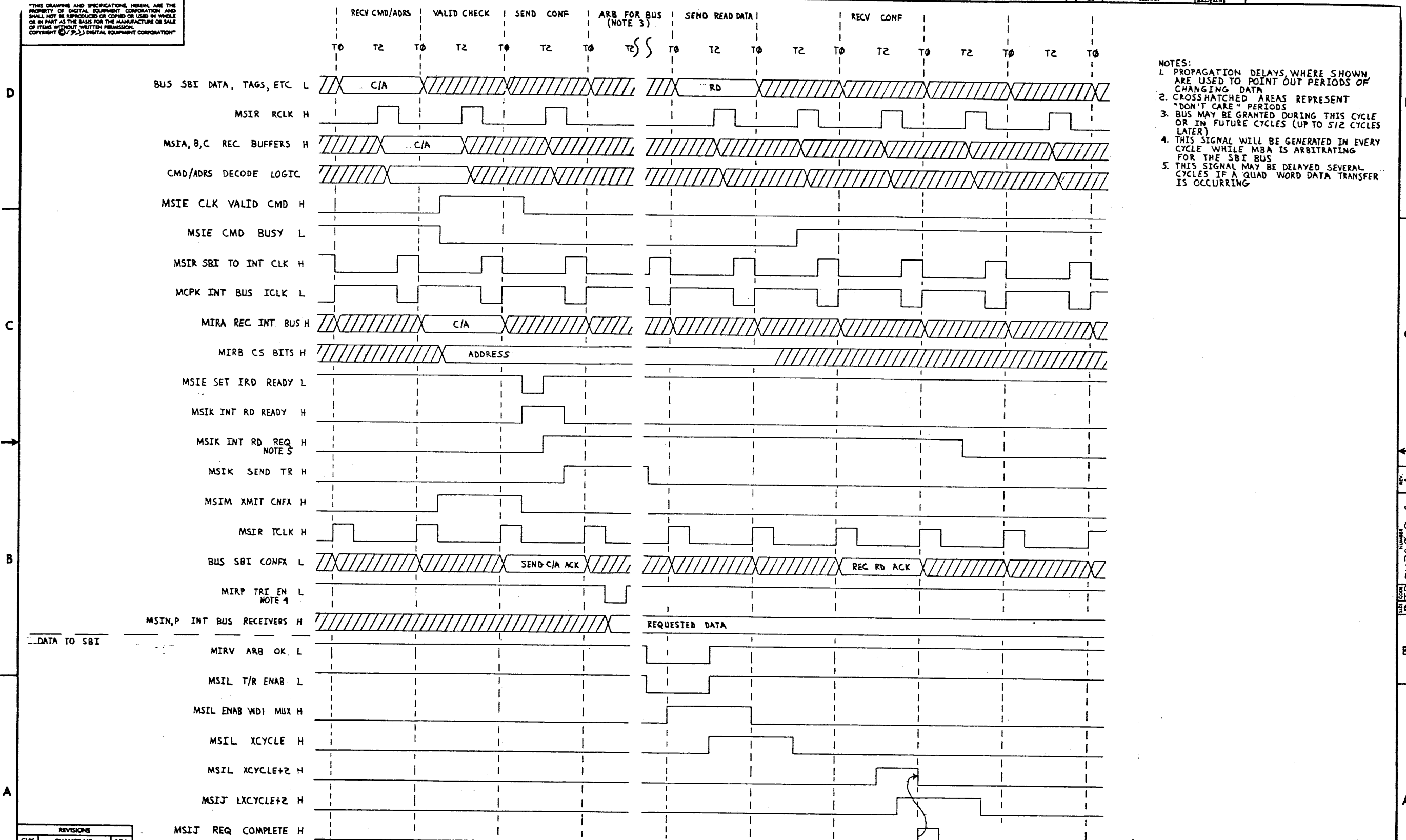
REVISIONS		
CHK	CHANGE NO.	REV.

(WRITE INTERNAL REGISTER / WRITE MAP)

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

DITD RH780-0-4

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- NOTES:
1. PROPAGATION DELAYS WHERE SHOWN ARE USED TO POINT OUT PERIODS OF CHANGING DATA.
  2. CROSSHATCHED AREAS REPRESENT "DON'T CARE" PERIODS.
  3. BUS MAY BE GRANTED DURING THIS CYCLE OR IN FUTURE CYCLES (UP TO 512 CYCLES LATER).
  4. THIS SIGNAL WILL BE GENERATED IN EVERY CYCLE WHILE MBA IS ARBITRATING FOR THE SBI BUS.
  5. THIS SIGNAL MAY BE DELAYED SEVERAL CYCLES IF A QUAD WORD DATA TRANSFER IS OCCURRING.

REVISIONS		
CHK	CHANGE NO.	REV.

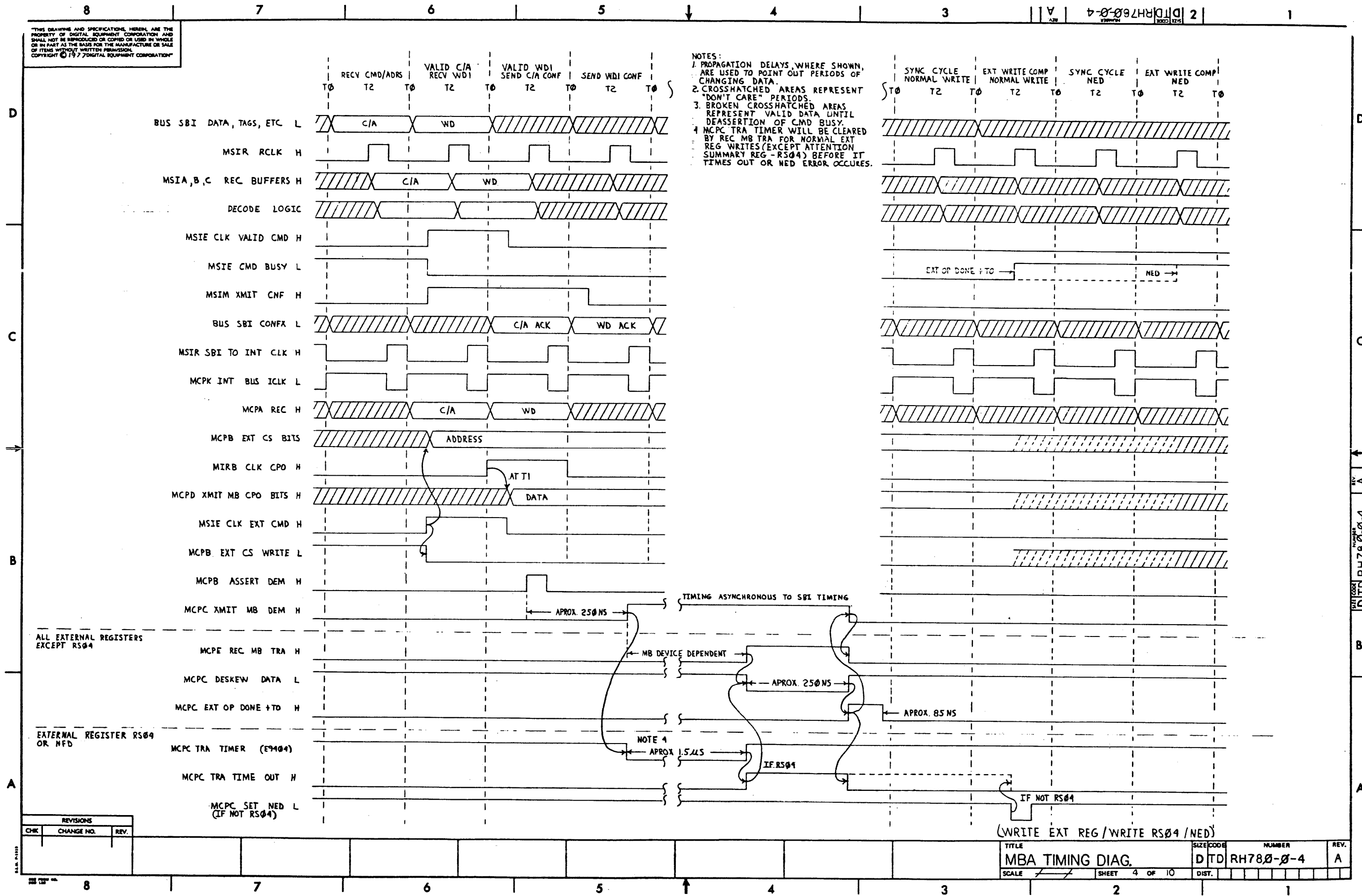
(READ INTERNAL REGISTER/READ MAP)

TITLE	SIZE CODE	NUMBER	REV.
MBA TIMING DIAG.	DTD	RH780-0-4	A
SCALE	SHEET	OF	DIST.
	3	10	



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- 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.



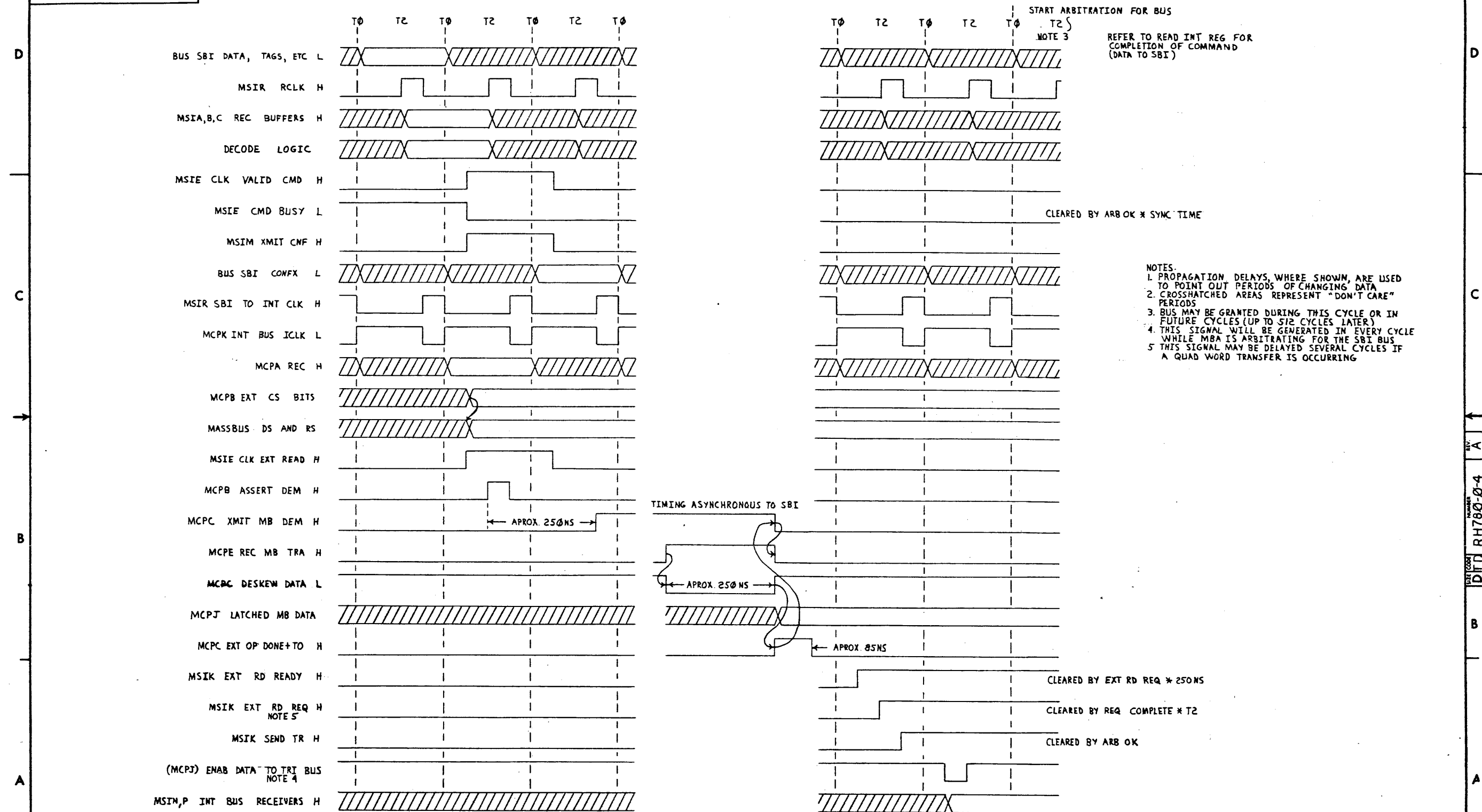
REVISIONS		
CHK	CHANGE NO.	REV.

(WRITE EXT REG / WRITE RS04 / NED)

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

DTD RH780-0-4  
 NUMBER  
 4 OF 10

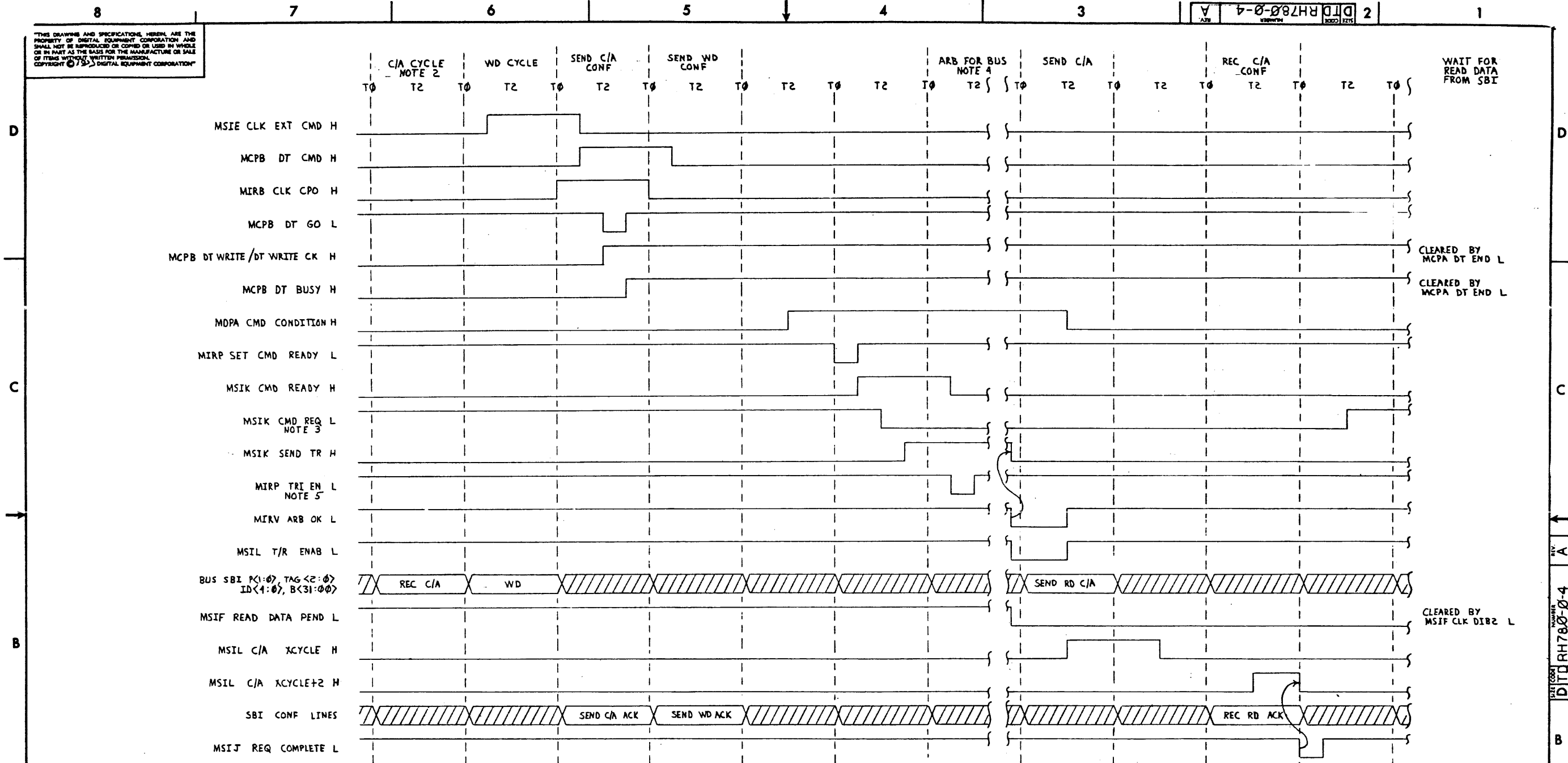
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- NOTES:
1. PROPAGATION DELAYS, WHERE SHOWN, ARE USED TO POINT OUT PERIODS OF CHANGING DATA
  2. CROSSHATCHED AREAS REPRESENT "DON'T CARE" PERIODS
  3. BUS MAY BE GRANTED DURING THIS CYCLE OR IN FUTURE CYCLES (UP TO 512 CYCLES LATER)
  4. THIS SIGNAL WILL BE GENERATED IN EVERY CYCLE WHILE MBA IS ARBITRATING FOR THE SBI BUS
  5. THIS SIGNAL MAY BE DELAYED SEVERAL CYCLES IF A QUAD WORD TRANSFER IS OCCURRING

REVISIONS		
CHK	CHANGE NO.	REV.

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- NOTES:
1. IT IS ASSUMED THAT ALL INTERNAL AND EXTERNAL REGISTERS HAVE BEEN PROPERLY LOADED.
  2. REFER TO WRITE EXTERNAL TIMING FOR OTHER SIMULTANEOUS EVENTS PERTAINING TO WRITE EXT. REG.
  3. CMD REQ MAY BE DELAYED SEVERAL CYCLES IF INT OR EXT RD REQ IS IN PROGRESS.
  4. BUS MAY BE GRANTED DURING THIS CYCLE OR IN FUTURE CYCLES (UP TO 512 CYCLES LATER).
  5. THIS SIGNAL WILL BE GENERATED IN EVERY CYCLE WHILE MBA IS ARBITRATING FOR THE BUS.

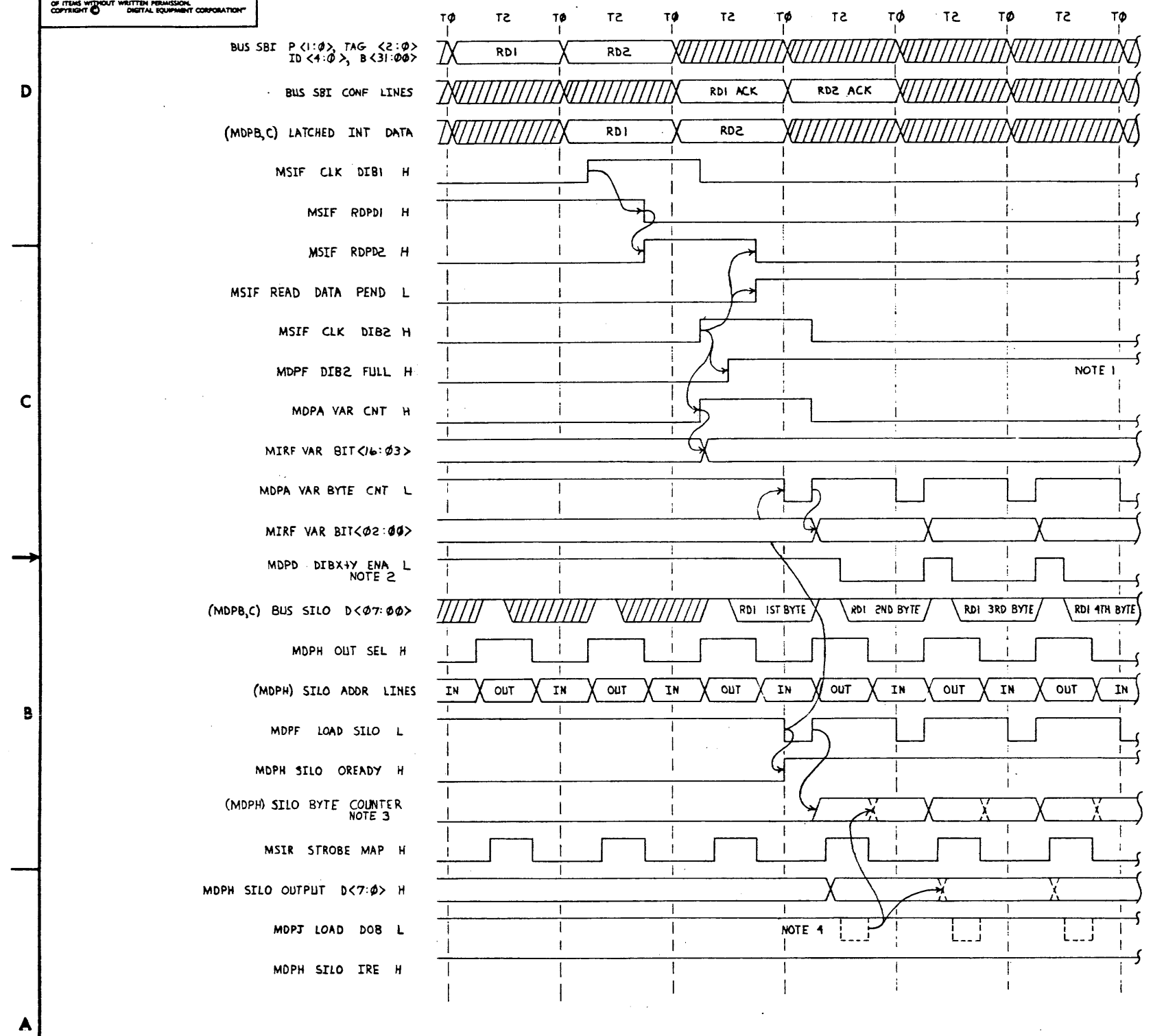
REVISIONS		
CHK	CHANGE NO.	REV.

(DATA TRANSFER WRITE / WRITE CHECK INITIATION)

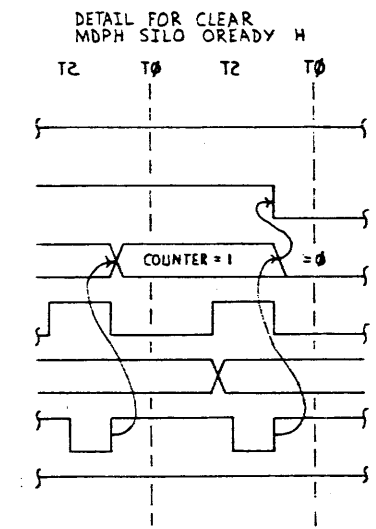
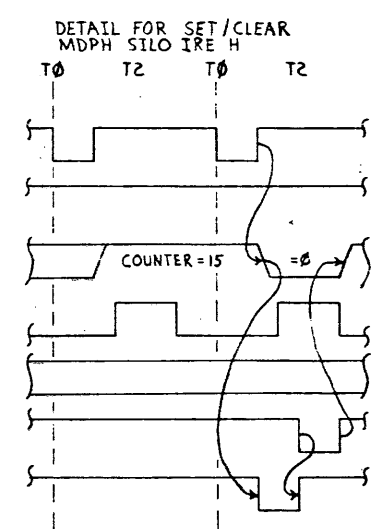
TITLE	SIZE CODE	NUMBER	REV.
MBA TIMING DIAG.	DTD RH780-0-4	2	A
SCALE	SHEET 6 OF 10	DIST.	

DTD RH780-0-4  
 SHEET 6 OF 10

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- 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.

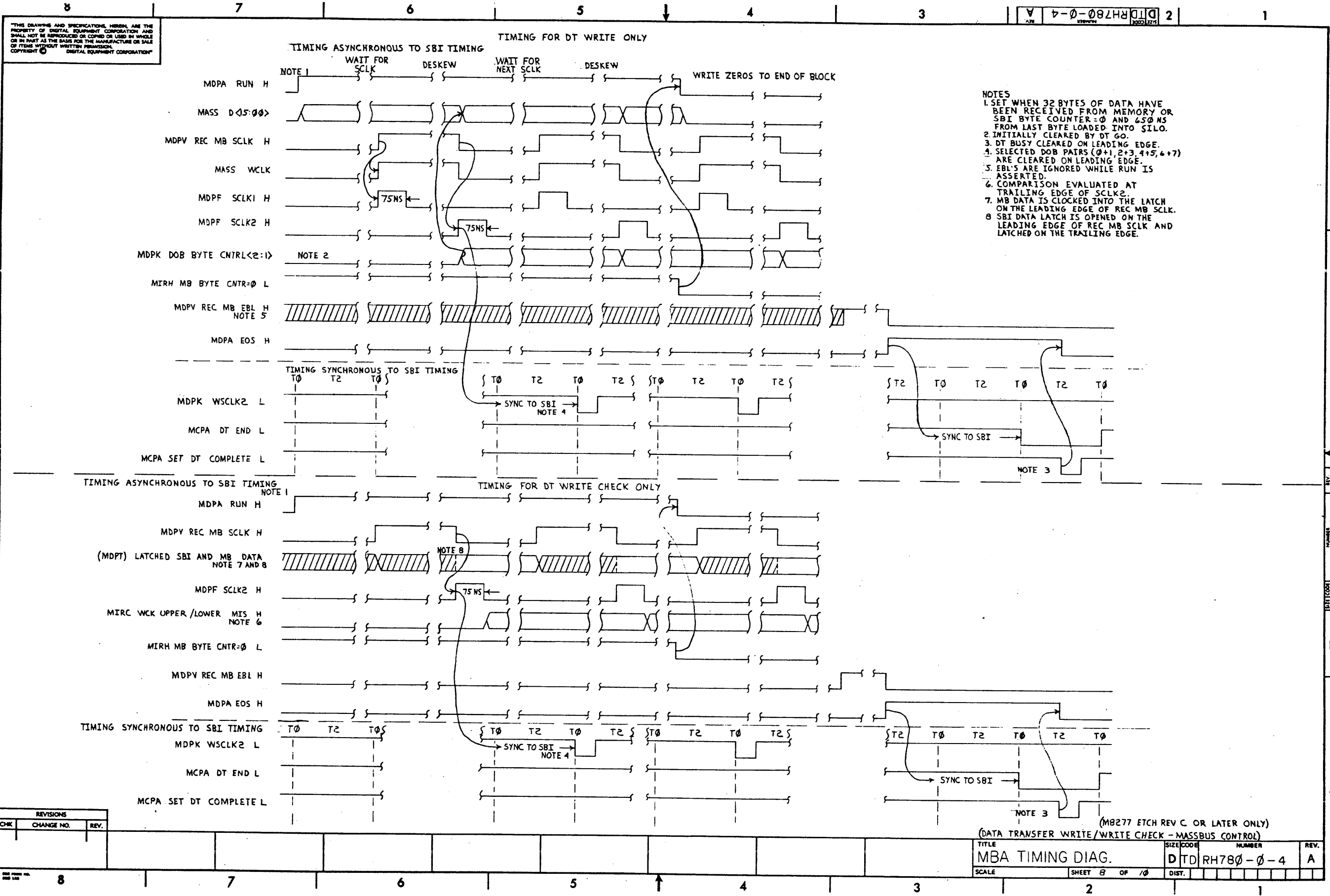


(M8277 ETCH REV C OR LATER)

(DATA TRANSFER WRITE/WRITE CHECK - SILO CONTROL)

REVISIONS		
CHK	CHANGE NO.	REV.

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



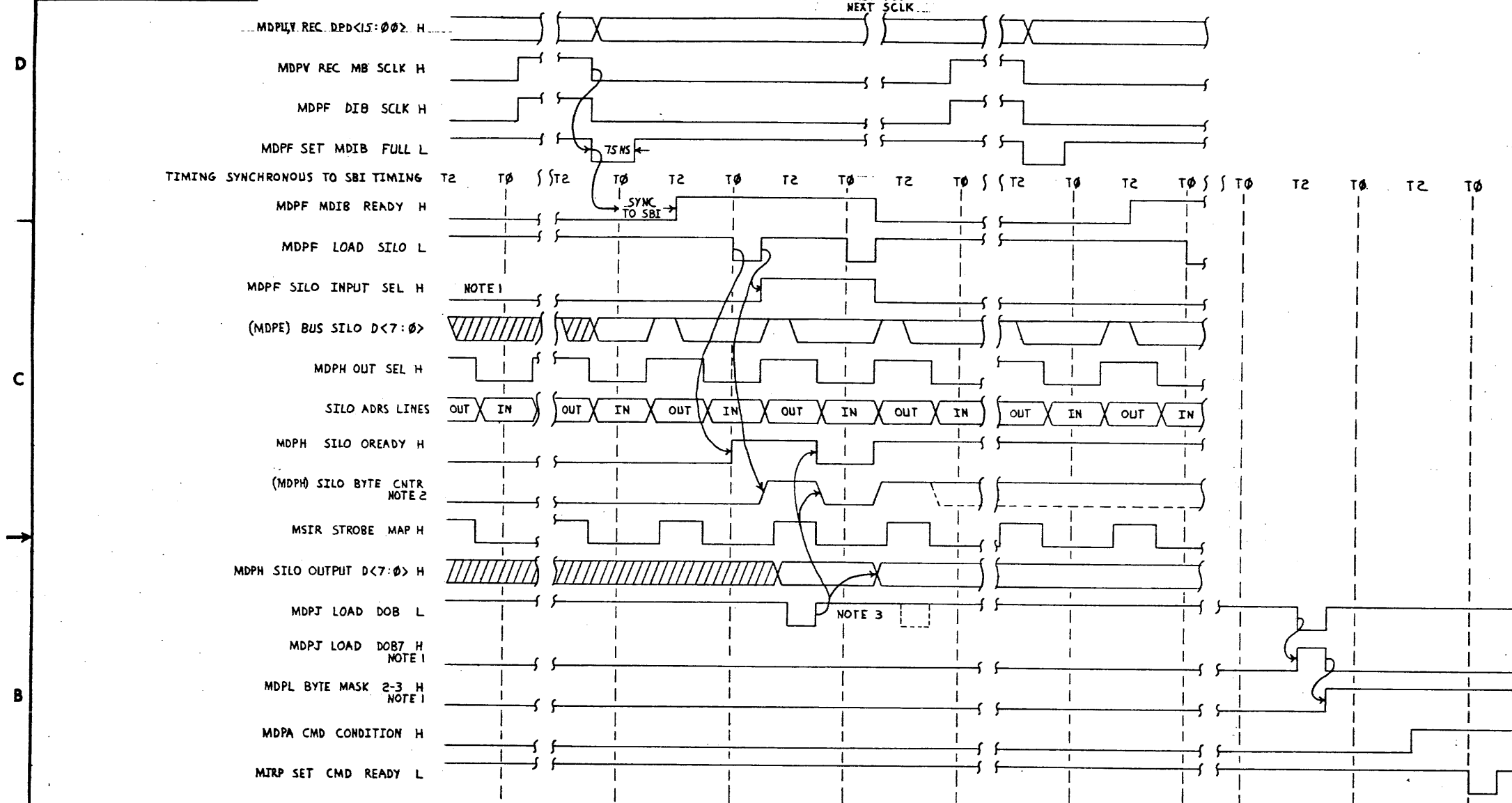
REVISIONS		
CHK	CHANGE NO.	REV.

(M8277 ETCH REV C. OR LATER ONLY)  
 (DATA TRANSFER WRITE/WRITE CHECK - MASSBUS CONTROL)

TITLE	SIZE/COO	NUMBER	REV.
MBA TIMING DIAG.	D TD	RH780-0-4	A
SCALE	SHEET 8	OF 10	DIST.

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TIMING ASYNCHRONOUS TO SBI TIMING



- NOTES:
1. FOR READ REVERSE, SILO INPUT SEL WILL INITIALLY BE SET HIGH, LOAD DOB 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

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

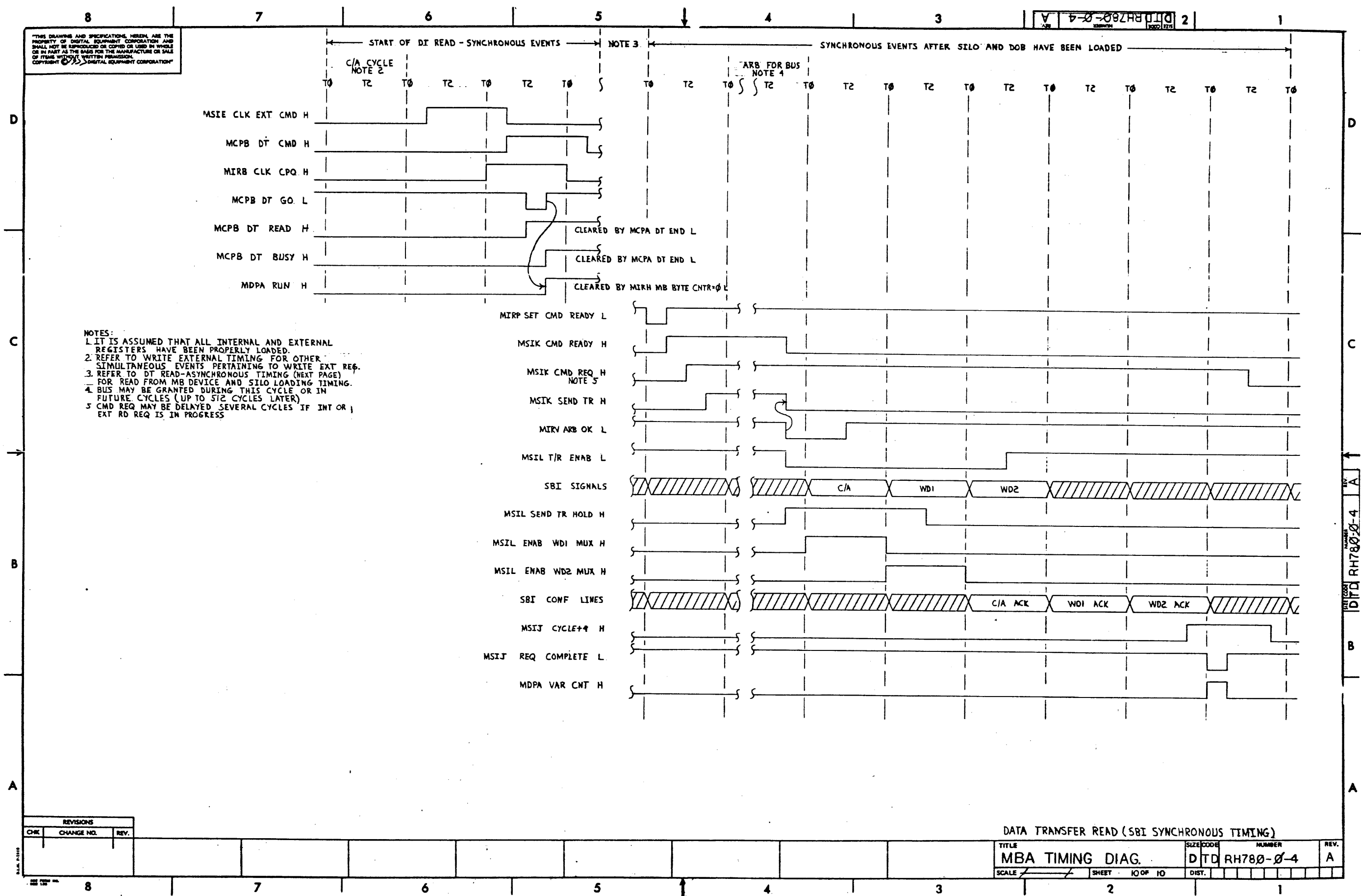
REVISIONS		
CHK	CHANGE NO.	REV.

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

TITLE	SIZE CODE	NUMBER	REV.
MBA TIMING DIAG.	D T D R H 7 8 0 - 0 - 4	2	A
SCALE	SHEET 2 OF 10	DIST.	

D T D R H 7 8 0 - 0 - 4 A

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- NOTES:  
 1 IT IS ASSUMED THAT ALL INTERNAL AND EXTERNAL REGISTERS HAVE BEEN PROPERLY LOADED.  
 2 REFER TO WRITE EXTERNAL TIMING FOR OTHER SIMULTANEOUS EVENTS PERTAINING TO WRITE EXT REQ.  
 3 REFER TO DT READ-ASYNCHRONOUS TIMING (NEXT PAGE) FOR READ FROM MB DEVICE AND SILO LOADING TIMING.  
 4 BUS MAY BE GRANTED DURING THIS CYCLE OR IN FUTURE CYCLES (UP TO 512 CYCLES LATER).  
 5 CMD REQ MAY BE DELAYED SEVERAL CYCLES IF INT OR EXT RD REQ IS IN PROGRESS

CLEARED BY MCPA DT END L  
 CLEARED BY MCPA DT END L  
 CLEARED BY MIRH MB BYTE CNTR-0 L

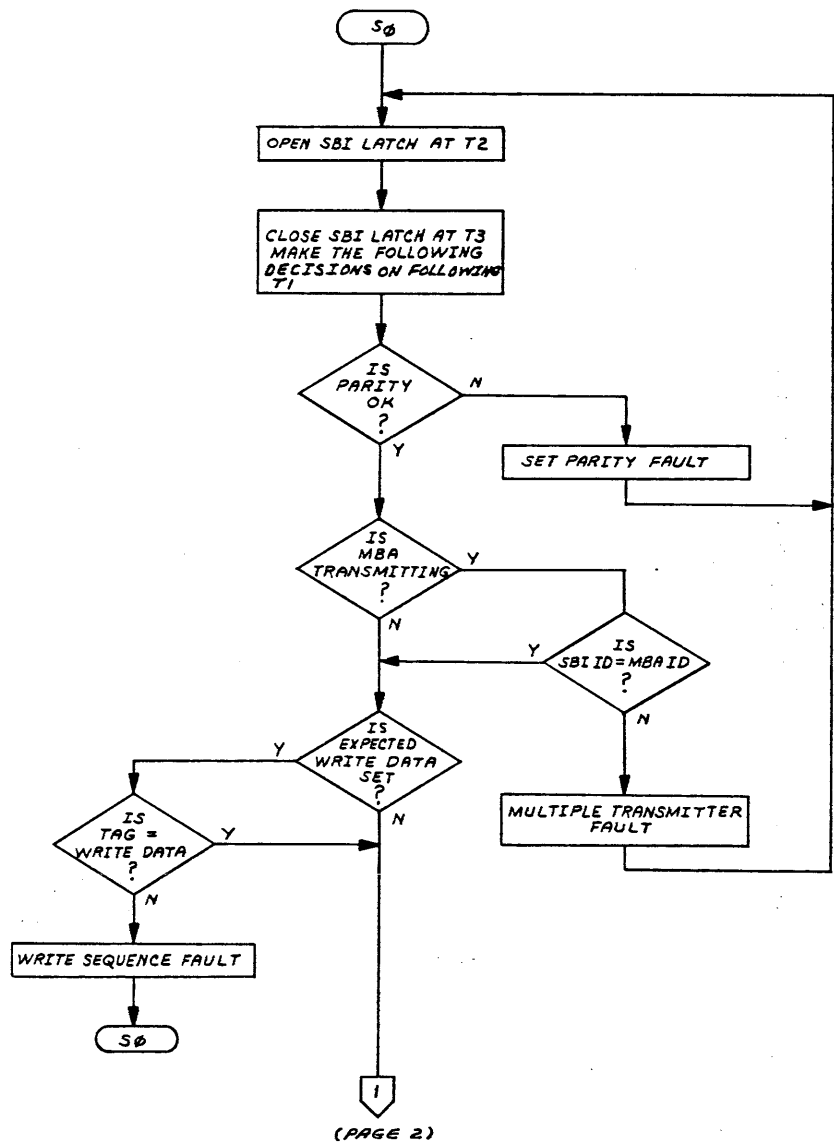
DATA TRANSFER READ (SBI SYNCHRONOUS TIMING)

REVISIONS		
CHK	CHANGE NO.	REV.

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

DITD RH780-0-4

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(PAGE 2)

(SBI DECODE & VALID CHECK)

DRN. <i>3-12-77</i>	FIRST USED ON	VAX 11780	<b>digital</b>
CHK'D. <i>3-12-77</i>	TITLE	MBA FLOW DIAG.	
ENG. <i>3-12-77</i>	PROJ. ENG. <i>3-12-77</i>	SCALE	REV.
PROD. <i>3-12-77</i>	NEXT HIGHER ASSY.	B-DD-RH780-0	D FD RH780-0-5
SHEET 1 OF 8		DIST.	

REVISIONS		
CHK	CHANGE NO.	REV.

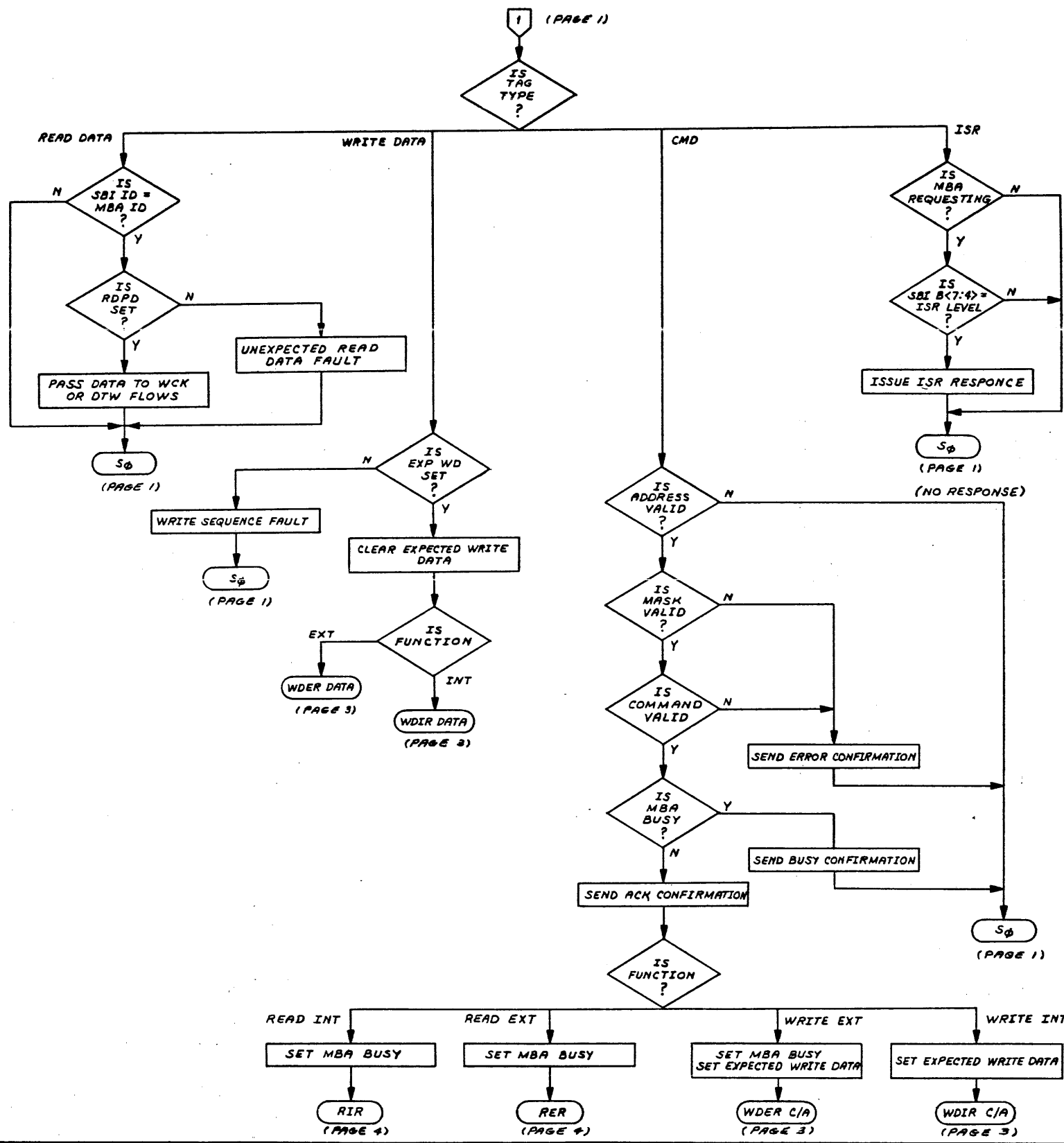
DFD RH780-0-5  
 1  
 2  
 3  
 4  
 5  
 6  
 7  
 8



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5-0-09ZHR 2

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)

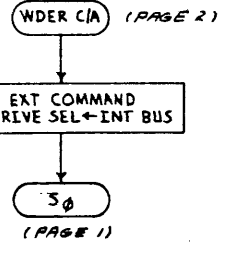
REVISIONS		
CHK	CHANGE NO.	REV.

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

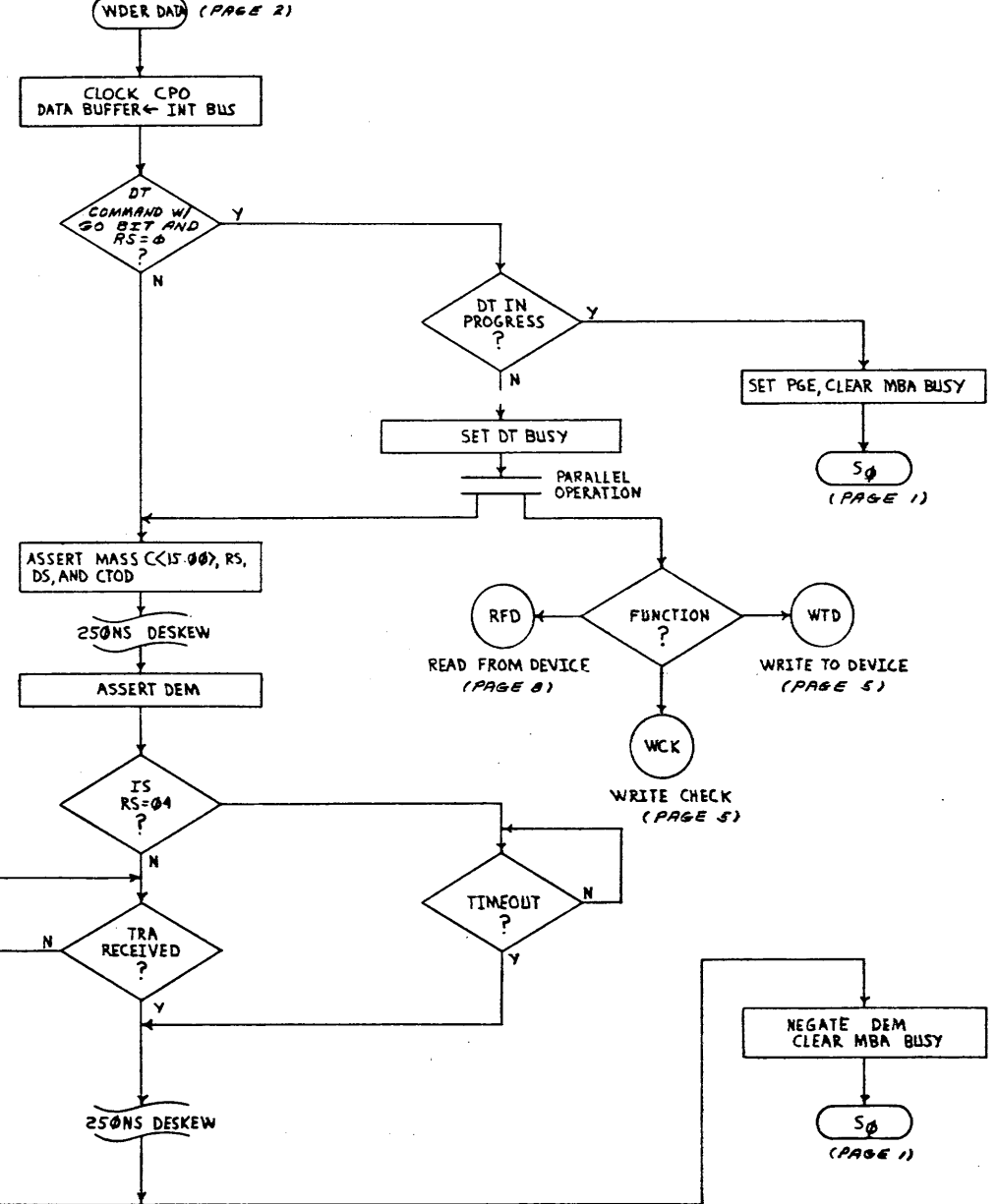
REV. 1  
 NUMBER  
 D FD RH780-0-5

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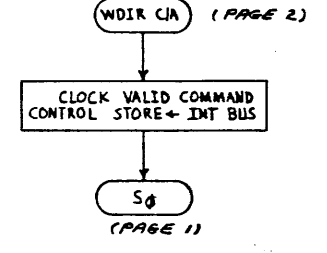
WRITE EXTERNAL REG - C/A



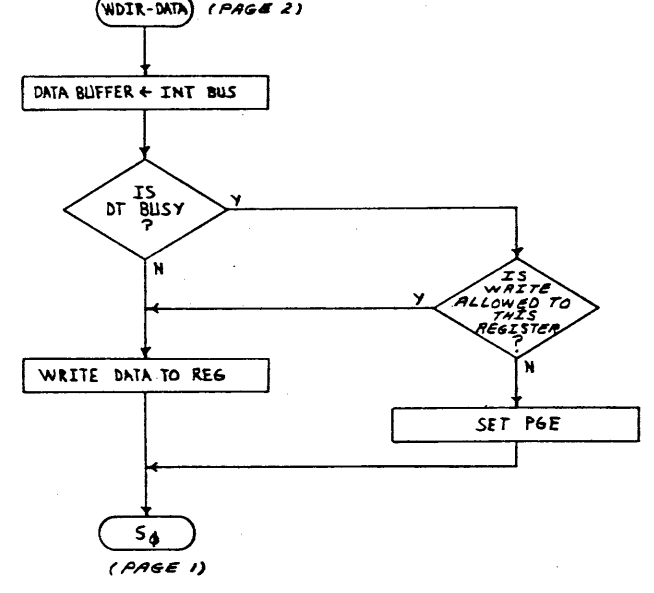
WRITE EXTERNAL REG - DATA



WRITE INTERNAL REG - C/A



WRITE INTERNAL REG - DATA



(WRITE EXTERNAL/WRITE INTERNAL REGISTER)

REVISIONS		
CHK	CHANGE NO.	REV.

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

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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)

TIMEOUT ?

Y

N

250 NS DESKEW

STROBE DATA INTO REG

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

CLEAR MBA BUSY

S0

(PAGE 1)

TIMEOUT ?

Y

N

SET IS TIMEOUT

REVISIONS		
CHK	CHANGE NO.	REV.

(READ EXTERNAL / READ INTERNAL REGISTER)

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

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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

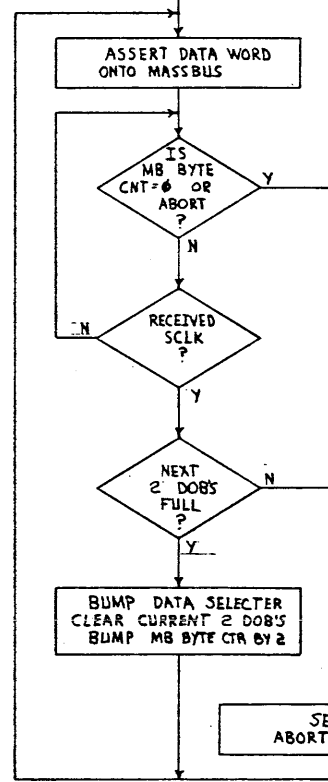
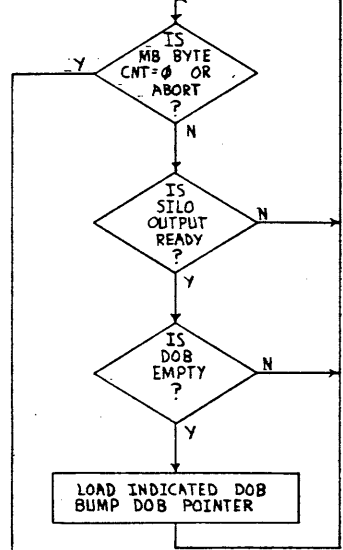
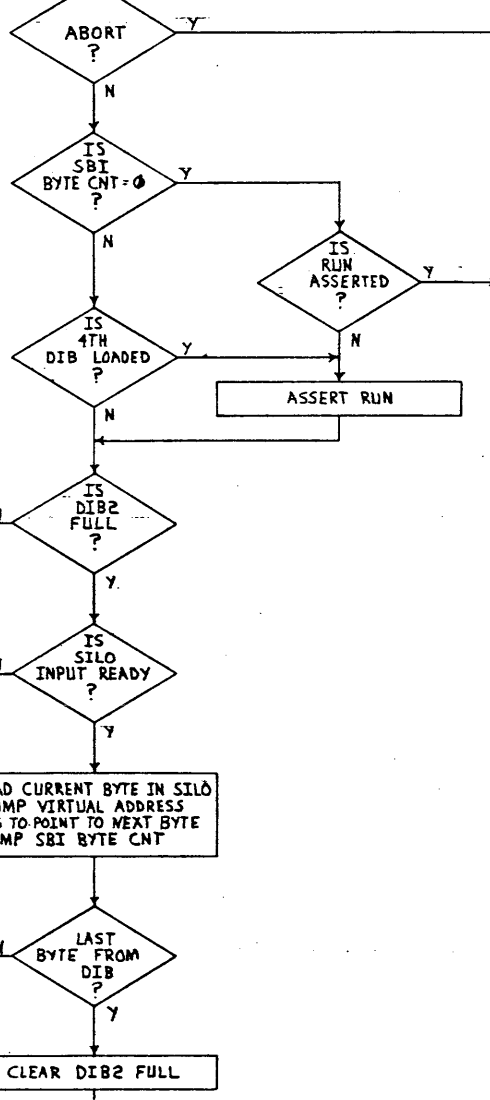
PARALLEL OPERATIONS

SILO INPUT CONTROL

SILO OUTPUT CONTROL

MASSBUS DATA CONTROL

SBI CONTROL



WRITE FUNCTION WRITE CHECK

NEGATE RUN

RECEIVED EBL?

ABORTED?

SET DT ABORT  
SET DT COMPLETE

(PAGE 6,7)

2

SELECT DATA WORD FROM DOB'S FOR COMPARISON

IS MB BYTE CNT=0 OR ABORT?

RECEIVED SCLK?

NEXT 2 DOB'S FULL?

STORE MASSBUS DATA AND COMPARE WITH DOB'S

IS COMPARE OK?

SET WCKERR

ABORT TRANSFER

BUMP DATA SELECTOR  
CLEAR CURRENT 2 DOB'S  
BUMP MB BYTE CTR

1 (PAGE 6)

50 (PAGE 1)

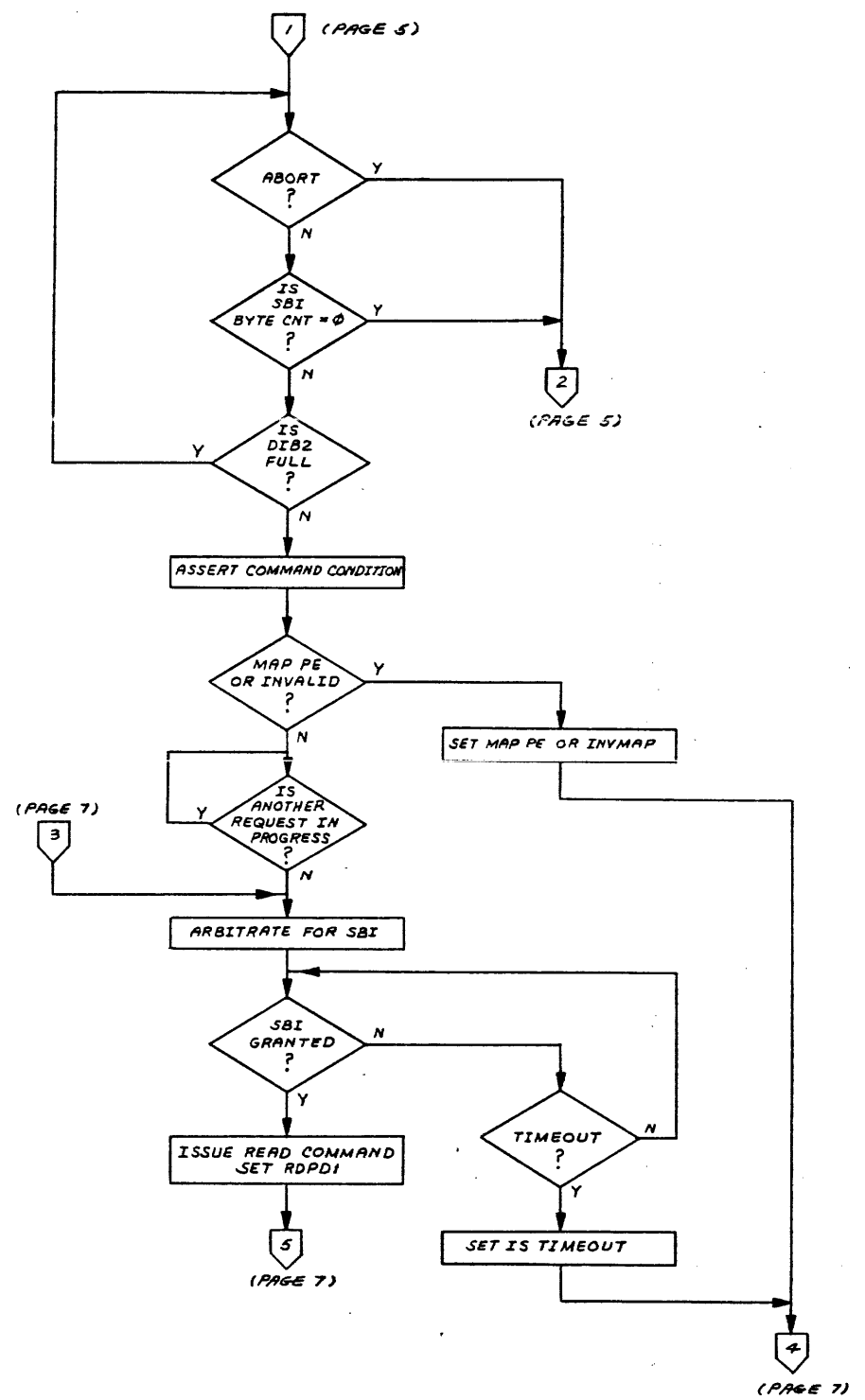
REVISIONS		
CHK	CHANGE NO.	REV.

(WRITE TO DEVICE / WRITE CHECK)

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

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SBI CONTROL

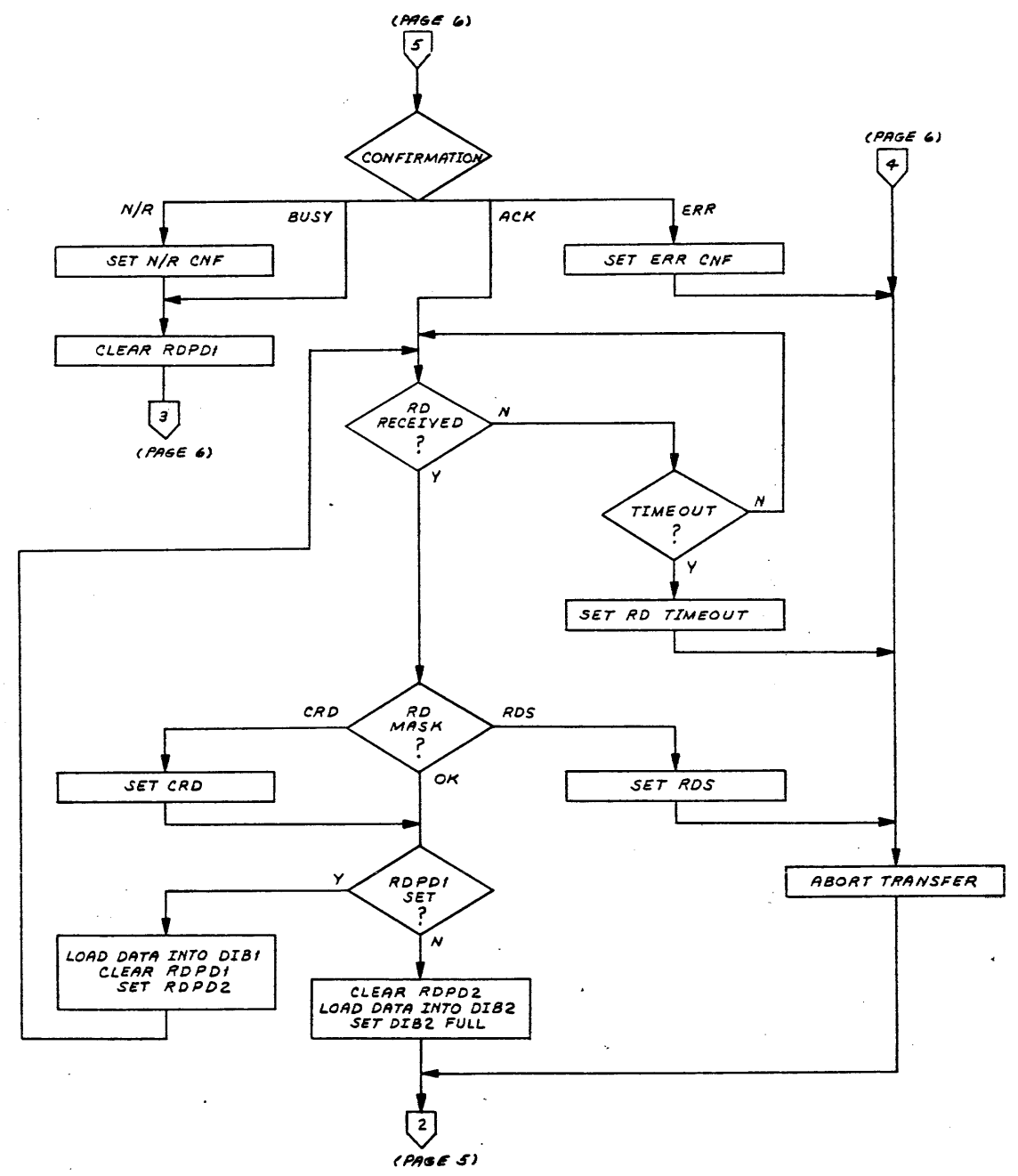


(WRITE TO DEVICE/WRITE CHECK (SBI CONTROL))

REVISIONS		
CHK	CHANGE NO.	REV.

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

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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	DIST.	
	7 OF 8		

D F D R H 7 8 0 - 0 - 5

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

INITIALIZE SILO  
ASSERT RUN  
INITIALIZE MDIB SEL  
INITIALIZE DOB LOAD CNTL

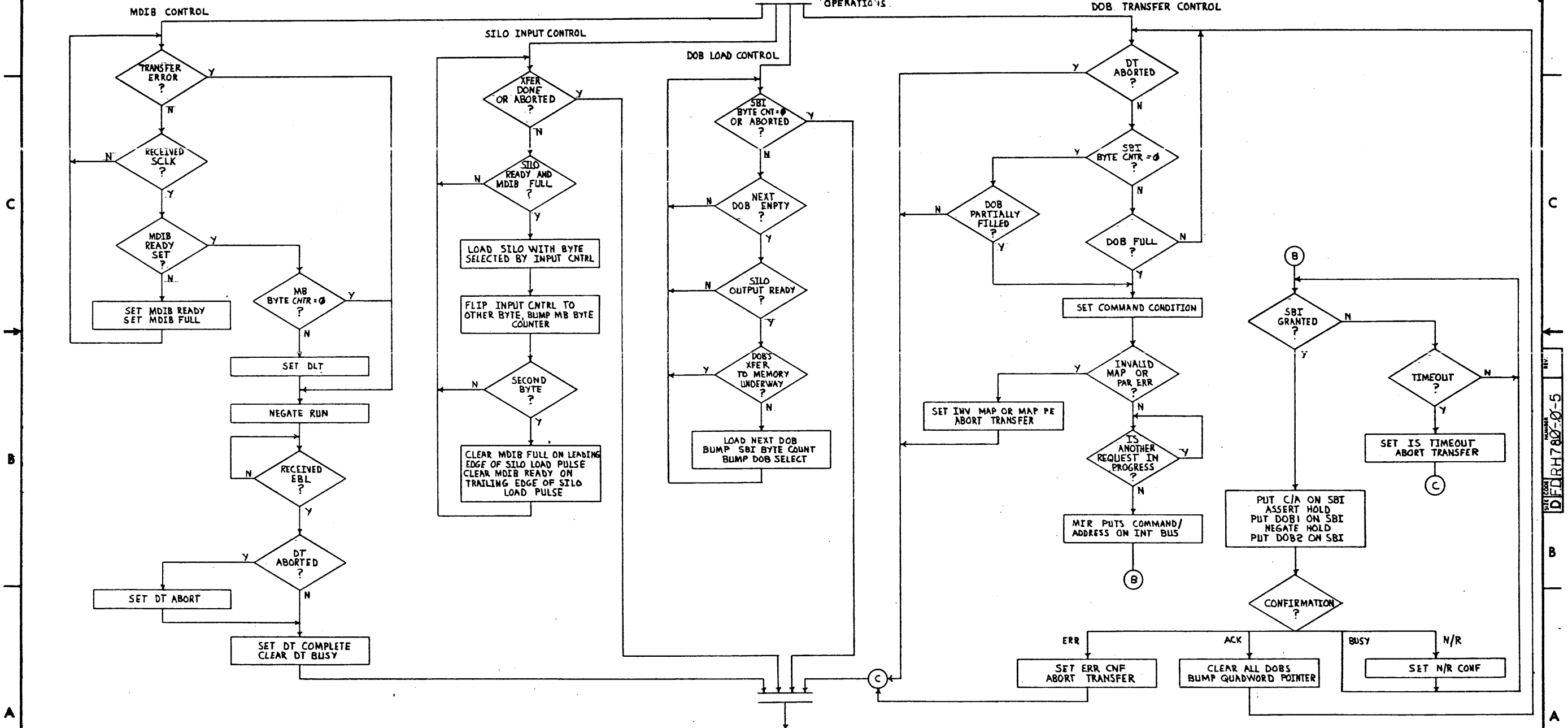
PARALLEL OPERATIONS

MDIB CONTROL

SILO INPUT CONTROL

DOB LOAD CONTROL

DOB TRANSFER CONTROL



Sg (PAGE 1)

(READ FROM MASSBUS DEVICE)

REVISIONS		
CHK	CHANGE NO.	REV.

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

DFDRH780-0-5



COMPONENT SIDE VIEW

DATE	12/27/77
DESIGNED BY	W. J. WILSON
CHECKED BY	L. J. WILSON
PROJECT	MS 1
SCALE	AS SHOWN
REV. OF	3
REV. NO.	1
REV. DATE	12/27/77
REV. BY	W. J. WILSON
REV. REASON	REVISED
REV. NO.	2
REV. DATE	12/27/77
REV. BY	W. J. WILSON
REV. REASON	REVISED
REV. NO.	3
REV. DATE	12/27/77
REV. BY	W. J. WILSON
REV. REASON	REVISED

digital  
TITLE MS 1  
PROJECT NUMBER  
UUA M8275-0-0

REV. NO.	1
REV. DATE	12/27/77
REV. BY	W. J. WILSON
REV. REASON	REVISED
REV. NO.	2
REV. DATE	12/27/77
REV. BY	W. J. WILSON
REV. REASON	REVISED
REV. NO.	3
REV. DATE	12/27/77
REV. BY	W. J. WILSON
REV. REASON	REVISED

REV. NO.	1
REV. DATE	12/27/77
REV. BY	W. J. WILSON
REV. REASON	REVISED
REV. NO.	2
REV. DATE	12/27/77
REV. BY	W. J. WILSON
REV. REASON	REVISED
REV. NO.	3
REV. DATE	12/27/77
REV. BY	W. J. WILSON
REV. REASON	REVISED

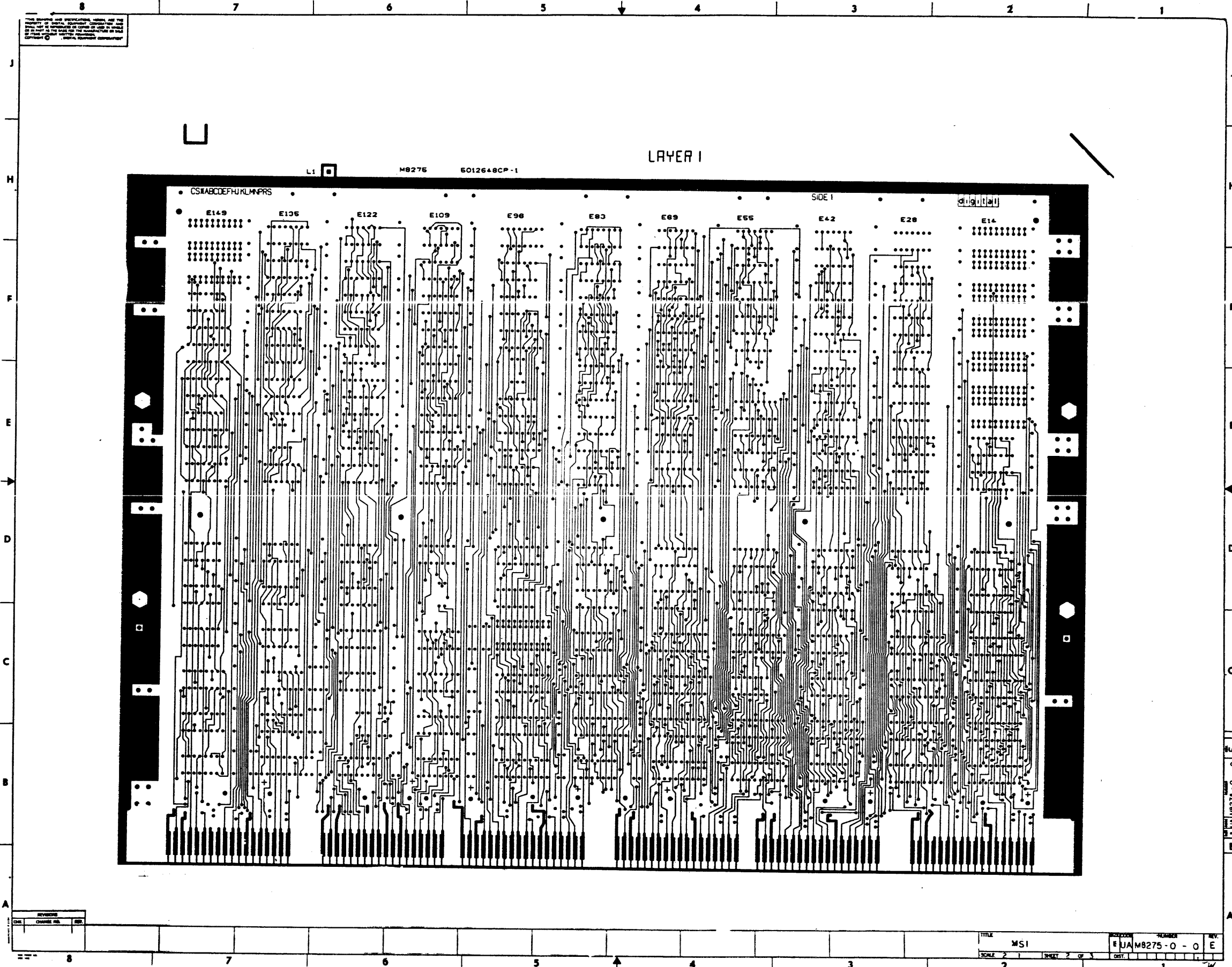
REV. NO.	1
REV. DATE	12/27/77
REV. BY	W. J. WILSON
REV. REASON	REVISED
REV. NO.	2
REV. DATE	12/27/77
REV. BY	W. J. WILSON
REV. REASON	REVISED
REV. NO.	3
REV. DATE	12/27/77
REV. BY	W. J. WILSON
REV. REASON	REVISED

NOTES:  
UUA M8275-0-0

UUA M8275-0-0  
REV. 1  
12/27/77  
W. J. WILSON



This drawing and specification, when used in conjunction with the drawings of other electrical components, shall be used as a guide in the construction of the equipment. It is the responsibility of the contractor to verify the accuracy of the information contained herein and to advise the manufacturer of any discrepancies.

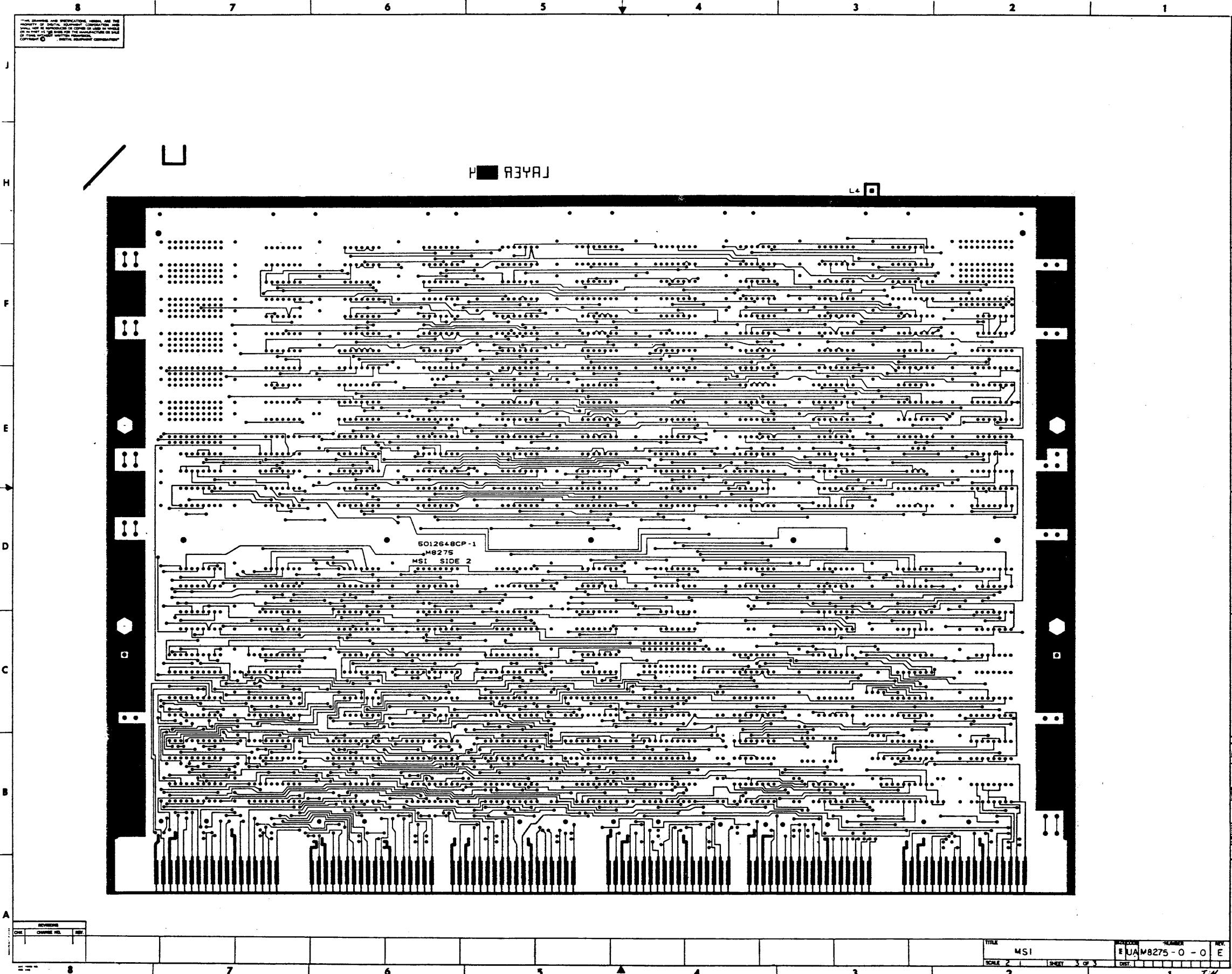


REV	BY	DATE

TITLE	NUMBER	REV.
MS1	EJAM8275-0-0	E
SCALE 2	SHEET 2 OF 3	DIST.

EJAM8275-0-0 E

ALL DIMENSIONS AND INDICATIONS SHALL BE THE PROPERTY OF THE MANUFACTURER. THE USER SHALL NOT BE RESPONSIBLE FOR ANY DAMAGE TO THE BOARD OR TO THE MANUFACTURER'S EQUIPMENT OR TO THE USER'S EQUIPMENT. THE USER SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE BOARD AND THE MANUFACTURER'S EQUIPMENT.



REV	DATE	BY	CHK

TITLE	NUMBER	REV.
MSI	EUA M8275-0-0	E
SCALE 2	SHEET 3 OF 3	DATE

MSI M8275-0-0 E

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION	REFERENCE DESIGNATOR
					00	
1	1	E-MD-5012648-0-0	5012648-00	M8275	1	
2	2		1012084-01	8 MFD 25V 6% 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, CONT 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, CONT 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-D-I GATE 4-2-3-2	9	E106,E66,E105,E119,E121,E122, CONT E133,E147,E81
17	17		1910544-00	74S74 FF-D DUAL,EDGE TRIGG	8	E69,E79,E141,E127,E117,E112, CONT 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	CHK'D:	F.SMART	DATE:	12-JUL-79	TITLE PARTS LIST			
	INITIAL	D	SECTION VARIATION INDEX					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]					DOCUMENT NUMBER			
			! [E]					SIZE	CODE	NUMBER	REV
			! [F]	RESP.ENG.:	K.OKIN	DATE:	12-JUL-79				
			! [H]					K	PL	M8275-0-DBP	E
			! [J]	MFG.ENG.:	M.TERILLO	DATE:	12-JUL-79				
			! [K]								
			! [L]	ASSEMBLY NUMBER:		TOP DOCUMENT NUMBER:				FILE NAME:	EDIT #
			! [M]	E-UA-M8275-0-0						Z0624E.PLS	6
			! [N]								

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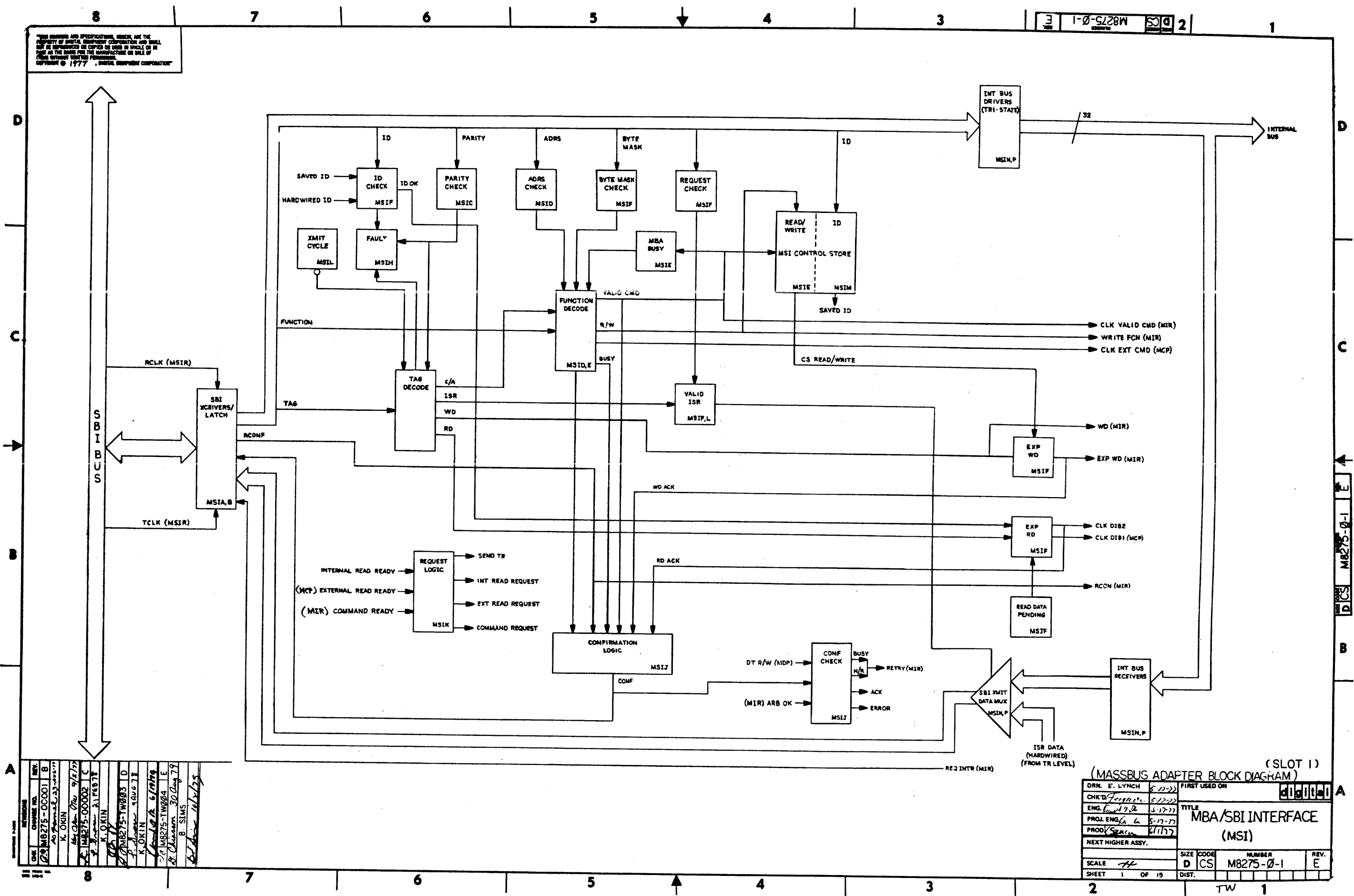
LINE ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
25	25	1910957-00	74S175 FF-D QUAD COMMON CLO	5	E89,E93,E103,E135,E143
26	26	1912824-00	LS74 FF-D DUAL,EDGE TRIGG	1	E95
27	27	1912847-00	LS157 MUX 1 OF 2(QUAD)	2	E136,E137
28	28	1910550-00	74S174 FF-D HEX	2	E64,E91
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	CONT
43	43	1210711-02	HANDLE,MODULE,HEX	1	E8
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	MSI	SECTION A OF A	SIZE	CODE	DOCUMENT NUMBER	REV
										K	PL	M8275-0-DBP	E

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M8275-0-1



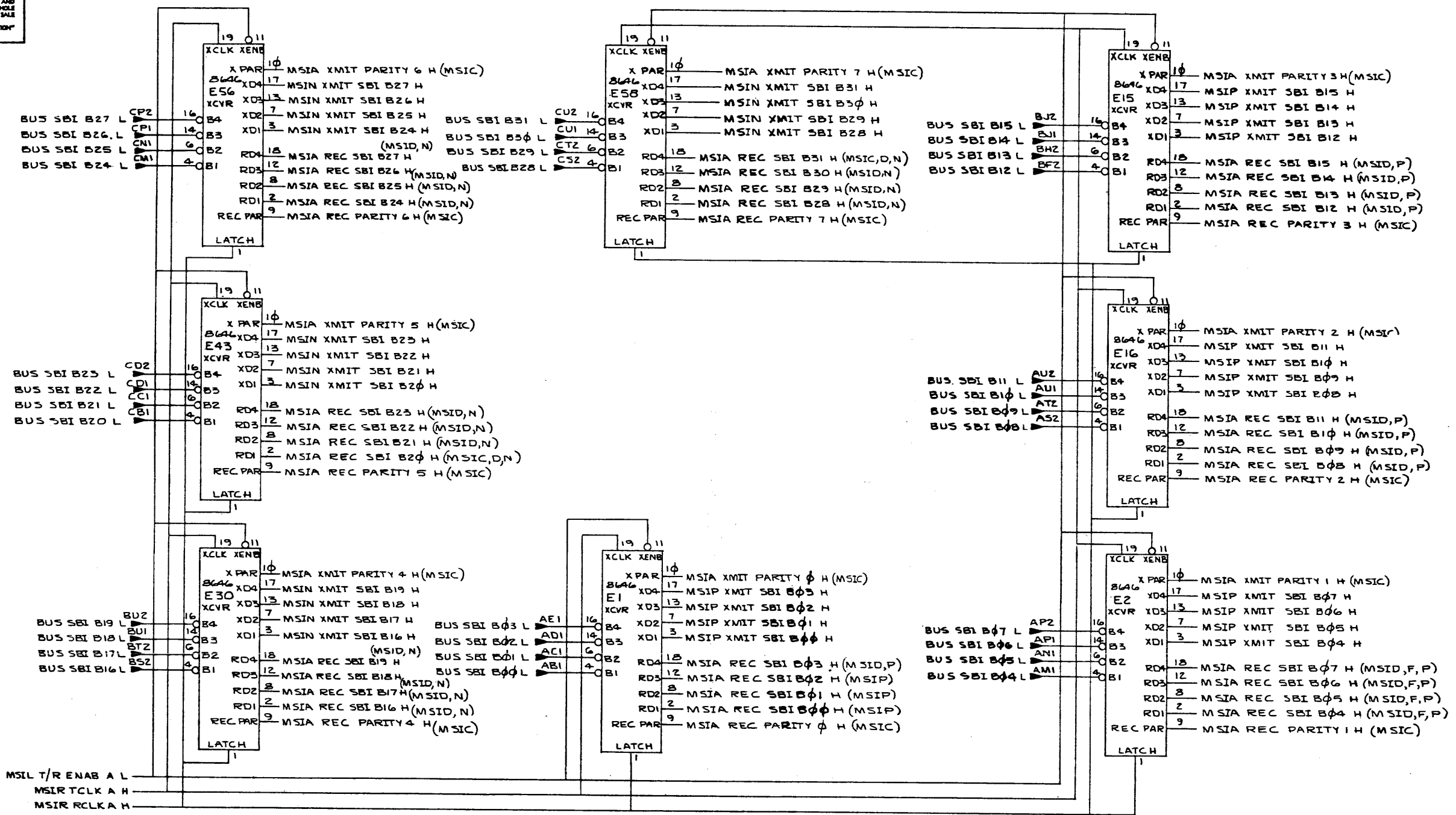
REV.	DATE	BY	CHKD.
1	5-17-77	K. OKIN	
2	5-17-77	K. OKIN	
3	5-17-77	K. OKIN	
4	5-17-77	K. OKIN	
5	5-17-77	K. OKIN	
6	5-17-77	K. OKIN	
7	5-17-77	K. OKIN	
8	5-17-77	K. OKIN	

(SLOT 1)  
(MASSBUS ADAPTER BLOCK DIAGRAM)

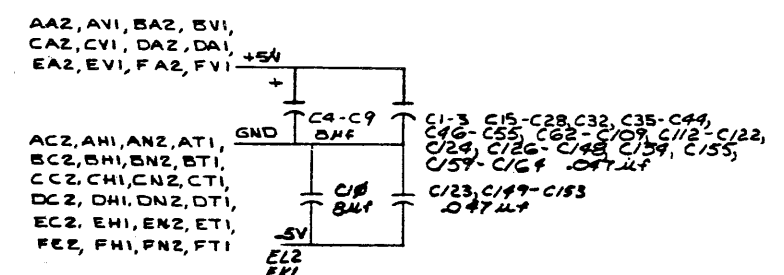
DRN. E. LYNCH	5-17-77	FIRST USED ON	
CHKD. J. LYNCH	5-17-77		
ENG. G. LYNCH	5-17-77	TITLE	MBA/SBI INTERFACE (MSI)
PROJ. ENG. G. LYNCH	5-17-77	SIZE	D CS
PROOF. G. LYNCH	5-17-77	NUMBER	M8275-0-1
NEXT HIGHER ASSY.		REV.	E
SCALE	#	SHEET	1 OF 15
		DIST.	

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10-5220W DCS MB275-01 2



MSIL T/R ENAB A L  
MSIR TCLK A H  
MSIR RCLK A H

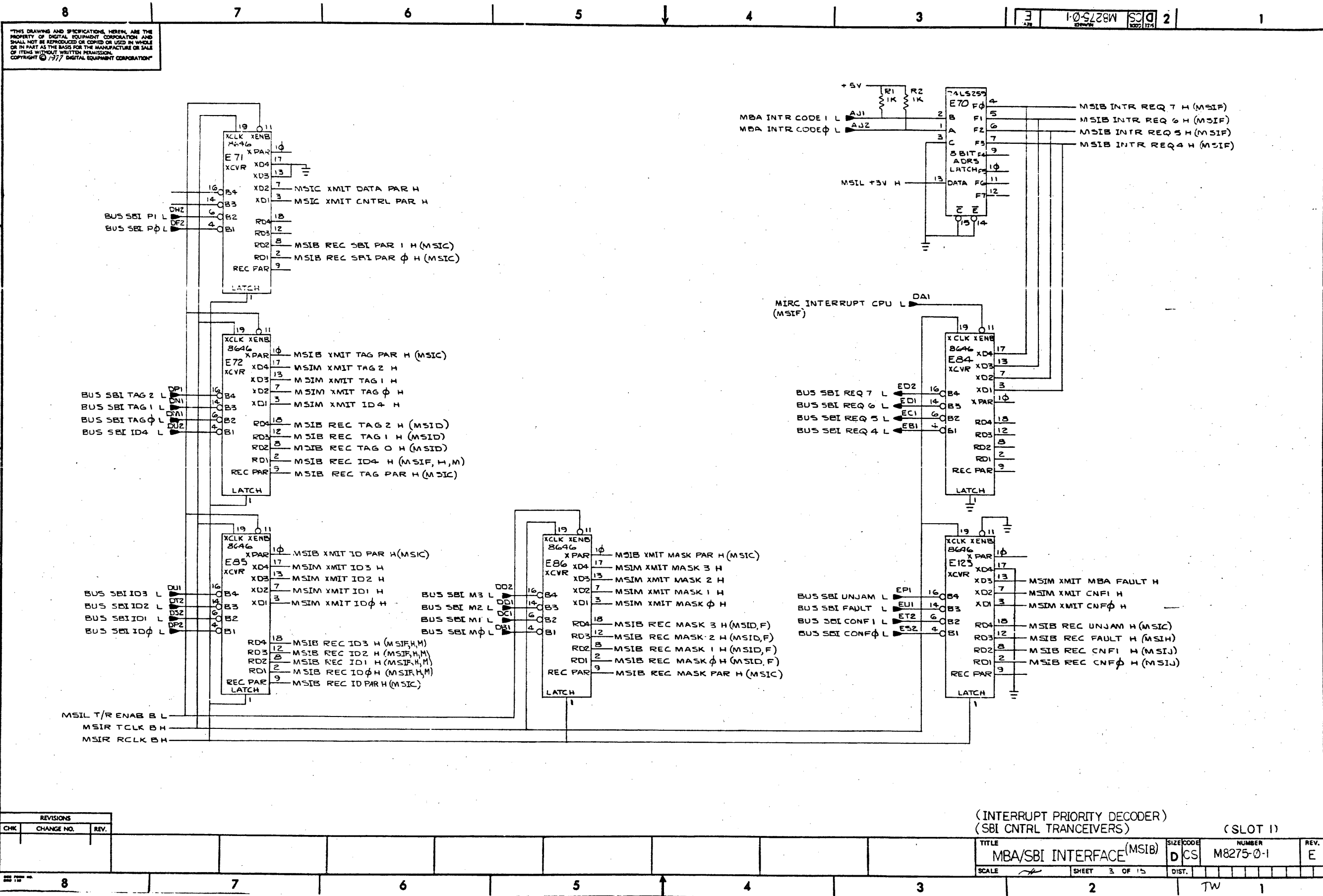


REV.	CHG.	CHANGES NO.	REV.

(SBI TRANCEIVER <31:00>) (SLOT 1)

TITLE	SIZE CODE	NUMBER	REV.
MBA/SBI INTERFACE (MSIA)	D CS	M8275-01	E
SCALE	SHEET	DIST.	
	2 OF 15		

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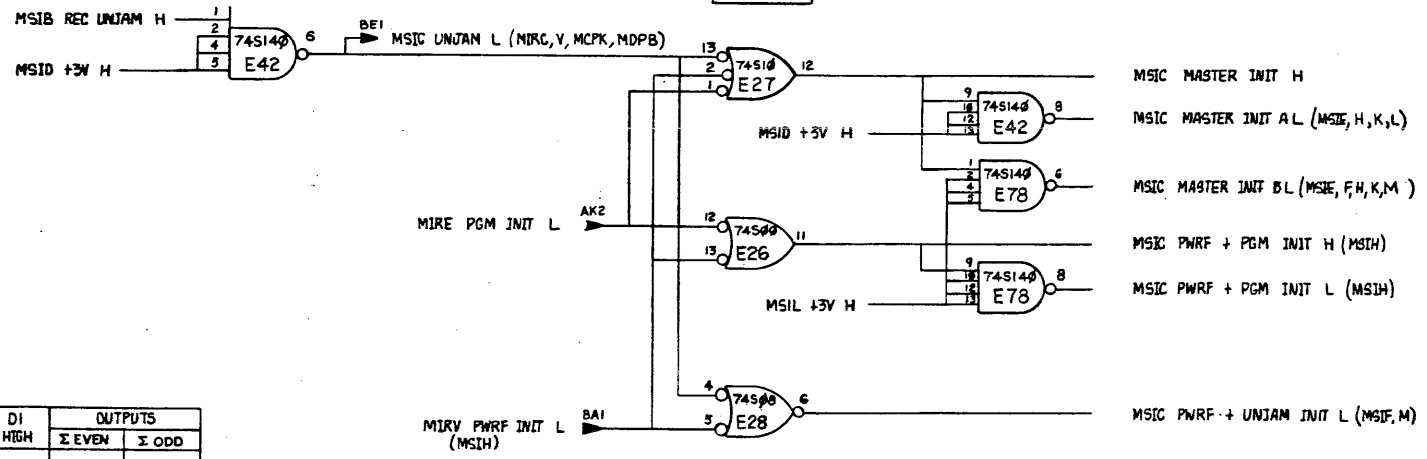
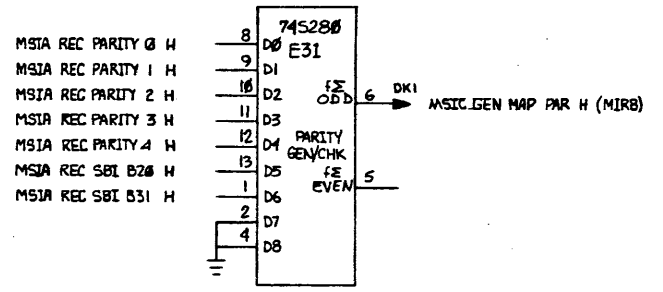
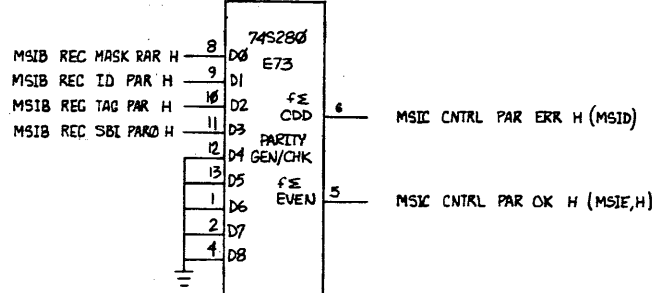
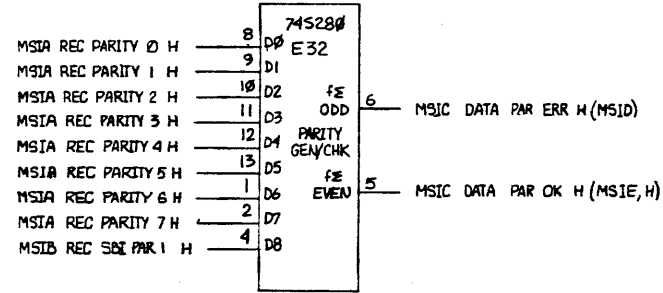
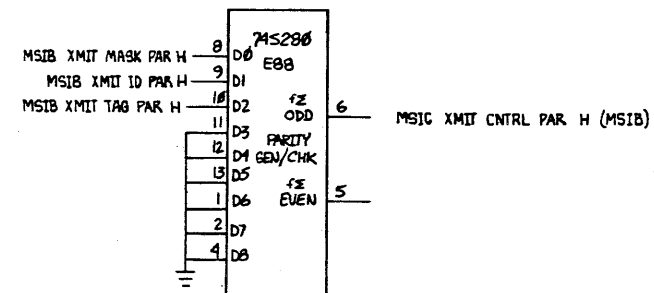
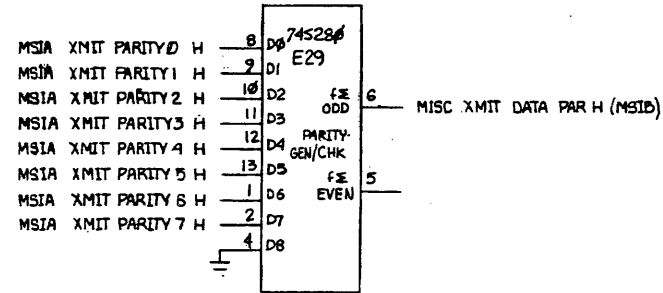
REVISIONS		
CHK	CHANGE NO.	REV.

(INTERRUPT PRIORITY DECODER) (SBI CNTRL TRANCEIVERS)		(SLOT 1)
TITLE MBA/SBI INTERFACE (MSIB)	SIZE CODE D CS	NUMBER M8275-0-1
SCALE	SHEET 3 OF 15	DIST.

REV. E M8275-0-1

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REV. E  
M8275-0-1  
DCS  
SHEET 4 OF 15



NUMBER OF INPUTS DI THRU D8 THAT ARE HIGH	OUTPUTS	
	Σ EVEN	Σ ODD
0, 2, 4, 6, 8	H	L
1, 3, 5, 7, 9	L	H

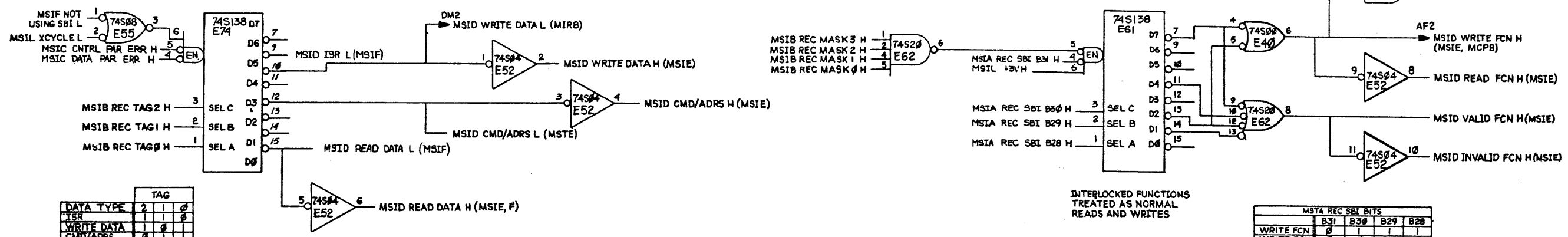
REVISIONS		
CHK	CHANGE NO.	REV.

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



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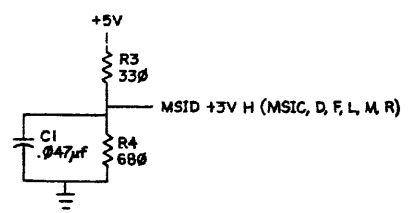
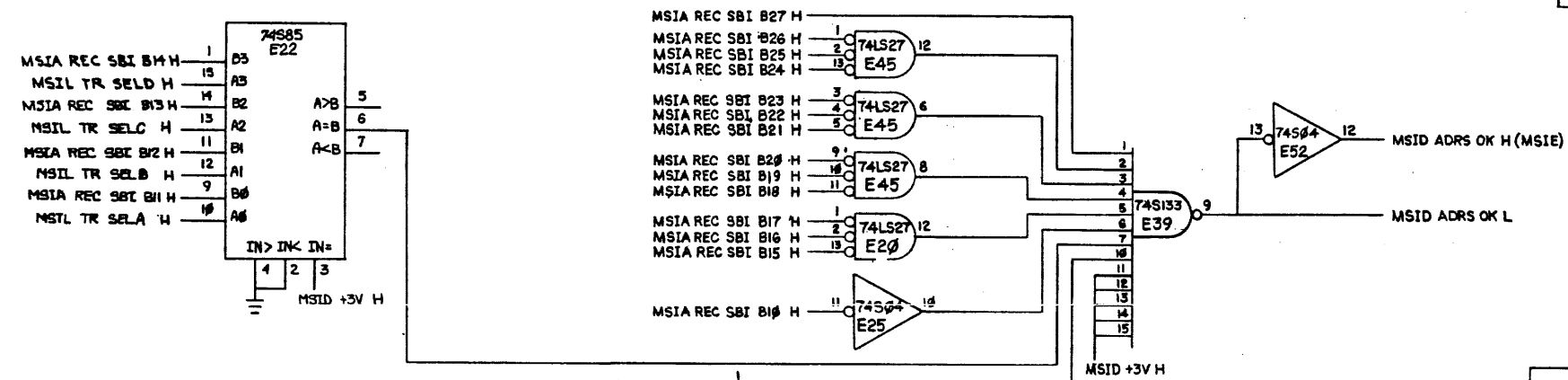
1-0-G128W DCS 2



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

74S85		TAG	
<B0:B4>	IN	A=B	OUT
Y	L	L	L
N	L	H	H
Y	H	L	H
N	H	H	L

MSIA REC SBI BITS				
	B31	B30	B29	B28
WRITE FCN	0	1	1	1
WRITE FCN	0	0	1	0
READ FCN	0	0	1	1
READ FCN	0	1	0	0



74S138		OUTPUT							
ENABLE	SELECT	D0	D1	D2	D3	D4	D5	D6	D7
X	X	H	X	X	X	H	H	H	H
X	H	X	X	X	X	H	H	H	H
L	X	X	X	X	X	H	H	H	H
H	L	L	L	L	L	L	H	H	H
H	L	L	L	L	H	L	H	H	H
H	L	L	L	H	L	L	H	H	H
H	L	L	H	L	L	L	H	H	H
H	L	L	H	H	L	L	H	H	H
H	L	L	H	L	H	L	H	H	H
H	L	L	H	H	H	L	H	H	H
H	L	L	H	H	H	H	L	H	H
H	L	L	H	H	H	H	H	L	H
H	L	L	H	H	H	H	H	H	L

MSIA REC SBI BITS				
SIGNAL NAME	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

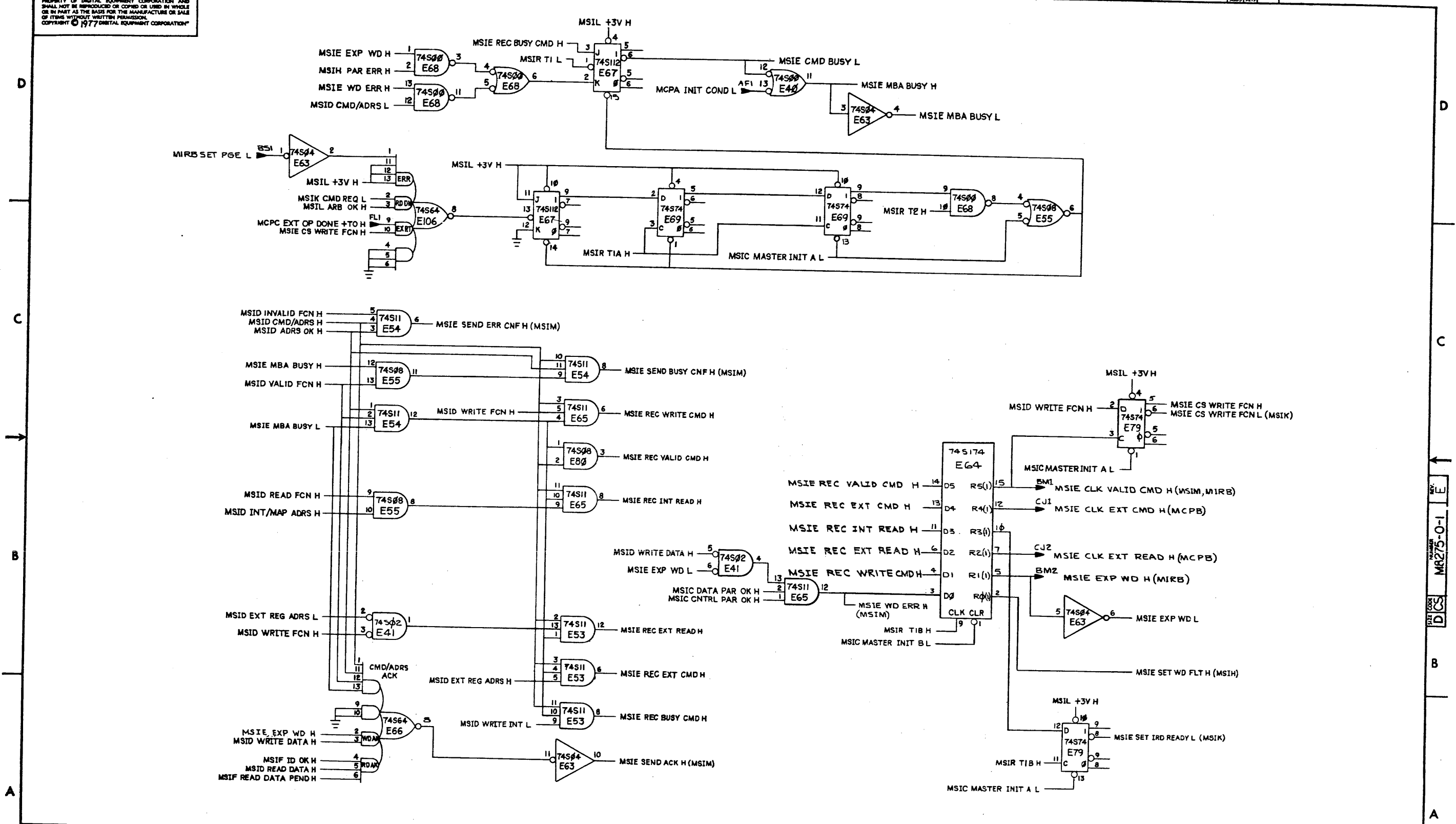
REVISIONS		
CHK	CHANGE NO.	REV.

(VALID ADRS/FUNCTION CHECK) (SLOT 1)

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

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3 1-0-5228W DCS 2



REVISIONS		
CHK	CHANGE NO.	REV.

(MBA BUSY COMMAND INTERPRETER) (SLOT 1)

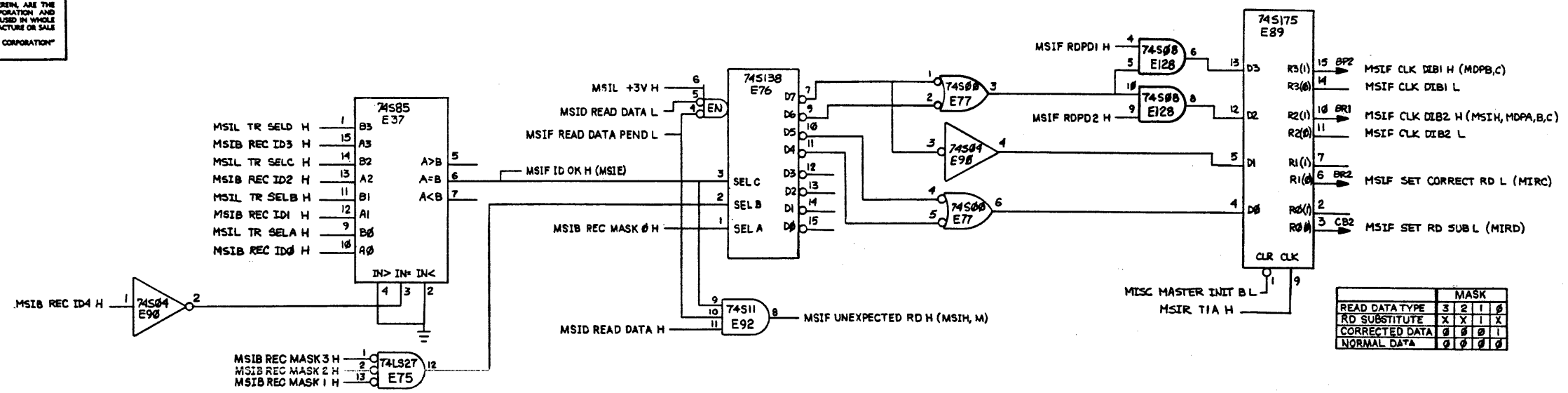
TITLE	MBA/MSI INTERFACE (MSIE)	SIZE/SCALE	D CS	NUMBER	M8275-0-1	REV.	E
SCALE	-H-	SHEET	6	OF	15	DIST.	

REV. E  
M8275-0-1  
DCS

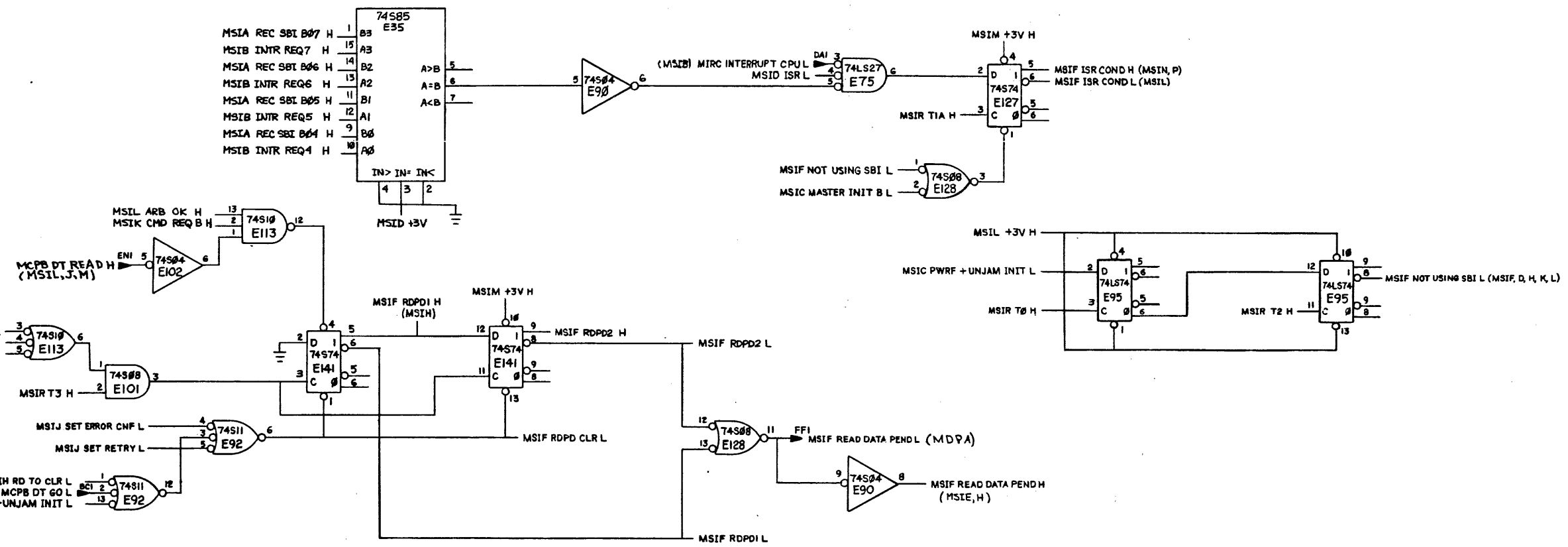
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D  
C  
B  
A

D  
C  
B  
A



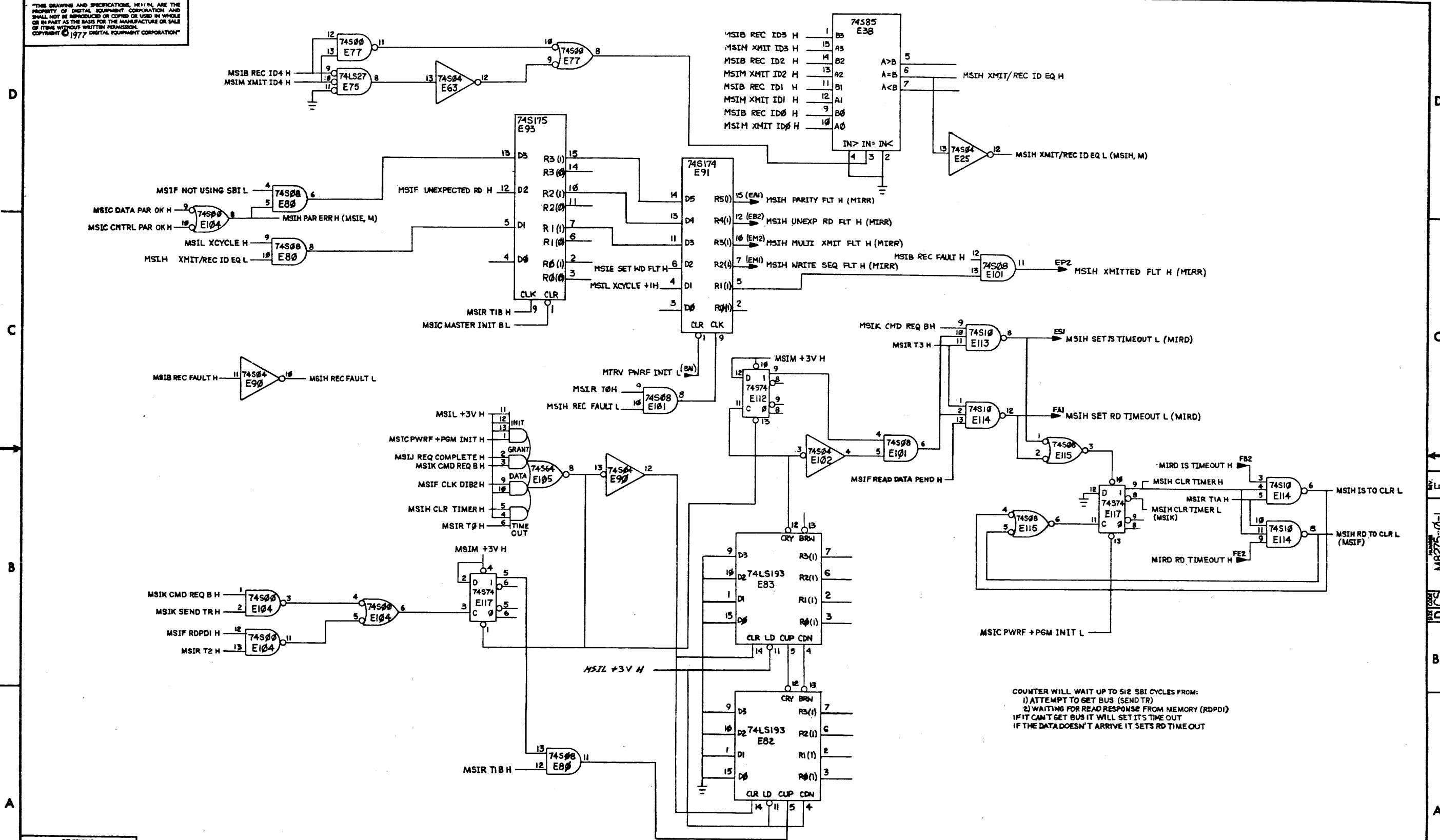
READ DATA TYPE	MASK			
RD SUBSTITUTE	X	X	1	X
CORRECTED DATA	0	0	0	1
NORMAL DATA	0	0	0	0



(SLOT 1)

CHK	CHANGE NO.	REV.	TITLE	SIZE CODE	NUMBER	REV.
			MBA/SBI INTERFACE	MSIF DCS	M8275-0-1	E
SCALE	SHEET 7 OF 15		DIST.			

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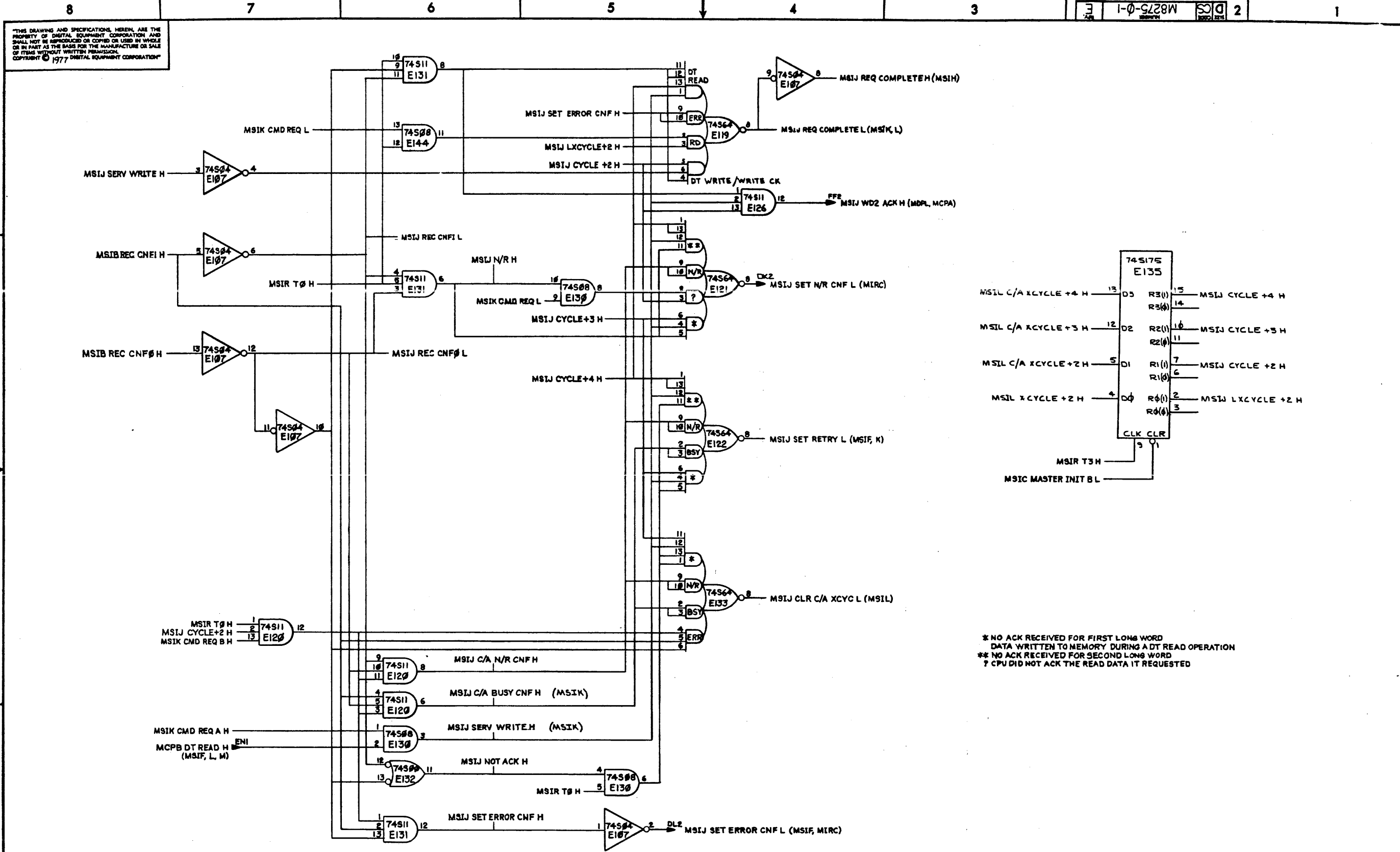


COUNTER WILL WAIT UP TO 512 SBI CYCLES FROM:  
 1) ATTEMPT TO GET BUS (SEND TR)  
 2) WAITING FOR READ RESPONSE FROM MEMORY (RDPDI)  
 IF IT CAN'T GET BUS IT WILL SET ITS TIME OUT  
 IF THE DATA DOESN'T ARRIVE IT SETS RD TIME OUT

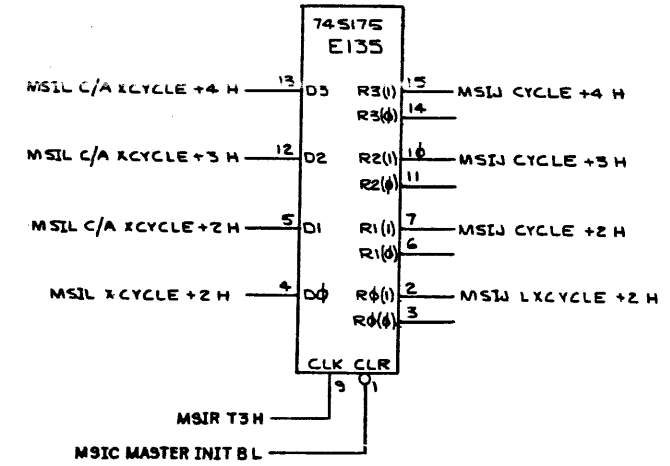
REVISIONS		
CHK	CHANGE NO.	REV.

(FAULT CONDITION/SBI TIMEOUT) (SLOT 1)

TITLE	MBA/SBI INTERFACE (MSIH)	SIZE CODE	DCS	NUMBER	M8275-0-1	REV.	E
SCALE		SHEET	8	OF 15			



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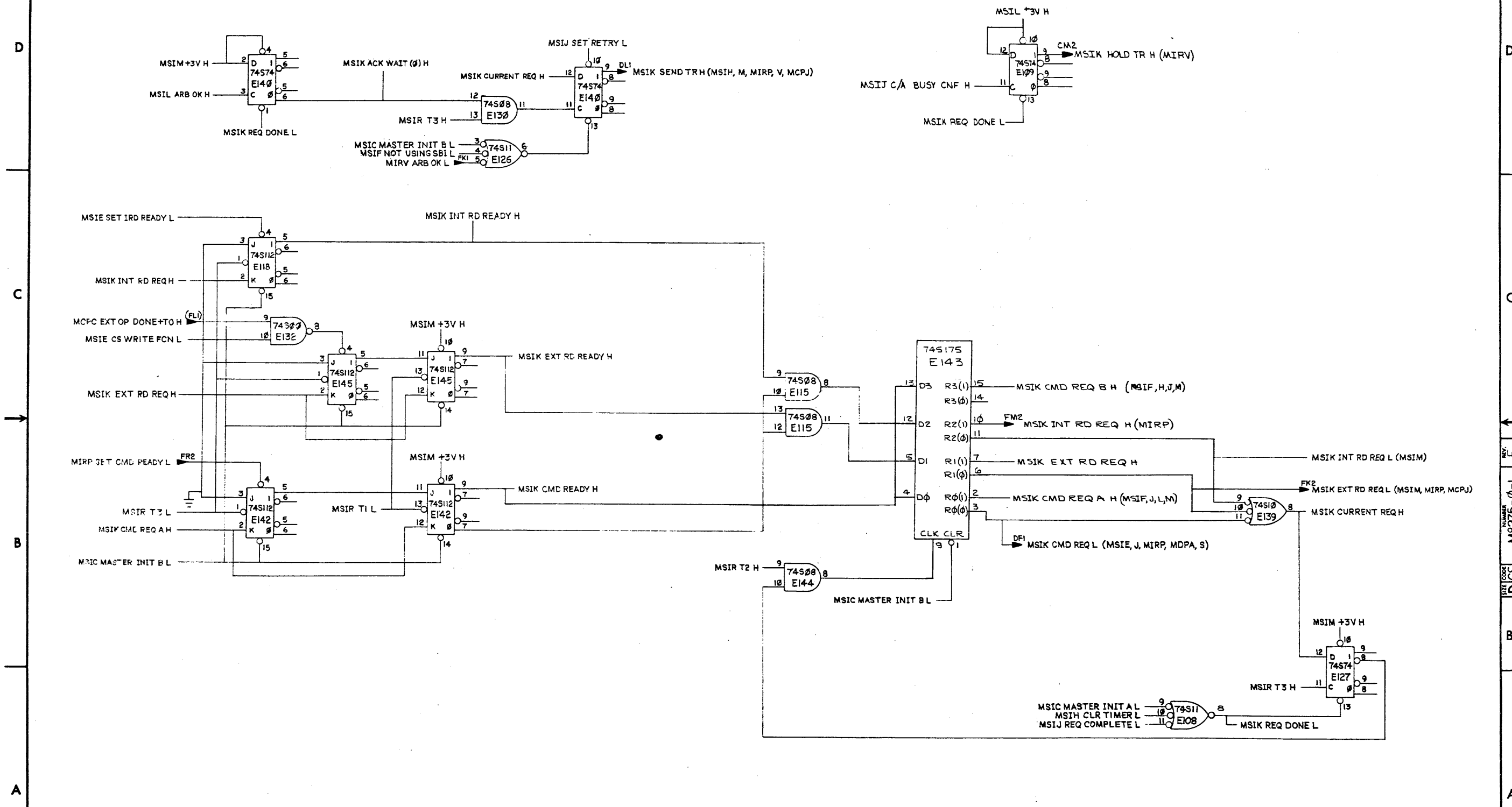


\* NO ACK RECEIVED FOR FIRST LONG WORD  
DATA WRITTEN TO MEMORY DURING A DT READ OPERATION  
\*\* NO ACK RECEIVED FOR SECOND LONG WORD  
? CPU DID NOT ACK THE READ DATA IT REQUESTED

REVISIONS		
CHK	CHANGE NO.	REV.

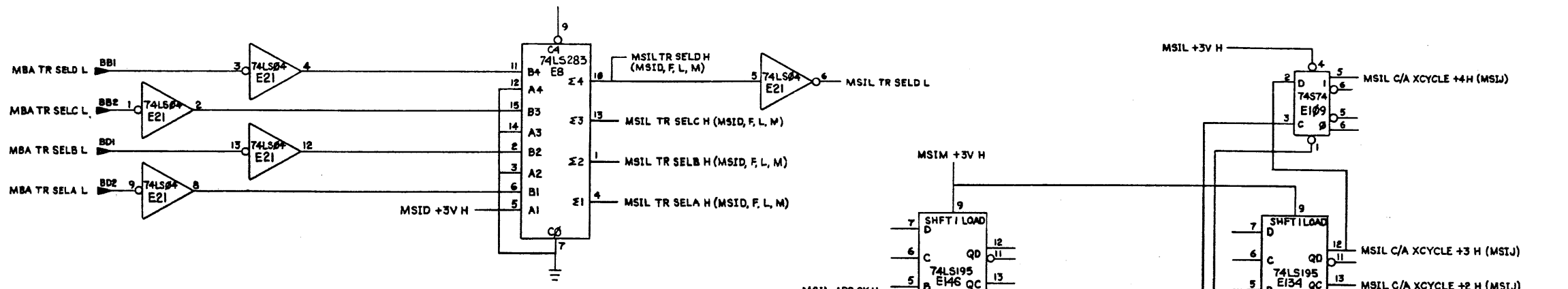
(CONFIRMATION CHECK) (SLOT 1)		TITLE	SIZE CODE	NUMBER	REV.
MBA SBI INTERFACE (MSL)		DCS	D	M8275-01	E
SCALE	SHEET	DIST.			
---	9 OF 15				

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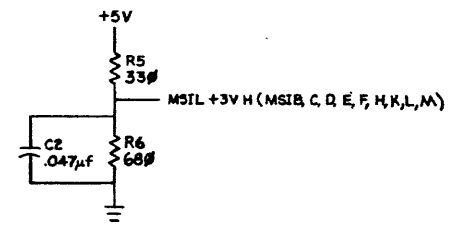
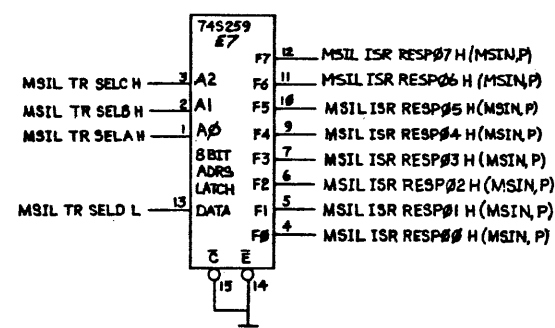
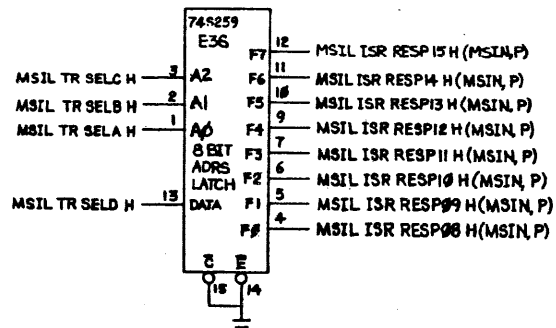
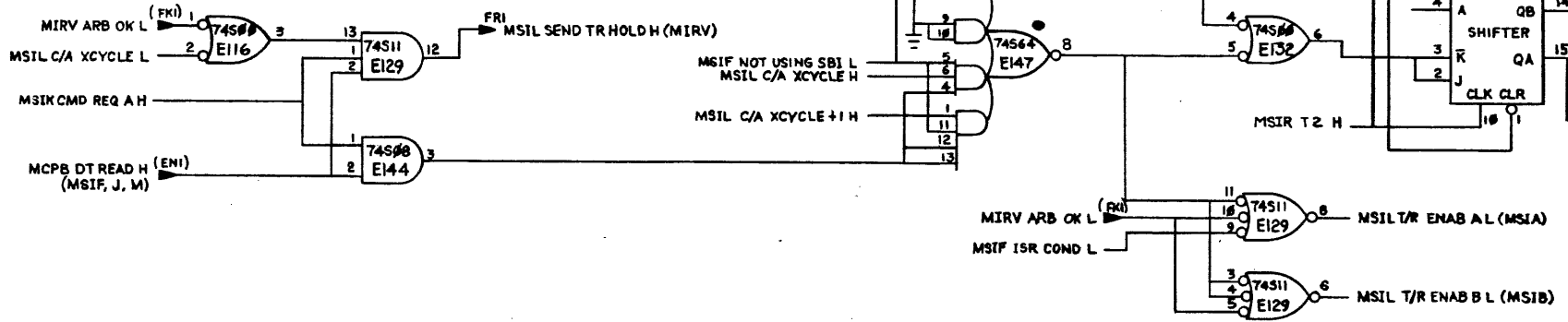
REVISIONS		
CHK	CHANGE NO.	REV.

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74LS195						
CLK	JR	QA	QB	QC	QD	
↓	↓	↓	↓	↓	↓	↓
↑	↑	↑	↑	↑	↑	↑

C, E BOTH LOW 74S259														
D	A2	A1	A0	F7	F6	F5	F4	F3	F2	F1	F0	F7	F6	F5
0	X	X	X	L	L	L	L	L	L	L	L	L	L	L
1	0	0	0	H	L	L	L	L	L	L	L	L	L	L
2	0	0	1	L	H	L	L	L	L	L	L	L	L	L
3	0	0	1	L	L	H	L	L	L	L	L	L	L	L
4	0	1	0	L	L	L	H	L	L	L	L	L	L	L
5	0	1	0	L	L	L	L	H	L	L	L	L	L	L
6	0	1	1	L	L	L	L	L	H	L	L	L	L	L
7	0	1	1	L	L	L	L	L	L	H	L	L	L	L
8	1	0	0	L	L	L	L	L	L	L	H	L	L	L
9	1	0	0	L	L	L	L	L	L	L	L	H	L	L
10	1	0	1	L	L	L	L	L	L	L	L	L	H	L
11	1	0	1	L	L	L	L	L	L	L	L	L	L	H
12	1	1	0	L	L	L	L	L	L	L	L	L	L	L
13	1	1	0	L	L	L	L	L	L	L	L	L	L	L
14	1	1	1	L	L	L	L	L	L	L	L	L	L	L
15	1	1	1	L	L	L	L	L	L	L	L	L	L	L



REVISIONS		
CHK	CHANGE NO.	REV.

(ISR RESP GENERATOR TRANSMIT HISTORY)(SLOT 1)

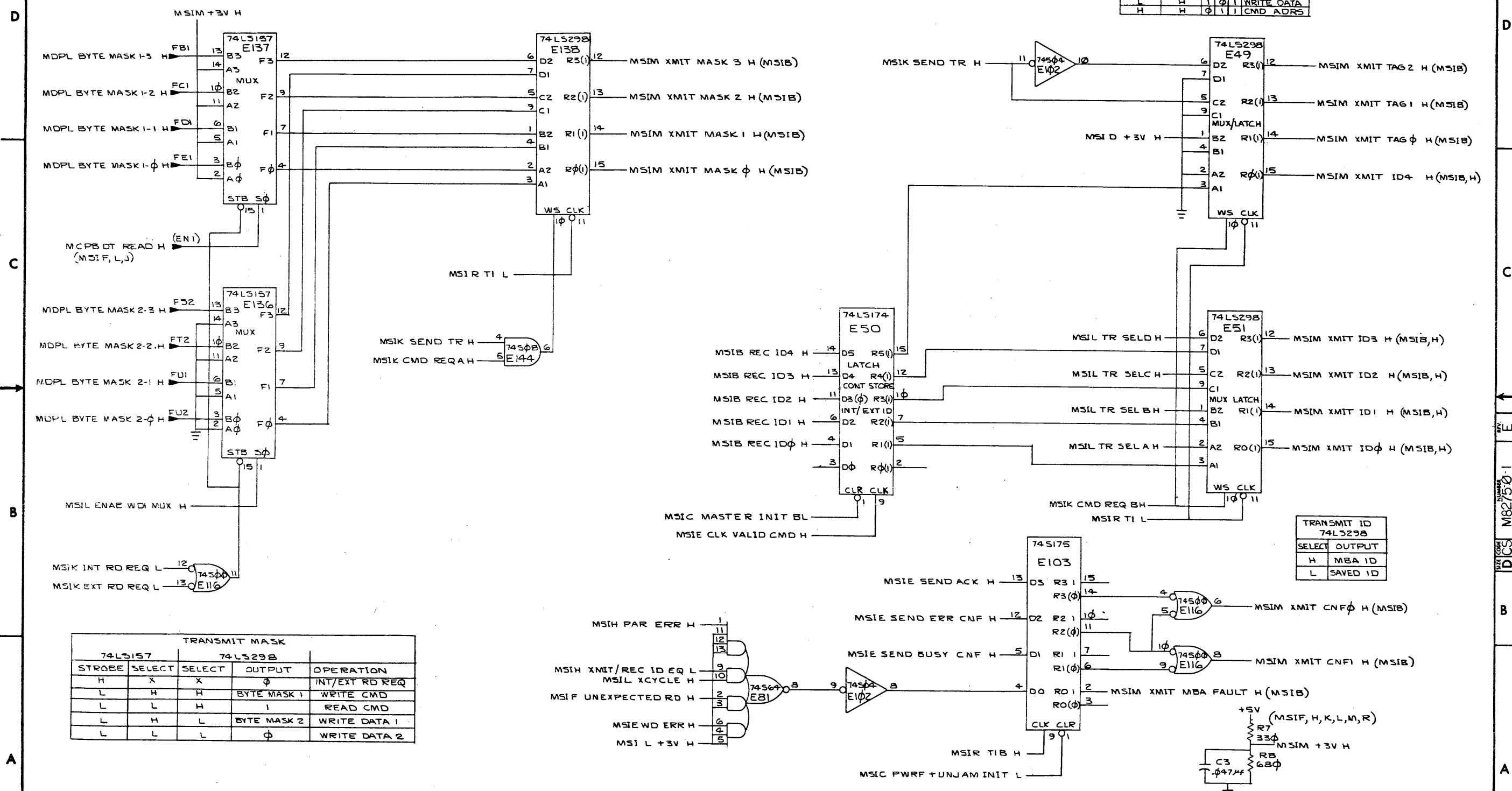
TITLE	MBA SBI INTERFACE (MSIL)	SIZE CODE	D CS	NUMBER	M8275-0-1	REV.	E
SCALE		SHEET	11 OF 15	DIST.			

REV. E  
PART CODE DCS  
NUMBER M8275-0-1

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TRANSMIT TAG - 74LS298

SEND TR	CMD REQ	OUTPUT R3 R2 R1	OPERATION
L	L	0 0 0	NONE
H	L	0 0 1	READ DATA
L	H	1 0 1	WRITE DATA
H	H	0 1 1	CMD ADRS



TRANSMIT MASK

74LS157		74LS298		OPERATION
STROBE	SELECT	SELECT	OUTPUT	
H	X	X	0	INT/EXT RD REQ
L	H	H	BYTE MASK 1	WRITE CMD
L	L	H	1	READ CMD
L	H	L	BYTE MASK 2	WRITE DATA 1
L	L	L	0	WRITE DATA 2

TRANSMIT ID - 74LS298

SELECT	OUTPUT
H	MBA ID
L	SAVED ID

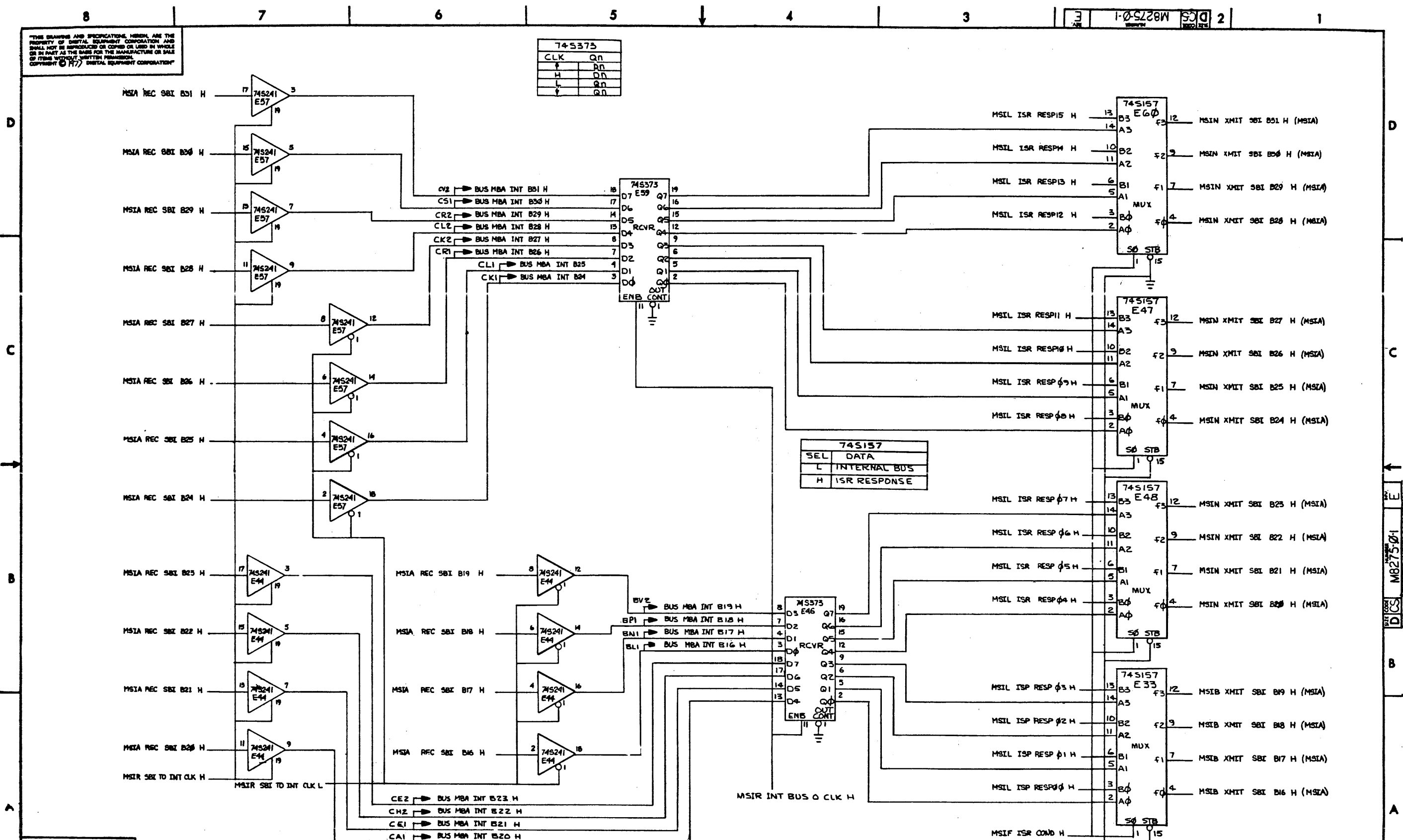
REVISIONS

CHK	CHANGE NO.	REV.



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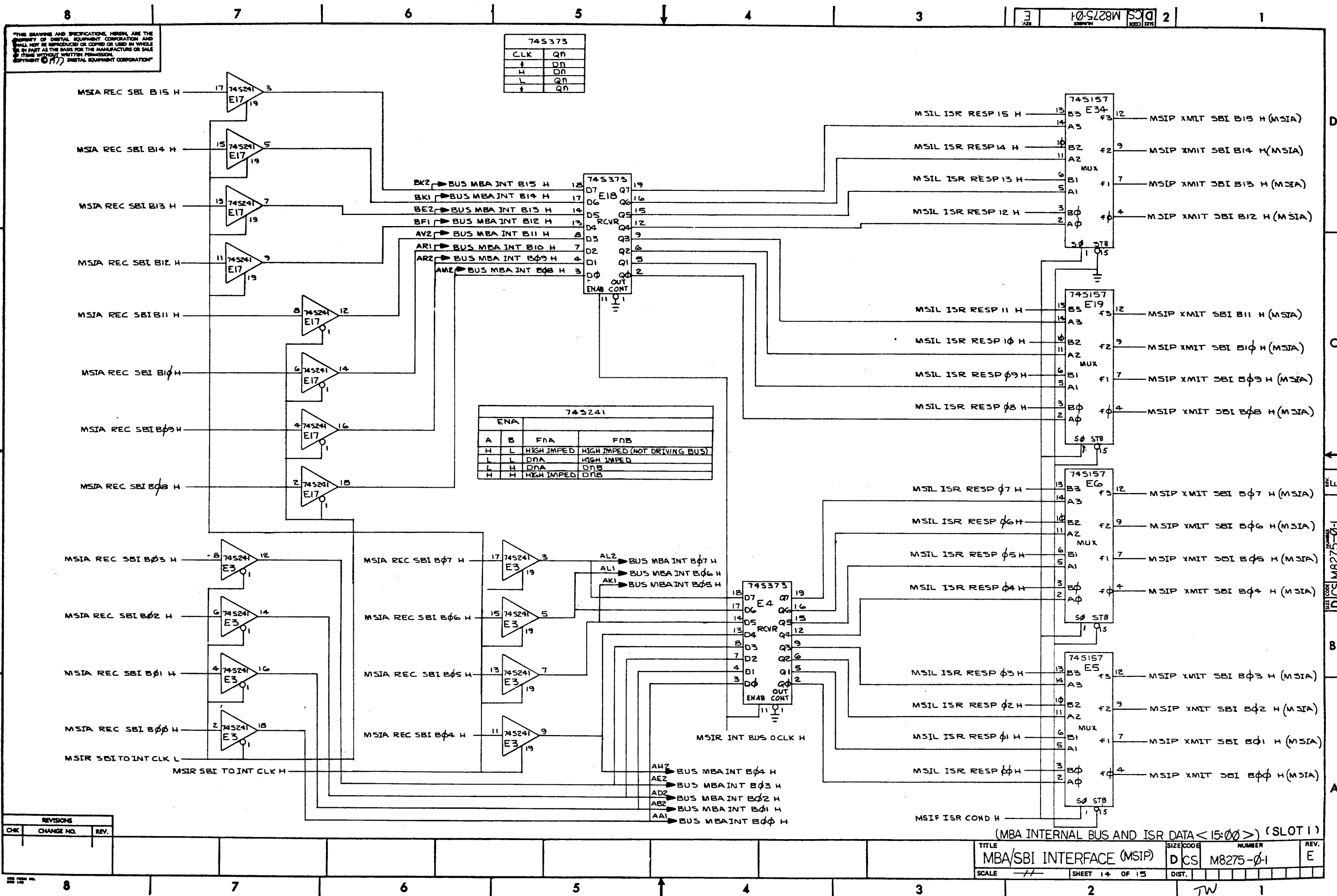
74S373	
CLK	Qn
↑	Qn
H	Qn
L	Qn
↓	Qn



REVISIONS		
CHK	CHANGE NO.	REV.

(MBAINTERNAL BUS AND ISR DATA <31:16>) (SLOT 1)			
TITLE	SIZE/DOSE	NUMBER	REV.
MBA/SBI INTERFACE (MSIN)	D CS	M8275-01	E
SCALE	SHEET	DIST.	
1/1	13 OF 15		

M8275-01



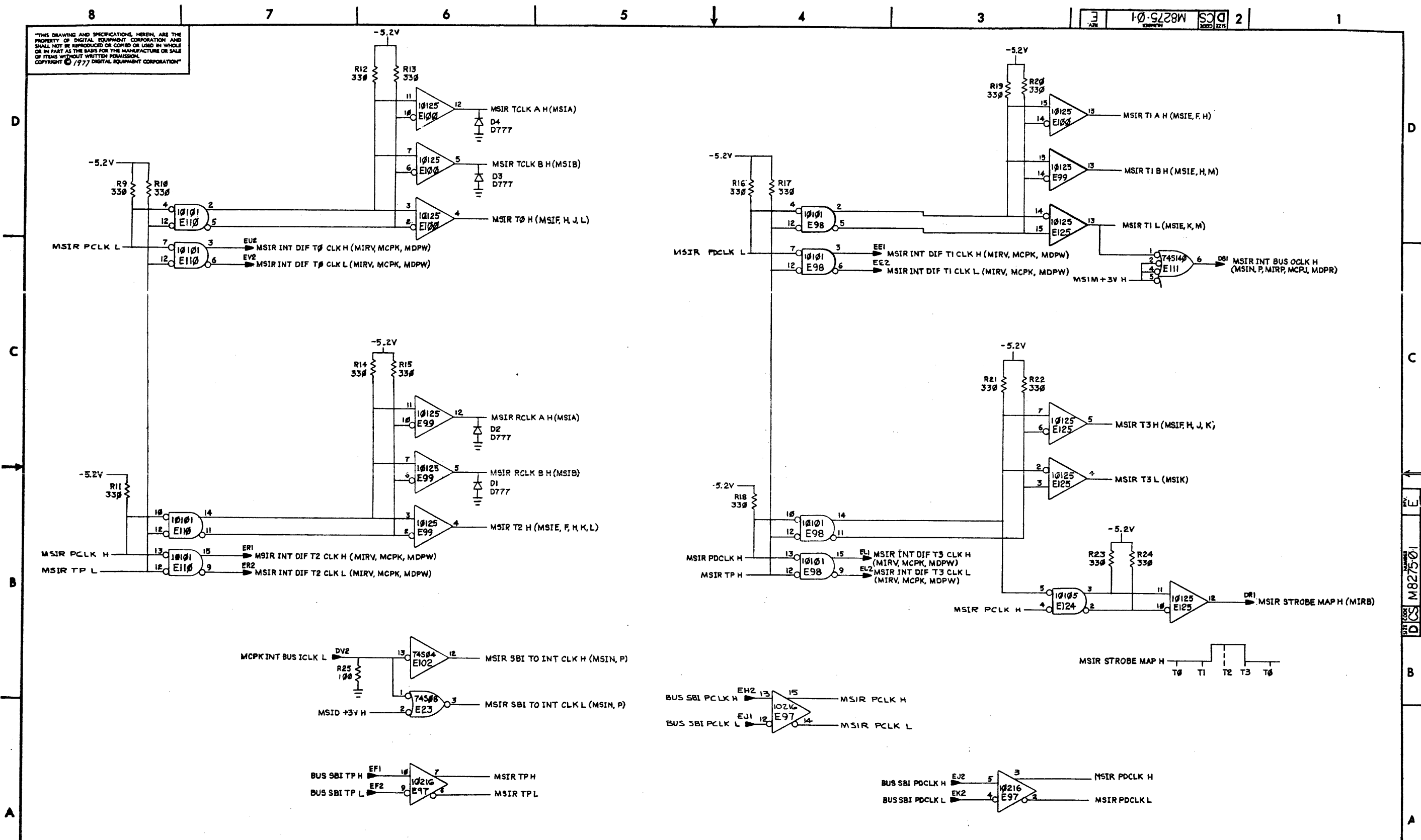
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CLK	Qn
↓	DN
H	DN
L	QN
↓	QN

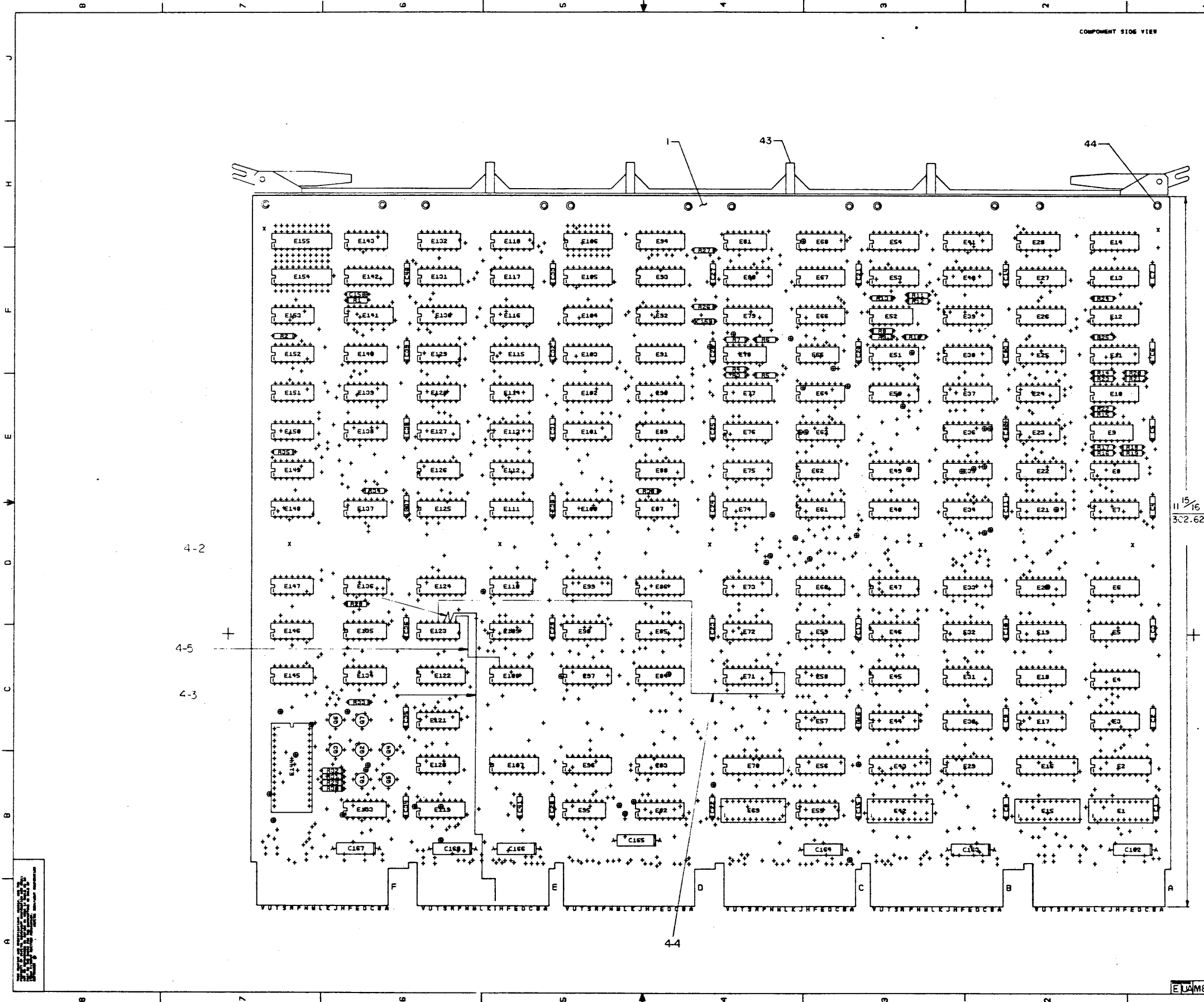
ENA		FNA		FNB	
H	L	HIGH IMPED	HIGH IMPED (NOT DRIVING BUS)		
L	L	DNA	HIGH IMPED		
L	H	DNA	DNB		
H	H	HIGH IMPED	DNB		

CHK	CHANGE NO.	REV.

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REVISIONS		
CHK	CHANGE NO.	REV.



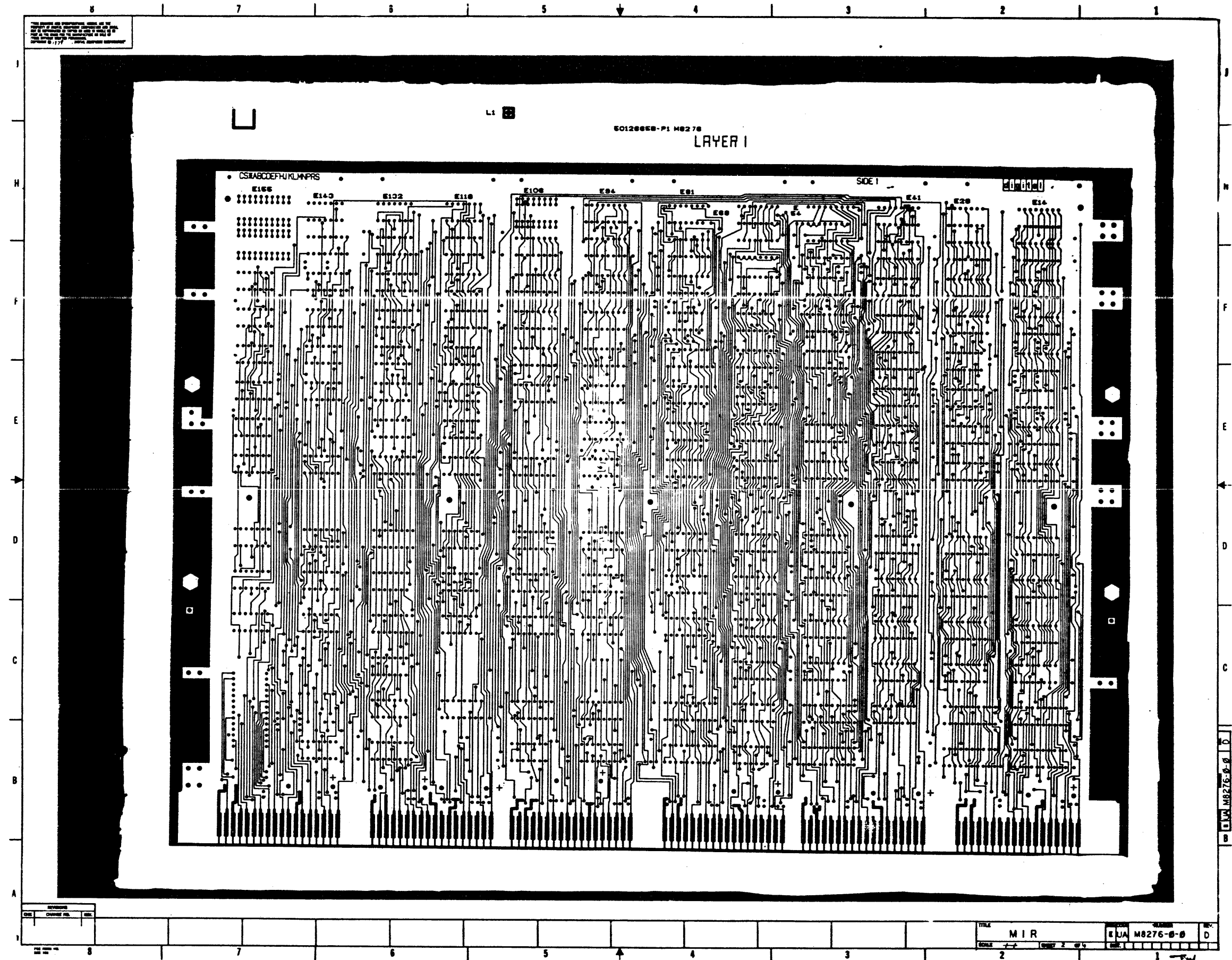
DATE	DESIGNED BY	DATE	DESIGNED BY
11/15/66	J. J. ...	11/15/66	J. J. ...
CHK. D.	11/15/66	CHK. D.	11/15/66
ENG. D.	11/15/66	ENG. D.	11/15/66
PROD. ENG.	11/15/66	PROD. ENG.	11/15/66
SCALE	1:1	SCALE	1:1
SIGNATURE		SIGNATURE	
TITLES		TITLES	
DIGITAL		DIGITAL	
INTERNAL REGISTERS		INTERNAL REGISTERS	
PART NUMBER		PART NUMBER	
EUA MB276-0-010		EUA MB276-0-010	
REV. 1		REV. 1	
REV. 2		REV. 2	
REV. 3		REV. 3	
REV. 4		REV. 4	
REV. 5		REV. 5	
REV. 6		REV. 6	
REV. 7		REV. 7	
REV. 8		REV. 8	
REV. 9		REV. 9	
REV. 10		REV. 10	

11 15/66  
302.62

DATE	DESIGNED BY	DATE	DESIGNED BY
11/15/66	J. J. ...	11/15/66	J. J. ...
CHK. D.	11/15/66	CHK. D.	11/15/66
ENG. D.	11/15/66	ENG. D.	11/15/66
PROD. ENG.	11/15/66	PROD. ENG.	11/15/66
SCALE	1:1	SCALE	1:1
SIGNATURE		SIGNATURE	
TITLES		TITLES	
DIGITAL		DIGITAL	
INTERNAL REGISTERS		INTERNAL REGISTERS	
PART NUMBER		PART NUMBER	
EUA MB276-0-010		EUA MB276-0-010	
REV. 1		REV. 1	
REV. 2		REV. 2	
REV. 3		REV. 3	
REV. 4		REV. 4	
REV. 5		REV. 5	
REV. 6		REV. 6	
REV. 7		REV. 7	
REV. 8		REV. 8	
REV. 9		REV. 9	
REV. 10		REV. 10	

NOTES:  
EUA MB276-0-0

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DAMAGEFUL TO THE NATIONAL DEFENSE.  
DATE 11-17-77 BY 1040, 1040/1040



REV	DATE	BY	CHKD

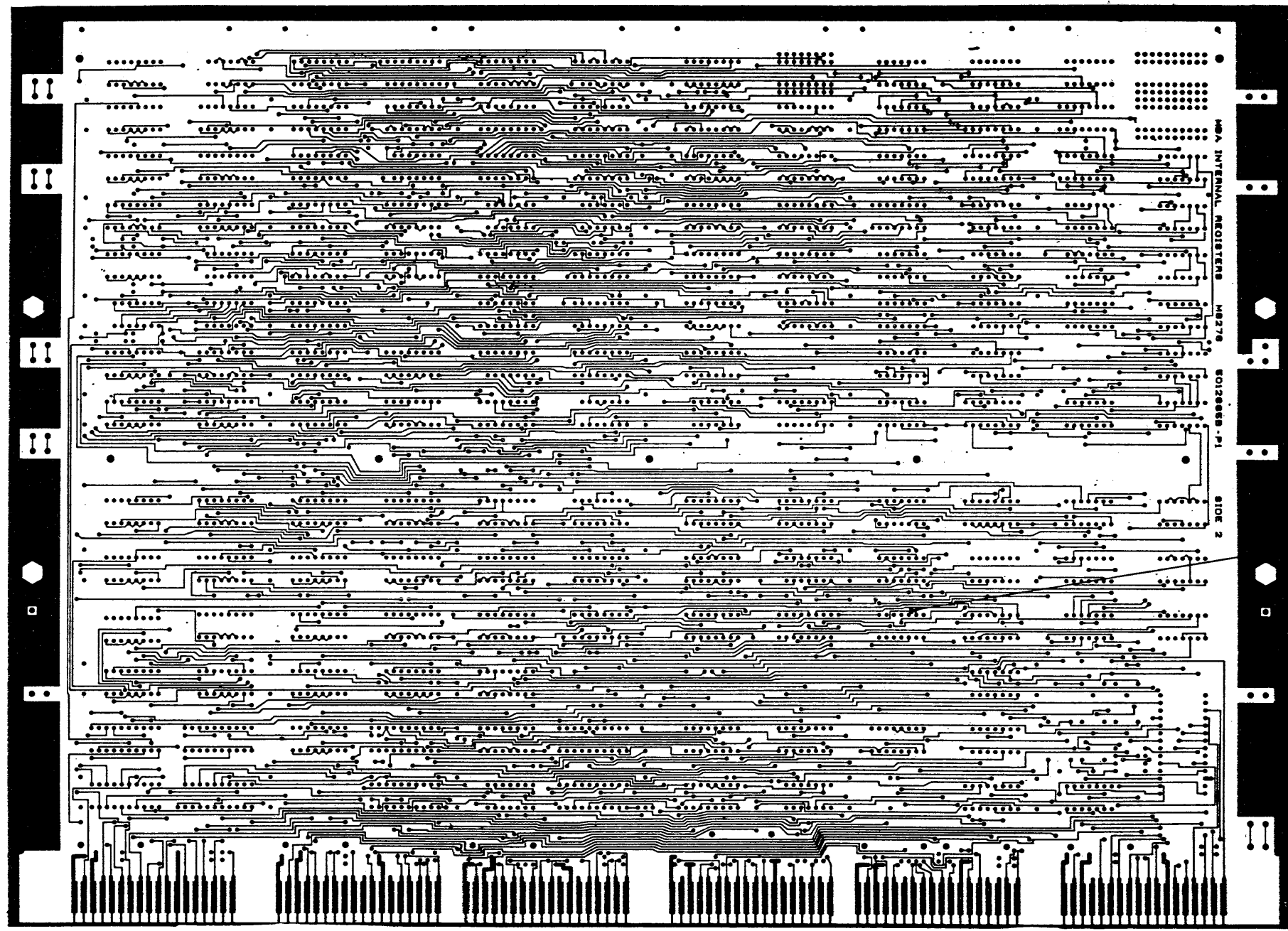
TITLE: M I R  
E J A M 8276-8-8  
D

E J A M 8276-8-8 D

8 7 6 5 4 3 2 1

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DEFENSE ESTABLISHMENT.  
CLASSIFICATION: UNCLASSIFIED

4-1  
R34AJ



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F  
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A

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F  
E  
D  
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B  
A

REV	DATE	BY	CHKD

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

NAME: MIR  
 SCALE: 1:1  
 SHEET: 1 OF 1  
 DRAWING NO: EJA M8276-0-0  
 REV: D

EJA M8276-0-0 D

8 6 5 4 3 2 1

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REWORK INSTRUCTIONS:

ECO #4

ETCH CUTS-SIDE 2

4-1. CUT ETCH CONNECTED TO E108-13.

WIRE ADDS-SIDE 1

4-2. E123-10 TO E123-9.

4-3. FROM E123-9 TO MODULE PIN EJM.

4-4. FROM E123-11 TO FEED THRU TO THE

LOWER RIGHT OF E71-9 (WITH ETCH

CONNECTED TO MODULE PIN CNI)

4-5. FROM E123-8 TO E108-13.

J

H

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EUAM8276-0-0

REVISION HISTORY

DATE EDC NUMBER REV

8

7

6

5

4

3

2

1

TITLE  
MIR

DOCUMENT NUMBER  
EUAM8276-0-0

SCALE SHEET 4 OF 4

TW 1

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY	PER VARIATION	REFERENCE DESIGNATOR
					00		
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	CONT	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	CONT	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	DOCUMENT NUMBER			
			[B]	RESP.ENG.:	K. OKIN	DATE:	06-OCT-78	SIZE	CODE	NUMBER	REV
			[C]	MFG.ENG.:	M. TERILLO	DATE:	06-OCT-78	K	PL	M8276-0-DBP	D
			[D]	ASSEMBLY NUMBER:		TOP DOCUMENT NUMBER:		FILE NAME:		EDIT #	
			[E]	ID-UA-M8276-0-0				Z1845.PLS		11	

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TW



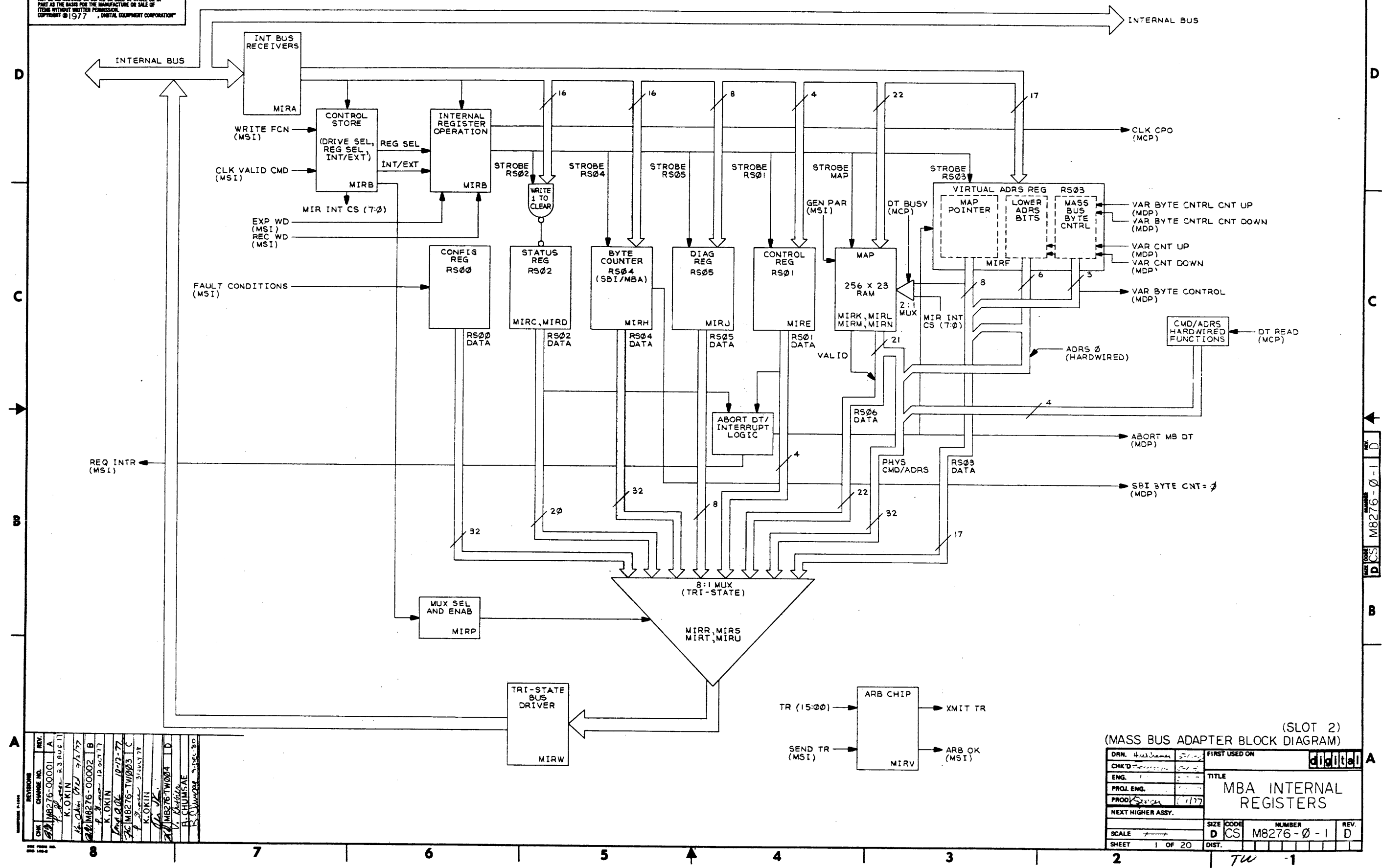
LINE ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
29	29	1912697-00	LS174 FF-D HEX W/CLEAR	4	CONT E56-E60,E67,E68,E79,E80,E89, CONT E91-E94,E101-E105
30	30	1910957-00	74S175 FF-D QUAD COMMON CLO	1	E64,E71,E83,E90
31	31	1910096-00	DEC 74191 COUNTER,SYNCHR. UP/D	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-DBF	D

TW

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REV.	CHG.	NO.	DATE	BY	CHK'D
A	1	MB276-00001	23 AUG 77	K. OKIN	
B	1	MB276-00002	12 OCT 77	K. OKIN	
C	1	MB276-TW0003	10-17-77	K. OKIN	
D	1	MB276-TW0004	31 JULY 78	K. OKIN	

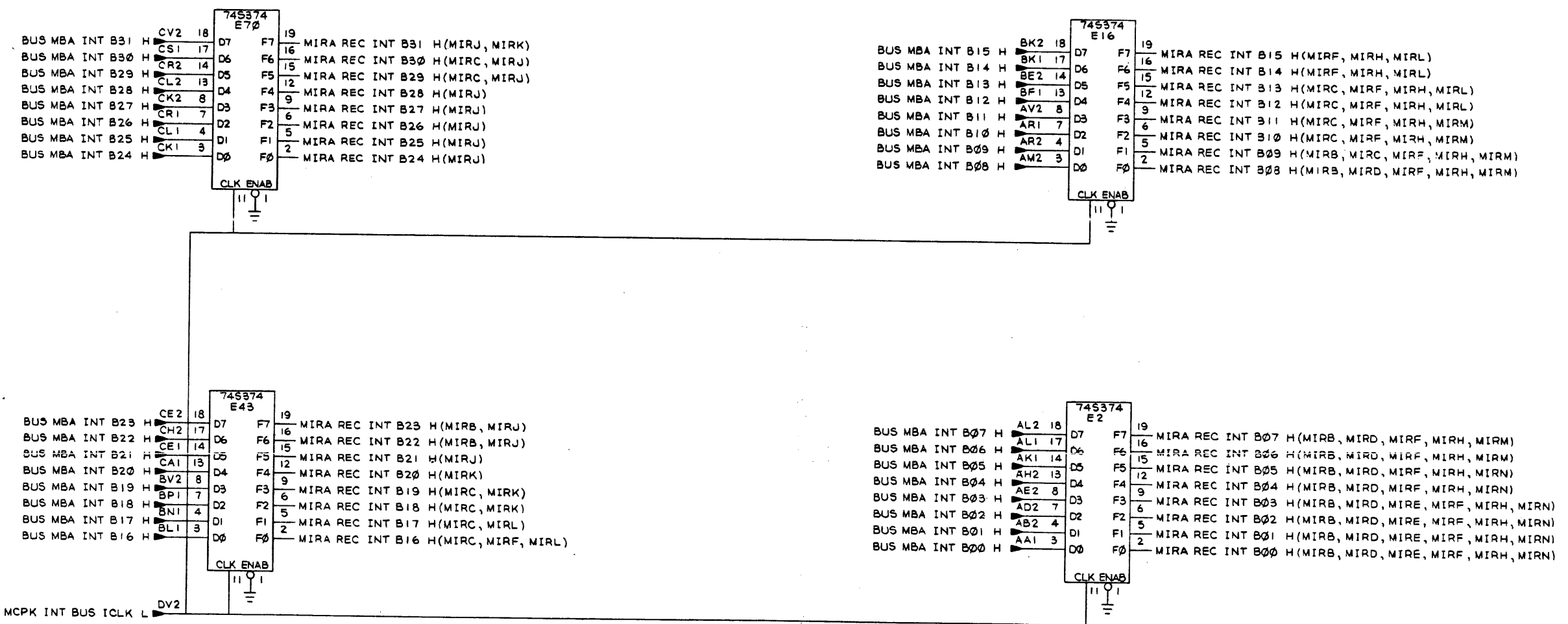
(SLOT 2)  
(MASS BUS ADAPTER BLOCK DIAGRAM)

DRN. 4-23-77	FIRST USED ON	digital
CHK'D	TITLE	MBA INTERNAL REGISTERS
ENG.	PROJ. ENG.	
PROD.	NEXT HIGHER ASSY.	
SCALE	SIZE	D CS
SHEET 1 OF 20	NUMBER	M8276-0-1
	REV.	D

TW -1

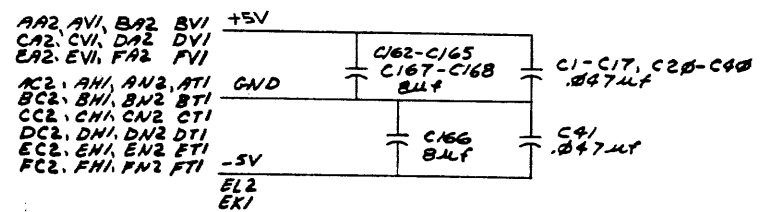
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1-0-9228W DCS M8276-0-1



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.



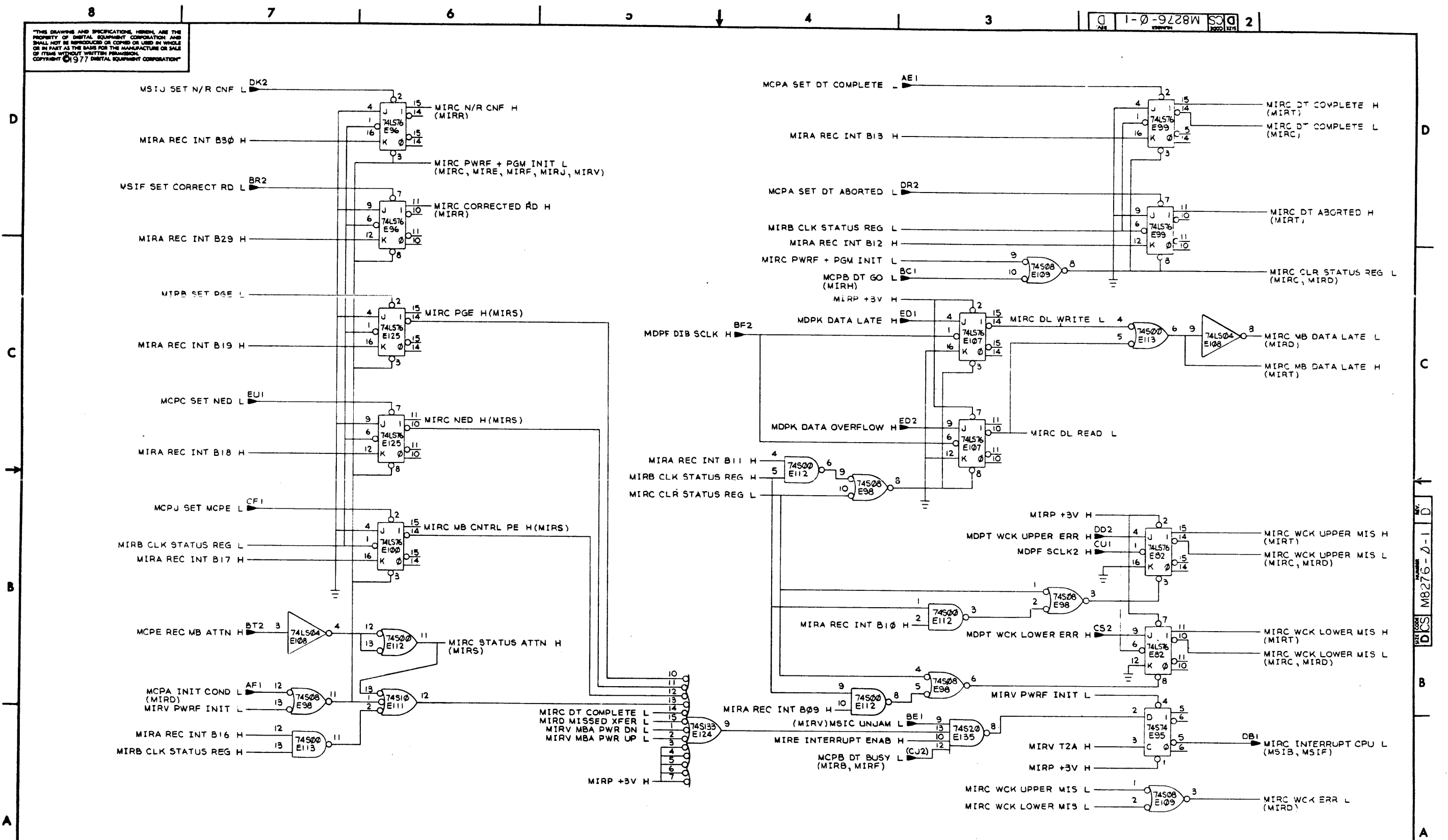
REVISIONS		
CHK	CHANGE NO.	REV.

(MBA INTERNAL BUS RECEIVERS) (SLOT 2)  
 TITLE MBA INTERNAL REGISTERS (MIRA) DCS M8276-0-1  
 SCALE SHEET 2 OF 20  
 NUMBER REV. 1

DCS M8276-0-1



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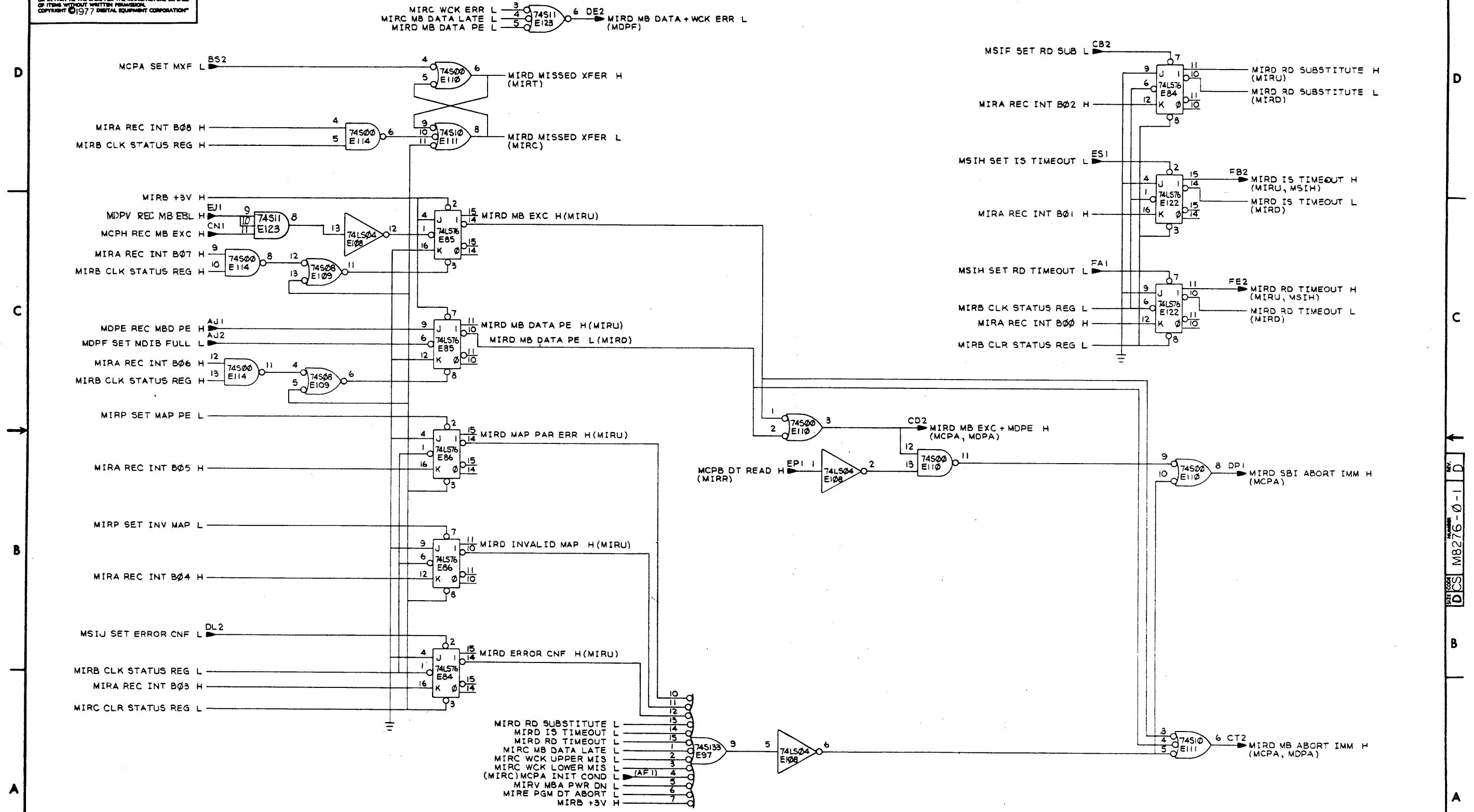


REVISIONS		
CHK	CHANGE NO.	REV.

(STATUS REGISTER) (SLOT 2)

TITLE	MBA INTERNAL REGISTERS (MIRC)	SIZE CODE	D CS	NUMBER	M8276-Ø-1	REV.	D
SCALE	+	SHEET	4 OF 20	DIST.			

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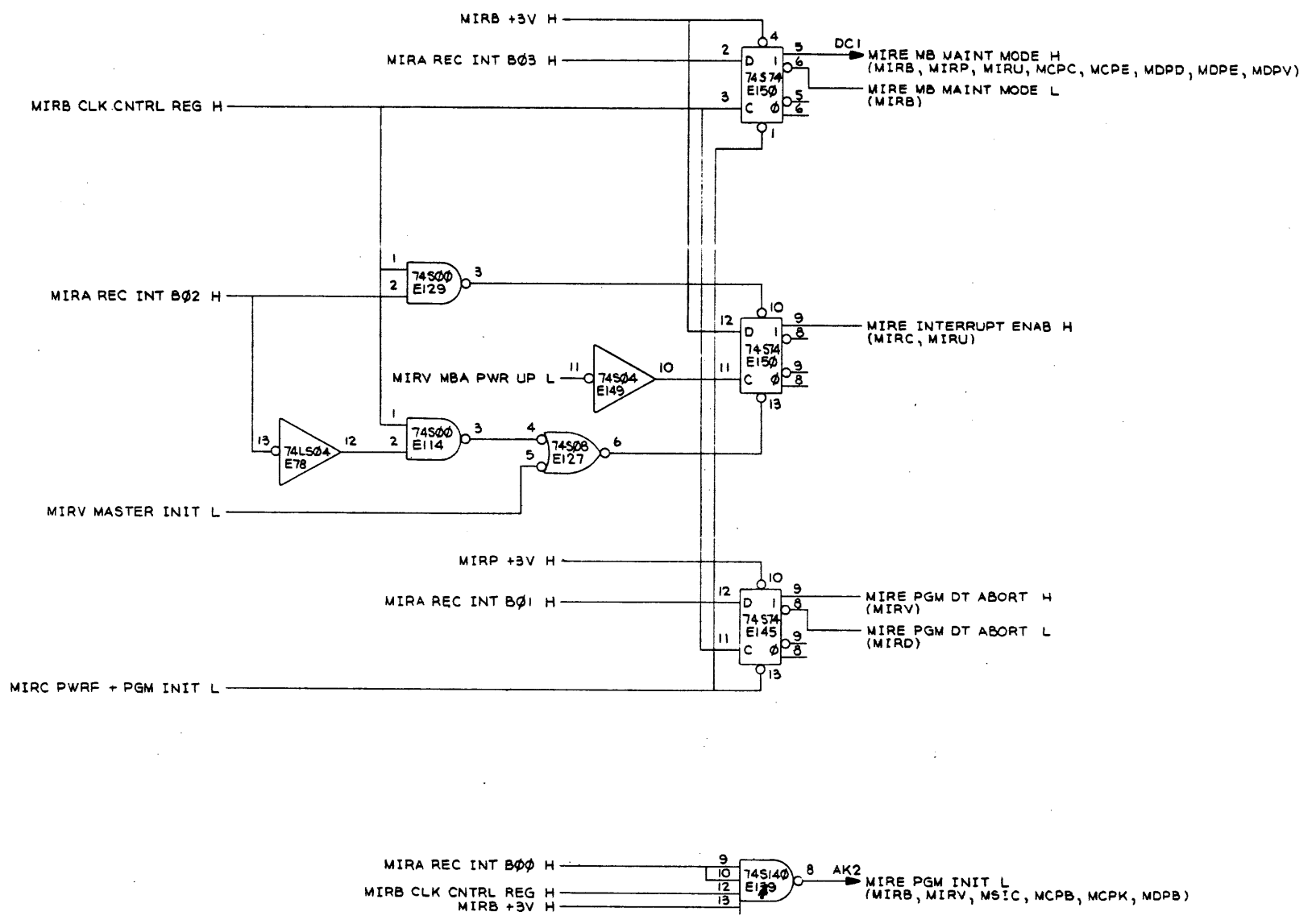


REVISIONS		
CHK	CHANGE NO.	REV.

(STATUS REGISTER) (SLOT 2)

TITLE	MBA INTERNAL REGISTERS (MIRD)	SIZE CODE	DCS	NUMBER	M8276-0-1	REV.	D
SCALE	+	SHEET	5 OF 20	DIST.			

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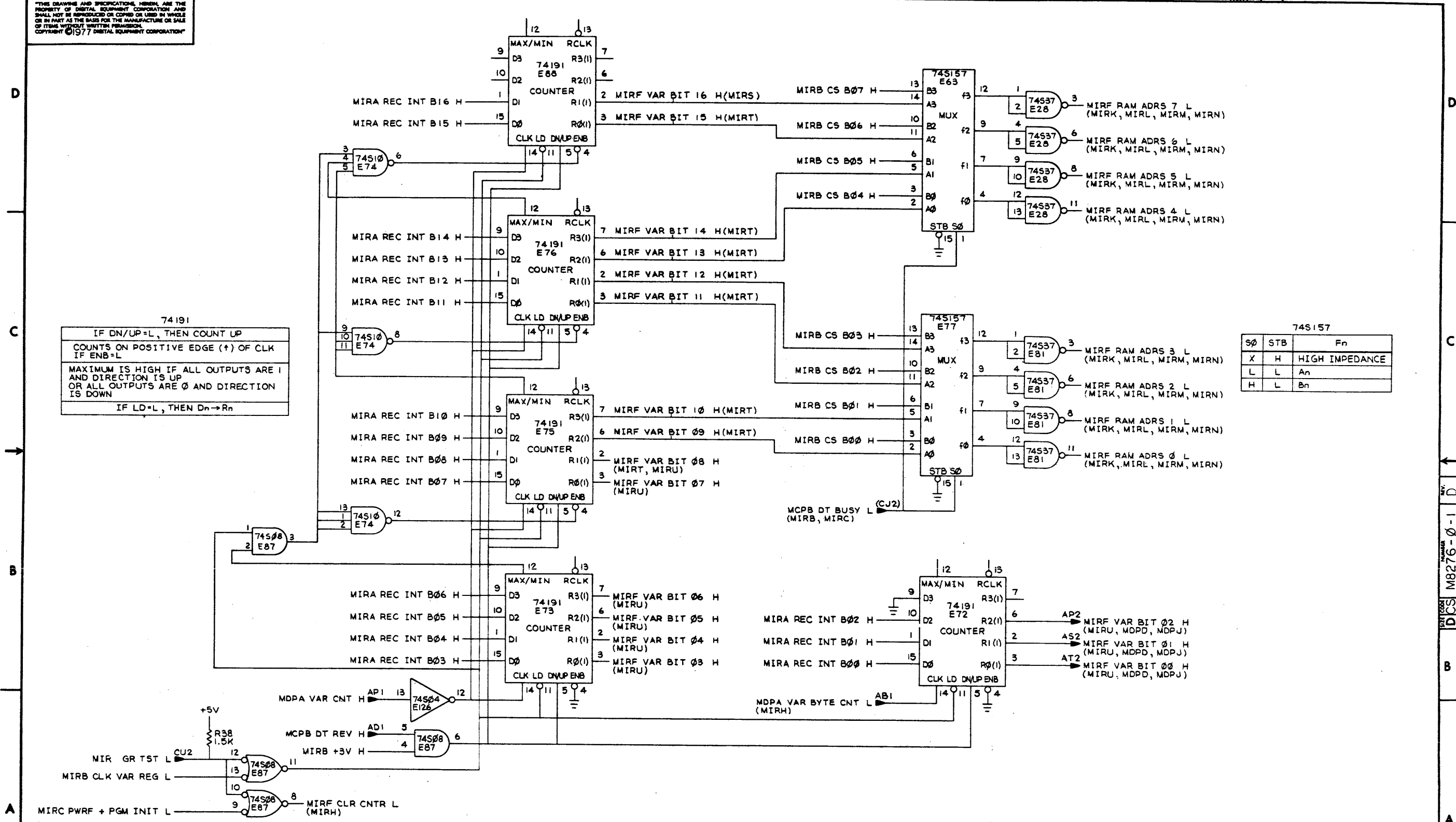


REVISIONS		
CHK	CHANGE NO.	REV.

(CONTROL REGISTER) (SLOT 2)

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

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74191  
IF DN/UP=L, THEN COUNT UP  
COUNTS ON POSITIVE EDGE (↑) OF CLK IF ENB=L  
MAXIMUM IS HIGH IF ALL OUTPUTS ARE 1 AND DIRECTION IS UP OR ALL OUTPUTS ARE 0 AND DIRECTION IS DOWN  
IF LD=L, THEN Dn→Rn

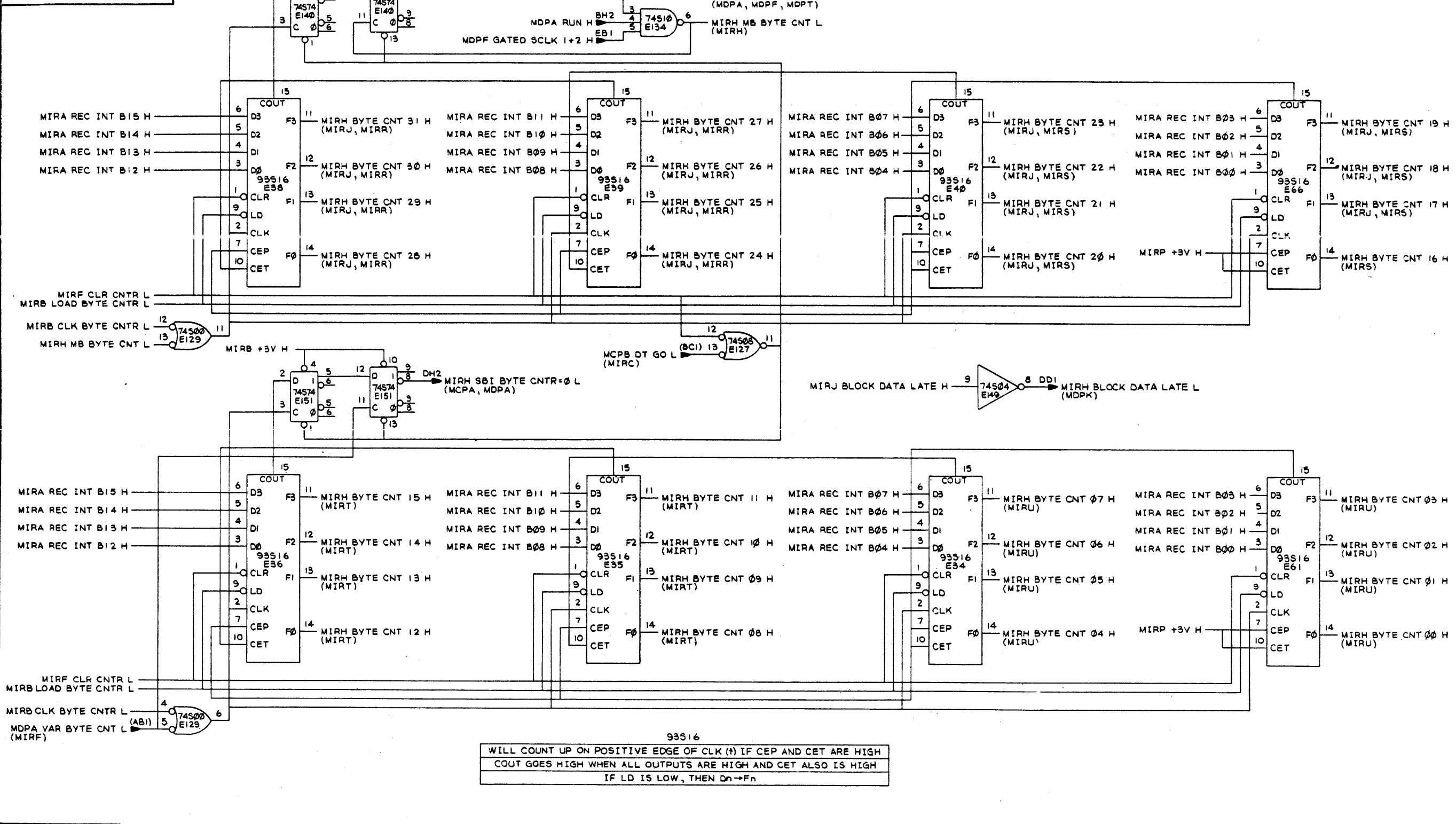
745157

S0	STB	F <sub>n</sub>
X	H	HIGH IMPEDANCE
L	L	A <sub>n</sub>
H	L	B <sub>n</sub>

REVISIONS		
CHK	CHANGE NO.	REV.



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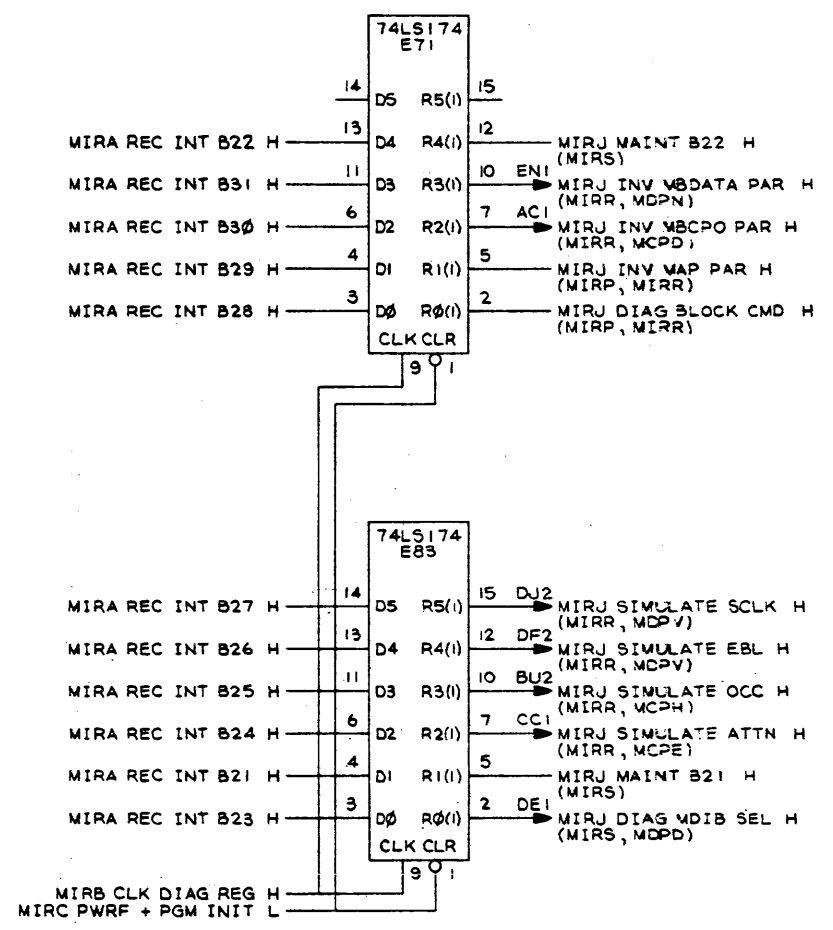
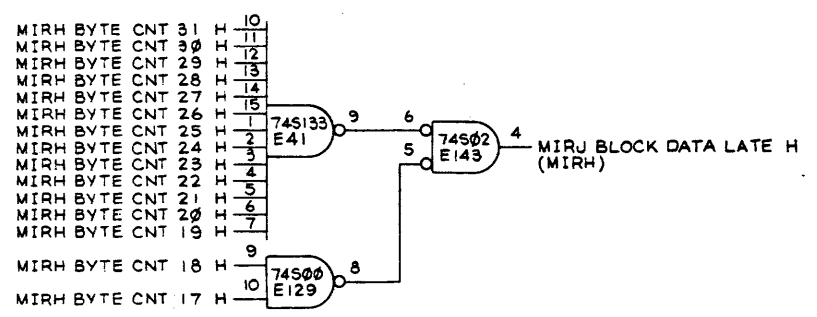
REVISIONS		
CHK	CHANGE NO.	REV.

(SLOT 2)

TITLE	SIZE CODE	NUMBER	REV.
MBA INTERNAL REGISTERS (MIRH)	DCS	M8276-0-1	D

SCALE: SHEET 8 OF 20

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REVISIONS		
CHK	CHANGE NO.	REV.

(SLOT 2)

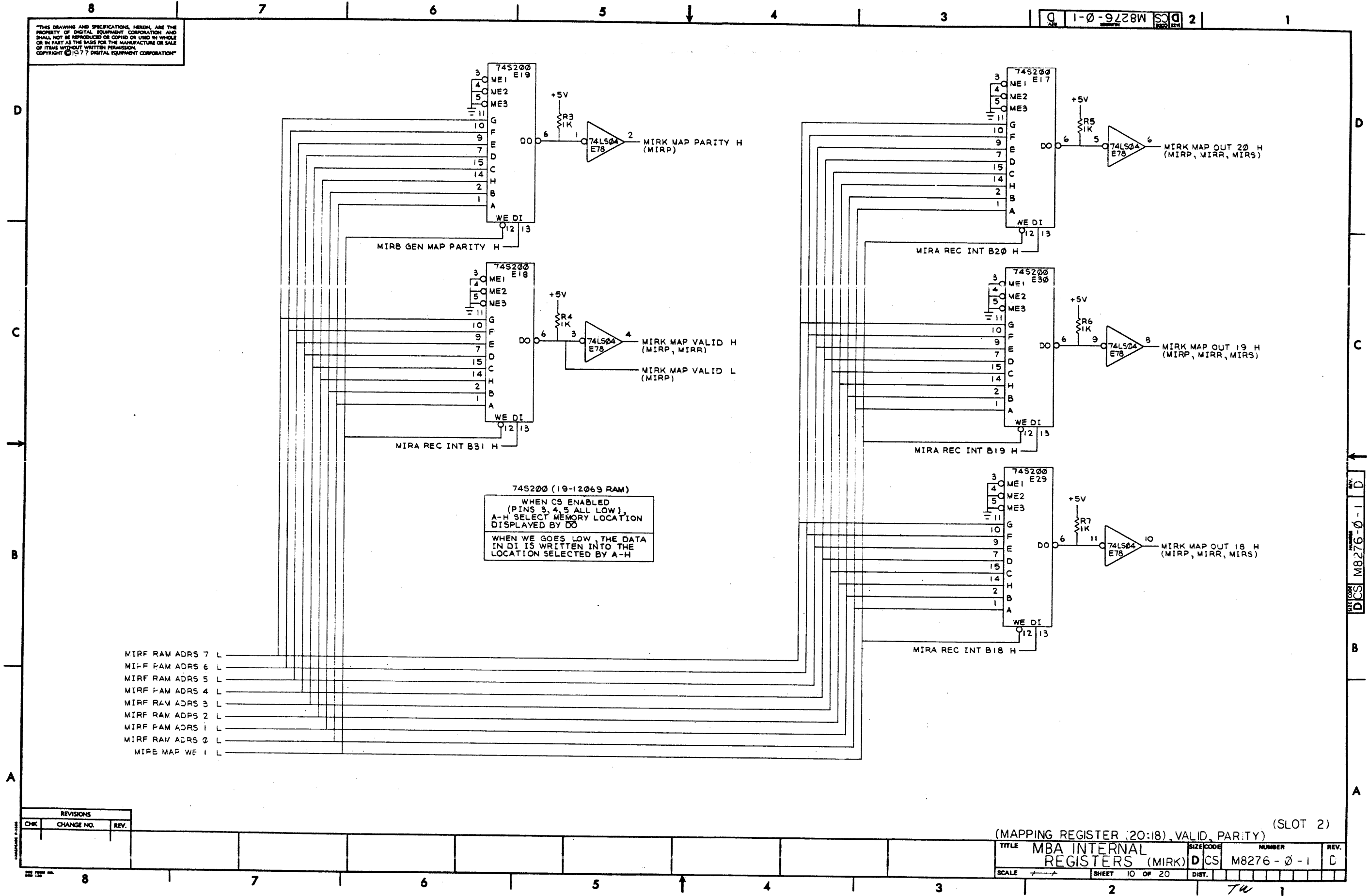
(DIAGNOSTIC REG)

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

Tu 1

REV. D M8276-0-1

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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  
 MIRE MAP WE 1 L

REVISIONS		
CHK	CHANGE NO.	REV.

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

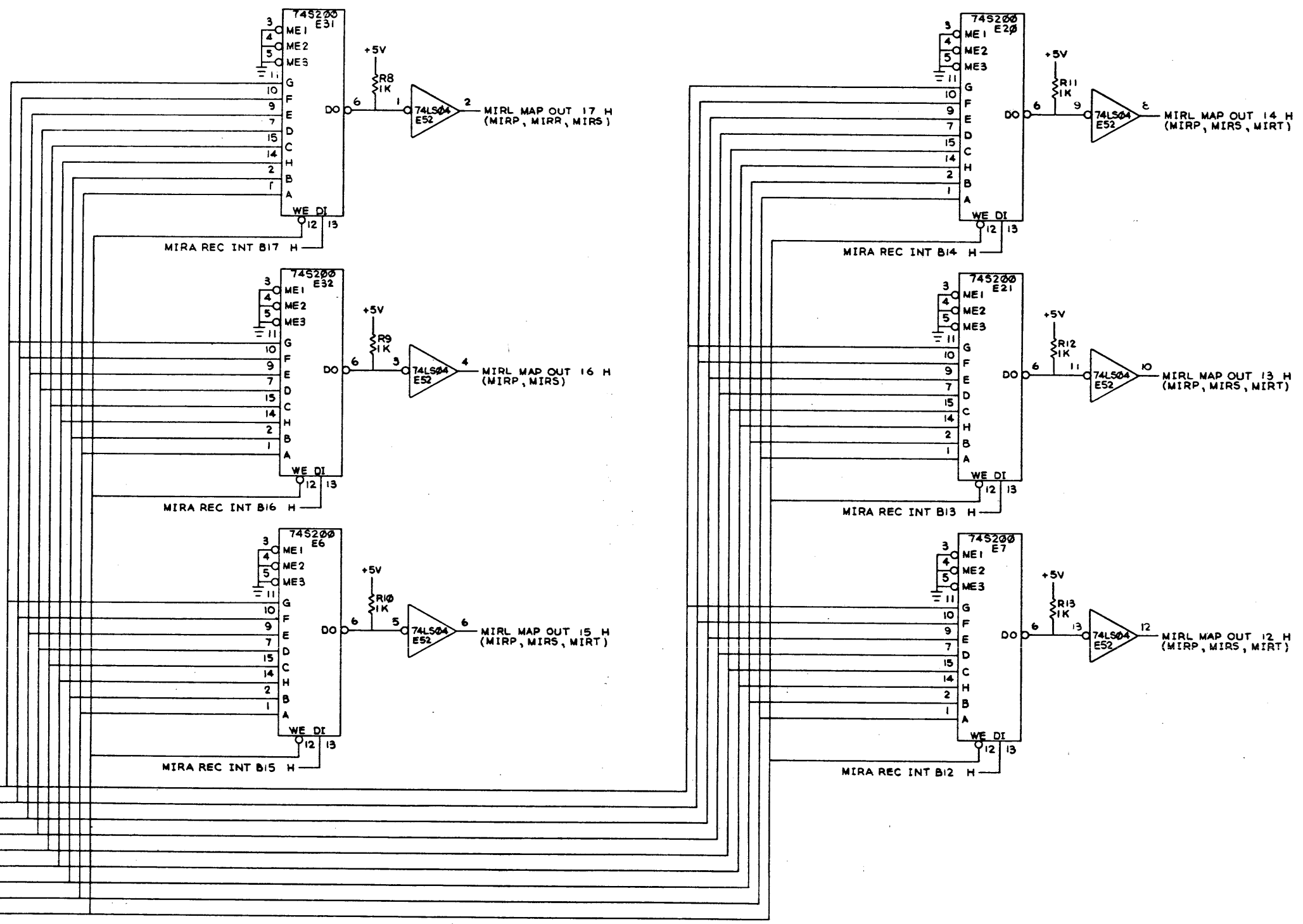
TITLE	MBA INTERNAL REGISTERS (MIRK)	SIZE CODE	D/CS	NUMBER	M8276-0-1	REV.	D
SCALE	+	SHEET	10 OF 20	DIST.			

REV. 10/77 DCS M8276-0-1-D

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DIGITAL EQUIPMENT CORPORATION  
 MODEL M8276-0-1 DCS

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.

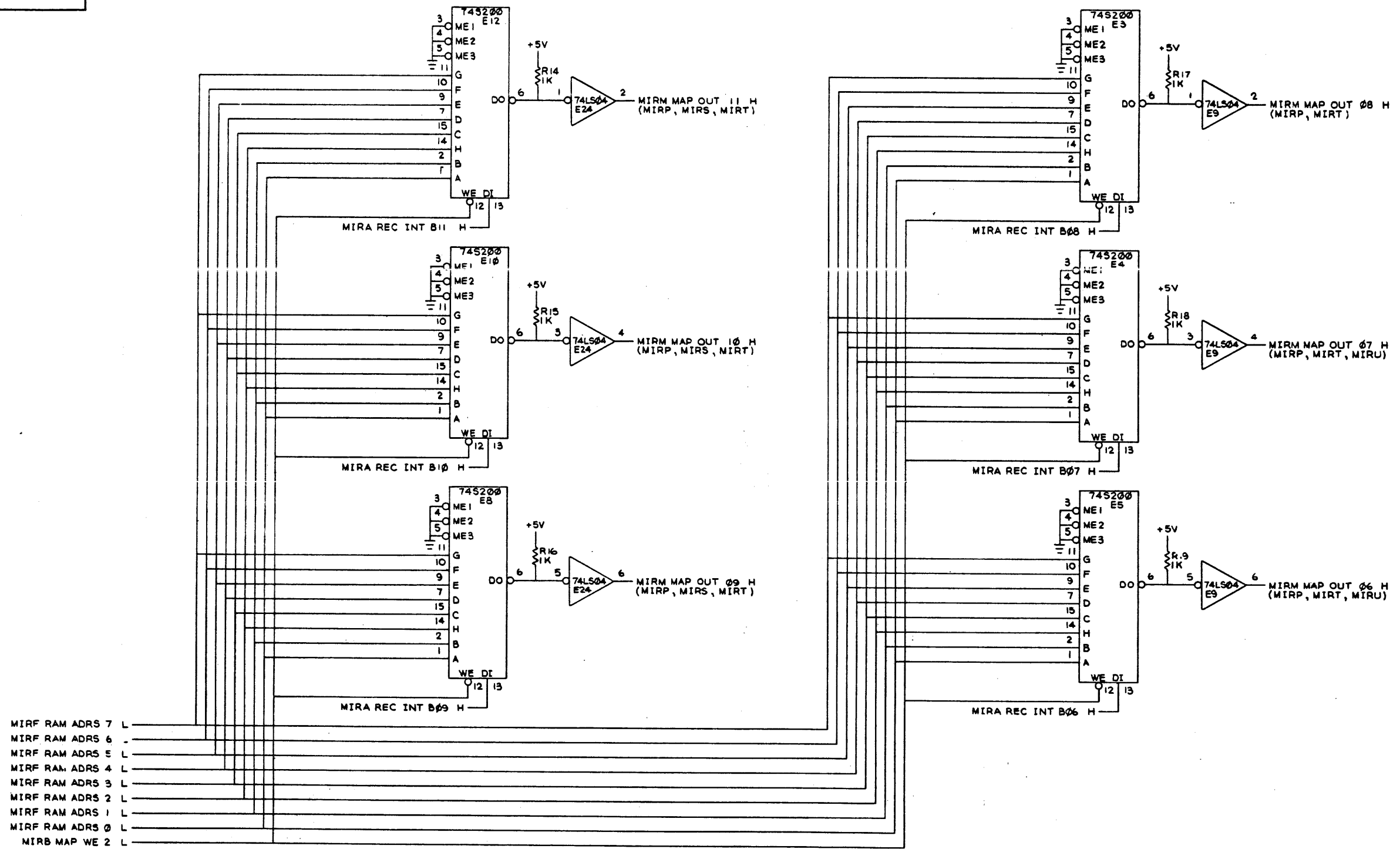
(MAPPING REGISTER ( 17:12 )) (SLOT 2)

TITLE	MBA INTERNAL REGISTERS (MIRL)	SIZE CODE	NUMBER	REV.
SCALE	SHEET 11 OF 20	DIST.	DCS M8276-0-1	D

TU 1

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1-0-9228W DCS 2



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

REVISIONS		
CHK	CHANGE NO.	REV.

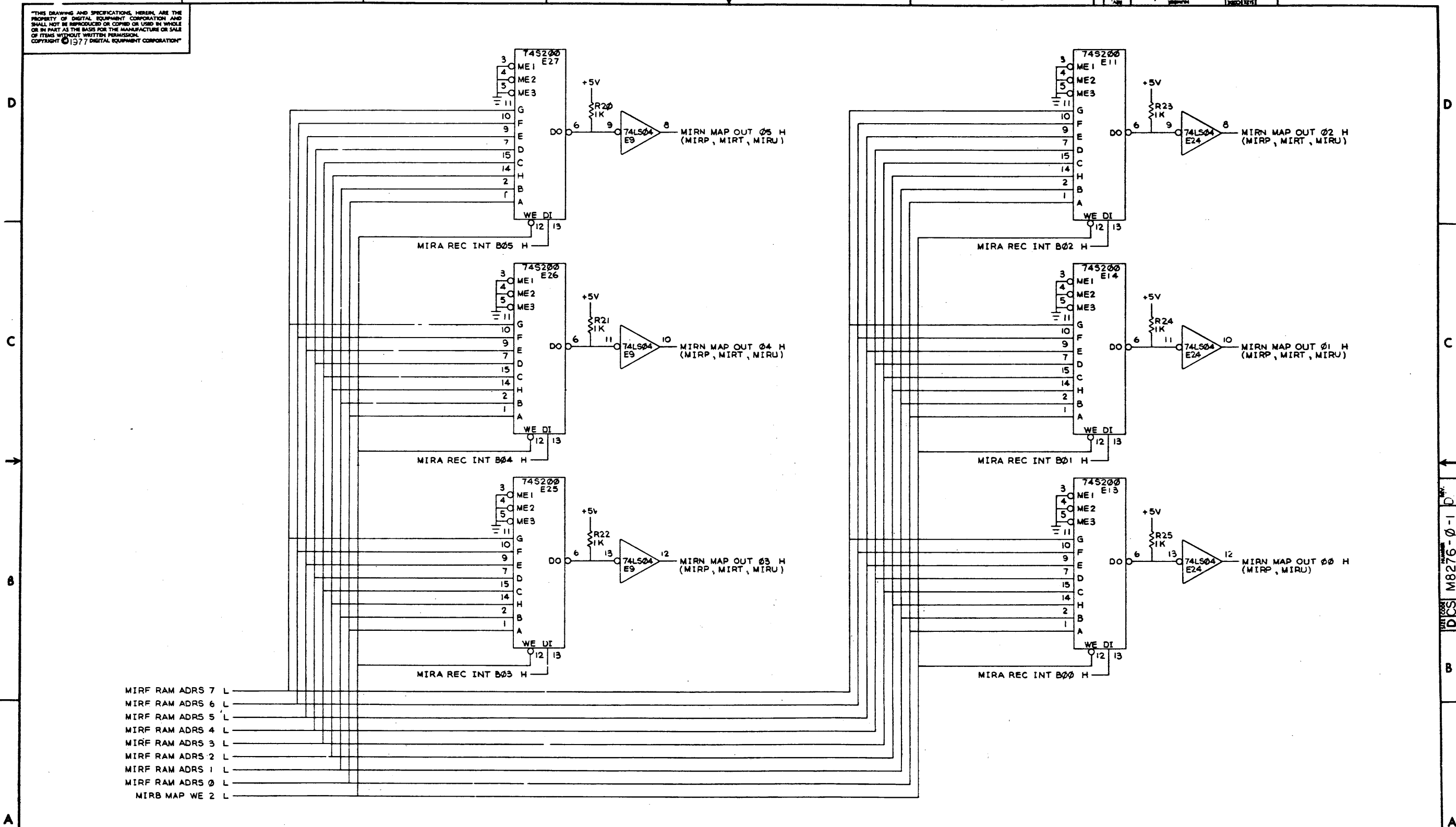
(MAPPING REGISTER (11:06)) (SLOT 2)

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

DCS M8276-0-1 D

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1-0-928W 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 2 L

REVISIONS		
CHK	CHANGE NO.	REV.

(SLOT 2)  
(MAPPING REGISTER (05:00))  
TITLE MBA INTERNAL REGISTERS (MIRN) SIZE CODE NUMBER REV.  
D CS M8276-0-1 D  
SCALE SHEET 13 OF 20 DIST. 1

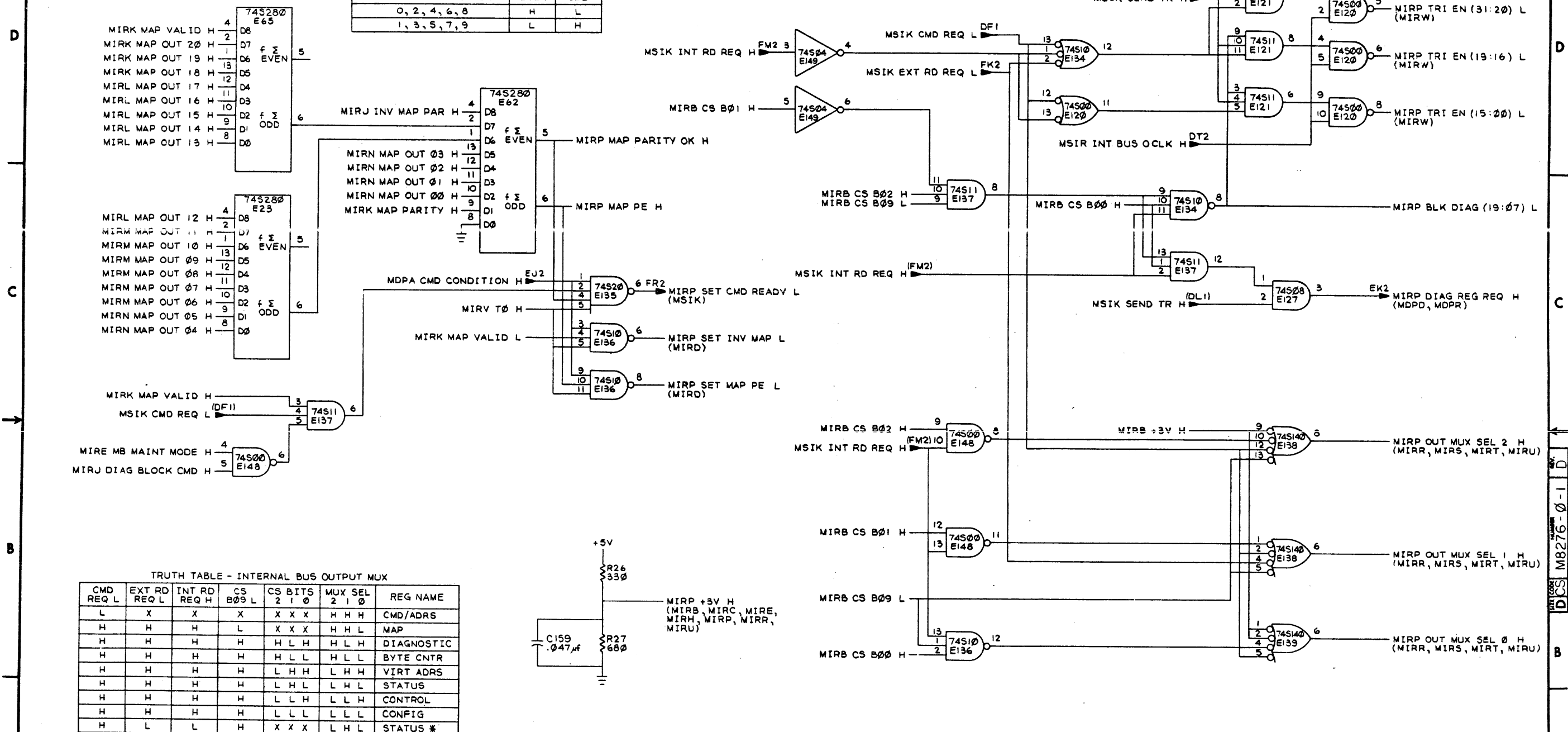
D CS M8276-0-1 D

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1-0-9228W 2

74S280

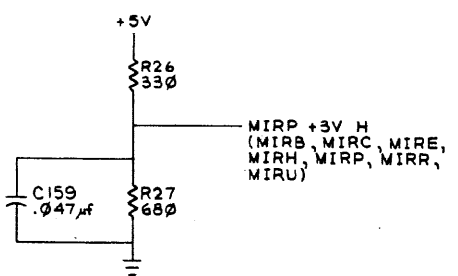
NUMBER OF INPUTS HIGH	EVEN	ODD
0, 2, 4, 6, 8	H	L
1, 3, 5, 7, 9	L	H



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

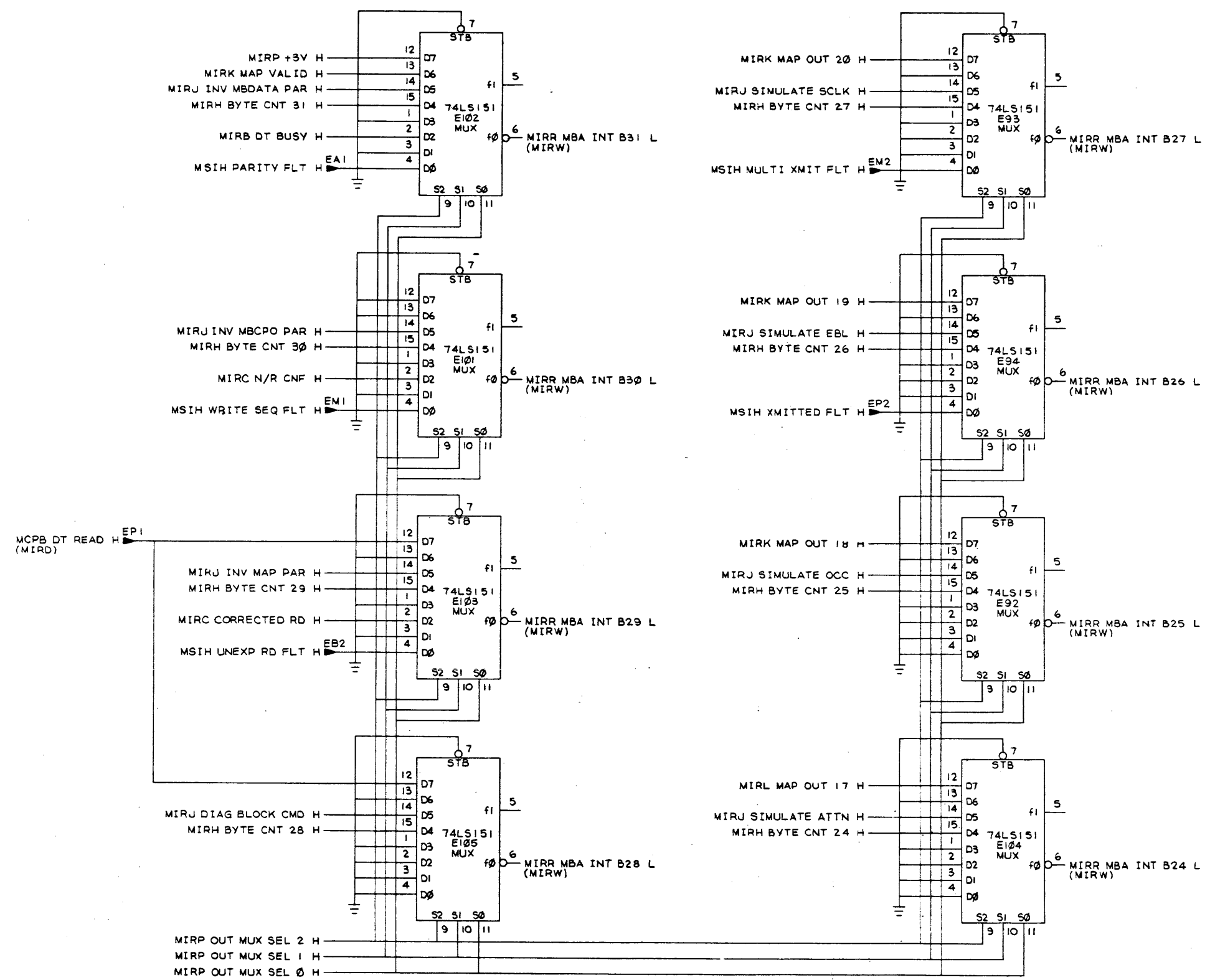
CHK	CHANGE NO.	REV.

(SLOT 2)  
(MAP PAR CHECK, OUTPUT MUX SEL AND ENAB)  
TITLE MBA INTERNAL REGISTERS (MIRP) SIZE CODE NUMBER REV.  
DCS M8276-0-1 D  
SCALE 1:1 SHEET 14 OF 20 DIST. TW

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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



(INTERNAL BUS OUTPUT MUX (31:24)) (SLOT 2)

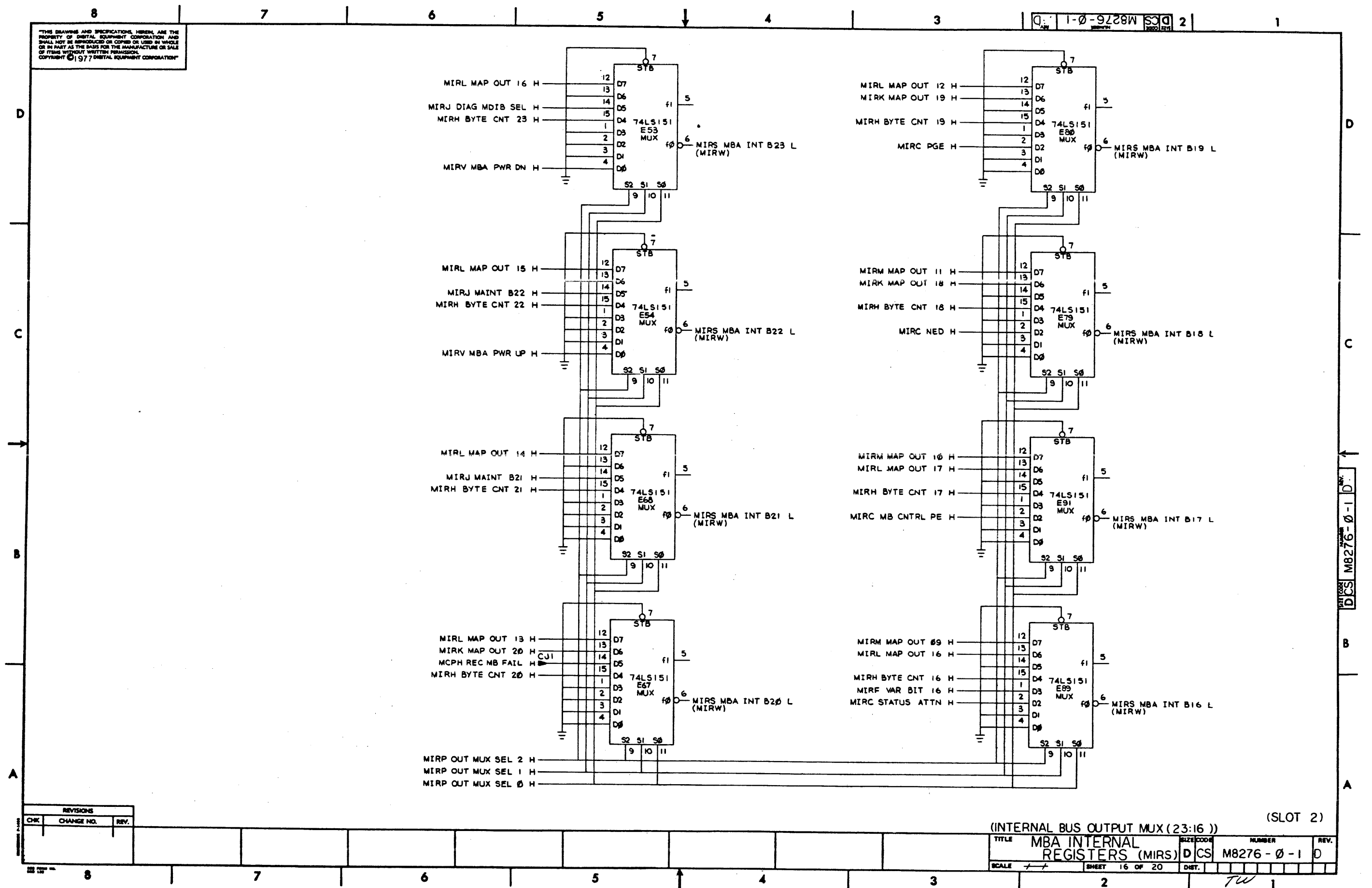
REVISIONS		
CHK	CHANGE NO.	REV.

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



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DCS M8276-0-1



REVISIONS		
CHK	CHANGE NO.	REV.

(INTERNAL BUS OUTPUT MUX (23:16)) (SLOT 2)

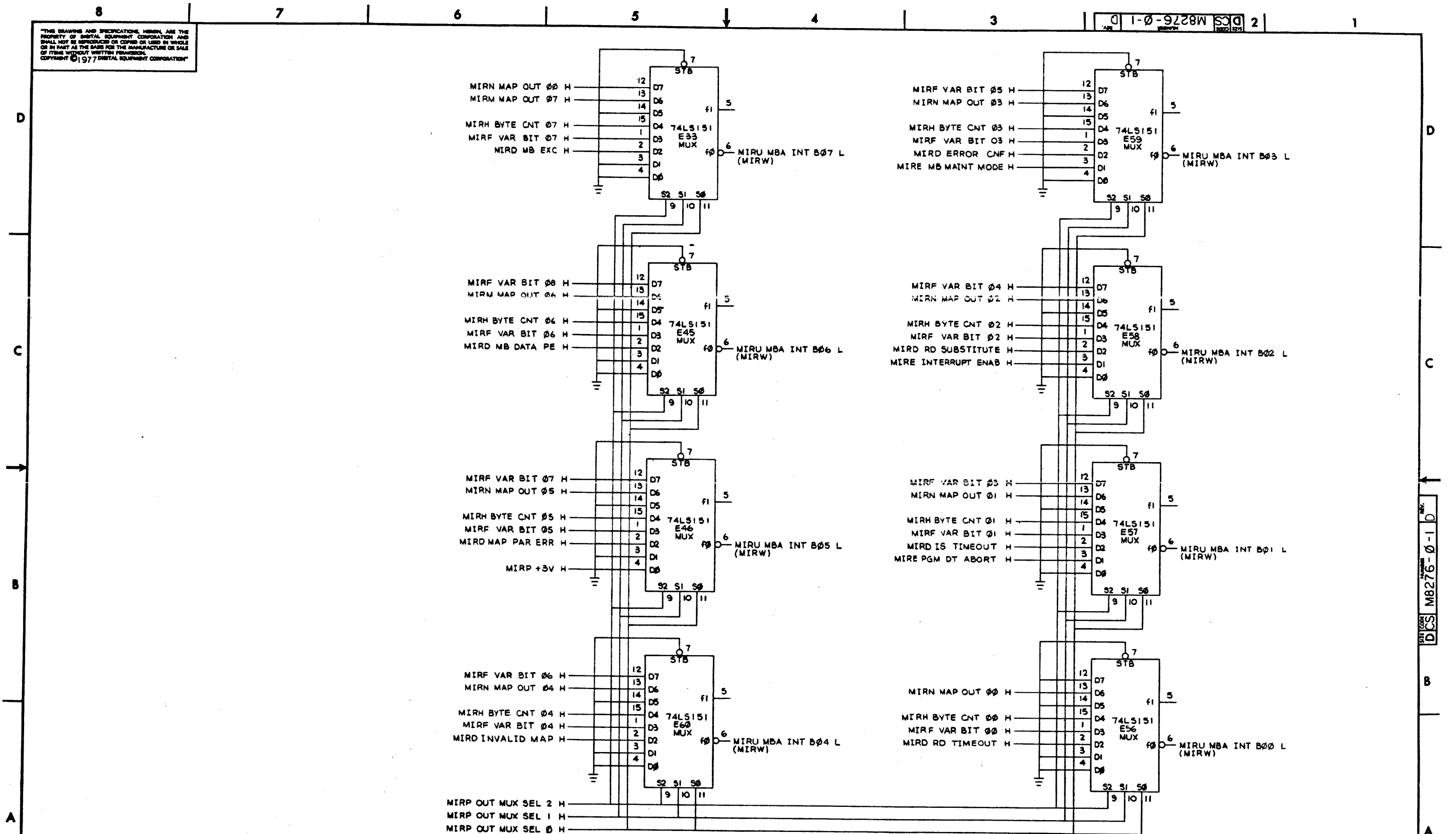
TITLE MBA INTERNAL REGISTERS (MIRS) DCS M8276-0-1 D

SCALE 1:1 SHEET 16 OF 20 DIST. TW



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1-0-9228W 2



REVISIONS		
CHK	CHANGE NO.	REV.

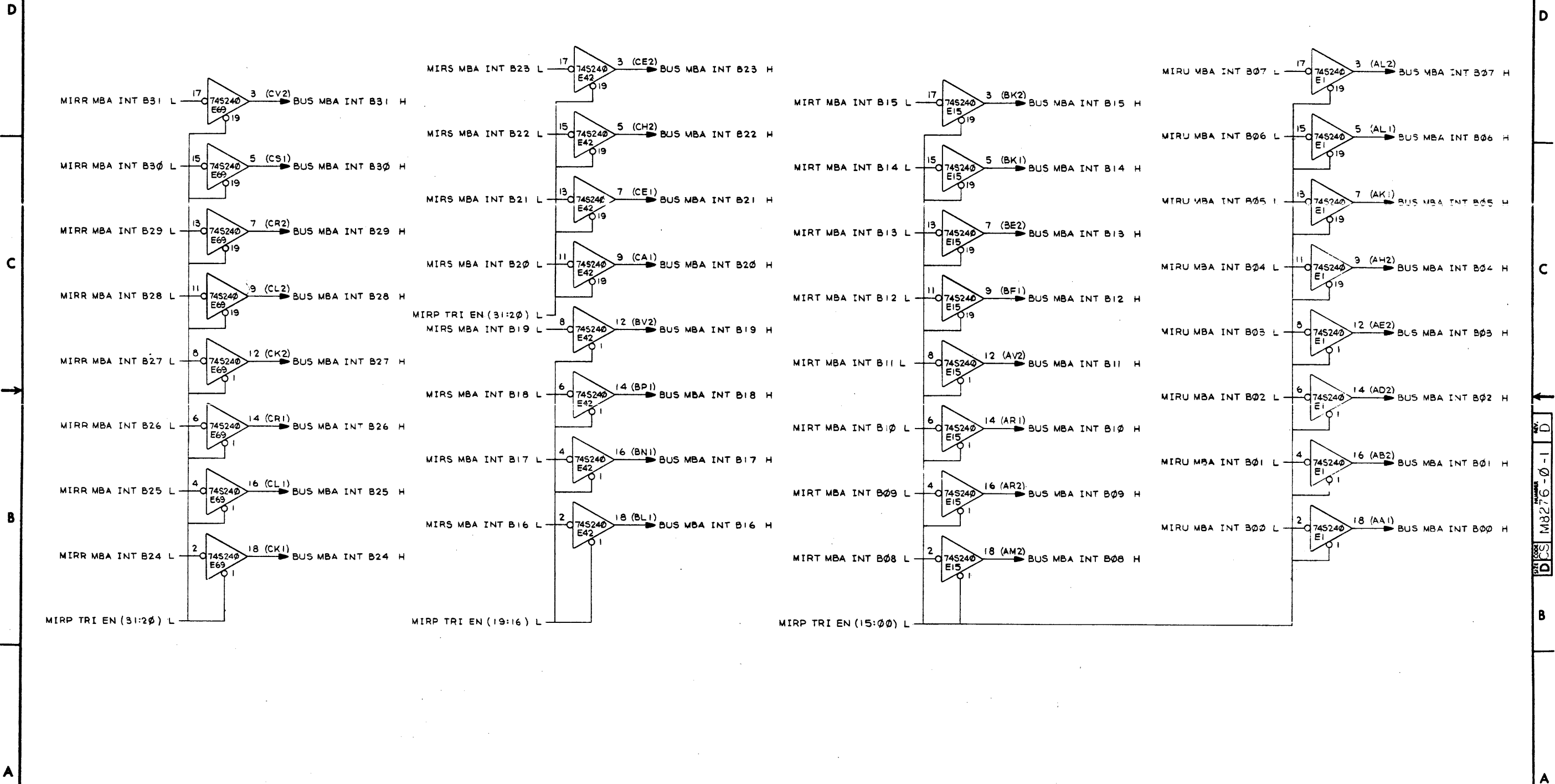
(INTERNAL BUS OUTPUT MUX (07:00)) (SLOT 2)

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

TW 1

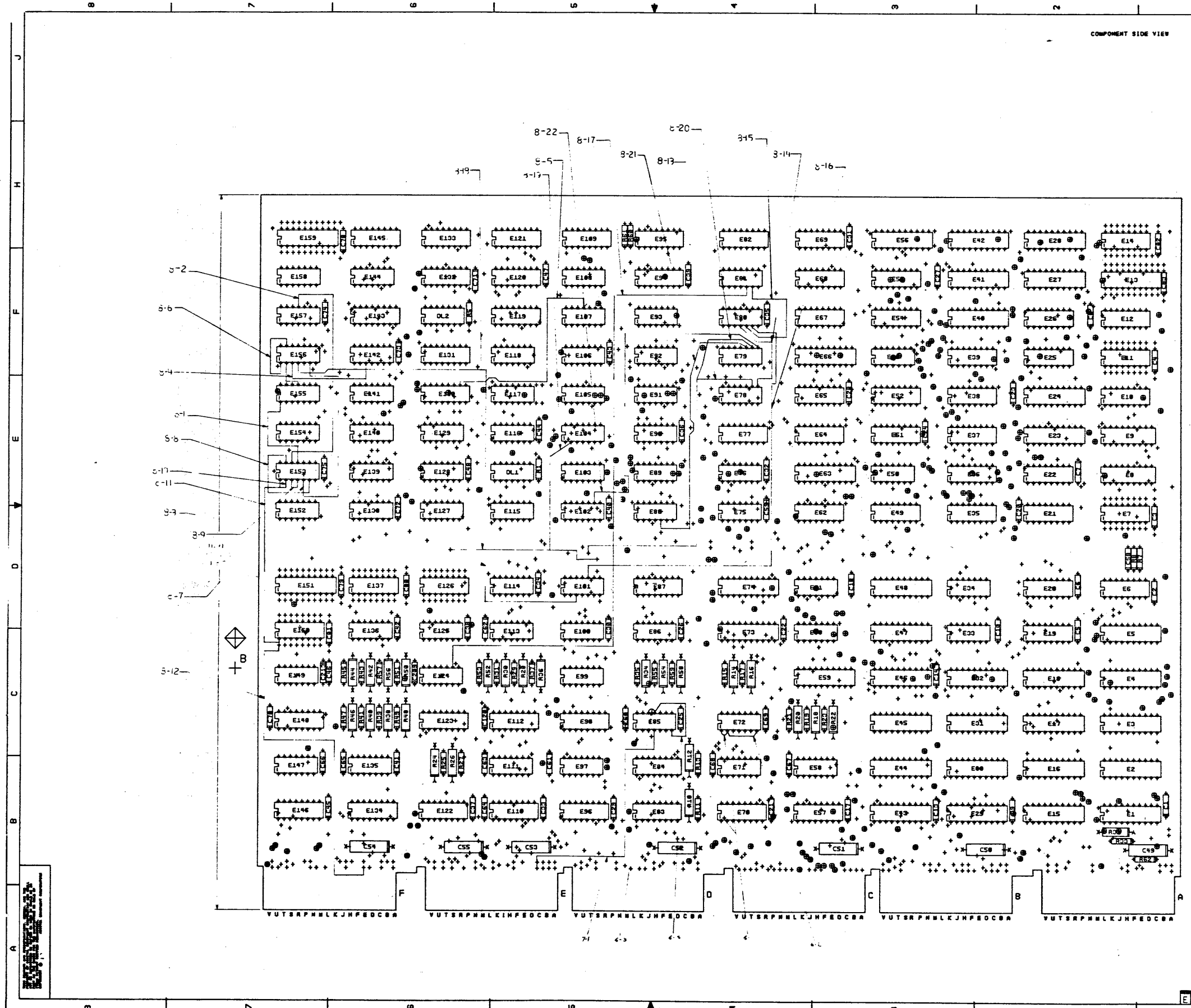


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REVISIONS		
CHK	CHANGE NO.	REV.

(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.			



COMPONENT SIDE VIEW

DATE	11/17/11
DESIGNED BY	MDP
PROJ. NO.	MDP
SCALE	1:1
REV.	0
DATE	11/17/11
DESIGNED BY	MDP
PROJ. NO.	MDP
SCALE	1:1
REV.	0

DATE	11/17/11
DESIGNED BY	MDP
PROJ. NO.	MDP
SCALE	1:1
REV.	0

DATE	11/17/11
DESIGNED BY	MDP
PROJ. NO.	MDP
SCALE	1:1
REV.	0

DATE	11/17/11
DESIGNED BY	MDP
PROJ. NO.	MDP
SCALE	1:1
REV.	0

NOTES:  
EIA M8277-0-0  
TW

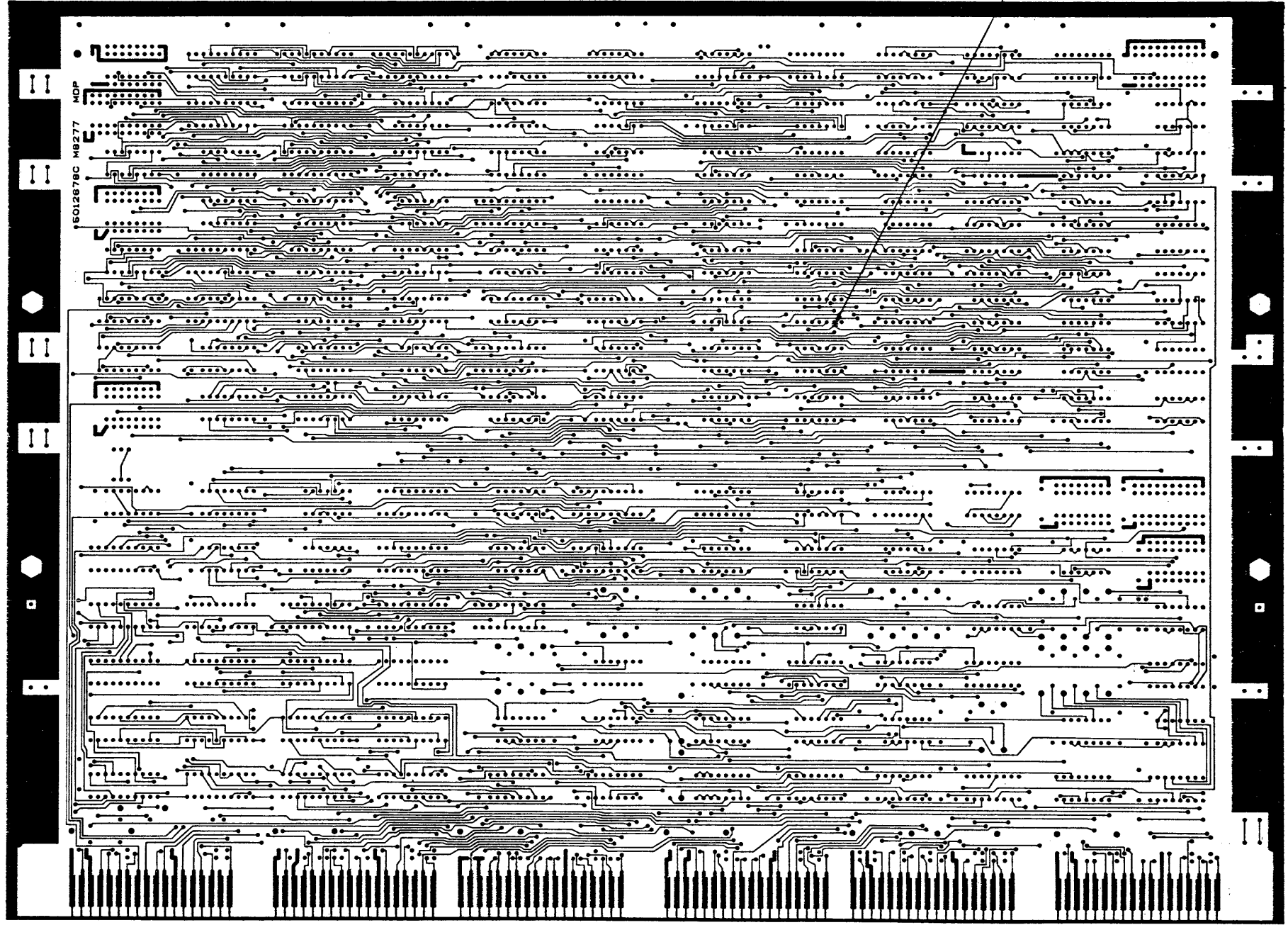


8 7 6 5 4 3 2 1

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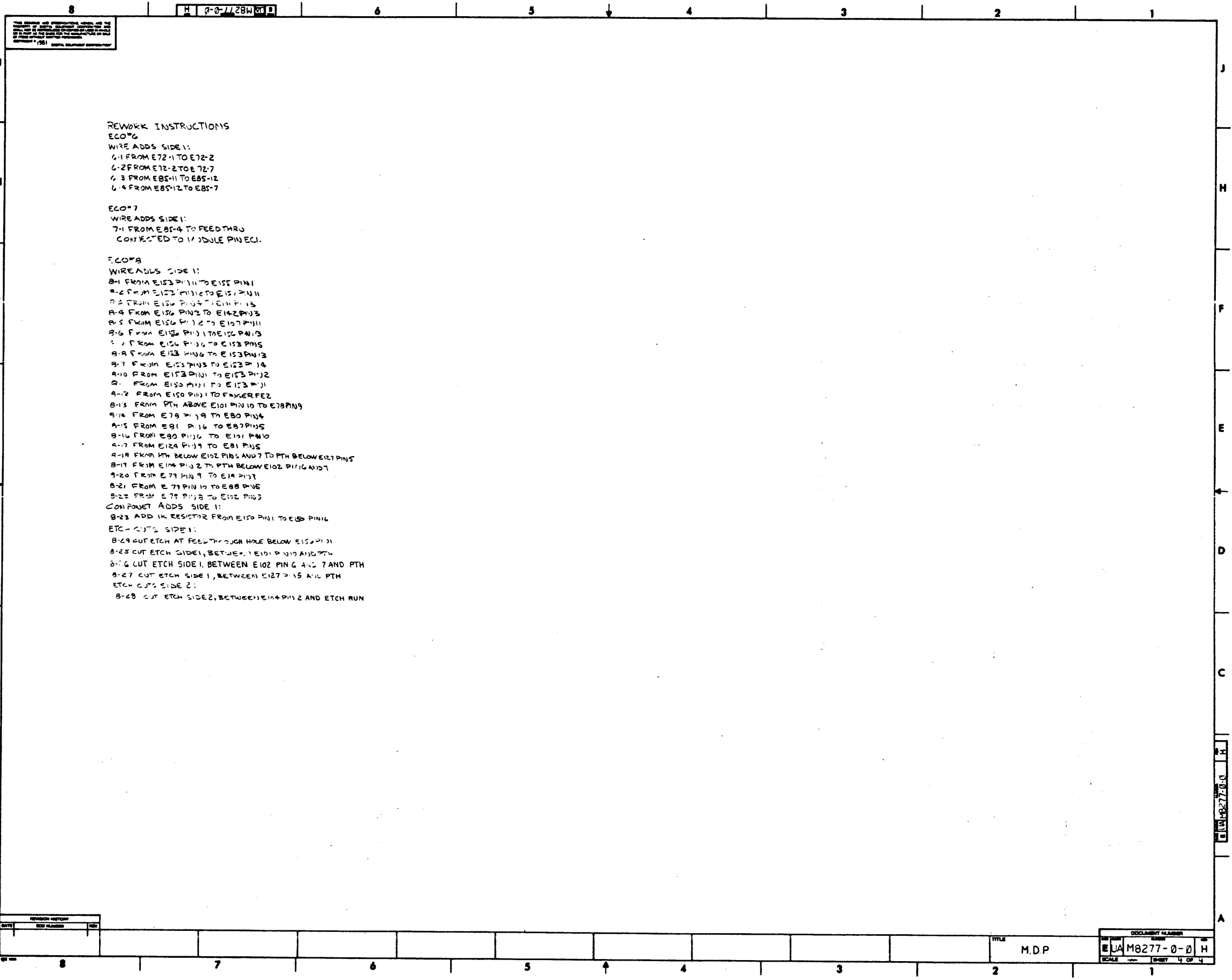
4 ■ 834AJ

8-28



REVISIONS		
DATE	CHANGE NO.	BY





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H 0-0-1128W 01 2

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  
 WIREADDS SIDE 1:  
 8-1 FROM E153 PIN11 TO E153 PIN1  
 8-2 FROM E153 PIN12 TO E153 PIN11  
 8-3 FROM E156 PIN4 TO E167 PIN15  
 8-4 FROM E156 PIN2 TO E162 PIN3  
 8-5 FROM E156 PIN2 TO E167 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 PIN2  
 8-11 FROM E150 PIN1 TO E153 PIN1  
 8-12 FROM E150 PIN1 TO FINGER FE2  
 8-13 FROM PTH ABOVE E101 PIN10 TO E78 PIN9  
 8-14 FROM E79 PIN19 TO E80 PIN4  
 8-15 FROM E81 PIN16 TO E80 PIN3  
 8-16 FROM E80 PIN6 TO E101 PIN10  
 8-17 FROM E124 PIN9 TO E81 PIN5  
 8-18 FROM 4TH BELOW E102 PIN6 AND 7 TO PTH BELOW E121 PIN5  
 8-19 FROM E104 PIN2 TO PTH BELOW E102 PIN6 AND 7  
 8-20 FROM E79 PIN9 TO E14 PIN3  
 8-21 FROM E79 PIN10 TO E88 PIN5  
 8-22 FROM E79 PIN3 TO E102 PIN3  
 CONDUIT ADDS SIDE 1:  
 8-23 ADD 1K RESISTOR FROM E150 PIN1 TO E150 PIN16  
 ETC-CUTS SIDE 1:  
 8-24 CUT ETCH AT FEEDTHRU HOLE BELOW E150 PIN1  
 8-25 CUT ETCH SIDE 1, BETWEEN E101 PIN10 AND PTH  
 8-26 CUT ETCH SIDE 1, BETWEEN E102 PIN6 AND 7 AND PTH  
 8-27 CUT ETCH SIDE 1, BETWEEN E127 PIN15 AND PTH  
 ETC-CUTS SIDE 2:  
 8-28 CUT ETCH SIDE 2, BETWEEN E104 PIN2 AND ETCH RUN

REVISION HISTORY	
DATE	ECO NUMBER

TITLE  
 M.D.P

DOCUMENT NUMBER  
 E LA M8277-0-0 H  
 SCALE --- SHEET 4 OF 4

E LA M8277-0-0 H

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
3	3		1012084-01	8 MFD 25V +75-10% AL EL	7	C49-C55
4	4		1300271-00	220.0 .25 W 5.0 % CC	2	R1,R5
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	DIGITAL			
ENG	ECO NUMBER	REV	SECTION A OF A	CHK'D:	F.SMART	DATE:	11-SEP-79	PARTS LIST			
---	INITIAL	D	SECTION.VARIATION INDEX	CHK'D:	F.SMART <td>DATE:</td> <td>11-SEP-79</td> <td colspan="4">M D P</td>	DATE:	11-SEP-79	M D P			
J.F.	00006	E	[A] 00								
R.C.	M8277-TW007	F	[B]								
D.R.	M8277-TW008	H	[C]	DES.ENG:	K.OKIN	DATE:	11-SEP-79				
			[D]								
			[E]								
			[F]	RESP.ENG.:	K.OKIN	DATE:	11-SEP-79	DOCUMENT NUMBER			
			[G]					SIZE	CODE	NUMBER	REV
			[H]								
			[I]	MFG.ENG.:	M.TERELLA	DATE:	11-SEP-79	K	PL	M8277-0-DBP	H
			[J]								
			[K]	ASSEMBLY NUMBER:		TOP DOCUMENT NUMBER:		FILE NAME:		EDIT #	
			[L]					Z0649.FLS		6	
			[M]								
			[N]								

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TW

LINE ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
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	

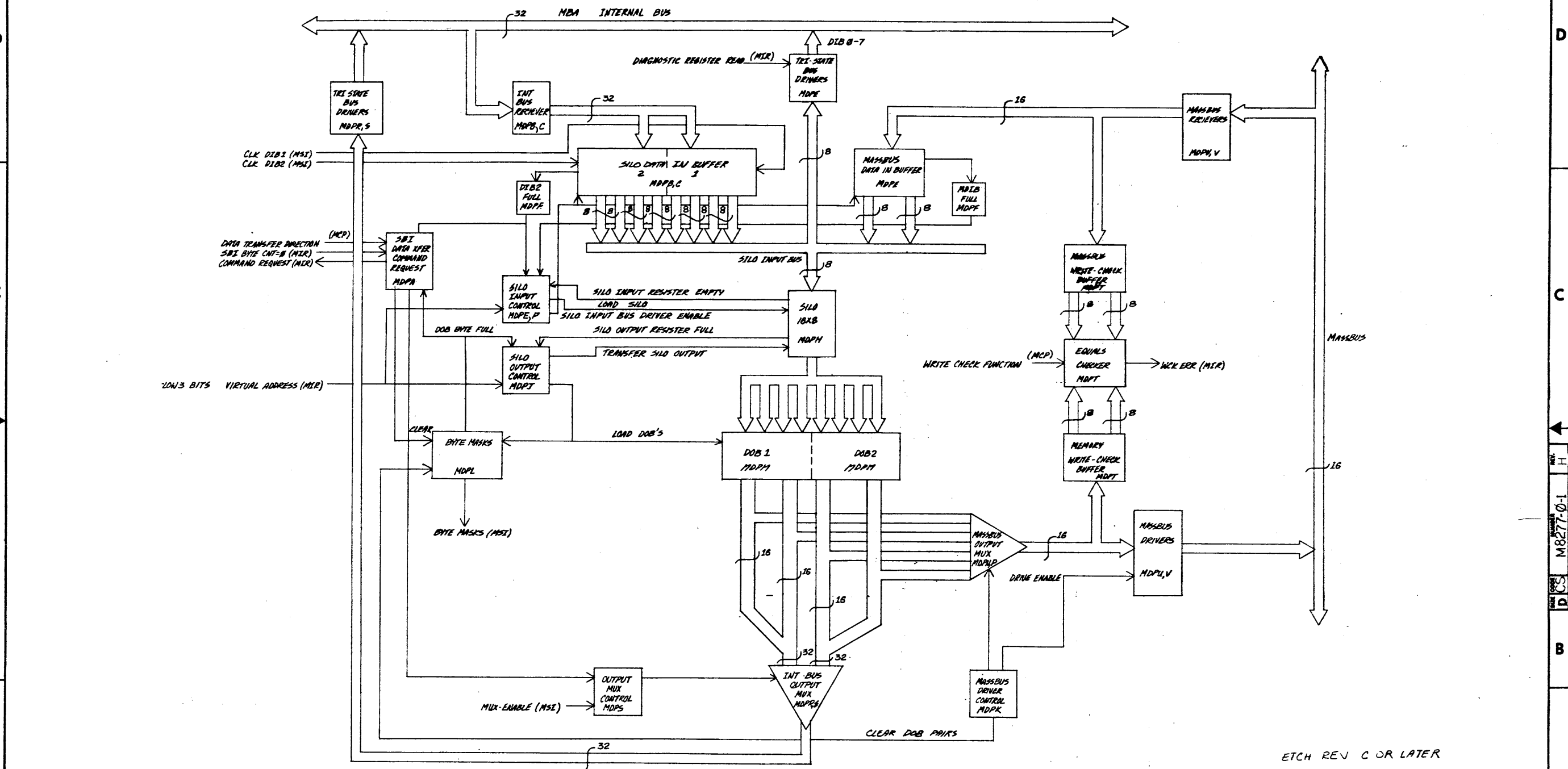
54 NOTE: I.C. SPARE LOCATIONS ARE: E7,E13,E14,E137,E150,E151,E159,E87,E11.

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

TW

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H 1-0-1128W SQ 2



ETCH REV C OR LATER

(MASS BUS ADAPTER BLOCK DIAGRAM)(SLOT 3)

REV.	CHG. NO.	DATE	BY	CHK
D	1004	11-15-77	JF	MDP
E	1006	11-15-77	JF	MDP
F	1007	11-15-77	JF	MDP
G	1008	11-15-77	JF	MDP
H	1009	11-15-77	JF	MDP

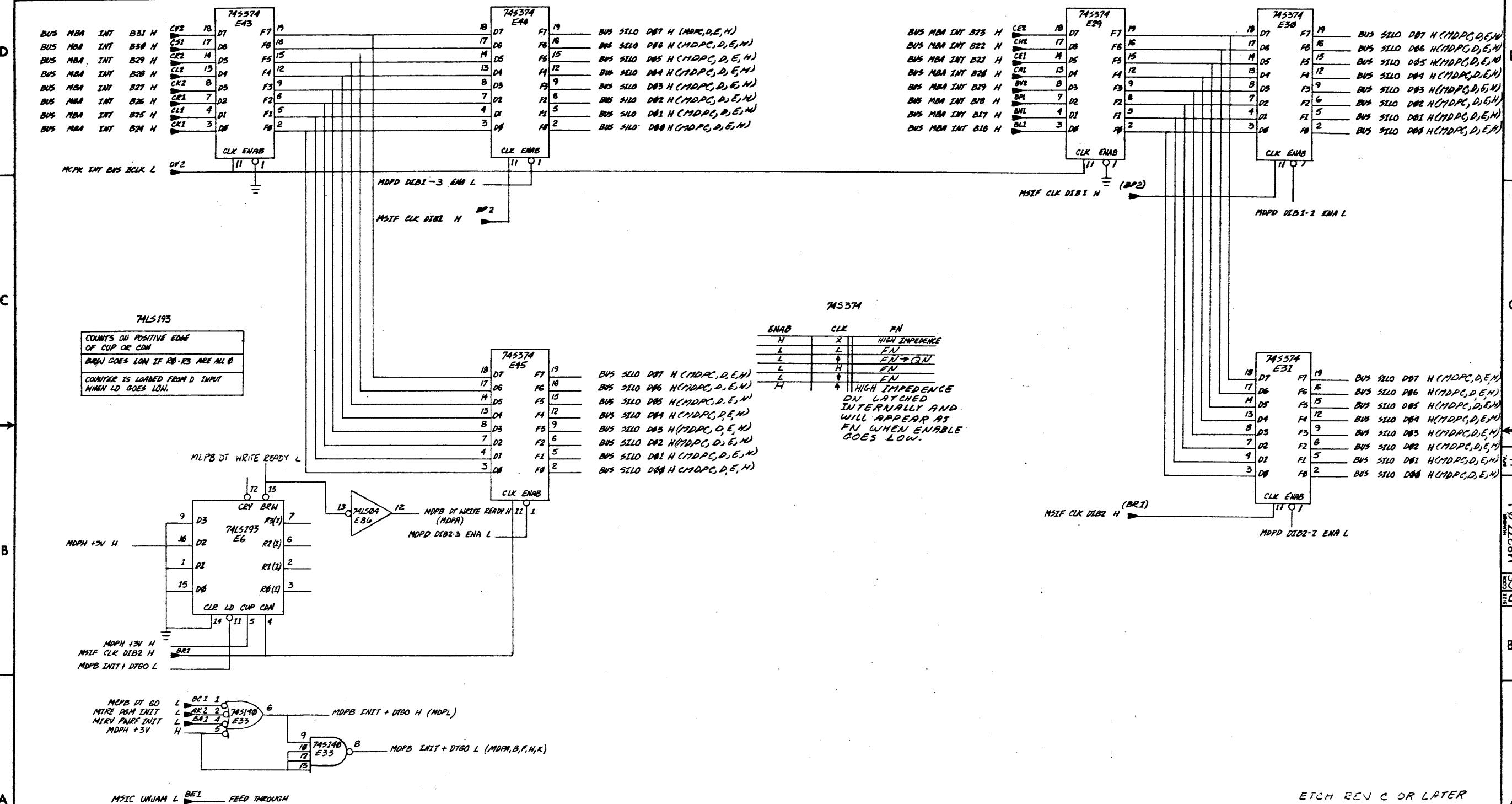
DRN	Chido	11-15-77	FIRST USED ON	11780	DIGITAL
CHK'D BY	Chido	11-15-77	TITLE	MASSBUS (MDP) DATA PATHS	
ENG. IN CHARGE	TW	11-15-77	PROJ. ENG. IN CHARGE	TW	11-15-77
PROD. IN CHARGE	JL	11-15-77	NEXT HIGHER ASSY.		
SCALE	1:1		SIZE	D	CS
SHEET	1 OF 20		NUMBER	M8277-0-1	REV. H

M8277-0-1

TW

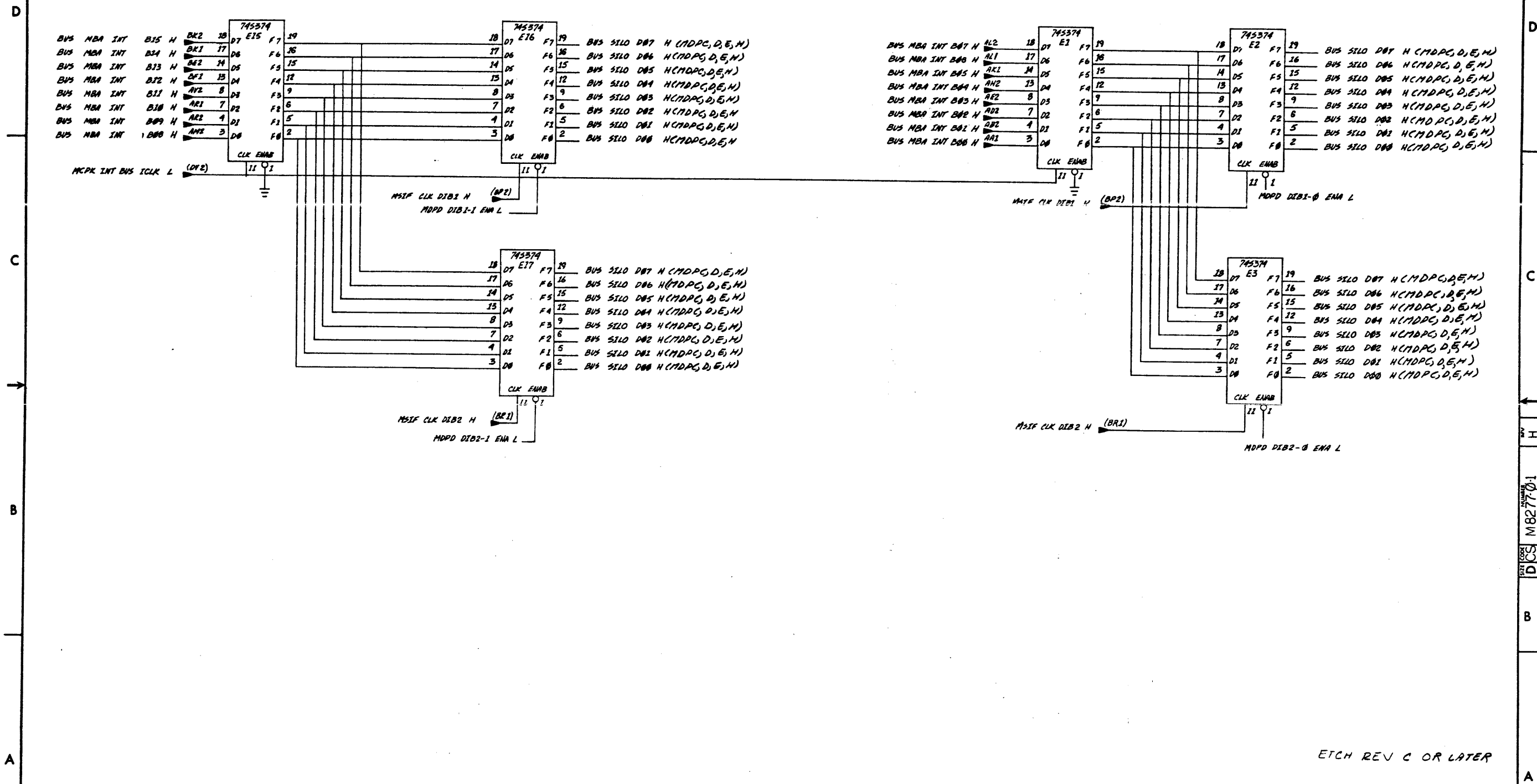


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REVISIONS		
CHK	CHANGE NO.	REV.

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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	M8277-0-1	REV.	H
SCALE	1X	SHEET	4	OF 20	DIST.		

ETCH REV C OR LATER

D CS M8277-0-1

TW

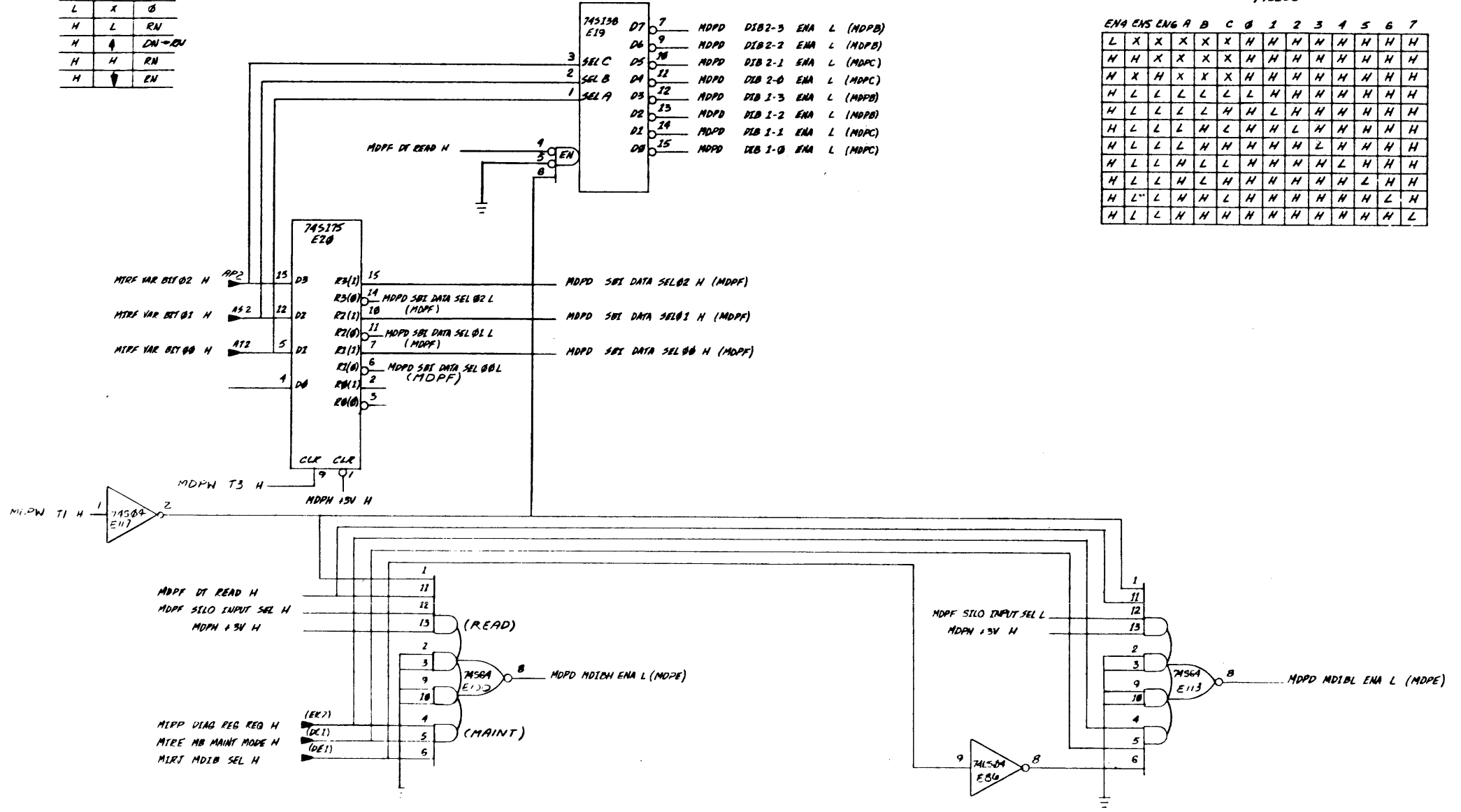
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74S175

CLR	CLK	EN
L	X	0
H	L	DN-EN
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	H	H	H	H	H	H	H	H
H	H	X	X	X	X	H	H	H	H	H	H	H	H
H	X	H	X	X	X	H	H	H	H	H	H	H	H
H	L	L	L	L	L	H	H	H	H	H	H	H	H
H	L	L	L	L	H	H	L	H	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	H	H	H	H	L	H	H	H	H
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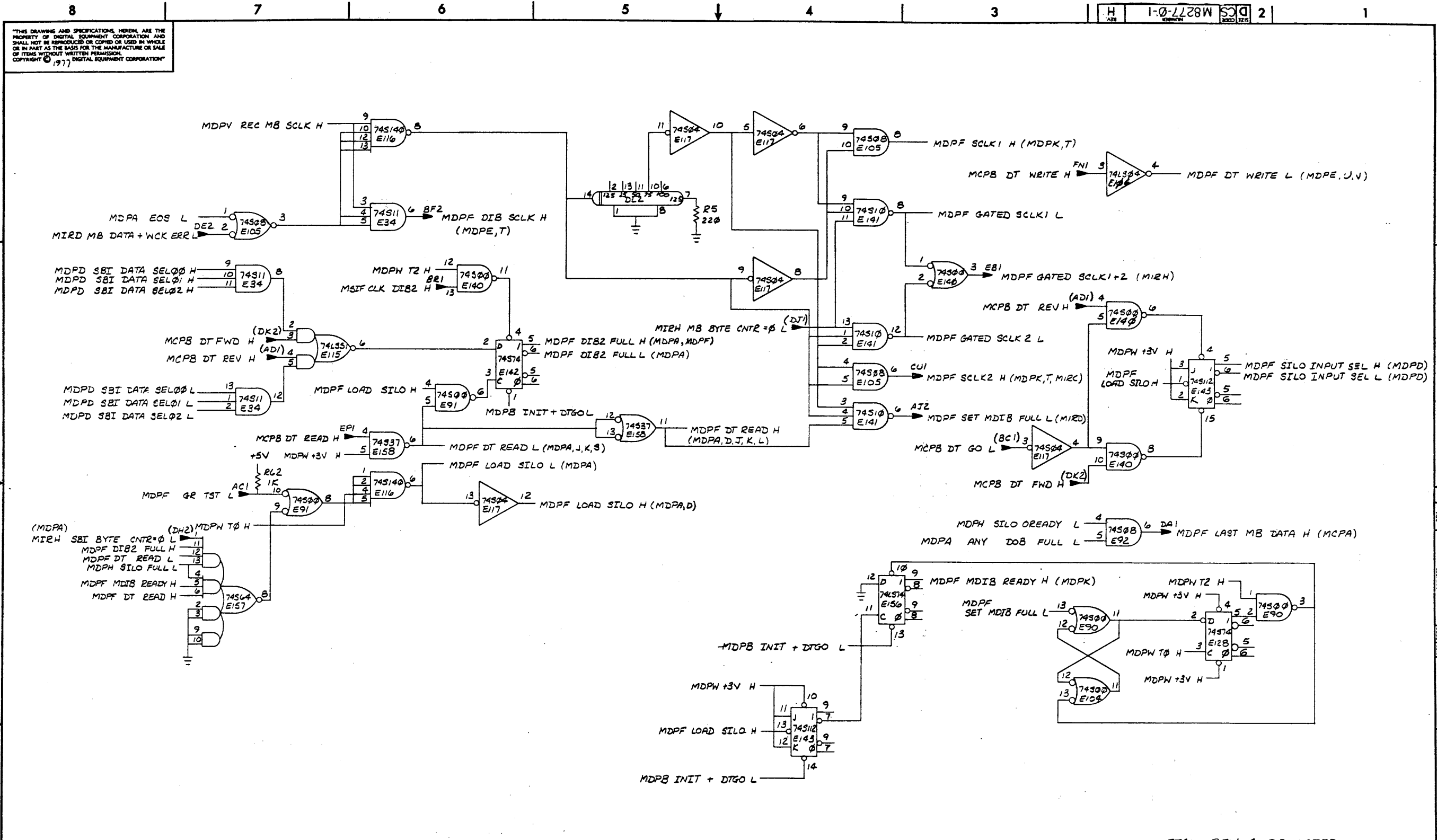
REVISIONS

CHK	CHANGE NO	REV





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ETCH REV C OR LATER

(SILO INPUT CONTROL) (SLOT 3)

TITLE	SIZE CODE	NUMBER	REV.
MASS BUS DATA PATHS (MDPF)	D CS	M8277-0-1	H
SCALE	SHEET	DIST.	
+	7 OF 20		

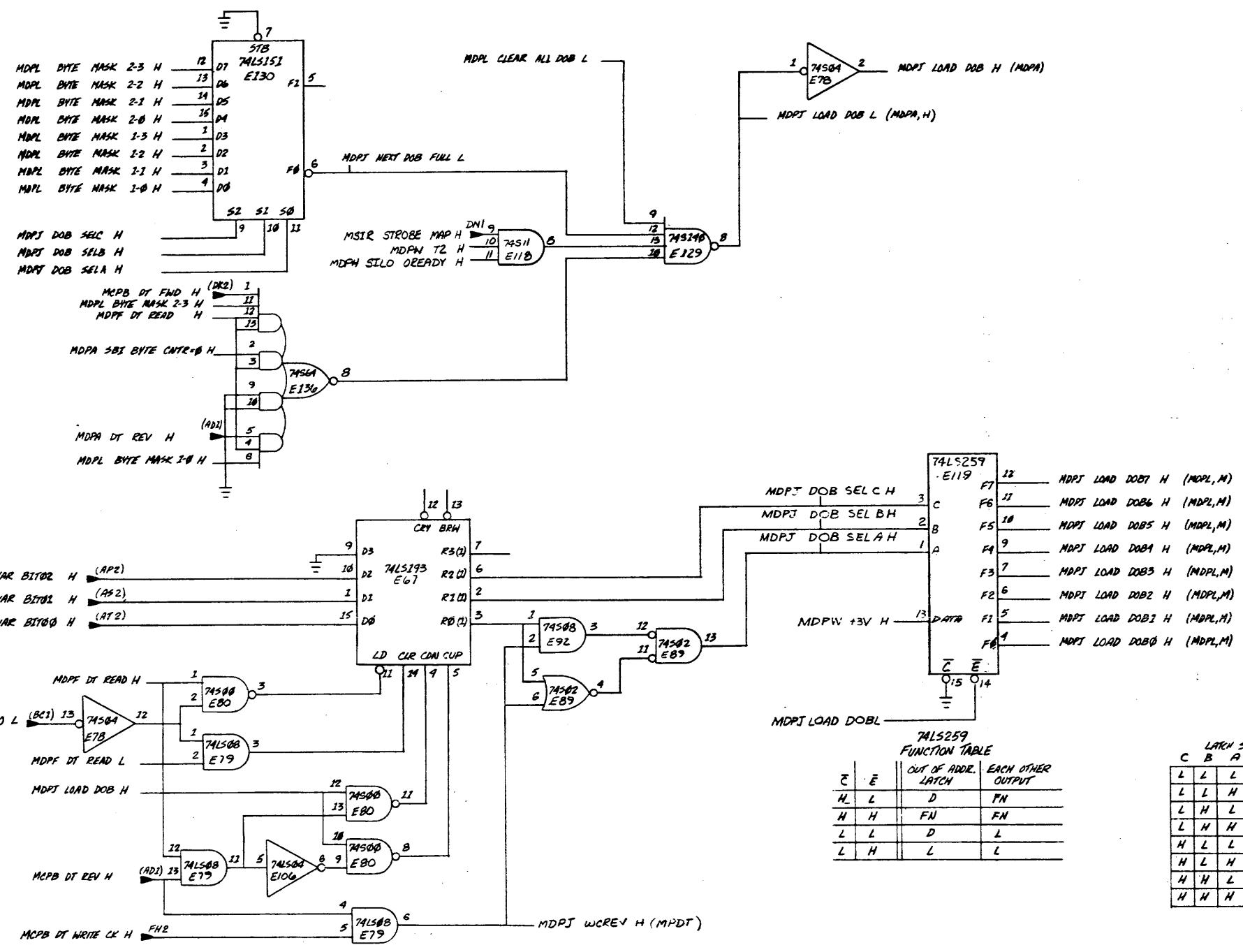
REVISIONS		
CHK	CHANGE NO.	REV.



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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

Z	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

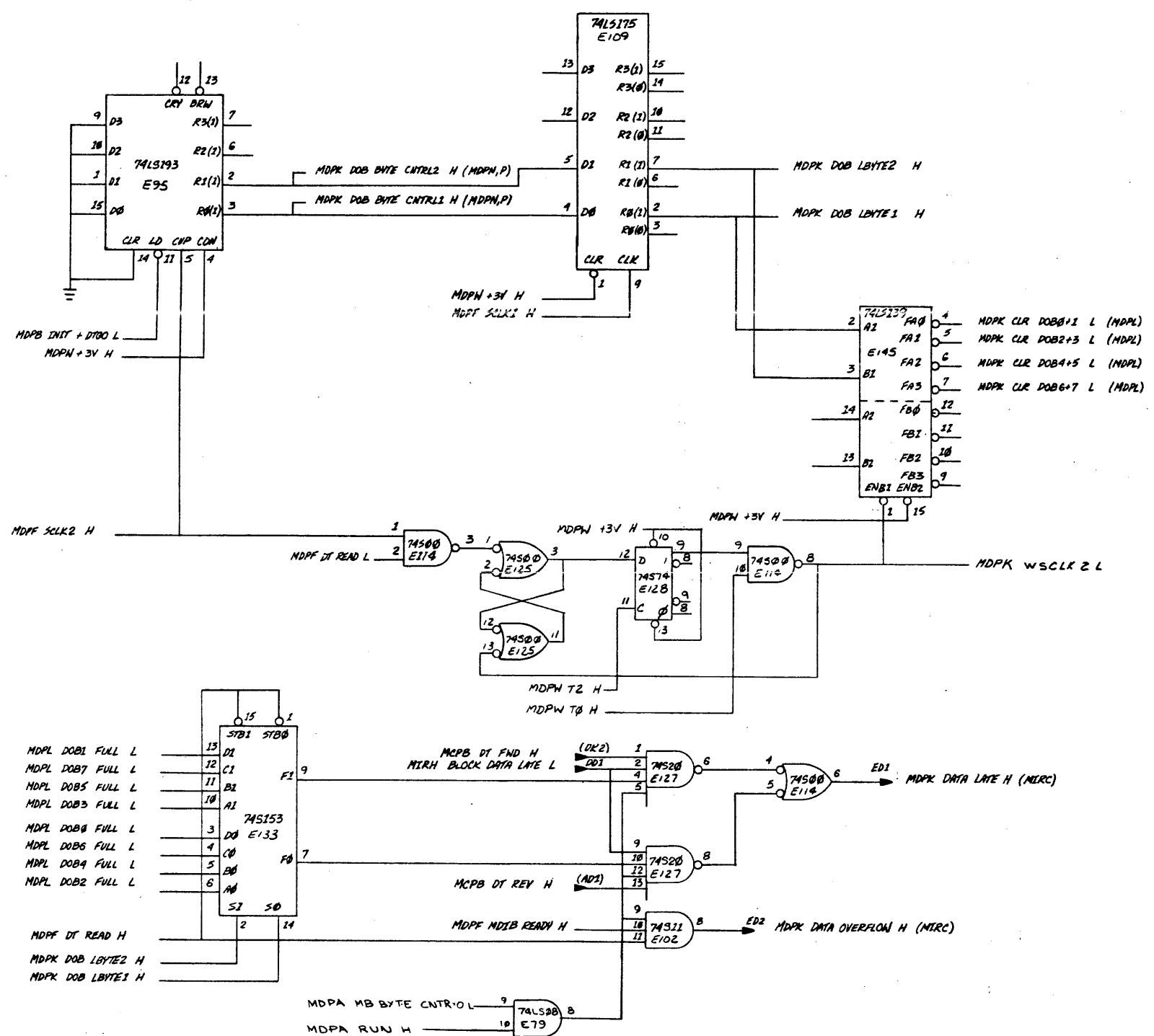
C	B	A	LATCH ADDRESSED
L	L	L	0
L	L	H	1
L	H	L	2
L	H	H	3
H	L	L	4
H	L	H	5
H	H	L	6
H	H	H	7

EICH REV C OR LATER

REVISIONS

CHK	CHANGE NO.	REV.

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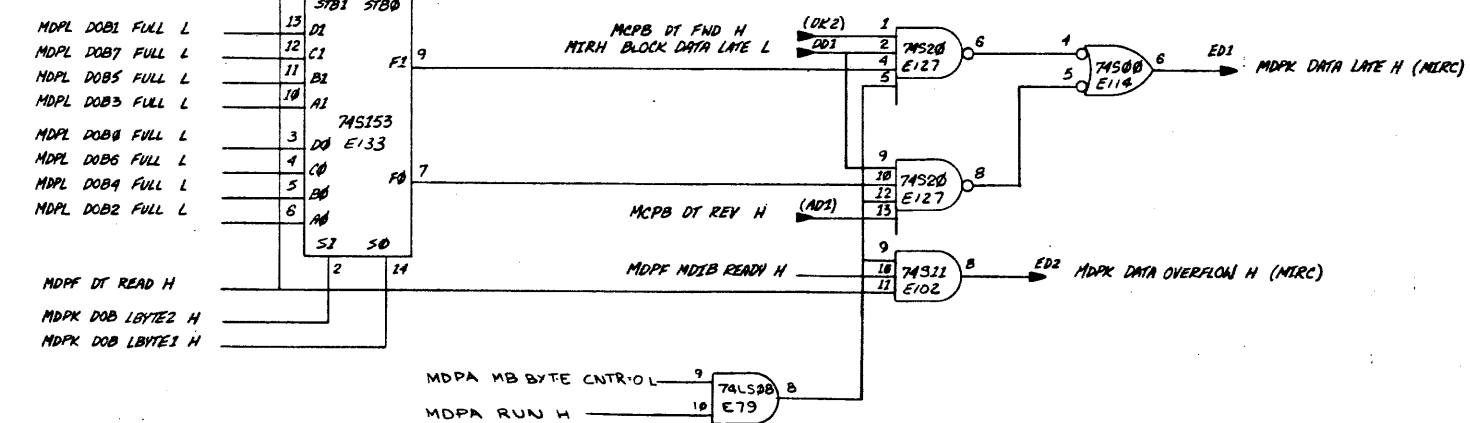


74LS139  
EACH MIX

ENB	A	B	F0	F1	F2	F3
H	X	X	H	H	H	H
L	L	L	L	H	H	H
L	L	H	H	L	H	H
L	H	L	H	H	L	H
L	H	H	H	H	H	L

74LS153

SI	SO	STB0	STB0	STB1	STB1
		L	H	L	H
L	L	L	A0	L	A1
L	H	L	B0	L	B1
H	L	L	C0	L	C1
H	H	L	D0	L	D1

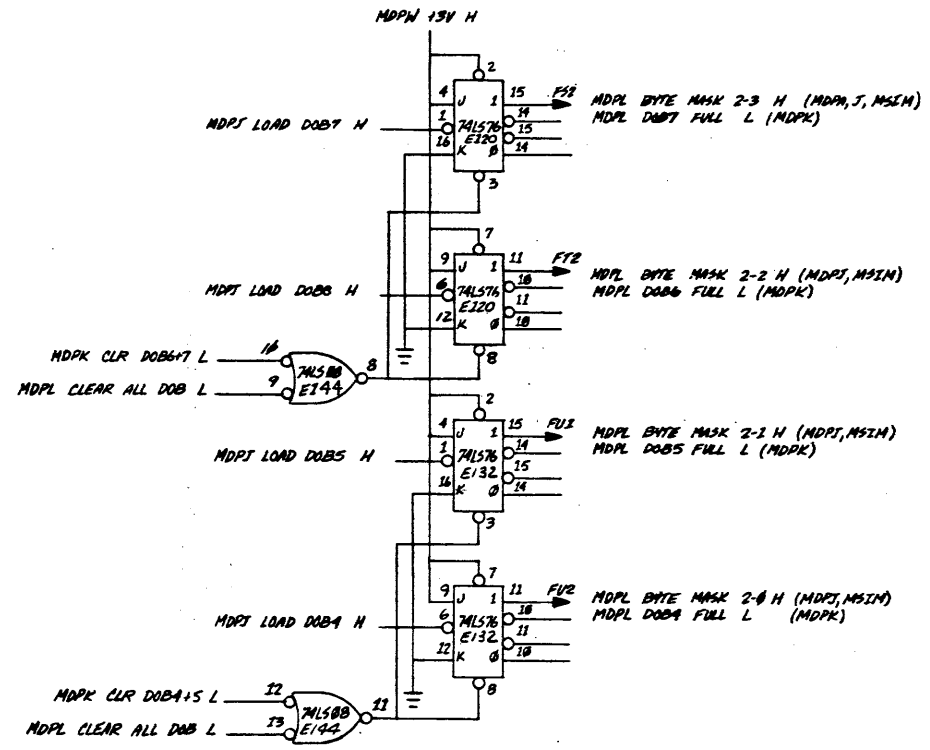
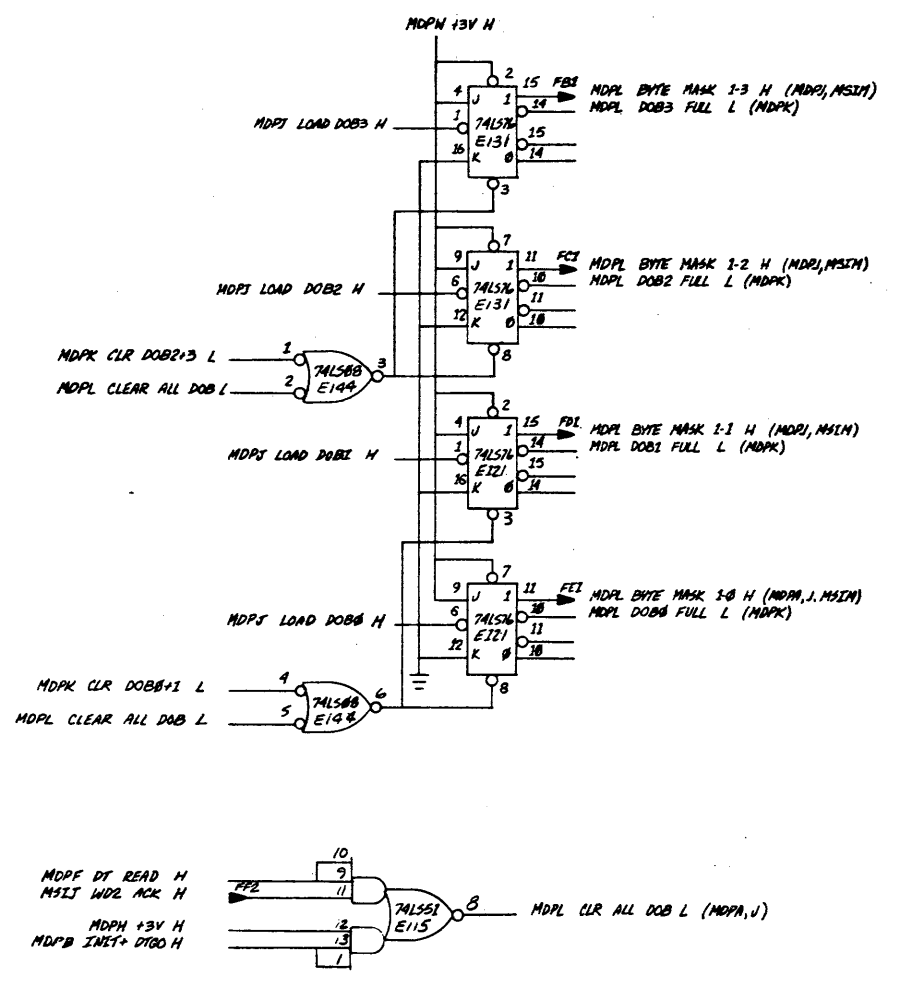


EACH REV C OR LATER

REVISIONS

CHK	CHANGE NO.	REV.

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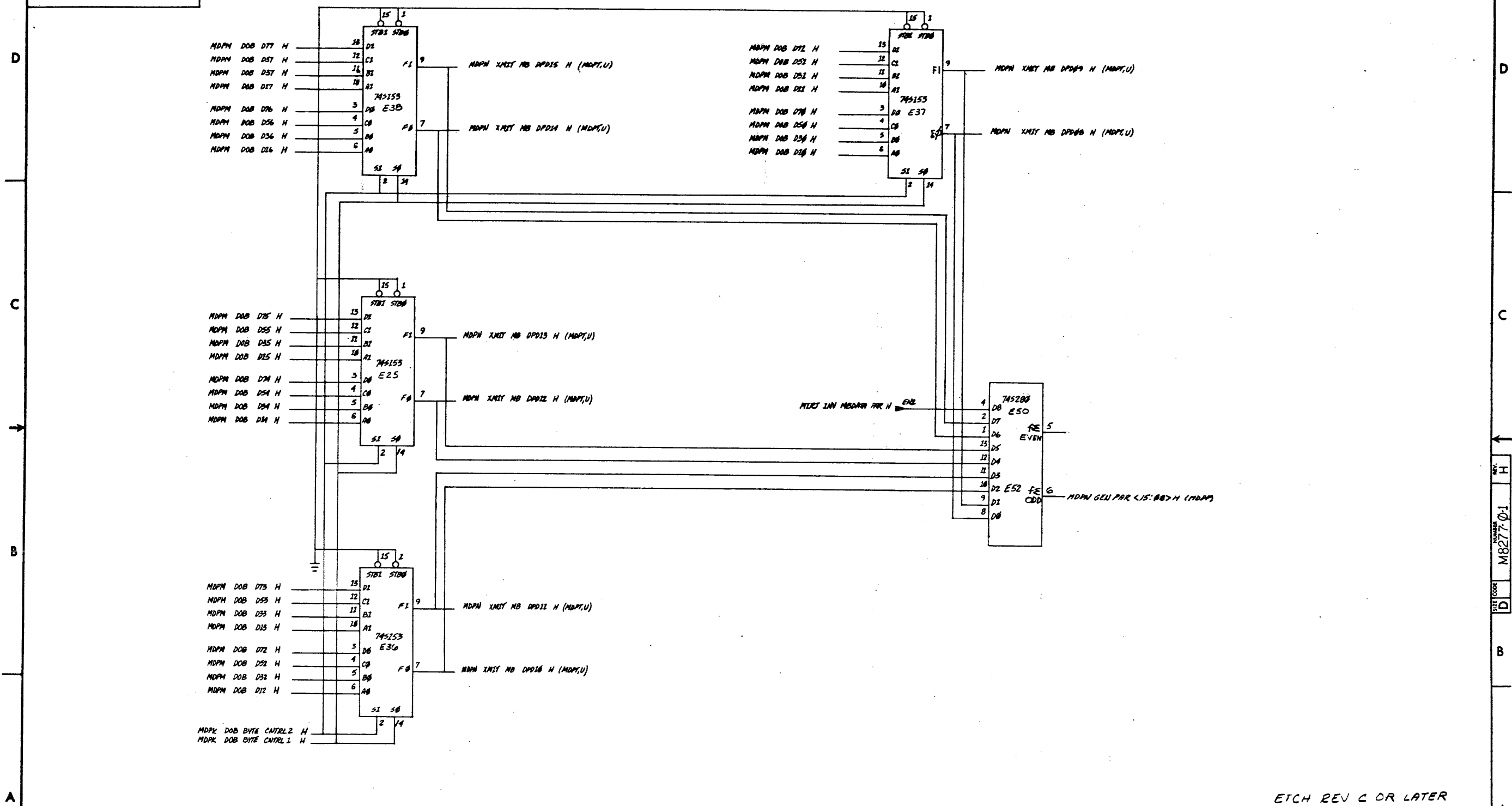
ETCH REV C OR LATER

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



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ETCH REV C OR LATER

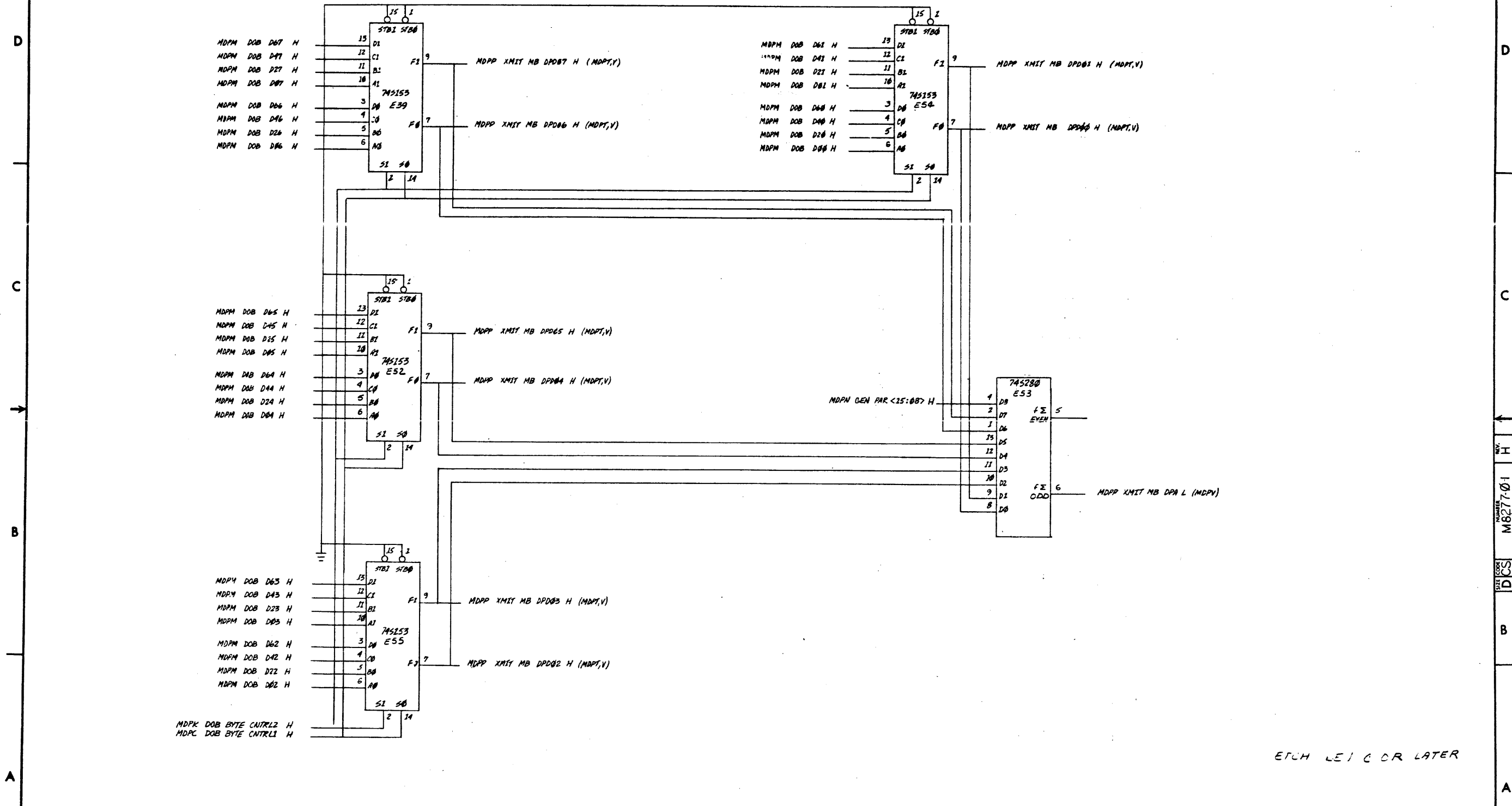
REVISIONS		
CHK	CHANGE NO.	REV.

(XMIT MB DATA <15:08> (PAR GEN))		SLOT 3	
TITLE	MASSBUS DATA PATHS (MDPN)	SIZE CODE	D CS
NUMBER	M8277-01	REV.	H
SCALE	1/1	SHEET	13 OF 20

NUMBER M8277-01  
 DATE CODE D  
 REV. H



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ETCH LEI C OR LATER

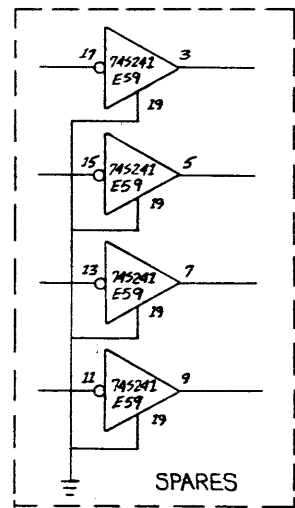
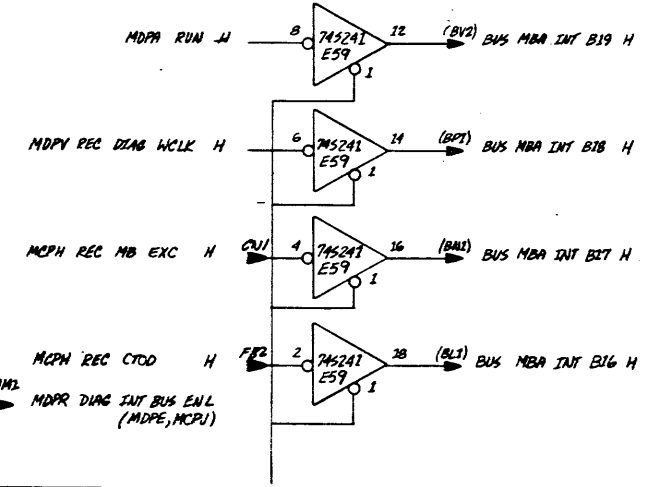
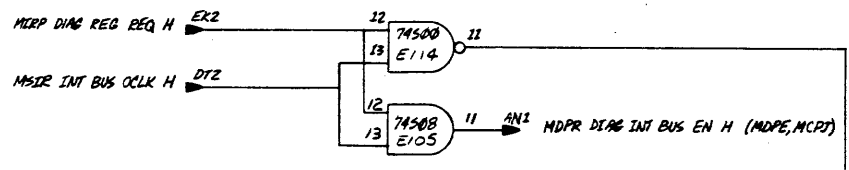
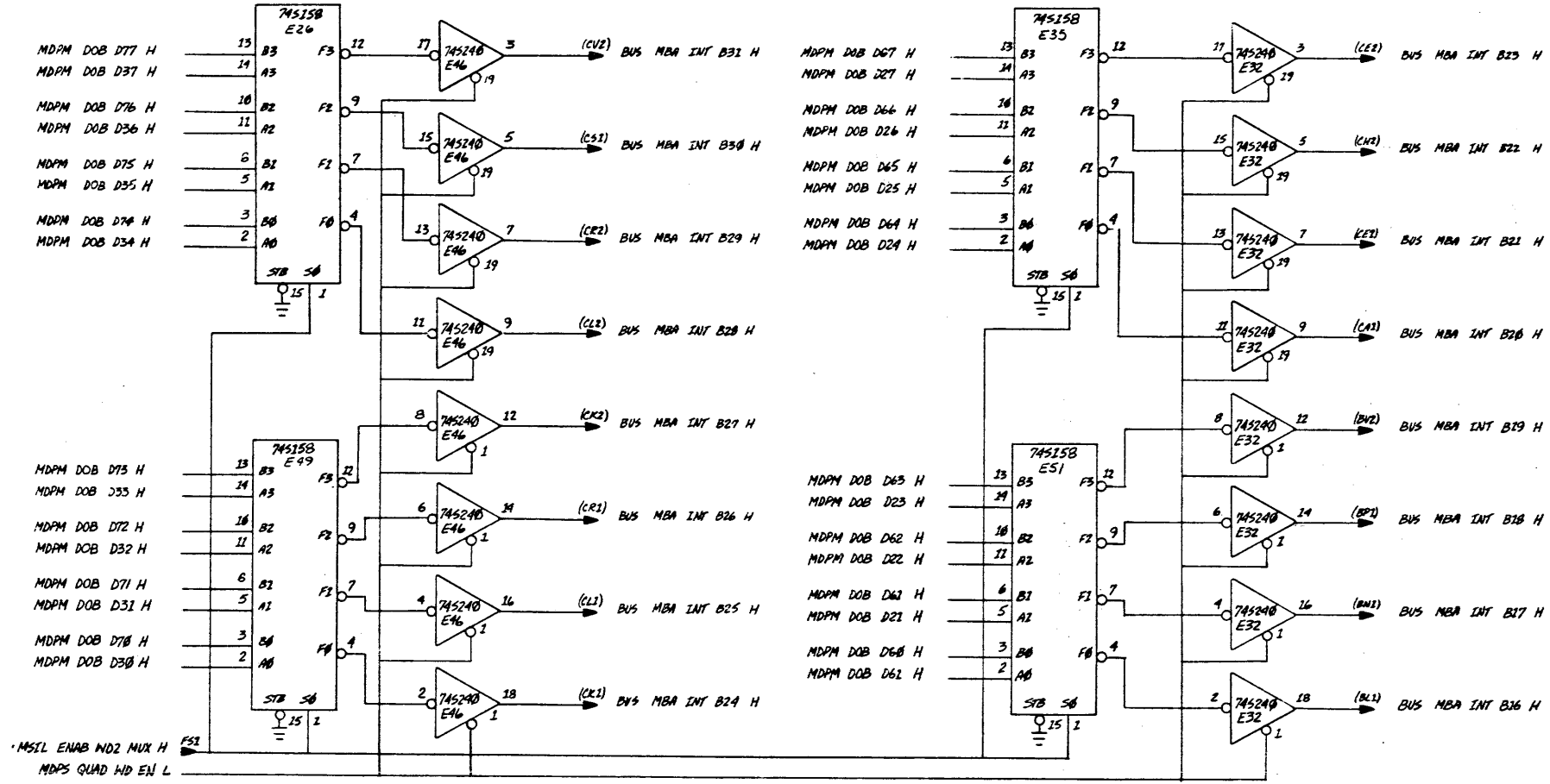
REVISIONS		
CHK	CHANGE NO.	REV.

(XMIT MB DATA <07:00> (PAR GEN))		(SLOT 3)	
TITLE	SIZE CODE	NUMBER	REV.
MASSBUS DATA PATHS (MDPP)	D CS	M8277-0-1	H
SCALE	SHEET	OF	DIST.
	14	20	

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74S158

STB	S0	FN
H	X	H
L	L	AN
L	H	BH

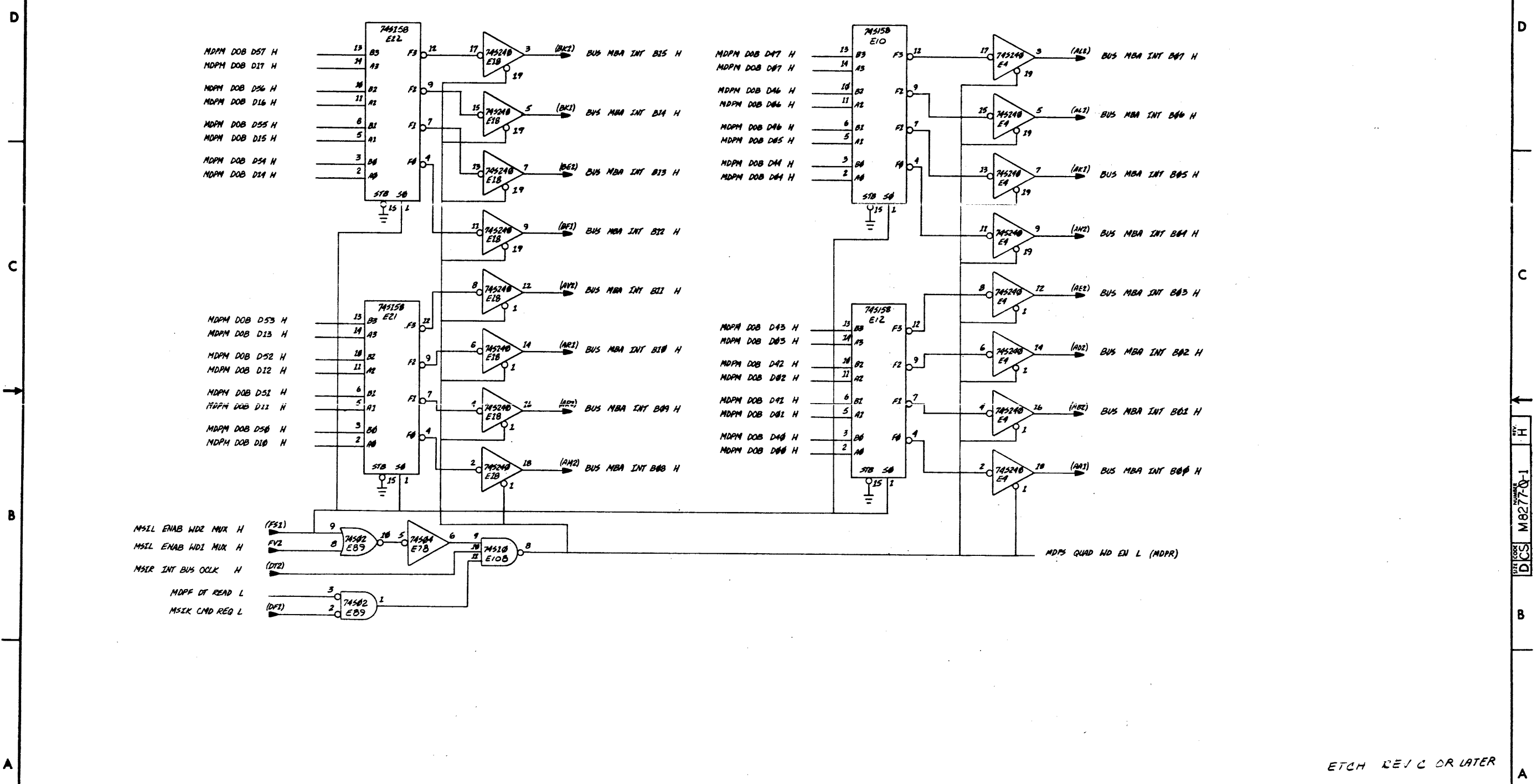


ETCH REV C OR LATER

REVISIONS		
CHK	CHANGE NO.	REV.

REV. H  
M8277-0-1  
DCS

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ETCH DEV C OR LATER

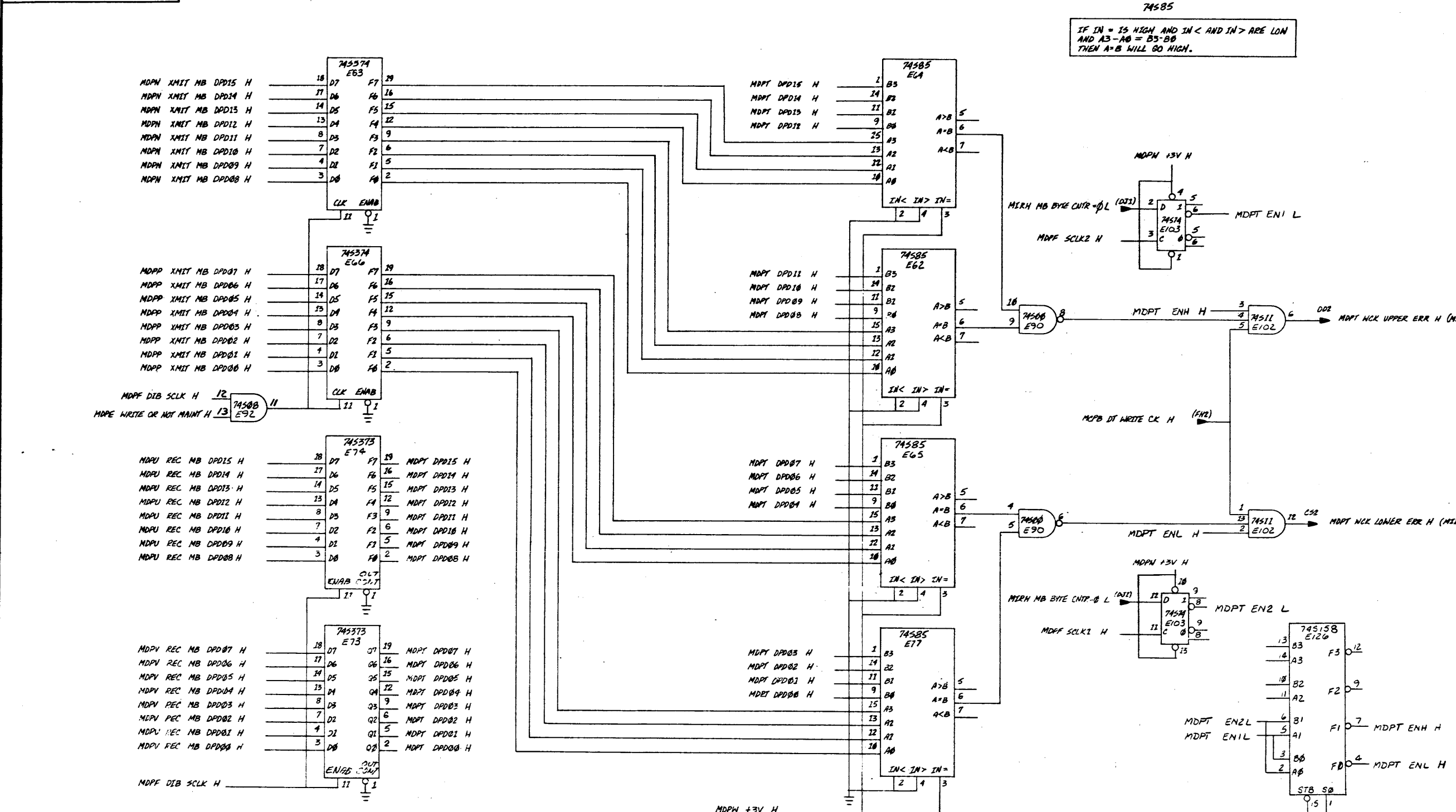
REVISIONS		
CHK	CHANGE NO.	REV.

(INT BUS DRIVERS < 15:00 >) (SLOT 3)

TITLE	SIZE CODE	NUMBER	REV.
MASSBUS DATA PATHS (MDPS)	DCS	M8277-0-1	H
SCALE	SHEET	DIST.	
1/4	16 OF 20		

UNIT LOCK DCS M8277-0-1 H

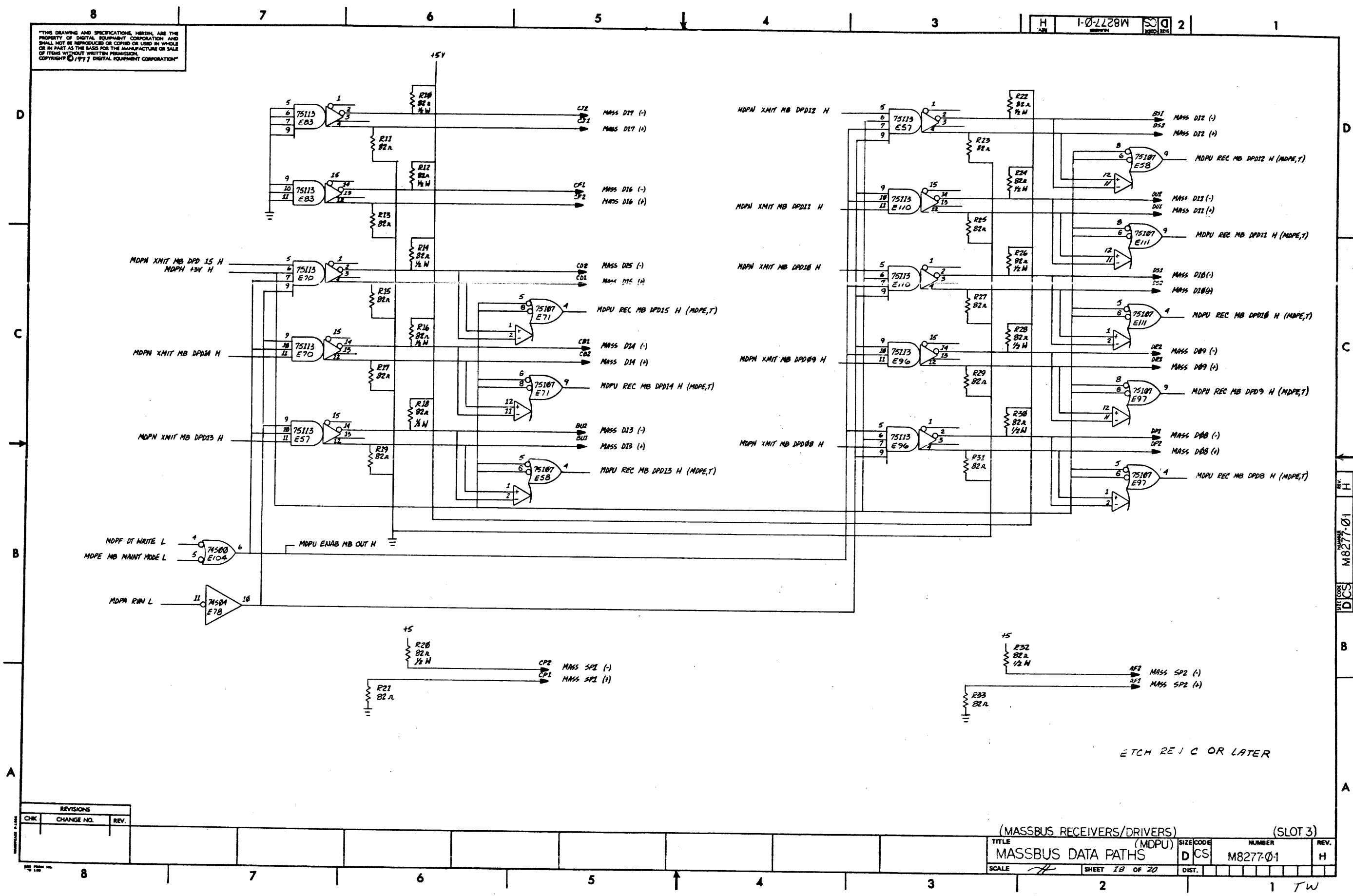
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REVISIONS			(WRITE CHECK)		(SLOT 3)	
CHK	CHANGE NO.	REV.	TITLE	SIZE CODE	NUMBER	REV.
			MASSBUS DATA PATHS (MDPT)	DCS	M8277-0-1	H
			SCALE	SHEET 17 OF 20	DIST.	

REV. H  
M8277-0-1  
DCS

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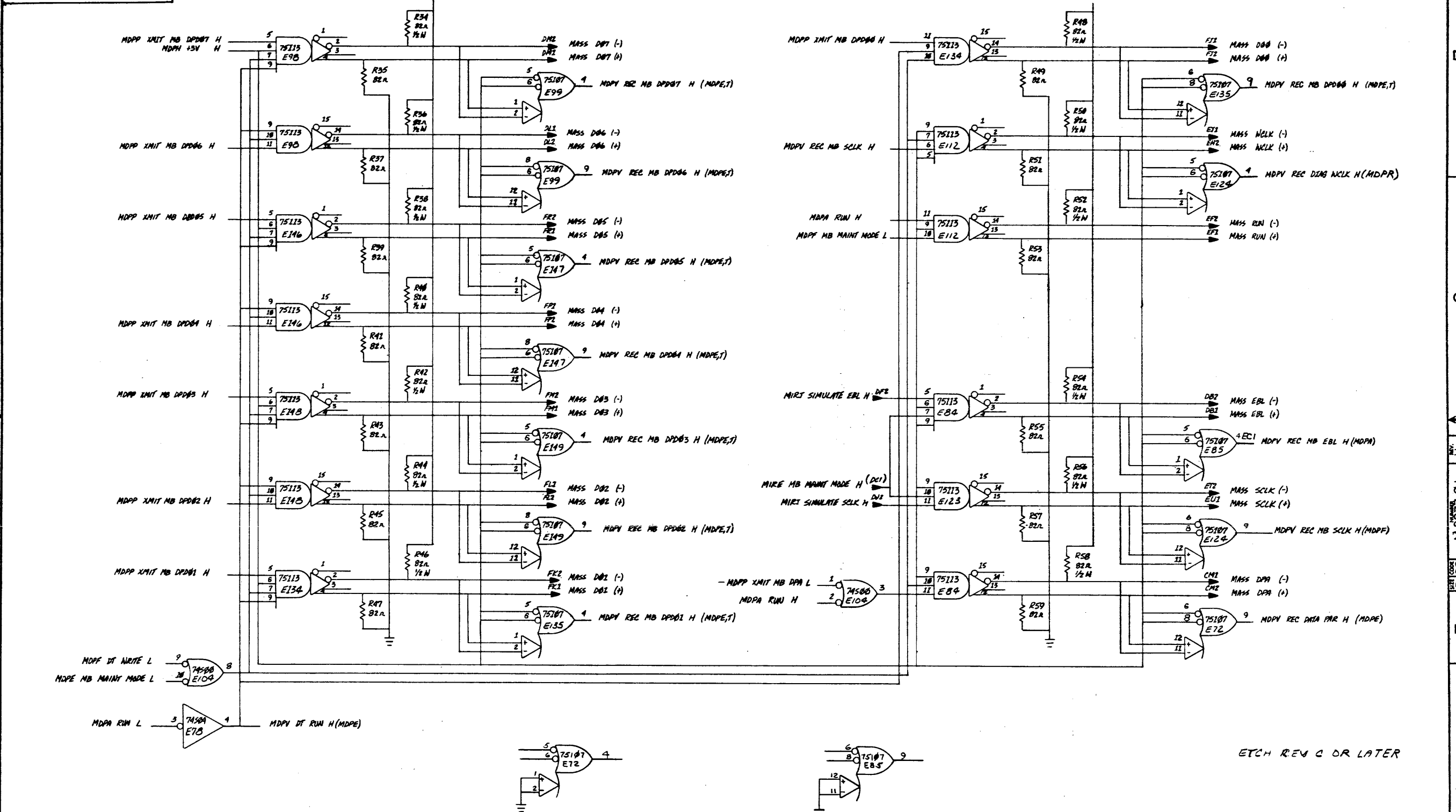
ETCH RE 1 C OR LATER

REVISIONS		
CHK	CHANGE NO.	REV.

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

REV. H  
M8277-01  
D CS

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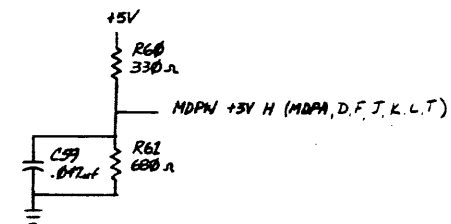
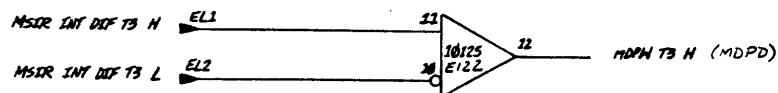
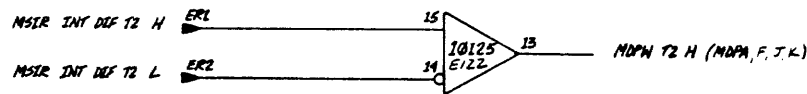
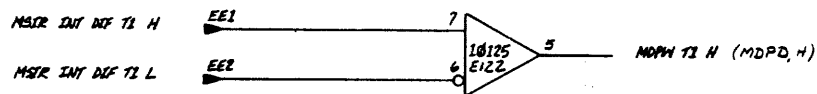
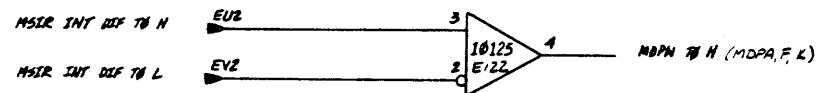
ETCH REV C OR LATER

REVISIONS			TITLE		SIZE CODE	NUMBER	REV.
CHK	CHANGE NO.	REV.	MASSBUS DATA PATHS (MDPV)		D CS	M8277-01	H
			SCALE	SHEET 19 OF 20	DIST.		

(MASSBUS RECEIVERS/DRIVERS) (SLOT 3)

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H 10-2228W DCS 2



ETCH REV C OR LATER

REVISIONS		
CHK	CHANGE NO.	REV.

(MDP CLOCKS)

(SLOT 3)

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

1 TW





LINE ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
1	E-MD-5012649-0-0	5012649-00	M8278	1	
2		1000019-00	150.0 MMF 100V 5%200PPM MICA	2	C144,C133
3		1005820-00	22.0 MMF 100V 5%200PPM MICA	1	C134
4		1011895-00	.15 MFD 35V 10% S.TANT	1	C135
5		1012121-00	220.0 MMF 100V 1%200PPM MICA	2	C130,C131
6		1012084-01	8 MFD 25V +75-10% AL EL	8	C136-C143
7	BLANK			0	
8		1100114-00	D 664 OS\75PCB PIV= 25V SP	2	D1,D2
9		1300220-00	100.0 .25 W 5.0 % CC	1	R97
10		1300488-00	12.0 K .25 W 5.0 % CC	1	R4
11		1300365-00	1.0 K .25 W 5.0 % CC	2	R5,R73
12		1301424-00	680.0 .25 W 5.0 % CC	3	R2,R31,R91
13		1301423-00	6.80 K .25 W 5.0 % CC	1	R3
14		1300295-00	330.0 .25 W 5.0 % CC	3	R1,R30,R90
15		1301477-00	82.0 .25 W 5.0 % CC	32	R20-R29,R42-R51,R63-R72,R93,R95
16		1305346-00	27.0 K .25 W 5.0 % CC	1	R7
17		1301781-00	82.0 .50 W 5.0 % CC	32	R10-R19,R32-R41,R53-R62,R92,R94
18		1301874-00	5.60 K .25 W 5.0 % CC	3	R6,R8,R9
19		1302957-00	121.0 .25 W 1.0 % RN55D-F10	8	R82-R89
20		1311422-00	178.0 .25 W 1.0 % RN55D-F10	8	R74-R81
21		1300439-00	3.30 K .25 W 5.0 % CC	1	R52
22		1312930-00	5.10 K .25 W 5.0 % CC	1	R96
23		1503014-00	DEC 3646 NPN 200MW SI 15 5 30	1	Q1
24		1910532-00	74S00 NAND GATE-QUAD 2IN	5	E71,E51,E102,E67,E68
25		1910534-00	74S04 INVERTER GATE-HEX 1I	3	E80,E41,E91
26		1912389-00	74S08 AND GATE-QUAD 2IN,PO	5	E81,E61,E49,E93,E90
27		1910536-00	74S10 NAND GATE-TRIPLE 3IN	2	E69,E40
28		1910537-00	74S11 AND GATE-TRIPLE 3IN	1	E50
29		1910539-00	74S20 NAND GATE-DUAL 4INPU	2	E70,E19
30		1910542-00	74S64 A-O-I GATE 4-2-3-2	1	E83

REVISION HISTORY		BASIC PART NO: M8278		DRN: K.FRIEDGEN	DATE: 11-SEP-79	DIGITAL				
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:	K	PL	M8278-0-DBP	E	
			[D]	E-UA-M8278-0-0				Z0650E,PLS	EDIT #	
			[E]						4	
			[F]							
			[G]							
			[H]							
			[I]							
			[J]							
			[K]							
			[L]							
			[M]							
			[N]							

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TW

AUTOMATED BY PRILST,3L(36)

P A R T S L I S T

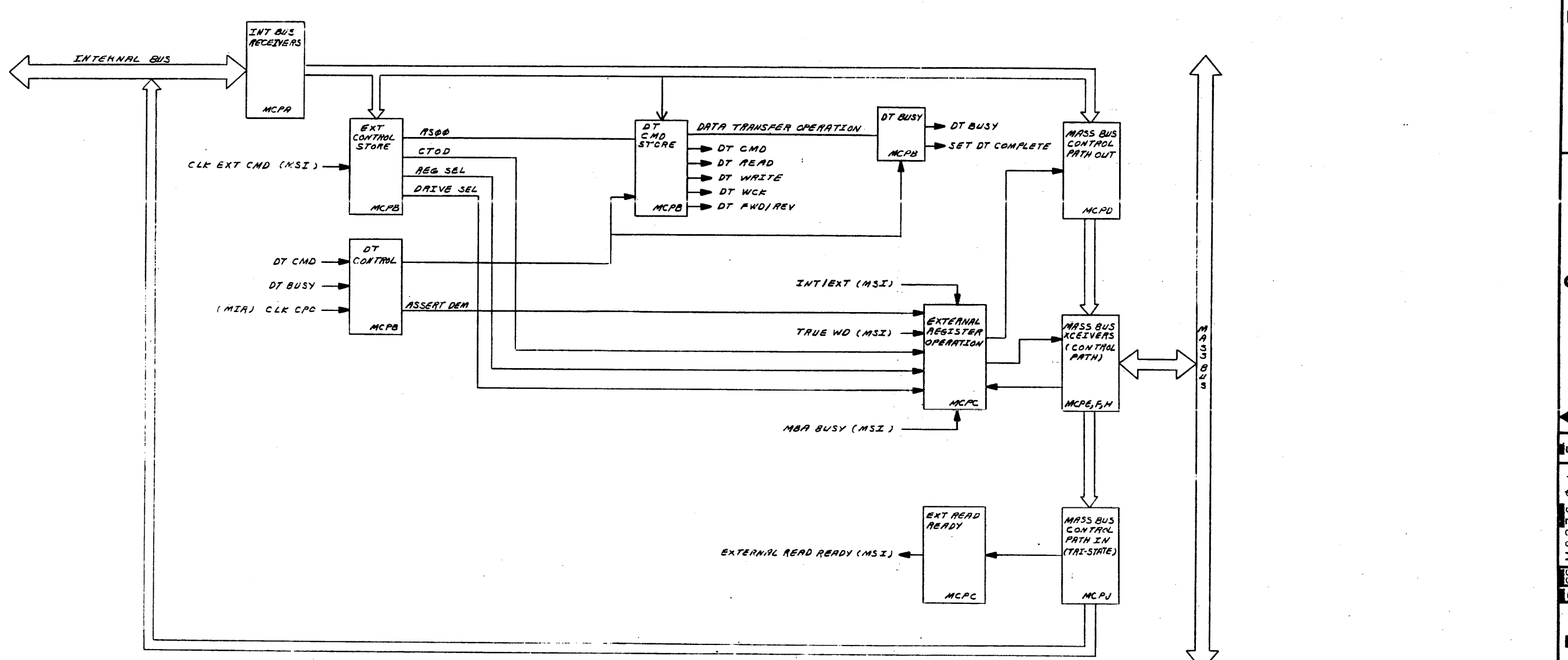
SHEET A2 OF A2

LINE ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
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 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	MCP	SECTION A	OF A	SIZE	CODE	DOCUMENT NUMBER	REV
											K	PL	M9278-0-DBP	E

*fw*

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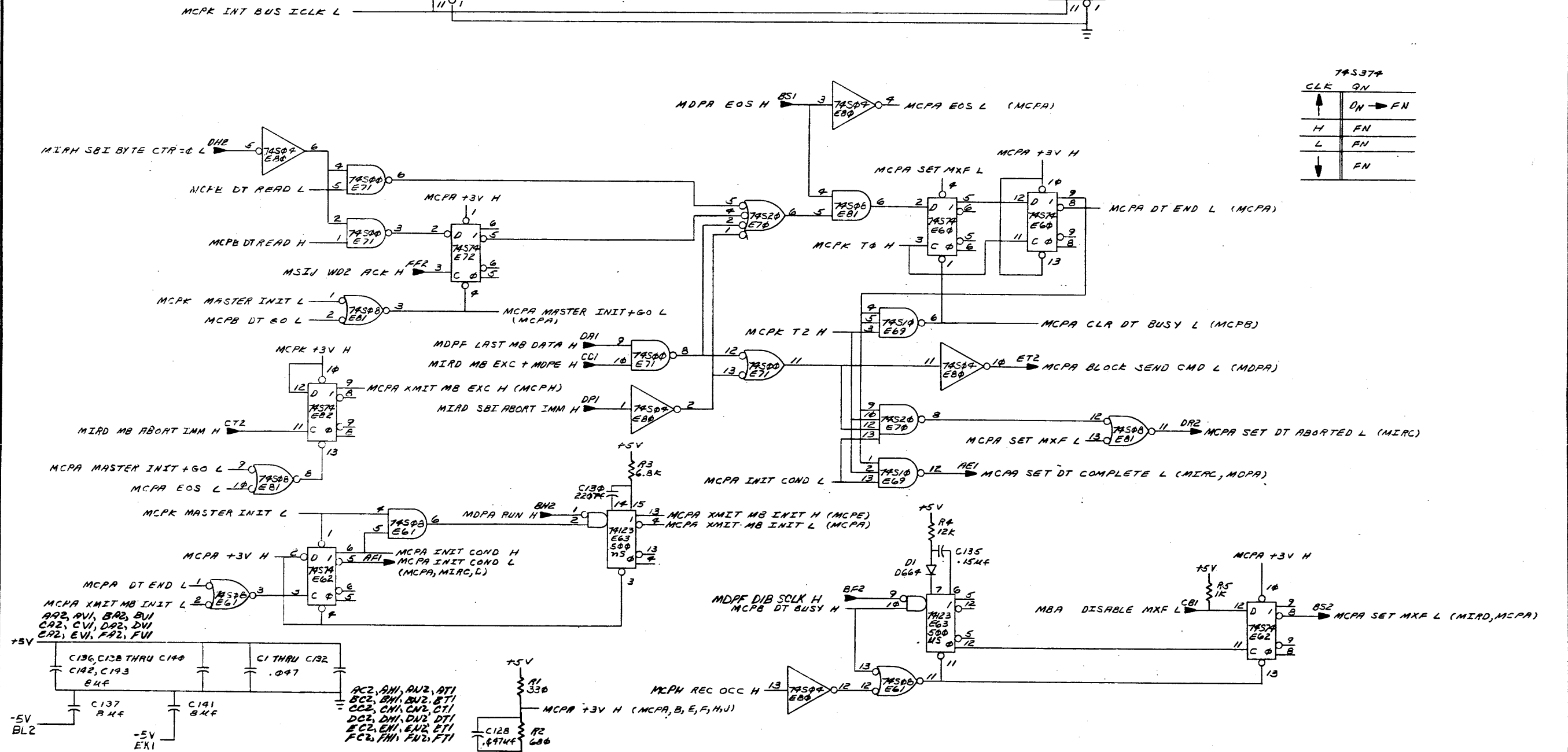
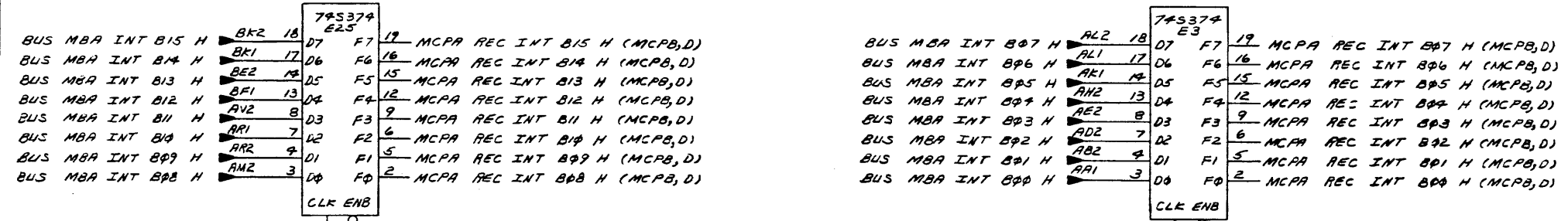
REV.	DATE	BY	CHK'D
1	10-1-77	K. OKIN	
2	11-1-77	K. OKIN	
3	11-1-77	K. OKIN	
4	11-1-77	K. OKIN	
5	11-1-77	K. OKIN	
6	11-1-77	K. OKIN	
7	11-1-77	K. OKIN	
8	11-1-77	K. OKIN	
9	11-1-77	K. OKIN	
10	11-1-77	K. OKIN	
11	11-1-77	K. OKIN	
12	11-1-77	K. OKIN	
13	11-1-77	K. OKIN	
14	11-1-77	K. OKIN	
15	11-1-77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

(BLOCK DIAGRAM) (SLOT 4)

DRN. P. 3-31-77	FIRST USED ON	
CHK'D 8-26-77	5-4-77	
ENGR. L. R.	5-12-77	TITLE
PROL. ENGR. G. R.	5-12-77	<b>MASSBUS CONTROL PATH (MCP)</b>
PROD. S. J.	6-11-77	
NEXT HIGHER ASSY.		
SCALE	SIZE CODE NUMBER	REV.
+	D CS M8278-0-1	F
SHEET 1 OF 10	DIST.	

1 TW

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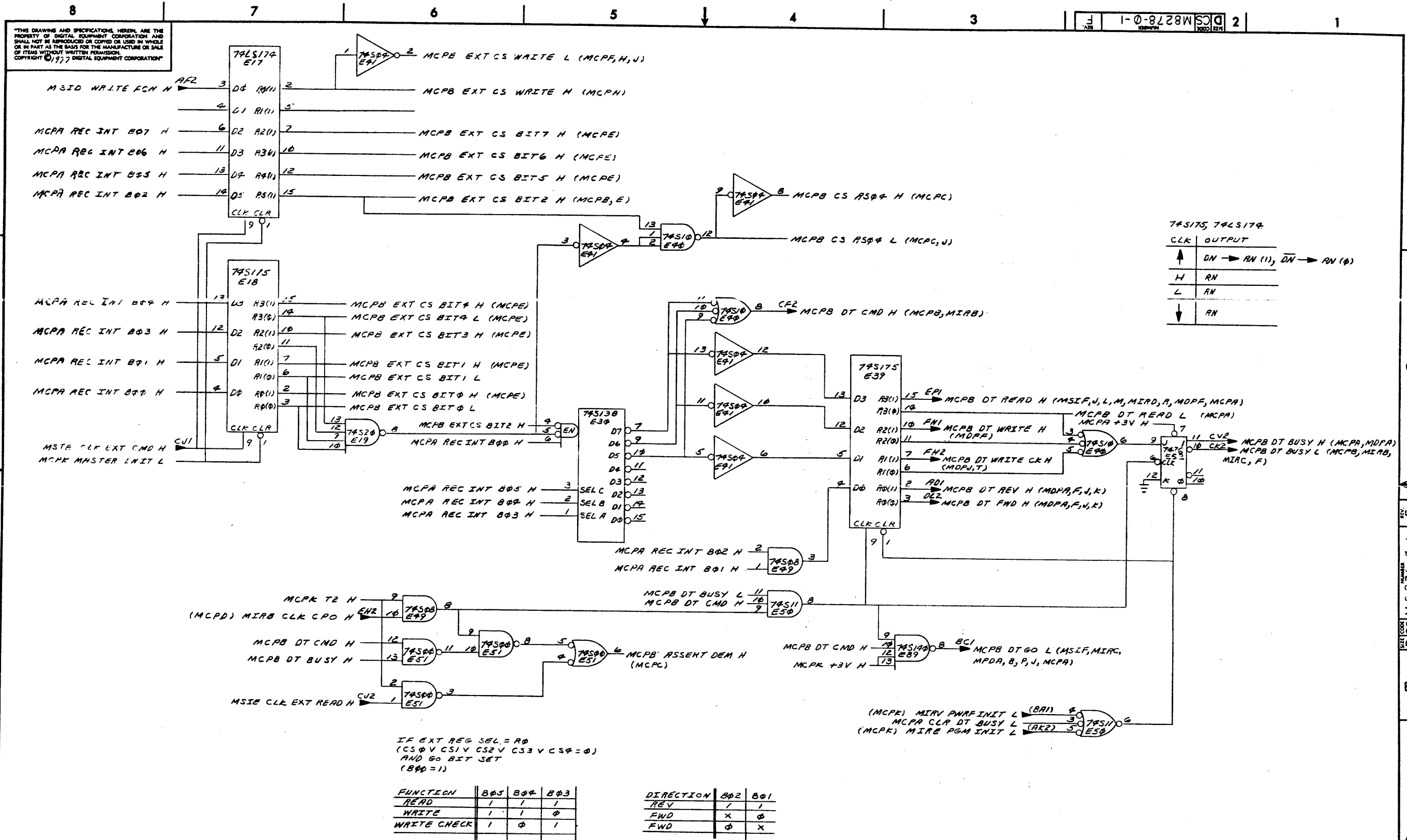
74S374

CLK	9N
DN	FN
H	FN
L	FN
	FN

REVISIONS		
CHK	CHANGE NO.	REV.

(MBA INTERNAL BUS RECEIVERS AND END DATA TRANSFER LOGIC) (SLOT 4)

TITLE	MASSBUS CONTROL PATH (MCPA)	SIZE/COORD	D CS	NUMBER	M8278-0-1	REV.	F
SCALE	←→	SHEET	2 OF 10	DIST.			



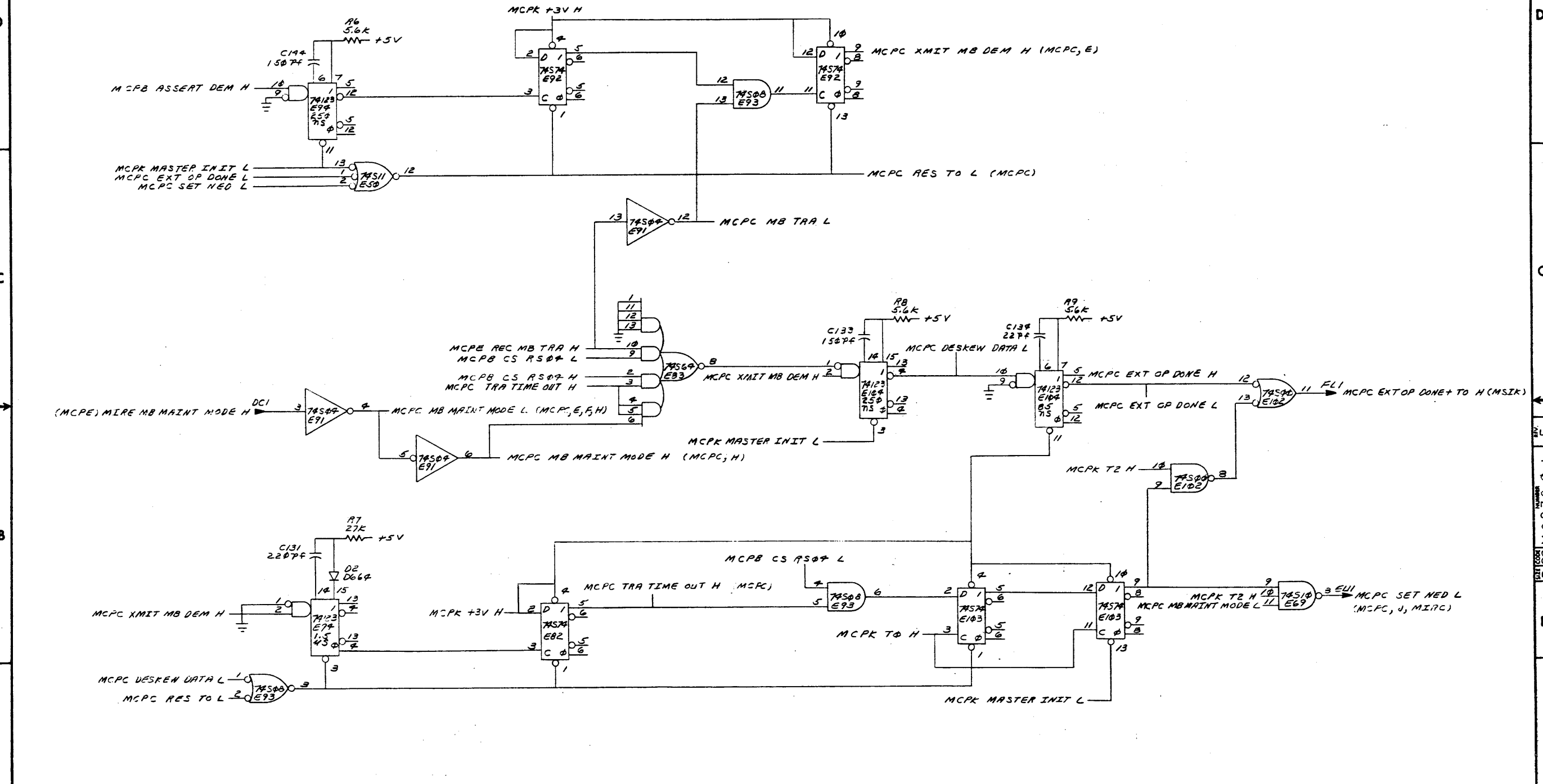
REVISIONS		
CHK	CHANGE NO.	REV.

(SLOT 4)  
 (RS/DS ADDRESS LATCH, DEM ASSERTION CONTROL, "GO BIT"  
 AND TRANSFER TYPE DECODE, DATA TRANSFER BUSY FLOP)

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

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DCS M8278-0-1 2

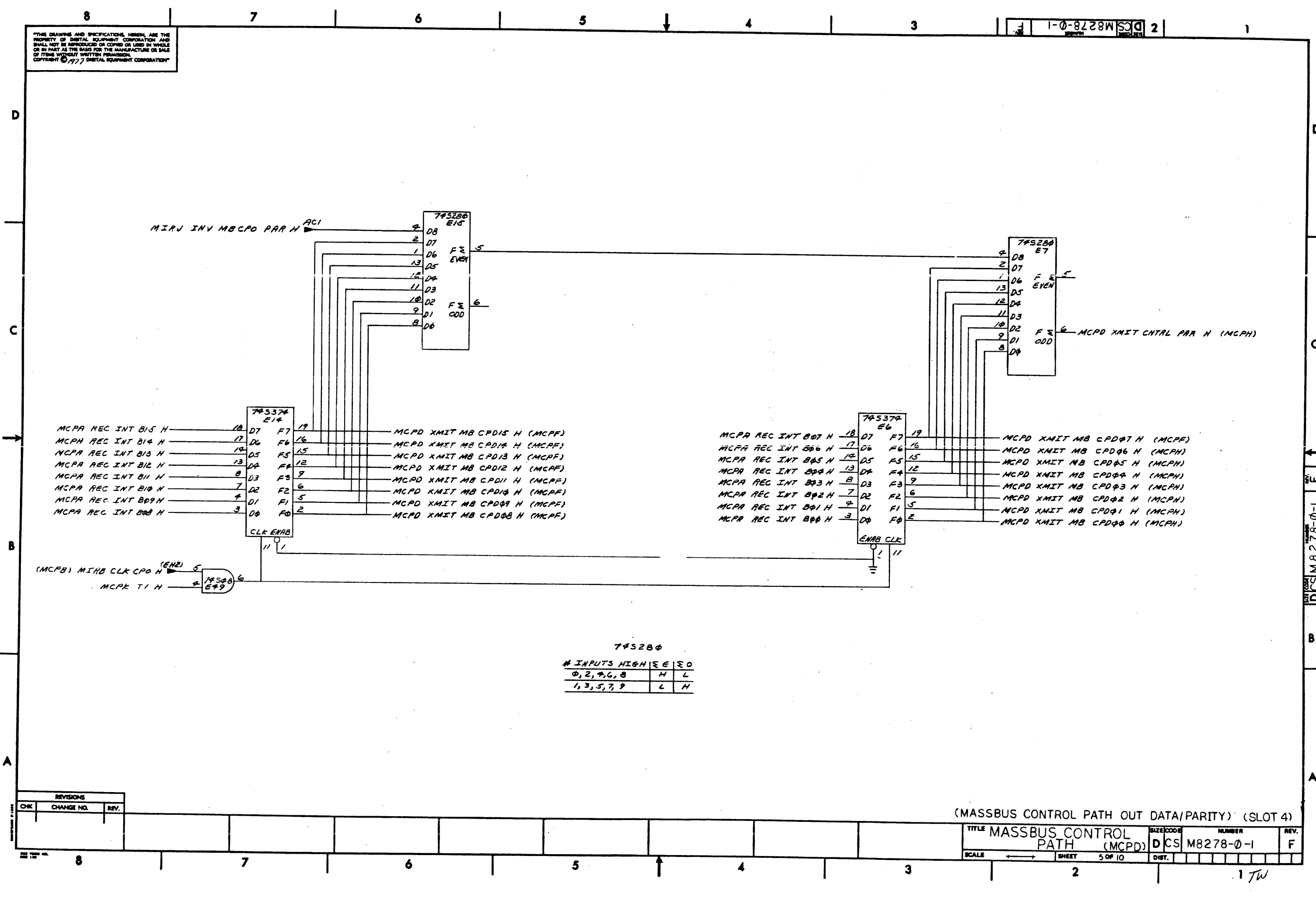


REVISIONS		
CHK	CHANGE NO.	REV.

(SLOT 4)  
 (DEM DESKEW ONE SHOT, TRA DESKEW ONE SHOT,  
 EXT OP DONE TIMEOUT ONE SHOT, SET NED)  
 TITLE MASSBUS CONTROL (MCPC) DCS M8278-0-1  
 SCALE + + SHEET 4 OF 10 DIST. 1 TW

DCS M8278-0-1

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74S280

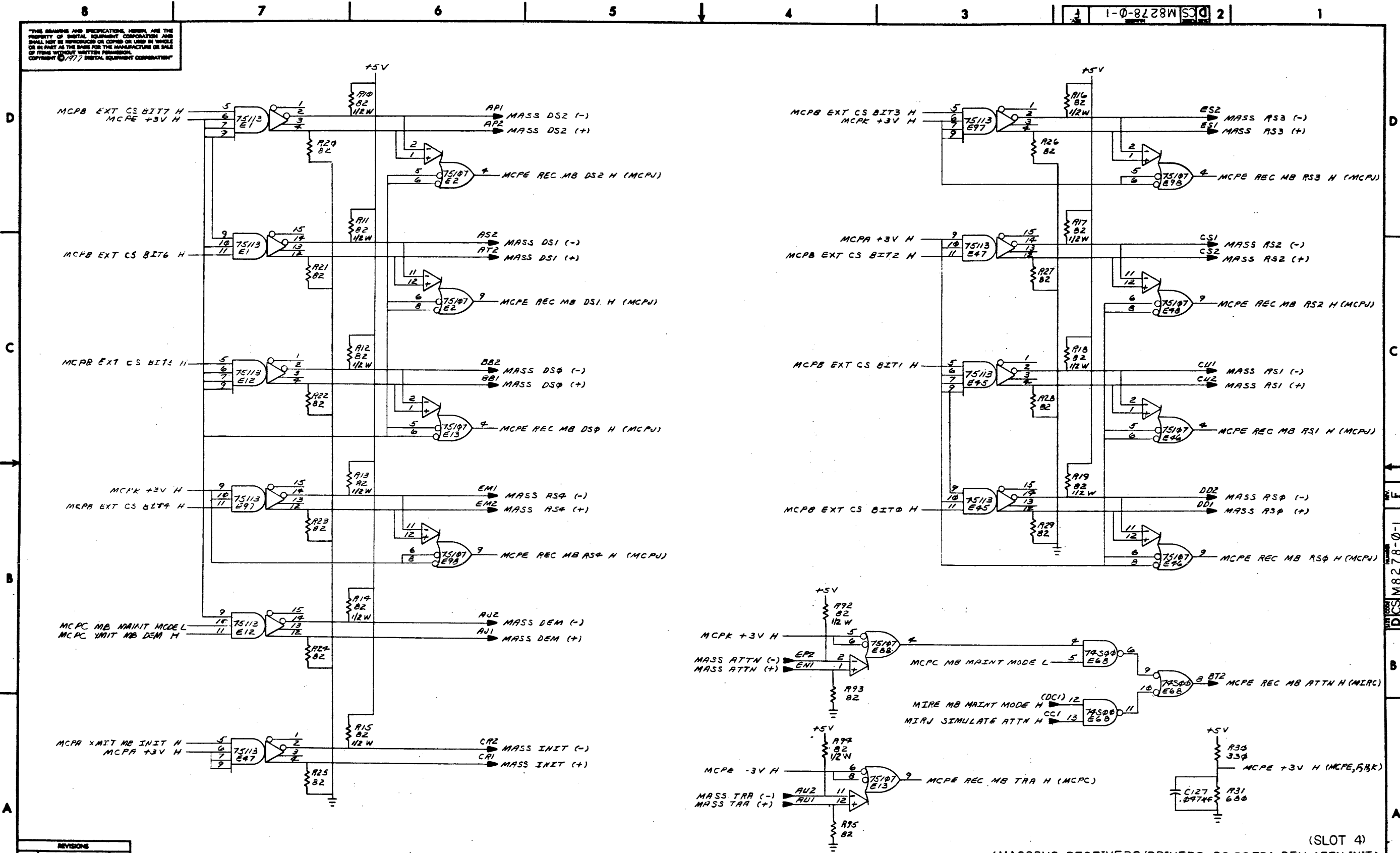
# INPUTS HIGH	Σ E	Σ O
0, 2, 4, 6, 8	H	L
1, 3, 5, 7, 9	L	H

REVISIONS		
CHK	CHANGE NO.	REV.

1 TW

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1-0-8278W SCS 2



REVISIONS		
CHK	CHANGE NO.	REV.

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

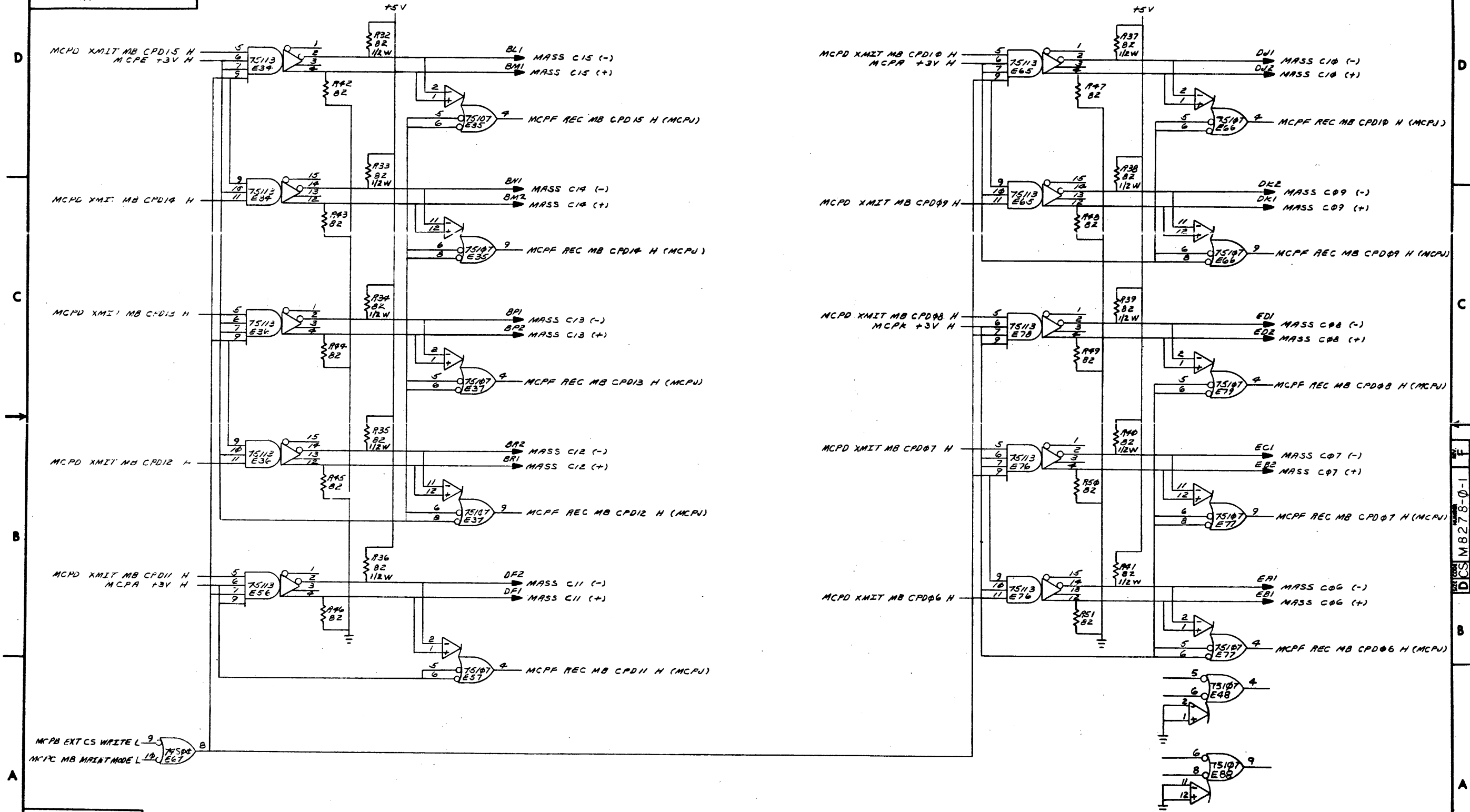
TITLE	MASSBUS CONTROL PATH (MCPE)	SIZE CODE	DCS	NUMBER	M8278-0-1	REV.	F
SCALE	←→	SHEET	6 OF 10	DATE			

DCS M8278-0-1

1 TW



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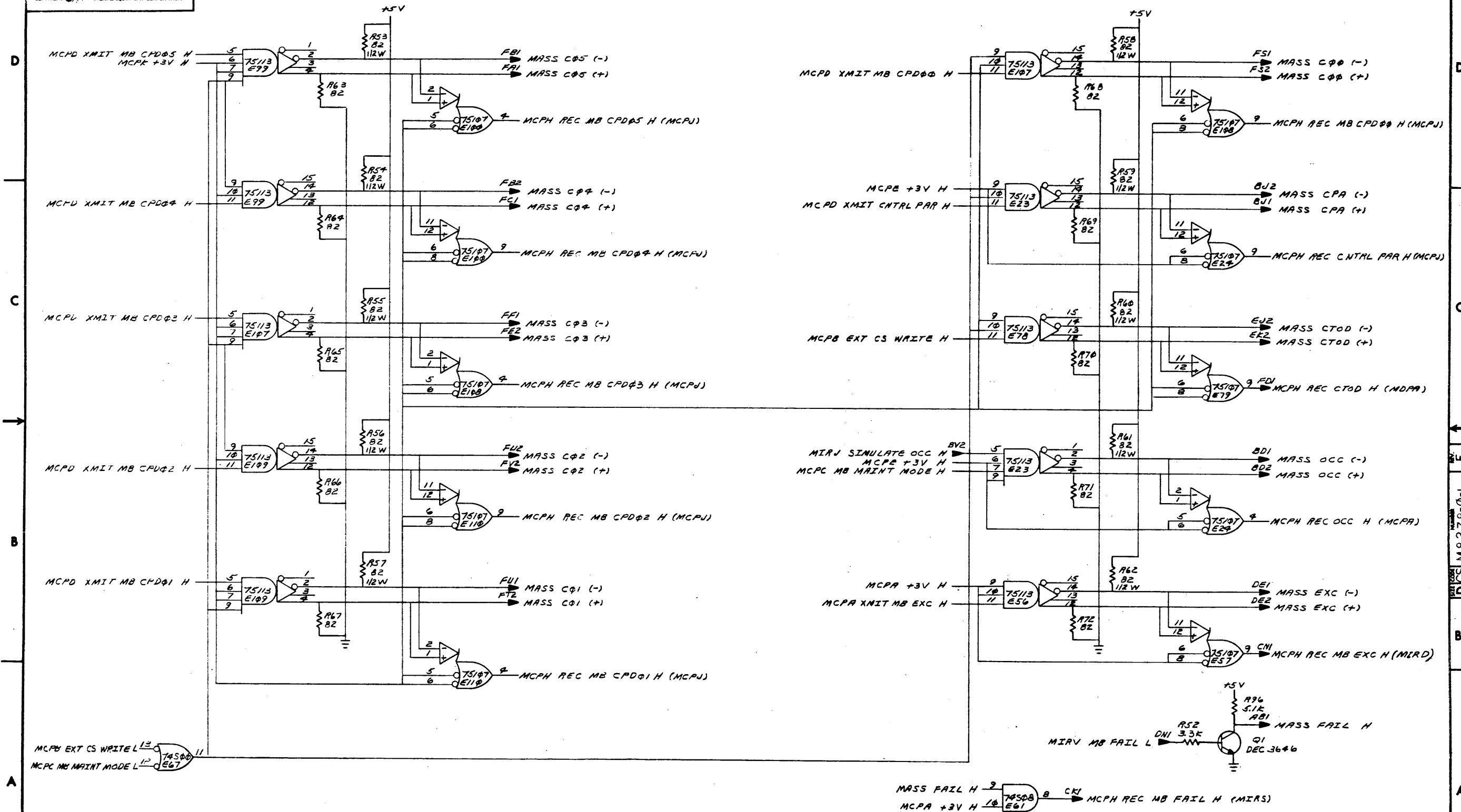
REVISIONS		
CHK	CHANGE NO.	REV.

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

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

1TW

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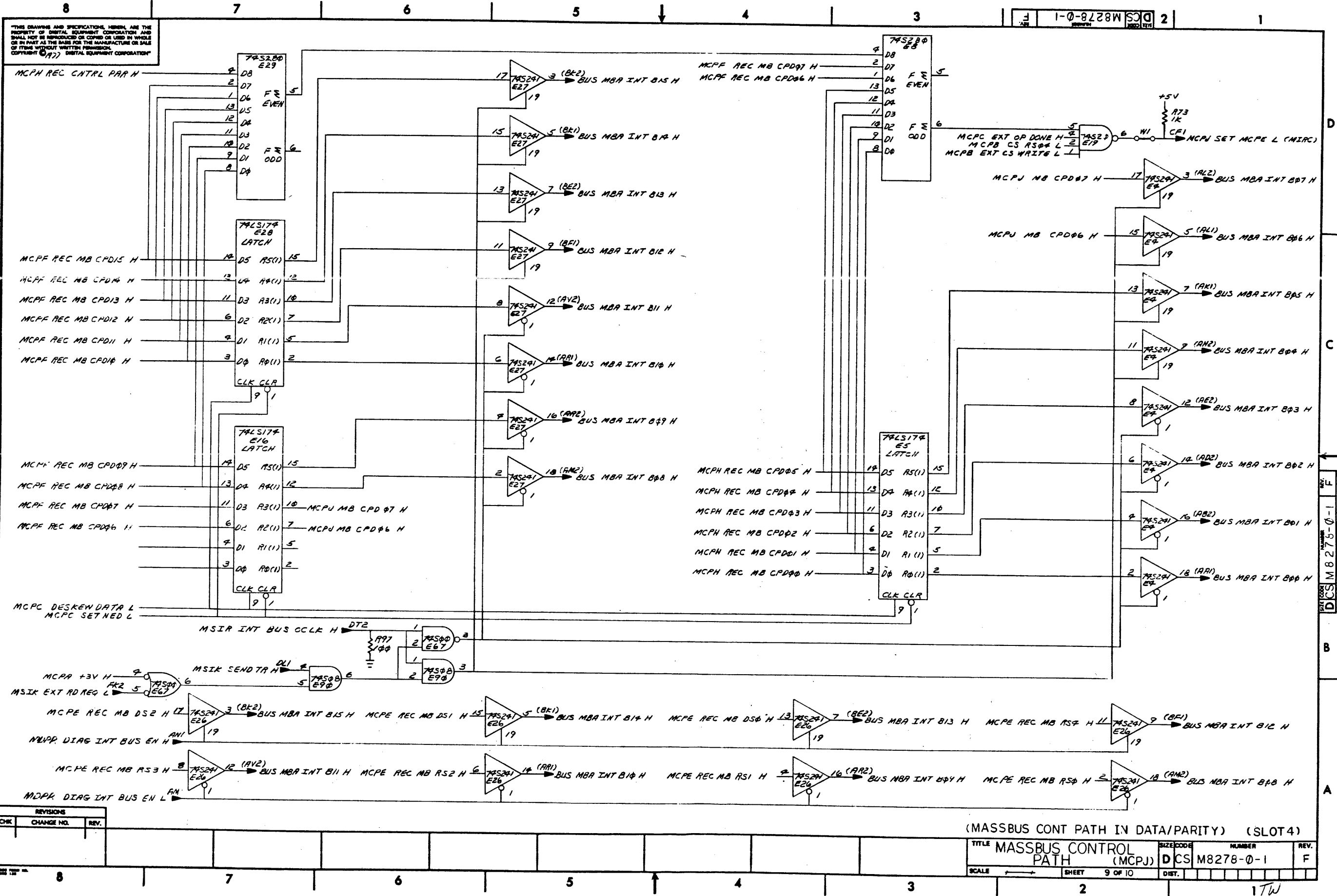


REVISIONS		
CHK	CHANGE NO.	REV.

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

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

DCS M8278-0-1

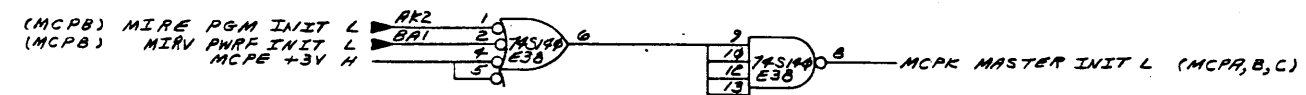
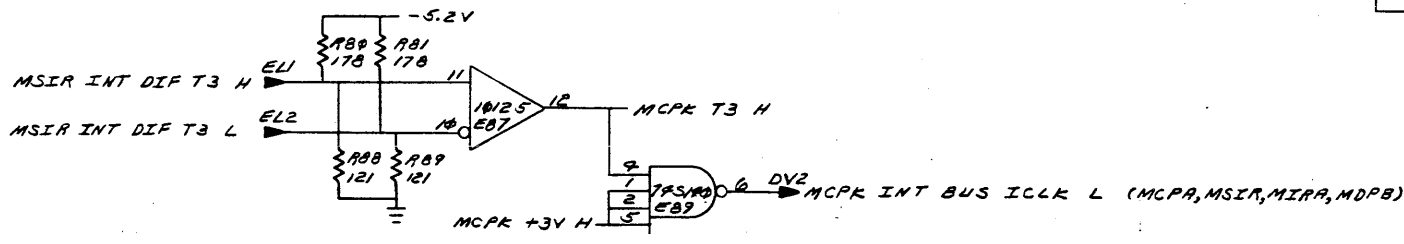
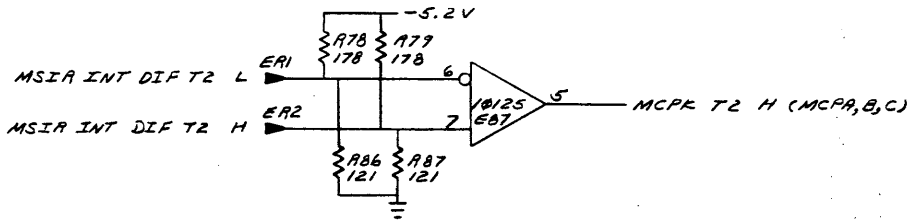
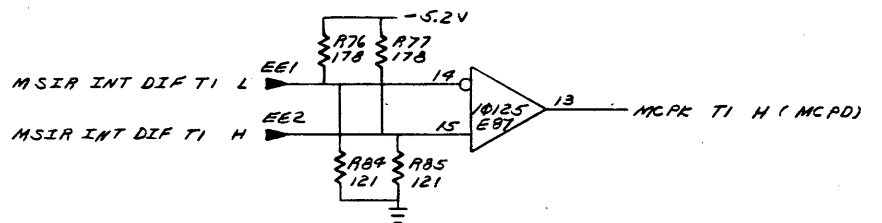
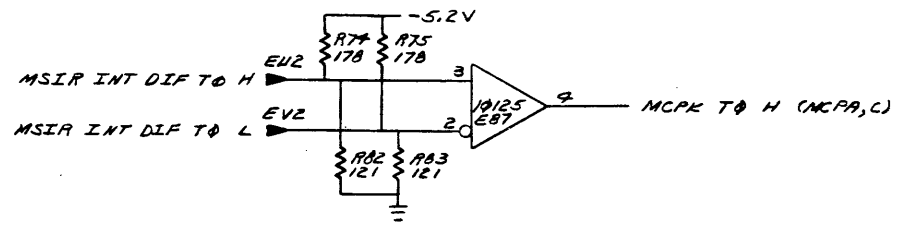


REVISIONS		
CHK	CHANGE NO.	REV.

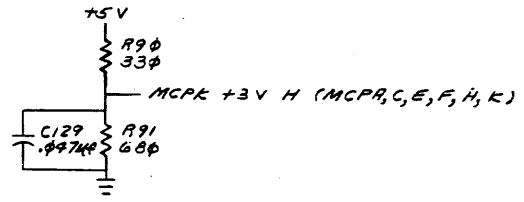
(MASSBUS CONT PATH IN DATA/PARITY) (SLOT 4)  
 TITLE MASSBUS CONTROL PATH (MCPJ) DCS M8278-0-1 REV. F  
 SCALE SHEET 9 OF 10 DIST. 1TW

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DCS M8278-0-1 2



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

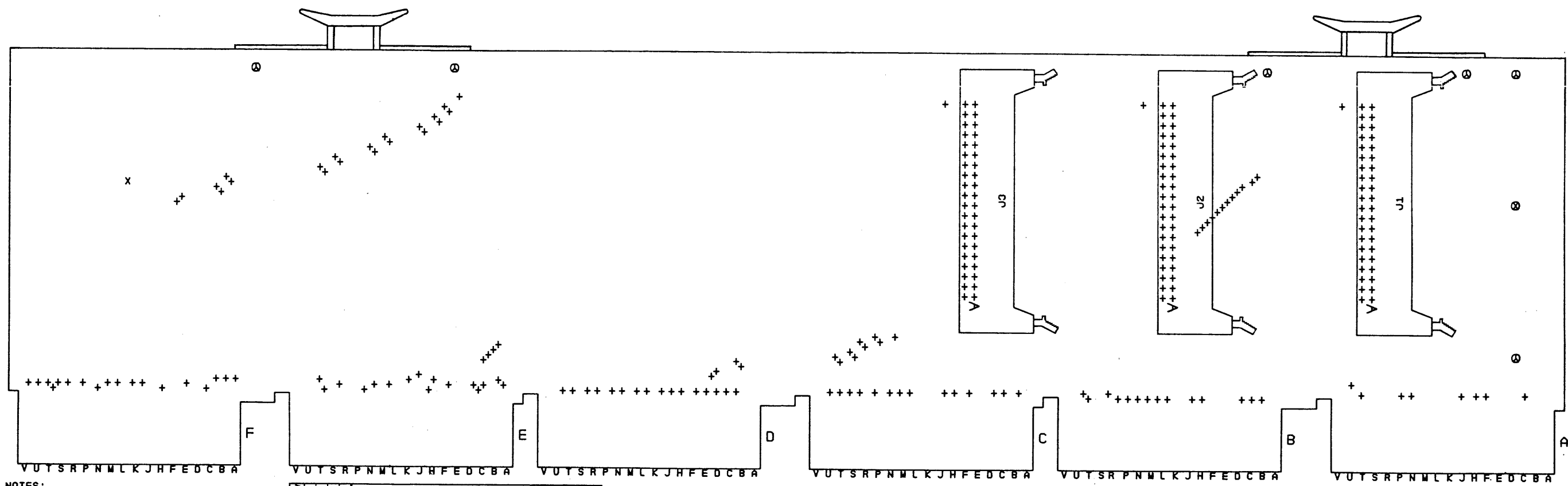


REVISIONS		
CHK	CHANGE NO.	REV.

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

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COMPONENT SIDE VIEW



V U T S R P N M L K J H F E D C B A

V U T S R P N M L K J H F E D C B A

V U T S R P N M L K J H F E D C B A

V U T S R P N M L K J H F E D C B A

V U T S R P N M L K J H F E D C B A

V U T S R P N M L K J H F E D C B A

NOTES:

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

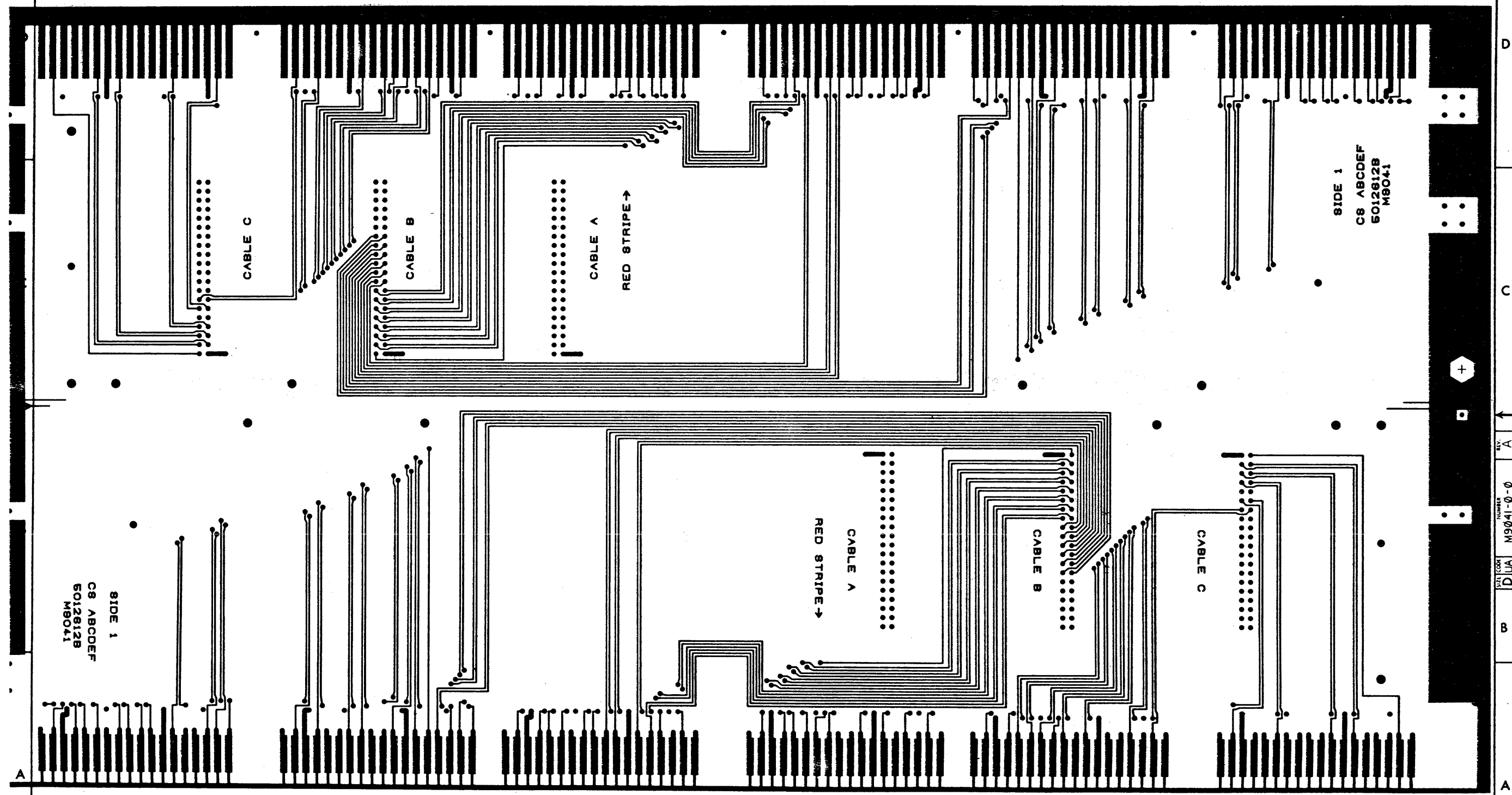
ETCH REV.	B
P.C. DESIGN DATA BASE REV.	B

SIGNATURES		DATE	digital
DRN.	<i>[Signature]</i>	4-4-78	
CHK'D.	<i>[Signature]</i>	7-6-77	
ENG.	<i>[Signature]</i>	5-23-77	
TITLE			MASSBUS PADDLE CARD
PROJ. ENG.	<i>[Signature]</i>	5-23-77	
PROD.	<i>[Signature]</i>	7-5-77	
SCALE	2/1		
SHT.	1 OF 5		
NEXT HIGHER ASSY:		B-DD-M9041-0	

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REV. A DUA M9041-0-0

LAYER 1



REVISIONS		
CHK	CHANGE NO.	REV.

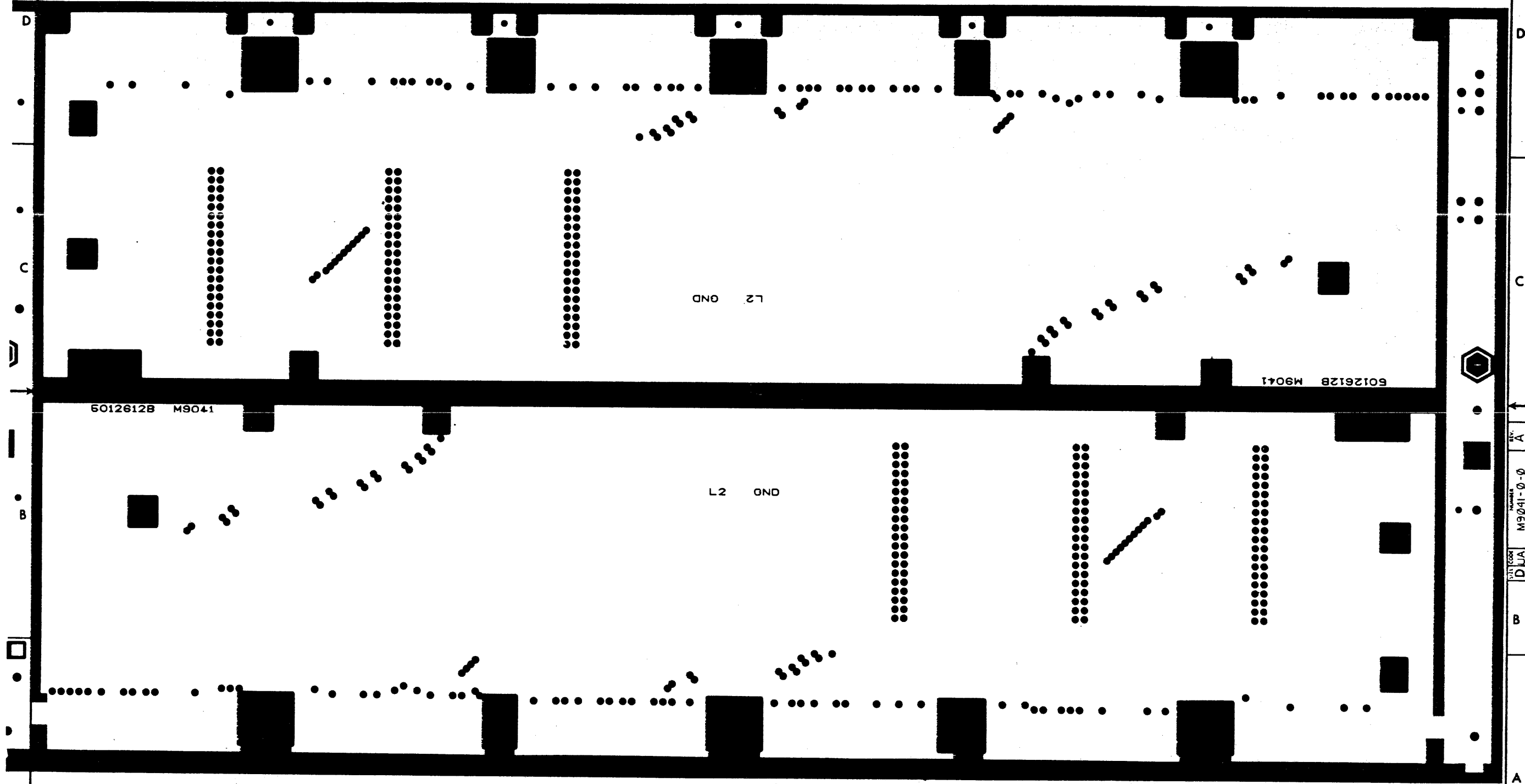
TITLE	SIZE/CODE	NUMBER	REV.
MASSBUS PADDLE CARD	DUA	M9041-0-0	A
SCALE 2-1	SHEET 2 OF 5	DIST.	

8 7 6 5 4 3 2 1

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REV. A  
 SIZE CODE D UA  
 NUMBER M9041-0-0  
 SHEET 2

LAYER 2



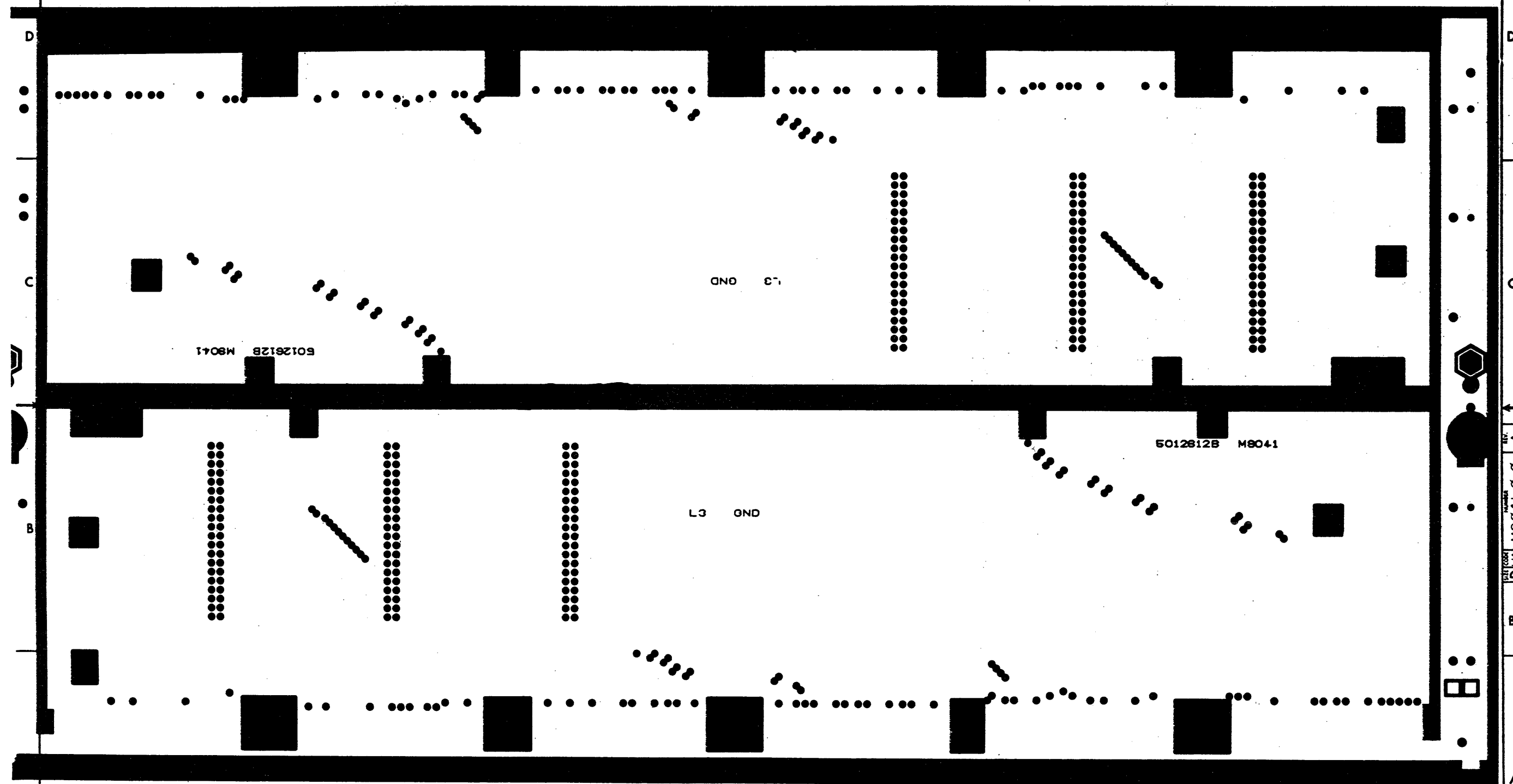
REVISIONS		
CHK	CHANGE NO.	REV.

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

8 7 6 5 4 3 2 1

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E R34AJ



REVISIONS		
CHK	CHANGE NO.	REV.

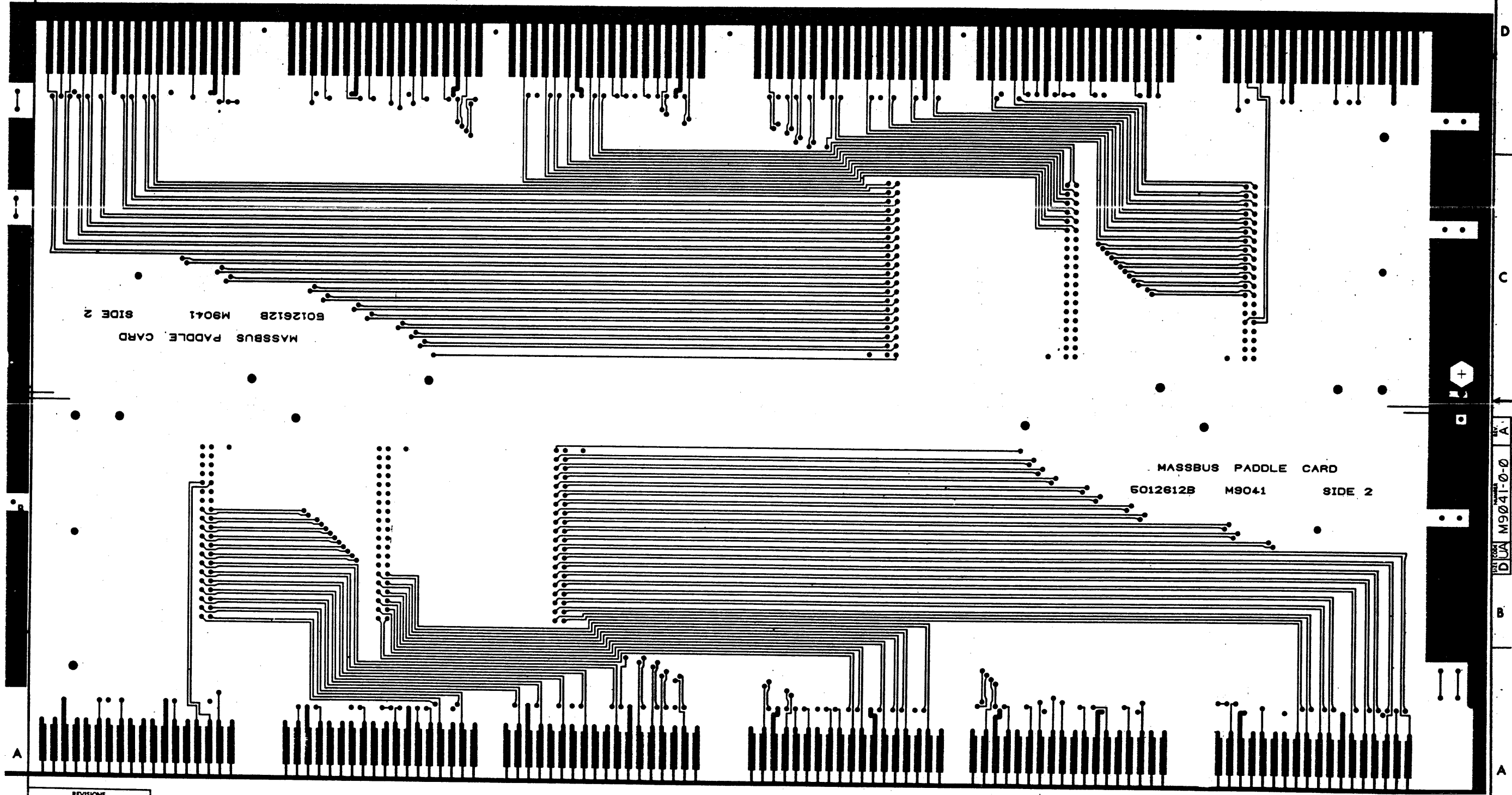
TITLE	MASSBUS PADDLE CARD	SIZE CODE	DUA	NUMBER	M9041-0-0	REV.	A
SCALE	2/1	SHEET	4	OF	5	DIST.	



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DLA M9041-0-0 A 2

LAYER 4



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	D-MD-5012612-0-0	5012612-00	M9041 PC BOARD	1	
2		1209941-02	HEADER 100 40POS RT ANGLE	3	J1, J2, J3
3		9008337-06	HANDLE, FLIP CHIP, MAGENTA	2	
4		9006732-00	EYELET, ROLLED FLANGE, .121 OD X .219 LG	4	
5		1209941-03	HEADER RT ANGLE LEFT LATCH FOR	3	
6		1209941-04	HEADER RT ANGLE, RIGHT LATCH FOR	3	

7 NOTE: 104866

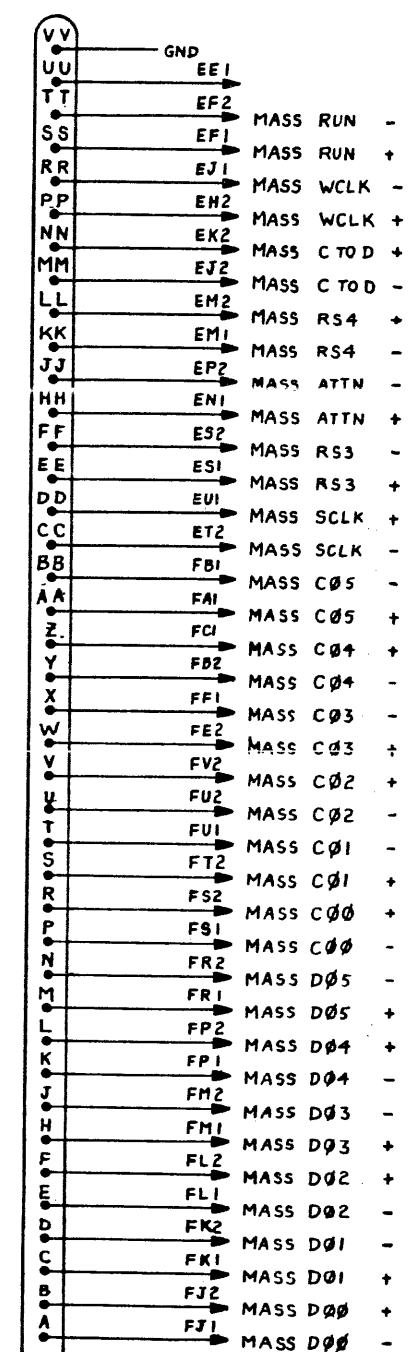
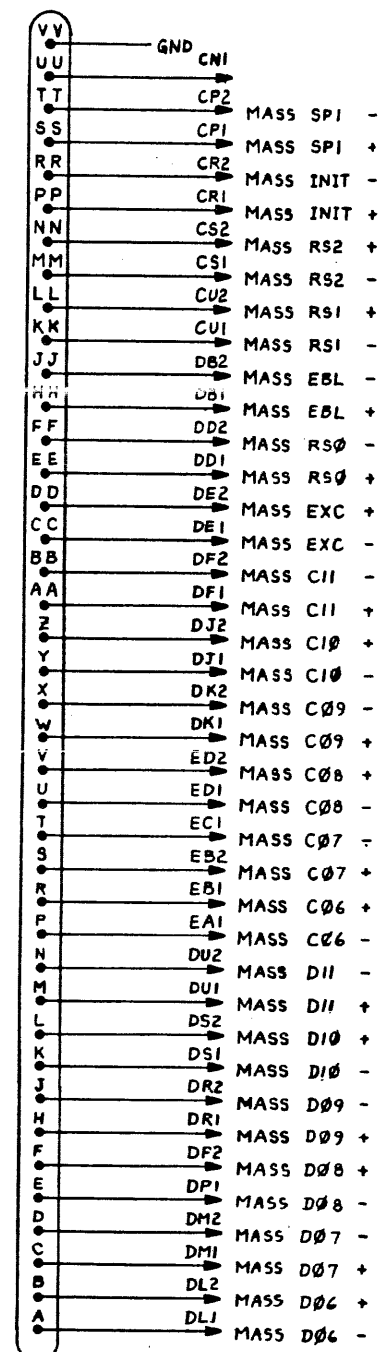
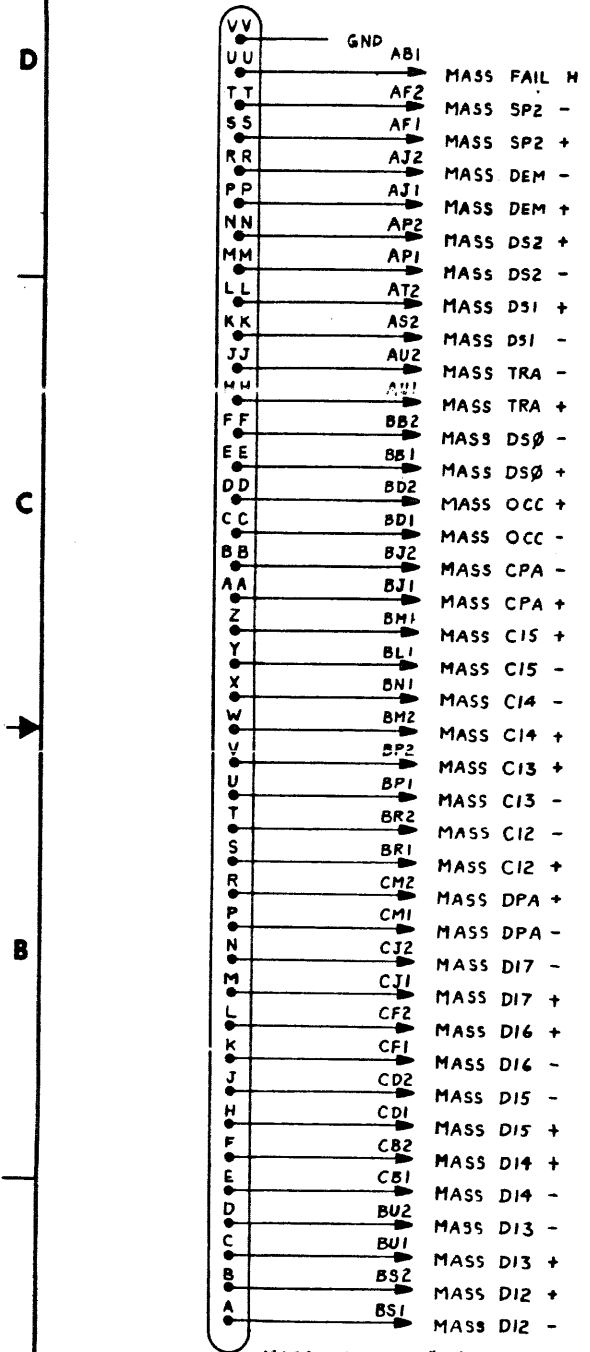
REVISION HISTORY			VARIATIONS FOR THIS ASSY.		DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS				
CHK	ECD NO	REV	FIRST USED ON:	DATE:	TITLE	SIZE	CODE	DOCUMENT NUMBER	REV.
P.G	00001	A	MADE BY: F.MULLIGAN	13-MAR-78	PARTS LIST			M9041-0-DBF	A
			CHECKED: L.GIAMMARINO	13-MAR-78	MASSBUS PADDLE CARD	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

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CABLE CONNECTOR 12-09941-02  
 3 REQUIRED

1-0-1066W 2



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

REV.	A
CHANGE NO.	1
DATE	12/17/77
BY	K. OKIN
CHKD	

(SLOT 5)

DRN. OFF.	A-20-77	FIRST USED ON	digital
CHK'D	5-17-77	TITLE	MASSBUS PADDLE CARD
ENG. (check used)	5-17-77	SIZE CODE	D
PROJ. ENG. (check used)	5-17-77	NUMBER	CSM9041-0-1
PROJ. (check used)	6/1/77	REV.	A
NEXT HIGHER ASSY.		SCALE	1 OF 1
		SHEET	1 OF 1

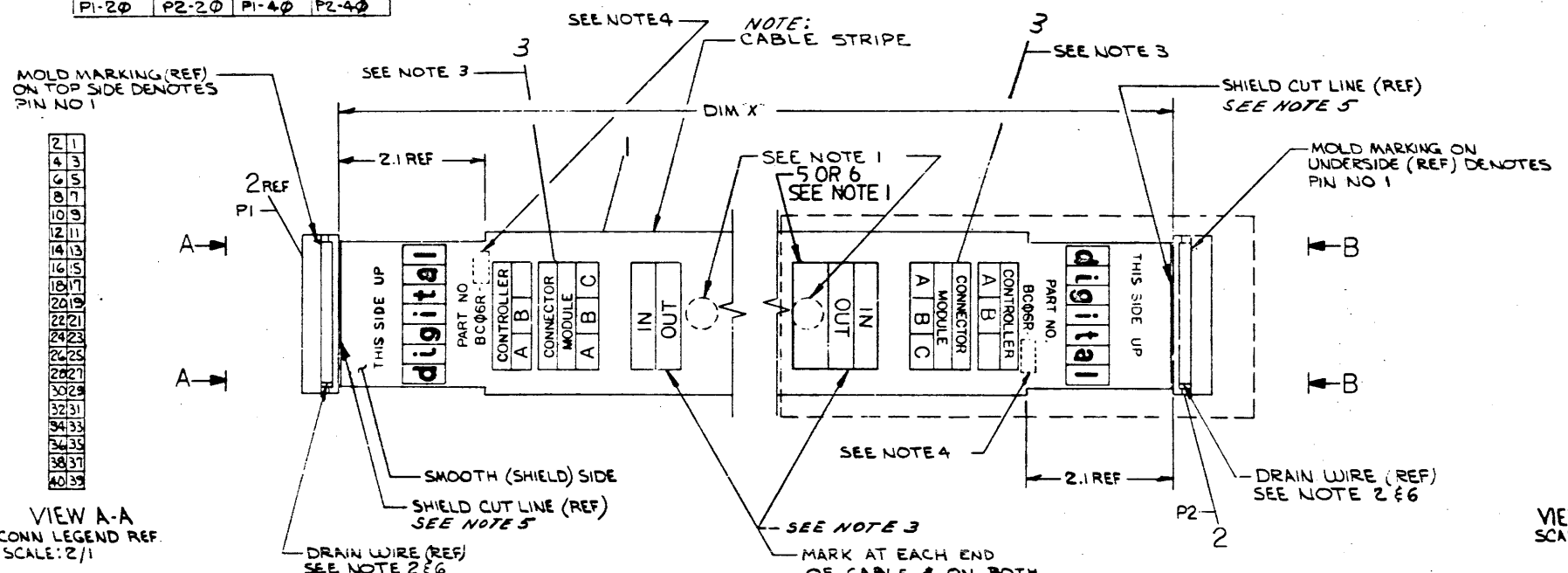
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WIRE TABLE			
FROM	TO	FROM	TO
P1-1	P2-1	P1-21	P2-21
P1-2	P2-2	P1-22	P2-22
P1-3	P2-3	P1-23	P2-23
P1-4	P2-4	P1-24	P2-24
P1-5	P2-5	P1-25	P2-25
P1-6	P2-6	P1-26	P2-26
P1-7	P2-7	P1-27	P2-27
P1-8	P2-8	P1-28	P2-28
P1-9	P2-9	P1-29	P2-29
P1-10	P2-10	P1-30	P2-30
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

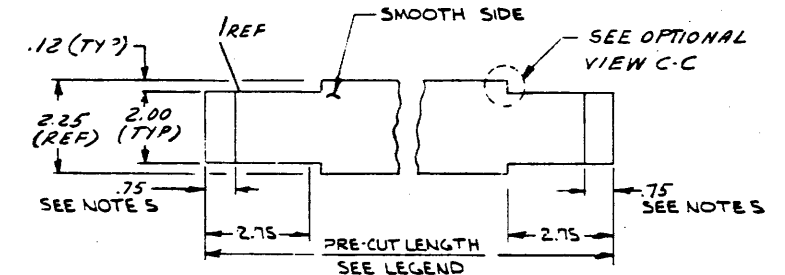
LEGEND			
NUMBER	DIM X	PRECUT LENGTH	REMARKS
BCØGR-Ø11	1 FT	1 FT 1.5 IN ± 1 IN	SEE PRE-CUT VIEW C-C
BCØGR-Ø2	2 FT	2 FT 1.5 IN ± 1 IN	
BCØGR-Ø3	3 FT	3 FT 1.5 IN ± 1 IN	
BCØGR-Ø4	4 FT	4 FT 1.5 IN ± 1 IN	
BCØGR-Ø5	4 FT 6 IN	4 FT 7.5 IN ± 1.5 IN	SEE NOTE 7
BCØGR-Ø6	6 FT	6 FT 1.5 IN ± 2 IN	
BCØGR-Ø8	8 FT	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-2Ø	2Ø FT	2Ø FT 1.5 IN ± 3 IN	
BCØGR-25	25 FT	25 FT 1.5 IN ± 3 IN	
BCØGR-3Ø	3Ø FT	3Ø FT 1.5 IN ± 6 IN	
BCØGR-5Ø	5Ø FT	5Ø FT 1.5 IN ± 10 FT	
BCØGR-6Ø	6Ø FT	6Ø FT 1.5 IN ± 12 FT	
BCØGR-75	75 FT	75 FT 1.5 IN ± 15 FT	
BCØGR-1ØØ	1ØØ FT	1ØØ FT 1.5 IN ± 2 FT	
BCØGR-Ø7	7 FT	7 FT 1.5 IN ± 2 IN	
BCØGR-Ø8	8 FT 6 IN	8 FT 7.5 IN ± 1 IN	SEE PRE-CUT VIEW C-C
BCØGR-15	15 FT	15 FT 1.5 IN ± 3 IN	

- NOTES:
- 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.
  - DRAIN WIRE CONNECTS TO PIN NO 40.
  - RUBBER STAMP INFORMATION SHOWN USING INK (ITEM 3) & ARTWORK DEC NO A-DC-7411699-0-0.
  - STAMP APPLICABLE OPTION DASH NO. ACCORDING TO LENGTH.
  - REMOVE SHIELD .75 FROM END OF PRECUT CABLE (SEE VIEW C-C).
  - COVER EXPOSED DRAIN WIRE WITH ITEM 4 PRIOR TO ASSY (BOTH ENDS).
  - 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-IA-7 JØ7-0-0 AND E-IA-7ØØ98Ø8-0-0.

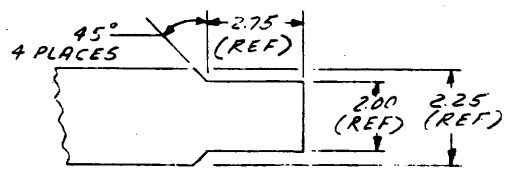


VIEW A-A  
CONN LEGEND REF.  
SCALE: 2/1

VIEW B-B  
SCALE: 2/1



VIEW C-C  
PRE-CUT VIEW  
SCALE: NONE



OPTIONAL VIEW C-C  
PRE-CUT VIEW  
SCALE: NONE

(CX ONLY) SEE NOTE 1  
SEE NOTE 1

QTY	DESCRIPTION	PART NO	ITEM NO
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

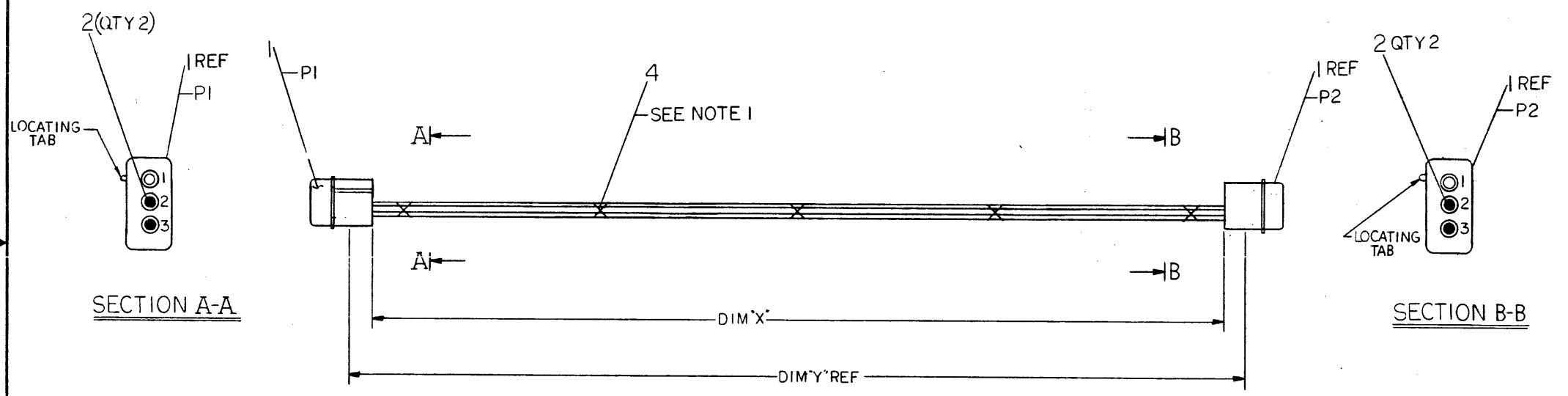
FIRST USED ON OPTION/MODEL		PARTS LIST	
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN & Date	DATE 12-22-73
DECIMALS	ANGLES	CHKD	DATE
XXX - .00	10° 30'	ENG	DATE
XX - .01	10° 30'	PROJ-ENG	DATE
X - .1		DATE	DATE
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE	
MATERIAL		NEXT HIGHER ASSY.	
SEE PARTS LIST		E-IA-7ØØ98Ø1-0-0	
FINISH		E-IA-7ØØ98Ø2-0-0	
SHEET 1 OF 1		SIZE CODE	NUMBER
		DUA BCØGR-Ø-Ø	F

REV	CHANGE NO	DATE	BY	APP
1	1	4-7-75	W. DUNIGAN	
2	2	4-7-75	W. DUNIGAN	
3	3	4-7-75	W. DUNIGAN	
4	4	4-7-75	W. DUNIGAN	
5	5	4-7-75	W. DUNIGAN	
6	6	4-7-75	W. DUNIGAN	
7	7	4-7-75	W. DUNIGAN	
8	8	4-7-75	W. DUNIGAN	

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WIRE TABLE							LEGEND			
ITEM NO	AWG	COLOR	CONN	WITH	CONN	WITH	REMARKS	NUMBER	DIM 'X' VARIATION	DIM 'Y' (PRE-CUT) REF
			PI-2	1#2	P2-2	1#2		7014213-0K	ØFT-9IN ±.5IN	ØFT-10IN ±.5IN
6	18	GRY/WHY	PI-2	1#2	P2-2	1#2		7014213-3E	3FT-5IN ±.5IN	3FT-6IN ±.5IN
3	18	GRAY	PI-3	1#2	P2-3	1#2		7014213-4A	4FT-1IN ±.5IN	4FT-2IN ±.5IN

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



REV	DATE	BY	CHKD	DESCRIPTION
1	11/11/78	W. MARTIN	W. MARTIN	REVISED TO 18 AWG GRAY/WHITE
2	11/11/78	R. CHURCH	R. CHURCH	REVISED TO 18 AWG GRAY

DESCRIPTION	DWG. PART NO.	ITEM NO.
A/R WIRE, 18 AWG GRAY/WHITE	9107360-89	6
1 LABEL, CABLE IDENT	9009532-00	.5
A/R TIE, CABLE	9007031-00	4
A/R WIRE 18 AWG GRAY	9107360-88	3
4 PIN, CONTACT	1209378-00	2
2 CONNECTOR MATE N LOCK	1209351-03	1

THIRD ANGLE PROJECTION		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
QUANTITY & VARIATION	CLASS OF ACCURACY	NOMINAL DIMENSION RANGE INCHES	
REMOVE BURRS AND BREAK SHARP CORNERS	(CHECK ONE)	OVER 0 TO 1.2	OVER 1.2 TO 4.0
DO NOT SCALE DWG	MEDIUM	OVER 4.0 TO 12.0	OVER 12.0 TO 48.0
MATERIAL SEE PARTS LIST	PREFERRED	OVER 48.0 TO 80.0	OVER 80.0 TO 10.1
FINISH		±.004	±.008
		±.012	±.016
		±.025	±.04
		±.06	±.1
DRN. W. MARTIN		FIRST USED ON VAX 11/780	
CHK'D. R. CHURCH		TITLE	
ENG. W. MARTIN		CABLE OVER TEMP	
PROD. R. CHURCH		NEXT HIGHER ASSY.	
EJA-11780-0-0		SIZE	CODE
SCALE NONE		D	IA7014213-0-0
SHEET OF		NUMBER	REV.
TW1			B

DIA7014213-0-0