D O R A D O S C H E M A T I C S

I n s t r u c t i o n F e t c h U n i t

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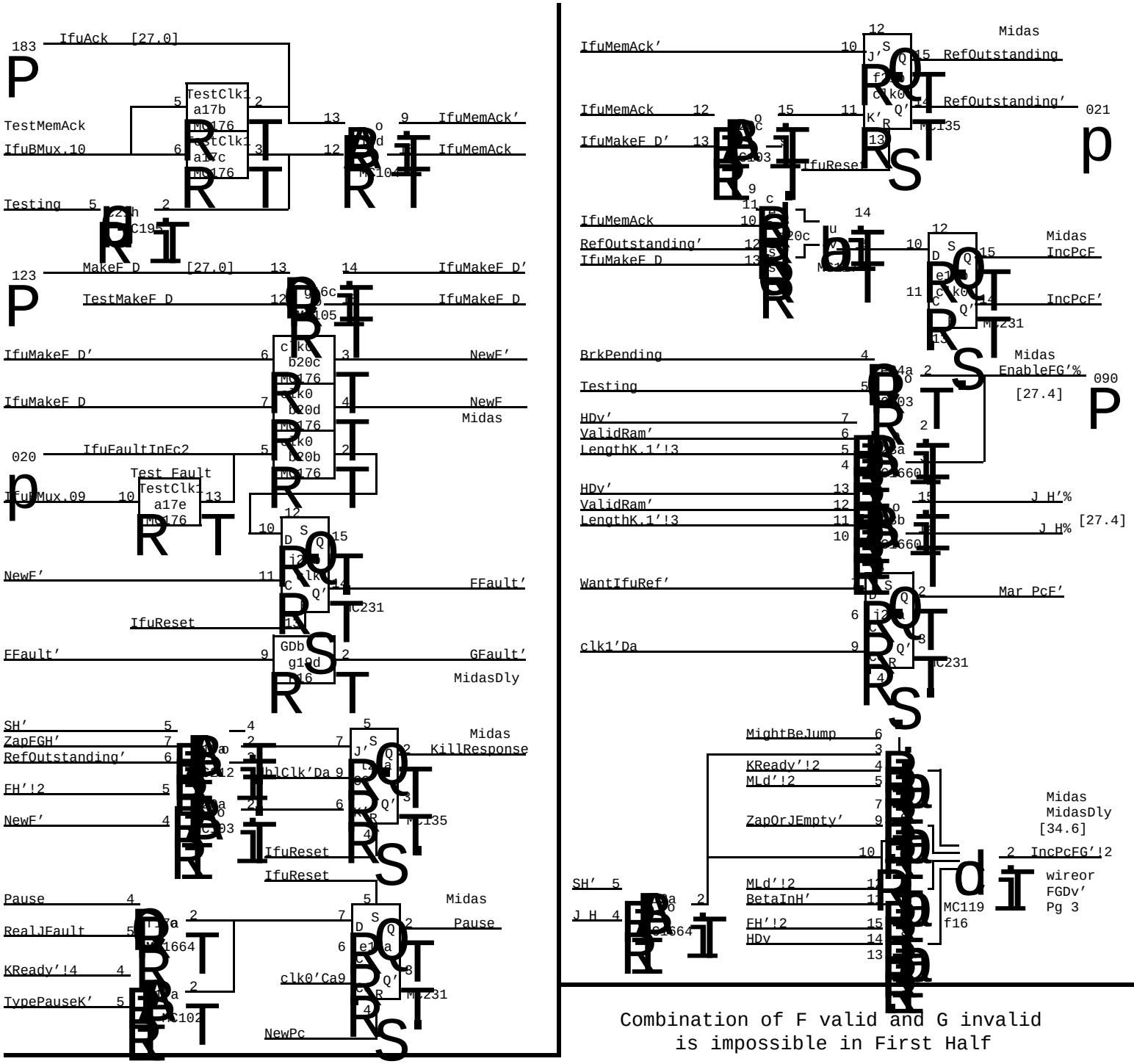
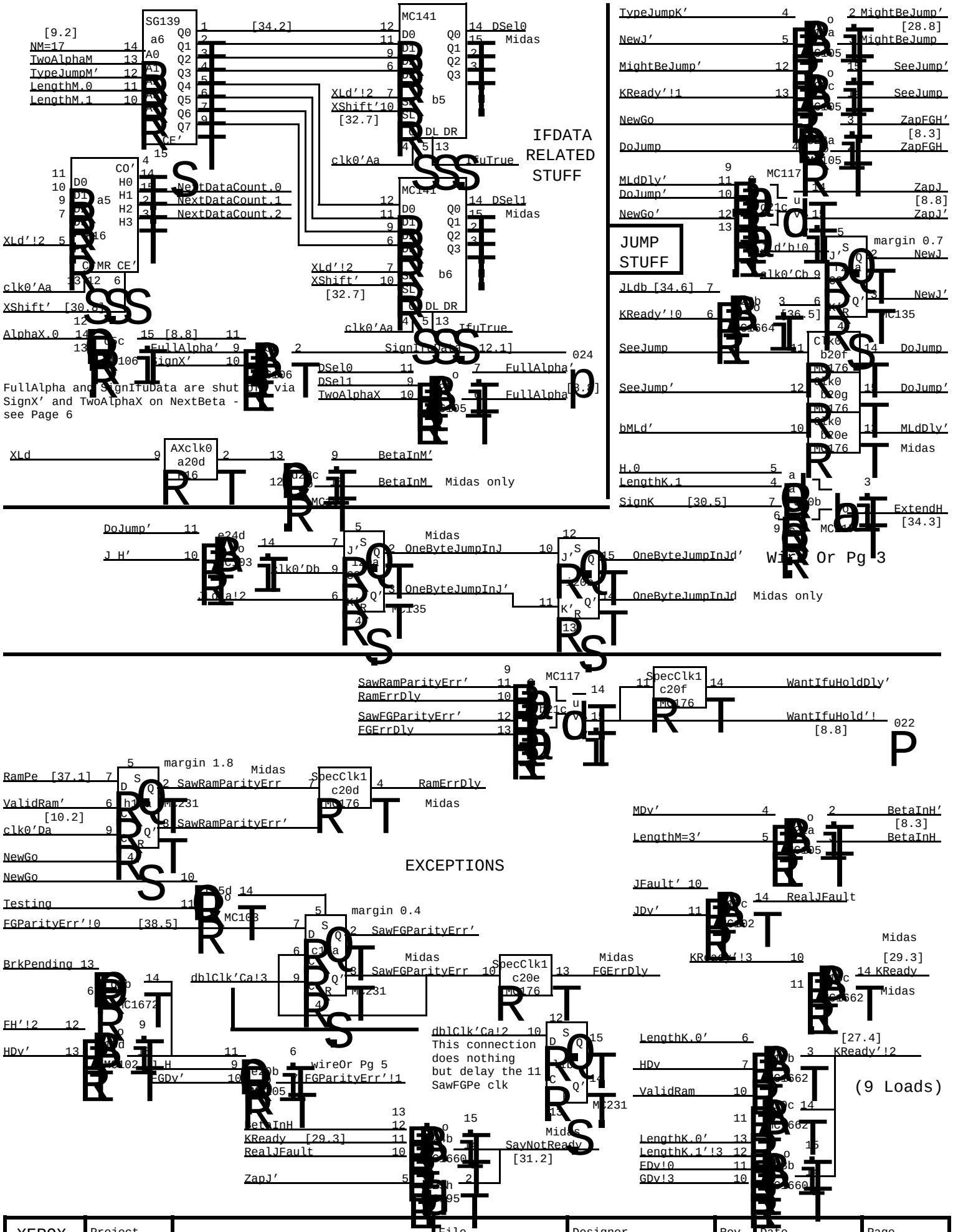
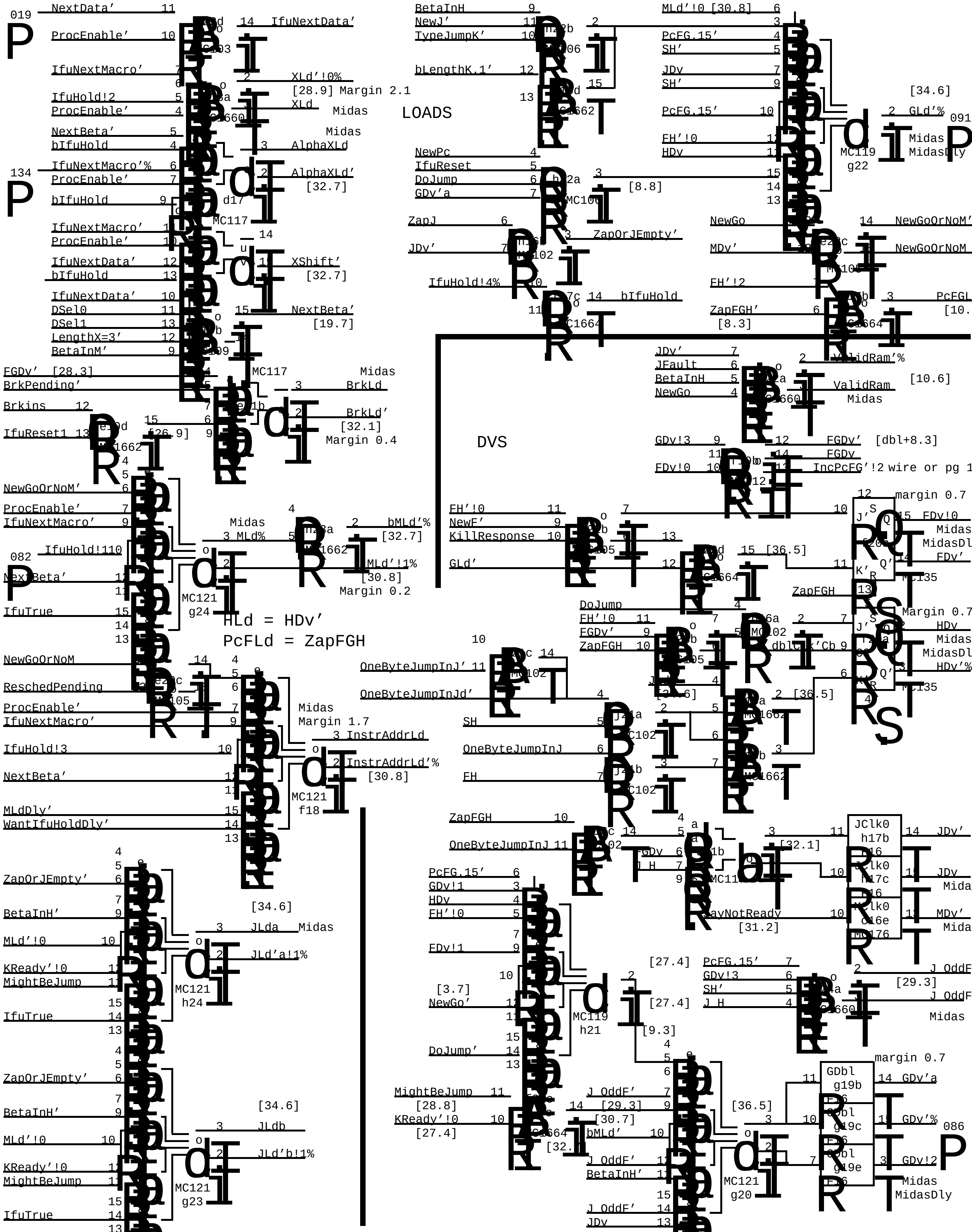
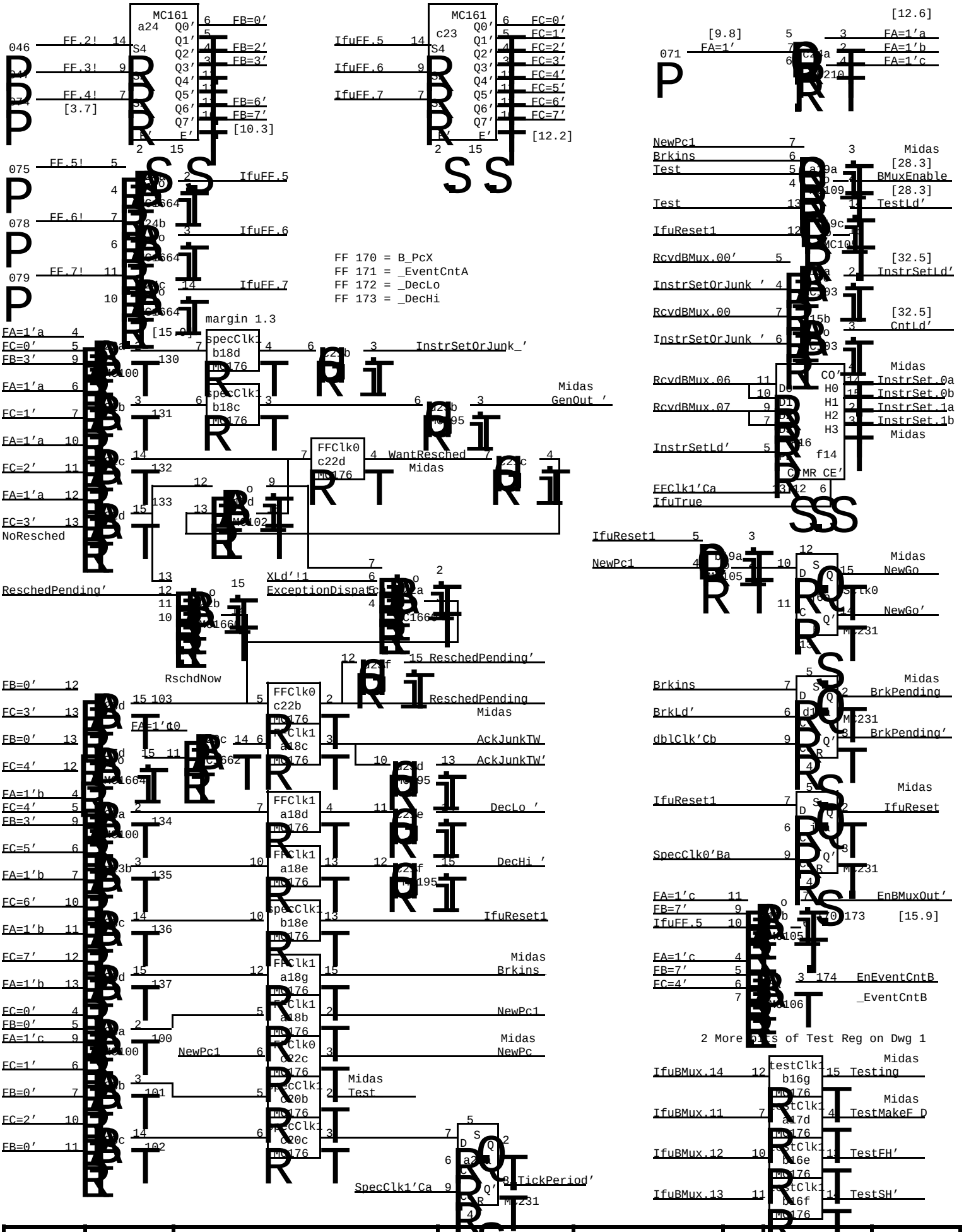

IfuAck [27.0]
TestClk1 a17b MC176
TestClk1 a17c MC176
TestMemAck
IfuBMux.10
Testing
IfuMemAck'
IfuMemAck
MakeF D [27.0]
TestMakeF D
IfuMakeF D'
IfuMakeF D
NewF'
NewF
Midas
IfuFaultInEc2
Test Fault
TestClk1 a17e MC176
IfuBMux.09
NewF'
FFault'
IfuReset
FFault'
GDb g10d
GFault'
MidasDly
SH'
ZapFGH'
RefOutstanding'
FH'!2
NewF'
Midas KillResponse
IfuReset
IfuReset
Pause
RealJFault
KReady'!4
TypePauseK'
Midas Pause
clk0'Ca9
NewPc
Can't detect the holes created by X_M or AlphaM_H because the Loads aren't ready until after T1, due to Hold
IfuMemAck'
RefOutstanding
IfuMemAck
IfuMakeF D'
RefOutstanding'
IfuMemAck
RefOutstanding'
IfuMemAck
RefOutstanding'
IfuMakeF D
Midas IncPcF
IncPcF'
BrkPending
Testing
HDv'
ValidRam'
LengthK.1'!3
HDv'
ValidRam'
LengthK.1'!3
Midas EnableFG'%
[27.4]
J H'%
J H%
[27.4]
WantIfuRef'
Mar PcF'
clk1'Da
MightBeJump
KReady'!2
MLd'!2
ZapOrJEmpty'
Midas MidasDly [34.6]
IncPcFG'!2
wireor FGDv' Pg 3
SH' 5
J H 4
MLd'!2
BetaInH'
FH'!2
HDv
MC119 f16
Combination of F valid and G invalid is impossible in First Half
(B_pipe...)
FA=1'c
FB=6'
Midas ThreeOutOfFive
NewPc
ASEL.0'
Testing
Pause
FA=1'c [12.6]
FB=2'
Midas [15.0]
WantIfuRef'%
Proc using Mar
DoJump'
HDv'
GDv'
NewF'
GDv!1
MDv'
JDv'
MDv'
RealPcFG.15
IfuTrue
MC121 h19
[9.3]
FDv'
NewF'
[13.1]
FDv!1
RefOutstanding
FDv!1
OtherHole'
RefOutstanding
FDv!1
GDv!1
NewF
MC121 h20
023
XEROX PARC
Project Dorado
IFU Mem Req Logic
File ifu01.sil
Designer S. Ornstein
Rev Ch
Date 10/19/79
Page 01

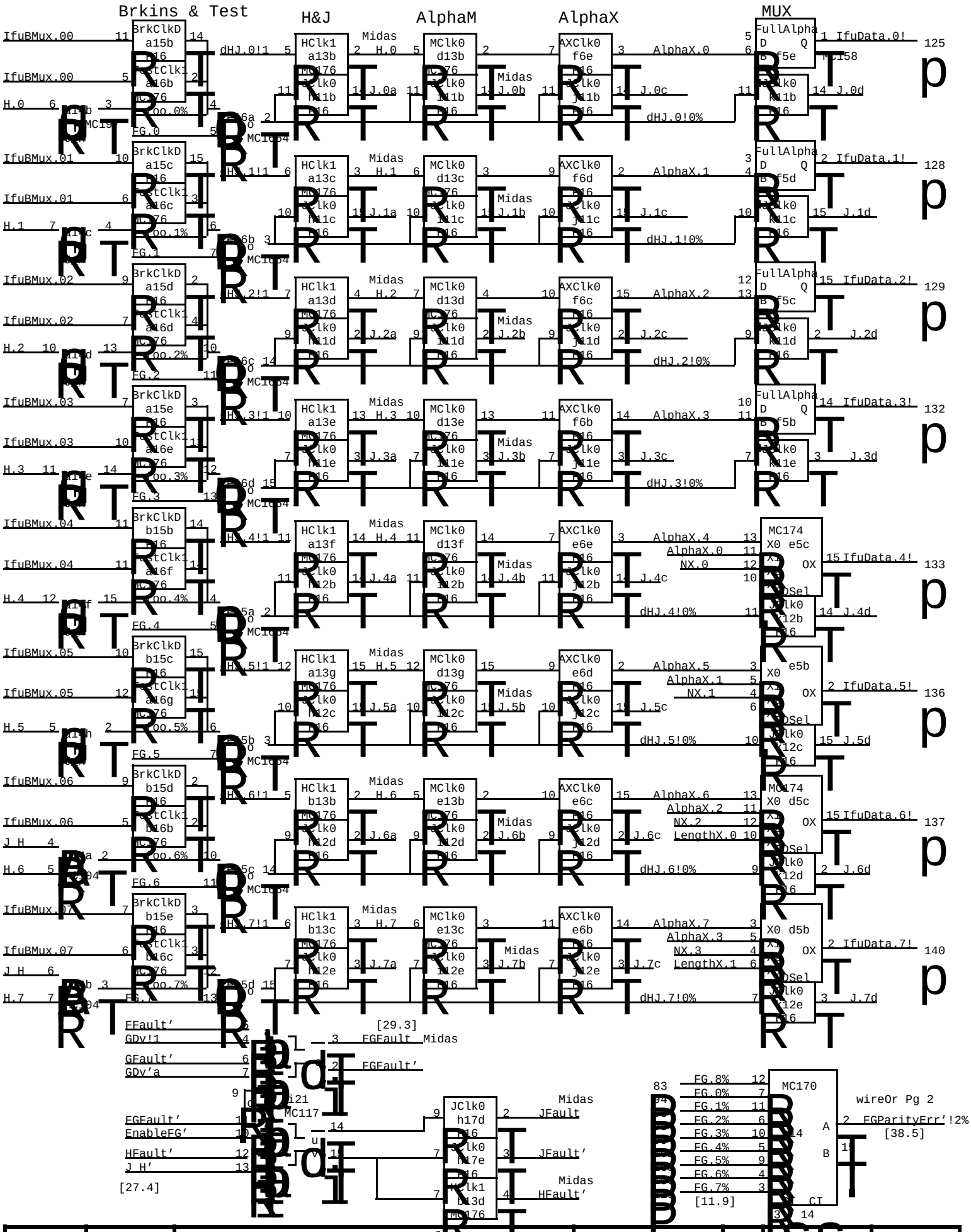

IFDATA RELATED STUFF
JUMP STUFF
EXCEPTIONS
FullAlpha and SignIfuData are shut off via SignX' and TwoAlphaX on NextBeta - see Page 6
Midas only
(9 Loads)
This connection does nothing but delay the SawFGPe clk
XEROX PARC
Project Dorado
Ifdata, Jumps, & Exceptions
File ifu02.sil
Designer S. Ornstein
Rev Ch
Date 12/28/79
Page 02

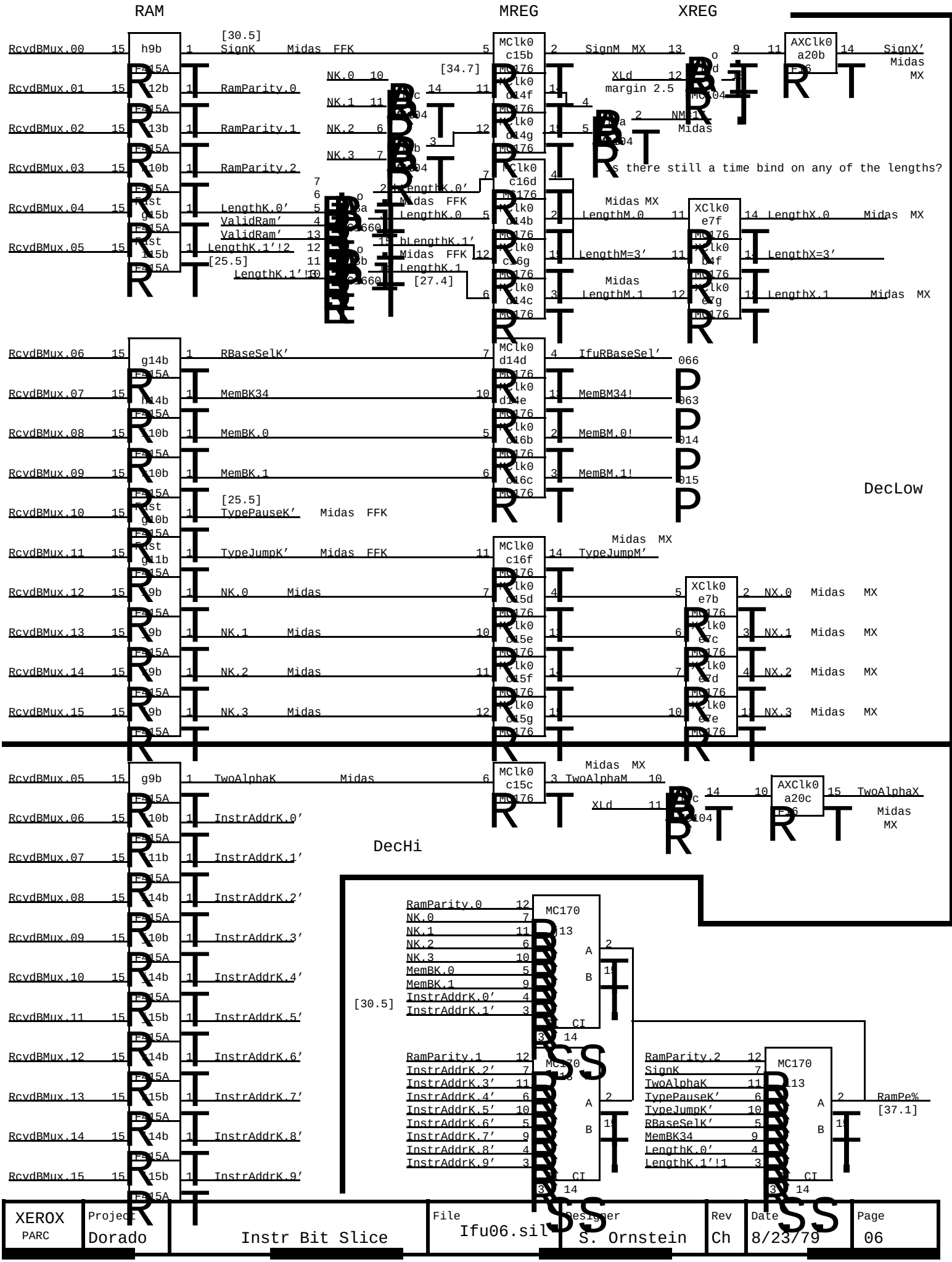


XEROX PARC	Project		File	Designer	Rev	Date	Page
	Dorado	Loads and DVs	ifu03.sil	S.Ornstein	Ch	10/19/79	03

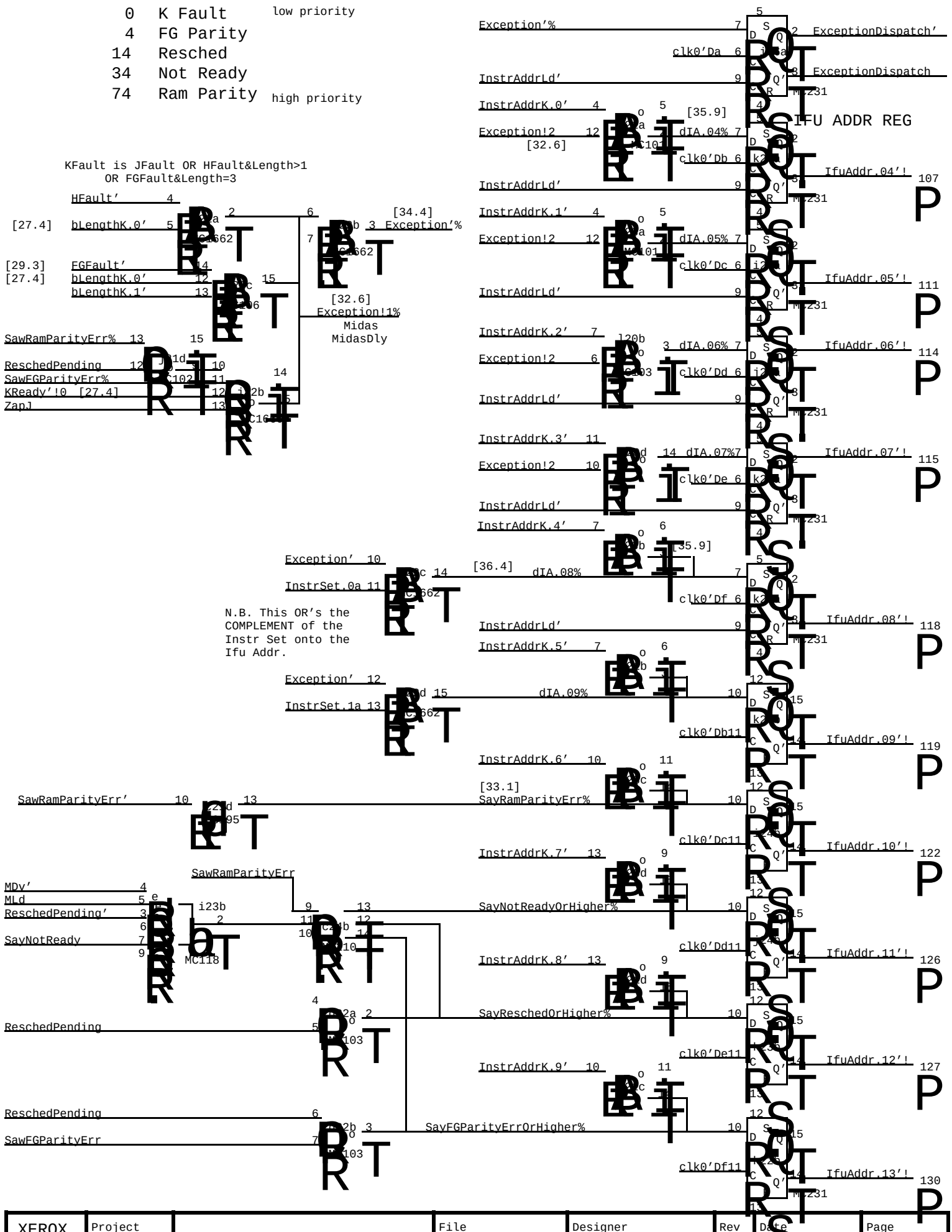


XEROX PARC	Project		File	Designer	Rev	Date	Page
	Dorado	FF Decodes	ifu04.sil	S. Ornstein	Ch	8/08/80	04


Brkins & Test
H&J
AlphaM
AlphaX
MUX
IfuBMux.00
IfuBMux.01
IfuBMux.02
IfuBMux.03
IfuBMux.04
IfuBMux.05
IfuBMux.06
IfuBMux.07
H.0
H.1
H.2
H.3
H.4
H.5
H.6
H.7
BrkClkD a15b
BrkClkD a15c
BrkClkD a15d
BrkClkD a15e
BrkClkD b15b
BrkClkD b15c
BrkClkD b15d
BrkClkD b15e
RstClk1 a16b
RstClk1 a16c
RstClk1 a16d
RstClk1 a16e
RstClk1 a16f
RstClk1 a16g
RstClk1 b16b
RstClk1 b16c
FG.0
FG.1
FG.2
FG.3
FG.4
FG.5
FG.6
FG.7
HClk1 a13b
HClk1 a13c
HClk1 a13d
HClk1 a13e
HClk1 a13f
HClk1 a13g
HClk1 b13b
HClk1 b13c
MClk0 d13b
MClk0 d13c
MClk0 d13d
MClk0 d13e
MClk0 d13f
MClk0 d13g
MClk0 e13b
MClk0 e13c
AXClk0 f6e
AXClk0 f6d
AXClk0 f6c
AXClk0 f6b
AXClk0 e6e
AXClk0 e6d
AXClk0 e6c
AXClk0 e6b
MClk0 k11b
MClk0 k11c
MClk0 k11d
MClk0 k11e
MClk0 k12b
MClk0 k12c
MClk0 k12d
MClk0 k12e
Midas
H.0
H.1
H.2
H.3
H.4
H.5
H.6
H.7
J.0a
J.0b
J.0c
J.0d
J.1a
J.1b
J.1c
J.1d
J.2a
J.2b
J.2c
J.2d
J.3a
J.3b
J.3c
J.3d
J.4a
J.4b
J.4c
J.4d
J.5a
J.5b
J.5c
J.5d
J.6a
J.6b
J.6c
J.6d
J.7a
J.7b
J.7c
J.7d
dHJ.0!0%
dHJ.1!0%
dHJ.2!0%
dHJ.3!0%
dHJ.4!0%
dHJ.5!0%
dHJ.6!0%
dHJ.7!0%
AlphaX.0
AlphaX.1
AlphaX.2
AlphaX.3
AlphaX.4
AlphaX.5
AlphaX.6
AlphaX.7
NX.0
NX.1
NX.2
NX.3
LengthX.0
LengthX.1
FullAlpha
MC174
X0 e5c
X0 e5b
X0 d5c
X0 d5b
OX
ODSel
IfuData.0!
IfuData.1!
IfuData.2!
IfuData.3!
IfuData.4!
IfuData.5!
IfuData.6!
IfuData.7!
125
128
129
132
133
136
137
140
FEFault'
GDv!1
GFault'
GDv'a
EGFault'
EnableEG'
HFault'
J H'
[27.4]
[29.3]
FGFault
FGFault'
MC117
JClk0 h17d
JClk1 b13d
JClk0 k17e
JFault
JFault'
HFault'
MC170
wireOr Pg 2
FGParityErr'!2%
[38.5]
[11.9]
XEROX
PARC
Project
Dorado
Byte Bit Slice
File
ifu05.sil
Designer
S. Ornstein
Rev
Ch
Date
8/23/79
Page
05



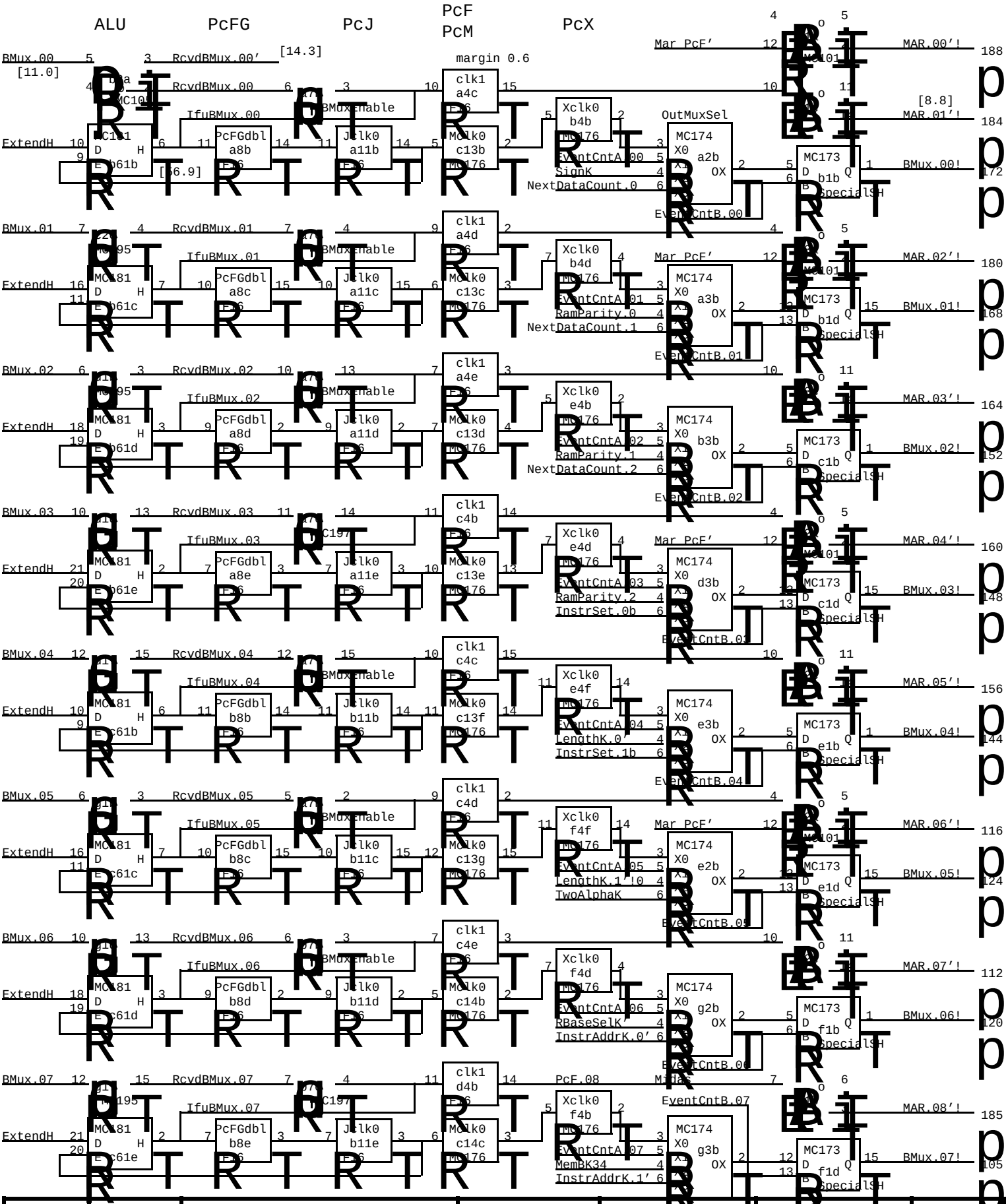
XEROX PARC	Project: Dorado	Instr Bit Slice	File: Ifu06.sil	Designer: S. Ornstein	Rev: Ch	Date: 8/23/79	Page: 06



XEROX PARC	Project		File	Designer	Rev	Date	Page
	Dorado	InstrAddr Bit Slice	ifu07.sil	S. Ornstein	Ch	8/08/80	07

THE HIGH ORDER BYTE OF THE PC PIPE

PcJ loads on JLd And not J_H, increments on JLd
PcF Loads on ZapFGH and increments on IncPcF
ALU turns of on BMuxEnable or BrkPending or IfuReset1
PcFG loads on PcFGLd and increments on IncPcFG



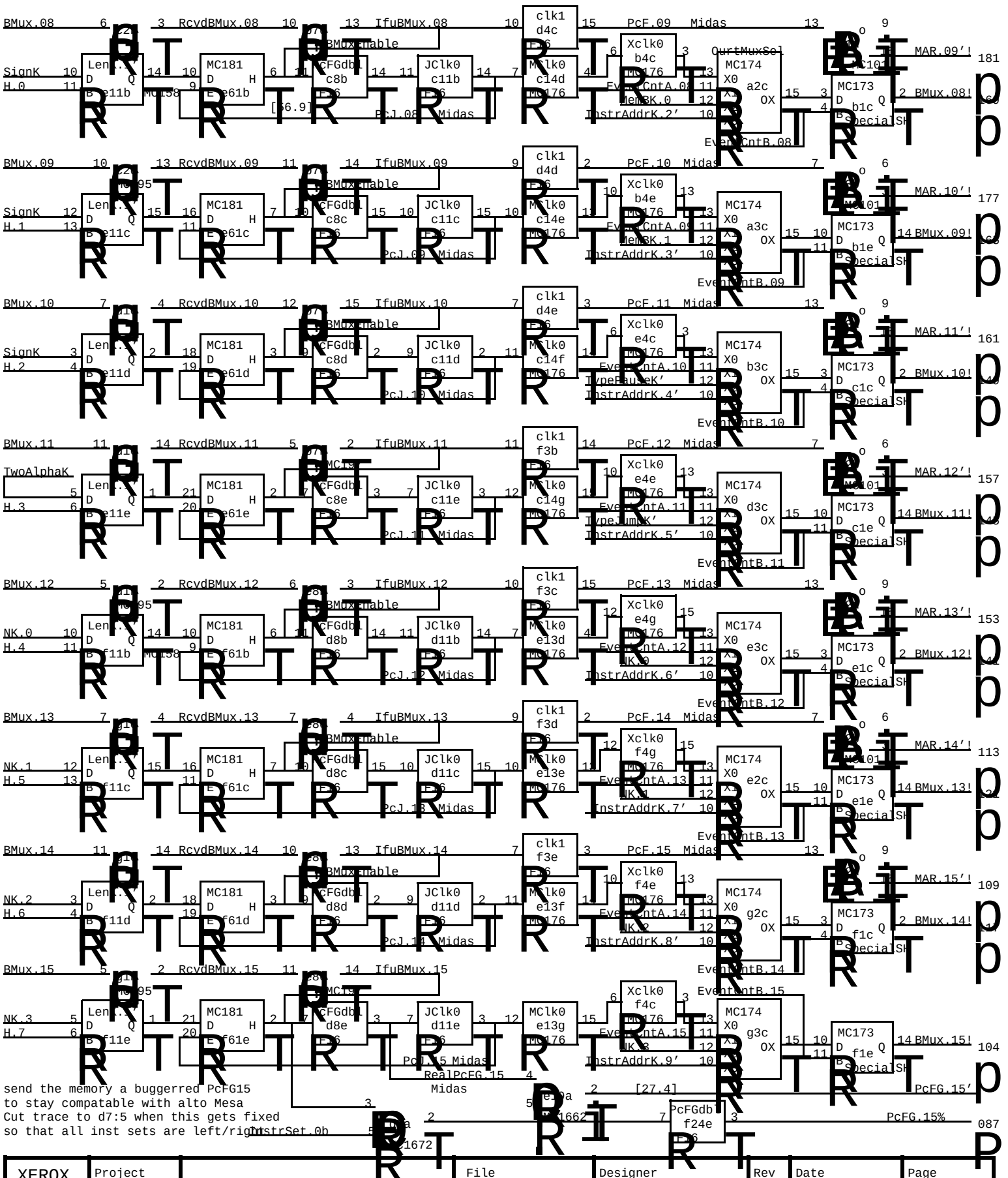
XEROX PARC	Project	File	Designer	Rev	Date	Page
	Dorado	PC Bit Slice (High byte)	Ifu08.sil	S. Ornstein	Ch	8/23/79	08

THE LOW ORDER BYTE OF THE PC PIPE

PcJ loads on JLd and not J_H, increments on JLd
PcF loads on ZapFGH and increments on IncPcF
ALU turns off on BMuxEnable or BrkPending or IfuReset
PcFG loads on PcFGLd and increments on IncPcFG

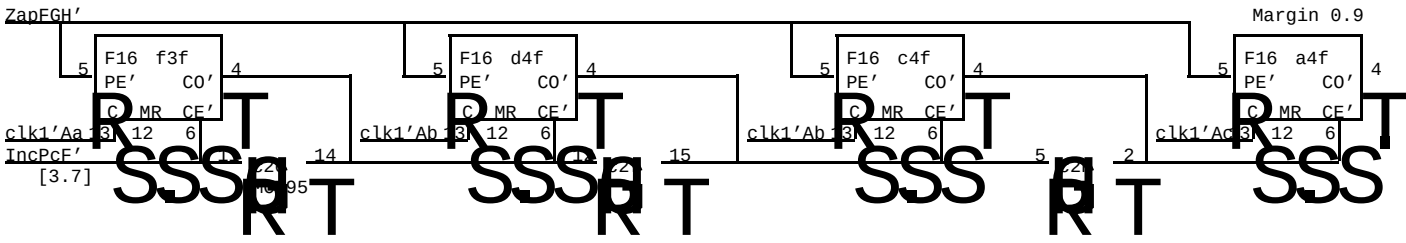
MUX ALU PcFG PcJ PcF PcM PcX

mux enable on ff.0-5



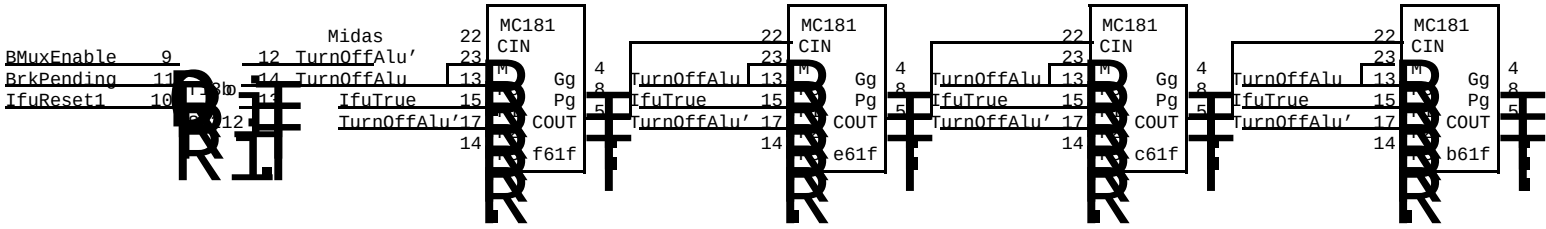
XEROX PARC	Project Dorado	PC Bit Slice(low byte)	File ifu09.sil	Designer S. Ornstein	Rev Ch	Date 8/14/79	Page 09

PcF Control



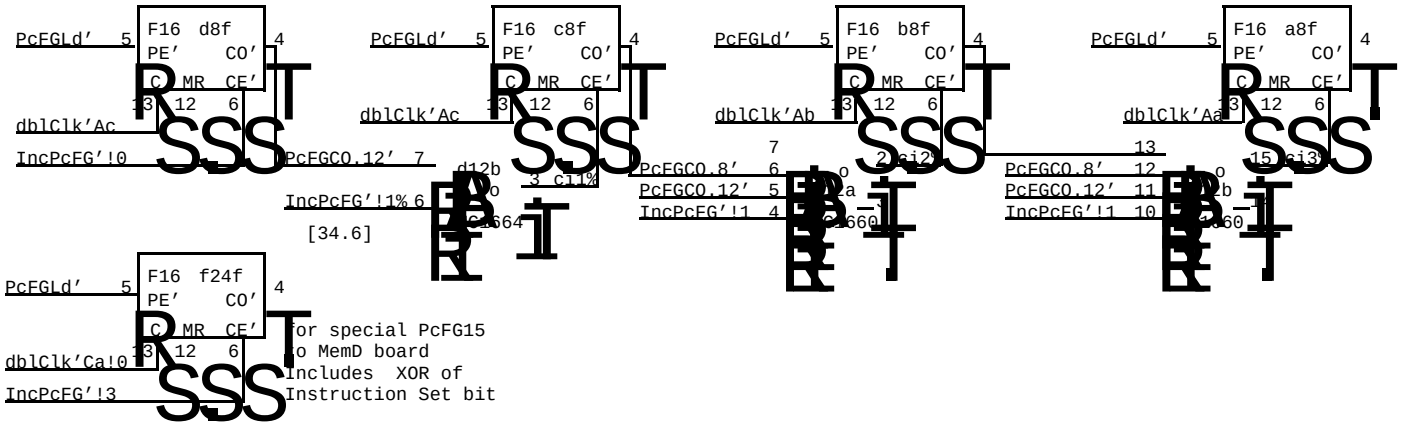
ALU Control

Low data in to high data out = 26.4



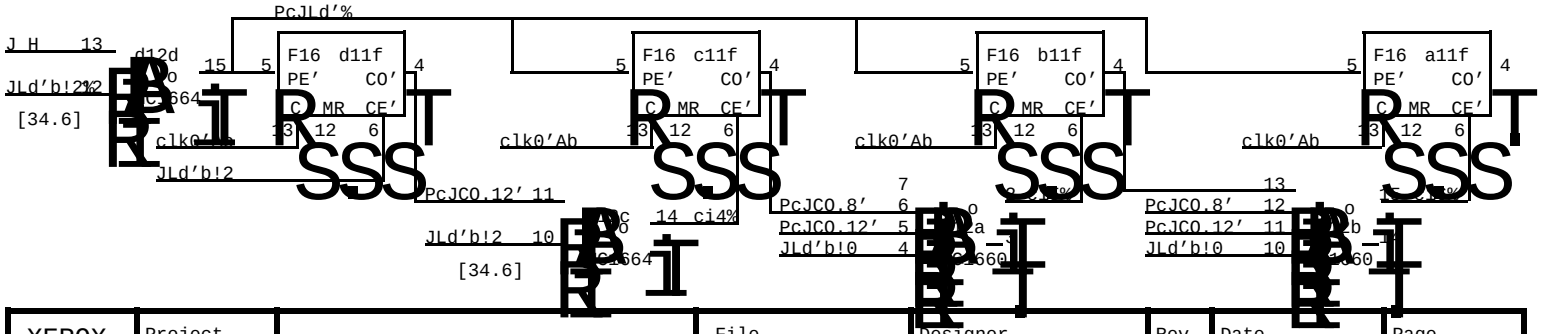
PcFG Control

[Margin 0.7 via Inc]

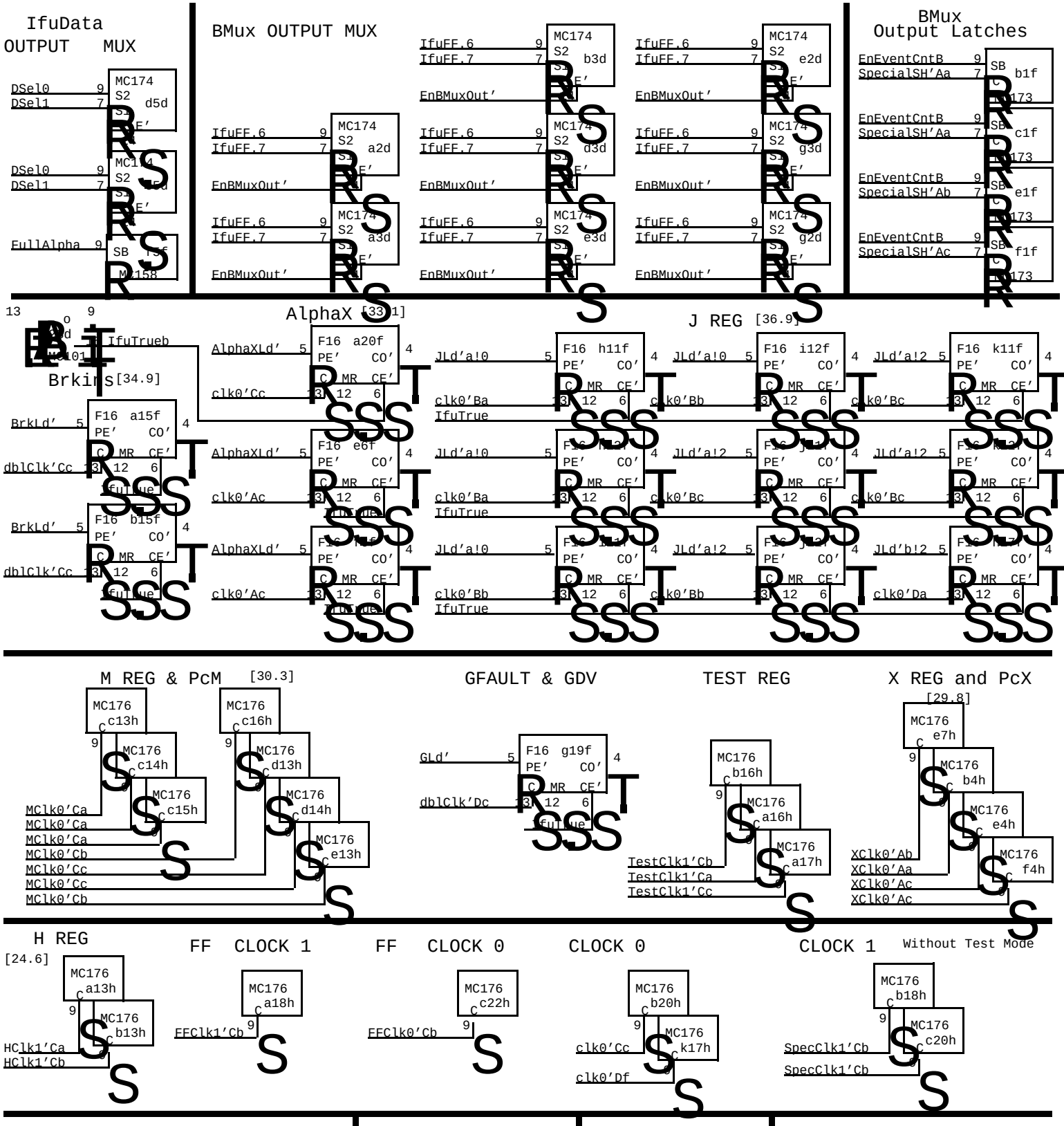


PcJ Control

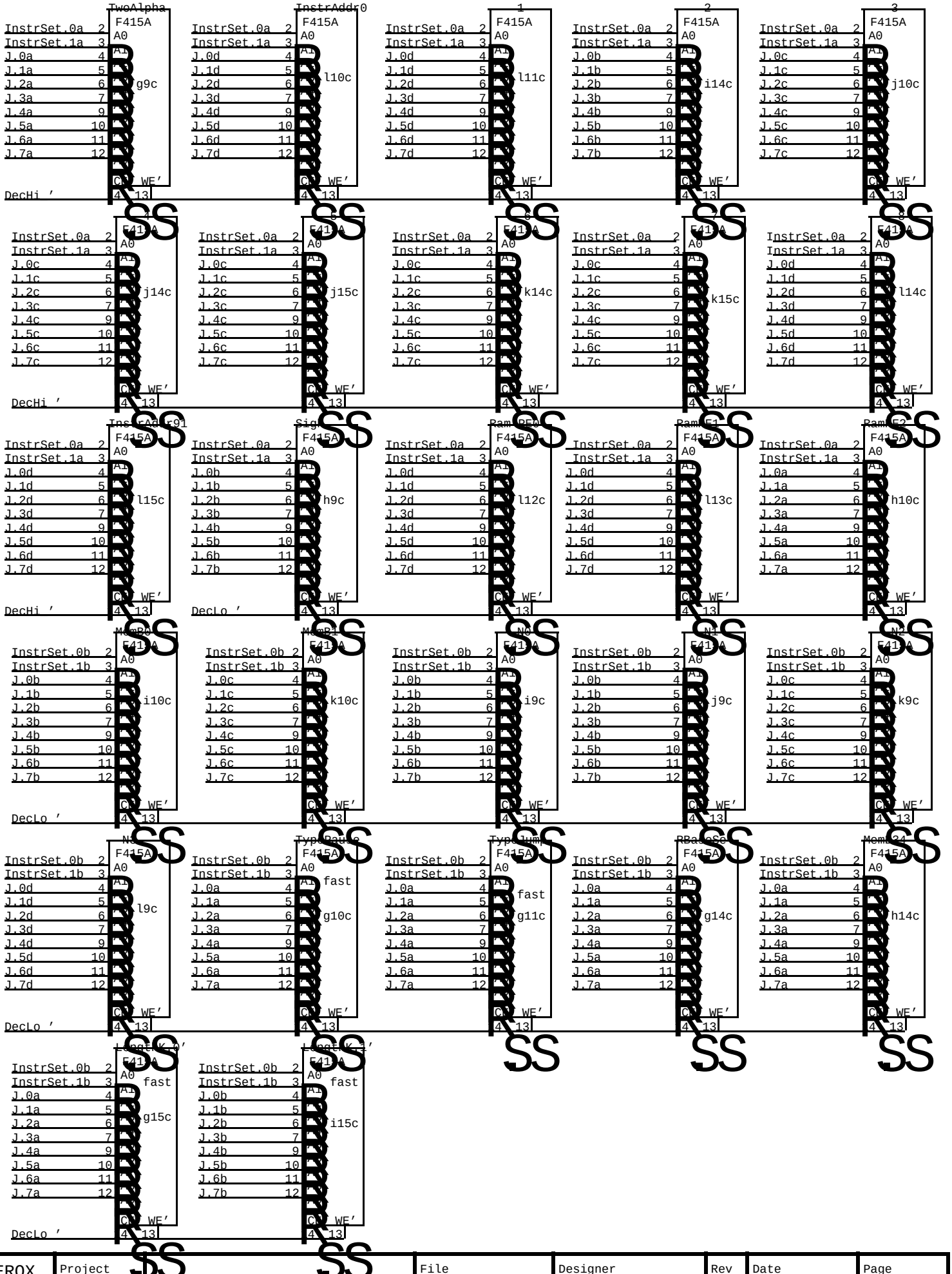
[Margin 0.7 via load and Inc]



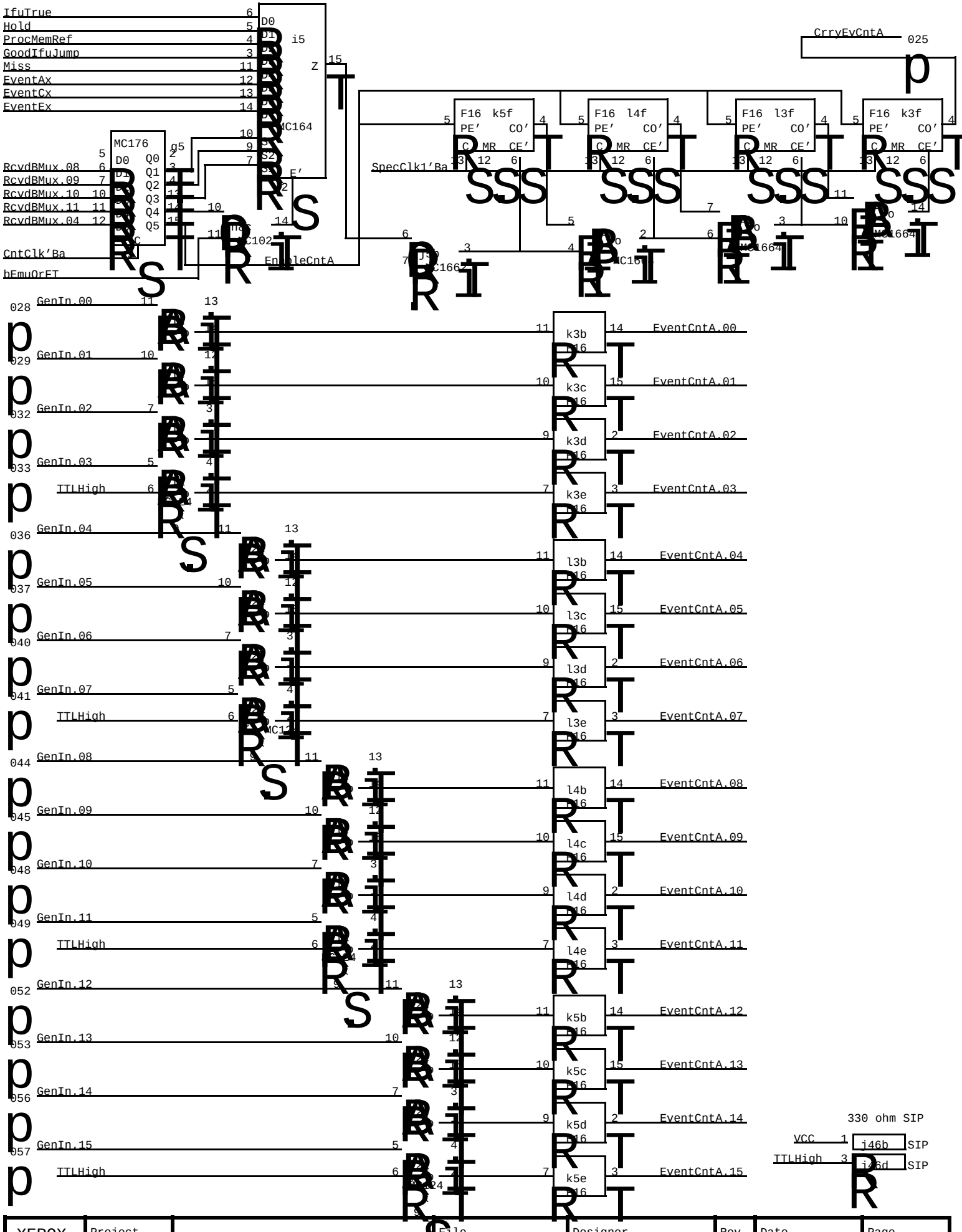
XEROX PARC	Project		File	Designer	Rev	Date	Page
	Dorado	Pc Control	ifu10.sil	S. Ornstein	Ch	8/23/79	10



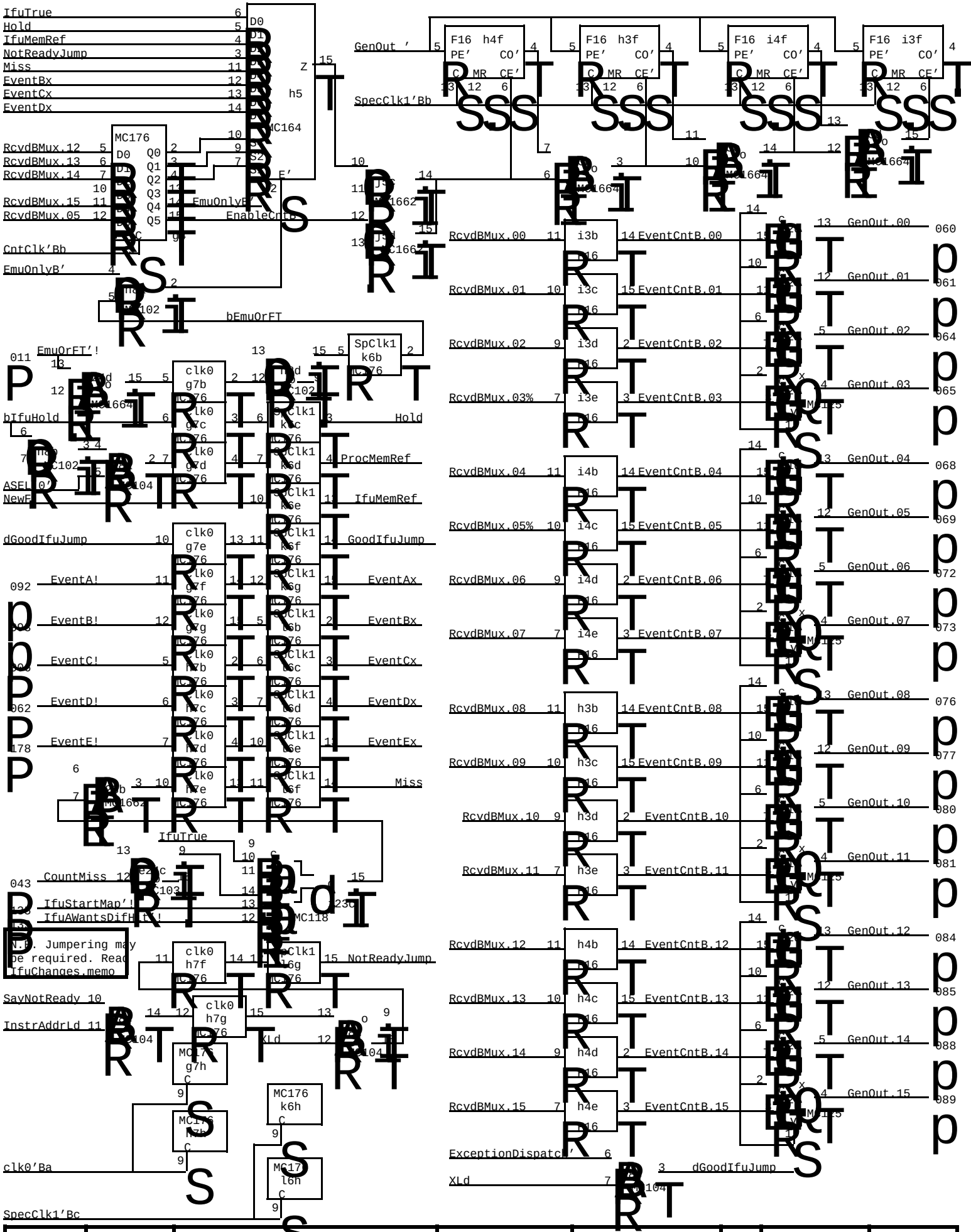
XEROX PARC	Project Dorado	CHIP CONTROL	File ifu11.sil	Designer S. Ornstein	Rev Ch	Date 8/23/79	Page 11



XEROX PARC	Project Dorado	Ram Control	File ifu12.sil	Designer S. Ornstein	Rev Ch	Date 8/23/79	Page 12

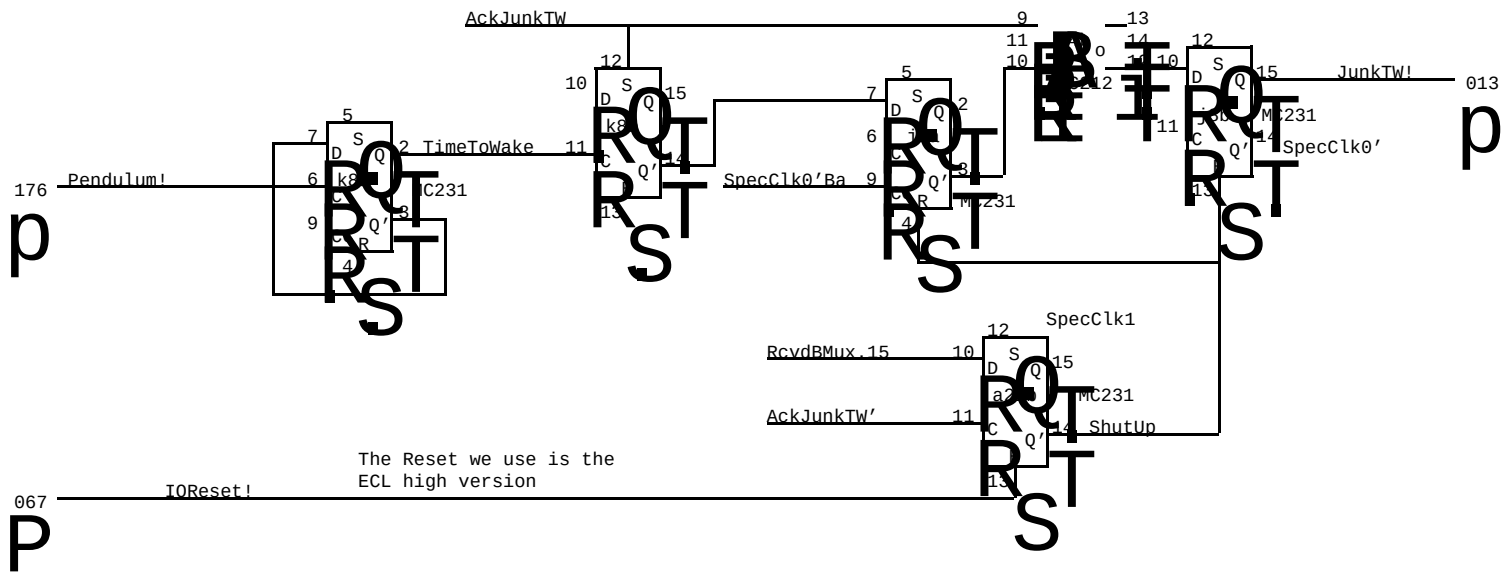


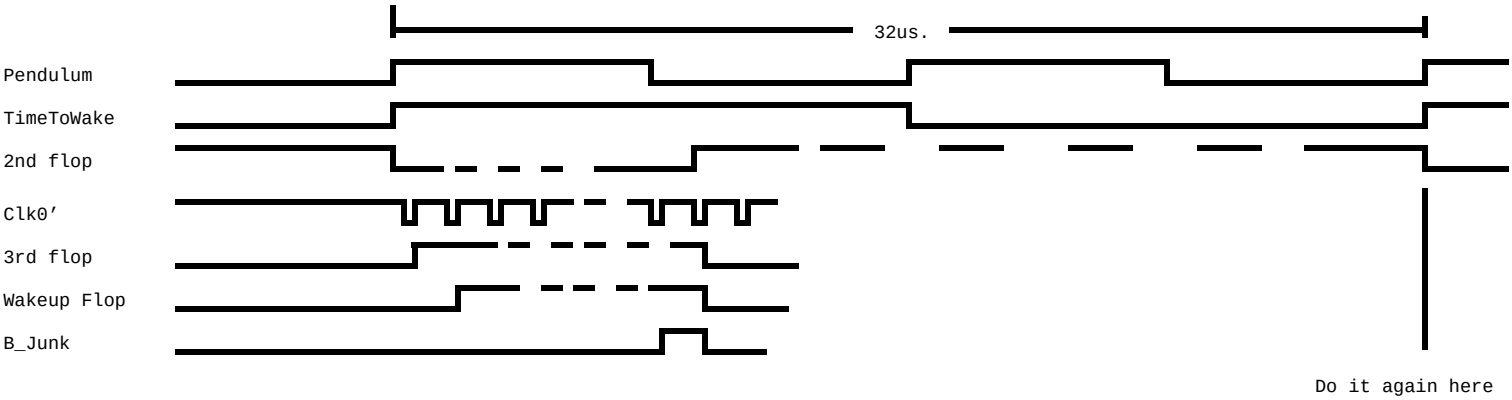
XEROX PARC	Project	File	Designer	Rev	Date	Page
	Dorado Event CounterA	1fu13.sil	S. Ornstein	Ch	1/12/80	13



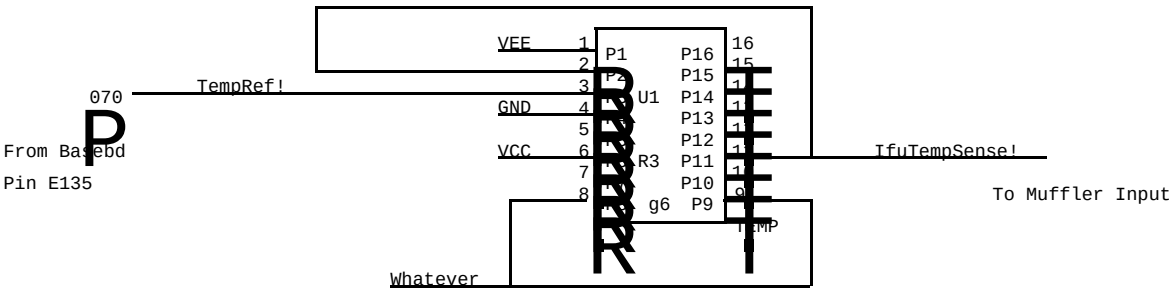
XEROX PARC	Project	File	Designer	Rev	Date	Page
	Dorado	ifu14.sil	S. Ornstein	Ch	12/21/79	14

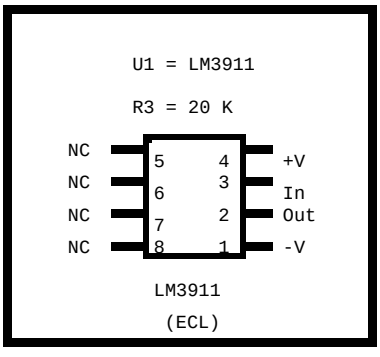
Event Counter B

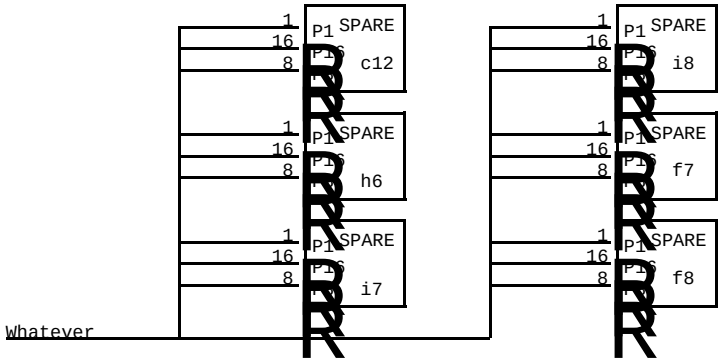




Temperature Sensor

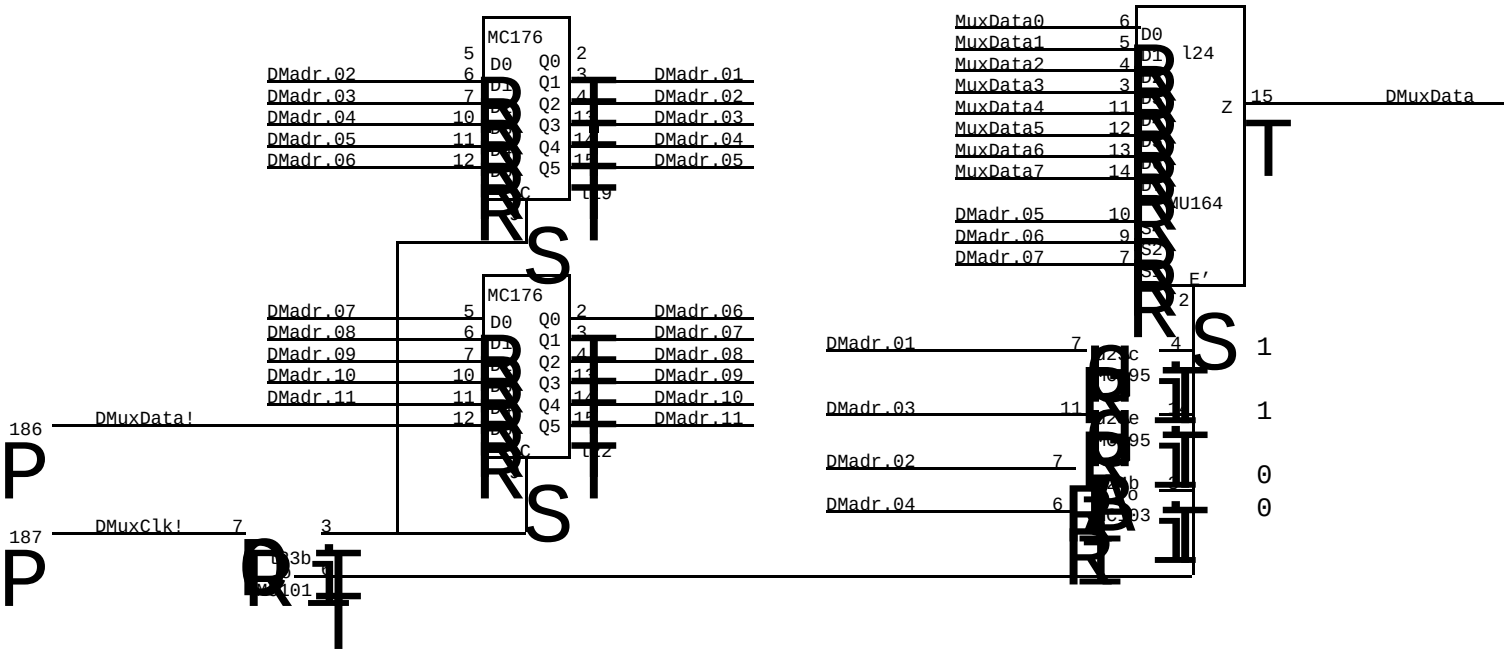




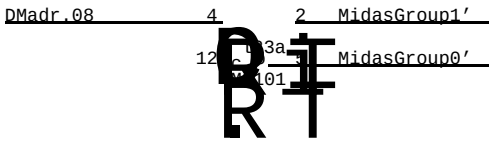


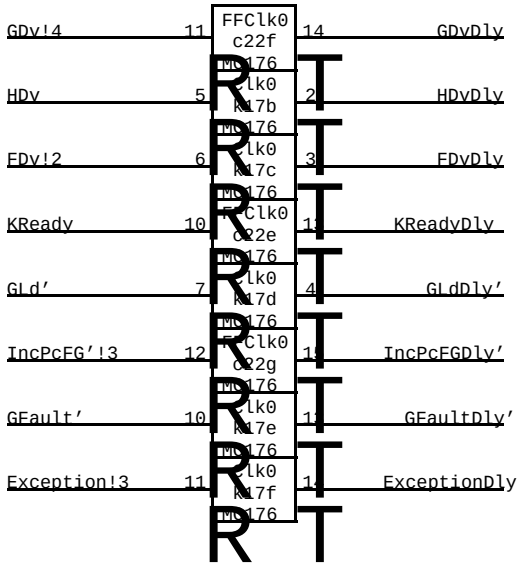
XEROX PARC	Project		File	Designer	Rev	Date	Page
	Dorado	Wakeups/Temp Sensor	ifu15.sil	S. Ornstein	Ch	1/12/80	15

Muffler Control

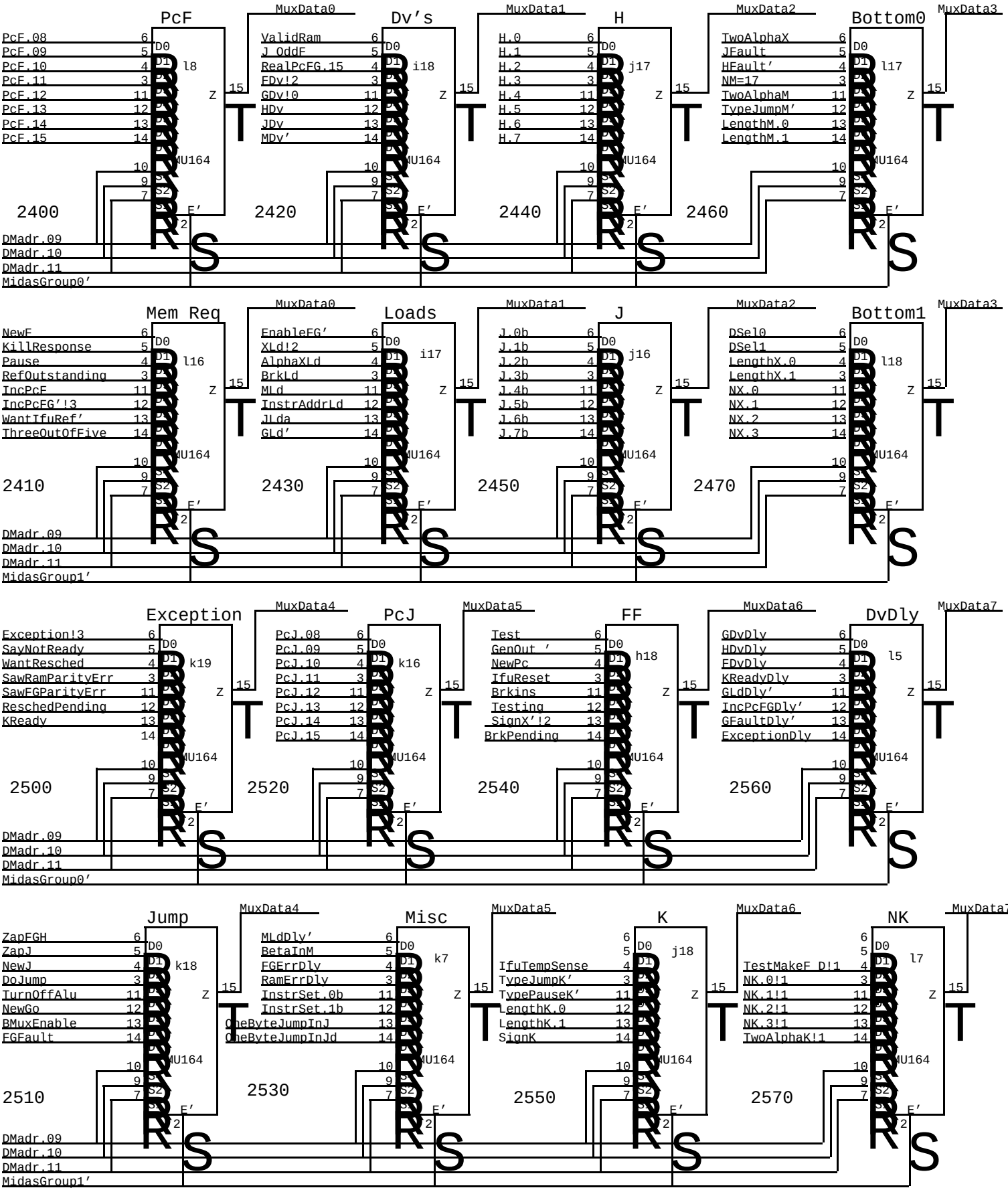


We respond to 2400 thru 2577
Tho we are allocated to 2777



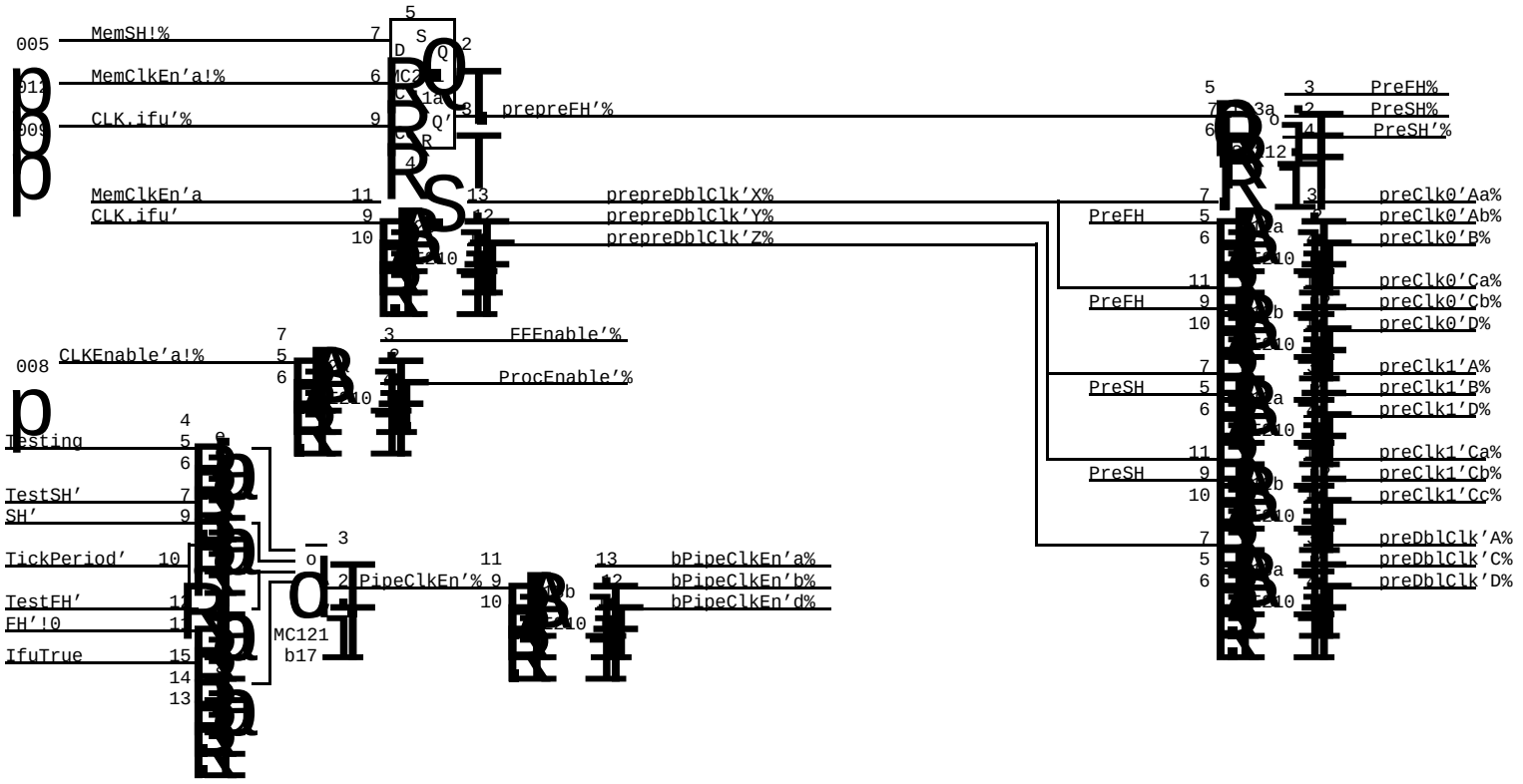


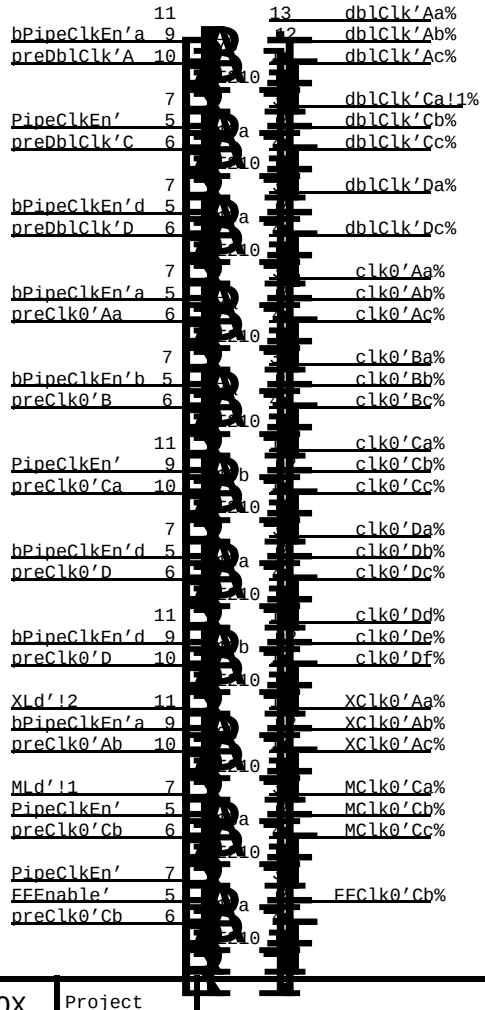
XEROX PARC	Project		File	Designer	Rev	Date	Page
	Dorado	DMUX CONTROL	Ifu16.sil	S. Ornstein	Ch	8/23/79	16

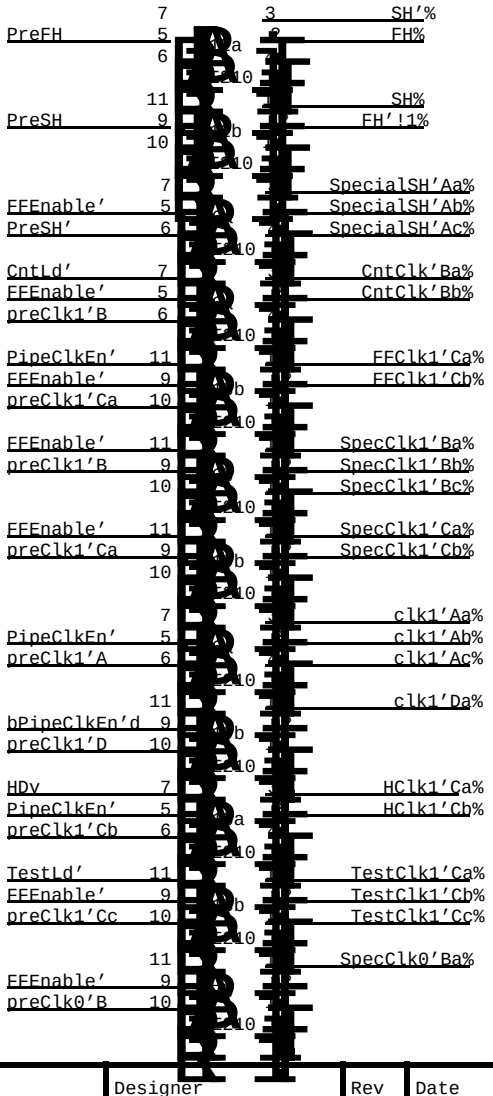


Word0:	MemRQ
Word1:	Loads
Word2:	HJ
Word3:	MX
Word4:	JmpExc
Word5:	PcJ
Word6:	FFK
Word7:	DvNK

XEROX PARC	Project		File	Designer	Rev	Date	Page
	Dorado	DMUX MUFFLERS	ifu17.sil	S. Ornstein	Ch	8/23/79	17







XEROX PARC	Project	File	Designer	Rev	Date	Page
	Dorado	IFU Clock Control	ifu18.sil	S. Ornstein	Ch	8/23/79	18

GenIn (28-57) | GenOut (60-89)

MAR 0,8,1,9,2,10 | MAR 3,11,4,12,5,13 | IfuData

BMux 0,8,1,9 | BMux 2,10,3,11,4,12 | BMux 5,13,6,14 | BMux 7,15

	A	B	C	D	E	F
01	A MAR 00 b MAR 08 c MAR 01 d MAR 09 101	b BMux 00 SS c BMux 08 d BMux 01 e BMux 09 173	b BMux 02 SS c BMux 10 d BMux 03 e BMux 11 173	b RcvdBMux 02 c RcvdBMux 10 d RcvdBMux 03 e RcvdBMux 11 f RcvdBMux 04 h RcvdBMux 12 195	b BMux 04 SS c BMux 12 d BMux 05 e BMux 13 173	b BMux 06 SS c BMux 14 d BMux 07 e BMux 15 173
02	b dBMux 00 c dBMux 08 174	a RcvdBMux 00 B FullAlpha c IfuTrue 105	b RcvdBMux 08 c RcvdBMux 01 d RcvdBMux 09 e PcFCarry f PcFCarry h PcFCarry 195	A MAR 04 b MAR 12 c MAR 05 d MAR 13 101	b dBMux 05 c dBMux 13 174	A MAR 06 b MAR 14 c MAR 07 d MAR 15 101
03	b dBMux 01 c dBMux 09 174	b dBMux 02 c dBMux 10 174	A MAR 02 b MAR 10 c MAR 03 d MAR 11 101	b dBMux 03 c dBMux 11 174	b dBMux 04 c dBMux 12 174	b PcF 12 c PcF 13 d PcF 14 e PcF 15 C1 F16
04	b c PcF 01 d PcF 02 e PcF 03 C1 F16	b PcX 00 c PcX 08 d PcX 01 e PcX 09 f LengthX=3’ g X0 176	b PcF 04 c PcF 05 d PcF 06 e PcF 07 C1 F16	b PcF 08 c PcF 09 d PcF 10 e PcF 11 C1 F16	b PcX 02 c PcX 10 d PcX 03 e PcX 11 f PcX 04 g PcX 12 X0 176	b PcX 07 c PcX 15 d PcX 06 e PcX 14 f PcX 05 g PcX 13 X0 176
05	b c NextData 0 d NextData 1 e NextData 2 C0 F16	DSel0 C0 141	A EnEventCntB b SignIfuData c AlphaX’ 106	b IfuData 7 c IfuData 6 174	b IfuData 5 c IfuData 4 174	b IfuData 3 c IfuData 2 d IfuData 1 e IfuData 0 158
06	DSelProm 139	DSel1 C0 141	a clk1’ A b 210	a SpecSH A b XClk0 A 210	b AlphaX 07 c AlphaX 06 d AlphaX 05 e AlphaX 04 C0 F16	b AlphaX 03 c AlphaX 02 d AlphaX 01 e AlphaX 00 C0 F16
07	b IfuBMux 00 c IfuBMux 01 d IfuBMux 02 e IfuBMux 03 f IfuBMux 04 h IfuBMux 05 197	b IfuBMux 06 c IfuBMux 07 d IfuBMux 08 e IfuBMux 09 f IfuBMux 10 h IfuBMux 11 197	a clk0’ A b dblclk A 210	a PcFG.15 b dSaw FGPE c 1672	b NX.0 c NX.1 d NX.2 e NX.3 f LengthX.0 g LengthX.1 X0 176	
08	b PcFG 00 c PcFG 01 d PcFG 02 e PcFG 03 C2 F16	b PcFG 04 c PcFG 05 d PcFG 06 e PcFG 07 C2 F16	b PcFG 08 c PcFG 09 d PcFG 10 e PcFG 11 C2 F16	b PcFG 12 c PcFG 13 d PcFG 14 e PcFG 15 C2 F16	b IfuBMux 12 c IfuBMux 13 d IfuBMux 14 e IfuBMux 15 f h 197	
09		b ALU 00 c ALU 01 d ALU 02 e ALU 03 181	b ALU 04 c ALU 05 d ALU 06 e ALU 07 181		b ALU 08 c ALU 09 d ALU 10 e ALU 11 181	b ALU 12 c ALU 13 d ALU 14 e ALU 15 181
10						
11	b PcJ 00 c PcJ 01 d PcJ 02 e PcJ 03 C0 F16	b PcJ 04 c PcJ 05 d PcJ 06 e PcJ 07 C0 F16	b PcJ 08 c PcJ 09 d PcJ 10 e PcJ 11 C0 F16	b PcJ 12 c PcJ 13 d PcJ 14 e PcJ 15 C0 F16	b dALU 08 c dALU 09 d dALU 10 e dALU 11 158	b dALU 12 c dALU 13 d dALU 14 e dALU 15 158
12	a PcJCarry b PcJCarry 1660	a PcFGCarry b PcFGCarry 1660		a dIncPcFG b PcFGCarry c PcJCarry d PcJLd 1664	a FH b SH 210	a preClk1 b preClk1 210

XEROX PARC	Project	reference	File	Designer	Rev	Date	Page
	Dorado	Upper Left Quadrant	ifu19.sil	S. Ornstein	Ch	8/08/80	19

x RunRfsh
x CLK.ifu
x ClkEnable
x StartCycle

	102	84	68	52	36	20
01	b RcvdBMux 05 c RcvdBMux 13 d RcvdBMux 06 e RcvdBMux 14 f RcvdBMux 07 h RcvdBMux 15 195	A GenOut.11 b GenOut.10 c GenOut.09 d GenOut.08 125	A GenOut.07 b GenOut.06 c GenOut.05 d GenOut.04 125	A Genin.03 b Genin.02 c Genin.01 d Genin.00 124	A Genin.11 b Genin.10 c Genin.09 d Genin.08 124	A prepreFH'a b See Pg. 2 231
02	b dBMux 06 c dBMux 14 174	A GenOut.15 b GenOut.14 c GenOut.13 d GenOut.12 125	A GenOut.03 b GenOut.02 c GenOut.01 d GenOut.00 125	A Genin.07 b Genin.06 c Genin.05 d Genin.04 124	A Genin.150 b Genin.14 c Genin.13 d Genin.12 124	a ClkEnable b prepreDblClk 210
03	b dBMux 07 c dBMux 15 174	Spec 1 EventCntB F16	Spec 1 EventCntB F16	a b BCntCarry c BCntCarry d BCntCarry 1664	Spec 1 EventCntA F16	Spec 1 EventCntA F16
04	CntClk BCntMuxCntrl 176	Spec 1 EventCntB F16	Spec 1 EventCntB F16	a ACntCarry b ACntCarry c ACntCarry d 1664	a b dTWReq01 212	Spec 1 EventCntA F16
05	CntClk ACntMuxCntrl 176	BCntMux 164	ACntMux 164	a b dCntA c dCntB d dCntB 1662	Spec 1 EventCntA F16	DvDly MU164
06	Temp Sensor		a CntClk B b SpecClk1 B 210	A IfuReset b NewGo SpecClk0 231	b bEmuOrFT c Hold Spec 1 d ProcMemRef e IfuMemRef f GoodIfuJmp g EventAx 176	b EventBx c EventCx Spec 1 d EventDx e EventEx f Miss g NotRdyJmp 176
07	c0 Events 176	c0 Events 176		a clk0 B b SpecClk0 B 210	Misc MU164	NK MU164
08	a EventCntB b EventCntB c EventCntB D EventCntB 104	a BCntMuxEnb b bIfuHold' c ACntMuxEnb D bEmuOrFT 102		SpecClk0 A SyncedTTW b TWReq01 231	A TimeToWake b del TTW Pendulum 231	PcF MU164
09	TwoAlphaK 415	SignK 415	NK.0 415	NK.1 415	NK.2 415	NK.3 415
10	TypePauseK 415	Parity2 415	MEMBK.0 415	IfuAddr 3 415	MemBK.1 415	IfuAddr 0 415
11	TypeJumpK 415	b J0a c J1a c0 d J2a e J3a F16	b J0b c J1b c0 d J2b e J3b F16	b J0c c J1c c0 d J2c e J3c F16	b J0d c J1d c0 d J2d e J3d F16	IfuAddr 1 415
12	a preClk0 b preClk0 210	b J4a c J5a c0 d J6a e J7a F16	b J4b c J5b c0 d J6b e J7b F16	b J4c c J5c c0 d J6c e J7c F16	b J4d c J5d c0 d J6d e J7d F16	Parity0 415
	G	H	I	J	K	L

XEROX PARC	Project	reference	File	Designer	Rev	Date	Page
	Dorado	UPPER RIGHT Quadrant	ifu20.sil	S. Ornstein	Ch	8/08/80	20

	A	B	C	D	E	F
13	b H 0 HC1 c H 1 d H 2 e H 3 f H 4 g H 5 176	b H.6 HC1 c H.7 d HFault e f g 176	b PcM 00 MC0 c PcM 01 d PcM 02 e PcM 03 f PcM 04 g PcM 05 176	b AlphaM 0 MC0 c AlphaM 1 d AlphaM 2 e AlphaM 3 f AlphaM 4 g AlphaM 5 176	b AlphaM 6 MC0 c AlphaM 7 d PcM 12 e PcM 13 f PcM 14 g PcM 15 176	a preFH b TurnOffAlu 212
14	b EnableH 0 c EnableH 1 d EnableH 2 e EnableH 3 f EnableH 4 h EnableH 5 197	a EnableH 6 b EnableH 7 c dSignX D dTwoAlphaX 104	b PcM 06 MC0 c PcM 07 d PcM 08 e PcM 09 f PcM 10 g PcM 11 176	b LengthM.0 MC0 c LengthM.1 d SpareM.0 e SpareM.1 f dNM=17a g dNM=17b 176	FGParityErr 170	b InstrSet 0a c InstrSet 0b d InstrSet 1a e InstrSet 1b FFc1 F16
15	b Brkins 0 c2 c Brkins 1 d Brkins 2 e Brkins 3 F16	b Brkins 4 c2 c Brkins 5 d Brkins 6 e Brkins 7 F16	b SignM MC0 c TwoAlphaM d NM 0 e NM 1 f NM 2 g NM 3 176	a NM=17 b NK2&NK3 c NK0&NK1 D IfuMemAck 104	a dHJ4 b dHJ5 c dHJ6 d dHJ7 1664	a InstrSetLd b CntLd C d TestOrReset 103
16	b TestReg 0 Test1 c TestReg 1 d TestReg 2 e TestReg 3 f TestReg 4 g TestReg 5 176	b TestReg 6 Test1 c TestReg 7 d e TestFH f TestSH g Testing 176	b MemBM 0 MC0 c MemBM 1 d LengthM=3 e MDv f TypeJumpM g LengthM=3 176	A BrkPending c2 b 231	a dHJ0 b dHJ1 c dHJ2 d dHJ3 1664	IncPcFG 119
17	b TestIfuAck Test1 c TestMemAck d TestMakeF_D e TestFault f g 176	PipeClkEn 121	A SawFGPe c2 b (delayed clock) 231	b AlphaXLd c XShift 117	A Pause c0 b IncPcF 231	a dPause b PcFGLd c bIfuHold d dAckJunkTW 1664
18	b NewPc1 c AckJnkTW d DecLo_ e DecHi_ FF1 f g Brkins 176	b c GenOut_ d InstrSetOrJunk_ e IfuReset1 f Spec1 g 176	a HClk1' C b TestClk1' C 210	a MClk0' C b FFClk1' C 210	a XLd b KReady 1660	InstrAddrLd 121
19	a BMuxEnable B NextBeta 109	a dNewGo B EnBMuuxOut c TestLd 105	a dblclk' C b SpecClk1' C 210	a FFClk0' C b Clk0' C 210	a PcFG15 b KReady c Kready d dBrkLd 1662	a JKillResponse b FGDv 212
20	b SignX AXC0 c TwoAlphaX d BetaInM e F16	b bIfuFault c0 c NewF d NewF' e MLdDly f DoJump g DoJump' 176	b Test_ Spec1 c dTickPeriod d RamErrDly e FGErrDly f WantIfuHoldDly g 176	b ExtendH c sIncPcF 117	a B dSawFGPe c InstrAddrLd 105	A HDv c2 b FDv 135
21	A TickPeriod b ShutUp (junk) Spec1 231	b c WantIfuHold 117	b InstrSetOrJunk_ c ReschedPending d SayRamParityErr e DecLo_ f DecHi_ inv h TestMemAck' 195	b dJDv c ZapJ 117	b BrkLd c SayNotReady 117	A NewJ b RefOutstanding c0 135
22	A FF130 b FF131 c FF132 d FF133 100	a dReschedPending b dReschedPending 1660	b ReschedPending c NewPc_ ff0 d WantResched e KReadyDly f GDvDly g IncPcFGDly 176	a SayResched b SayFGParityErr C BetaInM' d IfuNextData 103	a BetaInH B J FDv c NewGoOrNoM 105	a dSayNotReady b K NewJ c dGDv d K FDv 1664
23	A FF134 b FF135 c FF136 d FF137 100	A FF100 b FF101 c FF102 d dReschedPending 100	FC 161	b GenOut_ c DMuxEnable 195 d AckJnkTW' inv e DMuxEnable f ReschedPending' h SayNotReady	a ZapFGH B JHDv c SeeJump 105	a EnableFG' b J_H 1660
24	FB 161	a FF5 b FF6 c FF7 d EmuOrFT' 1664	a FA=1 b SayStuff 210	a J_OddF b SayNotReady1 1660	a EnableFG' b DMuxEnable C dMiss d 1ByteJumpInJ 103	b c2 c d e specialPcFG15 F16

10 26 42 58 74 92

MemB

x EmuOrFT'

x NextData
x WantIfuHold
xASEL0

FF

FG

XEROX PARC	Project	reference	File	Designer	Rev	Date	Page
	Dorado	Lower Left Quadrent	ifu21.sil	S. Ornstein	Ch	12/21/79	21

	G	H	I	J	K	L
13	a preDblClk b PipeClkEn 211	A SawRamParityErr b c0 231	RamParityErr 2 170	RamParityErr 0 170	RamParityErr 1 170	Parity1 415
14	RBaseSel 415	MemB 34 415	IfuAddr 2 415	IfuAddr 4 415	IfuAddr 6 415	IfuAddr 8 415
15	LengthK.0' 415	a HDv b HDv c KReady d dGLd 1662	LengthK.1' 415	IfuAddr 5 415	IfuAddr 7 415	IfuAddr 9 415
16	a MightBeJump B WantIfuRef c IfuMakeF_D 105	a d HDv b ZapOrJEmpty c dJDv D dSawFGPE 102	A ExceptionDispatch b 231	J MU164	PcJ MU164	Top MU164
17	a dPause b c RealJFault D dWantResched 102	b JDv' c JDv d JFault e JFault' c0 F16	Loads MU164	H MU164	b HDvDly c0 c FDvDly d GLdDly' e GFaultDly' f ExceptionDly' g 176	Bottom MU164
18	a LengthK.0 b LengthK.1 1660	FF's MU164	Dv's MU164	K MU164	Jumps MU164	Bottom MU164
19	b GDv'a c GDv' c2 d GFault e GDv F16	OtherHole 121	a clk0' D b clk0' D 210	a dblclk' D b clk1' D 210	Exception MU164	DMadr1-5 176
20	dGDv 121	WantIfuRef2 121	A 1ByteJumpInJ b 1ByteJumpInJd c0 135	A Mar_PcF c1 b FFault 231	a WantIfuRef1 b WantIfuRef1 c WantIfuRef1 D 102	a K KillResponse b IfuAddr 6 C K RefOutstanding d IfuAddr 7 103
21	a WantIfuRef1 b WantIfuRef2 c WantIfuRef3 d WantIfuRef' 1662	dGDv 119	b FGFault c FGFault 117	a K HDv b K HDv c K HDv D Exception 102	A IfuAddr 4 b IfuAddr 9 c IfuAddr 13 d IfuAddr 12 101	A KillResponse b c2 135
22	GLd 119	A dGLd1 b dGLd2 c Exception 106	a RealHFault b Exception' c IfuAddr 8 d IfuAddr 9 1662	a ValidRam B Exception 1660	A IfuAddr 4 c0 b IfuAddr 9 c0 231	DMadr6-11 176
23	JLdb 121	a bMLd b dMiss c dAckJunkTW d 1662	b SayNotReady c dMiss 118	A IfuAddr 5 b IfuAddr 8 c IfuAddr 10 d IfuAddr 11 101	A IfuAddr 3 c0 b IfuAddr 8 c0 231	A MidasGroup b DMuxClk c d IfuTrueb 101
24	MLd 121	JLda 121	A IfuAddr 1 c0 b IfuAddr 6 c0 231	A IfuAddr 2 c0 b IfuAddr 7 c0 231	A IfuAddr 0 c0 b IfuAddr 5 c0 231	DMuxData MU164

92 G 110 H 126 I 142 J 158 K 174 L

FG0-6

IfuAddr0-9 x IfuNextMacro

x WantIfuRef

MakeF_D
IfuAck
DMuxData
DMuxClock

XEROX PARC	Project	reference	File	Designer	Rev	Date	Page
	Dorado	Lower Right Layout	ifu22.sil	S. Ornstein	Ch	12/21/79	22

IF Data Selector PROM SG 139 (see Dwg. 02)

N	Two Alpha	JMP	Length	Address	Contents	Numeric Sequence	Effective Sequence
N		JMP q	0	00	11111111		
			1	01	11111111	3, 3, 3, 3,	3IL, IL, IL, IL, IL.....
			2	02	11111111		
			3	03	11111111		
		JMP r	0	04	11111111		
			1	05	11110111	2, 3, 3, 3,	3N, IL, IL, IL, IL.....
			2	06	10110011	2, 0, 3, 3,	3N, Alpha, IL, IL, IL.....
			3	07	10010001	2, 0, 0, 3,	3N, Alpha, Beta, IL, IL.....
	Two Alpha q	JMP q	0	10	11111111		
			1	11	11111111		
			2	12	11111111	3, 3, 3, 3,	3IL, IL, IL, IL, IL.....
			3	13	11111111		
		JMP r	0	14	11111111		
			1	15	11111111		
			2	16	10010101	2, 1, 0, 3,	3N, Alpha[0:3], Alpha[4:7] , IL, IL
			3	17	10000100	2, 1, 0, 0,	3N, Alpha[0:3], Alpha[4:7] , Beta,
no N	r	JMP q	0	20	11111111		
			1	21	11111111		
			2	22	11111111	3, 3, 3, 3,	3IL, IL, IL, IL, IL.....
			3	23	11111111		
		JMP r	0	24	11111111		
			1	25	11111111		
			2	26	01110111	0, 3, 3, 3,	3Alpha, IL, IL, IL, IL.....
			3	27	00110011	0, 0, 3, 3,	3Alpha, Beta, IL, IL, IL.....
	Two Alpha q	JMP q	0	30	11111111		
			1	31	11111111		
			2	32	11111111	3, 3, 3, 3,	3IL, IL, IL, IL, IL.....
			3	33	11111111		
		JMP r	0	34	11111111		
			1	35	11111111		
			2	36	00111011	1, 0, 3, 3,	3Alpha[0:3], Alpha[4:7], IL, IL,
			3	37	00011001	1, 0, 0, 3,	3Alpha[0:3], Alpha[4:7], Beta, IL

r q

No zero length instructions
No 3 - Byte Jumps
Jumps never export anything other than the length (no "N" on 2 - byte Jumps).
A one - byte instruction specifying Two Alpha is meaningless

XEROX PARC	Project Dorado	reference IF Data Selector PROM	File ifu23.sil	Designer S. Ornstein	Rev Ch	Date 10/19/79	Page 23