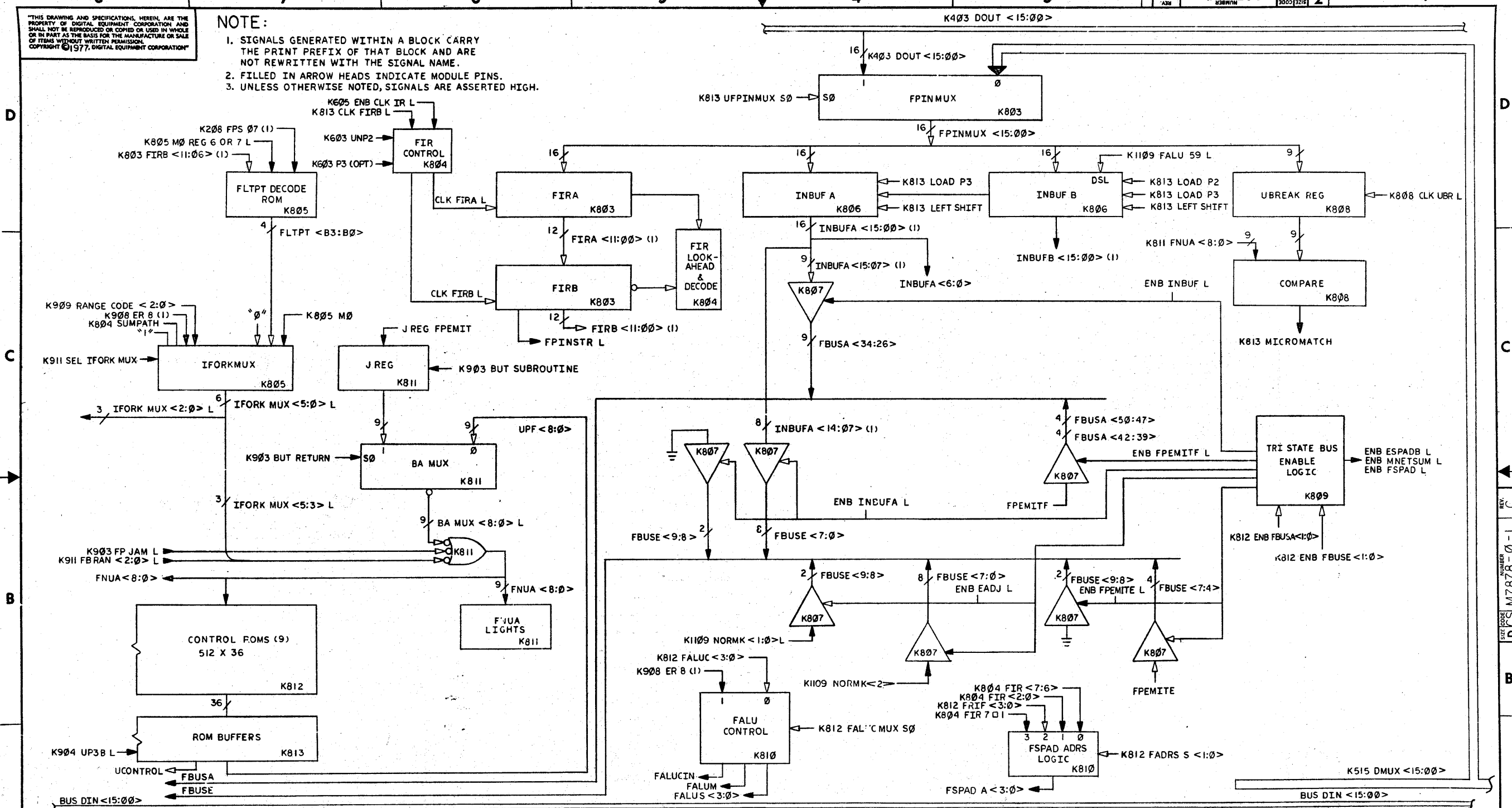




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**NOTE:**  
 1. SIGNALS GENERATED WITHIN A BLOCK CARRY THE PRINT PREFIX OF THAT BLOCK AND ARE NOT REWRITTEN WITH THE SIGNAL NAME.  
 2. FILLED IN ARROW HEADS INDICATE MODULE PINS.  
 3. UNLESS OTHERWISE NOTED, SIGNALS ARE ASSERTED HIGH.



(BLOCK DIAGRAM) (K801)

REV.	CHG.	BY	DATE
1			
2			
3			
4			
5			
6			
7			
8			

DRN. <i>J. Williams</i>	1-12-77	FIRST USED ON	<b>digital</b>
CHK. <i>D. E. Smart</i>	1-28-77	TITLE	FLTPT FNUA
ENG. <i>D. C. Jones</i>	4-28-77	PROJ. ENG. <i>D. C. Jones</i>	4-28-77
PROD. <i>K. J. McCall</i>	4-28-77	NEXT HIGHER ASSY.	
SCALE		SIZ: CODE	D CS M7878-0-1
SHEET 1 OF 13		NUMBER	
		REV.	C

REV. C  
NUMBER D CS M7878-0-1

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EXPONENT ADJUST		LOGIC											
NORM		FBUSE										# SHIFTS	
2	1	0	9	8	7	6	5	4	3	2	1		0
0	0	0	-	-	-	-	-	-	-	-	-	-	-
0	0	1	-	-	-	-	-	-	-	-	-	-	-
0	1	0	0	0	0	0	0	0	0	0	0	0	1
0	1	1	0	0	0	0	0	0	0	0	0	0	0
1	0	0	1	1	1	1	1	1	1	1	1	1	1
1	0	1	1	1	1	1	1	1	1	1	1	1	0
1	1	0	1	1	1	1	1	1	1	1	0	1	0
1	1	1	1	1	1	1	1	1	1	1	0	0	0

FLTPT INSTRUCTION DECODE											
FIRB XX(1)H			'NOT'	FPS07(1)H	FLTPT 0	INSTRUCTION					
11	10	09	08	07	06	05	04	03	02	01	00
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	1	-	-	-	-	-	-	-	-
0	0	1	-	-	-	-	-	-	-	-	-
0	0	1	-	-	-	-	-	-	-	-	-
0	0	1	-	-	-	-	-	-	-	-	-
0	0	-	0	-	-	-	-	-	-	-	-
0	0	-	0	-	-	-	-	-	-	-	-
0	1	0	1	-	-	-	-	-	-	-	-
0	0	0	0	~(0 0)	-	-	-	-	-	-	-
0	1	1	1	-	-	-	-	-	-	-	-
1	0	0	0	-	-	-	-	-	-	-	-
1	0	0	1	-	-	-	-	-	-	-	-
1	0	1	0	-	-	-	-	-	-	-	-
1	0	1	1	-	-	-	-	-	-	-	-
1	1	0	0	-	-	-	-	-	-	-	-
1	1	0	1	-	-	-	-	-	-	-	-
1	1	1	0	-	-	-	-	-	-	-	-
1	1	1	1	-	-	-	-	-	-	-	-

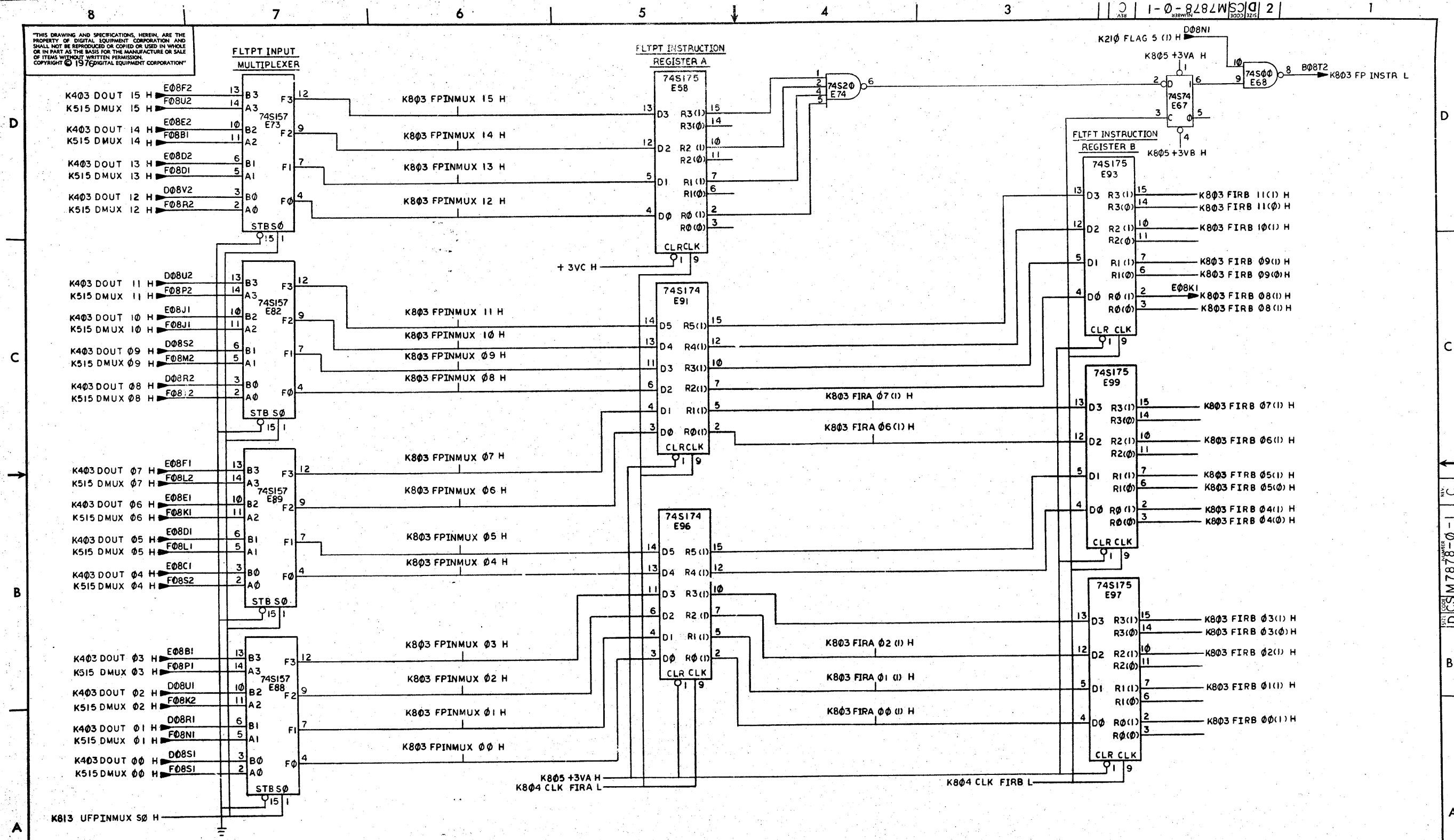
- ① SET CLASS 1  
FIRB <10:03> = 1  
COMMON ENTRY POINT FOR: 1. SET D 0 0 1  
2. SET L 0 1 0  
3. ILLEGAL ---
- ② SET CLASS 2  
FIRB <10:03> = 0  
COMMON ENTRY POINT FOR: 1. CFCC 0 0 0  
2. SET F 0 0 1  
3. SET I 0 1 0  
4. LDIB 0 1 1  
5. MNS 1 0 0  
6. MPP 1 0 1  
7. ILLEGAL 1 1 0  
8. MAS 1 1 1
- ③ CTAN  
FIRB <11:08> = 1  
COMMON ENTRY POINT FOR: 1. CLRX 0 0  
2. TSTX 0 1  
3. ABSX 1 0  
4. NEGX 1 1
- ④ MULF/D  
COMMON ENTRY POINT SHARED BY MUL AND MOD. SECONDARY DECODING FOR MOD IS PERFORMED BY BUT (FIRB <8> = 1)
- ⑤ ADSUBNZ  
COMMON ENTRY POINT SHARED BY ADD/D AND SUB/D (NON DEST MB)
- ⑥ ILLEGAL REFERENCE TO ACCUMULATOR 6 OR 7. RESTRICTED TO THOSE INSTRUCTIONS LISTED ON THE CHART ABOVE WHICH REQUIRE 'NOT' MB REG 6 OR 7 = 1 (i.e. 'NOT' ILL ACC) FOR DECODING UNDER NORMAL CONDITIONS.

1 = HIGH  
0 = LOW

(TABLES) (K802)

REVISIONS		
CHK	CHANGE NO.	REV.

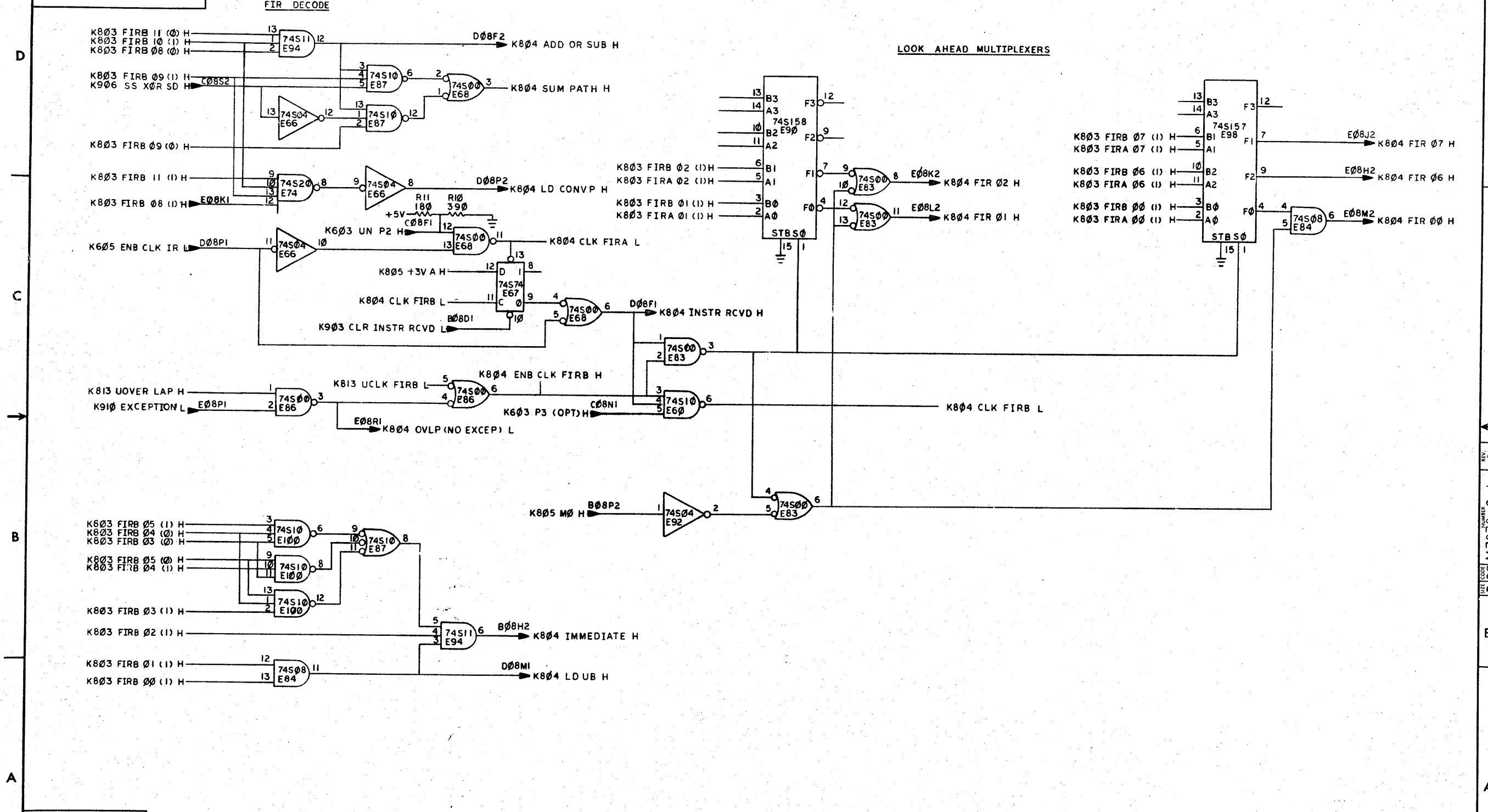
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REVISIONS		
CHK	CHANGE NO.	REV.

(FPINMUX, FIRA, FIRB)		(K803)	
TITLE	SIZE CODE	NUMBER	REV.
FLT PT FNUA	DCS	M7878-0-1	C
SCALE	SHEET	DIST.	
	3 OF 13		

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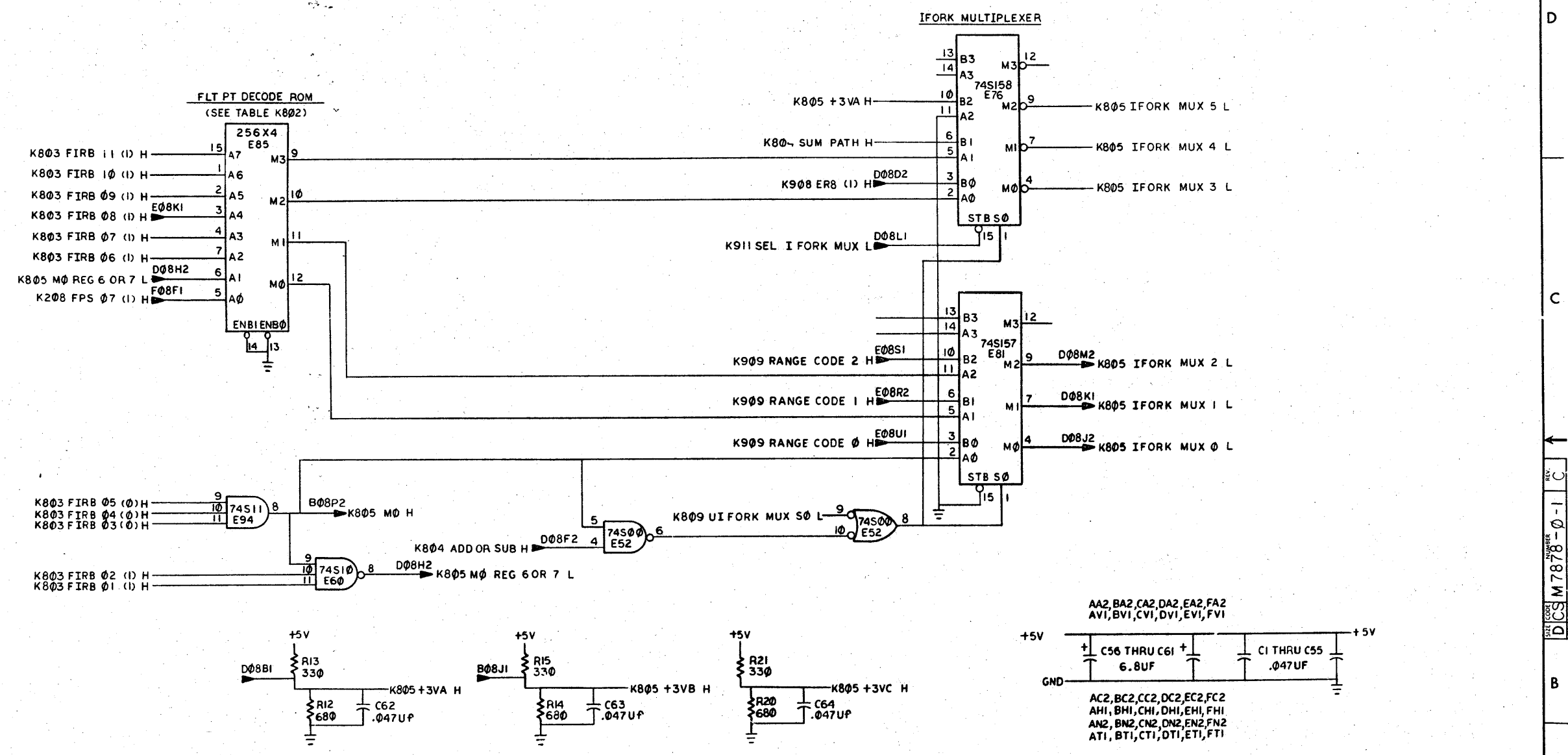
REVISIONS		
CHK	CHANGE NO.	REV.

(FIR DECODE, LOOK AHEAD) (K804)

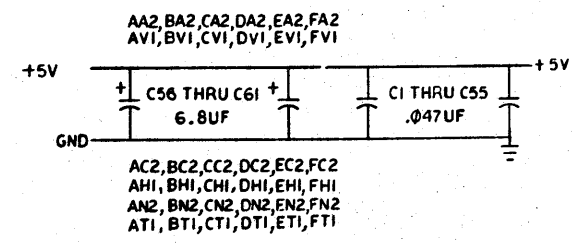
TITLE	SCALE	SHEET	OF	DIST.	NUMBER	REV.
FLT PT FNUA	---	4	OF	13	D/CS M7878-0-1	C

REV. C  
NUMBER DCS M7878-0-1

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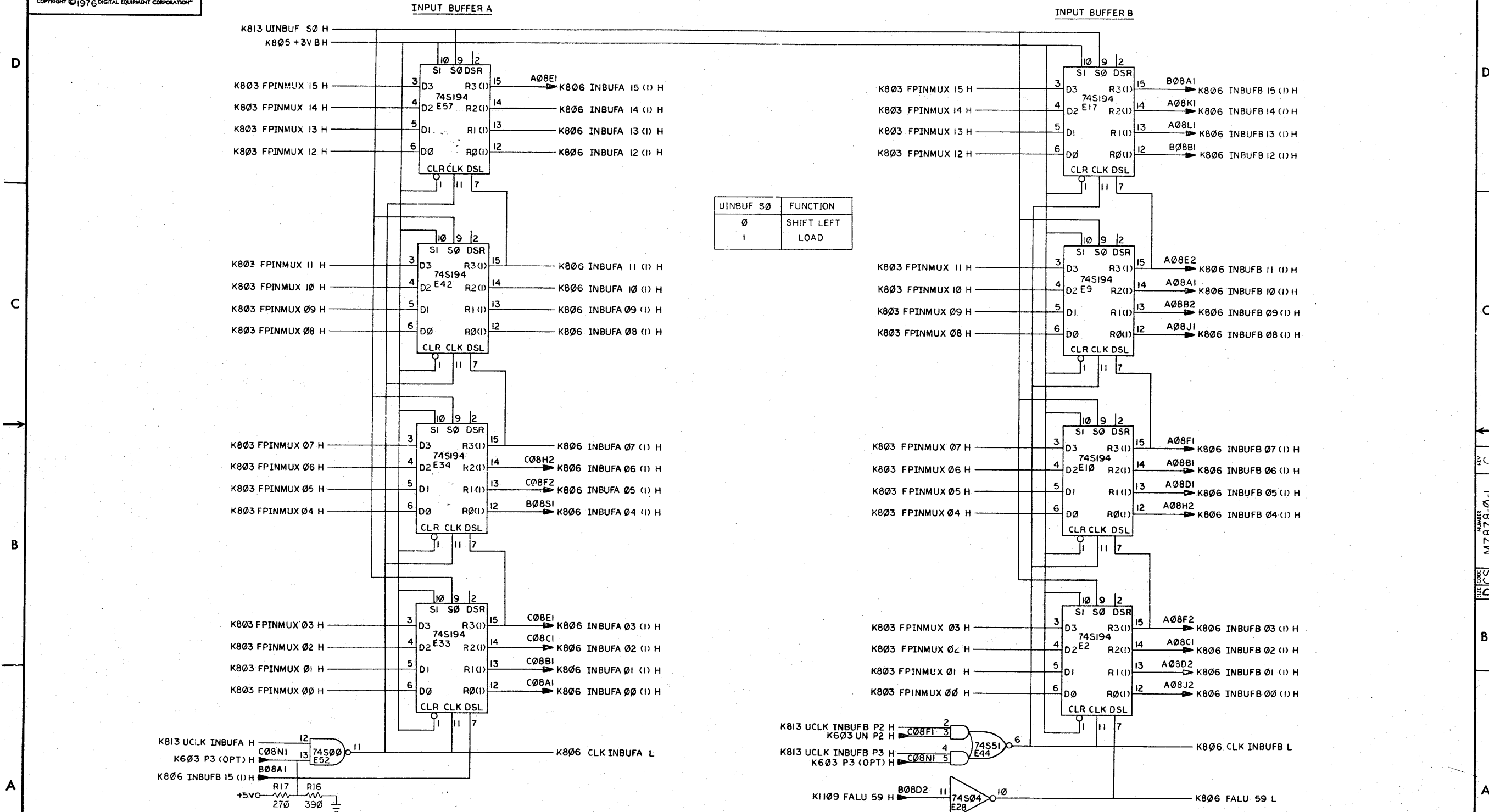
NOTE: REGISTERS CAN BE CLEARED BY MOMENTARILY GROUNDING THE APPROPRIATE +3V FINGER -



REVISIONS		
CHK	CHANGE NO.	REV.

(IFORK MUX <5:0>)		(K805)	
TITLE	SIZE CODE	NUMBER	REV.
FLT PT FNUA	DCS	M7878-0-1	C
SCALE	SHEET	DIST.	
	5 OF 13		

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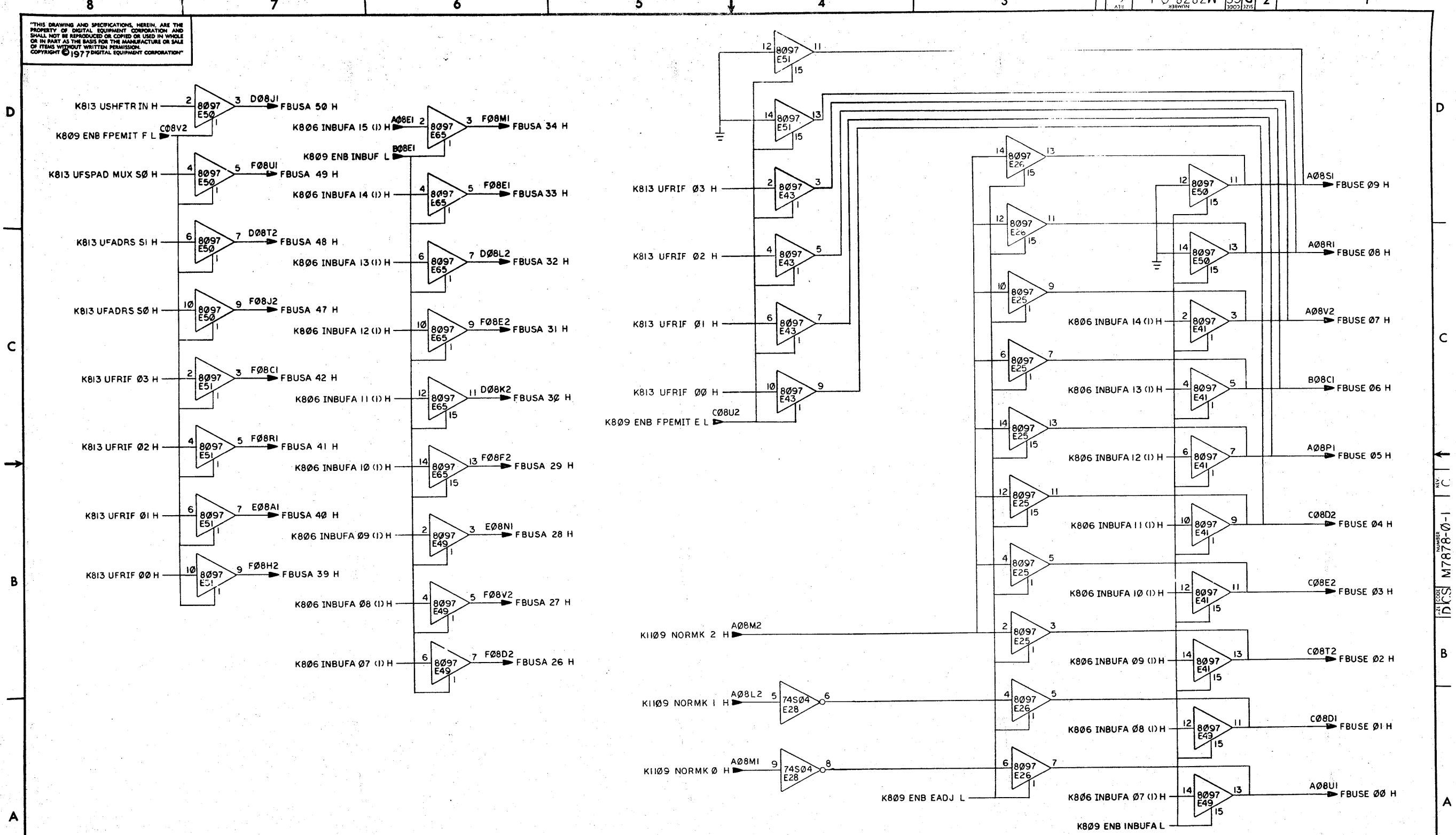
UINBUF S0	FUNCTION
0	SHIFT LEFT
1	LOAD

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE FLT PT FNUA		SIZE CODE DCS	NUMBER M7878-0-1	REV. C
SCALE ---	SHEET 6 OF 13	DIST.		

REV. C  
M7878-0-1  
DCS

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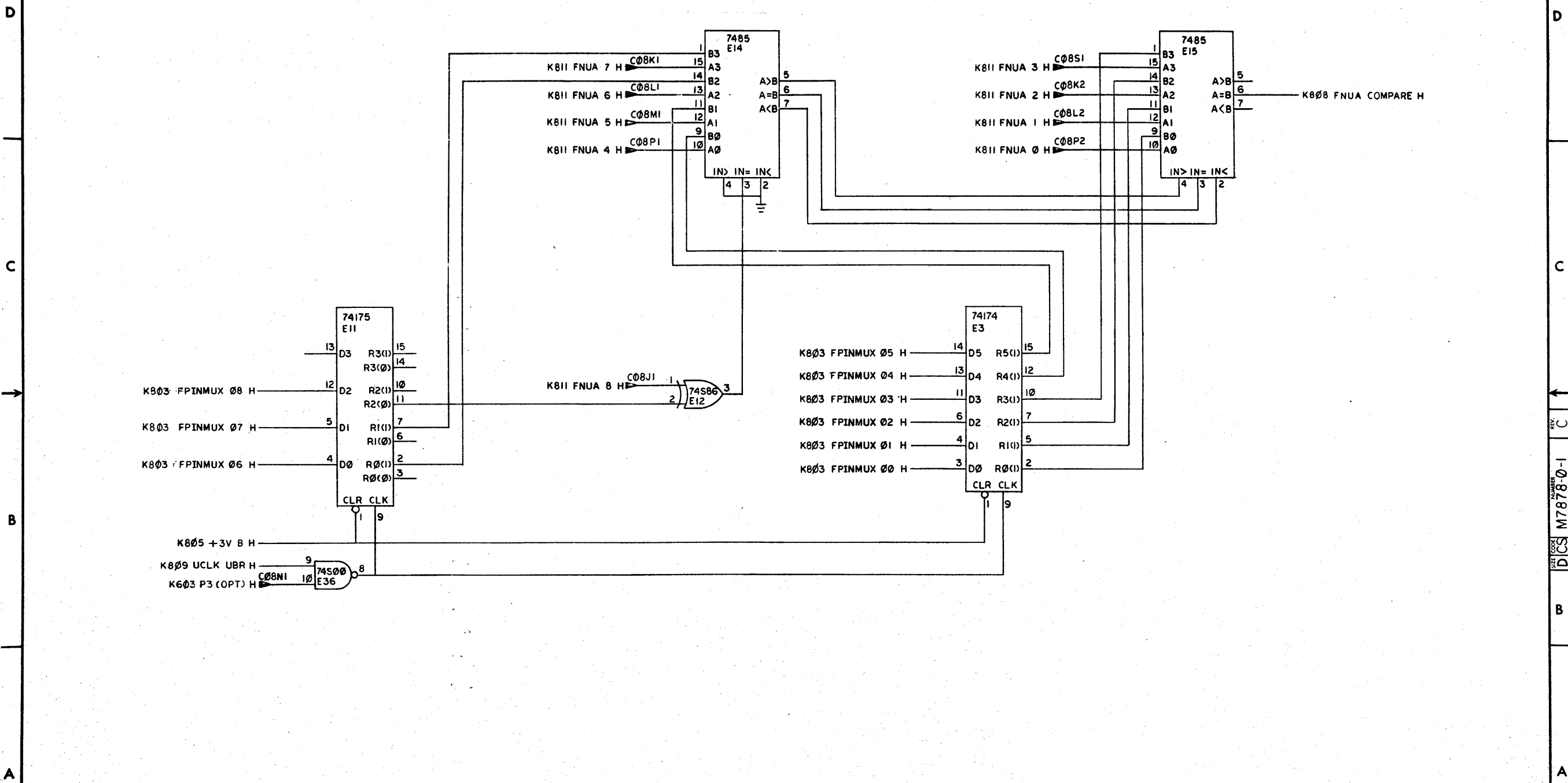


(FBUSA & E TRISTATE DRIVERS) (K807)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE CODE	NUMBER	REV.
FLT PT FNUA	DCS	M7878-0-1	C
SCALE	SHEET	DIST.	
	7 OF 13		

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REVISIONS		
CHK	CHANGE NO.	REV.

(MICROBREAK REGISTER) (K808)

TITLE	FLT PT FNUA	SIZE CODE	DCS	NUMBER	M7878-0-1	REV.	C
SCALE	1/1	SHEET	8 OF 13	DIST.			

REV. C  
 NUMBER DCS M7878-0-1

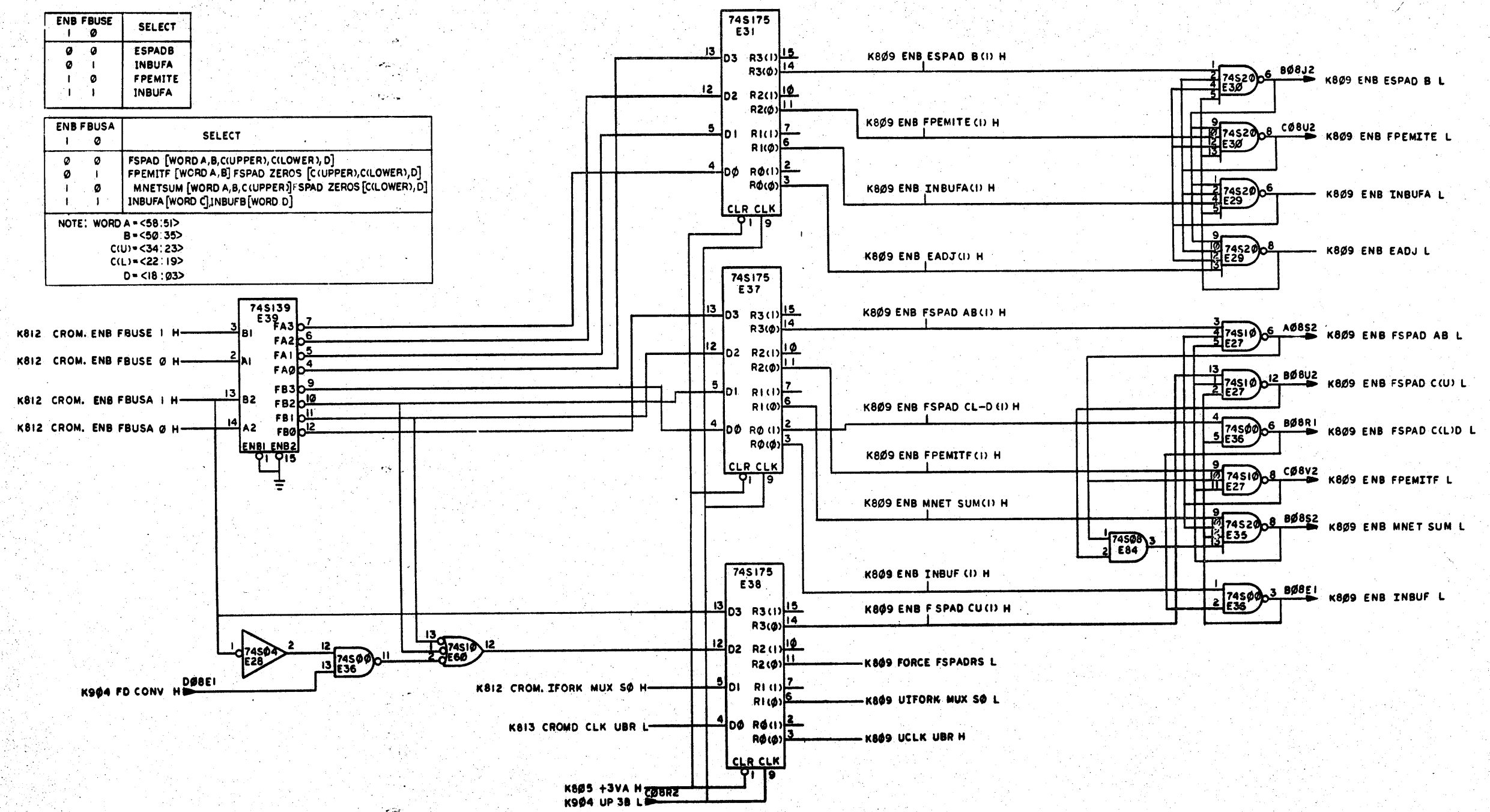
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1-0-8282W 2

ENB FBUSE	SELECT
0 0	ESPADB
0 1	INBUFA
1 0	FPEMITE
1 1	INBUFA

ENB FBUSA	SELECT
0 0	FSPAD [WORD A,B,C(UPPER),C(LOWER),D]
0 1	FPEMITF [WORD A,B] FSPAD ZEROS [C(UPPER),C(LOWER),D]
1 0	MNETSUM [WORD A,B,C(UPPER)] FSPAD ZEROS [C(LOWER),D]
1 1	INBUFA [WORD C], INBUFB [WORD D]

NOTE: WORD A = <58:51>  
 B = <50:35>  
 C(U) = <34:23>  
 C(L) = <22:19>  
 D = <18:03>

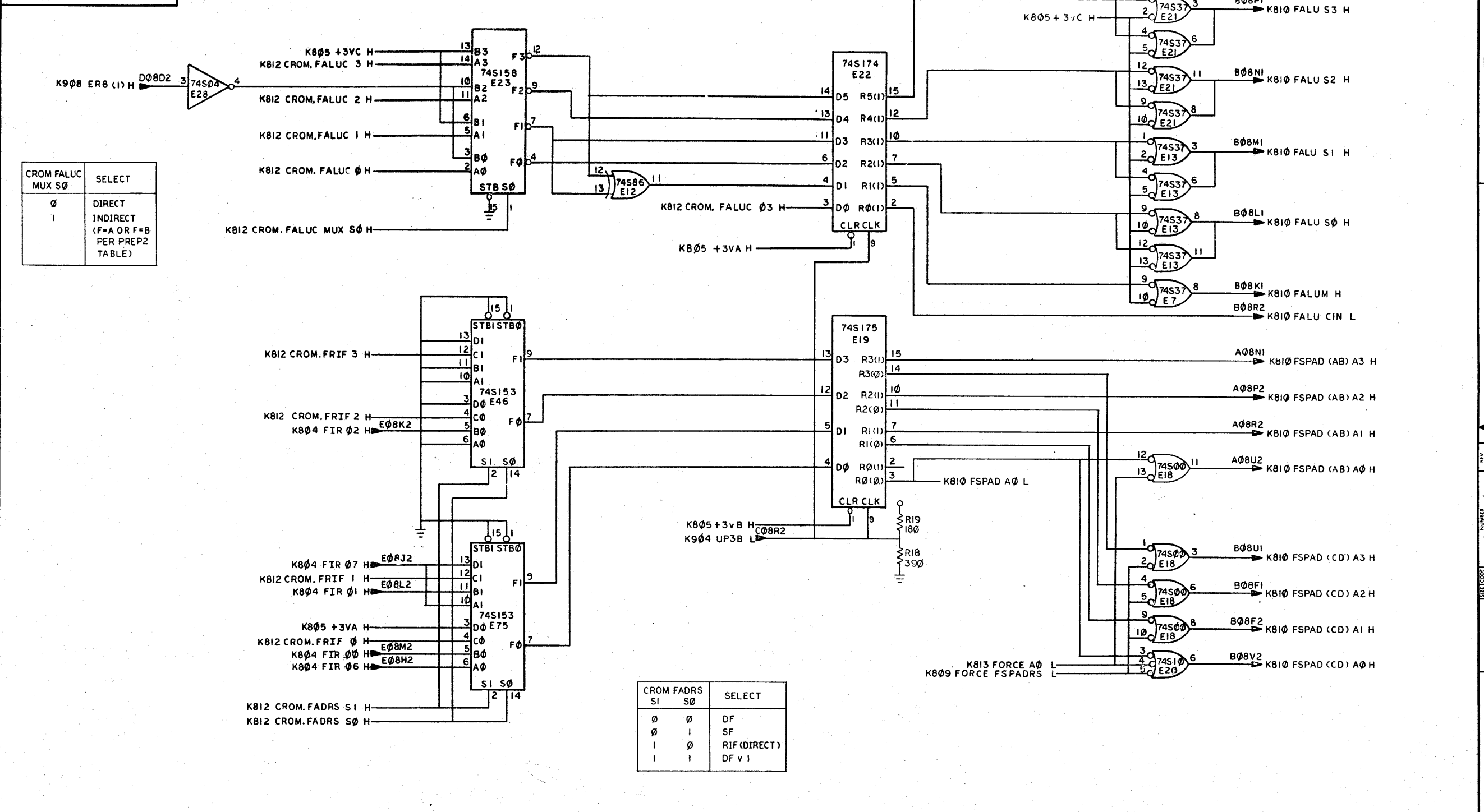


(TRISTATE BUS CONTROL) (K809)

REV.	CHG.	NO.	REV.

TITLE	FLT PT FNUA	REVISION	DCS M7878-0-1	NUMBER	1	REV.	C
SCALE	1:1	SHEET	9 OF 13	DIST.			

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CROM FALUC MUX S0	SELECT
0	DIRECT
1	INDIRECT (F=A OR F=B PER PREP2 TABLE)

CROM FADRS S1	S0	SELECT
0	0	DF
0	1	SF
1	0	RIF (DIRECT)
1	1	DF v I

REVISIONS		
CHK	CHANGE NO.	REV.

(FALU CONTROL & FSPAD ADDRESS) (K810)

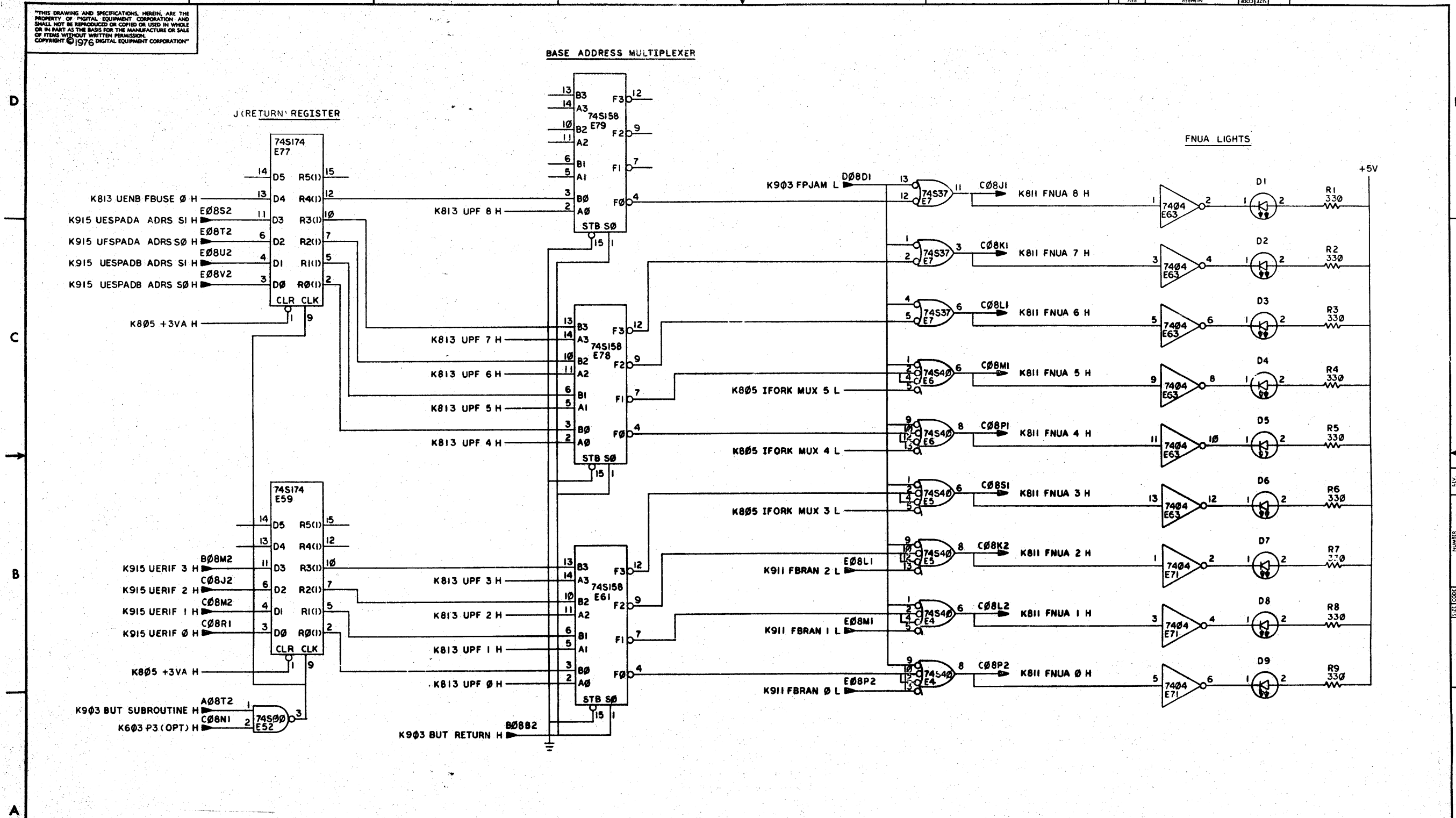
TITLE	SIZE/SCALE	NUMBER	REV.
FLT PT FNUA	DCS	M7878-0-1	C
SCALE	SHEET	DIST.	
1	10 OF 13		

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BASE ADDRESS MULTIPLEXER

J (RETURN) REGISTER

FNUA LIGHTS

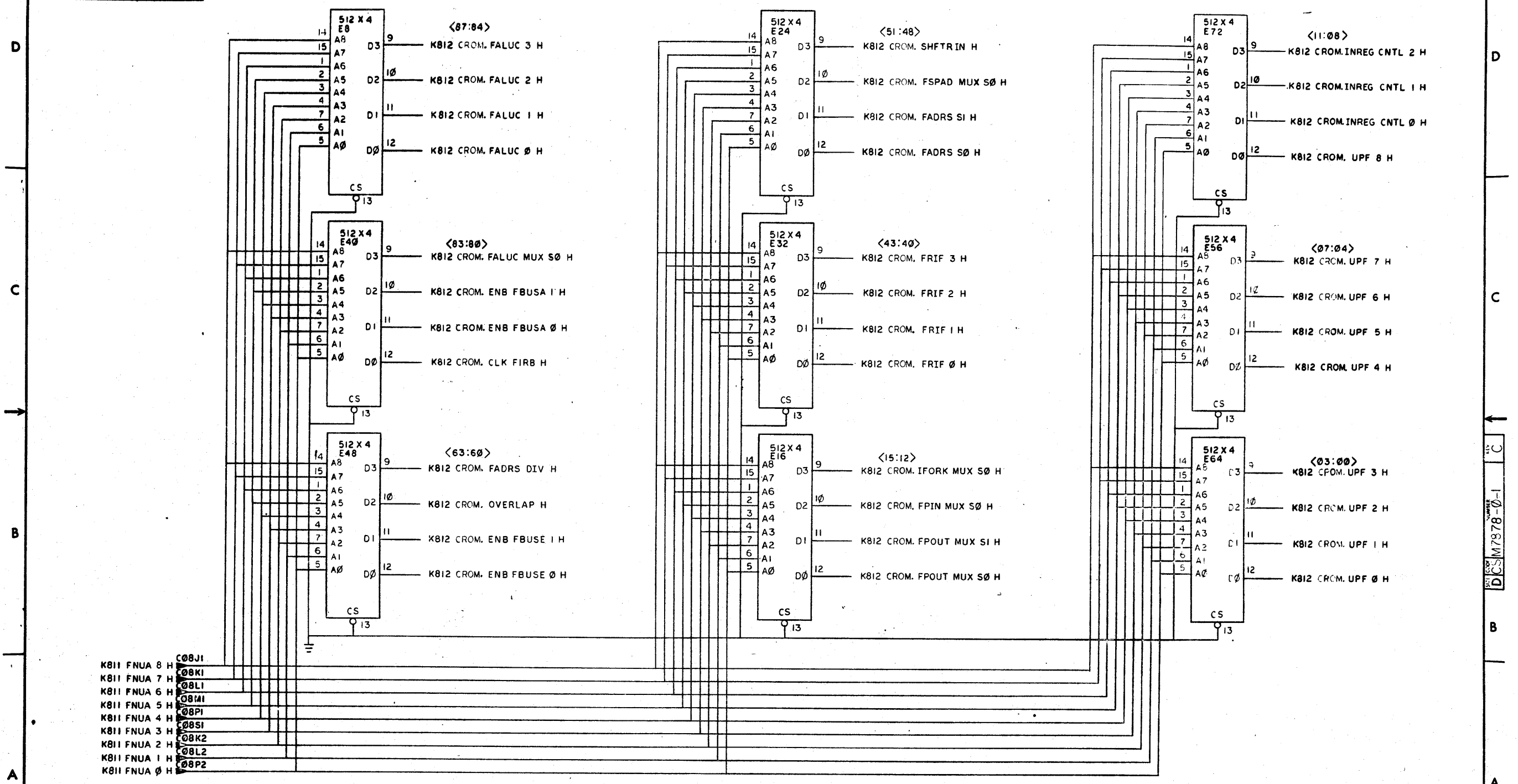


(FLTPT NEXT MICRO ADDRESS) (K811)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	FLT PT FNUA	SIZE CODE	D CS	NUMBER	M7878-0-1	REV.	C
SCALE		SHEET	11	OF	13	DIST.	

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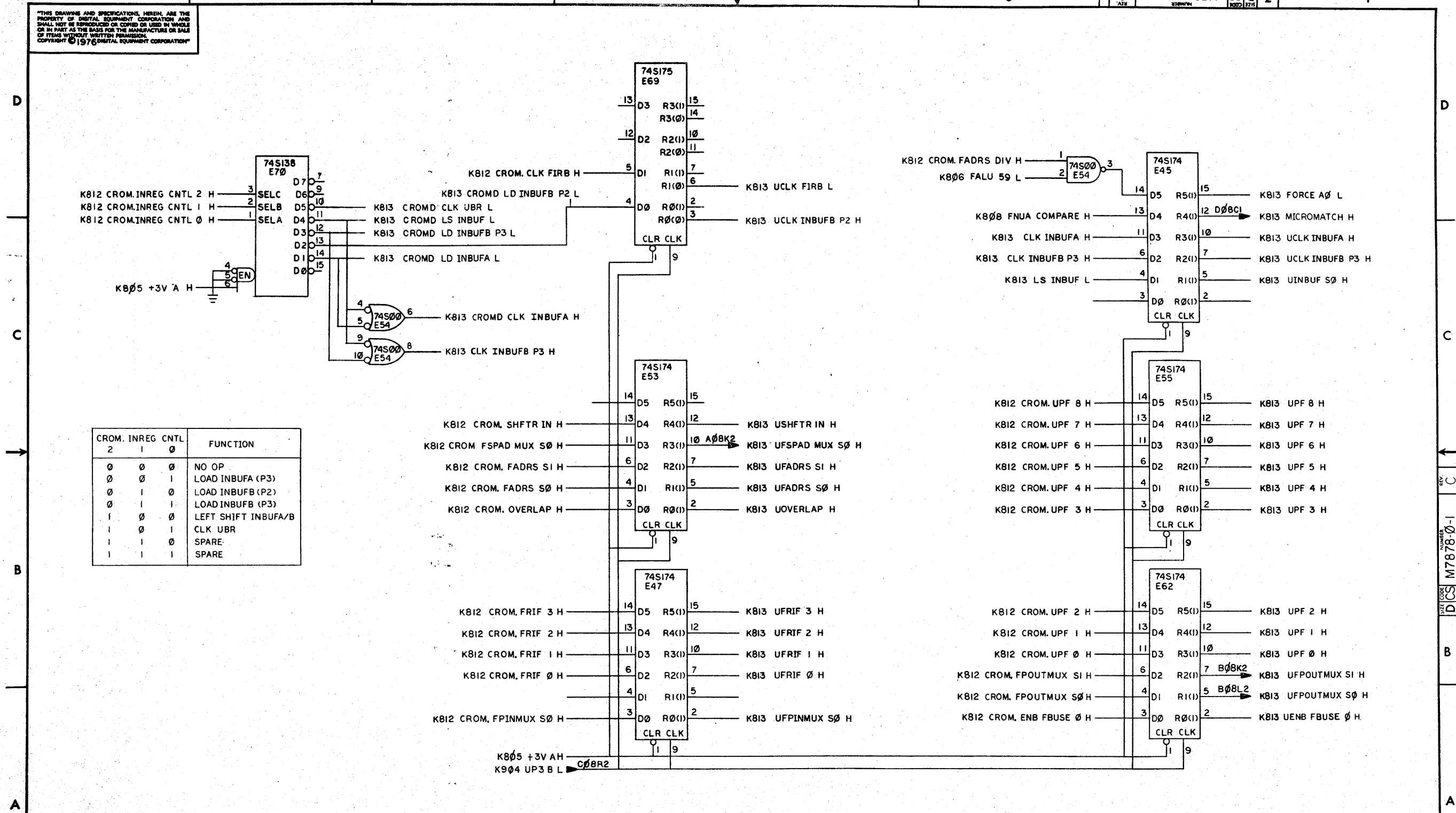


REVISIONS		
CHK	CHANGE NO.	REV.

(CONTROL ROMS) (K812)

TITLE	SIZE/CODE	NUMBER	REV.
FLT PT FNUA	D CS M7878-0-1	12 OF 13	C
SCALE	SHEET	DIST.	

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CROM. INREG. CNTL	2	1	0	FUNCTION
0	0	0	0	NO OP
0	0	0	1	LOAD INBUFA (P3)
0	1	0	0	LOAD INBUFB (P2)
0	1	1	0	LOAD INBUFB (P3)
1	0	0	0	LEFT SHIFT INBUFA/B
1	0	1	0	CLK UBR
1	1	0	0	SPARE
1	1	1	0	SPARE

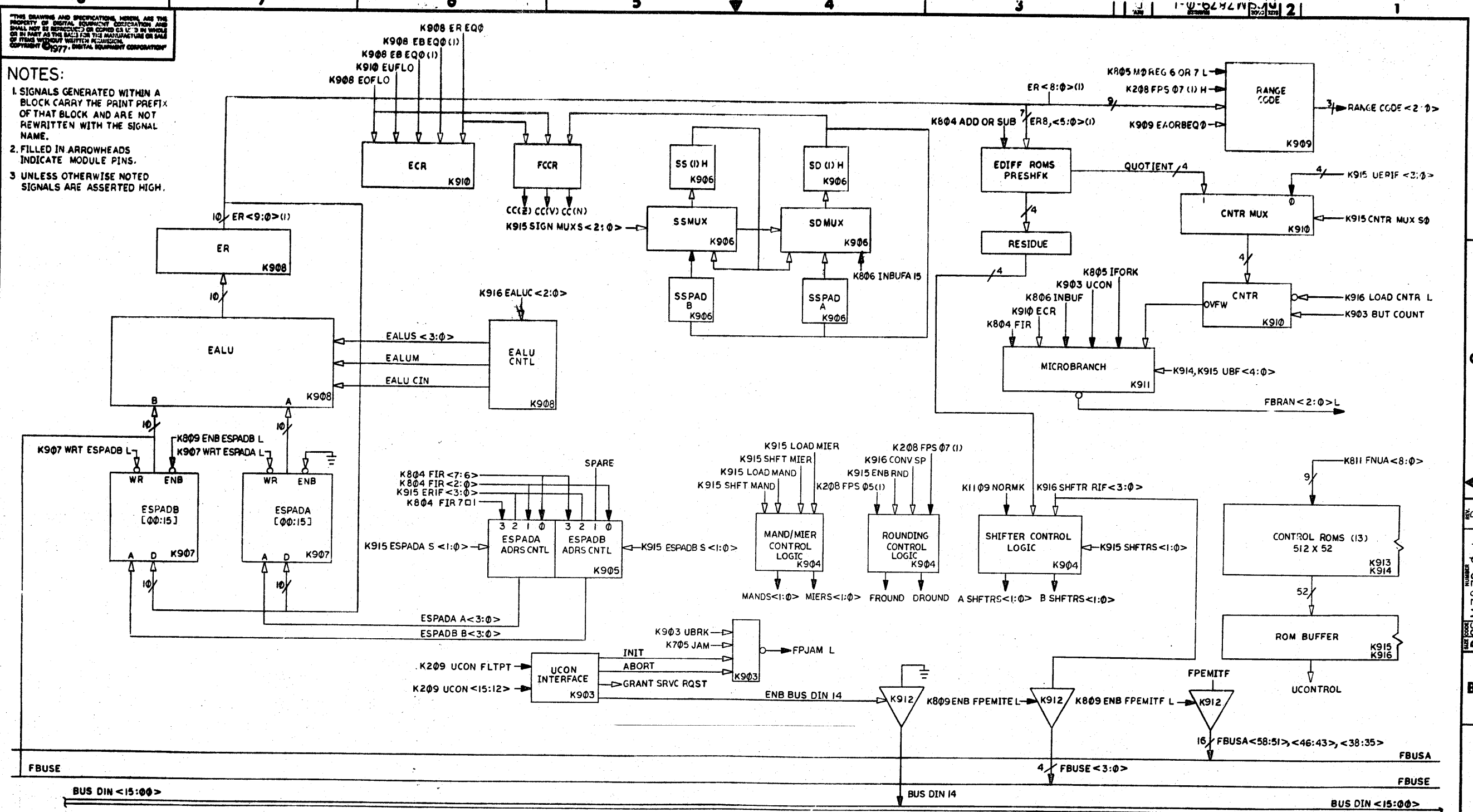
(CONTROL ROM BUFFERS) (K813)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	FLT PT FNUA	SIZE CODE	D CS	NUMBER	M7878-0-1	REV.	C
SCALE		SHEET	13 OF 13	DIST.			

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- NOTES:**
1. SIGNALS GENERATED WITHIN A BLOCK CARRY THE PRINT PREFIX OF THAT BLOCK AND ARE NOT REWRITTEN WITH THE SIGNAL NAME.
  2. FILLED IN ARROWHEADS INDICATE MODULE PINS.
  3. UNLESS OTHERWISE NOTED SIGNALS ARE ASSERTED HIGH.



REV.	DATE	BY	CHKD
1	1/13/77	D. F. FENNER	D. F. FENNER
2	4/28/77	D. F. FENNER	D. F. FENNER
3	4/28/77	D. F. FENNER	D. F. FENNER
4	4/28/77	D. F. FENNER	D. F. FENNER
5	4/28/77	D. F. FENNER	D. F. FENNER

(BLOCK DIAGRAM) (K901)

DRN	1/13/77	FIRST USED ON	
CHKD	4/28/77		
ENGR	D. F. FENNER	TITLE	FLTPT EXP
PRD. ENGR	D. F. FENNER	SIZE CODE	D
PRD. W. ENGR	D. F. FENNER	NUMBER	M7879-0-1
NEXT HIGHER ASSY.		REV.	D
SCALE		DIST.	
SHEET	1 OF 16		

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EXPONENT ALU CONTROL							
EALUC	FUNCTION	S3	S2	S1	S0	M	CIN
0 0 0		-	-	-	-	-	-
0 0 1	A PLUS B	1	0	0	1	0	1
0 1 0	A MINUS B	0	1	1	0	0	0
0 1 1		-	-	-	-	-	-
1 0 0	A	1	1	1	1	1	1
1 0 1		-	-	-	-	-	-
1 1 0	A OR B	1	1	1	0	1	-
1 1 1	B	1	0	1	0	1	-

SIGN CONTROL					
SIGNMUX			FUNCTION		
S2	S1	S0			
0	0	0	SD ← SD	SS ← SS	
0	0	1	SD ← NOT SD	SS ← SS	
0	1	0	SD ← SS	SS ← SS	
0	1	1	SD ← NOT SS	SS ← SS	
1	0	0	SD ← SS XOR SD	SS ← SS	
1	0	1	SU ← INBUFA 15	SS ← SS	
1	1	0	SD ← 0	SS ← SS	
1	1	1	SD ← SSPADA	SS ← SSPADB	

UCON INTERFACE	
UCON FLTP (1) H AND	FUNCTION
UCON 12(1)H	GRANT SERVICE REQUEST (IN RESPONSE TO FLTP SERVICE L)
UCON 13 (1)H	FLTP ABORT
UCON 14 (1)H AND NOT INH UCON (BUS X FER) L	1 → BUS DIN 14
UCON 15(1)H	FLTP INIT
NOT INH UCON (BUS X FER) L	END FPOUTMUX

EDIFF QUOTIENT & RESIDUE ROM				
A < 1:0 > B		QUOT		RES < 3:0 > B
A	B	3	2 1 0	RES
0 - 12		1	1 1 1	5 - 17
13 - 25		1	1 1 0	5 - 17
26 - 40		1	1 0 1	5 - 17
41 - 53		1	1 0 0	5 - 17
54 - 66		1	0 1 1	5 - 17
67 - 77		1	0 1 0	5 - 15
100		1	0 1 0	0
101 - 111		1	0 1 0	15 - 5
112 - 124		1	0 1 1	17 - 5
125 - 137		1	1 0 0	17 - 5
140 - 152		1	1 0 1	17 - 5
153 - 165		1	1 1 0	17 - 5
166 - 177		1	1 1 1	17 - 6
200 - 213		0	0 0 0	4 - 17
214 - 226		1	1 1 1	3 - 17
227 - 241		1	1 1 0	5 - 17
242 - 254		1	1 0 1	5 - 17
255 - 267		1	1 0 0	5 - 17
270 - 277		1	0 1 1	5 - 14
300		1	0 1 1	0
301 - 310		1	0 1 1	14 - 5
311 - 323		1	1 0 0	17 - 5
324 - 336		1	1 0 1	17 - 5
337 - 351		1	1 1 0	17 - 5
352 - 364		1	1 1 1	17 - 5
365 - 377		0	0 0 0	17 - 5

U BRANCH (DUT MUX) TABLE				
UBF FIELD	BITS < 5:3 >	BIT 2	DIT 1	DIT 0
BUT 00			K805 M 0 H	K903 GRANT SRVC RQST H
BUT 01			K910 ECR.EAEQ0(1)H	K910 ECR.EBEQ0(1)H
BUT 02		K906 INDFD02(1)H	K806 INDFB01(1)H	K806 INDFB00(1)H
BUT 03		K903 FIRB 08(1)H	K804 FIR07 H	K804 FIR 06 H
BUT 04			K908 ER 8(1) H	K910 ECR.EREQ0(1) H
BUT 05	K805 IFORKMUX < 5:3 >	K805 IFORKMUX 2 H	K805 IFORKMUX 1 H	K805 IFORKMUX 0 H
BUT 06		K1109 AR 59 (1) H	K910 ECR.EOUFLO H	K804 INSTR RCVD H
BUT 07		K804 FIR 02 H	K804 FIR 01 H	K804 FIR 00 H
BUT 10			K906 NEG ZERO H	K208 FPS 07 (1) H
BUT 11				K804 LDONVP H
BUT 12				K904 LDUB H
BUT 13			K906 INDFB 03(1)H	K910 ECR.EAORBEQ 0 H
BUT 14			K208 FPS 06 (1) H	K906 SD (1) H
BUT 15			K804 IMMEDIATE H	
BUT 16				
BUT 17			K806 INDFB 02 (1)H	K806 INDFB 01 (1)H
BUT 20			K803 FP INSTR L	K911 INSTR RCVD L
BUT 21				K1109 AR 59 (1) H
BUT 22				K910 CNTR=1111 H
BUT 23			K908 ER9(1) H	K1109 NORMKOVFLW L
BUT 24				K207 FLTPGO (1) H
BUT 25			K910 ECR.EOFLO(1)H	K910 ECR.EUFLO(1) H
BUT 26			K903 INITFLAG(1) H	K903 UBRKFLAG (1) H
BUT 27				K208 FPS07 (1) H

RANGE CODE ROM							
ER < 8:0 > B	D3	D2	D1	D0	FPS07		RANGE CODE
					0 (SINGLE)	1 (DOUBLE)	
0	1	1	1	0	EQ	EQ	0 0 1
1	1	1	0	1	GT1	GT1	0 1 0
2 - 13	1	1	0	0	GT2	GT2	0 1 1
14 - 30	1	0	1	0	GT3	GT3	1 0 1
31 - 70	0	0	1	1	MGT	GT3	1 0 0 → 1
71 - 377	1	0	1	1	MGT	MGT	1 0 0
400 - 707	1	0	1	1	MGT	MGT	1 0 0
710 - 747	0	0	1	1	MGT	GT3	1 0 0 → 1
750 - 764	1	0	1	0	GT3	GT3	1 0 1
765 - 776	1	1	0	0	GT2	GT2	0 1 1
777	1	1	0	1	GT1	GT1	0 1 0
EADPBEQ0	1	1	1	1			0 0 0
MB REG 6 OR 7	-	-	-	-			1 1 1

GT1 = 1 BIT SHIFT (TYPE 1 = GREATER THAN)  
 GT2 = 1 STEP SHIFT (2-11)0 (TYPE 2 = GREATER THAN)  
 GT3 = MULTI STEP SHIFT (TYPE 3 = GREATER THAN)  
 MGT = EXCEEDS REGISTER LENGTH (MUCH GREATER THAN)

ACTIVE BUT ROM			
UBF		OCTAL	ACTIVE BUT
4	3 2 1 0		
1	0 0 1 0	22	COUNT
1	0 1 1 0	26	CLEAR JAW
1	1 0 0 1	31	SET DIS FOC
1	1 0 1 0	32	CLEAR ER 98
1	1 1 0 0	34	SUBROUTINE
1	1 1 0 1	35	RETURN

BITS 33 36 & 37 ARE UNUSED

1 = HIGH  
 0 = LOW

BLANK LOCATIONS = 0  
 BUT 30 IS NULL (MUX DISABLED)  
 BUTS 11 & 16 ARE UNUSED

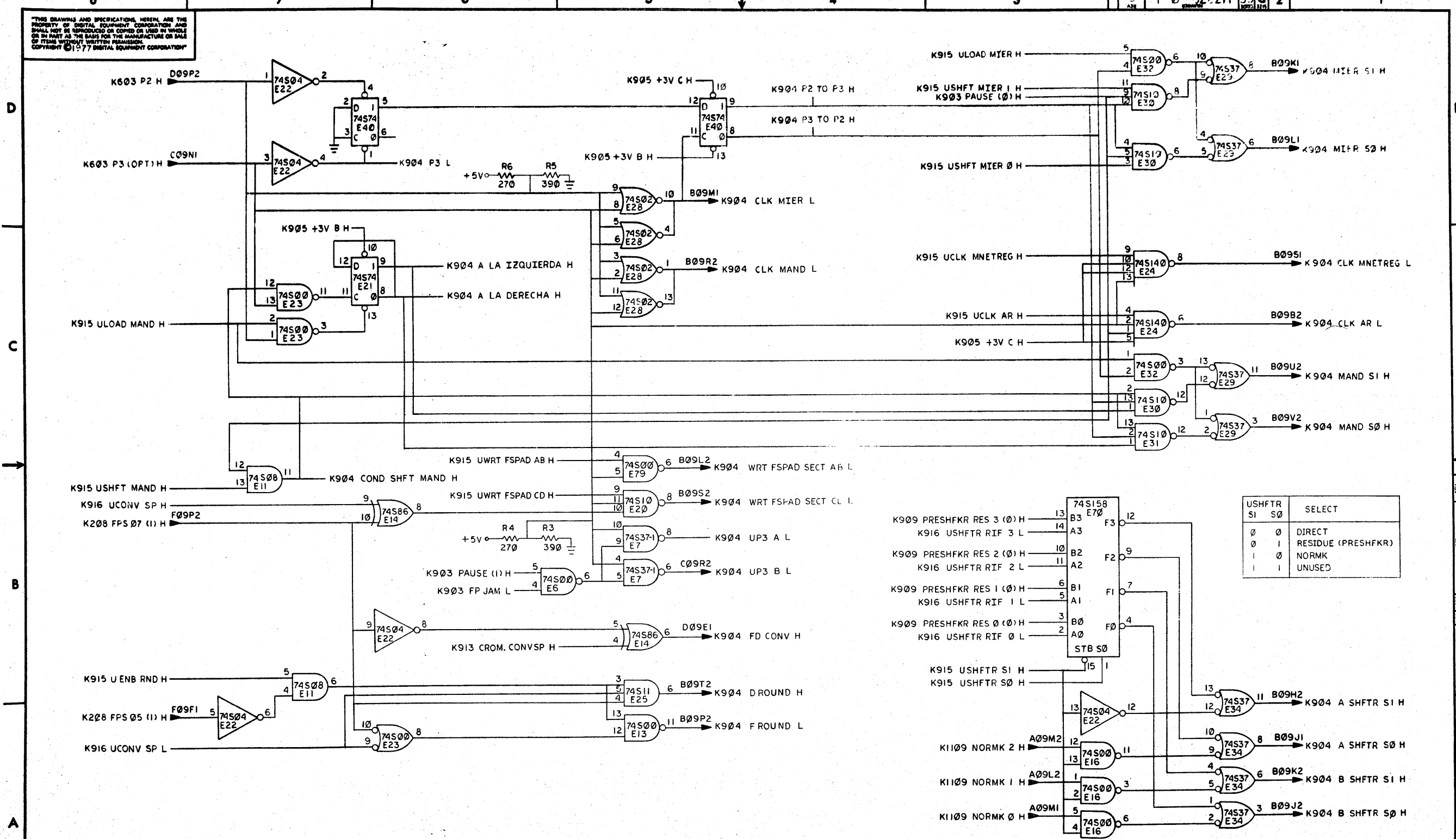
REVISIONS		
CHK	CHANGE NO.	REV.

(TABLES) (K902)

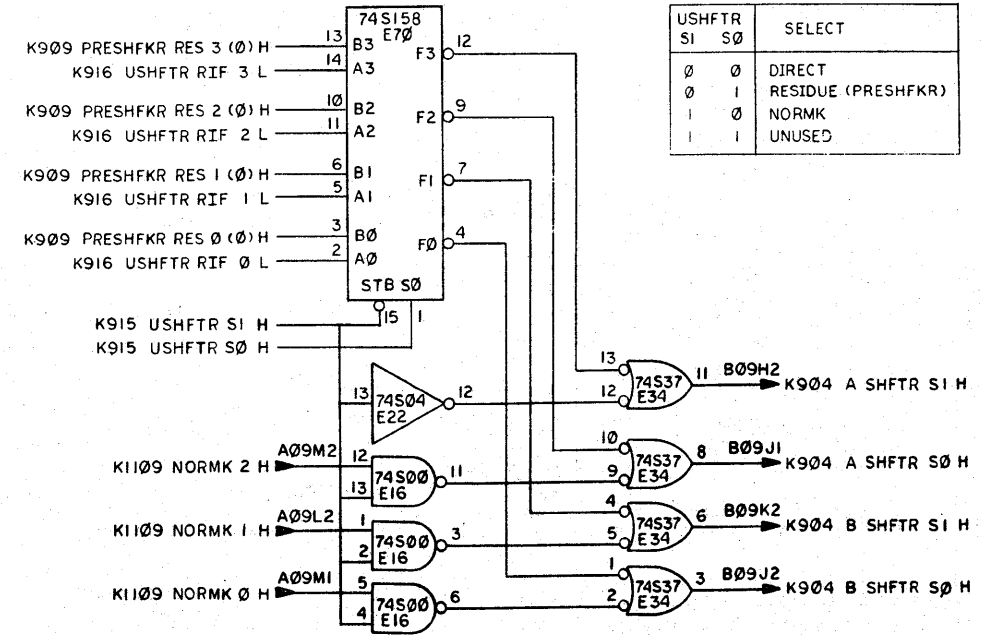
TITLE	FLTP EXP	SIZE CODE	D	NUMBER	CSM78790-1	REV.	D
SCALE	SHEET 2 OF 16	DIST.					



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USHFTR SI	S0	SELECT
0	0	DIRECT
0	1	RESIDUE (PRESHFKR)
1	0	NORMK
1	1	UNUSED

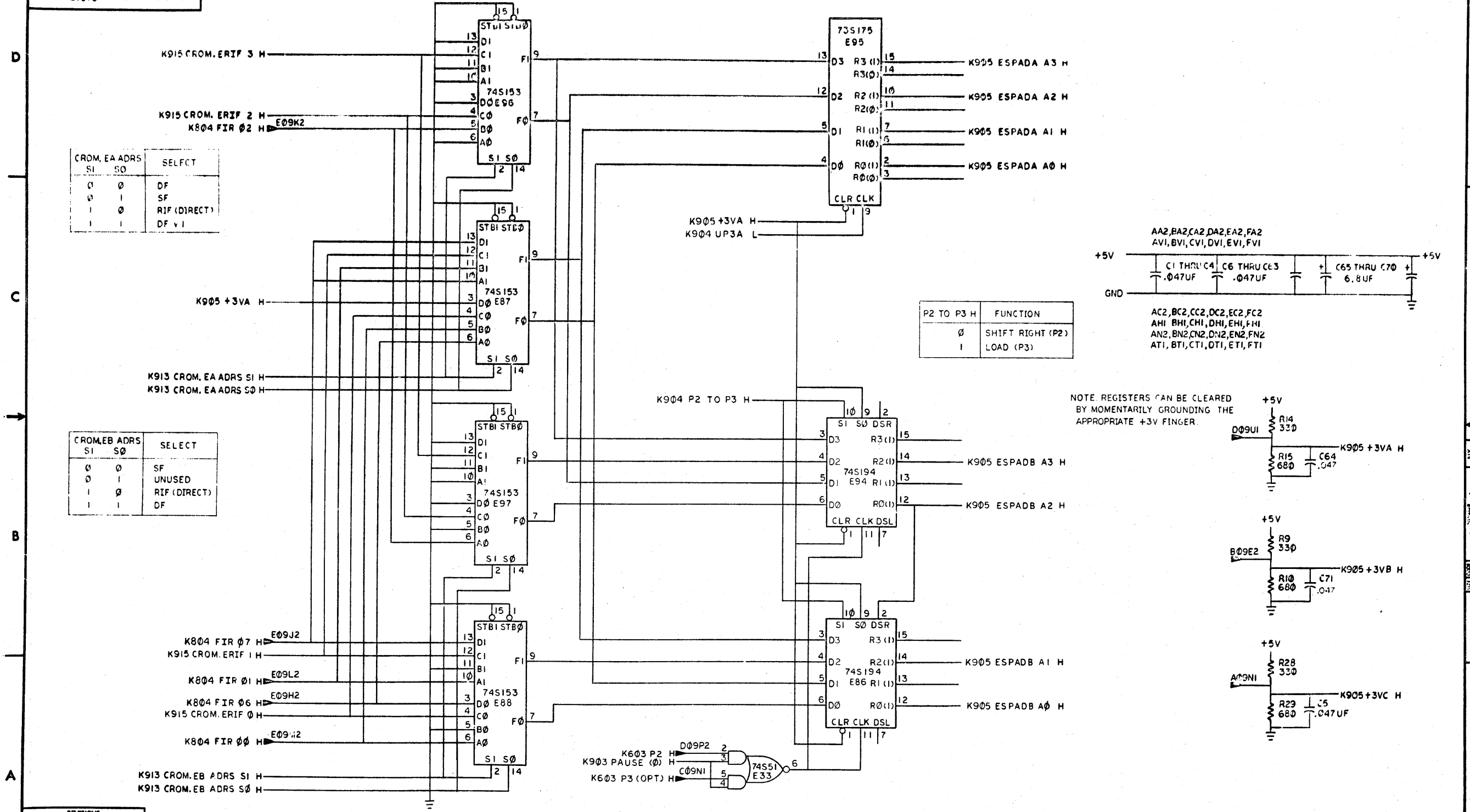


(DATA PATH CONTROL) (K904)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	FLTPT EXP	SIZE CODE	D CS	NUMBER	M7879-0-1	REV.	D
SCALE		SHEET	4 OF 16	DIST.			

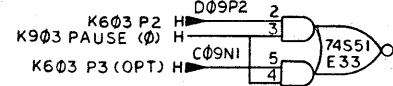
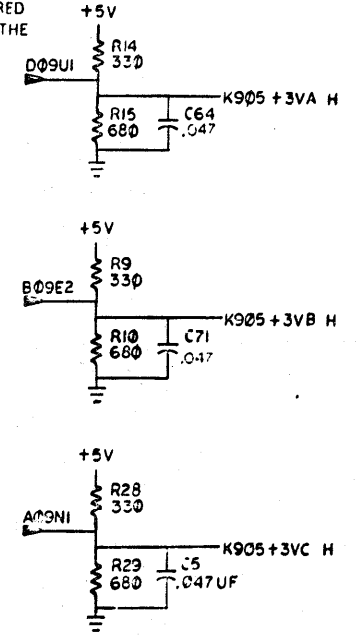
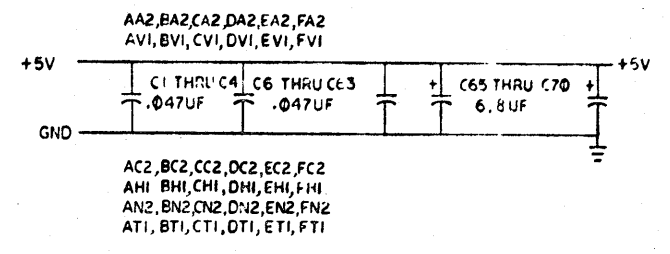
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CROM. EA ADRS	SI	S0	SELECT
0	0	0	DF
0	0	1	SF
1	0	0	RIF (DIRECT)
1	1	1	DF v1

CROM. EB ADRS	SI	S0	SELECT
0	0	0	SF
0	1	0	UNUSED
1	0	0	RIF (DIRECT)
1	1	1	DF

P2 TO P3 H	FUNCTION
0	SHIFT RIGHT (P2)
1	LOAD (P3)

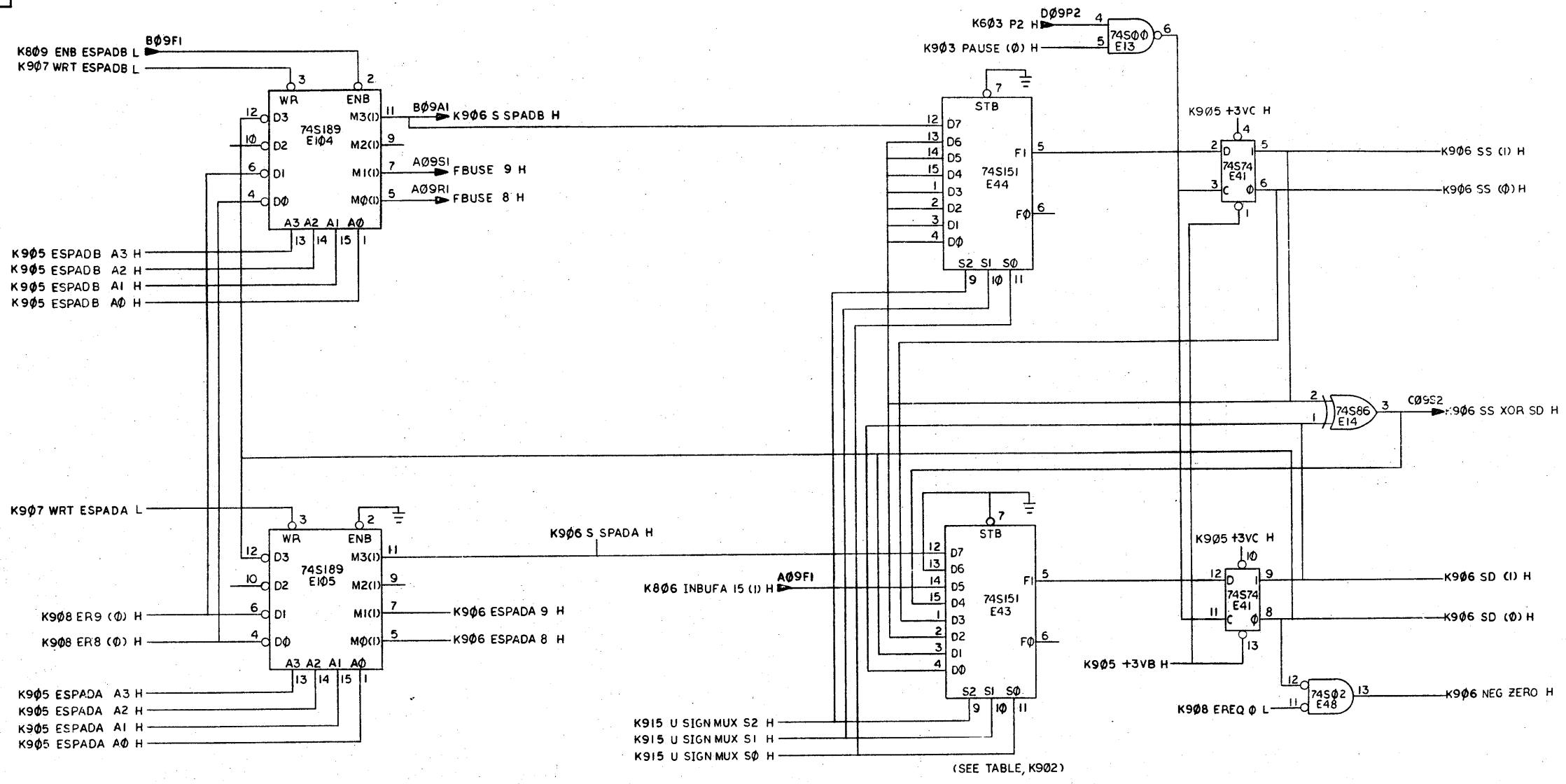


REVISIONS		
CHK	CHANGE NO.	REV.

(EXPONENT SCRATCH PAD ADDRESS REGISTERS) (K905)

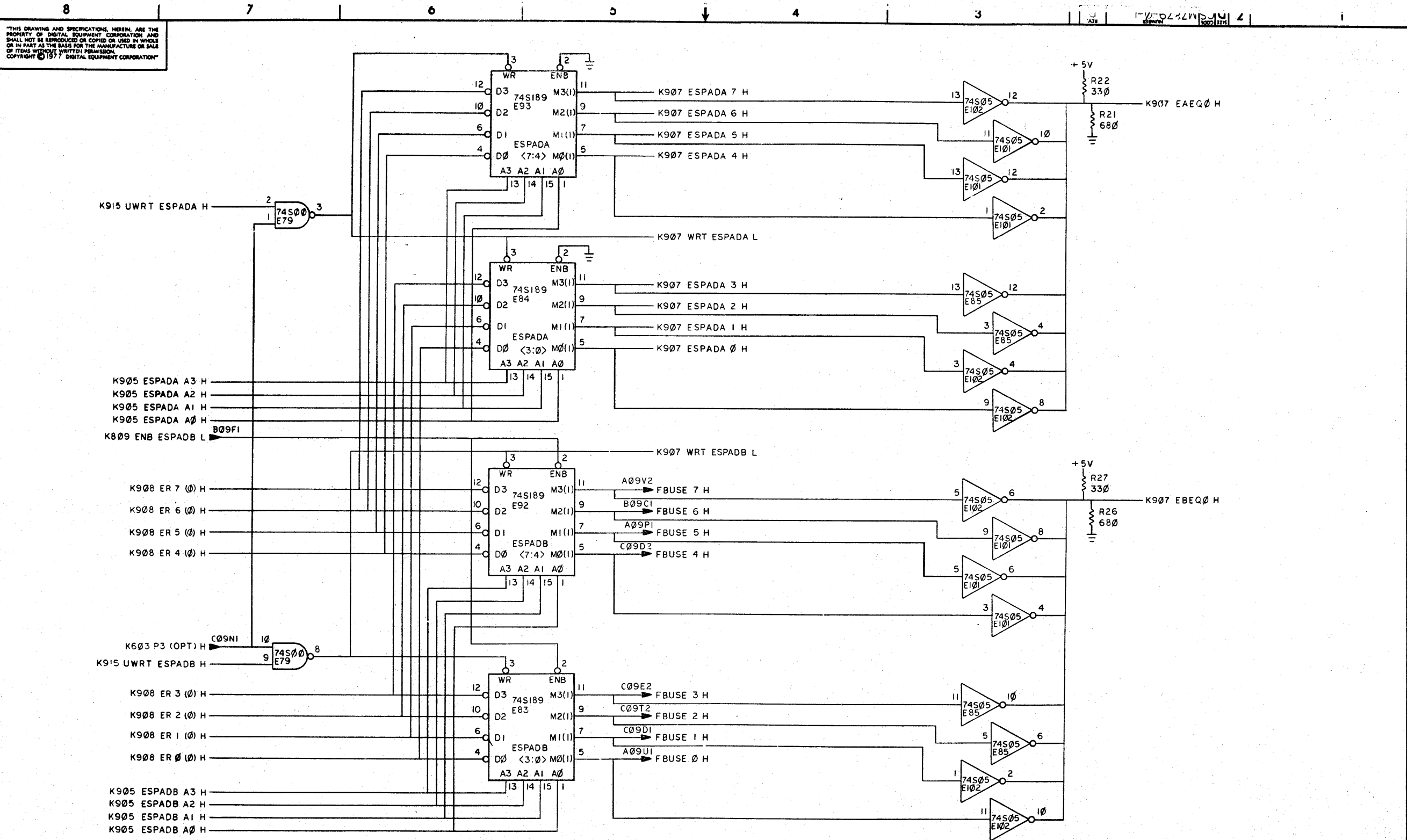
TITLE	FLTPT EXP	SIZE CODE	D	NUMBER	M7879-0-1	REV.	D
SCALE		SHEET	50F16	DIST.			

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REVISIONS		
CHK	CHANGE NO.	REV.

(SIGN LOGIC)		(K906)	
TITLE	FLTPT EXP	SIZE CODE	D CS
NUMBER	M7879-0-1	REV.	0
SCALE	←→	SHEET	6 OF 16
DIST.			

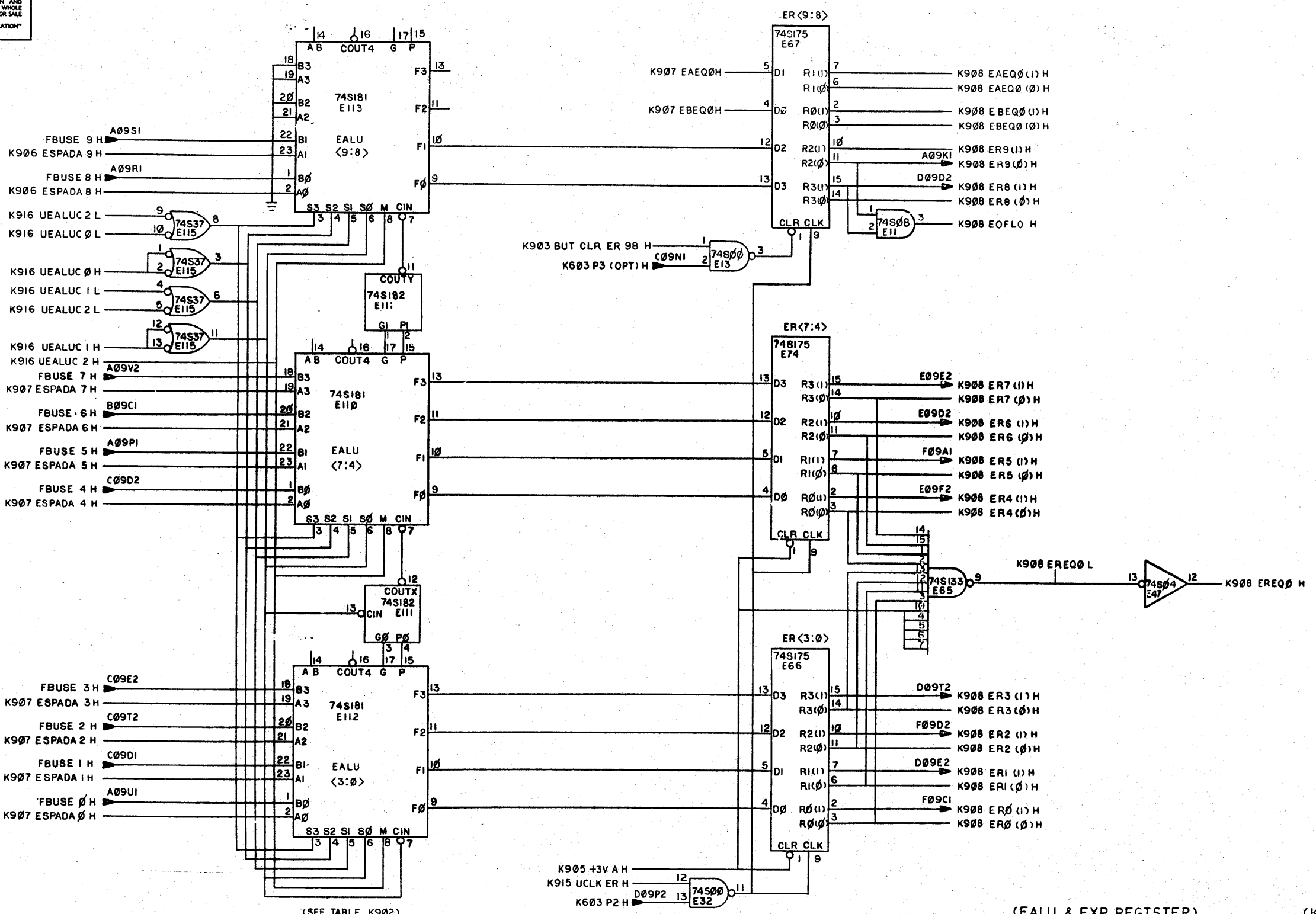


REVISIONS		
CHK	CHANGE NO.	REV.

(EXPONENT SCRATCH PAD) (K907)

TITLE FLTPT EXP		SIZE CODE D	NUMBER CSM7879-0-1	REV. D
SCALE	SHEET 7 OF 16	DIST.	21	

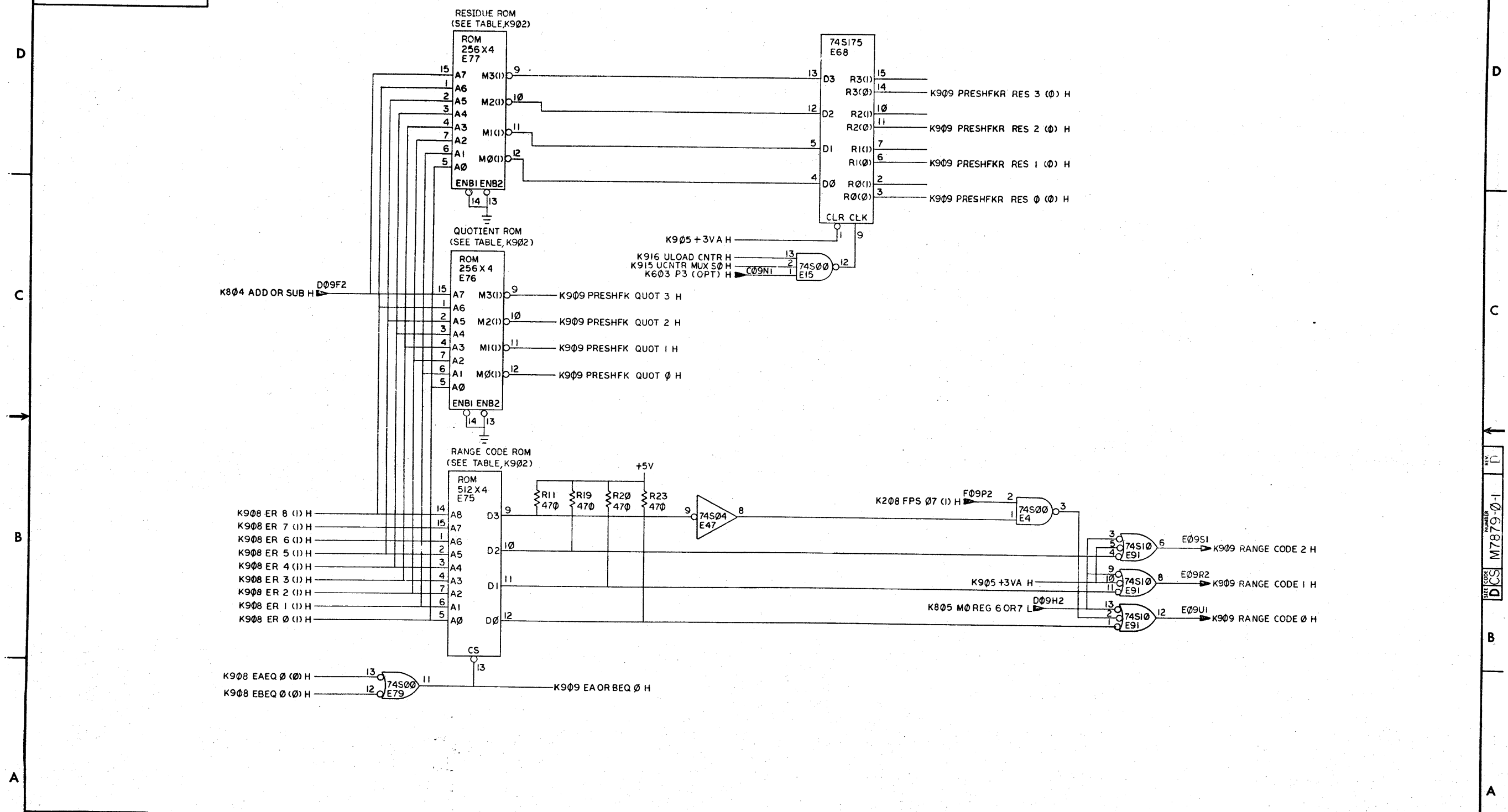
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(EALU & EXP REGISTER) (K908)

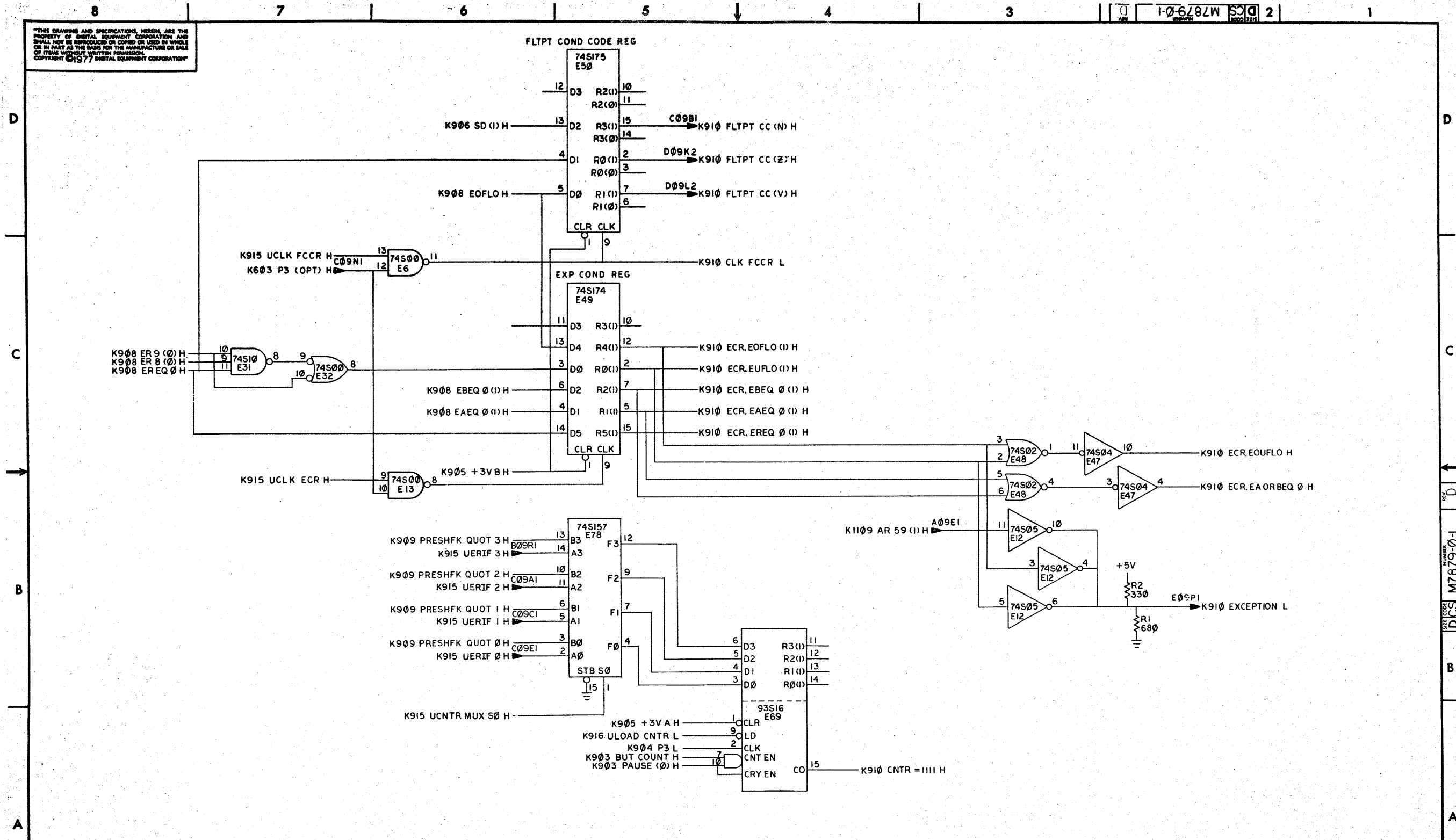
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE CODE	NUMBER	REV.
FLTPT EXP	D CS	M7879-0-1	D
SCALE	SHEET	8 OF 16	DIST.



REVISIONS		
CHK	CHANGE NO.	REV.

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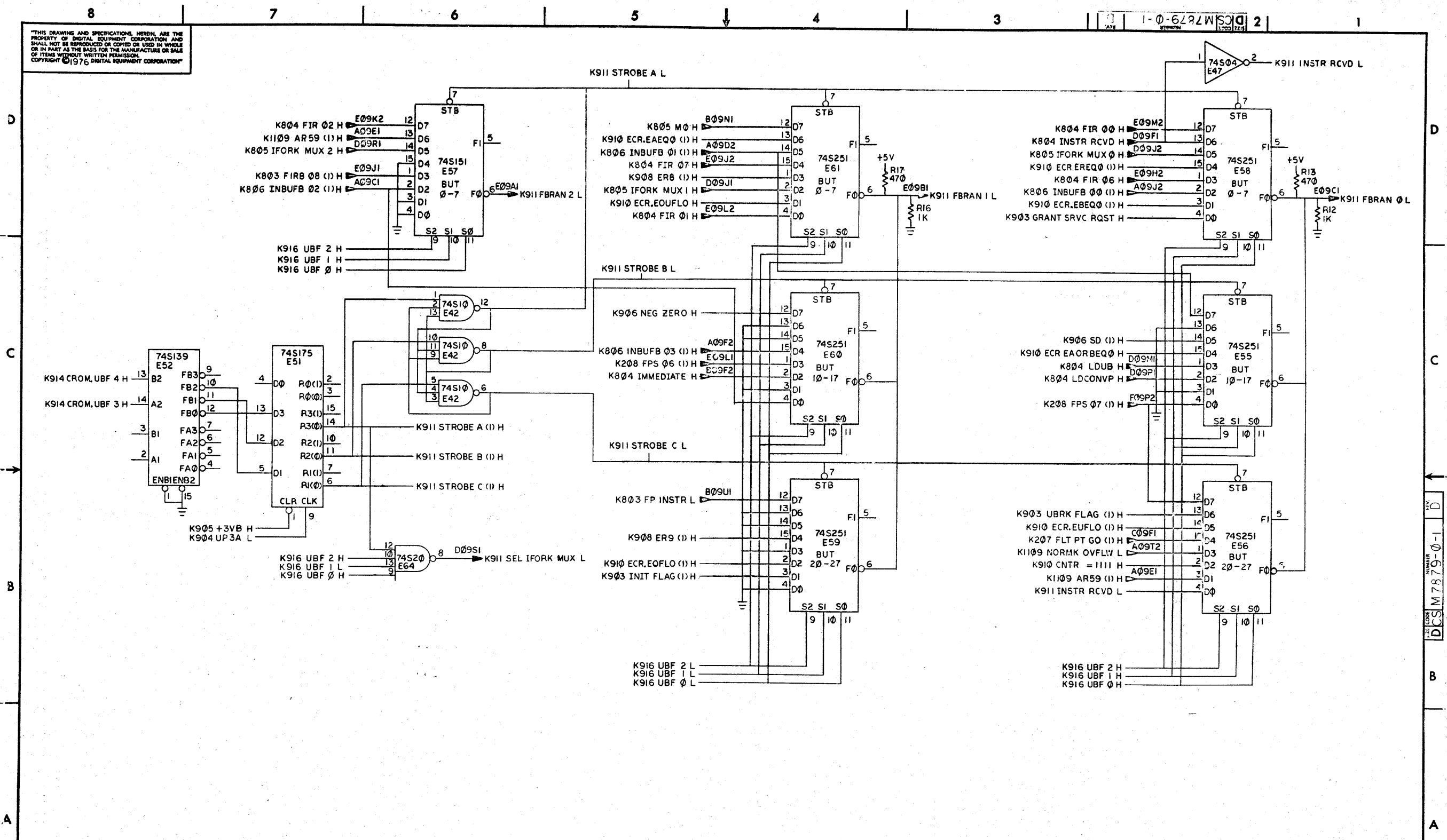
REVISIONS		
CHK	CHANGE NO.	REV.

(FCCR, ECR & CNTR)		(K910)	
TITLE	SIZE CODE	NUMBER	REV.
FLTPT EXP	DCS	M7879-0-1	D
SCALE	SHEET 10 OF 16	DIST.	

24

DCS M7879-0-1  
 SHEET 10 OF 16

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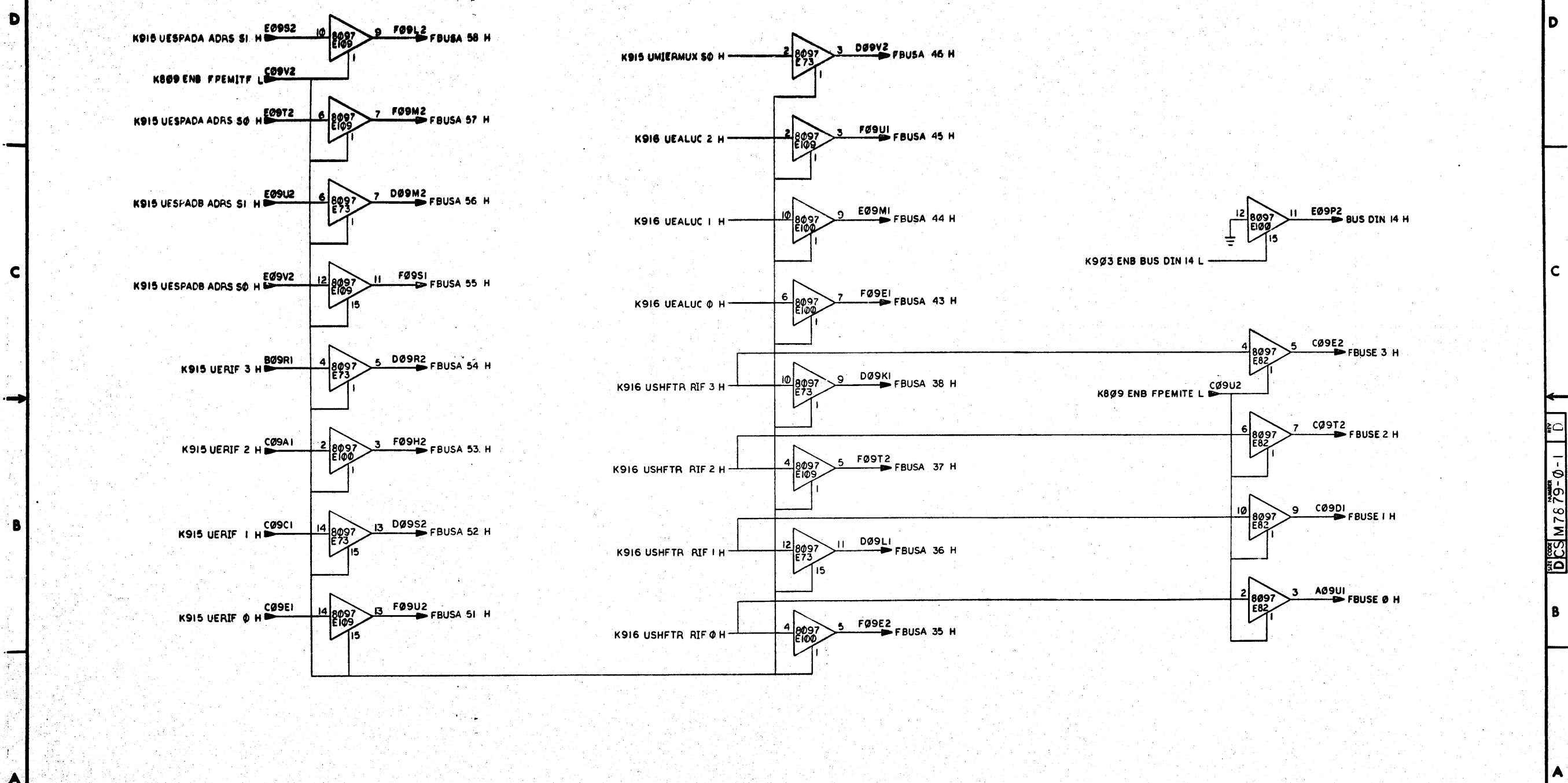


REVISIONS		
CHK	CHANGE NO.	REV.

(MICROBRANCH <2:0>)		(K911)	
TITLE	FLTPT EXP	SIZE CODE	NUMBER
SCALE	SHEET 11 OF 16	D CS	M7879-0-1
DIST.		REV.	D

DCS M7879-0-1 REV. D

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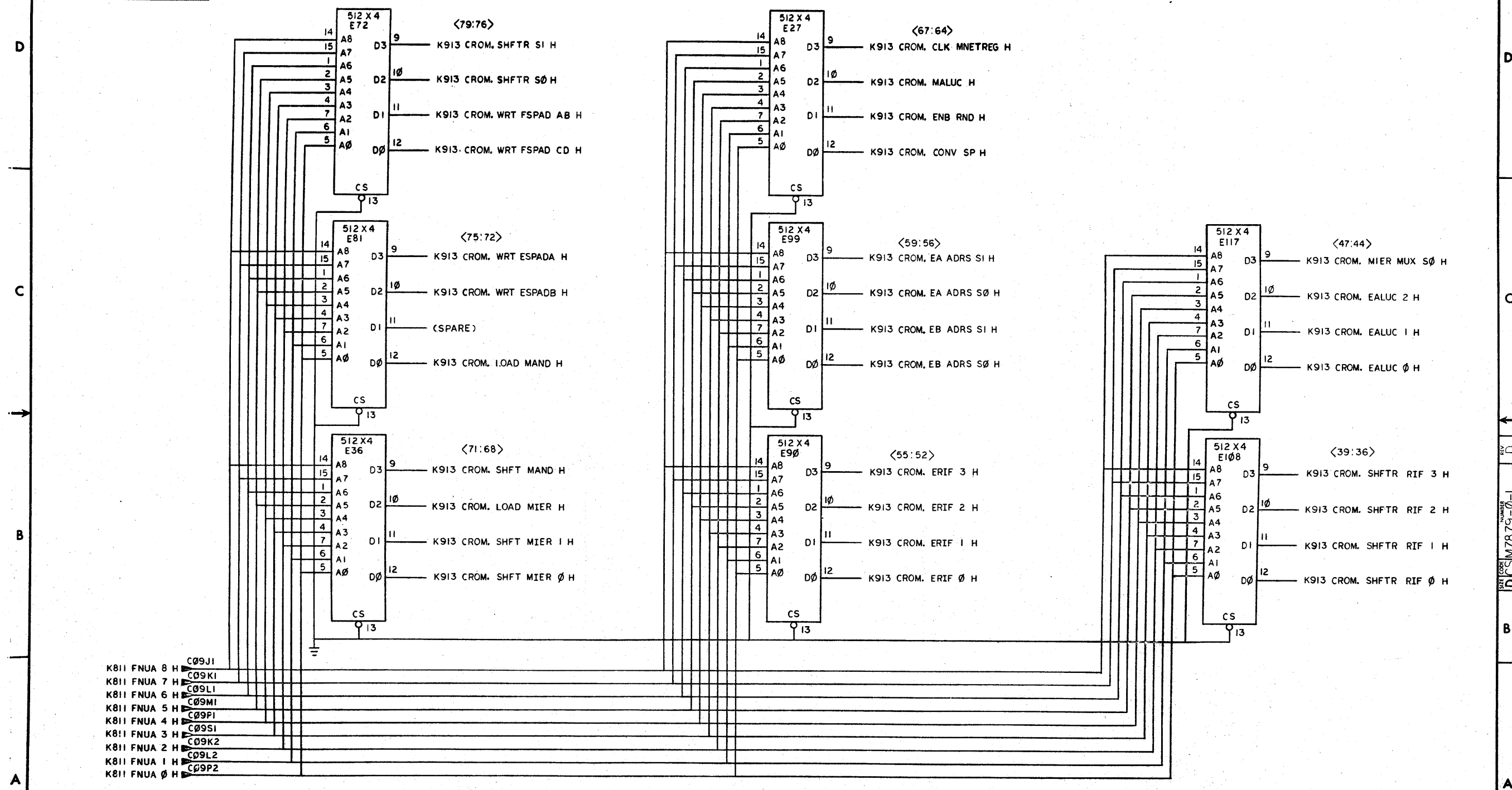
REVISIONS		
CHK	CHANGE NO.	REV.

(FPemite & F TRISTATE DRIVERS) (K912)

TITLE	FLTPT EXP.	DCS	NUMBER	M7879-0-1	REV.	D
SCALE	12 OF 16	EXT.				

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1-0-6282W SDC 2

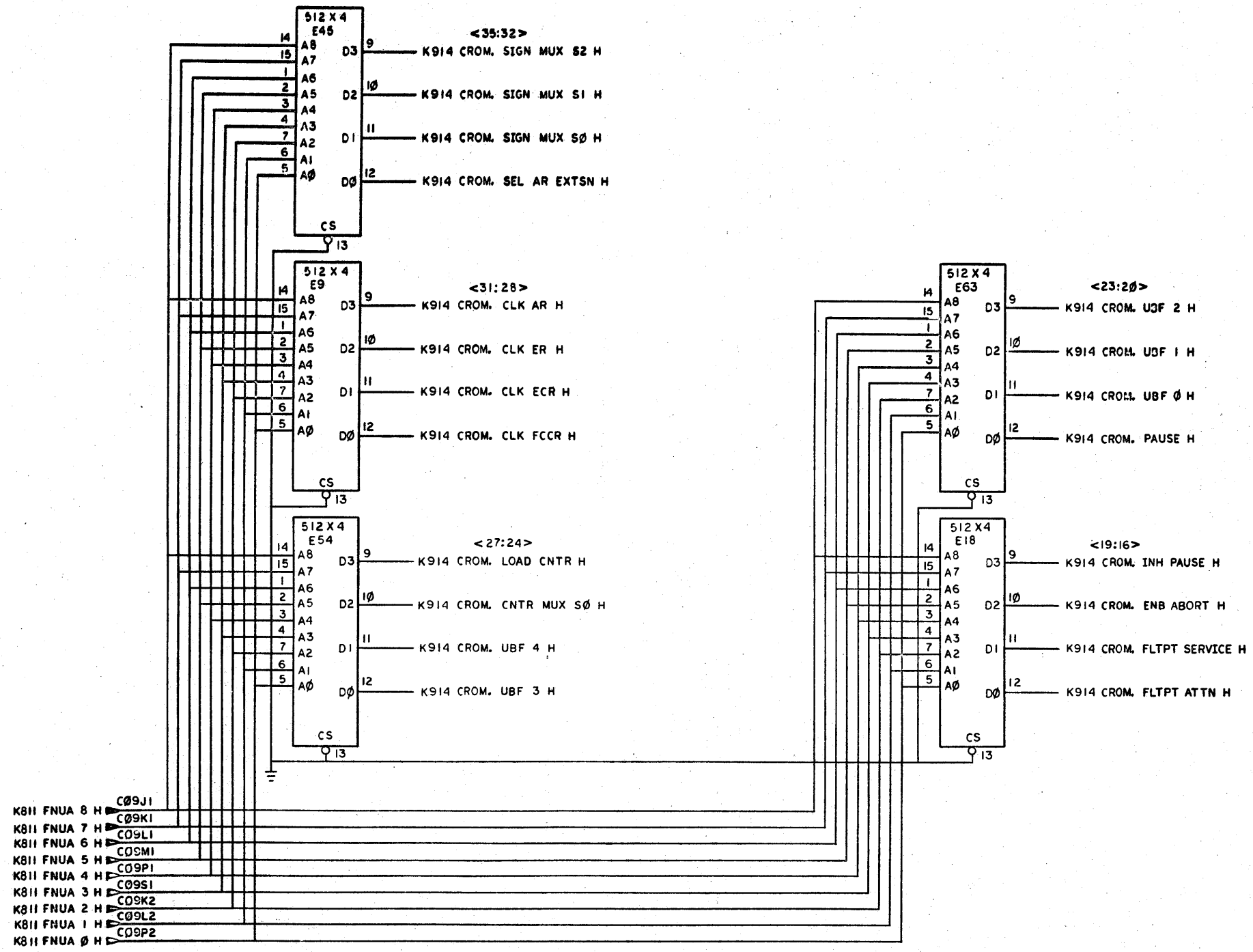


REVISIONS		
CHK	CHANGE NO.	REV.

(CONTROL ROMS I)		(K913)	
TITLE	SCALE	SIZE CODE	NUMBER
FLTPT EXP	←	DCSM7879-0-1	1
SHEET 13 OF 16		DIST.	REV. D

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DCSM7879-0-1 2



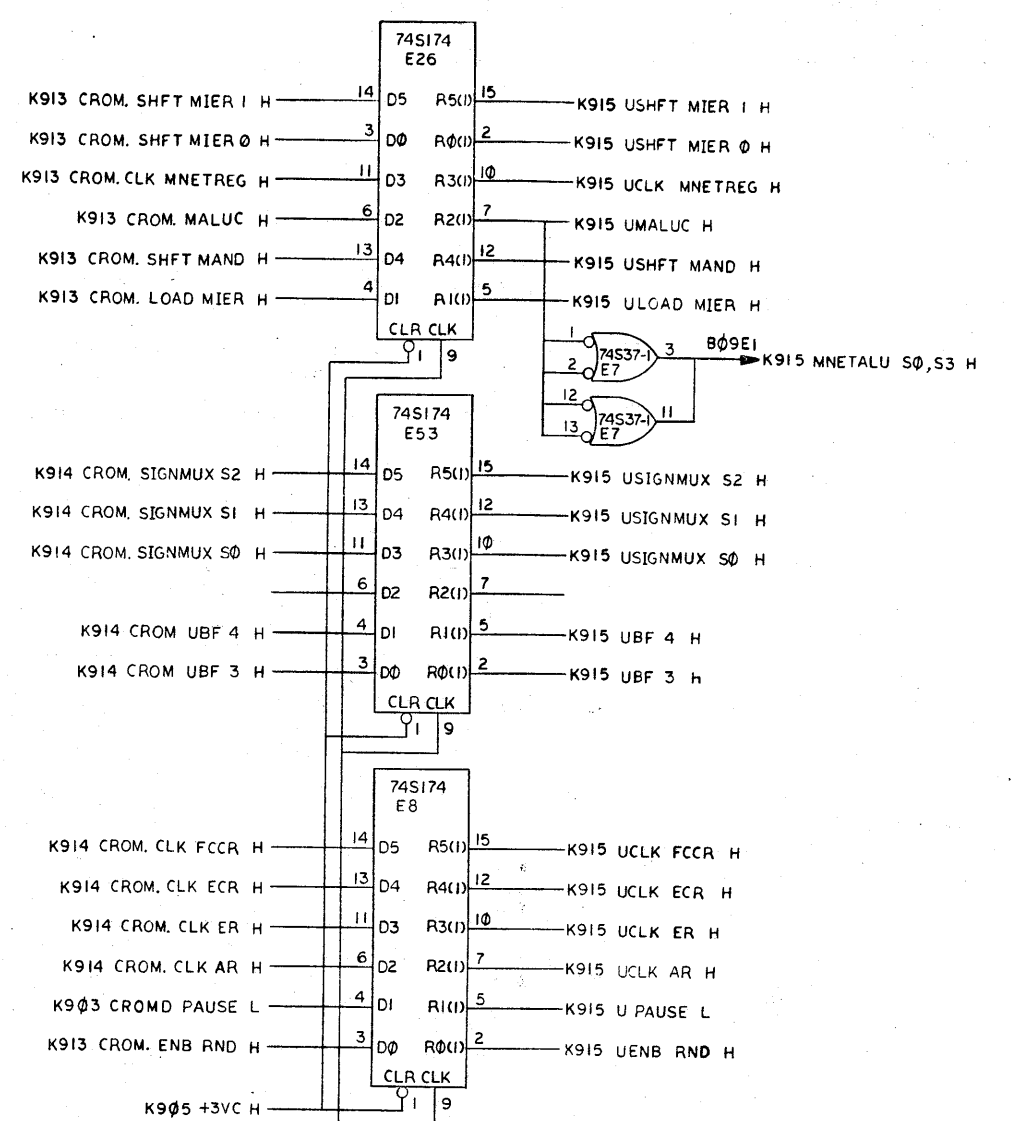
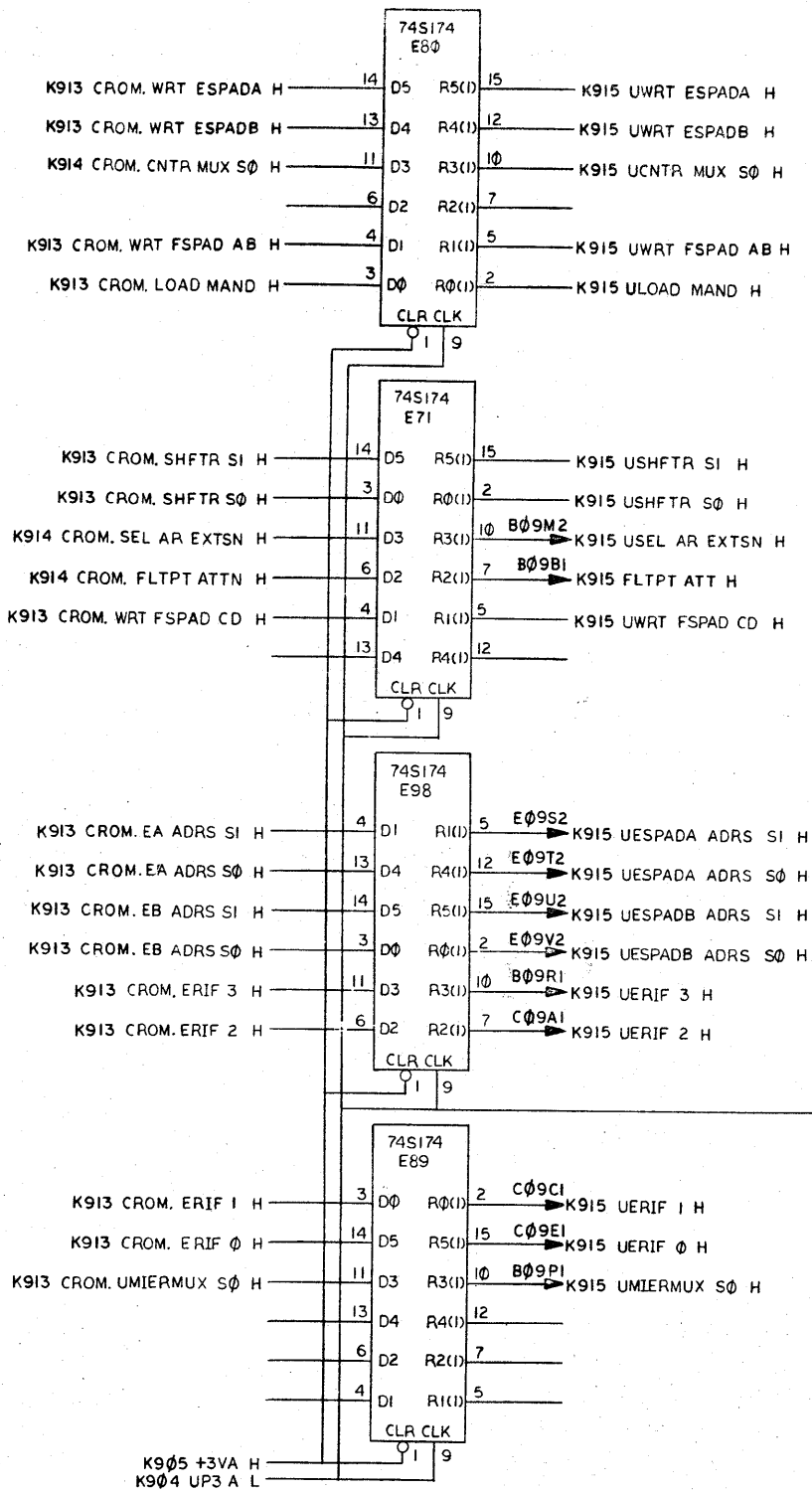
(CONTROL ROMS II) (K914)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	DCSM7879-0-1	NUMBER	D	REV.	D
SCALE	1:1	SHEET	14 OF 16	DATE	

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D  
C  
B  
A

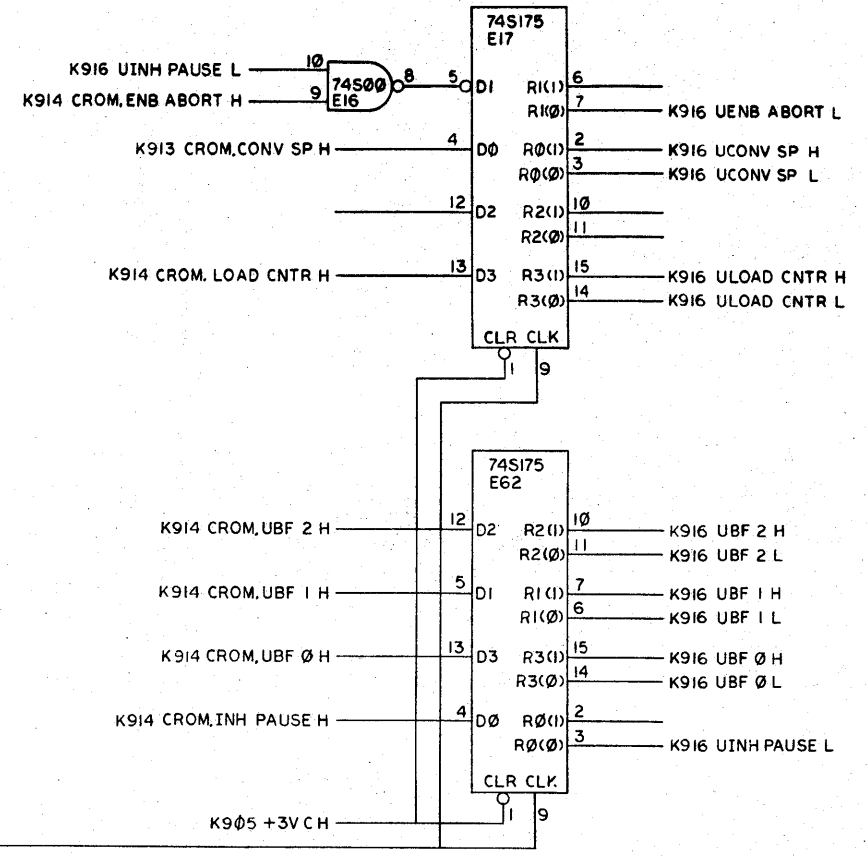
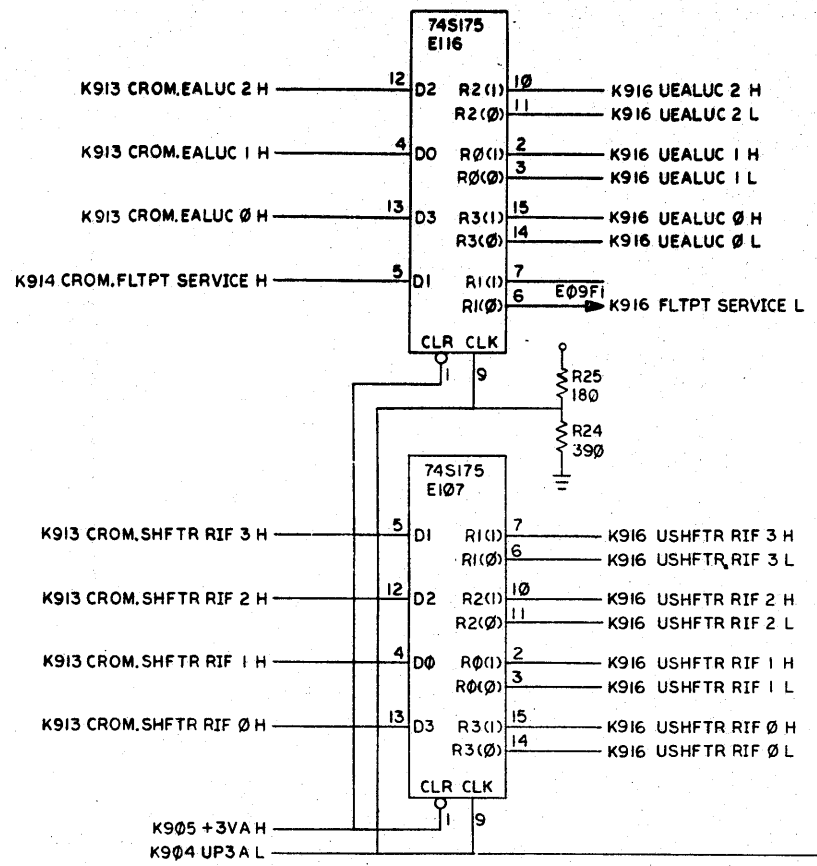


D  
C  
B  
A

REVISIONS		
CHK	CHANGE NO.	REV.

(ROM BUFFERS I)		(K915)	
TITLE	FLTPT EXP	SIZE CODE	NUMBER
SCALE	SHEET 15 OF 16	DCS	M7879-0-1
REV.	D	DIST.	

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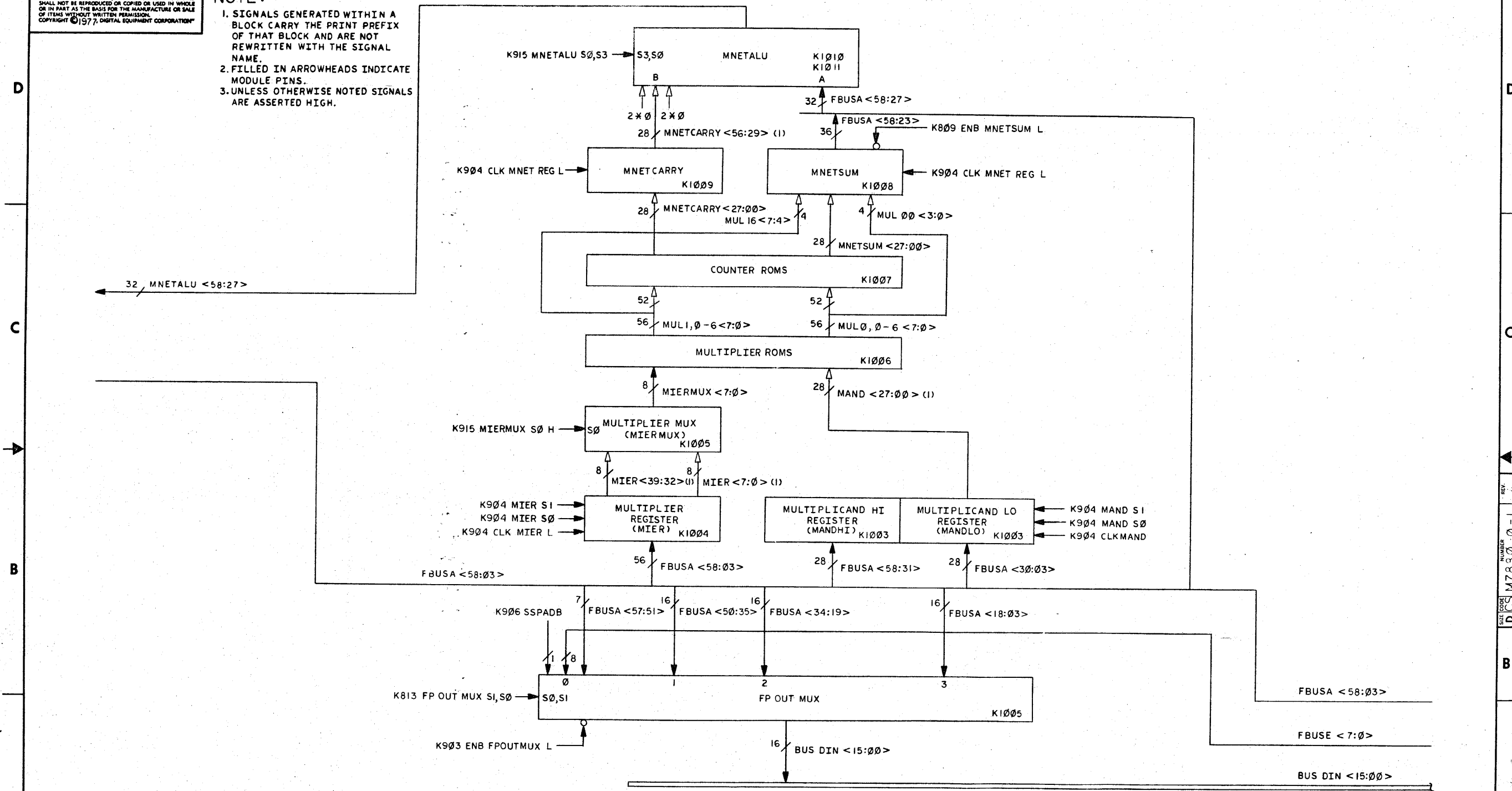


REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE CODE		NUMBER		REV.	
FLTPT EXP		D CS		M7879-0-1		D	
SCALE		SHEET		DIST.			
		16 OF 16					

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**NOTE:**  
 1. SIGNALS GENERATED WITHIN A BLOCK CARRY THE PRINT PREFIX OF THAT BLOCK AND ARE NOT REWRITTEN WITH THE SIGNAL NAME.  
 2. FILLED IN ARROWHEADS INDICATE MODULE PINS.  
 3. UNLESS OTHERWISE NOTED SIGNALS ARE ASSERTED HIGH.



REV.	
CHANGE NO.	
CHK	

(BLOCK DIAGRAM)		(K1001)
DRN. <i>J. P. Smith</i>	1-13-77	FIRST USED ON
CHK'D. <i>J. P. Smith</i>	4-28-77	<b>digital</b>
ENG. <i>D. C. Jones</i>	4/28/77	TITLE
PROJ. ENG. <i>D. C. Jones</i>	4/28/77	<b>FLTPT MULNET</b>
PROD. <i>K. J. McCall</i>	4-28-77	
NEXT HIGHER ASSY.		
SCALE	SIZE	CODE
	<b>D</b>	<b>CS</b>
SHEET	NUMBER	REV.
1 OF 11	<b>M7880-0-1</b>	<b>A</b>
DIST.		

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MULTIPLIER ROM															
A				B				AB							
3	2	1	0	3	2	1	0	7	6	5	4	3	2	1	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1
1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1

NOTE: TO OBTAIN THE PRODUCT AB <7:0> FOR ANY NON ZERO MULTIPLIER A <3:0> AND NON ZERO MULTIPLICAND B <3:0>, SIMPLY CALCULATE THE PRODUCT OF THE TWO 4 BIT BINARY NUMBERS.

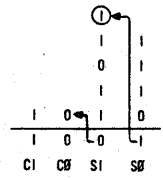
EXAMPLE: A = 1011, B = 1101  
 B <3:0> = 1101  
 X A <3:0> = 1011  
 -----  
 1101  
 1101  
 0000  
 1101  
 -----  
 AB <7:0> = 10001111

MULTIPLIER NETWORK ALU					
MALUC	FUNCTION	MNETALU			
		S3	S2	S1	S0 M CIN
0	A PLUS B	1	0	0	1 0 1
1	A	0	0	0	0 0 1

COUNTER ROM			
THIS DEVICE ACCEPTS TWO COLUMNS OF UP TO 4 BITS EACH AND PRODUCES A SUM AND CARRY.			
B3	A3		
B2	A2		
B1	A1		
	B0	A0	
C1	C0	S1	S0

TO DETERMINE THE OUTPUT FOR ANY GIVEN INPUT A <3:0>, B <3:0>, ADD THE A AND B COLUMNS TO PRODUCE A 2 BIT SUM S <1:0> AND CARRY C <1:0>.

EXAMPLE: A <3:0> = 1110, B <3:0> = 1011

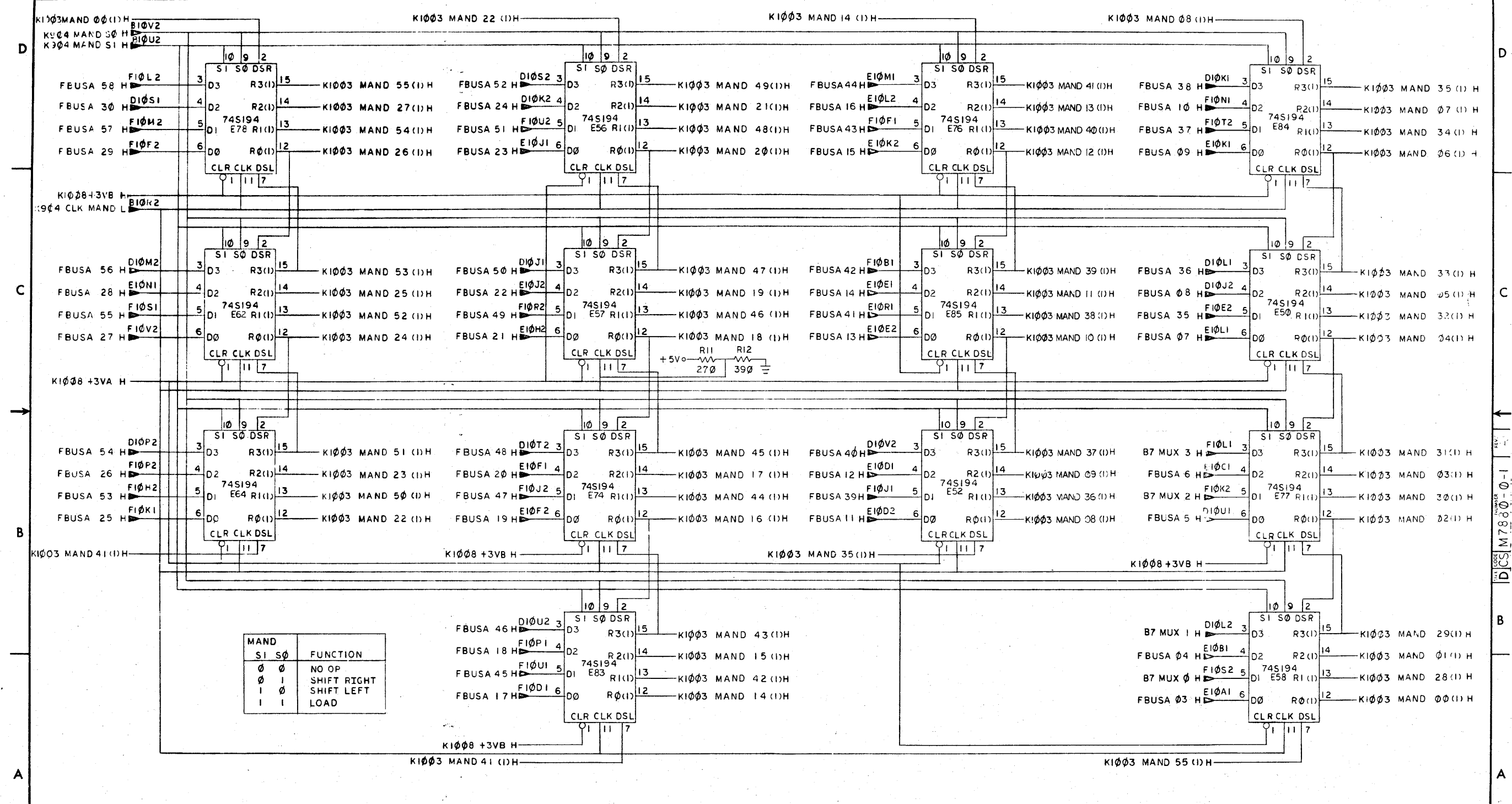


1 = HIGH  
 0 = LOW

REVISIONS		
CHK	CHANGE NO.	REV.

32

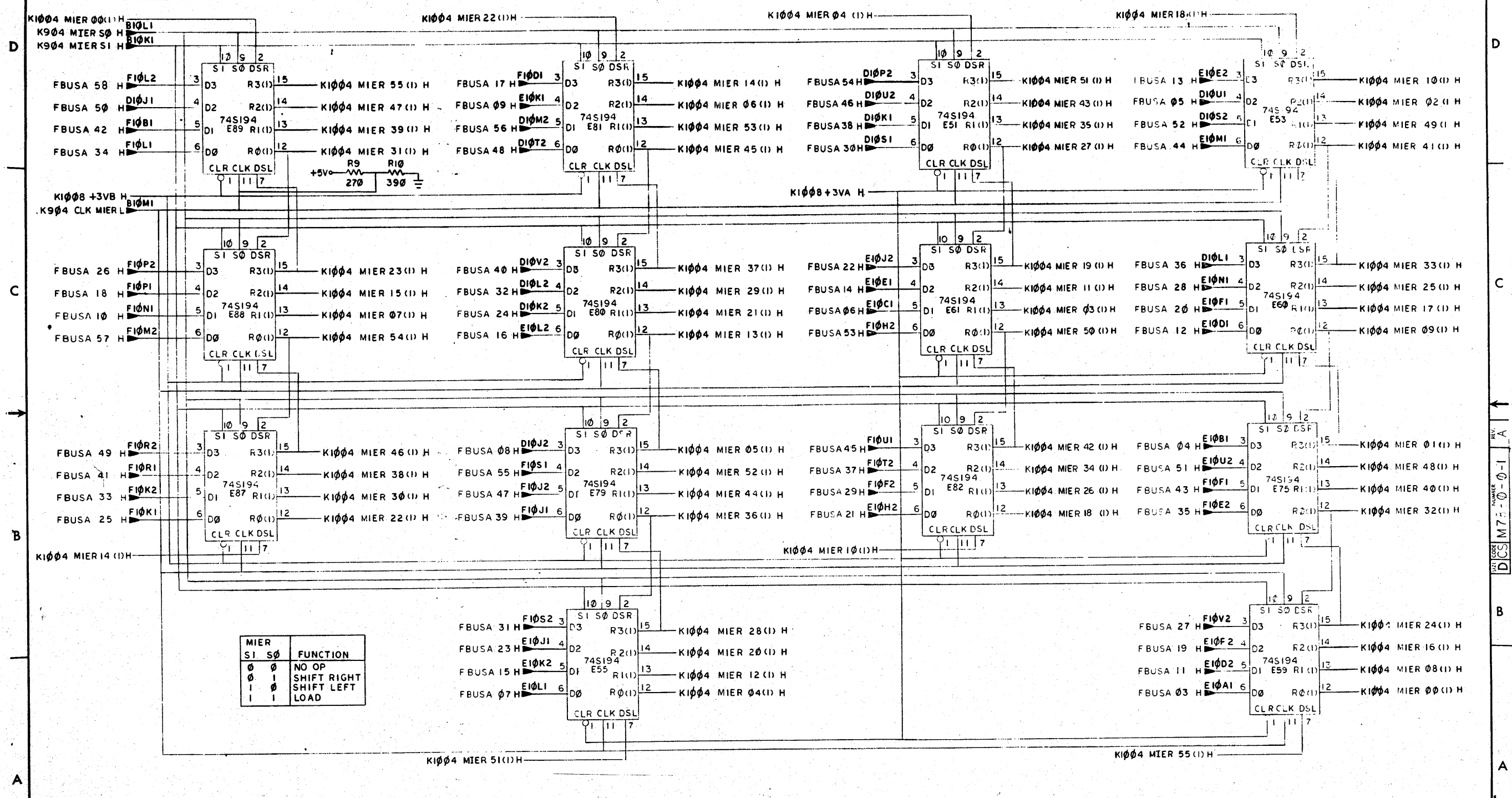
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MAND	SI	S0	FUNCTION
0 0			NO OP
0 1			SHIFT RIGHT
1 0			SHIFT LEFT
1 1			LOAD

REVISIONS		
CHK	CHANGE NO.	REV.

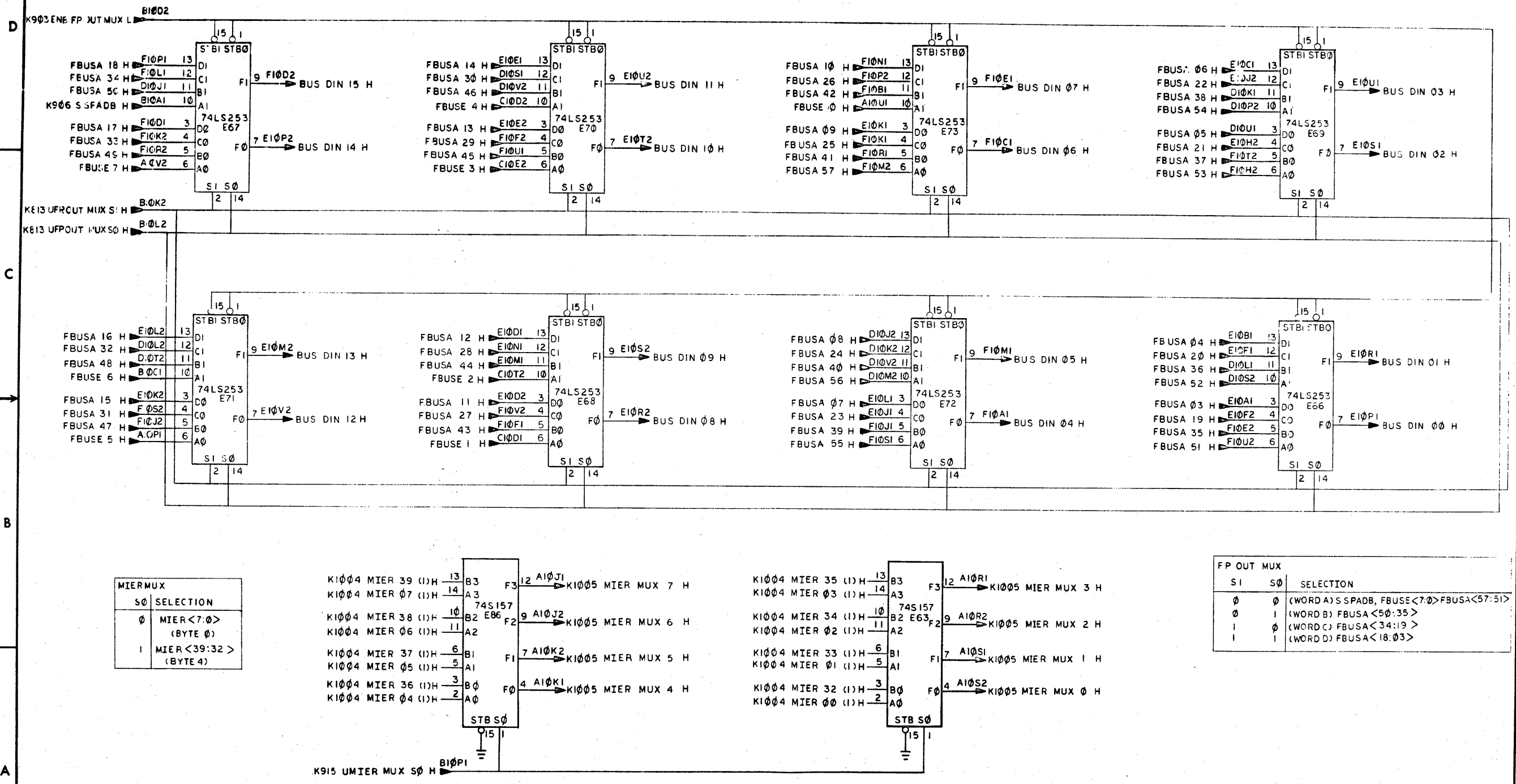
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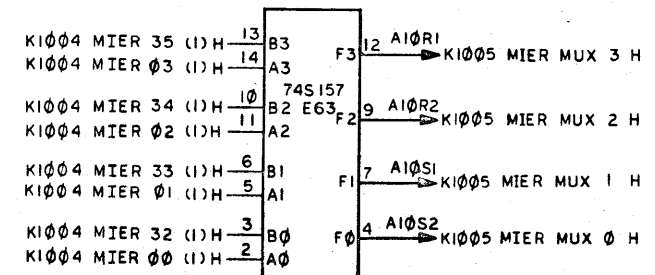
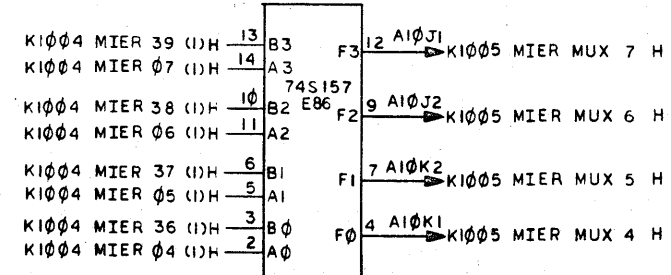
REVISIONS		
CHK	CHANGE NO.	REV.

(MULTIPLIER REGISTER <55:00>) (KIP04)  
 TITLE: FLT PT MULNET  
 SIZE/CODE: DCS  
 NUMBER: M7880-0-1  
 REV: A  
 SHEET 4 OF 11

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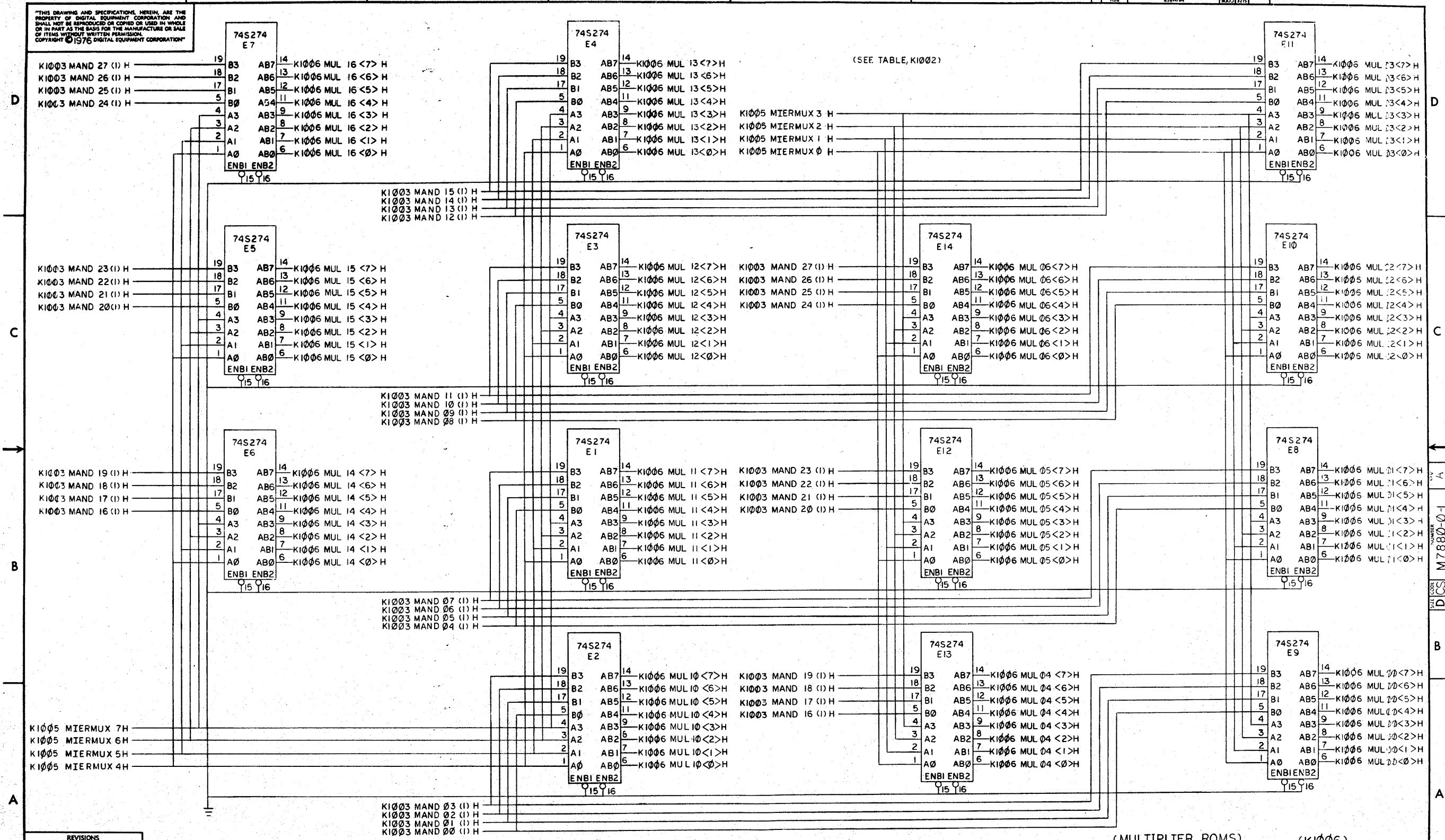
MIERMUX	
S0	SELECTION
0	MIER <7:0> (BYTE 0)
1	MIER <39:32> (BYTE 4)



FP OUT MUX		
S1	S0	SELECTION
0	0	(WORD A) S SPADB, FBUSE <7:0> FBUSA <57:51>
0	1	(WORD B) FBUSA <50:35>
1	0	(WORD C) FBUSA <34:19>
1	1	(WORD D) FBUSA <18:03>

REVISIONS		
CHK	CHANGE NO.	REV.

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REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE CODE	NUMBER	REV.
FLTPT MULNET		DCS	M7880-01	A
SCALE	SHEET	DIST.		
	6 OF 11			

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(SEE TABLE, K1002)

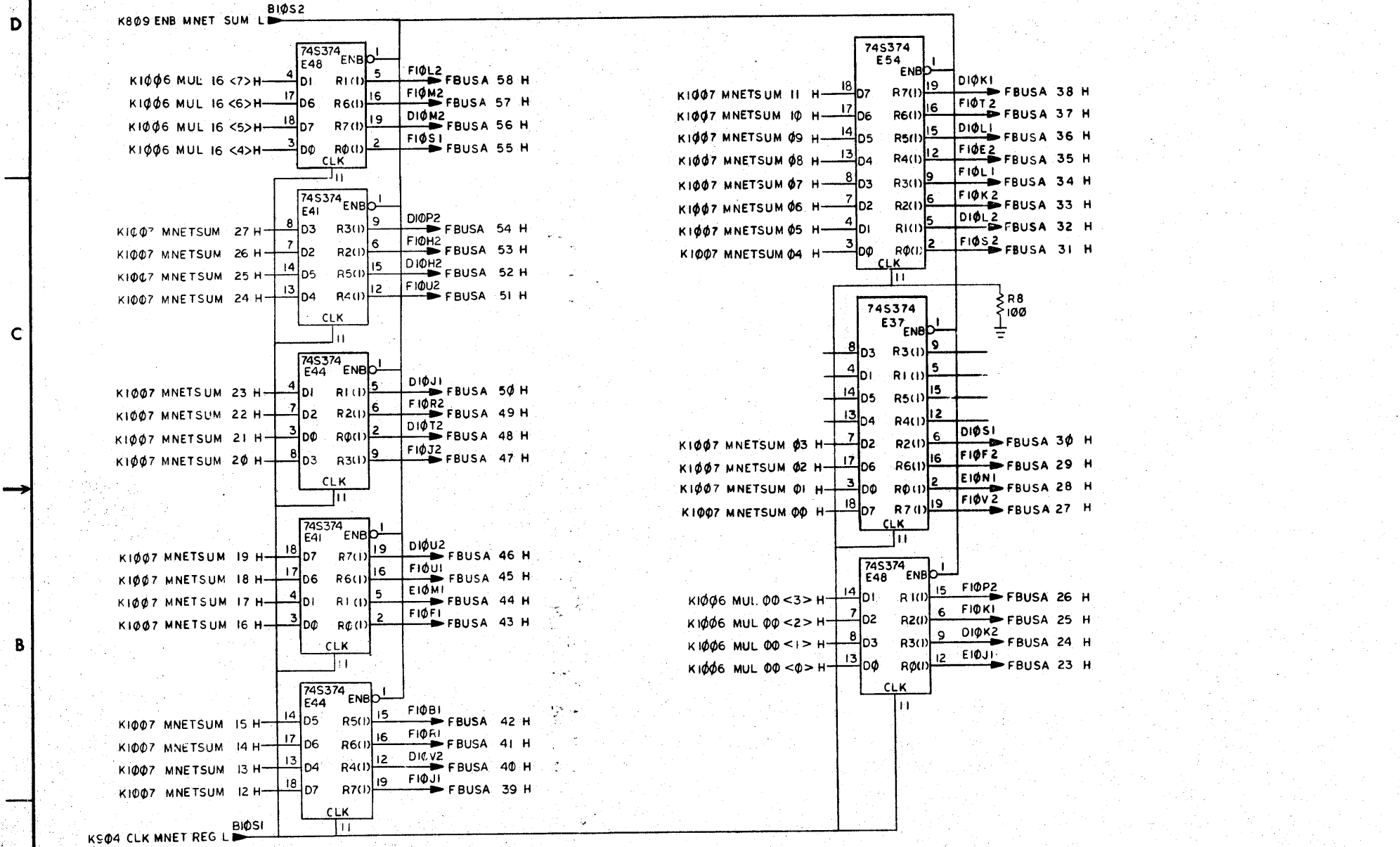


REVISIONS		
CHK	CHANGE NO.	REV.

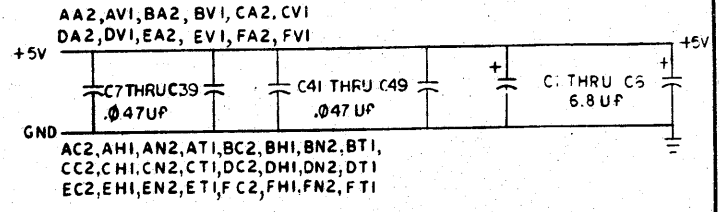
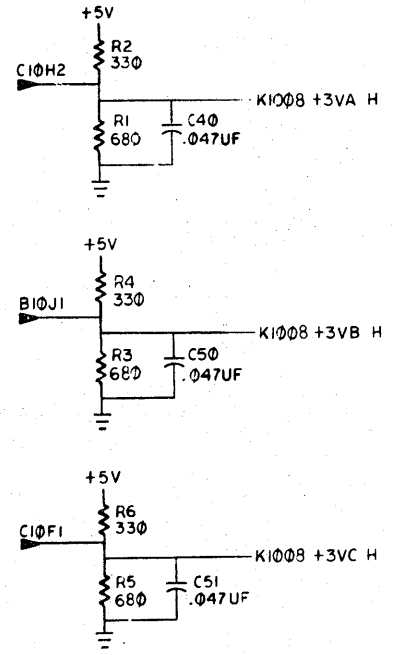
(COUNTER ROMS <27:00>) (K1007)

TITLE	SIZE CODE	NUMBER	REV.
FLT PT MULNET	D	CSM7880-0-1	A
SCALE	SHEET	OF	DIST.
	7	11	

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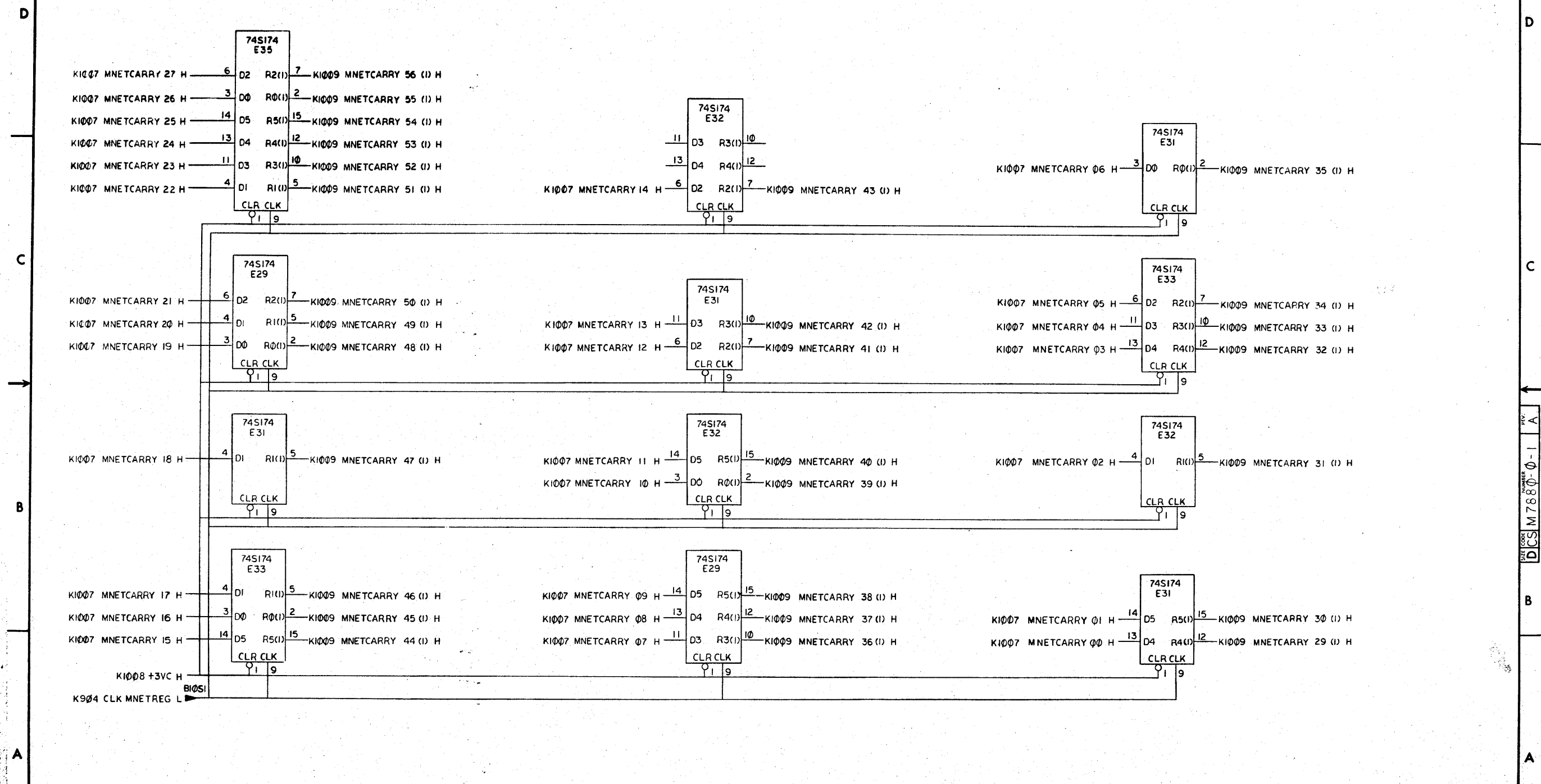
NOTE: REGISTERS CAN BE CLEARED BY MOMENTARILY GROUNDING THE APPROPRIATE +3V FINGER.



REVISIONS		
CHK	CHANGE NO.	REV.

(MNET SUM REGISTER <58:23>)		(K1008)	
TITLE	SIZE CODE	NUMBER	REV.
FLT PT MULNET	D	CS M7880-0-1	A
SCALE	SHEET 8 OF 11	DIST.	

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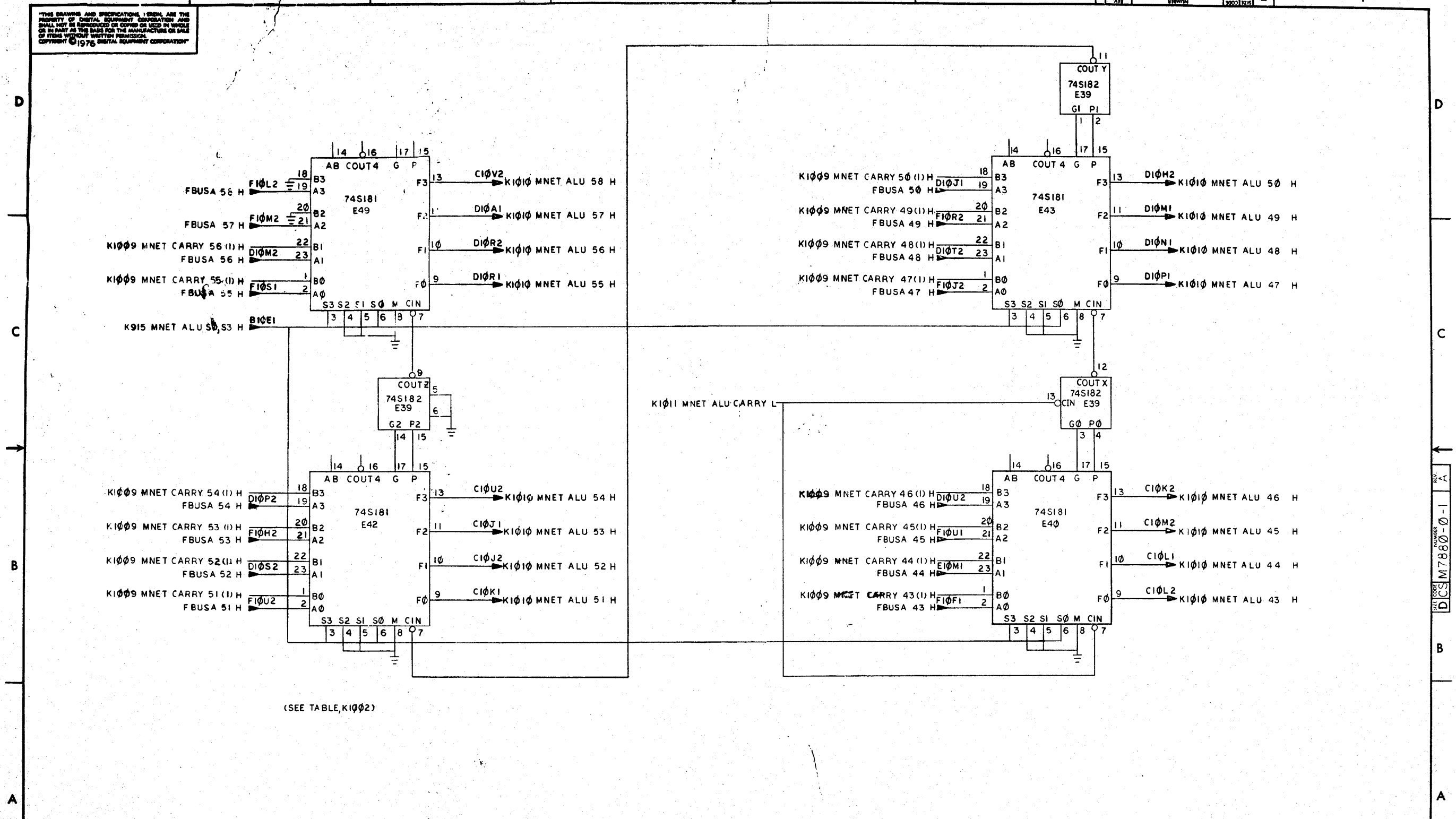


REVISIONS		
CHK	CHANGE NO.	REV.

(MNETCARRY REGISTER <56:29>) (K1009)

TITLE	SIZE CODE	NUMBER	REV.
FLT PT MULNET	DCS	M7880-0-1	A
SCALE	SHEET	OF	DIST.
	9	11	

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(SEE TABLE, K1002)

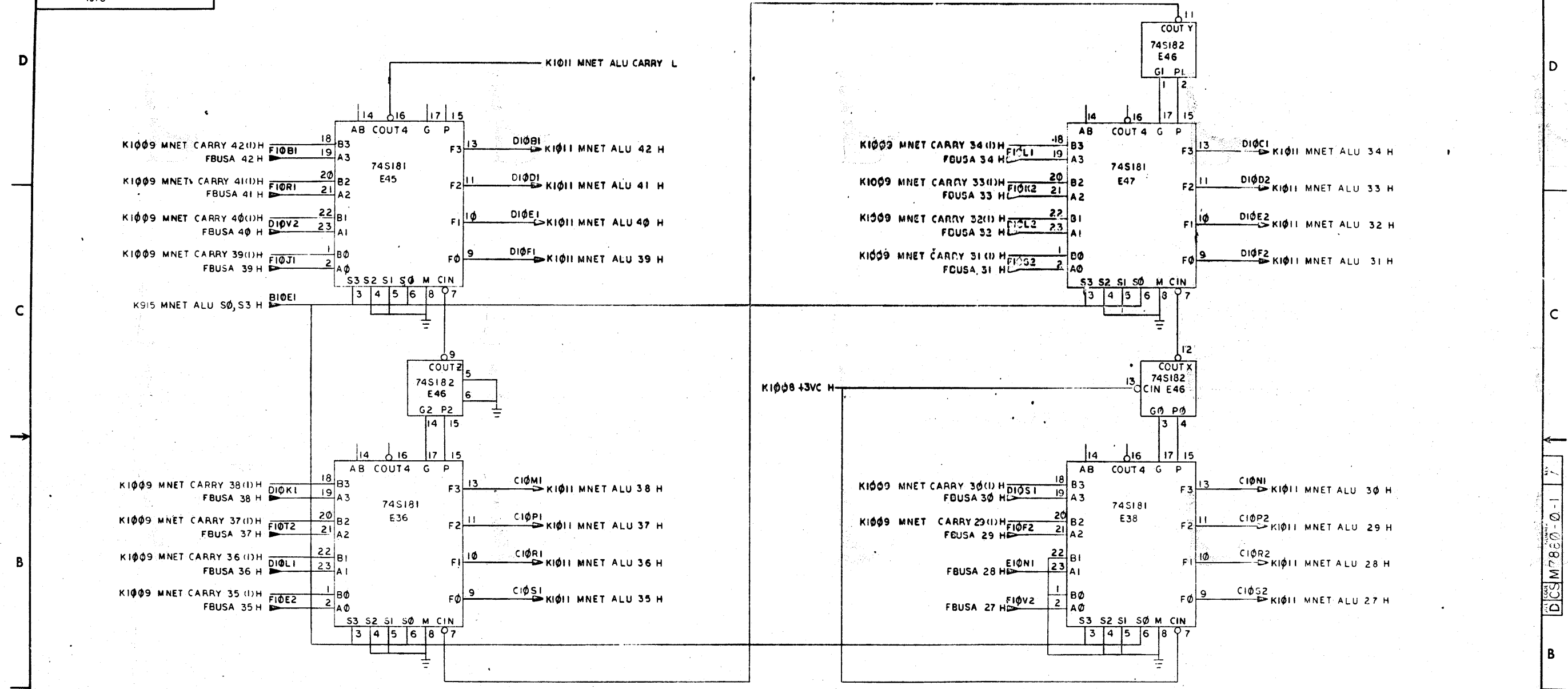
(MULNET ALU <58:43> (K1000)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE CODE	NUMBER	REV.
FLT PT MULNET	D CS	M7880-0-1	A
SCALE	SHEET	13 OF 11	DIST.

ALL WORK NUMBER DCS M7880-0-1 REV. A

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(SEE TABLE, KI002)

REVISIONS		
CHK	CHANGE NO.	REV.

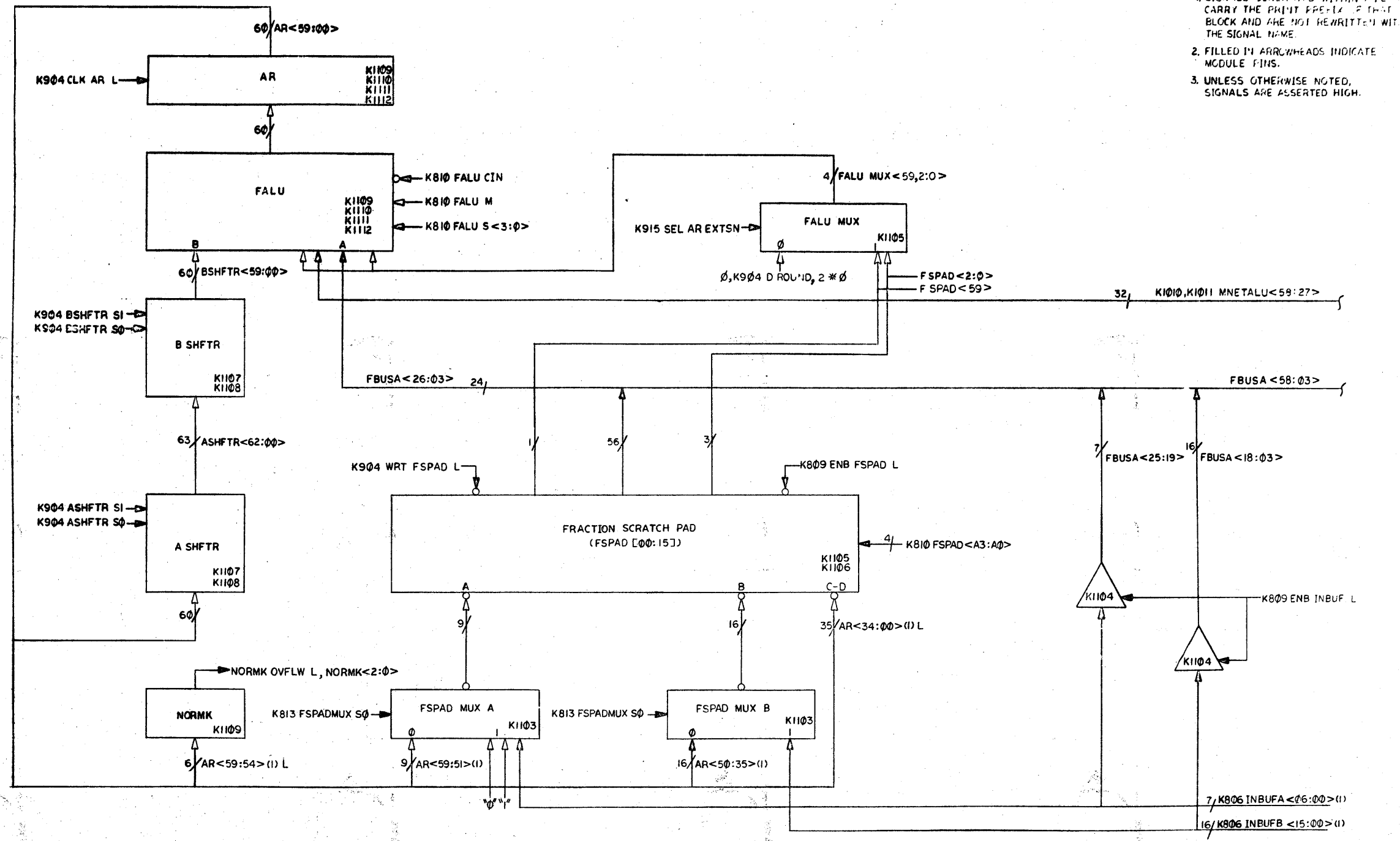
(MULNET ALU<42:27>) (KI011)

TITLE	SIZE CODE	NUMBER	REV.
FLT PT MULNET	DCS	M7880-0-1	A
SCALE	SHEET 11 OF 11	DIST.	

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1-0-1382WB 4/2

- NOTES:
1. SIGNALS GENERATED WITHIN A BLOCK CARRY THE PREFIX OF THAT BLOCK AND ARE NOT REWRITTEN WITH THE SIGNAL NAME.
  2. FILLED IN ARROWHEADS INDICATE MODULE PINS.
  3. UNLESS OTHERWISE NOTED, SIGNALS ARE ASSERTED HIGH.



(BLOCK DIAGRAM) (K1101)

REV.	CHG.	DATE	BY
1	1	1/10/77	DRM
2	1	4-26-77	ENG. D.C.
3	1	4-26-77	PRD. K.S.

DRM	1-10-77	FIRST USED ON	
ENG. D.C.	4-26-77	TITLE	FLTPT FALU
PRD. K.S.	4-26-77	SIZE	D CS
NEXT HIGHER ASSY.		NUMBER	M7881-0-1
SCALE	1 OF 12	DIST.	

42

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SHIFTER CONTROL			
A SHIFTER		B SHIFTER	NUMBER OF SHIFTS
S1	S0	S1 S0	
0	0	0 0	RIGHT 11
0	0	0 1	RIGHT 10
0	0	1 0	RIGHT 9
0	0	1 1	RIGHT 8
0	1	0 0	RIGHT 7
0	1	0 1	RIGHT 6
0	1	1 0	RIGHT 5
0	1	1 1	RIGHT 4
1	0	0 0	RIGHT 3
1	0	0 1	RIGHT 2
1	0	1 0	RIGHT 1
1	0	1 1	ZERO
1	1	0 0	LEFT 1
1	1	0 1	LEFT 2
1	1	1 0	LEFT 3
1	1	1 1	LEFT 4

FRACTION ALU CONTROL							
FALUC				FUNCTION	FALU		
S3	S2	S1	S0		S3	S2	S1 S0 M CIN
0	0	0	0	NOT A	0	0	0 0 1 X
0	0	0	1	-	-	-	- - -
0	0	1	0	-	-	-	- - -
0	0	1	1	ZERO	0	0	1 1 0 0
0	1	0	0	-	-	-	- - -
0	1	0	1	NOT B	0	1	0 1 1 X
0	1	1	0	A MINUS B	0	1	1 0 0 0
0	1	1	1	-	-	-	- - -
1	0	0	0	-	-	-	- - -
1	0	0	1	A PLUS B	1	0	0 1 0 1
1	0	1	0	B	1	0	1 0 1 X
1	0	1	1	A AND B	1	0	1 1 1 X
1	1	0	0	-	-	-	- - -
1	1	0	1	-	-	-	- - -
1	1	1	0	A OR B	1	1	1 0 1 X
1	1	1	1	A	1	1	1 1 1 X

NORMALIZATION LOGIC						
AR				NORM		# SHIFTS REQ'D
S9	S8	S7	S6 S5 S4	2	1 0	
0	0	0	0 0 0	1	1 1	GREATER THAN 4
0	0	0	0 0 1	1	1 1	LEFT 4
0	0	0	0 1 -	1	1 0	LEFT 3
0	0	0	1 - -	1	0 1	LEFT 2
0	0	1	- - -	1	0 0	LEFT 1
0	1	-	- - -	0	1 1	LEFT 0
1	-	-	- - -	0	1 0	RIGHT 1

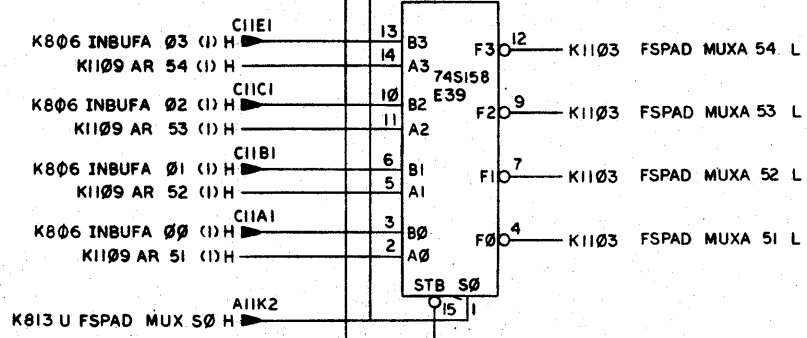
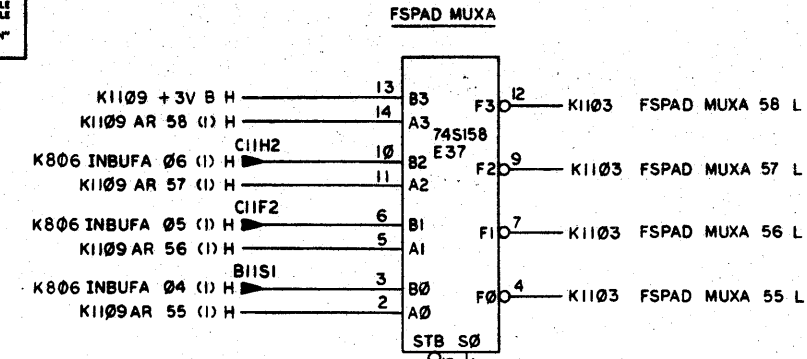
1 = HIGH  
0 = LOW

REVISIONS		
CHK	CHANGE NO.	REV.

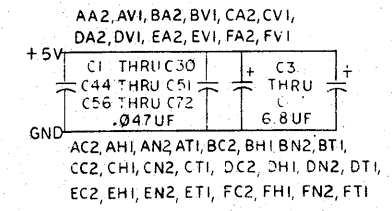
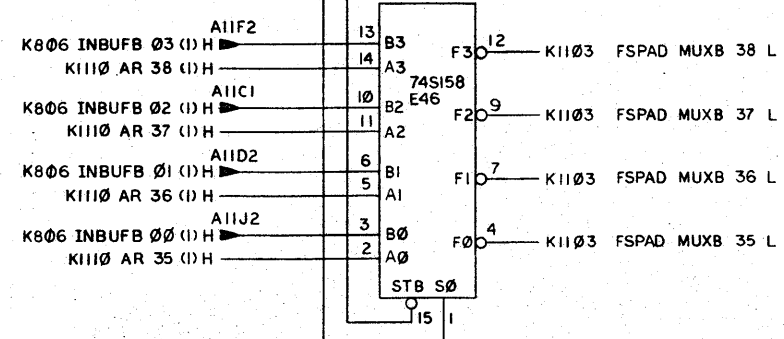
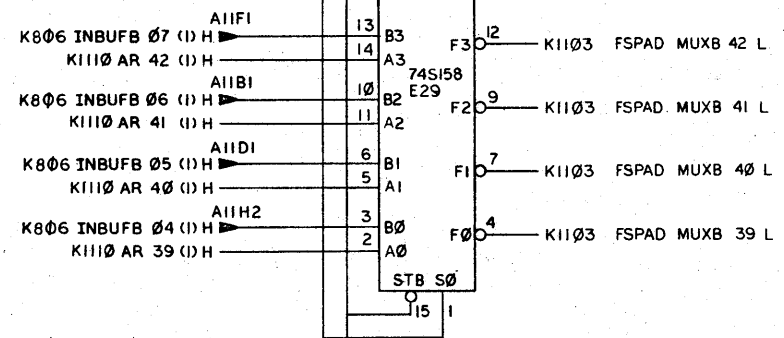
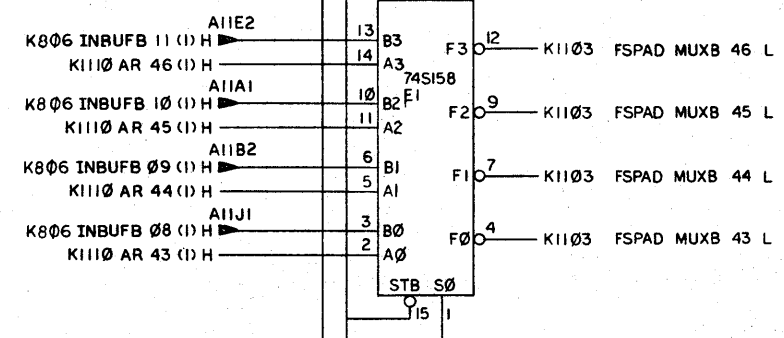
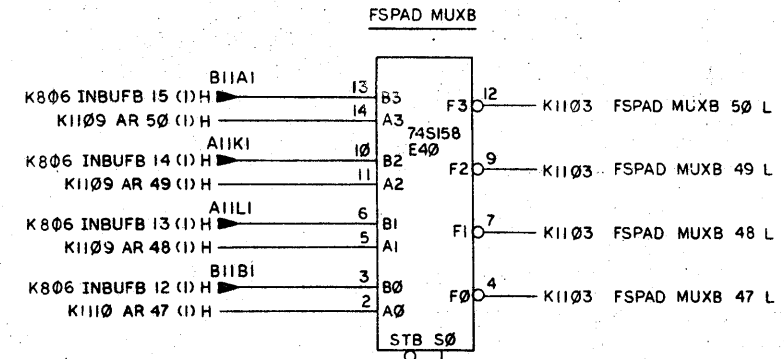
(TABLES) (K1102)

43

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UFSPAD MUX S0	SELECT
0	AR <58:35>
1	HIDDEN BIT, INBUFA <06:00> INBUFB <15:00>



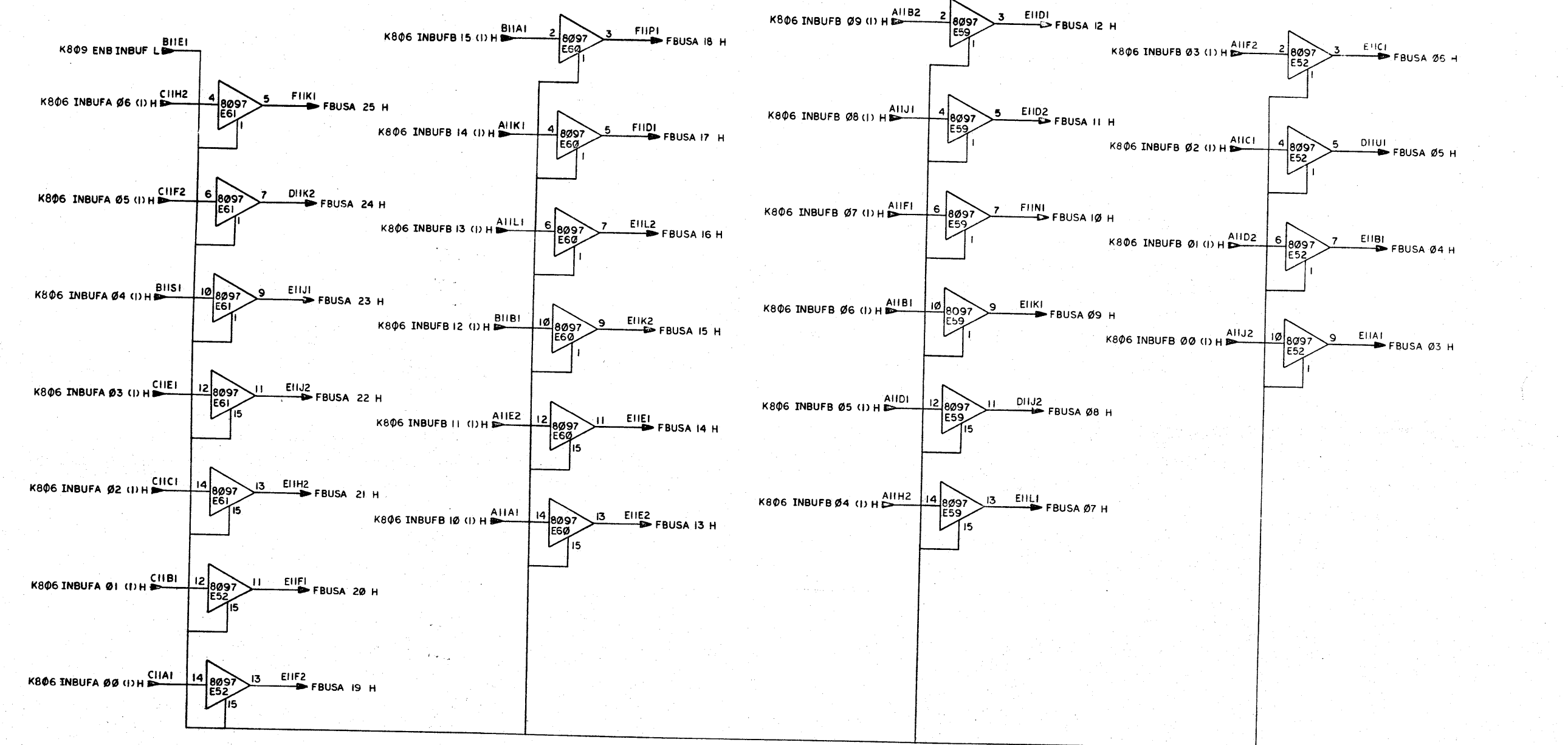
(FSPAD INPUT MUX) (K1103)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE CODE	NUMBER	REV.
FLT PT FALU	D CS	M7881-0-1	
SCALE	SHEET	OF	DIST.
	3	12	

44

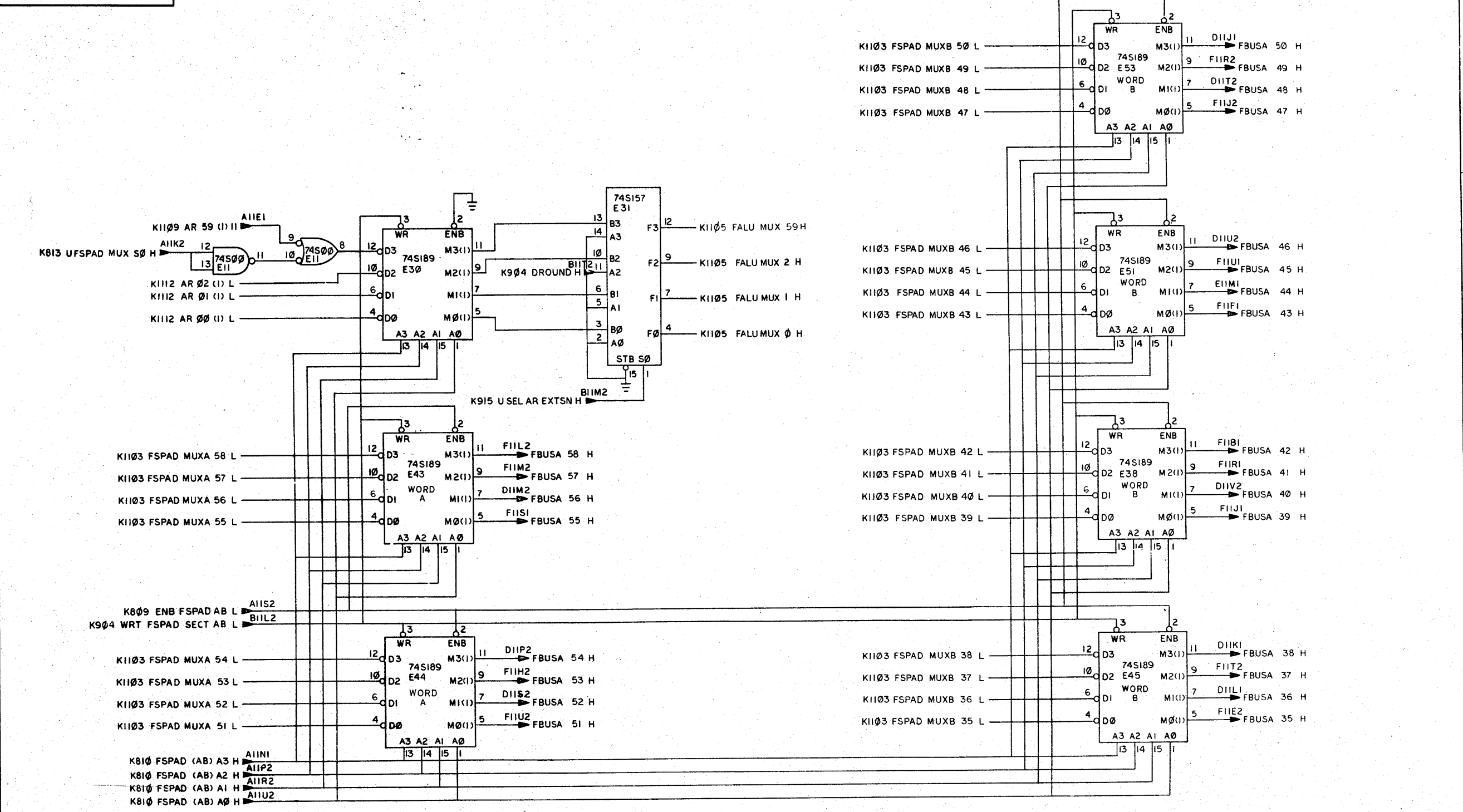
"THIS DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © 1976 DIGITAL EQUIPMENT CORPORATION"



REVISIONS		
CHK	CHANGE NO.	REV.

(INBUF TRISTATE DRIVERS) (K1104)

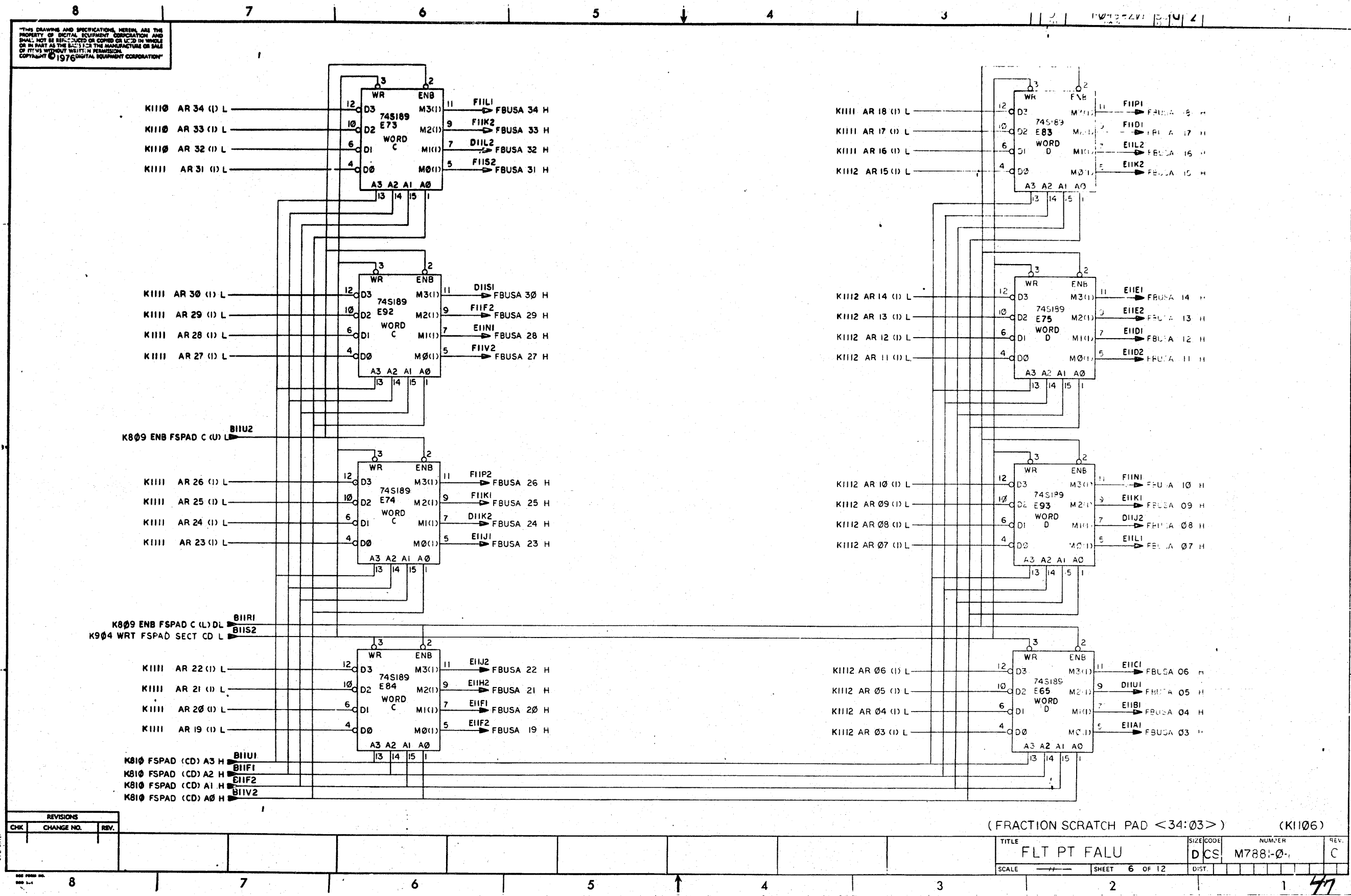
"THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © 1976 DIGITAL EQUIPMENT CORPORATION"



REVISIONS		
CHK	CHANGE NO.	REV.

(FRACTION SCRATCH PAD <59:35>)		(K1105)	
TITLE	SIZE CODE	NUMBER	REV.
FLT PT FALU	DCS	M7881-3-1	C
SCALE	SHEET	DIST.	
	5 OF 12		

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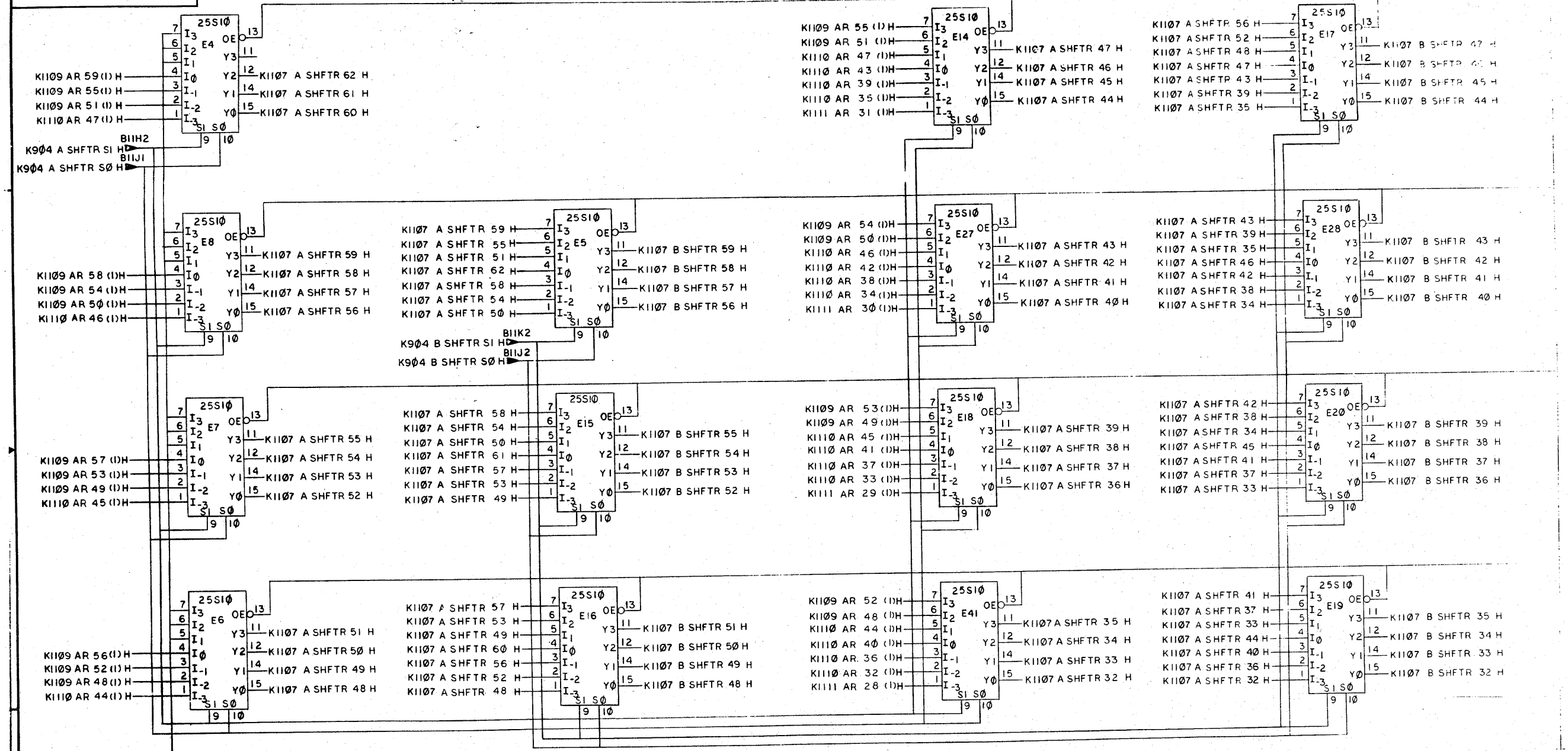


REVISIONS		
CHK	CHANGE NO.	REV.

(FRACTION SCRATCH PAD <34:03>) (K1106)

TITLE	SIZE CODE	NUMBER	REV.
FLT PT FALU	DCS	M788-0-	C
SCALE	SHEET	DIST.	
	6 OF 12		

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K904 B SHFTR SI HD  
K904 B SHFTR S0 H

(SEE TABLES, K1102)

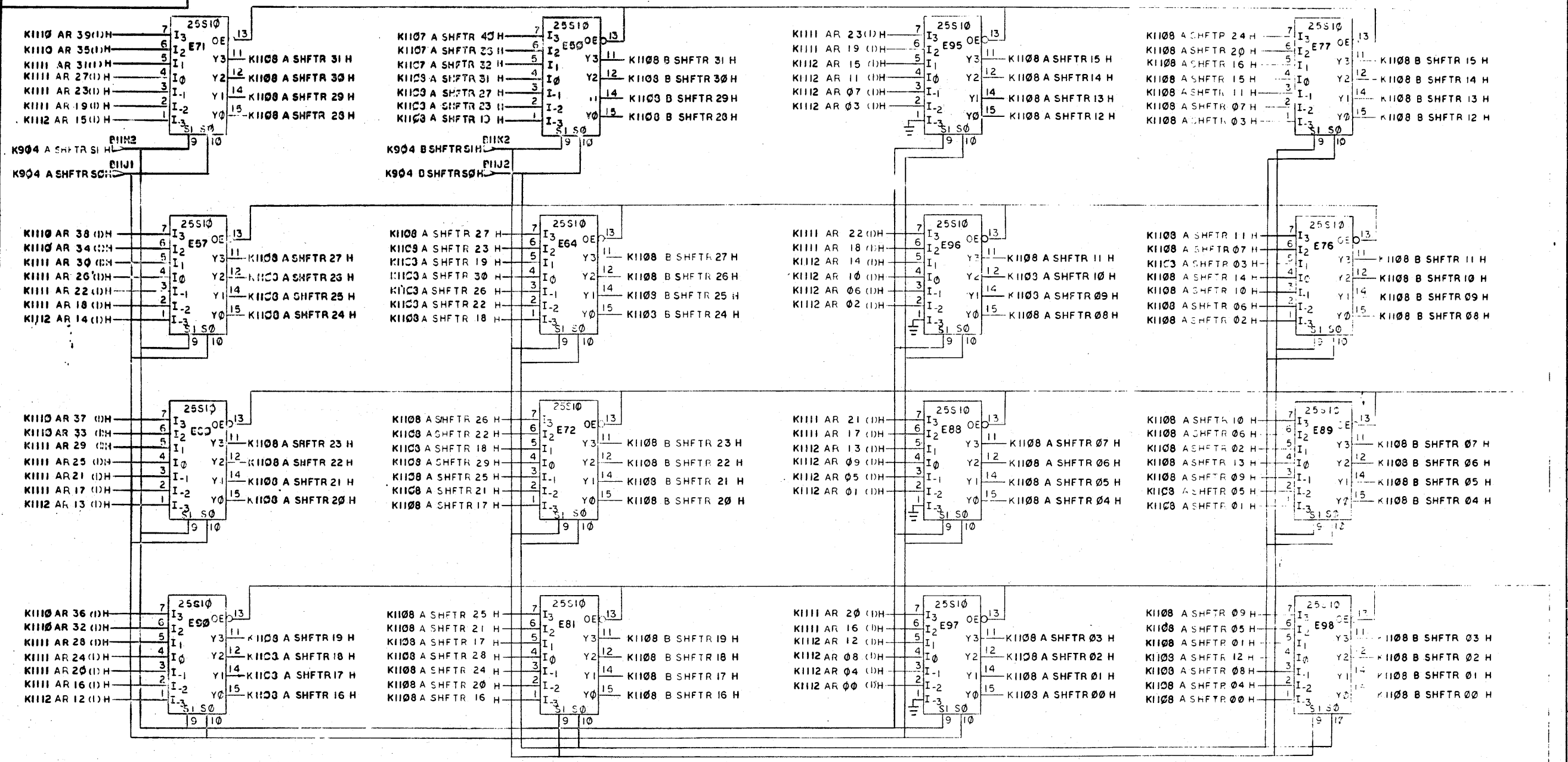
(SHIFTER (59:32)) (K1107)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE CODE	NUMBER	REV.
FLT PT FALU	DCS	M7881-C-1	
SCALE	SHEET	OF	TOTAL
	7	12	

48

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(SEE TABLES, K1102)

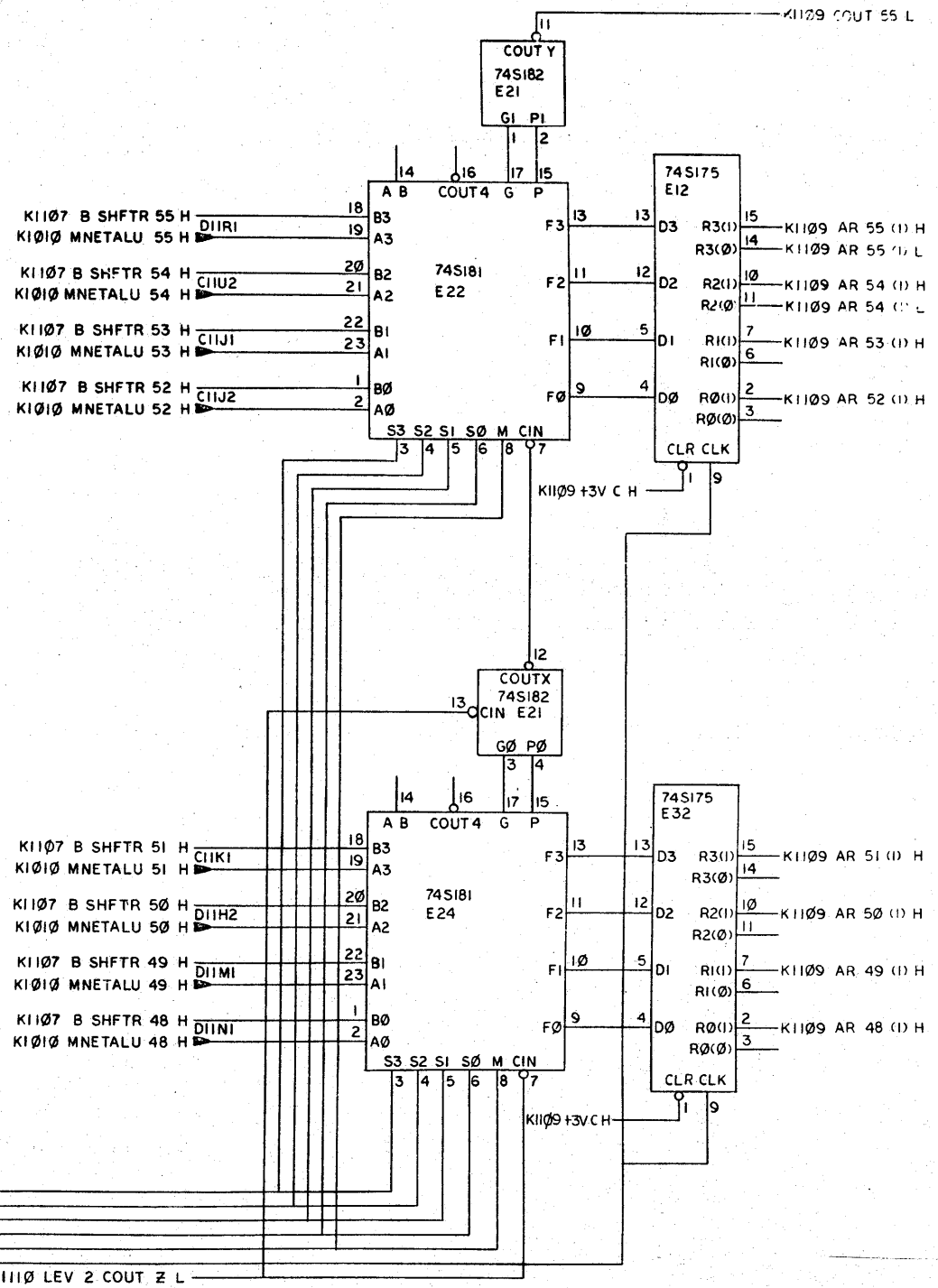
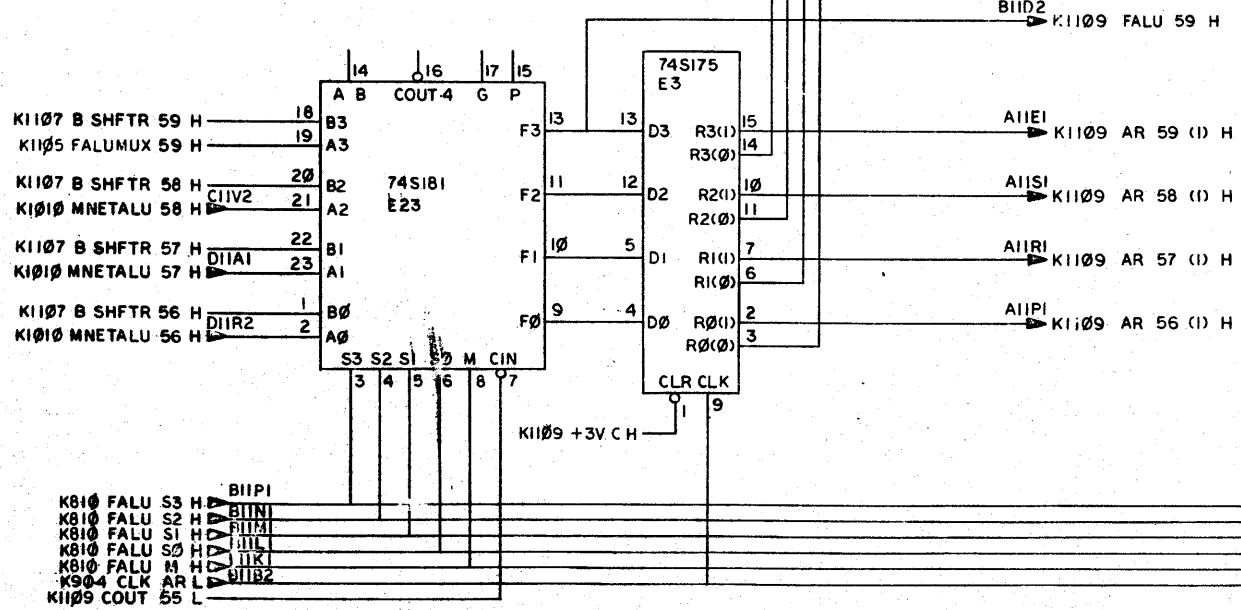
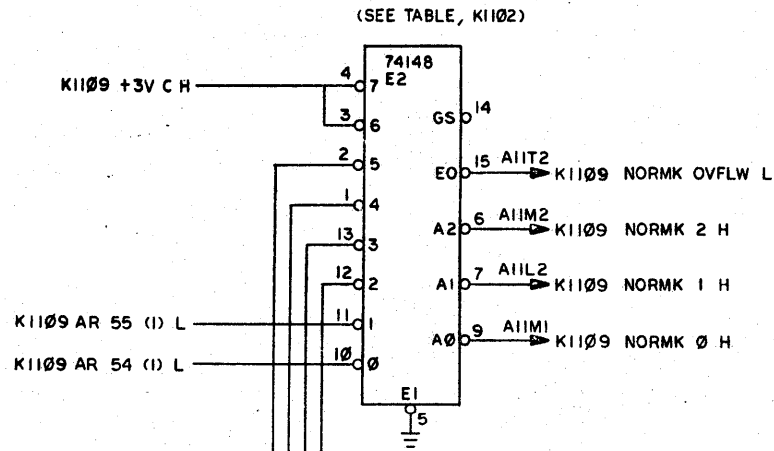
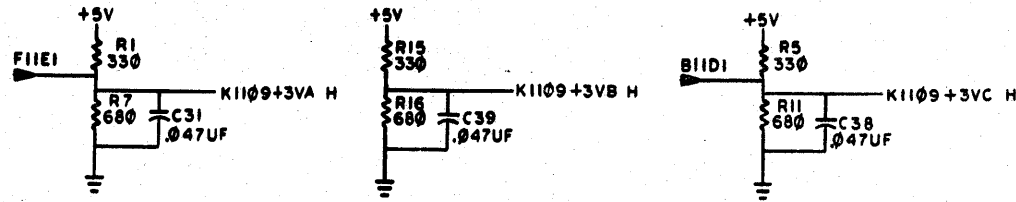
REVISIONS		
CHK	CHANGE NO.	REV.

(SHIFTER <3100>) (K1108)

TITLE FLT PT FALU		SIZE/CODE DCS	NUMBER M7881-0-1	REV. C
SCALE ---	SHEET 8	OF 12	DIST.	

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NOTE: REGISTERS CAN BE CLEARED BY MOMENTARILY GROUNDING THE APPROPRIATE +3V FINGERS



K810 FALU S3 H  
K810 FALU S2 H  
K810 FALU S1 H  
K810 FALU S0 H  
K810 FALU M H  
K904 CLK AR L  
K1109 COUT 55 L

K1110 LEV 2 COUT 2 L

(FALU AR <59:48>)

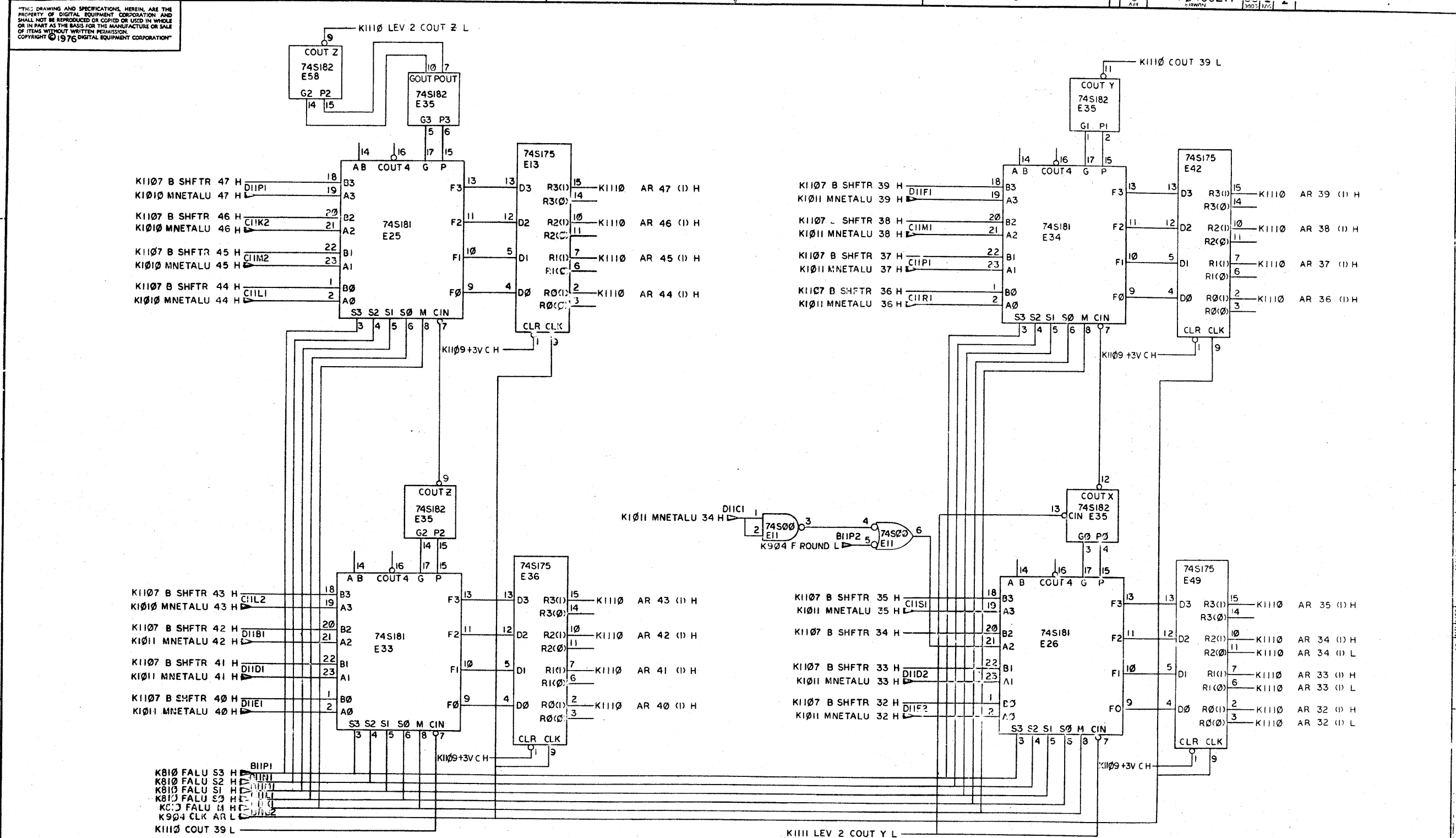
(K1109)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE CODE	NUMBR	REV.
FLT PT FALU	DCS	M7881-0-1	C
SCALE	SHEET	DIST.	
	9 OF 12		

50

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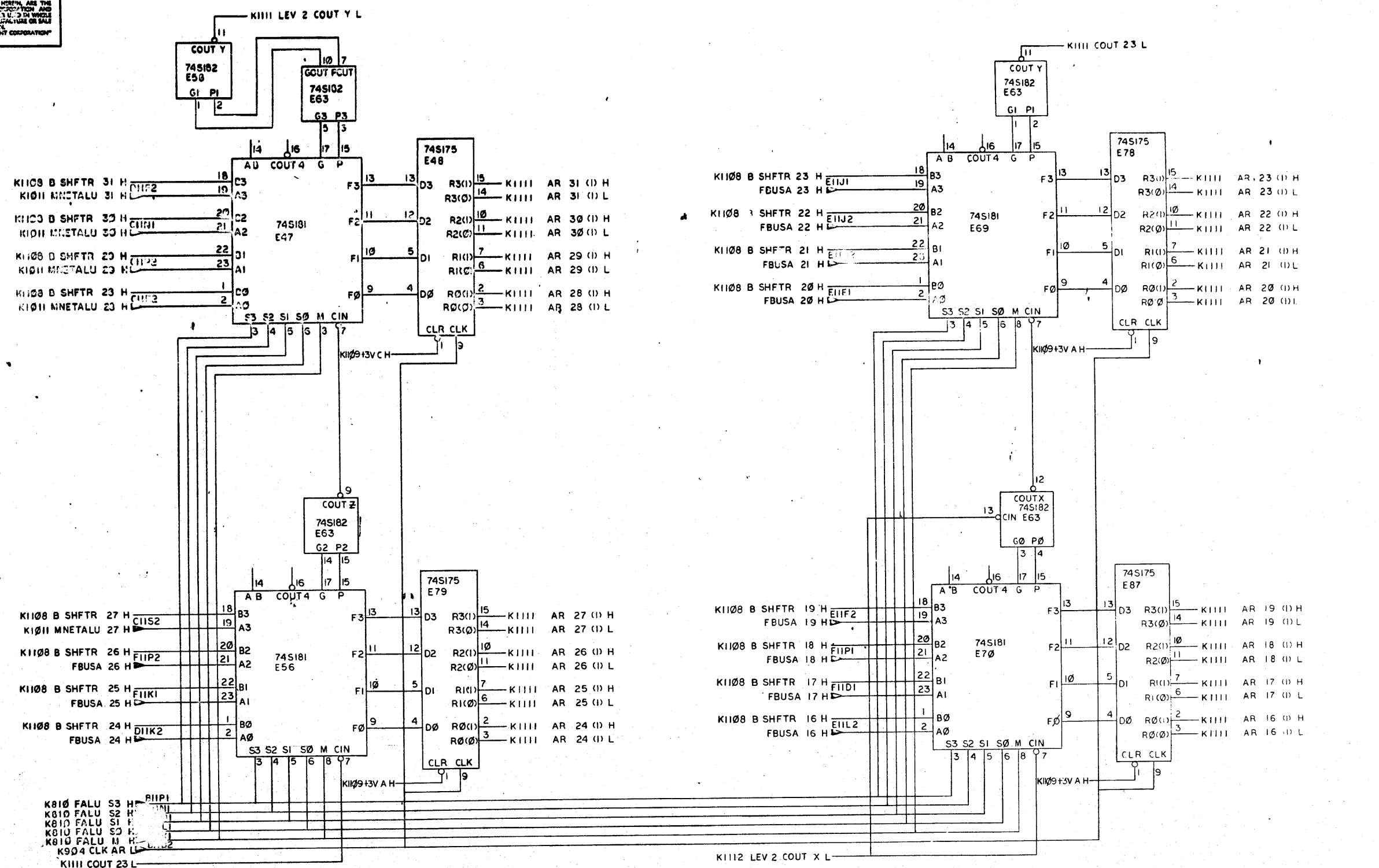


REVISIONS		
CHK	CHANGE NO.	REV.

(FALU, AR <47:32>) (K1110)

TITLE FLT PT FALU		SIZE CODE D CS	NUMBER M7981-0-1	REV. C
SCALE 1/1	SHEET 10 OF 12		DIST.	

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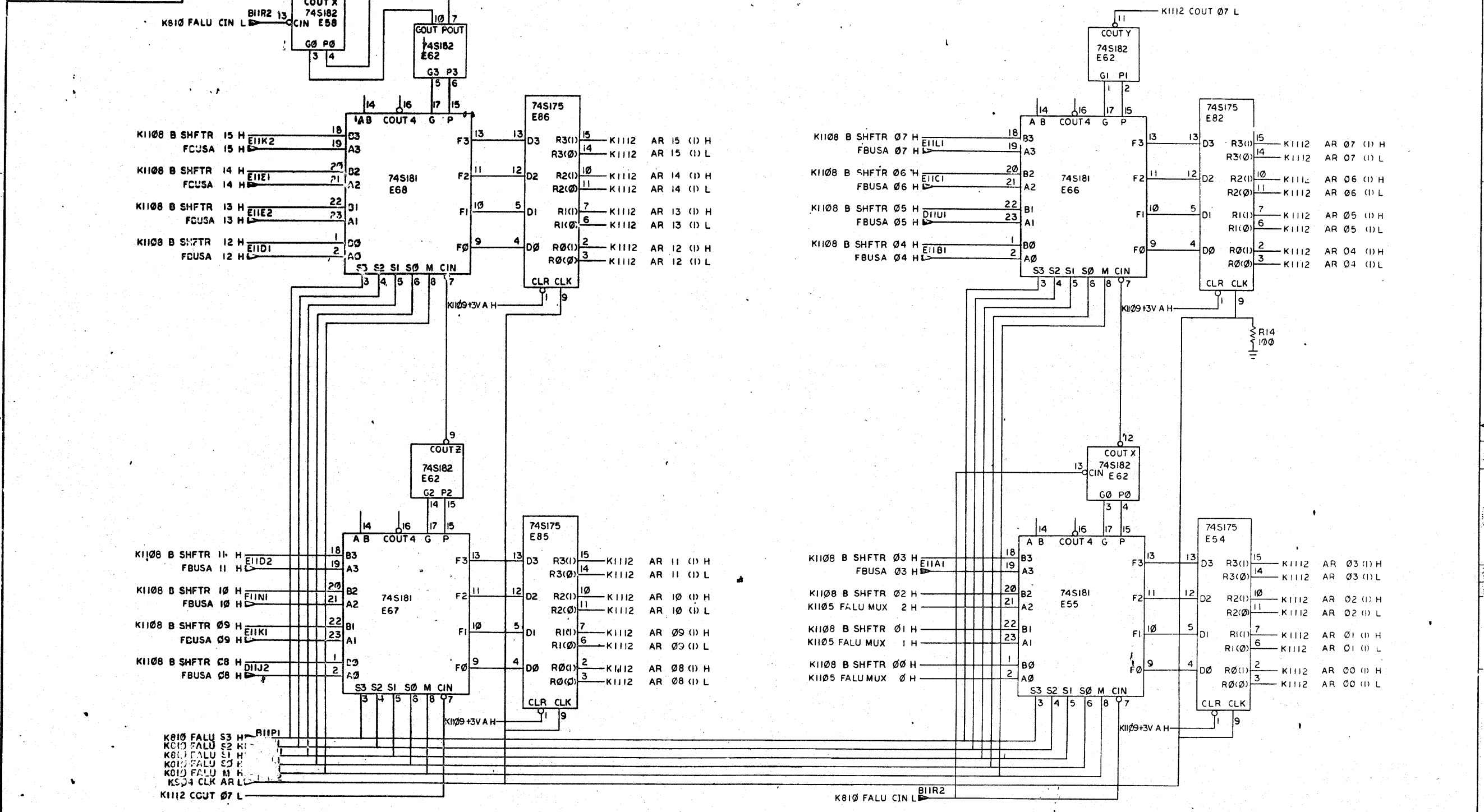


(FALU, AR <31:16>) (K1111)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE CODE	NUMBER	REV.
FLT PT FALU	D CS	M7881-0-1	C
SCALE	SHEET	OF	DIST.
	11	12	

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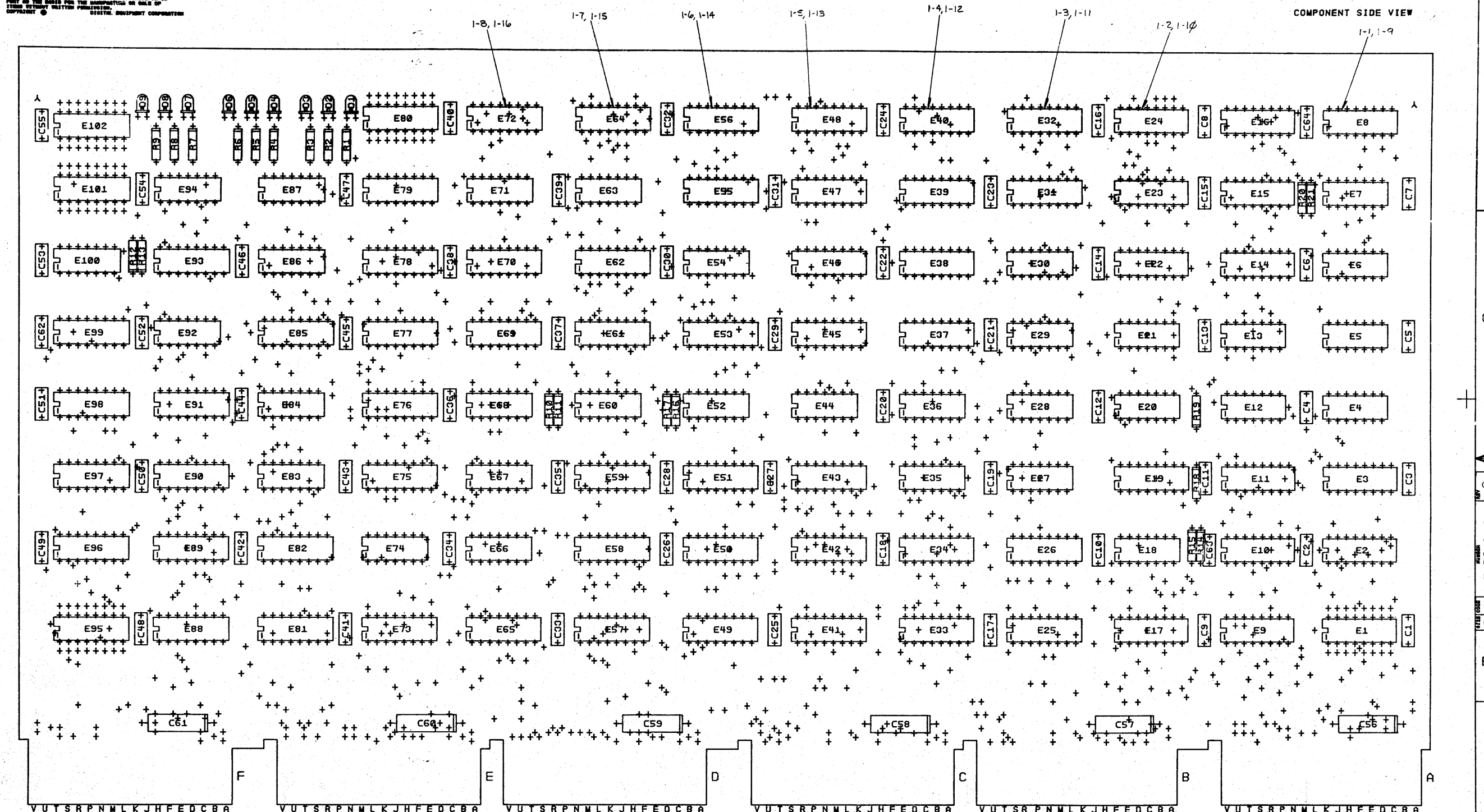


REVISIONS		
CHK	CHANGE NO.	REV.

(FALU, AR <15:00>) (K1112)

TITLE	FLT PT FALU	SIZE CODE	D CS	NUMBER	M 7881-0-1	REV.	C
SCALE	---	SHEET	12 OF 12	DIST.			

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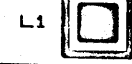
NOTES:

CHK	CHANGE NO	REV
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	10

SIGNATURES	DATE
DRN. R. REYNOLDS	2-25-77
CHK. D. J. SPENCER	3-25-77
ENC. [Signature]	4-1-77
PROJ. ENG. [Signature]	4-1-77
PROD. K. [Signature]	4-25-77
SCALE 2-1	
SHT. 1 OF 4	
NEXT HIGHER ASSY.	

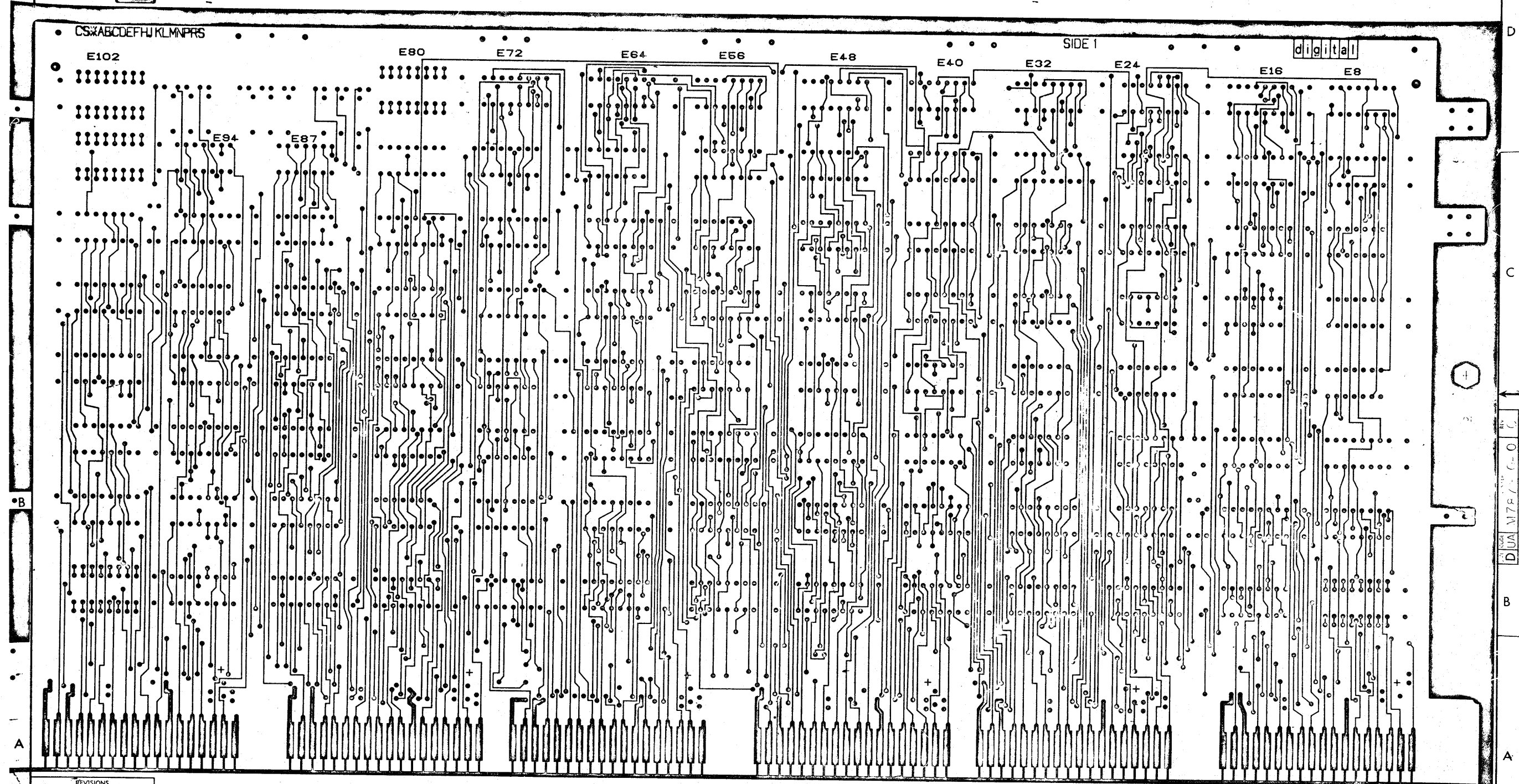
digital	
TITLE FNUA	
SIZE CODE	NUMBER
D U A	M7873-0-0
REV	C

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60126308 M7878

LAYER 1



REVISIONS		
CHK	CHANGE NO.	REV.

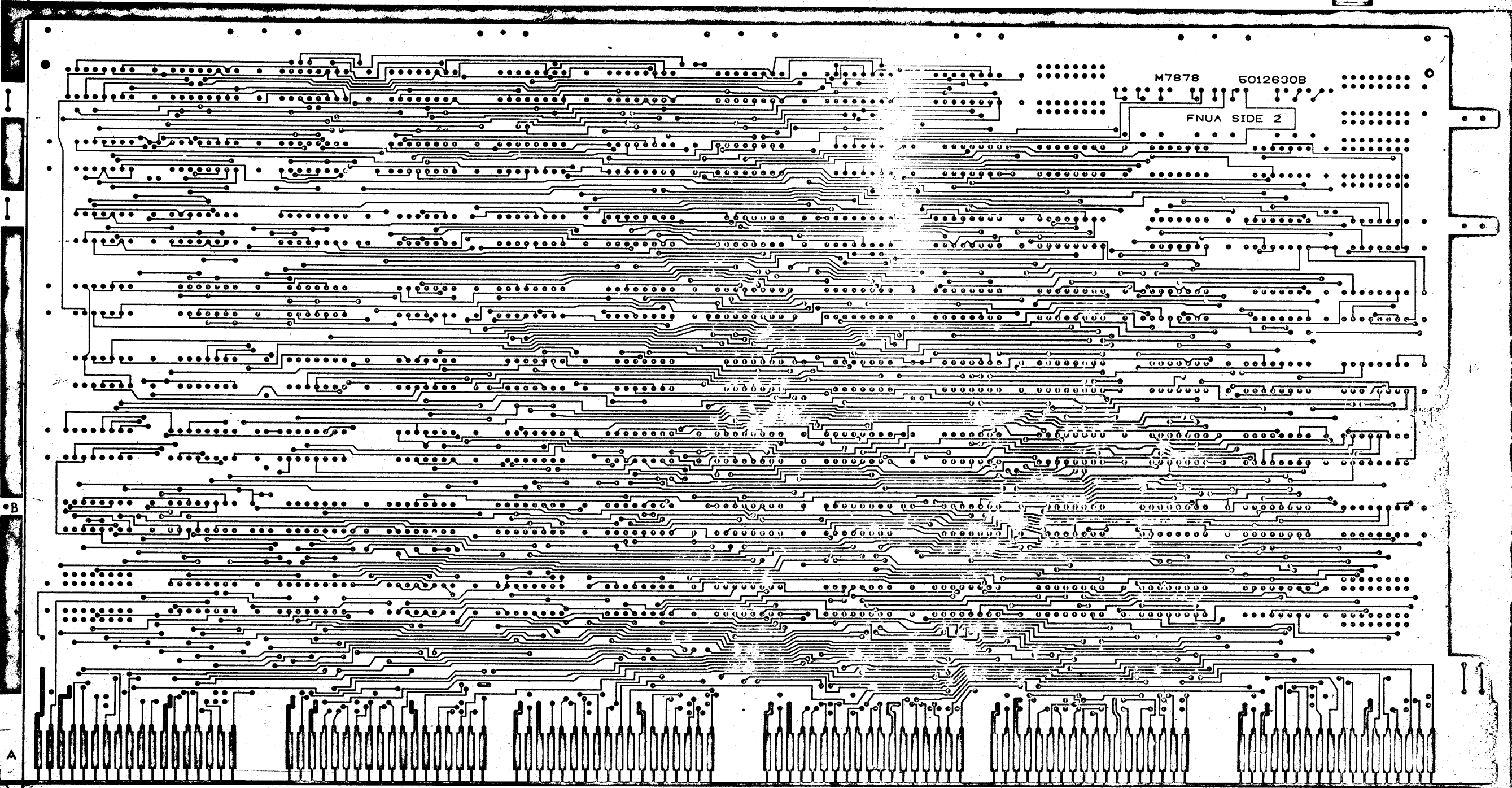
TITLE	FNUA	SIZE CODE	DUA	NUMBER	M7878-C-0	REV.	C
SCALE	2/1	SHEET	2	OP	4	DIST	

55

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H 934AJ

L4



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	FNUA	SIZE CODE	NUMBER	REV.
SCALE	2/1	DIST.	M 7878-0-0	C
SHEET 3 OF 4				

DUA M 7878-0-0 C  
 REV. C  
 DIST.

8 7 6 5 4 3 2 1

56

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0-0-7221N  
M7878-0-0  
DUA

*REWORK INSTRUCTIONS:*

*ECO #1*

*COMPONENT DELETES SIDE 1:*

- I-1 E08 (PIN 23546 A9 - 02)*
- I-2 E24 (PIN 23548 A9 - 02)*
- I-3 E32 (PIN 23549 A9 - 02)*
- I-4 E40 (PIN 23550 A9 - 02)*
- I-5 E48 (PIN 23551 A9 - 02)*
- I-6 E56 (PIN 23552 A9 - 02)*
- I-7 E64 (PIN 23553 A9 - 02)*
- I-8 E72 (PIN 23554 A9 - 02)*

*COMPONENT ADDS SIDE 1:*

- I-9 E08 (PIN 23646 A9 - 00)*
- I-10 E24 (PIN 23647 A9 - 00)*
- I-11 E32 (PIN 23648 A9 - 00)*
- I-12 E40 (PIN 23649 A9 - 00)*
- I-13 E48 (PIN 23650 A9 - 00)*
- I-14 E56 (PIN 23651 A9 - 00)*
- I-15 E64 (PIN 23652 A9 - 00)*
- I-16 E72 (PIN 23653 A9 - 00)*

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	FNUA	SIZE CODE	D UA	NUMBER	M 7878-0-0	REV.	C
SCALE	1/4" = 1"	SHEET	4 OF 4	DIST.			

DEC 1981 NO. 080 137

DUA M7878-0-0 C

57

# DIGITAL EQUIPMENT CORPORATION PARTS LIST

QUANTITY / VARIATION

NOTES:

MP 104872  
ETCH REV B  
CS REV A

MADE BY DATE	L. REYNOLDS 29 NOV 76	CHECKED DATE	G. GIDDINGS 21 DEC 76
ENG DATE	David C. Jones 4-28-77	PROD DATE	K. G. MacDonald 4-28-77

SECTION  
  
ISSUED SECTION

M7878-0-C																			
-----------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	QTY	VAR	UNIT	MATERIAL	DIM	FINISH	TOLER	REMARKS
1	D-MD-5012630-0-0	5012630	ETCH BOARD	1							
		1005306	CAPACITOR, 6.8 uf, 35V, 10%	6							
		1012784	CAPACITOR, .047 uf, 50V	58							
		1110864	DIODE, LED	9							
		1910548-0-0	I.C. DEC 74S157	6							
		1909686-0-0	I.C. DEC 7404	2							
		1910957-0-0	I.C. DEC 74S175	9							
		1910550-0-0	I.C. DEC 74S174	10							
		1910534-0-0	I.C. DEC 74S04	3							
		1910549-0-0	I.C. DEC 74S158	6							
		1910532-0-0	I.C. DEC 74S00	7							
		1911527-0-0	I.C. DEC 8097	8							
		1912389	I.C. DEC 74S08	1							
		1910536	I.C. DEC 74S10	5							
		1910544	I.C. DEC 74S74	1							
		1910539	I.C. DEC 74S20	4							
		1910537	I.C. DEC 74S11	1							
		23365A2-00	I.C. DEC 256 x 4 FP DECODE ROM	1							
		1912746	I.C. DEC 74S37	3							
		1910541	I.C. DEC 74S40	3							

REF DESIGNATION

C56 thru C61  
C1 thru C55, C62, C63 C64  
D1 thru D9  
  
E73, E82, E89, E88, E98, E81  
E63, E71  
E58, E93 E99, E97, E38, E31 E37 E19, E69  
E91 E77, E59, E22, E47 E45, E53, E55, E62, E90  
E92, E66, E28  
E90, E76 E79 E78, E61, E23  
E83, E68, E52, E36 E18, E54 E86  
E26, E65, E49, E41, E43, E50 E51, E25  
E84  
E27, E20, E100, E87, E60  
E67  
E30, E29, E35, E74  
E94  
E85  
E13, E21, E7  
E4, E5, E6

E.C.O. NO. M7878-1 M7878-2	"THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © 1977 DIGITAL EQUIPMENT CORPORATION"	TITLE FNUA	ASSY NO. D-UA-M7878-0-0	SIZE B	CODE PL	NUMBER M7878-0-0	REV. C
			SHEET 1 OF 3	INSERTION PARTS LIST DATA BASE REV			

# DIGITAL EQUIPMENT CORPORATION PARTS LIST

QUANTITY / VARIATION

NOTES:

MS 104872  
ETCH REV B  
CS REV A

MADE BY L. REYNOLDS DATE 11-29-76	CHECKED G. GIDDINGS DATE 12-21-76	SECTION
ENG David C. Jones DATE 4-28-77	PROD K. St. V. Ornela DATE 4-28-77	ISSUED SECTION

M7878-00

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	QUANTITY	VARIATION	REF DESIGNATION
21		1910552	I.C. DEC 74S194	8		E57, E42, E34, E33, E17, E9, E10, E2
2		1911712	I.C. DEC 74S51	1		E44
3		1911676	I.C. DEC 74S139	1		E39
4		1910547-0-0	I.C. DEC 74S153	2		E46, E75
5		1912096	I.C. DEC 74S86	1		E12
6		1910224-0-0	I.C. DEC 7485	2		E14, E15
27		1911675	I.C. DEC 74S138	1		E70
28			I.C. DEC SPARES	5		E1, E80, E95, E101, E102
29		1910652	I.C. DEC 74174	1		E3
30		1210711-2	HEX HANDLE ASSY	1		
31		9000024-01	EYELETS	12		
32		1910651	I.C. DEC 74175	1		E11
33		1300309	RESISTOR, 390, 1/4W, 5%	3		R10, R16, R18
34		1300295	RESISTOR, 330, 1/4W, 5%	12		R13, R15, R21, R1 THRU R9
35		1301424	RESISTOR, 680, 1/4W, 5%	3		R12, R14, R20
36		1212385-02	SOCKET	10		E8, E16, E24, E32, E40, E48, E56, E64, E72, E85
37		1301322	RESISTOR, 180, 1/4W, 5%	2		R11, R19
38		1301972	RESISTOR, 270, 1/4W, 5%	1		R17

E.C.O. NO.

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		SHEET 2 OF 3	INSERTION PARTS LIST DATA BASE REV			

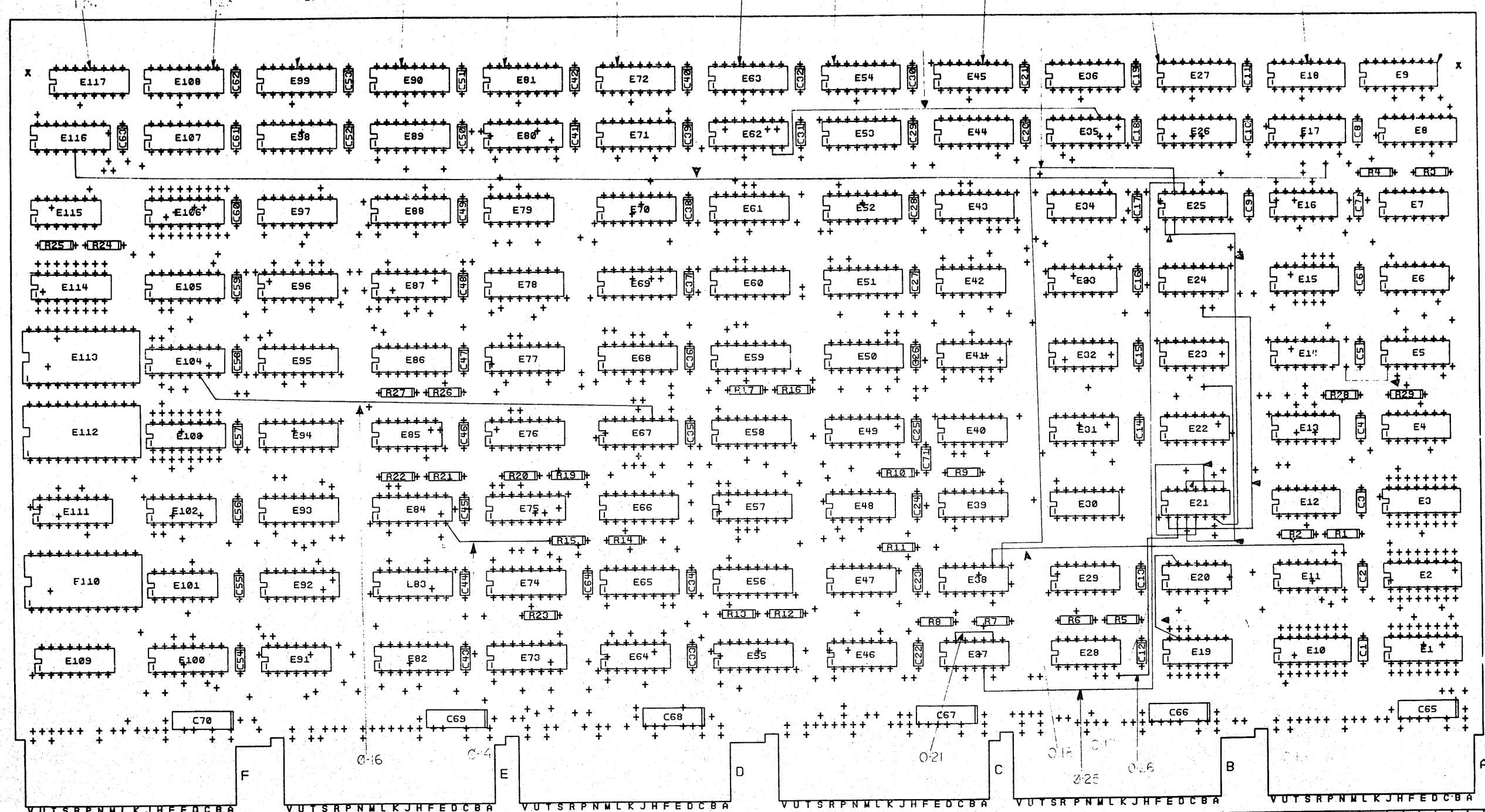




8 7 6 5 4 3 2 1

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COMPONENT SIDE VIEW



NOTES:

CHANGE NO	REV	DATE	BY	CHK'D	DESCRIPTION
1	B	11/17/75	D. IVEY		REVISED TO ADD C70
2	C	11/17/75	D. IVEY		REVISED TO ADD C69
3	D	11/17/75	D. IVEY		REVISED TO ADD C68
4	E	11/17/75	D. IVEY		REVISED TO ADD C67
5	F	11/17/75	D. IVEY		REVISED TO ADD C66

ETCH REV.	B
P.C. DESIGN DATA BASE REV.	B

SIGNATURES	DATE	TITLE
DRN.		digital
CHK'D.		
PROJ. ENG.		EXPONENT
SCALE	2/1	SIZE CODE NUMBER REV
SHT.	1 OF 4	UA M7879-0-0
NEXT HIGHER ASSY.	B-DD-M7879-0	

62

1 MS# 104772

8 7 6 5 4 3 2 1

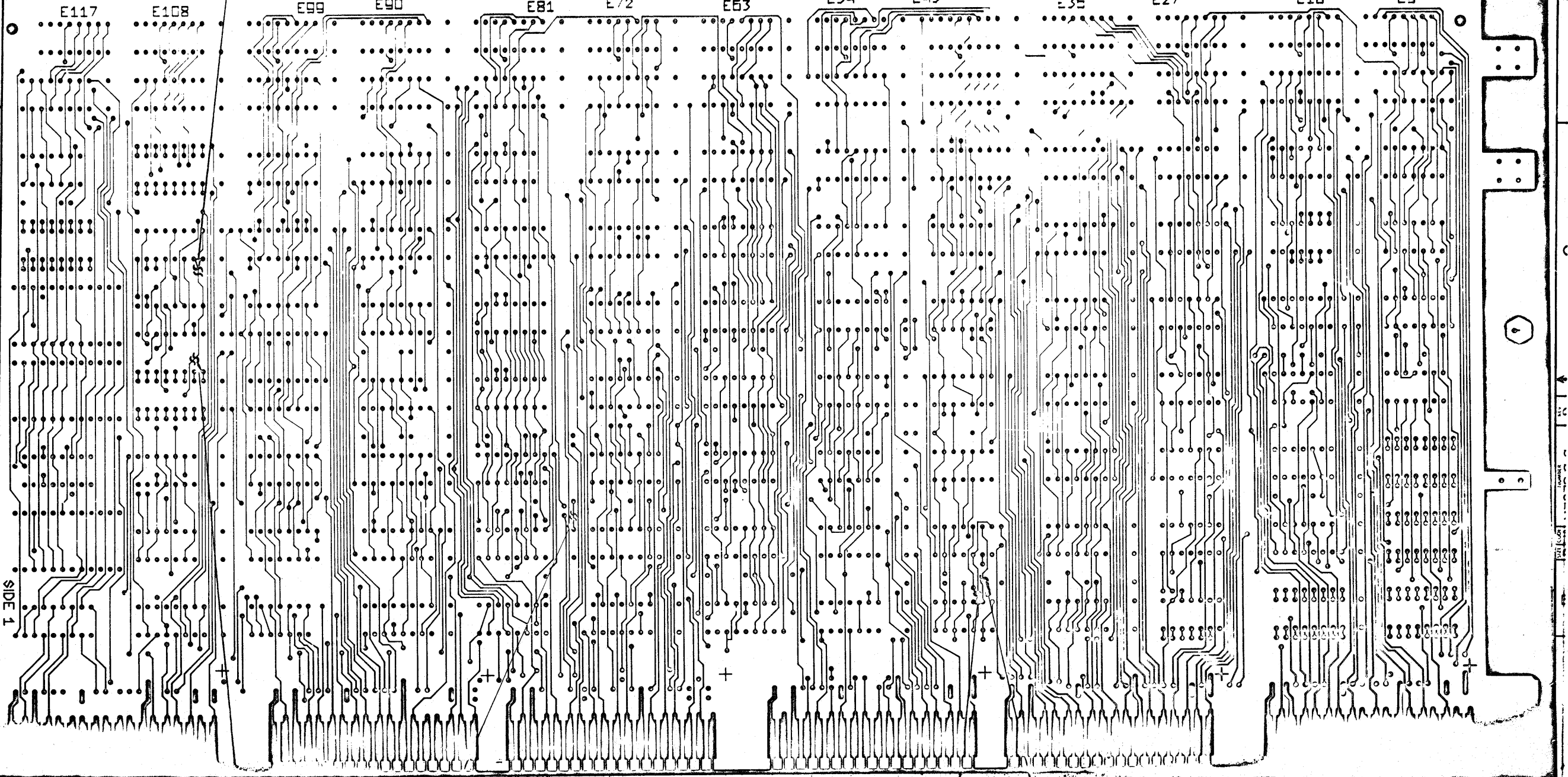
0-6

M7879 5012459B

LAYER 1

L1

CS ABCDEFHJ KLMNHS



REVISIONS		
CH.	CHANGE NO.	REV.

0-7

0-2

0-22

0-12

TITLE EXPONENT		SIZE CODE D UA	NUMBER M7879-0-0	REV. D
SCALE 2-1	SHEET 2 OF 4	DIST.		

8 7 6 5 4 3 2 1 63

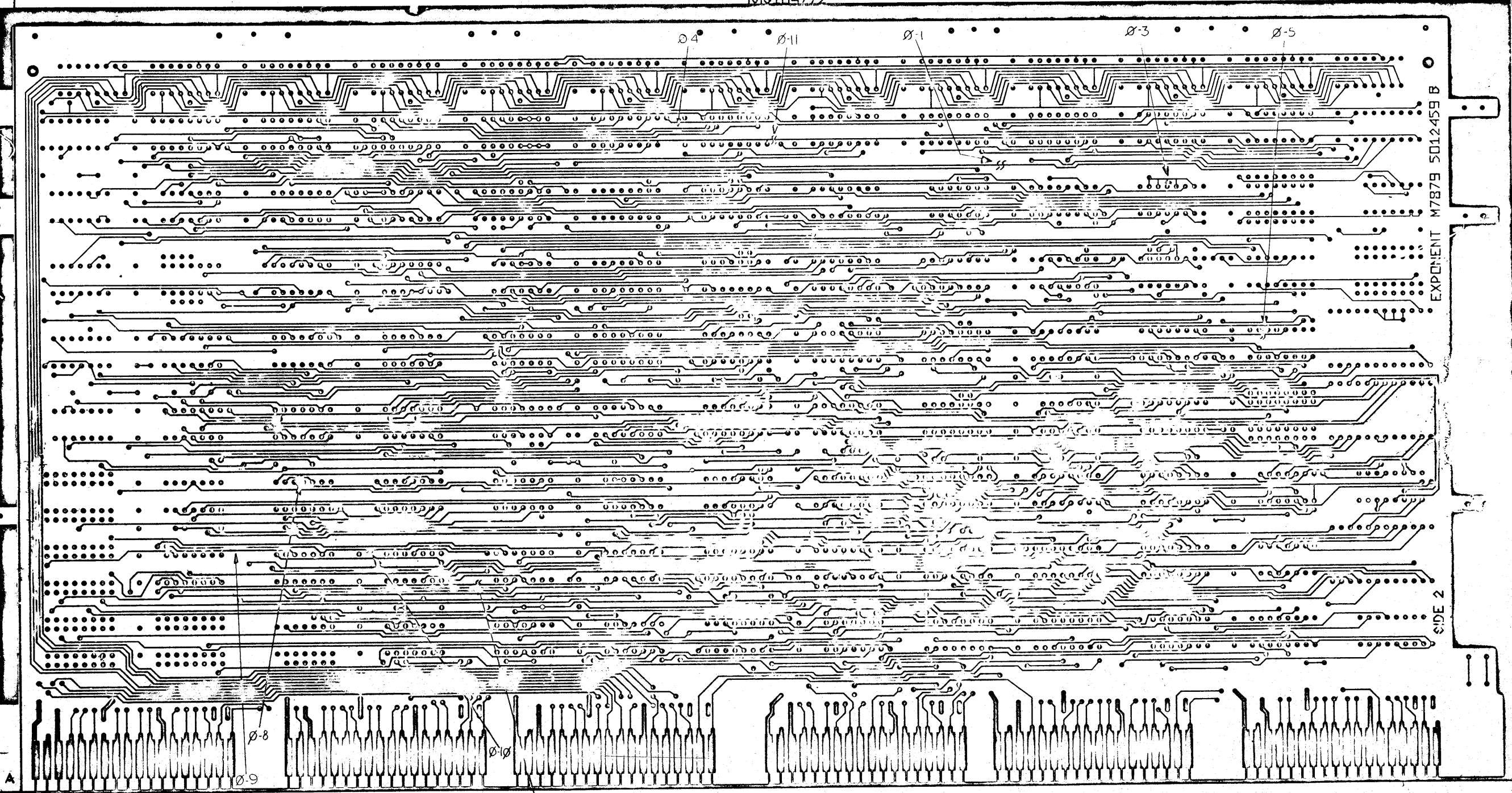
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L4

LAZER

MS104772

D U A M 7 8 7 9 - 0 - 0 2



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	EXPONENT	SIZE/CODF	D U A M 7 8 7 9 - 0 - 0	NUMBER		REV.	D
SCALE	2/1	SHEET	3	OF		DIST.	

64

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D  
C  
B  
A

NOTES:

- ETCH CUTS -
- Ø-1 SIDE 2 - E118 PIN 4 TO FEEDTHRU BELOW E17 PINS 6 & 7.
  - Ø-2 SIDE 1 - F.T. LEFT OF E85 PIN 16 TO F.T. ABOVE.
  - Ø-3 SIDE 2 - E97 PIN 12 TO GROUND.
  - Ø-4 SIDE 2 - F.T. TO E62 PIN 11 AND E35 PIN 11.
  - Ø-5 SIDE 2 - E1Ø4 PIN 13 TO E95 PIN 15.
  - Ø-6 SIDE 1 - E1Ø5 PIN 9 TO E1Ø4 PIN 9.
  - Ø-7 SIDE 1 - E1Ø4 PIN 9 TO F.T. ABOVE E1Ø3 PIN 6.
  - Ø-8 SIDE 2 - E21 PIN 9 TO E21 PIN 12.
  - Ø-9 SIDE 2 - E20 PIN 13 TO F.T. ABOVE, RIGHT OF E11 PIN 8.
  - Ø-10 SIDE 2 - E20 PIN 13 TO E38 PIN 9.
  - Ø-11 SIDE 2 - E62 PIN 1 TO E71 PIN 1.
  - Ø-12 SIDE 1 - E37 PIN 9 TO E38 PIN 9.
  - Ø-13 E118 PIN 5 TO FEEDTHRU BELOW E17 PINS 6 & 7.
  - Ø-14 E84 PIN 8 TO R15.
  - Ø-15 E62 PIN 7 TO E35 PIN 11.
  - Ø-16 E1Ø4 PIN 6 TO E67 PIN 11.
  - Ø-17 E21 PIN 12 TO E21 PIN 8.
  - Ø-18 E38 PIN 9 TO F.T. ABOVE, RIGHT OF E11 PIN 8.
  - Ø-19 E19 PIN 13 TO E20 PIN 13.
  - Ø-20 E5 PIN 1 TO F.T. LEFT OF C5.
  - Ø-21 E37 PIN 9 TO E37 PIN 13.
  - Ø-22 SIDE 1 E37 PIN 5 TO E38 PIN 5.
  - Ø-23 SIDE 2 E38 PIN 5 TO E17 PIN 6.
  - Ø-24 E38 PIN 8 TO E25 PIN 13.
  - Ø-25 E37 PIN 5 TO E25 PIN 12.
  - Ø-26 F.T. BELOW E29 PIN 7 TO E21 PIN 2.
  - Ø-27 E21 PIN 4 TO E21 PIN 10.
  - Ø-28 E21 PIN 1 TO F.T. BELOW E24 PIN 5.
  - Ø-29 E21 PIN 6 TO E25 PIN 2.
  - Ø-30 E21 PIN 3 TO F.T. BELOW E23 PIN 5.
  - Ø-31 E25 PIN 1 TO E25 PIN 2.
- WIRE ADDS (ALL ON SIDE 1)
- ETCH CUTS
- WIRE ADDS (ALL ON SIDE 1)

- COMPONENT ADDS SIDE 1:
- I-13. E9 (P/N 23654A9-ØØ)
  - I-14. E18 (P/N 23655A9-ØØ)
  - I-15. E27 (P/N 23656A9-ØØ)
  - I-16. E45 (P/N 23657A9-ØØ) SEE ECO #3
  - I-17. E54 (P/N 23658A9-ØØ)
  - I-18. E63 (P/N 23659A9-ØØ)
  - I-19. E72 (P/N 2366ØA9-ØØ)
  - I-20. E81 (P/N 23661A9-ØØ)
  - I-21. E9Ø (P/N 23662A9-ØØ)
  - I-22. E99 (P/N 23663A9-ØØ)
  - I-23. E1Ø8 (P/N 23664A9-ØØ)
  - I-24. E117 (P/N 23665A9-ØØ)

- ECO #3
- COMPONENT DELETES SIDE 1:
- 3-1. E45 (P/N 23657A9-ØØ)
- COMPONENT ADDS SIDE 1:
- 3-2. E45 (P/N 23724A9-ØØ)

- ECO #1
- COMPONENT DELETES SIDE 1:
- I-1. E9 (P/N 23555A9-Ø2)
  - I-2. E18 (P/N 23556A9-Ø2)
  - I-3. E27 (P/N 23557A9-Ø2)
  - I-4. E45 (P/N 23559A9-Ø2) SEE ECO #3
  - I-5. E54 (P/N 2356ØA9-Ø2)
  - I-6. E63 (P/N 23561A9-Ø2)
  - I-7. E72 (P/N 23562A9-Ø2)
  - I-8. E81 (P/N 23563A9-Ø2)
  - I-9. E9Ø (P/N 23564A9-Ø2)
  - I-10. E99 (P/N 23565A9-Ø2)
  - I-11. E1Ø8 (P/N 23566A9-Ø2)
  - I-12. E117 (P/N 23567A9-Ø2)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	EXONENT	SIZE CODE	D LA	NUMBER	W7579-Ø-C	REV.	D
SCALE	SHEET 4 OF 4	DIST.					

# DIGITAL EQUIPMENT CORPORATION PARTS LIST

QUANTITY / VARIATION

NOTES:  
MS 04772  
ETCH REV B  
CC REV 1

MADE BY DATE	CHECKED DATE	SECTION
David C. Ives 4-28-77	Frank S. Ives 3-28-77	
ENG DATE	PROD DATE	ISSUED SECTION
David C. Ives 4-28-77	K. R. MacDonald 4-28-77	

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	M7879-C-C	QUANTITY	VARIATION	REF DESIGNATION
1	D-MD-5012459B-C-C	5012459B	ETCH BOARD	1			
2		1005306	CAPACITOR, 6.8 uf, 35V, 10%	6			C65 thru C70
3		1012784	CAPACITOR, .047 uf	65			C1 thru C64, C71
4		1300295	RESISTOR, 330, 1/4W, 5%	6			R22, R27, R2, R9, R14 R28
5		1300365	RESISTOR, 1K, 1/4W, 5%	3			R7, R12, R16
6		1301424	RESISTOR, 680, 1/4W, 5%	6			R21, R26, R1 R10, R15, R29
7		1910532	I.C. DEC 74S00	8			E4, E6, E13, E16, E23, E32, E38, E79
8		1910536	I.C. DEC 74S10	6			E15, E20, E30, E31 E42, E91
9		1912746	I.C. DEC 74S37	3			E29, E34, E115
10		1912389	I.C. DEC 74S08	2			E11, E46
11		1910534	I.C. DEC 74S04	2			E22, E47
12		1911712	I.C. DEC 74S51	1			E33
13		1910544	I.C. DEC 74S74	6			E5 E19, E21, E39, E40, E41
14		23179A1-00	I.C. DEC ACT BUT ROM 32 x 8	1			E35
15		1913294	I.C. DEC 93S16	1			E69
16		1910540	I.C. DEC 74S158	1			E70
17		1910537	I.C. DEC 74S11	1			E25
18		1912096	I.C. DEC 74S86	1			E14
19		1910546	I.C. DEC 74S140	1			E24
20		1912388	I.C. DEC 74S02	2			E28, E48
21		1910547	I.C. DEC 74S153	4			E87, E88, E96, E97

ECO. NO.  
00001  
00002  
00003

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TITLE  
EXPONENT

ASSY NO.  
D-UA-M7879-0-0

SIZE	CODE	NUMBER	REV.
B	PL	M7879 0-0	D

bb

# DIGITAL EQUIPMENT CORPORATION PARTS LIST

QUANTITY / VARIATION

NOTES:

MADE BY DATE	CHECKED DATE	SECTION
David C. Jones 4-28-77	3-28-77	
ENG DATE	PROD DATE	ISSUED SECTION
David C. Jones 4-28-77	K. J. MacEwen 4-20-77	

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	M7879-0-0	QUANTITY	VARIATION	REF DESIGNATION
22		1910552	I.C. DEC 74S194		2		E86, E94
		1910957	I.C. DEC 74S175		11		E17, E50, E51, E62, E66, E67, E68, E74, E95, E107, E116
		1912661	I.C. DEC 74S189		6		E83, E84, E92, E93, E104, E105
		1910956	I.C. DEC 74S151		3		E43, E44, E57
		1910548	I.C. DEC 74S157		1		E78
		1910535	I.C. DEC 74S05		4		E12, E85, E101, E102
		1910531	I.C. DEC 74S181		3		E110, E112, E113
		1911983	I.C. DEC 74S133		1		E65
		1912097	I.C. DEC 74S182		1		E111
		23366A2-00	I.C. DEC QUOT ROM 256 x 4		1		E76
		1911527	I.C. DEC 8097		4		E73, E82, E100 E109
		1912728	I.C. DEC 74S251		6		E55, E56, E58 thru E61
		1910539	I.C. DEC 74S20		1		E64
		1911676	I.C. DEC 74S139		1		E52
		1910550	I.C. DEC 74S174		8		E8, E26, E49, E53, E71, E80, E89, E98
		1911219	I.C. DEC 7438		1		E37
		1301322	RESISTOR, 180, 1/4W, 5%		1		R25
		1301972	RESISTOR, 270, 1/4W, 5%		2		R4, R6
		1300309	RESISTOR, 390, 1/4W, 5%		3		R3, R5, R24

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		<p>SHEET 2 OF 4</p>	<p>INSERTION PARTS LIST DATA BASE REV</p>			



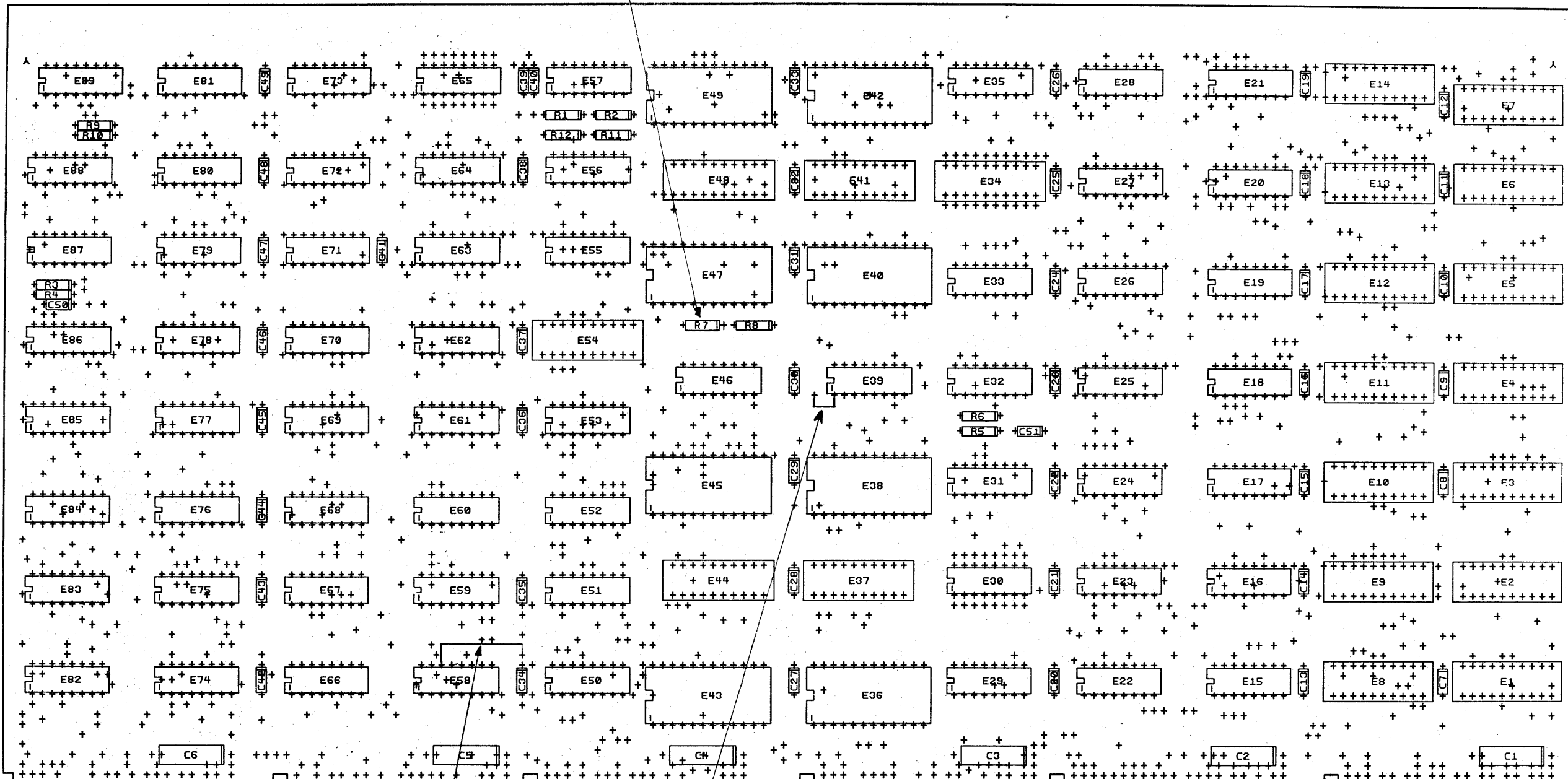




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0-0-0882W 2 1

COMPONENT SIDE VIEW



NOTES:  
 0-1 ADD JUMPER FROM E58-14 TO FEEDTHRU ABOVE C34  
 0-2 ADD JUMPER FROM E39-1 TO FEEDTHRU LEFT OF E39-1  
 0-3 NOT TO BE INSERTED

CHK	CHANGE NO	REV

ETCH REV.	B
P.C. DESIGN DATA BASE REV.	B

SIGNATURES		DATE	TITLE
DRN.	<i>[Signature]</i>	1-1-77	
CHK'D.	<i>[Signature]</i>	3/23/77	
ENG.	<i>[Signature]</i>	4-1-77	
PROJ. ENG.	<i>[Signature]</i>	4-1-77	
PROD.	<i>[Signature]</i>	4-28-77	
SCALE	2/1		SIZE CODE
SHT.	1 OF 3		NUMBER
NEXT HIGHER ASSY. B-DD-M7880-0			M7880-0-0 A

71

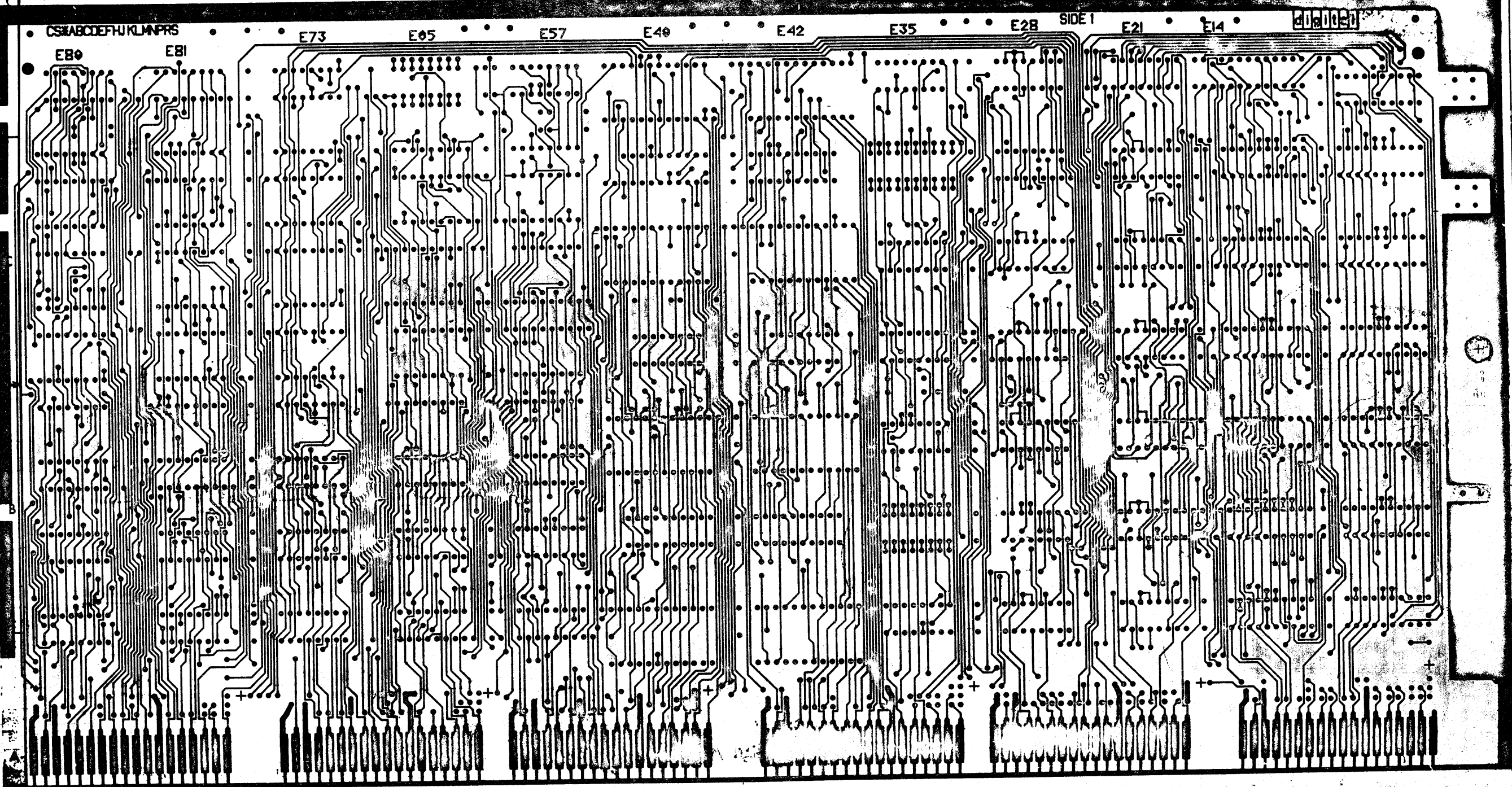
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LAYER 1

L1

50124070 M7880

DUA M7880-0-0 2



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	MULNET	SIZE CODE	D UA	NUMBER	M7880-0-0	REV.	A
SCALE	2/1	SHEET	2	OF	3	DIST.	

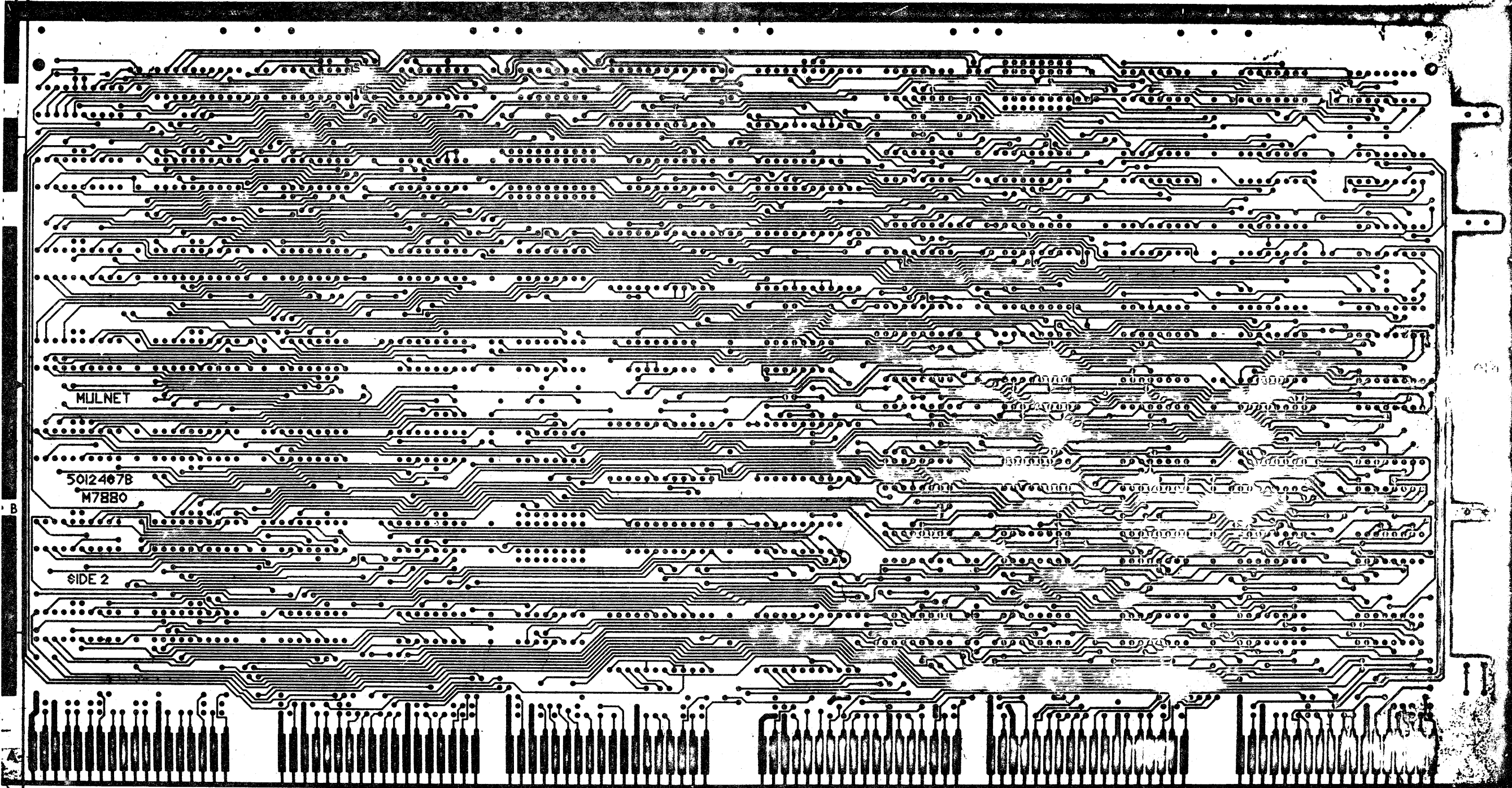
72

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L4

LAYER

0-0-0882W M7880 2



MULNET

5012407B  
M7880

SIDE 2

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	MULNET	SIZE CODE	D UA	NUMBER	M7880-0-0	REV.	A
SCALE	2/1	SHEET	3	OF	3	DIST.	

DWG FORM NO. 040 137

8 7 6 5 4 3 2 1 73

D  
C  
B  
A  
DUA M7880-0-0

# DIGITAL EQUIPMENT CORPORATION PARTS LIST

QUANTITY / VARIATION

NOTES:

MS IC4775

ETCH REV

CS REV

MADE BY DATE	CHECKED DATE	SECTION
David C. Lee 4-28-77	K. J. Mac Donald 4-28-77	
ENG DATE	PROD DATE	ISSUED SECTION
David C. Lee 4-28-77	K. J. Mac Donald 4-28-77	

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	M7880-0-0	QUANTITY	VARIATION	REF DESIGNATION
1	D-MD-5012467-0-0	5012467	ETCH BOARD	1			
2		1005306	CAPACITOR, 6.8 uf, 35V, 10%	6			C1 thru C6
3		1012784	CAPACITOR, .047 uf	45			C7 thru C51
4		1300295	RESISTOR, 330, 1/4W, 5%	3			R2, R4, R6
5		1301424	RESISTOR, 680, 1/4W, 5%	3			R1, R3, R5
6		1300229	RESISTOR, 100, 1/4W, 5%	1			R8
7		1910548	I.C. DEC 74S157	2			E63, E86
8		1910550	I.C. DEC 74S174	5			E29, E31, E32 E33, E35
9		1910552	I.C. DEC 74S194	28			E50 thru E53, E55 thru E62, E64, E74 thru E85, E87, E88, E89
10		1910531	I.C. DEC 74S181	8			E36, E38 E40, E42, E43, E45, E47, E49
11		1912097	I.C. DEC 74S182	2			E39, E46
12		23012B1-00	MULT. ROM 256 x 8	14			E1 thru E14
13		23364A2-00	COUNTER ROM 256 x 4	14			E15 thru E28
14		1913671	I.C. DEC 74S374	5			E37, E44, E48, E54, E41
15		1912646	I.C. DEC 74LS253	8			E66 thru E73
16			I.C. SPARE	3			E30, E34, E65
17		1301972	RESISTOR, 270, 1/4W, 5%	2			R9, R11
18		1300309	RESISTOR, 390, 1/4W, 5%	2			R10, R12
19		1210711-2	HANDLE ASSY (HEX)	1			
20		9000024-C1	EYELET, HANDLE	12			

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		SHEET 1 OF 1	INSERTION PARTS LIST DATA BASE REV			

DRAWING NO.	NO. OF SHTS.	PART NO.	DESCRIPTION	REVISIONS																	
B-MH-M7880-0-6	1		MULNET																		
D-UA-M7880-0-0-3	3		MULNET	A																	
B-PL-M7880-0-0-1	1		MULNET	A																	
D-CS-M7880-0-1-11	11		MULNET	A																	
D-MD-501246700-5	5		DRILL & ETCH DRAWING	A																	
		5012467	ETCHED BOARD	B																	
M7880-C-L			P.C. DESIGN DATA BASE	B																	

**NOTES:**

REVISIONS	DATE	CHG NO.	REV.																	

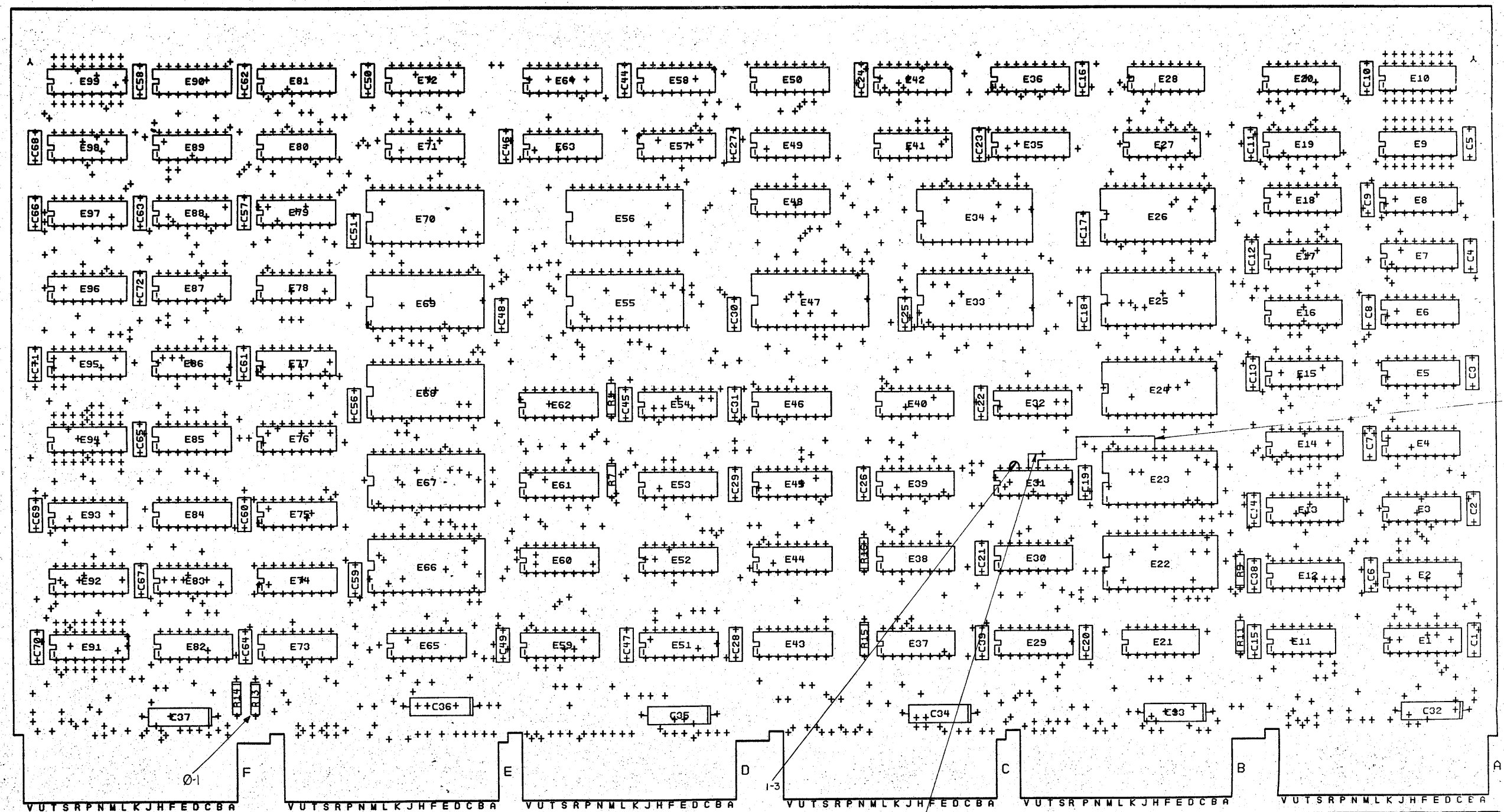
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USED ON OPTION/MODEL	DRN. <i>[Signature]</i>	TITLE	MULNET	
	CHK'D <i>[Signature]</i>	SIZE	B	DD
	ENG. <i>David C. [Signature]</i>	CODE	M7880-0	
	PROD. <i>[Signature]</i>	NUMBER	A	
		4-28-77	SHEET   OF	
		4-28-77		

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 RETURNED TO THE AIR FORCE OFFICE OF  
 AIR FORCE MATERIEL COMMAND, WASHINGTON, D.C.  
 20330-3100

COMPONENT SIDE VIEW



NOTES:  
 Ø-1: NOT TO BE INSERTED.

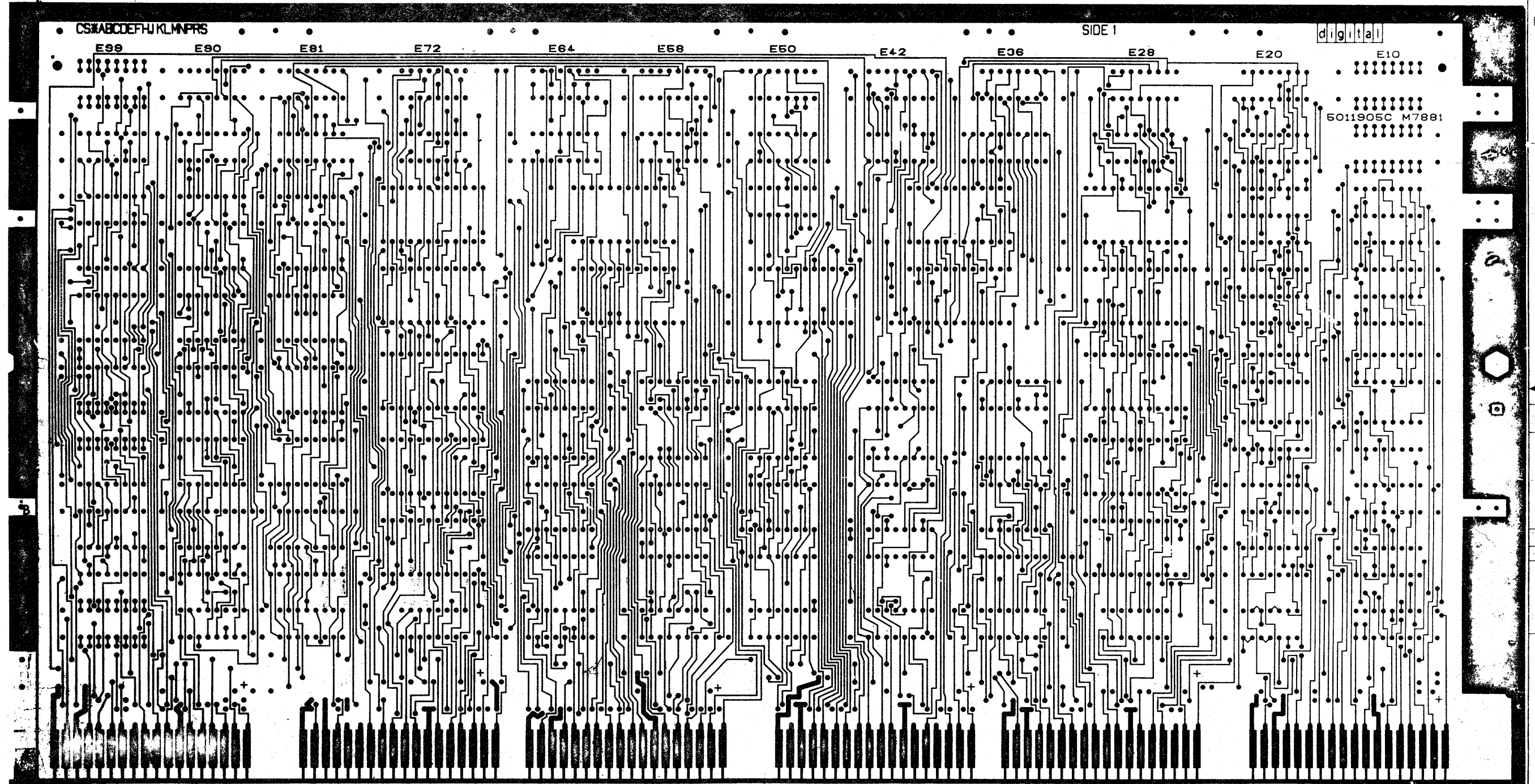
CHANGE NO	REV	DATE	BY
M7881-1	C		

ETCH REV. C
P.C. DESIGN DATA BASE REV. C

SIGNATURES	DATE	TITLE
DRN. R. BARILONE	2-4-76	digital
CHK'D		
ENG. D. C. JONES		
PROJ. ENG. J. C. JONES		
PROD. X. J. JONES		
SCALE 2-1	SIZE CODE	NUMBER
SHT. 1 OF 4	D UA	M7881-C
NEXT HIGHER ASSY. B-DD-M7881-C		

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LAYER 1



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SCALE	SHEET	SIZE/DATE	NUMBER	REV.
FLT PT FALU	2/1	2 OF 4	D UA	M7881-0-0	C

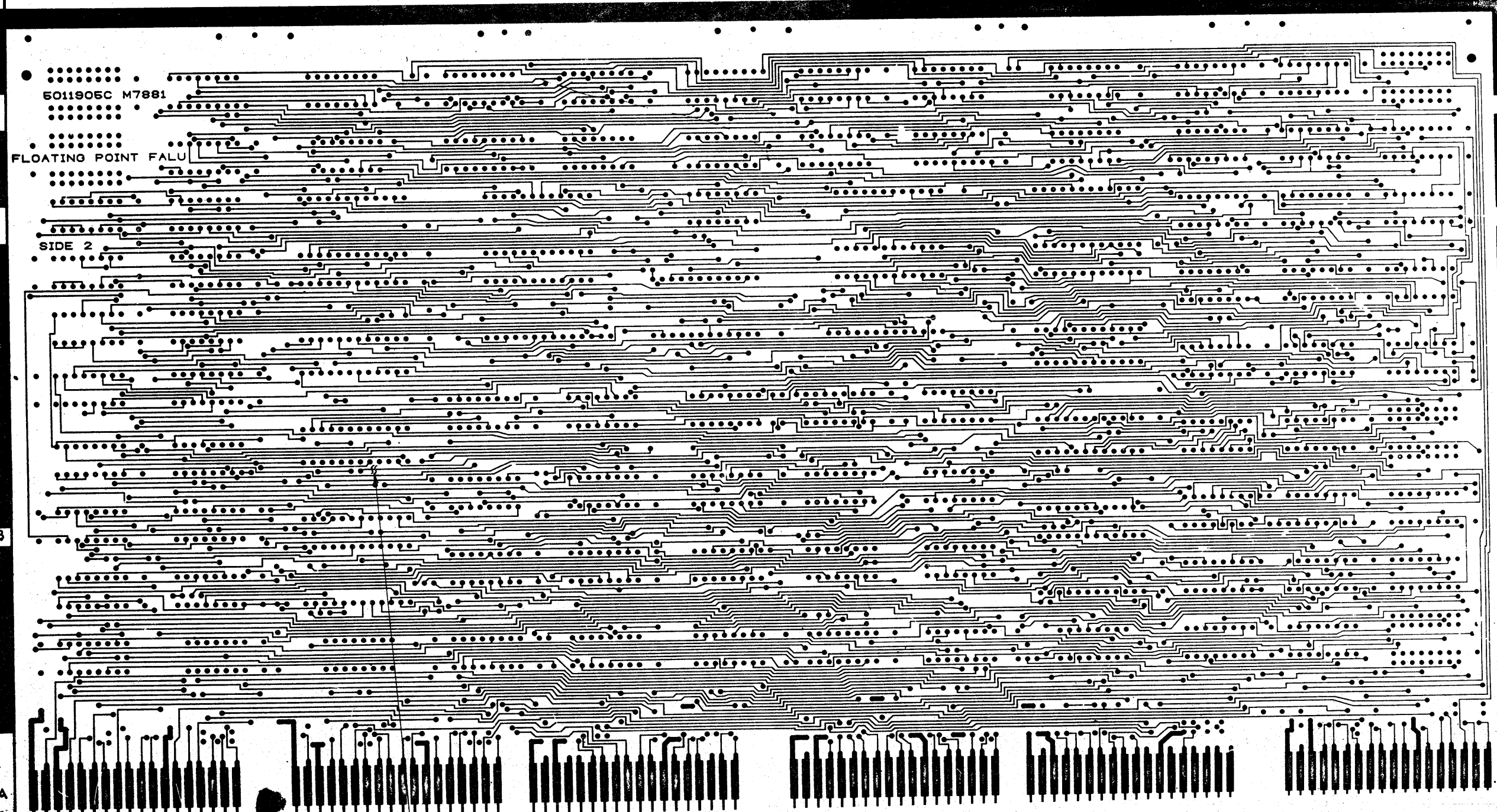
DEC FORM NO. 040 137

77

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AYER 934A

L4



REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE/LOC	NUM/REV	EFF.
FLT PT. FALU	D (1A)	M7881-0-0	C
SCALE 2/1	SHEET 3 OF 4	DIST.	

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REWORK INSTRUCTIONS

ECO #1

ETCH CUTS SIDE 2:

- 1-1. BETWEEN F/T ABOVE E31-11 AND 12 AND F/T BELOW E23-19

WIRE ADDS SIDE 1:

- 1-2. BETWEEN F/T ABOVE E31-11 AND 12 AND E31-13
- 1-3. BETWEEN E31-14 AND E31-15
- 1-4. BETWEEN E31-12 AND E23-19

REVISIONS		
CHK.	CHANGE NO.	REV.

TITLE FLT PT FALU		SIZE CODE DUA	NUMBER M7581-0-0	REV. C
SCALE ++	SHEET 4	OF 4	DIST.	

JEC FORM NO. 000 137

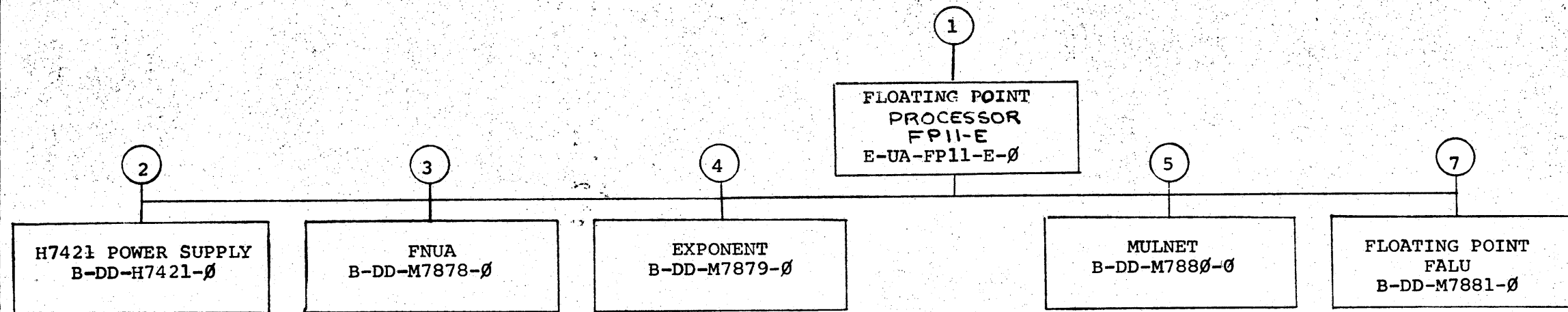
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TITLE	SHEET 2 OF 3	SIZE CODE	NUMBER	REV
FLOATING POINT PROCESSOR FP11-E	3	Ø DD	FP11-E	

FIND NO.	DRAWING NO.	DESCRIPTION	TYPE	FIND NO.	DRAWING NO.	DESCRIPTION	TYPE
1	MP00429	FIELD MAINTENANCE PRINT SET ORDER NO.	-				
	B-TC-FP11-E-1	FIELD MAINTENANCE PRINT SET ORDER NO. (TC)	-				
	E-UA-FP11-E-0	FLOATING POINT PROCESSOR FP11-E	E/M				
	D-IA-7013423-0-0	HARNESS POWER FP11-E	E/M				
	A-PL-FP11-E-3	SHIPPING LIST	M				
	K-FD-FP11-E-2	FP11-E MICROCODE	E				
2	B-DD-H7421-0	H7421 POWER SUPPLY	E/M				
3	B-DD-M7878-0	FNUA	E/M				
4	B-DD-M7879-0	EXPONENT	E/M				
5	B-DD-M7880-0	MULNER	E/M				
6	B-DD-M7881-0	FLOATING POINT PALJ	E/M				

TYPE: E ELECTRICAL  
M MECHANICAL  
E M ELECTRO MECHANICAL



TITLE  
FLOATING POINT PROCESSOR FP11-E

SHEET 3 OF 3

SIZE CODE  
**B DD**

NUMBER  
FP11-E

REV

