

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

SEQUENCE	DRAWING DIRECTORY KB11-C (SHEET 1 ONLY) 16 BIT PROCESSOR FLOW DIAGRAMS BLOCK DIAGRAM BLOCK DIAGRAM UNIBUS CABLE & GRANT CHAIN DATA PATHS GEN REG & ALU. CONTROLS IR DECODE CONSOLE BOARD PROC. DATA & UNIBUS CONTROL ROM & ADDRESS CONTROL TIMING GENERATOR TRAPS & MISC. CONTROL UNIBUS & CONSOLE CONTROL TIMING DIAGRAM FLOW DIAGRAM ADDRESS MEMORY BOARD CACHE CONTROL BOARD CACHE DATA PATHS BLOCK DIAGRAM DATA MEMORY BOARD MEM. MGMT BLOCK DIAGRAM MEM. MGMT REGISTERS CACH ADDRESS TIMING INT. REG. CYCLE TIMING MEM. MGMT TRAP TIMING SYSTEM ADDRESS PATHS SYSTEM DESCRIPTOR AND CONSOLE CABLES SYSTEM STATUS REGISTERS UNIBUS MAP (M8141) B.D. UNIBUS MAP PROCESSOR BACK PLANE AWT REV STATUS	SEQUENCE	B-DD-KB11-C B-PL-KB11-C-Ø D-FD-KB11-C-1 D-BD-KB11-B-2 D-BD-KB11-B-3 D-IC-KB11-B-7 D-CS-M813Ø-Ø-1 D-CS-M8131-Ø-1 D-CS-M8132-Ø-1 D-CS-5411294-Ø-1 D-CS-M8134-Ø-1 D-CS-M8123-Ø-1 D-CS-M8139-Ø-1 D-CS-M8135-Ø-1 D-CS-M8136-Ø-1 D-TD-M8136-Ø-7 D-FD-M8136-Ø-8 D-CS-M8143-Ø-1 D-CS-M8142-Ø-1 D-CS-M8145-Ø-1 B-BD-M8145-Ø-7 D-CS-M8144-Ø-1 D-BD-KB11-B-8 D-BD-KB11-B-4 D-TD-KB11-B-1Ø D-TD-KB11-B-9 E-BD-KB11-B-5 D-CS-M8137-Ø-1 D-CS-M814Ø-Ø-1 D-CS-M8138-YA-1 B-BD-KB11-B-6 D-CS-M8141-Ø-1 E-AD-7010329-0-0 A-WT-7010329-0
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FOR KB11-CM PRINT SET
REFER TO 11/74 ELECTRICAL
PRINT SET B-TC-11/74
ORDER NUMBER MP00821

*CPU ERROR REGISTER IS
ON THE
8140
MODULE*

REC # = #

VAR	TITLE	PRINT SET			
		1			
KB11-C	16 BIT PROCESSOR	X			
KB11-CM	16 BIT PROCESSOR WITH MP CAPABILITY				

EN-01062-1A-16-R972-1223

REVISIONS		CHG. NO.	REV	DATE	DESCRIPTION
DATE	BY				
11/70	A	000.07	A		
7/70	B	KB11-C-TWØØ2	B		

USED ON OPTION/MODEL	DRN. TOM NOTHRUP	DATE	TITLE
	CHK'D. D. HEALY	9/11/75	DRAWING DIRECTORY 16 BIT PROCESSOR
		DATE	
	PROJ ENG. <i>[Signature]</i>	9/18/75	
		DATE	
	PROD. <i>Keith Taylor</i>	11/26/75	
	FIELD SERV. <i>R.X. Olson</i>	DATE	

SIZE	CODE	NUMBER	REV
B	DD	KB11-C	B
DIST			

M9301-YC is For 11/70

DIGITAL EQUIPMENT CORPORATION PARTS LIST

MADE BY DATE	TOM NORTHRUP 9-11-75	CHECKED DATE	D. HEALY 9-18-75
ENG DATE	11-25-75	PROD DATE	R. TAYLOR 12-2-75
		SECTION	1
		ISSUED SECTION	1

QUANTITY / VARIATION

NOTES: #1 FOR KB11-C MODULE LOCATIONS,
REFER TO D-UA-11/70-0-0 SHEET 3.

#2 FOR KB11-CM MODULE LOCATIONS
REFER TO D-UA-11/74-0-0 SHEET 12.

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	KB11-C	KB11-CM											REF DESIGNATION				
1	D-CS-M8130-0-1	M8130	DATA PATHS	1	1															
2	D-CS-M8131-0-1	M8131	GEN. REG. PLUS ALU. CONTROLS	1	1															
3	D-CS-M8132-0-1	M8132	I R DECODE & COND CODES	1	-															
4	D-CS-M8132-0-1	M8132-YA	I R DECODE & COND CODES	-	1															
5	D-CS-M8123-0-1	M8123	ROM & ADDRESS CONTROL	1	1															
6	D-CS-M8134-0-1	M8134	PROCESSOR DATA & UNIBUS REGS	1	1															
7	D-CS-M8135-0-1	M8135	TRAPS & MISC. CONTROL	1	1															
8	D-CS-M8136-0-1	M8136	UNIBUS & CONSOLE CONTROL	1	-															
9	D-CS-M8137-0-1	M8137	SYSTEM ADDRESS PATHS	1	-															
10	D-CS-M8138-0-1	M8138-YA	SYSTEM STATUS REGISTERS	1	1															
11	D-CS-M8139-0-1	M8139	TIMING GENERATOR	1	1															
12	D-CS-M8140-0-1	M8140	SYS. DESCRIPTOR & CNSL CABLES	1	1															
13	D-CS-M8141-0-1	M8141	UNIBUS MAP	1	-															
14	D-CS-M8142-0-1	M8142	CACHE CONTROL	1	-															
15	D-CS-M8143-0-1	M8143	ADDRESS MEMORY BOARD	1	-															
16	D-CS-M8144-0-1	M8144	DATA MEMORY	1	-															
17	D-CS-M8145-0-1	M8145	CACHE DATA PATHS	1	-															
18	E-AD-7010329-0-0	7010329-00	PROCESSOR BACK PLANE ASSEMBLY	1	-															
19	D-CS-5411294-0-1	5411294-00	11/70 CONSOLE BOARD	1	-															
20	D-CS-5411294-01	5411294-03	11/70 & 11/74 CONSOLE BOARD	-	1															
21	B-MD-7414067-0-0	7414067	BLANK, MODULE	1	1															
22	B-DI-M8181-0	M8181	MAP UNIBUS M&P	-	1															
23	B-DD-M8182-0	M8182	CACHE CONTROL BOARD	-	1															
24	B-DD-M8183-0	M8183	ADDRESS MEMORY	-	1															
25	B-DD-M8184-0	M8184	DATA MEMORY	-	1															
26	B-DD-M8185-0	M8185	CACHE DATA PATH	-	1															
27	B-DD-M8176-0	M8176	UNIBUS & CONSOLE CONTROL	-	1															
28	B-DD-M8177-0	M8177	SYSTEM ADDRESS PATH	-	1															
29	D-CS-M9302-0-0	M9302	UNIBUS TERMINATOR	-	1															
30	B-DD-DL11-W	DL11W	SERIAL LINE/LINE CLOCK	-	1															
31	EK-74MP-TM-001		KB11-C, CM MANUAL	-	REF															

E.C.O. NO. 11/70-0-0
REV. 11/74-0-0
A-B11-C
7-1-77

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		SHEET 1 OF 1	INSERTION PARTS LIST DATA BASE REV			

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DIGITAL EQUIP. CORP.

D

C

B

A

REVISIONS
CHANG. NO.
CHK

ARITHMETIC LOGIC UNIT (A15-17); ALU
0 - A
1 - B
2 - A
3 - A PLUS B
4 - NOT USED
5 - A PLUS A (LEFT SHIFT)
6 - A MINUS B
7 - INSTRUCTION DEPENDENT (S)

A MULTIPLEXOR (C22-23); AMX:
0 - DR
1 - PCB
2 - SR
3 - BR

SHIFT COUNTER (C33-39); SMC:
0 - NO COUNT
1 - COUNT
2 - LOAD (DR-05-00)
3 - LOAD (17)

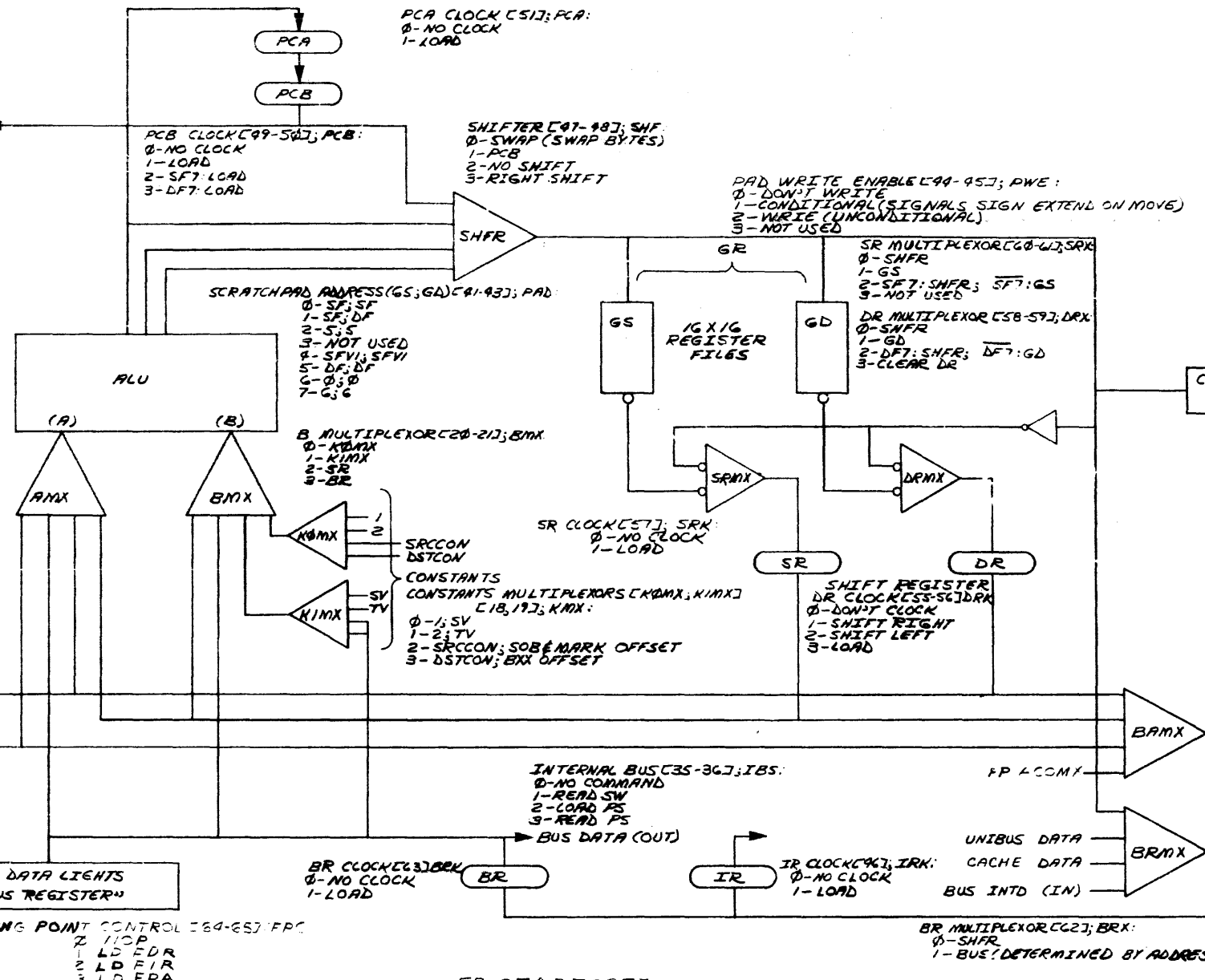
MICRO ADDRESS FIELD (C0-7); UAD:
(SEE FLOWS)

BRANCH ENABLE (C8-11); BEN:
(USE FLOWS, 0 IF NOTHING SPECIFIED)

FORK ENABLE (C12-14); FEN:
0 - NO FORK
1 - FORK A
2 - FORK B
4 - FORK C

MICROPROGRAM FIELD NAME,
BIT POSITIONS, AND ENCODING
SHOWN NEXT TO ASSOCIATED
DATA PATH ELEMENT

* MOST SIGNIFICANT BIT IS
BCT FIELD = 1 (READ FP)



BUS CONTROL (C30-32); BCT:
0 - NO AFFECT
1 - READ FP
2 - CONS ACKN
3 - CLR FLAGS
4 - INIT IF KERNEL MODE
5 - STACK REF
6 - ACKN
7 - BCND (BUS END)

CONDITION CODE LOAD (C52-54); CCL:
0 - NO CHANGE
1 - INSTRUCTION DEP (SUBSIDIARY ROM)
2 - SET CLR CC'S FROM BUS (CCOP'S)
3 - LOAD CC'S FROM FPU IF FP ENB
4 - CCLD * CZEN ACC SNFR; CE V=0;
5 - CCLD * CZEN ACC SNFR; CE AMX IS V=VOLD
6 - CCLD * C, C, E V UNAFFECTED; I-ZX SNFR=0;
7 - CCLD * C, C, E V UNAFFECTED; C=ALU CARRY)

CONSOLE DATA LIGHTS
"DATA PATHS"

BUS COND (C29-26); BSC:
0 - DATI
1 - SRC1 DATI
2 - KERNEL DATI
3 - SRC2 DATI
4 - FC
5 - DATO
6 - BSOP1
7 - BSOP2

BUS DELAY (C39-40); BSD:
0 - NO PAUSE
1 - INTR PAUSE
2 - BUS PAUSE
3 - (SEE NOTE 1 ON FLOWS 1)

VIRTUAL ADDRESS
BUS ADDRESS MULTIPLEXOR (C37-38); BAX:
0 - DR
1 - PCB
2 - SR
3 - FPU MAINT

MISCELLANEOUS CONTROL SIGNALS
(C27-29); MSC:
0 - NO AFFECT
1 - FP ATIN
2 - NOT USED
3 - SET CONF IF KERNEL MODE
4 - SPL
5 - CONDITIONAL BUST
6 - BRQ STROBE
7 - BUST (BUS START)

* FLOATING POINT CONTROL (C64-65); FPC:
0 - NOP
1 - LD FDR
2 - LD FDR
3 - LD FPA
4 - READ DATA
5 - READ FPS
6 - READ FDR
7 - READ FPA

FP START (C67)
0 - NO OPERATION
1 - FLOATING POINT START

CLEAR SYNC (C66)
0 - NOP
1 - CLEAR RIP + FPSYNC

INTERNAL BUS (C35-36); IBS:
0 - NO COMMAND
1 - READ SW
2 - LOAD PS
3 - READ FS

BR CLOCK (C63); BRK:
0 - NO CLOCK
1 - LOAD

IR CLOCK (C61); IRK:
0 - NO CLOCK
1 - LOAD

DEC FORM NO.
100 107-B

8

7

6

5

4

3

2

1

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
1170				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	DATE	DATE	DATE
XXX + .005	± 0° 30'	1/2/75	1/2/75	1/2/75
XX + .02		1/2/75	1/2/75	1/2/75
X + .1		1/2/75	1/2/75	1/2/75
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV
	B-00-KB11-B	DFD	KB11-B	
FINISH	SCALE	SHEET	DIST	
		1 OF 15		

DATA PATHS

TITLE
KB11-B
FLOW DIAGRAMS

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NOTE:
 1 t₁ BUS PAUSE =
 2 FOR UNIBUS CYCLES
 3 FOR CACHE CYCLES

FET.00 (217)
 FET.01 (331)
 FET.02 (332)
 FET.03 (334)
 FET.04 (164)
 FET.05 (126)
 FET.06 (373)

μ Addr

← = "GETS"
 ex. PCA ← PCB + 2

t₆ = t₁ OF THE NEXT CYCLE

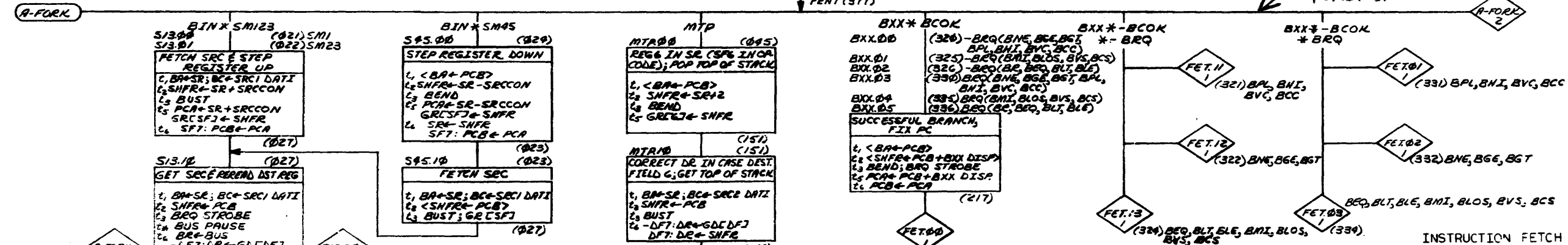
t* = PAUSE STATE

<> = Front Panel Display

you may enter the FLOW AT THIS SIGN "O"

SOURCE FIELD 7?
 DESTINATION FIELD 7?

AND FUNCTION



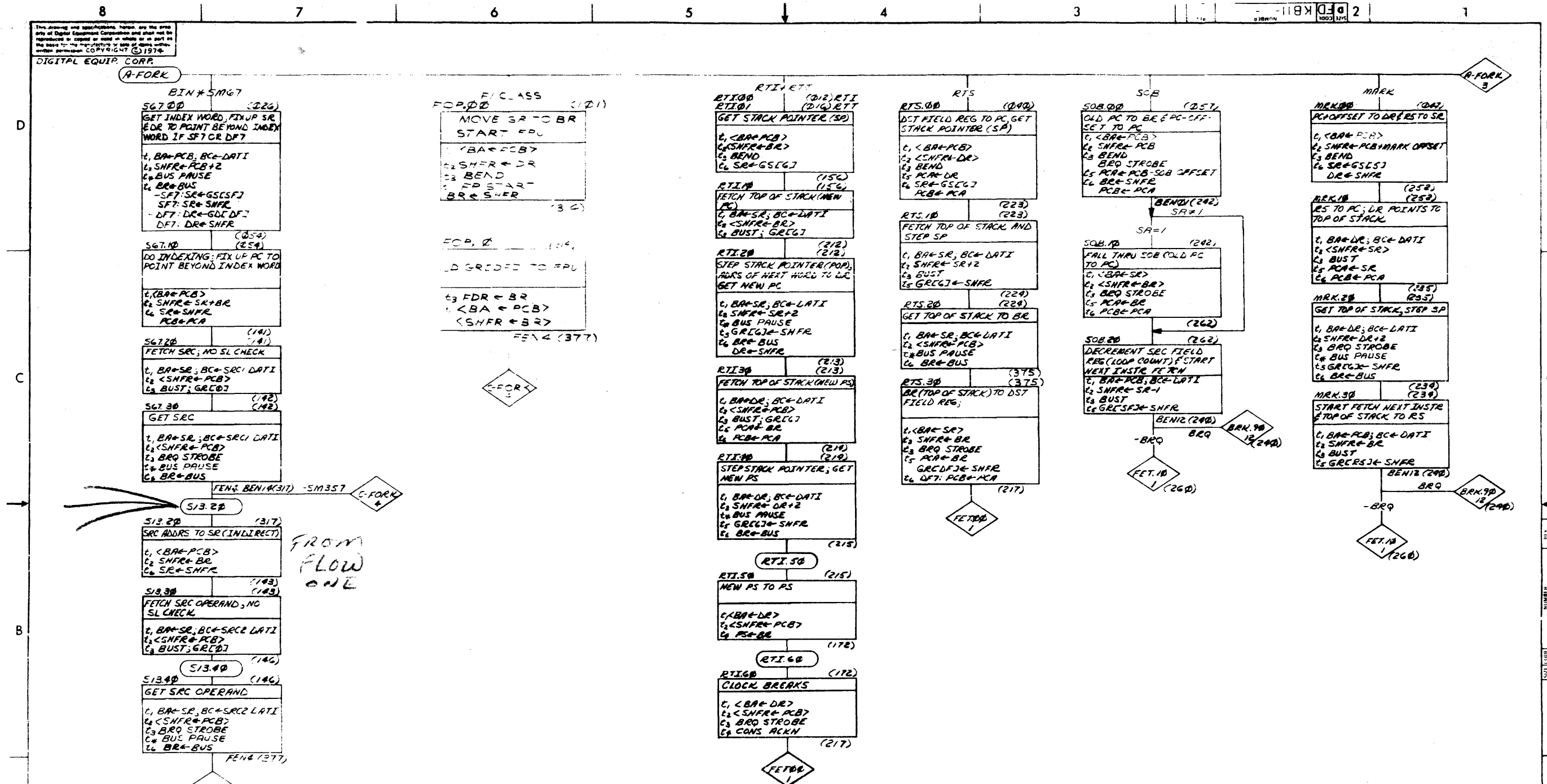
A-FORK
 C-FORK
 FEN 4
 BEN 1 (317)
 SM35T
 TO "C" FORK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	PARTS LIST		
XXX - .005	X ± .1	DATE	DIGITAL EQUIPMENT CORPORATION	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE	TITLE	
MATERIAL		DATE	KBII-C	
FINISH		DATE	FLOW DIAGRAMS (FLOWS)	
NEXT HIGHER ASSY		DATE	SIZE CODE	
B-DD-KBII-B		DATE	NUMBER	
SCALE		DATE	REV	
SHEET 2 OF 15		DATE	D/FD KBII-C-	
DIST				

REVISIONS
 DATE
 BY

REV
 NUMBER
 DATE
 BY
 D/FD KBII-C-1

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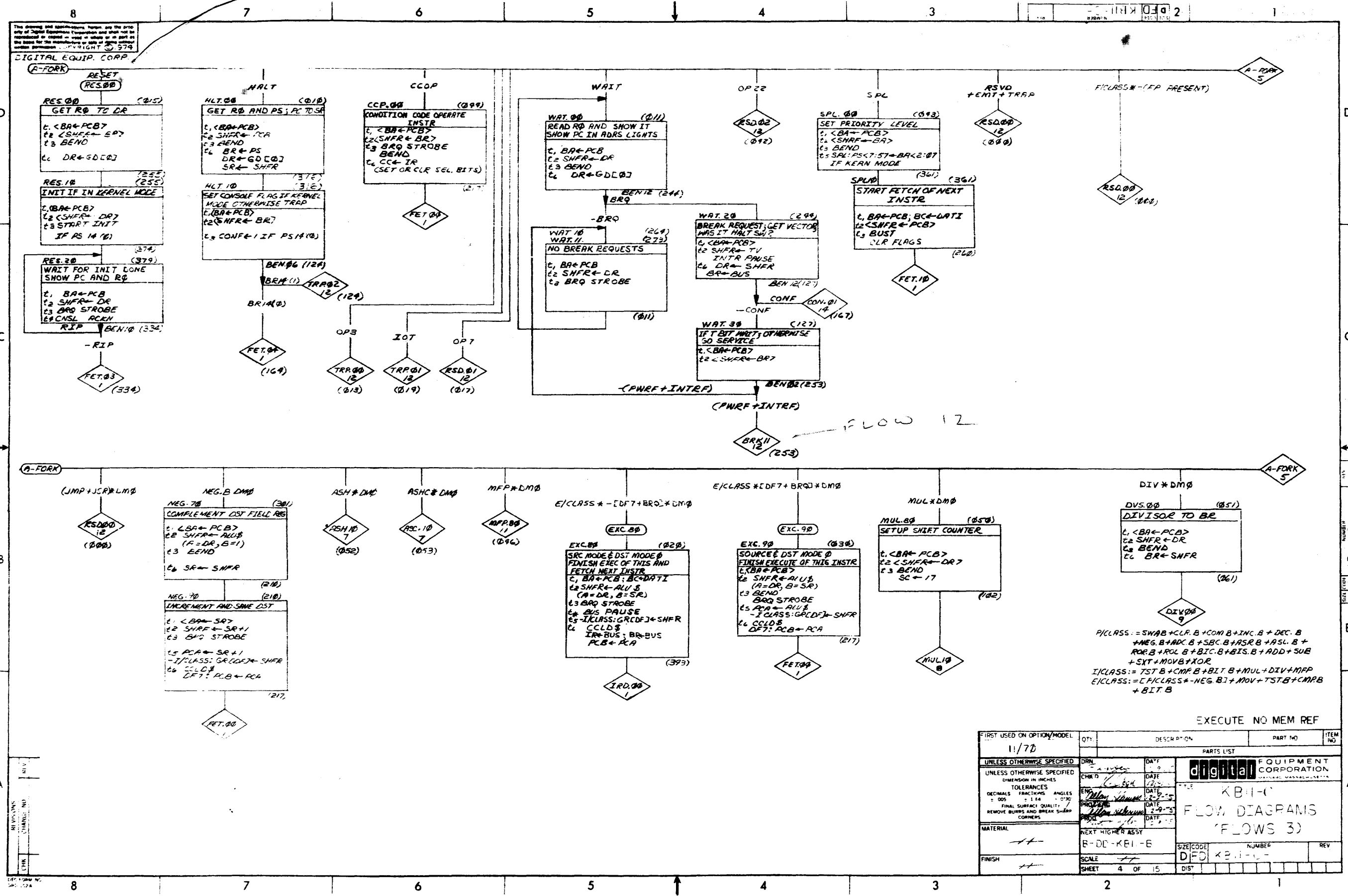


CONTROL; FLOATING; INDEXED SOURCE

FIRST USED ON OPTION-MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
1170		PARTS LIST		
UNLESS OTHERWISE SPECIFIED	DRAW	DATE	digital EQUIPMENT CORPORATION	
DIMENSION IN INCHES	CHK'D	DATE	TITLE KBII-	
TOLERANCES	ENG	DATE	FLOW DIAGRAMS	
DECIMALS	PROJ ENG	DATE	(FLOWS 2)	
ANGLES	PROJ	DATE		
XXX .005	PROOF	DATE		
XX .02		DATE		
X .1		DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY	SIZE CODE	NUMBER	REV
	B-DD-KBII-E	DFD	KBII-	
FINISH	SCALE	SHEET	3 OF 15	
		DIST		

DRAWING NO 1022 (10-84) REV 10-84

ONLY Kernel Mode Can do a Reset



EXECUTE NO MEM REF

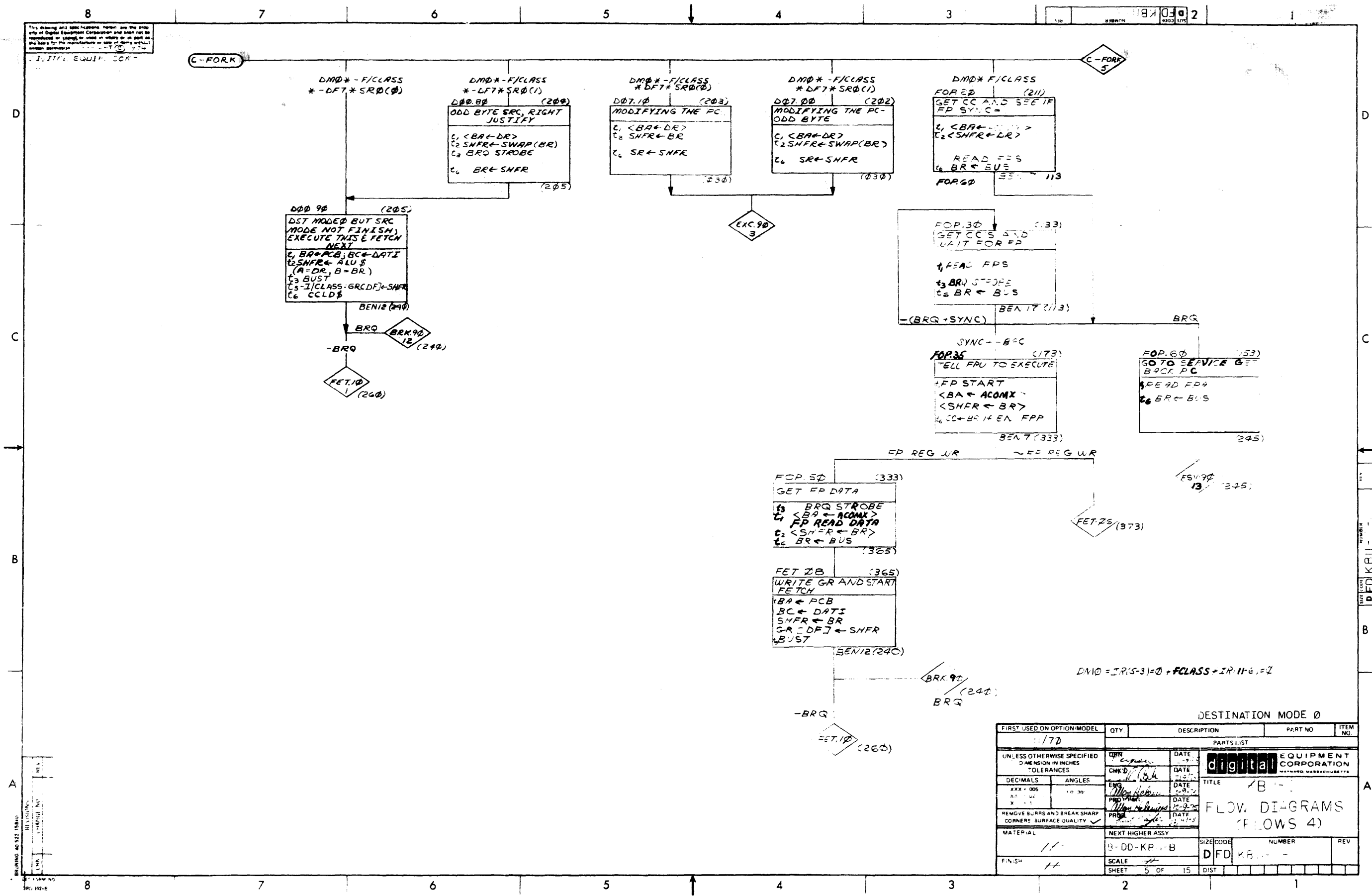
FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
11/70				
UNLESS OTHERWISE SPECIFIED				
DIMENSION IN INCHES				
TOLERANCES				
DECIMALS FRACTIONS ANGLES				
± .005 ± .124 ± .030				
FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS				
MATERIAL				
NEXT HIGHER ASSY				
FINISH				

digital EQUIPMENT CORPORATION
KBI-C
FLOW DIAGRAMS
(FLOWS 3)

SCALE: R-DI-KBI-E
SHEET 4 OF 15
DIST

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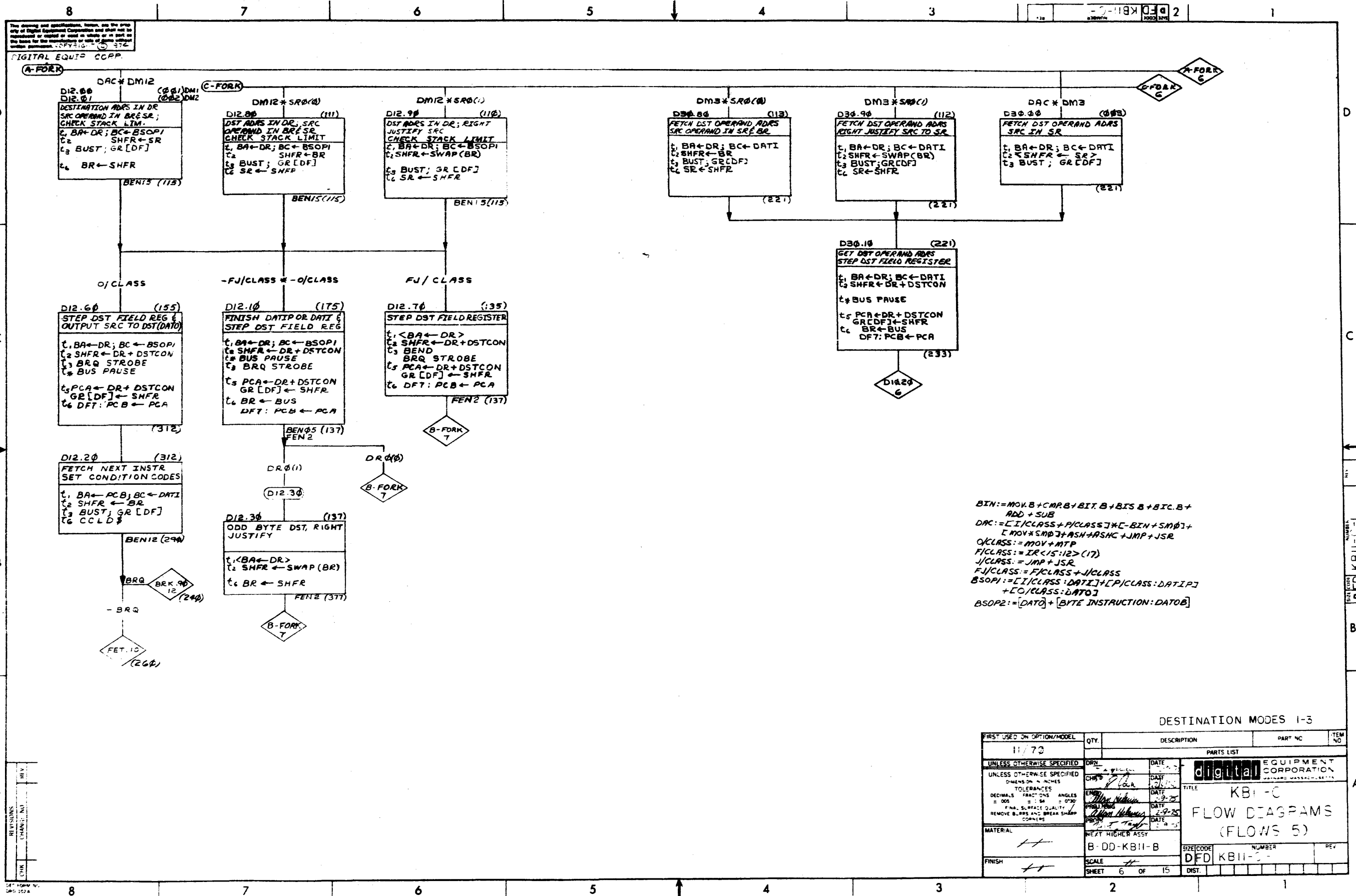
1. TITLE EQUIP. CORP.



BRUNING 40 522 18840
 REVISIONS
 DATE
 BY
 CHECKED
 DATE

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DATE	PARTS LIST	
DECIMALS	ANGLES	DATE	TITLE	
XXX + 005	10 30	DATE	4B-1	
X + 1		DATE	FLOW DIAGRAMS	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE	(FLOWS 4)	
MATERIAL	NEXT HIGHER ASSY	DATE	SIZE CODE	NUMBER
11	B-DD-KR-1-B	DATE	DFD	KB-11
FINISH	SCALE	DATE	SHEET	REV
H	5 OF 15	DIST		

DATE
 BY
 CHECKED
 DATE
 DIST
 SHEET

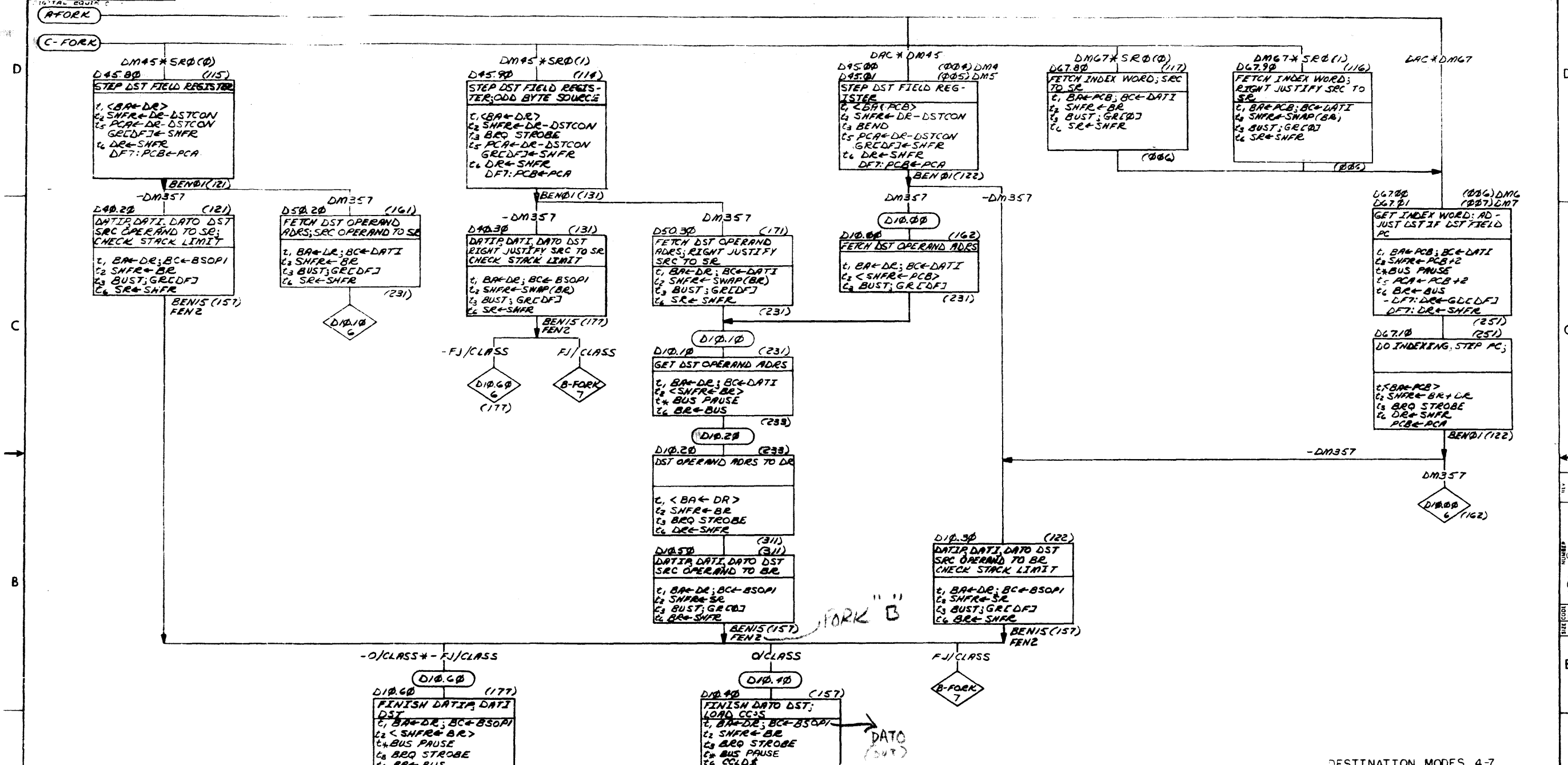


BIN := MOV.B + CMB.B + BIT.B + BIS.B + BIC.B +
 ADD + SUB
 DAC := L.I/CLASS + P.I/CLASS + J.CE - BIN + SM0 +
 L.MOV + SM0 + ASH + ASHC + JMP + JSR
 OCLASS := MOV + MTP
 F.I/CLASS := IR < 15:12 > (17)
 J.I/CLASS := JMP + JSR
 F.J.I/CLASS := F.I/CLASS + J.I/CLASS
 BSOP1 := L.I/CLASS:DATE + P.I/CLASS:DATE +
 L.O/CLASS:DATE
 BSOP2 := [DATE] + [BYTE INSTRUCTION:DATE]

DESTINATION MODES 1-3

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				
UNLESS OTHERWISE SPECIFIED				
DIMENSIONS IN INCHES				
TOLERANCES				
DECIMALS FRACTIONS ANGLES				
= .005 = .005 = .010				
FINAL SURFACE QUALITY				
REMOVE BURRS AND BREAK SHARP CORNERS				
MATERIAL	NEXT HIGHER ASSY			
FINISH	B-DD-KBII-B			
SCALE	SHEET 6 OF 15			
PARTS LIST		EQUIPMENT CORPORATION		
TITLE		KBI-C		
TITLE		FLOW DIAGRAMS (FLOWS 5)		
SIZE/SCALE	NUMBER	REV.		
DFD	KBII-C			

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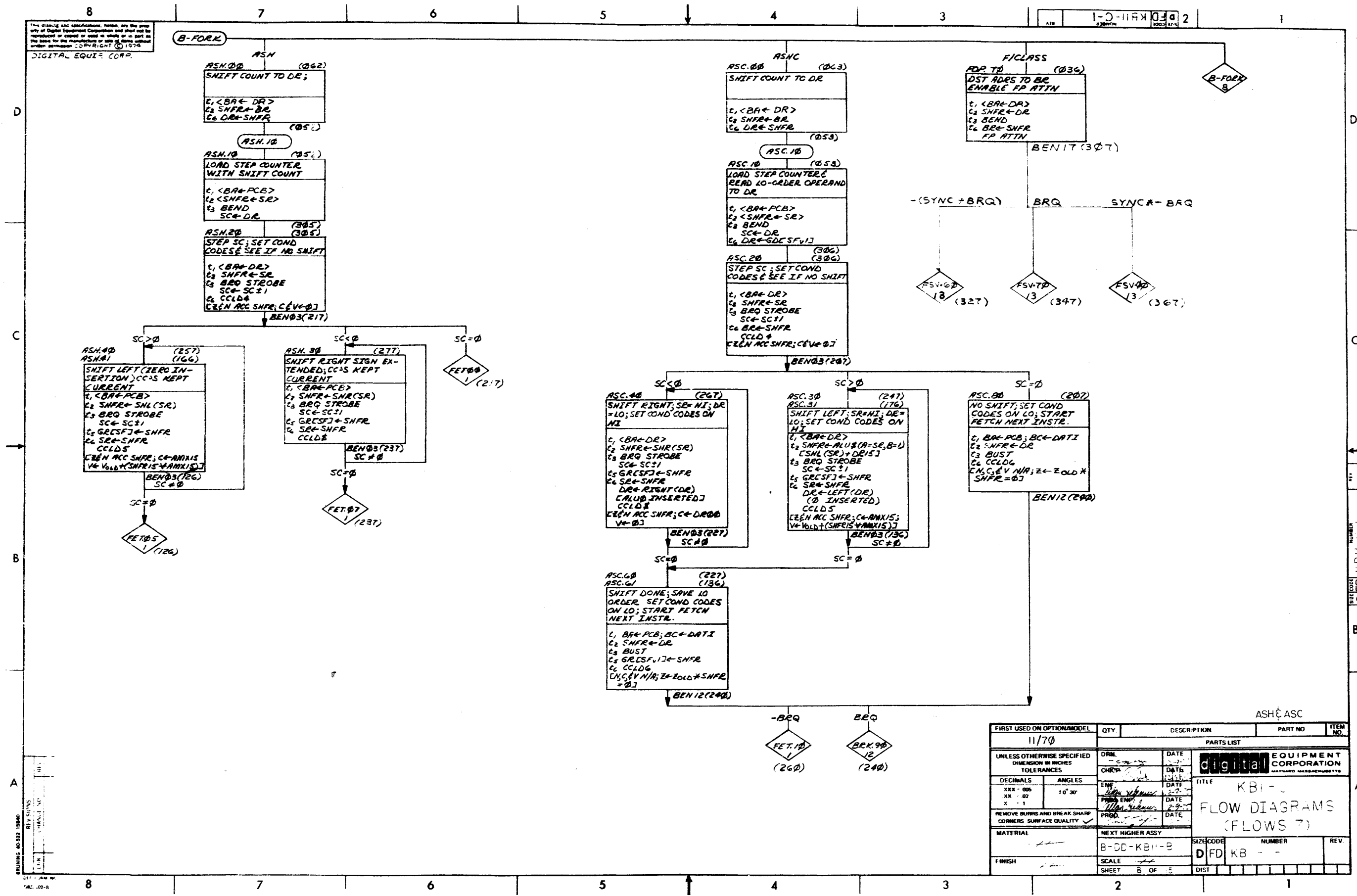


REV.	CHG.	REVISIONS

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70		DESTINATION MODES 4-7		
UNLESS OTHERWISE SPECIFIED				
DIMENSION IN INCHES	DATE	PARTS LIST		
TOLERANCES	DATE	digital EQUIPMENT CORPORATION MAYFORD MASSACHUSETTS		
DECIMALS	DATE	TITLE		
ANGLES	DATE	KRI-C		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE	FLOW DIAGRAMS		
MATERIAL	DATE	FLOWS (6)		
FINISH	DATE			
NEXT HIGHER ASSY	SIZE CODE	NUMBER	REV	
B-00-KBI-B	DFD	311-0-		
SCALE	SHEET	7	OF	15
	DIST			

OUTPUT CLASS

FORK "B"



BRUNING 40332 18840
REV. 10-68

REV. NUMBER
PFD KBI-1

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B-FORK

B-FORK 9

MUL.00 (060)
 MULTPLICAND GOES TO DR; SC ← 17
 1. <BA ← DR>
 2. SNFR ← BR
 3. SC ← 17
 4. DR ← SNFR
 (102)

MUL.10 (102)
 BR GETS CLEARED; DR SHIFTED RIGHT ONE PLACE; BRANCH DETERMINED BEFORE SHIFT
 1. <BA ← DR>
 2. SNFR ← BR - BR
 3. SC ← SC - 1
 4. BR ← SNFR
 5. DR ← RIGHT (DR)
 [ALU0 INSERTED]
 BEN11 (246)

DR0(1) (266)
 MUL.20 (266)
 IF DR0 IS 1 ADD SR TO BR AND COMBINED SHIFT RIGHT; BR ← SR IS FOR SIGN
 1. <BA ← DR>
 2. SNFR ← SHR (BR + SR)
 3. SC ← SC - 1
 4. CCLD ← 4
 5. BR ← SNFR
 6. DR ← RIGHT (DR)
 [ALU0 INSERTED]
 BEN11 (206)

DR0(0) (246)
 MUL.30 (246)
 IF DR0 IS 0 COMBINED SHIFT RIGHT ONE PLACE; SIGN EXTEND ON BR
 1. <BA ← DR>
 2. SNFR ← SNR (BR)
 3. SC ← SC - 1
 4. CCLD ← 4
 5. BR ← SNFR
 6. DR ← RIGHT (DR)
 [ALU0 INSERTED]
 BEN11 (206)

SC=0 DR0(1) (226)
 MUL.50 (226)
 MULTPLICAND NEG; SUBTRACT SR FROM BR AND SHIFT RIGHT; BR ← -SR IS FOR SIGN
 1. <BA ← DR>
 2. SNFR ← ALU8(A ← BR, B ← SR)
 3. BR0 STROBE
 4. GRCSF ← SNFR
 5. BR ← SNFR
 6. DR ← RIGHT (DR)
 [ALU0 INSERTED]
 CCLD ← 9
 [ZEN ACC SNFR; VEC ← 0]
 (310)

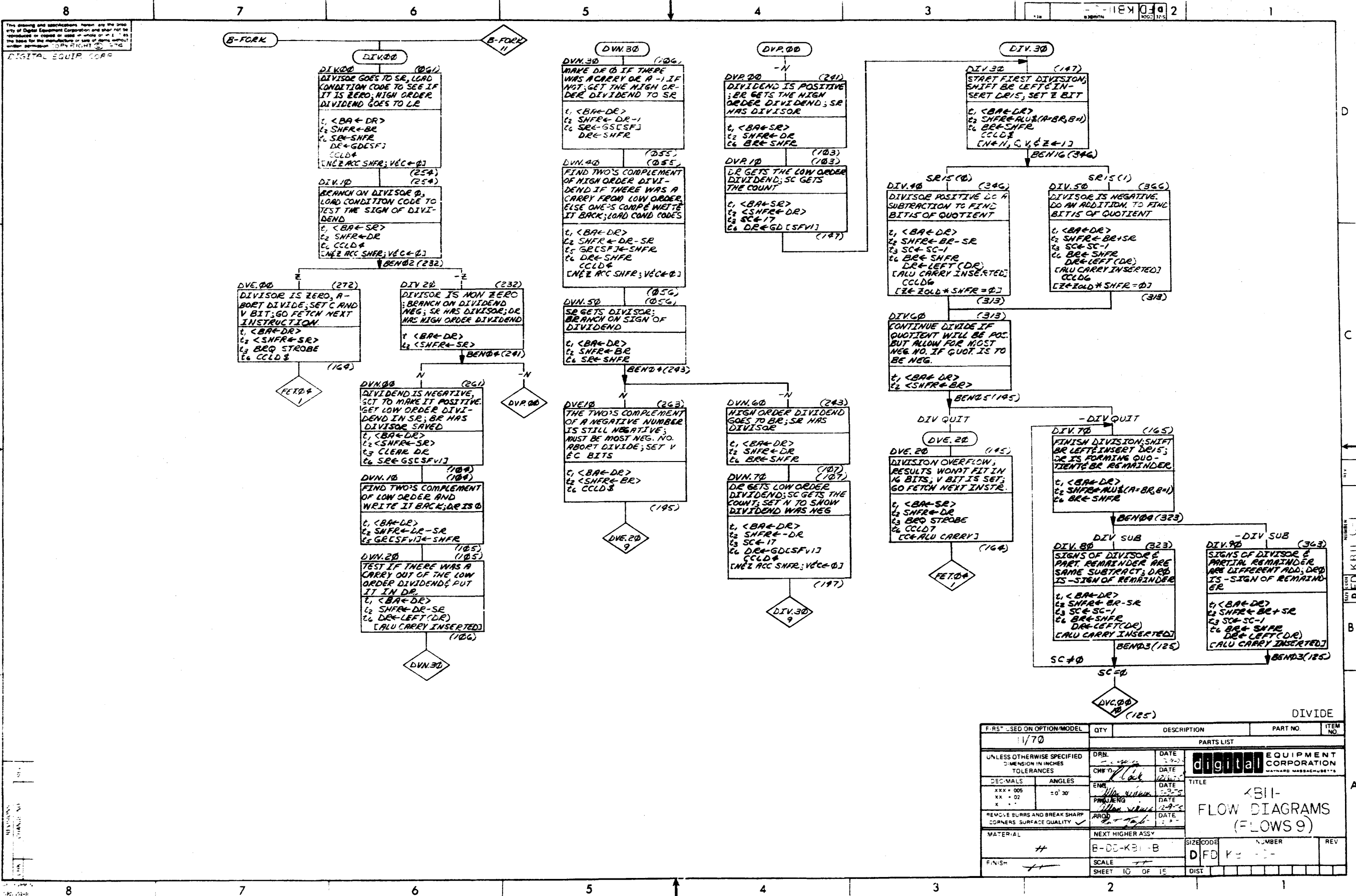
SC=0 DR0(0) (206)
 MUL.40 (206)
 MULTPLICAND POS; SHIFT RIGHT; HIGH ORDER PRODUCT GOES TO GRCSF
 1. <BA ← DR>
 2. SNFR ← SNR (BR)
 3. BR0 STROBE
 4. GRCSF ← SNFR
 5. BR ← SNFR
 6. DR ← RIGHT (DR)
 [ALU0 INSERTED]
 CCLD ← 4
 [ZEN ACC SNFR; VEC ← 0]
 (310)

MUL.60 (310)
 LOW ORDER PRODUCT GOES TO GRCSFV1
 1. BR ← PCB; BR ← DATI
 2. SNFR ← DR
 3. BUST
 4. GRCSFV1 ← SNFR
 5. CCLD ← 8
 BEN12 (246)

FET.10 - BRQ (240)

BRK.90 (240)

MULTIPLY				
REVISED ON OPTION MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
1/70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DWN	DATE	DIGITAL EQUIPMENT CORPORATION	
DIMENSIONS IN INCHES	CHKD	DATE	MAYNARD MASSACHUSETTS	
TOLERANCES				
DECIMALS				
ANGLES				
REVISED DIMS AND BREAK SHARP				
CORNER RADIUS QUALITY				
MATERIAL	NEXT HIGHER ASSY			
	B-00-KB11-B			
SCALE	SIZE CODE			
SHEET 9 OF 15	D E F K B 11 - B			



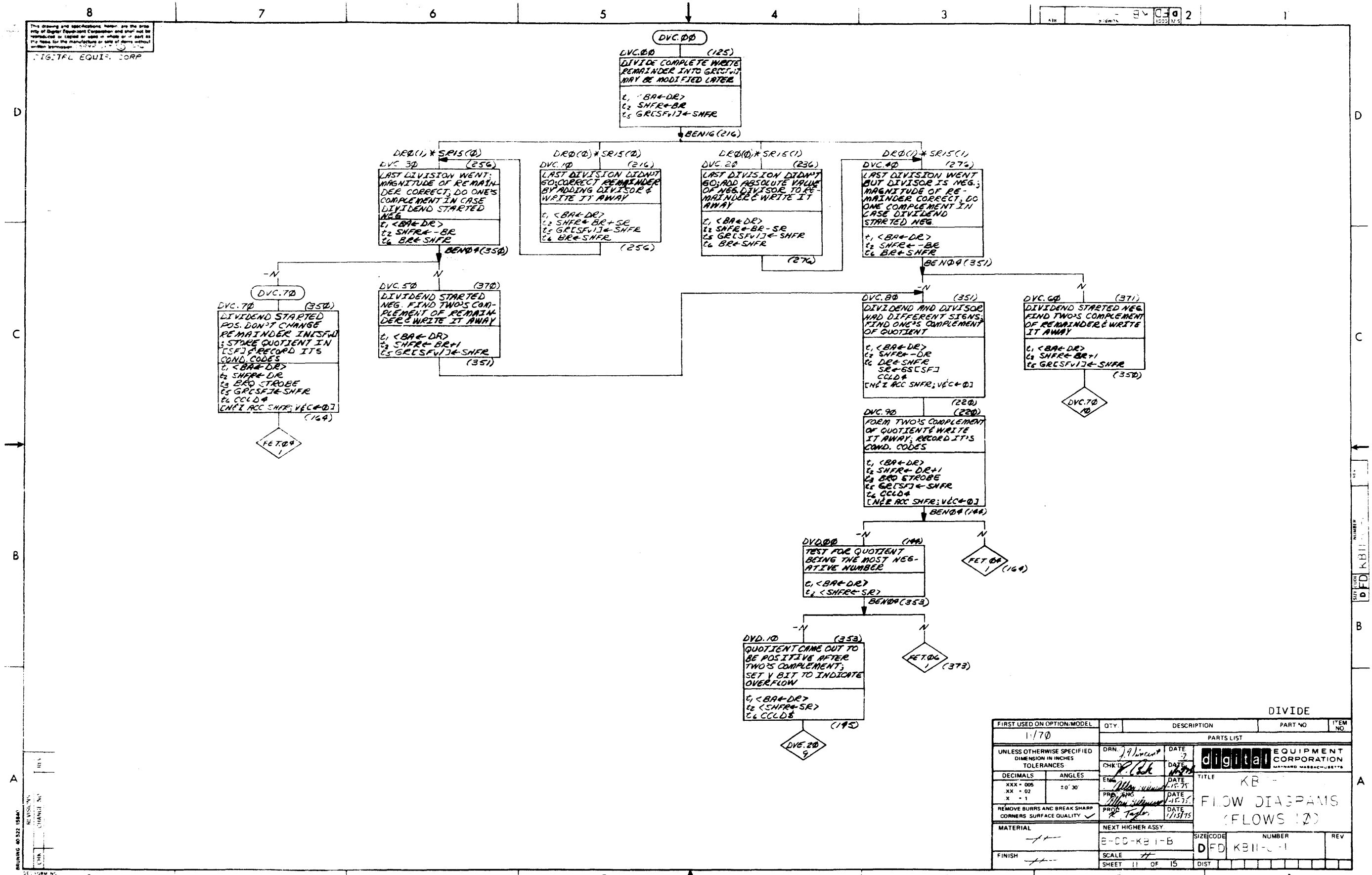
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F.R.S. USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
11/70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DRN	DATE	digital EQUIPMENT CORPORATION NATICK, MASSACHUSETTS	
DIMENSION IN INCHES	CHK'D	DATE		
TOLERANCES			TITLE <BII- FLOW DIAGRAMS (FLOWS 9)	
DECIMALS	ANGLES	DATE		
XXX .005	±0° 30'	DATE	SIZE CODE NUMBER REV D FD K 3 - B	
XX .02		DATE		
X .05		DATE	SCALE SHEET 10 OF 15	
		DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	RRQD	DATE	DIST	
		DATE		
MATERIAL	NEXT HIGHER ASSY		REV	
FINISH			REV	

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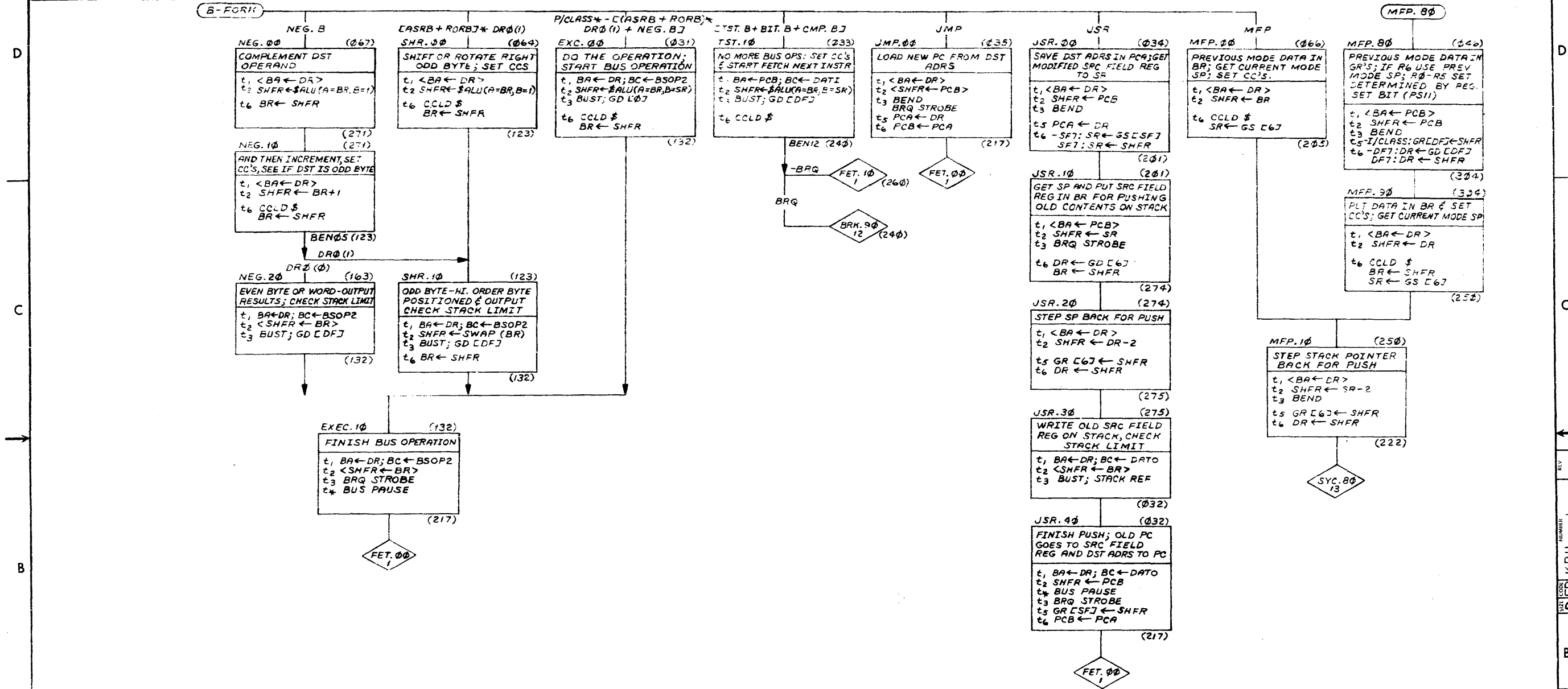
DIGITAL EQUIP. CORP.

REV 2



DIVIDE				
FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
1/170				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN: J. J. [unclear]	DATE: [unclear]	digital EQUIPMENT CORPORATION	
DECIMALS: .005	CHK'D: [unclear]	DATE: 1/15/75	TITLE: KB -	
ANGLES: ±0° 30'	ENG: [unclear]	DATE: 1/15/75	FLOW DIAGRAMS (FLOWS 10)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PREP: [unclear]	DATE: 1/15/75		
MATERIAL: [unclear]	NEXT HIGHER ASSY:	SIZE CODE: B-00-KB1-B		
FINISH: [unclear]	SCALE: [unclear]	NUMBER: DFD KB11-0-1		
SHEET 11 OF 15		REV		

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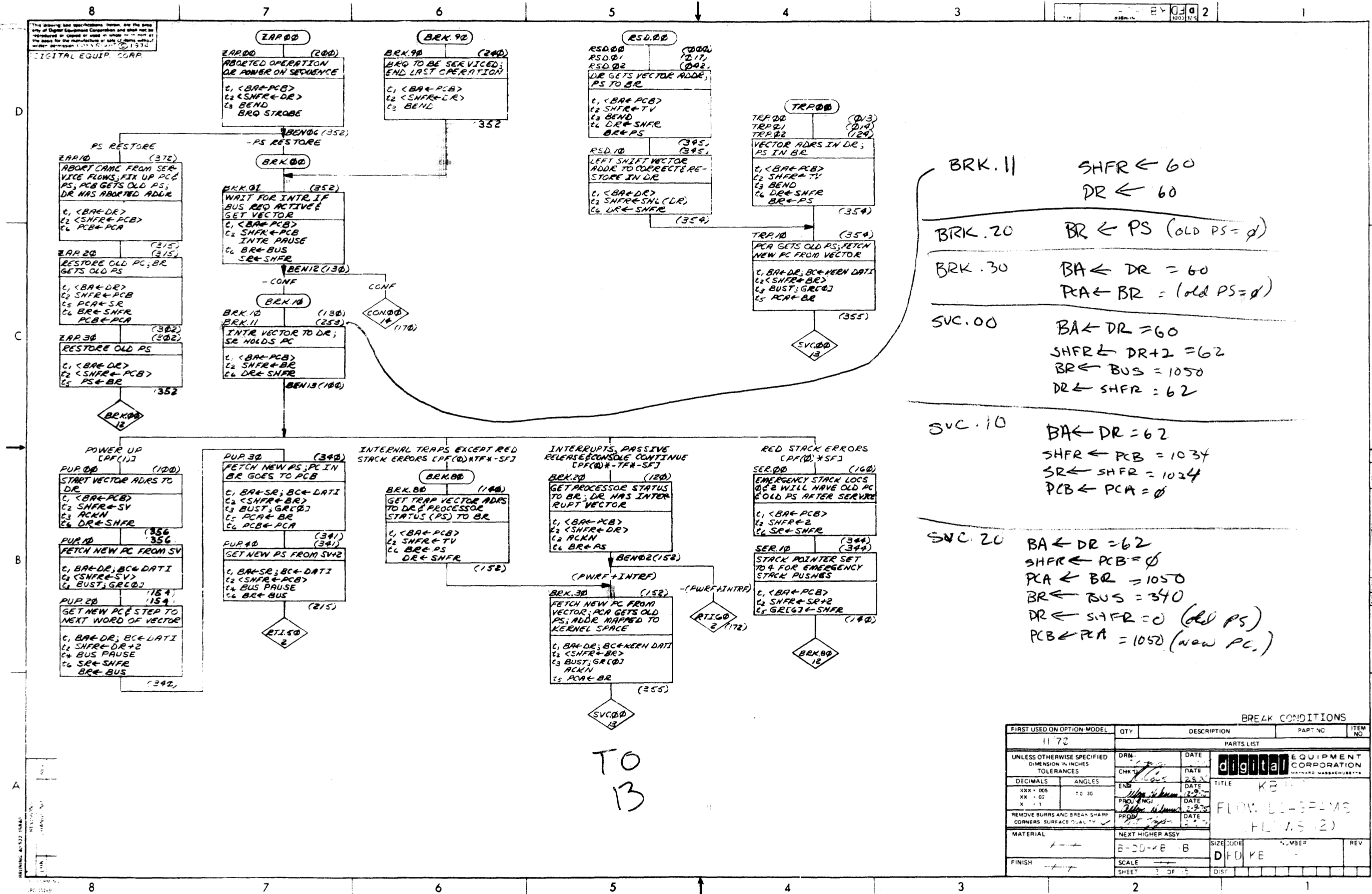


EXECUTE - MEM REF

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
11/70				
PARTS LIST				
DIMENSIONAL TOLERANCE		DRN.	DATE	
DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE SPECIFIED		CHK'D	DATE	
MILLIMETERS	INCHES	ENG	DATE	
ANGLES		PROD	DATE	
THIRD ANGLE PROJECTION	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	NEXT HIGHER ASSY.		
MATERIAL	H	B-00-KB11-B	SIZE CODE	NUMBER
FINISH	H	SCALE NONE	D/DFD KB11-0-1	REV.
		SHEET 12 OF 15	DIST	

TITLE
KB11-
FLOW DIAGRAMS
(FLOWS !!)

FLOW OF EXAMPLE INTERRUPT 1172



TO
B3

BREAK CONDITIONS					
FIRST USED ON OPTION MODEL	QTY	DESCRIPTION	PART NO	ITEM NO	
1172					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRW	DATE	<div style="display: flex; align-items: center; justify-content: center;"> digital EQUIPMENT CORPORATION <small>WALTHAM MASSACHUSETTS</small> </div>		
DECIMALS	CHK'D	DATE			
ANGLES	ENG	DATE			
XXX .005 XX .02 X .1	PROJ ENGR	DATE			
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD	DATE	TITLE FLOW DIAGRAMS (PLANS 2)		
MATERIAL	NEXT HIGHER ASSY				
FINISH	SCALE				
	SHEET 3 OF 5				
			SIZE CODE	NUMBER	REV
			D	FD	KE

SVC. 30
 $SHFR \leftarrow DR = \emptyset$
 $PS \leftarrow BR = 340$ (new PSW)
 $PCA \leftarrow DR = \emptyset$ (old PSW)
 $BR \leftarrow SHFR = \emptyset$

SVC. 40 $DR \leftarrow R6 = 500$

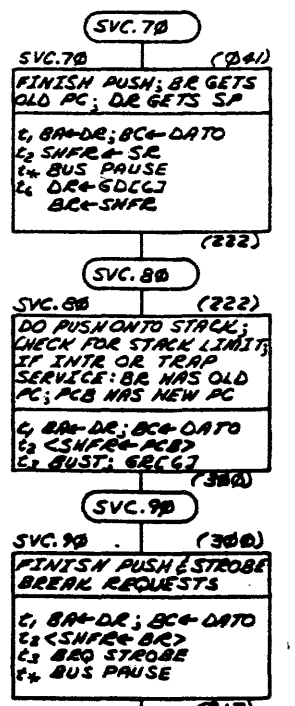
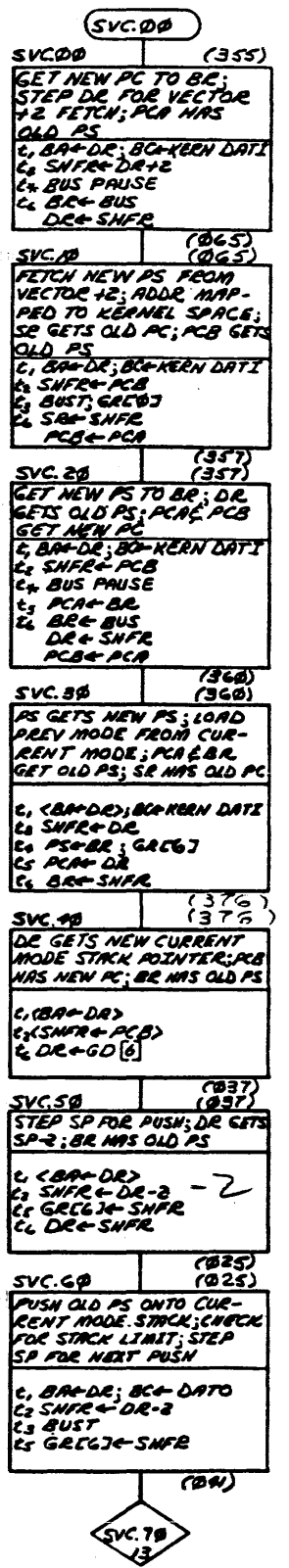
SVC. 50 $SHFR \leftarrow DR - 2 = 476$
 $R6 \leftarrow SHFR = 476$
 $DR \leftarrow SHFR = 476$

SVC. 60 $BA \leftarrow DR = 476$
 $SHFR \leftarrow DR - 2 = 474$
 $R6 \leftarrow SHFR = 474$
 *BUS NOW GETS BR WHICH IS \emptyset (old PSW)

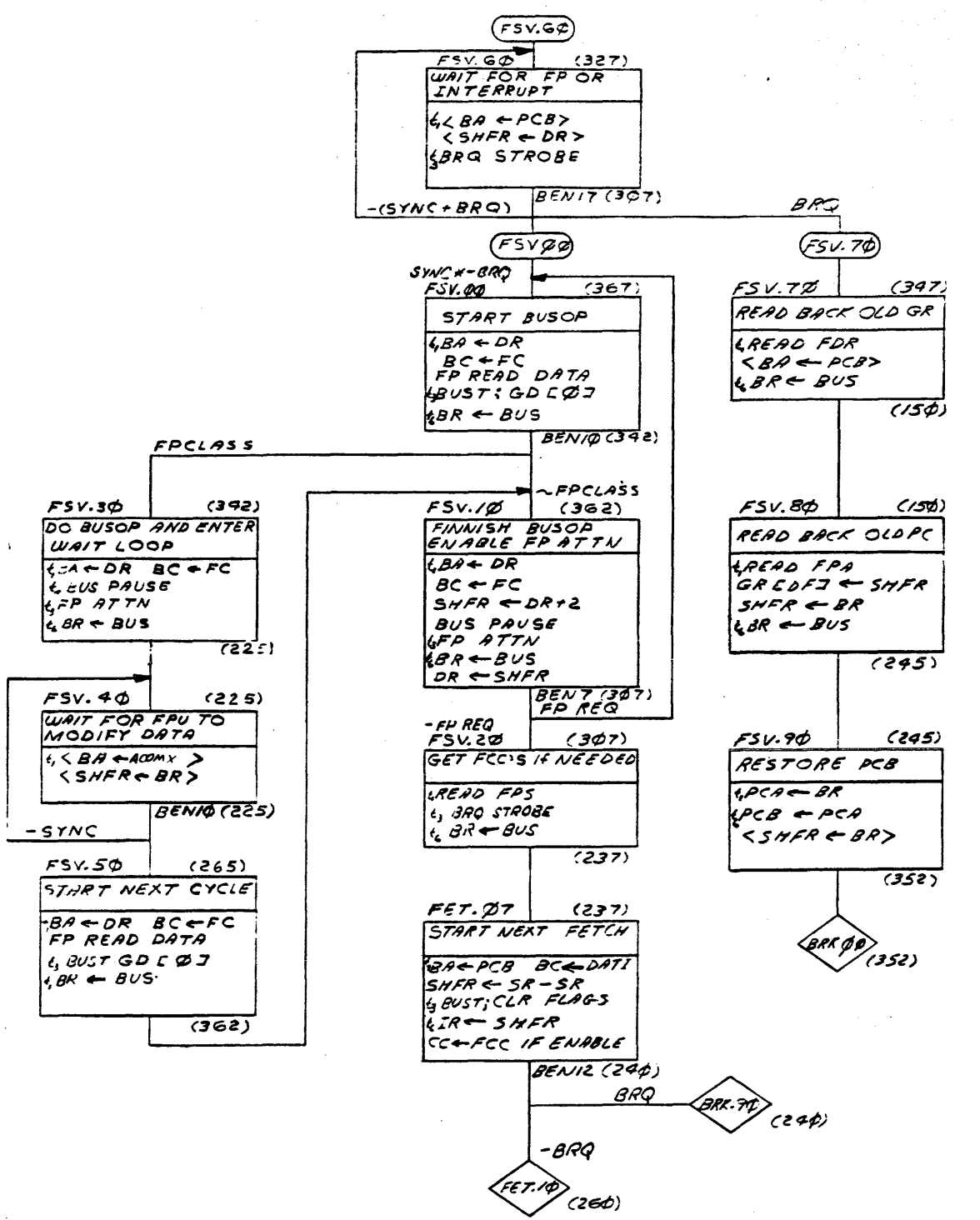
SVC. 70 $BA \leftarrow DR = 476$
 $SHFR \leftarrow SR = 1034$
 $DR \leftarrow R6 = 474$
 $BR \leftarrow SHFR = 1034$

SVC. 80 $BA \leftarrow DR = 474$

SVC. 90 $BA \leftarrow DR = 474$
 $SHFR \leftarrow BR = 1034$
 $BUS \leftarrow BR = 1034$



FLAWS #1



SERVICE SEQUENCE			
FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.
11/70			
UNLESS OTHERWISE SPECIFIED			
DRAWN	DATE	PARTS LIST	
CHECKED	DATE	digital EQUIPMENT CORPORATION	
DECIMALS	ANGLES	TITLE	
XXX - 000	10° 30'	KBII-C	
XXX - 00		FLOW DIAGRAMS	
XXX - 01		(FLOWS 13)	
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY			
MATERIAL	NEXT HIGHER ASSY	SIZE CODE	NUMBER
FINISH	SCALE	D F D	KBII-C-1
	SHEET 14 OF 5	DIST	

REVISIONS
 CHANGE NO.

DATE CHECKED
 D F D KBII-C-1

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DIGITAL EQUIP. CORP.

CON. 00 (170)
 CON. 01 (167)
 DISPLAY ADDRESS DATA;
 PUT SWITCHES INTO BR
 t1 BA←SR
 t2 SHFR←DR
 t6 BR←SW
 BEN18 (070)

EXAM STEP
 EXM. 00 (071)
 STEP THE ADDRESS
 t1 <BA←SR>
 t2 SHFR←SR+2
 t6 SR←SHFR
 (070)
 EXM. 10 (070)
 START BUS OPERATION;
 ASSERT BUS BUSY
 t1 BA←SR; BC←DATI
 t4 BUST; GD←0
 EXM. 20 (174)
 FINISH OPERATION; TURN
 MEMORY ON & WAIT FOR
 REPLY; BR GETS DATA
 t1 BA←SR; BC←DATI
 t4 BUS PAUSE
 t6 BR←BUS
 EXM. 30 (139)
 PUT DATA IN DR FOR
 DISPLAY
 t1 <BA←SR>
 t2 SHFR←BR
 t6 DR←SHFR
 (230)

DEF STEP
 DEP. 00 (174)
 STEP THE ADDRESS
 t1 <BA←SR>
 t2 SHFR←SR+2
 t6 SR←SHFR
 (273)
 DEP. 10 (073)
 OUTPUT DATA IN BR;
 ASSERT BUS BUSY
 t1 BA←SR; BC←DATO
 t2 <SHFR←BR>
 t3 BUST; GD←0
 DEP. 20 (303)
 FINISH OPERATION; TURN
 MEMORY ON & WAIT FOR
 REPLY; DR GETS DATA
 FOR DISPLAY
 t1 BA←SR; BC←DATO
 t2 SHFR←BR
 t4 BUS PAUSE
 t6 DR←SHFR
 (230)

REG EXAM/DEP
 RED. 00 (072)
 LOAD REG ADDR. IN IR'S
 DEST. MODE FIELD
 t1 <BA←SR>
 t2 SHFR←SR
 t6 IR←SHFR
 BEN07 (337)
 REG EXAM
 RXM. 00 (337)
 PUT REG. CONTENTS IN
 DR FOR DISPLAY
 t1 <BA←SR>
 t2 SHFR←PCB
 t6 -DF7: DR←GD LDF
 DF7: DR←SHFR
 (230)

REG EXAM/DEP STEP
 RED. 10 (075)
 STEP THE REG. ADDR.
 & PUT IT IN IR'S DEST.
 MODE FIELD & SR FOR
 DISPLAY
 t1 <BA←SR>
 t2 SHFR←SR+1
 t6 IR←SHFR
 SR←SHFR
 BEN07 (337)
 REG DEP
 RDP. 00 (377)
 WRITE THE REGISTER;
 DR GETS DATA FOR DISPLAY
 t1 <BA←SR>
 t2 SHFR←BR
 t3 GR LDFJ←SHFR
 t4 PCA←BR
 t6 DR←SHFR
 DF7: PCB←PCA
 (230)

START
 KST. 00 (076)
 PCB GETS PC; GO DO RE-
 SET; ACKN FLAG
 t1 <BA←SR>
 t2 <SHFR←DR>
 t3 ACKN
 t6 PCB←PCA
 (015)
 RES. 00
 3

CONT
 CON. 10 (077)
 DISPLAY PC OF NEXT
 FETCH
 t1 <BA←PCB>
 t2 <SHFR←DR>
 (130)
 BRK. 10
 12

LOAD ADRES
 ADR. 00 (078)
 SR & PCA GET SWITCHES;
 CLR DR FOR 0 IN DATA
 LIGHTS
 t1 <BA←SR>
 t2 SHFR←BR
 t3 CLEAR DR
 t6 PCA←BR
 t6 SR←SHFR
 (230)

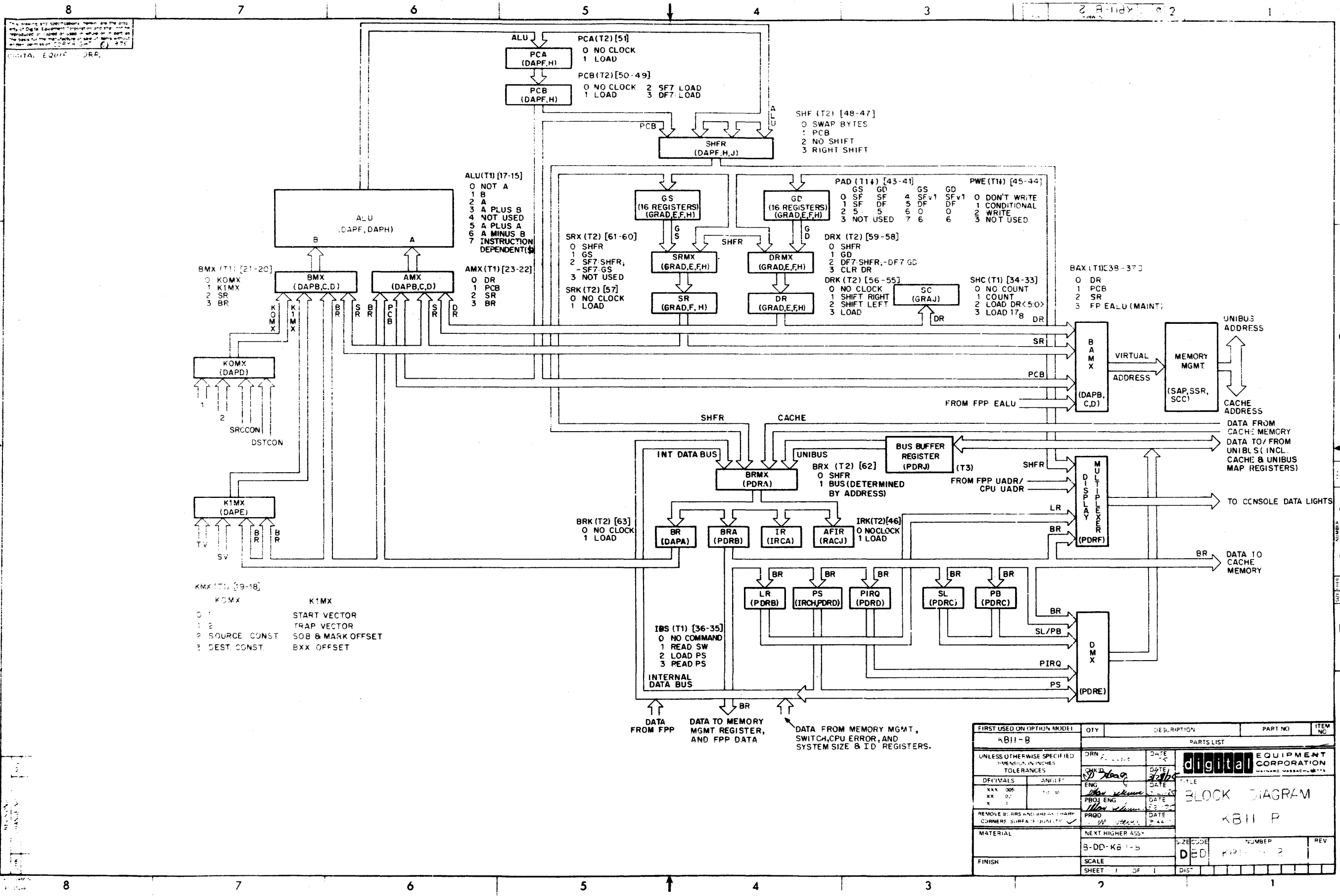
CON. 20 (230)
 ACKNOWLEDGE FUNCTION
 SWITCH
 t1 <BA←SR>
 t2 <SHFR←DR>
 t6 CONS ACKN
 (170)
 CON. 00
 19

CONSOLE			
FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO. ITEM NO.
11/70			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES			
DECIMALS	ANGLES	PARTS LIST	
.005	±0.30	DRN	DATE
.01		CHK	DATE
		ENG	DATE
		PROD. ENG	DATE
		PROD.	DATE
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		TITLE	
MATERIAL		NEXT HIGHER ASSY	
FINISH		SCALE	
		SHEET 15 OF 15	
		SIZE	
		NUMBER	
		REV.	
		DIST	

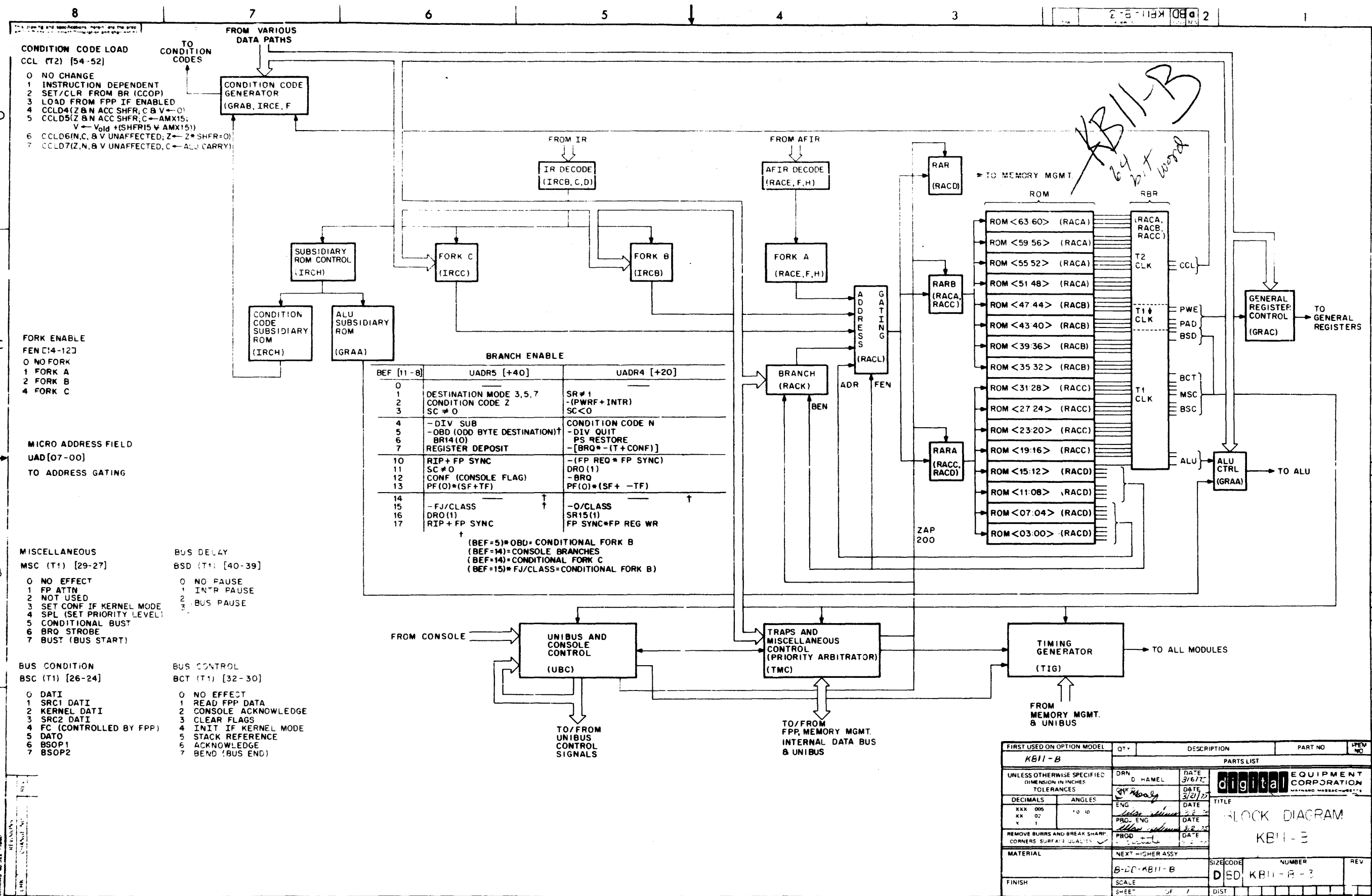
digital EQUIPMENT CORPORATION
 TITLE: KBI-1
 FLOW DIAGRAMS (FLOWS 4)

REVISIONS

NUMBER 1
 DFD KBI-1
 SHEET 15 OF 15



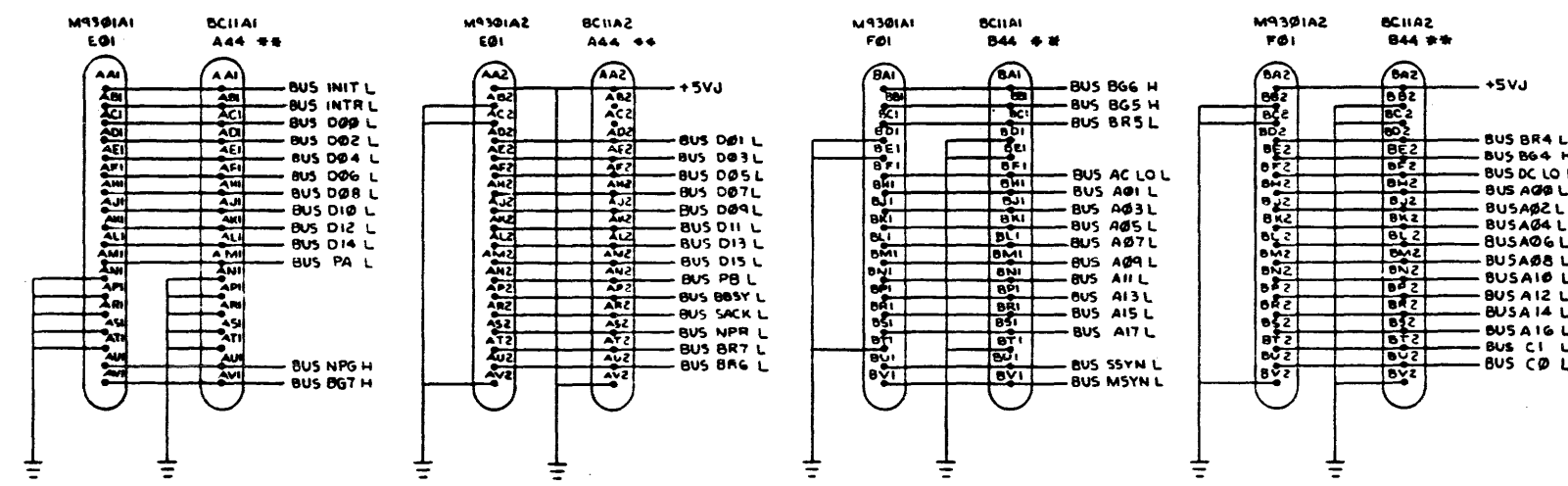
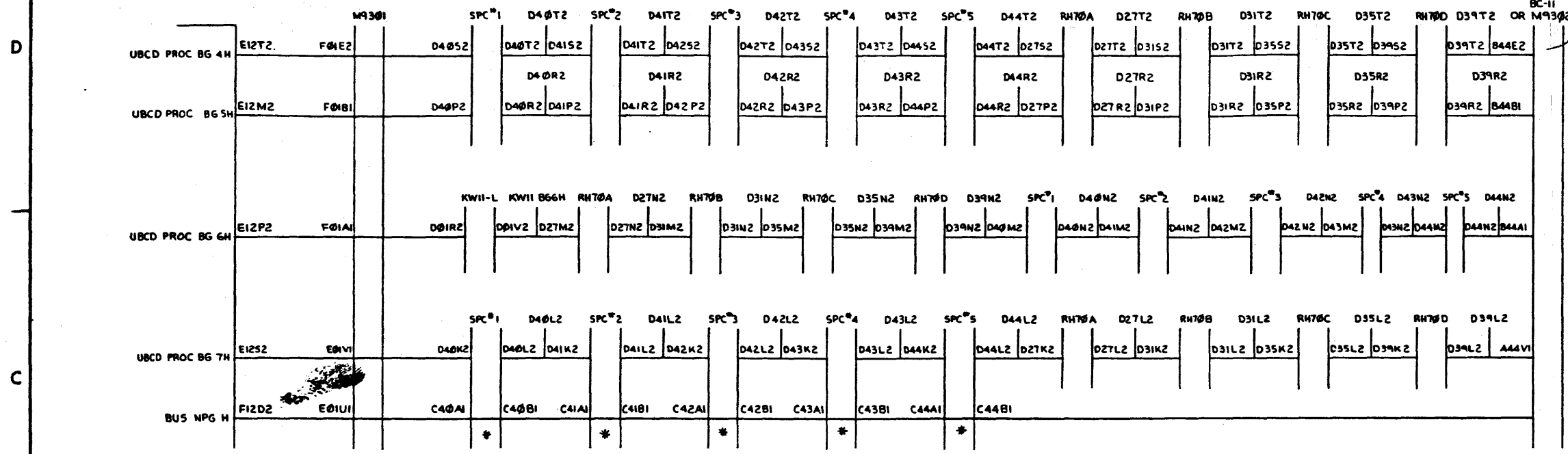
FIRST USED ON OPTION MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
KBII-B		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DEFINIALS	ANGLE	DATE	digital EQUIPMENT CORPORATION	
xxx 006		DATE	MAINTAIN MASSACHUSETTS	
xx 07		DATE	TITLE	
PROJ ENG		DATE	BLOCK DIAGRAM	
PRGD		DATE	KBII P	
MATERIAL	NEXT HIGHER ASSY	DATE	SIZE CODE	NUMBER
FINISH	B-DD-K6 1-5	DATE	D E D	KPI 1-2
	SCALE	DATE	SHEET	REV
	1 OF 1			



*KB11-B
64 bit word*

FIRST USED ON OPTION MODEL	QTY	DESCRIPTION	PART NO	REV NO
KB11-B				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	DRN	DATE	
XXX 005	*0 10	D HAMEL	3/6/72	
XX 02		ENG	DATE	
X 1		PROG. ENG	3/21/72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL				
NEXT HIGHER ASSY				
FINISH				
SCALE				
SHEET OF 1				
PARTS LIST				
digital EQUIPMENT CORPORATION				
TITLE				
BLOCK DIAGRAM				
KB11-B				
SIZE CODE	NUMBER	REV		
DIED	KB11-B-3			
DIST				

SLOT AA "SACK" TURNAROUND

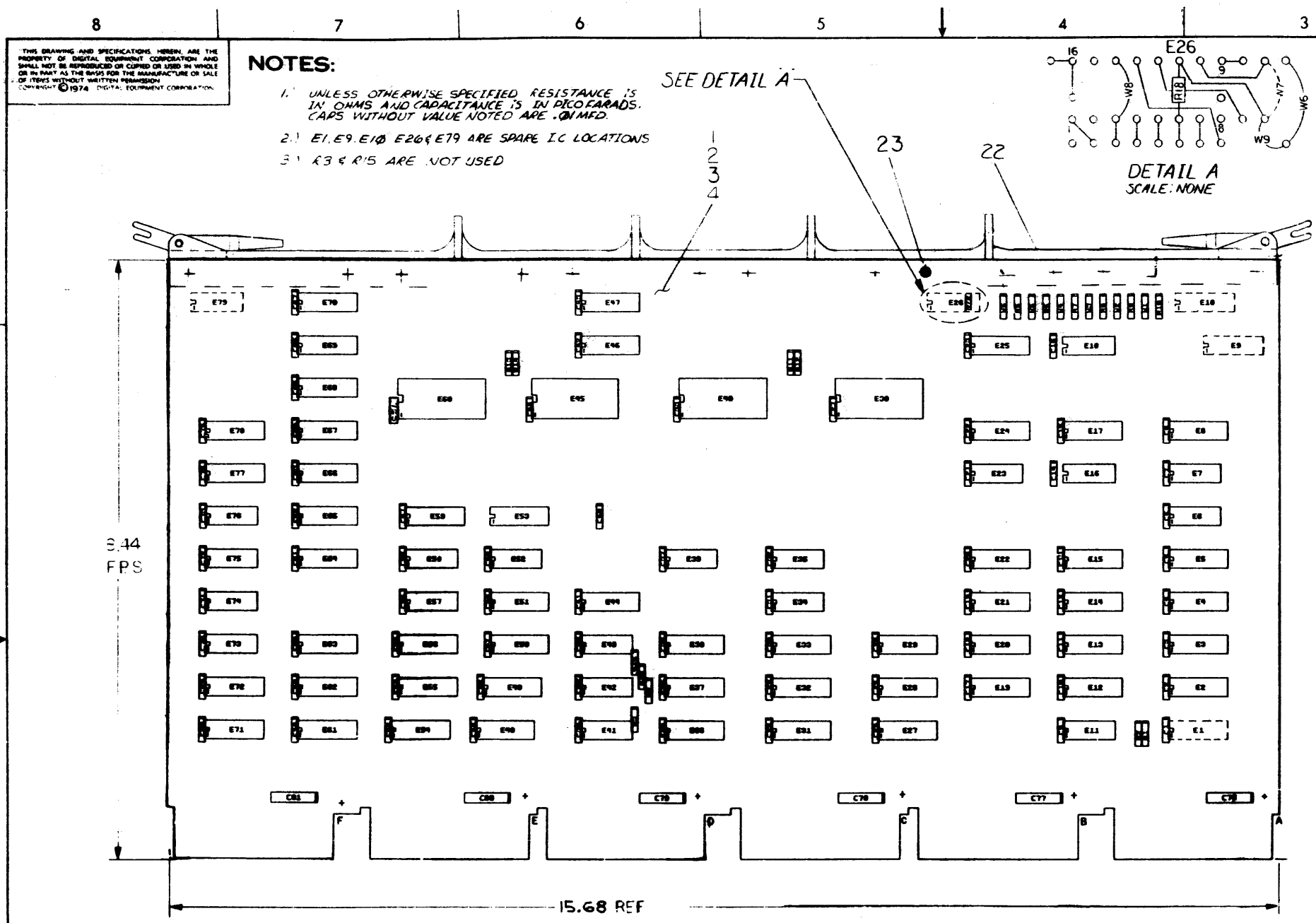


* A TO B JUMPER CONNECTION TO BE REMOVED IF AN NPG DEVICE IS INSERTED IN AN S.P.C. SLOT.
 ** IF NO UNIBUS DEVICES ARE PRESENT, REPLACE BC11 CABLE WITH M9302 UNIBUS TERM.
 RL11, RX211

REV	CHANGE NO	DATE	BY
1	1	11/18/75	UJVA
2	1	11/18/75	UJVA
3	1	11/18/75	UJVA
4	1	11/18/75	UJVA
5	1	11/18/75	UJVA
6	1	11/18/75	UJVA
7	1	11/18/75	UJVA
8	1	11/18/75	UJVA

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
KB11				
PARTS LIST				
DIMENSIONAL TOLERANCE		DRN	DATE	
DIMENSIONS ARE INCHES UNLESS OTHERWISE SPECIFIED		3/5/75		
THIRD ANGLE PROJECTION		CHK'D	DATE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		ENG.	DATE	
NEXT HIGHER ASSY.		PROJ. ENG.	DATE	
MATERIAL		PROD.	DATE	
FINISH		TITLE		
SCALE NCNE		UNIBUS CABLE AND GRANT CHAIN		
SHEET 1 OF 1		SIZE CODE	NUMBER	REV.
		DIC	KB11-B-7	A

REV. A
NUMBER
D I C KB11-B-7



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NOTES:

1. UNLESS OTHERWISE SPECIFIED RESISTANCE IS IN OHMS AND CAPACITANCE IS IN PICO FARADS. CAPS WITHOUT VALUE NOTED ARE .01MFD.
2. E1, E9, E10, E26, E79 ARE SPARE IC LOCATIONS
3. R3 & R15 ARE NOT USED

SEE DETAIL A

DETAIL A
SCALE: NONE

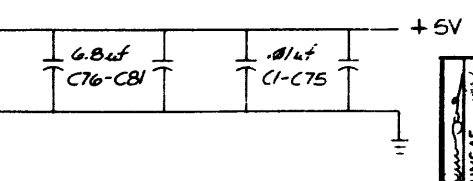
DEC NO.	QTY	DESCRIPTION	PART NO.	ITEM NO.
DEC 74182-1	8	16		
DEC 74S181	12	24		
DEC 74S174	8	16		
DEC 74S157	8	16		
DEC 74S153	8	16		
IC TYPE	GND	+5V		

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

IC PIN LOCATIONS

AA2, AV1, BA2, BV1, CA2, CV1, DA2, DV1, EA2, EV1, FA2, FV1

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



REV	CHG	NO.	DATE	BY	REVISIONS
1		0001	11/78	R. BOUCHER	INITIALS
2		0002		R. BOUCHER	REVISED

FIRST USED ON OPTION MODEL 11/78

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

ETCH BOARD REV A

DRW. Ferguson	DATE 11/74	
CHK'D. Ferguson	DATE 11/74	
ENG'D. Ferguson	DATE 11/74	
PRG'D. Ferguson	DATE 11/74	

TITLE: DATA PATHS (DAP)

SIZE CODE: DICS M8130-0-1

NUMBER: B-DD-KB11-B

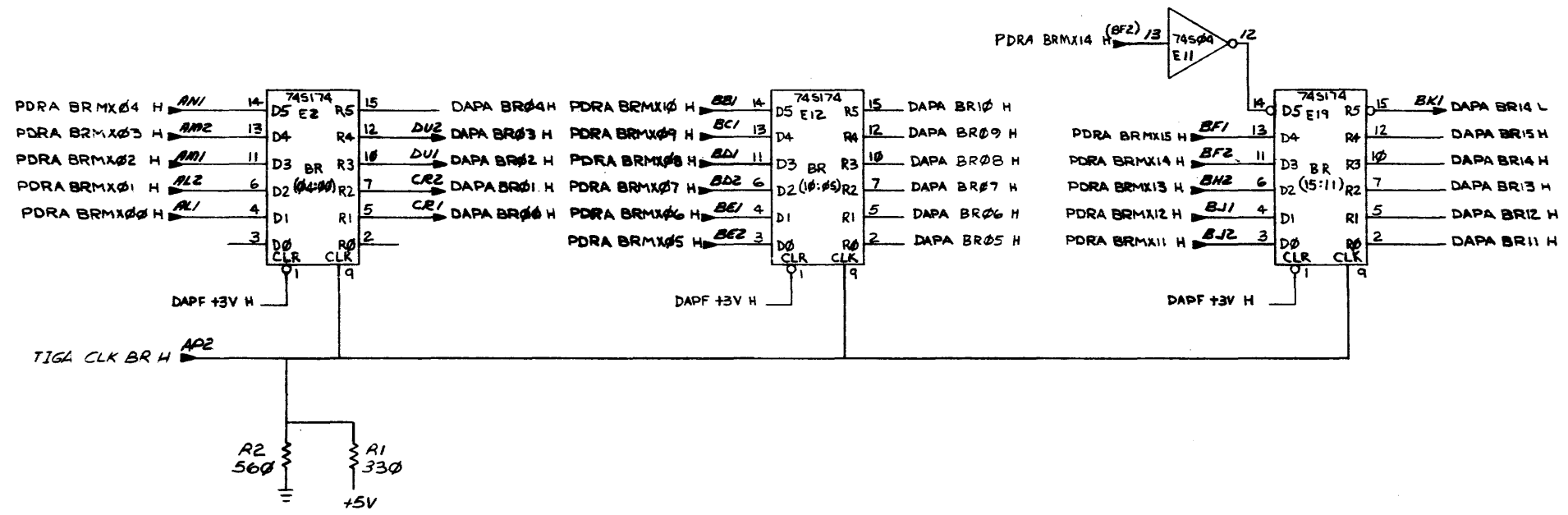
SCALE: 1:1

SHEET 1 OF 9

REF	DESCRIPTION	PART NO.	ITEM NO.
REF	X-Y COOR HOLE LOCATION	K-CD-M8130-0-1	1
REF	ASSY/DRILLING HOLE LAYOUT	EAM-M8130-0-5	2
REF	MODULE ECO HISTORY	B-MM-M8130-0-6	3
1	ETCHED CIRCUIT BOARD	5011347	4
75	C1 THRU C75	CAP, .01uF, 100V, 20%	1001010-01 5
5	C76 THRU C81	CAP, 6.8uF, 35V, 20%	10000067 6
7	R5 THRU R10, R18	RES, 10K, 1/4W, 5%	1300479 7
3	R1, R11, R13	RES, 330R, 1/4W, 5%	1300295 8
2	R4, R16	RES, 150R, 1/4W, 5%	3002250 9
3	R2, R12, R14	RES, 500R, 1/4W, 5%	1301890 10
1	E42	I.C. DEC 74S44	1910542 11
4	E30, E40, E45, E60	I.C. DEC 74S181	1910531 12
3	E23, E35, E74	I.C. DEC 74S00	1910532 13
2	E16, E34	I.C. DEC 74S10	1910536 14
4	E7, E43, E57, E75	I.C. DEC 74S11	1910537 15
1	E52	I.C. DEC 74S20	1910539 16
2	E48, E49	I.C. DEC 74S157	1910548 17
19	E3, E4, E5, E6, E13, E14, E15, E17, E20, E21, E22, E24, E25, E27, E28, E29, E31, E32, E33, E36, E37, E38, E50, E51, E53, E54, E55, E56, E59, E61, E62, E63, E64, E65, E66, E71, E72, E77, E78	I.C. DEC 74S153	1910547 18
1	E44	I.C. DEC 74182-1	1910551 19
9	E2, E12, E19, E60, E67, E46, E47, E69, E70	I.C. DEC 74S174	1910550 20
8	E6, E11, E18, E39, E41, E58, E73, E76	I.C. DEC 74S04	1910534 21
1		HANDLE, MODULE	1210711-2 22
12		EYELET	9006732 23
W/R		WIRE, #30 BUS (RETROFIT)	9105740-55 24

DICS M8130-0-1

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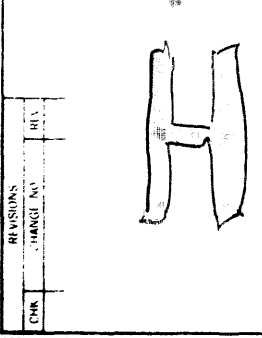
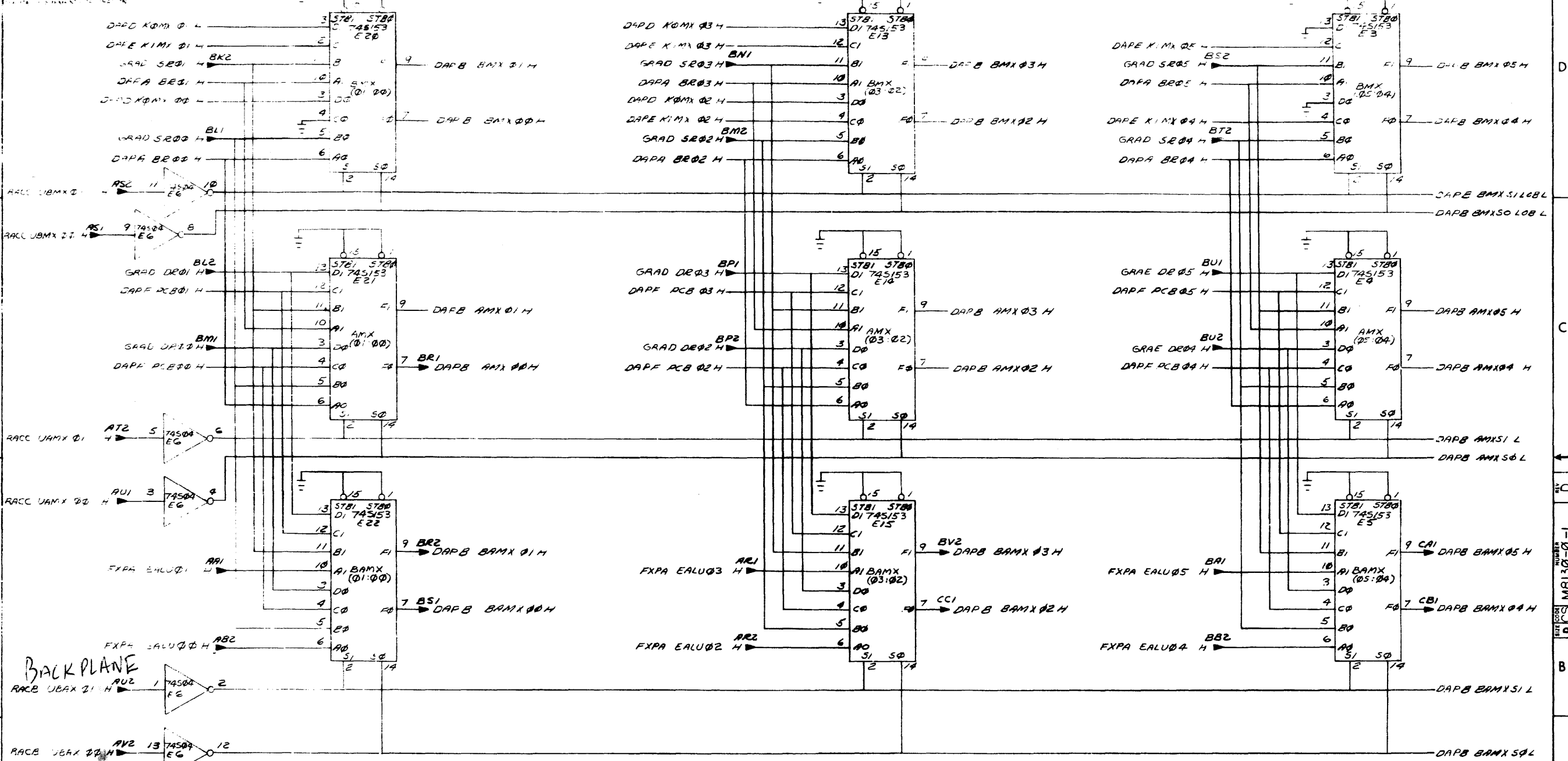


BUS REGISTER SLOTS

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN <i>Audman</i> DATE 11/74	EQUIPMENT CORPORATION	
DECIMALS ANGLES		<i>Targson</i> DATE 11/74	MILWAUKEE, WISCONSIN	
.XXX = .008		<i>Bob Jenkins</i> DATE 11/74	TITLE	
.XX = .02		<i>Bob Jenkins</i> DATE 11/74	DATA PATHS	
.X = .1		<i>Bob Jenkins</i> DATE 11/74		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL		NEXT HIGHER ASSY.	SIZE CODE	NUMBER (DAPA)
+		B-DD-KB11-8	D CS	M8130-0-1
FINISH		SCALE	SHEET	REV.
+		2 OF 9	DIST.	D

REV D
PART NO. CS M8130-0-1

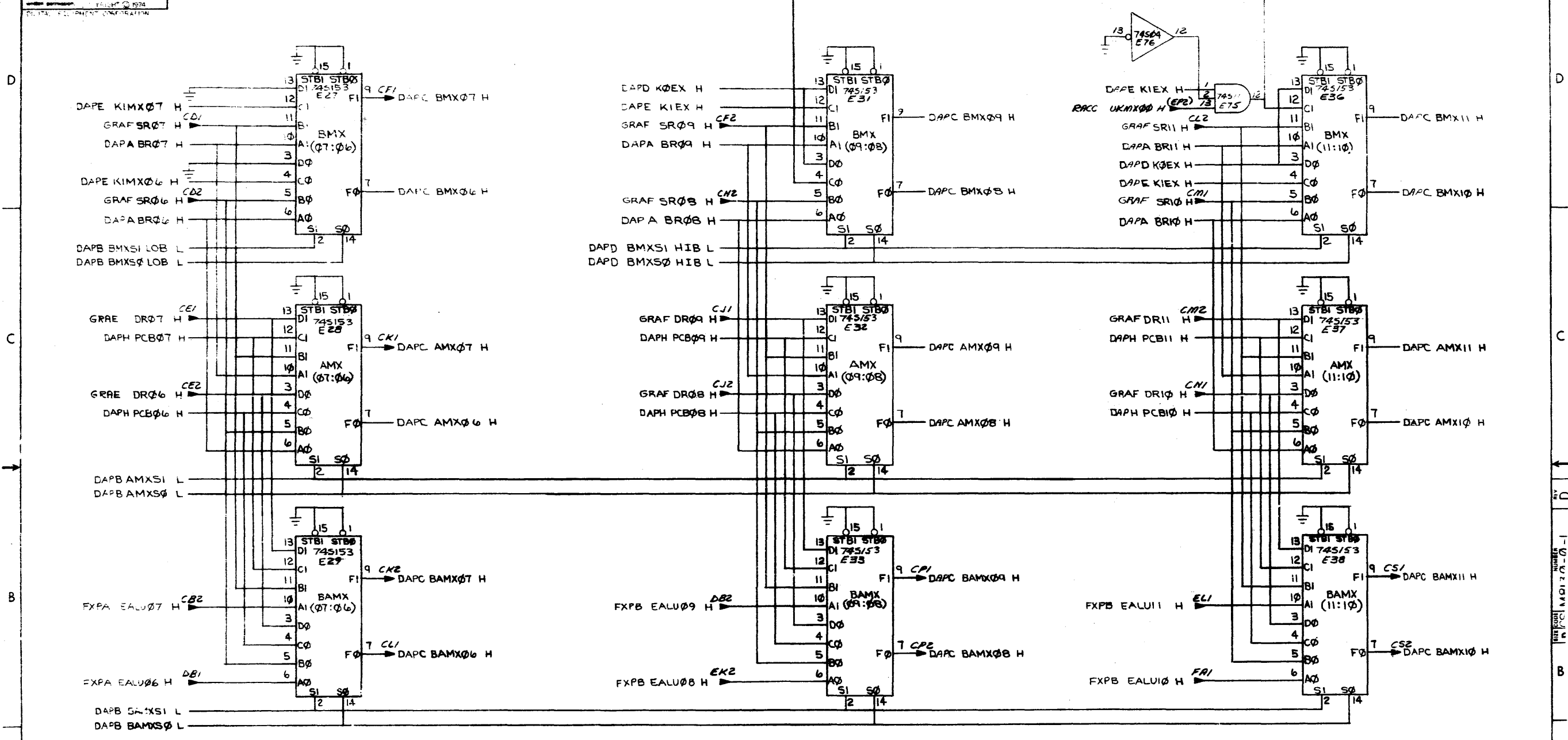
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UBAX 01	00	UAMX 01	00	UBMX 01	00
L	L DR	L	L DR	L	L KMX
L	H PCB	L	H PCB	L	H KMX
H	L SR	H	L SR	H	L SR
H	H FP MAINT	H	H BR	H	H BR

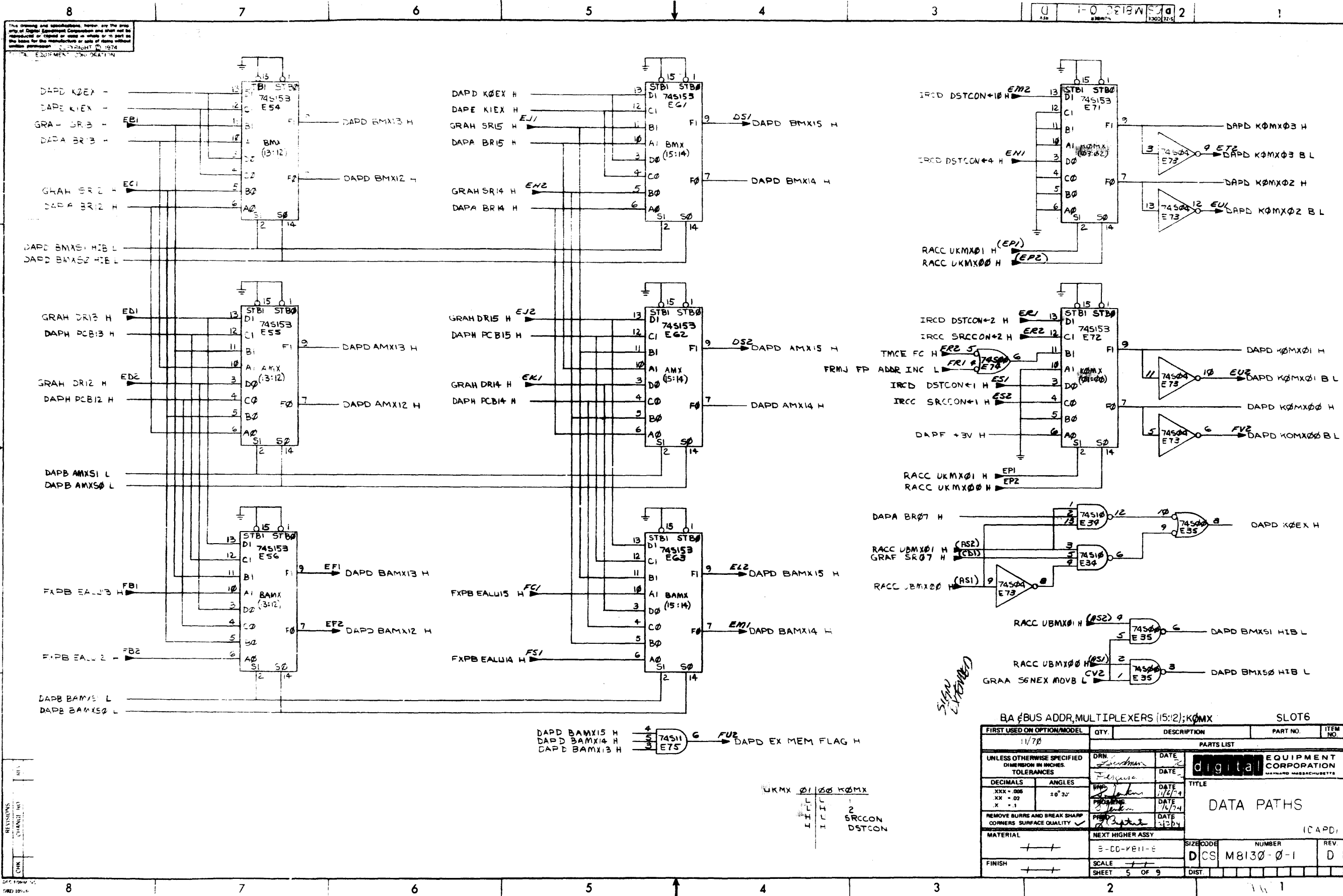
FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
1170					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN	DATE	EQUIPMENT CORPORATION	
DECIMALS	ANGLES	ENG	DATE	TITLE	
.XXX - .005	± 0° 30'	PROJ ENG	1/16/74	DATA PATHS	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD	DATE	(DAPB)	
MATERIAL		NEXT HIGHER ASSY.		SIZE CODE	NUMBER
FINISH		SCALE		DCS	M8130-0-1
		SHEET 3 OF 5		DIST.	REV D

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FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
78					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN	DATE	PARTS LIST	
DECIMALS	ANGLES	DATE	DATE	digital EQUIPMENT CORPORATION	
XXX - 006	±0° 30'	DATE	DATE	MAYHARD MASSACHUSETTS	
XX - 02		DATE	DATE	TITLE	
X - 1		DATE	DATE	DATA PATHS	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE	DATE	(D.A.F.C.)	
MATERIAL	NEXT HIGHER ASSY.	SCALE	SIZE CODE	NUMBER	REV
H	E DD 4211-H	H	D CS	M8130-0-1	D
FINISH	SHEET	4 OF 9	DIST.		

REVISIONS	CHANGE NO.	REV.
CHK		



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REVISIONS
 CHANGE NO.
 CHK

DATE 10-1-74

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70			PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES		DRN	DATE	digital EQUIPMENT CORPORATION	
DECIMALS		FIN	DATE	MAYNARD MASSACHUSETTS	
ANGLES		PROBING	DATE	TITLE	
XXX - .008		PROBING	DATE	DATA PATHS	
XX - .02		PROBING	DATE	ICAPDI	
X - .3		PROBING	DATE	MATERIAL	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		FIN	DATE	NEXT HIGHER ASSY	
FINISH		3-CC-VEN-E	SIZE CODE	NUMBER	REV
		SCALE	DCS	M8130-0-1	D
		SHEET 5 OF 9	DIST.		

UKMX 01 00 K0MX
 1 2 SRCCON
 1 2 DSTCON

SIGNAL
 UNDEFINED

REVISIONS
 CHANGE NO.
 CHK

DATE 10-1-74

DATE 10-1-74

DATE 10-1-74

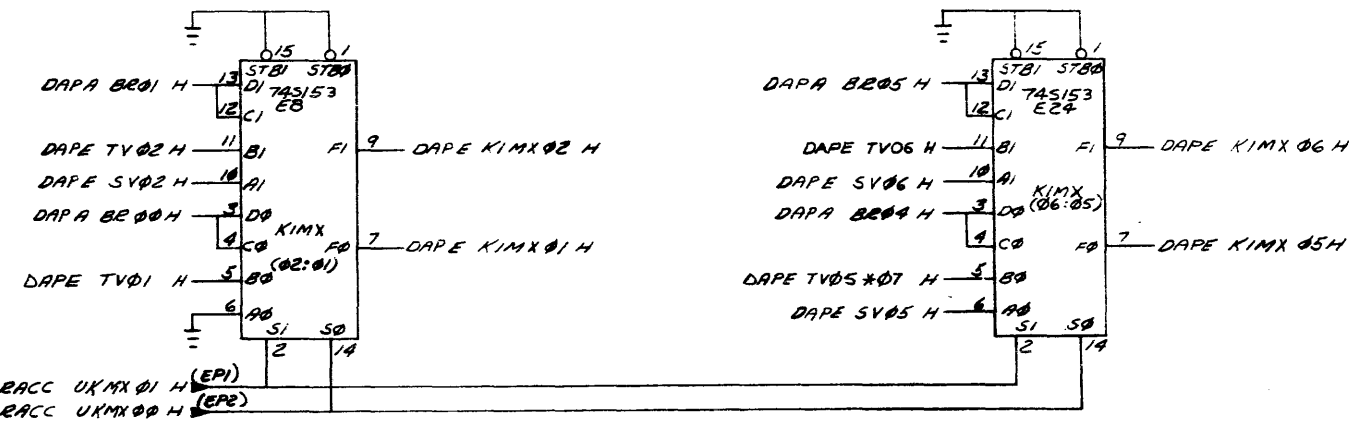
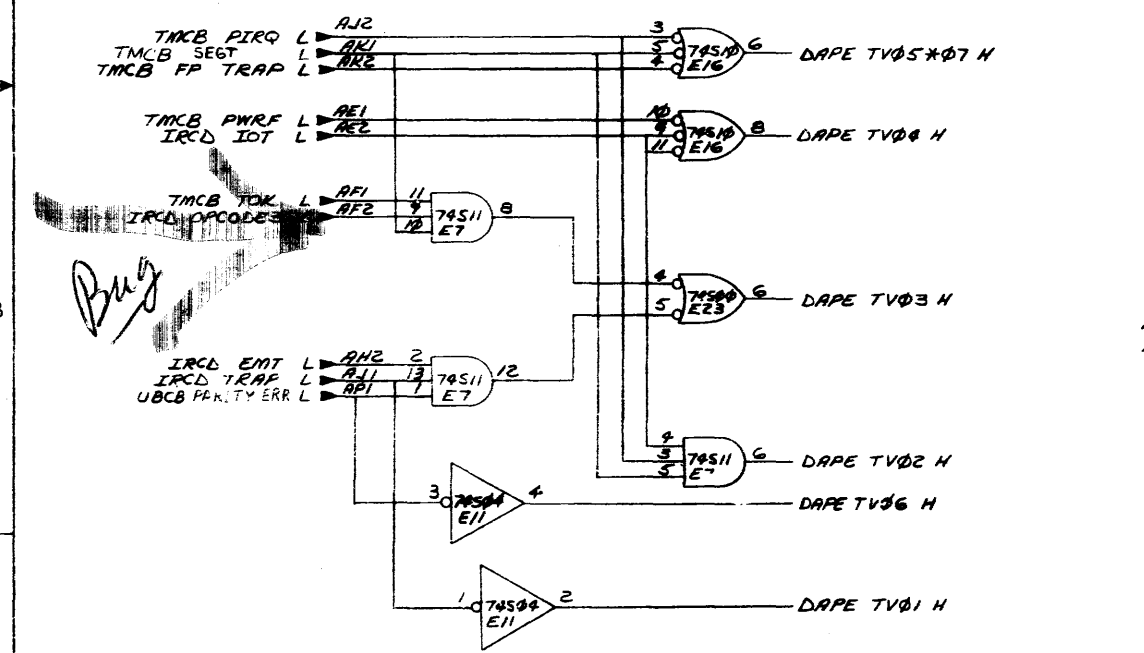
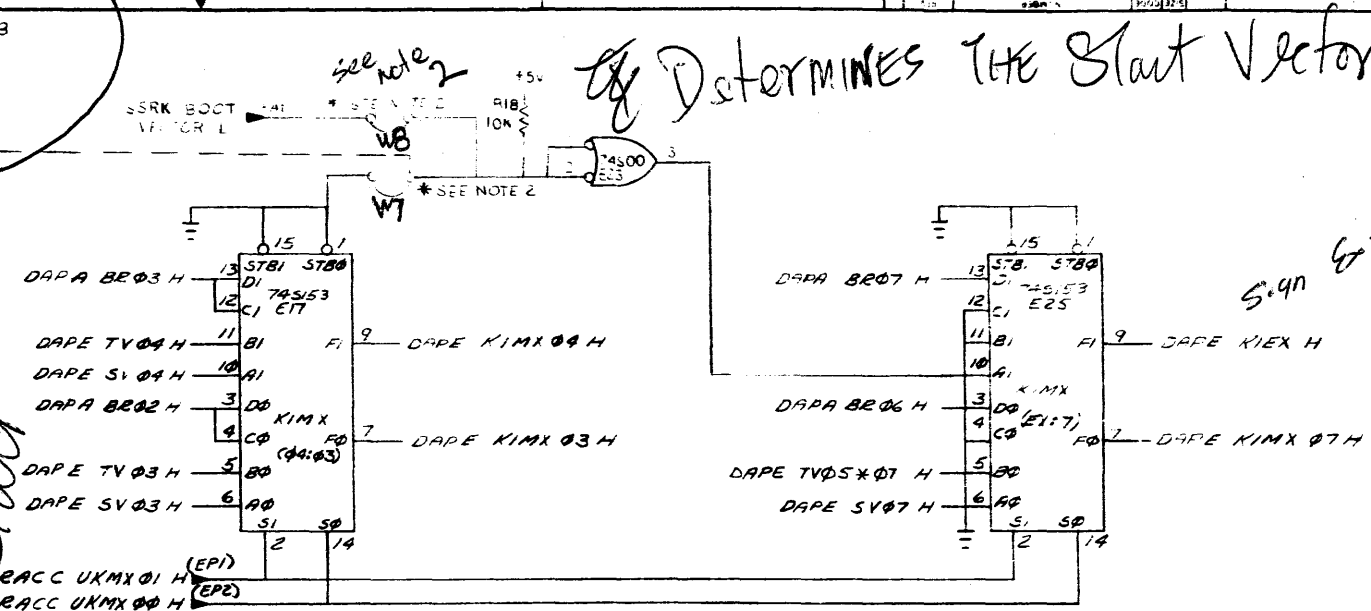
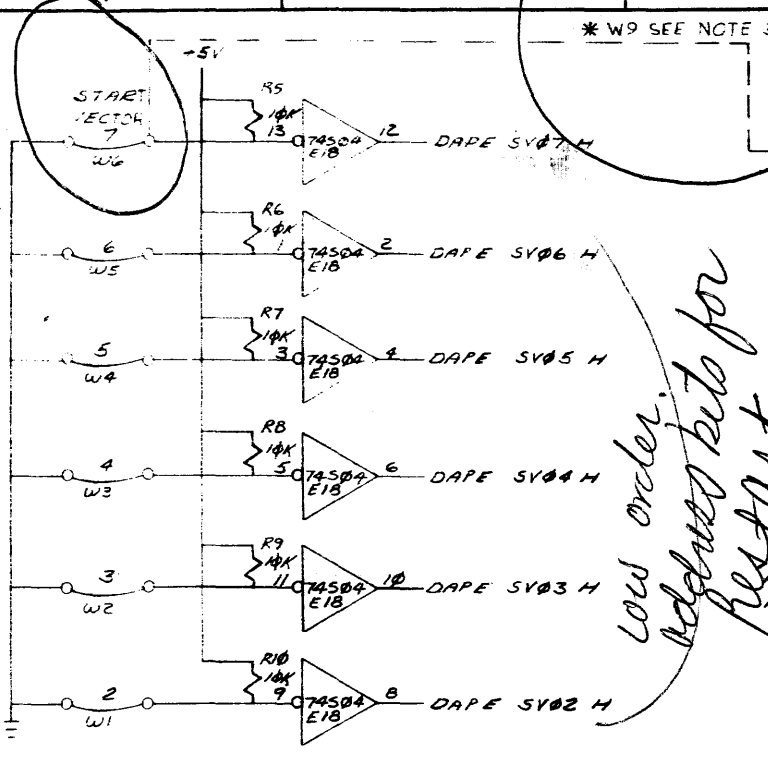
DATE 10-1-74

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USE ONLY WITH W0 AND W6 OUT JUMPER ARRANGEMENT

W0 IN	773000+XXX
W0 OUT	773000+XXX
W1 IN	773000+XXX
W1 OUT	773000+XXX
W2 IN	773000+XXX
W2 OUT	773000+XXX
W3 IN	773000+XXX
W3 OUT	773000+XXX
W4 IN	773000+XXX
W4 OUT	773000+XXX
W5 IN	773000+XXX
W5 OUT	773000+XXX
W6 IN	773000+XXX
W6 OUT	773000+XXX

XXX USED IN BITS 00 AND 01 ALWAYS 0



	TRAP VECTOR	UKMX 01	00	KIMX
RSVD INST	4 (4 LEFT SHIFTED)	L	L	SV
TOK+3	14	L	H	TV
IOT	20	H	L	SOB & MARK DISPLACEMENT
PNEF	24	H	H	BEIX DISPLACEMENT
EMT	30 (16 LEFT SHIFTED)			
TRAP	30 (16 LEFT SHIFTED)			
RECP	240			
RT TRAP	244			
PERF	250 - memory hqmt.			

NOTE: 1
LEFT SHIFTING TAKES PLACE ON FLOWS 12 R50.10

NOTE: 2
W8 OUT IF: AN M930 IS INSTALLED IN CPU SLOT 1, W7 IS IN, W6 AND W9 ARE IN, NOR M9301 ECO*5 IS NOT INSTALLED.

NOTE: 3
W9 IN FOR 773200 (FROM EA1)+XXX (7BIT OFFSET FROM W6-W5 INCLUDING BITS 00 AND 01 WHICH ARE ALWAYS 0) IF W6 AND W7 ARE OUT.

ROM & RESTART AFTER POWER FAIL

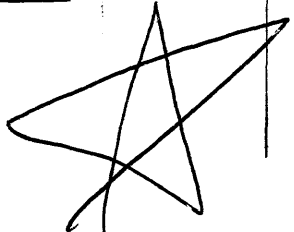
W6 OUT FOR 773000 (FROM EA1)+XXX (8 BIT OFFSET FROM W1-W6 INCLUDING BITS 00 AND 01 WHICH ARE ALWAYS 0) IF W7 IS OUT.

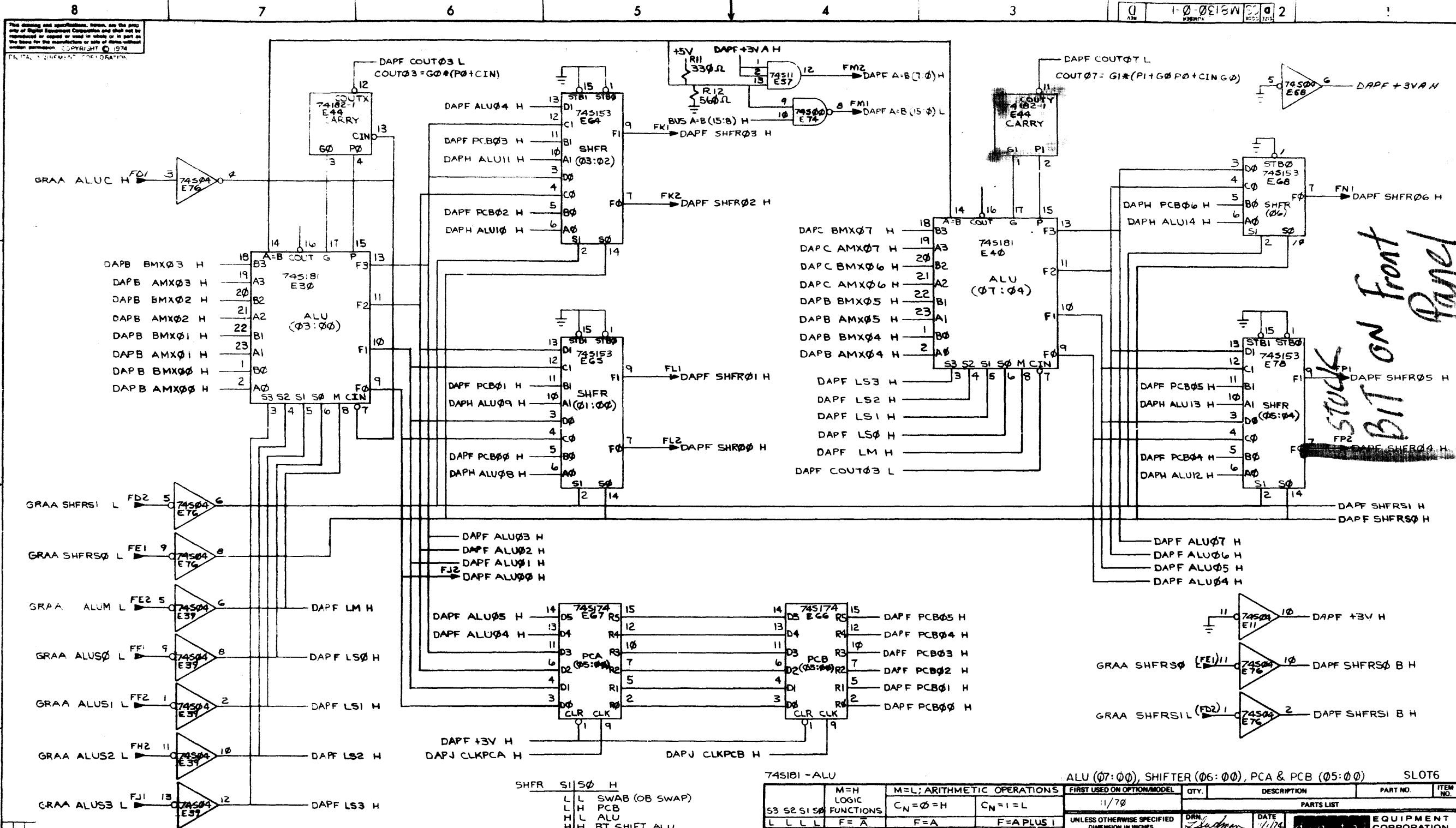
NOTE: 4
ATYPICAL 11/70 CONFIGURATION WITH M9301 ECO*5 INSTALLED AND AN M9301-YC IS W1, W3, W8, W9 IN AND W2, W4, W5, W6 AND W7 OUT. M9312 CONFIGURATION IS THE SAME EXCEPT W3 IS REMOVED. REFER TO SHEET 1 FOR LOCATION.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11.70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES				
TOLERANCES				
DECIMALS	ANGLES	DATE 11/11/70		
XXX - .005	±0°30'	DATE 11/11/70		
.X - .1		DATE 11/11/70		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL				
NEXT HIGHER ASSY.				
FINISH				
SCALE			SIZE CODE	NUMBER
SHEET 6 OF 9			DCS	M8130-0-1
DIST.			REV	D

REVISIONS	CHANGING NO.	REV.

REV. 11/70 M8130-0-1





REVISIONS

NO.	DATE	BY	DESCRIPTION
1			
2			
3			

SHFR SI S0 H

L L	SWAB (OB SWAP)
L H	PCB
H L	ALU
H H	RT. SHIFT ALU

745181 - ALU

M=H LOGIC FUNCTIONS	M=L ARITHMETIC OPERATIONS	FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PARTS LIST	PART NO.	ITEM NO.
S3 S2 S1 S0	C _N =0=H	11/70					
L L L L	F=A						
L L H H	F=0						
L H L L	F=A+B						
L H H H	F=A-B						
H L L L	F=A+B						
H L H L	F=B						
H L H H	F=AB						
H H L L	F=1						
H H H L	F=A+B						
H H H H	F=A						

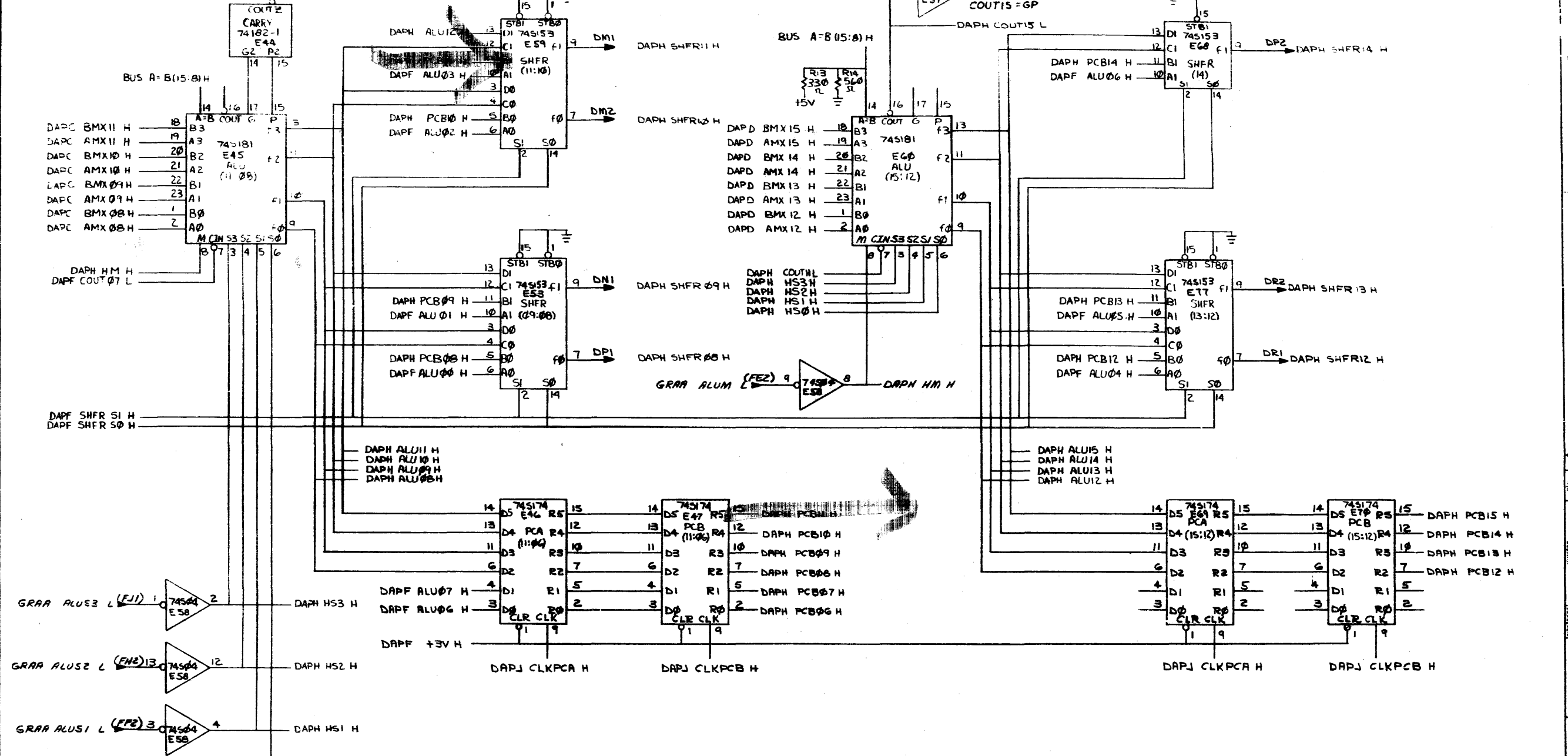
ALU (07:00), SHIFTER (06:00), PCA & PCB (05:00) SLOT6

DRN	DATE	TITLE
J. Johnson	11/74	DATA PATHS
S. Jenkins	11/74	
S. Jenkins	11/74	
J. Johnson	12-74	

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY

FINISH	SCALE	SHEET	SIZE CODE	NUMBER	REV
		7 OF 9	DCS	M8130-0-1	D

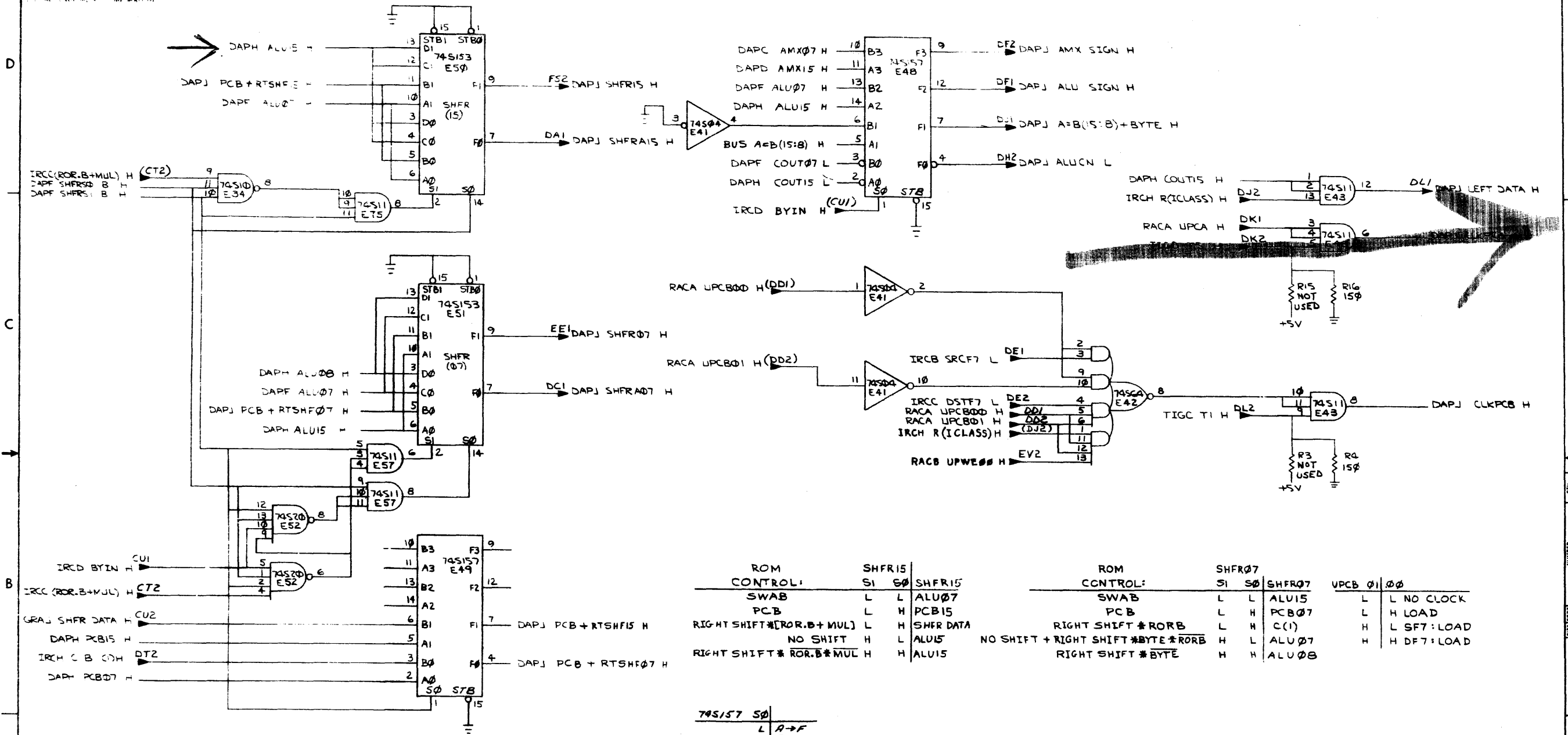
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REV	DATE	BY	CHK	APP
1	11/74	Fez	Fez	
2	11/74	Fez	Fez	
3	11/74	Fez	Fez	
4	11/74	Fez	Fez	
5	11/74	Fez	Fez	
6	11/74	Fez	Fez	
7	11/74	Fez	Fez	
8	11/74	Fez	Fez	
9	11/74	Fez	Fez	
10	11/74	Fez	Fez	
11	11/74	Fez	Fez	
12	11/74	Fez	Fez	
13	11/74	Fez	Fez	
14	11/74	Fez	Fez	
15	11/74	Fez	Fez	
16	11/74	Fez	Fez	
17	11/74	Fez	Fez	
18	11/74	Fez	Fez	
19	11/74	Fez	Fez	
20	11/74	Fez	Fez	
21	11/74	Fez	Fez	
22	11/74	Fez	Fez	
23	11/74	Fez	Fez	
24	11/74	Fez	Fez	
25	11/74	Fez	Fez	
26	11/74	Fez	Fez	
27	11/74	Fez	Fez	
28	11/74	Fez	Fez	
29	11/74	Fez	Fez	
30	11/74	Fez	Fez	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11.70		ALU(15:06), SHIFTER(14:08), PCA & PCB(15:06)		
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	TITLE		
.XXX - .005	± 0° 30'	DATA PATHS		
.XX - .02		REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		
.X - .1		MATERIAL		
		NEXT HIGHER ASSY.		
		SIZE CODE	NUMBER	REV
		D CS	M8130-0-1	D
		SCALE	SHEET 8 OF 9	
			DST.	

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ROM CONTROL:	SHFR15	SHFR7	UPCB 01	00
SWAB	L	L	L	L NO CLOCK
PCB	L	H	L	H LOAD
RIGHT SHIFT * [ROR.B + MUL]	L	H	H	L SF7: LOAD
NO SHIFT	H	L	H	H DF7: LOAD
RIGHT SHIFT * ROR.B * MUL	H	H	H	H DF7: LOAD

74S157 S0
L A→F
H B→F

SHIFTER (15:07); PCA & PCB CLOCKS SLOT 6

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DATE	EQUIPMENT CORPORATION MAYFORD MASSACHUSETTS	
DECIMALS	ANGLES	DATE	TITLE	
.XXX - .005	± 0° 30'	11/6/74	DATA PATHS	
.XX - .02		10/6/74		
X - .1		12-3-74		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE		
MATERIAL		DATE		
NEXT HIGHER ASSY		DATE		
FINISH		DATE		
SCALE		DATE		
SHEET 9 OF 9		DATE		

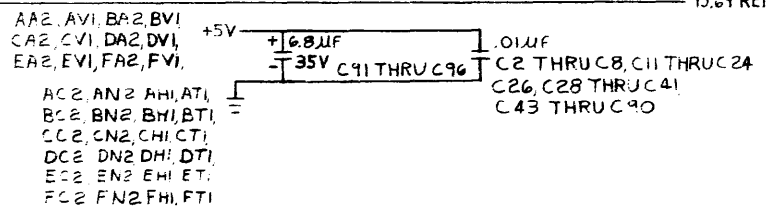
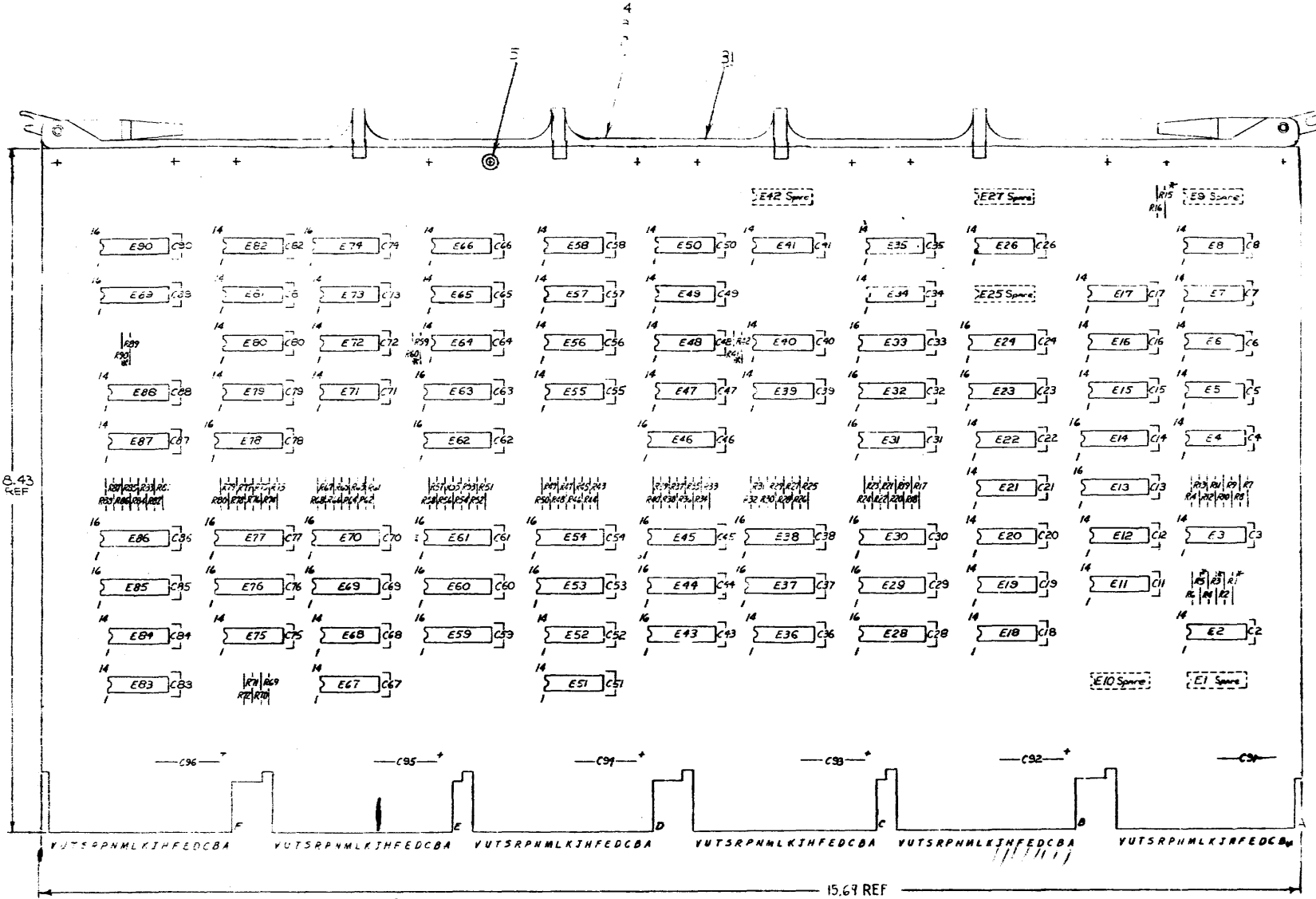
SIZE CODE NUMBER REV. DCS M8130-0-1 D

DIST. TW 1

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NOTES:

- 1 RESISTORS MARKED WITH ASTERISK ARE NOT USED
- 2 LOCATIONS MARKED E1, E9, E10, E25, E27, & E42 ARE SPARES.



DEC NO	QTY	DESCRIPTION
DEC DM 8598-AD	8	16
DEC 3101A	8	16
DEC 745174	8	16
DEC 745152	8	16
DEC 745153	8	16
DEC 745194	8	16
DEC 745112	8	16
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

REVISIONS

CHK	CHANGE NO	REV	DATE

DEC NO: 1170 EIA NO: DEC NO. EIA NO.

REF	X-Y COORDINATE HOLE LOCATION	K-CO-M8131-0-4	1	
REF	ASSY/DRILLING HOLE LAYOUT	E-AH-M8131-0-5	2	
REF	MODULE ECO HISTORY	B-MH-M8131-0-6	3	
I	ETCHED CIRCUIT BOARD	5009807	4	
12	EYELET	9006732	5	
F	C91 THRU C96	CAP. 6.8uF 35V ± 20% S TANT	6	
94	C2 THRU C8 C11 THRU C24 C26, C28 THRU C41, C43 THRU C49	CAP. 0.01 100V ± 20% DISC	7	
38	R7, R9, R11, R13, R18, R20, R22 R24, R26, R28, R30, R32, R34 R36, R38, R40, R44, R46, R48 R50, R52, R54, R56, R58, R62 R64, R66, R68, R69, R71, R72 R76, R78, R80, R82, R84, R86, R88	RES 330 OHM 1/4W ± 5%	8	
7	R2, R4, R6, R16, R42, R59, R99	RES 150 OHM 1/4W ± 5%	9	
4	R8, R10, R12, R14	RES 560 OHM 1/4W ± 5%	10	
32	R17, R19, R21, R23, R25, R27 R29, R31, R33, R35, R37, R39 R43, R45, R47, R49, R51, R53 R55, R57, R61, R63, R65, R67 R73, R75, R77, R79, R81, R83 R85, R87	RES 980 OHM 1/4W ± 5%	11	
2	R70, R72	RES 150 OHM 1/4W ± 5%	12	
2	E55, E72	IC DEC 74H38	13	
1	E47	IC DEC 74H58	14	
2	E13, E14	IC DEC 74191	15	
5	E3, E4, E17, E26, E98	IC DEC 74S08	16	
10	E7, E36, E39, E40, E51, E57, E66 E67, E83, E87	IC DEC 74S04	17	
5	E11, E12, E52, E68, E84	IC DEC 74S05	18	
5	E2, E15, E20, E22, E56	IC DEC 74S10	19	
7	E8, E21, E34, E41, E65, E71, E82	IC DEC 74S11	20	
3	E64, E73, E81	IC DEC 74S20	21	
11	E5, E6, E16, E18, E35, E48, E49, E58, E75, E80, E19	IC DEC 74S64	22	
2	E50, E79	IC DEC 74S74	23	
1	E63	IC DEC 74S112	24	
4	E23, E24, E32, E33	IC DEC 74S153	25	
10	E29, E30, E44, E45, E60, E61, E76, E77, E89, E90	IC DEC 74S158	26	
3	E28, E43, E59	IC DEC 74S174	27	
4	E31, E46, E62, E78	IC DEC 74S194	28	
8	E37, E38, E53, E54, E89, E70, E85, E88	IC DEC 3101A	29	
1	E74	IC DEC DM8598-AD	30	
1		HANDLE, MODULE	E PS 1210711-2	31
1		WIRE, INSULATED 30 AWG BUS	B105740-30	32

QTY REF DESIGNATION DESCRIPTION PART NO ITEM NO

1170

ETCH BOARD REV C

DRYING DATE 11-14-74
CHECKED DATE 11-27-74
ELECTRIC DATE 11-27-74
FINAL DATE 11-27-74
PREPARE DATE 11-27-74
NEXT HIGHER ASSY

B-DD-KB11-B

SCALE DIST

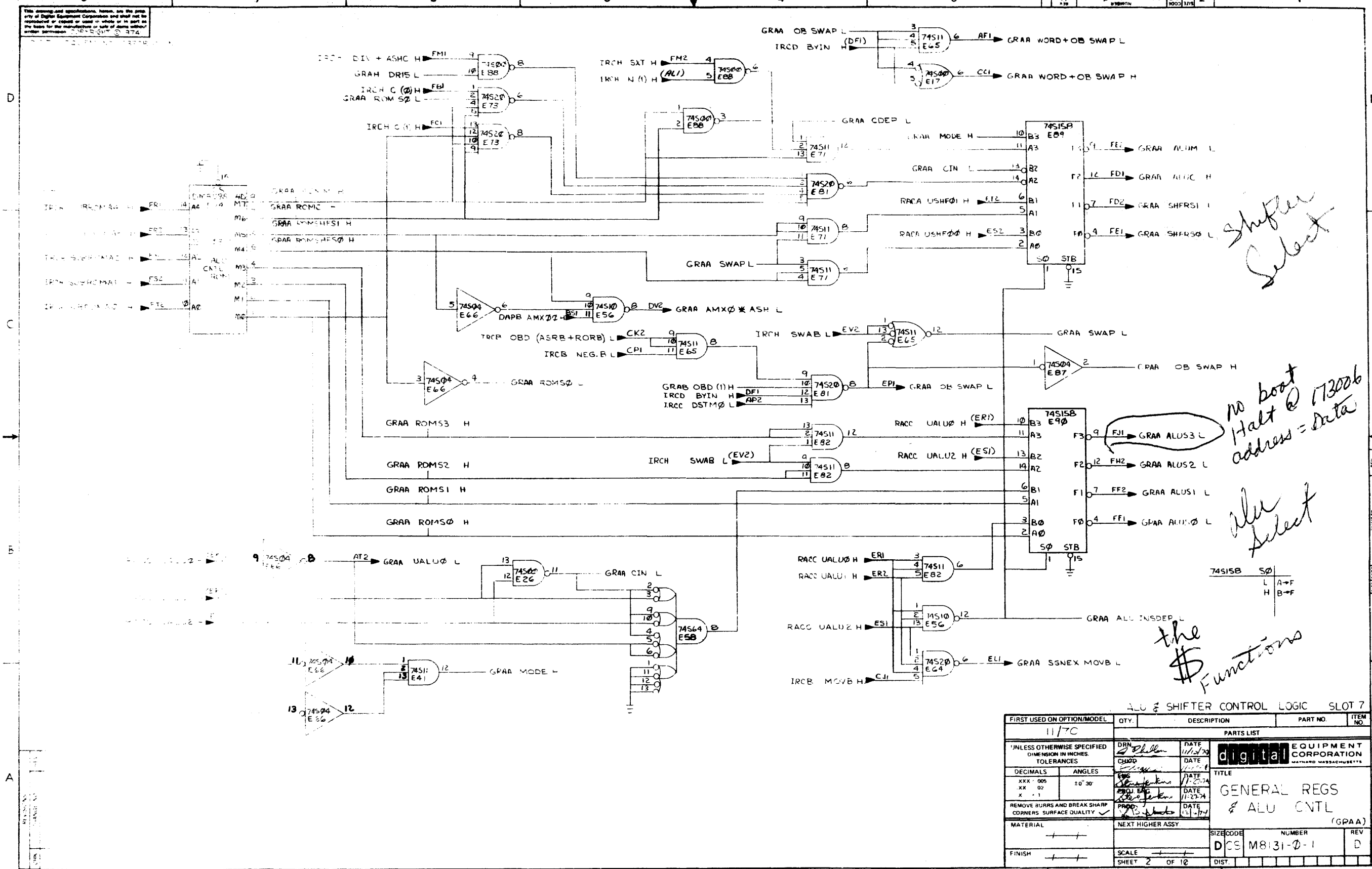
SEMICONDUCTOR CONVERSION CHART

digital EQUIPMENT CORPORATION

GENERAL REGS
#ALU, CNTL. (GRA)

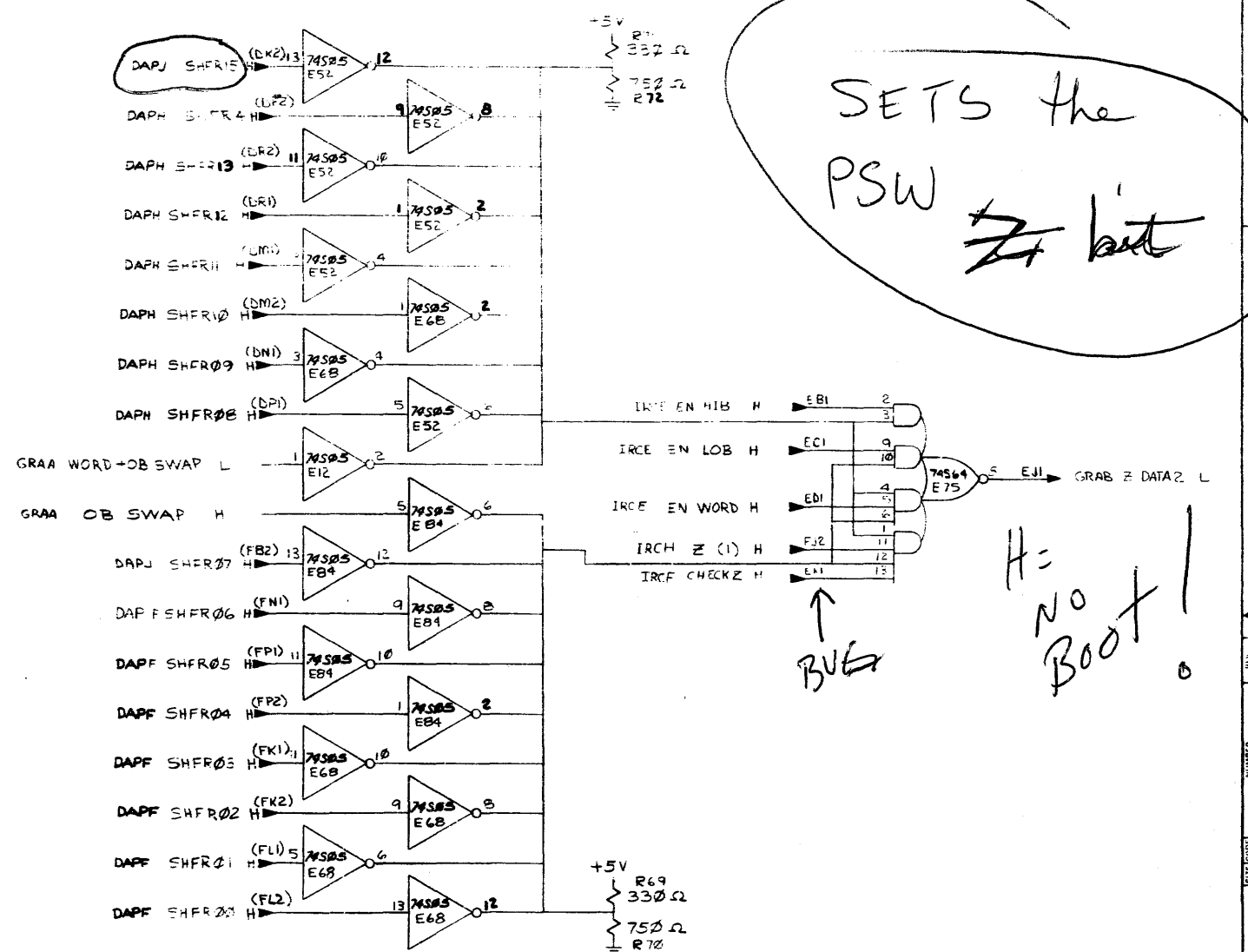
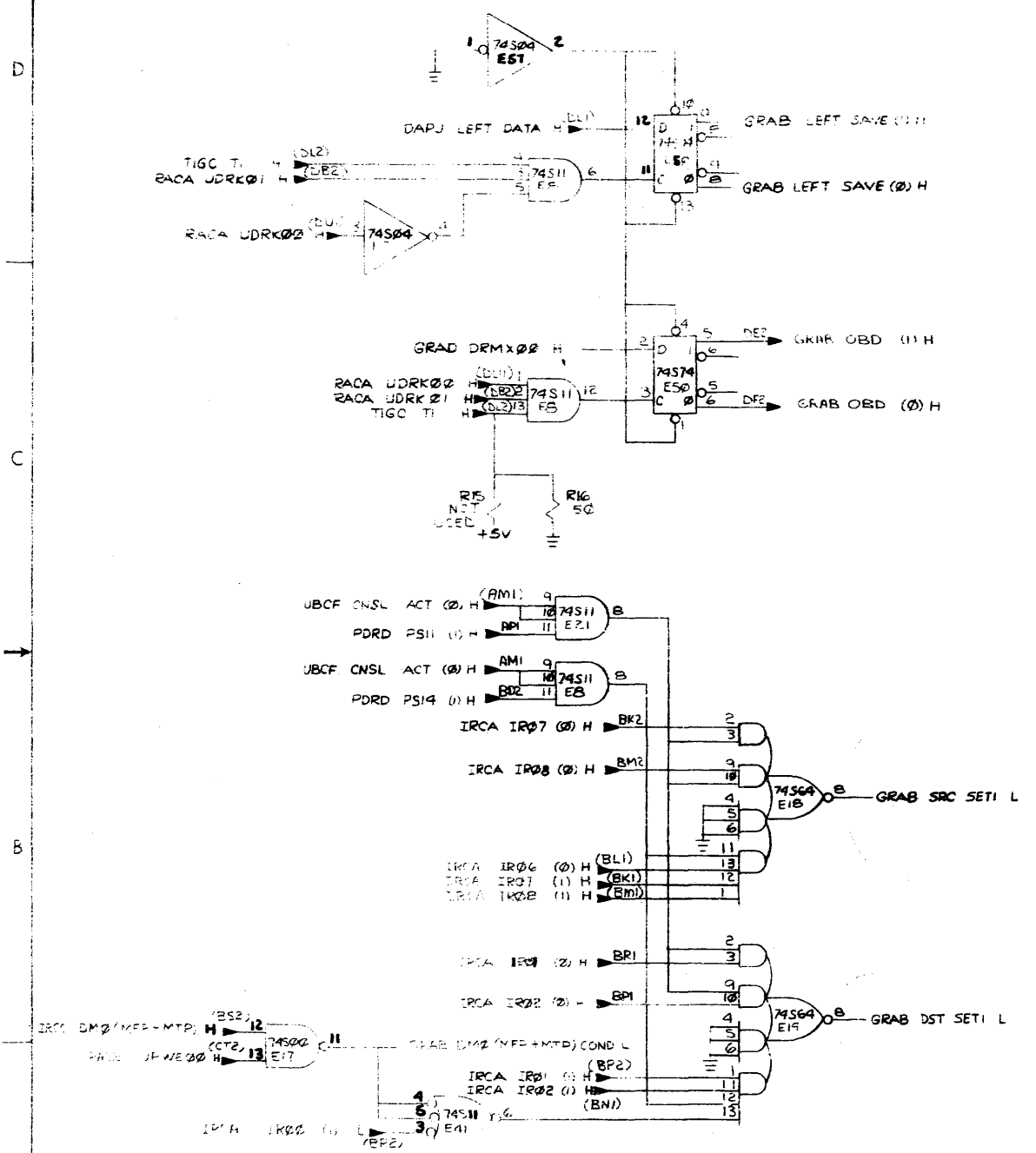
SIZE CODE NUMBER REV
DCS M8131-0-1 D

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FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
1170					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN	DATE	digital EQUIPMENT CORPORATION	
DECIMALS		CHUD	DATE	MAYNARD MASSACHUSETTS	
ANGLES		DATE	DATE	TITLE	
XXX .005		DATE	DATE	GENERAL REGS	
XX .02		DATE	DATE	& ALU CNTL	
X .1		DATE	DATE	(GPA)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROC.	DATE		
MATERIAL		NEXT HIGHER ASSY		SIZE CODE	NUMBER
FINISH		SCALE		DCS	M8131-D-1
		SHEET 2 OF 10		DIST.	REV D

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SETS the PSW ~~Z~~ bit

H = NO BOOT!

FAILS ROM
DIAG ADD 165206 at least
TO 165214

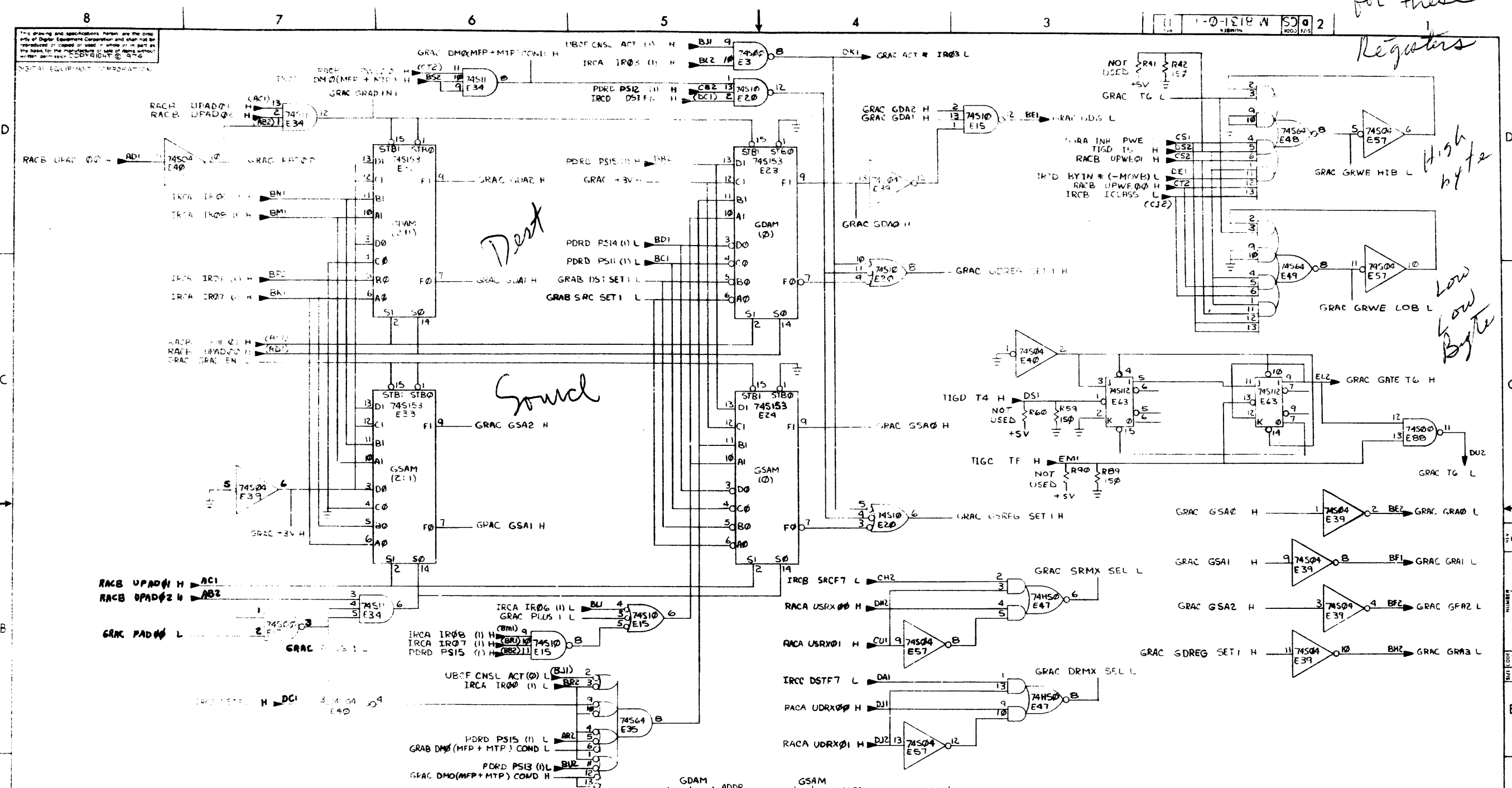
FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN	DATE 11/27/70	PARTS LIST	
DECIMALS	ANGLES	CMND	DATE 11/27/70	digital EQUIPMENT CORPORATION	
XXX + 008	±0°30'	PROJ ENG	DATE 11-27-70	TITLE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD. DATE 11-27-70		GENERAL REGS.	
MATERIAL	NEXT HIGHER ASSY			#ALU CNTL	
FINISH	SCALE			(GRAB)	
	SHEET OF 2			SIZE CODE	NUMBEP
				DCS M8131-0-1	REV
					D

EKI

AEZ

DCS M8131-0-1

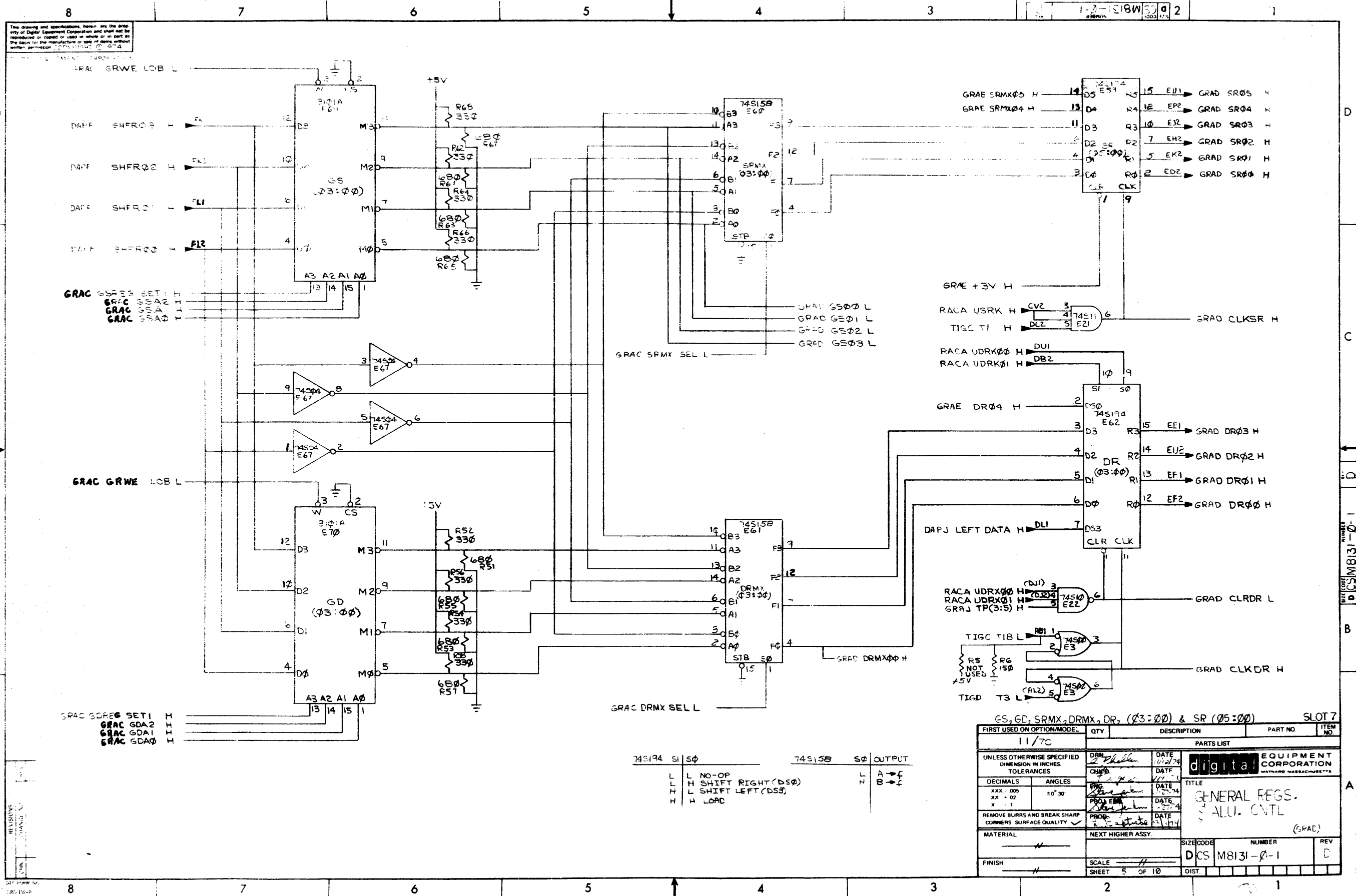
Registers
for these



GDAM				GSAM				P.WE		GRWE LOB		GRWE HIB	
UPAD	SI	SO	ADDR OUTPUT	UPAD	SI	SO	ADDR OUTPUT	01	00	00	00	00	00
0	L	L	SF	0	L	L	SF	L	L	DONT WRITE	DONT WRITE	DONT WRITE	DONT WRITE
4	L	L	SFVI	4	L	L	SFVI	L	H	WRITE COND: ICLASS	WRITE COND: ICLASS+BYTE INST	WRITE COND: ICLASS+BYTE INST	WRITE COND: ICLASS+BYTE INST
5	L	H	DF	5	L	H	DF	H	L	WRITE	WRITE	WRITE	
2	H	L	S	2+3	H	L	S	H	L	NOT USED	NOT USED	NOT USED	
3	H	H	S	7	H	H	S	H	H	NOT USED	NOT USED	NOT USED	

USRX				UDRX			
01	00	00	OUTPUT (SRMX)	01	00	00	OUTPUT (DRMX)
L	L	L	SFR	L	L	L	SFR
L	H	L	GS	L	H	L	GD
H	L	L	SF7:GSFR, SF7:GS	H	L	L	DF7:GSFR, DF7:GD
H	H	L	NOT USED	H	H	L	CLEAR DR

GENERAL REGS ADDR & WRITE PULSE CNTL				SLOT 7	
FIRST USED ON OPTION MODEL	QTY	DESCRIPTION	PART NO	ITEM NO	
11/70					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES					
DECIMALS	ANGLES	DATE	digital EQUIPMENT CORPORATION		
XXX .005	±0.30	11/27/70	METHUEN, MASSACHUSETTS		
XX .02		11/27/70	TITLE		
X .1		11/27/70	GENERAL REGS & ALU CNTL (GRAC)		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY					
MATERIAL					
NEXT HIGHER ASSY					
SCALE		SIZE CODE		NUMBER	
SHEET 4 OF 12		DCS M8131-0-1		REV D	

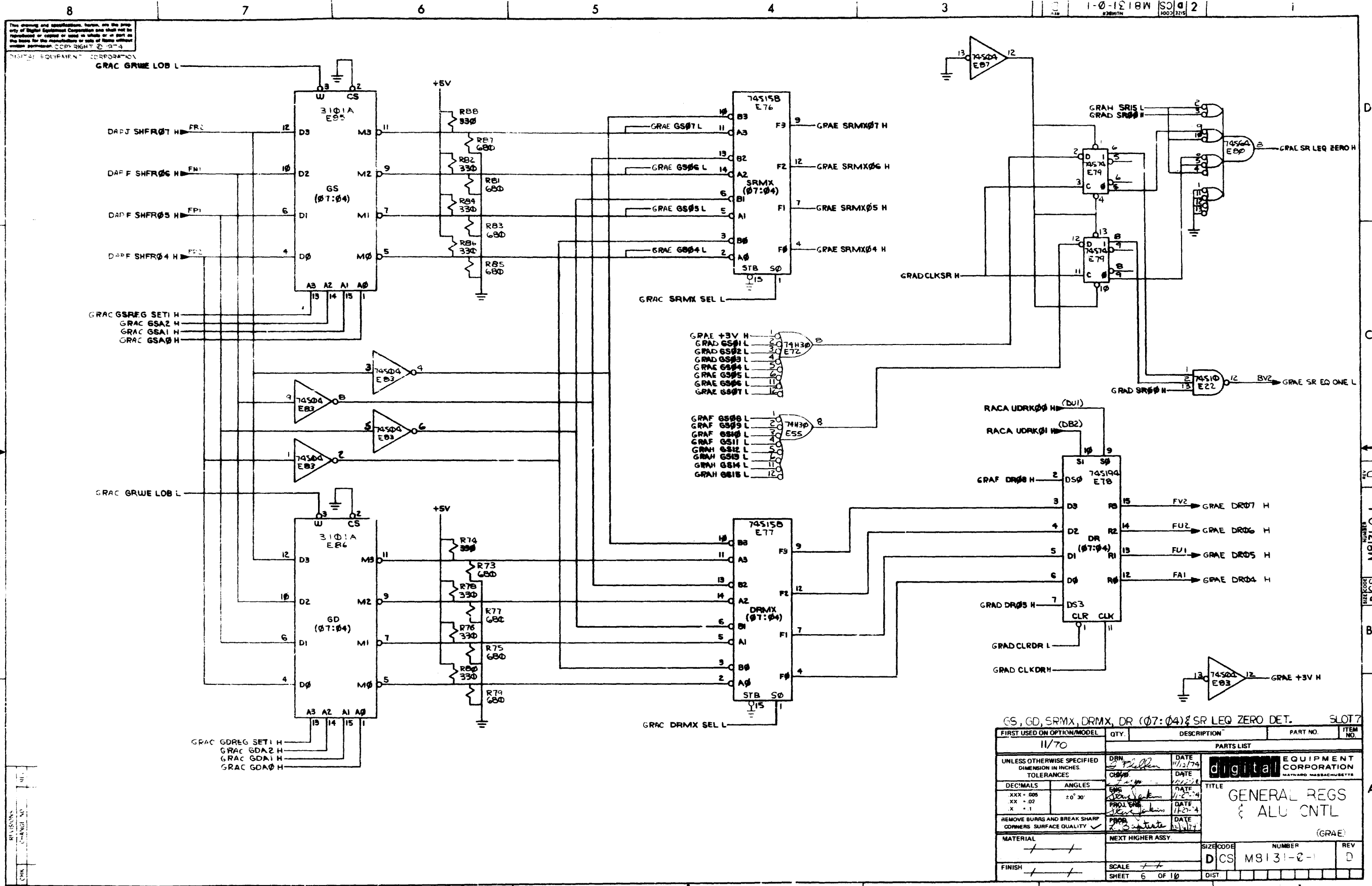


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REVISIONS
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74S194	SI	S0	74S158	S0	OUTPUT
L	L	NO-OP	L	A	→ f
L	H	SHIFT RIGHT (DS0)	H	B	→ f
H	L	SHIFT LEFT (DS3)			
H	H	LOAD			

FIRST USED ON OPTION/MODE:		QTY.	DESCRIPTION	PART NO.	ITEM NO.									
11/7C														
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		PARTS LIST												
DECIMALS	ANGLES	<table border="1"> <tr> <td>DRN</td> <td>DATE</td> <td rowspan="4"> </td> </tr> <tr> <td>CHG</td> <td>DATE</td> </tr> <tr> <td>ENG</td> <td>DATE</td> </tr> <tr> <td>PROJ ENGR</td> <td>DATE</td> </tr> </table>				DRN	DATE		CHG	DATE	ENG	DATE	PROJ ENGR	DATE
DRN	DATE													
CHG	DATE													
ENG	DATE													
PROJ ENGR	DATE													
XX - .005	±0° 30'													
X - .1														
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		TITLE												
MATERIAL		GENERAL REGS. & ALU. CNTL												
FINISH		NEXT HIGHER ASSY.												
		SIZE CODE	NUMBER	REV										
		DCS	M8131-01-1	D										
		SCALE												
		SHEET	5 OF 10											



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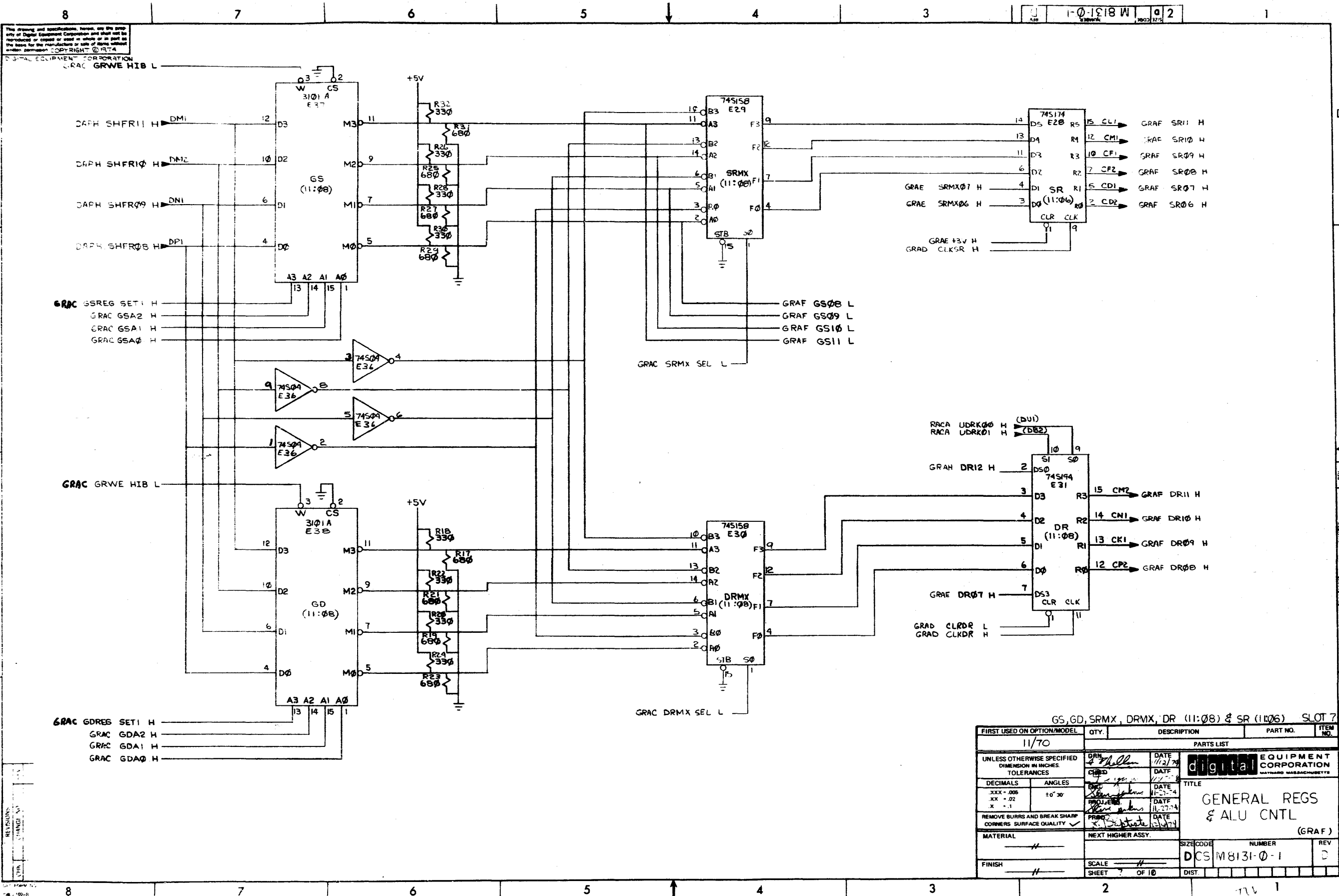
DIGITAL EQUIPMENT CORPORATION

REVISIONS
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GS, GD, SRMX, DRMX, DR (07:04) & SR LEQ ZERO DET. SLOT 7

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.									
11/70													
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES													
DECIMALS	ANGLES	PARTS LIST											
XXX + .005	± 0° 30'	<table border="1"> <tr> <td>DATE</td> <td>11/27/74</td> <td rowspan="4"> digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS </td> </tr> <tr> <td>DATE</td> <td>11/27/74</td> </tr> <tr> <td>DATE</td> <td>11/27/74</td> </tr> <tr> <td>DATE</td> <td>11/27/74</td> </tr> </table>			DATE	11/27/74	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	DATE	11/27/74	DATE	11/27/74	DATE	11/27/74
DATE	11/27/74				digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS								
DATE	11/27/74												
DATE	11/27/74												
DATE	11/27/74												
XX + .02		TITLE	GENERAL REGS & ALU CNTL										
X + .1		REVISION											
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY													
MATERIAL													
NEXT HIGHER ASSY.													
FINISH													
SCALE													
SHEET 6 OF 10													
SIZE CODE		NUMBER	REV										
D CS		M8131-2-1	D										
DIST													

REV D
 NUMBER M8131-0-1
 DCS



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DIGITAL EQUIPMENT CORPORATION
GRAC GRWE HIB L

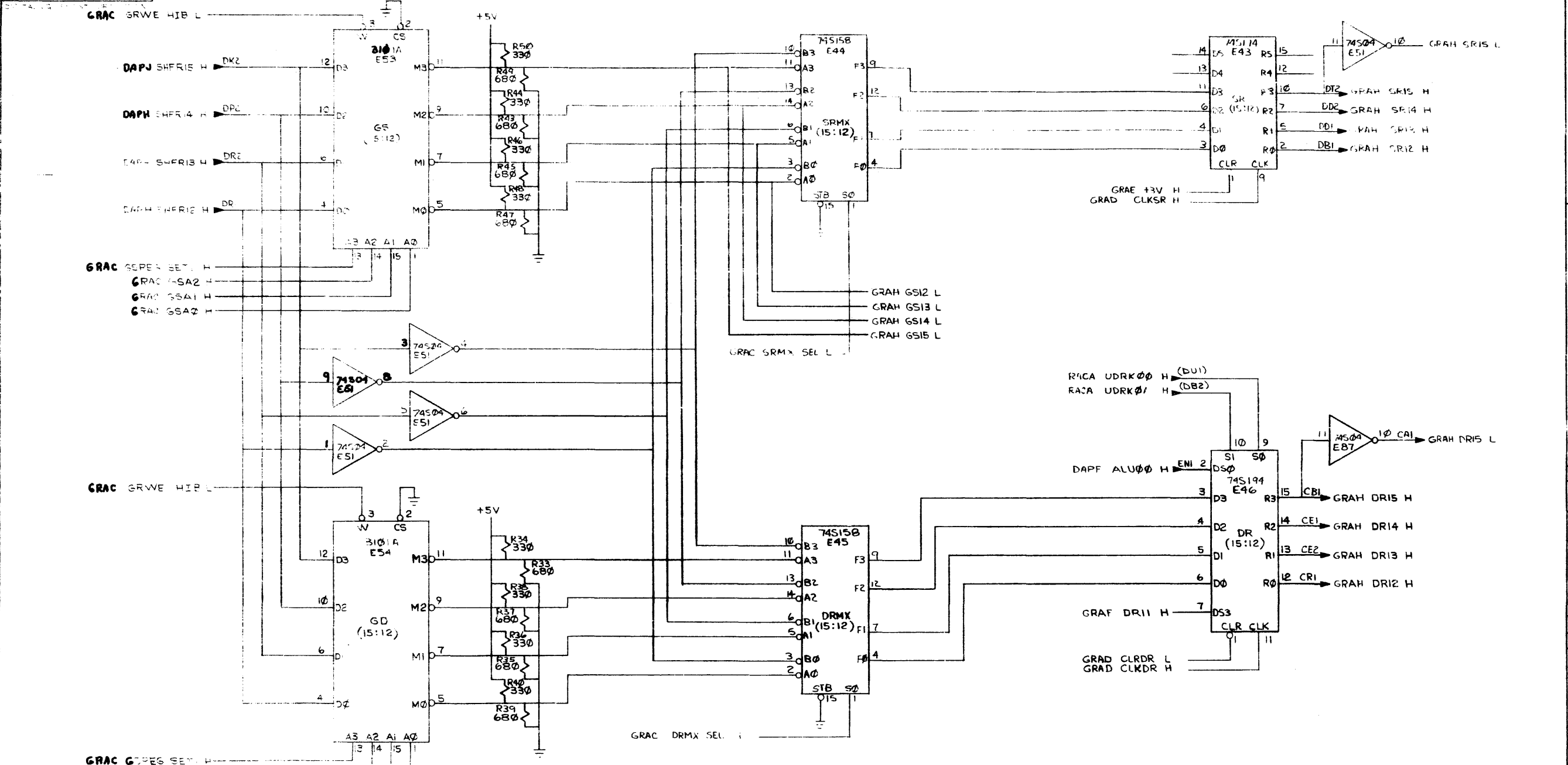
1-0-1818 W 2

GS, GD, SRMX, DRMX, DR (11:08) & SR (11:06) SLOT 7

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.					
11/70									
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES									
DECIMALS	ANGLES	PARTS LIST							
XXX - .006	±0° 30'	<table border="1"> <tr> <td>DATE</td> <td>11/21/74</td> <td rowspan="2"> </td> </tr> <tr> <td>DATE</td> <td>11/21/74</td> </tr> </table>			DATE	11/21/74		DATE	11/21/74
DATE	11/21/74								
DATE	11/21/74								
XX - .02		TITLE							
X - .1		GENERAL REGS & ALU CNTL (GRAF)							
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY									
MATERIAL									
NEXT HIGHER ASSY.									
FINISH									
SCALE		SIZE CODE	NUMBER	REV					
SHEET 7 OF 10		DCS M8131-0-1		D					

REV D
NUMBER
DCS M8131-0-1

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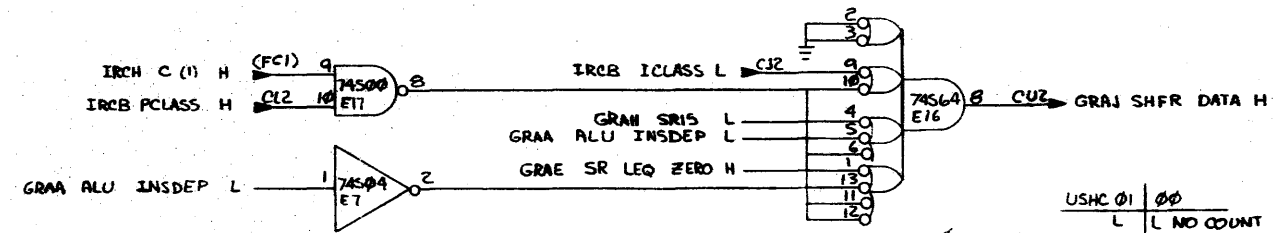
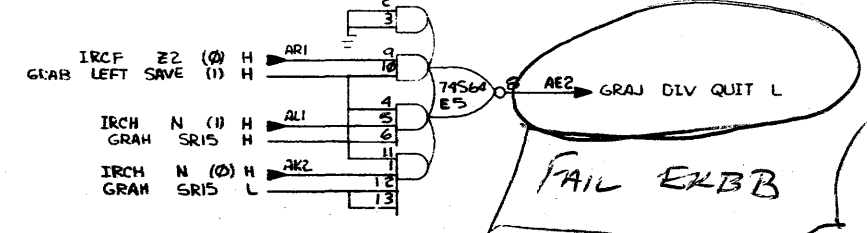
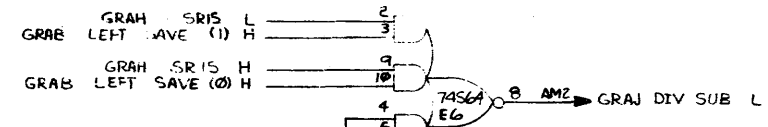
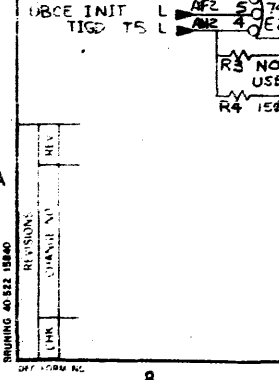
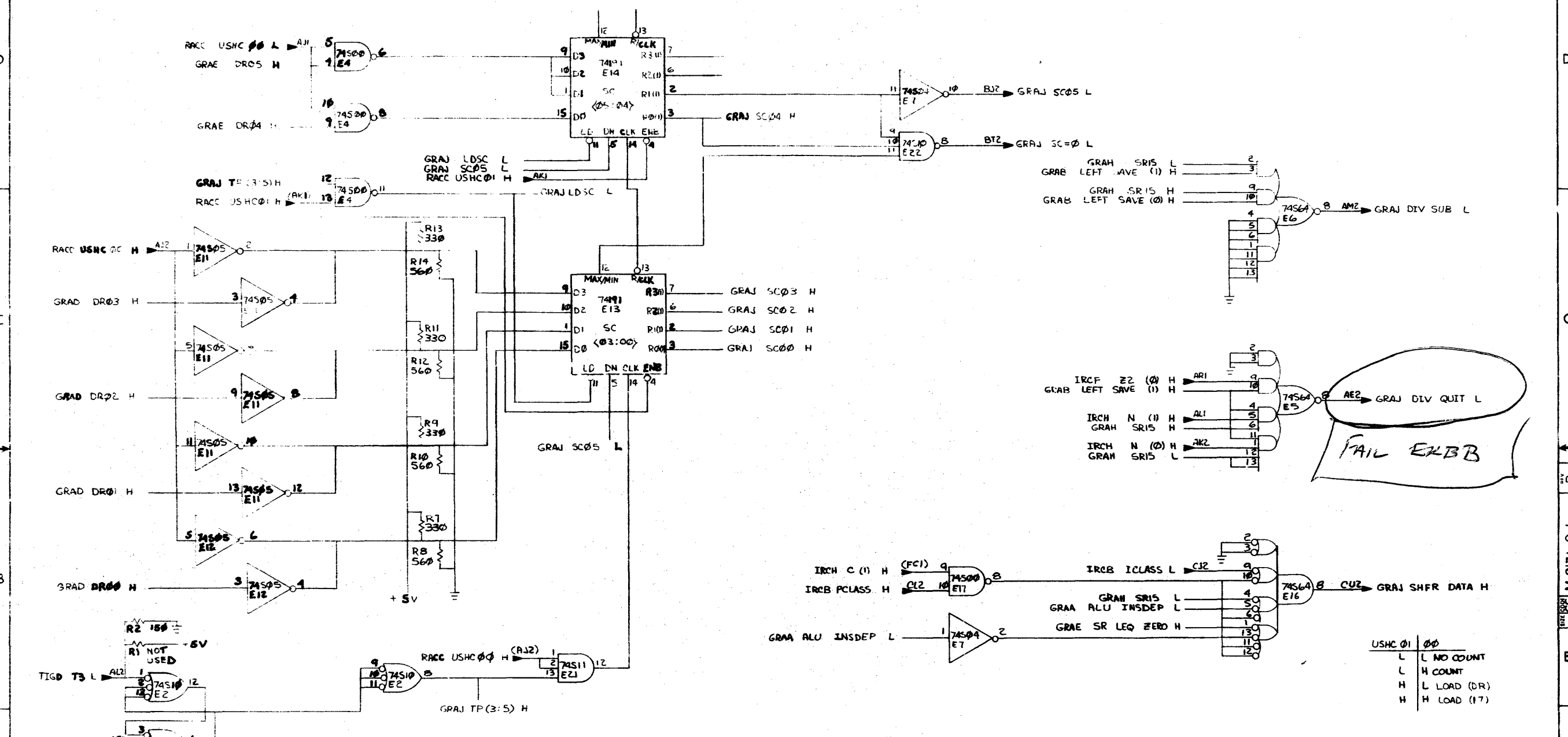


GS, GD, SRMX, DRMX, SR & DR (15:12) SLOT 7

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DATE 11/27/74	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS TITLE GENERAL REGS & ALU CNTL (GRAH)		
DECIMALS	DATE 11/27/74			
ANGLES	DATE 11/27/74			
XXX + .005 XX + .02 X + .1	DATE 11/27/74			
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE 11/27/74			
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	REV	
FINISH	SCALE	DCS M8131-0-1	D	
	SHEET 5 OF 10	DIST.		

REV. NO. 1
 DCS M8131-0-1
 DATE 11/27/74

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USHC 01	00
L	L NO COUNT
L	H COUNT
H	L LOAD (DR)
H	H LOAD (17)

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				PARTS LIST	
DECIMALS	ANGLES			digital EQUIPMENT CORPORATION	
.XX - .02	±0° 30'			TITLE	
X - 1				GENERAL REGS & ALU CNTL (GRAJ)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				SIZE CODE	NUMBER
MATERIAL		NEXT HIGHER ASSY		DCS	M8131-0-1
FINISH		SCALE		DIST	
		SHEET 9 OF 10			

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INSTRUCTION	OCTAL ADDRESS
ROR.B	00
ROL.B	01
ASR.B	02
ASL.B	03
MARK	04
MFP	05
NTP	06
SXT	07
CLR.B	10
COM.B	11
INC.B	12
DEC.B	13
NEG.B	14
ADC.B	15
SBC.B	16
TST.B	17
SUB	20
MOV.B	21
CMP.B	22
BIT.B	23
BIC.B	24
BIS.B	25
ADD	26
	27
MUL	30
DIV	31
ASH	32
ASHC	33
XOR	34
	35
	36
SWB	37

ALU CNTL ROM DM8598-AD							
ROMM	ROMC	ROMSHF1	ROMSHF2	ROMS3	ROMS2	ROMS1	ROMSB
M7	M6	M5	M4	M3	M2	M1	MSB
L	L	H	H	L	L	L	L
H	H	H	L	H	H	L	L
L	L	H	H	L	L	L	L
L	L	H	L	H	H	L	L
L	L	L	L	L	L	L	L
H	L	H	L	H	L	H	L
H	L	H	L	L	L	H	L
H	L	H	L	L	L	H	H
H	L	H	L	L	L	L	H
H	L	H	L	L	L	L	L
L	H	H	L	L	L	L	L
L	H	H	L	L	L	L	L
L	H	H	L	L	L	L	L
L	H	H	L	L	L	L	L
L	H	H	L	L	L	L	L
L	H	H	L	L	L	L	L
L	H	H	L	L	L	L	L
L	H	H	L	L	L	L	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L

SWAB

INSTRUCTION DEP. ALU FUNCTION (RACC UALU (2:0)=7)
F=A
F=A PLUS A PLUS CBIT
F=A
F=A PLUS A
NOT INST. DEP.
F=B
F=B
N: F=MINUS 1 ; N: F=B
F=B
F=A
F=A PLUS 1
F=A MINUS 1
F=A
F=A PLUS C BIT
F=A MINUS C BIT
F=A
F=A MINUS B
F=B
F=A MINUS B MINUS 1
F=AB
F=AB
F=A+B
F=A PLUS B
F=A MINUS B
F=A PLUS A PLUS DR15
NOT INST. DEP.
F=A PLUS A PLUS DR15
F=A + B
NOT INST. DEP.
NOT INST. DEP.
F=A

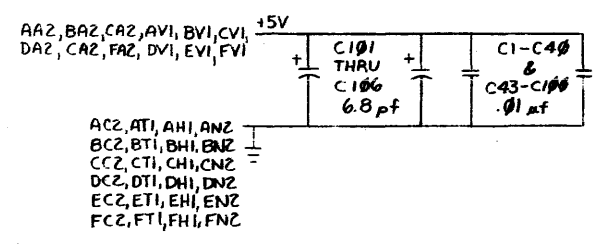
INSTRUCTION DEP. SHFR FUNCTION (RACC UALU (2:0)=7)
RIGHT SHIFT
NO - SHIFT **
RIGHT SHIFT
NO - SHIFT **
NOT INST. DEP.
NO - SHIFT
NO - SHIFT
NO - SHIFT **
NO - SHIFT **
NO - SHIFT **
NO - SHIFT **
NO - SHIFT **
NO - SHIFT **
NO - SHIFT **
NO - SHIFT **
NO - SHIFT **
NO - SHIFT **
NO - SHIFT **
NO - SHIFT **
NO - SHIFT **
NO - SHIFT **
NO - SHIFT **
RIGHT SHIFT
NO - SHIFT
NOT INST. DEP. *
NO - SHIFT
NO - SHIFT
NOT INST. DEP.
SWAP BYTES

NOTE: SWAB INSTR. HAS SAME ROM ADDRESS AS ASL.B
*ROMSHF OUTPUTS USED TO DECODE ASH
**ODD BYTE*BYTE INSTR. SWAP BYTES

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES			PARTS LIST		
DECIMALS	ANGLES	DATE	TITLE		
XXX .006	10 30	11/2/74	GENERAL REGS.		
XX .02		11-23-74	ALU CNTL		
X .1		11-27-74	(GAK)		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE	SIZE CODE	NUMBER	REV
		11-27-74	D	CS M8131-0-1	0
MATERIAL	NEXT HIGHER ASSY	SCALE	SHEET	OF	TOTAL SHEETS
		NONE	10	OF 10	

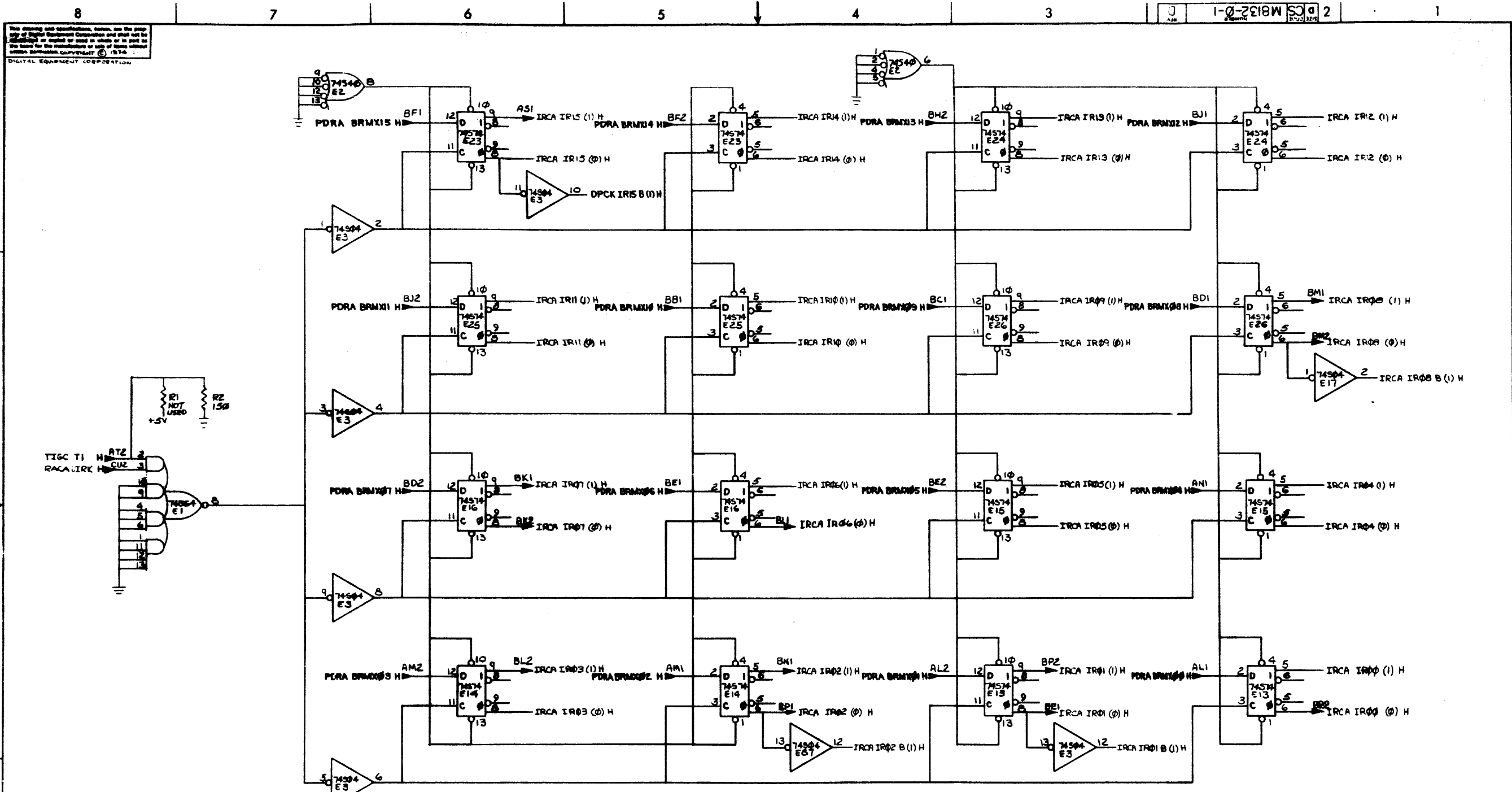
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- NOTES:
1. RESISTORS R1, R2 AND R14 ARE NOT USED.
 2. INSTALL JUMPER W1 FOR USE WITH FPII-B
 3. MUST BE M8132-YA FOR USE IN KB11-CM (1/74)



REV.	DATE
1	11/70
2	1/74
3	1/74
4	1/74
5	1/74
6	1/74
7	1/74
8	1/74

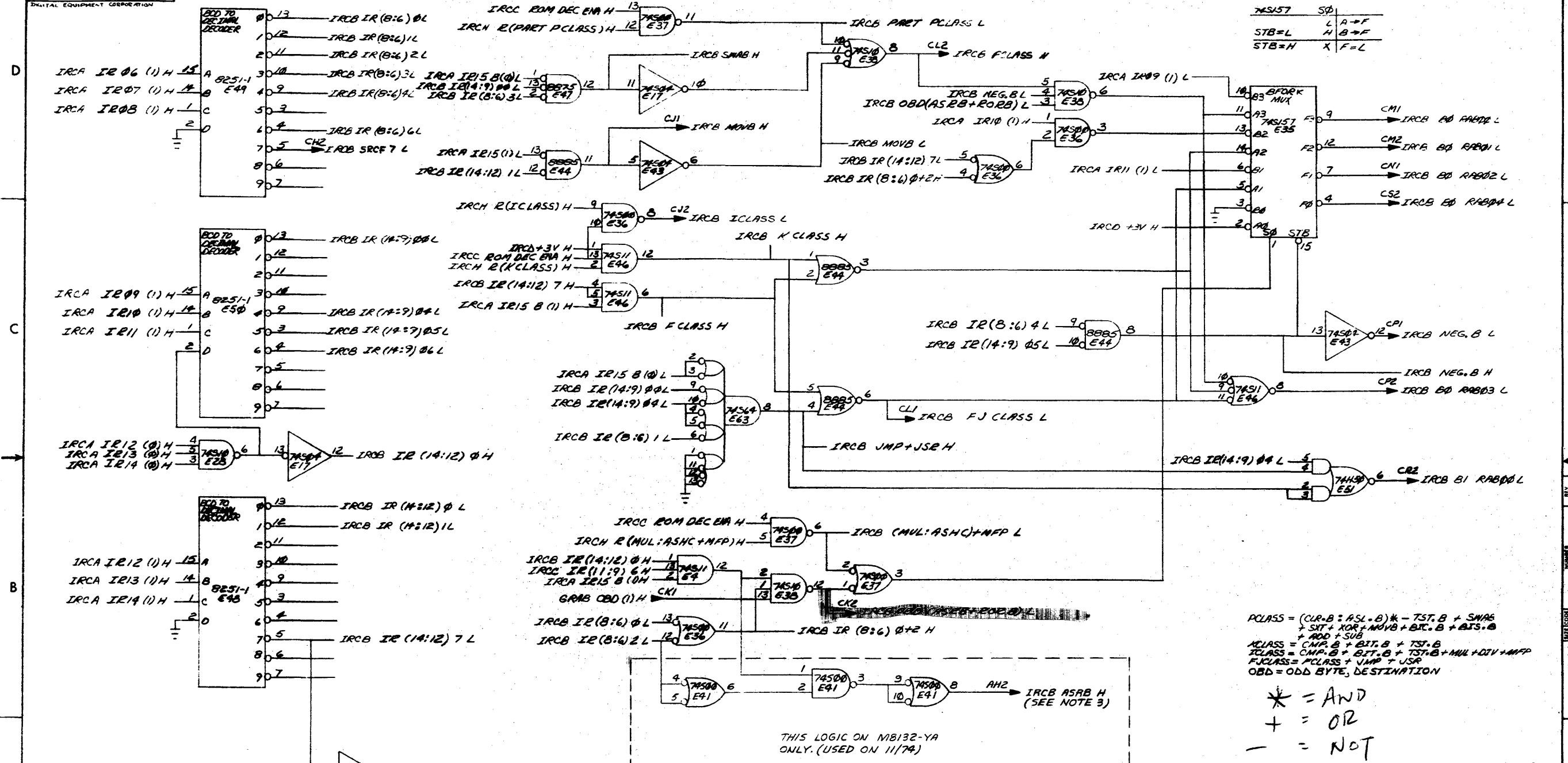
DRN. R. CONSTANTINEAU	FIRST USED ON	11/70
CHK'D FERGUSON	12-2-74	
ENGS. JENKINS	1-13-75	
PROJ. ENG. JENKINS	1-13-75	
PROD. R. TAYLOR	1-14-75	
NEXT HIGHER ASSY.		
B-DD-A/B11-B		
SCALE	SIZE	CODE
1	D	CS
SHEET	NUMBER	REV.
1	M8132-0-1	D
OF 9	DIST.	



REV	NO
CHK	CHANGE NO
REVISIONS	

FIRST USED ON OPTION/MODEL 11/70		QTY.	DESCRIPTION	PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		CHKD DATE 11-12-70	PARTS LIST		
DECIMALS	ANGLES	DATE 12-2-70	TITLE		
.XX - .008	10° 30'	DATE 1-13-75	IR DECODE & COND. CODES		
.X - .02		DATE 1-13-75	EQUIPMENT CORPORATION MAYFIELD MASSACHUSETTS		
.X - .1		DATE 1/10/75	REMOVES BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		
MATERIAL	NEXT HIGHER ASSY.	SCALE	SIZE CODE	NUMBER	REV.
FINISH		SHEET 2 OF 9	DCS M8132-0-1	D	D

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74S17	S0
STB=L	L A=F
STB=H	H B=F
	X F=L

$PCLASS = (CLR.B + ASL.B) * -TST.B + SWAB + SXT + XOR + MOV.B + BIT.B + BJS.B + ADD + SUB$
 $KCLASS = CMP.B + BIT.B + TST.B$
 $ICLASS = CMP.B + BIT.B + TST.B + MUL + DIV + MFP$
 $FJCLASS = PCLASS + JMP + JSR$
 OBD = ODD BYTE, DESTINATION

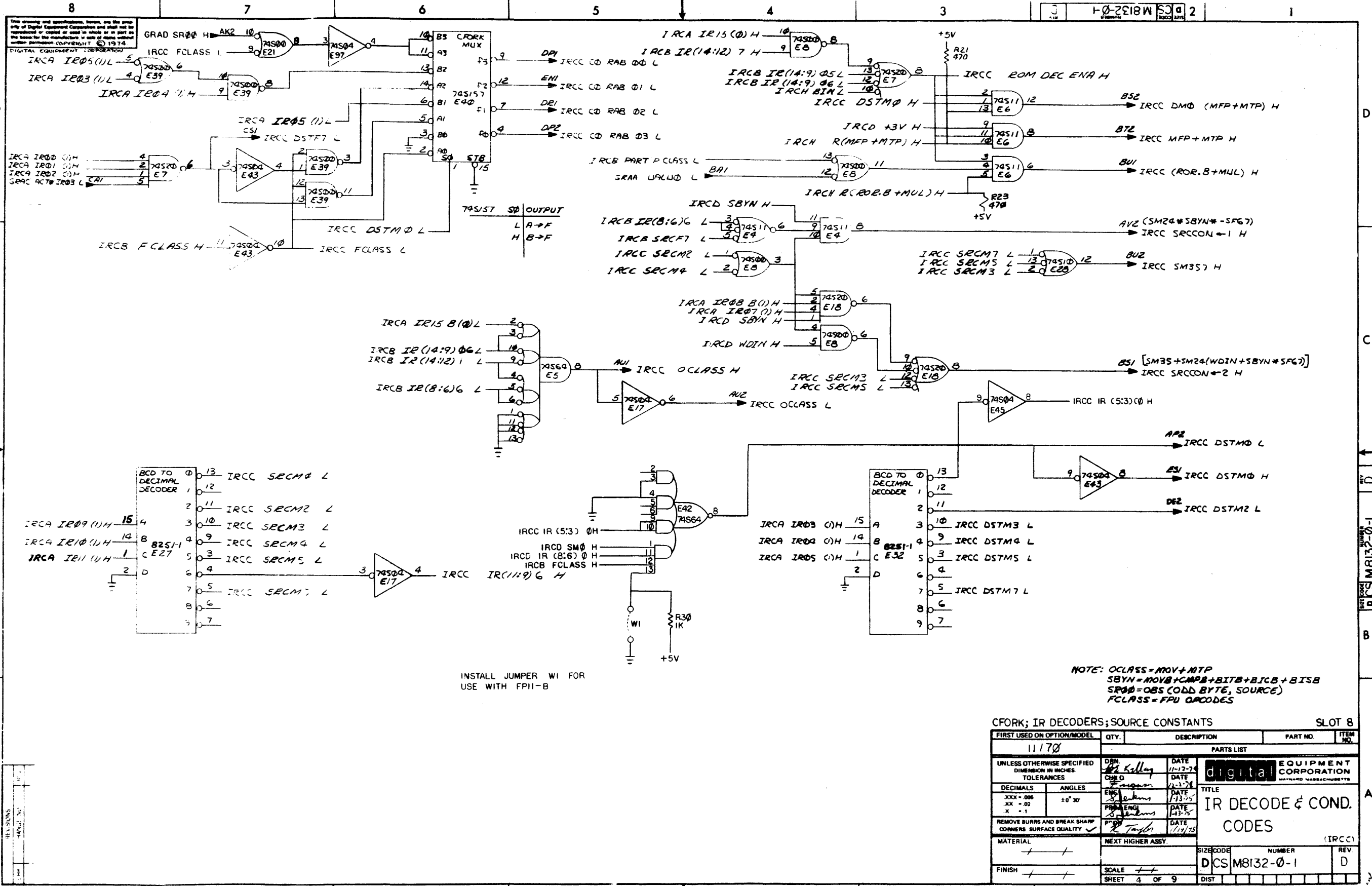
* = AND
 + = OR
 - = NOT

2 11/70's that shared memory

BFORK; IR DECODERS SLOT 8

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				
UNLESS OTHERWISE SPECIFIED				
DIMENSION IN INCHES		DATE	11-23-74	
TOLERANCES		CHK'D	DATE	
DECIMALS	ANGLES	ENG	DATE	
.XXX - .006	±0° 30'	PREP'NG	DATE	
.X - .1		PRG	DATE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.			
FINISH	SCALE			
SHEET 3 OF 9		DST.		

REV	
CHANGE NO	
CHK	



INSTALL JUMPER W1 FOR USE WITH FPII-B

NOTE: OCLASS = MOV + MTP
 SBYN = MOV + CMP + BIT + B.T.C + B.ISB
 SR00 = OBS (ODD BYTE, SOURCE)
 FCLASS = FPU OPCODES

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11170					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED		DATE		DIGITAL EQUIPMENT CORPORATION	
DIMENSION IN INCHES		11-12-74		MAYNARD MASSACHUSETTS	
TOLERANCES		DATE		TITLE	
DECIMALS		1-2-78		IR DECODE & COND. CODES	
ANGLES		DATE		REV.	
.XXX = .005		1-13-75		D	
.XX = .02		DATE		NUMBER	
.X = .1		1-13-75		DCS M8132-0-1	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE		DIST	
✓		1-14-75		SHEET 4 OF 9	
MATERIAL		NEXT HIGHER ASSY.		SCALE	
FINISH		SCALE		SHEET 4 OF 9	

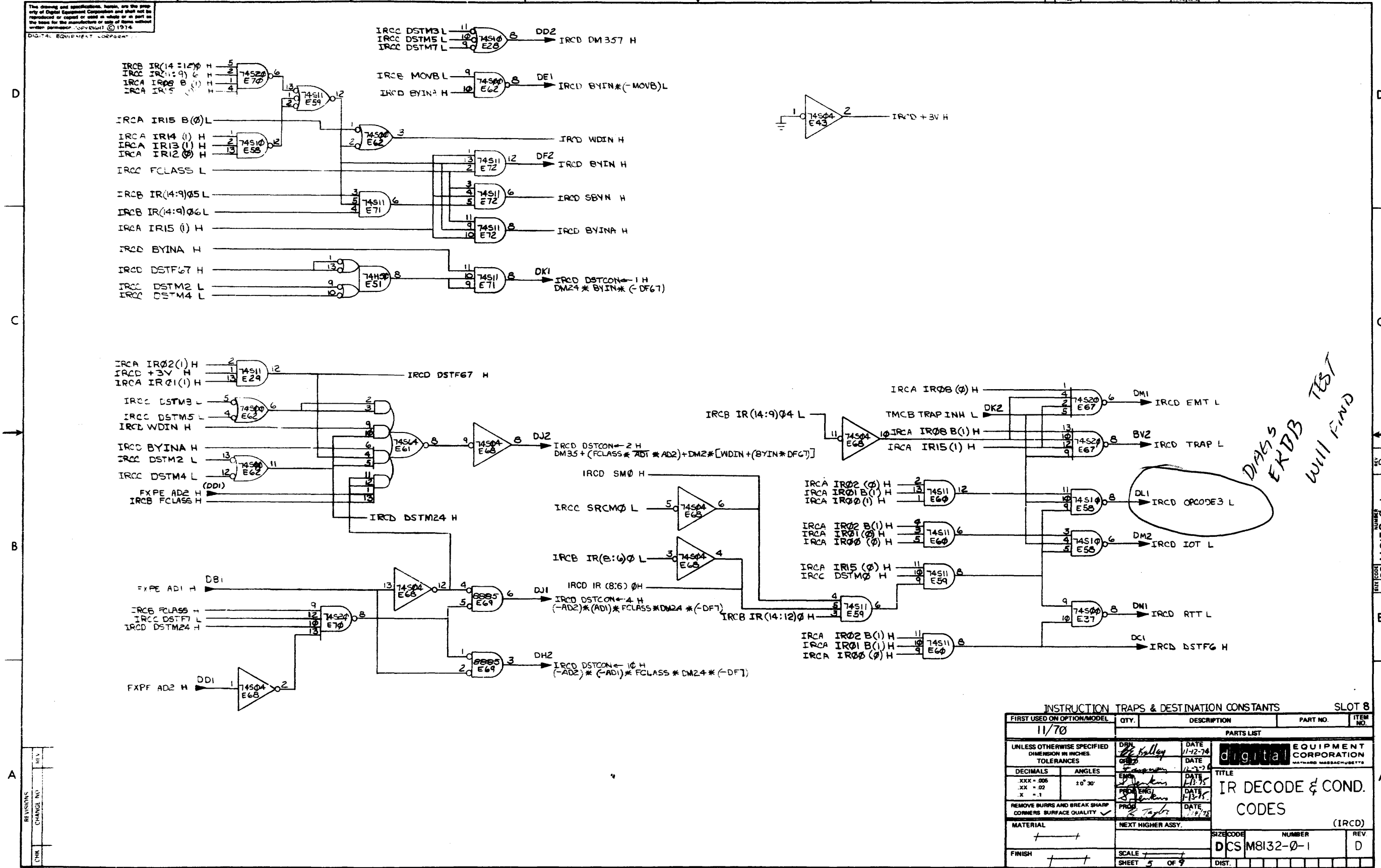
REV.	DATE	BY	CHKD.
1			

PART NO. DCS M8132-0-1

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8 7 6 5 4 3 2 1



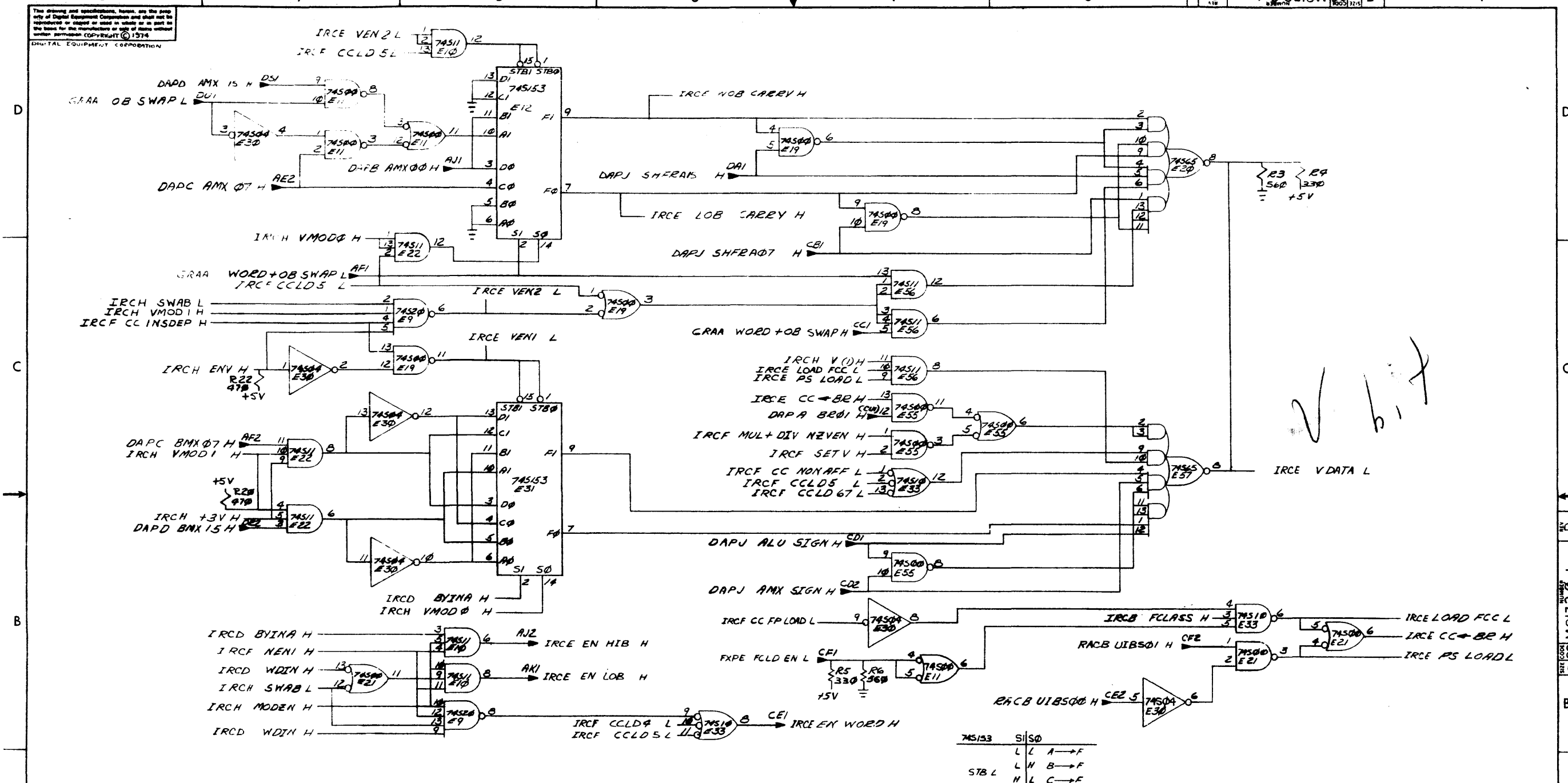
*DRIPS EX DB TEST
will find*

REV	DATE	BY	CHKD

INSTRUCTION TRAPS & DESTINATION CONSTANTS SLOT 8

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRAWN <i>De Kalley</i> DATE 11-12-74	digital EQUIPMENT CORPORATION MAYFIELD MASSACHUSETTS	
DECIMALS .XXX = .005	ANGLES ± 0° 30'	ENGR. <i>De Kalley</i> DATE 1-13-75	TITLE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PREF. ENGR. <i>De Kalley</i> DATE 1-13-75	IR DECODE & COND. CODES (IRCD)	
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
			DCS M8132-0-1	REV D
FINISH	SCALE	SHEET 5 OF 9	DIST.	

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V bit

74S153	SI	SO
	L	L A → F
	L	H B → F
STB L	H	L C → F
	H	H D → F
STB H	X	X F = L

CONDITION CODE V LOGIC SLOT 8

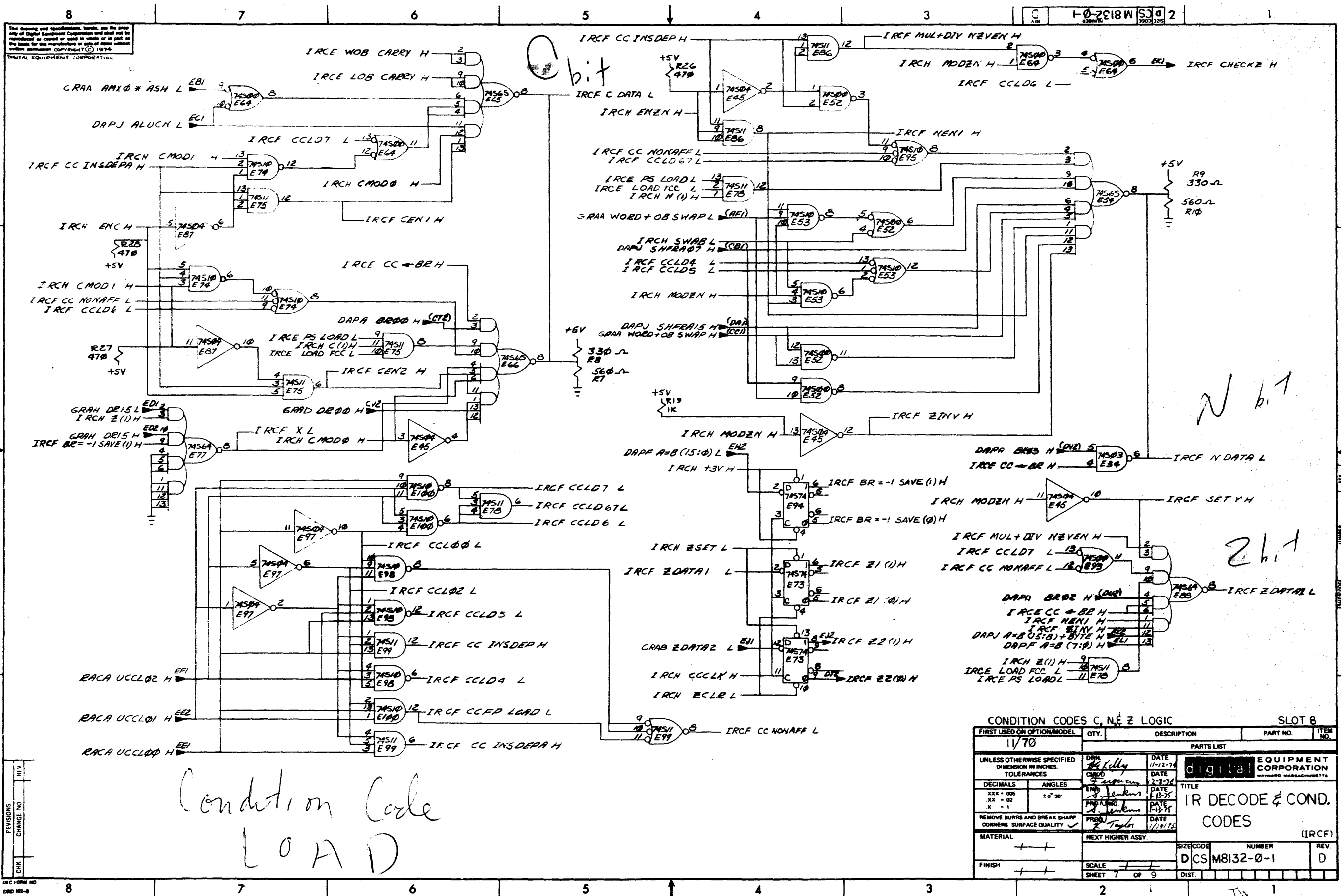
FIRST USED ON OPTION/MODEL 11/70	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES	DATE 11-12-74	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS		
DECIMALS .XXX - .008 ANGLES ±0° 30'	DATE 1-13-75	TITLE IR DECODE & COND CODES		
REMOVES BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE 1-13-75	SIZE CODE NUMBER REV DCS M8132-0-1 D		
MATERIAL ++	NEXT HIGHER ASSY.	(IRCE)		
FINISH ++	SCALE SHEET 6 OF 9	DIST.		

REV	
CHG	
REVISIONS	
CHANGE NO.	

DEC FORM NO. DED 100-B

DCS M8132-0-1

TW 1



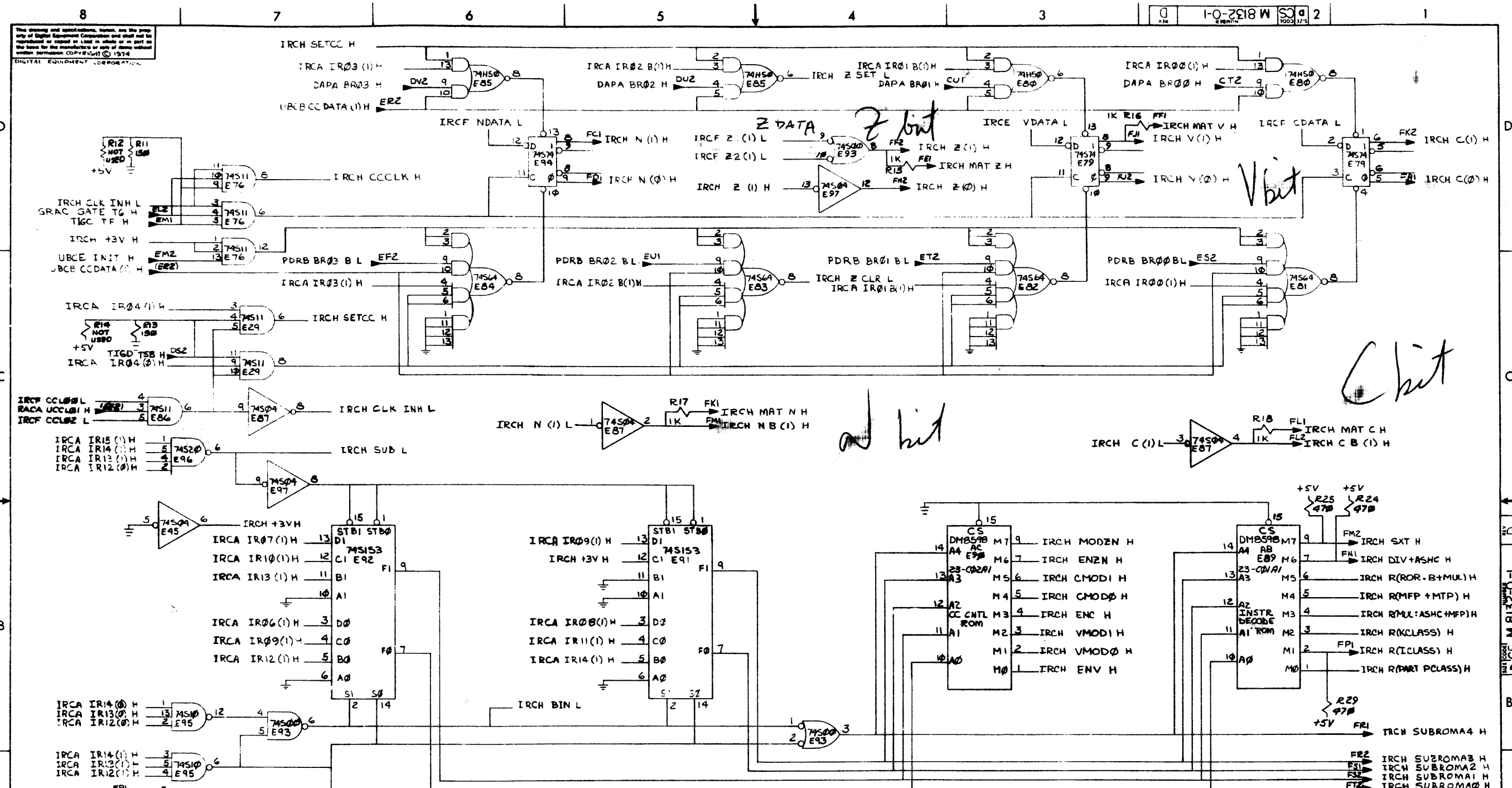
Condition Code
LOAD

0 bit

N bit

2 bit

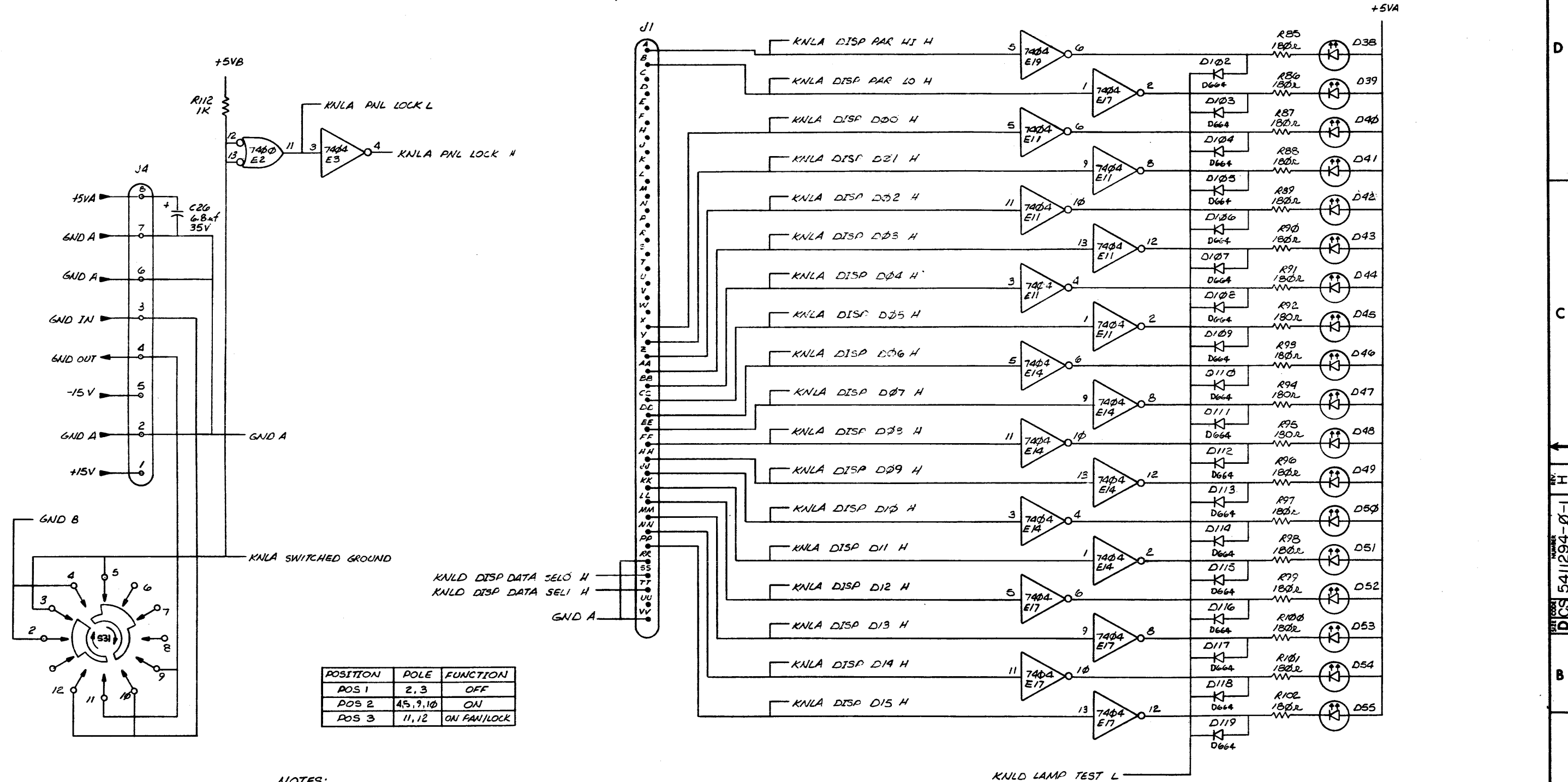
CONDITION CODES C, N, Z LOGIC		SLOT B	
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.
1/70			
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DATE 11-12-74	digital EQUIPMENT CORPORATION MAYLAND MASSACHUSETTS	
DECIMALS	DATE 1-2-75		
ANGLES	DATE 1-12-75	TITLE IR DECODE & COND. CODES (IRCF)	
XXX - .006 XX - .02 X - .1	DATE 1-12-75		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE 1/11/75	SIZE CODE	NUMBER
MATERIAL	NEXT HIGHER ASSY.	DCS	M8132-0-1
FINISH	SCALE		REV. D
	SHEET 7 OF 9	DIST.	



COND. CODE BITS, CC CNTL & INSTR DECODE ROMS		SLOT 8	
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.
11/70			
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		EQUIPMENT CORPORATION	
DECIMALS	ANGLES	TITLE	
.XXX - .008	±0° 30'	IR DECODE & COND CODES	
.XX - .02		(IRCH)	
.X - .1		SIZE CODE NUMBER REV	
REMOVE BURR AND BREAK SHARP CORNERS SURFACE QUALITY		D CS M 8132-0-1 D	
MATERIAL		NEXT HIGHER ASSY.	
FINISH		SCALE SHEET 8 OF 9	

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KNL/PDR INTERFACE



POSITION	POLE	FUNCTION
POS 1	2, 3	OFF
POS 2	4, 5, 9, 10	ON
POS 3	11, 12	ON PAN/LOCK

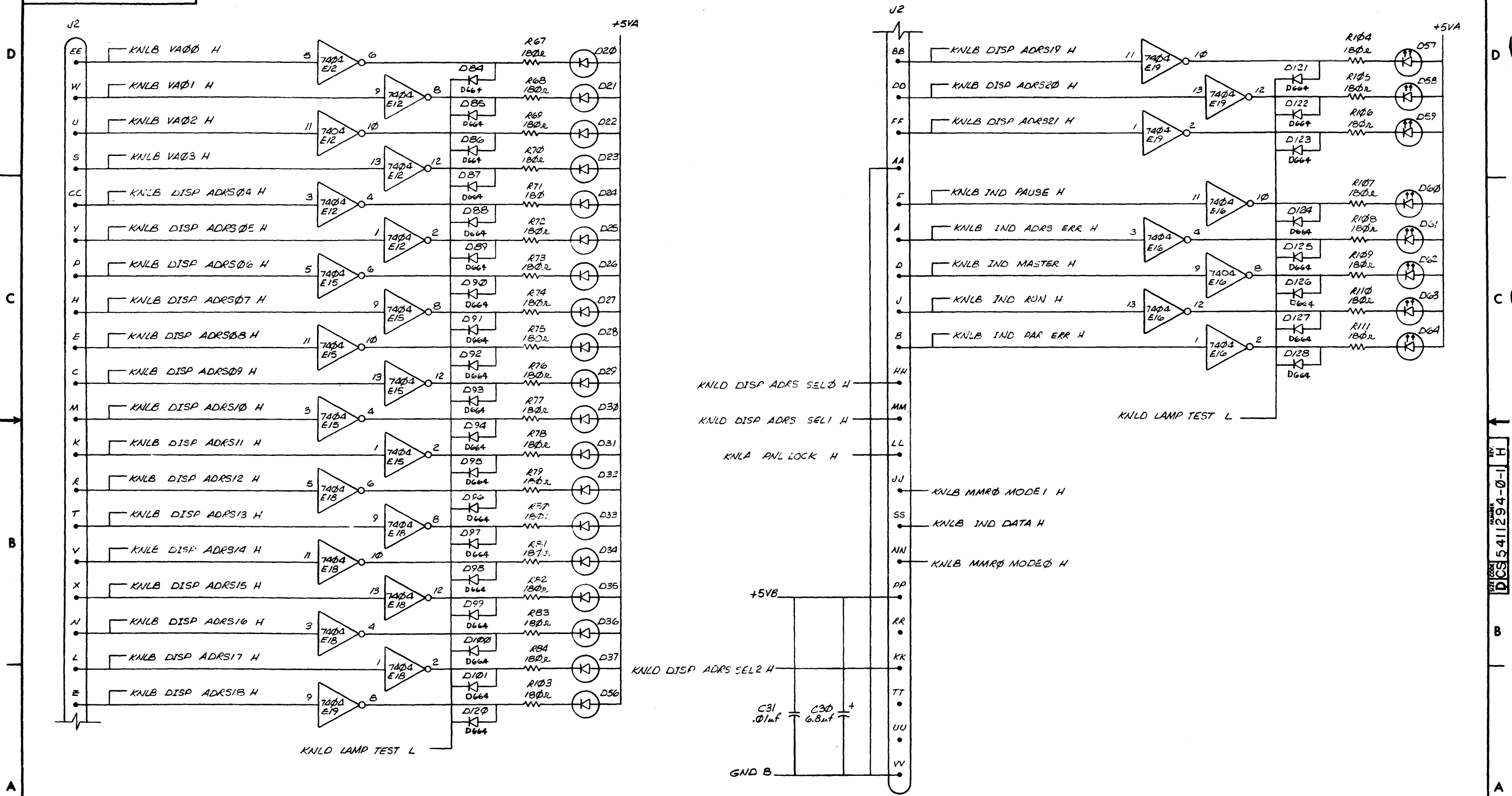
- NOTES:
1. BCØØR CABLES USED TO CONNECT CONSOLE TO PDR AND SCC BOARDS.
 2. CASE OF 531 = GND A

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE CODE	NUMBER	REV.
CONSOLE BOARD (KNL)	D CS	5411294-Ø-1	H
SCALE	SHEET	TW	
	2 OF 5	1	

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KNL/SCC INTERFACE

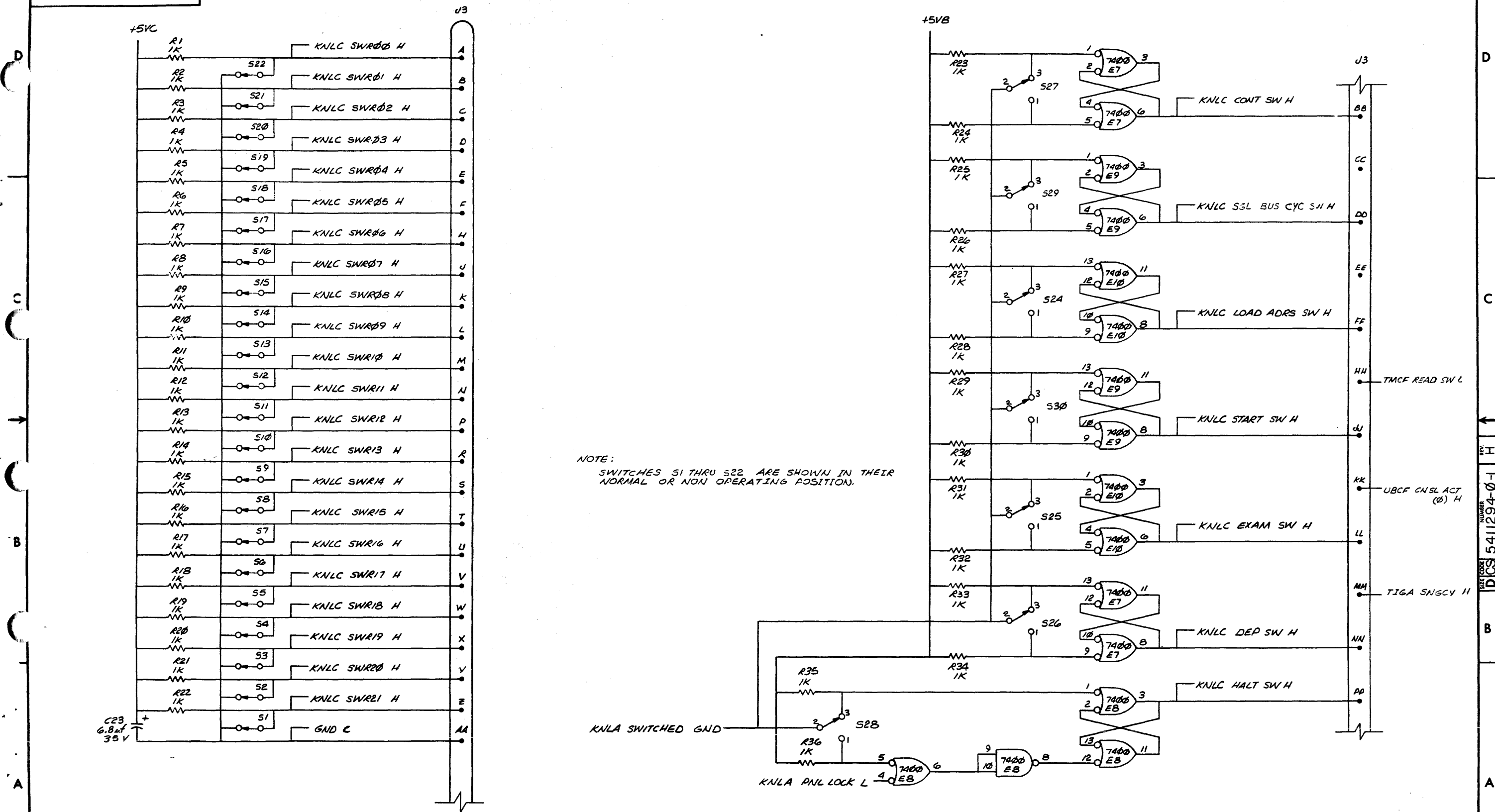


REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE/CODE	NUMBER	REV.
CONSOLE BOARD (KNLB)	D CS	5411294-0-1	H
SCALE	SHEET	DIST.	TW
1/1	3 OF 5		1

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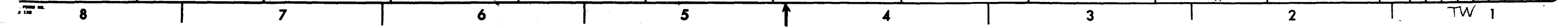
KNL / SCC INTERFACE



NOTE:
SWITCHES S1 THRU S22 ARE SHOWN IN THEIR NORMAL OR NON OPERATING POSITION.

REVISIONS		
CHK	CHANGE NO.	REV.

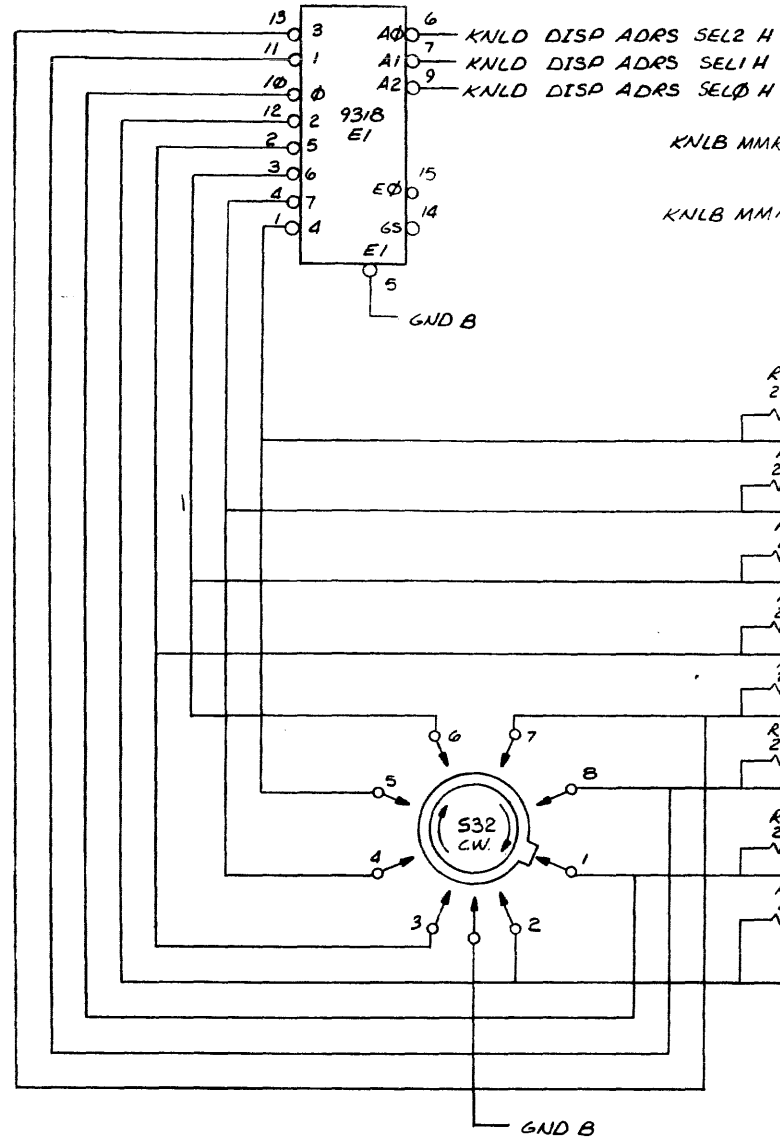
TITLE		SIZE CODE		NUMBER		REV.
CONSOLE BOARD (KNLC)		D CS		5411294-0-1		H
SCALE		SHEET		OF		DIST.
TW		4		5		



REV. H
 NUMBER DCS 5411294-0-1
 SIZE CODE

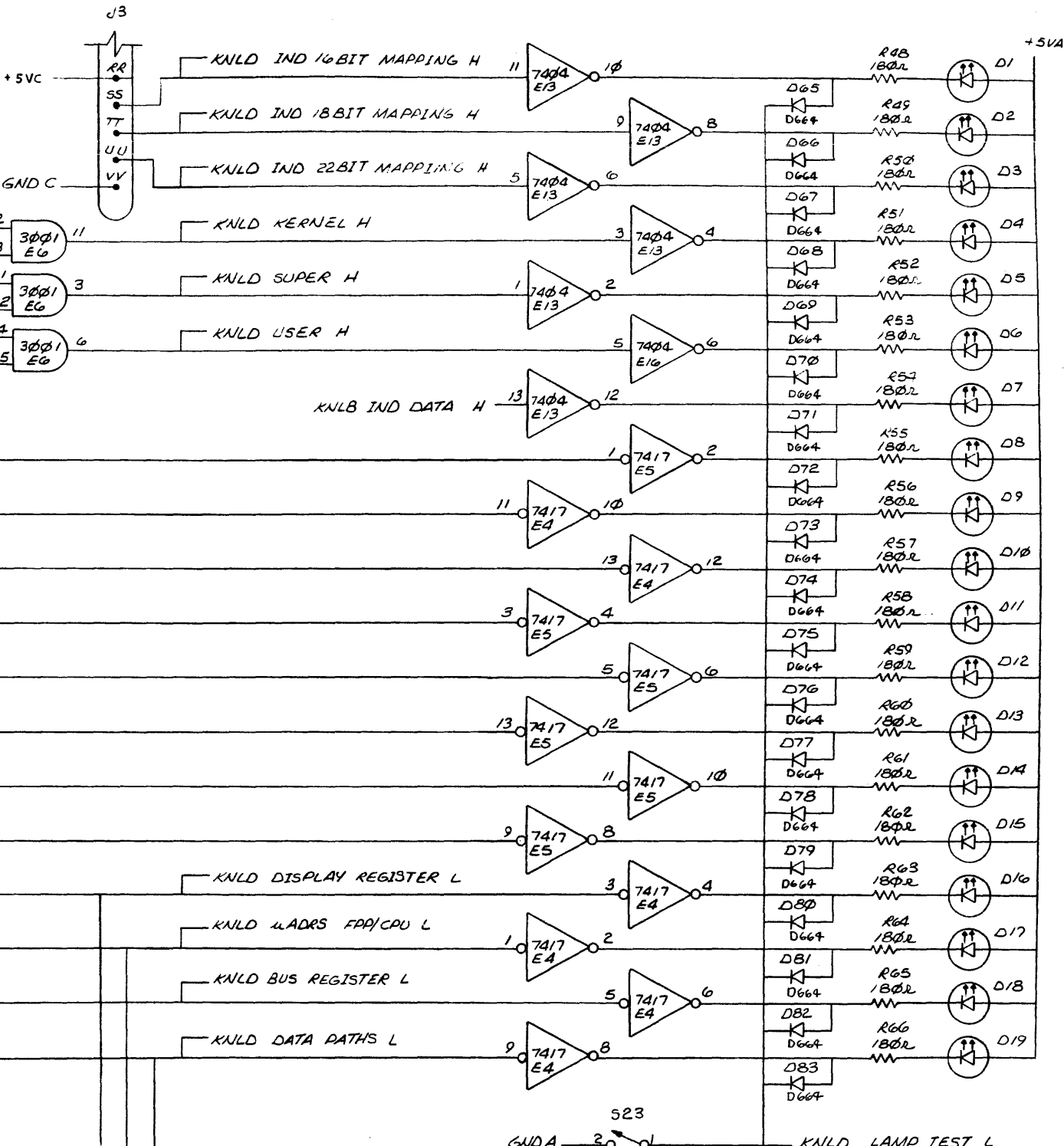
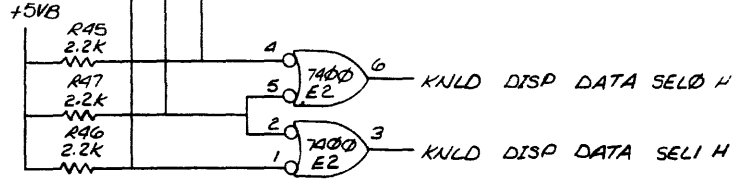
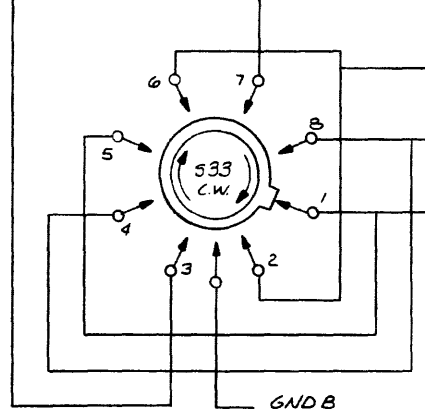
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D



CODE SELECT LINES	A2	A1	A0
USER I.V.	H	H	H
USER D.V.	H	H	L
SUPER I.V.	H	L	H
SUPER D.V.	H	L	L
KERNEL I.V.	L	H	L
KERNEL D.V.	L	L	H
PROGRAM PHY	L	L	L
CONSOLE PHY	L	H	H

CODE SELECT LINES	DISP DATA SEL1	DISP DATA SEL0
BUS REGISTER	L	L
DATA PATHS	L	H
DISPLAY REGISTER	H	L
ADDRS FAP/CPU	H	H



REV. H
NUMBER DCS 541294-0-1
SIZE CODE

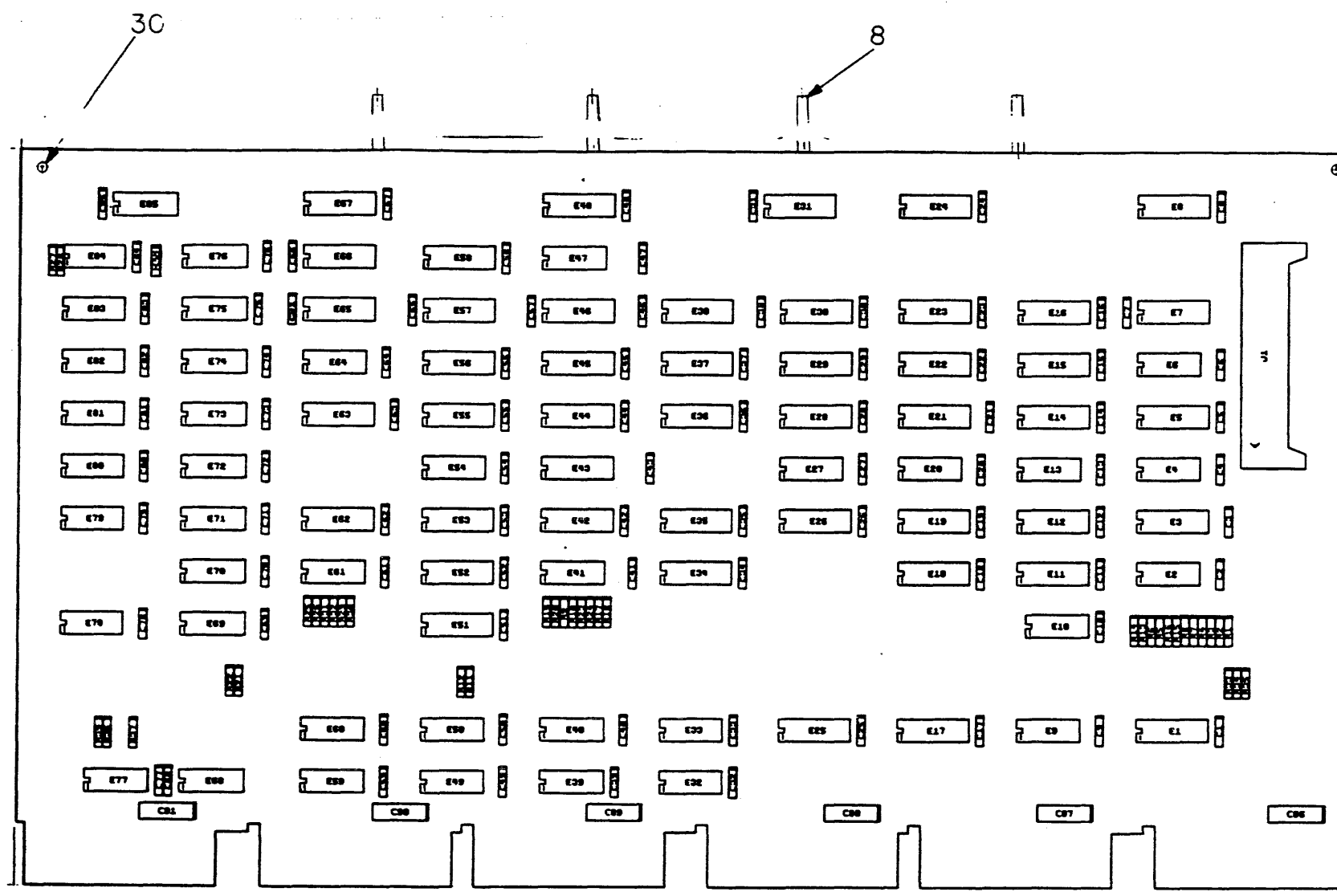
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	CONSOLE BOARD (KNLD)	SIZE CODE	D CS	NUMBER	541294-0-1	REV.	H
SCALE	1/1	SHEET	5 OF 5	DIST.			

8 7 6 5 4 3 2 1

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NOTES:
1. E31, E51 AND E84 ARE SPARE REFERENCE DESIGNATIONS



B-44 REF

15.39 REF

IC TYPE	GND	+5V
IC DEC 8640	1	9
IC DEC 74175	8	16
IC DEC 74S175	8	16
IC DEC 74S174	8	16
IC DEC 74S157	8	16
IC DEC 74S153	8	16
IC DEC 9318	8	16
IC DEC 74B5	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

REV	DATE	BY	DESCRIPTION
1	11/27/74	R. GONZALEZ	DRN
2	12/2/74	H. BOUCHER	CHG
3	12/2/74	H. BOUCHER	ENG
4	12/2/74	H. BOUCHER	PROJ. ENG.
5	12/2/74	H. BOUCHER	PROD.

REVISIONS

CHK	CHANGE NO	REV

DEC NO	EIA NO	DEC NO	EIA NO

SEMICONDUCTOR CONVERSION CHART

SCALE	SHEET	OF	9

digital EQUIPMENT CORPORATION

TITLE: PROCESSOR DATA & UNIBUS REGS

SIZE CODE: DKS M8134-0-1

NUMBER: 1

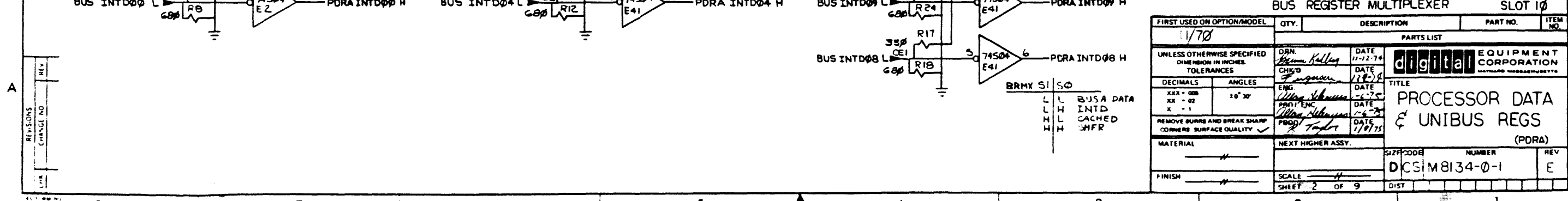
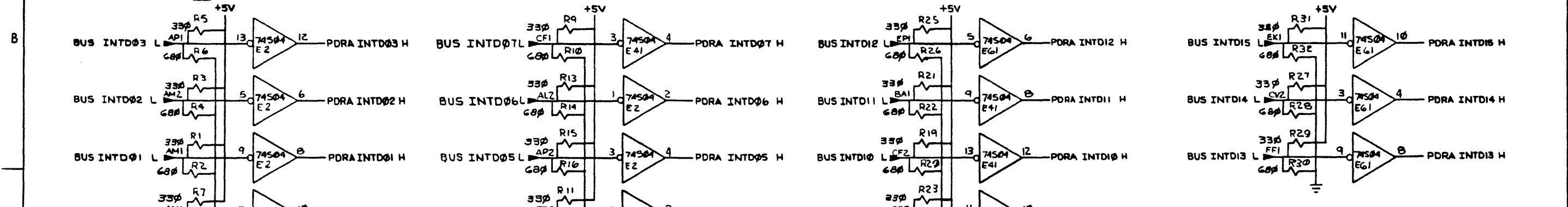
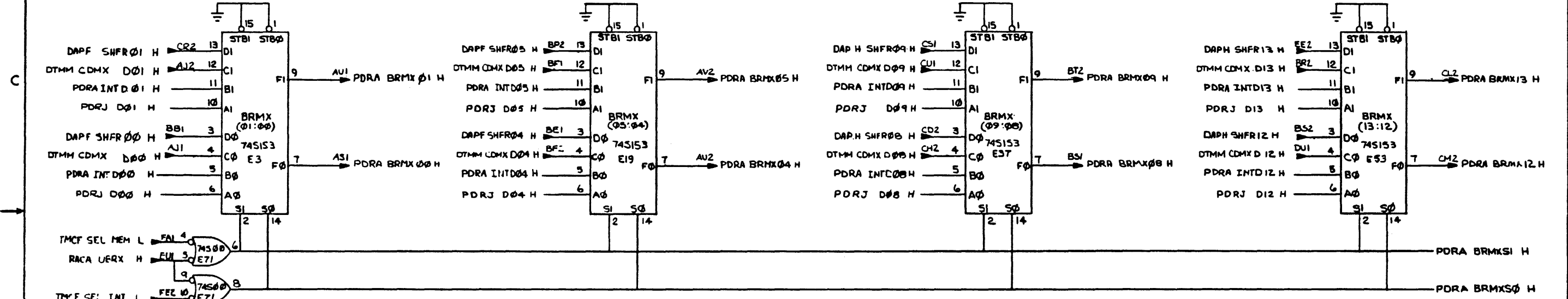
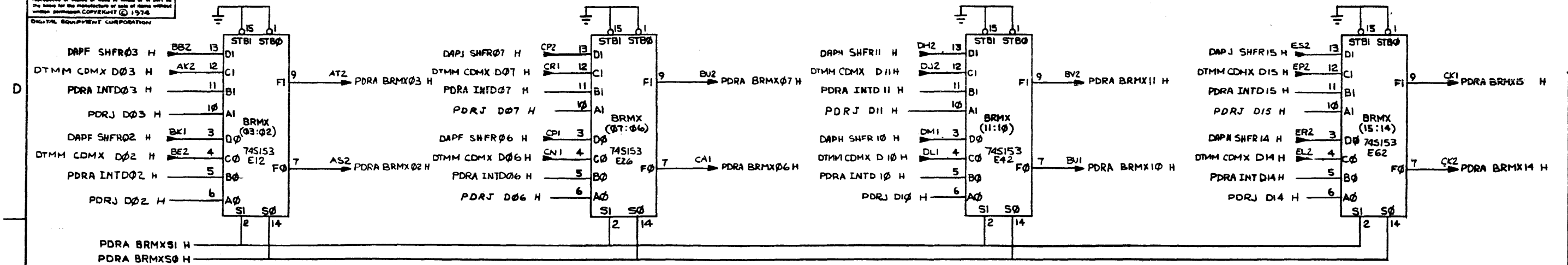
REV: E

REF	X-Y COORDINATE HOLE LOCATION	K-CO-M8134-0-4	ITEM NO.
REF	ASSY/DRILLING HOLE LAYOUT	D-AH-M8134-0-5	2
REF	MODULE ECO HISTORY	B-MH-M8134-0-6	3
1	ETCHED CIRCUIT BOARD	5011357	4
80	C1 THRU C85, C92	CAPACITOR, .01uf, 100V, 20% DISC	1001610-01
6	C86 THRU C91	CAPACITOR, 6.8uf, 35V, 10%	1005306
1	CONN., 48 PIN	1209941-02	7
1	HANDLE ASSY	1210711-02	8
3	R35, R36, R38	RESISTOR, 150 OHM, 1/4W, 5%	1300250
16	R1, R3, R5, R7, R9, R11, R13, R15, R17, R19, R21, R23, R25, R27, R29, R31	RESISTOR, 330 OHM, 1/4W, 5%	1300295
16	R2, R4, R6, R8, R10, R12, R14, R16, R18, R20, R22, R24, R26, R28, R30, R32	RESISTOR, 680 OHM, 1/4W, 5%	1301424
2	R34, R33	RESISTOR, 560 OHM, 1/4W, 5%	1301890
1	E73	I.C. DEC 74H50	1909060
4	E32, E39, E49, E59	I.C. DEC 8081	1908705
4	E13, E77, E80, E83	I.C. DEC 74H01	1909849-00
4	E8, E24, E48, E67	I.C. DEC 74B5	1910224
1	E37	I.C. DEC 9318	1910454
1	E71	I.C. DEC 74S00	1910532
9	E2, E4, E10, E27, E41, E54, E81, E84, E74	I.C. DEC 74S04	1910534
3	E89, E72, E85	I.C. DEC 74S10	1910536
1	E76	I.C. DEC 74S11	1910537
1	E70	I.C. DEC 74S20	1910539
2	E78, E75	I.C. DEC 74S40	1910541
8	E8, E9, E20, E47, E68, E79, E81, E82	I.C. DEC 74S74	1910544
24	E3, E5, E7, E12, E14, E18, E19, E21, E23, E28, E28, E30, E35, E36, E38, E42, E44, E48, E53, E55, E57, E62, E63, E85	I.C. DEC 74S153	1910547
1	E29	I.C. DEC 74S157	1910548
12	E1, E11, E15, E17, E18, E22, E25, E34, E43, E52, E56, E86	I.C. DEC 74S174	1910550
2	E45, E58	I.C. DEC 74175	1910851
4	E33, E40, E50, E80	I.C. DEC 8640	1911489
12	EYELET	9006732	30
	CABLE REPAIR	1209941-03	31
	CABLE REPAIR	1209941-04	32

DKS M8134-0-1

A

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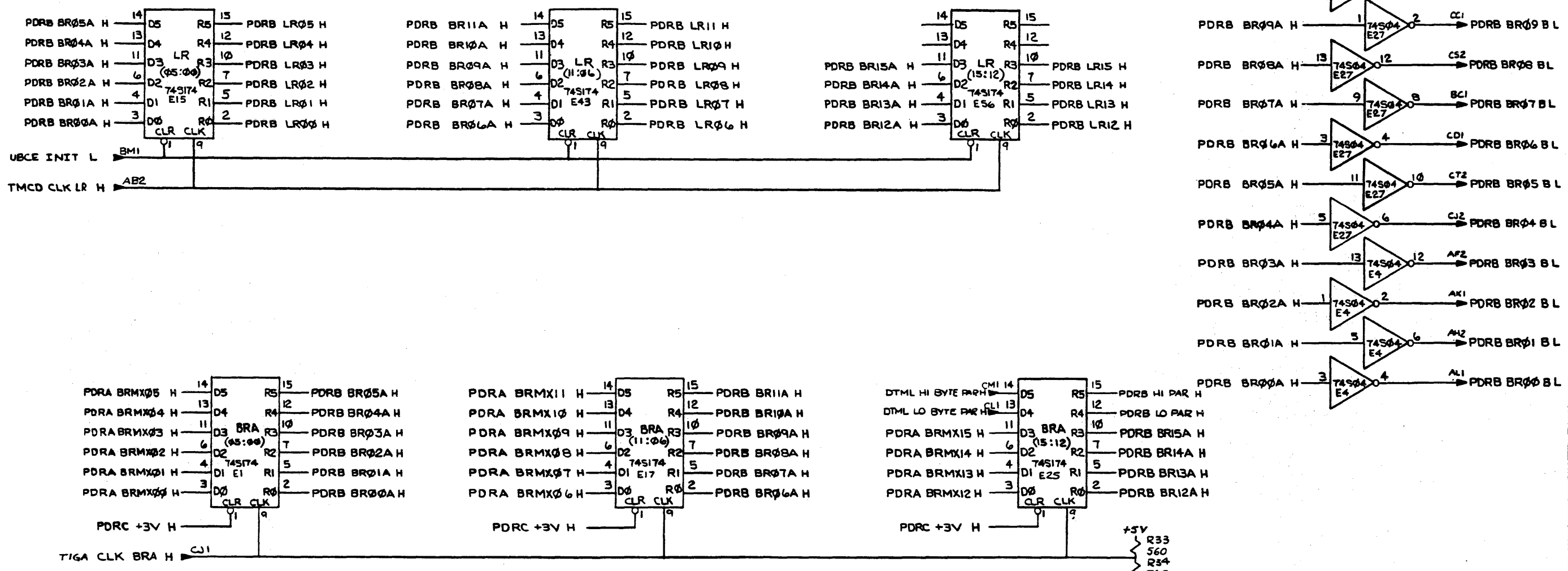
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	TITLE		
XXX - 000	± 0° 30'	PROCESSOR DATA & UNIBUS REGS (PORA)		
XX - 00				
X - 0				
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV
			DCS M8134-0-1	E
FINISH	SCALE	SHEET	OF	DIST
		2	9	

REVISIONS
CHANGE NO.
REV.

DCS M8134-0-1

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D
C
B
A



REV	CHG	NO	DATE

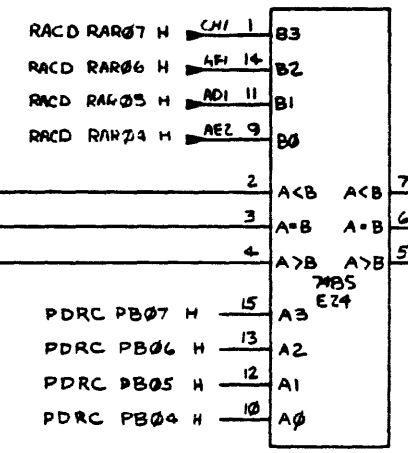
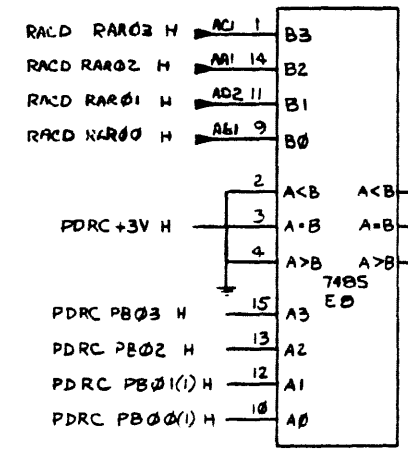
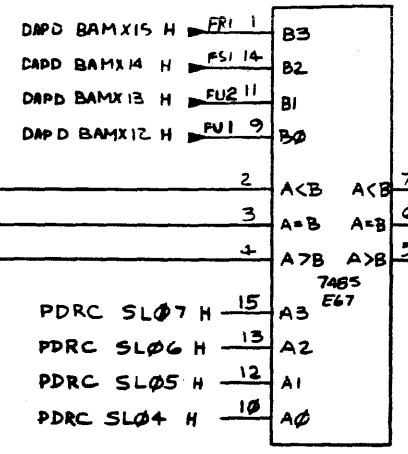
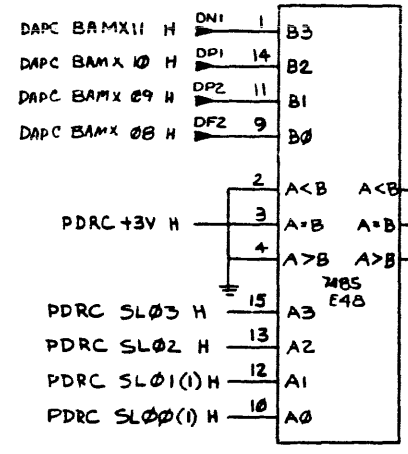
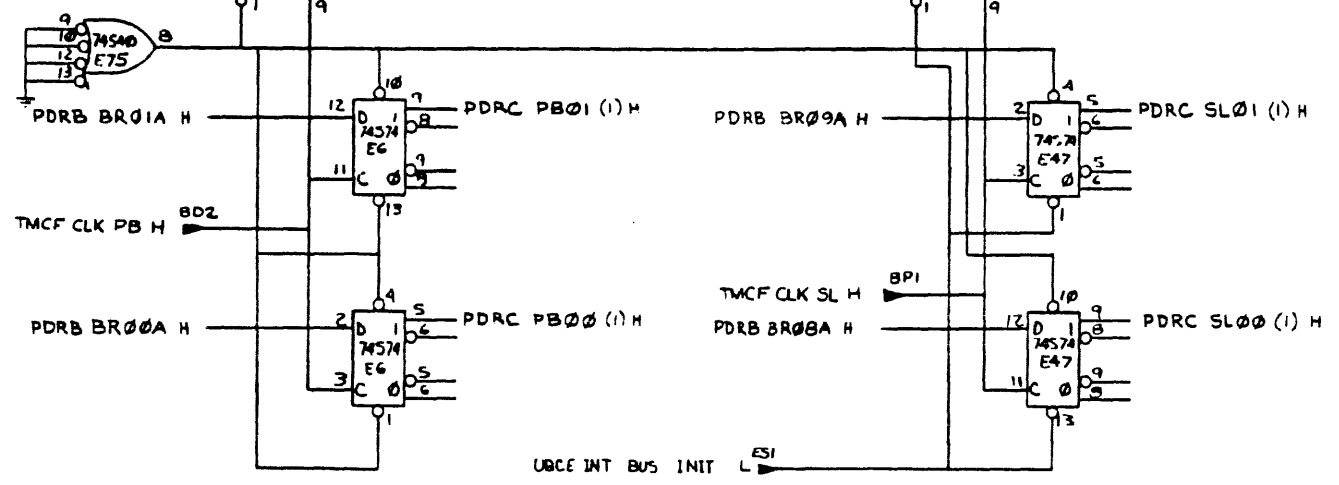
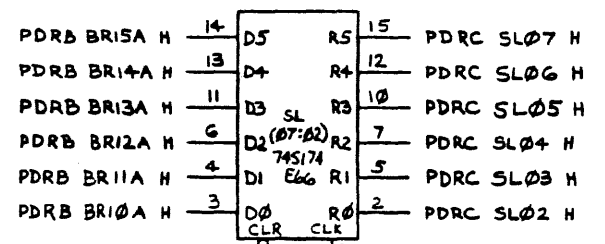
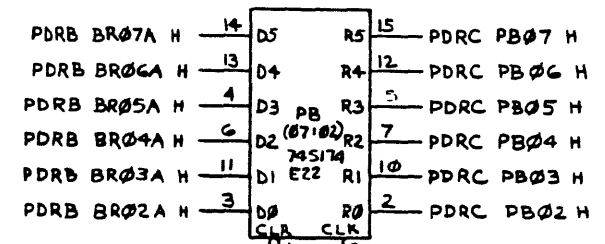
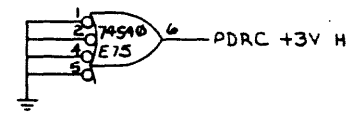
8 7 6 5 4 3 2 1

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES					
DECIMALS	ANGLES				
.XX - .008	±0° 30'				
X - .1					
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY					
MATERIAL		NEXT HIGHER ASSY.		SIZE CODE	NUMBER
				DCS	M8134-0-1
FINISH		SCALE	SHEET	DIST	REV
			3 OF 9		E

DCS M8134-0-1

Yellow & Red Zone
Decode Limit

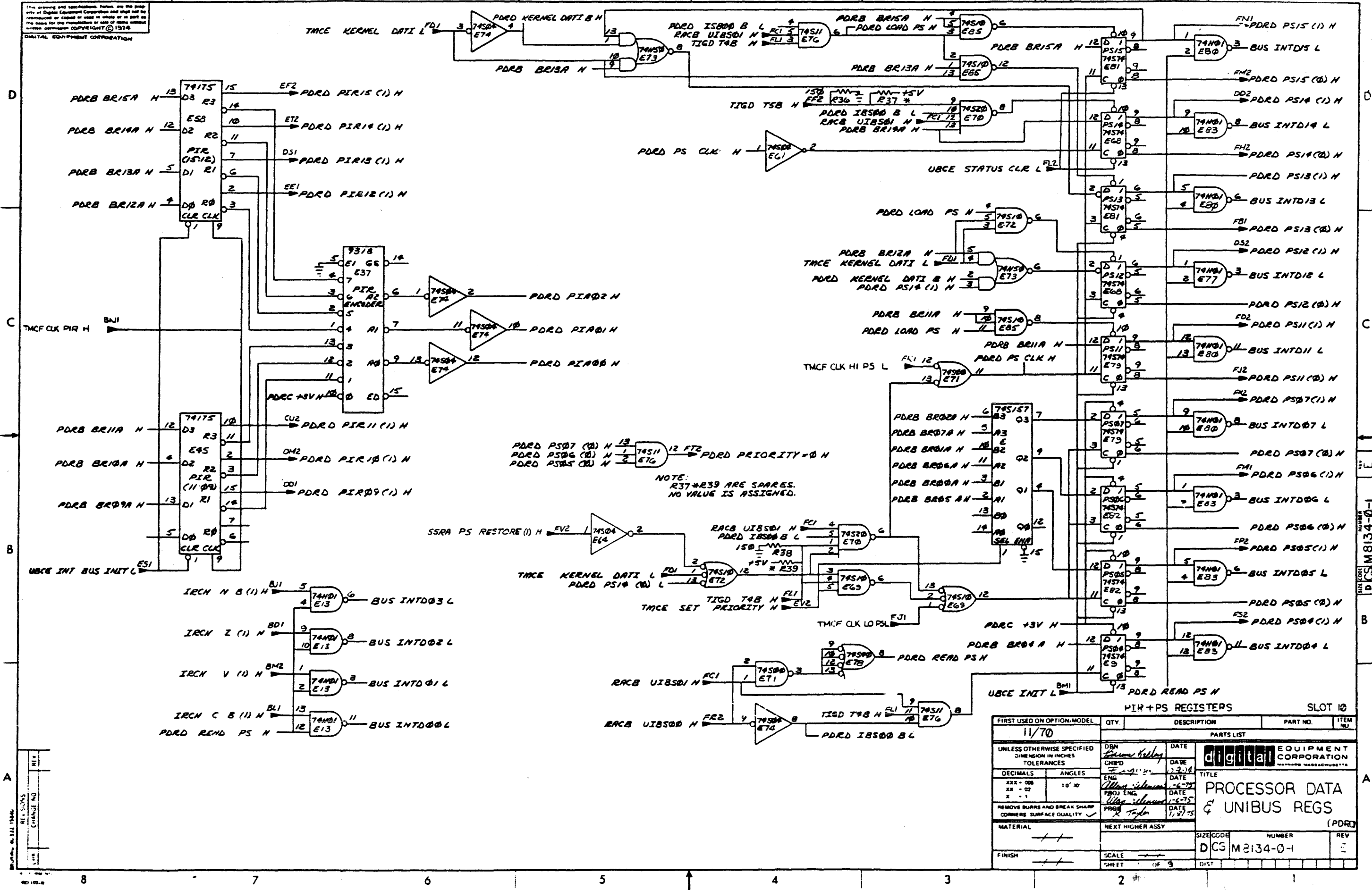
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PROGRAM BREAK & STACK LIMIT REGISTERS SLOT 10

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.	DRN <i>Kevin Kelly</i>	DATE 11-12-74	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
TOLERANCES	<i>Ferguson</i>	DATE 12-2-74		
DECIMALS	ENG <i>William V. Stevens</i>	BATE DATE 1-2-75	TITLE PROCESSOR DATA & UNIBUS REGS	
ANGLES	PBT/ENG <i>William V. Stevens</i>	DATE 1-2-75		
XXX - 008 XX - 02 X - 1	±0° 30'	DATE 1-2-75	(PDRC) SIZE CODE NUMBER REV DCS M8134-0-1 E	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROV <i>Tom</i>	DATE 11-01-75		
MATERIAL	NEXT HIGHER ASSY	SCALE		
FINISH		SHEET 1 OF 9		

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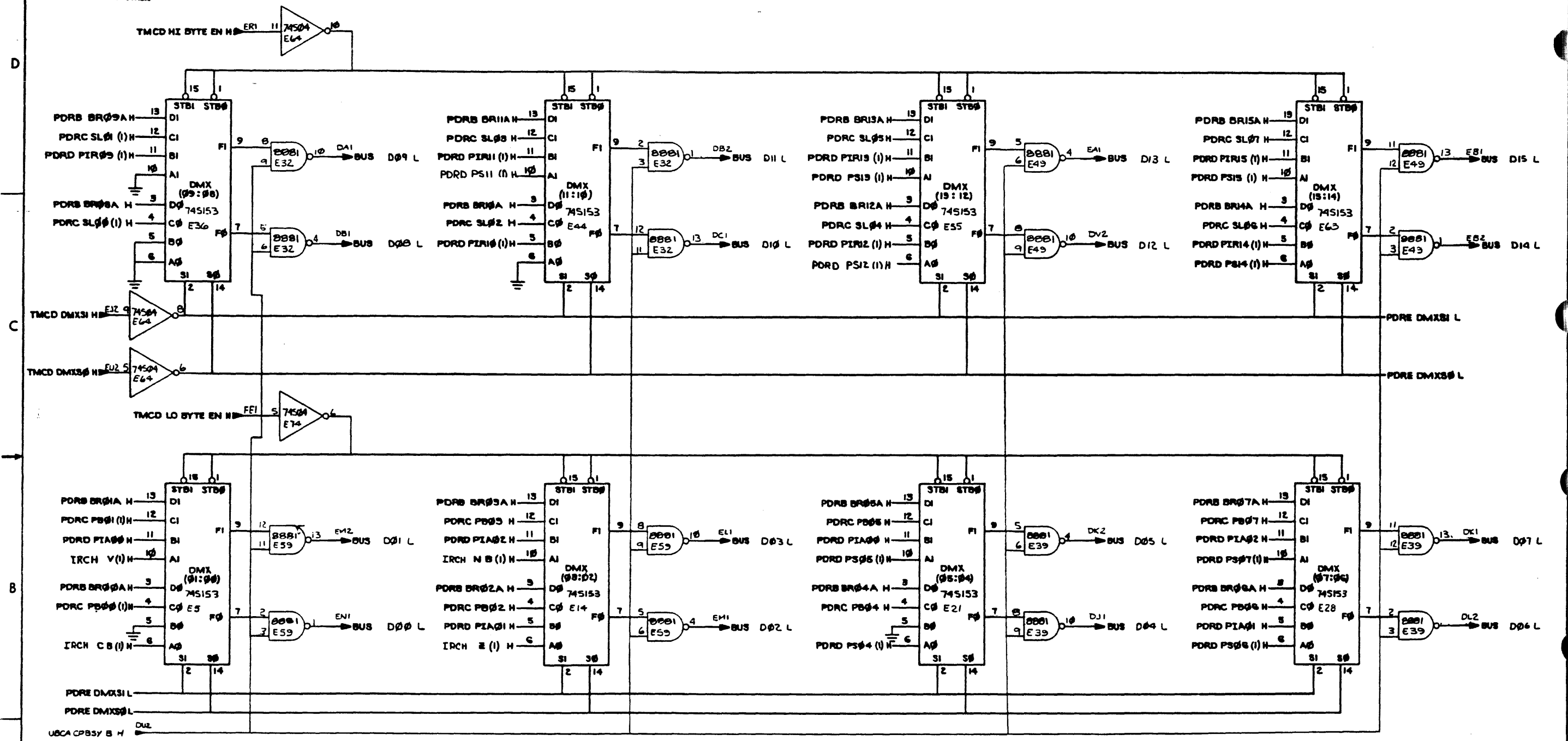
PDRD PS07 (0) H 13
PDRD PS06 (0) H 1
PDRD PS05 (0) H 2
NOTE:
R37+R39 ARE SPARES.
NO VALUE IS ASSIGNED.

FIRST USED ON OPTION/MODEL		QTY	DESCRIPTION	PART NO.	ITEM NO.
11/70					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DBN	DATE	digital EQUIPMENT CORPORATION MAYFIELD MASSACHUSETTS	
DECIMALS	ANGLES	CHND	DATE	TITLE PROCESSOR DATA & UNIBUS REGS (PDR)	
XXX - 008	10' 30"	ENG	DATE		
XX - 02		PROJ ENG	DATE		
X - 1		PRGR	DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY					
MATERIAL	NEXT HIGHER ASSY		SIZE/CODE	NUMBER	REV
FINISH	SCALE		DCS M2134-0-1		
SHEET			OF 9	DIST	

REV	CHANGE NO

DRAWING NO. DCS M8134-0-1

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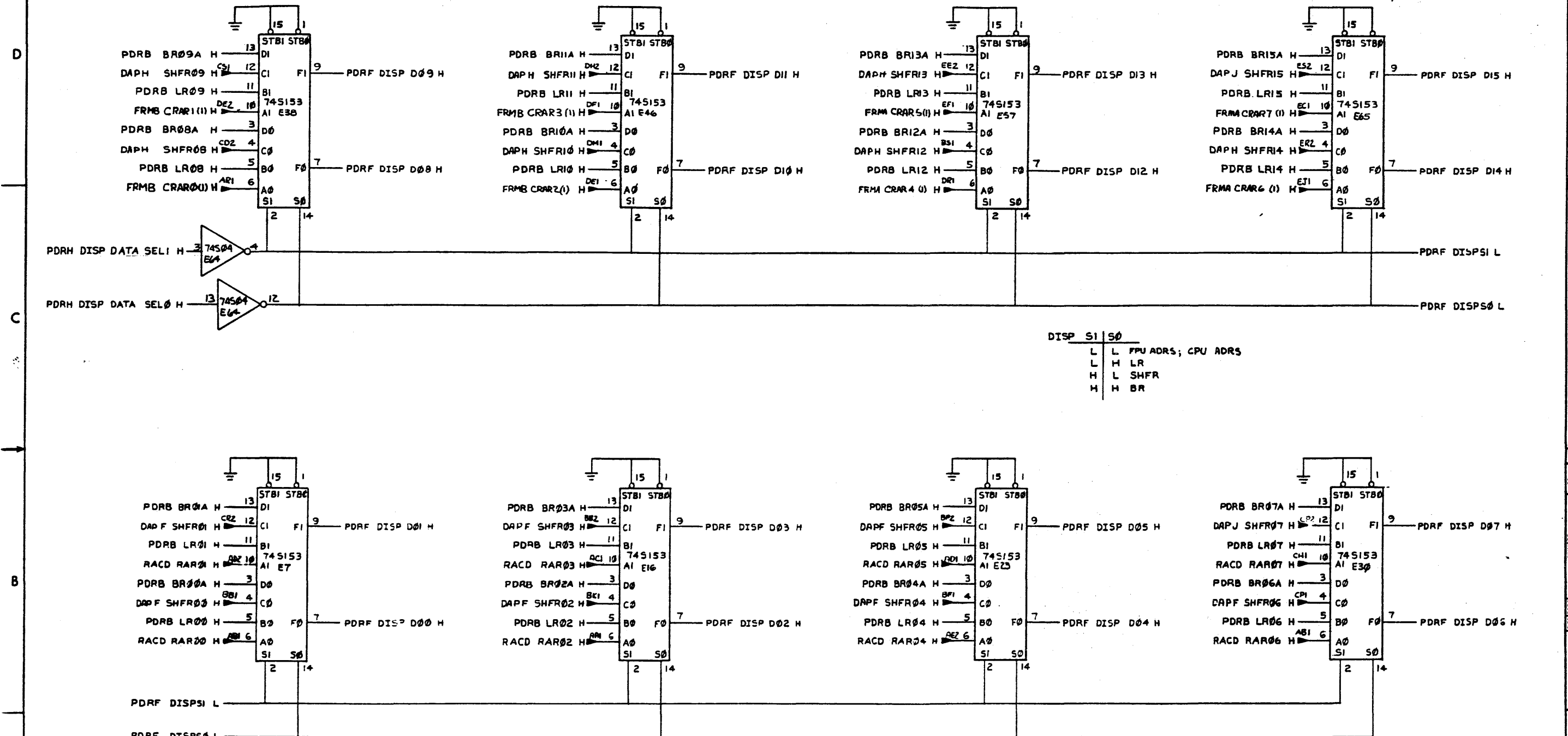
DMX	SI	SO	OUTPUT
L	L		STATUS
L	H		PIR; PIA
H	L		SL; PB
H	H		BR

REV	CHANGE NO	DESCRIPTION
1		

UNIBUS DATA MULTIPLEXER			SLOT 0	
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DATE 11-12-74	PARTS LIST	
DECIMALS	ANGLES	DATE 12-2-74	TITLE	
XXX - 008	±0° 30'	DATE 6-75	PROCESSOR DATA	
XX - 02		DATE 6-75	UNIBUS REGS	
X - 1		DATE 12-75	(PDRE)	
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV
FINISH	SCALE	D	CS M8134-0-1	E
	SHEET OF 9	DIST		

CS M8134-0-1

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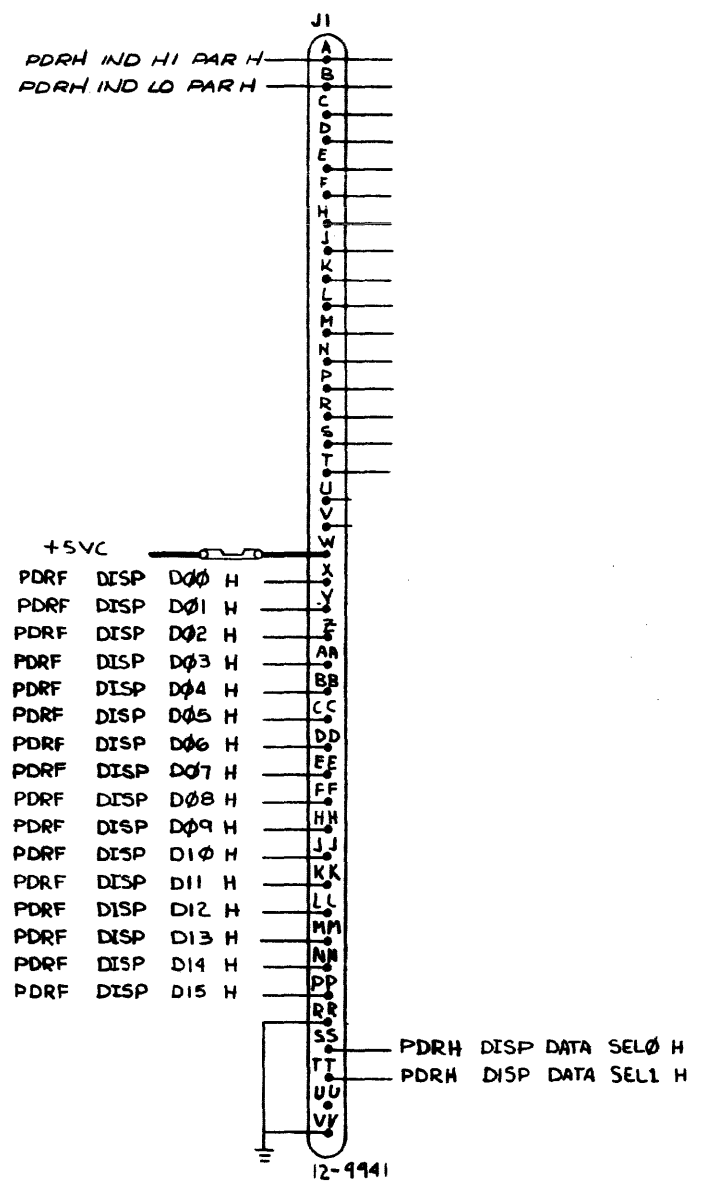
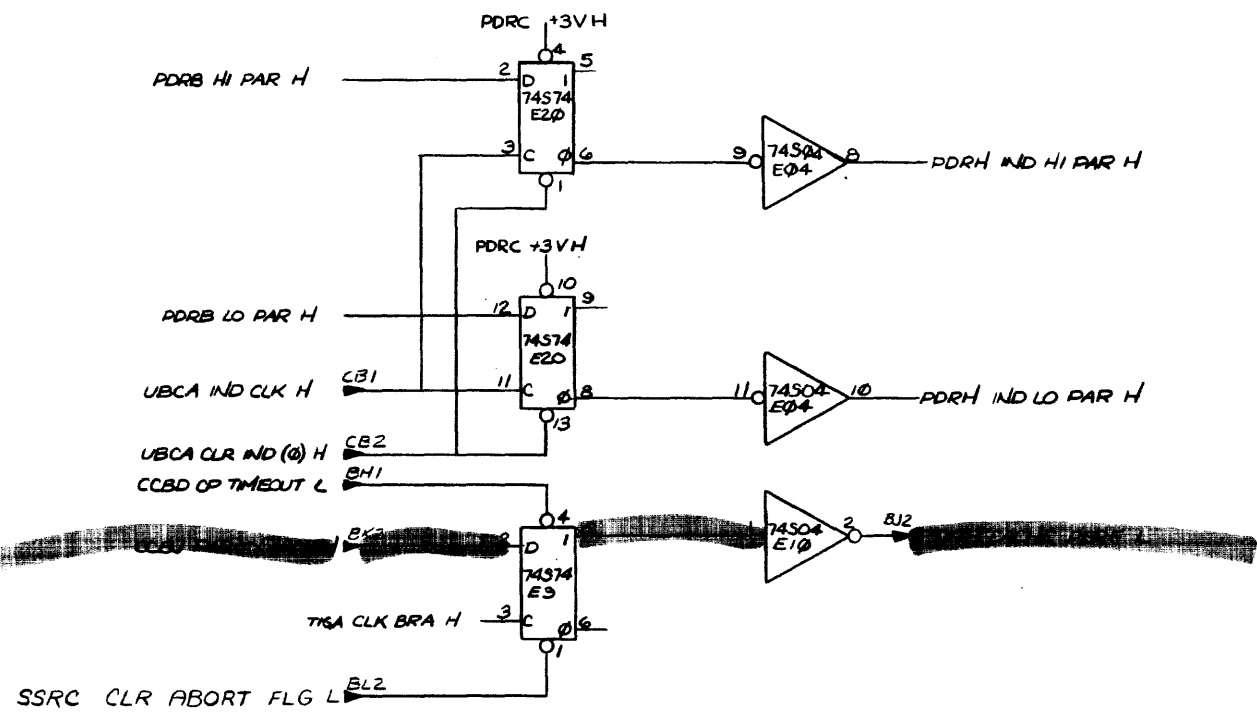
DISP	S1	S0
L	L	FPU ADRS; CPU ADRS
L	H	LR
H	L	SHFR
H	H	BR

REV.	CHANGE NO.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DATE	digital EQUIPMENT CORPORATION	
DECIMALS	ANGLES	11-12-74	TITLE PROCESSOR DATA & UNIBUS REGS (PDRF)	
XXX - 008	±0° 30'	1/27/75		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE	DCS M8134-0-1	
MATERIAL		DATE	REV. E	
FINISH		DATE	SHEET 7 OF 3	

8 7 6 5 4 3 2 1

REV. E
PART NO. DCS M8134-0-1



PDR/KNL INTERFACE
 SIGNALS TO CONSOLE SIGNALS FROM CONSOLE

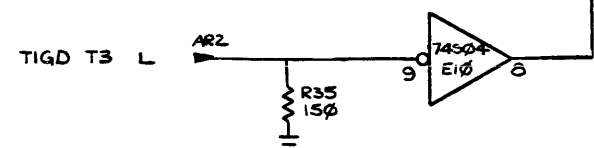
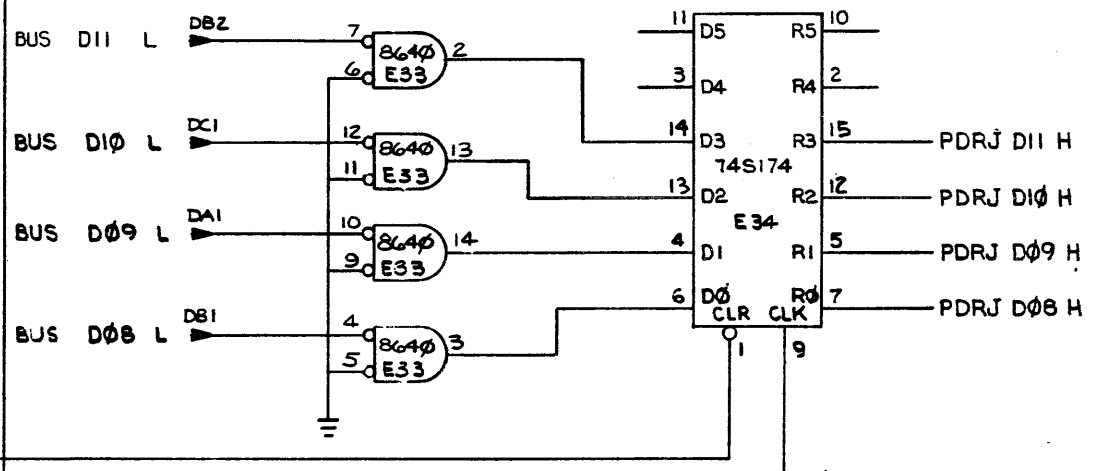
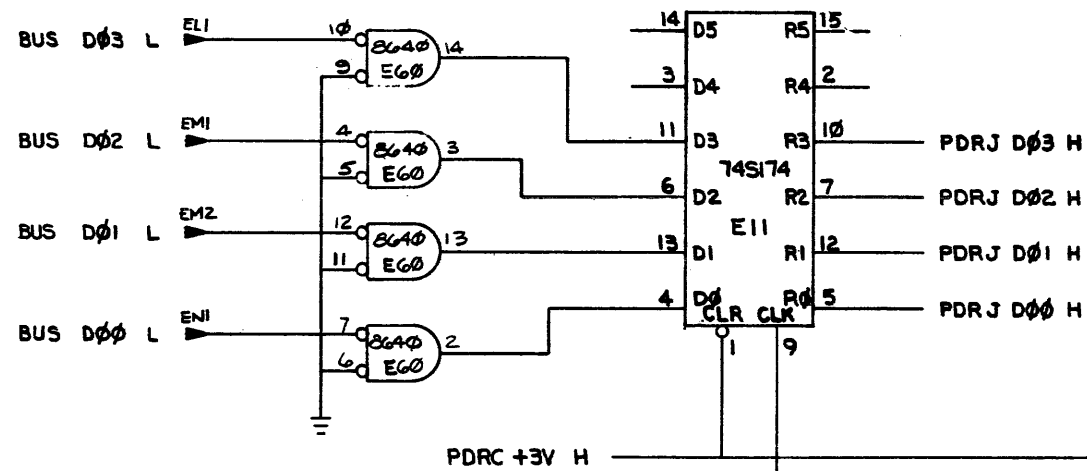
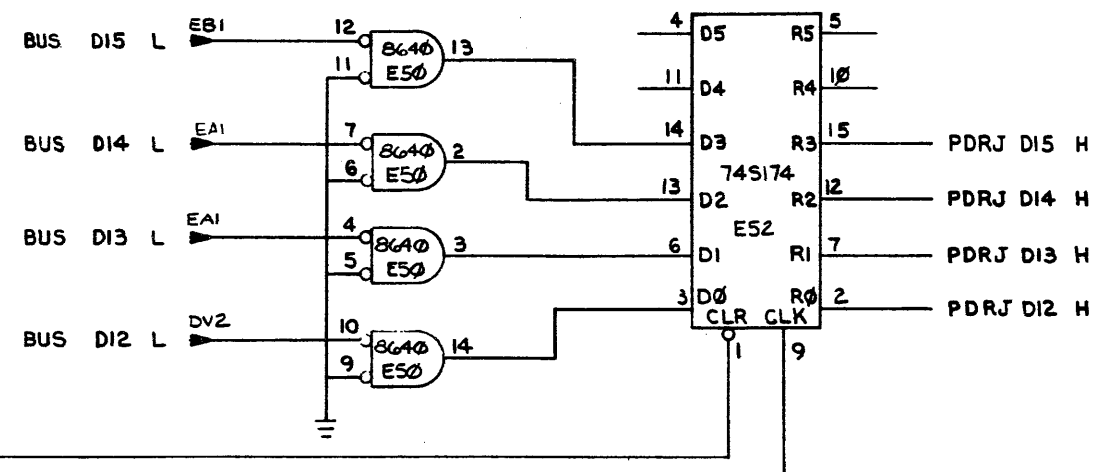
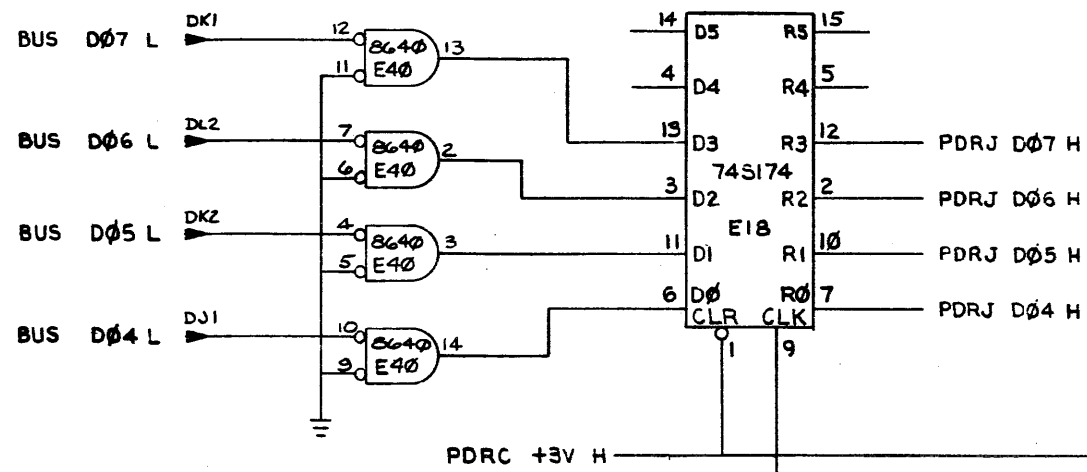
REV.	
CHANGE NO.	
CHK.	

FIRST USED ON OPTION/MODEL 11/70		QTY.	DESCRIPTION	PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES					
DECIMALS	ANGLES	PARTS LIST			
.XXX = .006	± 0° 30'	DATE 11-22-74	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS		
.XX = .02		DATE 11-12-74	TITLE		
.X = .1		DATE 1-6-75	PROCESSOR DATA & UNIBUS REGS		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE 1-8-75			
MATERIAL	NEXT HIGHER ASSY.	DATE 1-8-75	(PDRH)		
FINISH	SCALE	SIZE CODE	NUMBER	REV.	
	8 OF 9	DCS	M8134-0-1	E	
		DIST.			

REV. E
 NUMBER M8134-0-1
 SIZE CODE DCS
 B
 A

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Σ 10



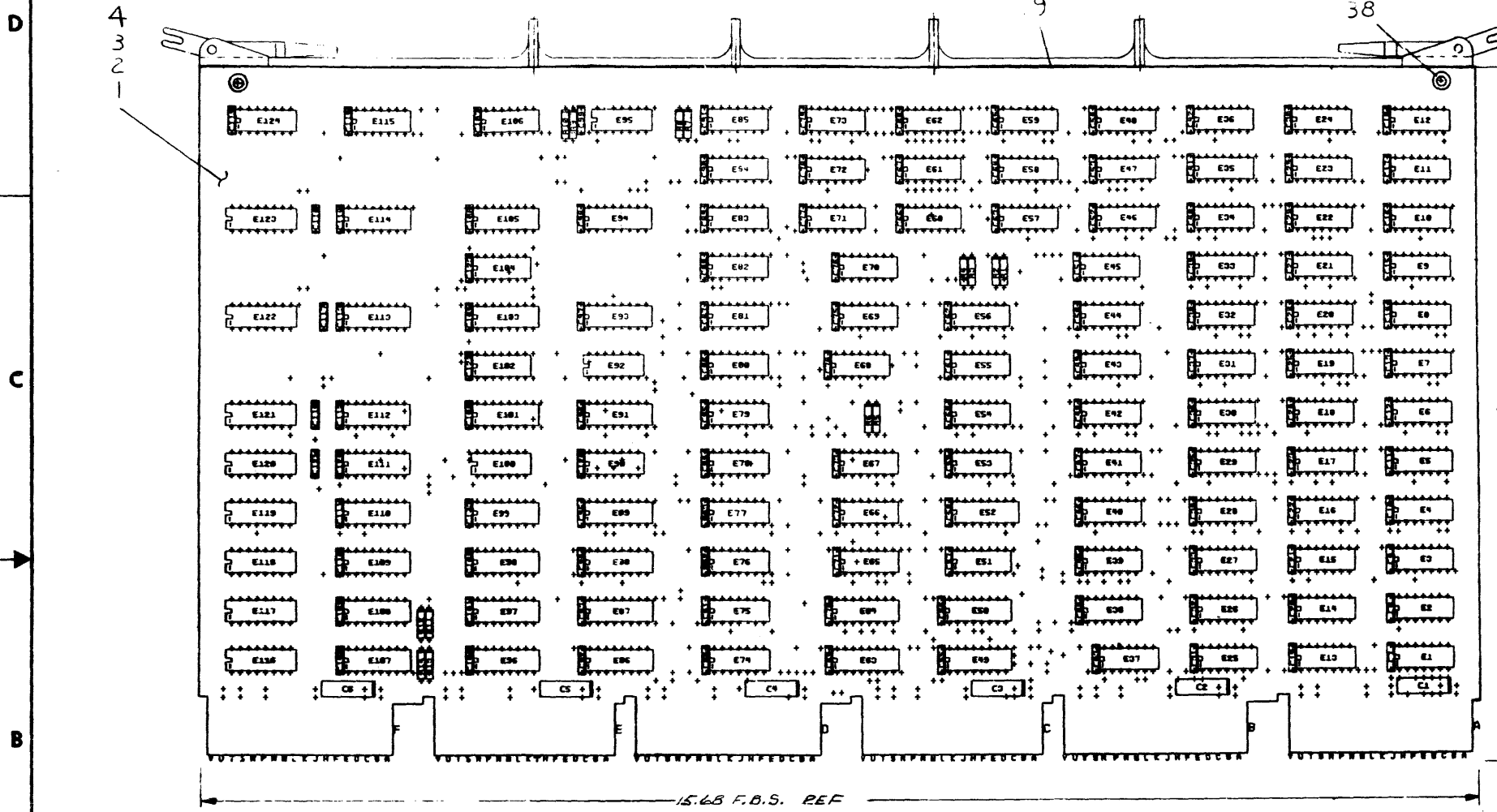
BUS BUFFER REG SLOT 10

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DRN <i>B. Kelly</i>	DATE 11-12-74	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
TOLERANCES	CHK'D <i>F. Brown</i>	DATE 11-12-74		
DECIMALS .005	ENG <i>Alan Helms</i>	DATE 11-12-74	TITLE PROCESSOR DATA & UNIBUS REGS (PDRJ)	
ANGLES 30°	PROJ ENG <i>Alan Helms</i>	DATE 11-12-74		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY 1	PBDD <i>R. Taylor</i>	DATE 11/8/75	SIZE CODE NUMBER REV. DCS M8134-0-1 E	
MATERIAL	NEXT HIGHER ASSY.	SCALE		
FINISH		SHEET 9 OF 9	DIST.	

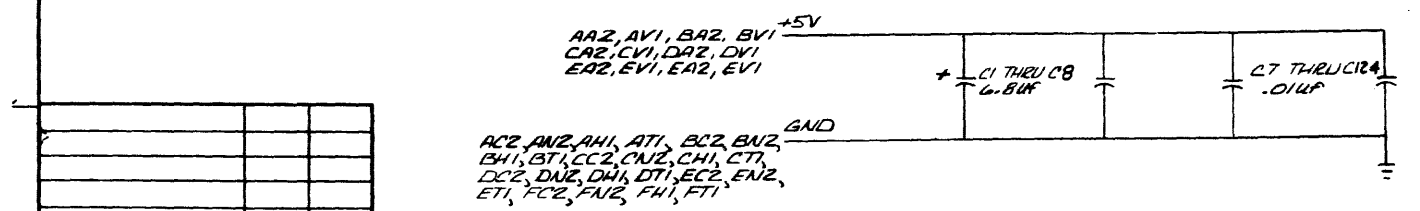
REV	CHANGE NO	REVISIONS

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NOTES: 1. UNLESS OTHERWISE NOTED RESISTANCE IS IN OHMS AND CAPACITANCE IS IN PICOFARADS. CAPS WITH OUT VALUE NOTED ARE .01 MFD
2. E61 & E62 ARE SPARE I.C. LOCATIONS.
3. R5, R7, R9, R12 & R13 ARE NOT USED



REF	X-Y COORDINATE HOLE LOCATION	QTY	ITEM NO.
REF	ASSY DRILLING HOLE LAYOUT		0-AM-00123-0-5
REF	MODULE ECO HISTORY		0-AM-00123-0-6
1	ETCHED CIRCUIT BOARD	5014669	4
10	C7 THRU C124	CAPACITOR, .01uF, 50V	1001610-00
6	C1 THRU C6	CAPACITOR, 6.0uF, 35V, 10%	1005306
5	R6, R8, R10, R11, R14	RESISTOR, 150 OHM, 1/4W, 5%	1300250
5	E4, E31, E50, E59, E104	I.C. DEC 74580	1910532
12	E6, E27, E34, E52, E56, E57, E72, E78, E79, E84, E95, E100	I.C. DEC 74584	1910534
12	E3, E10, E20, E29, E40, E48, E53, E59, E80, E87, E92, E102	I.C. DEC 74510	1910536
4	E55, E88, E89, E85	I.C. DEC 74511	1910537
3	E16, E30, E41	I.C. DEC 74520	1910539
1	E15	I.C. DEC 74540	1910541
37	E5, E7, E9, E8, E11, E12, E17, E18, E19, E20, E21, E22, E23, E24, E33, E35, E42, E43, E44, E45, E46, E47, E51, E54, E85, E70, E71, E74, E75, E76, E77, E80, E81, E82, E83, E92, E106	I.C. DEC 74564	1910542
4	E49, E50, E63, E64	I.C. DEC 745153	1910547
12	E88, E89, E96, E97, E98, E107, E100, E109, E116, E117, E118, E87	I.C. DEC 745174	1910550
14	E1, E2, E13, E14, E25, E26, E36, E37, E38, E73, E115, E124, E86, E90	I.C. DEC 74574	1910544
2	R1 R3	RES. 680 OHM 1/4W 5%	1301424
2	R2, R4	RES. 330 OHM 1/4W 5%	1300245
1	E99	ROM 256x4	23C77A2
1	E94	ROM 256x4	23C78A2
1	E93	ROM 256x4	23C79A2
1	E89	ROM 256x4	23C80A2
1	E91	ROM 256x4	23C81A2
1	E120	ROM 256x4	23C82A2
1	E111	74S175	1910957
1	E123	ROM 256x4	23C66A2
1	E110	ROM 256x4	23C67A2
1	E121	ROM 256x4	23C68A2
1	E122	ROM 256x4	23C69A2
1	E114	ROM 256x4	23C70A2
1	E112	ROM 256x4	23C71A2
1	E110	ROM 256x4	23C72A2
1	E113	ROM 256x4	23C73A2
1	E105	ROM 256x4	23C74A2
1	E103	ROM 256x4	23C75A2
1	E101	ROM 256x4	23C76A2
12		EYELET	9006732
1		HANDLE MODULE	1210711-2



IC TYPE	QTY	ITEM NO.
IC DEC 74S175	8	16
IC DEC 74S174	8	16
IC DEC 74S153	8	16
256x4 ROM	8	16

IC PIN LOCATIONS

SEMICONDUCTOR CONVERSION CHART

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

PARTS LIST

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

digital

TITLE: ROM & ADDR CONTROL (RAC)

SIZE CODE: DCSIM8123-0-1

REV: B

SCALE: 1 OF 14

DATE: 1/15/76

DESIGNED BY: A. HELENIUS

CHECKED BY: A. HELENIUS

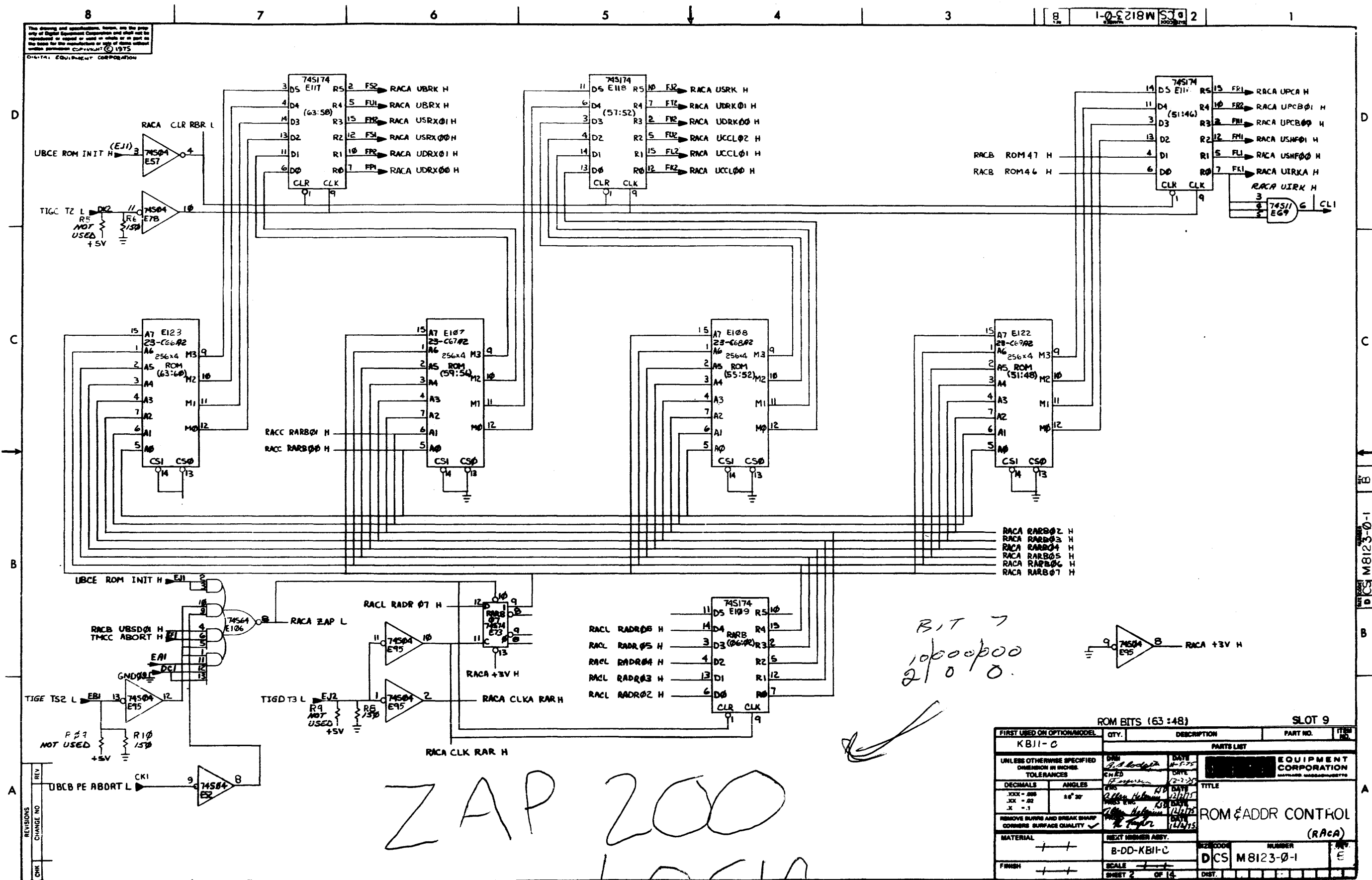
ORIGINATED BY: A. HELENIUS

DATE: 2 JAN 76

PROJECT: 8123-0-1000-1

REV: A

A WIRE "OR"



ZAP 200
LOGIC

BIT 7
10000000
21000

FIRST USED ON OPTION MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
KB11-C			ROM BITS (63:48)	SLOT 9	
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES					
DECIMALS	ANGLES	EQUIPMENT CORPORATION			
.XX - .005	± 0° 30'	CORPORATION			
.XX - .01		CORPORATION			
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY					
MATERIAL		NEXT NUMBER ASSEMBLY		SIZE CODE	NUMBER
++		B-DD-KB11-C		DCS	M8123-0-1
FINISH		SCALE		SHEET 2	OF 15
++		DST.			

ROM ADDR CONTROL (RACA)

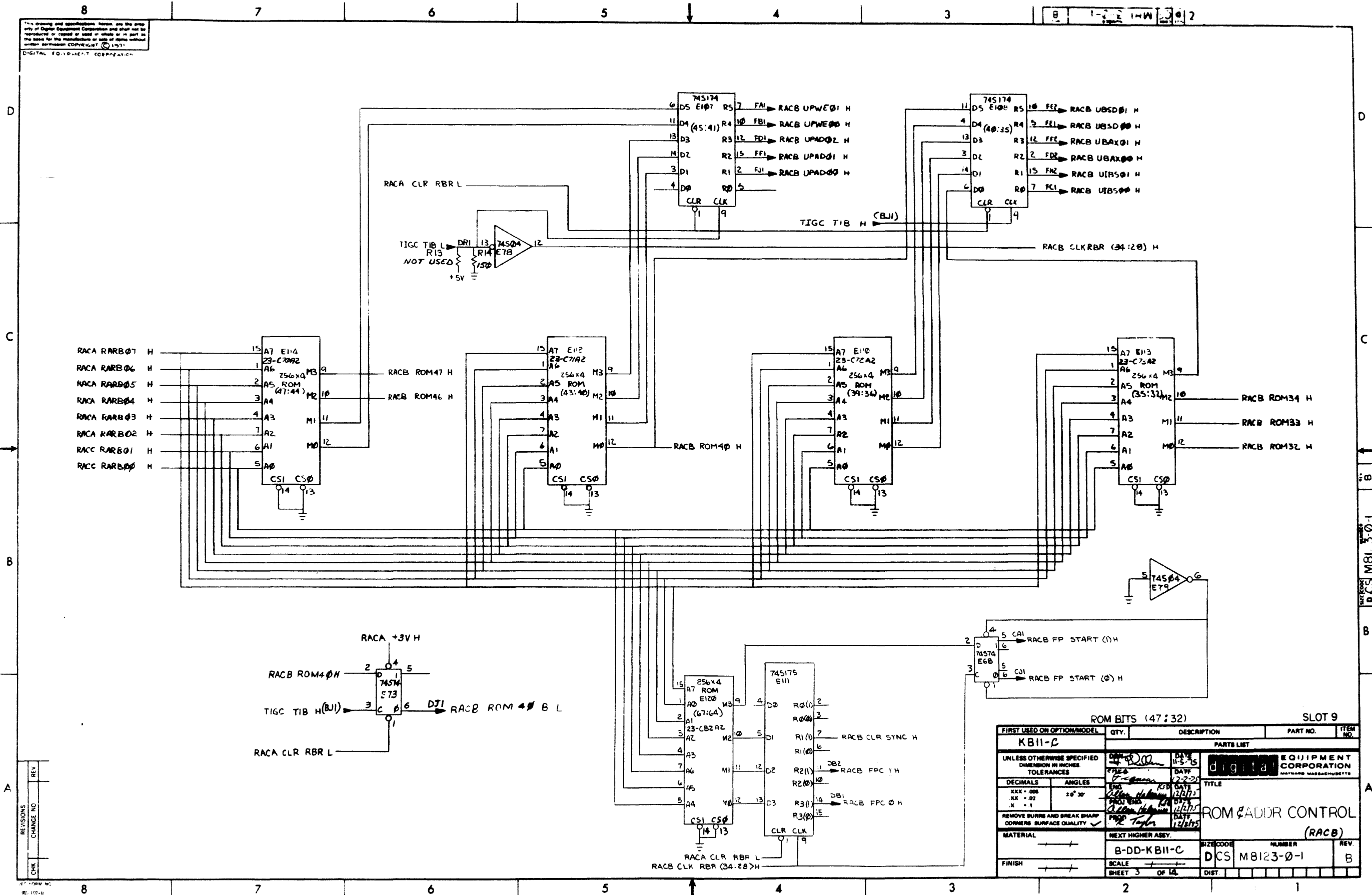
DCS M8123-0-1

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1-0-C218W 2

DCS M8123-0-1

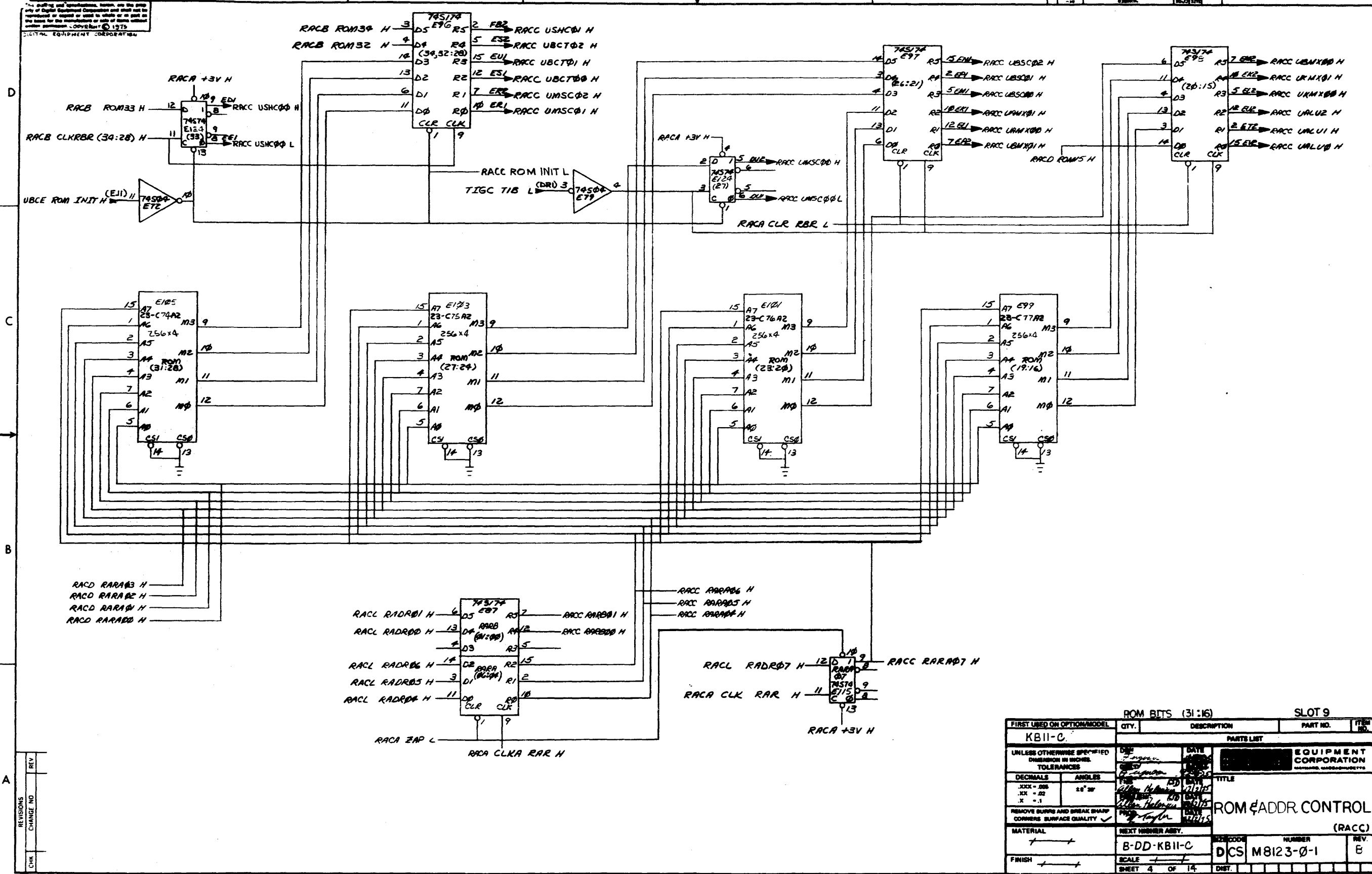
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REVISIONS	REV
CHANGE NO	
CHK	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
KB11-C				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	TITLE		
XXX - 005	20° 30'	ROM # ADDR CONTROL (RACB)		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL		NEXT HIGHER ASSEMBLY		REV
		B-DD-KB11-C		B
FINISH		SCALE	SHEET 3 OF 14	DIST.

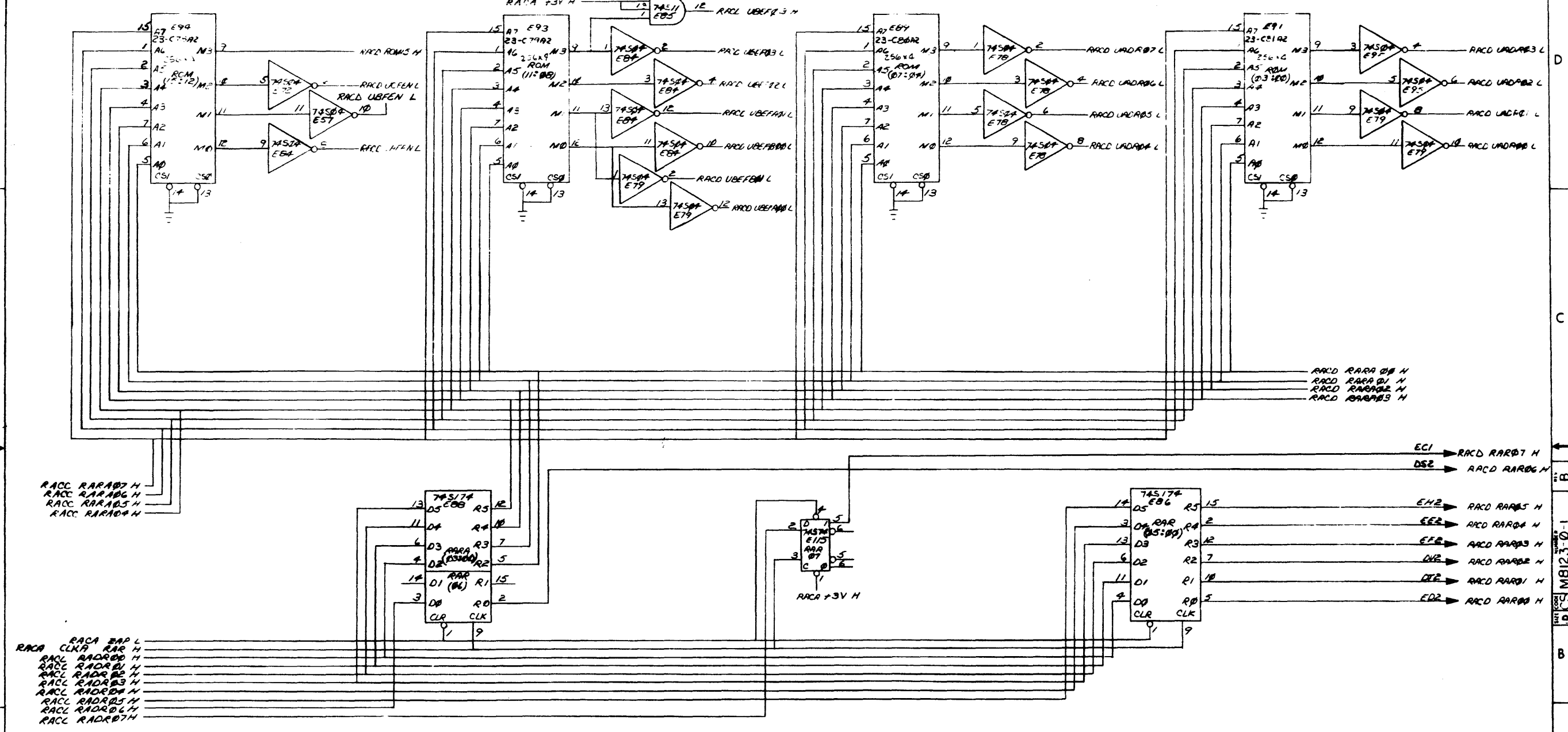
PART NO. M8123-0-1



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
KB11-C		ROM BITS (31:16)		SLOT 9
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	TITLE		
.XXX - .005	16° 30'	ROM ADDR. CONTROL (RACC)		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASBY.	REV. NO.		
FINISH	B-DD-KB11-C	DCS	M8123-0-1	B
SCALE		SHEET 4 OF 14		

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

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REV	CHANGE NO

FIRST USED ON OPTION/MODEL		QTY	DESCRIPTION	PART NO	ITEM NO
KB11-C					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES					
DECIMALS	ANGLES				
XXX - .005	XX - .02				
X - .1					
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY					
MATERIAL		NEXT HIGHER ASSY		SIZE/SCALE	NUMBER
				B-D-D-KB11-C	DCS M8123-0-1
FINISH		SHEET 5 OF 14		DIST	

ROM BITS (15:00) SLOT 9

digital EQUIPMENT CORPORATION

TITLE ROM ADDR. CONTROL (RACD)

REVISIONS

BEARING NO 532 15840

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RACJ AFIR03 (1) L
 RACE BF1=0 L
 RACJ AFIR15 (0) H
 RACJ AFIR14 (1) H
 RACJ AFIR13 (1) H
 RACJ AFIR12 (1) H
 RACE BF2=4 L

RACJ AFIR11 (1) H
 RACJ AFIR10 (1) H
 RACJ AFIR09 (0) H
 RACJ BUF AFIR08 (1) H
 RACJ AFIR5 (0) H
 RACJ AFIR06 (1) H
 RACJ AFIR08 (1) H

RACJ AFIR11 (1) H
 RACJ AFIR10 (0) H
 RACJ AFIR09 (1) H
 RACJ AFIR04 (1) L

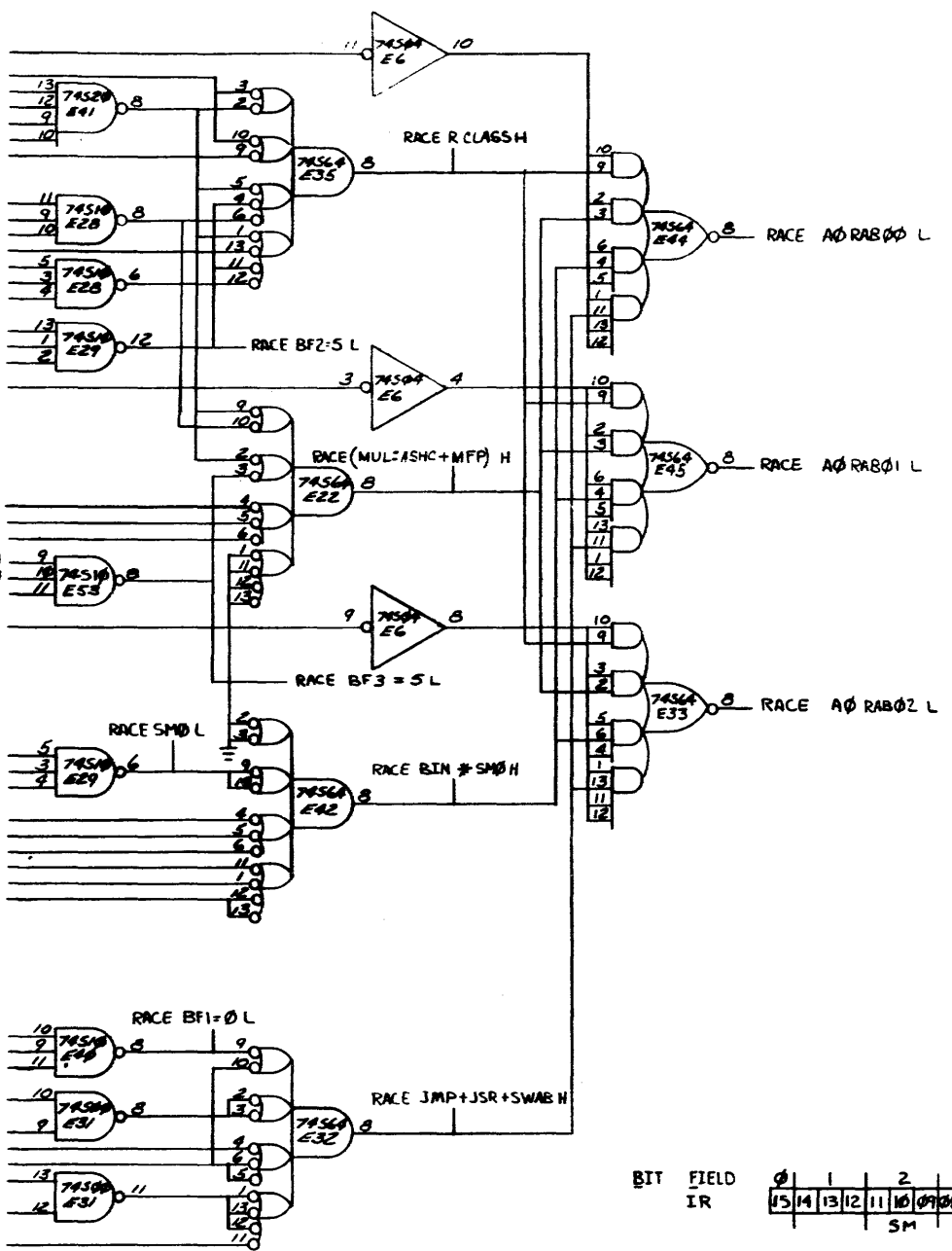
RACE BF1=0 L
 RACE +3V H
 RACJ BUF AFIR11 (0) L
 RACJ AFIR08 (1) H
 RACJ AFIR07 (0) H
 RACJ AFIR06 (1) H
 RACJ AFIR05 (1) L

RACE SMD L
 RACJ AFIR09 (0) H
 RACJ AFIR10 (0) H
 RACJ AFIR11 (0) H

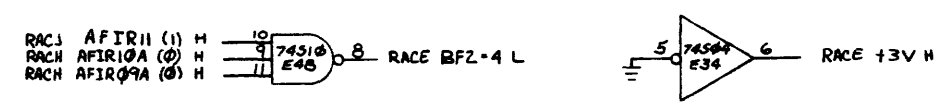
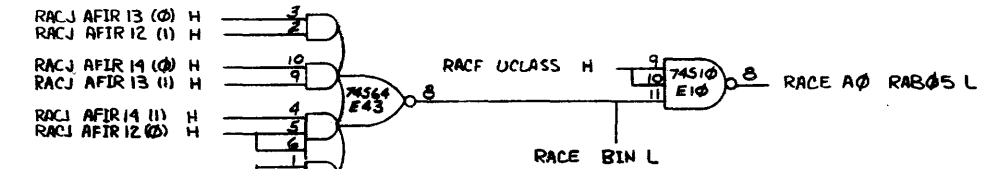
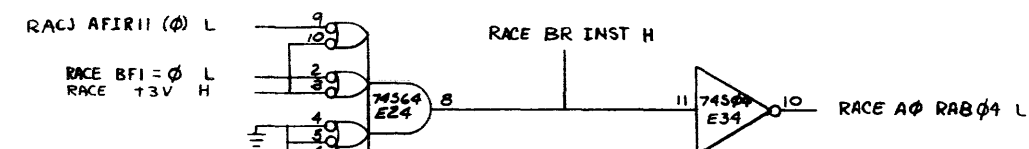
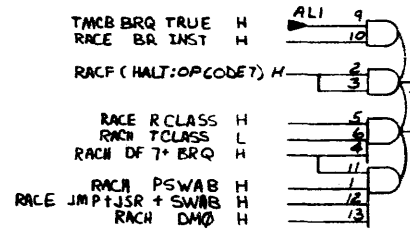
RACJ AFIR12 (1) L
 RACJ AFIR13 (0) L
 RACJ AFIR14 (1) L
 RACJ AFIR12 (0) L
 RACJ AFIR13 (0) L
 RACJ AFIR14 (0) L

RACE BF1=0 L
 RACJ AFIR14 (0) H
 RACJ AFIR13 (0) H
 RACJ AFIR12 (0) H

RACJ AFIR10 (0) H
 RACJ AFIR09 (0) H
 RACE +3V H
 RACJ AFIR08 (0) H
 RACJ AFIR06 (1) H
 RACJ AFIR11 (1) L



BIT FIELD	0	1	2	3	4	5
IR	15	14	13	12	11	10
			SM	SF	DM	DF



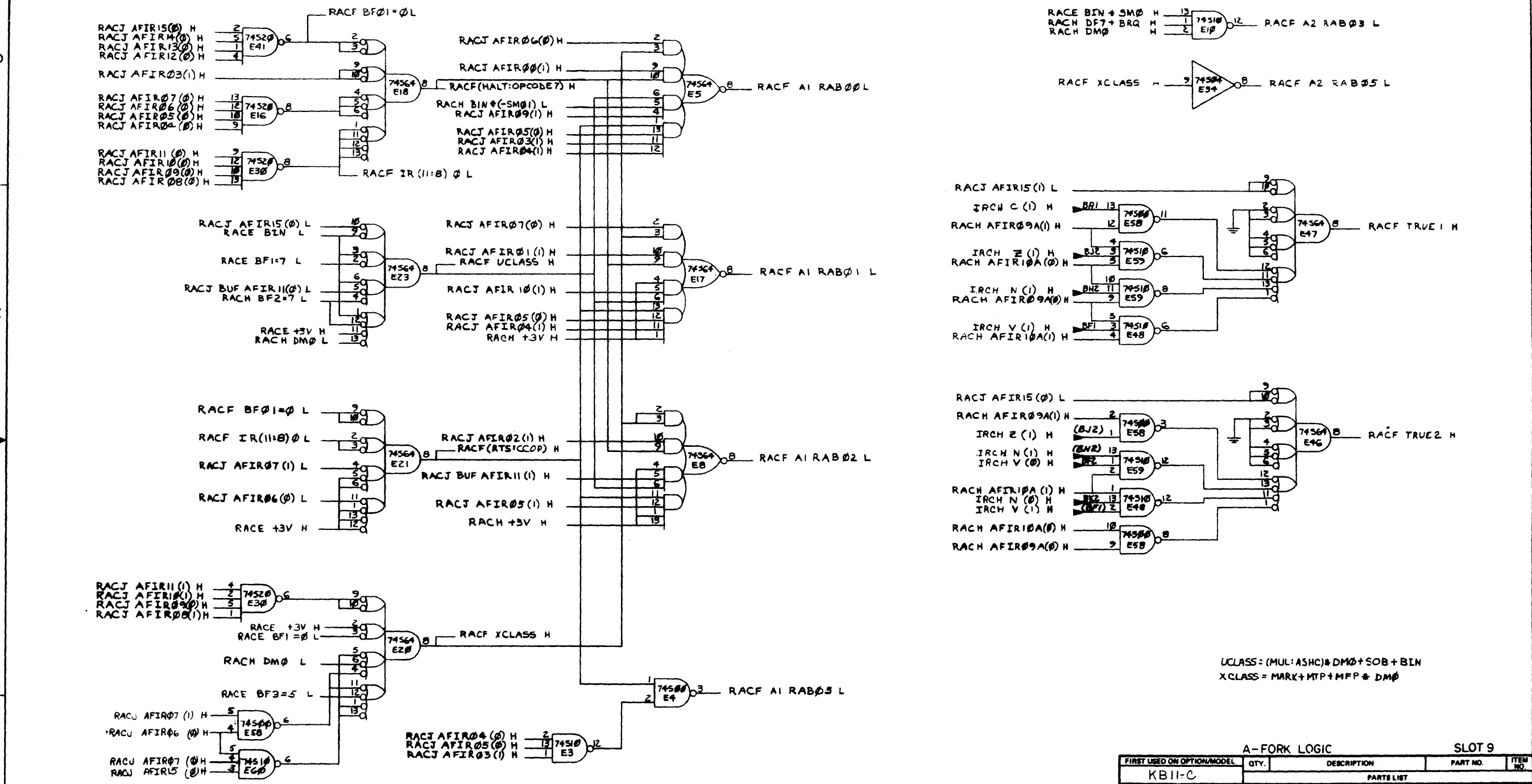
NOTE: UCLASS = (MUL:ASHC) * DM0 + SOB + BIN
 RCLASS = (CLR: B:ASL:B) + MFP + SXT + XOR
 TCLASS EXCLUDES [MFP + NEG:B + (-DM0)] FROM RCLASS WHEN COMBINED

REV	CHANGE NO

FIRST USED ON OPTION MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
KB11-C					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.				EQUIPMENT CORPORATION	
DECIMALS	ANGLES			TITLE	
.XX = .005	± 90°			ROM ADDR CONTROL (RACE)	
.XX = .02				MATERIAL	
.X = .1				B-DD-KB11-C	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				FINISH	
				SCALE	
				SHEET 6 OF 14	
				DST.	
				NUMBER	
				DCS M8123-0-1	
				REV.	
				B	

REV B
 DCS M8123-0-1

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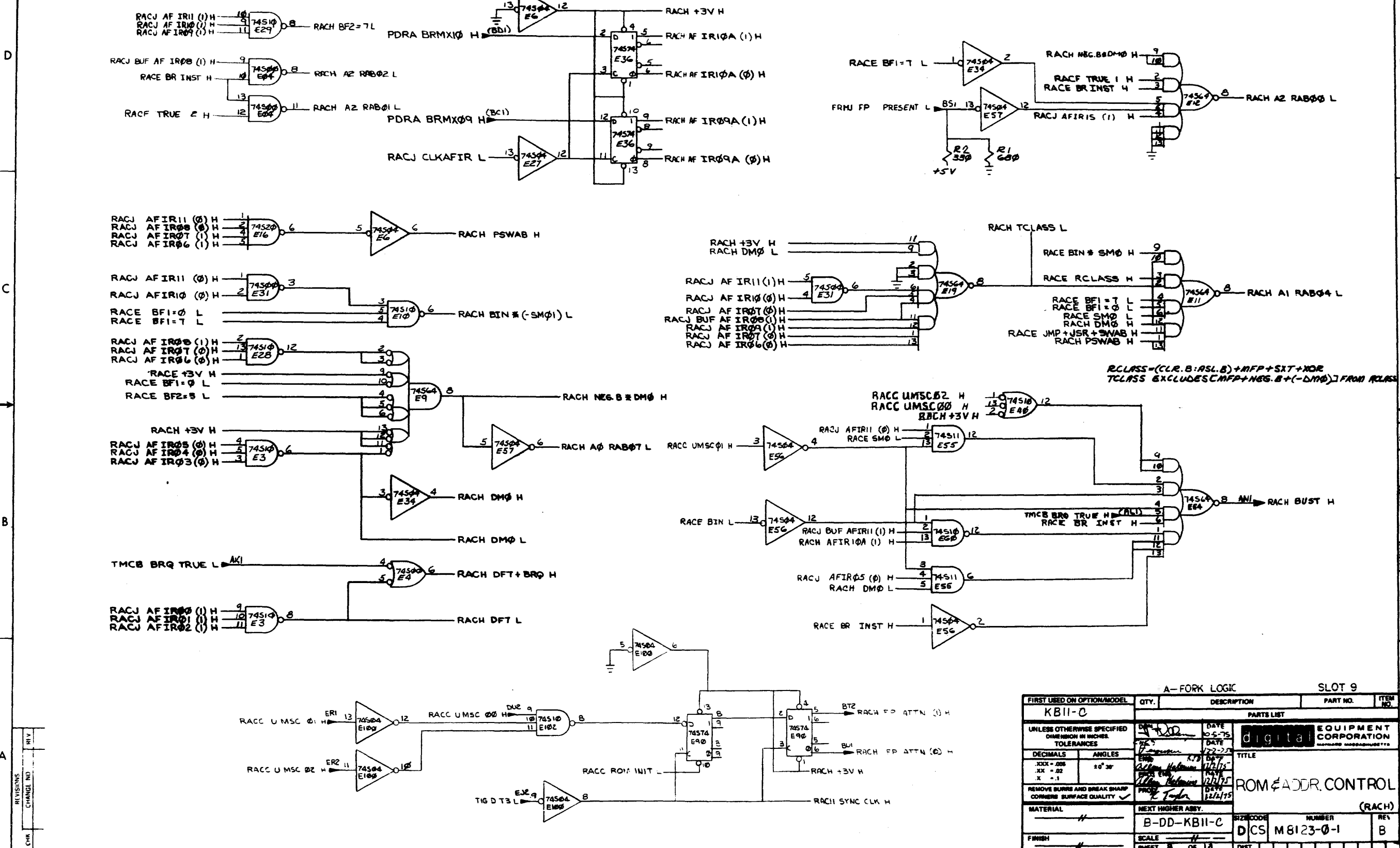
UCLASS = (MUL * ASHC) * DM0 + SOB + BIN
 XCLASS = MARK + MTP + MFP + DM0

REVISIONS	REV
CHANGE NO.	
CHK	

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
KB11-C					
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES		DATE	PARTS LIST		
DECIMALS	ANGLES	DATE	TITLE		
.XXX - .008	10° 30'	DATE	ROM & ADDR CONTROL (RACF)		
.XX - .02		DATE	REV. B		
.X - .1		DATE	DGS MB123-0-1		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE	REV. B		
MATERIAL		DATE	REV. B		
NEXT HIGHER ASSY.		DATE	REV. B		
FINISH		DATE	REV. B		

DGS MB123-0-1

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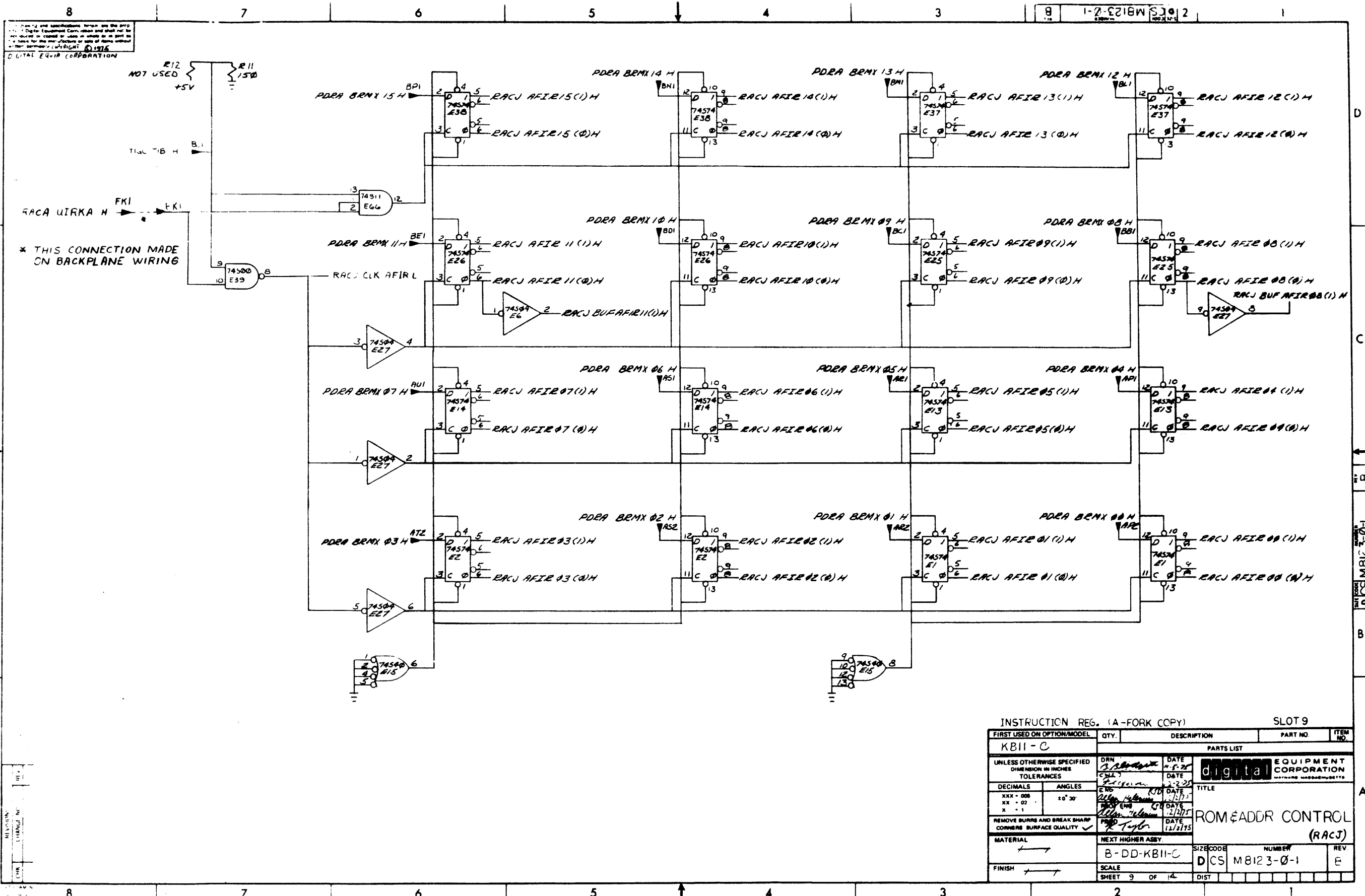


$RCLASS = (CLR.B:ASL.B) + MFP + SXT + XOR$
 $TCLASS \text{ EXCLUDES } CMFP + NEG.B + (-DM\phi)$

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
KB11-C					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DATE	DATE	EQUIPMENT CORPORATION	
DECIMALS	ANGLES	10-5-75	12-2-75	TITLE	
.XXX - .000	±0° 30'	Allen Holman	12/1/75	ROM & ADDR. CONTROL	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		Allen Holman	12/1/75	PROJECT	
MATERIAL		NEXT HIGHER ASSY.		REV	
FINISH		B-DD-KB11-C	SCALE	DCS M8123-0-1	B
		SHEET 8 OF 14	DIST.		

REVISIONS
 CHANGE NO.
 DATE

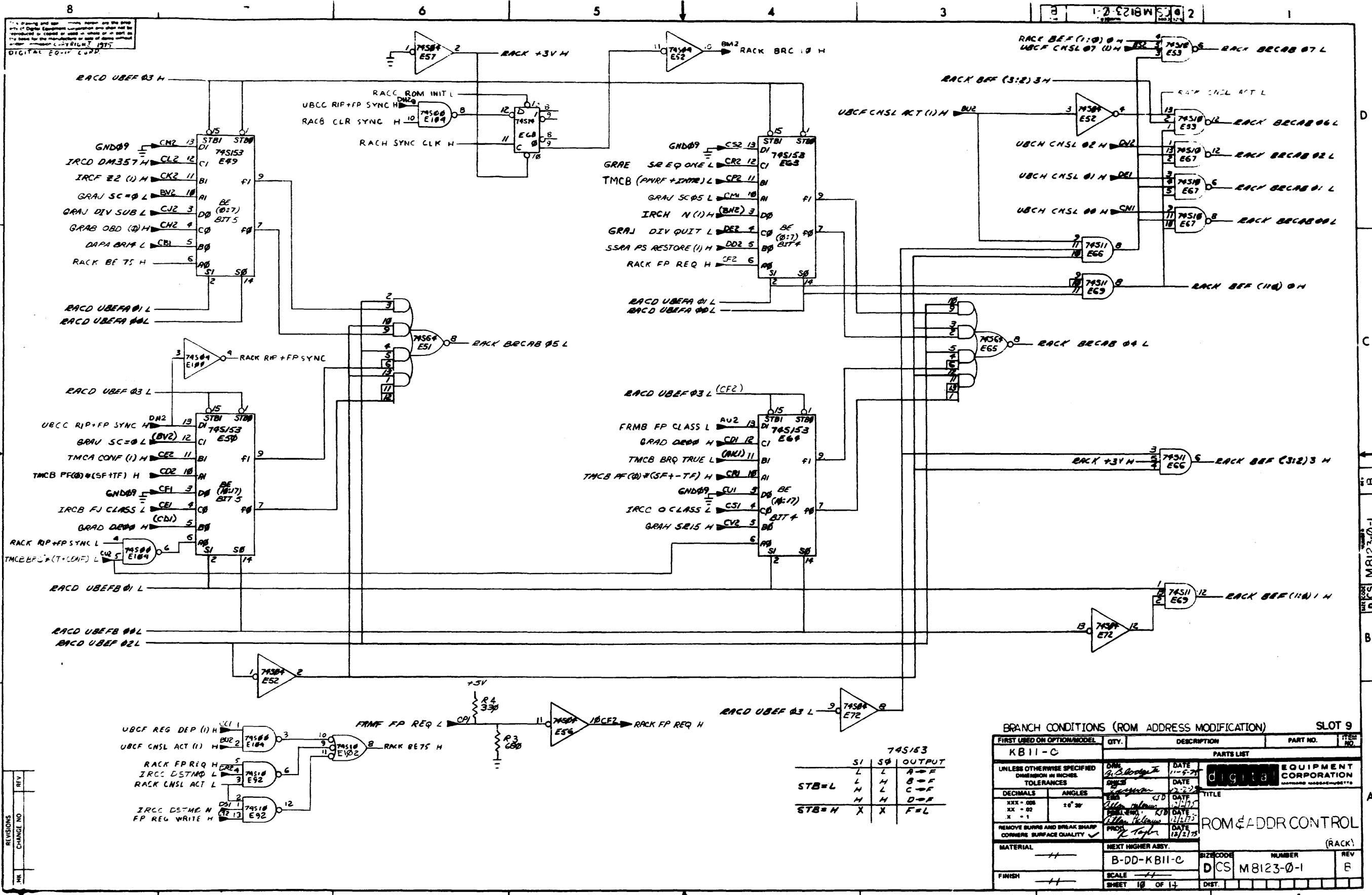
DCS M8123-0-1



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* THIS CONNECTION MADE ON BACKPLANE WIRING

REV B CS M8123-0-1



8
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 1975

1-2-8218W-0-1

74S153

SI	S0	OUTPUT
L	L	A=F
L	H	B=F
H	L	C=F
H	H	D=F
X	X	F=L

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
KB11-C					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES					
DECIMALS	ANGLES				
XXX - 000	±0.30				
XX - 00					
X - 1					
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY					
MATERIAL		NEXT HIGHER ASSY.		SIZE CODE	NUMBER
---		---		B-DD-KB11-C	
FINISH		SCALE		DIST.	
---		---			

BRANCH CONDITIONS (ROM ADDRESS MODIFICATION) SLOT 9

PARTS LIST

DIGITAL EQUIPMENT CORPORATION
 MAYNARD MASSACHUSETTS

TITLE
 ROM & DDR CONTROL (RACK)

SIZE CODE
 B-DD-KB11-C

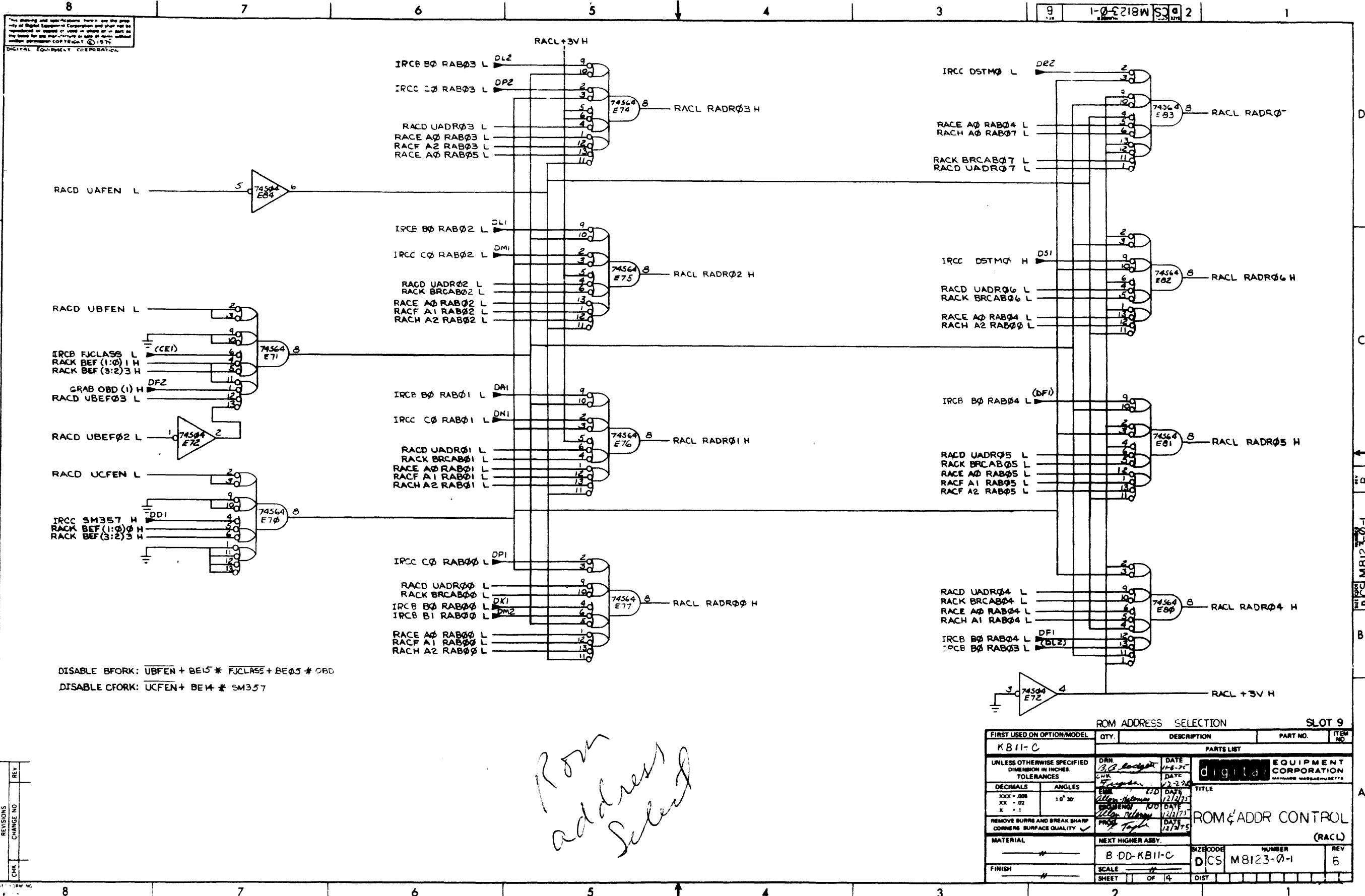
NUMBER
 DCS M8123-0-1

REV
 E

SHEET 10 OF 14

REVISIONS
 CHANGE NO.
 R1V
 MK

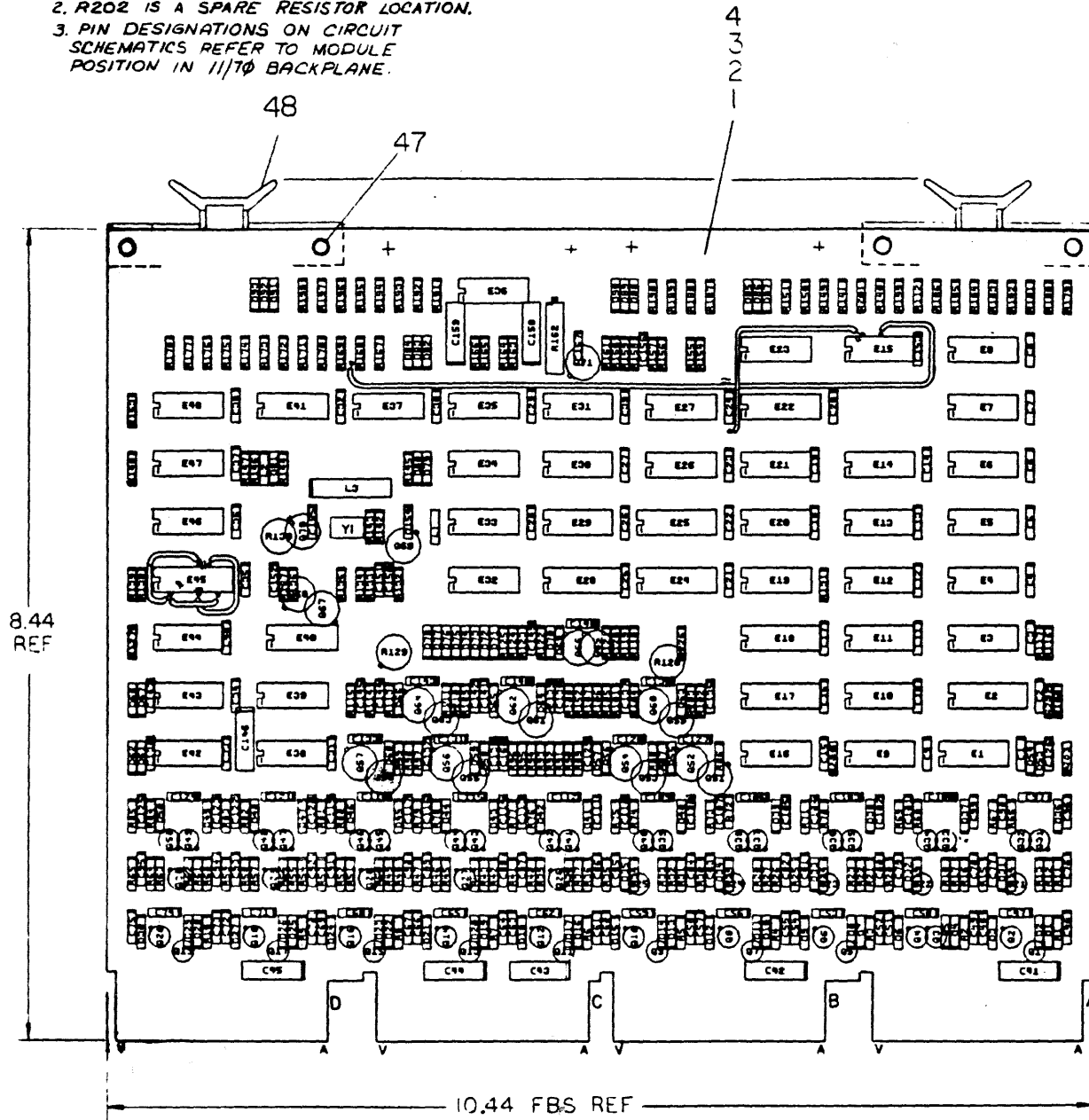
DIGITAL EQUIPMENT CORPORATION
 M8123-0-1



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NOTES:

- E3, E27, E36, E40, E44, AND E49 ARE SPARE I.C. LOCATIONS.
- R202 IS A SPARE RESISTOR LOCATION.
- PIN DESIGNATIONS ON CIRCUIT SCHEMATICS REFER TO MODULE POSITION IN 11/70 BACKPLANE.

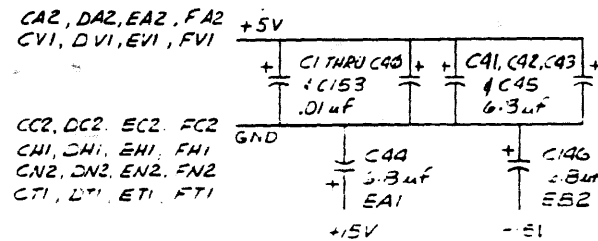


PIN NOMENCLATURE

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

REF	X-Y COORDINATE HOLE LOCATION	K-CO-MB139-0-4	1
REF	ASSY-DRILLING HOLE LAYOUT	D-AM-MB139-0-5	2
REF	MODULE ECO HISTORY	B-MH-MB139-0-6	3
1	ETCHED CIRCUIT BOARD	5011344	
44	C1 THRU C40, C150, C153, C155, C156	CAP .01uf 100V	1001610-01
8	C41, C42, C43, C44, C45, C146, C158, C159	CAP 6.8uf 35V 10%	1005306
98	C46 THRU C97, C99, C100, C102, C103, C105, C106, C108, C109, C111, C114, C115, C117, C118, C120, C121, C123, C124, C126 THRU C145, C147, C148, C149, C151, C152, C160, C112	CAP .22uf 50V 80-20%	1010274-01
10	C98, C101, C104, C107, C110, C113, C116, C119, C122, C125	CAP 33pf 100V 5%	1000009
1	C157	CAP 47pf 100V 5%	1000011
1	C154	CAP 100pf 100V 5%	1000016
52	D1, D3, D4, D6, D7, D9, D10, D12, D13, D15, D16, D18, D19, D21, D22, D24, D25, D27, D28, D30 THRU D50, D57, D58, D61, D62, D64, D65, D67, D68, D69, D70, D53, D54	DIODE DEC 777	1103041
39	D2, D5, D8, D11, D14, D17, D20, D23, D26, D29, D55, D56, D59, D60, D63, D66, D71 THRU D93	DIODE D662	1100113
17	R6 THRU R10, R40, R46, R52, R58, R64, R67, R71, R73, R75, R99, R113, R69	RESISTOR, 4.7K 1/4W 5%	1300447
6	R11, R16, R21, R26, R31, R143	RESISTOR, 1.5K 1/4W 5%	1300391
5	R12, R17, R22, R27, R32	RESISTOR 15K 1/4W 5%	1300496
26	R13, R15, R18, R20, R23, R25, R28, R30, R33, R35, R38, R41, R47, R50, R53, R56, R59, R62, R65, R102, R104, R114, R115, R132, R156, R44	RESISTOR 10 OHM 1/4W 5%	1301317
11	R14, R19, R24, R29, R34, R39, R45, R51, R57, R63, R121	RESISTOR, 100 OHM, 1/4W, 5%	1300229
76	R36, R37, R42, R43, R48, R49, R54, R55, R60, R61, R69 THRU R98, R101, R105 THRU R112, R123, R124, R128, R138, R139, R140, R141, R148 THRU R153, R187 THRU R200, R122, R201	RESISTOR, 1K 1/4W 5%	1300365
13	R66, R68, R70, R72, R76, R74, R78, R80, R82, R84, R118, R119, R120	RESISTOR 1.2K 1/4W 5%	1301320
12	R77, R79, R81, R93, R85, R86, R103, R1 THRU R5	RESISTOR 3K 1/4W 5%	1300432
7	R87, R88, R97, R98, R134, R135, R144	RESISTOR 47 OHM 1/4W 5%	1300202
6	R100, R125, R127, R131, R154, R155	RESISTOR 150 OHM 1/4W 5%	1300250
8	R116, R146, R156, R159, R160, R161, R164, R165	RESISTOR 330 OHM 1/4W 5%	1300295
5	R117, R147, R157, R163, R166	RESISTOR 680 OHM 1/4W 5%	1301424
2	R128, R129	RESISTOR 2K 1/2W 10%, POT	1309150-07
1	R130	RESISTOR 100 OHM 1/2W 10%, FOT	1309150-05
2	R133, R137	RESISTOR, 68 OHM 1/4W, 5%	1300219
1	R142	RESISTOR 750 OHM 1/4W, 5%	1301401
1	R145	RESISTOR 220 OHM 1/4W 5%	1300271
1	R162	RESISTOR 1K 3/4W POT	1309143-07
35	Q1, Q3, Q5, Q7, Q9, Q11, Q13, Q17, Q19, Q21 THRU Q25, Q31 THRU Q40, Q51, Q54, Q56, Q58, Q59, Q63, Q65, Q66, Q69, Q70, Q15	TRANSISTOR DEC 4258	1505321

IC TYPE	GND	+5V
IC DEC 7491/2	B	16
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE.		
IC PIN LOCATIONS		



11/70

ETCH BOARD REV B

DRN F. SELDMAN DATE 12-9-74
 CKD B. NORPENAL DATE 1-8-74
 ENG ALLEN HELENIUS DATE 2-25-75
 PROJ. ENG ALLEN HELENIUS DATE 2-25-75
 PROD K. TAYLOR DATE 2-25-75

NEXT HIGHER ASSY 3-012-KB11-0

SCALE #

SHEET 1 OF 7

SEMICONDUCTOR CONVERSION CHART

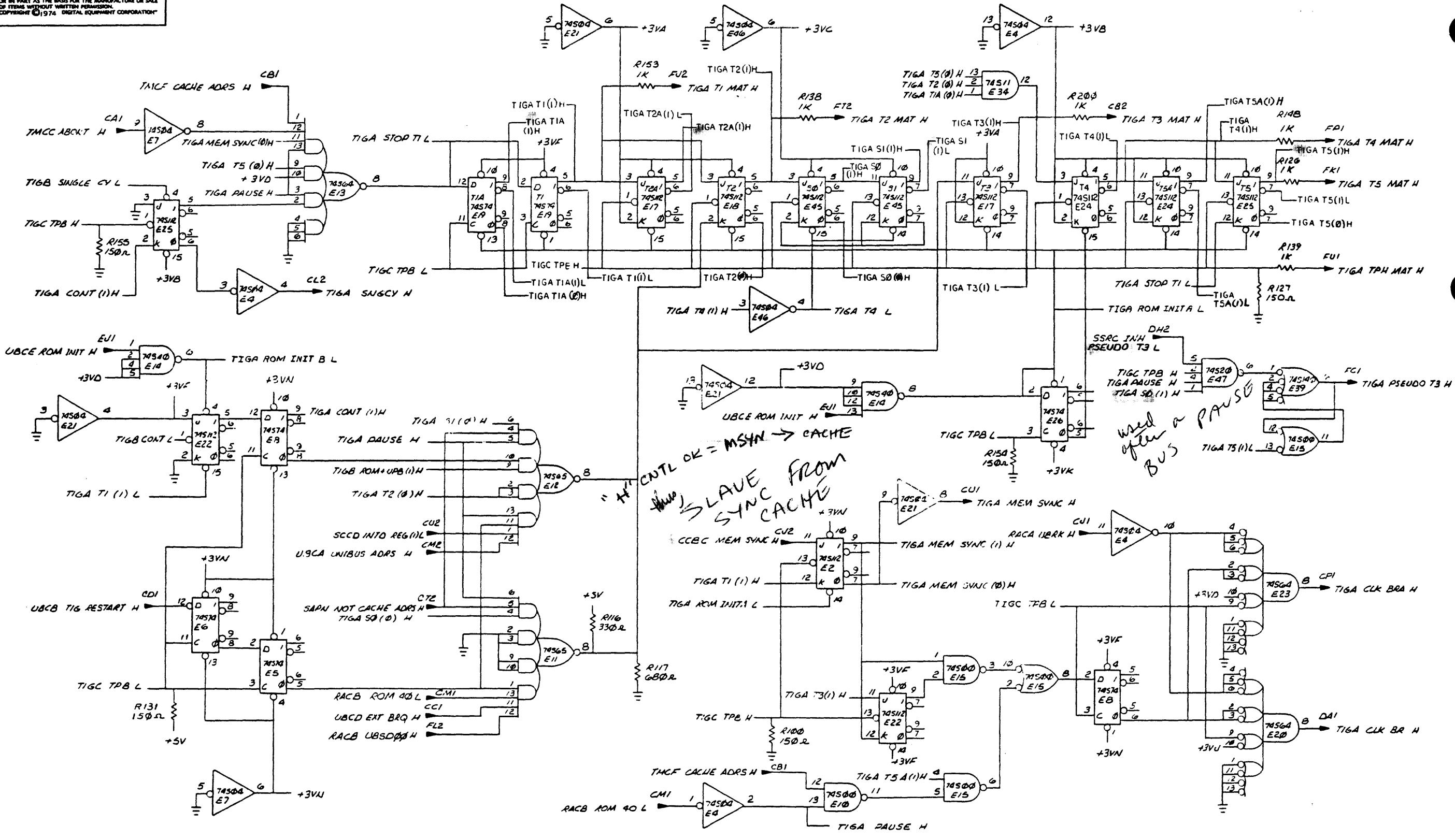
DEC NO EIA NO DEC NO EIA NO

digital EQUIPMENT CORPORATION

TITLE TIMING GENERATOR

SIZE CODE D103 NUMBER MB139-0-1 REV. 2

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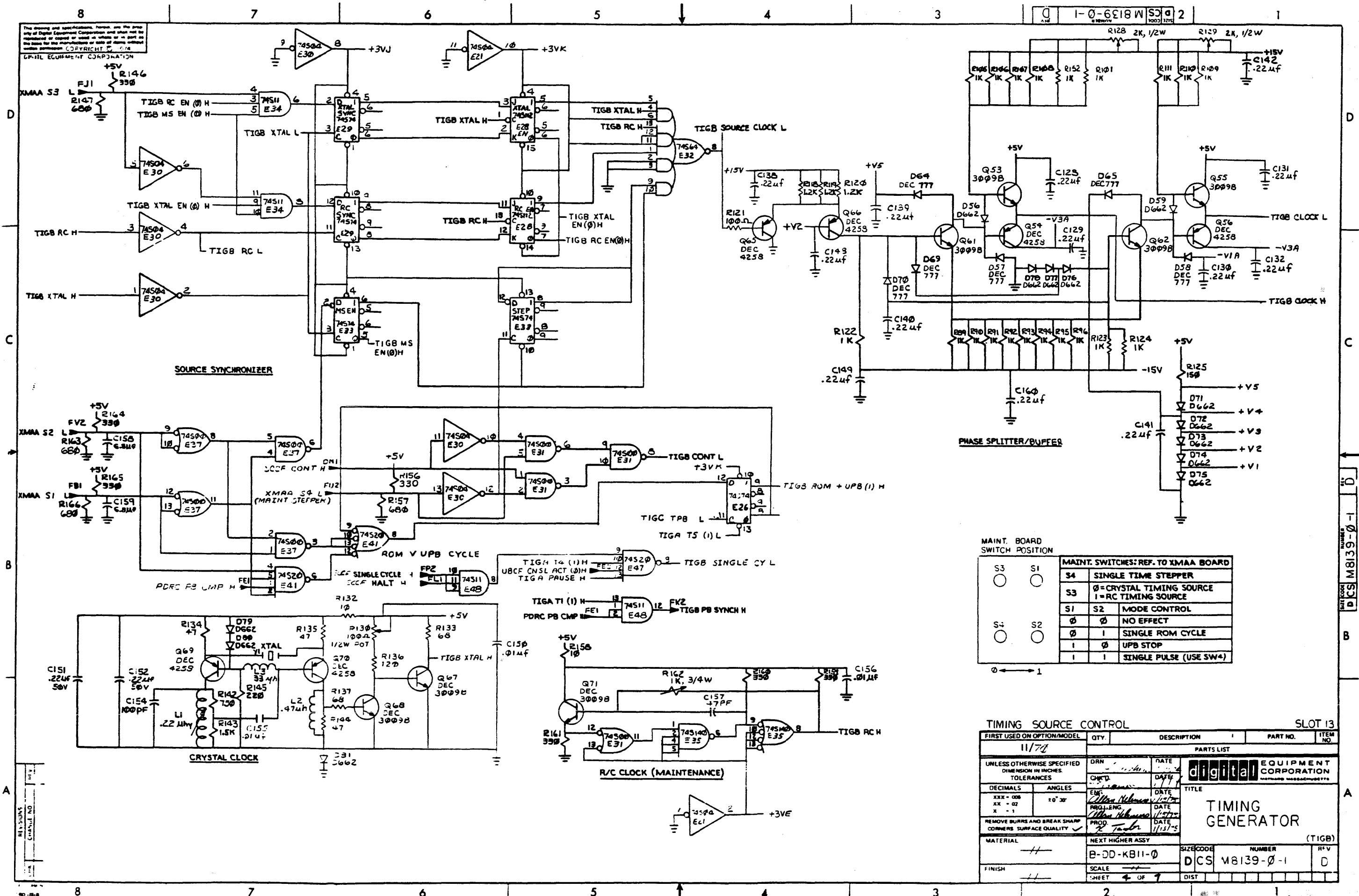


TIMING CONTROL SLOT 13

REVISIONS		
CHK	CHANGE NO	REV

TITLE	NUMBER	REV
TIMING GENERATOR (TIGA)	D CS 18139-0-1	
SCALE	SHEET 3 OF 7	DIST

18139-0-1
 DIST
 A
 B
 C
 D



MAINT. BOARD SWITCH POSITION

S3	S1	S4	SINGLE TIME STEPPER	
<input type="radio"/>	<input type="radio"/>	S3	0 = CRYSTAL TIMING SOURCE 1 = RC TIMING SOURCE	
S2	S2	S1	S2	MODE CONTROL
<input type="radio"/>	<input type="radio"/>	0	0	NO EFFECT
		0	1	SINGLE ROM CYCLE
		1	0	UPB STOP
		1	1	SINGLE PULSE (USE SW4)

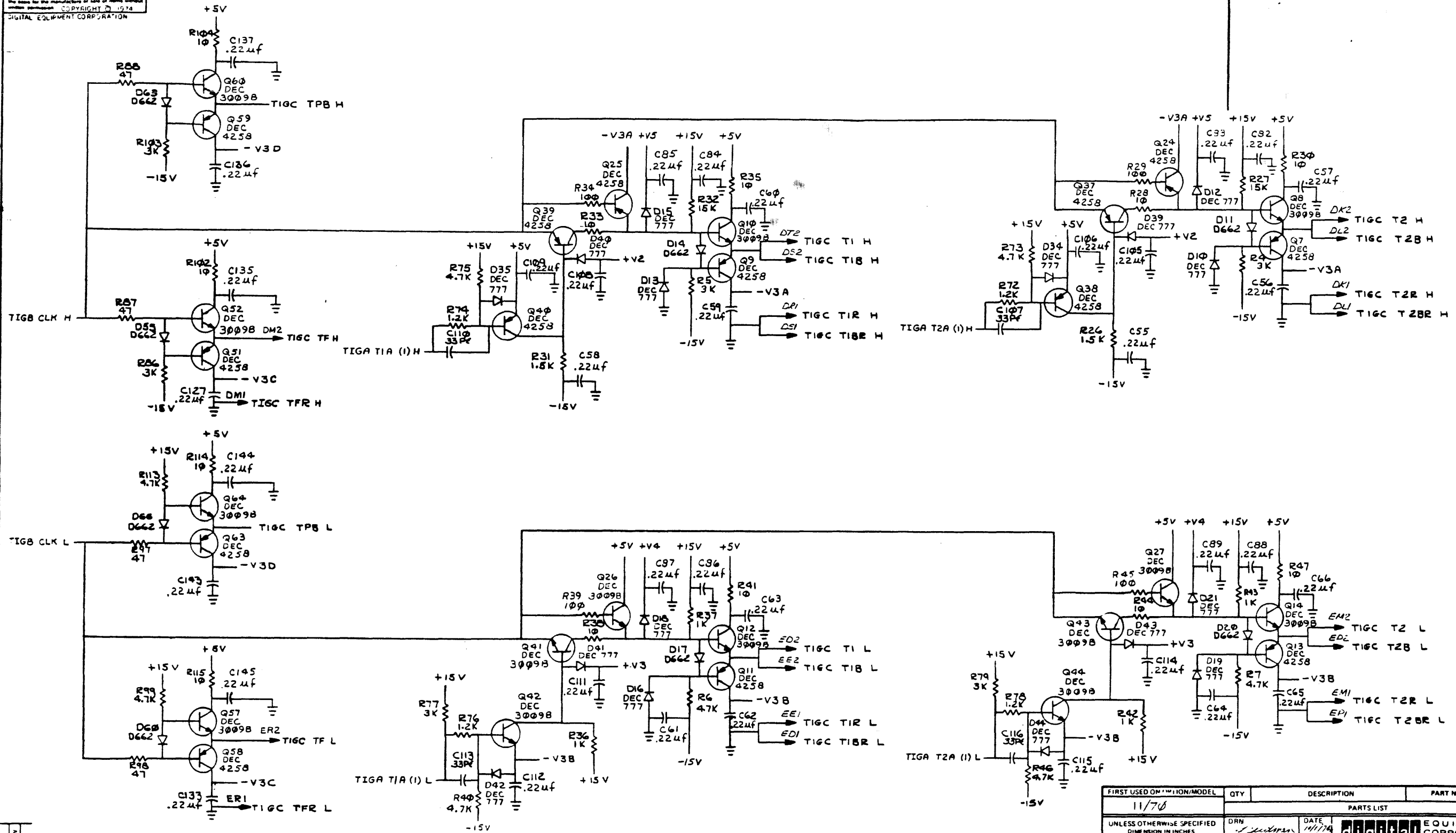
TIMING SOURCE CONTROL

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/72				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	PARTS LIST		
XXX - 008	± 0° 30'			
XX - 02				
X - 1				
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY	TITLE		
FINISH	SCALE	TIMING GENERATOR (TIGB)		
	1/8" = 1"	B-DD-KB11-0	SIZE CODE	NUMBER
	1/8" = 1"	DCS M8139-0-1		REV
				D

MAINT Board modification

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NOTES:



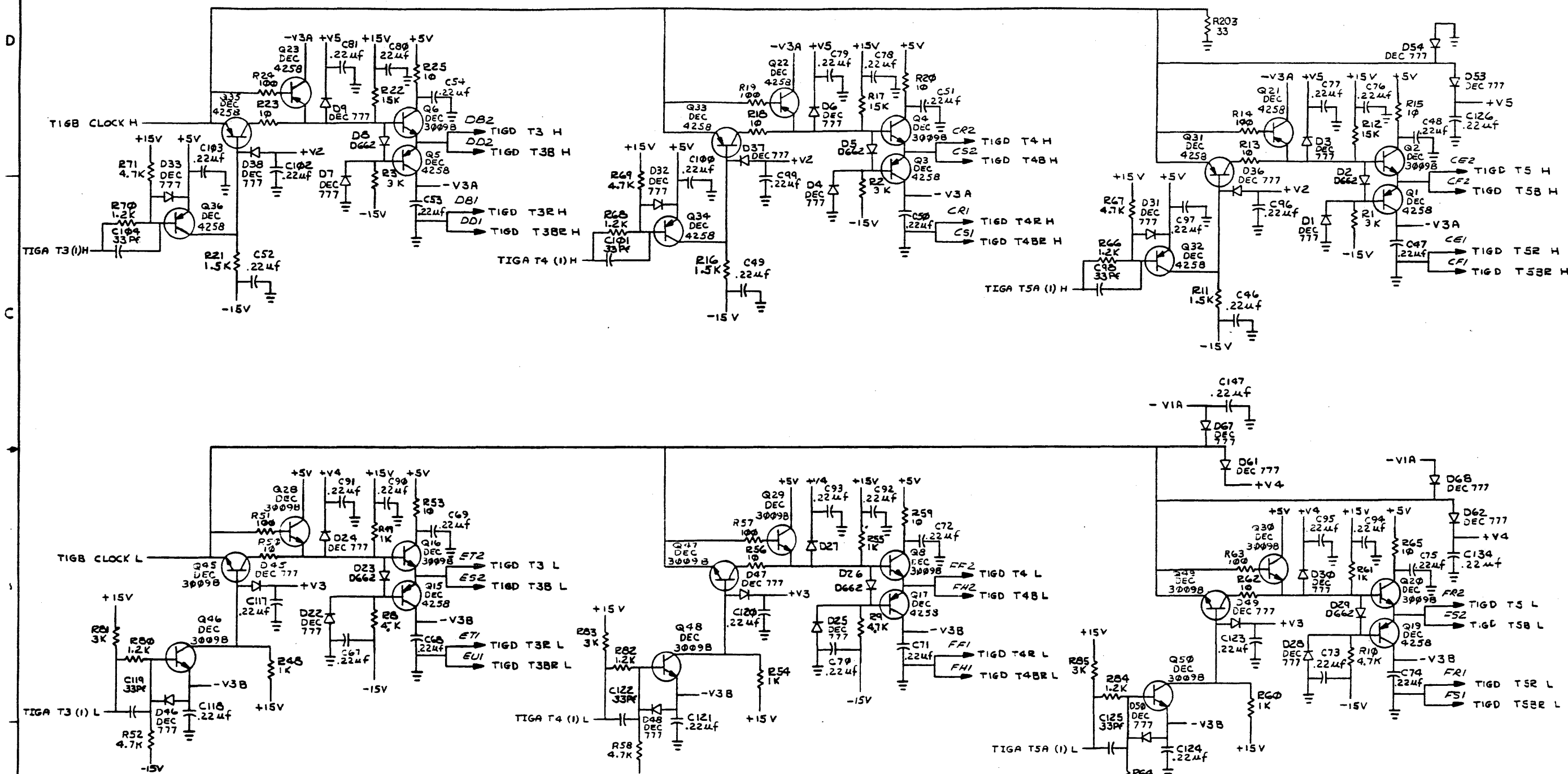
REV	CHANGE NO	REVISIONS

FIRST USED ON: 11/70	QTY	DESCRIPTION	PART NO	ITEM NO
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN	DATE	digital EQUIPMENT CORPORATION	
DECIMALS ANGLES	CHKD	DATE	TITLE	
XXX - 100 XX - 02 X - 1	ENG	DATE	TIMING GENERATOR (TIGC)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DRY FNC	DATE	MATERIAL	
	PROD	DATE	NEXT HIGHER ASSY	
			B-DD-KB11-0	
			SIZE CODE	NUMBER
			DCS	M3139-0-1
			SCALE	REV
			SHEET 5 OF 7	D

M3139-0-1

A

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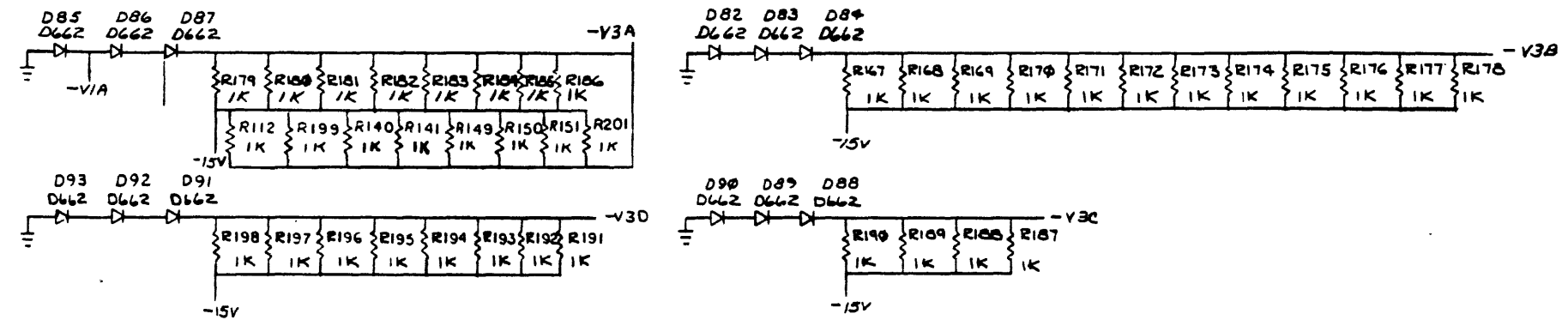
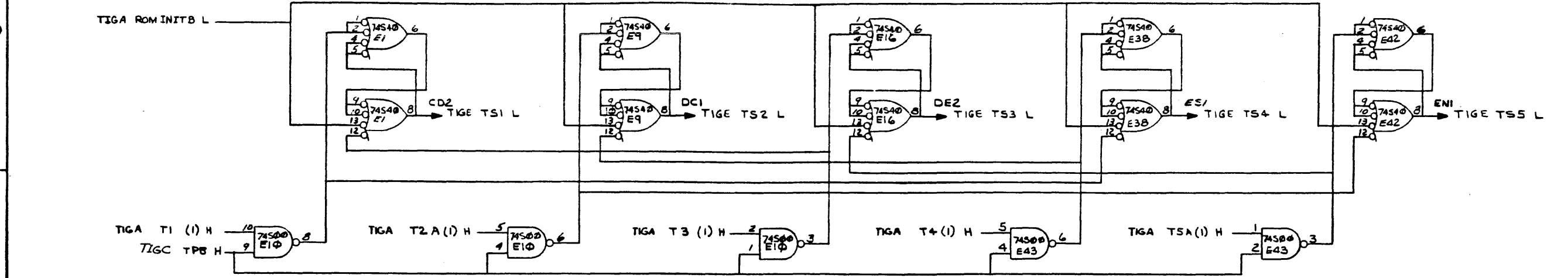


REV	CHANGE NO	REVISIONS

FIRST USED ON OPTION/MODEL 11/70		QTY.	DESCRIPTION	PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES					
DECIMALS	ANGLES	PARTS LIST			
XX - .005	20' 30"	DRN. <i>Judman</i>	DATE 10/74	digital EQUIPMENT CORPORATION	
XX - .02		CHKD. <i>Judman</i>	DATE 11/74	TITLE	
XX - .04		ENG. <i>William Helman</i>	DATE 11/74	TIMING GENERATOR	
XX - .08		PROF. <i>William Helman</i>	DATE 11/74	NEXT HIGHER ASSY (TIGD)	
XX - .1		PROD. <i>K Taylor</i>	DATE 11/75	MATERIAL	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		NEXT HIGHER ASSY		SIZE CODE	NUMBER
FINISH		3-00-KB11-0		DCS	MB39-0-1
SCALE		SHEET 6 OF 7		DIST	REV 0

DCS MB39-0-1
 SHEET 6 OF 7

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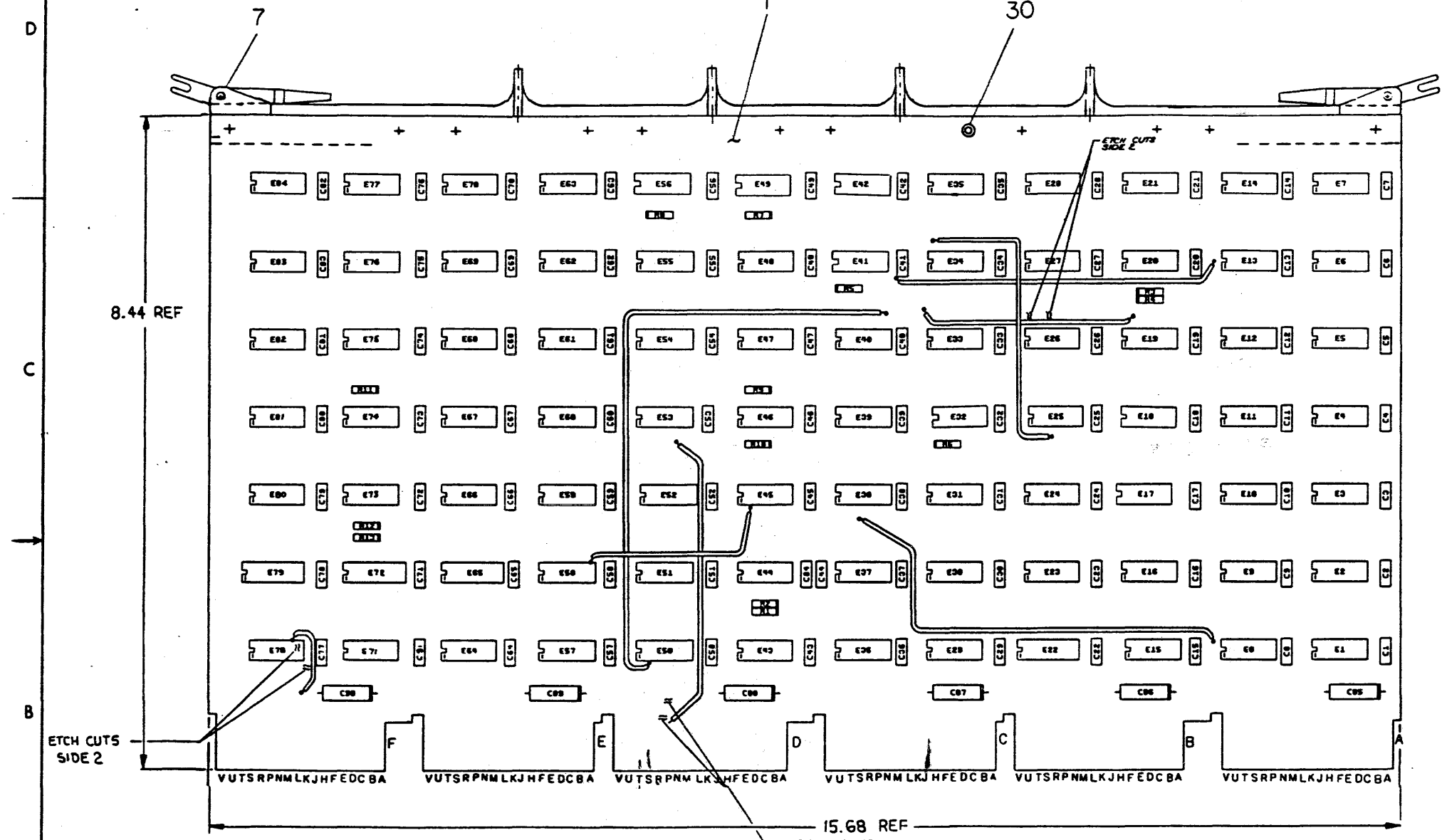
TIMING STATE DRIVERS				SLOT 13	
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.	
11/70					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DATE 10/1/75	 digital EQUIPMENT CORPORATION 300 MASSACHUSETTS ST. CAMBRIDGE, MASSACHUSETTS 02142		
DECIMALS	ANGLES	DATE 11/1/75			
XXX - 008	±0° 30'	DATE 11/1/75			
XX - 02		DATE 11/1/75			
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE 11/1/75	TITLE		
			TIMING GENERATOR (TIGE)		
MATERIAL		NEXT HIGHER ASSY		SIZE CODE	NUMBER
//		B-DD-KB11-0		DCS	M 8139-0-1
FINISH		SCALE		DIST	
//		SHEET 7 OF 7			

REV.	CHANGE NO.	DATE
1		

CS M8139-0-1

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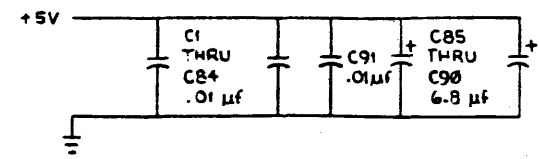
- NOTES:**
- R4 IS OPTIONAL
 - REFERENCE DESIGNATIONS E42, E49, E56 ARE SPARES.



REF	X-Y COORDINATE HOLE LOCATION	K-CO-M8135-0-4	1	
REF	ASSY/DRILLING HOLE LAYOUT	D-AH-M8135-0-5	2	
REF	MODULE ECO HISTORY	B-MH-M8135-0-6	3	
1	ETCHED CIRCUIT BOARD	5011321	4	
85	C1 THRU C84, C91	CAPACITOR, .01uf, 100V DISC	1001610-01	5
6	C85 THRU C90	CAPACITOR, 6.8uf, 35V, 10%	1005306	6
1	HANDLE HEX MODULE		1210711-2	7
2	R5, R6	RESISTOR, 120 OHM, 1/4W, 5%	1300247	8
1	R3	RESISTOR, 150 OHM, 1/4W, 5%	1300250	9
1	R7	RESISTOR, 180 OHM, 1/4W, 5%	1301322	10
2	R1, R13	RESISTOR, 330 OHM, 1/4W, 5%	1300295	11
1	R8	RESISTOR, 390 OHM, 1/4W, 5%	1300309	12
2	R2, R12	RESISTOR, 680, 1/4W, 5%	1301424	13
3	R9, R10, R11	RESISTOR, 1K, 1/4W, 5%	1300365	14
6	E21, E30, E45, E57, E64, E5	I.C. DEC 74S09	1910532	15
12	E1, E3, E12, E19, E27, E28, E29, E47, E55, E66, E73, E80	I.C. DEC 74S04	1910534	16
7	E11, E14, E23, E24, E37, E54, E61	I.C. DEC 74S10	1910536	17
19	E2, E6, E10, E13, E15, E20, E25, E26, E33, E35, E43, E51, E67, E68, E74, E75, E81, E82, E71	I.C. DEC 74S11	1910537	18
8	E8, E16, E60, E69, E76, E77, E83, E84	I.C. DEC 74S20	1910539	19
4	E53, E62, E63, E70	I.C. DEC 74H30	1909059	20
2	E9, E34	I.C. DEC 74S40	1910541	21
4	E44, E46, E50, E59	I.C. DEC 74H50	1909060	22
4	E7, E31, E36, E38	I.C. DEC 74S84	1910542	23
4	E4, E39, E40, E58	I.C. DEC 74S74	1910544	24
4	E17, E18, E32, E41	I.C. DEC 74S112	1910545	25
1	E22	I.C. DEC 74S153	1910547	26
3	E85, E72, E79	I.C. DEC 74S174	1910550	27
1	E78	I.C. DEC 8640	1911489	28
2	E48, E52	I.C. DEC 8885	1910649	29
12	EYELET	9008732	30	
35	WIRE #30 AWG BUSS (RETROFIT)	9105740-55	31	

IC	TYPE	QTY	LOCATIONS
I.C. DEC 8640	1	8	
I.C. DEC 74S174	8	1G	
I.C. DEC 74S153	8	1G	
I.C. DEC 74S112	8	1G	
IC TYPE	GND	+5V	

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



FIRST USED ON OPTION MODEL: 11/70

ETCH BOARD REV: A

PARTS LIST

CHK	CHANGE NO	REV	DATE	BY

DRW: P. Brasby, DATE: 12-5-74
 CHK'D: FERGUSON, DATE: 12-9-74
 ENG: [Signature], DATE: 12-16-74
 PROJ. ENG: [Signature], DATE: 12-16-74
 PROD: [Signature], DATE: 1/8/75
 NEXT HIGHER ASSY:

digital EQUIPMENT CORPORATION

TITLE: TRAP & MSC CONTROL

SIZE/CODE: DCS M8135-0-1
 NUMBER: 1
 DIST:

SEMICONDUCTOR CONVERSION CHART

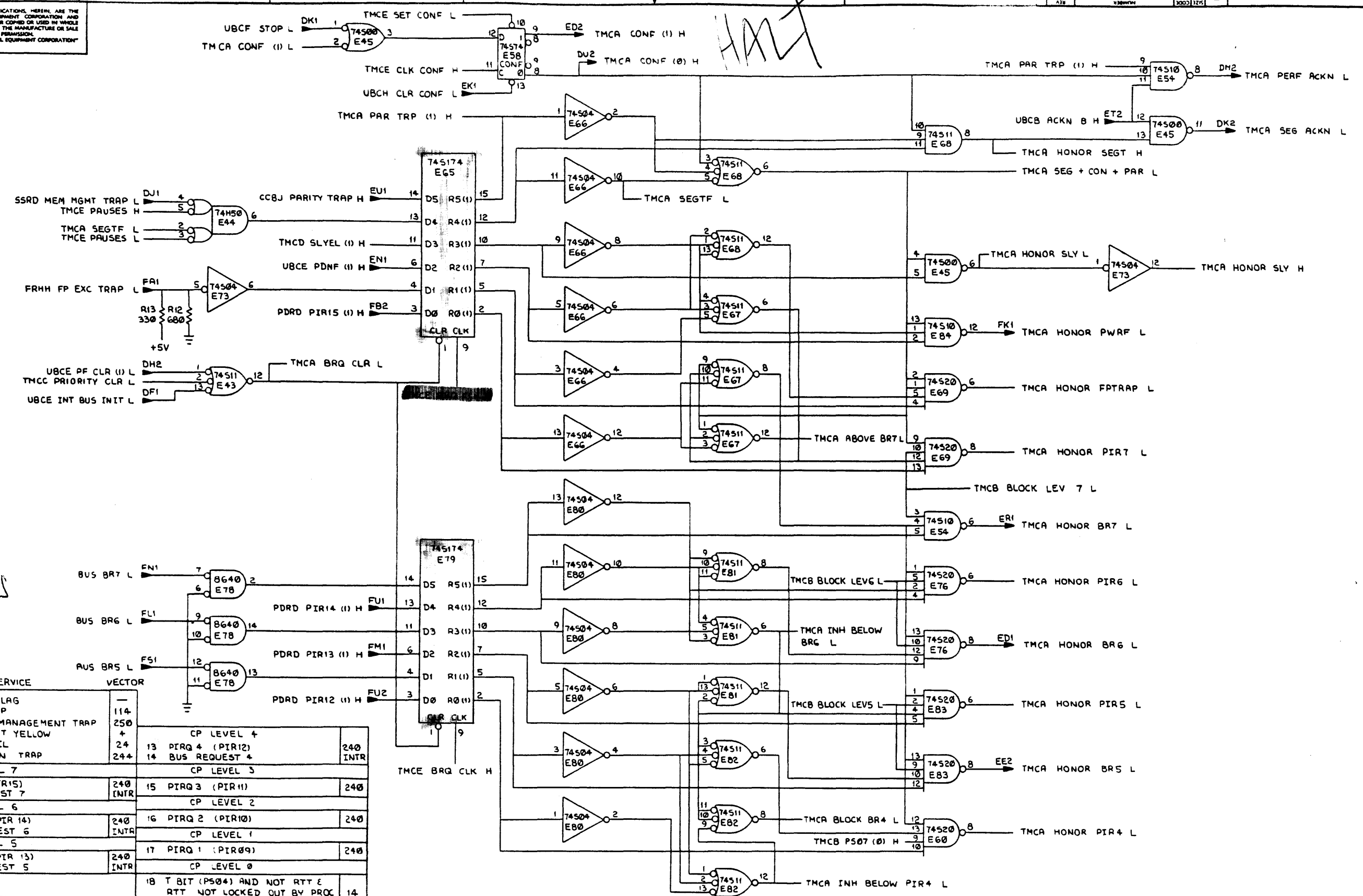
DEC NO	EIA NO	DEC NO	EIA NO

SCALE: SHEET 1 OF 7

1-0-5E18W DCS 2 1

DCS M8135-0-1

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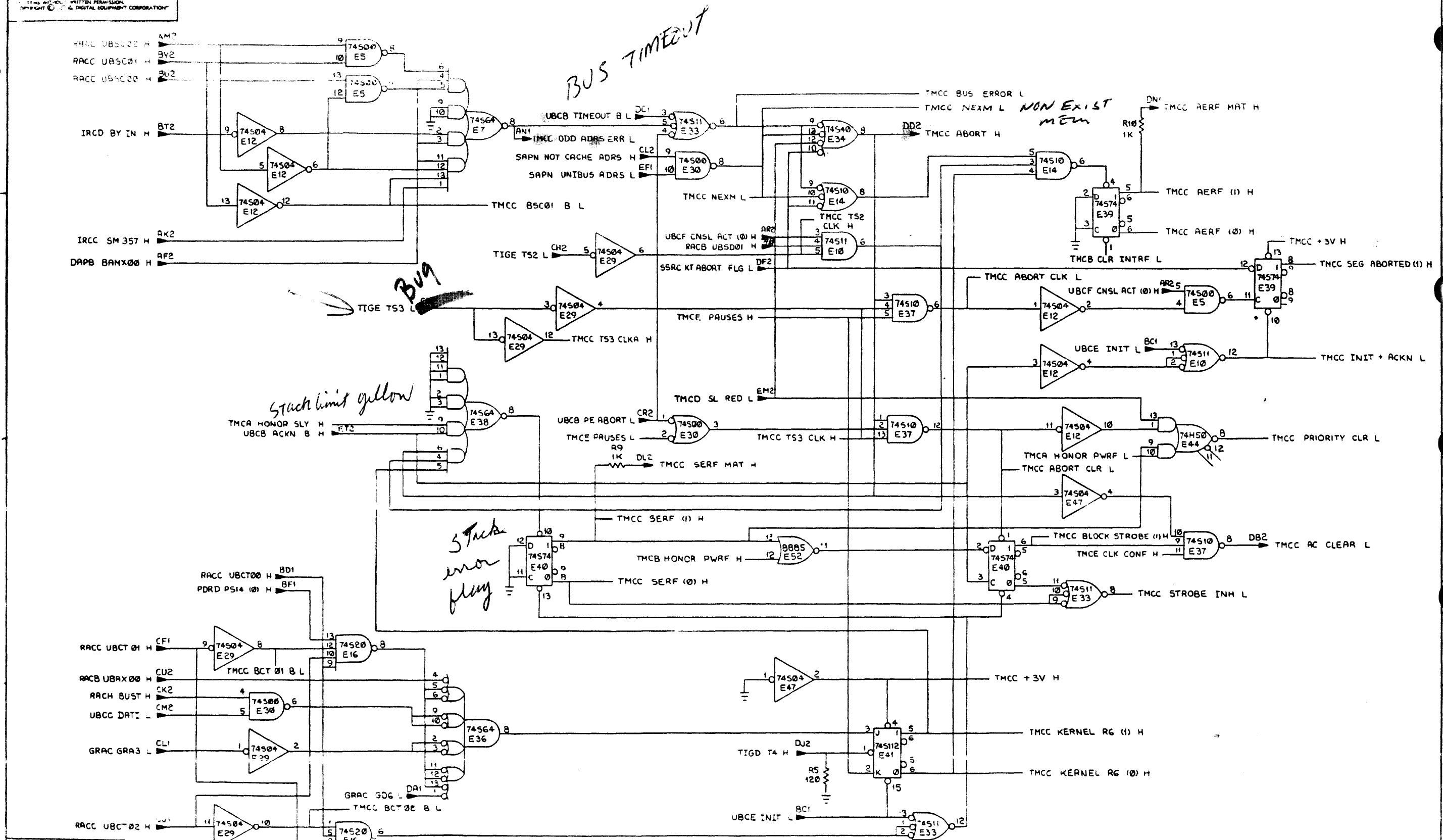


ARBITRATION PRIORITIES

ORDER OF SERVICE	VECTOR	INTR
1 CONSOLE FLAG	—	
2 PARITY TRAP	114	
3 SEG MEM MANAGEMENT TRAP	250	
4 STACK LIMIT YELLOW	+	
5 POWER FAIL	24	
6 FP EXCEPTION TRAP	244	
CP LEVEL 4		
13 PIRQ 4 (PIR12)		240
14 BUS REQUEST 4		INTR
CP LEVEL 3		
15 PIRQ 3 (PIR11)		240
CP LEVEL 2		
16 PIRQ 2 (PIR10)		240
CP LEVEL 1		
17 PIRQ 1 (PIR09)		240
CP LEVEL 0		
18 T BIT (P504) AND NOT RTT & RTT NOT LOCKED OUT BY PROC STATUS LEVELS BUT SERVICED LAST		14

(PRIORITY ARBITRATION) SLOT 11

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BUS TIMEOUT

Bus

Stack limit yellow

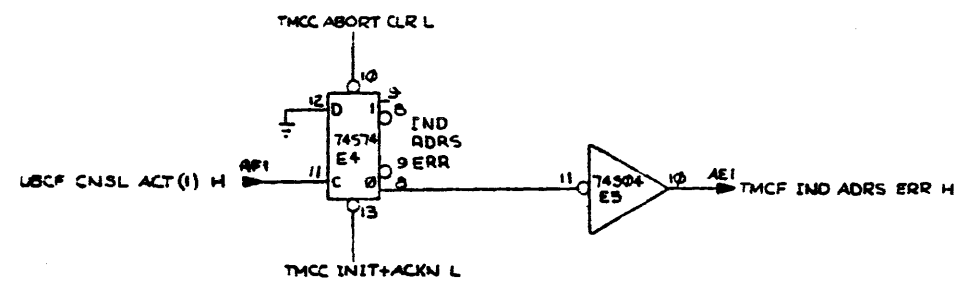
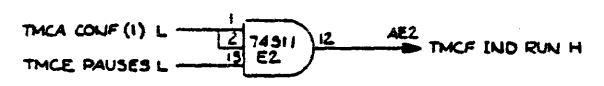
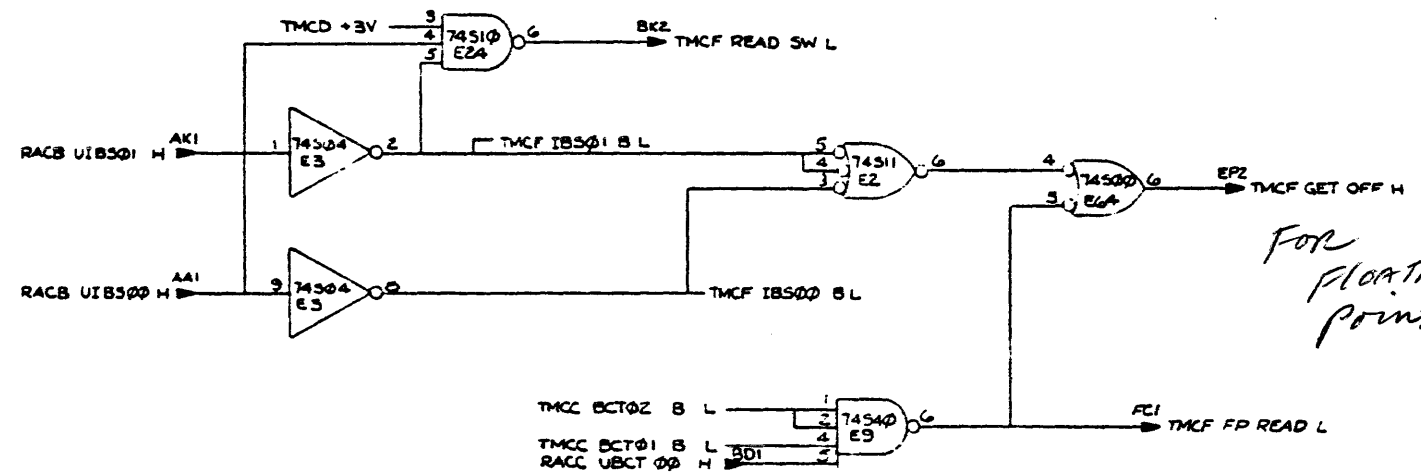
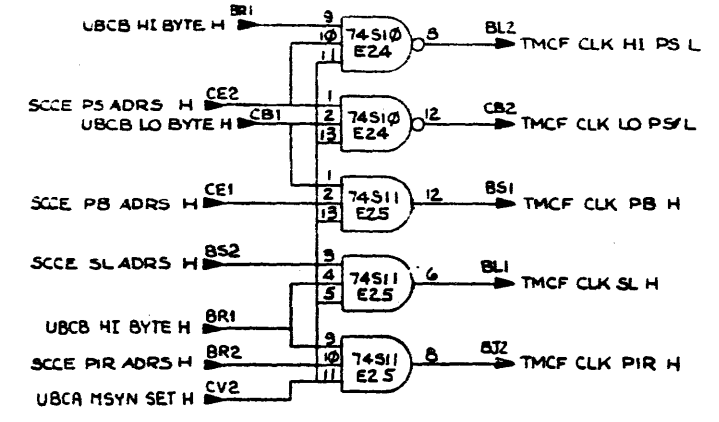
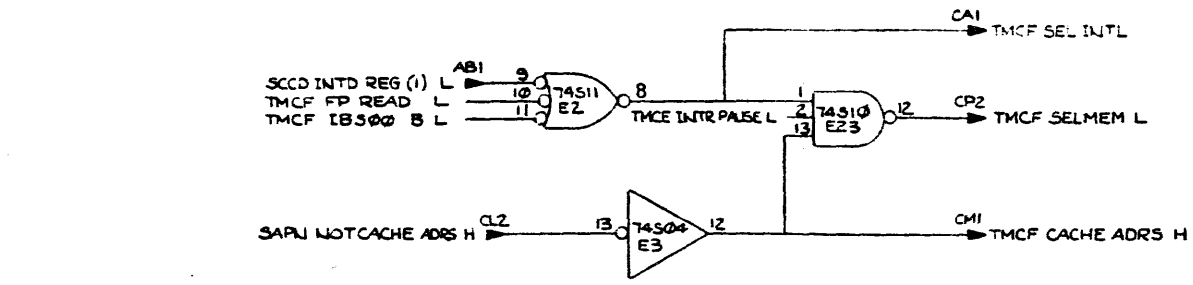
Stack error flag

NON EXIST MEM

REV	CHG	NO	REV

M8135-0-1

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REVISIONS		
CHK	CHANGE NO	REV

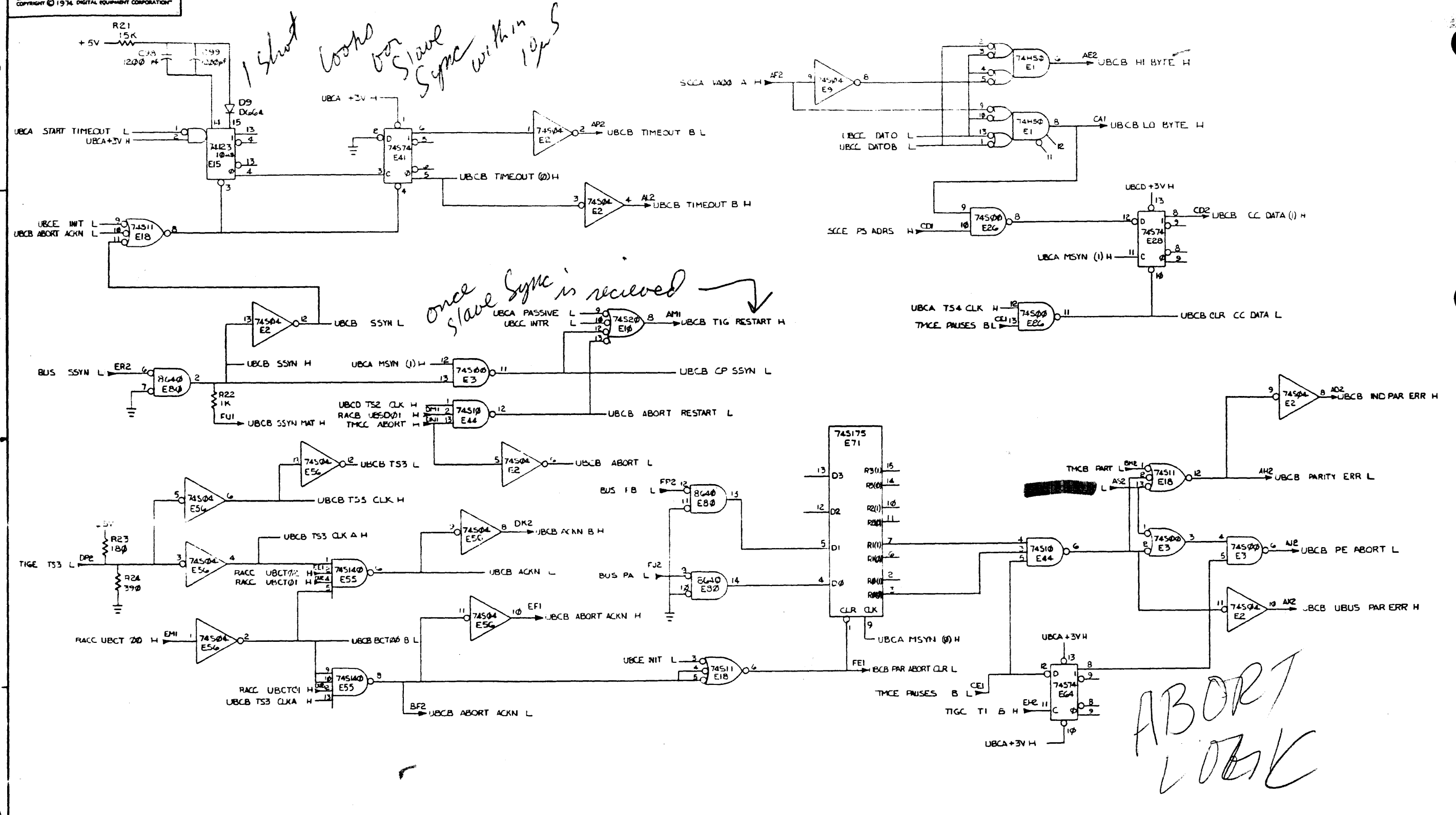
(BRMX SELECTION FP READ) SLOT 11

TITLE	(TMCF)	SIZE CODE	NUMBER	REV
TRAP & MSC CONTROL	DCS: M8135-0-1			
SCALE	SHEET 2 OF 7	DIST		

REV. # *
NUMBER
DCS: M8135-0-1

D
C
B
A

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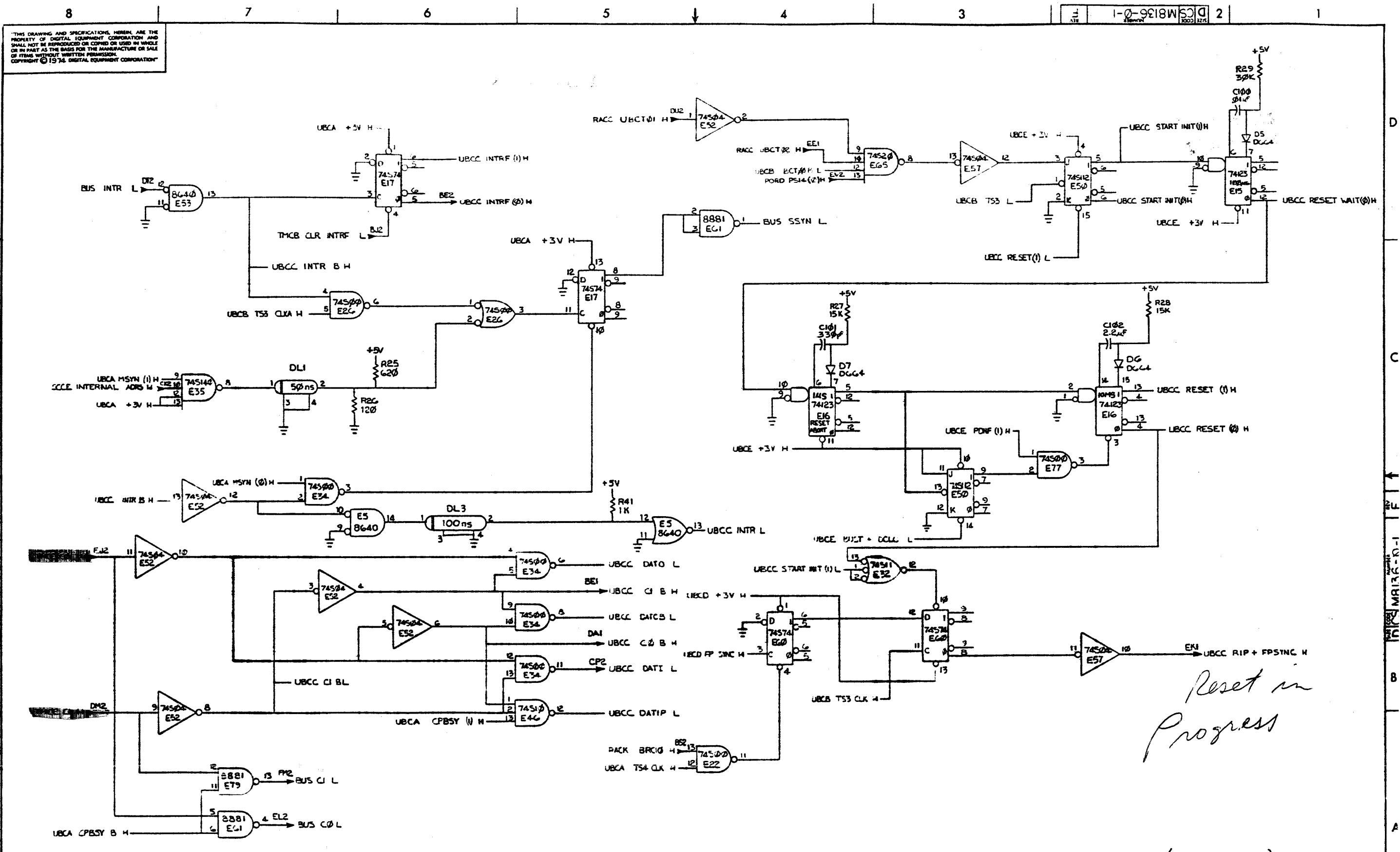


(PARITY AND TIMING CONTROL) SLOT 12

REVISIONS		
CHK	CHANGE NO	REV

TITLE	(UBCB) UNIBUS CONSOLE CONT	SIZE/DOE	D1C3	NUMBER	MS136-0-1	REV.	F
SCALE		SHEET	7	OF 5	DIST		

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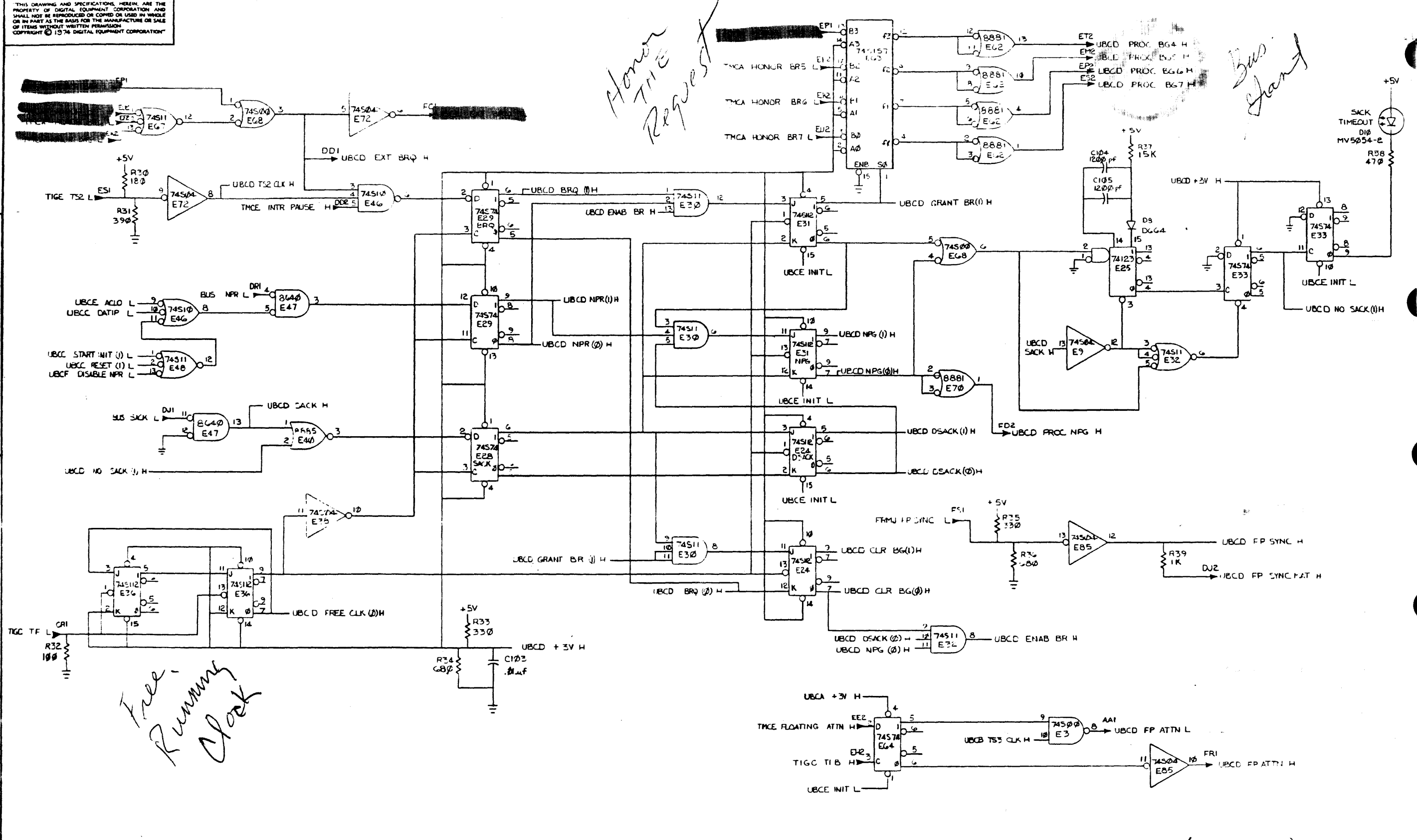


(RESET CONTROL) SLOT 12

REVISIONS		
CHK	CHANGE NO	REV

TITLE	(UBCC) UNIBUS / CONSOLE CONT.	SIZE CODE	D CS	NUMBER	MB136-0-1	REV.	F
SCALE		SHEET	4	OF	8	DIST.	

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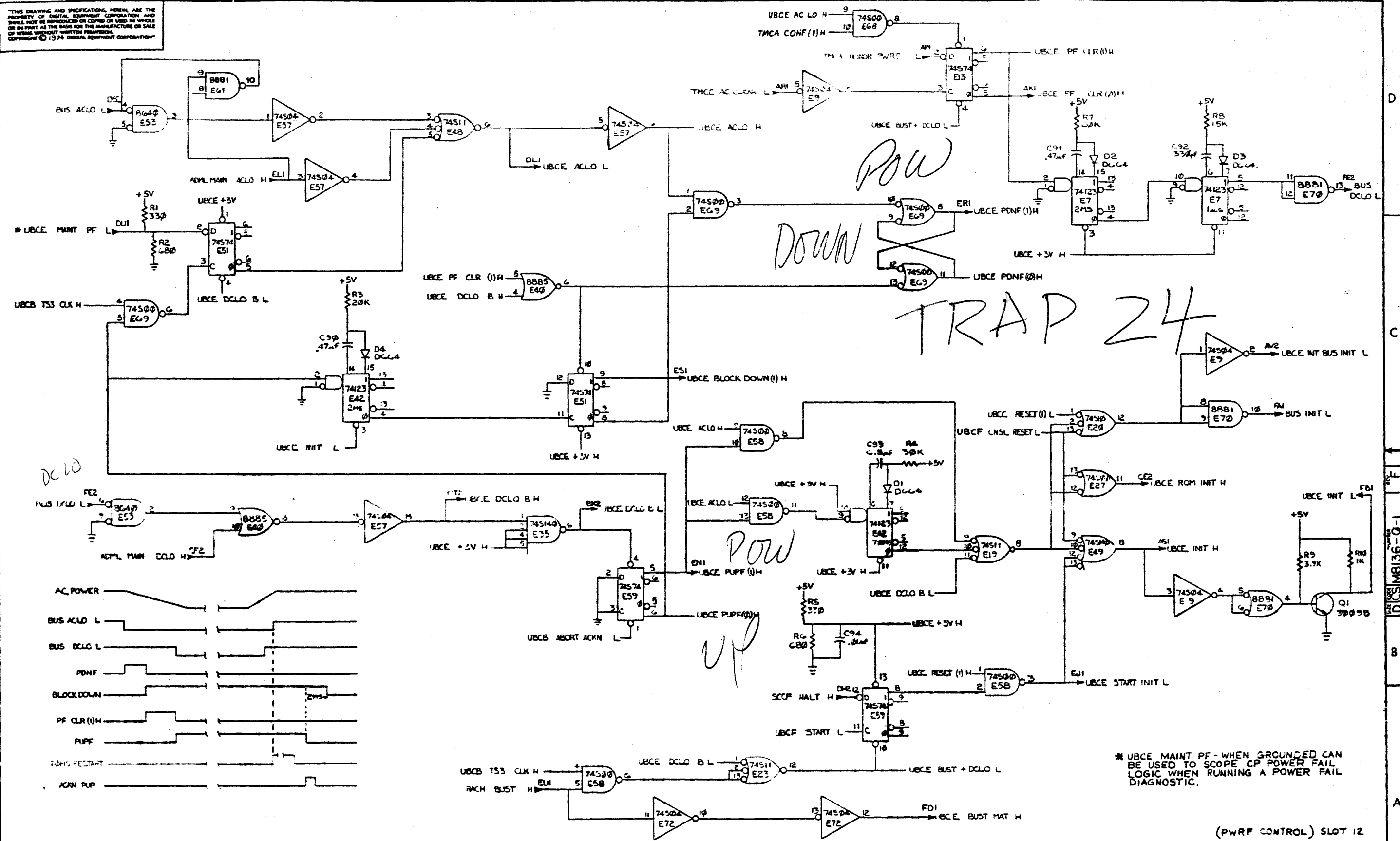


(BUS ARBITRATOR) SLOT 12

REVISIONS		
CHK	CHANGE NO	REV

TITLE	UBCD	SIZE/COOE	NUMBER	REV
UNIBUS/CONSOLE CONT.	DCSI M8136-0-1			F
SCALE	SHEET 5 OF 3	DIST		

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TRAP 24

POW UP

DCLO

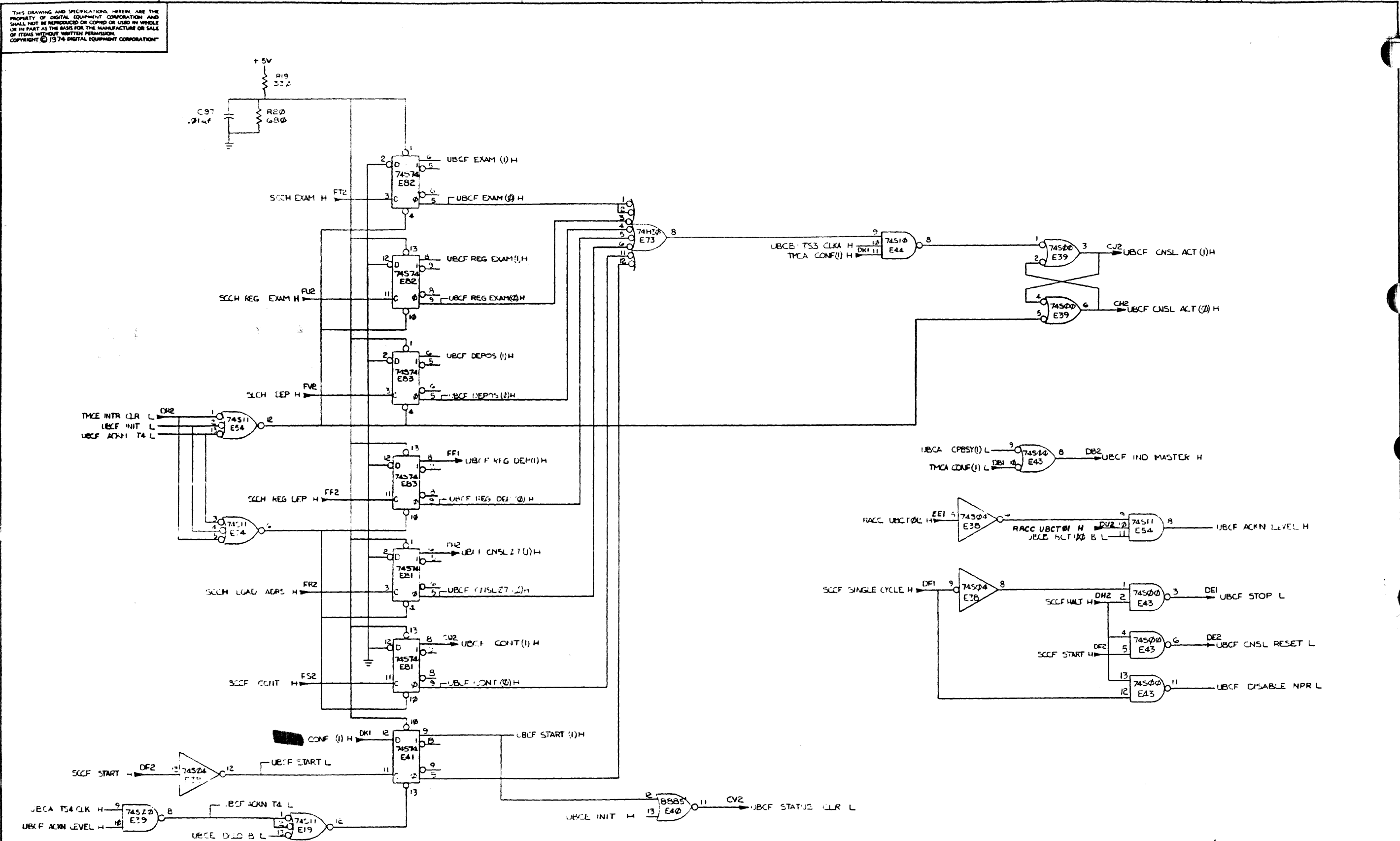
* UBCE MAINT PF - WHEN GROUNDING CAN BE USED TO SCOPE CP POWER FAIL LOGIC WHEN RUNNING A POWER FAIL DIAGNOSTIC.

(PWR CONTROL) SLOT 12

REVISIONS		
CHK	CHANGE NO	REV

TITLE	UNIBUS CONSOLE CONT.	SIZE CODE	D CS M8136-0-1	NUMBER		REV.	F
SCALE		SHEET		OF		DIST	

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(CONSOLE CONTROL) SLOT 12

REVISIONS		
CHK	CHANGE NO	REV

TITLE	UNIBUS/CONSOLE CONT	SIZE CODE	D 39	NUMBER	M8136-7-1	REV.	F
SCALE		SHEET	7	OF A		DIST	

REV. 18136-7-1

8

7

6

5

4

3

2

1

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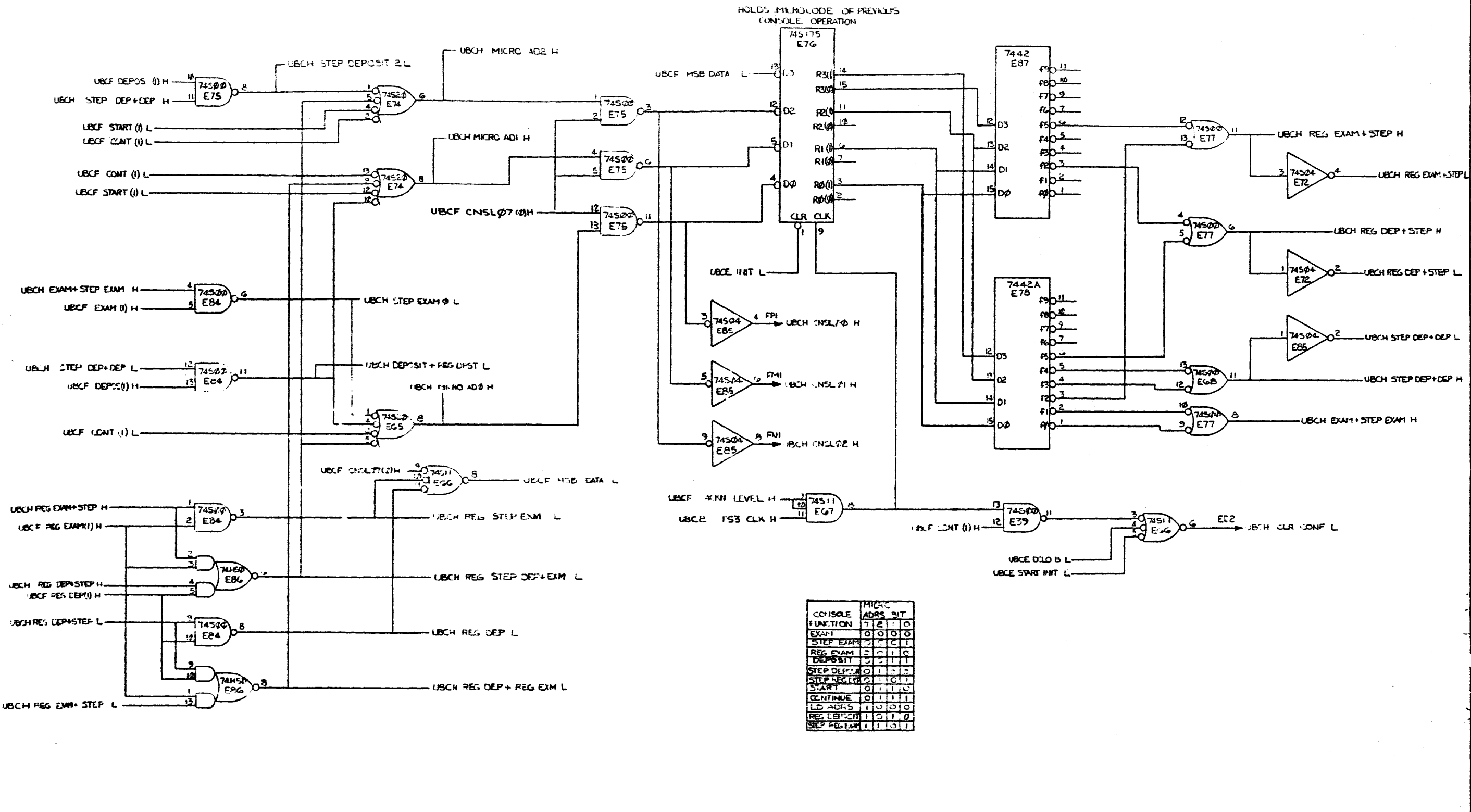
D

D

C

B

A



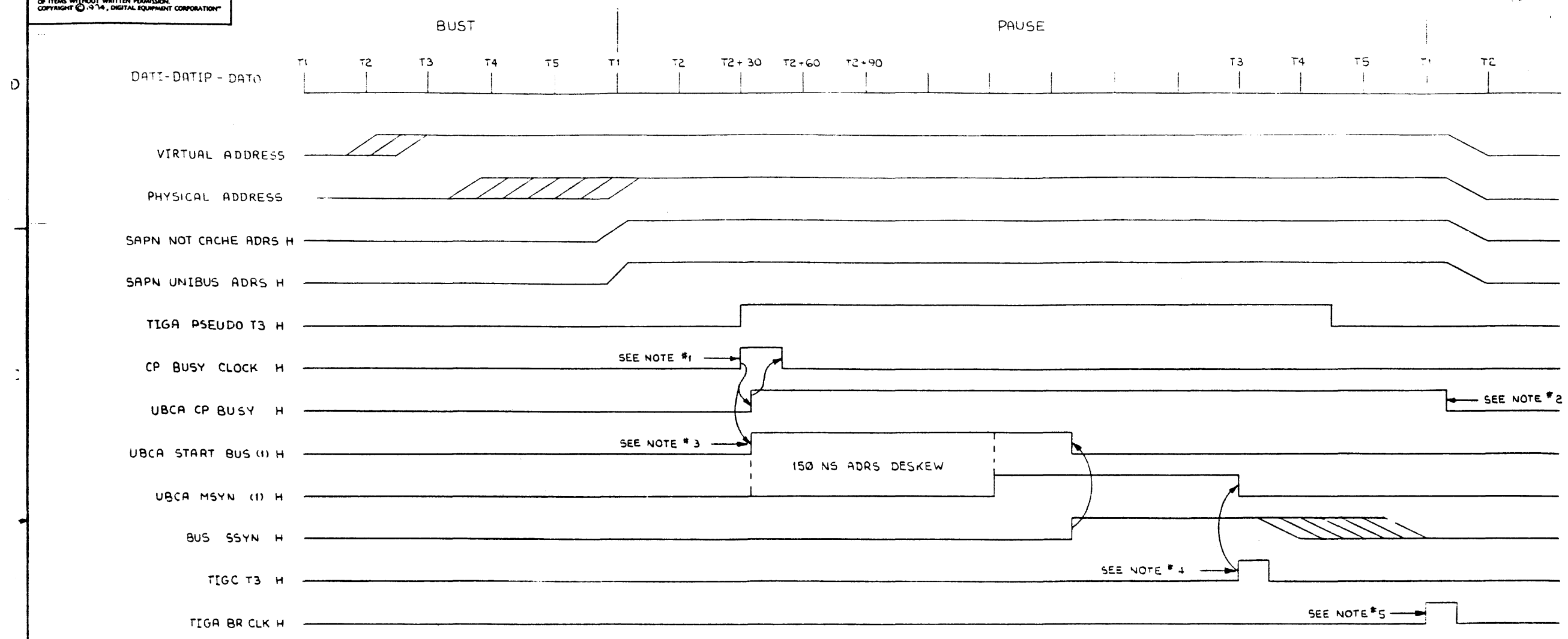
CONSOLE FUNCTION	MICRO ADDR	BIT
EXAM	7	0
STEP EXAM	2	1
REG EXAM	2	0
DEPOSIT	2	1
STEP DEP	0	1
STEP REG	2	1
START	0	1
CONTINUE	0	1
LD ADDR	1	0
REG DEP	1	0
STEP REG	1	1

REVISIONS		
CHK	CHANGE NO	REV

(CONSOLE μ ADDR) SLOT 12

DCS M8136-0-1

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NOTES :

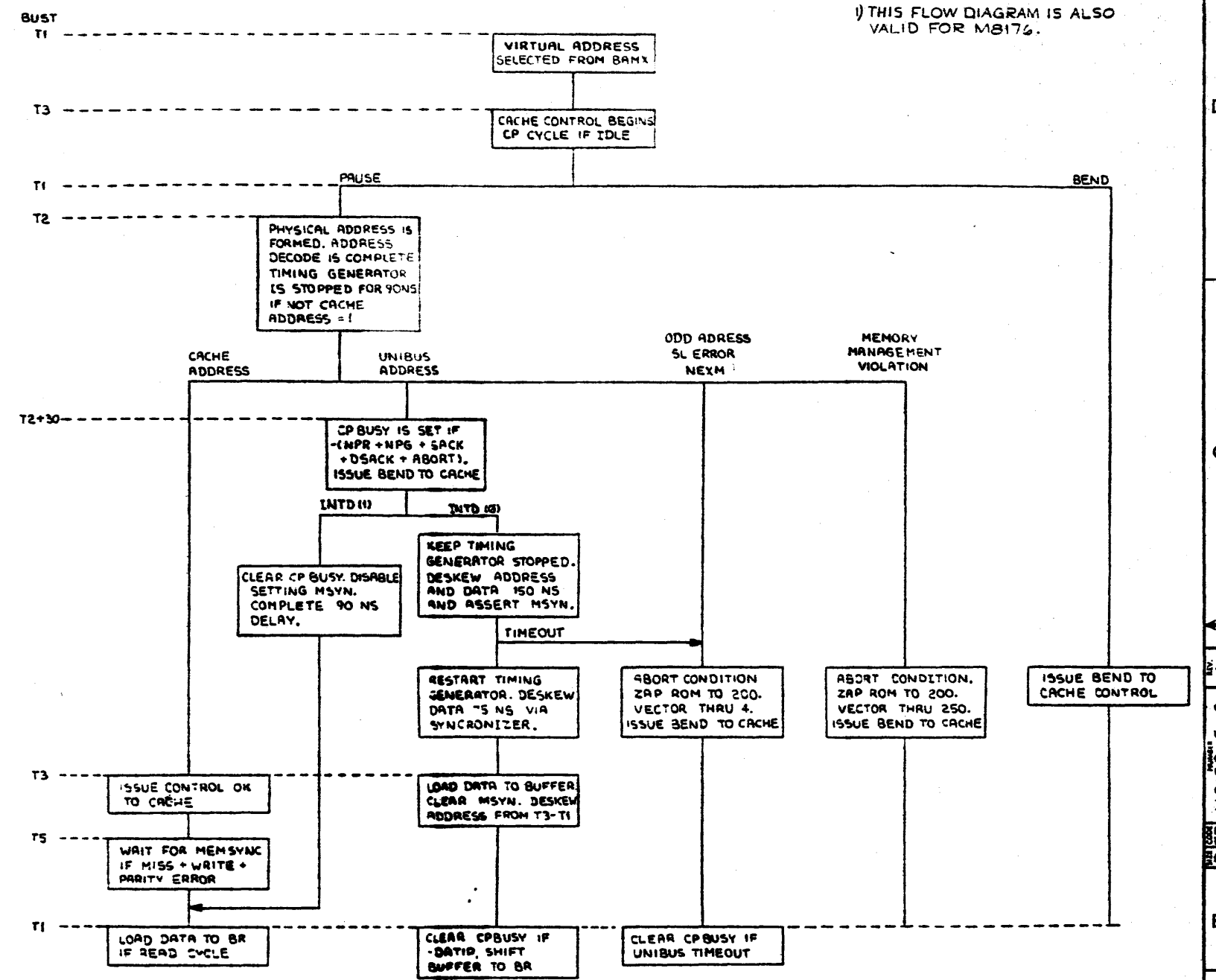
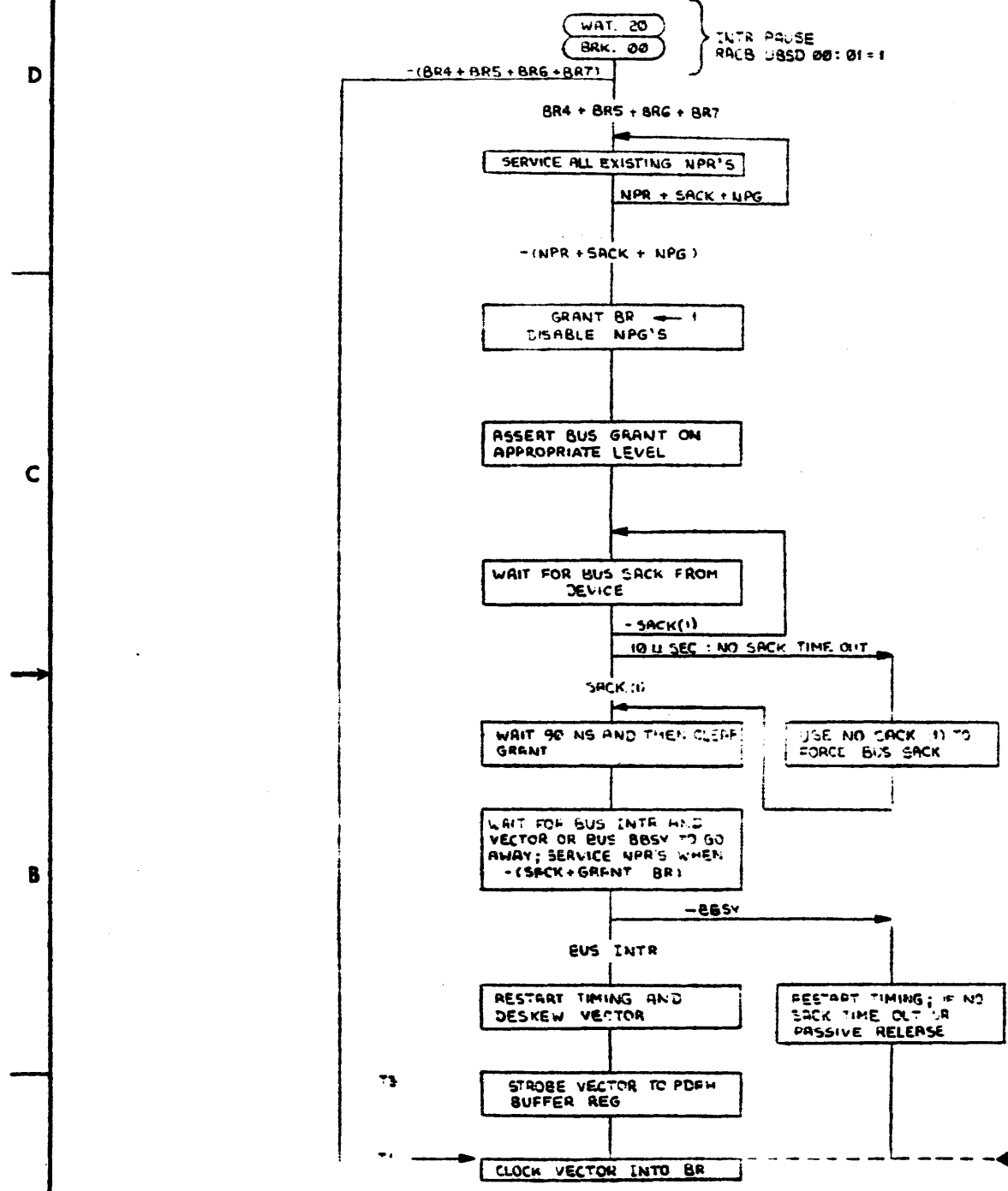
1. SET CP BUSY IF -(NPR + NPG + SACK + DSACK + ABORT + B BUSY)
2. CP BUSY IS NOT CLEARED IF DATIP CYCLE. IT IS CLEARED ON DATO PORTION OF DATIP/DATO
3. USED TO START DATO ADDRESS DESKEW ON DATIP/DATO OPERATION
4. 75 NS DATA DESKEW IS OBTAINED BY 2 STAGE SYNCHRONIZER ON TIGA. UNIBUS DATA IS LOADED INTO PDRH BUFFER REGISTER AT T3
5. ADDRESS & CONTROL ARE DESKEWED FROM T3 TO T1. PDRH BUFFER REGISTER LOADED TO BR AT T1.

REV	
CHANGE NO	
REVISIONS	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/78				
PARTS LIST				
DIMENSIONAL TOLERANCE		DRN.	DATE	digital
DIMENSIONS ARE MILLIMETERS INCHES UNLESS OTHERWISE SPECIFIED		CHK.D.	DATE	
MILLIMETERS	INCHES	ANGLES	DATE	
X.XX ±0.10	.XXX ±.008	10° 30'	1/19/78	TITLE TIMING DIAGRAM
X.X ±0.8	.XX ±.02		1/19/75	
X ±.2	.X ±.1		1/19/75	
THIRD ANGLE PROJECTION	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	ENG.	DATE	
	MATERIAL	PROJ. ENG.	DATE	
	FINISH	PROD.	DATE	
		NEXT HIGHER ASSY.		
		SCALE		SIZE/CODT
				NUMBER
				D 11 18136-3-7

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NOTE:
1) THIS FLOW DIAGRAM IS ALSO VALID FOR M8176.

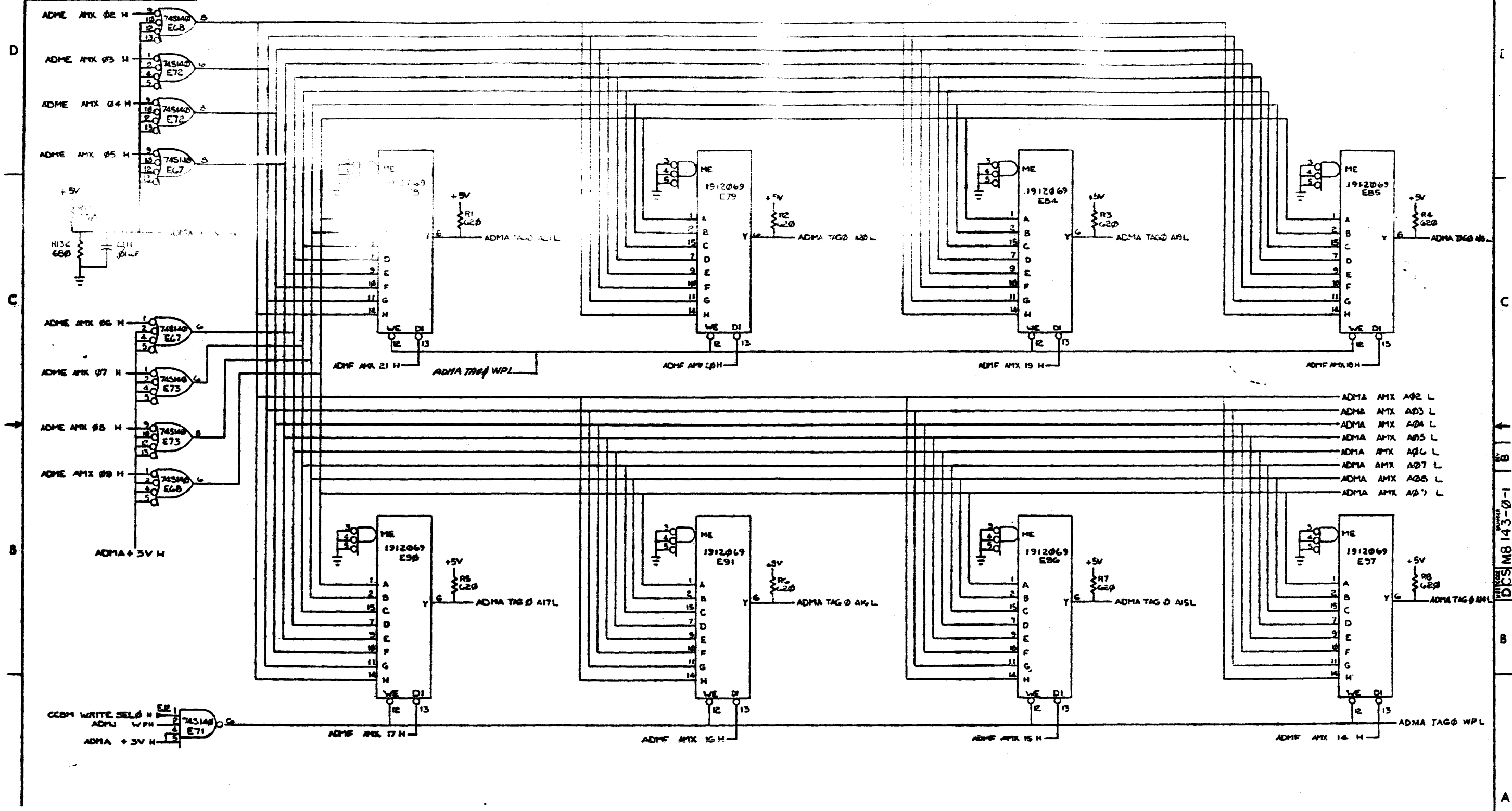


REV	CHANGE NO	DATE	BY
1	1	12-12-74	W. BOELEN
2	2	1-10-75	W. BOELEN

FIRST USED ON OPTION/MODEL 11/70	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
DIMENSIONAL TOLERANCE		DRN C. Sweeney	DATE 12-12-74	digital
DIMENSIONS ARE MILLIMETERS INCHES		CHK'D. W.T.	DATE 12-12-74	
UNLESS OTHERWISE SPECIFIED				
SIZE	FINISH	ANGLE	DATE	TITLE
RXZ ±0.10 ZX ±0.05 X ±0.2	RXZ ±0.250 ZX ±0.25 X ±0.1	90° 30'	12-12-74	FLW DIAGRAM
THIRD ANGLE PROJECTION	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	ENG. W. Boelen	DATE 12-12-74	SIZE CODE
MATERIAL	FINISH	PROJ. ENG. W. Boelen	DATE 12-12-74	NUMBER
		PROD. Taylor	DATE 11/10/75	D E C 118136-0-8
				REV. A
				SCALE
				SHEET 1 OF 1

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DCS M8143-0-1



REVISIONS	
CHANGE NO.	REV.

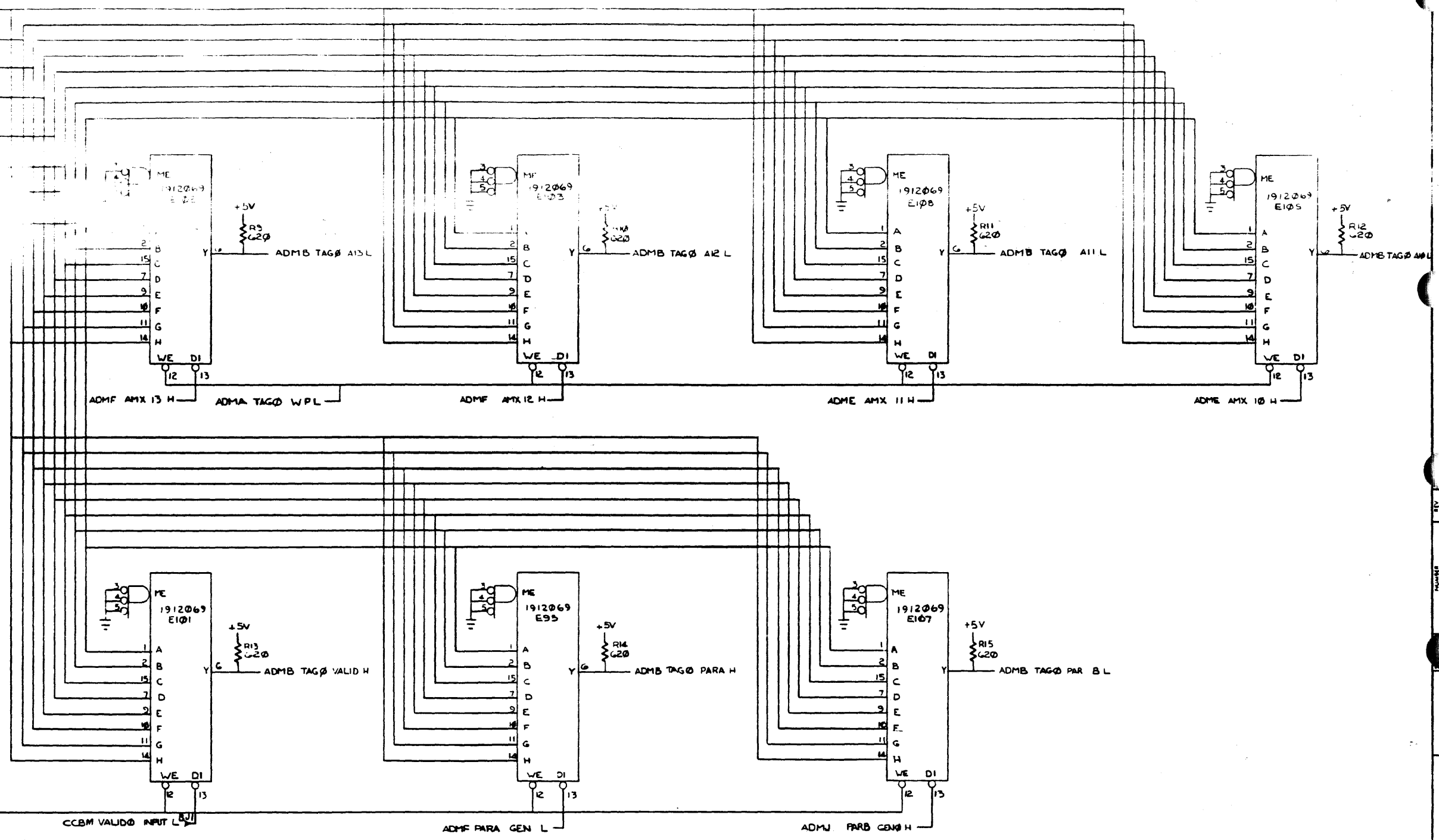
(TAG 0) SLOT 18

TITLE	ADMA ADDRESS MEMORY BOARD	SIZE CODE	D CS M8143-0-1	NUMBER		REV.	B
SCALE		SHEET	2 OF 12	DIST.			

ADN

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- ADMA AMX A02 L
- ADMA AMX A03 L
- ADMA AMX A04 L
- ADMA AMX A05 L
- ADMA AMX A06 L
- ADMA AMX A07 L
- ADMA AMX A08
- ADMA AMX A09 L

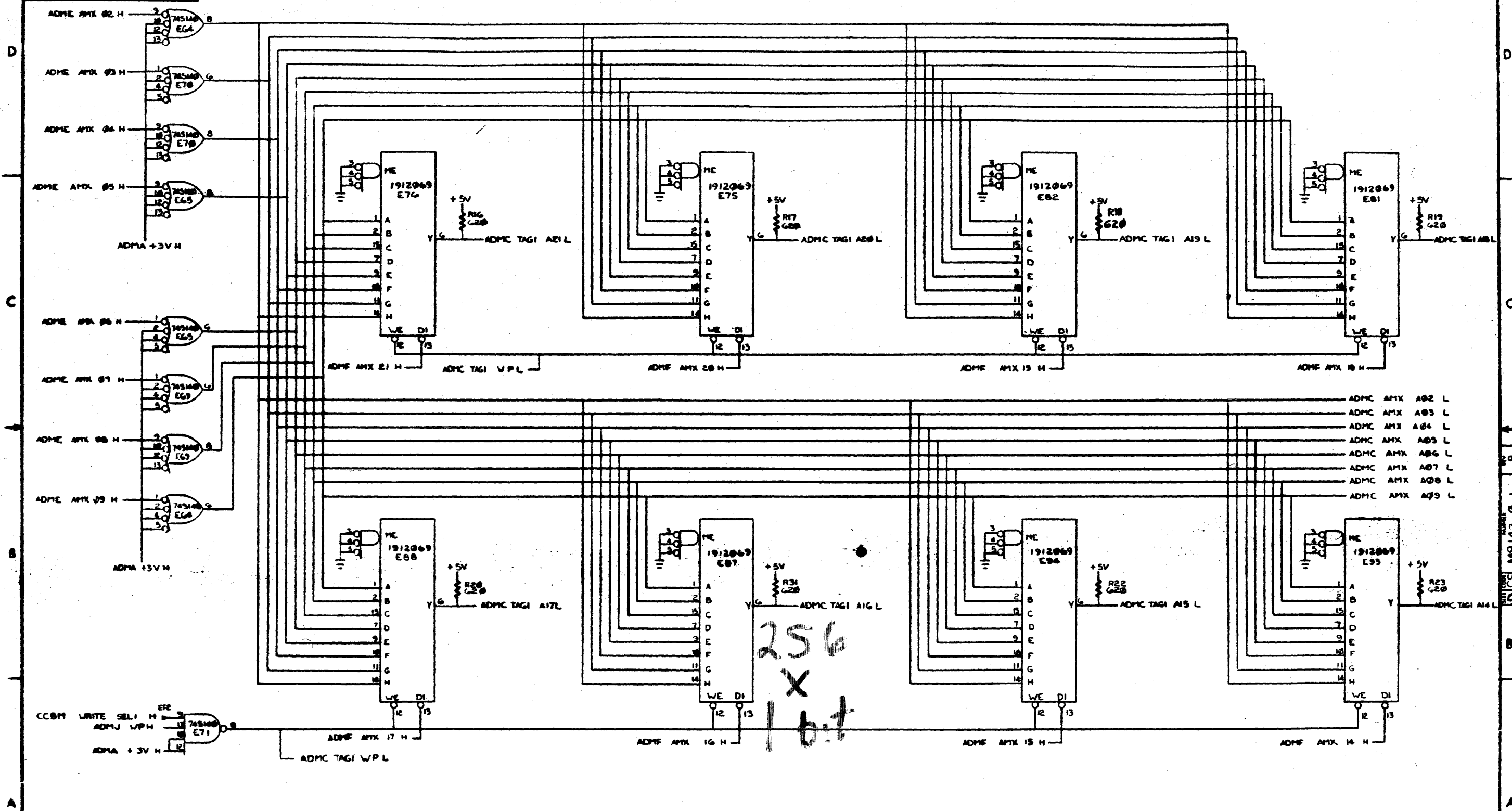


REVISIONS		
CHK	CHANGE NO	REV

(TAG0) SLOT B		TITLE	SIZE CODE	NUMBER	REV
		ADDRESS MEMORY BOARD	DCS	M8143-0-	E
SCALE	SHEET 1 OF 2	QST			

CS M8143-0-1

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REVISIONS		
CHK	CHANGE NO.	REV.

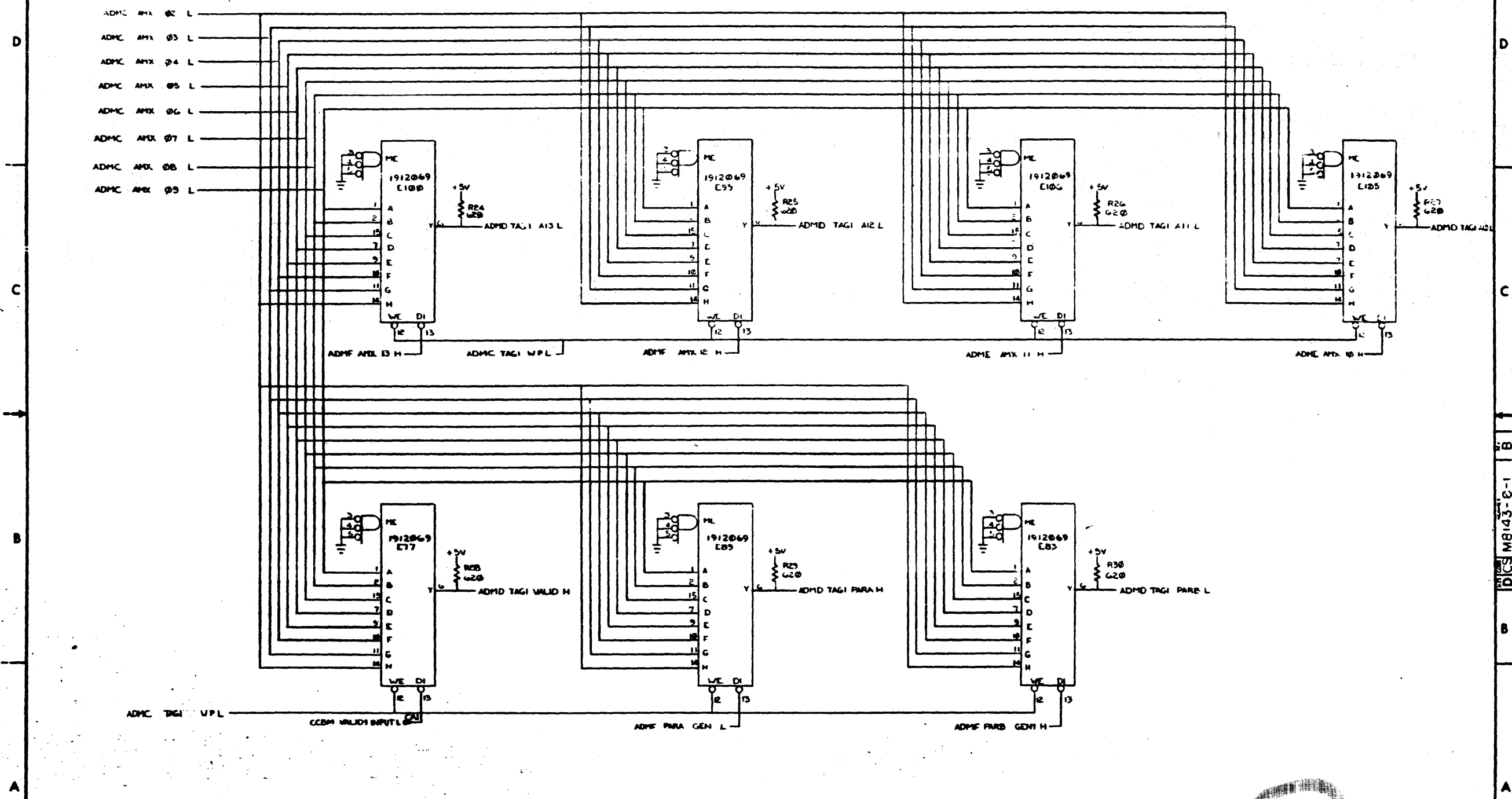
(TAG1) SLOT 18

TITLE ADDRESS MEMORY BOARD (ADM) NUMBER DCS M8143-0-1 REV B

SCALE SHEET 4 OF 12 DIST.

ADM

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REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	ADMD TAGI	NUMBER	18	REV.	B
ADDRESS MEMORY BOARD		CS	M8143-0-1		
SCALE		SHEET	5	OF	12



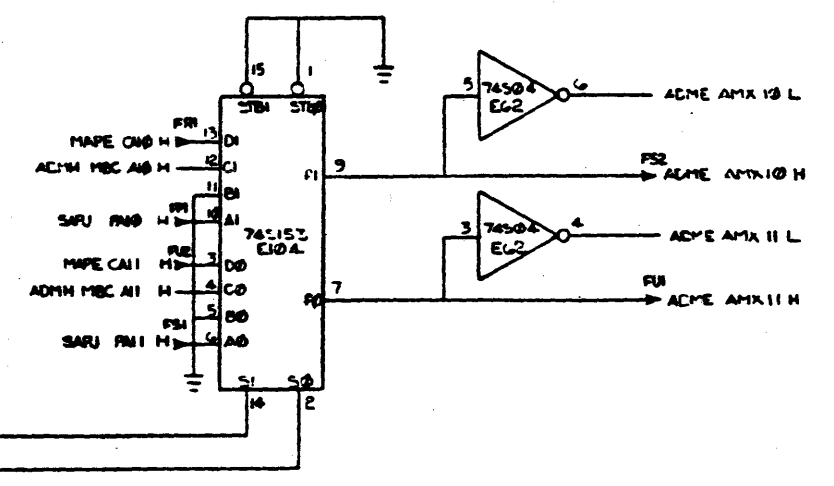
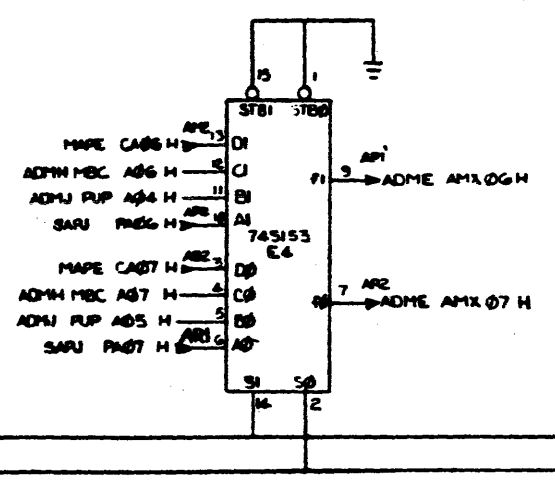
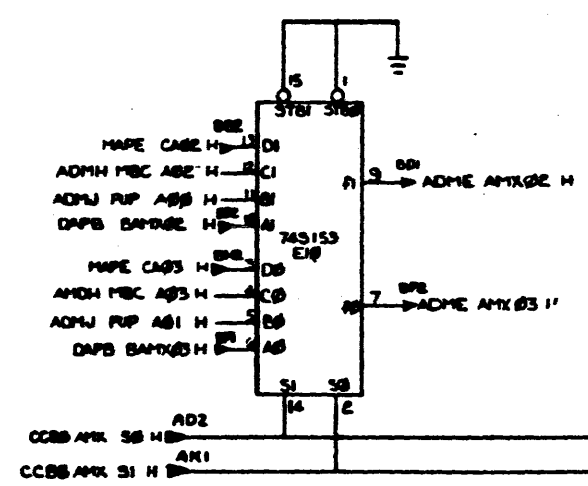
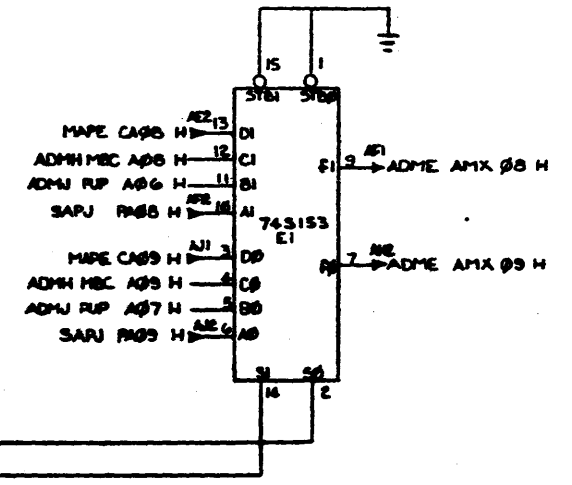
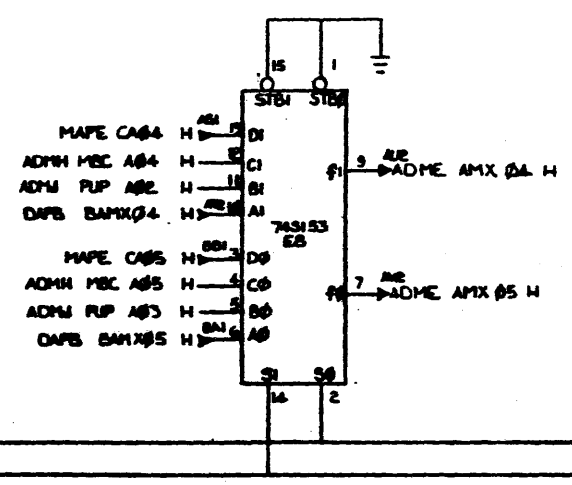
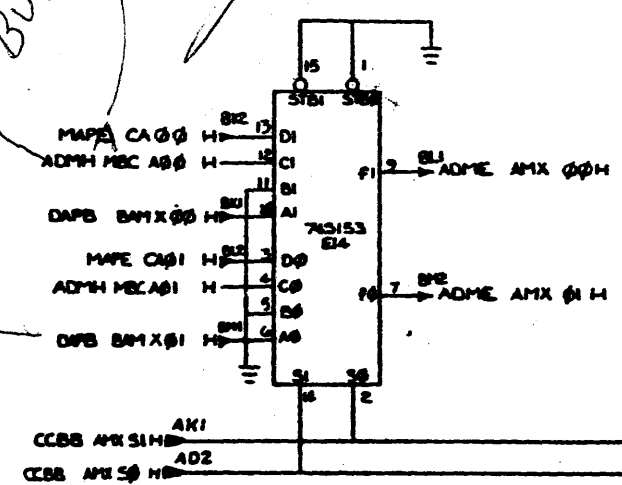
SLOT 18

D CS M8143-0-1 B

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UNIBUS MASSBUS
Addresses

CPU

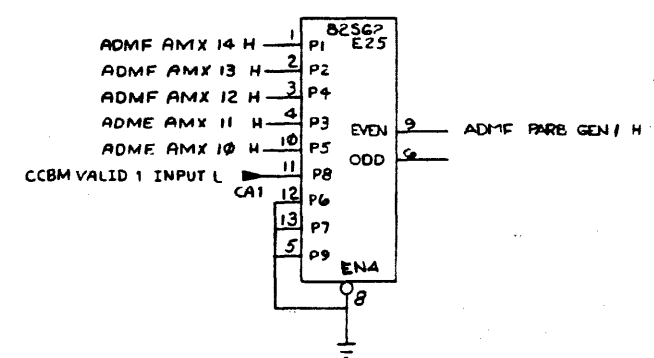
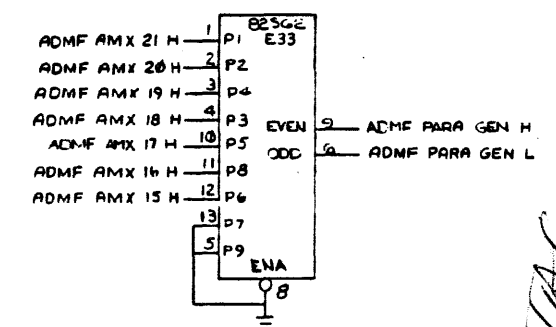
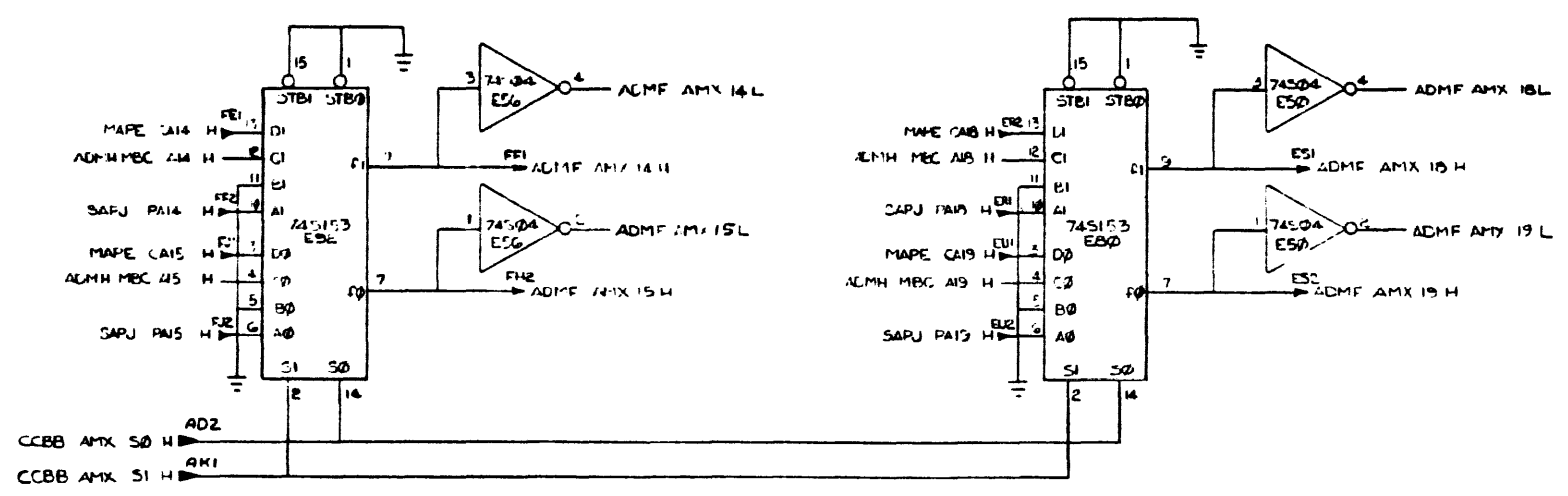
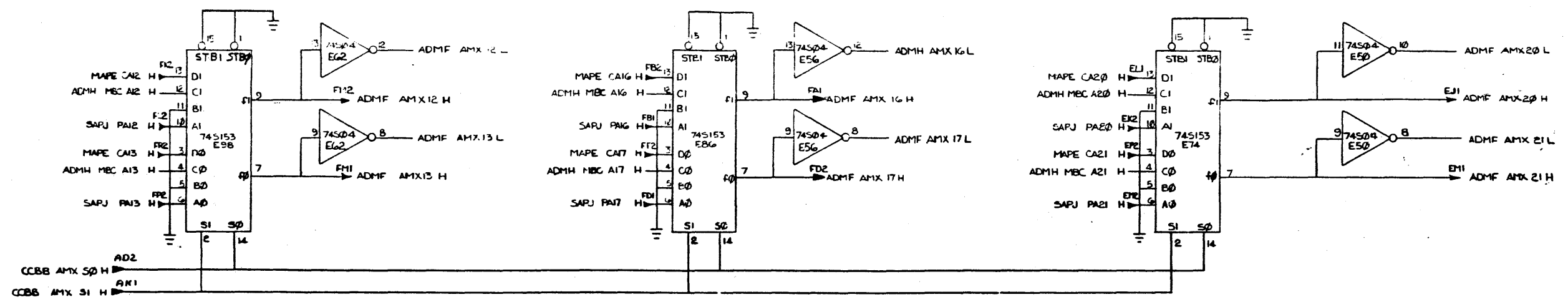


SI	SO	OUTPUT
0	0	CPU
0	1	POWER UP
1	0	MEM
1	1	UNIBUS

REVISIONS		
ONE	CHANGE NO.	REV.

ADPH

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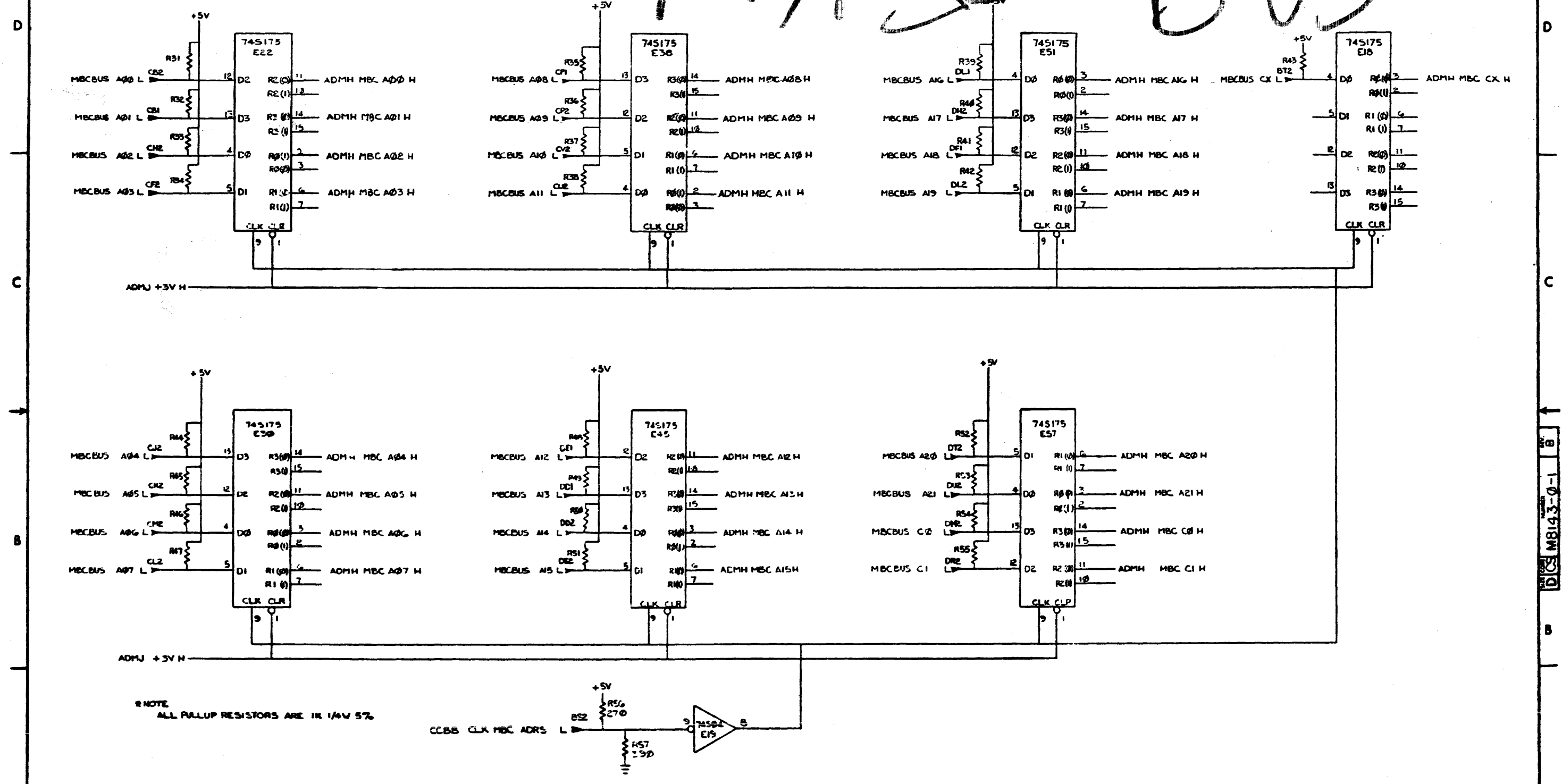
TAG ADDRESS PRIORITY

(ADDRESS MULTIPLEXOR) SLOT 18

REVISIONS		
CHK	CHANGE NO	REV

M A S S B U S

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NOTE
ALL PULLUP RESISTORS ARE 1K 1/4W 5%

(MBC ADDRESS BUFFER) SLOT 18

REVISIONS		
CHK	CHANGE NO	REV

TITLE	(ADMH) ADDRESS MEMORY BOARD	SIZE CODE	DCS	NUMBER	M8143-0-1	REV.	B
SCALE		SHEET	1	OF	12	DIST.	

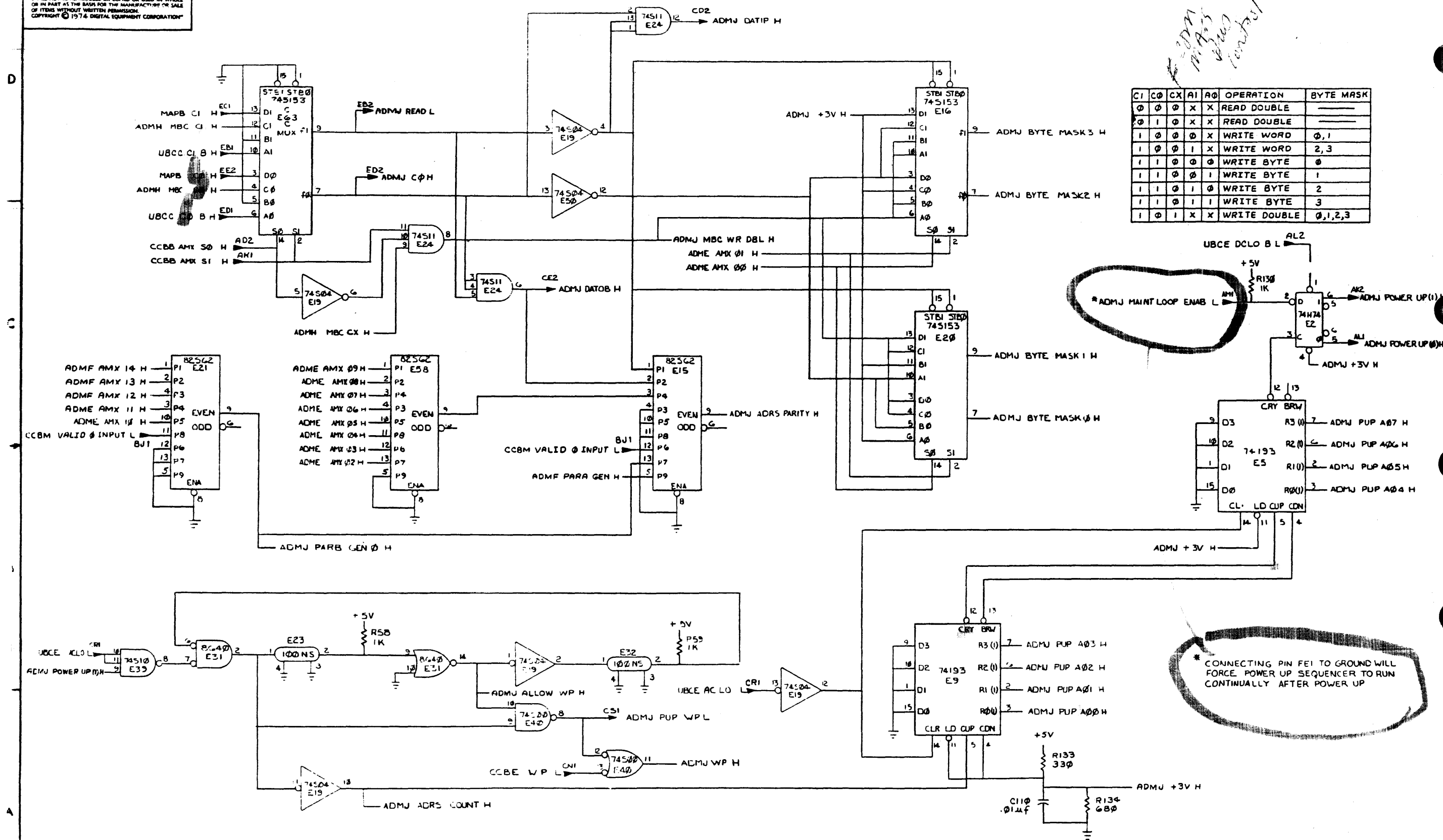
ADM

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D
C
B
A

1 2 3 4 5 6 7 8

CI	CO	CX	AI	AO	OPERATION	BYTE MASK
0	0	0	X	X	READ DOUBLE	---
0	1	0	X	X	READ DOUBLE	---
1	0	0	0	X	WRITE WORD	0,1
1	0	0	1	X	WRITE WORD	2,3
1	1	0	0	0	WRITE BYTE	0
1	1	0	0	1	WRITE BYTE	1
1	1	0	1	0	WRITE BYTE	2
1	1	0	1	1	WRITE BYTE	3
1	0	1	X	X	WRITE DOUBLE	0,1,2,3



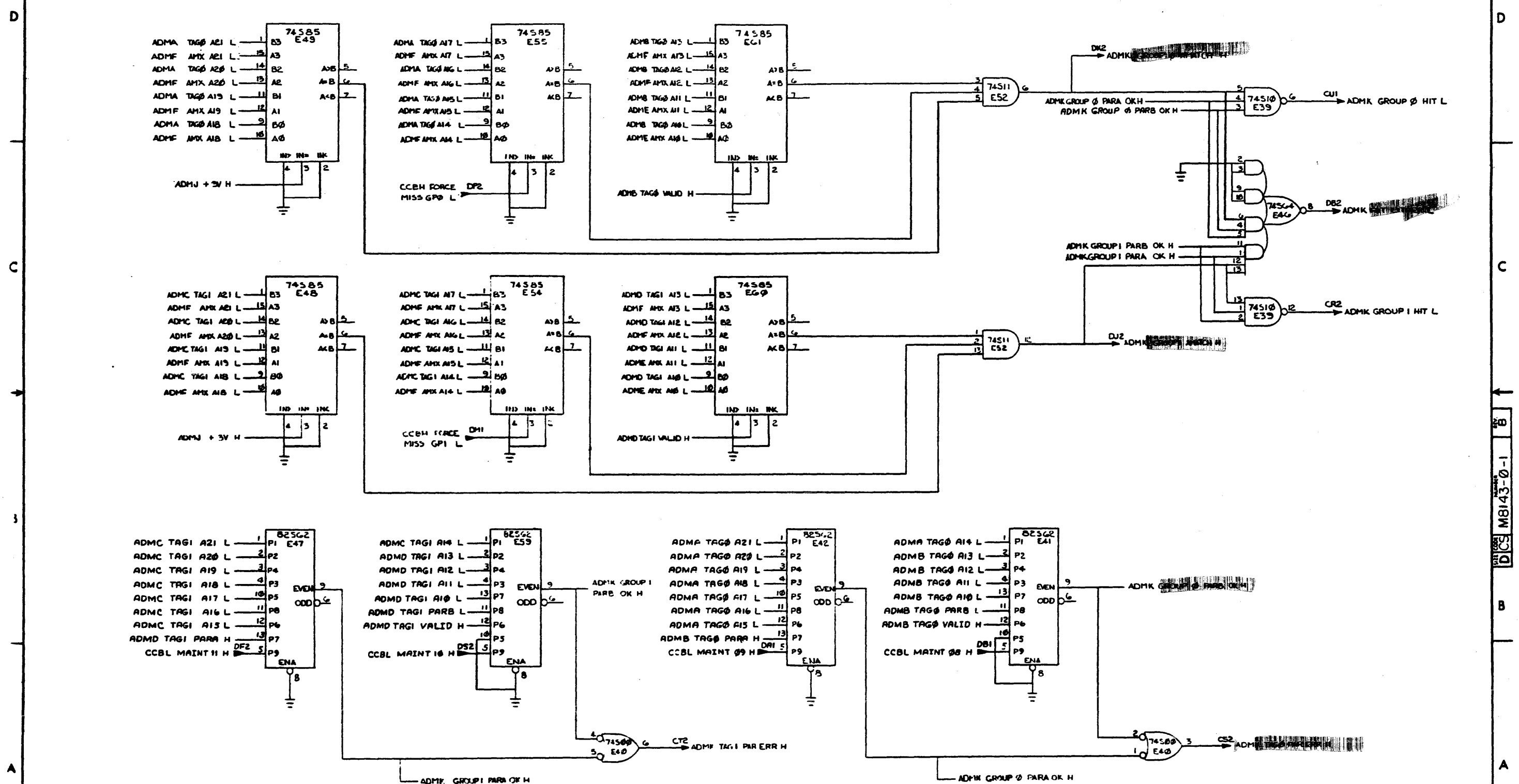
(BYTE MASK, PUP SEQUENCER) SLOT 18

REVISIONS		
CHK	CHANGE NO	REV

TITLE	(ADMJ)	SIZE CODE	NUMBER	REV
ADDRESS MEMORY BOARD	DCS	M8143-0-1	8	B
SCALE	SHEET 9	OF 12	DIST	

8 7 6 5 4 3 2 1

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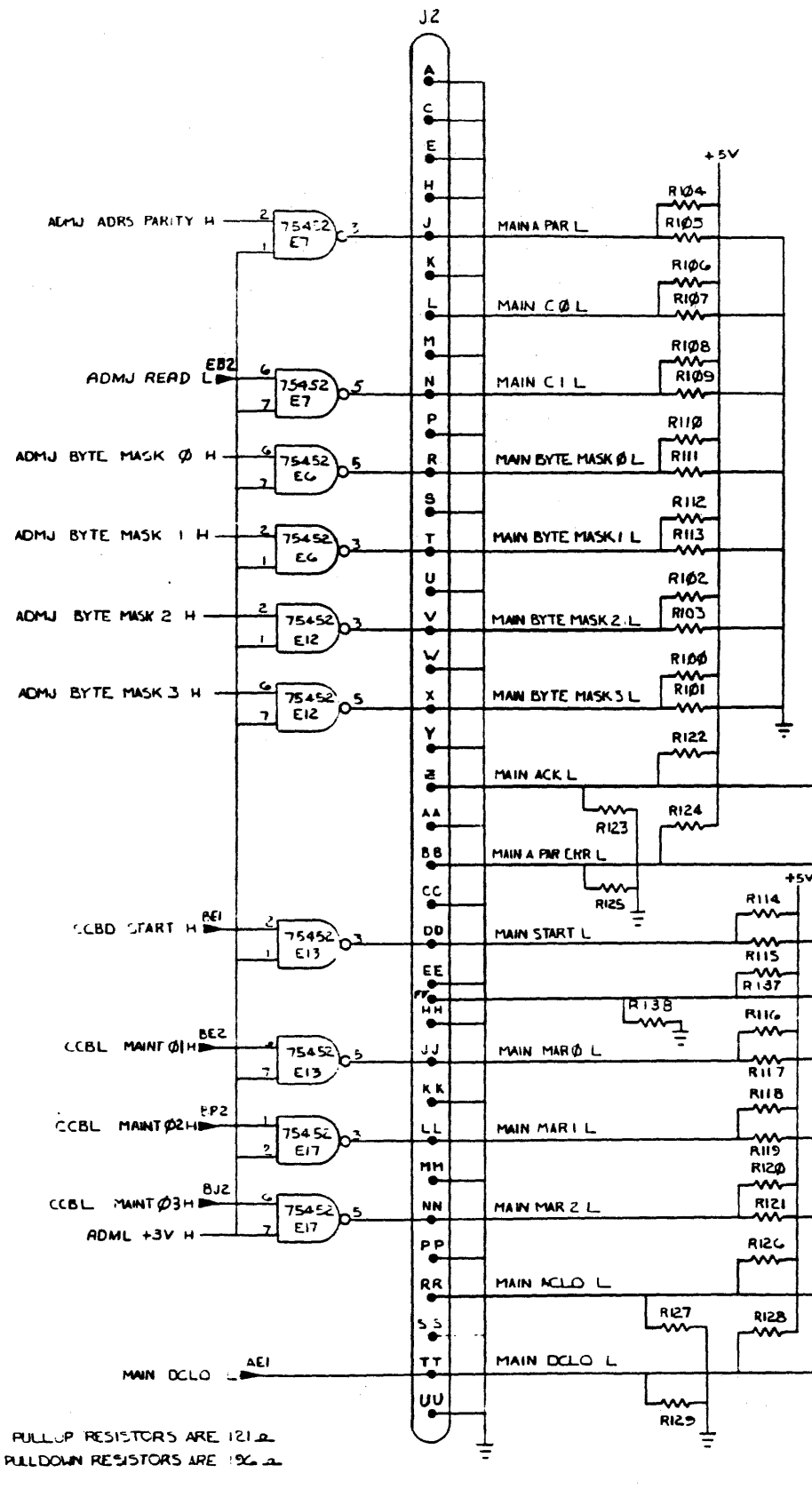
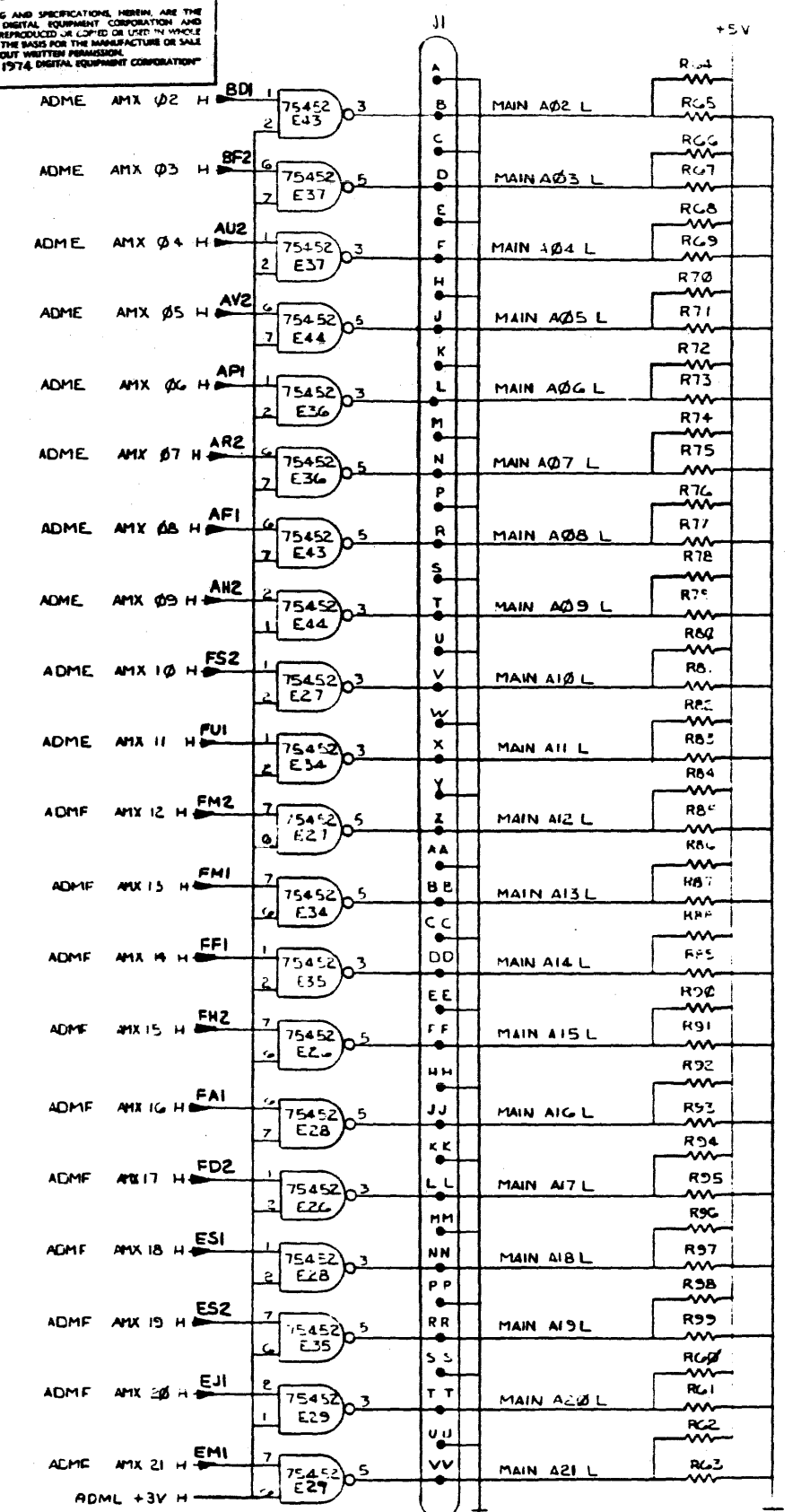
(EQUALS CHECK, PARITY CHECK) SLOT 18

REVISIONS		
CHK	CHANGE NO	REV

TITLE	(ADMK) ADDRESS MEMORY BOARD	SIZE CODE	D CS	NUMBER	M8143-0-1	REV.	B
SCALE		SHEET	1-2	OF	2	DIST.	

ADM

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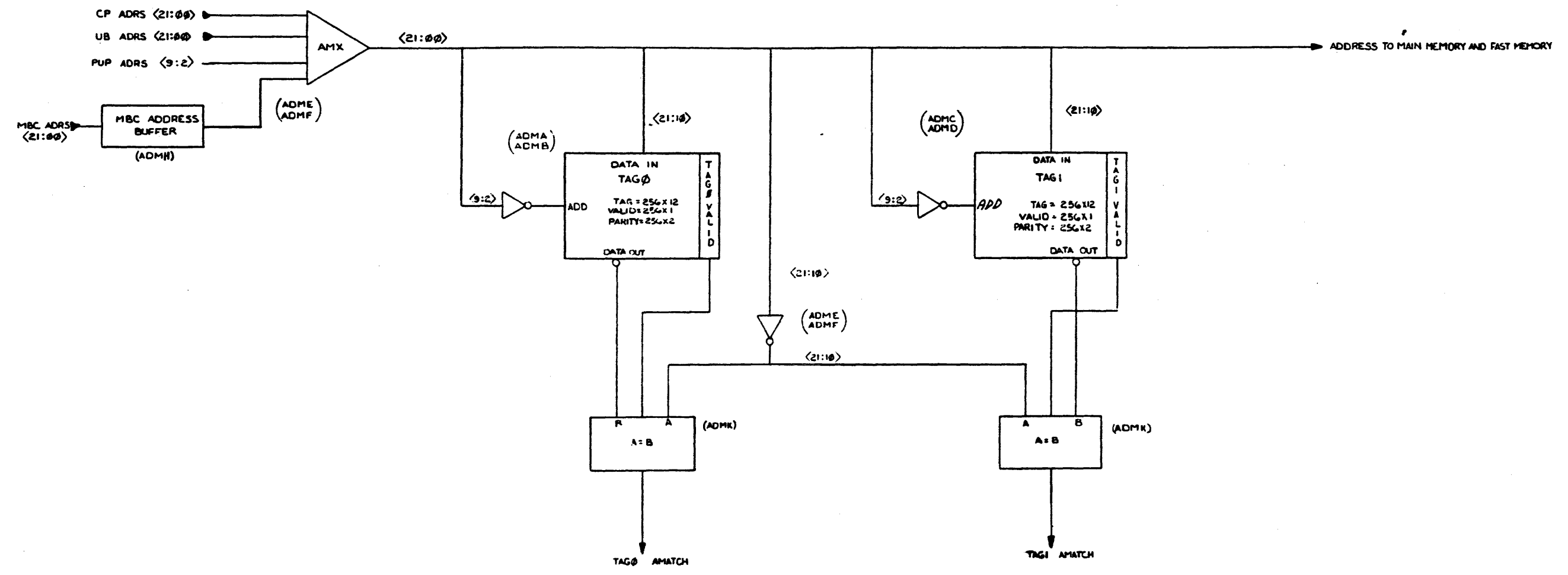
ALL PULLUP RESISTORS ARE 121Ω
ALL PULLDOWN RESISTORS ARE 192Ω

(MAIN MEMORY ADRS DRIVERS) SLOT 18

REVISIONS		
CHK	CHANGE NO	REV

TITLE	(ADML) ADDRESS MEMORY BOARD	SIZE CODE	NUMBER	REV.
SCALE	SHEET 1 OF 2	DIST.	DCS M8143-0-1	B

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REVISIONS		
CHK	CHANGE NO	REV

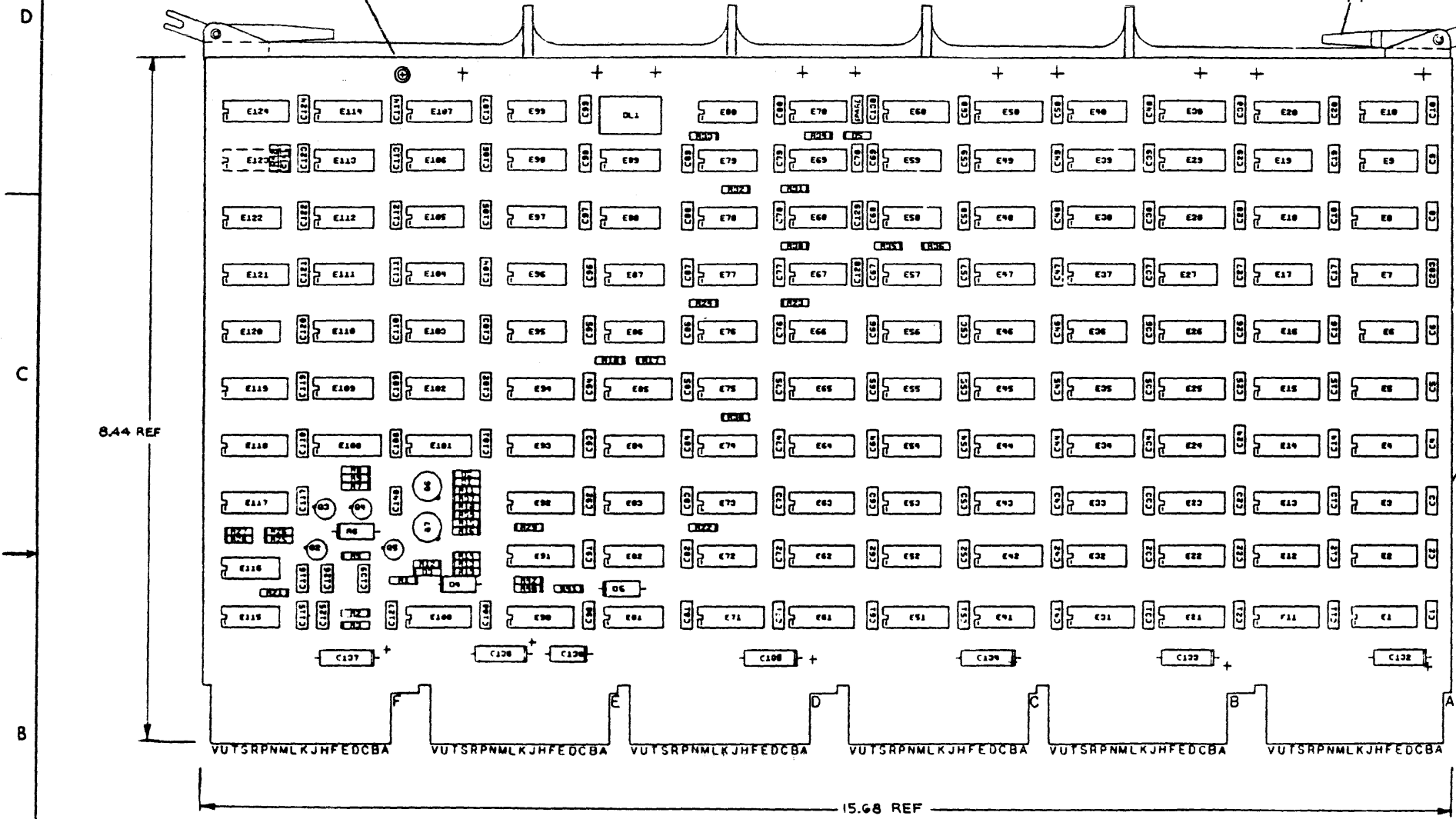
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NOTES: 1. E1, E5, E107, E114, E121, E123, E124 ARE SPARES

4	E4, E2, E14, E51, E42	I.C. DEC 74175	1910851	48	REF
1		HANDLE ASSY	1210711-2	49	REF
12		EYELET	9006732	50	REF
3	R7, R8, R9	RESISTOR, 511, 1/4W, 1%	1302411	51	1

FOR PARTS LIST SEE K-PL-M8142

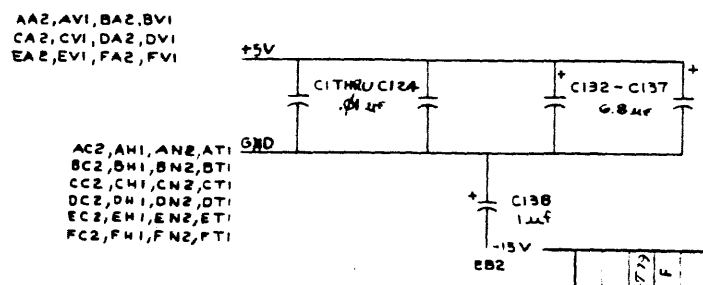
QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
1		X-Y COORDINATE HOLE LOCATION	K-CO-M8142-B-4	1
1		ASSY/DRILLING HOLE LAYOUT	D-AH-M8142-B-5	2
1		MODULE ECO HISTORY	B-WH-M8142-B-5	3
1		ETCHED CIRCUIT BOARD	5071393	4
6	C132 THRU C137	CAPACITOR, 6.8uf, 35V, 20%	1005306	5
126	C1 THRU C124, C128 THRU C129	CAPACITOR, .01uf, 100V, 20%	1001610-01	6
1	C125	CAPACITOR, 56 pf, 100V	1000012	7
1	C130	CAPACITOR, 1uf, 35V, 10%	1001776	8
4	D1, D2, D3, D5	DIODE D684	1100114	9
2	D4, D6	DIODE 1N4733A	1109943	10
2	R10, R37	RESISTOR, 133 1/8W, 5%	1303038	11
4	R51, R17, R26, R27	RESISTOR, 150, 1/4W, 5%	1300250	12
4	R23, R35, R39, R32	RESISTOR, 330, 1/4W, 5%	1300295	13
3	R21, R19, R22, R21, R33	RESISTOR, 1K, 1/4W, 5%	1300365	14
1	R34	RESISTOR, 15K, 1/4W, 5%	1300496	15
2	R24, R36	RESISTOR, 680, 1/4W, 5%	1301424	16
3	R18, R25, R28	RESISTOR, 220 1/4W, 5%	1300271	17
1	R3	RESISTOR, 5.6K, 1/4W, 5%	1301874	18
1	R2	RESISTOR, 820 OHM, 1/4W, 5%	1301775	19
1	R8	RESISTOR, 3.32K, 1/4W, 1%	1302311	20
1	R12	RESISTOR, 2K, 1/4W, 5%	1302388	21
1	R5	RESISTOR, 1.47K, 1/8W, 1%	1305108	22
5	R11, R13, R14, R15, R16	RESISTOR, 5.1 OHM, 1/4W, 5%	1309422	23
4	Q2, Q3, Q4, Q5	TRANSISTOR, DEC3809A	1501999	24
1	Q7	TRANSISTOR, DEC3762	1509649	25
1	Q8	TRANSISTOR, DEC3734	1510082	26
1	DL1	DELAYLINE 100NS	1609559	27
2	E76, E88	I.C. DEC 74H50	1809060	28
4	E3, E7, E24, E25	I.C. DEC 8266	1909934	29
8	E28, E84, E31, E62, E63, E34, E29, E8	I.C. DEC 74151	1909936	30
4	E13, E18, E15, E18	I.C. DEC 74153	1909937	31
1	E37	I.C. DEC 7442	1910046	32
1	E74	I.C. DEC 7437	1910091	33
1	E80	I.C. DEC 74123	1910438	34
13	E95, E109, E106, E111, E88, E98, E48, E49, E32, E41, E44, E88, E71	I.C. DEC 74588	1910532	35
7	E97, E38, E75, E48, E17, E53, E10	I.C. DEC 74584	1910534	36
8	E87, E102, E98, E99, E47, E54	I.C. DEC 74510	1910536	37
10	E89, E98, E69, E120, E67, E8, E40, E52, E43, E103	I.C. DEC 74511	1910537	38
2	E104, E78	I.C. DEC 74520	1910539	39
11	E113, E105, E79, E110, E112, E122, E88, E58, E27, E55, E45	I.C. DEC 74564	1910542	40
13	E72, E82, E115, E116, E84, E59, E70, E81, E9, E19, E33, E57, E77	I.C. DEC 74574	1910544	41
18	E23, E20, E22, E28, E118, E92, E50, E30, E90, E91, E85, E94, E101, E100, E108, E93, E117, E119	I.C. DEC 745112	1910545	42
2	E83, E73	I.C. DEC 745140	1910546	43
2	E35, E39	I.C. DEC 745175	1910957	44
1	E12	I.C. DEC 745133	1911983	45
5	E21, E38, E11, E61, E65	I.C. DEC 74174	1910652	46
1	E80	I.C. DEC 8640	1911469	47



IC TYPE	QTY	REF
8640	1	8
8266	8	16
74123	8	16
745133	8	16
74174	8	16
74151	8	16
7442	8	16
74153	8	16
74175	8	16
745175	8	16
745112	8	16

IC PIN LOCATIONS

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



3	R40, R41, R42	RESISTOR 56, 1/4W, 5%	1302602	58
1	C141	CAP. 680 pf, 100V, 5%	1300026	59
A/R		30-WIRE (RETROFIT)	9105740-55	53
2	Q6, Q7	TRANSISTORS	9007201	54
4	R1, R29, R30, R42	RESISTOR 100K 1/4W 5%	1300229	55
4	C126, C127, C139, C140	CAPACITOR .22 uf 50V	1018274-0-1	56
1	C130	CAPACITOR 1200 pf, 100V 5%	1002824-0-0	57

DESIGNER: R. CHUMSAE
 CHECKED: M. TRUHLAR
 DATE: 12/12/74
 DRAWN: R. BOUCHER
 DATE: 1/27/75
 ENGR: M. HELMIUS
 DATE: 1/27/75
 PROJ. ENG: M. HELMIUS
 DATE: 1/27/75
 PROD: M. HELMIUS
 DATE: 1/27/75
 NEXT HIGHER ASSY: M. HELMIUS

FIRST USED ON OPTION MODEL 1170

ETCH BOARD REV B

digital EQUIPMENT CORPORATION
 NORTON MASSACHUSETTS

TITLE: CACHE CONTROL

SIZE CODE: DCS M8142-0-1
 NUMBER: 1
 REV: F

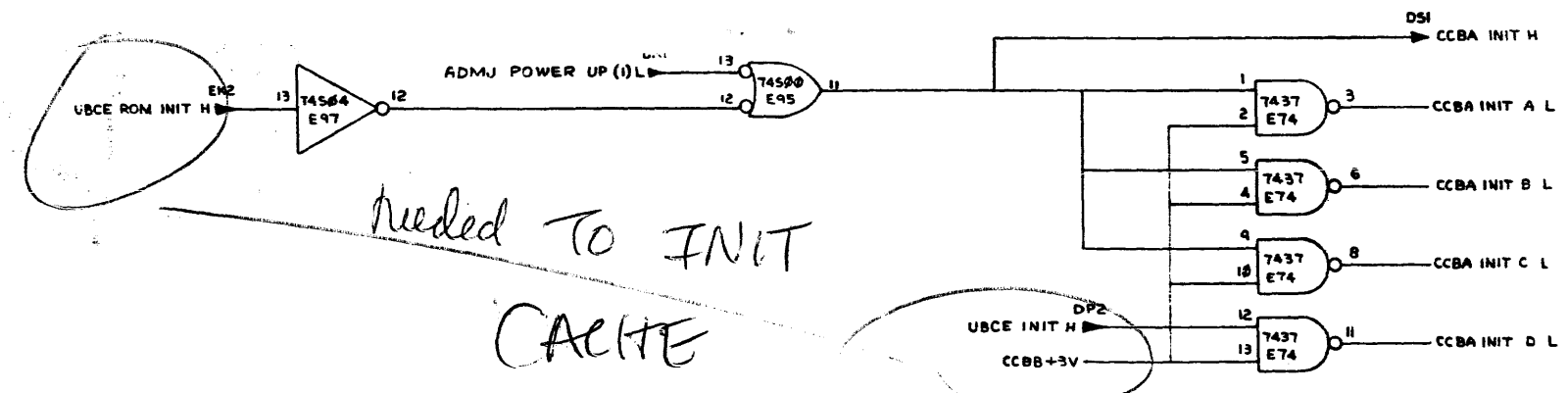
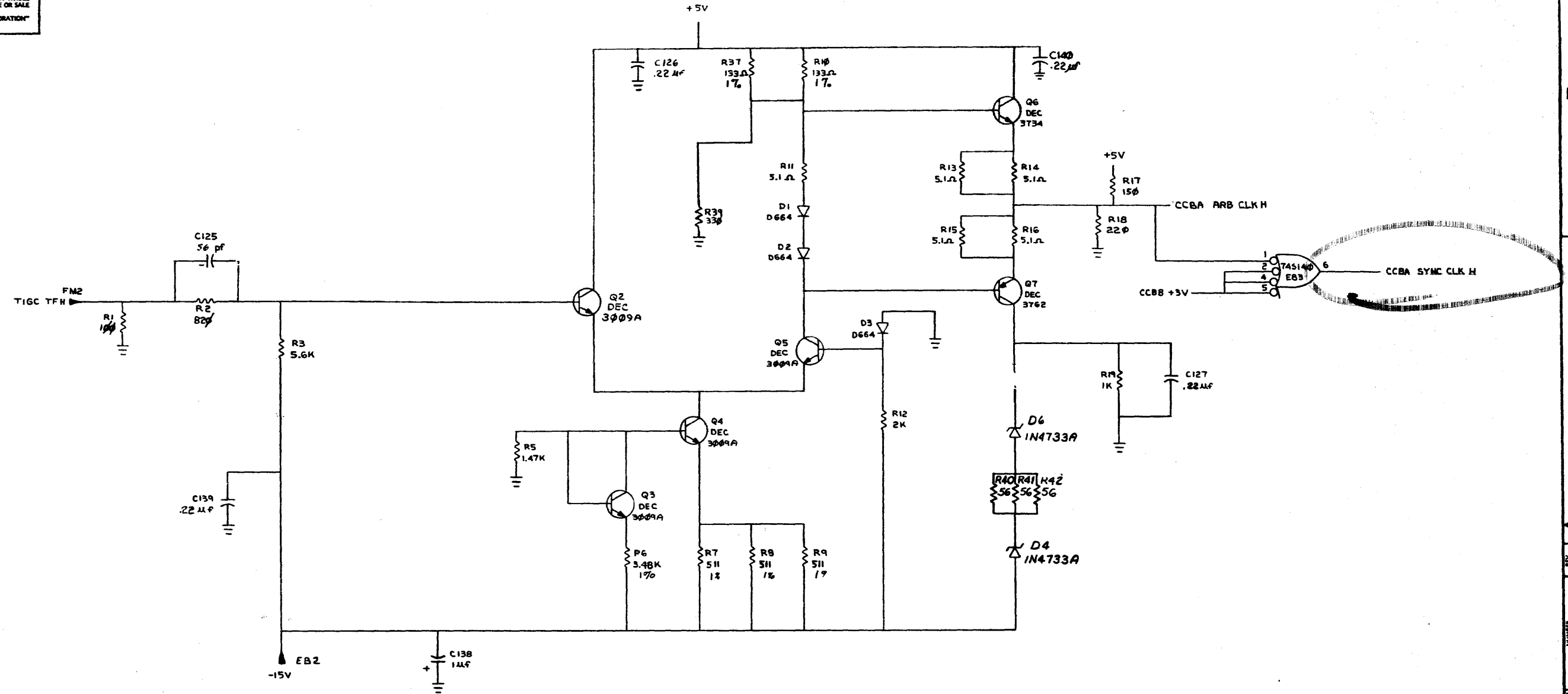
SEMICONDUCTOR CONVERSION CHART

DEC NO: EIA NO: DEC NO: EIA NO

SCALE: NONE

SHEET: 1 OF 1

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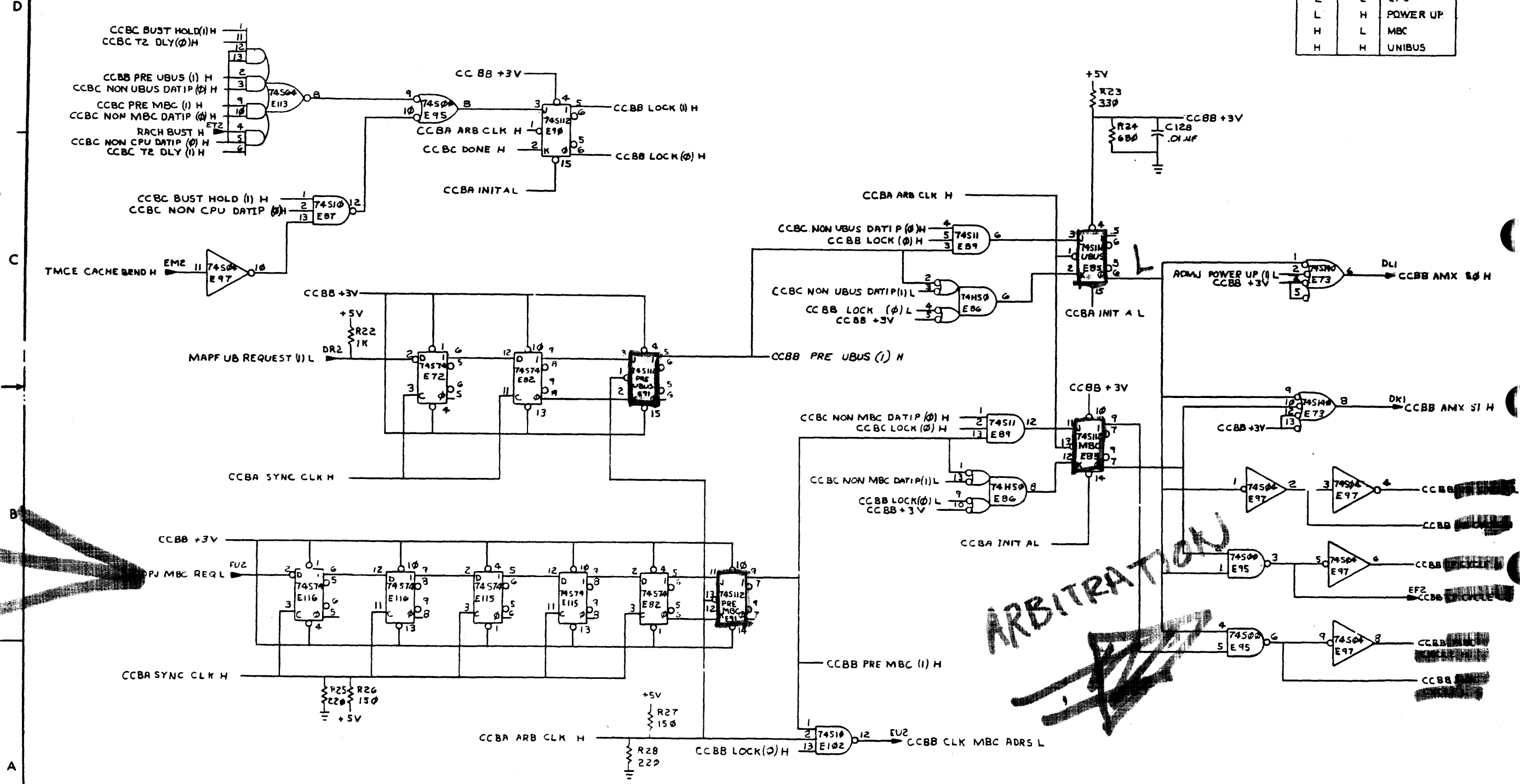
*needed to INIT
 CACHE*

REVISIONS		
CHK	CHANGE NO.	REV.

REV. F
 DCS M8142-0-1

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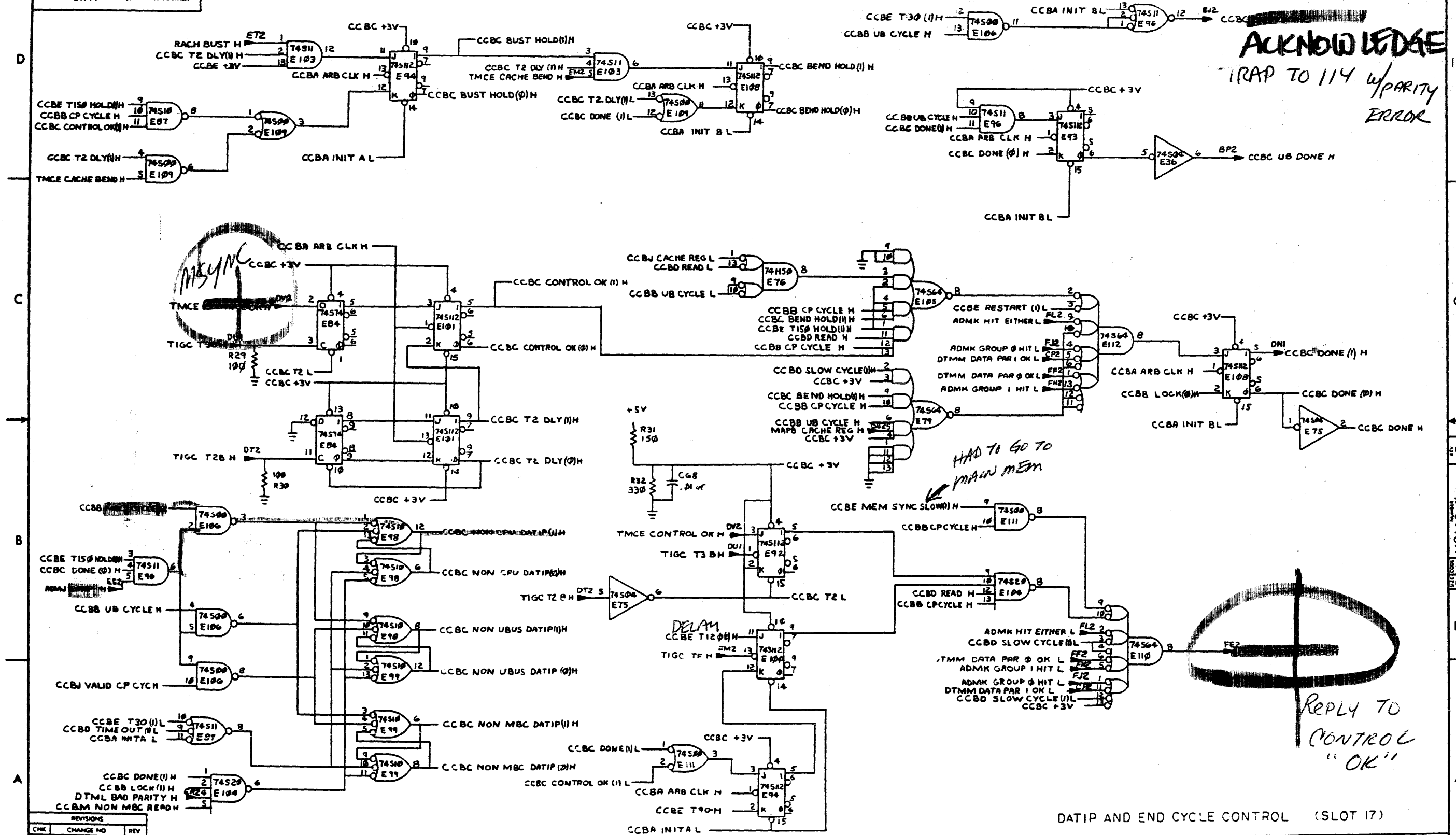
SI	S0	CYCLE
L	L	CPU
L	H	POWER UP
H	L	MBC
H	H	UNIBUS



CHK	CHANGE NO	REV

REQUEST ARBITRATOR (SLOT 17)
 TITLE CACHE CONTROL BOARD (CCBB)
 SIZE CODE DCSI M8142-01
 NUMBER
 SCALE SHEET 3 OF 13 DIST

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ACKNOWLEDGE
TRAP TO 114 w/ PARITY ERROR

HAD TO GO TO MAIN MEM

REPLY TO CONTROL "OK"

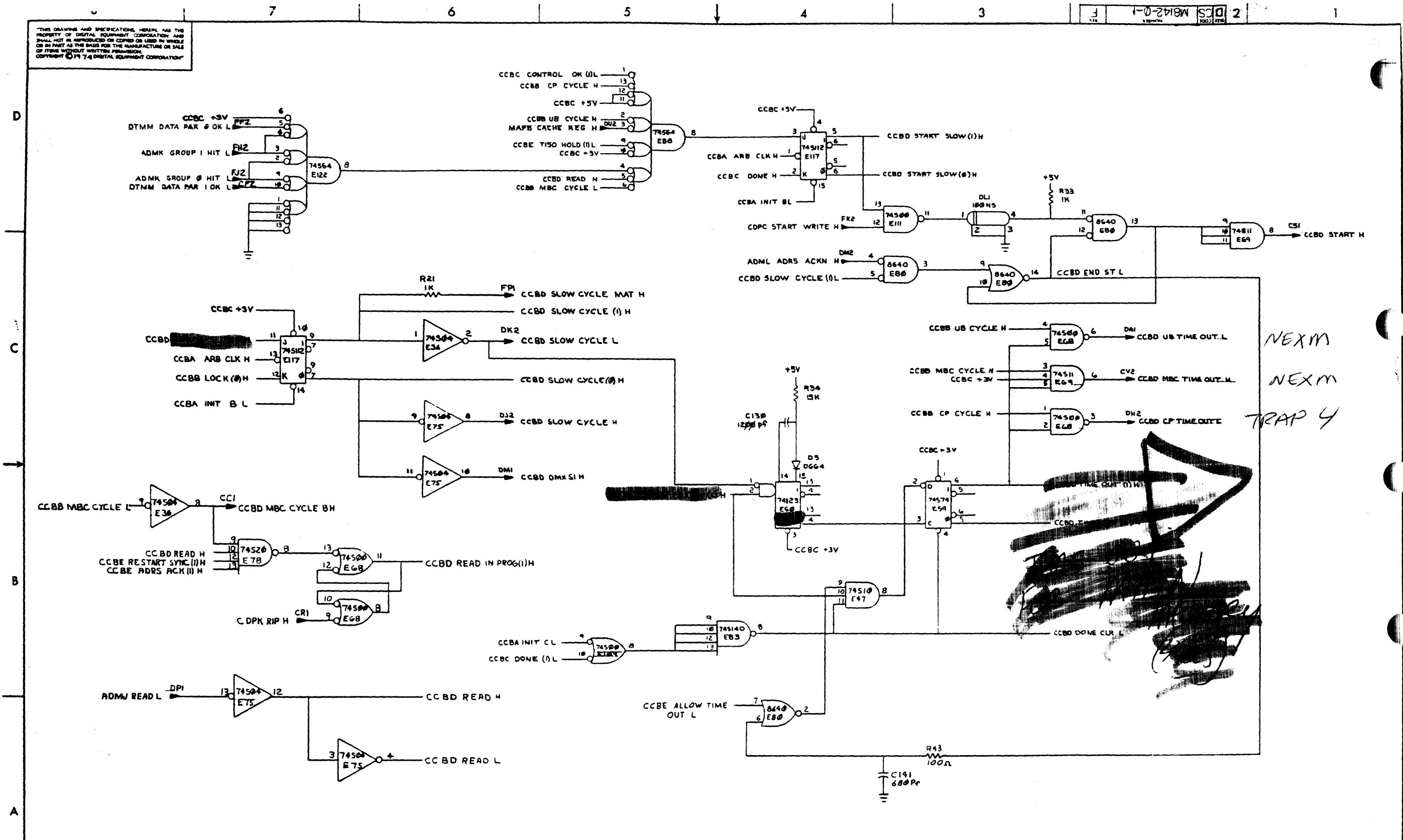
REV	CHG	NO	REV

DATIP AND END CYCLE CONTROL (SLOT 17)

TITLE	SIZE/NO	NUMBER	REV.
CACHE CONTROL BOARD (CCBC)	D CS	M8142-0-1	F

CCB

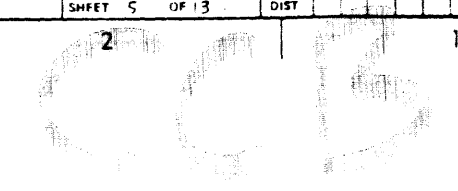
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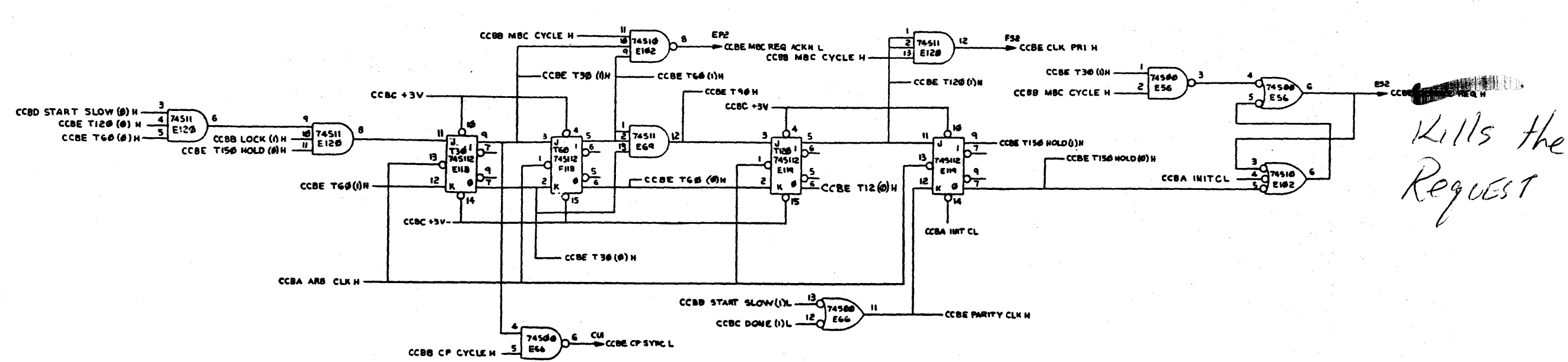
NEXIM
NEXIM
TRAP 4

REVISIONS		
CHK	CHANGE NO	REV

MEMORY CONTROL (SLOT 17)		TITLE	SIZE CODE	NUMBER	REV.
		CACHE CONTROL BOARD (CCBD)	D CS	M8142-3-	F
SCALE	SHEET 5 OF 13	DIST			

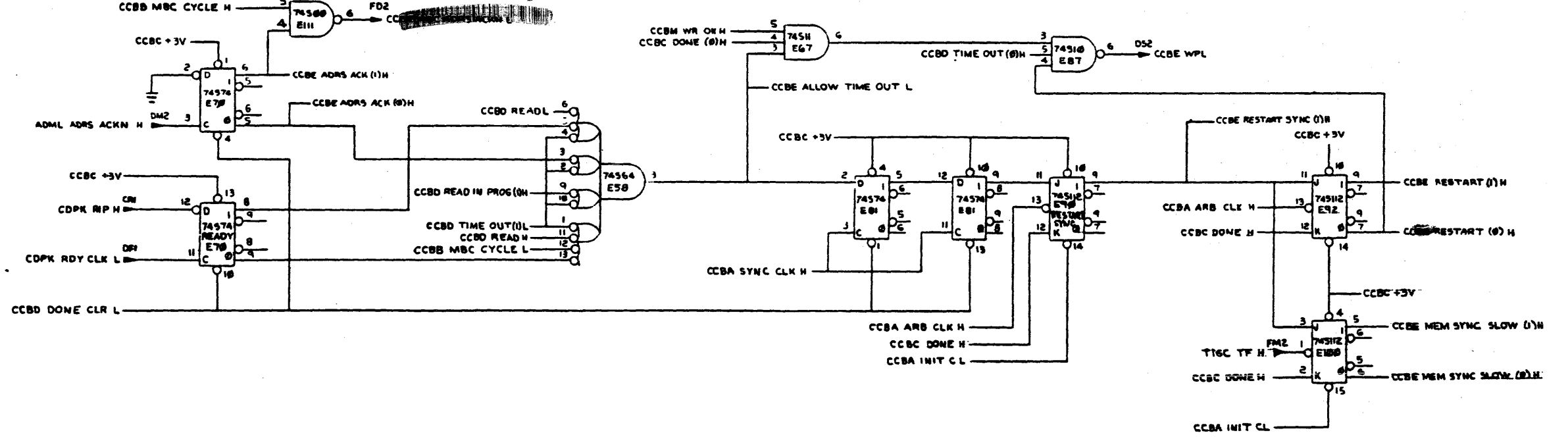


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Kills the Request

MBC ACKNOWLEDGE

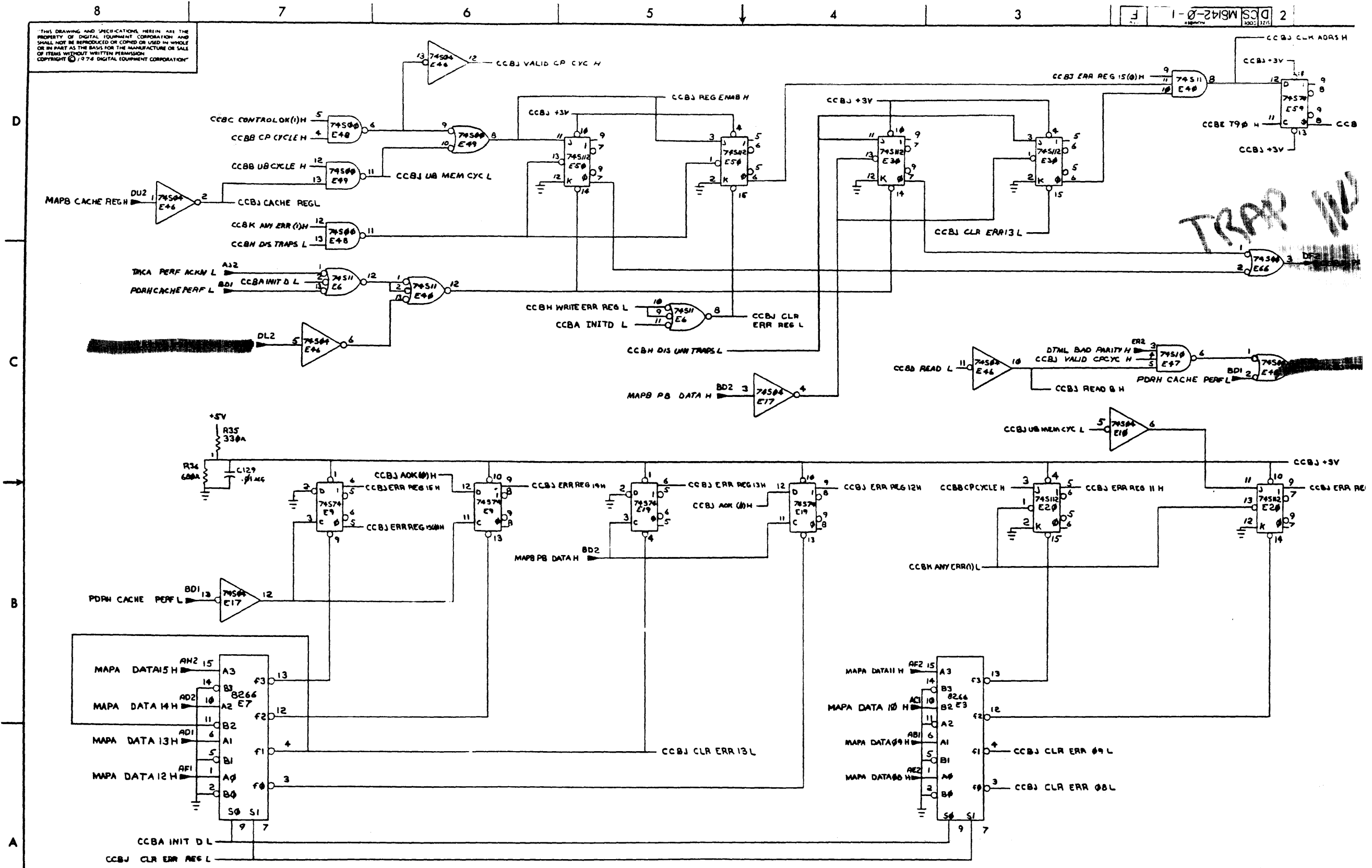


REVISIONS		
CHG	CHANGE NO	REV

TIMING + MAIN MEMORY RESTART (SLOT 17)			
TITLE	SIZE CODE	NUMBER	REV.
CACHE CONTROL BOARD (CCBE)	D	DCS M8142-0-1	F
SCALE	SHEET	OF	DIST.
	6	13	

CCB

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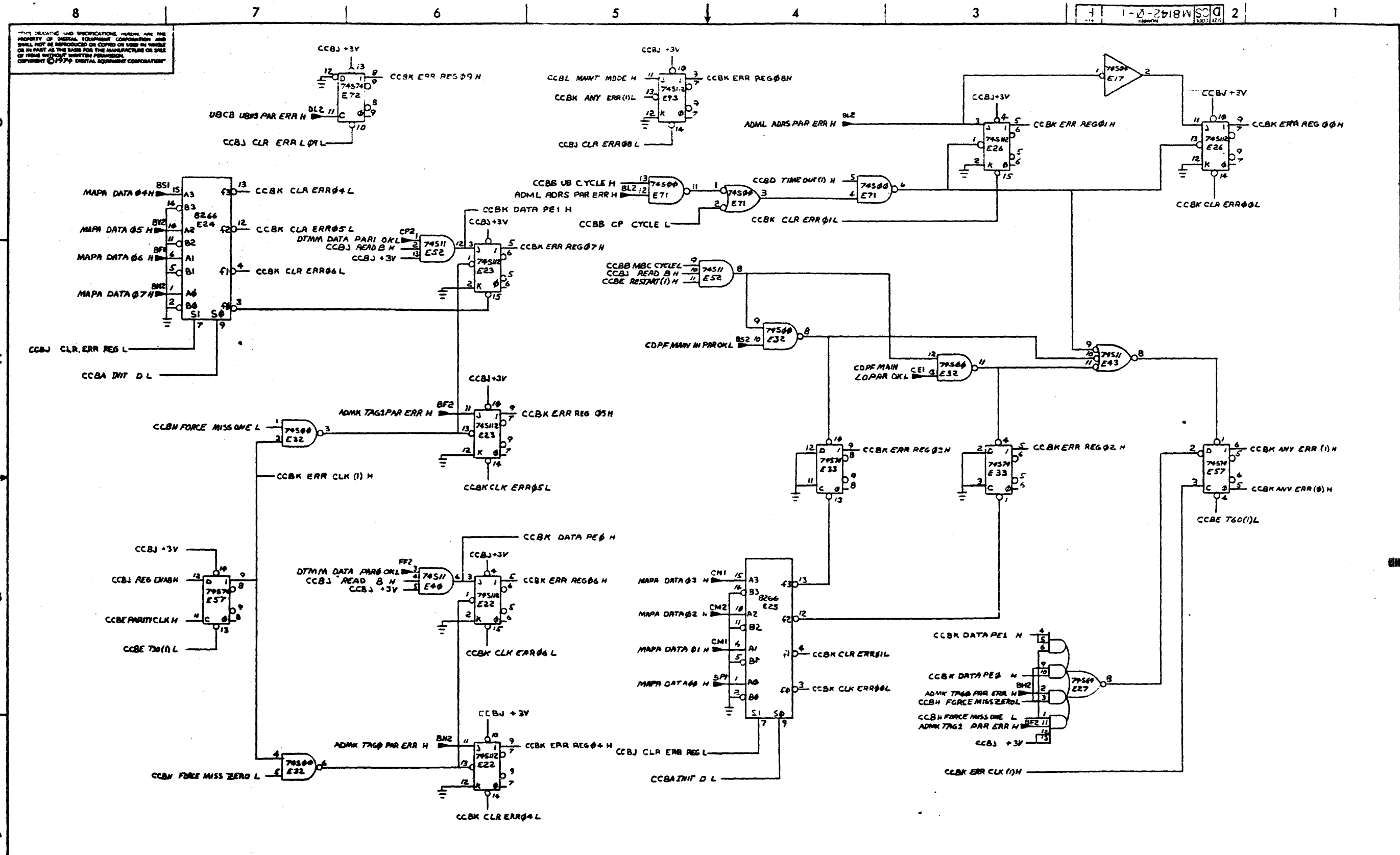


REVISIONS		
CHK	CHANGE NO	REV

CACHE ERROR REGISTER (SLOT 1)

TITLE	CACHE CONTROL BOARD (CCBJ)	SIZE	DOOB	MUM
D	CS	MBI42-0		
SCALE	SHEET 9 OF 15	DIST.		

AMJ

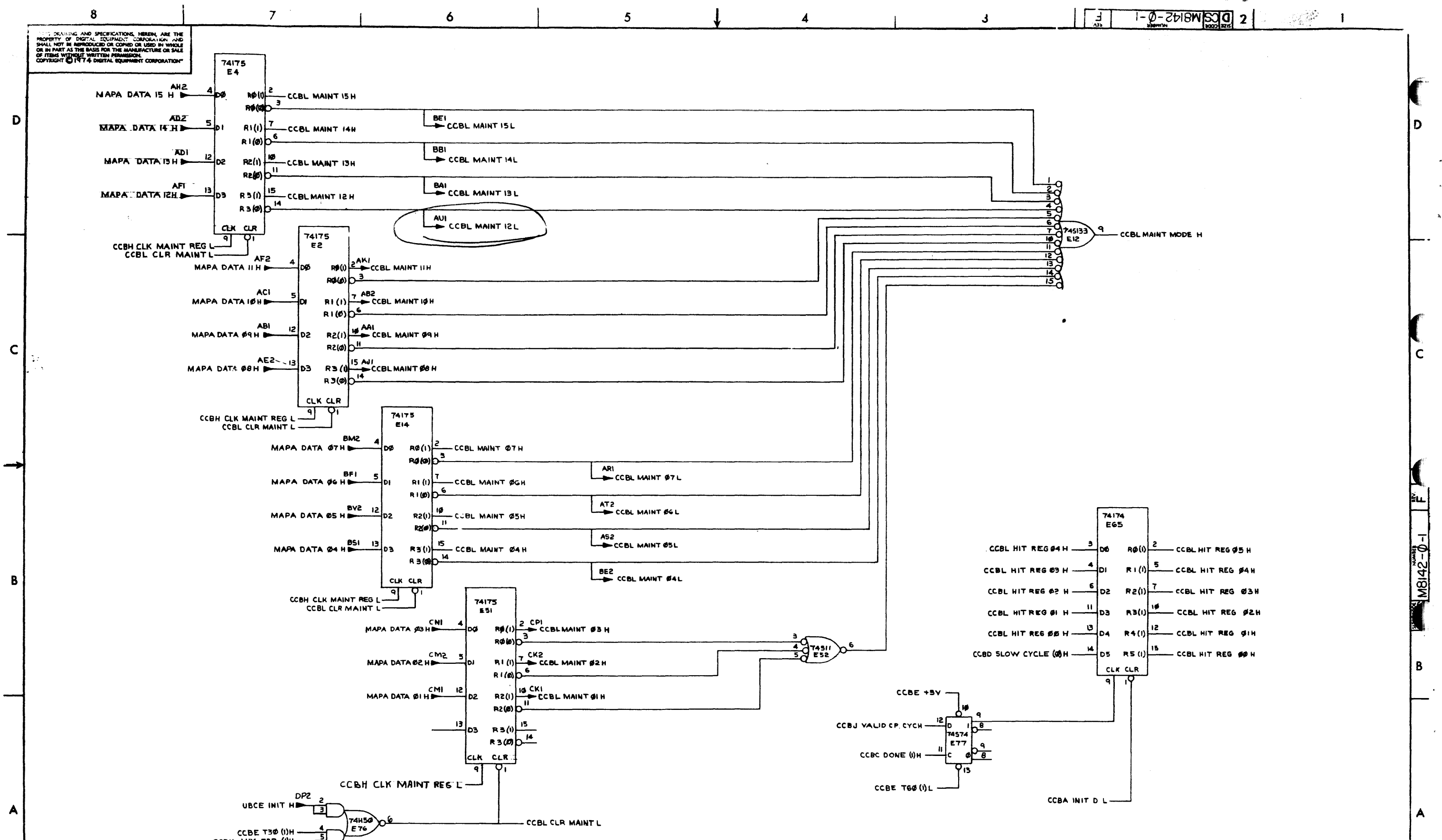


REVISIONS		
CHK	CHANGE NO	REV

CACHE ERROR REGISTER (SLOT 17)			
TITLE	CACHE (CCBK) CONTROL BOARD	SIZE CODE	NUMBER
SCALE	D	CS	M3142-0-1
SHEET	10 OF 13	DIST	

CCR

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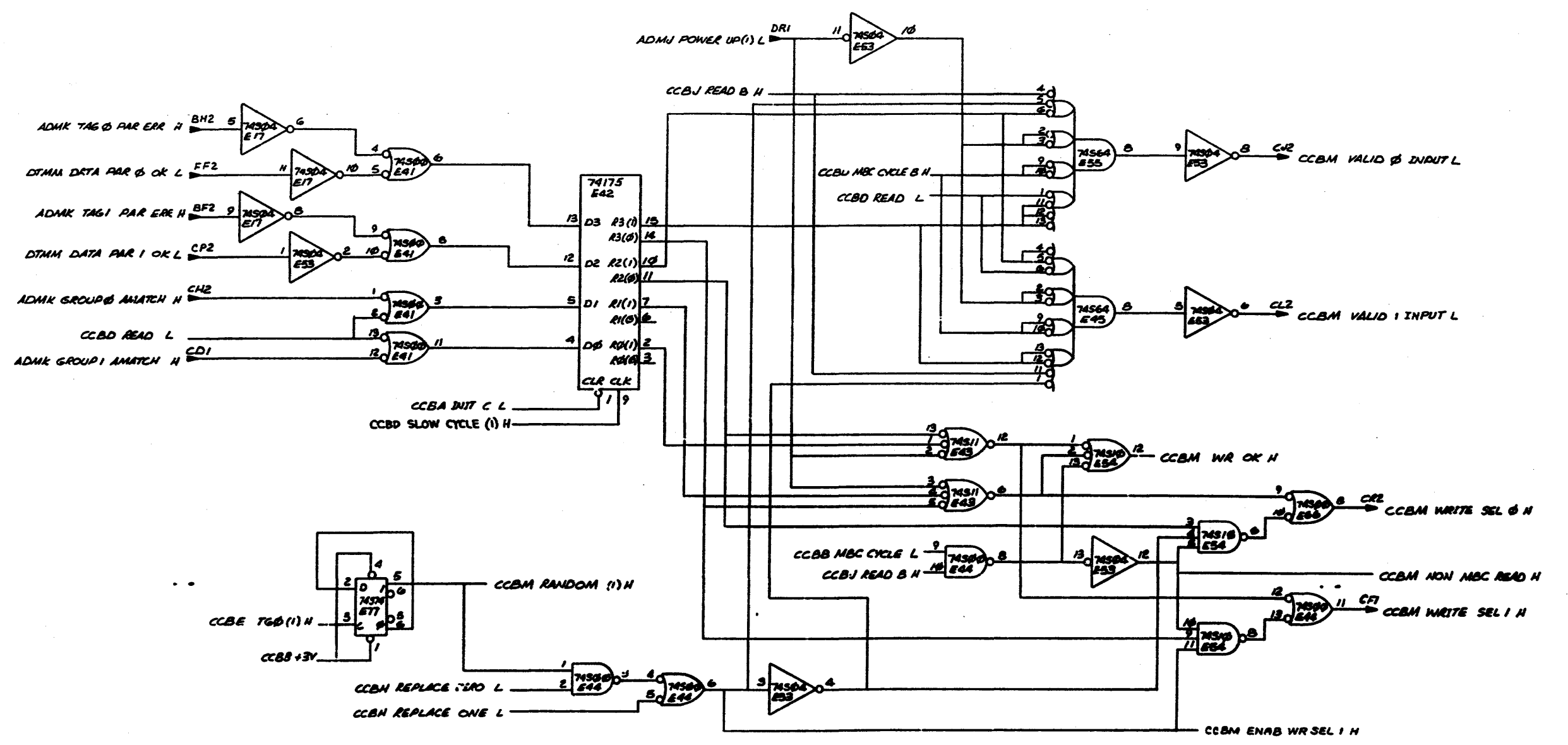


CACHE MAINTENANCE + HIT REG. (SLOT 17)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	CACHE CONTROL BOARD (CCBL)	SIZE CODE	D	NUMBER	DCS M8142-0-1	REV.	F
SCALE	1:1	SHEET	11	OF	15	DIST.	

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MAKES VALID BITS

REVISIONS		
CHK	CHANGE NO.	REV.

VALID AND WRITE SELECT LOGIC (SLOT 17)			
TITLE	SIZE CODE	NUMBER	REV.
CACHE CONTROL BOARD (CCBM) DCS M8142-0-1			F
SCALE	SHEET 12 OF 13	DWG.	

TW 1
 CCB

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1777740 ERROR ADDRESS LOW
 1777742 ERROR ADDRESS HI
 1777744 ERROR REGISTER
 1777746 CONTROL REGISTER
 1777750 MAINTENANCE REGISTER
 1777752 HIT MISS

CACHE ERROR REGISTER
 BIT DESCRIPTION
 ERR REG 15 CPU ABORT
 ERR REG 14 CPU ABORT AFTER ADRS LOCK
 ERR REG 13 PARITY ERROR ON DATA TO UNIBUS
 ERR REG 12 PARITY ERROR ON DATA TO UNIBUS AFTER ADRS LOCK
 ERR REG 11 ERROR DURING CP CYCLE
 ERR REG 10 ERROR DURING UNIBUS CYCLE
 ERR REG 09 CPU RECEIVED PARITY ERROR FROM UNIBUS CYCLE
 ERR REG 08 ERROR IN MAINTENANCE MODE
 ERR REG 07 FAST DATA MEMORY PARITY ERROR GROUP 1
 ERR REG 06 FAST DATA MEMORY PARITY ERROR GROUP 0
 ERR REG 05 ADDRESS MEMORY PARITY ERROR GROUP 1
 ERR REG 04 ADDRESS MEMORY PARITY ERROR GROUP 0
 ERR REG 03 MAIN MEMORY PARITY ERROR ODD WORD
 ERR REG 02 MAIN MEMORY PARITY ERROR EVEN WORD
 ERR REG 01 MAIN MEMORY ADDRESS PARITY ERROR
 ERR REG 00 MAIN MEMORY TIMEOUT

CONTROL REGISTER
 BIT DESCRIPTION
 05 FORCE REPLACEMENT TO GROUP 1
 04 FORCE REPLACEMENT TO GROUP 0
 03 FORCE MISS GROUP 1 (READ CYCLES)
 02 FORCE MISS GROUP 0 (READ CYCLES)
 01 DISABLE UNIBUS PD TRAPS
 00 DISABLE CPU AND FAST MEMORY TRAPS

CACHE MAINTENANCE REGISTER
 BIT DESCRIPTION
 MAINT 15 FORCE MAIN MEMORY ODD WORD, HI BYTE PARITY BIT TO 1
 MAINT 14 FORCE MAIN MEMORY ODD WORD, LO BYTE PARITY BIT TO 1
 MAINT 13 FORCE MAIN MEMORY EVEN WORD, HI BYTE PARITY BIT TO 1
 MAINT 12 FORCE MAIN MEMORY EVEN WORD, LO BYTE PARITY BIT TO 1
 MAINT 11 FORCE WRONG ADDRESS MEMORY PARITY GROUP 1
 MAINT 10 FORCE WRONG ADDRESS MEMORY PARITY GROUP 0
 MAINT 09 FORCE WRONG ADDRESS MEMORY PARITY GROUP 0
 MAINT 08 FORCE WRONG ADDRESS MEMORY PARITY GROUP 0
 MAINT 07 FORCE FAST DATA MEMORY, GROUP 1 HI BYTE PARITY BIT TO 1
 MAINT 06 FORCE FAST DATA MEMORY GROUP 1 LO BYTE PARITY BIT TO 1
 MAINT 05 FORCE FAST DATA MEMORY GROUP 0 HI BYTE PARITY BIT TO 1
 MAINT 04 FORCE FAST DATA MEMORY GROUP 0 LO BYTE PARITY BIT TO 1
 MAINT 03 }
 MAINT 02 } MAIN MEMORY MARGIN CODE
 MAINT 01 }
 MAINT 00 NOT USED

MAINT 3	MAINT 2	MAINT 1	DESCRIPTION
0	0	0	NORMAL OPERATION
0	0	1	CHECK WRONG ADDRESS PARITY
0	1	0	EARLY STROBE MARGIN
0	1	1	LATE STROBE MARGIN
1	0	0	LOW CURRENT MARGIN
1	0	1	HIGH CURRENT MARGIN
1	1	0	NOT USED
1	1	1	NOT USED

11/70 PARITY ERROR RESPONSE

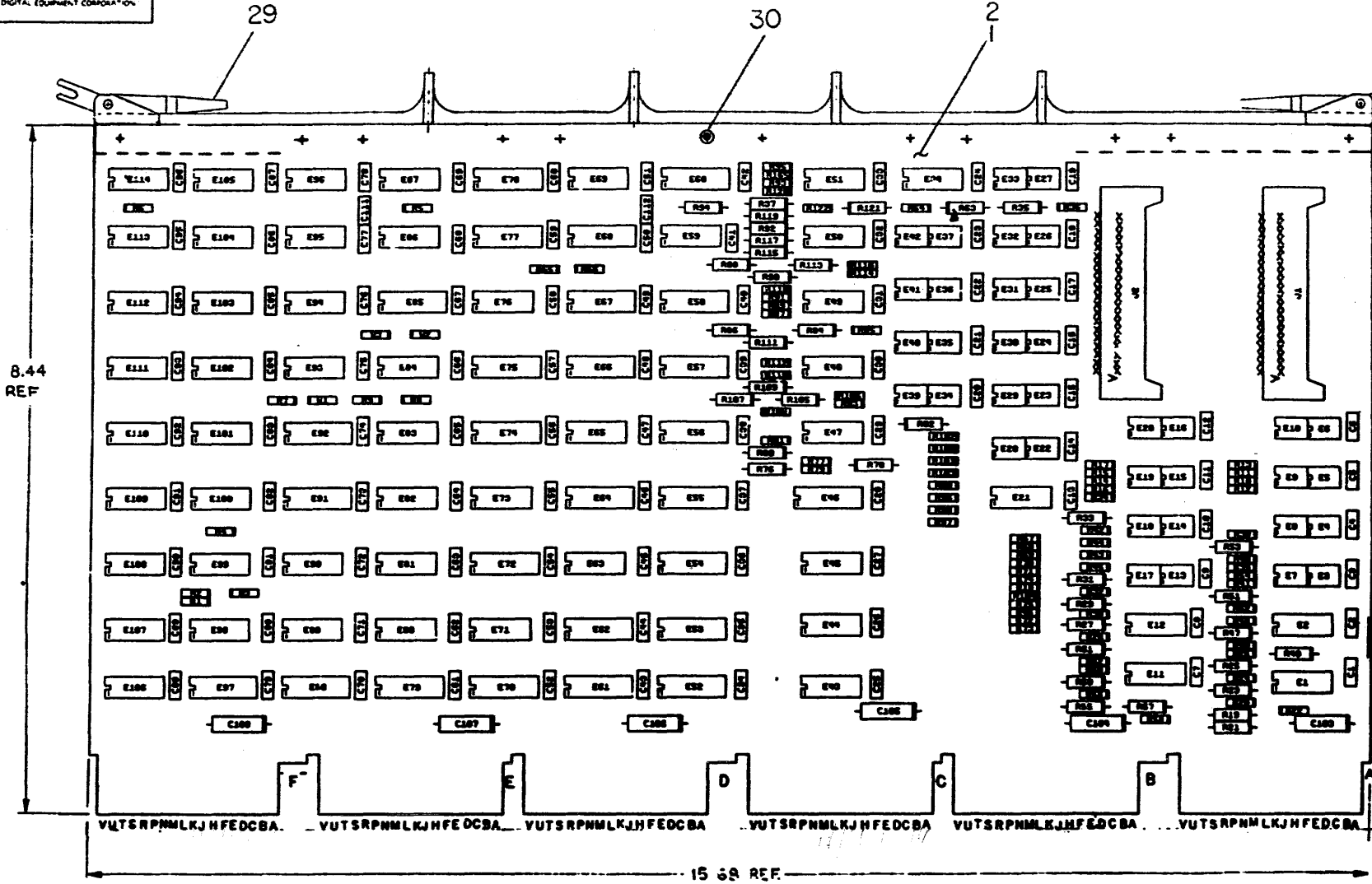
SOURCE OF CYCLE	CYCLE TYPE	TYPE OF EPORR	ACTION*			BITS SET IN ERROR REGISTER	
			ALL TRAPS ENABLED	DISABLE WARNING TRAPS (CR 01)	DISABLE ALL TRAPS (CR 01, 00 3)		
CPU to CACHE	DATI/P	MAIN BUS TIMEOUT	ABORT	ABORT	ABORT	15, 11, 0	
		MAIN BUS PARITY	ABORT	ABORT	ABORT	15, 11, 1	
		MAIN MEM WANTED WORD	ABORT	ABORT	ABORT	15, 11, 2 or 3	
	DATO/B	MAIN BUS TIMEOUT	ABORT	ABORT	ABORT	15, 11, 0	
		MAIN BUS PARITY	ABORT	ABORT	ABORT	15, 11, 1	
		MAIN BUS TIMEOUT	UNIBUS TIMEOUT	UNIBUS TIMEOUT	UNIBUS TIMEOUT	NONE	
	UNIBUS (thru MAP) to CACHE	DATI/P	MAIN BUS PARITY	UNIBUS TIMEOUT, TRAP	UNIBUS TIMEOUT	UNIBUS TIMEOUT	10, 1
			MAIN MEM WANTED WORD	UNIBUS PD, TRAP	UNIBUS PD, TRAP	UNIBUS PD	13, 10, 2 or 3
			MAIN MEM OTHER WORD	TRAP	NO ACTION	NO ACTION	10, 2 or 3
		DATO/B	FAST MEM ADDRESS	TRAP	NO ACTION	NO ACTION	10, 4 or 5
FAST MEM DATA			TRAP	NO ACTION	NO ACTION	10, 6 or 7	
MAIN BUS TIMEOUT			UNIBUS TIMEOUT, TRAP	UNIBUS TIMEOUT	UNIBUS TIMEOUT	10, 0	
CPU to UNIBUS (thru MAP) to CACHE		DATI/P	MAIN BUS PARITY	UNIBUS TIMEOUT, TRAP	UNIBUS TIMEOUT	UNIBUS TIMEOUT	10, 1
			MAIN MEM WANTED WORD	UNIBUS TIMEOUT, TRAP	UNIBUS TIMEOUT	UNIBUS TIMEOUT	10, 1
			MAIN MEM OTHER WORD	UNIBUS PARITY	UNIBUS PARITY	UNIBUS PARITY	13, 10, 9, 2 or 3
		DATO/B	FAST MEM ADDRESS	TRAP	NO ACTION	NO ACTION	10, 4 or 5
	FAST MEM DATA		TRAP	NO ACTION	NO ACTION	10, 6 or 7	
	MAIN BUS TIMEOUT		UNIBUS TIMEOUT	UNIBUS TIMEOUT	UNIBUS TIMEOUT	10, 0	
	CPU to UNIBUS (thru MAP) to CACHE	DATI/P	MAIN BUS PARITY	UNIBUS TIMEOUT, TRAP	UNIBUS TIMEOUT	UNIBUS TIMEOUT	10, 1
			FAST MEM ADDRESS	UNIBUS TIMEOUT, TRAP	UNIBUS TIMEOUT	UNIBUS TIMEOUT	10, 1
		DATO/B	FAST MEM ADDRESS	UNIBUS TIMEOUT, TRAP	UNIBUS TIMEOUT	UNIBUS TIMEOUT	10, 1
			FAST MEM DATA	UNIBUS TIMEOUT, TRAP	UNIBUS TIMEOUT	UNIBUS TIMEOUT	10, 1

* ALL TRAPS VECTOR TO 114
 NOTES
 1. THESE TABLES ONLY COVER SINGLE ERRORS.
 2. THE PROCESSOR ALSO WILL ABORT TO 114 WHEN DOING DATI/P CYCLES ON THE UNIBUS AND THE DEVICE ASSERTS PD. IN THESE CASES, BIT 9 SETS IN THE ERROR REGISTER.
 3. ERRORS ON MAINBUS CYCLES ARE HANDLED BY THE MAINBUS CONTROLS, AND HAVE AN EFFECT ON THE ERROR REGISTER.

REVISIONS		
CHK	CHANGE NO	REV

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NOTES: E77 AND E78 ARE SPARES.

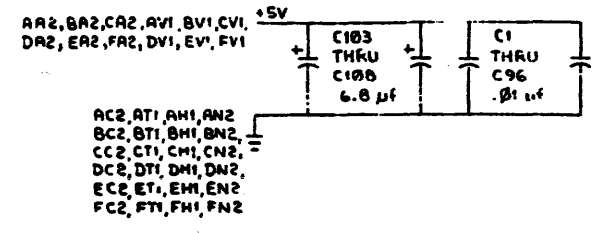


REF	X-Y COORDINATE HOLE LOCATION	K-CO-M8145-B-4	1
REF	ASSY DRILLING HOLE LAYOUT	D-AH-M8145-B-5	2
REF	MODULE ECO HISTORY	B-MH-M8145-B-6	3
1	ETCHED CIRCUIT BOARD	5011386	4
98	C1 THRU C96, C111, C112	CAPACITOR, .01uf, 100V, 20%	1001610
6	C103 THRU C108	CAPACITOR, 6.8uf, 35V, 20%	1805306
2	R5, R65	RESISTOR, 330 OHM, 1/4W, 5%	1300295
43	R1 THRU R4, R7 THRU R9, R10 THRU R18, R30 THRU R46, R67 THRU R75, R96 THRU R104	RESISTOR, 1K, 1/4W, 5%	1300365
2	R6, R66	RESISTOR, 680 OHM, 1/4W, 5%	1301424
38	R19, R21, R23, R25, R27, R29, R31, R33, R35, R37, R47, R49, R51, R53, R55, R57, R59, R61, R63, R76, R78, R80, R82, R84, R86, R88, R90, R92, R94, R105, R107, R109, R111, R113, R115, R117, R119, R121	RESISTOR, 121 OHM, 1/2W, 1%	1301782
38	R20, R22, R24, R26, R28, R30, R32, R34, R36, R38, R50, R52, R54, R56, R58, R60, R62, R64, R77, R79, R81, R83, R85, R87, R89, R91, R93, R95, R106, R108, R110, R112, R114, R116, R118, R120, R122, R165	RESISTOR, 196 OHM, 1/4W, 1%	1302956
4	E52, E79, E88, E97	I.C. DEC 8266	1909934
5	E81, E82, E89, E108, E103	I.C. DEC 74S80	1910532
4	E69, E80, E98, E108	I.C. DEC 74S84	1910534
5	E43, E84, E90, E98, E107	I.C. DEC 74S18	1910536
6	E73, E76, E83, E106, E109, E110	I.C. DEC 74S11	1910537
2	E93, E113	I.C. DEC 74S28	1910539
4	E86, E87, E94, E95	I.C. DEC 74S84	1910542
6	E96, E101, E102, E104, E111, E112	I.C. DEC 74S74	1910544
2	E44, E114	I.C. DEC 74S140	1910546
9	E55, E58, E64, E66, E67, E70, E72, E74, E75	I.C. DEC 74S158	1910549
18	E4, E8, E9, E10, E14, E16, E18, E20, E22, E23, E24, E25, E27, E34, E35, E36, E37, E28	I.C. DEC 75452	1910645
12	E48, E53, E54, E56, E57, E60, E61, E62, E68, E69, E91, E92	I.C. DEC 74S175	1910957
18	E3, E5, E7, E9, E13, E15, E17, E19, E20, E28, E30, E31, E32, E33, E38, E40, E41, E42	I.C. DEC 75453	1911838
8	E21, E45, E99, E83, E85, E71	I.C. DEC 82582	2911291
11	E1, E2, E11, E12, E38, E47, E48, E49, E50, E51, E105	I.C. DEC 0648	1911469
3	R1, R2, R3	JUMPER	9088185
2	J1, J2	CONNECTOR BERG 40 PIN -	209941
1		HANDLE ASSY	210711-02
12		EYELET	9086732
1		BLOCK DIAGRAM	D-BD-M8145-O-7

IC TYPE	QTY	REV
IC DEC 8640	1	8
IC DEC 74S175	8	16
IC DEC 75453	4	9
IC DEC 75452	4	8
IC DEC 74S158	8	16
IC DEC 8266	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 11/78

ETCH BOARD REV B

DATE: 12/18/75
 DESIGNED BY: FERGUSON
 DRAWN BY: ALLAN HELENUS
 CHECKED BY: ALLAN HELENUS
 APPROVED BY: K. TAYLOR

TITLE: CACHE DATA PATH

SIZE CODE: DCS
 NUMBER: M8145-0-1
 REV: C

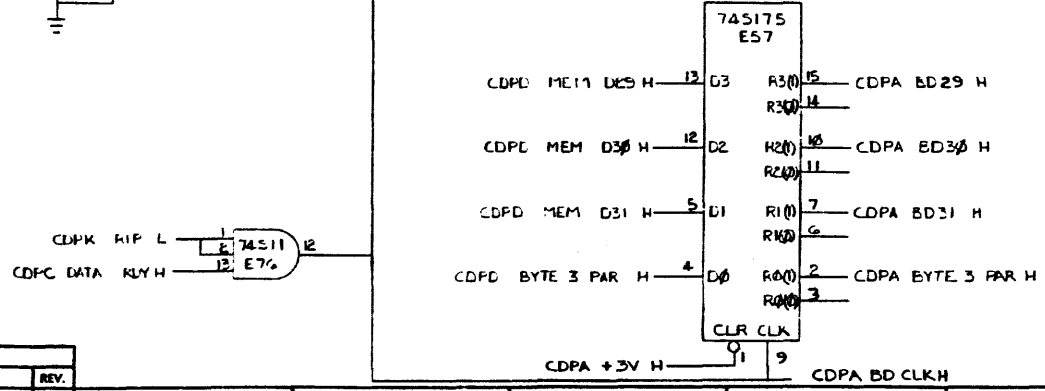
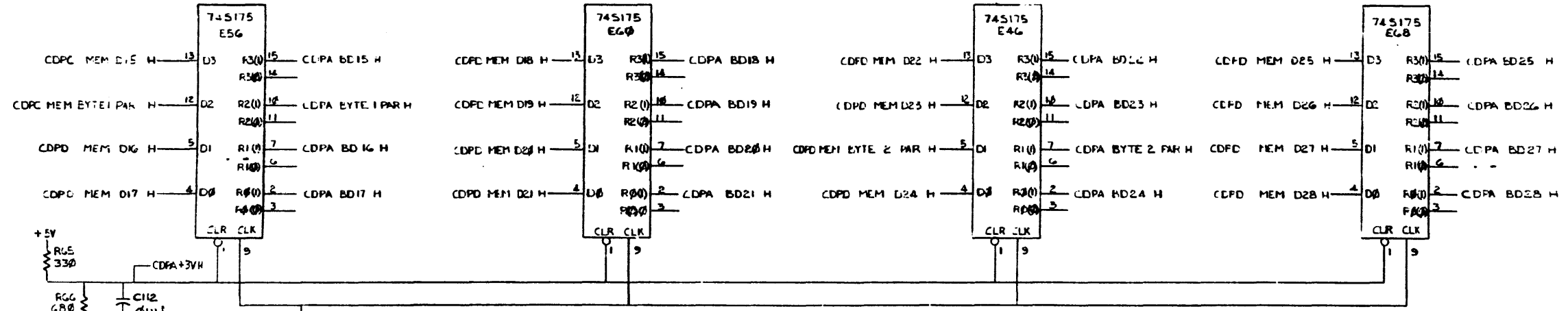
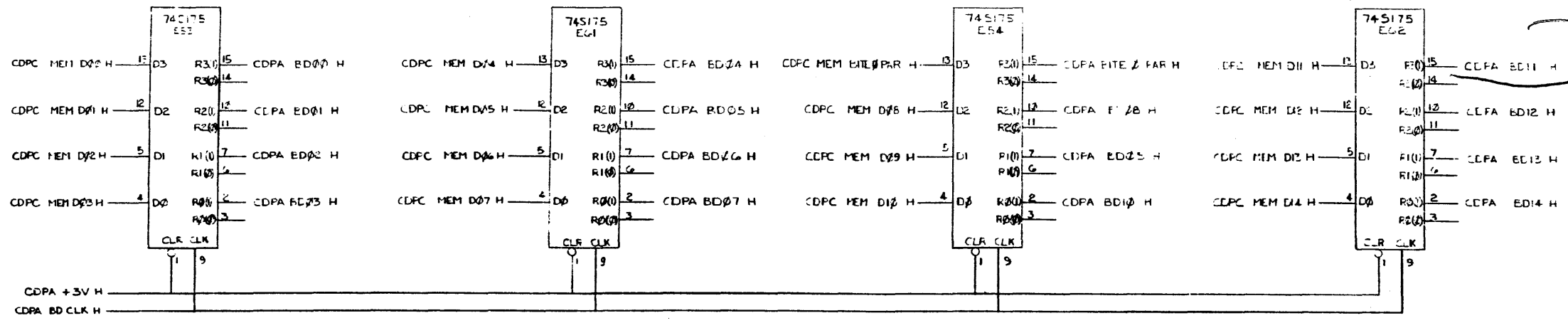
SEMICONDUCTOR CONVERSION CHART

SHEET 1 OF 10

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REVISED BY: [Signature] DATE: [Date] SHEET 2 OF 10

1.2



BD REGISTER (SLOT 21)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	(CDPA)	SIZE	COLOR	NUMBER	REV.
CACHE DATA PATH	D	CS	M8145-0-1	C	
SCALE	SHEET 2 OF 10	DIST.			

DEC FORM 100 100 100

8

7

6

5

4

3

2

1

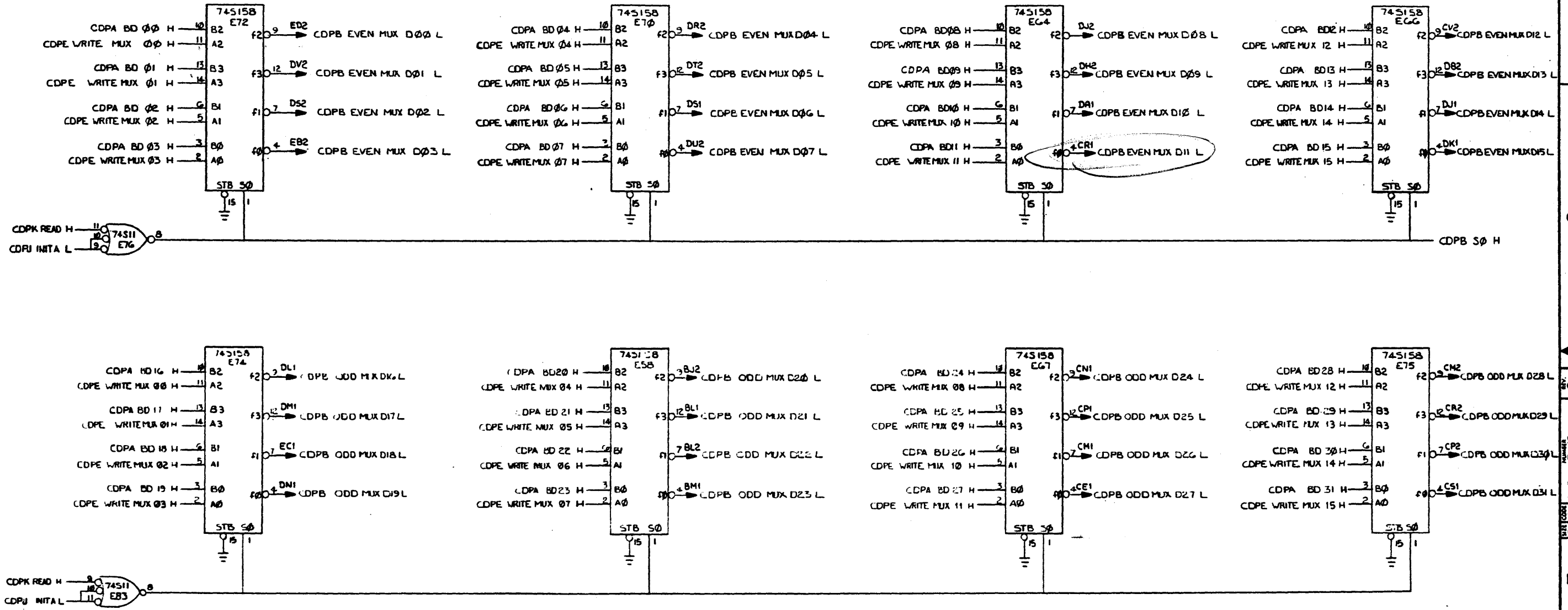
REV. 10/80 M8145-0-1

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D

C

A



* NOTE:
50 H SELECTS BD REGISTER

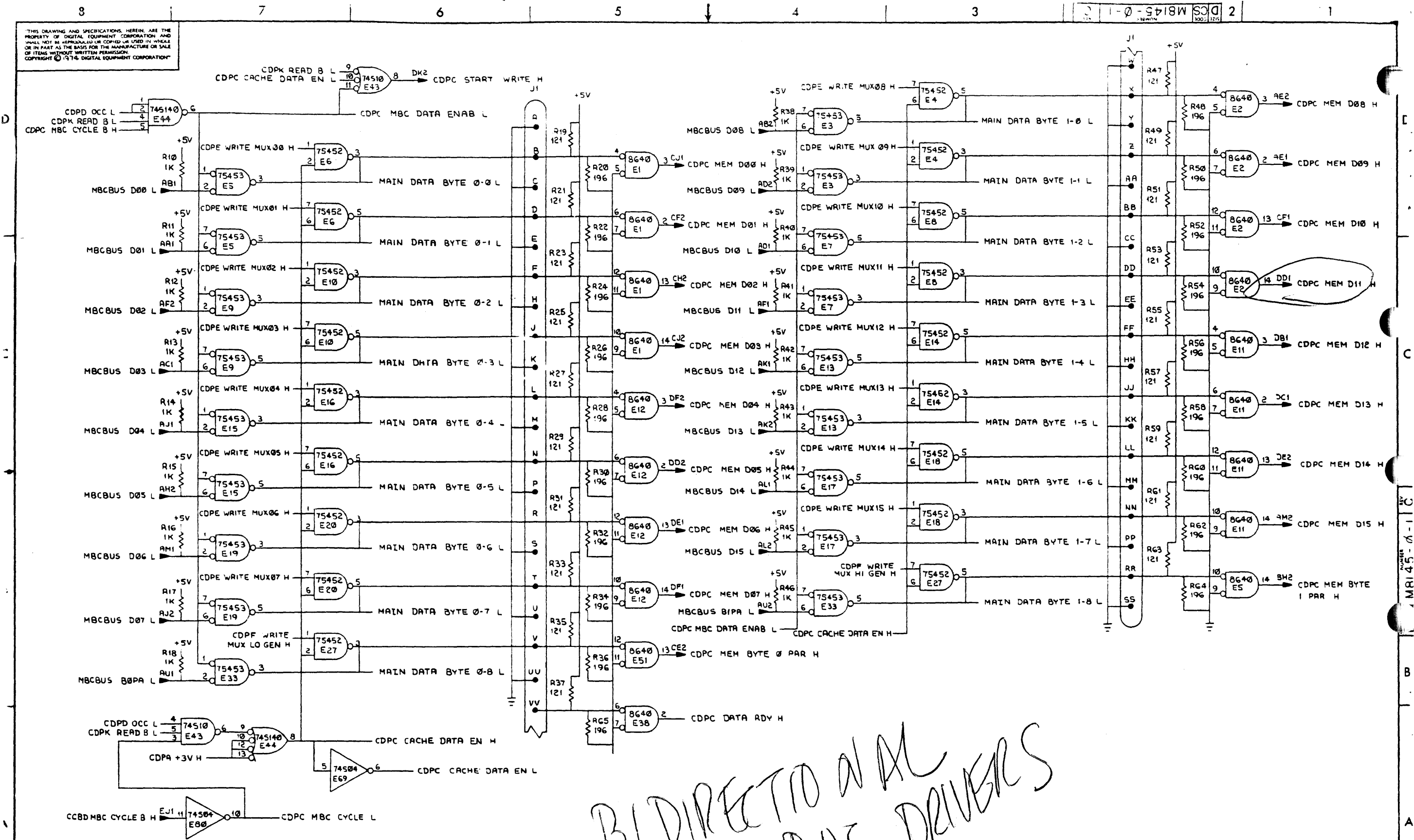
DATA MULTIPLEXER (SLOT 21)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
CACHE DATA PATH	D	CS	M8145-0-1	C
SCALE	SHEET	3	OF	10

CDP

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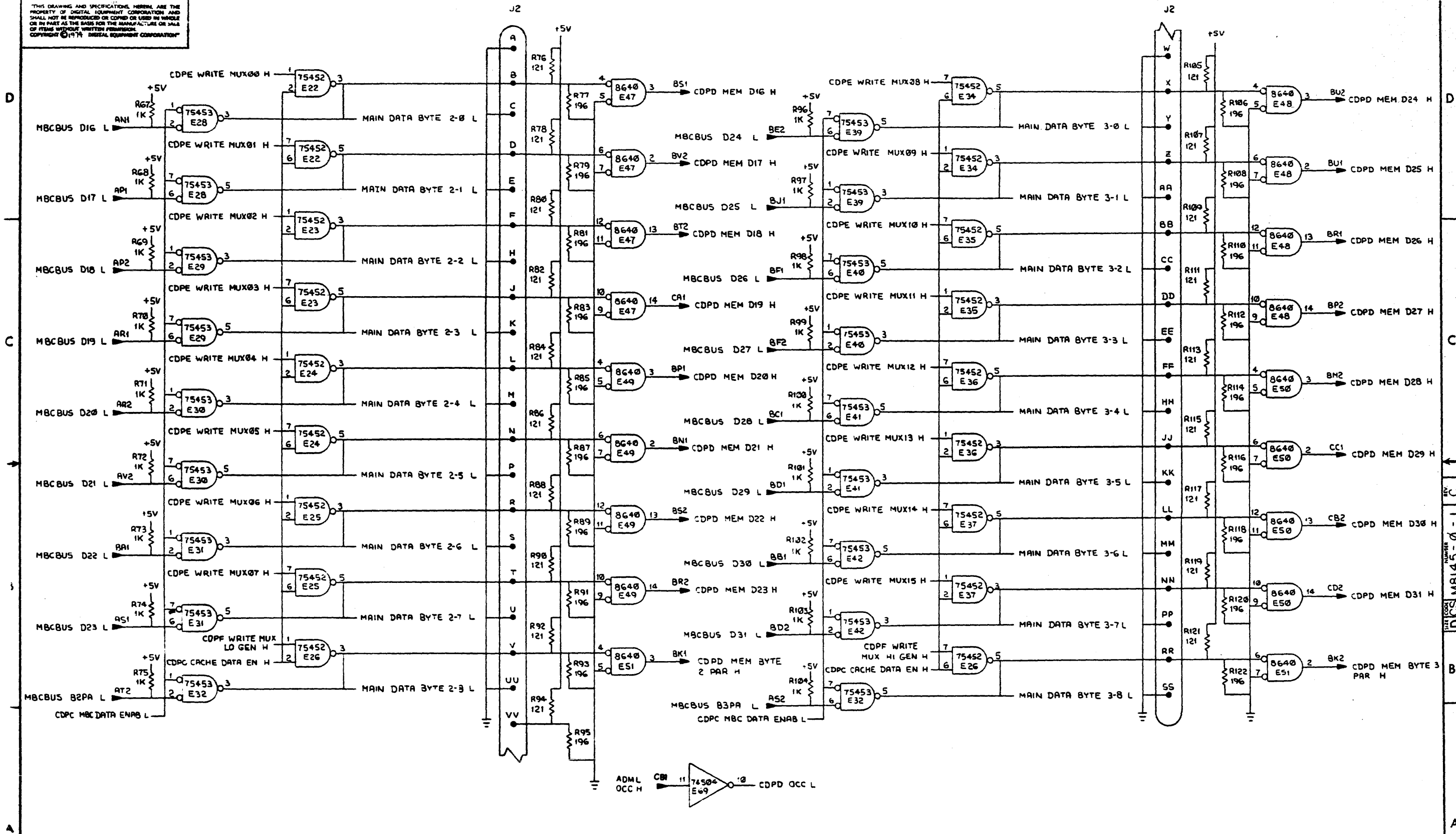
BIDIRECTIONAL BUS DRIVERS

MAIN MEMORY EVEN WORD (SLOT 21)

REVISIONS		
CHK	CHANGE NO.	REV

TITLE	CACHE DATA PATH (CDPC)	SIZE CODE	D C	NUMBER	M8145-3-1	REV.	0
SCALE	SHEET 4 OF 10		DIS.				

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MAIN MEMORY ODD WORD (SLOT 21)

REVISIONS		
CHK	CHANGE NO	REV

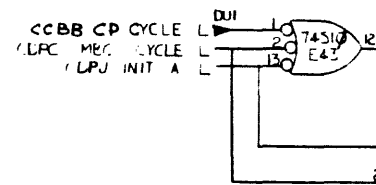
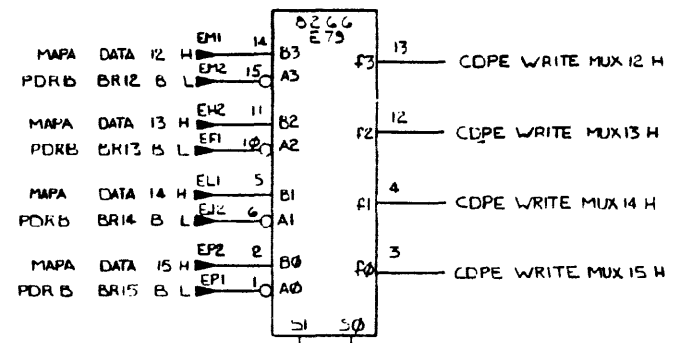
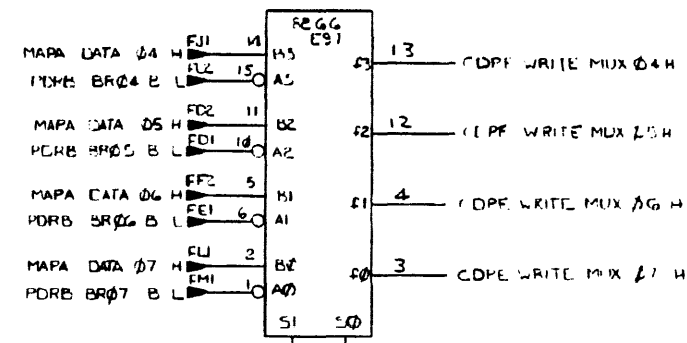
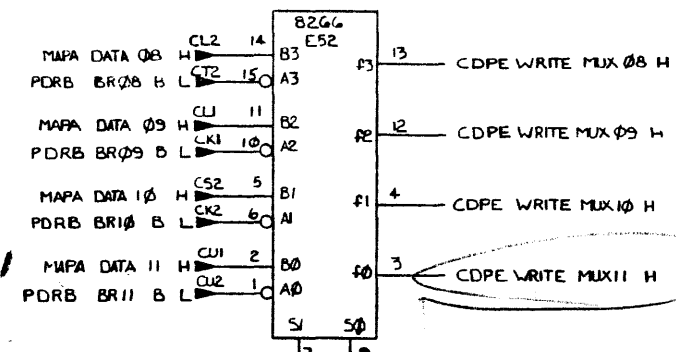
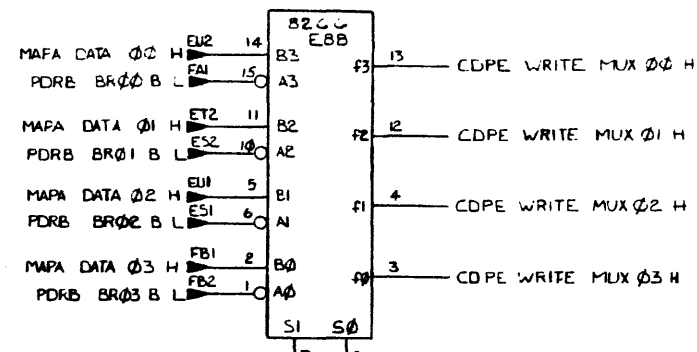
TITLE	DCS M8145-3-1	SIZE	CG0E1	NUMBER		REV.	C
SCALE		SHEET	5	OF	10	DIST	

Handwritten initials and a date stamp: "CAMP" and "10/10/74".

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2:1 MUX

2:1



DI	DO	OUTPUT	OPERATION
L	L	MAP DATA	UNIBUS CYCLE
L	H	PDR DATA	CP CYCLE
H	L	MAP DATA	CAN'T HAPPEN
H	H	ALL '1'S	MBC CYCLE, PUP

WRITE MULTIPLEXER (SLOT 21)

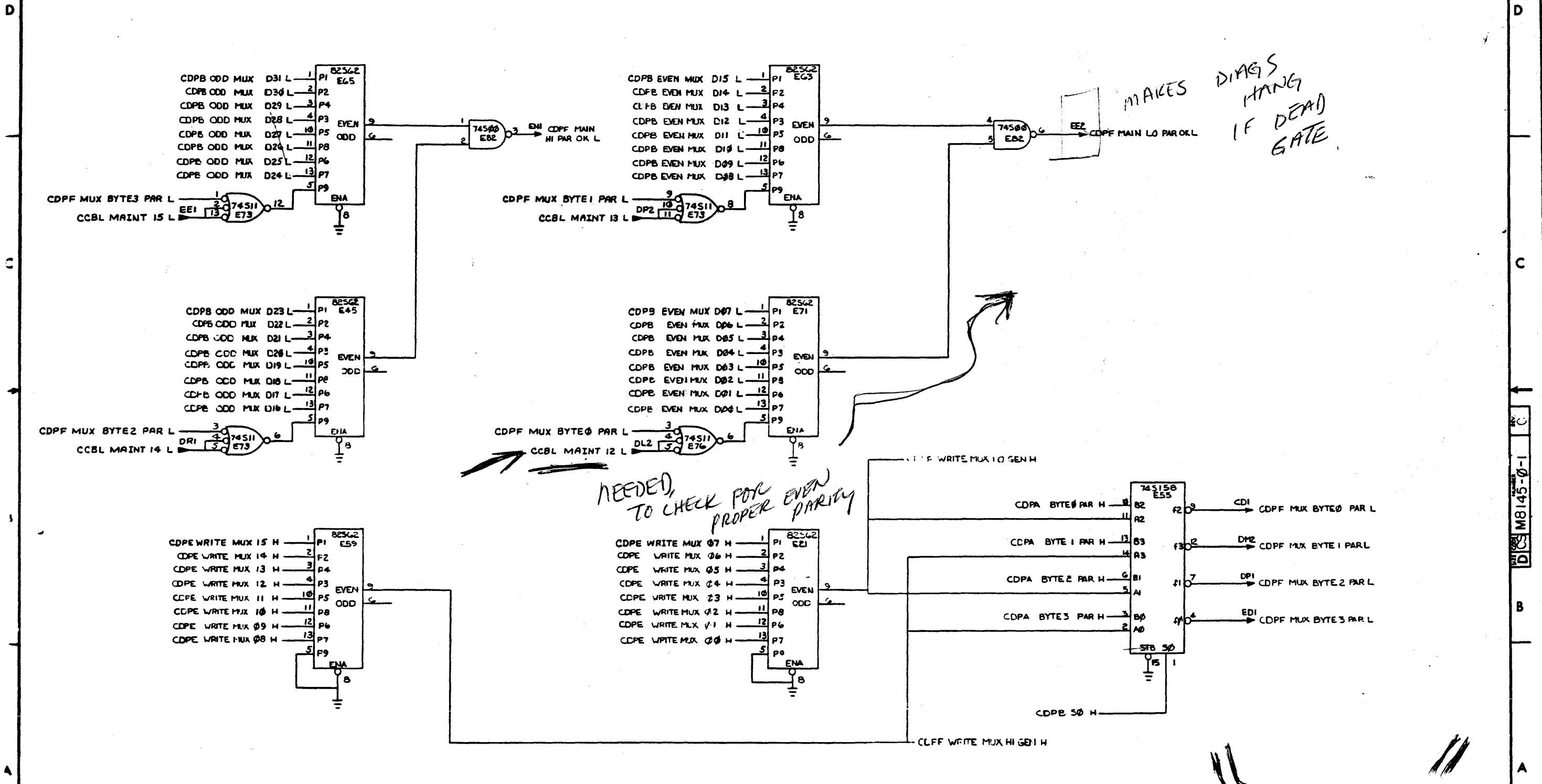
REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE CODE	NUMBER	REV.
CACHE DATA PATH	D CS	M8145-0-1	0
SCALE	SHEET 5 OF 10	DIST.	

D | CS M8145-0-1

8 7 6 5 4 3 2 1

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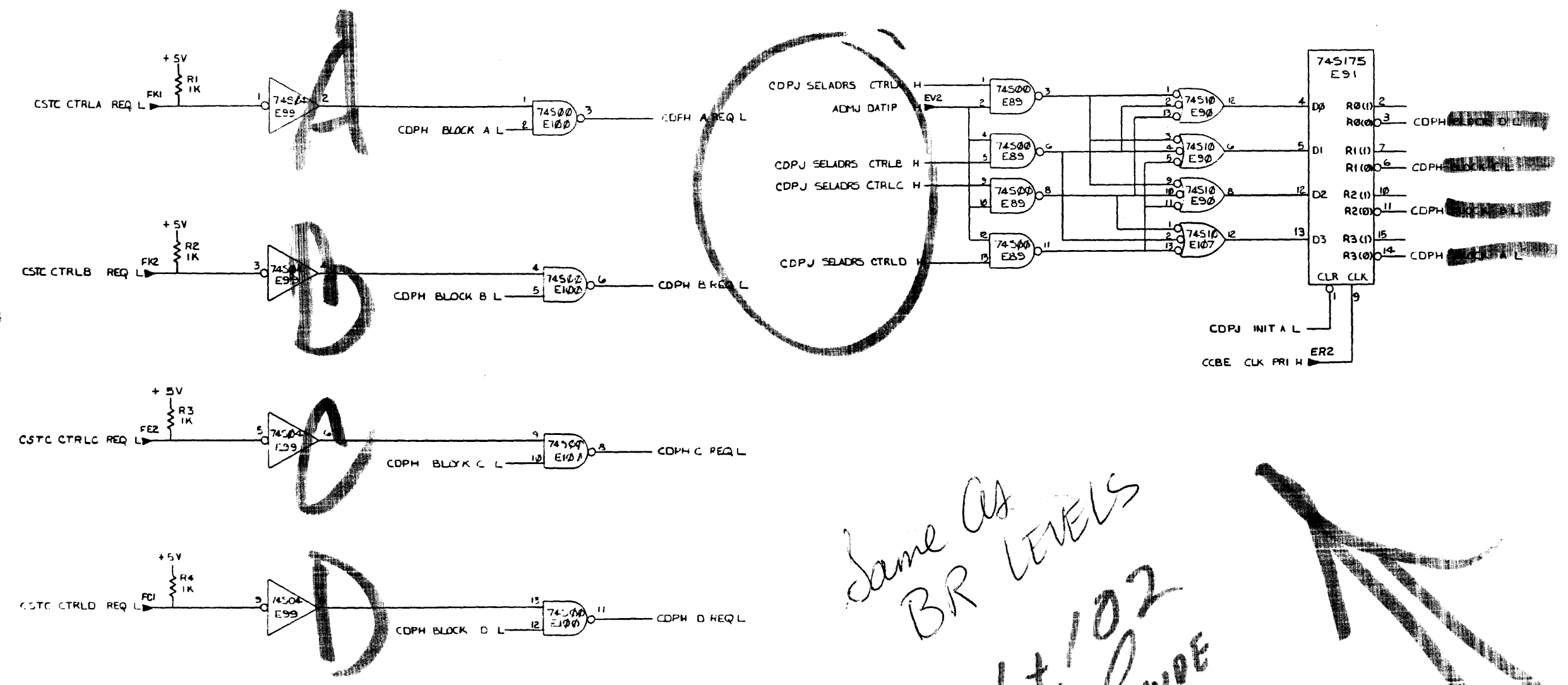
MEMORY PARITY CONTROL (SLOT 21)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	(CDP-)	SIZE CODE	NUMBER	REV.
CACHE DATA PATH	DCS	M8145-0-1	C	
SCALE	SHEET 7 OF 10	DIST.		

CDP

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See Pg. 101 + 102 Student Guide

Same as BR LEVELS

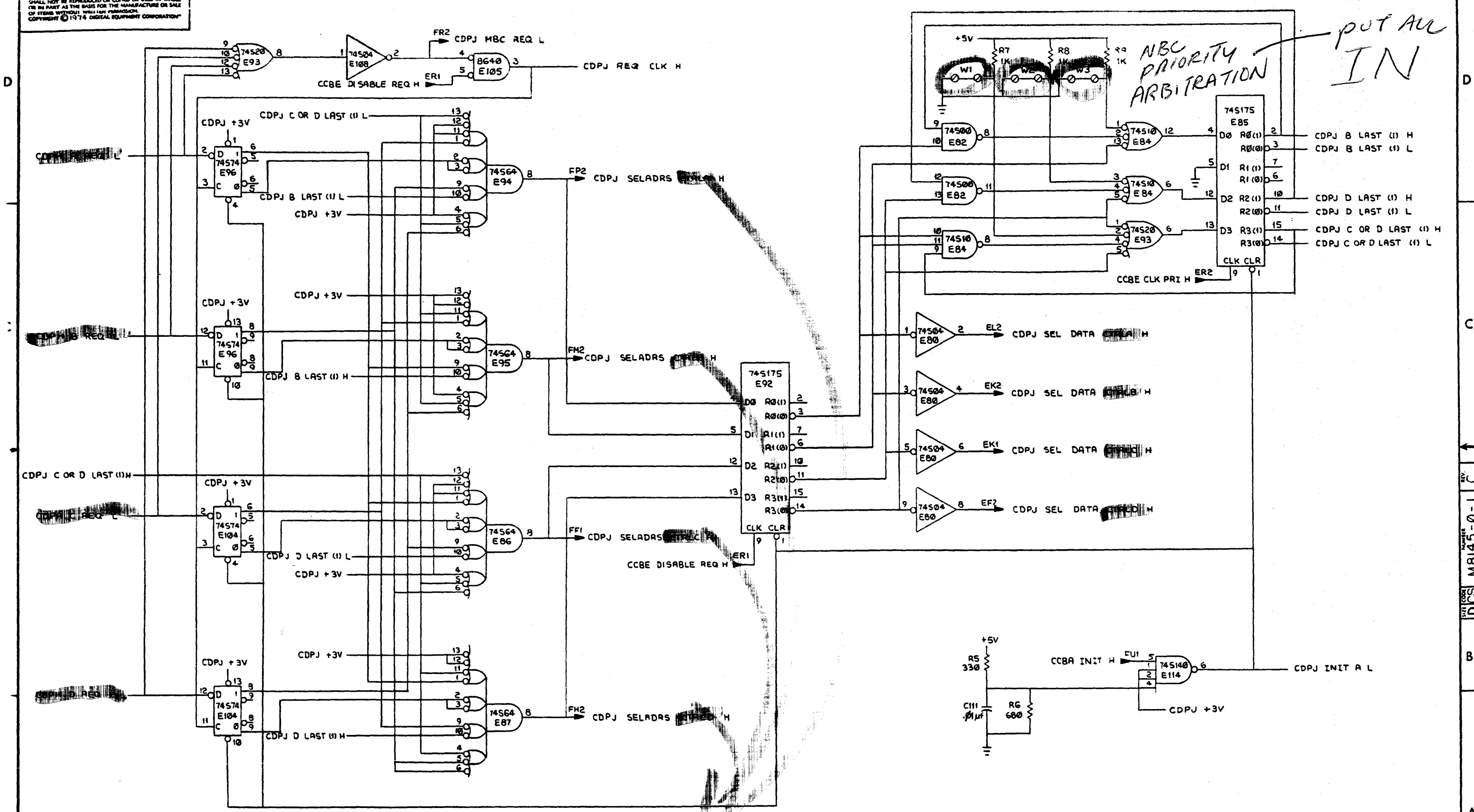


REVISIONS		
LINE	CHANGE NO	REV

TITLE	CDPH	SIZE CODE	NUMBER	REV.
CACHE DATA PATH	D CS	M8145-0-1	3	
SCALE	SHEET 3 OF 10	DIST		

MBC REQUEST (SLOT 21)

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NBC PRIORITY ARBITRATION
put ALL IN

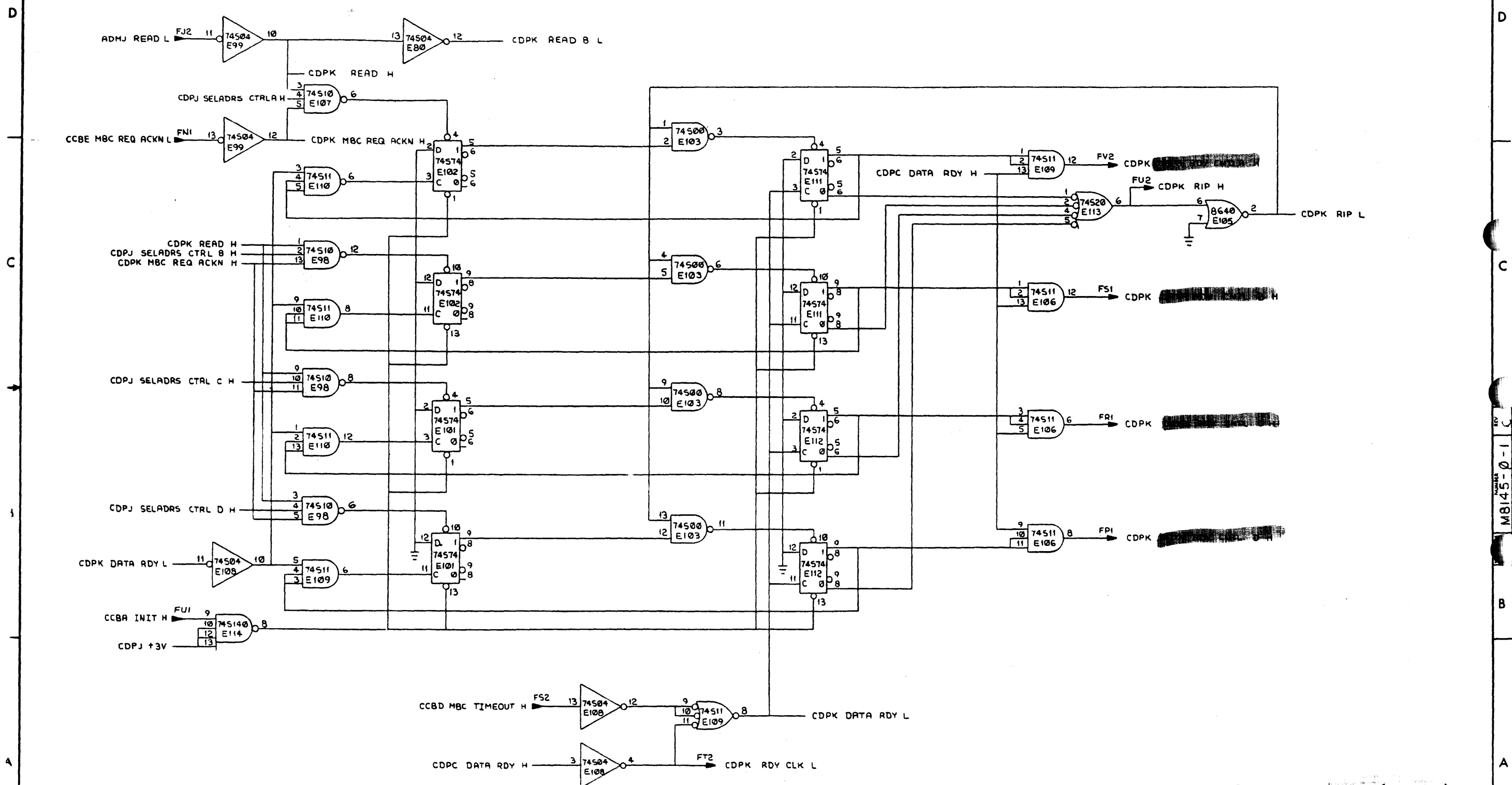
MBC ARBITRATOR (SLOT 21)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	CACHE DATA PATH (CDPJ)	SIZE CODE	DCS	NUMBER	M8145-0-1	REV.	1
SCALE		SHEET	9	OF	10	DIST	

CDP

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MBC DATA CONTROL (SLOT 21)

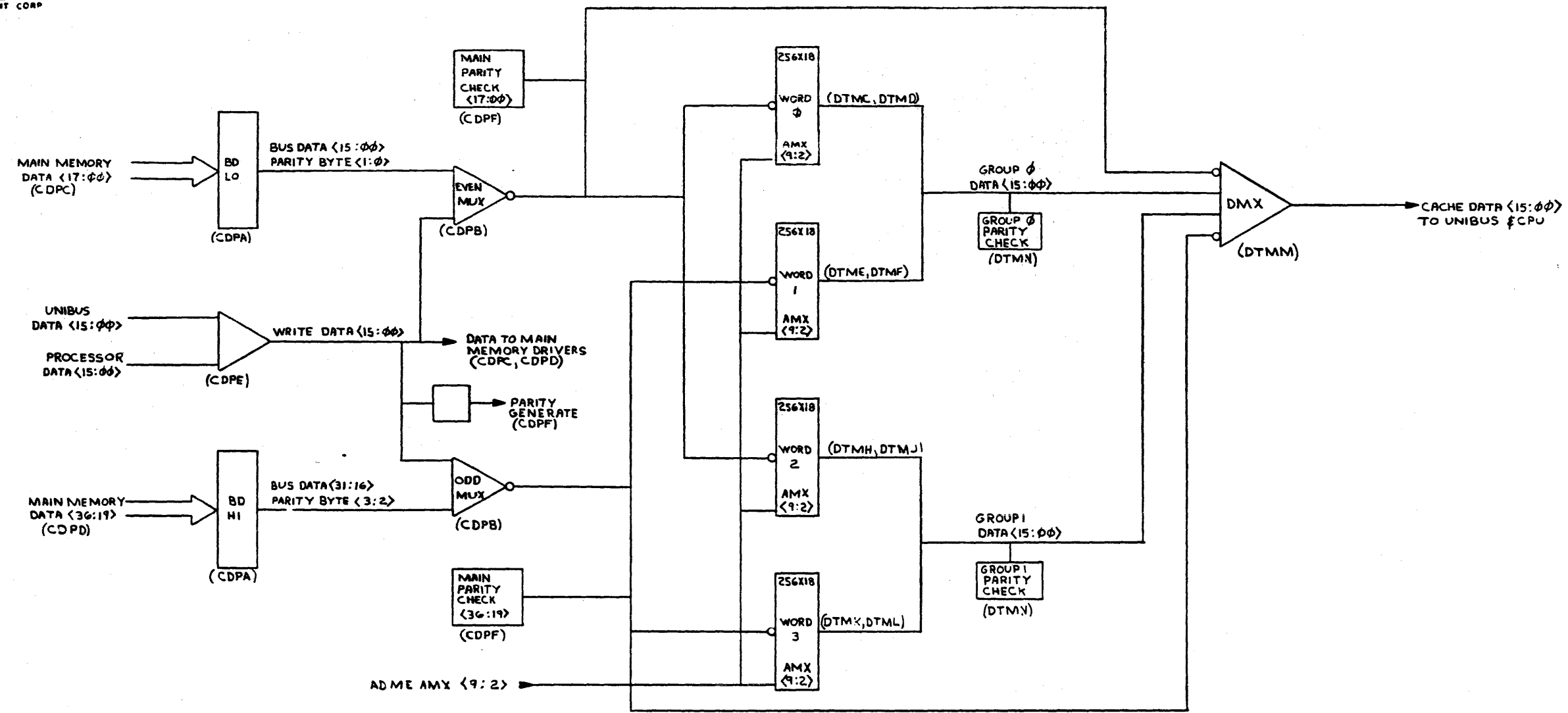
REVISIONS		
CHK	CHANGE NO	REV

TITLE	CACHE DATA PATH (CDPK)	SHEET	3	OF	10	DIST.		NUMBER	M8145-0-1	REV.	C
SCALE		SHEET	3	OF	10	DIST.					

M8145-0-1 C

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DIGITAL EQUIPMENT CORP



WORD SELECT

READ	A0	MISS	RANDOM	WORD SELECT	FUNCTION
0	0	0	X	0, 2	WRITE HIT
0	1	0	X	1, 3	WRITE HIT
1	0	0	X	0, 2	READ HIT
1	1	0	X	1, 3	READ HIT
1	X	1	0	0, 1	READ MISS
1	X	1	1	2, 3	READ MISS

REV	
CHANGE NO	
DATE	

FIRST USED ON OPTION / MODEL
11/70

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS FRACTIONS ANGLES
± 0.005 ± 0.001 ± 0.001 ± 0.001
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
DRN	DATE	11/70	
CHK'D	DATE		
ENG	DATE	1-19-75	
PROJ. ENG.	DATE	1-19-75	
PROD.	DATE	1/15/75	
NEXT HIGHER ASSY		D-CS-M8145-0-1	
SCALE	DIED M8145-0-7		REV *
SHEET	OF		

TITLE
CACHE DATA PATH

digital EQUIPMENT CORPORATION
MAYFORD MASSACHUSETTS

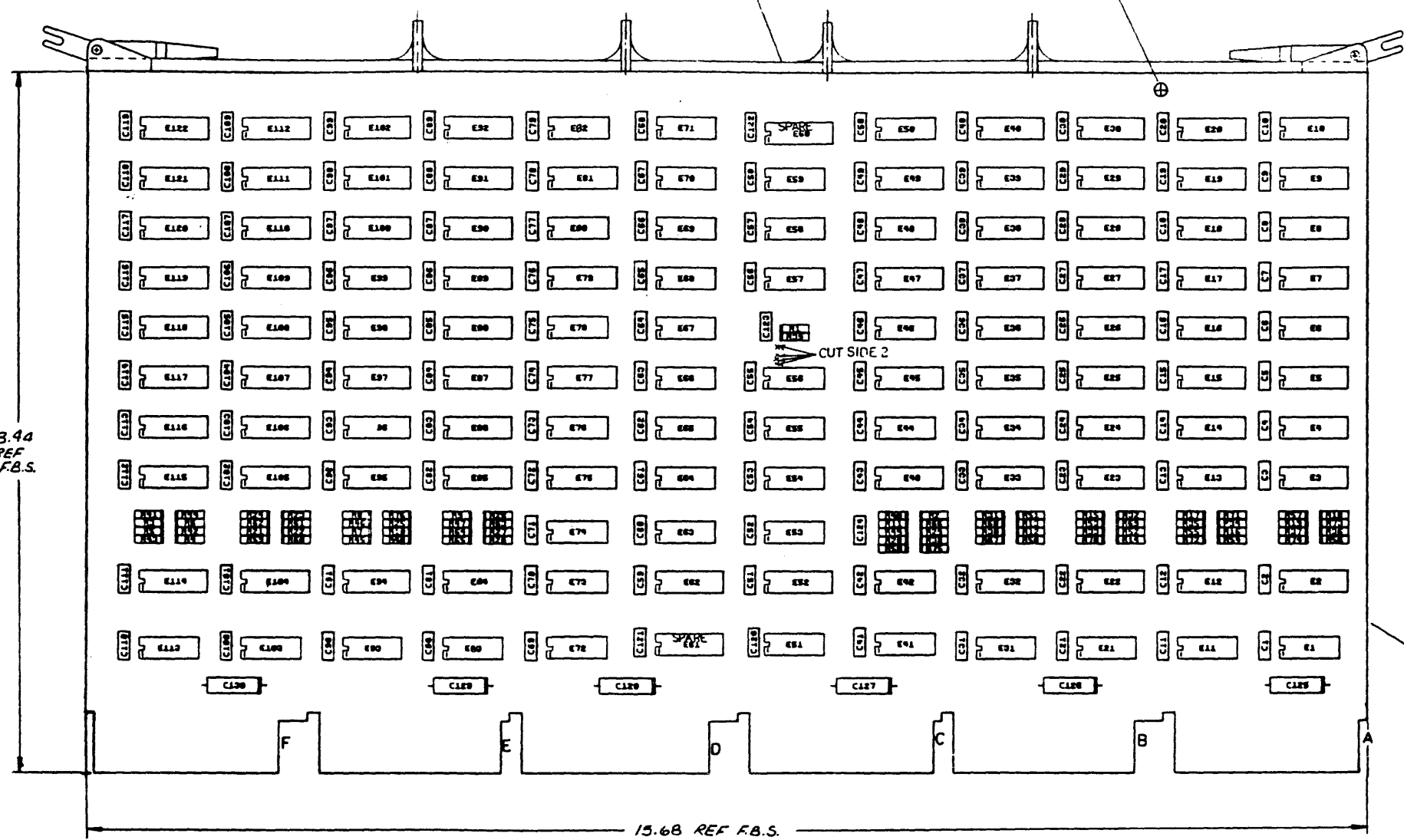
REV *
PART NO. M8145-0-7

[Handwritten signature]

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NOTES:

- E3 - E10, E13 - E20, E23 - E30, E33 - E40, E43, E45, E47, E49, E75, E77, E79, E85 - E90, E95 - E102, E81, E105 - E112, E91, E115 - E122, & E92 ARE DEC # 19-12069.

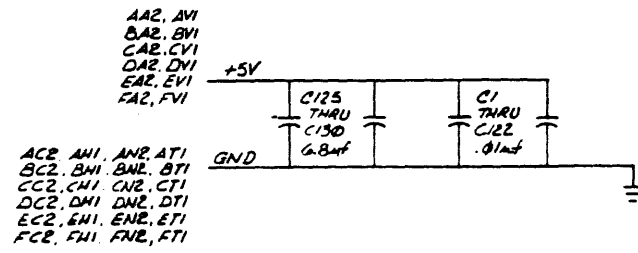


REF	DESCRIPTION	QTY	ITEM NO.
REF	X-Y COORDINATE HOLE LOC	K-CD-65041-0-4	1
REF	ASSY DRILLING HOLE LAYOUT	D-AH-65041-0-5	2
REF	MODULE ECO HISTORY	B-MH-65041-0-6	3
1	ETCHED CIRCUIT BOARD	5011286	
124	C1 THRU C124	CAP .01uf 100V DISC	1001610-01
6	C125 THRU C130	CAP 0.8uf 35V 10% TANT	1005306
2	R1, R2	RES. 270-ohm 1/4W 5%	1301972
36	R3 THRU R38	RES. 330-ohm 1/4W 5%	1300295
2	R39, R40	RES. 560-ohm 1/4W 5%	1301890
36	R41 THRU R76	RES. 680-ohm 1/4W 5%	1301424
8	E1, E21, E41, E53, E63, E72, E93, E113	IC DEC 74S04	1910534
10	E2, E12, E22, E32, E52, E62, E84, E94, E104, E114	IC DEC 74S153	1910547
72	E3 THRU E10, E13 THRU E20, E23 THRU E30, E33 THRU E40, E43, E45, E47, E49, E75, E77, E79, E85 THRU E90, E95 THRU E102, E81, E105 THRU E112, E91, E115 THRU E122, E92	SEE NOTE 1	19-12069
4	E11, E31, E83, E93	IC DEC 82562	1911291
3	E42, E73, E74	IC DEC 74S00	1910532
18	E44, E46, E48, E50, E54 THRU E59, E64, E66, E68, E70, E76, E78, E80, E82	IC DEC 74S40	1910541
5	E51, E65, E67, E69, E71	IC DEC 74S64	1910542
12		EYELET HANDLE	9006732
1		HEX HANDLE ASSY	1210711-2

IC TYPE	QTY	REF	ITEM NO.
IC DEC 74S153	B	10	
IC DEC 74S301	B	10	
IC TYPE	GND	+5V	

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

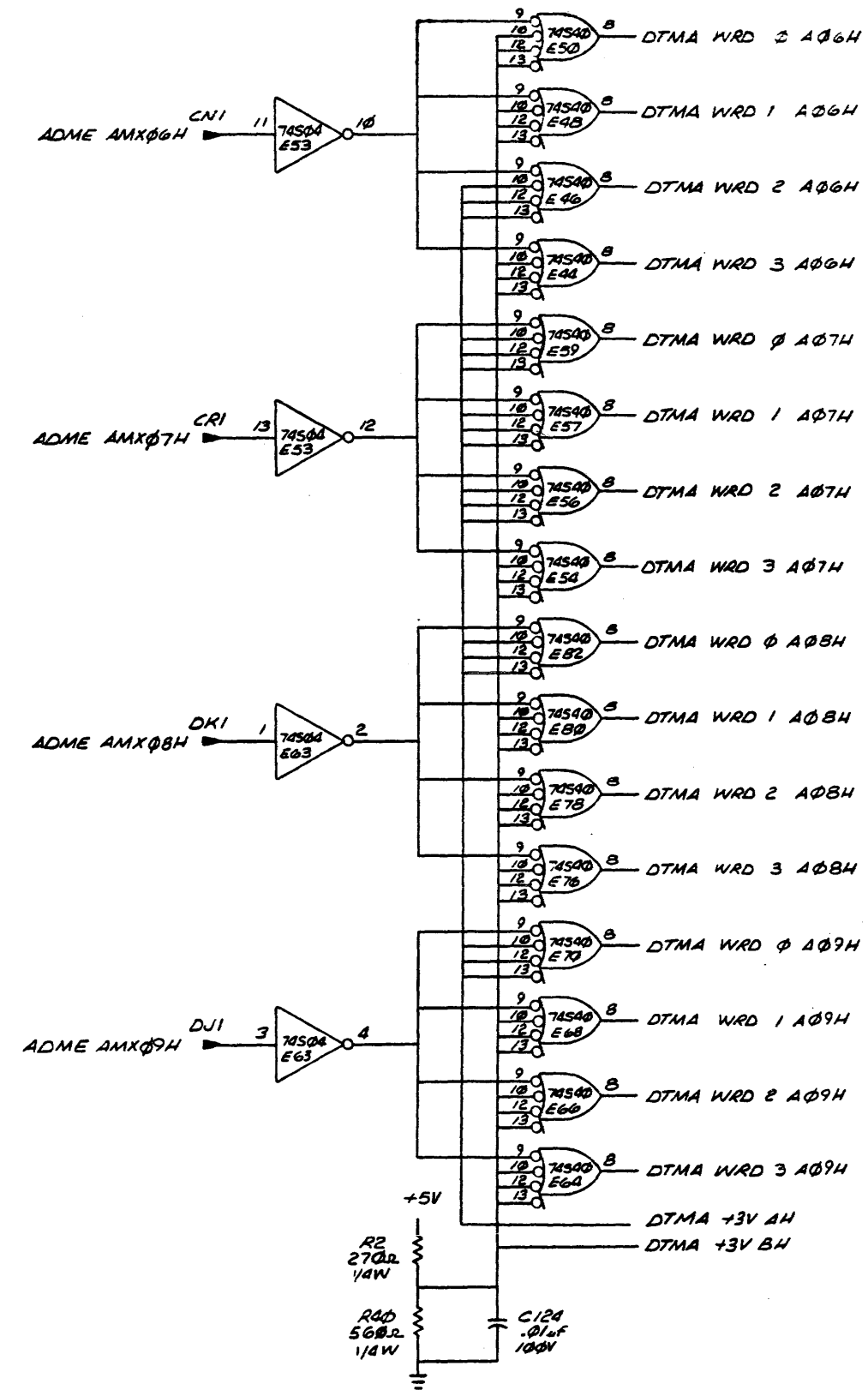
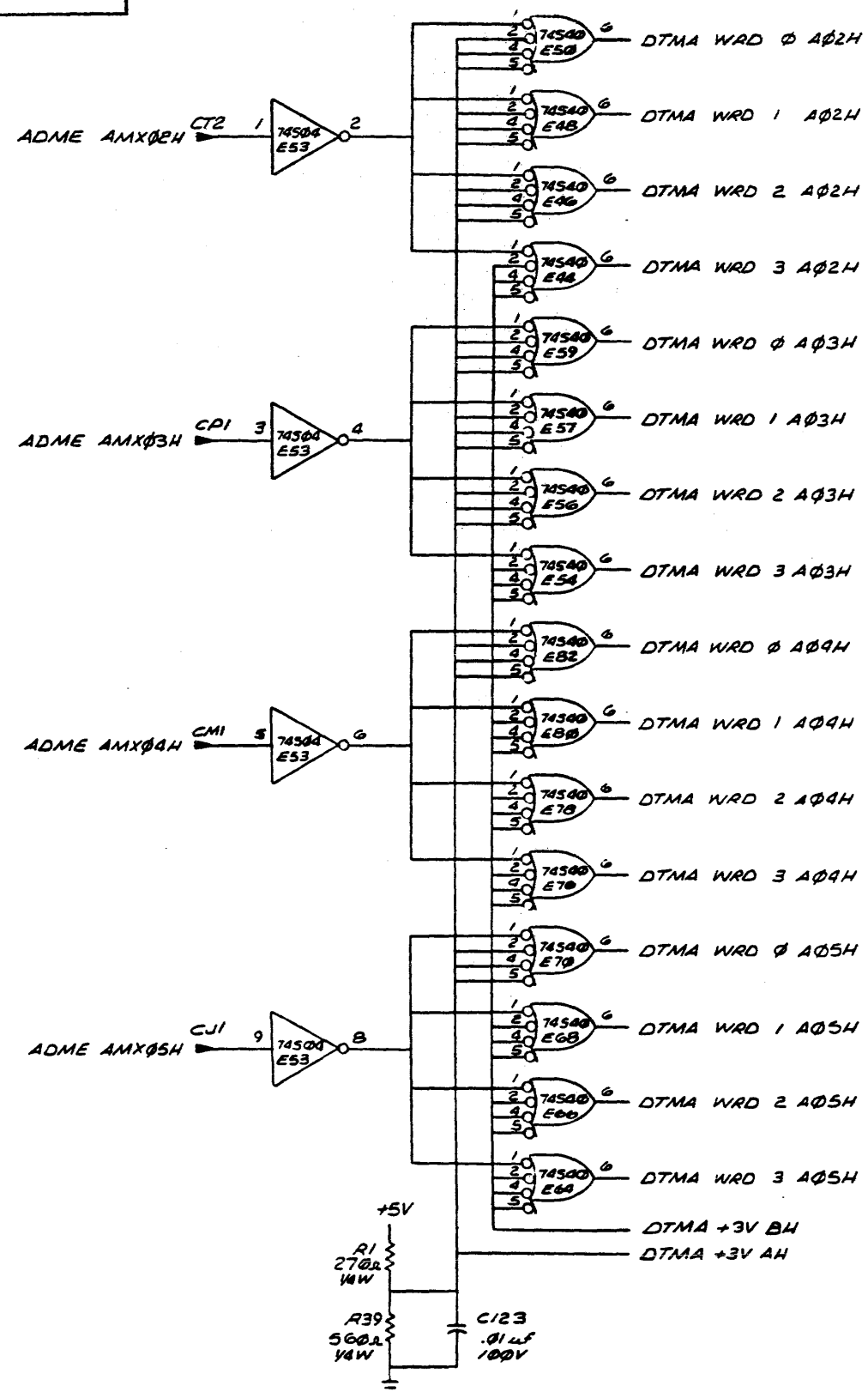
IC PIN LOCATIONS



QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
FIRST USED ON OPTION MODEL				
ETCH BOARD REV A				
PARTS LIST				
DRN: E. Friedman		DATE: 12/17/74		
CHWD: FERGUSON		DATE: 10-28-74		
ENG: Max Williams		DATE: 1-12-75		
PROJ. ENG: Max Williams		DATE: 1-12-75		
PROD: Taylor		DATE: 1/13/75		
NEXT HIGHER ASSY				
SCALE: 1/4		SIZE CODE: DICS		
SHEET: 1 OF 14		NUMBER: M8144-0-1		
SEMICONDUCTOR CONVERSION CHART				

CS M8144-0-1

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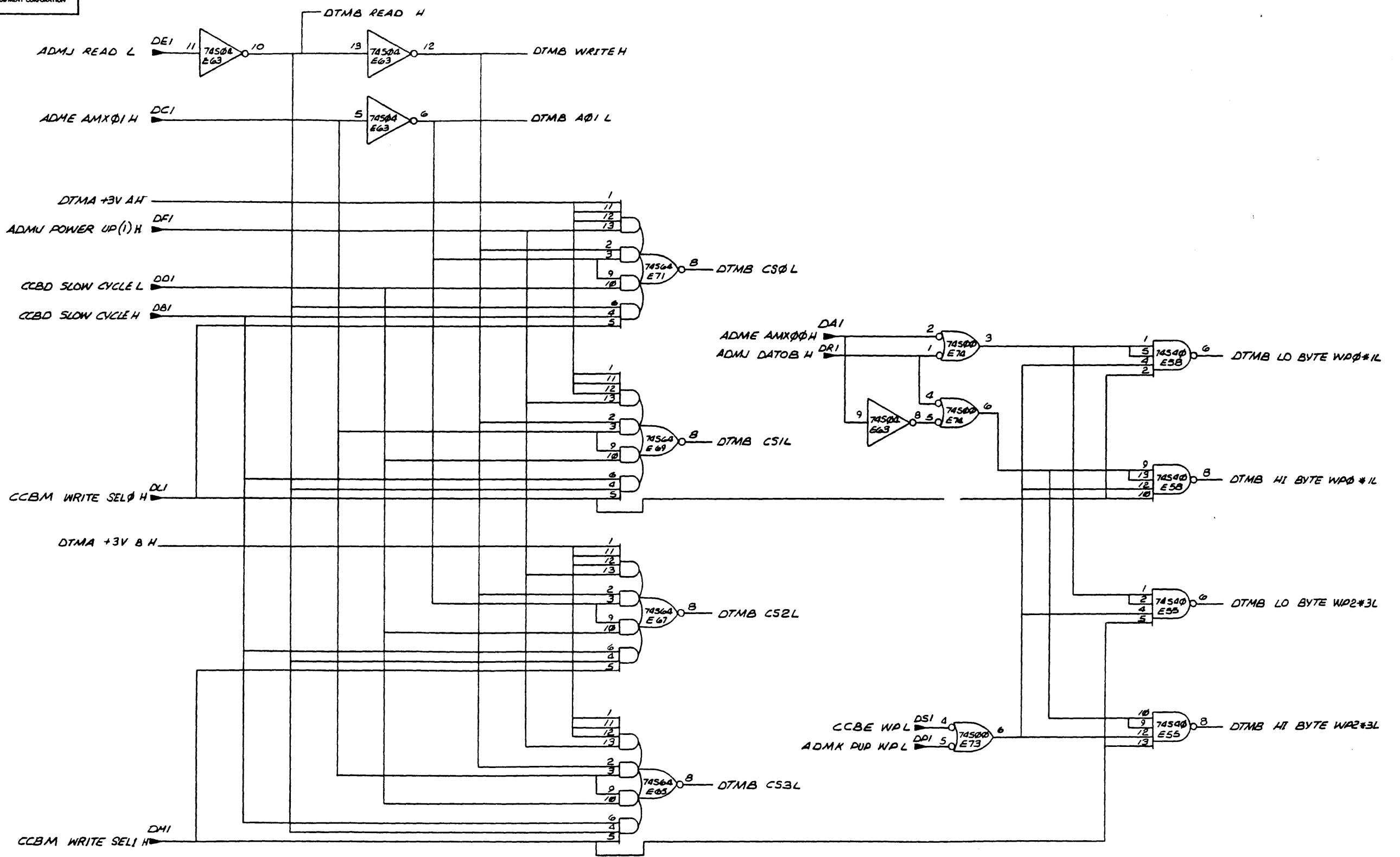
SLOT 20 (ADDRESS DRIVERS)

REVISIONS		
CHK	CHANGE NO	REV

TITLE	DATA MEMORY (DTMA)	SIZE CODE	D CS	NUMBER	M8144-0-1	REV.	*
SCALE	1/1	SHEET	2	OF	4	DIST.	

DTM

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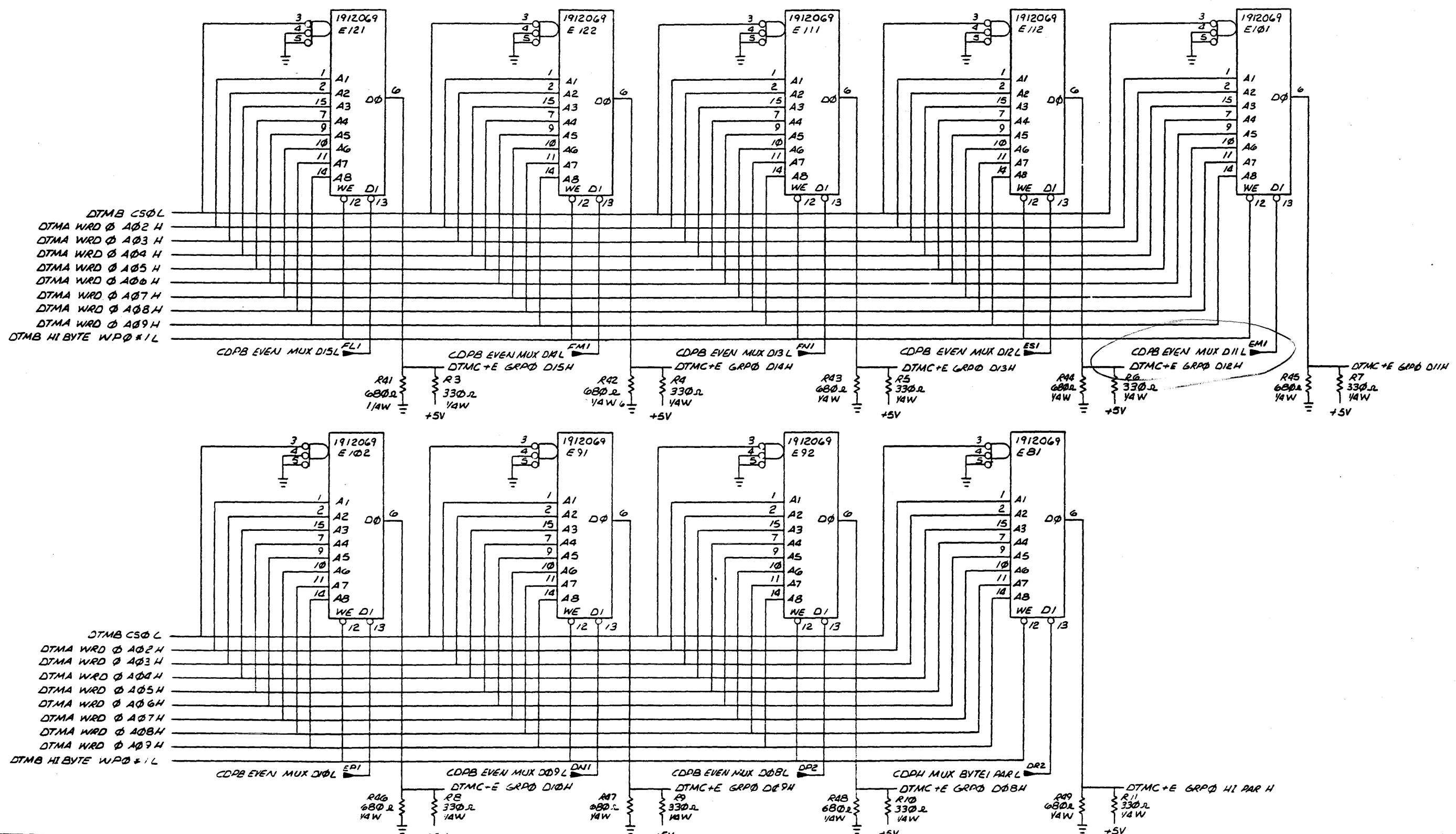


(WRITE PULSE DRIVERS
SLOT 20 CHIP SELECT DRIVERS)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	DATA MEMORY (DTMB)	SIZE CODE	D CS	NUMBER	M8144-0-1	REV.	*
SCALE	1/1	SHEET	3	OF	14	DIST	

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DTMB CS0L
 DTMA WRD 0 A02H
 DTMA WRD 0 A03H
 DTMA WRD 0 A04H
 DTMA WRD 0 A05H
 DTMA WRD 0 A06H
 DTMA WRD 0 A07H
 DTMA WRD 0 A08H
 DTMA WRD 0 A09H
 DTMB HI BYTE WP0*1L

DTMB CS0L
 DTMA WRD 0 A02H
 DTMA WRD 0 A03H
 DTMA WRD 0 A04H
 DTMA WRD 0 A05H
 DTMA WRD 0 A06H
 DTMA WRD 0 A07H
 DTMA WRD 0 A08H
 DTMA WRD 0 A09H
 DTMB HI BYTE WP0*1L

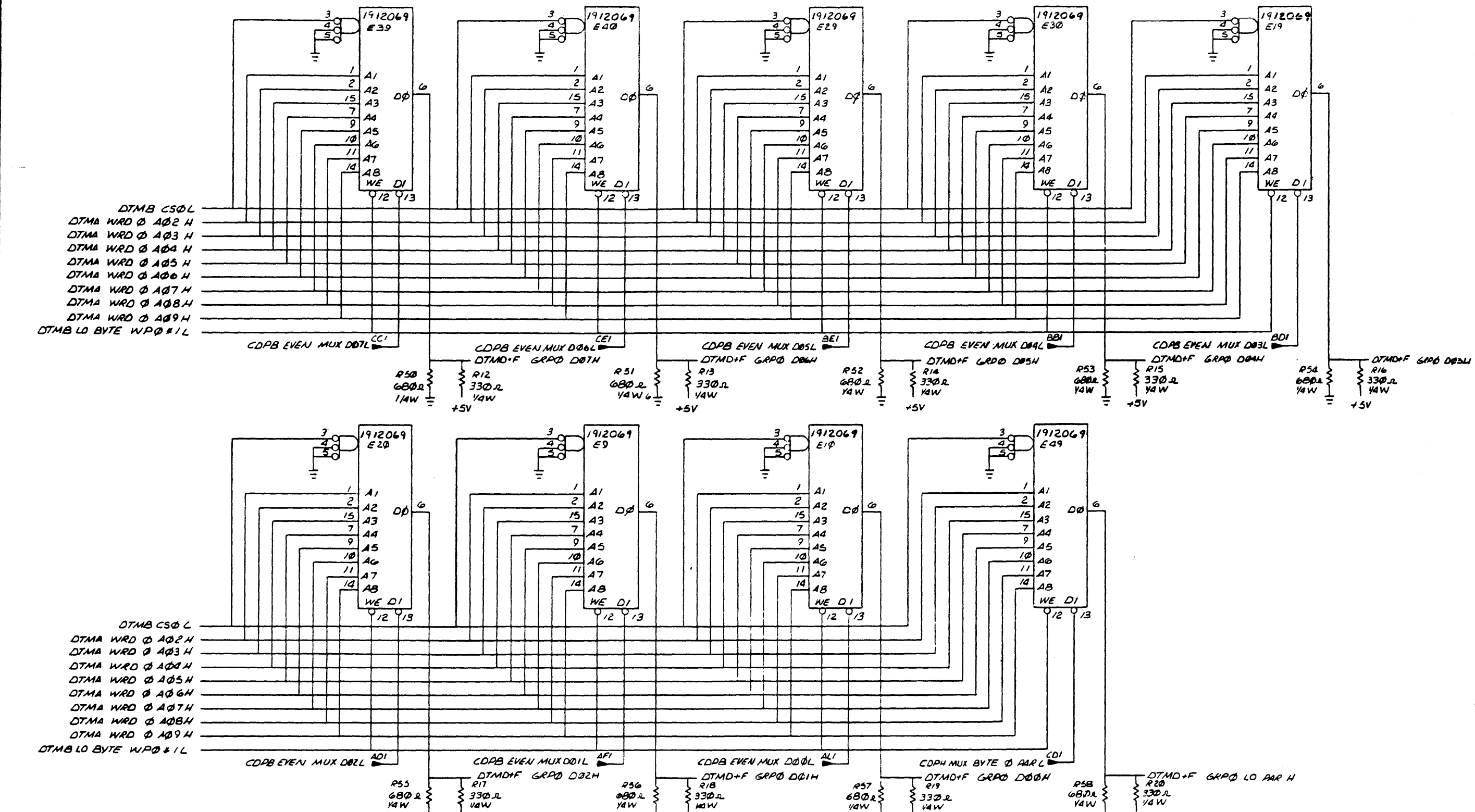
REVISIONS		
CHK	CHANGE NO	REV

SLOT 20 (WORD 0 HI BYTE)

TITLE	DATA MEMORY (DTMC)	SIZE CODE	D CS	NUMBER	M8144-0-1	REV.	*
SCALE	1/1	SHEET	4	OF	14	DIST	

DTM

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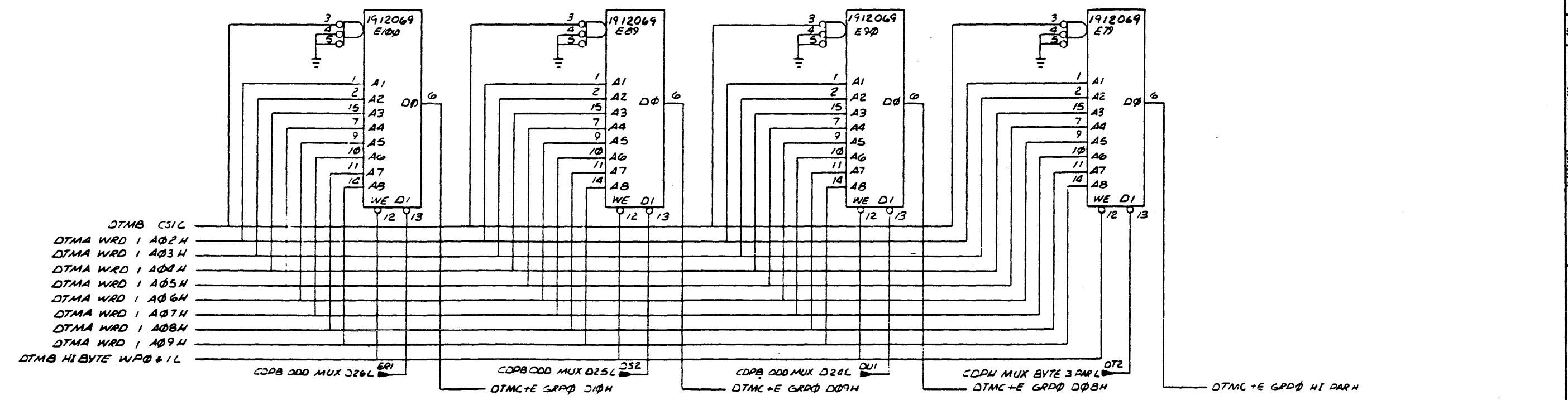
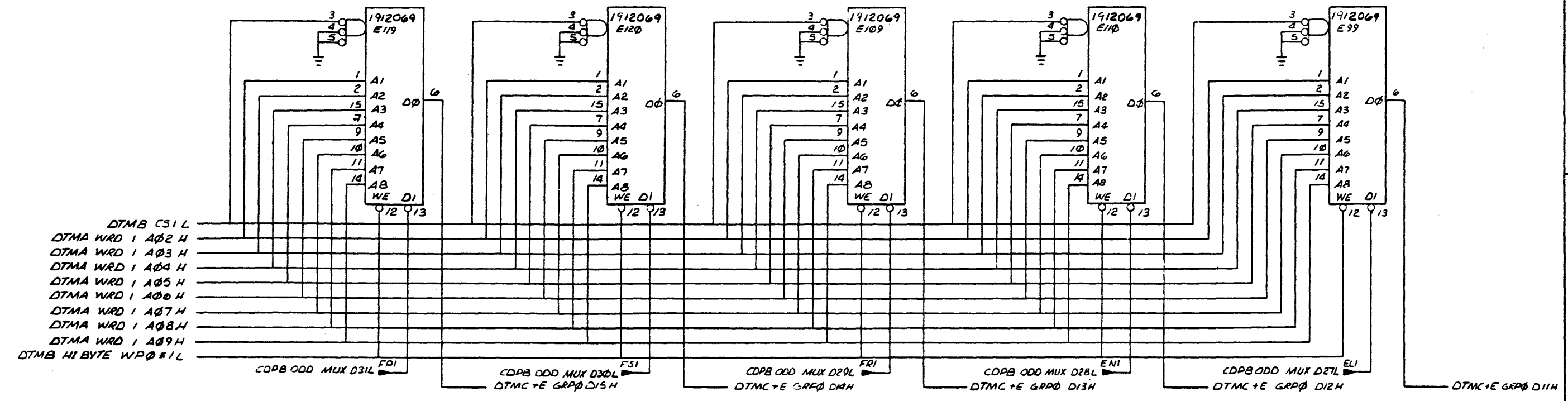
REVISIONS		
CHK	CHANGE NO	REV

TITLE		SIZE CODE	NUMBER	REV.
DATA MEMORY (DTMD)		D CS	M6144-0-1	*
SCALE	SHEET	OF	DIST	
	5	14		

SLOT 20 (WORD 0 LO BYTE)

M6144-0-1

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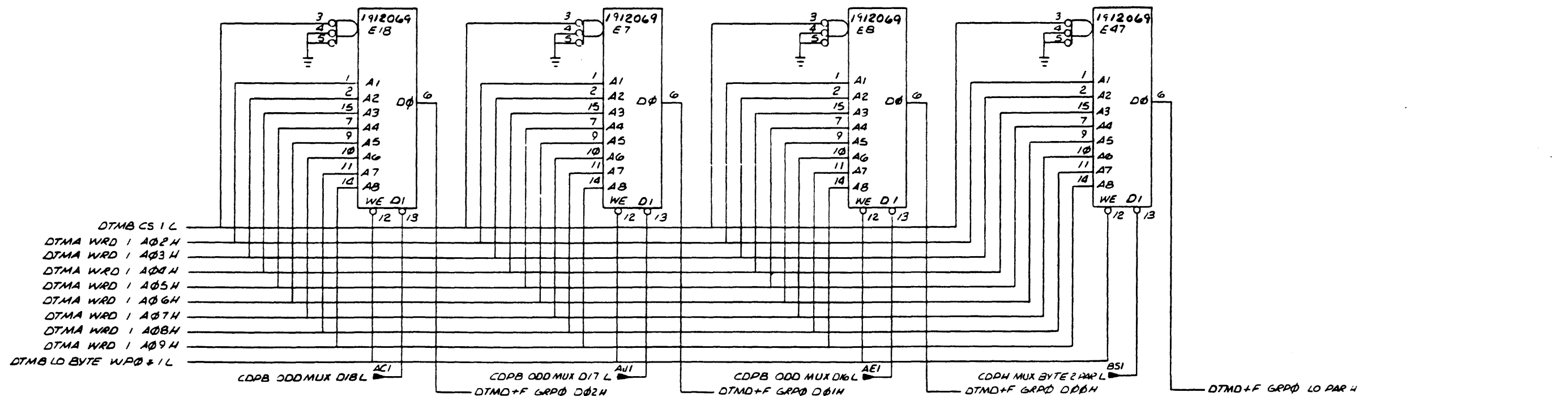
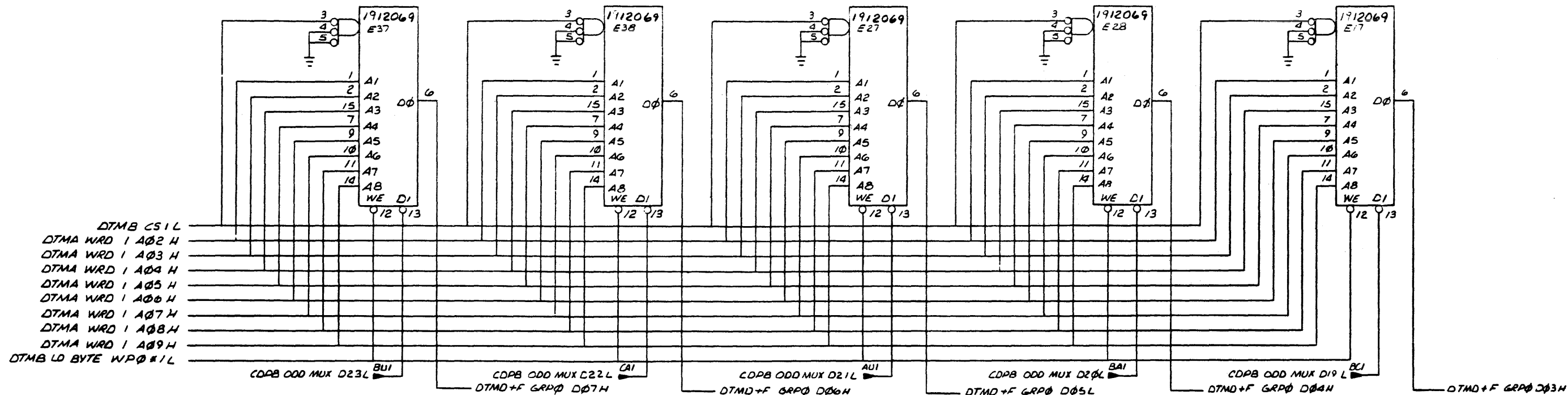
REVISIONS		
CHK	CHANGE NO	REV

SLOT 20 (WORD 1 HI BYTE)

TITLE	DATA MEMORY (DTME)	SIZE CODE	D CS	NUMBER	M8144-0-1	REV	*
SCALE		SHEET	5	OF	14	DIST	



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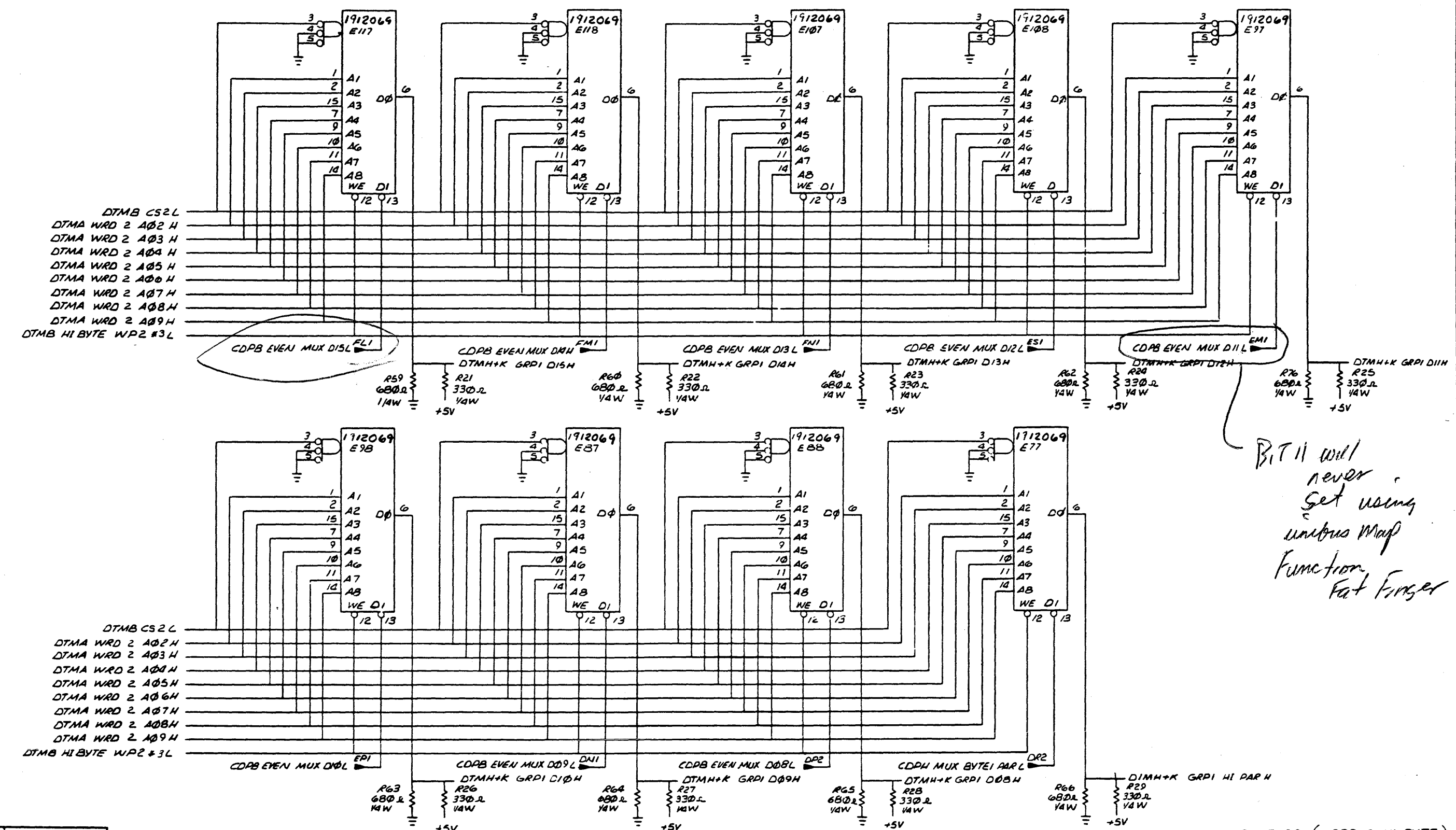
REVISIONS		
CHK	CHANGE NO	REV

SLOT 20 (WORD 1 LO BYTE)

TITLE	DATA MEMORY (DTMF)	SIZE CODE	D CS	NUMBER	M8144-0-1	REV.	*
SCALE		SHEET	7 OF 14	DIST			

M8144-0-1

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DTMB CS2L
 DTMA WRD 2 A02H
 DTMA WRD 2 A03H
 DTMA WRD 2 A04H
 DTMA WRD 2 A05H
 DTMA WRD 2 A06H
 DTMA WRD 2 A07H
 DTMA WRD 2 A08H
 DTMA WRD 2 A09H
 DTMB HI BYTE WP2 #3L

DTMB CS2L
 DTMA WRD 2 A02H
 DTMA WRD 2 A03H
 DTMA WRD 2 A04H
 DTMA WRD 2 A05H
 DTMA WRD 2 A06H
 DTMA WRD 2 A07H
 DTMA WRD 2 A08H
 DTMA WRD 2 A09H
 DTMB HI BYTE WP2 #3L

Bit 11 will never set using unibus Map Function. Fat Finger

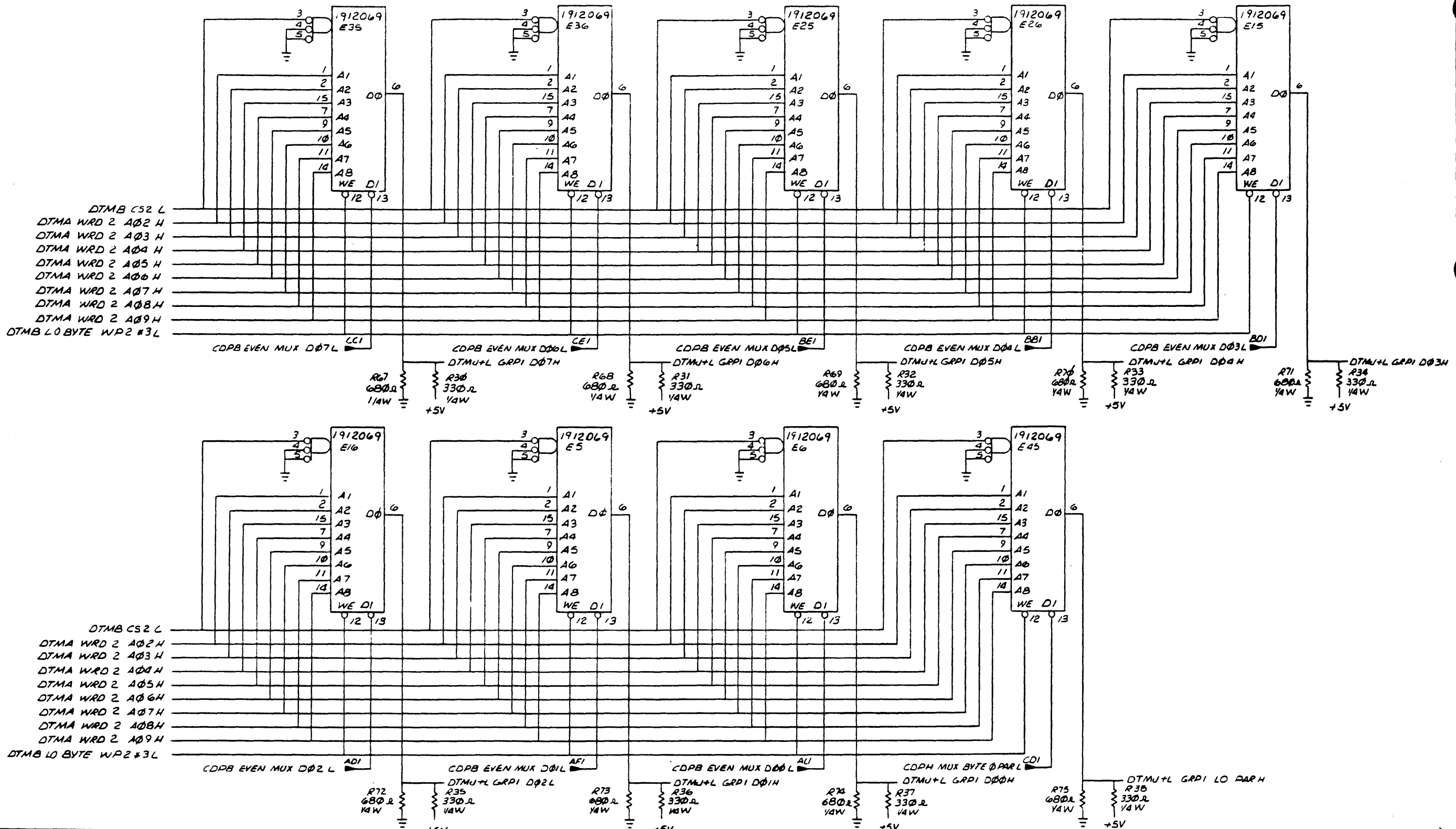
REVISIONS		
CHK	CHANGE NO	REV

TITLE		DATA MEMORY (DTMH)		SIZE CODE	D CS	NUMBER	M8144-0-1	REV.	*
SCALE	---	SHEET	3 OF 14	DIST.					

SLOT 20 (WORD 2 HI BYTE)

DTM

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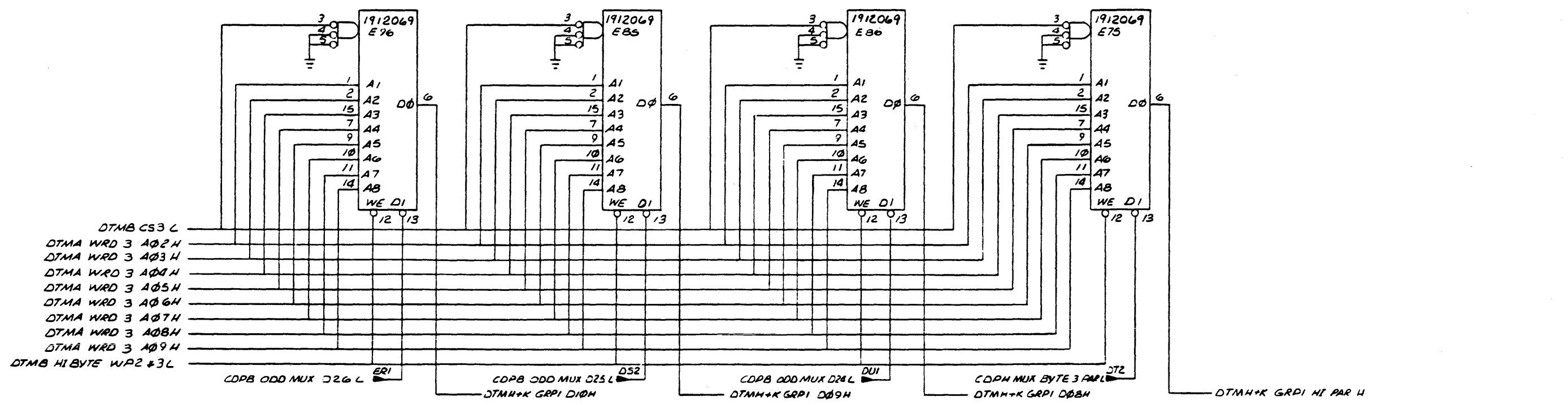
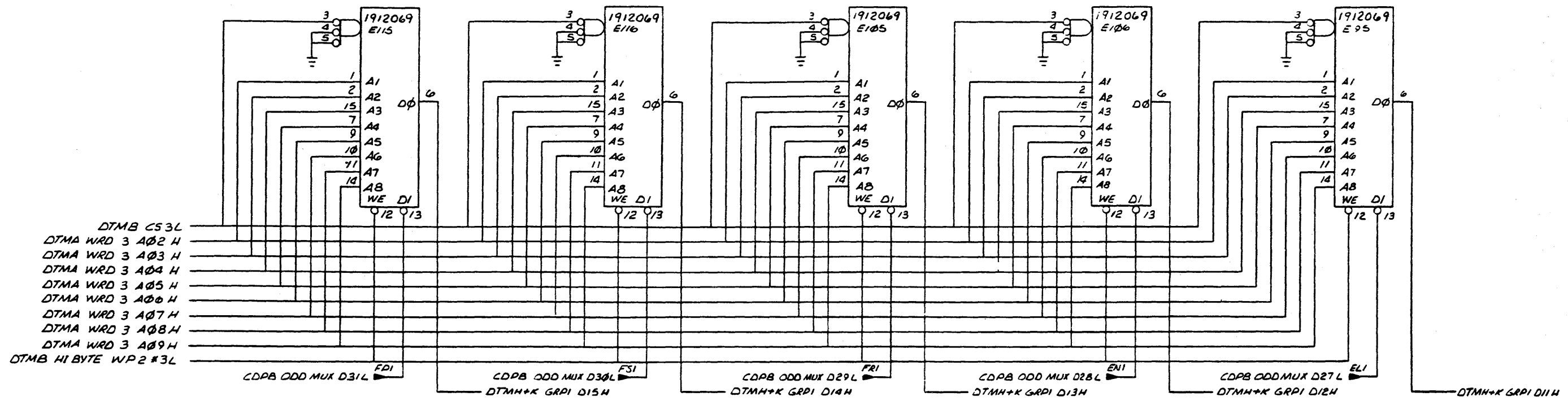
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE CODE	NUMBER	REV.
DATA MEMORY (DTMJ) DCS		M8144-0-1	1	*
SCALE	SHEET 9 OF 14	DIST		

M8144-0-1

SLOT 20 (WORD 2 LO BYTE)

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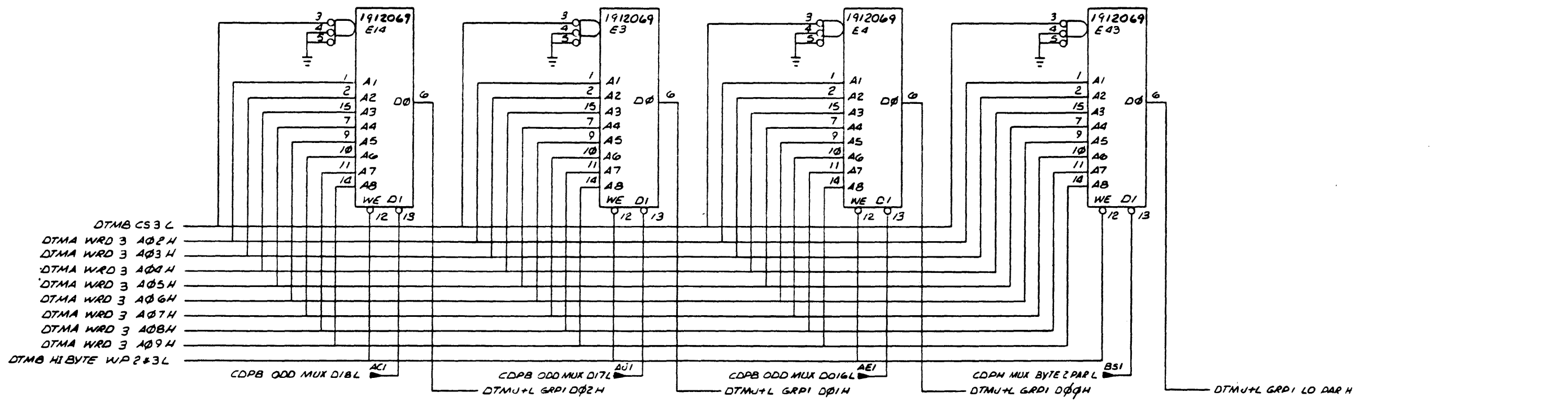
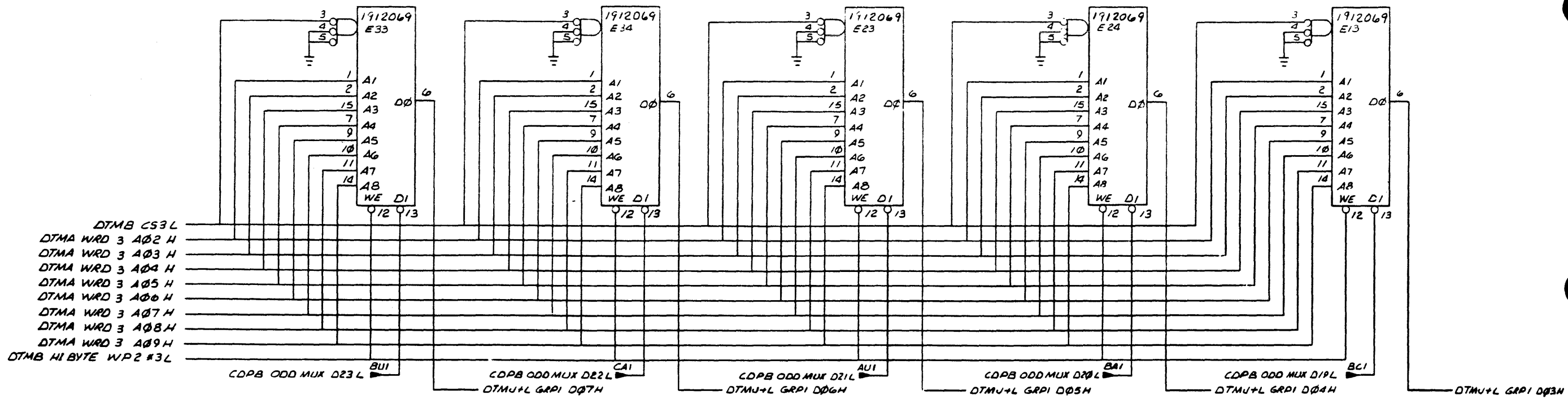
REVISIONS		
CHK	CHANGE NO	REV

SLOT 20 (WORD 3 HI BYTE)

TITLE	DATA MEMORY (DTMK)	SIZE/CODE	D CS	NUMBER	M8144-0-1	REV.	*
SCALE		SHEET	10	OF	14	DIST	

DTM

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REVISIONS		
CHK	CHANGE NO	REV

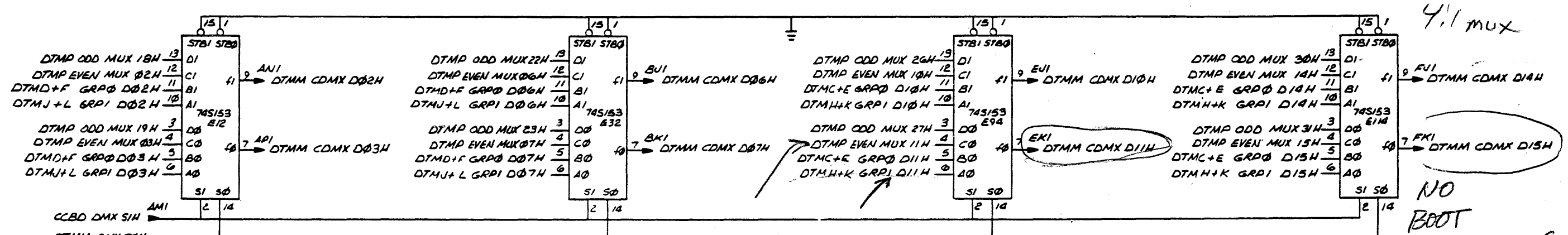
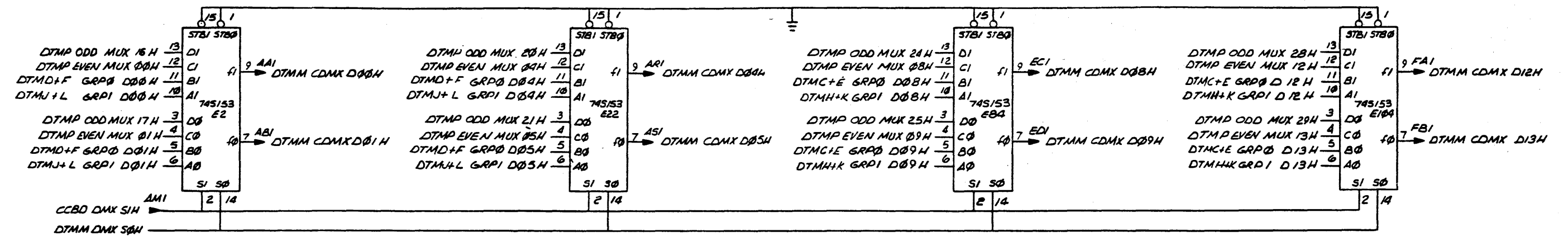
SLOT 20 (WORD 3 LO BYTE)

TITLE	DATA MEMORY (DTML) DCS	SIZE CODE	M8144-0-1	NUMBER	1	REV	*
SCALE		SHEET	11 OF 14	DIST			

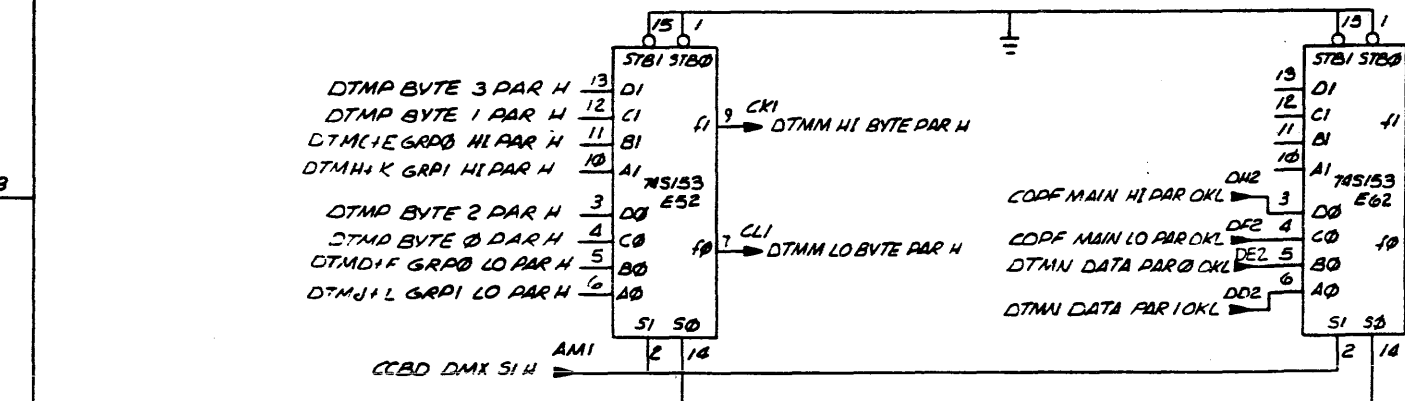
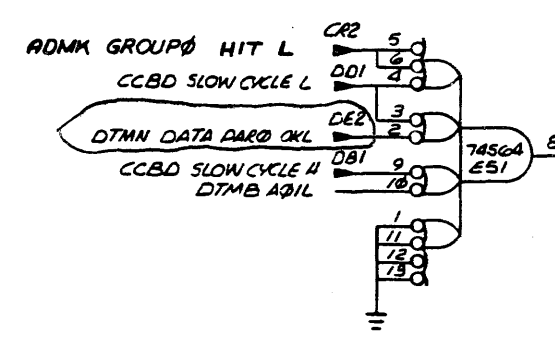
M8144-0-1

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16 bits = Actual DATA



NO BOOT
ALL ELSE SEEMS TO WORK FINE



DTMM BAD PARITY H

SI	S0	OUTPUT
L	L	GROUP 1 DATA
L	H	GROUP 0 DATA
H	L	MAIN MEMORY EVEN WORD
H	H	MAIN MEMORY ODD WORD

HIT
NO
HIT

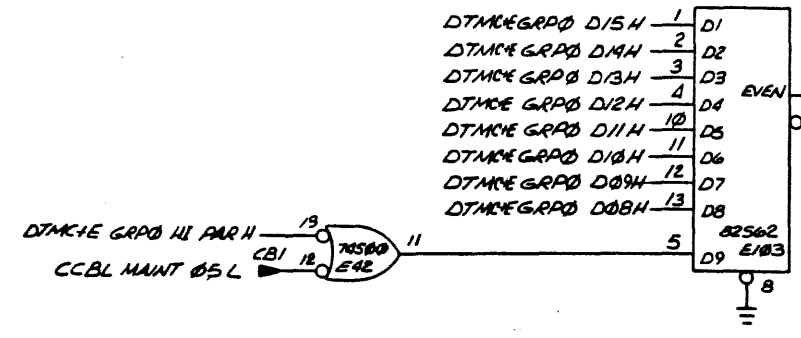
CHG	CHANGE NO	REV

SLOT 20 (DATA OUTPUT MULTIPLEXER)

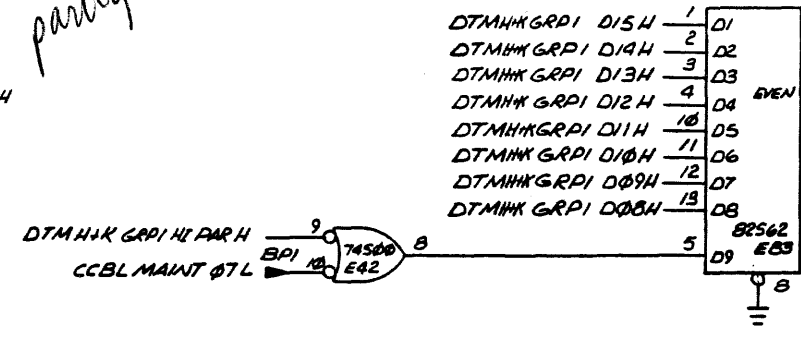
TITLE	SIZE CODE	NUMBER	REV.
DATA MEMORY (DTMM)	D CS	M3144-0-1	*

DTM

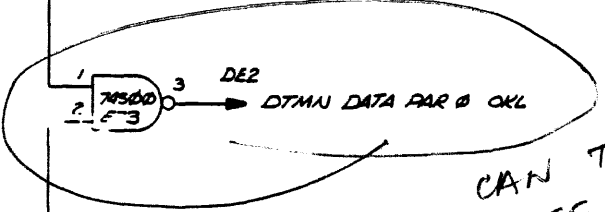
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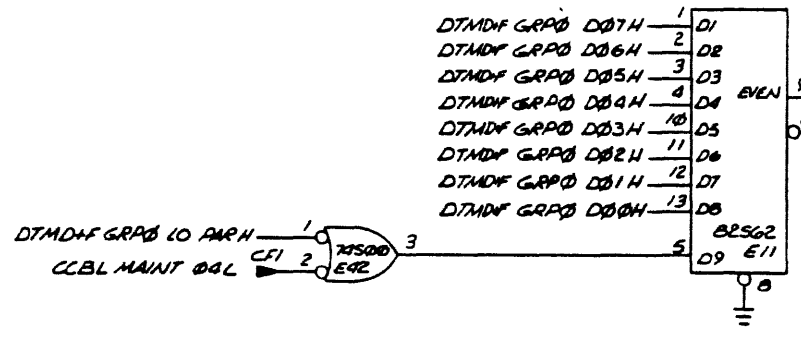
Group 0 High byte parity check



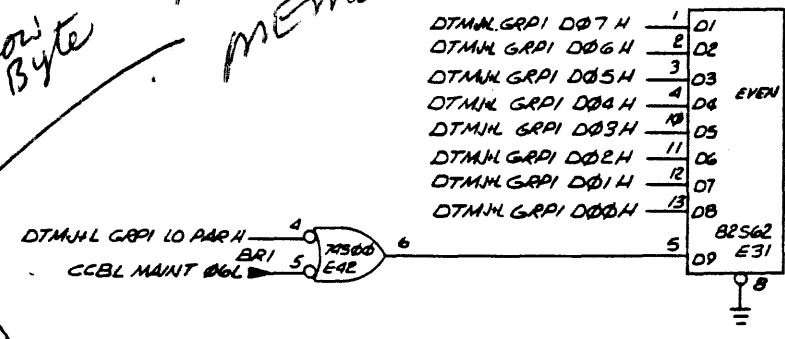
Group 1 High Byte parity check



CAN TURN OFF OUT PUT MUX TO MAIN MEMORY (previous page)



Group 0 Low Byte parity check



Low Byte Group 1 parity check

when trying to boot it will trap to 10 (address lights)

REVISIONS		
CHK	CHANGE NO.	REV

SLOT 20 (FAST MEMORY PARITY CHECKERS)

TITLE	DATA MEMORY (DTMN)	SIZE CODE	D CS	NUMBER	M8144-0-1	REV.	*
SCALE	1/1	SHEET	13	OF	14	DIST.	

CS M8144-0-1

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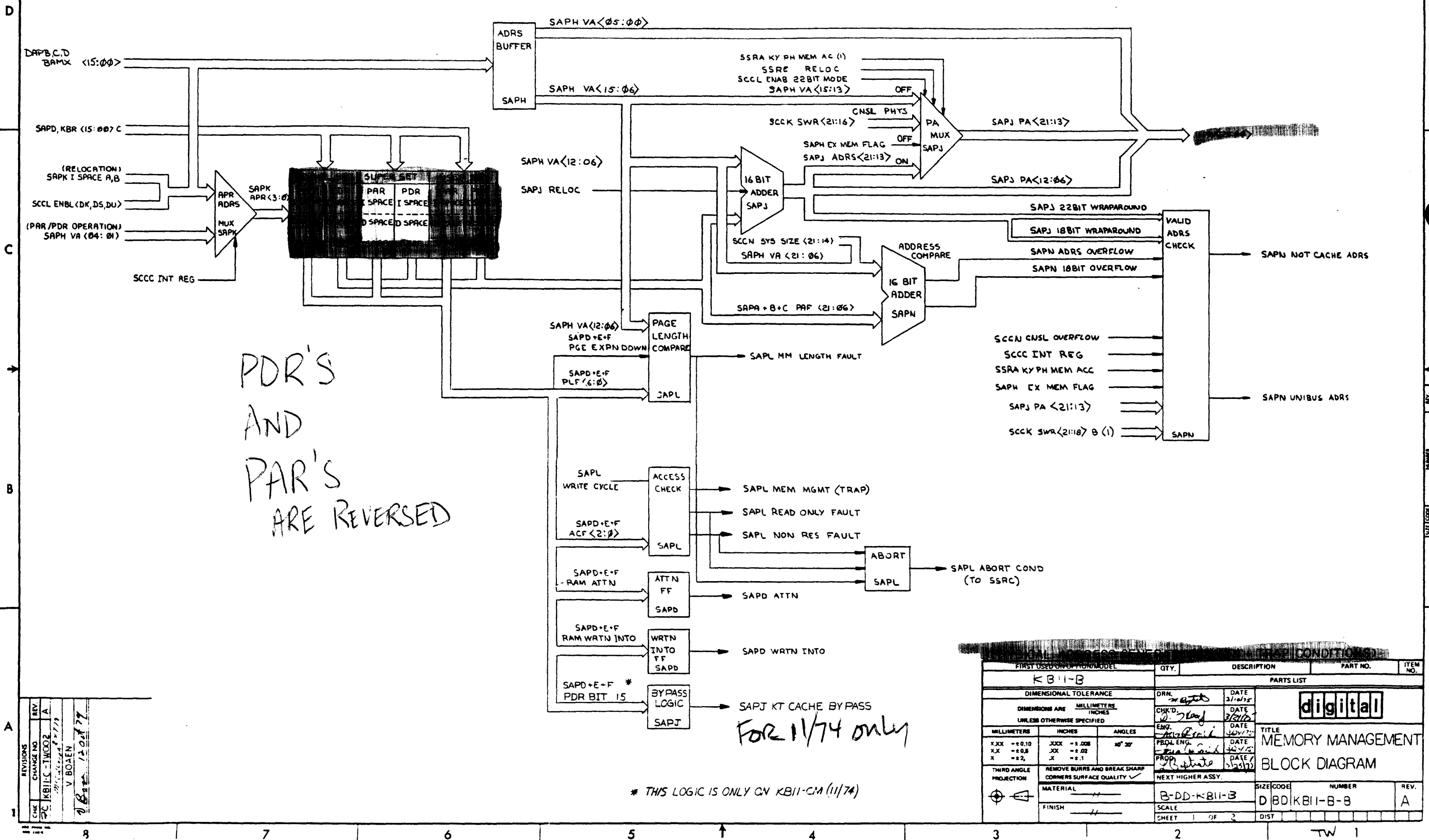
SLOT 20 (MAIN MEMORY DATA INVERTERS)

REVISIONS		
CHK	CHANGE NO	REV

TITLE	DATA MEMORY (DTMP)	SIZE CODE	D	NUMBER	CS M 8144-0-1	REV.	*
SCALE		SHEET	14	OF	14	DIST	



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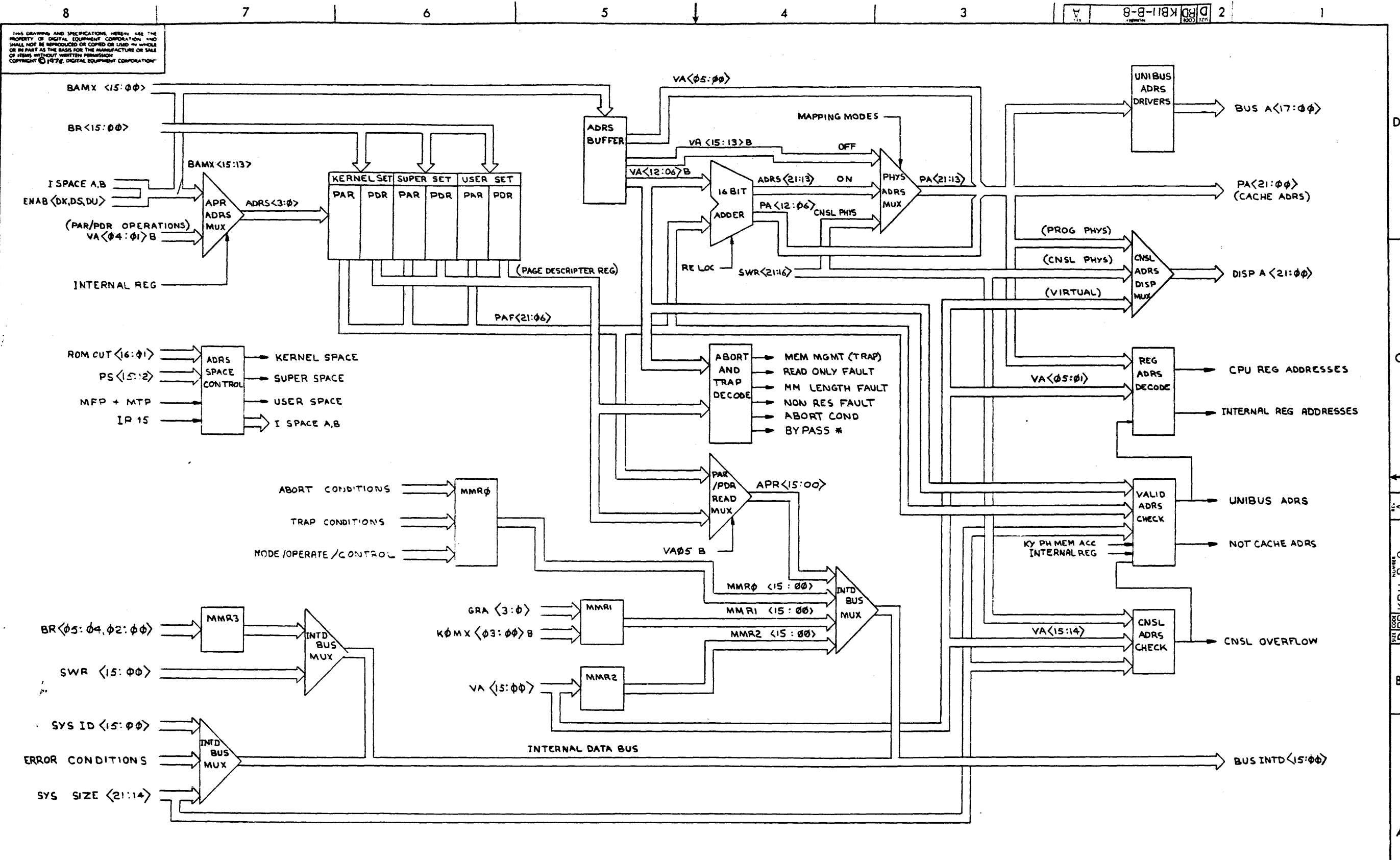
PDR'S AND PAR'S ARE REVERSED

FOR 11/74 ONLY

* THIS LOGIC IS ONLY ON KB11-CM (11/74)

REV.	CHANGE NO.	DATE
1	1	11/77
2	2	11/77
3	3	11/77

FIRST USED OR OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
KB11-B					
PARTS LIST					
DIMENSIONAL TOLERANCE		DRN	DATE	digital	
DIMENSIONS ARE MILLIMETERS INCHES		CHK'D	DATE		
UNLESS OTHERWISE SPECIFIED		ENG.	DATE		
MILLIMETERS	INCHES	PROJ. ENG.	DATE	TITLE	
XXX ±0.10	XXX ±0.008	PROP.	DATE	MEMORY MANAGEMENT	
XX ±0.8	XX ±0.02		DATE	BLOCK DIAGRAM	
X ±0.2	X ±0.1		DATE		
THIRD ANGLE PROJECTION		REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		NEXT HIGHER ASSY.	
MATERIAL		SCALE		SIZE CODE	NUMBER
FINISH		B-DD-KB11-B		D BD KB11-B-8	REV. A
		SHEET 1 OF 3		DIST	



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* THIS SIGNAL ONLY EXISTS ON KB11-CM (11/74)

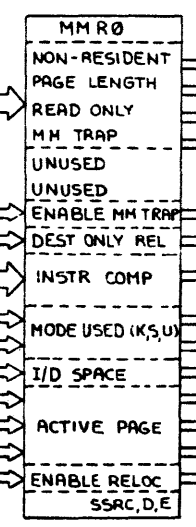
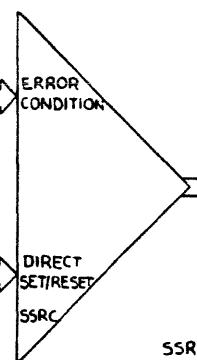
REVISIONS		
CHK	CHANGE NO	REV

TITLE	MEMORY MANAGEMENT BLOCK DIAGRAM	SIZE CODE	D B D I K B 1 1 - B - 8	NUMBER	2	REV.	A
SCALE		SHEET	2 OF 2	DIST			

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SAPL NON RES FAULT
SAPL MM LENGTH FAULT
SAPL READ ONLY FAULT
SSRD MEM MGMT B (TRAP)

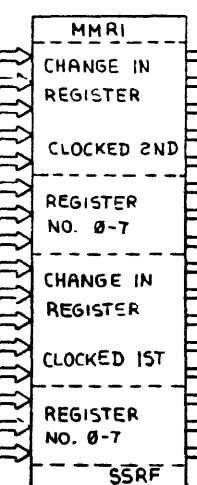
PDRB BR15 B
PDRB BR14 B
PDRB BR13 B
PDRB BR12 B



PDRB BR09 B
PDRB BR08 B
SSRC NO ERROR (I)
SSRH LOAD TR
SSRB MMR0 MODE 1
SSRB MMR0 MODE 0
SAPK IND DATA
SSRH VA15 C
SSRH VA14 C
SSRH VA13 C
PDRB BR00 B

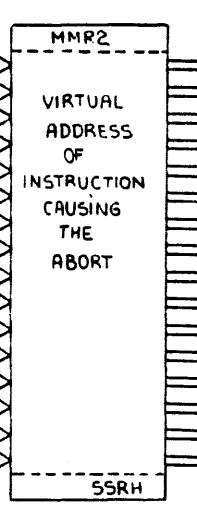
SSRC MMR0 BIT15
SSRC MMR0 BIT14
SSRC MMR0 BIT13
SSRD MEM MGMT DET (I)
SSRD ENABLE MG MT (I)
SSRE DST MODE (I)
SSRE INST COMP (I)
SSRE MMR0 BIT06
SSRE MMR0 BIT05
SSRE MMR0 BIT04
SSRE MMR0 BIT03
SSRE MMR0 BIT02
SSRE MMR0 BIT01
SSRE RELOCATING (I)

SSRA AUTO DEC
DAPD K0MX 03
DAPD K0MX 02
DAPD K0MX 01
DAPD K0MX 00
GRAC GRA02
GRAC GRA01
GRAC GRA00
SSRA AUTO DEC
DAPD K0MX 03
DAPD K0MX 02
DAPD K0MX 01
DAPD K0MX 00
GRAC GRA02
GRAC GRA01
GRAC GRA00



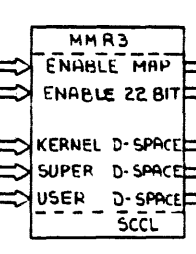
SSRF MMR1 BIT15
SSRF MMR1 BIT14
SSRF MMR1 BIT13
SSRF MMR1 BIT12
SSRF MMR1 BIT11
SSRF MMR1 BIT10
SSRF MMR1 BIT09
SSRF MMR1 BIT08
SSRF MMR1 BIT07
SSRF MMR1 BIT06
SSRF MMR1 BIT05
SSRF MMR1 BIT04
SSRF MMR1 BIT03
SSRF MMR1 BIT02
SSRF MMR1 BIT01
SSRF MMR1 BIT00

SSRH VA15 C
SSRH VA14 C
SSRH VA13 C
DAPD BAMX 12
DAPC BAMX 11
DAPC BAMX 10
DAPC BAMX 09
DAPC BAMX 08
DAPC BAMX 07
DAPC BAMX 06
DAPB BAMX 05
DAPB BAMX 04
DAPB BAMX 03
SAPH VA03 B
SSRH VA02 C
SSRH VA01 C
DAPB BAMX 00



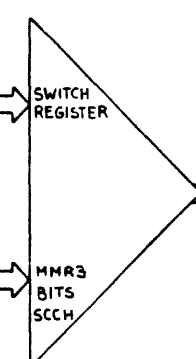
SSRH MMR2 BIT15
SSRH MMR2 BIT14
SSRH MMR2 BIT13
SSRH MMR2 BIT12
SSRH MMR2 BIT11
SSRH MMR2 BIT10
SSRH MMR2 BIT09
SSRH MMR2 BIT08
SSRH MMR2 BIT07
SSRH MMR2 BIT06
SSRH MMR2 BIT05
SSRH MMR2 BIT04
SSRH MMR2 BIT03
SSRH MMR2 BIT02
SSRH MMR2 BIT01
SSRH MMR2 BIT00

PDRB BR05 B
PDRB BR04 B
PDRB BR02 B
PDRB BR01 B
PDRB BR00 B



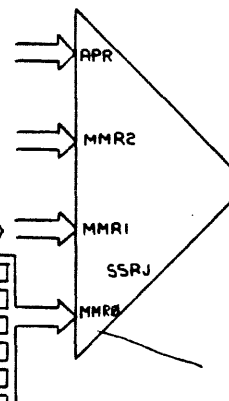
SCCL ENAB UB MAP
SCCL ENAB 22BIT MAPPING
SCCL ENAB DK (I)
SCCL ENAB DS (I)
SCCL ENAB DU (I)

SAPJ SWR 05,04,02:00
SCCL ENAB UB MAP
SCCL ENAB 22BIT MAPPING
SCCL ENAB DK (I)
SCCL ENAB DS (I)
SCCL ENAB DU (I)



BUS INTD 05,04,02:00

SAPM APR BIT (15:00)
(PAR OR PDR)
SSRH MMR2 BIT (15:00)
SSRF MMR1 BIT (15:00)
SSRC MMR0 BIT (15:13)
SSRD MEM MGMT DET (I)
SSRD ENABLE MGMT (I)
SSRE DST MODE (I)
SSRE INST COMP (I)
SSRE MMR0 BIT (06:01)
SSRE RELOCATING (I)



BUS INTD (15:00)

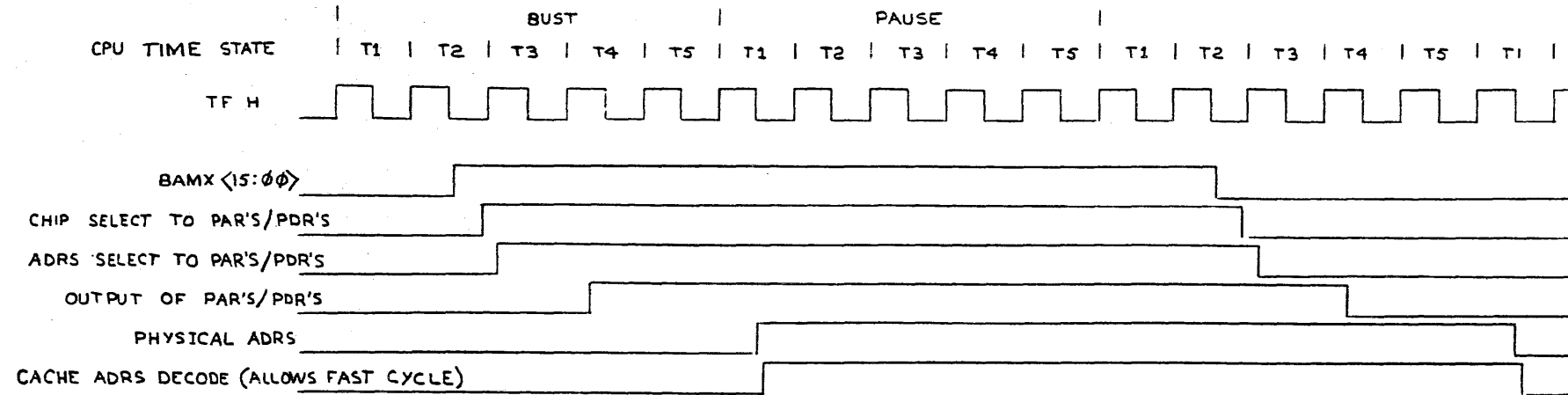
REV.	CHANGE NO.	REVISIONS

FIRST USED ON OPTION/MODEL K11-B	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	
.XX ±0.10 .XX ±0.8 X ±2	.XX ±0.08 .XX ±.02 X ±.1	° 30'	DATE	
THIRD ANGLE PROJECTION	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	NEXT HIGHER ASSY.	DATE	TITLE MEM MANAGEMENT REGISTERS
MATERIAL	FINISH	SCALE	SIZE/NUMBER	REV.
			B-2-118-B	D BD <B11-B-4
SHEET OF		DIST		

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NOTES:

1. THE PURPOSE OF THIS DIAGRAM IS TO ILLUSTRATE THE FLOW OF DATA. THE TIME DELAYS INDICATED ARE WORST CASE PROPAGATION DELAYS OF GATES AND MAY VARY
2. THE TIMING DIAGRAM REPRESENTS THE TIME PERIOD IN WHICH THE CHANGE TAKES PLACE BUT NOT NECESSARILY THE ACTUAL CHANGE IN POLARITY OF THE SIGNAL. A HIGH LEVEL OR PULSE ON THE DIAGRAM REPRESENTS AN ASSERTED SIGNAL.



DESCRIPTION		DWG. PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES			
ANGLES 10° 30'	CLASS OF ACCURACY	NOMINAL DIMENSION RANGE INCHES	
SURFACE QUALITY IN MICRONS	CHECK ONE	OVER 0 TO 0.2	OVER 0.2 TO 1.2
		OVER 1.2 TO 4.0	OVER 4.0 TO 12.0
MEDIUM		±.004	±.008
PREFERRED		±.012	±.016
MICRONS		±.012	±.016
THIRD ANGLE PROJECTION		DRN. <i>M. C. P.</i>	FIRST USED ON
REMOVE BURRS AND BREAK SHARP CORNERS		CHK'D. <i>M. C. P.</i>	<i>3/21/75</i>
DO NOT SCALE DWG		ENG. <i>M. C. P.</i>	<i>3/21/75</i>
MATERIAL		PROJ. ENG. <i>M. C. P.</i>	<i>3/21/75</i>
SCALE		PROD. <i>M. C. P.</i>	<i>3/21/75</i>
FINISH		NEXT HIGHER ASSY.	
TITLE		K311-B	
MATERIAL		CACHE ADDRESS	
SCALE		TIMING	
FINISH		NUMBER	
SHEET		OF	
DIST		REV.	

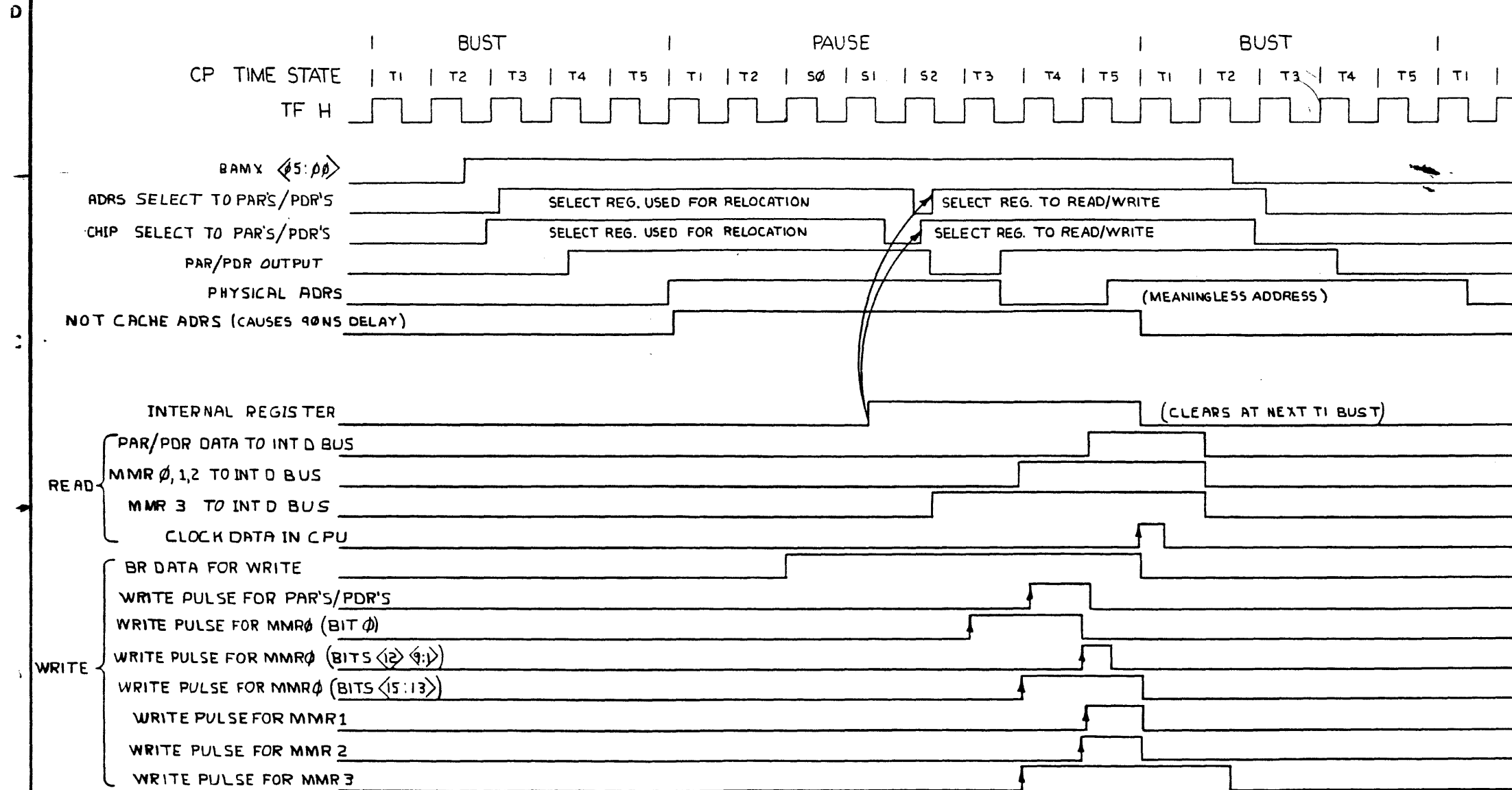
REV.	CHANGE NO.	DATE

REV. DATE
D 110 K311-B-10

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NOTES:

- 1 THE PURPOSE OF THIS DIAGRAM IS TO ILLUSTRATE THE FLOW OF DATA. THE TIME DELAYS INDICATED ARE WORST CASE PROPAGATION DELAYS OF GATES AND MAY VARY.
- 2 CLOCKED SIGNALS ARE INDICATED BY AN \uparrow .
- 3 THE TIMING DIAGRAM REPRESENTS THE TIME PERIOD IN WHICH THE CHANGE TAKES PLACE, BUT NOT NECESSARILY THE ACTUAL CHANGE IN POLARITY OF THE SIGNAL. A HIGH LEVEL OR PULSE ON THE DIAGRAM REPRESENTS AN ASSERTED SIGNAL.



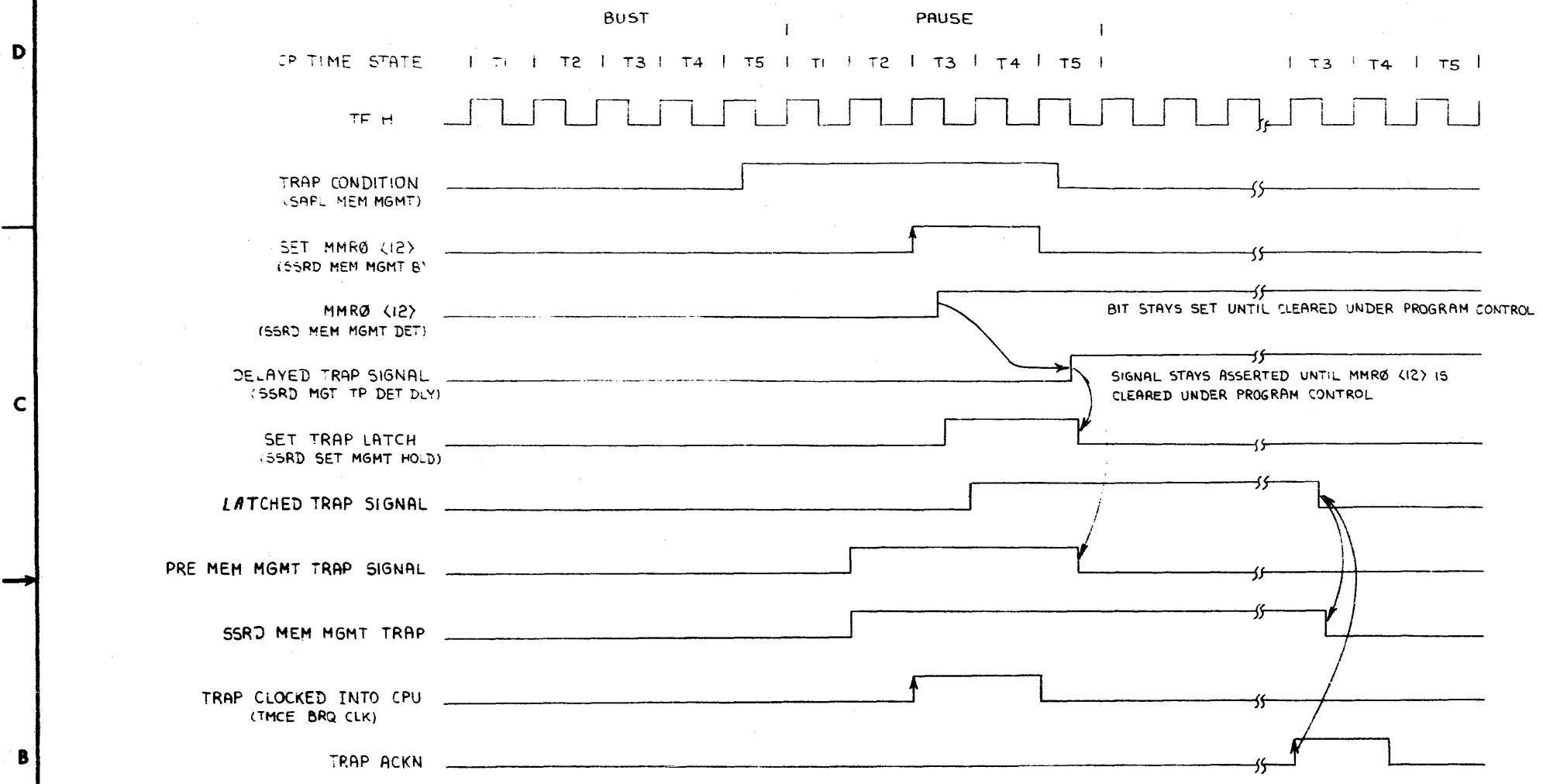
FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
KB11-B			PARTS LIST		
DIMENSIONAL TOLERANCE		DRN. John Rapp	DATE 3/13/75	digital	
DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE SPECIFIED		CHK'D P. Rapp	DATE 3/22/75		
MILLIMETERS	INCHES	ANGLE	ENG. John Rapp	DATE 3/22/75	TITLE
X,XX ±0.10	.XXX ±0.008	10° 30'	PROJ. ENG. John Rapp	DATE 3/22/75	INTERNAL REGISTERS
XX ±0.5	.XX ±0.02		PROD. Taylor	DATE 3/24/75	CYCLE TIMING
X ±2	.X ±0.1		NEXT HIGHER ASSY.		SIZE CODE
THIRD ANGLE PROJECTION	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		B-DD-KB11-B	NUMBER	REV.
	MATERIAL		SCALE	D TD	KB11-B-9
	FINISH		SHEET OF	DIST	

REV.	CHANGE NO.

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NOTES:

1. THE PURPOSE OF THIS DIAGRAM IS TO ILLUSTRATE THE FLOW OF DATA. THE TIME DELAYS INDICATED ARE WORST CASE PROPAGATION DELAYS OF GATES AND MAY VARY.
2. CLOCKED SIGNALS ARE INDICATED BY A Δ
3. THE TIMING DIAGRAM REPRESENTS THE TIME PERIOD IN WHICH THE CHANGE TAKES PLACE BUT NOT NECESSARILY THE ACTUAL CHANGE IN POLARITY OF THE SIGNAL. A HIGH LEVEL OR PULSE ON THE DIAGRAM REPRESENTS AN ASSERTED SIGNAL.



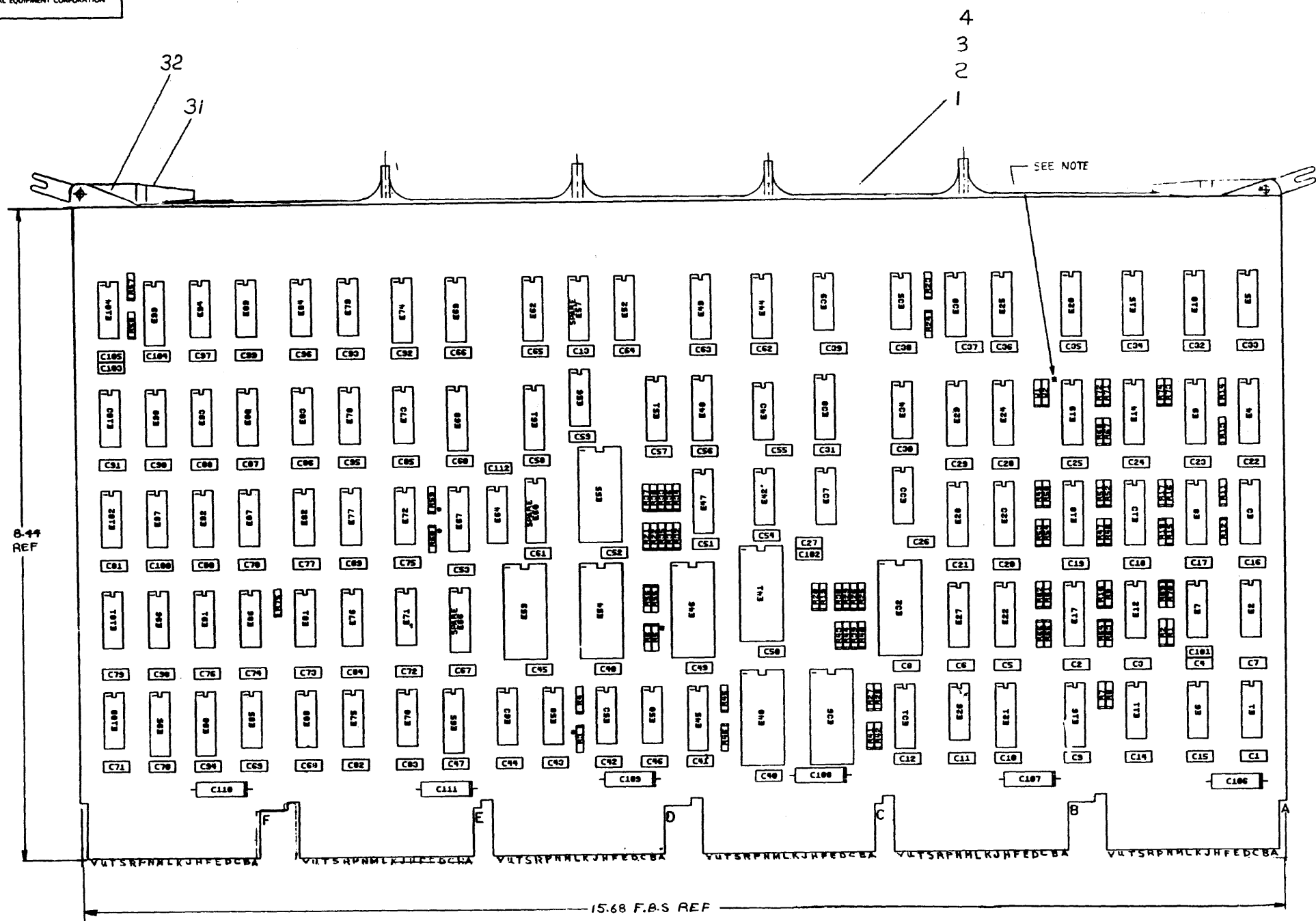
REV.	CHG.	NO.	DATE

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.	
KB11-B					
PARTS LIST					
DIMENSIONAL TOLERANCE		DRN	DATE	digital	
DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE SPECIFIED		R. Bousley	2-19-75		
MILLIMETERS		CHK'D	DATE		
INCHES		S. Head	3/21/75		
ANGLES		ENG.	DATE	TITLE	
X.XX ±0.10		R. Taylor	3/24/75		MEM MGMT TRAP TIMING
X.X ±0.5					
X ±0.2					
THIRD ANGLE PROJECTION	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	NEXT HIGHER ASSY.			
MATERIAL	FINISH	B-DD-KB11-B	SIZE CODE	NUMBER	
			D TD	KB11-B-5	
		SHEET 1 OF 1	DIST.		

REV. NO. PART NO. DTD KB11-B-5

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NOTES: * OPTIONAL COMPONENTS

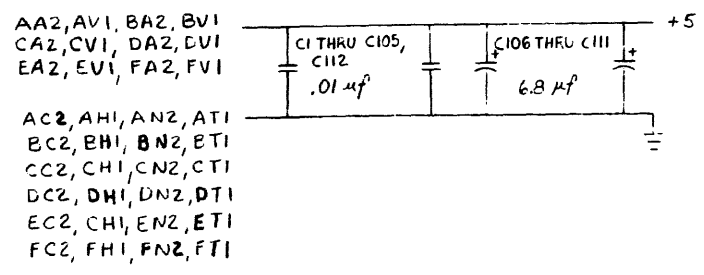


REF	DESIGNATION	DESCRIPTION	PART NO	ITEM NO
REF	X-Y COORDINATE HOLE LOCATION		KSCD-M8137-0-4	1
REF	ASSY DRILLING HOLE LAYOUT		BAH-M8137-0-5	2
REF	MODULE ECO HISTORY		B-MH-M8137-0-6	3
1		ETCHED CIRCUIT BOARD	5011313	4
106	C1 THRU C105 C112	CAP .01uf 100V 20%	1001610-1	5
6	C106 THRU C111	CAP 6.8uf 35V 10%	1005306	6
2	R4, R6	RESISTOR 150 OHM 1/4W 5%	1300250	7
34	R1, R7, R9, R11, R13, R15 R17, R19, R21, R23, R25, R27, R29, R31, R33, R35, R37, R39, R41, R43, R45, R47, R49, R51, R53, R55, R57, R61, R63, R65, R67, R69, R71, R73	RESISTOR 330 OHM 1/4W 5%	1300295	8
1	R75	RESISTOR 1K 1/4W 5%	1300365	9
34	R2, R8, R10, R12, R14, R16, R18, R20, R22, R24, R26, R28, R30, R32, R34, R36, R38, R40, R42, R44, R46, R48, R50, R52, R54, R56, R58, R62, R64, R66, R68, R70, R72, R74	RESISTOR 680 OHM 1/4W 5%	1301424	10
1	E100	IC DEC 74H21	1909058	11
1	E101	IC DEC 7437	1910091	12
4	E50, E56, E70, E79	IC DEC 7408	1910155	13
2	E17, E13	IC DEC 7485	1910224	14
8	E36, E40, E55, E54, E32, E41, E59, E46	IC DEC 74S181	1910531	15
5	E103, E76, E93, E73, E85	IC DEC 74S88	1910532	16
9	E97, E78, E5, E43, E39, E71, E37, E91, E35	IC DEC 74S84	1910534	17
1	E96	IC DEC 74S85	1910535	18
2	E75, E83	IC DEC 74S18	1910536	19
11	E82, E87, E26, E98, E2, E7, E80, E11, E6, E1, E92	IC DEC 74S11	1910537	20
3	E34, E33, E42	IC DEC 74S28	1910539	21
6	E64, E77, E72, E84, E89, E94	IC DEC 74S48	1910541	22
8	E53, E88, E12, E81, E86, E104	IC DEC 74S64	1910542	23
3	E58, E102, E63	IC DEC 74S74	1910544	24
3	E85, E90, E95	IC DEC 74S153	1910547	25
7	E27, E21, E18, E16, E8, E22, E31	IC DEC 74S157	1910548	26
3	E3, E99, E4	IC DEC 74S158	1910549	27
2	E45, E47	IC DEC 74182-1	1910551	28
24	E69, E74, E44, E38, E68, E62, E52, E49, E67, E61, E51, E48, E14, E30, E29, E28, E9, E20, E19, E23, E10, E15, E25, E24	IC DEC 3101A	1910653	29
1	W1	INSULATED JUMPER	9009185	30
1		HANDLE ASSEMBLY	I210711-2	31
12		EYELET HANDLE	9008732	32

IC TYPE	GND	+5V
IC DEC 3101A	8	16
IC DEC 74182-1	8	16
IC DEC 74S158	8	16
IC DEC 74S157	8	16
IC DEC 74S153	8	16
IC DEC 74S181	12	24
IC DEC 7485	8	16

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

IC PIN LOCATIONS



FIRST USED ON OPTION MODEL: 11/70

ETCH BOARD REV: B

REVISIONS: M8137-0001 A

SEMICONDUCTOR CONVERSION CHART

SCALE: 1 OF 13

DRN: B.F. KELLOGG DATE: 7-22-74
 CHK'D: F. K. GUSON DATE: 11-22-74
 ENG: SHARON A. SMITH DATE: 1-20-75
 PROJ. ENG: SHARON A. SMITH DATE: 1-20-75
 PROD: J. Taylor DATE: 1-21-75

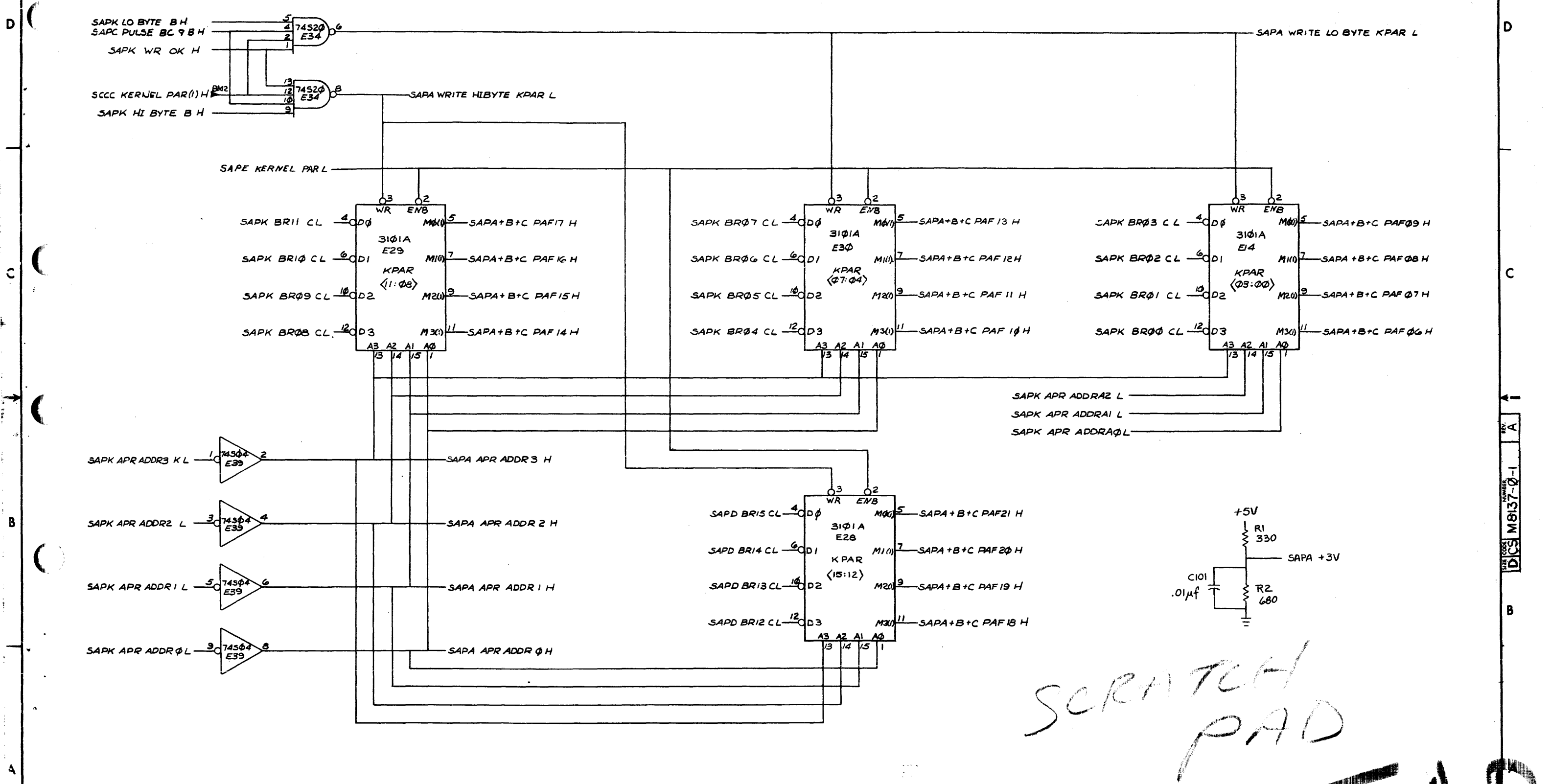
digital EQUIPMENT CORPORATION

TITLE: SYS ADRS PATH

SIZE CODE: DCS M8137-0-1

REV. A

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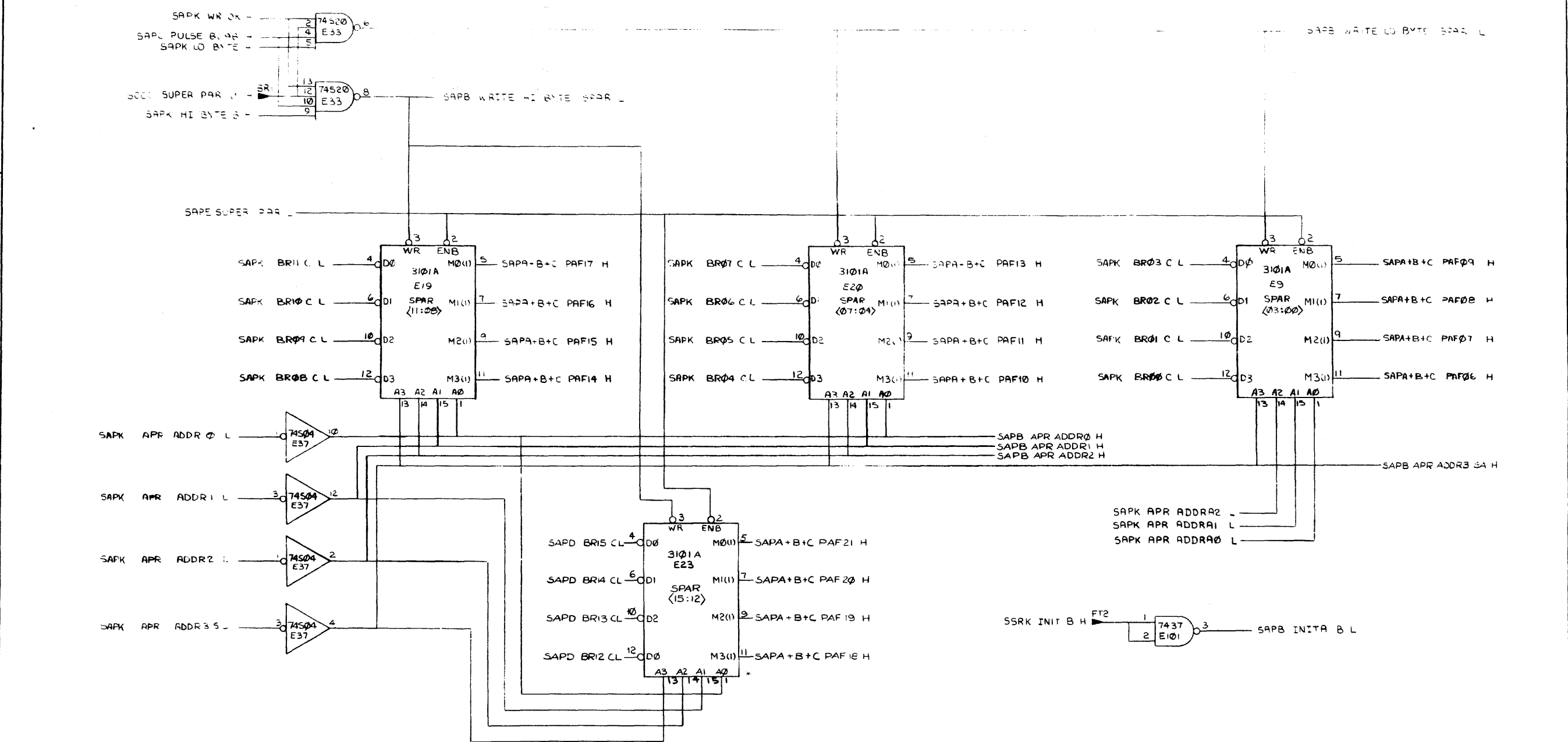


REV.	CHG.	NO.	REV.

KERNEL PAGE ADDRESS REGISTERS (PAR) SLOT 14

TITLE	SYS. ADRS PATH (SAPA)	DCS	60000000	REV	A
SCALE	1/1	SHEET	2 OF 13	DIST.	

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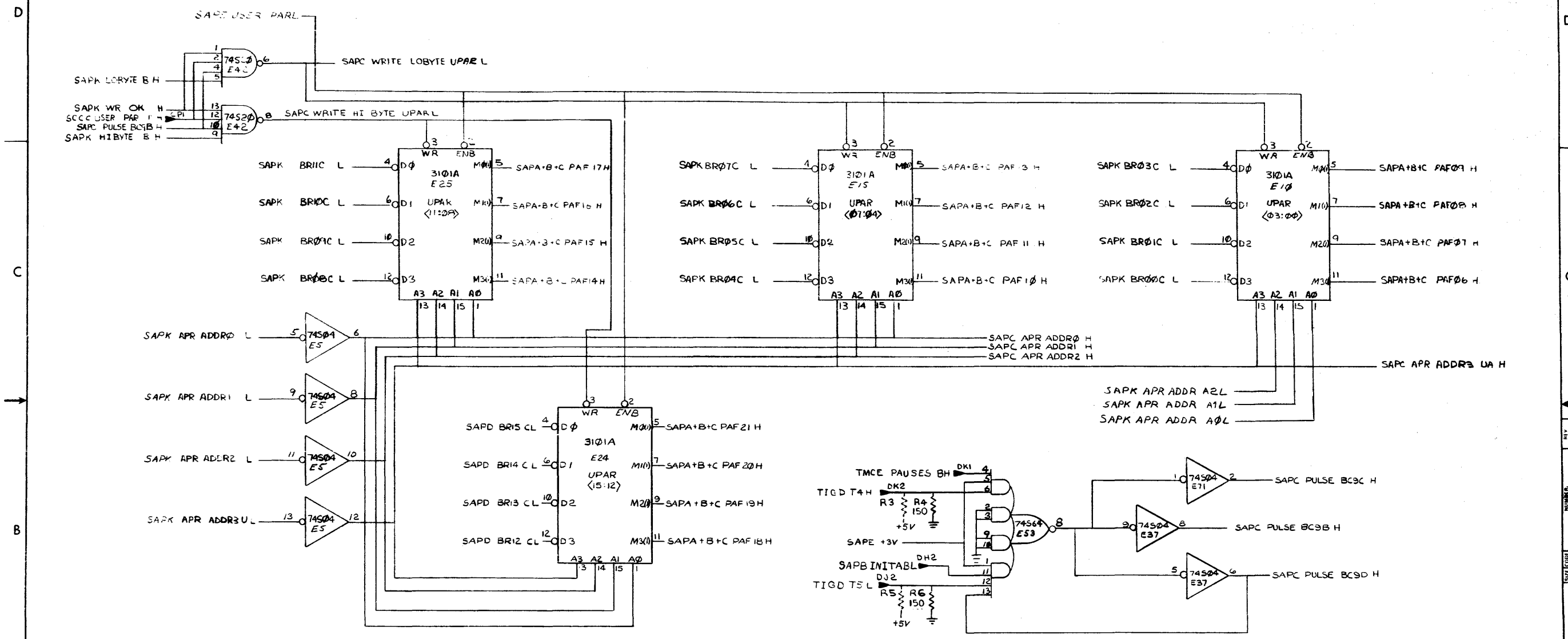
SUPERVISOR PAGE ADDRESS REGISTERS (PAR) SLOT 4				
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DATE 10-31-74	digital EQUIPMENT CORPORATION	
DECIMALS	ANGLES	DATE 11-22-74	TITLE	
XXX + 005	± 0' 30"	DATE 11-22-74	SYS. ADDR. PATH	
XX + 02		DATE 11-22-74	REV. ME 37-2-1	
X + 1		DATE 11-22-74		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY	SIZ. CODE	REV.	
FINISH	SCALE	DIST.		
SHEET 1 OF 1				

REV. A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

DRAWING 40132 (5840) REV. 10/31/74

1-07-518 W
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INSTALLMENT CONNECTIONS

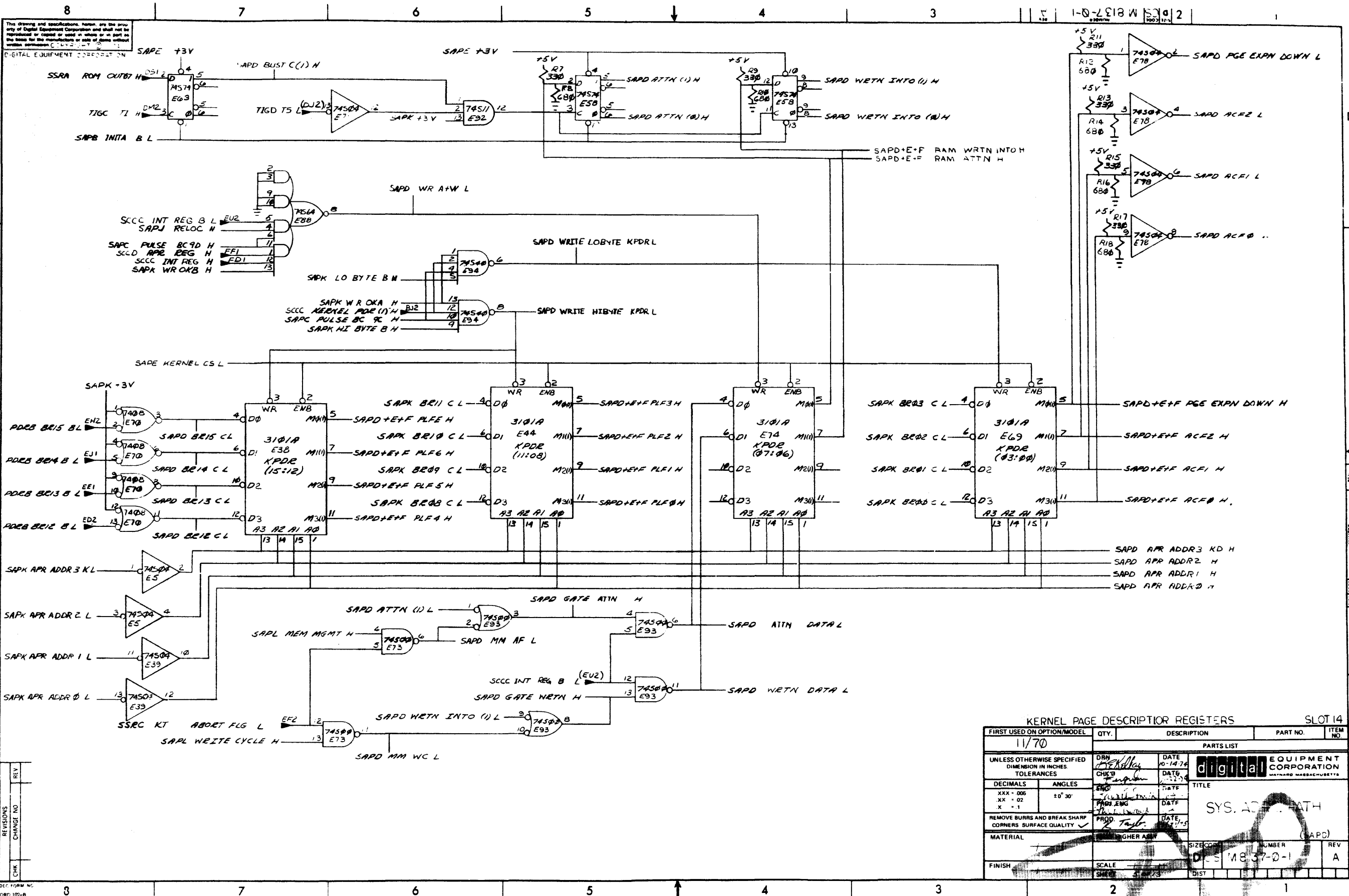


REV.	DATE

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRM	DATE	digital EQUIPMENT CORPORATION	
DECIMALS	ANGLES	DATE	DATE	TITLE	
XXX + 005	= 0° 30'	DATE	DATE	SYS. ADRS. PATH	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE	DATE	(SAPC)	
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.	
FINISH	SCALE	DCS M 8:37-0-1		A	
	SHEET 4 of 13	DIST.			

REV. A
 DCS M 8:37-0-1
 REV. B

P



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DIGITAL EQUIPMENT CORPORATION

REV	CHG	NO

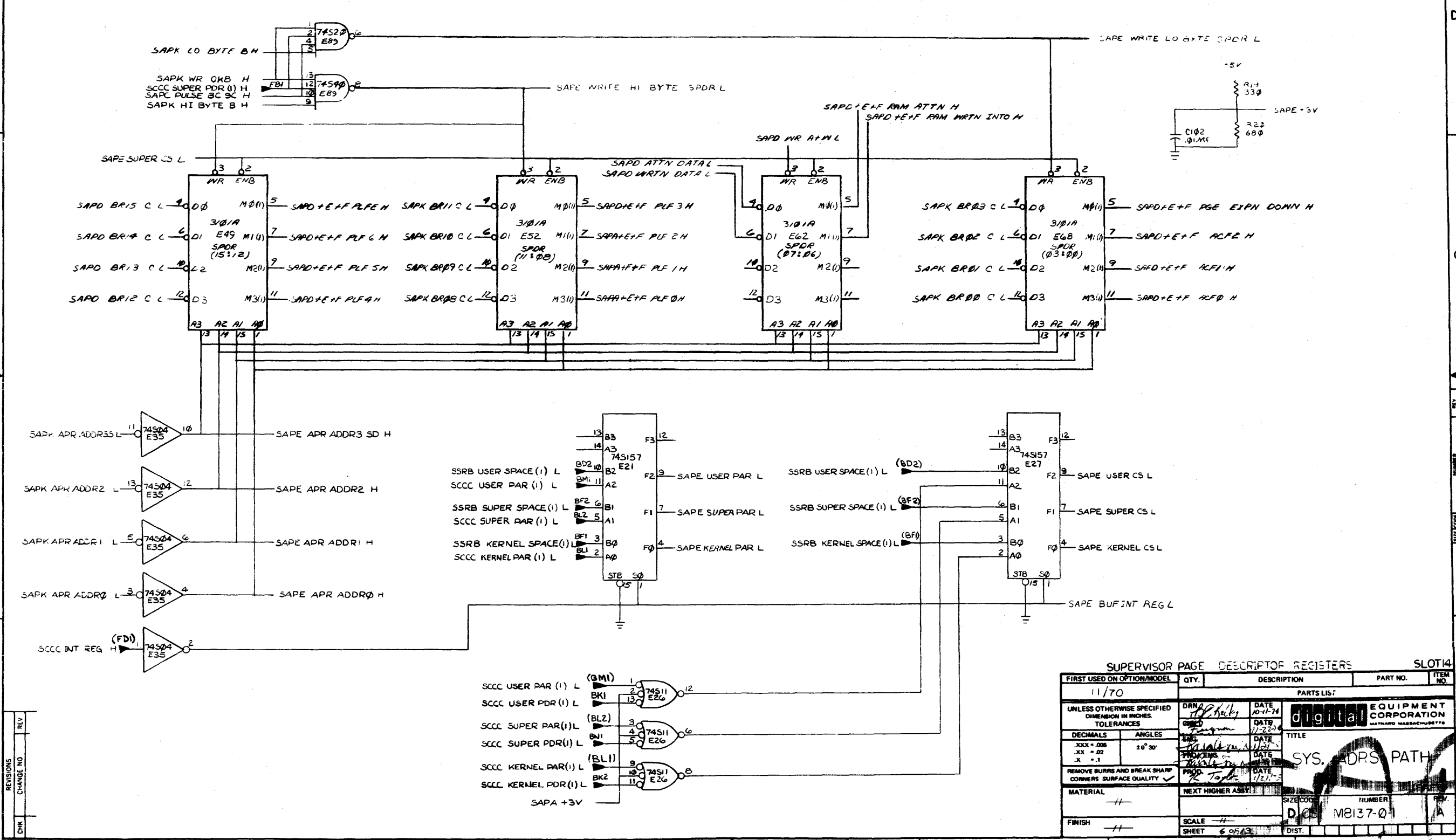
FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES					
DECIMALS	ANGLES				
XXX + .006	± 0° 30'				
.XX + .02					
X + .1					
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY					
MATERIAL					
FINISH					
SCALE					
SHEET					
TITLE			REV		
SYS. AD. PATH			A		
PARTS LIST			NUMBER		
			D E S M 8 3 7 - 0 - 1		
			DIST		

NUMBER M837-0-1
 SIZE GROUP D CS

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DIGITAL EQUIPMENT CORPORATION

V 1-0-2-18W 53 2

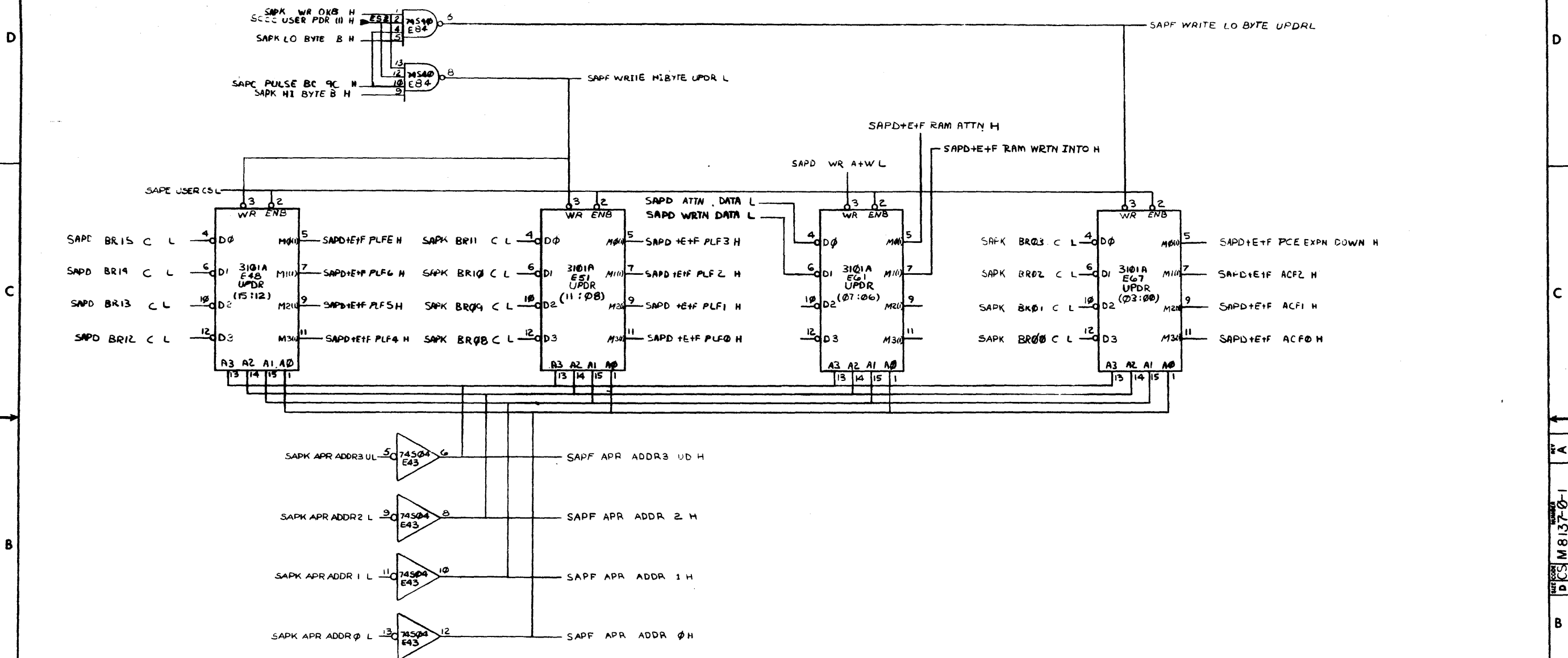


FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES		DRN <i>[Signature]</i> DATE 10-11-74			
TOLERANCES		DATE 11-27-74			
DECIMALS	ANGLES	TITLE			
XXX = .008	XX = .02	TITLE			
.X = .1	±0° 30'	DATE 11/21/74		MATERIAL --- FINISH ---	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE 11/21/74		NEXT HIGHER ASSY: SCALE --- SHEET 6 OF 13	
MATERIAL ---		DATE 11/21/74		SIZE CODE: --- NUMBER: --- DIST. ---	
FINISH ---		DATE 11/21/74		NUMBER: --- DIST. ---	

REVISIONS
 CHANGE NO.
 REV.

REV. A
 DCS MB137-0-1

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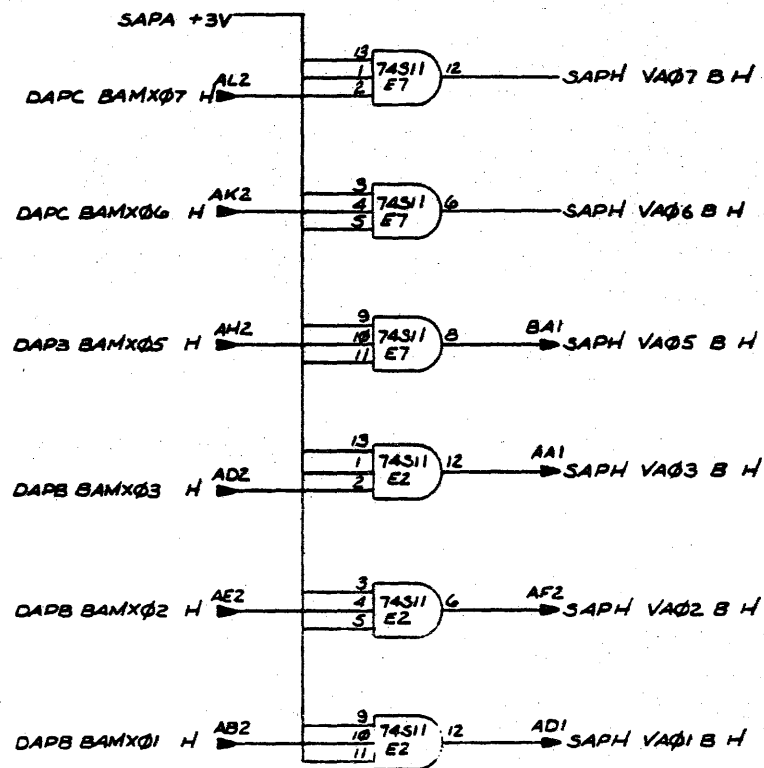
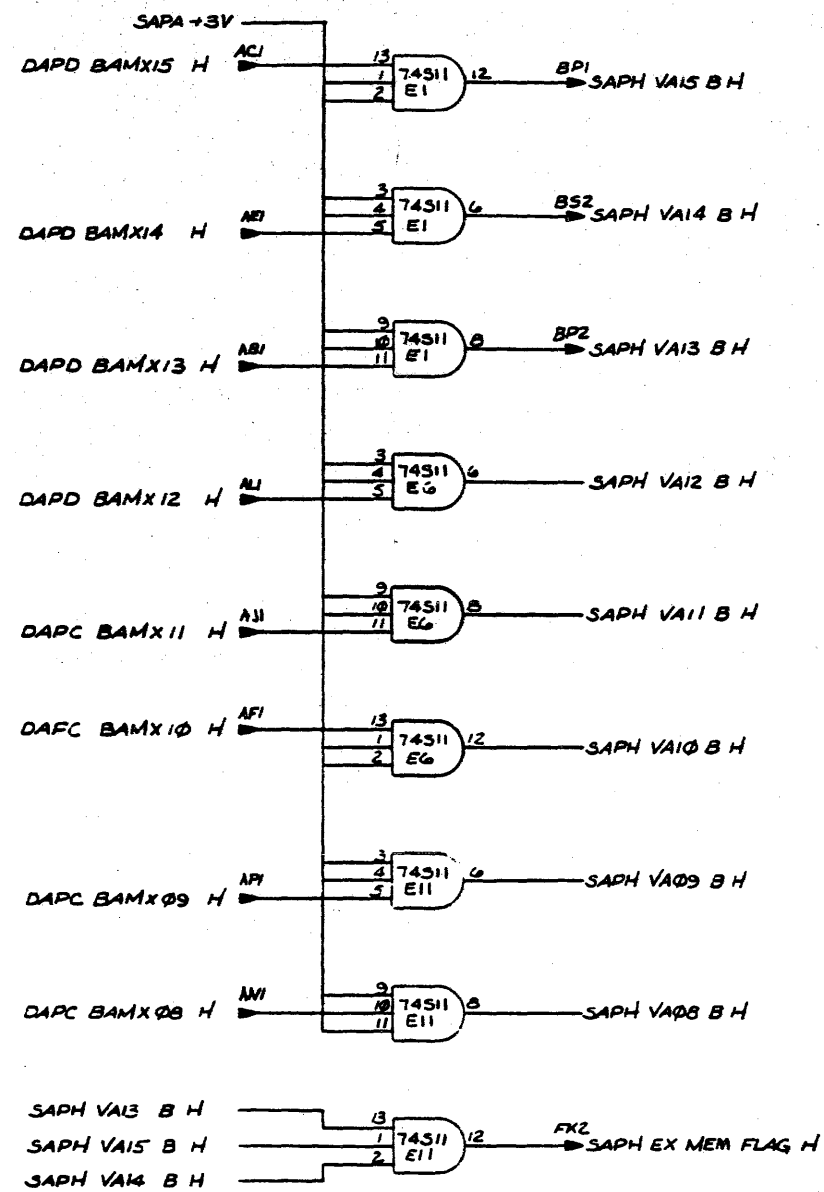
USER PAGE DESCRIPTOR REGISTERS SLOT 14

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DATE	EQUIPMENT CORPORATION	
DECIMALS	ANG.	DATE	TITLE	
.XXX = .006	.10 .30	DATE	SYS. ADPS. PATH	
.XX = .02		DATE	SAPF	
.X = .1		DATE	REV	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	✓	DATE	A	
MATERIAL	NEXT HIGH ASSEMBLY	DATE	SIZE CODE	NUMBER
			DCS M8137-0-1	A
FINISH	SCALE	DATE	DIST.	

REV	
CHG	
NO	

DCS M8137-0-1

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REVISIONS		
CHK	CHANGE NO	REV.

ADDRESS BUFFERS

TITLE SYS ADRS PATHSAPH

DCS M8137-0-1

SCALE 1/1

REV. 1

SIZE CODE

NUMBER

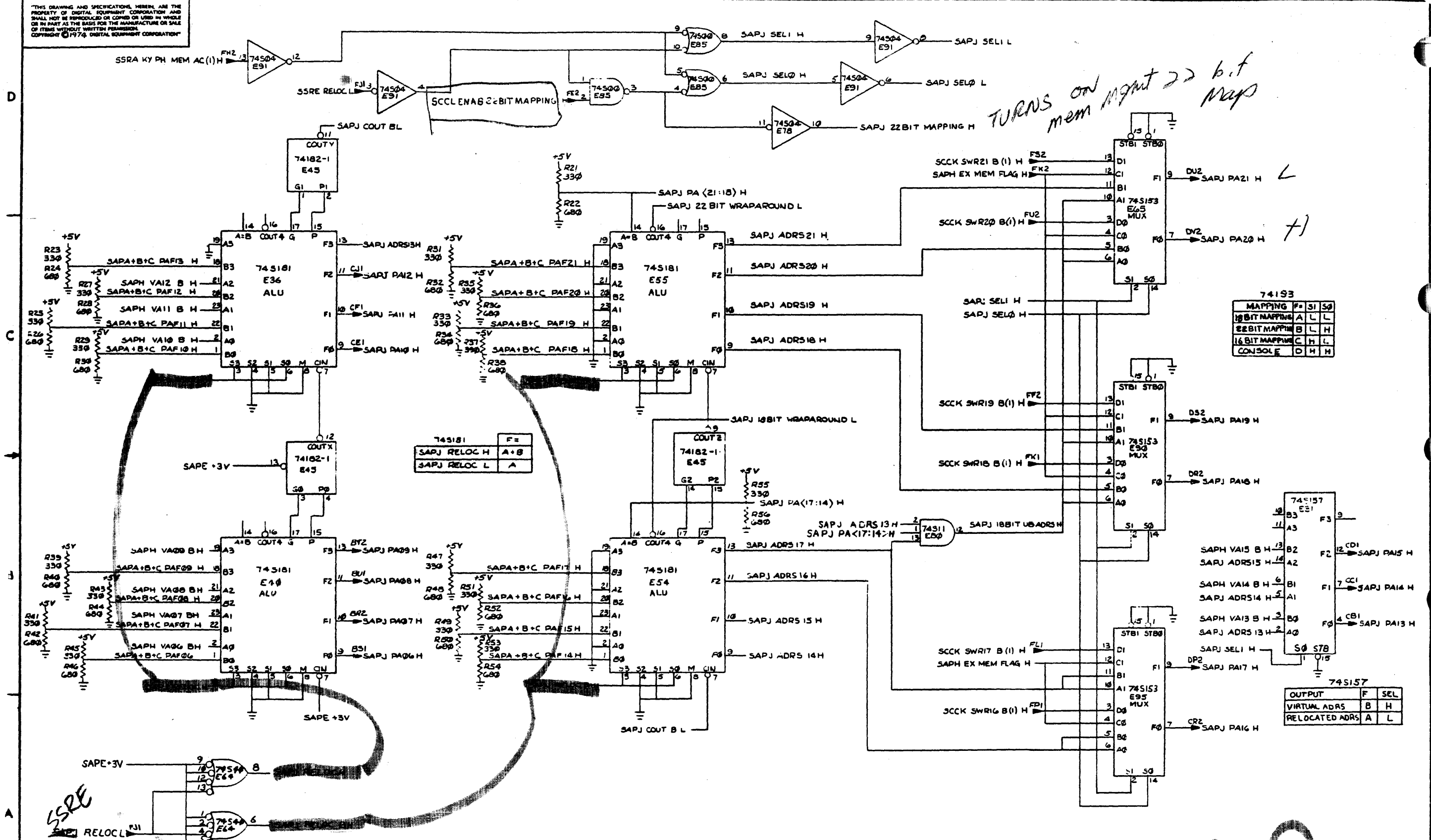
REV.

DCS M8137-0-1

SLOT 14

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TURNS ON mem input 22 bit map



74S153

MAPPING	F	S1	S0
18 BIT MAPPING	A	L	L
16 BIT MAPPING	B	L	H
14 BIT MAPPING	C	H	L
CONSOLE	D	H	H

74S181

F=
SAPJ RELOC H A+B
SAPJ RELOC L A

74S157

OUTPUT	F	SEL
VIRTUAL ADRS	B	H
RELOCATED ADRS	A	L

REVISIONS

CHR	CHANGE NO.	REV

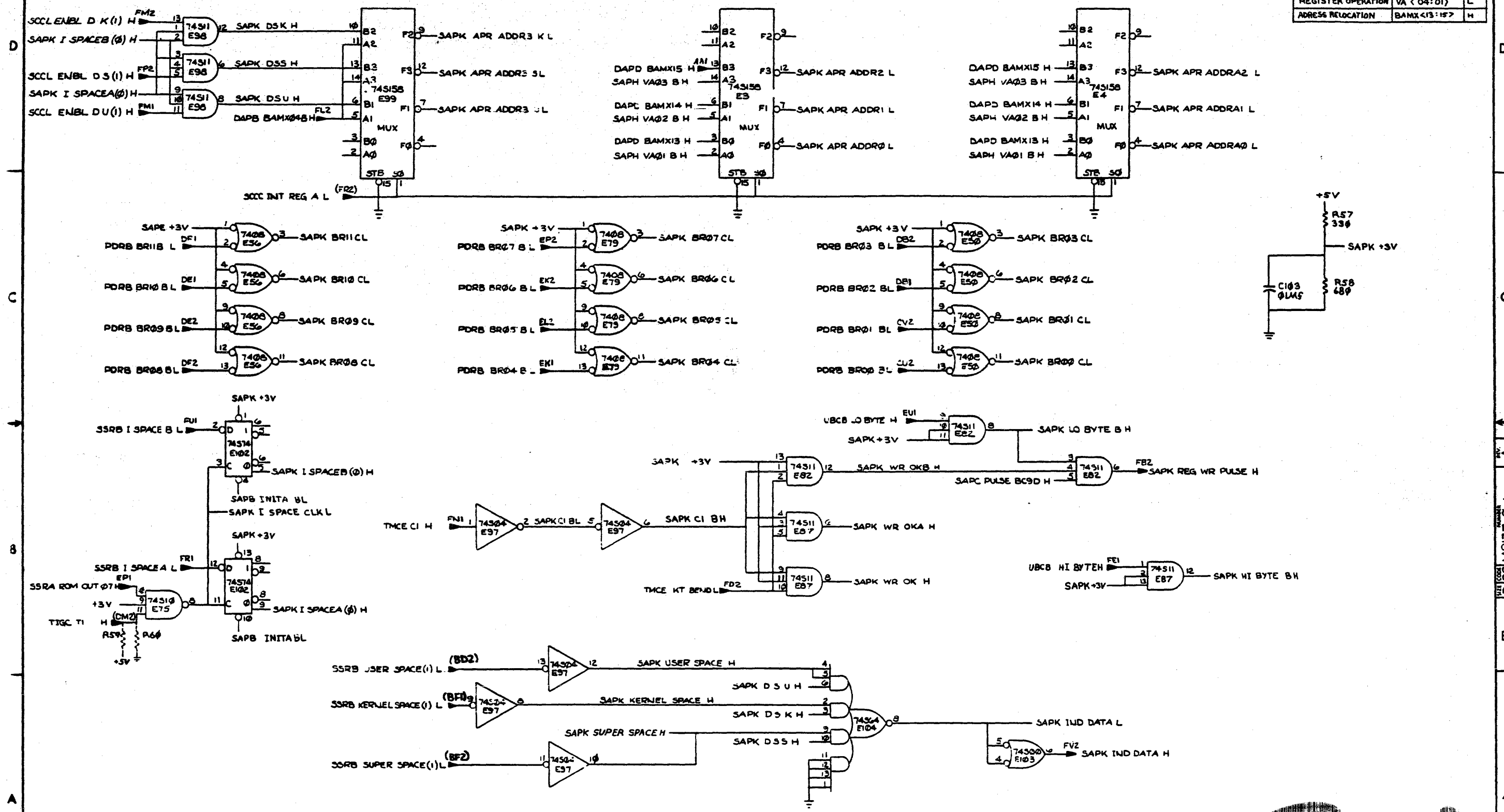
RELOCATION LOG

TITLE	NUMBER	REV.
SYS ADRS PTH(SAPJ)	DCS M8137-0-1	A

SLOT 14

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74S158		
FUNCTION	APR ADDR SELECT	SEL
MEM MGMT REGISTER OPERATION	VA < 04:01	L
ADDRESS RELOCATION	BAMX < 13:15	H

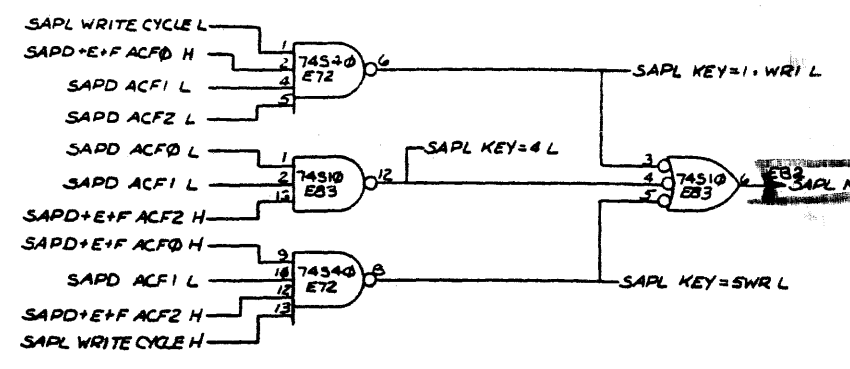


REVISIONS		
CHK	CHANGE NO.	REV

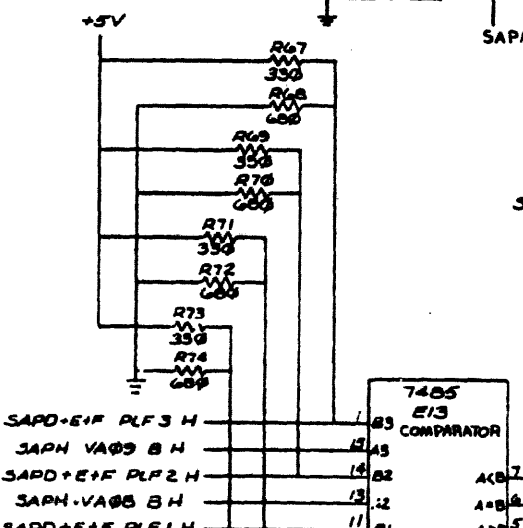
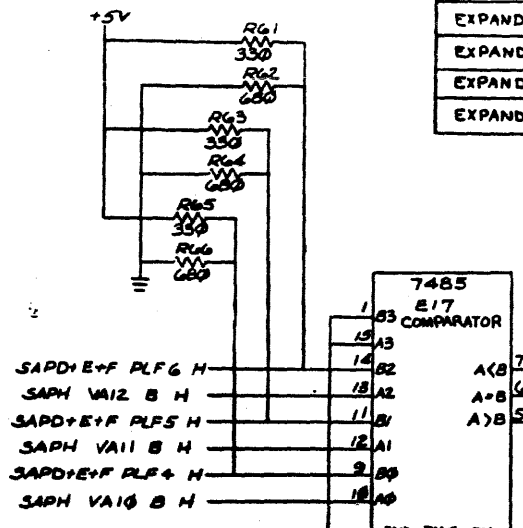
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7485 LENGTH FAULT

	MEM MGMT LENGTH FAULT	FUNCTION
EXPAND DOWN	L	A ≥ B
EXPAND DOWN	H	A < B
EXPAND UP	L	A ≤ B
EXPAND UP	H	A > B

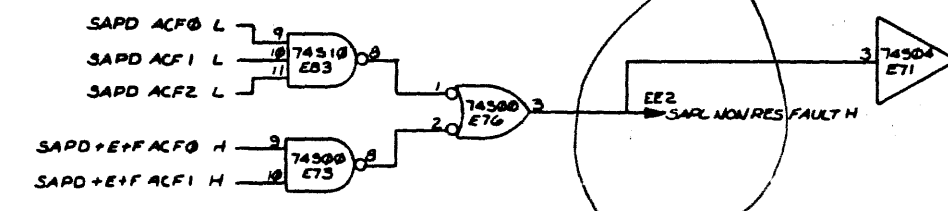
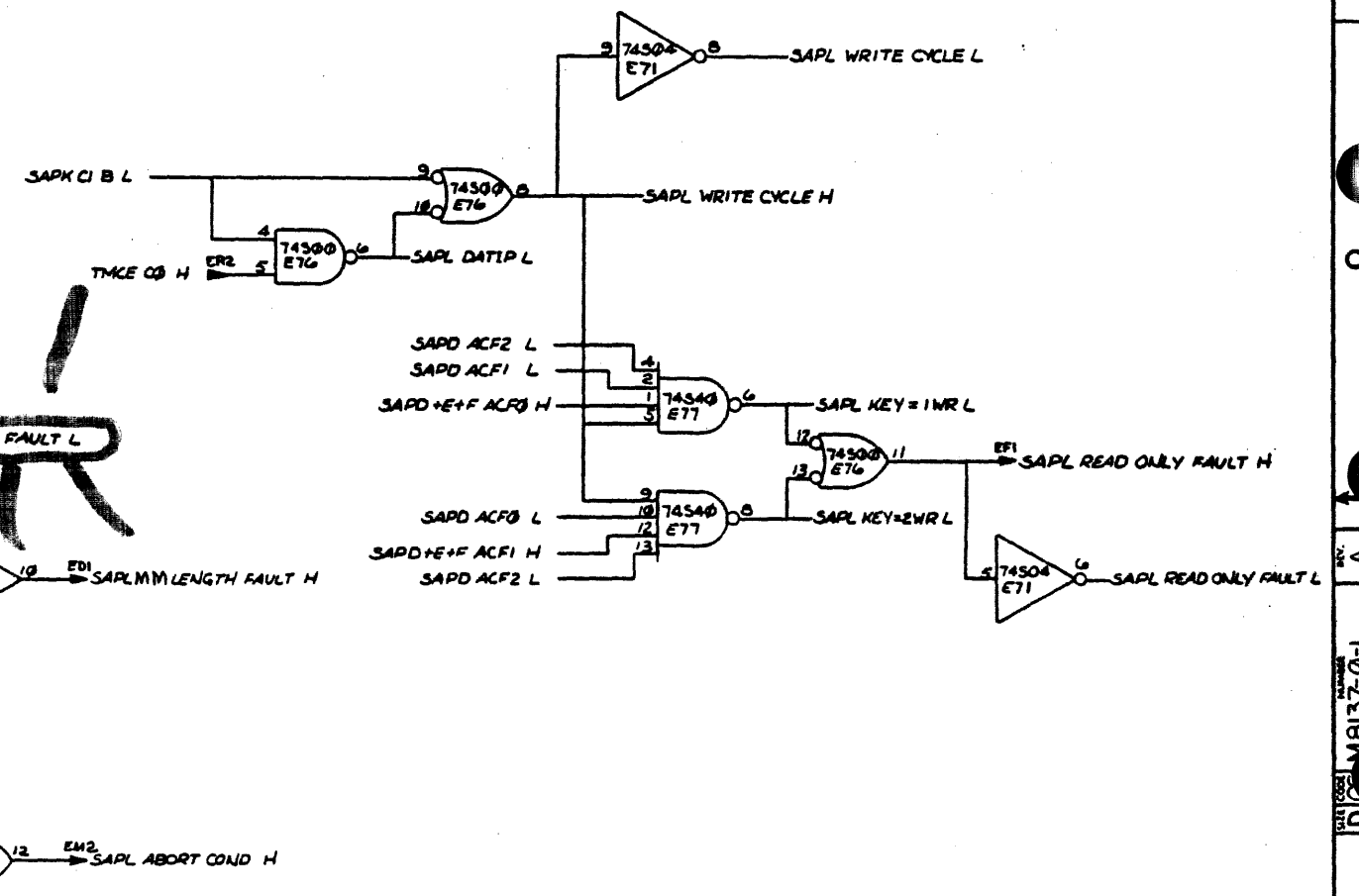


MEM MGMT TRAP



FAILS PIN EE2 EKBE TEST (51)

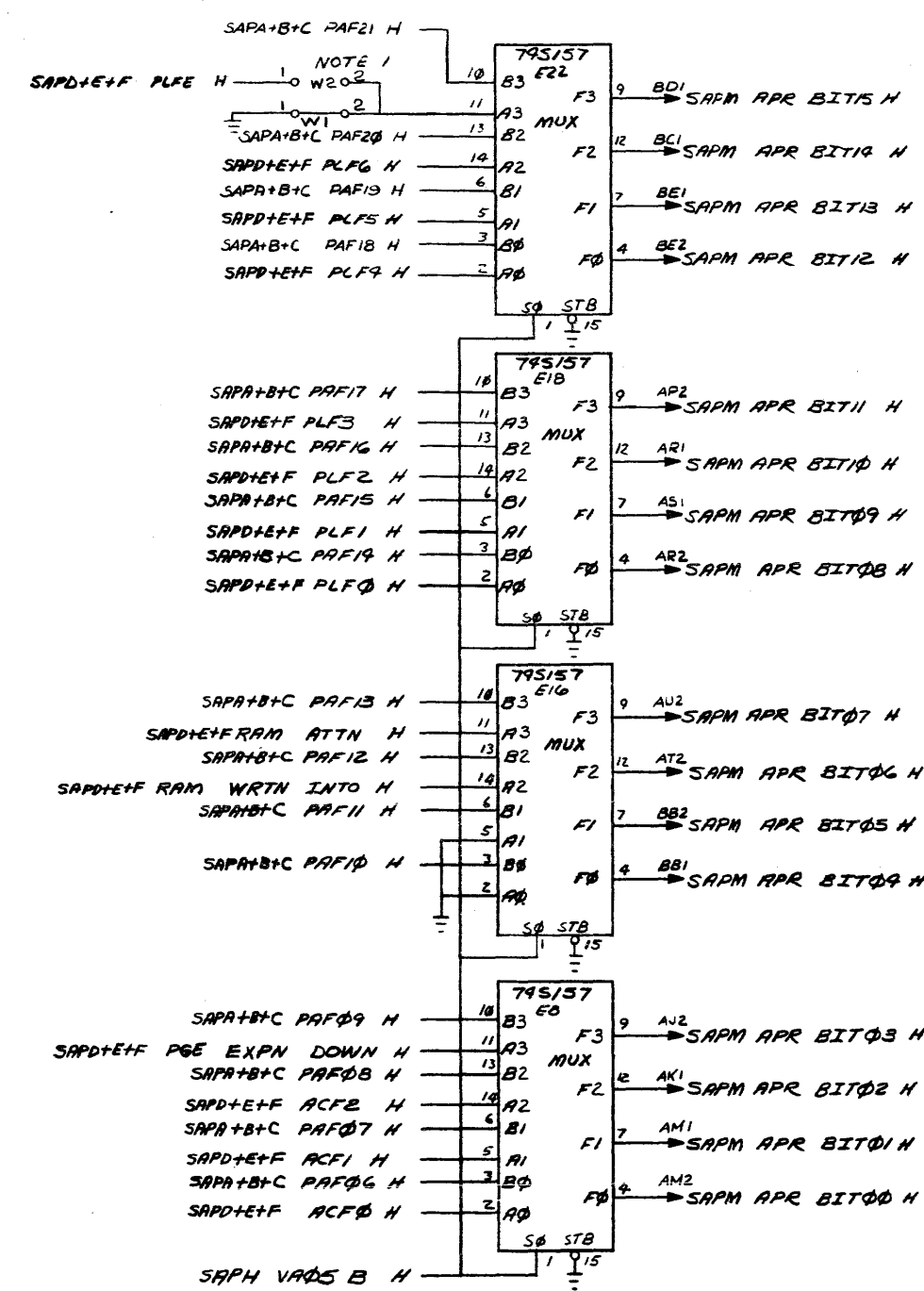
SAPL LENGTH FAULT L



REVISIONS

CHK	CHANGE NO.	REV.

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74S157

OUTPUT	INPUT LINES SELECTED				SEL
PDR'S	A3	A2	A1	A0	0
PAR'S	B3	B2	B1	B0	1

NOTES:
 1. PROVISIONS FOR WIRE JUMPER. JUMPER IS NORMALLY INSERTED TO CONNECT "A3" TO GROUND.

PAR/PDR READ MULTIPLEXERS SLOT 14

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DATE	DATE
DECIMALS	ANGLES	10-11-70	11-22-70
.XXX - .008	±0° 30'	1/24/75	1/24/75
.XX - .02		1/24/75	1/21/75
.X - .1			

TITLE: SYS. ADRS. PATH

MATERIAL: + +

FINISH: + +

SCALE: 1/2" = 1"

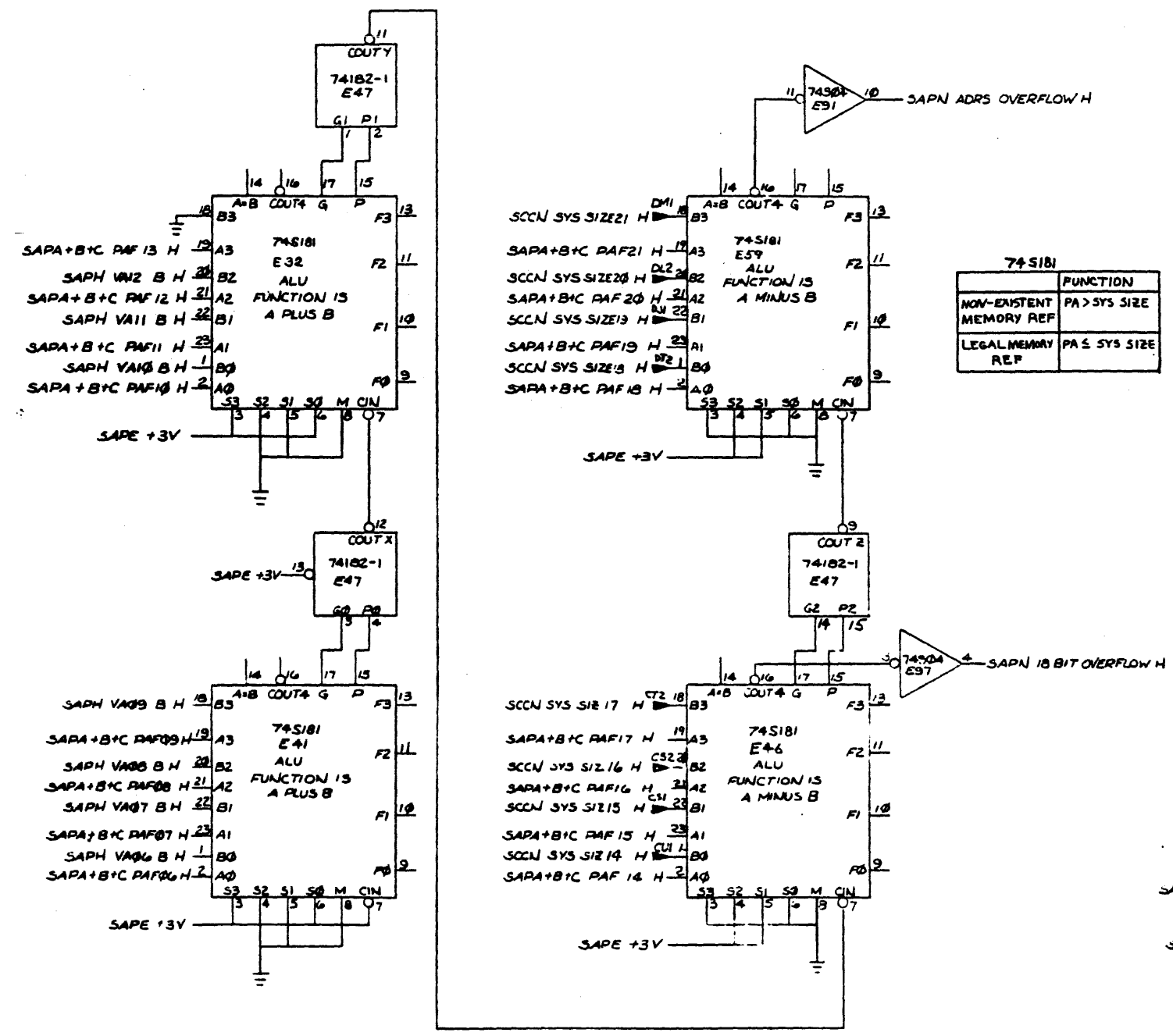
SHEET: 12 of 13

REVISIONS: A

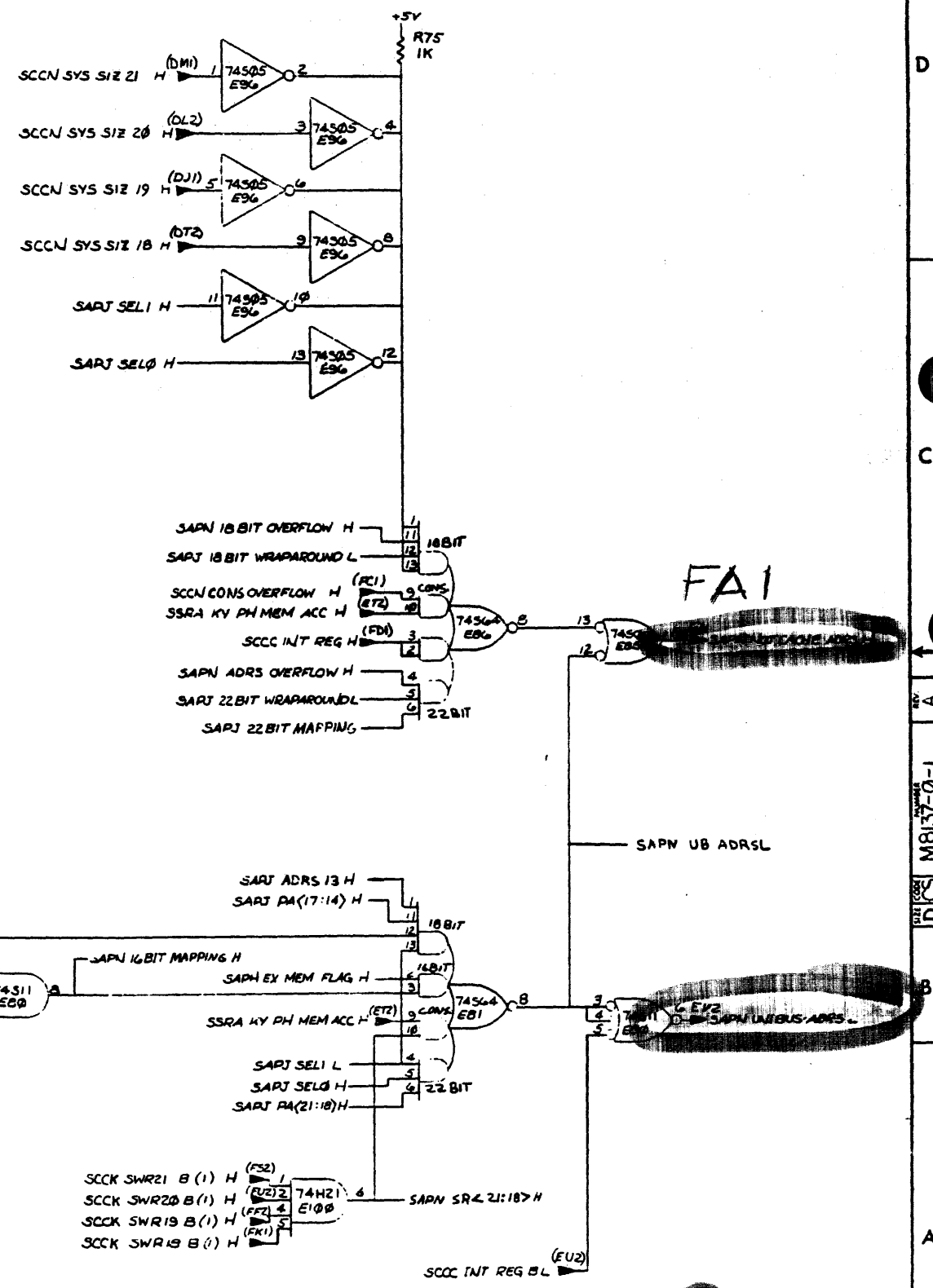
CS M8137-01

REVISIONS
 CHANGE NO.
 CHK

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74S181	
NON-EXISTENT MEMORY REF	PA > SYS SIZE
LEGAL MEMORY REF	PA ≤ SYS SIZE

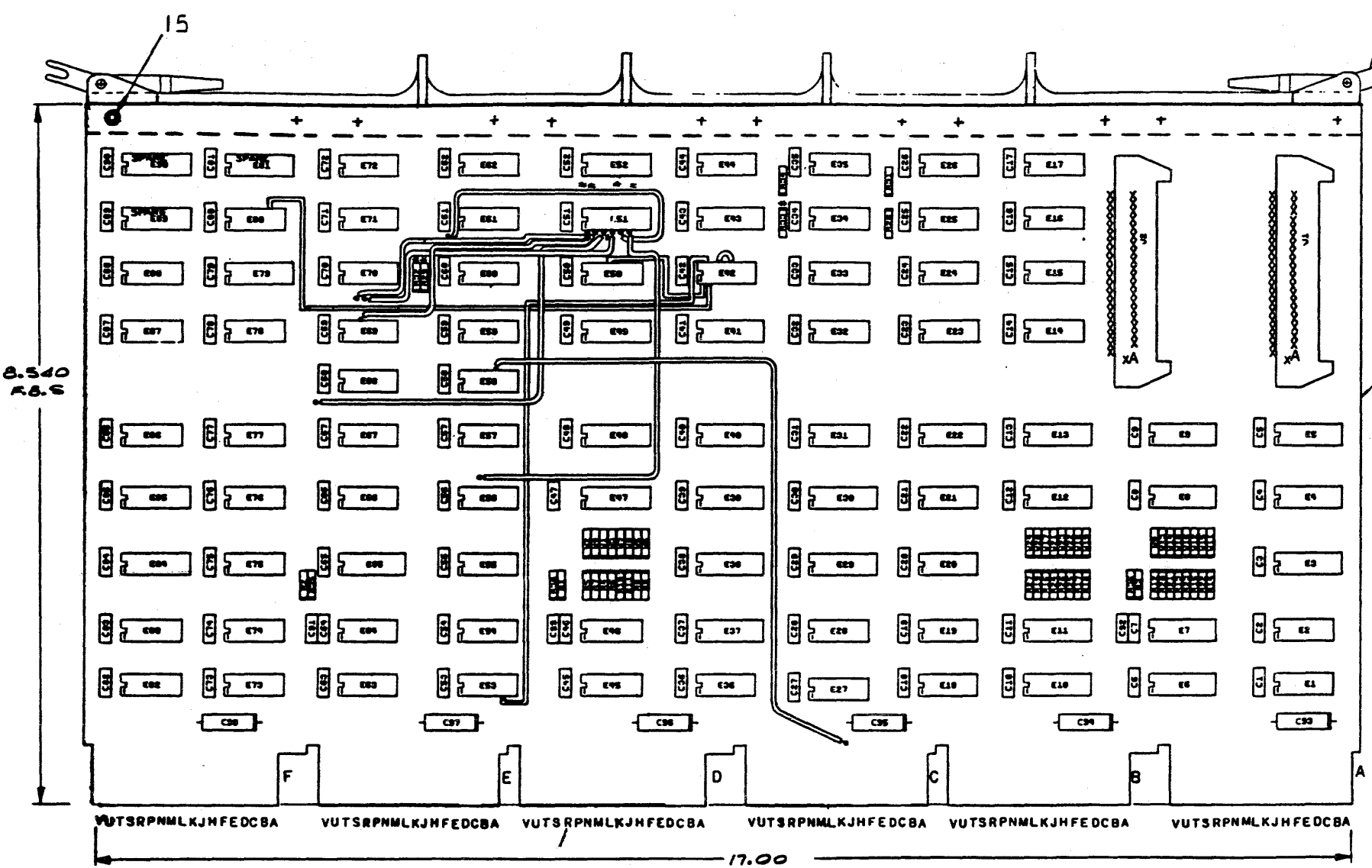


REVISIONS		
CHK	CHANGE NO	REV

VARIABLES CHECK		SLOT 14	
TITLE	SIZE CODE	NUMBER	REV.
SYS ADRS PATH (SAPN)	MSB	MSB137-0-1	1
SCALE	SHEET	OF	TOTAL

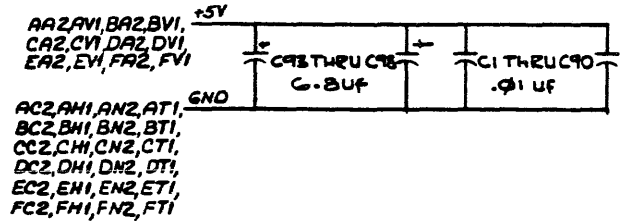
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NOTES:
 1. * OPTIONAL COMPONENTS.
 2. E81, E89, E90 ARE SPARE IC LOCATIONS.



REF	X-Y COORDINATE HOLE LOCATION	K-CO-M8140-0-4	1
REF	ASSY/DRILLING HOLE LAYOUT	D-AH-M8140-0-5	2
REF	MODULE ECO HISTORY	B-MH-M8140-0-6	3
1	ETCHED CIRCUIT BOARD	5011355	4
6	C93 THRU C98	CAPACITOR 0.01uf 35V 20% TANT	5
93	C1 THRU C92, C99	CAPACITOR .01uf 100V DISC 20%	6
2	J1, J2	CONN. RIGHT ANGLE HEADER, BERG	7
1	R34	RESISTOR 150, 1/4W, 5%	8
3	R1, R2, R3	RESISTOR 530, 1/4W, 5%	9
1	R28	RESISTOR 390, 1/4W, 5%	10
25	R4 THRU R27, R31	RESISTOR 1K, 1/4W, 5%	11
3	R30, R35, R36	RESISTOR 680 1/4W 5%	12
1	HANDLE ASSY HEX	1210711-02	13
3	WI THRU W24	SW, PKR DIP PKG W/8 SW	14
12	EYELET HANDLE	9006732	15
1	E24	IC DEC 7474	16
3	E1, E2, E14	IC 7404	17
5	E83, E73, E74, E82, E83	IC DEC 8801	18
1	E23	IC DEC 8815	19
7	E18, E19, E27, E28, E36, E45, E48	IC DEC 74H01	20
2	E6, E7	IC 7483	21
7	E3, E4, E5, E39, E40, E47, E48	IC 74153	22
3	E15, E16, E17	IC 7408	23
2	E68, E77	IC 74500	24
12	E28, E58, E59, E81, E86, E87, E75, E76, E78, E88, E89, E87	IC 74504	25
1	E82	IC 74510	26
9	E84, E25, E26, E31, E33, E42, E44, E54, E59	IC 74511	27
5	E21, E70, E71, E72, E88	IC 74520	28
1	E57	IC 74540	29
3	E32, E34, E35	IC 74564	30
3	E8, E9, E12	IC 74516B	31
2	E13, E29	IC 745174	32
1	E79	IC 74155	33
2	E37, E38	IC 8234	34
10	E22, E30, E41, E43, E51, E52, E65, E84, E85, E49	IC 745133	35
2	E10, E11	IC 74157	36
5	E53, E55, E56, E88, E89	IC 74574	37
40	WIPE #30 AWG BUSS (RETROFIT)	9105740-55	38
3	SWITCH COVER	1211284-4	39

IC, DEC 74157	8	16
IC, DEC 745133	8	16
IC, DEC 8234	8	16
IC, DEC 74155	8	16
IC, DEC 745174	8	16
IC, DEC 74515B	8	16
IC, DEC 74553	8	16
IC, DEC 7483	12	5
IC TYPE	GND	+5V



CHK	CHANGE NO	REV
1	00001	A

DEC NO	EIA NO	DEC NO	EIA NO

FIRST USED ON OPTION MODEL: 11/70

ETCH BOARD REV: A

REVISIONS: (List of changes)

SEMICONDUCTOR CONVERSION CHART

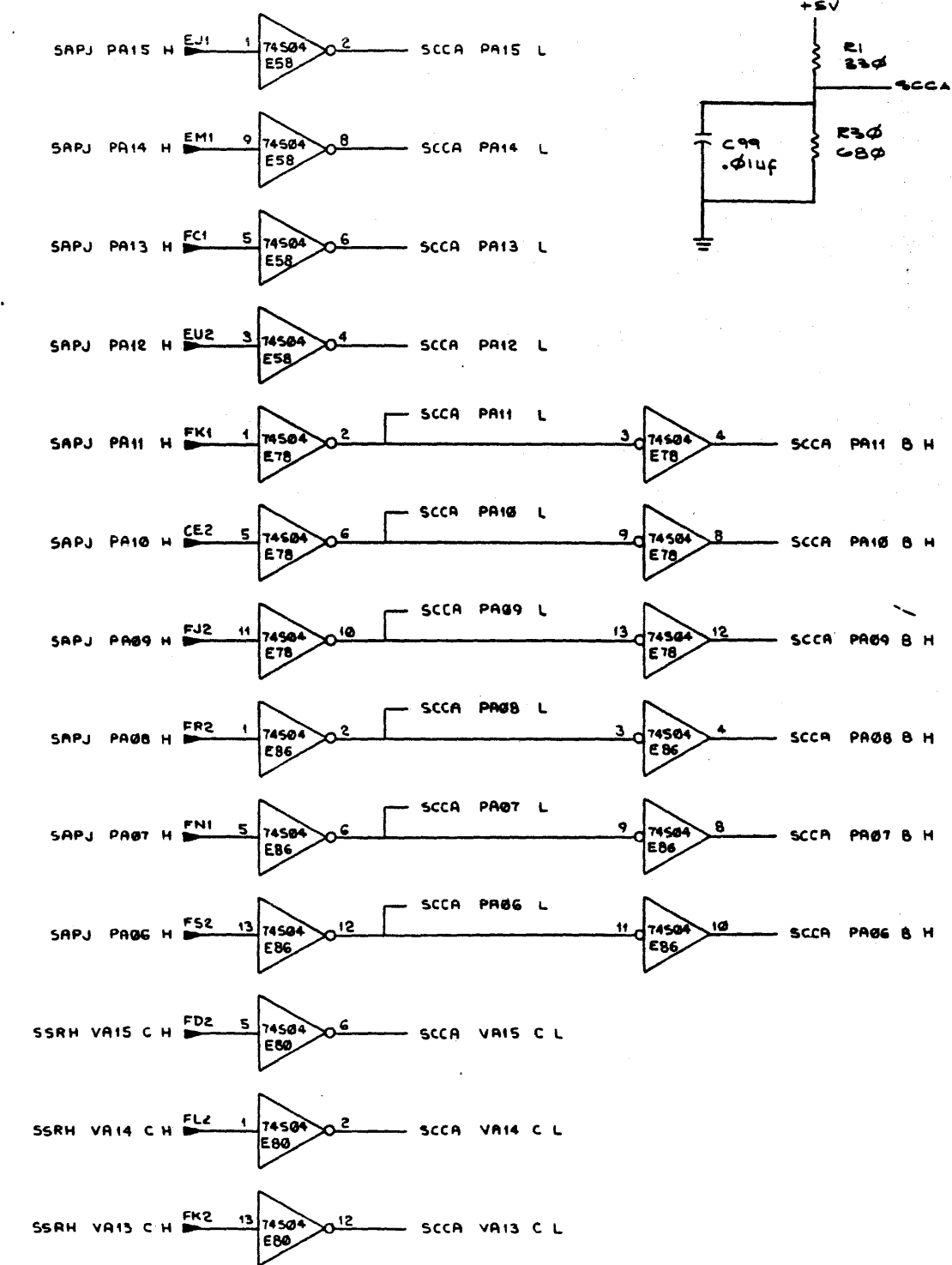
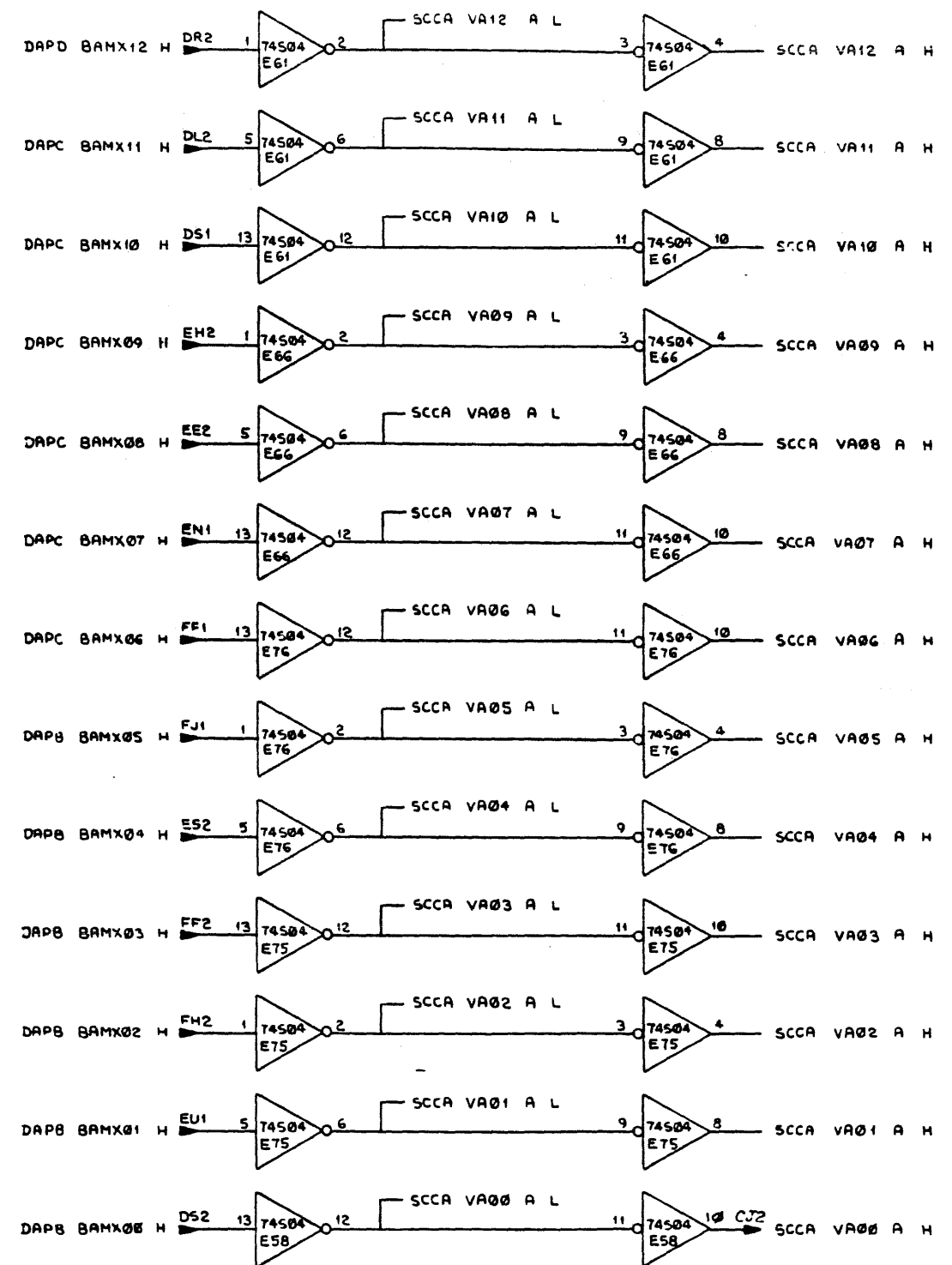
digital EQUIPMENT CORPORATION
 WATSON, MASSACHUSETTS

TITLE: SYS DESC/ CNSL CABLES

SIZE CODE: DCS
 NUMBER: M8140-0-1
 REV: B

SHEET 1 OF 13

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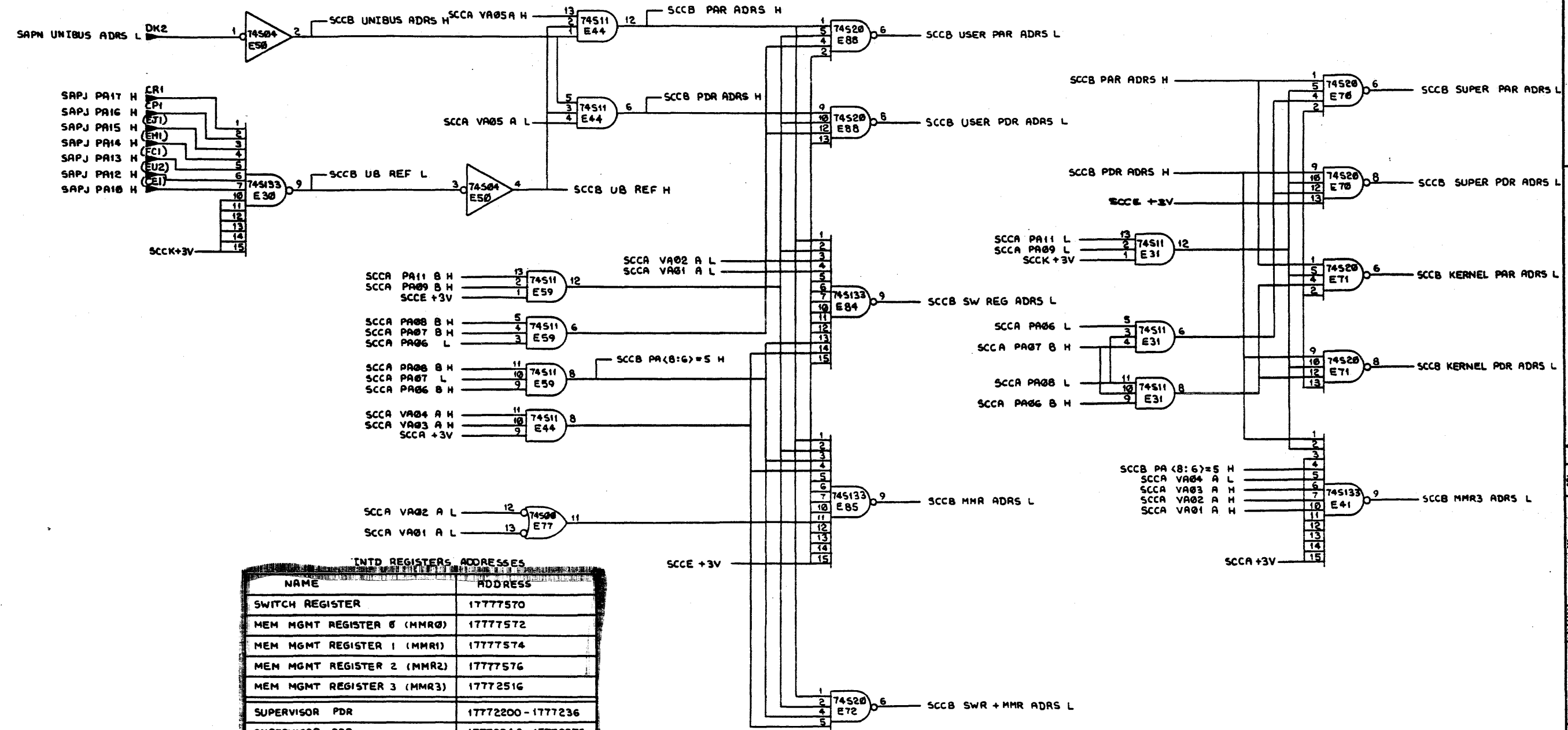
REVISIONS		
CHK	CHANGE NO.	REV

ADDRESS BUFFERS SLOT 16

TITLE	SIZE CODE	NUMBER	REV.
SYS DESC/CNSL CABLES (SCCA)	D CS	M8140-0-1	B
SCALE	SHEET 2 OF 13	DIST.	

D E C S M8140-0-1

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INTD REGISTERS ADDRESSES

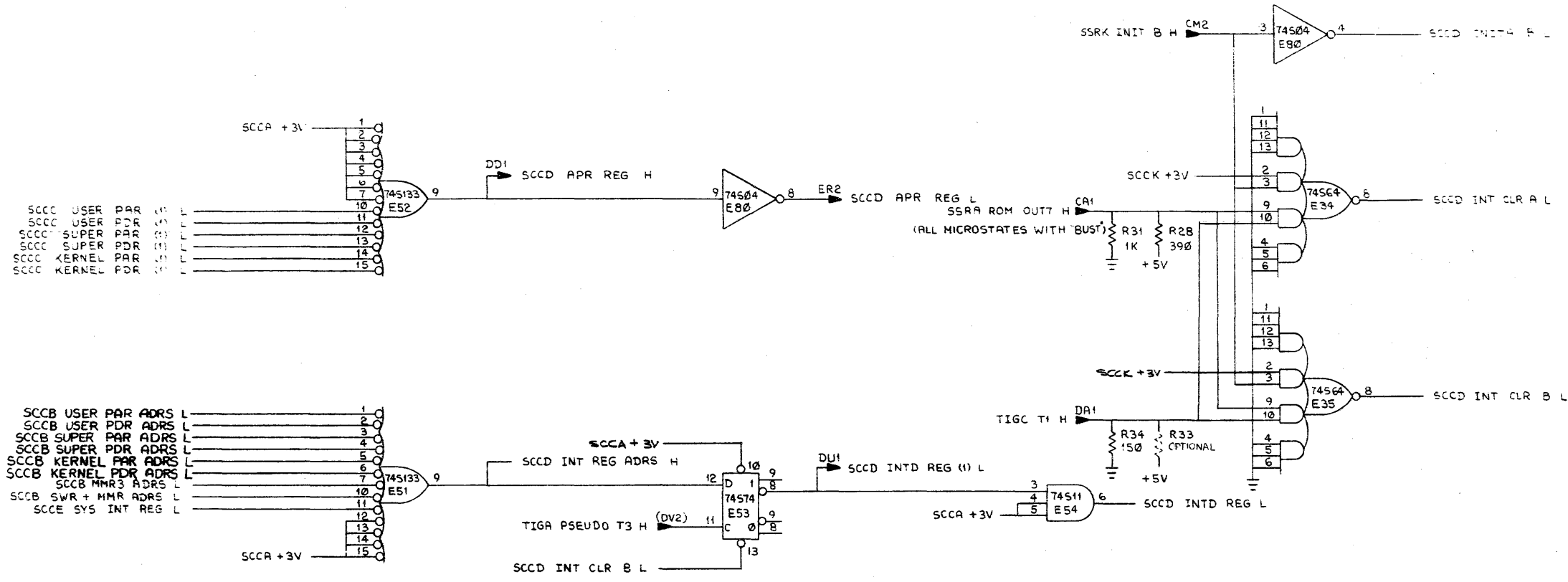
NAME	ADDRESS
SWITCH REGISTER	17777570
MEM MGMT REGISTER 0 (MMR0)	17777572
MEM MGMT REGISTER 1 (MMR1)	17777574
MEM MGMT REGISTER 2 (MMR2)	17777576
MEM MGMT REGISTER 3 (MMR3)	17772516
SUPERVISOR PDR	17772200 - 17772236
SUPERVISOR PAR	17772240 - 17772276
KERNEL PDR	17772300 - 17772336
KERNEL PAR	17772340 - 17772376
USER PDR	17777600 - 17777636
USER PAR	17777640 - 17777676

REVISIONS		
CHK	CHANGE NO.	REV.

REG ADDRESS DECODER SLOT 16

TITLE	SIZE/SCALE	CODE	NUMBER	REV.
SYS DESC/CNSL CABLES (SCCB)	D CS	M8140-0-1	B	
SCALE	SHEET	OF	DIST.	
	3	13		

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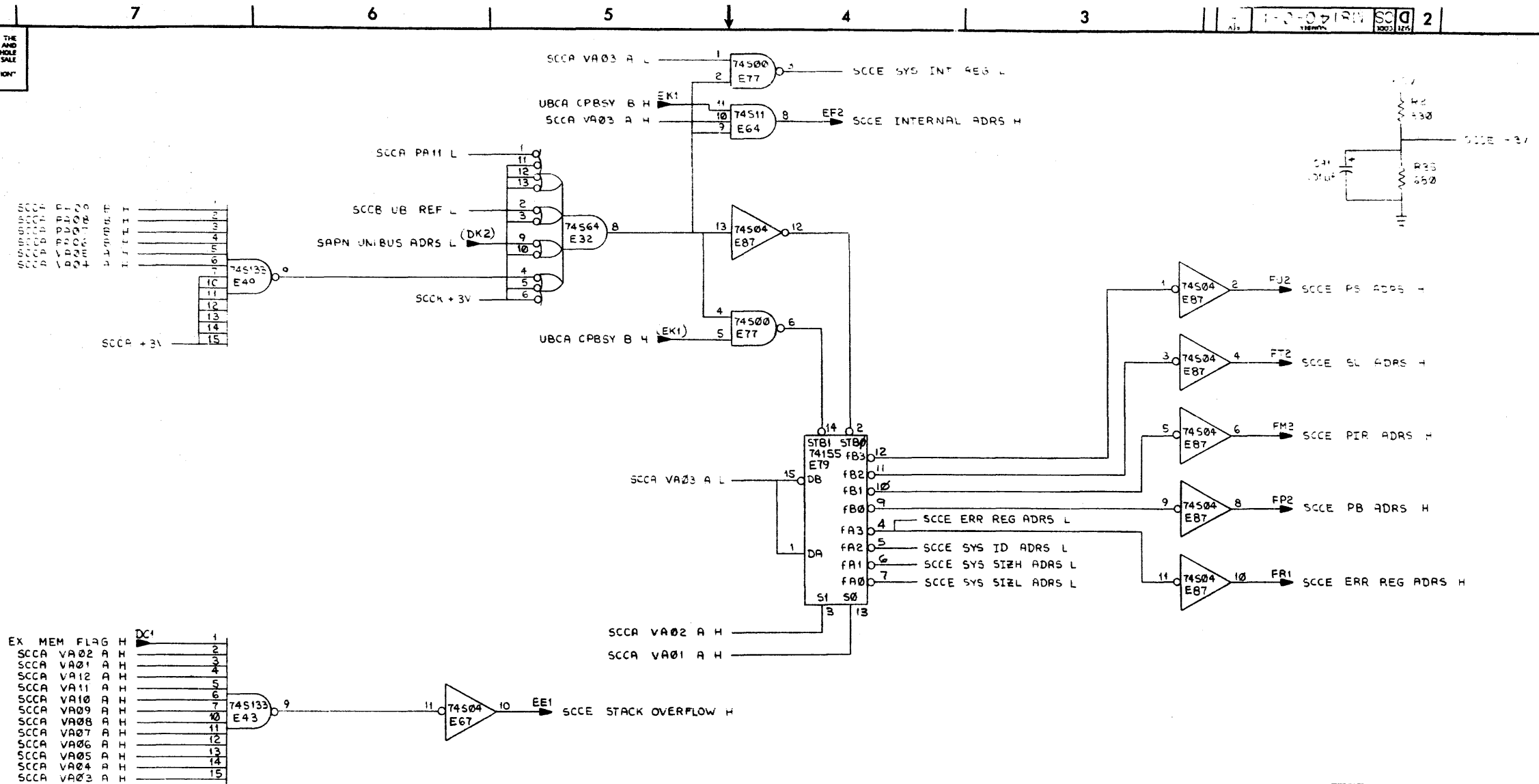
REVISIONS		
CHK	CHANGE NO	REV.

REG ADDRESS DECODE SLOT 16

TITLE	SIZE CODE	NUMBER	REV.
SYS DESC, CNSL CABLES (SCCD)	D CS	M8140-0-1	
SCALE	SHEET 5 OF 13	DIST.	

REV. H
NUMBER
D CS M8140-0-1

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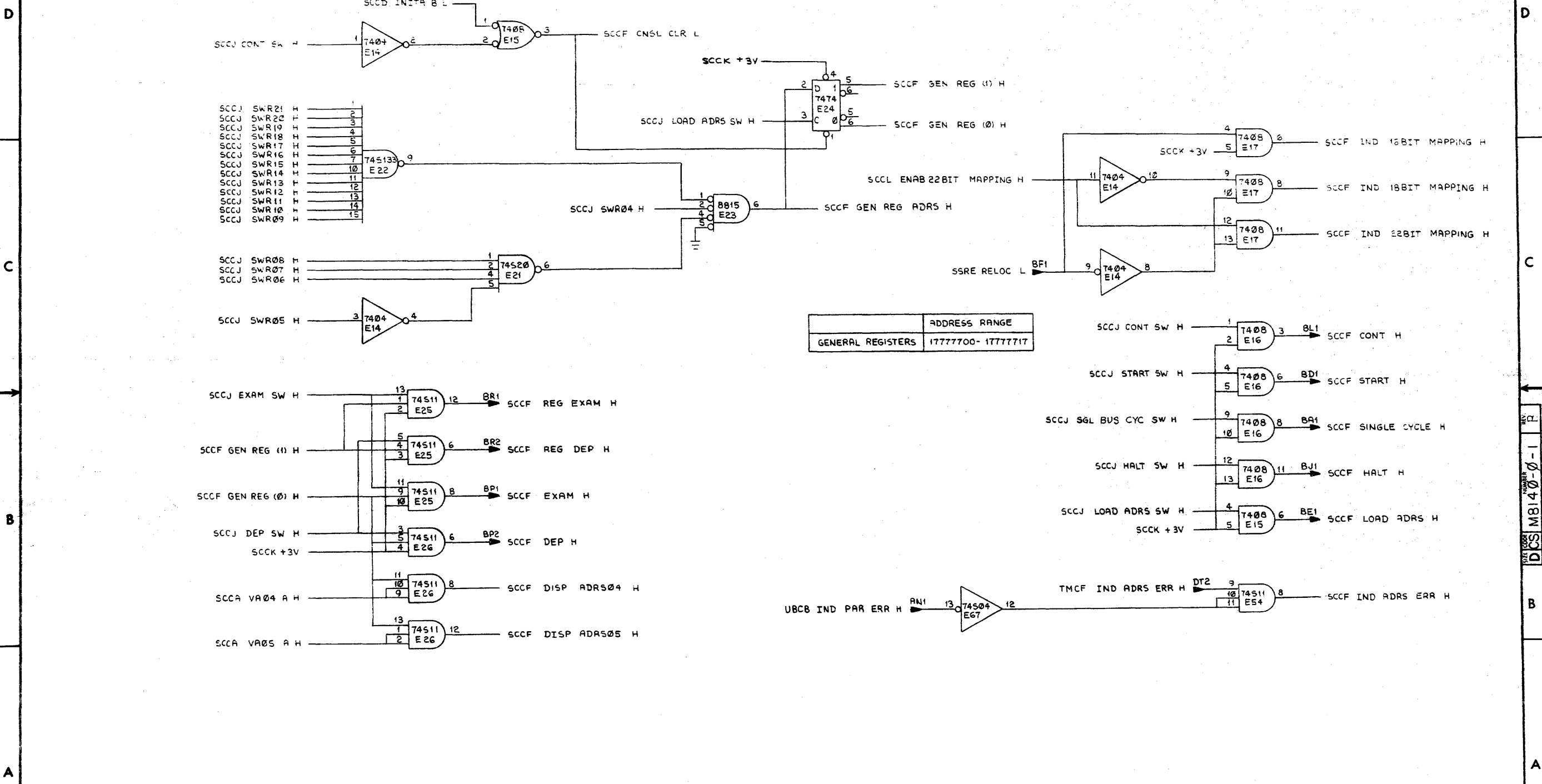
SYSTEM REG (STB0)	UNIBUS REG (STB1)	SCCA VA03 A	SCCA VA02 A (S1)	SCCA VA01 A (S0)	TRUE OUTPUT SIGNAL (F OUTPUTS)	REGISTER ADDRESS
H	H	X	X	X	NONE	NONE
L	L	H	L	L	SCCE PB ADRS	17777770
L	L	H	L	H	SCCE PIR ADRS	17777772
L	L	H	H	L	SCCE SL ADRS	17777774
L	L	H	H	H	SCCE PS ADRS	17777776
L	H	L	L	L	SCCE SYS SIZL ADRS	17777760
L	H	L	L	H	SCCE SYS SIZH ADRS	17777762
L	H	L	H	L	SCCE SYS ID ADRS	17777764
L	H	L	H	H	SCCE ERR REG ADRS	17777766

REVISIONS		
CHK	CHANGE NO.	REV.

SYSTEM REG ADDRESS DECODE SLOT 16
 TITLE: SYS DESC/CNSL CABLES(SCCE)
 SIZE CODE: DCS
 NUMBER: M8140-0-1
 REV: 0
 SCALE: SHEET 6 OF 13 DIST.

DCS M8140-0-1 REV 0

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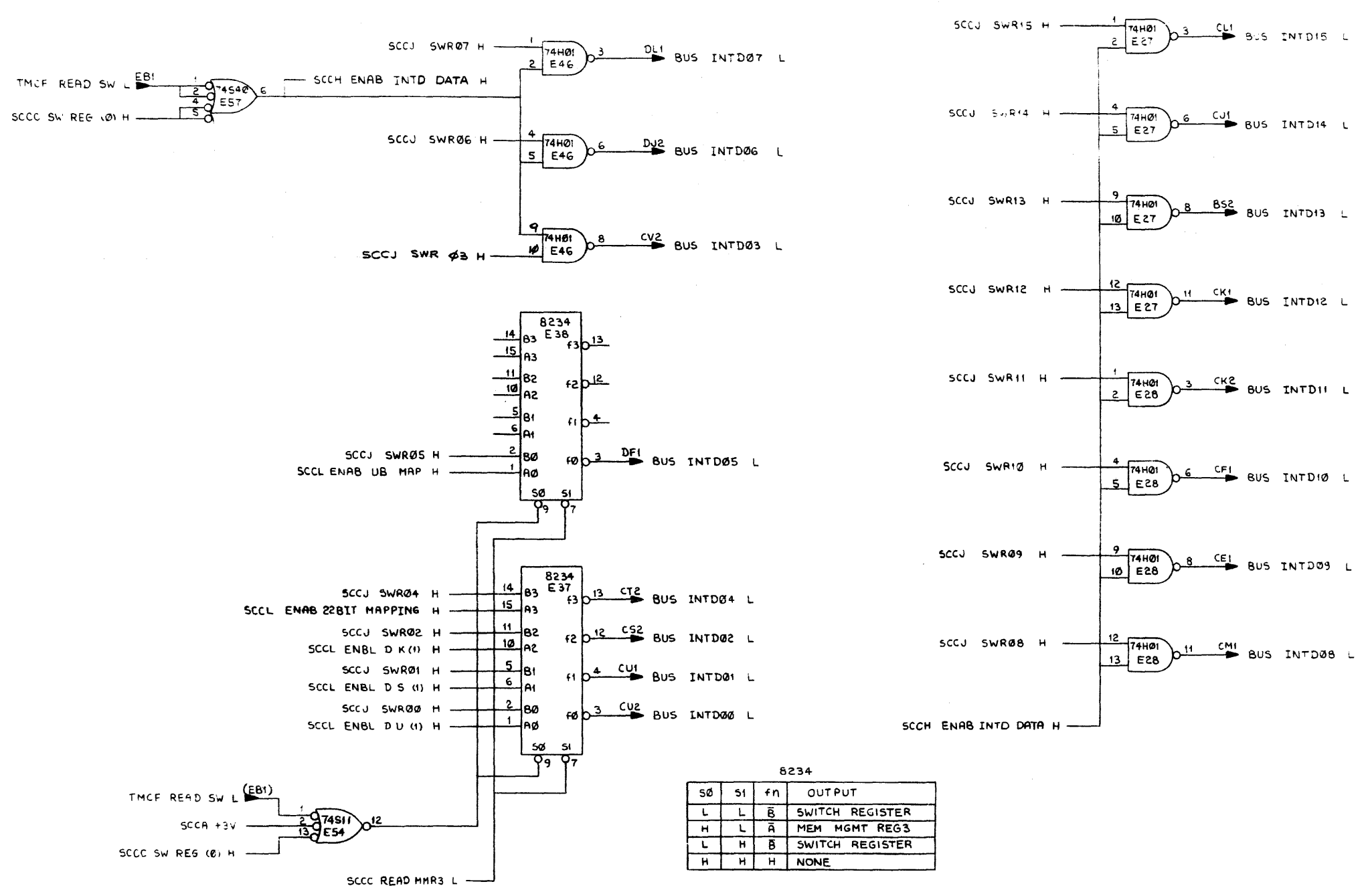
REVISIONS		
CHK	CHANGE NO.	REV.

GENERAL REGISTER DECODE SLOT 16

TITLE	SIZE CODE	NUMBER	REV.
SYS DESC/CNSL CABLES(SCCF)	D CS	M8140-0-1	3
SCALE	SHEET	OF	DIST.
	7	13	

DCS M8140-0-1
 NUMBER
 REV. P

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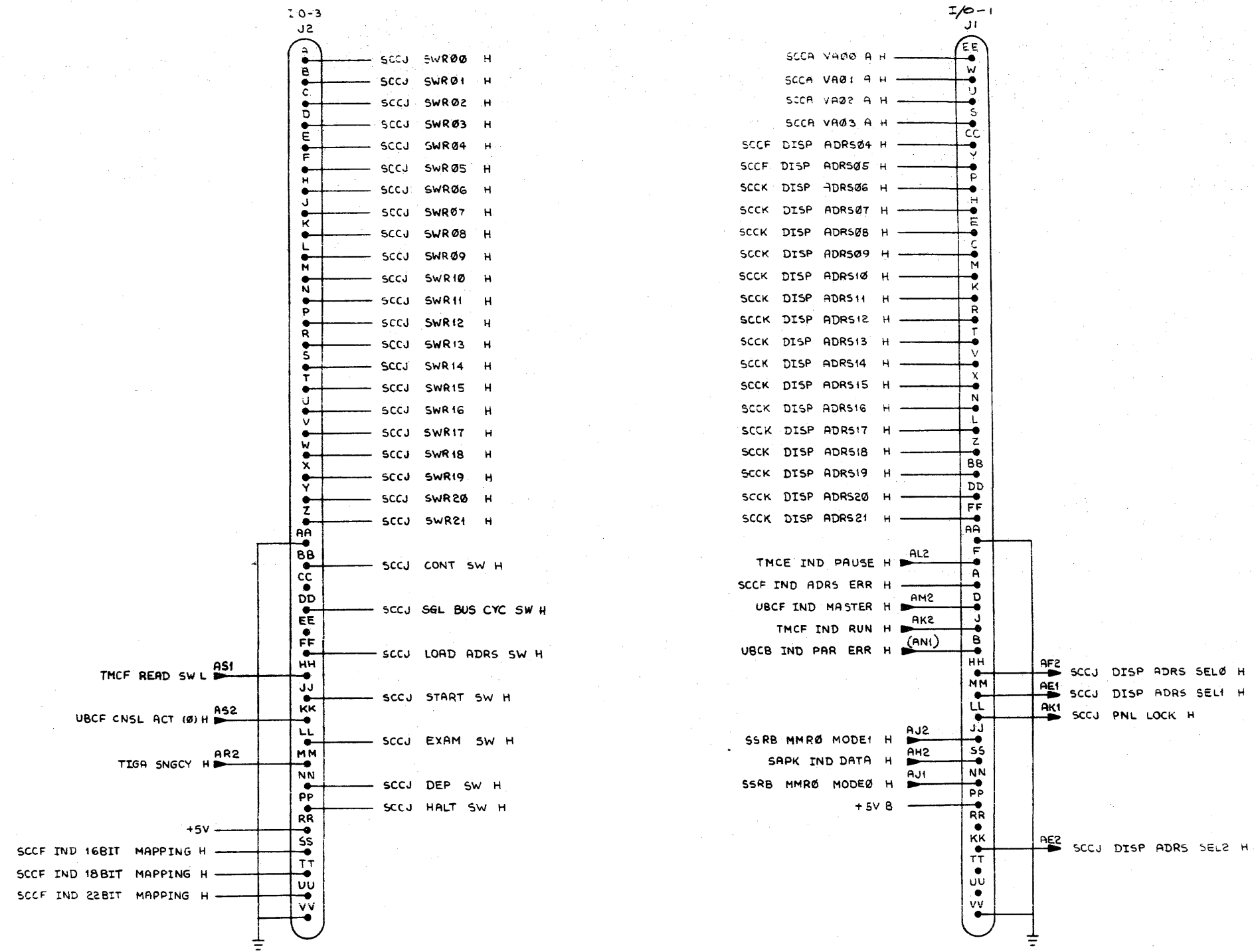
REVISIONS		
CHK	CHANGE NO.	REV.

INTERNAL BUS DRIVERS SLOT 16

TITLE	SIZE CODE	NUMBER	REV.
SYS DESC/CNSL CABLES(SCCH)	DCS	M8140-0-1	3
SCALE	SHEET	OF	DIST.
	8	13	

REV. B M8140-0-1

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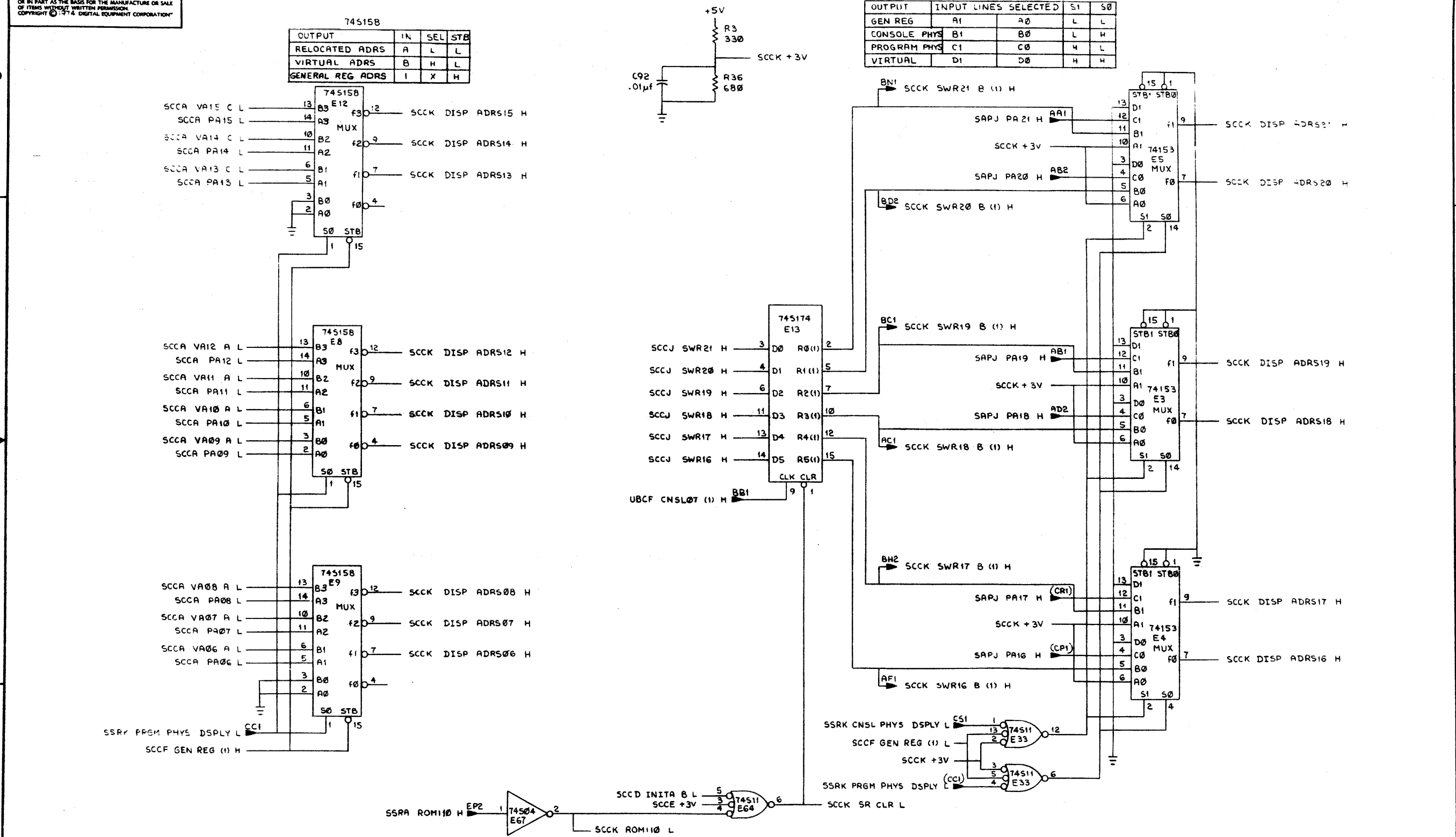
REVISIONS		
CHK	CHANGE NO.	REV.

SCC/CONSL CABLES SLOT 16

TITLE	SIZE CODE	NUMBER	REV.
SYS DESC/CONSL CABLES (SCCJ)	DCS	M8140-0-1	3
SCALE	SHEET	DIST.	
	9 OF 13		

DCS M8140-0-1

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74515B

OUTPUT	IN	SEL	STB
RELOCATED ADRS	A	L	L
VIRTUAL ADRS	B	H	L
GENERAL REG ADRS	I	X	H

74153

OUTPUT	INPUT LINES SELECTED	S1	S0
GEN REG	A1	A0	L L
CONSOLE PHYS	B1	B0	L H
PROGRAM PHYS	C1	C0	H L
VIRTUAL	D1	D0	H H

REVISIONS

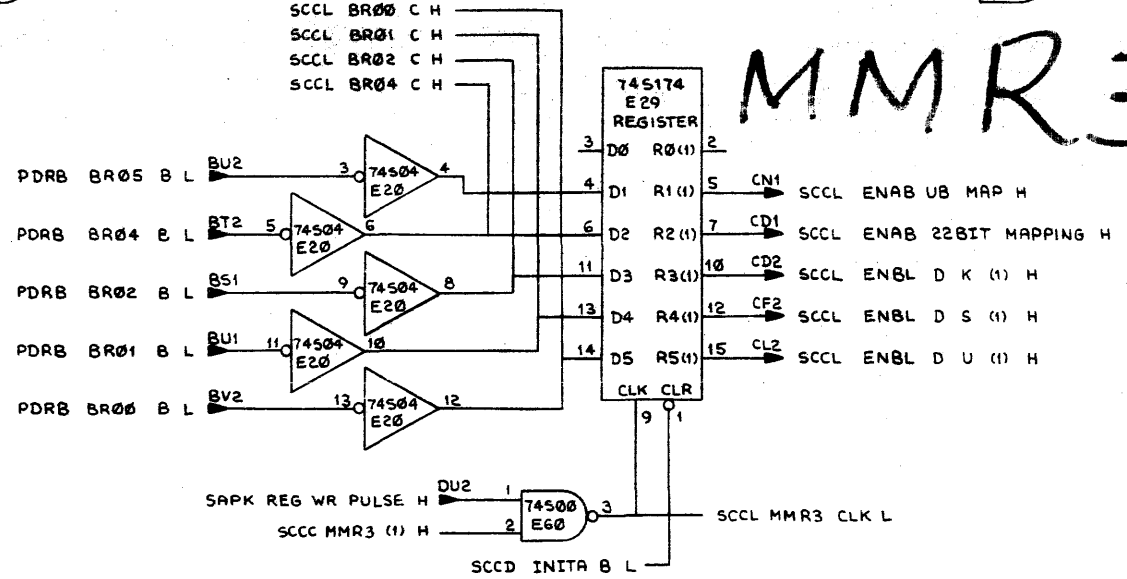
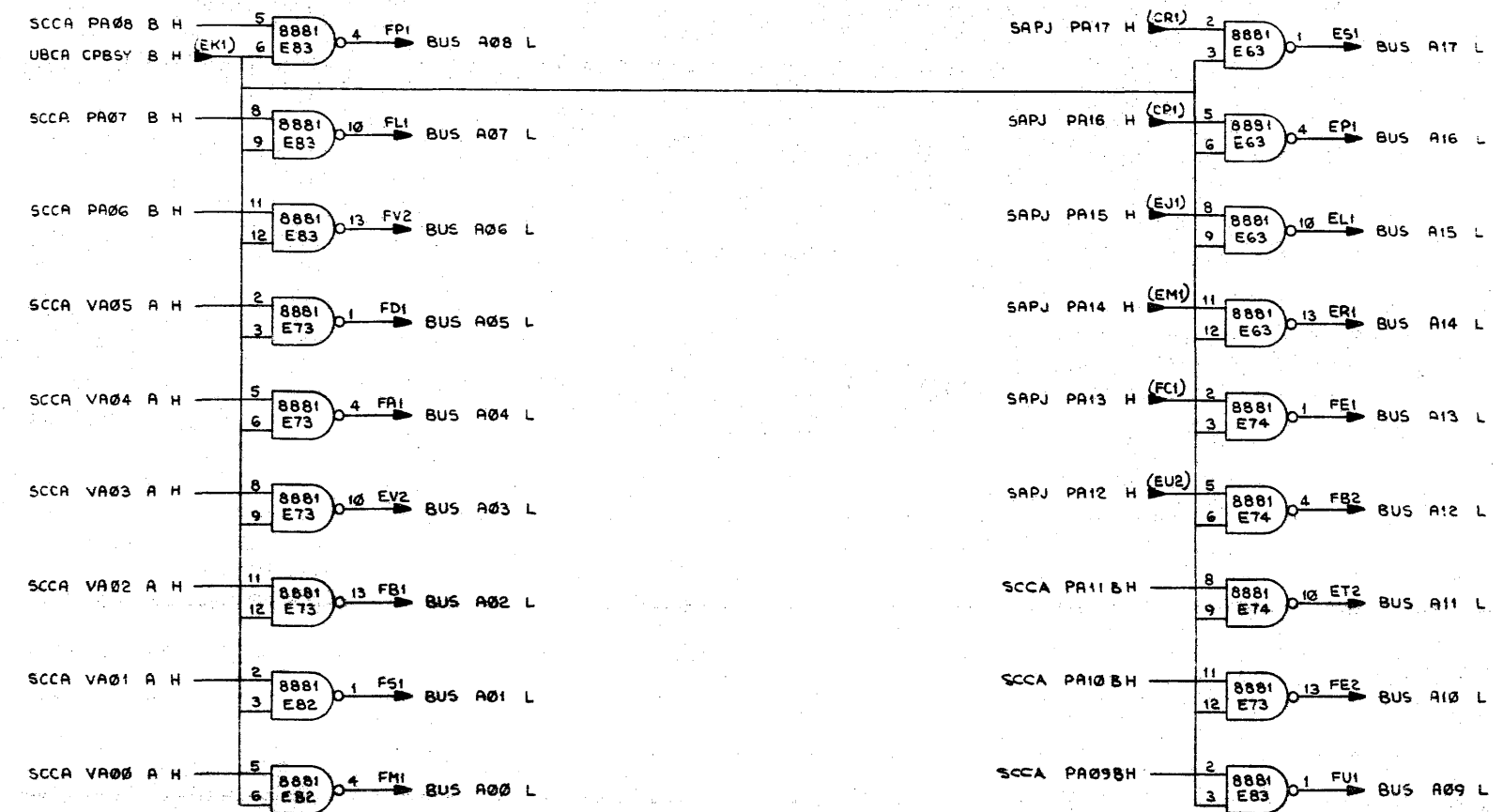
CHK	CHANGE NO.	REV.

CONSOLE ADDRESS DISPLAY SLOT 16

TITLE	SIZE CODE	NUMBER	REV.
SYS DESC/CNSL CABLES(SCKK)	D CS	M8140-0-1	3
SCALE	SHEET 10 OF 13	DIST.	

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3 1-0-018W SCD 2



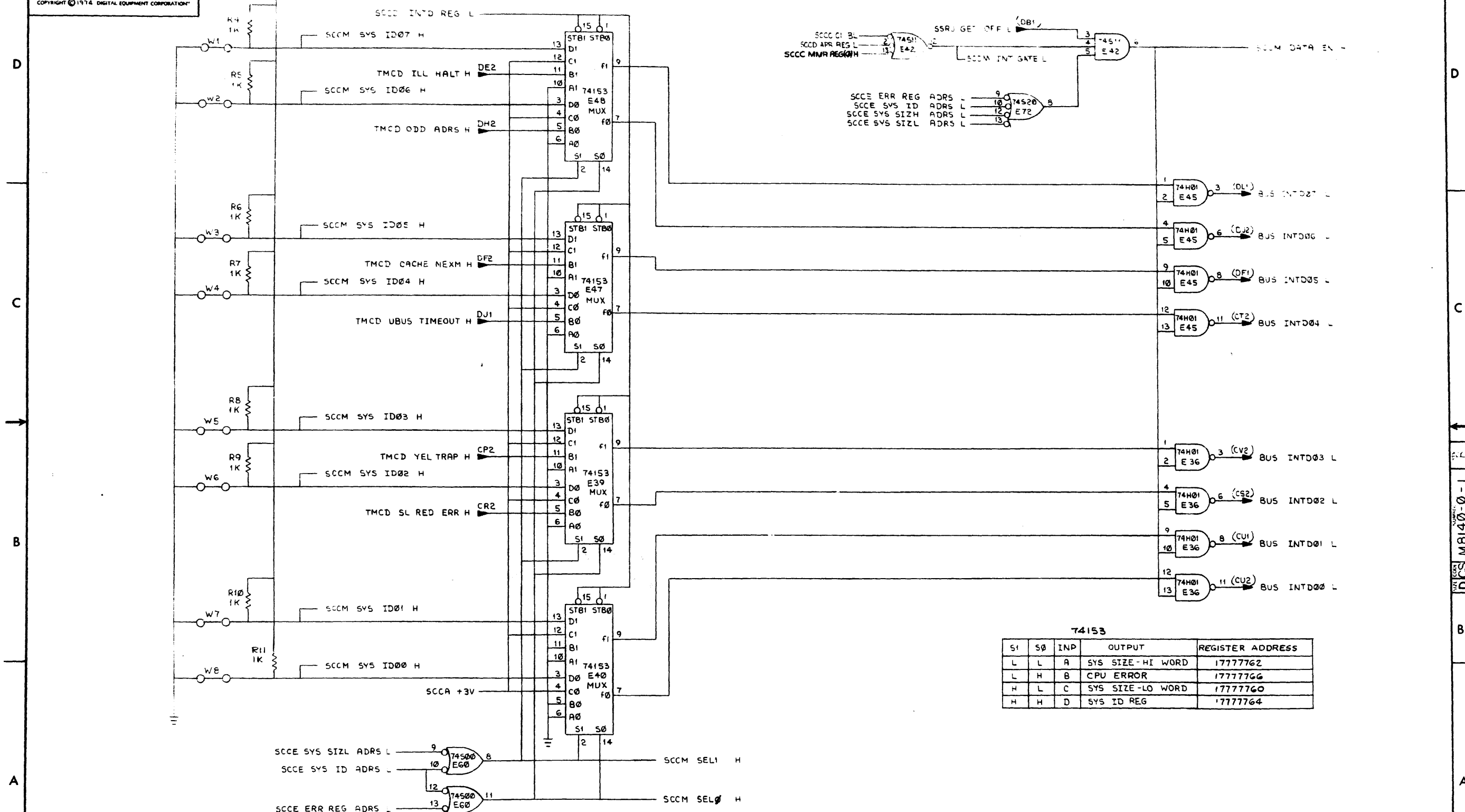
MMR3

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE CODE	NUMBER	REV.
SYS DESC/CNSL CABLES(SCCL)		D CS	M8140-0-1	3
SCALE	SHEET 11 OF 13	DIST.		

UNIBUS ADDRESS DRIVERS +MMR3 SLOT 16.

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74153				
SI	S0	INP	OUTPUT	REGISTER ADDRESS
L	L	A	SYS SIZE-HI WORD	17777762
L	H	B	CPU ERROR	17777766
H	L	C	SYS SIZE-LO WORD	17777760
H	H	D	SYS ID REG	17777764

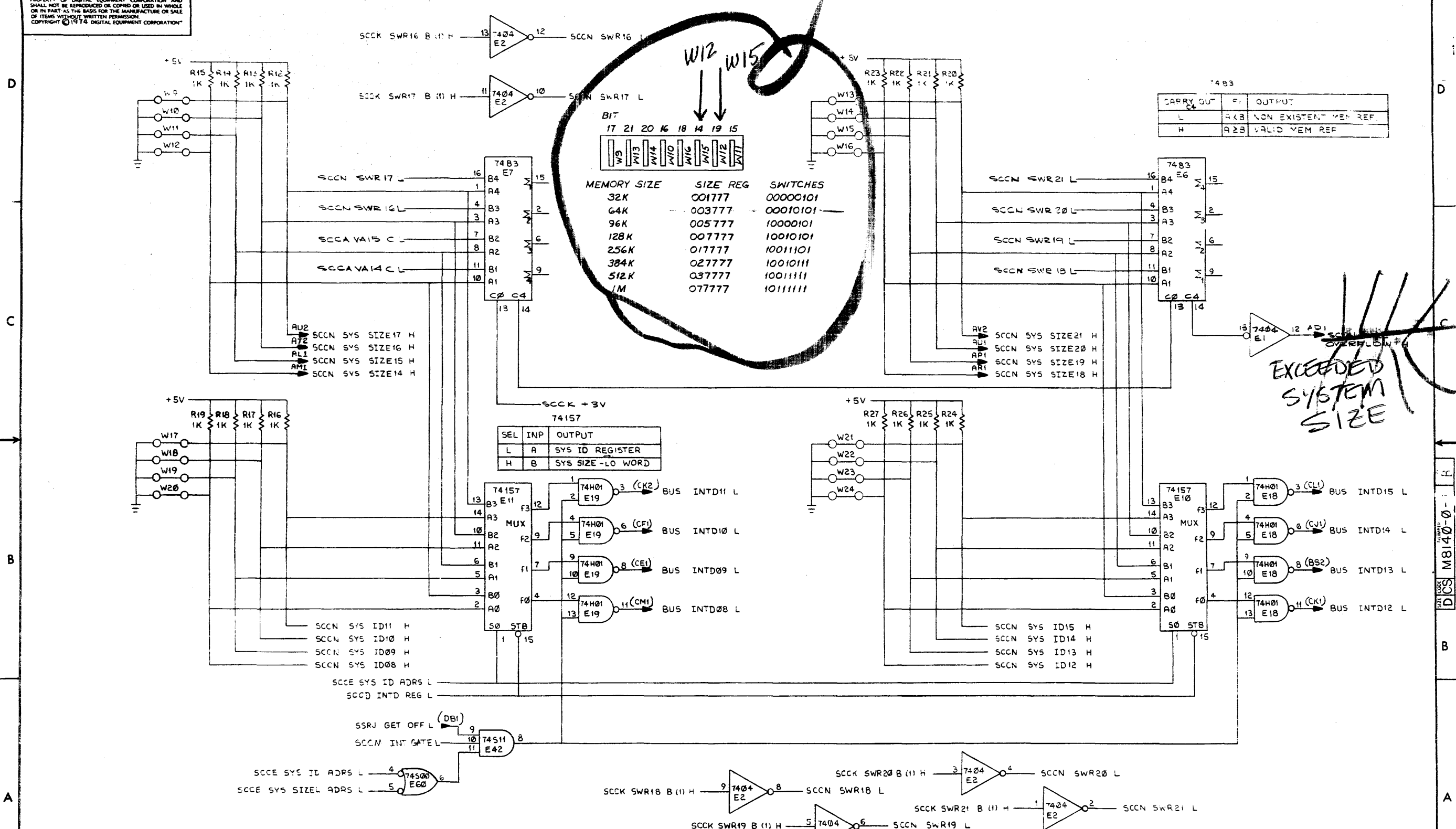
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE CODE		NUMBER		REV.	
SYS DESC/CNSL CABLES(SCCM)		D CS		M8140-0-1		E	
SCALE		SHEET 12 OF 13		DIST.			

SYSTEM SIZE

1-0-0181A SCOD 2

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EXCEEDED SYSTEM SIZE

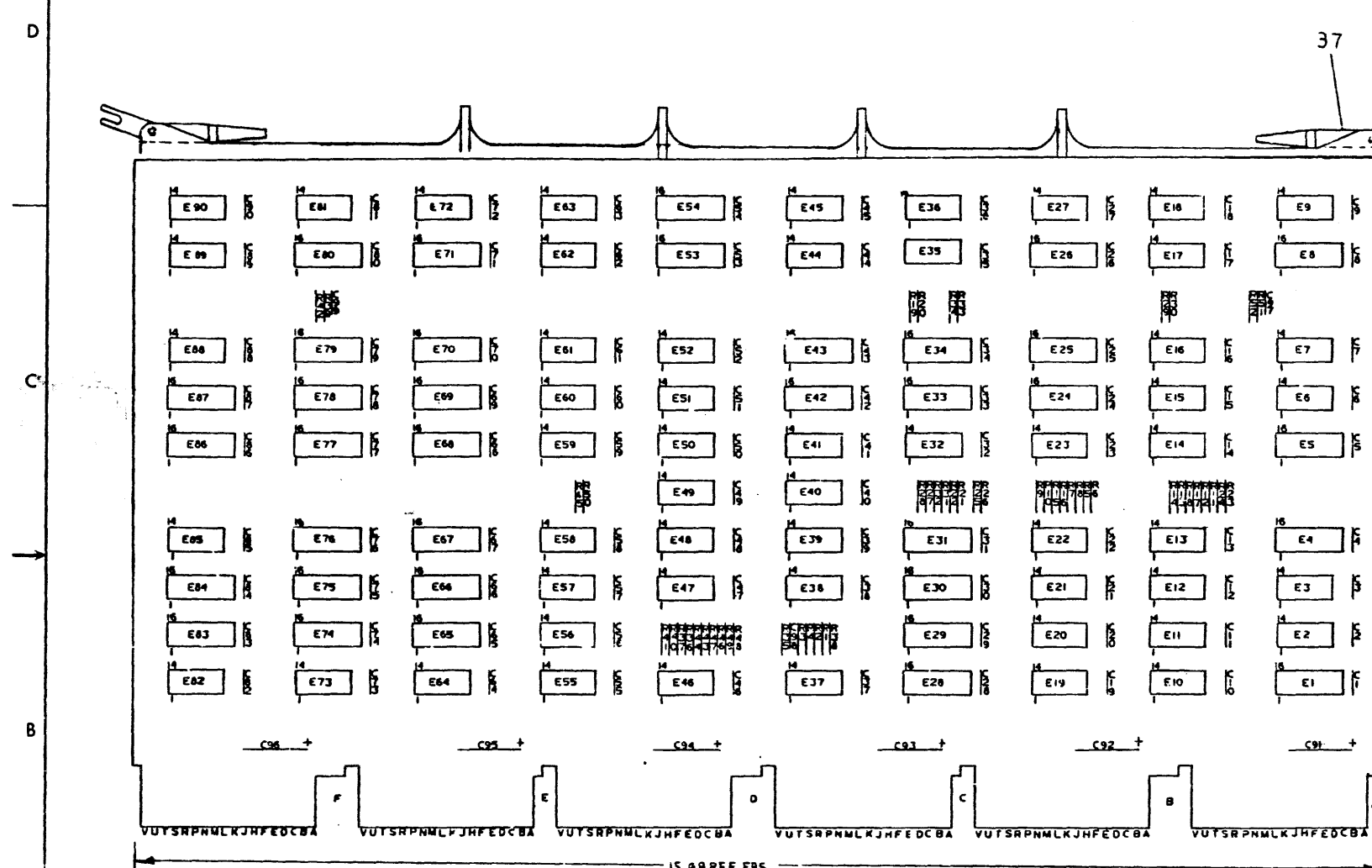
REVISIONS		
CHK	CHANGE NO	REV.

SYSTEM REGISTER BITS <15:08> SLOT 16			
TITLE	SIZE CODE	NUMBER	REV.
SYS DESC/CNSL CABLES (SCCN)	DCS	M8140-0-1	3
SCALE	SHEET 13 OF 13	DIST.	

DEC FORM NO. 510 110

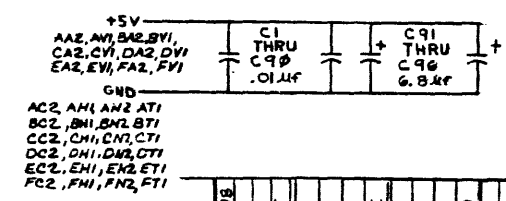
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NOTES:
 1. * OPTIONAL COMPONENTS.
 2. E4, E5, E8, E26, E33, & E80 ARE SPARE I.C. LOCATIONS.



IC TYPE	GND	+5V
IC DEC 7442	B	10
IC DEC 74153	B	16
IC DEC 74157	B	16
IC DEC 74S157	B	16
IC DEC 74174	B	16
IC DEC 74S174	B	16
IC DEC 74175	B	16
IC DEC 74187	B	16
IC TYPE	GND	+5V

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



6 APR 78
 D. THOMPSON
 5 APR 78
 S. MBI38-00006 F
 R. BOUCHER
 7 JAN 78
 S. MBI38-00003 E
 T. UPTON
 9 JAN 78
 S. MBI38-00004 D
 S. MBI38-00005 C
 RICHARD
 22 FEB 78
 S. MBI38-00006 A
 S. SMITH
 4 3 78
 S. MBI38-00007 A
 CHS CHANGE NO REV

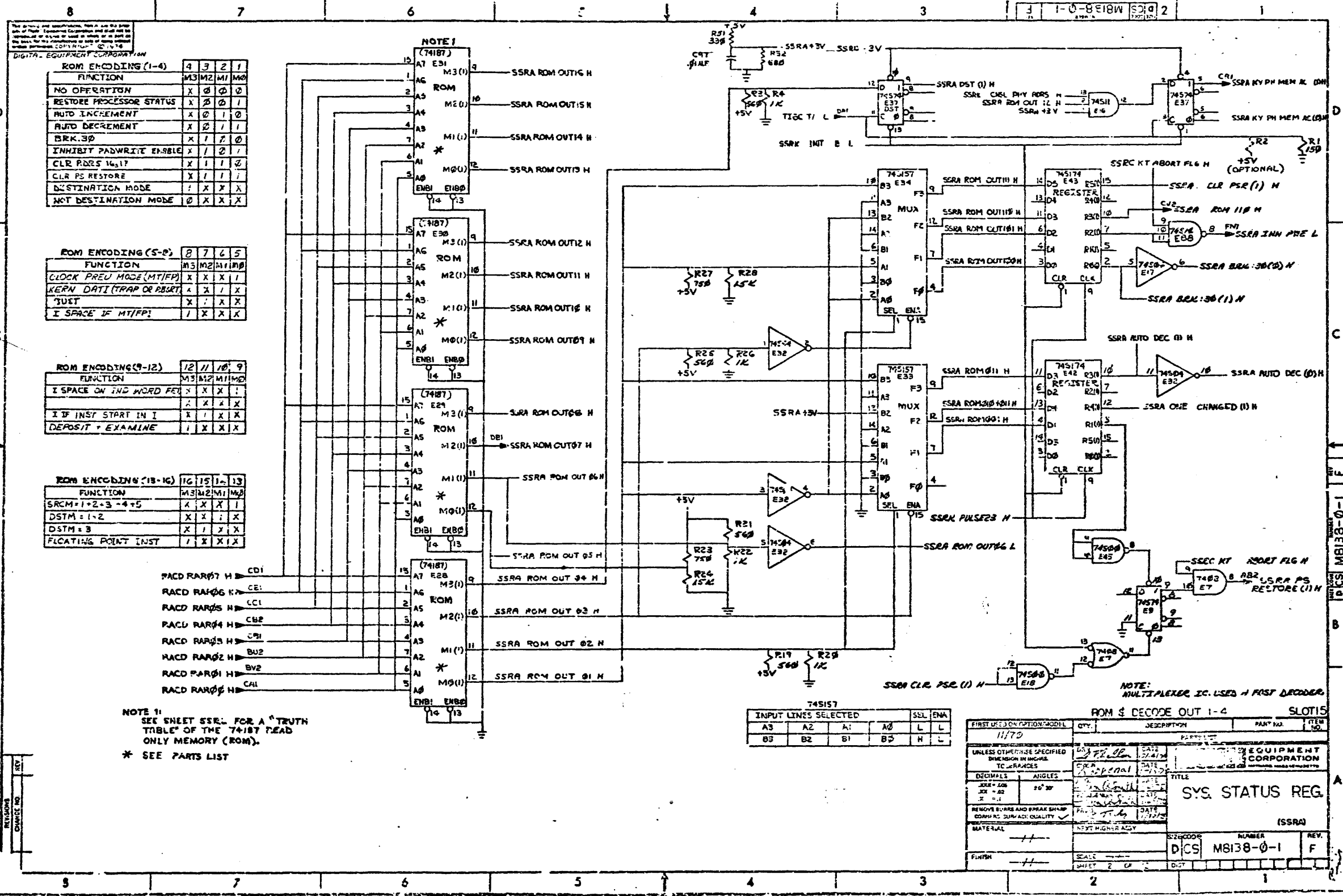
REF	REF	X-Y COORDINATE HOLE LOCATION	A-CO MBI38-0-4	1
REF	REF	ASSY. DRILLING HOLE LAYOUT	D-AH-MBI38-0-5	2
REF	REF	MODULE ECO HISTORY	B-MH-MBI38-0-6	3
1	1	ETCHED CIRCUIT BOARD	5011341	4
93	93	C1 THRU C90, C97, C98, C99	CAP .01uF 100V 20%	5
6	6	C91 THRU C96	CAP 6.8uF 35V 10% TANT	6
4	4	R1, R33, R44, R50	RESISTOR 150 1/4W 5%	7
3	3	R35, R38, R51	RESISTOR 330 1/4W 5%	8
12	12	R4, R6, R8, R10, R12, R14, R16, R18, R20, R22, R28, R32	RESISTOR 1K 1/4W 5%	9
3	3	R24, R28, R30	RESISTOR 1.5K 1/4W 5%	10
3	3	R23, R27, R29	RESISTOR 750 1/4W 5%	11
3	3	R38, R42, R52	RESISTOR 680 1/4W 5%	12
1	1	R34	RESISTOR 300 1/4W 5%	13
12	12	R3, R5, R7, R11, R13, R15, R9, R17, R19, R21, R25, R31	RESISTOR 560 1/4W 5%	14
1	1	E35	DELAY LINE	15
6	6	E85, E88, E67, E74, E75, E76, E93, E84	IC 74153	16
1	1	E1	IC 7442	17
2	2	E81, E85	IC DEC 7437	18
1	1	E7	IC 7408	19
6	6	E7, E15, E18, E45, E47, E58	IC 74S00	20
9	9	E12, E14, E17, E23, E32, E46, E59, E81, E89	IC 74S04	21
4	4	E10, E27, E48, E88	IC 74S10	22
8	8	E3, E8, E11, E16, E38, E50, E57, E72	IC 74S11	23
3	3	E84, E73, E82	IC 74S03	24
5	5	E41, E44, E51, E80, E90	IC 74S40	25
8	8	E13, E19, E20, E21, E22, E55, E56, E83	IC 74S64	26
3	3	E33, E34, E79	IC 74S157	27
6	6	E42, E43, E89, E70, E78, E87	IC 74S174	28
4	4	E25, E54, E71, E86	IC DEC 74175	29
2	2	E86, E77	IC 74174	30
1	1	E24	IC 74157	31
6	6	E9, E37, E38, E39, E40, E49, E52, E82	IC 74S74	32
1	1	E28	IC DEC 74187	33
1	1	E29	IC 74187	34
1	1	E30	IC 74187	35
1	1	E31	IC 74187	36
1	1		HANDLE, HEX MODULE	37
12	12		EYELET HANDLE	38
1	1	E26	I.C. 74187	39
1	1	E29	I.C. 74187	40
1	1	E30	I.C. 74187	41
1	1	E31	I.C. 74187	42
1	1	E31	I.C. 74187	43
1	1		WIRE, #30 AWG	44

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
11/78				

ETCH BOARD REV B

DRN	DATE	10/15/78
ATTHELLEN	DATE	11-14-75
KOPPENAL	DATE	11-14-75
SHARONA SMITH	DATE	11-29-75
SHARONA SMITH	DATE	11-29-75
TAYLOR	DATE	11/29/75

digital EQUIPMENT CORPORATION
 SYS. STATUS REG.
 SIZE CODE DCS MBI38-0-1
 SHEET 1 OF 12



ROM ENCODING (1-4)

FUNCTION	M3	M2	M1	M0
NO OPERATION	X	0	0	0
RESTORE PROCESSOR STATUS	X	0	0	1
AUTO INCREMENT	X	0	1	0
AUTO DECREMENT	X	0	1	1
BRK.30	X	1	0	0
INHIBIT PADWRITE ENABLE	X	1	0	1
CLR PDS 1651?	X	1	1	0
CLR PS RESTORE	X	1	1	1
DESTINATION MODE	1	X	X	X
NOT DESTINATION MODE	0	X	X	X

ROM ENCODING (5-8)

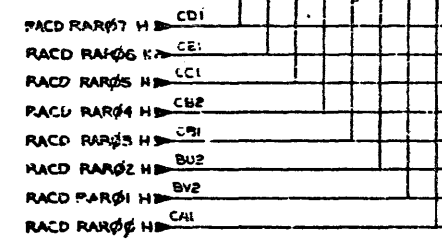
FUNCTION	M3	M2	M1	M0
CLOCK PREV MODE (MT/FP)	X	X	X	1
KEPN DATI (TRAP OR ABRT)	X	X	1	X
JUST	X	1	X	X
I SPACE IF MT/FP?	1	X	X	X

ROM ENCODING (9-12)

FUNCTION	M3	M2	M1	M0
I SPACE ON IND WORD FET	X	X	X	1
I IF INST START IN I	X	1	X	X
DEPOSIT - EXAMINE	1	X	X	X

ROM ENCODING (13-16)

FUNCTION	M3	M2	M1	M0
SRCM = 1+2+3+4+5	X	X	X	1
DSTM = 1-2	X	X	1	X
DSTM = 3	X	1	X	X
FLOATING POINT INST	1	X	X	X



NOTE 1:
SEE SHEET SSR.L FOR A TRUTH TABLE OF THE 74187 READ ONLY MEMORY (ROM).
* SEE PARTS LIST

74517

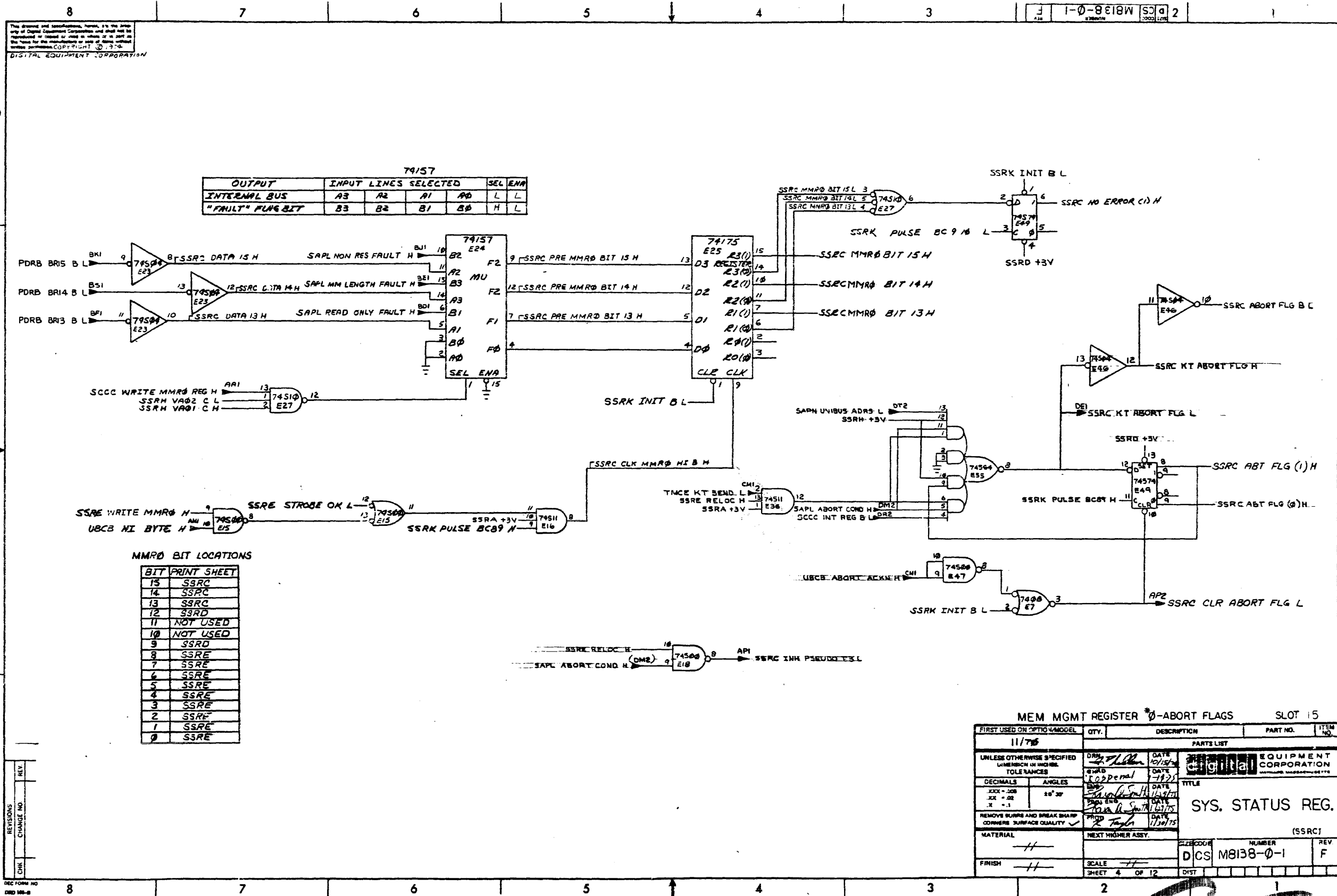
INPUT LINES SELECTED	SEL	ENA
A3 A2 A1	A0	L L
B3 B2 B1	B0	H L

ROM & DECODE OUT 1-4

FIRST USED OR OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM
1170				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES				
DECIMALS	ANGLES	TITLE		
SIZE = 200	10° 30'	SYS. STATUS REG.		
JOB = A2		(SSRA)		
DATE = 11/11/70		MATERIAL		
REMOVE BURRS AND BREAK SHARP EDGES TO SURFACE QUALITY		NEXT HIGHER ASSY		
FINISH		SCALE	NUMBER	REV.
		DICS	MB138-0-1	F
		SHEET	2 OF 2	DGT

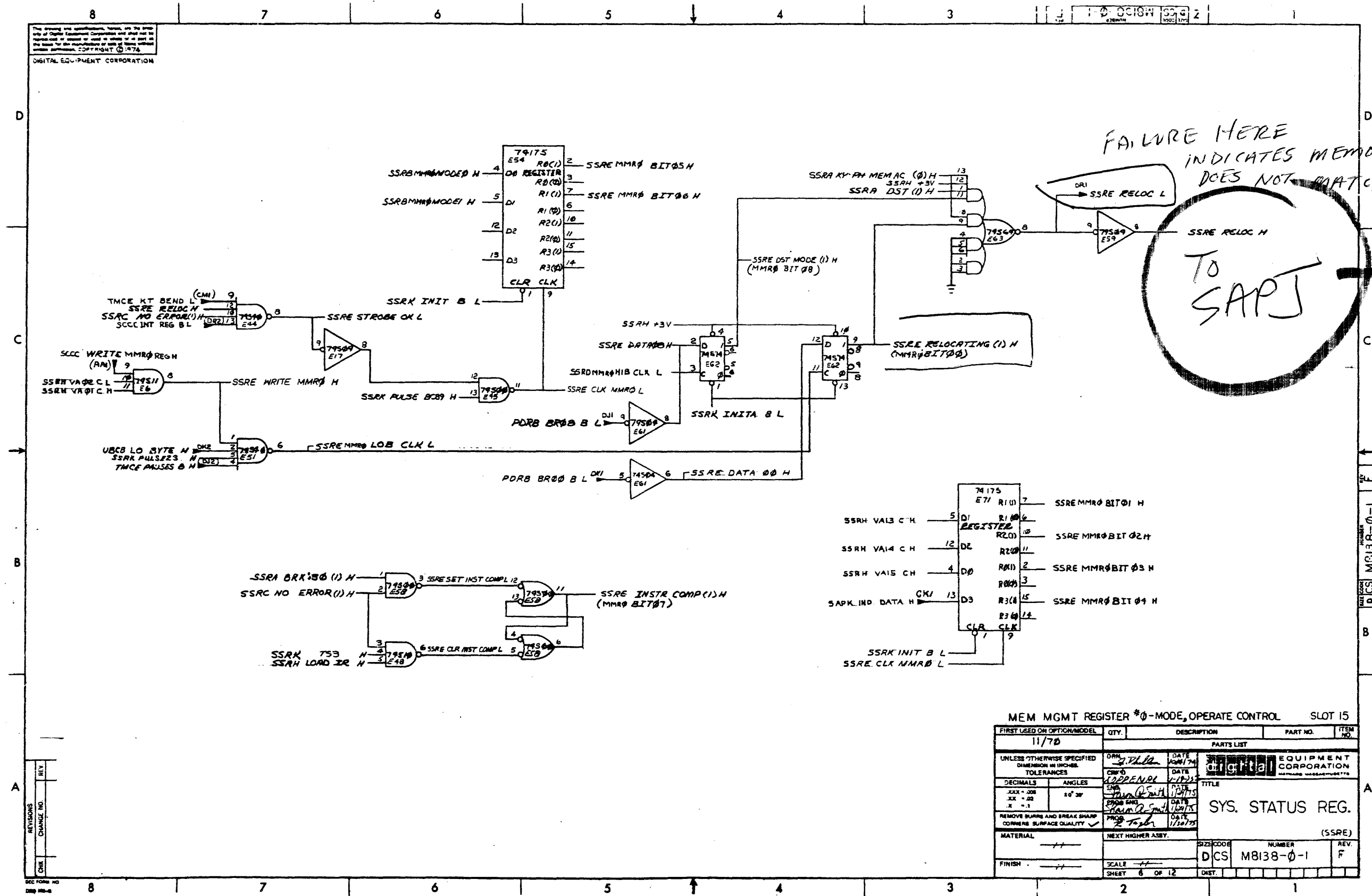
SSR

176 30266



SSR

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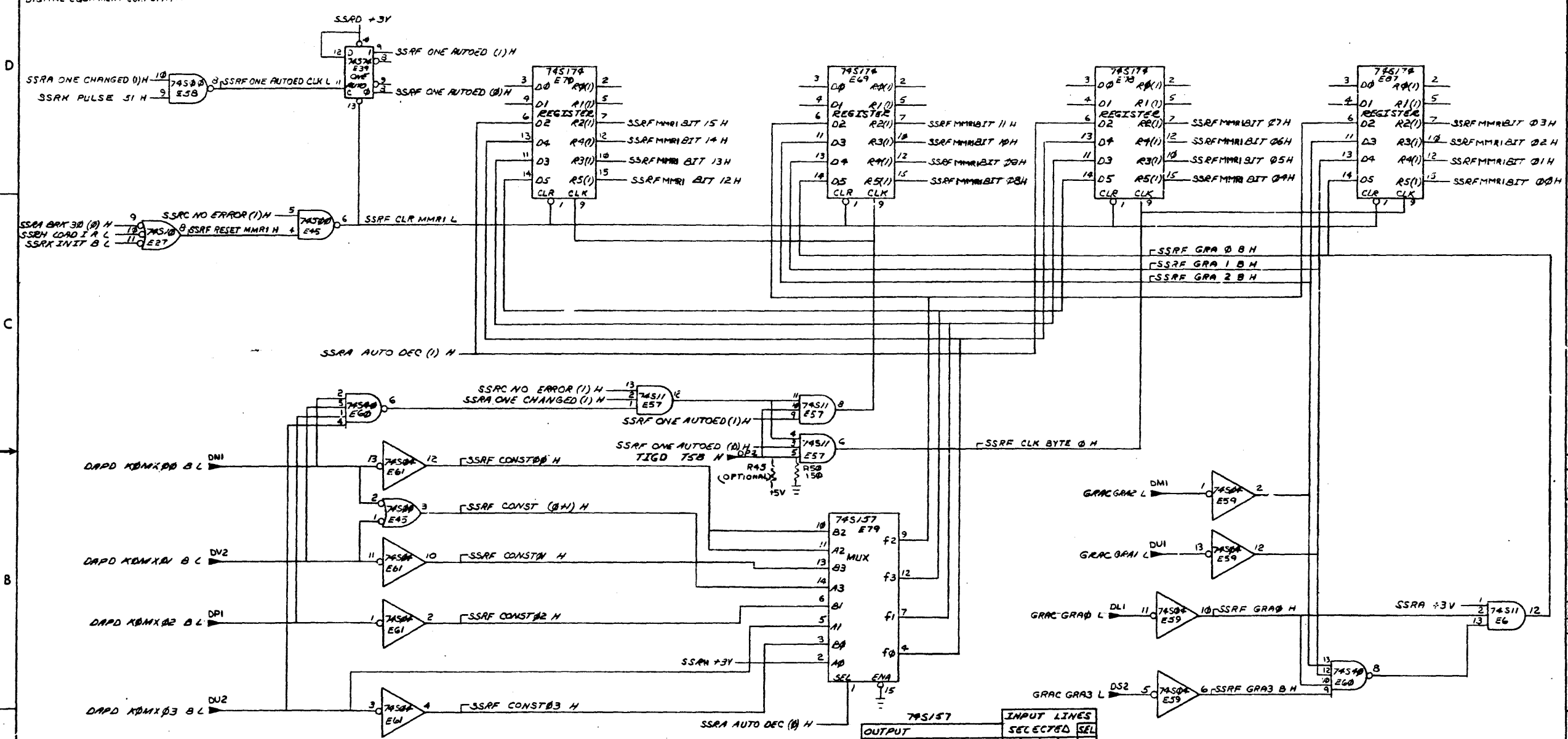
FAILURE HERE
INDICATES MEMORY
DOES NOT MATCH SYSTEM
SIZE
TO SAPJ

MEM MGMT REGISTER *0-MODE, OPERATE CONTROL SLOT 15

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DATE 1/18/75	DIGITAL EQUIPMENT CORPORATION	
DECIMALS	ANGLES	DATE 1/18/75	TITLE	
.XXX - .008	10° 30'	DATE 1/18/75	SYS. STATUS REG.	
.XX - .02		DATE 1/18/75	(SSRE)	
.X - .1		DATE 1/18/75		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE 1/18/75		
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
		DCS	M8138-0-1	F
FINISH	SCALE	SHEET	6 OF 12	DIST.

SSR

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OUTPUT	INPUT LINES	SELECTED	SEL
NEGATIVE CONSTANT	A3/A2/A1/A0	L	L
POSITIVE CONSTANT	B3/B2/B1/B0	H	H

MEM MGMT REGISTER*1-AUTO INC/DEC INFO. SLOT 15

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	TOLERANCES	DATE	DATE
DECIMALS	ANGLES	11/70	11/70
XXX - 000	20' 30"		
.XX - 02			
X - 1			

TITLE: SYS. STATUS REG. (SSRF)

SIZE CODE: DCS M8138-0-1

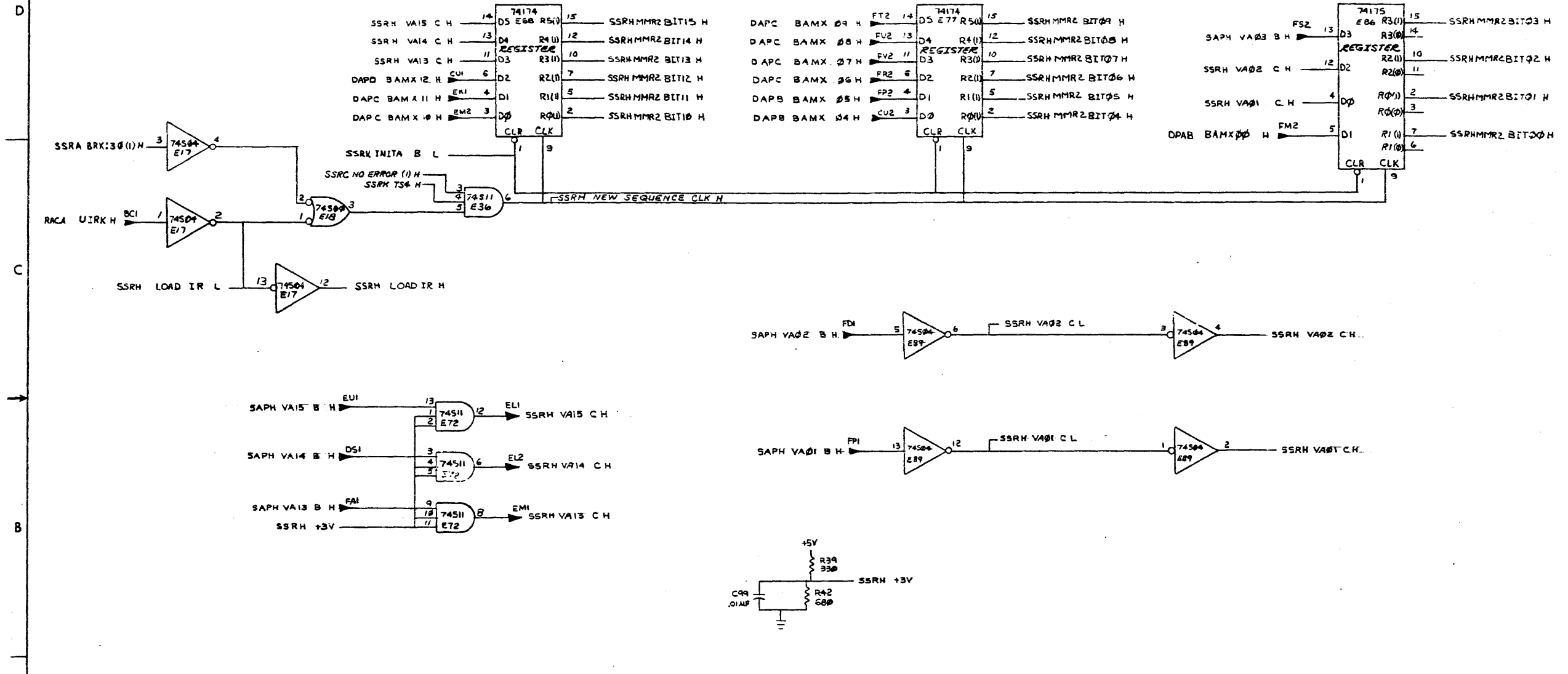
NUMBER: F

SCALE: 7 OF 12

SHEET: 7 OF 12

REV	CHG	NO

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REV	CHANGE NO

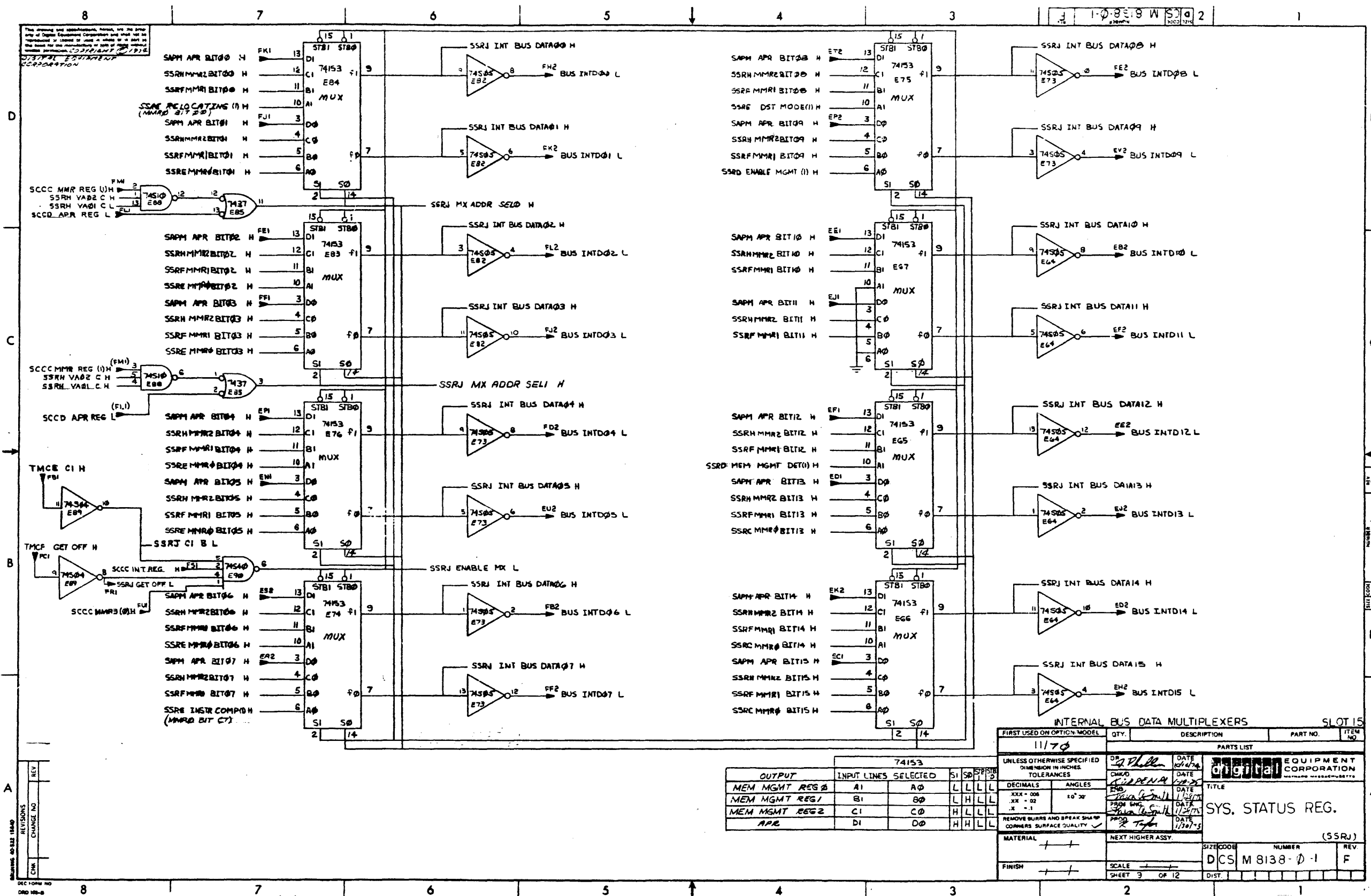
DEC FORM NO. DRD 102-B

MEM MGMT REGISTER #2 INST OR TRAP VECTOR ADDRESS SLOT 15

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
i170				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN G. Phelan	DATE 10/17/76	DIGITAL EQUIPMENT CORPORATION MAYFIELD MANUFACTURING
DECIMALS .XXX - .008 ANGLES ±0° 30'		CHK'D K. O'Connell	DATE 1/10/77	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		APPROV'D M. Smith	DATE 1/10/77	TITLE SYS. STATUS REG.
MATERIAL		PRG'D R. Taylor	DATE 1/10/77	(SSRH)
FINISH		NEXT HIGHER ASSY	SIZE CODE	NUMBER DCS M8138-0-1
SHEET 8 OF 12		SCALE	DIST	REV F



DCS M8138-0-1 F



OUTPUT	INPUT LINES	SELECTED	SI	SD	SP	ST	SB
MEM MGMT REG 0	A1	A0	L	L	L	L	L
MEM MGMT REG 1	B1	B0	L	H	L	L	L
MEM MGMT REG 2	C1	C0	H	L	L	L	L
APR	D1	D0	H	H	L	L	L

INTERNAL BUS DATA MULTIPLEXERS

SLOT 15

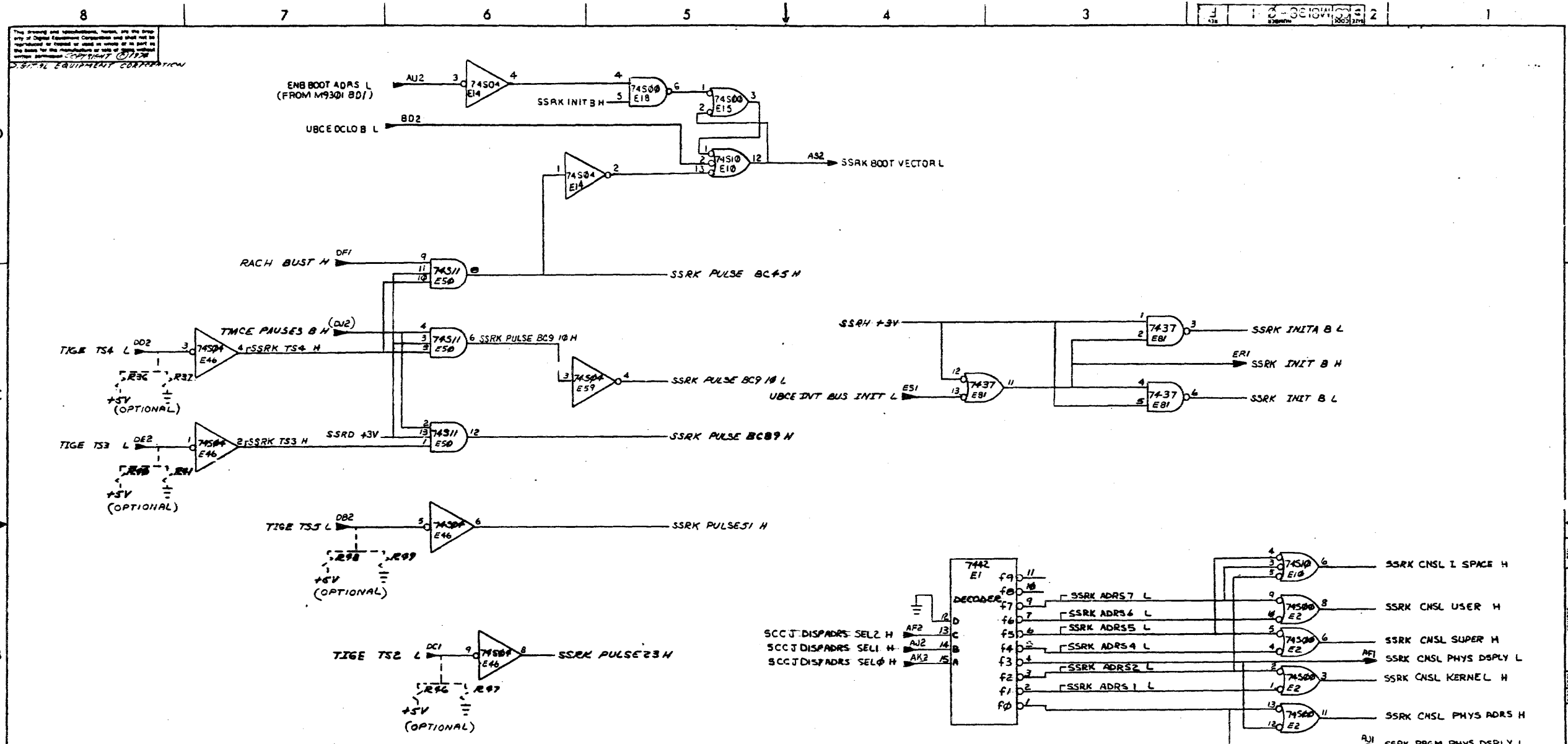
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
1170				

PARTS LIST		DATE	
UNLESS OTHERWISE SPECIFIED	DATE	DATE	DATE
DIMENSION IN INCHES	1/16	1/8	1/4
TOLERANCES	±.005	±.010	±.020
DECIMALS	XXX - 008	XX - 02	.X - 1
ANGLES	10° 30'		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY			
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER
FINISH	SCALE	DCS	M 8138-0-1
	SHEET 3 OF 12	DIST	

TITLE
SYS. STATUS REG. (SSRJ)

REVISIONS
CHANGE NO.
REV.

DEC FORM NO. 010 100-0



ADDRESS SELECT SWITCH POSITION	UBCJ DIS ADRS SEL2	UBCJ DIS ADRS SEL1	UBCJ DIS ADRS SEL0
PROGRAM PHYSICAL	L	L	L
KERNEL D VIRTUAL	L	L	H
KERNEL I VIRTUAL	L	H	L
CONSOLE PHYSICAL	L	H	H
SUPERVISOR D VIRTUAL	H	L	L
SUPERVISOR I VIRTUAL	H	L	H
USER D VIRTUAL	H	H	L
USER I VIRTUAL	H	H	H

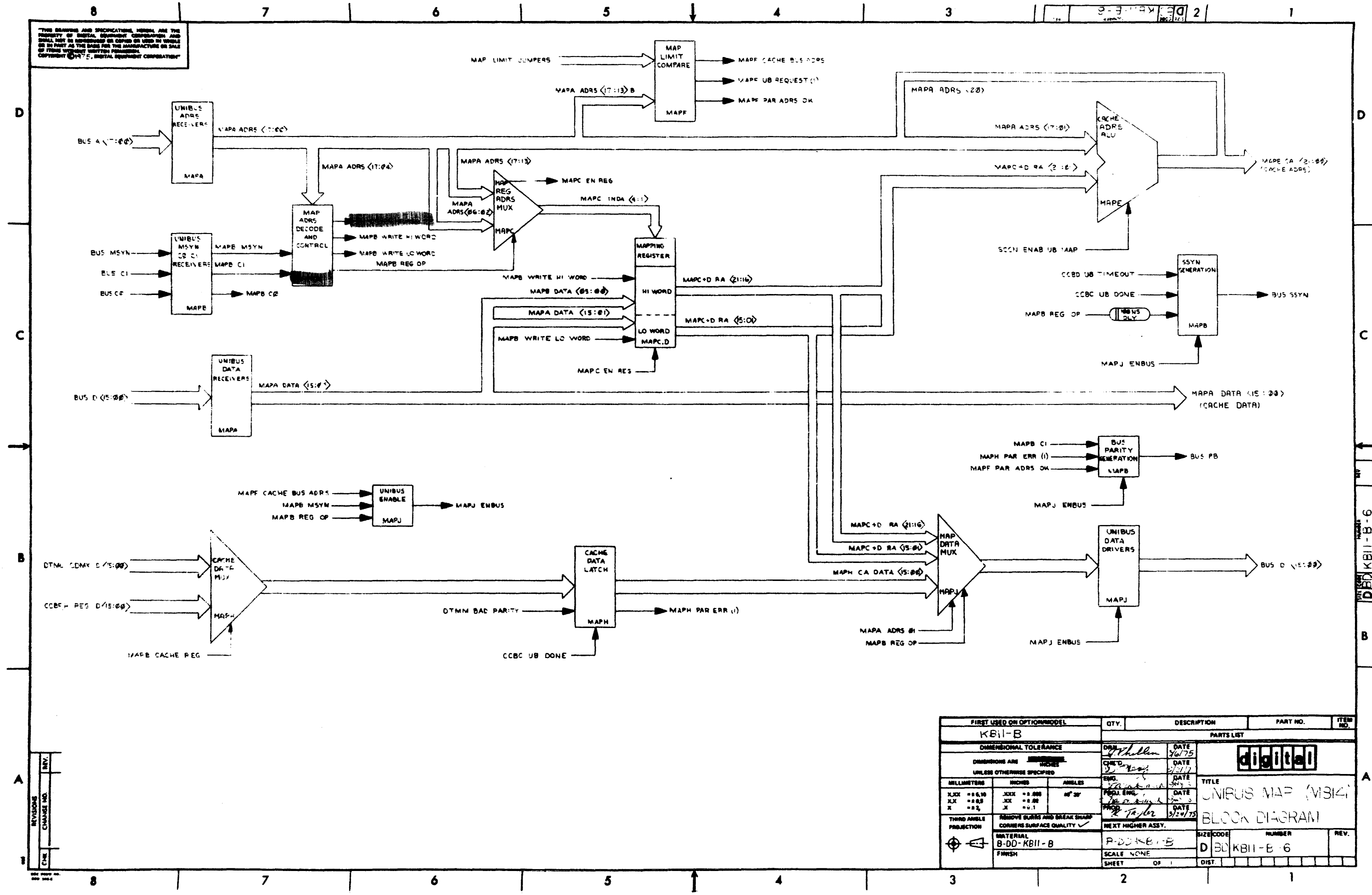
CNSL. ADRS. SEL. SWITCH, TIMING LOGIC, INIT SLOT 15

FIRST USED OR OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES. TOLERANCES				
DECIMALS	ANGLES	TITLE		
XXX - 000	± 0° 30'	SYS. STATUS REG. (SSRK)		
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
FINISH	SCALE	DCS M8138-0-1		F
	SHEET 10 OF 12	DIST.		

REVISIONS
 CHANGE NO.
 CHK
 REVISIONS
 CHANGE NO.
 CHK

DCS M8138-0-1

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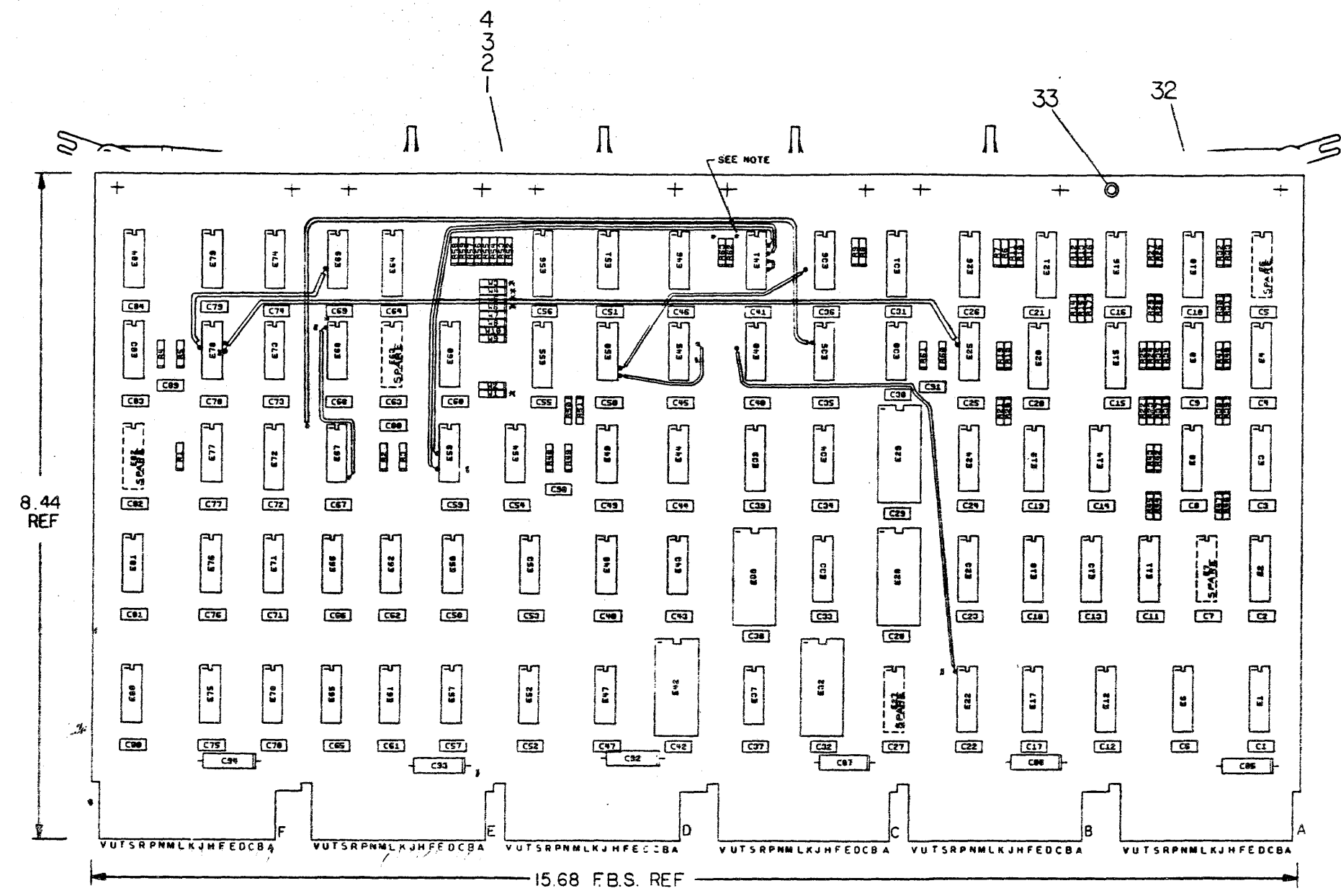
REV.	CHG.	BY	DATE

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
KBII-B				
DIMENSIONAL TOLERANCE				
DIMENSIONS ARE UNLESS OTHERWISE SPECIFIED		DATE 7/6/75	PARTS LIST	
MILLIMETERS			digital	
INCHES				
ANGLES				
TITLE				
UNIBUS MAP (MS14)				
BLOCK DIAGRAM				
MATERIAL				
B-DD-KBII-B				
FINISH				
SCALE NONE				
SHEET OF 1				
DIST				

DDB KBII-B-6

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NOTES:
* OPTIONAL COMPONENT

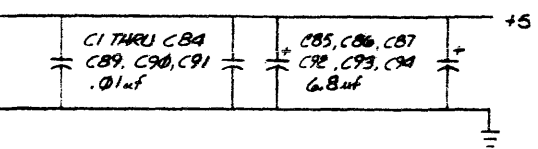


REF	X-Y HOLE COORDINATE LOCATION	K-CO-M8141-0-4	1
REF	ASSY/DRILLING HOLE LAYOUT	D-AH-M8141-0-5	2
REF	MODULE ECO HISTORY	B-MN-M8141-0-6	3
1	ETCHED CIRCUIT BOARD	5011346	4
07	C1 THRU C04, C09, C90, C91	CAP .01uf 100V 20%	1001610-01
6	C05, C06, C07, C92, C93, C94	CAP 6.8uf 35V 20%	1005306
1	C08	CAP 220pf 100V 5%	1000021
12	R1, R2, R50 THRU R59	RES 1K 1/4W 5%	1300365
1	R3	RES 47 OHM 1/4W 5%	1300202
24	R4, R4C, R60, R7 THRU R47 (odd #'s only)	RES 330 OHM 1/4W 5%	1300295
24	R5, R49, R61, R6 THRU R46 (even #'s only)	RES 680 OHM 1/4W 5%	1801424
7	E1, E8, E12, E17, E13, E18, E23	IC DEC 74S157	1910548
3	E2, E11, E22	IC DEC 74S174	1910550
12	E3, E4, E0, E9, E10, E14, E16, E20, E26, E15, E21, E31	IC DEC 3101A	1910653
3	E19, E24, E39	IC DEC 74153	1909937
2	E25, E78	IC DEC 74S74	1910544
5	E29, E42, E32, E38, E28	IC DEC 74S181	1910531
9	E47, E50, E54, E34, E37, E59, E30, E44, E36	IC DEC 74S04	1910534
1	E33	IC DEC 74182-1	1910551
1	E35	IC DEC 74N50	1909860
4	E74, E49, E46, E40	IC DEC 74S11	1910537
3	E03, E51, E41	IC DEC 74S00	1910532
2	E43, E48	IC DEC 74H30	1909859
2	E67, E45	IC DEC 74S20	1910539
5	E00, E52, E57, E61, E65	IC DEC 0081	1909705
10	E53, E58, E62, E68, E70, E76, E75, E77, E81, E71	IC DEC 0640	1911469
2	E60, E55	IC DEC 7485	1910224
1	E88	IC DEC 7405	1909930
3	E79, E84, E88	IC DEC 74S40	1910541
1	E72	IC DEC 74S158	1910544
1	E73	IC DEC 74S10	1910536
1		HANDLE ASSEMBLY	1210711-2
12		EYELET HANDLE	9086732
5	W2, W7-W10	INSULATED JUMPERS	9009185
2	E56, E44	IC DEC 74585	1912089-00

DEC NO.	QTY	REF
DEC 74585	8	16
DEC 74182-1	8	16
DEC 74S181	12	24
DEC 74S174	8	16
DEC 74S158	8	16
DEC 74S157	8	16
DEC 8640	1	8
DEC 7485	8	16
DEC 74153	8	16
DEC 3101A	8	16
IC TYPE	GND	+5V

AA2 CA2 EA2
AV1 CV1 EV1
BA2 DA2 FA2
BV1 DV1 FV1

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



FIRST USED ON OPTION MODEL 11/70

ETCH BOARD REV A

REVISIONS

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

SEMICONDUCTOR CONVERSION CHART

SCALE 1 OF 3

digital EQUIPMENT CORPORATION

TITLE UNIBUS MAP

SIZE CODE DCS NUMBER M8141-0-1 REV. A

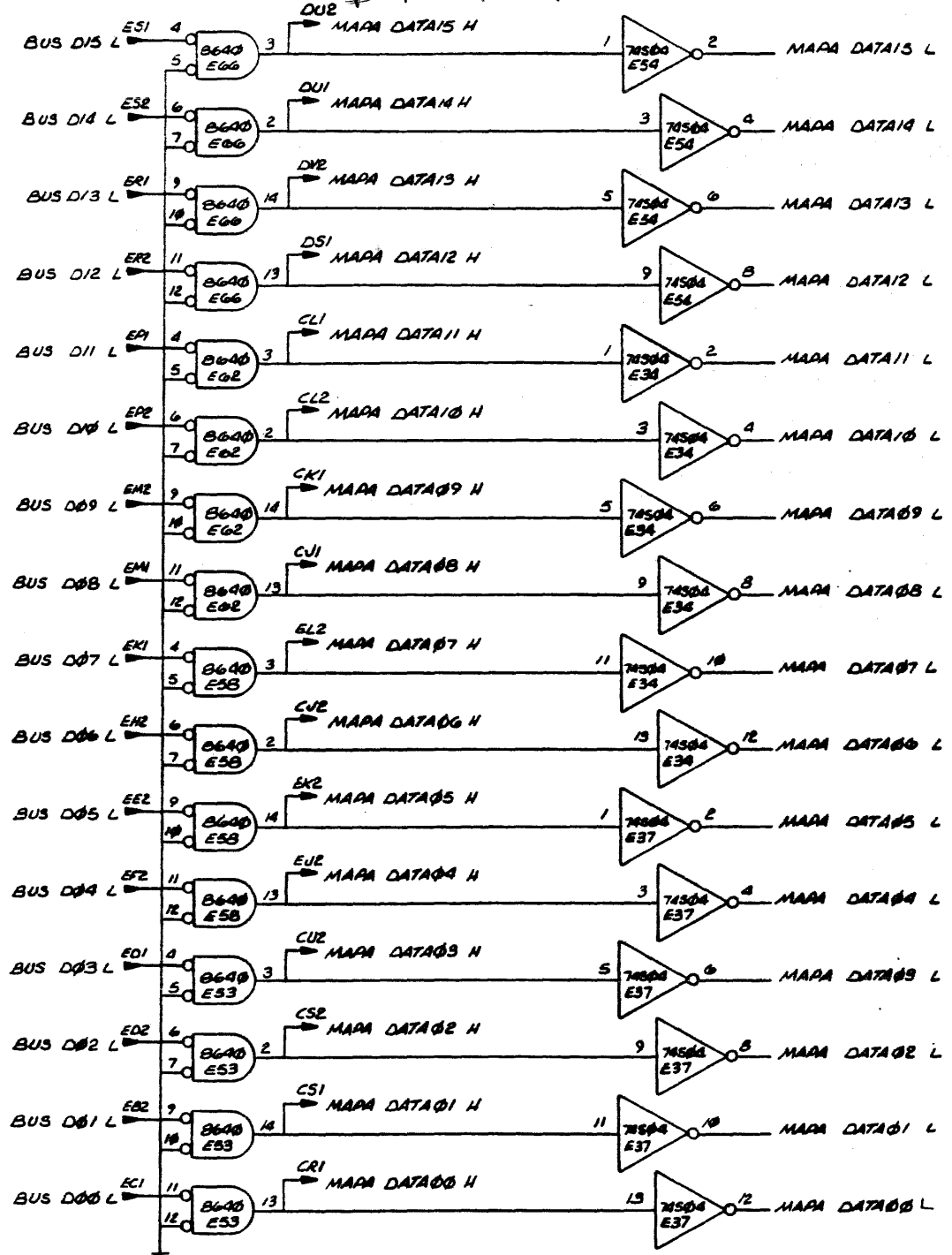
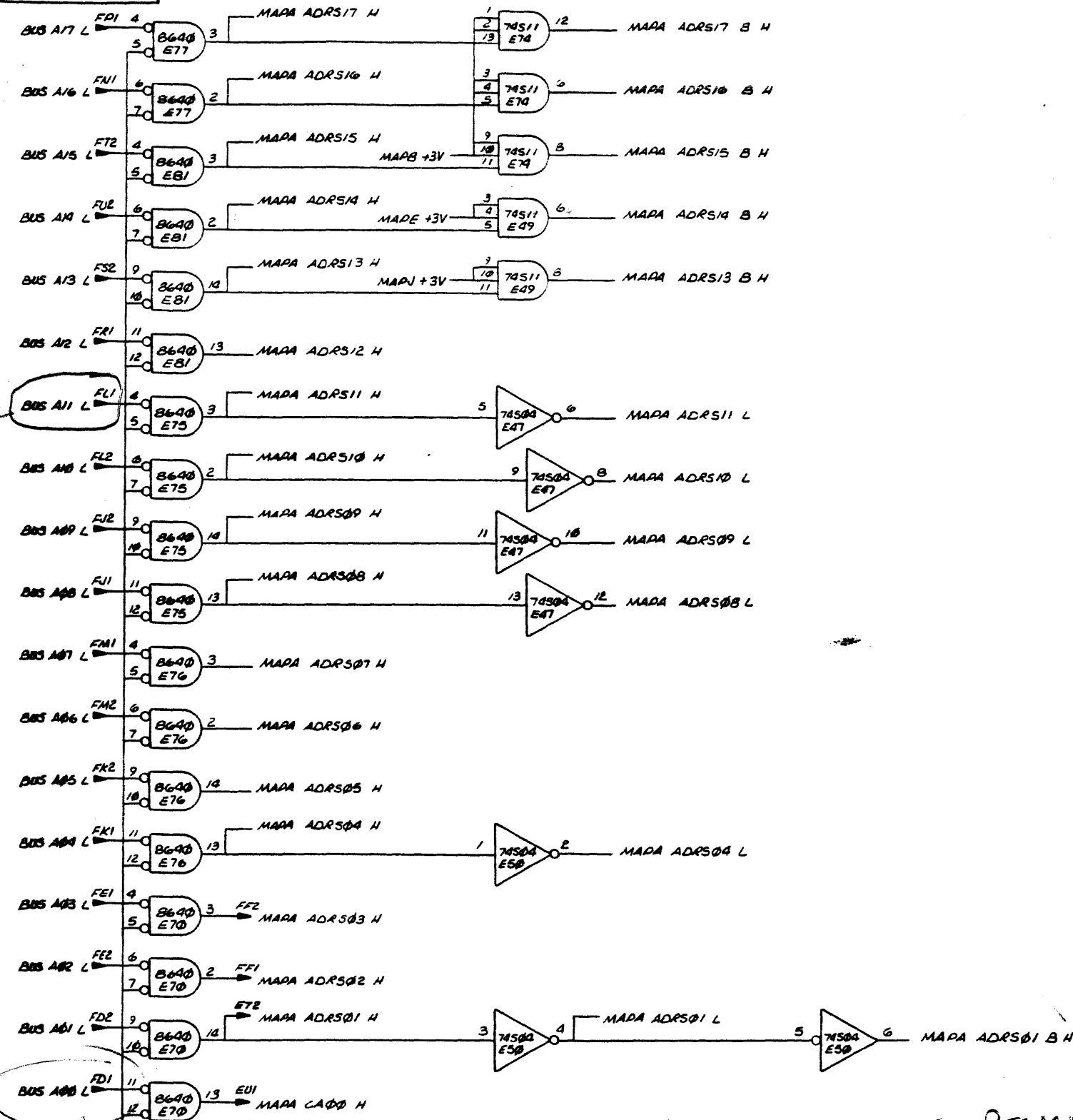
DCS M8141-0-1

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ADDRESS

DATA

KILLS UNIBUS MAP



ADDRESS ERROR WHEN DOING UNIBUS RELOCATION TEST AND FAILS EKBF

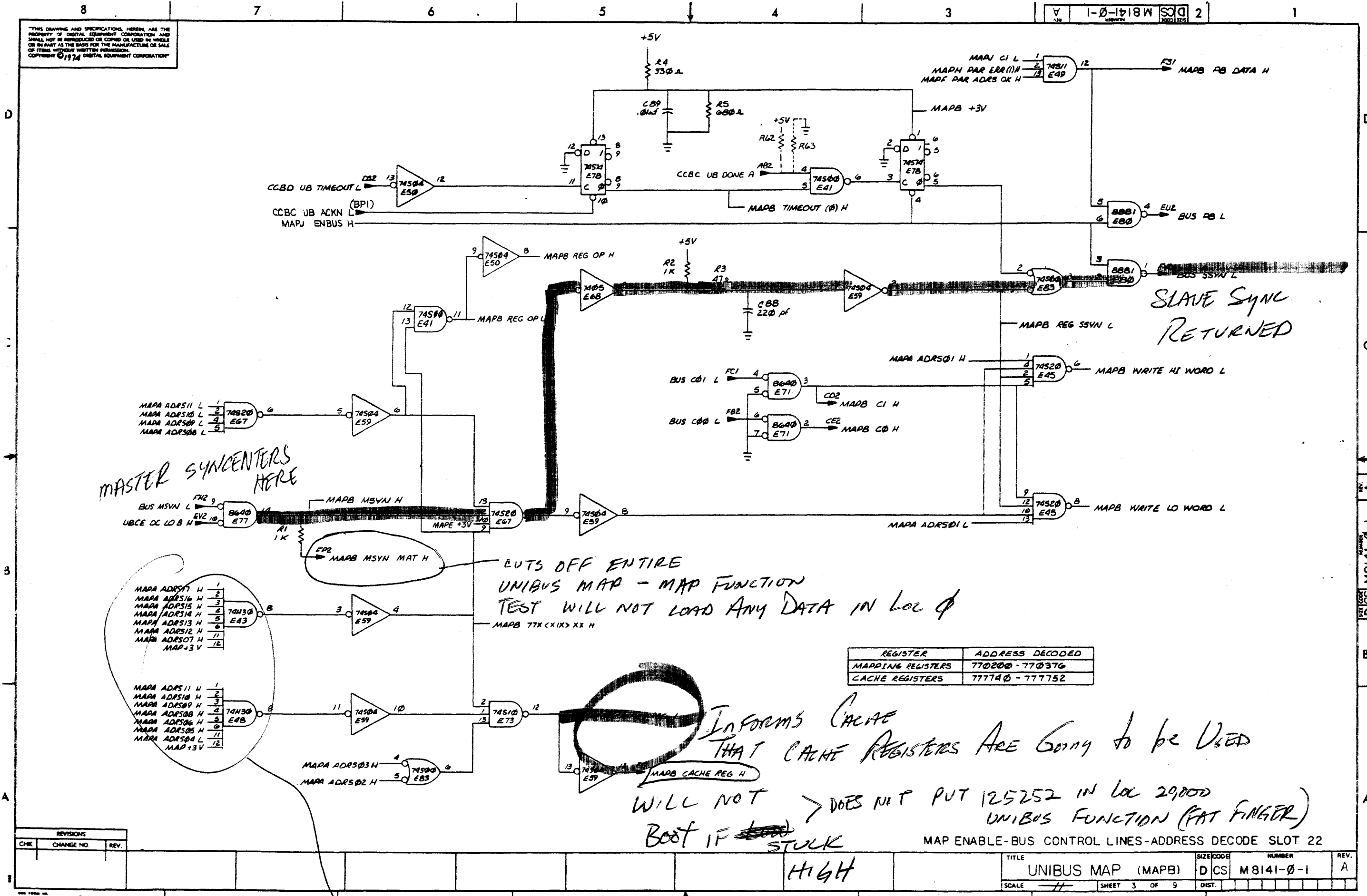
REV.	CHANGE NO.	REV.

BUS ADDRESS AND DATA RECEIVERS SLOT 22

TITLE	SIZE CODE	NUMBER	REV.
UNIBUS MAP (MAPA)	D CS	M8141-0-1	A
SCALE	SHEET	DIST.	
8	7	6	5
4	3	2	1

D E C S M 8141-0-1

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MASTER SYNCENTERS HERE

SLAVE SYNC RETURNED

CUTS OFF ENTIRE UNIBUS MAP - MAP FUNCTION TEST WILL NOT LOAD ANY DATA IN LOC 0

REGISTER	ADDRESS DECODED
MAPPING REGISTERS	770200 - 770376
CACHE REGISTERS	777740 - 777752

INFORMS CACHE THAT CACHE REGISTERS ARE GOING TO BE USED

WILL NOT BOOT IF ~~STUCK~~ DOES NOT PUT 125252 IN LOC 29,000 UNIBUS FUNCTION (FAT FINGER)

HIGH Says all data is going to CACHE

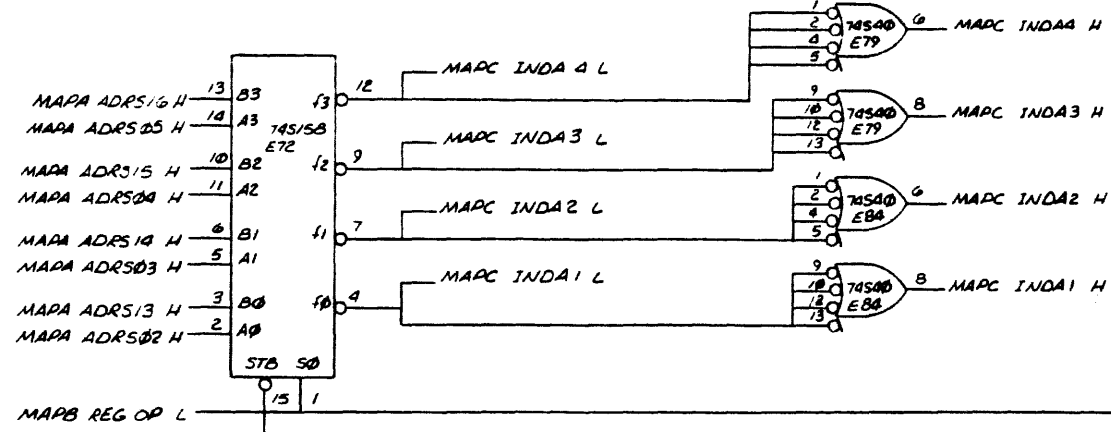
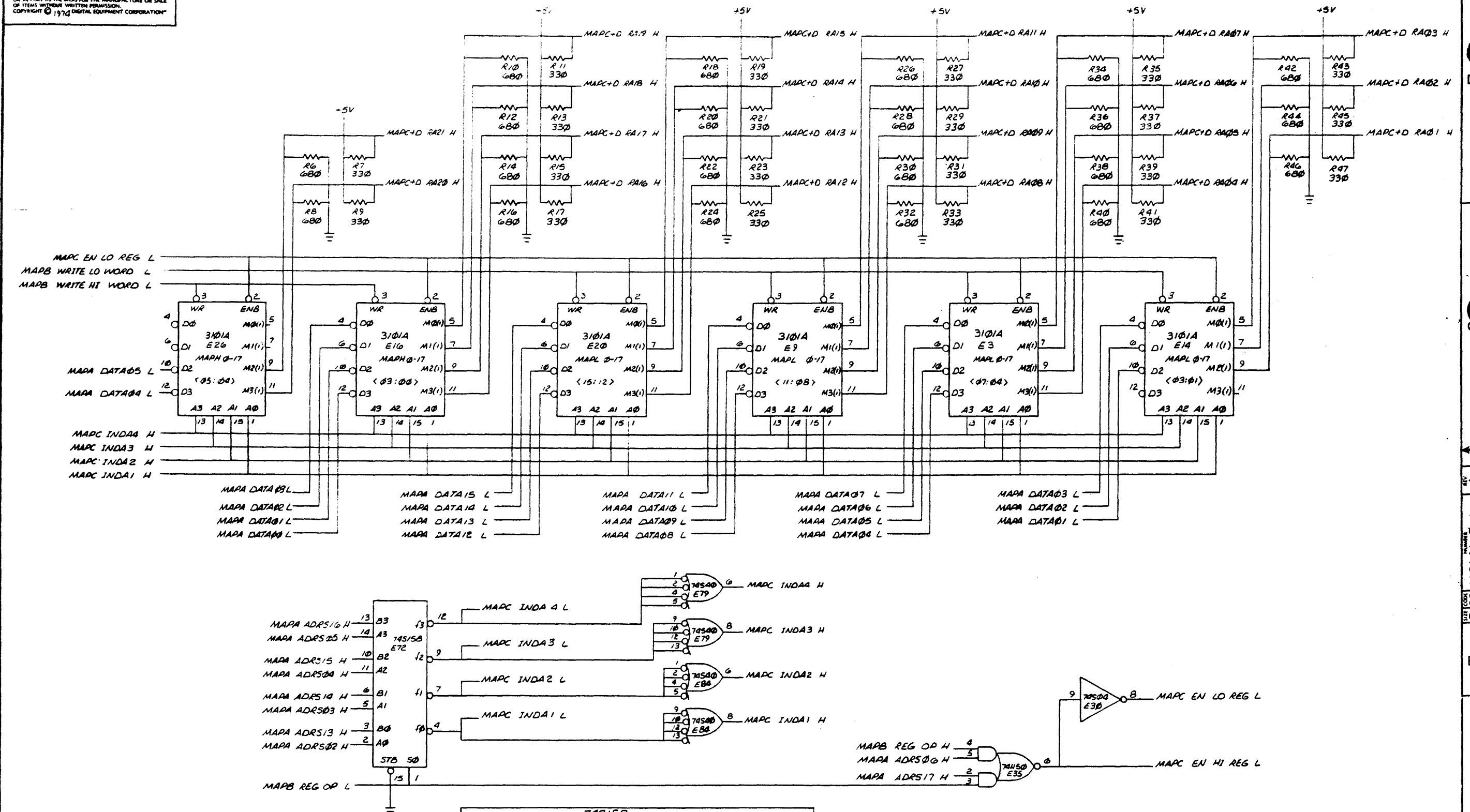
REVISIONS		
CHK	CHANGE NO.	REV.

MAP ENABLE-BUS CONTROL LINES-ADDRESS DECODE SLOT 22

TITLE	SIZE/CODE	NUMBER	REV.
UNIBUS MAP (MAPB)	D CS	M8141-0-1	A

SCALE: 1/4 SHEET 3 OF 9 DIST.

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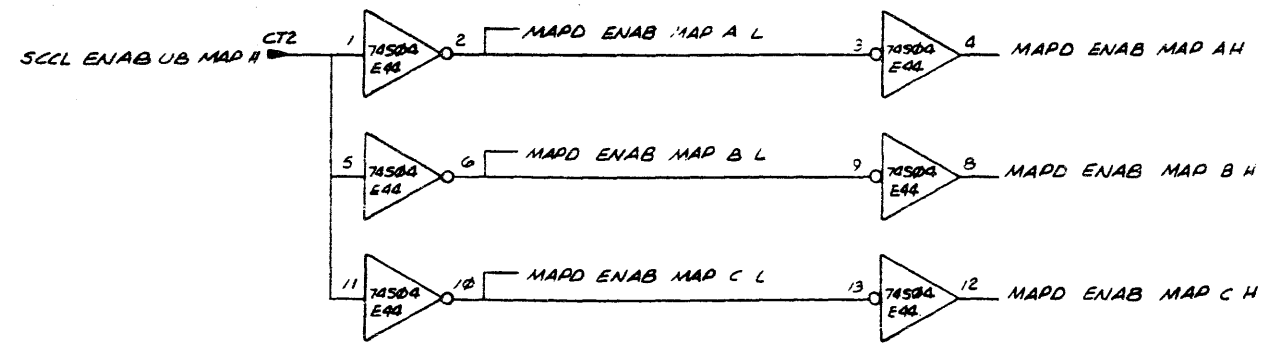
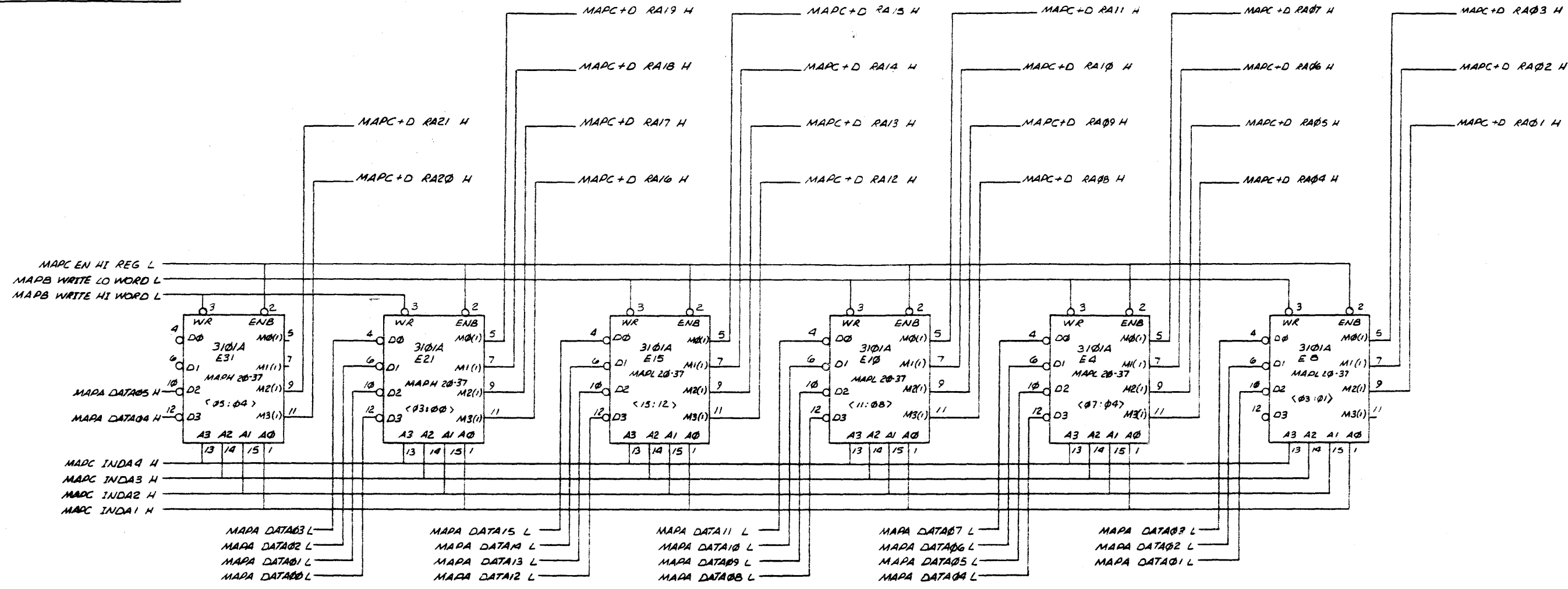
74S15B			
S $\bar{0}$	INP	OUTPUT	FUNCTION
L	\bar{A}	MAPA ADRS <05:02>	MAPPING REGISTER REFERENCE
H	\bar{B}	MAPA ADRS <16:13>	UNIBUS ADDRESS RELOCATION

LOWER MAPPING REGISTER SLOT 22

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE CODE	NUMBER	REV.
UNIBUS MAP (MAPC)		D CS	M8141-0-1	A
SCALE	SHEET	OF	DIST.	
	4	9		

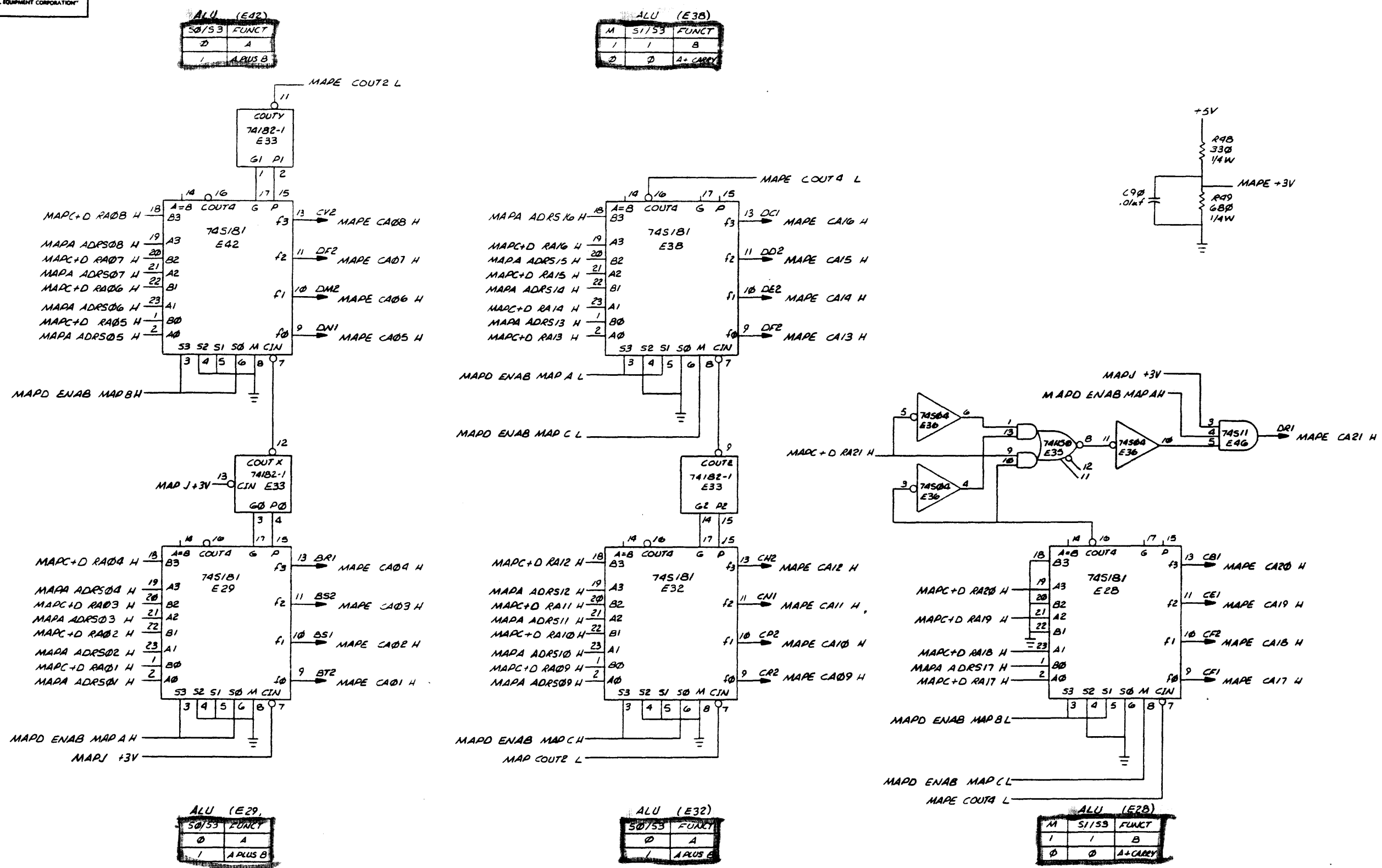
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REVISIONS		
CHK	CHANGE NO	REV

UPPER MAPPING REGISTER		SLOT 22	
TITLE	UNIBUS MAP (MAPD)	SIZE CODE	NUMBER
SCALE	1/1	D	CS M 8141-0-1
SHEET	5 OF 9	DIST	

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ALU (E42)

S0/S3	FUNCT
0	A
1	A PLUS B

ALU (E3B)

M	S1/S3	FUNCT
1	1	B
0	0	A + CARRY

ALU (E29)

S0/S3	FUNCT
0	A
1	A PLUS B

ALU (E32)

S0/S3	FUNCT
0	A
1	A PLUS B

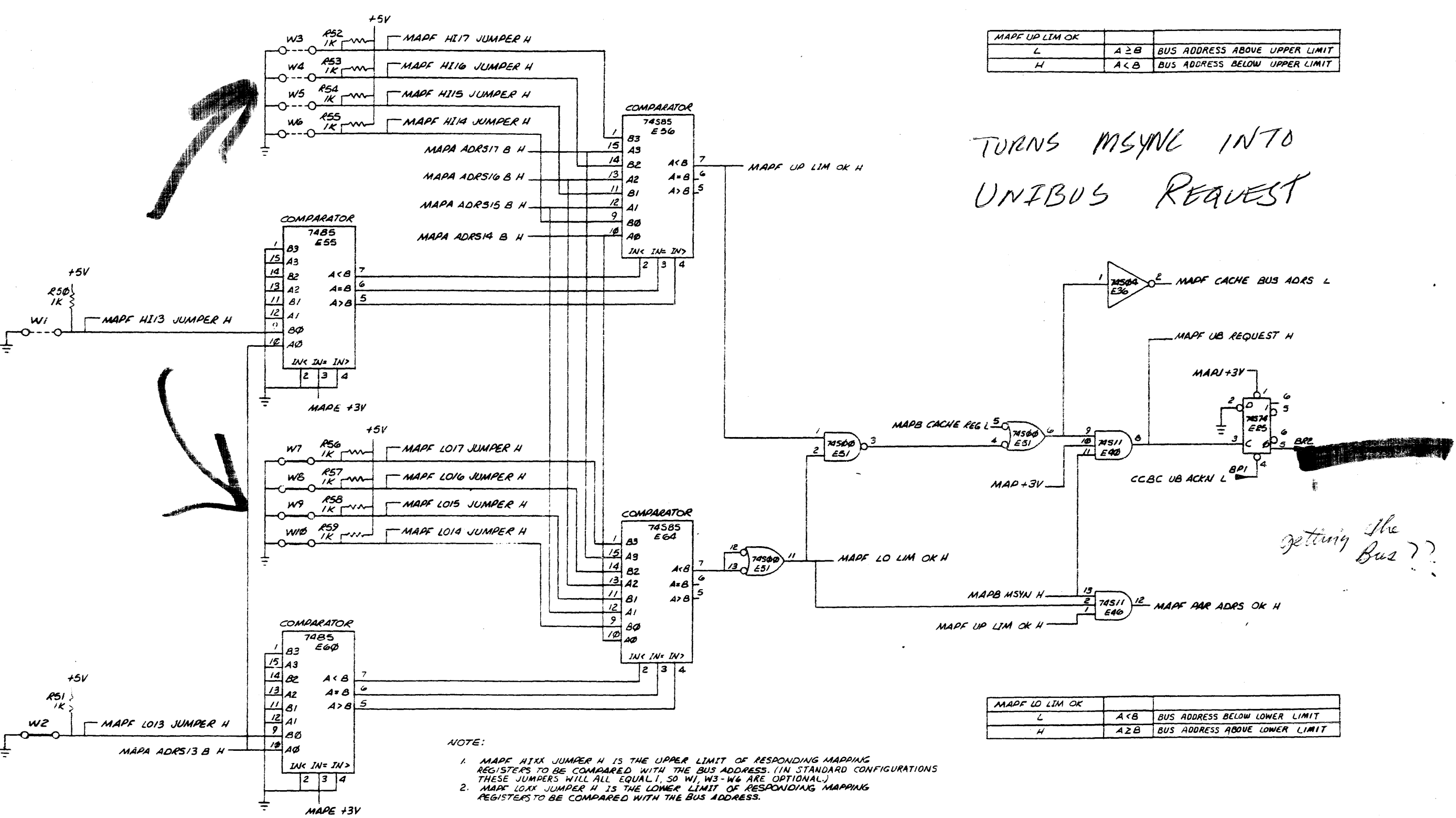
ALU (E2B)

M	S1/S3	FUNCT
1	1	B
0	0	A + CARRY

REVISIONS		
CHK	CHANGE NO.	REV.

CACHE ADRS		SLOT 22	
TITLE	SIZE/CODE	NUMBER	REV.
UNIBUS MAP (MAPE)	D/CS	M8141-0-1	A
SCALE	SHEET	DIST	
77	6 OF 9		

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MAPF UP LIM OK		
L	$A \geq B$	BUS ADDRESS ABOVE UPPER LIMIT
H	$A < B$	BUS ADDRESS BELOW UPPER LIMIT

TURNS MSYNC INTO UNIBUS REQUEST

getting the Bus??

- NOTE:
1. MAPF HIXX JUMPER H IS THE UPPER LIMIT OF RESPONDING MAPPING REGISTERS TO BE COMPARED WITH THE BUS ADDRESS. (IN STANDARD CONFIGURATIONS THESE JUMPERS WILL ALL EQUAL 1, SO W1, W3-W6 ARE OPTIONAL.)
 2. MAPF LOXX JUMPER H IS THE LOWER LIMIT OF RESPONDING MAPPING REGISTERS TO BE COMPARED WITH THE BUS ADDRESS.

MAPF LO LIM OK		
L	$A < B$	BUS ADDRESS BELOW LOWER LIMIT
H	$A \geq B$	BUS ADDRESS ABOVE LOWER LIMIT

REVISIONS		
CHK	CHANGE NO.	REV.

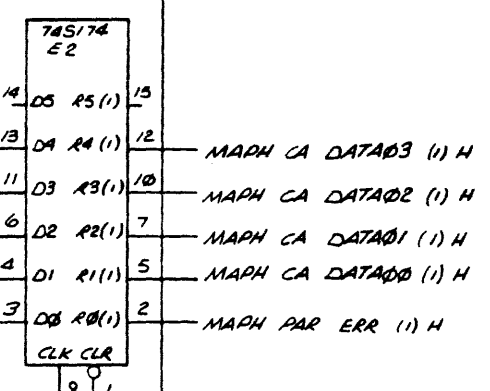
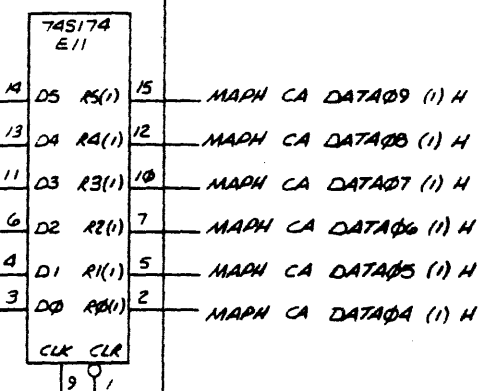
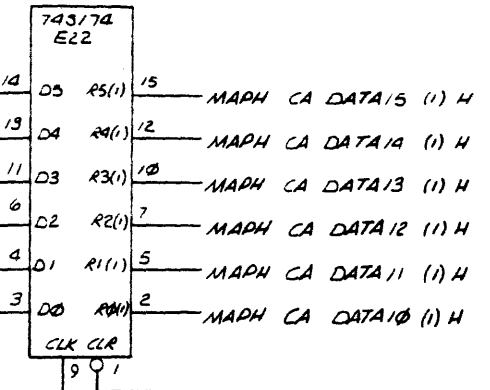
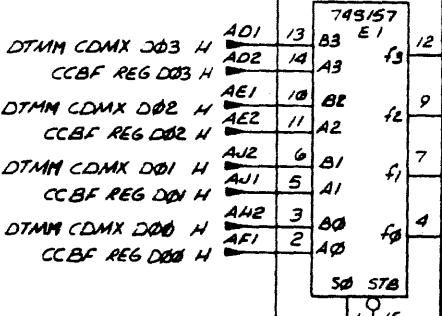
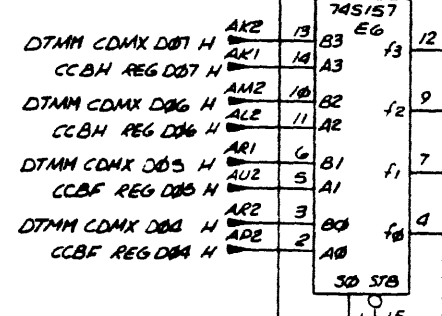
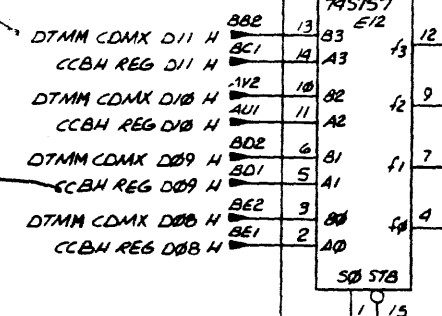
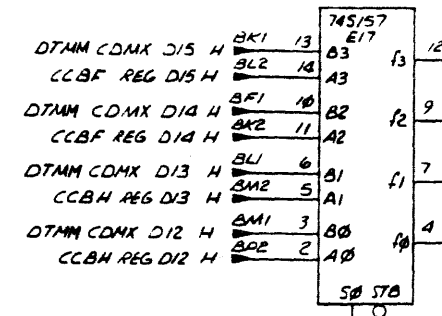
MAP LIMIT COMPARATOR SLOT 22

TITLE	UNIBUS MAP (MAPF)	SIZE CODE	D C S	NUMBER	M 8141-0-1	REV	A
SCALE	1/8"	SHEET	7 OF 9	DIST			

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74S157		
SD	INP	OUTPUT
L	A	CACHE REG DATA
H	B	CACHE DATA

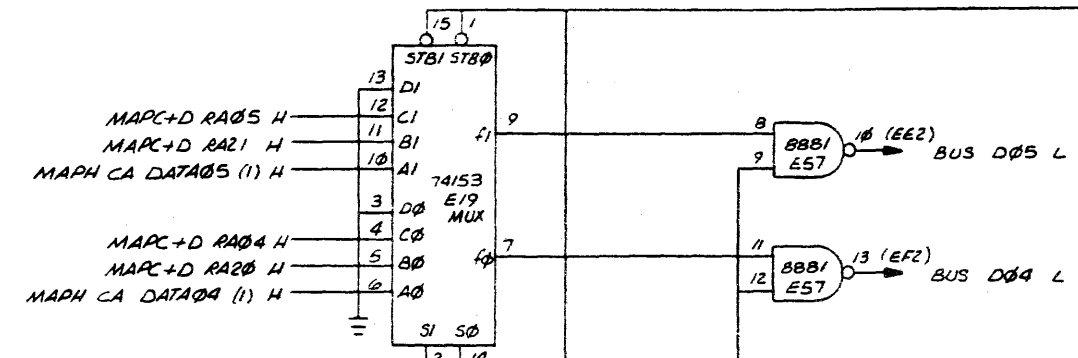
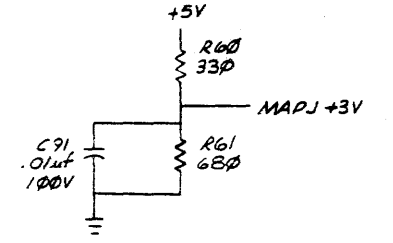
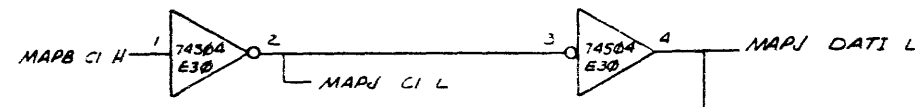
Cache Register Data Read



DTMM BAD PARITY H AF2 3 D0 R0(1) 2 MAPH PAR ERR (1) H
 CCBC UB DONE H (AB2)
 MAPH MSYN H

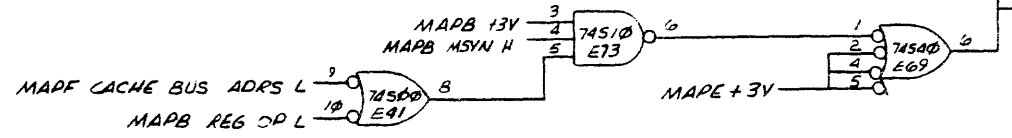
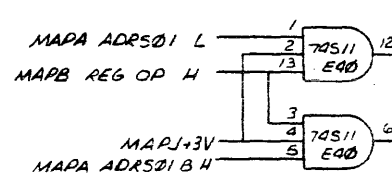
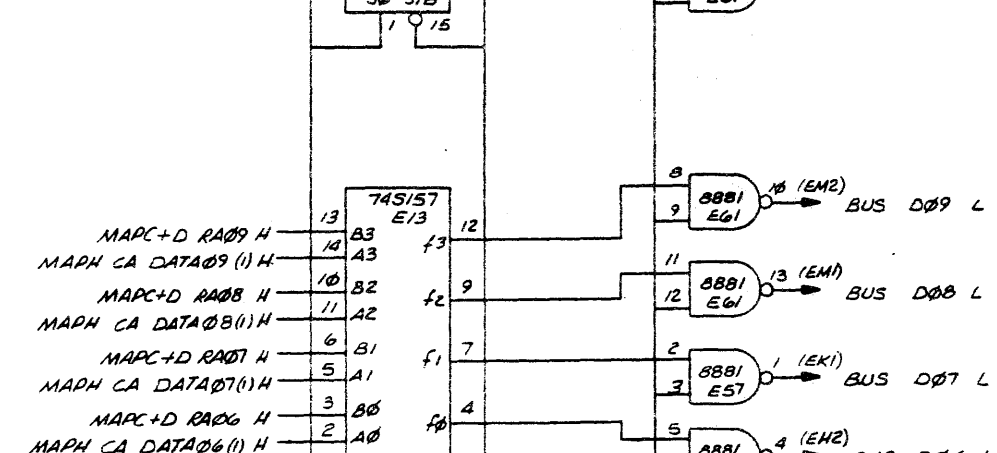
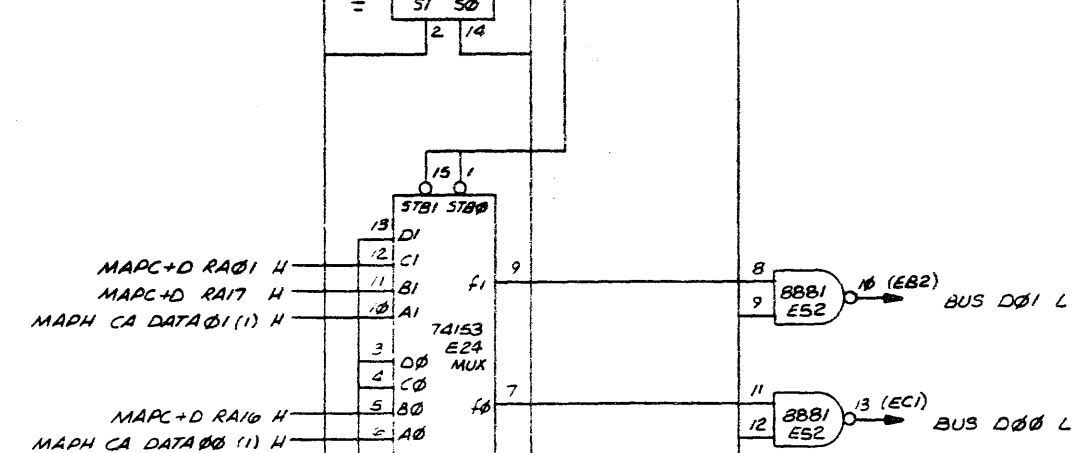
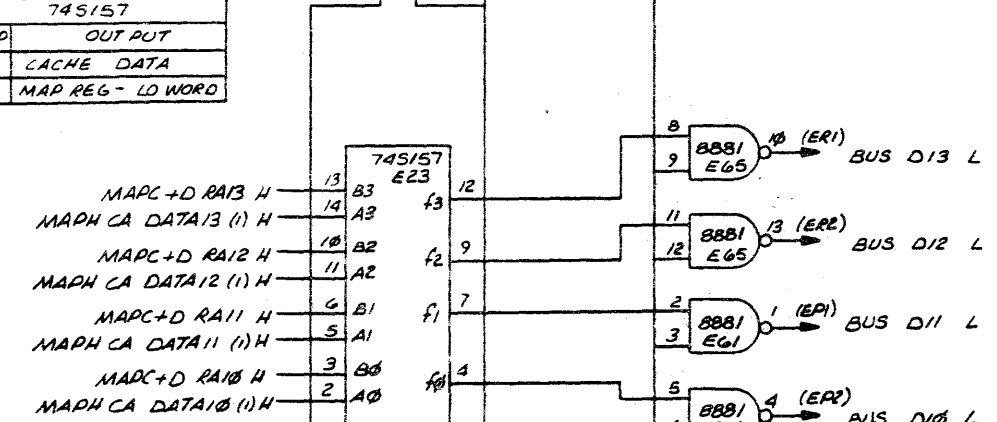
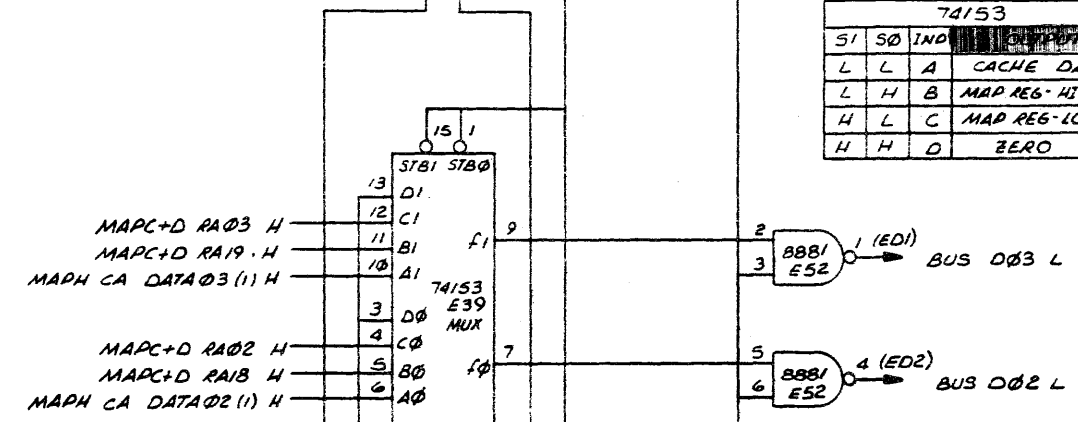
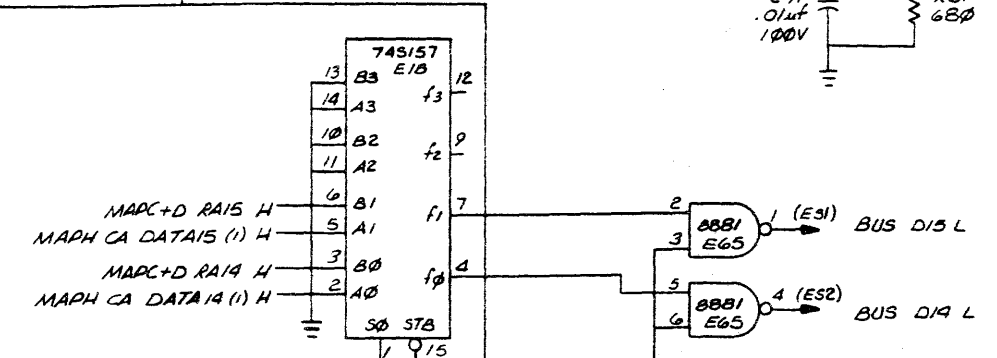
REVISIONS		
CHK	CHANGE NO.	REV.

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S1	S0	IND	OUT PUT
L	L	A	CACHE DATA
L	H	B	MAP REG - HI WORD
H	L	C	MAP REG - LO WORD
H	H	D	ZERO

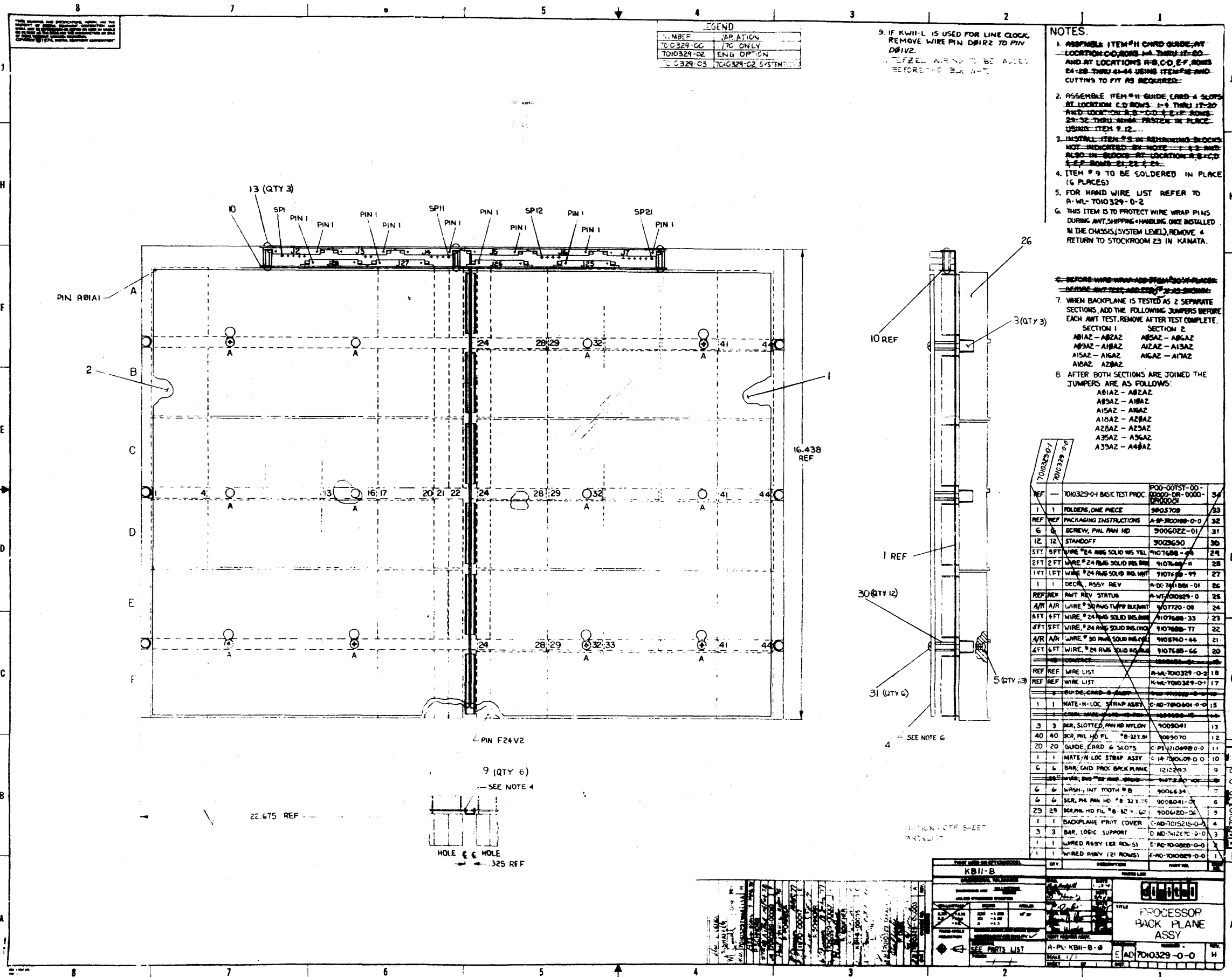
S0	INP	OUT PUT
L	A	CACHE DATA
H	B	MAP REG - LO WORD



REVISIONS		
CHK	CHANGE NO	REV.

DATA MUX AND DRIVERS		SLOT 22	
TITLE	SIZE CODE	NUMBER	REV.
UNIBUS MAP (MAPJ)	D/CS	M8141-0-1	1
SCALE	SHEET	OF	DIST
	9	9	

REV. A
M8141-0-1
D/CS



LEGEND

NUMBER	DESCRIPTION
700329-00	700 ONLY
700329-02	ENG OPTION
700329-03	700329-02 SYSTEM

9. IF KWHL IS USED FOR LINE CLOCK REMOVE WIRE PIN D01R2 TO PIN D01V2. REFERRED WIRING TO BE ADDED BEFORE THE BLD ANT.

- NOTES:
1. ASSEMBLE ITEM #4 CHARD GUIDE AT LOCATION C0, ROWS 14 THRU 17-20 AND AT LOCATIONS R-B, C0, C1, C2, C3, C4 THRU 44-44 USING ITEM #5 AND CUTTING TO FIT AS REQUIRED.
 2. ASSEMBLE ITEM #4 GUIDE CARD 4 SLOTS AT LOCATION C0 ROWS 14 THRU 17-20 AND LOCATIONS R-B, C0, C1, C2, C3, C4 THRU 44-44 USING ITEM #5 AND CUTTING TO FIT AS REQUIRED.
 3. INSTALL ITEM #5 IN REMAINING SLOTS NOT INDICATED BY NOTE 1 & 2 ALSO IN SLOTS AT LOCATION R-B, C0, C1, C2, C3, C4 THRU 44-44.
 4. ITEM #9 TO BE SOLDERED IN PLACE (G PLACES)
 5. FOR WIRE LIST REFER TO A-WL-700329-0-2
 6. THIS ITEM IS TO PROTECT WIRE WRAP PINS DURING ANT, SHIPPING & HANDLING. ONCE INSTALLED IN THE CHASSIS (SYSTEM LEVEL), REMOVE & RETURN TO STOCKROOM 23 IN KANATA.

6. BEFORE WIRE WRAP ADD ITEM #6 TO PLACES BEFORE ANT TEST AND TEST #2 AS SHOWN:
7. WHEN BACKPLANE IS TESTED AS 2 SEPARATE SECTIONS ADD THE FOLLOWING JUMPER BEFORE EACH ANT TEST. REMOVE AFTER TEST COMPLETE.
- | | |
|---------------|---------------|
| SECTION 1 | SECTION 2 |
| A1A2 - A2A2 | A5A2 - A6A2 |
| A3A2 - A4A2 | A7A2 - A8A2 |
| A9A2 - A10A2 | A11A2 - A12A2 |
| A13A2 - A14A2 | A15A2 - A16A2 |
| A17A2 - A18A2 | A19A2 - A20A2 |
| A21A2 - A22A2 | A23A2 - A24A2 |
| A25A2 - A26A2 | A27A2 - A28A2 |
| A29A2 - A30A2 | A31A2 - A32A2 |
| A33A2 - A34A2 | A35A2 - A36A2 |
| A37A2 - A38A2 | A39A2 - A40A2 |
| A41A2 - A42A2 | A43A2 - A44A2 |

REF	QTY	DESCRIPTION	UNIT	REF	QTY	DESCRIPTION	UNIT
REF		700329-01 BACK TEST PROC		REF		700329-02	
1	1	FOLDERS, ONE PIECE		30	12	WIRE #30 AWG TYP BK WMT	
REF		PACKAGING INSTRUCTIONS		ATT	4	WIRE #24 AWG SOLID BSL WMT	
6	6	SCREW, PHL PAN HD		47T	1	WIRE #24 AWG SOLID BSL WMT	
12	12	STANDOFF		A/R	A/H	WIRE #30 AWG SOLID BSL WMT	
5T	5	WIRE #24 AWG SOLID WSL TEL		47T	6	WIRE #24 AWG SOLID BSL WMT	
21T	2	WIRE #24 AWG SOLID BSL WMT		REF		WIRE LIST	
1Y1T	1	WIRE #24 AWG SOLID BSL WMT		REF		WIRE LIST	
1	1	DECL, PSSY REV		3	3	BAR, LOGIC SUPPORT	
REF		ANT REV STATUS		1	1	WIRED ASSY (2 ROWS)	
A/R	A/R	WIRE #30 AWG TYP BK WMT		1	1	WIRED ASSY (21 ROWS)	
ATT	4	WIRE #24 AWG SOLID BSL WMT					
47T	1	WIRE #24 AWG SOLID BSL WMT					
A/R	A/H	WIRE #30 AWG SOLID BSL WMT					
47T	6	WIRE #24 AWG SOLID BSL WMT					
REF		WIRE LIST					
REF		WIRE LIST					
1	1	MATE-N-LOC STRAP ASSY					
3	3	BAR, SLOTTED, PAN HD NYLON					
40	40	SCR, PHL HD FL #8-32 X.75					
20	20	GUIDE, CARD & SLOTS					
1	1	MATE-N-LOC STRAP ASSY					
6	6	BAR, GND PROC BACK PLANE					
6	6	WASH, INT TOOTH #8					
6	6	SCR, PHL PAN HD #8-32 X.75					
29	29	SCR, PHL HD FL #8-32 X.62					
1	1	BACKPLANE PRINT COVER					
3	3	BAR, LOGIC SUPPORT					
1	1	WIRED ASSY (2 ROWS)					
1	1	WIRED ASSY (21 ROWS)					

PARTS LIST		PROCESSOR BACK PLANE ASSY	
QTY	DESCRIPTION	QTY	DESCRIPTION
1	700329-01	1	700329-01
1	700329-02	1	700329-02
1	700329-03	1	700329-03
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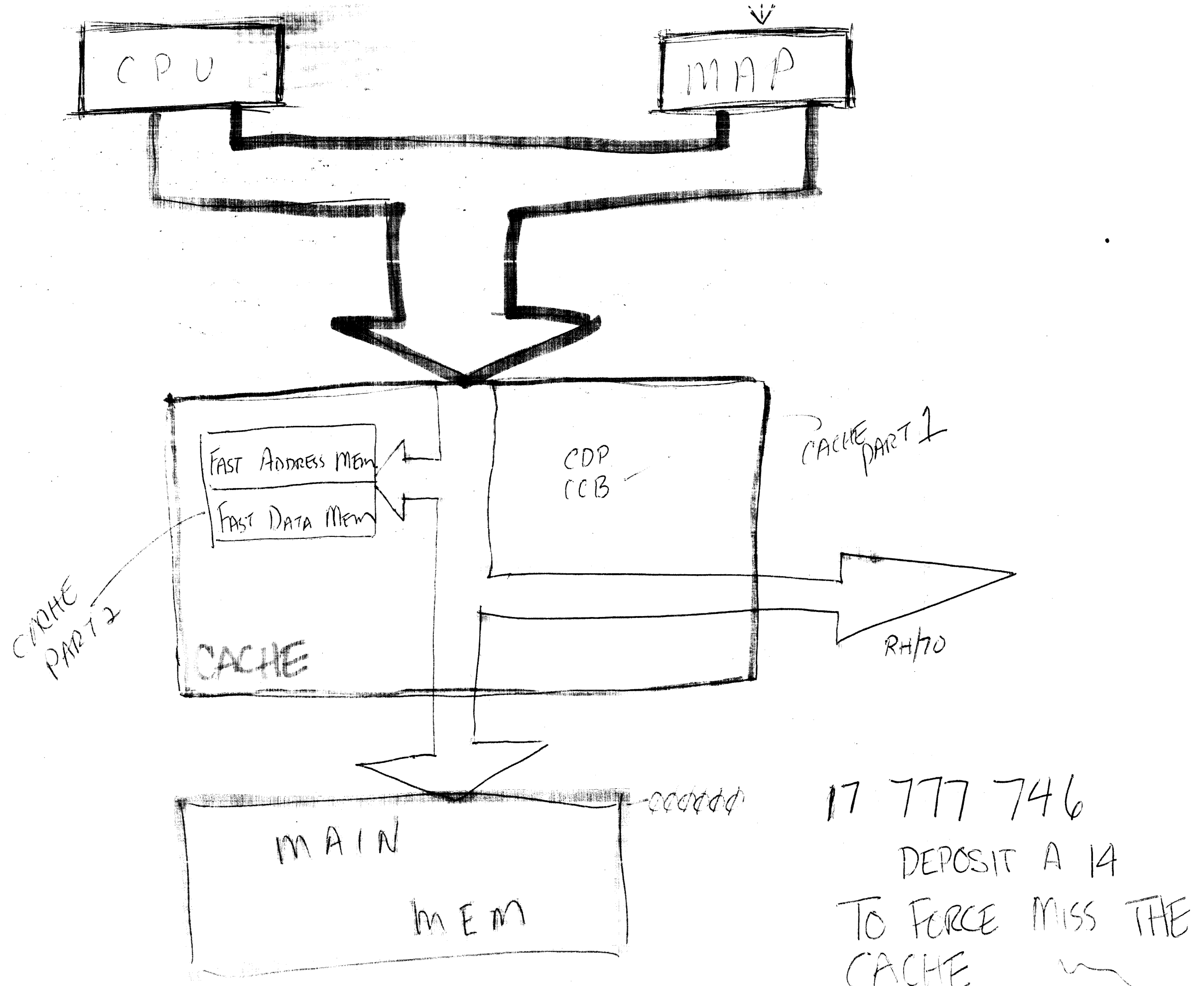
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DRAWING NUMBER	INIT REL	AUTOMATIC WIRE TESTER (AWT) REVISION STATUS																REV. S
	T7	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S		
E-AD-7010829-0-0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
E-AD-7010828-0-0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
K-WL-7010329-0-1	*	A	B	B	C	C	C	D	E	F	H	J	K	K	L	M		
A-WL-7010329-0-2	*	*	*	A	A	B	B	B	B	B	C	C	C	C	D	D		
E-AD-7010329-0-0	*	*	*	*	*	A	B	B	B	B	C	C	D	E	F	F		
D-CS-5411337-0-1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
D-CS-5411339-0-1	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
E-IA-7010510-0-0	*	*	*	*	*	*	*	*	*	*	*	*	A	A	A	A		
E-IA-7010511-0-0	*	*	*	*	*	*	*	*	*	*	*	A	A	B	B	B		

REV. S
NUMBER 7010329-0
SIZE CODE AWT

REV. A		REV. B		REV. C		REV. D		REV. E		REV. F		REV. H		REV. J		REV. K		REV. L		REV. M		REV. N		REV. P		REV. R		REV. S	
CHK	CHANGE NO.	CHK	CHANGE NO.	CHK	CHANGE NO.	CHK	CHANGE NO.	CHK	CHANGE NO.	CHK	CHANGE NO.	CHK	CHANGE NO.	CHK	CHANGE NO.	CHK	CHANGE NO.	CHK	CHANGE NO.	CHK	CHANGE NO.	CHK	CHANGE NO.	CHK	CHANGE NO.	CHK	CHANGE NO.	CHK	CHANGE NO.
	KB11-B-00001		KB11-B-00002		7010329-0002A		KB11-B-00003		7010329-00003		7010329-00004		7010329-00006		7010329-00006		11/70-00007		KB11-B-00005		7010329-8		7010329-9		11/70-00017		7010329-00010		7010329-00011

DRN. D. HEALY	DATE 1/20/75	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. D. HEALY	DATE 1/20/75	
ENG. <i>Don Weir</i>	DATE 3/5/75	
PRD. ENG. <i>Don Weir</i>	DATE 3/5/75	
TITLE		PROC BACK PLANE 7010329
FIRST USED ON		
KB11-B		AWT REVISION STATUS
SCALE <i>1:1</i>	SHEET 1 OF 1	SIZE CODE AWT NUMBER 7010329-0 REV. S



17 777 746
DEPOSIT A 14
TO FORCE MISS THE
CACHE