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# Wildcat Board 1/Prototype Design

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55	CROSS REFERENCE: Signal Names	[Documentation]	20OCT88

Sht	Contents	Classification	Rev/Date
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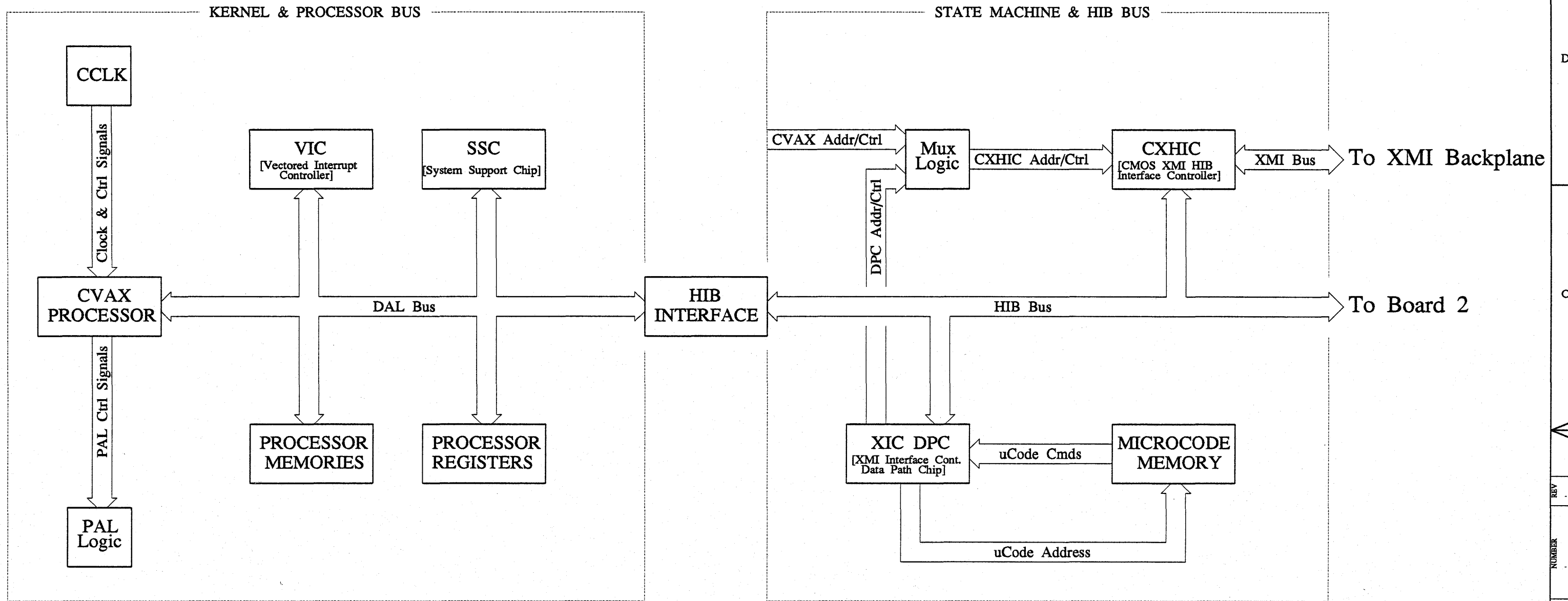
REVISIONS		
CHK	CHANGE NO.	REV

**digital**  
 LOGIC NAME = LOGIC SHEET NAME  
 FIRST USED ON OPTION/MODEL: \_\_\_\_\_

DRN: Taskmaster	DATE 10/20/88
CHK'D: K. Yesse	DATE 10/20/88

ENG: D. Versace	DATE 10/20/88
BOARD LOCATION: CXO	SHEET 1 OF Many
NEXT HIGHER ASSEMBLY:	NAME

TITLE: WILDCAT BOARD 1			
SIZE K	CODE CS	NUMBER T2022	REV A1_12



WILDCAT BOARD 1: Basic Elements of KERNEL And STATE MACHINE

Local Drawing Library

Navigation icons: back, forward, search, and other symbols.

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REVISIONS		
CHK	CHANGE NO.	REV

[Documentation]  
**Basic Board 1**  
 Top-Level Block Diagram

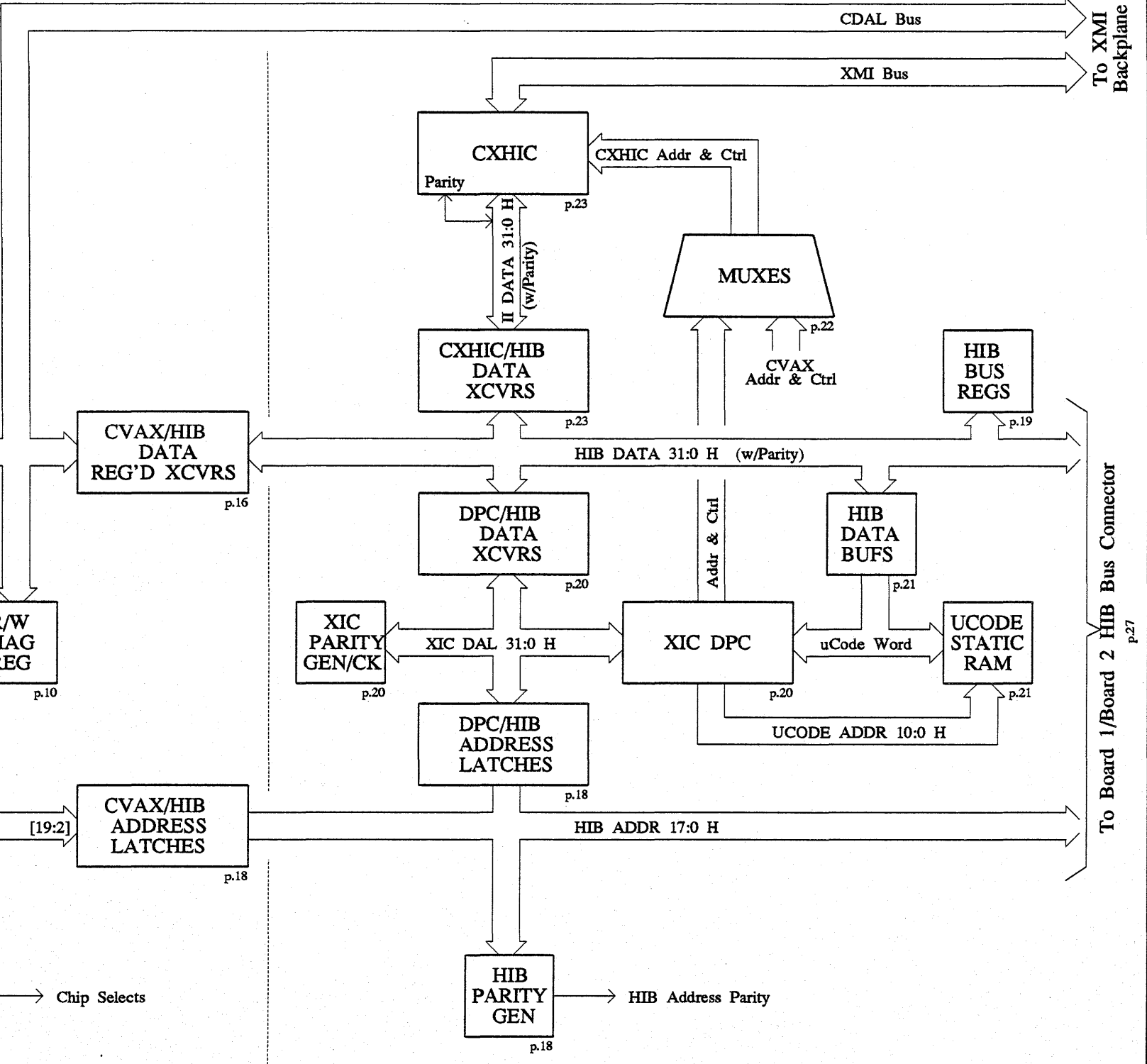
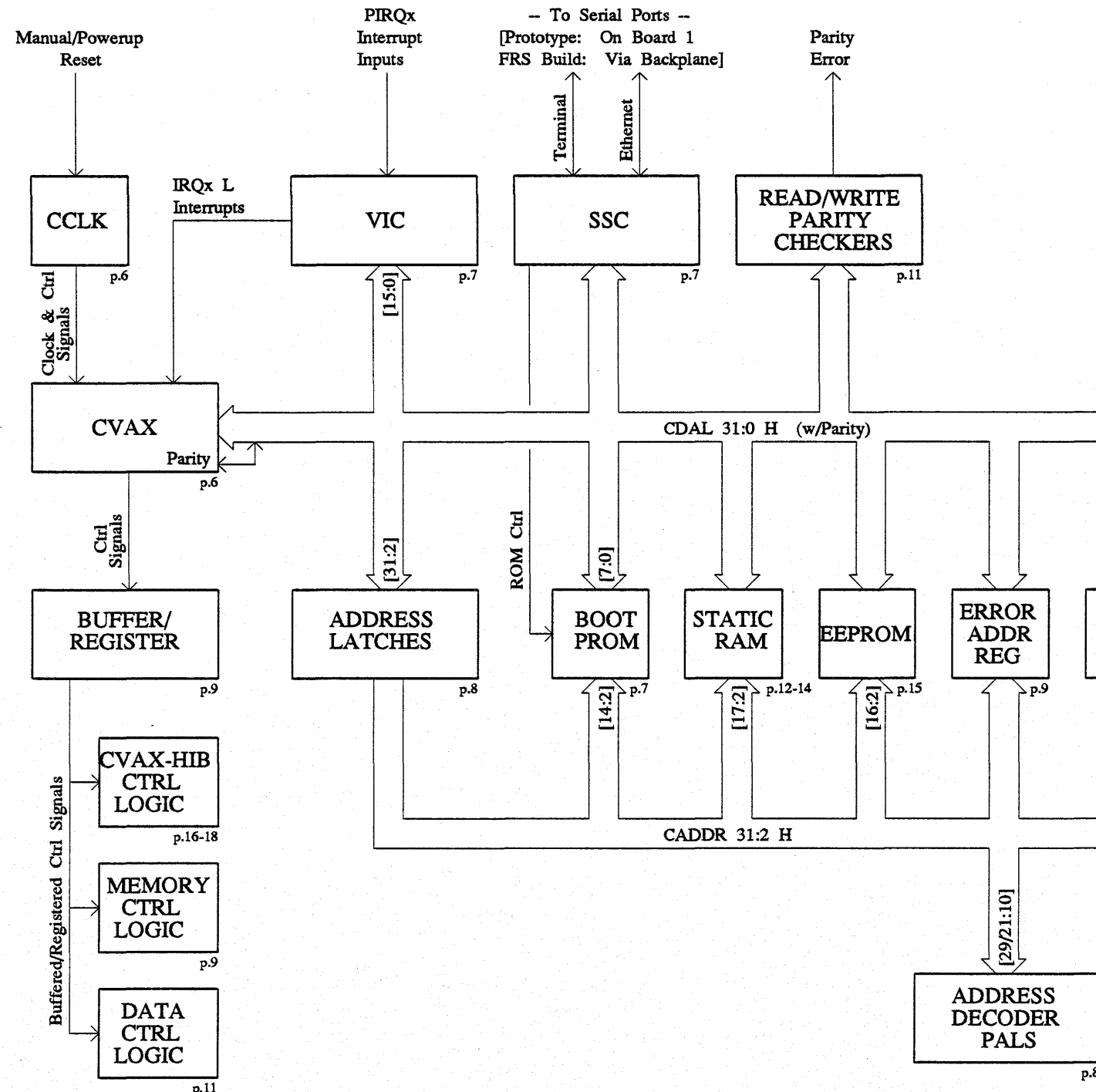
digital

FIRST USED ON OPTION/MODEL: -

DRN: K. Yesse	DATE	ENG: D. Versace	DATE
CHK'D: -	DATE	BOARD LOCATION: CXO	
Thu Oct 20 16:45:20 1988		SHEET 2	
		NEXT HIGHER ASSEMBLY:	

TITLE: WILDCAT BOARD 1			
SIZE K	CODE CS	NUMBER -	REV 20OCT88

SIZE K	CODE CS	NUMBER -	REV 20OCT88
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Local Drawing Library

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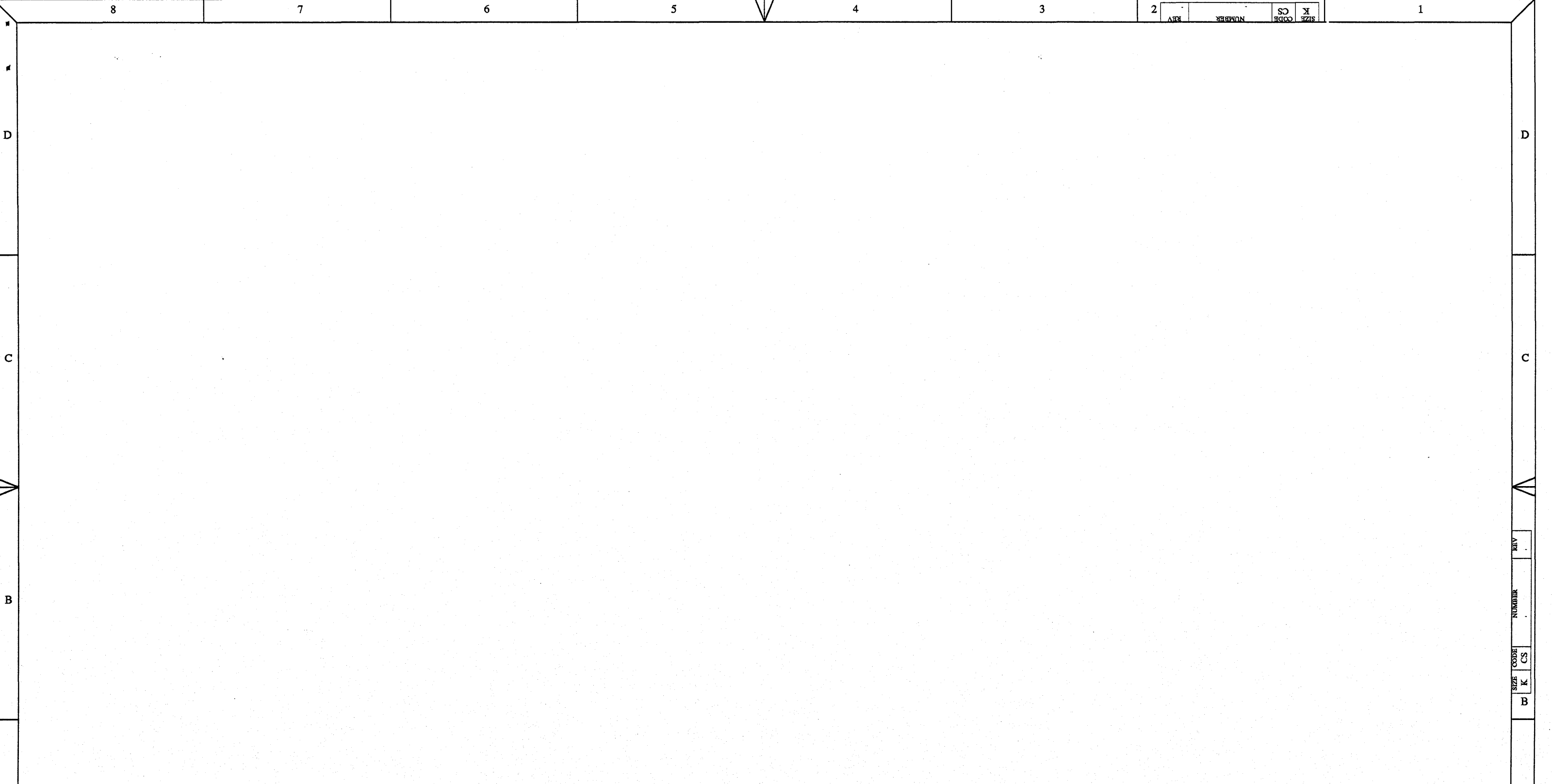
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REVISIONS		
CHK	CHANGE NO.	REV

[Documentation]  
**Kernel & XI State Machine Block Diagrams**

	DRN: K. Yesse	DATE	ENG: D. Versace	DATE	TITLE: WILDCAT BOARD 1
	CHK'D: -	DATE	BOARD LOCATION: CXO	SHEET 3	SIZE K CODE CS NUMBER REV 200CT88
FIRST USED ON OPTION/MODEL: -	Thu Oct 20 17:04:34 1988	NEXT HIGHER ASSEMBLY: -			

SIZE	K	CS	NUMBER	REV



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CHK	CHANGE NO.	REV

[Documentation]  
**Detailed Kernel Diagram  
 (TBD)**

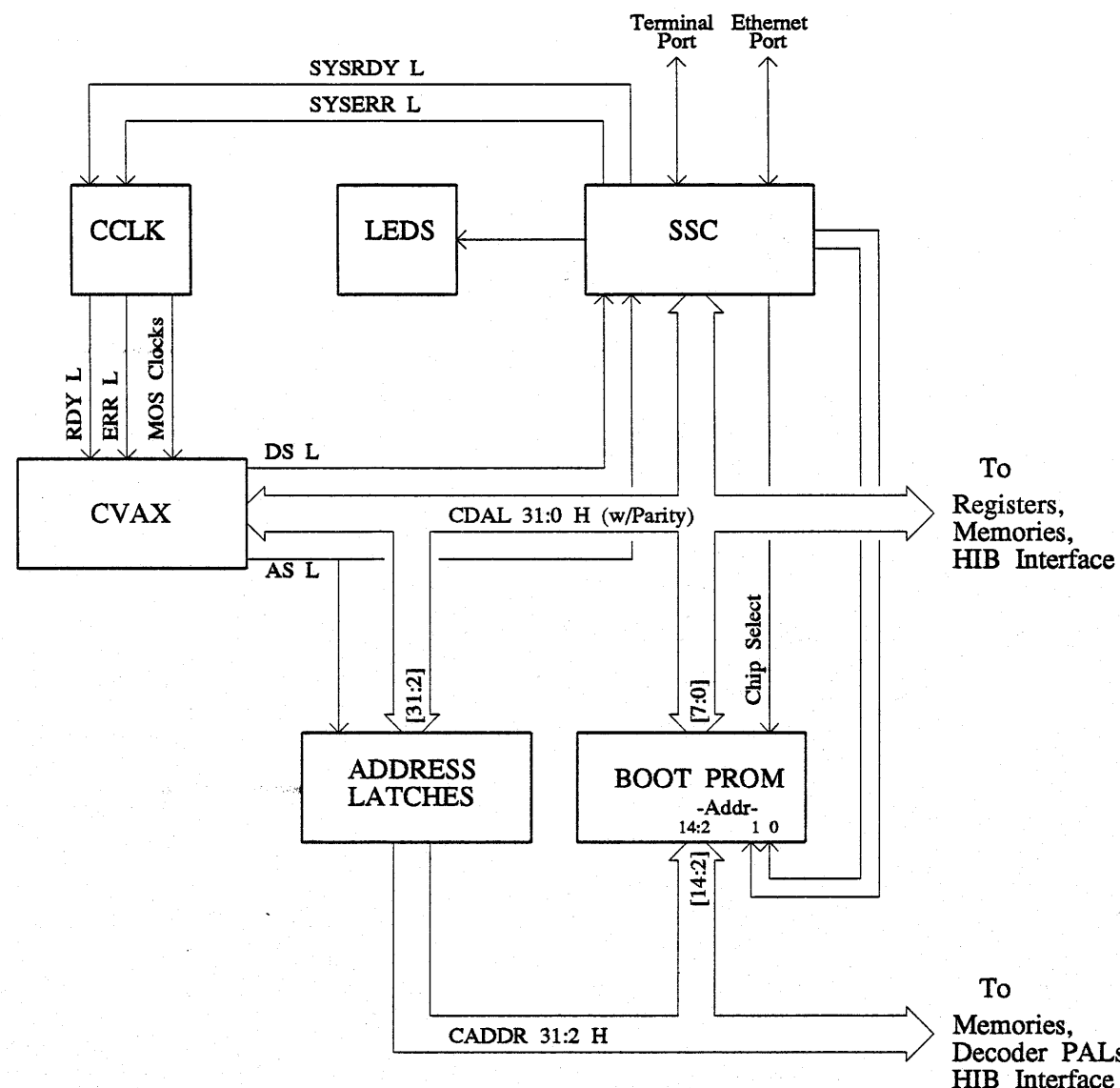
FIRST USED ON OPTION/MODEL: -

DRN:	K. Yesse	DATE	-
CHK'D:	-	DATE	-

ENG :	D. Versace	DATE	-
BOARD LOCATION:	CXO	SHEET	4
NEXT HIGHER ASSEMBLY:	-		

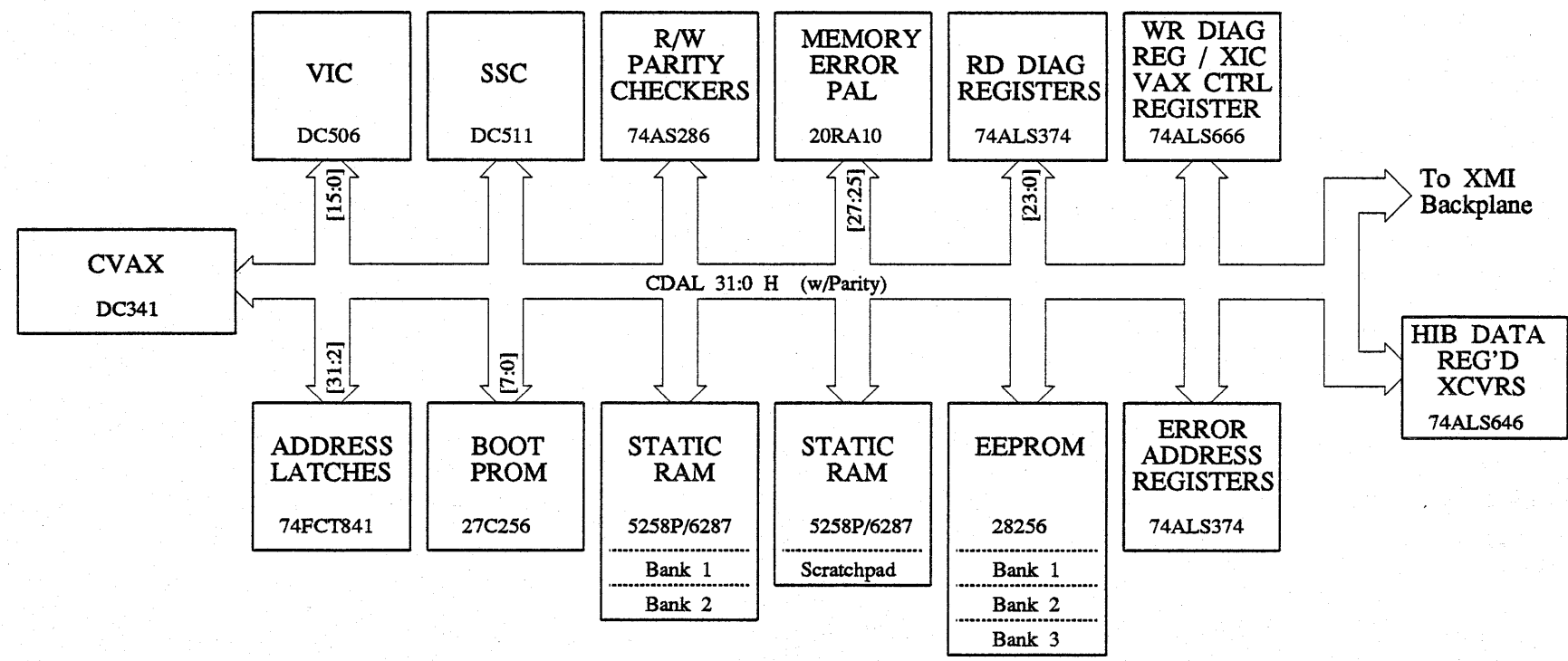
TITLE:			
WILDCAT BOARD 1			
SIZE	CODE	NUMBER	REV
K	CS	-	1

SIZE	K	CS	NUMBER	REV
B				



### BOOT LOGIC

This diagram shows the minimum logic required to boot the CVAX processor.



### DAL BUS DETAIL

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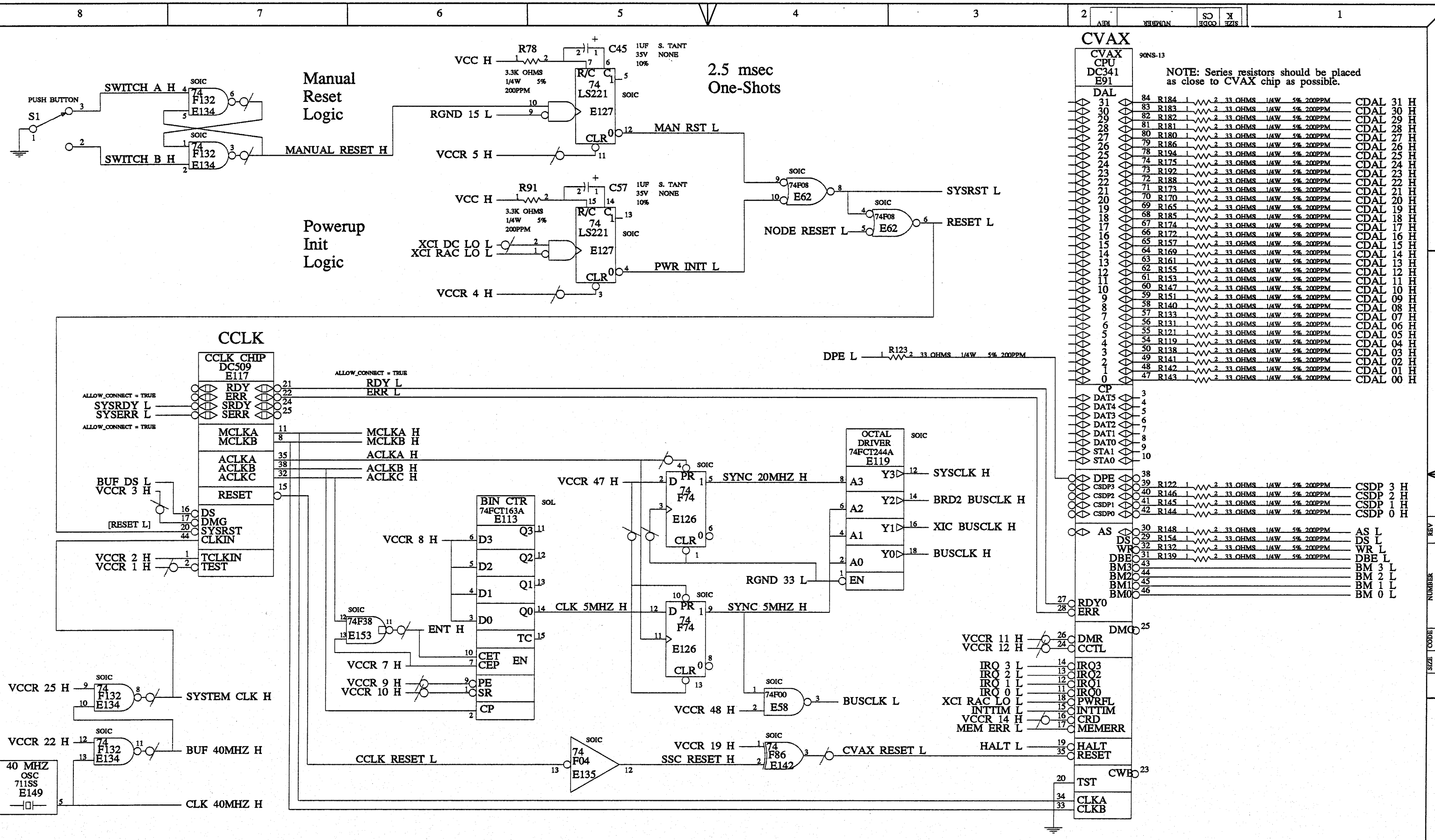
REVISIONS		
CHK	CHANGE NO.	REV

[Documentation]  
**Boot Logic & DAL Bus Detail Diagrams**

FIRST USED ON OPTION/MODEL: -

DRN: K. Yesse	DATE	ENG: D. Versace	DATE
CHK'D:	DATE	BOARD LOCATION: CXO	
Thu Oct 20 17:06:32 1988		SHEET 5	
		NEXT HIGHER ASSEMBLY:	

TITLE: WILDCAT BOARD 1			
SIZE K	CODE CS	NUMBER -	REV 20OCT88



**CVAX**

CVAX CPU DC341 E91

NOTE: Series resistors should be placed as close to CVAX chip as possible.

Pin	Signal	Resistor	Value	Power	Frequency	Signal	Pin	Direction
31	DAL	R184	2 33 OHMS	1/4W	5% 200PPM	CDAL	31	H
30	DAL	R183	2 33 OHMS	1/4W	5% 200PPM	CDAL	30	H
29	DAL	R182	2 33 OHMS	1/4W	5% 200PPM	CDAL	29	H
28	DAL	R181	2 33 OHMS	1/4W	5% 200PPM	CDAL	28	H
27	DAL	R180	2 33 OHMS	1/4W	5% 200PPM	CDAL	27	H
26	DAL	R186	2 33 OHMS	1/4W	5% 200PPM	CDAL	26	H
25	DAL	R194	2 33 OHMS	1/4W	5% 200PPM	CDAL	25	H
24	DAL	R175	2 33 OHMS	1/4W	5% 200PPM	CDAL	24	H
23	DAL	R192	2 33 OHMS	1/4W	5% 200PPM	CDAL	23	H
22	DAL	R188	2 33 OHMS	1/4W	5% 200PPM	CDAL	22	H
21	DAL	R173	2 33 OHMS	1/4W	5% 200PPM	CDAL	21	H
20	DAL	R170	2 33 OHMS	1/4W	5% 200PPM	CDAL	20	H
19	DAL	R165	2 33 OHMS	1/4W	5% 200PPM	CDAL	19	H
18	DAL	R185	2 33 OHMS	1/4W	5% 200PPM	CDAL	18	H
17	DAL	R174	2 33 OHMS	1/4W	5% 200PPM	CDAL	17	H
16	DAL	R172	2 33 OHMS	1/4W	5% 200PPM	CDAL	16	H
15	DAL	R157	2 33 OHMS	1/4W	5% 200PPM	CDAL	15	H
14	DAL	R169	2 33 OHMS	1/4W	5% 200PPM	CDAL	14	H
13	DAL	R161	2 33 OHMS	1/4W	5% 200PPM	CDAL	13	H
12	DAL	R155	2 33 OHMS	1/4W	5% 200PPM	CDAL	12	H
11	DAL	R153	2 33 OHMS	1/4W	5% 200PPM	CDAL	11	H
10	DAL	R147	2 33 OHMS	1/4W	5% 200PPM	CDAL	10	H
9	DAL	R151	2 33 OHMS	1/4W	5% 200PPM	CDAL	9	H
8	DAL	R140	2 33 OHMS	1/4W	5% 200PPM	CDAL	8	H
7	DAL	R133	2 33 OHMS	1/4W	5% 200PPM	CDAL	7	H
6	DAL	R131	2 33 OHMS	1/4W	5% 200PPM	CDAL	6	H
5	DAL	R121	2 33 OHMS	1/4W	5% 200PPM	CDAL	5	H
4	DAL	R119	2 33 OHMS	1/4W	5% 200PPM	CDAL	4	H
3	DAL	R138	2 33 OHMS	1/4W	5% 200PPM	CDAL	3	H
2	DAL	R141	2 33 OHMS	1/4W	5% 200PPM	CDAL	2	H
1	DAL	R142	2 33 OHMS	1/4W	5% 200PPM	CDAL	1	H
0	DAL	R143	2 33 OHMS	1/4W	5% 200PPM	CDAL	0	H
3	CP					CP	3	
4	DAT5					DAT5	4	
5	DAT4					DAT4	5	
6	DAT3					DAT3	6	
7	DAT2					DAT2	7	
8	DAT1					DAT1	8	
9	DAT0					DAT0	9	
10	STA1					STA1	10	
11	STA0					STA0	11	
38	DPE3	R122	2 33 OHMS	1/4W	5% 200PPM	CSDP	3	H
39	DPE2	R146	2 33 OHMS	1/4W	5% 200PPM	CSDP	2	H
40	DPE1	R145	2 33 OHMS	1/4W	5% 200PPM	CSDP	1	H
41	DPE0	R144	2 33 OHMS	1/4W	5% 200PPM	CSDP	0	H
30	AS	R148	2 33 OHMS	1/4W	5% 200PPM	AS	L	
29	DS	R154	2 33 OHMS	1/4W	5% 200PPM	DS	L	
32	WR	R132	2 33 OHMS	1/4W	5% 200PPM	WR	L	
31	DBE	R139	2 33 OHMS	1/4W	5% 200PPM	DBE	L	
43	BM3					BM	3	L
44	BM2					BM	2	L
45	BM1					BM	1	L
46	BM0					BM	0	L
27	RDY0					RDY0		
28	ERR					ERR		
25	DMC					DMC		
26	DMR					DMR		
24	CCTL					CCTL		
14	IRO3					IRO3		
13	IRO2					IRO2		
12	IRO1					IRO1		
11	IRO0					IRO0		
18	PWRFL					PWRFL		
15	INTTIM					INTTIM		
16	CRD					CRD		
17	MEMERR					MEMERR		
19	HALT					HALT		
35	HALT RESET					HALT RESET		
20	TST					TST		
34	CLKA					CLKA		
33	CLKB					CLKB		

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REVISIONS		
CHK	CHANGE NO.	REV

[Kernel]  
**CVAX, CCLK,  
 CLOCK & RESET LOGIC**

**digital**

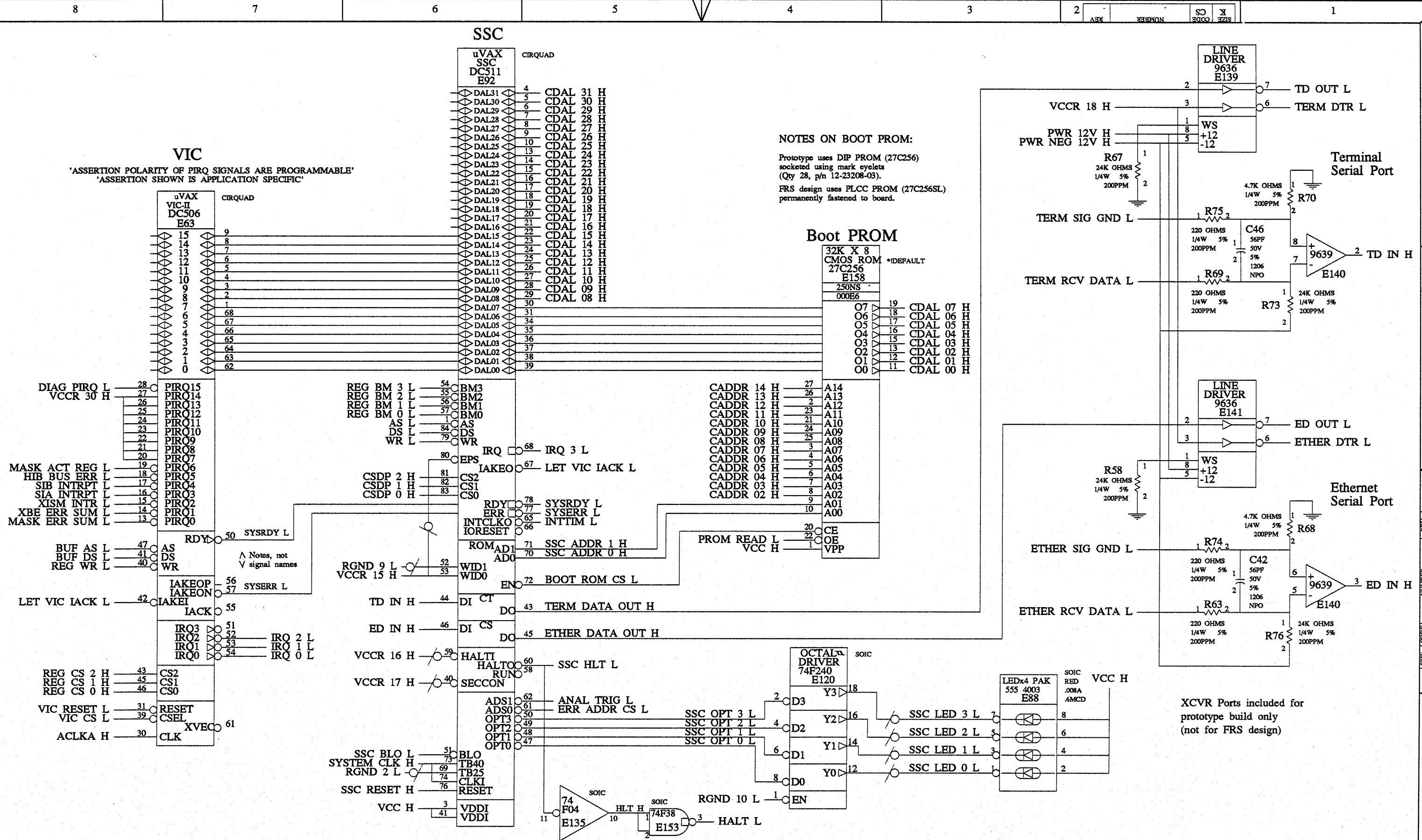
DRN: K. Yesse  
 DATE: -  
 ENG: T. Kinlaw  
 DATE: -  
 BOARD LOCATION: CXO  
 SHEET: 6  
 NEXT HIGHER ASSEMBLY: -

Thu Oct 20 17:11:49 1988

FIRST USED ON OPTION/MODEL: -

SIZE	CODE	NUMBER	REV
K	CS	-	200CT88

TITLE:  
**WILDCAT BOARD 1**



**NOTES ON BOOT PROM:**  
 Prototype uses DIP PROM (27C256) socketed using mark eyelets (Qty 28, p/n 12-23208-03).  
 FRS design uses PLCC PROM (27C256SL) permanently fastened to board.

XCVR Ports included for prototype build only (not for FRS design)

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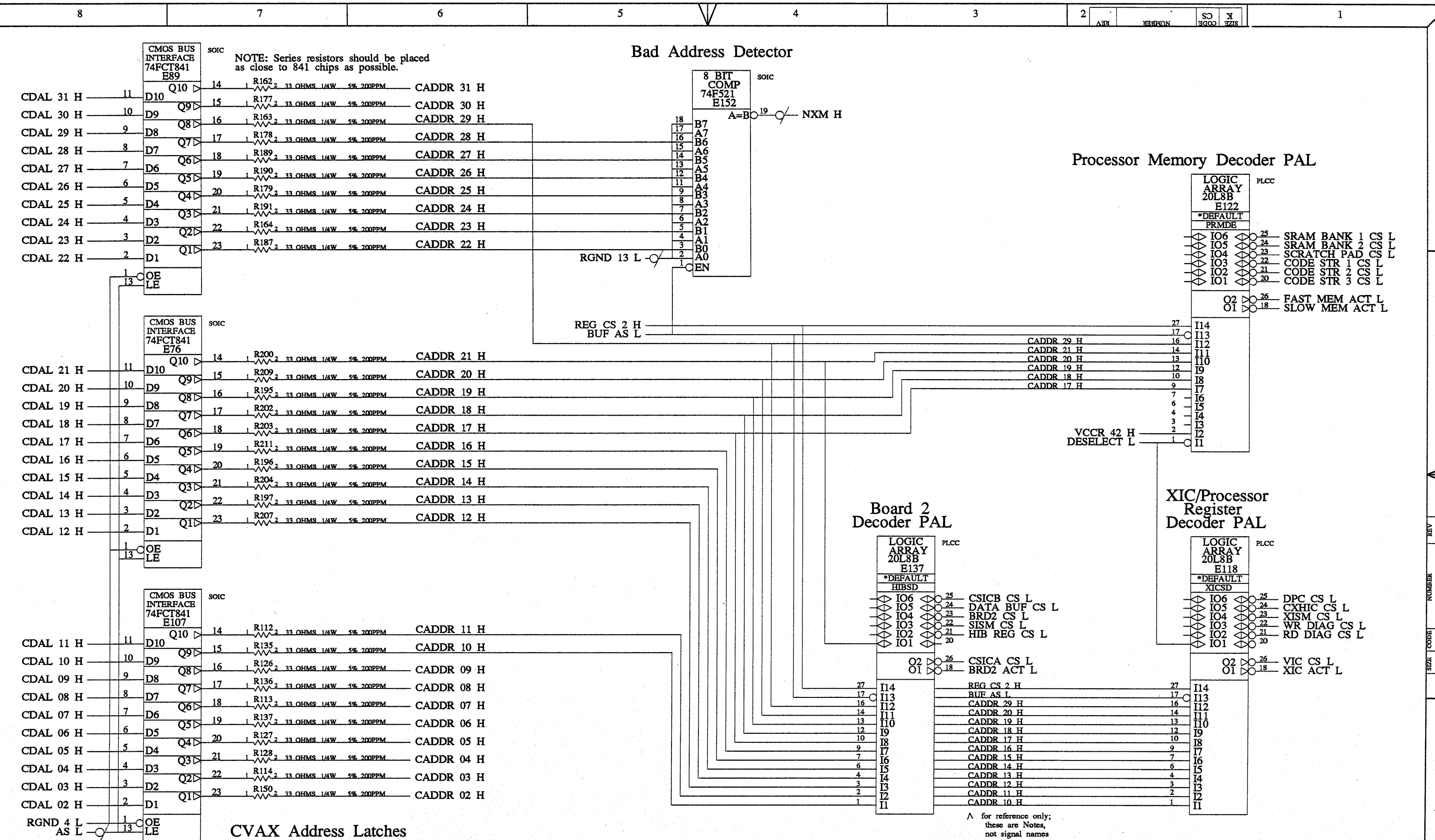
REVISIONS		
CHK	CHANGE NO.	REV

[Kernel]  
**VIC, SSC, BOOT PROM**  
 [SERIAL PORTS/protos only]

**digital**  
 FIRST USED ON OPTION/MODEL: -

DRN: K. Yesse	DATE	ENG: M. Dutaxus	DATE	TITLE: WILDCAT BOARD 1
CHK'D: -	DATE	BOARD LOCATION: CXO	SHEET 7	SIZE K
Thu Oct 20 17:12:58 1988		NEXT HIGHER ASSEMBLY: -		CODE CS
				NUMBER -
				REV 20OCT88

SIZE K	CODE CS	NUMBER -	REV 20OCT88
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REVISIONS		
CHK	CHANGE NO.	REV

[Kernel]  
**ADDRESS LATCHES & DECODER PALs, II ADDRESS PAL**

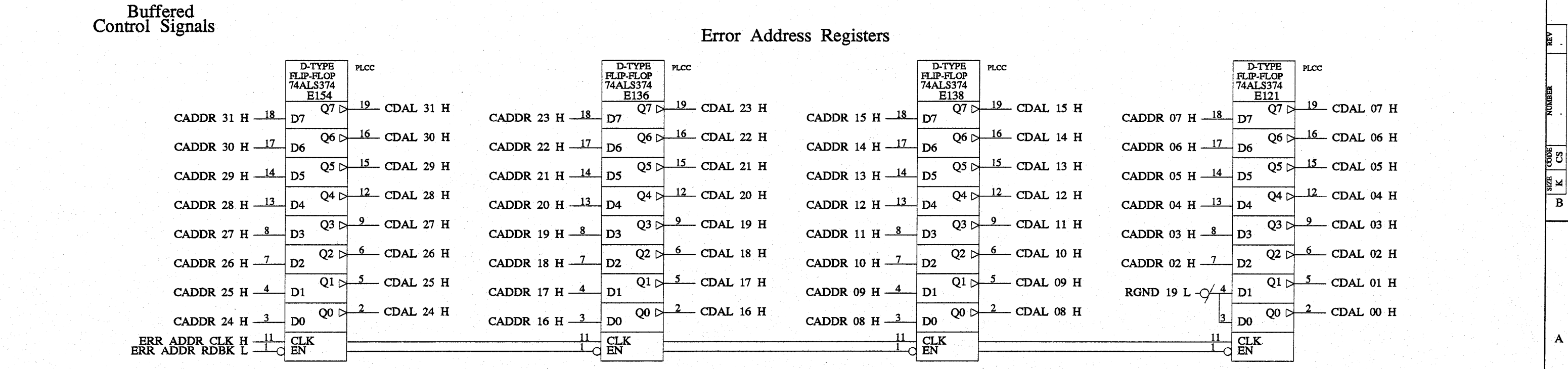
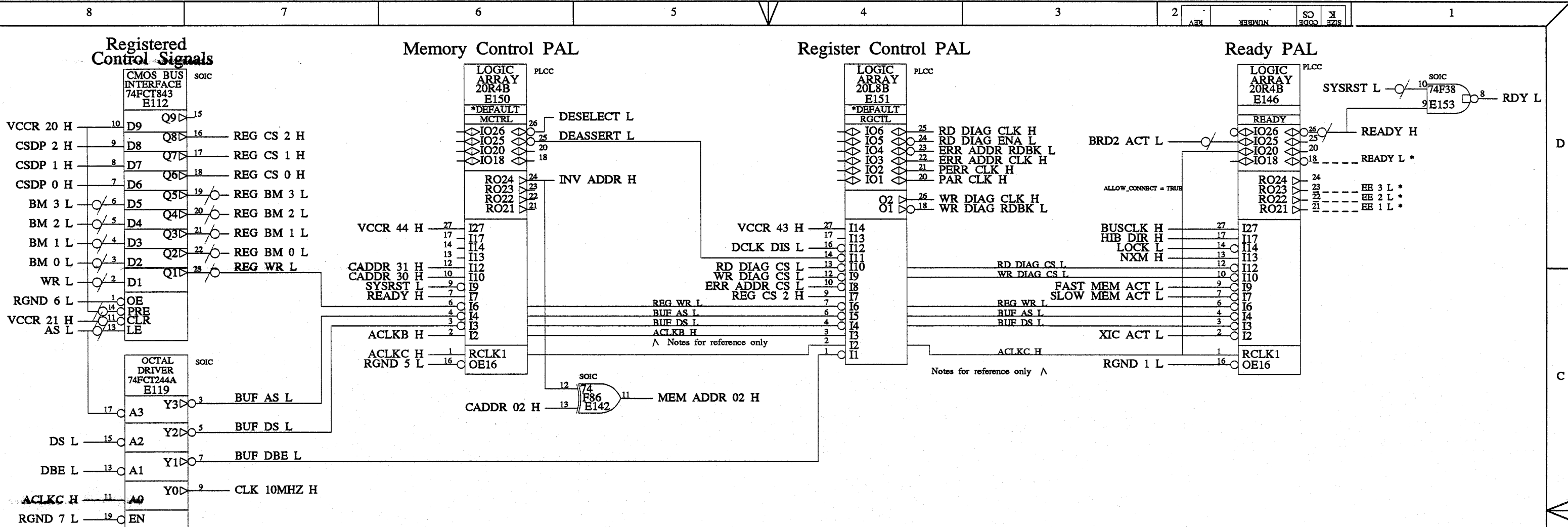
**digital**

FIRST USED ON OPTION/MODEL:

DRN: Rev. Jackson	DATE	ENG: Rev. Calvert	DATE
CHK'D:	DATE	BOARD LOCATION: CXO	
Thu Oct 20 17:13:48 1988		SHEET 8	
		NEXT HIGHER ASSEMBLY:	

TITLE: WILDCAT BOARD 1			
SIZE K	CODE CS	NUMBER	REV 200CT88



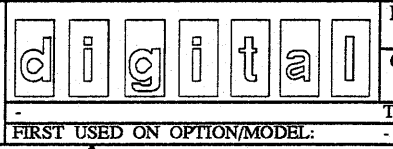


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REVISIONS		
CHK	CHANGE NO.	REV

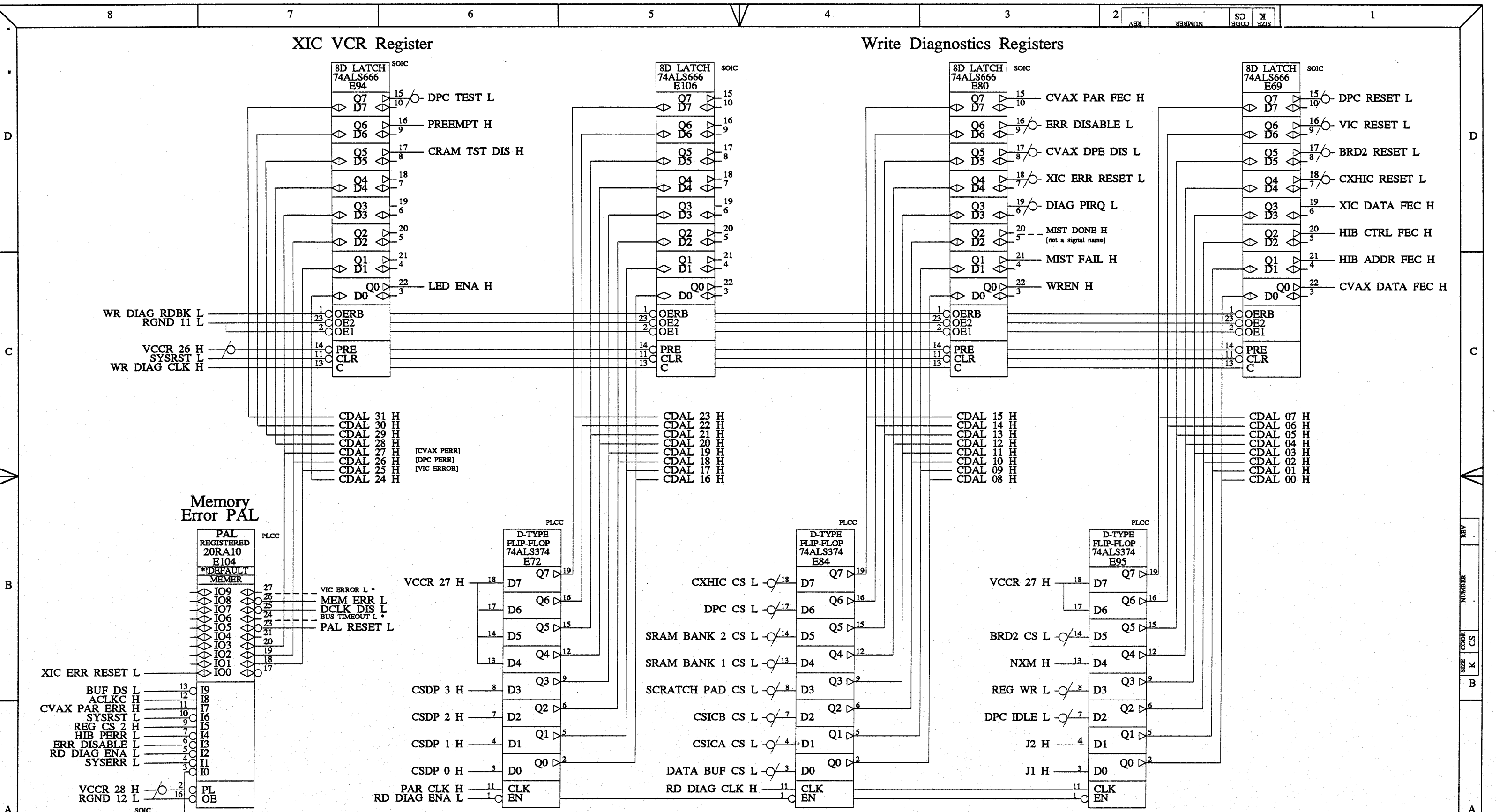
[Kernel]  
**CVAX BUFFER/REGISTERS,  
 CTRL PALS,  
 ERROR ADDR REGS**



DRN: K. Yesse  
 DATE: -  
 CHK'D: -  
 DATE: -  
 Thu Oct 20 17:14:21 1988

ENG: R. Reagan  
 DATE: -  
 BOARD LOCATION: CXO  
 SHEET: 9  
 NEXT HIGHER ASSEMBLY: -

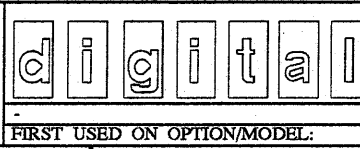
TITLE:			
WILDCAT BOARD 1			
SIZE	CODE	NUMBER	REV
K	CS	-	20OCT88



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REVISIONS		
CHK	CHANGE NO.	REV

[Kernel]  
**PROCESSOR REGISTERS**  
 [R-W DIAG/XIC VCR],  
 MEM ERR PAL

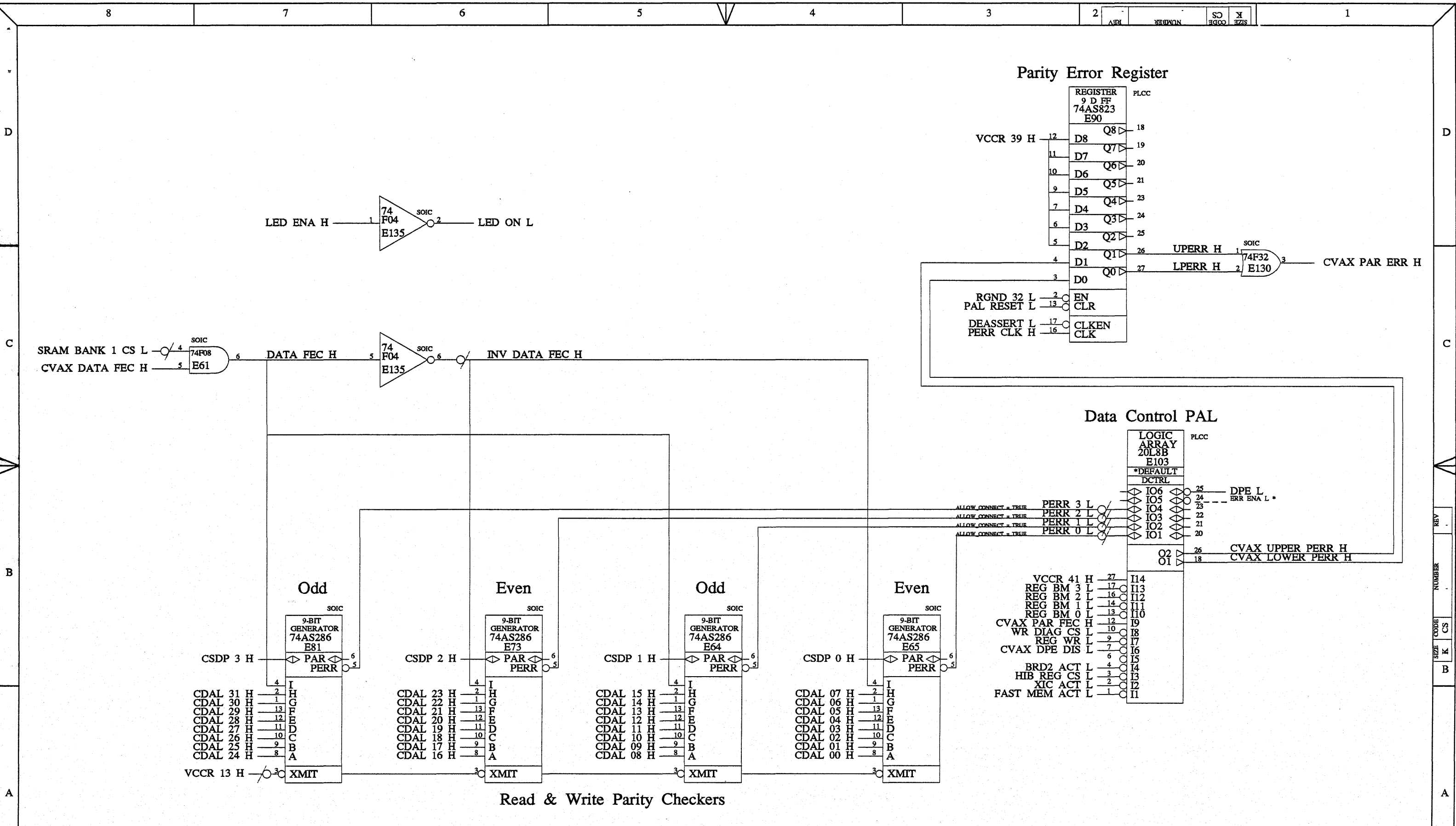


DRN: K. Yesse  
 DATE: Thu Oct 20 16:39:03 1988  
 CHK'D:   
 DATE:   
 FIRST USED ON OPTION/MODEL:   
 NEXT HIGHER ASSEMBLY:   
 SHEET 10

ENG: Col. North  
 BOARD LOCATION: CXO  
 DATE:   
 NEXT HIGHER ASSEMBLY:   
 SHEET 10

TITLE: WILDCAT BOARD 1			
SIZE	CODE	NUMBER	REV
K	CS	-	200CT88

\* Output used for feedback within PAL



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REVISIONS		
CHK	CHANGE NO.	REV

[Kernel]  
**READ/WRITE  
 PARITY CHECKERS,  
 DATA CONTROL PAL**

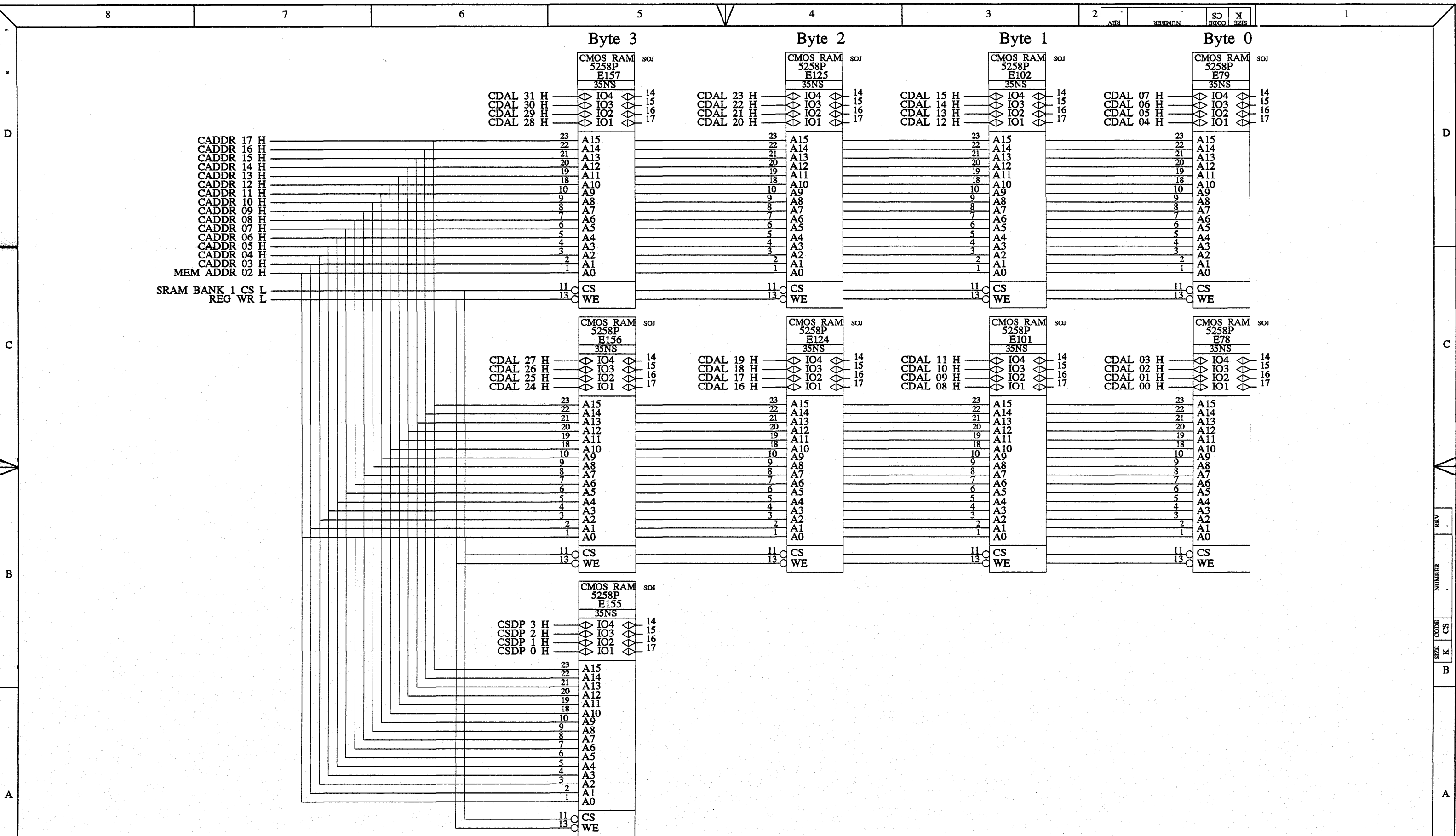
**digital**  
 FIRST USED ON OPTION/MODEL:

DRN: K. Yesse  
 CHK'D:   
 Thu Oct 20 16:39:24 1988

ENG: H. Kinlaw  
 BOARD LOCATION: CXO  
 SHEET 11  
 NEXT HIGHER ASSEMBLY:

TITLE: **WILDCAT BOARD 1**  
 SIZE K CODE CS NUMBER REV 200CT88

\* Output used for feedback within PAL



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REVISIONS		
CHK	CHANGE NO.	REV

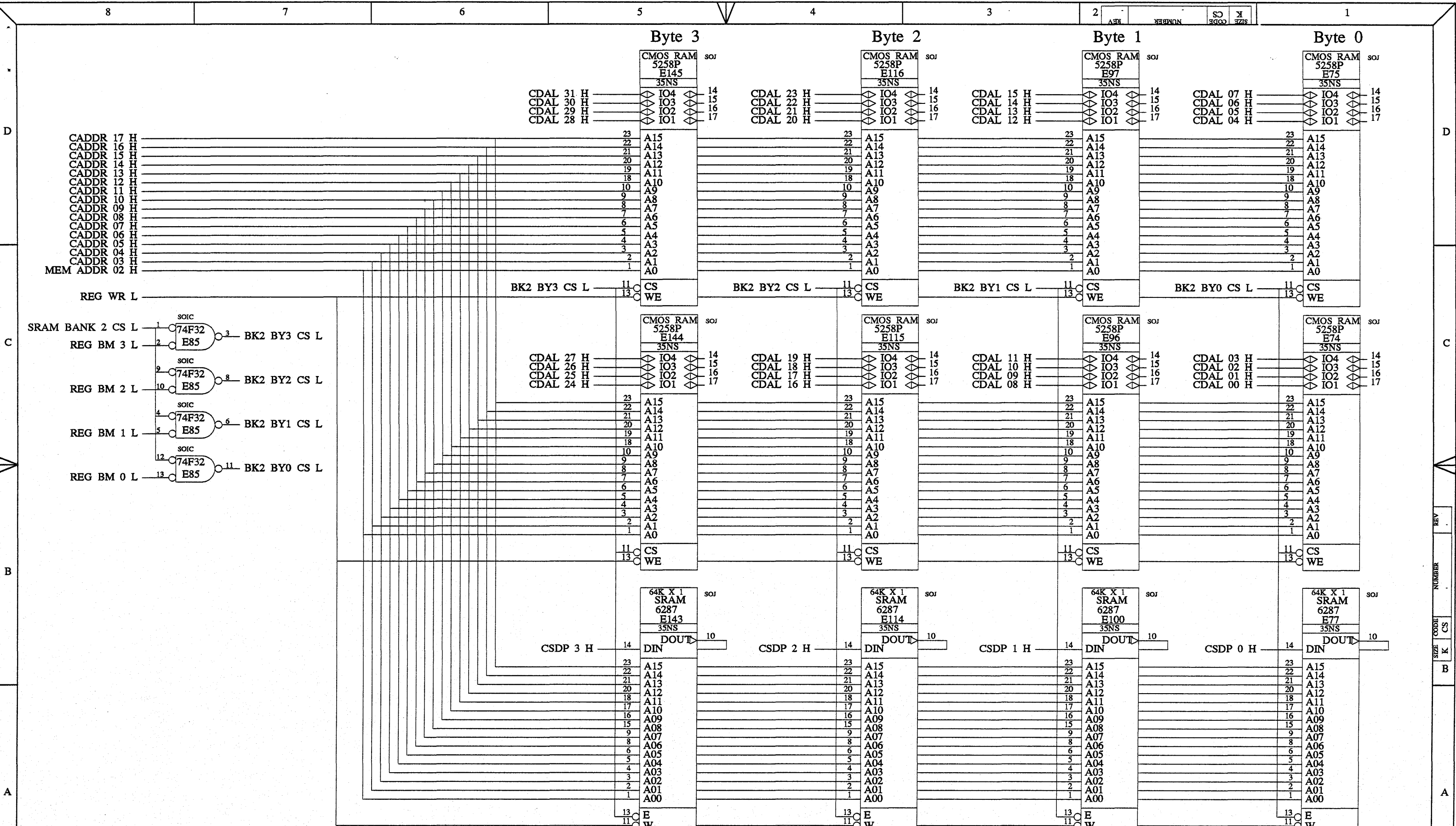
[Kernel]  
**STATIC RAM:**  
 Bank 1

**digital**  
 FIRST USED ON OPTION/MODEL: -

DRN: K. Yesse  
 CHK'D: -  
 DATE: -  
 Thu Oct 20 16:40:03 1988

ENG: G. Bush  
 BOARD LOCATION: CXO  
 SHEET 12  
 NEXT HIGHER ASSEMBLY: -

TITLE: WILDCAT BOARD 1			
SIZE	CODE	NUMBER	REV
K	CS	-	20OCT88



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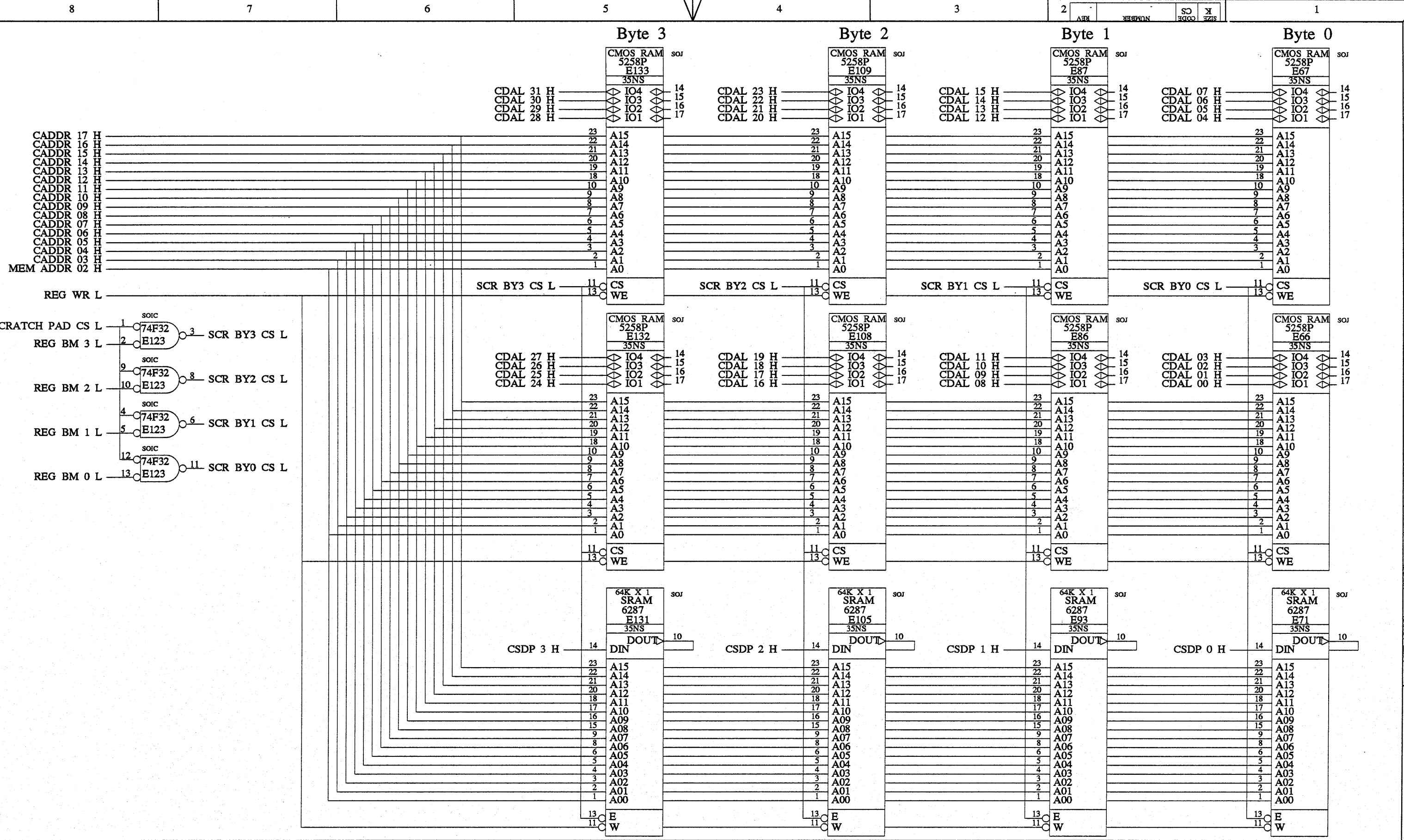
REVISIONS		
CHK	CHANGE NO.	REV

[Kernel]  
**STATIC RAM:**  
 Bank 2

**digital**  
 DRN: K. Yesse  
 DATE: -  
 CHK'D: -  
 DATE: -  
 FIRST USED ON OPTION/MODEL: -

ENG: G. Washington  
 DATE: -  
 BOARD LOCATION: CXO  
 SHEET: 13  
 NEXT HIGHER ASSEMBLY: -

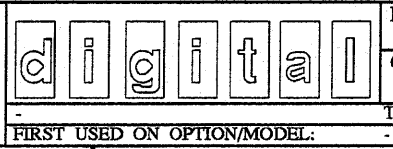
TITLE: **WILDCAT BOARD 1**  
 SIZE: K  
 CODE: CS  
 NUMBER: -  
 REV: 200CT88



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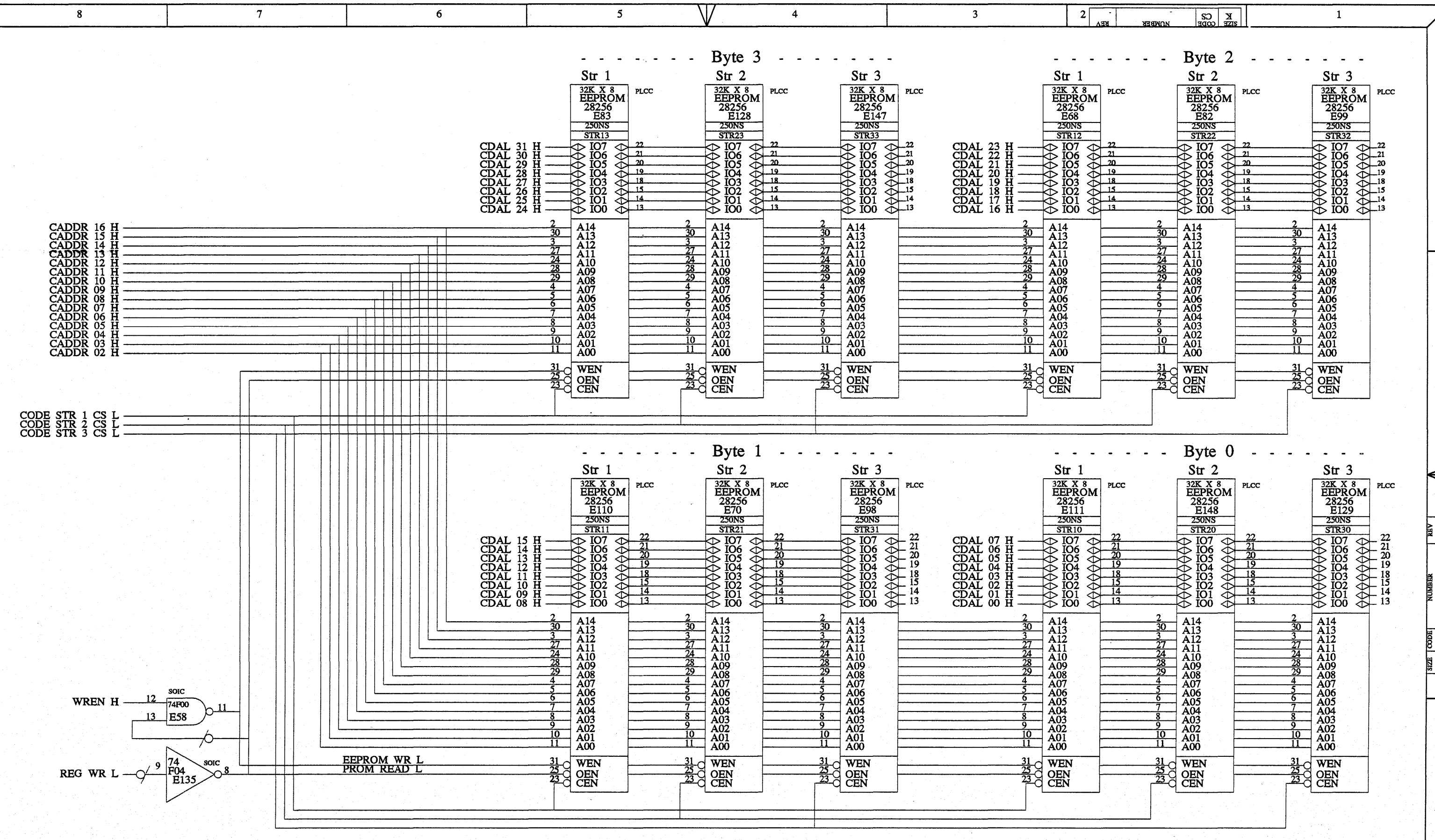
REVISIONS		
CHK	CHANGE NO.	REV

[Kernel]  
**STATIC RAM:**  
 Scratch Pad



DRN: K. Yesse  
 DATE: -  
 ENG: G. Bushington  
 DATE: -  
 BOARD LOCATION: CXO  
 SHEET: 14  
 NEXT HIGHER ASSEMBLY: -  
 Thu Oct 20 16:42:04 1988

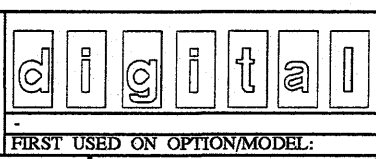
TITLE: **WILDCAT BOARD 1**  
 SIZE: K  
 CODE: CS  
 NUMBER: -  
 REV: 200CT88



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REVISIONS		
CHK	CHANGE NO.	REV

[Kernel]  
**EEPROMS:**  
 Banks 1, 2, 3

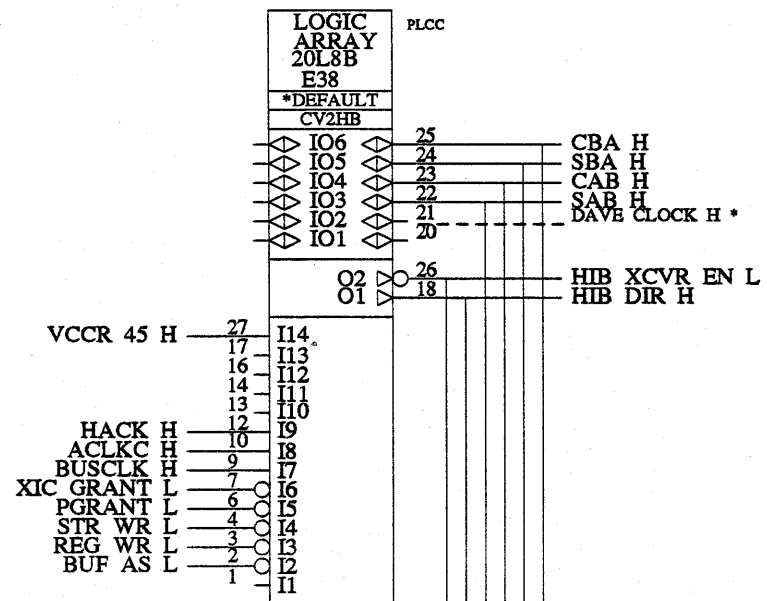


DRN: K. Yesse  
 DATE: -  
 CHK'D: -  
 DATE: -  
 FIRST USED ON OPTION/MODEL: -

ENG: A. E. Newman  
 DATE: -  
 BOARD LOCATION: CXO  
 SHEET: 15  
 NEXT HIGHER ASSEMBLY: -

TITLE: **WILDCAT BOARD 1**  
 SIZE: K  
 CODE: CS  
 NUMBER: -  
 REV: 200CT88

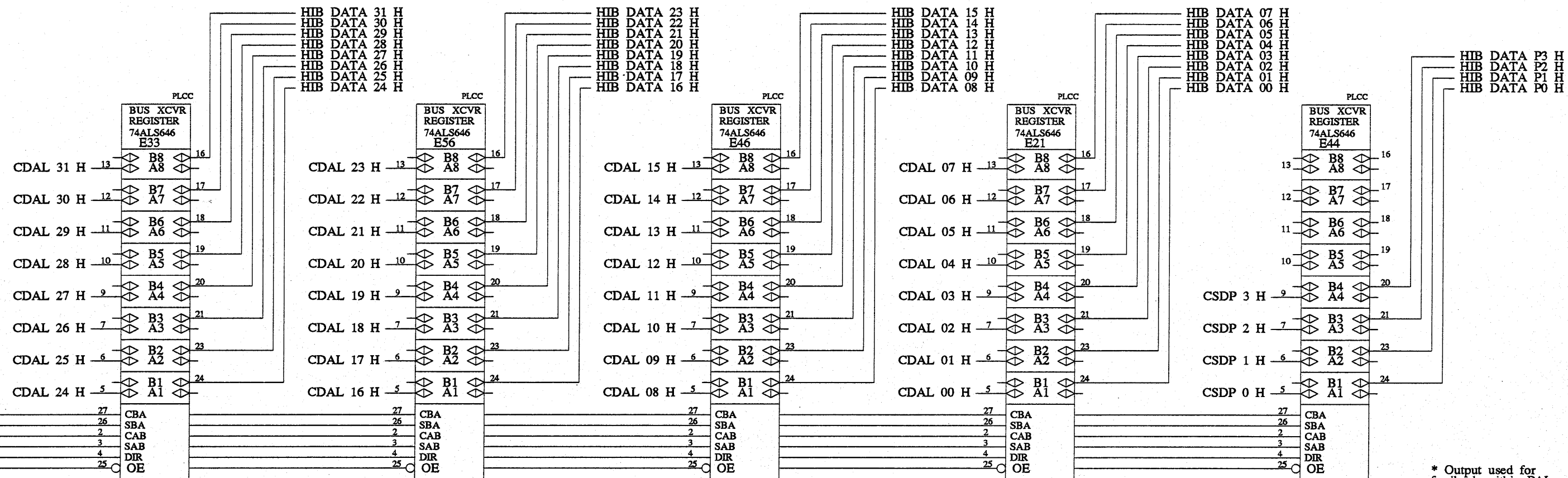
# CVAX/HIB Data Control PAL



CBA H  
SBA H  
CAB H  
SAB H  
DIR CLOCK H \*

HIB XCVR EN L  
HIB DIR H

# CVAX/HIB Data Registered XCVRs



\* Output used for feedback within PAL

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REVISIONS		
CHK	CHANGE NO.	REV

[HIB]  
CVAX <-> HIB  
DATA XCVR/REGS &  
DATA CTRL PAL

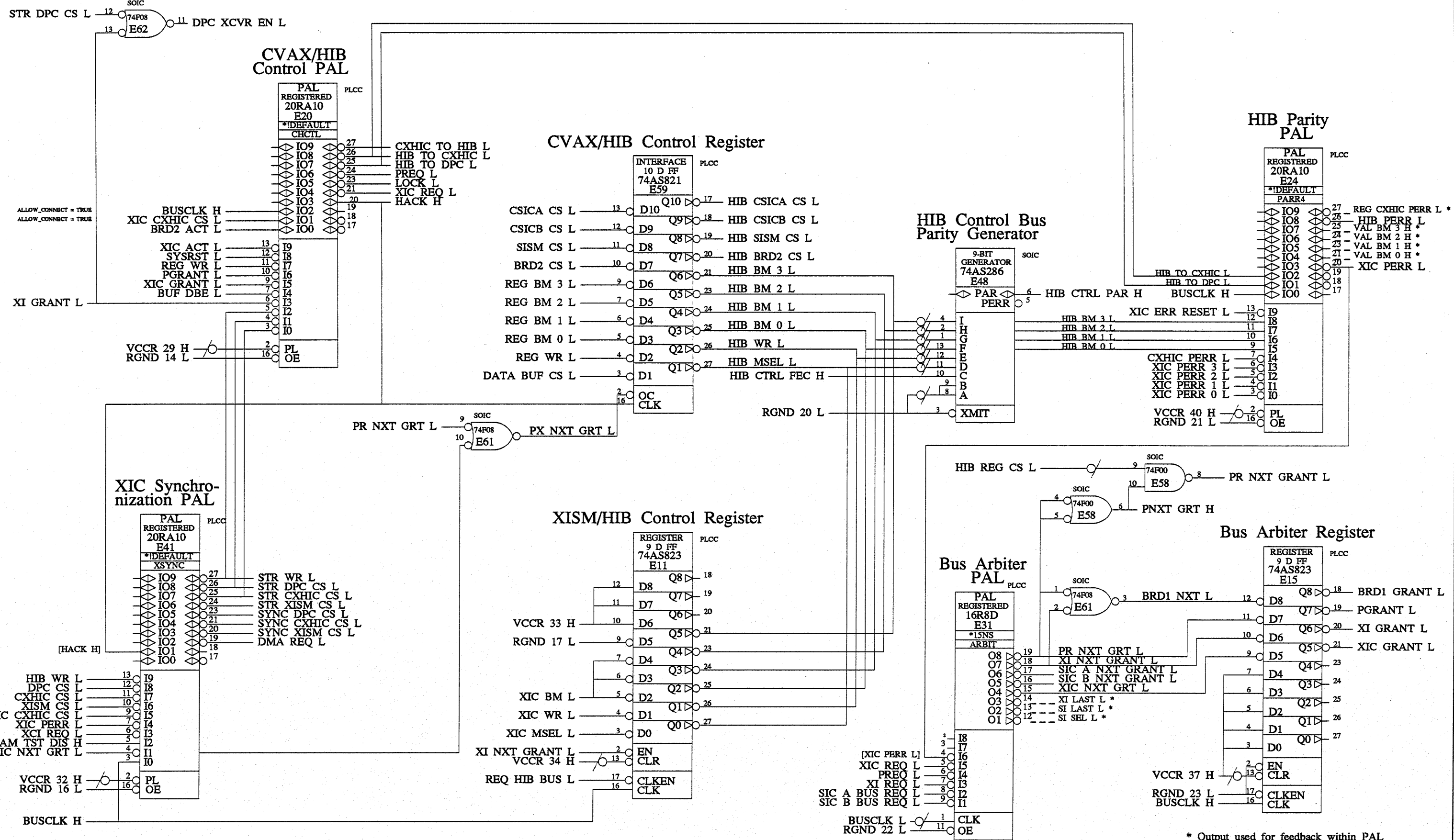
digital  
FIRST USED ON OPTION/MODEL:

DRN: K. Yesse  
CHK'D:  
DATE  
Thu Oct 20 16:44:00 1988

ENG: V. Dersace  
BOARD LOCATION: CXO  
SHEET 16  
NEXT HIGHER ASSEMBLY:

TITLE: WILDCAT BOARD 1  
SIZE K  
CODE CS  
NUMBER  
REV 20OCT88





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REVISIONS		
CHK	CHANGE NO.	REV

[HIB]  
**HIB CONTROL BUS,  
 BUS ARBITER,  
 CVAX/XIC/HIB/ARB PALS**

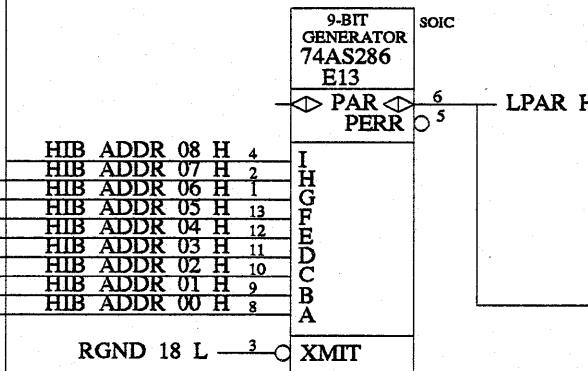
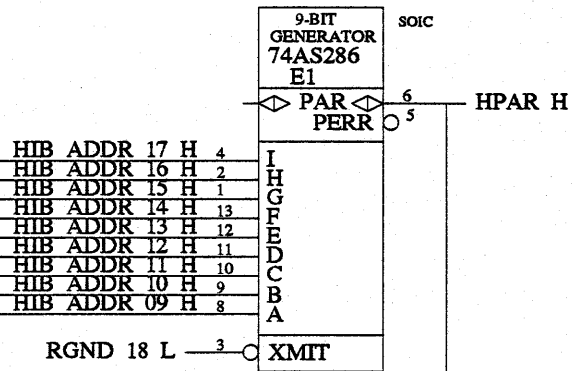
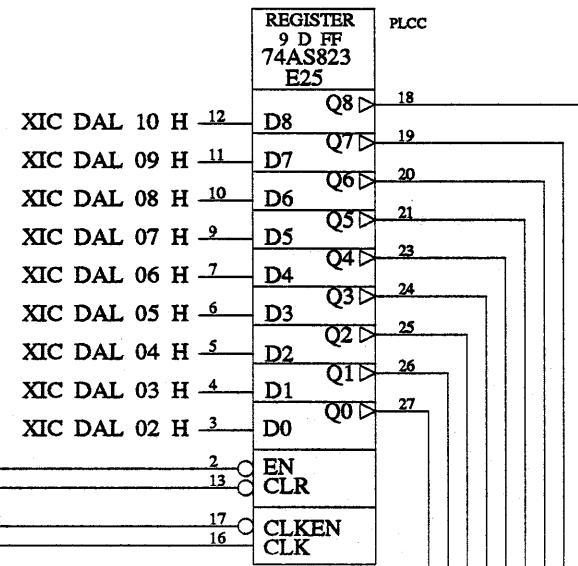
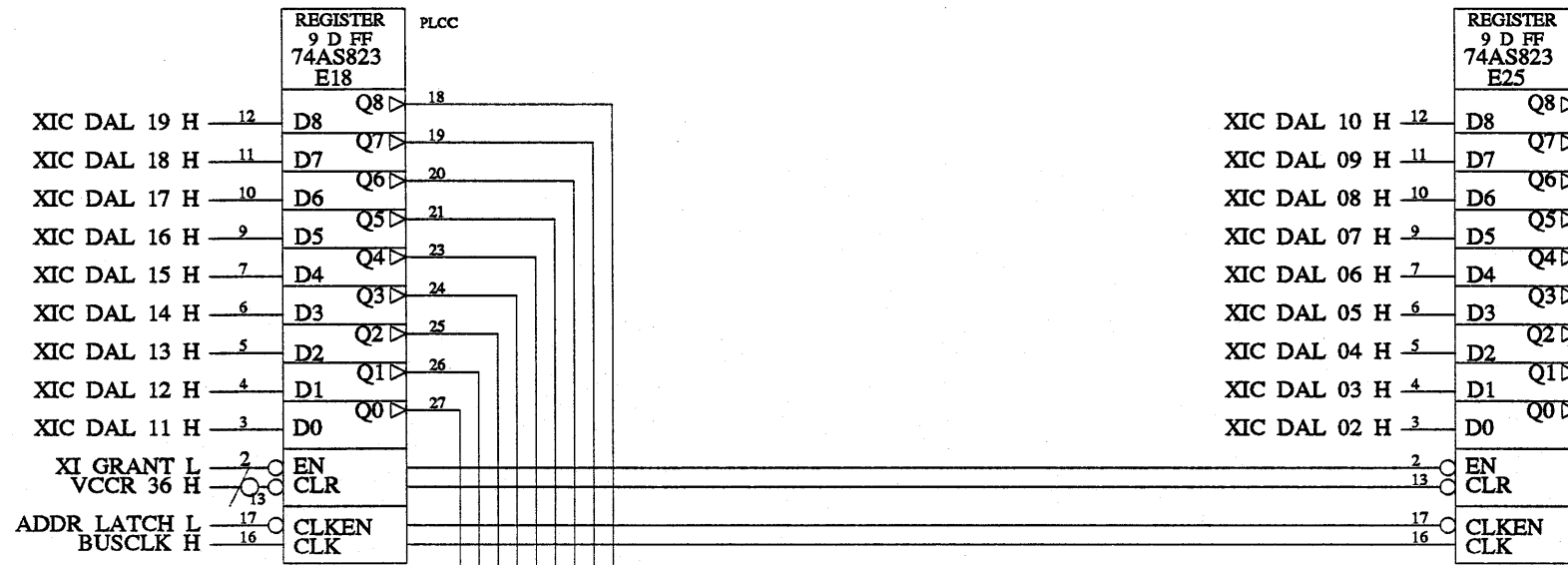
**digit**

FIRST USED ON OPTION/MODEL:

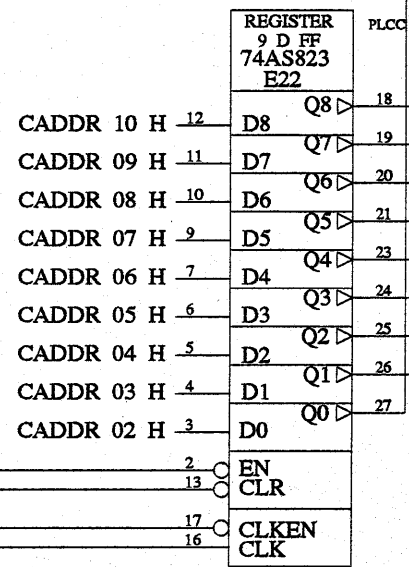
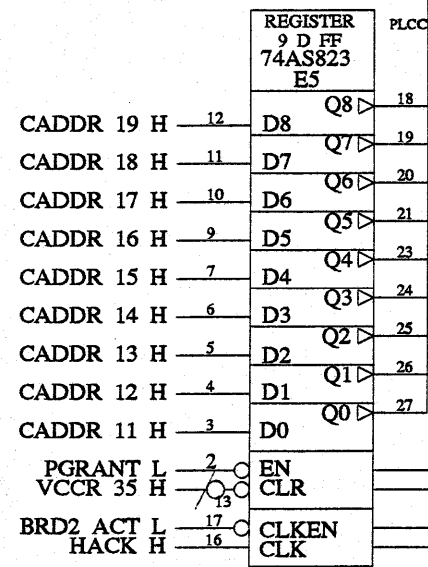
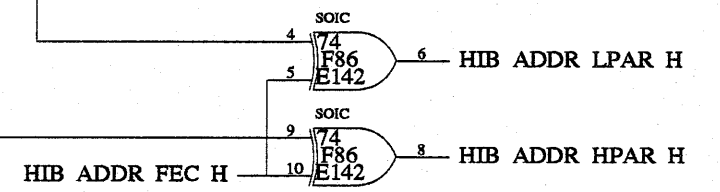
DRN: K. Yesse	DATE	ENG: Cedar Vase	DATE	TITLE: WILDCAT BOARD 1
CHK'D:	DATE	BOARD LOCATION: CXO	SHEET 17	SIZE K
Thu Oct 20 16:44:32 1988		NEXT HIGHER ASSEMBLY:		CODE CS
				NUMBER
				REV 200CT88

SIZE K	CODE CS	NUMBER	REV 200CT88
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DPC/HIB Address Latches



HIB Parity Generation



CVAX/HIB Address Latches

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REVISIONS		
CHK	CHANGE NO.	REV

[HIB]  
CVAX/HIB & DPC/HIB  
ADDRESS LATCHES,  
PARITY GEN

digital  
FIRST USED ON OPTION/MODEL:

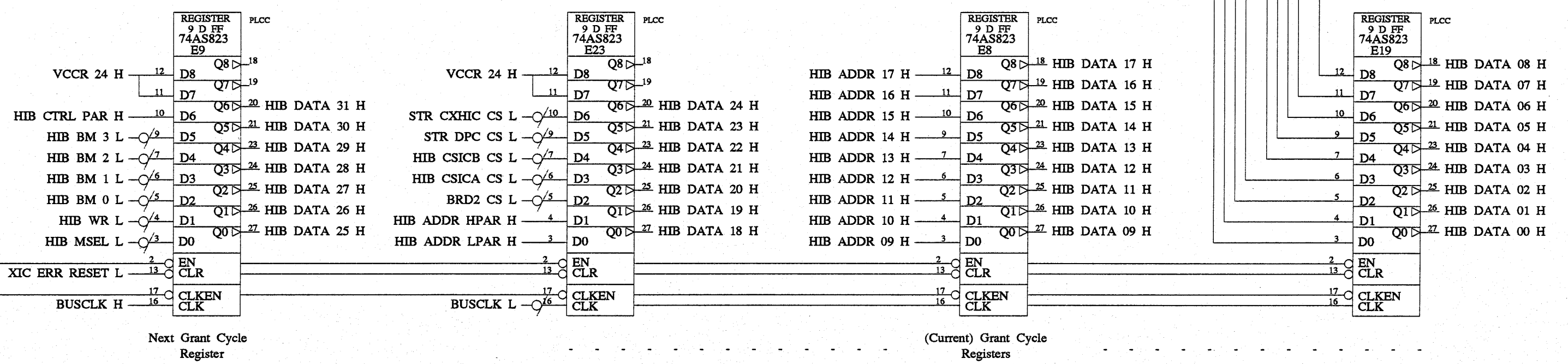
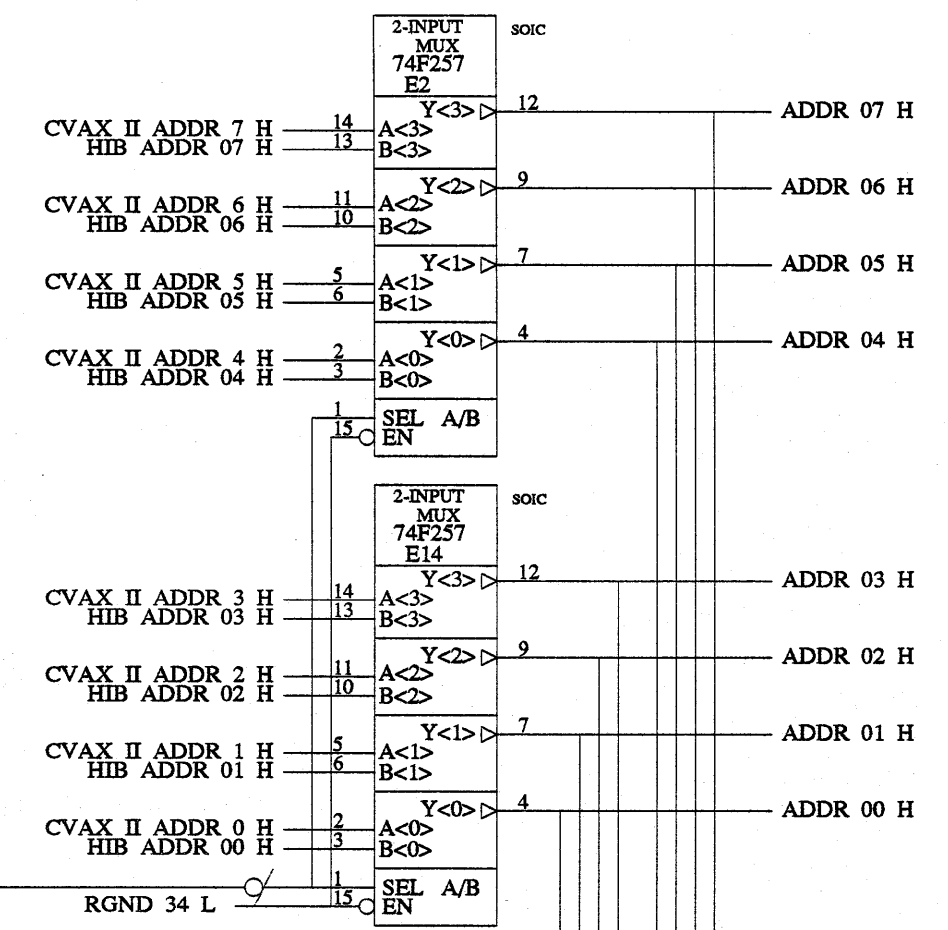
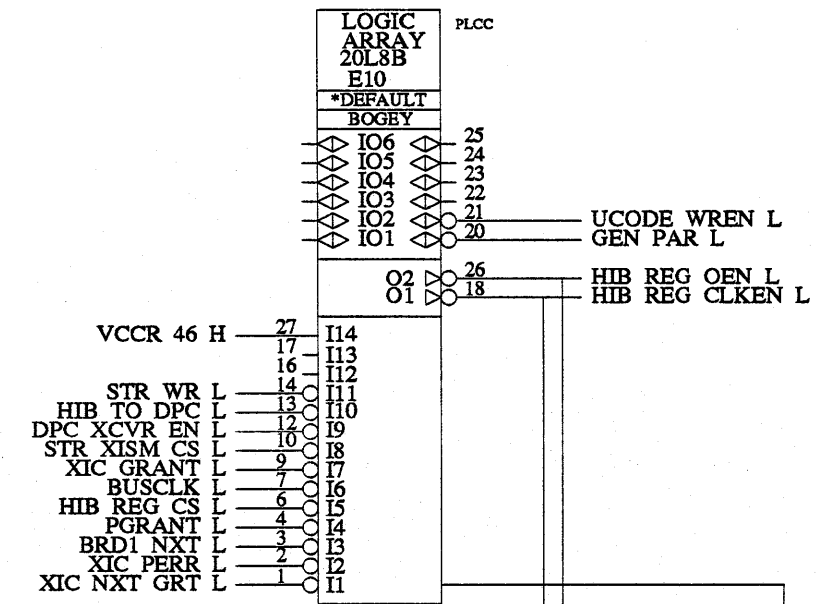
DRN: K. Yesse  
CHK'D: -  
DATE -  
DATE -  
Thu Oct 20 16:44:49 1988

ENG: B. Hoffman  
BOARD LOCATION: CXO  
SHEET 18  
NEXT HIGHER ASSEMBLY:

TITLE: WILDCAT BOARD 1  
SIZE K  
CODE CS  
NUMBER -  
REV 200CT88

REV 1  
NUMBER  
SIZE CODE CS  
K  
B  
A

### HIB Bus PAL



### HIB Bus Registers

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REVISIONS

CHK	CHANGE NO.	REV

[HIB] HIB BUS REGISTERS, MUXES

DRN: K. Yesse DATE:      ENG: R. Rabbit DATE:      TITLE: WILDCAT BOARD 1

CHK'D:      DATE:      BOARD LOCATION: CXO

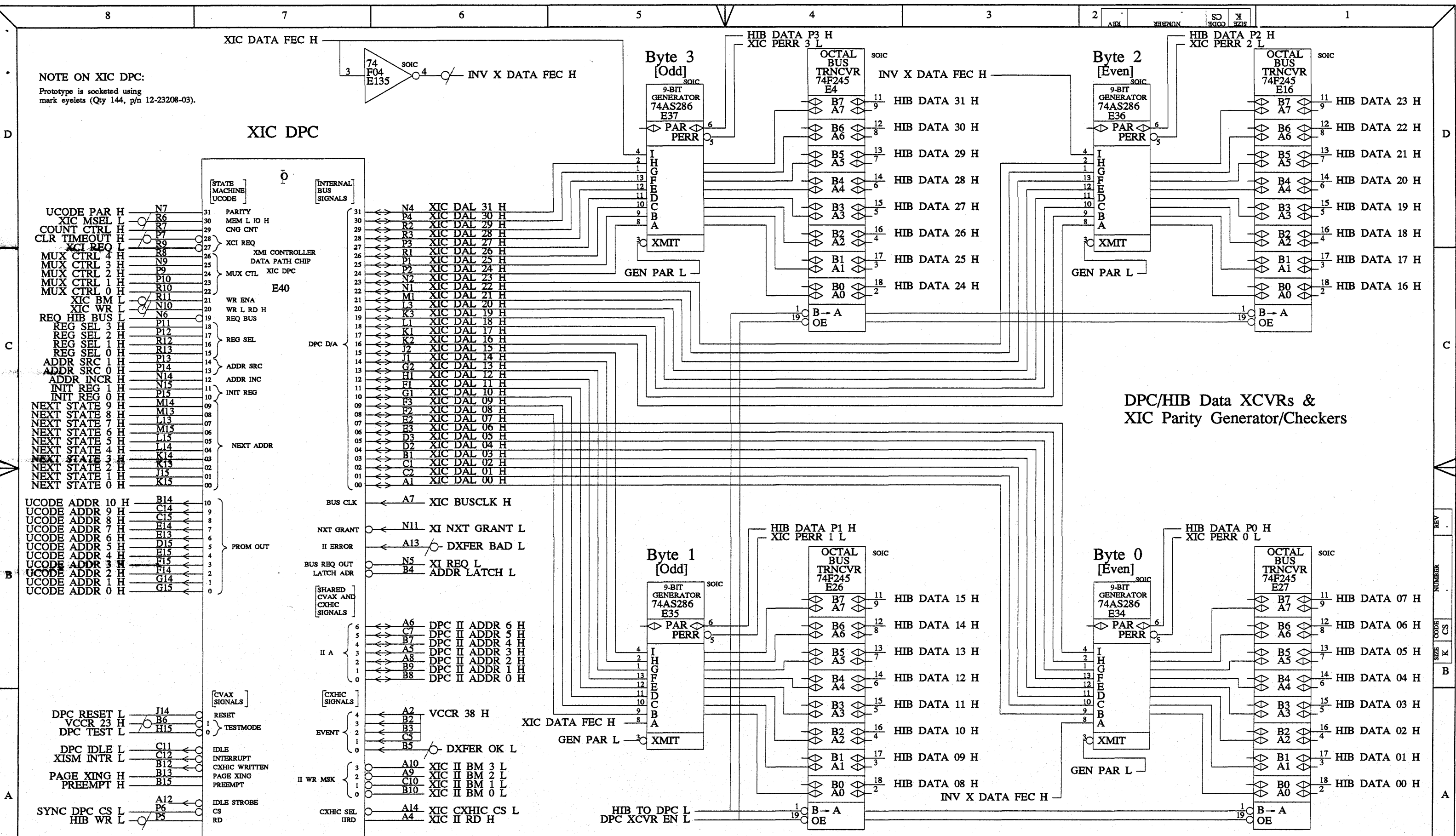
Thu Oct 20 16:45:09 1988 SHEET 19 NEXT HIGHER ASSEMBLY:

FIRST USED ON OPTION/MODEL:      SIZE K CODE CS NUMBER REV 200CT88

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NOTE ON XIC DPC:  
 Prototype is socketed using  
 mark eyelets (Qty 144, p/n 12-23208-03).

**XIC DPC**



**DPC/HIB Data XCVRs & XIC Parity Generator/Checkers**

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REVISIONS		
CHK	CHANGE NO.	REV

[HIB]  
**XIC DPC,  
 DPC <-> HIB XCVRS,  
 XIC PARITY GEN/CHECKERS**

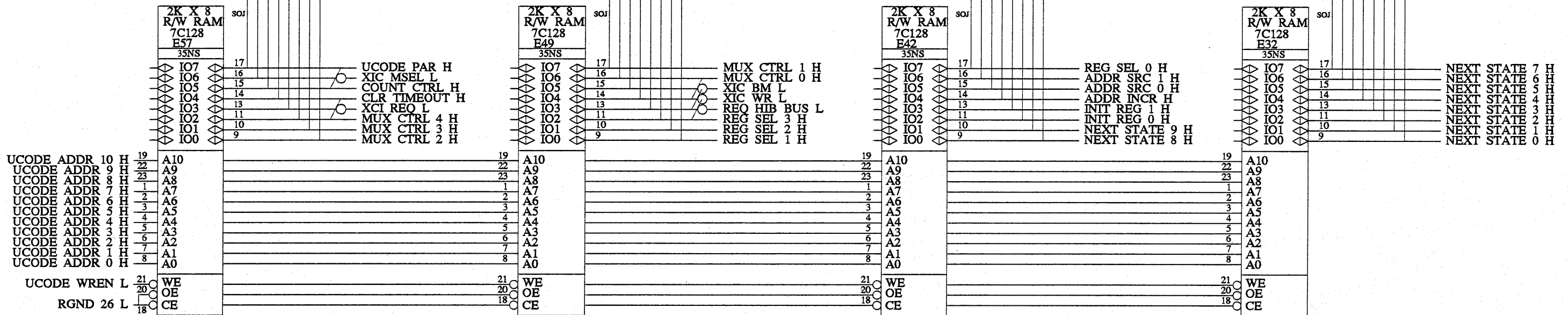
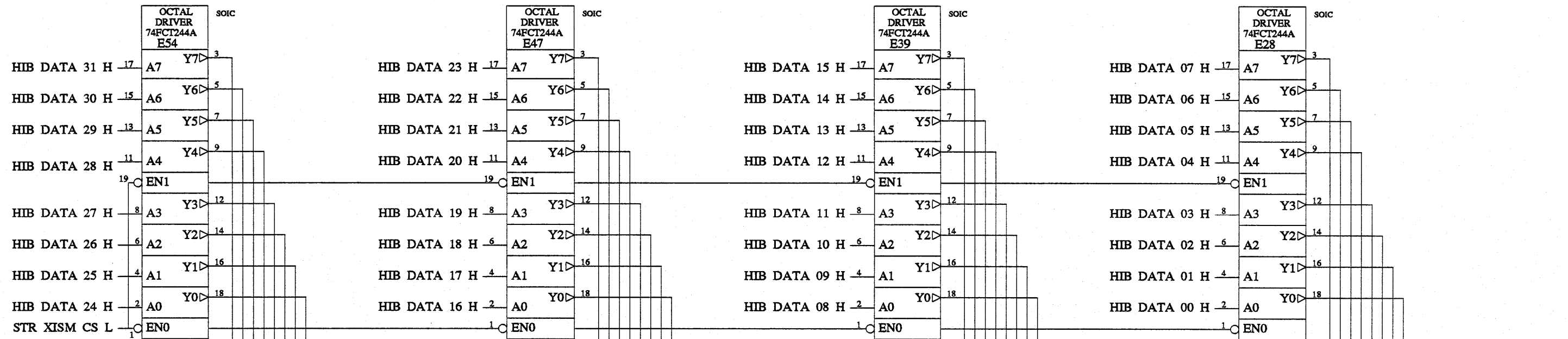
**digital**  
 FIRST USED ON OPTION/MODEL: -

DRN: K. Yesse  
 CHK'D: -  
 DATE: -  
 Thu Oct 20 16:46:00 1988

ENG: D. Versace  
 BOARD LOCATION: CXO  
 SHEET: 20  
 NEXT HIGHER ASSEMBLY: -

TITLE: **WILDCAT BOARD 1**  
 SIZE: K  
 CODE: CS  
 NUMBER: -  
 REV: 200C184

### HIB Data Buffers



### XIC DPC Microcode Memory

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REVISIONS		
CHK	CHANGE NO.	REV

[HIB]  
XIC DPC MICROCODE  
STATIC RAM & BUFFERS



DRN: K. Yesse

CHK'D: -

FIRST USED ON OPTION/MODEL: -

DATE

DATE

Thu Oct 20 16:46:36 1988

ENG: M. Gorbachev

BOARD LOCATION: CXO

SHEET 21

DATE

DATE

NEXT HIGHER ASSEMBLY: -

ENG: M. Gorbachev

BOARD LOCATION: CXO

SHEET 21

DATE

DATE

NEXT HIGHER ASSEMBLY: -

TITLE: WILDCAT BOARD 1

SIZE K

CODE CS

NUMBER

NUMBER

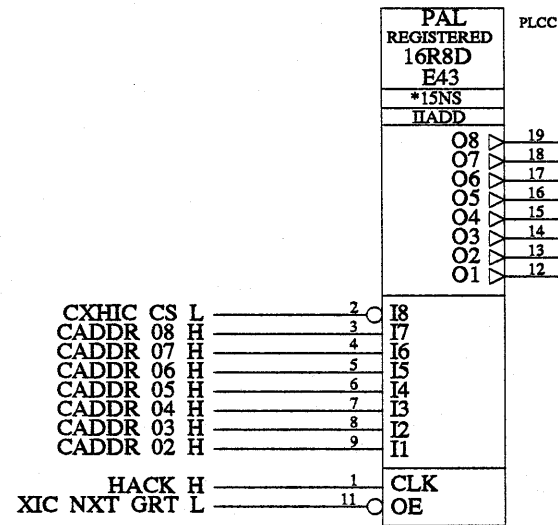
NUMBER

REV

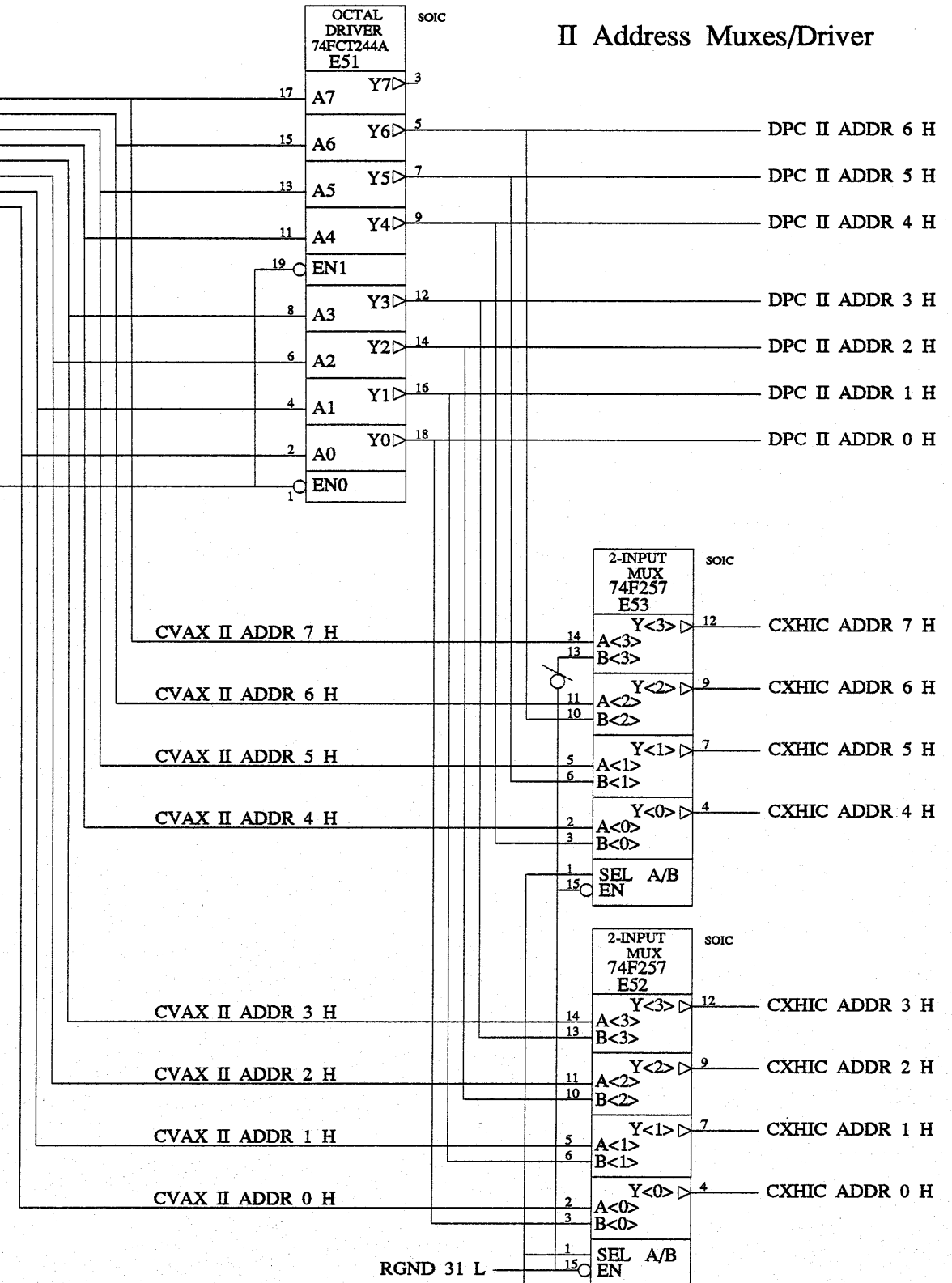
REV

200CT88

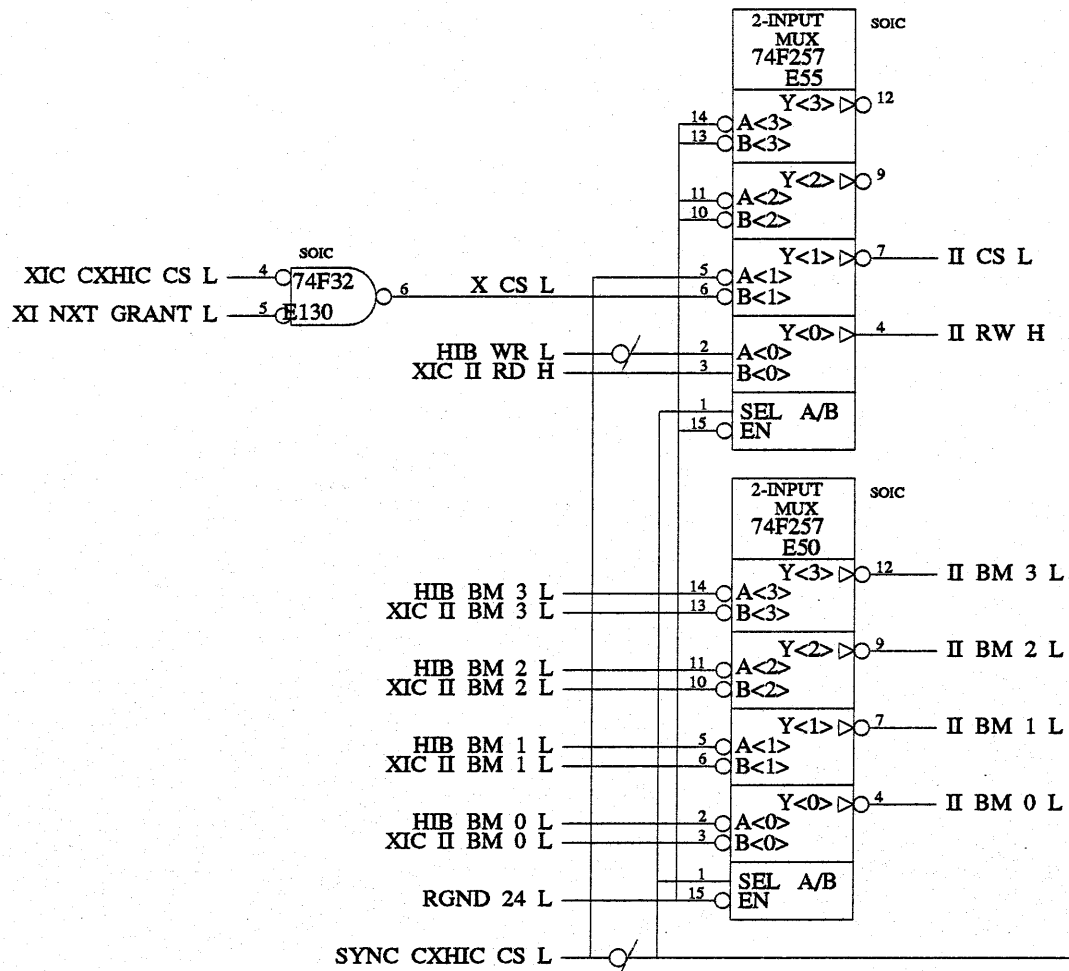
### II Address Translation PAL



### II Address Muxes/Driver



### II Control Mux



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REVISIONS		
CHK	CHANGE NO.	REV

[HIB]  
**CXHC MUX LOGIC,  
II ADDRESS PAL**

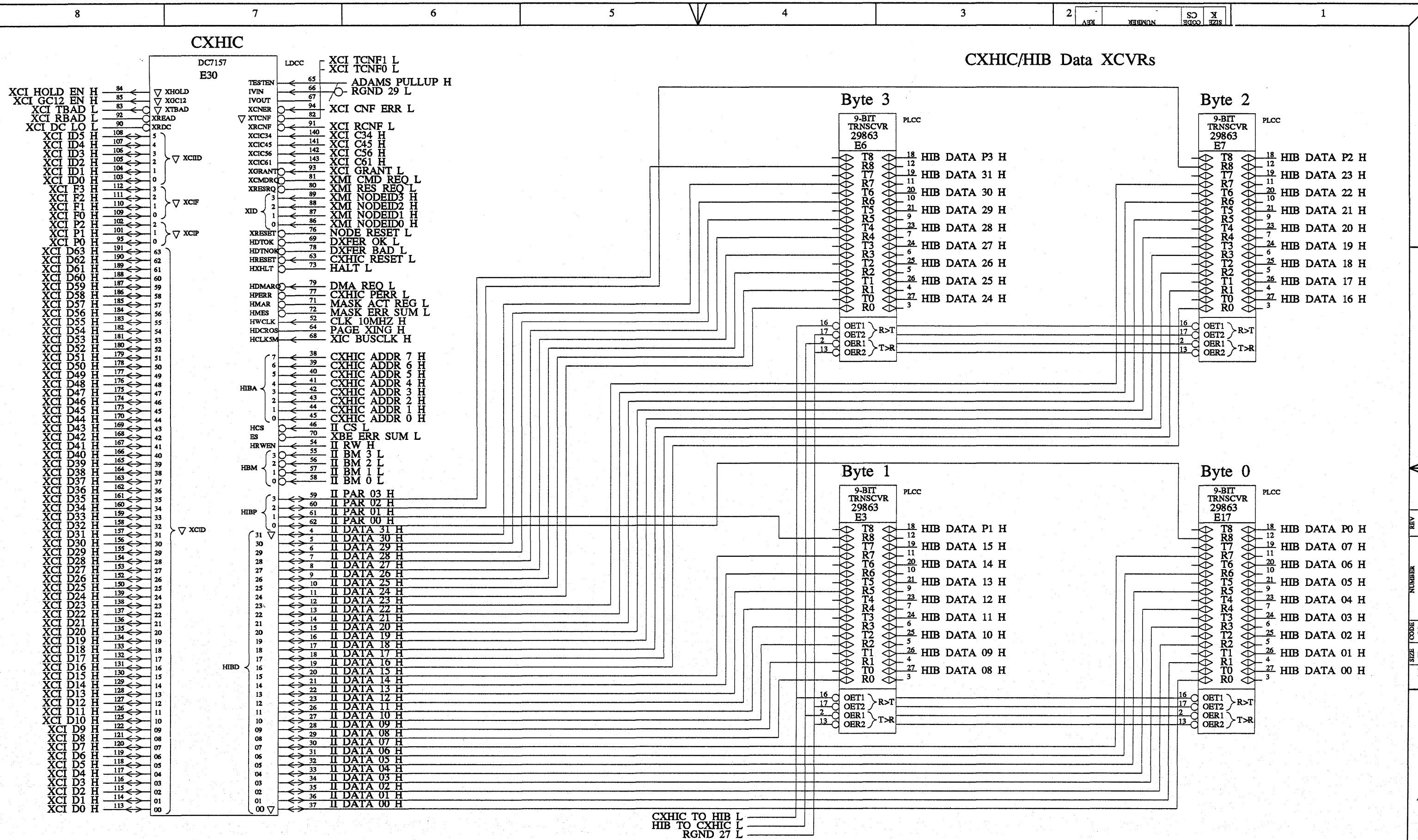
**digital**  
FIRST USED ON OPTION/MODEL: -

DRN: K. Yesse  
CHK'D: -  
DATE: -  
DATE: -  
Thu Oct 20 16:46:52 1988

ENG: B. Hoffman  
BOARD LOCATION: CXO  
SHEET 22  
NEXT HIGHER ASSEMBLY: -

TITLE:  
**WILDCAT BOARD 1**

SIZE	CODE	NUMBER	REV
K	CS	-	20OCT88



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REVISIONS		
CHK	CHANGE NO.	REV

[HIB]  
**CXHIC,  
 CXHIC <-> HIB  
 DATA XCVRS**

**digital**

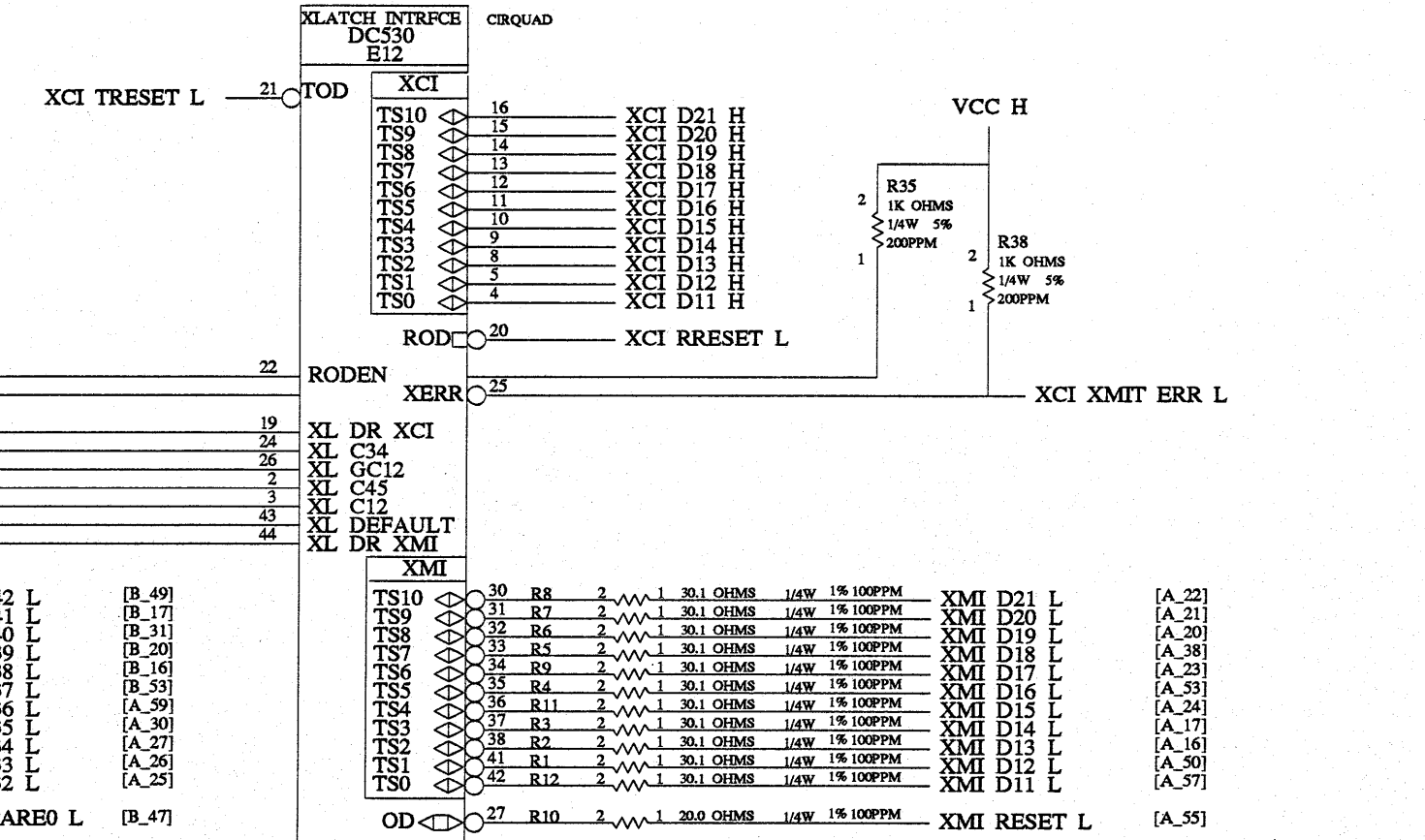
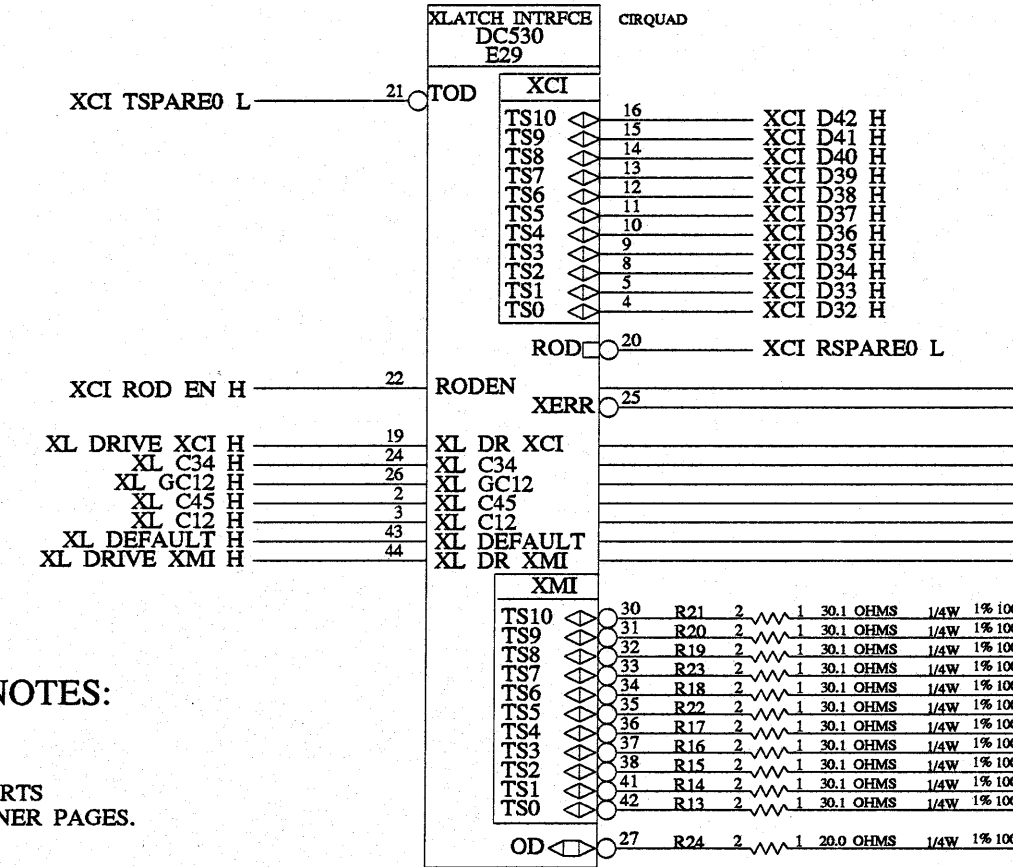
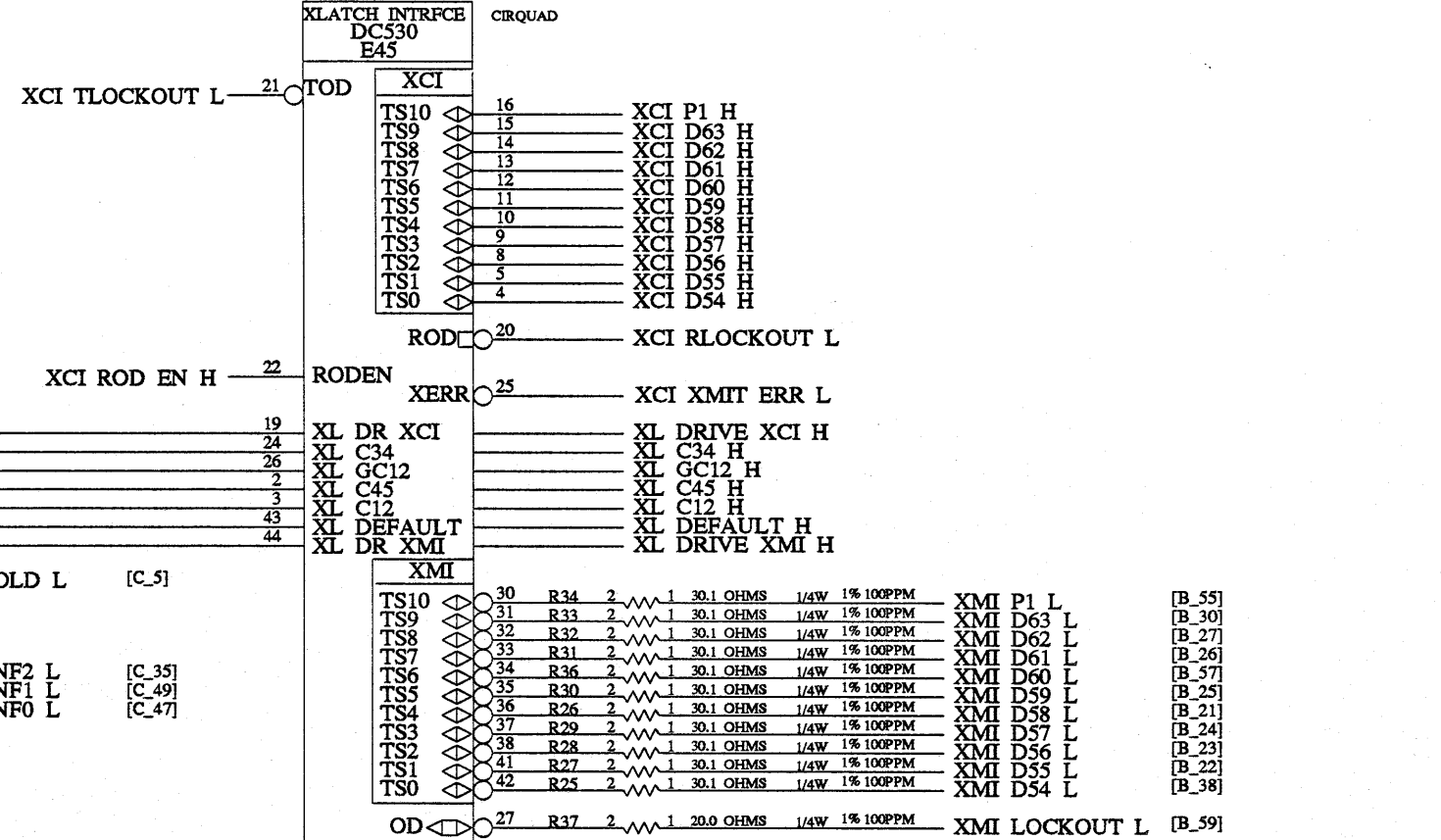
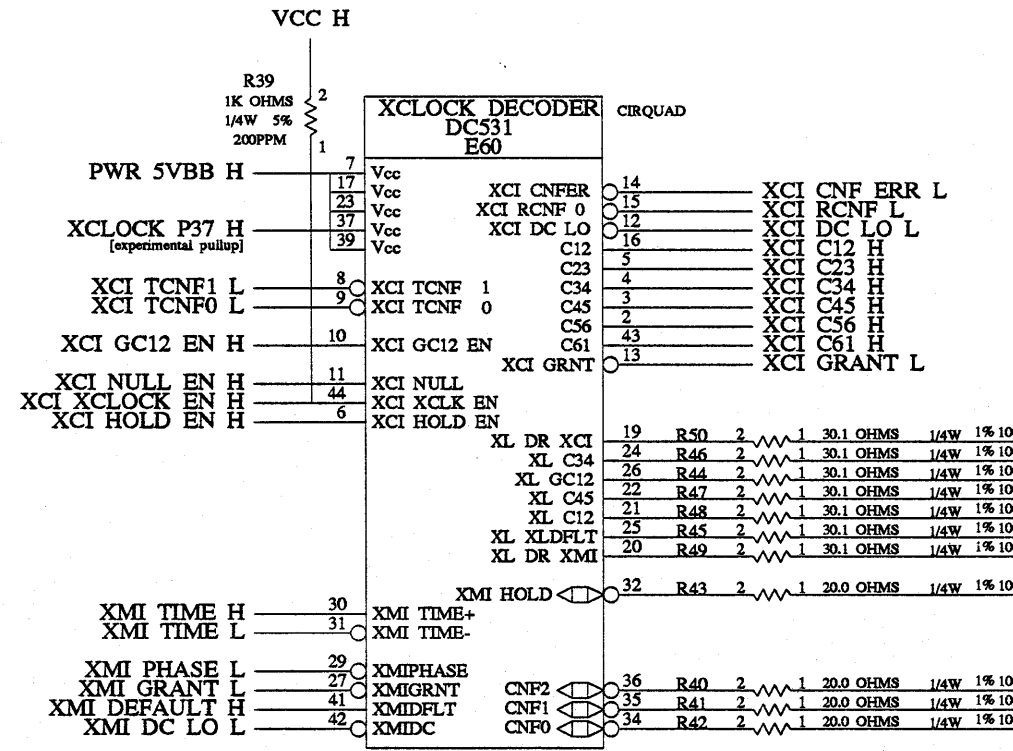
FIRST USED ON OPTION/MODEL: -

DRN: K. Yesse  
 CHK'D: -  
 DATE: -  
 DATE: -  
 Thu Oct 20 16:47:38 1988

ENG: T. Cxhic Adams  
 BOARD LOCATION: CXO  
 SHEET: 23  
 NEXT HIGHER ASSEMBLY: -

TITLE: **WILDCAT BOARD 1**

SIZE	CODE	NUMBER	REV
K	CS	-	200CT88



[C\_59]  
[C\_57]  
[C\_45]  
[C\_42]  
[C\_54]  
[C\_55]

[C\_5]  
[C\_35]  
[C\_49]  
[C\_47]

[B\_55]  
[B\_30]  
[B\_27]  
[B\_26]  
[B\_57]  
[B\_25]  
[B\_21]  
[B\_24]  
[B\_23]  
[B\_22]  
[B\_38]

[B\_59]

**XMI CORNER NOTES:**

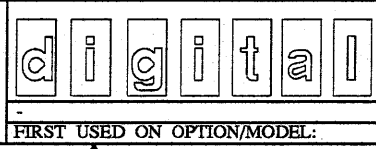
- 1) VCC H = +5V
- 2) VEE H = -5.2V
- 3) NO NON-CORNER PARTS ALLOWED ON CORNER PAGES.

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REVISIONS		
CHK	CHANGE NO.	REV

[XMI]  
**XMI CORNER**



DRN: K. Yesse  
DATE:                      

ENG: M. I. Real  
DATE:                      

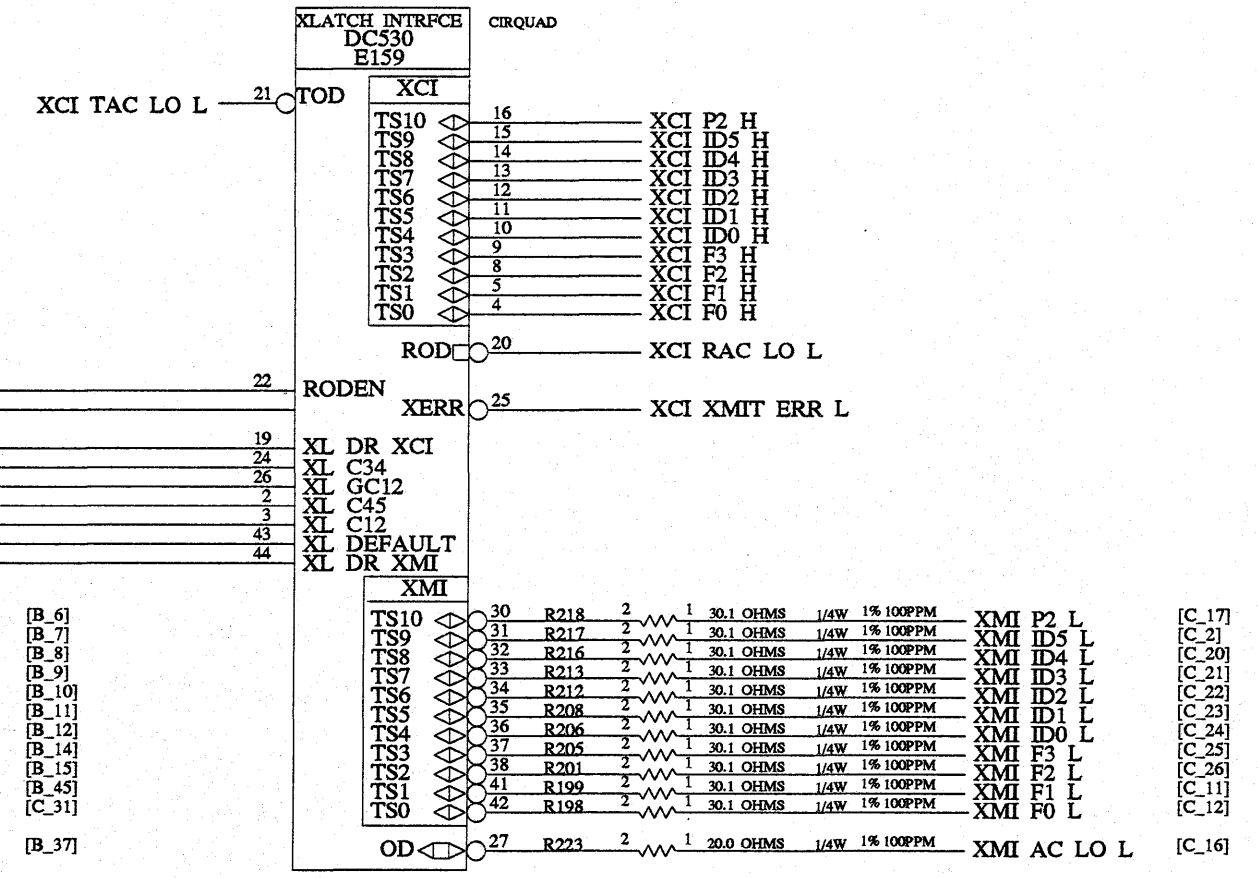
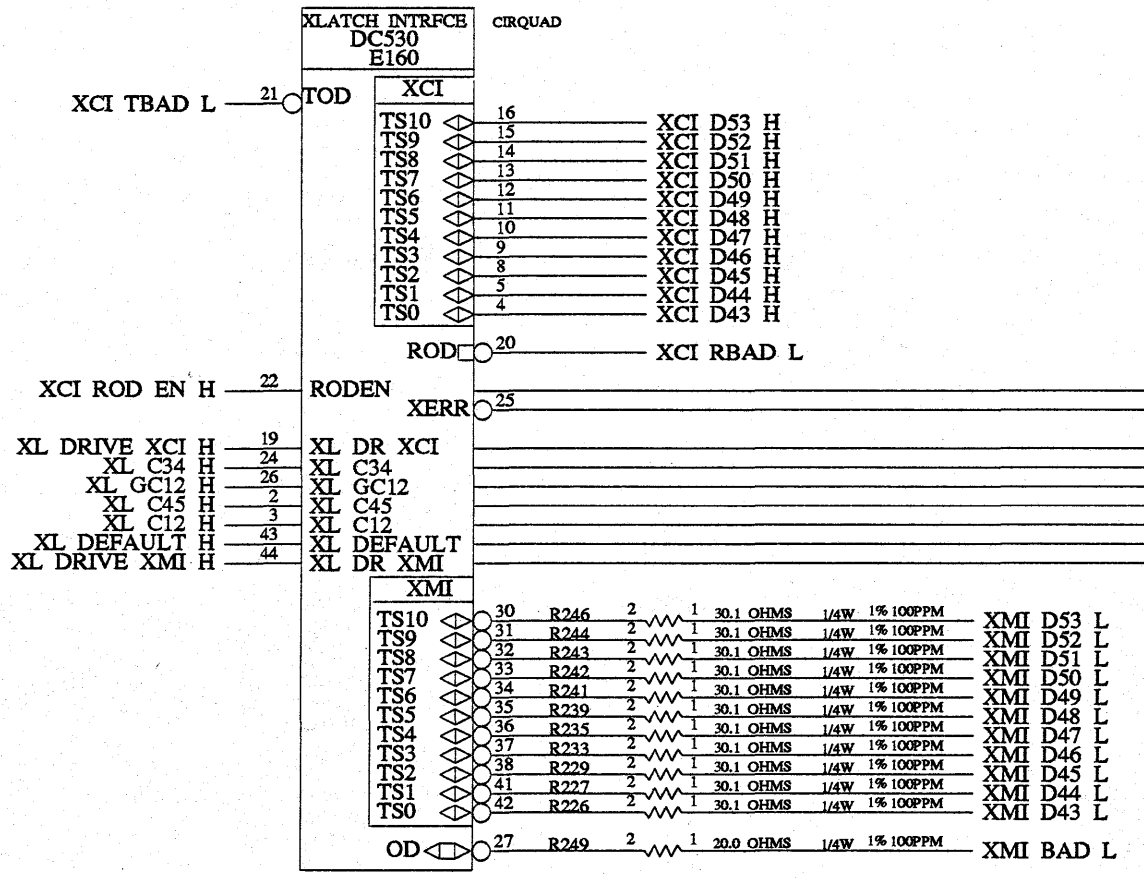
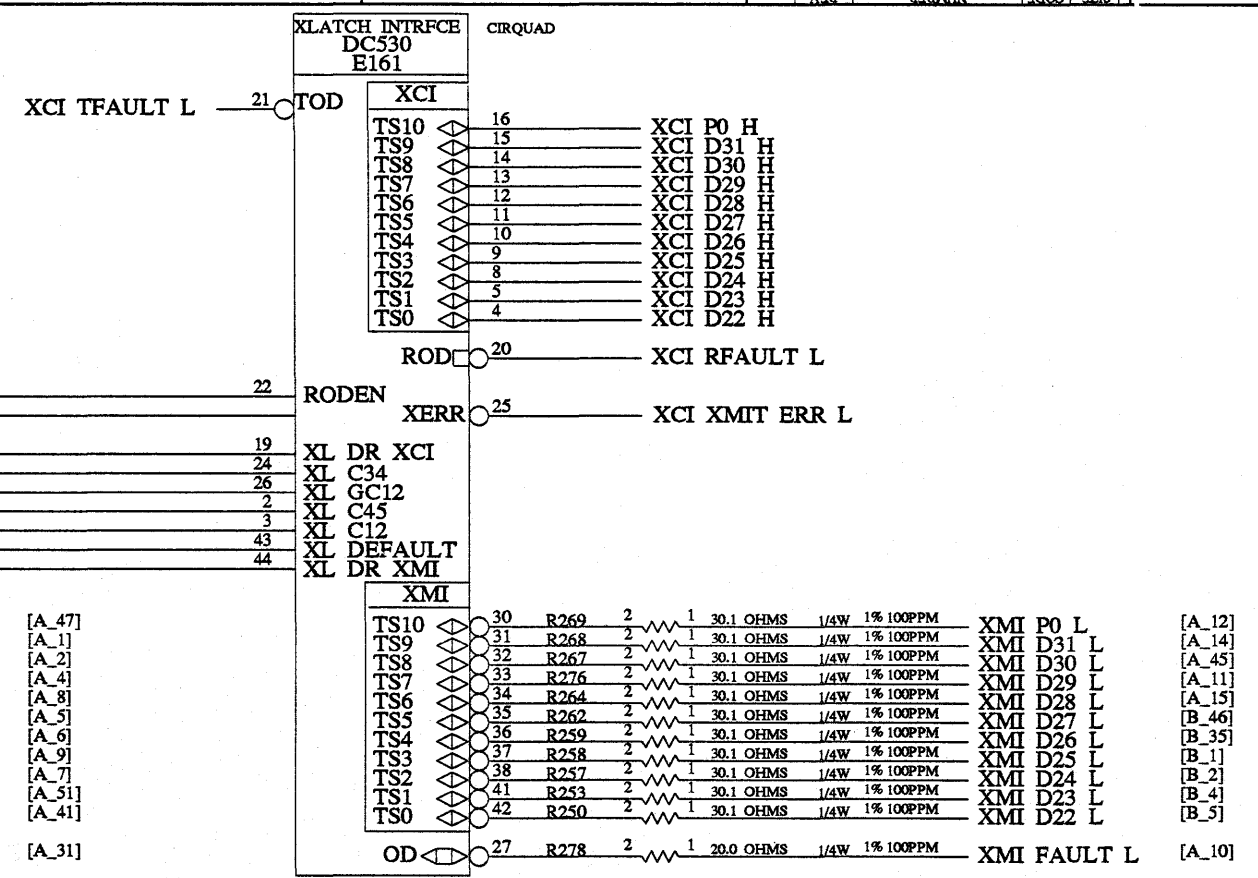
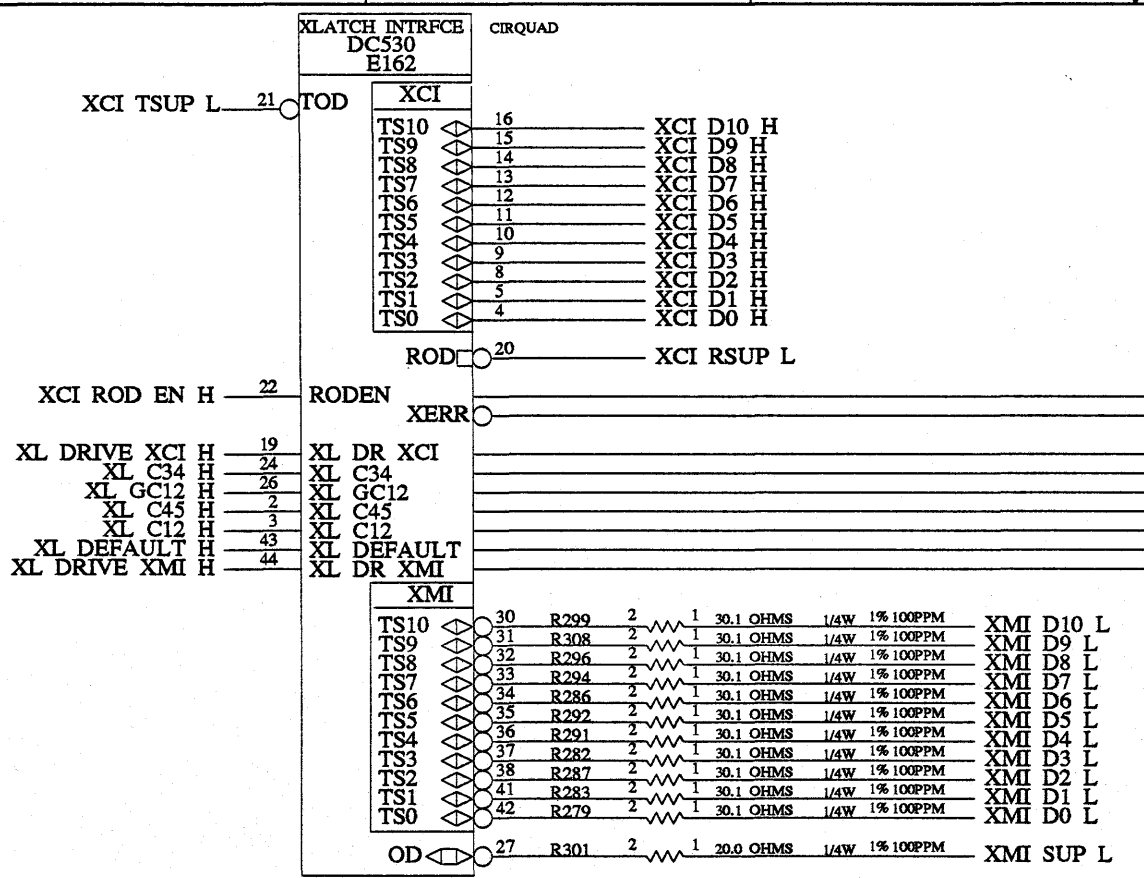
BOARD LOCATION: CXO

SHEET 24

NEXT HIGHER ASSEMBLY:

TITLE:			
WILDCAT BOARD 1			
SIZE	CODE	NUMBER	REV
K	CS	-	200CT88



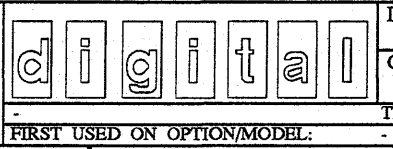


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REVISIONS		
CHK	CHANGE NO.	REV

[XMI]  
**XMI CORNER**



DRN: K. Yesse  
CHK'D: -  
DATE: -  
DATE: -  
Thu Oct 20 16:49:46 1988

ENG: M. I. Memorex  
BOARD LOCATION: CXO  
SHEET 25  
NEXT HIGHER ASSEMBLY: -

TITLE: WILDCAT BOARD 1			
SIZE K	CODE CS	NUMBER -	REV 200CT88

**A**  
 Board Edge Vias  
 A 46 XMI TOY BBU OK H  
 A 47 XMI D10 L  
 A 48 PWR 5VBB H  
 A 49 XMI CON RCV H  
 A 50 XMI D12 L  
 A 51 XMI D1 L  
 A 52 XMI CON XMIT H  
 A 53 XMI D16 L  
 A 54 XMI RUN L  
 A 55 XMI RESET L  
 A 56 GND HNG  
 A 57 XMI D11 L  
 A 58 GND HNG  
 A 59 XMI D36 L  
 A 60 XMI CON SECURE L

**B**  
 B 46 XMI D27 L  
 B 47 XMI SPARE0 L  
 B 48 VCC H  
 B 49 XMI D42 L  
 B 50 GND HNG  
 B 51 GND HNG  
 B 52 GND HNG  
 B 53 XMI D37 L  
 B 54 GND HNG  
 B 55 XMI P1 L  
 B 56 GND HNG  
 B 57 XMI D60 L  
 B 58 VEE H  
 B 59 XMI LOCKOUT L  
 B 60 GND HNG

**C**  
 C 46 XMI SPAREBIT0 L  
 C 47 XMI CNF0 L  
 C 48 PWR NEG 2V H  
 C 49 XMI CNF1 L  
 C 50 XMI SPAREBIT1 L  
 C 51 GND HNG  
 C 52 GND HNG  
 C 53 XMI D37 L  
 C 54 GND HNG  
 C 55 XMI DEFAULT H  
 C 56 XMI DC LO L  
 C 57 GND HNG  
 C 58 XMI TIME L  
 C 59 XMI TIME H  
 C 60 GND HNG

**D**  
 D 46 GND HNG  
 D 47 CDAL 00 H  
 D 48 CDAL 02 H  
 D 49 CDAL 04 H  
 D 50 CDAL 06 H  
 D 51 CDAL 08 H  
 D 52 CDAL 10 H  
 D 53 CDAL 12 H  
 D 54 CDAL 14 H  
 D 55 CDAL 16 H  
 D 56 CDAL 18 H  
 D 57 CDAL 20 H  
 D 58 CDAL 22 H  
 D 59 CDAL 24 H  
 D 60 CDAL 26 H

**E**  
 E 46 GND HNG  
 E 47 CDAL 28 H  
 E 48 CDAL 30 H  
 E 49 CSDP 0 H  
 E 50 CSDP 2 H  
 E 51 REG BM 0 L  
 E 52 REG BM 1 L  
 E 53 REG BM 2 L  
 E 54 REG BM 3 L  
 E 55 REG CS 0 H  
 E 56 REG CS 1 H  
 E 57 REG CS 2 H  
 E 58 BUF DBE L  
 E 59 BUF DS L  
 E 60 BUF AS L

**A**  
 Inside Vias  
 A 16 XMI D13 L  
 A 17 XMI D14 L  
 A 18 PWR 5VBB H  
 A 19 PWR 5VBB H  
 A 20 XMI D19 L  
 A 21 XMI D20 L  
 A 22 XMI D21 L  
 A 23 XMI D17 L  
 A 24 XMI D15 L  
 A 25 XMI D32 L  
 A 26 XMI D33 L  
 A 27 XMI D34 L  
 A 28 GND HNG  
 A 29 GND HNG  
 A 30 XMI D35 L

**B**  
 B 16 XMI D38 L  
 B 17 XMI D41 L  
 B 18 VCC H  
 B 19 VCC H  
 B 20 XMI D39 L  
 B 21 XMI D58 L  
 B 22 XMI D55 L  
 B 23 XMI D56 L  
 B 24 XMI D57 L  
 B 25 XMI D59 L  
 B 26 XMI D61 L  
 B 27 XMI D62 L  
 B 28 VCC H  
 B 29 VCC H  
 B 30 XMI D63 L

**C**  
 C 16 XMI AC LO L  
 C 17 XMI P2 L  
 C 18 PWR 3V H  
 C 19 PWR 3V H  
 C 20 XMI ID4 L  
 C 21 XMI ID3 L  
 C 22 XMI ID2 L  
 C 23 XMI ID1 L  
 C 24 XMI ID0 L  
 C 25 XMI F3 L  
 C 26 XMI F2 L  
 C 27 GND HNG  
 C 28 GND HNG  
 C 29 GND HNG  
 C 30 GND HNG

**D**  
 D 16 CVAX LOWER PERR H  
 D 17 CVAX UPPER PERR H  
 D 18 XIC PERR L  
 D 19 SYSERR L  
 D 20 MEM ERR L  
 D 21 DCLK DIS L  
 D 22 LOCK L  
 D 23 HACK H  
 D 24 CXHC TO HIB L  
 D 25 HIB TO CXHC L  
 D 26 DPC XCVR EN L  
 D 27 HIB TO DPC L  
 D 28 XIC BUSCLK H  
 D 29 ANAL TRIG L  
 D 30 GND HNG

**E**  
 E 16 GND HNG  
 E 17 TD OUT L  
 E 18 TERM DTR L  
 E 19 TERM SIG GND L  
 E 20 TERM RCV DATA L  
 E 21 VCC H  
 E 22 ED OUT L  
 E 23 ETHER DTR L  
 E 24 ETHER SIG GND L  
 E 25 ETHER RCV DATA L  
 E 26 WR DIAG CS L  
 E 27 SSC ADDR 0 H  
 E 28 SSC ADDR 1 H  
 E 29 BOOT ROM CS L  
 E 30 GND HNG

XMI Bus

Oscilloscope/Logic Analyzer Port

**A**  
 Inside Vias  
 A 1 XMI D9 L  
 A 2 XMI D8 L  
 A 3 PWR 5VBB H  
 A 4 XMI D7 L  
 A 5 XMI D5 L  
 A 6 XMI D4 L  
 A 7 XMI D2 L  
 A 8 XMI D6 L  
 A 9 XMI D3 L  
 A 10 XMI FAULT L  
 A 11 XMI D29 L  
 A 12 XMI P0 L  
 A 13 GND HNG  
 A 14 XMI D31 L  
 A 15 XMI D28 L

**B**  
 B 1 XMI D25 L  
 B 2 XMI D24 L  
 B 3 VCC H  
 B 4 XMI D23 L  
 B 5 XMI D22 L  
 B 6 XMI D53 L  
 B 7 XMI D52 L  
 B 8 XMI D51 L  
 B 9 XMI D50 L  
 B 10 XMI D49 L  
 B 11 XMI D48 L  
 B 12 XMI D47 L  
 B 13 VCC H  
 B 14 XMI D46 L  
 B 15 XMI D45 L

**C**  
 C 1 GND HNG  
 C 2 XMI ID5 L  
 C 3 PWR 3V H  
 C 4 GND HNG  
 C 5 XMI HOLD L  
 C 6 XMI NODEID0 H  
 C 7 XMI NODEID1 H  
 C 8 XMI NODEID2 H  
 C 9 XMI NODEID3 H  
 C 10 GND HNG  
 C 11 XMI F1 L  
 C 12 XMI F0 L  
 C 13 GND HNG  
 C 14 GND HNG  
 C 15 GND HNG

**D**  
 D 1 GND HNG  
 D 2 UCODR ADDR 0 H  
 D 3 UCODR ADDR 1 H  
 D 4 UCODR ADDR 2 H  
 D 5 UCODR ADDR 3 H  
 D 6 UCODR ADDR 4 H  
 D 7 UCODR ADDR 5 H  
 D 8 UCODR ADDR 6 H  
 D 9 UCODR ADDR 7 H  
 D 10 UCODR ADDR 8 H  
 D 11 UCODR ADDR 9 H  
 D 12 UCODR ADDR 10 H  
 D 13 STR CXHC CS L  
 D 14 STR DPC CS L  
 D 15 GND HNG

**E**  
 E 1 GND HNG  
 E 2 IRQ 0 L  
 E 3 IRQ 1 L  
 E 4 IRQ 2 L  
 E 5 IRQ 3 L  
 E 6 MIST FAIL H  
 E 7 XIC REQ L  
 E 8 PREQ L  
 E 9 XT REQ L  
 E 10 BRD1 NXT L  
 E 11 XIC NXT GRT L  
 E 12 J1 H  
 E 13 J2 H  
 E 14 SSC BLO L  
 E 15 GND HNG

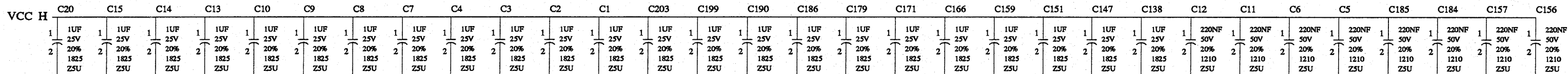
**A**  
 Board Edge Vias  
 A 31 XMI SUP L  
 A 32 GND HNG  
 A 33 PWR 5VBB H  
 A 34 PWR 5VBB H  
 A 35 XMI SPAREBIT2 L  
 A 36 GND HNG  
 A 37 XMI SPAREBIT3 L  
 A 38 XMI D18 L  
 A 39 XMI SPAREBIT4 L  
 A 40 GND HNG  
 A 41 XMI D0 L  
 A 42 XMI TOY BBU PWR H  
 A 43 GND HNG  
 A 44 GND HNG  
 A 45 XMI D30 L

**B**  
 B 31 XMI D40 L  
 B 32 GND HNG  
 B 33 VCC H  
 B 34 VCC H  
 B 35 XMI D26 L  
 B 36 GND HNG  
 B 37 XMI BAD L  
 B 38 XMI D54 L  
 B 39 GND HNG  
 B 40 XMI BOOT EN L  
 B 41 XMI UPDATE EN L  
 B 42 GND HNG  
 B 43 VEE H  
 B 44 VEE H  
 B 45 XMI D44 L

**C**  
 C 31 XMI D43 L  
 C 32 GND HNG  
 C 33 PWR NEG 2V H  
 C 34 PWR NEG 2V H  
 C 35 XMI CNF2 L  
 C 36 GND HNG  
 C 37 PWR 12V H  
 C 38 XMI CMD REQ L  
 C 39 PWR NEG 12V H  
 C 40 XMI RES REQ L  
 C 41 GND HNG  
 C 42 XMI GRANT L  
 C 43 GND HNG  
 C 44 GND HNG  
 C 45 XMI PHASE L

**D**  
 D 31 GND HNG  
 D 32 CDAL 01 H  
 D 33 CDAL 03 H  
 D 34 CDAL 05 H  
 D 35 CDAL 07 H  
 D 36 CDAL 09 H  
 D 37 CDAL 11 H  
 D 38 CDAL 13 H  
 D 39 CDAL 15 H  
 D 40 CDAL 17 H  
 D 41 CDAL 19 H  
 D 42 CDAL 21 H  
 D 43 CDAL 23 H  
 D 44 CDAL 25 H  
 D 45 CDAL 27 H

**E**  
 E 31 GND HNG  
 E 32 CDAL 29 H  
 E 33 CDAL 31 H  
 E 34 CSDP 1 H  
 E 35 CSDP 3 H  
 E 36 REG WR L  
 E 37 RDY L  
 E 38 FAST MEM ACT L  
 E 39 SLOW MEM ACT L  
 E 40 XIC ACT L  
 E 41 BRD2 ACT L  
 E 42 GND HNG  
 E 43 ACLKA H  
 E 44 ACLKB H  
 E 45 ACLKC H



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REVISIONS		
CHK	CHANGE NO.	REV

[XMI]  
**XMI CORNER (Board I/O)**

**digital**  
 FIRST USED ON OPTION/MODEL:

DRN: K. Yesse	DATE	ENG: M. I. Crazy?	DATE	TITLE: WILDCAT BOARD 1
CHK'D:	DATE	BOARD LOCATION: CXO	SHEET 26	SIZE K
Thu Oct 20 16:57:41 1988		NEXT HIGHER ASSEMBLY:	NUMBER	REV 200CT88

SPACING = .100CC  
MOUNT = 90D  
HOUSING = SHROUD W/O LTCH  
KEYING = NONE  
CONFIG = STD  
PINS = .022X.100G

BOARD COMPONENTS      J3      BOARD EDGE

		1	2			
	GND HNG	3	4	2	SYSCLK H	/B_OUT
	GND HNG	5	6	4	BRD2 BUSCLK H	/B_OUT
	GND HNG	7	8	6	GND HNG	
/B_OUT	BRD2 EE CLK H	9	9	8	HIB DATA 00 H	/B_BI
/B_BI	HIB DATA 16 H	11	10	10	HIB DATA 01 H	/B_BI
/B_BI	HIB DATA 17 H	13	12	12	HIB DATA 02 H	/B_BI
/B_BI	HIB DATA 18 H	15	14	14	GND HNG	
/B_BI	HIB DATA 19 H	17	16	16	HIB DATA 03 H	/B_BI
/B_BI	HIB DATA 20 H	19	18	18	HIB DATA 04 H	/B_BI
/B_BI	HIB DATA 21 H	21	20	20	HIB DATA 05 H	/B_BI
/B_BI	HIB DATA 22 H	23	22	22	HIB DATA 06 H	/B_BI
/B_BI	HIB DATA 23 H	25	24	24	GND HNG	
/B_BI	HIB DATA 24 H	27	26	26	HIB DATA 07 H	/B_BI
/B_BI	HIB DATA 25 H	29	28	28	HIB DATA 08 H	/B_BI
/B_BI	HIB DATA 26 H	31	30	30	HIB DATA 09 H	/B_BI
/B_BI	HIB DATA 27 H	33	32	32	HIB DATA 10 H	/B_BI
/B_BI	HIB DATA 28 H	35	34	34	GND HNG	
/B_BI	HIB DATA 29 H	37	36	36	HIB DATA 11 H	/B_BI
/B_BI	HIB DATA 30 H	39	38	38	HIB DATA 12 H	/B_BI
/B_BI	HIB DATA 31 H	41	40	40	HIB DATA 13 H	/B_BI
/B_BI	HIB DATA P0 H	43	42	42	HIB DATA 14 H	/B_BI
/B_BI	HIB DATA P1 H	45	44	44	GND HNG	
/B_BI	HIB DATA P2 H	47	46	46	HIB DATA 15 H	/B_BI
/B_BI	HIB DATA P3 H	49	48	48	HIB ADDR 00 H	/B_OUT
/B_OUT	BRD2 EE DATA H	51	50	50	GND HNG	
/B_OUT	HIB ADDR 09 H	53	52	52	HIB ADDR 01 H	/B_OUT
/B_OUT	HIB ADDR 10 H	55	54	54	HIB ADDR 02 H	/B_OUT
/B_OUT	HIB ADDR 11 H	57	56	56	HIB ADDR 03 H	/B_OUT
/B_OUT	HIB ADDR 12 H	59	58	58	HIB ADDR 04 H	/B_OUT
/B_OUT	HIB ADDR 13 H	61	60	60	HIB ADDR 05 H	/B_OUT
/B_OUT	HIB ADDR 14 H	63	62	62	HIB ADDR 06 H	/B_OUT
/B_OUT	HIB ADDR 15 H	65	64	64	GND HNG	
/B_OUT	HIB ADDR 16 H	67	66	66	HIB ADDR 07 H	/B_OUT
/B_OUT	HIB ADDR 17 H	69	68	68	HIB ADDR 08 H	/B_OUT
/B_OUT	HIB ADDR HPAR H	71	70	70	HIB BM 0 L	/B_OUT
/B_OUT	HIB ADDR LPAR H	73	72	72	GND HNG	
/B_OUT	HIB SPARE 73 H	75	74	74	HIB BM 1 L	/B_OUT
/B_OUT	HIB SPARE 75 H	77	76	76	HIB BM 2 L	/B_OUT
/B_OUT	HIB BUS ERR L	79	78	78	HIB BM 3 L	/B_OUT
/B_IN	BRD2 EE WR H	81	80	80	HIB BRD2 CS L	/B_OUT
/B_OUT	HIB WR L	83	82	82	HIB CSICB CS L	/B_OUT
/B_OUT	HIB CSICA CS L	85	84	84	GND HNG	
/B_IN	BRD2 EE RD DATA H	87	86	86	HIB MSEL L	/B_OUT
/B_OUT	HIB CTRL PAR H	89	88	88	SIA INTRPT L	/B_IN
/B_IN	SIB INTRPT L	91	90	90	BRD2 RESET L	/B_OUT
/B_OUT	SIC B NXT GRANT L	93	92	92	SIC B BUS REQ L	/B_IN
/B_OUT	SIC A NXT GRANT L	95	94	94	GND HNG	
/B_OUT	XI NXT GRANT L	97	96	96	SIC A BUS REQ L	/B_IN
/B_OUT	PR NXT GRANT L	99	98	98	HIB SISM CS L	/B_OUT
/B_OUT	HIB SPARE 99 H	99	100	100	GND HNG	

NOTE: Connector pins have the property  
IO\_DIRECTION set according to  
input/output/bidirectional status.  
/B\_OUT = from Board 1 to Board 2  
/B\_IN = from Board 2 to Board 1  
/B\_BI = Bidirectional signal

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REVISIONS		
CHK	CHANGE NO.	REV

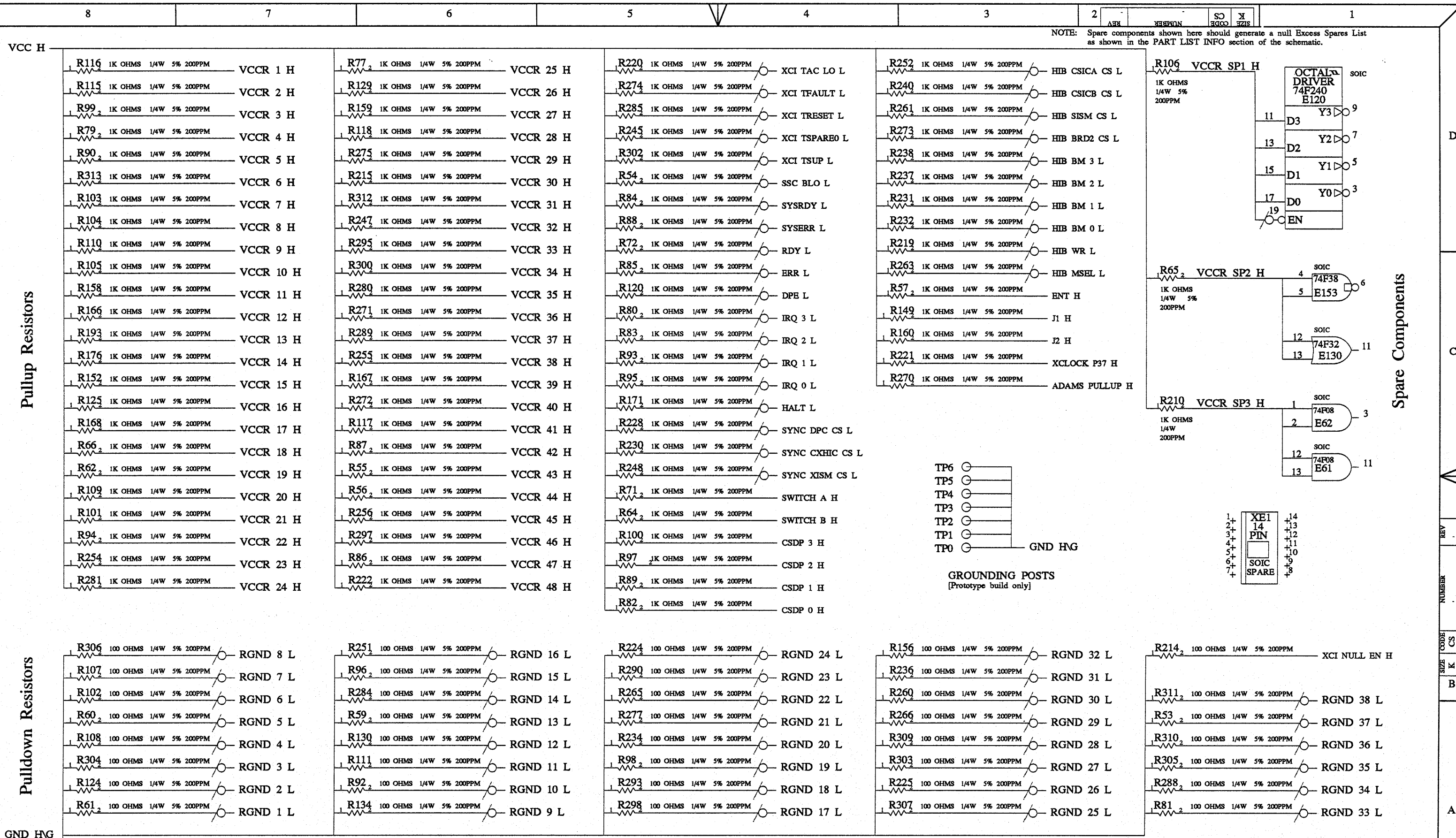
[HIB]  
**BOARD 1 <-> BOARD 2**  
**HIB BUS CONNECTOR**

**digital**  
FIRST USED ON OPTION/MODEL:      Thu Oct 20 16:58:11 1988

DRN: K. Yesse	DATE	ENG: C. D. Light	DATE	TITLE: WILDCAT BOARD 1
CHK'D: -	DATE	BOARD LOCATION: CXO	SHEET 27	
NEXT HIGHER ASSEMBLY: -		SIZE K	CODE CS	NUMBER -

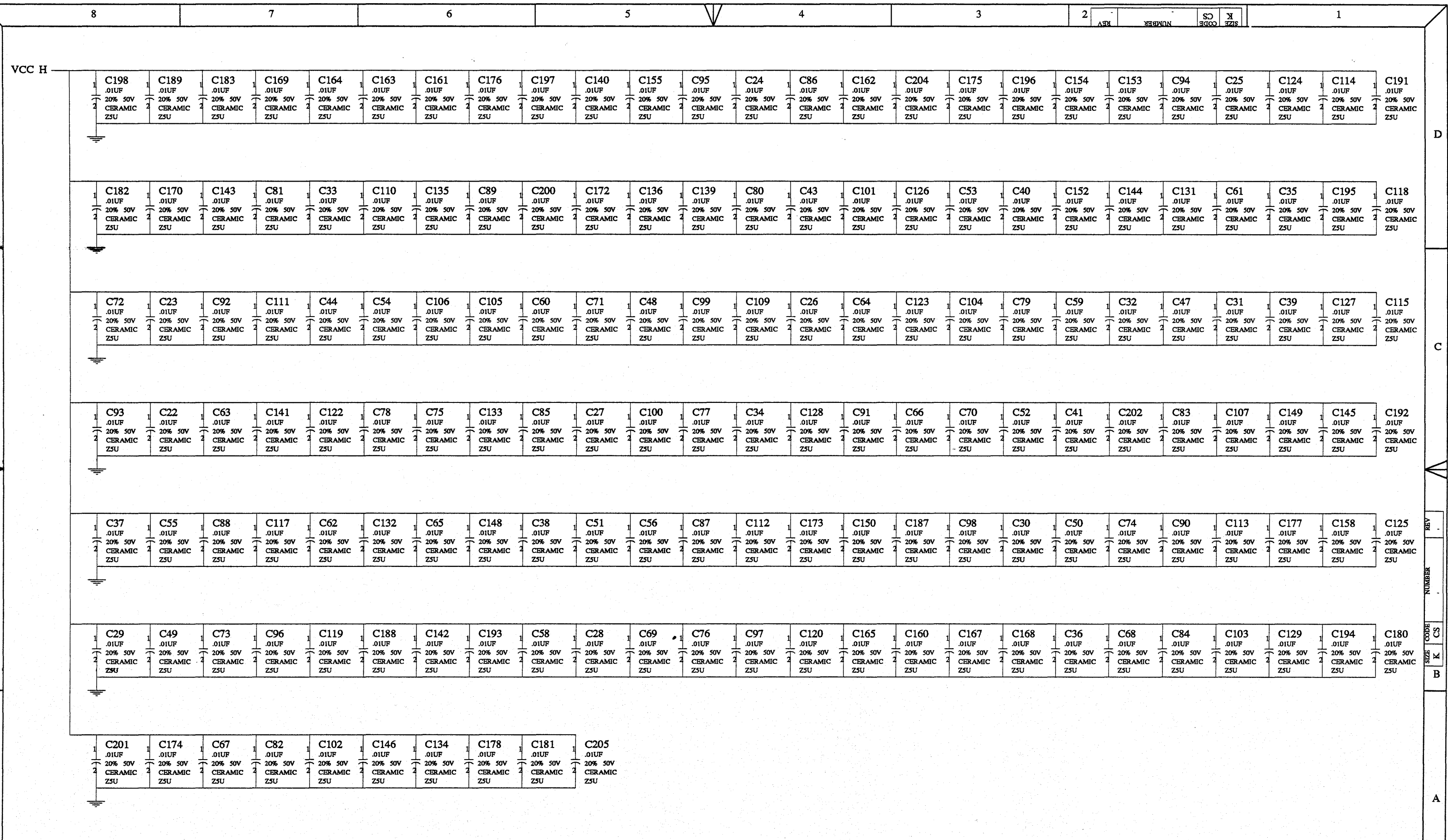
REV 200CT88	NUMBER -	CODE CS	SIZE K
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NOTE: Spare components shown here should generate a null Excess Spares List as shown in the PART LIST INFO section of the schematic.



NOTE: GND H (Global) is used by all ground symbols, and implicitly by ICs in their ground connections. RGND x L pulldowns employ the opposite assertion sense.

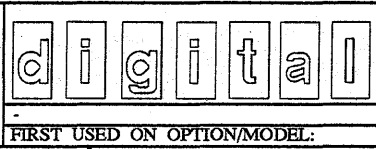
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------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------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



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REVISIONS		
CHK	CHANGE NO.	REV

[Common Logic]  
**DECOUPLING CAPACITORS**



DRN: K. Yesse  
 DATE: -  
 CHK'D: -  
 DATE: -  
 Thu Oct 20 17:04:03 1988  
 FIRST USED ON OPTION/MODEL: -

ENG: Your Name Here  
 DATE: -  
 BOARD LOCATION: CXO  
 SHEET: 29  
 NEXT HIGHER ASSEMBLY: -

TITLE: WILDCAT BOARD 1			
SIZE: K	CODE: CS	NUMBER: -	REV: 200CT88

File: 16R8DSL\_ARBIT.PLD  
 Source: DISK\$HSBSIM\_B:[SIMULATION.CMS]

```
Name ARBIT;
Partno xxxxx;
Date 8/25/88;
Revision A3;
Designer Richie;
Company DEC;
Assembly Wildass;
Location e96;
Device P16R8;

/*****
*
* BUS ARBITER
*
*****/
/* Allowable Target Device Types: 16R8D */
/*****
*
* 8/25/88 - added xic perr 1 to inputs for disabling xi nxt grant
* when a parity error occurs */
/* Inputs */
Pin 1 = bus_clk; /* inverted > mid phase transition*/
Pin 4 = !xic_perr_1; /* xic parity error */
Pin 5 = !xic_req_1; /* proc to xic bus request */
Pin 6 = !preq_1; /* processor bus request */
Pin 7 = !xi_req_1; /* xic bus request */
Pin 8 = !sic_a_bus_req_1; /* */
Pin 9 = !sic_b_bus_req_1; /* */
Pin 11 = !oe; /* */

/* Outputs */
Pin 15 = !xic_nxt_grant_1;
Pin 16 = !sic_b_nxt_bus_grant_1; /* bus grants - all active low */
Pin 17 = !sic_a_nxt_bus_grant_1; /* */
Pin 18 = !xi_nxt_bus_grant_1; /* */
Pin 19 = !proc_nxt_grant_1; /* */

Pin 12 = !sisel_1; /* the following are used for
/* state information (active hi) */
/* si selector - shows which SI */
/* will get the bus next if both */
/* SI channels request it */
Pin 13 = !silast_1; /* set if one of the SI's got the */
/* bus on the last cycle */
Pin 14 = !xilast_1; /* set if xiC got the bus on the */
/* last cycle */

/* Logic Equations */
/* IF ! sys_clock_H THEN BEGIN
*++
* Equations:
* Give the xi the bus if he wants it and the CVAX doesn't and:
* a) Neither SI wants it and the xi didn't have it last cycle, or
* b) Only one of the SI's wants it but he got it last cycle.
*--
xic_nxt_grant_1_d = xic_req_1; /* always let cvax have board bus, si
sisms can't get here so no conflict */

xi_nxt_bus_grant_1_d =
xi_req_1 & !sic_a_bus_req_1 & !sic_b_bus_req_1 &
!preq_1 & !xilast_1 & !xic_req_1 & !xic_perr_1
# xi_req_1 & !sic_a_bus_req_1 & sic_b_bus_req_1 &
silast_1 & !sisel_1 & !preq_1 & !xic_req_1 & !xic_perr_1
# xi_req_1 & sic_a_bus_req_1 & !sic_b_bus_req_1 &
silast_1 & !sisel_1 & !preq_1 & !xic_req_1 & !xic_perr_1;

*++
* Give the uVAX the bus if he wants it and:
* a) Neither SI wants it, or
* b) Only one of the SI's wants it but he got it last cycle.
*--
proc_nxt_grant_1_d =
```

16R8DSL\_ARBIT.PLD continued..

```
preq_1 & !sic_a_bus_req_1 & !sic_b_bus_req_1 & !xic_req_1
# preq_1 & !sic_a_bus_req_1 & sic_b_bus_req_1 & !silast_1 & !sisel_1 & !xic_req_1
# preq_1 & sic_a_bus_req_1 & !sic_b_bus_req_1 & !silast_1 & !sisel_1 & !xic_req_1;

*++
* Give the bus to SI A if he wants it and didn't get it last cycle and:
* a) SI B doesn't want it, or
* b) SI B wants it too but its SI A's turn due to fairness
*
* The long form of the following equation is:
* (! sic_a_bus_req_1 & sic_b_bus_req_1 & ! (silast_1 & !sisel_1))
* # (! sic_a_bus_req_1 & ! sic_b_bus_req_1 & ! sisel_1)
*--

sic_a_nxt_bus_grant_1_d =
sic_a_bus_req_1 & !sic_b_bus_req_1 & !silast_1
# sic_a_bus_req_1 & !sisel_1;

*++
* Give the bus to SI B if he wants it and didn't get it last cycle and:
* a) SI A doesn't want it, or
* b) SI A wants it too but its SI B's turn due to fairness
*
* The long form of the following equation is:
* (! sic_a_bus_req_1 & sic_b_bus_req_1 & ! (silast_1 & !sisel_1))
* # (! sic_a_bus_req_1 & ! sic_b_bus_req_1 & ! sisel_1)
*--

sic_b_nxt_bus_grant_1_d =
sic_b_bus_req_1 & !sic_a_bus_req_1 & !silast_1
# sic_b_bus_req_1 & !sisel_1;

*++
* Set SILAST and xILAST;
*--

silast_1_d = sic_a_bus_req_1 & !sic_b_bus_req_1 & !silast_1
# sic_b_bus_req_1 & !sic_a_bus_req_1 & !silast_1
# sic_a_bus_req_1 & !sisel_1
# sic_b_bus_req_1 & !sisel_1;

xilast_1_d = xi_req_1 & !sic_a_bus_req_1 & !sic_b_bus_req_1 & !preq_1 & !xilast_1 & !xic_req_1
# xi_req_1 & !sic_a_bus_req_1 & sic_b_bus_req_1 & !silast_1
& !sisel_1 & !preq_1 & !xic_req_1
# xi_req_1 & sic_a_bus_req_1 & !sic_b_bus_req_1 & !silast_1
& !sisel_1 & !preq_1 & !xic_req_1;

*++
* If neither SI wanted the bus don't change SISEL, otherwise
* set SISEL to the index of the SI who deserves the bus next.
* This means that if an SI got the bus set SISEL to the other SI,
* and if an SI was denied the bus set SISEL to that SI.
*
* The long form of the next equation is:
* ! sic_b_bus_req_1 & ! sic_a_bus_req_1 & ! sisel_1
* # ! sic_b_bus_req_1 & sic_a_bus_req_1 & (silast_1 & ! sisel_1)
* # sic_b_bus_req_1 & ! sic_a_bus_req_1 & ! (silast_1 & sisel_1)
* # sic_b_bus_req_1 & sic_a_bus_req_1 & sisel_1
*--

sisel_1_d = !sic_b_bus_req_1 & sic_a_bus_req_1 & !silast_1
# sic_b_bus_req_1 & !silast_1 & !sisel_1
# sic_a_bus_req_1 & !sisel_1
# !sic_a_bus_req_1 & !sic_b_bus_req_1 & !sisel_1;
```

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REVISIONS		
CHK	CHANGE NO.	REV

[Documentation]  
 PAL EQN FILES:  
 16R8DSL\_ARBIT.PLD

**digital**

DRN: K. Yesse  
 DATE: -  
 ENG: W. Chewbacca  
 DATE: -  
 BOARD LOCATION: CXO  
 SHEET 30  
 NEXT HIGHER ASSEMBLY:  
 Thu Oct 20 17:04:42 1988

DRN: K. Yesse	DATE: -	ENG: W. Chewbacca	DATE: -	TITLE: WILDCAT BOARD 1
CHK'D: -	DATE: -	BOARD LOCATION: CXO	SHEET 30	SIZE K
NEXT HIGHER ASSEMBLY:			NUMBER -	REV 20OCT88

SIZE K	CODE CS	NUMBER -	REV 20OCT88
--------	---------	----------	-------------

File: 16R8DSL\_IIADD.PLD  
 Source: DISK\$HSBSIM\_B:[SIMULATION.CMS]

16R8DSL\_IIADD.PLD continued..

NAME IIADD;  
 PARTNO 16R8D;  
 REVISION 03;  
 DATE 8/22/88;  
 DESIGNER Versace;  
 COMPANY DEC;  
 ASSEMBLY HSX50 BOARD 1;  
 LOCATION B115;  
 DEVICE P16R8;

CVAX\_II\_ADDR\_7\_H.D = CADDR\_07\_H; /\* asserted \*/

```

  /*****
  /* HSX50 BOARD 1 PAL: Cvax XIC Address Translation
  /* REVISION HISTORY:
  /* 4/28/87 KY/DV Verified correct pinout & functionality
  /* 5/12/87 KY Horrors! Took gen. 4, added comments
  /* (threw away gen. 5, bad I/O)
  /* 7/19/88 DV Added caddr07 to an output pin.
  /* 8/22/88 DV/MW make signal names and pal names compatible
  /*****
  
```

```

  /** INPUTS **/
  |
  pin 1 = HACK_H;
  pin 2 = !CXHIC_CS_L;
  pin 3 = CADDR_08_H;
  pin 4 = CADDR_07_H;
  pin 5 = CADDR_06_H;
  pin 6 = CADDR_05_H;
  pin 7 = CADDR_04_H;
  pin 8 = CADDR_03_H;
  pin 9 = CADDR_02_H;
  pin 11 = !XIC_NXT_GRT_L;
  
```

```

  /** OUTPUTS **/
  |
  pin 12 = CVAX_II_ADDR_0_H;
  pin 13 = CVAX_II_ADDR_1_H;
  pin 14 = CVAX_II_ADDR_2_H;
  pin 15 = CVAX_II_ADDR_3_H;
  pin 16 = CVAX_II_ADDR_4_H;
  pin 17 = CVAX_II_ADDR_5_H;
  pin 18 = CVAX_II_ADDR_6_H;
  pin 19 = CVAX_II_ADDR_7_H;
  
```

```

  /* The cxhic is longword addressable. The dpc is byte addressable. */
  /* This pal zero fills the lower 2 iiaddr lines for cvax to cxhic operations */
  /* and right shifts 2 bits for cvax to dpc operations. */
  
```

```

  /** LOGIC EQUATIONS **/
  |
  CVAX_II_ADDR_0_H.D = !CXHIC_CS_L & /* not asd */
  CADDR_02_H; /* asserted */
  |
  CVAX_II_ADDR_1_H.D = !CXHIC_CS_L & /* not asd */
  CADDR_03_H; /* asserted */
  |
  CVAX_II_ADDR_2_H.D = !CXHIC_CS_L & /* not asd */
  CADDR_04_H /* asserted */
  # CXHIC_CS_L & /* asserted */
  CADDR_02_H; /* asserted */
  |
  CVAX_II_ADDR_3_H.D = !CXHIC_CS_L & /* not asd */
  CADDR_05_H /* asserted */
  # CXHIC_CS_L & /* asserted */
  CADDR_03_H; /* asserted */
  |
  CVAX_II_ADDR_4_H.D = !CXHIC_CS_L & /* not asd */
  CADDR_06_H /* asserted */
  # CXHIC_CS_L & /* asserted */
  CADDR_04_H; /* asserted */
  |
  CVAX_II_ADDR_5_H.D = !CXHIC_CS_L & /* not asd */
  CADDR_07_H /* asserted */
  # CXHIC_CS_L & /* asserted */
  CADDR_05_H; /* asserted */
  |
  CVAX_II_ADDR_6_H.D = !CXHIC_CS_L & /* not asd */
  CADDR_08_H /* asserted */
  # CXHIC_CS_L & /* asserted */
  CADDR_06_H; /* asserted */
  |
  
```

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REVISIONS		
CHK	CHANGE NO.	REV

[Documentation]  
**PAL EQN FILES:**  
**16R8DSL\_IIADD.PLD**

**digital**  
 FIRST USED ON OPTION/MODEL: -

DRN: K. Yesse  
 CHK'D: -  
 Thu Oct 20 17:04:49 1988

DATE -  
 DATE -  
 BOARD LOCATION: CXO  
 SHEET 31  
 NEXT HIGHER ASSEMBLY: -

TITLE: **WILDCAT BOARD 1**  
 SIZE K  
 CODE CS  
 NUMBER -  
 REV 20OCT88

REV  
 NUMBER  
 CS  
 K  
 B

File: 20L8BSL\_BOGEY.PLD  
 Source: DISK\$HSBSIM\_B:[SIMULATION.CMS]

20L8BSL\_BOGEY.PLD continued..

NAME BOGEY  
 PARTNO xxxxx;  
 REVISION 01;  
 DATE 9/07/88;  
 DESIGNER Versace;  
 COMPANY DEC;  
 ASSEMBLY Wildcat;  
 LOCATION E119;  
 DEVICE P20L8;  
 FORMAT -j;

UCODE\_WREN\_L.OE = VCCR\_46;

```

/*****
/* This is the HIB Bus pal. */
*****/
/* 9/7/88 - modified hib reg clk ena to include processor to xism transfers */

```

```

/** INPUTS **/
pin 1 = XIC_NXT_GRT_L; /* plcc pin1 */
pin 2 = XIC_PERR_L; /* plcc pin2 */
pin 3 = BRD1_NXT_L; /* plcc pin3 */
pin 4 = PGRANT_L; /* plcc pin4 */
pin 5 = HIB_REG_CS_L; /* plcc pin6 */
pin 6 = BUSCLK_L; /* plcc pin7 */
pin 7 = XIC_GRANT_L; /* plcc pin9 */
pin 8 = STR_XISM_CS_L; /* plcc pin10 */
pin 9 = DPC_XCVR_EN_L; /* plcc pin12 */
pin 10 = HIB_TO_DPC_L; /* plcc pin13 */
pin 11 = STR_WR_L; /* plcc pin14 */
pin 13 = SPARE16; /* plcc pin16 */
pin 14 = SPARE17; /* plcc pin17 */
pin 23 = VCCR_46; /* plcc pin27 */

```

```

/** OUTPUTS **/
pin 15 = !HIB_REG_CLKEN_L; /* plcc pin18 */
pin 16 = !GEN_PAR_L; /* plcc pin20 */
pin 17 = !UCODE_WREN_L; /* plcc pin21 */
pin 18 = SPARE18; /* plcc pin22 */
pin 19 = SPARE19; /* plcc pin23 */
pin 20 = SPARE20; /* plcc pin24 */
pin 21 = SPARE21; /* plcc pin25 */
pin 22 = !HIB_REG_OEN_L; /* plcc pin26 */

```

```

/** LOGIC EQUATIONS **/
HIB_REG_OEN_L = !HIB_REG_CS_L & /* Asserted - during reads maintained */
                STR_WR_L & /* until cycle completion */
                !PGRANT_L; /* NOT Asserted - performing read */
                /* Asserted - avoid bus contention */
                /* with XISM */

HIB_REG_OEN_L.OE = VCCR_46; /* For ICT: if = high then TTL
                             if = low then tristate */

HIB_REG_CLKEN_L = !BRD1_NXT_L & /* Asst - either Proc. or XISM bus cycle */
                  HIB_REG_CS_L & /* not asst. - therefore not reading reg */
                  XIC_PERR_L & /* not asst. - this error will disable */
                  # /* further updating of reg until cleared */
                  !XIC_NXT_GRT_L & /* Asst - processor to xism bus cycle */
                  HIB_REG_CS_L & /* not asst. - therefore not reading reg */
                  XIC_PERR_L; /* not asst. - this error will disable */
                  /* further updating of reg until cleared */

HIB_REG_CLKEN_L.OE = VCCR_46;

GEN_PAR_L = HIB_TO_DPC_L & /* not asst. thus DPC Write to HIB */
            !DPC_XCVR_EN_L; /* Asst. -- some kind of DPC activity */

GEN_PAR_L.OE = VCCR_46;

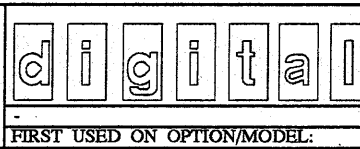
UCODE_WREN_L = !STR_XISM_CS_L & /* Asst- accessing ucode SRAMs */
               !XIC_GRANT_L & /* asst.- CVAX granted the HIB Bus */
               !STR_WR_L & /* performing write operation */
               BUSCLK_L; /* when Busclk L is high -- 2nd half */
               /* of bus grant cycle */

```

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REVISIONS		
CHK	CHANGE NO.	REV

[Documentation]  
**PAL EQN FILES:**  
**20L8BSL\_BOGEY.PLD**



DRN: K. Yesse	DATE	ENG: W. Chewbacca	DATE	TITLE: WILDCAT BOARD 1
CHK'D:	DATE	BOARD LOCATION: CXO	SHEET 32	SIZE K
FIRST USED ON OPTION/MODEL:		NEXT HIGHER ASSEMBLY:		NUMBER -
Thu Oct 20 17:04:56 1988				REV 20OCT88

SIZE K	CODE CS	NUMBER -	REV 20OCT88
--------	---------	----------	-------------



File: 20L8BSL\_CV2HB.PLD  
 Source: DISK\$HSBSIM\_B:[SIMULATION.CMS]

20L8BSL\_CV2HB.PLD continued..

```

NAME      CV2HB;
PARTNO    xxxxx;
REVISION  01;
DATE      8/22/88;
DESIGNER  Versace;
COMPANY   DEC;
ASSEMBLY  Wildcat;
LOCATION    E107;
DEVICE    P20L8;
FORMAT    -jf;
  
```

```

*****
/* CVAX-HIB DATA CONTROL PAL */
*****
  
```

```

***** REVISION HISTORY *****
/* 8-22-88 added vccr 45 h to provide in ckt test w/tri-state capability */
  
```

```

** INPUTS **
pin 1 = spare1;          /* plcc pin1 */
pin 2 = BUF_AS_L;       /* plcc pin2 */
pin 3 = REG_WR_L;       /* plcc pin3 */
pin 4 = STR_WR_L;       /* plcc pin4 */
pin 5 = PGRANT_L;       /* plcc pin6 */
pin 6 = XIC_GRANT_L;    /* plcc pin7 */
pin 7 = BUSCLK;        /* plcc pin9 */
pin 8 = ACLKC;         /* plcc pin10 */
pin 9 = HACK;          /* plcc pin12 */
pin 10 = SPARE10;      /* plcc pin13 */
pin 11 = SPARE11;      /* plcc pin14 */
pin 13 = SPARE13;      /* plcc pin16 */
pin 14 = SPARE14;      /* plcc pin17 */
pin 23 = VCCR_45;      /* plcc pin27 */
  
```

```

** OUTPUTS **
pin 15 = HIB_DIR;       /* plcc pin18 */
pin 16 = spare16;      /* plcc pin20 */
pin 17 = dave_clock;    /* plcc pin21 */
pin 18 = SAB;          /* plcc pin22 */
pin 19 = CAB;          /* plcc pin23 */
pin 20 = SBA;          /* plcc pin24 */
pin 21 = CBA;          /* plcc pin25 */
pin 22 = HIB_XCVR_EN_L; /* plcc pin26 */
  
```

```

** LOGIC VARIABLES **
  
```

```

** LOGIC EQUATIONS **
/* CVAX read of HIB or XIC */
  
```

```

SBA = HACK &
     REG_WR_L &
     CBA;
/* HIB or XIC operation w/o lock */
/* CVAX read */
/* data is latched in 646 from HIB */
/* ready to output */
  
```

```

SBA.OE = VCCR_45;
/* if vccr 45 = high then TTL */
/* if vccr 45 = low then tristate */
  
```

```

dave_clock = !BUSCLK &
             !ACLKC;
/* when low - last 100ns of cycle */
/* when low - last 50ns of cycle */
  
```

```

dave_clock.OE = VCCR_45;
  
```

```

/* clocks in HIB data then feedback keeps asserted until end */
/* so as to help maintain asserted HIB DIR signal for READY pal */
  
```

```

CBA = STR_WR_L &
      !PGRANT_L &
      dave_clock;
/* this read goes away after grant */
/* and REG_WR doesn't */
/* 0 -> 1 asserted CBA */
  
```

```

      STR_WR_L &
      !XIC_GRANT_L &
      dave_clock;
/* maintained during HIB data cycle only */
/* 0 -> 1 asserted CBA */
  
```

```

      CBA & !BUF_AS_L;
/* latched until BUF AS deasserts */
  
```

```

CBA.OE = VCCR_45;
  
```

```

/* NOTE: If HACK occurs prior to 150, may have to qualify or possibly */
  
```

```

/* use WR DIAG CLK instead */
CAB = !REG_WR_L &
      HACK &
      ACLKC;
/* asserted - doing CVAX write */
/* asserted - bd2 or XICACT w/o lock */
/* occurs @200 - so plenty of set up */
/* for parity */
CAB.OE = VCCR_45;
SAB = !PGRANT_L & !STR_WR_L /* transfer stored CVAX data to HIB */
      #
      !XIC_GRANT_L & !STR_WR_L;
SAB.OE = VCCR_45;
HIB_DIR = !SBA; /* inverted SBA */
HIB_DIR.OE = VCCR_45; /* for ict */
/* If SBA deasserted low and SAB deasserted low then HIB XCVR ENA L = high */
/* else HIB XCVR EN L = low -- nor functionality */
HIB_XCVR_EN_L = SBA # SAB;
HIB_XCVR_EN_L.OE = VCCR_45; /* for ict */
  
```

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REVISIONS		
CHK	CHANGE NO.	REV

[Documentation]  
**PAL EQN FILES:**  
 20L8BSL\_CV2HB.PLD

**digital**  
 FIRST USED ON OPTION/MODEL: -

DRN: K. Yesse  
 DATE -  
 CHK'D: -  
 DATE -  
 Thu Oct 20 17:05:02 1988

ENG: W. Chewbacca  
 DATE -  
 BOARD LOCATION: CXO  
 SHEET 33  
 NEXT HIGHER ASSEMBLY: -

TITLE: WILDCAT BOARD 1  
 SIZE K  
 CODE CS  
 NUMBER -  
 REV 200CT88

REV  
 NUMBER  
 CS  
 K  
 B  
 A

File: 20L8BSL\_DCTRL.PLD  
 Source: DISK\$HSBSIM\_B:[SIMULATION.CMS]

NAME dctrl;  
 PARTNO xxxxx;  
 REVISION 03;  
 DATE 9/26/88;  
 DESIGNER Versace;  
 COMPANY DEC;  
 ASSEMBLY Wildcat;  
 LOCATION E57;  
 DEVICE P20L8;  
 FORMAT -j;

\*\*\*\*\*  
 /\* Wildcat Board 1 pal: CVAX Data Control pal \*/  
 /\* REVISION HISTORY: \*/  
 /\* 4/25/88 add two pins, wr diag csl & cvax par fec H, to allow the DPEL signal to be asserted when the WR DIAG reg is read and the cvax par fec line is asserted. - mr. rick \*/  
 /\* 5/2/88 add byte mask lines and perr lines from 286s to generate cvax perr H - mr rick \*/  
 /\* 6/24/88 created word wide cvax parity errors. \*/  
 /\* 8/22/88 check parity for all board2 reads \*/  
 /\* 9/21/88 removed HIB REG CS from pal since it's not parity protected \*/  
 /\* 9/26/88 duh -- added HIB REG CS back in cause it was supposed to be used as a qualifier for DPE and ERR ENA during BRD2 ACT assertions \*/  
 \*\*\*\*\*

\*\*\* INPUTS \*\*/  
 pin 1 = FAST\_MEM\_ACT\_L; /\* plcc pin1 \*/  
 pin 2 = XIC\_ACT\_L; /\* plcc pin2 \*/  
 pin 3 = HIB\_REG\_CS\_L; /\* plcc pin3 \*/  
 pin 4 = BRD2\_ACT\_L; /\* plcc pin4 \*/  
 pin 5 = spare5; /\* plcc pin6 \*/  
 pin 6 = CVAX\_DPE\_DIS\_L; /\* plcc pin7 \*/  
 pin 7 = REG\_WR\_L; /\* plcc pin9 \*/  
 pin 8 = WR\_DIAG\_CS\_L; /\* plcc pin10 \*/  
 pin 9 = CVAX\_PAR\_FEC\_H; /\* plcc pin12 \*/  
 pin 10 = REG\_BM0\_L; /\* plcc pin13 \*/  
 pin 11 = REG\_BM1\_L; /\* plcc pin14 \*/  
 pin 13 = REG\_BM2\_L; /\* plcc pin16 \*/  
 pin 14 = REG\_BM3\_L; /\* plcc pin17 \*/  
 pin 16 = PERR\_0\_L; /\* plcc pin20 \*/  
 pin 17 = PERR\_1\_L; /\* plcc pin21 \*/  
 pin 18 = PERR\_2\_L; /\* plcc pin22 \*/  
 pin 19 = PERR\_3\_L; /\* plcc pin23 \*/  
 pin 23 = VCCR\_41; /\* plcc pin27 \*/

\*\*\* OUTPUTS \*\*/  
 pin 15 = CVAX\_LOWER\_PERR; /\* plcc pin18 \*/  
 pin 20 = ERR\_ENA\_L; /\* plcc pin24 \*/  
 pin 21 = IDPE\_L; /\* plcc pin25 \*/  
 pin 22 = CVAX\_UPPER\_PERR; /\* plcc pin26 \*/

\*\*\* LOGIC VARIABLES \*\*/  
 \*\*\* LOGIC EQUATIONS \*\*/  
 /\* allow cvax parity error detection \*/  
 DPE\_L = !FAST\_MEM\_ACT\_L & CVAX\_DPE\_DIS\_L & REG\_WR\_L  
 #  
 !XIC\_ACT\_L & CVAX\_DPE\_DIS\_L & REG\_WR\_L  
 #  
 !BRD2\_ACT\_L & CVAX\_DPE\_DIS\_L & REG\_WR\_L & HIB\_REG\_CS\_L  
 #  
 !WR\_DIAG\_CS\_L & CVAX\_DPE\_DIS\_L & CVAX\_PAR\_FEC\_H & REG\_WR\_L;  
 DPE\_L.OE = REG\_WR\_L; /\* only drive dpel when a read occurs \*/  
 /\* The next two circuits will assert cvax perr whenever a byte has bad parity and the corresponding byte mask is asserted, and we \*/

20L8BSL\_DCTRL.PLD continued..

/\* are error enabled. \*/  
 CVAX\_LOWER\_PERR = !REG\_BM0\_L & !PERR\_0\_L & ERR\_ENA\_L  
 #  
 !REG\_BM1\_L & !PERR\_1\_L & ERR\_ENA\_L;  
 CVAX\_LOWER\_PERR.OE = VCCR\_41;  
 CVAX\_UPPER\_PERR = !REG\_BM2\_L & !PERR\_2\_L & ERR\_ENA\_L  
 #  
 !REG\_BM3\_L & !PERR\_3\_L & ERR\_ENA\_L;  
 CVAX\_UPPER\_PERR.OE = VCCR\_41;  
 /\* Error Enable was created for Diagnostic test purposes. It allows for CVAX parity error detection by the hardware w/o the CVAX internally seeing the parity error. \*/  
 ERR\_ENA\_L = !FAST\_MEM\_ACT\_L & REG\_WR\_L /\* reads from any parity \*/  
 # /\* protected medium \*/  
 !XIC\_ACT\_L & REG\_WR\_L  
 #  
 !BRD2\_ACT\_L & REG\_WR\_L & HIB\_REG\_CS\_L  
 #  
 !WR\_DIAG\_CS\_L & CVAX\_PAR\_FEC\_H & REG\_WR\_L /\* special diag \*/  
 # /\* test case \*/  
 !REG\_WR\_L; /\* any write operation. \*/  
 ERR\_ENA\_L.OE = VCCR\_41;

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CHK	CHANGE NO.	REV

[Documentation]  
**PAL EQN FILES:**  
 20L8BSL\_DCTRL.PLD

**digital**  
 FIRST USED ON OPTION/MODEL: -

DRN: K. Yesse  
 DATE -  
 CHK'D: -  
 DATE -  
 Thu Oct 20 17:05:08 1988

ENG: W. Chewbacca  
 DATE -  
 BOARD LOCATION: CXO  
 SHEET 34  
 NEXT HIGHER ASSEMBLY: -

TITLE: WILDCAT BOARD 1  
 SIZE K  
 CODE CS  
 NUMBER -  
 REV 20OCT88

REV  
 NUMBER  
 CS  
 K  
 B  
 A

File: 20L8BSL\_HIBSD.PLD  
 Source: DISK\$HSBSIM\_B:[SIMULATION.CMS]

20L8BSL\_HIBSD.PLD continued..

NAME hibsdi;  
 PARTNO xxxxx;  
 REVISION 02;  
 DATE 8/18/88;  
 DESIGNER Versace;  
 COMPANY DEC;  
 ASSEMBLY Wildcat;  
 LOCATION E94;  
 DEVICE P20L8;  
 FORMAT -jf;

/\* 4/12/88 checked pins for new net list. removed novram cs1 output, added  
 caddr21 input, added brd2 act output - mr. rick \*/  
 /\* 5/4/88 added deselect pin and move output pins \*/  
 /\* 7/1/88 temporarily eliminated the error log from brd2cs1 since  
 it conflicts with exhical \*/  
 /\* 7/5/88 fixed brd2cs decode and got rid of deselect from brd2act \*/  
 /\* 8/18/88 added hib reg cs decode and removed deselect from all eqns \*/

\*\*\*\*\*  
 /\* This is the HIB space address decode pal. \*/  
 \*\*\*\*\*

\*\*\* INPUTS \*\*\*  
 pin 1 = CADDR10; /\* p1cc pin1 \*/  
 pin 2 = CADDR11; /\* p1cc pin2 \*/  
 pin 3 = CADDR12; /\* p1cc pin3 \*/  
 pin 4 = CADDR13; /\* p1cc pin4 \*/  
 pin 5 = CADDR14; /\* p1cc pin6 \*/  
 pin 6 = CADDR15; /\* p1cc pin7 \*/  
 pin 7 = CADDR16; /\* p1cc pin9 \*/  
 pin 8 = CADDR17; /\* p1cc pin10 \*/  
 pin 9 = CADDR18; /\* p1cc pin12 \*/  
 pin 10 = CADDR19; /\* p1cc pin13 \*/  
 pin 11 = CADDR20; /\* p1cc pin14 \*/  
 pin 13 = CADDR29; /\* p1cc pin16 \*/  
 pin 14 = BUF\_AS\_L; /\* p1cc pin17 \*/  
 pin 16 = CADDR21; /\* p1cc pin20 \*/  
 pin 23 = REG\_CS2; /\* p1cc pin27 \*/

\*\*\* OUTPUTS \*\*\*  
 pin 15 = BRD2\_ACT\_L; /\* p1cc pin18 \*/  
 pin 17 = HIB\_REG\_CS\_L; /\* p1cc pin21 \*/  
 pin 18 = ISISM\_CS\_L; /\* p1cc pin22 \*/  
 pin 19 = BRD2\_CS\_L; /\* p1cc pin23 \*/  
 pin 20 = DATA\_BUF\_CS\_L; /\* p1cc pin24 \*/  
 pin 21 = CSIC\_B\_CS\_L; /\* p1cc pin25 \*/  
 pin 22 = CSIC\_A\_CS\_L; /\* p1cc pin26 \*/

\*\*\* LOGIC VARIABLES \*\*\*  
 \*\*\* LOGIC EQUATIONS \*\*\*

DATA\_BUF\_CS\_L = !CADDR29 & !CADDR21 & !CADDR20 & !BUF\_AS\_L & REG\_CS2;  
 /\* Addr bit 21 necc. to distinguish from proc mem decode \*/  
 SISM\_CS\_L = CADDR29 & !CADDR21 & !CADDR20 & !CADDR19 & !CADDR18 &  
 !CADDR17 & !CADDR16 & !CADDR15 & !BUF\_AS\_L & REG\_CS2;  
 CSIC\_A\_CS\_L = CADDR29 & !CADDR21 & !CADDR20 & !CADDR19 & !CADDR18 &  
 !CADDR17 & !CADDR16 & CADDR15 & !CADDR14 & !CADDR13 &  
 !CADDR12 & !CADDR11 & !CADDR10 & !BUF\_AS\_L & REG\_CS2;  
 CSIC\_B\_CS\_L = CADDR29 & !CADDR21 & !CADDR20 & !CADDR19 & !CADDR18 &  
 !CADDR17 & !CADDR16 & CADDR15 & !CADDR14 & !CADDR13 &  
 !CADDR12 & !CADDR11 & CADDR10 & !BUF\_AS\_L & REG\_CS2;  
 BRD2\_CS\_L = CADDR29 & !CADDR21 & !CADDR20 & !CADDR19 & !CADDR18 &  
 !CADDR17 & !CADDR16 & CADDR15 & !CADDR14 & !CADDR13 &  
 !CADDR12 & CADDR11 &  
 !BUF\_AS\_L & REG\_CS2;  
 HIB\_REG\_CS\_L = CADDR29 & !CADDR21 & !CADDR20 & !CADDR19 & !CADDR18 &  
 !CADDR17 & !CADDR16 & CADDR15 & CADDR14 & CADDR13 &  
 !CADDR12 & !CADDR11 & !CADDR10 &

IBUF\_AS\_L & REG\_CS2;  
 BRD2\_ACT\_L = !CADDR29 & !CADDR21 & !CADDR20 & !BUF\_AS\_L & REG\_CS2  
 /\* DATA\_BUF\_CS\_L \*/  
 #  
 CADDR29 & !CADDR21 & !CADDR20 & !CADDR19 & !CADDR18 &  
 !CADDR17 & !CADDR16 & !CADDR15 & !BUF\_AS\_L & REG\_CS2  
 /\* SISM\_CS\_L \*/  
 #  
 CADDR29 & !CADDR21 & !CADDR20 & !CADDR19 & !CADDR18 &  
 !CADDR17 & !CADDR16 & CADDR15 & !CADDR14 & !CADDR13 &  
 !CADDR12 & !CADDR11 & !CADDR10 & !BUF\_AS\_L & REG\_CS2  
 /\* CSIC\_A\_CS\_L \*/  
 #  
 CADDR29 & !CADDR21 & !CADDR20 & !CADDR19 & !CADDR18 &  
 !CADDR17 & !CADDR16 & CADDR15 & !CADDR14 & !CADDR13 &  
 !CADDR12 & !CADDR11 & CADDR10 & !BUF\_AS\_L & REG\_CS2  
 /\* CSIC\_B\_CS\_L \*/  
 #  
 CADDR29 & !CADDR21 & !CADDR20 & !CADDR19 & !CADDR18 &  
 !CADDR17 & !CADDR16 & CADDR15 & !CADDR14 & !CADDR13 &  
 !CADDR12 & CADDR11 &  
 !BUF\_AS\_L & REG\_CS2  
 /\* BRD2\_CS\_L \*/  
 #  
 CADDR29 & !CADDR21 & !CADDR20 & !CADDR19 & !CADDR18 &  
 !CADDR17 & !CADDR16 & CADDR15 & CADDR14 & CADDR13 &  
 !CADDR12 & !CADDR11 & !CADDR10 & !BUF\_AS\_L & REG\_CS2;  
 /\* HIB\_REG\_CS\_L \*/

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REVISIONS		
CHK	CHANGE NO.	REV

[Documentation]  
**PAL EQN FILES:**  
 20L8BSL\_HIBSD.PLD

digital  
 FIRST USED ON OPTION/MODEL:

DRN: K. Yesse	DATE	ENG: W. Chewbacca	DATE
CHK'D:	DATE	BOARD LOCATION: CXO	
Thu Oct 20 17:05:14 1988		SHEET 35	
		NEXT HIGHER ASSEMBLY:	

TITLE: WILDCAT BOARD 1			
SIZE K	CODE CS	NUMBER	REV 200CT88

REV  
 NUMBER  
 CS  
 K  
 B

File: 20L8BSL\_PRMDE.PLD  
 Source: DISK\$HSBSIM\_B:[SIMULATION.CMS]

```

NAME      prmde;
PARTNO    xxxxx;
REVISION  03;
DATE      8/22/88;
DESIGNER  Versace;
COMPANY   DEC;
ASSEMBLY  Wildcat;
LOCATION    E61;
DEVICE    P20L8;
FORMAT    -j;
  
```

```

/* 4-12-88 checked pinout for new netlist, rewired and added new equations
and names for all outputs except scratchpads. added caddr21 input
- mr. rick */

/* 6-3-88 buf_as_l was wrong sense in slowmemactl signal, added ! to each
buf_as_l term in that equation. rick */

/* 8-22-88 modified for In Ckt Test (ICT) Engineering to provide tri state
capability */
  
```

```

/*****
/* This is the processor memory address decode pal. */
*****/
  
```

```

/** INPUTS **/

pin 1 = DESELECT_L; /* plcc pin1 */
pin 2 = VCCR_42_H; /* plcc pin2 */
pin 3 = SPARE_3; /* plcc pin3 */
pin 4 = SPARE_4; /* plcc pin4 */
pin 5 = SPARE_5; /* plcc pin6 */
pin 6 = SPARE_6; /* plcc pin7 */
pin 7 = CADDR17; /* plcc pin9 */
pin 8 = CADDR18; /* plcc pin10 */
pin 9 = CADDR19; /* plcc pin12 */
pin 10 = CADDR20; /* plcc pin13 */
pin 11 = CADDR21; /* plcc pin14 */
pin 13 = CADDR29; /* plcc pin16 */
pin 14 = BUF_AS_L; /* plcc pin17 */
pin 23 = REG_CS2_H; /* plcc pin27 */
  
```

```

/** OUTPUTS **/

pin 15 = !SLOW_MEM_ACT_L; /* plcc pin18 */
pin 16 = !CODE_STR3_CS_L; /* plcc pin20 */
pin 17 = !CODE_STR2_CS_L; /* plcc pin21 */
pin 18 = !CODE_STR1_CS_L; /* plcc pin22 */
pin 19 = !SCRATCH_PAD_CS_L; /* plcc pin23 */
pin 20 = !SRAM_BANK2_CS_L; /* plcc pin24 */
pin 21 = !SRAM_BANK1_CS_L; /* plcc pin25 */
pin 22 = !FAST_MEM_ACT_L; /* plcc pin26 */
  
```

```

/** LOGIC EQUATIONS **/

/* If vccr 42 h = high then tri output else vccr 42 = low then tri state */
CS_CTRL = !BUF_AS_L & REG_CS2_H & DESELECT_L;
CODE_STR3_CS_L = !CADDR29 & CADDR21 & CADDR20 & CADDR19 & CADDR18 &
CADDR17 & CS_CTRL;
CODE_STR3_CS_L.OE = VCCR_42_H;
CODE_STR2_CS_L = !CADDR29 & CADDR21 & CADDR20 & CADDR19 & CADDR18 &
CADDR17 & CS_CTRL;
CODE_STR2_CS_L.OE = VCCR_42_H;
CODE_STR1_CS_L = !CADDR29 & CADDR21 & CADDR20 & CADDR19 & CADDR18 &
CADDR17 & CS_CTRL;
CODE_STR1_CS_L.OE = VCCR_42_H;
SCRATCH_PAD_CS_L = !CADDR29 & CADDR21 & CADDR20 & CADDR19 & CADDR18 &
CS_CTRL;
SCRATCH_PAD_CS_L.OE = VCCR_42_H;
SRAM_BANK2_CS_L = !CADDR29 & CADDR21 & CADDR20 & CADDR19 & CADDR18 &
CS_CTRL;
  
```

20L8BSL\_PRMDE.PLD continued..

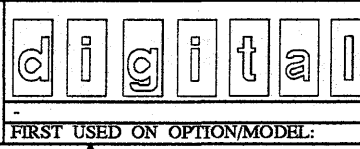
```

SRAM_BANK2_CS_L.OE = VCCR_42_H;
SRAM_BANK1_CS_L = !CADDR29 & CADDR21 & CADDR20 & CADDR19 & CADDR18 &
CS_CTRL;
SRAM_BANK1_CS_L.OE = VCCR_42_H;
FAST_MEM_ACT_L = !CADDR29 & CADDR21 & CADDR20 & CADDR19 & CADDR18 &
!BUF_AS_L & REG_CS2_H /* SCRATCH_PAD_CS_L */
#
!CADDR29 & CADDR21 & CADDR20 & CADDR19 & CADDR18 &
!BUF_AS_L & REG_CS2_H /* SRAM_BANK2_CS_L */
#
!CADDR29 & CADDR21 & CADDR20 & CADDR19 & CADDR18 &
!BUF_AS_L & REG_CS2_H; /* SRAM_BANK1_CS_L */
FAST_MEM_ACT_L.OE = VCCR_42_H;
SLOW_MEM_ACT_L = !CADDR29 & CADDR21 & CADDR20 & CADDR19 & CADDR18 &
!CADDR17 & !BUF_AS_L & REG_CS2_H /* CODE_STR3_CS_L */
#
!CADDR29 & CADDR21 & CADDR20 & CADDR19 & CADDR18 &
CADDR17 & !BUF_AS_L & REG_CS2_H /* CODE_STR2_CS_L */
#
!CADDR29 & CADDR21 & CADDR20 & CADDR19 & CADDR18 &
!CADDR17 & !BUF_AS_L & REG_CS2_H; /* CODE_STR1_CS_L */
SLOW_MEM_ACT_L.OE = VCCR_42_H;
  
```

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REVISIONS		
CHK	CHANGE NO.	REV

[Documentation]  
**PAL EQN FILES:**  
 20L8BSL\_PRMDE.PLD



DRN: K. Yesse	DATE	ENG: W. Chewbacca	DATE	TITLE: WILDCAT BOARD 1
CHK'D: -	DATE	BOARD LOCATION: CXO		
FIRST USED ON OPTION/MODEL: -		SHEET 36		
		NEXT HIGHER ASSEMBLY: -		

SIZE K	CODE CS	NUMBER -	REV 200CT88
--------	---------	----------	-------------

REV NUMBER SIZE CODE CS B A

File: 20L8BSL\_RGCTL.PLD  
 Source: DISK\$HSBSIM\_B:[SIMULATION.CMS]

20L8BSL\_RGCTL.PLD continued..

NAME RGCTL;  
 PARTNO xxxxx;  
 REVISION 01;  
 DATE 8/22/88;  
 DESIGNER Versace;  
 COMPANY DEC;  
 ASSEMBLY Wildcat;  
 LOCATION E80;  
 DEVICE P20L8;  
 FORMAT -j;

```
RD_DIAG_CLK = !ACLKC & !BUF_DBE_L & DCLK_DIS_L & DEASSERT_L & RD_DIAG_CS_L;
RD_DIAG_CLK.OE = VCCR_43;
RD_DIAG_ENA_L = !RD_DIAG_CS_L & REG_WR_L;
RD_DIAG_ENA_L.OE = VCCR_43;
/* there might be a problem with the parity capture. Parity is valid at 180
   until 205. This clk edge should occur near 200. */
PAR_CLK_H = !DEASSERT_L & DCLK_DIS_L & !BUF_AS_L;
PAR_CLK_H.OE = VCCR_43;
```

/\* 4-22-88 added equation for err addr clk h and moved some pins  
 - mr. rick \*/  
 /\* 6-24-88 replaced delayed as with perr clk \*/  
 /\* 8-22-88 modified for in ckt test engr. -- provide z capability \*/

\*\*\*\*\*  
 /\* This is the REGISTER CONTROL pal \*/  
 \*\*\*\*\*

/\*\* INPUTS \*\*/  
 pin 1 = BUF\_DBE\_L; /\* plcc pin1 \*/  
 pin 2 = ACLKC; /\* plcc pin2 \*/  
 pin 3 = ACLKB; /\* plcc pin3 \*/  
 pin 4 = BUF\_DS\_L; /\* plcc pin4 \*/  
 pin 5 = BUF\_AS\_L; /\* plcc pin6 \*/  
 pin 6 = REG\_WR\_L; /\* plcc pin7 \*/  
 pin 7 = REG\_CS2\_H; /\* plcc pin9 \*/  
 pin 8 = ERR\_ADDR\_CS\_L; /\* plcc pin10 \*/  
 pin 9 = WR\_DIAG\_CS\_L; /\* plcc pin12 \*/  
 pin 10 = RD\_DIAG\_CS\_L; /\* plcc pin13 \*/  
 pin 11 = DEASSERT\_L; /\* plcc pin14 \*/  
 pin 13 = DCLK\_DIS\_L; /\* plcc pin16 \*/  
 pin 14 = SPARE\_14; /\* plcc pin17 \*/  
 pin 23 = VCCR\_43; /\* plcc pin27 \*/

/\*\* OUTPUTS \*\*/  
 pin 15 = !WR\_DIAG\_RDBK\_L; /\* plcc pin18 \*/  
 pin 16 = PAR\_CLK\_H; /\* plcc pin20 \*/  
 pin 17 = PERR\_CLK\_H; /\* plcc pin21 \*/  
 pin 18 = ERR\_ADDR\_CLK\_H; /\* plcc pin22 \*/  
 pin 19 = !ERR\_ADDR\_RDBK\_L; /\* plcc pin23 \*/  
 pin 20 = !RD\_DIAG\_ENA\_L; /\* plcc pin24 \*/  
 pin 21 = RD\_DIAG\_CLK; /\* plcc pin25 \*/  
 pin 22 = WR\_DIAG\_CLK; /\* plcc pin26 \*/

/\*\* LOGIC EQUATIONS \*\*/  
 PERR\_CLK\_H = ACLKC & DCLK\_DIS\_L; /\* Clock parity error reg when \*/  
 /\* aclkc 0->1 and dclk dis not asserted \*/  
 PERR\_CLK\_H.OE = VCCR\_43;

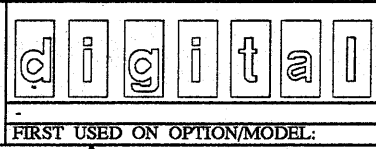
/\* Clock the err add reg when it is not being selected. The assertion of  
 buf ds1 will assert the clock high, and dclk dis will not allow the  
 register to be clocked after and error has occurred. \*/  
 ERR\_ADDR\_CLK\_H = ERR\_ADDR\_CS\_L & !BUF\_DS\_L & DCLK\_DIS\_L;  
 ERR\_ADDR\_CLK\_H.OE = VCCR\_43;  
 ERR\_ADDR\_RDBK\_L = !ERR\_ADDR\_CS\_L & REG\_WR\_L;  
 ERR\_ADDR\_RDBK\_L.OE = VCCR\_43;  
 WR\_DIAG\_CLK = !REG\_WR\_L & !BUF\_DS\_L & !WR\_DIAG\_CS\_L & ACLKB;  
 WR\_DIAG\_CLK.OE = VCCR\_43;  
 WR\_DIAG\_RDBK\_L = !WR\_DIAG\_CS\_L & REG\_WR\_L;  
 WR\_DIAG\_RDBK\_L.OE = VCCR\_43;

/\* assert rd diag clk every cycle except when an error occurs (dclk\_dis\_L)  
 or we are trying to read the register (rd\_diag\_cs\_l) \*/

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REVISIONS		
CHK	CHANGE NO.	REV

[Documentation]  
**PAL EQN FILES:**  
**20L8BSL\_RGCTL.PLD**



DRN: K. Yesse	DATE	ENG: W. Chewbacca	DATE	TITLE: WILDCAT BOARD 1
CHK'D:	DATE	BOARD LOCATION: CXO	SHEET 37	
FIRST USED ON OPTION/MODEL:			NEXT HIGHER ASSEMBLY:	

SIZE K	CODE CS	NUMBER	REV 20OCT88
--------	---------	--------	-------------

REV .  
 NUMBER .  
 CS  
 K  
 B  
 A

File: 20L8BSL\_XICSD.PLD  
 Source: DISK\$HSBSIM\_B:[SIMULATION.CMS]

20L8BSL\_XICSD.PLD continued..

NAME XICSD;  
 PARTNO xxxxx;  
 REVISION 02;  
 DATE 8/22/88;  
 DESIGNER Versace;  
 COMPANY DEC;  
 ASSEMBLY Wildcat;  
 LOCATION E62;  
 DEVICE P20L8;  
 FORMAT -jf;

```
!CADDR16 & CADDR15 & !CADDR14 & CADDR13 &
!BUF_AS_L & REG_CS2
#
CADDR29 & !CADDR20 & !CADDR19 & !CADDR18 &
!CADDR17 & !CADDR16 & CADDR15 & !CADDR14 &
!CADDR13 & CADDR12 & CADDR11 & !CADDR10 &
!BUF_AS_L & REG_CS2
#
CADDR29 & !CADDR20 & !CADDR19 & !CADDR18 &
!CADDR17 & !CADDR16 & CADDR15 & !CADDR14 &
!CADDR13 & CADDR12 & CADDR11 & CADDR10 &
!BUF_AS_L & REG_CS2;
```

```
/* 4-12-88 rewired pins for new netlist - mr. rick */
/* 5/4/88 added deselect to xic act 1 term */
/* 8/22/88 removed deselect term from xic act eqn -- */
/* dave did this solely on his own volition */
```

```
*****
/* This is the XIC and special address decode pal. */
*****
```

```
/** INPUTS **/
pin 1 = CADDR10; /* plcc pin1 */
pin 2 = CADDR11; /* plcc pin2 */
pin 3 = CADDR12; /* plcc pin3 */
pin 4 = CADDR13; /* plcc pin4 */
pin 5 = CADDR14; /* plcc pin6 */
pin 6 = CADDR15; /* plcc pin7 */
pin 7 = CADDR16; /* plcc pin9 */
pin 8 = CADDR17; /* plcc pin10 */
pin 9 = CADDR18; /* plcc pin12 */
pin 10 = CADDR19; /* plcc pin13 */
pin 11 = CADDR20; /* plcc pin14 */
pin 13 = CADDR29; /* plcc pin16 */
pin 14 = BUF_AS_L; /* plcc pin17 */
pin 16 = DESELECT_L; /* plcc pin20 */
pin 23 = REG_CS2; /* plcc pin27 */
```

```
/** OUTPUTS **/
pin 15 = !XIC_ACT_L; /* plcc pin18 */
pin 17 = !RD_DIAG_CS_L; /* plcc pin21 */
pin 18 = !WR_DIAG_CS_L; /* plcc pin22 */
pin 19 = !XISM_CS_L; /* plcc pin23 */
pin 20 = !CXHC_CS_L; /* plcc pin24 */
pin 21 = !DPC_CS_L; /* plcc pin25 */
pin 22 = !VIC_CS_L; /* plcc pin26 */
```

```
/** LOGIC EQUATIONS **/
XISM_CS_L = CADDR29 & !CADDR20 & !CADDR19 & !CADDR18 & !CADDR17 &
!CADDR16 & CADDR15 & !CADDR14 & CADDR13 &
!BUF_AS_L & REG_CS2;

CS_CTRL = !BUF_AS_L & REG_CS2 & DESELECT_L;

RD_DIAG_CS_L = CADDR29 & !CADDR20 & !CADDR19 & !CADDR18 & !CADDR17 &
!CADDR16 & CADDR15 & CADDR14 & !CADDR13 & !CADDR12 &
!CADDR11 & CADDR10 & CS_CTRL;

WR_DIAG_CS_L = CADDR29 & !CADDR20 & !CADDR19 & !CADDR18 & !CADDR17 &
!CADDR16 & CADDR15 & CADDR14 & !CADDR13 & !CADDR12 &
!CADDR11 & !CADDR10 & CS_CTRL;

VIC_CS_L = CADDR29 & !CADDR20 & !CADDR19 & !CADDR18 &
!CADDR17 & !CADDR16 & CADDR15 & CADDR14 &
!CADDR13 & CADDR12 & !CADDR11 & !CADDR10 &
!BUF_AS_L & REG_CS2;

CXHC_CS_L = CADDR29 & !CADDR20 & !CADDR19 & !CADDR18 &
!CADDR17 & !CADDR16 & CADDR15 & !CADDR14 &
!CADDR13 & CADDR12 & CADDR11 & !CADDR10 &
!BUF_AS_L & REG_CS2;

DPC_CS_L = CADDR29 & !CADDR20 & !CADDR19 & !CADDR18 &
!CADDR17 & !CADDR16 & CADDR15 & !CADDR14 &
!CADDR13 & CADDR12 & CADDR11 & CADDR10 &
!BUF_AS_L & REG_CS2;

XIC_ACT_L = CADDR29 & !CADDR20 & !CADDR19 & !CADDR18 & !CADDR17 &
```

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REVISIONS		
CHK	CHANGE NO.	REV

[Documentation]  
**PAL EQN FILES:**  
 20L8BSL\_XICSD.PLD

**digital**  
 FIRST USED ON OPTION/MODEL: -

DRN: K. Yesse	DATE -	ENG: W. Chewbacca	DATE -
CHK'D: -	DATE -	BOARD LOCATION: CXO	
Thu Oct 20 17:05:31 1988		SHEET 38	NEXT HIGHER ASSEMBLY: -

TITLE: WILDCAT BOARD 1			
SIZE K	CODE CS	NUMBER -	REV 20OCT88

REV .  
 NUMBER .  
 CS  
 K  
 B

File: 20R4BSL\_MCTRL.PLD  
 Source: DISK\$HSBSIM\_B:[SIMULATION.CMS]

NAME MCTRL;  
 PARTNO NONE;  
 REVISION 03;  
 DATE 8/22/88;  
 DESIGNER Versace;  
 COMPANY DEC;  
 ASSEMBLY WILDASS;  
 LOCATION B86;  
 DEVICE P20R4;

/\* 4-12-88 moved pins around for new netlist - mr. rick \*/  
 /\* 4-13-88 READYL has been changed to READYH, so we simply changed  
 the polarity of the input (added ! ) to make the equations  
 right - mr.rick \*/  
 /\* 5-25-88 Added reset term to invaddr logic so invaddr will clear during  
 systst time since aclkc will be running \*/  
 /\* 8-22-88 modified for ICT engr. to provide tri state capabilities  
 also changed ready\_l to ready\_h and the associated ls \*/

/\* MEMORY CONTROL PAL \*/

/\*\* INPUTS \*\*/  
 pin 1 = ACLKC; /\* plcc pin1 \*/  
 pin 2 = ACLKB; /\* plcc pin2 \*/  
 pin 3 = BUF\_DS\_L; /\* plcc pin3 \*/  
 pin 4 = BUF\_AS\_L; /\* plcc pin4 \*/  
 pin 5 = REG\_WR\_L; /\* plcc pin6 \*/  
 pin 6 = READY\_H; /\* plcc pin7 \*/  
 pin 7 = SYSRST\_L; /\* plcc pin9 \*/  
 pin 8 = CADDR30; /\* plcc pin10 \*/  
 pin 9 = CADDR31; /\* plcc pin12 \*/  
 pin 10 = SPARE10; /\* plcc pin13 \*/  
 pin 11 = SPARE11; /\* plcc pin14 \*/  
 /\* pin 13 = rgnd 5 1 /\* plcc pin16 - OE16 \*/  
 pin 14 = SPARE14; /\* plcc pin17 \*/  
 pin 23 = VCCR\_44; /\* plcc pin27 \*/

/\*\* OUTPUTS \*\*/  
 pin 15 = SPARE15; /\* plcc pin18 \*/  
 pin 16 = SPARE16; /\* plcc pin20 \*/  
 pin 17 = SPARE17; /\* plcc pin21 \*/  
 pin 18 = SPARE18; /\* plcc pin22 \*/  
 pin 19 = SPARE19; /\* plcc pin23 \*/  
 pin 20 = !INV\_ADDR; /\* plcc pin24 \*/  
 pin 21 = !DEASSERT\_L; /\* plcc pin25 \*/  
 pin 22 = !DESELECT\_L; /\* plcc pin26 \*/

/\*\* LOGIC EQUATIONS \*\*/  
 /\* wr\_enable is fed to ceproms and srams. Will deassert 2 pal delays after the  
 start of phi4. This should be before DSL deassert so valid data will still be  
 on the cdal \*/

WR\_ENABLE\_L = !REG\_WR\_L & !DEASSERT\_L; /\* single cycles \*/  
 WR\_ENABLE\_L.OE = VCCR\_44;  
 INV\_ADDR.D = !CADDR31 & CADDR30 /\* Multiple read cycle -- only \*/  
 # /\* one address given so must \*/  
 !READY\_H & INV\_ADDR /\* invert CADDR 2 for second \*/  
 # /\* longword fetch -- ready \*/  
 READY\_H & !INV\_ADDR /\* indicates how far we've \*/  
 # /\* progressed in cycle \*/  
 !SYSRST\_L; /\* added 5-25-88 \*/

/\* bufdsl added \*/  
 DEASSERT\_L = !INV\_ADDR & READY\_H & ACLKB & !BUF\_DS\_L & !BUF\_AS\_L & SYSRST\_L /\* multiple reads \*/  
 #  
 !CADDR31 & CADDR30 & READY\_H & ACLKB & !BUF\_AS\_L & SYSRST\_L /\* single cycles \*/  
 #  
 !BUF\_AS\_L & SYSRST\_L & DEASSERT\_L; /\* System Reset prevents initial latch up \*/  
 /\* feedback latch up until end of cycle \*/

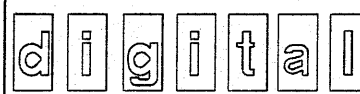
DEASSERT\_L.OE = VCCR\_44;  
 !  
 DESELECT\_L = DEASSERT\_L & !BUF\_AS\_L; /\* REG\_WR\_L removed \*/  
 !  
 DESELECT\_L.OE = VCCR\_44;

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CHK	CHANGE NO.	REV

[Documentation]  
**PAL EQN FILES:**  
**20R4BSL\_MCTRL.PLD**



DRN: K. Yesse	DATE	ENG: W. Chewbacca	DATE	TITLE: WILDCAT BOARD 1
CHK'D:	DATE	BOARD LOCATION: CXO		
		SHEET 39		
		NEXT HIGHER ASSEMBLY:		
		SIZE K	CODE CS	NUMBER
				REV 200CT88

FIRST USED ON OPTION/MODEL:

File: 20R4BSL\_READY.PLD  
 Source: DISK\$HSBSIM\_B:[SIMULATION.CMS]

20R4BSL\_READY.PLD continued..

```

NAME      READY;
PARTNO    NONE;
REVISION  02;
DATE      8/22/88;
DESIGNER  Versace;
COMPANY   DEC;
ASSEMBLY  WILDASS;
LOCATION    E83;
DEVICE    P20R4;

/* 4-12-88 moved pins around for new netlist - mr. rick */
/* 6-7-88 added one more flip flop delay to slow mem activity */
/* 6-8-88 changed the ready_h deassertion for the ceprom slip cycle */
/* conditions - mr. mike and mr. dave */
/* 6-17-88 added all hib logic to pal - mr. dave */
/* 6-24-88 replaced delayed as with buf as */
/* 7-6-88 changed cba to hib dir and changed its polarity to provide */
/* adequate delay for hib reads */
/* 7-11-88 sync fix for any arbitor related activity on writes */
/* 8-22-88 rearranged signals for dave's aesthetically pleasing schematics */

*****
/* READY GENERATION PAL */
*****

** INPUTS **

pin 1 = CLKC; /* plcc pin1 */
pin 2 = XIC_ACT_L; /* plcc pin2 */
pin 3 = BUF_DS_L; /* plcc pin3 */
pin 4 = BUF_AS_L; /* plcc pin4 */
pin 5 = REG_WR_L; /* plcc pin6 */
pin 6 = SLOW_MEM_ACT_L; /* plcc pin7 */
pin 7 = FAST_MEM_ACT_L; /* plcc pin9 */
pin 8 = WR_DIAG_CS_L; /* plcc pin10 */
pin 9 = RD_DIAG_CS_L; /* plcc pin12 */
pin 10 = NXM; /* plcc pin13 */
pin 11 = LOCK_L; /* plcc pin14 */
pin 13 = RGND1_L; /* plcc pin16 */
pin 14 = HIB_DIR; /* plcc pin17 */
pin 16 = ACLKC; /* plcc pin20 */
pin 21 = BRD2_ACT_L; /* plcc pin25 - added 6-8-88 for deassertion */
pin 23 = BUSCLK; /* plcc pin27 */

** OUTPUTS **

pin 15 = !READY_L; /* plcc pin18 */
pin 17 = !EE_1_L; /* plcc pin21 */
pin 18 = !EE_2_L; /* plcc pin22 */
pin 19 = !EE_3_L; /* plcc pin23 */
pin 20 = SPARE_REG20; /* plcc pin24 */
pin 22 = READY_H; /* plcc pin26 */

/* YOU WILL NOTE THAT READY IS ACTIVE HIGH!!!! */

** LOGIC EQUATIONS **

READY_H = READY_L & !ACLKC /* syncs with CVAX during */
/* last 50ns of data cycle */

#
EE_3_L & !BUF_DS_L & !ACLKC; /* EEPROM feedback */
/* BUF DS is used for */
/* deassertion during */
/* slipped cycles */
/* 6-8-88 */

READY_L = !FAST_MEM_ACT_L & !NXM /* Any SRAM select */
#
!WR_DIAG_CS_L & !NXM /* Write Diagnostic */
#
!RD_DIAG_CS_L & !NXM /* Read Diagnostic */
#
!BRD2_ACT_L & /* Write to board 2 */
!REG_WR_L & /* Write */
!LOCK_L & /* Nothing pending */
!BUSCLK &

```

```

INXM
#
!XIC_ACT_L & !REG_WR_L & /* Write to XIC */
!BUSCLK &
!LOCK_L & !INXM
#
!BRD2_ACT_L & !REG_WR_L & !LOCK_L & /* Read from BD2 */
!HIB_DIR & /* Processor grant completed */
!INXM /* and data latched in 646 */
#
!XIC_ACT_L & !REG_WR_L & !LOCK_L & /* Read from XIC */
!HIB_DIR & /* Processor grant completed */
!INXM /* and data latched in 646 */

|
EE_1_LD = !SLOW_MEM_ACT_L & !BUF_AS_L & /* must delay ready gen. */
!NXM; /* to account for 250ns */
EE_2_LD = EE_1_L & !BUF_AS_L; /* EEPROM access times */
|
EE_3_LD = EE_2_L & !BUF_AS_L;

```

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[Documentation]

PAL EQN FILES:  
20R4BSL\_READY.PLD



DRN: K. Yesse	DATE	ENG: W. Chewbacca	DATE	TITLE: WILDCAT BOARD 1
CHK'D: -	DATE	BOARD LOCATION: CXO	SHEET 40	SIZE K
FIRST USED ON OPTION/MODEL: -	Thu Oct 20 17:05:48 1988	NEXT HIGHER ASSEMBLY: -	NUMBER	REV 20OCT88



File: 20RA10SL\_CHCTL.PLD  
 Source: DISK\$HSBSIM\_B:[SIMULATION.CMS]

20RA10SL\_CHCTL.PLD continued..

NAME CHCTL;  
 PARTNO 23-000J8-01;  
 REVISION 01;  
 DATE 8/23/88;  
 DESIGNER Versace;  
 COMPANY DEC;  
 ASSEMBLY Wildcat board 1;  
 LOCATION E134;  
 DEVICE P20RA10;

```

  /* ***** */
  /* Wildcat BOARD 1 PAL: CVAX to HIB Control pal          */
  /* ***** */
  /* REVISION HISTORY:                                     */
  /* ***** */
  /* CUPL Rules of Thumb used herein:                      */
  /* 2) Noninverted outputs (without '!') indicate state  */
  /*    at latch Q output, or from polarity XOR if pass-thru. */
  /* 3) Inverting an entire expression should blow polarity fuse. */
  /* 4) Due to output lines being declared with '!' (by   */
  /*    definition), feedback lines will have opposite polarity */
  /*    than inputs when used in logic equations.          */
  /* ***** */
  
```

```

  /* 7-19-88 add 1 to xi_grant_l in 2nd term of hibto dpcl */
  /* 8/11/88 add 1 to xic_cxhic_cs_l in 3rd term of hibtodpc. Without
  /*          this, the hibtodpc asserts when the xism tries to write
  /*          the byte status to the workblock. - mr rick */
  /* 8-23-88 BUSCLK incorrectly listed as output is really input -- dmv */
  
```

```

  /** INPUTS **/
  pin 2 = STR_CXHC_CS_L;      /* p1cc pin 3 */
  pin 3 = STR_DPC_CS_L;      /* p1cc pin 4 */
  pin 4 = STR_WR_L;          /* p1cc pin 5 */
  pin 5 = XI_GRANT_L;         /* p1cc pin 6 */
  pin 6 = BUF_DBE_L;         /* p1cc pin 7 */
  pin 7 = XIC_GRANT_L;        /* p1cc pin 9 */
  pin 8 = PGRANT_L;           /* p1cc pin 10 */
  pin 9 = REG_WR_L;           /* p1cc pin 11 */
  pin 10 = SYSRST_L;          /* p1cc pin 12 */
  pin 11 = XIC_ACT_L;         /* p1cc pin 13 */
  pin 14 = BRD2_ACT_L;        /* p1cc pin 17 */
  pin 15 = XIC_CXHC_CS_L;     /* p1cc pin 18 */
  pin 16 = BUSCLK;           /* p1cc pin 19 */

  /* pin 1 = Vccr 29 H      p1cc pin 2 preload default */
  /* pin 13 = Rgnd 14 L     p1cc pin 16 output enable def. */
  
```

```

  /** OUTPUTS **/
  pin 17 = HACK;             /* p1cc pin 20 */
  pin 18 = XIC_REQ_L;        /* p1cc pin 21 */
  pin 19 = ILOCK_L;          /* p1cc pin 23 */
  pin 20 = IPREQ_L;          /* p1cc pin 24 */
  pin 21 = HIB_TO_DPC_L;     /* p1cc pin 25 */
  pin 22 = HIB_TO_CXHC_L;    /* p1cc pin 26 */
  pin 23 = ICXHC_TO_HIB_L;   /* p1cc pin 27 */
  
```

```

  /** LOGIC EQUATIONS **/
  CXHC_TO_HIB_L = !STR_CXHC_CS_L & /* PROC read of CXHC */
  STR_WR_L
  #
  !XIC_CXHC_CS_L & /* XISM write to data buffer */
  !STR_WR_L &
  !XI_GRANT_L;

  HIB_TO_CXHC_L = !STR_CXHC_CS_L & /* PROC write to CXHC */
  !STR_WR_L
  #
  !XIC_CXHC_CS_L & /* XISM read of data buffer */
  STR_WR_L &
  
```

```

  !XI_GRANT_L;
  HIB_TO_DPC_L = !STR_DPC_CS_L & /* PROC write to DPC */
  !STR_WR_L
  #
  !XI_GRANT_L & /* XISM read of data buffer */
  STR_WR_L /* or workblock polling by DPC */
  #
  !XI_GRANT_L & /* XMI write to data buffer */
  !STR_WR_L & /* EDC calculation by DPC */
  !XIC_CXHC_CS_L;

  /* LOCK L inhibits a current new CVAX HIB cycle from overwriting pending */
  /* old HIB cycle data which has not received a bus grant and thus */
  /* is still waiting to complete */
  /* LOCK is asserted on the rising edge of BUSCLK and remains asserted */
  /* until the end of a bus grant cycle */
  LOCK_L_D = !BRD2_ACT_L & /* HIB write initially sets LOCK L */
  !REG_WR_L &
  !LOCK_L /* LOCK not currently asserted */
  #
  !XIC_ACT_L & /* or CVAX write to XISM */
  !REG_WR_L &
  !LOCK_L /* LOCK not currently asserted */
  #
  XIC_GRANT_L & /* upon receiving either GRANT */
  PGRANT_L & /* deassert LOCK at end of cycle */
  LOCK_L; /* on rising edge of BUSCLK */

  LOCK_L_CK = BUSCLK;
  LOCK_L_AR = !SYSRST_L; /* Initial clear at power up */

  PREQ_L_D = !BRD2_ACT_L & /* If no XIC REQUEST is pending */
  !XIC_REQ_L & /* post PROC REQUEST on rising edge */
  SYSRST_L /* of Busclk H if BRD2 Activity asst */
  #
  SYSRST_L & /* Continue to assert request until */
  PREQ_L; /* receipt of GRANT */

  PREQ_L_CK = BUSCLK;
  PREQ_L_AR = !PGRANT_L; /* remove Processor Request */

  XIC_REQ_L_D = !PREQ_L & /* if no Processor Request pending */
  !XIC_ACT_L & /* assert XI Controller Request */
  SYSRST_L
  #
  SYSRST_L &
  XIC_REQ_L;

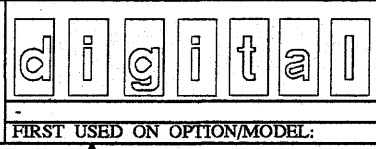
  XIC_REQ_L_CK = BUSCLK;
  XIC_REQ_L_AR = !XIC_GRANT_L; /* remove XI Controller Request */

  HACK = !BRD2_ACT_L & /* Provide clock to capture CVAX */
  !LOCK_L & /* HIB addr and control */
  !BUF_DBE_L /* assures CVAX addr and ctrl stable */
  #
  !XIC_ACT_L & /* allow assertion of synchronized */
  !LOCK_L & /* XIC chip selects */
  !BUF_DBE_L; /* assures CVAX CS stable */
  
```

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REVISIONS		
CHK	CHANGE NO.	REV

[Documentation]  
**PAL EQN FILES:**  
 20RA10SL\_CHCTL.PLD



DRN: K. Yesse	DATE	ENG: W. Chewbacca	DATE	TITLE: WILDCAT BOARD 1
CHK'D: -	DATE	BOARD LOCATION: CXO	SHEET 41	SIZE K
Thu Oct 20 17:05:55 1988	FIRST USED ON OPTION/MODEL: -	NEXT HIGHER ASSEMBLY: -	CODE CS	NUMBER -
				REV 200CT88

File: 20RA10SL\_MEMER.PLD  
 Source: DISK\$HSBSIM\_B:[SIMULATION.CMS]

NAME MEMER;  
 PARTNO 23-000J8-01;  
 REVISION 04;  
 DATE 8/26/88;  
 DESIGNER Versace;  
 COMPANY DEC;  
 ASSEMBLY Wildcat board 1;  
 LOCATION E142;  
 DEVICE P20RA10;

\*\*\*\*\*  
 /\* Wildcat BOARD 1 PAL: Memory Error Generator \*/  
 /\* REVISION HISTORY: \*/  
 /\* \*\*\*\*\*  
 /\* CUPL Rules of Thumb used herein: \*/  
 /\* 2) Noninverted outputs (without '!') indicate state \*/  
 /\* at latch Q output, or from polarity XOR if pass-thru. \*/  
 /\* 3) Inverting an entire expression should blow polarity fuse. \*/  
 /\* 4) Due to output lines being declared with '!' (by \*/  
 /\* definition), feedback lines will have opposite polarity \*/  
 /\* than inputs when used in logic equations. \*/  
 /\* \*\*\*\*\*

/\* 5/26/88 remove dpe from all equations since cvaxperrl is now qualified  
 in the dctrl\_pal with dpe and deassertl \*/  
 /\* 5/26/88 remove deselect from the .ck input on the rd diag reg cvax perrl  
 bit since cvaxperrl is now qualified with deassert in the dctrl\_pal \*/  
 /\* 6/14/88 total redesign of the memory error pal - 20ra10 changed to new  
 pinouts, but the kernal board will use the old... thus this pld file  
 was renamed to k20ra10sl\_memer.pld \*/  
 /\* 6/16/88 changed polarity err\_disable \*/  
 /\* 6/23/88 to please dave's schematics - switched buf ds and reg oen \*/  
 /\* 7/5/88 wrong sense of err\_disable in mem err equation \*/  
 /\* 8/22/88 modify dclk dis equation - removing xic perr  
 - changed reset to the xic perr latch to xic\_err\_reset \*/  
 /\* 8/26/88 modified mem err eqn so that if cvax perr and hib perr occur  
 simultaneously the pal will regenerate mem err after servicing  
 of the first of the two error indications \*/

/\* INPUTS \*/  
 pin 2 = REG\_OEN\_L; /\* plcc pin 3 \*/  
 pin 3 = SYSERR\_L; /\* plcc pin 4 \*/  
 pin 4 = RD\_DIAG\_ENA\_L; /\* plcc pin 5 \*/  
 pin 5 = ERR\_DISABLE\_L; /\* plcc pin 6 \*/  
 pin 6 = HIB\_PERR\_L; /\* plcc pin 7 \*/  
 pin 7 = REG\_CS2\_H; /\* plcc pin 9 \*/  
 pin 8 = SYSRST\_L; /\* plcc pin 10 \*/  
 pin 9 = CVAX\_PAR\_ERR; /\* plcc pin 11 \*/  
 pin 10 = ACLKC; /\* plcc pin 12 \*/  
 pin 11 = BUF\_DS\_L; /\* plcc pin 13 \*/  
 pin 14 = XIC\_ERR\_RESET\_L; /\* plcc pin 17 added 8/22/88 \*/  
 /\* pin 1 = Vccr 28 H plcc pin 2 preload default \*/  
 /\* pin 13 = Rgnd 12 L plcc pin 16 output enable def. \*/

/\* OUTPUTS \*/  
 pin 15 = !CDAL\_25\_H; /\* plcc pin 18 - VIC ERROR L \*/  
 pin 16 = !CDAL\_26\_H; /\* plcc pin 19 - DPC PERR L \*/  
 pin 17 = !CDAL\_27\_H; /\* plcc pin 20 - CVAX PERR L \*/  
 pin 18 = spare\_18; /\* plcc pin 21 - SPARE PIN \*/  
 pin 19 = !PAL\_RESET\_L; /\* plcc pin 23 \*/  
 pin 20 = !BUS\_TIMEOUT\_L; /\* plcc pin 24 \*/ /\* local output \*/  
 pin 21 = !DCLK\_DIS\_L; /\* plcc pin 25 \*/  
 pin 22 = !MEM\_ERR\_L; /\* plcc pin 26 \*/  
 pin 23 = !VIC\_ERROR\_L; /\* plcc pin 27 \*/ /\* local output \*/

20RA10SL\_MEMER.PLD continued..

/\* LOGIC EQUATIONS \*/  
 MEM\_ERR\_L = VIC\_ERROR\_L /\* VIC\_ERROR\_L asserted \*/  
 #  
 ERR\_DISABLE\_L & /\* ERR\_DISABLE deasserted \*/  
 !HIB\_PERR\_L & /\* DPC parity error asserted \*/  
 !PAL\_RESET\_L /\* deasst. -If clearing CVAX PERR \*/  
 /\* asserted MEM ERR will toggle \*/  
 #  
 ERR\_DISABLE\_L & /\* ERR\_DISABLE deasserted \*/  
 CVAX\_PAR\_ERR & /\* CVAX\_PAR\_ERR asserted \*/  
 XIC\_ERR\_RESET\_L; /\* deasst. -If clearing HIB PERR \*/  
 /\* asserted MEM ERR will toggle \*/  
 DCLK\_DIS\_L = CVAX\_PAR\_ERR /\* CVAX\_PAR\_ERR asserted \*/  
 #  
 BUS\_TIMEOUT\_L /\* or BUS\_TIMEOUT asserted \*/  
 #  
 VIC\_ERROR\_L; /\* or VIC\_ERROR\_L asserted \*/  
 PAL\_RESET\_L.D = !RD\_DIAG\_ENA\_L; /\* RD\_DIAG\_ENA\_L asserted \*/  
 PAL\_RESET\_L.CK = ACLKC; /\* Clocks on: CLKC 0->1 \*/  
 PAL\_RESET\_L.AP = !SYSRST\_L; /\* ASSERTED - assert pal\_reset\_L  
 on power up \*/  
 PAL\_RESET\_L.AR = SYSRST\_L & /\* SYSRST\_L deasserted \*/  
 !DCLK\_DIS\_L; /\* DCLK\_DIS\_L deasserted \*/  
 #  
 /\* CVAX\_PERR\_L part of read diag register \*/  
 CDAL\_27\_H.D = 'b'1; /\* Latch data always 1 \*/  
 #  
 /\* CLOCKS ON ERROR ASSERTION 1 -> 0 \*/  
 CDAL\_27\_H.CK = CVAX\_PAR\_ERR; /\* CVAX\_PAR\_ERR asserted \*/  
 CDAL\_27\_H.AR = PAL\_RESET\_L; /\* Resets on !PAL\_RESET\_L asserted \*/  
 CDAL\_27\_H.OE = !REG\_OEN\_L; /\* Enables on REG\_OEN\_L asserted \*/  
 #  
 /\* DPC\_PERR\_L part of read diag register \*/  
 CDAL\_26\_H.D = 'b'1; /\* Latch data always 1 \*/  
 #  
 /\* CLOCKS ON ERROR ASSERTION 1 -> 0 \*/  
 CDAL\_26\_H.CK = !HIB\_PERR\_L; /\* HIB\_PERR\_L asserts \*/  
 CDAL\_26\_H.AR = !XIC\_ERR\_RESET\_L; /\* Resets by sftw toggle of write \*/  
 /\* diagnostic register bit \*/  
 CDAL\_26\_H.OE = !REG\_OEN\_L; /\* Enables on REG\_OEN\_L asserted \*/  
 #  
 /\* VIC ERROR part of read diag register \*/  
 CDAL\_25\_H.D = 'b'1; /\* Latch data always 1 \*/  
 #  
 CDAL\_25\_H.CK = !REG\_CS2\_H & /\* Clocks on: BUUV\_CS2\_H 1->0 \*/  
 !SYSERR\_L; /\* ERR\_L asserted \*/  
 CDAL\_25\_H.AR = PAL\_RESET\_L; /\* Resets on PAL\_RESET\_L asserted \*/  
 CDAL\_25\_H.OE = !REG\_OEN\_L; /\* Enables on REG\_OEN\_L asserted \*/  
 #  
 /\* WHEN CS2 IS LOW AND SYSERR IS ASSERTED, THEN WE ARE PROBABLY IN AN INT ACK  
 CYCLE AND MUST POST MEM\_ERR TO GET OUT OF AN INFINITE LOOP.  
 This signal does not need to be cleared since syserr will deassert on the  
 next cycle. This circuit is required since the CDAL 25 H ckt is tristated  
 until read and thus can not provide feedback. \*/  
 VIC\_ERROR\_L.D = !REG\_CS2\_H & /\* REG\_CS2\_H deasserted \*/  
 !SYSERR\_L; /\* ERR\_L asserted \*/  
 #  
 /\* Clocks at the end of the cycle when BUF\_DS\_L goes high (deasserts)  
 and DCLK\_DIS\_L is deasserted \*/  
 VIC\_ERROR\_L.CK = BUF\_DS\_L & /\* BUF\_DS\_L deasserts \*/

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REVISIONS		
CHK	CHANGE NO.	REV

[Documentation]  
**PAL EQN FILES:**  
 20RA10SL\_MEMER.PLD

**digital**  
 DRN: K. Yesse  
 DATE: Thu Oct 20 17:06:02 1988  
 CHK'D: -  
 FIRST USED ON OPTION/MODEL: -

DRN: K. Yesse	DATE: Thu Oct 20 17:06:02 1988	ENG: W. Chewbacca	DATE: -	TITLE: WILDCAT BOARD 1
CHK'D: -	DATE: -	BOARD LOCATION: CXO	SHEET 42	NEXT HIGHER ASSEMBLY: -

SIZE K	CODE CS	NUMBER -	REV 200CT88
--------	---------	----------	-------------

20RA10SL\_MEMER.PLD continued..  
 Source: DISK\$HSBSIM\_B:[SIMULATION.CMS]

```

!DCLK_DIS_L; /* DCLK_DIS_L deasserted */
VIC_ERROR_LAR = PAL_RESET_L; /* Resets on PAL_RESET_L asserted */
/* Any NXM will result in the SSC asserting SYSERR due to a CVAX */
/* bus timeout - this error will only disable error reporting regs. */
BUS_TIMEOUT_L.D = REG_CS2_H & /* REG_CS2_H asserted */
!SYSERR_L; /* ERR_L asserted */
/* Clocks at the end of the cycle when BUF_DS_L goes high (deasserts)
and DCLK_DIS_L is deasserted */
BUS_TIMEOUT_L.CK = !DCLK_DIS_L & /* DCLK_DIS_L deasserted */
BUF_DS_L; /* BUF_DS_L deasserts */
BUS_TIMEOUT_L.AR = PAL_RESET_L; /* reset on PAL_RESET_L asserted */
  
```

D  
C  
B  
A

D  
C  
B  
A

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REVISIONS		
CHK	CHANGE NO.	REV

[Documentation]  
**PAL EQN FILES:**  
 20RA10SL\_MEMER.PLD

**digital**

FIRST USED ON OPTION/MODEL: Thu Oct 20 17:06:07 1988

DRN:	K. Yesse	DATE	-	ENG :	W. Chewbacca	DATE	-
CHK'D:	-	DATE	-	BOARD LOCATION:	CXO	SHEET 43	
NEXT HIGHER ASSEMBLY:				-			

TITLE:			
WILDCAT BOARD 1			
SIZE	CODE	NUMBER	REV
K	CS	-	20OCT88

REV  
NUMBER  
CS  
K  
B

File: 20RA10SL\_PARR4.PLD  
 Source: DISK\$HSBSIM\_B:[SIMULATION.CMS]

NAME PARR4;  
 PARTNO 23-000J8-01;  
 REVISION 02;  
 DATE 9/9/88;  
 DESIGNER Versace;  
 COMPANY DEC;  
 ASSEMBLY Wildcat board 1;  
 LOCATION E136;  
 DEVICE P20RA10;

```

*****
/* Wildcat BOARD 1 PAL: HIB PARITY PAL */
/* REVISION HISTORY: */
/* never was one never will be one... I has spokin */
/* Rev 1 -- 9/7/88 - modified clock equation in HIB PERR clk thus */
/* changing HIB PERR from pulse to a level so we */
/* don't drop this error inside the MEMERR pal */
/* under simultaneous error assertions */
/* Rev 2 -- 9/9/88 - reversed dip pinning between VAL BM1 & XIC PERR */
/* Rev 3 -- 9/20/88 - correct VAL BM equation so DeMorgan doesn't */
/* blow polarity fuse thus inverting VAL BM output */
*****
/* CUPL Rules of Thumb used herein: */
/* 2) Noninverted outputs (without '!') indicate state */
/* at latch Q output, or from polarity XOR if pass-thru. */
/* 3) Inverting an entire expression should blow polarity fuse. */
/* 4) Due to output lines being declared with '!' (by */
/* definition), feedback lines will have opposite polarity */
/* than inputs when used in logic equations. */
*****
  
```

```

** INPUTS **
pin 2 = XIC_PERR0_L; /* plcc pin 3 */
pin 3 = XIC_PERR1_L; /* plcc pin 4 */
pin 4 = XIC_PERR2_L; /* plcc pin 5 */
pin 5 = XIC_PERR3_L; /* plcc pin 6 */
pin 6 = CXHIC_PERR_L; /* plcc pin 7 */
pin 7 = HIB_BM0_L; /* plcc pin 9 */
pin 8 = HIB_BM1_L; /* plcc pin 10 */
pin 9 = HIB_BM2_L; /* plcc pin 11 */
pin 10 = HIB_BM3_L; /* plcc pin 12 */
pin 11 = XIC_ERR_RESET_L; /* plcc pin 13 */
pin 14 = BUSCLK; /* plcc pin 17 */
pin 15 = HIB_TO_DPC_L; /* plcc pin 18 */
pin 16 = HIB_TO_CXHIC_L; /* plcc pin 19 */
  
```

```

/* pin 1 = Vccr 40 H plcc pin 2 preload default */
/* pin 13 = Rgnd 21 L plcc pin 16 output enable def. */
  
```

```

** OUTPUTS **
pin 23 = !REG_CXHIC_PERR_L; /* plcc pin 27 */
pin 22 = !HIB_PERR_L; /* plcc pin 26 */
pin 21 = VAL_BM3; /* plcc pin 25 */
pin 20 = VAL_BM2; /* plcc pin 24 */
pin 19 = VAL_BM1; /* plcc pin 23 */
pin 18 = VAL_BM0; /* plcc pin 21 */
pin 17 = !XIC_PERR_L; /* plcc pin 20 */
  
```

```

** LOGIC EQUATIONS **
/* THE DPC's AS286 PARITY GENERATOR/CHECKERS PERFORM AS FOLLOWS: */
/* DPC XISM OPERATIONS: Writes - parity generation no checking */
/* Reads - parity checking and error detection */
/* CVAX OPERATIONS: Writes - parity checking and error detection */
/* Reads - parity generation no checking */
  
```

20RA10SL\_PARR4.PLD continued..

```

/* Since the HIB BMs are only valid during next grant cycles they are */
/* registered to provide correct info during error detection portion */
/* the grant cycle */
VAL_BM0.D = !HIB_BM0_L; /* If HIB BM = 0, then assert VAL BM = 1 */
VAL_BM0.CK = BUSCLK; /* Clocked on rising edge (0->1) of Busclk */
/* at the beginning of the grant cycle */
VAL_BM1.D = !HIB_BM1_L;
VAL_BM1.CK = BUSCLK;
VAL_BM2.D = !HIB_BM2_L;
VAL_BM2.CK = BUSCLK;
VAL_BM3.D = !HIB_BM3_L;
VAL_BM3.CK = BUSCLK;
  
```

```

/* This error will be generated by: */
/* 1) CXHIC write to data buffer mem -- DPC calc EDC */
/* 2) CXHIC read of data buffer mem -- DPC chk EDC */
/* 3) XISM work block polling */
/* 4) CXHIC determination of HIB DATA Parity Error */
/* 5) CVAX write to XIC */
XIC_PERR_L = HIB_PERR_L /* Assert if Hib Perr asserted */
#
REG_CXHIC_PERR_L /* or if CXHIC Perr is asserted */
#
XIC_PERR_L & /* or if Feedback latch up asserted */
XIC_ERR_RESET_L; /* and error reset not asserted */
/* Maintains the error assertion */
/* until cleared by sftwr servicing */
  
```

```

/* The CXHIC provides an async. parity error signal so it is */
/* sampled and registered inside of this pal */
REG_CXHIC_PERR_L.D = !CXHIC_PERR_L & /* CXHIC detected parity error */
/* and operation involving CXHIC */
HIB_TO_CXHIC_L;
REG_CXHIC_PERR_L.CK = BUSCLK; /* Clocked on rising edge (0->1) */
/* of Busclk at end of grant cycle */
REG_CXHIC_PERR_L.AR = !XIC_ERR_RESET_L; /* asserted by WR Diag Reg after */
/* error serviced by software */
  
```

```

/* Every time data is read into the DPC the 74AS286 are checking byte */
/* parity. These devices provide most of the HIB BUS error detection */
HIB_PERR_L.D = !HIB_TO_DPC_L & /* Hib to DPC asserted - DPC xcvr ena */
/* and XIC Perr 0 is asserted by 286 */
/* and the byte mask is valid */
XIC_PERR0_L &
VAL_BM0
#
HIB_TO_DPC_L &
XIC_PERR1_L &
VAL_BM1
#
HIB_TO_DPC_L &
XIC_PERR2_L &
VAL_BM2
#
HIB_TO_DPC_L &
XIC_PERR3_L &
VAL_BM3;
HIB_PERR_L.CK = BUSCLK & /* clock the register at the end of */
/* grant cycle when Busclk goes 0->1 */
/* and we aren't in an error state */
HIB_PERR_L;
HIB_PERR_L.AR = !XIC_ERR_RESET_L; /* Cleared by bit clr then bit set in */
/* Wrt Diag by sftwr servicing routine */
  
```

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REVISIONS		
CHK	CHANGE NO.	REV

[Documentation]  
**PAL EQN FILES:**  
 20RA10SL\_PARR4.PLD

**digital**  
 FIRST USED ON OPTION/MODEL: -

DRN: K. Yesse  
 DATE: -  
 CHK'D: -  
 DATE: -  
 Thu Oct 20 17:06:13 1988

ENG: W. Chewbacca  
 DATE: -  
 BOARD LOCATION: CXO  
 SHEET 44  
 NEXT HIGHER ASSEMBLY: -

TITLE: WILDCAT BOARD 1			
SIZE	CODE	NUMBER	REV
K	CS	-	20OCT88

REV .  
 NUMBER .  
 CS .  
 K .  
 B .

File: 20RA10SL\_XSYNC.PLD  
 Source: DISK\$HSBSIM\_B:[SIMULATION.CMS]

NAME XSYNC;  
 PARTNO 23-000J8-01;  
 REVISION 00;  
 DATE 6/21/88;  
 DESIGNER Versace;  
 COMPANY DEC;  
 ASSEMBLY Wildcat board 1;  
 LOCATION E39;  
 DEVICE P20RA10;

```

*****
/* Wildcat BOARD 1 PAL: XIC Synchronization PAL */
/* REVISION HISTORY: */
*****
/*
/* CUPL Rules of Thumb used herein:
/* 2) Noninverted outputs (without '!') indicate state
/* at latch Q output, or from polarity XOR if pass-thru.
/* 3) Inverting an entire expression should blow polarity fuse.
/* 4) Due to output lines being declared with '!' (by
/* definition), feedback lines will have opposite polarity
/* than inputs when used in logic equations.
/*
*****
  
```

```

/* 8/17/88 - registered dma_req so glitches on prom address lines do not
/* assert dma_req to cxhic */
  
```

```

/** INPUTS **/
pin 2 = BUSCLK; /* plcc pin 3 */
pin 3 = XIC_NXT_GRT_L; /* plcc pin 4 */
pin 4 = CRAM_TST_DIS; /* plcc pin 5 */
pin 5 = XIC_REQ_L; /* plcc pin 6 */
pin 6 = XIC_PERR_L; /* plcc pin 7 */
pin 7 = XIC_CXHIC_CS_L; /* plcc pin 9 */
pin 8 = XISM_CS_L; /* plcc pin 10 */
pin 9 = CXHIC_CS_L; /* plcc pin 11 */
pin 10 = DPC_CS_L; /* plcc pin 12 */
pin 11 = HIB_WR_L; /* plcc pin 13 */
pin 15 = HACK; /* plcc pin 18 */
  
```

```

/* pin 1 = Vccr 32 H plcc pin 2 preload default */
/* pin 13 = Rgnd 16 L plcc pin 16 output enable def. */
  
```

```

/** OUTPUTS **/
pin 14 = SPARE14; /* plcc pin 17 */
pin 16 = IDMA_REQ_L; /* plcc pin 19 */
pin 17 = !SYNC_XISM_CS_L; /* plcc pin 20 */
pin 18 = !SYNC_CXHIC_CS_L; /* plcc pin 21 */
pin 19 = !SYNC_DPC_CS_L; /* plcc pin 23 */
pin 20 = !STR_XISM_CS_L; /* plcc pin 24 */
pin 21 = !STR_CXHIC_CS_L; /* plcc pin 25 */
pin 22 = !STR_DPC_CS_L; /* plcc pin 26 */
pin 23 = !STR_WR_L; /* plcc pin 27 */
  
```

```

/** LOGIC EQUATIONS **/
/* SYNC_DPC_CS is always = 1 by means of an external pullup resistor,
/* until next grant asserts then it = 0. When next grant deasserts
/* so does SYNC_DPC_CS_L */
  
```

```

SYNC_DPC_CS_L.D = !DPC_CS_L; /* DPC CS asserted */
SYNC_DPC_CS_L.OE = !XIC_NXT_GRT_L; /* output enabled when asserted */
SYNC_DPC_CS_L.CK = BUSCLK & HACK; /* clocked 0 -> 1 */

STR_DPC_CS_L.D = SYNC_DPC_CS_L; /* SYNC DPC CS asserted */
STR_DPC_CS_L.CK = BUSCLK; /* clocked 0 -> 1 */
  
```

20RA10SL\_XSYNC.PLD continued..

```

/* Like sync dpc cs, SYNC_XISM_CS is always = 1 until next grant */
/* asserts then it = 0. When next grant deasserts, CS deasserts */
SYNC_XISM_CS_L.D = !XISM_CS_L; /* XISM CS asserted */
SYNC_XISM_CS_L.OE = !XIC_NXT_GRT_L; /* output enabled when asserted */
SYNC_XISM_CS_L.CK = BUSCLK & HACK; /* clocked 0 -> 1 */

STR_XISM_CS_L.D = SYNC_XISM_CS_L; /* SYNC XISM CS asserted */
STR_XISM_CS_L.CK = BUSCLK; /* clocked 0 -> 1 */

/* NOTE: SYNC_CXHIC_CS is always = 1 until next grant asserts then = 0 */
/* until next grant deasserts */
SYNC_CXHIC_CS_L.D = !CXHIC_CS_L; /* CXHIC CS asserted */
SYNC_CXHIC_CS_L.OE = !XIC_NXT_GRT_L; /* output enabled when asserted */
SYNC_CXHIC_CS_L.CK = BUSCLK & HACK; /* clocked 0 -> 1 */

STR_CXHIC_CS_L.D = SYNC_CXHIC_CS_L; /* SYNC CXHIC CS asserted */
STR_CXHIC_CS_L.CK = BUSCLK; /* clocked 0 -> 1 */

STR_WR_L.D = !HIB_WR_L; /* HIB WR asserted */
STR_WR_L.CK = BUSCLK; /* clocked 0 -> 1 */

/* this signal tells the CXHIC to kick off an XMI transfer */
DMA_REQ_L.D = !XIC_REQ_L & /* Asserted */
!CRAM_TST_DIS & /* deasserted */
XIC_PERR_L; /* deasserted */

DMA_REQ_L.CK = BUSCLK; /* clocked 0 -> 1 */
  
```

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REVISIONS		
CHK	CHANGE NO.	REV

[Documentation]  
**PAL EQN FILES:**  
 20RA10SL\_XSYNC.PLD

**digital**

FIRST USED ON OPTION/MODEL: -

DRN: K. Yesse	DATE
CHK'D: -	DATE
Thu Oct 20 17:06:19 1988	

ENG: W. Chewbacca	DATE
BOARD LOCATION: CXO	
SHEET 45	
NEXT HIGHER ASSEMBLY:	

TITLE: WILDCAT BOARD 1			
SIZE K	CODE CS	NUMBER -	REV 200CT84

REV .  
 NUMBER .  
 CS  
 K  
 B













Output Sources for nets listed in cross-reference available upon request

Output Source Key: o> general output t> tristate output b> bidirectional output

Table with 8 columns (8-1) listing various signal names and their corresponding net numbers. Column 1 (net number) is on the right side of the page. Signal names include C84-1, C85-1, R129-1, E142-1, E15-7, R210-2, E12-11, E30-109, R220-2, etc.

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Table with 3 columns: CHK, CHANGE NO., REV. Under the heading REVISIONS.

[Documentation] CROSS REFERENCE: Signal Names



Form with fields for DRN: K. Yesse, DATE, ENG: C. Threepio, DATE, BOARD LOCATION: CXO, SHEET 55, NEXT HIGHER ASSEMBLY: SIZE K, CODE CS, NUMBER, REV 200C188

FIRST USED ON OPTION/MODEL: Thu Oct 20 17:09:45 1988

Output Sources for nets listed in cross-reference available upon request

Output Source Key: o> general output t> tristate output b> bidirectional output

Table of signal names and their locations on the board. Columns are labeled 1 through 8. Signal names include XIC DAL 05 H, XIC DAL 23 H, E24-3 p.17, etc. Some are marked with output type letters like 'o', 't', or 'b'.

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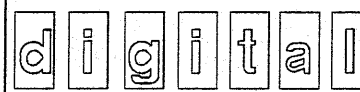
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REVISIONS

Table with columns: CHK, CHANGE NO., REV. It shows revision history.

[Documentation]

CROSS REFERENCE: Signal Names



DRN: K. Yesse

DATE

ENG: C. Threepio

DATE

TITLE: WILDCAT BOARD 1

CHK'D: -

DATE

BOARD LOCATION: CXO

SHEET 56

NEXT HIGHER ASSEMBLY:

Thu Oct 20 17:10:17 1988

FIRST USED ON OPTION/MODEL:

SIZE K CS

NUMBER

REV 200CT88

Output Sources for nets listed in cross-reference available upon request

Output Source Key: o> general output t> tristate output b> bidirectional output

- XMI RUN L:
- A\_54-1 p.26
- XMI SPARE0 L:
- B\_47-1 p.26
- R24-1 p.24
- XMI SPARE0 ST L:
- E29-27 p.24
- R24-2 p.24
- XMI SPAREBIT0 L:
- C\_46-1 p.26
- XMI SPAREBIT1 L:
- C\_50-1 p.26
- XMI SPAREBIT2 L:
- A\_35-1 p.26
- XMI SPAREBIT3 L:
- A\_37-1 p.26
- XMI SPAREBIT4 L:
- A\_39-1 p.26
- XMI SUP L:
- A\_31-1 p.26
- R301-1 p.25
- XMI SUP ST L:
- E162-27 p.25
- R301-2 p.25
- XMI TIME H:
- C\_59-1 p.26
- t>E60-30 p.24
- XMI TIME L:
- C\_57-1 p.26
- E60-31 p.24

D

D

C

C

B

B

A

A

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REVISIONS		
CHK	CHANGE NO.	REV

[Documentation]  
**CROSS REFERENCE:**  
Signal Names

**digital**

FIRST USED ON OPTION/MODEL: -

DRN:	K. Yesse	DATE	-
CHK'D:	-	DATE	-
Thu Oct 20 17:10:24 1988		-	

ENG :	C. Threepio	DATE	-
BOARD LOCATION: CXO		-	
SHEET 57		-	
NEXT HIGHER ASSEMBLY: -			

TITLE: WILDCAT BOARD 1			
SIZE	CODE	NUMBER	REV
K	CS	-	20OCT88

REV .  
NUMBER  
SIZE CODE  
K CS  
B



**PART I: PARTS COUNT SUMMARY**

Generic Parts Summary for WC\_BRD1/REVA1\_12 - Generated 20-OCT-1988 16:34:46

PROTO QTY	FRS QTY	Generic Part Name
2	2	16R8DSL
2	7	20L8BSL
2	2	20R4BSL
4	4	20RA10SL
1	0	27C256
12	12	28256SL
4	4	29863SL
25	25	5258PSOJ
8	8	6287SOJ
7	7	74ALS374SL
5	5	74ALS646SL
4	4	74ALS666SO
11	11	74AS286SO
1	1	74AS821SL
11	11	74AS823SL
1	1	74F00SO
1	1	74F04SO
2	2	74F08SO
1	1	74F132SO
1	1	74F240SO
4	4	74F245DSO
6	6	74F257SO
3	3	74F32SO
1	1	74F38SO
1	1	74F521SO
1	1	74F74SO
1	1	74F86SO
1	1	74FCT163ASOL
6	6	74FCT244ASO
3	3	74FCT841BSO
1	1	74FCT843BSO
1	1	74LS221SO
2	0	9636
1	0	9639
1	1	BICDPC
203	201	CAP.C
2	2	CPCAP
4	4	CY7C128SOJ
1	1	DC341A
1	1	DC506
1	1	DC509
1	1	DC511
7	7	DC530
1	1	DC531P
1	1	DC7157
1	0	ESDTAB
300	0	FINGER
1	1	LEDA
1	1	LEDX4
1	1	PC2CONN100A
7	7	POST
313	305	RES.C
1	0	SPSOIC14
1	1	SW.SPDT
1	1	TCO711SS
0	1	27C256SL
172	0	[Mark Eyelets]

**PART II: EXCESS SPARES LIST**

Excess Spare Parts/Gates Summary for WC\_BRD1/REVA1\_12 - Generated 20-OCT-1988 16:34:45

-- NO EXCESS SPARES FOUND --

**PART III: PACKAGE-SPECIFIC LOGIC PART SUMMARIES**

== PLCC-Packaged Parts ==

PROTO QTY	FRS QTY	Generic Part Name
2	2	16R8DSL
7	7	20L8BSL
2	2	20R4BSL
4	4	20RA10SL
12	12	28256SL
4	4	29863SL
7	7	74ALS374SL
5	5	74ALS646SL
1	1	74AS821SL
11	11	74AS823SL
0	1	27C256SL

== SOIC-Packaged Parts ==

PROTO QTY	FRS QTY	Generic Part Name
4	4	74ALS666SO
11	11	74AS286SO
1	1	74F00SO
1	1	74F04SO
2	2	74F08SO
1	1	74F132SO
1	1	74F240SO
4	4	74F245DSO
6	6	74F257SO
3	3	74F32SO
1	1	74F38SO
1	1	74F521SO
1	1	74F74SO
1	1	74F86SO
1	1	74FCT163ASOL
6	6	74FCT244ASO
3	3	74FCT841BSO
1	1	74FCT843BSO
1	1	74LS221SO

== SOJ-Packaged Parts ==

PROTO QTY	FRS QTY	Generic Part Name
25	25	5258PSOJ
8	8	6287SOJ
4	4	CY7C128SOJ

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REVISIONS		
CHK	CHANGE NO.	REV

[Documentation]  
**PART LIST INFO:**  
Part Summaries &  
Excess Spares List

**digital**  
FIRST USED ON OPTION/MODEL: -

DRN: K. Yesse  
CHK'D: -  
DATE -  
Thu Oct 20 17:12:04 1988

ENG: C. Threepio  
BOARD LOCATION: CXO  
SHEET 60  
NEXT HIGHER ASSEMBLY: -

TITLE: WILDCAT BOARD 1  
SIZE K  
CODE CS  
NUMBER -  
REV 20OCT88

REV NUMBER B K CS

PART IV: DETAILED PART LIST

continued...

Detailed Parts List (w/Ref. Des.) for WC\_BRD1/REVA1\_I2 - Generated 20-OCT-1988 16:35:09  
[Sorted by Generic Part Number]

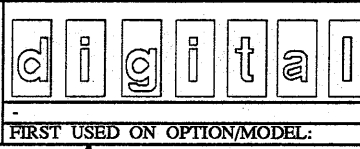
Quantity	Generic Name	DEC Part No.	Part Reference Designators
QTY: 1	16R8DSL	ID-ARBIT-P1	E31
QTY: 1	16R8DSL	ID-IIADD-P1	E43
QTY: 1	20L8BSL	ID-BOGEY-P1	E10
QTY: 1	20L8BSL	ID-CV2HB-P1	E38
QTY: 1	20L8BSL	ID-DCTRL-P1	E103
QTY: 1	20L8BSL	ID-HIBSD-P1	E137
QTY: 1	20L8BSL	ID-PRMDE-P1	E122
QTY: 1	20L8BSL	ID-RGCTL-P1	E151
QTY: 1	20L8BSL	ID-XICSD-P1	E118
QTY: 1	20R4BSL	ID-MCTRL-P1	E150
QTY: 1	20R4BSL	ID-READY-P1	E146
QTY: 1	20RA10SL	ID-CHCTL-PIN	E20
QTY: 1	20RA10SL	ID-MEMER-PIN	E104
QTY: 1	20RA10SL	ID-PARR4-PIN	E24
QTY: 1	20RA10SL	ID-XSYNC-PIN	E41
QTY: 1	27C256	23-000E6-07	E158
QTY: 1	28256SL	ID-STR10-P2	E111
QTY: 1	28256SL	ID-STR11-P2	E110
QTY: 1	28256SL	ID-STR12-P2	E68
QTY: 1	28256SL	ID-STR13-P2	E83
QTY: 1	28256SL	ID-STR20-P2	E148
QTY: 1	28256SL	ID-STR21-P2	E70
QTY: 1	28256SL	ID-STR22-P2	E82
QTY: 1	28256SL	ID-STR23-P2	E128
QTY: 1	28256SL	ID-STR30-P2	E129
QTY: 1	28256SL	ID-STR31-P2	E98
QTY: 1	28256SL	ID-STR32-P2	E99
QTY: 1	28256SL	ID-STR33-P2	E147
QTY: 4	29863SL	19-26845-01	E17,E3,E6,E7
QTY: 25	5258PSOJ	21-26937-05	E101,E102,E108,E109,E115,E116,E124,E125,E132,E133,E144,E145,E155,E156,E157,E66
QTY: 8	6287SOJ	21-24781-04	E67,E74,E75,E78,E79,E86,E87,E96,E97
QTY: 7	74ALS374SL	19-23441-01	E100,E105,E114,E131,E143,E71,E77,E93
QTY: 5	74ALS646SL	19-26843-01	E121,E136,E138,E154,E72,E84,E95
QTY: 4	74ALS666SO	19-28730-01	E21,E33,E44,E46,E56
QTY: 11	74AS286SO	19-26848-01	E106,E69,E80,E94
QTY: 1	74AS821SL	19-26837-01	E1,E13,E34,E35,E36,E37,E48,E64,E65,E73,E81
QTY: 11	74AS823SL	19-23453-02	E59
QTY: 1	74F00SO	19-21305-02	E11,E15,E18,E19,E22,E23,E25,E5,E8,E9,E90
QTY: 1	74F04SO	19-21307-02	E58
QTY: 2	74F08SO	19-21308-02	E135
QTY: 1	74F132SO	19-26844-01	E61,E62
QTY: 1	74F240SO	19-21008-02	E134
QTY: 4	74F245DSO	19-20441-02	E120
QTY: 6	74F257SO	19-21330-02	E16,E26,E27,E4
QTY: 3	74F32SO	19-21312-02	E14,E2,E50,E52,E53,E55
QTY: 1	74F38SO	19-26139-01	E123,E130,E85
QTY: 1	74F521SO	19-21417-02	E153
QTY: 1	74F74SO	19-21314-02	E152
QTY: 1	74F86SO	19-21315-02	E126
QTY: 1	74FCT163ASOL	21-30158-01	E142
QTY: 6	74FCT244ASO	21-30486-01	E113
QTY: 3	74FCT841BSO	21-30289-01	E119,E28,E39,E47,E51,E54
QTY: 1	74FCT843BSO	21-30474-01	E107,E76,E89
QTY: 1	74LS221SO	19-12858-02	E112
QTY: 2	9636	19-15415-00	E127
QTY: 1	9639	19-19542-01	E139,E141
QTY: 1	BICDPC	21-27781-01	E140
QTY: 2	CAP C	10-24051-10	E40
QTY: 160	CAP,C	10-24053-01	C42,C46
QTY: 8	CAP,C	10-24053-12	C100,C101,C102,C103,C104,C105,C106,C107,C109,C110,C111,C112,C113,C114,C115,C117
QTY: 33	CAP,C	10-24053-18	C118,C119,C120,C122,C123,C124,C125,C126,C127,C128,C129,C131,C132,C133,C134,C135
QTY: 2	CPCAP	10-24455-08	C136,C139,C140,C141,C142,C143,C144,C145,C146,C148,C149,C150,C152,C153,C154,C155
QTY: 4	CY7C128SOJ	21-17872-13	C158,C160,C161,C162,C163,C164,C165,C167,C168,C169,C170,C172,C173,C174,C175,C176
QTY: 1	DC341A	21-24674-13	C177,C178,C180,C181,C182,C183,C187,C188,C189,C191,C192,C193,C194,C195,C196,C197
QTY: 1	DC506	21-24330-02	C198,C200,C201,C202,C204,C205,C22,C23,C24,C25,C26,C27,C28,C29,C30,C31,C32,C33,C34
QTY: 1	DC509	21-24673-01	C35,C36,C37,C38,C39,C40,C41,C43,C44,C47,C48,C49,C50,C51,C52,C53,C54,C55,C56,C58
QTY: 1	DC511	21-24942-03	C59,C60,C61,C62,C63,C64,C65,C66,C67,C68,C69,C70,C71,C72,C73,C74,C75,C76,C77,C78
QTY: 7	DC530	21-26702-02	C79,C80,C81,C82,C83,C84,C85,C86,C87,C88,C89,C90,C91,C92,C93,C94,C95,C96,C97,C98,C99
QTY: 1	DC531P	21-26703-01	C11,C12,C156,C157,C184,C185,C5,C6
QTY: 1	DC7157	ID-X7157-01	C1,C10,C108,C116,C121,C13,C130,C137,C138,C14,C147,C15,C151,C159,C16,C166,C17,C171
			C179,C18,C186,C19,C190,C199,C2,C20,C203,C21,C3,C4,C7,C8,C9
			C45,C57
			E32,E42,E49,E57
			E91
			E63
			E117
			E92
			E12,E159,E160,E161,E162,E29,E45
			E60
			E30

QTY: 1	ESDTAB	99-99999-96	U1
QTY: 1	LEDA	11-17373-02	D101
QTY: 1	LEDX4	11-20964-01	E88
QTY: 1	PC2CONN100A	ID-40697-01	J3
QTY: 7	POST	90-07791-00	TP0,TP1,TP2,TP3,TP4,TP5,TP6
QTY: 71	RES,C	13-23825-13	R112,R113,R114,R119,R121,R122,R123,R126,R127,R128,R131,R132,R133,R135,R136,R137
			R138,R139,R140,R141,R142,R143,R144,R145,R146,R147,R148,R150,R151,R153,R154,R155
			R157,R161,R162,R163,R164,R165,R169,R170,R172,R173,R174,R175,R177,R178,R179,R180
			R181,R182,R183,R184,R185,R186,R187,R188,R189,R190,R191,R192,R194,R195,R196,R197
			R200,R202,R203,R204,R207,R209,R211
QTY: 39	RES,C	13-23825-25	R102,R107,R108,R111,R124,R130,R134,R156,R214,R224,R225,R234,R236,R251,R260,R265
			R266,R277,R284,R288,R290,R293,R298,R303,R304,R305,R306,R307,R309,R310,R311,R53,R59
			R60,R61,R81,R92,R96,R98
QTY: 4	RES,C	13-23825-33	R63,R69,R74,R75
QTY: 1	RES,C	13-23825-41	R51
QTY: 95	RES,C	13-23825-49	R100,R101,R103,R104,R105,R106,R109,R110,R115,R116,R117,R118,R120,R125,R129,R149
			R152,R158,R159,R160,R166,R167,R168,R171,R176,R193,R210,R215,R219,R220,R221,R222
			R228,R230,R231,R232,R237,R238,R240,R245,R247,R248,R252,R254,R255,R256,R261,R263
			R270,R271,R272,R273,R274,R275,R280,R281,R285,R289,R295,R297,R300,R302,R312,R313
			R35,R38,R39,R52,R54,R55,R56,R57,R62,R64,R65,R66,R71,R72,R77,R79,R80,R82,R83,R84
			R85,R86,R87,R88,R89,R90,R93,R94,R95,R97,R99
QTY: 2	RES,C	13-23825-61	R78,R91
QTY: 2	RES,C	13-23825-65	R68,R70
QTY: 4	RES,C	13-23826-10	R58,R67,R73,R76
QTY: 11	RES,C	13-23827-30	R10,R223,R24,R249,R278,R301,R37,R40,R41,R42,R43
QTY: 84	RES,C	13-23827-47	R1,R11,R12,R13,R14,R15,R16,R17,R18,R19,R198,R199,R2,R20,R201,R205,R206,R208,R21
			R212,R213,R216,R217,R218,R22,R226,R227,R229,R23,R233,R235,R239,R241,R242,R243,R244
			R246,R25,R250,R253,R257,R258,R259,R26,R262,R264,R267,R268,R269,R27,R276,R279,R28
			R282,R283,R286,R287,R29,R291,R292,R294,R296,R299,R3,R30,R308,R31,R32,R33,R34,R36
			R4,R44,R45,R46,R47,R48,R49,R5,R50,R6,R7,R8,R9
QTY: 1	SPSOIC14	ID-OSOIC-14	XE1
QTY: 1	SW SPDT	12-16523-00	S1
QTY: 1	TCO711SS	18-29889-01	E149
QTY: 172	[Mark Eyelet]	12-23208-03	

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REVISIONS		
CHK	CHANGE NO.	REV

[Documentation]  
**PART LIST INFO:**  
Detailed Part List



DRN:	K. Yesse	DATE	-
CHK'D:	-	DATE	-
FIRST USED ON OPTION/MODEL: Thu Oct 20 17:12:11 1988			

ENG:	C. Threepio	DATE	-
BOARD LOCATION: CXO			
SHEET 61			
NEXT HIGHER ASSEMBLY:			

TITLE: WILDCAT BOARD 1			
SIZE	CODE	NUMBER	REV
K	CS	-	200CT88

REV NUMBER SIZE CODE K CS B A