

**FP11-B
floating-point
processor
engineering drawings**

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

SEQUENCE	SEQUENCE
DRAWING DIRECTORY	B-DD-FP11-0 (SHEET ONE ONLY)
FP DATA PATHS	D-FD-FP11-B-01
FP11 FLOWS 1(READY STATE & UTRAPS)	D-FD-FP11-B-02
FP11 FLOWS 2(NOMEM CLASS)	D-FD-FP11-B-03
FP11 FLOWS 3(NOMEM CLASS)	D-FD-FP11-B-04
FP11 FLOWS 4(LOAD CLASS)	D-FD-FP11-B-05
FP11 FLOWS 5(LOAD CLASS)	D-FD-FP11-B-06
FP11 FLOWS 6(STORE CLASS)	D-FD-FP11-B-07
FP11 FLOWS 7(STORE CLASS)	D-FD-FP11-B-08
FP11 FLOWS 8(EXECUTE ADD, SUB, OR CMP)	D-FD-FP11-B-09
FP11 FLOWS 9(EXECUTE ADD, SUB, OR CMP)	D-FD-FP11-B-10
FP11 FLOWS 10(EXECUTE MUL OR MOD)	D-FD-FP11-B-11
FP11 FLOWS 11(EXECUTE DIV, LDCF OR LDCI)	D-FD-FP11-B-12
FP11 FLOWS 12(NORMALIZE & ROUND)	D-FD-FP11-B-13
FP11 FLOWS 13(EXECUTE STXP & STCF)	D-FD-FP11-B-14
FP11 FLOWS 14(EXECUTE STCI)	D-FD-FP11-B-15
FRACTION DATA PATH HIGH ORDER(FRH)	E-CS-M8114-0-1
FRACTION DATA PATH LOW ORDER(FRL)	E-CS-M8115-0-1
FP ROM & ROM CONTROL (FRM)	E-CS-M8112-0-1
FP EXPONENT DATA PATH (FXP)	E-CS-M8113-0-1
ACCESSORY LIST	A-AL-FP11-B-16

UNIT VARIATIONS		PRINT SET TYPE			
VARIATION	TITLE	FP11-1			
FP11-B	FLOATING POINT PROCESSOR				

REVISIONS			USED ON OPTION/MODEL	DRN.	DATE	TITLE
DATE	CHG. NO.	REV				
7-72	FP11-1	A	11/45	R. COOK	2/24/72	FLOATING POINT PROCESSOR
				R. COOK	4/19/72	
				R. B. Hughes	1/28/72	
						FIELD SERV. DATE
						5/1/72
						5/1/72
					SHEET	1 OF 3
					DIST	
					SIZE CODE	B DD
					NUMBER	FP11-0
					REV	A

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ALUC
 0 A
 1 A + B
 2 A - B
 3 B
 4 A + B
 5 B
 6 A - B - 1
 7 A - B
 8 A + B + 1
 9 A + B
 10 A + B
 11 A + B + 1
 12 B
 13 A + B
 14 1
 15 A - 1
 16 A + B
 17 A

CNST
 0 200
 1 1 TO 10
 11 100000
 12 TO 14 12 TO 14
 15 100004
 16 17
 20 220
 21 TO 31 21 TO 31
 32 70
 33 71
 34 TO 35 34 TO 35
 36 74
 37 75

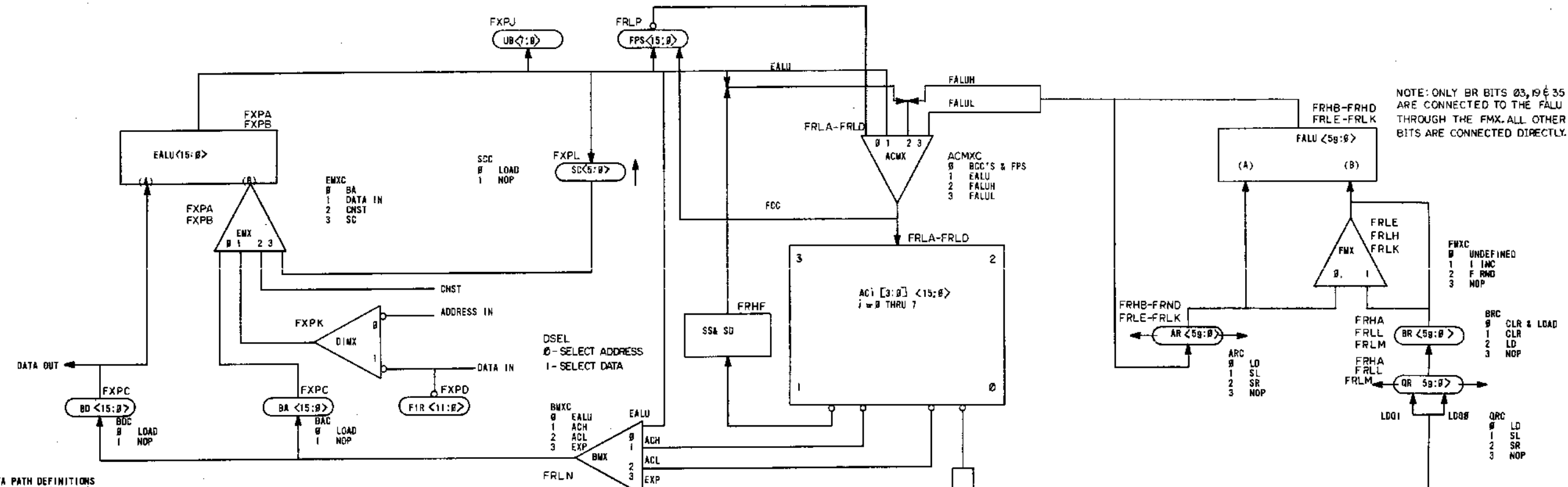
RDFN CNSTF (1)
 CNSTF0
 0 TRAP & WAIT FOR ACKN
 1 NOP
 CNSTF1
 0 WAIT FOR ATTN
 1 NOP
 CNSTF2
 0 NOT USED
 1 NOP
 CNSTF3
 0 DATA
 1 NOP
 CNSTF4
 0 TRAP IF -B
 1 NOP

FCC
 0 LD FN FZ CLR FV EFC
 1 LD FN FZ FV EFC
 2 LD FN FZ CLR FV SET FC
 3 NOP

SYNC
 0 ENABLE
 1 NOP
 ADDR INCR
 0 ADD 2 TO ADDRESS
 1 ADD 0 TO ADDRESS
 DISBL0
 0 CLR INITF & ABORTF
 1 NOP
 DISBL1
 0 CLR FP RED
 1 NOP

CONTROL SEL
 0 LD FPS
 1 LD UB
 2 REG WRITE
 3 DISABLE SYNC
 4 DISABLE SC
 5 FIR CLK
 6 NOT USED
 7 NOP

CSB
 0 FRAC-MUL
 1 FRAC-DIV
 2 RS-AR-SC
 3 LS-AR-NORM
 4 RS-QR-SC (0 IN)
 5 LS-QR-SC
 6 RS-QR-SC (1 IN)
 7 NOP



NOTE: ONLY BR BITS 03, 04 & 35 ARE CONNECTED TO THE FALU THROUGH THE FMX. ALL OTHER BITS ARE CONNECTED DIRECTLY.

DATA PATH DEFINITIONS

ACMX ← FPS = ACMX <31> ← BM; ACMX <30> ← B2; ACMX <29:16> ← 2777; ACMX <15:0> ← FPS <15:0>
 ACMX ← EALU = ACMX <31:15> ← EALU <15:0>; ACMX <15:0> ← EALU <15:0>
 ACMX ← FALU = ACMX <31:0> ← SD; ACMX <30:23> ← EALU <7:0>; ACMX <22:0> ← FALU <57:35>
 ACMX ← FALU = ACMX <31:0> ← FALU <34:3>
 BMX ← EALU = BMX <15:0> ← EALU <15:0>
 BMX ← ACH = BMX <15:0> ← ACI [3] <15:0> OR ACI [1] <15:0>
 BMX ← ACL = BMX <15:0> ← ACI [2] <15:0> OR ACI [0] <15:0>
 BMX ← EXP = BMX <15:0> ← 0; BMX <7:0> ← ACI [3:2] <38:23>
 EMX ← BA = EMX <15:0> ← BA <15:0>
 EMX ← DATA IN = EMX <15:0> ← DIMX <15:0>
 EMX ← CNST = EMX <15:0> ← CNST <15:0>
 EMX ← SC = EMX <15:0> ← 0; EMX <5:0> ← SC <5:0>
 FMX ← BR = FMX <2> ← BR <35>; FMX <1> ← BR <19>; FMX <0> ← BR <3>
 FMX ← F-RND = FMX <2> ← AR <34> IF PD ELSE FMX <2> ← BR <35>; FMX <1> ← BR <19>; FMX <0> ← AR <2> IF PD ELSE FMX <0> ← BR <3>
 FMX ← I-INC = FMX <2> ← 1; FMX <1> ← 1; FMX <0> ← BR <3>
 LDQI = OR <59> ← 0; OR <58> ← 1 IF ACI [3:2] <38:23> ≠ 0 ELSE OR <56> ← 0; OR <57:35> ← ACI [3:2] <22:0>
 LDQ0 = OR <34:3> ← ACI [1:0] <31:0>; OR <2:0> ← 0

SIGNC
 0 SD ← SS IF SUB ELSE SD ← SS
 1 SD ← SS
 2 SS ← 1
 3 NOP

ACF
 0 ACS
 1 ACSy1
 2 ACC
 3 ACCy1
 4 AC6
 5 AC7
 6 NOT USED
 7 NOT USED

ACC
 0 0
 1 1
 2 2
 3 3
 4 4
 5 5
 6 6
 7 7

ACRE
 0 WRITE
 1 READ

BRC
 0 CLR & LOAD
 1 CLR
 2 LD
 3 NOP

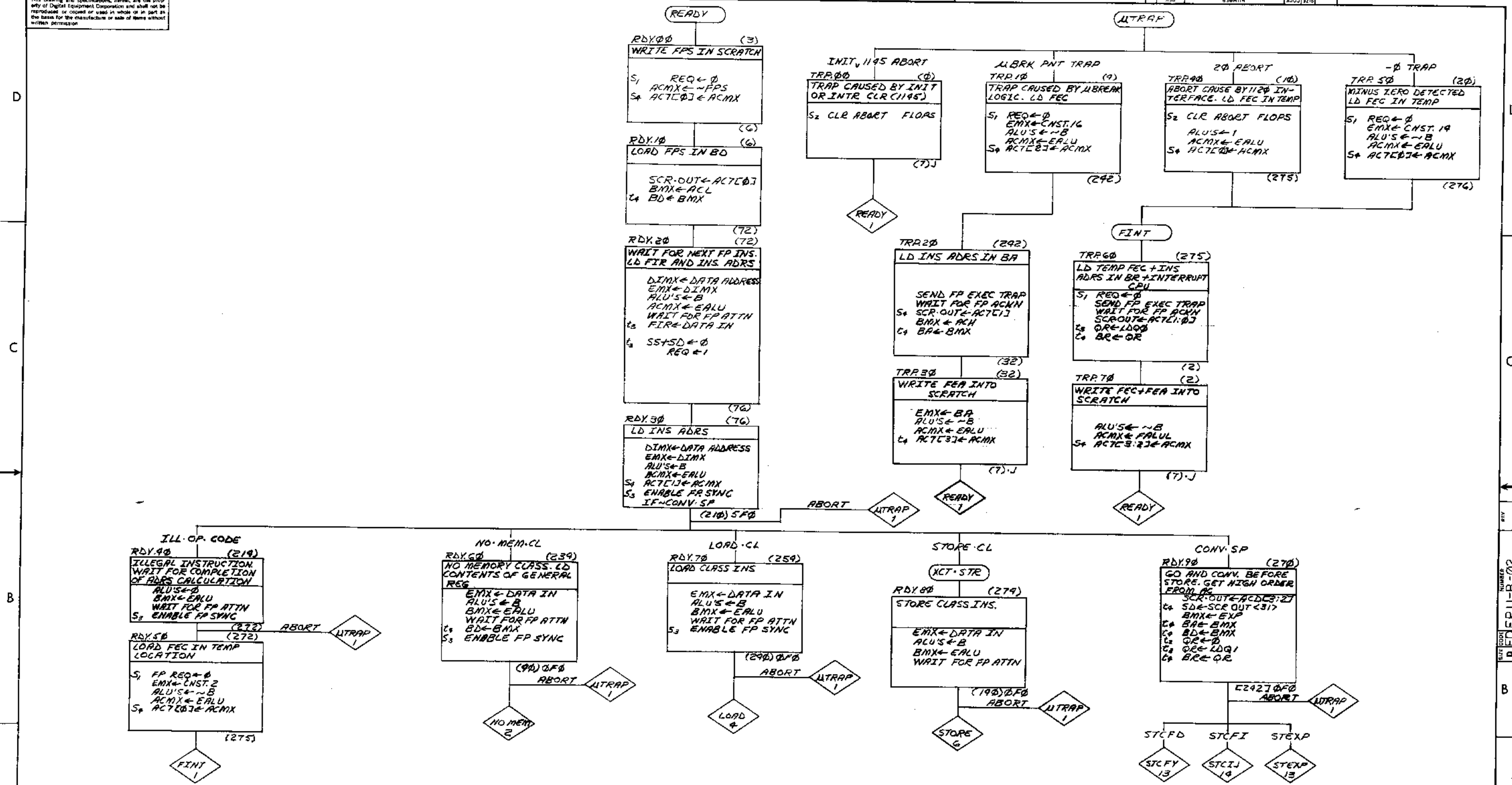
QRC
 0 LD
 1 SL
 2 SR
 3 NOP

REV	CHANGE NO	REVISIONS

FIRST USED ON OPTION/MODEL 11/45	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN 12-24-71	DATE	digital EQUIPMENT CORPORATION METHUEN, MASSACHUSETTS	
DECIMALS	ENG 3/1/72	DATE	TITLE	
ANGLES	PROJ. ENG. 3-10-72	DATE	FP DATA PATHS	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PRD. 3-15-72	DATE		
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
FINISH	B-DD-11/45-0	DFD	FP11-B-01	
SCALE	SHEET	DIST.		

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20-8-11-B-02



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN OK/lt	DATE 10/10/77	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS	ANGLES	DATE 3/10/77	TITLE FP11 FLOWS 1 (READY STATE & UTRAP)	
XXX . 005	00 30	DATE 3/22/77		
X . 1		DATE 3/15/77		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD U. Phuh	DATE 3/15/77		
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
++		B-DD-11/45-0	DFD	
FINISH	SCALE	SHEET	OF	
		2	1	

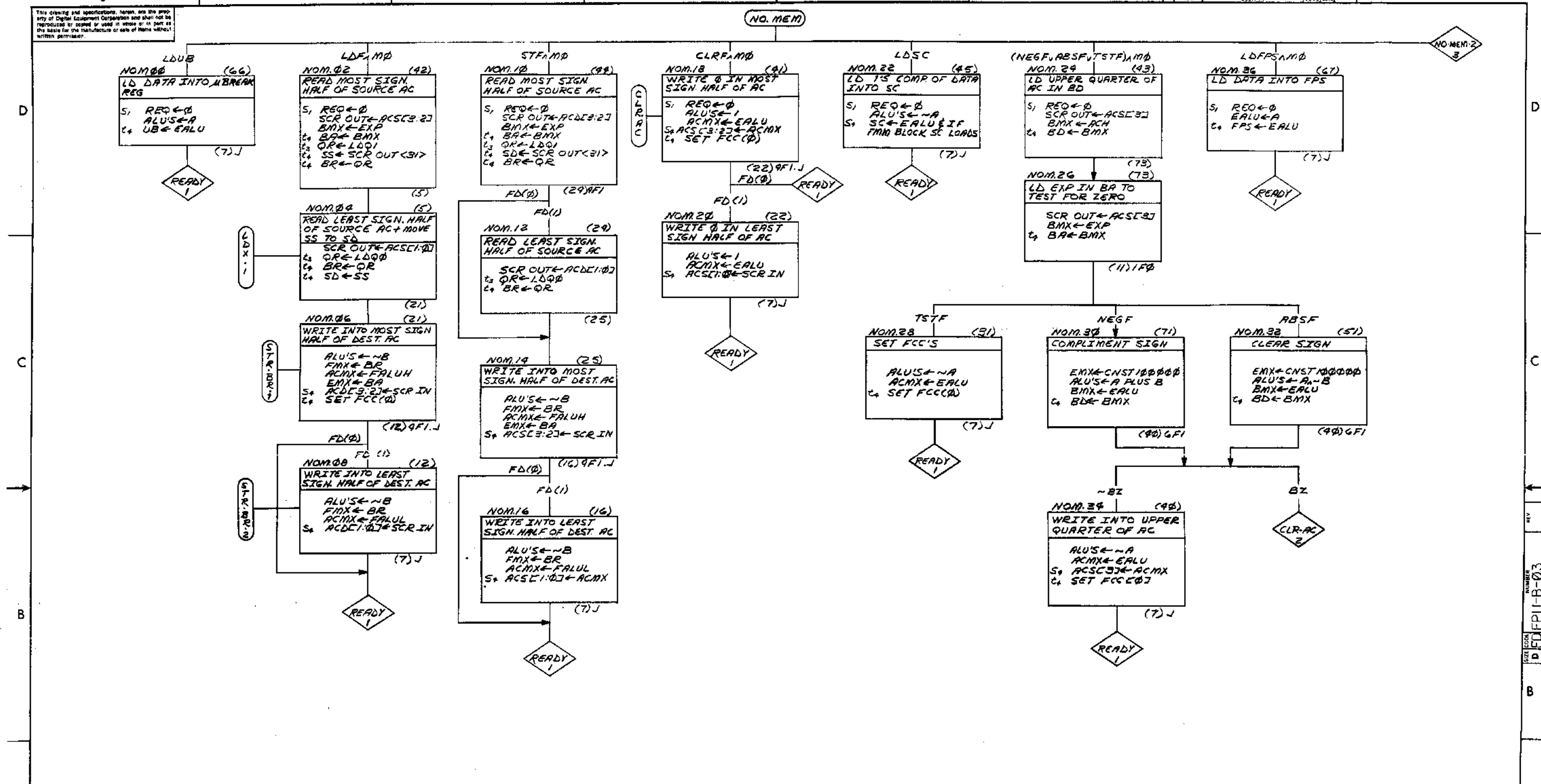
REV. CHANNEL NO. DATE

DEC FORM 149
OCT 1974-B

NUMBER
DFD-FP11-B-02

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REV. 10-11-71
 DATE 3-14-72
 DATE 3-14-72
 DATE 3-14-72

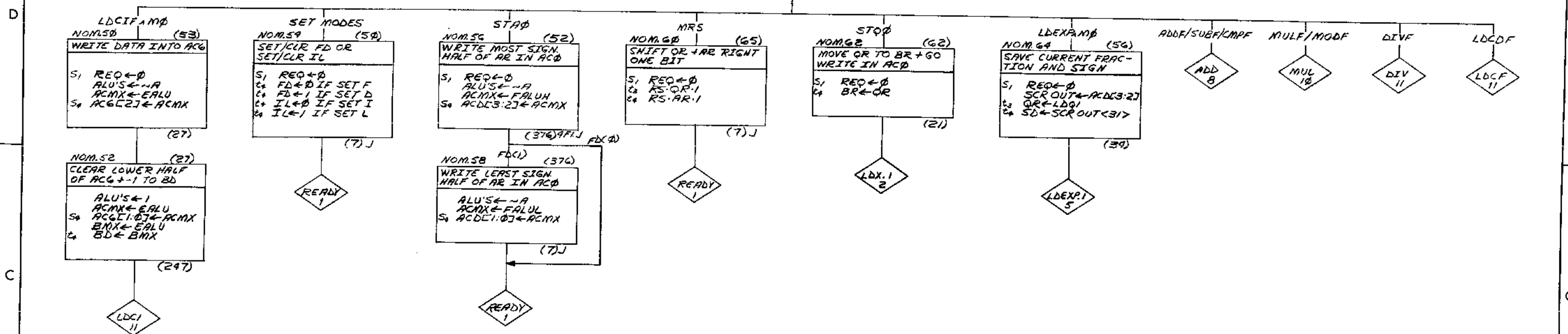


FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN. <i>C. Kibent</i>	DATE 10-11-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
DECIMALS ANGLES		CHKD. <i>[Signature]</i>	DATE 3-14-72	
XXX + .005	± 0° 30'	ENG. <i>[Signature]</i>	DATE 3-14-72	TITLE FP11 FLOWS 2 (NO MEM CLASS)
.XX + .02		PROJ. ENG. <i>[Signature]</i>	DATE 3-14-72	
.X + .1		PROD. <i>[Signature]</i>	DATE 3-14-72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL		NEXT HIGHER ASSY.		
FINISH		B-DD-11/45-0	SIZE CODE	NUMBER
		SCALE	D	FD
		SHEET OF	FPII-B-03	REV.

REV.	CHANGE NO.	CHK.

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SIZE CODE NUMBER
 2 FD FPII-B-04

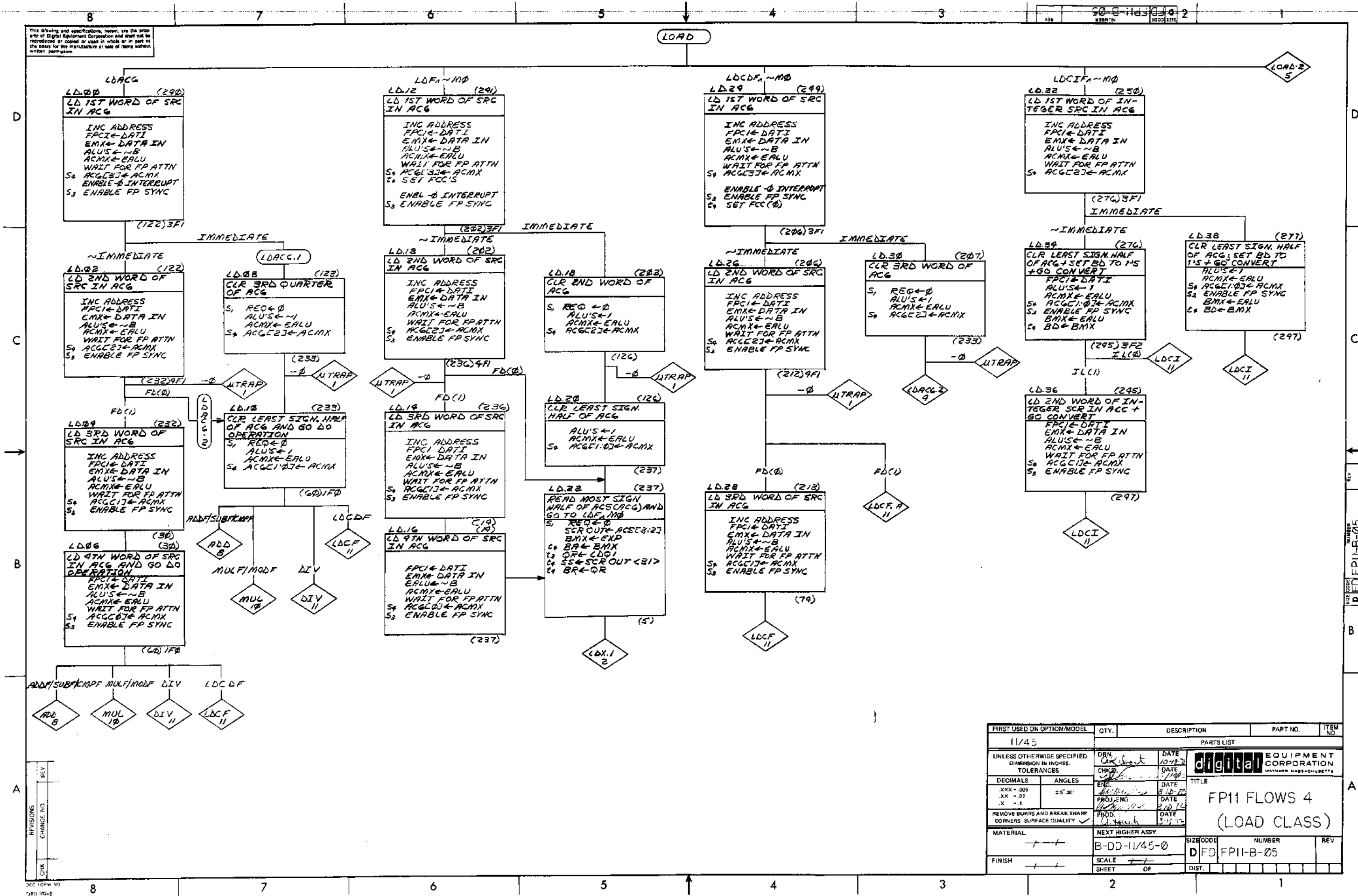


REV	
CHK	

SEE FORM NO. 132-B

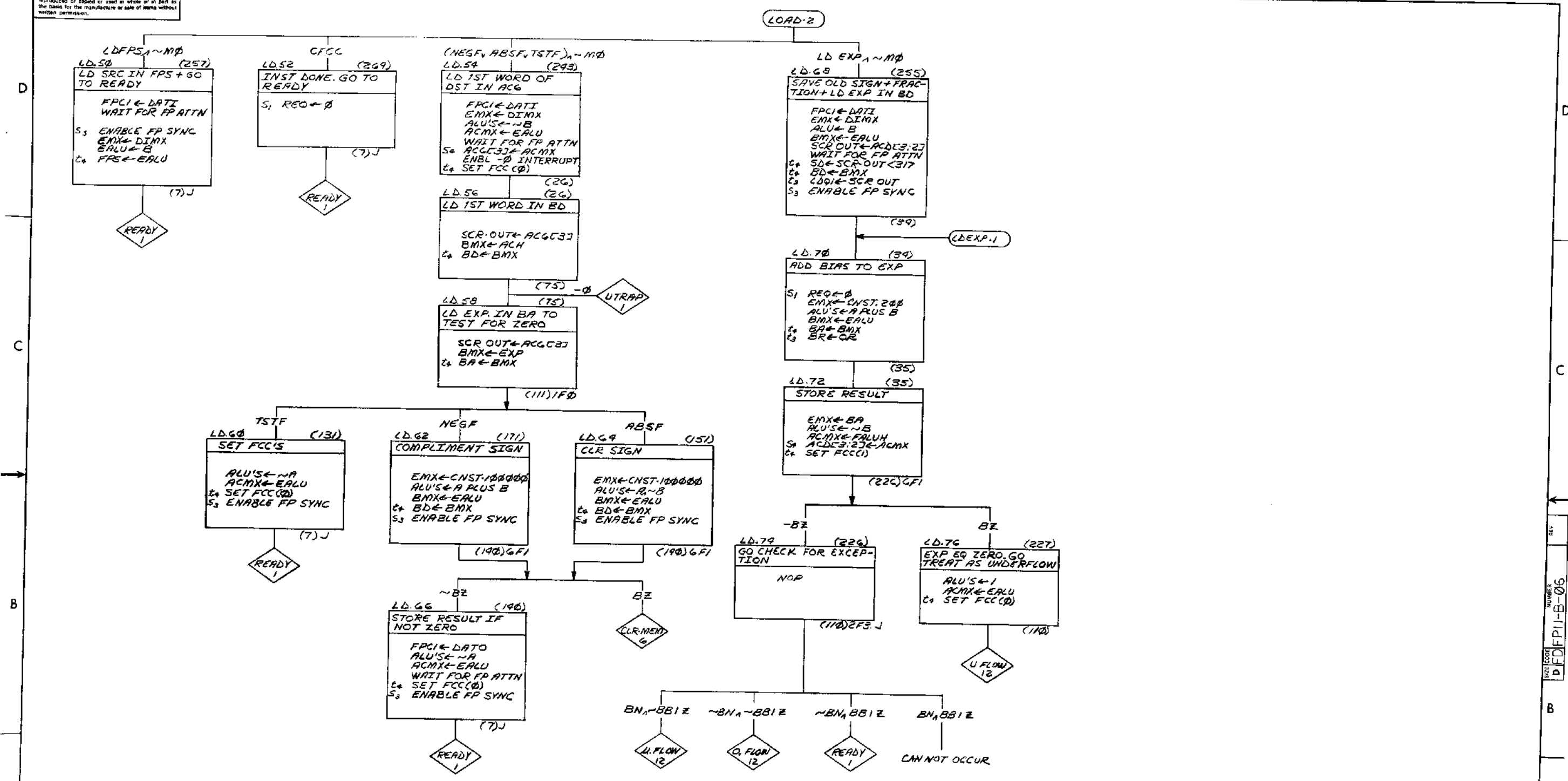
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DRN.	DATE	digital EQUIPMENT CORPORATION METHUEN, MASSACHUSETTS	
DIMENSION IN INCHES	CHK	DATE		
TOLERANCES			TITLE FP11 FLOWS 3 (NO MEM CLASS)	
DECIMALS	ENG.	DATE		
ANGLES	PROJ. ENG.	DATE	SIZE CODE NUMBER REV D FD FPII-B-04	
XXX - 005 .XX - .02 X - .1	10° 30'			
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD.	DATE	SHEET OF DIST	
MATERIAL	NEXT HIGHER ASSY.			
FINISH				

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FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN CHK'D	DATE 10-22-71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS ANGLES	ENG.	DATE 7/19/73		
XXX - .005 ±0° 30'	PROJ. ENG.	DATE 9/10/77	TITLE FP11 FLOWS 4 (LOAD CLASS)	
.X - .1	PROD.	DATE 3/10/76		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD.	DATE 3-10-76		
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV
FINISH	B-DD-11/45-0	D F D	FP11-B-05	
	SCALE	SHEET	OF	

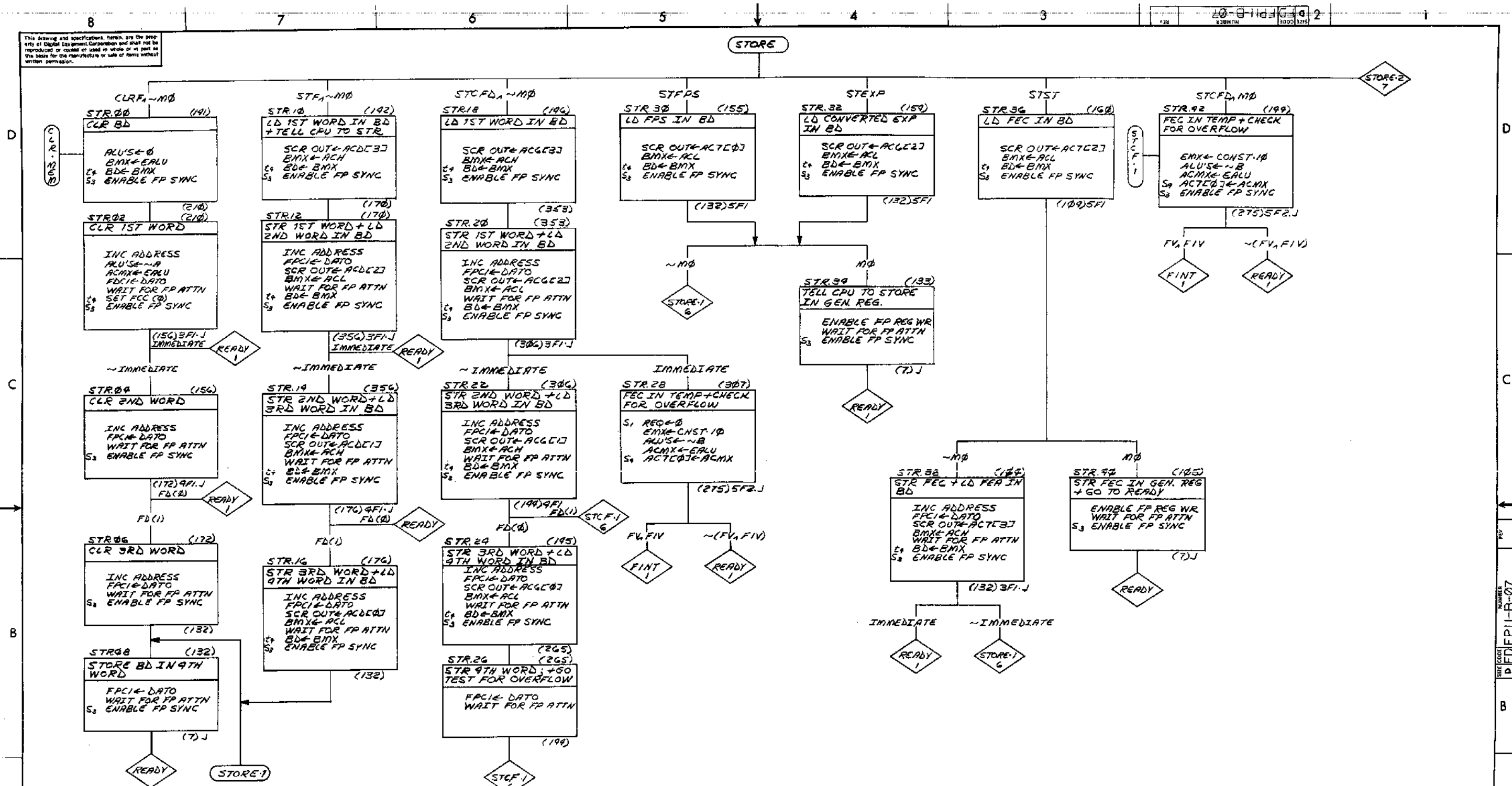
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REV	
CHK	
BY	
CHK	
BY	
CHK	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN G. Wilson	DATE 10-15-70	 FD11 FLOWS 5 (LOAD CLASS)	
DECIMALS	CHK G. Wilson	DATE 3/1/71		
ANGLES	EJC	DATE		
XXX - DR	PROJ. ENG.	DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD.	DATE		
MATERIAL	NEXT HIGHER ASSY.			
FINISH	6-00-1145-0	SIZE CODE	NUMBER	REV
	SCALE	DFD FPII-B-06		
	SHEET	OF	DIST.	

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REV	
CHG	
NO	
DATE	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN <i>Adiant</i>	DATE 10-18-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS ANGLES	CHKD <i>[Signature]</i>	DATE 11/16/71	TITLE FP11 FLOWS 6 (STORE CLASS)	
.XXX - .005 ±0°30'	ENG <i>[Signature]</i>	DATE 8-29-72	SIZE CODE B-DD-11/45-0	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ. ENG. <i>[Signature]</i>	DATE 8-3-72	NUMBER DFD/FPII-B-07	
MATERIAL	PROD. <i>[Signature]</i>	DATE 3-25-72	REV.	
FINISH	NEXT HIGHER ASSY.		SHEET OF	
	B-DD-11/45-0		DIST.	

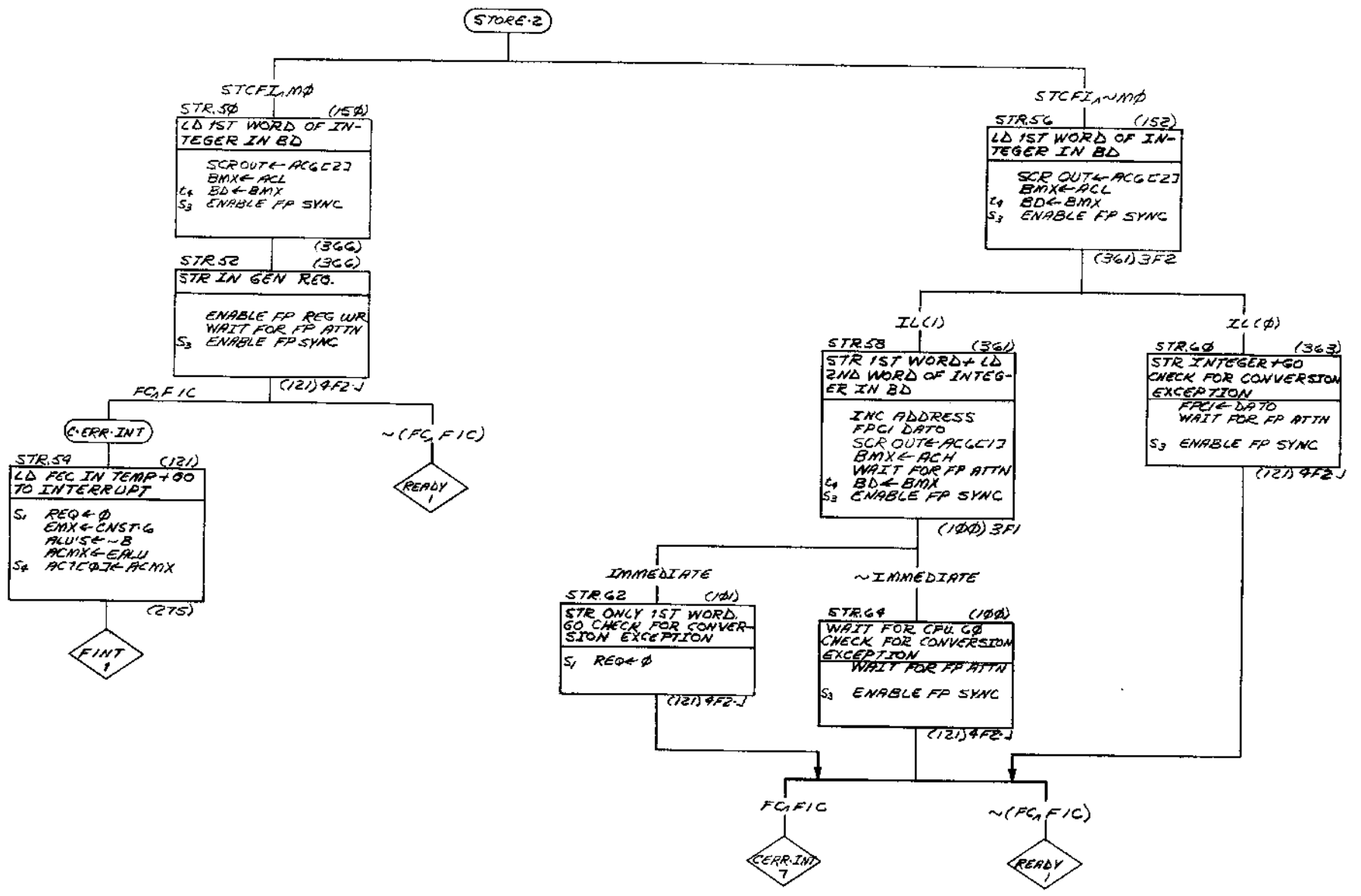
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80-8-111-03 2

D
C
B
A

D
C
B
A

REV. NUMBER
PDP11-B-08



REV. NO.	CHK	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS	ANGLES	DRN	DATE	
XXX . 00	± 0° 30'	CHKD	DATE	
XX . 02		ENG.	DATE	
X . 1		PROJ. ENG.	DATE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.	PROD.	DATE	
++	B-DD-11/45-0			
FINISH	SCALE	SIZE CODE	NUMBER	REV.
++		DFD	FP11-B-08	
	SHEET OF	DIST		

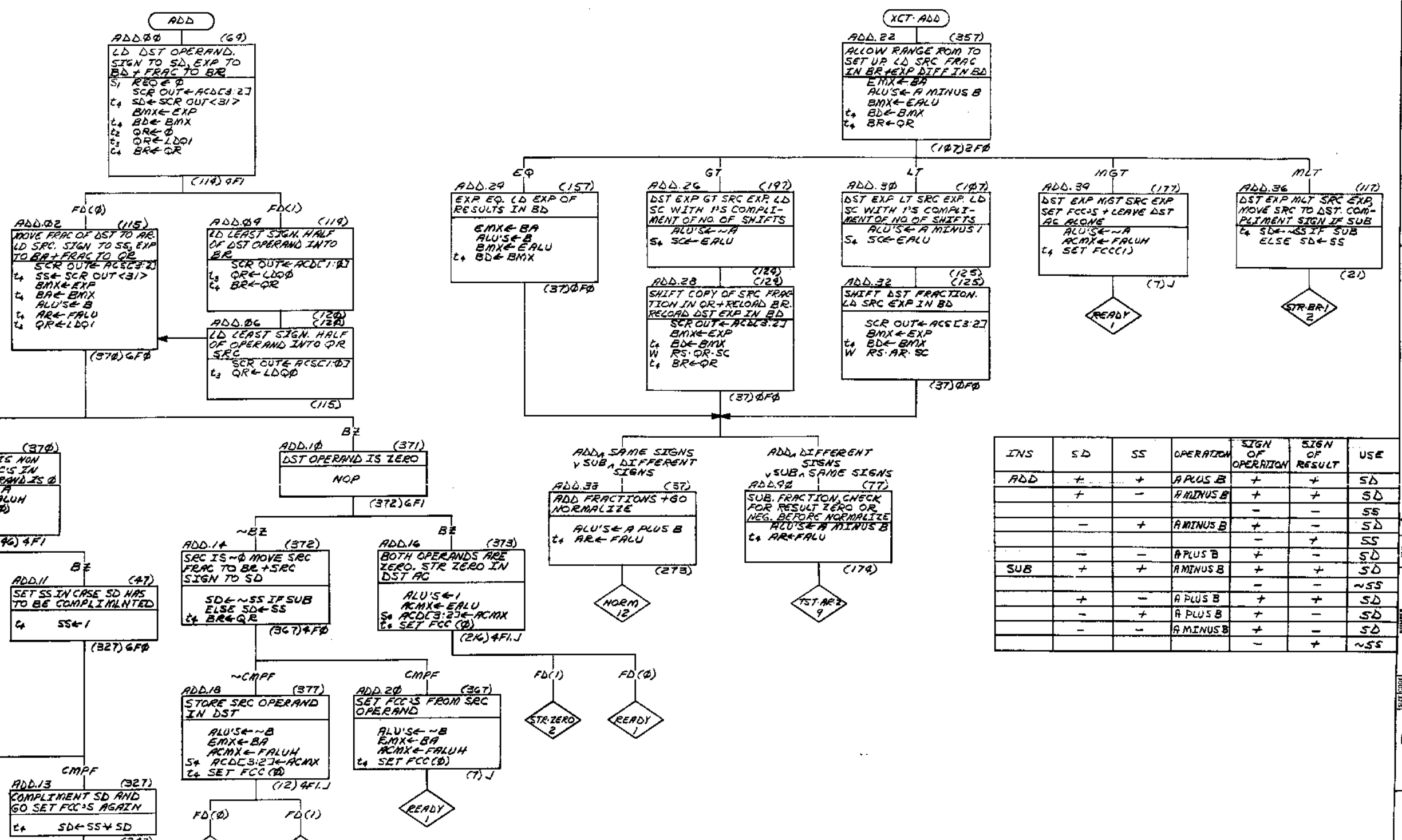
80-8-111-03 2

8 7 6 5 4 3 2 1

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REVISIONS
CHANGE NO.
REV

DEC FORM NO
13RD 102-B

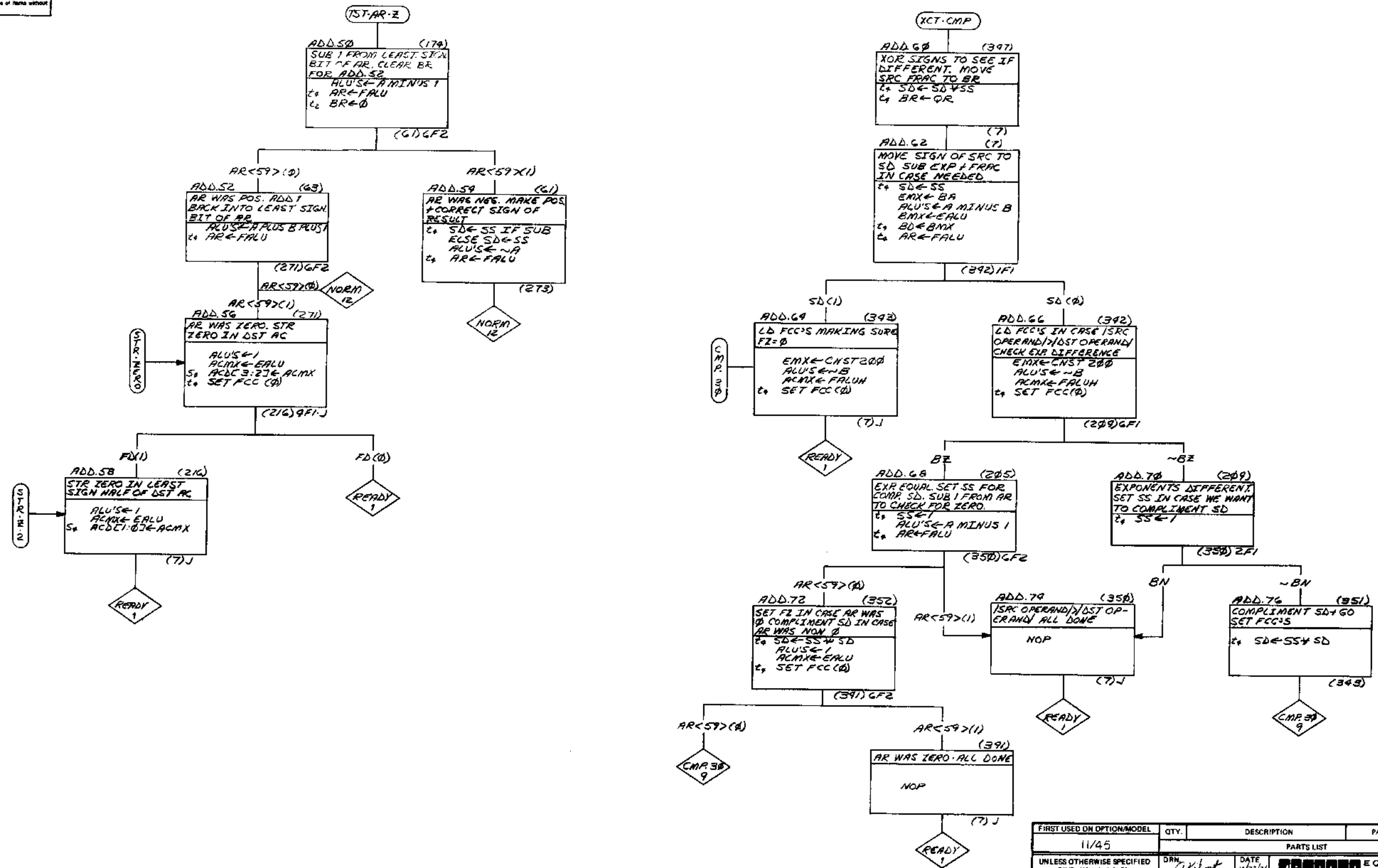


INS	SD	SS	OPERATION	SIGN OF OPERATION	SIGN OF RESULT	USE
ADD	+	+	A PLUS B	+	+	SD
	+	-	A MINUS B	+	+	SD
	-	+	A MINUS B	+	-	SD
	-	-	A PLUS B	+	-	SD
SUB	+	+	A MINUS B	+	+	SD
	+	-	A PLUS B	+	+	SD
	-	+	A PLUS B	+	-	SD
	-	-	A MINUS B	+	-	SD
	-	+		-	+	SS

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN: <i>Admitt</i> DATE: 4/21/71 CHK'D: <i>Part 1/10</i> DATE: 5/14/70 ENGR: <i>H. B. ...</i> DATE: 5-18-72 PROJ. ENG.: <i>A. B. ...</i> DATE: 5-18-72 PROD.: <i>...</i> DATE: 3-15-73		
DECIMALS	ANGLES	TITLE: FP11 FLOWS 8 (EXECUTE ADD, SUB, OR CMP)		
XXX - 005	±0' 30"	MATERIAL: + / +		
XX - 02		FINISH: + / +		
X - 1		SCALE: + / +		
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY		NEXT HIGHER ASSY.:		
		B-DD-11/45-0		
		SIZE CODE: DFD FP11-B-09		
		NUMBER: 1		
		REV: 1		
		SHEET OF: 1		

SIZE CODE: DFD FP11-B-09

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REV	
CHG	
REF	
NO	
NO	

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN	DATE	
DECIMALS	ANGLES	CHKD	DATE	
.xxx - .005	± 0° 30'	ENG	DATE	
.xx - .02		PROJ ENG	DATE	
.x - .1		PROD	DATE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL		NEXT HIGHER ASSY.		
FINISH		B-00-11/45-0	SIZE CODE	NUMBER
		SCALE	DFD	REV
		SHEET	OF	DIST

digital EQUIPMENT CORPORATION
 TITLE: FP11 FLOWS 9
 (EXECUTE ADD SUB OR CMP)

REV
 NUMBER
 P D F P I I - B - 1 0

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D

C

B

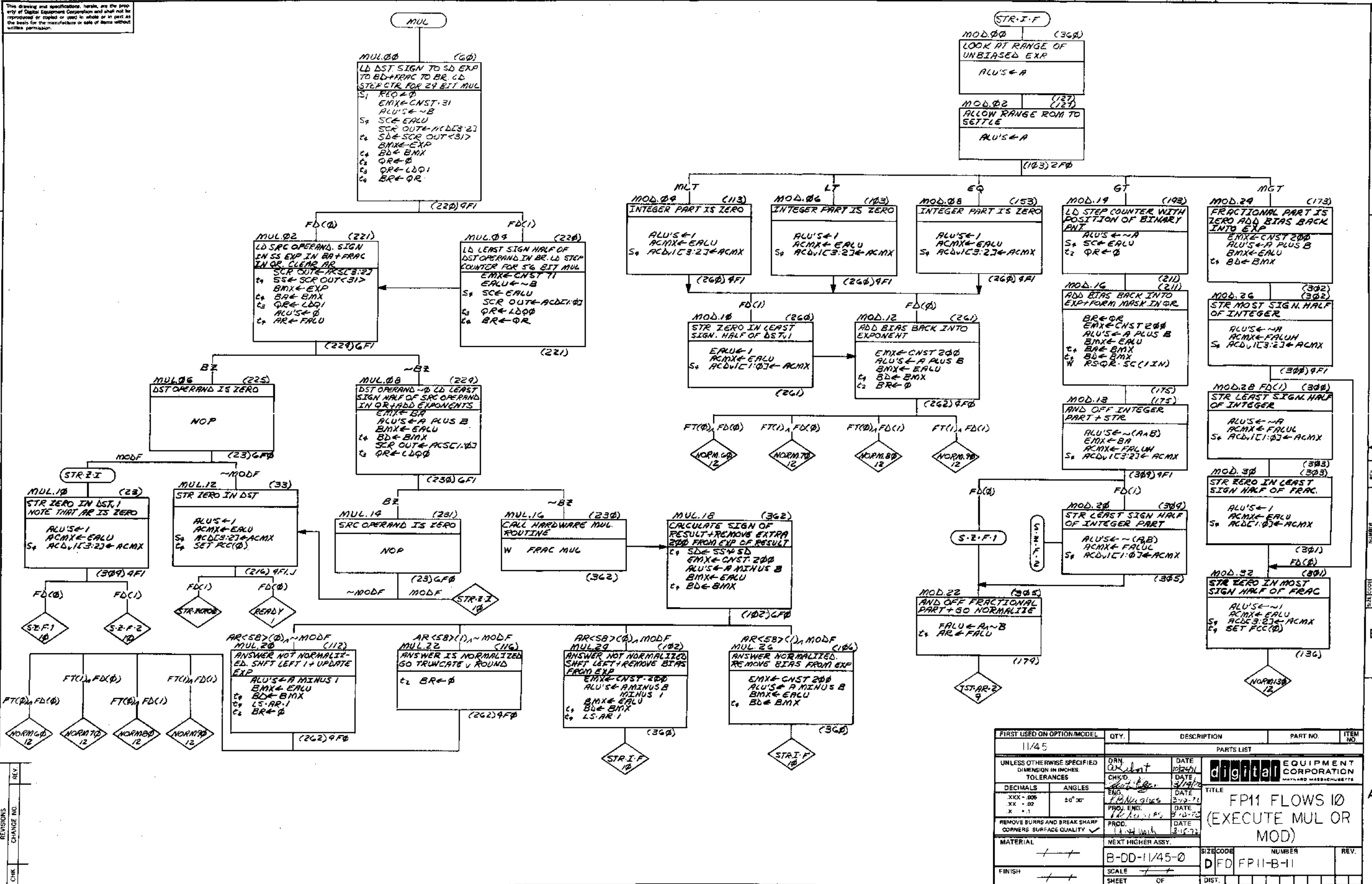
A

D

C

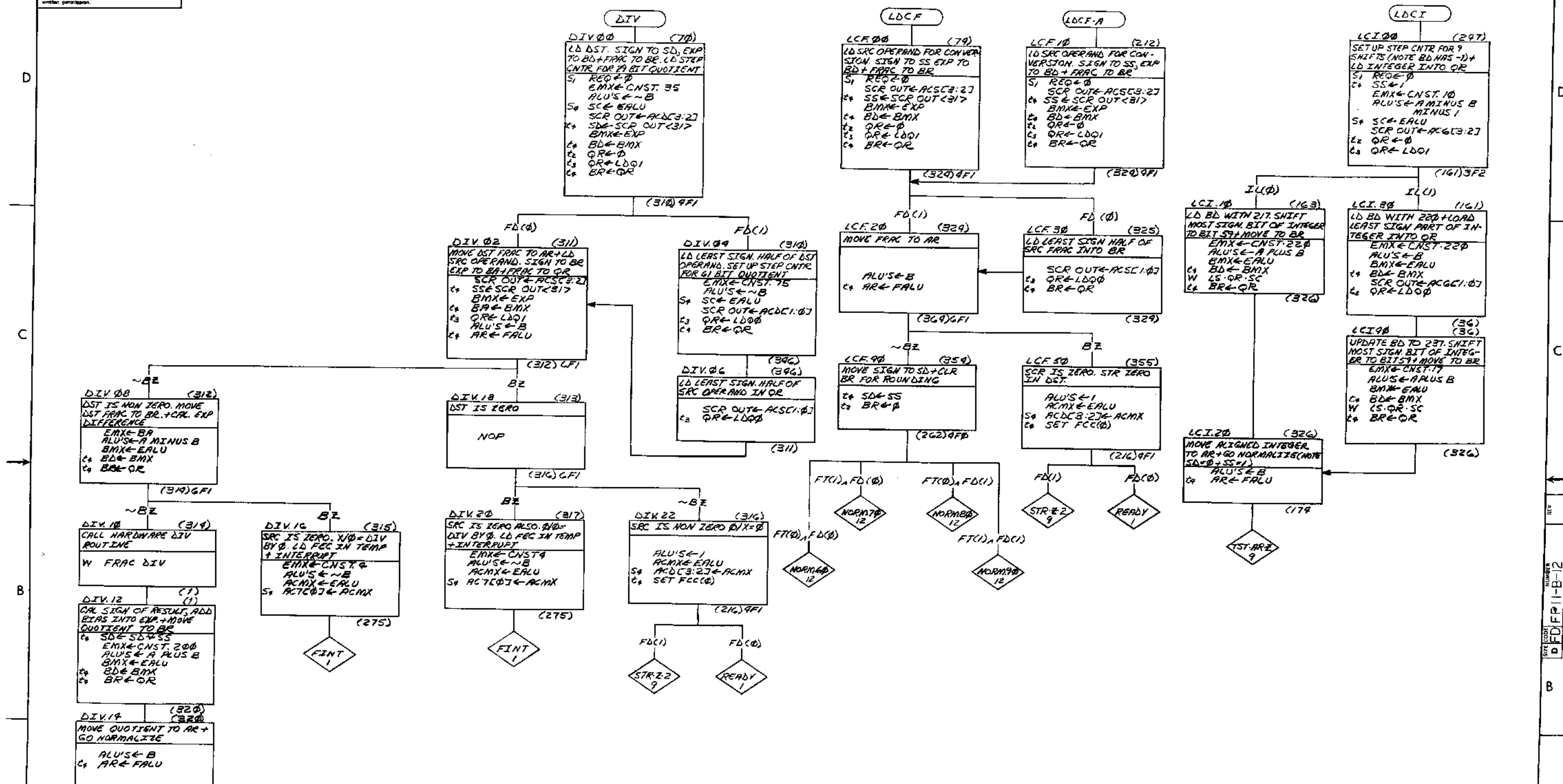
B

A



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.	DRN	DATE	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
TOLERANCES	CHKD.	DATE	TITLE	
DECIMALS	ENG.	DATE	FP11 FLOWS 10 (EXECUTE MUL OR MOD)	
ANGLES	PROL. ENG.	DATE	SIZE CODE	
XXX - .006	PROL. ENG.	DATE	NUMBER	
.XX - .02	PROL. ENG.	DATE	REV.	
.X - .1	PROL. ENG.	DATE	D1D FP11-B-11	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD.	DATE	SCALE	
MATERIAL	PROD.	DATE	SHEET	
FINISH	PROD.	DATE	OF	
	PROD.	DATE	DIST.	

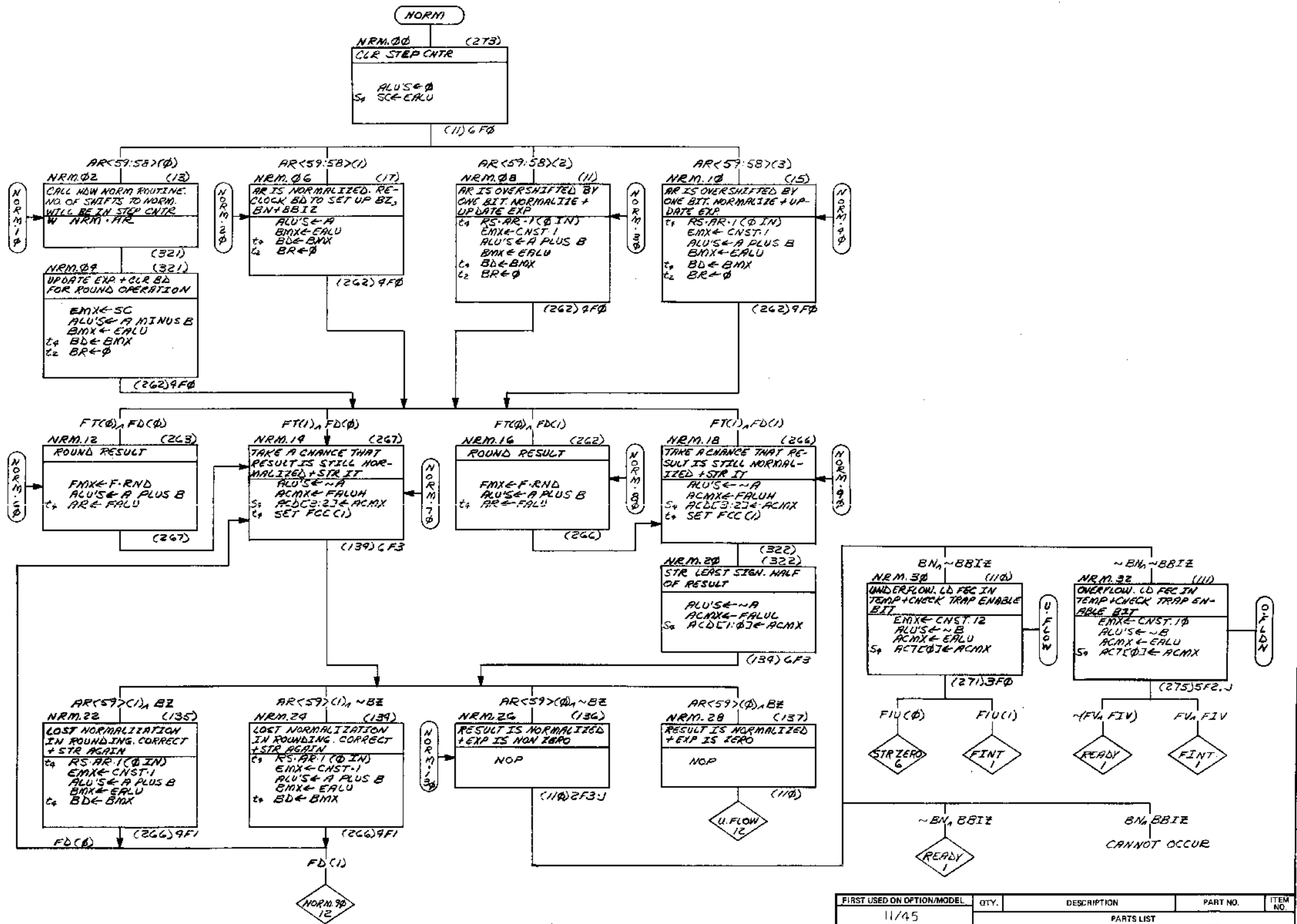
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REV	
CHANGE	NC
APPROVAL	NC
CHEK	

FIRST USED DM OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DATE 10-27-71	digital EQUIPMENT CORPORATION	
DECIMALS	ANGLES	DATE 3/19/72	TITLE	
.XX - .005	± 0' 30"	DATE 4-23-72	FP11 FLOWS 11	
.XX - .02		DATE 5-2-72	(EXECUTE DIV, LDCF OR LDCI)	
.XX - .1		DATE 3-22-72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE 3-22-72		
MATERIAL	NEXT HIGHER ASSY.	DATE		
FINISH	B-33-11/45-0	DATE		
	SCALE	DATE		
	SHEET	DATE		

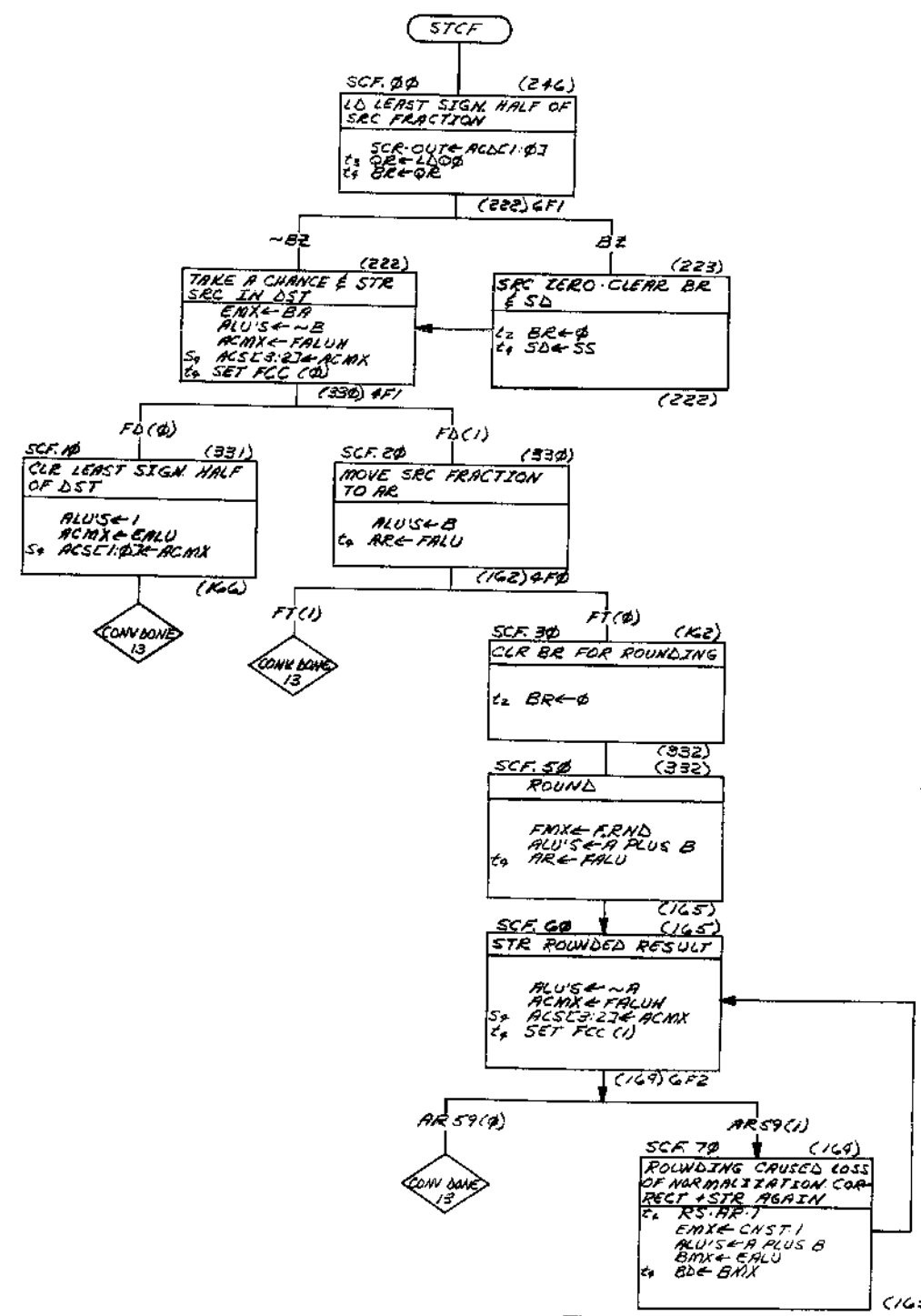
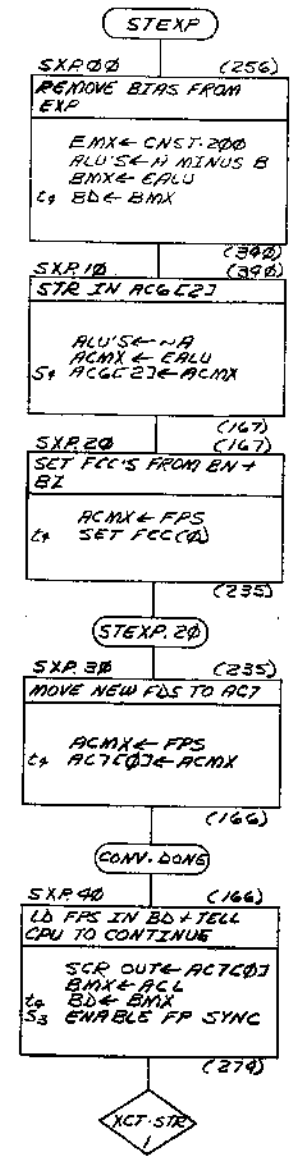
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REV.	
CHANGE NO.	
CHK	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN <i>Chilton</i>	DATE 1/28/77	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS	ANGLES	CHK'D <i>Chilton</i>	DATE 2/14/78	TITLE FP11 FLOWS 12 (NORMALIZE & ROUND)
XXX - .006	±0° 30'	ENG. <i>Chilton</i>	DATE 3/13/78	
XX - .02		PROJ. ENG. <i>Chilton</i>	DATE 5/18/78	
X - .1		PROD. <i>Chilton</i>	DATE 8-15-78	
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY				
MATERIAL		NEXT HIGHER ASSY.	SIZE CODE	NUMBER
FINISH		B-DD-11/45-0	D	FP11-B-13
		SCALE	SHEET	OF
			DIST.	

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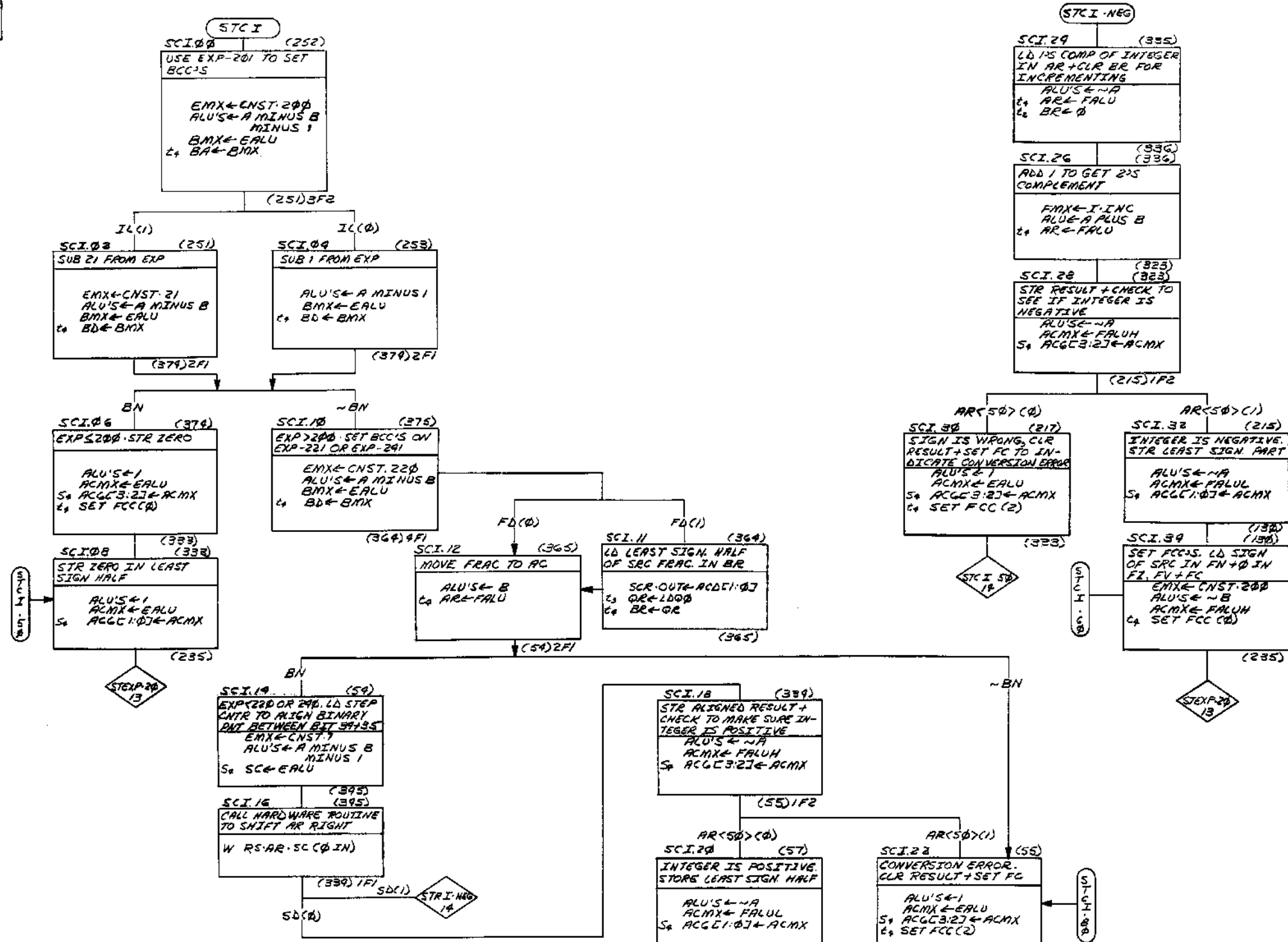


FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRAWN DATE 10-19-71	digital EQUIPMENT CORPORATION	
DECIMALS .005	ANGLES ± 30°	DATE 3/4/72	TITLE	
XX .02	X .1	PROJ. ENG. DATE 10-19-71	FP11 FLOWS 13	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD. DATE 3-4-72	EXECUTE STEXP & STCF		
MATERIAL	NEXT HIGHER ASSY.	SCALE	SIZE CODE	NUMBER
FINISH	B-DD-11/45-0	SHEET OF	D/FD	FP11-B-14

REV. NO. DATE BY

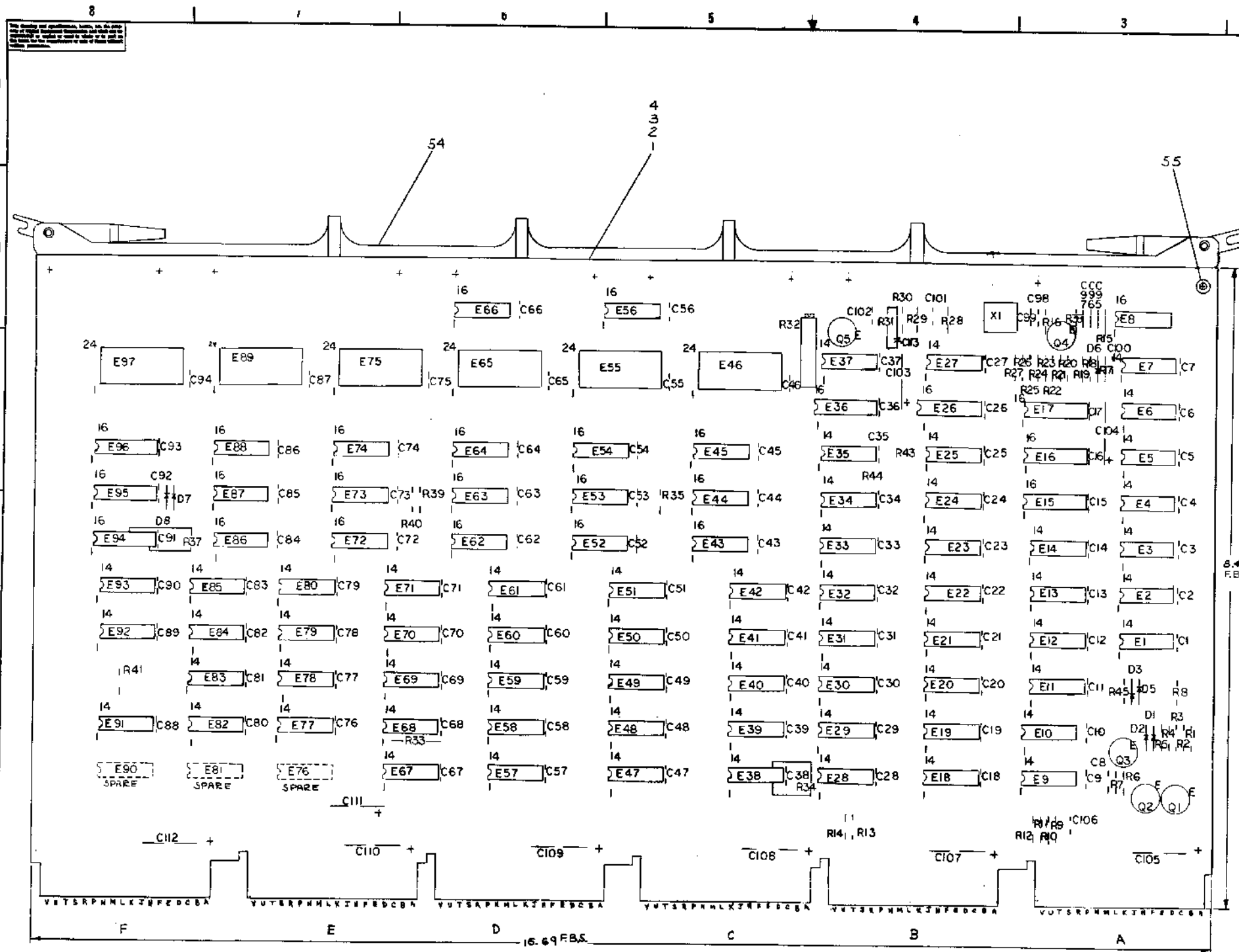
REV. NO. DATE BY

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FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN <i>Schmitt</i> DATE <i>1/19/72</i> CHK'D <i>...</i> DATE <i>...</i> ENG <i>...</i> DATE <i>...</i> PROJ. ENG. <i>...</i> DATE <i>...</i> PROD. <i>...</i> DATE <i>...</i>	digital EQUIPMENT CORPORATION <small>WATYARD MASSACHUSETTS</small>	
DECIMALS .XXX - .005 .XX - .02 .X - .1	ANGLES ±0°30'	TITLE FP11 FLOWS 14 (EXECUTE STCI)		
MATERIAL		NEXT HIGHER ASSY.		
FINISH		SCALE		
		SHEET OF		
		SIZE CODE NUMBER REV D F D FP11-B-15		
		DIST		

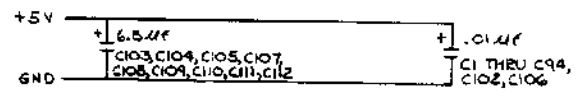
REVISIONS	CHANGE NO.	REV.



NOTES:
 1. UNLESS OTHERWISE NOTED RESISTANCE IS IN Ω AND CAPACITANCE IS IN PICO FARADS. CAPS. WITHOUT VALUE NOTED ARE .01 MFD.

AAZ, AVI, CAZ, CVI,
 BAZ, BV1, DAZ, DV1,
 EAZ, EV1, FAZ, FV1

ACZ, ANZ, AH1, RT1,
 BCZ, BNZ, BH1, BT1,
 CCZ, CNZ, CH1, CT1,
 DCZ, DNZ, DH1, DT1,
 ECZ, ENZ, EH1, ET1,
 FCZ, FNZ, FH1, FT1



QTY	REF DESIGNATION	DESCRIPTION	PART NO	NO
1	E10	IC DEC74574 - 45	110950	84
1	C113	CAPACITOR .01µF 100V 5%	1002608	58
1	C101	CAPACITOR 47PF 100V 5%	1000011	57
1	X1	CRYSTAL 20MC	1809880	56
12		EYELET	9006732	55
1		HANDLE MODULE	E-PS-120711-2	54
1	Q1	TRANSISTOR DEC 4258	1505321	53
4	Q2, Q3, Q4, Q5	TRANSISTOR DEC 30098	1503100	52
1	E24	IC DEC 74565	1910543	51
6	E46, E55, E65, E75, E84, E97	IC DEC 74101	1909902	50
6	E44, E53, E63, E73, E87, E95	IC DEC 74175	1910651	49
12	E43, E45, E52, E54, E62, E64, E72, E74, E86, E88, E94, E96	IC DEC 74194	1910623	48
1	E84	IC DEC 74174	1909667	47
1	F77	IC DEC 74130	1909060	46
3	E61, E80, E85	IC DEC 74140	1908586	45
2	E5, E82	IC DEC 74111	1909247	44
3	E27, E79, E91	IC DEC 74110	1909057	43
1	E76	IC DEC 74104	1909431	42
2	E71, E92	IC DEC 74100	1909356	41
2	E56, E66	IC DEC 74182-1	1910351	40
8	E7, E18, E19, E20, E27, E42, E47, E93	IC DEC 745190	1910546	39
5	E15, E16, E17, E26, E36	IC DEC 745112	1910545	38
8	E25, E28, E33, E39, E41, E68, E69, E91	IC DEC 74574	1910544	37
3	E8, E32, E35	IC DEC 74564	1910542	36
2	E40, E48	IC DEC 74520	1910539	35
6	E1, E11, E22, E30, E35, E49	IC DEC 74511	1910537	34
6	E12, E29, E34, E51, E57, E60	IC DEC 74510	1910536	33
1	E13	IC DEC 74505	1910535	32
9	E3, E14, E21, E31, E50, E58, E59, E67, E83	IC DEC 74500	1910532	31
2	E23, E70	IC DEC 74504	1910534	30
1	E6	IC DEC 7404	1909686	29
1	E2	IC DEC 7400	1909651	28
1	E8	TRANSFORMER, PULSE	1109451	27
4	R33, R35, R37, R41	RESISTOR 100Ω, 1/4W, 5%	1300229	26
1	R32	RESISTOR, VARIABLE, 5K, 1/4W	1309143-09	25
4	R1 THRU R4	RESISTOR 1.2K, 1/4W, 5%	1301320	24
5	R8 THRU R12	RESISTOR 1K, 1/4W, 5%	1300365	23
7	R3, R20, R22, R24, R26, R39, R44	RESISTOR 680Ω, 1/4W, 5%	1301424	22
1	E16	RESISTOR 10K, 1/4W, 10%	1300481	21
1	R19	RESISTOR 3.3K, 1/4W, 5%	1300439	20
2	R5, R38	RESISTOR 82Ω, 1/4W, 10%	1300224	19
10	R14, R21, R23, R25, R27, R29, R30, R31, R40, R43	RESISTOR 330Ω, 1/4W, 5%	1300295	18
2	R15, R34	RESISTOR 220Ω, 1/4W, 5%	1300271	17
3	R17, R18, R45	RESISTOR 470Ω, 1/4W, 5%	1300316	16
1	R6, R7	RESISTOR 22Ω, 1/4W, 5%	1301969	15
1	R28	RESISTOR 10Ω, 1/4W, 5%	1301317	14
5	D1, D2, D3, D5, D6	DIODE D662	1100113	13
2	D7, D8	DIODE FD 777	1103041	12
1	C98	CAPACITOR 33PF, 100V, 5%	1000009	11
1	C96	CAPACITOR 68PF, 100V, 5%	1000014	10
1	C99	CAPACITOR 10PF, 100V, 5%	1000006	9
9	C103, C104, C105, C107, C108, C109, C110, C111, C112	CAPACITOR 6.8µF, 35V, 20%	1000067	8
16	C1 THRU C94, C102, C106	CAPACITOR .01µF, 100V, 20% DISC	1001610	7
1	C97	CAPACITOR 100PF, 100V, 5% DISC	1000016	6
2	C95, C100	CAPACITOR .047µF, 16V, 50% DISC	1009678	5
1		ETCHED CIRCUIT BOARD	5008643	4
REF		MODULE ECO HISTORY	B-MH-M814-04	3
REF		ASSY/DRILLING HOLE LAYOUT	FAN-M814-05	2
REF		Y-Y COORDINATE HOLE LOCATION	ECO-M814-04	1

IC TYPE	QTY	REF	NO
DEC 74101	2	Z4	
DEC 74175	6	B 16	
DEC 74194	6	B 16	
DEC 745182	6	B 16	
DEC 745112	6	B 16	

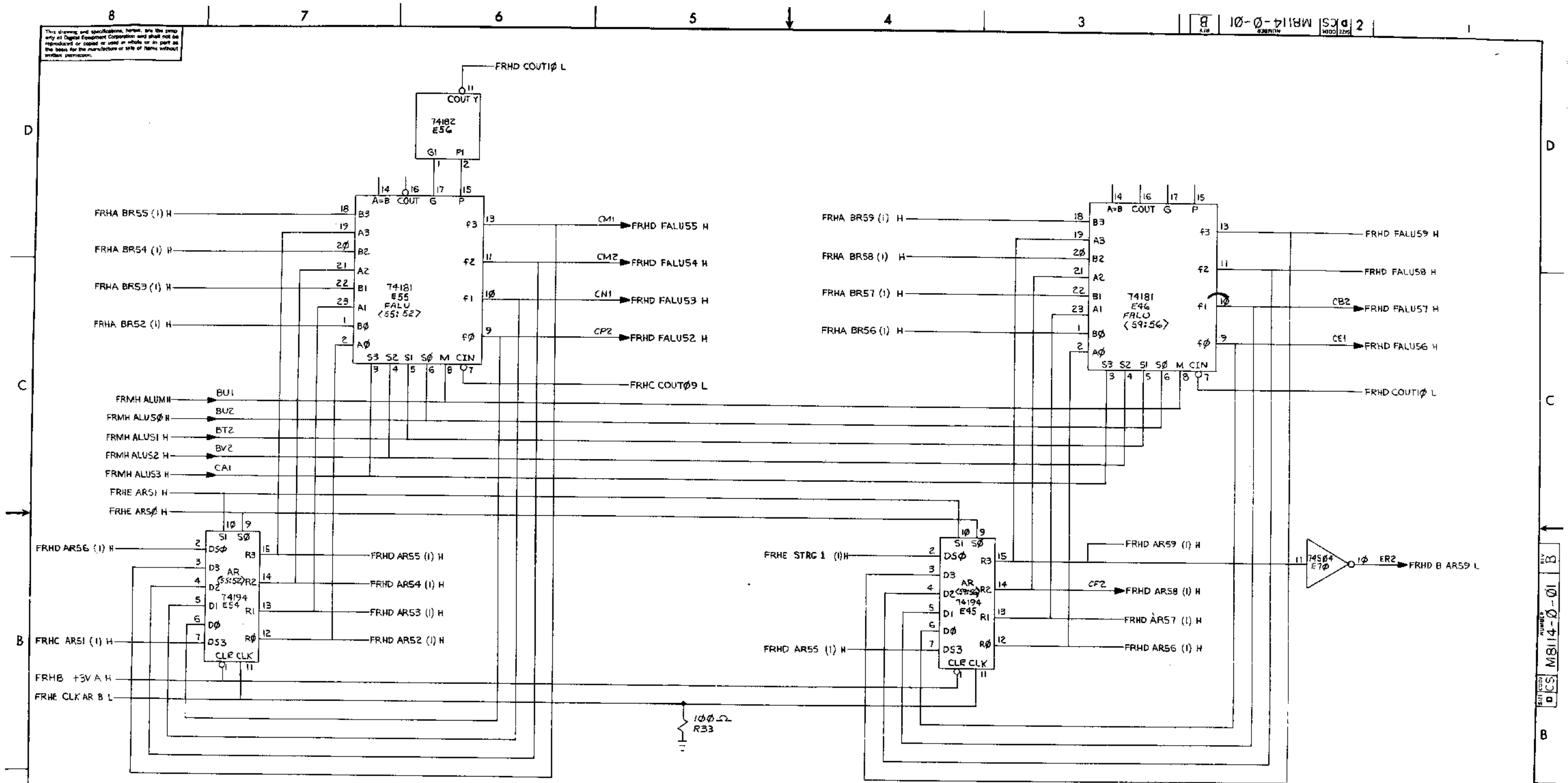
ETCH BOARD REV B

DEC 4258 N.A.
 DEC 30098 ZN3644
 FD 777 SAME
 D662 1N645

SEMICONDUCTOR CONVERSION CHART

EQUIPMENT CORPORATION
 FRACTION DATA PATH
 HIGH ORDER
 ESM814-01

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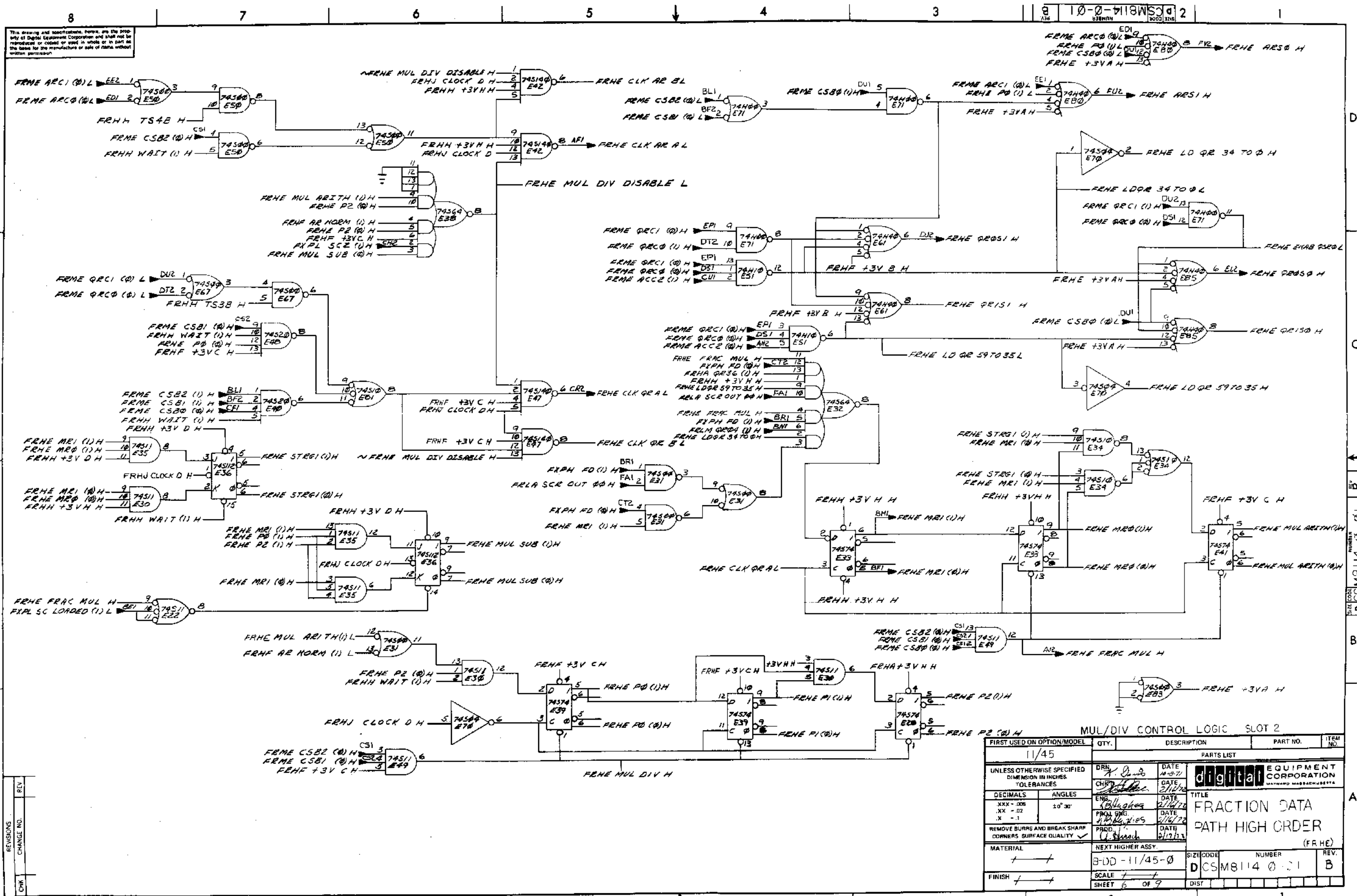
REV	
CHG	
CHK	

DEC FORM NO 102-B

AR5 FALU BITS 52 TO 59		SLOT 2	
FIRST USED ON OPTION/MODEL 11/45	QTY	DESCRIPTION	PART NO
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN 11/45	DATE 10/15/71	ITEM NO.
DECIMALS	ANGLES	TITLE	
.XXX ± .005	± 0° 30'	FRACTION DATA	
.XX ± .002		PATH HIGH ORDER	
.X ± .001		(FRHD)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROG. U. G. 11/45	DATE 11/16/71	REV.
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER
— 11 —	B-DD-11/45-0	DCS	MB114-0-01
FINISH	SCALE	SHEET	OF
— 11 —	— 11 —	5	9

REV B
 NUMBER
 DCS MB114-0-01

A



MUL/DIV CONTROL LOGIC SLOT 2

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				

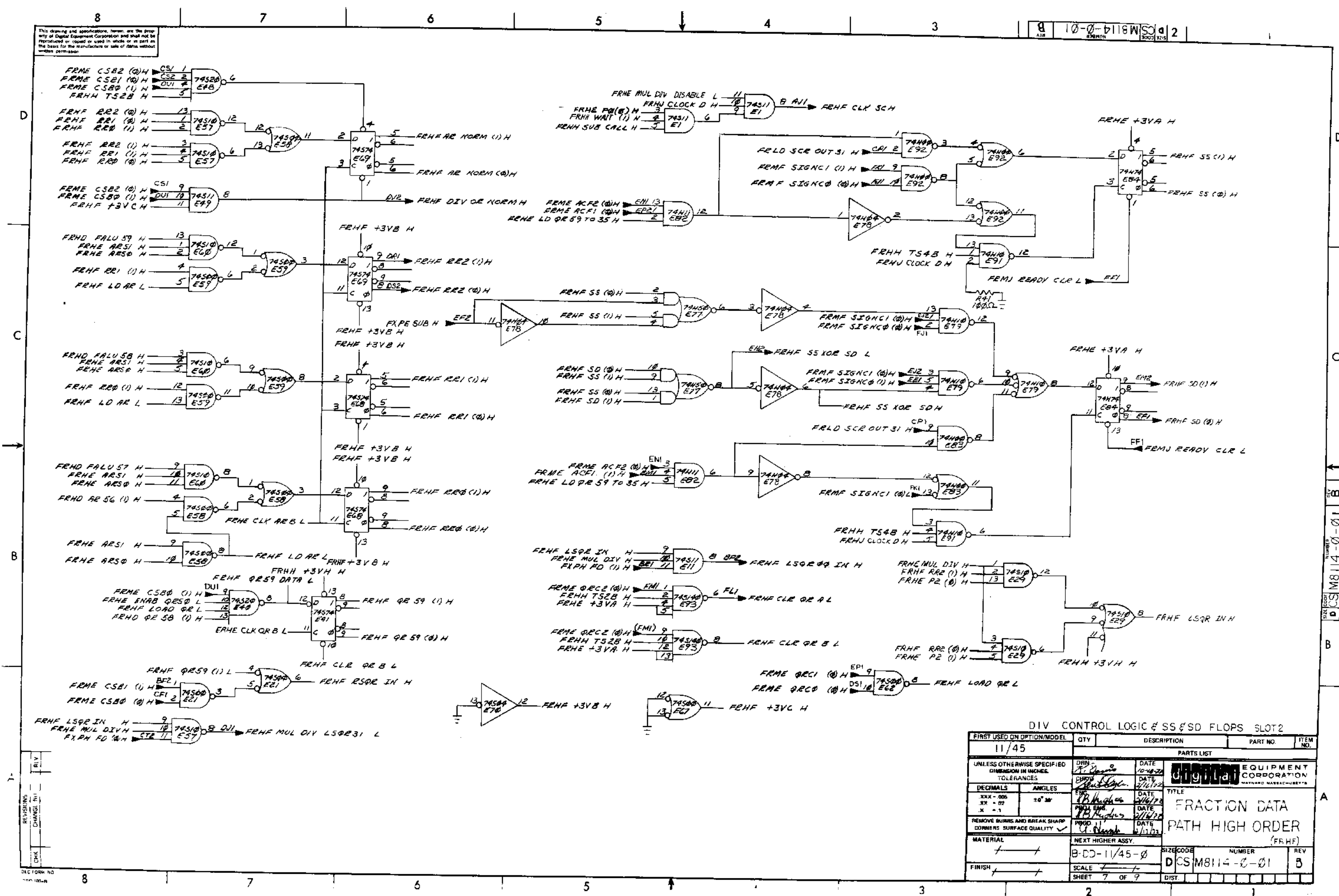
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN	DATE	PARTS LIST
DECIMALS	CHK	DATE	
ANGLES	ENG	DATE	
XXX - 000	PRG	DATE	
XX - 02	PRD	DATE	
X - 1	DATE	DATE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE	DATE	
MATERIAL	NEXT HIGHER ASSY.		
FINISH			

TITLE	SIZE CODE	NUMBER	REV.
FRACTION DATA PATH HIGH ORDER (FR HE)	B-DD-11/45-0	DCSM8114 0-01	B

REV.	CHANGE NO.	DATE

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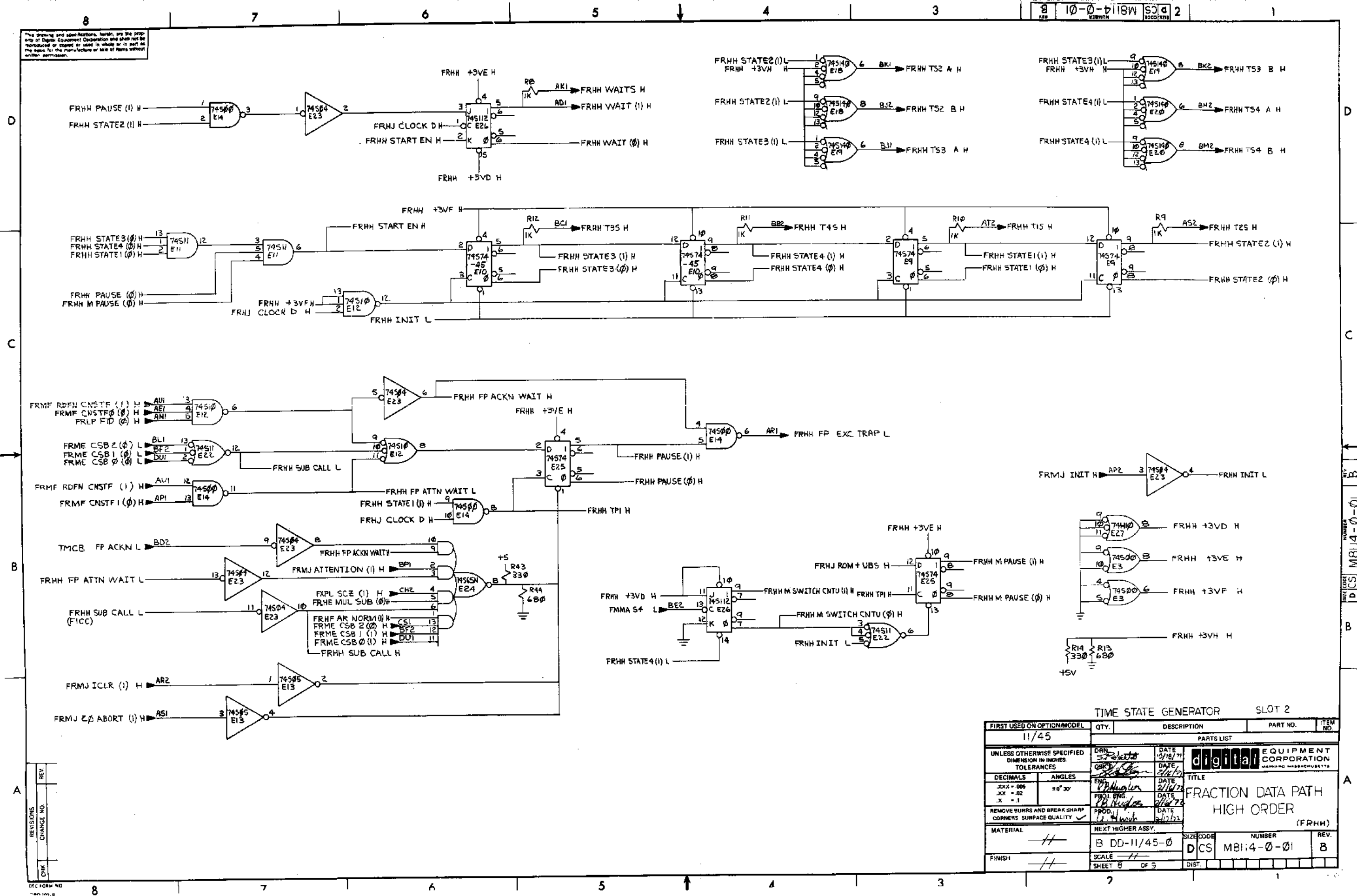
10-0-01818 2



DIV CONTROL LOGIC & SS & SD FLOPS SLOT 2			
FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.
11/45			
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DATE	EQUIPMENT CORPORATION	
TOLERANCES	DATE	MAYNARD MASSACHUSETTS	
DECIMALS	DATE	TITLE	
ANGLES	DATE	FRACTION DATA	
XXX - .005	DATE	PATH HIGH ORDER	
XX - .01	DATE	(FRHF)	
X - .1	DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE		
MATERIAL	NEXT HIGHER ASSY.		
FINISH	SCALE		
	SHEET 7 OF 9	SIZE CODE	NUMBER
		DCS M8114-0-01	REV
			8

REV B
M8114-0-01

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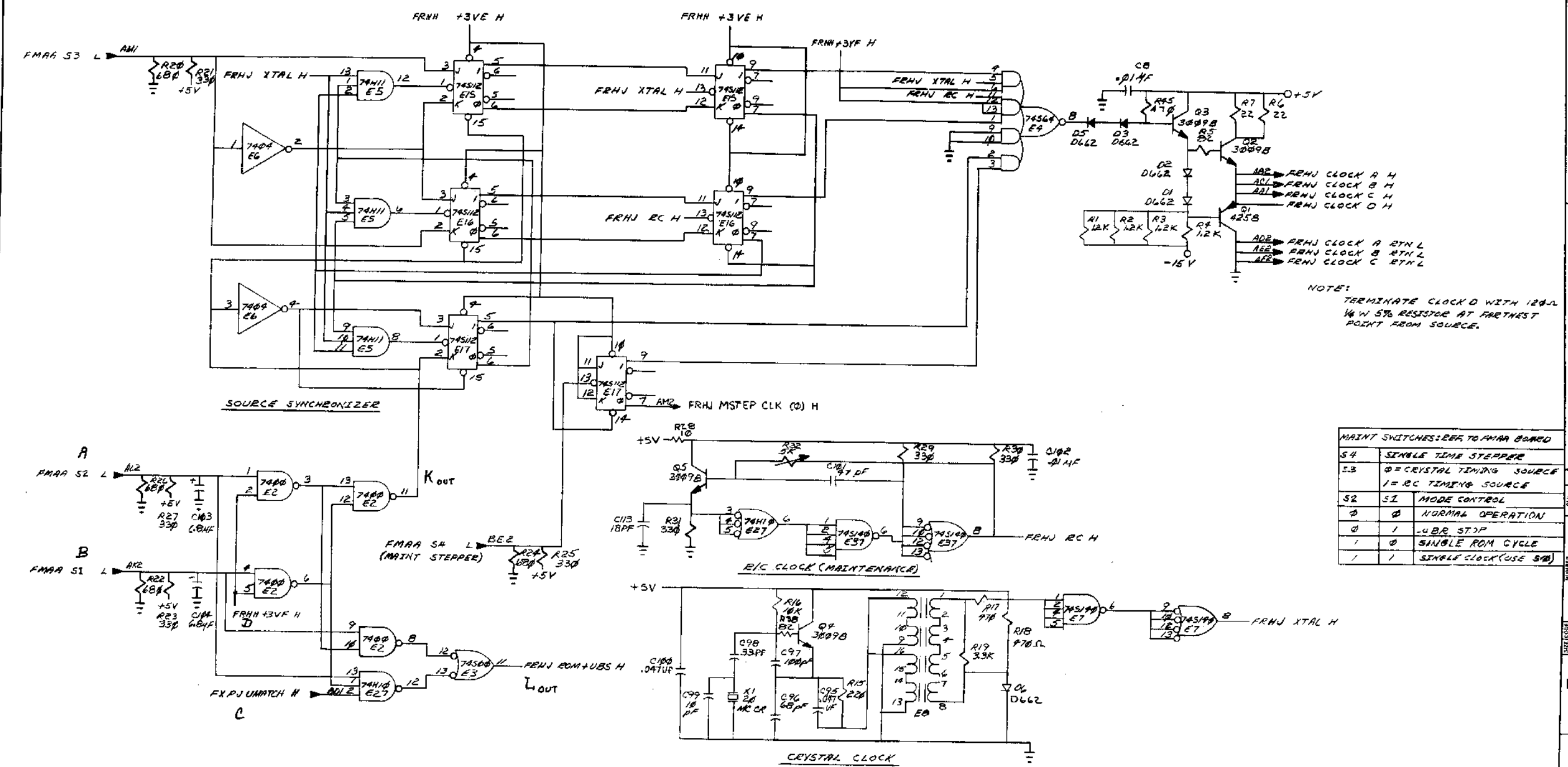
TIME STATE GENERATOR SLOT 2

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN 5/18/77	DATE 5/18/77	 digital EQUIPMENT CORPORATION <small>MAYFIELD MASSACHUSETTS</small>	
DECIMALS ANGLES	CHK 2/16/77	DATE 2/16/77		
.XX - .005 .XX - .02 .X - .1	ENG 2/16/77	DATE 2/16/77	FRACTION DATA PATH HIGH ORDER (FRHH)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ. ENG 2/16/77	DATE 2/16/77		
MATERIAL	NEXT HIGHER ASSY.	DATE 5/10/77	SIZE CODE	NUMBER
FINISH	B DD-11/45-0		DCS	MB114-0-01
	SCALE			REV. B
	SHEET 8 OF 9			

REV.	CHANGE NO.

SIZE CODE NUMBER
 DCS MB114-0-01

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NOTE:
TERMINATE CLOCK D WITH 120-Ω 1/4 W 5% RESISTOR AT FARTHEST POINT FROM SOURCE.

MAINT SWITCHES: REF TO FMAA BOARD

S4	SINGLE TIME STEPPER
S3	0 = CRYSTAL TIMING SOURCE 1 = RC TIMING SOURCE
S2	S1 MODE CONTROL
0	0 NORMAL OPERATION
0	1 CLR STOP
1	0 SINGLE ROM CYCLE
1	1 SINGLE CLOCK (USE S4)

CLOCKS & CLOCK SYNCHRONIZER SLOT 2

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	DATE		
.XXX - .000	10' 30'	DATE	2/16/75	
.XX - .00		DATE	2/16/75	
.X - .0		DATE	2/16/75	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL				
NEXT HIGHER ASSY.				
FINISH				
SCALE		SHEET 9 OF 9		
SHEET 9 OF 9		DIST.		

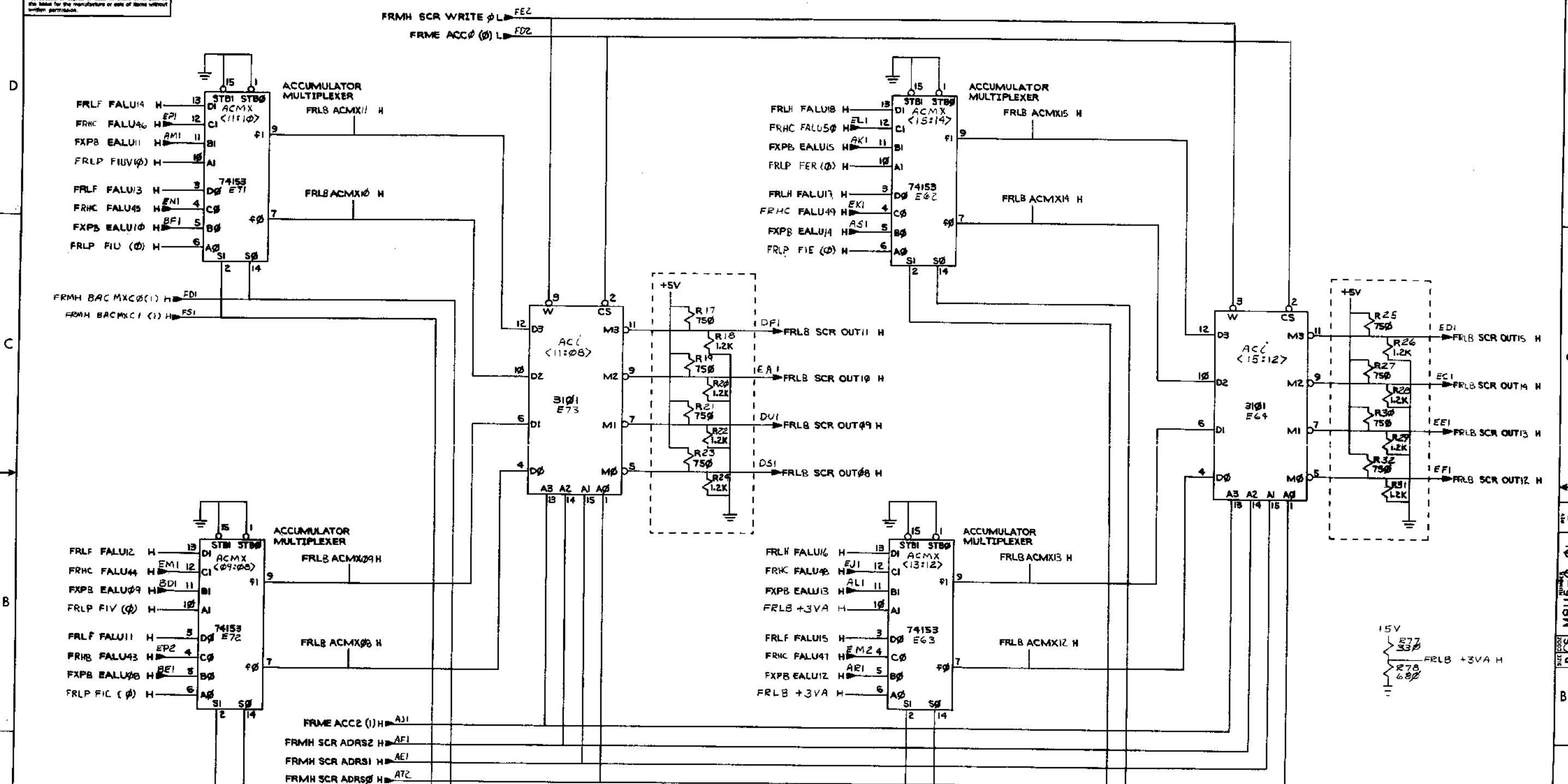
digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
**FRACTION DATA PATH
HIGH ORDER**
(FRHJ)

SIZE CODE: B-DD-11/45-0
NUMBER: DCSM8114-0-01
REV: 0

REV	
CHANGE NO.	
REVISIONS	
CHK	

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REV	
CHANGE NO	
REVISIONS	
CHK	

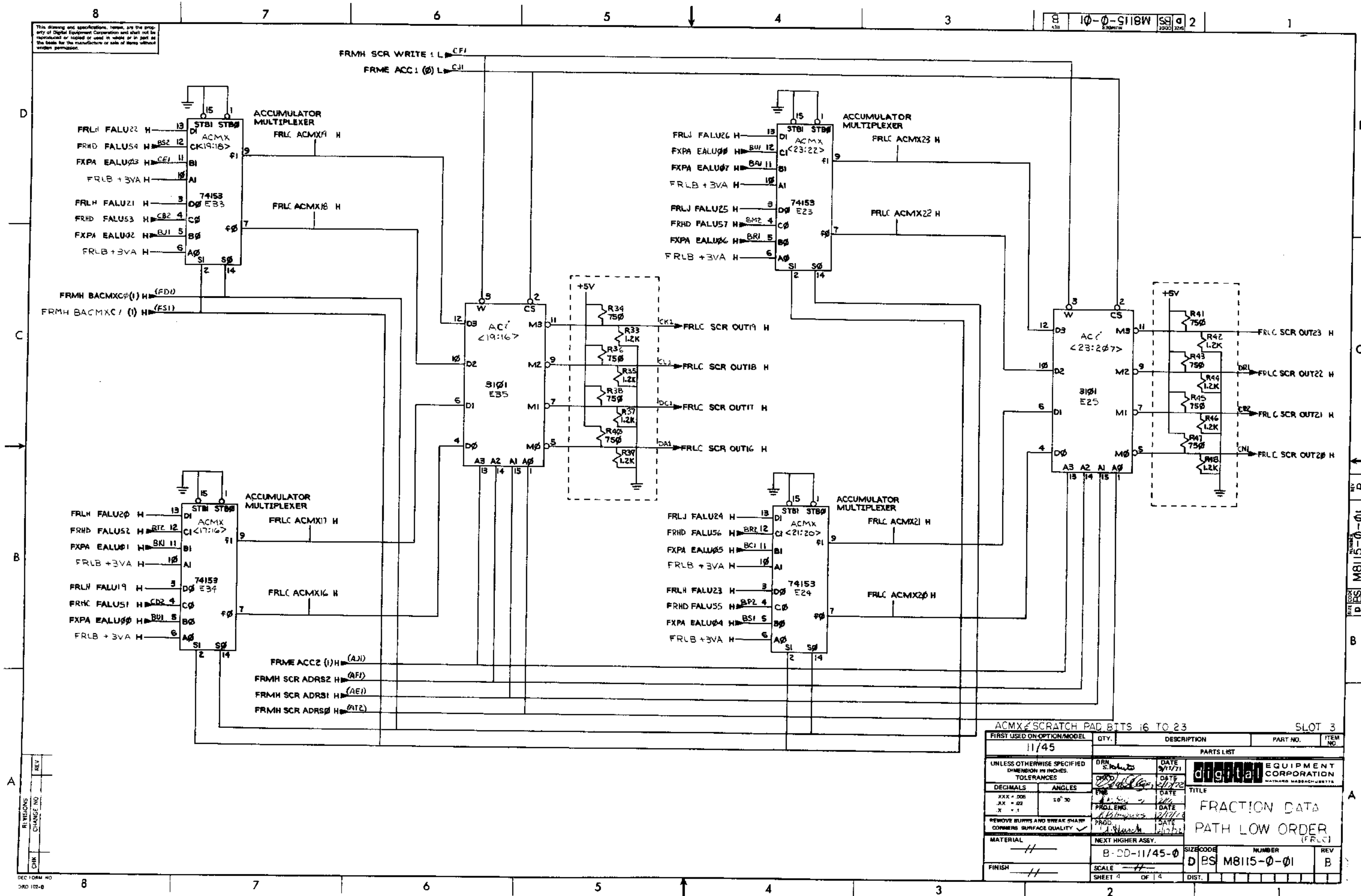
FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.					
TOLERANCES					
DECIMALS	ANGLES				
.XXX = .005	±0° 30'				
.XX = .02					
.X = .1					
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY					
MATERIAL					
NEXT HIGHER ASSY.					
FINISH		SCALE	SHEET 3 OF 14	DIST.	
//		//			

ACMX SCRATCH PAD BITS 08 TO 15 SLOT 3

TITLE
FRACTION DATA
PATH LOW ORDER
(FRL)

digital EQUIPMENT CORPORATION
MAYFIELD MASSACHUSETTS
D/C S M8115-0-01
REV. B

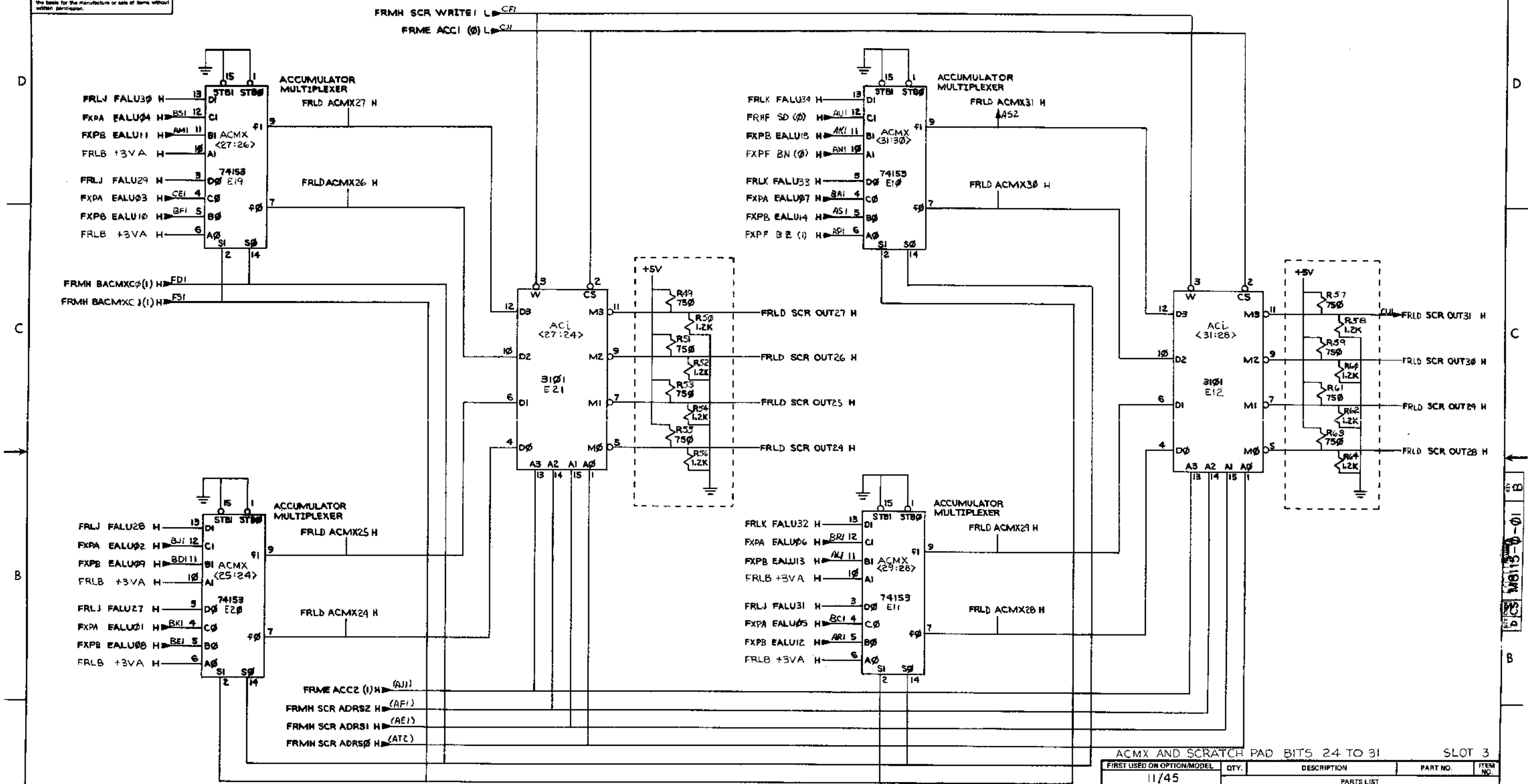
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FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS	ANGLES	TITLE		
.XX ± .006	± 30°	FRACTION DATA		
.X ± .02		PATH LOW ORDER		
.X ± .1		(FRLC)		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE		
FINISH	B-DD-11/45-0	NUMBER		
	SCALE	REV		
	SHEET 4 OF 14	D BS M8115-0-01 B		

REV	CHG	NO

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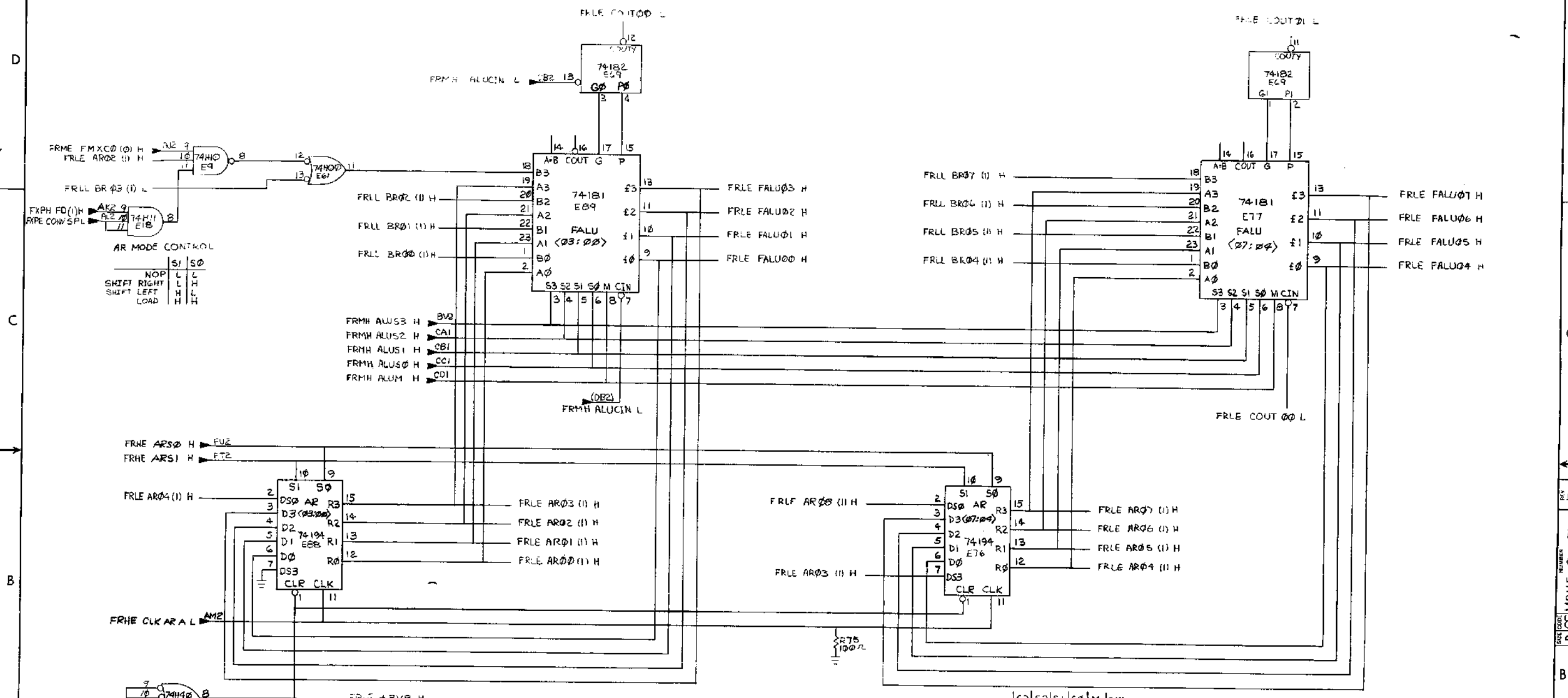


ACMX AND SCRATCH PAD BITS 24 TO 31 SLOT 3

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN S. R. L. W.	DATE 9/11/71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS	ENGR.	DATE		
ANGLES	PROJ. ENGR.	DATE		
XXX - .005 XX - .02 X - .1	PROD.	DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	NEXT HIGHER ASSY.		TITLE FRACTION DATA PATH LOW ORDER (FRLD)	
MATERIAL	B-DD-11/45-0			
FINISH	SCALE			
	SHEET 5	OF 14	DIST.	SIZE CODE DCS M8115-0-01
				NUMBER REV. B

REVISIONS	REV.
CHANGE NO.	
CHK	

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AR MODE CONTROL

	S1	S0
NOP	L	L
SHIFT RIGHT	L	H
SHIFT LEFT	H	L
LOAD	H	H

	S3	S2	S1	S0	M	CIN
~A	L	L	L	L	H	X
~(A v B)	L	L	L	H	H	X
A MINUS B	L	H	H	L	L	L
0	L	L	H	H	H	X
~(A ^ B)	L	H	L	L	H	X
~B	L	H	L	H	H	X
A MINUS B MINUS 1	L	H	H	L	L	H
A ^ B	L	H	H	H	H	X
A PLUS B PLUS 1	H	L	L	H	L	L
A PLUS B	H	L	L	H	L	L
0	H	L	H	H	H	X
A ^ B	H	L	H	H	H	X
1	H	H	L	L	L	H
A MINUS 1	H	H	H	H	L	H
A v B	H	H	H	L	H	X
A	H	H	H	H	H	X

AR & FALU BITS 00 TO 07 SLOT 3

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES

DECIMALS	ANGLES
XXX - .005	= 0° 30'
XX - .02	
X - .1	

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY

MATERIAL: #

FINISH: #

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE: FRACTION DATA PATH LOW ORDER (FRLE)

DATE: 10/15/71
CHK'D: [Signature]
DATE: 11/12/71
ENG: [Signature]
DATE: 11/12/71
PROJ. ENG: [Signature]
DATE: 11/12/71
PROD: [Signature]
DATE: 11/12/71

NEXT HIGHER ASSY.: B-00-11/45-0

SCALE: #

SHEET 6 OF 14

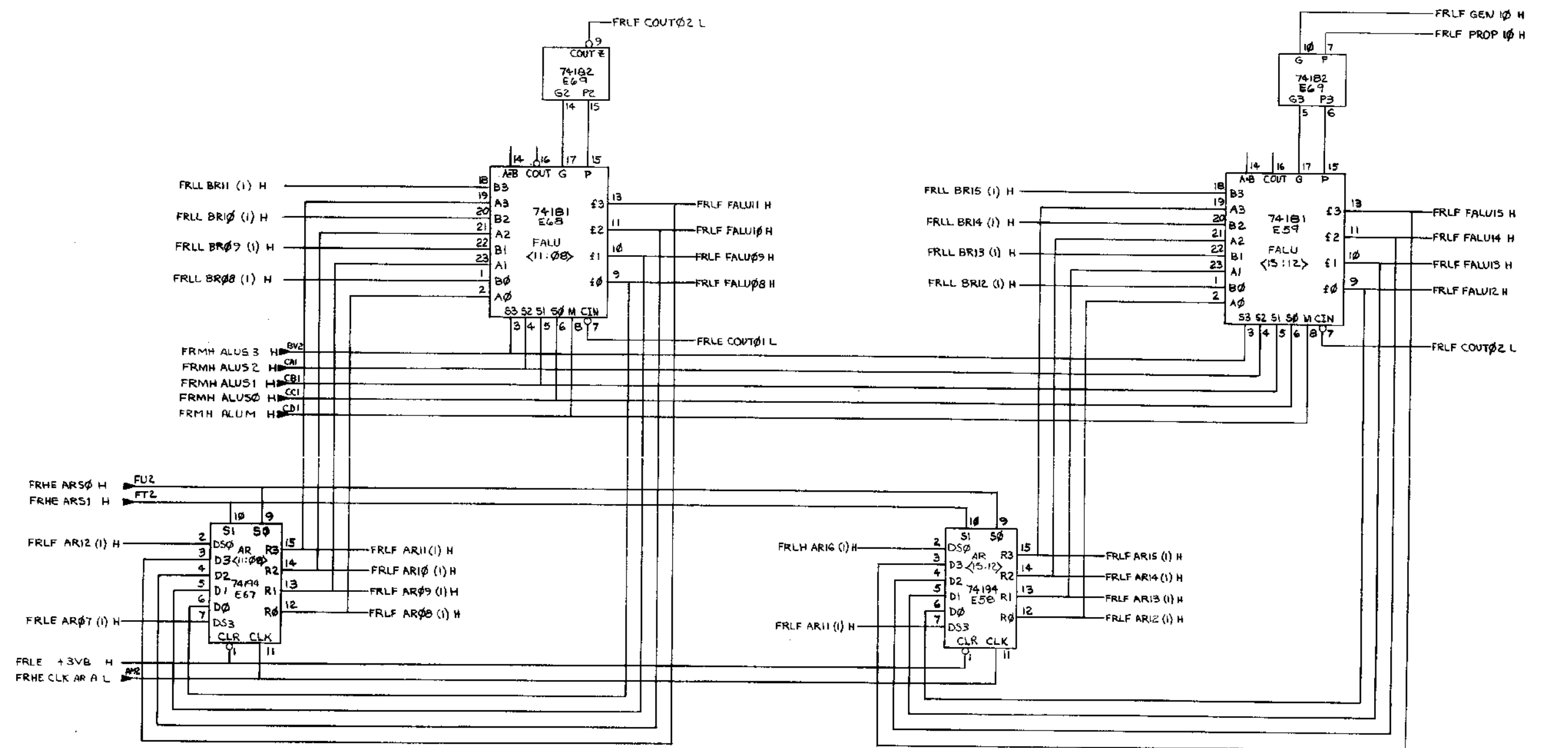
SIZE CODE: DCS M8115-0-01

NUMBER: M8115-0-01

REV. B

REV	
REV	
REV	
REV	
REV	

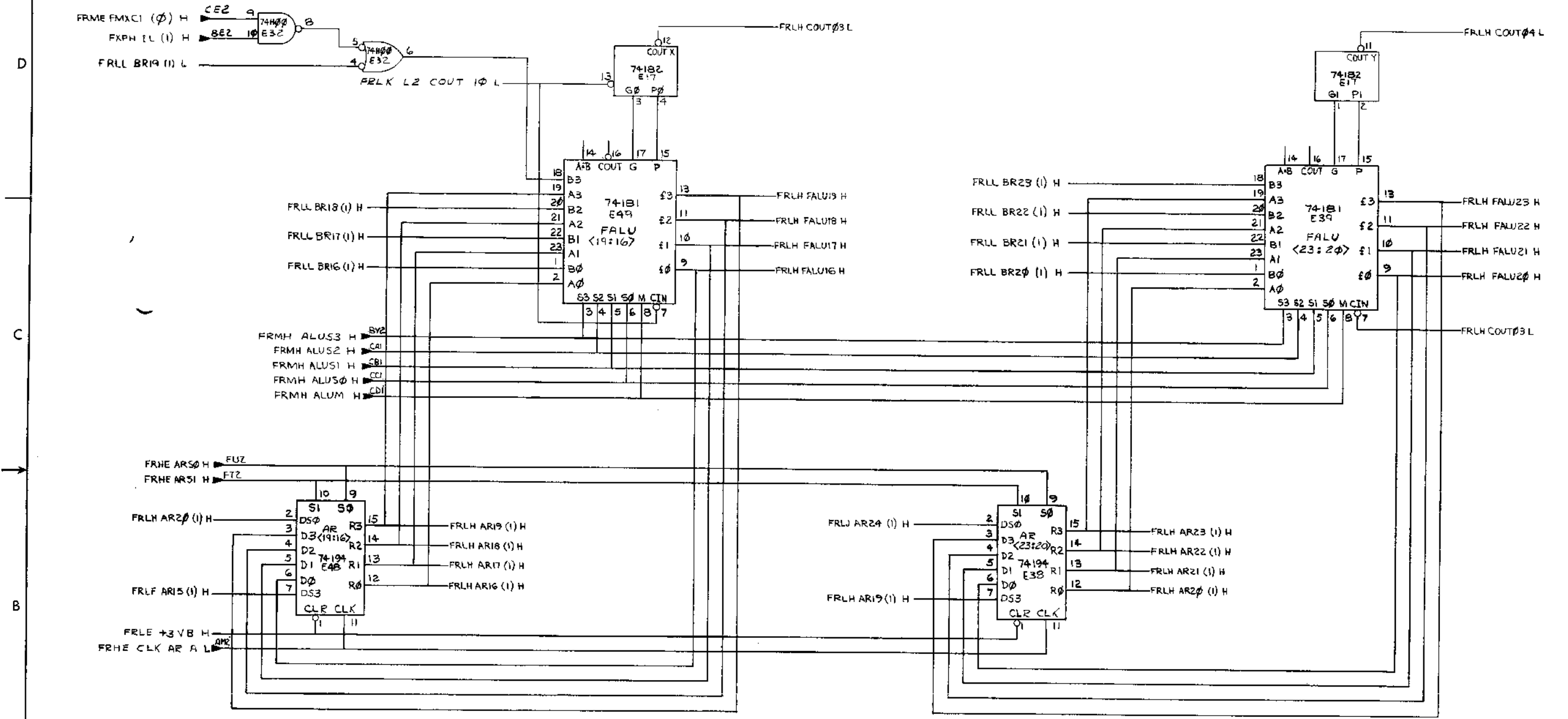
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FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45			AR & FALU BITS 00 TO 15 SLOT 3		
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN <i>[Signature]</i>	DATE 9-16-71	digital EQUIPMENT CORPORATION <small>MAYNARD AND BACHALUZZI</small> TITLE FRACTION DATA PATH LOW ORDER (FRLF)		
DECIMALS .XXX - .005 .XX - .02 .X - .1	ENG. <i>[Signature]</i>	DATE 2/17/72			
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROJ. ENG. <i>[Signature]</i>	DATE 7/17/72			
	PROD. <i>[Signature]</i>	DATE 2/17/72			
MATERIAL —H—	NEXT HIGHER ASSY.	B-DD-11/45-0	SIZE CODE	NUMBER DCS M8115-0-01	REV. B
FINISH —H—	SCALE SHEET 7 OF 14				

REV.	CHANGE NO.	REVISIONS

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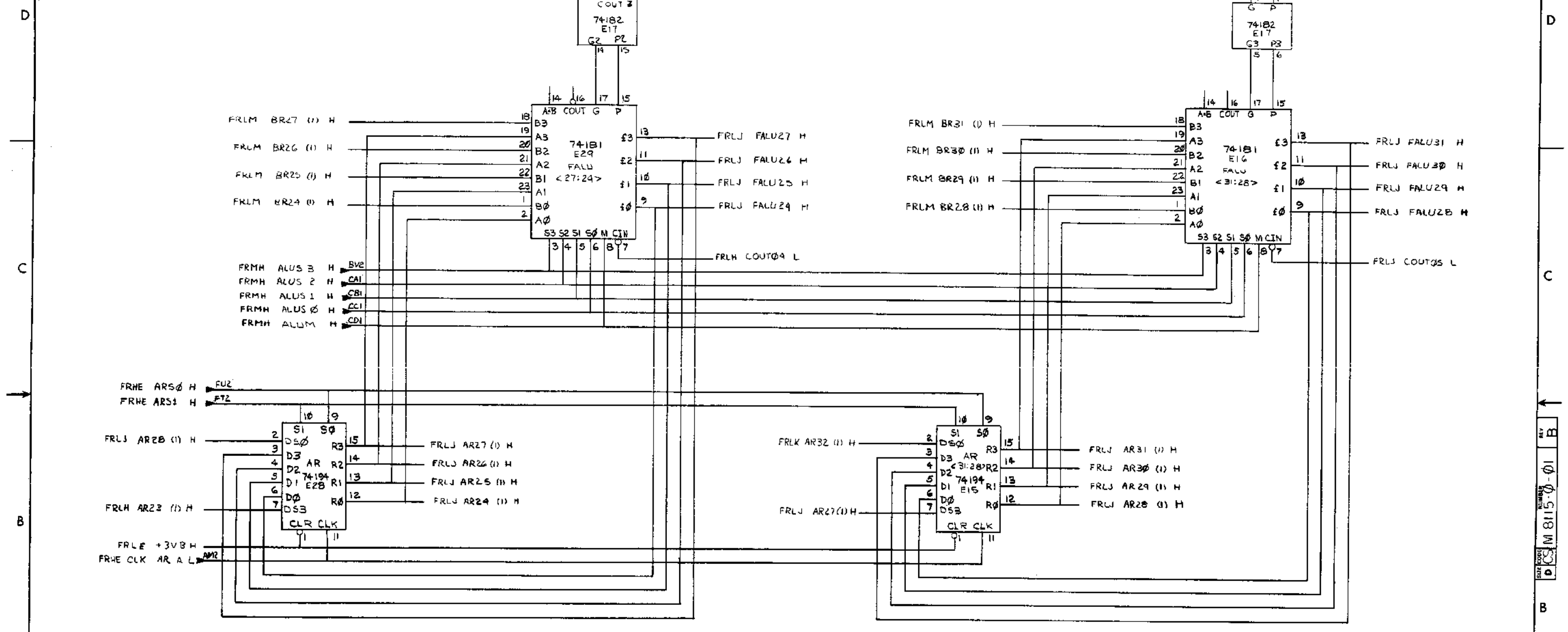


REVISIONS:	REV
CHANGE NO.	
CHK	

AR & FALU BITS 19 TO 23		SLOT 3	
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.
11/45			
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN	DATE	
DECIMALS	2	16/71	
ANGLES		DATE	
XXX + .000		14/71	
XX + .02		DATE	
X + .1		PROL ENG.	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE	
MATERIAL	NEXT HIGHER ASSY.		
FINISH	B 00-11/45-0		
	SCALE	SIZE CODE	NUMBER
	SHEET 3 OF 14	D CS	M8115-0-01
			REV B

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8 7 6 5 4 3 2 1



REV	NO.

DEC 10/64 NO. 010-102-B

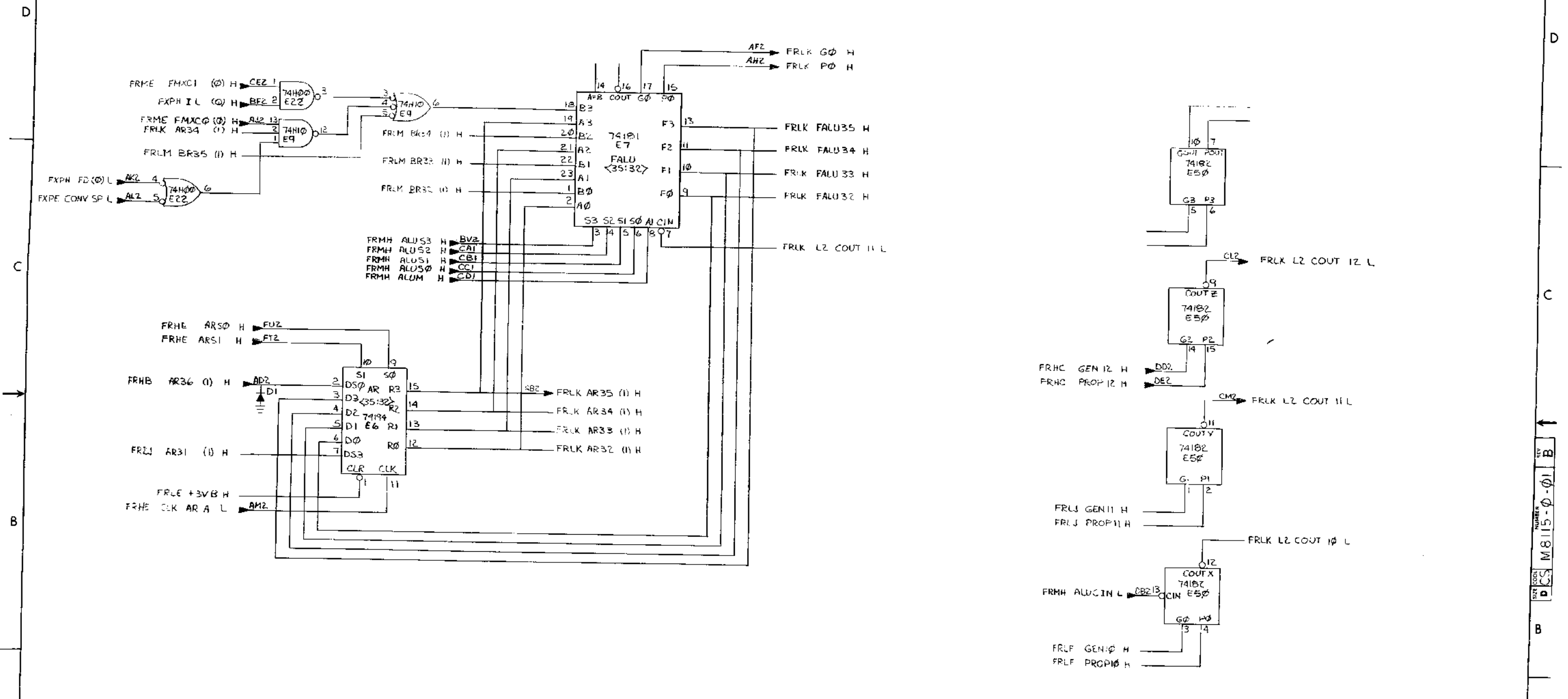
8 7 6 5 4 3 2 1

AR & FALU BITS 24 TO 31		SLOT 3	
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO. ITEM NO.
11/45			
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN. DATE 1/16/71	DATE 2/1/72	 digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
DECIMALS ANGLES	ENG. DATE 2/1/72	DATE 2/1/72	
.XX = .005 .X = .02 X = .1	PROJ. ENG. DATE 2/1/72	DATE 2/1/72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PRD. DATE 2/1/72	DATE 2/1/72	
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER
FINISH	B-DD-11/45-0	DCS	MB115-0-01
SCALE	SHEET 9 OF 14	DIST.	REV. B

REV. B
M 8115-0-01

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10-51.8 W S 2



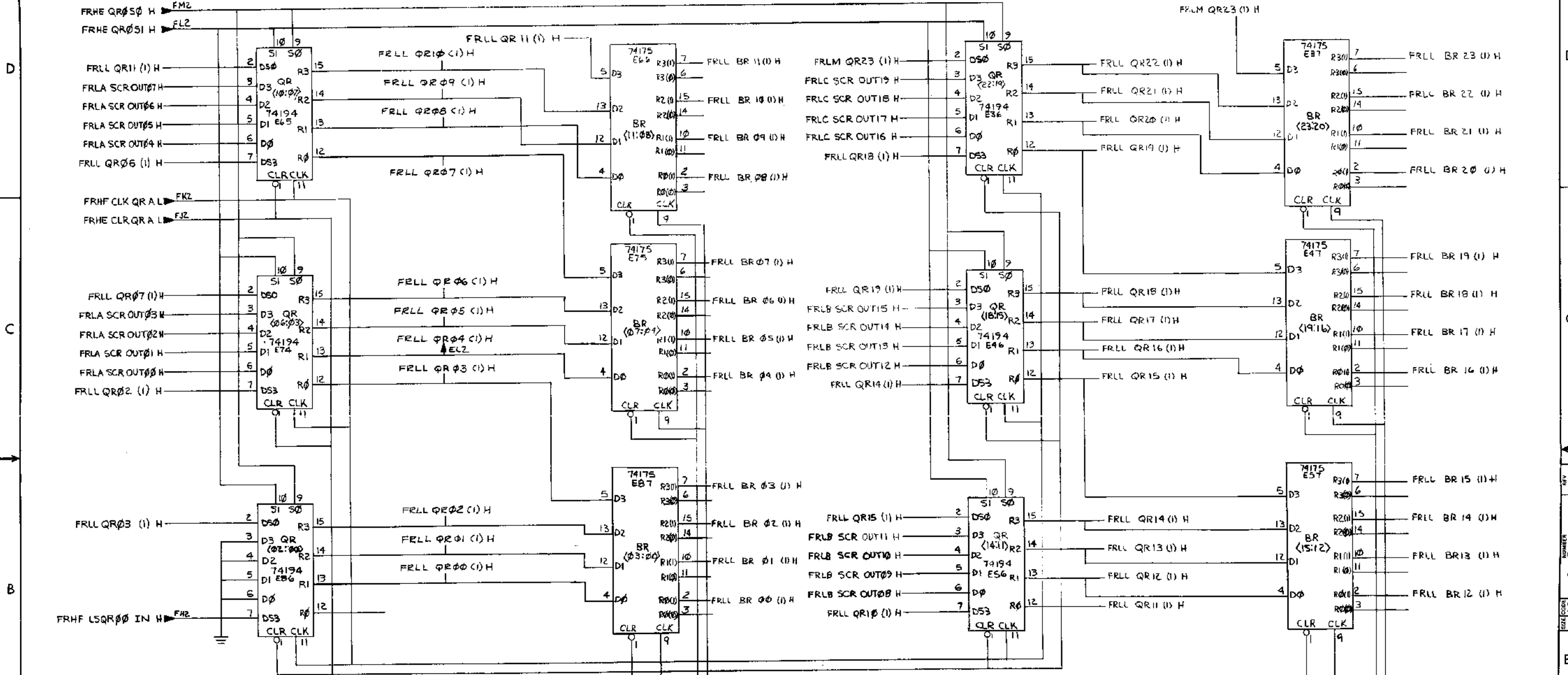
AR & FALU BITS 32 to 35 & 2ND CARRY LOOKAHEAD SLOT 3

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN	DATE	
DECIMALS	ANGLES	CHK'D	DATE	
XXX - 005	± 0' 30"	ENGR	DATE	
KX - 02		PROJ ENG	DATE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD.	DATE	FRACTION DATA PATH LOW ORDER
MATERIAL	NEXT HIGHER ASSY.			
FINISH	B-DD-11/45-0	SIZE CODE	NUMBER	REV.
	SCALE	DCS	M8115-0-01	B
	SHEET 10 OF 14	DIST.		

REV. 11/45
CHK
REV

REV B
NUMBER M8115-0-01
DCS

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QR MODE CONTROL

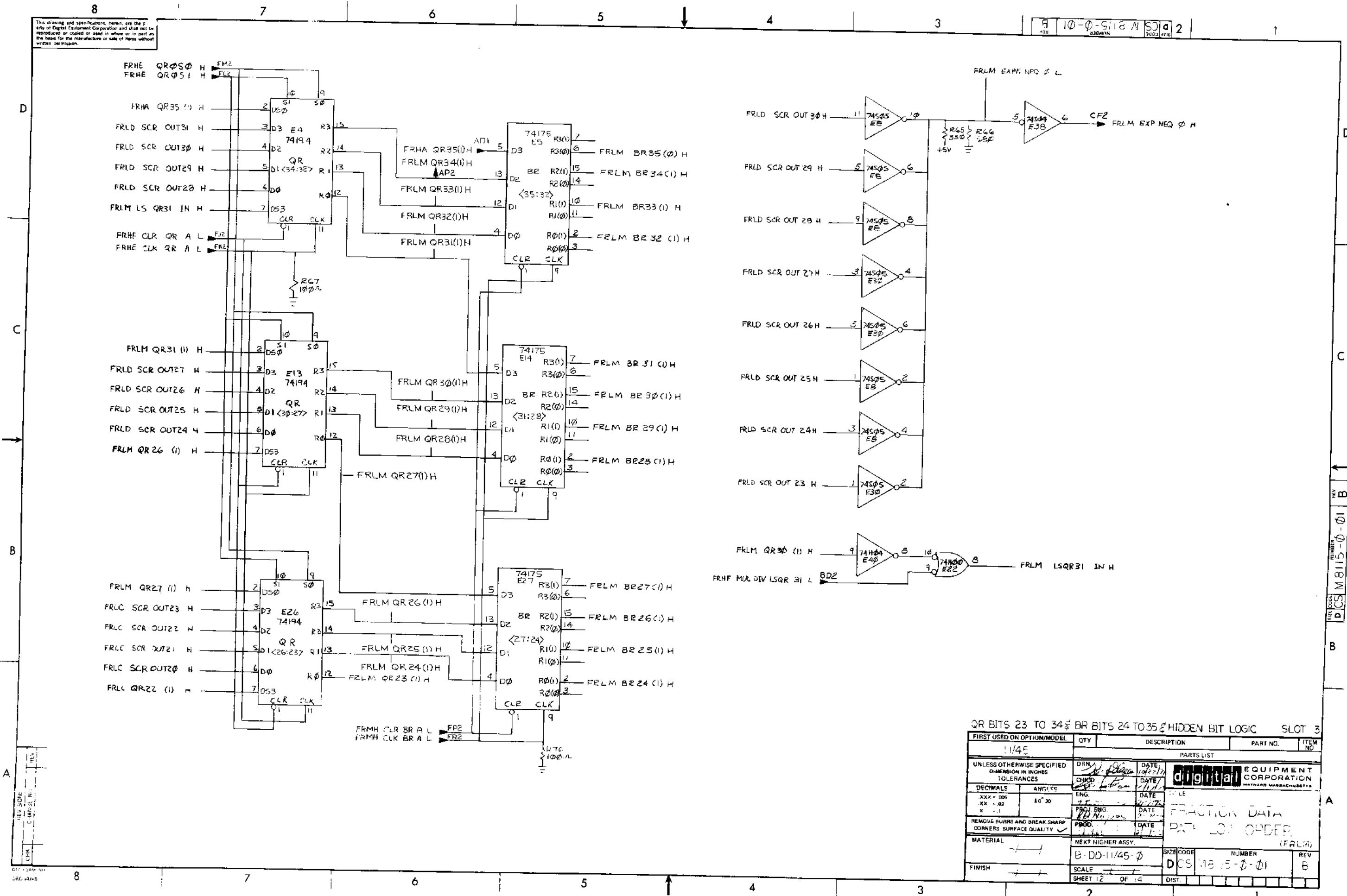
	S1	S0
NOP	L	L
SHIFT RIGHT	L	H
SHIFT LEFT	H	L
LOAD	H	H

FRMH CLR BR A L
FRMH CLK BR A L

QR BITS 00 TO 22 & BR BITS 00 TO 23 SLOT 3

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN	DATE	digital EQUIPMENT CORPORATION <small>MAYNARD MASSACHUSETTS</small> TITLE FRACTION DATA PATH LOW ORDER (FRL)
DECIMALS	ANGLES	CHKD	DATE	
.XXX = .005	± 30'	ENG	DATE	
.XX = .02		PROJ. ENG.	DATE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD.	DATE	
MATERIAL		NEXT HIGHER ASSY.		
FINISH		B-00-11/45-0	SIZE CODE	NUMBER
		SCALE	DCS	MB115-0-01
		SHEET	OF 14	REV. B

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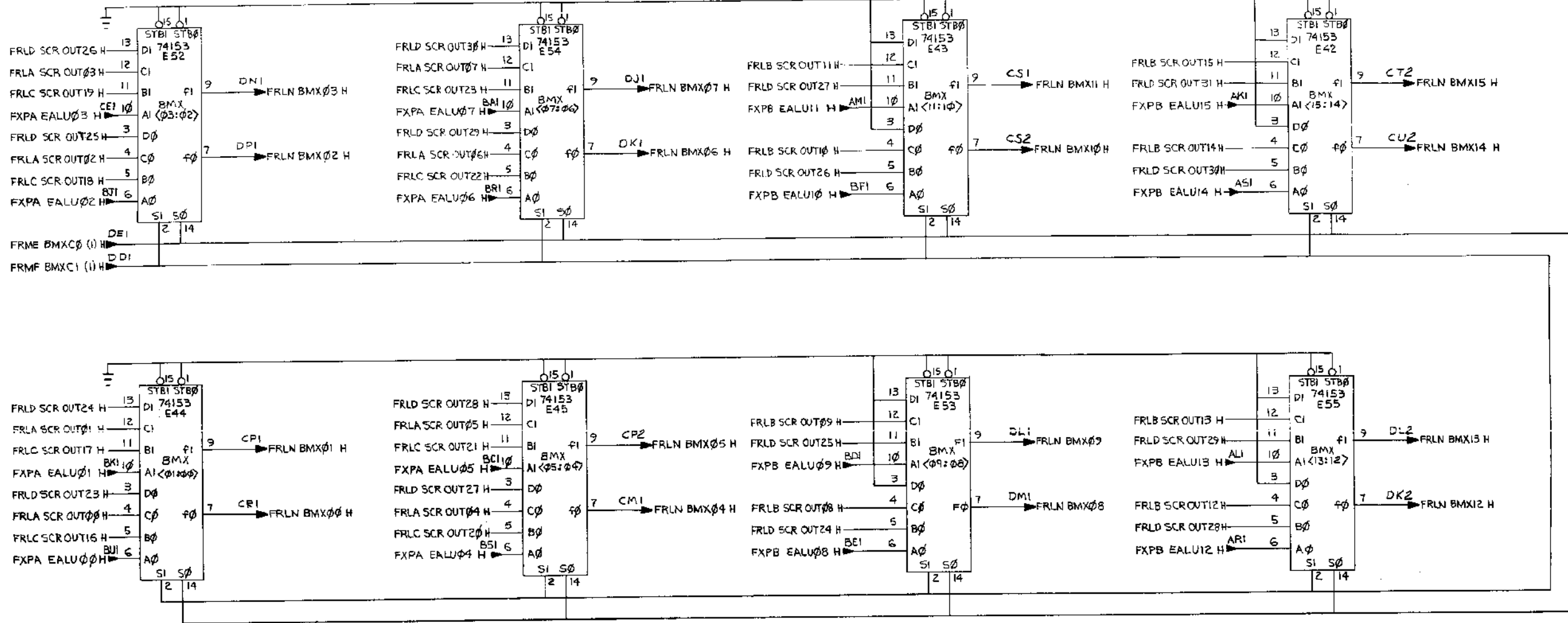


QR BITS 23 TO 34 & BR BITS 24 TO 35 & HIDDEN BIT LOGIC SLOT 3

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
1145				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	PARTS LIST		
XXX - .005	10° 30'	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL				
NEXT HIGHER ASSY.				
FINISH				
B-DD-1145-0		SIZE CODE	NUMBER	REV
SCALE		DCS M815-0-01		B
SHEET 12 OF 14		DIST.		

REV B
NUMBER
DCS M815-0-01

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BMX CONTROL

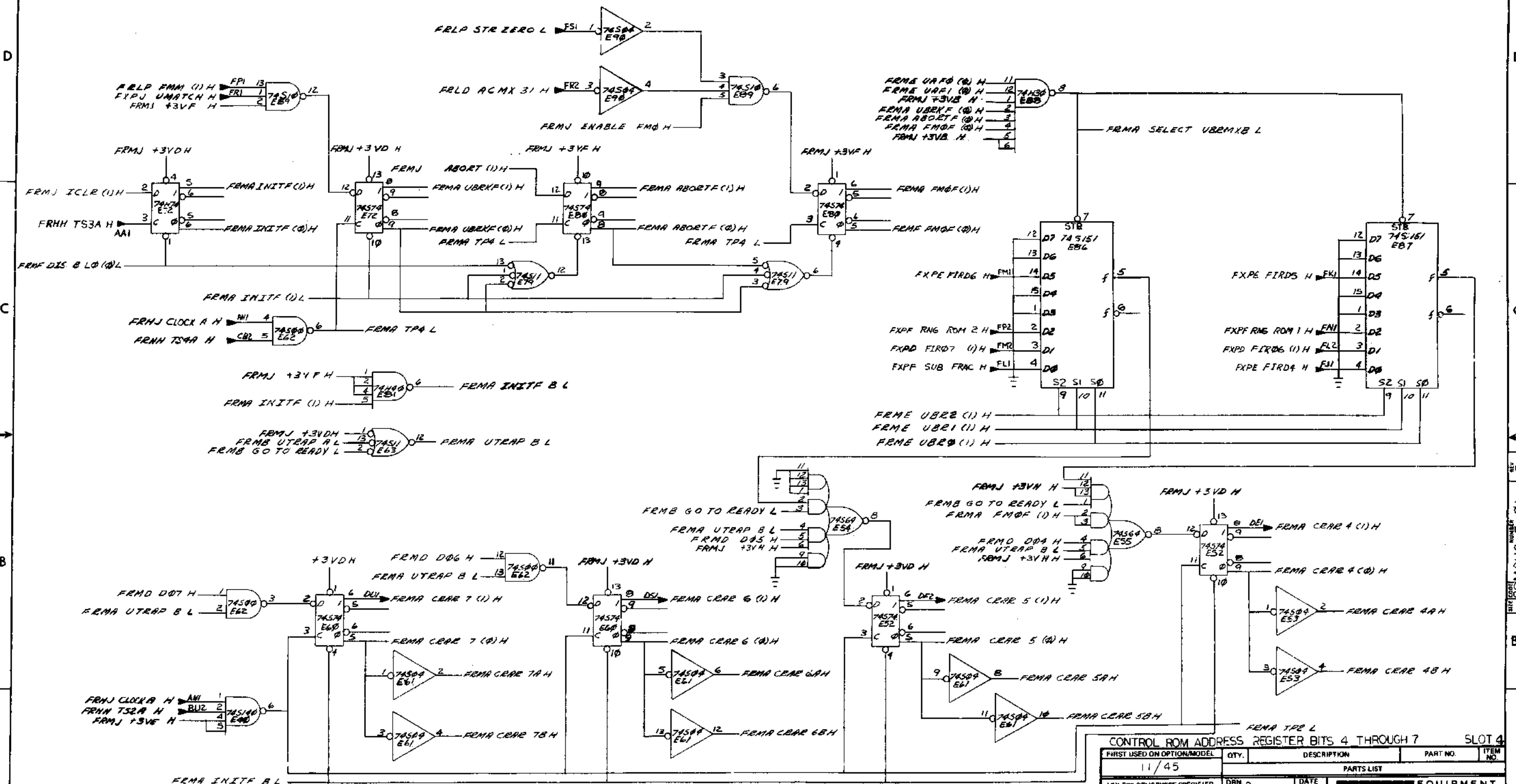
	SI	S0
EALU	L	L
ACH	L	H
ACL	H	L
EXP	H	H

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN: <i>Drayton</i>	DATE: 10/22/71	 digital EQUIPMENT CORPORATION <small>MAYFIELD, MASSACHUSETTS</small>	
DECIMALS ANGLES		CHK'D: <i>Drayton</i>	DATE: 11/1/71		
.XXX - .005 10° 30'		ENG: <i>Drayton</i>	DATE: 11/1/71		
.XX - .02		PROJ. ENG. <i>Drayton</i>	DATE: 11/1/71		
.X - .1		PROD. <i>Drayton</i>	DATE: 11/1/71	FRACTION DATA PATH LOW ORDER <small>(FRLN)</small>	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY					
MATERIAL	FINISH	NEXT HIGHER ASSY.	SCALE	SIZE CODE	NUMBER
11	11	B-DD-11/45-0	13 OF 14	DCS	M8115-0-01
			SHEET	DIST.	REV.
			13 OF 14		B

REV	CHG	NO.

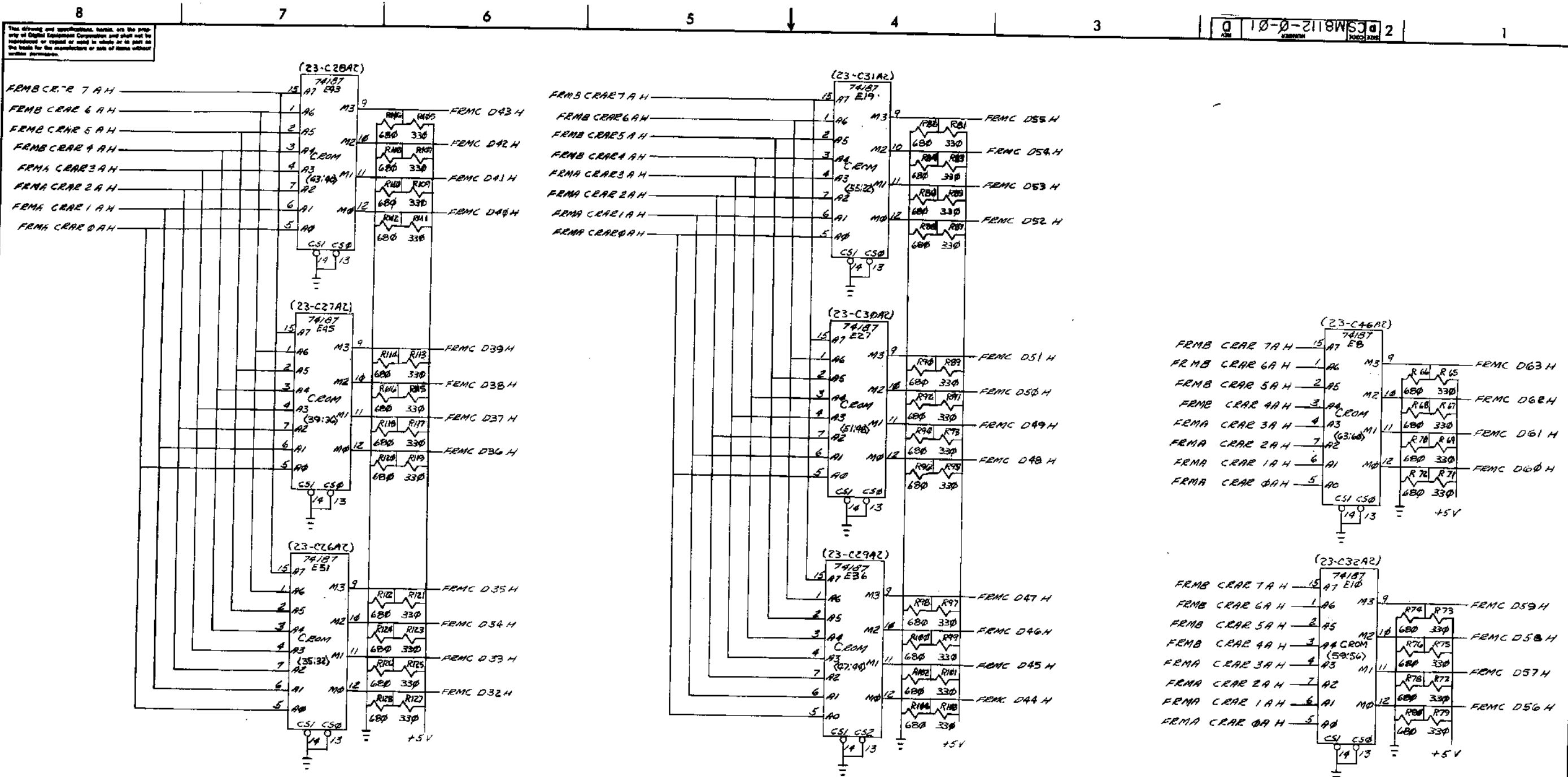
DEC 1970 NO. 2
DAD 104-3

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CONTROL ROM ADDRESS REGISTER BITS 4 THROUGH 7				SLOT 4	
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.	
11/45					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES					
DECIMALS	ANGLES	TITLE			
XX - 0.05	± 0° 30'	F.P. ROM * ROM CONTROL (FRMA)			
REMOVE BURRS AND BREAK SHARP EDGES SURFACE QUALITY					
MATERIAL		NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
		B-DD-11/45-0	DCSMB112-0-01		D
FINISH		SCALE	SHEET	OF 13	DIST.

REV.	CHG.	REVISIONS



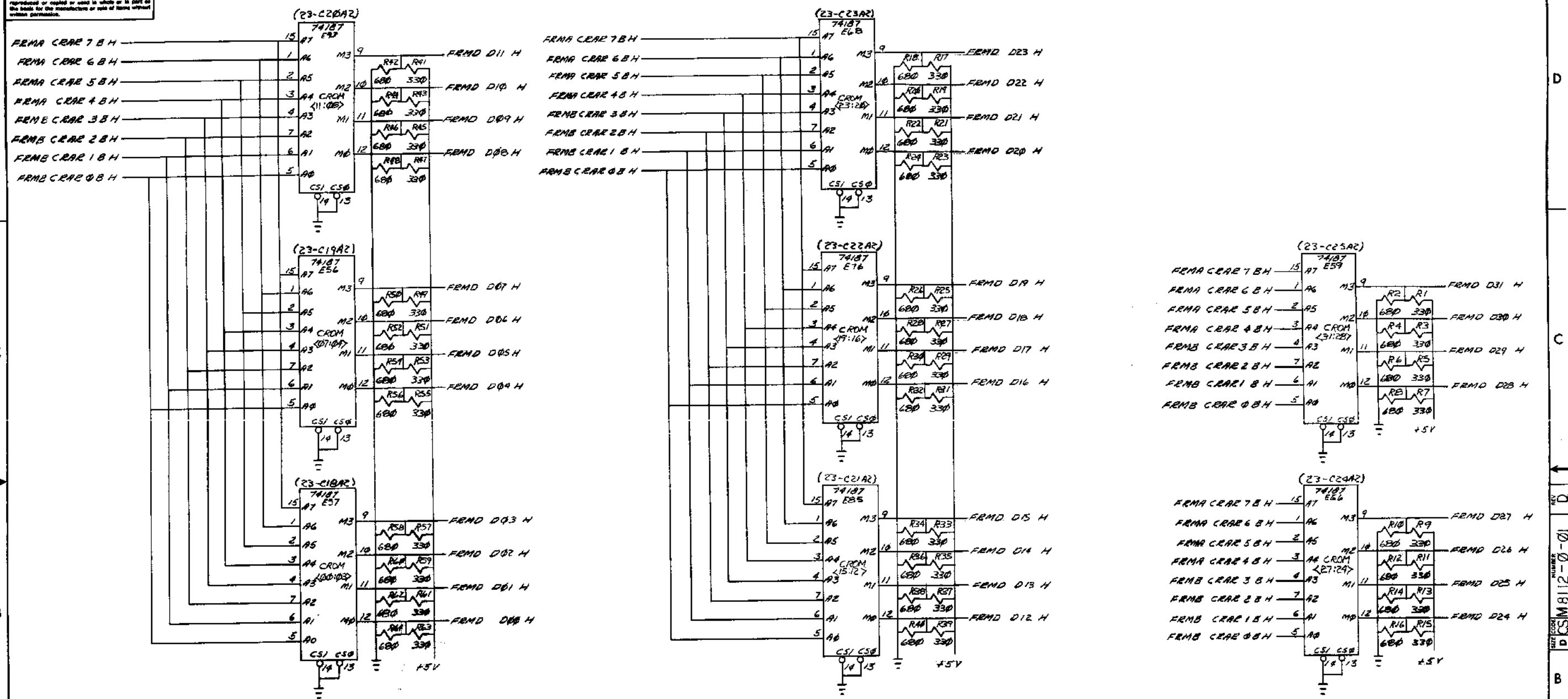
CONTROL ROM DATA BUFFER BITS 32 TO 63 SLOT 4

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DATE 12/1/77		
DECIMALS ANGLES		DATE 2/17/78		
MATERIAL		DATE 2/17/78	FP ROM & ROM CONTROL (FRMC)	
FINISH		DATE 2/17/78		
NEXT HIGHER ASSY.		DATE 2/17/78	SIZE CODE NUMBER REV. B-DD-11/45-0 DCS M8112-0-01 D	
SCALE		DATE	DIST.	
SHEET 4 OF 5				

REV	DESCRIPTION
1	CHG
2	CHG
3	CHG
4	CHG
5	CHG
6	CHG
7	CHG
8	CHG
9	CHG
10	CHG
11	CHG
12	CHG
13	CHG
14	CHG
15	CHG

DEC FORM NO. 105-11

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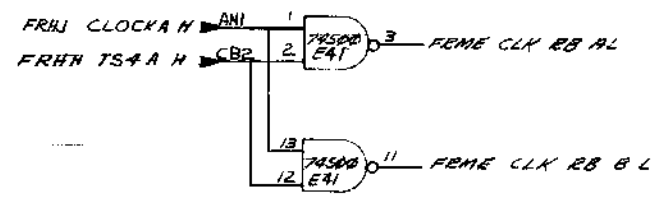
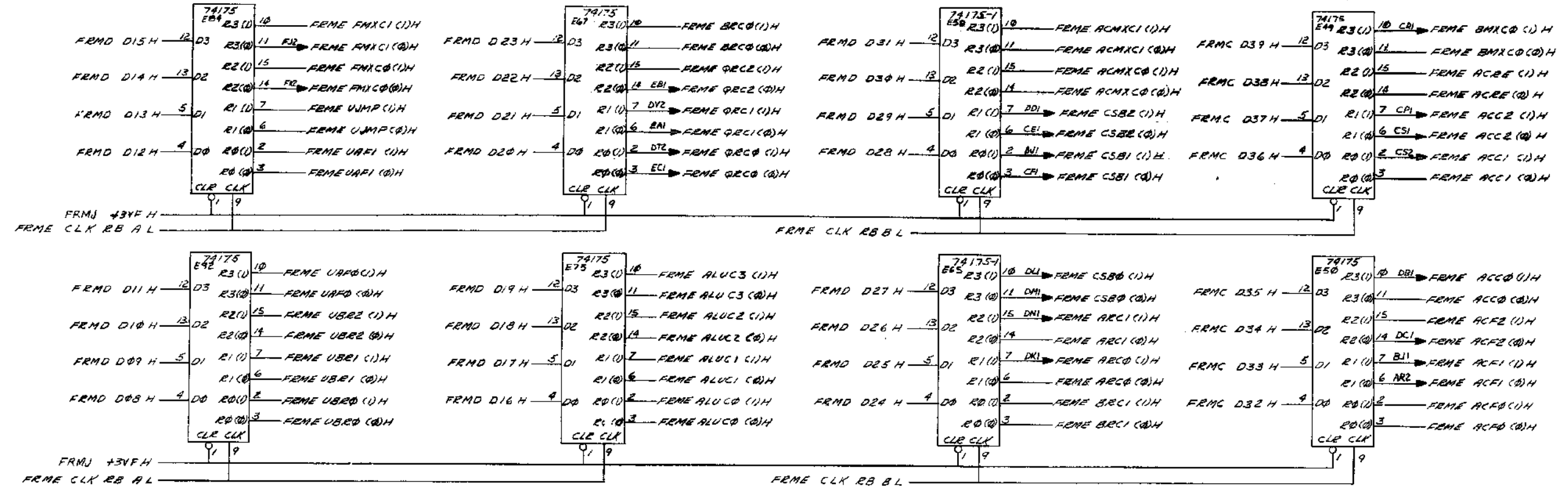
REVISIONS	BY
CHANGE NO.	
CHK	

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		PARTS LIST			
DRN	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS			
ENG	DATE	TITLE			
PROL. ENG.	DATE	FR ROM & ROM CONTROL (FRMD)			
PROD.	DATE	MATERIAL			
NEXT HIGHER ASSY.		SIZE CODE	NUMBER	REV.	
B-DD-11/45-0		DCSMB112-0-01		D	
FINISH		SCALE	DIST.		
		SHEET 5 OF 15	1		

CONTROL ROM BITS 00 TO 31 SLOT 4

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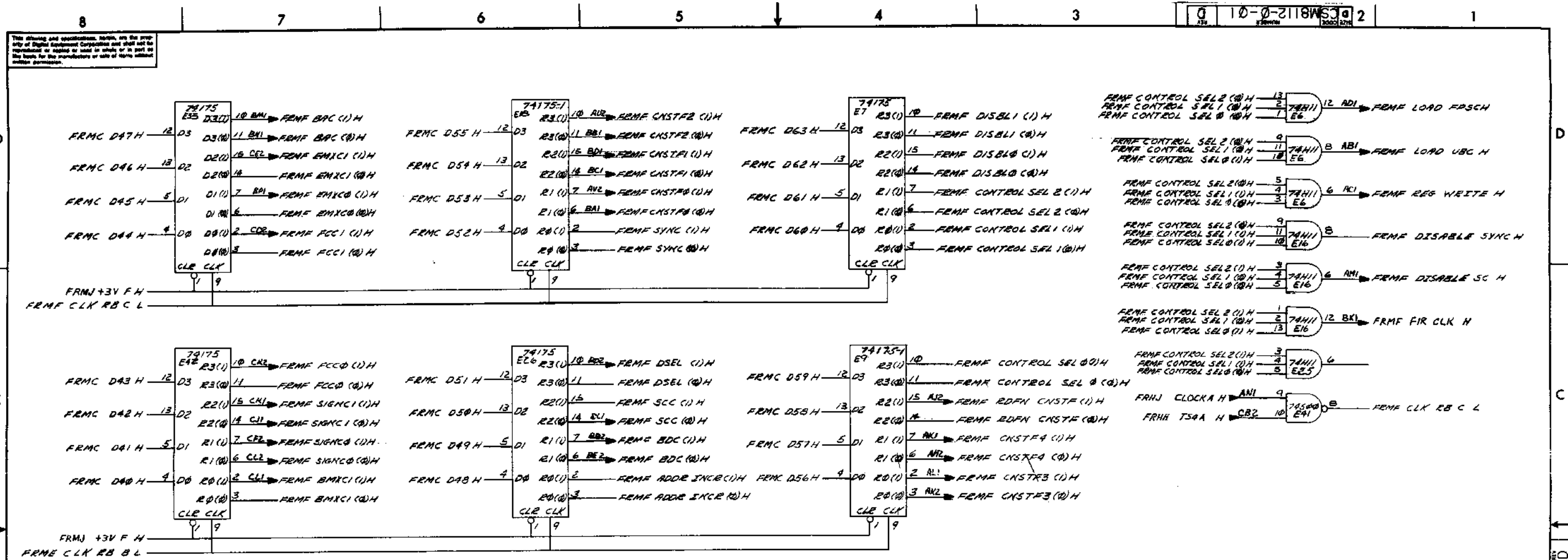
10-0-2118W 2



CONTROL ROM DATA BUFFER BITS 08 TO 39 SLOT 4

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
LAWLESS OTHERWISE SPECIFIED DIMENSION IN INCHES		DRN <i>X B...</i>	DATE 10-9-71	
TOLERANCES		CHK <i>[Signature]</i>	DATE 2/19/72	
DECIMALS	ANGLES	ENG <i>[Signature]</i>	DATE 2/17/72	5.2 ROM ROM CONTROL (FRME)
.XXX = .005	±0° 30'	FRM ENG <i>[Signature]</i>	DATE 2/17/72	
.XX = .02		FRM <i>[Signature]</i>	DATE 2/17/72	
.X = .1		PROD <i>[Signature]</i>	DATE 2/17/72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
	B-DD-11/45-0	D	CSM8:12-0-01	D
FINISH	SCALE	SHEET	6 OF 13	

REVISIONS	CHANG NO.	REV.
CHK		



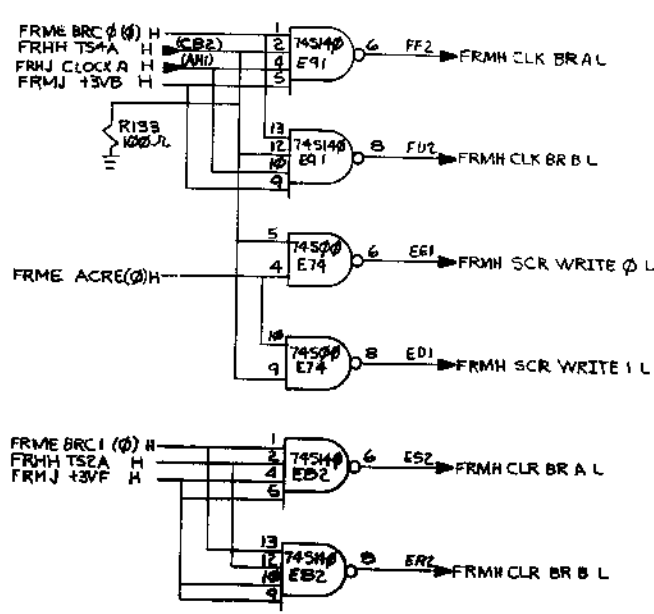
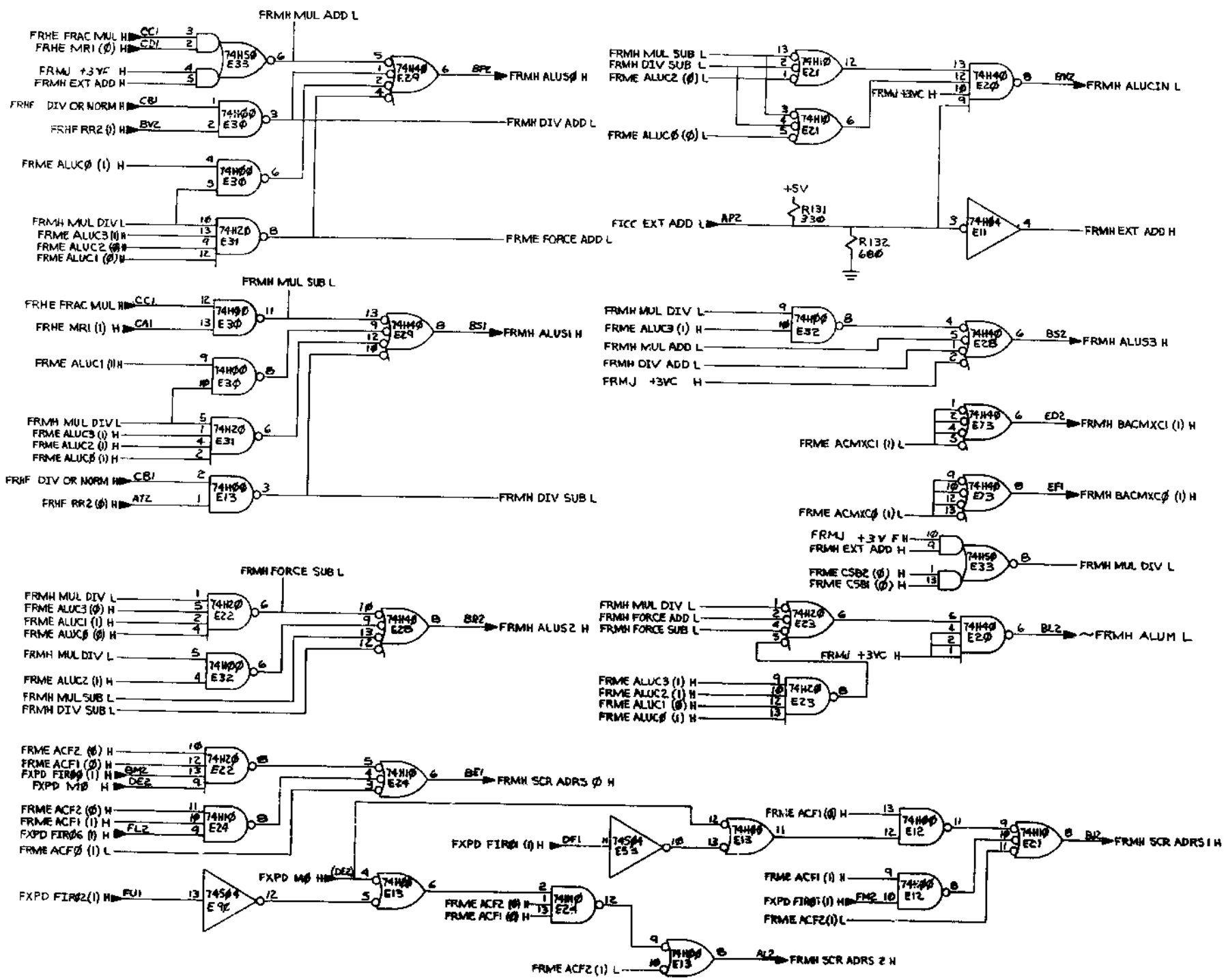
REV	
CHG	
REV	
CHG	

CONTROL ROM DATA BUFFER BITS 40 TO 63 SLOT 4

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN 2/2/72	DATE 10-5-72	
DECIMALS	ANGLES	ENG R. Hughes	DATE 8/17/72	
.XXX - .006	±0° 30'	PROJ ENG R. Hughes	DATE 2/11/72	
.XX - .02		PROD. R. Hughes	DATE 2/17/72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
FINISH	SCALE	B-DD-11/45-0	DCS M8112-0-01	D
	SHEET	7	OF	13

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D
C
B
A

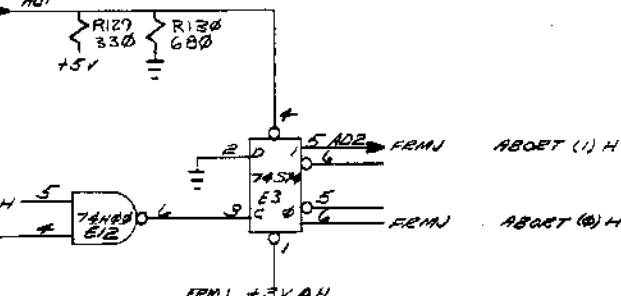
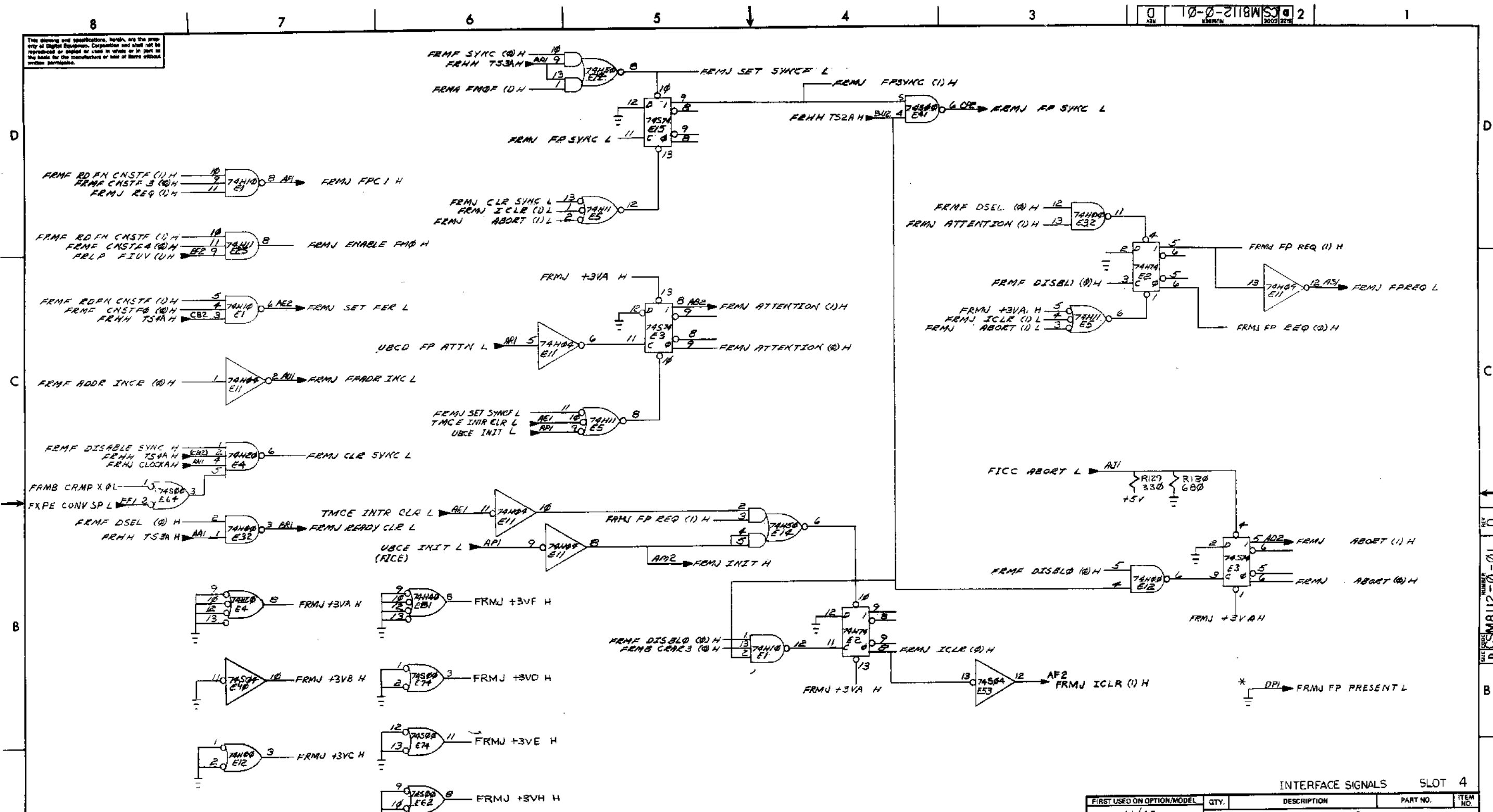


ALU AND SCRATCH PAD CONTROL SLOT 4

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN MILLIMETERS TOLERANCES				
DECIMALS	ANGLES	DATE 11/17/75		
300 ± .008	± .005	DRAWN BY J. B. HUGHES		
.001 ± .002	± .002	CHECKED BY J. B. HUGHES		
.002 ± .003	± .003	DATE 11/17/75		
REWORK SURFACE QUALITY				
MATERIAL	NEXT FORMER ASBY.	TITLE F.P. ROM & ROM CONTROL (FRMH)		
—	—	SIZE CODE	NUMBER	REV.
—	—	B-DD-11/45-0	DCS MB112-0-01	D
FRMH	—	SCALE	SHEET	8 OF 15
—	—	—	DIST.	—

REV D
MB112-0-01
DCS

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NOTE
* THIS GROUND IS GENERATED ON FRM BOARD

INTERFACE SIGNALS SLOT 4

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN T. Darr	DATE 10-5-77	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS TITLE F.P. ROM & ROM CONTROL (FRMJ)	
DECIMALS .XXX = .008 .XX = .02 .X = .2	ENGR B. Hughes	DATE 2/11/78		
ANGLES ±0° 30'	PROL ENGR B. Hughes	DATE 2/17/78		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PRD U. Duesch	DATE 2/17/78		
MATERIAL	NEXT HIGHER ASSY.			
FINISH	B-DD-11/45=0	SCALE	SIZE CODE	NUMBER
		SHEET 9 OF 13	DCS M8112-0-01	REV. D

REVISIONS

REV.	CHANGE NO.

CHK

Table with 28 columns: FLOWS STATE, ADR, DL1, DL0, CSL, RBF, CST, SYN, OSL, SCC, BDC, AIC, BAC, EMX, FCC, SGN, BMX, ACR, ACC, ACF, AGM, CSB, ARC, BRC, ORC, ALU, FMX, UJP, UAF, UBR, NAD. Rows include various flow descriptions like '07 STR, 64 100' and '08 STR, 18 146'.

Table with 28 columns: FLOWS STATE, ADR, DL1, DL0, CSL, RBF, CST, SYN, OSL, SCC, BDC, AIC, BAC, EMX, FCC, SGN, BMX, ACR, ACC, ACF, AGM, CSB, ARC, BRC, ORC, ALU, FMX, UJP, UAF, UBR, NAD. Rows include various flow descriptions like '05 LD, 56 148' and '06 STR, 18 146'.

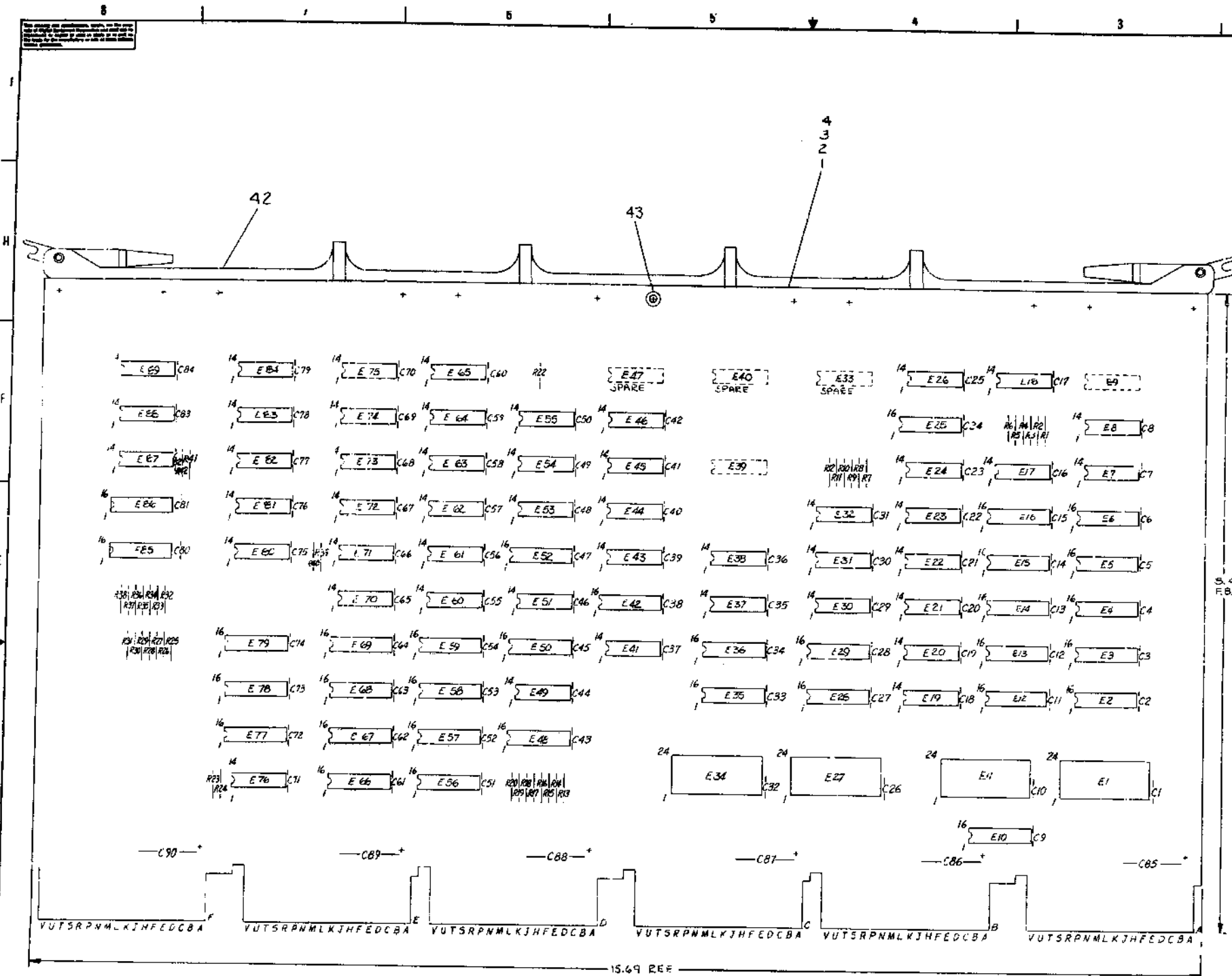
DRM: T.M. Blaine, DATE: 3/21/72
CHK'D: J. J. Blaine, DATE: 5/22/72
ENG: J. Blaine, DATE: 5/22/72
PROJ: J. Blaine, DATE: 5/22/72
APP: J. Blaine, DATE: 3/22/72
SHEET 11 OF 13

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

F.P. ROM & ROM CONTROL
(ROM MAP 100 TO 177)

SIZE CODE NUMBER REV. KCS M8112 - 0-1 D

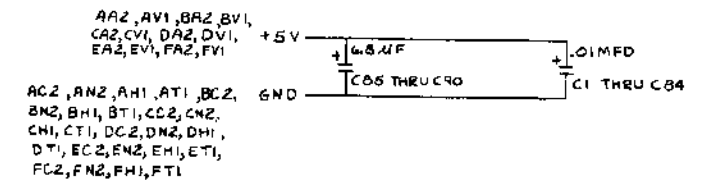
DIST.



NOTES:
 1. UNLESS OTHERWISE NOTED RESISTANCE IS IN Ω AND CAPACITANCE IS IN PICO FARADS. CAPS. WITHOUT VALUE NOTED ARE .01 MFD

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	QTY
43	EYELET		7006732	43
1	HANDLE MODULE		F38-21011-2	42
41	C1 THRU C84	CAPACITOR .01MFD, 50V, 20% TOL	1001610	41
40	C85 THRU C90	CAPACITOR 4.8M, 35V, 20% TOL	1000067	40
39	E86	IC DEC DM8598 ROM	23-C05A1	39
38	E85	IC DEC DM8598 ROM	23-C04A1	38
37	E84	IC DEC 74187 ROM	23-C17A2	37
36	E83, E84, E85, E86	IC DEC 74174	1910652	36
35	E84, E14, E25, E50, E59, E77, E78, E79	IC DEC 74175	1910651	35
34	E10	IC DEC 74182-1	1910551	34
33	E66, E67, E68, E69	IC DEC 74315B	1910549	33
32	E42, E52	IC DEC 743112	1910545	32
31	E61	IC DEC 74365	1910543	31
30	E41, E62	IC DEC 74364	1910542	30
29	E37, E45, E72, E87	IC DEC 74320	1910539	29
28	E30, E32, E49, E65, E73	IC DEC 74311	1910537	28
27	E23, E24, E31, E43, E71, E83	IC DEC 74310	1910536	27
26	E7, E8, E17, E76	IC DEC 74305	1910535	26
25	E26, E38, E63, E68	IC DEC 74304	1910534	25
24	E51, E62, E89	IC DEC 74300	1910532	24
23	E56, E57	IC DEC 7485	1910224	23
22	E50	IC DEC 74191	1910096	22
21	E60	IC DEC 74422	1910055	21
20	E1, E11, E27, E54	IC DEC 74161	1909982	20
19	E2, E3, E12, E13, E28, E29, E35, E36	IC DEC 743153	1910547	19
18	E10	IC DEC 74409	1909431	18
17	E19, E20, E21, E22, E49	IC DEC 74401	1909449	17
16	E46, E60, E74	IC DEC 74474	1909667	16
15	E18, E81	IC DEC 74411	1909267	15
14	E63, E75	IC DEC 74410	1909057	14
13	E54, E64, E84	IC DEC 74400	1909056	13
12	E55	IC DEC 74420	1905635	12
11	R12	RESISTOR 270Ω, 1/4W, 5%	1301972	11
10	R20, R30, R34, R36, R38	RESISTOR 2.4K, 1/4W, 5%	1303177	10
9	R13, R25, R7, R9, R13, R15, R17, R19, R24, R26, R32, R40, R41	RESISTOR 680Ω, 1/4W, 5%	1301424	9
8	R16, R18, R20, R23, R25, R33, R39, R42	RESISTOR 330Ω, 1/4W, 5%	1300295	8
7	R27, R29, R31, R35, E37	RESISTOR 1.2K, 1/4W, 5%	1301320	7
6	R11	RESISTOR 470Ω, 1/4W, 5%	1300316	6
5	R22	RESISTOR 100Ω, 1/4W, 5%	1300229	5
4		ETCHED CIRCUIT BOARD	5009860	4
3		MODULE ECO HISTORY	84M-MB13-0-1	3
2		ASSY/DRILLING HOLE LAYOUT	84M-MB13-0-5	2
1		X-Y COORDINATE HOLE LOCATION	84M-MB13-0-4	1

IC PIN LOCATIONS	IC TYPE	QTY	REF. DESIGNATION
DEC DM8598	8	16	
DEC 74187	8	16	
DEC 74174	8	16	
DEC 74175	8	16	
DEC 743182	8	16	
DEC 74315B	8	16	
DEC 743112	8	16	
DEC 74365	8	16	
DEC 74364	8	16	
DEC 74320	12	24	
DEC 74311	8	16	
DEC 74175	8	16	
DEC 74151	12	24	
DEC 74153	8	16	

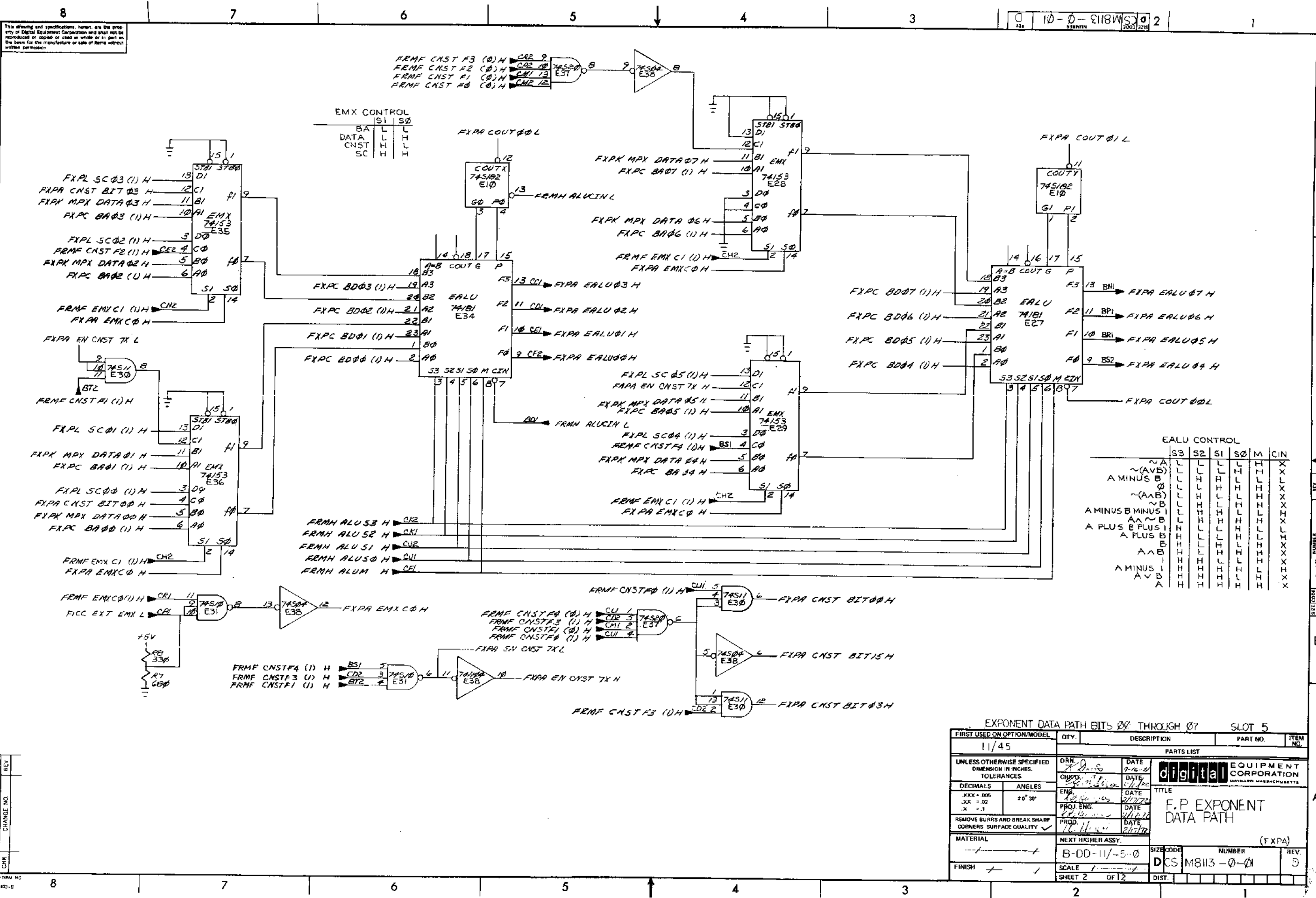


DEC. NO.	ISA NO.	DEC. NO.	ISA NO.
DEC 74174	23-C05A1	DEC 74175	23-C04A1
DEC 74187	23-C17A2	DEC 74182-1	23-C05A1
DEC 74311	1910652	DEC 74315B	1910549
DEC 743112	1910545	DEC 74365	1910543
DEC 74364	1910542	DEC 74320	1910539
DEC 74311	1910537	DEC 74310	1910536
DEC 74305	1910535	DEC 74304	1910534
DEC 74300	1910532	DEC 7485	1910224
DEC 74191	1910096	DEC 74422	1910055
DEC 74161	1909982	DEC 74409	1909431
DEC 743153	1910547	DEC 74401	1909449
DEC 74474	1909667	DEC 74411	1909267
DEC 74410	1909057	DEC 74400	1909056
DEC 74420	1905635		

F.P. EXPONENT DATA PATH

SEMICONDUCTOR CONVERSION CHART

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EMX CONTROL

BA	SI	S0
DATA	L	L
CNST	L	H
SC	H	H

EALU CONTROL

	S3	S2	S1	S0	M	CIN
~A	L	L	L	L	L	X
~(A∨B)	L	L	L	L	L	X
A MINUS B	L	L	L	L	L	X
0	L	L	L	L	L	X
~(A∧B)	L	L	L	L	L	X
~B	L	L	L	L	L	X
A MINUS B MINUS I	L	L	L	L	L	X
A∧~B	L	L	L	L	L	X
A PLUS B PLUS I	L	L	L	L	L	X
A PLUS B	L	L	L	L	L	X
A∧B	L	L	L	L	L	X
I	L	L	L	L	L	X
A MINUS I	L	L	L	L	L	X
A∨B	L	L	L	L	L	X
A	L	L	L	L	L	X

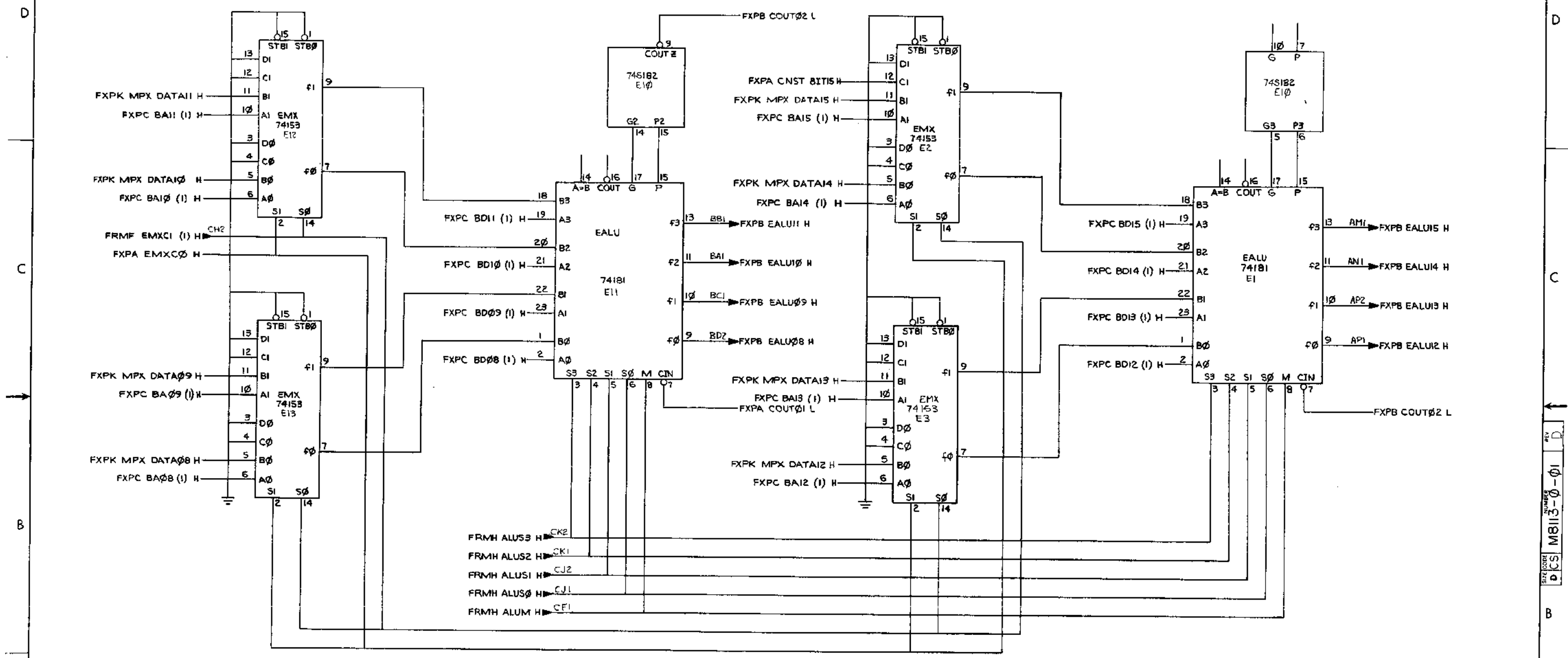
EXPONENT DATA PATH BITS 00 THROUGH 07 SLOT 5

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN	DATE	digital EQUIPMENT CORPORATION	
DECIMALS ANGLES	CHKD	DATE	MAYNARD MASSACHUSETTS	
XXX = .005 .XX = .02 .X = .1	ENR	DATE	TITLE	
REMOVE BURRS AND BREAK SHARP EDGES SURFACE QUALITY	PROJ. ENG.	DATE	F.P. EXPONENT DATA PATH	
MATERIAL	PRD.	DATE	(FXPA)	
FINISH	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
	B-DD-11/-5-0		DCS	M8113-0-01
	SCALE			REV.
	SHEET 2 OF 12			0

REVISIONS

REV	CHANGE NO.

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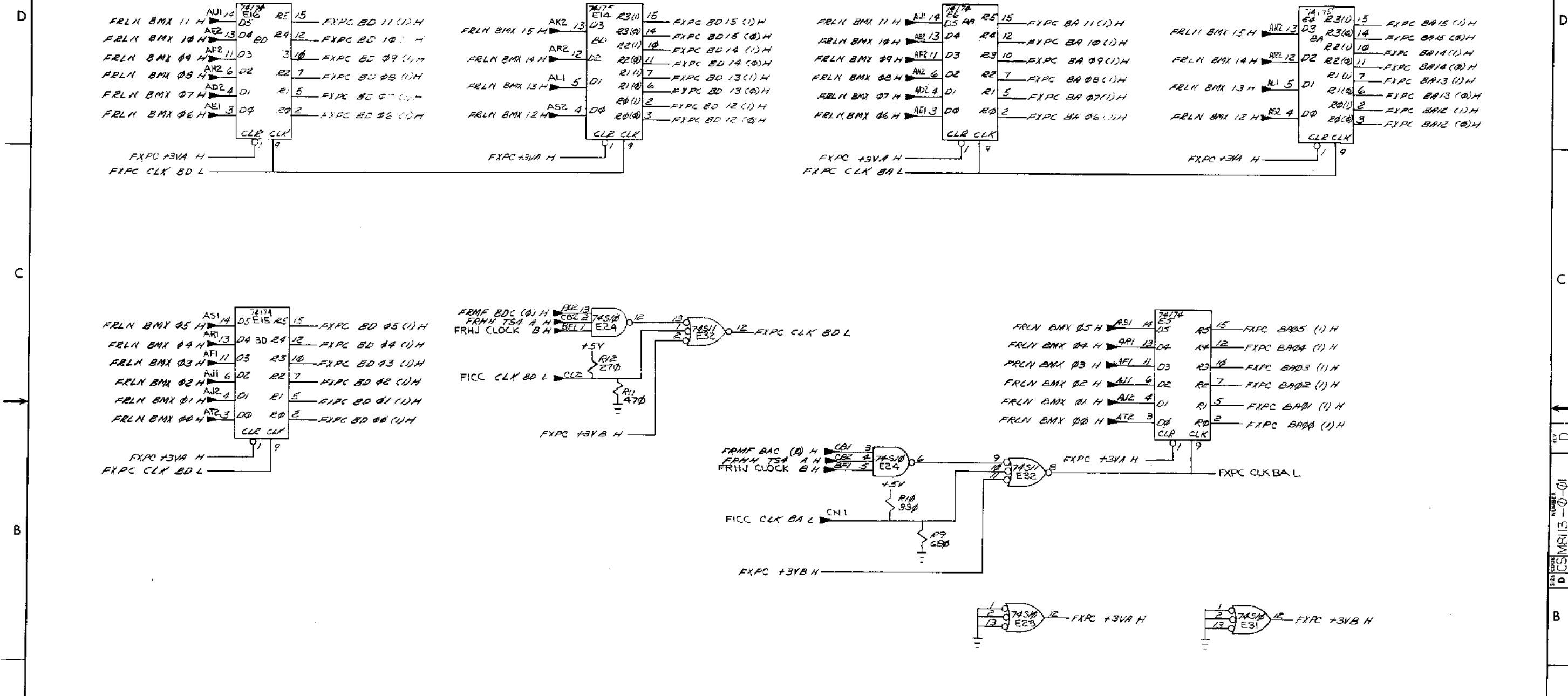


REV. 1
 DIMENSIONS IN INCHES
 UNLESS OTHERWISE SPECIFIED
 TOLERANCES
 DECIMALS ANGLES
 .XX - .05
 .XX - .02
 .X - .1
 REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY
 MATERIAL
 FINISH

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN. S. R. 10/25	DATE 9/23/74	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
		CHK'D.	DATE		
DECIMALS	ANGLES	ENG.	DATE	TITLE EXPONENT DATA PATH	
.XX - .05	.XX - .02	PROJ. ENG.	DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD.	DATE 4/1/75	(719)	
MATERIAL		NEXT HIGHER ASSY.		SIZE CODE	NUMBER
		B-D0-11/45-0		DCS	MB113-0-01
FINISH		SCALE		REV.	
		SHEET 5 OF 12			

SIZE CODE MB113-0-01
 DCS
 REV. 1

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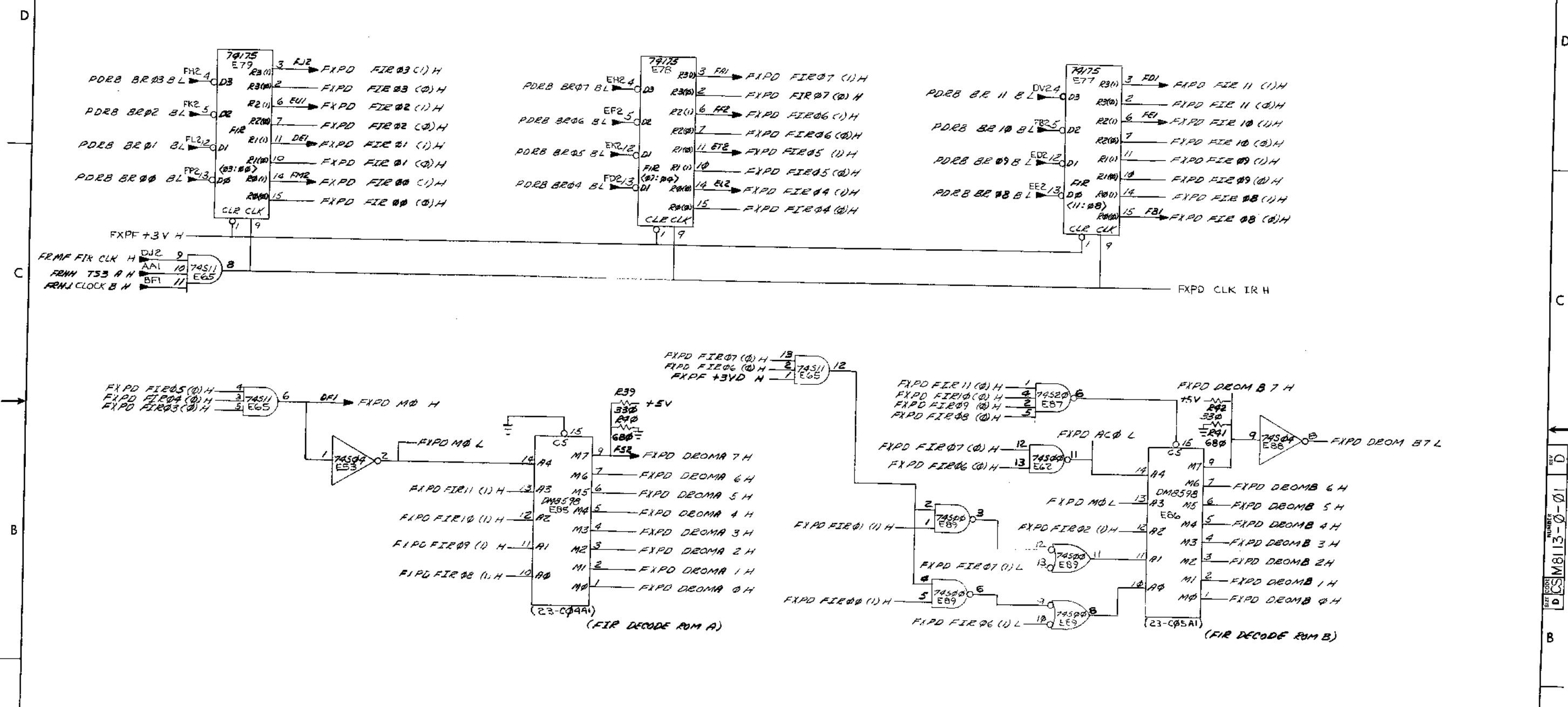


REV	CHANGE NO

DEC FORM INC
ORD 102-B

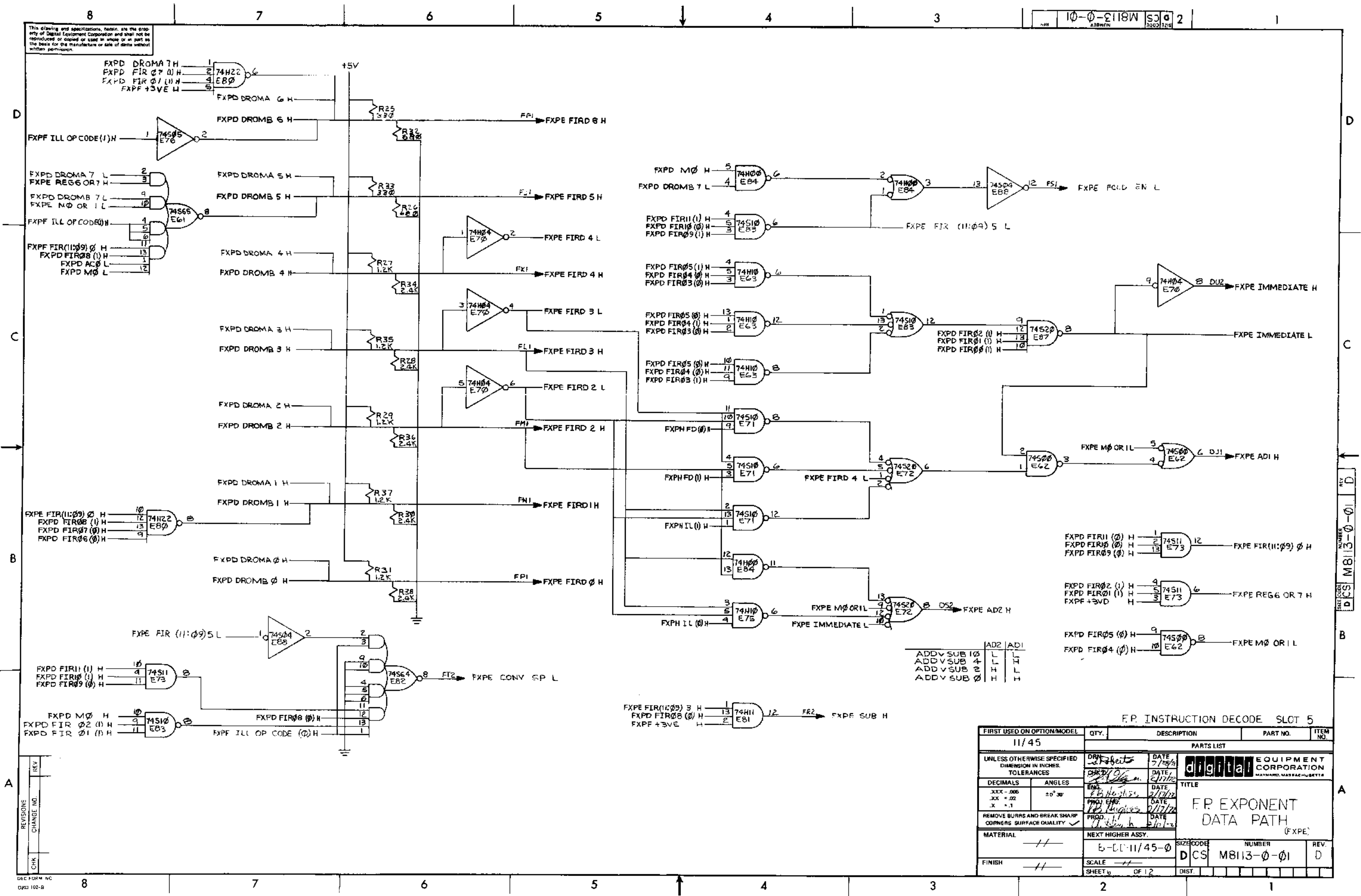
FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.		DRN	DATE	digital EQUIPMENT CORPORATION MAYFORD, MASSACHUSETTS	
TOLERANCES		CHKD	DATE	TITLE	
DECIMALS	ANGLES	ENG	DATE	F.P. EXPONENT DATA PATH	
.XX ± .02	± 0° 30'	PROJ. ENG.	DATE	MATERIAL	
REMOVE BURNS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD.	DATE	NEXT HIGHER ASSY.	
FINISH		SCALE		SIZE CODE	NUMBER (FXPC)
		SHEET 4 OF 12		DCS	M 8113-0-01

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F.P. INSTRUCTION REGISTER SLOT 5				
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN: [Signature]	DATE: 7-23-77	 DIGITAL EQUIPMENT CORPORATION <small>WATYARD MASSACHUSETTS</small>	
DECIMALS	ANGLE	DATE: 7-11-77		
XXX + .005	± 0° 30'	DATE: 7-11-77		
XX + .02	X + .1	DATE: 7-11-77		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ. ENG. [Signature]	DATE: 7-11-77	F.P. EXPONENT DATA PATH (FXPD)	
MATERIAL	NEXT HIGHER ASSY.	SCALE	SIZE CODE	NUMBER
FINISH	0-03-11/45-0	SHEET 5 OF 12	DCS M813-0-01	REV. []

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AD2	AD1
ADDV SUB 10	L L
ADDV SUB 4	L L
ADDV SUB 2	H L
ADDV SUB 0	H H

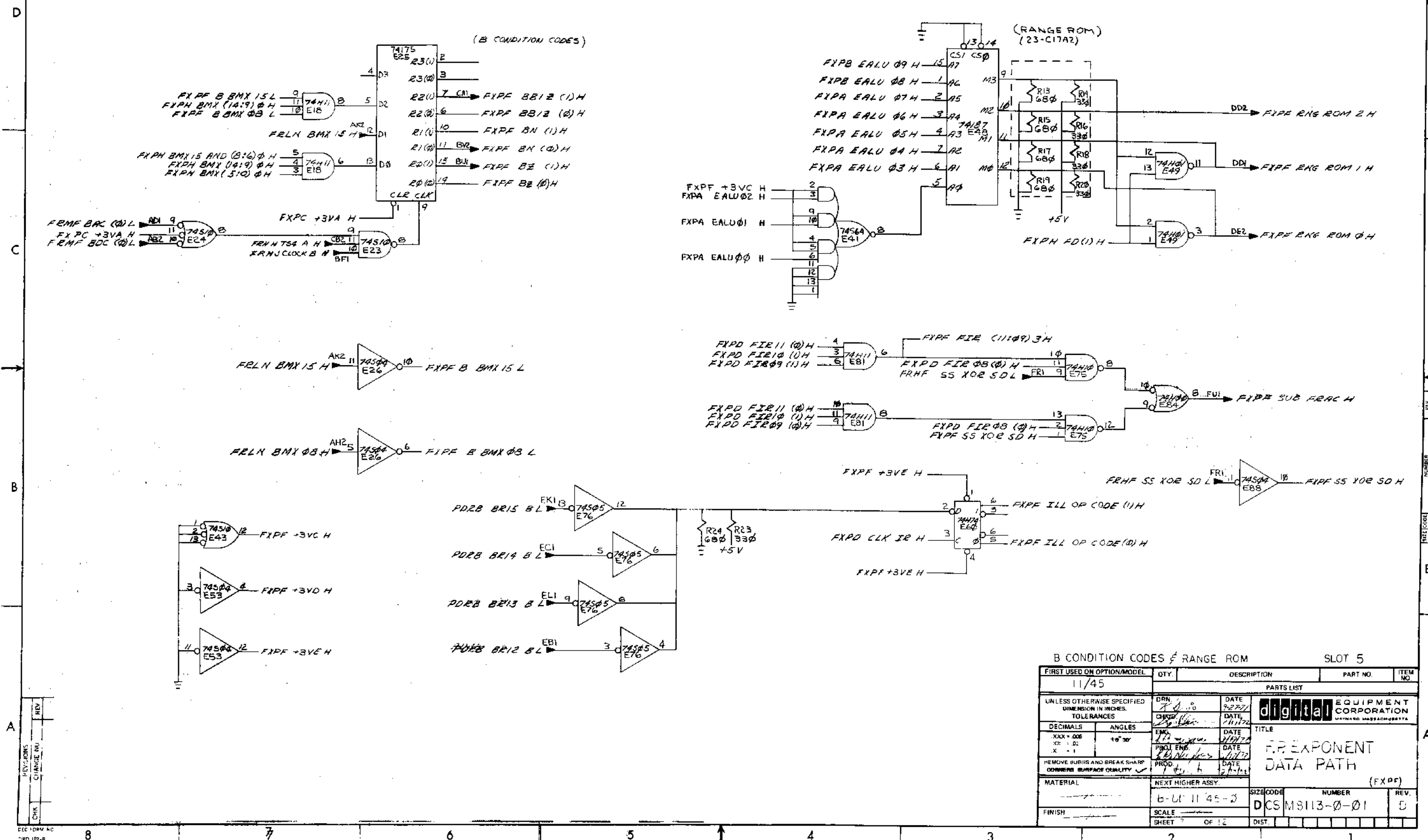
F.P. INSTRUCTION DECODE SLOT 5

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS	ANGLES	TITLE		
.XXX - .005	±0°30'	F.P. EXPONENT DATA PATH (FXPE)		
.XX - .02		REMOVED BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		
.X - .1		MATERIAL		
		NEXT HIGHER ASSY.		
		FINISH		
		SCALE		
		SHEET 6 OF 12		
		SIZE CODE		
		NUMBER		
		REV.		
		DIST		

REV. D
NUMBER M8113-0-01
SIZE CODE DCS

REV.	CHANGE NO.	DATE

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B CONDITION CODES & RANGE ROM SLOT 5

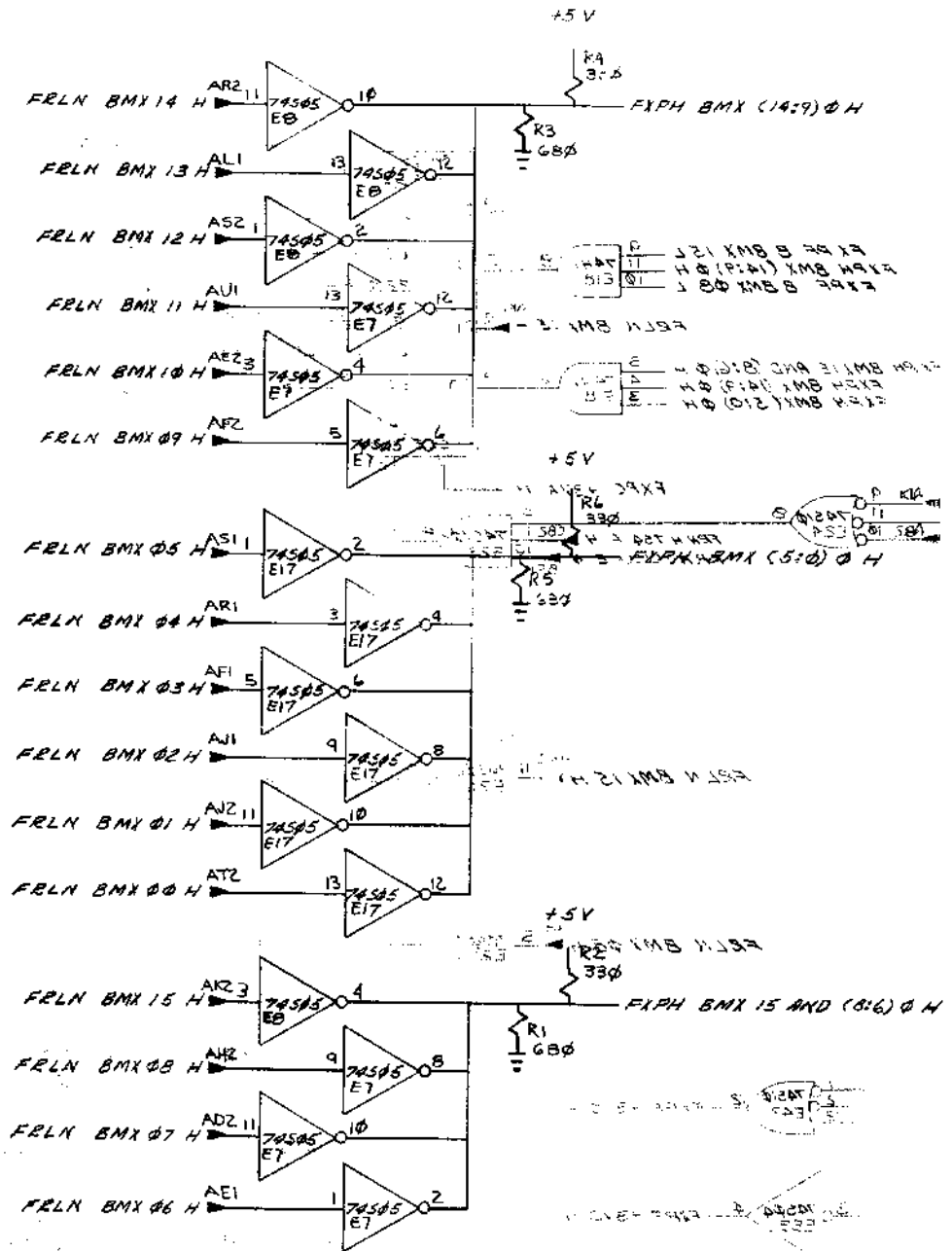
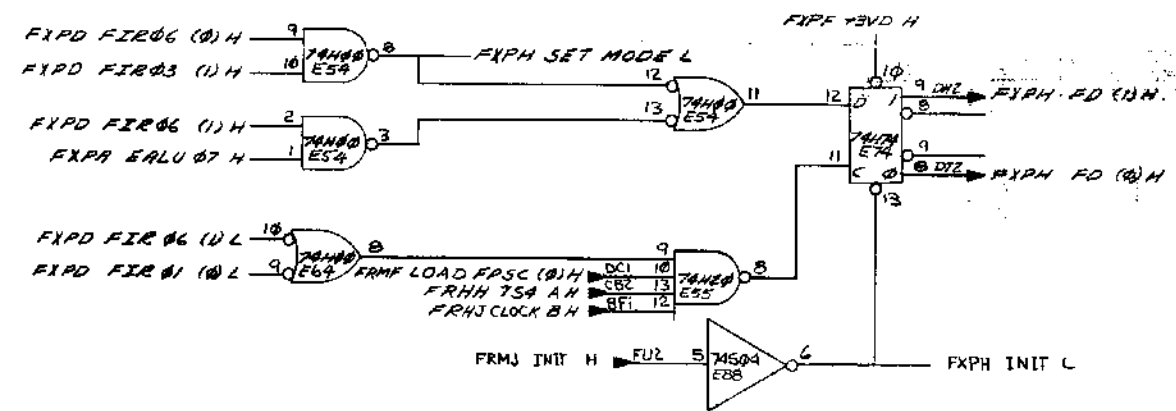
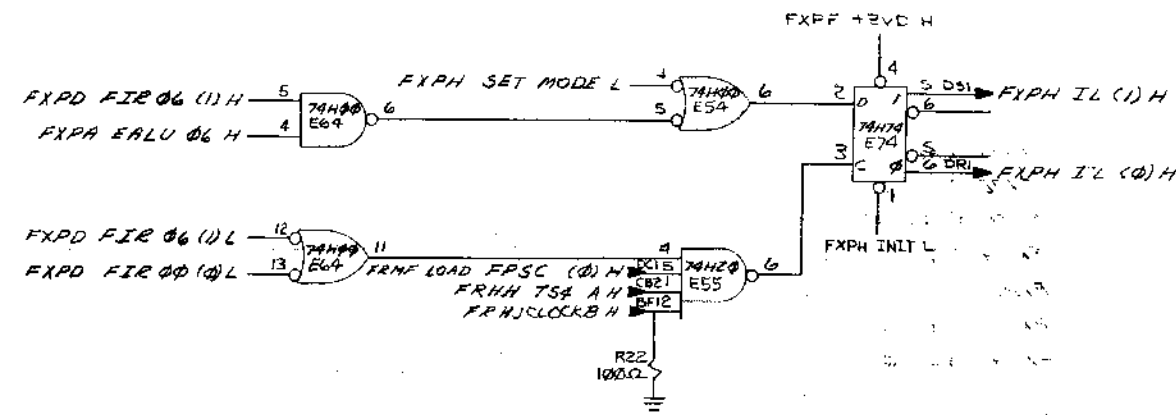
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN	DATE	digital EQUIPMENT CORPORATION WATLING MASSACHUSETTS	
DECIMALS	CHKD	DATE		
ANGLES	EMC	DATE		
MAX + .006 XX - .02 X - .1	PROJ ENG	DATE		
REMOVE BURRS AND BREAK SHARP EDGES TO SURFACE QUALITY	PROD	DATE	TITLE F.P. EXPONENT DATA PATH (FXPF)	
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
FINISH	SCALE		DCS M8113-0-01	REV. 5
	SHEET 7 OF 12		DIST.	

REV. 109V KC
DRD 102-B

REV. 109V KC
DRD 102-B

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D
C
B
A



FD & IL MODE BITS & BMX DECODE SLOT 5

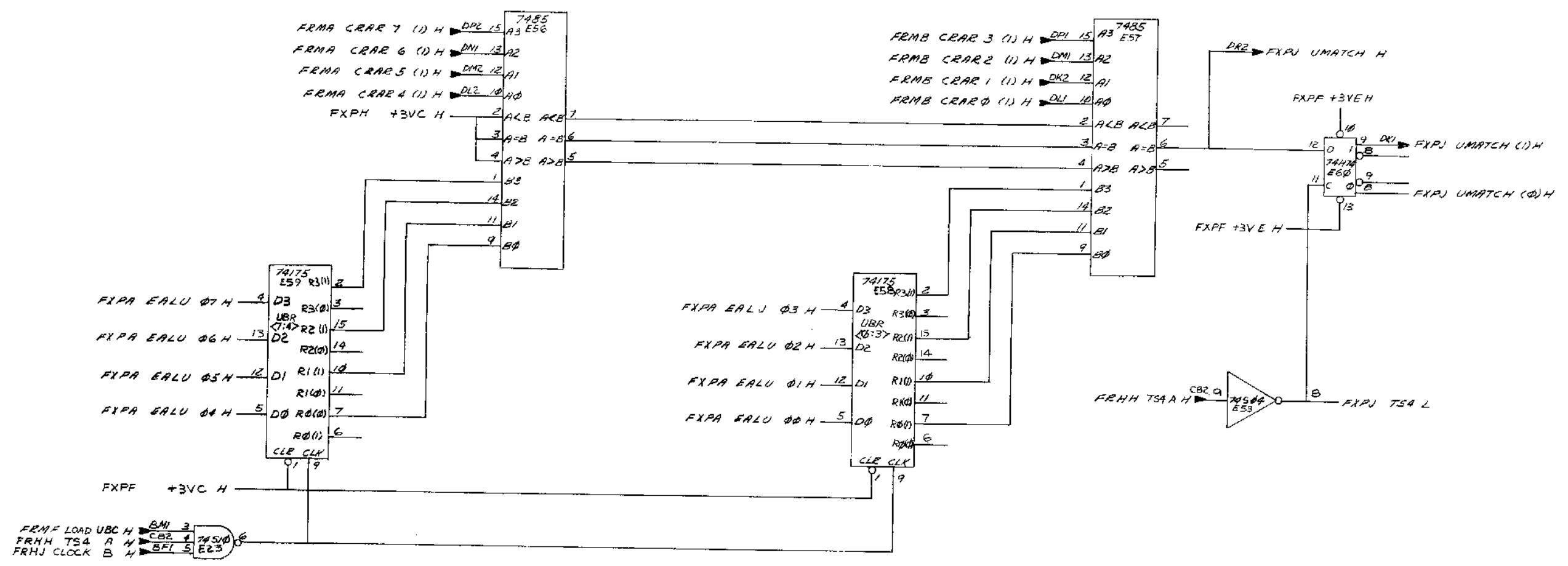
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN	DATE	
DECIMALS	ANGLES	ENG.	DATE	
.XXX + .005	10° 30'	PROJ. ENG.	DATE	
X - .1		PROD.	DATE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROO.	DATE	
MATERIAL		NEXT HIGHER ASSY.		
FINISH		SCALE	SHEET 8 OF 12	
		DICS M8113-0-01		

TITLE
F.P. EXPONENT DATA PATH (FXPH)

REV. D
NUMBER
DICS M8113-0-01

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10-0-8118W50 2



D
C
B
A

D
C
B
A

MICROBREAK LOGIC SLOT 5

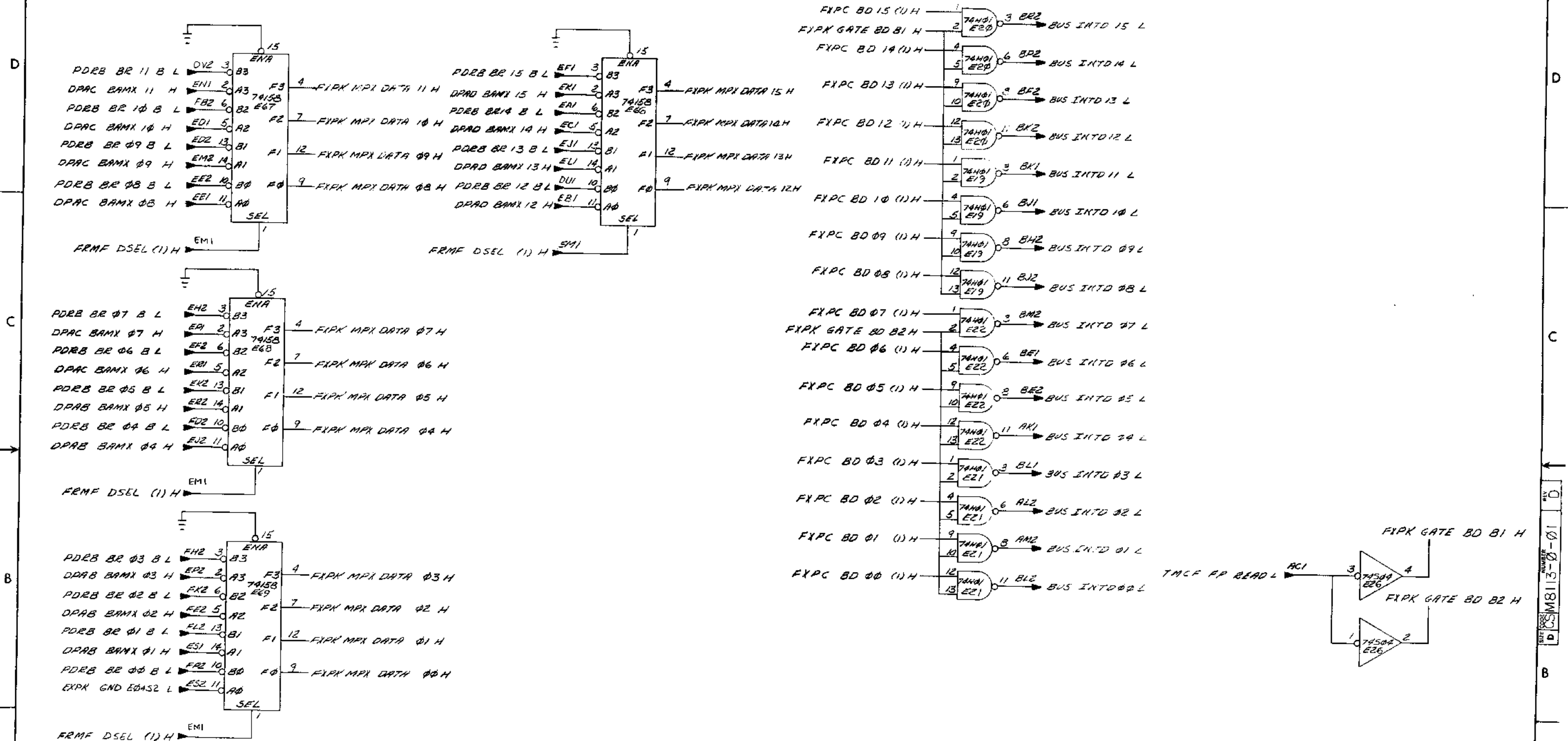
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN. <i>H. E. S.</i>	DATE 2/22/72	<p>digital EQUIPMENT CORPORATION NATYARD GARDENWAY, MASSACHUSETTS</p>
DECIMALS	ANGLES	CHKD. <i>J. H. S.</i>	DATE 2/12/72	
.XXX - .005	= 0° 30'	ENG. <i>J. H. S.</i>	DATE 11/17/71	
.XX - .02		PROJ. ENG. <i>J. H. S.</i>	DATE 11/17/71	
.X - .1		PROD. <i>J. H. S.</i>	DATE 11/17/71	
REVOLVE SURF AND BREAK SHARP CORNERS SURFACE QUALITY		TITLE FR EXPONENT DATA PATH		
MATERIAL	NEXT HIGHER ASSY	B-DL-11/45-0		SIZE CODE
FINISH	SCALE	D C S M 8113-0-0		NUMBER
	SHEET 9 OF 12	DIST.		REV. D

REV. 102-B

8 7 6 5 4 3 2 1

REV. D
D C S M 8113-0-01

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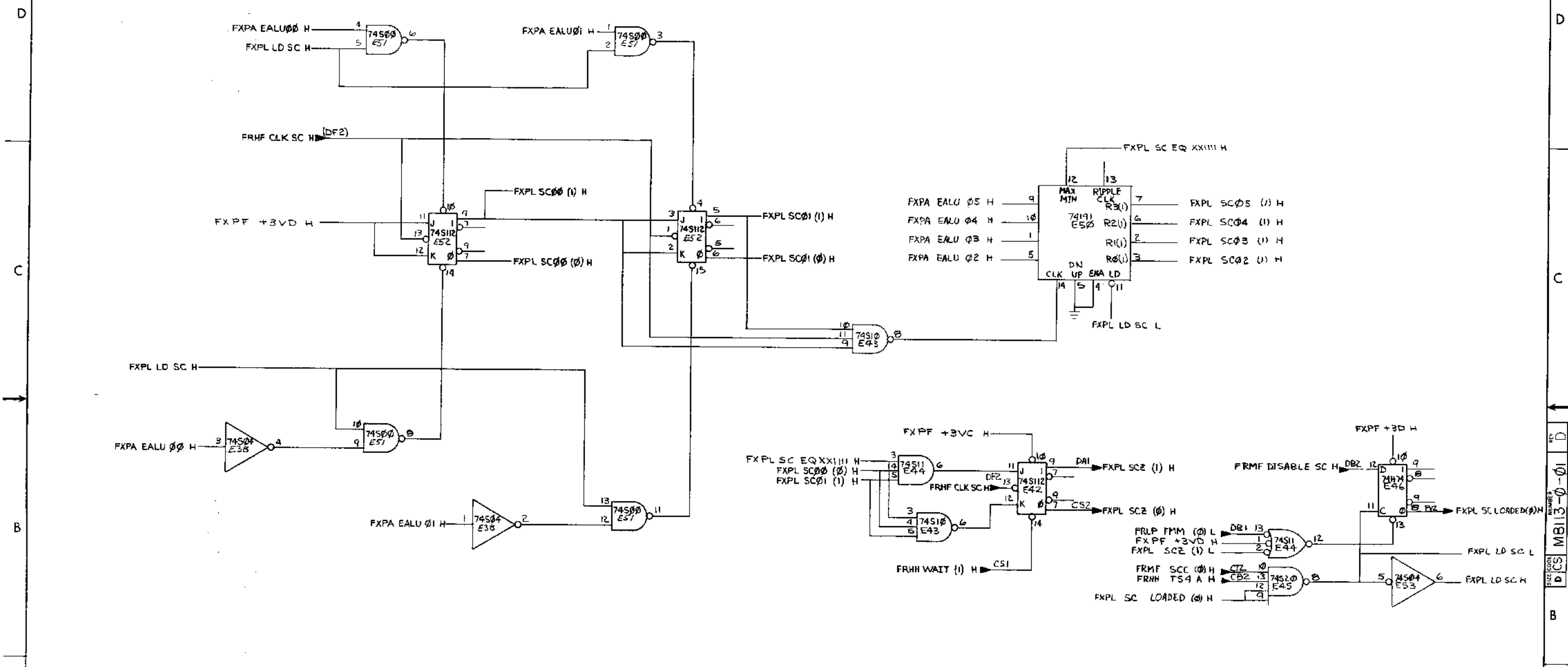
F.P. DATA RECEIVERS AND DRIVERS SLOT 5

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
F.P. EXPONENT DATA PATH (FXPK)				
DCSM813-0-01				
SHEET 10 OF 12				

REV.	CHANGE NO.

DCSM813-0-01
 SHEET 10 OF 12

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STEP COUNTER		SLOT 5	
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO. ITEM NO.
11/45			
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN	DATE	digital EQUIPMENT CORPORATION MAYFIELD MASSACHUSETTS
DECIMALS ANGLES	CHKD	DATE	
XXX = 008 XX = 02 X = .1	ENG	DATE	TITLE
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PRGJ. ENG.	DATE	F.P. EXPONENT DATA PATH
MATERIAL	PROD.	DATE	(FXPL)
FINISH	NEXT HIGHER ASSY.		SIZE CODE NUMBER REV
	B-DD-11/45-0		D C S M813-0-01
	SCALE		SHEET OF 12

REV	CHK	CHK	CHK

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CONTENTS OF DECODE ROM A (DROMA)

ADDRESS	DATA				INSTRUCTION
	7	6	5	4	
0	0	1	1	1	FOP CODE 0 (CLR, TSTF, ABSF, NEG)
1	1	0	1	1	MULF
2	1	0	1	0	ADDF
3	1	0	1	0	ADDF
4	1	0	1	0	LDIF
5	1	0	1	0	SUBF
6	1	0	1	0	CMPF
7	1	0	1	0	STF
8	1	0	1	0	DIVF
9	1	0	1	0	STXP
10	1	0	1	0	STCF
11	1	0	1	0	STCFD
12	1	0	1	0	LDEXP
13	1	0	1	0	LDCIF
14	1	0	1	0	LDCIF
15	1	0	1	0	LDCIF
16	1	0	1	0	LDCIF
17	1	0	1	0	LDCIF
18	1	0	1	0	LDCIF
19	1	0	1	0	LDCIF
20	1	0	1	0	LDCIF
21	1	0	1	0	LDCIF
22	1	0	1	0	LDCIF
23	1	0	1	0	LDCIF
24	1	0	1	0	LDCIF
25	1	0	1	0	LDCIF
26	1	0	1	0	LDCIF
27	1	0	1	0	LDCIF
28	1	0	1	0	LDCIF
29	1	0	1	0	LDCIF
30	1	0	1	0	LDCIF
31	1	0	1	0	LDCIF
32	1	0	1	0	LDCIF
33	1	0	1	0	LDCIF
34	1	0	1	0	LDCIF
35	1	0	1	0	LDCIF
36	1	0	1	0	LDCIF
37	1	0	1	0	LDCIF

NOTE:

- FOP CODE 0 ALSO ENABLES DROMB. DATA BITS <6:0> OF DROMB ARE COLLECTOR OR'D WITH DATA BITS <6:0> OF DROMA.
- DATA BIT 7 IS USED TO DECODE F_A CLASS. F CLASS CONTAINS ALL INSTRUCTIONS THAT REFERENCE AN AC FOR ADDRESS MODE 0.
- DATA BITS <6:5> ENCODE THE INSTRUCTIONS INTO 4 CLASSES.
 - 0 ILL-OP-CODE; UNDEFINED FOR CODES
 - 1 NO-MEM-CL; THESE REQUIRE NO MEMORY CYCLES
 - 2 LOAD-CL; THESE REQUIRE DAT1'S
 - 3 STORE-CL; THESE REQUIRE DAT0'S
 ONE LEG OF THE AND-OR-INVERT GATE THAT IS COLLECTOR OR'D WITH DATA BIT 5 FORCES TSTF, ABSF & NEG & 0 INTO THE LOAD CLASS. THE REMAINING INPUTS TO THIS GATE FORCE AN ILLEGAL OP CODE.
- DATA BITS <4:0> ENCODE THE INSTRUCTIONS INTO 6 CLASSES. THIS GROUPING DEFINES THE CONSTANT THAT IS ADDED TO OR SUBTRACTED FROM THE GENERAL REGISTER FOR ADDRESSING MODES 2 OR 4.
 - 0 CLASS 0; USE 4 (FD(0)) OR 8 (FD(1))
 - 1 CLASS 1; USE 0 (FD(0)) OR 4 (FD(1))
 - 2 CLASS 2; USE 2 (1L(0)) OR 4 (1L(1))
 - 3 CLASS 3; USE 2
 - 4 CLASS 4; USE 4
 - 5, 6, 7 CLASS 5; DON'T CARE (0 ONLY)

CONTENTS OF DECODE ROM B (DROMB)

ADDRESS	DATA				INSTRUCTION
	7	6	5	4	
0	0	1	0	0	OPCC
1	1	0	1	0	SETF
2	1	0	1	0	SETL
3	1	0	1	0	LIDUB
4	1	0	1	0	LIDUB
5	1	0	1	0	LIDUB
6	1	0	1	0	LIDUB
7	1	0	1	0	LIDUB
8	1	0	1	0	LIDUB
9	1	0	1	0	LIDUB
10	1	0	1	0	LIDUB
11	1	0	1	0	LIDUB
12	1	0	1	0	LIDUB
13	1	0	1	0	LIDUB
14	1	0	1	0	LIDUB
15	1	0	1	0	LIDUB
16	1	0	1	0	LIDUB
17	1	0	1	0	LIDUB
18	1	0	1	0	LIDUB
19	1	0	1	0	LIDUB
20	1	0	1	0	LIDUB
21	1	0	1	0	LIDUB
22	1	0	1	0	LIDUB
23	1	0	1	0	LIDUB
24	1	0	1	0	LIDUB
25	1	0	1	0	LIDUB
26	1	0	1	0	LIDUB
27	1	0	1	0	LIDUB
28	1	0	1	0	LIDUB
29	1	0	1	0	LIDUB
30	1	0	1	0	LIDUB
31	1	0	1	0	LIDUB
32	1	0	1	0	LIDUB
33	1	0	1	0	LIDUB
34	1	0	1	0	LIDUB
35	1	0	1	0	LIDUB
36	1	0	1	0	LIDUB
37	1	0	1	0	LIDUB

NOTE:

- FOP CODE 0 ENABLES DROMB.
- FIR <07:06>(0) 1 CAUSES THE LOWER QUARTER OF DROMB TO BE ADDRESSED BY THE LOWER 3 BITS OF THE FIR. ALL OF THESE OP CODES ARE USED. DATA BIT 7 IS USED TO DECODE OPCC FOR THE GENERATION OF FOLD EN.
- FIR <07:06>(0) 1 CAUSES THE SECOND QUARTER OF DROMB TO BE ADDRESSED BY THE LOWER 3 BITS OF THE FIR. ONLY TWO OP CODES ARE USED (SET 0 & SET L). DATA BIT 7 IS USED TO FORCE AN ILL OP CODE IF ADDRESSES 11 & 12 ARE ADDRESSED & FIR <06:05> IS NOT 1.
- FIR <07:06>(1), (2) OR (3) CAUSE THE UPPER HALF OF DROMB TO BE ADDRESSED. THE INSTRUCTIONS LDFPS, STFPS, & STST USE ALL OF THIS OP CODE SPACE. NOTE THAT FIR 06 & FIR 07 ARE ALSO USED AS THE LEAST SIGNIFICANT TWO BITS OF THE ADDRESS.

CONTENTS OF RANGE ROM

ADDRESS	DATA				OUTPUT OF EALU	RANGE FD(0)	RANGE FD(1)
	3	2	1	0			
0	0	1	0	0	1 TO 7	GT	GT
1	0	1	0	1	0	EQ	EQ
2 TO 5	0	1	0	0	10 TO 27	GT	GT
6	1	1	1	1	31 TO 37	MGT	GT
7	0	1	0	0	39	GT	GT
10 TO 15	1	1	1	1	41 TO 67	MGT	GT
16	0	1	1	1	71 TO 77	MGT	MGT
17	1	1	1	1	79	MGT	GT
20 TO 177	0	1	1	1	100 TO 777	MGT	MGT
200 TO 361	0	0	0	1	-71 TO -1000	MLT	MLT
362 TO 371	1	0	0	1	-31 TO -70	MLT	LT
372 TO 377	0	0	0	0	-1 TO -30	LT	LT

NOTE:

DATA BITS <2:0> ARE USED TO PERFORM THE MLT, LT, EQ, GT & MGT BRANCH DATA BIT 3, WHEN TRUE IS USED TO ENABLE HARDWARE THAT MODIFIES MLT TO LT AND MGT TO GT IF FD(1).

DRIVING 40 522 15640
REV. NO.
CHK
REVISIONS
CHANGE NO.

AUX ROM MAPS

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN	DATE	digital EQUIPMENT CORPORATION	
DECIMALS	CHK'D	DATE	MAYNARD MASSACHUSETTS	
ANGLES	ENG.	DATE	TITLE	
XXX = .005	PROJ. ENG.	DATE	F P EXPONENT	
XX = .02	PROD.	DATE	DATA PATH	
X = .1			(FXPM)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
	B UN-11/45-0	DCS	W 8113-0-01	0
FINISH	SCALE	SHEET 12	OF 12	DIST.

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ACCESSORY LIST

LEGEND

- D DOCUMENT
- DN DOCUMENT CHANGE NOTICE
- PA PAPER TAPE ASCII
- PB PAPER TAPE BINARY
- PM PAPER TAPE READ-IN-MODE

QUANTITY/VARIATION

MADE BY <i>J. Horman</i>		CHECKED <i>J. Rogers</i>		SECTION				KIT CHECK		BY DATE		INSTALLATION CHECK		BY DATE		
DATE 6-15-72		DATE 6-15-72														
ENG <i>D. Lee</i>		PROD <i>J. Horman</i>		ISSUED SECT.												
DATE 6-20-72		DATE 6-20-72														
ITEM NO.	DWG NO./PART NO.	DESCRIPTION														
	FP11-B	Print Set					1									
	Lib Kit11-FPP11-A-K	Software Kit					1									
	Dec11-HFPA-D	Maint. Manual (FP11B)					1									
TITLE Floating Point Processor				ASSY. NO.		SIZE CODE A AL		NUMBER FP11-B - 16			REV.		ECO NO			
				SHEET OF 		DIST										