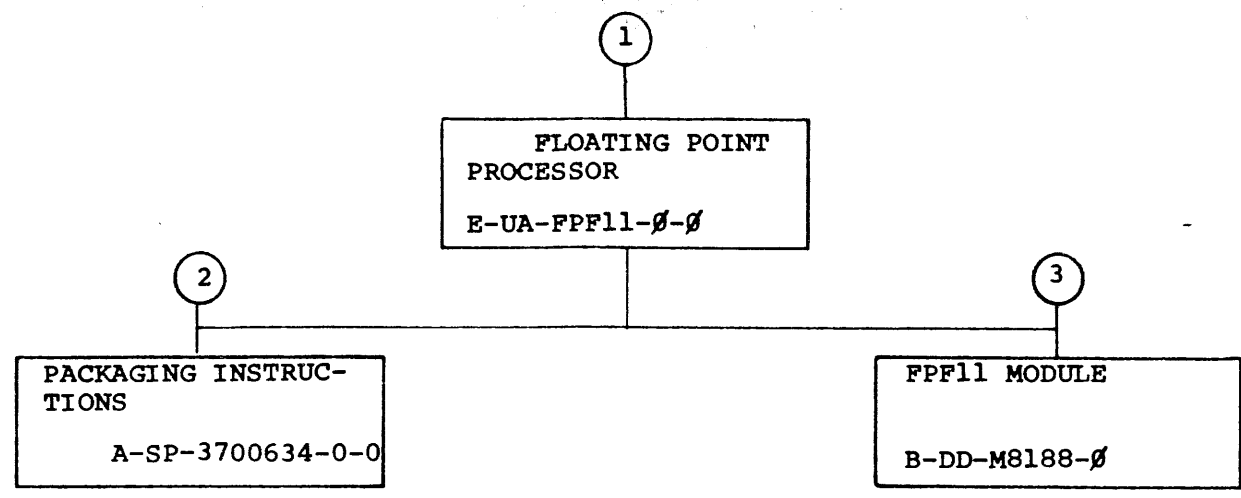
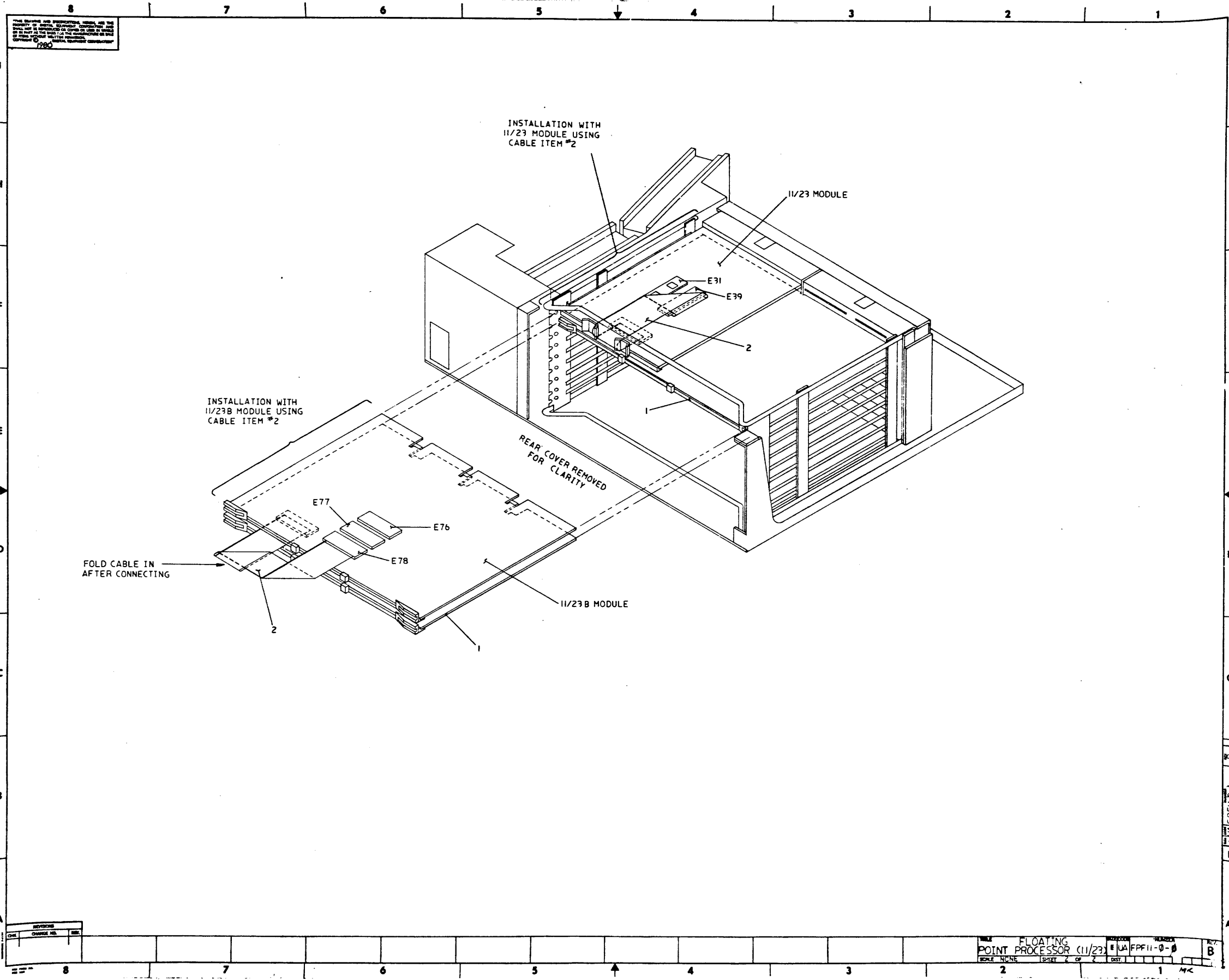


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TITLE	FLOATING POINT PROCESSOR (11/23)	SHEET 2 OF 3	SIZE CODE B DD	NUMBER PPF11-0	REV A
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MR



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REV.	DESCRIPTION	DATE

TITLE: FLOATING POINT PROCESSOR (11/23) EIA FPF11-0-0
 SHEET: 2 OF 2
 DRAWN: MK
 CHECKED: B
 APPROVED: B

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANTITY PER VARIATION	
					00	A
1	1	D-UA-MR188-0-0	M8188-00	FPF11 FLOATING POINT PROCESSOR	1	1
2	2		1700254-00	CABLE ASSY,14"LG,40PIN DIP CONN	1	-
3	3		1700254-01	CABLE ASSY,10"LG,40PIN DIP CONN	1	1
4	4	EK-FPF11-TM	EKFPF11-TM	TECHNICAL MANUAL FPF11	1	1
5	5		MP01285-00	NOT FLOATING POINT PROCESSOR	1	1
6	6	A-SP-3700634-0-0	3700634-01	PKG. OPTION FPF11	1	1
7	7	CJFPA *		FPF11 DAIG. PART #1	REF	REF
8	8	CJFPB *		FPF11 DIAG. PART #2	REF	REF

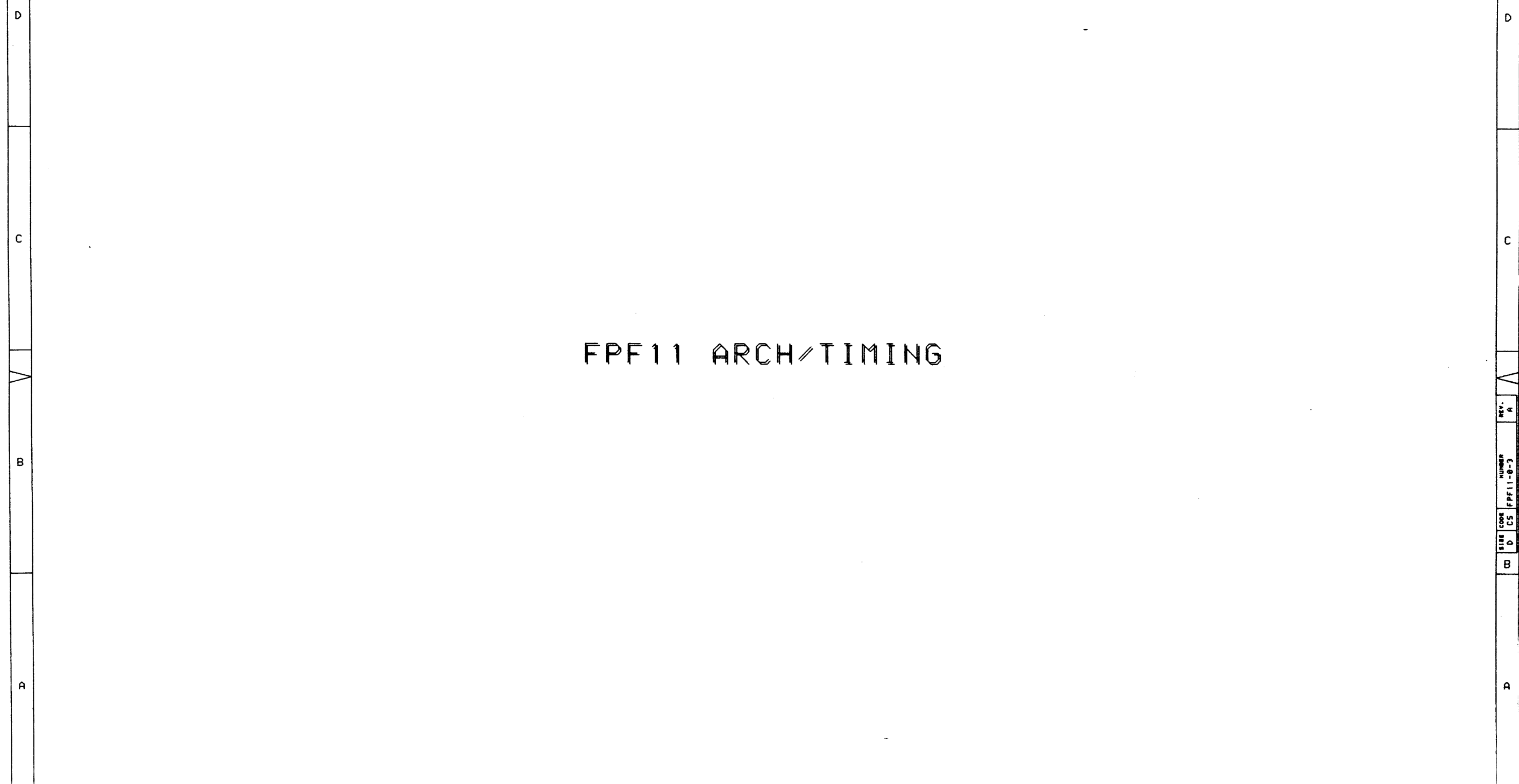
9 NOTE: 1.* DENOTES LATEST REV.

REVISION HISTORY			BASIC PART NO: FPF11		DRN: J. DONAHER		DATE: 5-SEP-80		D I G I T A L		
ENG	ECO NUMBER	REV	SECTION A OF A	CHK'D	DATE	TITLE	DOCUMENT NUMBER	SIZE	CODE	NUMBER	REV
---	INITIAL	A	SECTION, VARIATION INDEX	B, HOVEY	1-FEB-81	FLOATING POINT PROCESSOR					
AF	FPF11-MR001	B	[A] 00,A	ART FILZ	1-MAR-81						
			[B]	ART FILZ	1-MAR-81						
			[C]	ART FILZ	1-MAR-81						
			[D]								
			[E]	J. APONTE	1-MAR-81						
			[F]								
			ASSEMBLY NUMBER:	TOP DOCUMENT NUMBER:		FILE NAME:	EDIT #:				
			E-UA-FPF11-0-0	E-UA-FPF11-0-0		22717B,PLS	5				

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8 7 6 5 4 3 2 1



FPF11 ARCH/TIMING

REV. A
NUMBER FPF11-0-3
SIZE CODE D CS
B

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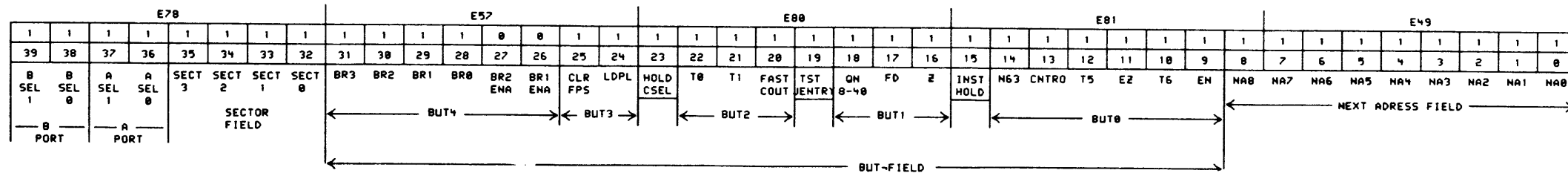
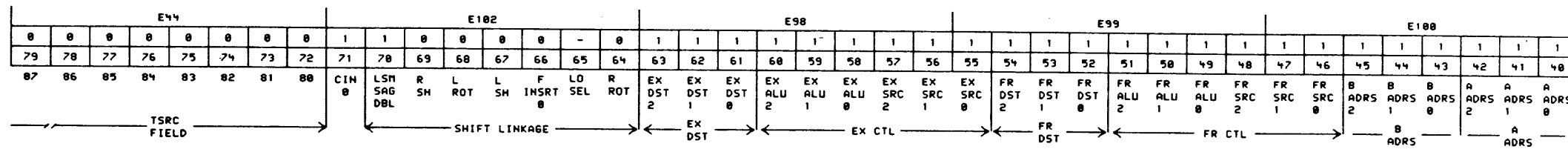
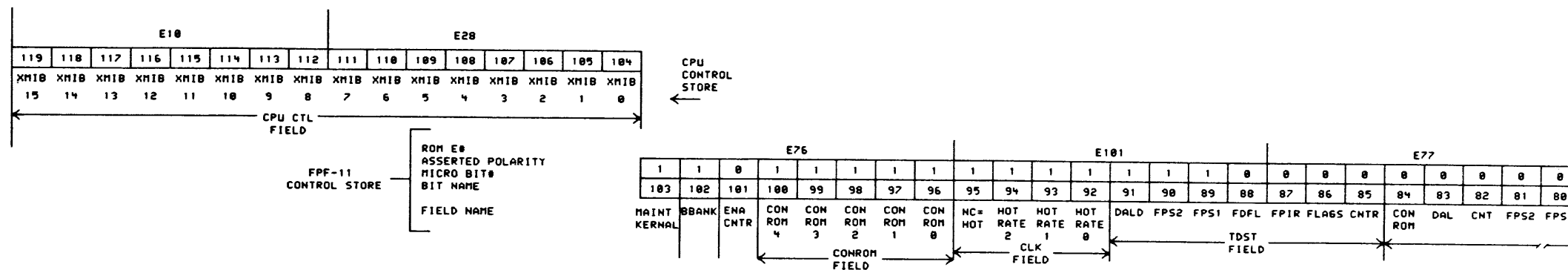
REVISIONS		
CHK	CHANGE NO.	REV

digital	DRW. <i>J. Family</i>	DATE 10-JUN-81	ENG. <i>luc</i>	DATE 10-JUN-81	TITLE: FPF11 ARCH/TIMING
	CHK. <i>gcr</i>	DATE 10-JUN-81	BOARD LOCATION: 1 OF 6	SHEET 1 OF 6	
PSI<GARTER>FPF33.DRW		10-JUN-81 13151	NEXT HIGHER ASSEMBLY: B-DD-FPF11-0	SIZE CODE D CS	NUMBER FPF11-0-3
FIRST USED ON OPTION/MODEL: FPF11					REV. A

8 7 6 5 4 3 2 1

MR

FPF-11 MICROWORD



NOTE: (ON TBUS BUT CONDITIONS)

- T0 = Y8
- T1 = Y9
- T5 = Y61
- T6 = Y62

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REVISIONS		
CHK	CHANGE NO.	REV

digital
PSI (CARTER) FPF24.DRW 10-JUN-61 13153
FIRST USED ON OPTION/MODEL: FPF11

DATE 10-JUN-61
ENG. [Signature]
DATE 10-JUN-61
BOARD LOCATION: [Signature]
SHEET 2 OF 6
NEXT HIGHER ASSEMBLY: B-DD-FPF11-0

TITLE: MICROWORD
SIZE CODE: D FD
NUMBER: FPF11-0-3
REV.: A

NR

BUT CONTRIBUTION TABLE

CONDITION: ("SOURCE") - HARDWIRED UNLESS NOTED OTHERWISE	MPC 0, 1, 2, 3, 4, 5, 6, 7, 8	
FD	X	
EM	X	
E2	X	
XN	X	= "N63 BIT"
XZ	X	
CNTR0	X	= "CNTR BORROW"
FAST COUNT 63	X	
Q8-48	X	
Y8	X	= TBUS0
Y9	X	= TBUS1
Y61	X	= TBUS5
Y62	X	= TBUS6
LDPC ONT FETCH	X	
CLRFP5	X	
(PLA 1) BREAKOUT	+ + + + +	
OP1A	+ + +	
MODES	+ + + +	
OP1C	+	
(PLA 2) FL	X	
GR7	X	
FL-BAR	X	
FLBAR#OR#GR7	X	
FID	X	
FIV	X	
FIU	X	
FIUV	X	
FIC-BAR	X	
FT	X	
FLAG0	X	
STAT(210)#FT	X X X	
STAT(21)	X X	

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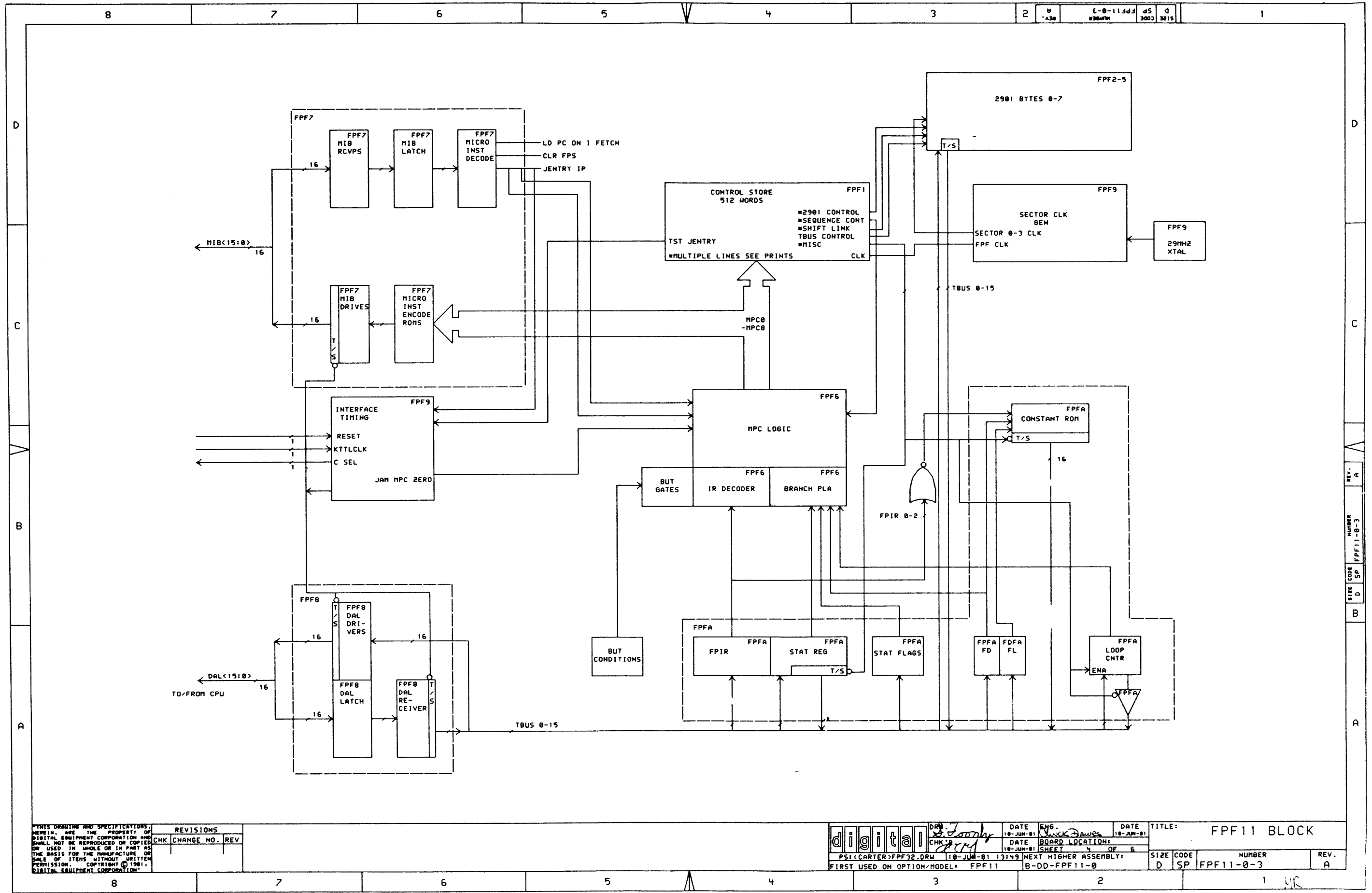
REVISIONS		
CHK	CHANGE NO.	REV

digital DRW. *J. J. [Signature]* DATE *10-JUN-81* ENG. *Clark Danks* DATE *10-JUN-81*
 CHK'D *AKM* DATE *10-JUN-81* BOARD LOCATION: *3* OF *6*
 PS: (CARTER) FPF39.DRW 10-JUN-81 13:55 NEXT HIGHER ASSEMBLY:
 FIRST USED ON OPTION/MODEL: FPF11 B-DD-FPF11-0

TITLE: BUT CONTRIBUTION TABLE			
SIZE CODE	NUMBER	REV.	
D FD	FPF11-0-3	A	

REV. A
NUMBER FPF11-0-3
D B A

YR

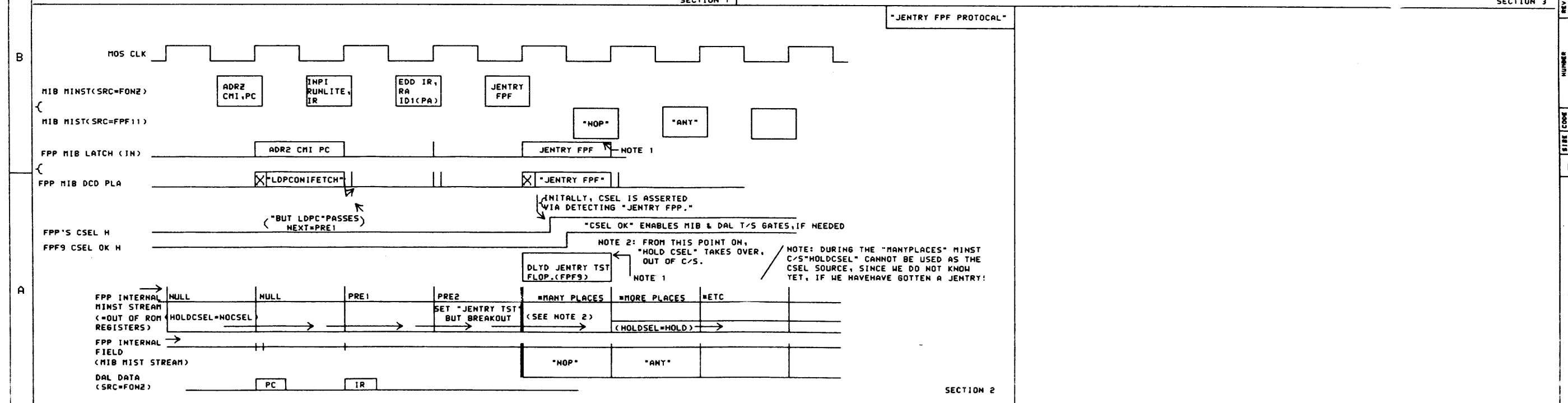
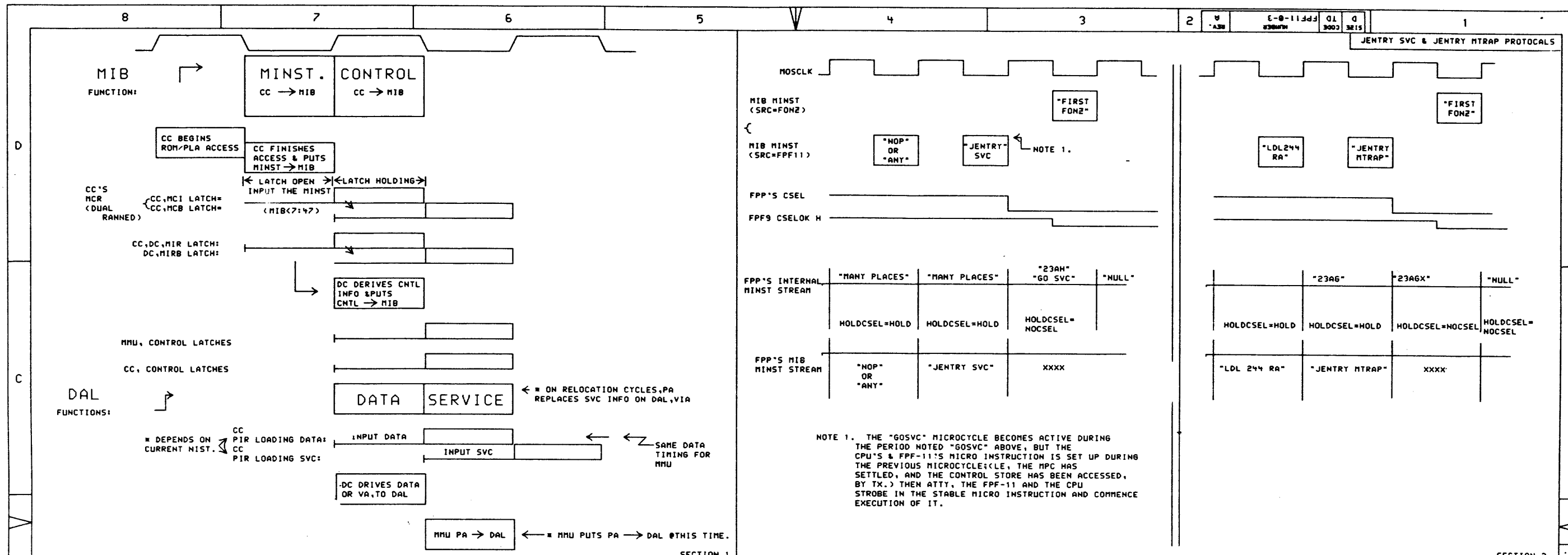


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REVISIONS		
CHK	CHANGE NO.	REV.

	DATE: 10-JUN-81	ENG. NAME: [Signature]	DATE: 10-JUN-81	TITLE: FPF11 BLOCK
	DATE: 10-JUN-81	CHK: [Signature]	DATE: 10-JUN-81	BOARD LOCATION: [Blank]
PS: CARTER: FPF32.DRW	10-JUN-81 13:49	NEXT HIGHER ASSEMBLY: B-DD-FPF11-0	SHEET: 4 OF 6	SIZE CODE: D SP
FIRST USED ON OPTION/MODEL: FPF11				NUMBER: FPF11-0-3
				REV. A

REV. A
 NUMBER FPF11-0-3
 SIZE CODE D SP
 B
 A



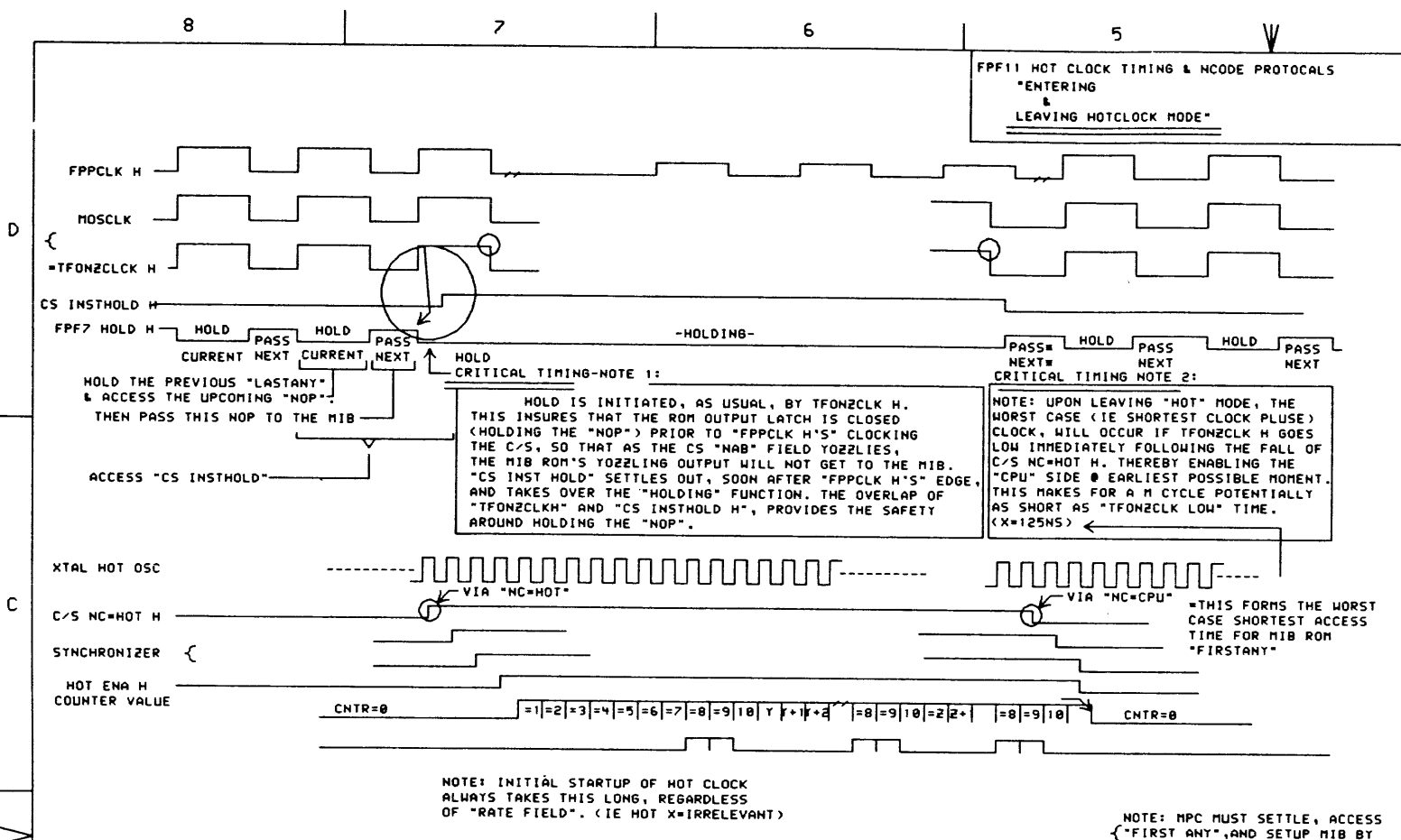
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REVISIONS		
CHK	CHANGE NO.	REV

DATE	11-JUN-81	ENG.	DATE	11-JUN-81	TITLE:	PPF11 H/W ARCH AND TRAINING INFO.
DATE	11-JUN-81	DATE	11-JUN-81	SHEET	5	OF 6
PS: <CARTER>TINI.DRW	11-JUN-81 09:20	NEXT HIGHER ASSEMBLY:	B-DD-PPF11-0	SIZE CODE	D TD	NUMBER
FIRST USED ON OPTION/MODEL:	PPF11	REV.	A			

SECTION 1 SECTION 2 SECTION 3
 REV. A
 NUMBER PPF11-0-3
 SIZE CODE D TD
 BOARD LOCATION B
 SHEET 5
 OF 6

MR



CLOCK STATUS	BASE MACHINE SYNCH'D.	DESYNC FROM BASE	HOT OPERATIONS	RESYNCA	BASE MACHINE SYNC'D.
MICROCYCLE:	A	B	C	D	E
MINST FONZ	"ANY"	"LAST ANY"	"NOP"	"NOP"	"MORE ANY"
"C/SNC = "	"NC=CPU"	"NC=CPU"	"NC=HOTX"	"NC=CPU"	"NC=CPU"
"C/S INST HOLD"	"PASS"	(LAST CPU RATE)	"HOLD"	"HOLD"	"PASS"



2901 & TBUS RESOURCE REGISTER LAYOUTS

17	FUR 17 (WORKING REGISTER)	FEA	#FPS TEMP	
16	FUR 16 (WORKING REGISTER)	FEA TEMP	FCCR	
15			FEC	
14	ZEROS			E FSRC ← E14
13	ZEROS			E AC ← E13
12	FSRC (WORKING)			S E
11	AC			S E
10	FSRC (UNROTATED, AS FROM MEMORY)			S E
9				
8				
7				
6	AC5 (UNROTATED, AS FROM MEMORY)			S E
5	AC4			S E
4	AC3			S E
3	AC2			S E
2	AC1			S E
1	AC0			S E
0	AC0			S E

ONLY AC0 AC3 ARE ALLOWED TO BE USED FOR TRANSFERS TO AND FROM THE BASE MACHINE

2901 CLOCK SECTORS

SECT 3	SECT 2	SECT 1	SECT 0	SECT
B6	B5	B4	B3	B2
B1	B0	B7		

T-BUS BIT POSITIONS

7	0	15	0	15	0	15	0
---	---	----	---	----	---	----	---

CORRESPONDING SLICE POSITION (Y#)

63	56	55	40	39	24	23	0	7	0
----	----	----	----	----	----	----	---	---	---

REGISTER DEFINITIONS

F REG	E REG
X REG	

NOTE: SIGNALS SHOWN AS "J" ARE NON-TBUS CONNECTIONS TO THE SLICES, & AS SUCH DO NOT REQUIRE THE TBUS AS THEIR INTRACONNECT PATH. (THEY MAY REQUIRE THE ALU START FLAGS TO BE ACTIVE).

ALU START FLAGS

T14	T2	T1	T0
3	2	1	0

CNTR

T15	14	13	12	11	10	9	8
7							0

FPS1,2

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
FER	FD	FL	FT	FN	F2	PV	PC								

FD/FL

FD	FL
----	----

EXCESS 200 EXPONENT NORMON

+EXP { 377 → 2##177
200 → 2##0
EXP { 177 → 2##-1
1 → 2##-177
0 → 2##-200 (EXACT ZERO)

11/34 REGISTER'S

R11	FEA
R14	LOOP COUNT
R17	ALIGNMENT COUNT
B	INDEX CONST.
BX	PC+2(FEA TEMP)

FEC CODES:

- 2=FOC
- 4=DIVIDE BY ZERO
- 6=INTEGER CONVERT
- 8=OVERFLOW
- 12, 10=UNDERFLOW
- 14, 12=MINUS ZERO
- 16, 14=MAINTAINANCE TRAP

FPP INSTR. FORMATS:

F1: OC=17 FOC AC FSRC/FDST

F2: OC=17 FOC FDST

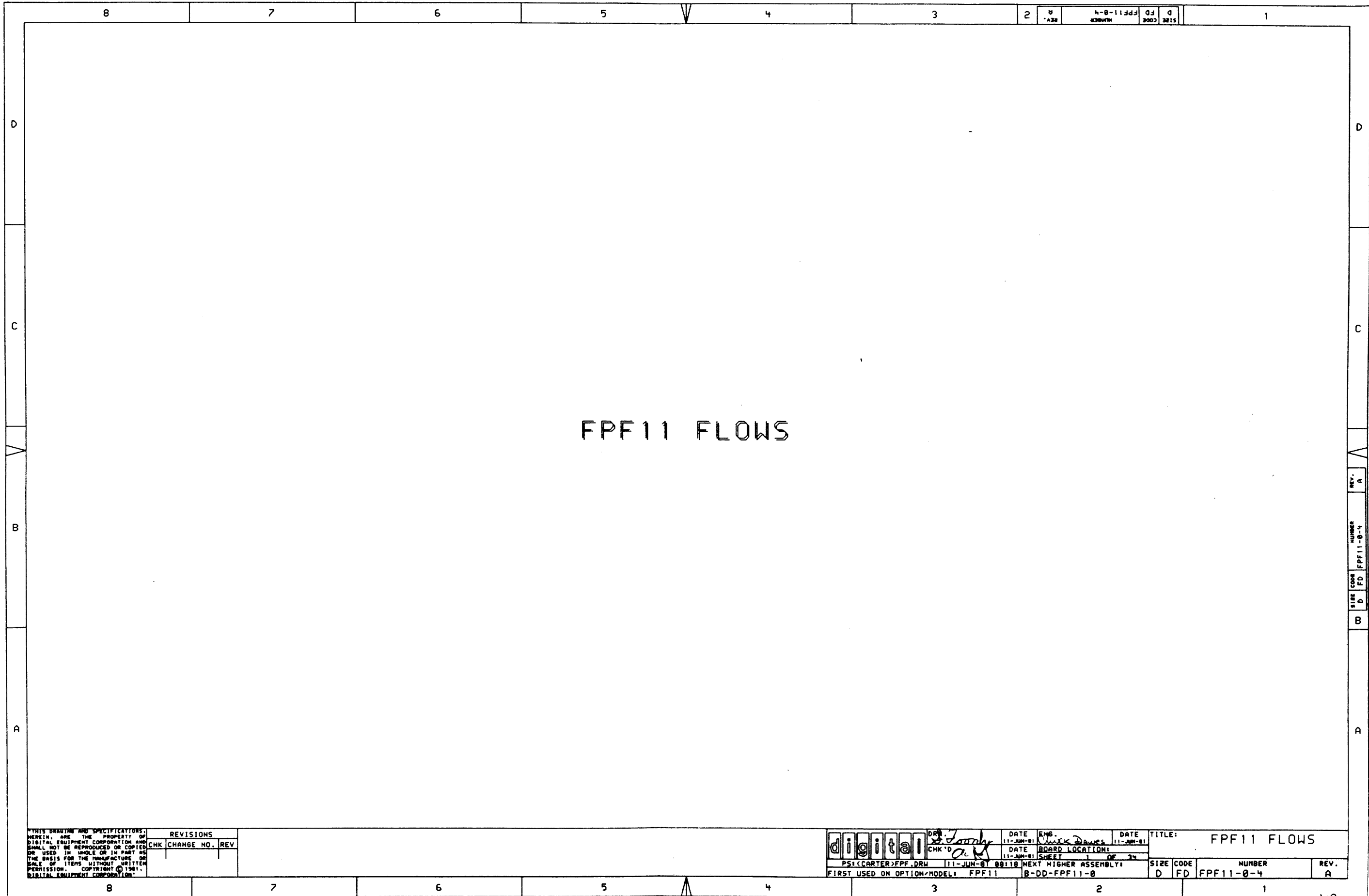
F3: OC=17 FOC AC SRC/DST

F4: OC=17 FOC SRC/DST

F5: OC=17 FOC

2901 & TBUS RESOURCE REGISTER LAYOUTS

0	GR0
1	GR1
2	GR2
3	GR3
4	GR4
5	GR5
6(SP)	GR6
7(PC)	PC
8(PS)	PS
9	WR9
A	WRA
B	WRB
C	REG SRC FIELD POINTER (IRB:6)
D	RD1 DST FIELD POINTER (IR2:0)
E	WRE
F	WRF



FPF11 FLOWS

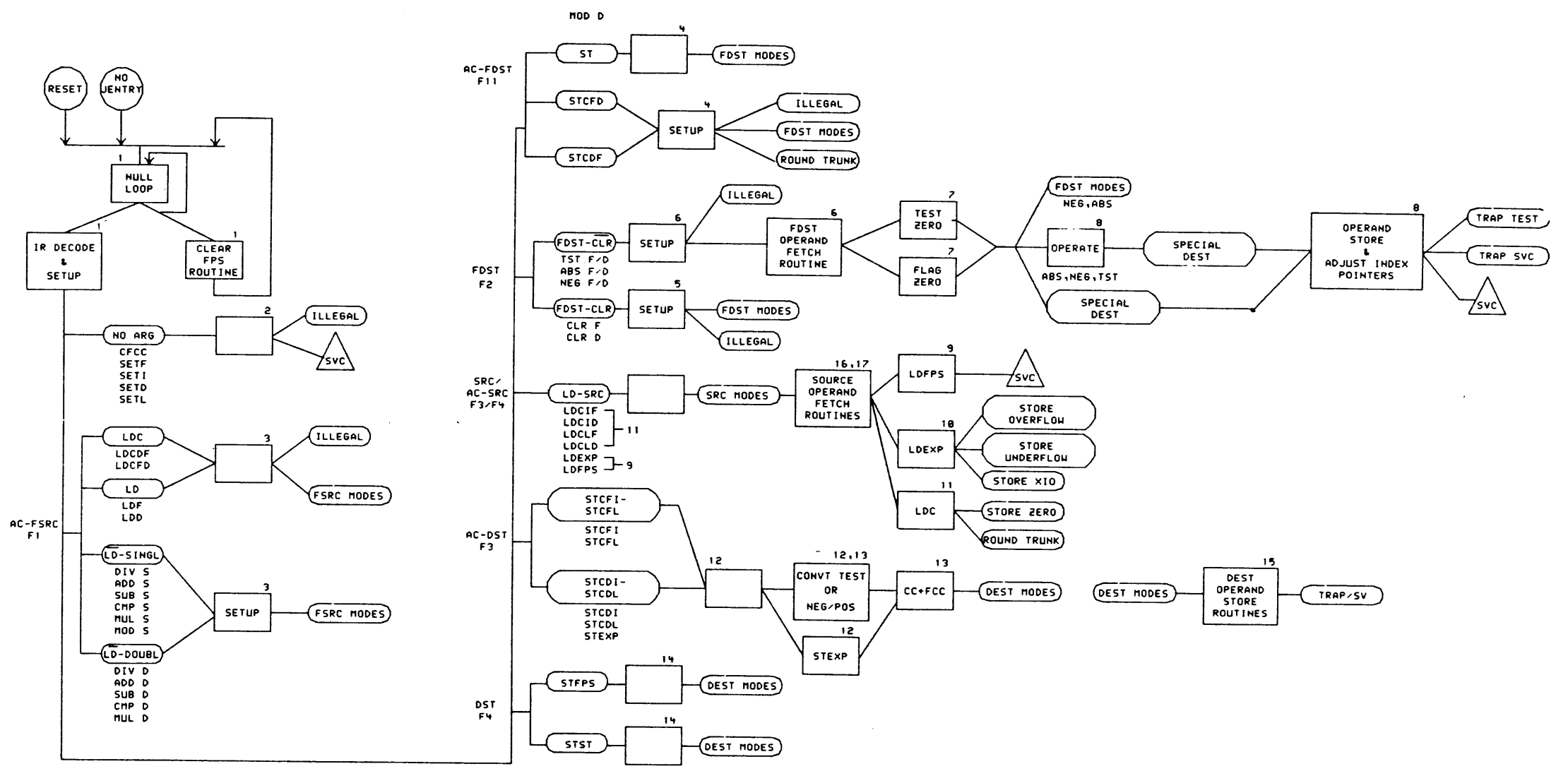
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REVISIONS		
CHK	CHANGE NO.	REV

digital	DRW. <i>Looby</i>	DATE 11-JUN-81	ENG. <i>Chuck Dawes</i>	DATE 11-JUN-81	TITLE: FPF11 FLOWS
	CHK'D <i>ack</i>	DATE 11-JUN-81	BOARD LOCATION:	SHEET 1 OF 34	
PSI<CARTER>FPF.DRW		11-JUN-81 0818	NEXT HIGHER ASSEMBLY:		SIZE CODE D FD
FIRST USED ON OPTION/MODEL: FPF11		B-DD-FPF11-0		NUMBER FPF11-0-4	REV. A

REV. A
NUMBER FPF11-0-4
SIZE CODE D FD

MR

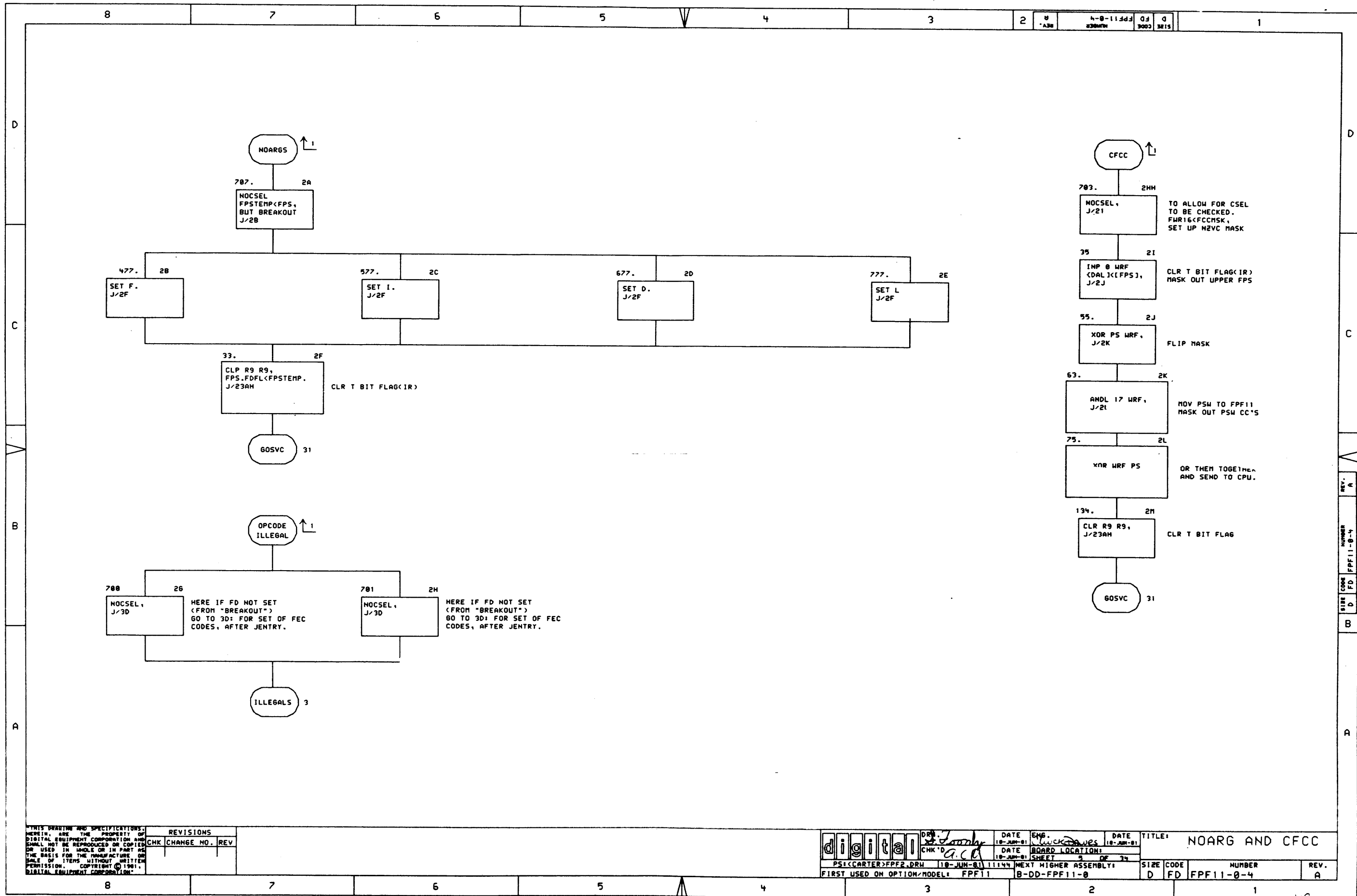


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REVISIONS		
CHK	CHANGE NO.	REV

digital	DRY	DATE	ENG.	DATE	TITLE:
	CHK'D	11-JUN-81	SWICK	11-JUN-81	TOP DOWN FLOW 1
PSI/CARTER/COMCD.DRW	11-JUN-81	09107	DATE	BOARD LOCATION:	
FIRST USED ON OPTION/MODEL: PPF11			11-JUN-81	SHEET	2 OF 24
				NEXT HIGHER ASSEMBLY:	
				B-DD-PPF11-0	
				SIZE CODE	D FD
				NUMBER	PPF11-0-4
				REV.	A

REV. A
 NUMBER PPF11-0-4
 SIZE CODE D FD



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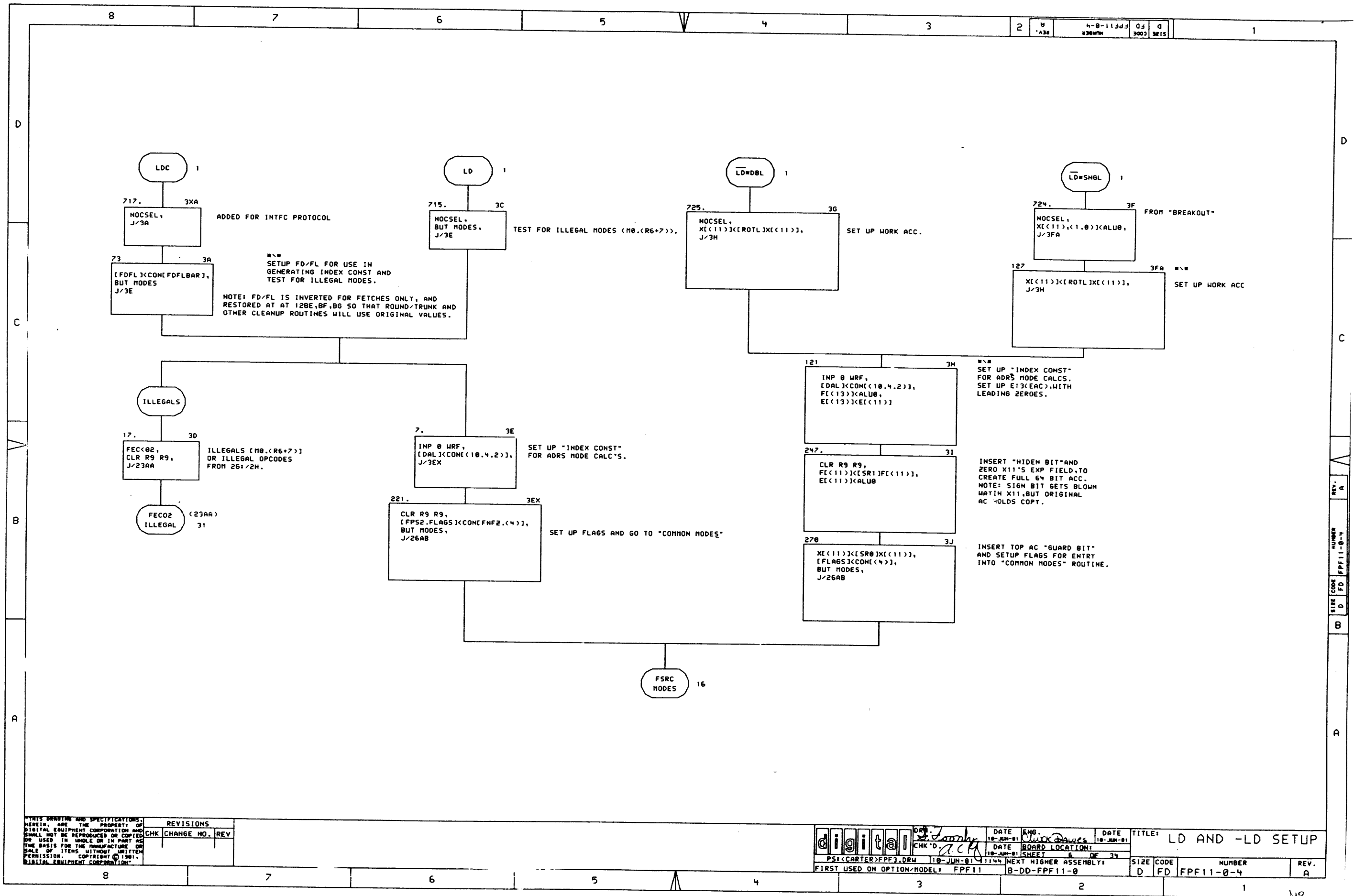
REVISIONS		
CHK	CHANGE NO.	REV

digital	DR. J. J. J.	DATE 10-JUN-81	ENG. J. J. J.	DATE 10-JUN-81	TITLE: NOARG AND CFCC
	CHK'D A.C.K.	DATE 10-JUN-81	BOARD LOCATION:		
		10-JUN-81	SHEET 5 OF 34		
PS1<CARTER>FPF2.DRW		10-JUN-81	11144	NEXT HIGHER ASSEMBLY:	B-DD-FPF11-0
FIRST USED ON OPTION/MODEL:		FPF11			

SIZE	CODE	NUMBER	REV.
D	FD	FPF11-0-4	A

REV. A
NUMBER
FFP11-0-4
CODE
FD
D
B

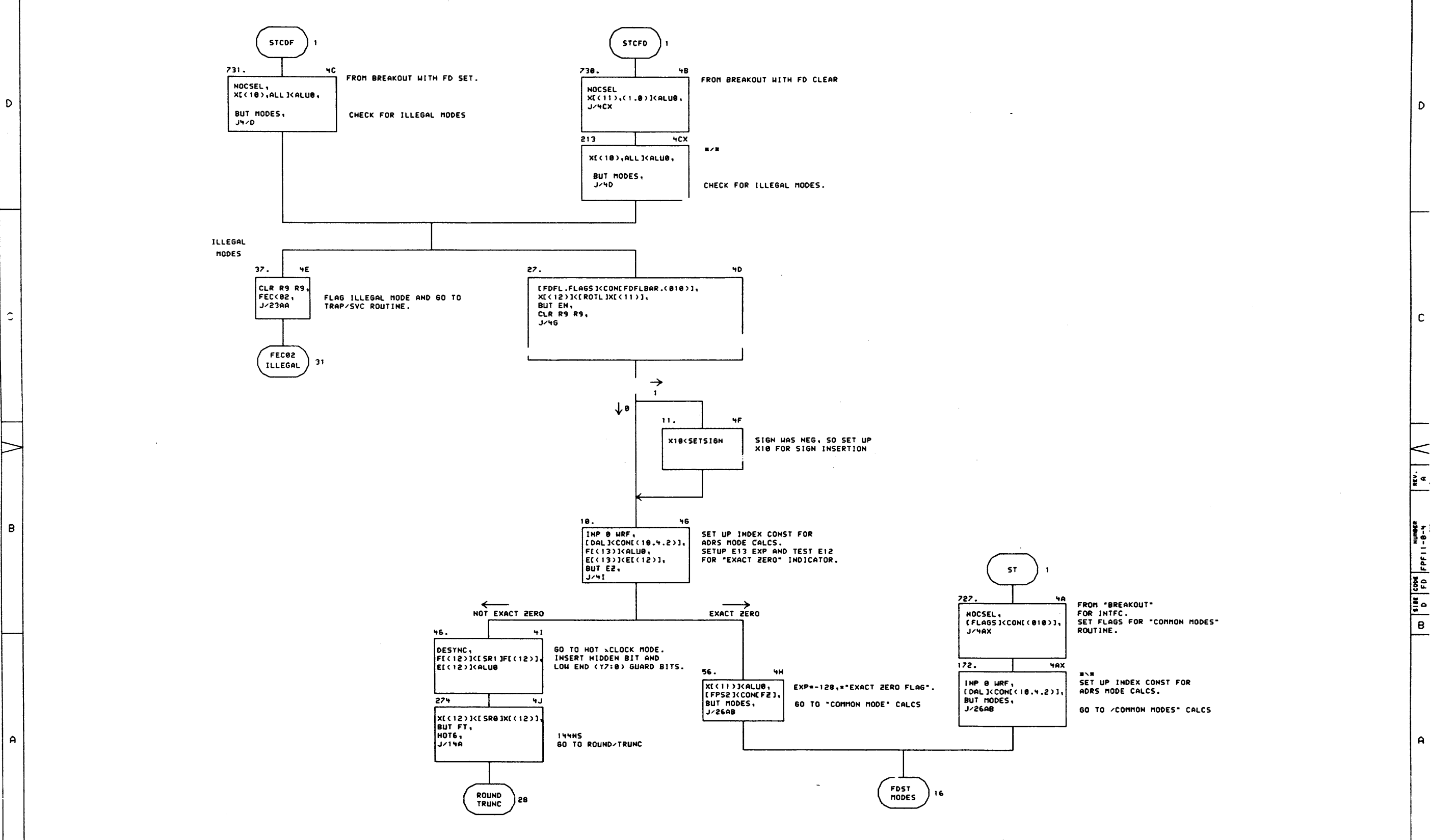
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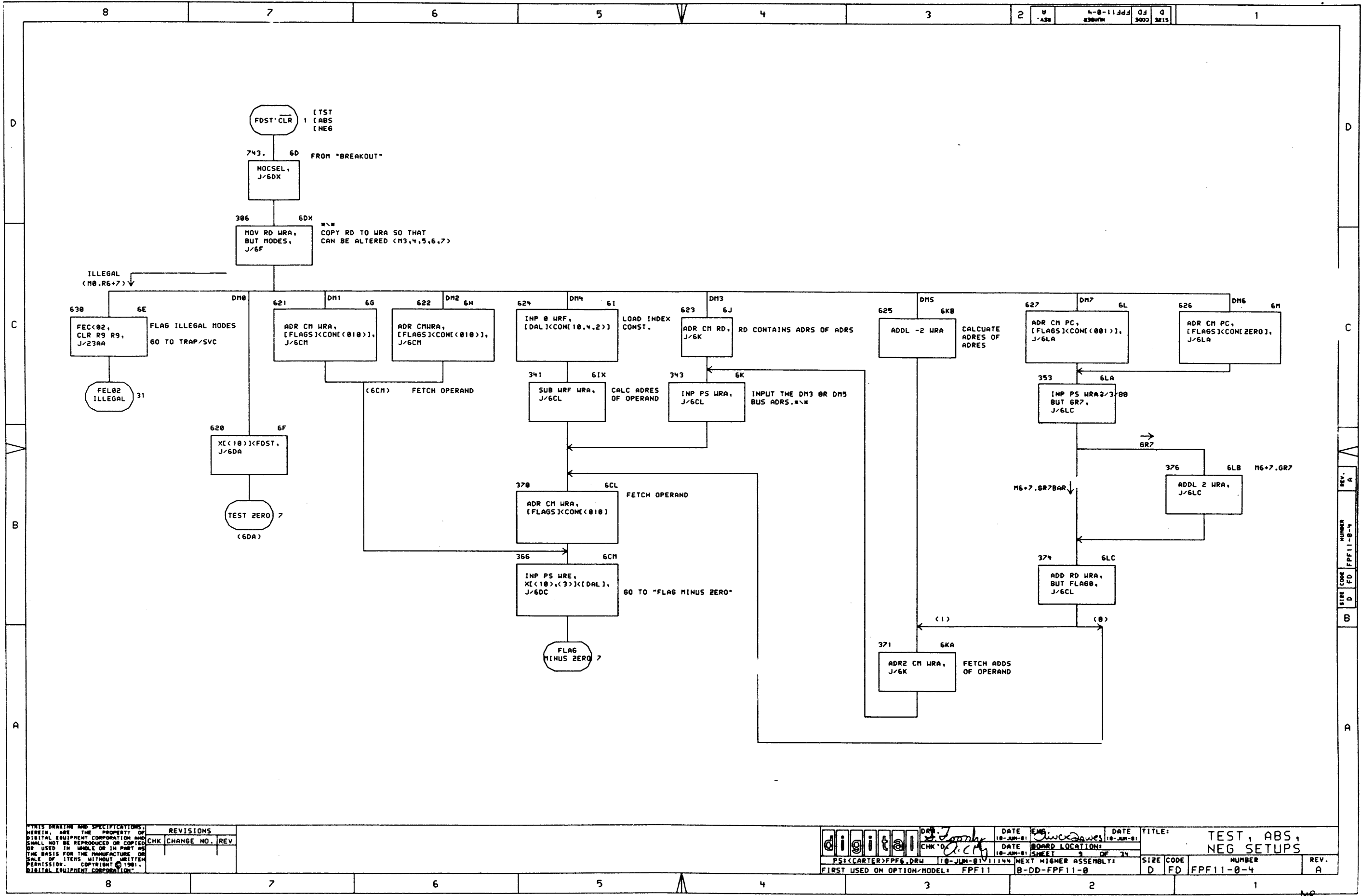
REVISIONS		
CHK	CHANGE NO.	REV

	DATE: 10-JUN-81	CHK'D: <i>ack</i>	DATE: 10-JUN-81	TITLE: LD AND -LD SETUP
	DATE: 10-JUN-81	DATE: 10-JUN-81	DATE: 10-JUN-81	DATE: 10-JUN-81
PS: CARTER>PPF3.DRW	10-JUN-81	1144	NEXT HIGHER ASSEMBLY:	SIZE: CODE: D
FIRST USED ON OPTION/MODEL: PPF11	B-DD-PPF11-0	6	OF 34	NUMBER: FPF11-0-4
				REV: A



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digital PS: CARTER, PPF4, DRW FIRST USED ON OPTION/MODEL: PPF11		DATE: 10-JUN-81 DATE: 10-JUN-81 SHEET: 2 OF 34 NEXT HIGHER ASSEMBLY: B-DD-PPF11-0	DATE: 10-JUN-81 DATE: 10-JUN-81 SHEET: 2 OF 34 NEXT HIGHER ASSEMBLY: B-DD-PPF11-0
8	7	6	5
4	3	2	1

REV. A
 NUMBER PPF11-0-4
 SIZE CODE FD
 REV. A



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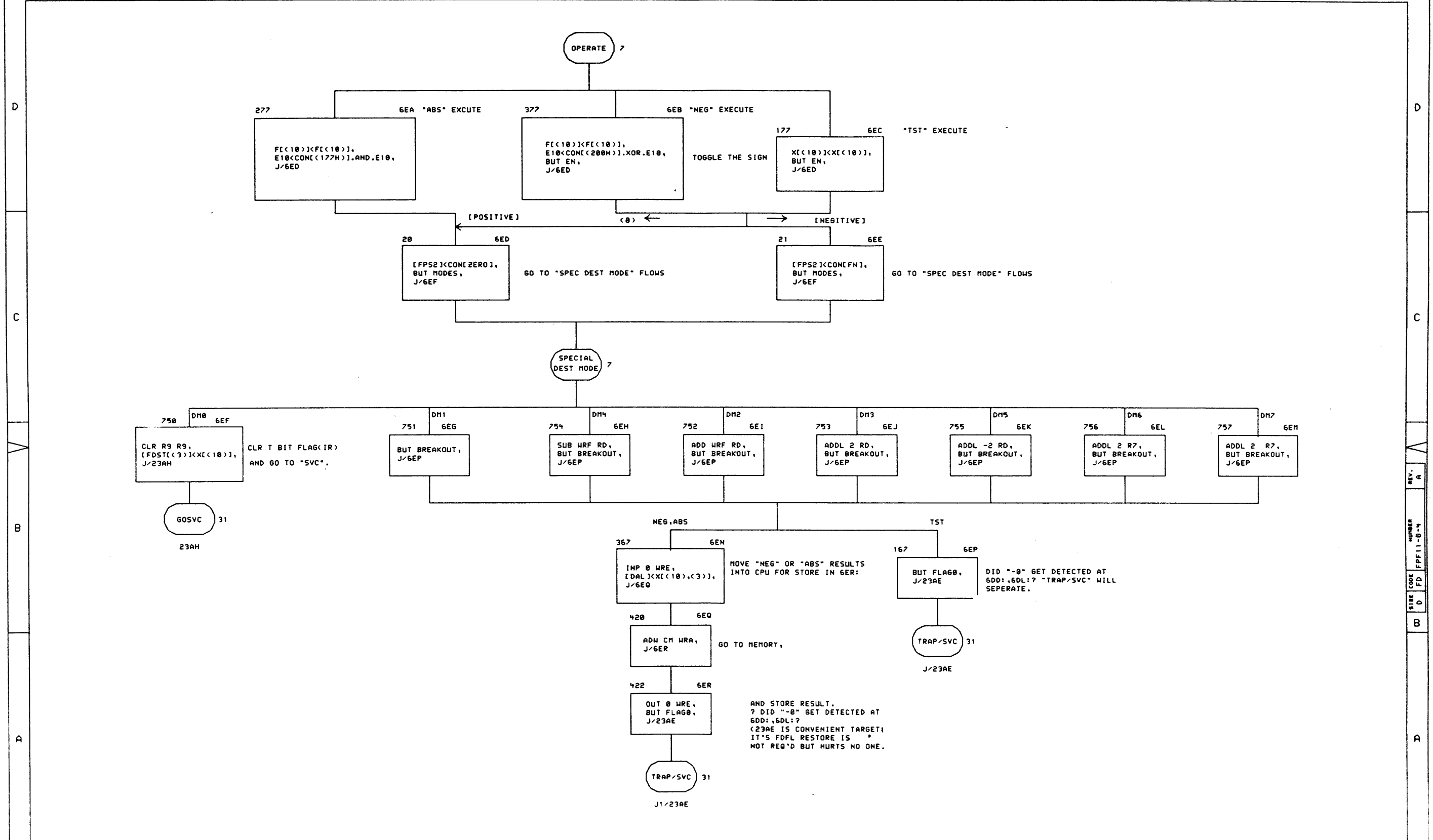
REVISIONS		
CHK	CHANGE NO.	REV

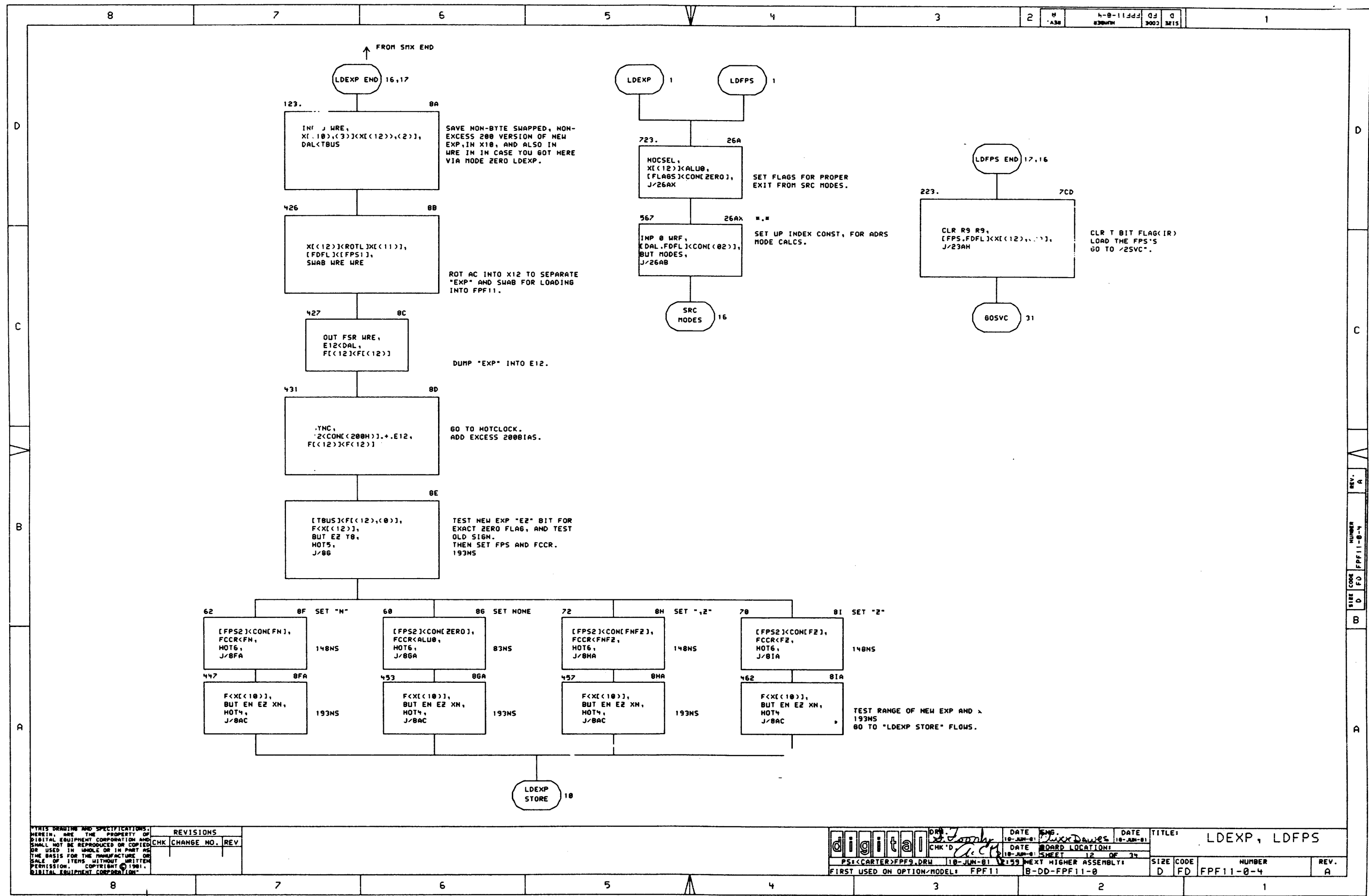
DATE: 18-JUN-81	DATE: 18-JUN-81	DATE: 18-JUN-81	DATE: 18-JUN-81
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DRG: [Signature]	DATE: 18-JUN-81	DATE: 18-JUN-81	DATE: 18-JUN-81
CHK'D: [Signature]	DATE: 18-JUN-81	DATE: 18-JUN-81	DATE: 18-JUN-81

TITLE: TEST, ABS, NEG SETUPS	SIZE CODE: D FD	NUMBER: PPF11-0-4	REV: A
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SIZE CODE NUMBER REV. A
D FD PPF11-0-4

MR

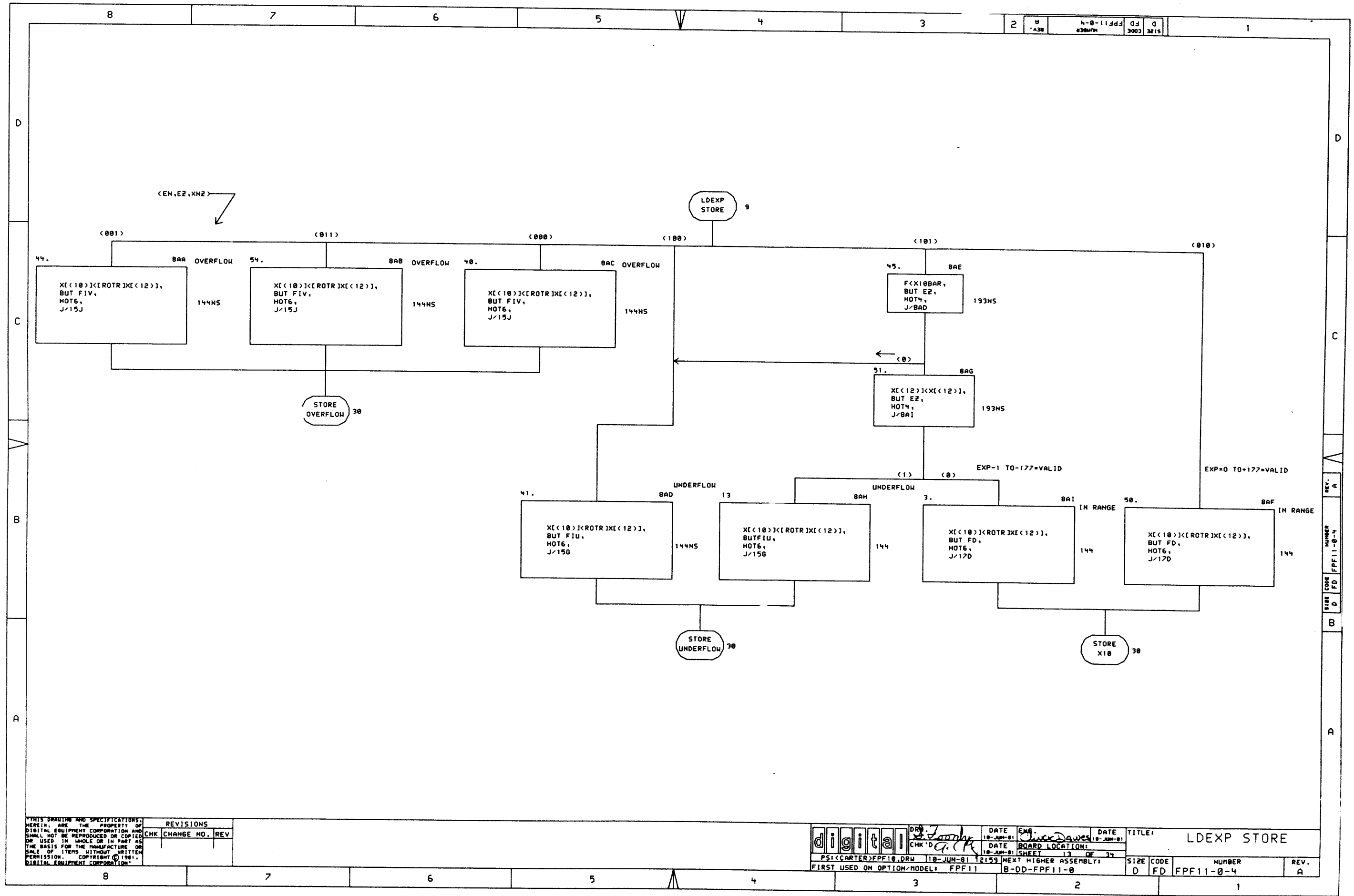




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REVISIONS		
CHK	CHANGE NO.	REV.

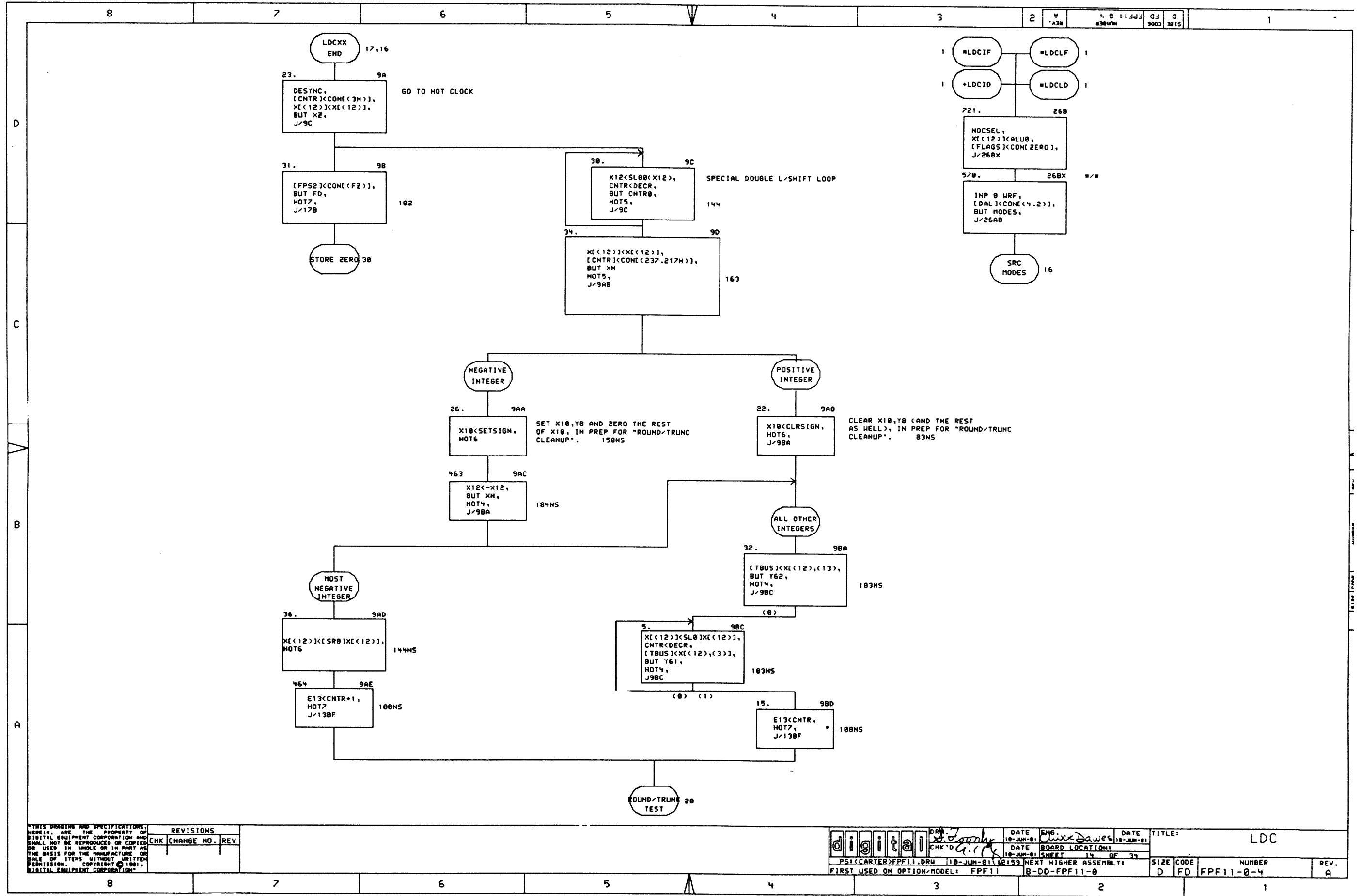
digital	DATE	10-JUN-81	DATE	10-JUN-81	TITLE	LDEXP, LDFPS
	CHK'D		DATE		BOARD LOCATION	
PS: CARTER, PPF9, DRW		10-JUN-81	1989	NEXT HIGHER ASSEMBLY:	SIZE	CODE
FIRST USED ON OPTION/MODEL:		FPF11	B-DD-FPF11-0		D	FD
				NUMBER	FPF11-0-4	REV.
						A

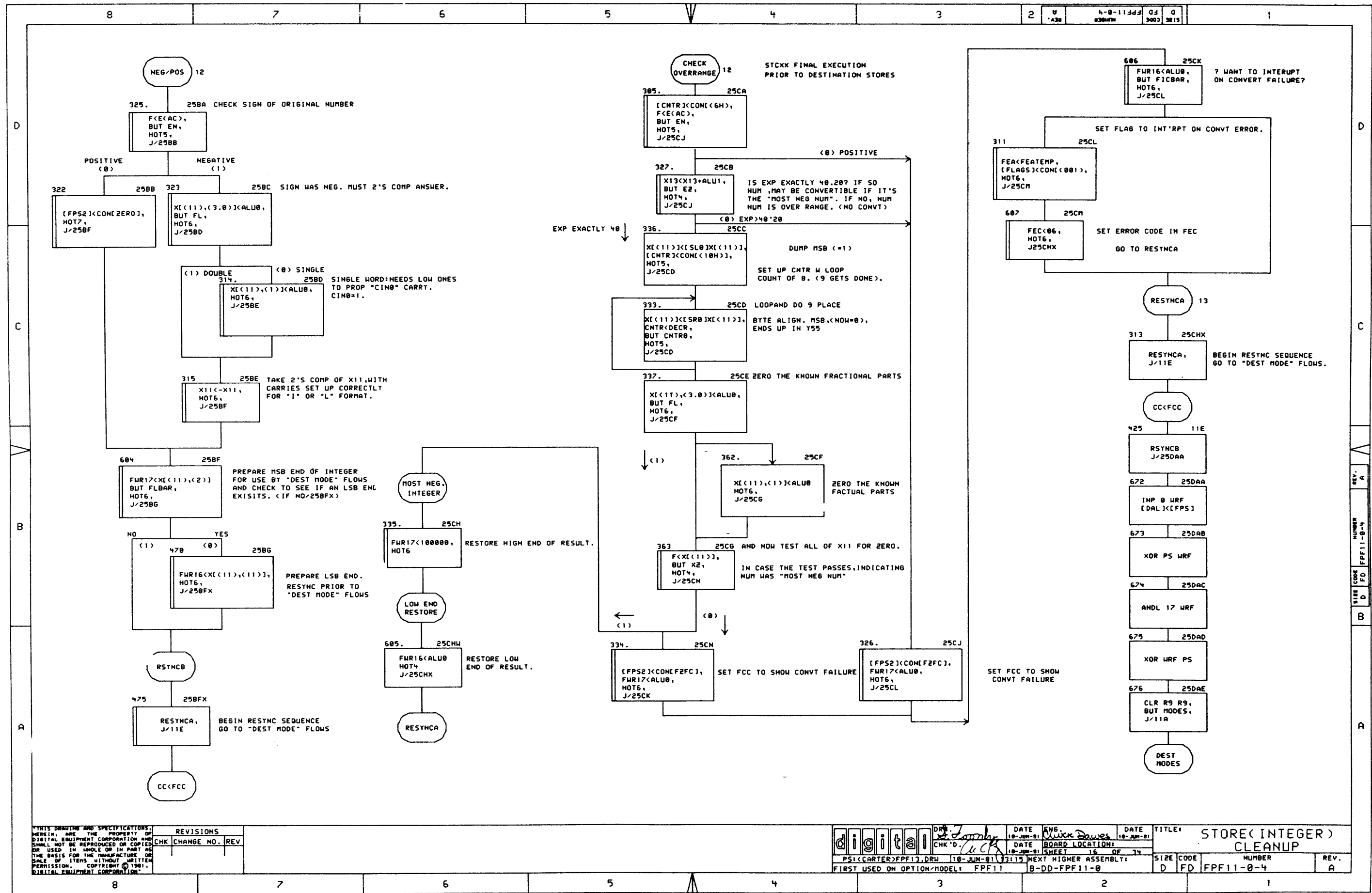


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REVISIONS	
CHK	CHANGE NO. REV

digital	DRY	DATE	ENG.	DATE	TITLE
	CHK'D	10-JUN-81	Jack Dawes	10-JUN-81	LDEXP STORE
PSI<<CARTER>>FPF11.DRW		10-JUN-81	12:59	NEXT HIGHER ASSEMBLY:	SIZE CODE
FIRST USED ON OPTION/MODEL: FPF11		B-DD-FPF11-0		D	FD
NUMBER				REV.	
FPF11-0-4				A	

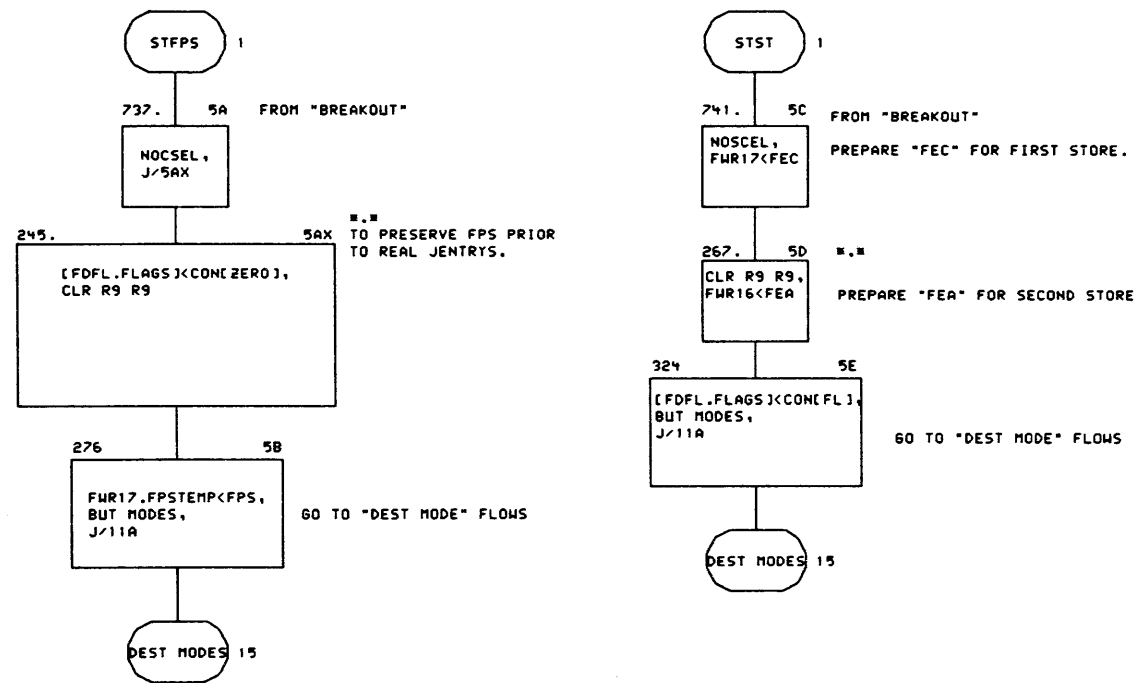




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REV.	CHG	NO.	REV

DATE: 10-JUN-81	DATE: 10-JUN-81	TITLE: STORE(INTEGER) CLEANUP
DATE: 10-JUN-81	DATE: 10-JUN-81	SIZE CODE: D FD
DATE: 10-JUN-81	DATE: 10-JUN-81	NUMBER: PPF11-0-4
DATE: 10-JUN-81	DATE: 10-JUN-81	REV: A



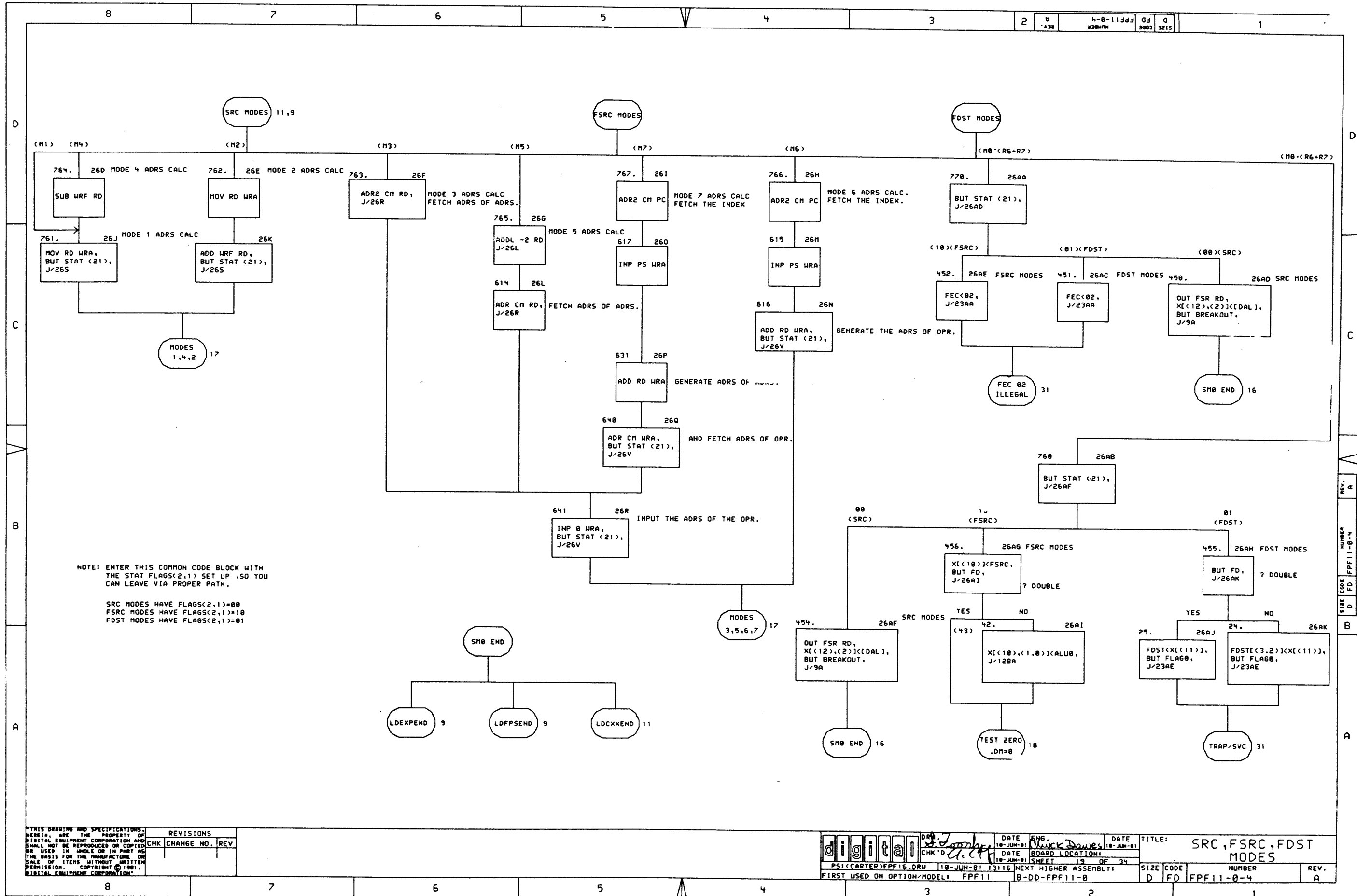
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REVISIONS		
CHK	CHANGE NO.	REV

digital	DR. <i>Looney</i>	DATE 10-JUN-81	ENG. <i>Wick James</i>	DATE 10-JUN-81
	CHK'D <i>ack</i>	DATE 10-JUN-81	BOARD LOCATION:	
FIRST USED ON OPTION/MODEL: FPF11		NEXT HIGHER ASSEMBLY: B-DD-FPF11-0		SHEET 17 OF 24

TITLE: STFPS AND STST		
SIZE CODE	NUMBER	REV.
D FD	FPF11-0-4	A

MX



NOTE: ENTER THIS COMMON CODE BLOCK WITH THE STAT FLAGS(2,1) SET UP, SO YOU CAN LEAVE VIA PROPER PATH.

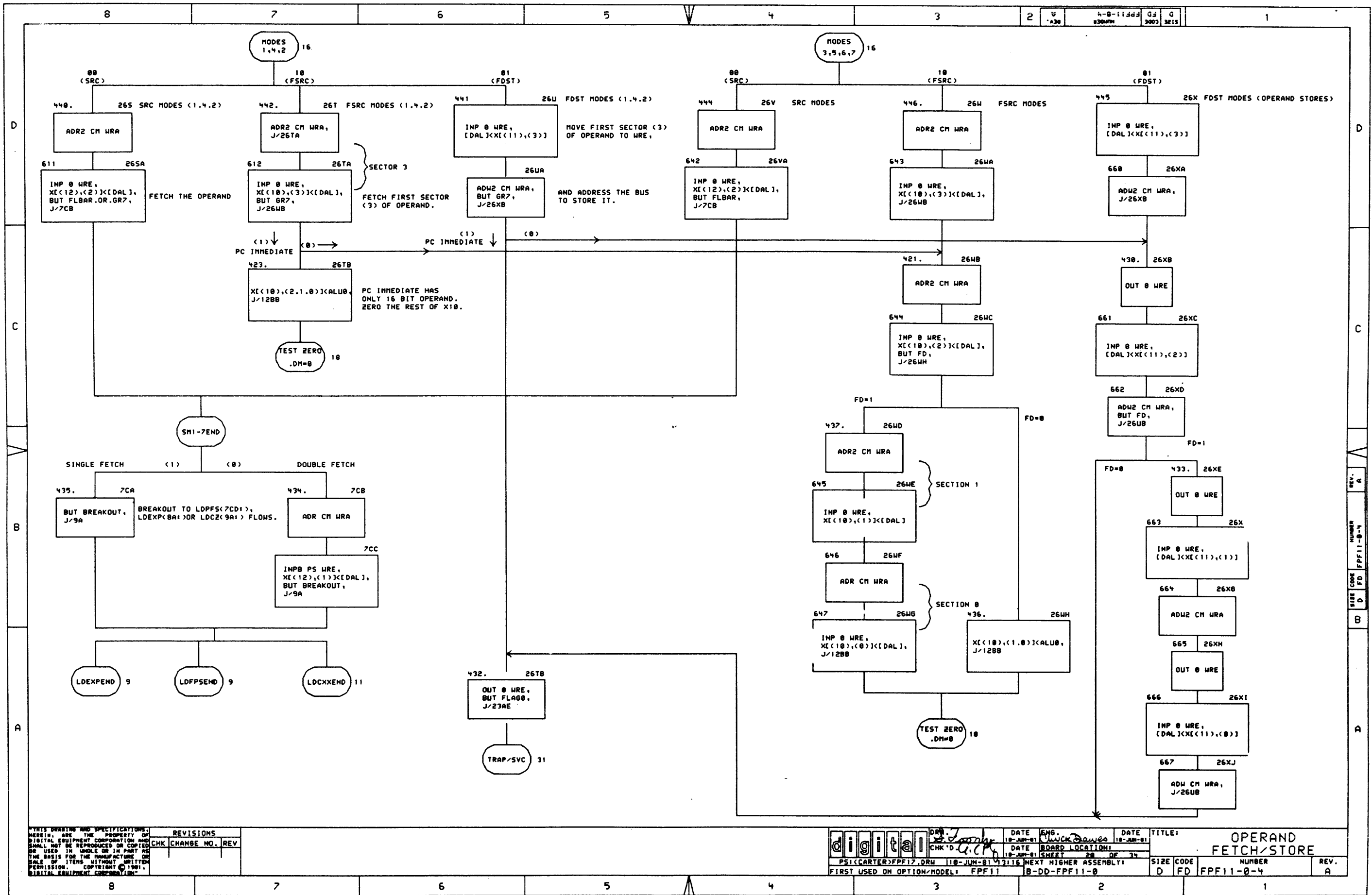
SRC MODES HAVE FLAGS(2,1)=00
 FSRC MODES HAVE FLAGS(2,1)=10
 FDST MODES HAVE FLAGS(2,1)=01

REVISIONS	
CHK	CHANGE NO. REV

		DATE ENG. 18-JUN-81 DATE BOARD 19-JUN-81 DATE SHEET 19 OF 24	DATE 18-JUN-81 SHEET 19 OF 24	TITLE: SRC, FSRC, FDST MODES
PS: (CARTER) PPF16.DRM 18-JUN-81 13:16 FIRST USED ON OPTION/MODEL: PPF11		NEXT HIGHER ASSEMBLY: B-DD-PPF11-0	SIZE CODE D FD NUMBER PPF11-0-4	REV. A

REV. A
 NUMBER PPF11-0-4
 SIZE CODE D FD

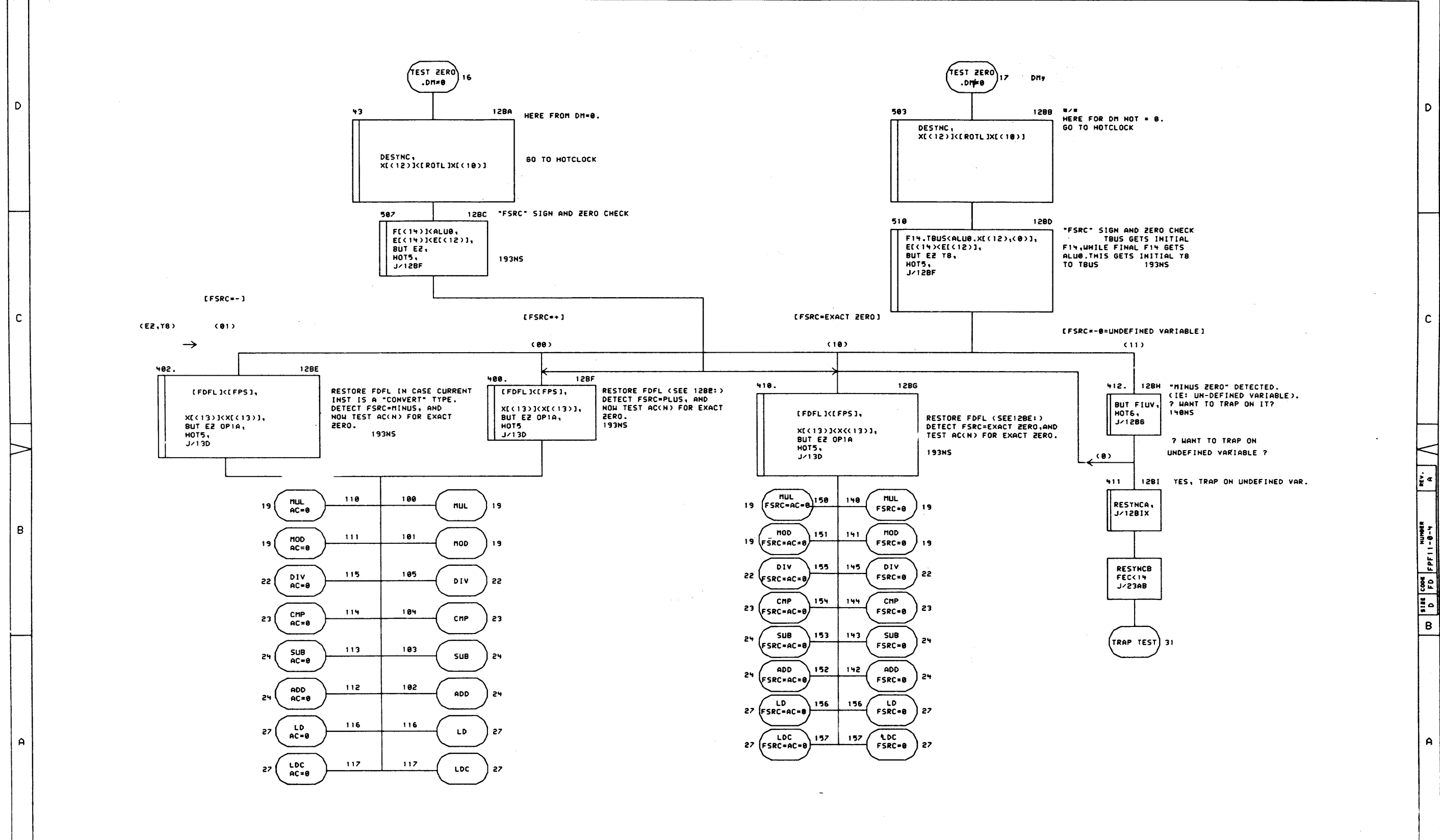
MR



REV. A
NUMBER FPF11-0-4
SIZE CODE D
FD

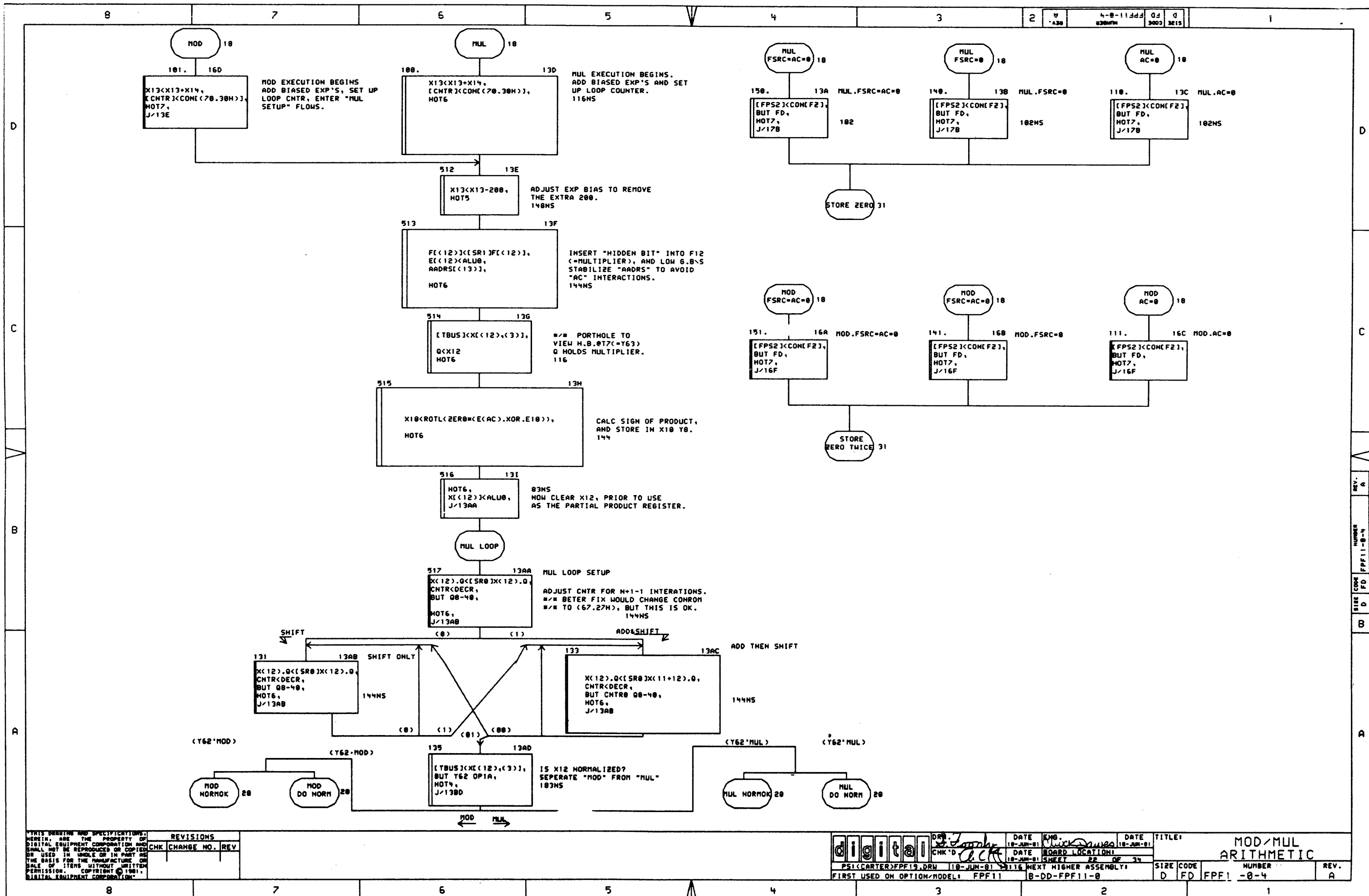
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MR



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	DATE: 10-JUN-81 DATE: 10-JUN-81		
	ENG: [Signature] BOARD LOCATION: [Blank] SHEET: 21 OF 24		
	DATE: 10-JUN-81 DATE: 10-JUN-81 NEXT HIGHER ASSEMBLY: B-DD-FPF11-0		

MR

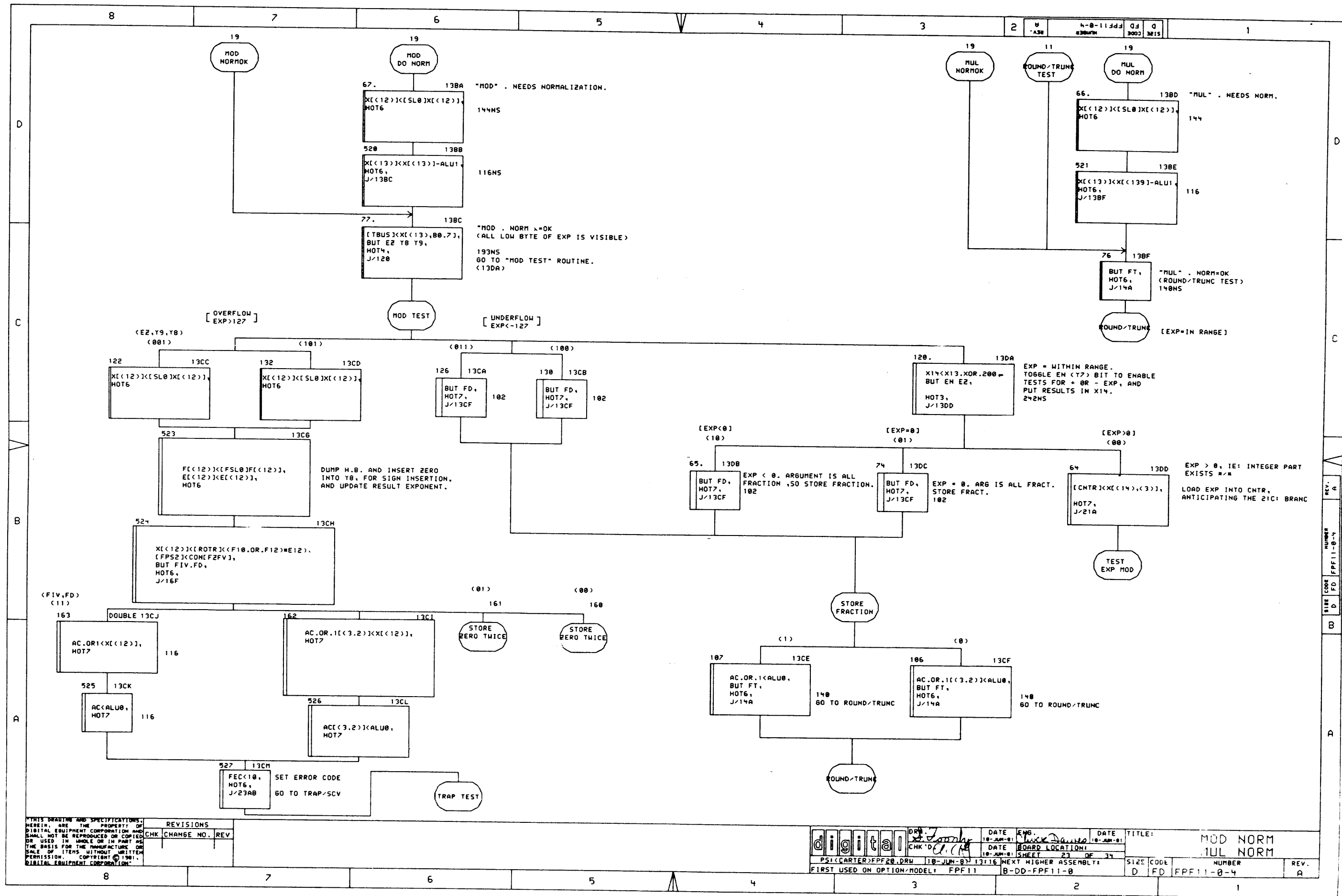


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REVISIONS	
CHK	CHANGE NO. REV

DATE: 18-JUN-81	DATE: 18-JUN-81	DATE: 18-JUN-81	TITLE: MOD/MUL ARITHMETIC
CHK'D: [Signature]	DATE: 18-JUN-81	BOARD LOCATION: 22 OF 24	SIZE CODE: D FD
PSI (CARTER) PPF19.DRM	18-JUN-81	116 NEXT HIGHER ASSEMBLY: B-DD-FPF11-8	NUMBER: -0-4
FIRST USED ON OPTION/MODEL: PPF11			REV: A

REV. A
 NUMBER PPF11-0-4
 SIZE CODE D FD
 B

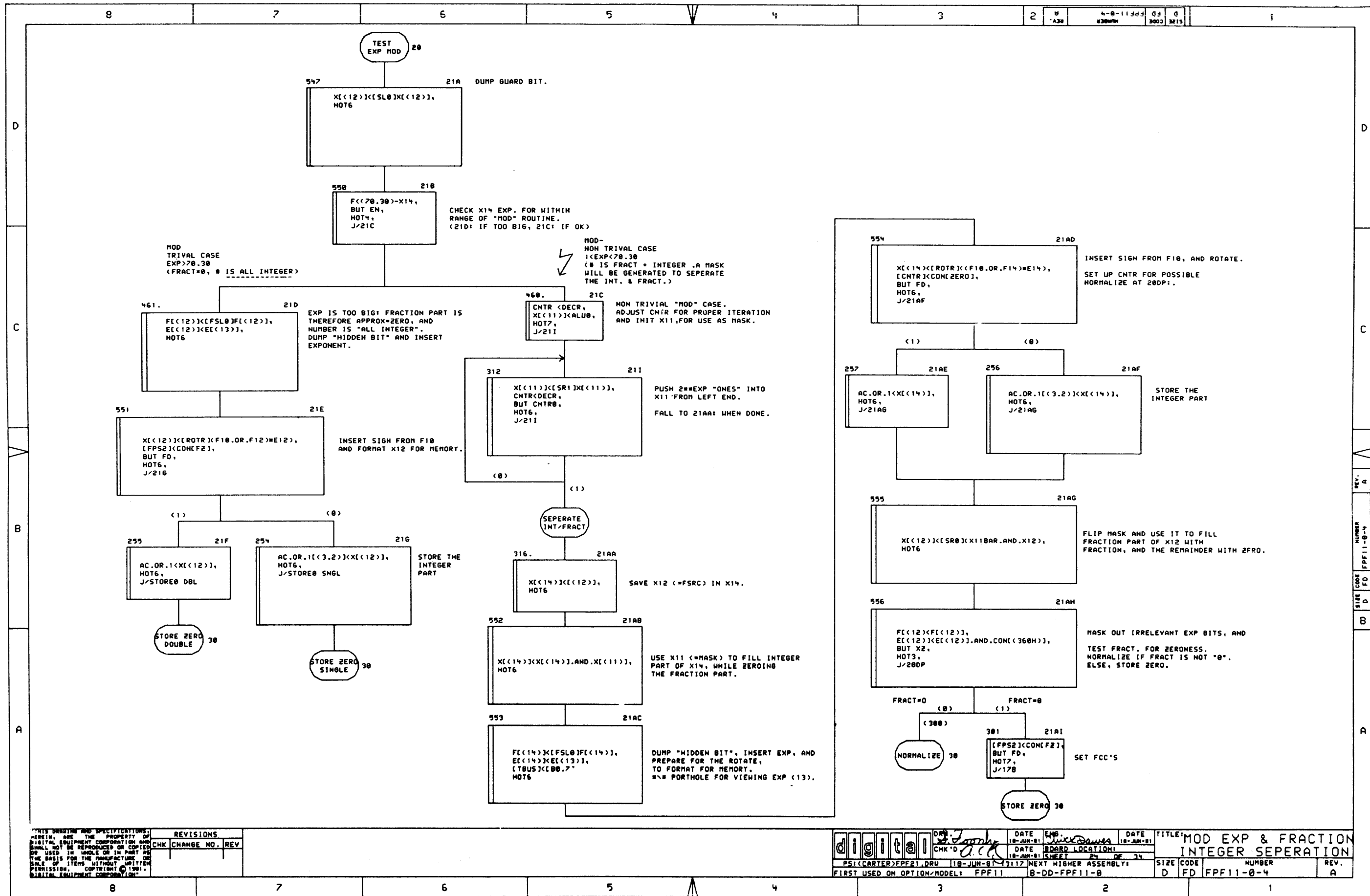


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REVISIONS	
CHK	CHANGE NO. REV

	DRY. <i>[Signature]</i>	DATE ENG. 10-JUN-81	DATE 10-JUN-81	TITLE: MOD NORM
	CHK'D. <i>[Signature]</i>	DATE BOARD LOCATION: 10-JUN-81	SHEET 23 OF 34	NUMBER 101 NORM
PS: (CARTER) FPF20.DRW 10-JUN-81 13116 NEXT HIGHER ASSEMBLY:		SIZE CODE D	FD	REV. A
FIRST USED ON OPTION/MODEL: FPF11		B-DD-FPF11-0		

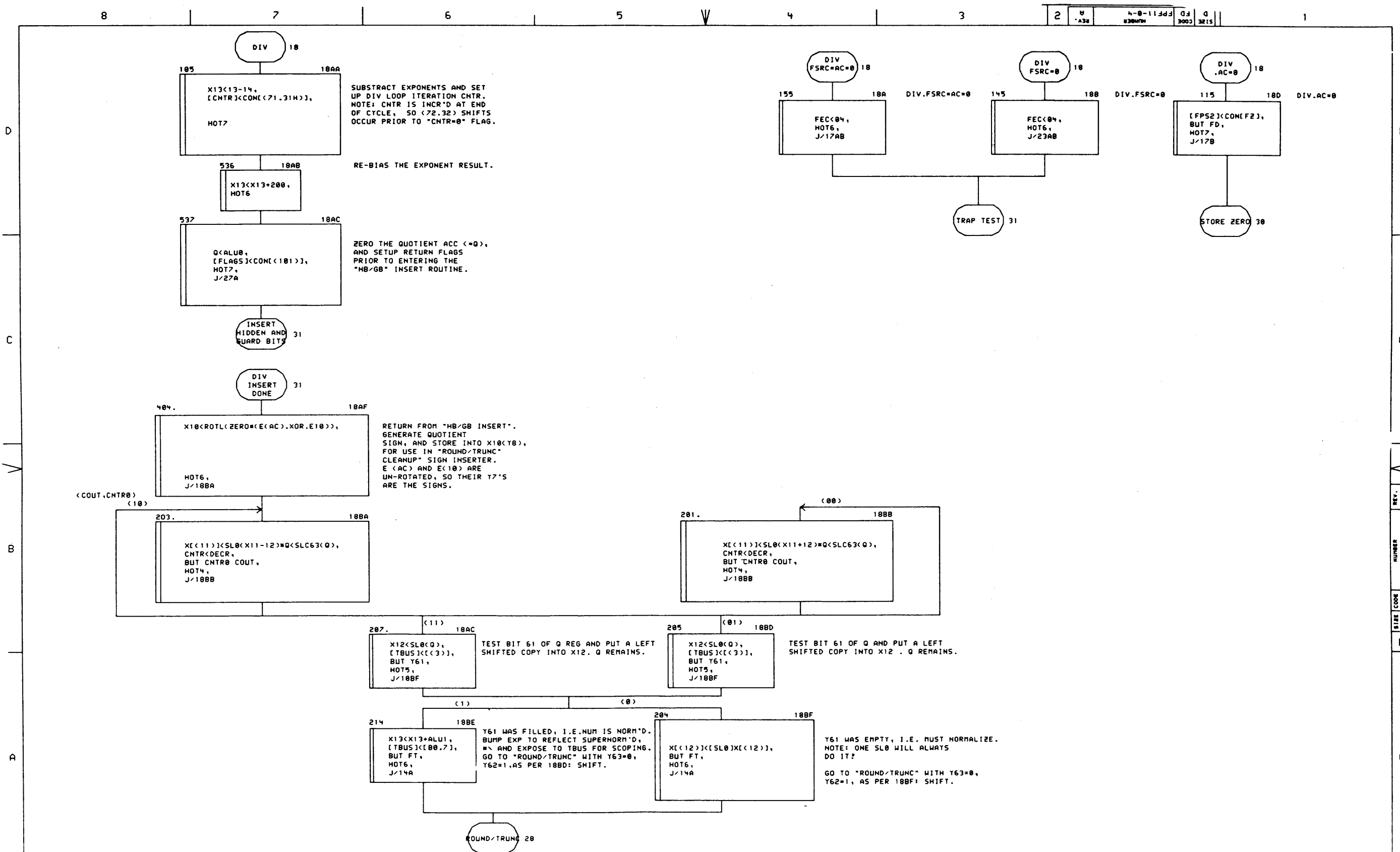
REV. 4
 NUMBER FPF11-0-4
 SIZE CODE D
 FD



REV. A
 NUMBER
 FPF11-0-4
 D
 FD
 D

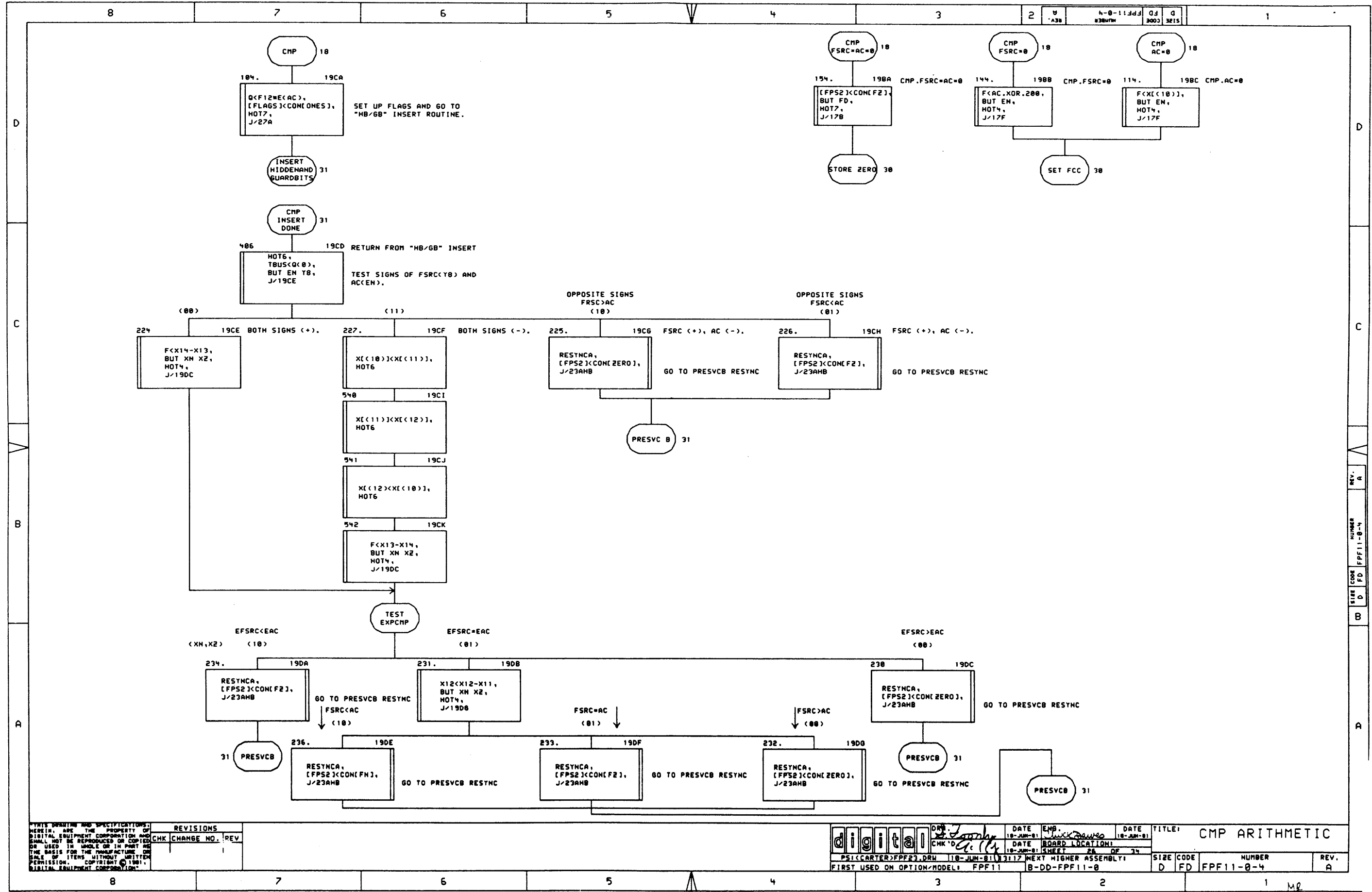
REVISIONS		
CHK	CHANGE NO.	REV.

DATE	18-JUN-81	DATE	18-JUN-81	TITLE	MOD EXP & FRACTION INTEGER SEPERATION
CHK'D	<i>[Signature]</i>	DATE	18-JUN-81	BOARD LOCATION	
PSI (CARTER) FPF21.DRW	118	DATE	18-JUN-81	SHEET	24 OF 34
FIRST USED ON OPTION/MODEL	FPF11	NEXT HIGHER ASSEMBLY	B-DD-FPF11-0	SIZE CODE	D
				NUMBER	FPF11-0-4
				REV.	A



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--	--	--	---	--------------------------------------	--	--

REV. A
 NUMBER FPF11-0-4
 SIZE CODE D FD



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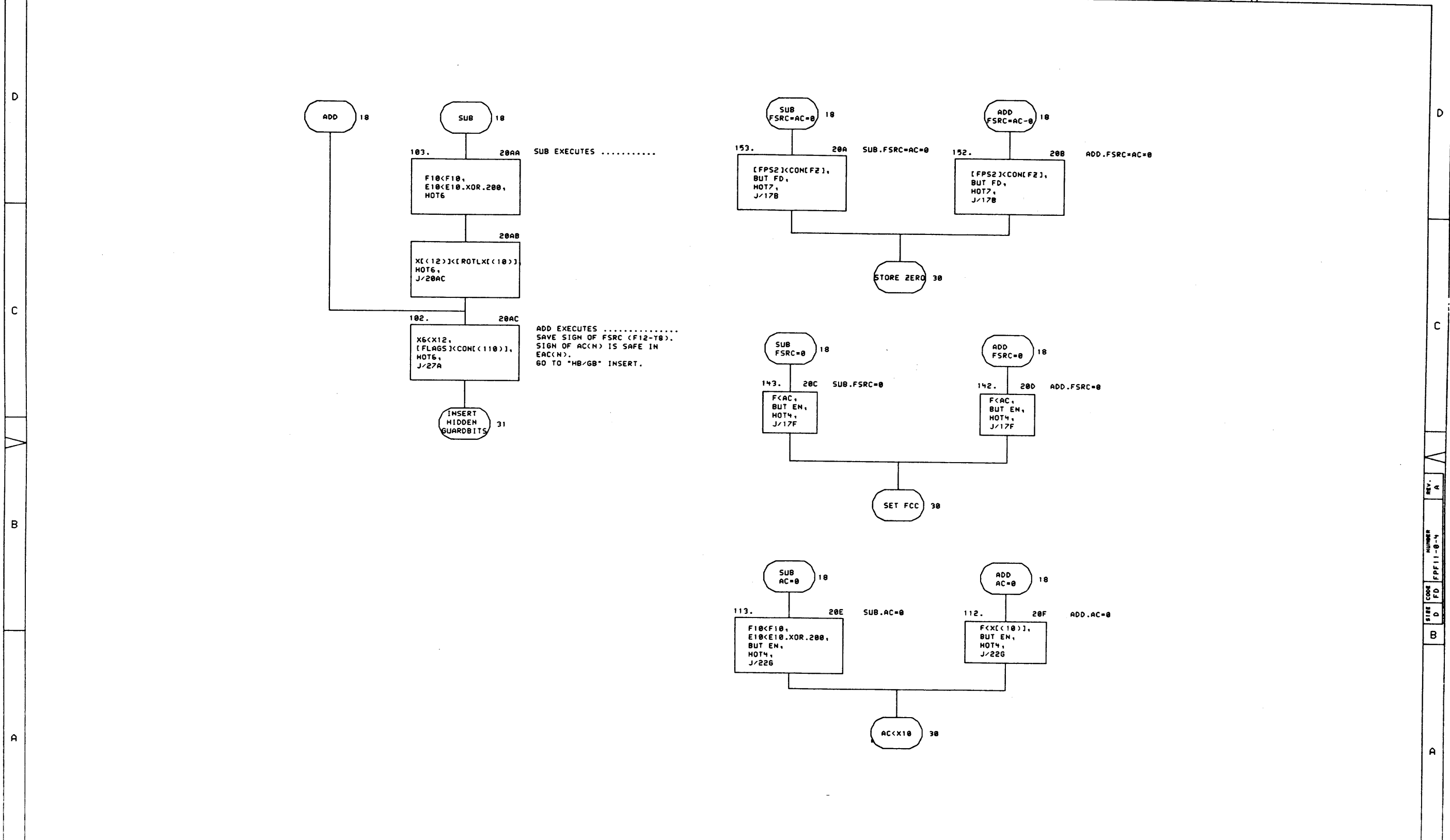
REVISIONS	
CHK	CHANGE NO. REV

DATE	18-JUN-61	DATE	18-JUN-61	TITLE	CMP ARITHMETIC
CHK'D	<i>[Signature]</i>	DATE	18-JUN-61	BOARD LOCATION	
PSI(CARTER)FPF23.DRW	18-JUN-61	SHEET	26 OF 34	SIZE CODE	D FD
FIRST USED ON OPTION/MODEL	FPF11	NEXT HIGHER ASSEMBLY	B-DD-FPF11-0	NUMBER	FPF11-0-4

SIZE CODE	D FD	NUMBER	FPF11-0-4	REV.	A
-----------	------	--------	-----------	------	---

REV. A
NUMBER
FPF11-0-4

M2

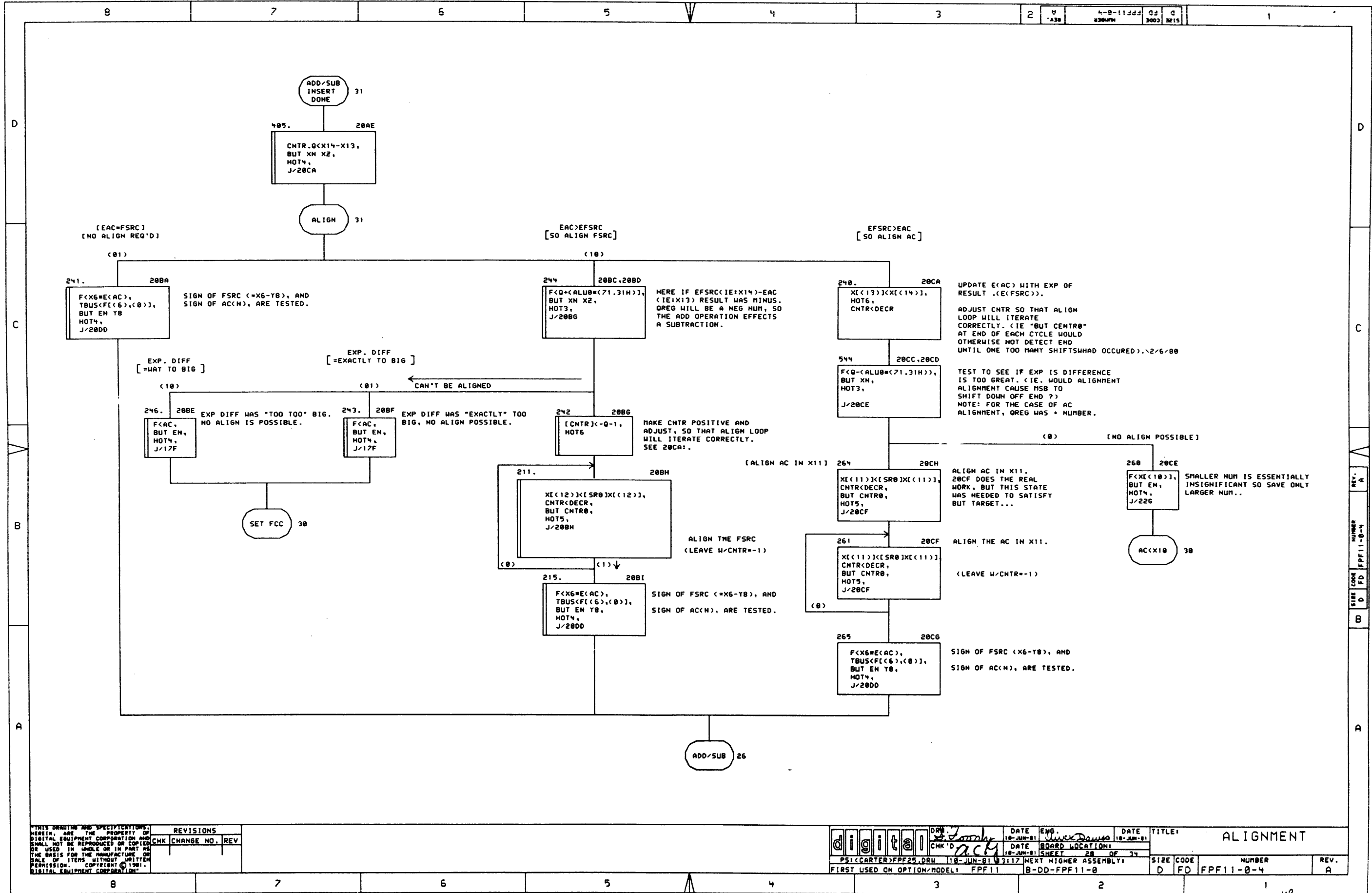


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REVISIONS		
CHK	CHANGE NO.	REV

digital DRW. *J. J. [Signature]* DATE ENB. *10-JUN-81* DATE *10-JUN-81* TITLE: ADD/SUB SETUPS
 CHK'D. *[Signature]* DATE BOARD LOCATION: *10-JUN-81* SHEET 27 OF 34
 PSI (CARTER) PPF24.DRW 10-JUN-81 1317 NEXT HIGHER ASSEMBLY: B-DD-PPF11-0
 FIRST USED ON OPTION/MODEL: PPF11

SIZE	CODE	NUMBER	REV.
D	FD	PPF11-0-4	A

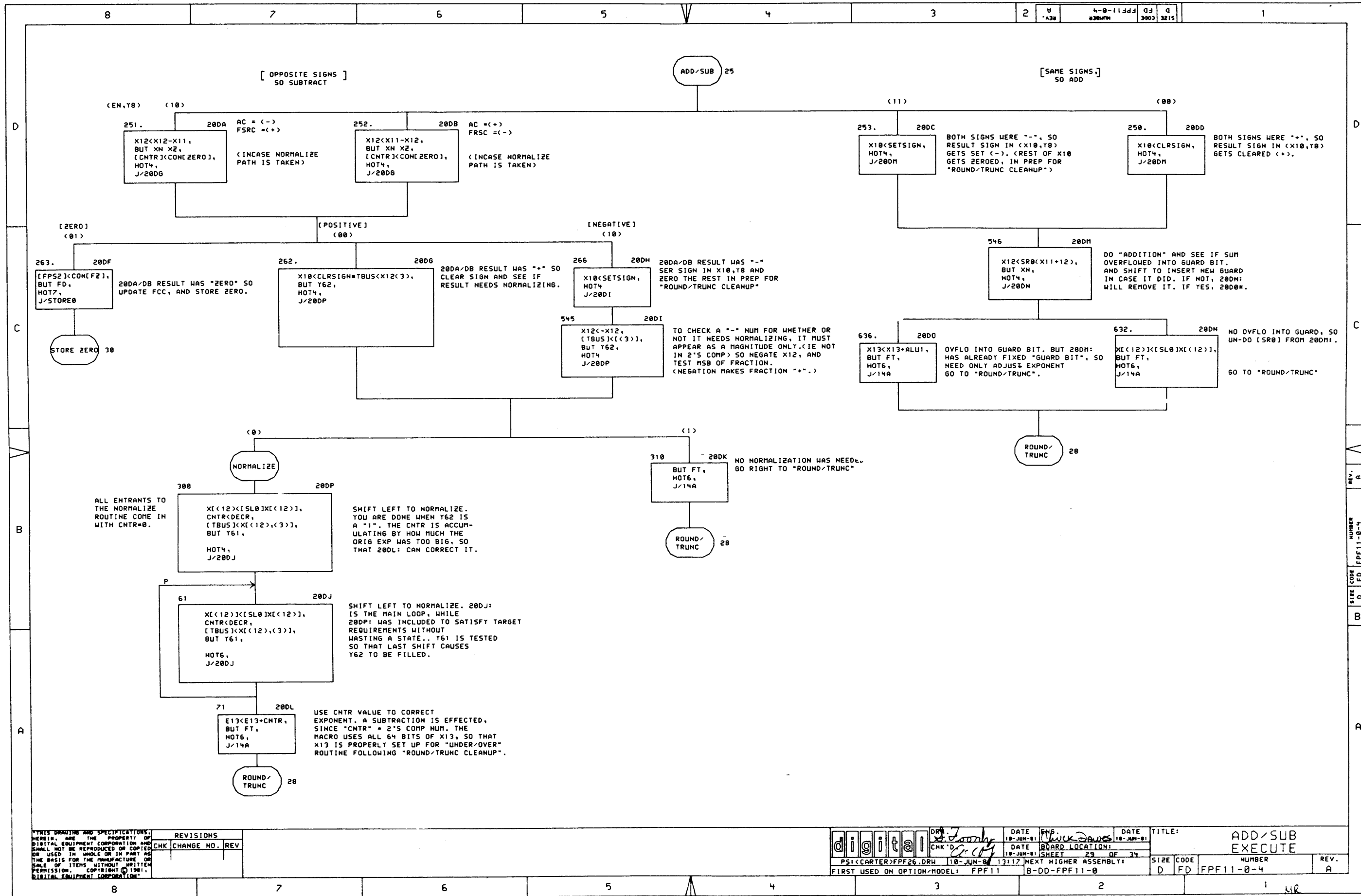


REV. A
NUMBER PPF11-0-4
D FD PPF11-0-4
B

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REVISIONS	
CHK	CHANGE NO. REV

DATE	18-JUN-81	ENG.	W. J. Carter	DATE	18-JUN-81	TITLE:	ALIGNMENT
CHK'D	ACG	DATE	18-JUN-81	BOARD LOCATION	20 OF 34	SIZE CODE	D FD PPF11-0-4
FIRST USED ON OPTION/MODEL:		PPF11		NEXT HIGHER ASSEMBLY:		B-DD-PPF11-0	

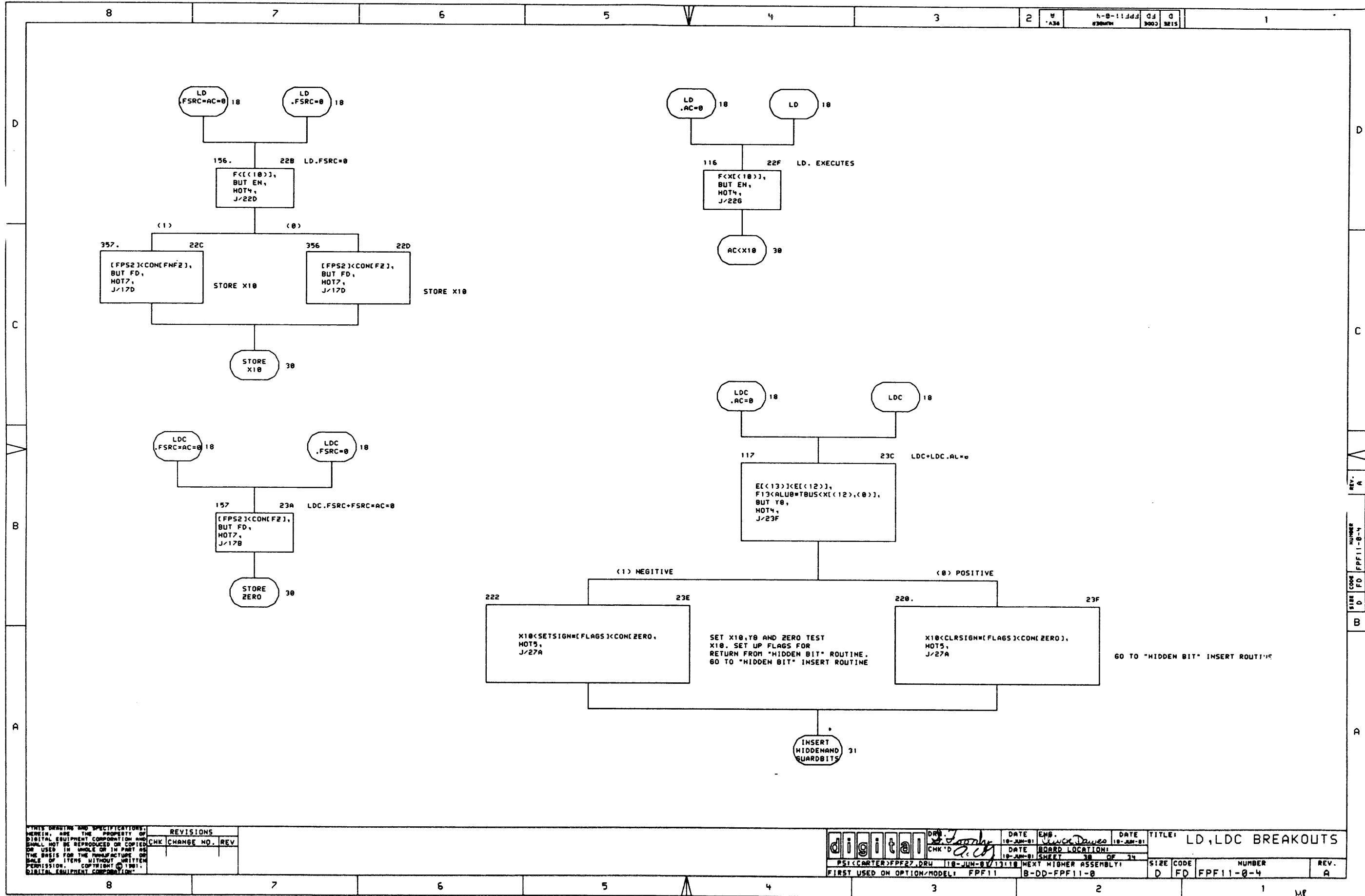


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REVISIONS		
CHK	CHANGE NO.	REV

digital	DR: J. Loomis	DATE: 10-JUN-81	FNA: [Signature]	DATE: 10-JUN-81	TITLE: ADD/SUB EXECUTE
PSI (CARTER) FPF26.DRW	CHK'D: G. CH	DATE: 10-JUN-81	BOARD LOCATION:	SHEET: 29 OF 34	SIZE: D
FIRST USED ON OPTION/MODEL: FPF11	10-JUN-81 13117	NEXT HIGHER ASSEMBLY: B-DD-FPF11-0	CODE: FD	NUMBER: FPF11-0-4	REV: A

REV. A
NUMBER FPF11-0-4
SIZE D
CODE FD
NUMBER FPF11-0-4
REV. A



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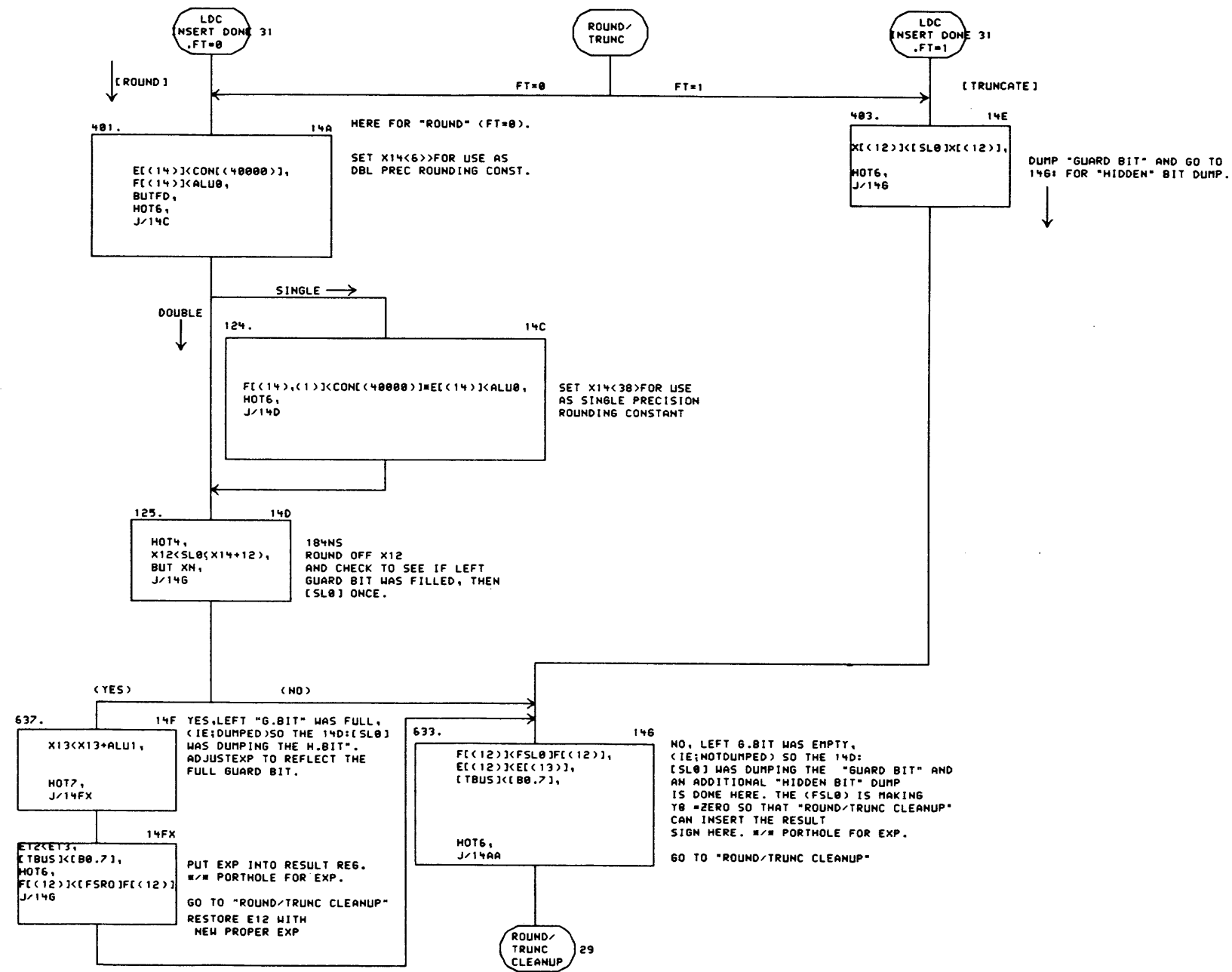
REVISIONS	
CHK	CHANGE NO. REV

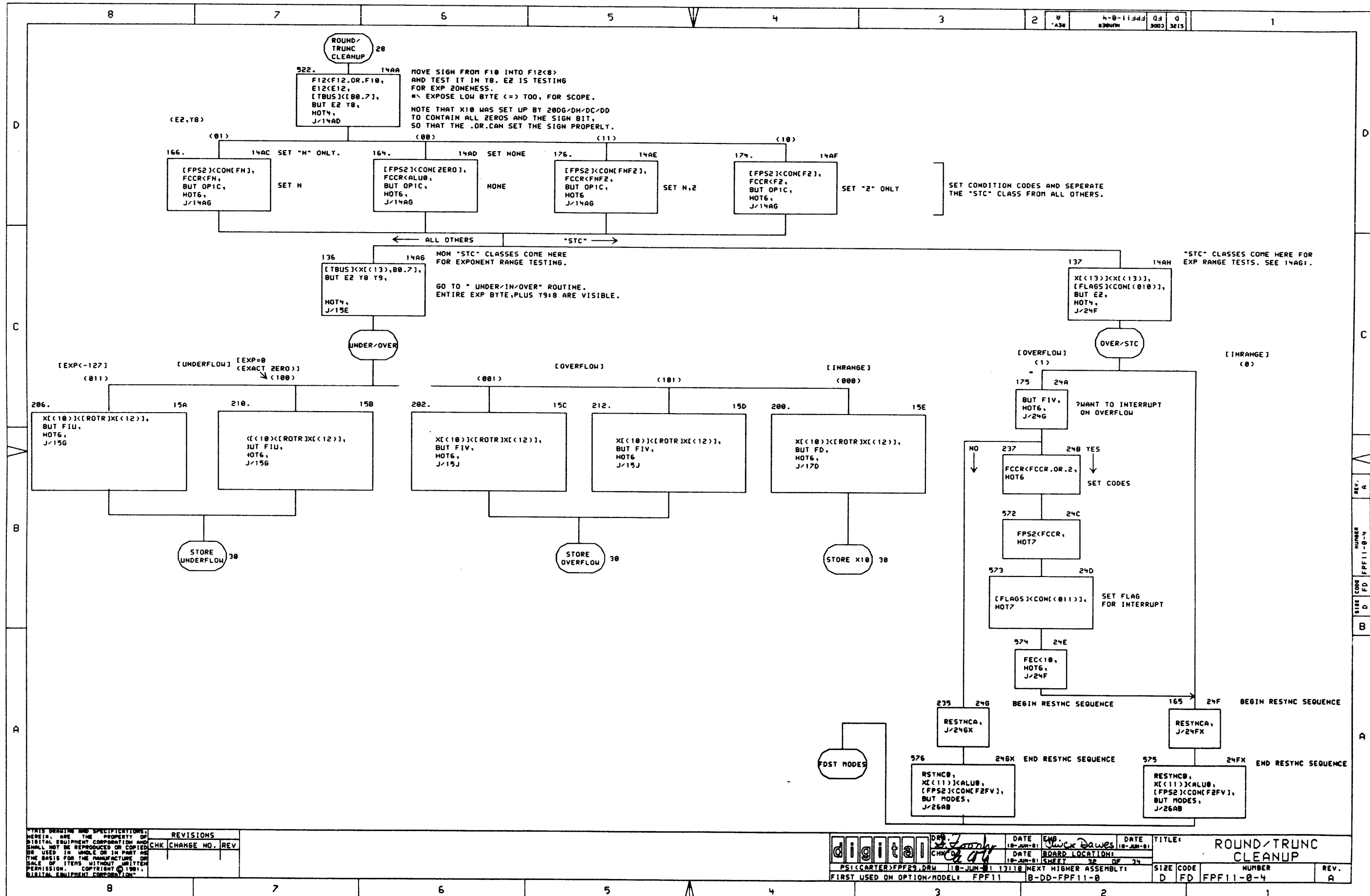
digital	DATE	10-20-61	ENG.	W. J. Dwyer	DATE	10-20-61	TITLE	LD, LDC BREAKOUTS			
	CHK'D	DATE	10-20-61	BOARD LOCATION	DATE	10-20-61	SHEET	30 OF 34			
PSI (CARTER) FPF22.DRW		10-JUN-61 11:18		NEXT HIGHER ASSEMBLY:		SIZE CODE	D FD	NUMBER	FPF11-0-4	REV.	A
FIRST USED ON OPTION/MODEL:		FPF11		B-DD-FPF11-0							

REV. A
NUMBER FPF11-0-4
SIZE CODE D FD

NOTE: ALL ENTRANTS COME HERE WITH ARGUMENT IN X12, WITH TOP GUARD BIT (Y63)=0 AND WITH HIDDEN BIT (Y62)=1. X13 IS A FULL "64 BIT" EXP.

NOTE: 14A6 (ROUND/TRUNC CLEANUP) EXPECTS TO FIND A "64 BIT" EXPONENT IN X13 WHEN IT TESTS FOR UNDER/OVER RANGE BECAUSE OVER-UNDER FLOWS RUN OVER INTO Y9,Y8. THEREFORE ALL ENTRANTS TO ROUND/TRUNC PRESERVE A FULL X13. ALL MICRO STATES WHICH MODIFY THE WORKING EXPONENT RESULT MUST OPERATE ON ENTIRE X13.



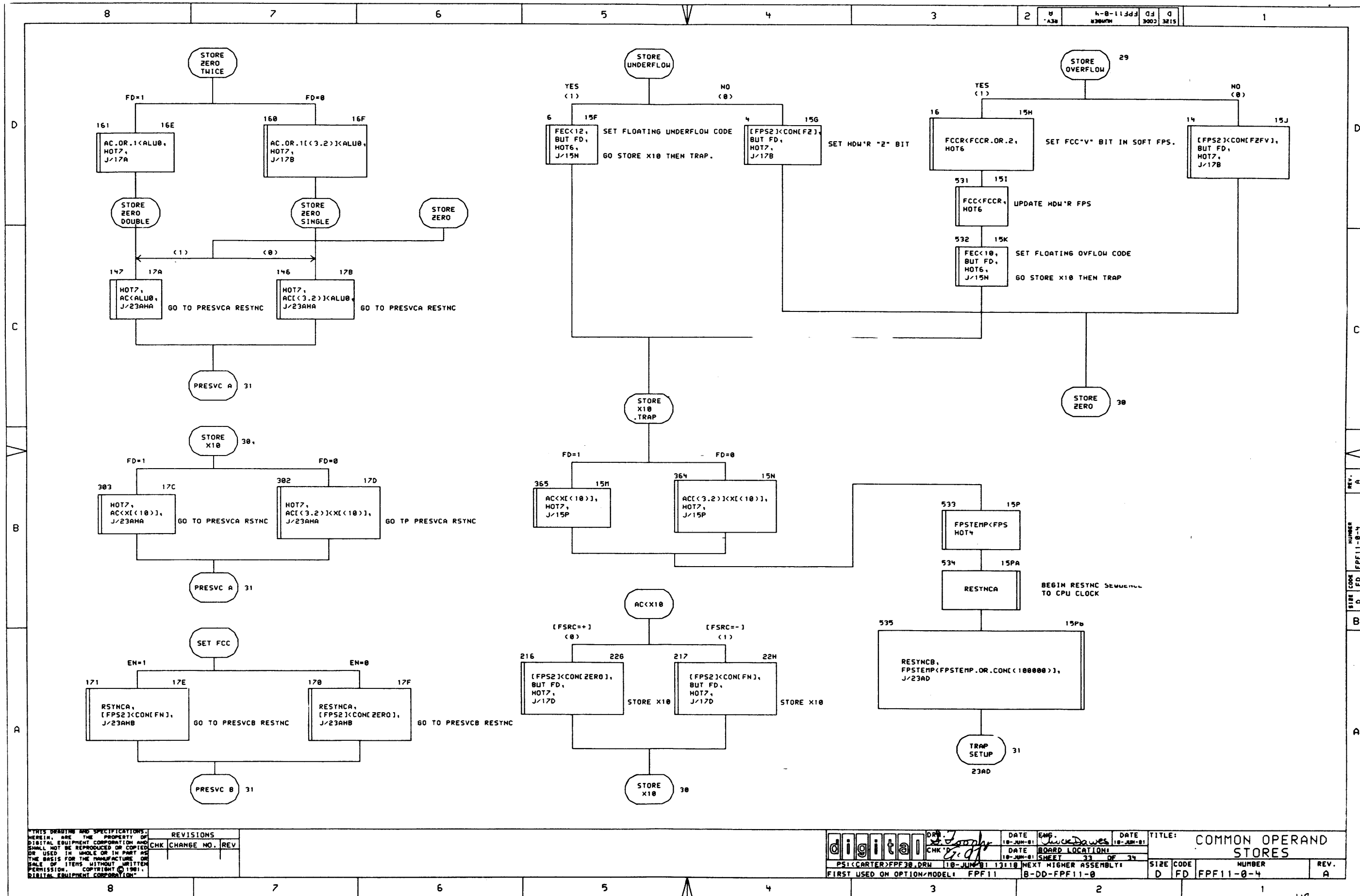


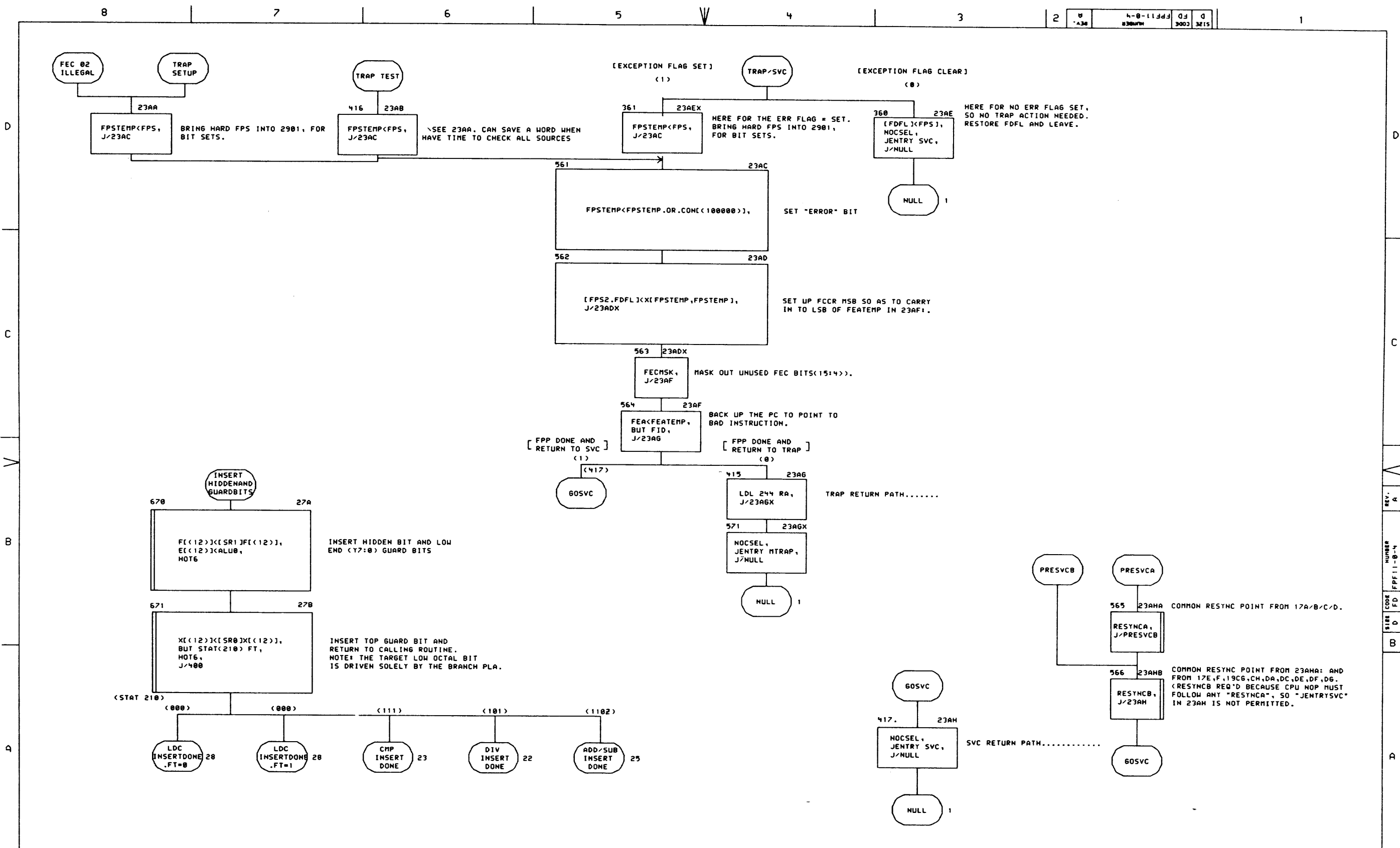
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REVISIONS	
CHK	CHANGE NO. REV

digital DRW: *[Signature]* DATE: 18-JUN-81 ENG: *[Signature]* DATE: 18-JUN-81
 CHK: *[Signature]* DATE: BOARD LOCATION: TITLE: ROUND/TRUNC CLEANUP
 10-JUN-81 SHEET 32 OF 34
 PS1(CARTER)FPF11.DRW 18-JUN-81 17:18 NEXT HIGHER ASSEMBLY: SIZE CODE NUMBER REV.
 FIRST USED ON OPTION/MODEL: FPF11 B-DD-FPF11-0 D FD FPF11-0-4 A

REV. A
NUMBER
FPF11-0-4
D FD





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digital PS: (CARTER) FPF31.DRW 10-JUN-81 13118 NEXT HIGHER ASSEMBLY: B-DD-FPF11-8				DATE 10-JUN-81 DATE 10-JUN-81 DATE 10-JUN-81		SIZE CODE NUMBER REV. D FD FPF11-0-4 A	

REV. A
 NUMBER FPF11-0-4
 SIZE CODE FD
 D

8

7

6

5

4

3

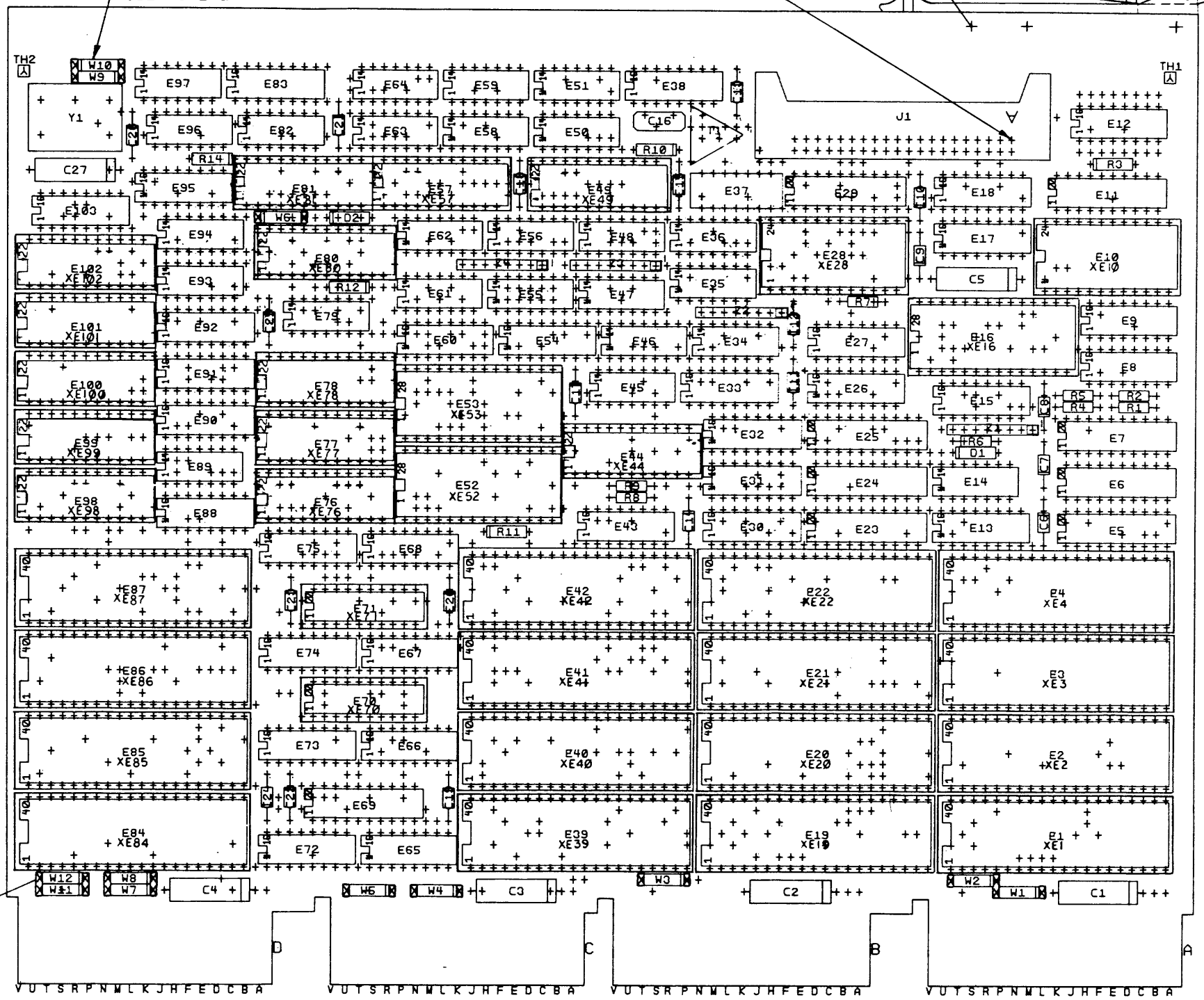
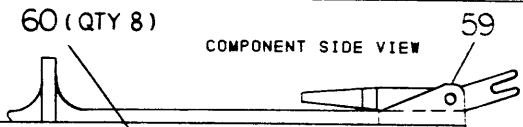
2

1

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NOTES CONT

6. PIN 'A OR 1' ON J1 IS CUT OUT TO KEY THE CONNECTOR.



SEE NOTE *2

SEE NOTE *6

(SEE NOTE *4) 64
(SEE NOTE *1) 58

- NOTES: 1. ITEM 58 COMES IN PAIRS & MIGHT HAVE TO BE CUT TO GO ON EITHER SIDE OF 'W' JUMPERS.
 2. W10 IS A SPARE JUMPER, BUT IS INSERTED.
 3. SPARE LOCATIONS ARE: E12
 4. USE ITEM 64 ON W1, W2, W4, W5, W6, W9, W10.
 5. W3, W7, W8, W11, W12 ARE USED FOR UBUS OPERATION & MODULE IS NOT BUILT WITH THEM.
- | | | | |
|--------|--------|------|-------|
| STEP | Y AXIS | STEP | TIMES |
| REPEAT | X AXIS | STEP | TIMES |

CHK	CHANGE	NO	REV

ETCH REV.	C
P.C. DESIGN DATA REV	A

SIGNATURES		DATE	digital
DRAWN: <i>P. Wilson</i>		11/5/70	
CHK'D: <i>P. Wilson</i>		11/5/70	TITLE FPF-11
MECH. ENG. <i>J. C. ...</i>		11/5/70	
PROJ. ENG. <i>J. C. ...</i>		11/5/70	
PROD. <i>P. Wilson</i>		11/5/70	
SCALE 2/1			SIZE CODE
SHT. 1 OF 1			NUMBER
NEXT HIGHER ASSY: B-DD-ME155-2			REV

8

7

6

5

4

3

2

MR

1 WO# 19C-27

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY	PER VARIATION	REFERENCE DESIGNATOR
1	1	D=MD=5014348-0-0	5014348-00	DRILL AND ETCH FOR MR188	1		
2	2		1004812-00	15 MFD 20V 10% S.TANT	6		C1-C5,C27
3	3		1012784-00	.047 MFD 50V +80-20% CER	20		C6-C15,C17-C26
4	4		1109977-00	1N 749A VZ= 4.3 5%	1		D1
5	5		1209941-02	HEADER 100 40PDS RT ANGLE	1		J1
6	6		1301322-00	180.0 .25 W 5.0 % CC	4		R1,R3,R7,R11
7	7		1300309-00	390.0 .25 W 5.0 % CC	1		R2
8	8		1300447-00	4.70 K .25 W 5.0 % CC	2		R4,R5
9	9		1300197-00	33.0 .25 W 5.0 % CC	1		R6
10	10		1300316-00	470.0 .25 W 5.0 % CC	2		R8,R9
11	11		1316254-01	R NETWORK 7=4.7K 2.0 % 8PIN	2		Z1,Z2
12	12		1316254-00	R NETWORK 7=470 2.0 % 8PIN	2		Z3,Z4
13	13		1811660-32	OSCILLATOR, XTAL 29,000 MHZ	1		Y1
14	14		1913245-02	2901A-1 MICROPROCESSOR 4=	16		E1-E4,E19-E22,E39-E42,E84-E87
15	15		1914214-00	LS374 FF=D OCTAL EDGE TRIG	2		E7,E25
16	16		1914570-00	SD 5000 ANALOG SWITCH=QUAD D	5		E8,E17,E18,E26,E38
17	17		1915193-00	LS244 DRIVER,LINE,OCTAL,T	7		E5,E6,E11,E23,E24,E29,E69
18	18		1910550-00	74S174 FF=D HEX	3		E9,E15,E27
19	19		1912097-00	SN 74S182 LOOK AND CARRY GEN	6		E13,E30-E32,E43,E88
20	20		1910010-00	DEC 2501 16 DIODE ARRAY,CORE	2		E14,E34
21	21		1910547-00	74S153 MUX 1 OF 4 (DUAL)	4		E33,E90-E92
22	22		1912388-00	74S02 NOR GATE=QUAD 2IN,PO	4		E35,E36,E50,E51
23	23		1616653-00	DELAY= 50NS,10TAPS WITH TTLBU	1		E37
24	24		1910536-00	74S10 NAND GATE=TRIPLE 3IN	1		E45
25	25		1910837-00	8093 BUFFER GATE=QUAD 2IN	3		E46,E93,E94
26	26		1910533-00	74S03 NAND GATE=QUAD 2IN,0	4		E47,E56,E58,E61
27	27		1910535-00	74S05 INVERTER GATE=HEX 1	2		E48,E55
28	28		1917246-00	AM 25S07 D=REG,HEX,PARALLEL	3		E54,E60,E74
29	29		1910534-00	74S04 INVERTER GATE=HEX 1I	1		E59
30	30		1910532-00	74S00 NAND GATE=QUAD 2IN	4		E62,E63,E82,E89

REVISION HISTORY		BASIC PART NO: MR188		DRN:	R.W. CAUNTER	DATE: 25-OCT-79	DIGITAL			
ENG:	ECO NUMBER	REV	SECTION A OF A	CHK'D:	R.W. CAUNTER	DATE: 25-SEP-80	TITLE	PARTS LIST		
---	INITIAL	A	SECTION VARIATION INDEX				MR188			
ACF	MR188-MR001	B	[A] 00				PPF=11			
			[B]							
			[C]	DES,ENG:	A.FILZ	DATE: 12-FEB-81				
			[D]							
			[E]							
			[F]	RESP,ENG:	A.FILZ	DATE: 12-FEB-81		DOCUMENT NUMBER		
			[H]							
			[J]							
			[K]	IMG,ENG:	J.L.APONTE	DATE: 18-FEB-81	K	PL	MR188-0-DBP	REV
			[L]							
			[M]	ASSEMBLY NUMBER:		TOP DOCUMENT NUMBER:	FILE NAME:	EDIT #		
			[N]	D-UA-MR188-0-0		B-DD-MR188-0	Z1950B.PLS	17		

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LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY	PER VARIATION	REFERENCE DESIGNATOR
					00		
31	31		1910544-00	74S74 FF-D DUAL, EDGE TRIGG	2		E64, E97
32	32		1917244-00	74S169 COUNTER, SYNCH UP/DOW	2		E65, E72
33	33		1914845-00	2918 FF-D QUAD TRI-STATE	4		E66-E68, E73
34	34		1917245-00	AM 25S08 D-REG, QUAD, PARALLEL	1		E75
35	35		1910957-00	74S175 FF-D QUAD COMMON CLO	2		E83, E95
36	36		1910542-00	74S64 A-O-I GATE 4-2-3-2	1		E96
37	37		1914082-00	74S163 COUNTER, SYNCH UP/DOW	1		E103
38	38		23041D2-00	D2=01	1		E49
39	39		23042D2-00	D2=01	1		E81
40	40		23003D2-00	D2=01	1		E80
41	41		23004D2-00	D2=01	1		E57
42	42		23005D2-00	D2=01	1		E78
43	43		23006D2-00	D2=01	1		E100
44	44		23007D2-00	D2=01	1		E99
45	45		23008D2-00	D2=01	1		E98
46	46		23009D2-00	D2=01	1		E102
47	47		23010D2-00	D2=01	1		E44
48	48		23011D2-00	D2=01	1		E77
49	49		23012D2-00	D2=01	1		E101
50	50		23013D2-00	D2=01	1		E76
51	51		23049C6-00	C6=02	1		E53
52	52		23048C6-00	C6=02	1		E52
53	53		23047C6-00	C6=01	1		E16
54	54		1000024-00	470.0 MMF 100V 5%200PPM MICA	1		C16
55	55		1100114-00	D 664 QS\75PCB PIV= 25V SP	1		D2
56	56		1302091-00	330.0 K .25 W 5.0 % CC	1		R12
57	57		1300229-00	100.0 .25 W 5.0 % CC	1		R10
58	58	SEE NOTE #1 ON UA	1215901-01	HEADER 2PIN STRAIGHT	12		
59	59		1213113-01	HANDLE, MODULE,	1		
60	60		9000024-01	EYELET, ROLL FLANGE .1210DX .192	8		
61	61		1609751-00	TRANSF 25UH PREF ELEC	1		T1
62	62		1910539-00	74S20 NAND GATE-DUAL 4INPU	1		E79
63	63		1300365-00	1.0 K .25 W 5.0 % CC	1		R14
64	64		1215899-01	CLIP, JUMPER, .400CENTERS	7		W1, W2, W4, W5, W6, W9, W10
65	65		23059D1-00	D1=02	1		E28
66	66		23058D1-00	D1=02	1		E10
67	67		23056B1-00	B1=01	1		E70
68	68		23057B1-00	B1=01	1		E71
69	69		1215006-04	SKT, IC 20PIN DIP TIN PLATE	2		XE70, XE71
70	70		1215006-05	SKT, IC 22PIN DIP TIN PLATE	13		XE44, XE49, XE57, XE76-XE78, XE80,
71	71		1215006-07	SKT, IC 28PIN DIP TIN PLATE	3	CONT	XE81, XE98-XE102
72	72		1215006-08	SKT, IC 40PIN DIP TIN PLATE	16		XE16, XE52, XE53
73	73		1215006-06	SKT, IC 24PIN DIP TIN PLATE	2	CONT	XE1-XE4, XE19-XE22, XE39-XE42, XE84-XE87 XE10, XE28

D	I	G	I	T	A	I	T	TITLE	SECTION A OF A	SIZE	CODE	DOCUMENT NUMBER	REV
								M8188 EPF=11		K	PL	M8188-0-DBP	B

AUTOMATED BY PRTLST.3L(37)

P A R T S L I S T

SHEET A3 OF A3

LINE ITEM DOCUMENT NUMBER

PART NUMBER

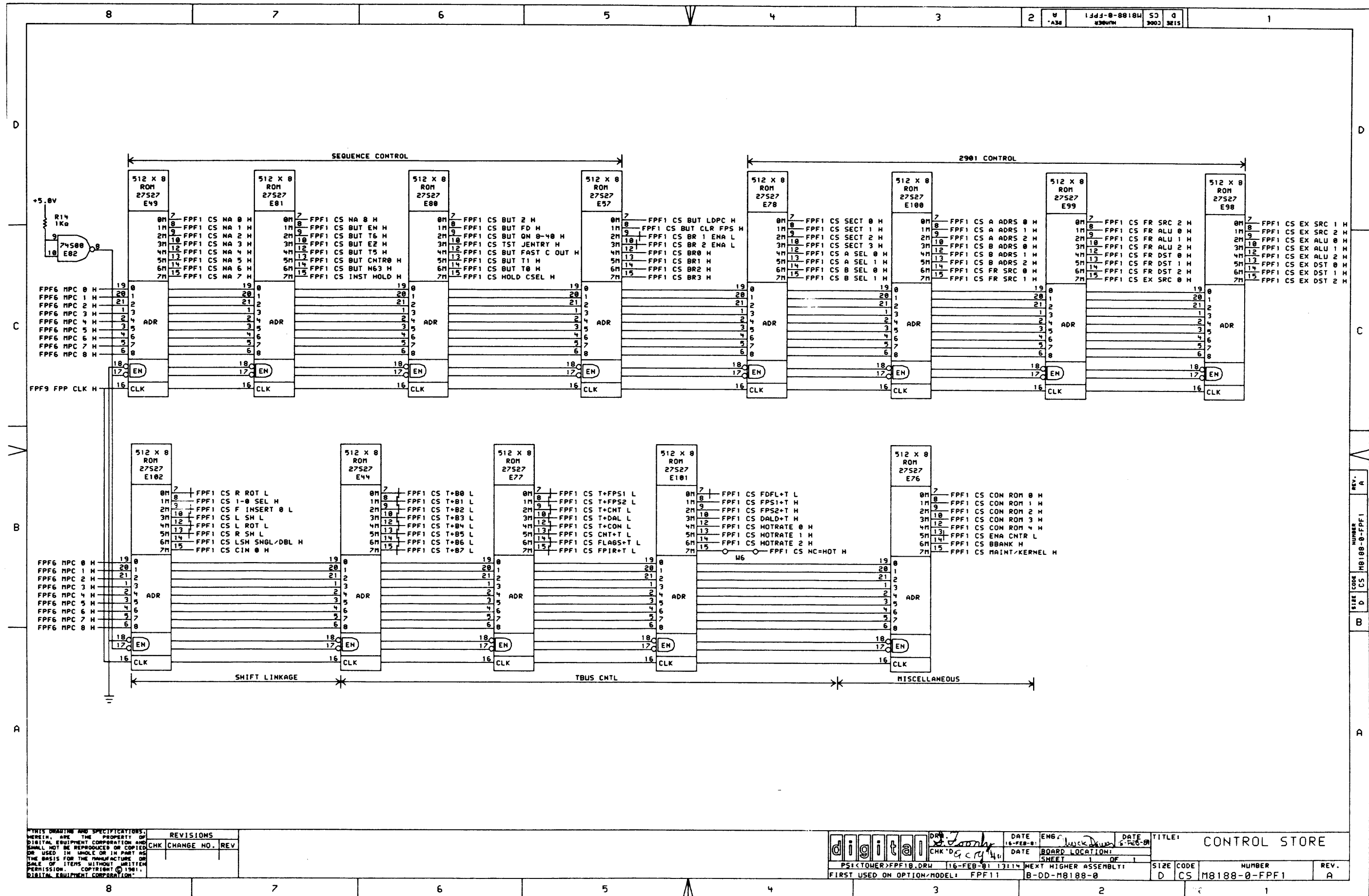
DESCRIPTION

QTY PER VARIATION
00

REFERENCE DESIGNATOR

74 NOTE: 1. SPARE LOCATIONS ARE: E12.

D	I	G	I	T	A	L	TITLE	M8188	SECTION A OF A	SIZE	CODE	DOCUMENT NUMBER	REV
								FPF#11		K	PL	M8188-0-DBP	B

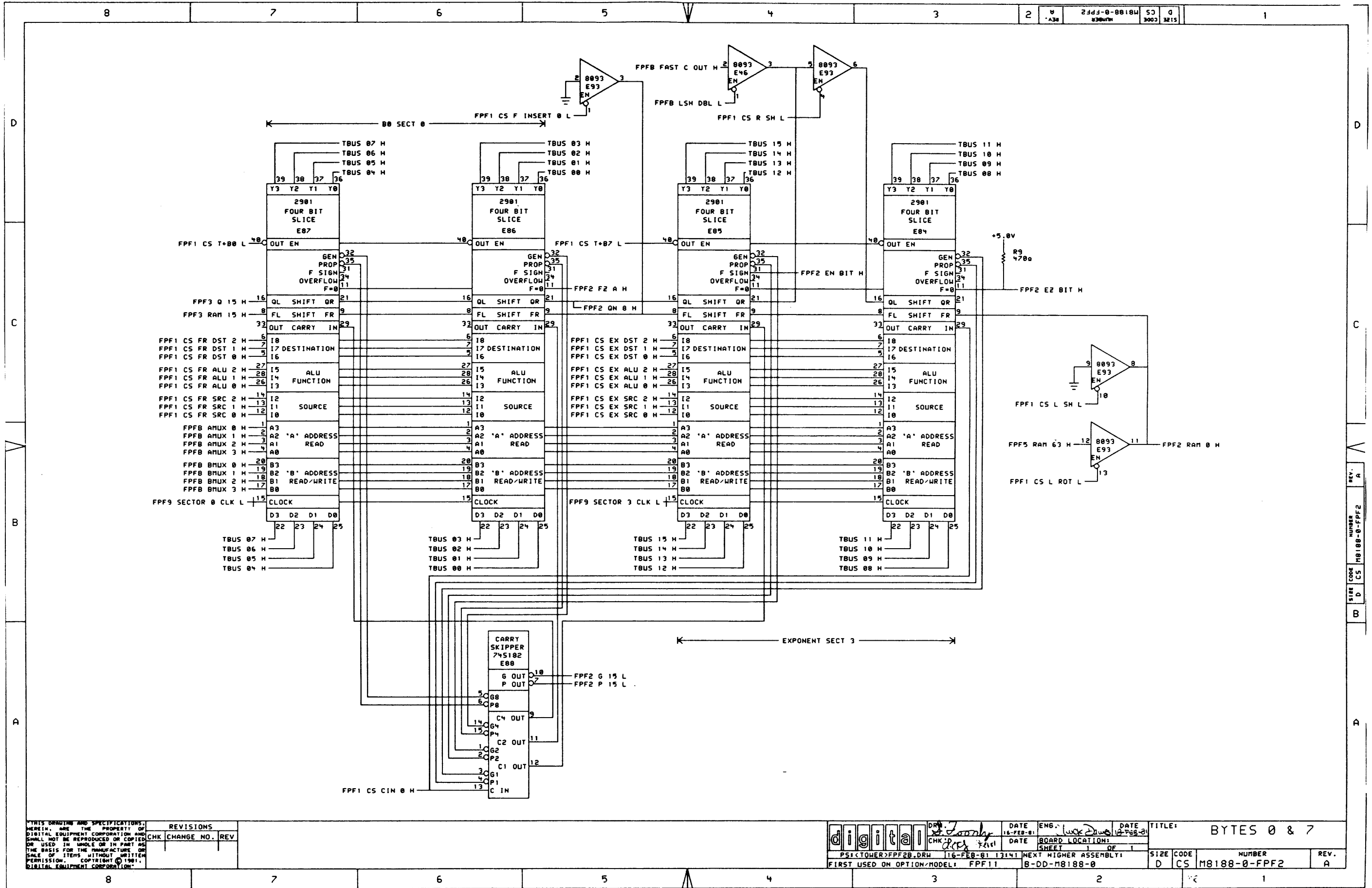


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REVISIONS		
CHK	CHANGE NO.	REV

	DRN: J. J. J.	DATE: 16-FEB-81	ENG: J. J. J.	DATE: 6-FEB-81	TITLE: CONTROL STORE
	CHK: G. C. G.	DATE: 16-FEB-81	BOARD LOCATION: B-DD-M8188-0	SHEET: 1 OF 1	
PS: (TOWER) FPF18.DRW 16-FEB-81 13:14 NEXT HIGHER ASSEMBLY: B-DD-M8188-0			SIZE CODE: D CS	NUMBER: M8188-0-FPF1	REV: A

REV. A
 NUMBER M8188-0-FPF1
 SIZE CODE D CS



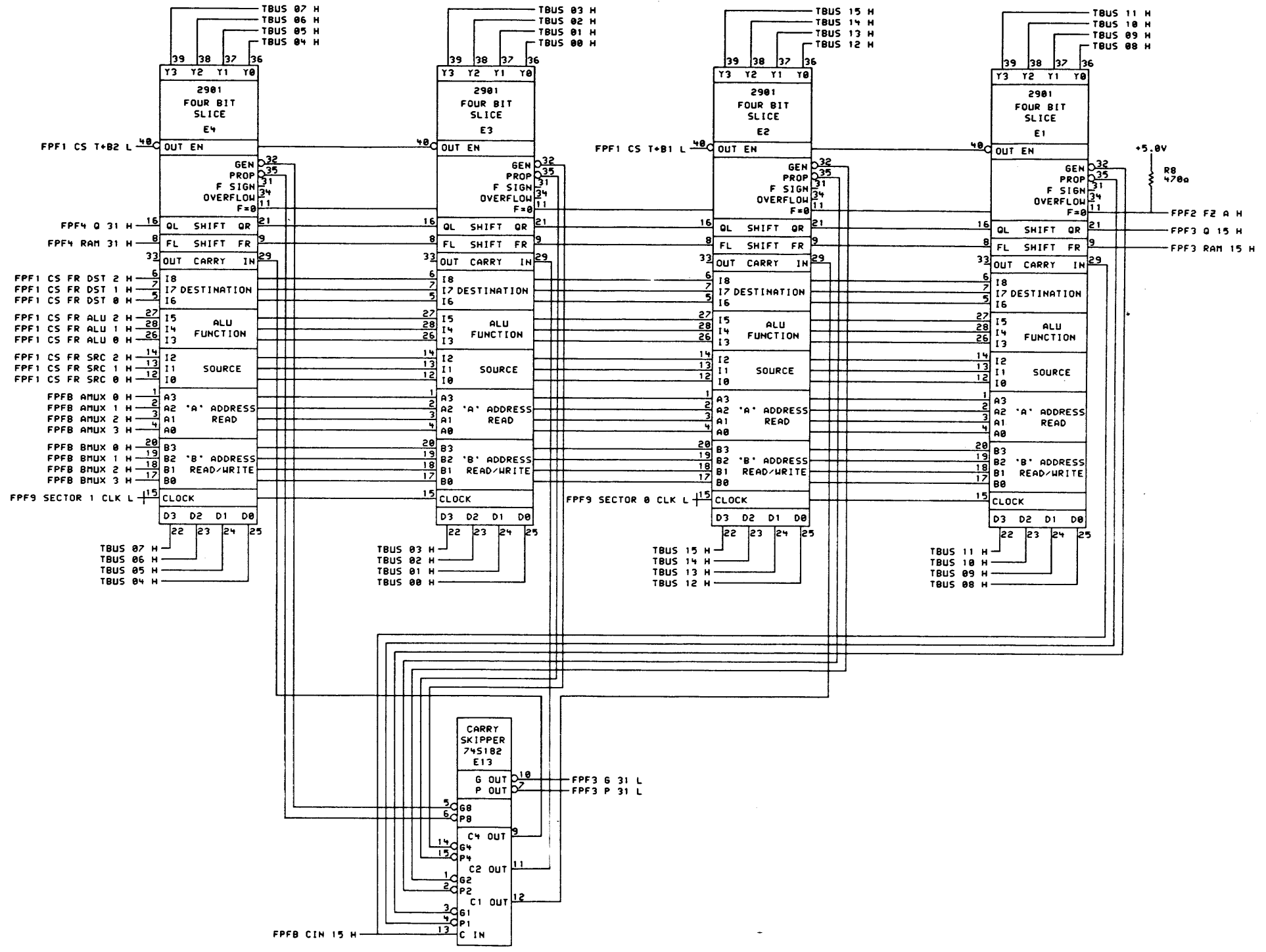
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REVISIONS		
CHK	CHANGE NO.	REV

	DATE	ENG.	DATE	TITLE:
	16-FEB-61	Lucy D...	12-FEB-61	BYTES 0 & 7
DATE	BOARD LOCATION:	SIZE CODE		
16-FEB-61	SHEET 1 OF 1	D	CS	M8188-0-FPF2
FIRST USED ON OPTION/MODEL: FPF11		NEXT HIGHER ASSEMBLY: B-DD-M8188-0		

NUMBER	REV.
M8188-0-FPF2	A

SECT 1 B2 SECT 0 B1

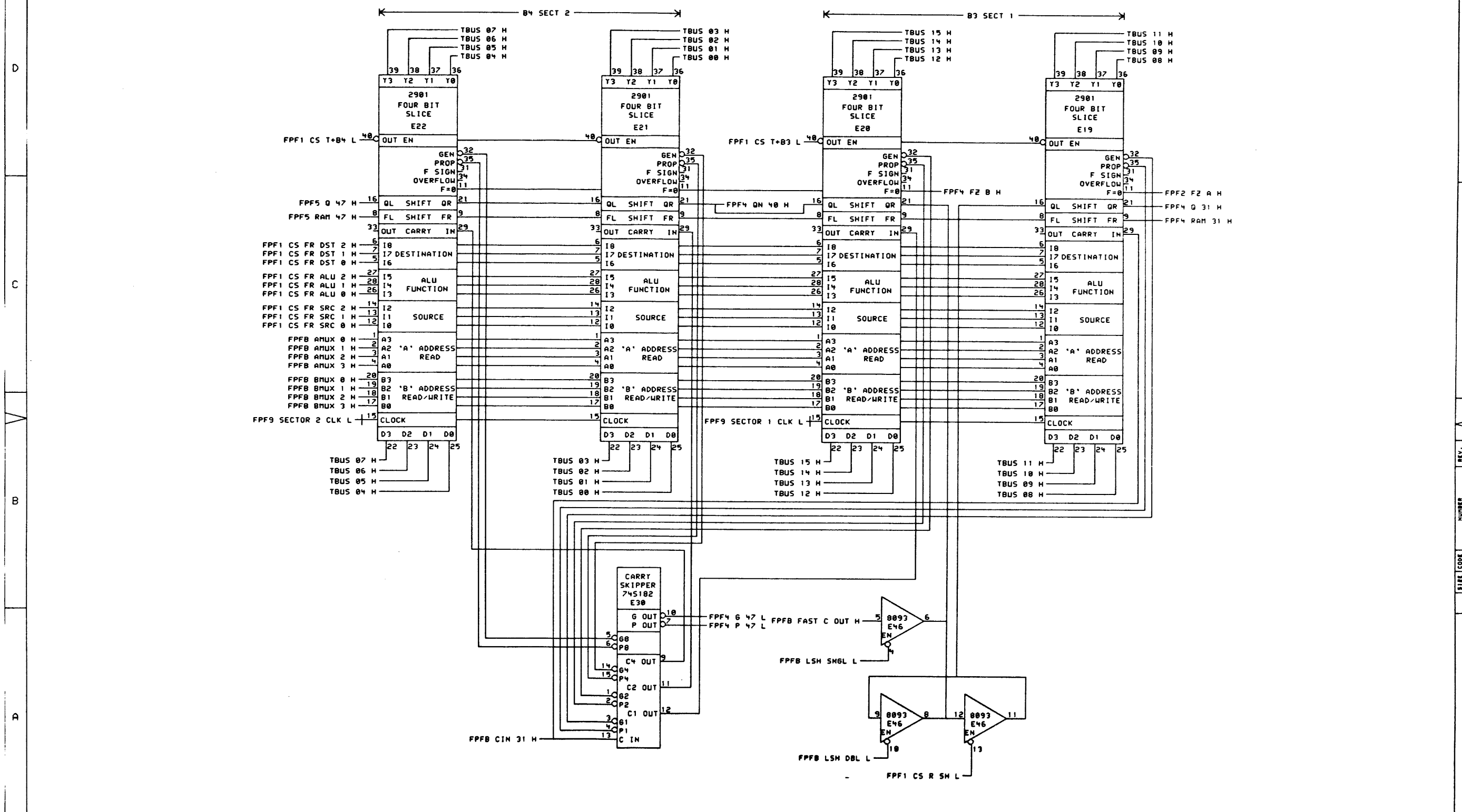


REV. A
 NUMBER MB188-B-PPF3
 CODE CS
 SIZE D
 BOARD LOCATION B

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CHK	CHANGE NO.	REV

digital	DATE 16-FEB-81	ENG. Wick Davies	DATE 2-10-81	TITLE: BYTES 2 & 1
DR: J. Lally	DATE	BOARD LOCATION:	SHEET 1 OF 1	
PS1(TOWER)PPF3B.DRW	16-FEB-81 13:47	NEXT HIGHER ASSEMBLY: B-00-M8188-0	SIZE CODE D CS	NUMBER M8188-0-PPF3
FIRST USED ON OPTION/MODEL: FPF11			REV. A	

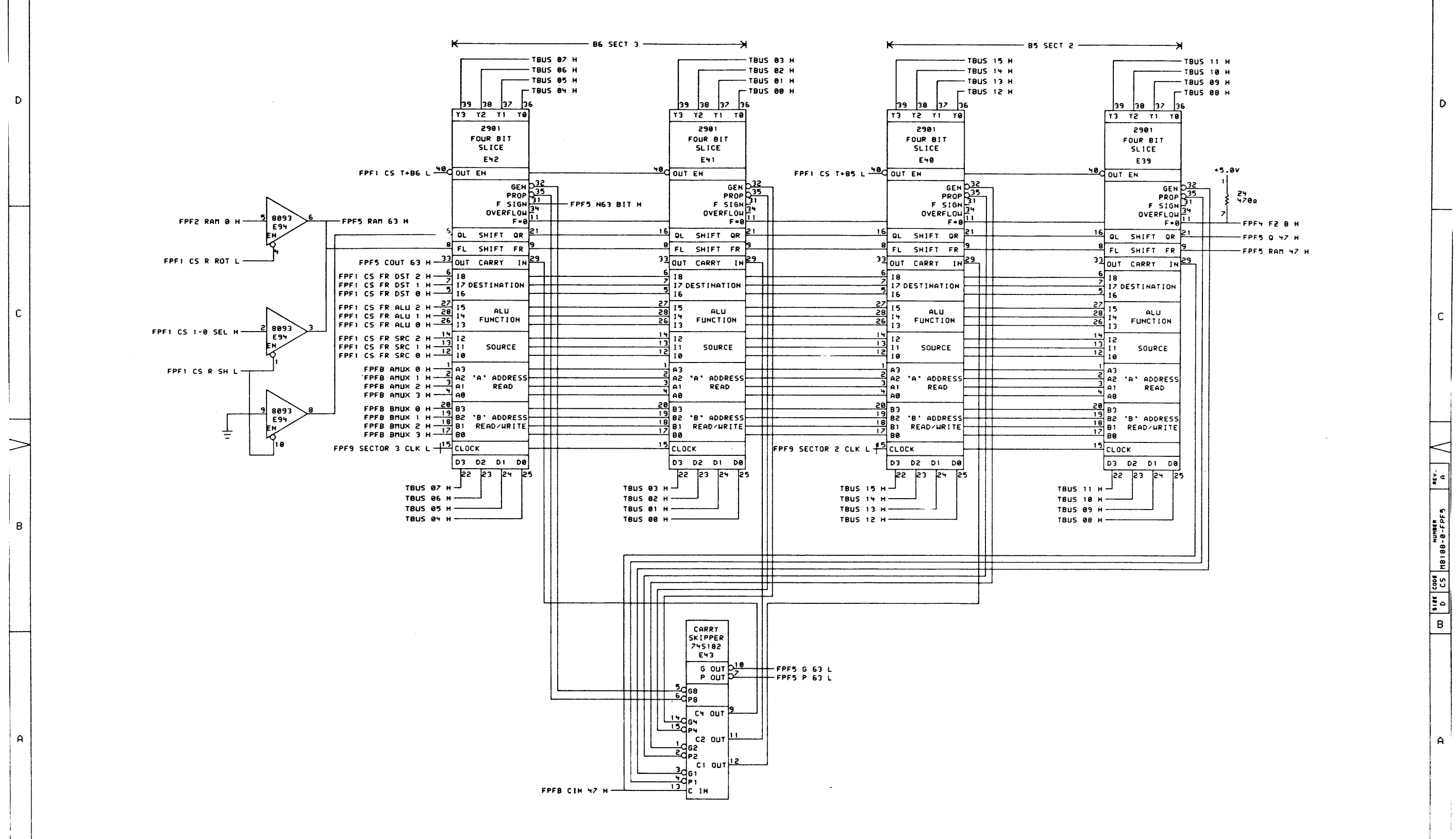


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REVISIONS	
CHK	CHANGE NO. REV.

	DRY: J. J. M.	DATE: 16-FEB-81	ENG: LUC D...	DATE: 18-FEB-81	TITLE: BYTES 4 & 3
	CHK'D: J. J. M.	DATE: 16-FEB-81	BOARD LOCATION: B-DD-M8188-0	SHEET: 1 OF 1	
PS1<TOWER>PPF4.DRW	16-FEB-81 13:49	NEXT HIGHER ASSEMBLY: PPF11			
FIRST USED ON OPTION/MODEL: PPF11		B-DD-M8188-0			
SIZE CODE: D CS	NUMBER: M8188-0-PPF4	REV.: A			

REV. A
 NUMBER: M8188-0-PPF4
 SIZE CODE: D CS
 SHEET: 1 OF 1

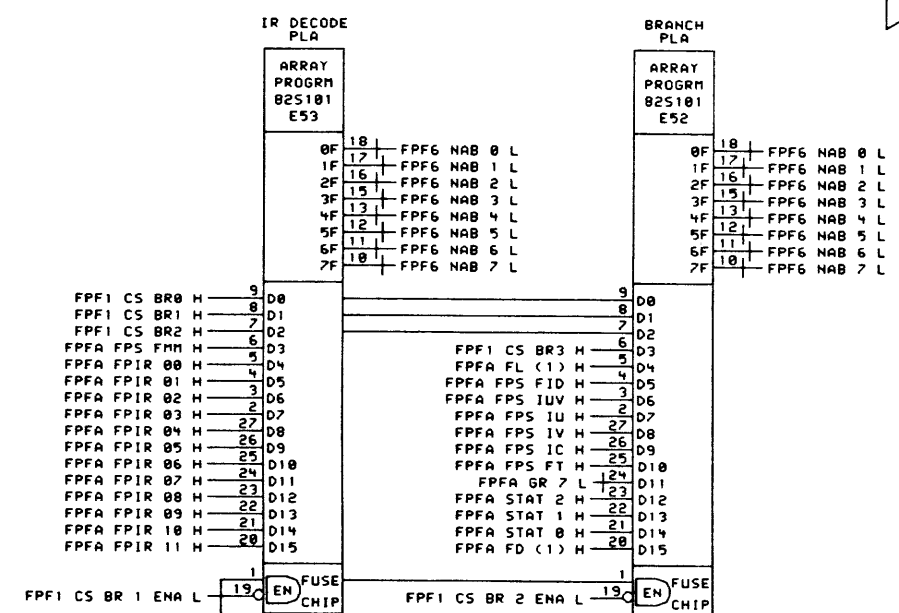
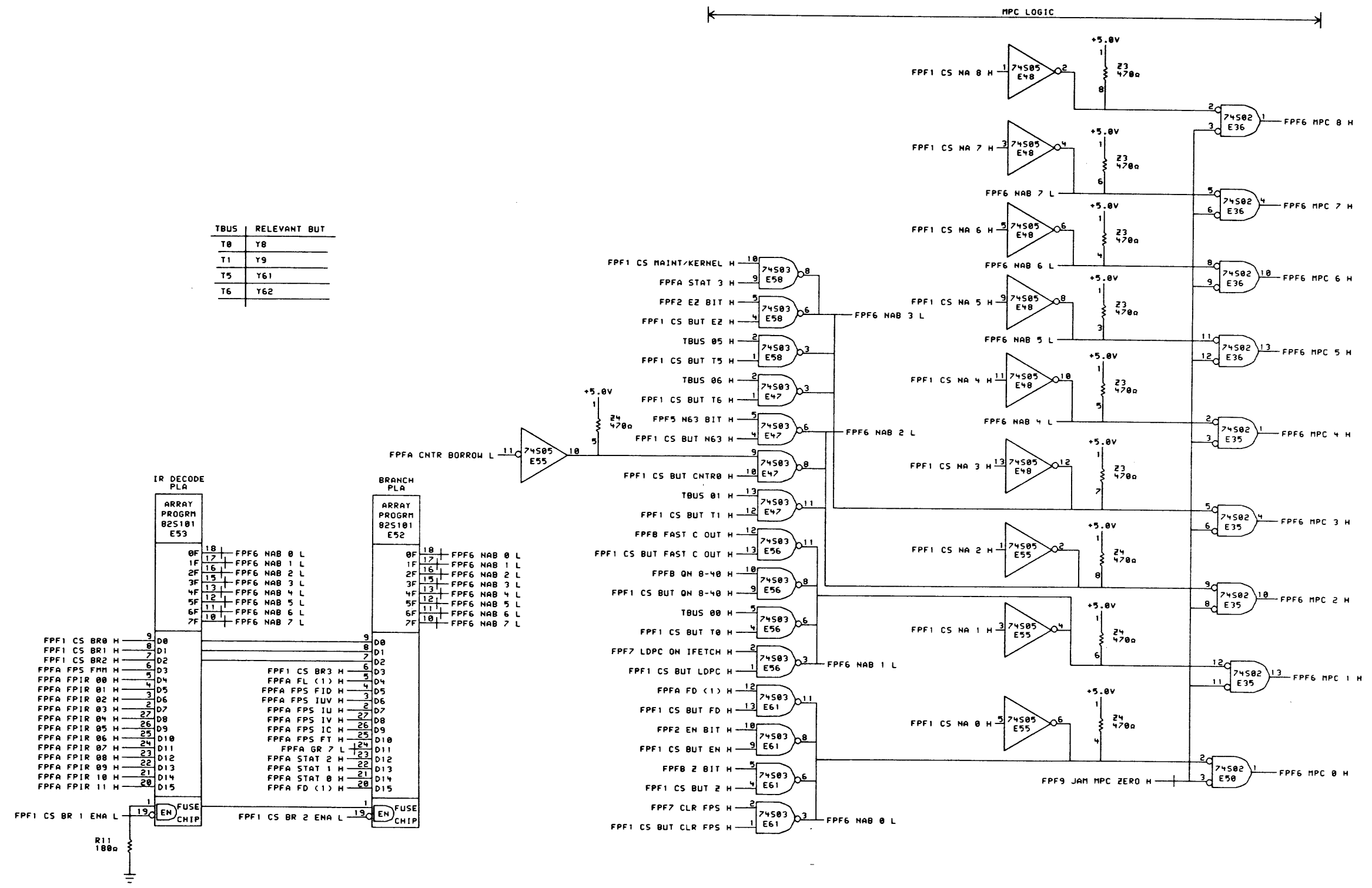


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REVISIONS		
CHK	CHANGE NO.	REV

	DATE: 16-FEB-81	ENG: [Signature]	DATE: 2-28-81	TITLE: BYTES 6 & 5
	CHK'D: A.B. (1/16/81)	DATE: 16-FEB-81 13:46	BOARD LOCATION: SHEET 1 OF 1	SIZE CODE: D CS
PS1<TOWER>PPF50.DRW	NEXT HIGHER ASSEMBLY: B-DD-M8188-0	NUMBER: M8188-0-FPF5	REV: A	

TBUS	RELEVANT BUT
T8	Y8
T1	Y9
T5	Y61
T6	Y62



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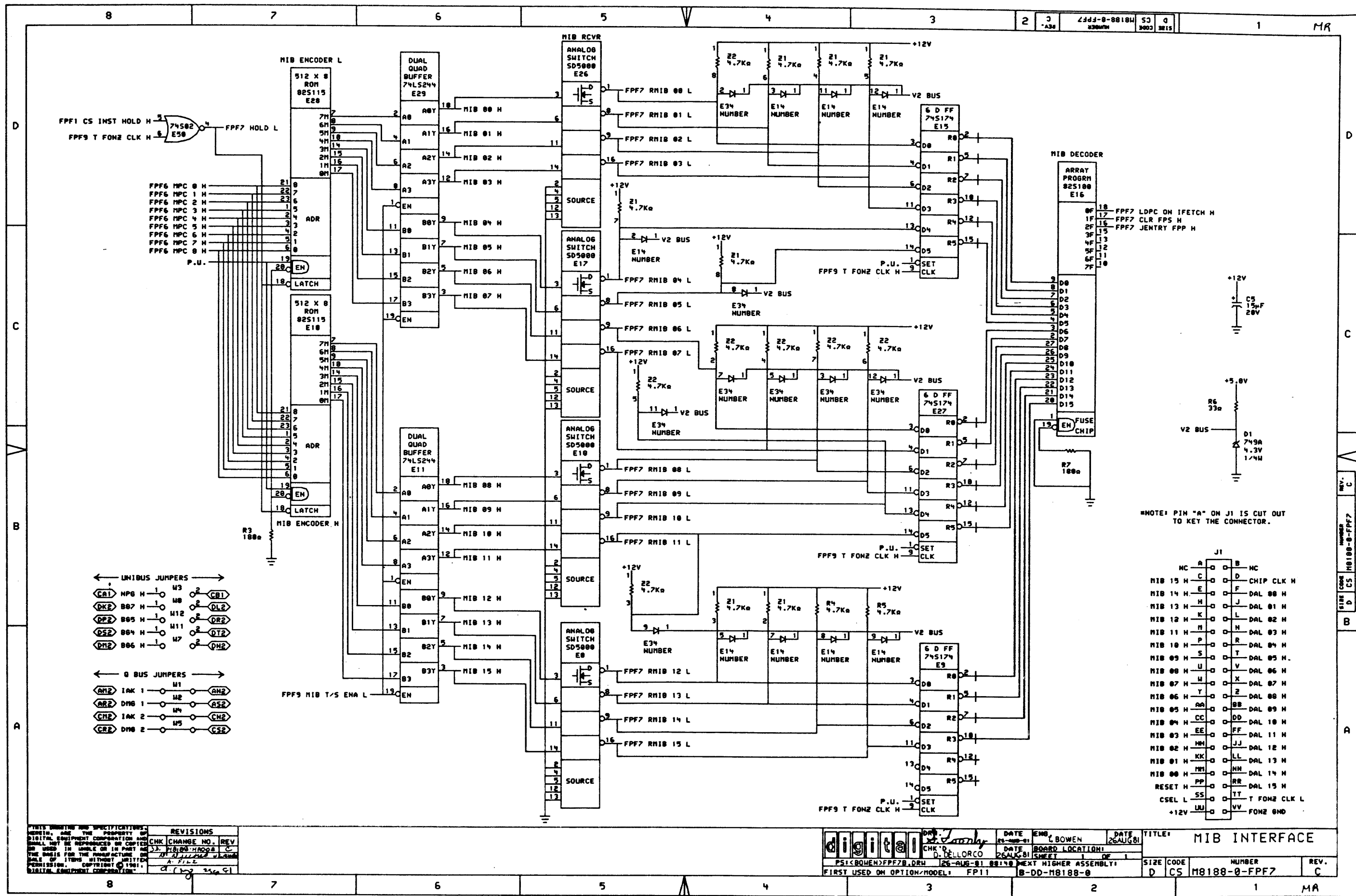
CHK	CHANGE NO.	REV

digital DRW: J. J. J. DATE: 16-FEB-81 ENG: J. J. J. DATE: 18-FEB-81 TITLE: NADRS SEQUENCER

PS1<TOWER>PPF68.DRW 16-FEB-81 13:48 NEXT HIGHER ASSEMBLY: B-DD-M8188-0

FIRST USED ON OPTION/MODEL: FP11

SIZE CODE	NUMBER	REV.
D CS	M8188-0-PPF6	A



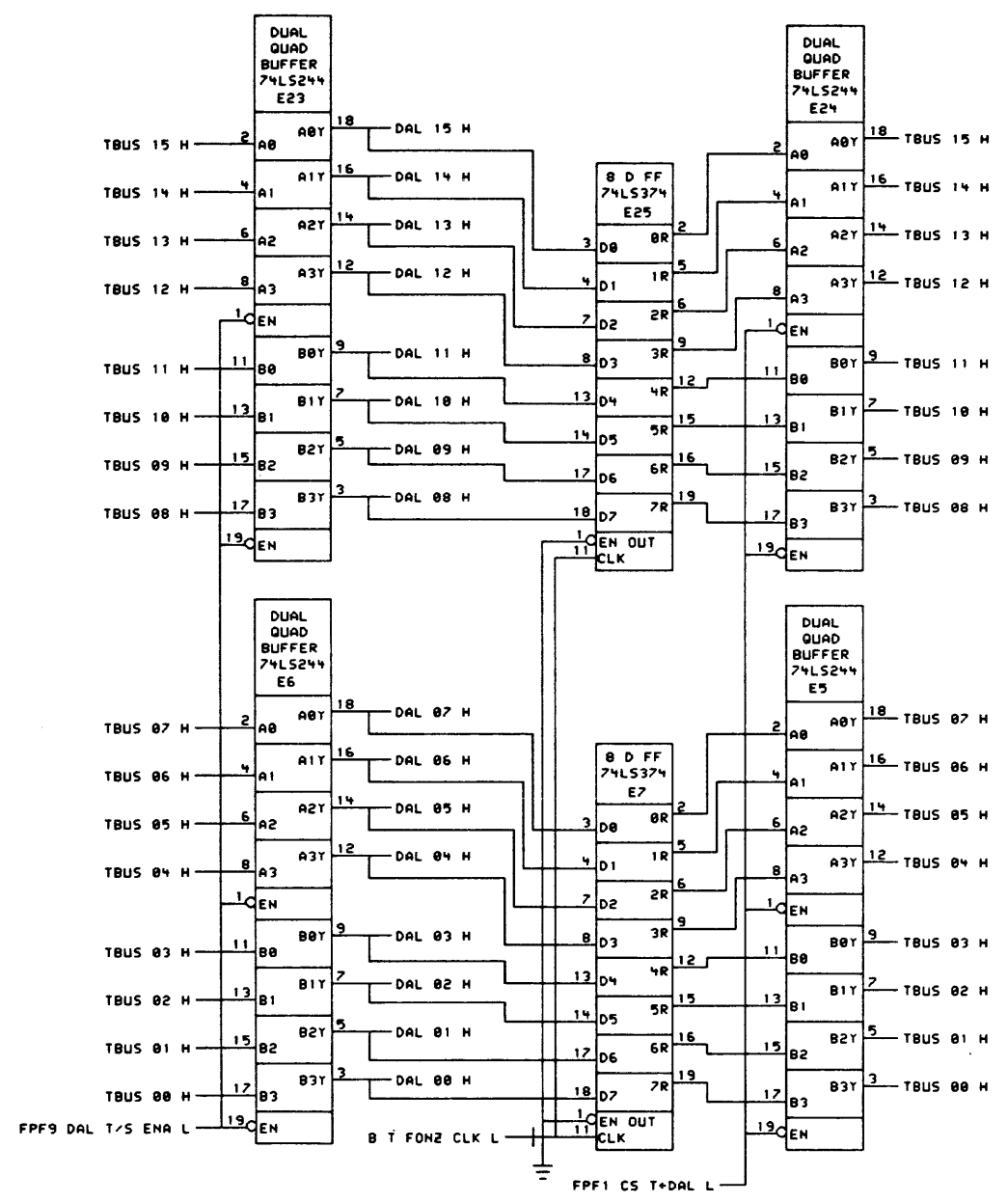
- ← UNIBUS JUMPERS →
- (CA1) NP6 H 1 - U3 (CB1)
 - (DKP) B07 H 1 - U8 (DL2)
 - (DP2) B05 H 1 - U12 (DR2)
 - (DS2) B04 H 1 - U11 (DT2)
 - (DM2) B06 H 1 - U7 (DM2)
- ← 0 BUS JUMPERS →
- (AM2) IAK 1 - U1 (AN2)
 - (AR2) DNB 1 - U4 (AS2)
 - (CP2) IAK 2 - U5 (CN2)
 - (CR2) DNB 2 - U5 (CS2)

NOTE: PIN "A" ON J1 IS CUT OUT TO KEY THE CONNECTOR.

	NC	A	B	NC
MIB 15 H	C	D	D	CHIP CLK H
MIB 14 H	E	F	F	DAL 00 H
MIB 13 H	H	J	J	DAL 01 H
MIB 12 H	K	L	L	DAL 02 H
MIB 11 H	N	N	N	DAL 03 H
MIB 10 H	P	R	R	DAL 04 H
MIB 09 H	S	T	T	DAL 05 H
MIB 08 H	U	V	V	DAL 06 H
MIB 07 H	W	X	X	DAL 07 H
MIB 06 H	Y	Z	Z	DAL 08 H
MIB 05 H	AA	BB	BB	DAL 09 H
MIB 04 H	CC	DD	DD	DAL 10 H
MIB 03 H	EE	FF	FF	DAL 11 H
MIB 02 H	HH	JJ	JJ	DAL 12 H
MIB 01 H	KK	LL	LL	DAL 13 H
MIB 00 H	MM	NN	NN	DAL 14 H
RESET H	PP	RR	RR	DAL 15 H
CSEL L	SS	TT	TT	T FONZ CLK L
+12V	UU	VV	VV	FONZ 0ND

REVISIONS	CHK	CHANGE NO.	REV

	DATE	ENG	L BOWEN	DATE	26 AUG 81	TITLE	MIB INTERFACE
	DATE	CHK'D	D. DELORCO	DATE	26 AUG 81	BOARD LOCATION	
FIRST USED ON OPTION/MODEL: FP11		NEXT HIGHER ASSEMBLY: B-DD-N8188-0		SIZE	CODE	NUMBER	REV.
				D	CS	M8188-0-PPF7	C

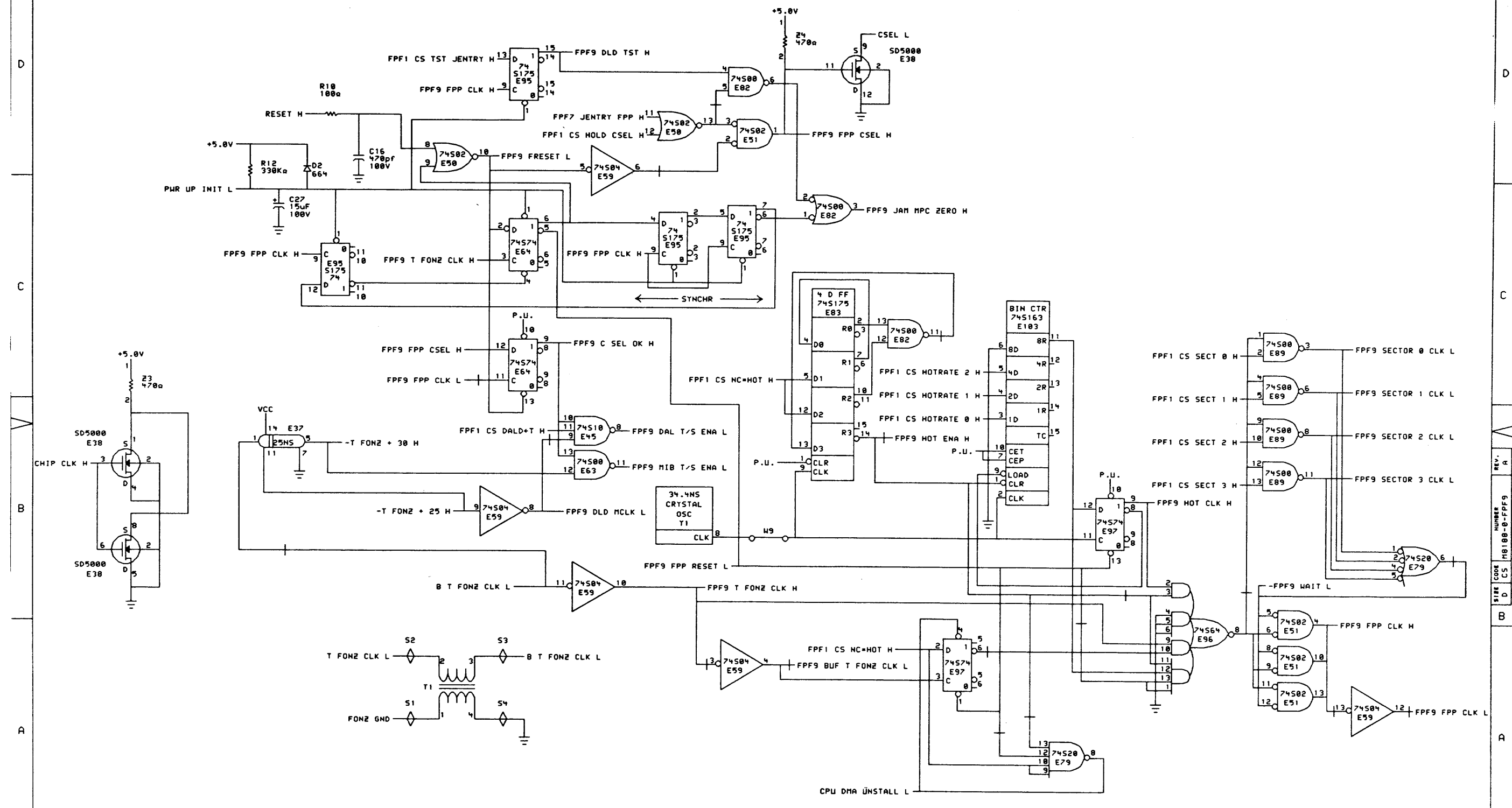


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REVISIONS	
CHK	CHANGE NO. REV

	DATE: 16-FEB-81	ENG: <i>J. J. J.</i>	DATE: 12-FEB-81	TITLE: DAL INTERFACE
	CHK: <i>P. J. M.</i>	DATE: 16-FEB-81 13:52	SHEET: 1 OF 1	SIZE CODE: D CS
FIRST USED ON OPTION/MODEL: PPF11	NEXT HIGHER ASSEMBLY: B-DD-M8188-0	NUMBER: M8188-0-PPF8	REV.: A	

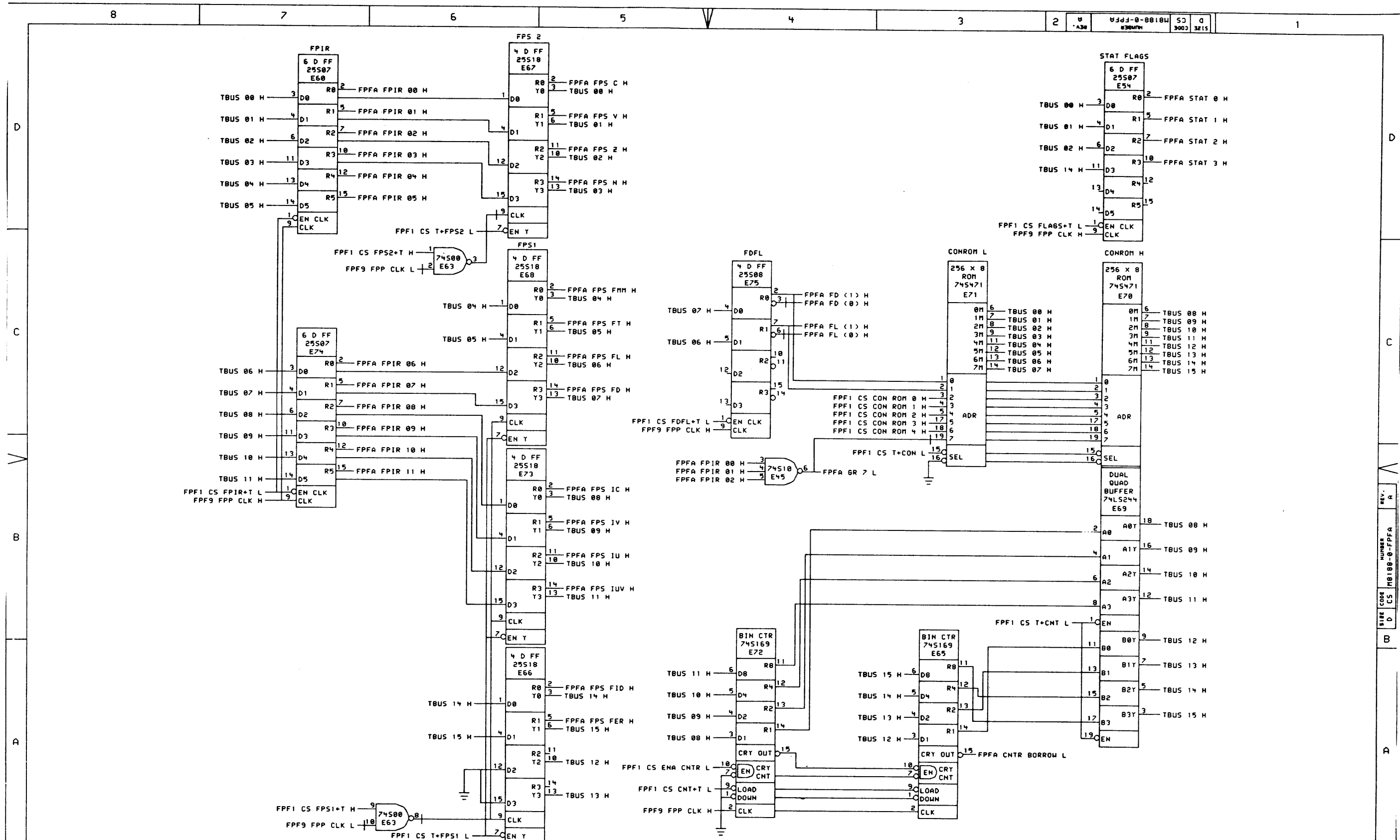
REV. A
NUMBER M8188-0-PPF8
SIZE CODE D CS



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REVISIONS		
CHK	CHANGE NO.	REV

	DRW: <i>Looney</i>	DATE: 16-FEB-81	ENG: <i>Wick Jones</i>	DATE: 10-2-81	TITLE: RESTE, CSEL, MIB & DAL ENA LOGIC
	CHK: <i>A. C. H. A. M. H.</i>	DATE: 16-FEB-81 13:54	DATE: 10-2-81	BOARD LOCATION: SHEET 1 OF 1	SIZE CODE: D CS M8188-0-PPF9
PSI(TOWER) PPF98.DRW		NEXT HIGHER ASSEMBLY: B-DD-M8188-0	NUMBER: M8188-0-PPF9		REV: A
FIRST USED ON OPTION/MODEL: FPF11					

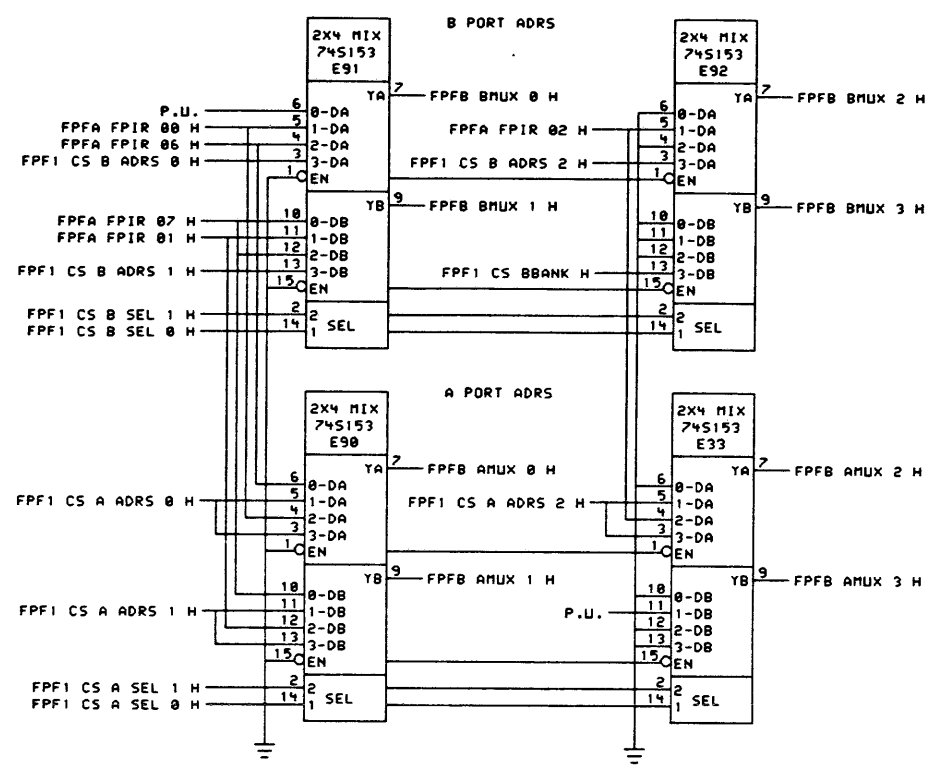


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REVISIONS	
CHK	CHANGE NO. REV

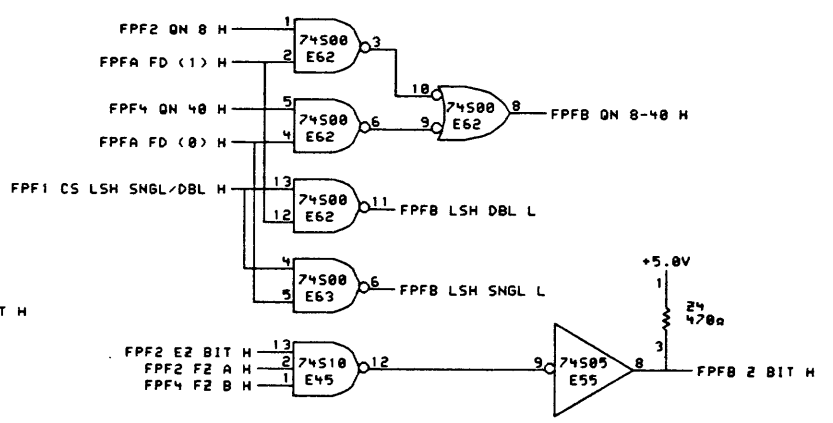
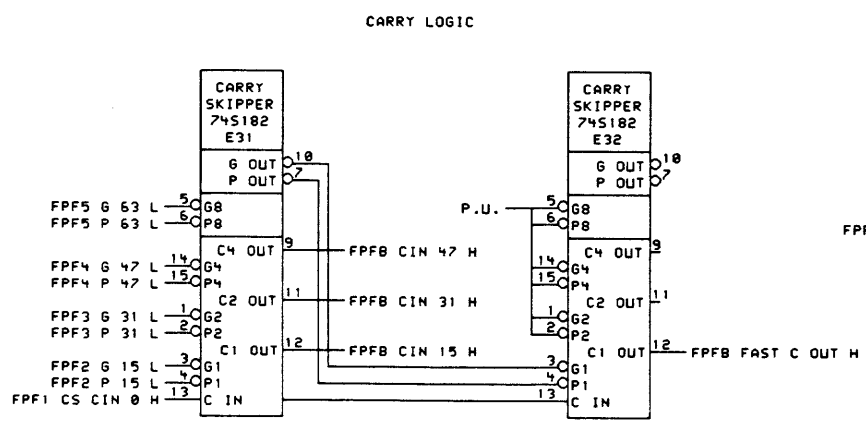
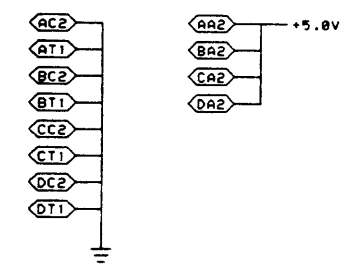
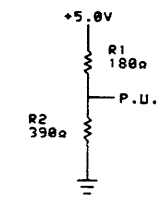
	DR: <i>J. Family</i>	DATE: 16-FEB-81	ENG: <i>[Signature]</i>	DATE: 19-FEB-81	TITLE: T-BUS RESOURCES
	CHK: <i>D.G.</i>	DATE: 16-FEB-81	BOARD LOCATION: 1	SHEET: 1 OF 1	
FIRST USED ON OPTION/MODEL: FPF11		NEXT HIGHER ASSEMBLY: B-OD-M8188-0		SIZE CODE: D CS	NUMBER: M8188-0-FPFA
				REV.:	A

SIZE CODE NUMBER REV.
 D CS M8188-0-FPFA A



B PORT CHANNEL
 0 X3:0R.X1 = AC.OR.1
 1 X7:X0 = FSRC
 2 X3:X0 = AC
 3 X17:X10 = B ROM * BBANK

A PORT CHANNEL
 0 X3:X0 = AC (FPIR <7:6>)
 1 X17:X10 = A ROM
 2 X7:X0 = F SRC / FDST (FPIR <2:0>)
 3 L0 ADRS



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REVISIONS		
CHK	CHANGE NO.	REV

digital DATE 16-FEB-81 ENG. DATE 16-FEB-81 TITLE: MISC. SLICE LOGIC
 CHK'D: [Signature] DATE BOARD LOCATION: SHEET 1 OF 1
 PS1CTOWER.FPFBB.DRW 16-FEB-81 15:13 NEXT HIGHER ASSEMBLY: B-DD-M8188-0
 FIRST USED ON OPTION/MODEL: FPF11

SIZE	CODE	NUMBER	REV.
D	CS	M8188-0-PPFB	A

