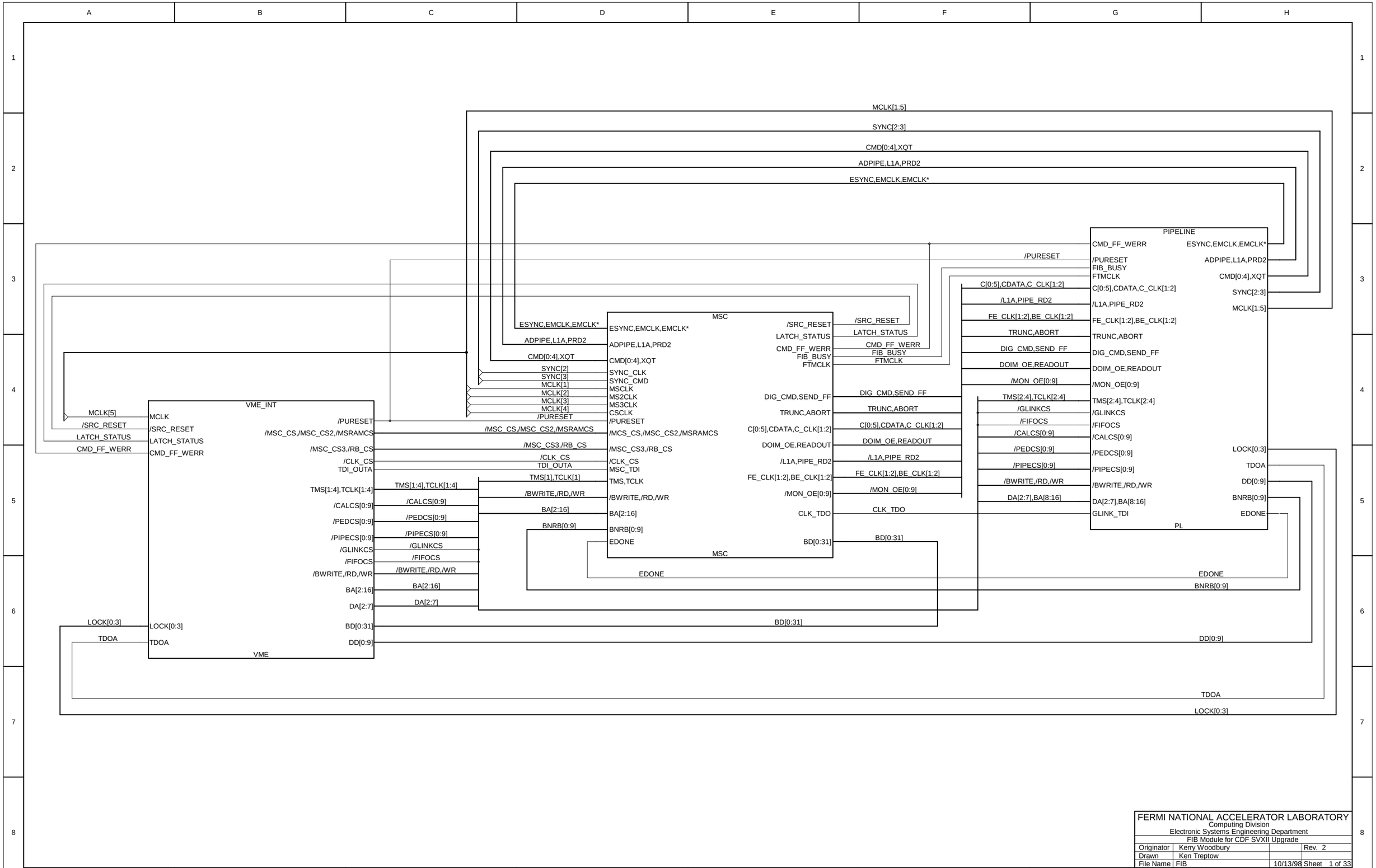
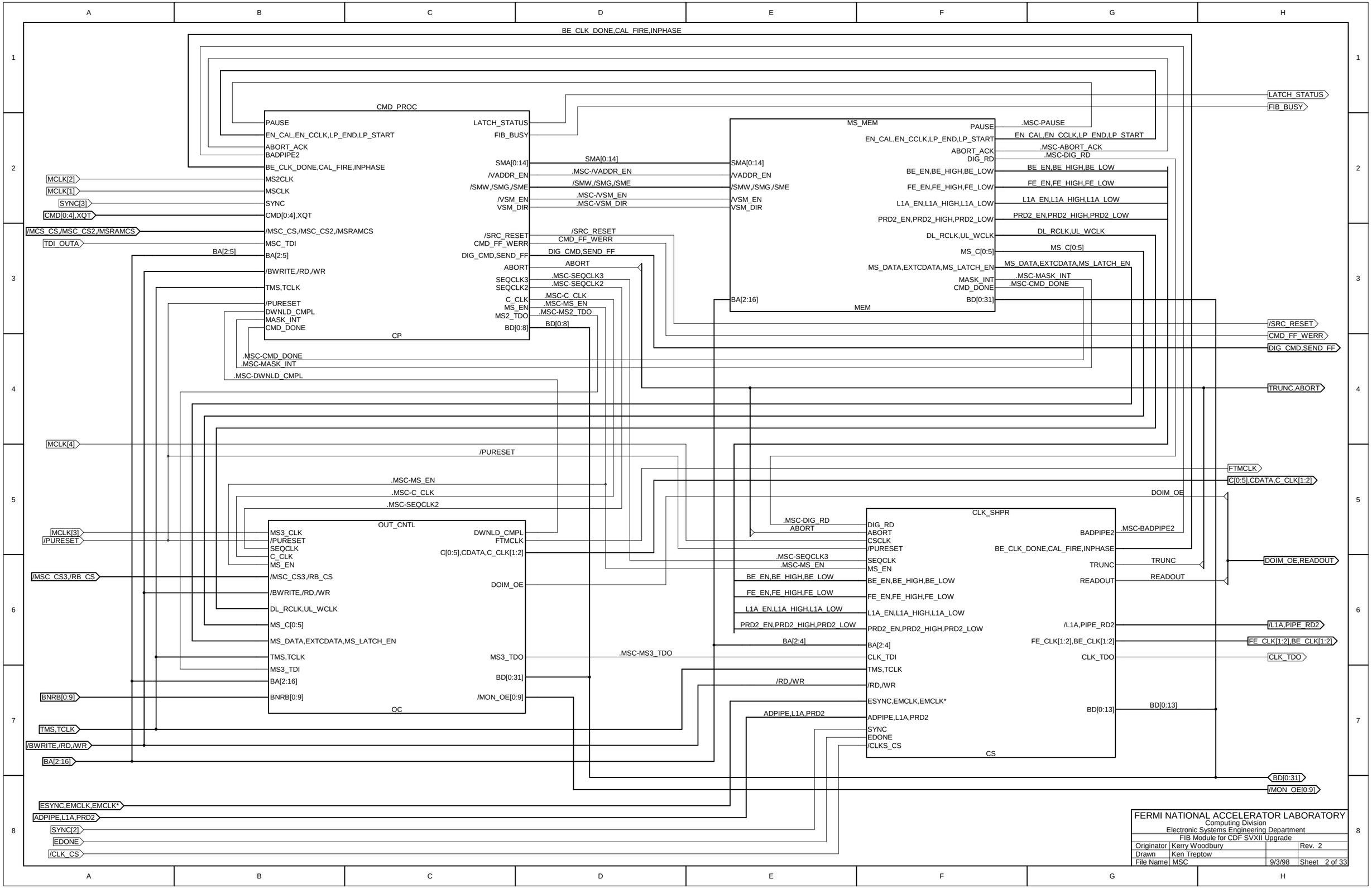
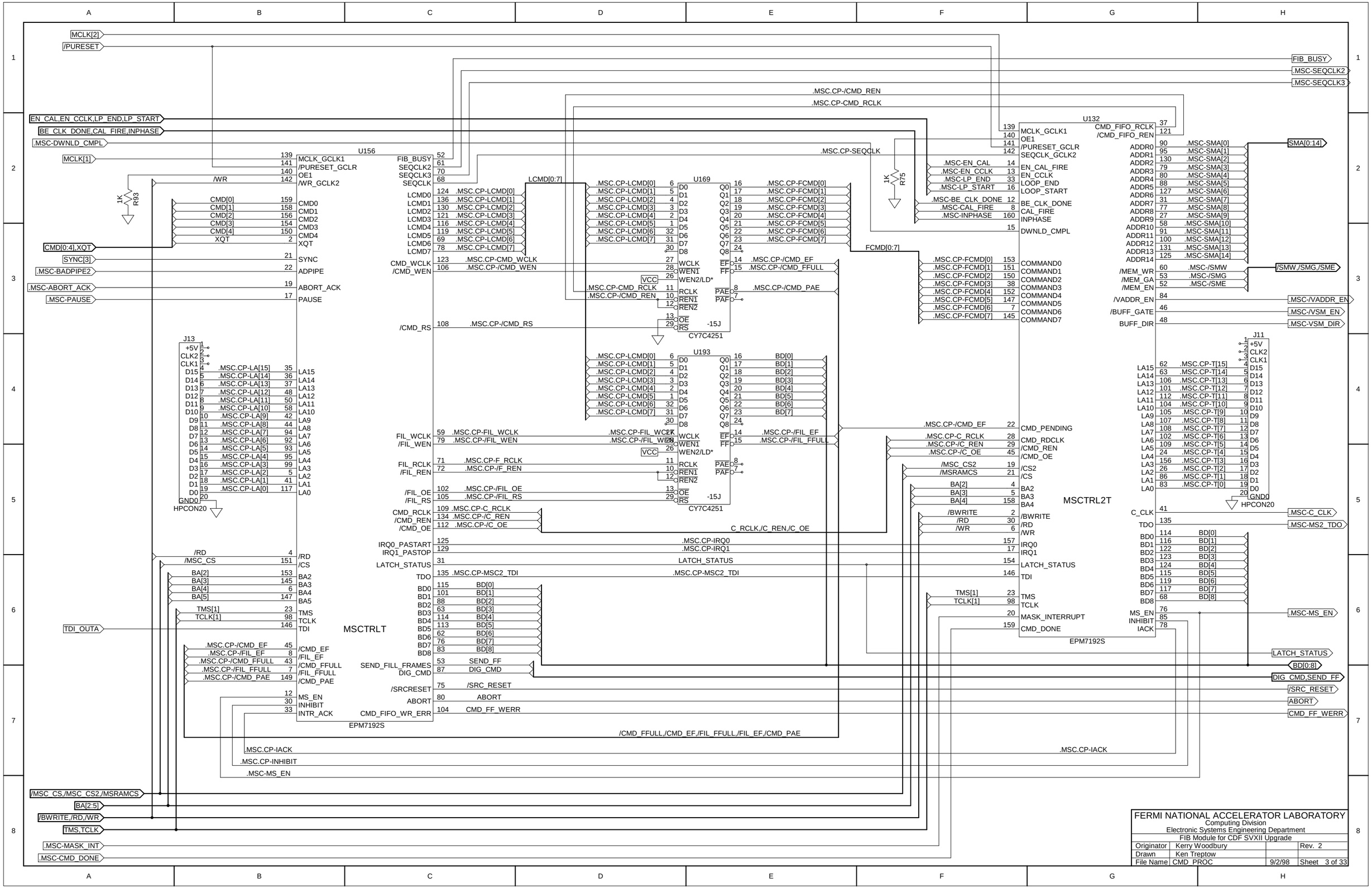
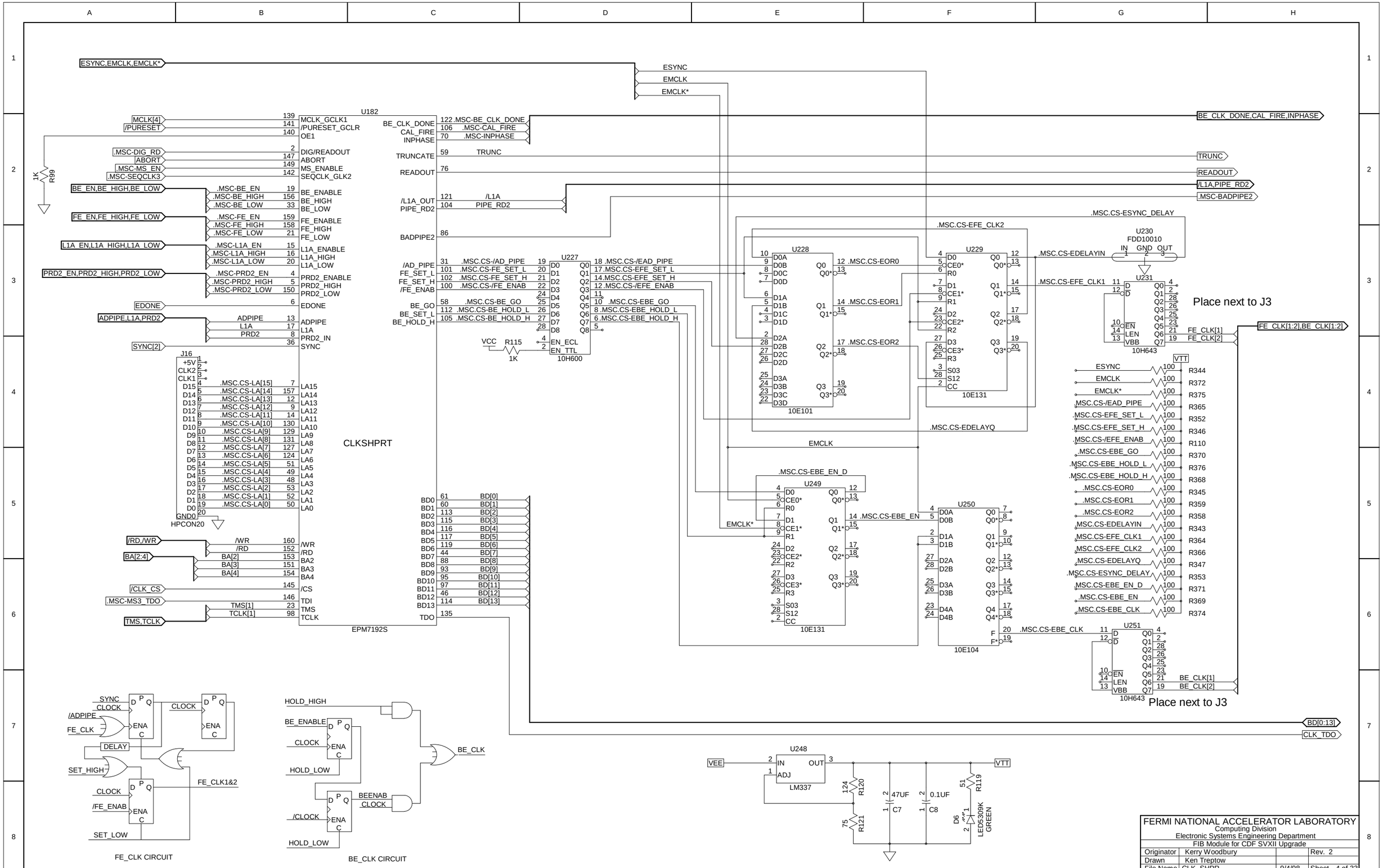
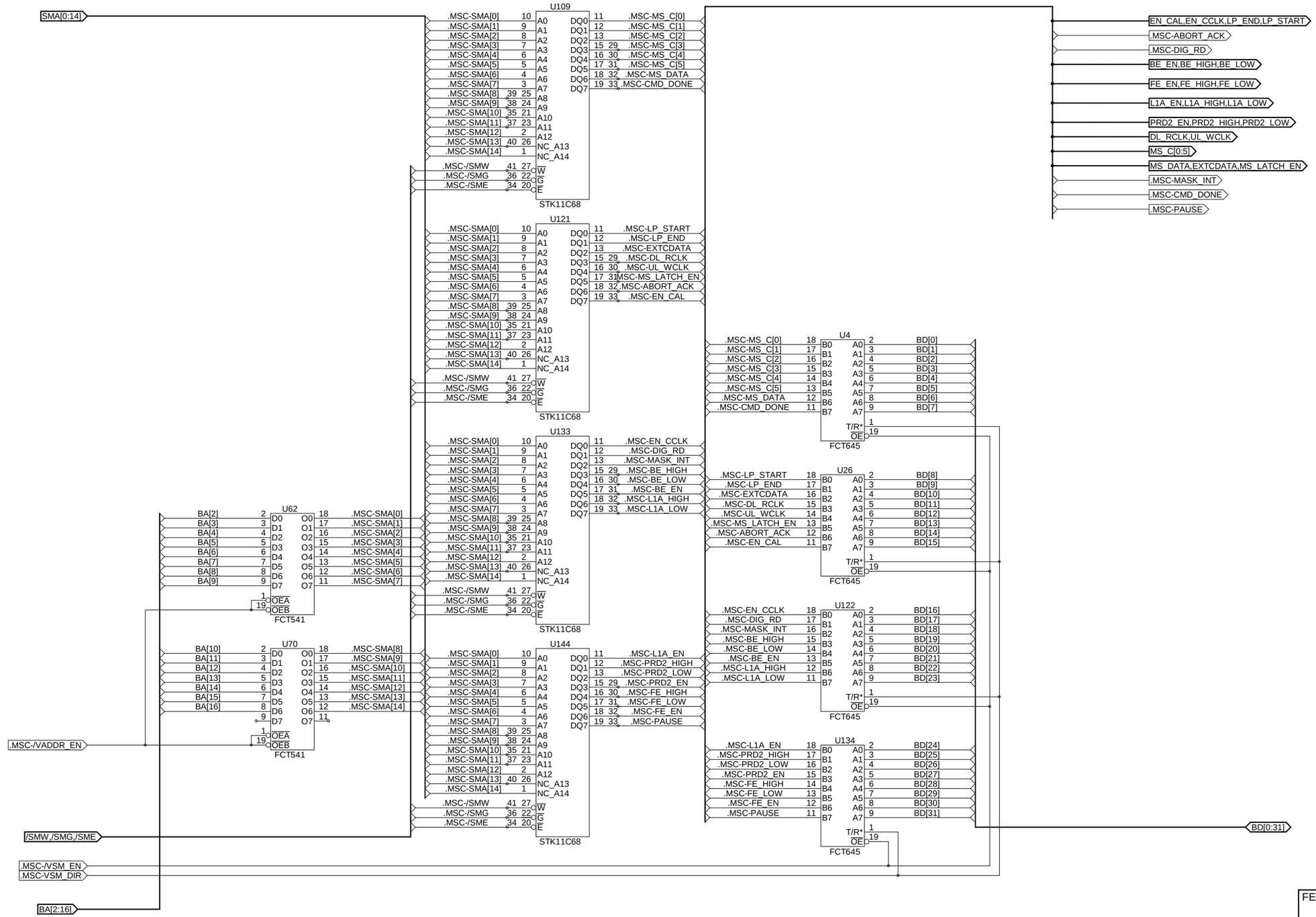

MCLK[1:5]
SYNC[2:3]
CMD[0:4],XQT
ADPIPE,L1A,PRD2
ESYNC,EMCLK,EMCLK*
VME_INT
MCLK
/SRC_RESET
LATCH_STATUS
CMD_FF_WERR
/PURESET
/MSC_CS,/MSC_CS2,/MSRAMCS
/MSC_CS3,/RB_CS
/CLK_CS
TDI_OUTA
TMS[1:4],TCLK[1:4]
/CALCS[0:9]
/PEDCS[0:9]
/PIPECS[0:9]
/GLINKCS
/FIFOCS
/BWRITE,/RD,/WR
BA[2:16]
DA[2:7]
BD[0:31]
DD[0:9]
LOCK[0:3]
TDOA
VME
MSC
ESYNC,EMCLK,EMCLK*
ADPIPE,L1A,PRD2
CMD[0:4],XQT
SYNC_CLK
SYNC_CMD
MSCLK
MS2CLK
MS3CLK
CSCLK
/PURESET
/MCS_CS,/MSC_CS2,/MSRAMCS
/MSC_CS3,/RB_CS
/CLK_CS
MSC_TDI
TMS,TCLK
/BWRITE,/RD,/WR
BA[2:16]
BNRB[0:9]
EDONE
/SRC_RESET
LATCH_STATUS
CMD_FF_WERR
FIB_BUSY
FTMCLK
DIG_CMD,SEND_FF
TRUNC,ABORT
C[0:5],CDATA,C_CLK[1:2]
DOIM_OE,READOUT
/L1A,PIPE_RD2
FE_CLK[1:2],BE_CLK[1:2]
/MON_OE[0:9]
CLK_TDO
BD[0:31]
PIPELINE
CMD_FF_WERR
/PURESET
FIB_BUSY
FTMCLK
C[0:5],CDATA,C_CLK[1:2]
/L1A,PIPE_RD2
FE_CLK[1:2],BE_CLK[1:2]
TRUNC,ABORT
DIG_CMD,SEND_FF
DOIM_OE,READOUT
/MON_OE[0:9]
TMS[2:4],TCLK[2:4]
/GLINKCS
/FIFOCS
/CALCS[0:9]
/PEDCS[0:9]
/PIPECS[0:9]
/BWRITE,/RD,/WR
DA[2:7],BA[8:16]
GLINK_TDI
ESYNC,EMCLK,EMCLK*
ADPIPE,L1A,PRD2
CMD[0:4],XQT
SYNC[2:3]
MCLK[1:5]
LOCK[0:3]
TDOA
DD[0:9]
BNRB[0:9]
EDONE
PL
FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
FIB Module for CDF SVXII Upgrade
Originator Kerry Woodbury
Rev. 2
Drawn Ken Treptow
File Name FIB
10/13/98
Sheet 1 of 33


BE_CLK_DONE,CAL_FIRE,INPHASE
CMD_PROC
PAUSE
EN_CAL,EN_CCLK,LP_END,LP_START
ABORT_ACK
BADPIPE2
BE_CLK_DONE,CAL_FIRE,INPHASE
MS2CLK
MSCLK
SYNC
CMD[0:4],XQT
/MSC_CS,/MSC_CS2,/MSRAMCS
MSC_TDI
BA[2:5]
/BWRITE,/RD,/WR
TMS,TCLK
/PURESET
DWNLD_CMPL
MASK_INT
CMD_DONE
CP
LATCH_STATUS
FIB_BUSY
SMA[0:14]
/VADDR_EN
/SMW,/SMG,/SME
/VSM_EN
VSM_DIR
/SRC_RESET
CMD_FF_WERR
DIG_CMD,SEND_FF
ABORT
SEQCLK3
SEQCLK2
C_CLK
MS_EN
MS2_TDO
BD[0:8]
MS_MEM
PAUSE
EN_CAL,EN_CCLK,LP_END,LP_START
ABORT_ACK
DIG_RD
BE_EN,BE_HIGH,BE_LOW
FE_EN,FE_HIGH,FE_LOW
L1A_EN,L1A_HIGH,L1A_LOW
PRD2_EN,PRD2_HIGH,PRD2_LOW
DL_RCLK,UL_WCLK
MS_C[0:5]
MS_DATA,EXTCDATA,MS_LATCH_EN
MASK_INT
CMD_DONE
BD[0:31]
BA[2:16]
MEM
.MSC-PAUSE
.MSC-ABORT_ACK
.MSC-DIG_RD
.MSC-/VADDR_EN
.MSC-/VSM_EN
.MSC-VSM_DIR
.MSC-SEQCLK3
.MSC-SEQCLK2
.MSC-C_CLK
.MSC-MS_EN
.MSC-MS2_TDO
.MSC-CMD_DONE
.MSC-MASK_INT
.MSC-DWNLD_CMPL
.MSC-MS3_TDO
.MSC-BADPIPE2
OUT_CNTL
MS3_CLK
/PURESET
SEQCLK
C_CLK
MS_EN
/MSC_CS3,/RB_CS
/BWRITE,/RD,/WR
DL_RCLK,UL_WCLK
MS_C[0:5]
MS_DATA,EXTCDATA,MS_LATCH_EN
TMS,TCLK
MS3_TDI
BA[2:16]
BNRB[0:9]
OC
DWNLD_CMPL
FTMCLK
C[0:5],CDATA,C_CLK[1:2]
DOIM_OE
MS3_TDO
BD[0:31]
/MON_OE[0:9]
CLK_SHPR
DIG_RD
ABORT
CSLK
/PURESET
SEQCLK
MS_EN
BE_EN,BE_HIGH,BE_LOW
FE_EN,FE_HIGH,FE_LOW
L1A_EN,L1A_HIGH,L1A_LOW
PRD2_EN,PRD2_HIGH,PRD2_LOW
BA[2:4]
CLK_TDI
TMS,TCLK
/RD,/WR
ESYNC,EMCLK,EMCLK*
ADPIPE,L1A,PRD2
SYNC
EDONE
/CLKS_CS
CS
BADPIPE2
BE_CLK_DONE,CAL_FIRE,INPHASE
TRUNC
READOUT
/L1A,PIPE_RD2
FE_CLK[1:2],BE_CLK[1:2]
CLK_TDO
BD[0:13]
MCLK[2]
MCLK[1]
SYNC[3]
CMD[0:4],XQT
/MCS_CS,/MSC_CS2,/MSRAMCS
TDI_OUTA
MCLK[4]
MCLK[3]
/PURESET
/MSC_CS3,/RB_CS
BNRB[0:9]
TMS,TCLK
/BWRITE,/RD,/WR
BA[2:16]
ESYNC,EMCLK,EMCLK*
ADPIPE,L1A,PRD2
SYNC[2]
EDONE
/CLK_CS
LATCH_STATUS
FIB_BUSY
/SRC_RESET
CMD_FF_WERR
DIG_CMD,SEND_FF
TRUNC,ABORT
FTMCLK
C[0:5],CDATA,C_CLK[1:2]
DOIM_OE
DOIM_OE,READOUT
/L1A,PIPE_RD2
FE_CLK[1:2],BE_CLK[1:2]
CLK_TDO
BD[0:31]
/MON_OE[0:9]
FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
FIB Module for CDF SVXII Upgrade
Originator Kerry Woodbury Rev. 2
Drawn Ken Treptow
File Name MSC 9/3/98 Sheet 2 of 33

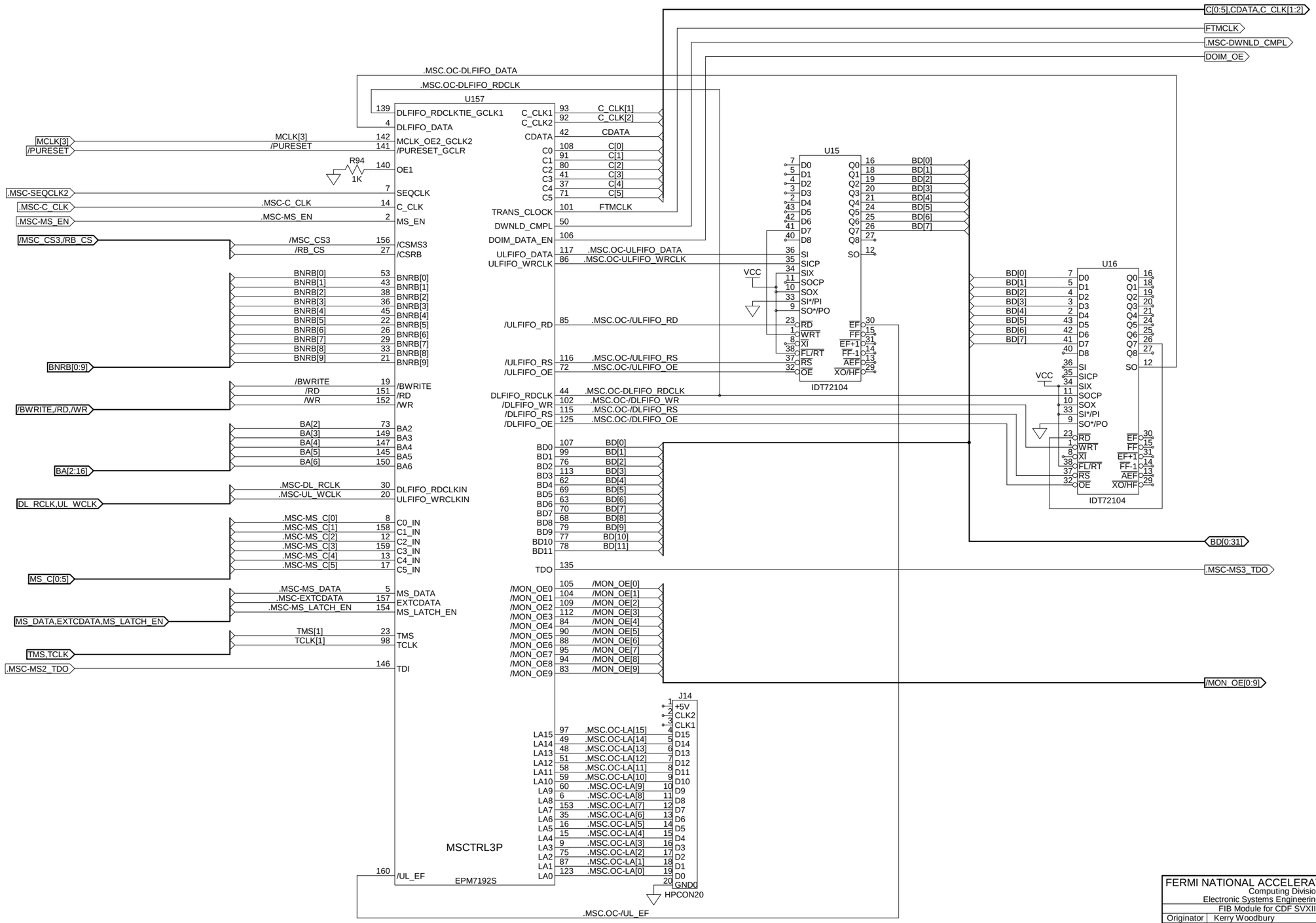

MSCTRLT
EPM7192S
MSCTRL2T
EPM7192S
U156
U169
U193
U132
CY7C4251
CY7C4251
J13
J11
HPCON20
HPCON20
MCLK[2]
/PURESET
EN_CAL,EN_CCLK,LP_END,LP_START
BE_CLK_DONE,CAL_FIRE,INPHASE
.MSC-DWNLD_CMPL
MCLK[1]
CMD[0:4],XQT
SYNC[3]
.MSC-BADPIPE2
.MSC-ABORT_ACK
.MSC-PAUSE
TDI_OUTA
/MSC_CS,/MSC_CS2,/MSRAMCS
BA[2:5]
/BWRITE,/RD,/WR
TMS,TCLK
.MSC-MASK_INT
.MSC-CMD_DONE
FIB_BUSY
.MSC-SEQCLK2
.MSC-SEQCLK3
SMA[0:14]
/SMW,/SMG,/SME
.MSC-/VADDR_EN
.MSC-/VSM_EN
.MSC-VSM_DIR
.MSC-C_CLK
.MSC-MS2_TDO
.MSC-MS_EN
LATCH_STATUS
BD[0:8]
DIG_CMD,SEND_FF
/SRC_RESET
ABORT
CMD_FF_WERR
.MSC-CP-/CMD_REN
.MSC-CP-CMD_RCLK
.MSC-CP-SEQCLK
LCMD[0:7]
FCMD[0:7]
C_RCLK,/C_REN,/C_OE
/CMD_FFULL,/CMD_EF,/FIL_FFULL,/FIL_EF,/CMD_PAE
.MSC-CP-IACK
.MSC-CP-INHIBIT
.MSC-MS_EN
FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
FIB Module for CDF SVXII Upgrade
Originator Kerry Woodbury
Rev. 2
Drawn Ken Treptow
File Name CMD_PROC
9/2/98
Sheet 3 of 33



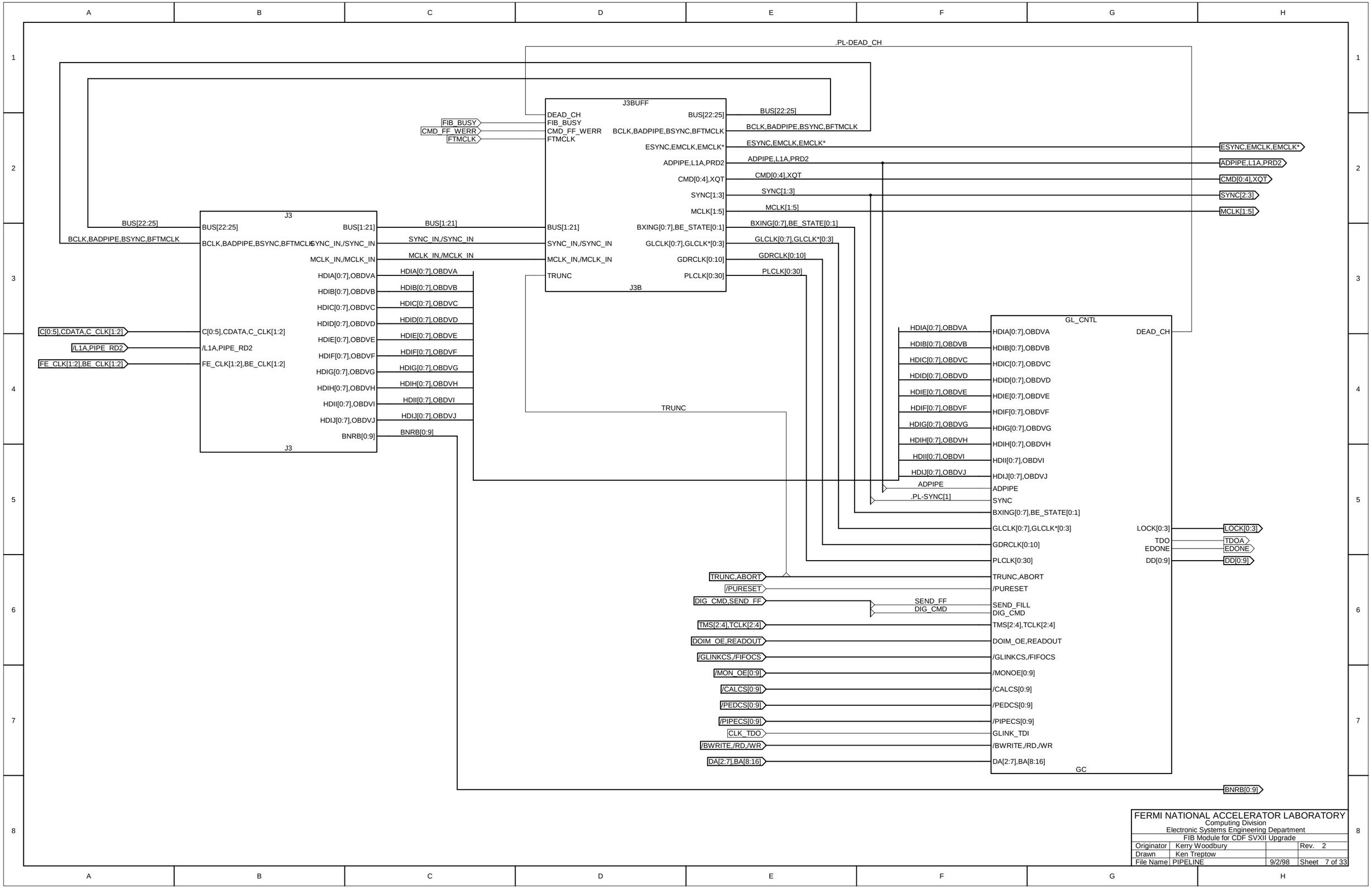
FERMI NATIONAL ACCELERATOR LABORATORY			
Computing Division			
Electronic Systems Engineering Department			
FIB Module for CDF SVXII Upgrade			
Originator	Kerry Woodbury		Rev. 2
Drawn	Ken Treptow		
File Name	CLK_SHPR	9/4/98	Sheet 4 of 33

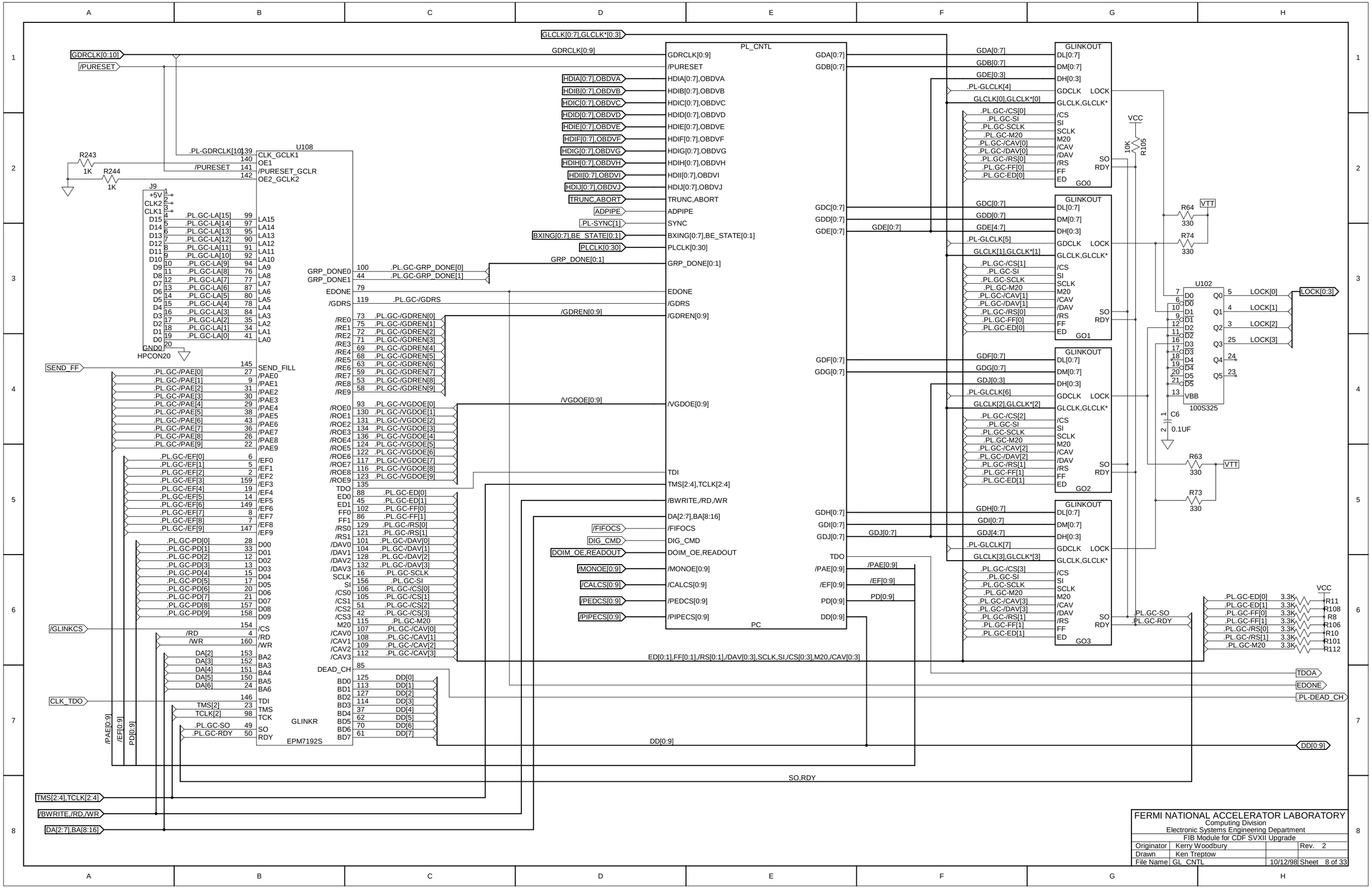


FERMI NATIONAL ACCELERATOR LABORATORY			
Computing Division			
Electronic Systems Engineering Department			
FIB Module for CDF SVXII Upgrade			
Originator	Kerry Woodbury		Rev. 2
Drawn	Ken Treptow		
File Name	MS_MEM	7/2/98	Sheet 5 of 33



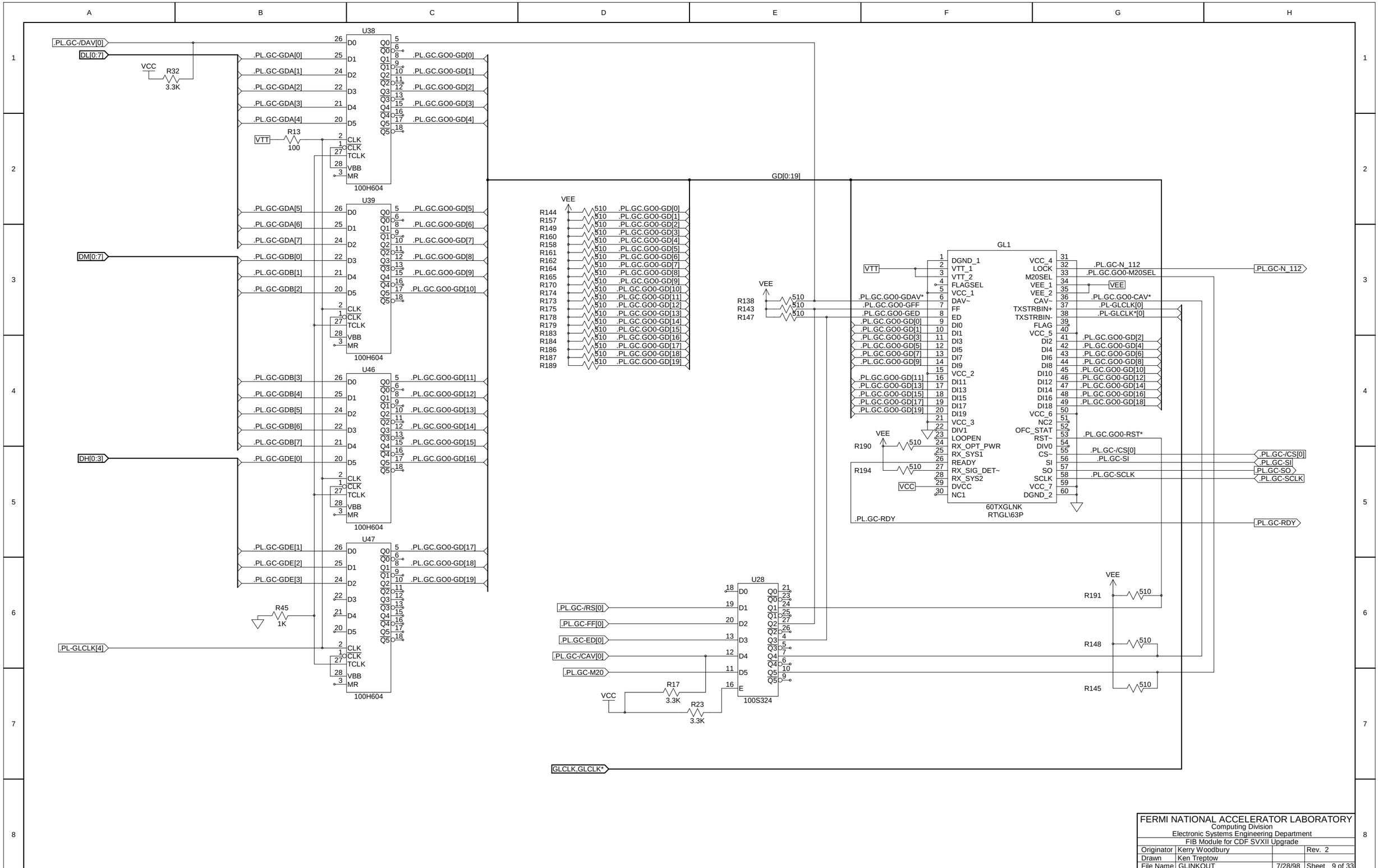
FERMI NATIONAL ACCELERATOR LABORATORY			
Computing Division			
Electronic Systems Engineering Department			
FIB Module for CDF SVXII Upgrade			
Originator	Kerry Woodbury		Rev. 2
Drawn	Ken Treptow		
File Name	OUT_CNTL	7/2/98	Sheet 6 of 33


.PL-DEAD_CH
J3BUFF
DEAD_CH
FIB_BUSY
CMD_FF_WERR
FTMCLK
BUS[22:25]
BCLK,BADPIPE,BSYNC,BFTMCLK
ESYNC,EMCLK,EMCLK*
ADPIPE,L1A,PRD2
CMD[0:4],XQT
SYNC[1:3]
MCLK[1:5]
BUS[1:21]
SYNC_IN,/SYNC_IN
MCLK_IN,/MCLK_IN
TRUNC
BXING[0:7],BE_STATE[0:1]
GLCLK[0:7],GLCLK*[0:3]
GDRCLK[0:10]
PLCLK[0:30]
J3B
J3
C[0:5],CDATA,C_CLK[1:2]
/L1A,PIPE_RD2
FE_CLK[1:2],BE_CLK[1:2]
HDIA[0:7],OBDVA
HDIB[0:7],OBDVB
HDIC[0:7],OBDVC
HDID[0:7],OBDVD
HDIE[0:7],OBDVE
HDIF[0:7],OBDVF
HDIG[0:7],OBDVG
HDIH[0:7],OBDVH
HDII[0:7],OBDVI
HDIJ[0:7],OBDVJ
BNRB[0:9]
GL_CNTL
DEAD_CH
ADPIPE
.PL-SYNC[1]
SYNC
LOCK[0:3]
TDO
EDONE
DD[0:9]
TRUNC,ABORT
/PURESET
DIG_CMD,SEND_FF
SEND_FF
DIG_CMD
SEND_FILL
TMS[2:4],TCLK[2:4]
DOIM_OE,READOUT
/GLINKCS,/FIFOCS
/MON_OE[0:9]
/MONOE[0:9]
/CALCS[0:9]
/PEDCS[0:9]
/PIPECS[0:9]
CLK_TDO
GLINK_TDI
/BWRITE,/RD,/WR
DA[2:7],BA[8:16]
GC
FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
FIB Module for CDF SVXII Upgrade
Originator Kerry Woodbury Rev. 2
Drawn Ken Treptow
File Name PIPELINE 9/2/98 Sheet 7 of 33

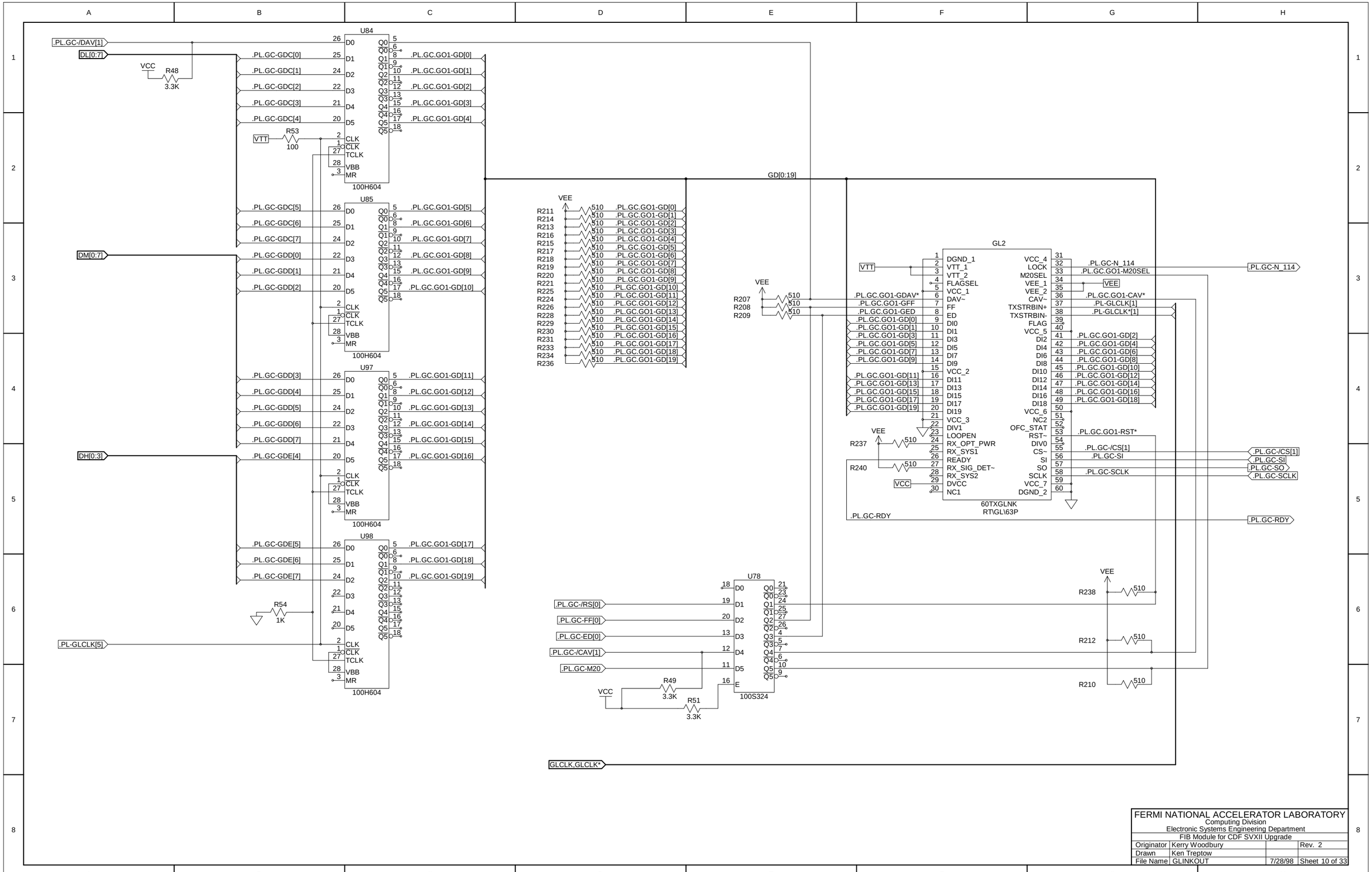


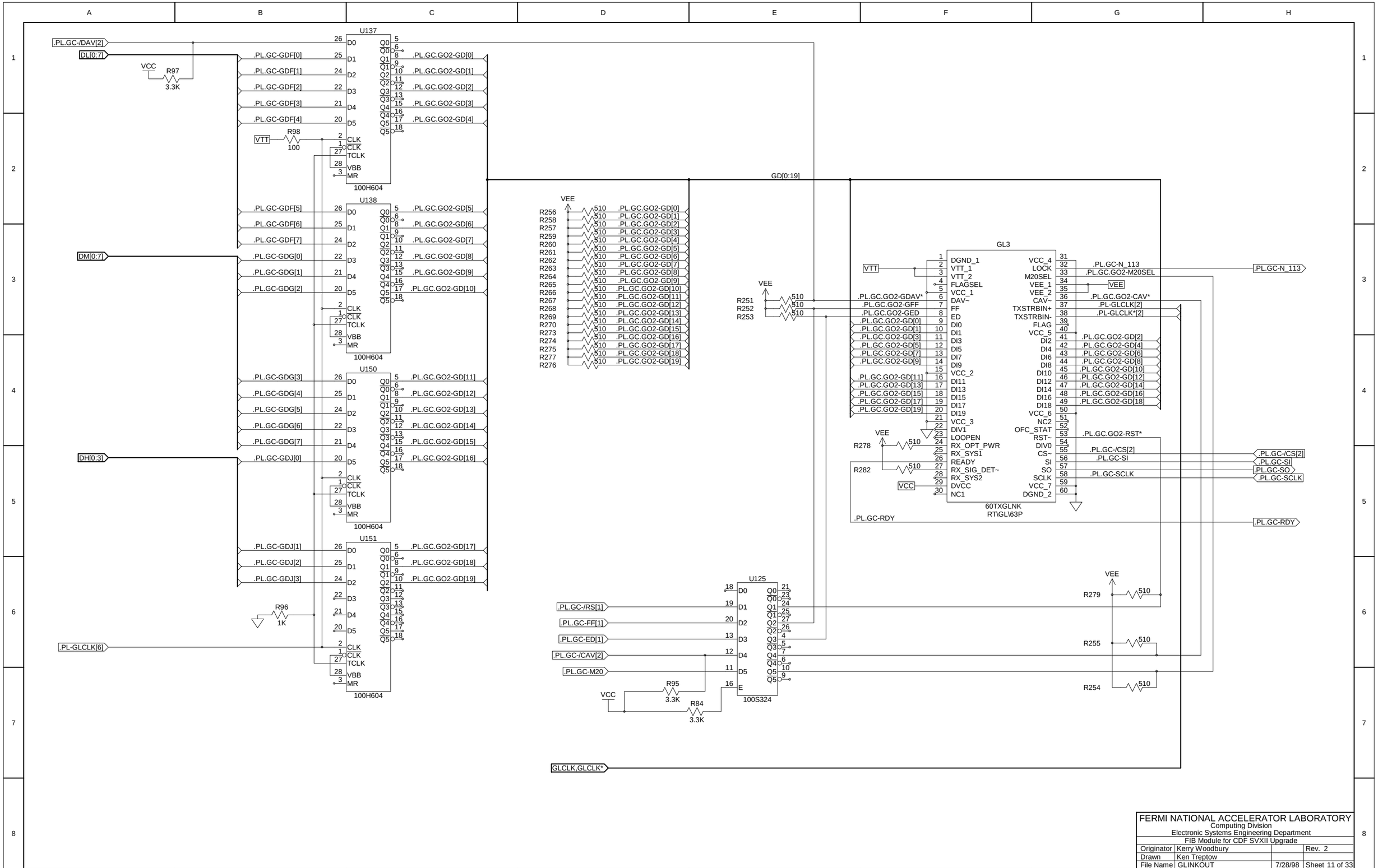
FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
FIB Module for CDF SVXII Upgrade

Originator	Kerry Woodbury		Rev. 2
Drawn	Ken Treptow		
File Name	GL_CNTL	10/12/98	Sheet 8 of 33

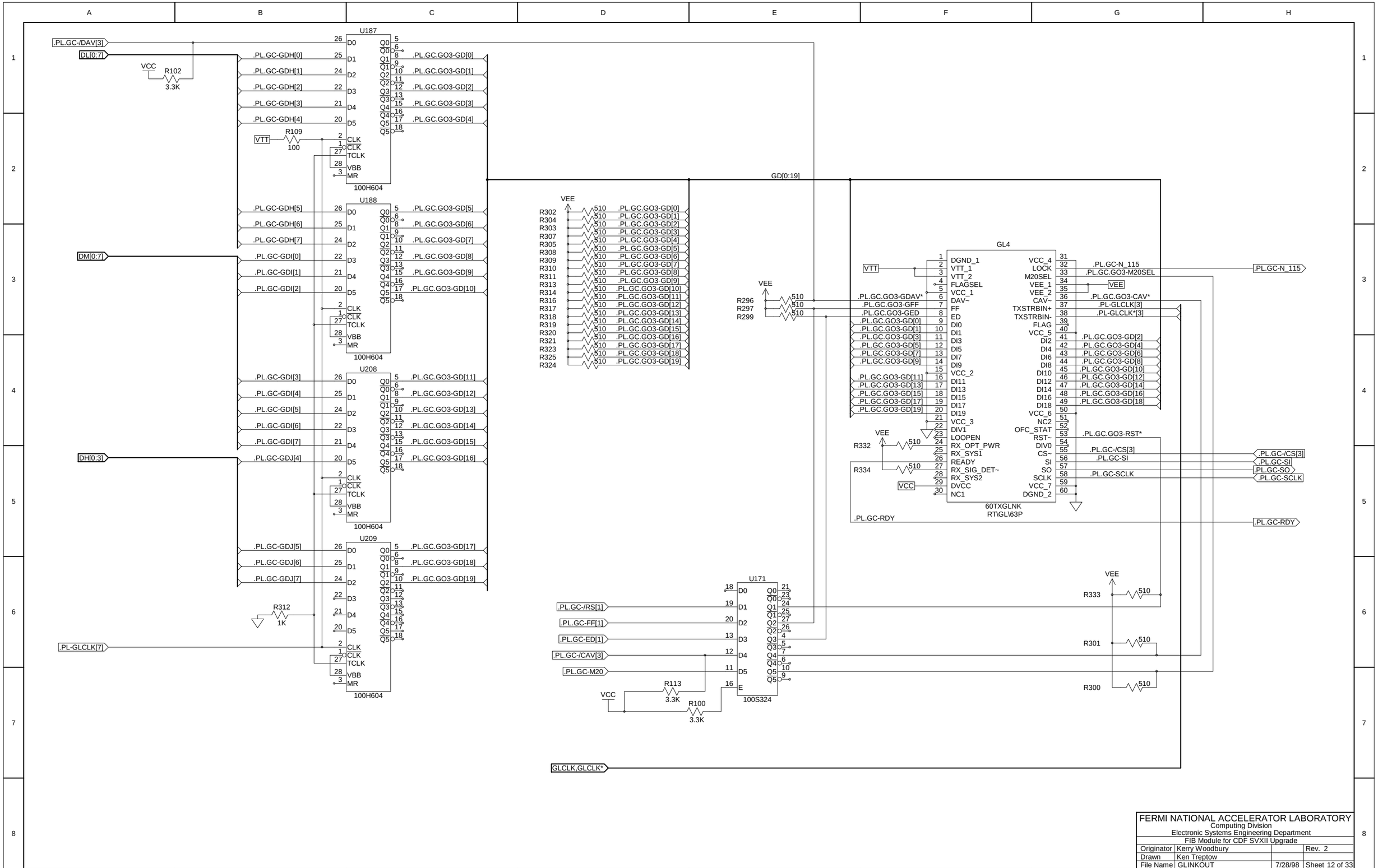


FERMI NATIONAL ACCELERATOR LABORATORY			
Computing Division			
Electronic Systems Engineering Department			
FIB Module for CDF SVXII Upgrade			
Originator	Kerry Woodbury		Rev. 2
Drawn	Ken Treptow		
File Name	GLINKOUT	7/28/98	Sheet 9 of 33

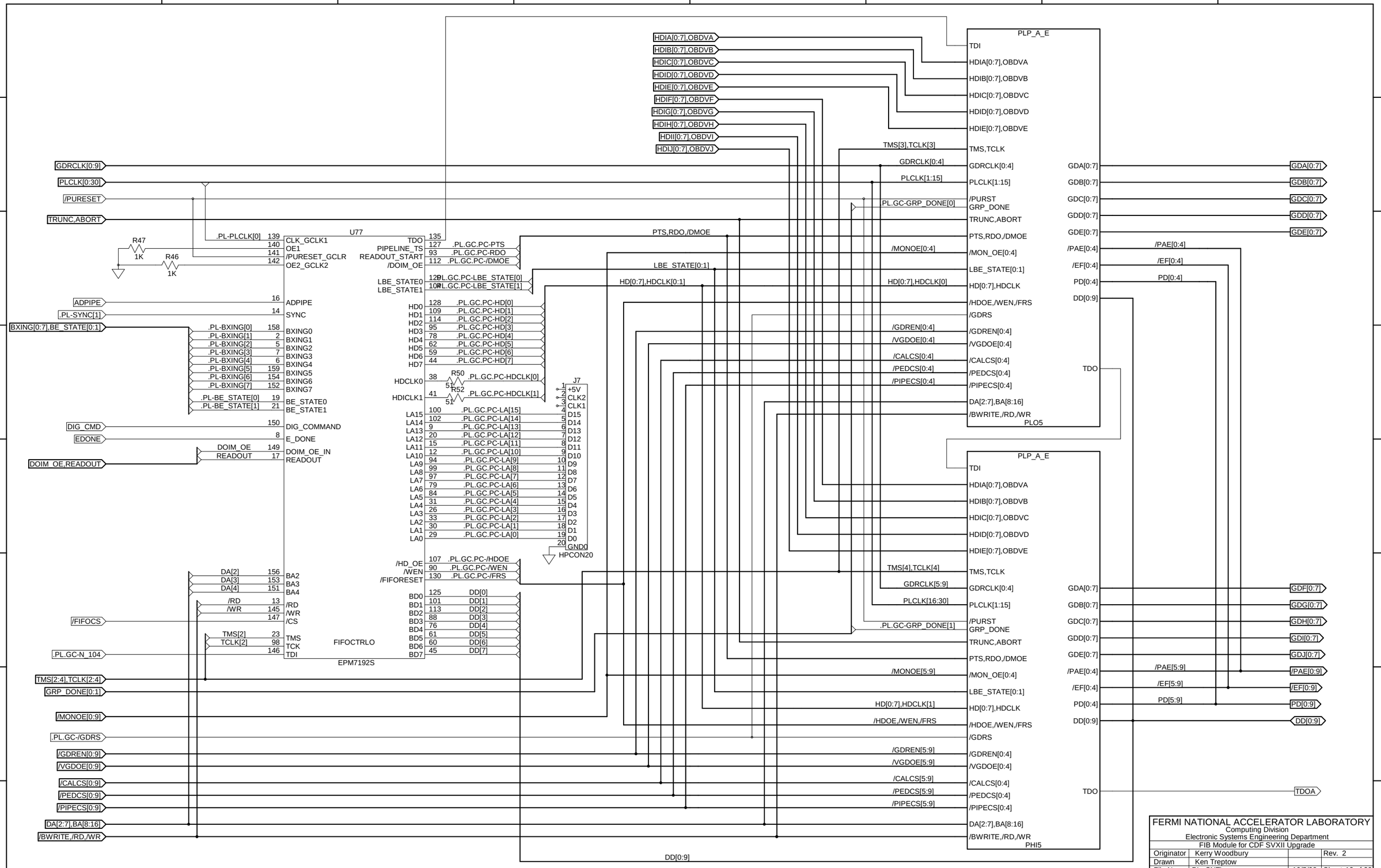

U84
U85
U97
U98
100H604
.PL.GC-/DAV[1]
DL[0:7]
DM[0:7]
DH[0:3]
.PL-GLCLK[5]
VCC
R48
3.3K
VTT
R53
100
R54
1K
.PL.GC-GDC[0]
.PL.GC-GDC[1]
.PL.GC-GDC[2]
.PL.GC-GDC[3]
.PL.GC-GDC[4]
.PL.GC-GDC[5]
.PL.GC-GDC[6]
.PL.GC-GDC[7]
.PL.GC-GDD[0]
.PL.GC-GDD[1]
.PL.GC-GDD[2]
.PL.GC-GDD[3]
.PL.GC-GDD[4]
.PL.GC-GDD[5]
.PL.GC-GDD[6]
.PL.GC-GDD[7]
.PL.GC-GDE[4]
.PL.GC-GDE[5]
.PL.GC-GDE[6]
.PL.GC-GDE[7]
.PL.GC.GO1-GD[0]
.PL.GC.GO1-GD[1]
.PL.GC.GO1-GD[2]
.PL.GC.GO1-GD[3]
.PL.GC.GO1-GD[4]
.PL.GC.GO1-GD[5]
.PL.GC.GO1-GD[6]
.PL.GC.GO1-GD[7]
.PL.GC.GO1-GD[8]
.PL.GC.GO1-GD[9]
.PL.GC.GO1-GD[10]
.PL.GC.GO1-GD[11]
.PL.GC.GO1-GD[12]
.PL.GC.GO1-GD[13]
.PL.GC.GO1-GD[14]
.PL.GC.GO1-GD[15]
.PL.GC.GO1-GD[16]
.PL.GC.GO1-GD[17]
.PL.GC.GO1-GD[18]
.PL.GC.GO1-GD[19]
CLK
TCLK
VBB
MR
VEE
R211
R214
R213
R216
R215
R217
R218
R219
R220
R221
R225
R224
R226
R228
R229
R230
R231
R233
R234
R236
510
GD[0:19]
R207
R208
R209
GL2
60TXGLNK
RT\GL\63P
DGND_1
VTT_1
VTT_2
FLAGSEL
VCC_1
DAV~
FF
ED
DI0
DI1
DI3
DI5
DI7
DI9
VCC_2
DI11
DI13
DI15
DI17
DI19
VCC_3
DIV1
LOOPEN
RX_OPT_PWR
RX_SYS1
READY
RX_SIG_DET~
RX_SYS2
DVCC
NC1
VCC_4
LOCK
M20SEL
VEE_1
VEE_2
CAV~
TXSTRBIN+
TXSTRBIN-
FLAG
VCC_5
DI2
DI4
DI6
DI8
DI10
DI12
DI14
DI16
DI18
VCC_6
NC2
OFC_STAT
RST~
DIV0
CS~
SI
SO
SCLK
VCC_7
DGND_2
.PL.GC-N_114
.PL.GC.GO1-M20SEL
.PL.GC.GO1-CAV*
.PL-GLCLK[1]
.PL-GLCLK*[1]
.PL.GC.GO1-RST*
.PL.GC-/CS[1]
.PL.GC-SI
.PL.GC-SCLK
.PL.GC-RDY
.PL.GC.GO1-GDAV*
.PL.GC.GO1-GFF
.PL.GC.GO1-GED
R237
R240
U78
100S324
.PL.GC-/RS[0]
.PL.GC-FF[0]
.PL.GC-ED[0]
.PL.GC-/CAV[1]
.PL.GC-M20
R49
R51
R238
R212
R210
GLCLK,GLCLK*
FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
FIB Module for CDF SVXII Upgrade
Originator Kerry Woodbury
Rev. 2
Drawn Ken Treptow
File Name GLINKOUT
7/28/98
Sheet 10 of 33

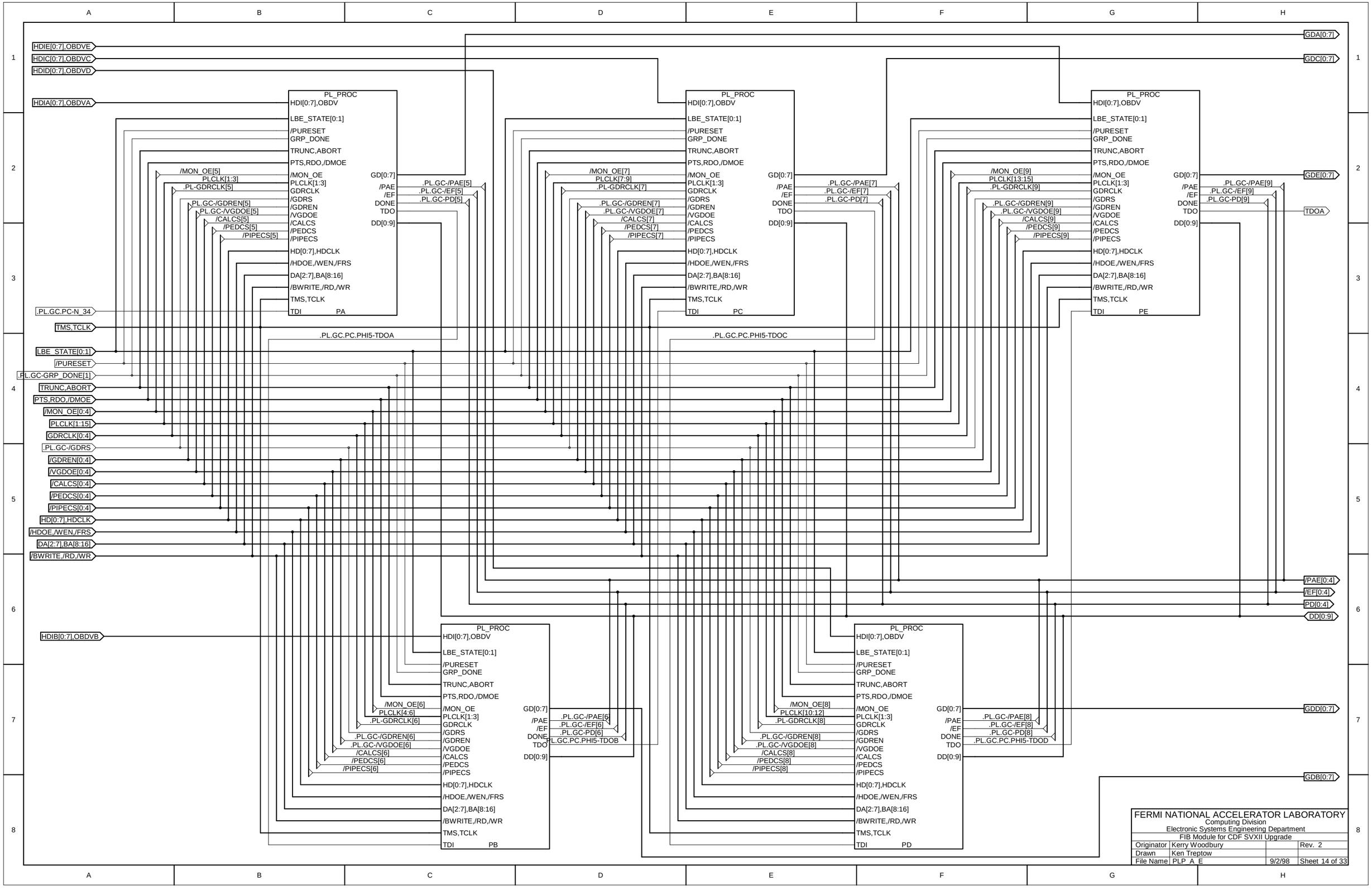


FERMI NATIONAL ACCELERATOR LABORATORY			
Computing Division			
Electronic Systems Engineering Department			
FIB Module for CDF SVXII Upgrade			
Originator	Kerry Woodbury		Rev. 2
Drawn	Ken Treptow		
File Name	GLINKOUT	7/28/98	Sheet 11 of 33

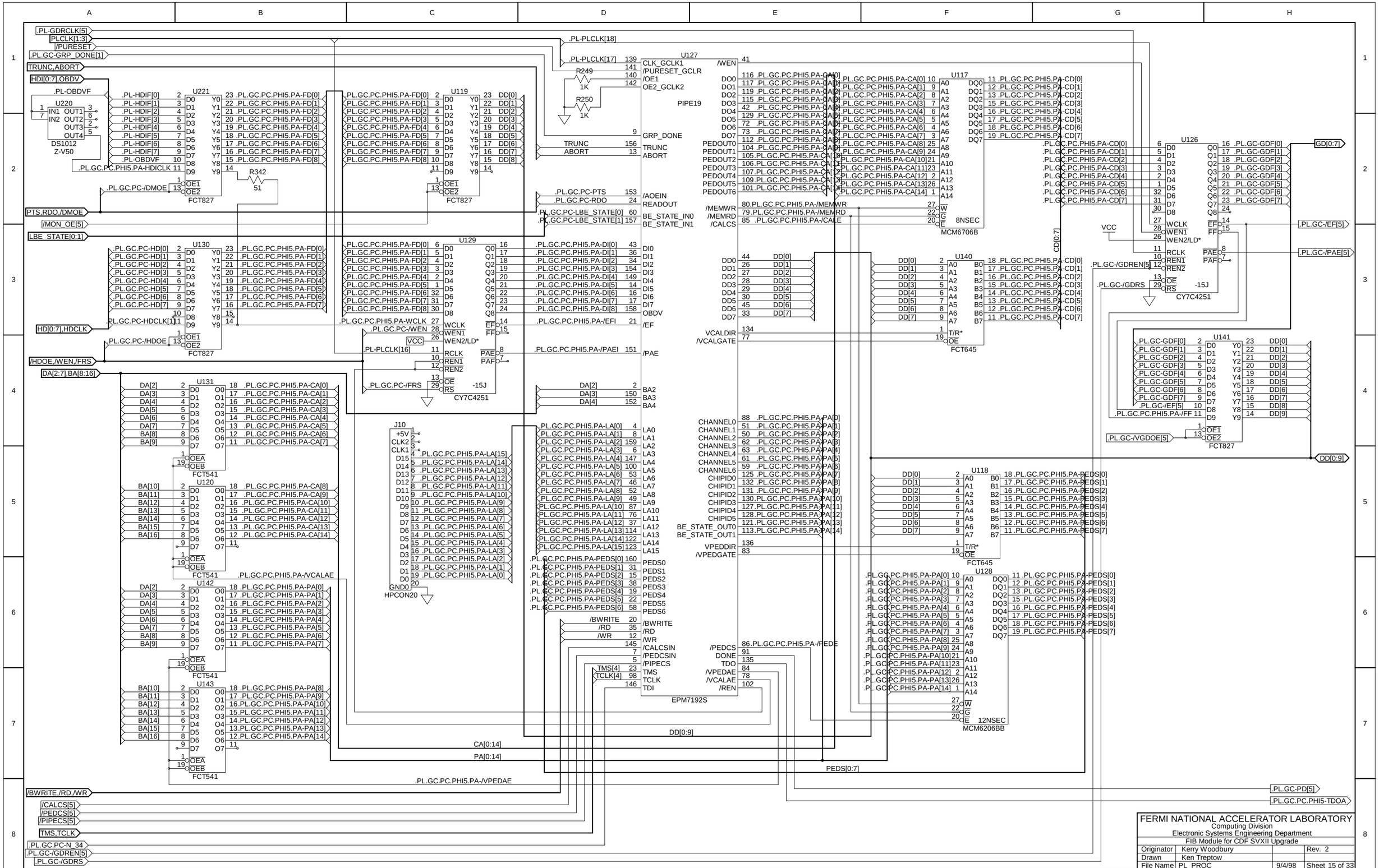


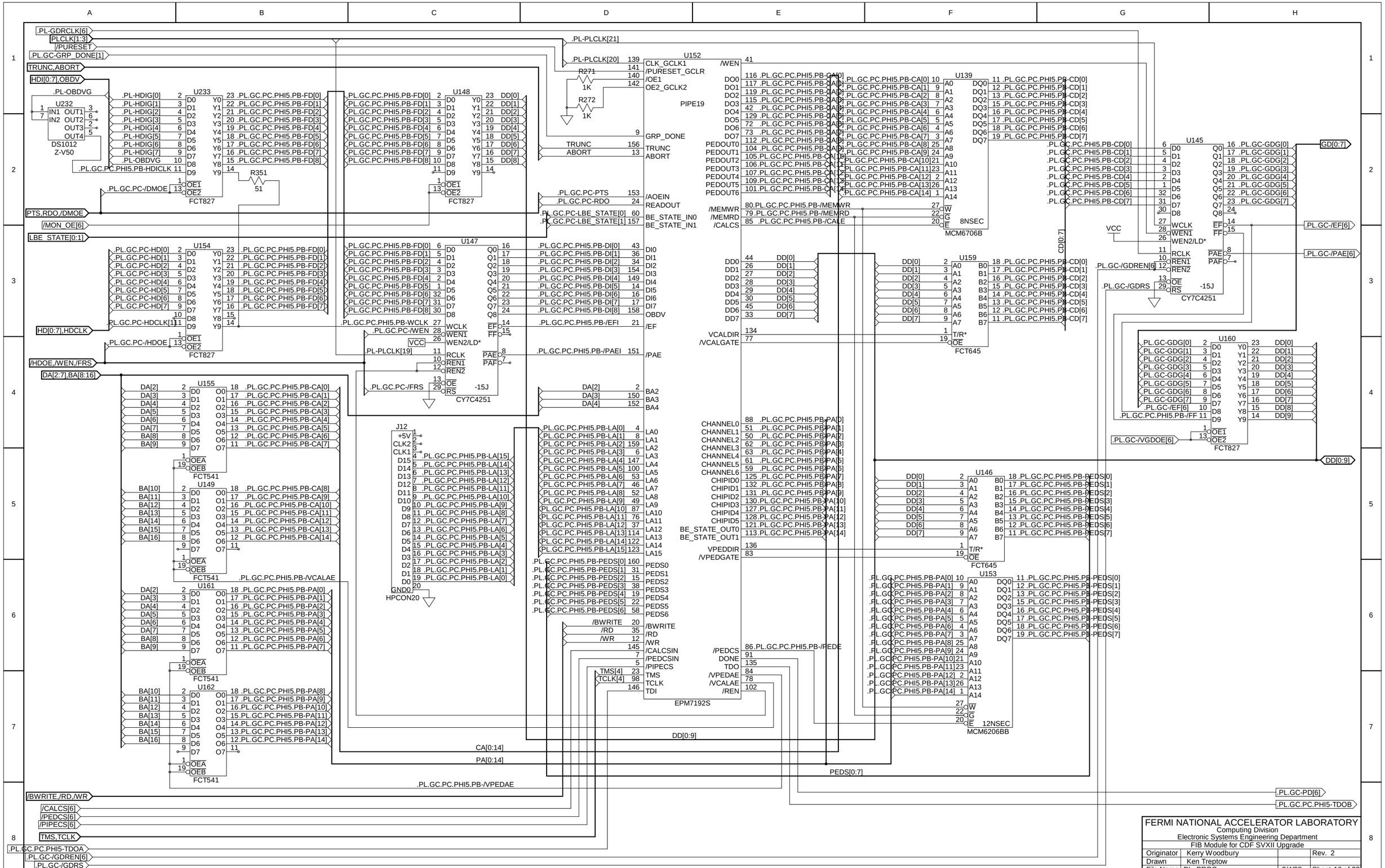
FERMI NATIONAL ACCELERATOR LABORATORY			
Computing Division			
Electronic Systems Engineering Department			
FIB Module for CDF SVXII Upgrade			
Originator	Kerry Woodbury		Rev. 2
Drawn	Ken Treptow		
File Name	GLINKOUT	7/28/98	Sheet 12 of 33

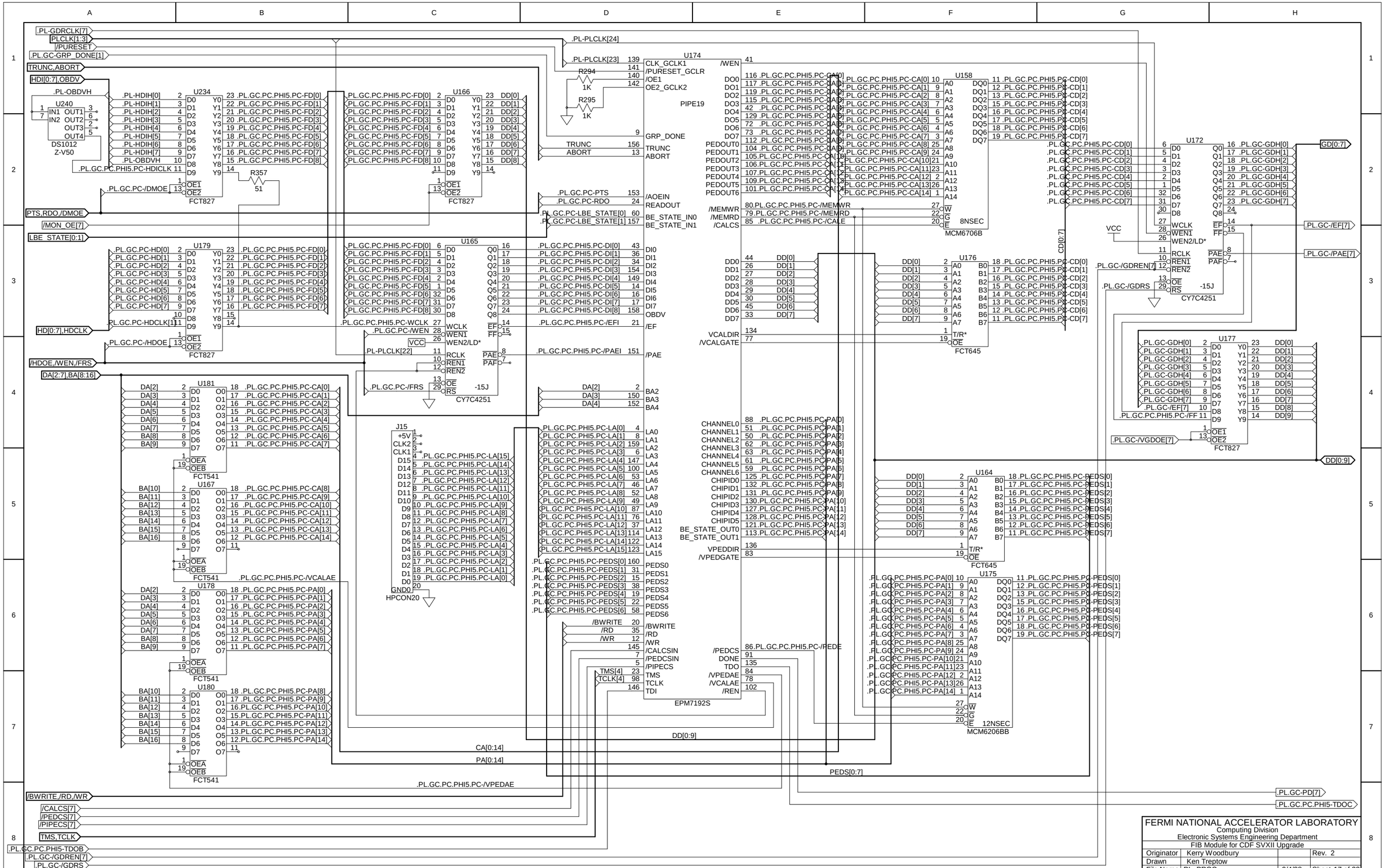

U77
EPM7192S
PLP_A_E
PHI5
PLO5
J7
HPCON20
GDRCLK[0:9]
PLCLK[0:30]
/PURESET
TRUNC,ABORT
ADPIPE
.PL-SYNC[1]
BXING[0:7],BE_STATE[0:1]
DIG_CMD
EDONE
DOIM_OE,READOUT
/FIFOCS
.PL.GC-N_104
TMS[2:4],TCLK[2:4]
GRP_DONE[0:1]
/MONOE[0:9]
.PL.GC-/GDRS
/GDREN[0:9]
/VGDOE[0:9]
/CALCS[0:9]
/PEDCS[0:9]
/PIPECS[0:9]
DA[2:7],BA[8:16]
/BWRITE,/RD,/WR
HDIA[0:7],OBDVA
HDIB[0:7],OBDVB
HDIC[0:7],OBDVC
HDID[0:7],OBDVD
HDIE[0:7],OBDVE
HDIF[0:7],OBDVF
HDIG[0:7],OBDVG
HDIH[0:7],OBDVH
HDII[0:7],OBDVI
HDIJ[0:7],OBDVJ
GDA[0:7]
GDB[0:7]
GDC[0:7]
GDD[0:7]
GDE[0:7]
/PAE[0:4]
/EF[0:4]
PD[0:4]
DD[0:9]
TDO
GDF[0:7]
GDG[0:7]
GDH[0:7]
GDI[0:7]
GDJ[0:7]
/PAE[0:9]
/EF[0:9]
PD[0:9]
DD[0:9]
TDOA
/PAE[5:9]
/EF[5:9]
PD[5:9]
DD[0:9]
FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
FIB Module for CDF SVXII Upgrade
Originator Kerry Woodbury Rev. 2
Drawn Ken Treptow
File Name PL_CNTL 10/5/98 Sheet 13 of 33

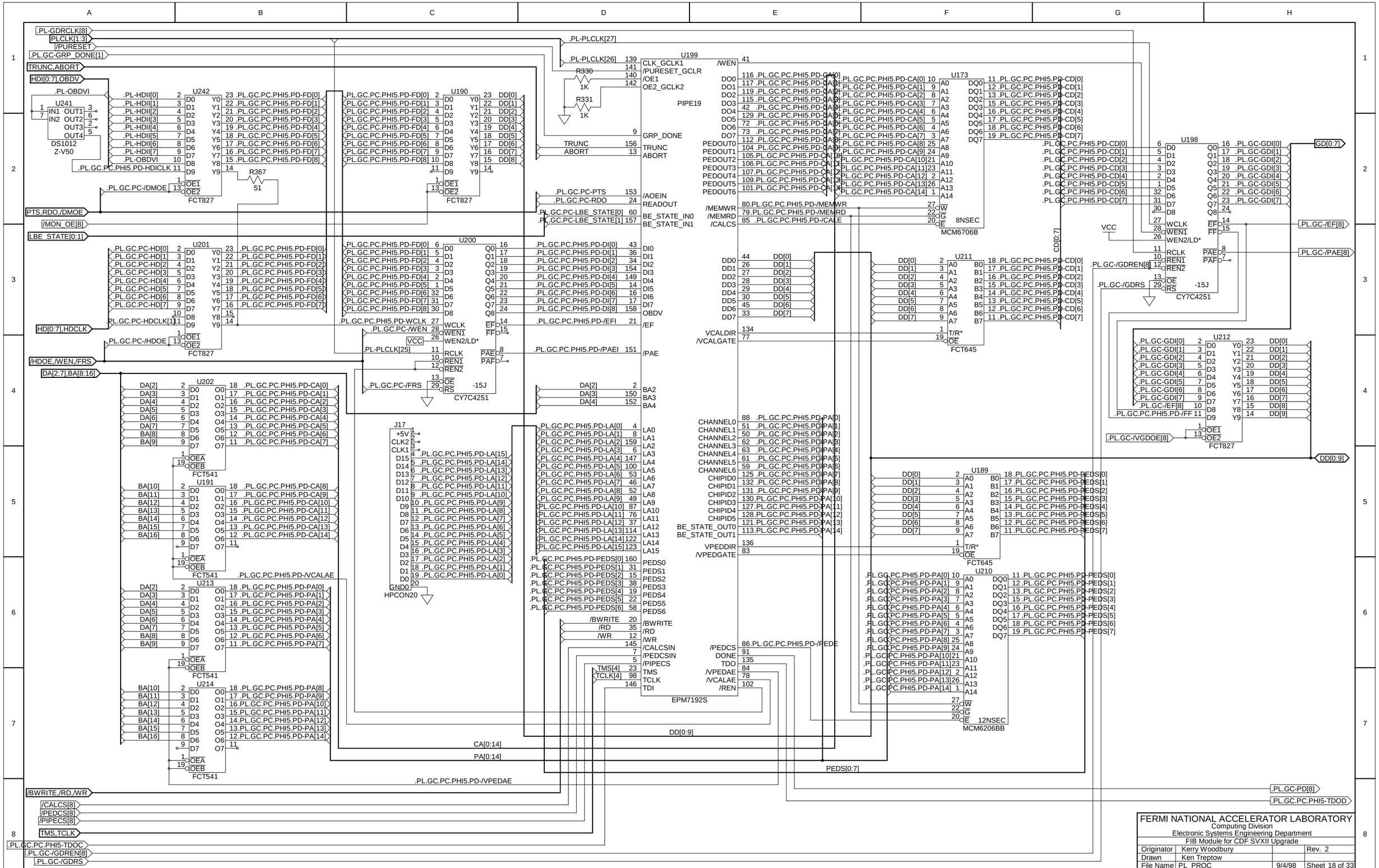


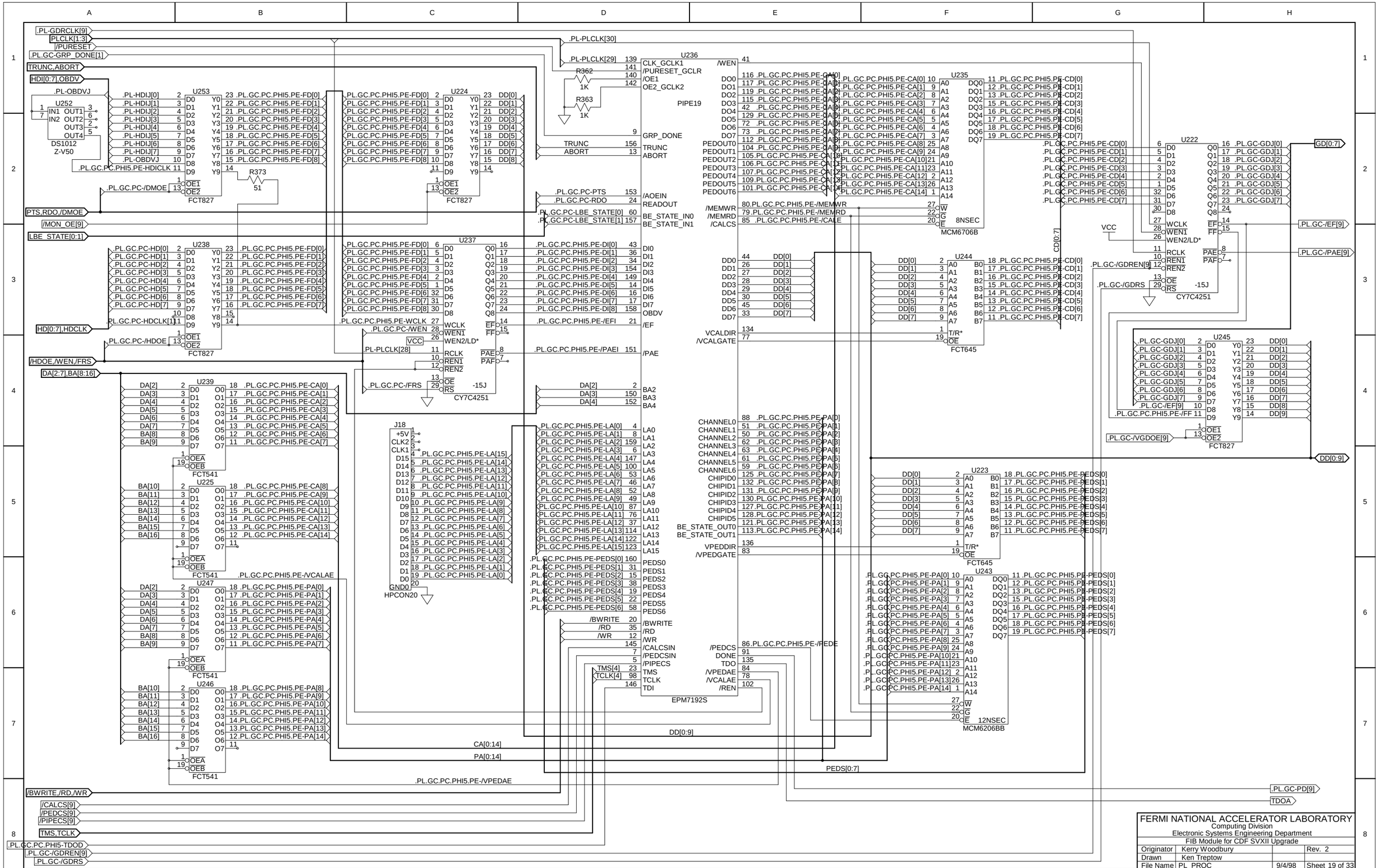
FERMI NATIONAL ACCELERATOR LABORATORY			
Computing Division			
Electronic Systems Engineering Department			
FIB Module for CDF SVXII Upgrade			
Originator	Kerry Woodbury		Rev. 2
Drawn	Ken Treptow		
File Name	PLP_A_E	9/2/98	Sheet 14 of 33

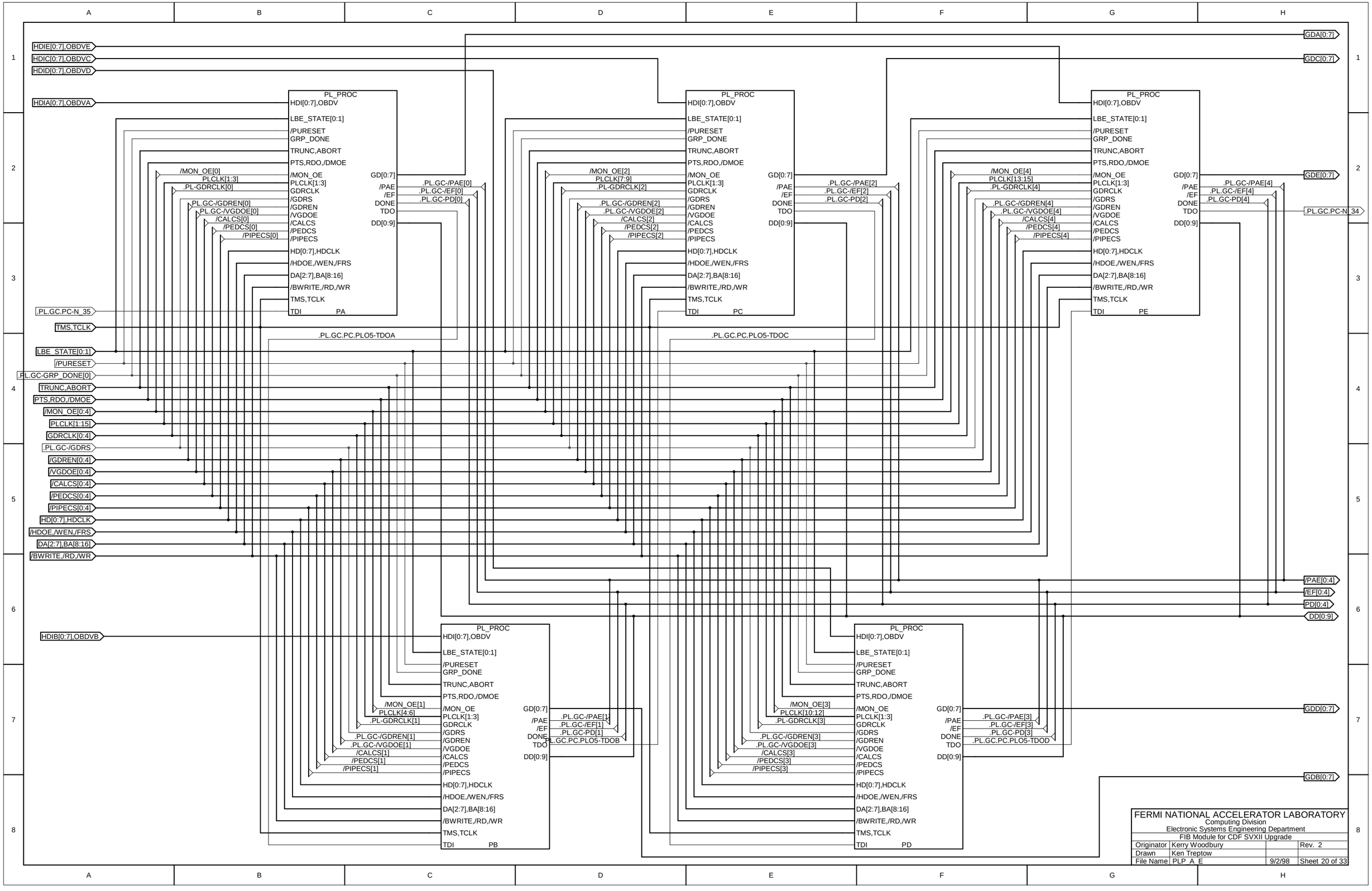

U127
EPM7192S
U221
U119
U130
U129
U131
U120
U142
U143
U220
DS1012
Z-V50
U117
MCM6706B
U126
CY7C4251
U140
FCT645
U141
U118
U128
MCM6206BB
J10
HPCON20
FCT827
FCT541
R249
R250
R342
FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
FIB Module for CDF SVXII Upgrade
Originator Kerry Woodbury
Rev. 2
Drawn Ken Treptow
File Name PL_PROC
9/4/98
Sheet 15 of 33

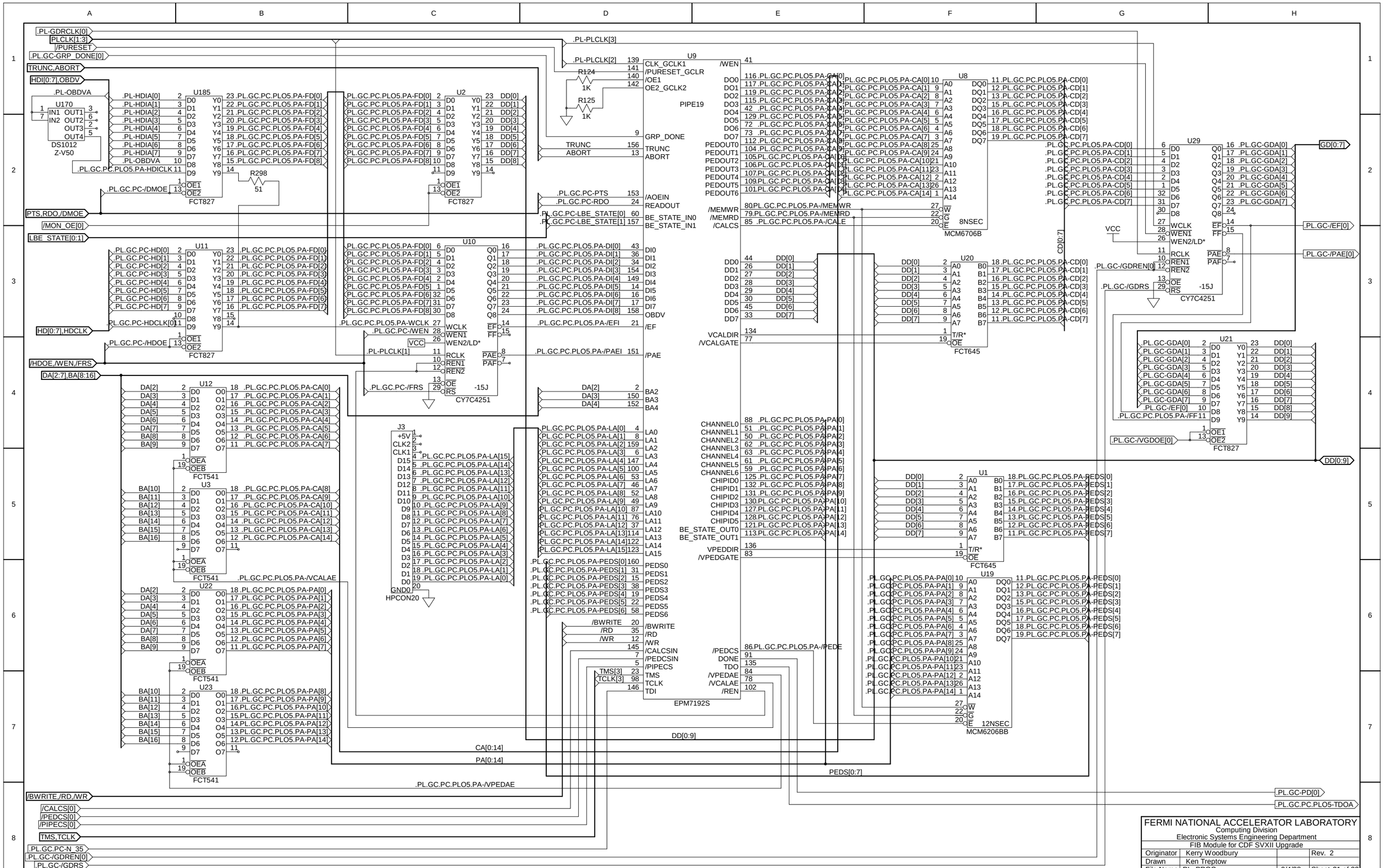

.PL-GDRCLK[6]
PLCLK[1:3]
/PURESET
.PL.GC-GRP_DONE[1]
TRUNC,ABORT
HDI[0:7],OBDV
.PL-OBDVG
U232
DS1012
Z-V50
U233
FCT827
U148
FCT827
R351
51
R271
1K
R272
1K
U152
EPM7192S
PIPE19
PTS,RDO,/DMOE
/MON_OE[6]
LBE_STATE[0:1]
U154
U147
CY7C4251
HD[0:7],HDCLK
/HDOE,/WEN,/FRS
DA[2:7],BA[8:16]
U155
FCT541
U149
FCT541
U161
FCT541
U162
FCT541
J12
HPCON20
U139
MCM6706B
U159
FCT645
U145
CY7C4251
U160
FCT827
U146
FCT645
U153
MCM6206BB
GD[0:7]
DD[0:9]
CA[0:14]
PA[0:14]
PEDS[0:7]
/BWRITE,/RD,/WR
/CALCS[6]
/PEDCS[6]
/PIPECS[6]
TMS,TCLK
.PL.GC.PC.PHI5-TDOA
.PL.GC-/GDREN[6]
.PL.GC-/GDRS
.PL.GC-PD[6]
.PL.GC.PC.PHI5-TDOB
FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
FIB Module for CDF SVXII Upgrade
Originator Kerry Woodbury
Rev. 2
Drawn Ken Treptow
File Name PL_PROC
9/4/98
Sheet 16 of 33

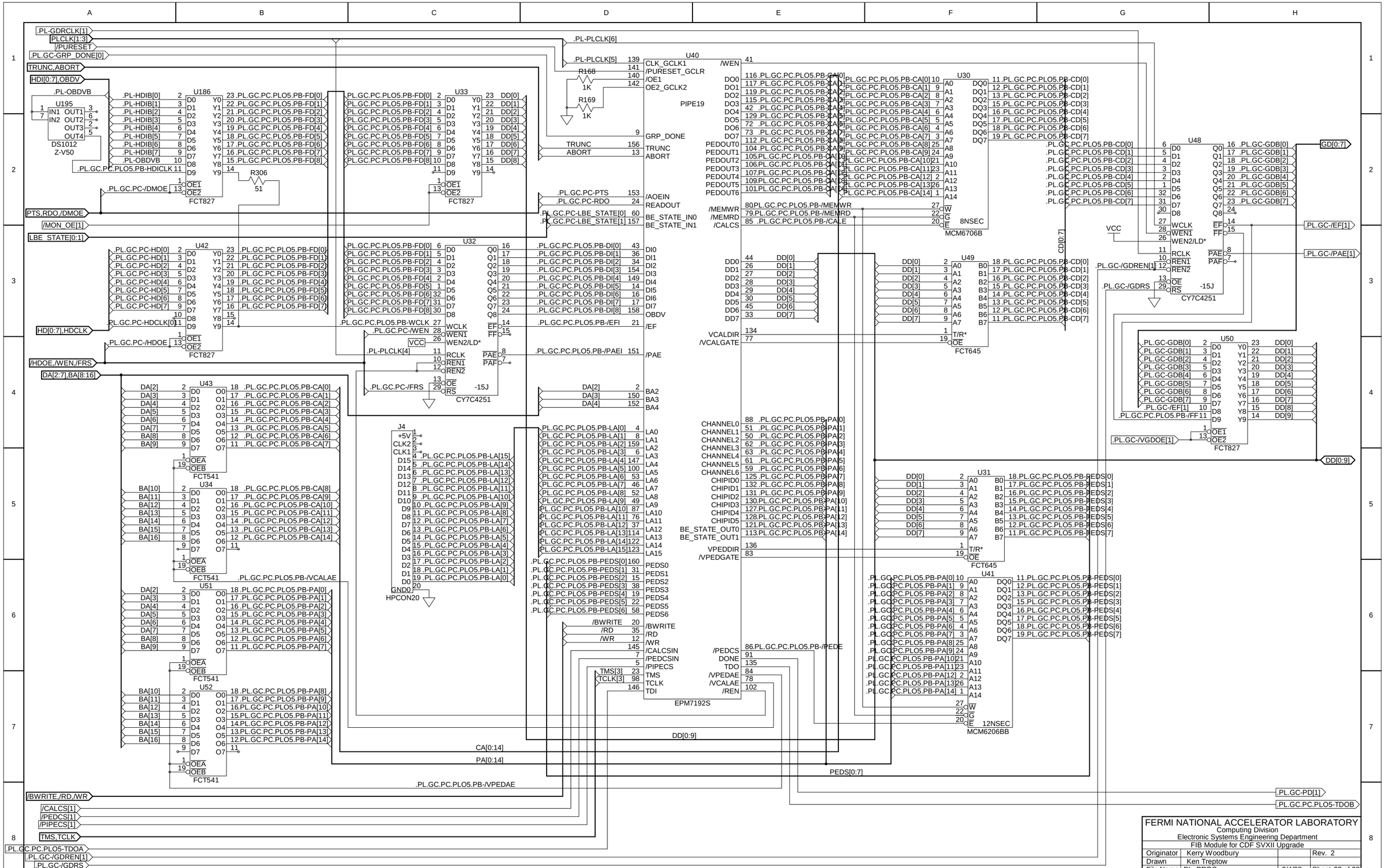

U174
EPM7192S
U234
FCT827
U166
FCT827
U240
DS1012
Z-V50
U179
FCT827
U165
CY7C4251
U181
FCT541
U167
FCT541
U178
FCT541
U180
FCT541
J15
HPCON20
U158
MCM6706B
U176
FCT645
U172
CY7C4251
U177
FCT827
U164
FCT645
U175
MCM6206BB
FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
FIB Module for CDF SVXII Upgrade
Originator Kerry Woodbury
Rev. 2
Drawn Ken Treptow
File Name PL_PROC
9/4/98
Sheet 17 of 33

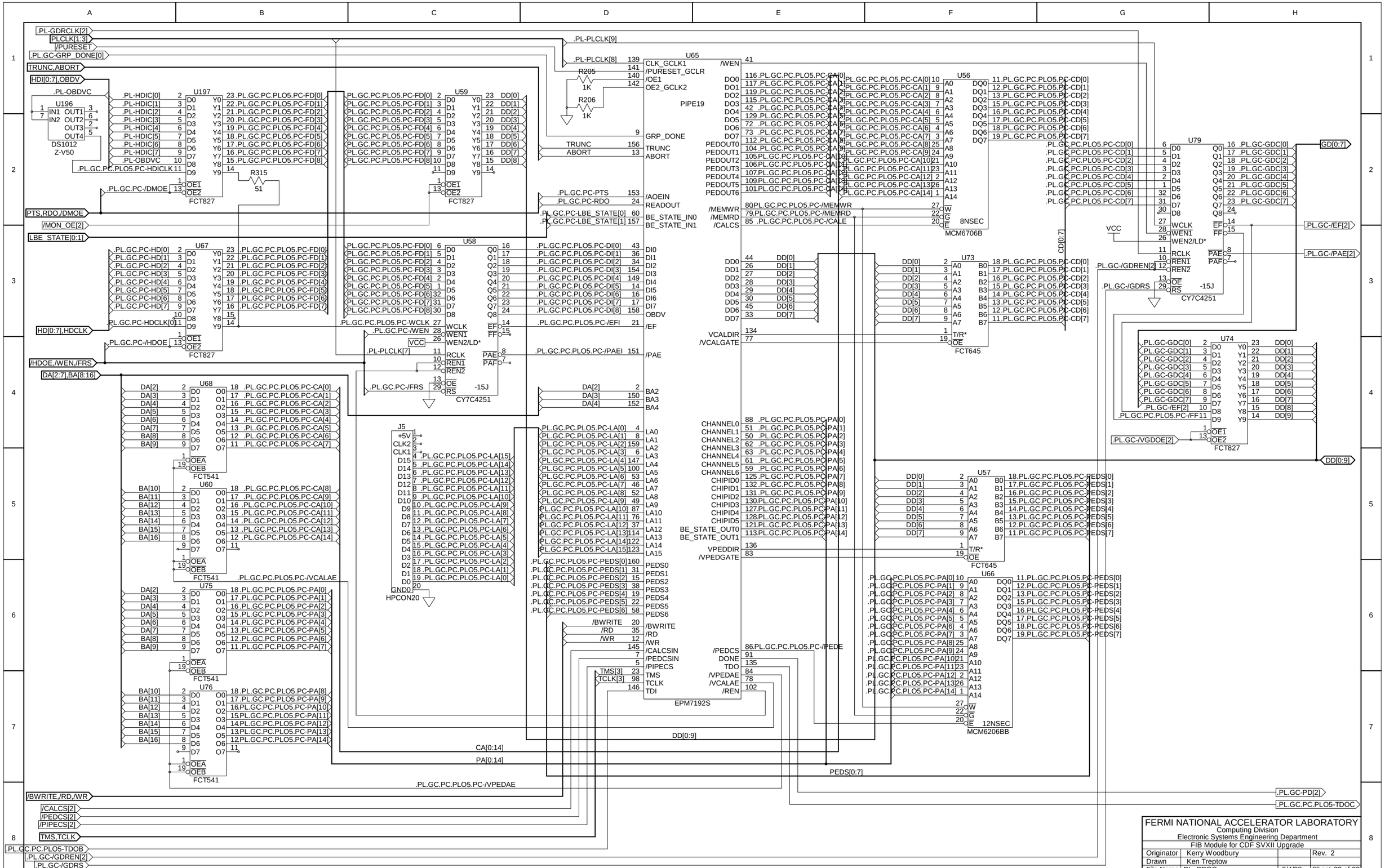

U199
U242
U190
U173
U198
U241
DS1012
Z-V50
FCT827
R367
51
R330
1K
R331
1K
U201
U200
U211
U212
CY7C4251
FCT645
MCM6706B
8NSEC
FCT827
U202
U191
U213
U214
FCT541
J17
HPCON20
U189
U210
MCM6206BB
12NSEC
EPM7192S
PIPE19
GRP_DONE
TRUNC
ABORT
/AOEIN
READOUT
BE_STATE_IN0
BE_STATE_IN1
DI0
DI1
DI2
DI3
DI4
DI5
DI6
DI7
OBDV
/EF
/PAE
BA2
BA3
BA4
LA0
LA1
LA2
LA3
LA4
LA5
LA6
LA7
LA8
LA9
LA10
LA11
LA12
LA13
LA14
LA15
PEDS0
PEDS1
PEDS2
PEDS3
PEDS4
PEDS5
PEDS6
/BWRITE
/RD
/WR
/CALCSIN
/PEDCSIN
/PIPECS
TMS
TCLK
TDI
/PEDCS
DONE
TDO
/VPEDAE
/VCALAE
/REN
VPEDDIR
/VPEDGATE
VCALDIR
/VCALGATE
/MEMWR
/MEMRD
/CALCS
PEDOUT0
PEDOUT1
PEDOUT2
PEDOUT3
PEDOUT4
PEDOUT5
PEDOUT6
CHANNEL0
CHANNEL1
CHANNEL2
CHANNEL3
CHANNEL4
CHANNEL5
CHANNEL6
CHIPID0
CHIPID1
CHIPID2
CHIPID3
CHIPID4
CHIPID5
BE_STATE_OUT0
BE_STATE_OUT1
.PL.GC-GRP_DONE[1]
TRUNC,ABORT
HDI[0:7],OBDV
PTS,RDO,/DMOE
/MON_OE[8]
LBE_STATE[0:1]
HD[0:7],HDCLK
/HDOE,/WEN,/FRS
DA[2:7],BA[8:16]
/BWRITE,/RD,/WR
/CALCS[8]
/PEDCS[8]
/PIPECS[8]
TMS,TCLK
.PL.GC.PC.PHI5-TDOC
.PL.GC-/GDREN[8]
.PL.GC-/GDRS
.PL.GC-PD[8]
.PL.GC.PC.PHI5-TDOD
GD[0:7]
DD[0:9]
.PL.GC-/EF[8]
.PL.GC-/PAE[8]
.PL.GC-/GDREN[8]
.PL.GC-/GDRS
.PL.GC-/VGDOE[8]
CA[0:14]
PA[0:14]
PEDS[0:7]
.PL.GC.PC.PHI5.PD-/VCALAE
.PL.GC.PC.PHI5.PD-/VPEDAE
FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
FIB Module for CDF SVXII Upgrade
Originator Kerry Woodbury
Rev. 2
Drawn Ken Treptow
File Name PL_PROC
9/4/98
Sheet 18 of 33

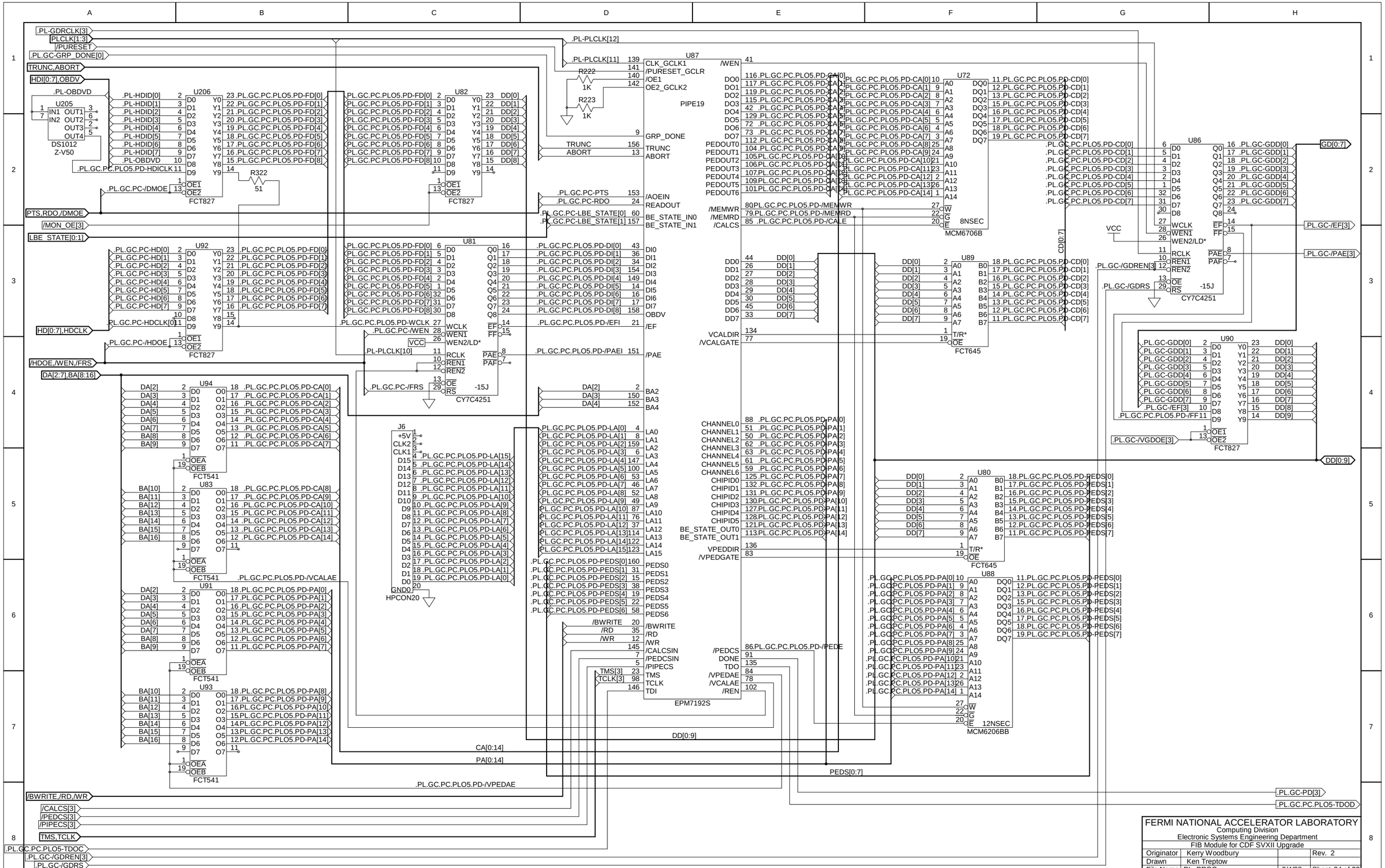

U236
EPM7192S
U235
MCM6706B
U222
CY7C4251
U253
FCT827
U224
FCT827
U237
CY7C4251
U238
FCT827
U239
FCT541
U225
FCT541
U247
FCT541
U246
FCT541
U244
FCT645
U245
FCT827
U223
FCT645
U243
MCM6206BB
U252
DS1012
Z-V50
J18
HPCON20
R362
1K
R363
1K
R373
51
FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
FIB Module for CDF SVXII Upgrade
Originator Kerry Woodbury
Rev. 2
Drawn Ken Treptow
File Name PL_PROC
9/4/98
Sheet 19 of 33

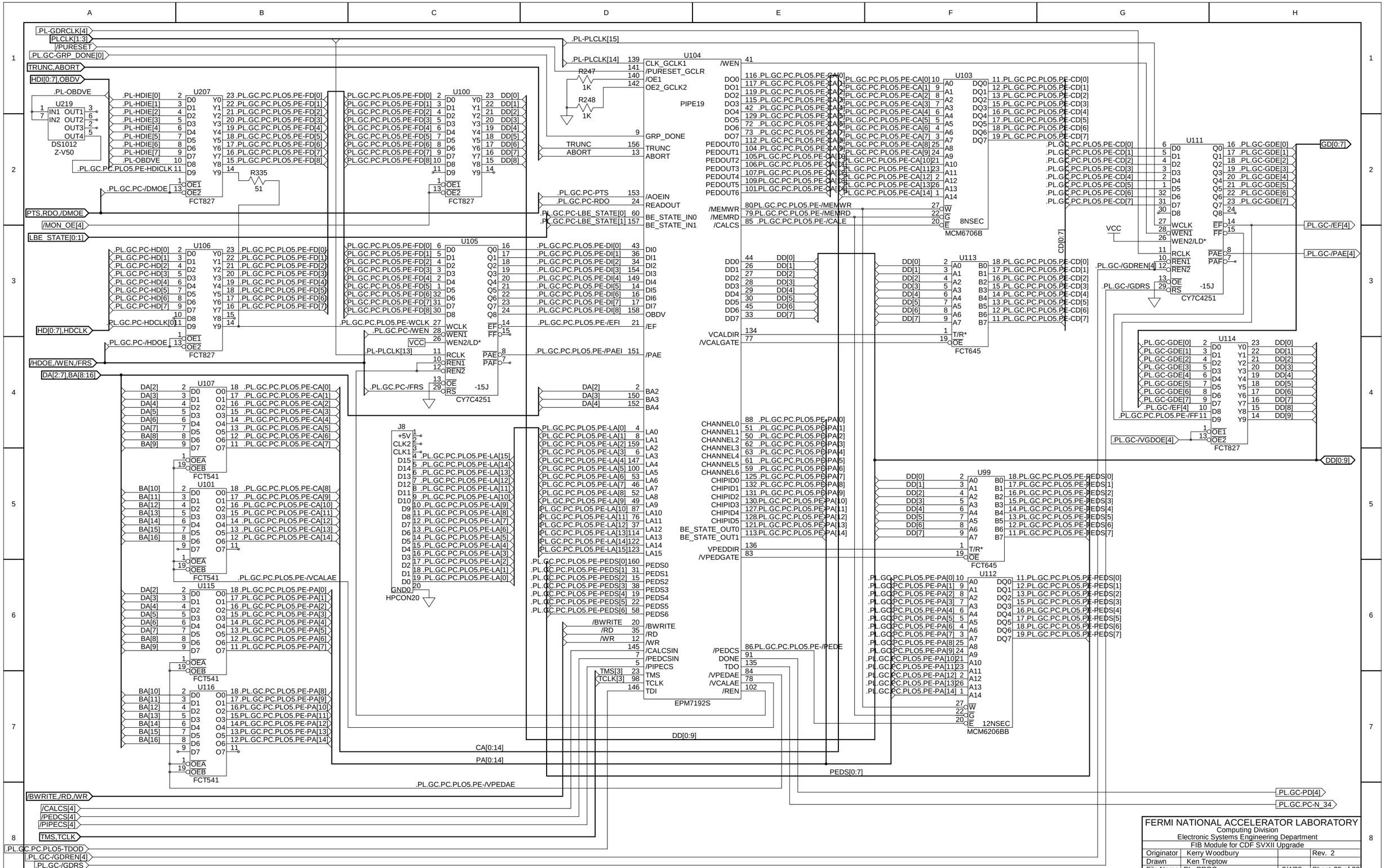

HDIE[0:7],OBDVE
HDIC[0:7],OBDVC
HDID[0:7],OBDVD
HDIA[0:7],OBDVA
HDIB[0:7],OBDVB
.PL.GC.PC-N_35
TMS,TCLK
LBE_STATE[0:1]
/PURESET
.PL.GC-GRP_DONE[0]
TRUNC,ABORT
PTS,RDO,/DMOE
/MON_OE[0:4]
PLCLK[1:15]
GDRCLK[0:4]
.PL.GC-/GDRS
/GDREN[0:4]
/VGDOE[0:4]
/CALCS[0:4]
/PEDCS[0:4]
/PIPECS[0:4]
HD[0:7],HDCLK
/HDOE,/WEN,/FRS
DA[2:7],BA[8:16]
/BWRITE,/RD,/WR
GDA[0:7]
GDC[0:7]
GDE[0:7]
.PL.GC.PC-N_34
/PAE[0:4]
/EF[0:4]
PD[0:4]
DD[0:9]
GDD[0:7]
GDB[0:7]
PL_PROC
HDI[0:7],OBDV
LBE_STATE[0:1]
/PURESET
GRP_DONE
TRUNC,ABORT
PTS,RDO,/DMOE
/MON_OE
PLCLK[1:3]
GDRCLK
/GDRS
/GDREN
/VGDOE
/CALCS
/PEDCS
/PIPECS
HD[0:7],HDCLK
/HDOE,/WEN,/FRS
DA[2:7],BA[8:16]
/BWRITE,/RD,/WR
TMS,TCLK
TDI
GD[0:7]
/PAE
/EF
DONE
TDO
DD[0:9]
PA
PB
PC
PD
PE
/MON_OE[0]
PLCLK[1:3]
.PL-GDRCLK[0]
.PL.GC-/GDREN[0]
.PL.GC-/VGDOE[0]
/CALCS[0]
/PEDCS[0]
/PIPECS[0]
.PL.GC-/PAE[0]
.PL.GC-/EF[0]
.PL.GC-PD[0]
.PL.GC.PC.PLO5-TDOA
/MON_OE[2]
PLCLK[7:9]
.PL-GDRCLK[2]
.PL.GC-/GDREN[2]
.PL.GC-/VGDOE[2]
/CALCS[2]
/PEDCS[2]
/PIPECS[2]
.PL.GC-/PAE[2]
.PL.GC-/EF[2]
.PL.GC-PD[2]
.PL.GC.PC.PLO5-TDOC
/MON_OE[4]
PLCLK[13:15]
.PL-GDRCLK[4]
.PL.GC-/GDREN[4]
.PL.GC-/VGDOE[4]
/CALCS[4]
/PEDCS[4]
/PIPECS[4]
.PL.GC-/PAE[4]
.PL.GC-/EF[4]
.PL.GC-PD[4]
/MON_OE[1]
PLCLK[4:6]
.PL-GDRCLK[1]
.PL.GC-/GDREN[1]
.PL.GC-/VGDOE[1]
/CALCS[1]
/PEDCS[1]
/PIPECS[1]
.PL.GC-/PAE[1]
.PL.GC-/EF[1]
.PL.GC-PD[1]
.PL.GC.PC.PLO5-TDOB
/MON_OE[3]
PLCLK[10:12]
.PL-GDRCLK[3]
.PL.GC-/GDREN[3]
.PL.GC-/VGDOE[3]
/CALCS[3]
/PEDCS[3]
/PIPECS[3]
.PL.GC-/PAE[3]
.PL.GC-/EF[3]
.PL.GC-PD[3]
.PL.GC.PC.PLO5-TDOD
FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
FIB Module for CDF SVXII Upgrade
Originator Kerry Woodbury
Rev. 2
Drawn Ken Treptow
File Name PLP_A_E
9/2/98
Sheet 20 of 33

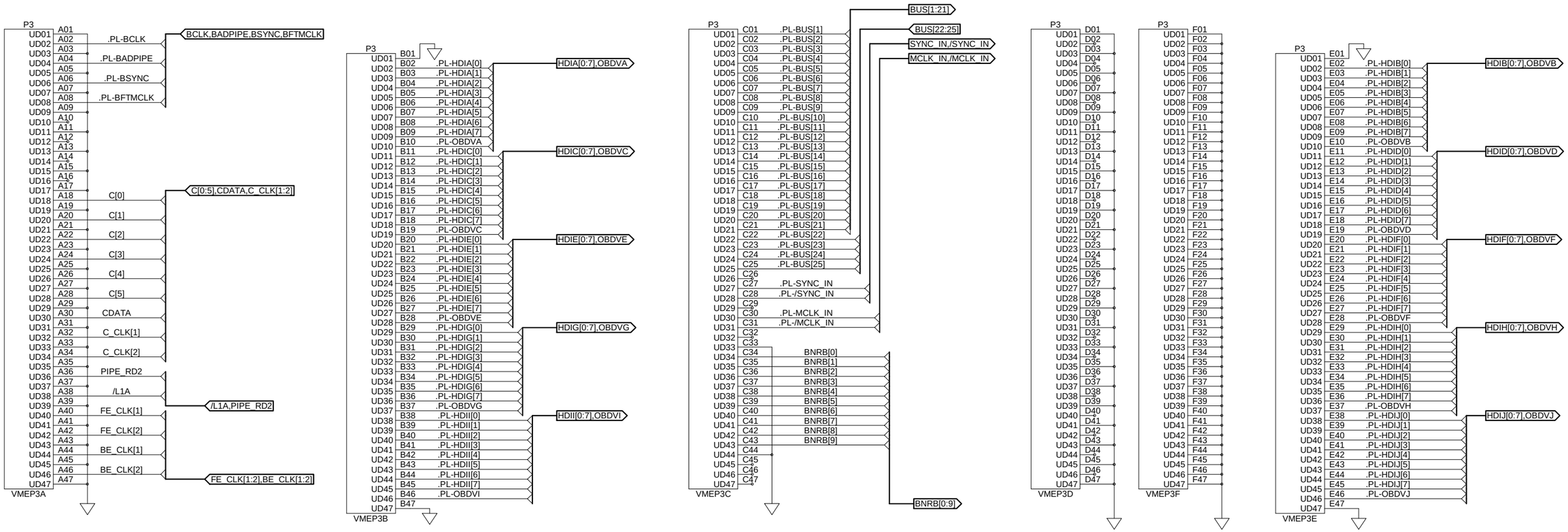

.PL-GDRCLK[0]
PLCLK[1:3]
/PURESET
.PL.GC-GRP_DONE[0]
TRUNC,ABORT
HDI[0:7],OBDV
.PL-OBDVA
U170
DS1012
Z-V50
U185
FCT827
U2
FCT827
R298
51
.PL.GC.PC-/DMOE
PTS,RDO,/DMOE
/MON_OE[0]
LBE_STATE[0:1]
U11
U10
CY7C4251
HD[0:7],HDCLK
.PL.GC.PC-/HDOE
/HDOE,/WEN,/FRS
DA[2:7],BA[8:16]
U12
FCT541
U3
FCT541
U22
FCT541
U23
FCT541
.PL.GC.PC.PLO5.PA-/VCALAE
.PL.GC.PC.PLO5.PA-/VPEDAE
J3
HPCON20
U9
EPM7192S
PIPE19
R124
1K
R125
1K
U8
MCM6706B
8NSEC
U20
FCT645
U29
CY7C4251
-15J
U21
FCT827
U1
FCT645
U19
MCM6206BB
12NSEC
GD[0:7]
DD[0:9]
CA[0:14]
PA[0:14]
PEDS[0:7]
/BWRITE,/RD,/WR
/CALCS[0]
/PEDCS[0]
/PIPECS[0]
TMS,TCLK
.PL.GC.PC-N_35
.PL.GC-/GDREN[0]
.PL.GC-/GDRS
.PL.GC-PD[0]
.PL.GC.PC.PLO5-TDOA
FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
FIB Module for CDF SVXII Upgrade
Originator Kerry Woodbury
Rev. 2
Drawn Ken Treptow
File Name PL_PROC
9/4/98
Sheet 21 of 33


U40
EPM7192S
U186
FCT827
U33
FCT827
U195
DS1012
Z-V50
U42
FCT827
U32
CY7C4251
U43
FCT541
U34
FCT541
U51
FCT541
U52
FCT541
J4
HPCON20
U30
MCM6706B
U49
FCT645
U48
CY7C4251
U50
FCT827
U31
FCT645
U41
MCM6206BB
FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
FIB Module for CDF SVXII Upgrade
Originator Kerry Woodbury
Rev. 2
Drawn Ken Treptow
File Name PL_PROC
9/4/98
Sheet 22 of 33

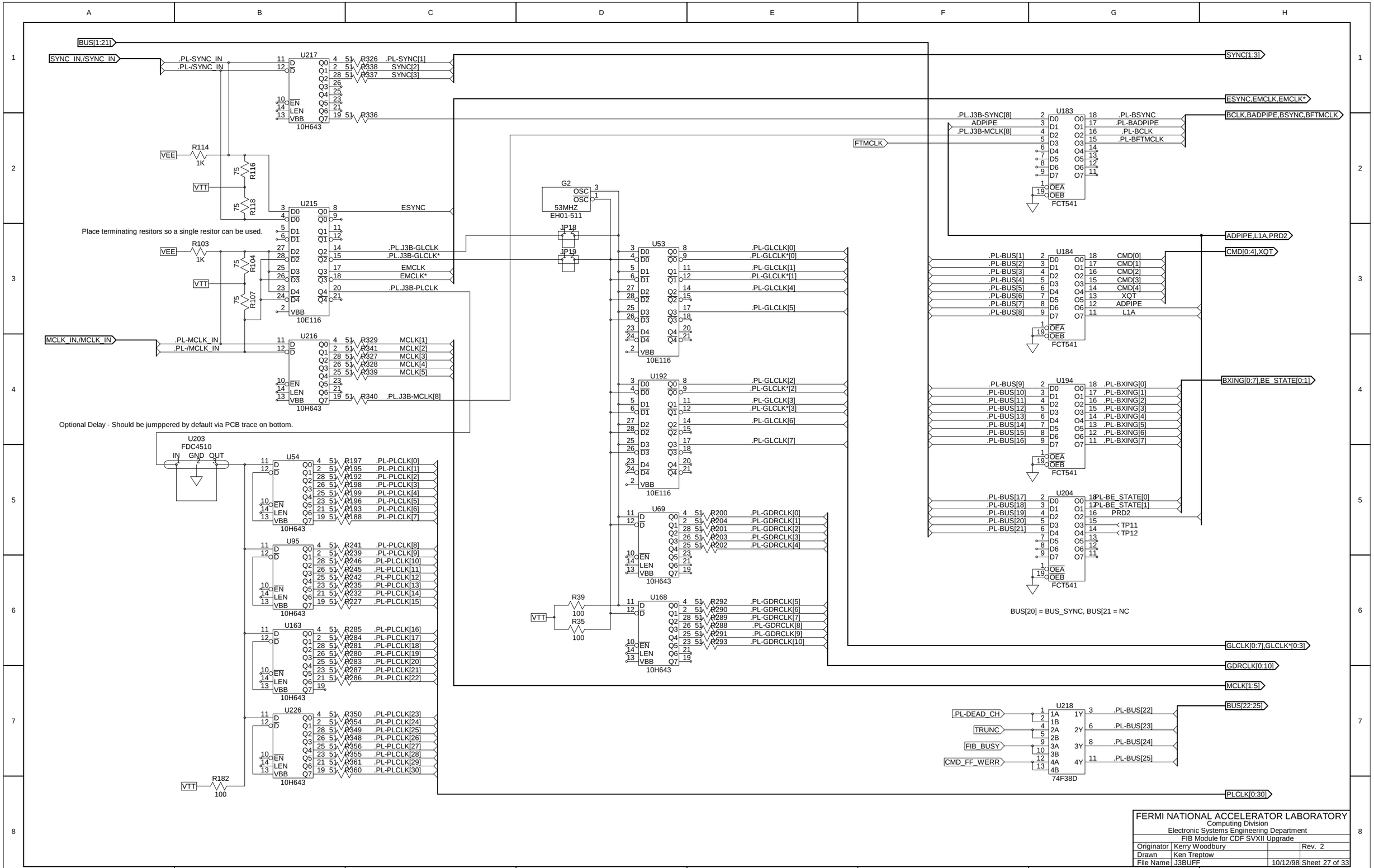

U65
EPM7192S
U197
U59
U58
U67
U68
U60
U75
U76
U56
U73
U79
U74
U57
U66
U196
DS1012
Z-V50
J5
HPCON20
FCT827
FCT541
FCT645
CY7C4251
MCM6706B
MCM6206BB
8NSEC
12NSEC
.PL-GDRCLK[2]
PLCLK[1:3]
/PURESET
.PL.GC-GRP_DONE[0]
TRUNC,ABORT
HDI[0:7],OBDV
PTS,RDO,/DMOE
/MON_OE[2]
LBE_STATE[0:1]
HD[0:7],HDCLK
/HDOE,/WEN,/FRS
DA[2:7],BA[8:16]
/BWRITE,/RD,/WR
/CALCS[2]
/PEDCS[2]
/PIPECS[2]
TMS,TCLK
.PL.GC.PC.PLO5-TDOB
.PL.GC-/GDREN[2]
.PL.GC-/GDRS
.PL.GC-PD[2]
.PL.GC.PC.PLO5-TDOC
GD[0:7]
DD[0:9]
.PL.GC-/EF[2]
.PL.GC-/PAE[2]
.PL.GC-/VGDOE[2]
CA[0:14]
PA[0:14]
PEDS[0:7]
.PL.GC.PC.PLO5.PC-/VPEDAE
.PL.GC.PC.PLO5.PC-/VCALAE
FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
FIB Module for CDF SVXII Upgrade
Originator Kerry Woodbury
Rev. 2
Drawn Ken Treptow
File Name PL_PROC
9/4/98
Sheet 23 of 33

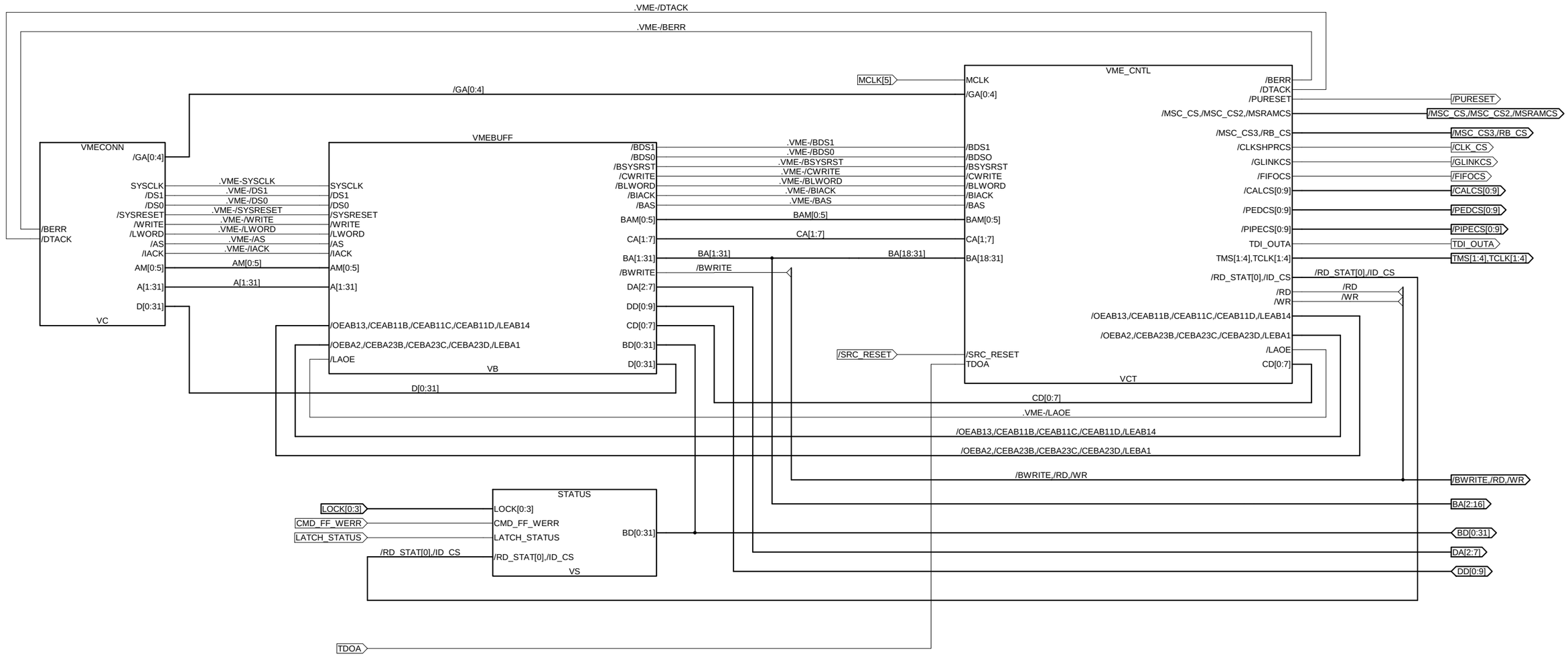

U87
EPM7192S
U206
U82
U81
U92
U94
U83
U91
U93
U205
DS1012
Z-V50
U72
MCM6706B
FCT645
U89
U86
CY7C4251
U90
U80
U88
MCM6206BB
J6
HPCON20
FCT827
FCT541
R222
R223
R322
PIPE19
8NSEC
12NSEC
FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
FIB Module for CDF SVXII Upgrade
Originator Kerry Woodbury
Rev. 2
Drawn Ken Treptow
File Name PL_PROC
9/4/98
Sheet 24 of 33


U104
EPM7192S
U207
FCT827
U100
FCT827
U106
FCT827
U105
CY7C4251
U107
FCT541
U101
FCT541
U115
FCT541
U116
FCT541
U219
DS1012
Z-V50
J8
HPCON20
R247
1K
R248
1K
R335
51
U103
MCM6706B
8NSEC
U113
FCT645
U111
CY7C4251
U114
FCT827
U99
FCT645
U112
MCM6206BB
12NSEC
FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
FIB Module for CDF SVXII Upgrade
Originator Kerry Woodbury
Rev. 2
Drawn Ken Treptow
File Name PL_PROC
9/4/98
Sheet 25 of 33

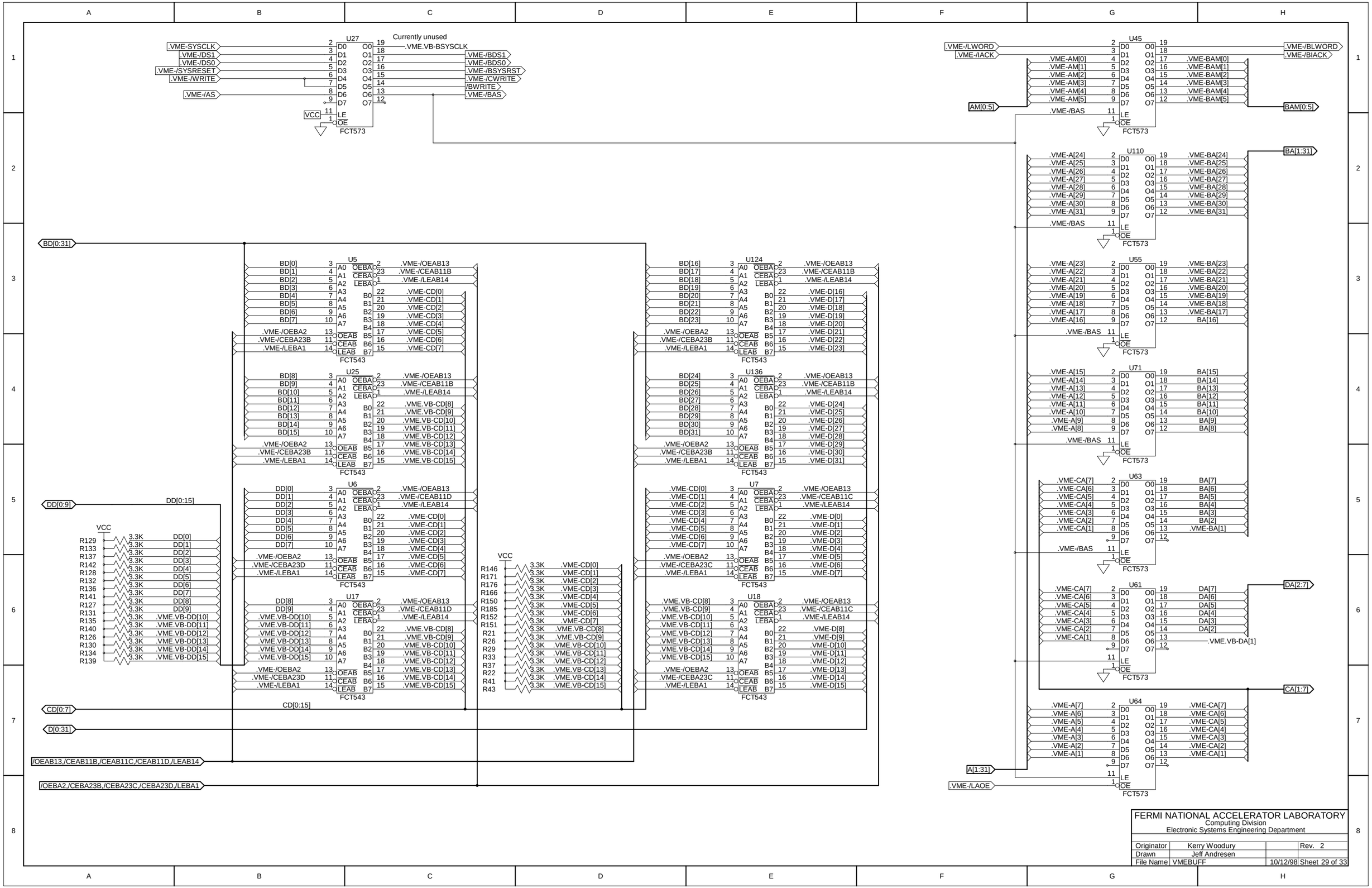


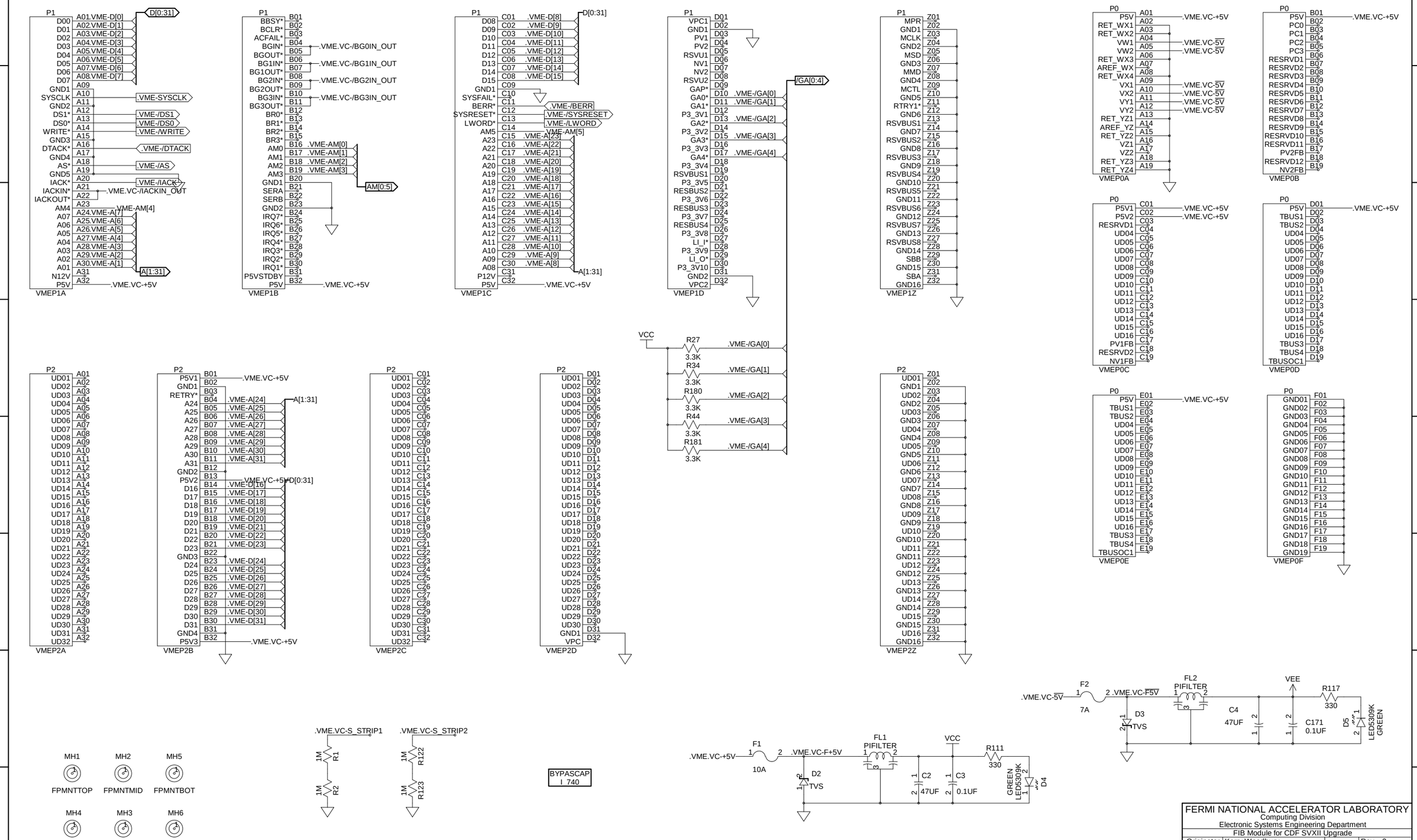
FERMI NATIONAL ACCELERATOR LABORATORY			
Computing Division			
Electronic Systems Engineering Department			
FIB Module for CDF SVXII Upgrade			
Originator	Kerry Woodbury		Rev. 2
Drawn	Ken Treptow		
File Name	J3	7/28/98	Sheet 26 of 33


BUS[1:21]
SYNC_IN,/SYNC_IN
.PL-SYNC_IN
.PL-/SYNC_IN
U217
10H643
.PL-SYNC[1]
SYNC[2]
SYNC[3]
R326
R338
R337
R336
SYNC[1:3]
ESYNC,EMCLK,EMCLK*
BCLK,BADPIPE,BSYNC,BFTMCLK
U183
FCT541
.PL.J3B-SYNC[8]
ADPIPE
.PL.J3B-MCLK[8]
.PL-BSYNC
.PL-BADPIPE
.PL-BCLK
.PL-BFTMCLK
FTMCLK
VEE
R114
1K
VTT
R116
R118
U215
10E116
ESYNC
Place terminating resitors so a single resitor can be used.
R103
R104
R107
.PL.J3B-GLCLK
.PL.J3B-GLCLK*
EMCLK
EMCLK*
.PL.J3B-PLCLK
ADPIPE,L1A,PRD2
CMD[0:4],XQT
U184
FCT541
.PL-BUS[1]
.PL-BUS[2]
.PL-BUS[3]
.PL-BUS[4]
.PL-BUS[5]
.PL-BUS[6]
.PL-BUS[7]
.PL-BUS[8]
CMD[0]
CMD[1]
CMD[2]
CMD[3]
CMD[4]
XQT
ADPIPE
L1A
MCLK_IN,/MCLK_IN
.PL-MCLK_IN
.PL-/MCLK_IN
U216
10H643
MCLK[1]
MCLK[2]
MCLK[3]
MCLK[4]
MCLK[5]
R329
R341
R327
R328
R339
R340
.PL.J3B-MCLK[8]
G2
OSC
53MHZ
EH01-511
JP18
JP19
U53
10E116
.PL-GLCLK[0]
.PL-GLCLK*[0]
.PL-GLCLK[1]
.PL-GLCLK*[1]
.PL-GLCLK[4]
.PL-GLCLK[5]
U192
10E116
.PL-GLCLK[2]
.PL-GLCLK*[2]
.PL-GLCLK[3]
.PL-GLCLK*[3]
.PL-GLCLK[6]
.PL-GLCLK[7]
BXING[0:7],BE_STATE[0:1]
U194
FCT541
.PL-BUS[9]
.PL-BUS[10]
.PL-BUS[11]
.PL-BUS[12]
.PL-BUS[13]
.PL-BUS[14]
.PL-BUS[15]
.PL-BUS[16]
.PL-BXING[0]
.PL-BXING[1]
.PL-BXING[2]
.PL-BXING[3]
.PL-BXING[4]
.PL-BXING[5]
.PL-BXING[6]
.PL-BXING[7]
Optional Delay - Should be jumppered by default via PCB trace on bottom.
U203
FDC4510
IN GND OUT
U54
10H643
.PL-PLCLK[0]
.PL-PLCLK[1]
.PL-PLCLK[2]
.PL-PLCLK[3]
.PL-PLCLK[4]
.PL-PLCLK[5]
.PL-PLCLK[6]
.PL-PLCLK[7]
U204
FCT541
.PL-BUS[17]
.PL-BUS[18]
.PL-BUS[19]
.PL-BUS[20]
.PL-BUS[21]
.PL-BE_STATE[0]
.PL-BE_STATE[1]
PRD2
TP11
TP12
U95
10H643
.PL-PLCLK[8]
.PL-PLCLK[9]
.PL-PLCLK[10]
.PL-PLCLK[11]
.PL-PLCLK[12]
.PL-PLCLK[13]
.PL-PLCLK[14]
.PL-PLCLK[15]
U69
10H643
.PL-GDRCLK[0]
.PL-GDRCLK[1]
.PL-GDRCLK[2]
.PL-GDRCLK[3]
.PL-GDRCLK[4]
R39
R35
100
U168
10H643
.PL-GDRCLK[5]
.PL-GDRCLK[6]
.PL-GDRCLK[7]
.PL-GDRCLK[8]
.PL-GDRCLK[9]
.PL-GDRCLK[10]
BUS[20] = BUS_SYNC, BUS[21 = NC
GLCLK[0:7],GLCLK*[0:3]
GDRCLK[0:10]
MCLK[1:5]
U163
10H643
.PL-PLCLK[16]
.PL-PLCLK[17]
.PL-PLCLK[18]
.PL-PLCLK[19]
.PL-PLCLK[20]
.PL-PLCLK[21]
.PL-PLCLK[22]
U226
10H643
.PL-PLCLK[23]
.PL-PLCLK[24]
.PL-PLCLK[25]
.PL-PLCLK[26]
.PL-PLCLK[27]
.PL-PLCLK[28]
.PL-PLCLK[29]
.PL-PLCLK[30]
R182
100
U218
74F38D
.PL-DEAD_CH
TRUNC
FIB_BUSY
CMD_FF_WERR
.PL-BUS[22]
.PL-BUS[23]
.PL-BUS[24]
.PL-BUS[25]
BUS[22:25]
PLCLK[0:30]
FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
FIB Module for CDF SVXII Upgrade
Originator Kerry Woodbury
Rev. 2
Drawn Ken Treptow
File Name J3BUFF
10/12/98
Sheet 27 of 33



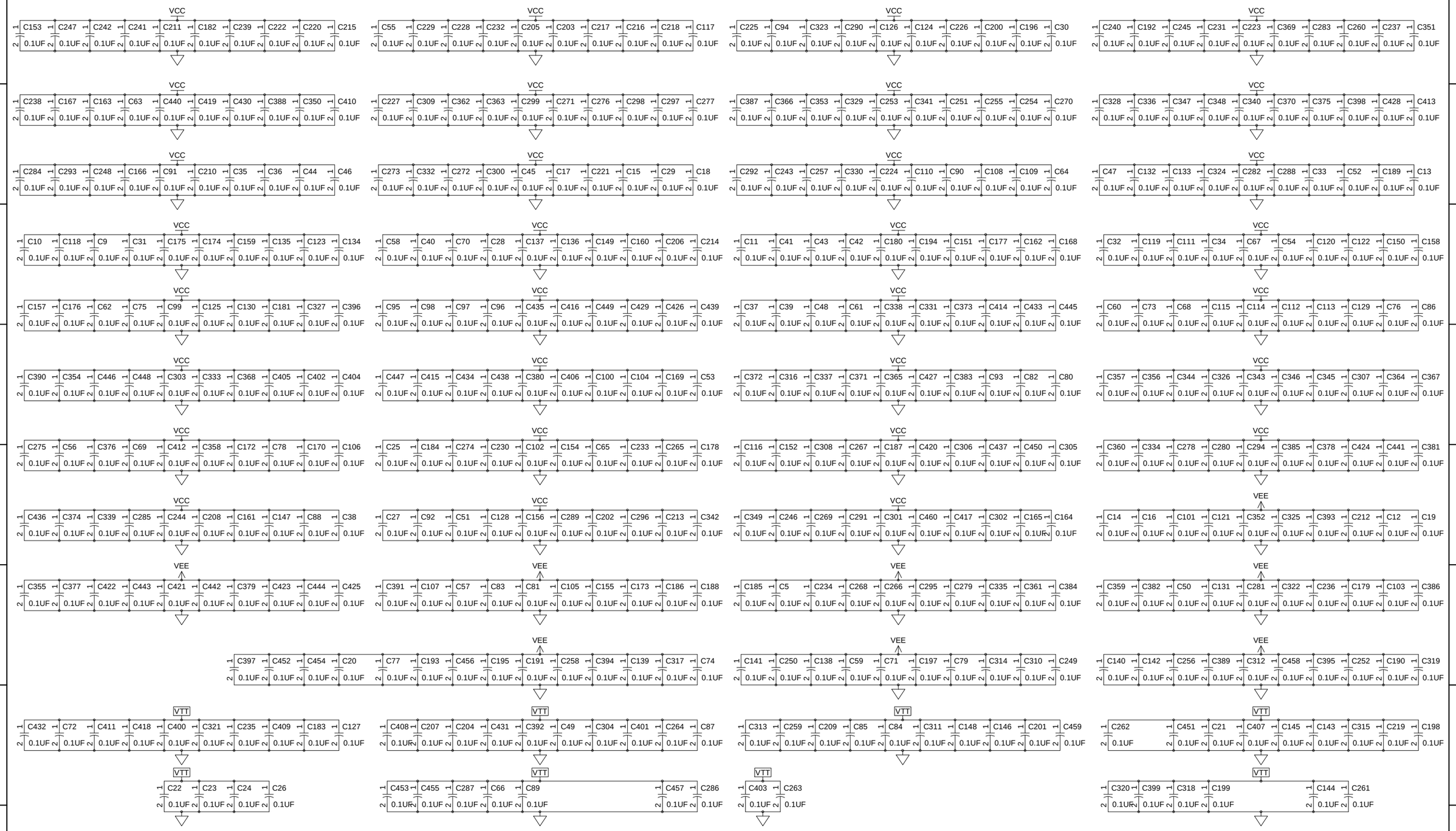
FERMI NATIONAL ACCELERATOR LABORATORY Computing Division Electronic Systems Engineering Department			
FIB Module for CDF SVXII Upgrade			
Originator	Kerry Woodbury		Rev. 2
Drawn	Ken Treptow		
File Name	VME_INT	10/13/98	Sheet 28 of 33


Currently unused
U27
.VME-SYSCLK
.VME-/DS1
.VME-/DS0
.VME-/SYSRESET
.VME-/WRITE
.VME-/AS
.VME.VB-BSYSCLK
.VME-/BDS1
.VME-/BDS0
.VME-/BSYSRST
.VME-/CWRITE
/BWRITE
.VME-/BAS
VCC
FCT573
U45
.VME-/LWORD
.VME-/IACK
.VME-/BLWORD
.VME-/BIACK
.VME-AM[0]
.VME-AM[1]
.VME-AM[2]
.VME-AM[3]
.VME-AM[4]
.VME-AM[5]
.VME-BAM[0]
.VME-BAM[1]
.VME-BAM[2]
.VME-BAM[3]
.VME-BAM[4]
.VME-BAM[5]
AM[0:5]
BAM[0:5]
U110
BA[1:31]
.VME-A[24]
.VME-A[25]
.VME-A[26]
.VME-A[27]
.VME-A[28]
.VME-A[29]
.VME-A[30]
.VME-A[31]
.VME-BA[24]
.VME-BA[25]
.VME-BA[26]
.VME-BA[27]
.VME-BA[28]
.VME-BA[29]
.VME-BA[30]
.VME-BA[31]
U55
.VME-A[23]
.VME-A[22]
.VME-A[21]
.VME-A[20]
.VME-A[19]
.VME-A[18]
.VME-A[17]
.VME-A[16]
.VME-BA[23]
.VME-BA[22]
.VME-BA[21]
.VME-BA[20]
.VME-BA[19]
.VME-BA[18]
.VME-BA[17]
BA[16]
U71
.VME-A[15]
.VME-A[14]
.VME-A[13]
.VME-A[12]
.VME-A[11]
.VME-A[10]
.VME-A[9]
.VME-A[8]
BA[15]
BA[14]
BA[13]
BA[12]
BA[11]
BA[10]
BA[9]
BA[8]
U63
.VME-CA[7]
.VME-CA[6]
.VME-CA[5]
.VME-CA[4]
.VME-CA[3]
.VME-CA[2]
.VME-CA[1]
BA[7]
BA[6]
BA[5]
BA[4]
BA[3]
BA[2]
.VME-BA[1]
U61
DA[2:7]
DA[7]
DA[6]
DA[5]
DA[4]
DA[3]
DA[2]
.VME.VB-DA[1]
CA[1:7]
U64
.VME-A[7]
.VME-A[6]
.VME-A[5]
.VME-A[4]
.VME-A[3]
.VME-A[2]
.VME-A[1]
.VME-CA[7]
.VME-CA[6]
.VME-CA[5]
.VME-CA[4]
.VME-CA[3]
.VME-CA[2]
.VME-CA[1]
A[1:31]
.VME-/LAOE
BD[0:31]
U5
U25
U6
U17
U124
U136
U7
U18
FCT543
.VME-/OEAB13
.VME-/CEAB11B
.VME-/CEAB11D
.VME-/CEAB11C
.VME-/LEAB14
.VME-/OEBA2
.VME-/CEBA23B
.VME-/CEBA23D
.VME-/CEBA23C
.VME-/LEBA1
.VME-CD[0]
.VME-CD[1]
.VME-CD[2]
.VME-CD[3]
.VME-CD[4]
.VME-CD[5]
.VME-CD[6]
.VME-CD[7]
.VME-CD[8]
.VME-CD[9]
.VME-CD[10]
.VME-CD[11]
.VME-CD[12]
.VME-CD[13]
.VME-CD[14]
.VME-CD[15]
.VME.VB-CD[8]
.VME.VB-CD[9]
.VME.VB-CD[10]
.VME.VB-CD[11]
.VME.VB-CD[12]
.VME.VB-CD[13]
.VME.VB-CD[14]
.VME.VB-CD[15]
.VME-D[16]
.VME-D[17]
.VME-D[18]
.VME-D[19]
.VME-D[20]
.VME-D[21]
.VME-D[22]
.VME-D[23]
.VME-D[24]
.VME-D[25]
.VME-D[26]
.VME-D[27]
.VME-D[28]
.VME-D[29]
.VME-D[30]
.VME-D[31]
.VME-D[0]
.VME-D[1]
.VME-D[2]
.VME-D[3]
.VME-D[4]
.VME-D[5]
.VME-D[6]
.VME-D[7]
.VME-D[8]
.VME-D[9]
.VME-D[10]
.VME-D[11]
.VME-D[12]
.VME-D[13]
.VME-D[14]
.VME-D[15]
DD[0:9]
DD[0:15]
DD[0]
DD[1]
DD[2]
DD[3]
DD[4]
DD[5]
DD[6]
DD[7]
DD[8]
DD[9]
.VME.VB-DD[10]
.VME.VB-DD[11]
.VME.VB-DD[12]
.VME.VB-DD[13]
.VME.VB-DD[14]
.VME.VB-DD[15]
R129
R133
R137
R142
R128
R132
R136
R141
R127
R131
R135
R140
R126
R130
R134
R139
3.3K
R146
R171
R176
R166
R150
R185
R152
R151
R21
R26
R29
R33
R37
R22
R41
R43
CD[0:7]
CD[0:15]
D[0:31]
/OEAB13,/CEAB11B,/CEAB11C,/CEAB11D,/LEAB14
/OEBA2,/CEBA23B,/CEBA23C,/CEBA23D,/LEBA1
FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
Originator Kerry Woodury
Rev. 2
Drawn Jeff Andresen
File Name VMEBUFF
10/12/98 Sheet 29 of 33



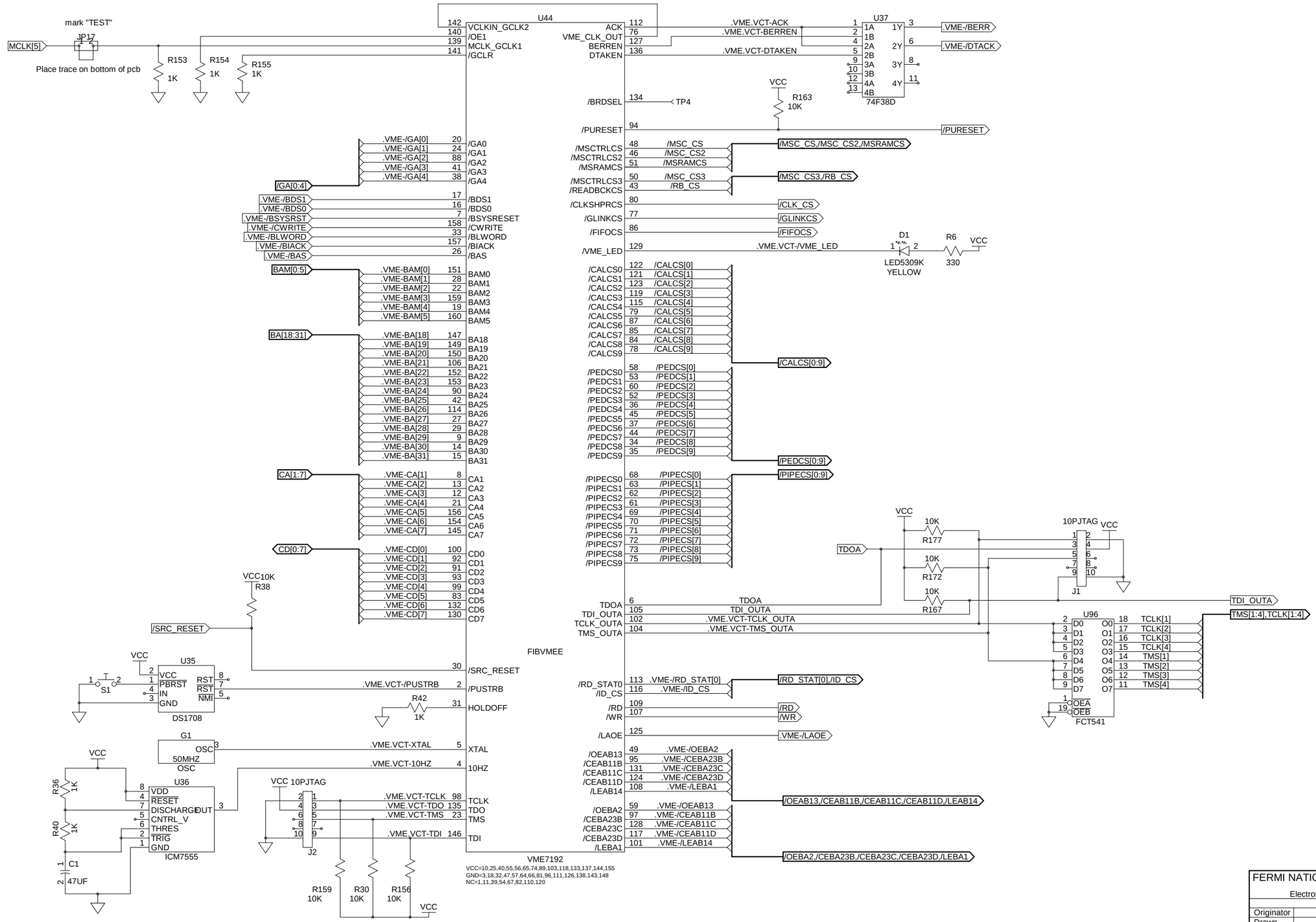
FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
FIB Module for CDF SVXII Upgrade

Originator	Kerry Woodbury		Rev. 2
Drawn	Ken Treptow		
File Name	VMECONN	10/12/98	Sheet 30 of 33

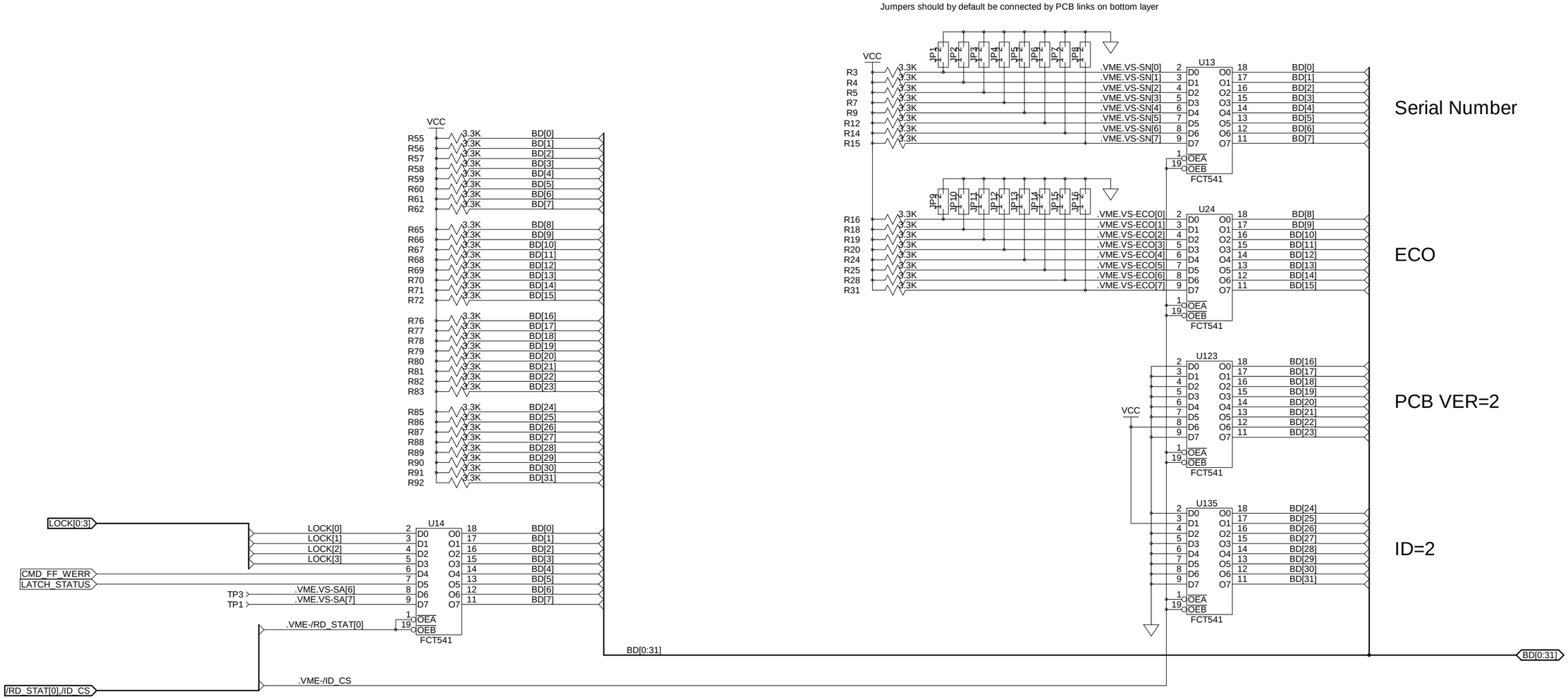


FERMI NATIONAL ACCELERATOR LABORATORY
Computing Division
Electronic Systems Engineering Department
FIB Module for CDF SVXII Upgrade

Originator	Kerry Woodbury		Rev. 2
Drawn	Ken Treptow		
File Name	BYPASCAP	10/12/98	Sheet 31 of 33



FERMI NATIONAL ACCELERATOR LABORATORY Computing Division Electronic Systems Engineering Department			
Originator	Kerry Woodury		Rev. 2
Drawn	Jeff Andresen		
File Name	VME_CNTL	10/13/98	Sheet 32 of 33



FERMI NATIONAL ACCELERATOR LABORATORY			
Computing Division			
Electronic Systems Engineering Department			
FIB Module for CDF SVXII Upgrade			
Originator	Kerry Woodbury		Rev. 2
Drawn	Ken Treptow		
File Name	STATUS	7/1/98	Sheet 33 of 33