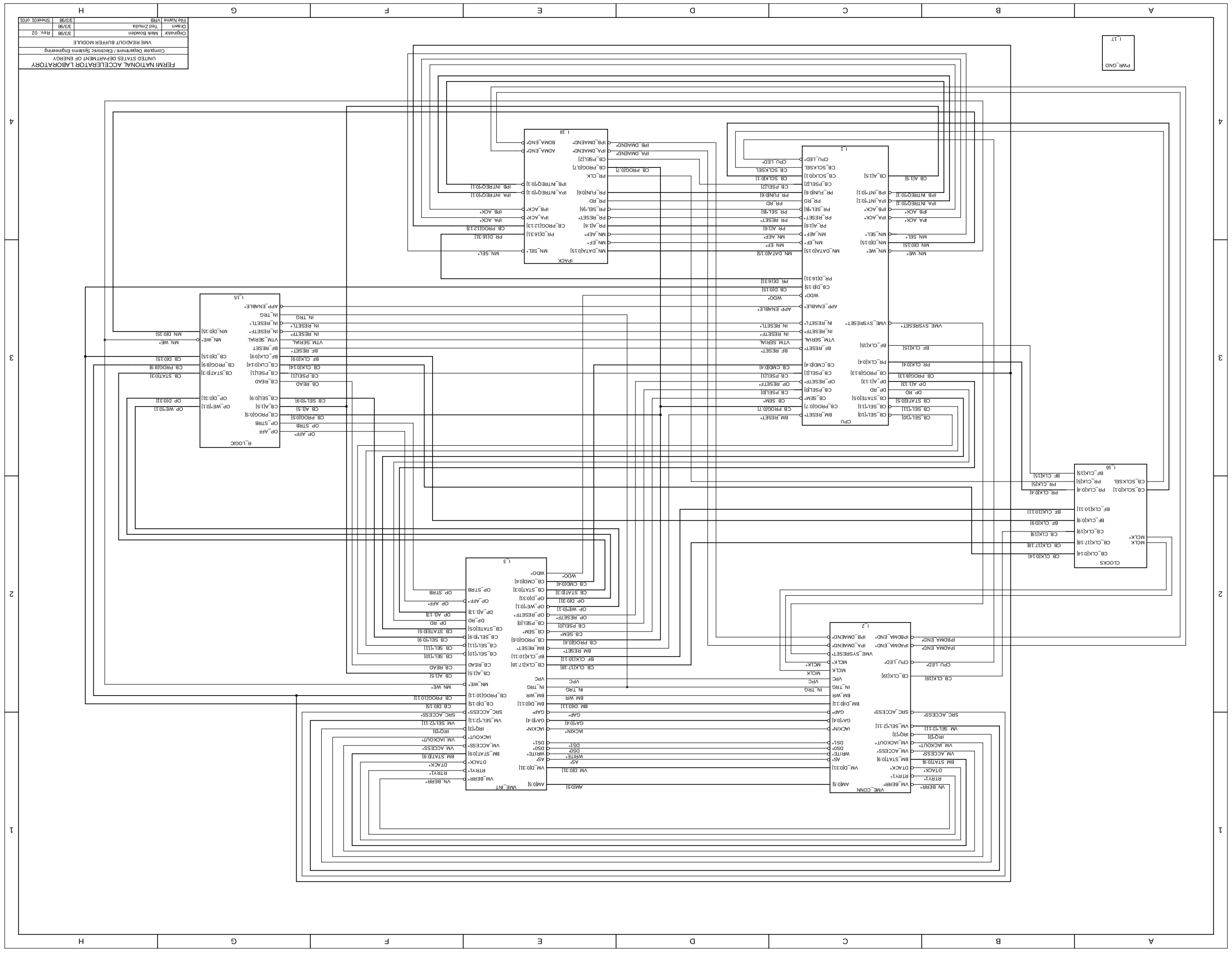
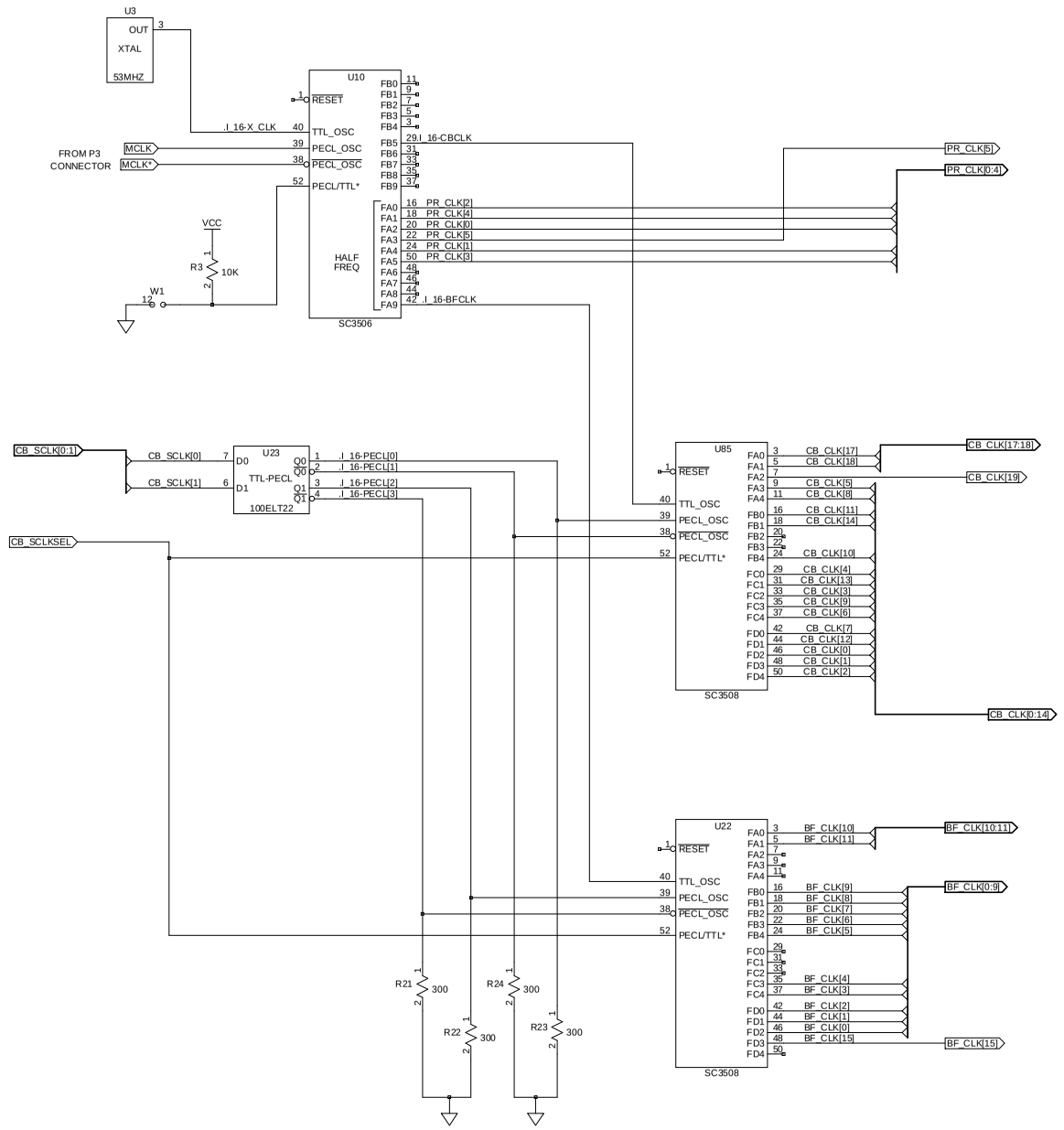
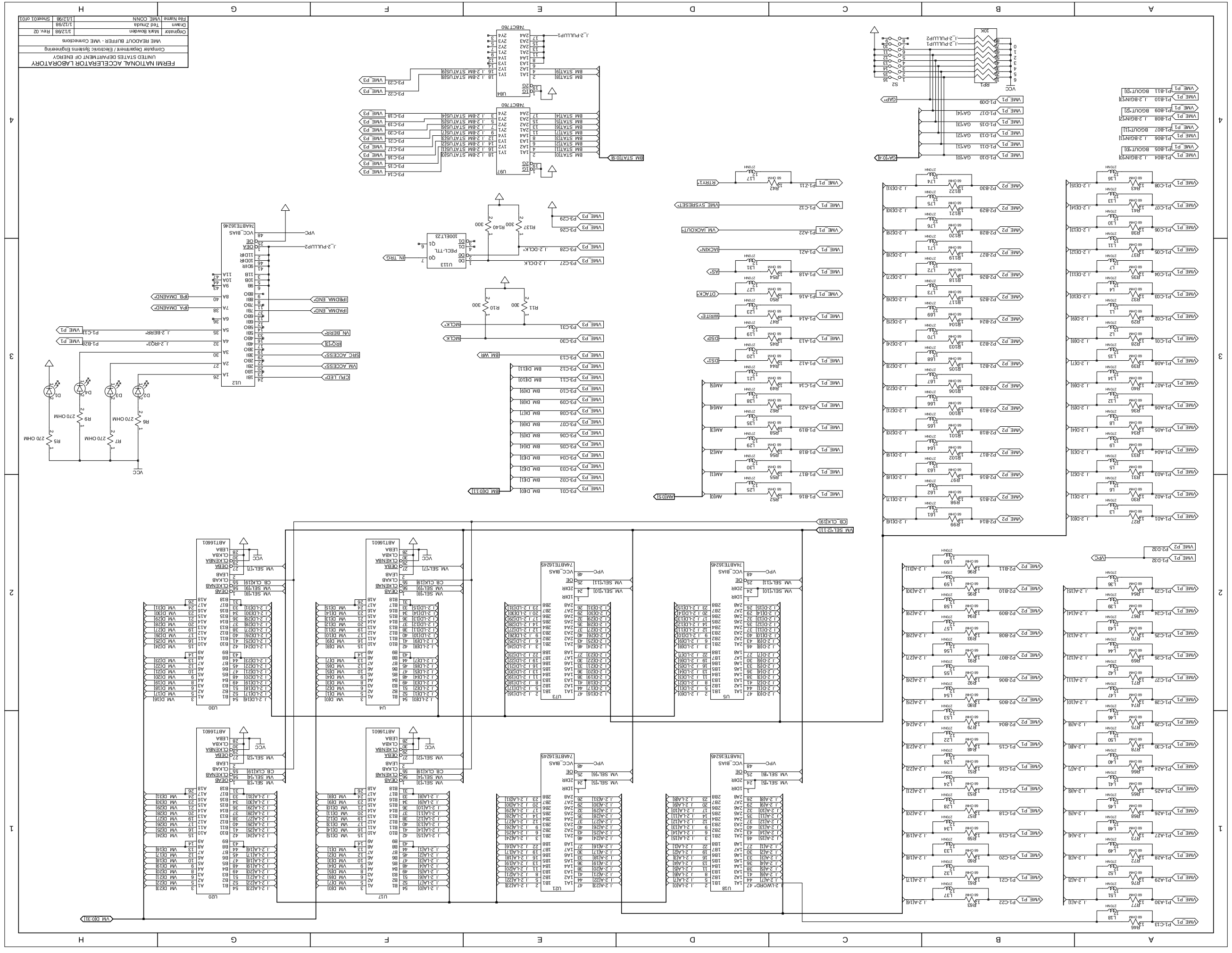
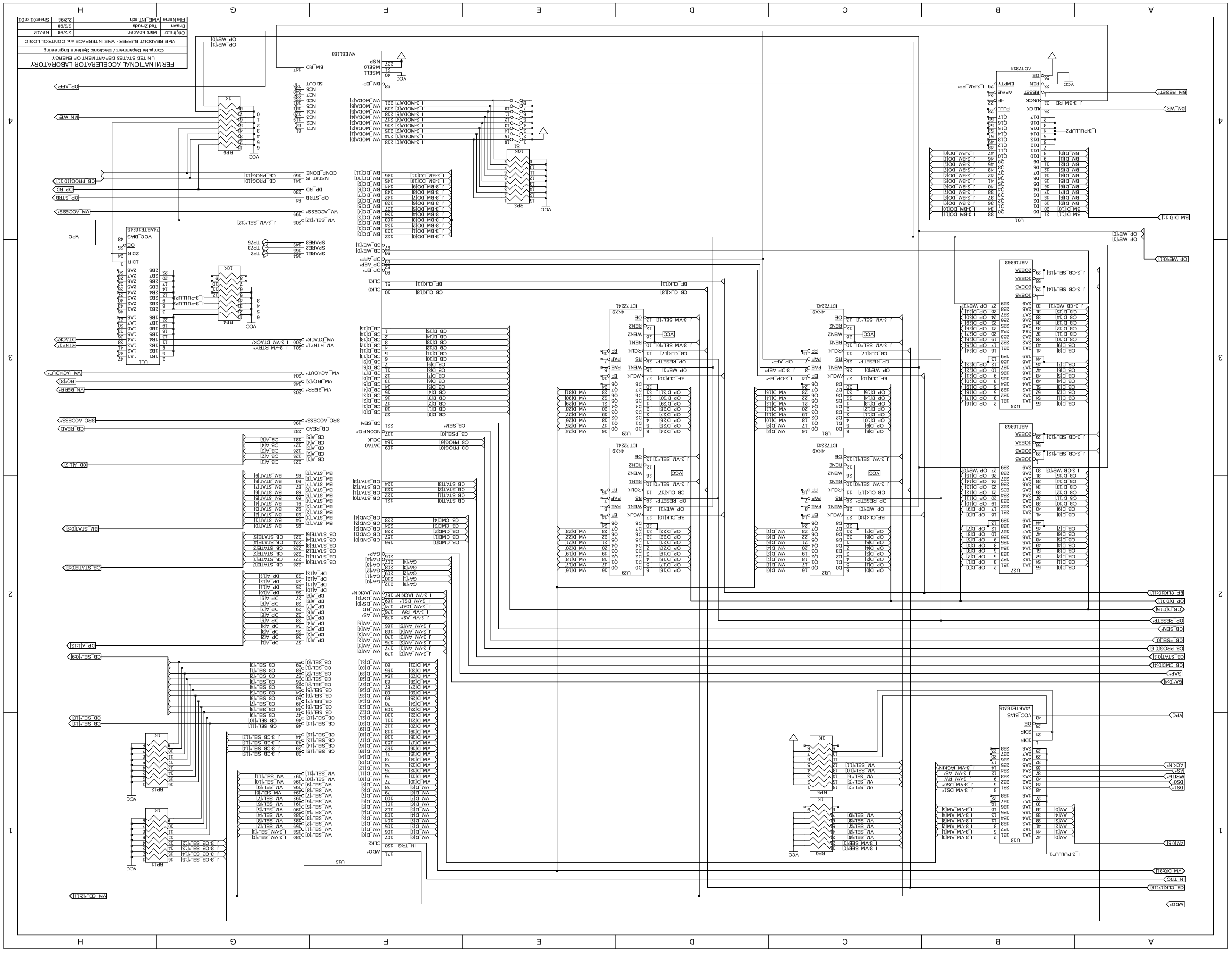
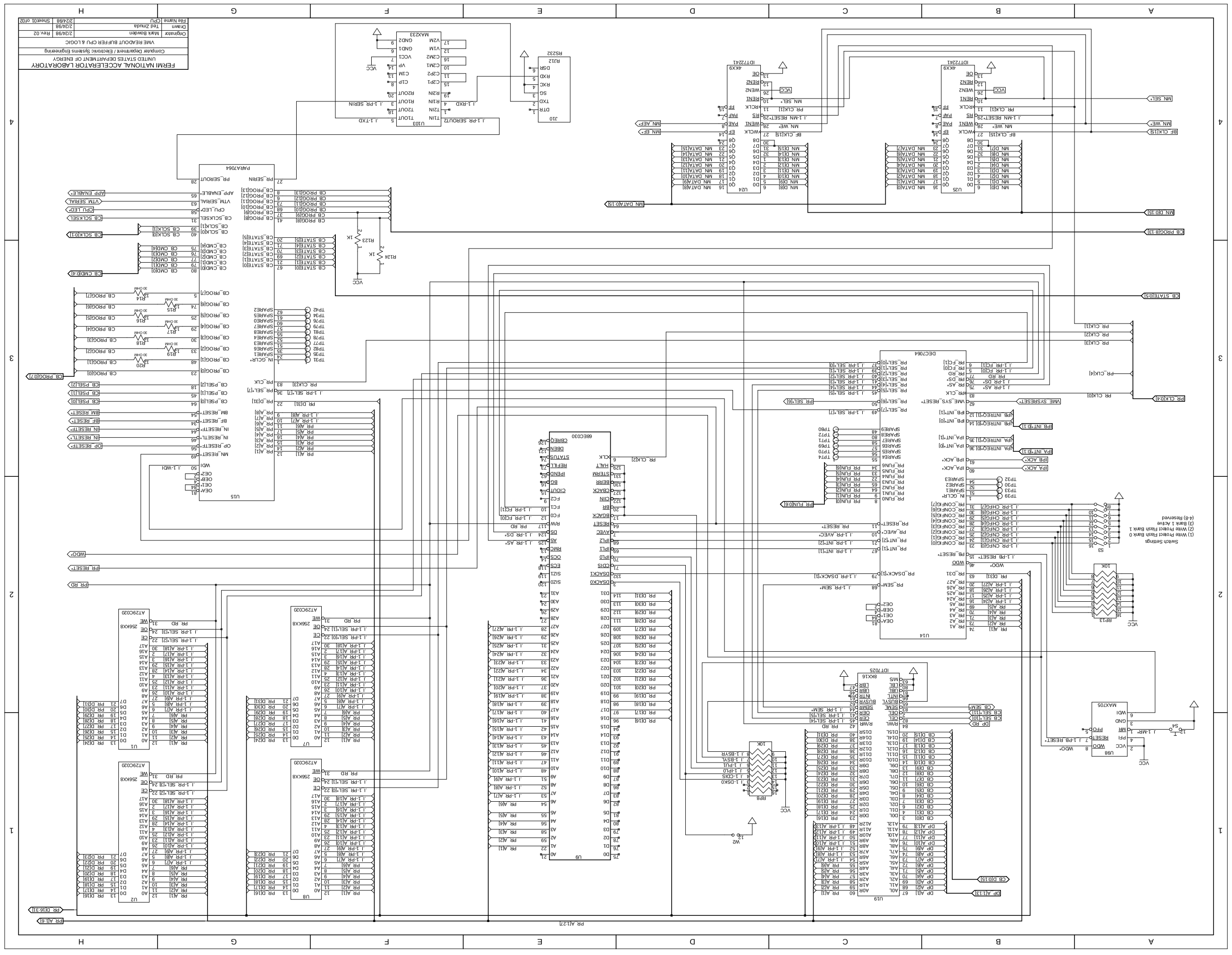

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY
Computer Department / Electronic Systems Engineering
VME READOUT BUFFER MODULE
Originator Mark Bowden 3/3/98 Rev. 02
Drawn Ted Zmuda 3/3/98
File Name VRB 3/3/98 Sheet01.of01
PWR_GND
I_17
CPU
I_1
VME_CONN
I_2
IPACK
I_18
VME_INT
I_3
R_LOGIC
I_15
CLOCKS
I_16



FERMI NATIONAL ACCELERATOR LABORATORY UNITED STATES DEPARTMENT OF ENERGY			
Computer Department / Electronic Systems Engineering			
VME READOUT BUFFER CLOCKS			
Originator	Mark Bowden	1/14/98	Rev. 02
Drawn	Ted Zmuda	1/14/98	
File Name	CLOCKS	1/14/98	Sheet 01 of 01


FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY
Computer Department / Electronic Systems Engineering
VME READOUT BUFFER - VME Connectors
Originator Mark Bowden 1/12/98 Rev. 02
Drawn Ted Zmuda 1/12/98
File Name VME_CONN Sheet01 of01


FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY
Computer Department / Electronic Systems Engineering
Designer Mark Bowden Rev:02
VME READOUT BUFFER - VME INTERFACE and CONTROL LOGIC
Drawn Ted Zmuda 2/2/98
File Name VME_INT.sch 2/2/98 Sheet01 of01


FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY
Computer Department / Electronic Systems Engineering
VME READOUT BUFFER CPU & LOGIC
Originator Mark Bowden 2/24/98 Rev. 02
Drawn Ted Zmuda 2/24/98
File Name CPU 2/24/98 Sheet01 of02
PAR A70 64
DEC 7064
U 25
U 24
U 14
U 19
U 9
U 7
U 8
U 2
U 15
U 98
U 10
U 13
U 12
U 11
U 6
U 3
U 4
U 5
U 1
J 10
R J12
RS 232
U 103
MAX 233
MAX 705
BP 13
BP 8
BP 14
BP 12
BP 11
BP 10
BP 9
S 1
S 2
S 3
S 4
W 2
W 3
R 23
R 24
R 14
R 15
R 16
R 17
R 18
R 19
R 20
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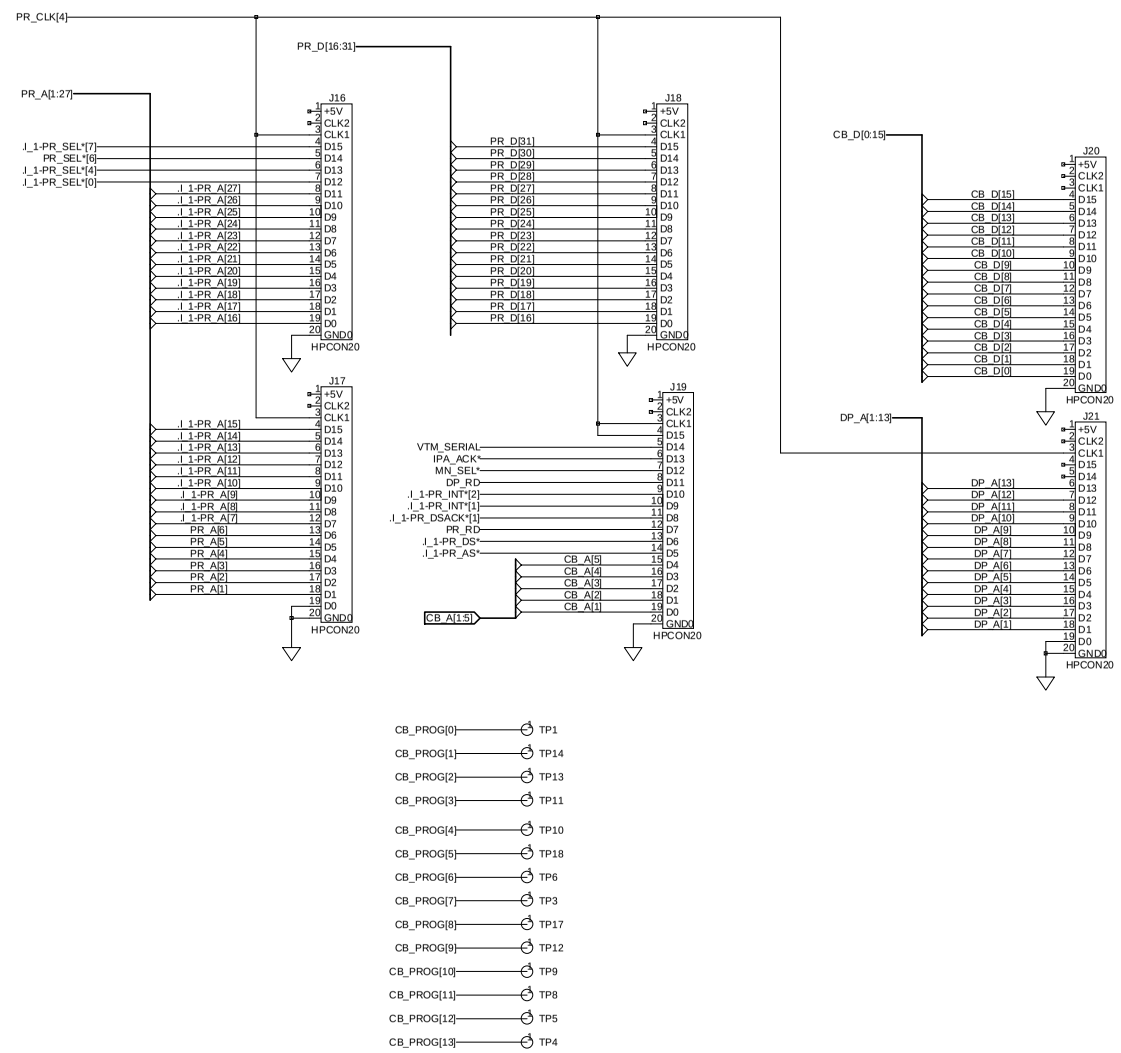
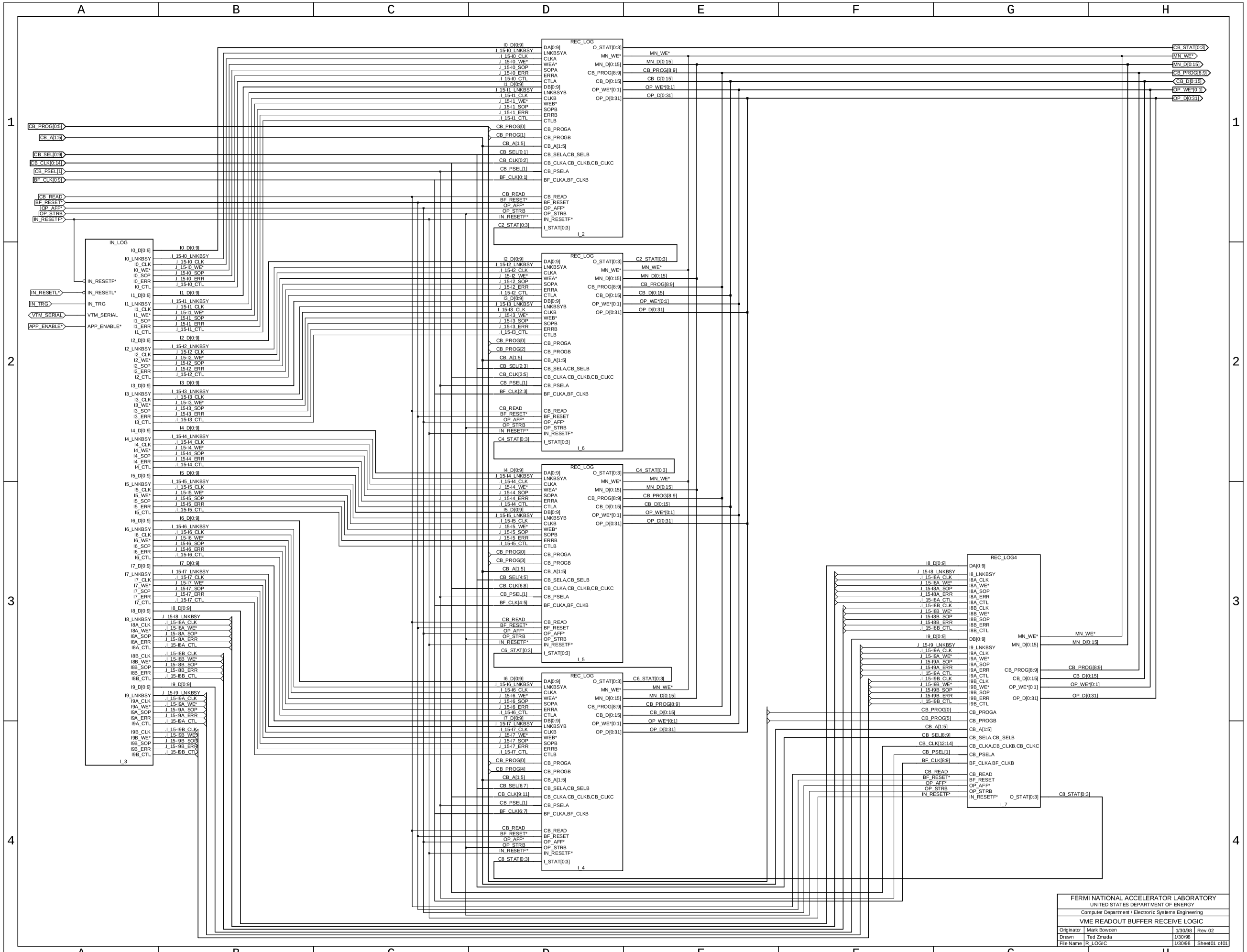
R 26
R 27
R 28
R 29
R 30
R 31
R 32
R 33
R



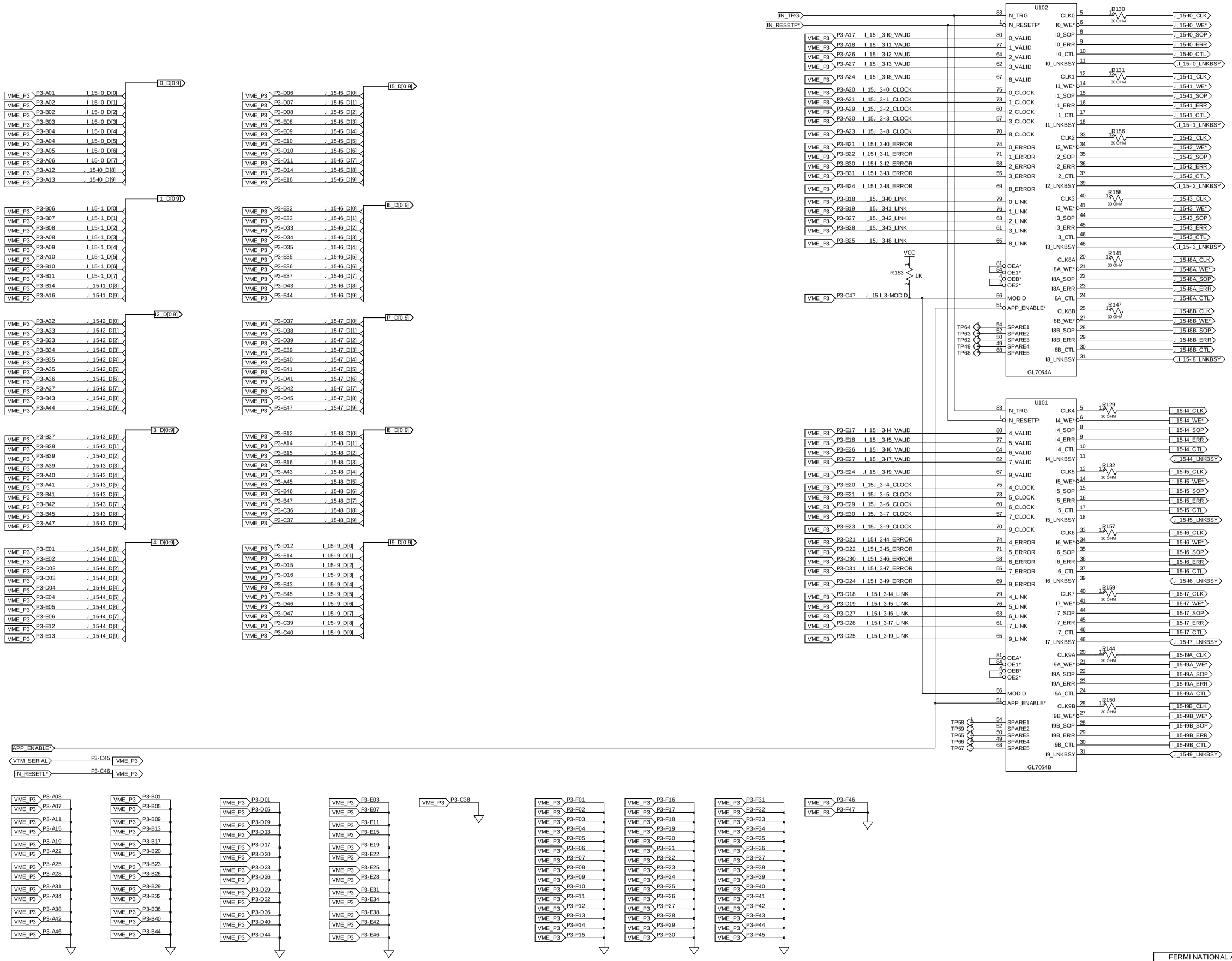
FERMI NATIONAL ACCELERATOR LABORATORY UNITED STATES DEPARTMENT OF ENERGY			
Computer Department / Electronic Systems Engineering			
VRB TEST CONNECTORS			
Originator	Mark Bowden		Rev. 02
Drawn	Ted Zmuda		
File Name	CPU	2/24/98	Sheet 02 of 02



FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY
Computer Department / Electronic Systems Engineering

VME READOUT BUFFER RECEIVE LOGIC

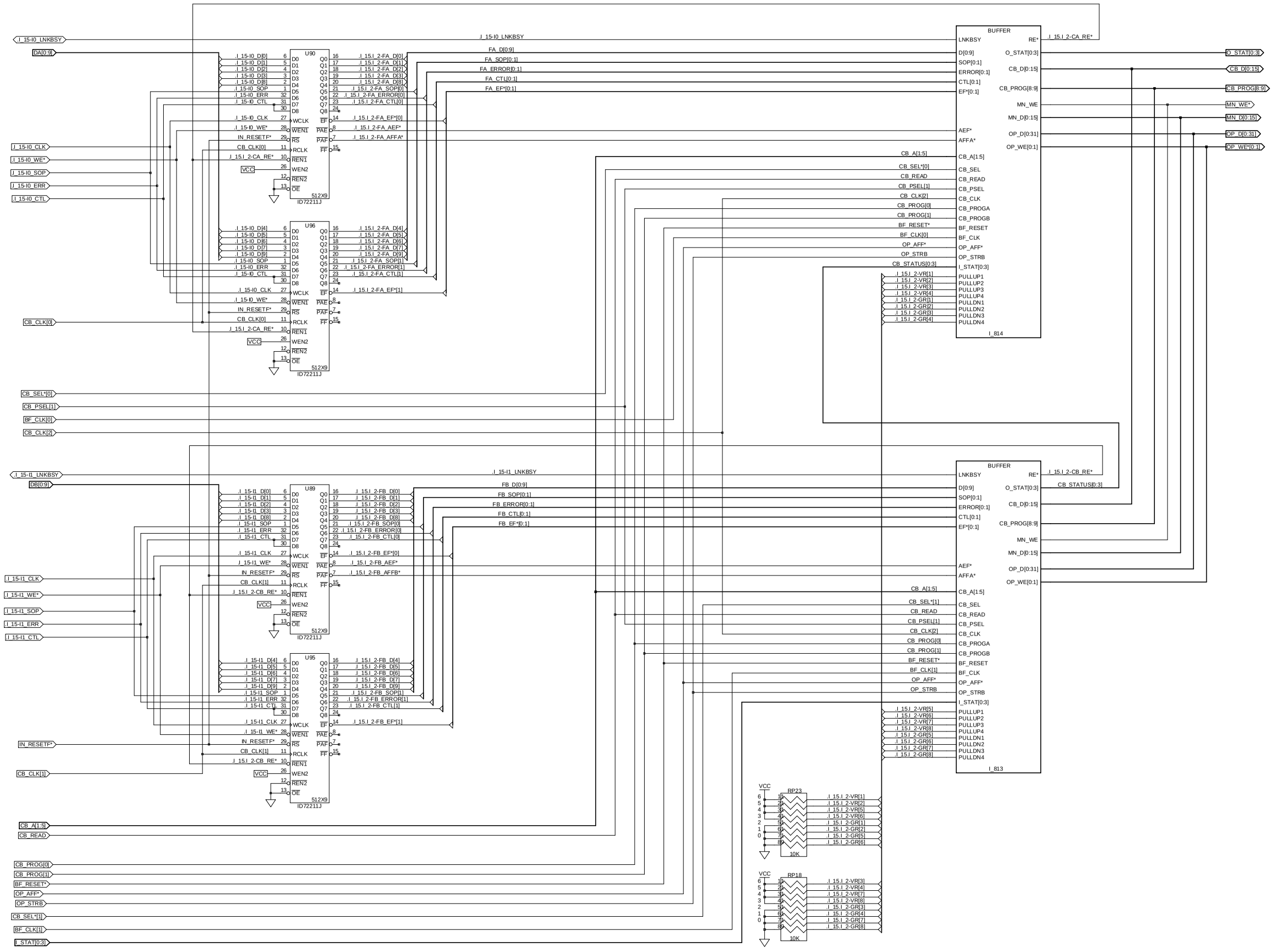
Originator	Mark Bowden	1/30/98	Rev.02
Drawn	Ted Zmuda	1/30/98	
File Name	R_LOGIC	1/30/98	Sheet01 of01



FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY
Computer Department / Electronic Systems Engineering

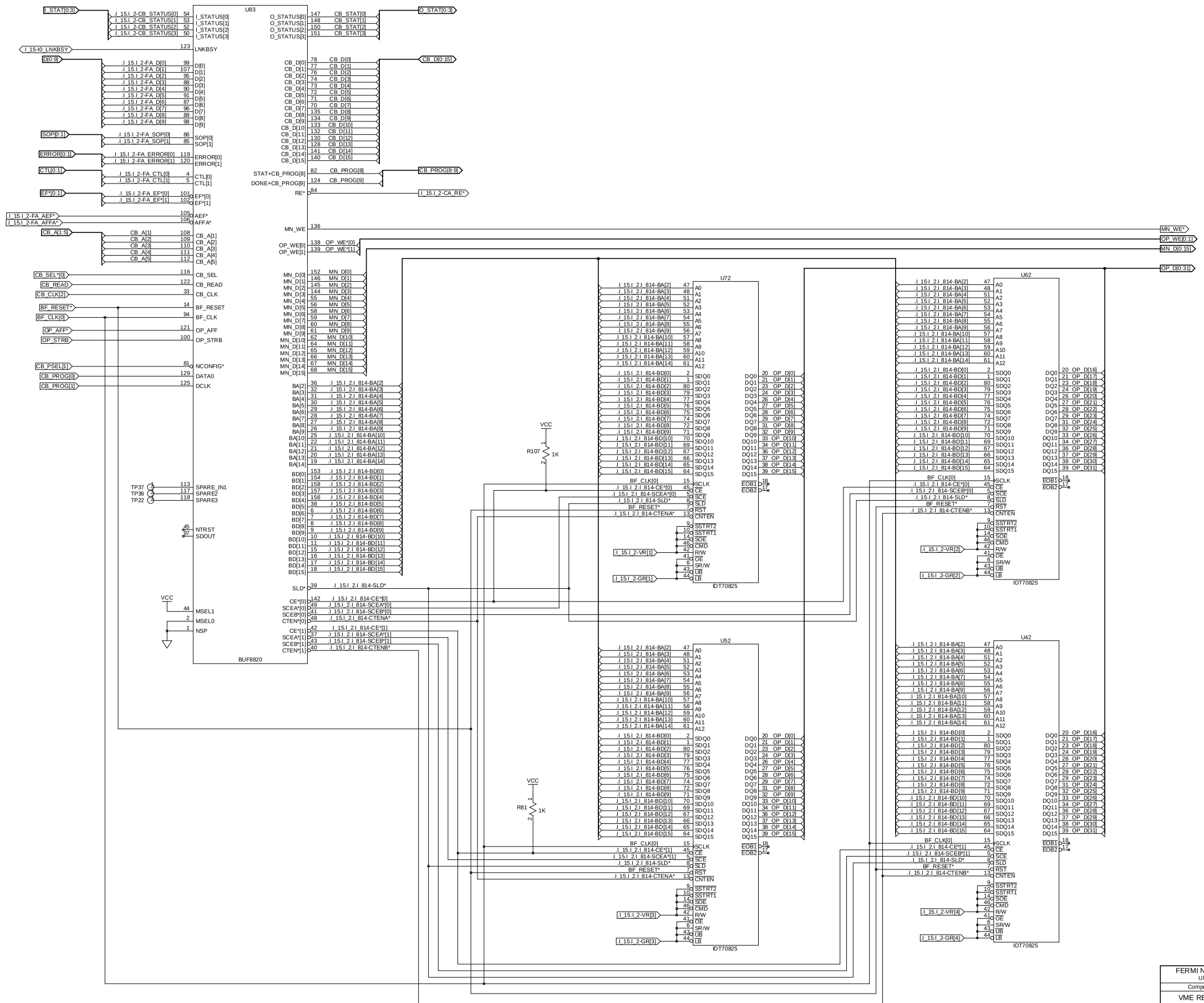
VME READOUT BUFFER INPUT LOGIC

Originator	Mark Bowden	3/2/98	Rev.02
Drawn	Ted Zmuda	3/2/98	
File Name	IN_LOG	3/2/98	Sheet01 of01

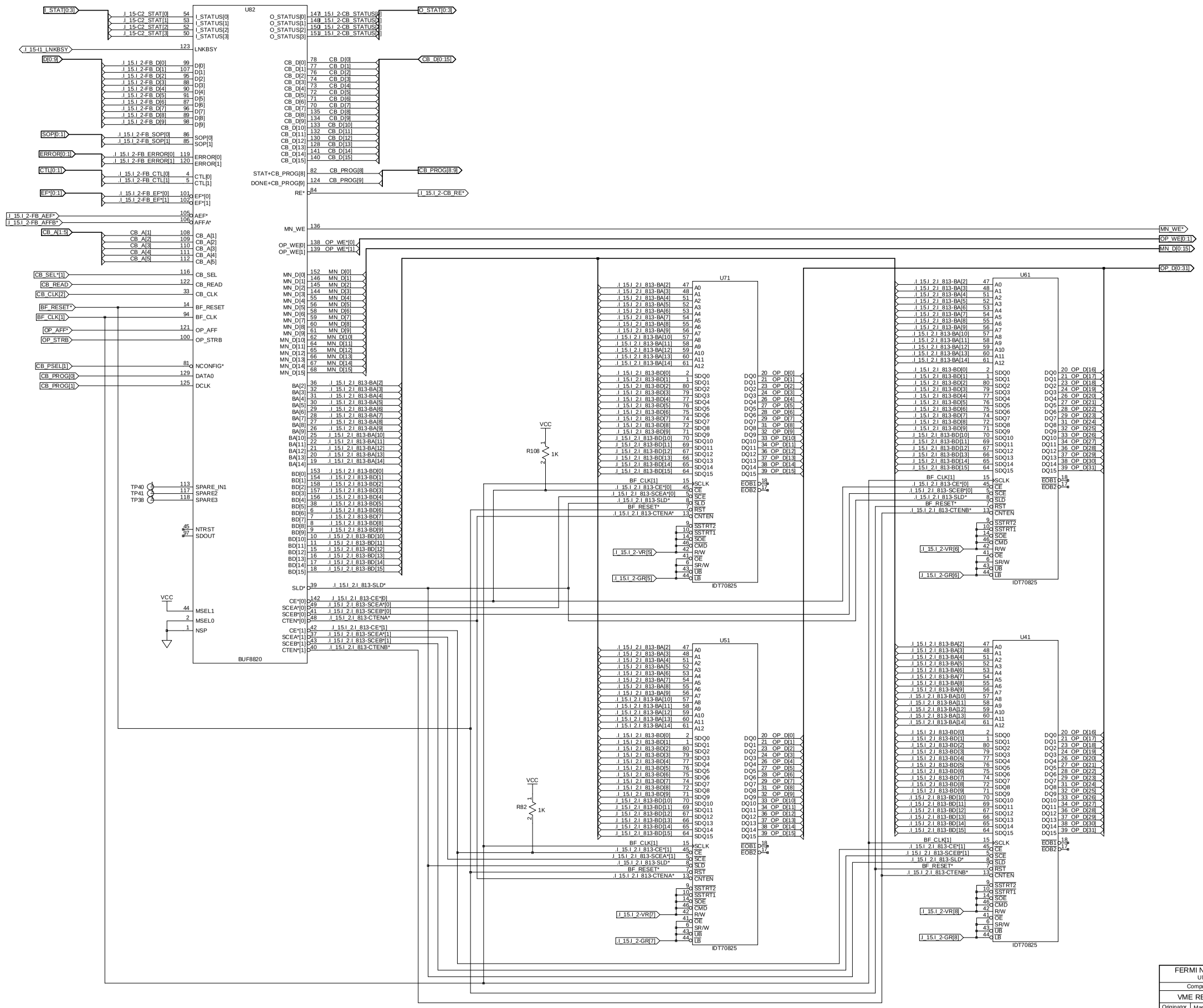


FERMI NATIONAL ACCELERATOR LABORATORY UNITED STATES DEPARTMENT OF ENERGY	
Computer Department / Electronic Systems Engineering	
VME READOUT BUFFER RECEIVE LOGIC	

Originator	Mark Bowden	1/30/98	Rev.02
Drawn	Ted Zmuda	1/30/98	
File Name	REC_LOG	1/30/98	Sheet01 of01



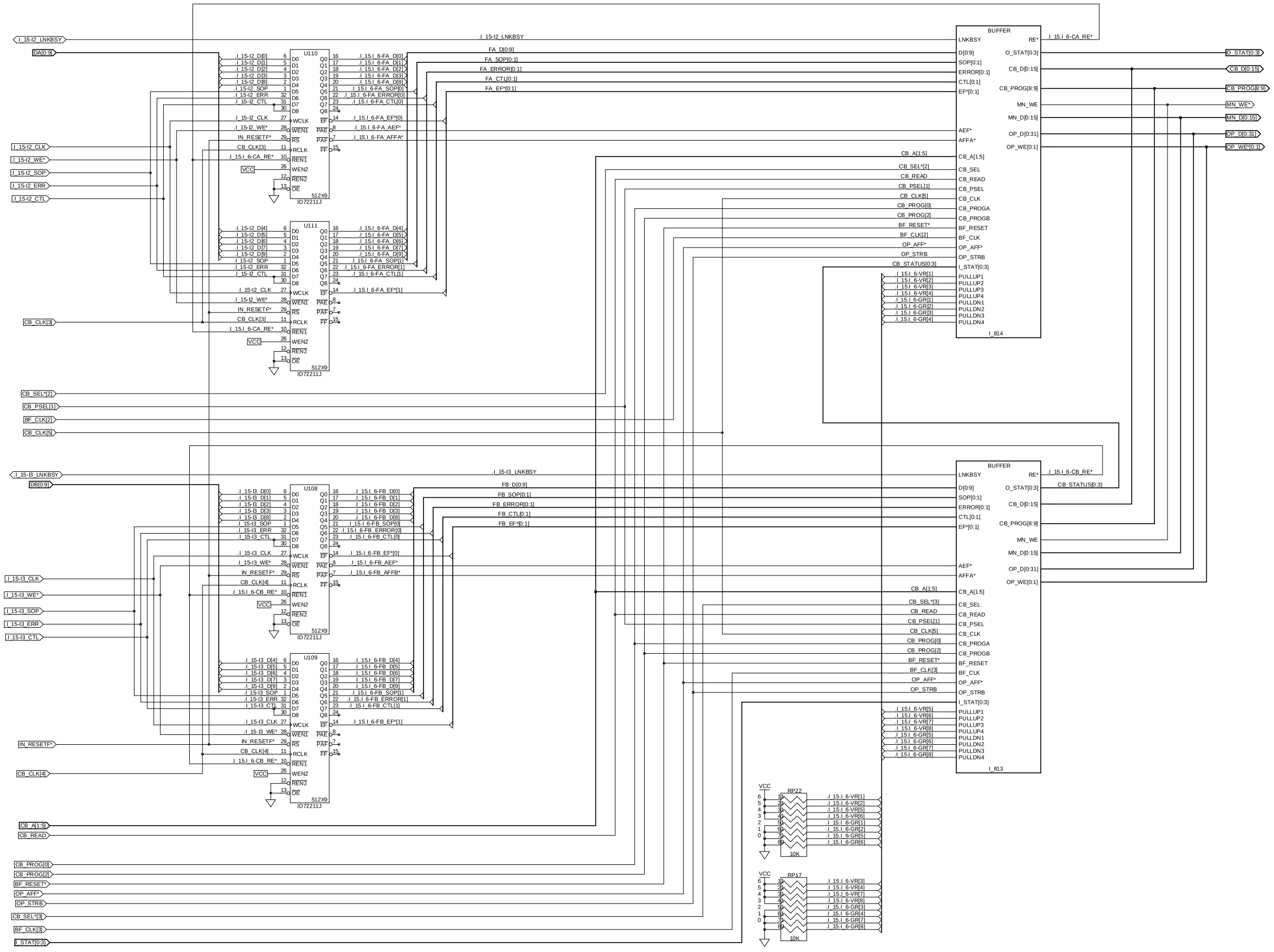
FERMI NATIONAL ACCELERATOR LABORATORY	
UNITED STATES DEPARTMENT OF ENERGY	
Computer Department / Electronic Systems Engineering	
VME READOUT BUFFER - BUFFER LOGIC	
Originator: Mark Bowden	2/2/98 — Rev. 02
Drawn: Ted Zmuda	2/2/98
File Name: BUFFER	2/2/98 — Sheet01 of01



FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY
Computer Department / Electronic Systems Engineering

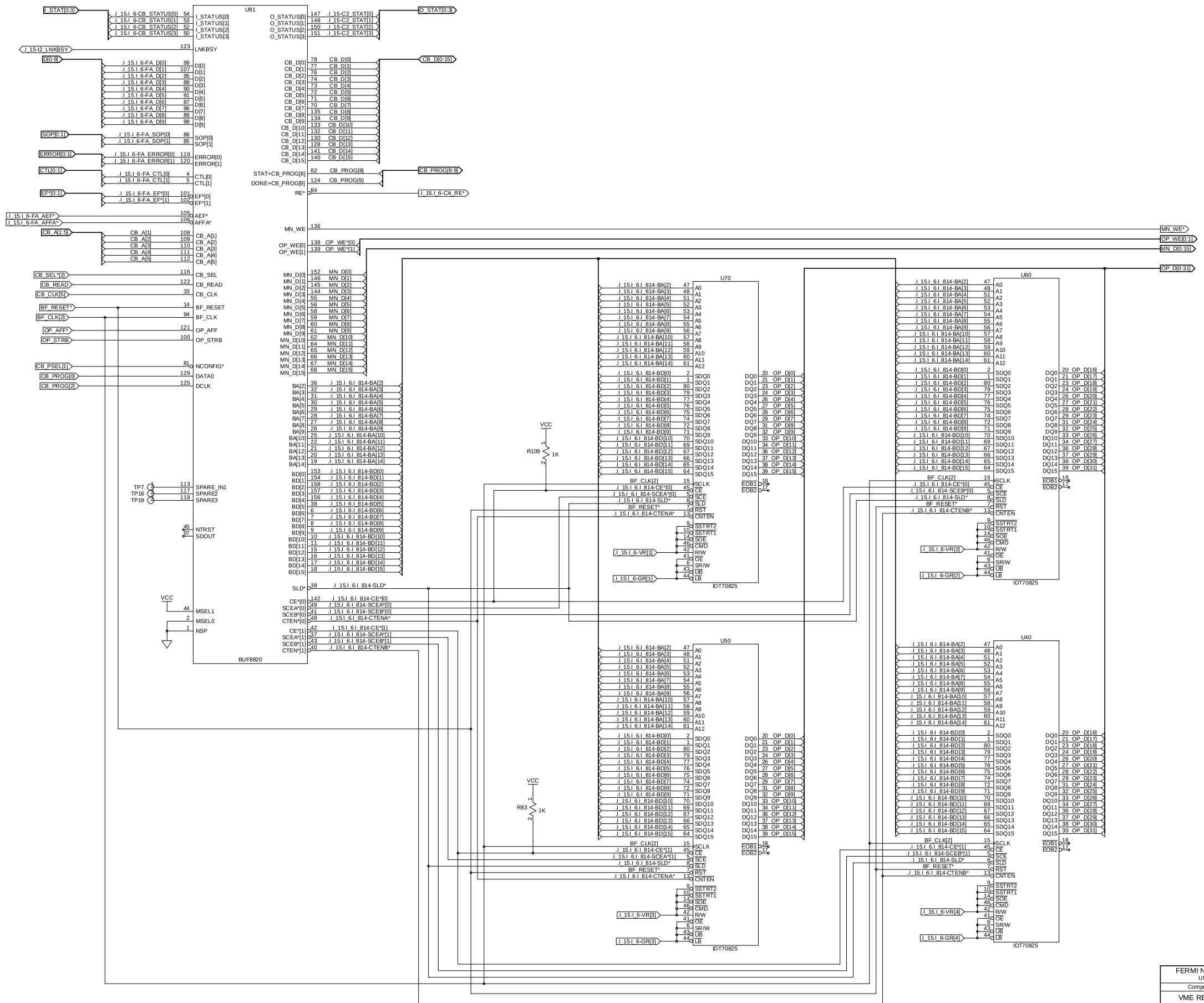
VME READOUT BUFFER - BUFFER LOGIC

Originator	Mark Bowden	2/2/98	Rev. 02
Drawn	Ted Zmuda	2/2/98	
File Name	BUFFER	2/2/98	Sheet01 of01

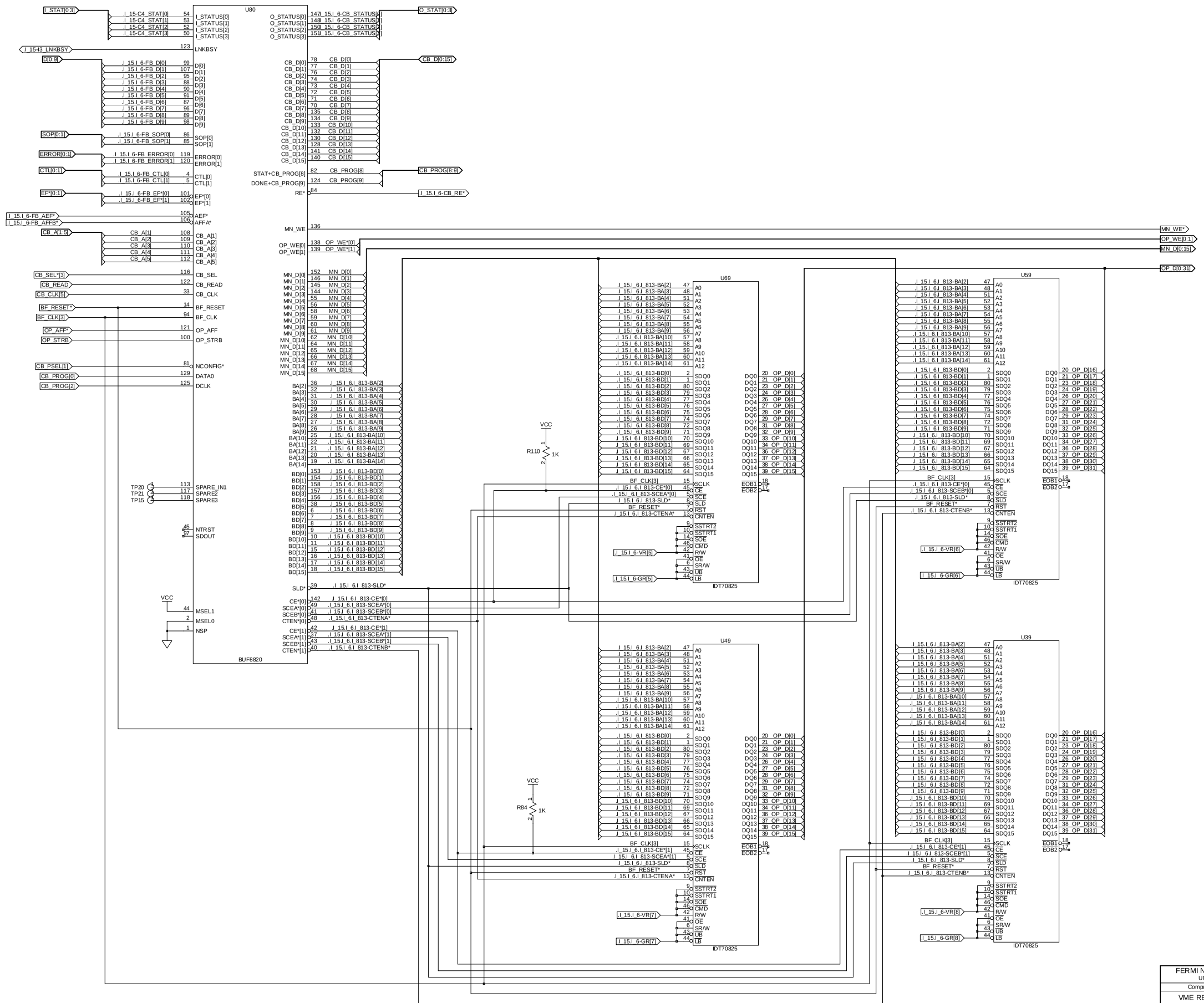


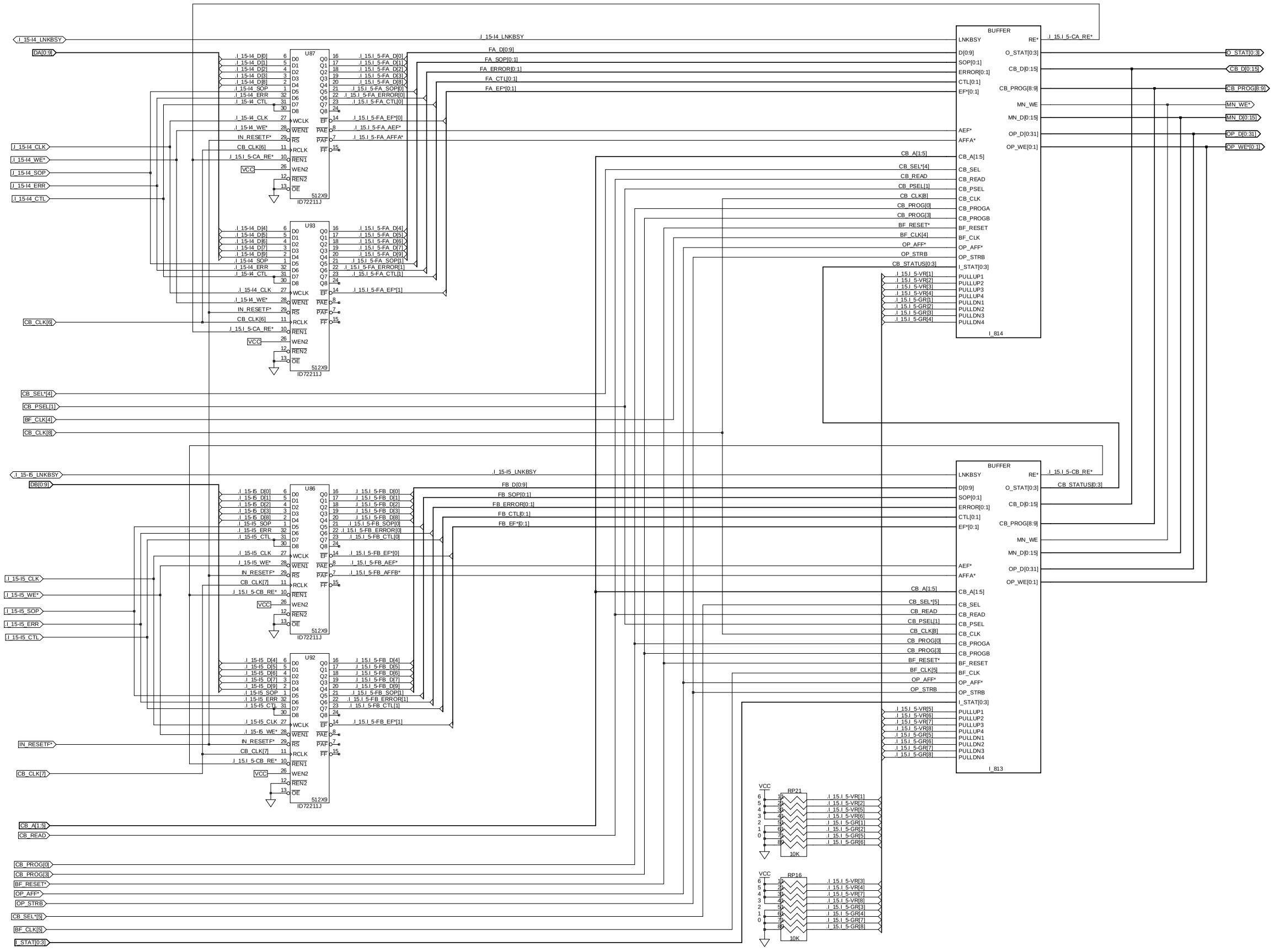
FERMI NATIONAL ACCELERATOR LABORATORY UNITED STATES DEPARTMENT OF ENERGY	
Computer Department / Electronic Systems Engineering	
VME READOUT BUFFER RECEIVE LOGIC	

Originator	Mark Bowden	1/30/98	Rev.02
Drawn	Ted Zmuda	1/30/98	
File Name	REC_LOG	1/30/98	Sheet01 of01



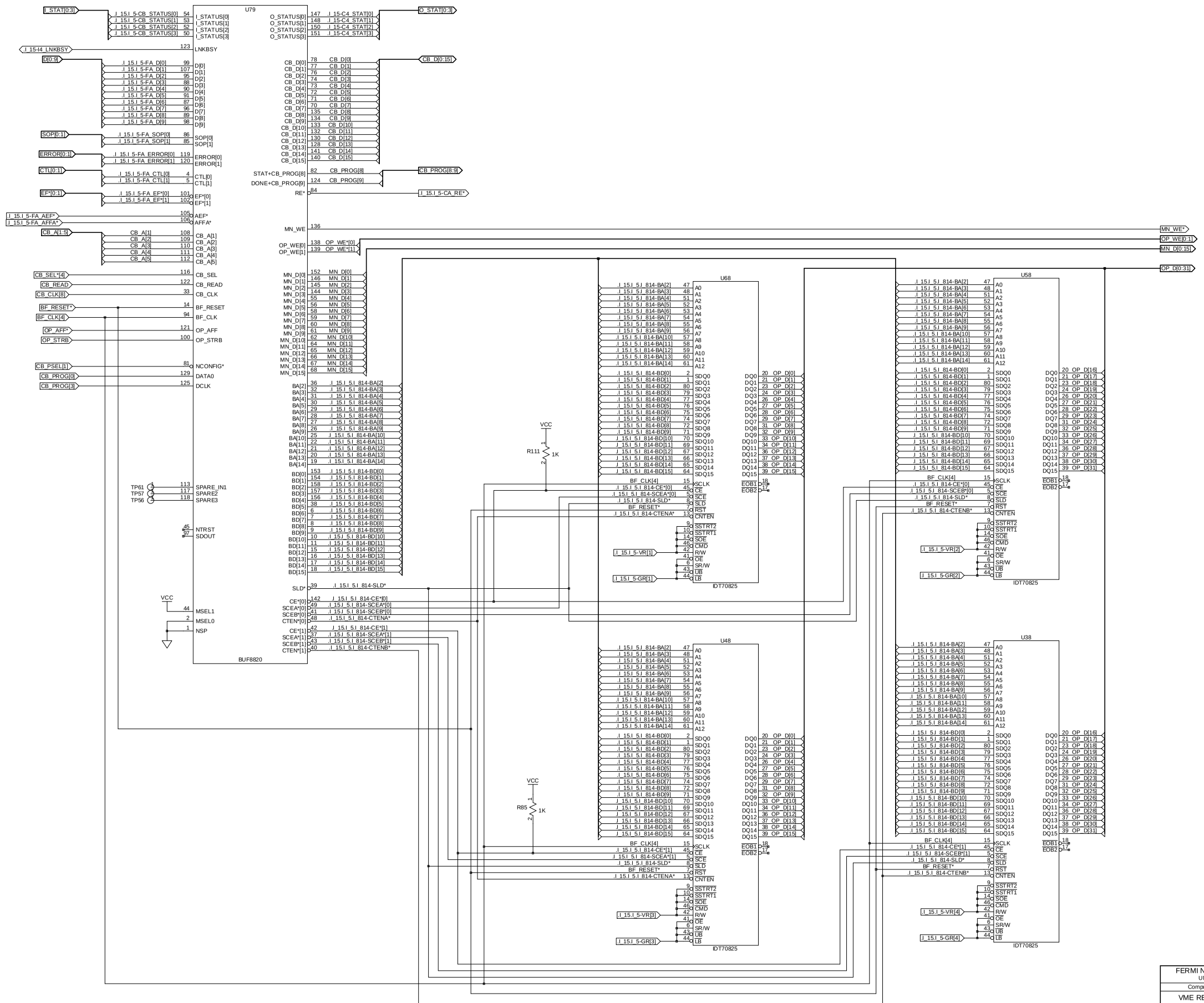
FERMI NATIONAL ACCELERATOR LABORATORY	
UNITED STATES DEPARTMENT OF ENERGY	
Computer Department / Electronic Systems Engineering	
VME READOUT BUFFER - BUFFER LOGIC	
Originator: Mark Bowden	2/2/98	Rev. 02
Drawn: Ted Zmuda	2/2/98	
File Name: BUFFER	2/2/98	Sheet01 of01


U80
BUF8820
U69
U59
U49
U39
IDT70825
I_STAT[0:3]
O_STAT[0:3]
I_15-I3_LNKBSY
D[0:9]
SOP[0:1]
ERROR[0:1]
CTL[0:1]
EF*[0:1]
CB_D[0:15]
CB_PROG[8:9]
I_15.I_6-CB_RE*
MN_WE*
OP_WE[0:1]
MN_D[0:15]
OP_D[0:31]
CB_A[1:5]
CB_SEL*[3]
CB_READ
CB_CLK[5]
BF_RESET*
BF_CLK[3]
OP_AFF*
OP_STRB
CB_PSEL[1]
CB_PROG[0]
CB_PROG[2]
TP20
TP21
TP15
VCC
R110
R84
1K
FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY
Computer Department / Electronic Systems Engineering
VME READOUT BUFFER - BUFFER LOGIC
Originator Mark Bowden 2/2/98 Rev. 02
Drawn Ted Zmuda 2/2/98
File Name BUFFER 2/2/98 Sheet01 of01

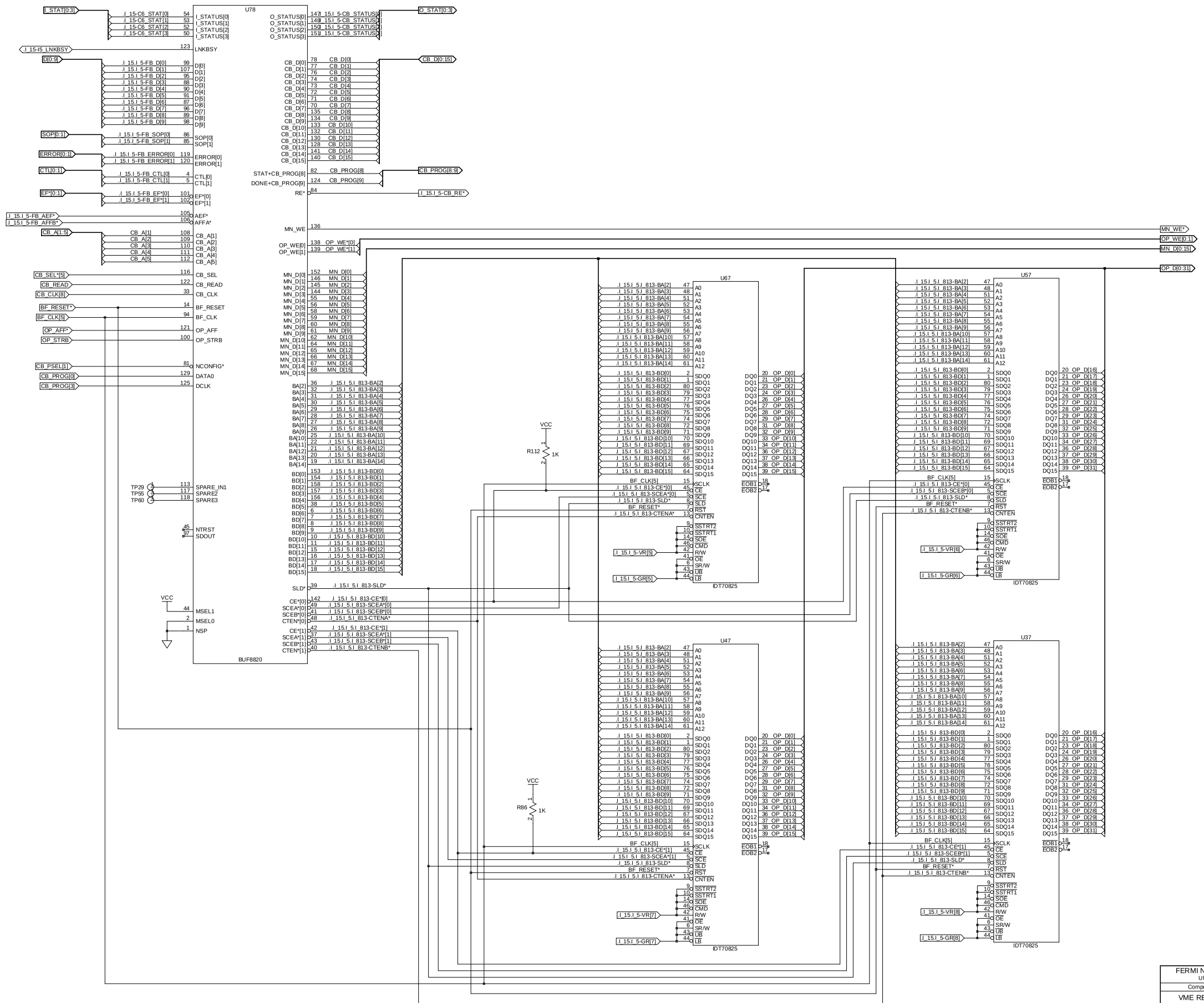


FERMI NATIONAL ACCELERATOR LABORATORY UNITED STATES DEPARTMENT OF ENERGY	
Computer Department / Electronic Systems Engineering	
VME READOUT BUFFER RECEIVE LOGIC	

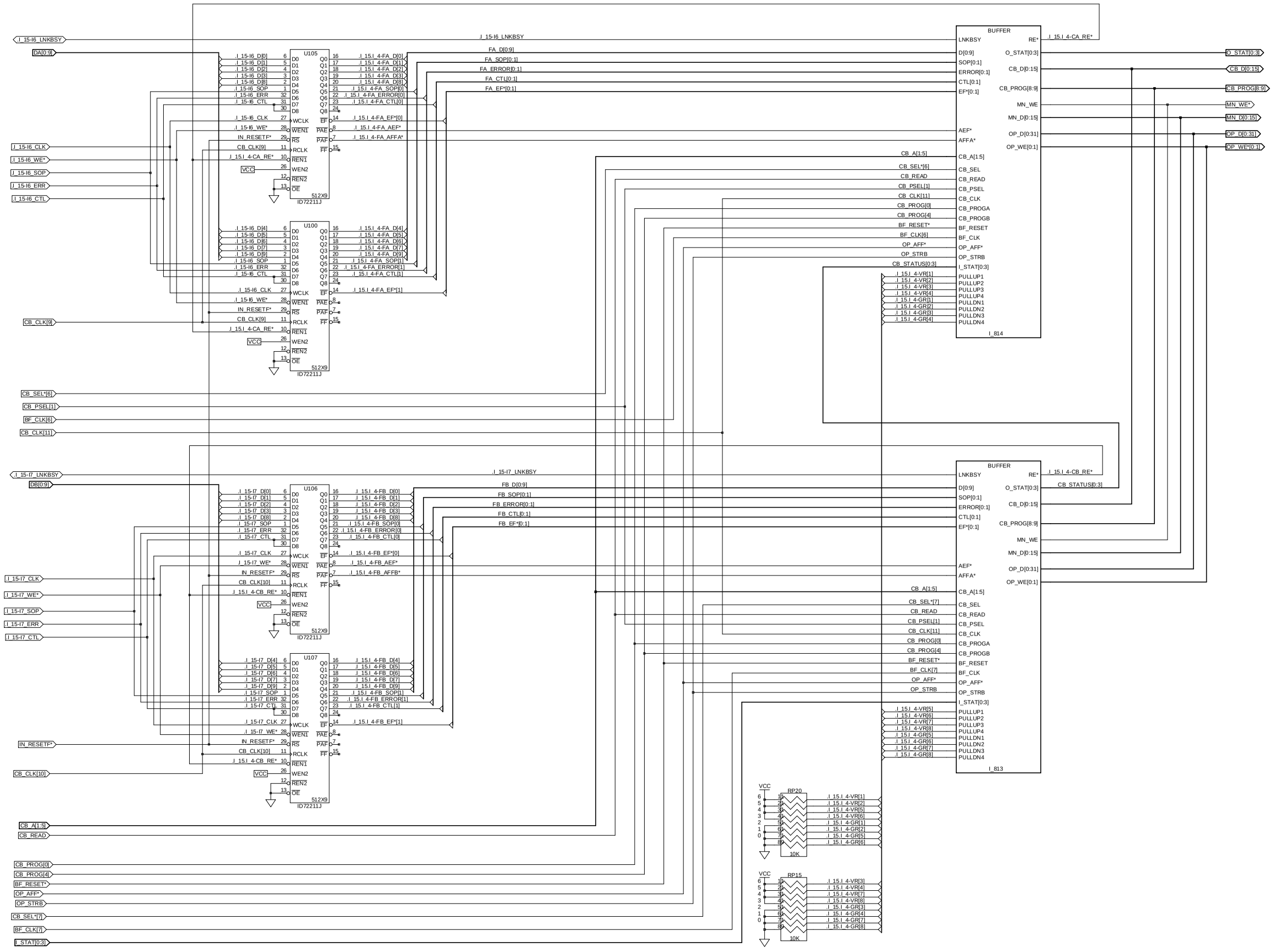
Originator	Mark Bowden	1/30/98	Rev.02
Drawn	Ted Zmuda	1/30/98	
File Name	REC_LOG	1/30/98	Sheet01 of01



FERMI NATIONAL ACCELERATOR LABORATORY			
UNITED STATES DEPARTMENT OF ENERGY			
Computer Department / Electronic Systems Engineering			
VME READOUT BUFFER - BUFFER LOGIC			
Originator	Mark Bowden	2/2/98	Rev. 02
Drawn	Ted Zmuda	2/2/98	
File Name	BUFFER	2/2/98	Sheet01 of01

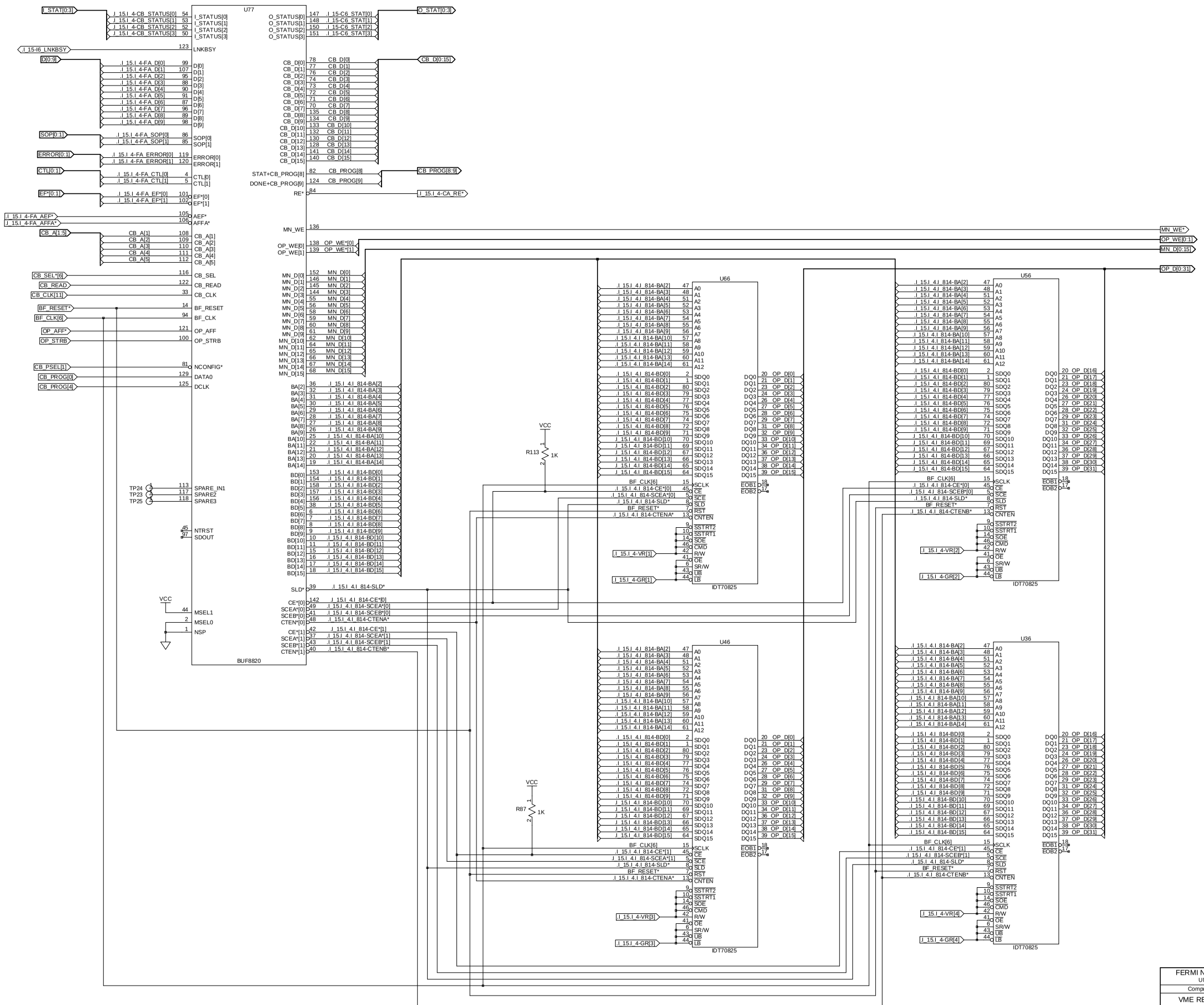


FERMI NATIONAL ACCELERATOR LABORATORY	
UNITED STATES DEPARTMENT OF ENERGY	
Computer Department / Electronic Systems Engineering	
VME READOUT BUFFER - BUFFER LOGIC	
Originator: Mark Bowden	2/2/98 — Rev. 02
Drawn: Ted Zmuda	2/2/98
File Name: BUFFER	2/2/98 — Sheet01 of01

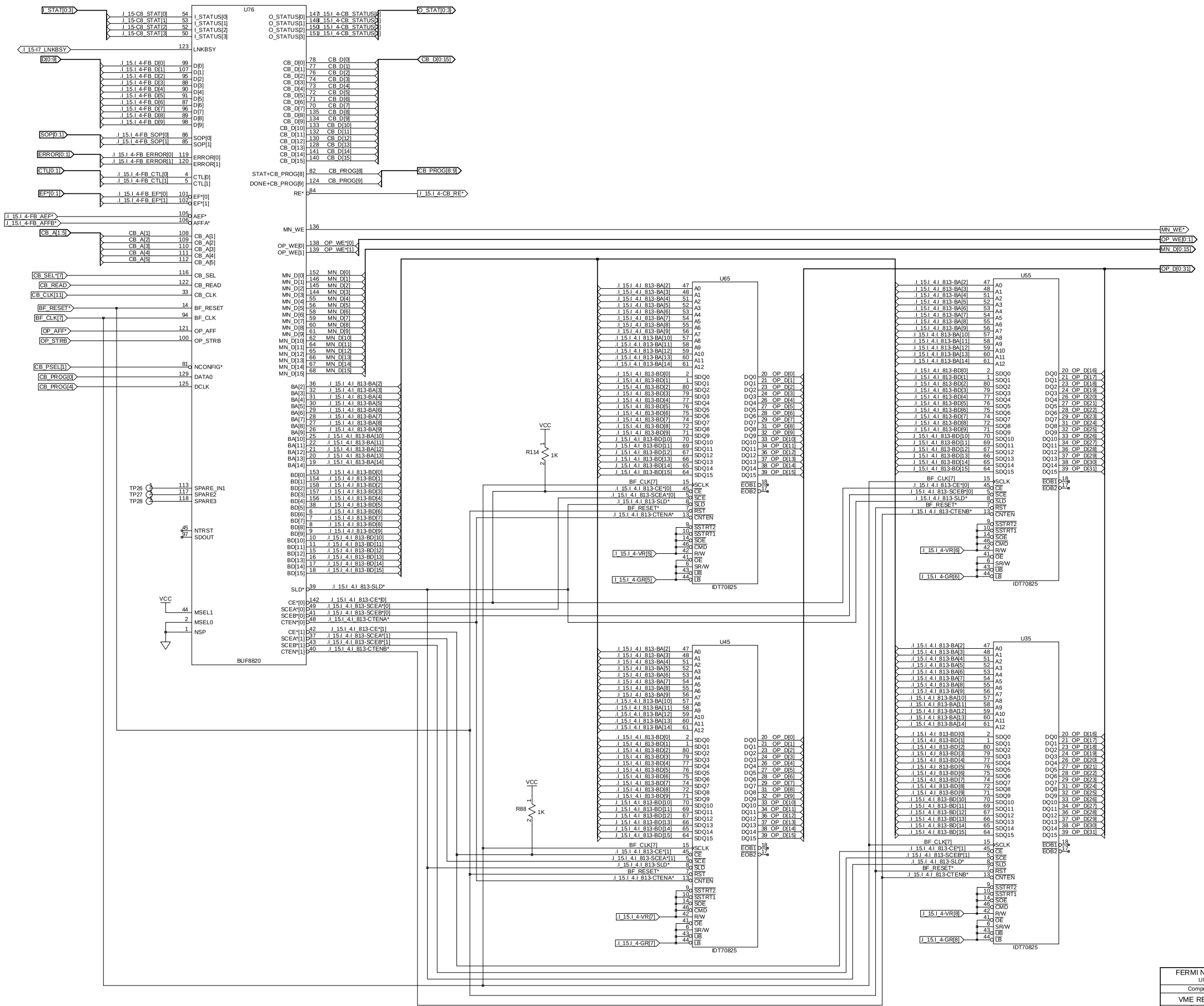


FERMI NATIONAL ACCELERATOR LABORATORY UNITED STATES DEPARTMENT OF ENERGY	
Computer Department / Electronic Systems Engineering	
VME READOUT BUFFER RECEIVE LOGIC	

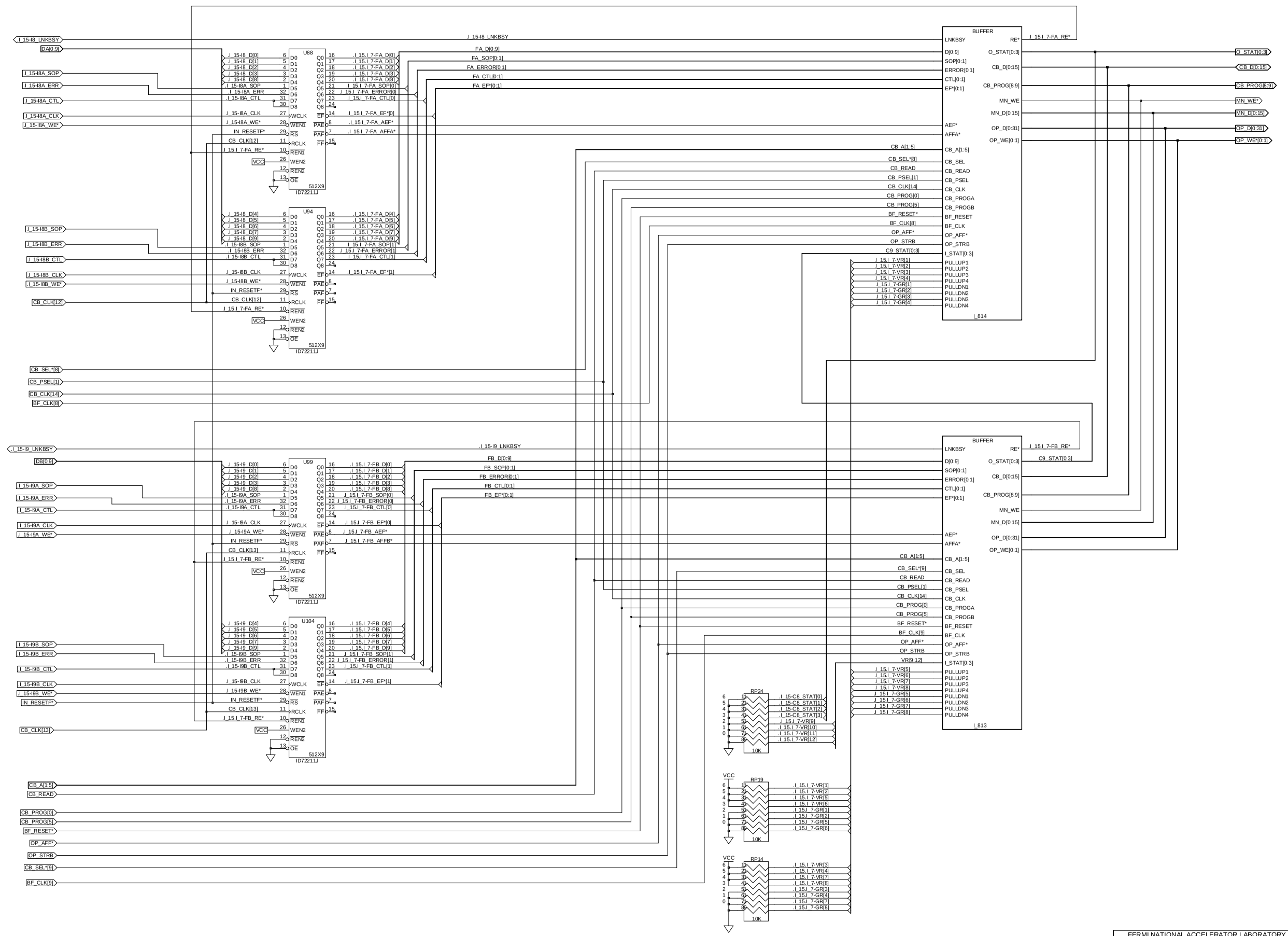
Originator	Mark Bowden	1/30/98	Rev.02
Drawn	Ted Zmuda	1/30/98	
File Name	REC_LOG	1/30/98	Sheet01 of01



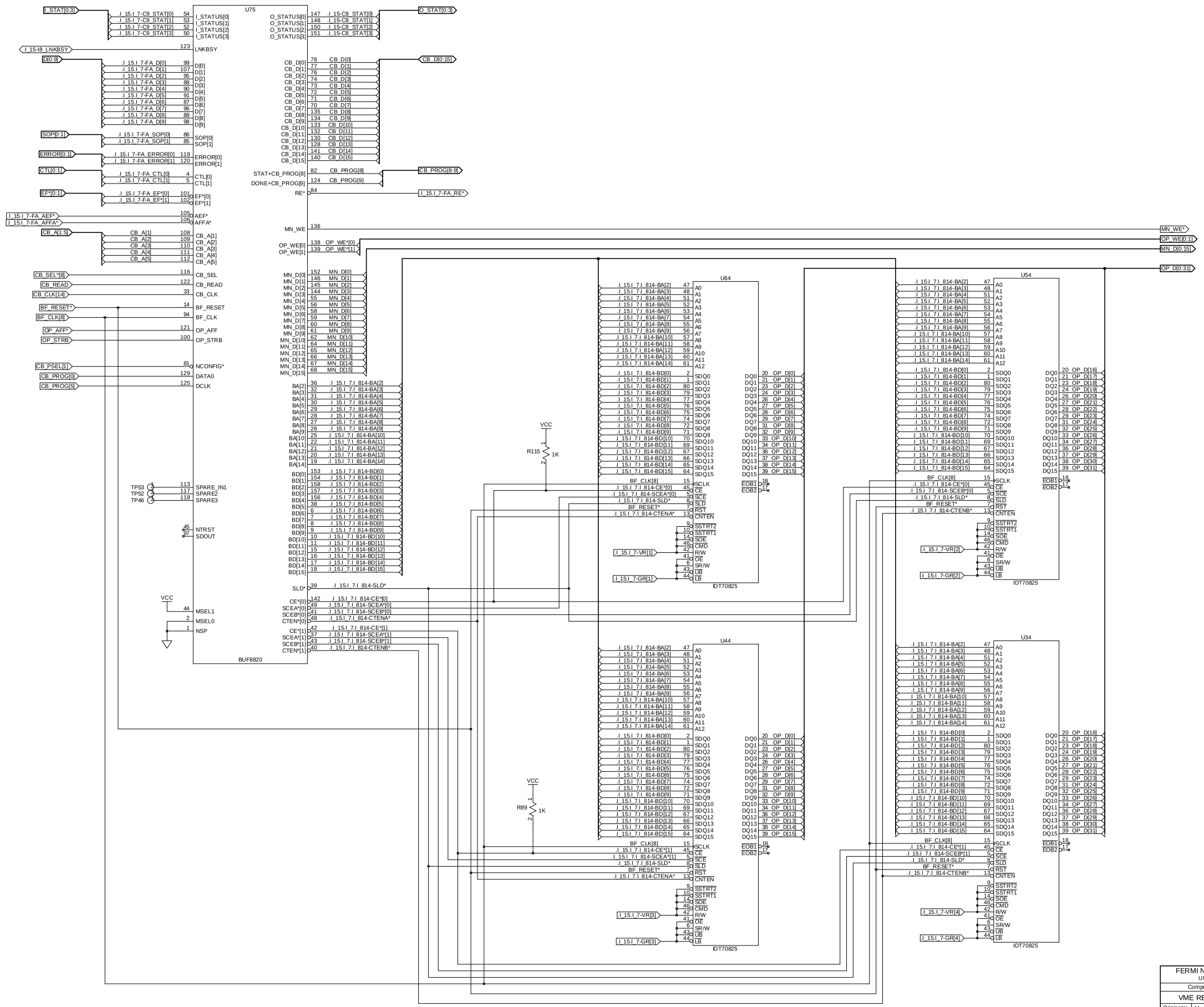
FERMI NATIONAL ACCELERATOR LABORATORY	
UNITED STATES DEPARTMENT OF ENERGY	
Computer Department / Electronic Systems Engineering	
VME READOUT BUFFER - BUFFER LOGIC	
Originator: Mark Bowden	2/2/98	Rev. 02
Drawn: Ted Zmuda	2/2/98
File Name: BUFFER	2/2/98	Sheet01 of01



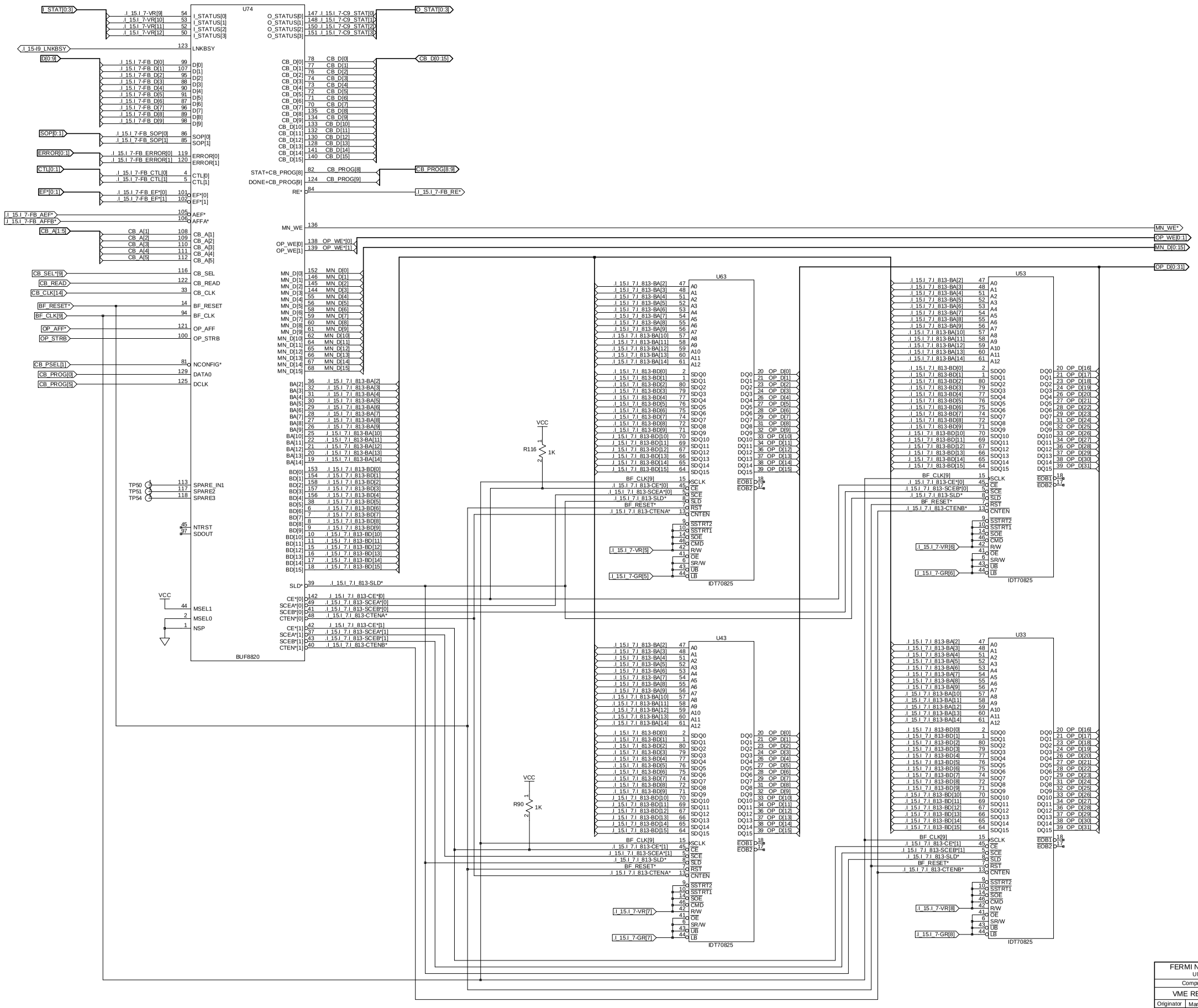
FERMI NATIONAL ACCELERATOR LABORATORY	
UNITED STATES DEPARTMENT OF ENERGY	
Computer Department / Electronic Systems Engineering	
VME READOUT BUFFER - BUFFER LOGIC	
Originator: Mark Bowden	2/2/98 — Rev. 02
Drawn: Ted Zmuda	2/2/98
File Name: BUFFER	2/2/98 — Sheet01 of01



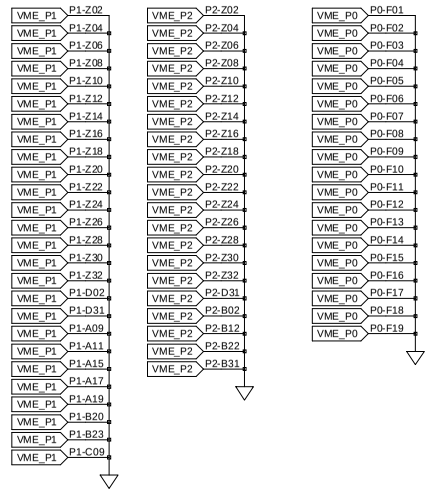
FERMI NATIONAL ACCELERATOR LABORATORY UNITED STATES DEPARTMENT OF ENERGY	
Computer Department / Electronic Systems Engineering	
VME READOUT BUFFER RECEIVE LOGIC	
Originator: Mark Bowden	1/16/98 Rev. 02
Drawn: Ted Zmuda	1/16/98
File Name: REC_LOG4	1/16/98 Sheet01 of01

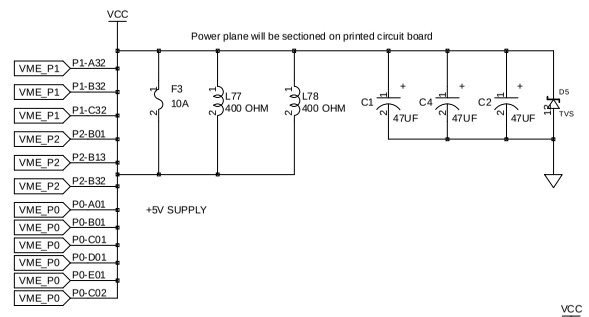


FERMI NATIONAL ACCELERATOR LABORATORY	
UNITED STATES DEPARTMENT OF ENERGY	
Computer Department / Electronic Systems Engineering	
VME READOUT BUFFER - BUFFER LOGIC	
Originator: Mark Bowden	2/2/98 — Rev. 02
Drawn: Ted Zmuda	2/2/98
File Name: BUFFER	2/2/98 — Sheet01 of01



FERMI NATIONAL ACCELERATOR LABORATORY	
UNITED STATES DEPARTMENT OF ENERGY	
Computer Department / Electronic Systems Engineering	
VME READOUT BUFFER - BUFFER LOGIC	
Originator: Mark Bowden	2/2/98 Rev. 02
Drawn: Ted Zmuda	2/2/98
File Name: BUFFER	2/2/98 Sheet01 of01

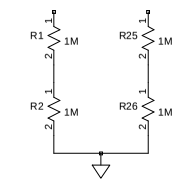


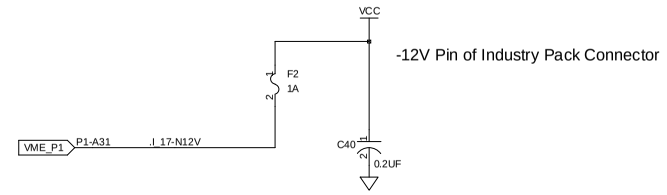


Bypass Capacitors

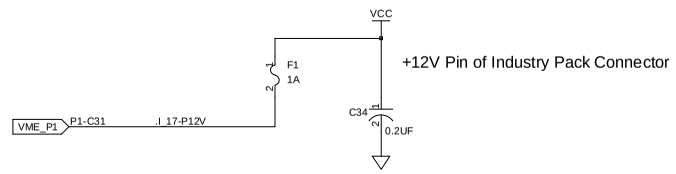
CAPS
I 814

Resistors for Static Discharge Strip



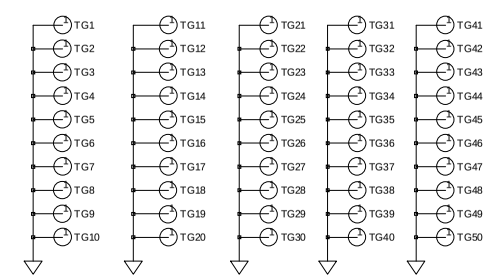


-12V Pin of Industry Pack Connector



+12V Pin of Industry Pack Connector

These are grounding points for connecting a test probe



U112
400 PIN
KLUDGE
AREA
A1

Fiducials

FD1 FD2 FD3 FD4 FD5 FD6 FD7 FD8 FD9 FD10 FD11 FD12 FD13 FD14 FD15 FD16 FD17

Targets

T1 T2 T3 T4

Stiffener Holes

M7 M9

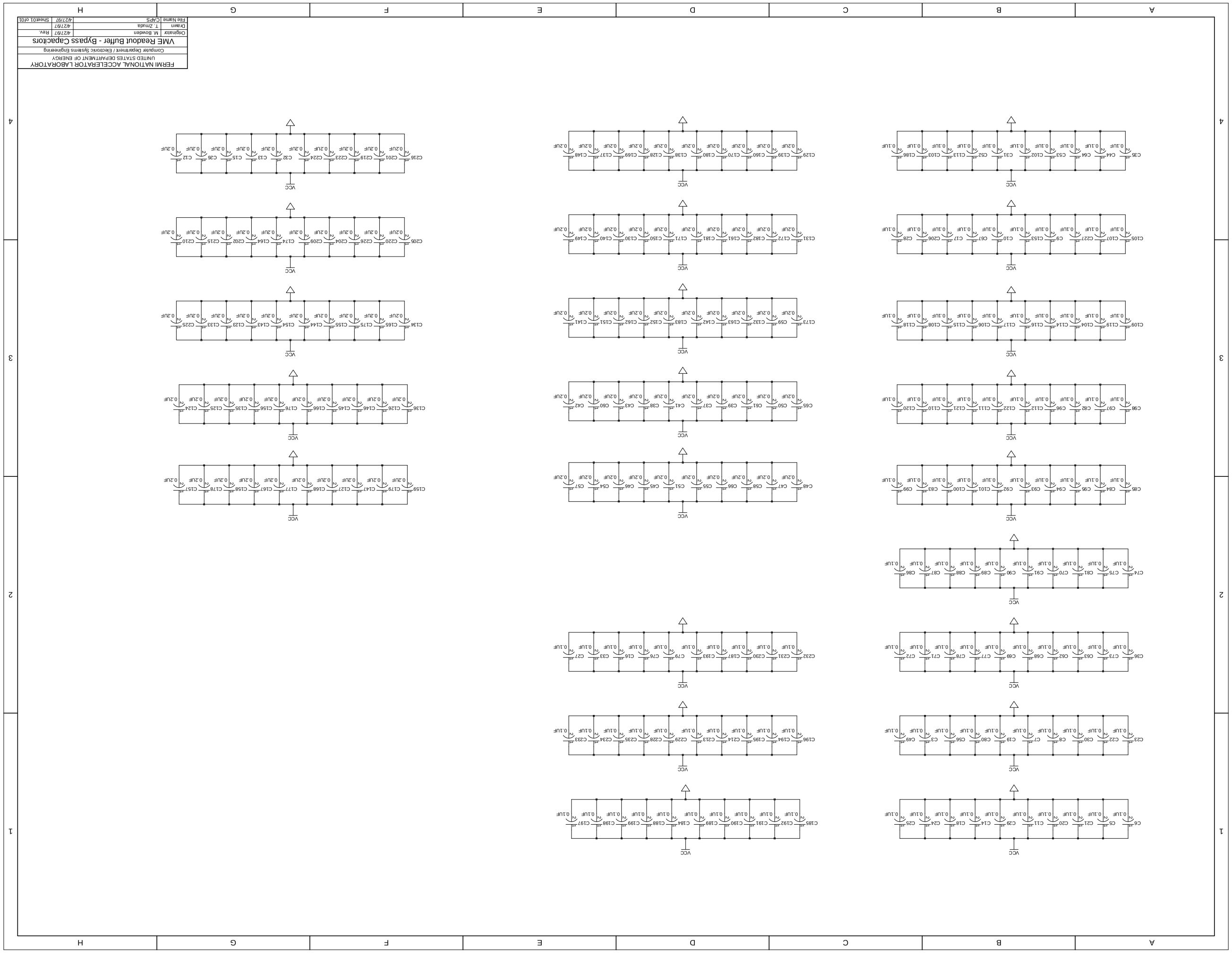
Front Panel Holes

M5 M8 M1

IP Mounting Holes

M3 M6 M2 M4

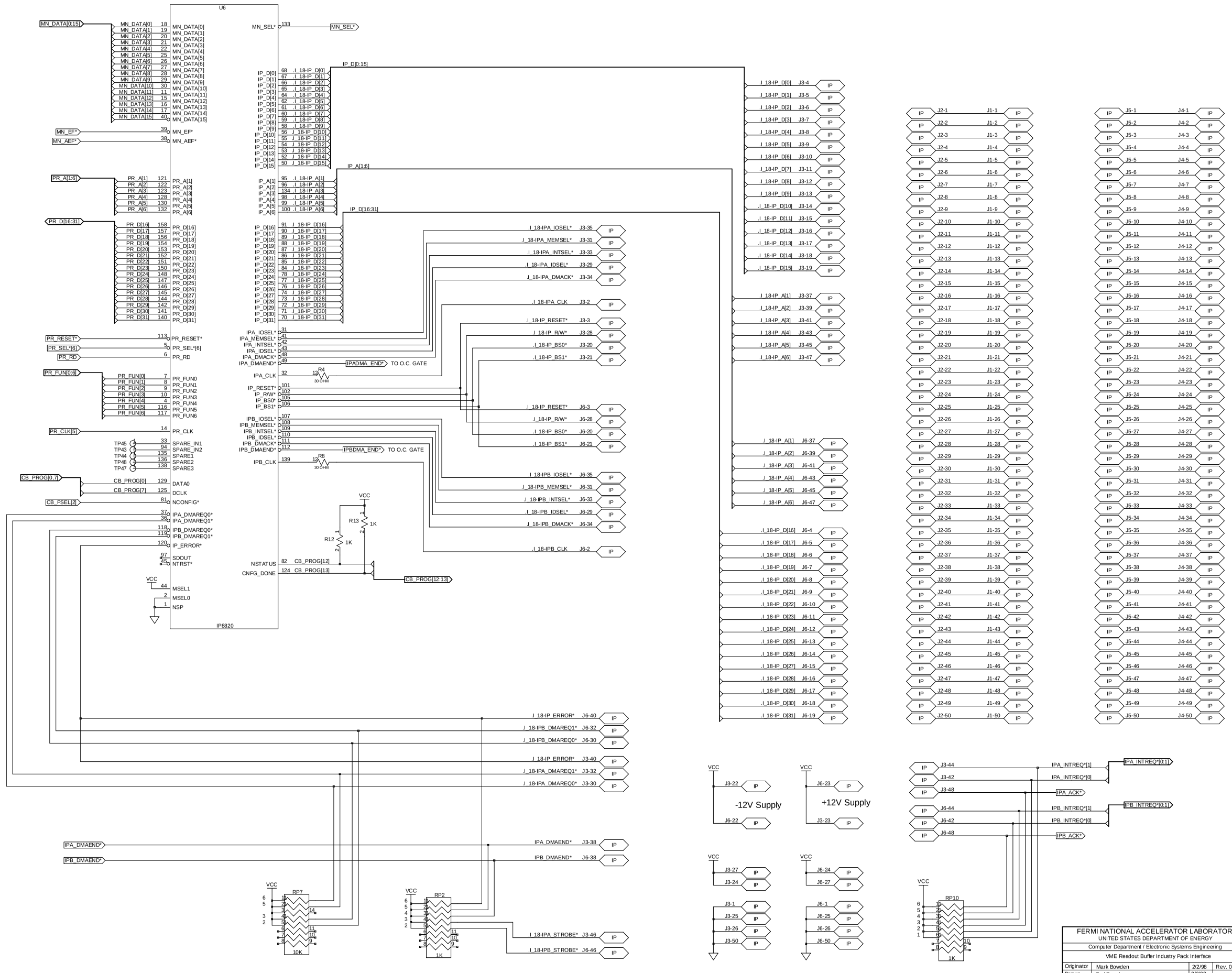
FERMI NATIONAL ACCELERATOR LABORATORY UNITED STATES DEPARTMENT OF ENERGY			
Computer Department / Electronic Systems Engineering			
VME READOUT BUFFER - VME Power & Ground			
Originator	Mark Bowden	3/3/98	Rev. 02
Drawn	Ted Zmuda	3/3/98	
File Name	PWR_GND	3/3/98	Sheet01 of01



FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY
Computer Department / Electronic Systems Engineering

VME Readout Buffer - Bypass Capacitors		
Originator	M. Bowden	4/27/97
Drawn	T. Zmuda	4/27/97
File Name	CAPS	4/27/97

Rev.
Sheet01 of01



FERMI NATIONAL ACCELERATOR LABORATORY			
UNITED STATES DEPARTMENT OF ENERGY			
Computer Department / Electronic Systems Engineering			
VME Readout Buffer Industry Pack Interface			
Originator	Mark Bowden	2/2/98	Rev. 02
Drawn	Ted Zmuda	2/2/98	
File Name	IPACK	2/2/98	Sheet01 of01