

pdp11



digital

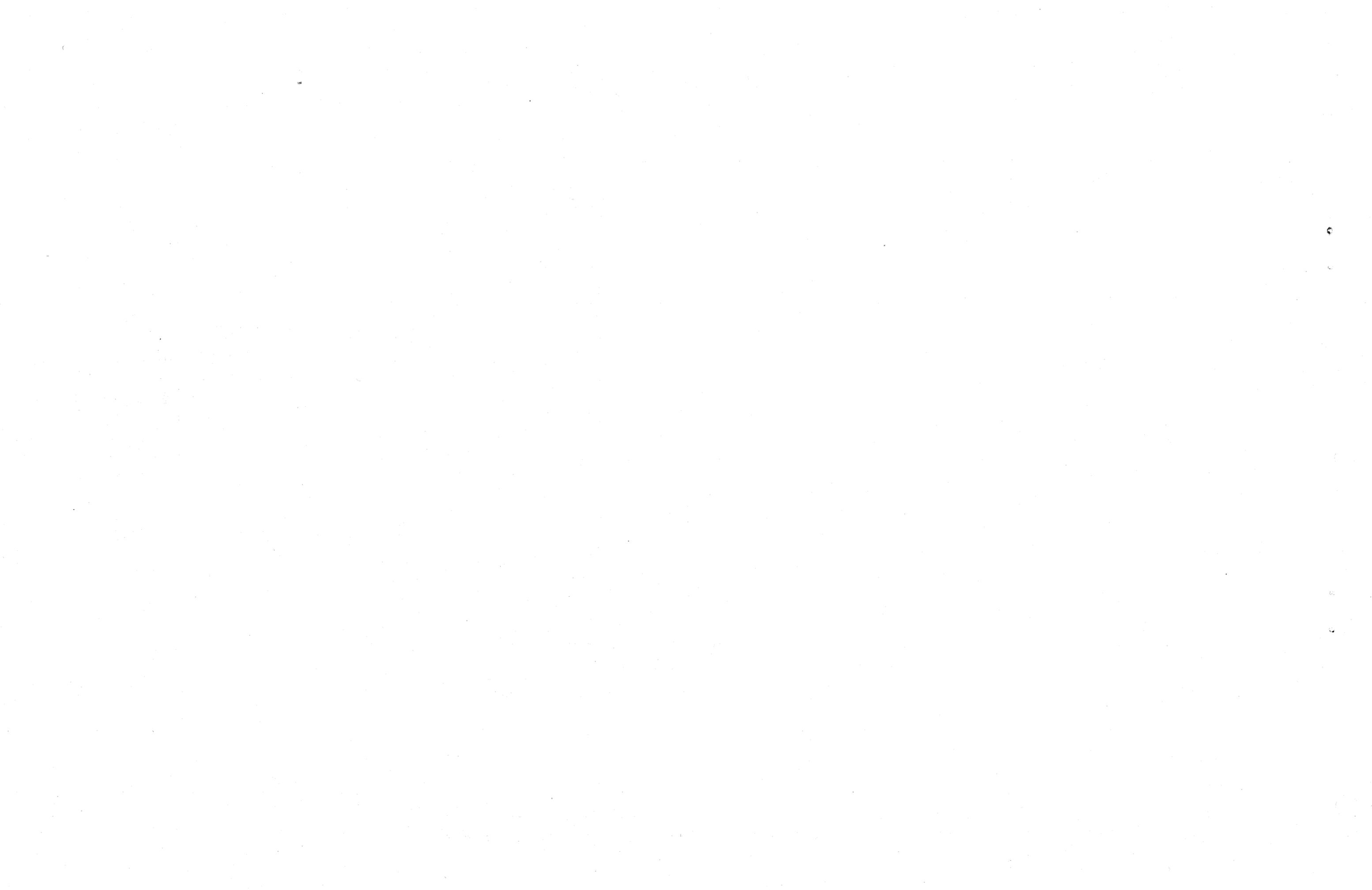
Walter Rison

DIP SHIT

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

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- ALUC (14:16)**
- 1 A
 - 2 A MINUS B
 - 3 B
 - 4 A AND B
 - 5 B
 - 6 A MINUS B MINUS 1
 - 7 A AND B
 - 8 A PLUS B PLUS 1
 - 9 A PLUS B
 - 10 B
 - 11 A AND B
 - 12 B
 - 13 A AND B
 - 14 1
 - 15 A MINUS 1
 - 16 A AND B
 - 17 A

- CNST (57:53)**
- 1 TO 10 200
 - 11 100000
 - 12 TO 14 12 TO 14
 - 15 100004
 - 16&17 16&17
 - 18 220
 - 21 TO 31 21 TO 31
 - 32 70
 - 33 71
 - 34 TO 35 34 TO 35
 - 36 74
 - 37 75

- RDFN CNSTF (1)**
- 1 TRAP & WAIT FOR ACKN
 - 2 NOP
 - 3 WAIT FOR ATTN
 - 4 NOT USED
 - 5 NOT USED
 - 6 DATI
 - 7 NOP
 - 8 TRAP IF -#
 - 9 NOP

- FCC (44:43)**
- 1 LD FN&FZ CLR FV&FC
 - 2 LD FN&FZ&FV&CLR FC
 - 3 LD FN&FZ CLR FV&SET FC
 - 4 NOP

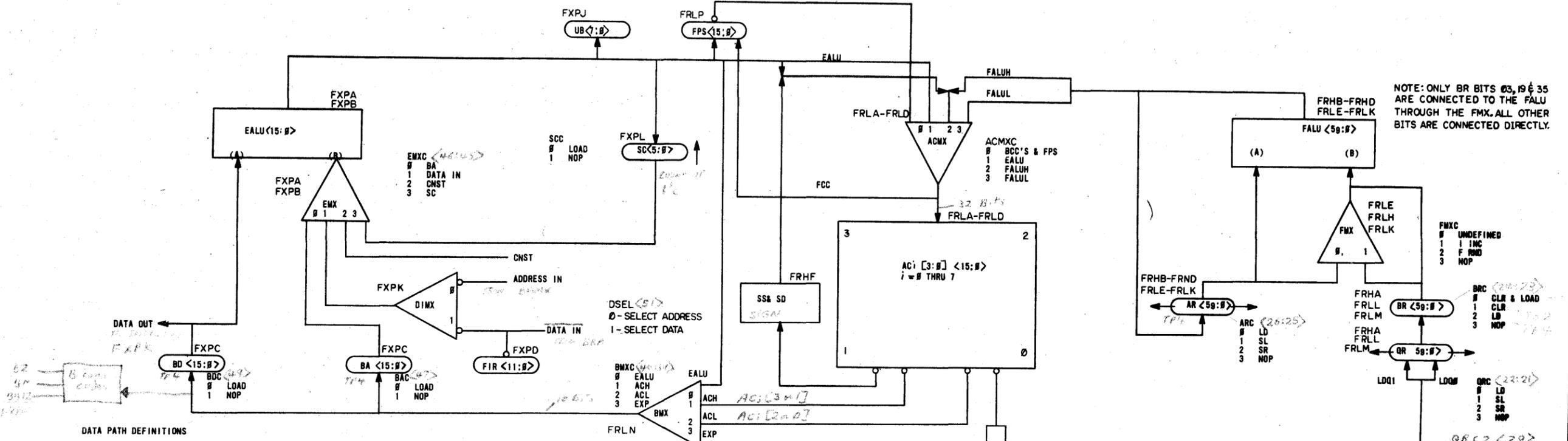
- SYNC (52)**
- 0 ENABLE FP SYNC
 - 1 NOP
- ADDR INCR (48)**
- 0 ADD 2 TO ADDRESS
 - 1 ADD # TO ADDRESS
- DISBL# (62)**
- 0 CLR INITF & ABORTF
 - 1 NOP
- DISBL1 (63)**
- 0 CLR FP REQ
 - 1 NOP

- CONTROL SEL (61:57)**
- 0 LD FPS
 - 1 LD UB
 - 2 REG WRITE
 - 3 DISABLE SYNC
 - 4 DISABLE SC - HI<
 - 5 FIR CLK
 - 6 NOT USED
 - 7 NOP

CALL SRC. FIELDS WILL STOP THE CLOCK

- CSB (31:17)**
- 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

CSB # 1, 2, 4, 5, 6
CLOCK WILL STOP UNMIL
SEND THEN START



DATA PATH DEFINITIONS

ACMX ← FPS = ACMX (31) ← BN; ACMX (30) ← BZ; ACMX (29:16) ← 37777; ACMX (15:0) ← FPS (15:0)

ACMX ← EALU = ACMX (31:16) ← EALU (15:0); ACMX (15:0) ← EALU (15:0)

ACMX ← FALUH = ACMX (31:0) ← SD; ACMX (30:23) ← EALU (7:0); ACMX (22:0) ← FALU (57:35)

ACMX ← FALUL = 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 [0] (15:0) — ACH ← SCOUT (31:16)

BMX ← ACL = BMX (15:0) ← ACI [2] (15:0) OR ACI [0] (15:0) — ACL ← SCOUT (15:0)

BMX ← EXP = BMX (15:0) ← #; BMX (7:0) ← ACI [3:2] (30:23)

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) ← #; 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 FD ELSE FMX (2) ← BR (35); FMX (1) ← BR (19); FMX (0) ← AR (2) IF FD ELSE FMX (0) ← BR (3)

FMX ← I-INC = FMX (2) ← IL; FMX (1) ← IL; FMX (0) ← BR (3)

LDQI = QR (59) ← #; QR (58) ← 1 IF ACI [3:2] (30:23) ≠ # ELSE QR (58) ← #; QR (57:35) ← ACI [3:2] (22:0)

LDQ0 = QR (34:3) ← ACI [1:0] (31:0); QR (2:0) ← #

B cond. codes are set over time. BC & BA is clocked

BZ = BMX (15:0) = #

BN = BMX (15) = 1

BBIZ = BMX (15:08) = #

NOTE: SEE Page 4-13 FOR ROUNDRULES

FICC is not used

- SIGNC (3)**
- 0 SD ← SS IF SUB ELSE SD ← SS
 - 1 SD ← SS & SD
 - 2 SS ← 1
 - 3 NOP
- ACF (3:2)**
- 0 ACS
 - 1 ACSy1
 - 2 ACD
 - 3 ACDy1
 - 4 ACS
 - 5 AC7
 - 6 NOT USED
 - 7 NOT USED
- ACC (3:2)**
- 0 (3:2)
 - 1 (3)
 - 2 (2)
 - 3 (1:0)
 - 4 (1)
 - 5 (0)
 - 6 (0)
 - 7 NOP
- ACRE (3)**
- 0 WRITE
 - 1 READ
 - 2 TS4
 - 3 NOP

FIR (20) specifies ACS is mode 4
if mode 4 then ACS specifies ALB

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.				
DECIMALS	ANGLES	TOLERANCES		
.XXX - .005	±0° 30'	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL				
NEXT HIGHER ASSY.				
FINISH				
SCALE				
SHEET				

DATE	12-27-71	DATE	3/1/72
CHKD	W. H. G.	DATE	3-16-72
ENGR	W. H. G.	DATE	3-16-72
PROJ. ENG.	W. H. G.	DATE	3-16-72
PRD.	W. H. G.	DATE	3-16-72

TITLE: FP DATA PATHS

SIZE CODE: DFD

NUMBER: FP11-B-01

REV.:

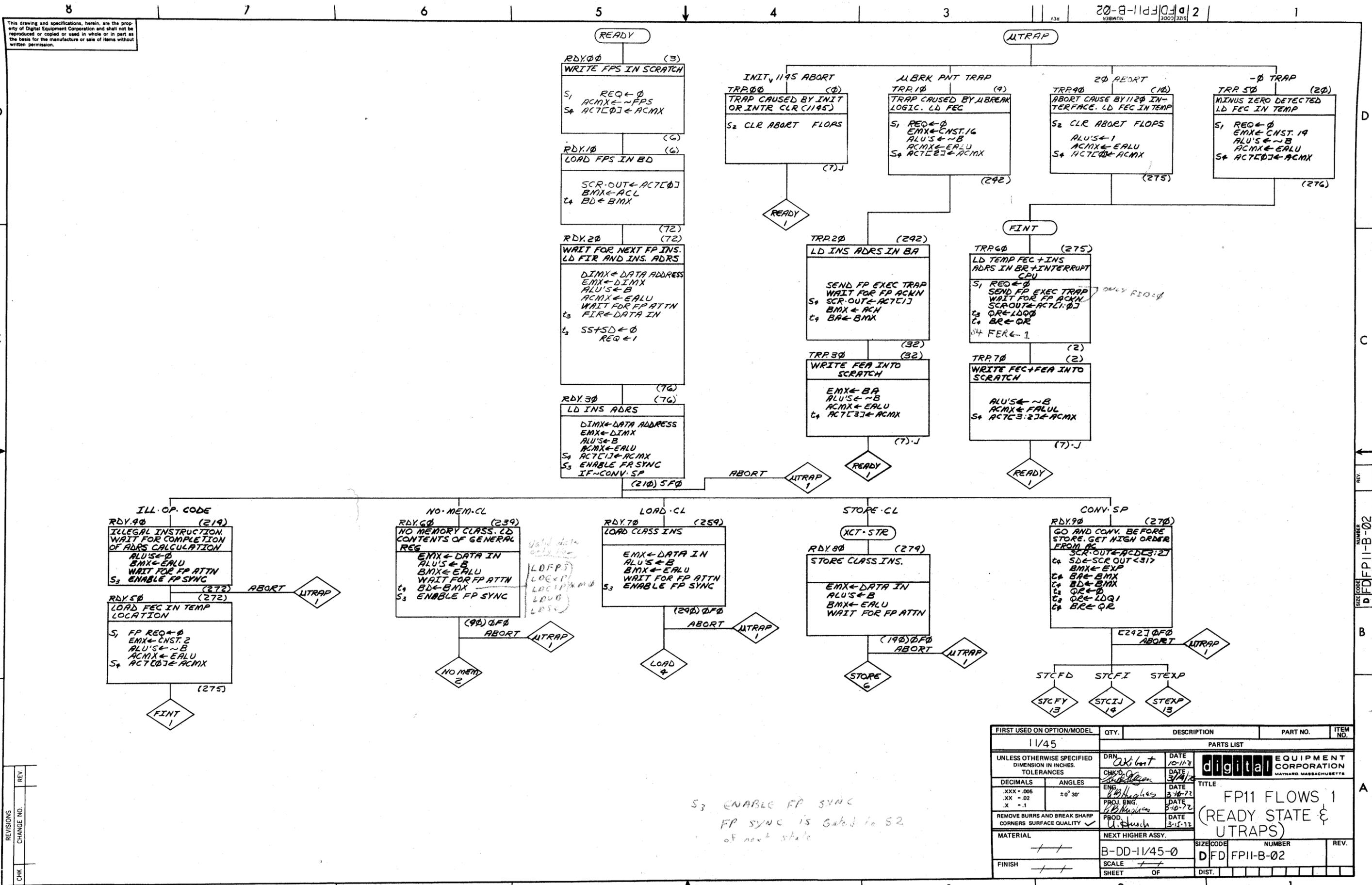
BRUNING 4052Z 15640

REV.:

CHANGE NO.:

CHK:

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S3 ENABLE FP SYNC
 FP SYNC is gated in S2 of next state

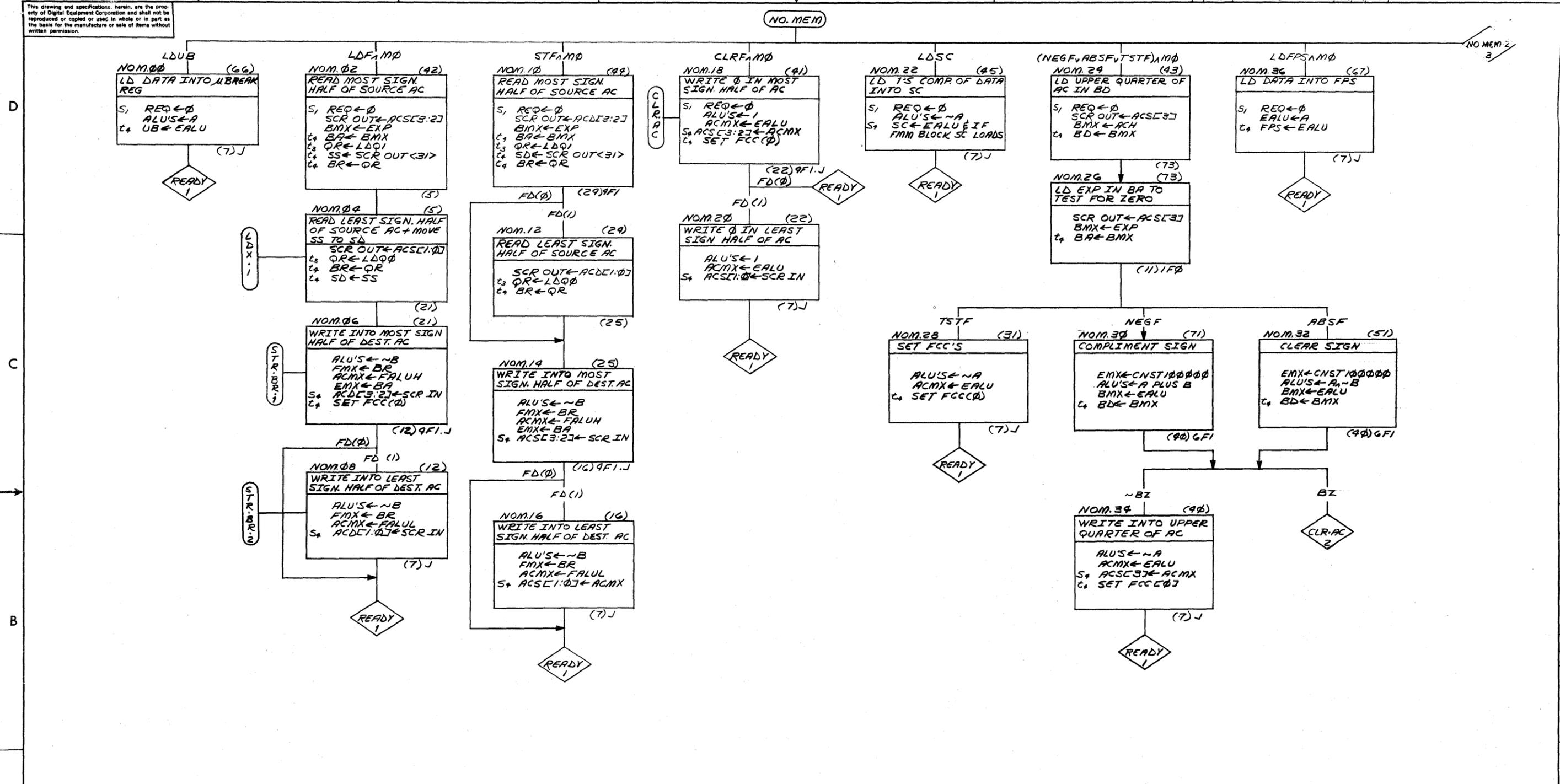
REV.	CHANGE NO.

DEC FORM NO. DRD 102-B

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS	ANGLES	PARTS LIST		
.XXX = .005	±0° 30'	DRN	DATE	
.XX = .02		CHK'D	DATE	
.X = .1		ENG	DATE	
		PROJ. ENG.	DATE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD.	DATE	TITLE
MATERIAL	NEXT HIGHER ASSY.			FP11 FLOWS 1 (READY STATE & UTRAPS)
FINISH				(READY STATE & UTRAPS)
	B-DD-11/45-0	SCALE		SIZE CODE
		SHEET		NUMBER
				DFD FPII-B-02
				REV.

REV. NO. DDFPII-B-02

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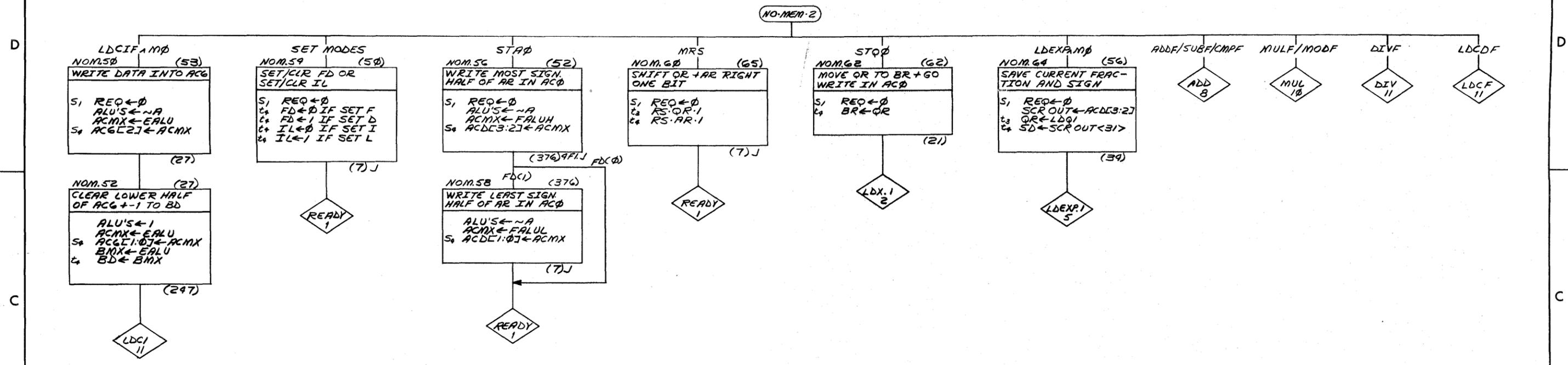
REV.	
CHANGE NO.	
CHK	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.		DRN. <i>A. Kilant</i>	DATE 10-12-71	digital CORPORATION MAYNARD, MASSACHUSETTS
TOLERANCES		CHKD. <i>[Signature]</i>	DATE 3/14/72	
DECIMALS	ANGLES	ENG. <i>[Signature]</i>	DATE 8-10-72	
.XXX = .005	± 0° 30'	PROJ. ENG. <i>[Signature]</i>	DATE 2-10-72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD. <i>[Signature]</i>	DATE 3-15-72	
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
++	B-DD-11/45-0		DFD	FP11-B-03
FINISH	SCALE	SHEET	OF	REV.
++				

TITLE
FP11 FLOWS 2
(NO MEM CLASS)

REV. NUMBER
DFD FP11-B-03

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CHK	

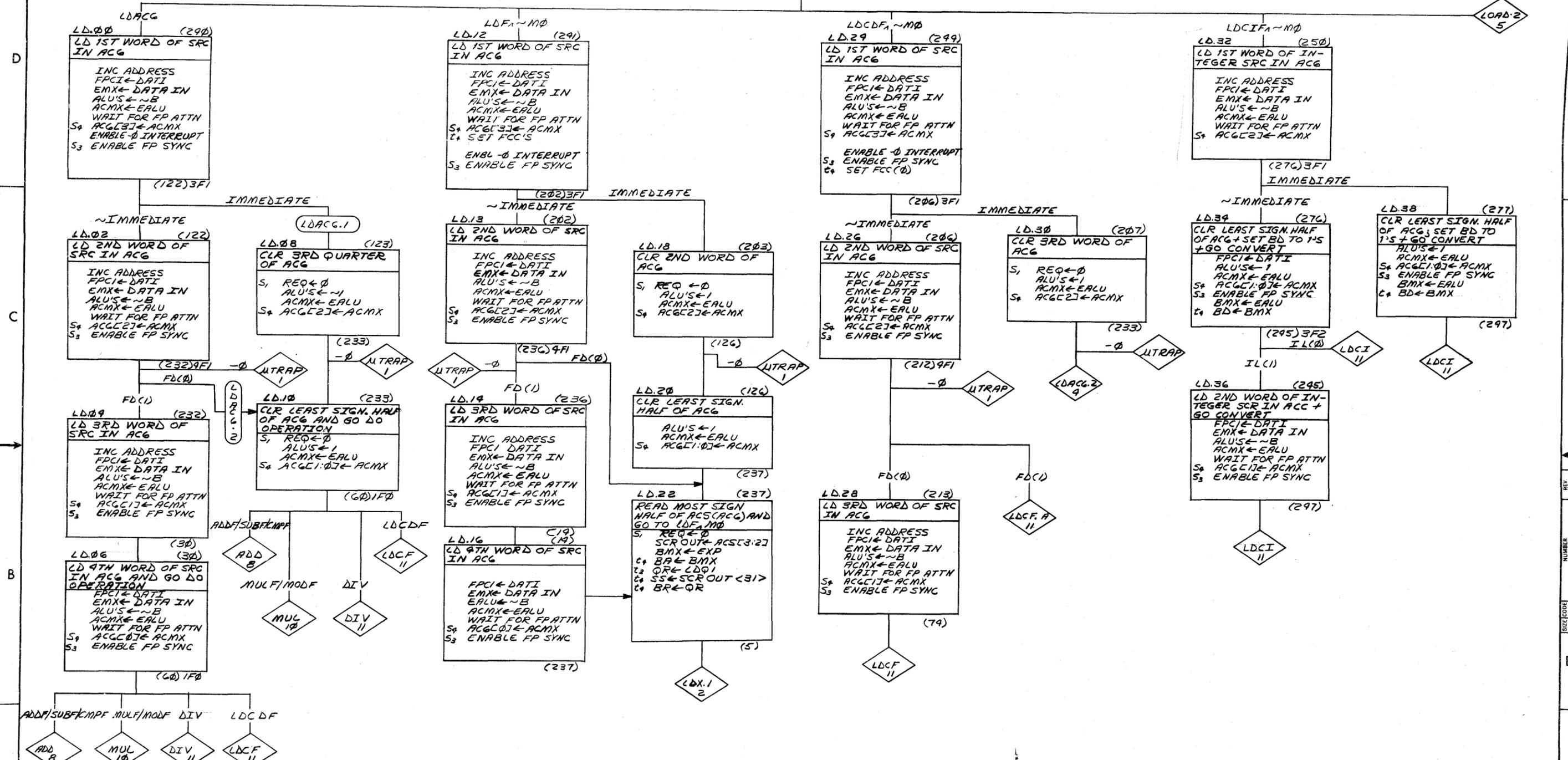
2 316

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN. <i>Carlson T</i>	DATE 10/19/71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS	CHK'D <i>Carlson</i>	DATE 5/14/72		
ANGLES	ENG. <i>W. H. Hines</i>	DATE 2-10-72	TITLE FP11 FLOWS 3 (NO MEM CLASS)	
.XXX - .006 .XX - .02 .X - .1	PROJ. ENG. <i>W. H. Hines</i>	DATE 2-10-72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD. <i>W. H. Hines</i>	DATE 3-15-72		
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
++	B-DD-11/45-0		D	FD FPII-B-04
FINISH	SCALE			
++				

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LOAD

LOAD 2
5

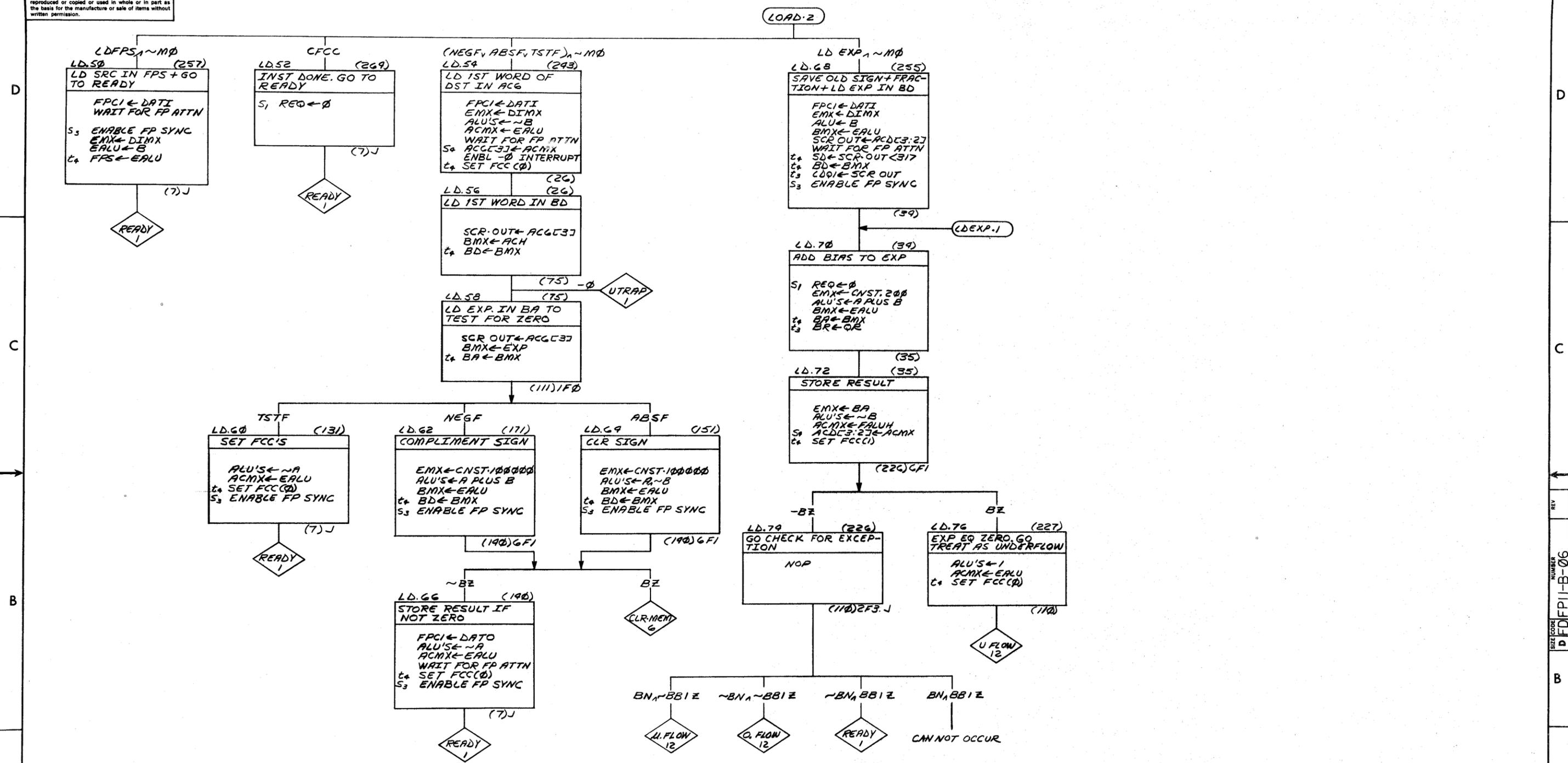


REVISIONS

CHK	CHANGE NO.	REV

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN: <i>Car Dent</i> DATE: 10-19-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS: .XXX = .005, .XX = .02, .X = .1	ANGLES: ±0° 30'	CHK: <i>[Signature]</i> DATE: 3/1/72	TITLE: FP11 FLOWS 4 (LOAD CLASS)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		ENG: <i>[Signature]</i> DATE: 3-10-72	MATERIAL: + + +	
		PROL: <i>[Signature]</i> DATE: 3-10-72	NEXT HIGHER ASSY.:	
		PROD: <i>[Signature]</i> DATE: 3-15-72	FINISH: + + +	
			SCALE: + + +	
			SHEET OF	
			DISTRIBUTION: DFD FP11-B-05	

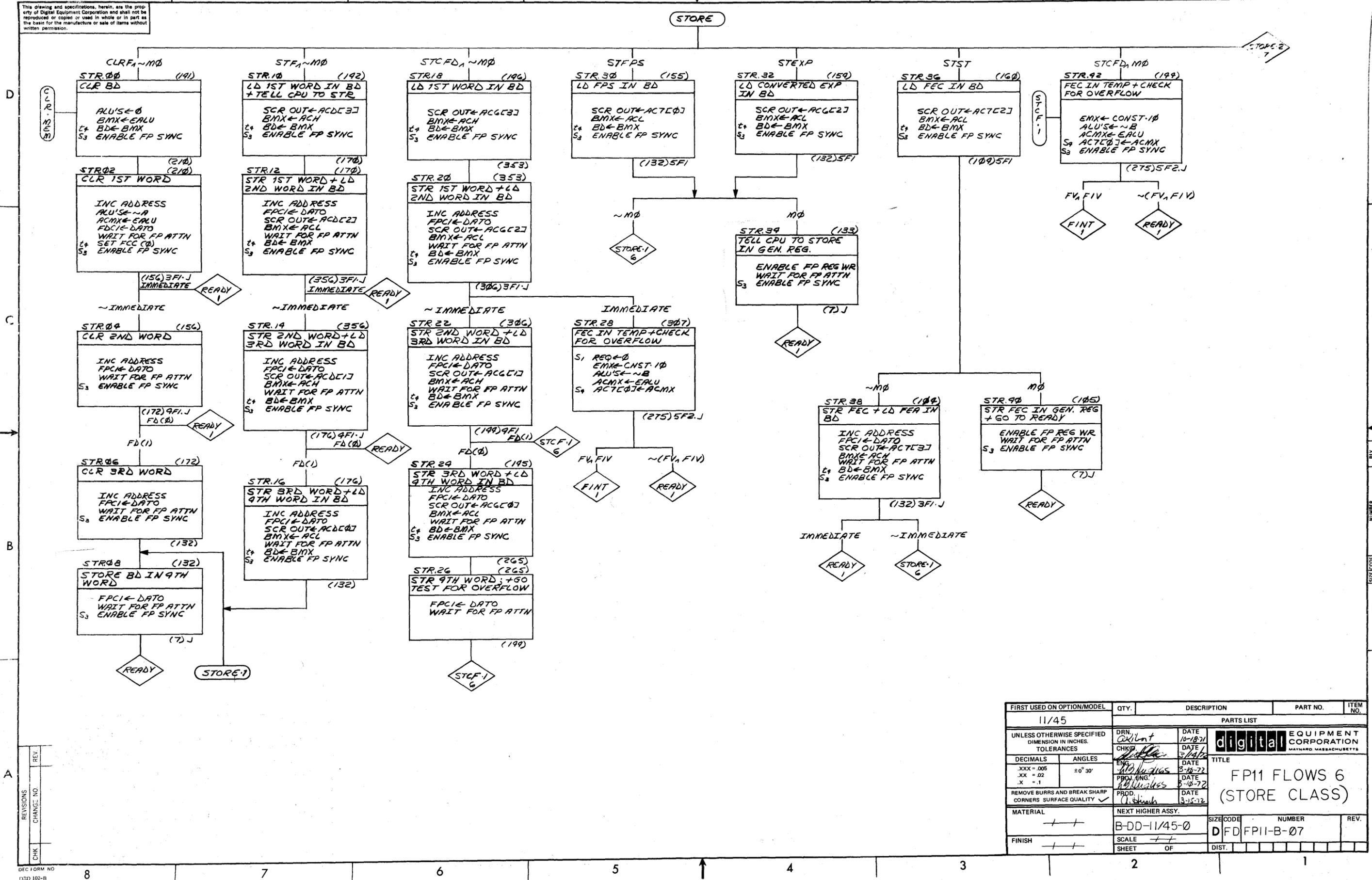
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FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN. <i>A. Klont</i>	DATE 10-15-71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .XXX = .006 .XX = .02 .X = .1	CHK'D <i>[Signature]</i>	DATE 3/14/72	TITLE FP11 FLOWS 5 (LOAD CLASS)	
ANGLES ±0° 30'	ENG. <i>A.B. Hughes</i>	DATE 3-16-72	SIZE CODE NUMBER REV. D FDFP11-B-06	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROJ. ENG. <i>A.B. Hughes</i>	DATE 3-15-72	SCALE <i>1/1</i>	
MATERIAL <i>1/1</i>	PROD. <i>[Signature]</i>	DATE	SHEET OF	
FINISH <i>1/1</i>	NEXT HIGHER ASSY.		DIST.	

REVISIONS
CHANGE NO. REV.

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REV	NO	DATE
CHK		

DEC FORM NO DSD 102-B

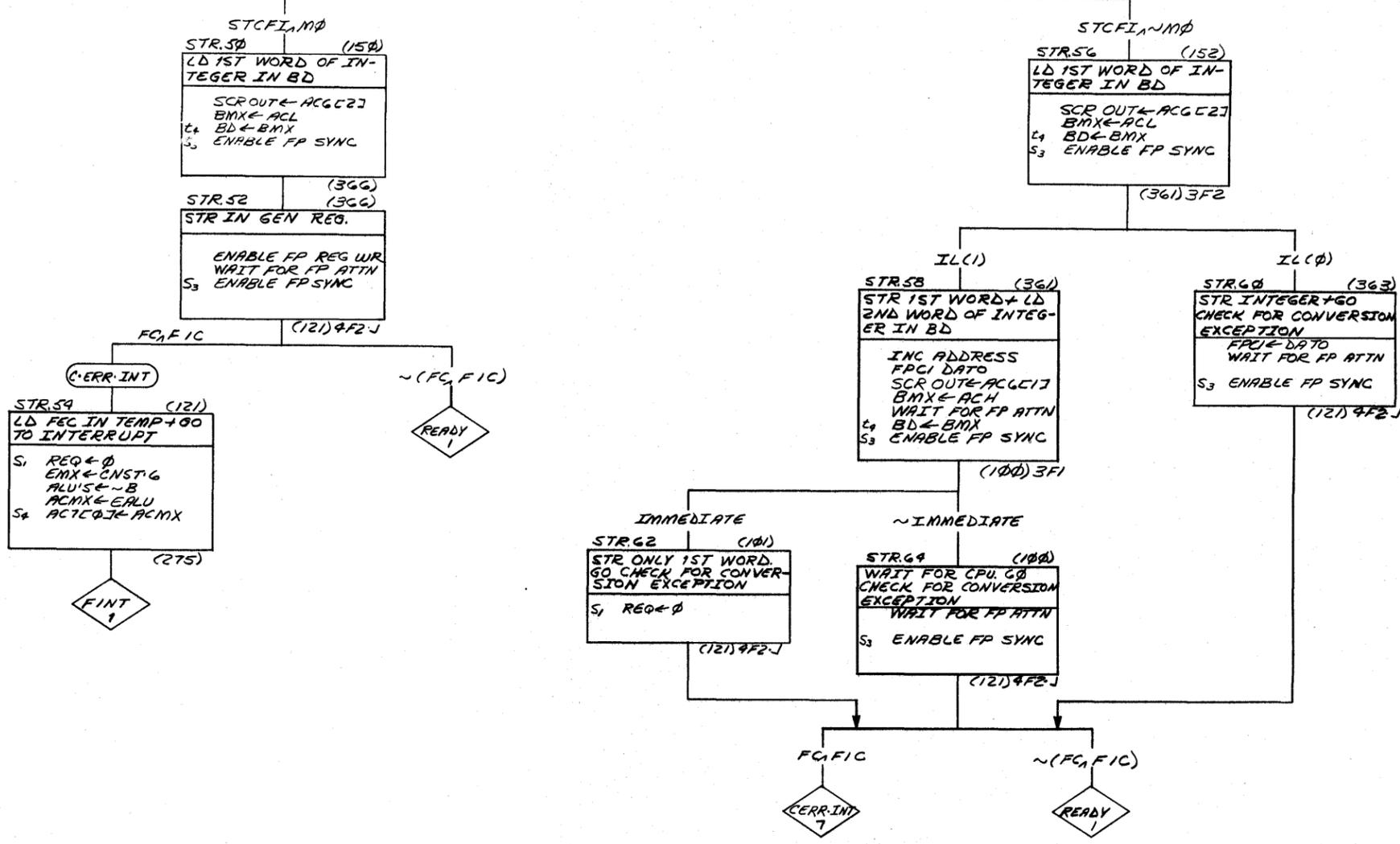
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN <i>Qilint</i>	DATE 10-18-71	 digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS ANGLES	CHKD <i>[Signature]</i>	DATE 3-14-72		
.XXX = .005 .XX = .02 .X = .1	ENG <i>[Signature]</i>	DATE 3-10-72	TITLE FP11 FLOWS 6 (STORE CLASS)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROJ. ENG. <i>[Signature]</i>	DATE 3-10-72		
MATERIAL	NEXT HIGHER ASSY.	SCALE	SIZE CODE	NUMBER
FINISH	B-DD-11/45-0	++	D	FD
				FP11-B-07

REV. B DFD/FP11-B-07

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REV. NUMBER
B-08-11/45-02

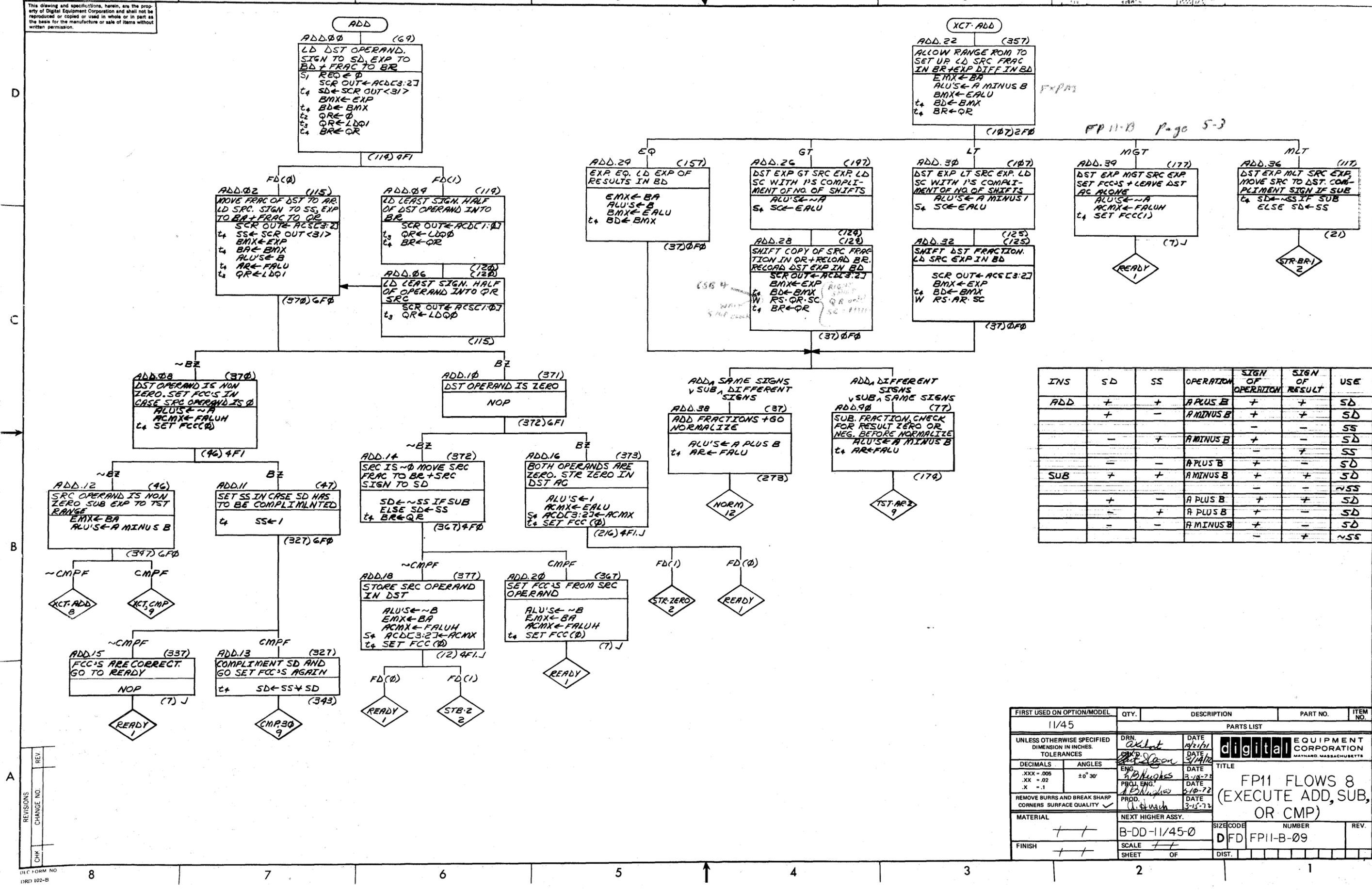
STORE 2



REVISIONS	REV.
CHANGE NO.	
CHK	

FIRST USED ON OPTION/MODEL 11/45	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN. CHK'D. ENG. PROL. ENG. PROD.	DATE DATE DATE DATE DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .XXX = .005 .XX = .02 .X = .1	ANGLES ±0° 30'	DATE 1/26/71 DATE 3/14/72 DATE 3-16-72 DATE 3-16-72 DATE 3-15-72	TITLE FP11 FLOWS 7 (STORE CLASS)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	NEXT HIGHER ASSY.	B-DD-11/45-0	SIZE CODE DFD	NUMBER FP11-B-08
MATERIAL ++	SCALE ++	SHEET OF	REV.	

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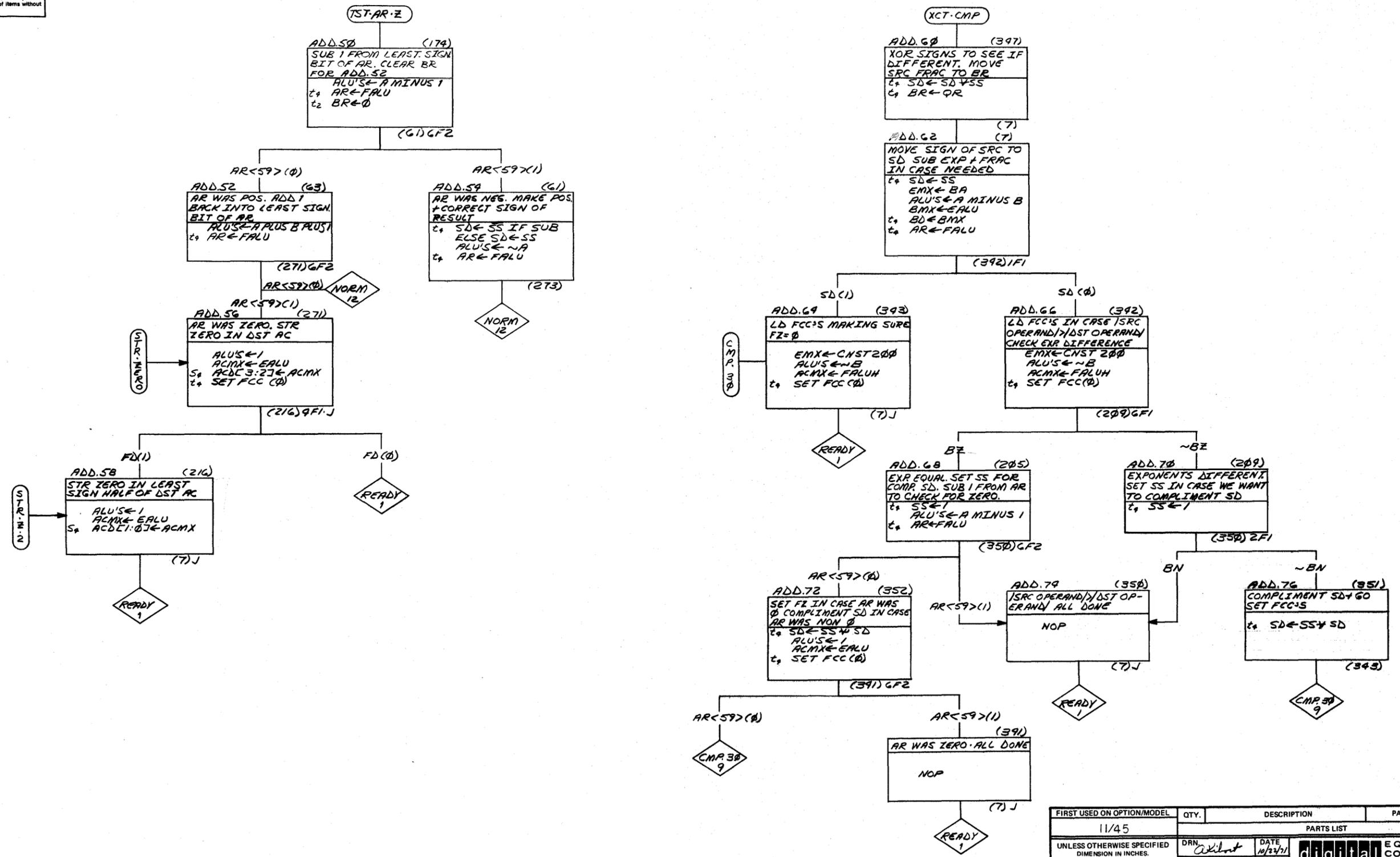


INS	SD	SS	OPERATION	SIGN OF OPERATION	SIGN OF RESULT	USE
ADD	+	+	A PLUS B	+	+	SD
	+	-	A MINUS B	+	+	SD
SUB	-	+	A MINUS B	+	-	SD
	-	-	A PLUS B	+	-	SD
SUB	+	+	A MINUS B	+	+	SD
	-	+	A PLUS B	+	-	SD
SUB	+	-	A PLUS B	+	+	SD
	-	-	A MINUS B	+	-	SD
						SS

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN. <i>aklnt</i>	DATE 12/1/71	DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .XXX = .005 .XX = .02 .X = .1	ENGR. <i>W. Hughes</i>	DATE 3-18-72	TITLE	
ANGLES ±0° 30'	PROL. ENGR. <i>J. Hughes</i>	DATE 5-10-72	FP11 FLOWS 8 (EXECUTE ADD, SUB, OR CMP)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PRDD. <i>J. Hughes</i>	DATE 3-15-72	SIZE CODE NUMBER	
MATERIAL			B-DD-11/45-0	REV.
FINISH			SCALE	REV.
			SHEET OF	

REVISIONS
CHANGE NO.
REV.

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REV	CHANGE NO.	CHK

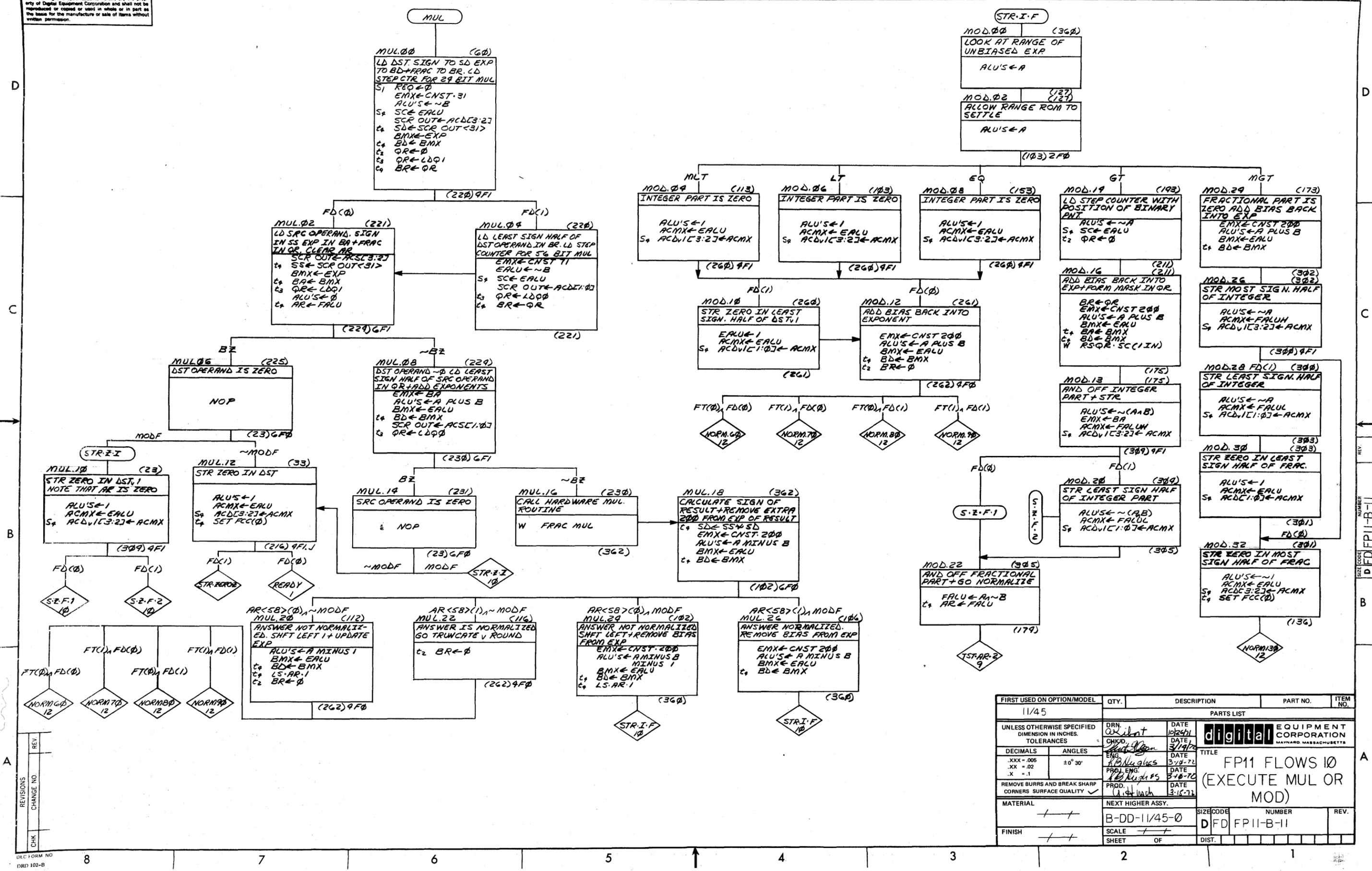
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN <i>OK</i>	DATE 10/23/71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .XXX = .005	CHKD <i>OK</i>	DATE 3/14/72	TITLE FP11 FLOWS 9	
ANGLES ±0° 30'	ENG <i>to Hughes</i>	DATE 2-18-72	(EXECUTE ADD SUB OR CMP)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PRD. ENG. <i>to Hughes</i>	DATE 2-18-72	MATERIAL ++	
	PRD. <i>to Hughes</i>	DATE 3-15-72	NEXT HIGHER ASSY. B-DD-11/45-0	
			SIZE CODE DFD	NUMBER FP11-B-10
			SCAF ++	REV.
			SHEET OF	DIST.

REV NUMBER DFD FP11-B-10

A

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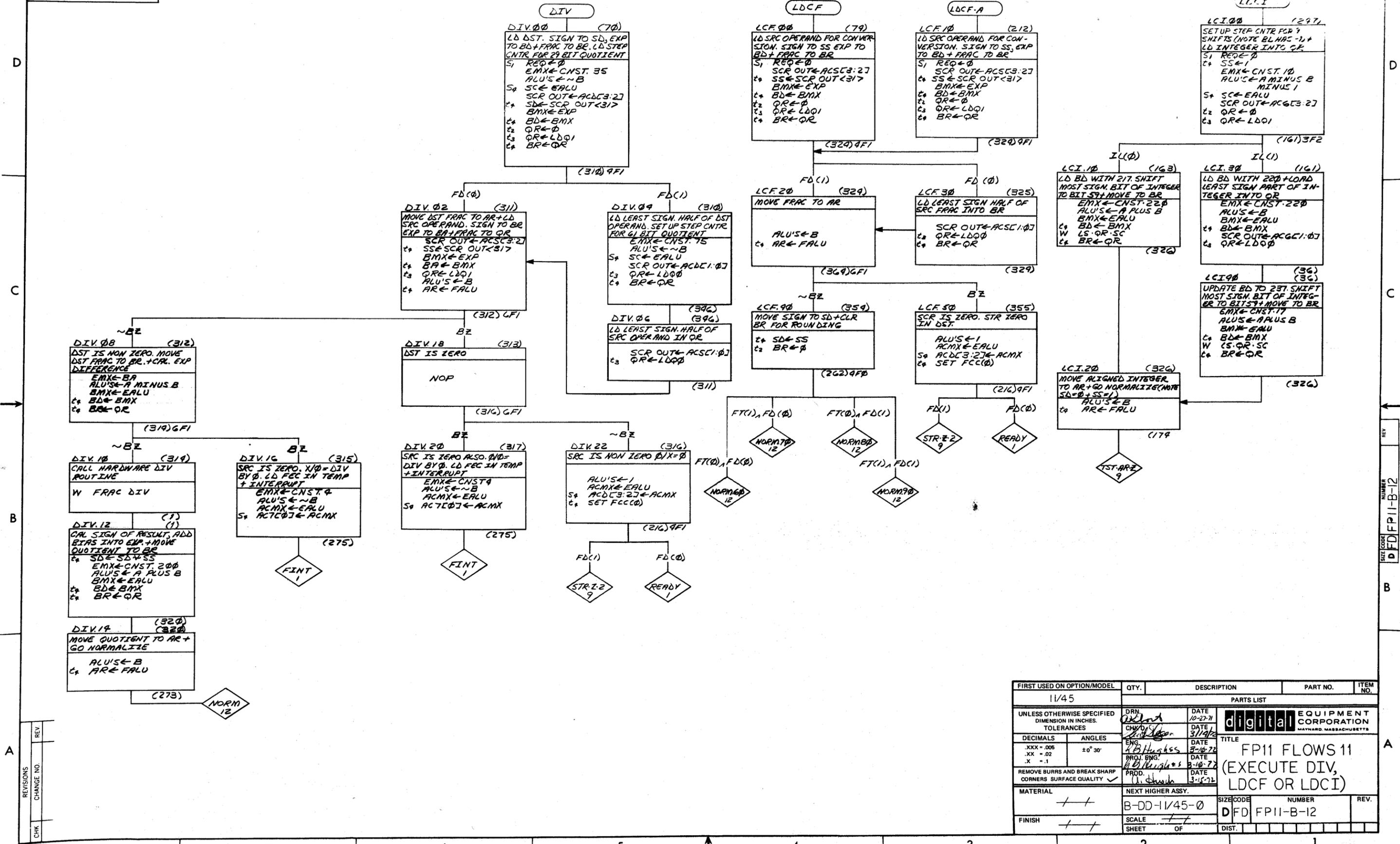
11-8-1104 10 2



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN. <i>Orlent</i>	DATE 10/24/71	 digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .XXX = .005 .XX = .02 .X = .1	CHKD. <i>John</i>	DATE 3/19/72		
ANGLES ±0° 30'	ENG. <i>R. Blugues</i>	DATE 3/10/72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROJ. ENG. <i>R. Blugues</i>	DATE 3/10/72		
MATERIAL	PRD. <i>John</i>	DATE 3/15/72	TITLE FP11 FLOWS 10 (EXECUTE MUL OR MOD)	
FINISH	NEXT HIGHER ASSY.		SIZE CODE B-DD-11/45-0	NUMBER DFD FPII-B-II
	SCALE		SHEET	REV.

REV.	CHANGE NO.

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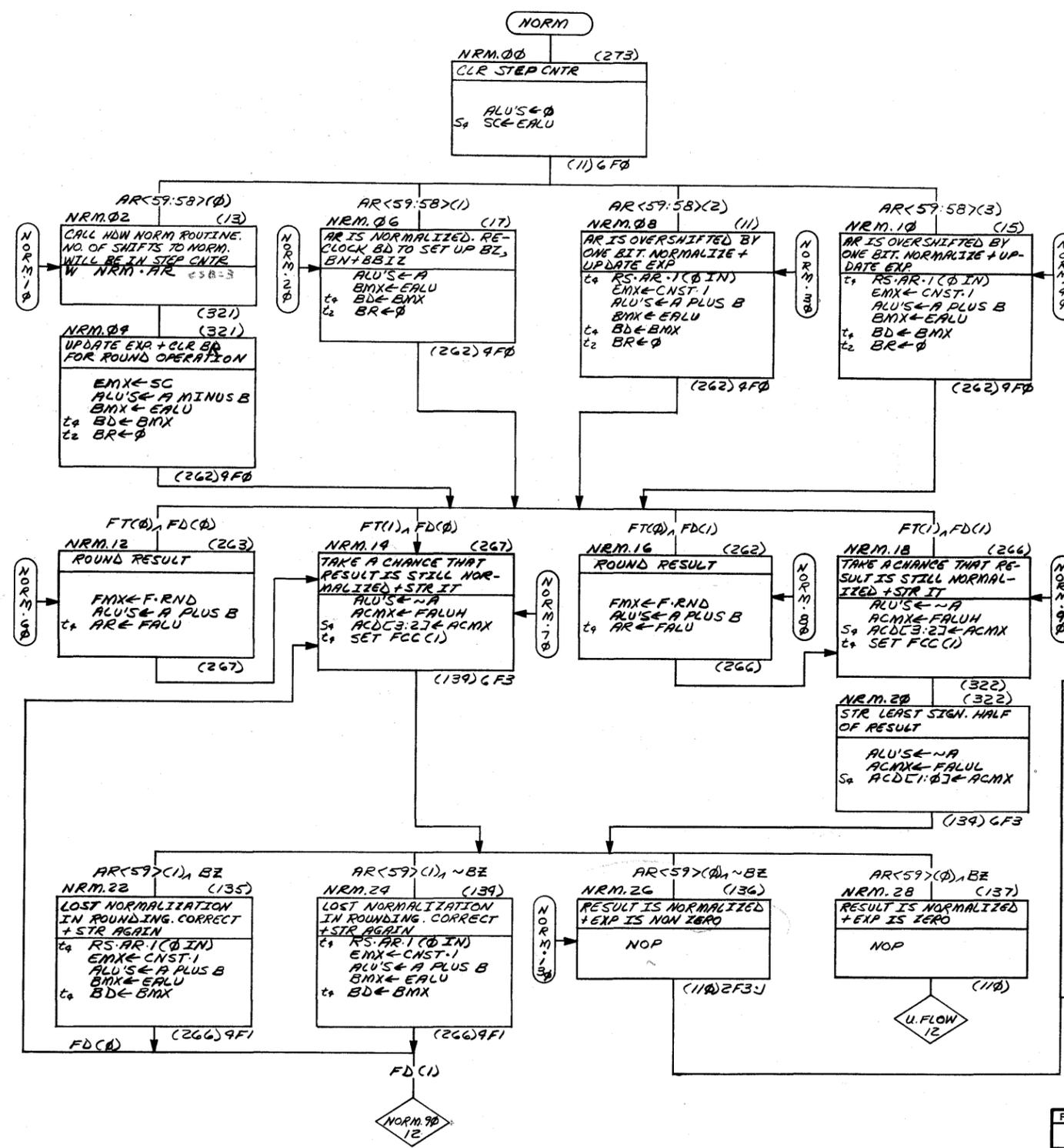
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN <i>[Signature]</i>	DATE 10-27-71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .XXX ± .005 ANGLES ± 0° 30'	CHK'D <i>[Signature]</i>	DATE 3/19/72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	ENG. <i>[Signature]</i>	DATE 3-10-72	TITLE FP11 FLOWS 11 (EXECUTE DIV, LDCF OR LDCI)	
MATERIAL	PROJ. ENG. <i>[Signature]</i>	DATE 3-10-72		
FINISH	PROD. <i>[Signature]</i>	DATE 3-15-72	NEXT HIGHER ASSY. B-DD-11/45-0	
			SIZE CODE D FD	NUMBER FP11-B-12
			SHEET OF	REV.

REV	CHANGE NO.	REVISIONS

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D
C
B
A

D
C
B
A

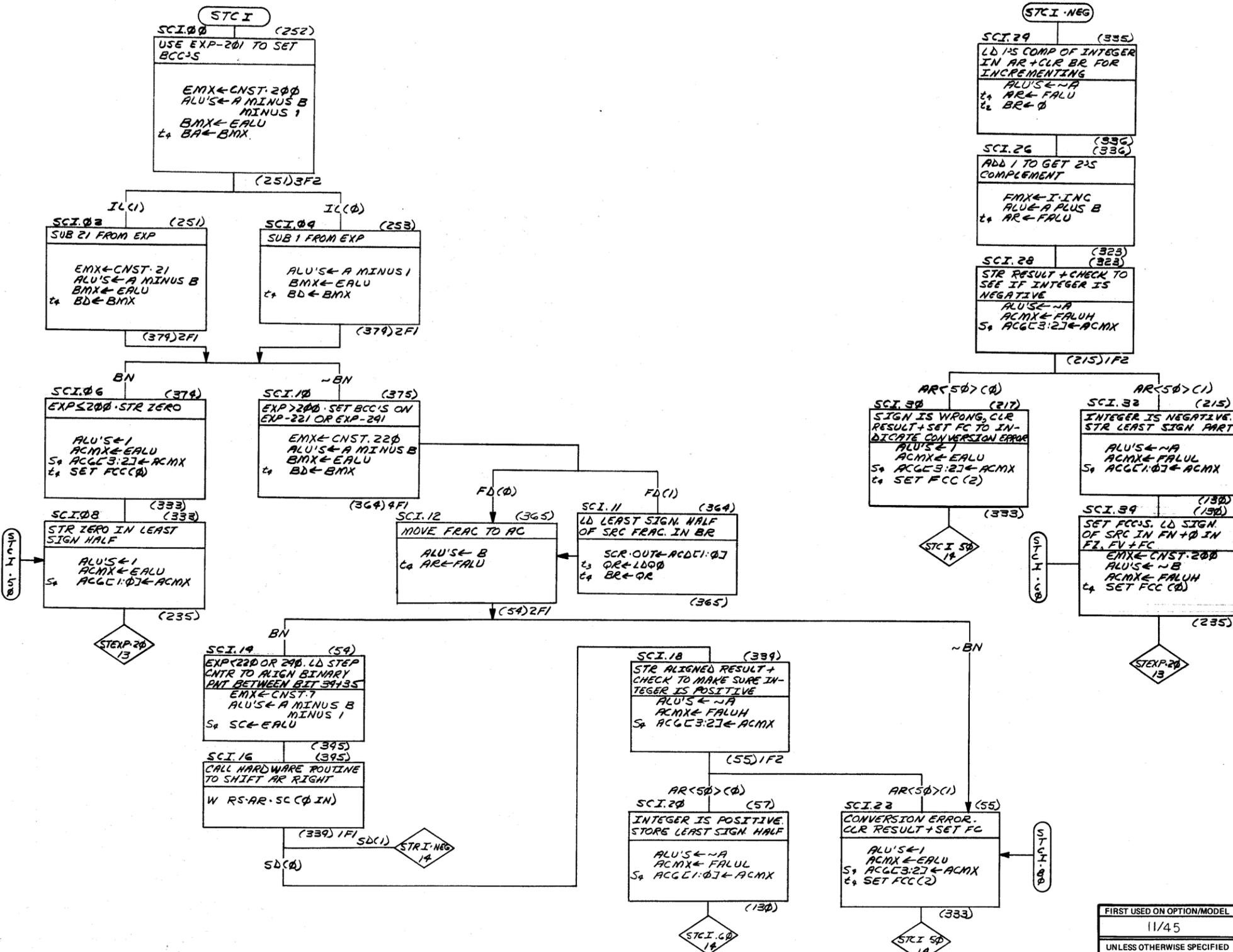


FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS	ANGLES	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
.XXX = .005	±0° 30'	1/28/71	TITLE	
.XX = .02		3/10/72	FP11 FLOWS12 (NORMALIZE & ROUND)	
.X = .1		3/18/72	SIZE CODE NUMBER REV.	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		3/15/72	D F D F P I I - B - 13	
MATERIAL	NEXT HIGHER ASSY.		DIST.	
FINISH	B-DD-11/45-0		SHEET OF	

REVISIONS	CHANGE NO.	REV.
CHK		

B cond codes on block

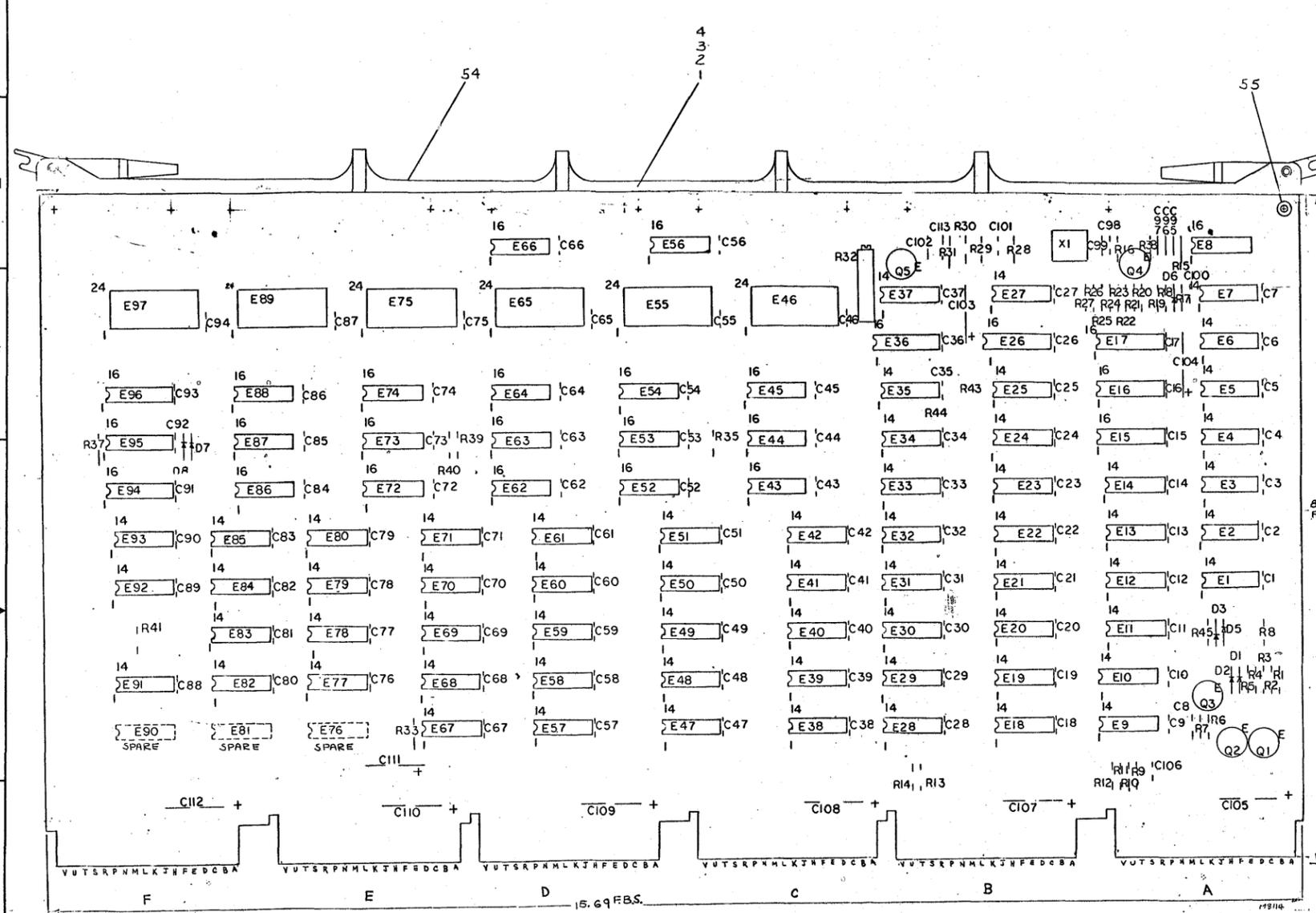
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FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN <i>Edmont</i>	DATE 1/2/74	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .XXX = .005 .XX = .02 .X = .1	CHK'D <i>Paul Dyer</i>	DATE 3/14/70	TITLE FP11 FLOWS 14 (EXECUTE STCI)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	ENG <i>H.B. Hughes</i>	DATE 2-18-72	MATERIAL NEXT HIGHER ASSY.	
	PROJ. ENG. <i>H.B. Hughes</i>	DATE 3-10-77	FINISH SCALE	
	PROD. <i>A. Smith</i>	DATE 3-15-72	SHEET OF	
			SIZE CODE NUMBER REV. DFD FP11-B-15	
			DIST.	

REVISIONS
CHK CHANGE NO. REV.

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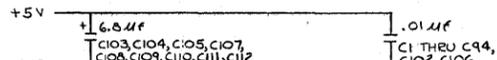


NOTES:

1. UNLESS OTHERWISE NOTED RESISTANCE IS IN OHMS AND CAPACITANCE IS IN PICOSECONDS. CAPS. WITHOUT VALUE NOTED ARE .01 MFD.

AA2, AV1, CA2, CV1, BA2, BV1, 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



DEC 74181	12	24			
DEC 74175	8	16			
DEC 74194	8	16			
DEC 745182	8	16			
DEC 745112	8	16			
IC TYPE	GND	+5V			
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE.					
IC PIN LOCATIONS			JUMPER LIST		

1	E10	IC DEC74574-45	1A10950	59
1	C113	CAPACITOR 18PF 100V 5%	1002608	58
1	C101	CAPACITOR 47PF 50V 5%	1000011	57
1	X1	CRYSTAL 18MHz	1809880-6	56
12		EYELET	9006732	55
1		HANDLE MODULE	E-73-120711-2	54
1	Q1	TRANSISTOR DEC 4255	1505321	53
4	Q2, Q3, Q4, Q5	TRANSISTOR DEC 3009B	1503100	52
1	E24	IC DEC 74565	1910543	51
6	E46, E55, E65, E75, E89, E97	IC DEC 74181	1909982	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	E77	IC DEC 74150	1909060	46
3	E61, E80, E85	IC DEC 74140	1905586	45
2	E5, E82	IC DEC 74111	1909267	44
3	E27, E79, E91	IC DEC 74110	1909057	43
1	E76	IC DEC 74104	1909931	42
2	E71, E92	IC DEC 74100	1909056	41
2	E56, E66	IC DEC 74182-1	1910551	40
8	E7, E18, E19, E20, E37, E42, E47, E93	IC DEC 745140	1910546	39
5	E15, E16, E17, E26, E36	IC DEC 745112	1910545	38
8	E41, E68, E69, E94	IC DEC 74574	1910544	37
3	E4, 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	199686	29
1	E2	IC DEC 7400	195575	28
1	E8	TRANSFORMER, PULSE	1609651	27
4	R33, R35, R37, E41	RESISTOR 100Ω, 1/4W, 5%	1300229	26
1	R32	RESISTOR, VARIABLE, 5KΩ, 1/4W	130143-09	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	R13, R20, R22, R24, R26, R39, R44	RESISTOR 680Ω, 1/4W, 5%	1301424	22
1	E16	RESISTOR 10K, 1/4W, 10%	1300481	21
1	E19	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
7	R15,	RESISTOR 220Ω, 1/4W, 5%	1300271	17
3	R17, R18, R45	RESISTOR 470Ω, 1/4W, 5%	1300316	16
2	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 .01PF, 100V, 5%	1000006	9
9	C103, C104, C105, C107, C108, C109, C110, C111, C112	CAPACITOR 6.8M, 35V, 20%	1000067	8
96	C1 THRU C94, C102, C106	CAPACITOR .01M, 100V, 20% DISC	1001610	7
1	C97	CAPACITOR 100PF, 100V, 5% DISC	1000016	6
2	C95, C100,	CAPACITOR .047UF (4V, 5-20V)	1009678	5
1		ETCHED CIRCUIT BOARD	5009863	4
REF		MODULE ECO HISTORY	B-MH-M8114-04	3
REF		ASSY/DRILLING HOLE LAYOUT	E-AH-M8114-05	2
REF		X-Y COORDINATE HOLE LOCATION	X-CO-M8114-04	1

REVISION BOARD REV C

DATE	BY	DESCRIPTION
DEC 4255	N.A.	
DEC 3009 B	2N3646	
FD 777	SAME	
D662	IN445	

SEMICONDUCTOR CONVERSION CHART

DATE: DEC 11 1965

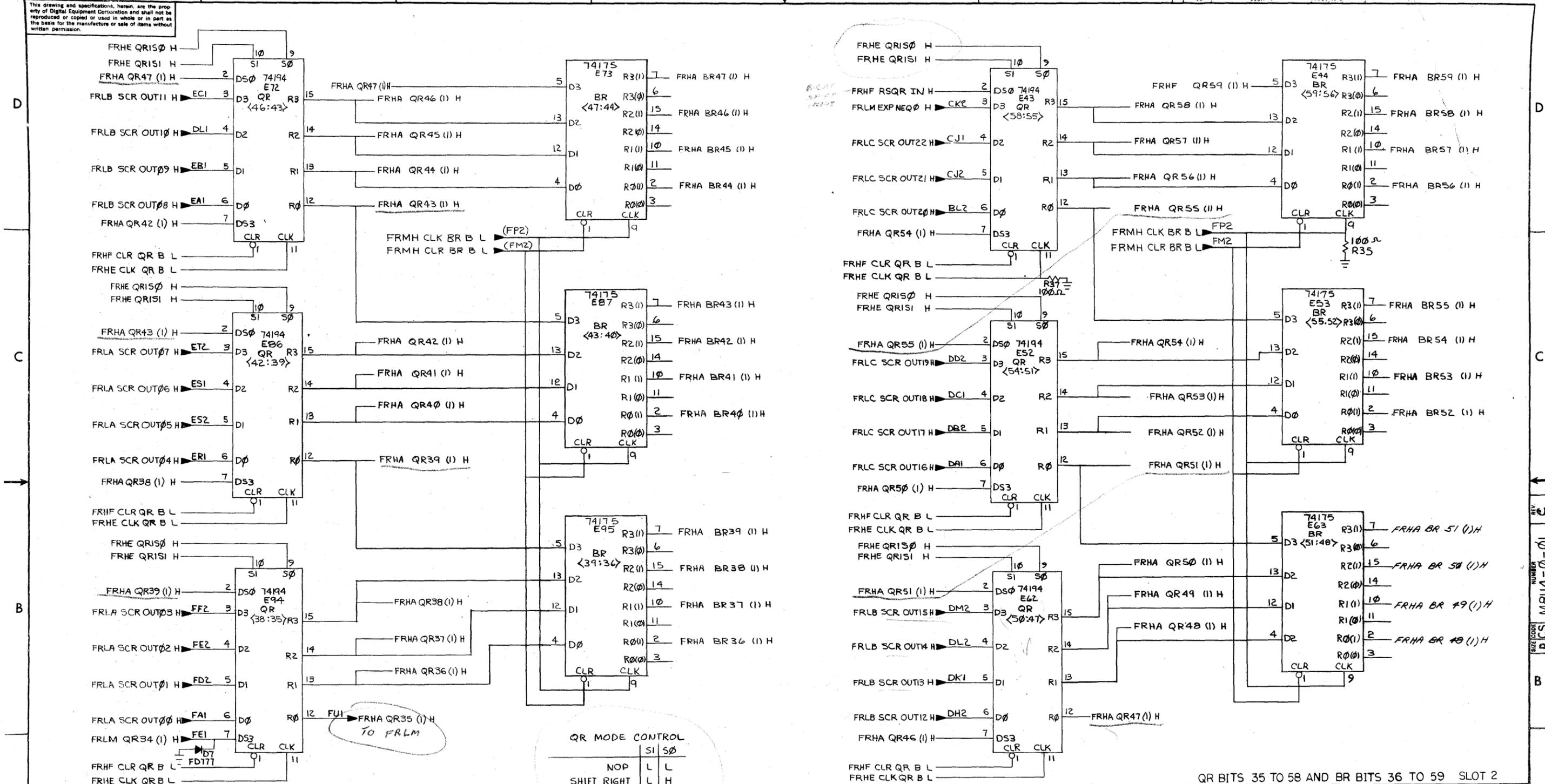
SCALE: 2/1

SHEET: 1 OF 2

FRACITION DATA PATH HIGH ORDER

ITEM NO. B

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QR MODE CONTROL

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

QR BITS 35 TO 58 AND BR BITS 36 TO 59 SLOT 2

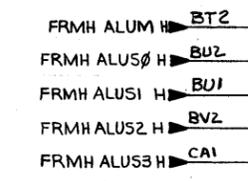
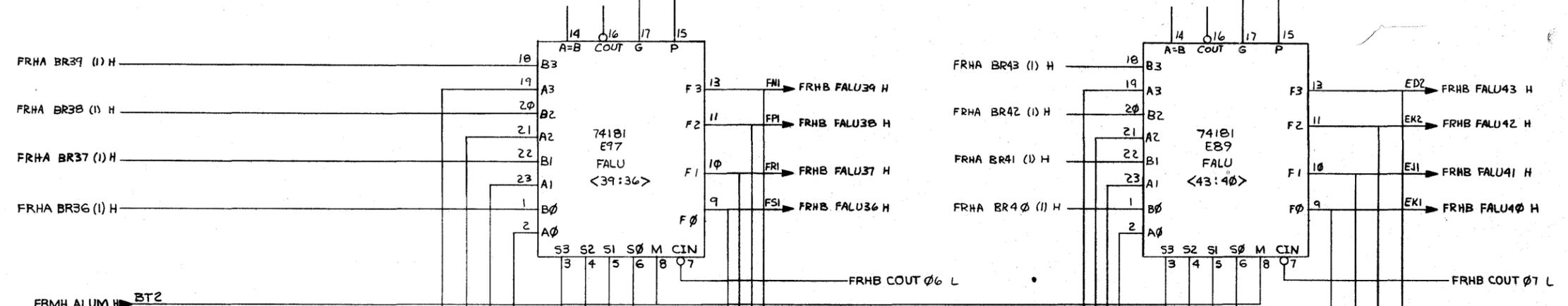
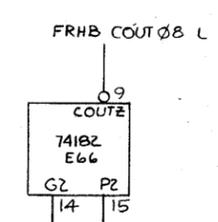
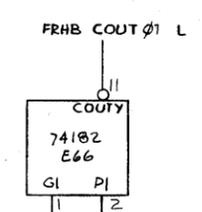
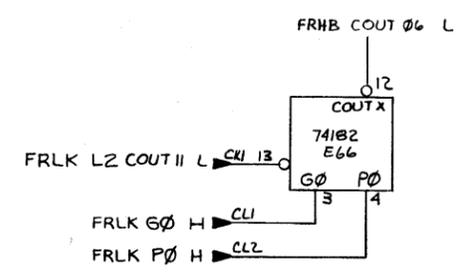
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN. <i>S. Roberts</i>	DATE 10/17/71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
DECIMALS ANGLES		CHKD. <i>[Signature]</i>	DATE 1/11/72	
.XXX = .005	± 0° 30'	ENG. <i>[Signature]</i>	DATE 2/16/72	
.XX = .02		PROJ. ENG. <i>[Signature]</i>	DATE 2/16/72	
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY		PROD. <i>[Signature]</i>	DATE 5/17/71	
MATERIAL		TITLE FRACTION DATA PATH HIGH ORDER (FRHA)		
FINISH		NEXT HIGHER ASSY.	SIZE CODE	NUMBER
		B-DD -11/45-0	D CS	M8114-0-01
		SCALE	REV.	
		SHEET 2 OF 9	C	

REV	CHANGE NO.

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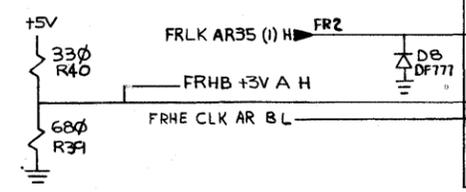
FALU CONTROL

	S3	S2	S1	S0	M	CIN
~A	L	L	L	L	H	X
~(A~B)	L	L	L	L	H	X
A MINUS B	L	L	L	L	H	X
~(A~B)	L	L	L	L	H	X
A MINUS B MINUS 1	L	L	L	L	H	X
A~B	L	L	L	L	H	X
A PLUS B	L	L	L	L	H	X
A PLUS B PLUS 1	L	L	L	L	H	X
A PLUS B	H	H	H	H	L	X
A~B	H	H	H	H	L	X
A AND B	H	H	H	H	L	X
A MINUS 1	H	H	H	H	L	X
A V B	H	H	H	H	L	X
A	H	H	H	H	L	X



AR MODE CONTROL

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

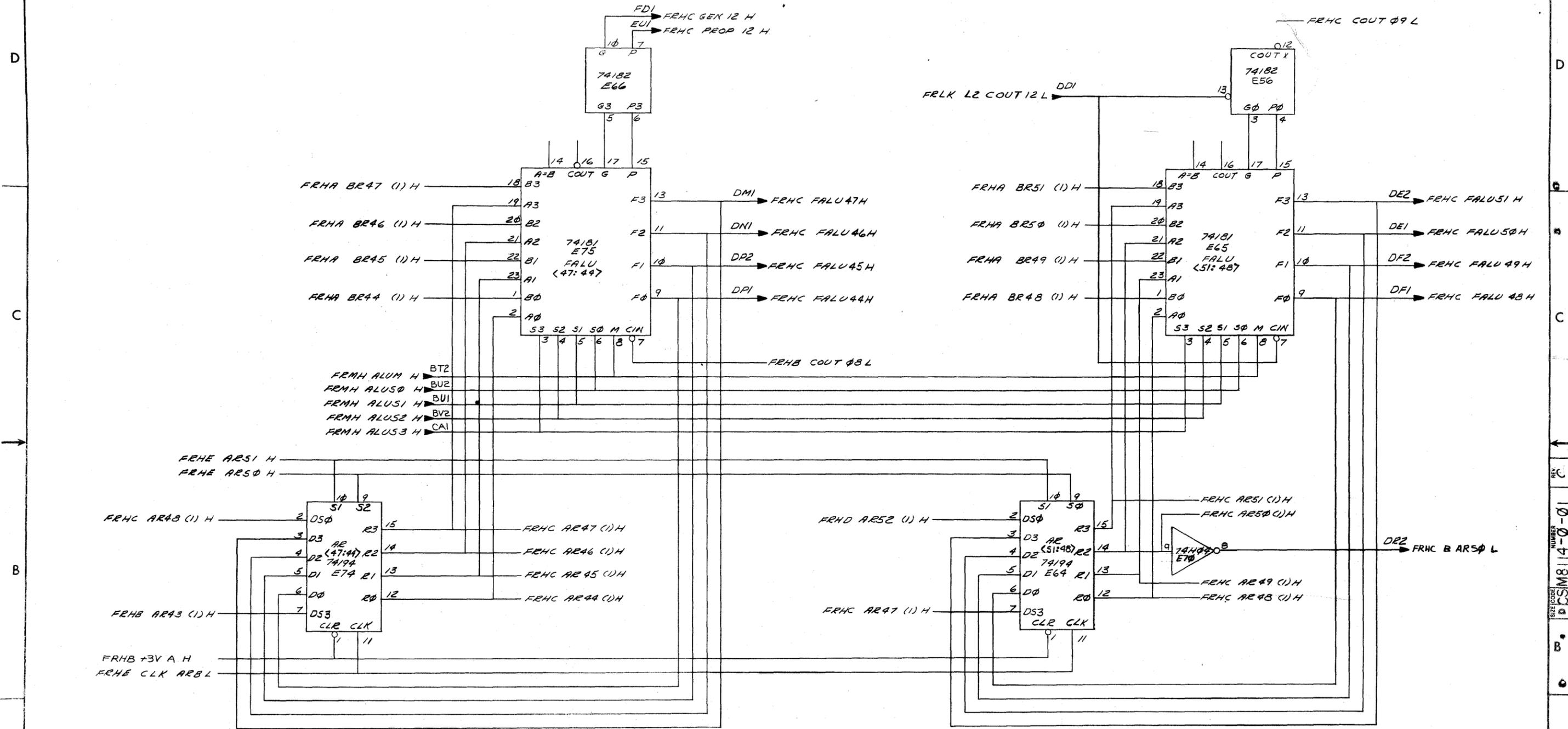


AR & FALU BITS 36 TO 43 SLOT 2

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS	ANGLES	TITLE		
.XXX = .005	±0° 30'	FRACTION DATA PATH HIGH ORDER (FRHB)		
.XX = .02		REMOVED BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		
.X = .1		MATERIAL		
		NEXT HIGHER ASSY.		
		FINISH		
SCALE		SIZE CODE	NUMBER	REV.
SHEET 3 OF 9		DCS	M8114-0-01	C
		DIST.		

REV. C
MB114-0-01
DCS

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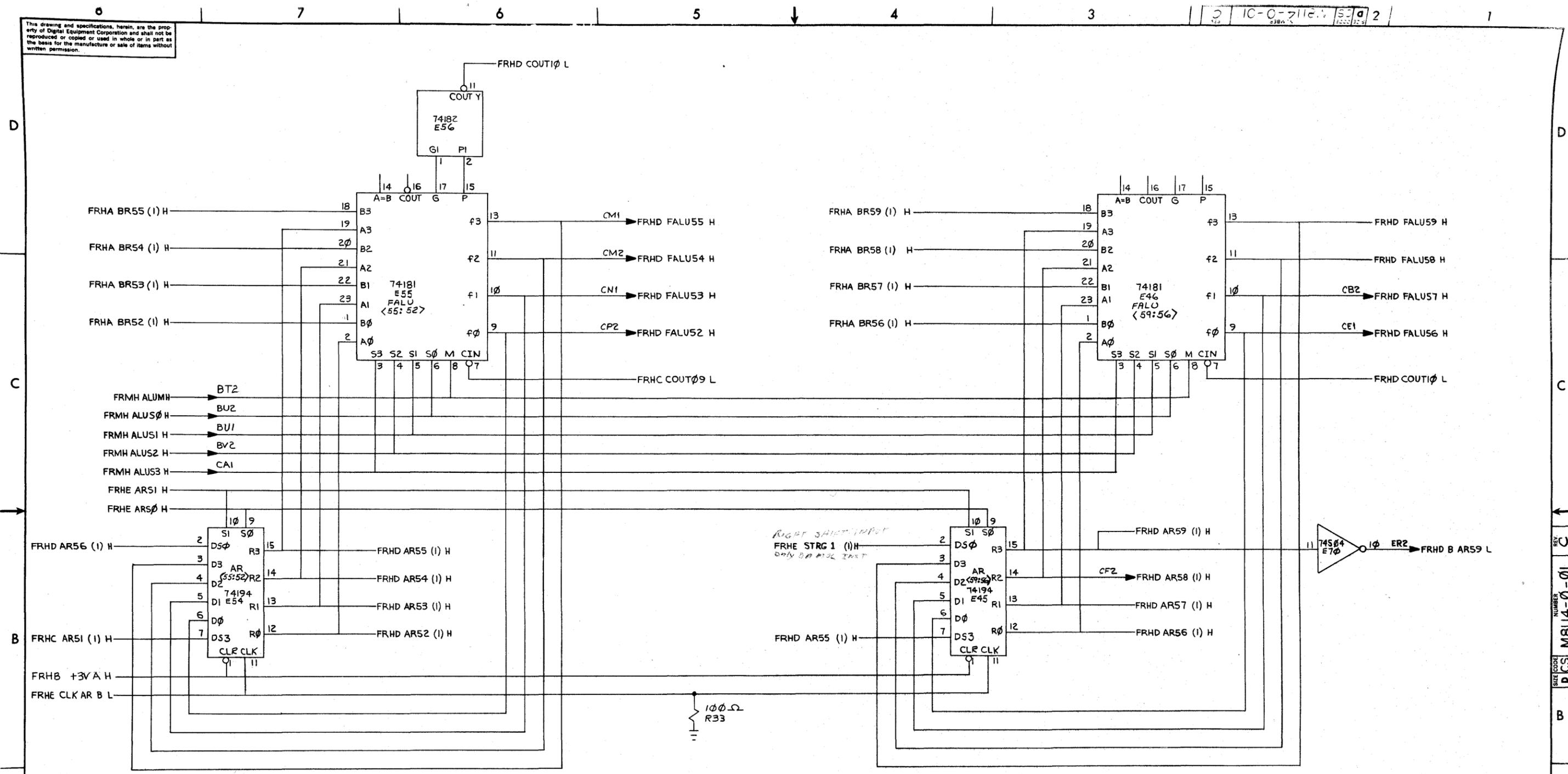


AR & FALU BITS 44 TO 51 SLOT 2

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN. <i>J. Dando</i>	DATE 10-11-71	 digital EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small>
DECIMALS .XXX = .005 .XX = .02 .X = .1	ANGLES ±0° 30'	CHKD. <i>[Signature]</i>	DATE 2/16/72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		ENG. <i>[Signature]</i>	DATE 2/14/72	
		PROJ. ENG. <i>[Signature]</i>	DATE 2/16/72	
		PRD. <i>[Signature]</i>	DATE 2/17/72	
MATERIAL	NEXT HIGHER ASSY.	TITLE		
+	B-DD-11/45-0	FRACTION DATA PATH HIGH ORDER (FRHC)		
FINISH	SCALE	SIZE CODE	NUMBER	REV.
+	4 OF 9	D	CSM8114-0-01	C
SHEET		DIST.		

REV.	CHANGE NO.

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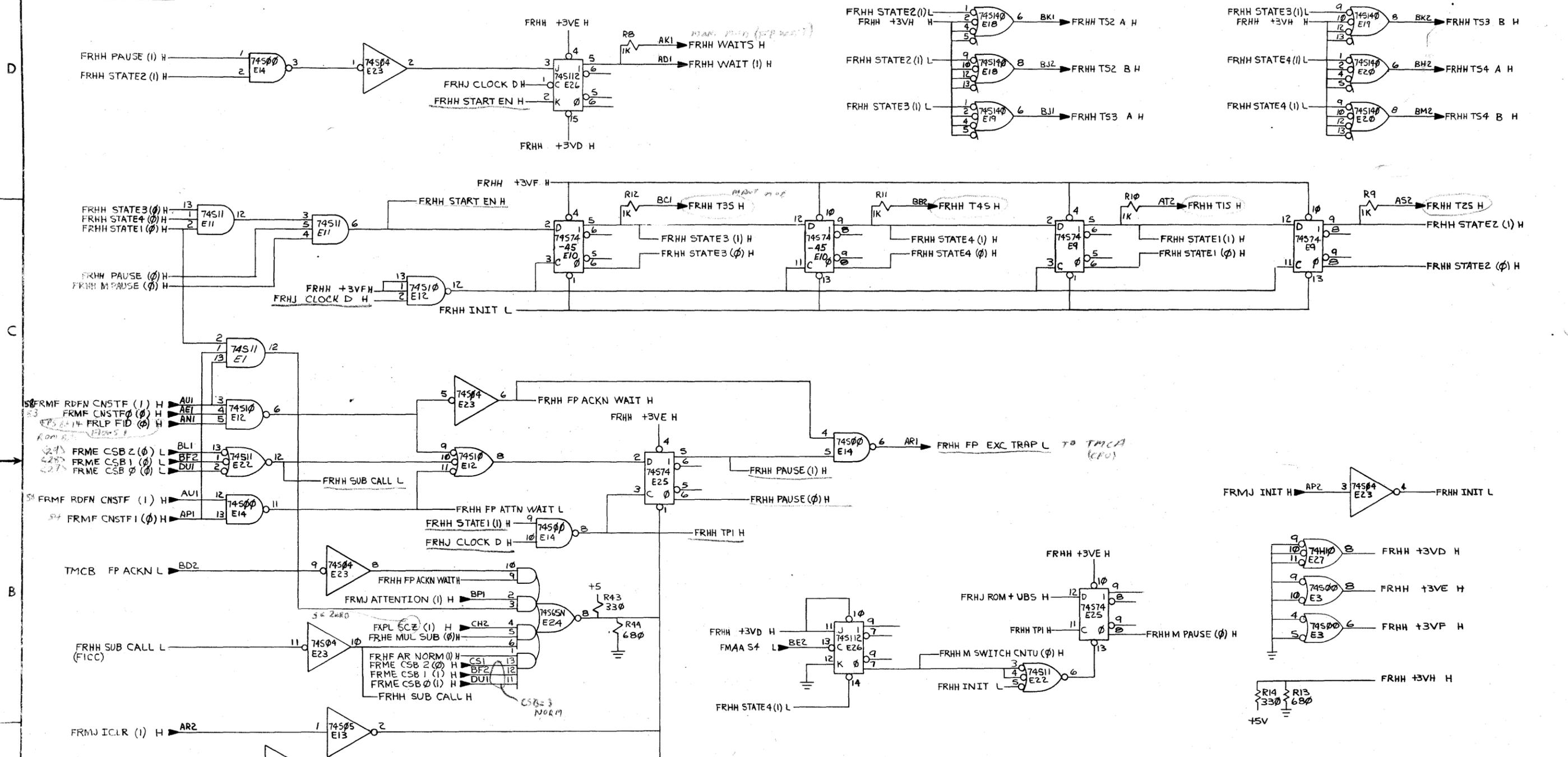
REV	
CHANGE NO.	
CHK	

AR5 FALU BITS 52 TO 59 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: <i>S. Barts</i> DATE: 10/15/71	 digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS	ANGLES	CHKD: <i>[Signature]</i> DATE: 2/16/72		
.XXX = .005	±0° 30'	ENGR: <i>[Signature]</i> DATE: 2/16/72		
.XX = .02		PROJ. ENGR: <i>[Signature]</i> DATE: 2/16/72		
.X = .1		PROD. <i>[Signature]</i> DATE: 2/16/72	TITLE: FRACTION DATA PATH HIGH ORDER (FRHD)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		MATERIAL: NEXT HIGHER ASSY.		
FINISH: //		B-DD -11/45-0		SIZE CODE: DCS M8114-0-01
		SCALE: //		NUMBER: 5 OF 9
		SHEET: 5 OF 9		DIST.:

REV. C
NUMBER
DCS M8114-0-01
B

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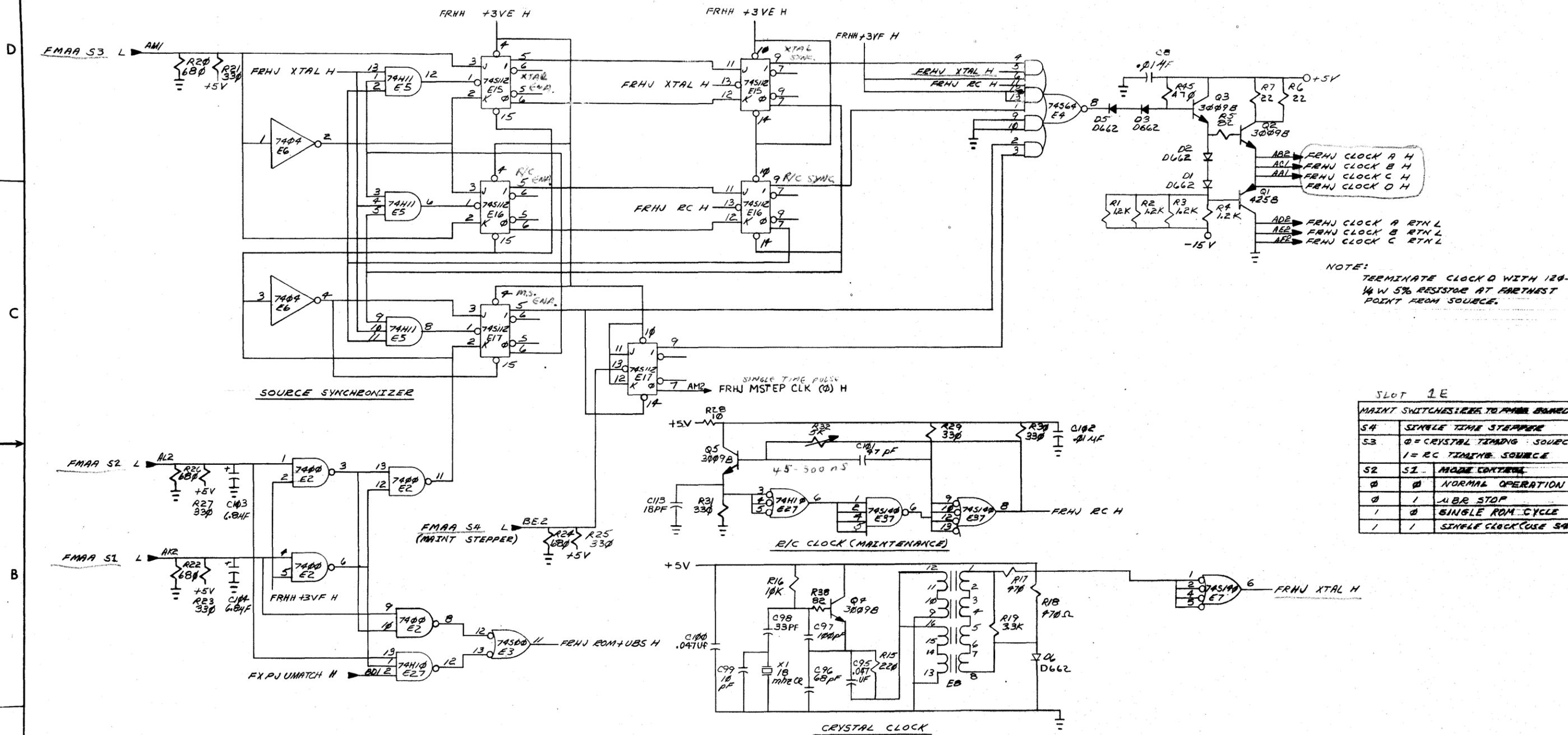
TIME STATE GENERATOR SLOT 2

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.		
11/45						
PARTS LIST						
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN <i>[Signature]</i>	DATE 10/18/71	digital EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small>			
DECIMALS ANGLES	CHKD <i>[Signature]</i>	DATE 2/1/72				
.XXX = .005 ±0° 30'	ENG <i>[Signature]</i>	DATE 2/1/72				
.XX = .02	PROJ. ENG. <i>[Signature]</i>	DATE 2/1/72				
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD. <i>[Signature]</i>	DATE 2/1/72	FRACTION DATA PATH HIGH ORDER (FRHH)			
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE			NUMBER	REV.
FINISH	B DD-11/45-0	D CS			M8114-0-01	C
	SCALE	SHEET 8			OF 9	DIST.

REV.	CHANGE NO.

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10-0-1118WCS



NOTE:
TERMINATE CLOCK D WITH 120-Ω
¼ W 5% RESISTOR AT FURTHEST
POINT FROM SOURCE.

SLOT 2E

MAINT SWITCHES: SEE TO FRAME BOARD

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

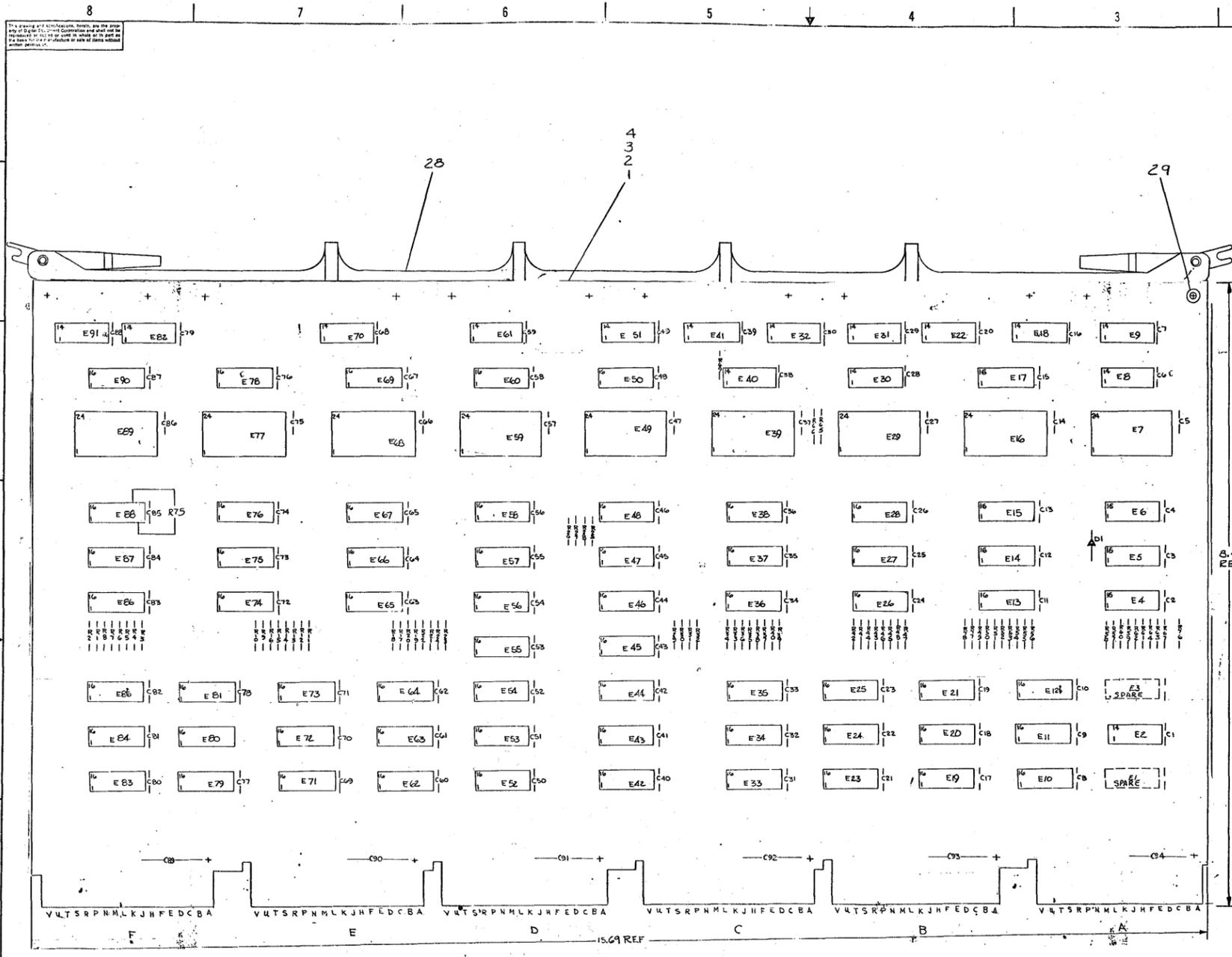
CLOCKS & CLOCK SYNCHRONIZER SLOT 2

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN A. Davis	DATE 10-9-71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS	ANGLES	ENG B. Hughes	DATE 2/16/72	TITLE FRACTION DATA PATH HIGH ORDER (FRHJ)
.XXX = .005	±0° 30'	PROJ. ENG. B. Hughes	DATE 2/16/72	
.XX = .02		PROD. A. Hirsch	DATE 2/17/72	
.X = .1				
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.			
FINISH	B-DD-11/45-0	SIZE CODE DCSM8114-0-01	NUMBER C	REV. C
	SCALE	SHEET 9 OF 9	DIST.	

REVISIONS
CHANGE NO.

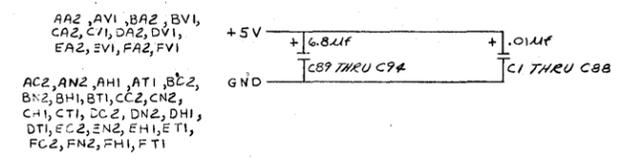
NUMBER
DCSM8114-0-01

A



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

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
12		EYELET	9006732	29
1		HANDLE, MODULE	EP5-121011-2	28
1	E10	IC DEC 74H11	1909267	27
2	E8, E30	IC DEC 74505	1910535	24
1	E51	IC DEC 74H74	1909667	25
3	E32, E61, E22	IC DEC 74H00	1909056	24
2	E9, E41	IC DEC 74H10	1909057	23
2	E40, E70	IC DEC 74504	1910534	22
2	E82, E91	IC DEC 74H50	1909060	21
1	E2	IC DEC 74H30	1909059	20
12	E14, E27, E37, E47, E57, E60, E66, E75, E78, E5, E87, E90	IC DEC 74175	1910651	19
3	E17, E50, E69	IC DEC 74182-1	1910551	18
9	E7, E16, E29, E39, E49, E59, E68, E77, E89	IC DEC 74181	1909982	17
18	E9, E6, E13, E15, E26, E28, E36, E38, E46, E48, E56, E58, E65, E67, E76, E76, E86, E88	IC DEC 74194	1910623	16
8	E12, E21, E25, E35, E49, E73, E81, E85	IC DEC 3101A	1910653	15
24	E10, E11, E19, E20, E23, E24, E33, E34, E42, E43, E44, E45, E52, E53, E54, E55, E62, E63, E71, E72, E79, E80, E83, E84	IC DEC 74153	1909937	14
1	E31	IC DEC 74H40	1905586	13
32	R2, R4, R6, R8, R10, R12, R14, R16, R18, R20, R22, R24, R26, R28, R29, R31, R33, R35, R37, R39, R42, R44, R46, R48, R50, R52, R54, R56, R58, R60, R62, R64	RESISTOR 1.2K, 1/4W, 5%	1301320	12
32	R1, R3, R5, R7, R9, R11, R13, R15, R17, R19, R21, R23, R25, R27, R29, R32, R34, R36, R38, R40, R41, R43, R45, R47, R49, R51, R53, R55, R57, R59, R61, R63	RESISTOR 750 Ω , 1/4W, 5%	1301401	11
2	R65, R78	RESISTOR 330 Ω , 1/4W, 5%	1300295	10
2	R66, R77	RESISTOR 680 Ω , 1/4W, 5%	1301424	9
4	R67, R69, R76, R75	RESISTOR 100 Ω , 1/4W, 5%	1300229	8
1	D1	DIODE FD777	1103041	7
88	C1 THRU C88	CAPACITOR .01 μ F, 100V, 20%	1001610	6
6	C89 THRU C94	CAPACITOR 6.8 μ F, 35V, 20%	1000067	5
1		ETCHED CIRCUIT BOARD	5009861	4
REF		MODULE ECO HISTORY	3-MH-M8115-0-6	3
REF		ASSY/DRILLING-HOLE LAYOUT	3-MH-M8115-0-5	2
REF		X-Y COORDINATE HOLES LOCATION	3-MH-M8115-0-4	1



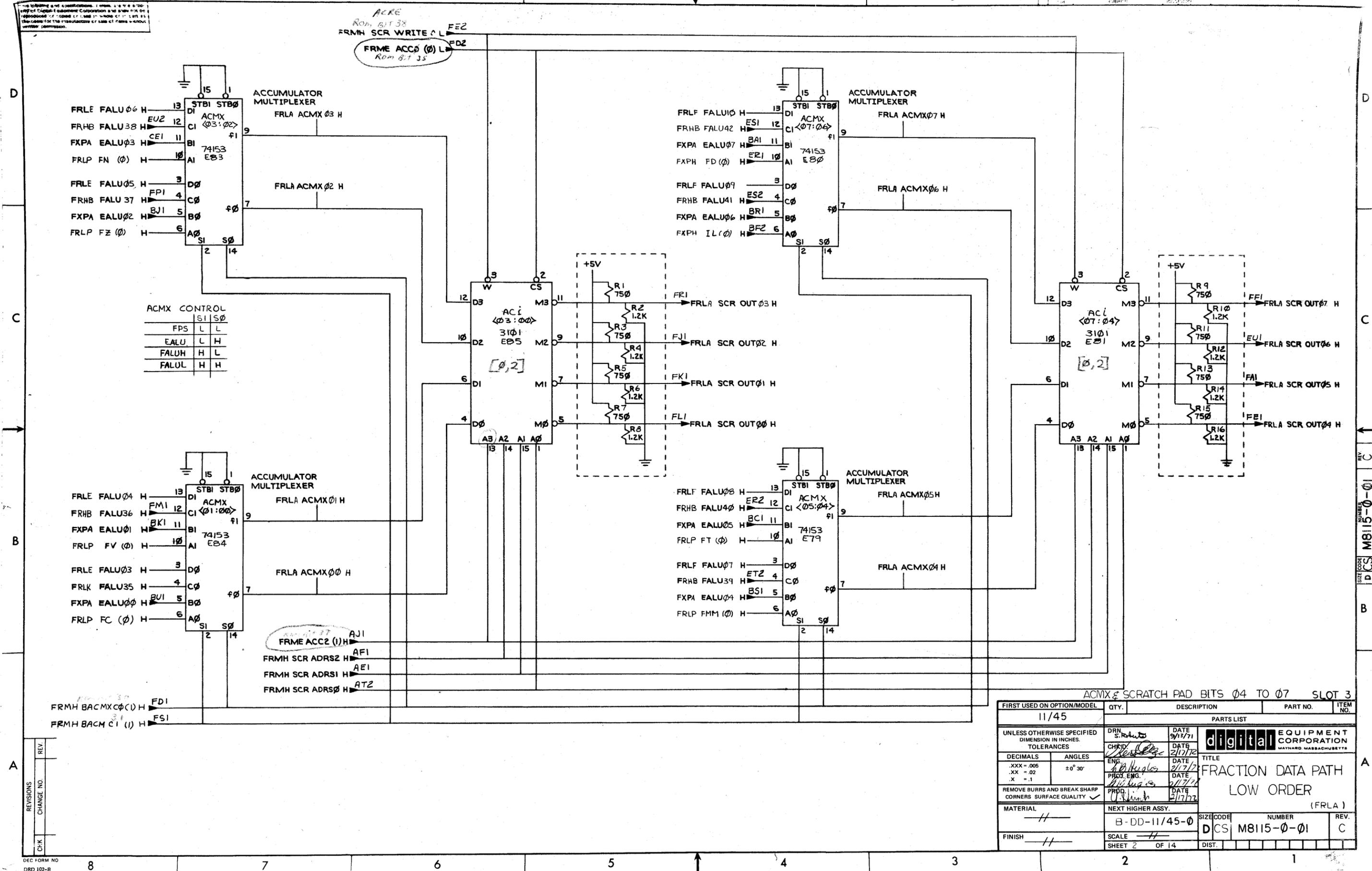
IC TYPE	GND	+5V
DEC 74153	8	16
DEC 74175	8	16
DEC 74194	8	16
DEC 74181	12	24
DEC 74182-1	8	16

ITEM NO.	AWG	FROM PT	TO PT

EQUIPMENT CORPORATION
 FRACTION DATA PATH
 LOW ORDER
 3-DD-11/45-0
 SEMICONDUCTOR CONVERSION CHART
 SHEET 1 of 14

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10-0-3 EN 2



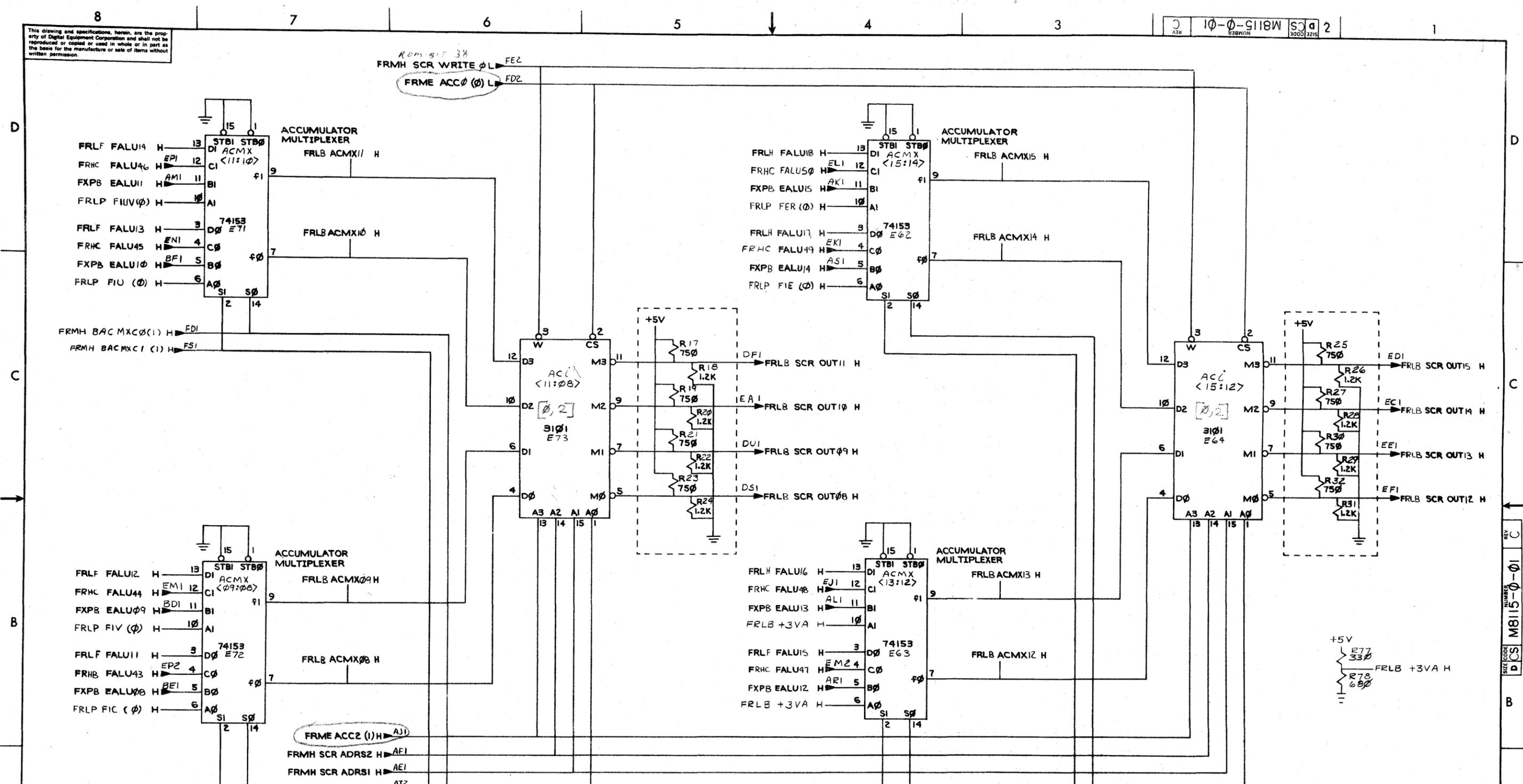
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED, DIMENSION IN INCHES.				
TOLERANCES				
DECIMALS	ANGLES			
.XXX - .005	±0° 30'			
.XX - .02				
.X - .1				
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓				
MATERIAL		NEXT HIGHER ASSY.		
FINISH		B-DD-11/45-0		
SCALE		SIZE CODE		
SHEET 2 OF 14		NUMBER		
		REV.		
		DCS M8115-0-01 C		

REV.	CHANGE NO.	REVISIONS

DEC FORM NO. DRD 102-B

REV. C
NUMBER M8115-0-01
SIZE CODE DCS

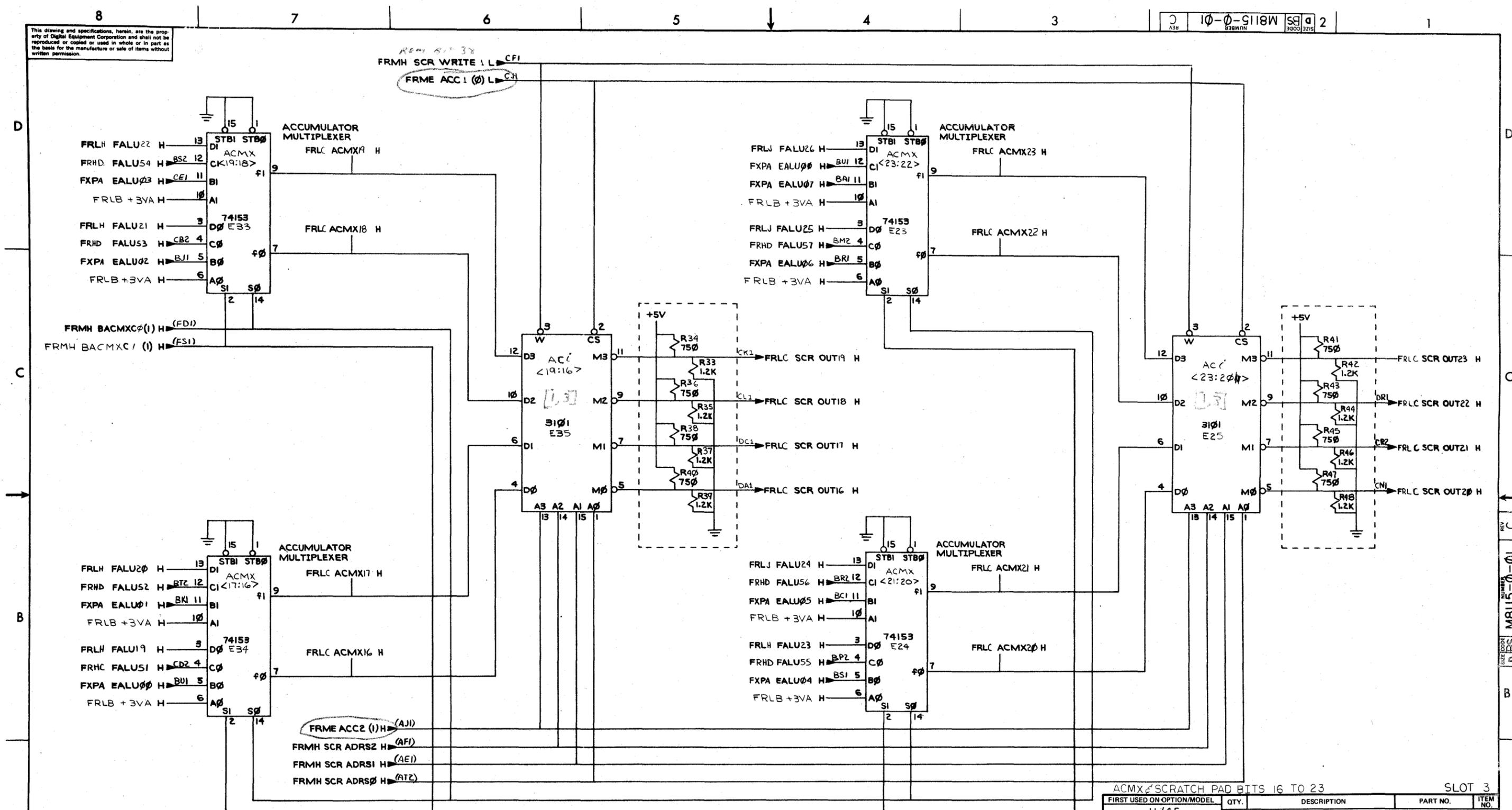
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REV	CHANGE NO.

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN	DATE	digital EQUIPMENT CORPORATION	
DECIMALS	ANGLES			MAYNARD, MASSACHUSETTS	
.XXX = .005	±0° 30'			TITLE	
.XX = .02				FRACTION DATA	
.X = .1				PATH LOW ORDER	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				(FRLR)	
MATERIAL	NEXT HIGHER ASSY.			SIZE CODE	NUMBER
				D CS	M8115-0-01
FINISH	SCALE			REV.	
				C	
	SHEET 3 OF 14			DIST.	

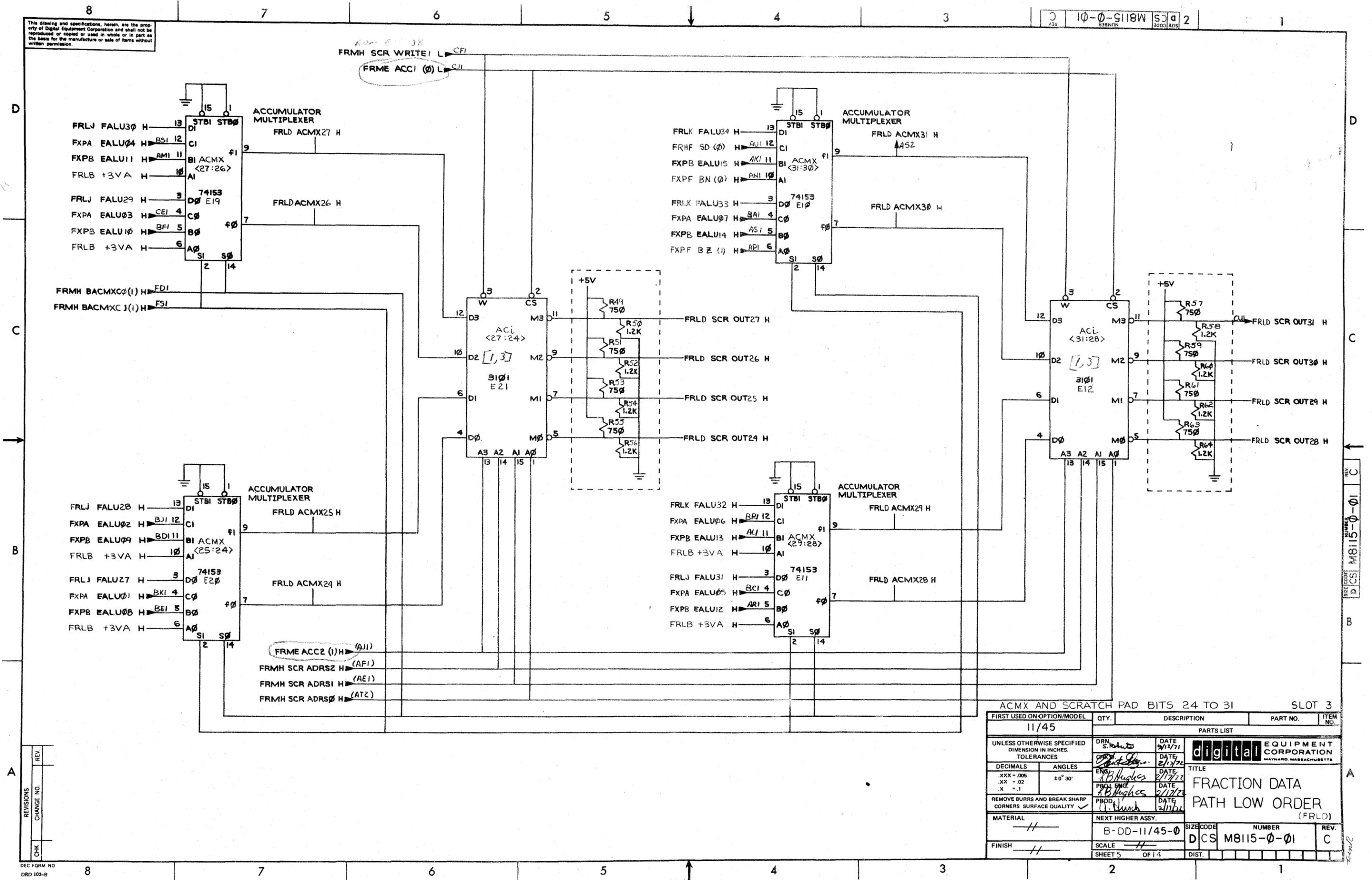
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FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45			ACMX SCRATCH PAD BITS 16 TO 23		SLOT 3
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.		DRN	DATE	digital EQUIPMENT CORPORATION	
TOLERANCES		CHKD	DATE	MAYNARD MASSACHUSETTS	
DECIMALS	ANGLES	ENG	DATE	TITLE	
.XXX = .005	±0° 30'	PROJ ENGR	DATE	FRACTION DATA	
.XX = .02		PROD	DATE	PATH LOW ORDER	
.X = .1			DATE	(FRLC)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY					
MATERIAL		NEXT HIGHER ASSY.		SIZE CODE	NUMBER
FINISH		B-DD-11/45-0		D BS	M8115-0-01
		SCALE		SHEET	OF
		4		14	
		DIST.			

REV.	CHANGE NO.	REVISIONS

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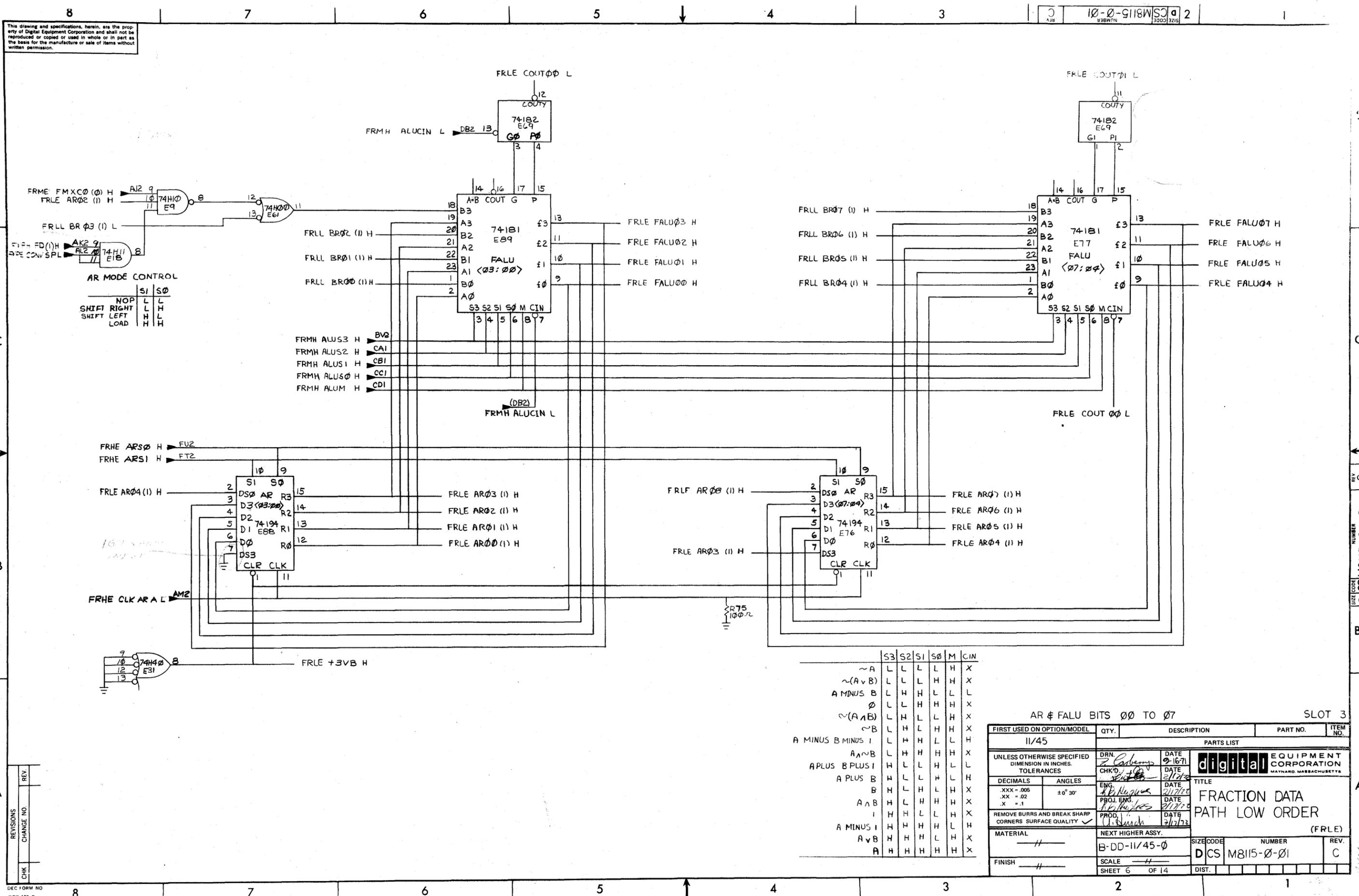
ACMX AND SCRATCH PAD BITS 24 TO 31 SLOT 3

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS	ANGLES	TITLE		
.XXX = .005	±0° 30'	FRACTION DATA PATH LOW ORDER (FRLD)		
.XX = .02		REMOVED BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		
MATERIAL		NEXT HIGHER ASSY.		
FINISH		SCALE		
		SHEET 5 OF 14		
		SIZE CODE NUMBER		REV.
		DCS M8115-0-01		C

REVISIONS

REV.	CHANGE NO.

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AR MODE CONTROL

	SI	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
∅	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	H
B	H	L	H	L	H	X
A ^ B	H	L	H	H	H	X
I	H	H	L	L	H	X
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		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN <i>R. Carbery</i>	DATE 2-16-71		
DECIMALS .XXX = .005	CHKD <i>[Signature]</i>	DATE 2/17/71		
ANGLES ±0° 30'	ENG <i>[Signature]</i>	DATE 2/17/71		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROD. <i>[Signature]</i>	DATE 2/17/71		
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
FINISH	B-DD-11/45-0		D CS	M8115-0-01
	SCALE			REV. C
	SHEET 6	OF 14	DIST.	

REVISIONS

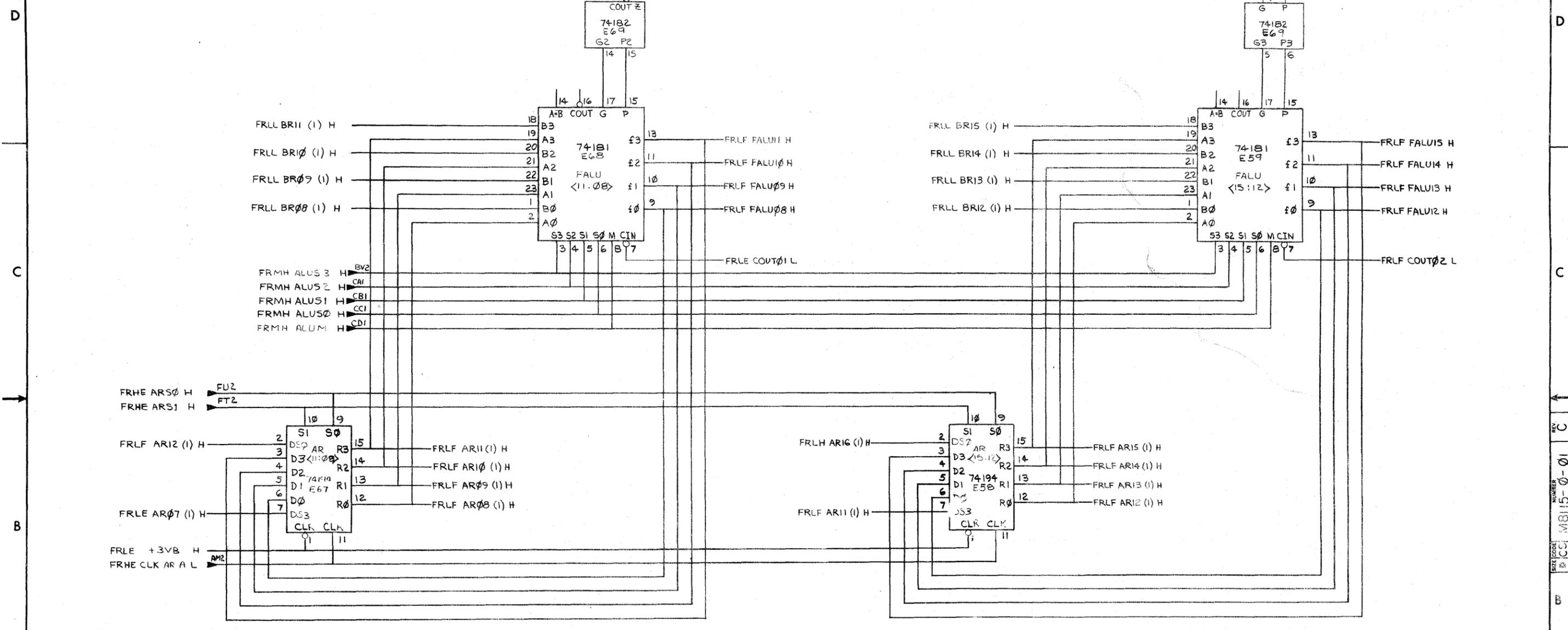
REV.	CHANGE NO.

DEC FORM NO. DRD 102-B

REV. C
NUMBER
D CS M8115-0-01

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10-0-9118W S01 2



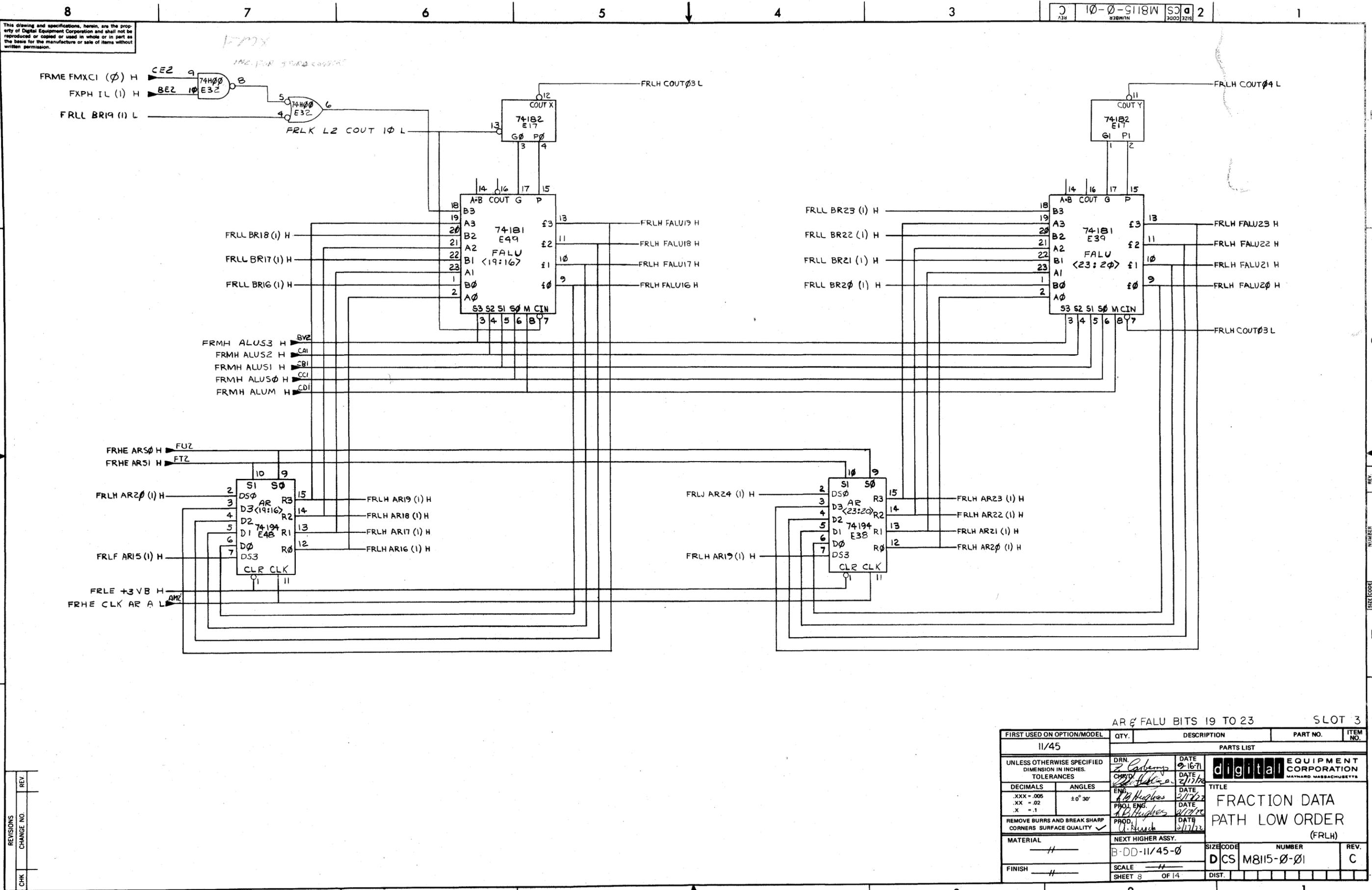
REV	NO.
CHK	

DEC FORM NO DRD 102-B

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN. <i>Z. Carberry</i>	DATE 2-16-71	 digital EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small>	
DECIMALS .XXX - .005	ANGLES ±0° 30'	CHK'D <i>John Doe</i>	DATE 2/17/72		
.XX - .02		ENG. <i>B. Hughes</i>	DATE 2/17/72		
.X - .1		PROJ. ENG. <i>B. Hughes</i>	DATE 2/17/72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD. <i>C. Smith</i>	DATE 2/17/72	TITLE	
		NEXT HIGHER ASSY.		FRACTION DATA PATH LOW ORDER (FRLF)	
MATERIAL		B-DD-11/45-0		SIZE CODE	NUMBER
FINISH		SCALE		DCS	M3115-0-01
		SHEET 7 OF 14		DIST.	

REV. C
NUMBER M3115-0-01
SIZE CODE DCS

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REVISIONS	REV
CHANGE NO.	
CHK	

DEC FORM NO DRD 102-B

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED		DRN	DATE	digital EQUIPMENT CORPORATION	
DIMENSION IN INCHES.		2 Carberry	9-16-71	MAYNARD MASSACHUSETTS	
TOLERANCES		CHRY	DATE	TITLE	
DECIMALS		2/17/72	DATE	FRACTION DATA	
ANGLES		ENG	DATE	PATH LOW ORDER	
.XXX = .005		PROL ENG.	DATE	(FRLH)	
.XX = .02		PROL.	DATE	SIZE CODE NUMBER REV.	
.X = .1		DATE	DATE	DCS M815-0-01 C	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE	DATE	SCALE SHEET 8 OF 14	
MATERIAL		NEXT HIGHER ASSY.		DIST.	
FINISH		B-DD-11/45-0			

REV. C
M815-0-01

REV. C

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D

C

B

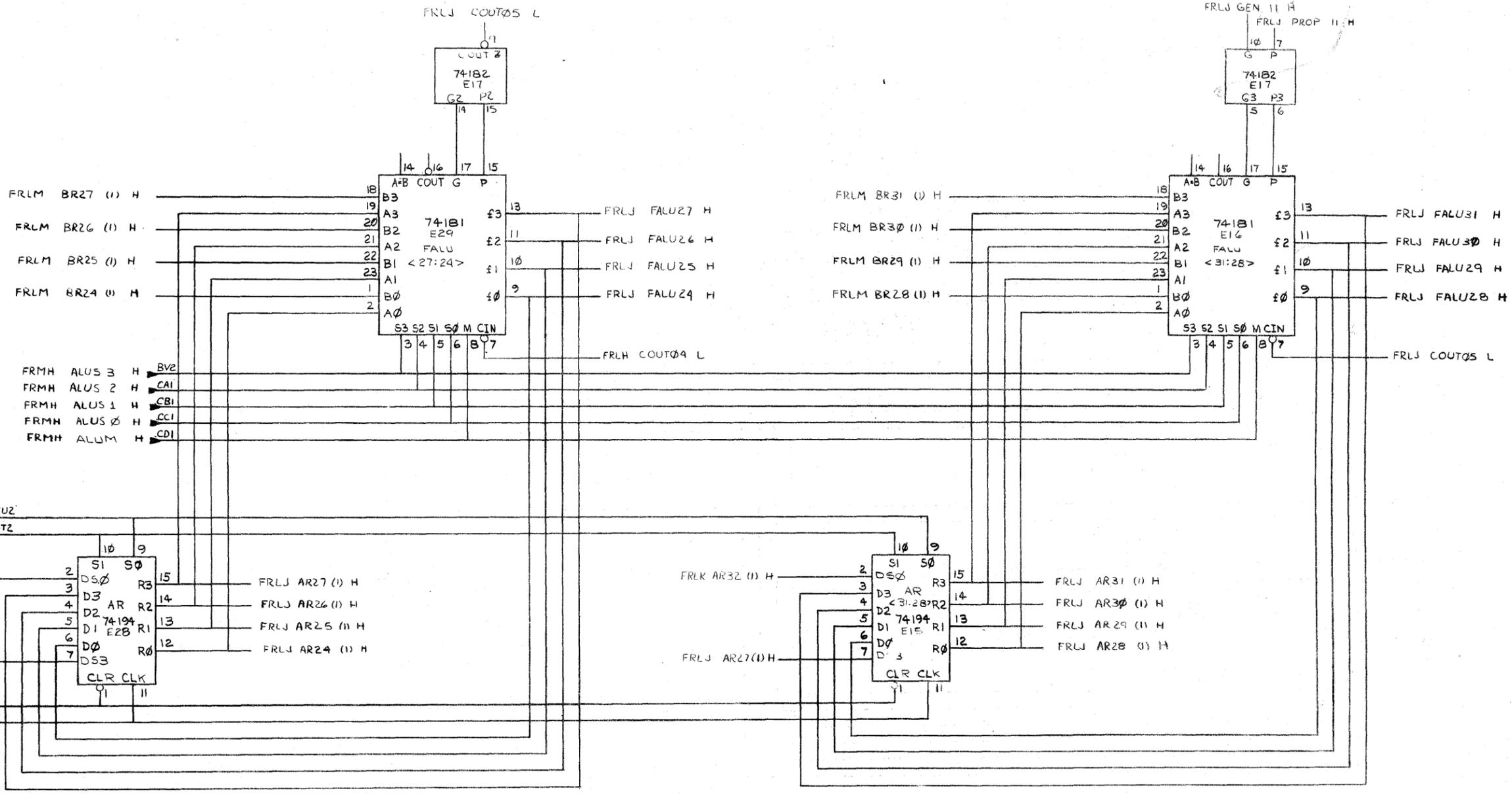
A

D

C

B

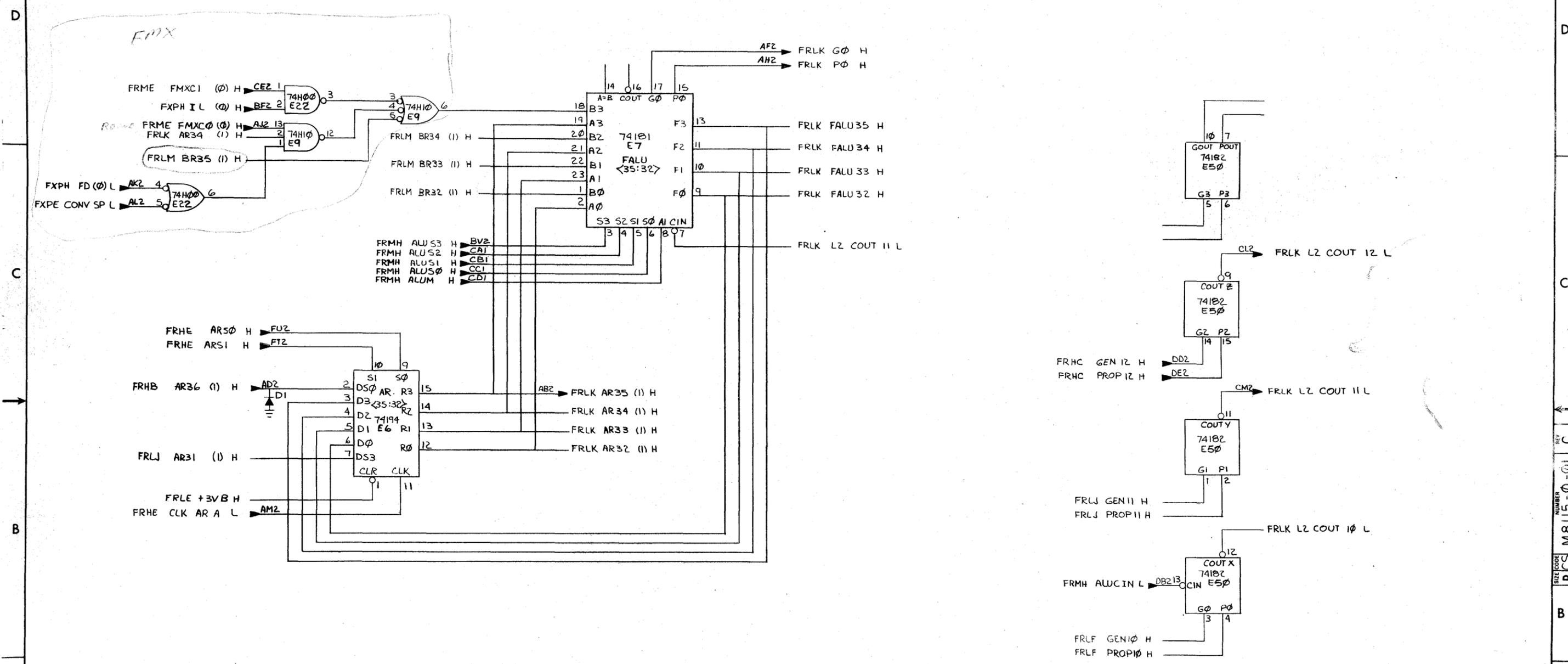
A



REV. C
NUMBER
D CS M 8115-0-01

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN. <i>Z. Carberry</i>	DATE 2/16/71	 digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS	ANGLES	ENG. <i>B. Hughes</i>	DATE 2/17/71		
.XXX = .005	±0° 30'	PROJ. ENG. <i>B. Hughes</i>	DATE 2/17/71		
.XX = .02		PROD. <i>B. Hughes</i>	DATE 2/17/71		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		TITLE FRACTION DATA PATH LOW ORDER (FRLJ)			
MATERIAL		NEXT HIGHER ASSY.		SIZE CODE	NUMBER
—//—		B-DD-11/45-0		D CS	M8115-0-01
FINISH		SCALE		REV.	
—//—		—//—		C	
SHEET 9 OF 14		DIST.			

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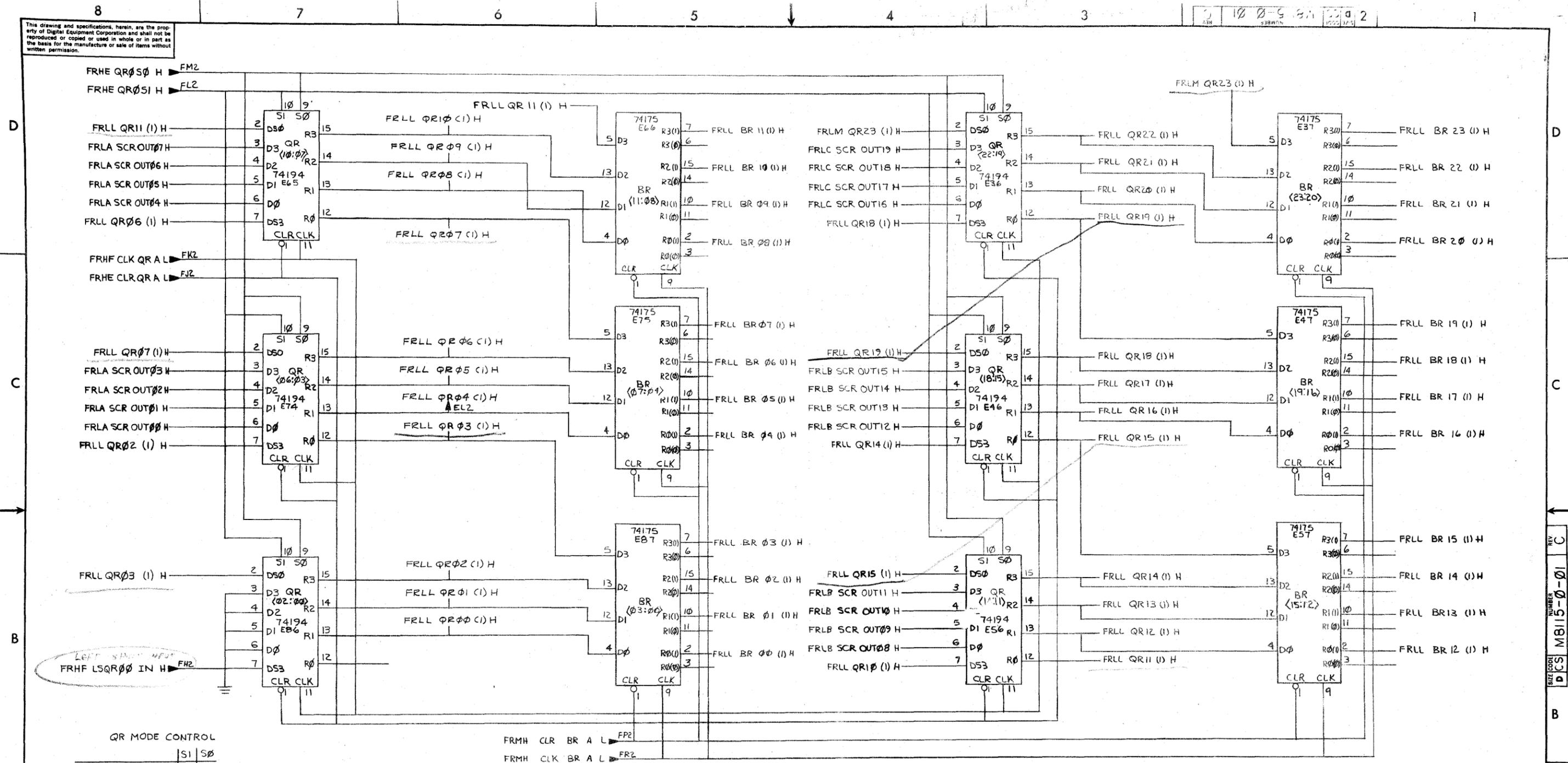
AR & FALU BITS 32 TO 35 & 2ND CARRY LOOKAHEAD SLOT 3

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN	DATE	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS	CHK	DATE	TITLE	
ANGLES	ENG	DATE	FRACTION DATA PATH	
XXX - .005	PROL ENG.	DATE	LOW ORDER	
XX - .02	PROD	DATE	(FRLK)	
X - .1	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE		
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
FINISH	SCALE		DCS	M8115-0-01
	SHEET 10 OF 14		DIST.	REV. C

BRUNING 40-522 15840
DEC FORM NO DRD 102-B

REV C
NUMBER M8115-0-01
SIZE CODE DCS

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QR MODE CONTROL

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

FRMH CLR BR A L FP2

FRMH CLK BR A L FR2

REV	CHANGE NO.

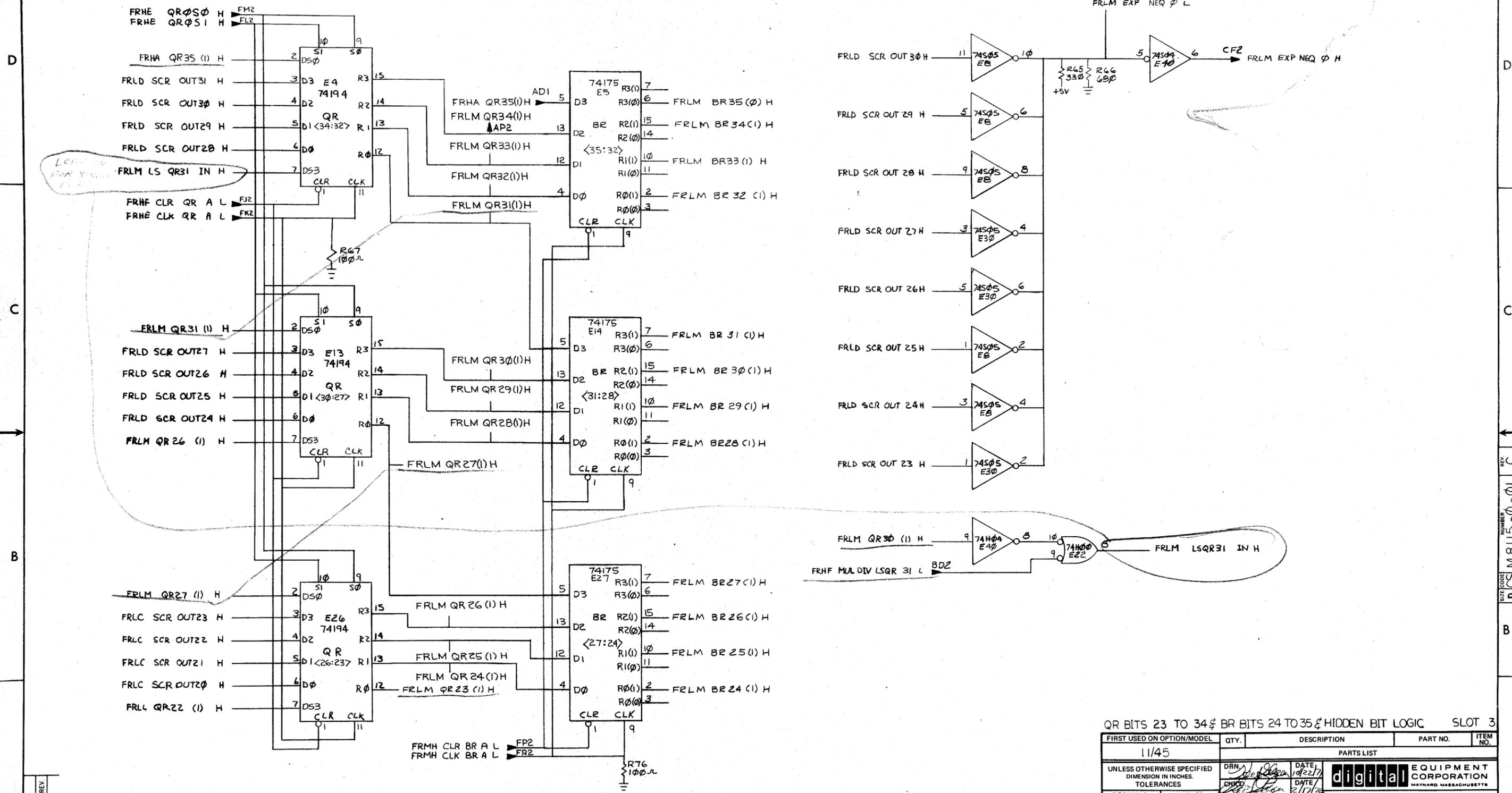
DEC FORM NO DRD 102-B

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: <i>[Signature]</i>	DATE: 10/22/71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .XXX = .005 .XX = .02 .X = .1	CHKD: <i>[Signature]</i>	DATE: 11/16/71		
ANGLES ±0° 30'	ENG: <i>[Signature]</i>	DATE: 11/16/71	TITLE FRACTION DATA PATH LOW ORDER (FRL)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROJ. ENG: <i>[Signature]</i>	DATE: 11/17/71		
MATERIAL --	NEXT HIGHER ASSY.	DATE: 11/17/71	SIZE CODE	NUMBER
FINISH --	B-DD-11/45-0	SCALE --	D CS	M8115-0-01
	SHEET 11 OF 14	DIST.		REV. C

REV. C
NUMBER M8115-0-01
REV. B

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

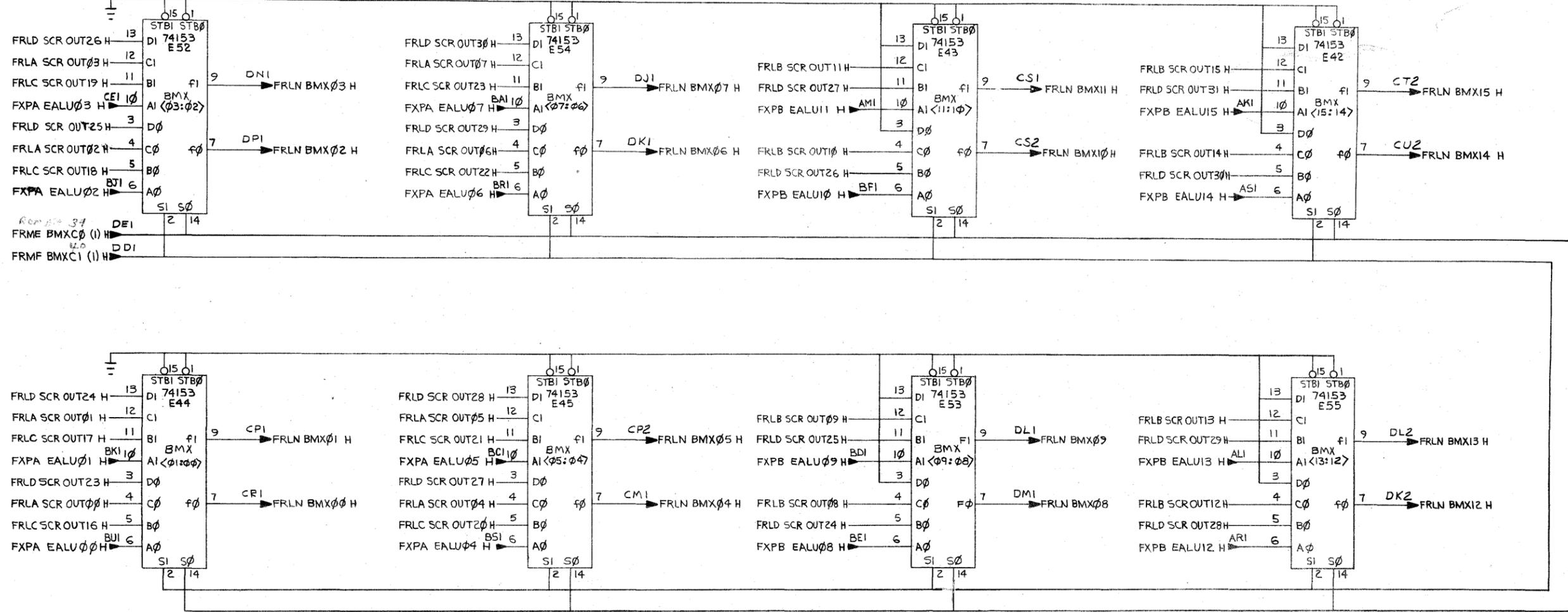
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN <i>[Signature]</i>	DATE 10/22/77	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .XXX = .005 .XX = .02 .X = .1	CHKD <i>[Signature]</i>	DATE 2/17/78		
ANGLES ±0° 30'	ENG. <i>[Signature]</i>	DATE 2/17/78	TITLE FRACTION DATA PATH LOW ORDER (FRLM)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ. ENG. <i>[Signature]</i>	DATE 2/17/78		
MATERIAL	PROD. <i>[Signature]</i>	DATE 2/17/78	NEXT HIGHER ASSY.	
FINISH			B-DD-11/45-0	SIZE CODE
			DCS M8115-0-01	NUMBER
				REV. C
				SHEET 12 OF 14
				DIST.

REV.	
CHANGE NO.	
CHK	

REV. C
NUMBER DCS M8115-0-01

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10-0-9118W S3 2



BMX CONTROL

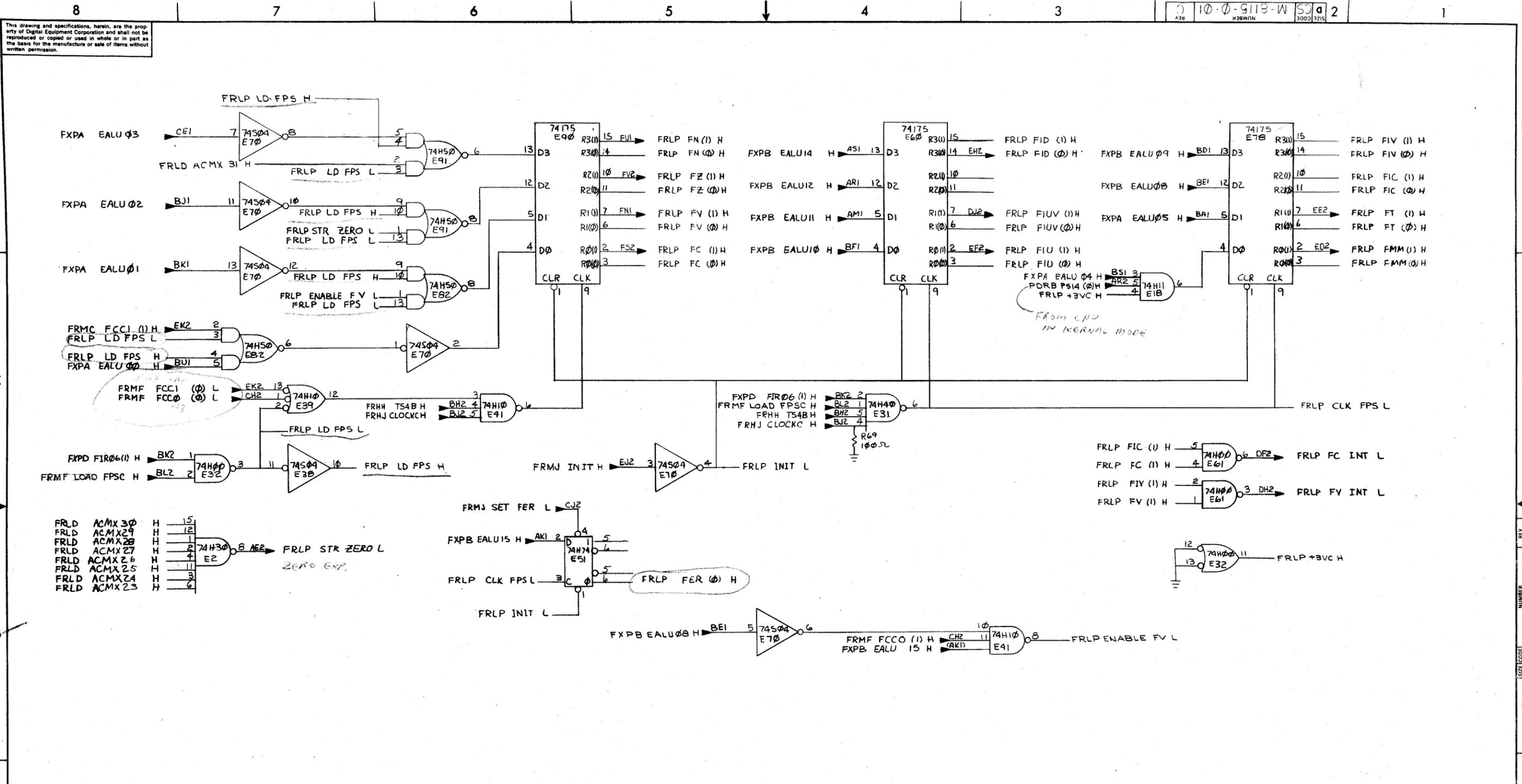
	SI	S0
EALU	L	L
ACH	L	H
ACL	H	L
EXP	H	H

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN. <i>R. Roberts</i>	DATE 10/26/71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .XXX = .005 .XX = .02 .X = .1		CHK'D. <i>R. Roberts</i>	DATE 2/17/72		
ANGLES ±0° 30'		ENG. <i>R. Roberts</i>	DATE 2/27/72	TITLE FRACTION DATA PATH LOW ORDER (FRLN)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		PROJ. ENG. <i>R. Roberts</i>	DATE 8/17/72		
MATERIAL		PROD. <i>R. Roberts</i>	DATE 2/17/72	NEXT HIGHER ASSY.	
FINISH		B-DD-11/45-0		SIZE CODE	NUMBER
		SCALE		D	M8115-0-01
		SHEET 13 OF 14		DIST.	REV. C

REV.	CHANGE NO.

REV. C
NUMBER M8115-0-01
SIZE CODE DCS

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- FRLD ACMX 30 H 15
- FRLD ACMX 29 H 12
- FRLD ACMX 28 H 11
- FRLD ACMX 27 H 8
- FRLD ACMX 26 H 4
- FRLD ACMX 25 H 11
- FRLD ACMX 24 H 9
- FRLD ACMX 23 H 6

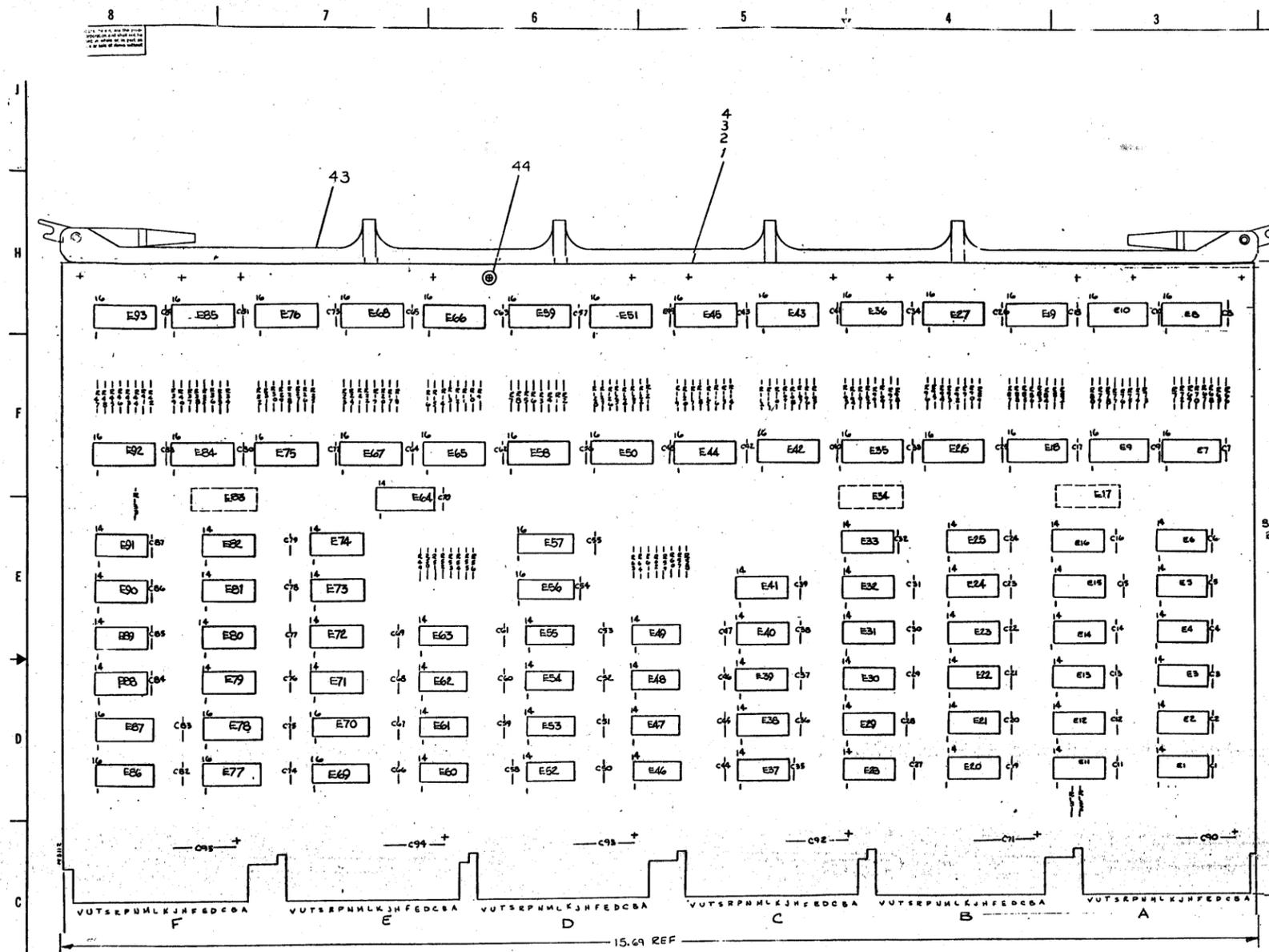
REV	
CHANGE NO.	
CHK	

DEC FORM NO. DRD 102-B

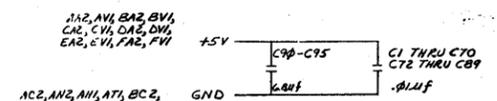
FPS (EXCLUDING FD & IL MODE BITS)		SLOT 3	
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.
11/45			
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN	DATE	 digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
DECIMALS	ANGLES	DATE	
.XXX = .005	±0° 30'	DATE	
.XX = .02		DATE	
.X = .1		DATE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ. ENG.	DATE	TITLE
	PROJ. ENG.	DATE	FRACTION DATA
	PROJ. ENG.	DATE	PATH LOW ORDER
	PROJ. ENG.	DATE	(FRLP)
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER
FINISH		SCALE	REV.
		SHEET	
		DIST.	

SIZE CODE DCS M 8115-0-01 REV C





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



AC2, AN2, AH1, AT1, BC2, BN2, EN1, BT1, CC2, CN2, CH1, CT1, DC2, DN2, DH1, DT1, EC2, EN2, EM1, ET1, FC2, FN2, FH1, FT1

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	REF	QTY	REF DESIGNATION	DESCRIPTION	PART NO.	REF
1	E85	IC DEC 74187 ROM	23-C21A2	31					
1	E76	IC DEC 74187 ROM	23-C22A2	32					
1	E68	IC DEC 74187 ROM	23-C23A2	37					
1	E66	IC DEC 74187 ROM	23-C24A2	36					
1	E59	IC DEC 74187 ROM	23-C25A2	35					
1	E51	IC DEC 74187 ROM	23-C26A2	34					
1	E45	IC DEC 74187 ROM	23-C27A2	33					
1	E43	IC DEC 74187 ROM	23-C28A2	32					
1	E36	IC DEC 74187 ROM	23-C29A2	31					
1	E27	IC DEC 74187 ROM	23-C30A2	30					
1	E19	IC DEC 74187 ROM	23-C31A2	29					
1	E10	IC DEC 74187 ROM	23-C32A2	28					
1	E8	IC DEC 74187 ROM	23-C46A2	27					
1	E2	IC DEC 74174	1909667	26					
4	E5, E6, E14, E25	IC DEC 74111	1909667	25					
4	E12, E13, E30, E32	IC DEC 74100	1909056	24					
4	E4, E22, E23, E31	IC DEC 74120	1905635	23					
10	E7, E35, E26, E42, E44, E58, E67, E75, E84, E92	IC DEC 74175	1910651	22					
3	E14, E33, E71	IC DEC 74150	1909060	21					
1	E11	IC DEC 74104	1909931	20					
5	E20, E28, E29, E73, E81	IC DEC 74140	1905586	19					
3	E1, E21, E24	IC DEC 74110	1909057	18					
2	E63, E79	IC DEC 74511	1910837	17					
3	E40, E82, E91	IC DEC 745140	1910546	16					
4	E41, E62, E74, E64	IC DEC 74500	1910532	15					
4	E47, E53, E61, E90	IC DEC 74504	1910534	14					
1	E88	IC DEC 74130	1909059	13					
6	E69, E70, E77, E78, E84, E87	IC DEC 745151	1910956	12					
6	E38, E39, E48, E49, E54, E55	IC DEC 74564	1910542	11					
8	E15, E37, E46, E52, E60, E72, E80, E83	IC DEC 74574	1910544	10					
1	R133	RESISTOR 100 Ω , 1/4W, 5%	1300229	9					
65	R2, R4, R6, 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, R60, R62, R64, R66, R68, R70, R72, R74, R76, R78, R80, R82, R84, R86, R88, R90, R92, R94, R96, R98, R100, R102, R104, R106, R108, R110, R112, R114, R116, R118, R120, R122, R124, R126, R128, R132	RESISTOR 680 Ω , 1/4W, 5%	1301424	8					
65	R1, R3, R5, 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, R59, R61, R63, R65, R67, R69, R71, R73, R75, R77, R79, R81, R83, R85, R87, R89, R91, R93, R95, R97, R99, R101, R103, R105, R107, R109, R111, R113, R115, R117, R119, R121, R123, R125, R127, R131	RESISTOR 330 Ω , 1/4W, 5%	1300295	7					
4	C1 THRU C70, C72 THRU C89	CAPACITOR .01uF, 100V, 20%	1001610	6					
1	E89	IC DEC 74518	1910536	5					
12	EYELET	9006732	44	6					
1		HANDLE MODULE	EPS-12107H-2	43					
1	E57	IC DEC 74187 ROM	23-C18A2	42					
1	E56	IC DEC 74187 ROM	23-C19A2	41					
1	E93	IC DEC 74187 ROM	23-C20A2	40					

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	REF	QTY	REF DESIGNATION	DESCRIPTION	PART NO.	REF
4	E9, E18, E58, C65	IC DEC 745175	1910957	46	88	C1 THRU C70, C72 THRU C89	CAPACITOR .01uF, 100V, 20% D-SC	1001610	6
1	E89	IC DEC 74518	1910536	45					
12		EYELET	9006732	44	6	C90 THRU C95	CAPACITOR .5uF, 35V, 20%	1000067	5
1		HANDLE MODULE	EPS-12107H-2	43	1		ETCHED CIRCUIT BOARD	5009862	4
1	E57	IC DEC 74187 ROM	23-C18A2	42	1		MODULE ECO HISTORY	B-MH-MB12-0-6	3
1	E56	IC DEC 74187 ROM	23-C19A2	41	1		ASSY/DRILLING HOLE LAYOUT	E-AH-MB12-0-5	2
1	E93	IC DEC 74187 ROM	23-C20A2	40	1		XY COORDINATE HOLE LOCATION	KCO-MB12-0-4	1

IC TYPE	QTY	LOCATIONS
DEC 74187	8	IC
DEC 745151	8	IC
IC TYPE	QTY	LOCATIONS
GND	+	

ITEM NO.	AWG	FROM PT	TO PT

ETCH BOARD REV D

SEMICONDUCTOR CONVERSION CHART

DATE: 11/11/77

BY: [Signature]

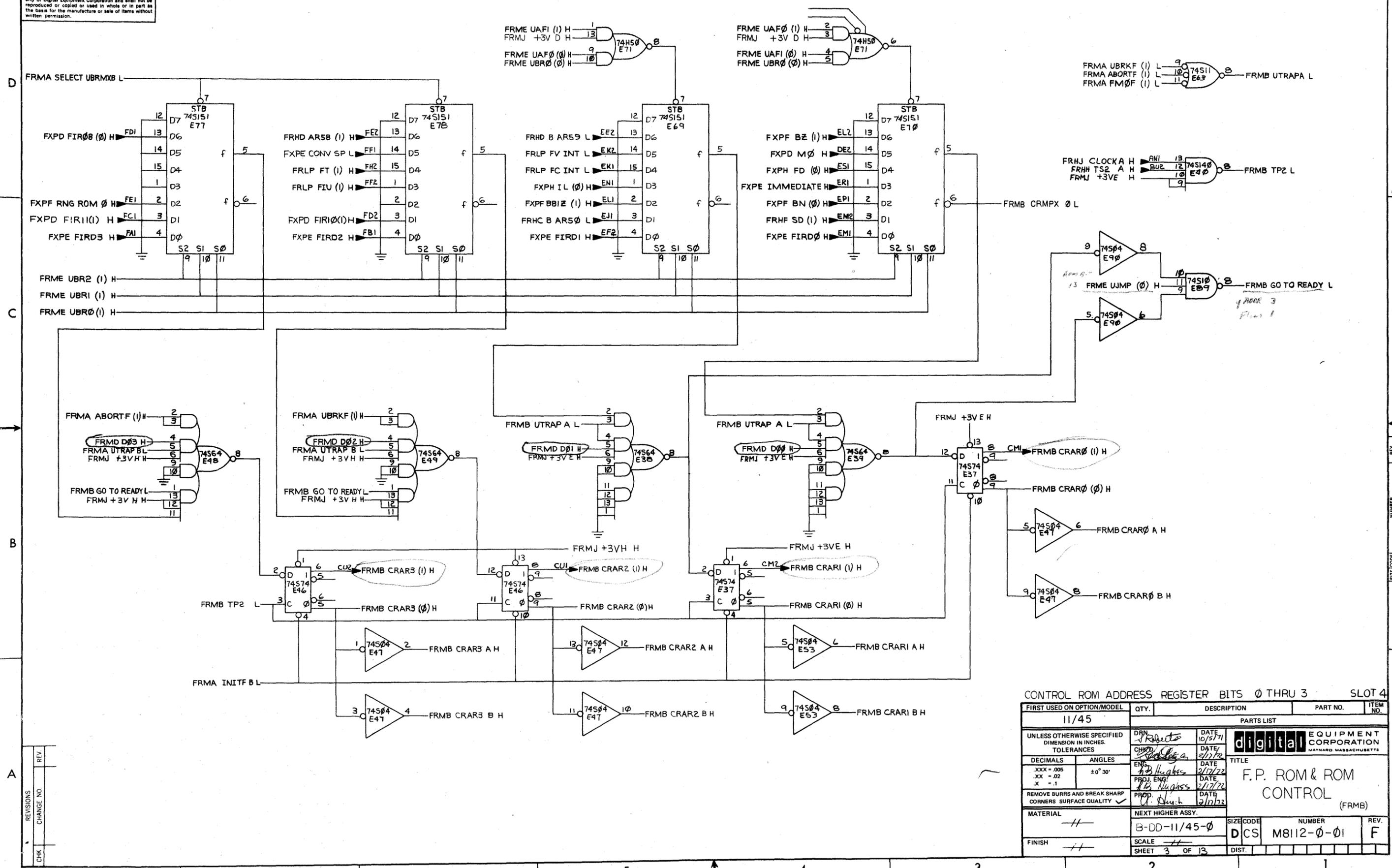
REVISIONS:

NO.	DATE	DESCRIPTION
1	11/11/77	ISSUED FOR FAB

CONTROL



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CONTROL ROM ADDRESS REGISTER BITS 0 THRU 3 SLOT 4

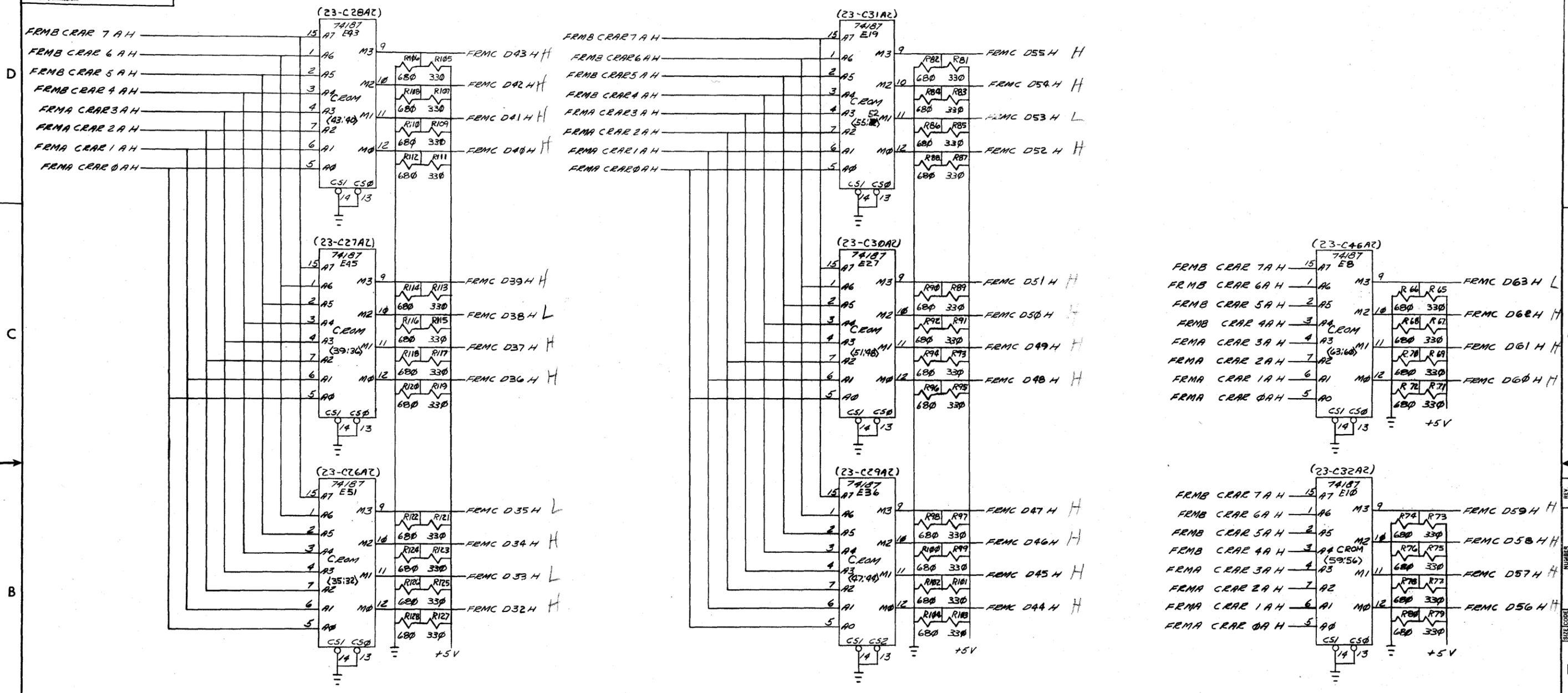
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS	ANGLES	TITLE		
.XXX = .005	±0° 30'	F.P. ROM & ROM CONTROL (FRMB)		
.XX = .02				
.X = .1		REMOVED BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		
MATERIAL		NEXT HIGHER ASSY.		
FINISH		SCALE		
		SHEET 3 OF 13		
		SIZE CODE	NUMBER	REV.
		DCS	M8112-0-01	F
		DIST.		

REV.	CHANGE NO.

SIZE CODE: DCS
 NUMBER: M8112-0-01
 REV: B

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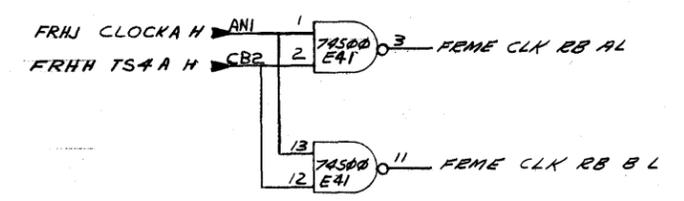
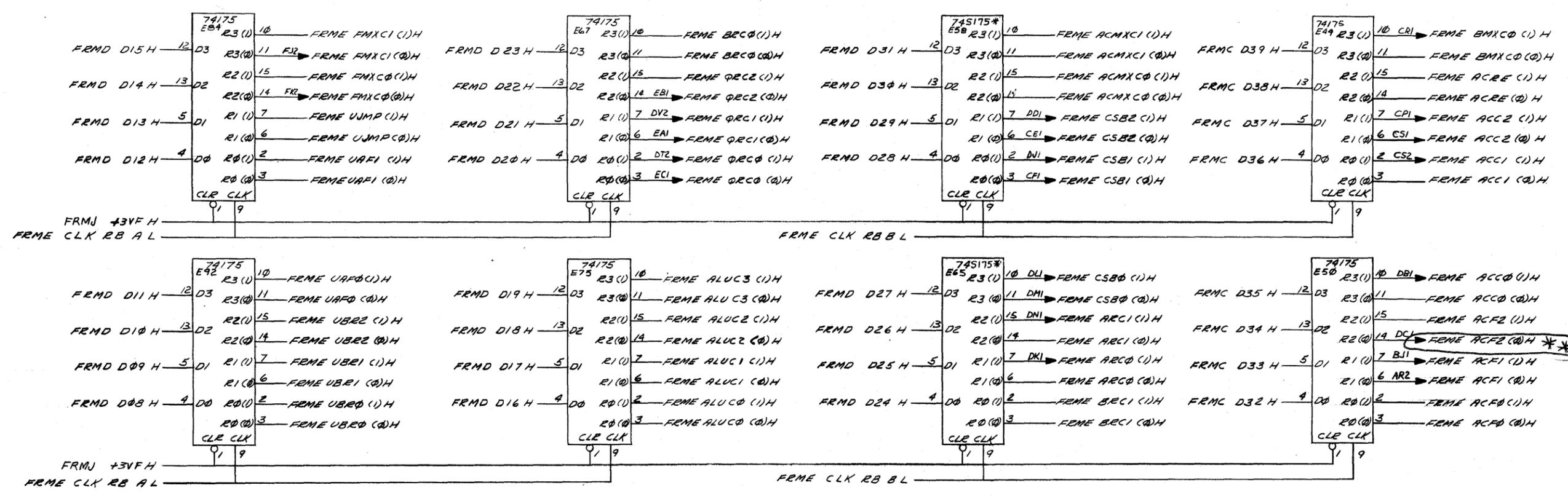
ROM 256x4



REV.	
CHANGE NO.	
CHK	

CONTROL ROM DATA BUFFER BITS 32 TO 63		SLOT 4	
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.
11/45			
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.	DRN. <i>X. Davis</i>	DATE 10-1-71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
TOLERANCES	CHK/DWG. <i>[Signature]</i>	DATE 2/17/72	
DECIMALS .005	ENG. <i>[Signature]</i>	DATE 2/17/72	TITLE FP ROM & ROM CONTROL (FRMC)
ANGLES ±0° 30'	PROJ. ENG. <i>[Signature]</i>	DATE 2/17/72	
.XX = .02	PROD. <i>[Signature]</i>	DATE 2/17/72	
.X = .1			
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY			
MATERIAL	NEXT HIGHER ASSY.		
+	B-DD-11/45-0	SIZE CODE	NUMBER
+		DCS M8112-0-01	REV. F
FINISH	SCALE	SHEET 4 OF 13	DIST.

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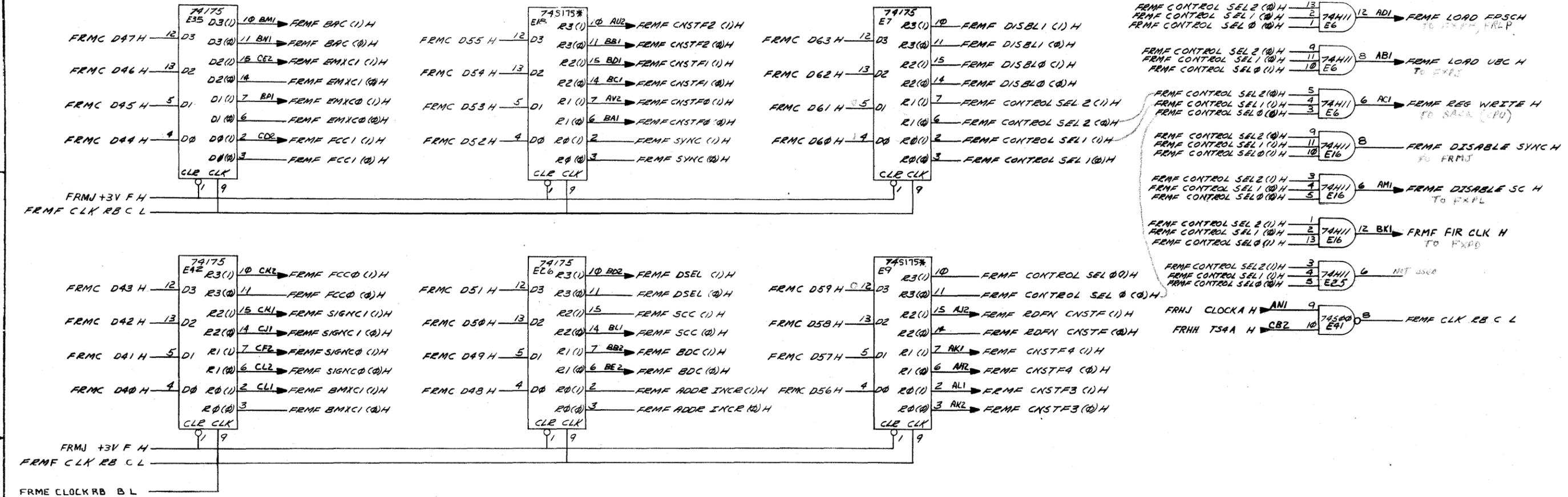
* NOTE: THE 745175 AND 74175-1 ARE INTERCHANGEABLE.

SEE MAN. FOR ROM
BITS Page 4-13: 4-18

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45			PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN. <i>A. Davis</i>	DATE 10-9-71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .XXX = .005	ANGLES ±0° 30'	CHKD. <i>[Signature]</i>	DATE 2/17/72	TITLE F.P. ROM & ROM CONTROL (FRME)	
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓		ENG. <i>H.B. Hughes</i>	DATE 2/17/72	MATERIAL NEXT HIGHER ASSY.	
		PROJ. ENG. <i>H.B. Hughes</i>	DATE 2/17/72	FINISH SCALE +	
		PRD. <i>A. Davis</i>	DATE 2/17/72	SHEET 6 OF 13	
		SIZE CODE B-DD-11/45-0		NUMBER DCSM8112-0-01	REV. F

REV.	CHANGE NO.	DESCRIPTION

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*NOTE: THE 745175 AND 74175-1 ARE INTERCHANGEABLE.

REV	CHANGE NO

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																						
DECIMALS	ANGLES	TITLE																				
.XXX = .006	±0° 30'	F.P. ROM & ROM CONTROL (FRMF)																				
.XX = .02		REVISIONS																				
.X = .1		<table border="1"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>10-5-71</td> <td>R. D. ...</td> </tr> <tr> <td>2</td> <td>2/12/72</td> <td>...</td> </tr> <tr> <td>3</td> <td>2/17/72</td> <td>...</td> </tr> <tr> <td>4</td> <td>2/17/72</td> <td>...</td> </tr> <tr> <td>5</td> <td>2/17/72</td> <td>...</td> </tr> </tbody> </table>			REV	DATE	BY	1	10-5-71	R. D. ...	2	2/12/72	...	3	2/17/72	...	4	2/17/72	...	5	2/17/72	...
REV	DATE	BY																				
1	10-5-71	R. D. ...																				
2	2/12/72	...																				
3	2/17/72	...																				
4	2/17/72	...																				
5	2/17/72	...																				
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.																		
		B-DD-11/45-0	DCSM8112-0-01	F																		
FINISH	SCALE	SHEET	OF																			
		7	OF 13																			

FLWS STATE	ADR	DL1	DL0	CSL	RDF	CST	SYN	DSL	SCC	BDC	AIC	BAC	EMX	FCC	SGN	BMX	ACR	ACC	ACF	ACM	CSB	ARC	BRC	QRC	ALU	FMX	UJP	UAF	UBR	NAD
01 TRP,00	000	1	0	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	0	3	7	007
11 DIV,12	001	1	1	7	0	00	1	1	1	0	1	1	2	3	1	0	1	7	7	3	7	3	2	7	11	3	1	3	7	320
01 TRP,70	002	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	0	5	3	7	3	3	7	05	3	0	3	7	007
01 RDY,00	003	0	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	6	5	0	7	3	3	7	17	3	1	3	7	006
01 TRP,10	004	0	1	7	0	16	1	1	1	1	1	1	2	3	3	3	0	2	5	1	7	3	3	7	05	3	1	3	7	242
02 NOM,04	005	1	1	7	1	37	1	1	1	1	1	1	3	3	0	3	1	4	0	3	7	3	2	4	17	3	1	3	7	021
01 RDY,10	006	1	1	7	1	37	1	1	1	0	1	1	3	3	3	2	1	6	5	3	7	3	3	7	17	3	1	3	7	072
09 ADD,62	007	1	1	7	1	37	1	1	1	0	1	1	0	3	0	0	1	7	7	3	7	0	3	7	02	3	1	3	1	342
01 TRP,40	010	1	0	7	1	37	1	1	1	1	1	1	3	3	3	3	0	6	5	1	7	3	3	7	14	3	1	3	7	275
12 NRM,08	011	1	1	7	0	01	1	1	1	0	1	1	2	3	3	0	1	7	7	3	7	2	1	7	11	3	1	0	4	262
02 NOM,08	012	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	4	2	3	7	3	3	7	05	3	0	3	7	007
12 NRM,02	013	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	3	3	3	7	17	3	1	3	7	321
04 LD,,16	014	1	1	7	1	25	0	1	1	1	1	1	1	3	3	3	0	6	4	1	7	3	3	7	05	3	1	3	7	237
12 NRM,10	015	1	1	7	0	01	1	1	1	0	1	1	2	3	3	0	1	7	7	3	7	2	1	7	11	3	1	0	4	262
02 NOM,16	016	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	4	0	3	7	3	3	7	05	3	0	3	7	007
12 NRM,06	017	1	1	7	1	37	1	1	1	0	1	1	3	3	3	0	1	7	7	3	7	3	1	7	17	3	1	0	4	262
01 TRP,50	020	0	1	7	0	14	1	1	1	1	1	1	2	3	3	3	0	6	5	1	7	3	3	7	05	3	1	3	7	275
02 NOM,06	021	1	1	7	1	37	1	1	1	1	1	1	0	3	3	3	0	0	2	2	7	3	3	7	05	3	0	1	4	012
02 NOM,20	022	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	4	0	1	7	3	3	7	14	3	0	3	7	007
10 MUL,10	023	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	0	3	1	7	3	3	7	14	3	1	1	4	304
02 NOM,12	024	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	4	2	3	7	3	2	4	17	3	1	3	7	025
02 NOM,14	025	1	1	7	1	37	1	1	1	1	1	1	0	3	3	3	0	0	0	2	7	3	3	7	05	3	0	1	4	016
05 LD,,56	026	1	1	7	1	37	1	1	1	0	1	1	3	3	3	1	1	4	3	7	3	3	3	7	17	3	1	3	7	075
03 NOM,52	027	1	1	7	1	37	1	1	1	0	1	1	3	3	3	0	0	4	4	1	7	3	3	7	14	3	1	3	7	247
04 LD,,06	030	1	1	7	1	25	0	1	1	1	1	1	1	3	3	3	0	6	4	1	7	3	3	7	05	3	1	0	1	060
02 NOM,28	031	1	1	7	1	37	1	1	1	1	1	1	3	0	3	3	1	7	7	1	7	3	3	7	00	3	0	3	7	007
01 TRP,30	032	1	1	7	1	37	1	1	1	1	1	1	0	3	3	3	0	1	5	1	7	3	3	7	05	3	0	3	7	007
10 MUL,12	033	1	1	7	1	37	1	1	1	1	1	1	3	0	3	3	0	0	2	1	7	3	3	7	14	3	0	1	4	216
05 LD,,70	034	0	1	7	0	00	1	1	1	1	1	0	2	3	3	0	1	7	7	3	7	3	2	7	11	3	1	3	7	035
05 LD,,72	035	1	1	7	1	37	1	1	1	1	1	1	0	1	3	3	0	0	2	2	7	3	3	7	05	3	1	1	6	226
11 LCI,40	036	1	1	7	0	17	1	1	1	0	1	1	2	3	3	0	1	7	7	3	5	3	2	7	11	3	1	3	7	326
08 ADD,38	037	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	0	3	7	11	3	1	3	7	273

FLWS STATE	ADR	DL1	DL0	CSL	RDF	CST	SYN	DSL	SCC	BDC	AIC	BAC	EMX	FCC	SGN	BMX	ACR	ACC	ACF	ACM	CSB	ARC	BRC	QRC	ALU	FMX	UJP	UAF	UBR	NAD
02 NOM,34	040	1	1	7	1	37	1	1	1	1	1	1	3	0	3	3	0	1	0	1	7	3	3	7	00	3	0	3	7	007
02 NOM,18	041	0	1	7	1	37	1	1	1	1	1	1	3	0	3	3	0	0	0	1	7	3	3	7	14	3	0	1	4	022
02 NOM,02	042	0	1	7	1	37	1	1	1	1	1	1	0	3	3	3	1	0	0	3	7	3	2	4	17	3	1	3	7	005
02 NOM,24	043	0	1	7	1	37	1	1	1	0	1	1	3	3	3	1	1	1	0	3	7	3	3	7	17	3	1	3	7	073
02 NOM,10	044	0	1	7	1	37	1	1	1	1	1	0	3	3	3	3	1	0	2	3	7	3	2	4	17	3	1	1	4	024
02 NOM,22	045	0	1	4	1	37	1	1	0	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	00	3	0	3	7	007
08 ADD,12	046	1	1	7	1	37	1	1	1	1	1	1	0	3	3	3	1	7	7	3	7	3	3	7	02	3	1	0	6	347
08 ADD,11	047	1	1	7	1	37	1	1	1	1	1	1	3	3	2	3	1	7	7	3	7	3	3	7	17	3	1	0	6	327
03 NOM,54	050	0	1	0	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	0	3	7	007
02 NOM,32	051	1	1	7	0	11	1	1	1	0	1	1	2	3	3	0	1	7	7	3	7	3	3	7	07	3	1	1	6	040
03 NOM,56	052	0	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	0	2	2	7	3	3	7	00	3	0	1	4	376
03 NOM,50	053	0	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	2	4	1	7	3	3	7	00	3	1	3	7	027
14 SCI,14	054	1	1	7	0	07	1	1	0	1	1	1	2	3	3	3	1	7	7	3	7	3	3	7	06	3	1	3	7	345
14 SCI,22	055	1	1	7	1	37	1	1	1	1	1	1	3	2	3	3	0	0	4	1	7	3	3	7	14	3	1	3	7	333
03 NOM,64	056	0	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	0	2	3	7	3	3	4	17	3	1	3	7	334
14 SCI,20	057	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	4	4	3	7	3	3	7	00	3	1	3	7	130
10 MUL,00	060	0	1	7	0	31	1	1	0	0	1	1	2	3	3	3	1	0	2	3	7	3	2	0	05	3	1	1	4	220
09 ADD,54	061	1	1	7	1	37	1	1	1	1	1	1	3	3	0	3	1	7	7	3	7	0	3	7	00	3	1	3	7	273
03 NOM,62	062	0	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	2	7	17	3	1	3	7	021
09 ADD,32	063	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	0	3	7	10	3	1	2	6	271
08 ADD,00	064	0	1	7	1	37	1	1	1	0	1	1	3	3	3	3	1	0	2	3	7	3	2	0	17	3	1	1	4	114
03 NOM,60	065	0	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	2	3	6	17	3	0	3	7	007
02 NOM,00	066	0	1	1	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	0	3	7	007
02 NOM,36	067	0	1	0	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	0	3	7	007
11 DIV,00	070	0	1	7	0	35	1	1	0	0	1	1	2	3	3	3	1	0	2	3	7	3	2	0	05	3	1	1	4	310
02 NOM,30	071	1	1	7	0	11	1	1	1	0	1	1	2	3	3	0	1	7	7	3	7	3	3	7	11	3	1	1	6	040
01 RDY,20	072	1	1	5	1	35	1	0																						

FLWS	STATE	ADR	DL1	DL0	CSL	RDF	CST	SYN	DSL	SCC	BDC	AIC	BAC	EMX	FCC	SGN	BMX	ACR	ACC	ACF	ACM	CSB	ARC	BRC	QRC	ALU	FMX	UJP	UAF	UBR	NAD
07	STR,64	100	1	1	7	1	35	0	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	0	2	4	121
07	STR,62	101	0	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	1	2	4	121
10	MUL,24	102	1	1	7	0	00	1	1	1	0	1	1	2	3	3	0	1	7	7	3	7	1	3	7	06	3	0	3	7	360
10	MOD,06	103	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	0	3	1	7	3	3	7	14	3	1	1	4	260
06	STR,38	104	1	1	7	1	35	0	1	1	0	0	1	3	3	3	1	1	1	5	3	7	3	3	7	17	3	0	1	3	132
06	STR,40	105	1	1	2	1	35	0	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	0	3	7	007
10	MUL,26	106	1	1	7	0	00	1	1	1	0	1	1	2	3	3	3	1	7	7	3	7	3	3	7	02	3	1	3	7	360
08	ADD,30	107	1	1	7	1	37	1	1	1	0	1	1	2	3	3	3	1	7	7	3	7	3	3	7	15	3	1	3	7	125
12	NRM,30	110	1	1	7	0	12	1	1	1	1	1	1	2	3	3	3	0	6	5	1	7	3	3	7	05	3	1	0	3	271
12	NRM,32	111	1	1	7	0	10	1	1	1	1	1	1	2	3	3	3	0	6	5	1	7	3	3	7	05	3	0	2	5	275
10	MUL,20	112	1	1	7	1	37	1	1	1	0	1	1	3	3	3	0	1	7	7	3	7	1	1	7	15	3	1	0	4	262
10	MOD,04	113	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	0	3	1	7	3	3	7	14	3	1	1	4	260
08	ADD,04	114	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	4	2	3	7	3	2	4	17	3	1	3	7	120
08	ADD,02	115	1	1	7	1	37	1	1	1	1	1	0	3	3	3	3	1	0	0	3	7	0	3	4	12	3	1	1	6	370
10	MUL,22	116	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	1	7	17	3	1	0	4	262
08	ADD,36	117	1	1	7	1	37	1	1	1	1	1	1	3	3	0	3	1	7	7	3	7	3	3	7	17	3	1	3	7	021
08	ADD,06	120	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	4	0	3	7	3	3	4	17	3	1	3	7	115
07	STR,54	121	0	1	7	0	06	1	1	1	1	1	1	2	3	3	3	0	6	5	1	7	3	3	7	05	3	1	3	7	275
04	LD,,02	122	1	1	7	1	25	0	1	1	1	0	1	1	3	3	3	0	2	4	1	7	3	3	7	05	3	1	1	4	232
04	LD,,08	123	0	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	2	4	1	7	3	3	7	14	3	1	3	7	233
08	ADD,28	124	1	1	7	1	37	1	1	1	0	1	1	3	3	3	3	1	0	2	3	4	3	2	7	17	3	1	0	0	037
08	ADD,32	125	1	1	7	1	37	1	1	1	0	1	1	3	3	3	3	1	0	0	3	2	3	3	7	17	3	1	0	0	037
04	LD,,20	126	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	4	4	1	7	3	3	7	14	3	1	3	7	237
10	MOD,02	127	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	1	0	2	103
14	SCI,34	130	1	1	7	0	00	1	1	1	1	1	1	2	0	3	3	1	7	7	2	7	3	3	7	05	3	1	3	7	235
05	LD,,60	131	1	1	7	1	37	0	1	1	1	1	1	3	0	3	3	1	7	7	1	7	3	3	7	00	3	0	3	7	007
06	STR,08	132	1	1	7	1	35	0	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	0	3	7	007
06	STR,34	133	1	1	2	1	35	0	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	0	3	7	007
12	NRM,24	134	1	1	7	0	01	1	1	1	0	1	1	2	3	3	0	1	7	7	3	7	2	3	7	11	3	1	1	4	266
12	NRM,22	135	1	1	7	0	01	1	1	1	0	1	1	2	3	3	0	1	7	7	3	7	2	3	7	11	3	1	1	4	266
12	NRM,26	136	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	0	3	2	110
12	NRM,28	137	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	1	3	7	110

FLWS	STATE	ADR	DL1	DL0	CSL	RDF	CST	SYN	DSL	SCC	BDC	AIC	BAC	EMX	FCC	SGN	BMX	ACR	ACC	ACF	ACM	CSB	ARC	BRC	QRC	ALU	FMX	UJP	UAF	UBR	NAD	
05	LD,,66	140	1	1	7	1	35	0	1	1	1	1	1	3	0	3	3	1	7	7	1	7	3	3	7	00	3	0	3	7	007	
06	STR,00	141	1	1	7	1	37	0	1	1	0	1	1	3	3	3	0	1	7	7	3	7	3	3	7	03	3	1	3	7	210	
06	STR,10	142	1	1	7	1	37	0	1	1	0	1	1	3	3	3	1	1	1	2	3	7	3	3	7	17	3	1	3	7	170	
10	MOD,14	143	1	1	7	1	37	1	1	0	1	1	1	3	3	3	3	1	7	7	3	7	3	3	3	00	3	1	3	7	211	
06	STR,42	144	0	1	7	0	10	0	1	1	1	1	1	2	3	3	3	0	6	5	1	7	3	3	7	05	3	0	2	5	275	
06	STR,24	145	1	1	7	1	35	0	1	1	0	0	1	3	3	3	2	1	6	4	3	7	3	3	7	17	3	1	3	7	265	
06	STR,18	146	1	1	7	1	37	0	1	1	0	1	1	3	3	3	1	1	1	4	3	7	3	3	7	17	3	1	3	7	353	
08	ADD,26	147	1	1	7	1	37	1	1	0	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	00	3	1	3	7	124	
07	STR,50	150	1	1	7	1	37	0	1	1	0	1	1	3	3	3	2	1	2	4	3	7	3	3	7	17	3	1	3	7	366	
05	LD,,64	151	1	1	3	0	11	0	1	1	0	1	1	2	3	3	0	1	7	7	3	7	3	3	7	07	3	1	1	6	140	
07	STR,56	152	1	1	7	1	37	0	1	1	0	1	1	3	3	3	2	1	2	4	3	7	3	3	7	17	3	1	2	3	361	
10	MOD,08	153	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	0	3	1	7	3	3	7	14	3	1	1	4	260	
06	STR,32	154	1	1	7	1	37	0	1	1	0	1	1	3	3	3	2	1	1	1	4	3	7	3	3	7	17	3	1	1	5	132
06	STR,30	155	1	1	7	1	37	0	1	1	0	1	1	3	3	3	2	1	6	5	3	7	3	3	7	17	3	1	1	5	132	
06	STR,04	156	1	1	7	1	35	0	1	1	1	0	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	0	1	4	172	
08	ADD,24	157	1	1	7	1	37	1	1	1	0	1	1	0	3	3	0	1	7	7	3	7	3	3	7	12	3	1	0	0	037	
06	STR,36	160	1	1	7	1	37	0	1	1	0	1	1	3	3	3	2	1	2	5	3	7	3	3	7	17	3	1	1	5	104	
11	LCI,30	161	1	1	7	0	20	1	1	1	0	1	1	2	3	3	0	1	4	4	3	7	3	3	4	12	3	1	3	7	036	
13	SCF,30	162	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	1	7	17	3	1	3	7	332	
11	LCI,10	163	1	1	7	0	20	1	1	1	0	1	1	2	3	3	0	1	7	7	3	5	3	2	7	11	3	1	3	7	326	
13	SCF,70	164	1	1	7	0	01	1	1	1	0	1	1	2	3	3	0	1	7	7	3	7	2	3	7	11	3	1	3	7	165	
13	SCF,60	165	1	1	7	1	37	1	1	1	1	1	1	3	1	3	3	0	0	0	2	7	3	3	7	00	3	1	2	6	164	
13	SXP,40	166	1	1	7	1	37	0	1	1	0	1	1	3	3	3	2	1	6	5	3	7	3	3	7	17	3	1	3	7	274	
13	SXP,20	167	1	1	7	1	37	1	1	1	1	1	1	3	0	3	3	1	7	7	0	7	3	3	7	17	3	1	3	7	235	
06	STR,12	170	1	1	7	1	35	0	1	1	0	0	1	3	3	3	2	1	2	2	3	7	3	3	7	17	3	0</				

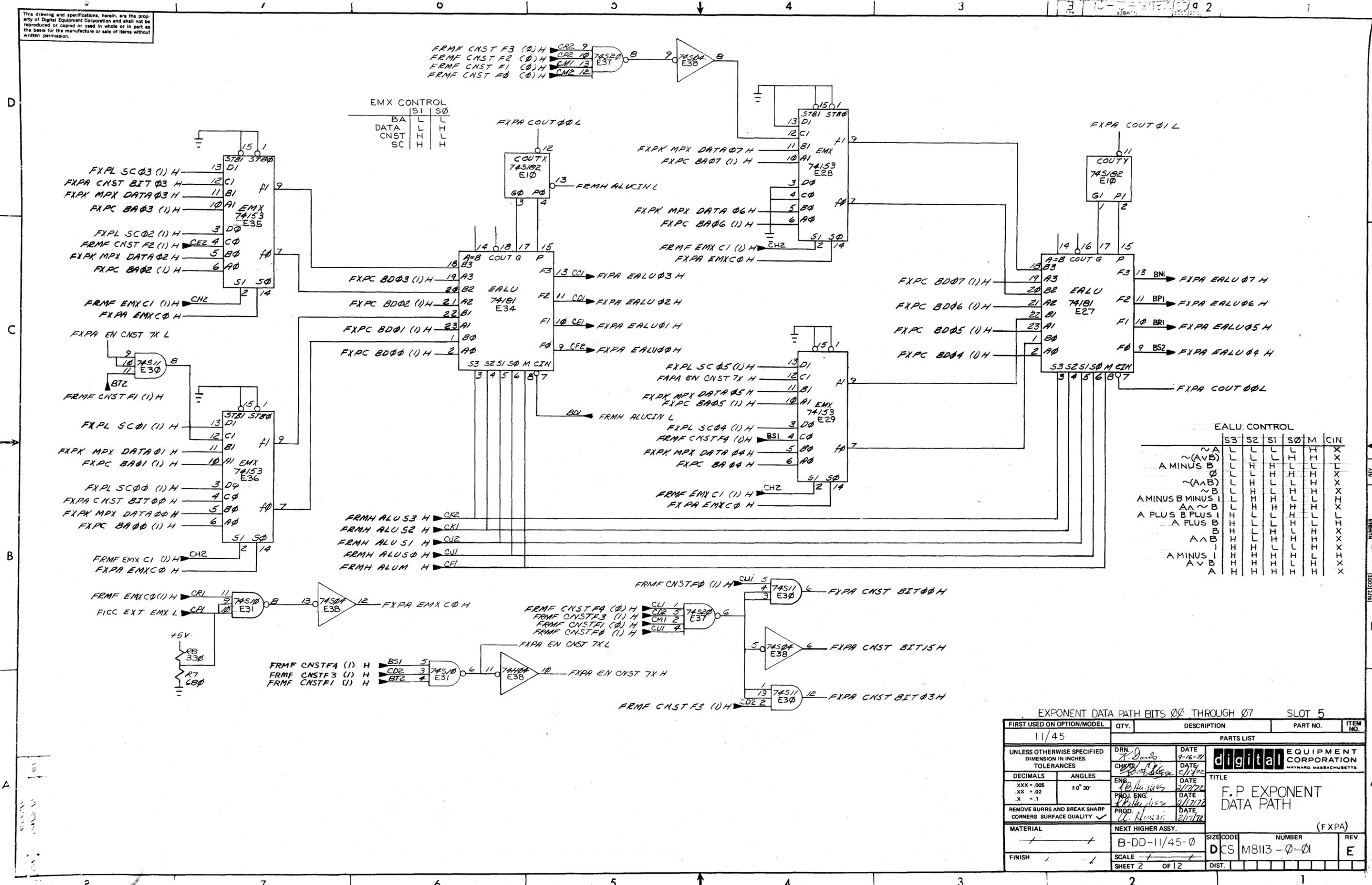
FLWS STATE	ADR	DL1	DL0	CSL	RDF	CST	SYN	DSL	SCC	BDC	AIC	BAC	EMX	FCC	SGN	BMX	ACR	ACC	ACF	ACM	CSB	ARC	BRC	QRC	ALU	FMX	UJP	UAF	UBR	NAD
XX XXX,XX	200	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	1	3	7	377
XX XXX,XX	201	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	1	3	7	377
04 LD,,13	202	1	1	7	1	25	0	1	1	1	0	1	3	3	3	0	2	4	1	7	3	3	7	05	3	1	1	4	236	
04 LD,,18	203	0	1	7	1	37	1	1	1	1	1	1	3	3	3	0	2	4	1	7	3	3	7	14	3	1	3	7	126	
09 ADD,,70	204	1	1	7	1	37	1	1	1	1	1	1	3	3	2	3	1	7	7	3	7	3	3	7	17	3	1	1	2	350
09 ADD,,68	205	1	1	7	1	37	1	1	1	1	1	1	3	3	2	3	1	7	7	3	7	0	3	7	15	3	1	2	6	350
04 LD,,26	206	1	1	7	1	25	0	1	1	1	0	1	3	3	3	0	2	4	1	7	3	3	7	05	3	1	1	4	212	
04 LD,,30	207	0	1	7	1	37	1	1	1	1	1	1	3	3	3	0	2	4	1	7	3	3	7	14	3	1	3	7	233	
06 STR,,02	210	1	1	7	1	35	0	1	1	1	0	1	3	0	3	3	1	7	7	1	7	3	3	7	00	3	0	1	3	156
10 MOD,,12	211	1	1	7	0	00	1	1	1	0	1	0	2	3	3	0	1	7	7	3	6	3	2	7	11	3	1	3	7	175
11 LCF,,10	212	0	1	7	1	37	1	1	1	0	1	1	3	3	3	1	0	0	3	7	3	2	0	17	3	1	1	4	324	
04 LD,,28	213	1	1	7	1	25	0	1	1	1	0	1	3	3	3	0	5	4	1	7	3	3	7	05	3	1	3	7	074	
01 RDY,,40	214	1	1	7	1	35	0	1	1	1	1	1	3	3	3	0	1	7	7	3	7	3	7	03	3	1	3	7	272	
14 SCI,,32	215	1	1	7	1	37	1	1	1	1	1	1	3	3	3	0	4	4	3	7	3	3	7	00	3	1	3	7	130	
09 ADD,,58	216	1	1	7	1	37	1	1	1	1	1	1	3	3	3	0	4	2	1	7	3	3	7	14	3	0	3	7	007	
14 SCI,,30	217	1	1	7	1	37	1	1	1	1	1	1	3	2	3	3	0	0	4	1	7	3	3	7	14	3	1	3	7	333
10 MUL,,04	220	1	1	7	0	33	1	1	0	1	1	1	2	3	3	3	1	4	2	3	7	3	2	4	05	3	1	3	7	221
10 MUL,,02	221	1	1	7	1	37	1	1	1	1	1	0	3	3	3	1	0	0	3	7	0	3	4	03	3	1	1	6	224	
13 SCF,,05	222	1	1	7	1	37	1	1	1	1	1	1	0	0	3	3	0	0	0	2	7	3	3	7	05	3	1	1	4	330
13 SCF,,15	223	1	1	7	1	37	1	1	1	1	1	1	3	3	0	3	1	7	7	3	7	3	1	7	17	3	1	3	7	222
10 MUL,,08	224	1	1	7	1	37	1	1	1	0	1	1	0	3	3	0	1	4	0	3	7	3	3	4	11	3	1	1	6	230
10 MUL,,06	225	1	1	7	1	37	1	1	1	1	1	1	3	3	3	1	7	7	3	7	3	3	7	17	3	1	0	6	023	
05 LD,,74	226	1	1	7	1	37	1	1	1	1	1	1	3	3	3	1	7	7	3	7	3	3	7	17	3	0	3	2	110	
05 LD,,76	227	1	1	7	1	37	1	1	1	1	1	1	3	0	3	3	1	7	7	1	7	3	3	7	14	3	1	3	7	110
10 MUL,,16	230	1	1	7	1	37	1	1	1	1	1	1	3	3	3	1	7	7	3	0	3	3	7	17	3	1	3	7	362	
10 MUL,,14	231	1	1	7	1	37	1	1	1	1	1	1	3	3	3	1	7	7	3	7	3	3	7	17	3	1	0	6	023	
04 LD,,04	232	1	1	7	1	25	0	1	1	1	0	1	3	3	3	0	5	4	1	7	3	3	7	05	3	1	3	7	030	
04 LD,,10	233	0	1	7	1	37	1	1	1	1	1	1	3	3	3	0	4	4	1	7	3	3	7	14	3	1	0	1	060	
01 RDY,,60	234	1	1	7	1	35	0	1	1	0	1	1	3	3	0	1	7	7	3	7	3	3	7	12	3	1	0	0	040	
13 SXP,,30	235	1	1	7	1	37	1	1	1	1	1	1	3	3	3	0	6	5	0	7	3	3	7	17	3	1	3	7	166	
04 LD,,20	236	1	1	7	1	25	0	1	1	1	0	1	3	3	3	0	5	4	1	7	3	3	7	05	3	1	3	7	014	
04 LD,,22	237	0	1	7	1	37	1	1	1	1	1	0	3	3	3	1	0	0	3	7	3	2	4	17	3	1	3	7	005	

FLWS STATE	ADR	DL1	DL0	CSL	RDF	CST	SYN	DSL	SCC	BDC	AIC	BAC	EMX	FCC	SGN	BMX	ACR	ACC	ACF	ACM	CSB	ARC	BRC	QRC	ALU	FMX	UJP	UAF	UBR	NAD
04 LD,,00	240	1	1	7	1	05	0	1	1	1	0	1	1	3	3	3	0	1	4	1	7	3	3	7	05	3	1	1	3	122
04 LD,,12	241	1	1	7	1	05	0	1	1	1	0	1	1	0	3	3	0	1	4	1	7	3	3	7	05	3	1	1	3	202
01 TRP,,20	242	1	1	7	1	36	1	1	1	1	1	0	3	3	3	1	1	5	5	3	7	3	3	7	17	3	1	3	7	032
05 LD,,54	243	1	1	7	1	05	1	1	1	1	1	1	1	0	3	3	0	1	4	1	7	3	3	7	05	3	1	3	7	026
04 LD,,24	244	1	1	7	1	05	0	1	1	1	0	1	1	0	3	3	0	1	4	1	7	3	3	7	05	3	1	1	3	206
04 LD,,36	245	1	1	7	1	25	0	1	1	1	1	1	1	3	3	3	0	5	4	1	7	3	3	7	05	3	1	3	7	247
13 SCF,,00	246	1	1	7	1	37	1	1	1	1	1	1	3	3	3	1	4	2	3	7	3	2	4	17	3	1	1	6	222	
11 LCI,,00	247	0	1	7	0	10	1	1	0	1	1	1	2	3	2	3	1	0	4	3	7	3	0	06	3	1	2	3	161	
04 LD,,32	250	1	1	7	1	25	1	1	1	1	0	1	1	3	3	3	0	2	4	1	7	3	3	7	05	3	1	1	3	276
14 SCI,,02	251	1	1	7	0	21	1	1	1	0	1	1	2	3	3	0	1	7	7	3	7	3	3	7	02	3	1	1	2	374
14 SCI,,00	252	1	1	7	0	00	1	1	1	1	0	1	0	2	3	3	0	1	7	7	3	7	3	7	06	3	1	2	3	251
14 SCI,,04	253	1	1	7	1	37	1	1	1	1	1	1	3	3	3	0	1	7	7	3	7	3	3	7	15	3	1	1	2	374
01 TRP,,70	254	1	1	7	1	35	0	1	1	1	1	1	1	3	3	0	1	7	7	3	7	3	3	7	12	3	1	0	0	240
05 LD,,68	255	1	1	7	1	25	0	1	1	0	1	1	1	3	3	0	1	0	2	3	7	3	3	4	12	3	1	3	7	034
13 SXP,,00	256	1	1	7	0	00	1	1	1	0	1	1	2	3	3	0	1	7	7	3	7	3	3	7	02	3	1	3	7	340
05 LD,,50	257	1	1	0	1	25	0	1	1	1	1	1	1	3	3	3	1	7	7	3	7	3	3	7	12	3	0	3	7	007
10 MOD,,10	260	1	1	7	1	37	1	1	1	1	1	1	3	3	3	0	4	3	1	7	3	3	7	14	3	1	3	7	261	
10 MOD,,12	261	1	1	7	0	00	1	1	1	0	1	1	2	3	3	0	1	7	7	3	7	3	1	7	11	3	1	0	4	262
12 NRM,,16	262	1	1	7	1	37	1	1	1	1	1	1	1	3	3	3	1	7	7	3	7	0	3	7	11	2	1	3	7	266
12 NRM,,12	263	1	1	7	1	37	1	1	1	1	1	1	1	3	3	3	1	7	7	3	7	0	3	7	11	2	1	3	7	267
05 LD,,52	264	0	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	0	3	7	007
06 STR,,26	265	1	1	7	1	35	1	1	1	1	1	1	3	3	3	1	7	7	3	7	3	3	7	17	3	1	3	7	144	
12 NRM,,00	266	1	1	7	1	37	1	1	1	1	1	1	1	3	3	0	0	2	2	7	3	3	7	00	3	1	3	7	322	
12 NRM,,14	267	1	1	7	1	37	1	1	1	1	1	1	1	3	1	3	0	0	2	2	7	3	3	7	00	3	1	3	6	134
01 RDY,,90	270	1	1	7	1	37	1	1	1	0	1	0	3	3	3	3	1	0	2	3	7	3	2	0	17	3	1	0	0	242
09 ADD,,56	271	1	1	7	1	37	1	1	1	1	1	1	3	0	3	3	0	0	2	1	7	3	3	7	14	3	0	1	4	216
01 RDY,,50	272	0	1	7	0	02	1	1	1	1	1	1	2	3	3	3	0	6	5	1	7	3	3	7	05	3	1	3	7	275
12 NRM,,00																														

FLWS	STATE	ADR	DL1	DL0	CSL	RDF	CST	SYN	DSL	SEC	BDC	AIC	BAC	EMX	FCC	SGN	BMX	ACR	ACC	ACF	ACM	CSB	ARC	BRC	QRC	ALU	FMX	UJP	UAF	UBR	NAD
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10	MOD,32	301	1	1	7	1	37	1	1	1	1	1	1	3	0	3	3	0	0	2	1	7	3	3	7	14	3	1	3	7	136
10	MOD,26	302	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	0	3	2	7	3	3	7	00	3	1	1	4	300
10	MOD,30	303	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	4	2	1	7	3	3	7	14	3	1	3	7	301
10	MOD,20	304	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	4	3	3	7	3	3	7	04	3	1	3	7	305
10	MOD,22	305	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	0	3	7	07	3	1	3	7	174
06	STR,22	306	1	1	7	1	35	0	1	1	0	0	1	3	3	3	1	1	5	4	3	7	3	3	7	17	3	1	1	4	144
06	STR,28	307	0	1	7	0	10	1	1	1	1	1	1	2	3	3	3	0	6	5	1	7	3	3	7	05	3	0	2	5	275
11	DIV,04	310	1	1	7	0	37	1	1	0	1	1	1	2	3	3	3	1	4	2	3	7	3	2	4	05	3	1	3	7	346
11	DIV,02	311	1	1	7	1	37	1	1	1	1	1	0	3	3	3	3	1	0	0	3	7	0	3	4	12	3	1	1	6	312
11	DIV,08	312	1	1	7	1	37	1	1	1	0	1	1	0	3	3	0	1	7	7	3	7	3	2	7	02	3	1	1	6	314
11	DIV,18	313	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	1	1	6	316
11	DIV,10	314	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	1	3	3	7	17	3	1	3	7	001
11	DIV,16	315	1	1	7	0	04	1	1	1	1	1	1	2	3	3	3	0	6	5	1	7	3	3	7	05	3	1	3	7	275
11	DIV,22	316	1	1	7	1	37	1	1	1	1	1	1	3	0	3	3	0	0	2	1	7	3	3	7	14	3	0	1	4	216
11	DIV,20	317	1	1	7	0	04	1	1	1	1	1	1	2	3	3	3	0	6	5	1	7	3	3	7	05	3	1	3	7	275
11	DIV,14	320	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	0	3	7	12	3	1	3	7	273
12	NRM,04	321	1	1	7	1	37	1	1	1	0	1	1	3	3	3	0	1	7	7	3	7	3	1	7	02	3	1	0	4	262
12	NRM,20	322	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	4	2	3	7	3	3	7	00	3	1	3	6	134
14	SCI,28	323	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	0	4	2	7	3	3	7	00	3	1	2	1	215
11	LCF,20	324	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	0	3	7	12	3	1	1	6	354
11	LCF,30	325	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	4	0	3	7	3	2	4	17	3	1	3	7	324
11	LCI,20	326	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	0	3	7	12	3	1	3	7	174
08	ADD,13	327	1	1	7	1	37	1	1	1	1	1	1	3	3	1	3	1	7	7	3	7	3	3	7	17	3	1	3	7	343
13	SCF,20	330	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	0	3	7	12	3	1	0	4	162
13	SCF,10	331	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	4	0	1	7	3	3	7	14	3	1	3	7	166
13	SCF,50	332	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	0	3	7	11	2	1	3	7	165
14	SCI,08	333	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	4	4	1	7	3	3	7	14	3	1	3	7	235
14	SCI,18	334	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	4	4	2	7	3	3	7	00	3	1	2	1	055
14	SCI,24	335	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	0	1	7	00	3	1	3	7	336
14	SCI,26	336	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	0	3	7	11	1	1	3	7	323
08	ADD,15	337	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	0	3	7	007

FLWS	STATE	ADR	DL1	DL0	CSL	RDF	CST	SYN	DSL	SEC	BDC	AIC	BAC	EMX	FCC	SGN	BMX	ACR	ACC	ACF	ACM	CSB	ARC	BRC	QRC	ALU	FMX	UJP	UAF	UBR	NAD
13	SXP,10	340	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	0	2	4	1	7	3	3	7	00	3	1	3	7	167
09	ADD,78	341	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	0	3	7	007
09	ADD,66	342	1	1	7	0	00	1	1	1	1	1	1	2	0	3	3	1	7	7	2	7	3	3	7	05	3	1	1	6	204
09	ADD,64	343	1	1	7	0	00	1	1	1	1	1	1	2	0	3	3	1	7	7	2	7	3	3	7	05	3	0	3	7	007
XX	XXX,XX	344	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	1	3	7	377
14	SCI,16	345	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	2	3	3	7	17	3	1	1	1	334
11	DIV,06	346	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	4	0	3	7	3	3	4	17	3	1	3	7	311
09	ADD,60	347	1	1	7	1	37	1	1	1	1	1	1	3	3	1	3	1	7	7	3	7	3	2	7	17	3	1	3	7	007
09	ADD,74	350	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	0	3	7	007
09	ADD,76	351	1	1	7	1	37	1	1	1	1	1	1	3	3	1	3	1	7	7	3	7	3	3	7	17	3	1	3	7	343
09	ADD,72	352	1	1	7	1	37	1	1	1	1	1	1	3	0	1	3	1	7	7	1	7	3	3	7	14	3	1	2	6	341
06	STR,20	353	1	1	7	1	35	0	1	1	0	0	1	3	3	3	2	1	2	4	3	7	3	3	7	17	3	1	1	3	306
11	LCF,40	354	1	1	7	1	37	1	1	1	1	1	1	3	3	0	3	1	7	7	3	7	3	1	7	17	3	1	0	4	262
11	LCF,50	355	1	1	7	1	37	1	1	1	1	1	1	3	0	3	3	0	0	2	1	7	3	3	7	14	3	0	1	4	216
06	STR,14	356	1	1	7	1	35	0	1	1	0	0	1	3	3	3	1	1	5	2	3	7	3	3	7	17	3	0	1	4	176
08	ADD,22	357	1	1	7	1	37	1	1	1	0	1	1	0	3	3	0	1	7	7	3	7	3	2	7	02	3	1	0	2	107
10	MOD,00	360	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	1	3	7	127
07	STR,58	361	1	1	7	1	35	0	1	1	0	0	1	3	3	3	1	1	5	4	3	7	3	3	7	17	3	1	1	3	100
10	MUL,18	362	1	1	7	0	00	1	1	1	0	1	1	2	3	1	0	1	7	7	3	7	3	3	7	02	3	1	0	6	102
07	STR,60	363	1	1	7	1	35	0	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	0	2	4	121
14	SCI,11	364	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	4	2	3	7	3	2	4	17	3	1	3	7	365
14	SCI,12	365	1	1	7	1	37	1	1	1	1	1	1	3	3	3	3	1	7	7	3	7	0	3	7	12	3	1	1	2	054
07	STR,52	366	1	1	2	1	35	0	1	1	1	1	1	3	3	3	3	1	7	7	3	7	3	3	7	17	3	0	2	4	121
08	ADD,20	367	1	1	7	1	37	1	1	1	1	1	1	3	0	3	3	1	7	7	2	7	3	3	7	05	3	0	3	7	007
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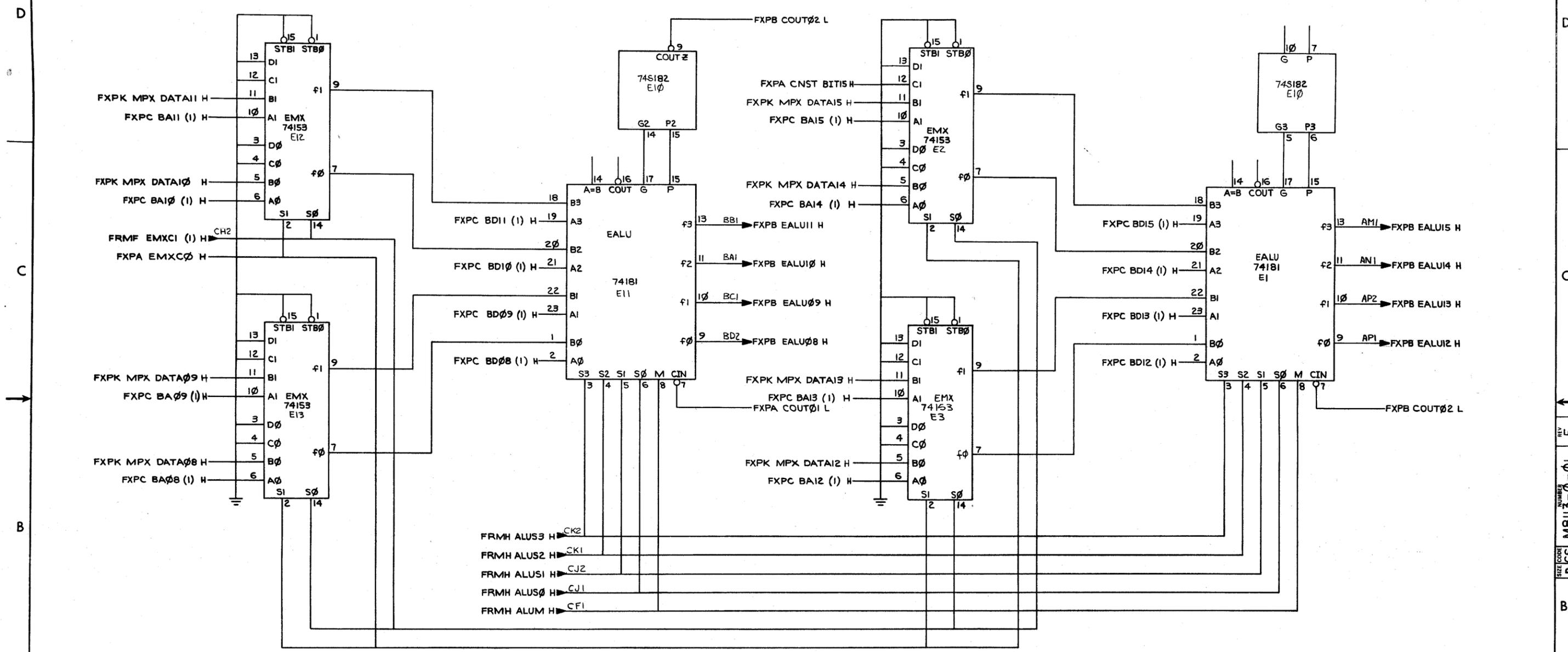
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EXPONENT DATA PATH BITS 00 THROUGH 07 SLOT 5

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN <i>A. Davis</i>	DATE 9-16-71	 digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .XXX = .005 .XX = .02 .X = .1	CHKD <i>W. H. Lewis</i>	DATE 5/1/72		
ANGLES ±0° 30'	ENG <i>W. H. Lewis</i>	DATE 2/17/72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROL ENG <i>W. H. Lewis</i>	DATE 2/17/72		
MATERIAL	NEXT HIGHER ASSY.		(FXPA)	
FINISH	B-DD-11/45-0	SCALE	SIZE CODE DCS M8113-0-01	NUMBER REV. E
	SHEET 2 OF 12	DIST.		

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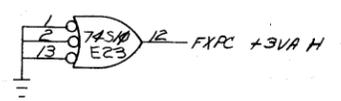
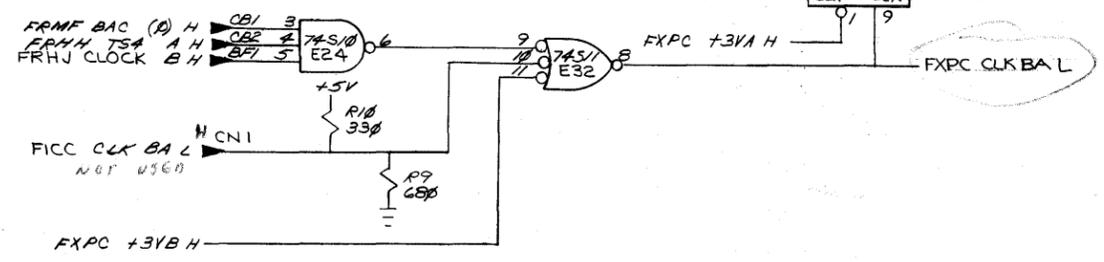
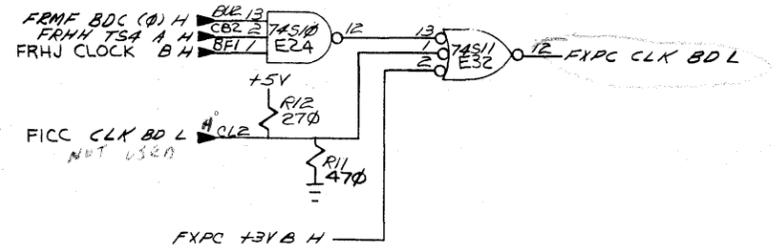
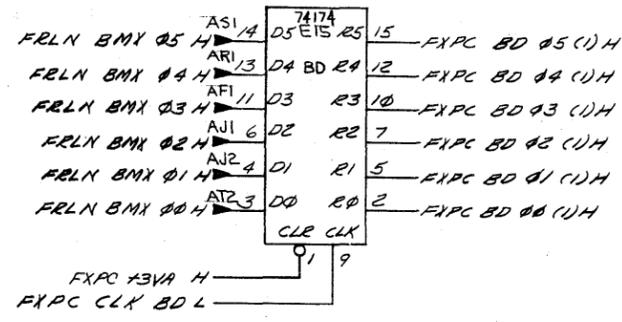
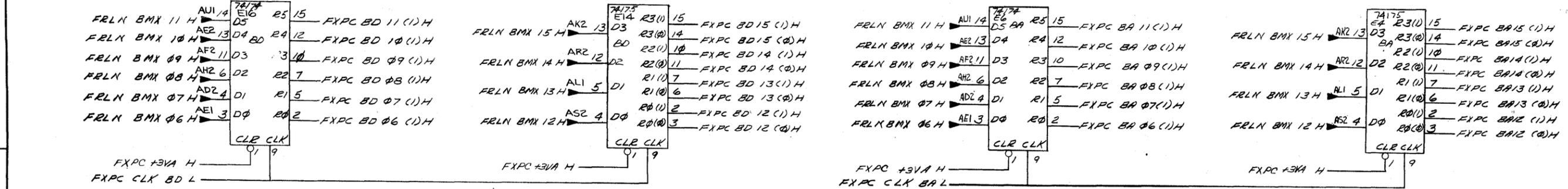


EXPONENT DATA PATH BITS 08 THROUGH 15 SLOT 5

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 (FXPB)		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.	REV.		
FINISH	SCALE	SIZE CODE	NUMBER	
	SHEET 3 OF 12	D CS	M8113-0-01	E

REV E
M8113-0-01
D CS
B

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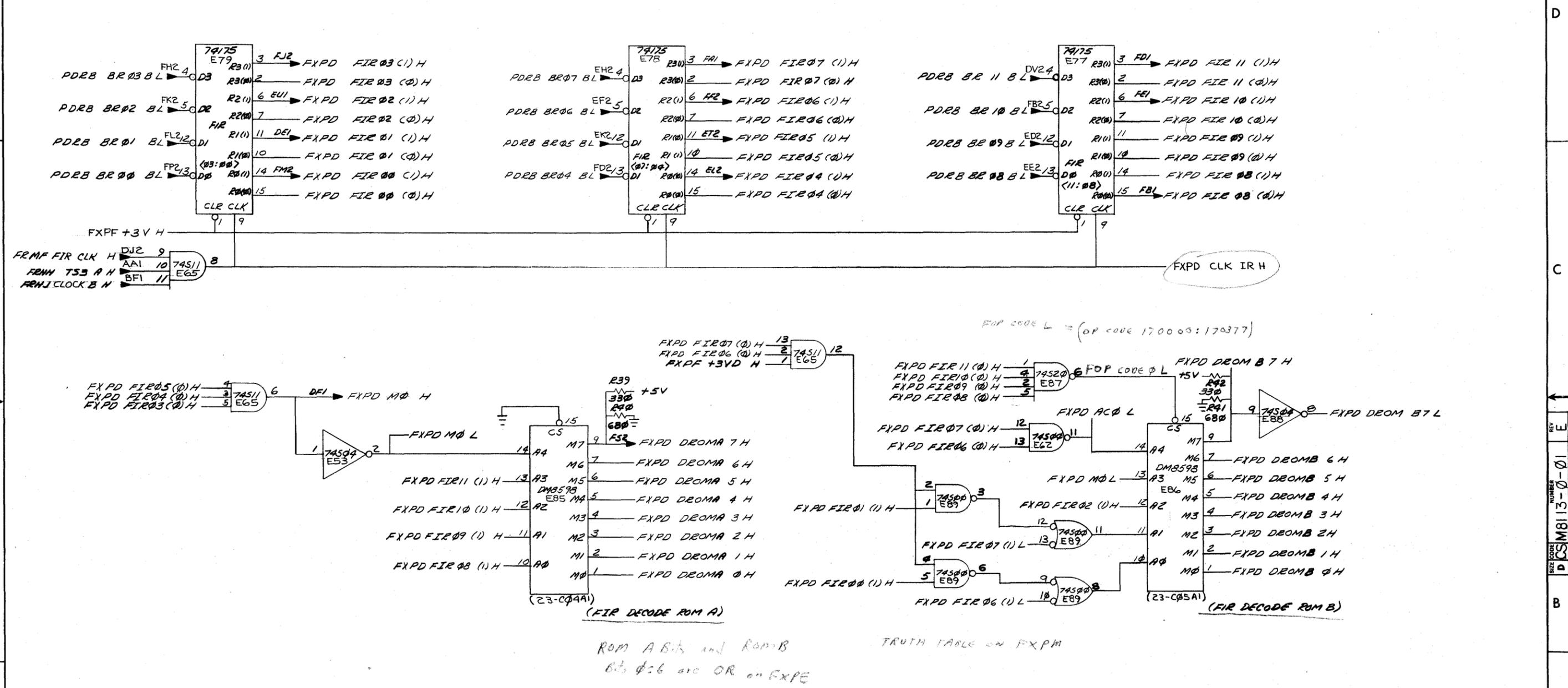


REV	
CHG	
NO	
BY	
DATE	

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 DATA PATH	
.XX = .02		PROD.	DATE	(FXPC)	
.X = .1					
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY					
MATERIAL		NEXT HIGHER ASSY.		SIZE CODE	NUMBER
FINISH		B-DD-11/45-0		D	M 8113-0-01
		SCALE		DIST.	REV
		SHEET 4	OF 12		E

NUMBER M8113-0-01

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FOP CODE L = (OP CODE 170009:170377)

ROM A bits and ROM B bits are OR on FXPE

TRUTH TABLE ON FXPM

F.P. INSTRUCTION REGISTER SLOT 5

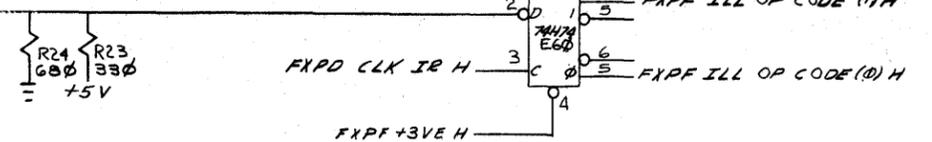
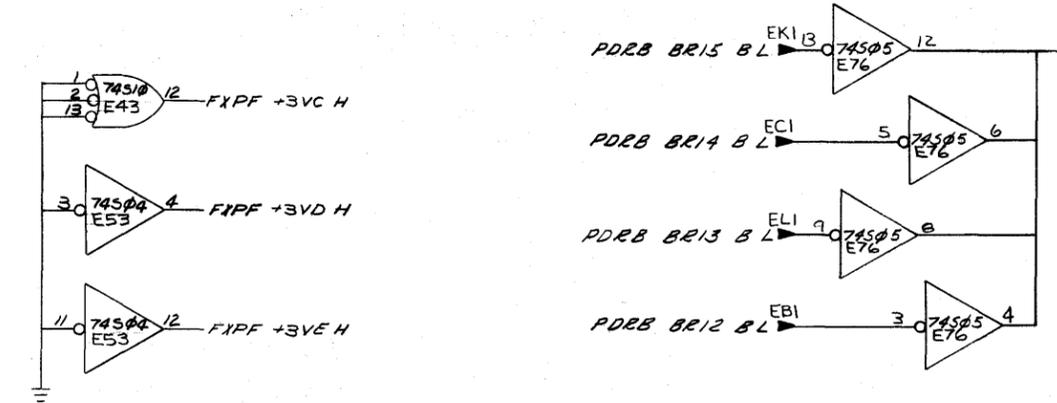
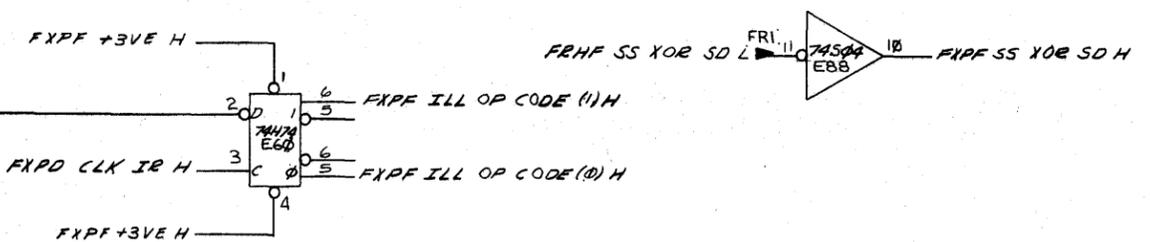
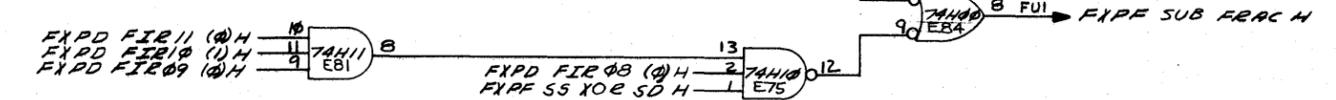
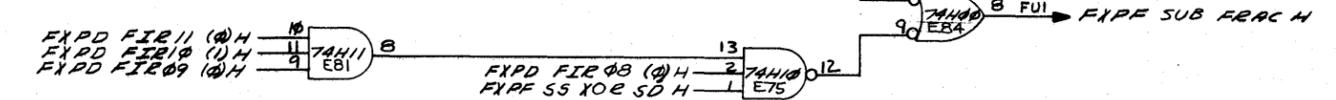
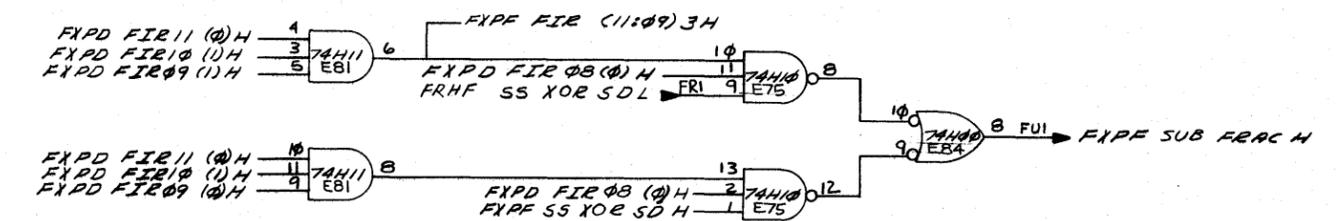
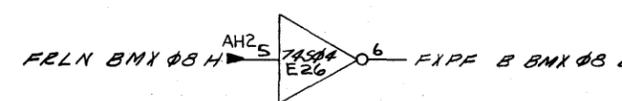
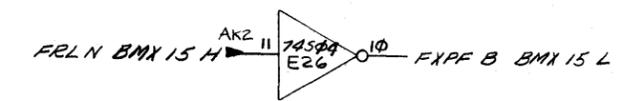
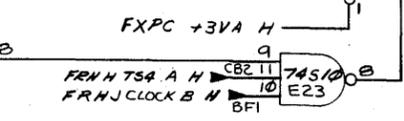
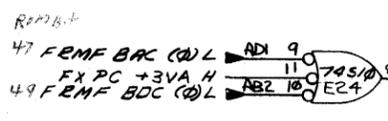
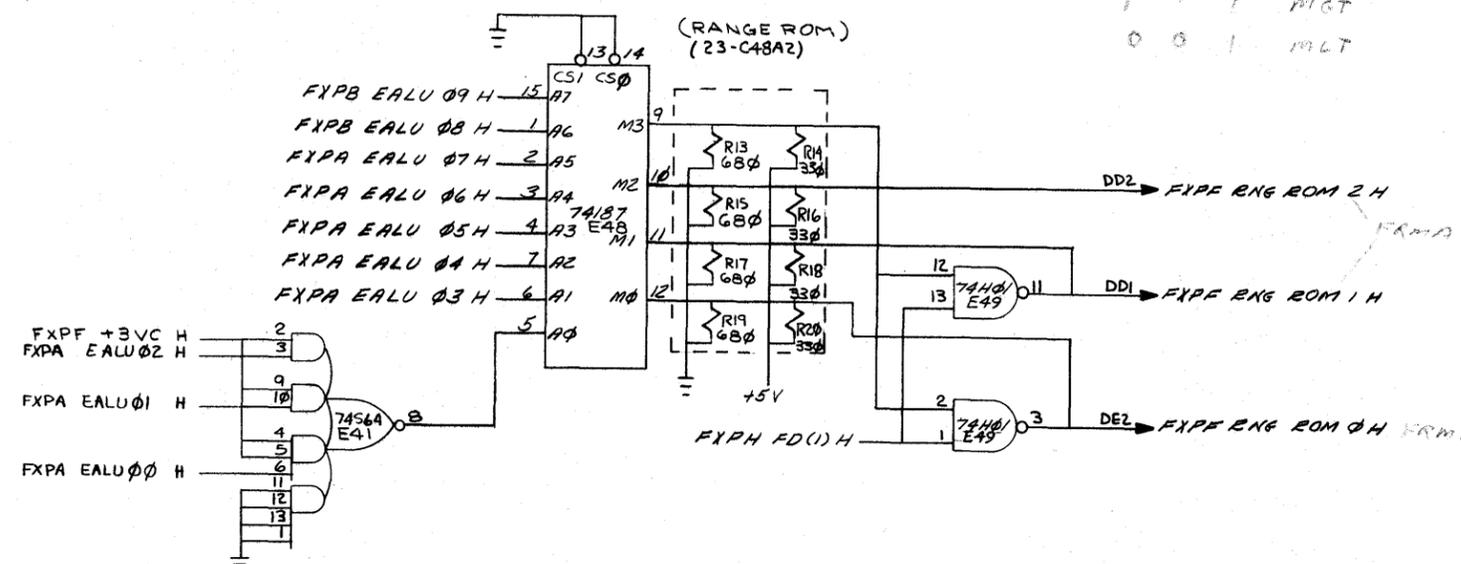
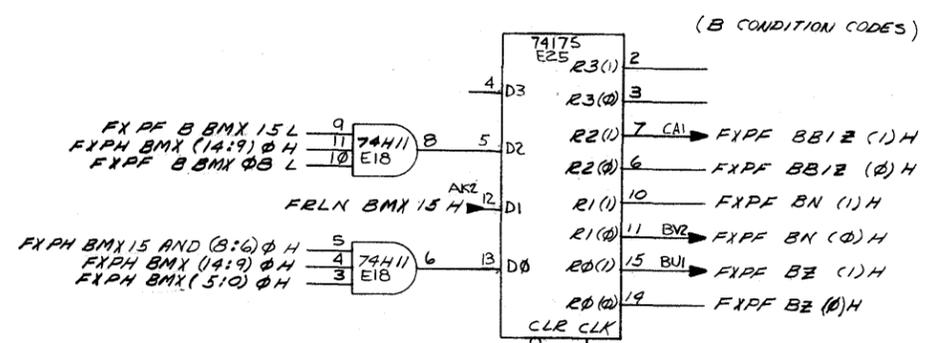
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.						
11/45										
PARTS LIST										
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN <i>K. Janda</i>	DATE 9-23-71	 digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS						
DECIMALS	ANGLES	CHKD <i>F. J. Hayes</i>	DATE 2/12/72							
.XXX = .005	±0° 30'	ENGR <i>J. B. Hughes</i>	DATE 2/17/72							
.XX = .02		PROJ. ENG. <i>J. B. Hughes</i>	DATE 2/17/72							
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		PROD. <i>D. Branch</i>	DATE 2/17/72	TITLE F.P. EXPONENT DATA PATH (FXPD)						
MATERIAL	NEXT HIGHER ASSY.	<table border="1"> <tr> <td>SIZE CODE</td> <td>NUMBER</td> <td>REV.</td> </tr> <tr> <td>B-DD-11/45-0</td> <td>DCSM8113-0-01</td> <td>E</td> </tr> </table>			SIZE CODE	NUMBER	REV.	B-DD-11/45-0	DCSM8113-0-01	E
SIZE CODE	NUMBER	REV.								
B-DD-11/45-0	DCSM8113-0-01	E								
FINISH	SCALE	SHEET 5 OF 12								

REVISIONS	CHANGE NO.	REV.
CHK		

REV E
NUMBER
D C S M 8 1 1 3 - 0 - 0 1

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Rev 2	Rev 1	Rev 0
002	001	000
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0



B CONDITION CODES & RANGE ROM SLOT 5

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

UNLESS OTHERWISE SPECIFIED		PARTS LIST	
DIMENSION IN INCHES.	DRN. <i>J. Davis</i>	DATE	9-27-71
TOLERANCES	CHKD. <i>[Signature]</i>	DATE	2/17/72
DECIMALS .XXX = .005	ENG. <i>J.B. Hughes</i>	DATE	2/17/72
ANGLES ±0° 30'	PROL. ENG. <i>J.B. Hughes</i>	DATE	2/17/72
.XX = .02	PROD. <i>J. Davis</i>	DATE	2/17/72
.X = .1			

TITLE: F.P. EXPONENT DATA PATH (FXPF)

MATERIAL: *---*

FINISH: *---*

REVISIONS: 11/45

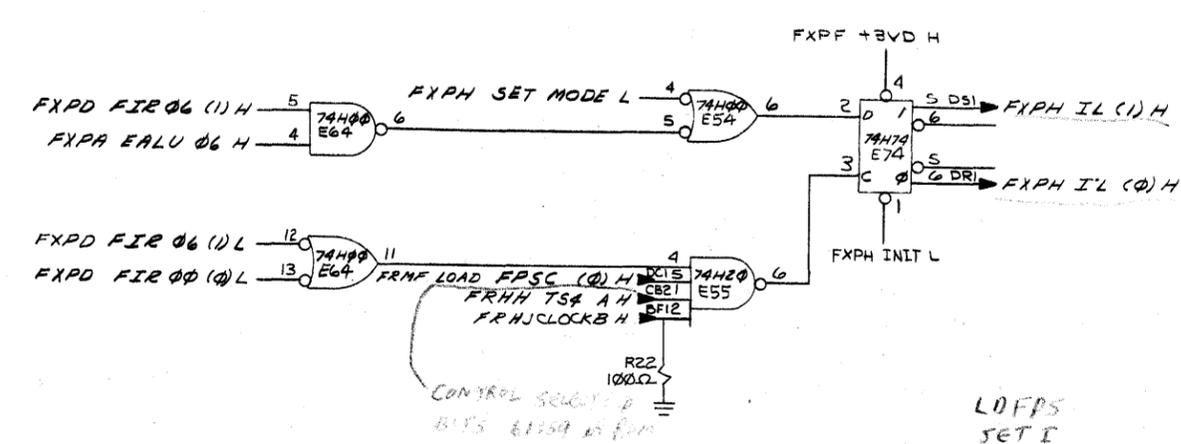
SCALE: *---*

SHEET 7 OF 12

DIST. *---*

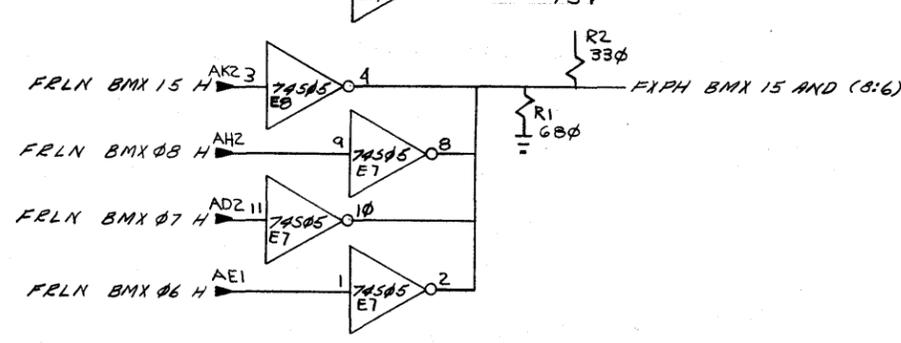
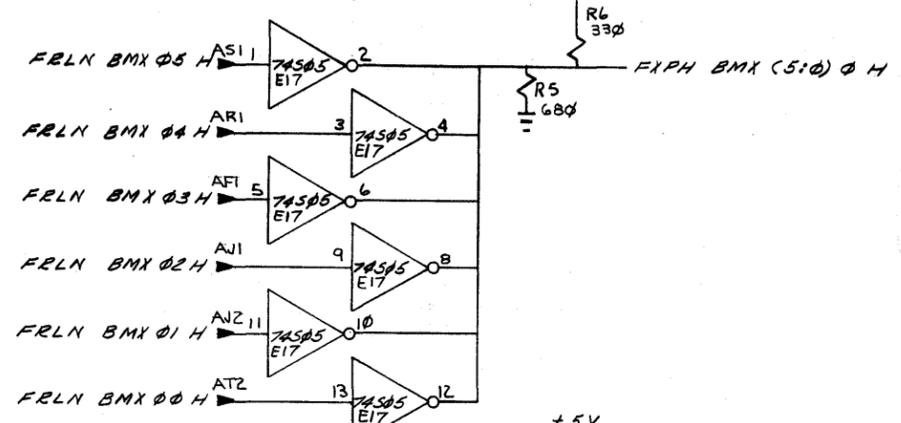
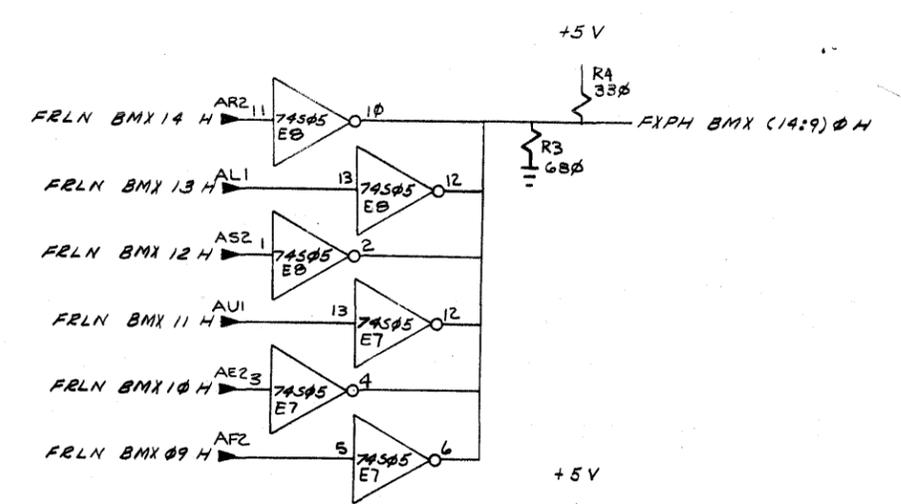
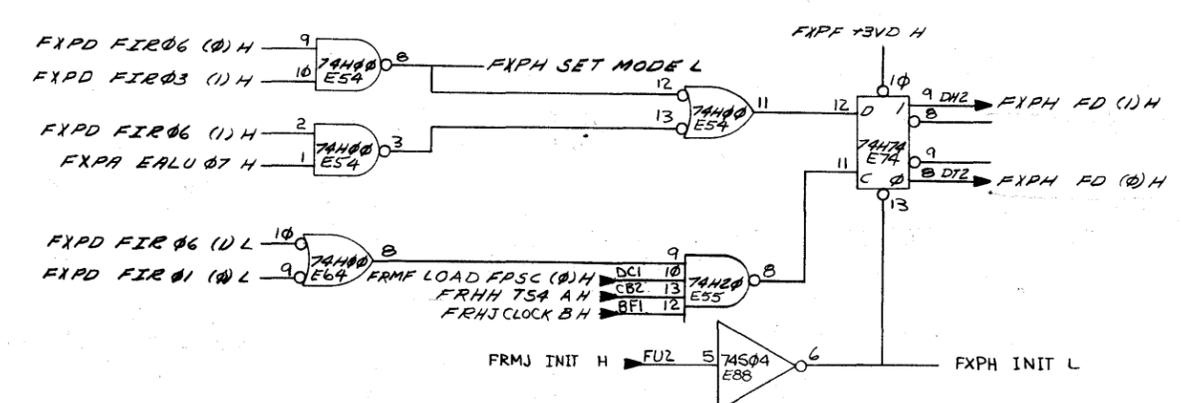
REV.	CHANGE NO.	CHK.

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CONTROL SELECT 1
BITS 6159 65 67

LDFPS
SET I
SET L
SET F
SET D

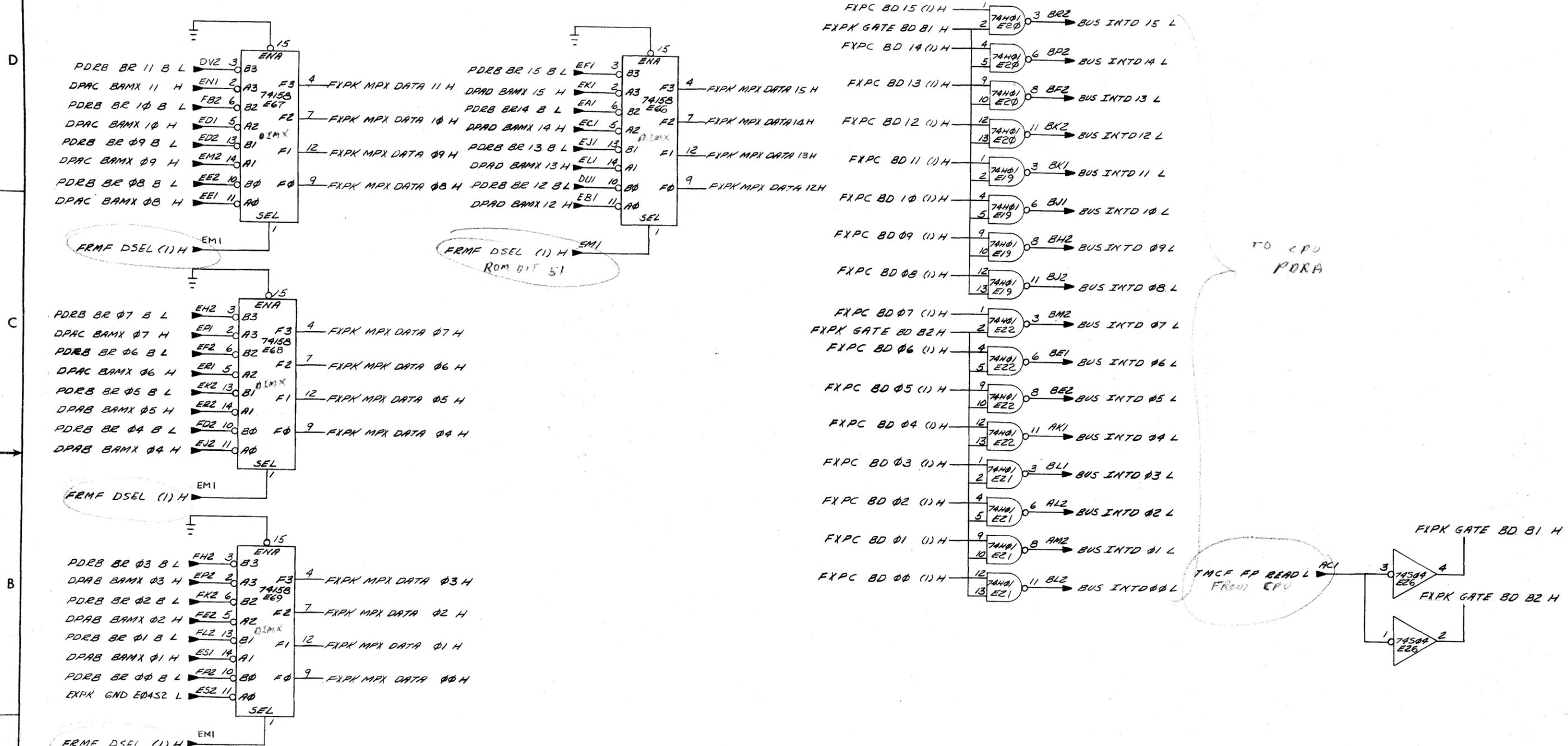


B COND. CODE
FXPH

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: [Signature]	DATE: 9/1/71	<p>digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS</p>
DECIMALS	ANGLES	CHKD: [Signature]	DATE: 2/17/72	
.XXX = .005	±0° 30'	ENG: [Signature]	DATE: 2/17/72	
.XX = .02		PROJ. ENG. [Signature]	DATE: 2/17/72	
.X = .1		PROD. [Signature]	DATE: 2/17/72	<p>TITLE</p> <p>F.P. EXPONENT DATA PATH (FXPH)</p>
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	NEXT HIGHER ASSY.	B-DD-11/45-0		
MATERIAL	SCALE	SIZE CODE	NUMBER	
FINISH	SHEET 8 OF 12	D	CSM8113-0-01	REV. E

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F. R. DATA RECEIVERS AND DRIVERS 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>A. Jones</i> DATE 9/28/71	 digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS	ANGLES	CHK'D. <i>A. Jones</i> DATE 2/17/72		
.XXX = .005	± 0° 30'	ENG. <i>A. Jones</i> DATE 8/17/72		
.XX = .02		PROJ. ENG. <i>A. Jones</i> DATE 2/17/72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PRD. <i>A. Jones</i> DATE 2/17/72	TITLE F. R. EXPONENT DATA PATH	
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE NUMBER (FXPK) REV.		
FINISH	B-DD-11/45-0	D CSM8113-0-01 E		
SCALE		SHEET 10 OF 12		

REV	CHANGE NO

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CONTENTS OF DECODE ROM A (DROMA)

ADDRESS	DATA							INSTRUCTION
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2	1	0	1	1	1	1	1	MODF
3	1	0	1	1	1	1	1	ADDF
4	1	0	1	1	1	1	1	LDF
5	1	0	1	1	1	1	1	SUBF
6	1	0	1	1	1	1	1	CMPF
7	1	0	1	1	1	1	1	STF
8	1	0	1	1	1	1	1	DIVF
9	1	0	1	1	1	1	1	STEXP
10	1	0	1	1	1	1	1	STCF1
11	1	0	1	1	1	1	1	STCFD
12	1	0	1	1	1	1	1	LDEXP
13	1	0	1	1	1	1	1	LDCIF
14	1	0	1	1	1	1	1	LDCDF
15	1	0	1	1	1	1	1	FOP CODE 1 (CLR, TSTF, ABSF, NEG)
16	1	0	1	1	1	1	1	MULF
17	1	0	1	1	1	1	1	MODF
18	1	0	1	1	1	1	1	ADDF
19	1	0	1	1	1	1	1	LDF
20	1	0	1	1	1	1	1	SUBF
21	1	0	1	1	1	1	1	CMPF
22	1	0	1	1	1	1	1	STF
23	1	0	1	1	1	1	1	DIVF
24	1	0	1	1	1	1	1	STEXP
25	1	0	1	1	1	1	1	STCF1
26	1	0	1	1	1	1	1	STCFD
27	1	0	1	1	1	1	1	LDEXP
28	1	0	1	1	1	1	1	LDCIF
29	1	0	1	1	1	1	1	LDCDF
30	1	0	1	1	1	1	1	FOP CODE 2 (CLR, TSTF, ABSF, NEG)
31	1	0	1	1	1	1	1	MULF
32	1	0	1	1	1	1	1	MODF
33	1	0	1	1	1	1	1	ADDF
34	1	0	1	1	1	1	1	LDF
35	1	0	1	1	1	1	1	SUBF
36	1	0	1	1	1	1	1	CMPF
37	1	0	1	1	1	1	1	STF

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 CLASS NO. 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 & M0 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 0 (FD(1))
 - 1 CLASS 1; USE 0 (FD(0)) OR 4 (FD(1))
 - 2 CLASS 2; USE 2 (IL(0)) OR 4 (IL(1))
 - 3 CLASS 3; USE 2
 - 4 CLASS 4; USE 4
 - 5, 6 & 7 CLASS 5; DON'T CARE (M0 ONLY)

CONTENTS OF DECODE ROM B (DROMB)

ADDRESS	DATA							INSTRUCTION
	7	6	5	4	3	2	1	
0	0	1	0	1	0	1	0	CFCC
1	1	0	1	0	1	0	0	SETF
2	1	0	1	0	1	0	0	SETI
3	1	0	1	0	1	0	0	LDUB
4	1	0	1	0	1	0	1	LDSC
5	1	0	1	0	1	0	1	STAB
6	1	0	1	0	1	0	1	MRS
7	1	0	1	0	1	0	1	STQB
8	1	0	1	0	1	0	1	ILLEGAL OP CODE
9	1	0	1	0	1	0	1	SETD
10	1	0	1	0	1	0	1	SETL
11	1	0	1	0	1	0	1	ILLEGAL OP CODE
12	1	0	1	0	1	0	1	ILLEGAL OP CODE
13	1	0	1	0	1	0	1	ILLEGAL OP CODE
14	1	0	1	0	1	0	1	ILLEGAL OP CODE
15	1	0	1	0	1	0	1	ILLEGAL OP CODE
16	1	0	1	0	1	0	1	ILLEGAL OP CODE
17	1	0	1	0	1	0	1	ILLEGAL OP CODE
18	X	X	X	X	X	X	X	NOT USED
19	1	0	1	0	1	0	1	LDFPS
20	1	0	1	0	1	0	1	STFPS
21	1	0	1	0	1	0	1	STST
22	1	0	1	0	1	0	1	NOT USED
23	1	0	1	0	1	0	1	LDFPS
24	X	X	X	X	X	X	X	NOT USED
25	1	0	1	0	1	0	1	LDFPS
26	1	0	1	0	1	0	1	STFPS
27	1	0	1	0	1	0	1	STST
28	X	X	X	X	X	X	X	NOT USED
29	1	0	1	0	1	0	1	LDFPS
30	1	0	1	0	1	0	1	STFPS
31	1	0	1	0	1	0	1	STST
32	1	0	1	0	1	0	1	NOT USED
33	1	0	1	0	1	0	1	LDFPS
34	X	X	X	X	X	X	X	NOT USED
35	1	0	1	0	1	0	1	LDFPS
36	1	0	1	0	1	0	1	STFPS
37	1	0	1	0	1	0	1	STST

NOTE:

- FOP CODE 0 ENABLES DROMB.
- FIR <07:06>(0) M0 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 CFCC FOR THE GENERATION OF FCCLD EN.
- FIR <07:06>(0) M1 CAUSES THE SECOND QUARTER OF DROMB TO BE ADDRESSED BY THE LOWER 3 BITS OF THE FIR. ONLY TWO OP CODES ARE USED (SET D & SET L). DATA BIT 7 IS USED TO FORCE AN ILL OP CODE IF ADDRESSES 11 & 12 ARE ACCESSED & 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

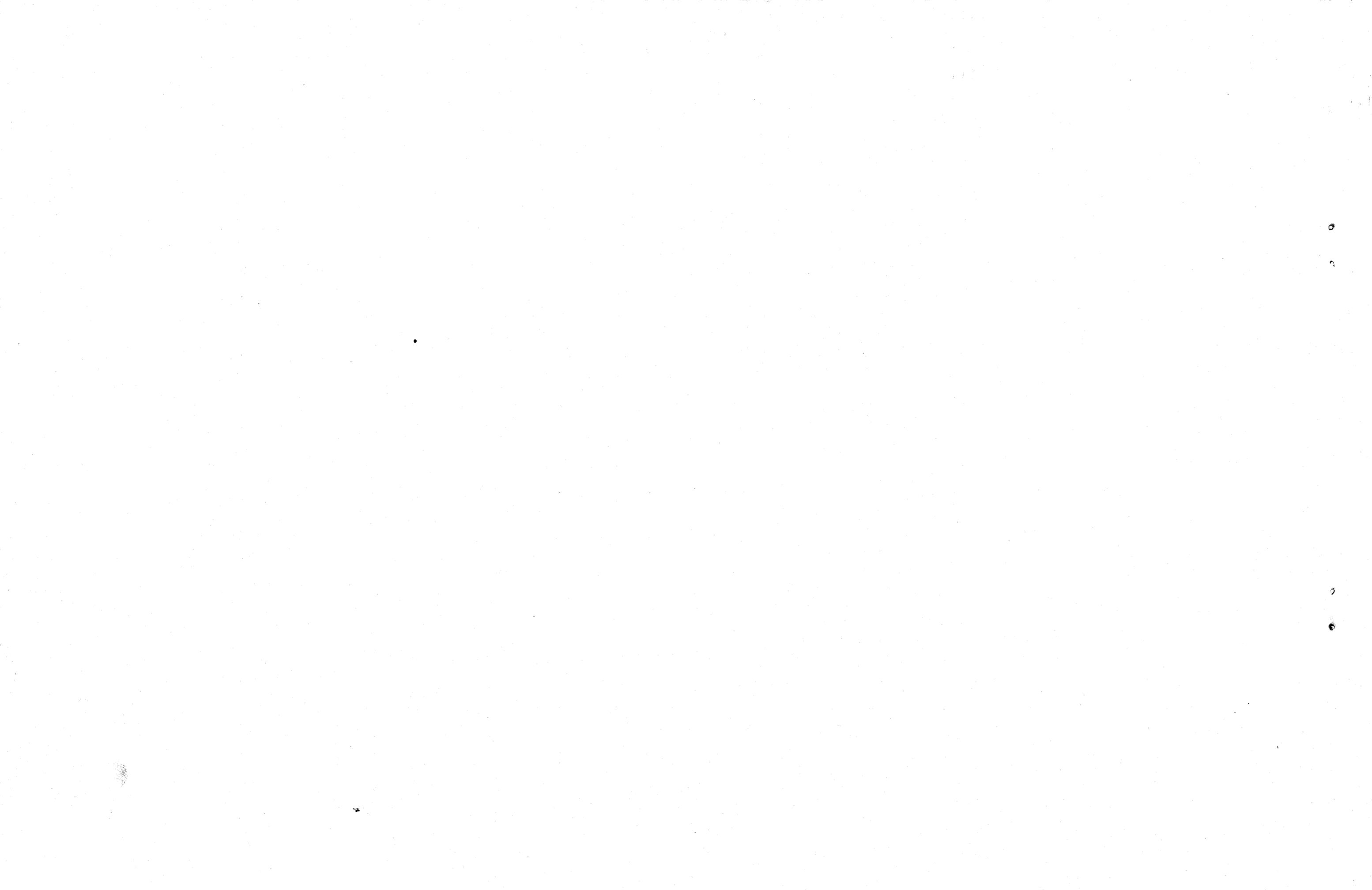
ADDRESS	DATA				OUTPUT OF EALU	RANGE FD(0)	RANGE FD(1)
	3	2	1	0			
0	0	1	0	0	1 TO 7	GT	GT
1	0	1	0	1	0	EQ	EQ
2 TO 5	0	1	0	0	10 TO 27	GT	GT
6	1	1	1	1	31 TO 37	MGT	GT
7	0	1	0	0	30	GT	GT
10 TO 15	1	1	1	1	41 TO 67	MGT	GT
16	0	1	1	1	71 TO 77	MGT	MGT
17	1	1	1	1	70	MGT	GT
20 TO 177	0	1	1	1	100 TO 777	MGT	MGT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

REV	CHANGE NO	REVISIONS

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN. DATE 1/16/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS: .xxx = .005 .xx = .02 .x = .1	ANGLES: ±0° 30'	CHK'D. DATE 2/17/72	TITLE: F.P. EXPONENT DATA PATH	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		ENG. DATE 2/17/72	(FXPM)	
MATERIAL	NEXT HIGHER ASSY.	PROJ. ENG. DATE 2/17/72	SIZE CODE	NUMBER
FINISH	SCALE	PROD. DATE 2/17/72	DCS	M 8113-0-01
	SHEET 12 OF 12	DIST.		



digital

**DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS 01754**