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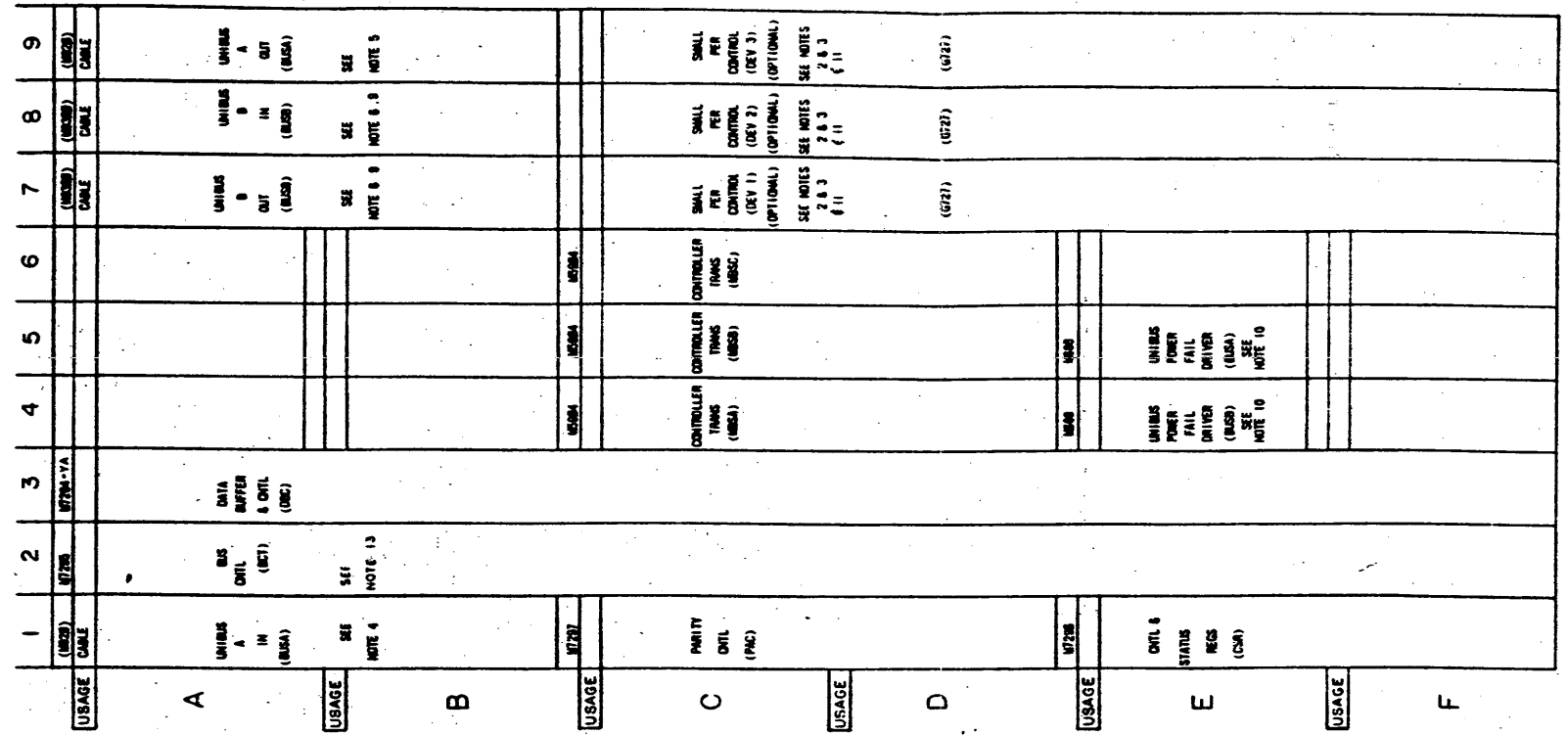
10-0-11HUTND 2

NOTES:

- VIEW OF LOGIC PANEL IS FROM WIRING SIDE.
- THE SMALL PERIPHERAL CONTROLLER SLOTS MAY CONTAIN A VARIETY OF POP 11 OPTIONS. THE OPTION MAY CONSIST OF A SINGLE QROM MODULE BOARD (SLOTS C,D,E & F); OR A DOUBLE HEIGHT CONTROLLER BOARD (SLOTS C & D); OR AN ADDRESS SELECTOR MODULE (SLOT E) AND AN INTERRUPT/CONTROL MODULE (SLOT F).
- IF NO OPTION IS PRESENT IN THE SMALL PERIPHERAL CONTROLLER SLOTS, 6727 GROUND CONTINUITY MODULE(S) MUST BE INSERTED IN SLOTS D.
- MAY BE EITHER WIRE (CONNECTION FROM ADJACENT DEVICE ON IC11A CABLE (CONNECTION FROM ANOTHER BOX OR NON-ADJACENT DEVICE)).
- MAY BE WIRE (CONNECTION TO ADJACENT DEVICE) OR WIRE (TERMINATION AT END OF UNIBUS A), OR IC11A CABLE (CONNECT TO NEXT BOX OR NON-ADJACENT DEVICE).
- MAY BE WIRE (TERMINATION AT BEGINNING OR END OF UNIBUS B) OR IC11A CABLE (CONNECTION TO OTHER BUS B DEVICES).
- FOR DIAGNOSTIC CHECKOUT AN M7295 CONNECTION MODULE MAY BE PLACED IN SLOTS A,B OR A BULAN WIRE OR IC11A CABLE. WHEN USED IN SLOT A,B IT.
- THE M7295 MODULE WILL BE INSERTED IN 1/2 OF EACH OF THE M7295 MODULES IN THE LAST DRIVE UNIT ATTACHED TO THE MASSBUS CABLES ORIGINATING FROM THE M7295'S IN THE RHII CONTROLLER BACKPLANE, WHEN BUILDING A MASSBUS SYSTEM.
- IF NO UNIBUS B SIGNAL IS CONNECTED TO THE RHII ONLY ONE M7295 MODULE SHOULD BE USED IN SLOT A,B.
- IF ANOTHER DEVICE ATTACHED TO THE SAME POWER SUPPLY AS THE RHII HAS UNIBUS POWER FAIL SIGNALS WIRE TO THE UNIBUS REMOVE THE M7295 MODULE FOR THAT BUS.
- SMALL PER CONTROL SLOTS FOR MANUFACTURING USE ONLY.
- ONE M7295 MODULE WILL BE INSERTED IN 1/2 COMPONENT SIDE CUT) OF EACH OF THE 3 M7295 MODULES FOR SHIPMENT ONLY.
- INSERT BRG PRIORITY PLUG IN DIP SITE E57 OF M7295.

Insert BRG priority plug in dip site E57 of M7295.
(see board layout m.p.8.)

VIEW FROM WIRING SIDE



1	BUS CTRL	D-CS-M7295-B-1	1
2	GROUND CONTINUITY	D-CS-M727-B-1	2
3	MASS BUS TERMINATOR	D-CS-M726-C-1	3
4	PARITY CTRL	D-CS-M727-B-1	4
5	CTRL & STATUS REG	D-CS-M726-B-1	5
6	DATA BUFFER & CONTROL	B-DD-M7295-A-1	6
7	CONTROLLER TRANSCEIVER	D-CS-M7294-B-1	7
8	UNIBUS TERMINATOR (BUS B)	D-CS-M726-B-1	8
9	UNIBUS CONNECTOR	D-CS-M726-B-1	9
10	POWER FAIL DRIVER	D-CS-M726-B-1	10
11	MODULE EXTENDER	A-PL-M726-B-1	11
12	BRG JUMPER PLUG	FACEPEC	12

FIRST USED ON OPTION MODEL		PARTS LIST	
RHII		TITLE	
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES		digital EQUIPMENT CORPORATION	
TOLERANCES		DATE	
DECIMALS	ANGLES	DATE	
.005	0° 30'	DATE	
.02		DATE	
.1		DATE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY B		DATE	
MATERIAL		DATE	
NEXT HIGH-LEVEL ASSEMBLY		DATE	
B-DD-RHII-C		DATE	
SCALE NONE		DATE	
SHEET OF		DATE	

Digital Equipment Corporation

B

A

[illegible]

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE RH11-C Jumper Configurations

5410506 Etched Backplane

Lowest acceptable wire list revision C
No jumpers or other configurable components.

M7294-YA Data Buffer & Control Location ABCDEF03

Lowest acceptable revision Etch rev N/A CS Rev *

Jumper Table

<u>Jumper</u>	<u>State</u>		<u>Comments</u>
	<u>Disk</u>	<u>Tape</u>	
W1	Out	Out	Sense Unibus A parity error
W2	In	In	Sense Unibus B parity error
E66, Pins 1-16	In	In	Start Count 64 words
E66, Pins 5-13	Out	Out	Start count 32 words
E66, Pins 7-10	Out	Out	Start count 16 words
E66, Pins 2-15	In	In	Disable Bus B Hog mode
E66, Pins 3-14	Out	Out	Enable Back to back mem cycles
E66, Pins 4-13	Out	In	For tape subsystem only, otherwise Out
E66, Pins 6-11	In	Out	Configures controller for disk only operation. No other type of drive allowed.

M7295 Bus Control **Location ABCDEF02**

Lowest acceptable revision Etch Rev N/A CS Rev D

Jump Table

<u>Jumper Table</u>	<u>State</u>		
<u>Jumper</u>	<u>Disk</u>	<u>Tape</u>	<u>Comments</u>
W1	Out	Out	Address bit 12
W2	Out	In	Address bit 11
W3	Out	Out	Address bit 10
W4	In	In	Address bit 09
W5	Out	Out	Address bit 08
W6	Out	In	Address bit 07
W7	Out	In	Address bit 06
W8	In	Out	Address bit 05
E3, Pins 1-16	Out	In	16-32 registers
E3, Pins 2-15	Out	In	16-32 registers
E3, Pins 3-14	In	Out	1-16 registers
E3, Pins 4-13	In	Out	1-16 registers
E3, Pins 5-12	In	Out	16 registers
E3, Pins 6-11	Out	Out	8 registers
E3, Pins 7-10	In	Out	4 registers
E3, Pins 8-9	Out	In	2 registers
W11	In	In	Vector bit V2
W12	In	Out	Vector bit V3
W13	Out	In	Vector bit V4
W14	In	Out	Vector Bit V5
W15	Out	Out	Vector bit V6
W16	In	In	Vector bit V7

SIZE A	CODE SP	NUMBER RH11-C-2	REV
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ENGINEERING SPECIFICATION		CONTINUATION SHEET	
TITLE RH11-C Jumper Configurations			
M7295 Bus Control Jumper Table (Continued)			
W17	Out	Out	Vector bit V8
W18	In	In	NPR latency
W19	In	In	Maintenance (MXF errors)
W1-W8 Correspond to a base address of 7767XX for disks and 7724XX for tapes			
W11-W17 correspond to a vector address of 000254 for disks and 000224 for tapes			
Jumpers on E3 are set for 20 registers for disks and 14 for tapes			
Dip site E57 should contain priority plug BR6 (54-08780)			
M7296 Control & Status Registers Location EF01			
Lowest acceptable revision Etch Rev N/A CS Rev B			
Install jumper W1 to allow only unibus A to be selected			
M7297 Parity Control Location CD01			
Lowest acceptable revision Etch rev N/A CS Rev A			
No jumpers or other configurable components			
There are two visual indicators (LEDs) for Massbus parity error display on this board (lit if parity error detected.)			
M9300 Unibus B Terminator Location AB08			
Lowest acceptable revision Etch Rev N/A CS Rev 0			
Jumper Table			
Jumper	State	Comments	
W1	Out	Beginning of bus	
W2	In	Not end of bus	
W3	In	Not end of bus	
There is a visual indicator (LED) for an illegal jumper configuration check (lit if illegal).			
M9504 Controller Transceiver Locations CD04, CD05, CD06			
Lowest acceptable revision Rev N/A CS Rev D			
Jo jumpers or other configurable component.			
SIZE	CODE	NUMBER	REV
A	SP	RH11-C-2	

ENGINEERING SPECIFICATION		CONTINUATION SHEET	
TITLE RH11-C Jumper Configurations			
M688 Unibus Power Fail Drivers Locations E04 and E05			
Lowest acceptable revision Etch Rev N/A CS Rev N/A			
No jumpers or other configurable component			
NOTE: No devices other than disks can be connected to the RH11-C jumpered for disk operation.			
SIZE	CODE	NUMBER	REV
A	SP	RH11-C-2	

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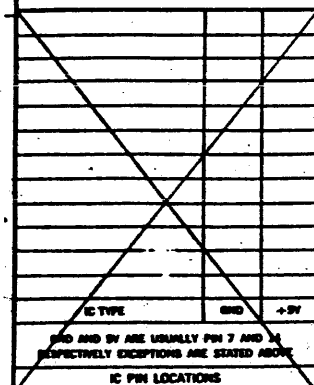
NOTES:

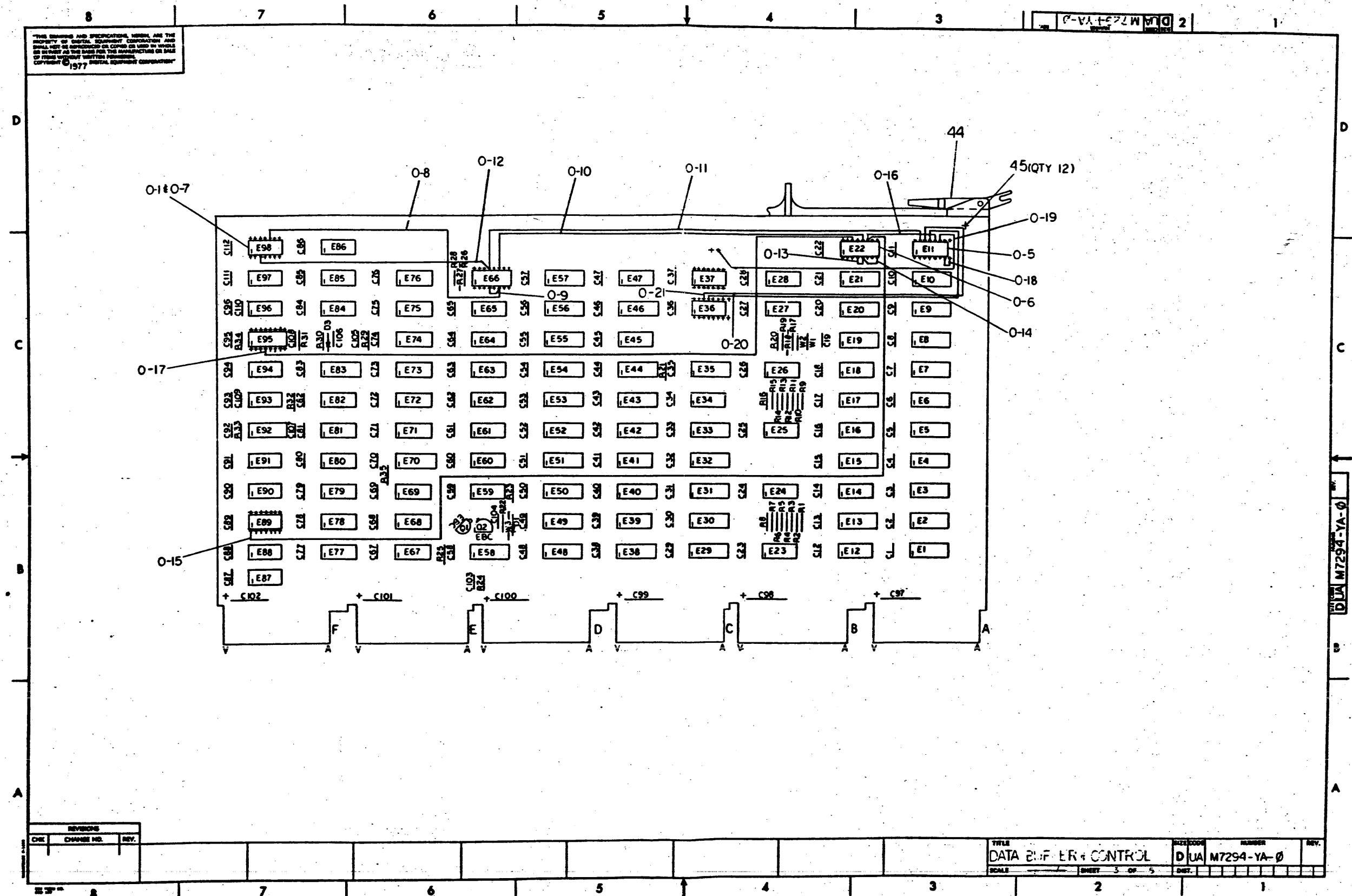
1. FOR DRAWING DIRECTORY REFER TO 3-DD M7294-YA
2. UNLESS OTHERWISE SPECIFIED THE FOLLOWING PIN NUMBER APPLY:

PACKAGE TYPE	VCC	GND
16 PIN DIP	16	8
14 PIN DIP	14	7

		ETCHED CIRCUIT BOARD		5010427	1
99	C1 THRU C87, C89 THRU C95, C104, C111, C112	CAP	81 PF, 20%	1001010-00	2
4	C97 THRU C102	CAP	8 0 REF. 105, 35V	1005306	3
1	C103	CAP	56 PF, 5%, 100V	1000012	4
1	C105	CAP	30 PF, 5%, 100V	1000010	5
11	C106	CAP	2400 PF, 5%, 100V	1001036	6
1	C107	CAP	220 PF, 5%, 100	1000021	7
2	C104, C109	CAP	82 PF, 5%, 100V	1000013	8
1	C110	CAP	15 PF, 5%, 100 OH	1002427	9
1	D1	DIODE	1N9040 ZENER	1105900	10
1	D3	DIODE	D084	1100114	11
23	R1 THRU R17, R20, R21, R23, R26, R27, R28	RESISTOR	1K, 5%, 1/2	1300305	12
2	R19, R19	RESISTOR	750, 5%, 1/2	1301401	13
2	R22, R30	RESISTOR	15K, 5%, 1/2	1300496	14
9	R24, R25, R29, R31 THRU R35	RESISTOR	5.6K, 5%, 1/2	1301074	15
1	Q2	TRANSISTOR	2N3806	1505525	16
1	Q1	TRANSISTOR	2N5450	1505374	17
10	E1, E3, E5, E7, E9, E13, E15, E17, E19, E20	I.C.	DEC 9041	1911570	18
11	E2, E4, E6, E8, E10, E21, E43, E40, E51, E55, E57	I.C.	DEC 74157	1910055	19
2	E11, E63	I.C.	DEC 74574	1910544	20
5	E12, E14, E16, E18, E90	I.C.	DEC 9001	1909705	21
0	E23 THRU E26, E81, E74, E82, E91	I.C.	DEC 74004	1909931	22
4	E27, E75, E86, E90	I.C.	DEC 74000	1900056	23
3	E28, E84, E94	I.C.	DEC 74011	1909267	24
6	E29 THRU E33, E95	I.C.	DEC 8234	1911315	25
5	E34, E39, E41, E45, E47	I.C.	DEC 8242	1900712	26
0	E36, E37, E88, E91, E95, E97	I.C.	DEC 74074	1909967	27
0	E38, E42, E44, E30, E53, E90	I.C.	DEC 74174	1910052	28
5	E40, E46, E48, E32, E54	I.C.	DEC 3341	2111100	29
5	E50, E70, E83, E92, E95	I.C.	DEC 74123	1910430	30
2	E30, E82	I.C.	DEC 74030	1900059	31
1	E83	I.C.	DEC 7437	1910001	32
2	E84, E85	I.C.	DEC 74107	1910035	33
1	E86	I.C.	COMPONENT CARRIER	1211323	34
2	E97, E96	I.C.	DEC 74053	1909062	35
1	E89	I.C.	DEC 74384	1910542	36
3	E71, E79, E90	I.C.	DEC 7402	1900004	37
1	E72	I.C.	DEC 74380	1910532	38
1	E73	I.C.	DEC 7474	1905547	39
2	E78, E77	I.C.	DEC 74050	1909090	40
1	E79	I.C.	DEC 7410	1905570	41
2	E80, E90	I.C.	DEC 7400	1910155	42
2	E84, E97	I.C.	DEC 74010	1909057	43
1		HANDLE		1210711-2	44
12		EYELET		0000024-01	45
3	W1, W2, W3	JUMPER, INSULATED		0000105	46
3	(SEE E96)	JUMPER WIRE		0107500-01	47
1	E22	I.C.	DEC 74101	1910006	48
A/B		WIRE SOLID #30 AWG GUN		0102740-35	49
QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.	

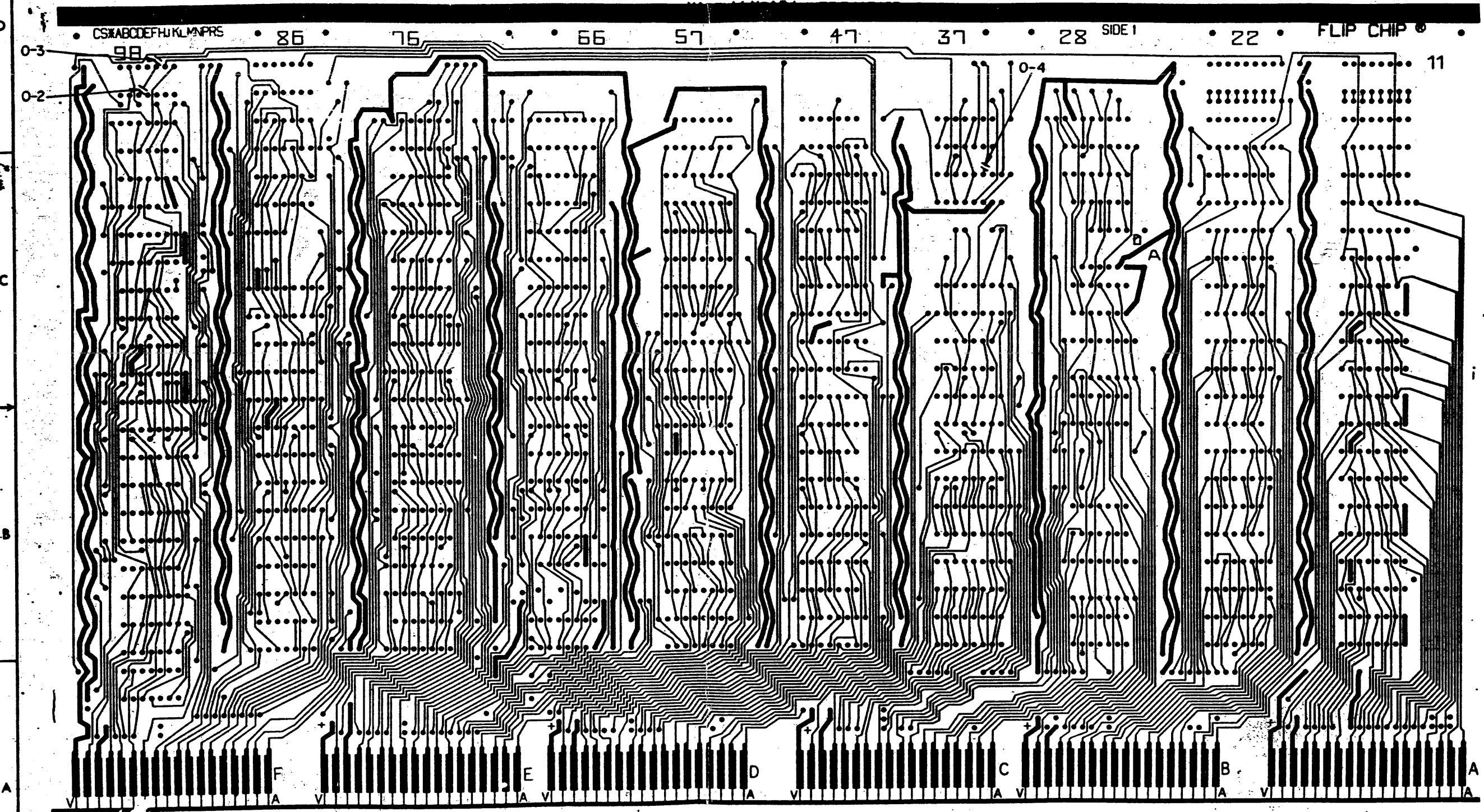
REV.		CHANGE NO.	REVISIONS	FIRST USED ON OPTION MODEL		PARTS LIST		NO.
				RHII-C				
CHG.				ETCH BOARD NO.		DATE		TITLE DATA BUFFER & CONTROL
						DATE		
						DATE		
						DATE		
						DATE		
						DATE		
						DATE		
						DATE		
						DATE		
				DEC NO.				SEMICONDUCTOR CONVERSION CHART





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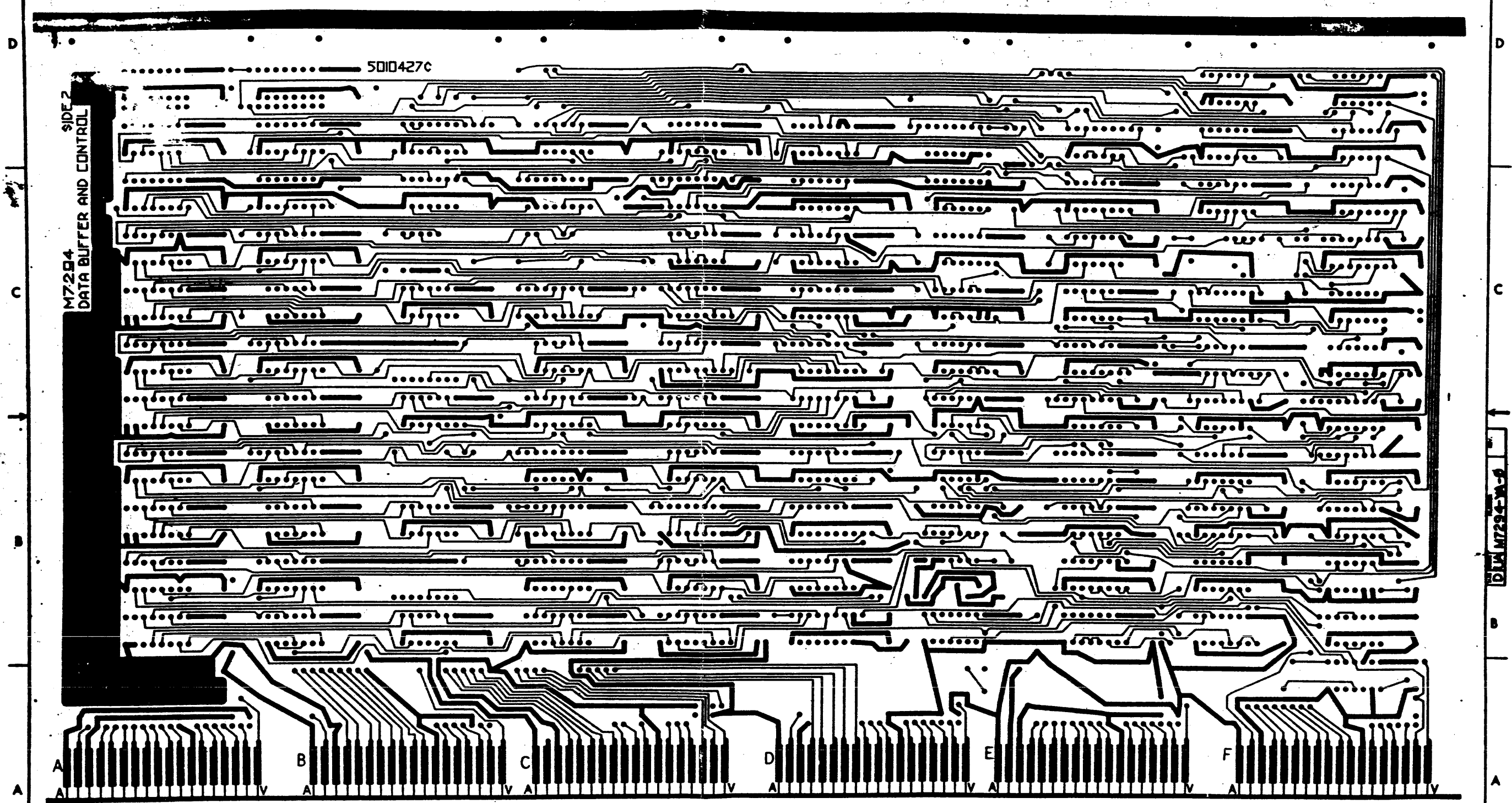


REVISIONS		
CHK	CHANGE NO	REV

TITLE			SIZE CODE		NUMBER				REV.		
DATA BUFFER & CONTROL			D UA		M7294-YA-0						
SCALE		2/1		SHEET		4 OF 5		DIST.			

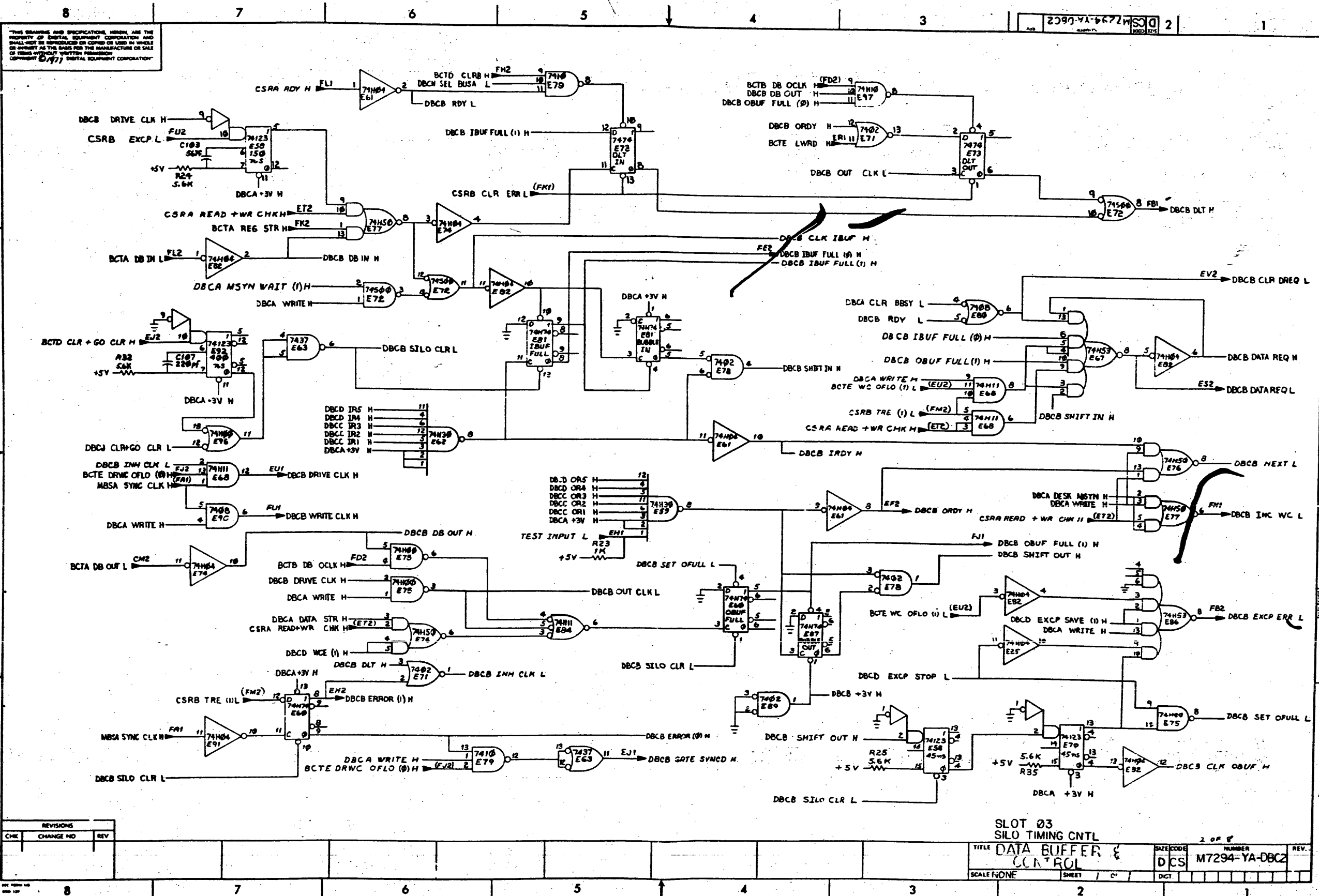
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DLA M7294-YA-0 2



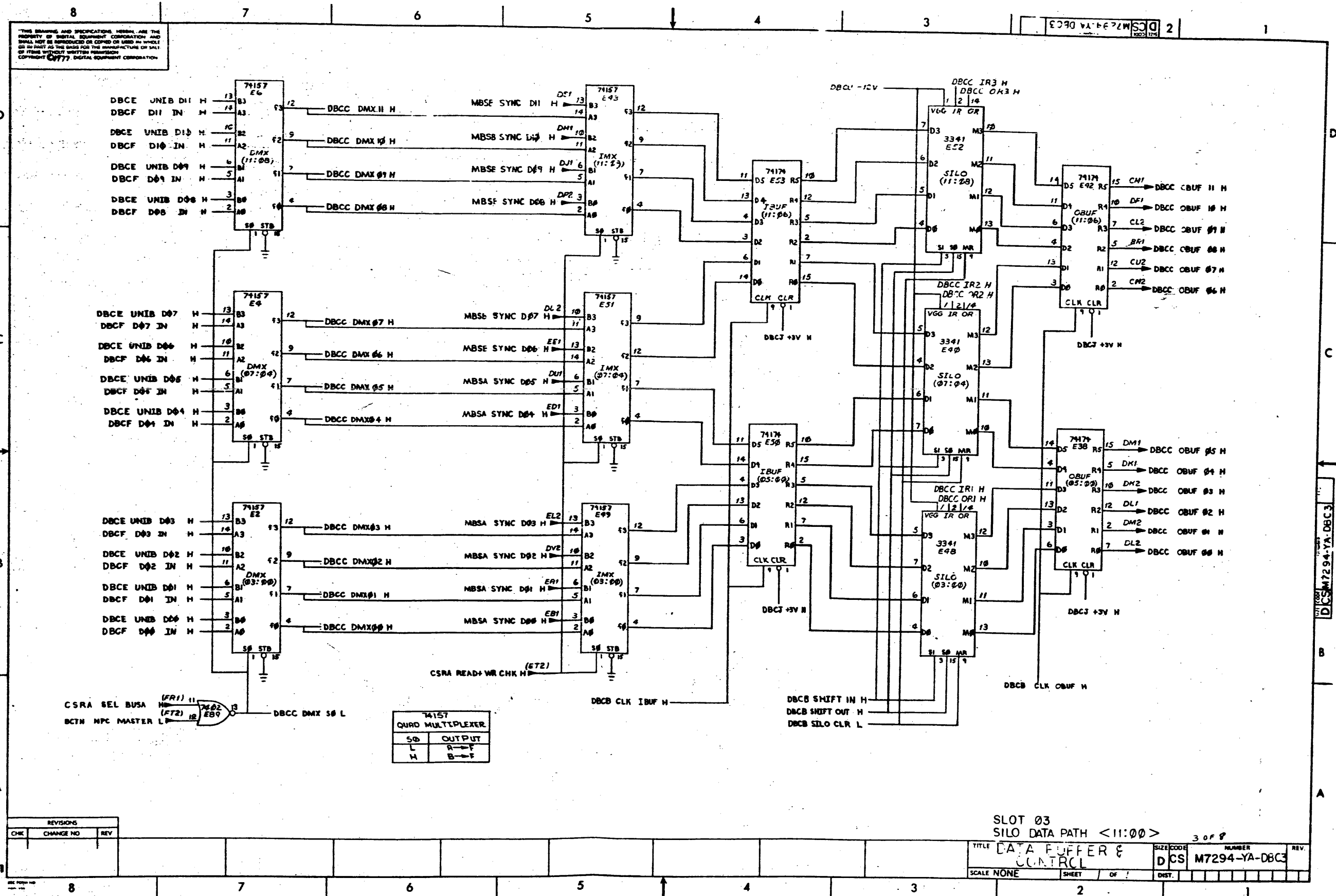
REVISIONS		
CHK	CHANGE NO	REV

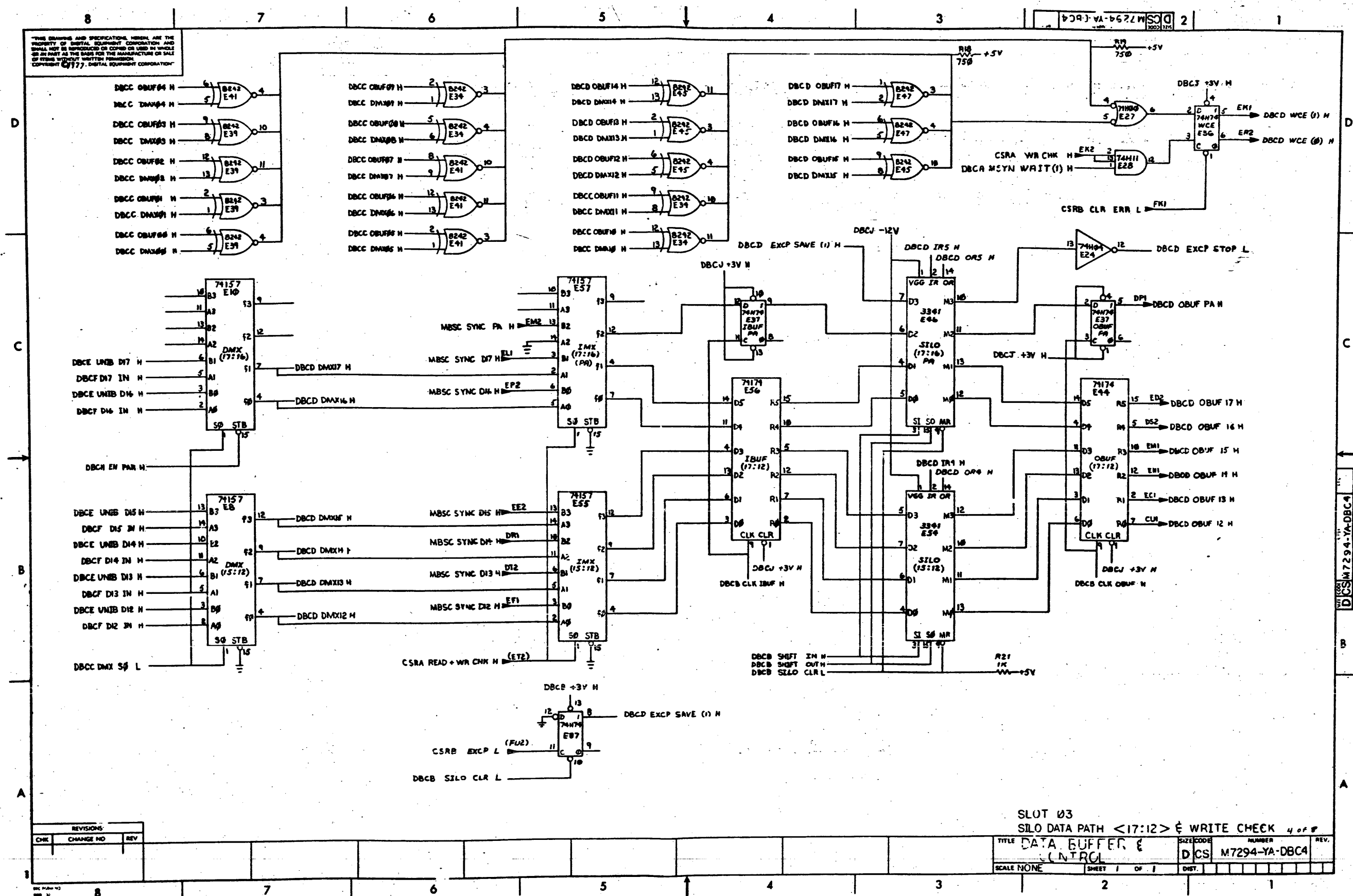
TITLE		DATA BUFFER & CONTROL	SIZE CODE	D UA	NUMBER	M7294-YA-0	REV.
SCALE	2/1	SHEET	5	OF	5	DIST.	



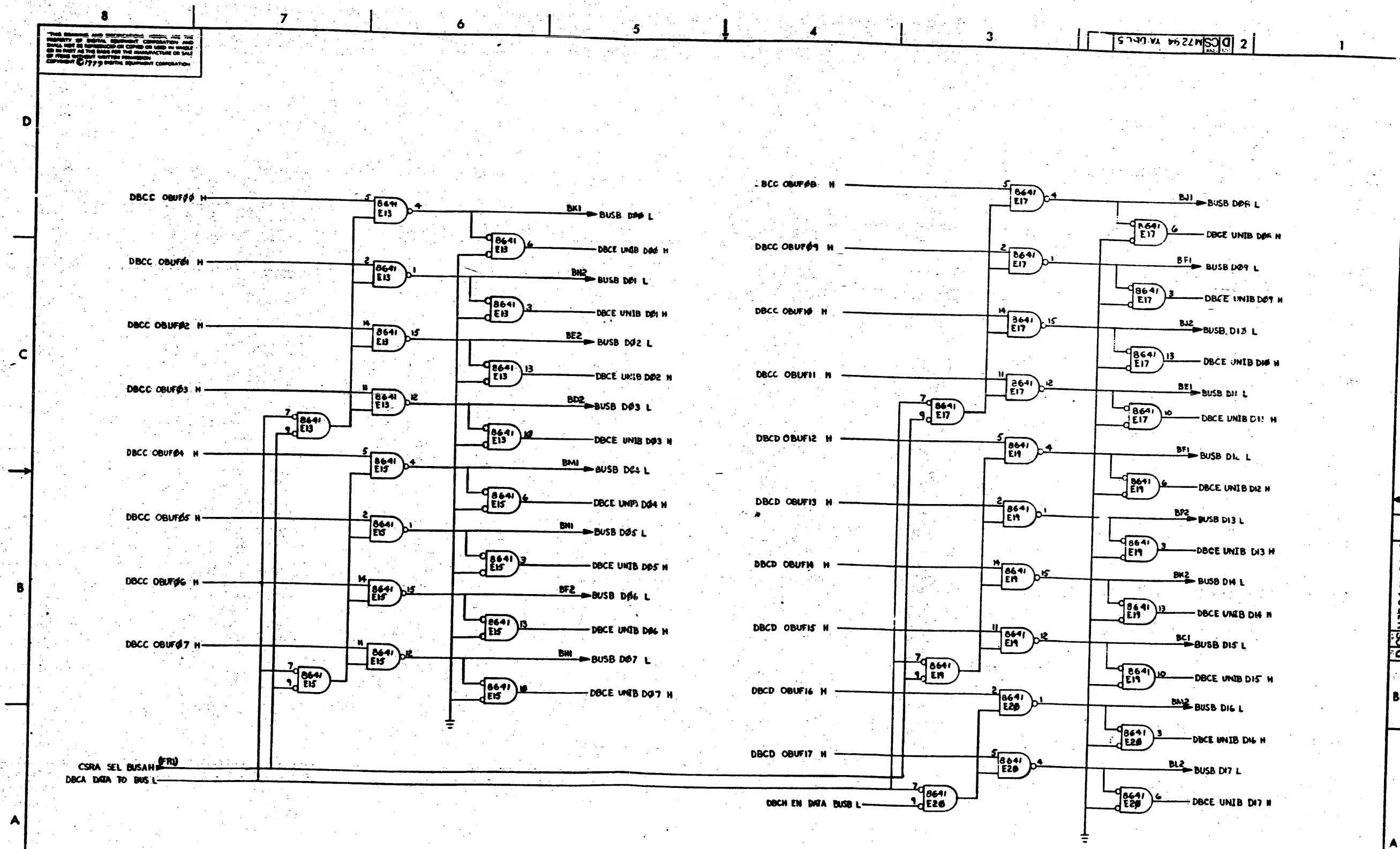
REVISIONS		
CHK	CHANGE NO	REV

SLOT 03		SILO TIMING CNTL		2 OF 8	
DATA BUFFER &		CONTROL		REV. 1	
SCALE NONE		SHEET 1 OF 1		DCT	





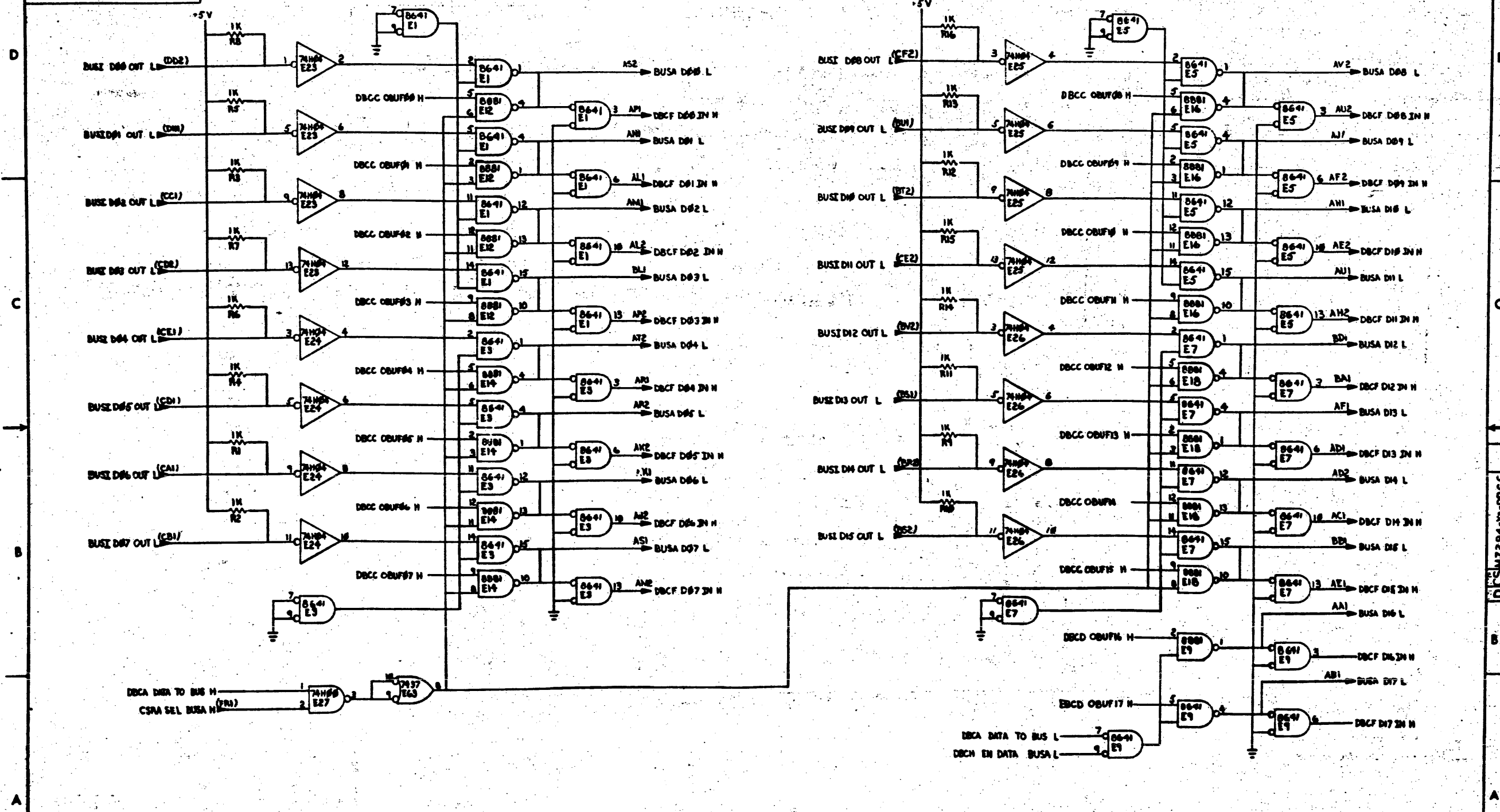
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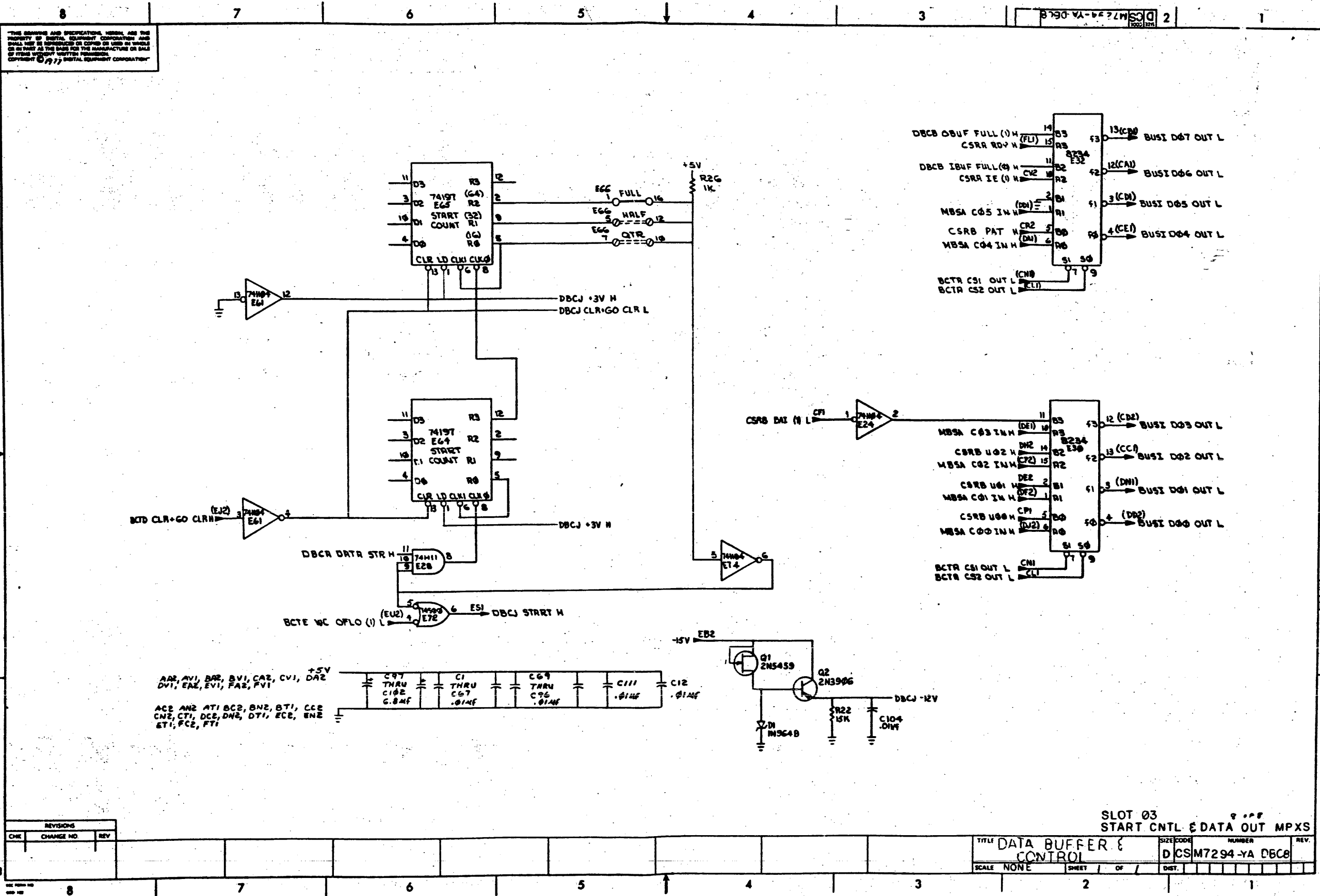


REVISIONS		
CHK	CHANGE NO	REV

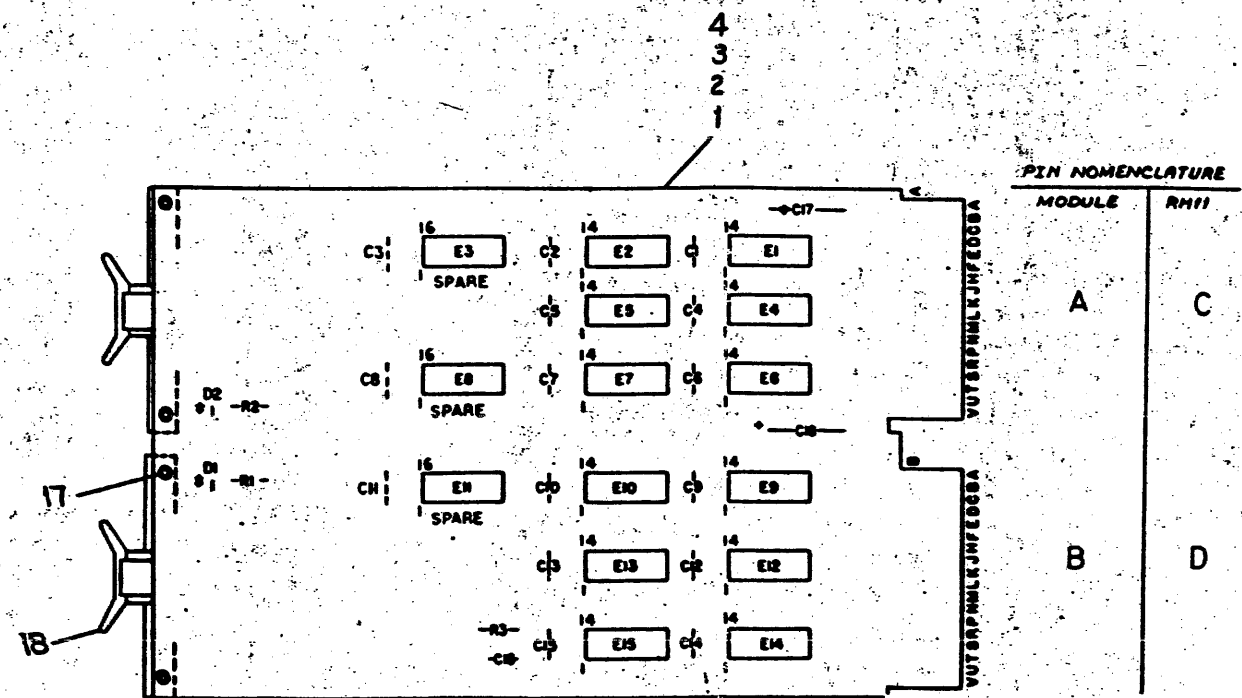
SLOT 03 UNIBUS B DATA TRANSCEIVERS		5 OF 8
TITLE DATA BUFFER & CONTROL		REV.
SCALE NONE	SHEET 1 OF 1	DIST
D C S		M7294-YA-DBCS

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1. PIN INDICATION THROUGHOUT IS ORDERED UPON MODULE PLACEMENT IN THE RH11. MODULE PIN REFERENCE ALONE IS OBTAINED BY DELETING THE NUMBER (SLOT LOCATION) AFTER THE FIRST LETTER AND CONVERTING THE FIRST LETTER ACCORDING TO THE PIN NOMENCLATURE CHART AT RIGHT.
2. C3, C6, CH, E3, E6 & E11 ARE SPARE COMPONENT, SLOTS.



REF		X-Y COORDINATE HOLE LOCATION	KCO-MT29T-0-4	1
REF		RESV/DRILLING HOLE LAYOUT	0-44-MT29T-0-5	2
REF		MODULE ECO HISTORY	0-44-MT29T-0-6	3
1		ETCHED CIRCUIT BOARD	3010504	4
12	C1C2,C4,C5,C6,C7,C8,C9, C12,C13,C14,C15	CAP .01uF, 20V, 50V DISC	1001610-00	5
1	C16	CAP .27uF, 5%, 100V MICR	1001759	6
2	C17,C18	CAP 6.8uF 10%, 35V STANT	1005306	7
2	D1,D2	DIODE LED	1111084	8
1	R3	RES 1K, 5%, 1/4W	1300363	9
2	R1,R2	RES 330, 5%, 1/4W	1300309	10
1	E7	IC DEC 74H05	1909056	11
1	E3	IC DEC 74H10	1909057	12
1	E10	IC DEC 74H74	1909667	13
1	E15	IC DEC 8881	1909705	14
1	E15	IC DEC 74H04	1909931	15
7	E1,E2,E4,E6,E9,E12,E14	IC DEC 74180	1910174	16
4		EYELET	9006732	17
2		HANDLE, FLIP-CHIP (MAGNETA)	9008337-6	18

[illegible]

C01A2
 D01A2
 +5V
 C1 0.1uF
 C2 0.05uF
 C4 0.05uF
 C5 0.04uF
 C6 0.04uF
 C7 0.01uF
 C9 0.01uF
 C10 0.01uF
 C12 0.04uF
 C13 0.04uF
 C14 0.04uF
 C15 0.04uF
 C17 0.01uF
 C18 0.01uF
 C01C2, C01T1
 D01C2, D01T1
 GND

		QTY		REF DESIGNATION		DESCRIPTION		PART NO.		NO.	
FIRST USED OR OPTION MODEL RHII						PARTS LIST					
ETCH BOARD REV				8							
DATE 17-01-73		BY J.S. JENKINS		DATE 17-01-73		BY J.S. JENKINS		EQUIPMENT CORPORATION HARTFORD, CONNECTICUT 06105			
TITLE		PARITY CONTROL (PAC)									
NEXT HIGHER ASSY											
DEC NO.		EIA NO.		DEC NO.		EIA NO.					
SEMICONDUCTOR CONVERSION CHART											
SCALE NONE		SHEET OF 2		DCS M7297-0-1		REV A					

