

digital

RH70

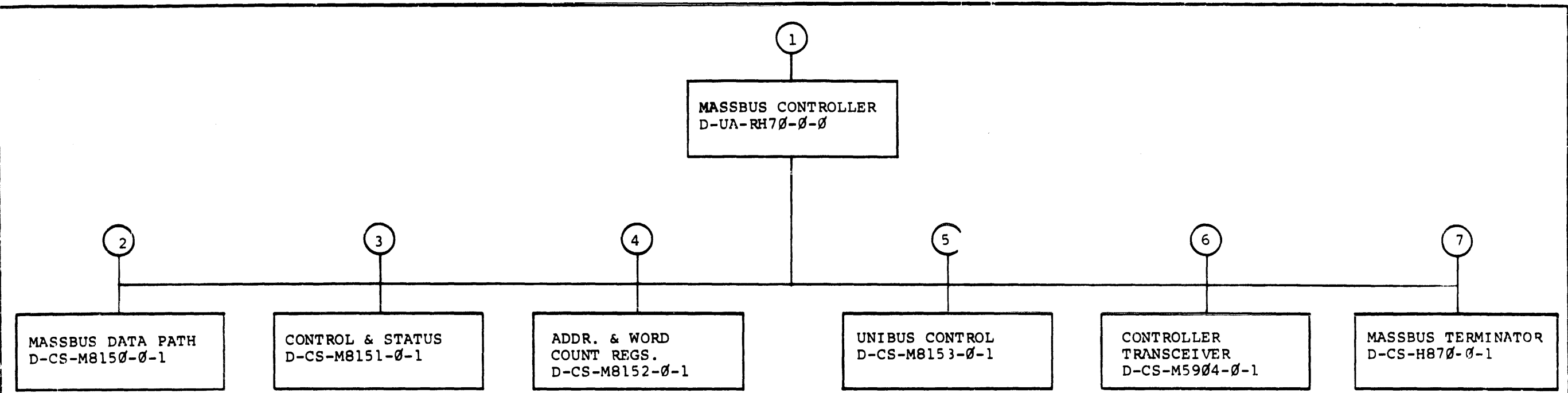
Engineering Drawings

Digital Equipment Corporation

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TITLE	SHEET ? OF 3	SIZE	CODE	NUMBER	REV
DRAWING DIRECTORY RH70		B	DD	RH70-0	

CUSTOMER PRINT SET		ELECTRICAL					CUSTOMER PRINT SET		ELECTRICAL						
1	1	FIG. SET	FIND NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE	1	1	FIG. SET	FIND NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X			1		1	MASSBUS CONTROLLER							1	MODULE ECO HISTORY	
					1	MODULE HOLDER									
X					3	MASSBUS TRANSCEIVER									
X					1	WRITE COMMAND FLOW DIAG.									
X					1	WRITE CHECK COMM. FLOW DIAG.									
X					1	READ COMMAND FLOW DIAG.									
X					4	RH7Ø DATA BUFFER TIM. DIAG.									
X					1	WRITE MASSBUS TIMING DIAG.									
X					1	MASSBUS TIMING DIAG.		X		5	D-CS-M8153-Ø-1		6	UNIBUS CONTROL	
						RH7Ø ENGIN. SPEC.							1	X-Y COOR. HOLE LOCATION	
						RH7Ø MANUF. CHECK. PROC.							1	ASSY/DRILLING HOLE LAYOUT	
X					1	UNIBUS CABLE & GRANT CHAIN							1	MODULE ECO HISTORY	
					4	11/70 UNIT ASSY (REF)									
						KB11-B WIRELIST (REF)									
X			2		9	MASSBUS DATA PATH		X		6	D-CS-M59Ø4-Ø-1		2	CONTROLLER TRANSCEIVER	
					1	X-Y COOR. HOLE LOCATION							1	X-Y COOR. HOLE LOCATION	
					1	ASSY/DRILLING HOLE LAYOUT							1	ASSY/DRILLING HOLE LAYOUT	
					1	MODULE ECO HISTORY							1	MODULE ECO HISTORY	
X			3		6	CONTROL & STATUS		X		7	D-CS-H87Ø-Ø-1		1	MASSBUS TERMINATOR	
					1	X-Y COOR. HOLE LOCATION							1	X-Y COOR. HOLE LOCATION	
					1	ASSY/DRILLING HOLE LAYOUT							1	ASSY/DRILLING HOLE LAYOUT	
					1	MODULE ECO HISTORY							1	MODULE ECO HISTORY	
X			4		7	ADDR. & WORD COUNT REGS.									
					1	X-Y COOR. HOLE LOCATION									
					1	ASSY/DRILLING HOLE LAYOUT									

CUSTOMER PRINT SET CODES	X = PRINT OF DOCUMENT INCLUDED IN PRINT SET C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED	TITLE	SIZE CODE	NUMBER	REV
		DRAWING DIRECTORY RH7Ø	B DD	RH7Ø-Ø	
			SHEET 3 OF 3		

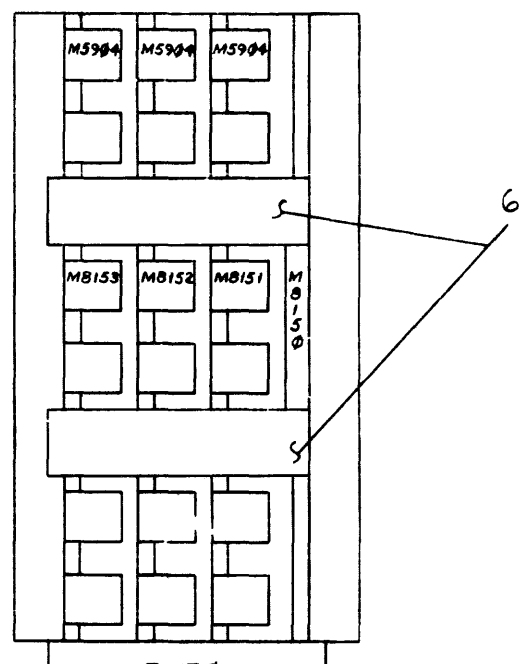
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- NOTES:**
- VIEW OF LOGIC IS FROM MODULE SIDE.
 - SELECT PROPER JUMPER SETTINGS FOR UNIBUS ADDRESS, REGISTER LENGTH FIELD, AND VECTOR ADDRESS AS PER MASSBUS DEVICE USED.
 - INSERT ONE H870 MASSBUS TERMINATOR MODULE IN J2 (ETCH SIDE OF H870 TO COMPONENT SIDE OF M5903) OF EACH OF THE M5903 MASSBUS TRANSCEIVER MODULES IN THE LAST MASSBUS DRIVE.
 - COLORLED EDGE OF MASSBUS CABLES SHOULD BE FACING MODULE HANDLE OF M5904 IN RH70 & M5903 IN MASSBUS DRIVES.
 - ONE H870 MASSBUS TERMINATOR MODULE WILL BE INSERTED IN J1 (COMPONENT SIDE OUT) OF EACH OF THE 3 M5904 MODULES FOR SHIPMENT ONLY.
 - M5904 MODULES MUST BE ETCH REVISION E OR LATER FOR PROPER MECHANICAL POSITION OF CABLE CONNECTOR ON MODULE.
7. ROMS IN PARTS LISTS ITEMS 9,10,11 SHOULD BE SHIPPED IN BOX, ITEM #8.

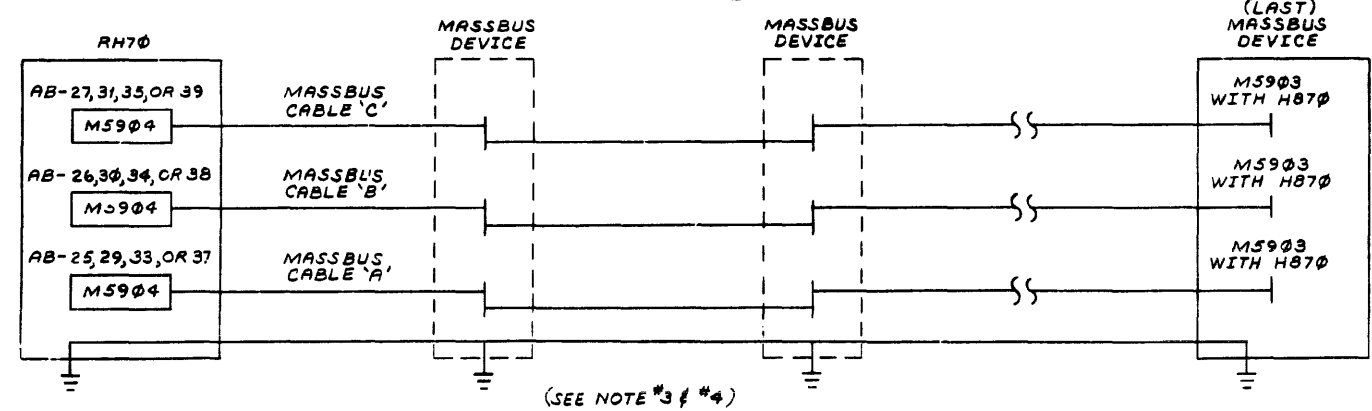
LEGEND

NUMBER	VARIATION
RH70-A	MASSBUS CONTROLLER PDP11/70

	4TH RH70				3RD RH70				2ND RH70				1ST RH70			
	CONTROLLER D				CONTROLLER C				CONTROLLER B				CONTROLLER A			
	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24
A	M5904	M5904	M5904	MB150	M5904	M5904	M5904	MB150	M5904	M5904	M5904	MB150	M5904	M5904	M5904	MB150
B	CONTROL- LER TRANS (MBSC)	CONTROL- LER TRANS (MBSB)	CONTROL- LER TRANS (MBSA)		CONTROL- LER TRANS (MBSC)	CONTROL- LER TRANS (MBSB)	CONTROL- LER TRANS (MBSA)		CONTROL- LER TRANS (MBSC)	CONTROL- LER TRANS (MBSB)	CONTROL- LER TRANS (MBSA)		CONTROL- LER TRANS (MBSC)	CONTROL- LER TRANS (MBSB)	CONTROL- LER TRANS (MBSA)	
C	SEE NOTES 4 & 5	SEE NOTES 4 & 5	SEE NOTES 4 & 5		SEE NOTES 4 & 5	SEE NOTES 4 & 5	SEE NOTES 4 & 5		SEE NOTES 4 & 5	SEE NOTES 4 & 5	SEE NOTES 4 & 5		SEE NOTES 4 & 5	SEE NOTES 4 & 5	SEE NOTES 4 & 5	
D	MB153	MB152	MB151	MASSBUS DATA PATH (MDP)	MB153	MB152	MB151	MASSBUS DATA PATH (MDP)	MB153	MB152	MB151	MASSBUS DATA PATH (MDP)	MB153	MB152	MB151	MASSBUS DATA PATH (MDP)
E	UNIBUS CNTRL (BCT)	ADDR & WC REGS (AWR)	CONTROL & STATUS (CST)		UNIBUS CNTRL (BCT)	ADDR & WC REGS (AWR)	CONTROL & STATUS (CST)		UNIBUS CNTRL (BCT)	ADDR & WC REGS (AWR)	CONTROL & STATUS (CST)		UNIBUS CNTRL (BCT)	ADDR & WC REGS (AWR)	CONTROL & STATUS (CST)	
F	SEE NOTE 2				SEE NOTE 2				SEE NOTE 2				SEE NOTE 2			



VIEW FROM MODULE SIDE



QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	ROM FOR R503, 0#	2375999	11
1	ROM FOR TUI6, TMD2, TUI7, TMD3	2375799	10
1	ROM FOR RPA4, Q5, Q6, RMA2, Q3	2375599	9
1	BOX	9906228	8
1	11/70 UNIT ASSEMBLY	D-UA-11/70-0-0	REF
1	KB11-B WIRELIST	H-WL-7010029-0-1	REF
3	MASSBUS TERMINATOR	H870	7
2	MODULE HOLDER	1209856	6
3	CONTROLLER TRANSCEIVER	M5904	5
1	UNIBUS CONTROL	MB153	4
1	ADDR. & WORD COUNT REGS.	MB152	3
1	CONTROL & STATUS	MB151	2
1	MASSBUS DATA PATH	MB150	1

FIRST USED ON OPTION/MODEL: RH70

DIMENSIONAL TOLERANCE: DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE SPECIFIED

THIRD ANGLE PROJECTION: REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY

MATERIAL: B-DD-RH70-0

FINISH: //

DRN: J. Vincent DATE: 3-7-75

CHKD: DATE: 4-1-75

ENG: J. Vincent DATE: 4-10-75

PROJ: DATE: 4/11/75

DATE: 4/11/75

TITLE: MASSBUS CONTROLLER (RH70)

SIZE CODE: B-DD-RH70-0

NUMBER: DUA RH70-0-0

SCALE: 1 OF 1

SHEET: 1 OF 1

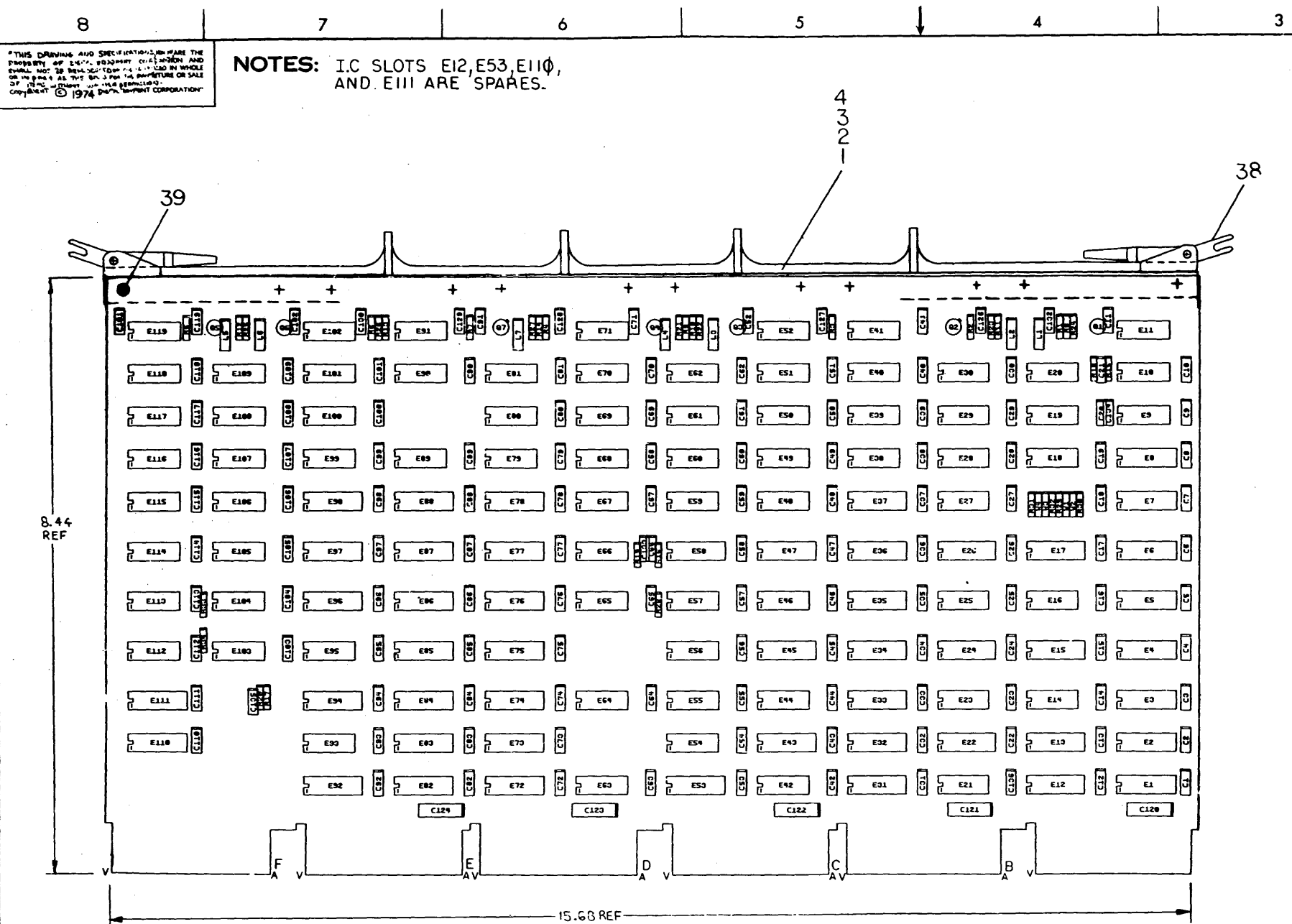
DIST: 1

REV: 3

REVISIONS

CHK	CHANGE NO.	REV.
PC	RH70-00001	A
		B

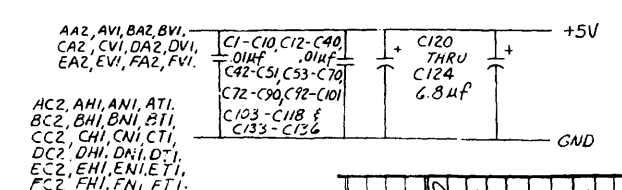
D. THOMPSON
C. THOMPSON



REF	X-Y COORDINATE HOLE LOCATION	K-CO-8150-0-4	1
REF	ASSY/DRILLING HOLE LAYOUT	D-AH-8150-0-5	2
REF	MODULE ECO HISTORY	B-MH-8150-0-8	3
1	ETCHED CIRCUIT BOARD	5011278	4
118	C1 THRU C10, C12 THRU C40, C42 THRU C51, C53 THRU C70, C72 THRU C90, C92 THRU C101, C103 THRU C110, C133 THRU C136	CAP .01uf 20% 100V DISC	5
5	C120 THRU C124	CAP 6.8uf 10% 35V	6
7	C126 THRU C132	CAP 82pf 5% 100V	7
7	C11, C41, C52, C71, C91, C102, C119	CAP .22uf 50V CERAMIC	8
7	R1 THRU R7	RES 100 OHM 5% 1/4W	9
7	R8 THRU R14	RES 120 OHM 5% 1/4W	10
3	R15, R16, R17	RES 330 OHM 5% 1/4W	11
3	R18, R19, R20	RES 880 OHM 5% 1/4W	12
8	R21 THRU R29	RES 1K 5% 1/4W	13
4	R29 THRU R32	RES 1.5K 5% 1/4W	14
7	Q1 THRU Q7	TRANSISTOR DEC 3009B	15
7	L1 THRU L7	INDUCTOR 100uh	16
7	E11, E41, E52, E71, E91, E102, E105, E100	DELAY - 10 TAP 250ns 100 OHM	17
8	E19, E38, E50, E59, E62, E80, E99	IC DEC 74500	18
9	E42, E55, E56, E57, E63 THRU E67	IC DEC 74H01	19
1	E115	IC DEC 7402	20
6	E20, E51, E70, E101, E112, E118	IC DEC 74504	21
2	E40, E90	IC DEC 74510	22
8	E10, E30, E60, E68, E107, E108, E114, E116	IC DEC 74511	23
1	E49	IC DEC 74H30	24
1	E54	IC DEC 74H40	25
2	E39, E89	IC DEC 74H50	26
6	E28, E61, E104, E105, E108, E113	IC DEC 74584	27
8	E9, E29, E69, E79, E109, E117, E48, E81	IC DEC 74574	28
2	E18, E103	IC DEC 7486	29
4	E92, E94, E96, E98	IC DEC 74157	30
14	E31, E33, E35, E37, E72, E74, E78, E78, E58, E82, E84, E86, E88, E97	IC DEC 745157	31
3	E22, E24, E26	IC DEC 74174	32
18	E2, E4, E6, E13, E15, E17, E32, E34, E36, E73, E75, E77, E83, E85, E87, E43, E45, E47	IC DEC 745174	33
5	E1, E3, E5, E7, E8	IC DEC 74298	34
4	E21, E23, E25, E27	IC DEC 9242	35
6	E14, E16, E44, E46, E93, E95	IC DEC 82562	36
4	W1 THRU W4	INSULATED JUMPERS	37
1	HANDLE	1210711-02	38
12	EYELET	9000732	39
1	R33	RES 270 OHM 5% 1/4 W	40
1	R34	RES 560 OHM 5% 1/4 W	41
A/R	WIRE #30AWG BUSS (RETROFIT)	9105740-55	42

IC TYPE	GND	+5V
IC DEC 74157	8	16
IC DEC 745157	8	16
IC DEC 745174	8	16
IC DEC 74174	8	16
IC DEC 74298	8	16

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



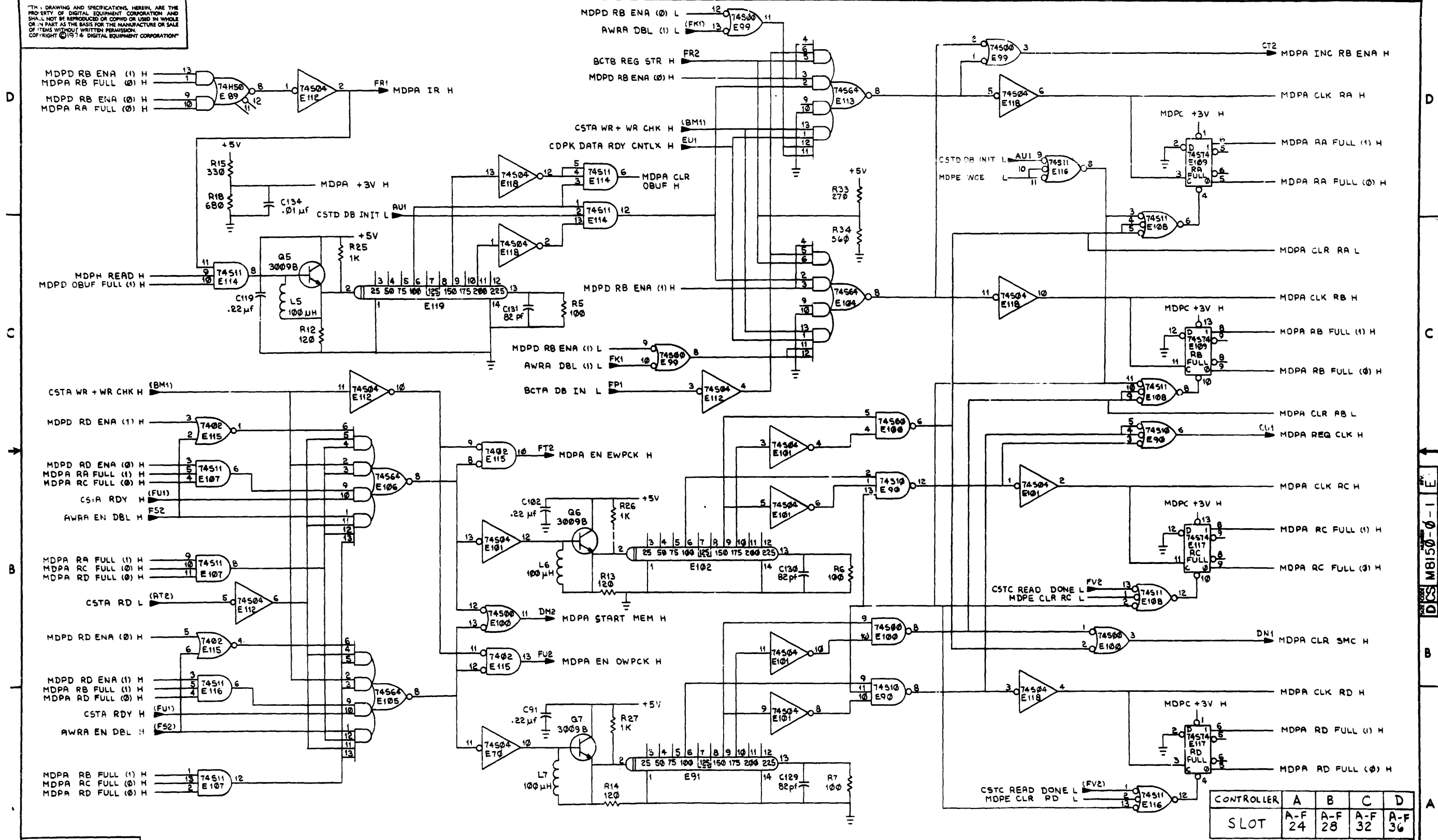
REV	DESCRIPTION	DATE
1	INITIAL DESIGN	12/15/79
2	REVISED FOR MANUFACTURING	1/2/80
3	REVISED FOR MANUFACTURING	1/2/80
4	REVISED FOR MANUFACTURING	1/2/80
5	REVISED FOR MANUFACTURING	1/2/80
6	REVISED FOR MANUFACTURING	1/2/80
7	REVISED FOR MANUFACTURING	1/2/80
8	REVISED FOR MANUFACTURING	1/2/80
9	REVISED FOR MANUFACTURING	1/2/80
10	REVISED FOR MANUFACTURING	1/2/80

DEC NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

digital EQUIPMENT CORPORATION
 MASSBUS DATA PATH (MDP)
 DATE: 9-15-79
 SCALE: 1 OF 9 SHEET

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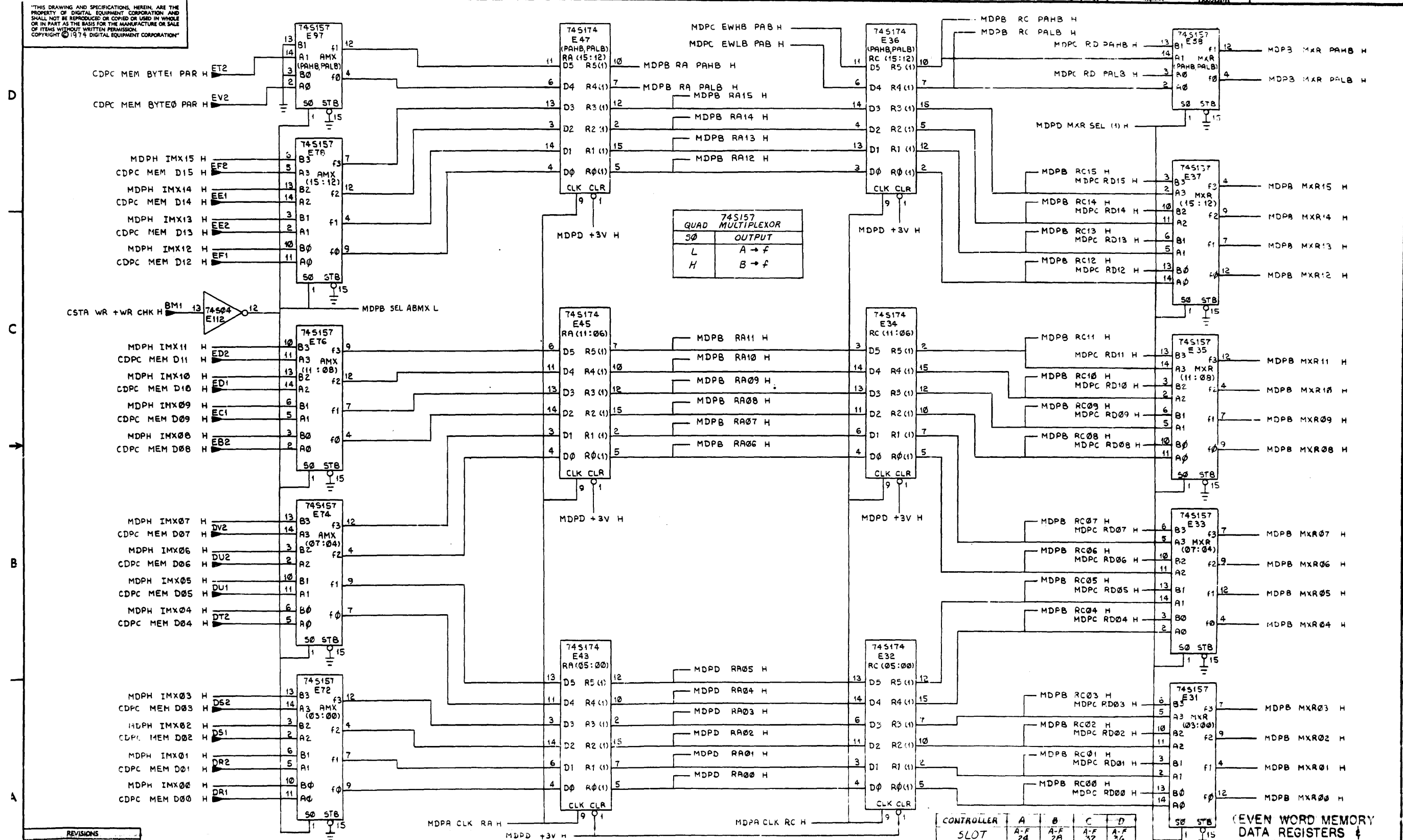
REVISIONS		
CHK	CHANGE NO.	REV.

CONTROLLER	A	B	C	D
SLOT	A-F 24	A-F 28	A-F 32	A-F 36

(MEMORY REGISTERS CONTROL)
 TITLE MASSBUS DATA PATH (MDPA) DCS MB150-0-1
 SCALE 1:1 SHEET 2 OF 9 DWT.

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1-0-0918W SCD 2



74517 QUAD MULTIPLEXOR	
S0	OUTPUT
L	A → f
H	B → f

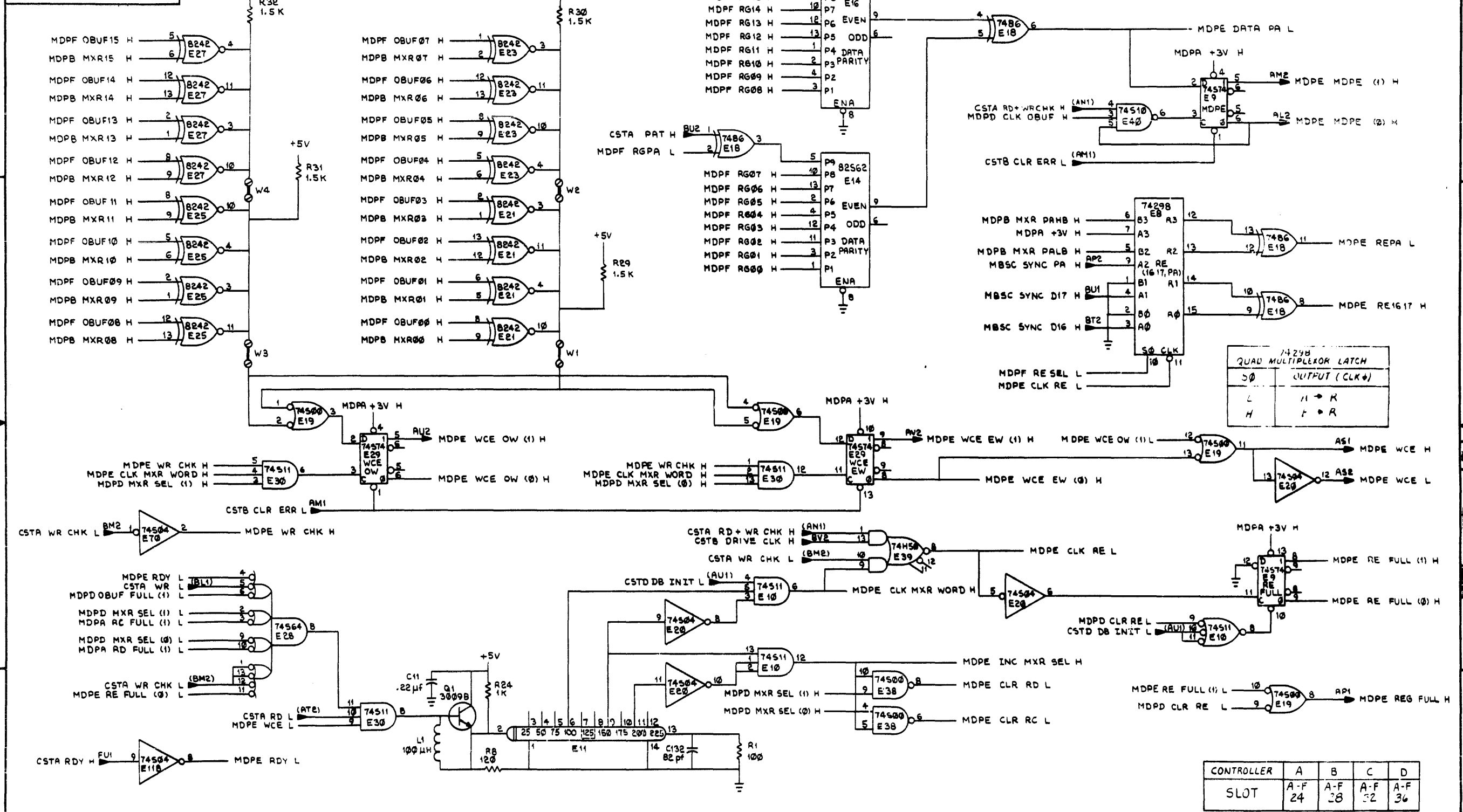
CONTROLLER	A	B	C	D
SLOT	A-F 24	A-F 28	A-F 32	A-F 36

(EVEN WORD MEMORY DATA REGISTERS & MIXER)

REVISIONS		
CHK	CHANGE NO	REV.

TITLE MASSBUS DATA PATH (MDPB) NUMBER DCS MB150-0-1 REV. E
SCALE SHEET 3 OF 9

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CONTROLLER	A	B	C	D
SLOT	A-F 24	A-F 28	A-F 32	A-F 36

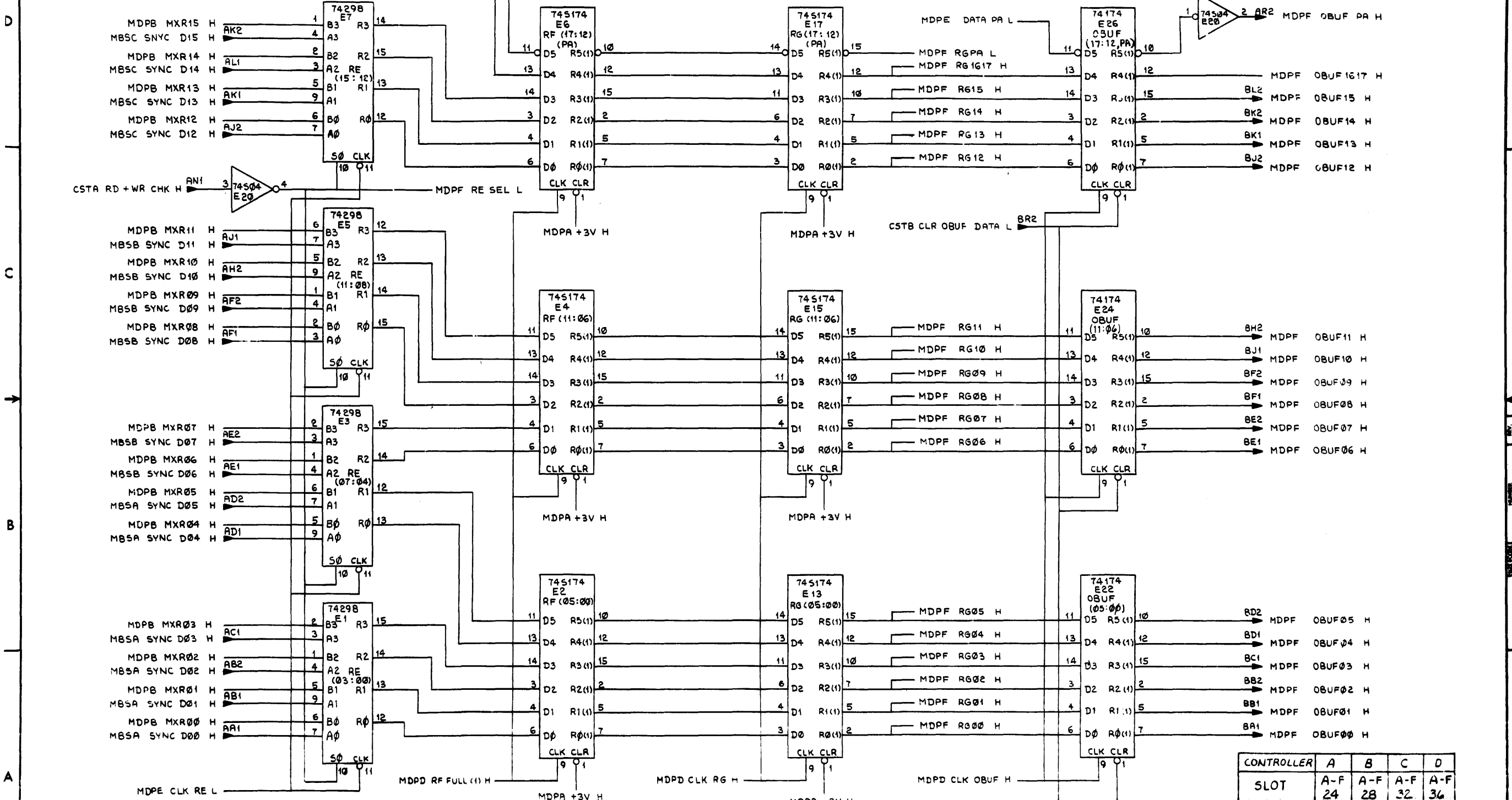
(WRITE CHECK LOGIC; CLOCK RE, & DATA PARITY)

REVISIONS		
CHK	CHANGE NO	REV.

TITLE	MASSBUS DATA PATH (MDPE)	SIZE CODE	D CS	NUMBER	M8150-0-1	REV.	E
SCALE	1/1	SHEET	6 OF 9	DIST.			

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74298	
QUAD MULTIPLEXOR LATCH	
S0	OUTPUT (CLK#)
L	A → R
H	B → R



CONTROLLER	A	B	C	D
SLOT	A-F	A-F	A-F	A-F
	24	28	32	36

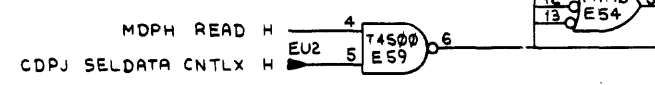
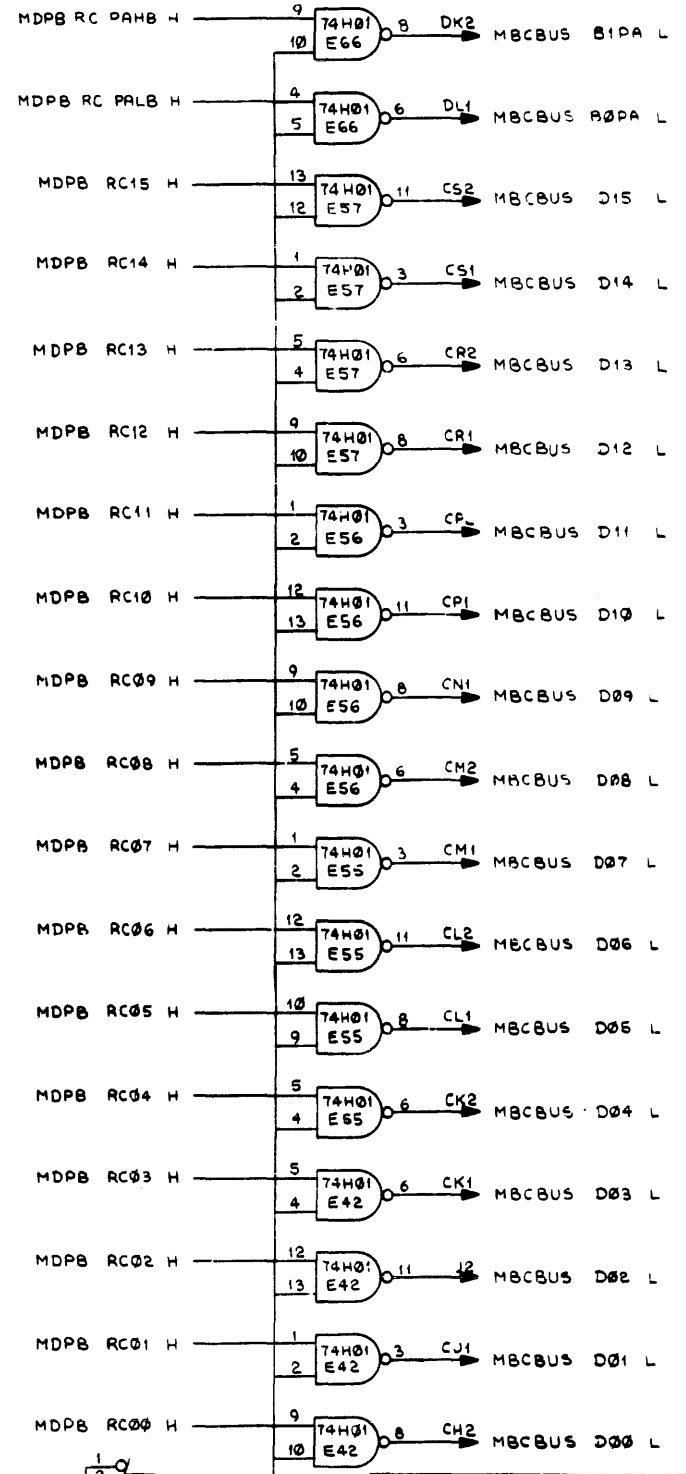
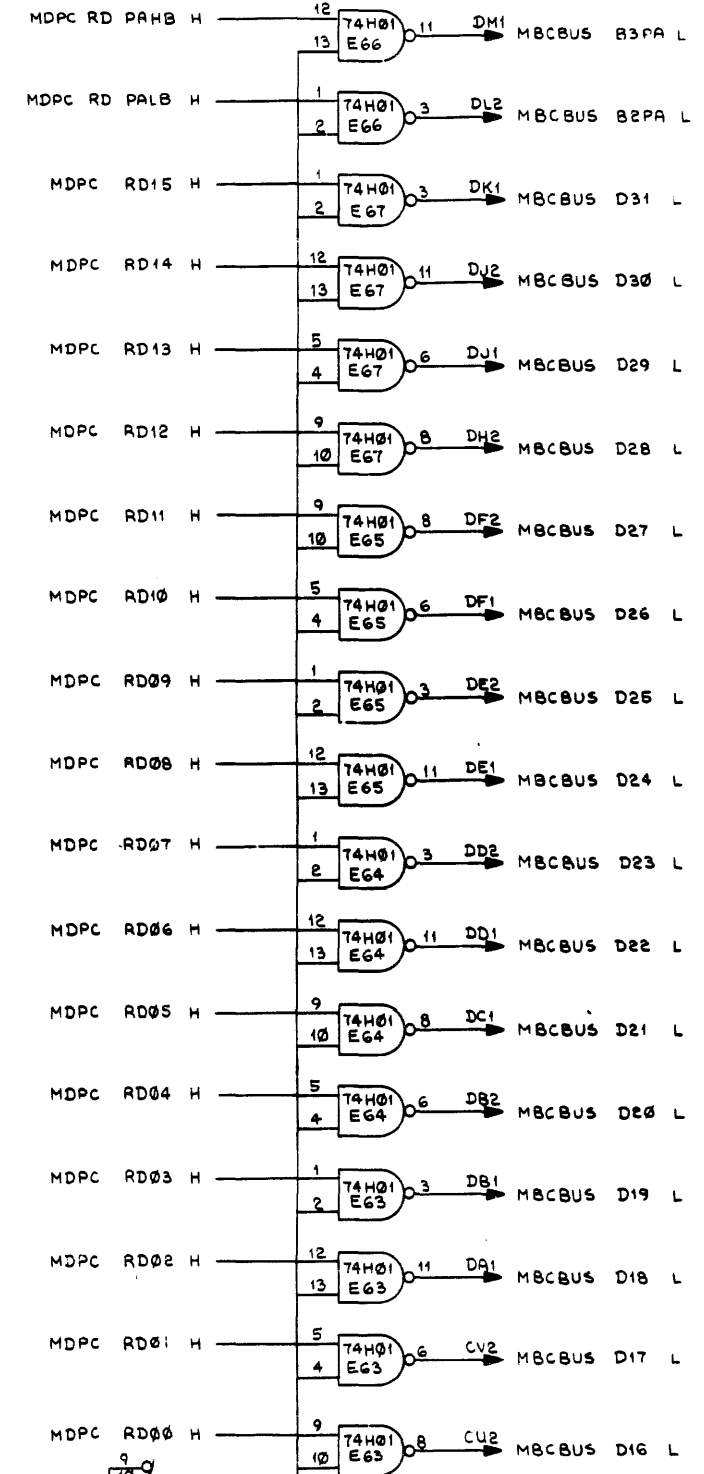
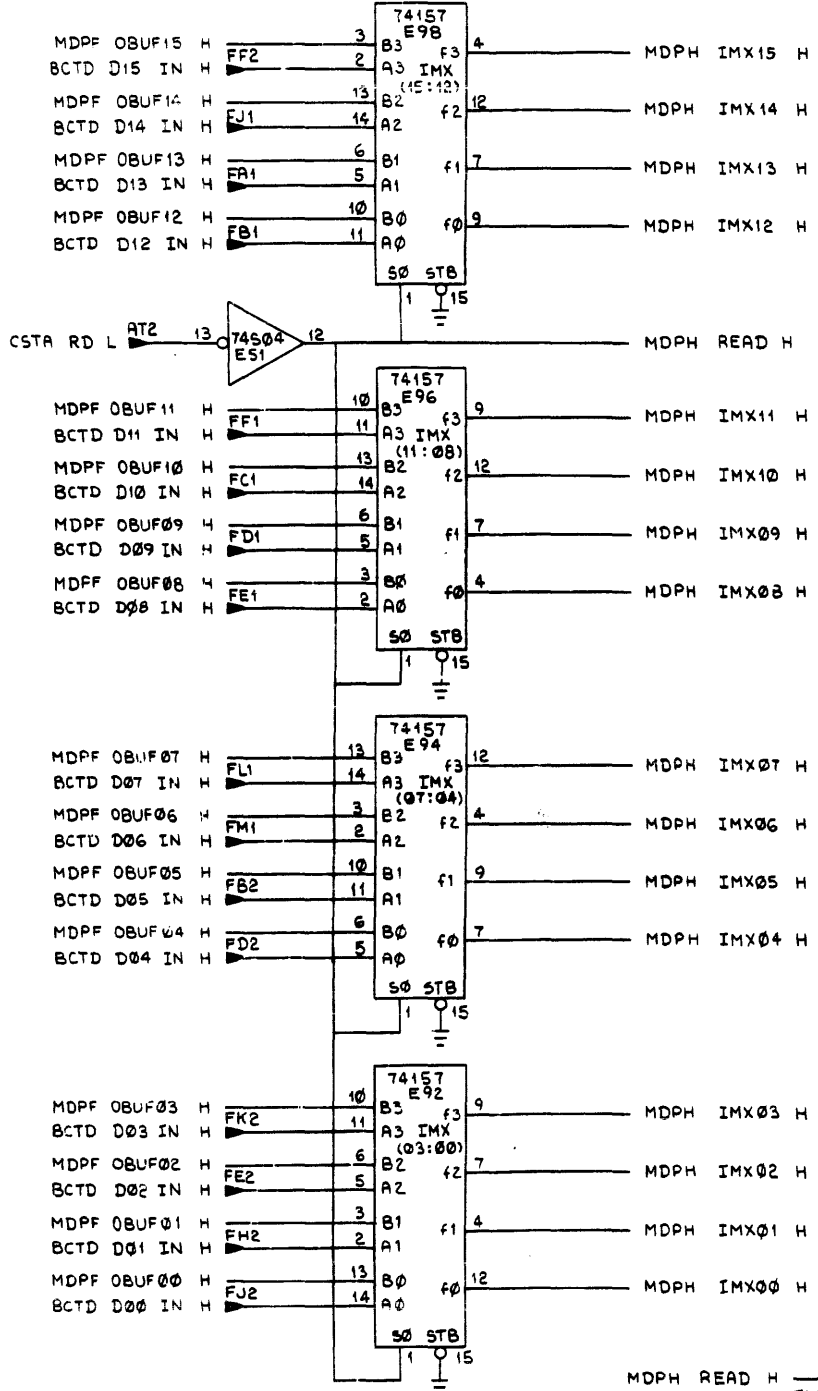
(DATA BUFFER REGISTERS)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	MASSBUS DATA PATH (MDPF)	SIZE CODE	D CS	NUMBER	M8150-0-1	REV.	E
SCALE	—/—	SHEET	7 OF 9	DIST.			

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74157 QUAD MULTIPLEXOR	
S ₀	OUTPUT
L	A → f
H	B → f



CONTROLLER	A	B	C	D
SLOT	A-F	A-F	A-F	A-F
	24	28	32	36

(IMX & DATA DRIVERS)

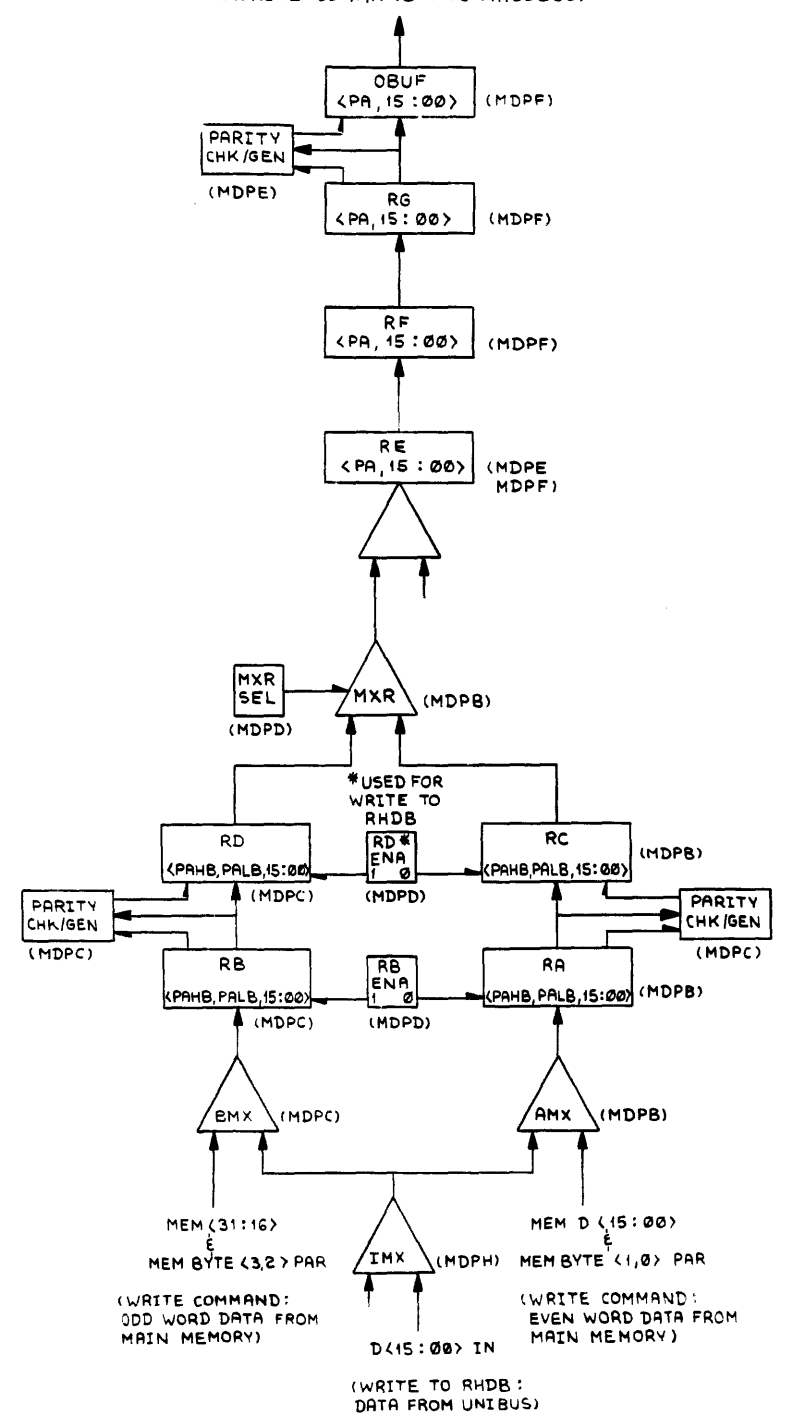
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	MASSBUS DATA PATH (MDPH)	SIZE CODE	D CS	NUMBER	M8150-0-1	REV.	E
SCALE		SHEET	9	OF	9	DIST.	

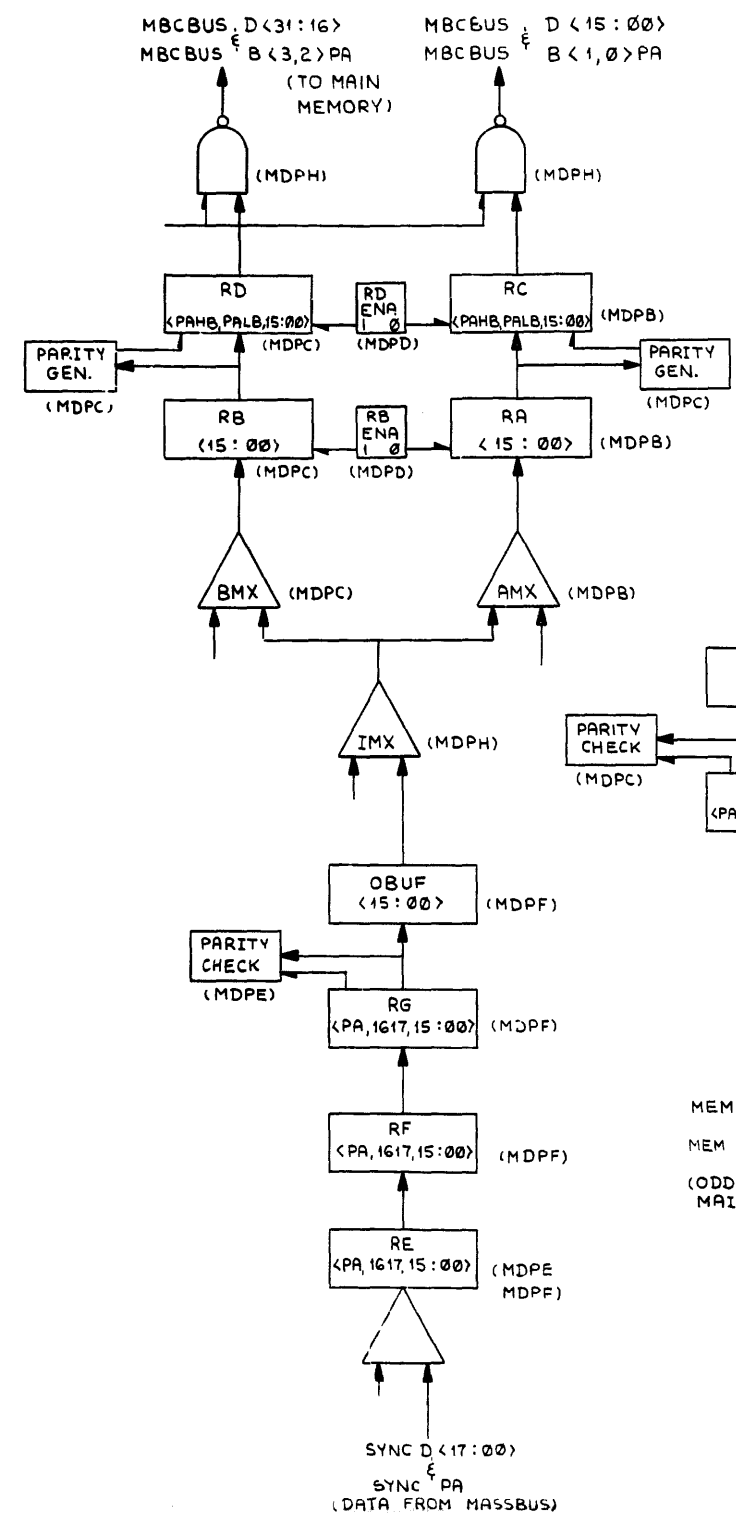
D
C
B
A

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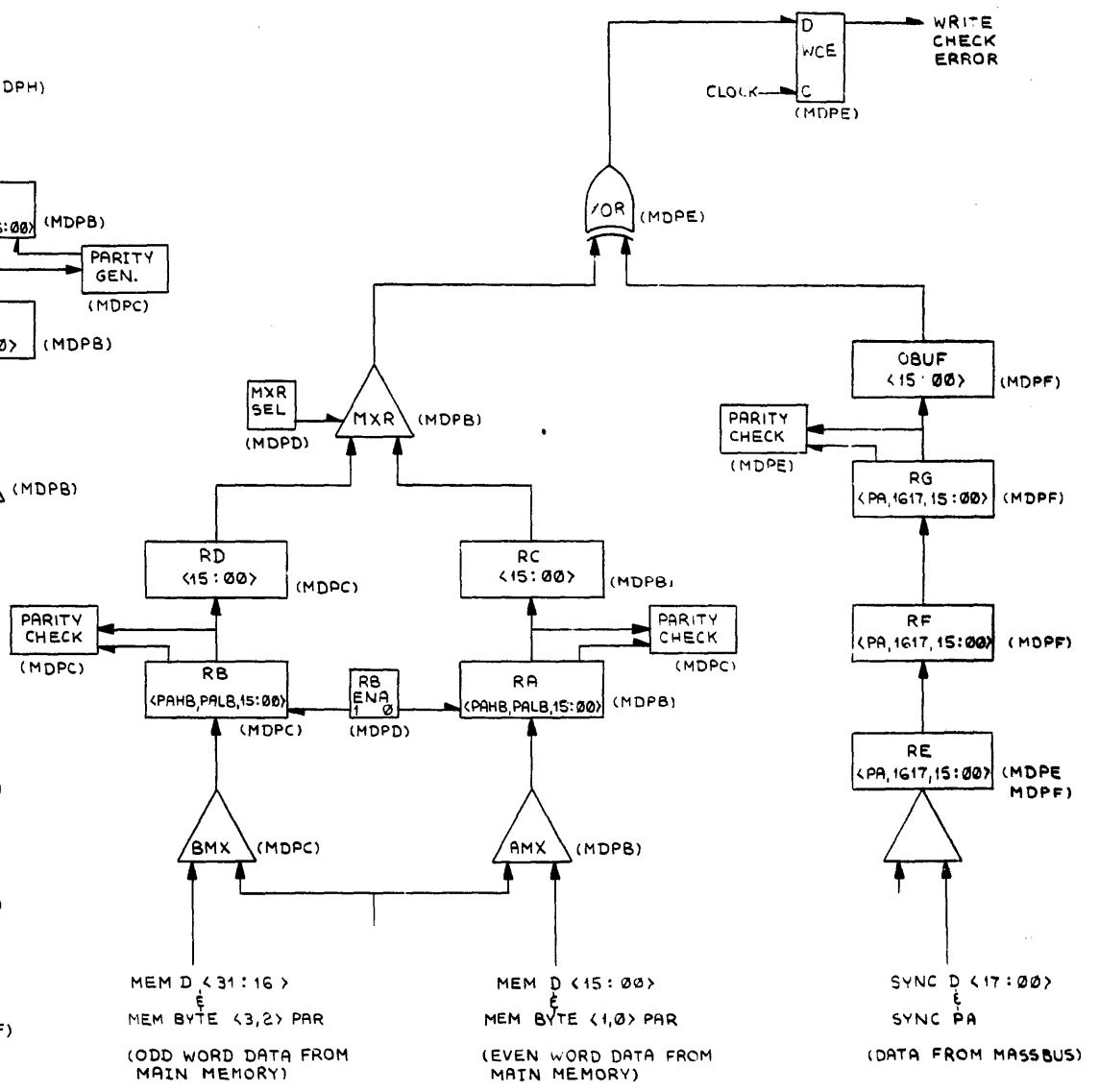
**WRITE COMMAND
OR
READ-WRITE RHDB REGISTER**
(READ FROM RHDB : TO UNIBUS)
(WRITE COMMAND : TO MASSBUS)



READ COMMAND



WRITE CHECK COMMAND



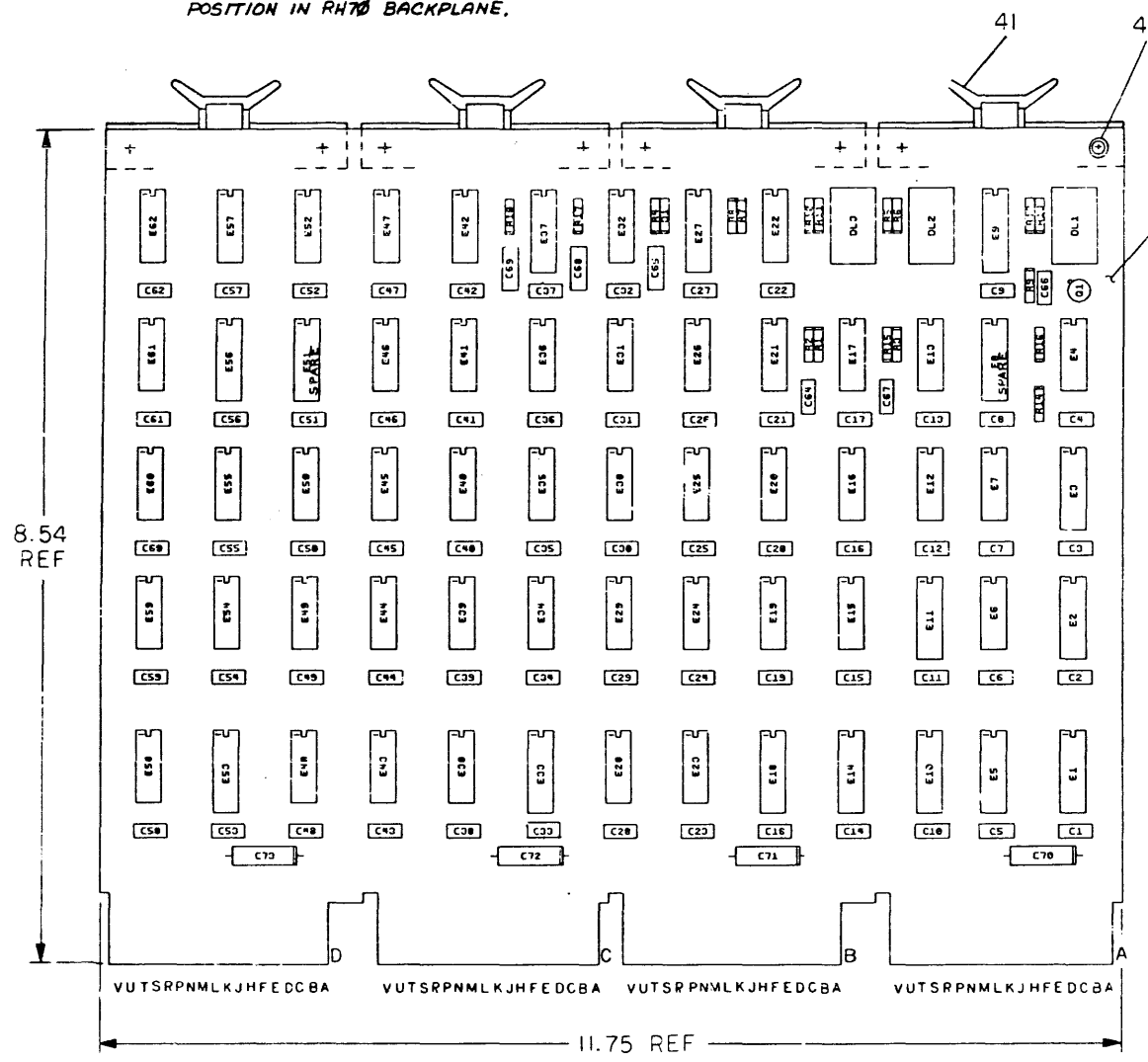
CONTROLLER	A	B	C	D
SLOT	A-F 24	A-F 28	A-F 32	A-F 36

(DATA PATH BLOCK DIAGRAM)

REVISIONS		
CHK	CHANGE NO.	REV.

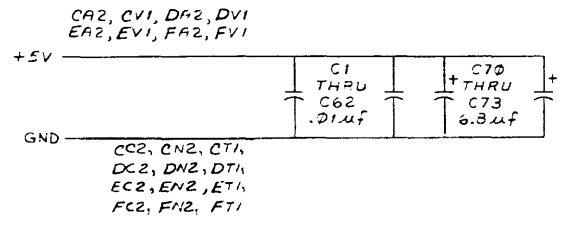
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NOTES:
 1. IC SLOTS E0 & E51 ARE SPARES.
 2. PIN DESIGNATIONS ON CIRCUIT SCHEMATICS REFER TO MODULE POSITION IN RH70 BACKPLANE.



PIN NOMENCLATURE
 MODULE PIN BACKPLANE PIN
 A C
 B D
 C E
 D F

REF	X-Y COORDINATE HOLE LOCATION	K-CO-M8151-0-4	1
REF	ASSY/DRILLING HOLE LAYOUT	D-AH-M8151-0-5	2
REF	MODULE ECO HISTORY	B-MH-M8151-0-8	3
1	ETCHED CIRCUIT BOARD	5011356	4
64	C1 THRU C62, C64, C66	CAPACITOR .01uf 100V, 20%	5
4	C70 THRU C73	CAPACITOR 6.8uf 10% 35V	6
1	C65	CAPACITOR .47uf 20% 25V	7
1	C67	CAPACITOR 47pf 5% 100V	8
2	C68, C69	CAPACITOR 180pf 5% 100V	9
1	D1	DIODE D664	10
3	R5, R10, R12	RESISTOR 150 OHM, 1/4 W, 5%	11
3	R6, R11, R13	RESISTOR 300 OHM, 1/4 W, 5%	12
2	R1, R8	RESISTOR 330 OHM, 1/4 W, 5%	13
2	R2, R9	RESISTOR 680 OHM, 1/4 W, 5%	14
3	R3, R14, R15	RESISTOR 1K OHM, 1/4 W, 5%	15
4	R7, R17, R18, R4	RESISTOR 5.6K OHM, 1/4 W, 5%	16
1	R16	RESISTOR 6.8K OHM, 1/4 W, 5%	17
1	Q1	TRANSISTOR DEC 3009 B	18
3	DL1, DL2, DL3	DELAY 50 NS	19
2	E45, E46	IC DEC 7400	20
3	E7, E12, E62	IC DEC 74H00	21
2	E39, E48	IC DEC 74S00	22
2	E34, E42	IC DEC 7402	23
4	E6, E36, E43, E49	IC DEC 74H04	24
4	E35, E41, E58, E59	IC DEC 7408	25
3	E40, E44, E52	IC DEC 7410	26
2	E24, E32	IC DEC 74H10	27
5	E4, E25, E50, E54, E57	IC DEC 74H11	28
2	E22, E31	IC DEC 7437	29
1	E56	IC DEC 7442	30
1	E20	IC DEC 74H30	31
1	E28	IC DEC 74H50	32
10	E13, E15, E16, E21, E26, E30, E47, E55, E60, E61	IC DEC 74H74	33
3	E19, E23, E29	IC DEC 74S74	34
1	E38	IC DEC 74S64	35
2	E27, E37	IC DEC 74123	36
1	E33, E53	IC DEC 74175	37
1	E9	IC DEC 74193	38
8	E1, E2, E3, E5, E10, E11, E14, E18	IC DEC 8234	39
1	E17	IC DEC 9640	40
4	HANDLE, FLIP CHIP (MAGENTA)	9008337-6	41
8	EYELET	9006732	42
AJR	WIRE # 30 AWG BUSS	9105740-55	43



IC TYPE	GND	+5V
I.C. DEC 74175	8	16
I.C. DEC 74123	8	16
I.C. DEC 8640	1	8
I.C. DEC 8234	8	16
I.C. DEC 7442	3	16
I.C. DEC 74193	8	16
IC TYPE	GND	+5V

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

FIRST USED ON OPTION MODEL: RH70

ETCH BOARD REV: A

REVISIONS:

CHK	CHANGE NO	REV

DRN: *G. Vincent* DATE: 11-7-74
 CHKD: *[Signature]* DATE: 12-22-74
 ENGR: *[Signature]* DATE: 1-15-75
 PROD: *[Signature]* DATE: 1-15-75

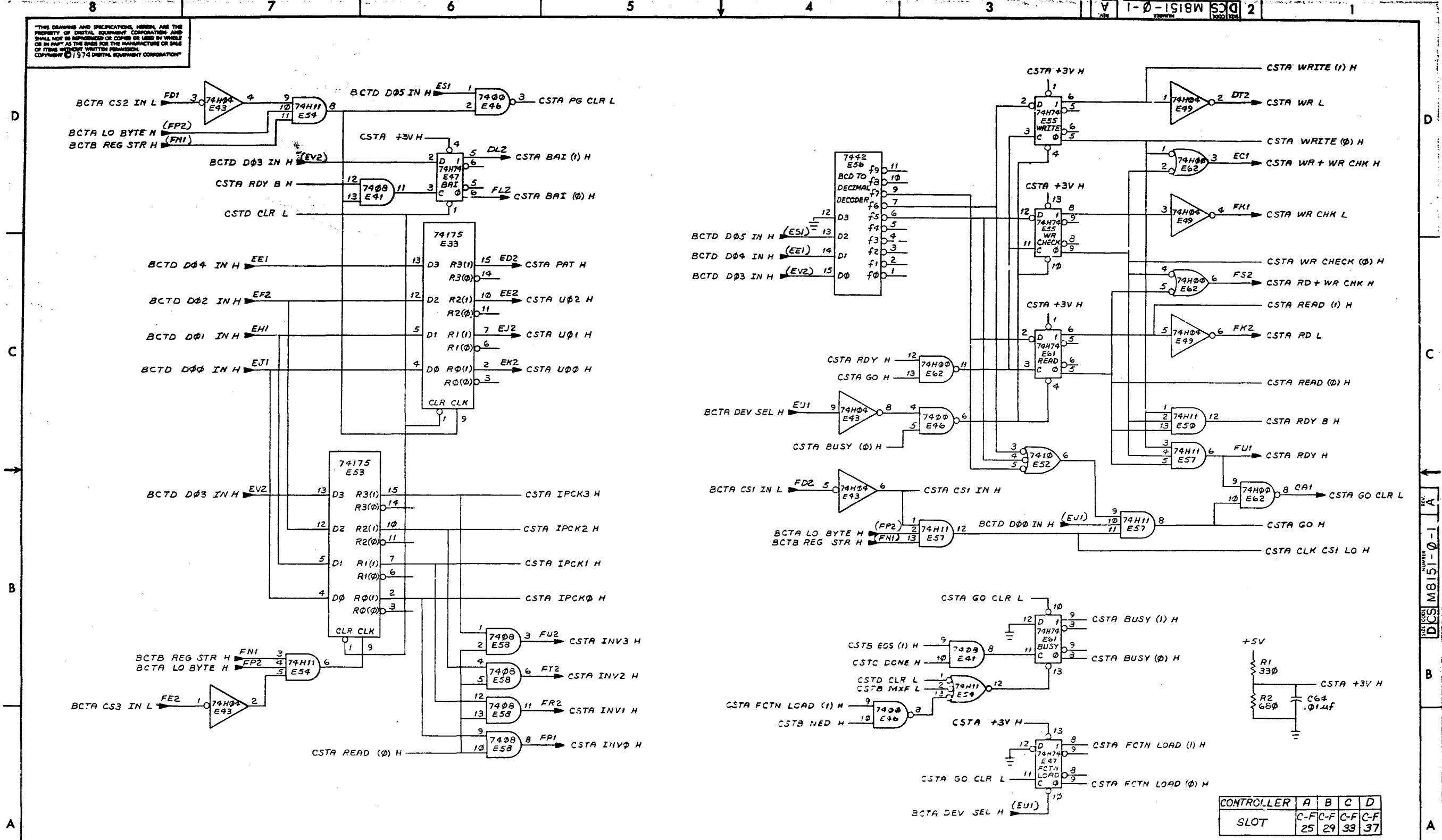
NEXT HIGHER ASSY: B-DD-RH70-0

SCALE: 1:1

SHEET: 1 OF 6

digital EQUIPMENT CORPORATION
 TITLE: CONTROL AND STATUS (CST)
 SIZE CODE: DCS M8151-0-1
 NUMBER: 1
 REV: A

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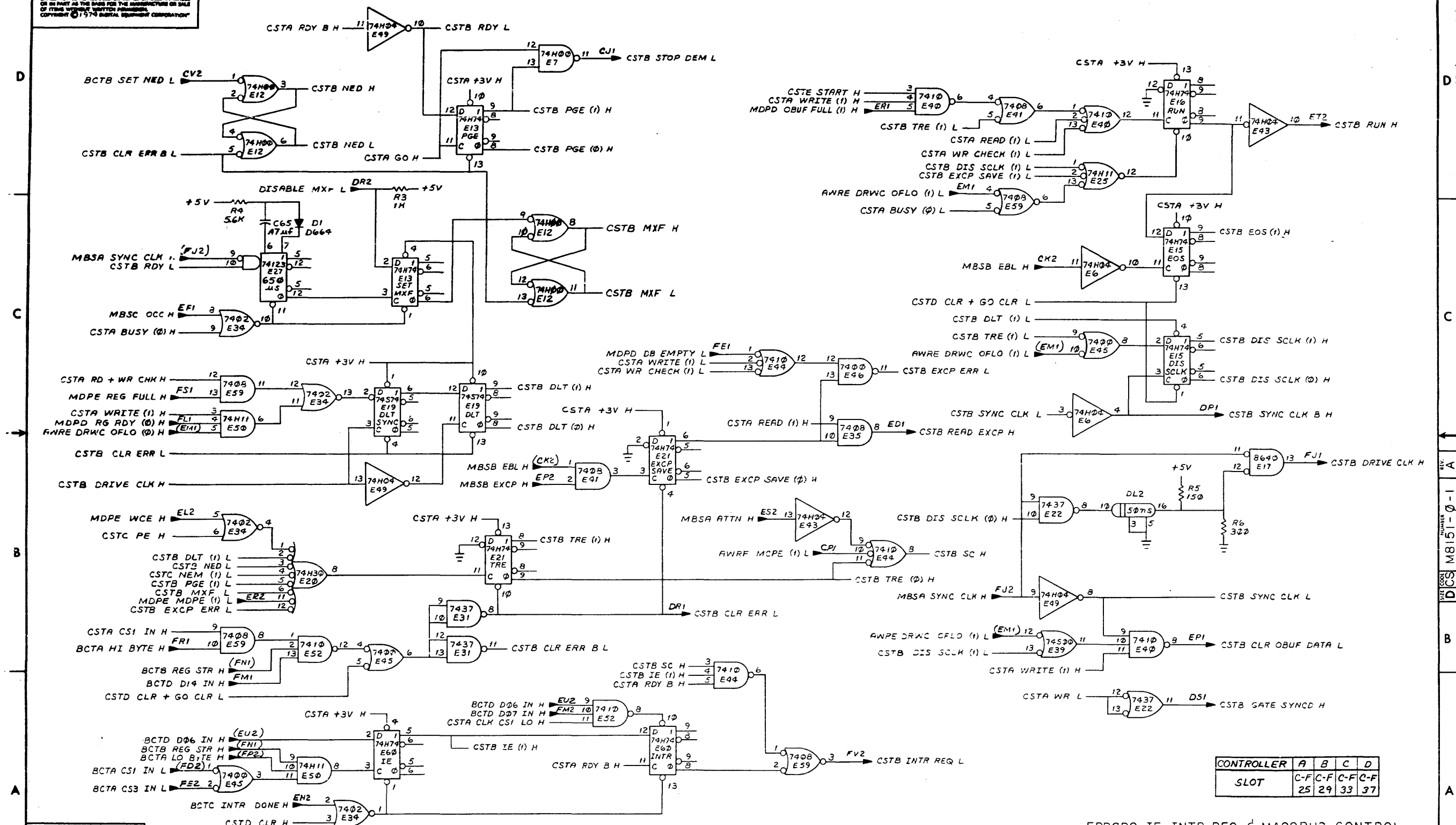
CONTROLLER	A	B	C	D
SLOT	C-F	C-F	C-F	C-F
	25	29	33	37

CS1, CS2, & CS3 CNTL & STATUS BITS; FUNCTION SELECT

REVISIONS		
CHK	CHANGE NO.	REV.

REV. A NUMBER DCS M8151-0-1

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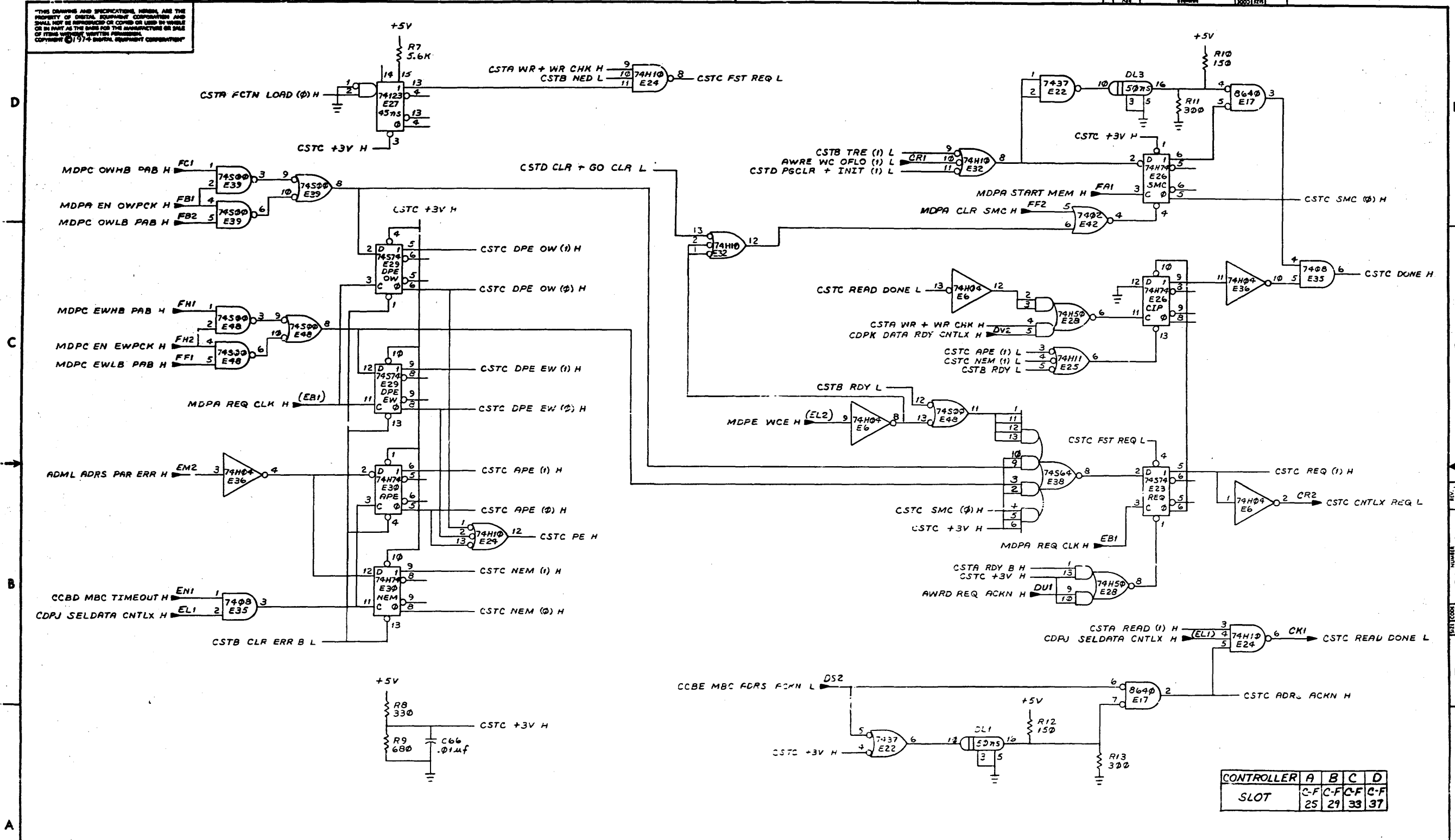
CONTROLLER	A	B	C	D
SLOT	C-F	C-F	C-F	C-F
	25	29	33	37

ERRORS; IE; INTR REQ; MASSBUS CONTROL

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
CONTROL AND STATUS (CSTB)	D	CS	M8151-0-1	A
SCALE	SHEET	3 OF 8	DIST.	

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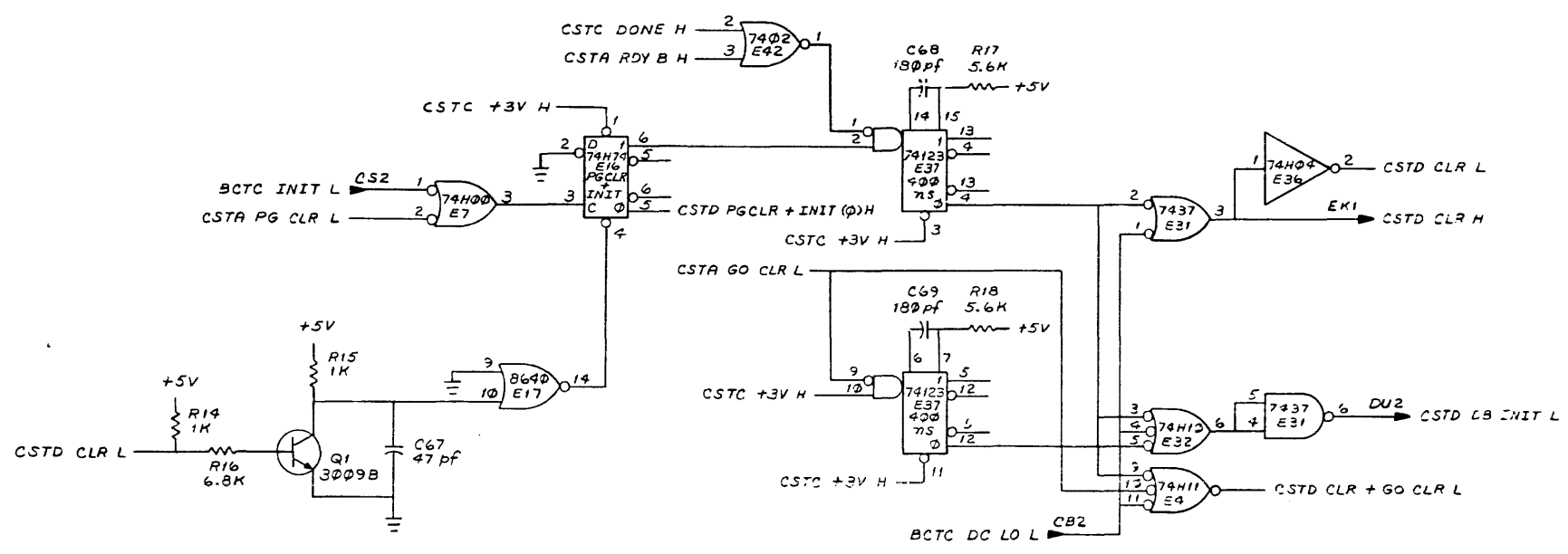
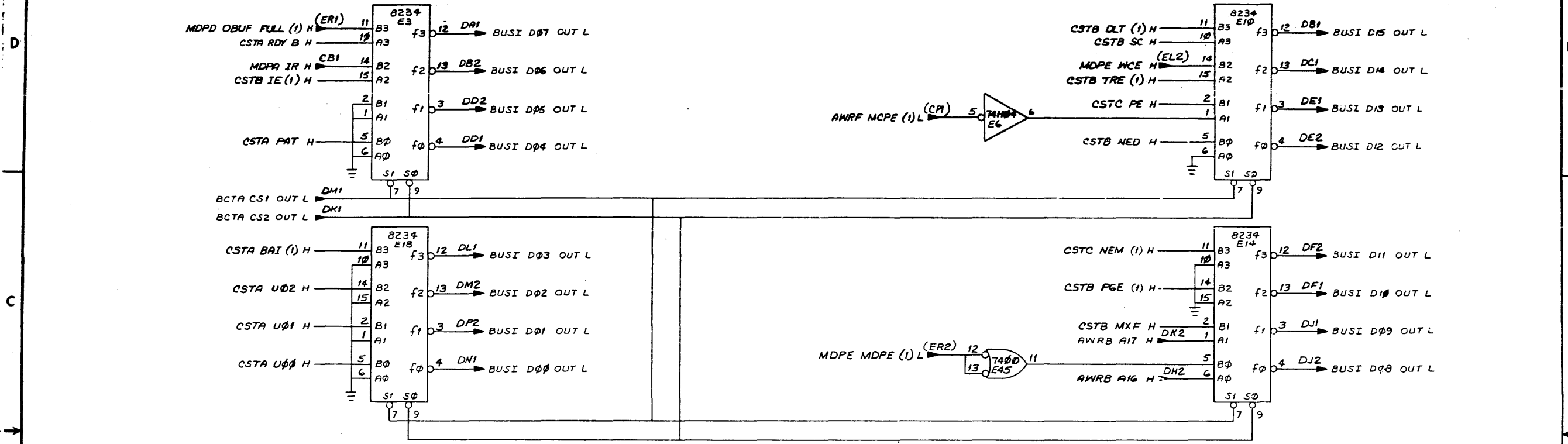
CONTROLLER	A	B	C	D
SLOT	C-F	C-F	C-F	C-F
	25	29	33	37

PE; NEM & MEMORY CYCLE CONTROL

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE/CODE	NUMBER	REV.
CONTROL AND STATUS (CSTC)	DCS	M8151-0-1	A
SCALE	SHEET	4 OF 6	DIST.

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8234 OPEN COLLECTOR MULTIPLEXOR		
S0	S1	OUTPUT
L	L	B → f (NOT USED)
L	H	B → f
H	L	A → f
H	H	OFF

CONTROLLER	A	B	C	D
SLOT	C-F	C-F	C-F	C-F
	25	29	33	37

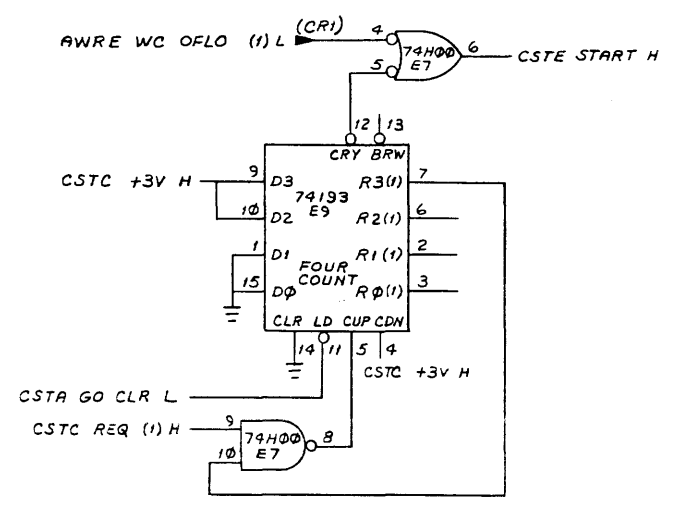
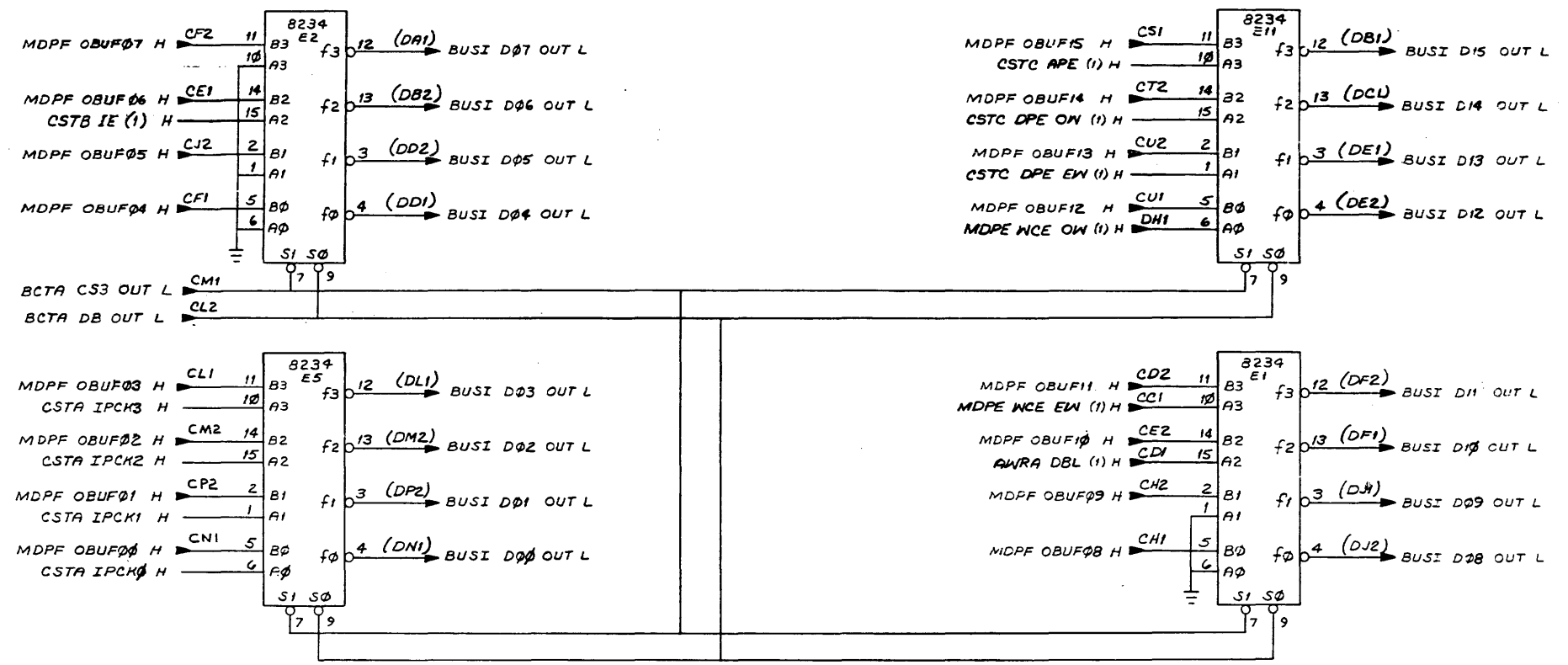
BUSI MUXS < CS1 & CS2 REGS. > & CLEAR LOGIC

TITLE	CONTROL AND STATUS (CSTD)	SIZE CODE	DCS	NUMBER	M8151-0-1	REV.	A
SCALE		SHEET	5 OF 6	DIST.			

REVISIONS		
CHK	CHANGE NO.	REV.

REV. A M8151-0-1 DCS

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8234 OPEN COLLECTOR MULTIPLEXOR		
S0	S1	OUTPUT
L	L	B→f (NOT USED)
L	H	B→f
H	L	A→f
H	H	OFF

CONTROLLER	A	B	C	D
SLOT	C-F	C-F	C-F	C-F
	25	29	33	37

BUSI MUXS. <DB & CS3 REGS.> & START

REVISIONS		
CHK	CHANGE NO.	REV.

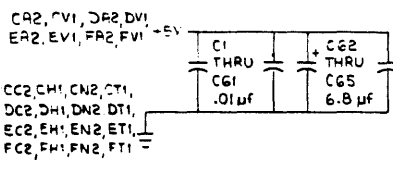
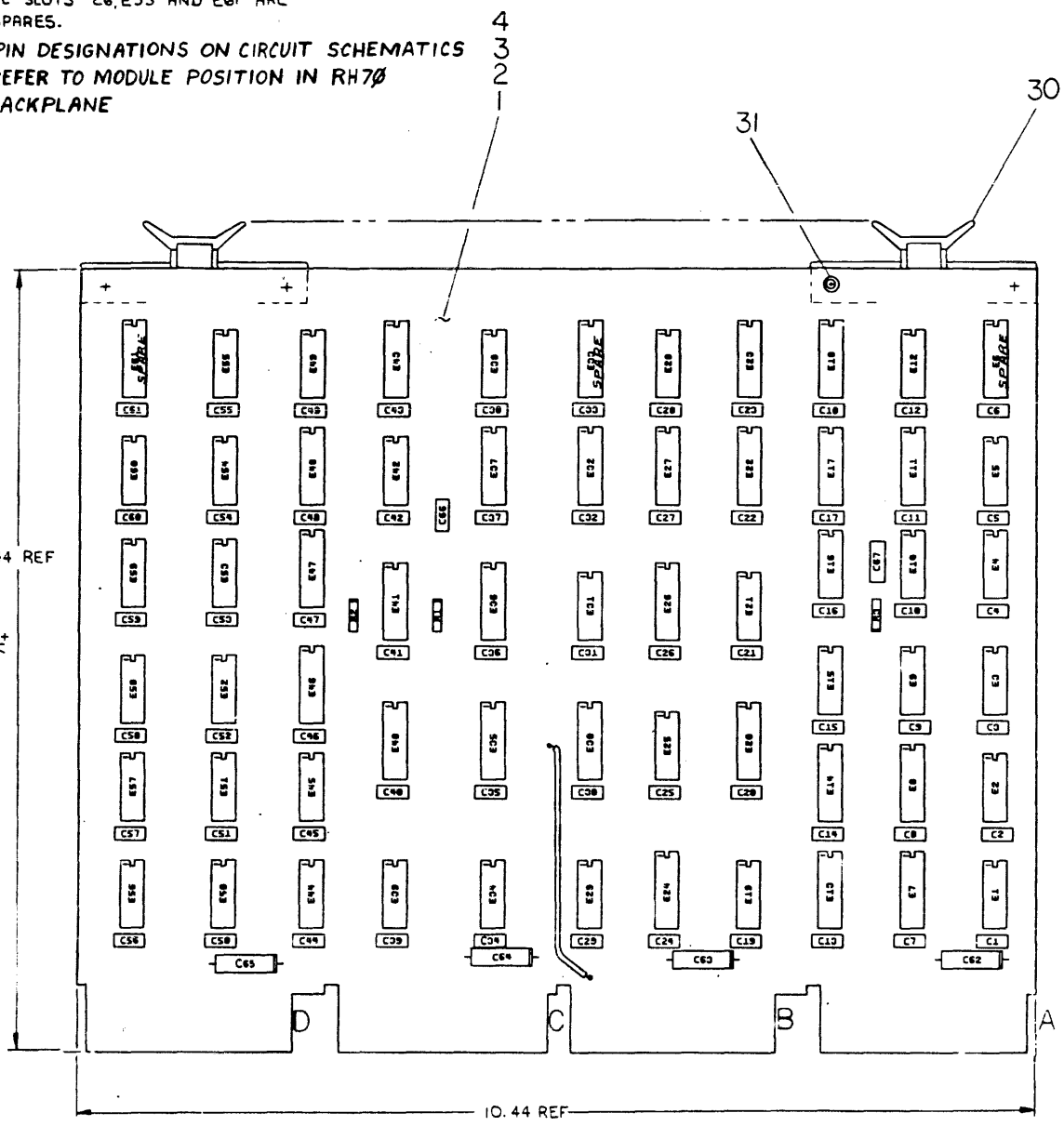
REV. NUMBER DCS M8151-0-1 A

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NOTES:

- IC SLOTS EG, E33 AND EG1 ARE SPARES.
- PIN DESIGNATIONS ON CIRCUIT SCHEMATICS REFER TO MODULE POSITION IN RH70 BACKPLANE

PIN NOMENCLATURE	
MODULE PINS	BACK PLANE PINS
A	C
B	D
C	E
D	F



REF	X-Y COORDINATE HOLE LOCATION	K-CO-00152-B-4	1
REF	ASSY/DRILLING HOLE LAYOUT	D-AH-00152-B-5	2
REF	MODULE E.C.O. HISTORY	B-MH-00152-B-8	3
1	ETCHED CIRCUIT BOARD	5011285	4
62	C1 THRU C61, C65	CAPACITOR, .01uF, 100V, 20% DISC	5
4	C62 THRU C65	CAPACITOR, 6.8uF, 35V, 10%	6
1	C67	CAPACITOR, 27pF, 100V, 5%	7
1	R1	RESISTOR, 330, 1/4W, 5%	9
1	R2	RESISTOR, 680, 1/4W, 5%	9
1	R3	RESISTOR, 1K, 1/4W, 5%	10
4	E10, E42, E52, E53	I.C. DEC 74H00	11
6	E19, E21, E25, E29, E31, E34	I.C. DEC 74H01	12
4	E11, E17, E18, E22	I.C. DEC 74191	13
3	E38, E57, E51	I.C. DEC 74H04	14
1	E50	I.C. DEC 7408	15
3	E28, E54, E60	I.C. DEC 74H10	16
3	E5, E49, E59	I.C. DEC 74H11	17
1	E55	I.C. DEC 7427	18
2	E9, E15	I.C. DEC 74H30	19
1	E45	I.C. DEC 74H55	20
1	E58	I.C. DEC 74H53	21
1	E16	I.C. DEC 74S40	22
3	E4, E12, E56	I.C. DEC 74H74	23
1	E40	I.C. DEC 74157	24
1	E49	I.C. DEC 74H106	25
4	E1, E2, E39, E44	I.C. DEC 74180	26
10	E23, E27, E32, E35, E36, E37, E41, E43, E46, E47	I.C. DEC 74193	27
8	E7, E9, E13, E14, E20, E24, E26, E30	I.C. DEC 8234	28
1	E3	I.C. DEC 74S04	29
4		HANDLES FLIP CHIP (MAGENTA)	30
8		EYELET HANDLES	31
4		WIRE #30 AWG BUSS (RETROFIT)	32

IC	DEC	QTY	16
IC DEC 8234	8	16	
IC DEC 74193	6	16	
IC DEC 74H106	13	5	
IC DEC 74157	8	16	
IC DEC 74191	8	16	
IC TYPE	GND	+5V	

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

IC PIN LOCATIONS

FIRST USED ON OPTION MODEL RH70

ETCH BOARD REV A

DRN	DATE	
CHKD	DATE	
ENGR	DATE	
PROJ ENGR	DATE	
PROJ	DATE	

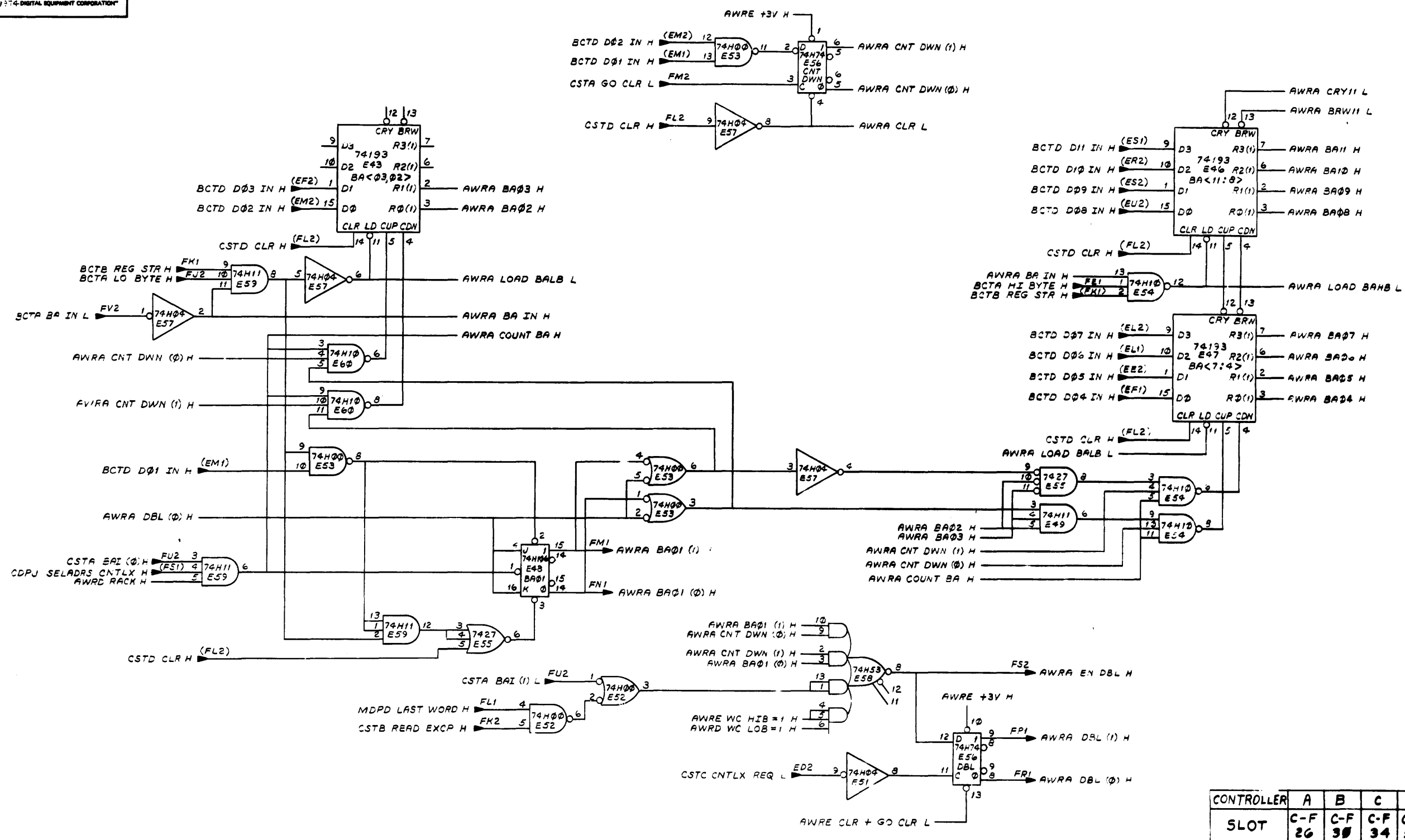
TITLE: ADDR. & WORD COUNT REGS. (AWR)

SIZE CODE: DCS NUMBER: M8152-0-1 REV: A

SEMICONDUCTOR CONVERSION CHART

SHEET 1 OF 7

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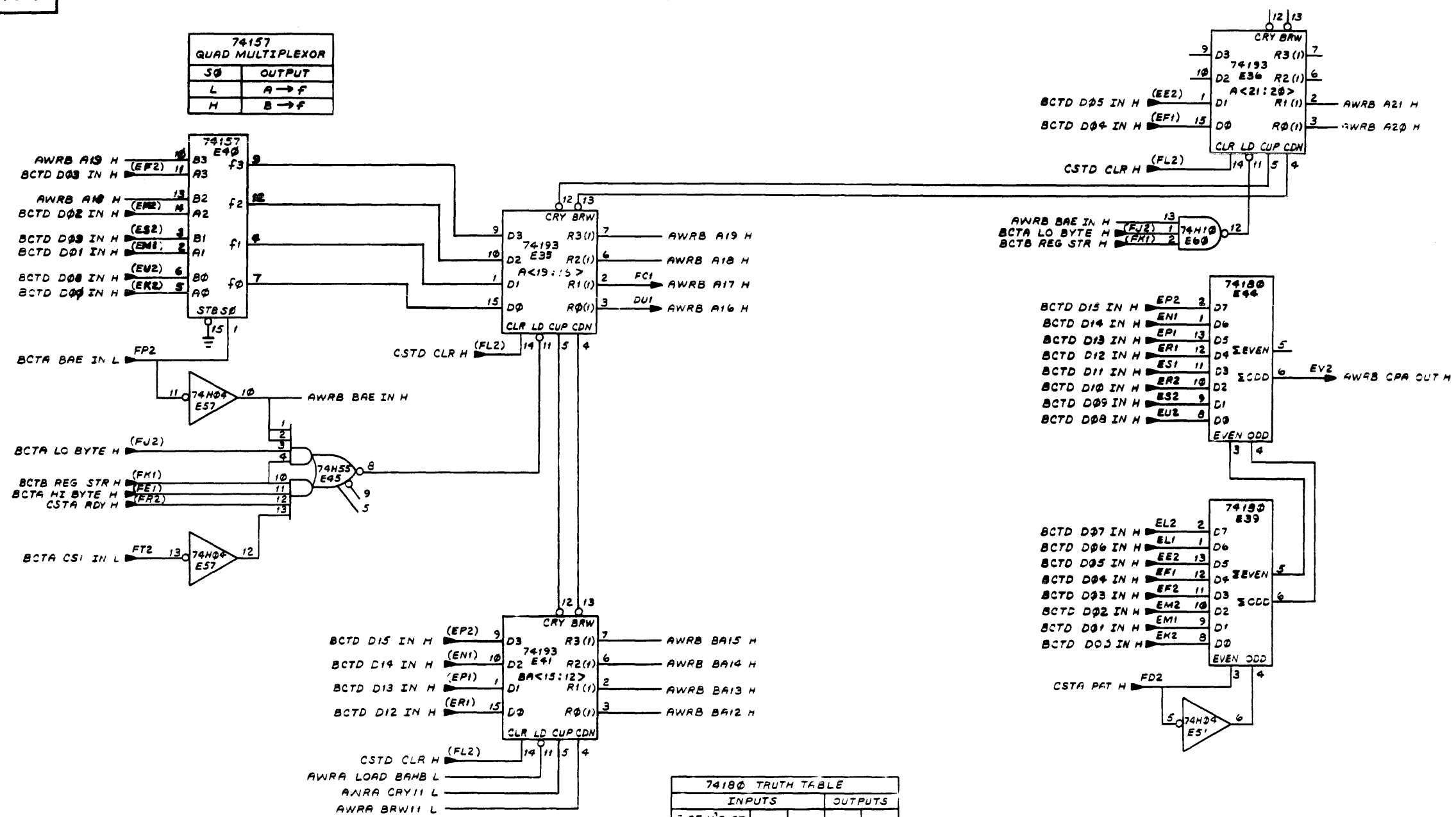
CONTROLLER	A	B	C	D
SLOT	C-F	C-F	C-F	C-F
	26	30	34	38

(BUS ADDR REG. <11:01>)

REVISIONS		
NO.	CHANGE NO.	REV.

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74157 QUAD MULTIPLEXOR	
SELECT	OUTPUT
L	A → F
H	B → F



74180 TRUTH TABLE

Σ OF 1'S AT D0 - D7	INPUTS		OUTPUTS	
	EVEN	ODD	Σ EVEN	Σ ODD
EVEN	L	H	L	H
ODD	L	H	H	L
EVEN	H	L	H	L
ODD	H	L	L	H

CONTROLLER	A	B	C	D
SLOTS	C-F	C-F	C-F	C-F
	26	30	34	38

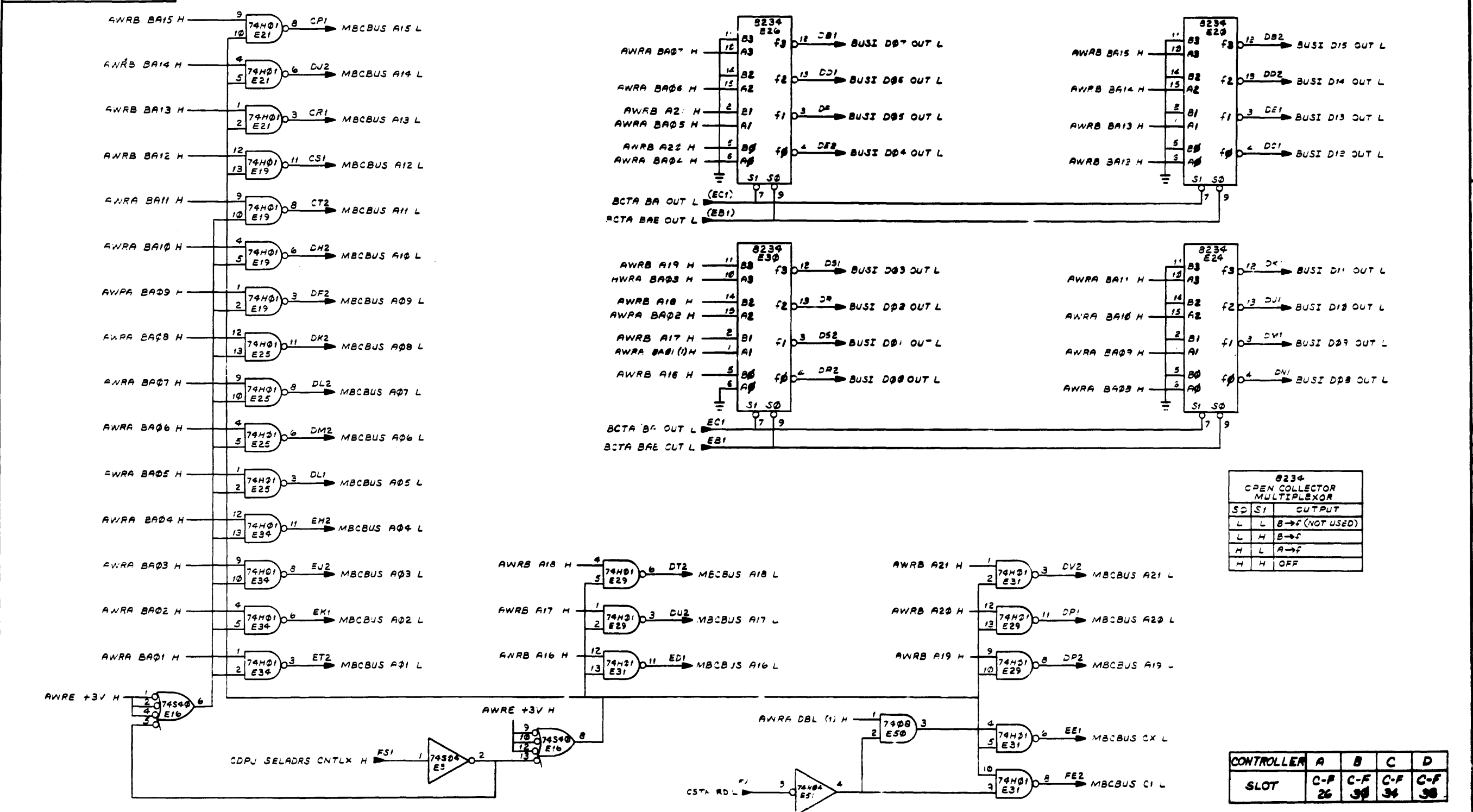
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REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	ADDR. & WORD COUNT REGS.(AWRB)	SIZE CODE	D CS	NUMBER	M8152-0-1	REV.	A
SCALE	11	SHEET	3 OF 7	DIST.			

DCS M8152-0-1 A

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8234
OPEN COLLECTOR
MULTIPLEXOR

SD	S1	OUTPUT
L	L	B → f (NOT USED)
L	H	B → f
H	L	A → f
H	H	OFF

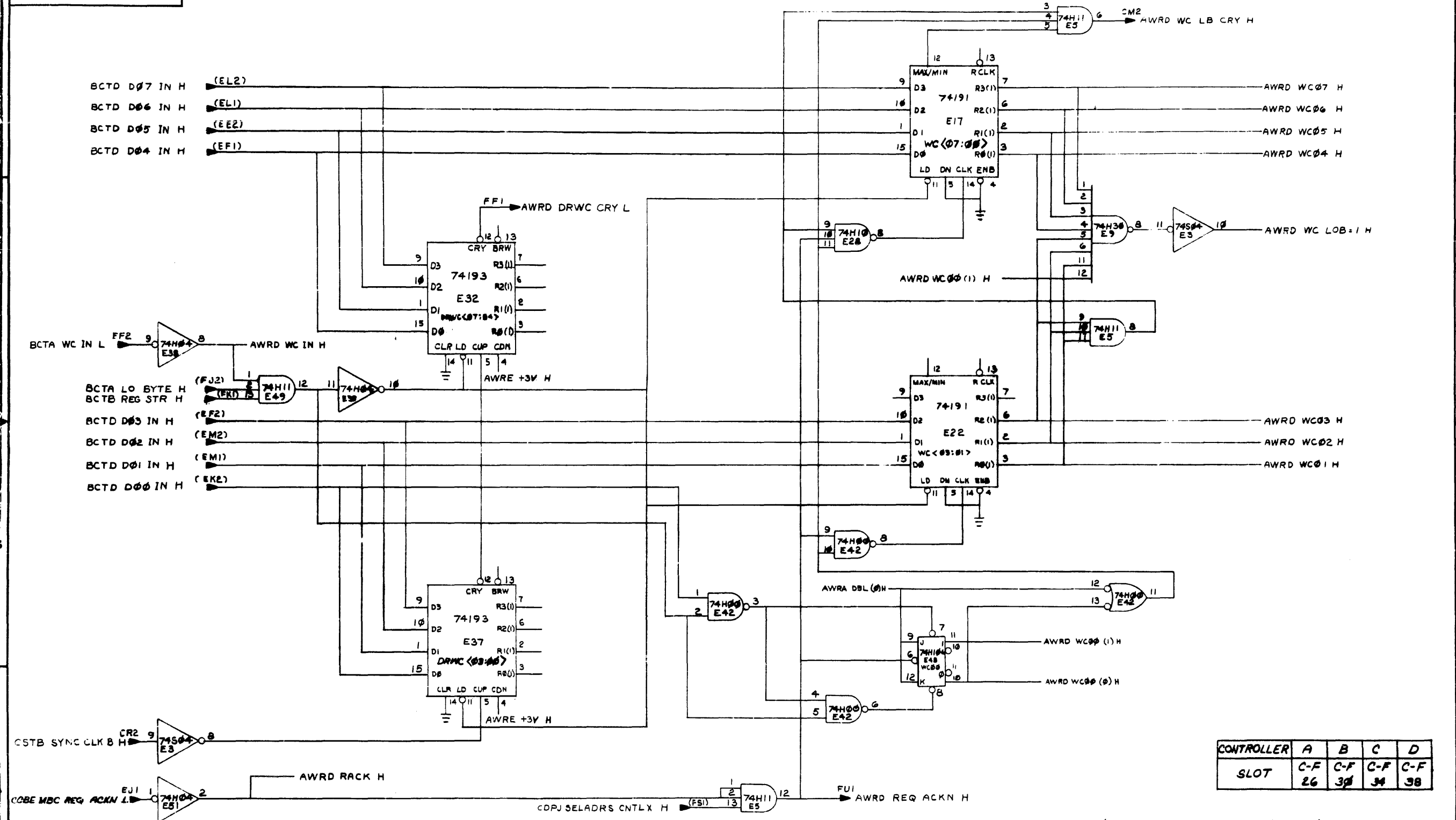
CONTROLLER	A	B	C	D
SLOT	C-F	C-F	C-F	C-F
	26	30	34	38

(BUSI MUXXS. < BA & BAE REGS. > & ADDRESS DRIVERS)

REVISIONS

CHK	CHANGE NO.	REV.

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CONTROLLER	A	B	C	D
SLOT	C-F	C-F	C-F	C-F
	26	30	34	38

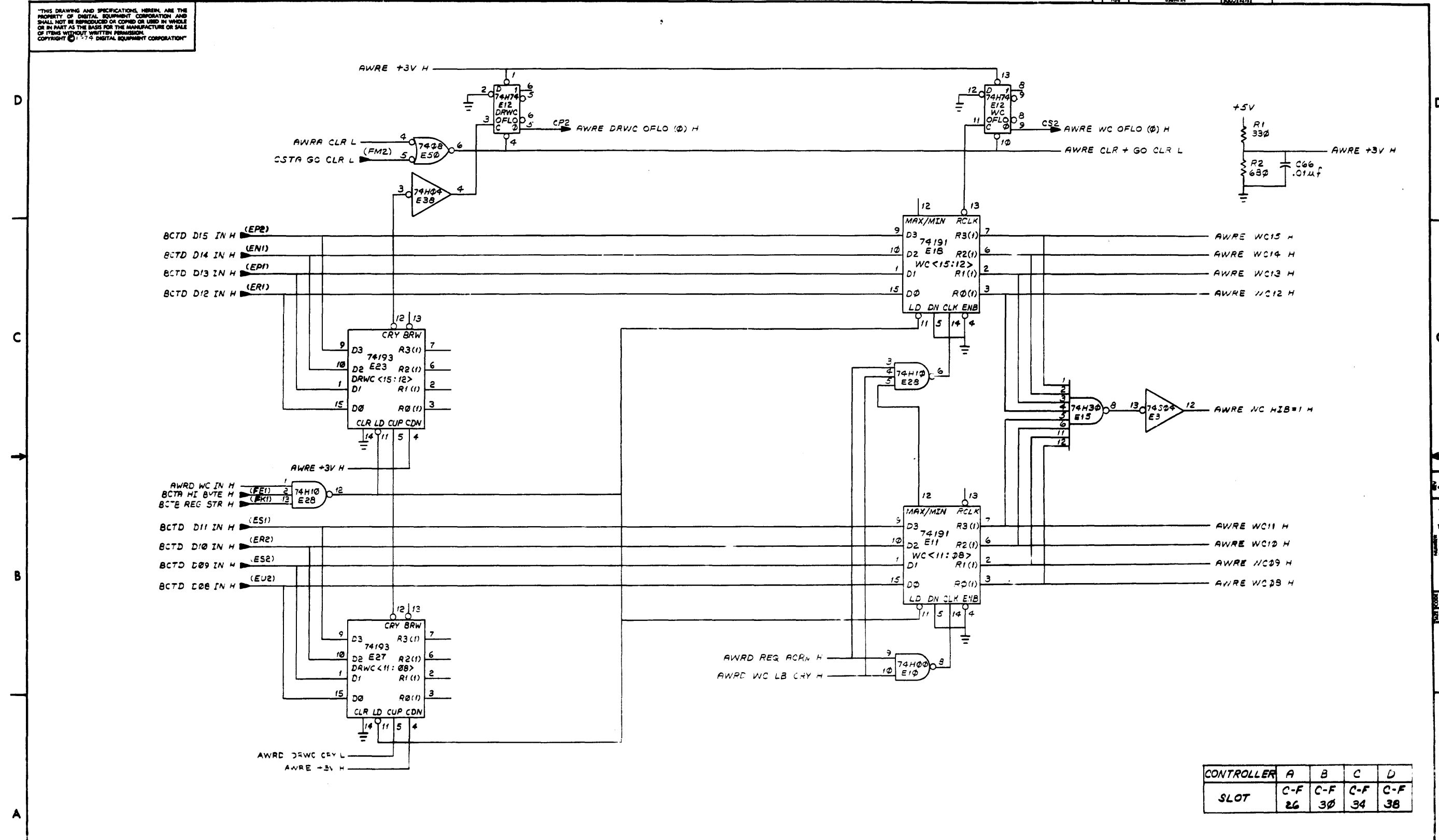
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REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	ADDR. & WORD COUNT REGS. (AWRD)	SIZE CODE	DCS	NUMBER	M8152-0-1	REV.	A
SCALE	H	SHEET	5	OF	7	DIST.	

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8 7 6 5 4 3 2 1



CONTROLLER	A	B	C	D
SLOT	C-F	C-F	C-F	C-F
	26	30	34	38

(WORD COUNT REGS <15:08> WC OFLO)

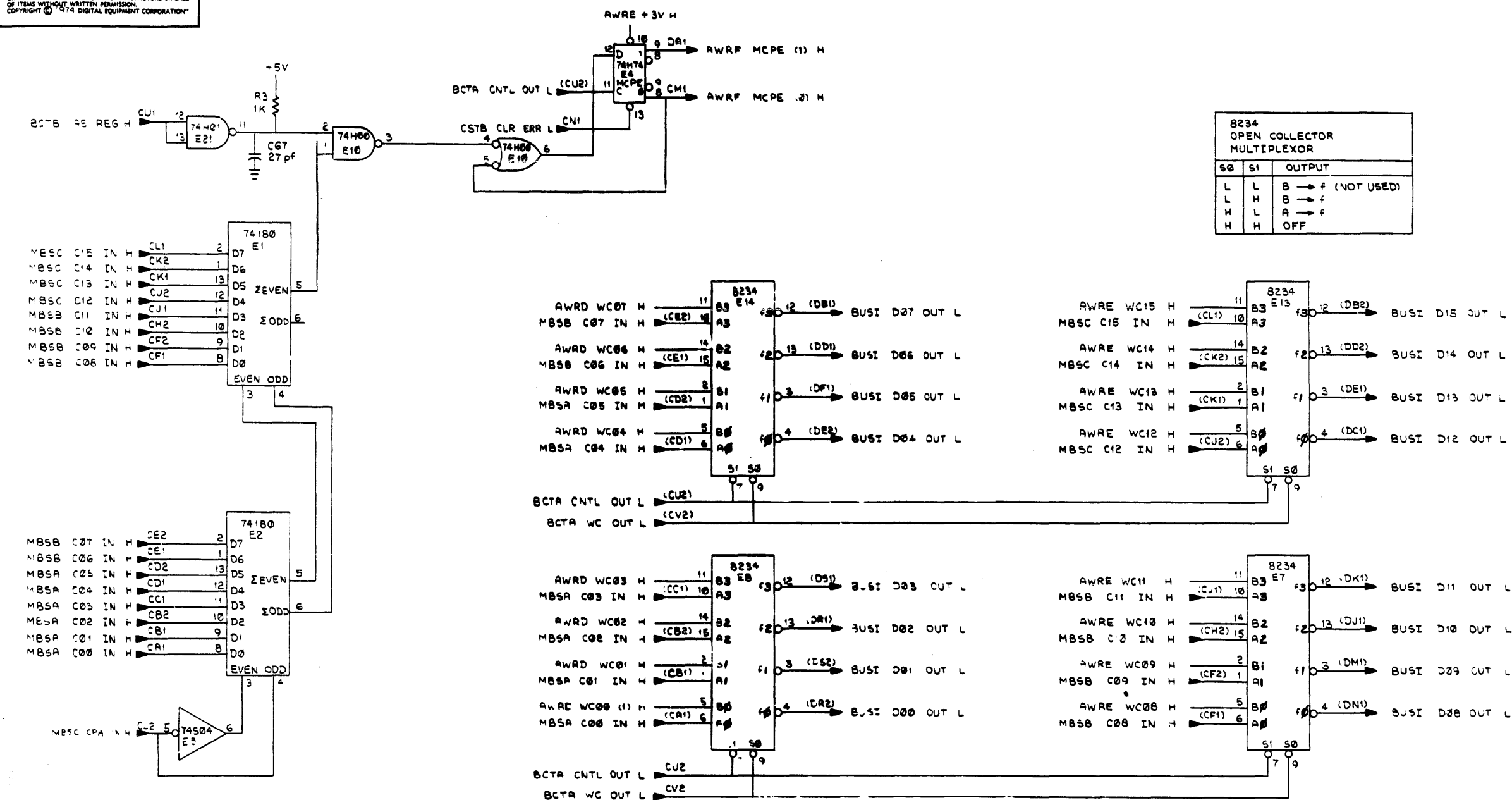
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	ADDR. & WORD COUNT REGS. (AWRE)	SIZE CODE	D CS	NUMBER	M8152-0-1	REV.	A
SCALE		SHEET	6 OF 7	DIST.			

DCS M8152-0-1 A

8 7 6 5 4 3 2 1

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S0	S1	OUTPUT
L	L	B → F (NOT USED)
L	H	B → F
H	L	A → F
H	H	OFF

INPUTS		OUTPUTS	
Σ OF 1'S AT D0 - D7	EVEN	ODD	Σ EVEN Σ ODD
EVEN	L	H	L H
ODD	L	H	H L
EVEN	H	L	H L
ODD	H	L	L H

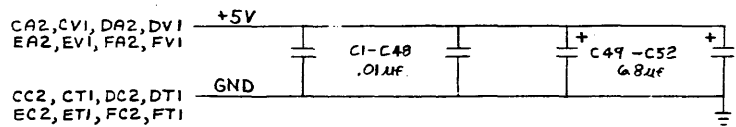
CONTROLLER	A	B	C	D
SLOT	C-F	C-F	C-F	C-F
	26	30	34	38

REVISIONS		
CHK	CHANGE NO.	REV.

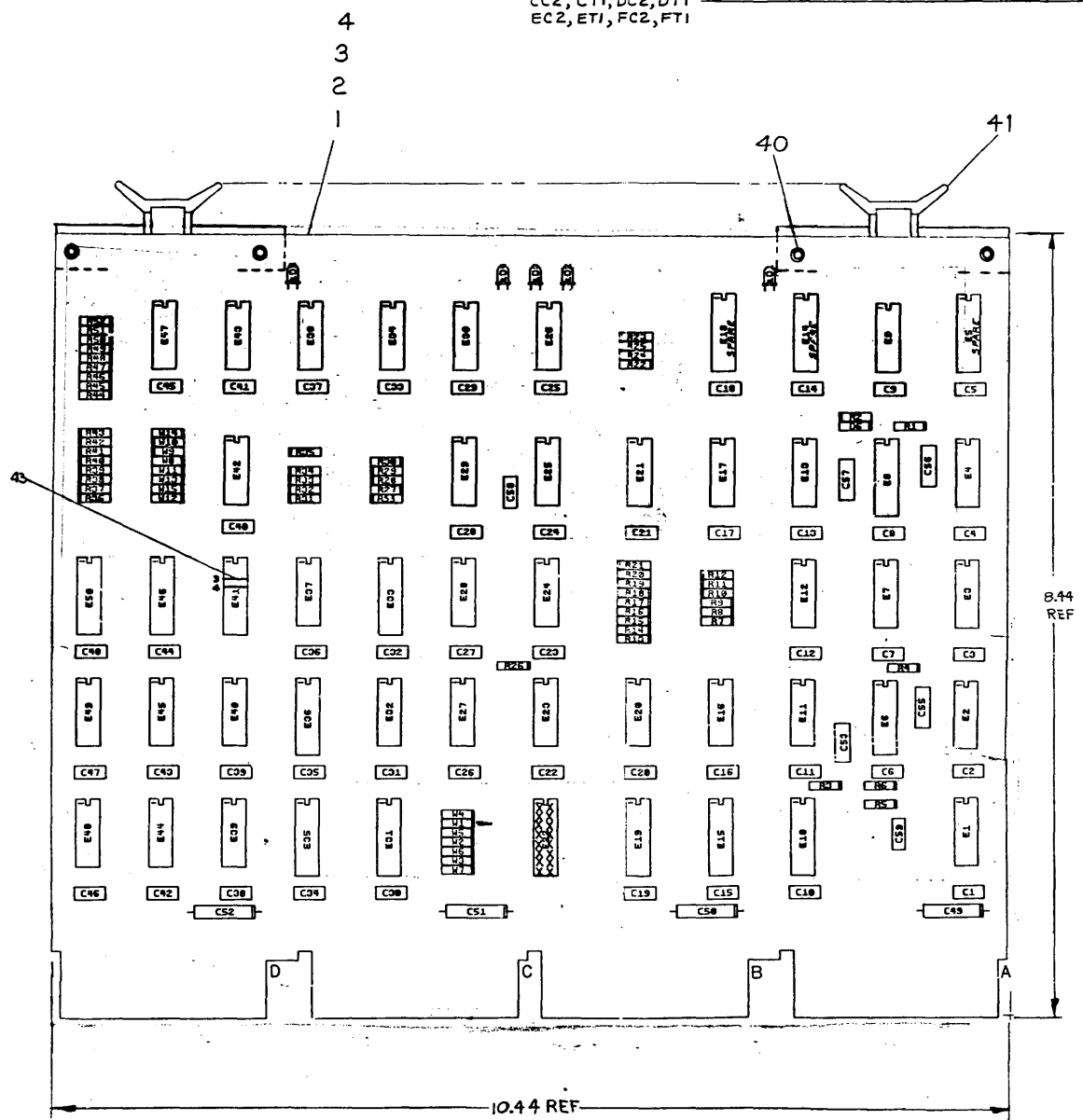
(BUSI MUXTS. <WC & REMOTE REGS.> & MCPE)
 TITLE ADDR. & WORD COUNT REGS. (AWRF) DCS M8152-0-1 A
 SCALE SHEET 7 OF 7 DIST.

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NOTES:
 1. IC SLOTS E5, E14, AND E18 ARE SPARES.
 2. PIN DESIGNATIONS ON CIRCUIT SCHEMATICS REFER TO MODULE POSITION IN RH70 BACKPLANE.



PIN NOMENCLATURE	
MODULE PINS	BACKPLANE PINS
A	C
B	D
C	E
D	F



REF	X-Y COORDINATE HOLE LOCATION	K-CD-M8153-D-4	1
REF	ASSY/DRILLING HOLE LAYOUT	D-AH-M8153-D-5	2
REF	MODULE ECO HISTORY	B-MH-M8153-D-6	3
1	ETCHED CIRCUIT BOARD	5011271	4
1	C53	CAPACITOR, 47pf, 100V, 5%	1000011
1	C56	CAPACITOR, 100pf, 100V, 5%	1000018
1	C57	CAPACITOR, 220pf, 100V, 5%	1000021
1	C58	CAPACITOR, 330pf, 100V, 5%	1000023
49	C1 THRU C48, C59	CAPACITOR, .01µf, 100V, 20% DISC	1081810-01
4	C49 THRU C52	CAPACITOR, 6.8µf, 35V, 10%	1005308
1	C55	CAPACITOR, 22pf, 100V, 5%	1005820
1	D6	DIODE, D664	1100114
5	D1 THRU D5	DIODE, LED	1110864
1	E22	I.C. SOCKET 16 PIN	1209838
1	E41	I.C. COMPONENT CARRIER	1211323
1	R29	RESISTOR, 47, 1/4W, 5%	1300202
7	R6, R22 THRU R25, R28, R35	RESISTOR, 390, 1/4W, 5%	1300309
38	R7 THRU R21, R26, R30 THRU R34, R36 THRU R52	RESISTOR, 1K, 1/4W, 5%	1300385
3	R5, R27, R53	RESISTOR, 180, 1/4W, 5%	1301322
3	R1, R3, R4	RESISTOR, 5.6K, 1/4W, 5%	1301874
1	R2	RESISTOR, 27K, 1/4W, 5%	1305348
2	E1, E30	I.C. DEC 7402	1909004
2	E7, E9	I.C. DEC 7408	1909056
2	E12, E38	I.C. DEC 7410	1909057
2	E13, E43	I.C. DEC 7411	1909267
4	E11, E17, E24, E28	I.C. DEC 74174	1909667
5	E4, E27, E28, E29, E32	I.C. DEC 8881	1909705
2	E42, E47	I.C. DEC 8242	1909712
5	E3, E16, E20, E23, E34	I.C. DEC 7404	1909931
3	E10, E15, E19	I.C. DEC 7442	1910046
2	E2, E40	I.C. DEC 7437	1910091
1	E25	I.C. DEC 7408	1910155
1	E46	I.C. DEC 7485	1910224
2	E6, E8	I.C. DEC 74123	1910436
1	E21	I.C. DEC 7427	1910878
4	E31, E33, E35, E36	I.C. DEC 8838	1911117
6	E37, E39, E44, E45, E48, E49	I.C. DEC 8640	1911489
1	E50	I.C. DEC 8223 PROM	23040A1
1	(E22)	PRIORITY JUMPER LEVEL #5	5408778
8		EYELET	9006732
4		HANDLE, FLIP CHIP (MAGENTA)	9008337-06
15	W1 THRU W15	JUMPER, INSULATED	9009185
A/R (E41)		#22 AWG BUSS WIRE (UNINSULATED)	9897560-01

IC DEC 8640	1	8
IC DEC 8838	2	16
IC DEC 74123	8	16
IC DEC 7485	8	16
IC DEC 7442	8	16
IC DEC 8223	8	16
IC TYPE	GND	+5V
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE.		
IC PIN LOCATIONS		

FIRST USED ON OPTION MODEL
RH70

ETCH BOARD REV E

DRN	DATE	1/21/75
CHKD	DATE	1-27-75
ENG	DATE	1-14-75
PRD	DATE	1-14-75
REV	DATE	1/11/75

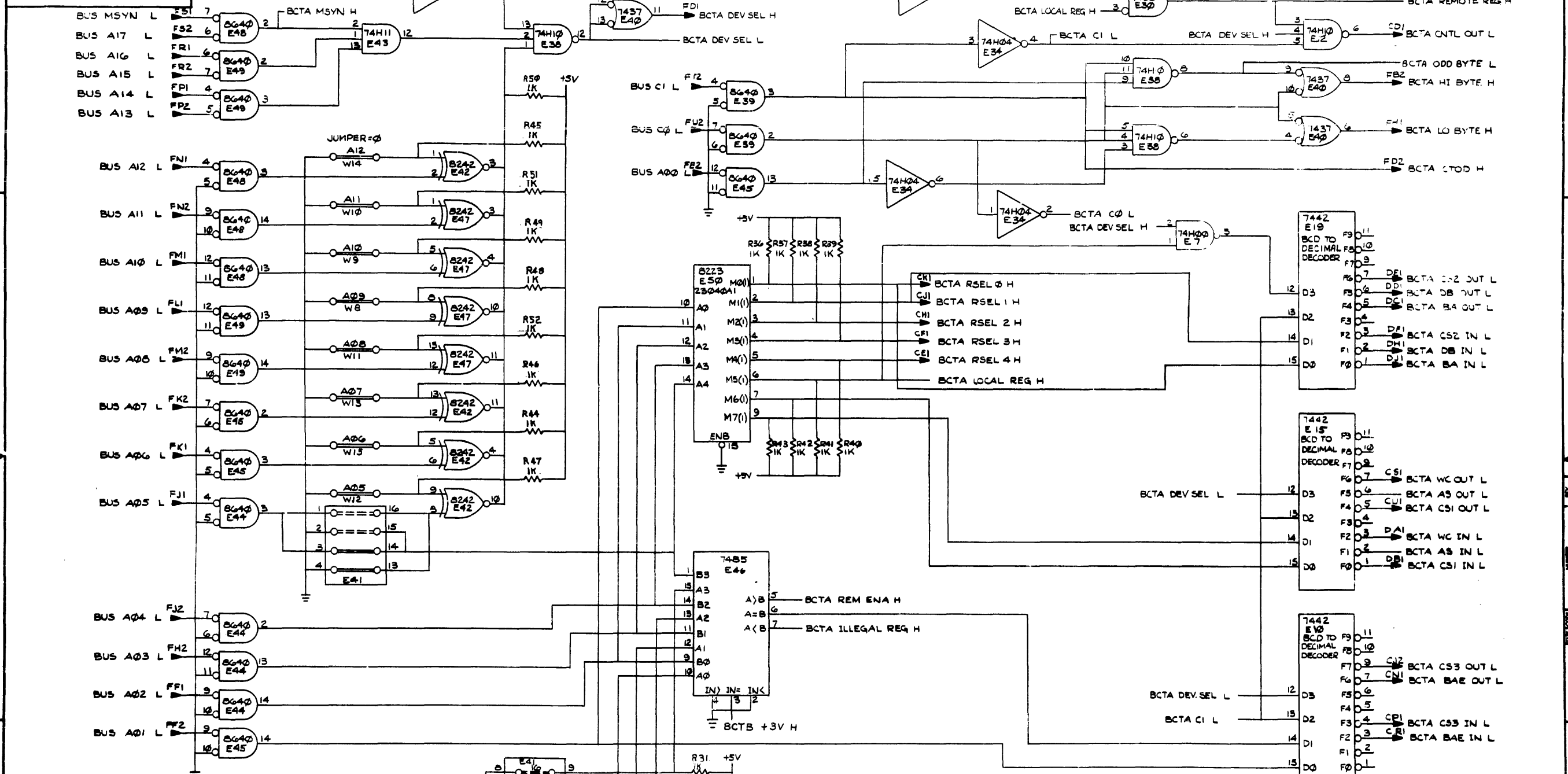
digital EQUIPMENT CORPORATION
 TITLE: UNIBUS CONTROL (BCT)
 SIZE CODE: DICS M8153-D-1
 NUMBER: B
 REV: B

SEMICONDUCTOR CONVERSION CHART

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

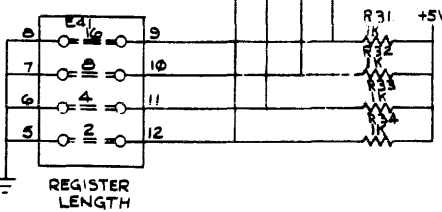
SCALE: 1 OF 6

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REVISIONS

CHK	CHANGE NO.	REV.



REGISTER LENGTH SELECTION

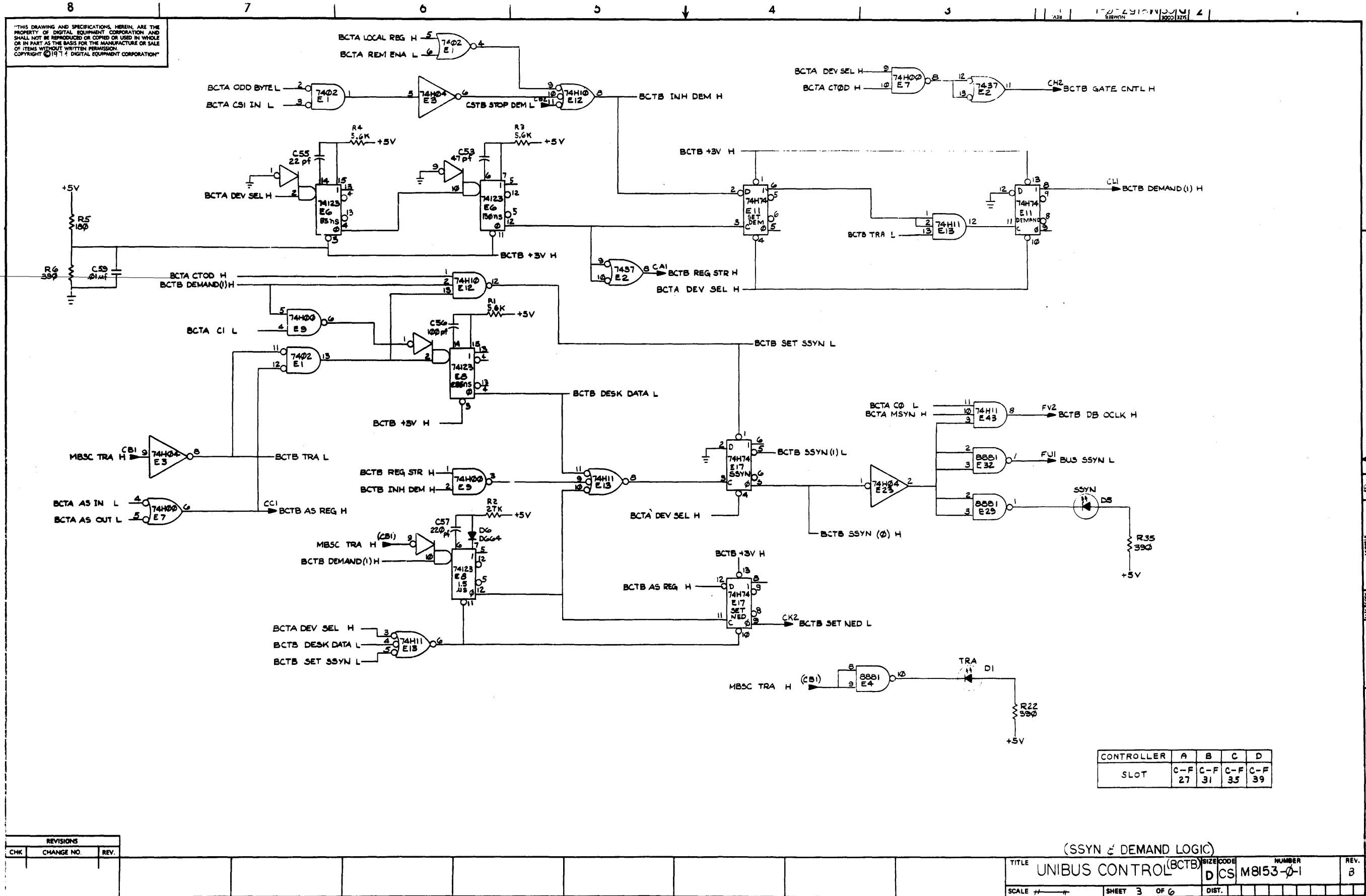
JUMPERS	TO SELECT UP TO 16 REGISTERS	TO SELECT UP TO 32 REGISTERS
E41 (1-16) (2-15)	IN	OUT
E41 (3-14) (4-13)	OUT	IN (A05 MUST BE IN)
E41 (5-12) (6-11) (7-10) (8-9)	THE SUM OF THE WEIGHTED VALUES OF JUMPERS REMOVED PLUS 2 IS THE NO. OF REGS SELECTED	

CONTROLLER

SLOT	A	B	C	D
C-F	27	31	35	39

(REGISTER SELECTION)

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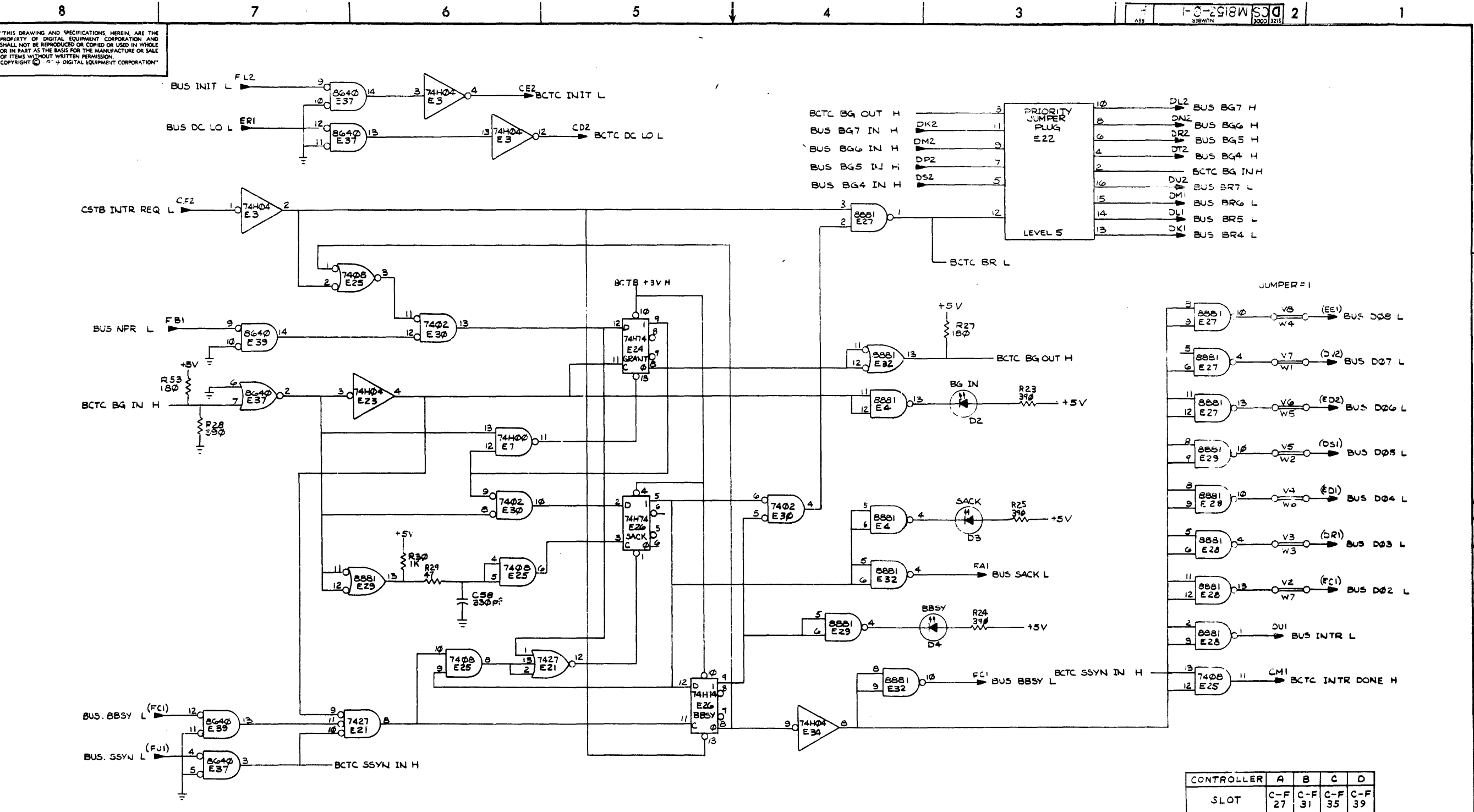
CONTROLLER	A	B	C	D
SLOT	C-F 27	C-F 31	C-F 35	C-F 39

REVISIONS		
CHK	CHANGE NO.	REV.

(SSYN & DEMAND LOGIC)

TITLE	UNIBUS CONTROL (BCTB)	SIZE CODE	D CS	NUMBER	M8153-0-1	REV.	0
SCALE	1:1	SHEET	3 OF 6	DIST.			

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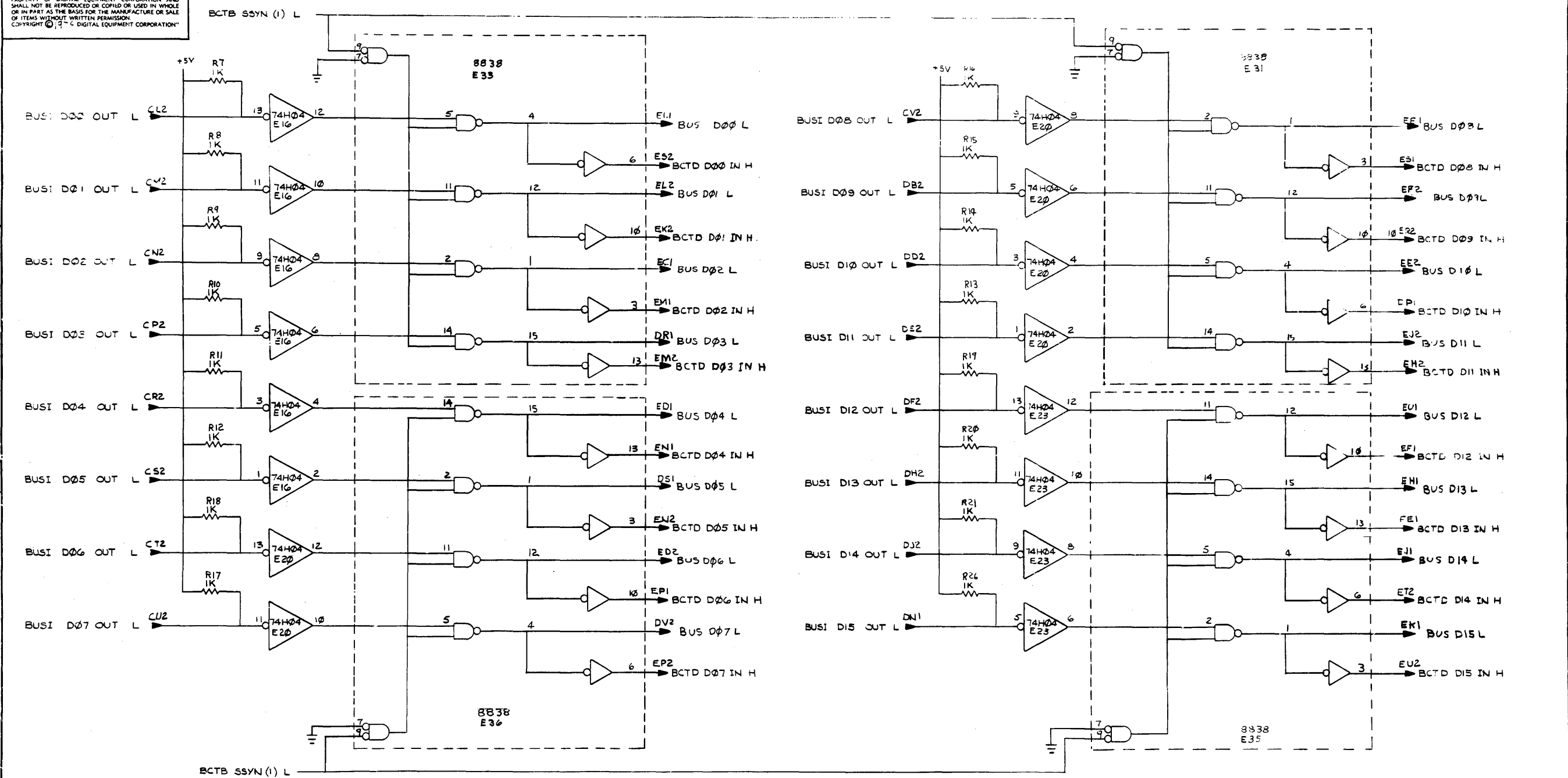
CONTROLLER	A	B	C	D
SLOT	C-F 27	C-F 31	C-F 35	C-F 39

F0-2918W SJD 2

(UNIBUS INTERRUPT LOGIC)
 TITLE UNIBUS CONTROL (BCTC) SIZE CODE DCS NUMBER M8153-0-1 REV. B
 SCALE -- SHEET 4 OF 6 DIST.

REVISIONS		
CHK	CHANGE NO.	REV.

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CONTROLLER	A	B	C	D
SLOT	C-F 27	C-F 31	C-F 35	C-F 39

REVISIONS		
CHK	CHANGE NO	REV

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0291-1130 JUN 74

NOTES:

- THE RHBAE & RHCS3 REGISTERS WILL BE SELECTED AS THE LAST TWO REGISTERS IN THE REGISTER SET. THE JUMPERS ON BCTA SELECT THE DESIRED NUMBER OF REGISTERS IN THE SET. WHEN RHBAE OR RHCS3 IS SELECTED THE MASSBUS REGISTER SELECTION WILL BE DISABLED.

REGISTER SELECT PROM - 23040A1 (822B)								
OCTAL ADDR	M7	M6	LOCAL REG M5	RSEL 4 M4	RSEL 3 M3	RSEL 2 M2	RSEL 1 M1	RSEL 0 M0
00	L	L	L	L	L	L	L	L
01	H	L	H	L	L	L	H	H
02	H	H	H	L	L	L	L	L
03	H	H	L	L	L	H	L	H
04	H	H	H	L	L	L	H	L
05	H	H	L	L	L	L	L	H
06	H	H	L	L	L	L	H	L
07	L	H	L	L	L	H	L	L
10	H	H	L	L	L	H	H	H
11	H	H	H	L	L	L	L	H
12	H	H	L	L	L	L	H	H
13	H	H	L	L	L	H	H	L
14	H	H	L	L	H	L	L	L
15	H	H	L	L	H	L	L	H
16	H	H	L	L	H	L	H	L
17	H	H	L	L	H	L	H	H
20	H	H	L	L	H	H	L	L
21	H	H	L	L	H	H	L	H
22	H	H	L	L	H	H	H	L
23	H	H	L	L	H	H	H	H
24	H	H	L	H	L	L	L	L
25	H	H	L	H	L	L	L	H
26	H	H	L	H	L	L	H	L
27	H	H	L	H	L	L	H	H
30	H	H	L	H	L	H	L	L
31	H	H	L	H	L	H	L	H
32	H	H	L	H	L	H	H	L
33	H	H	L	H	L	H	H	H
34	H	H	L	H	H	L	L	L
35	H	H	L	H	H	L	L	H
36	H	H	L	H	H	L	H	L
37	H	H	L	H	H	L	H	H

REGISTER SELECTED SEE NOTE #1	UNIBUS ADDRESS SEE NOTE #1
RHCS1 & MASSBUS (00)	BASE ADDR
RHWC	BASE + 2
RHBA	BASE + 4
MASSBUS (05)	BASE + 6
RHCS2	BASE + 10
MASSBUS (01)	BASE + 12
MASSBUS (02)	BASE + 14
MASSBUS (04)	BASE + 16
MASSBUS (07)	BASE + 20
RHDB	BASE + 22
MASSBUS (03)	BASE + 24
MASSBUS (06)	BASE + 26
MASSBUS (10)	BASE + 30
MASSBUS (11)	BASE + 32
MASSBUS (12)	BASE + 34
MASSBUS (13)	BASE + 36
MASSBUS (14)	BASE + 40
MASSBUS (15)	BASE + 42
MASSBUS (16)	BASE + 44
MASSBUS (17)	BASE + 46
MASSBUS (20)	BASE + 50
MASSBUS (21)	BASE + 52
MASSBUS (22)	BASE + 54
MASSBUS (23)	BASE + 56
MASSBUS (24)	BASE + 60
MASSBUS (25)	BASE + 62
MASSBUS (26)	BASE + 64
MASSBUS (27)	BASE + 66
MASSBUS (30)	BASE + 70
MASSBUS (31)	BASE + 72
MASSBUS (32)	BASE + 74
MASSBUS (33)	BASE + 76

RHBAE, RHCS3

CONTROLLER	A	B	C	D
SLOT	C-F 27	C-F 31	C-F 35	C-F 39

(PROM TRUTH TABLE)

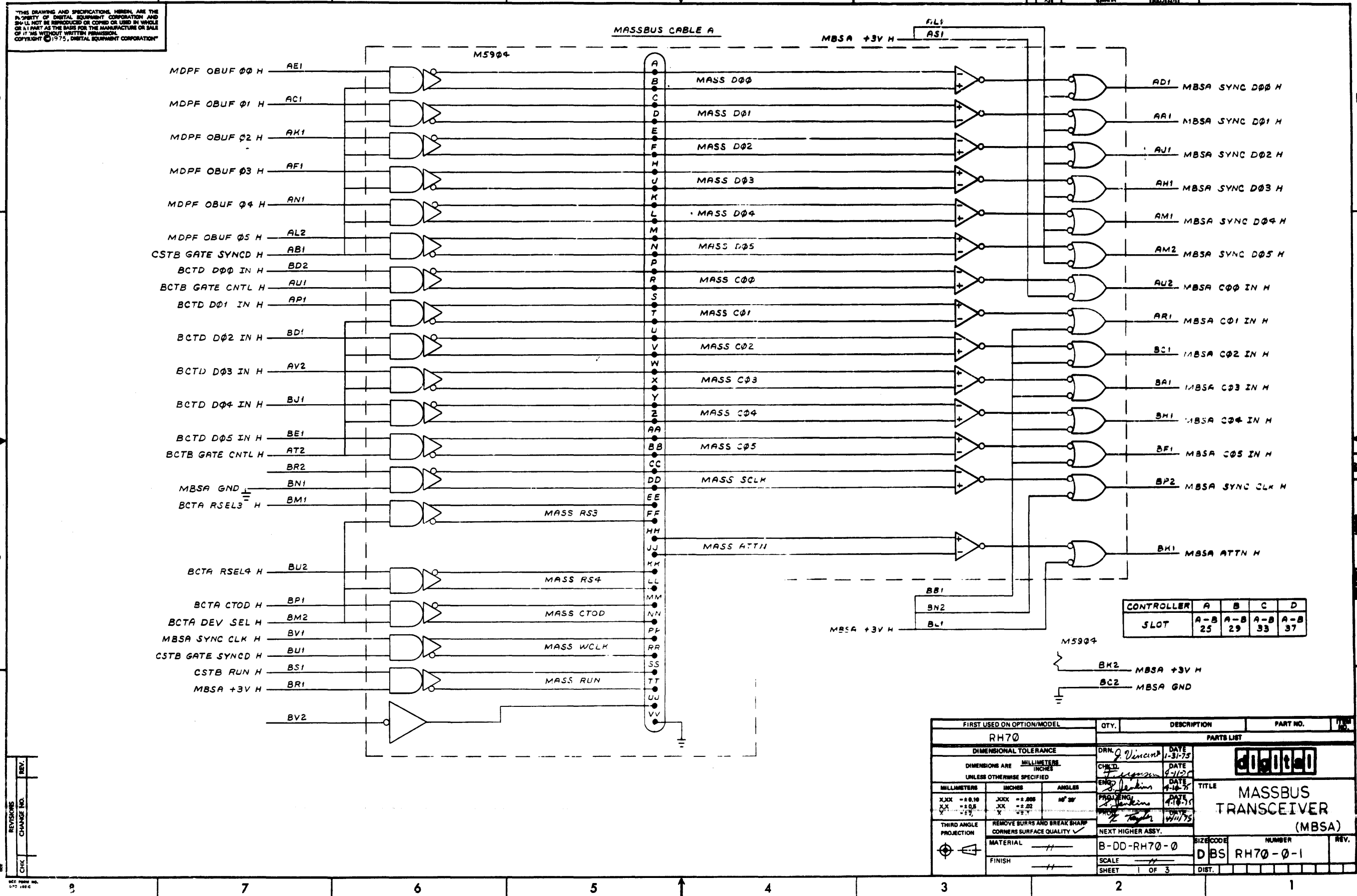
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	UNIBUS CONTROL (BCTE)	SIZE CODE	D CS	NUMBER	M8153-0-1	REV.	B
SCALE	#	SHEET	6	OF	6	DIST.	

8 7 6 5 4 3 2 1

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DES RH70-0-1 2



CONTROLLER	A	B	C	D
SLOT	A-B 25	A-B 29	A-B 33	A-B 37

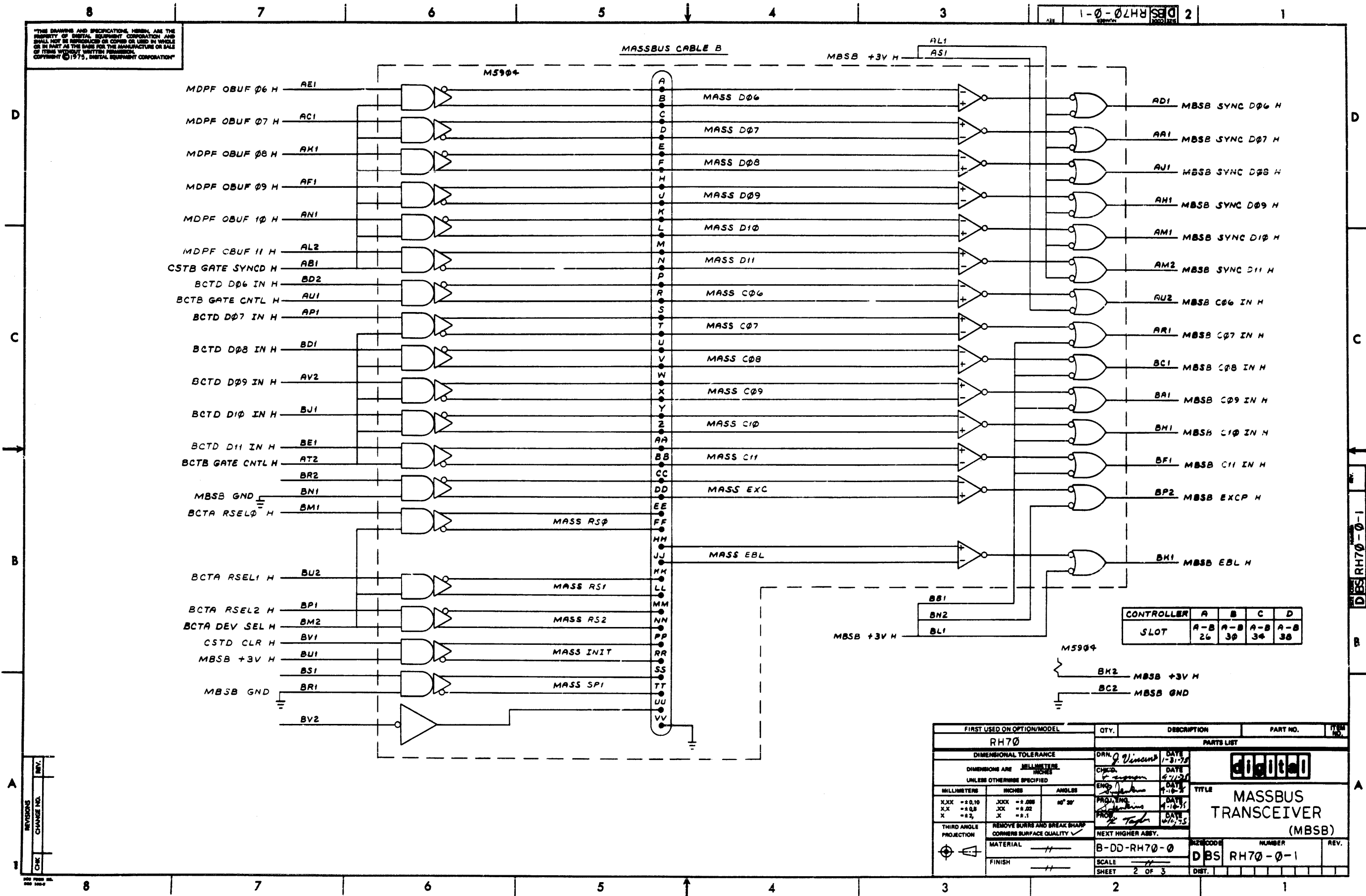
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.
RH70			
PARTS LIST			
DIMENSIONAL TOLERANCE		DRN. <i>J. Vincent</i>	DATE 1-31-75
DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE SPECIFIED		CHKD. <i>J. Vincent</i>	DATE 4/10/75
MILLIMETERS	INCHES	ENGR. <i>J. Vincent</i>	DATE 4-10-75
XXX ±0.10	JXX ±0.05	PROB. ENGR. <i>J. Vincent</i>	DATE 4/10/75
XX ±0.5	X ±0.2	PROB. ENGR. <i>J. Vincent</i>	DATE 4/10/75
THIRD ANGLE PROJECTION		REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	NEXT HIGHER ASSY.
MATERIAL		B-DD-RH70-0	SIZE CODE
FINISH			NUMBER
		SCALE	D BS RH70-0-1
		SHEET 1 OF 3	REV.

REV.	CHANGE NO.	REV.

DES RH70-0-1

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1-0-04RH70 2



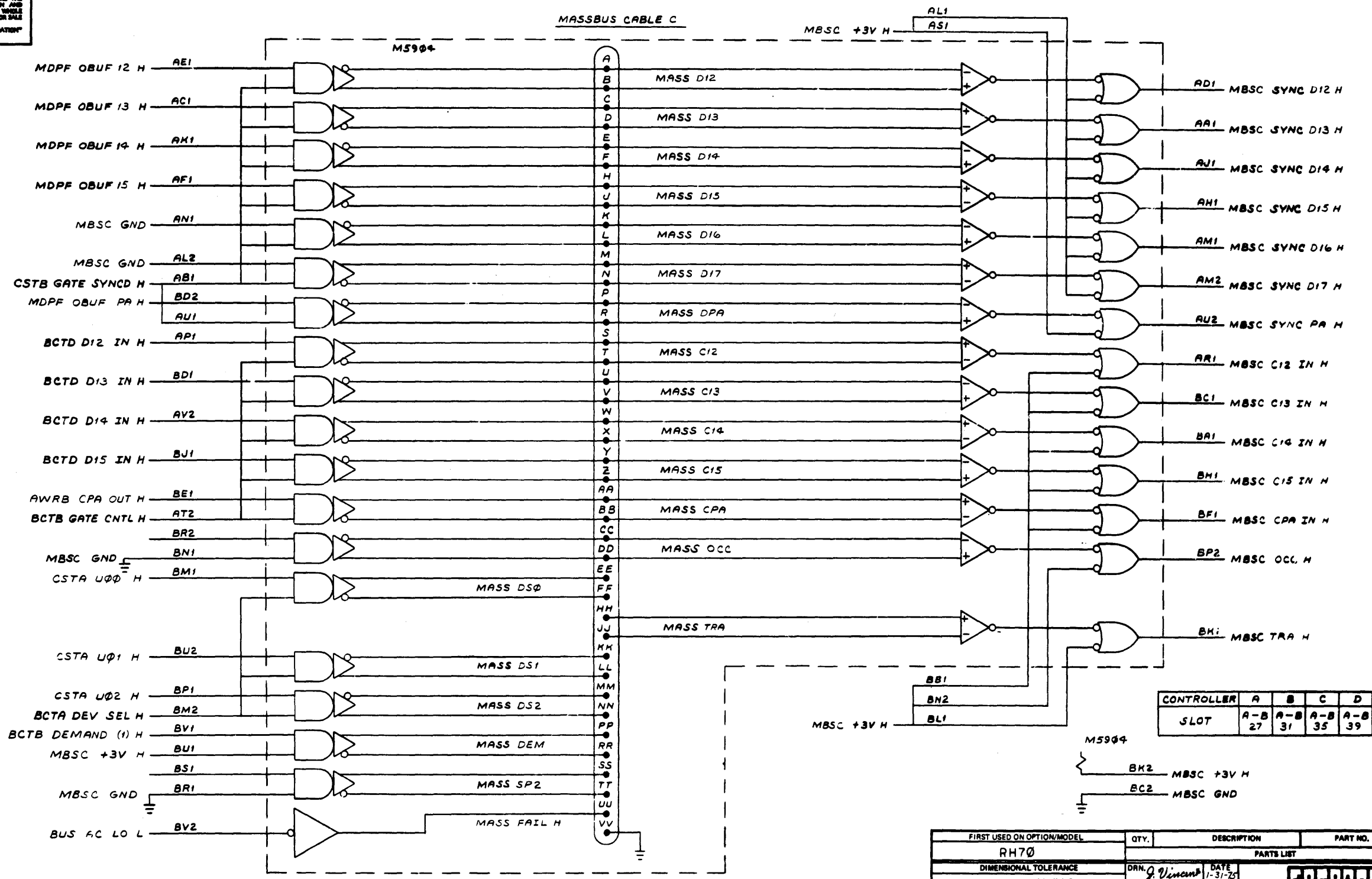
CONTROLLER	A	B	C	D
SLOT	A-B 26	A-B 30	A-B 34	A-B 38

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
RH70				
PARTS LIST				
DIMENSIONAL TOLERANCE		DRN. <i>Q. Vincent</i>	DATE <i>1-31-75</i>	00000
DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE SPECIFIED		CHKD. <i>E. Simpson</i>	DATE <i>6/11/75</i>	
MILLIMETERS INCHES ANGLES		ENG. <i>J. Brown</i>	DATE <i>1-10-75</i>	
X,XX = ±0.10	XX = ±0.008	° 30'	DATE <i>1-10-75</i>	TITLE MASSBUS TRANSCEIVER (MBSB)
X,X = ±0.8	X = ±0.02		DATE <i>6/11/75</i>	
X = ±2	X = ±0.1		DATE <i>6/11/75</i>	
THIRD ANGLE PROJECTION	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	NEXT HIGHER ASBY.		
MATERIAL	FINISH	B-DD-RH70-0	SIZE CODE	NUMBER
		SCALE	DBS	RH70-0-1
		SHEET 2 OF 3	DIST.	REV.

DDBS RH70-0-1

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DBS RH70-0-1

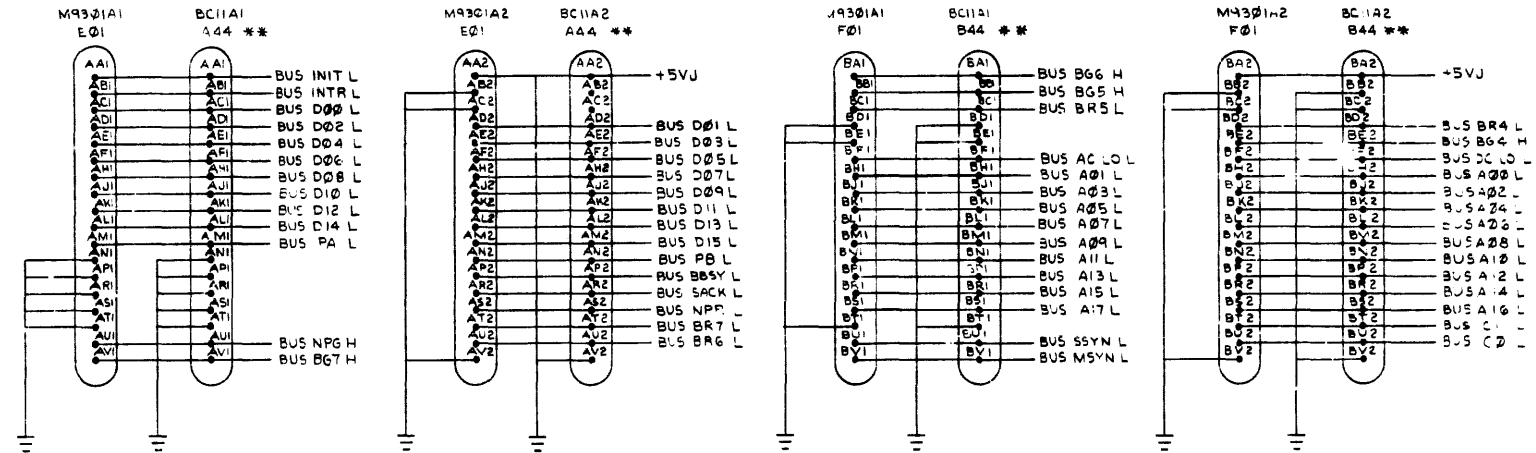
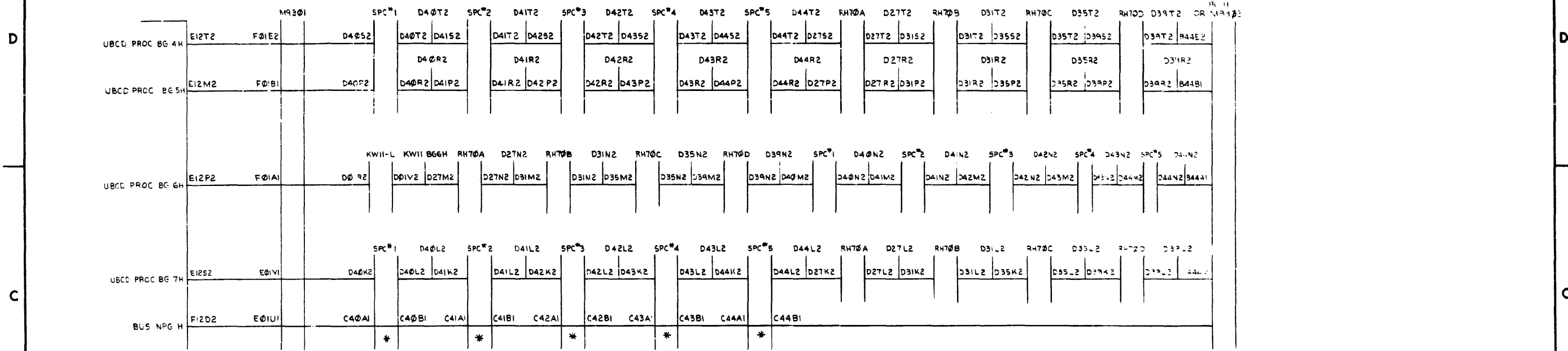


REV.	
CHK	
CHG	
NO.	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
RH70				
DIMENSIONAL TOLERANCE		PARTS LIST		
DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE SPECIFIED		TITLE		
MILLIMETERS		MASSBUS TRANSCEIVER (MBSC)		
THIRD ANGLE PROJECTION		NEXT HIGHER ASSY.		
MATERIAL		SIZE CODE		
FINISH		NUMBER		
SCALE		REV.		
SHEET 3 OF 3		DBS RH70-0-1		

DBS RH70-0-1

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* A TO B JUMPER CONNECTION TO BE REMOVED IF AN NPG DEVICE IS INSERTED IN AN S.P.C. SLOT.
 ** IF NO UNIBUS DEVICES ARE PRESENT, REPLACE BC11 CABLE WITH M9302 UNIBUS TERM.

REV.	CHANGE NO.	DATE
1	1	11/18/75
2	1	11/18/75
3	1	11/18/75

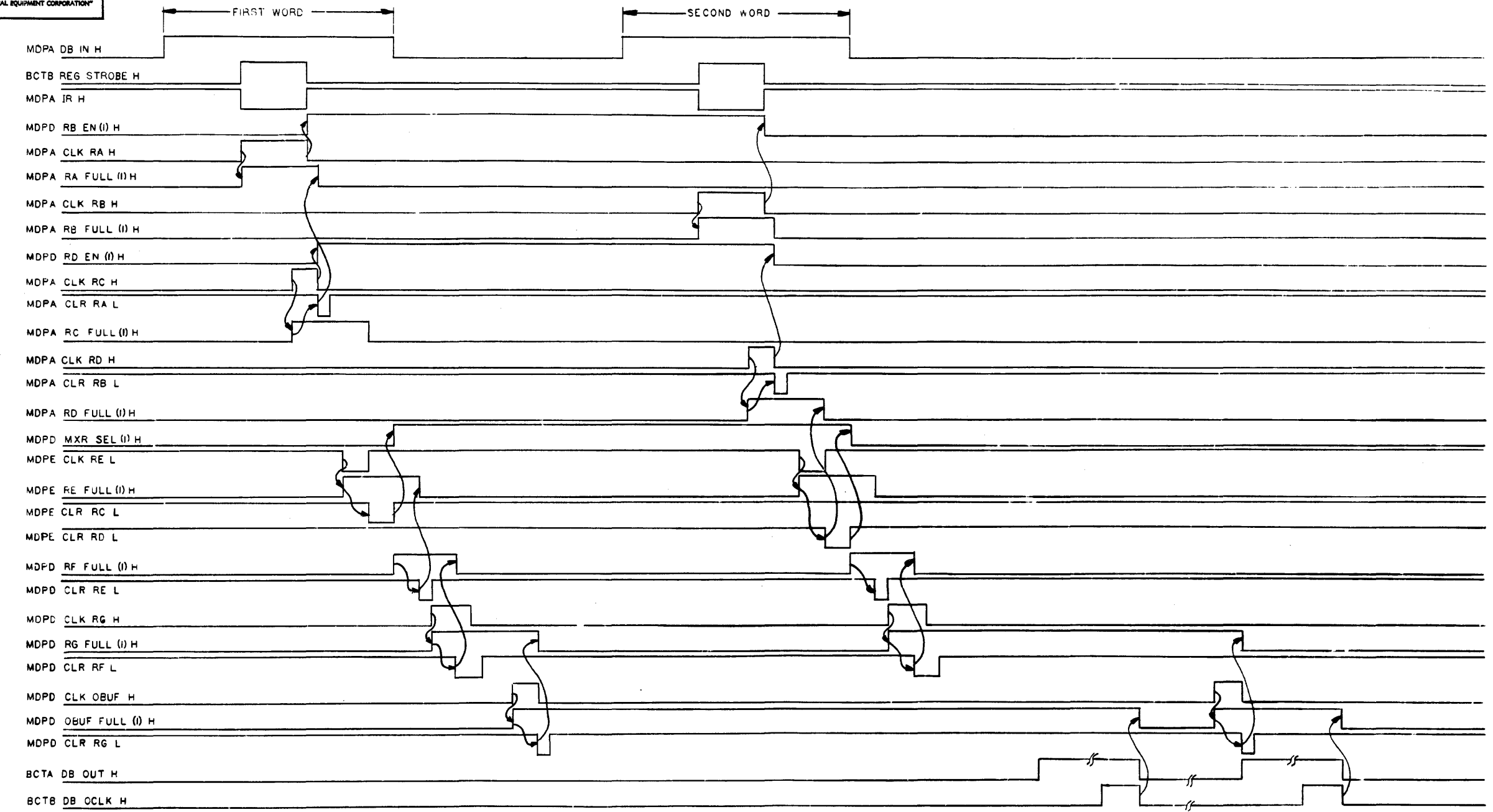
REVISIONS
 CHK: KBI-B-7
 P. DUBE
 11/23/75

FIRST USED ON OPTION/MODEL KBI1	QTY.	DESCRIPTION	PART NO.
PARTS LIST			
DIMENSIONAL TOLERANCE	DRN: <i>Challen</i>	DATE: 2/5/75	
DIMENSIONS ARE INCHES UNLESS OTHERWISE SPECIFIED	CHK'D: <i>D. Dube</i>	DATE: 2/11/75	
INCHES ANGLES	ENG: <i>J. Dube</i>	DATE: 2/11/75	
THIRD ANGLE PROJECTION	PROJ. ENG: <i>J. Dube</i>	DATE: 2/11/75	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD. DATE: 11/18/75	TITLE UNIBUS CABLE AND GRAFT DIAM	
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER
FINISH	B-DD-KBI1-B	D I C	KB11-B-7
	SCALE NONE		REV. A
	SHEET OF	DIST.	

D I C KB11-B-7

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WRITE AND READ DATA BUFFER
A 2 WORD (MOV) TO RHDB FOLLOWED BY A 2 WORD (MOV) FROM RHDB



REV.	NO.	DATE
CHK.	NO.	DATE

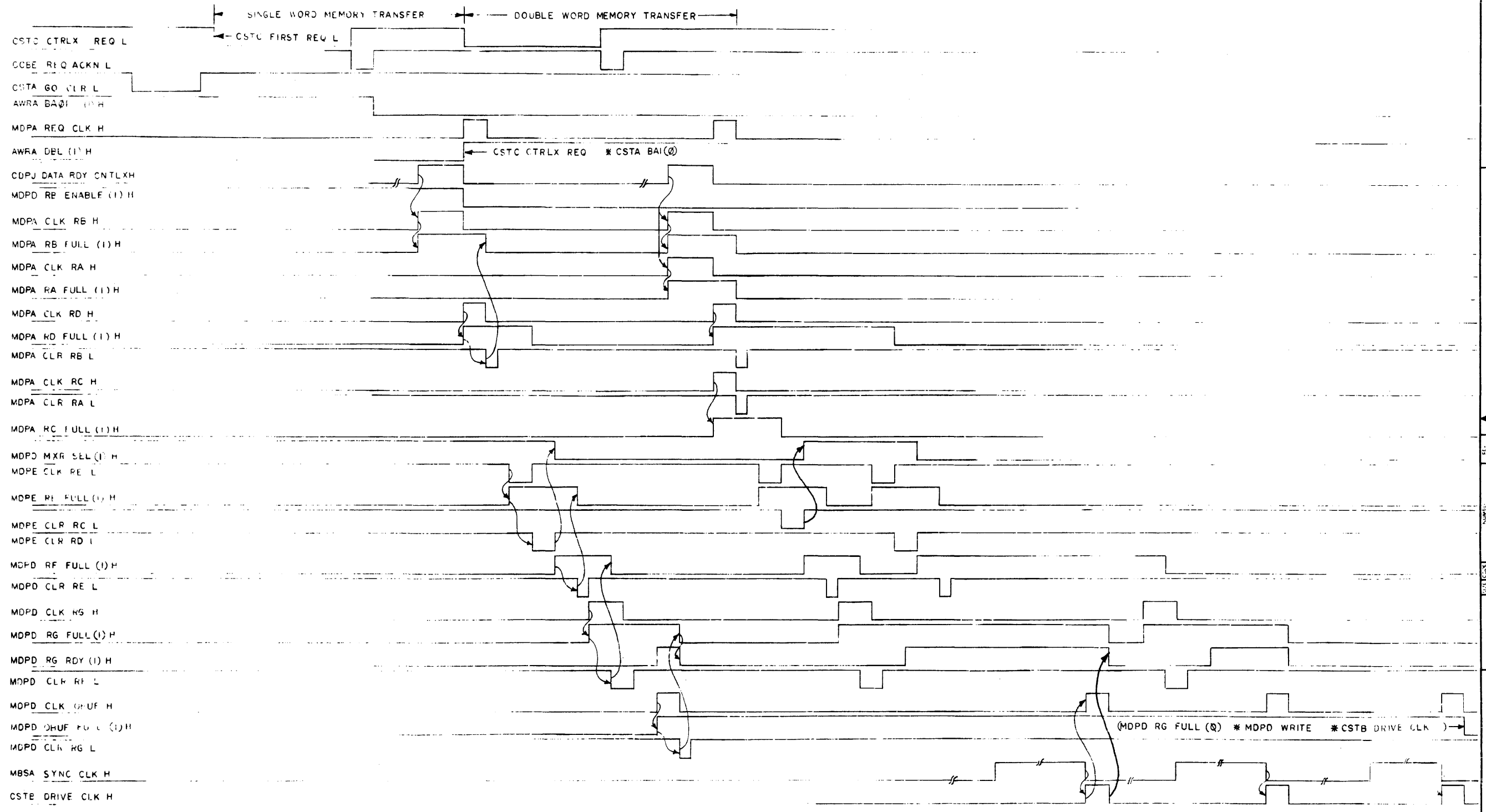
8 7 6 5 4 3 2 1

(WRITE-READ MAINTENANCE OPERATION)

FIRST USED ON OPTION/MODEL RH 70	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
DIMENSIONAL TOLERANCE		DRN	DATE	digital
DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE SPECIFIED		CHK'D	DATE	
MILLIMETERS	INCHES	ANGLES	DATE	TITLE
XXX ±0.10	XXX ±.005	30° 30'	4-10-75	RH 70 DATA
XX ±0.5	XX ±.02		4-10-75	BUFFER TIMING DIAG.
X ±1.0	X ±.05		4-10-75	
THIRD ANGLE PROJECTION	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	ENG	DATE	
		PROB	DATE	
		FINISH	DATE	
MATERIAL	B-DD-RH70-0	SCALE		SIZE CODE
		SHEET	1 OF 4	NUMBER
		DIST.		REV.

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WRITE COMMAND DATA BUFFER TIMING
 3 WORD WRITE STARTING ON AN ODD WORD BOUNDRY (BA01 BIT=1)
 A SINGLE WORD FOLLOWED BY A DOUBLE WORD



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE RH70 DATA BUFFER TIMING DIAG.		SIZE CODE DTD	NUMBER RH70-0-5	REV.
SCALE	SHEET 2 OF 4	DIST.		

8

7

6

5

4

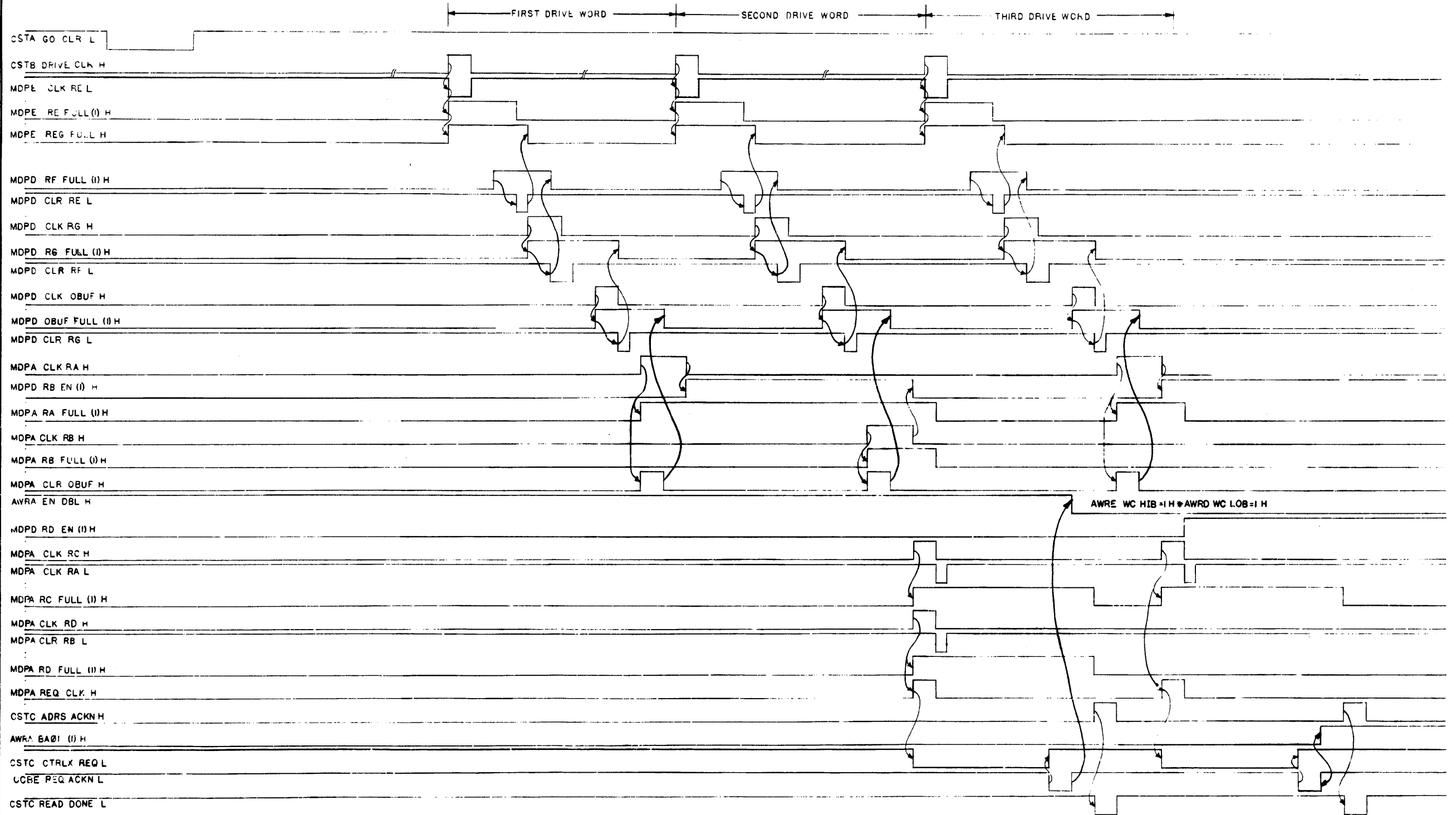
3

2

1

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READ COMMAND DATA BUFFER TIMING
 3 WORDS STARTING ON AN EVEN WORD BOUNDARY (BA01 BIT=0)
 A DOUBLE WORD FOLLOWED BY A SINGLE WORD



DOUBLE WORD MEMORY TRANSFER SINGLE WORD MEMORY TRANSFER

(READ COMMAND)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	RH70 DATA BUFFER	SIZE/CODE	NUMBER	REV.
	TIMING DIAG.	D	TD	RH70-0-5
SCALE	SHEET 3 OF 4	DIST.		

8

7

6

5

4

3

2

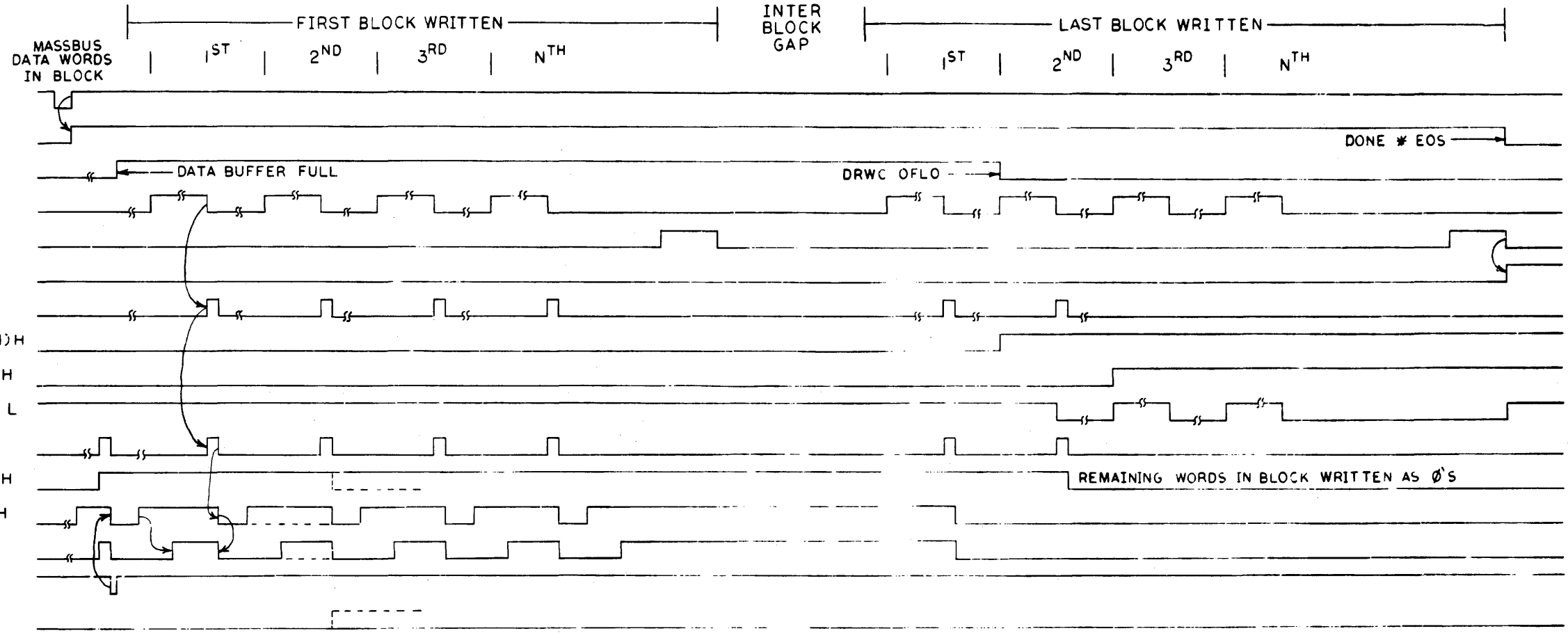
1

DEC FORM NO. DND 136

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9-0-02HE 010 2

WRITE MASSBUS TIMING DIAGRAM



REV.	
CHANGE NO.	
CHK	

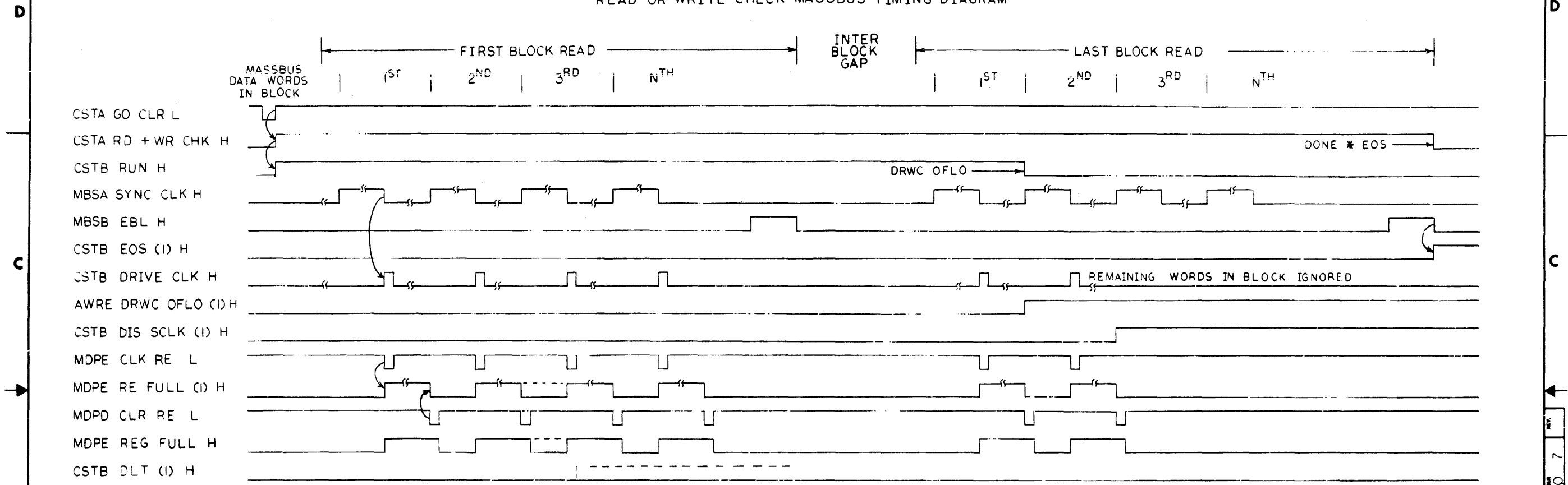
DEC FORM NO. DSD 100

THIRD ANGLE PROJECTION	DRN	FIRST USED ON
REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D	TITLE
DO NOT SCALE DWG	ENG.	WRITE MASSBUS TIMING DIAGRAM
MATERIAL	PROD. ENG.	SIZE
FINISH	PROD. X	D
	NEXT HIGHER ASSY.	CODE
		TD
		NUMBER
		6
		REV.

REV. 1
DITD RH70-0-6

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READ OR WRITE CHECK MASSBUS TIMING DIAGRAM



REV.	
CHANGE NO.	
CHK	

DEC FORM NO. DED 100-C

(READ - WRITE CHECK)

THIRD ANGLE PROJECTION	DRN. 11/10/71	FIRST USED ON	digital	
REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D [Signature]	ENG. [Signature]	TITLE	
DO NOT SCALE DWG	PROJ. ENG. [Signature]	PROD. [Signature]	MASSBUS TIMING DIAGRAM	
MATERIAL	NEXT HIGHER ASSY.	SIZE	CODE	NUMBER
FINISH	B-00-RH70-0	D	TD	RH70-0-7
	SCALE	SHEET	OF	DIST.

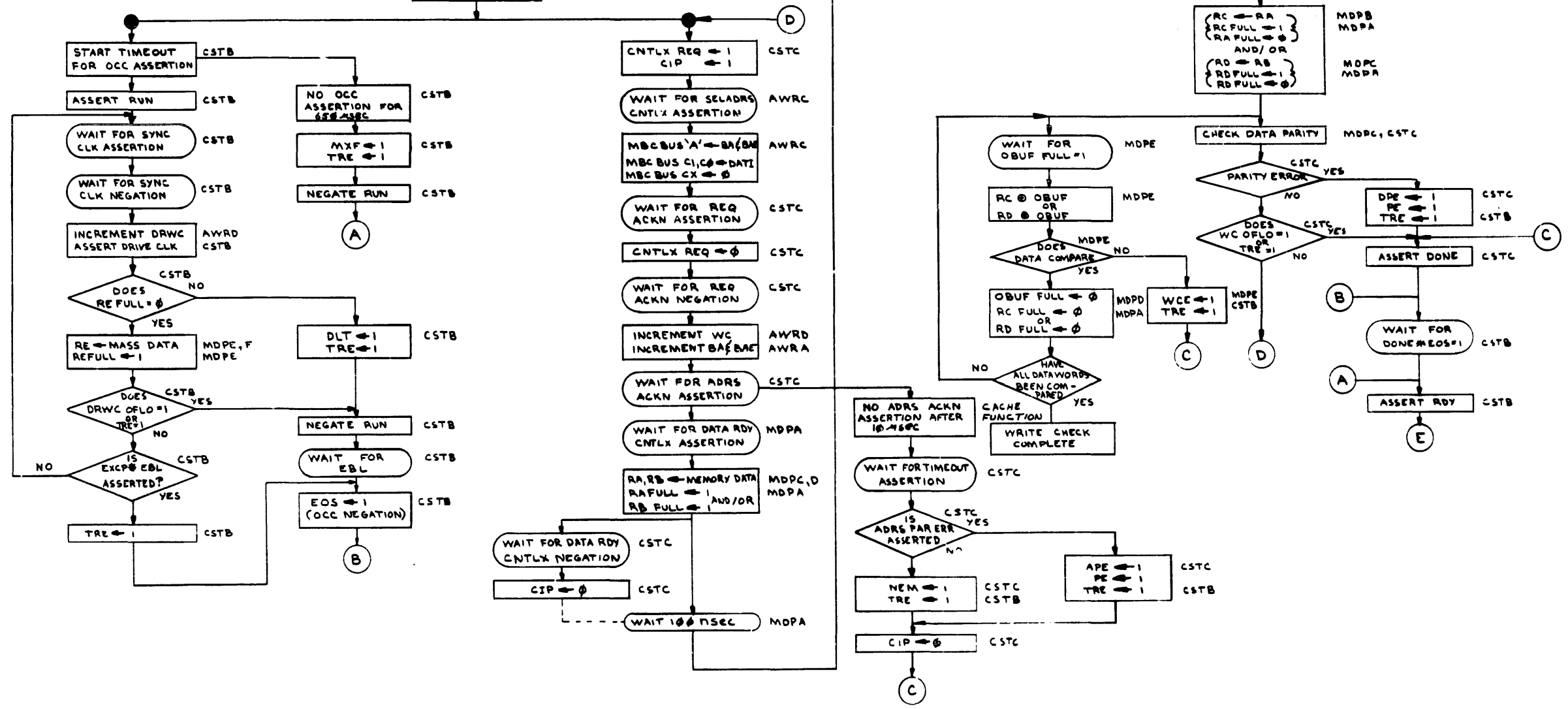
REV.	7
NUMBER	RH70-0-7
SIZE	D
CODE	TD

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WRITE CHECK COMMAND

MASS BUS FLOW

RH70/CACHE INTERFACE FLOW



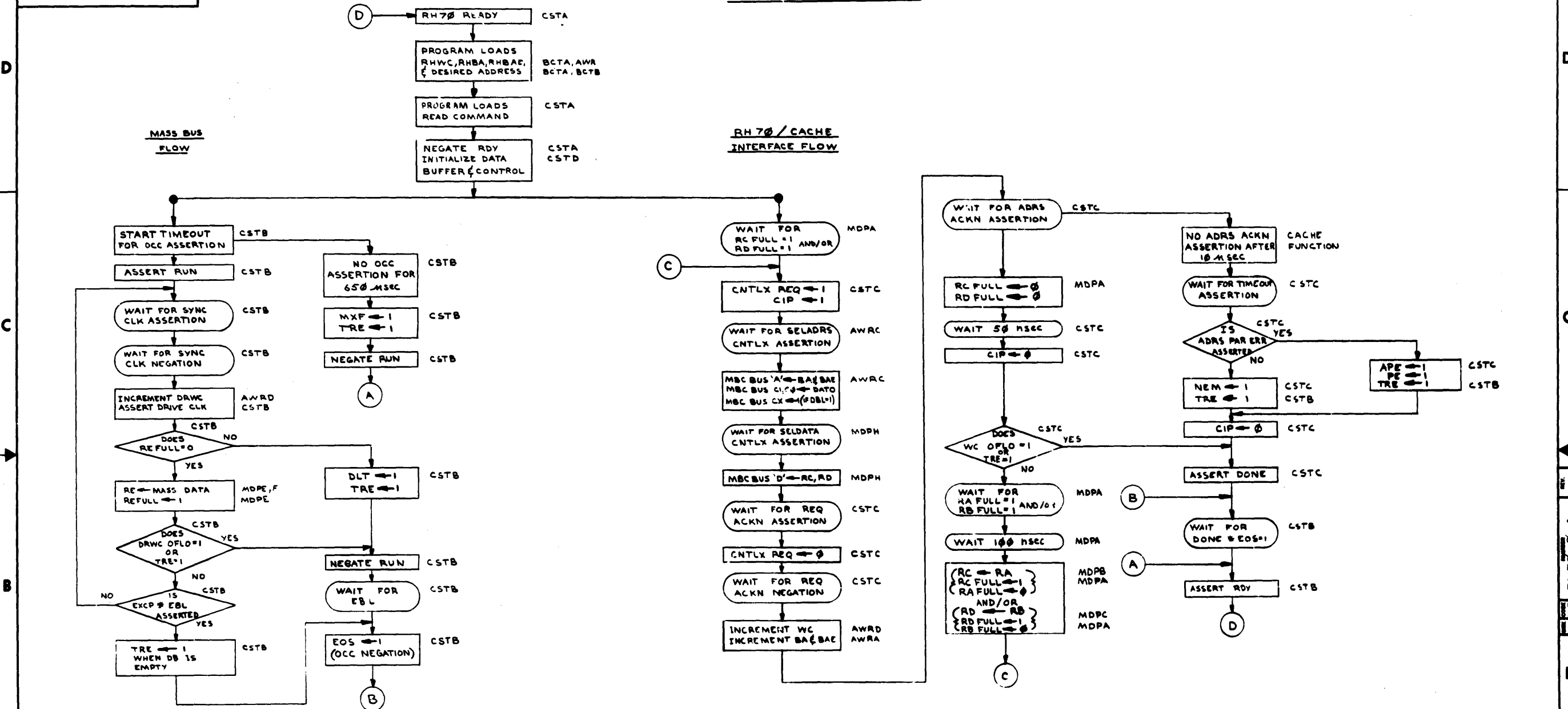
REV. 1
REV. 2
REV. 3
REV. 4
REV. 5
REV. 6
REV. 7
REV. 8

DEC FORM NO. D40 100-C

THIRD ANGLE PROJECTION	DRN. <i>[Signature]</i> 4-11-75	FIRST USED ON	digital
REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D <i>[Signature]</i> 4-11-75	TITLE	WRITE CHECK COMMAND FLOW DIAGRAM
DO NOT SCALE DWG	ENG. <i>[Signature]</i> 4-10-75	SIZE	D
MATERIAL	PROJ. ENG. <i>[Signature]</i> 4-10-75	SCALE	1
FINISH	PROD. <i>[Signature]</i> 4-11-75	NUMBER	RH70-C-3
	NEXT HIGHER ASSY.	SCALE	
	B DD RH70-C	SHEET	OF 1
		DIST.	

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READ COMMAND



REV.	
CHK	
CHK	
CHK	

DEC FORM NO. DRD 100-C

THIRD ANGLE PROJECTION	DRN	FIRST USED ON
REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D	
DO NOT SCALE DWG	ENG	
MATERIAL	PROJ. ENG.	
FINISH	PROD. 2	
	NEXT HIGHER ASBY.	
	SCALE	SIZE
	SHEET	CODE
	OF	DIST.
		NUMBER
		REV.

READ COMMAND FLOW DIAGRAM

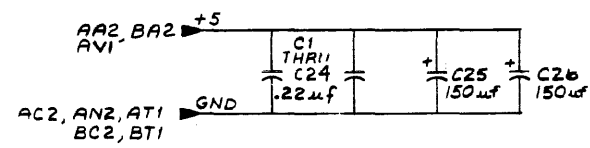
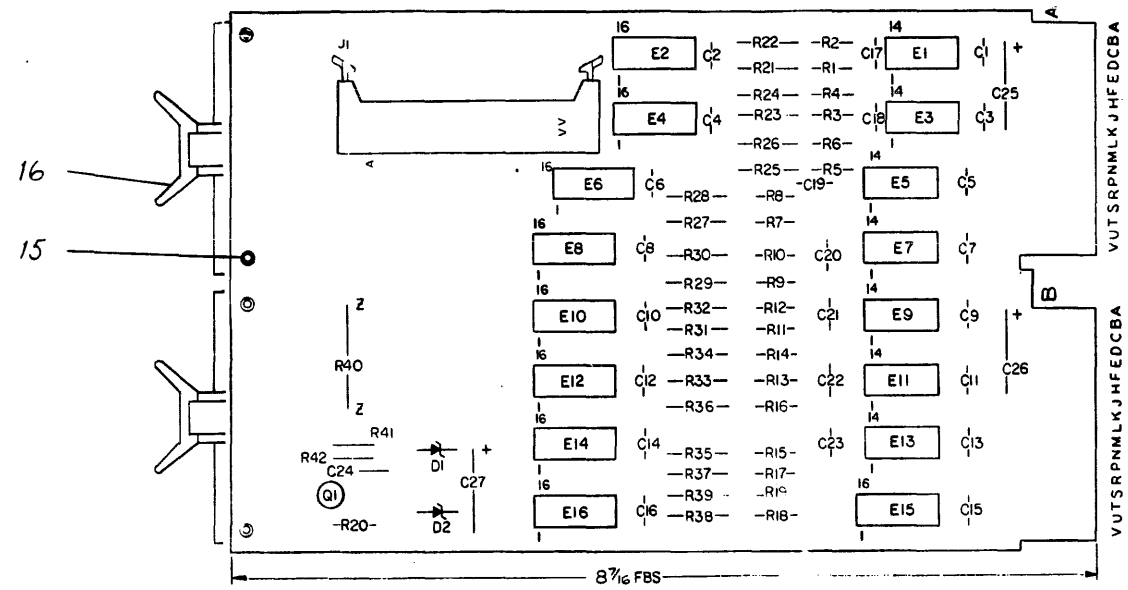
FD RH70-0-4

FD RH70-0-4

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NOTES:

1-0-066SW 2



REF	X-Y COORDINATE HOLE LOCATION	K-CO-M5904-0-0	1	
REF	ASSY/DRILLING HOLE LAYOUT	D-AH-M5904-0-5	2	
REF	MODULE ECO HISTORY	B-MH-M5904-0-6	3	
1	ETCHED CIRCUIT BOARD	5010503	4	
24	C1 THRU C24	CAP. .22 μf 20% 50V DISC	5	
			6	
2	D1, D2	DIODE ZENER 1N4733A 5.1V 1W	7	
19	R21 THRU R39	RES. 82 5% 1/2W	8	
19	R1 THRU R19	RES. 82 5% 1/4W	9	
1	R41	RES. 150 5% 1/4W	10	
1	R42	RES. 390 5% 1/4W	11	
1	R40	RES. 56 5% 5W	12	
7	E1, E3, E5, E7, E9, E11, E13	I.C. DEC 75107B	13	
9	E2, E4, E6, E8, E10, E12, E14, E15	I.C. DEC 75113	14	
4		EYELET	9006732	15
2		HANDLE, FLIP-CHIP MAGENTA	9009337-06	16
1	J1	CONN. (40 PIN)	1209941-2	17
2	C25, C26	CAP. 150 μf 20% 6V	1005572	18
1	Q1	TRANS. DEC 2N3646	1503014-00	19
1	R20	RES 4.7K 5% 1/4W	1300407-00	20
1	C27	CAP. 6.8 μf 35V 5 TANT	1005306	21
1		CLIP	1209941-3	22
1		CLIP	1209941-4	23

IC TYPE	-5V	GND	+5V
IC 75107B	13	7	14
IC 75113	—	8	16

IC PIN LOCATIONS

QTY REF DESIGNATION DESCRIP TIC PART NO ITEM NO

FIRST USED ON OPTION MODEL

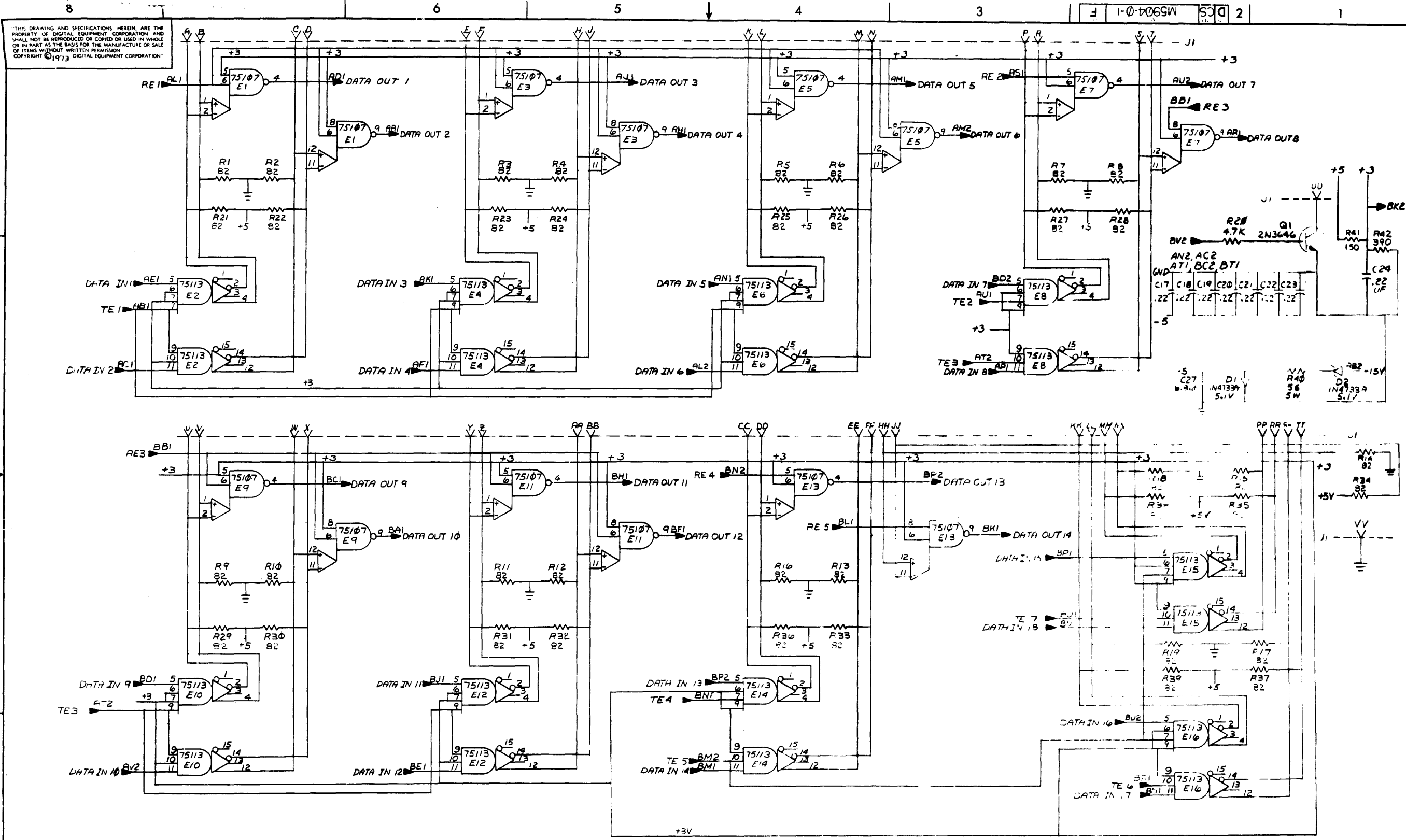
ETCH BOARD REV [F]

digital EQUIPMENT CORPORATION

CONTROLER TRANSCIVER

SIZE CODE NUMBER REV

1-0-066SW 0-1 F



REVISIONS		
CHK	CHANGE NO	REV

DCS M5904-0-1

