

APPENDIX B



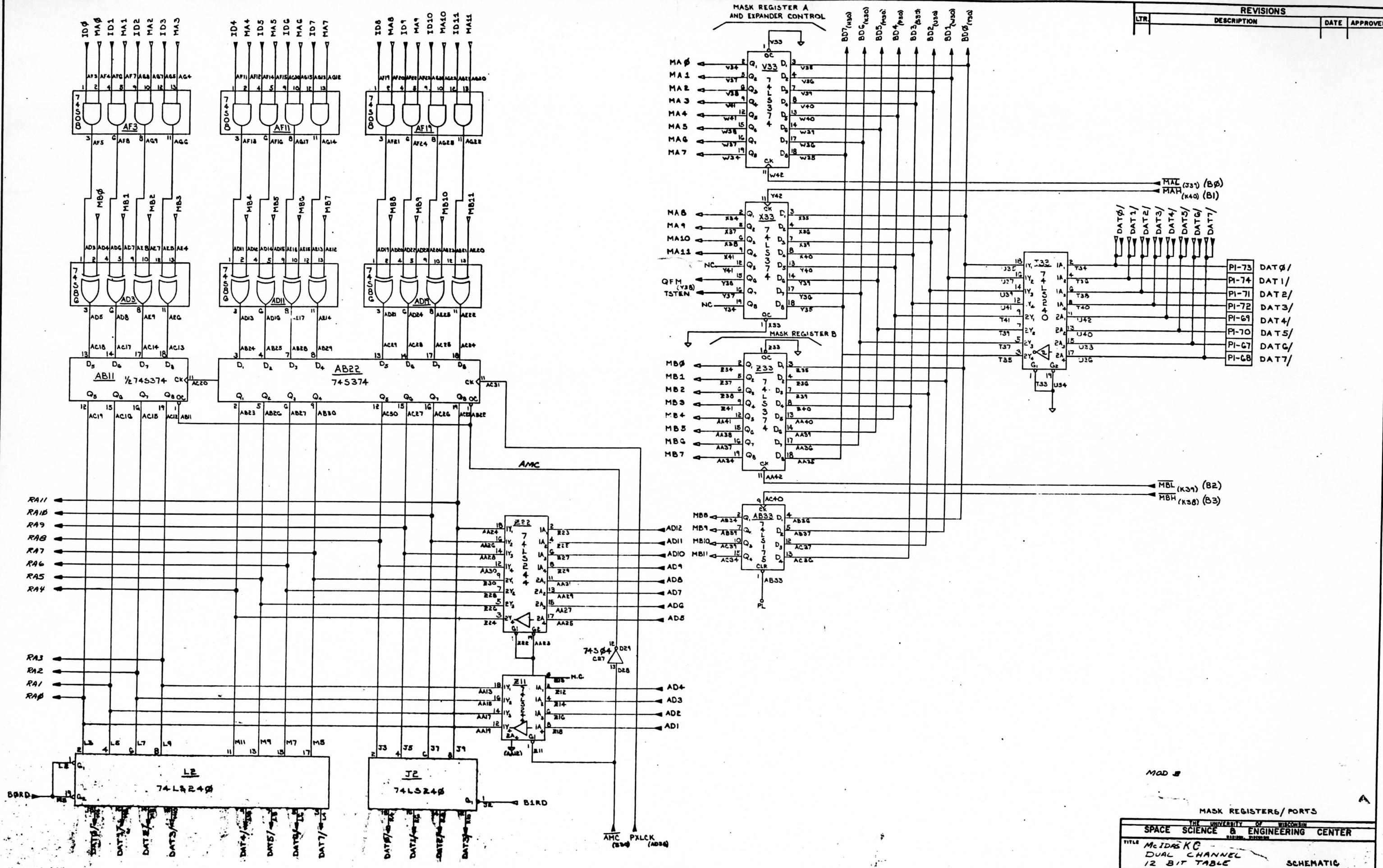
McIDAS WORKSTATION HARDWARE SCHEMATIC AND ASSEMBLY DIAGRAMS



SPACE SCIENCE AND ENGINEERING CENTER

UNIVERSITY of WISCONSIN - MADISON
1225 West Dayton Street
Madison, Wisconsin 53706
TWX (910) 286-2771

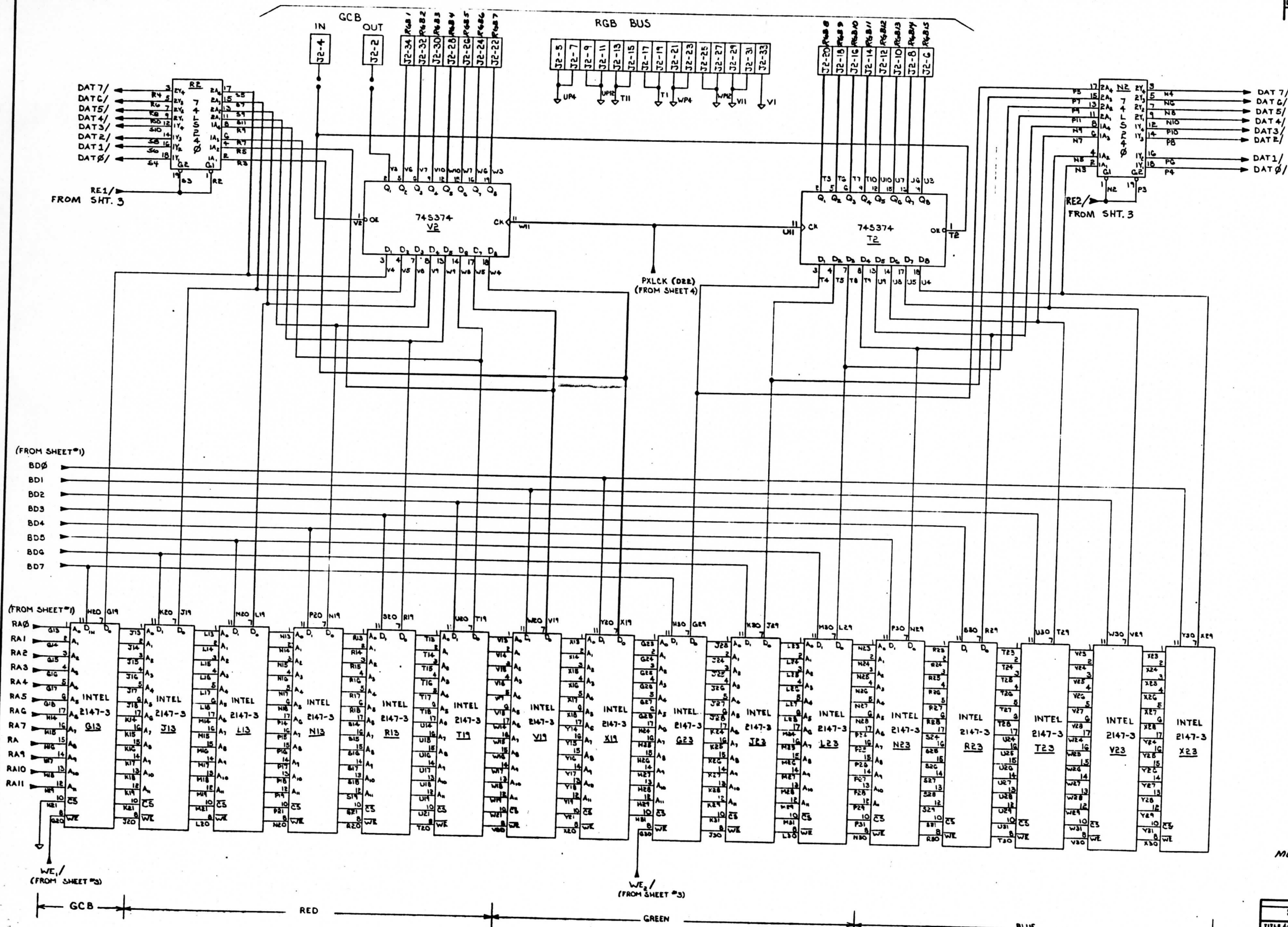
REVISIONS			
LTR.	DESCRIPTION	DATE	APPROVED



MASK REGISTERS/ PORTS			
THE UNIVERSITY OF WISCONSIN SPACE SCIENCE & ENGINEERING CENTER			
TITLE: McIDAS KC DUAL CHANNEL 12 BIT TABLE SCHEMATIC			
DATE: NONE	BY: JWS	DATE: 8-7-86	APP: JWS
NO: 3504-006	PROJECT: 3504-006	DATE: 8-7-86	APP: JWS
3504	REV: D	SHEET: 1 OF 4	3504-005

B1

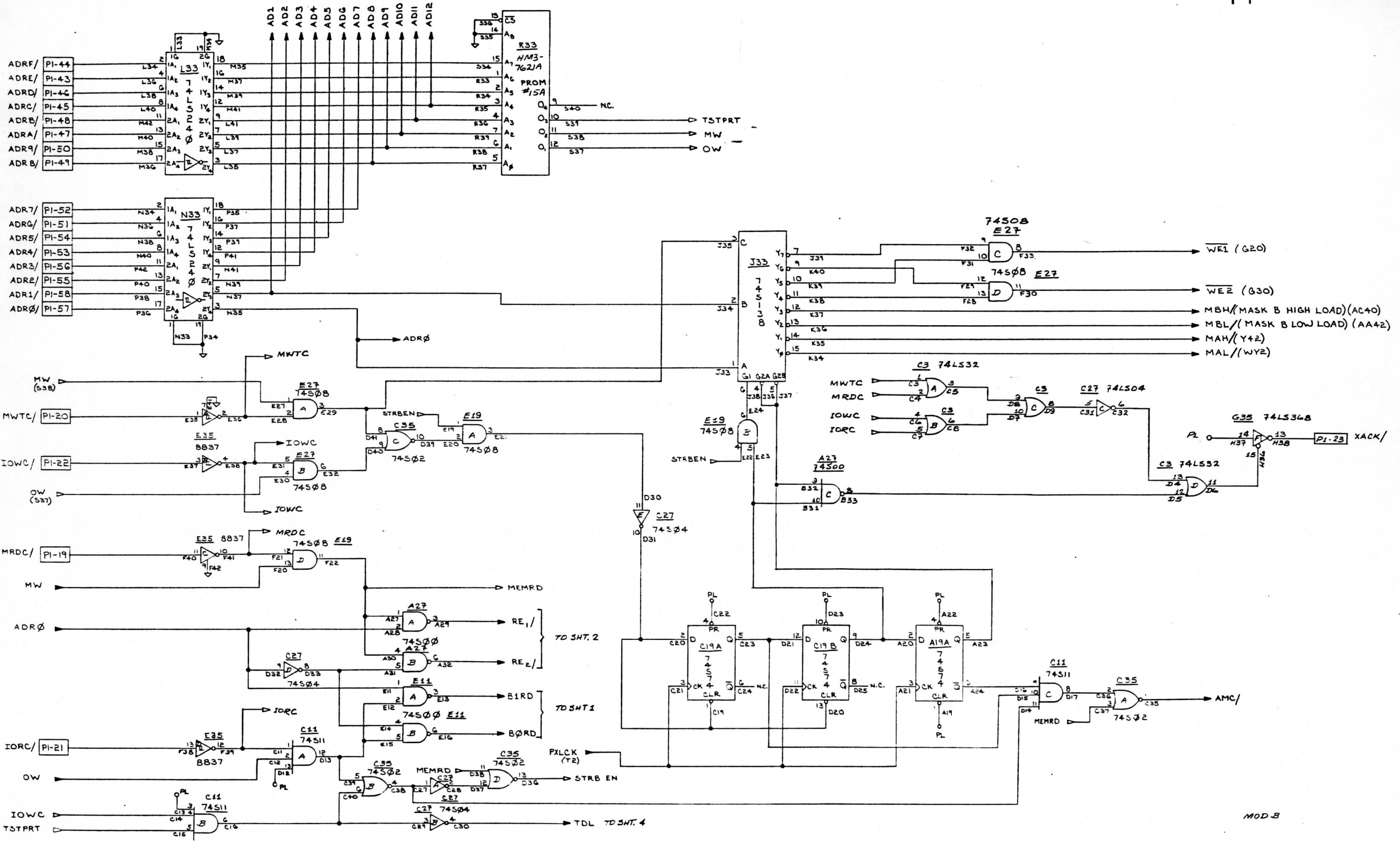
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



MOD 5

MEMORY SECTION			
THE UNIVERSITY OF WISCONSIN			
SPACE SCIENCE & ENGINEERING CENTER			
TITEL: MCIDAS KC			
DUAL CHANNEL			
12 BIT TABLE			
SCHEMATIC			
SCALE: NONE	DATE: 8-7-86	BY: [Signature]	APP: [Signature]
PROJECT: 3504-006	REVISION: 1	SHEET: 2 OF 4	DATE: 8-7-86
3504	D	3504-005	

REVISIONS			
LTR.	DESCRIPTION	DATE	APPROVED

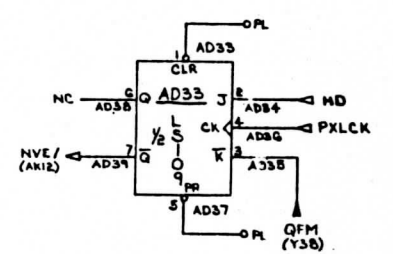
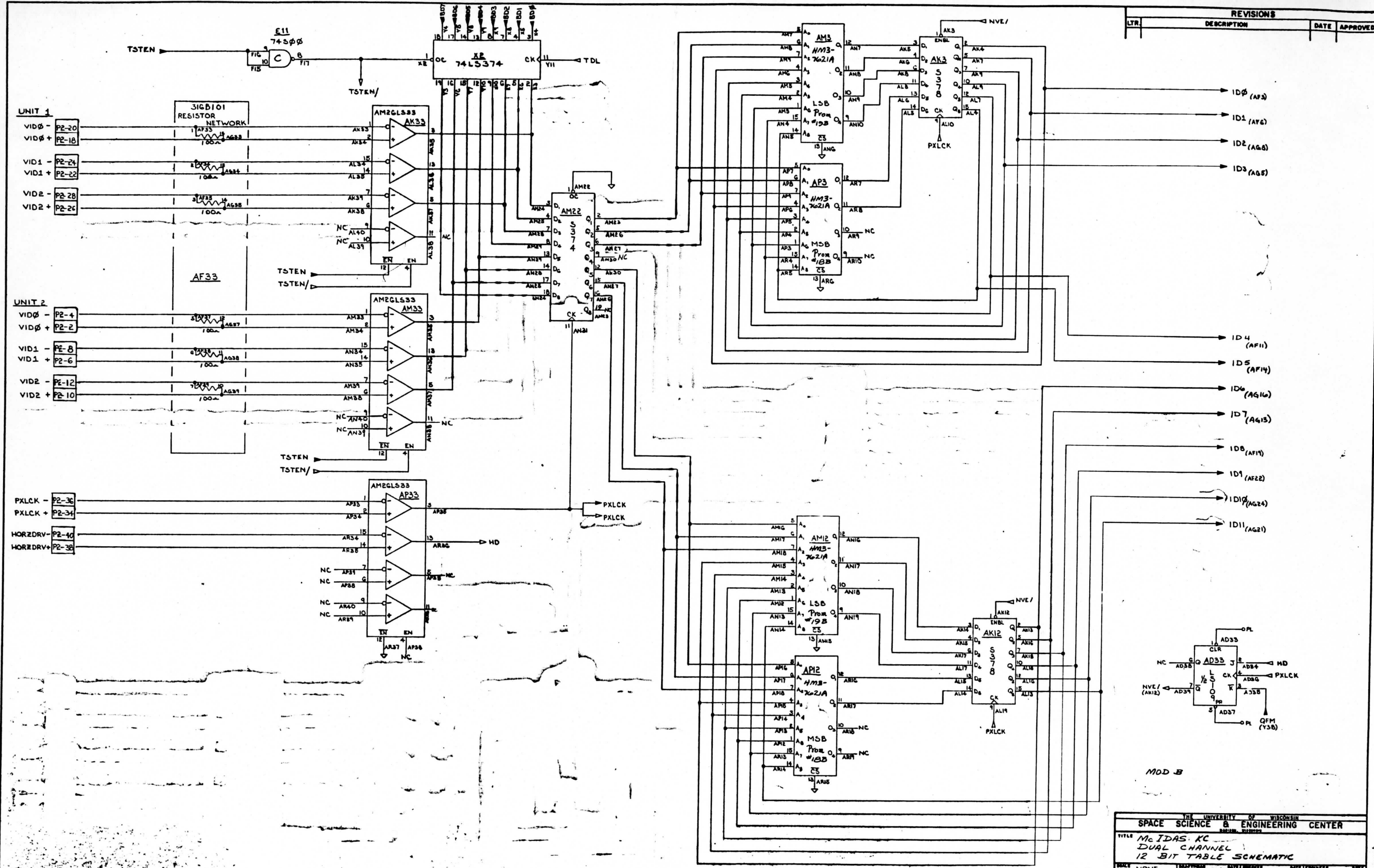


MOD B

SBC BUS INTERFACE					
THE UNIVERSITY OF WISCONSIN					
SPACE SCIENCE & ENGINEERING CENTER					
MADISON, WISCONSIN					
TITLE McIDAS KC DUAL CHANNEL 12 BIT TABLE SCHEMATIC					
SCALE	DESIGNED BY	ENGINER	DATE	ENGINEER	DATE
NONE	HW E3-B4				2-7-86
REV	HIGHER APPROV	PROJECT	REVISION	DATE	APPROV
3504-000					
PROPERTY NO	SIZE	SHEET	OF	DRAWING NO	DATE
3504	D	3	OF	4	3504-005

B3

REVISIONS		
LTR.	DESCRIPTION	DATE APPROVED

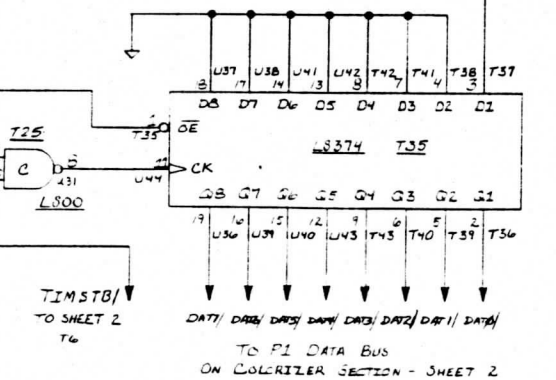
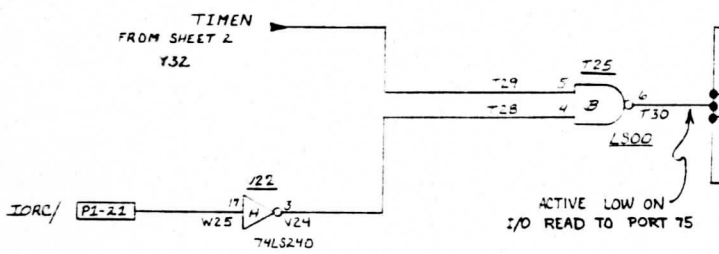
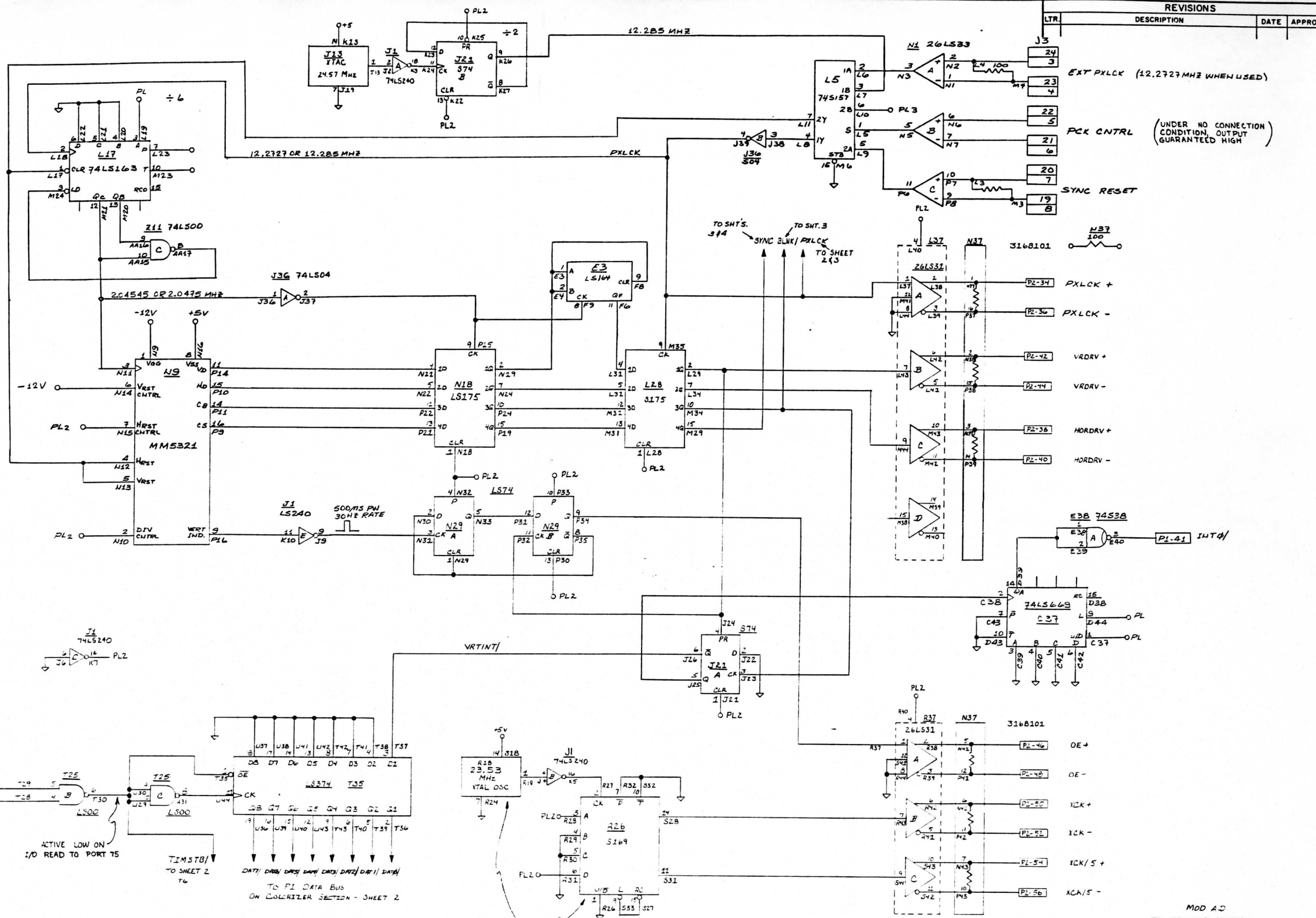


MOD B

THE UNIVERSITY OF WISCONSIN SPACE SCIENCE & ENGINEERING CENTER			
TITLE: MCIDAS-KC DUAL CHANNEL 12 BIT TABLE SCHEMATIC			
DATE: NONE	DESIGNED: 4-5-84	DATE ENGINEER: 8-7-84	DATE:
REVIEW: NONE	PROOFREAD: 4-5-84	DATE: 8-7-84	DATE:
FIG. NO: 3504	SHEET: D	OF: 4	NO: 3504-005

B4

REVISIONS			
LTR.	DESCRIPTION	DATE	APPROVED



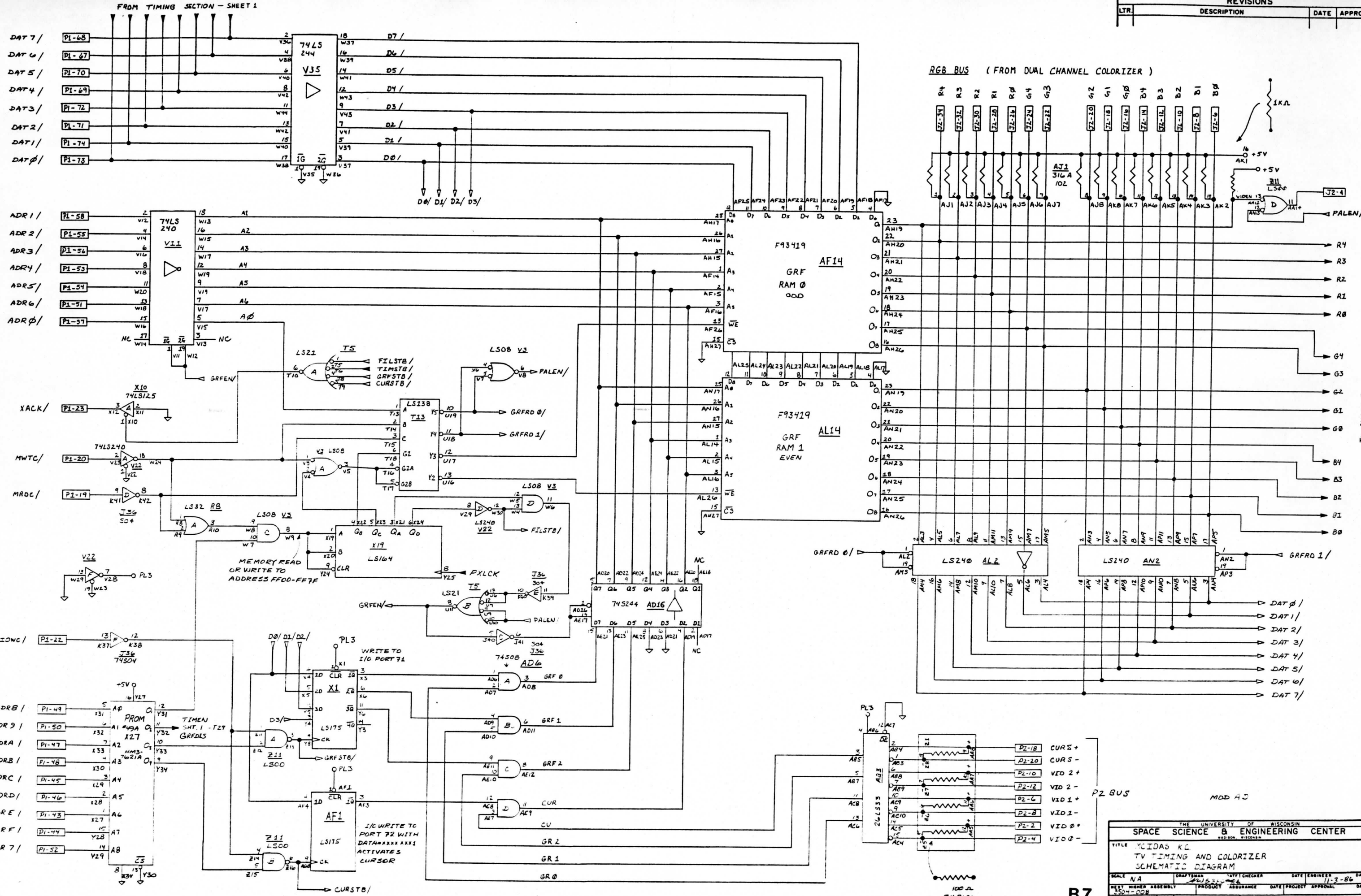
74LS169 (R26) AND XTAL OSC. (R18) SHOULD BE DELETED IN K.C. STYLE TERMINALS USING DATARAM MEMORY

MOD A-D
TV TIMING SECTION

THE UNIVERSITY OF WISCONSIN SPACE SCIENCE & ENGINEERING CENTER MADISON, WISCONSIN			
TITLE MADIDAS KC TV TIMING AND COLORIZER SCHEMATIC			
SCALE	DRAFTSMAN	DATE	CHECKER
1:1	W. S.
NEXT HIGHER ASSEMBLY		PRODUCT ASSURANCE	DATE
3504-C-2	
PROJECT NO.		SIZE	SHEET
3504		D	1 OF 4
DRAWING NO.		DATE	
3504-007		11-3-86	

B6

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

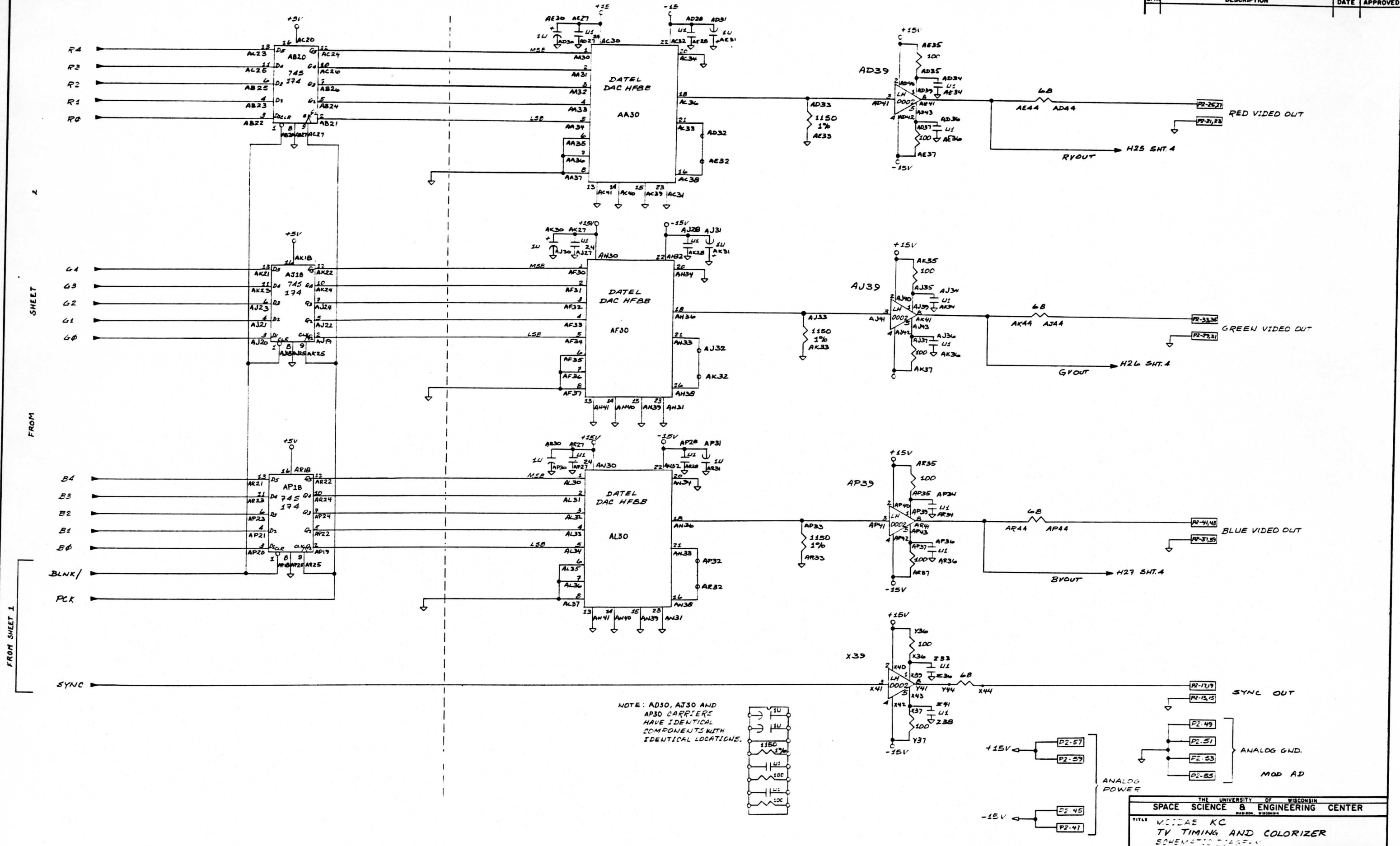


TO SHEET 3

THE UNIVERSITY OF WISCONSIN SPACE SCIENCE & ENGINEERING CENTER			
TITLE: MCIDAS KC TV TIMING AND COLORIZER SCHEMATIC DIAGRAM			
SCALE: NA	DRAWN BY: [Signature]	CHECKER: [Signature]	DATE: 11-3-86
DESIGN: 3504-002	PROJECT: 3504	DATE: 11-3-86	APPROVAL: [Signature]
PROJECT NO: 3504	SHEET: 2 OF 4	DRAWING NO: 3504-007	DATE:

B7

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

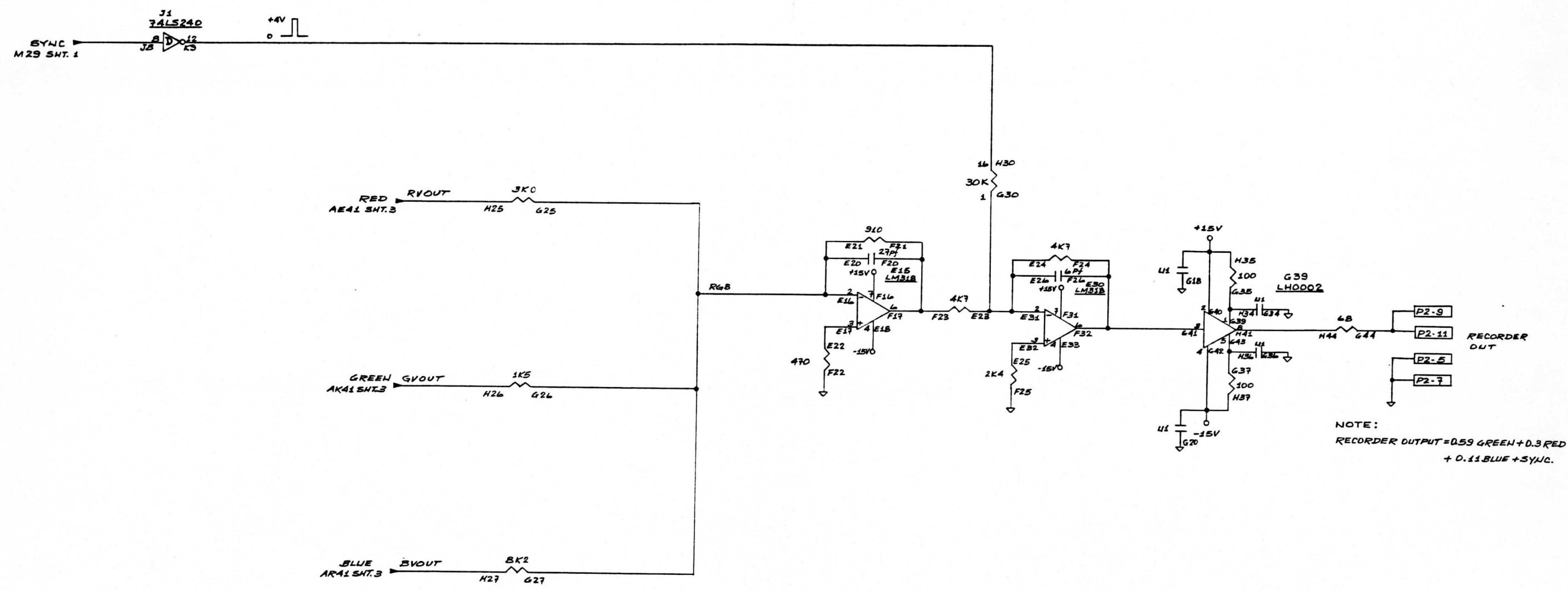


FROM SHEET 1

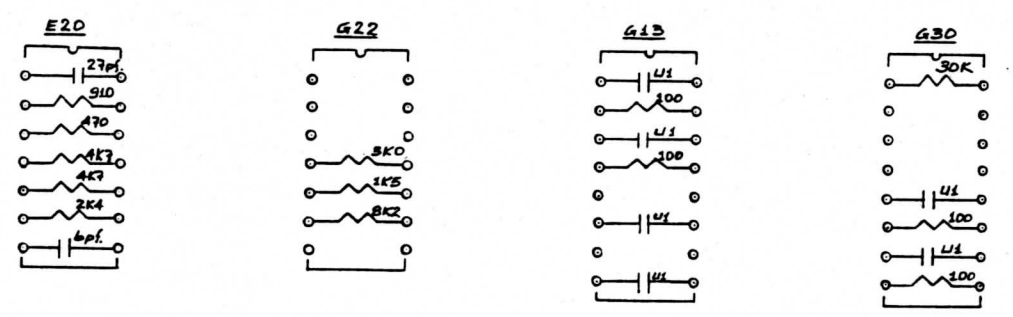
B8

THE UNIVERSITY OF WISCONSIN SPACE SCIENCE & ENGINEERING CENTER					
TITLE MCIDAS KC TV TIMING AND COLORIZER SCHEMATIC PAGE 4					
SCALE 1:1	DRAWN BY K.A.	CHECKED BY K.A.	DATE 11-3-86	ENGINEER K.A.	DATE 11-3-86
REV. NO. 3	ISSUED BY C.C.G.	PRODUCT ASSURANCE	DATE	PROJECT APPROVAL	DATE
PROJECT NO. 3504	SIZE 7	SHEET 3	OF 4	DRAWING NO.	3504-007

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



NOTE:
 RECORDER OUTPUT = 0.59 GREEN + 0.3 RED
 + 0.11 BLUE + SYNC.

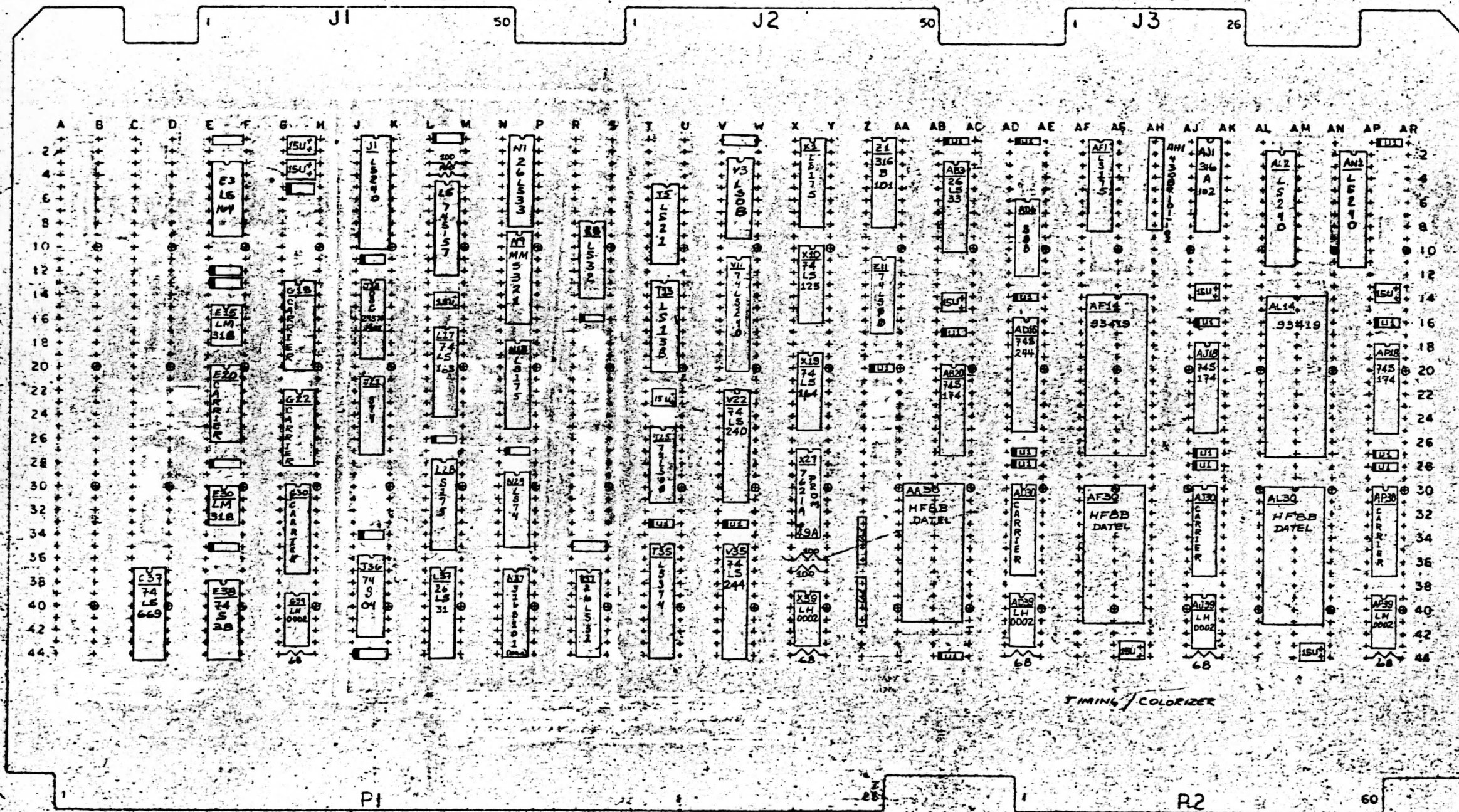


COMPOSITE VIDEO (RECIEVER) SECTION
 MOD AD

THE UNIVERSITY OF WISCONSIN			
SPACE SCIENCE & ENGINEERING CENTER			
TITLE MCIDAS K.C. TV TIMING AND COLORIZER SCHEMATIC DIAGRAM			
DATE	DRAWN	CHECKER	DATE
11-3-86	W 531-P4		
BY	ASSEMBLY	PRODUCT	ASSURANCE
3504	D		
PROJECT NO	SHEET	SHEET	OF
3504	2	4	4
DRAWING NO			DATE
3504-007			

B9

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVE



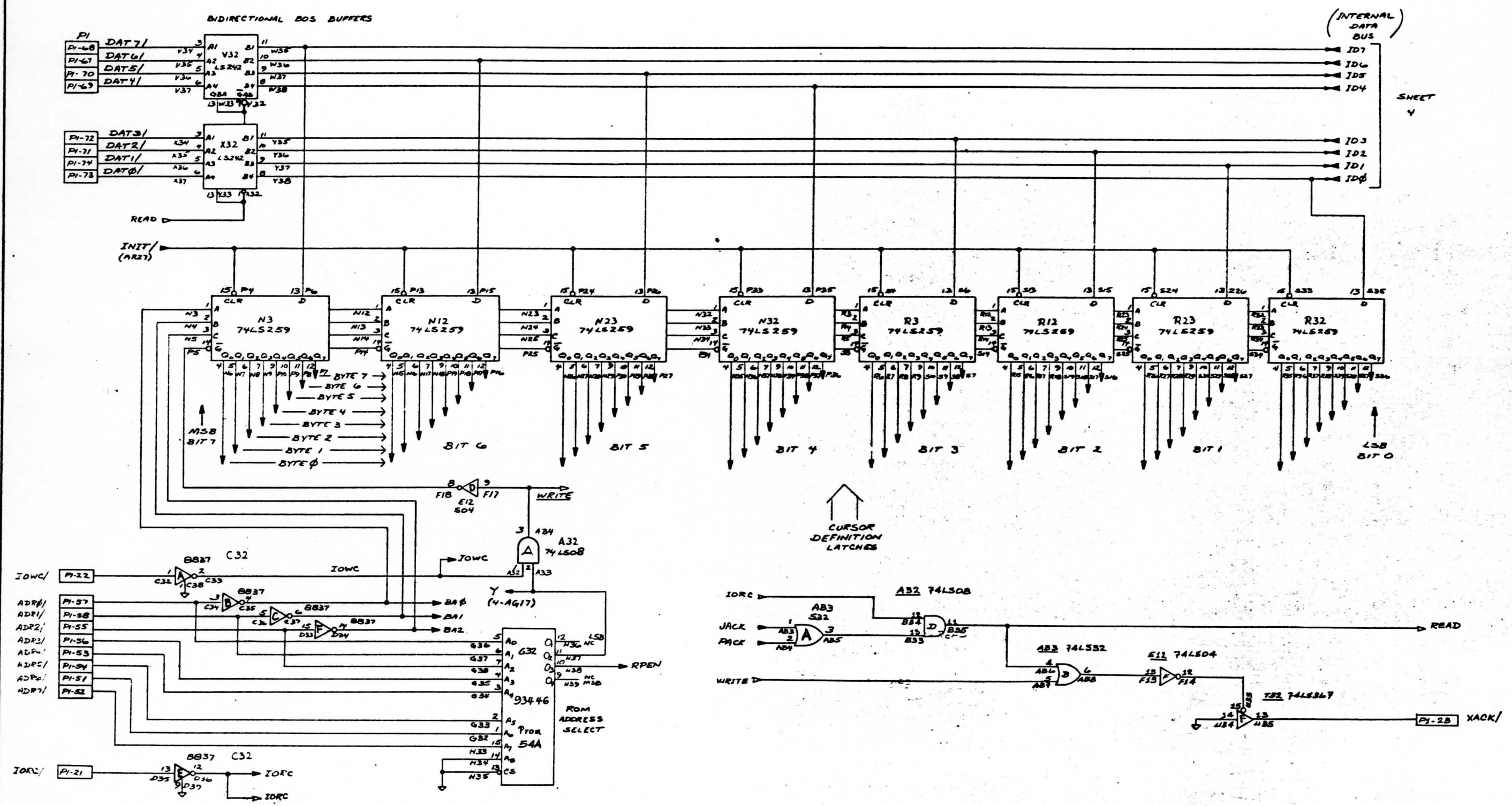
● TENTH ROW DESIGNATION

THE UNIVERSITY OF WISCONSIN					
SPACE SCIENCE & ENGINEERING CENTER					
TITLE MCIDAS KC					
TV TIMING AND COLORIZER					
ASSEMBLY DRAWING					
SCALE 2:1	DATE 11/1/81	BY E. G. B.	CHECKED	DATE 7-4-85	BY
PROJECT NO. 3504-007	PRODUCT ADVANCE	DATE 11/1/81	BY	PROJECT APPROVAL	DATE
PROJECT NO. 3504	SHEET 0	OF 1	DATE 11/1/81	BY	3504-006

B10

MOD AD

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



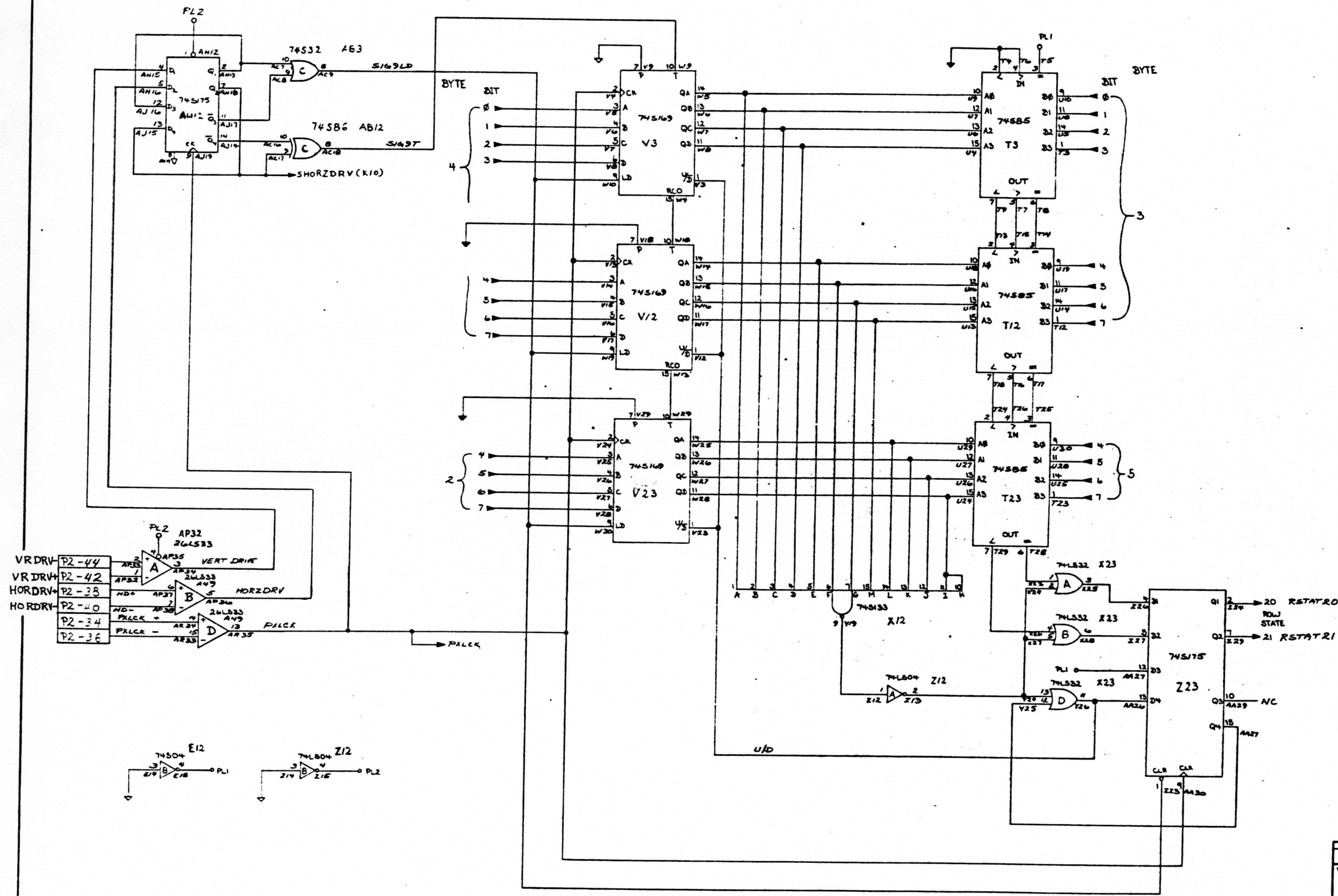
SHEET 4

MOD I
SBC BUS INTERFACE SECTION

THE UNIVERSITY OF WISCONSIN SPACE SCIENCE & ENGINEERING CENTER			
TITLE: MCLDAS KC CURSOR GENERATOR AND GRAPHICS TABLET SCHEMATIC			
DATE: NONE	REV: 5-3-84	DATE: 4-26-85	BY: [Signature]
PROJECT: 3504-C-30	PROJECT: 3504-C-30	PROJECT: 3504-C-30	PROJECT: 3504-C-30
PROJECT: 3504	SHEET: 1 of 5	DATE: 3504-029	DATE: 3504-029

B11

REVISIONS			
LTR.	DESCRIPTION	DATE	APPROVAL



MOD I
LINE COUNTER SECTION

THE UNIVERSITY OF WISCONSIN
SPACE SCIENCE & ENGINEERING CENTER

TITLE: MC 1045 KC
CURSOR GENERATOR AND GRAPHICS TABLET
SCHEMATIC

DATE: 4-28-85

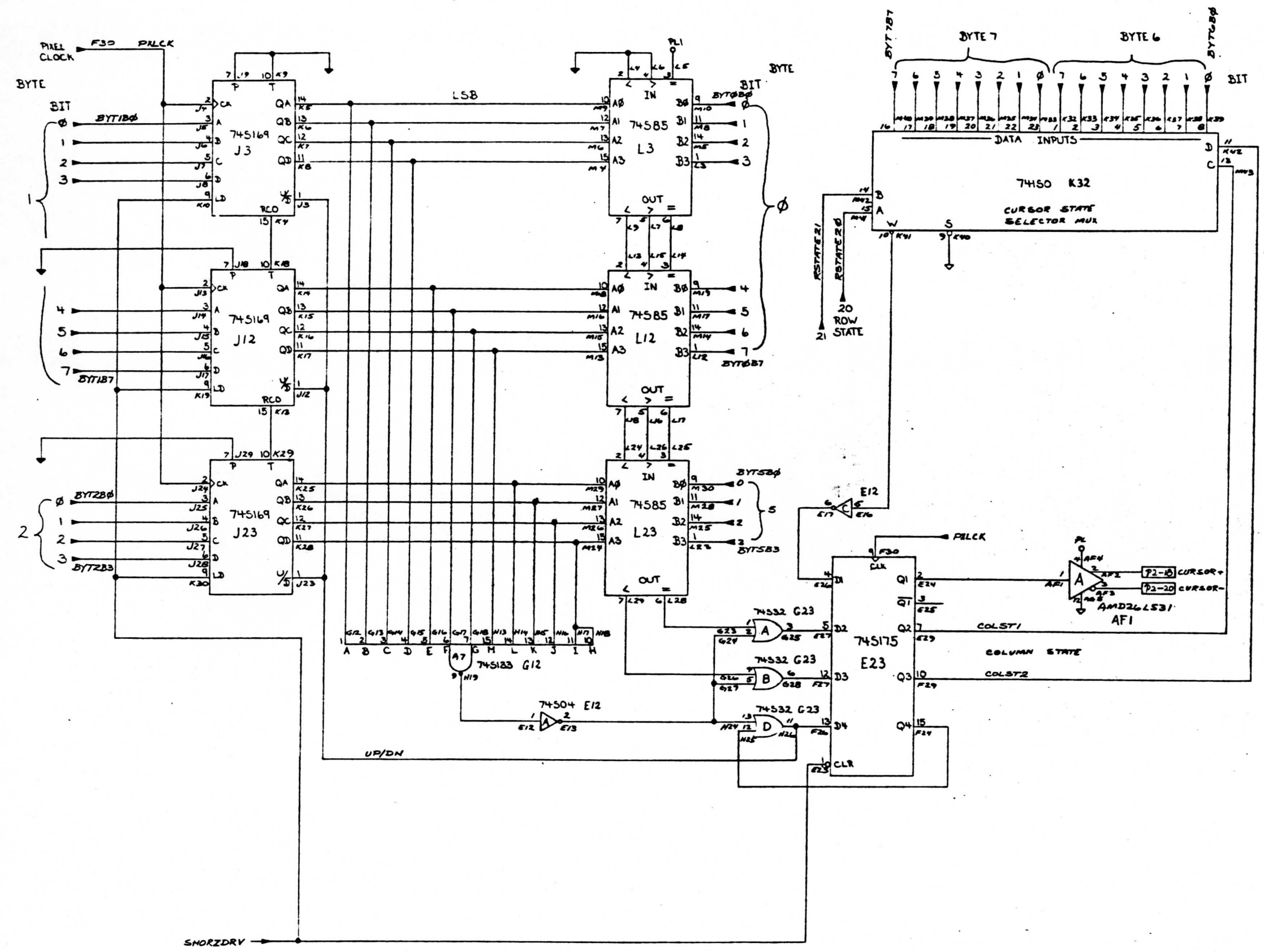
PROJECT NO: 3504

SHEET 2 OF 5

DRAWING NO: 3504-029

B12

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

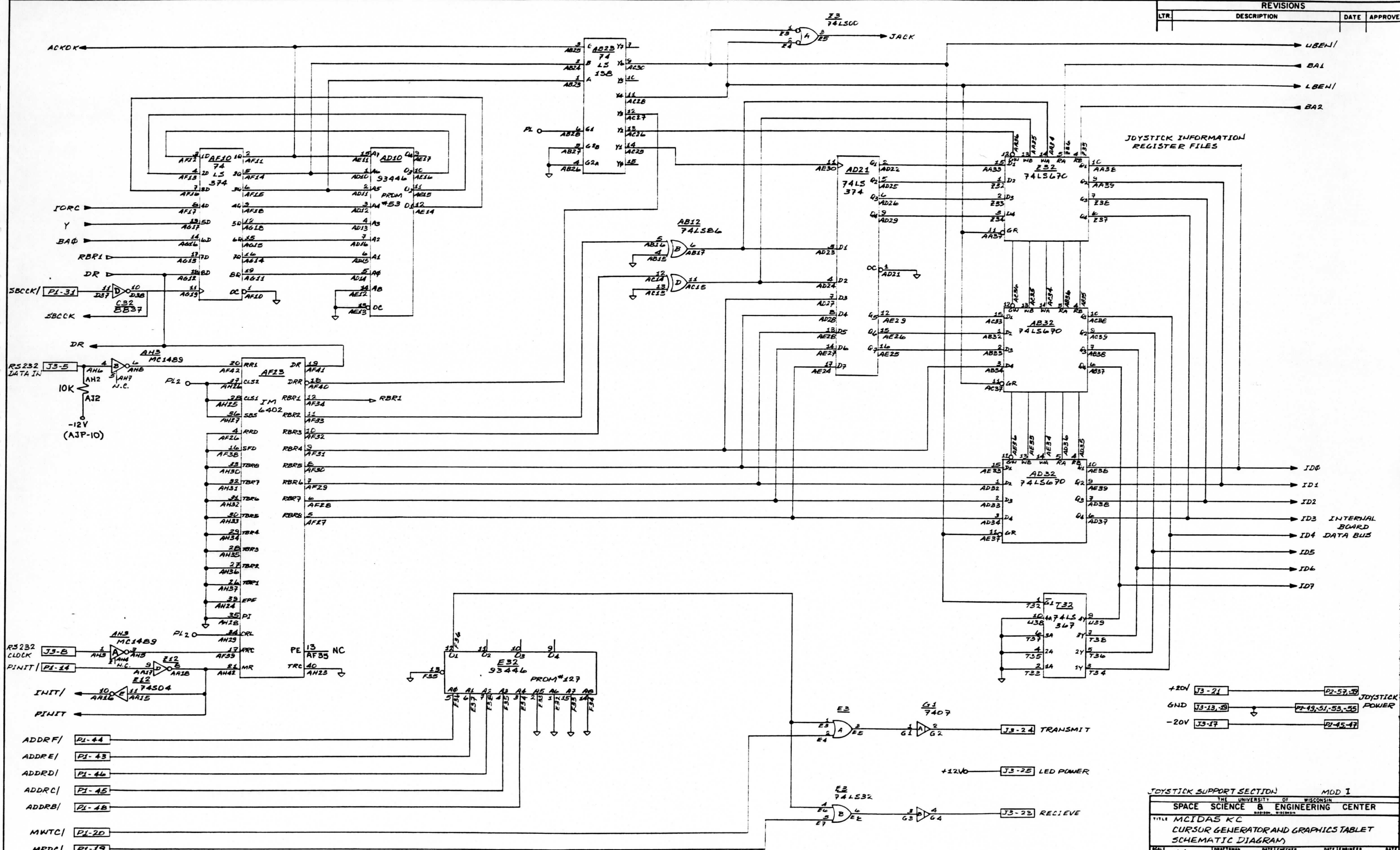


MOD I
PIXEL COUNTER & CURSOR SELECT SECTION

UNIVERSITY OF WISCONSIN SPACE SCIENCE & ENGINEERING CENTER			
TITLE: MC 1DAS KC CURSOR GENERATOR AND GRAPHICS TABLET SCHEMATIC			
SCALE: None	REVISED: Nov 5-3-82	DESIGNED BY: [blank]	DATE: 4-2-82
DRN: 15-1-730	PROJECT ASSIGNED: [blank]	DATE PROJECT APPROVAL: [blank]	DATE: [blank]
PROJECT NO: 3504	SHEET: 3 of 5	DESIGNED BY: [blank]	3504-029

B13

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



JOYSTICK SUPPORT SECTION MOD 1

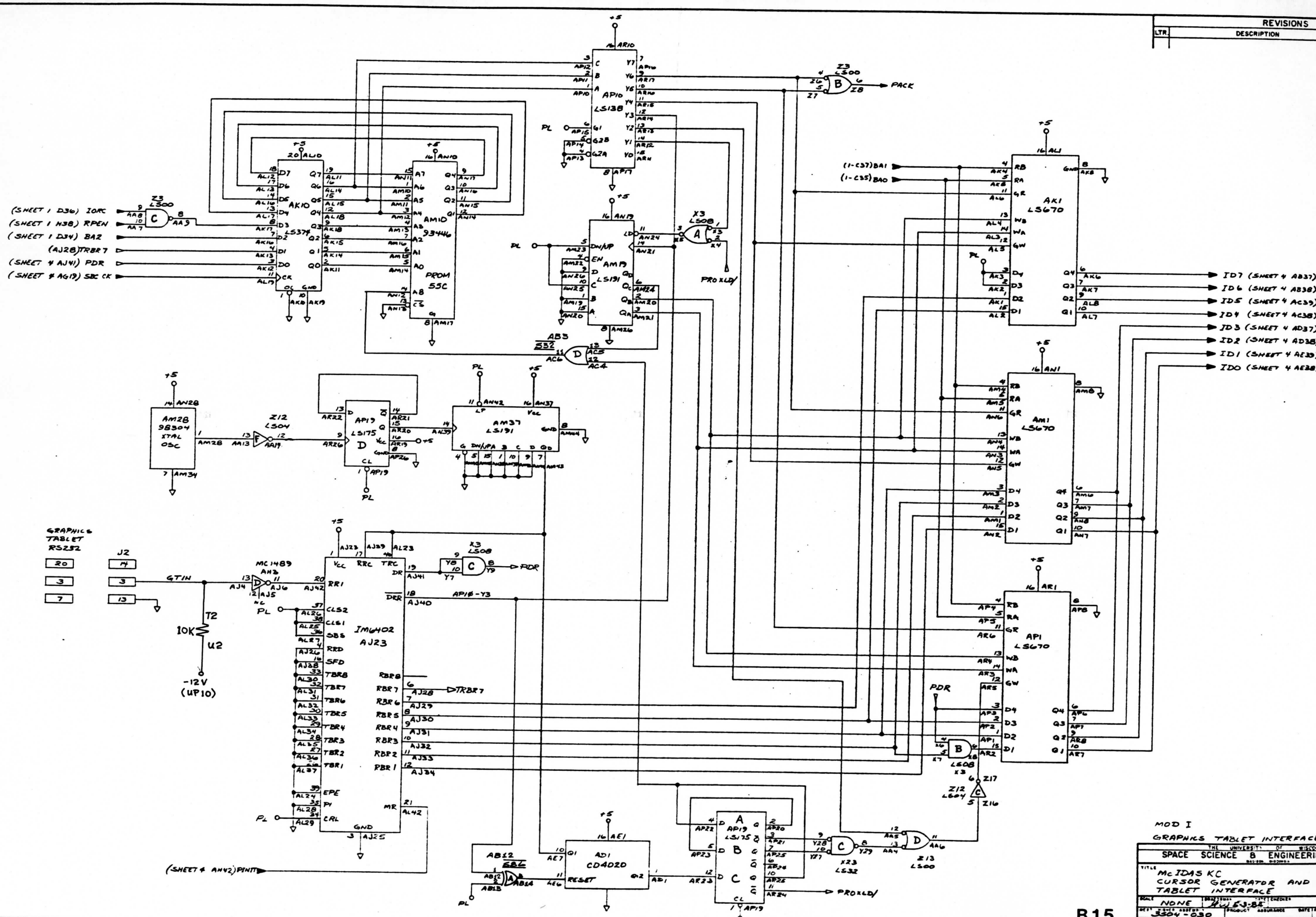
THE UNIVERSITY OF WISCONSIN
SPACE SCIENCE & ENGINEERING CENTER
MADISON, WISCONSIN

TITLE MCIDAS K/C
CURSOR GENERATOR AND GRAPHICS TABLET
SCHEMATIC DIAGRAM

SCALE	N.A.	DRAWN BY	DATE	CHECKED	DATE	ENGINEER	DATE
BEST HIGHWAY ASSEMBLY	-030	PRODUCT ASSURANCE	DATE	PROJECT	APPROVAL	DATE	DATE
PROJECT NO.	3504	SIZE	D	SHEET	4 OF 5	DRAWING NO.	3504-029

B14

REVISIONS		
LTR.	DESCRIPTION	DATE APPROVAL



B15

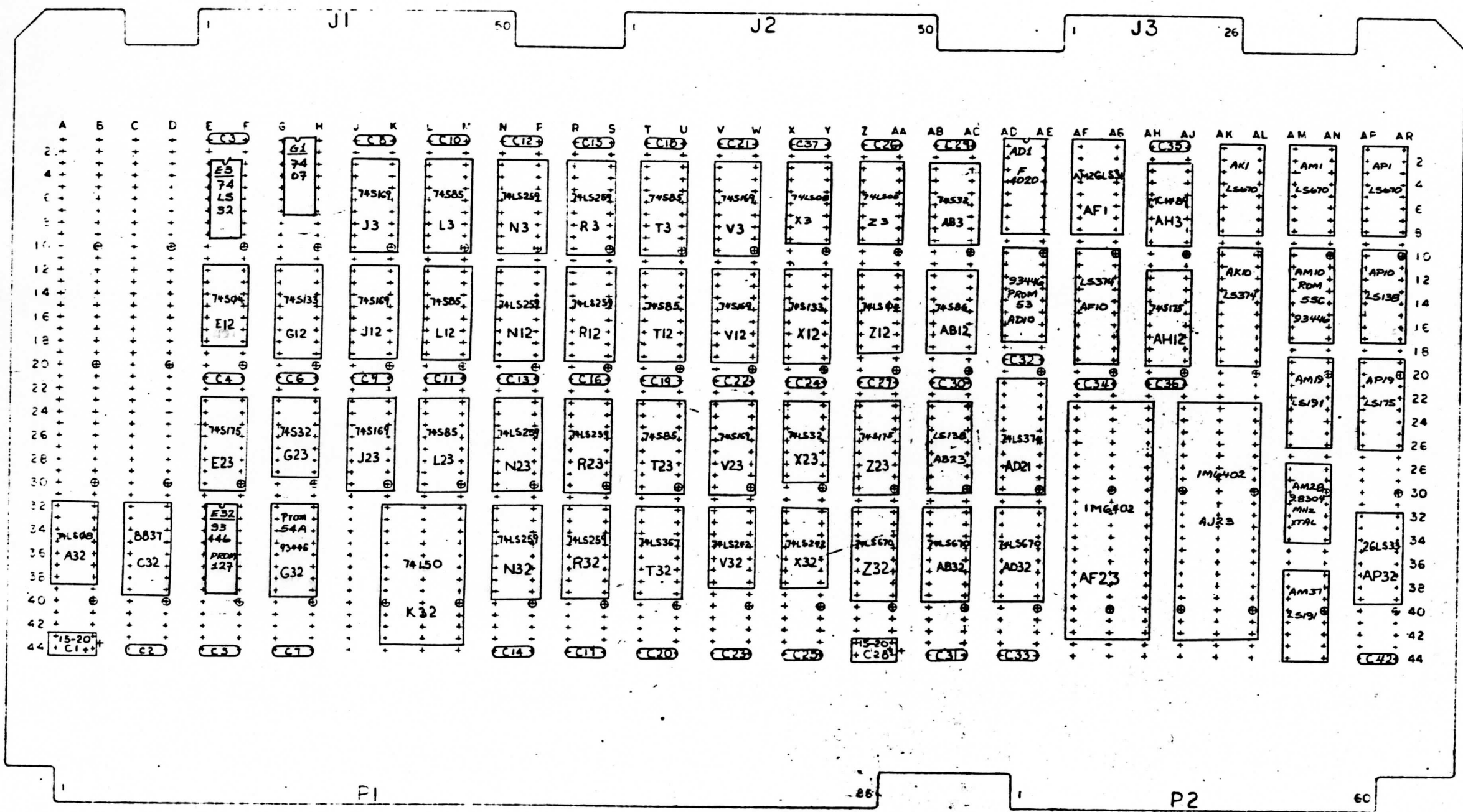
MOD I
GRAPHICS TABLET INTERFACE

THE UNIVERSITY OF WISCONSIN
SPACE SCIENCE & ENGINEERING CENTER

TITLE
MCIDAS KC
CURSOR GENERATOR AND GRAPHICS
TABLET INTERFACE

SCALE: NONE
DATE: 6-26-85
PROJECT: 3504-020
SHEET: 5 OF 5

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVE

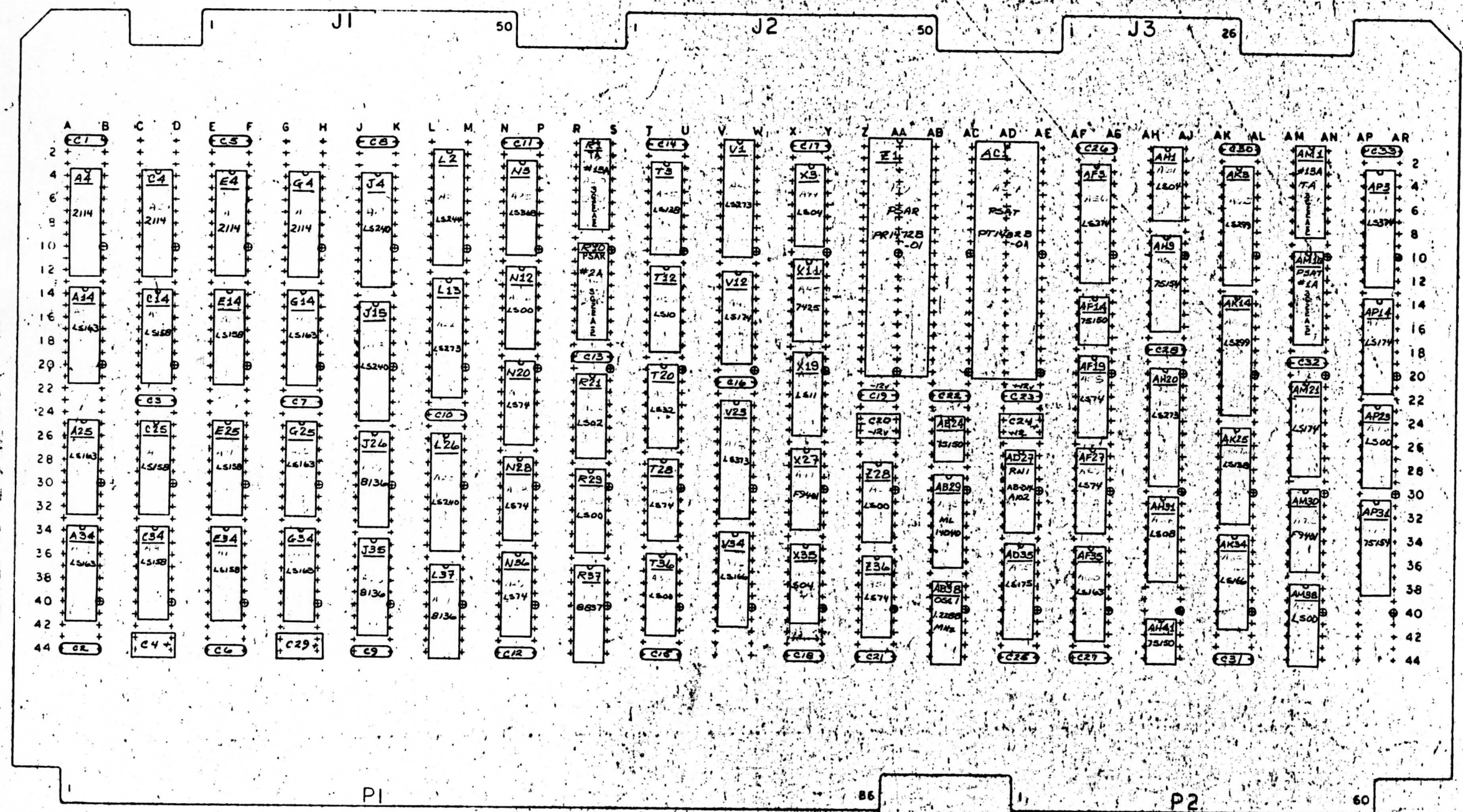


⊕ TENTH ROW DESIGNATION

MDD #

THE UNIVERSITY OF MICHIGAN	
SPACE SCIENCE & ENGINEERING CENTER	
TITLE MCIDAS KC	
CURSOR GENERATOR AND GRAPHICS TABLET	
ASSEMBLY DRAWING	
SCALE 2:1	DATE 5-1-81
DESIGNED BY 1504-C29	APPROVED BY 1504-C29
DRAWN BY 1504-D	CHECKED BY 1504-D
ISSUED BY 1504-D	REVISIONS 1504-030

B16

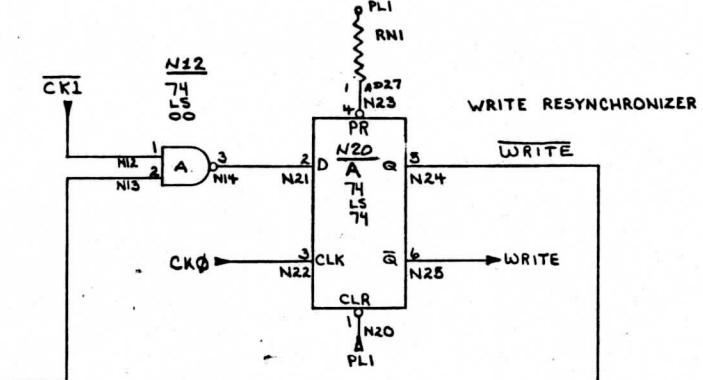
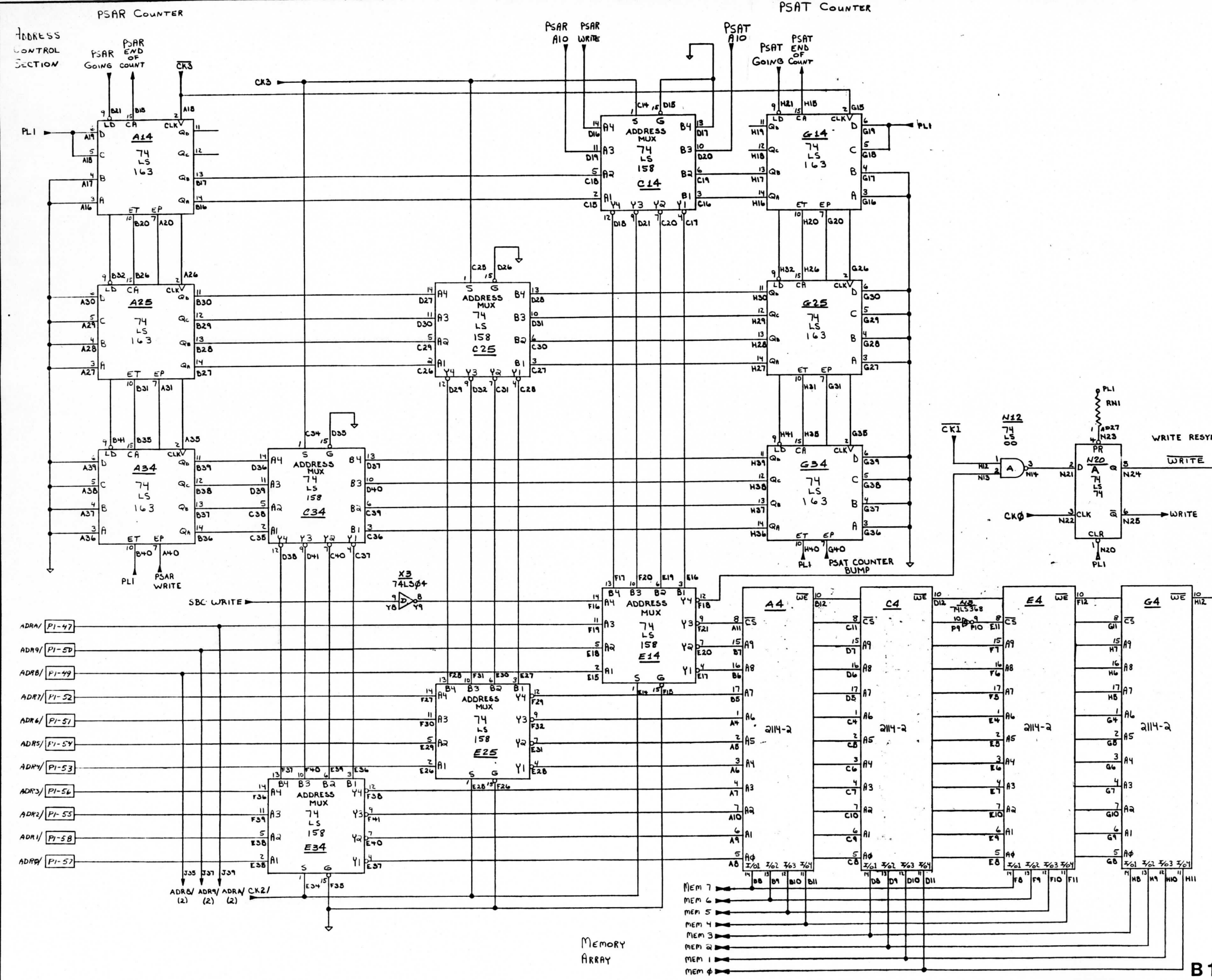


© TENTH ROW DESIGNATION

817

UNIVERSITY OF MICHIGAN
SPACE SCIENCE & ENGINEERING CENTER
DR. MICHAEL S. ...
S/ SWC
ASSEMBLY DRAWING
REV. 1
6450-0019

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



QUADRA PORTED
BUFFER MEMORY

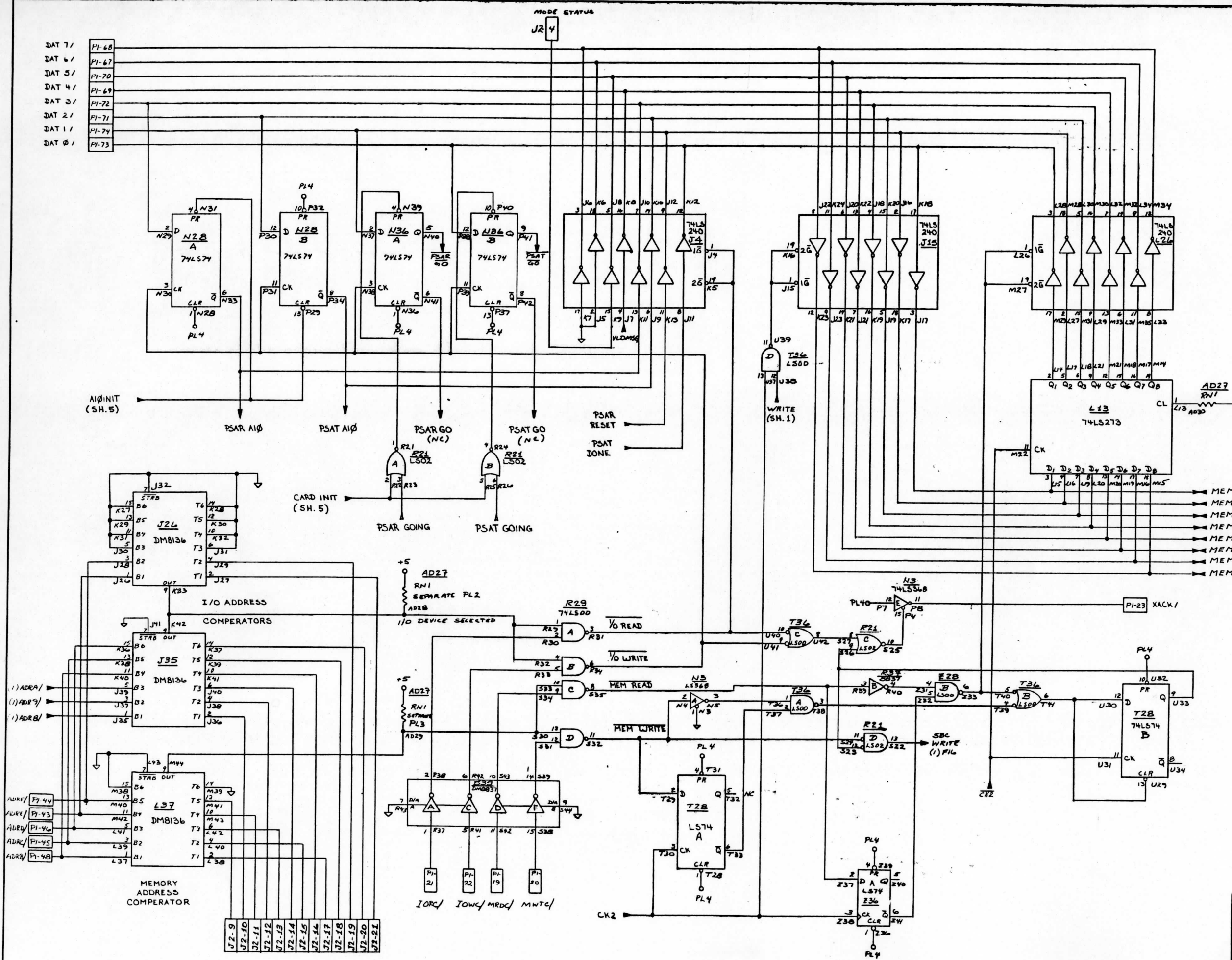
MEMORY
ARRAY

MOD AC

THE UNIVERSITY OF WISCONSIN			
SPACE SCIENCE & ENGINEERING CENTER			
TITLE MCIDAS 2 BISYNC MODULE			
MEMORY SECTION			
SCALE	NAME	DATE	CHECKER
PROJECT NO.	SIZE	SHEET	DRAWING NO.
6450	D	4 OF 5	6450-0085

B18

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



MOD AC

THE UNIVERSITY OF WISCONSIN
SPACE SCIENCE & ENGINEERING CENTER

TITLE: McIDAS 2 BSYNCH MODULE INTERFACE

SCALE: None

DESIGNED BY: AZ

DATE: 10-31-86

PRODUCT ASSURANCE: []

PROJECT APPROVAL: []

PRODUCT NO: 6450

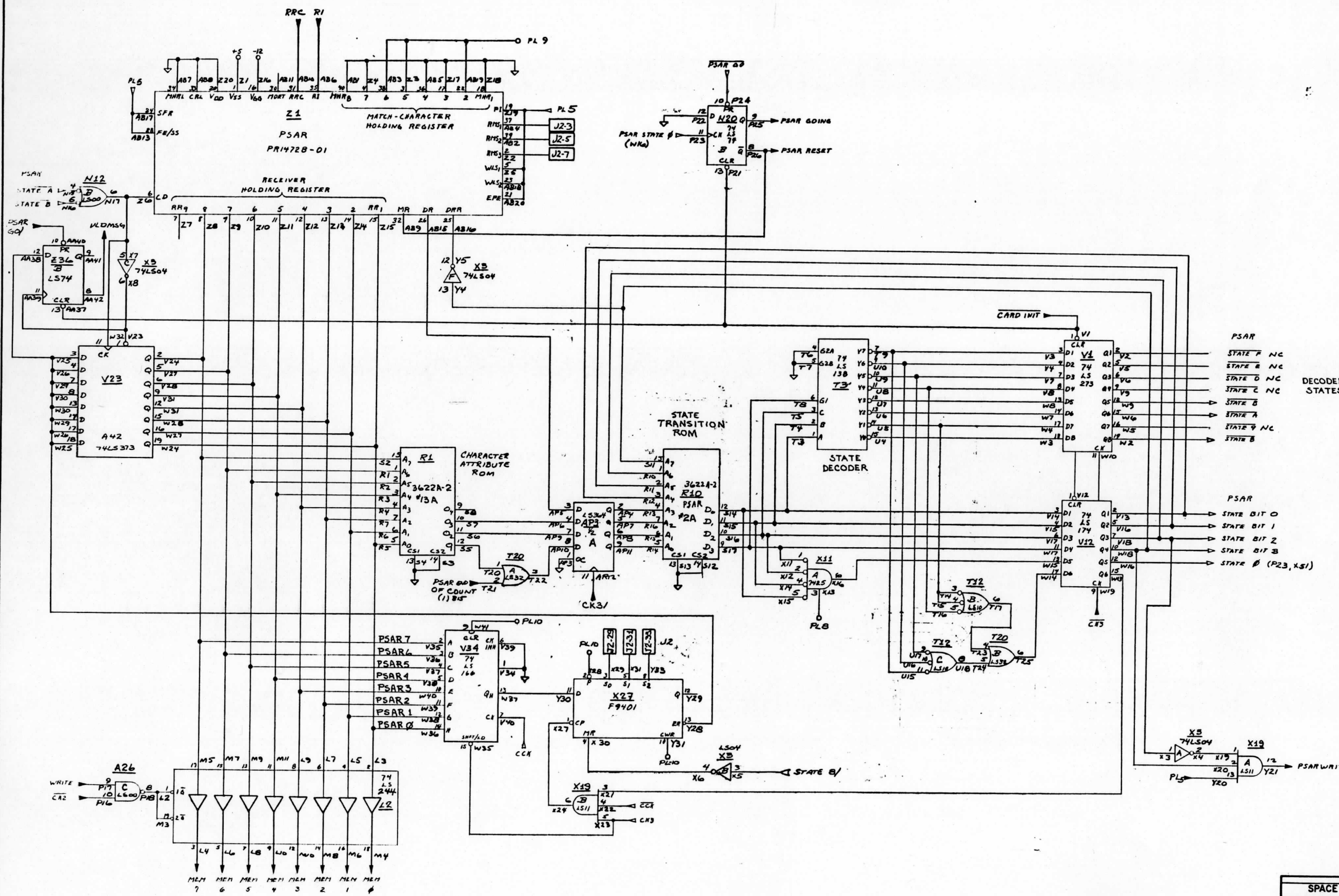
SIZE: D

SHEET: 2 OF 5

DRAWING NO: 6450-0095

B19

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



B20

MOD AC

THE UNIVERSITY OF WISCONSIN
SPACE SCIENCE & ENGINEERING CENTER
MADISON, WISCONSIN

TITLE
McIDAS 2
BSYNC MODULE
RECEIVER SECTION

SCALE
NONE

PROJECT NO.
6450

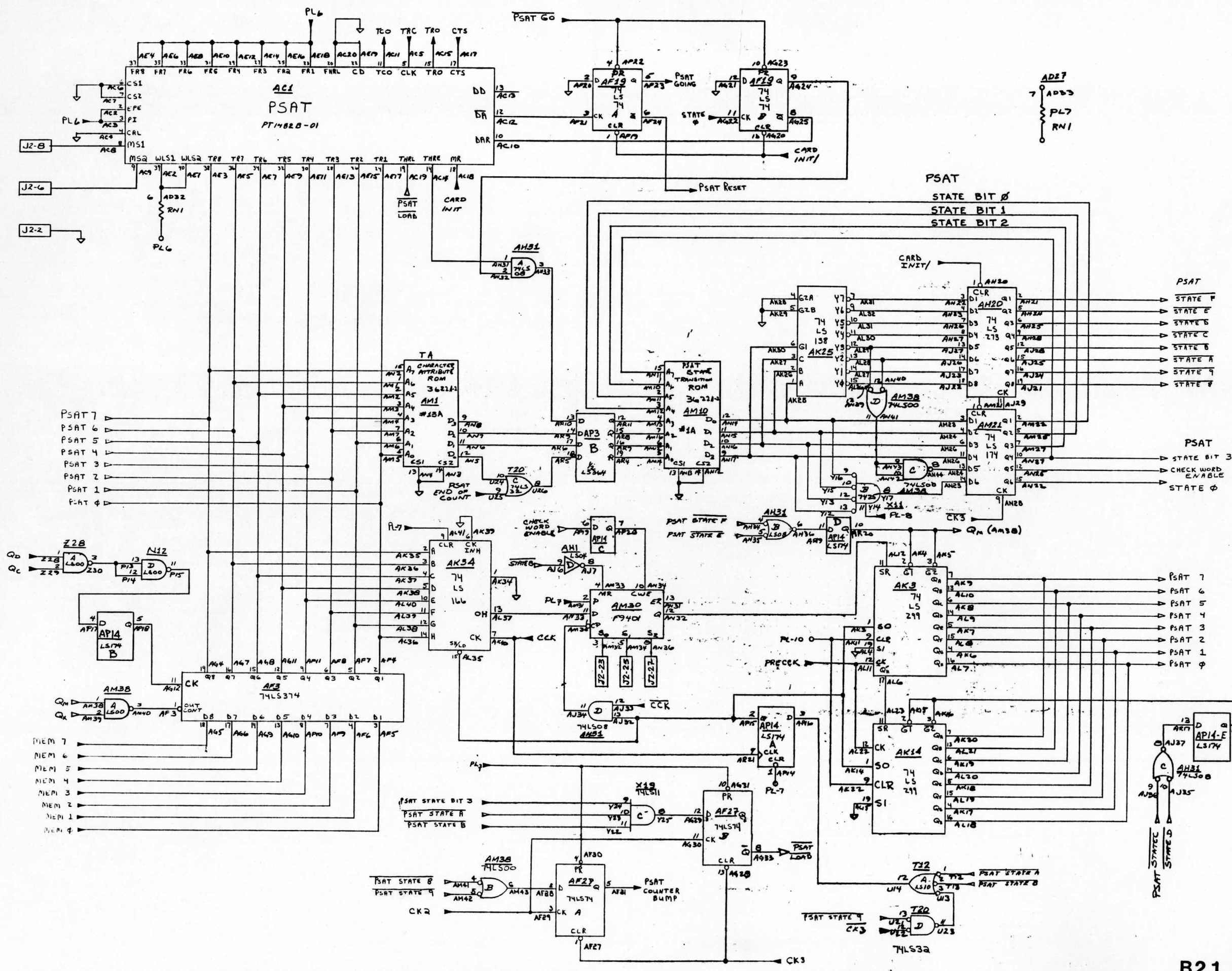
DATE CHECKED
10-31-86

DESIGNED BY
A2

PROJECT APPROVAL
DATE PROJECT APPROVAL

DRAWING NO.
6450-0085

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



MOD AC

THE UNIVERSITY OF WISCONSIN
SPACE SCIENCE & ENGINEERING CENTER
MADISON, WISCONSIN

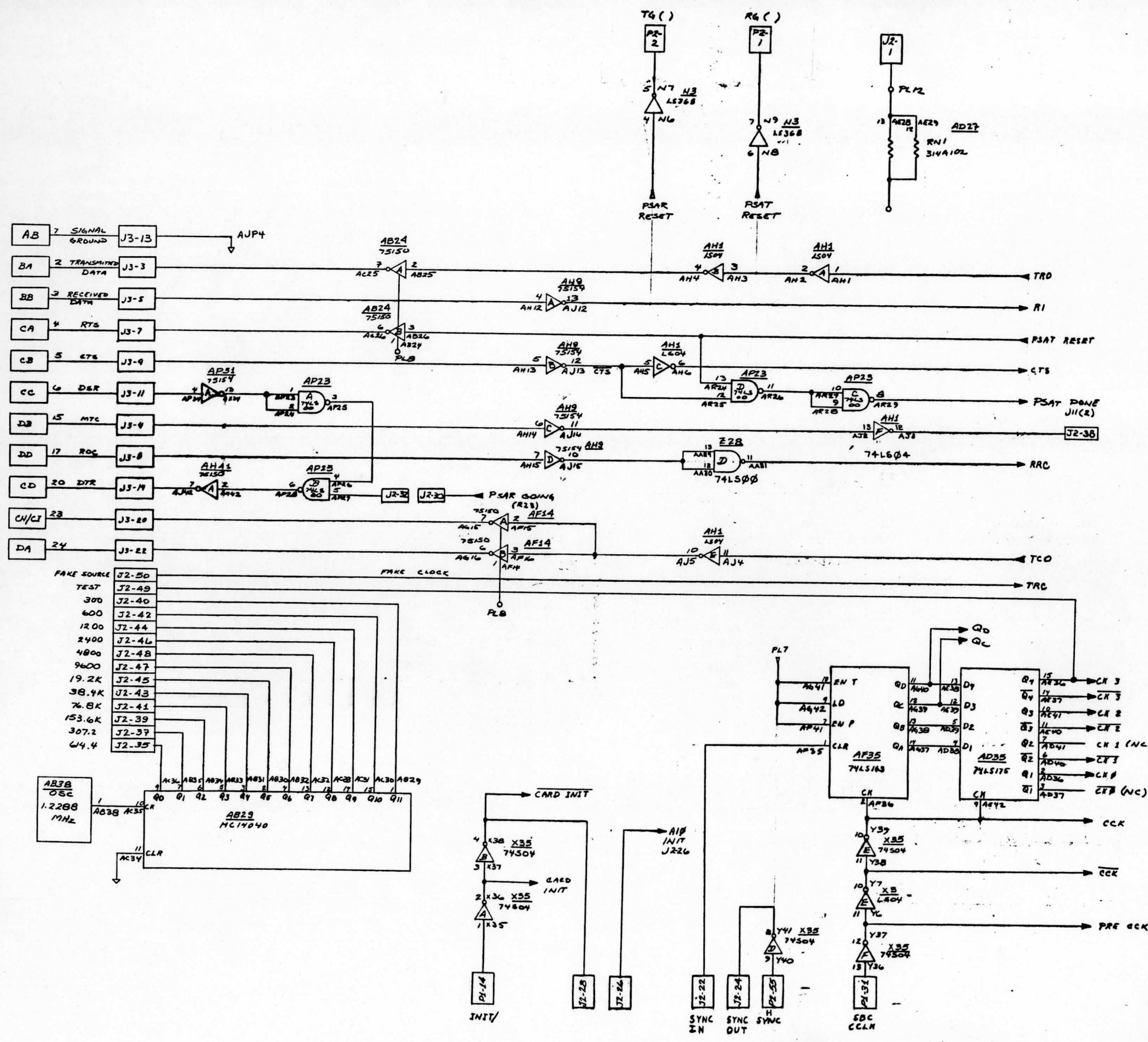
TITLE: **MR IDAS 2**
BISYNC MODULE
TRANSMITTER SECTION

SCALE: NONE DRAWN: 10-31-86 DATE: CHECKER: DATE: ENGINEER: DATE: BAYT

PROJECT NO: 6450 SHEET: 4 of 5 DRAWING NO: 6450-0085

B21

REVISIONS			
LTR.	DESCRIPTION	DATE	APPROVED



B22

MOD A2

THE UNIVERSITY OF WISCONSIN
SPACE SCIENCE & ENGINEERING CENTER
MADISON, WISCONSIN

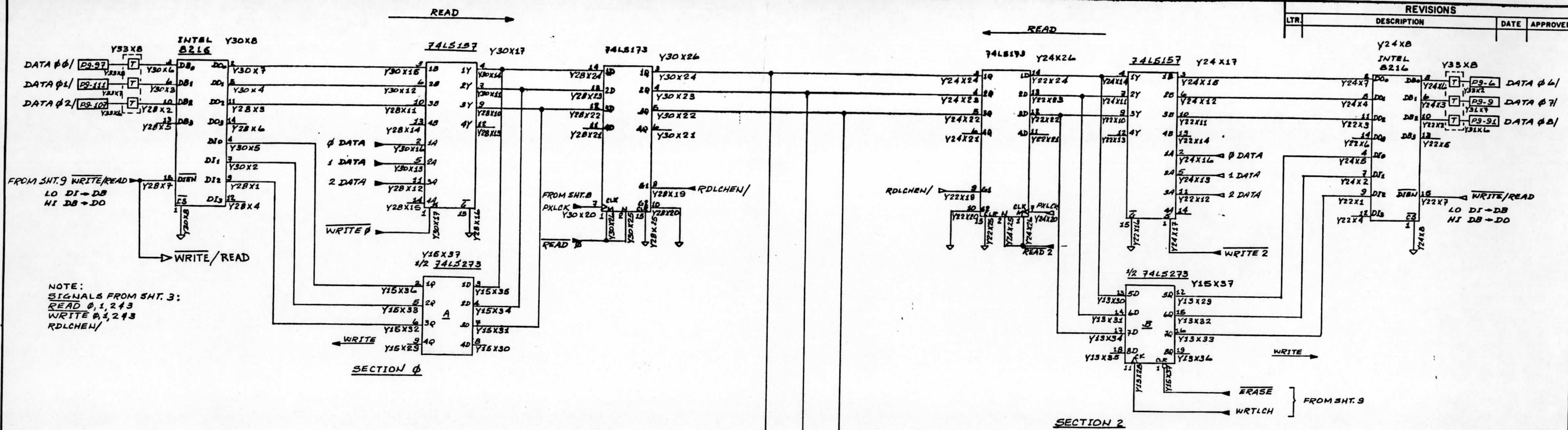
TITLE: MLIDAS 2
B13 SYNC MODULE
RS232 SECTION

SCALE: None DESIGNED BY: A2 10-31-86 DATE: CHECKED BY: DATE: ENGINEER BY: DATE:

BEST HIGHER ASSEMBLY: PRODUCT ASSURANCE: DATE: PROJECT APPROVAL: DATE:

PROJECT NO. 6450 SHEET 5 OF 5 DRAWING NO. 6450-0085

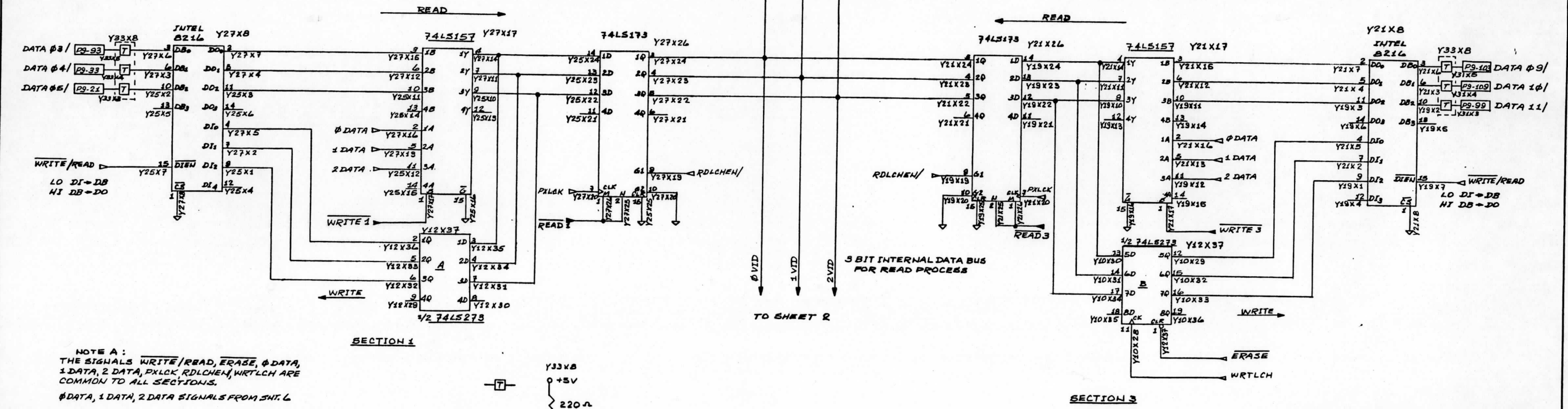
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



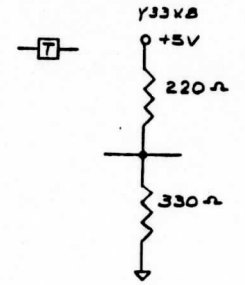
NOTE:
SIGNALS FROM SHT. 3:
READ 0, 1, 2, 3
WRITE 0, 1, 2, 3
RDLCHEN/

SECTION 0

SECTION 2



NOTE A:
THE SIGNALS WRITE/READ, ERASE, 0 DATA,
1 DATA, 2 DATA, PKLCK, RDLCHEN, WRTLCH ARE
COMMON TO ALL SECTIONS.
0 DATA, 1 DATA, 2 DATA SIGNALS FROM SHT. 6



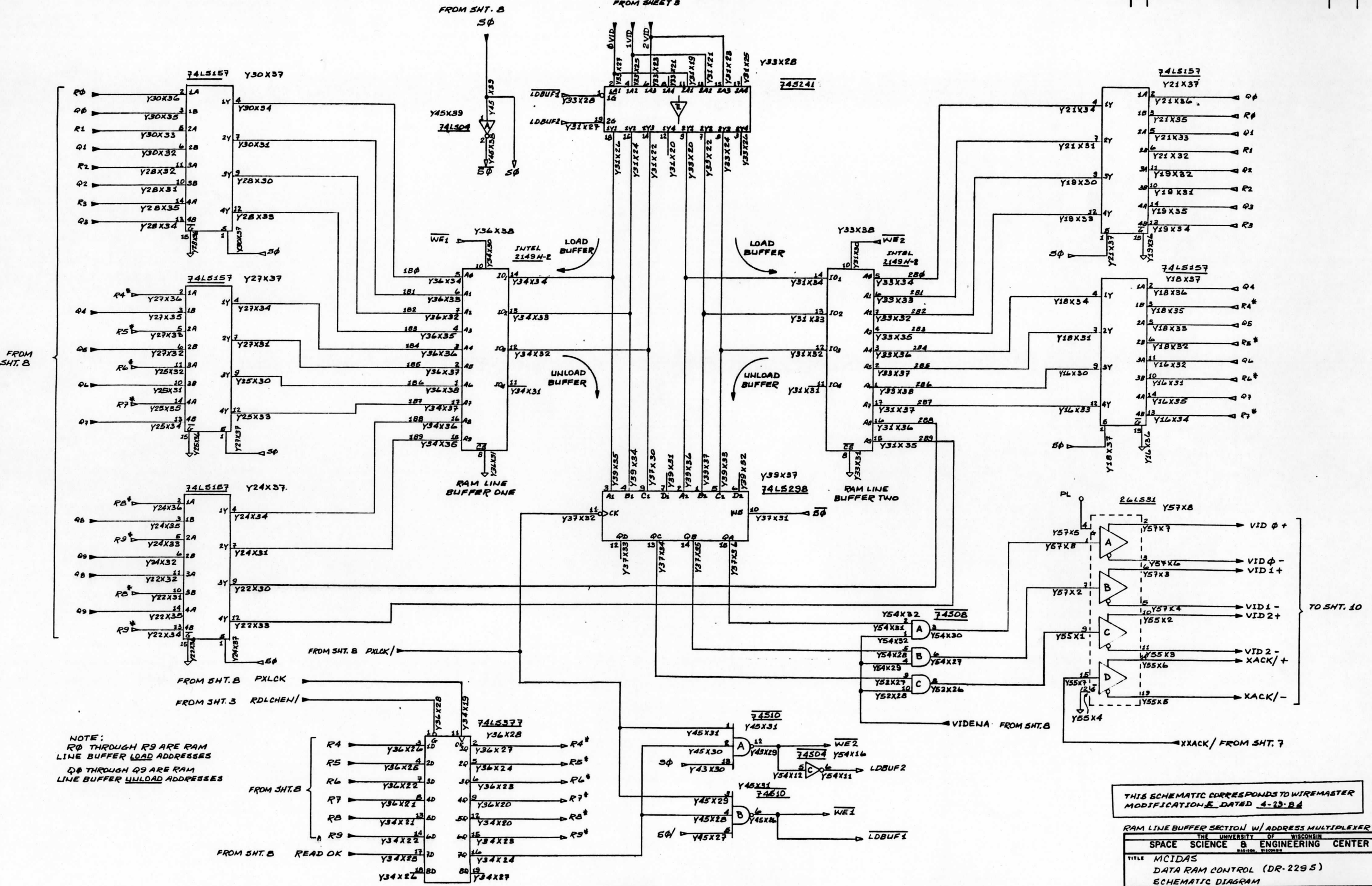
3 BIT INTERNAL DATA BUS FOR READ PROCESS
TO SHEET 2

THIS SCHEMATIC CORRESPONDS TO WIREMASTER MODIFICATION E DATED 4-23-84

BIDIRECTIONAL DATA BUS - SECTIONS 0, 1, 2, 3					
THE UNIVERSITY OF WISCONSIN					
SPACE SCIENCE & ENGINEERING CENTER					
TITLE MCIDAS					
DATA RAM CONTROL (DR-2295)					
SCHEMATIC DIAGRAM					
SCALE	DRAWN	CHECKED	DATE	ENGINEER	DATE
N.A.					11-3-84
NEXT HIGHER ASSEMBLY	PROJECT ASSURANCE	DATE	PROJECT	APPROVAL	DATE
PROJECT NO	SIZE	SHEET	OF	DRAWING NO	
7001	D	1	10	6450-0377	

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

3 BIT INTERNAL DATA BUS FROM SHEET 8



NOTE:
R0 THROUGH R9 ARE RAM LINE BUFFER LOAD ADDRESSES
Q0 THROUGH Q9 ARE RAM LINE BUFFER UNLOAD ADDRESSES

THIS SCHEMATIC CORRESPONDS TO WIREMASTER MODIFICATION E DATED 4-23-84

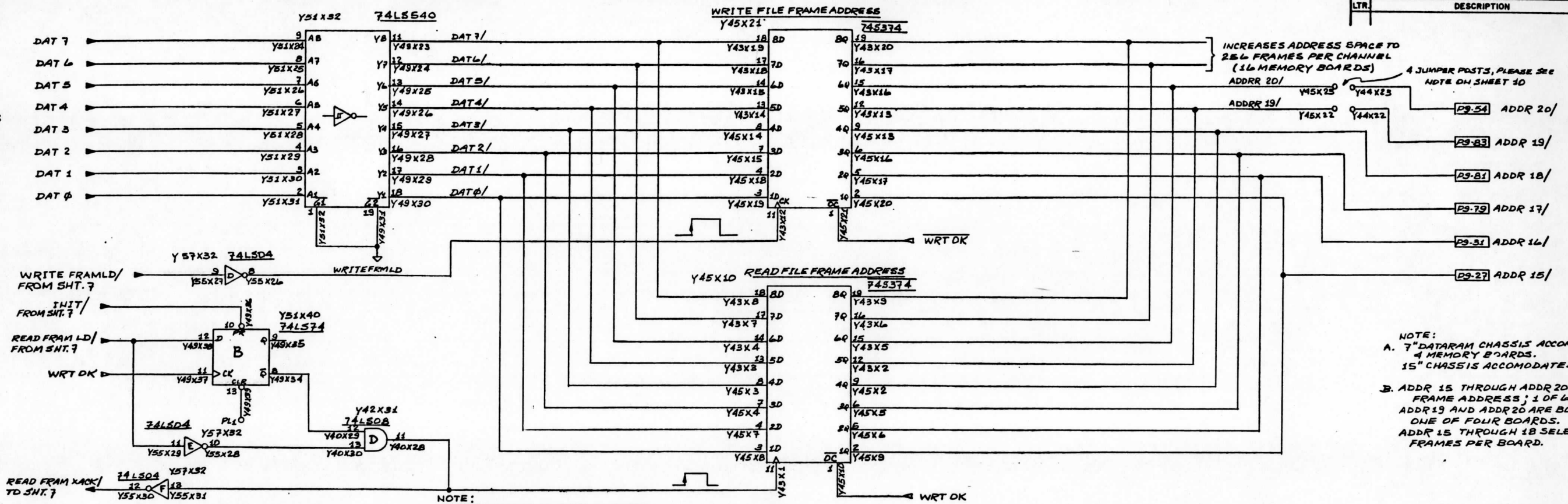
RAM LINE BUFFER SECTION W/ ADDRESS MULTIPLEXER

THE UNIVERSITY OF WISCONSIN			
SPACE SCIENCE & ENGINEERING CENTER			
TITLE: MCIDAS			
DATA RAM CONTROL (DR-229S)			
SCHEMATIC DIAGRAM			
SCALE: N.A.	DATE: 11-3-84	DATE CHECKED: 11-3-84	DATE ENGINEER: 11-3-84
REVISION: 037A	PRODUCT ASSURANCE: 037A	DATE PROJECT APPROVAL: 11-3-84	DATE: 11-3-84
PROJECT NO: 7001	SHEET: 4 OF 10	DRAWING NO: 6450-0377	

B26

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

FROM P-1
DATA BUS
RECEIVER
SHEET 6



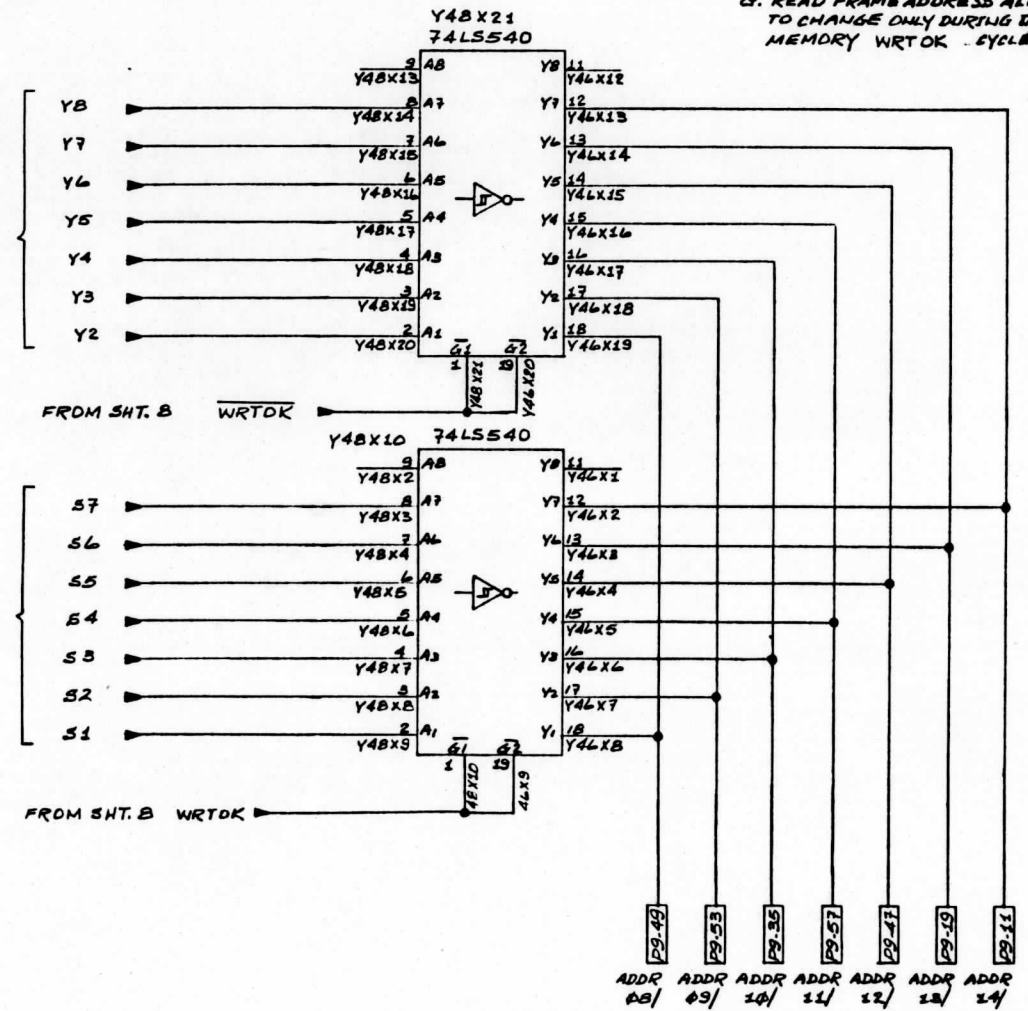
INCREASES ADDRESS SPACE TO
256 FRAMES PER CHANNEL
(16 MEMORY BOARDS)
4 JUMPER POSTS, PLEASE SEE
NOTE ON SHEET 10

NOTE:
A. 7" DATARAM CHASSIS ACCOMMODATES
4 MEMORY BOARDS.
15" CHASSIS ACCOMMODATES 16 BOARDS.
B. ADDR 15 THROUGH ADDR 20 ARE 6 BIT
FRAME ADDRESS; 1 OF 64 FRAMES.
ADDR 19 AND ADDR 20 ARE BOARD SELECT;
ONE OF FOUR BOARDS.
ADDR 15 THROUGH 18 SELECT 1 OF 16
FRAMES PER BOARD.

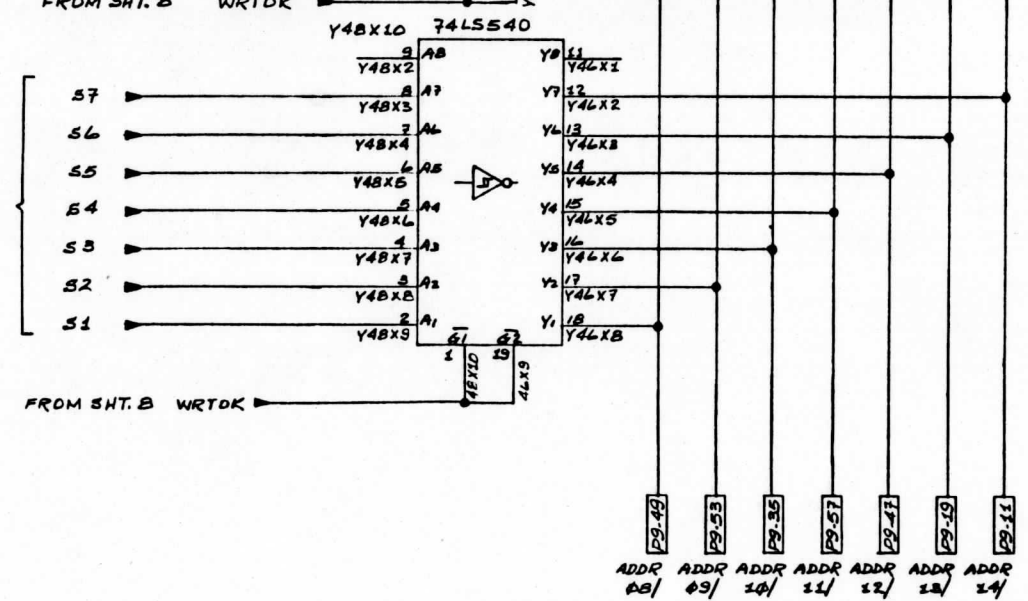
NOTE:
G. READ FRAME ADDRESS ALLOWED
TO CHANGE ONLY DURING DATARAM
MEMORY WRTOK CYCLE.

NOTE:
C. ADDR 0 THROUGH ADDR 14 SELECT
A WORD ADDRESS WITHIN A FRAME.
D. DATARAM WORD IS 32 BITS WIDE, THIS
IMPLEMENTATION USES 30 BITS.
5 BITS/PIXEL
30 PIXELS/WORD
64 WORDS/LINE
640 PIXELS/LINE
E. X'S AND Y'S ARE WRITE ADDRESSES.
R'S AND S'S ARE READ ADDRESSES.
F. SB IS LOWEST ORDER 'Y'-ADDRESS
BIT FOR ODD/EVEN FIELD
INTERLACE DURING READ PROCESS.

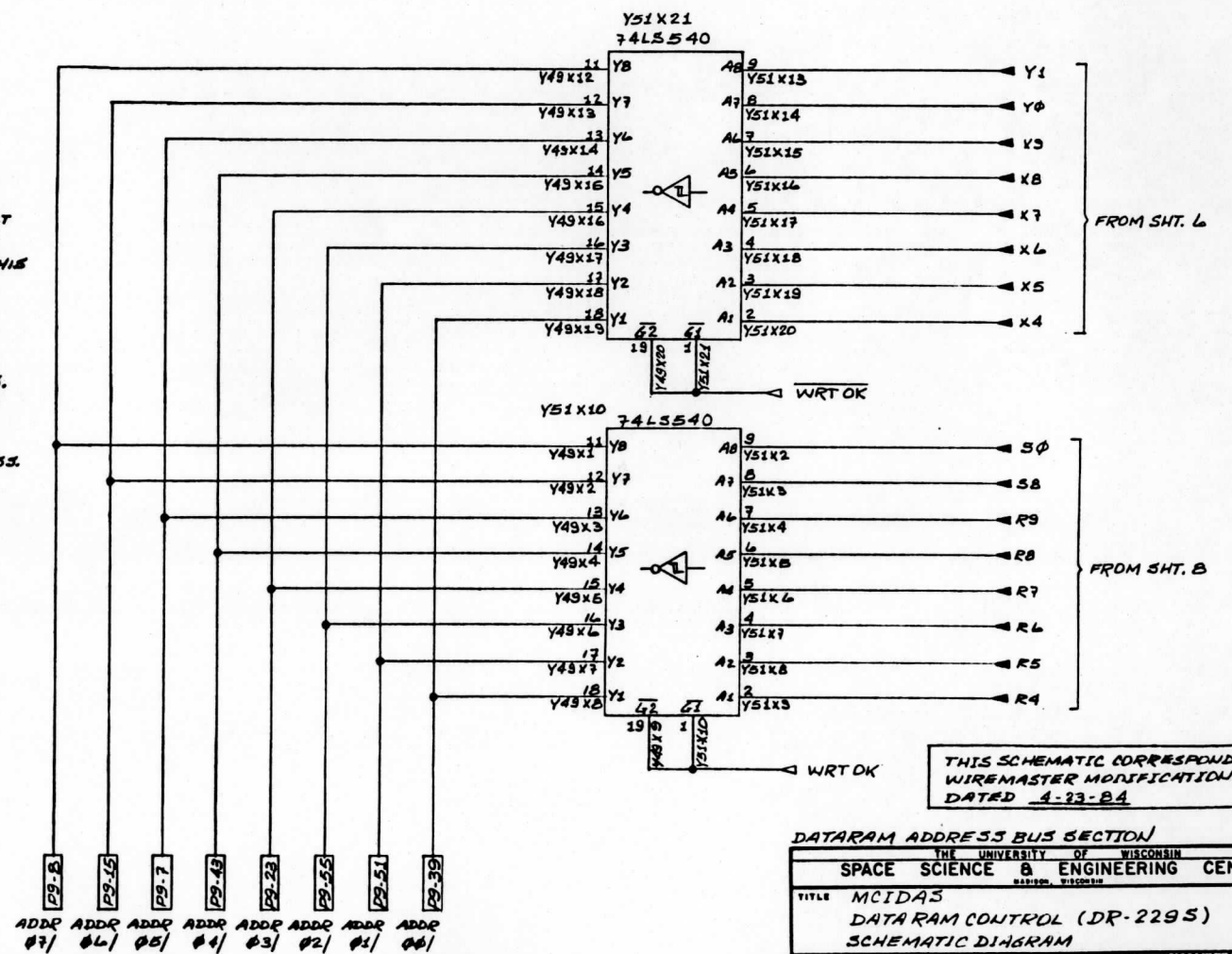
FROM SMT. 6



FROM SMT. B



ADDR 08/ ADDR 09/ ADDR 10/ ADDR 11/ ADDR 12/ ADDR 13/ ADDR 14/

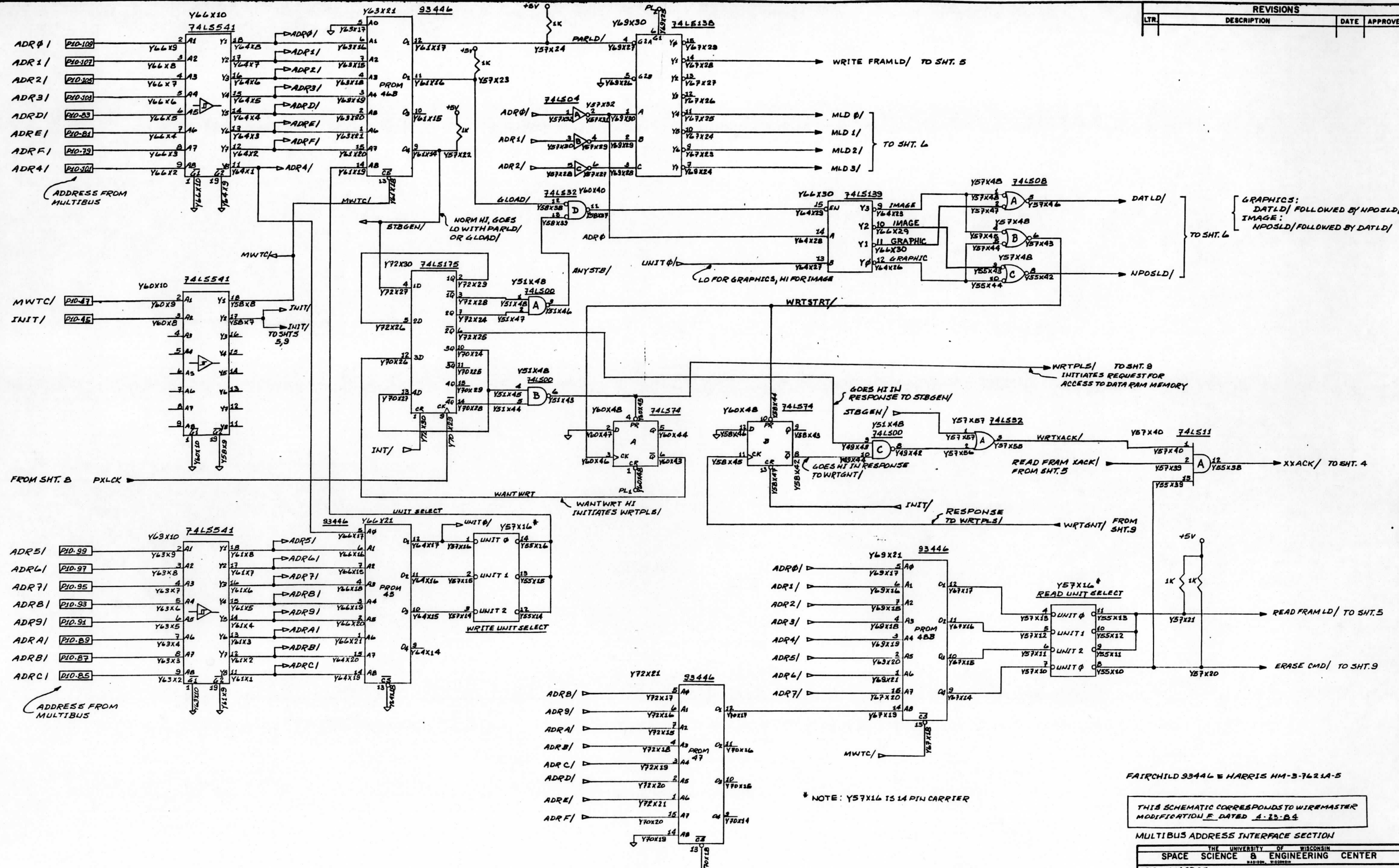


ADDR 07/ ADDR 06/ ADDR 05/ ADDR 04/ ADDR 03/ ADDR 02/ ADDR 01/ ADDR 00/

THIS SCHEMATIC CORRESPONDS TO
WIREMASTER MODIFICATION E
DATED 4-23-84

DATARAM ADDRESS BUS SECTION			
THE UNIVERSITY OF WISCONSIN SPACE SCIENCE & ENGINEERING CENTER			
TITLE: MCIDAS DATA RAM CONTROL (DR-2295) SCHEMATIC DIAGRAM			
SCALE: N/A	DRAWN BY: D.F. 05-80/84	CHECKED BY: [blank]	DATE: 11-5-86
PROJECT NO: 7001	SIZE: D	SHEET 5 OF 10	DRAWING NO: 6450-0377

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



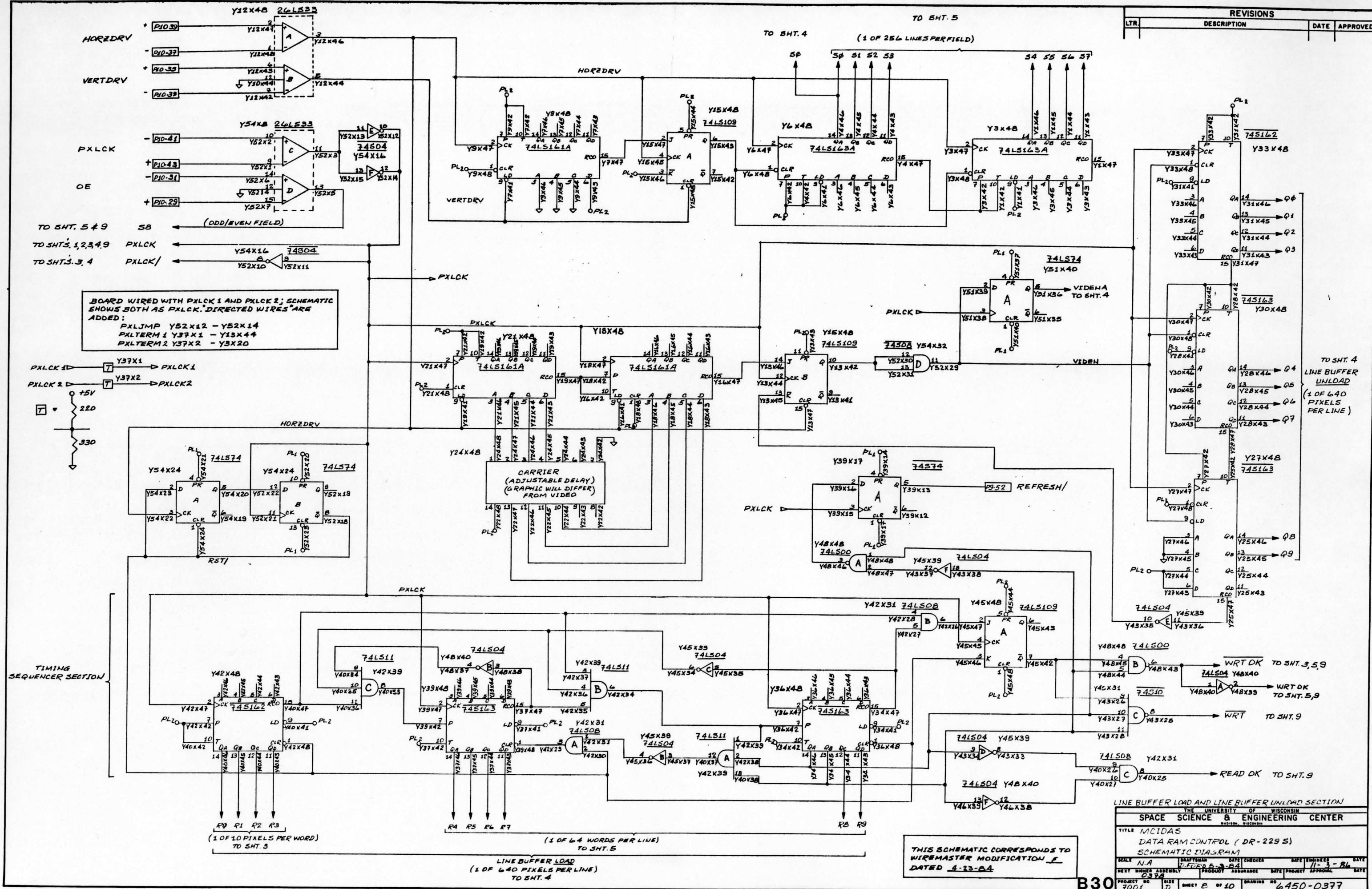
FAIRCHILD 93446 & HARRIS HM-3-7621A-5

THIS SCHEMATIC CORRESPONDS TO WIREMASTER MODIFICATION F DATED 4-25-84

MULTIBUS ADDRESS INTERFACE SECTION

THE UNIVERSITY OF WISCONSIN			
SPACE SCIENCE & ENGINEERING CENTER			
MADISON, WISCONSIN			
TITLE MCIDAS DATA RAM CONTROL (DR-2295) SCHEMATIC DIAGRAM			
SCALE N.A.	DESIGNER D.FORD	CHECKER S.B.	DATE 11-3-84
BY N.A.	PROJECT ASSURANCE	DATE PROJECT APPROVAL	DATE
PROJECT NO. 7001	SHEET 7 OF 10	DRAWING NO. 6450-0377	

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



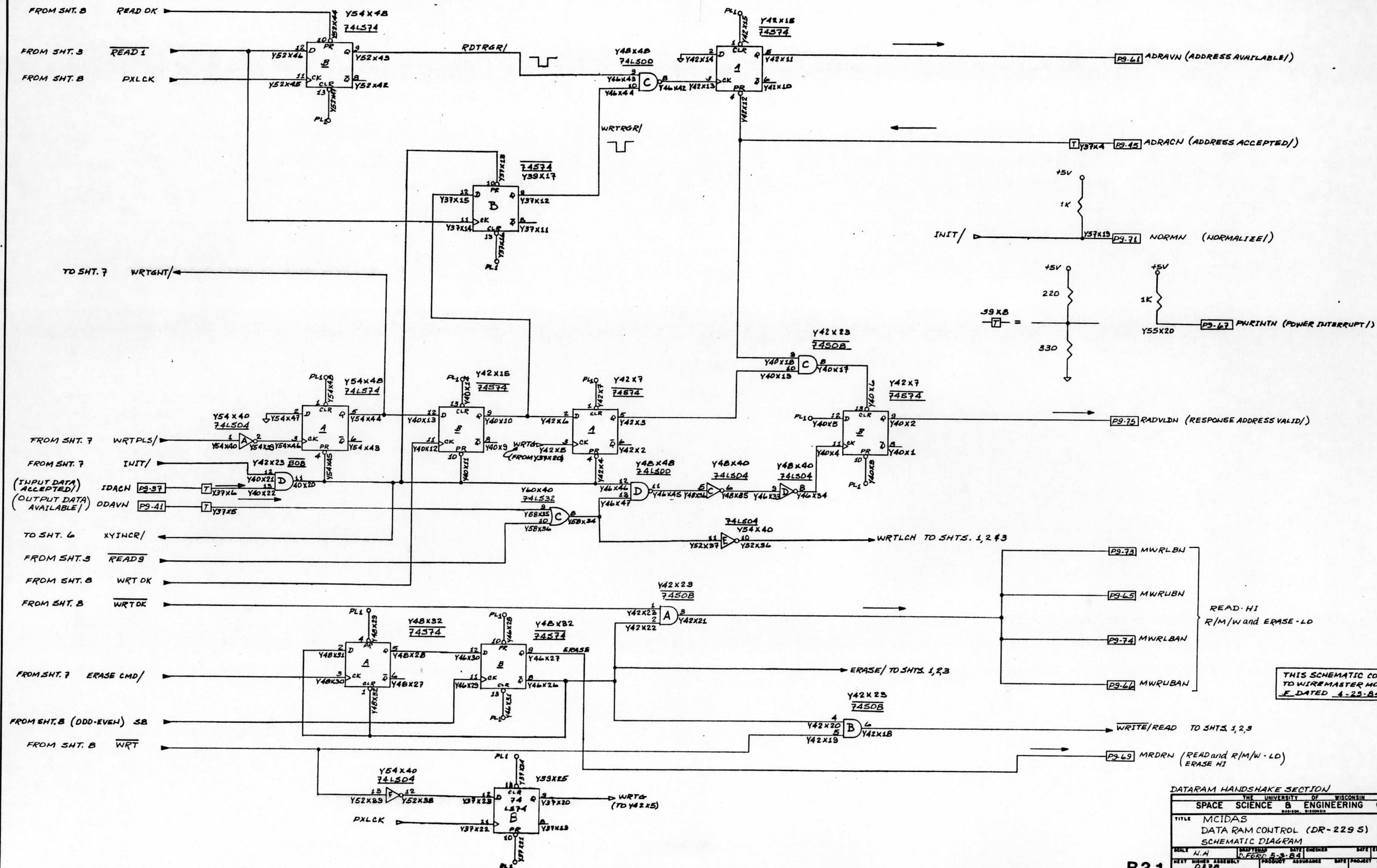
BOARD WIRED WITH PXLCK 1 AND PXLCK 2; SCHEMATIC SHOWS BOTH AS PXLCK. DIRECTED WIRES ARE ADDED:
 PXLJMP Y52X12 - Y52X14
 PXLTERM 1 Y37X1 - Y13X44
 PXLTERM 2 Y37X2 - Y3X20

THIS SCHEMATIC CORRESPONDS TO WIREMASTER MODIFICATION F DATED 4-23-84

THE UNIVERSITY OF WISCONSIN					
SPACE SCIENCE & ENGINEERING CENTER					
TITLE MCIDAS					
DATA RAM CONTROL (DR-229 S)					
SCHEMATIC DIAGRAM					
SCALE	DATE	DESIGNED BY	CHECKED BY	DATE	BY
N.A.	11-3-84				
PROJECT NO.	SIZE	SHEET	OF	DRAWING NO.	
7001	D	E	OF	10	6450-0377

B30

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



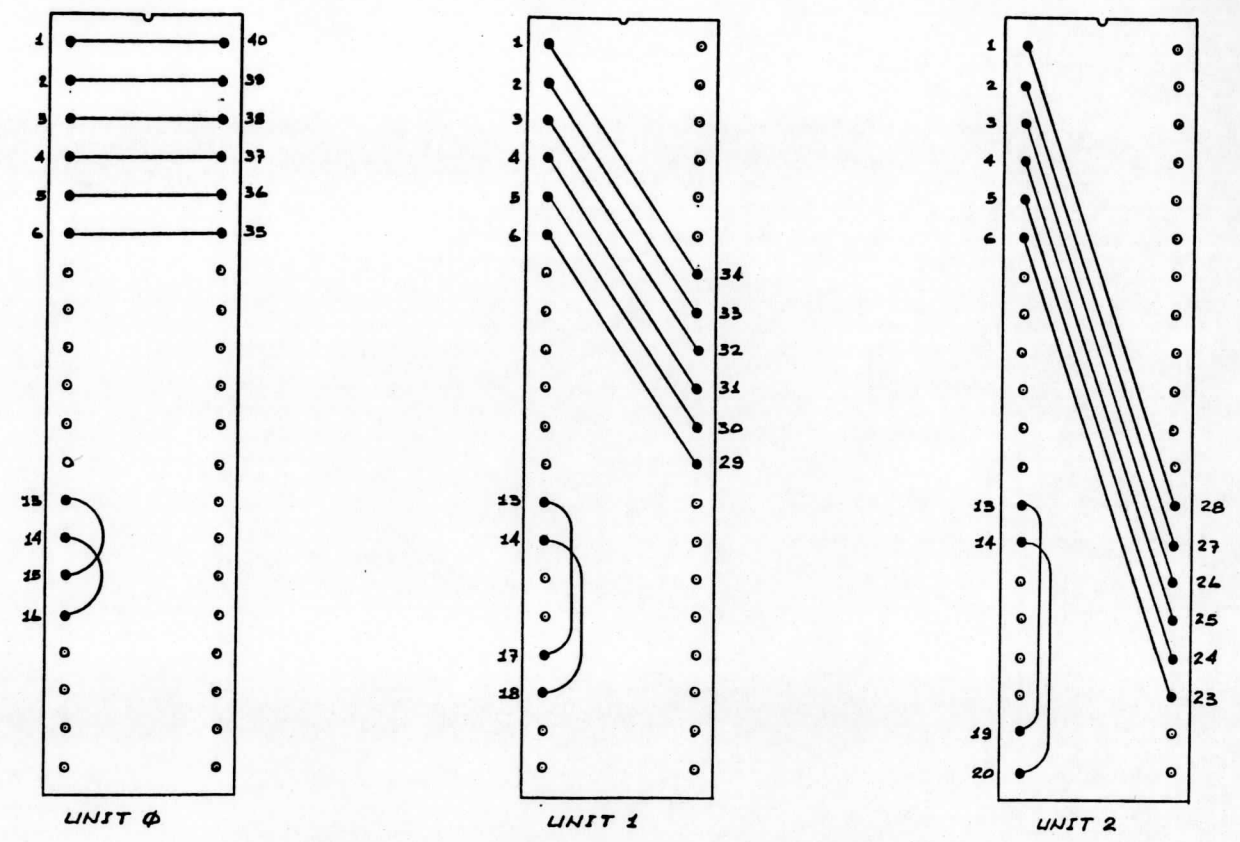
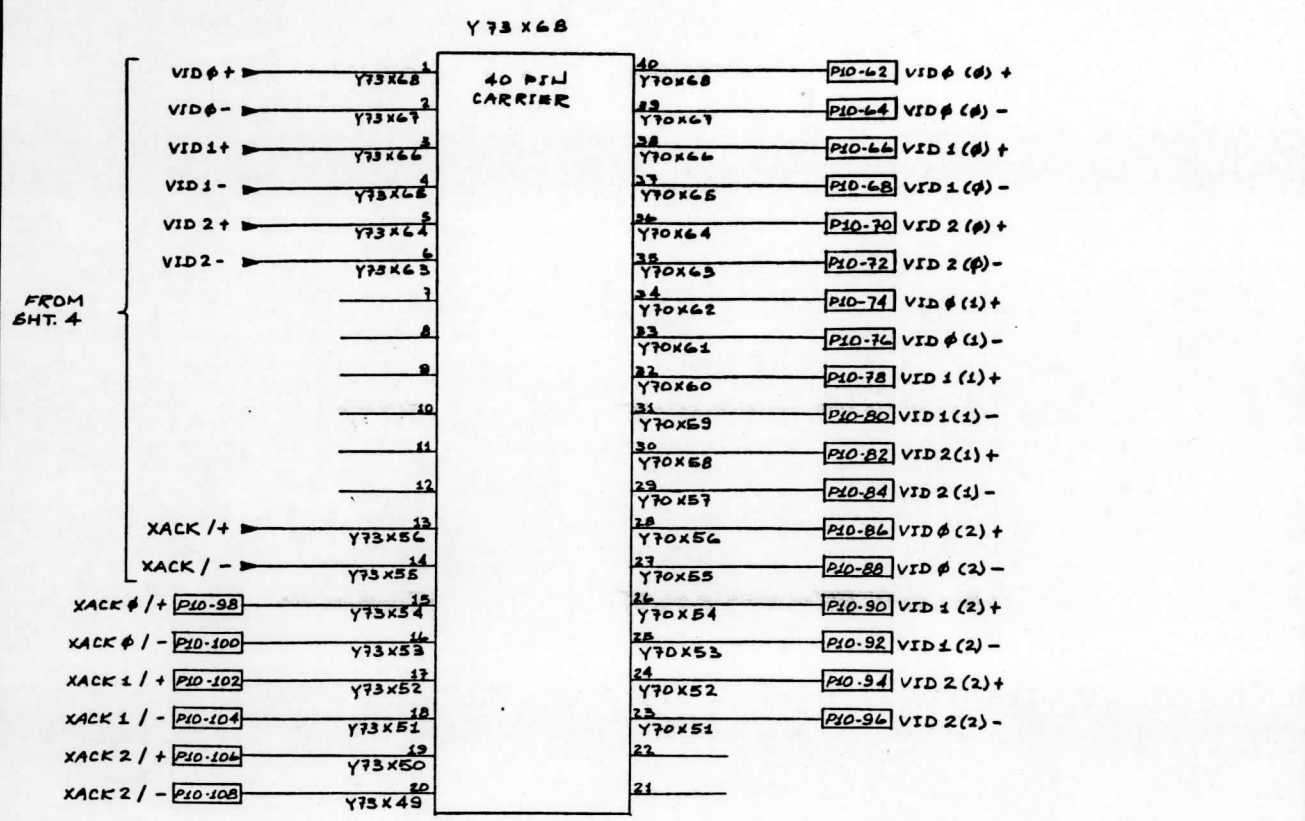
THIS SCHEMATIC CORRESPONDS TO WIRE MASTER MODIFICATION E DATED 4-23-84

DATARAM HANDSHAKE SECTION

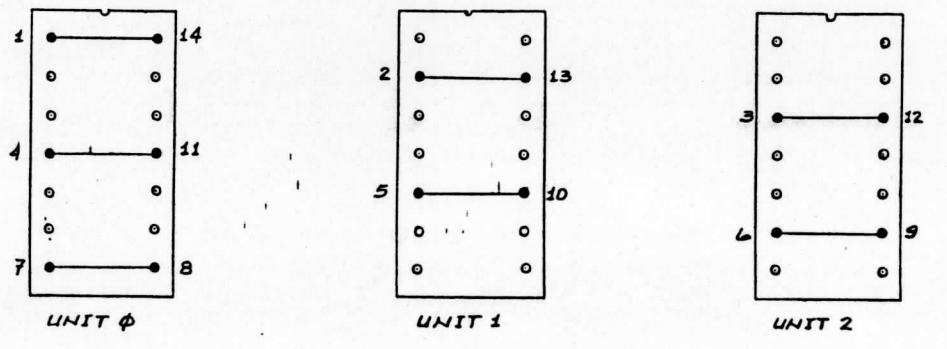
THE UNIVERSITY OF WISCONSIN			
SPACE SCIENCE & ENGINEERING CENTER			
MADISON, WISCONSIN			
TITLE	MCIDAS DATA RAM CONTROL (DR-229 S) SCHEMATIC DIAGRAM		
SCALE	N/A	DATE	1-3-84
DESIGNED BY	R.F. 5-3-84	CHECKED BY	
PROJECT NO.	7001	PROJECT APPROVAL	
SIZE	37	SHEET	9 OF 10
DRAWING NO.	6450-0377		

B31

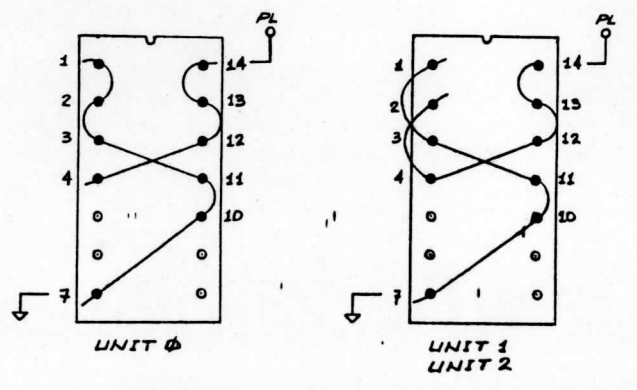
REVISIONS			
LYR.	DESCRIPTION	DATE	APPROVED



VIDEO AND XACK/ SELECT CARRIER (Y73X68)



UNIT SELECT CARRIER (Y57X16)



HORIZONTAL POSITION CARRIER (Y24X46)

NOTE: JUMPER POSTS (PLEASE SEE SHEETS)

NO. OF MEMORY BOARDS IN DATARAM CHASSIS	ADDR 19/JUMPER Y45X22-Y44X22	ADDR 20/JUMPER Y45X23-Y44X23	TERMINAL CONFIGURATION
1			32 IMAGE / 16 GRAPHIC
2	*		64 IMAGE / 32 GRAPHIC
3	*	*	96 IMAGE / 48 GRAPHIC
4	*	*	128 IMAGE / 64 GRAPHIC

* DENOTES JUMPER(S) REQUIRED FOR INDICATED TERMINAL CONFIGURATION.

THIS SCHEMATIC CORRESPONDS TO WIREMASTER MODIFICATION E DATED 4-23-84

CARRIER CONFIGURATIONS

THE UNIVERSITY OF WISCONSIN
SPACE SCIENCE & ENGINEERING CENTER
MADISON, WISCONSIN

TITLE MCIDAS
DATARAM CONTROL (DR-2295)
SCHEMATIC

SCALE N.A. DRAWN BY B.F.P. DATE 8-2-84 CHECKED DATE 11-3-84

PROJECT NO. -037A PRODUCT ASSURANCE DATE PROJECT APPROVAL DATE

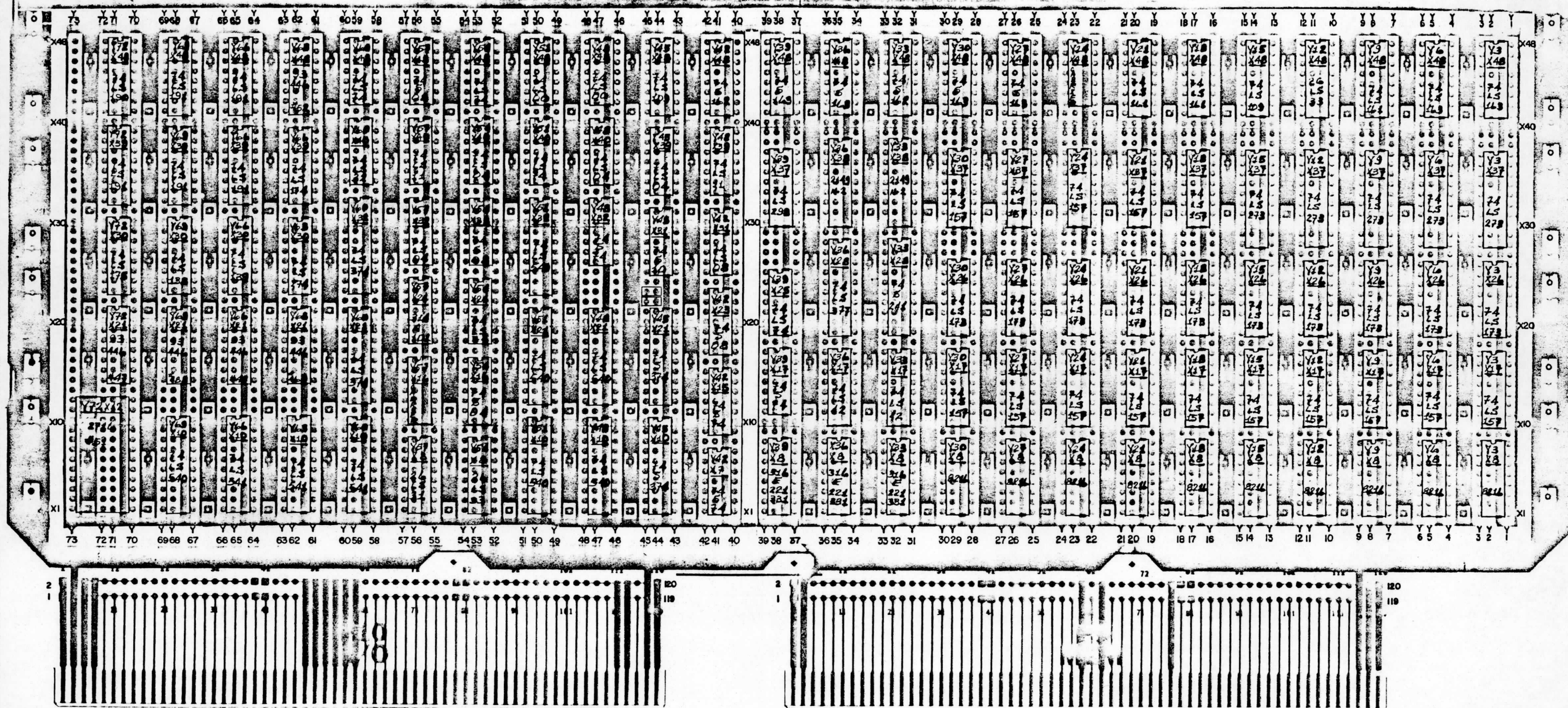
PROJECT NO. 7004 SIZE D SHEET 10 OF 10 DRAWING NO. 6450-0377

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

Y73
X68

40 PIN CARRIER
NOTE:
NOT 2/1 SCALE

Y57
X51
71
15
32

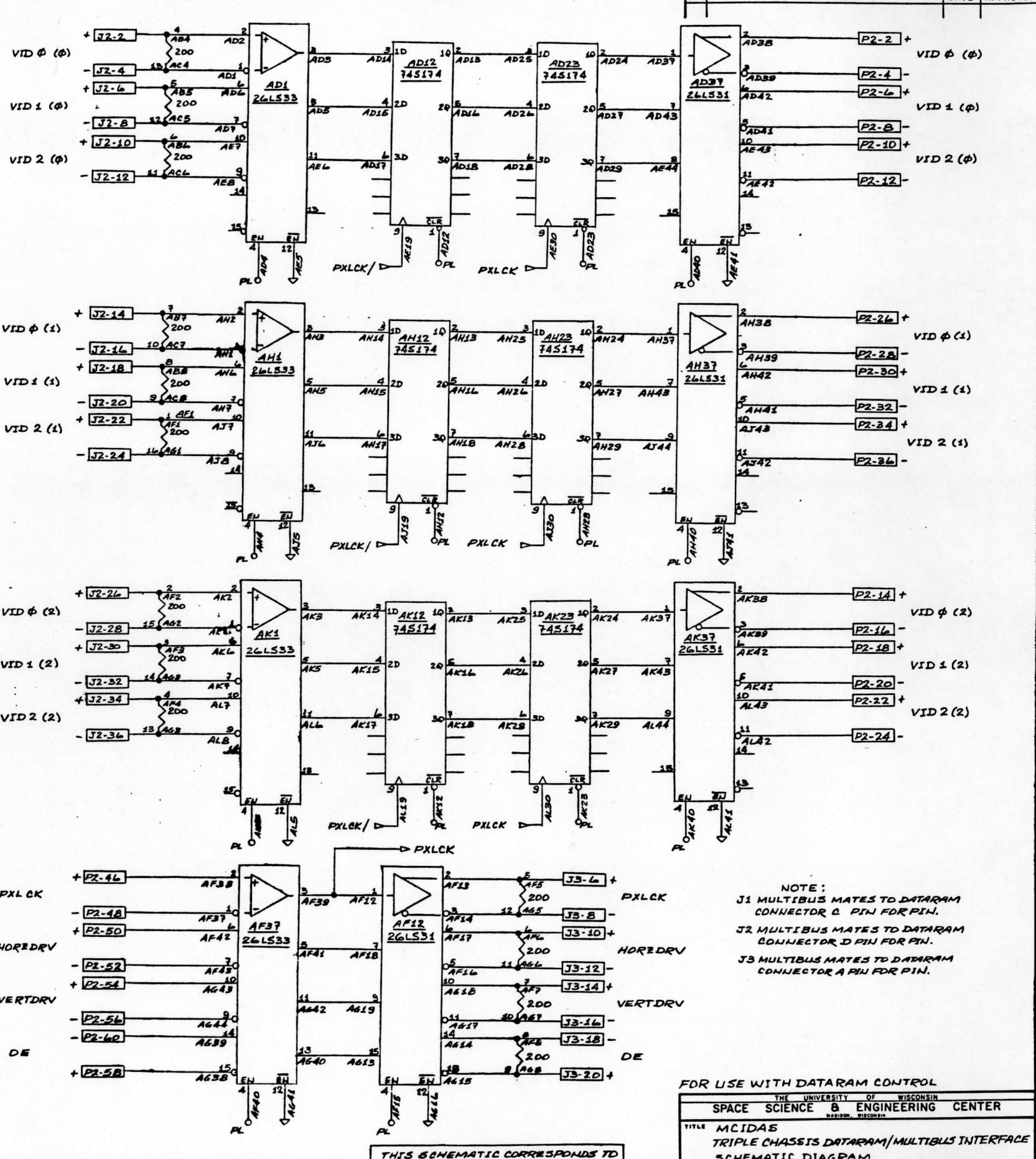
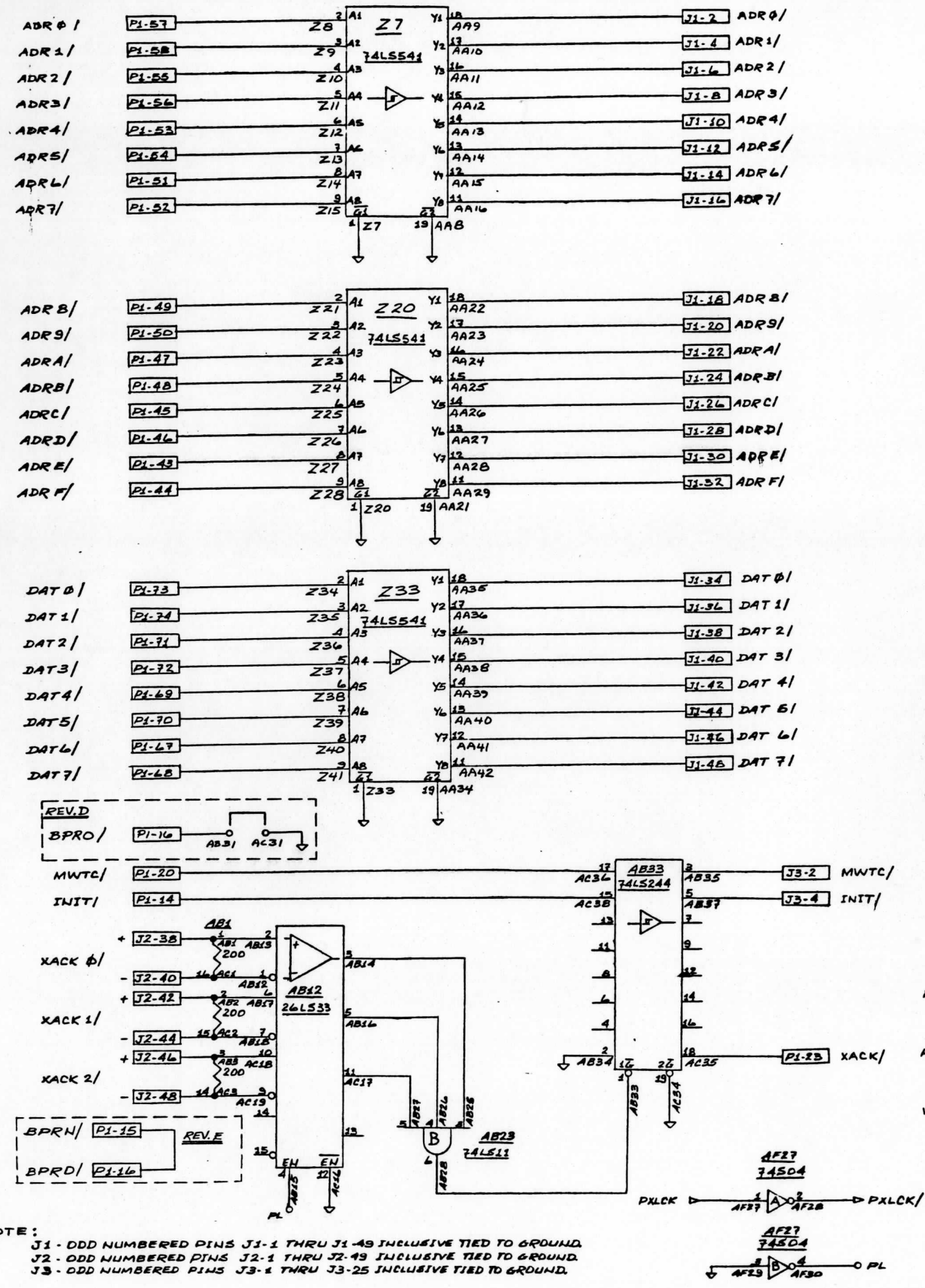


THIS ASSEMBLY CORRESPONDS TO WIREMASTER MODIFICATION E, DATED 4-23-84

THE UNIVERSITY OF WISCONSIN			
SPACE SCIENCE & ENGINEERING CENTER			
TITLE MCIDAS			
DATA RAM CONTROL (DR-229 S)			
ASSEMBLY DIAGRAM			
SCALE 2/1	DRAFTSMAN	DATE CHECKER	DATE ENGINEER
PROJECT NO 7001	ASSURANCE	DATE PROJECT APPROVAL	DATE
PROJECT NO 7001		DRAWING NO 6450-0378	

B33

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



THIS SCHEMATIC CORRESPONDS TO WIREMASTER MODIFICATION D DATED 3-12-84 E DATED 3-14-84

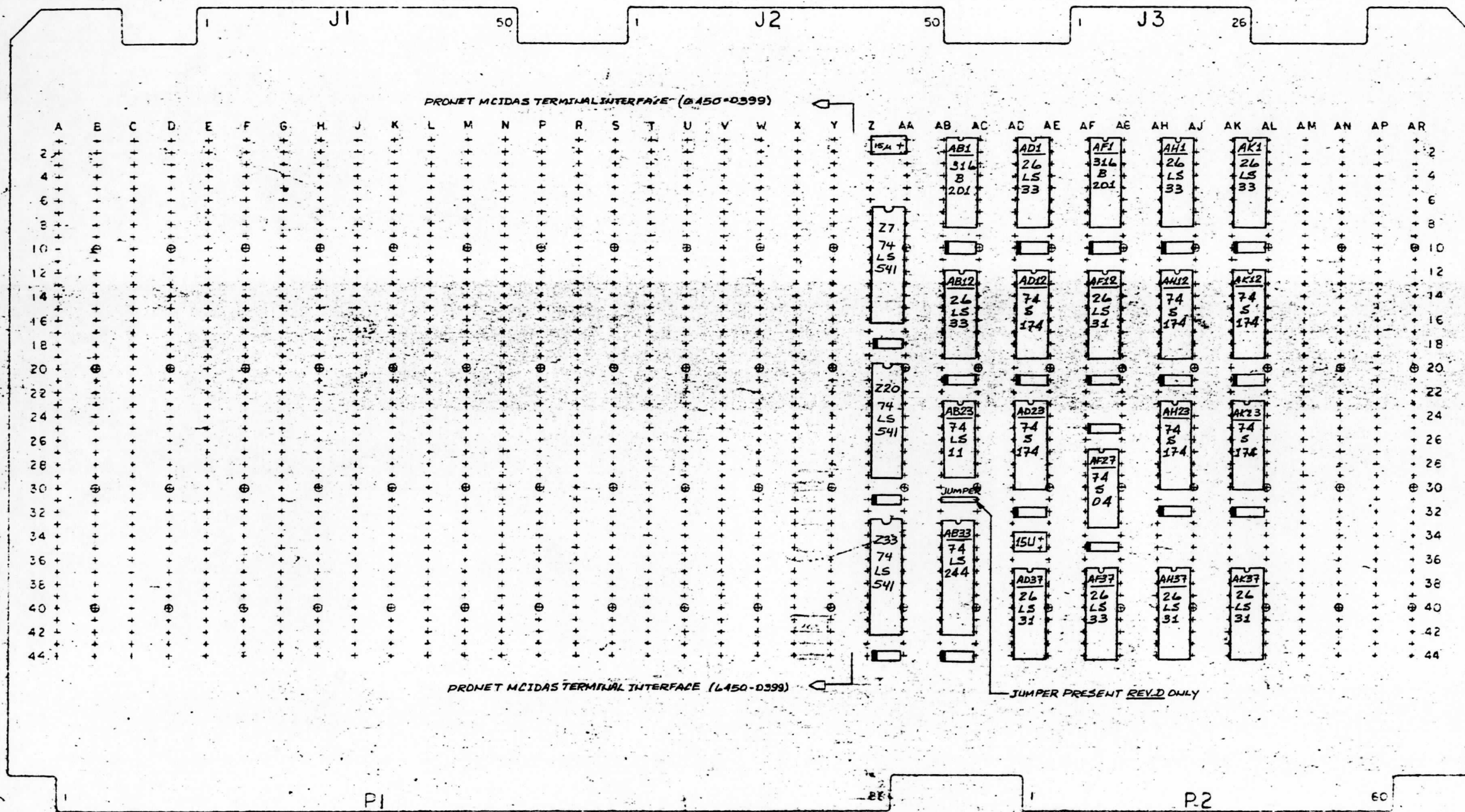
FOR USE WITH DATARAM CONTROL

THE UNIVERSITY OF WISCONSIN
 SPACE SCIENCE & ENGINEERING CENTER

TITLE MCIDAS
 TRIPLE CHASSIS DATARAM/MULTIBUS INTERFACE
 SCHEMATIC DIAGRAM

SCALE N.A. DATE CHECKED DATE ENGINEER DATE
 D. FORD 4-14-84 3-17-84

PROJECT NO. 7001 SHEET 1 OF 1 DRAWING NO. 6450-0379



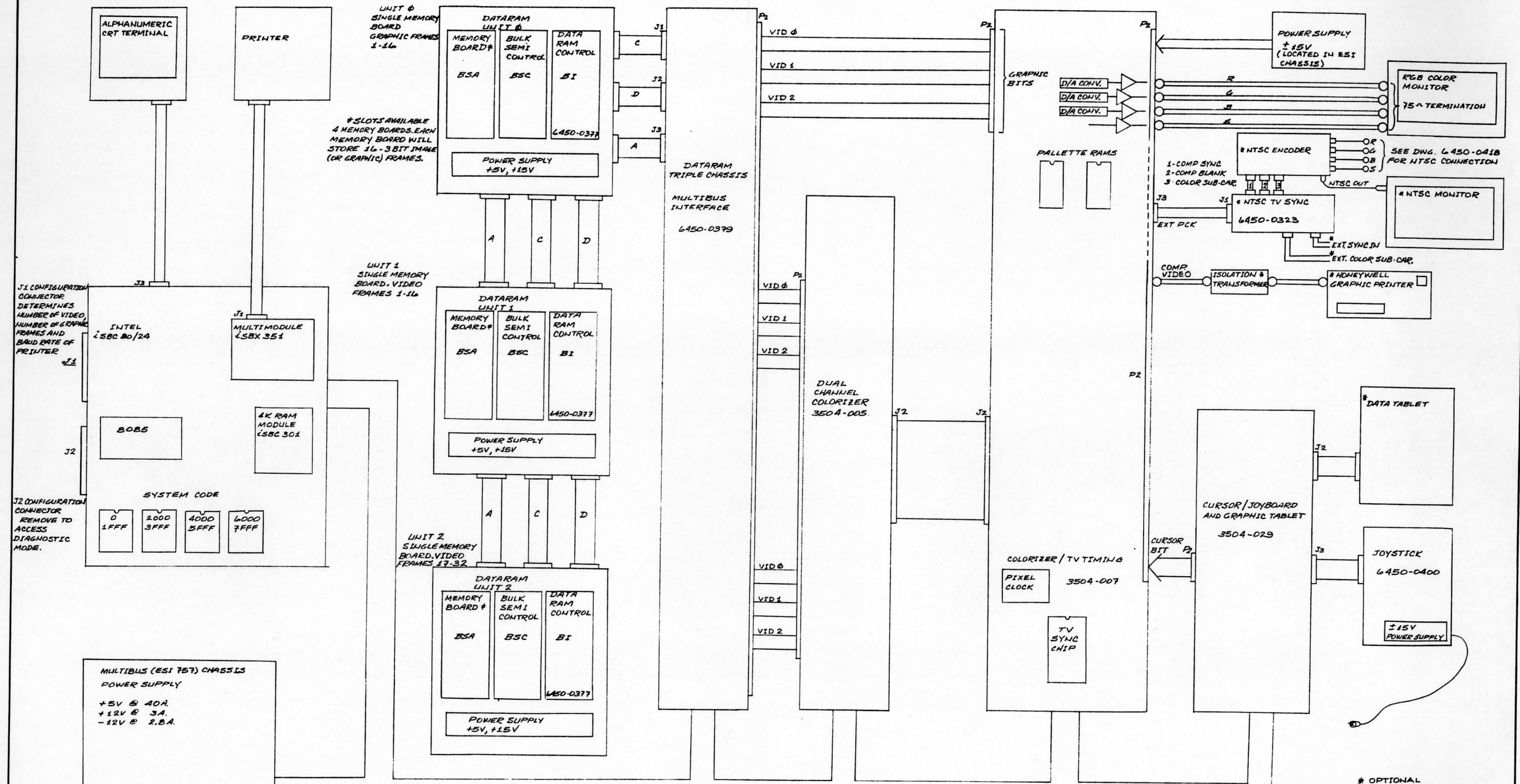
⊕ TENTH ROW DESIGNATION

THIS ASSEMBLY CORRESPONDS TO WIREMASTER
 MODIFICATION D DATED 3-17-84
 E DATED 3-14-84

SPACE SCIENCE & ENGINEERING CENTER			
TITLE MCIDAS 2			
TRIPLE CHASSIS DATARAM / MULTIBUS INTERFACE			
ASSEMBLY DRAWING			
SCALE: 2:1	DATE: 4-14-83	DATE: 3-17-84	DATE: 3-17-84
PROJECT: 6450-0379	DESIGNER: [blank]	DATE: [blank]	APPROVAL: [blank]
7001	OF 1	DRAWING NO. 6450-0380	

B35

REVISIONS			
LTR.	DESCRIPTION	DATE	APPROVED



UNIT 0
SINGLE MEMORY BOARD
GRAPHIC FRAMES 1-16

* SLOTS AVAILABLE
4 MEMORY BOARDS. EACH
MEMORY BOARD WILL
STORE 16-3 BIT IMAGE
(OR GRAPHIC) FRAMES.

UNIT 1
SINGLE MEMORY BOARD. VIDEO
FRAMES 17-32

UNIT 2
SINGLE MEMORY BOARD. VIDEO
FRAMES 33-48

J1 CONFIGURATION
CONNECTOR
DETERMINES
NUMBER OF VIDEO
FRAMES AND
BAUD RATE OF
PRINTER

J2 CONFIGURATION
CONNECTOR
REMOVE TO
ACCESS
DIAGNOSTIC
MODE.

SYSTEM CODE

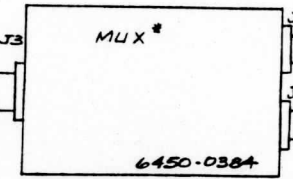
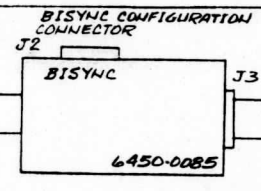
0	2000	4000	6000
1FFF	3FFF	5FFF	7FFF

MULTIBUS (ESI 757) CHASSIS
POWER SUPPLY

+5V @ 40A.
+12V @ 3A.
-12V @ 2.8A.

* OPTIONAL

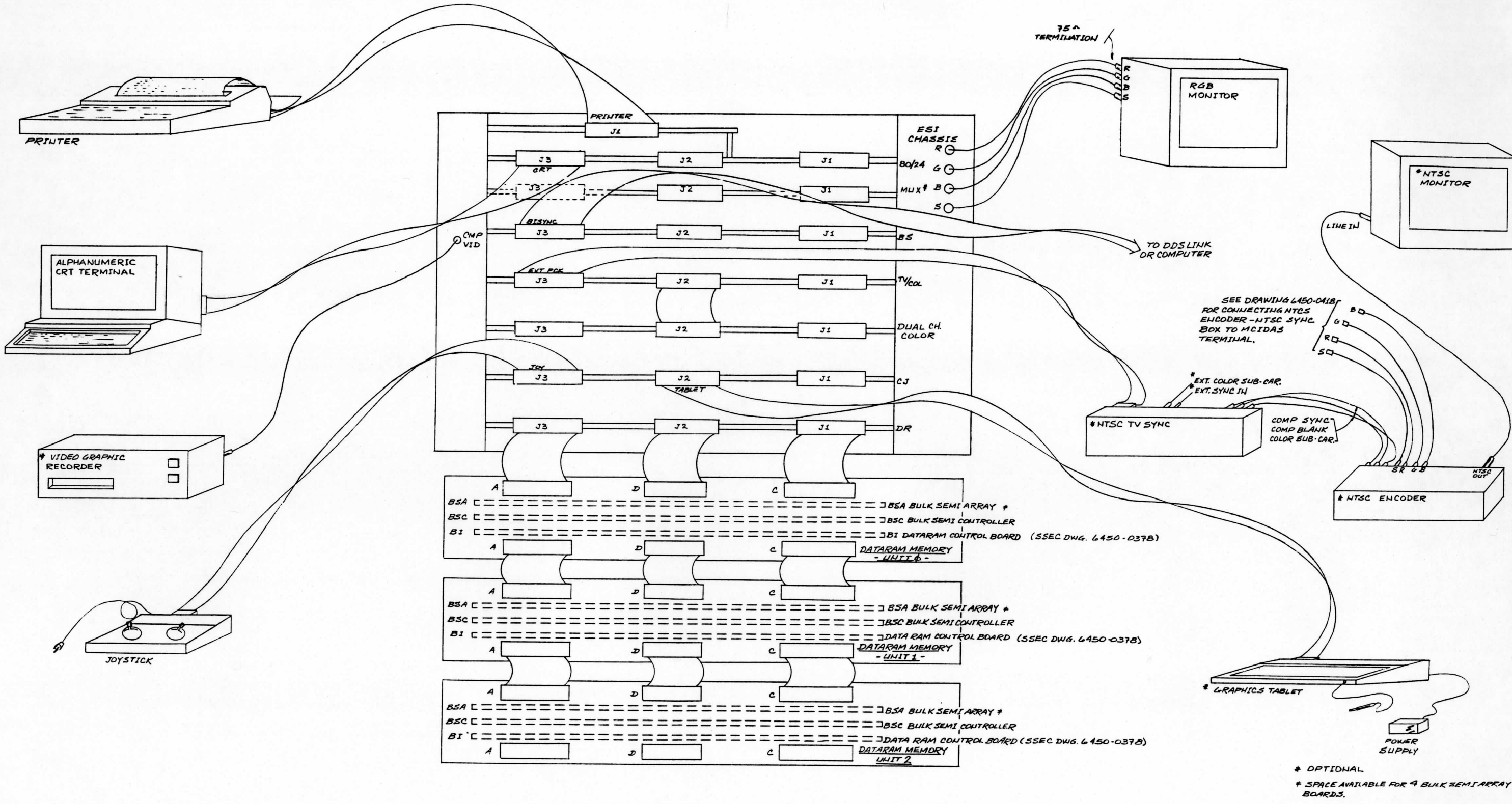
NOTE: DRAWING NUMBERS SHOWN ARE SSEC
ELECTRONICS SCHEMATIC NUMBERS.



THE UNIVERSITY OF WISCONSIN SPACE SCIENCE & ENGINEERING CENTER					
TITLE MCIDAS CSIS/DATARAM TERMINAL BLOCK DIAGRAM					
SCALE N.A.	DRAWN D.FORD	CHECKED D.FORD	DATE 4-83	DATE ENGINEERED	DATE
NEXT HIGHER ASSEMBLY	PRODUCT ASSURANCE	DATE PROJECT	APPROVAL	DATE	DATE
PROJECT NO 1800	SIZE D	SHEET 1 OF 2	DRAWING NO 6450-0394		

B36

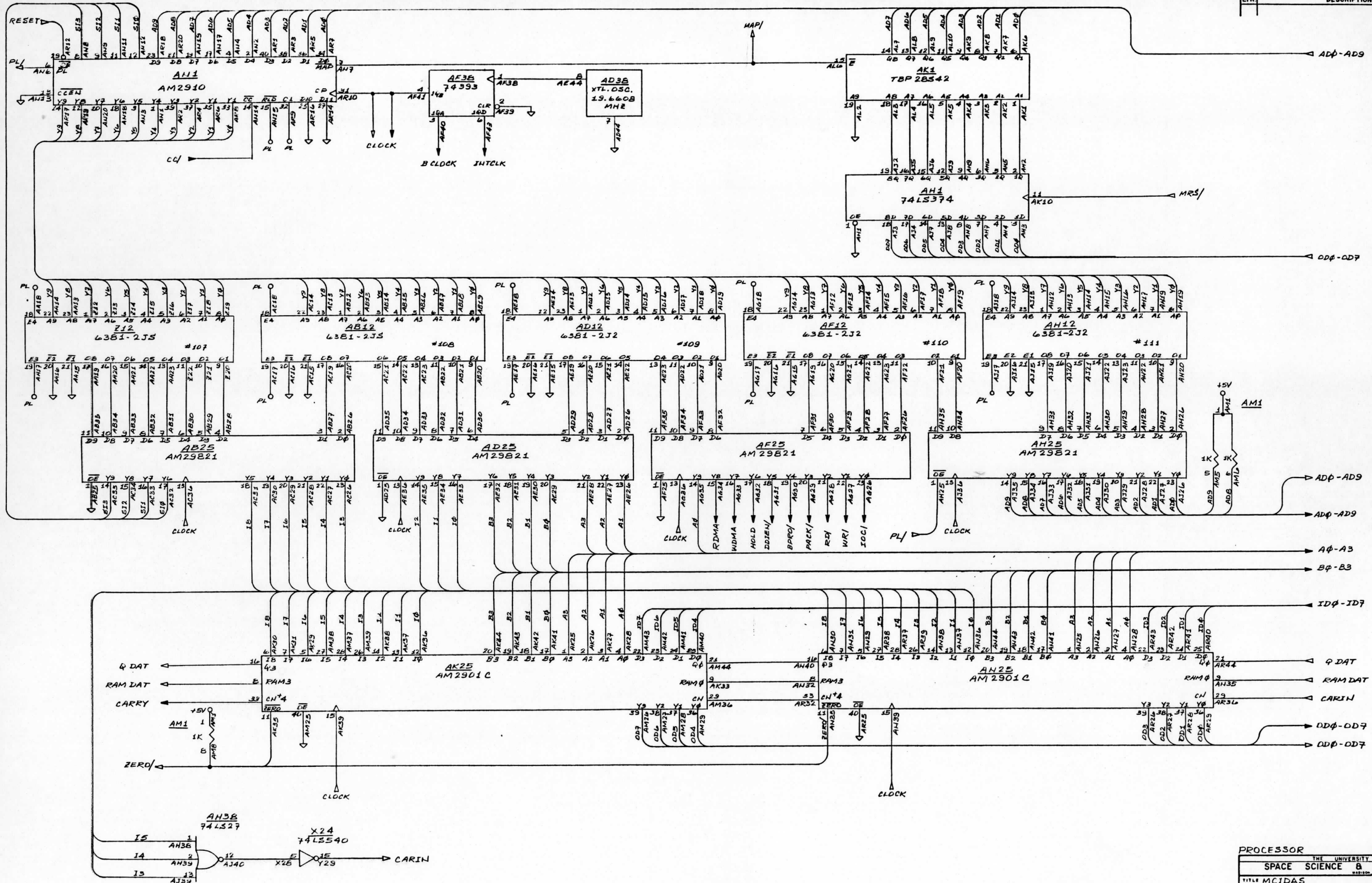
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



THE UNIVERSITY OF WISCONSIN			
SPACE SCIENCE & ENGINEERING CENTER			
TITLE MCIDAS			
CSIS DATARAM TERMINAL			
BLOCK DIAGRAM			
SCALE N.A.	DRAWN BY D.FORD	DATE CHECKER	DATE ENGINEER
PROJECT NO. 1800	PRODUCT ASSURANCE	DATE PROJECT APPROVAL	DATE
SIZE SHEET 2 OF 2	DRAWING NO. 6450-0391		

B37

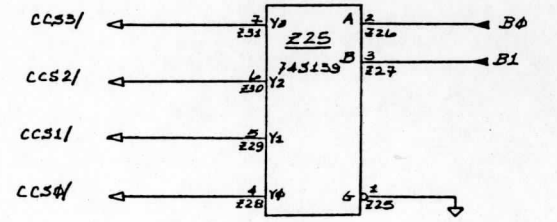
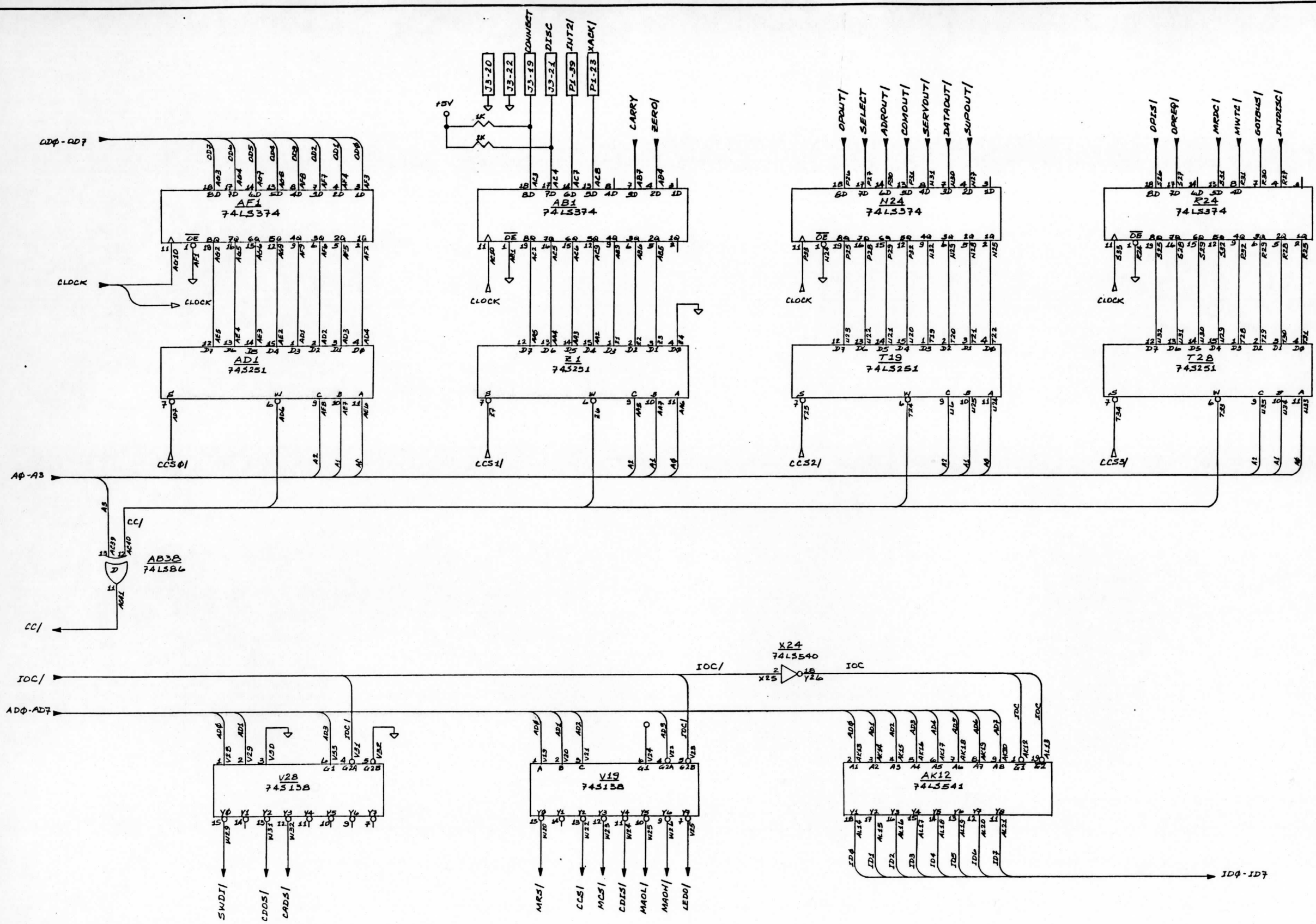
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



PROCESSOR				MCIDU			
THE UNIVERSITY OF WISCONSIN							
SPACE SCIENCE & ENGINEERING CENTER							
MADISON, WISCONSIN							
TITLE MCIDAS							
PRNET/IBM CHANNEL INTERFACE							
SCHEMATIC DIAGRAM							
SCALE	NA	DRAFTSMAN	DATE	CHECKER	DATE	ENGINEER	DATE
NEXT HIGHER ASSEMBLY		PRODUCT	ASSURANCE	DATE	PROJECT	APPROVAL	DATE
PROJECT NO	1020	SIZE	D	SHEET	1	OF 5	DRAWING NO
							L450-0396

B38

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



CONDITION CODE & CONTROL LOGIC MUD U

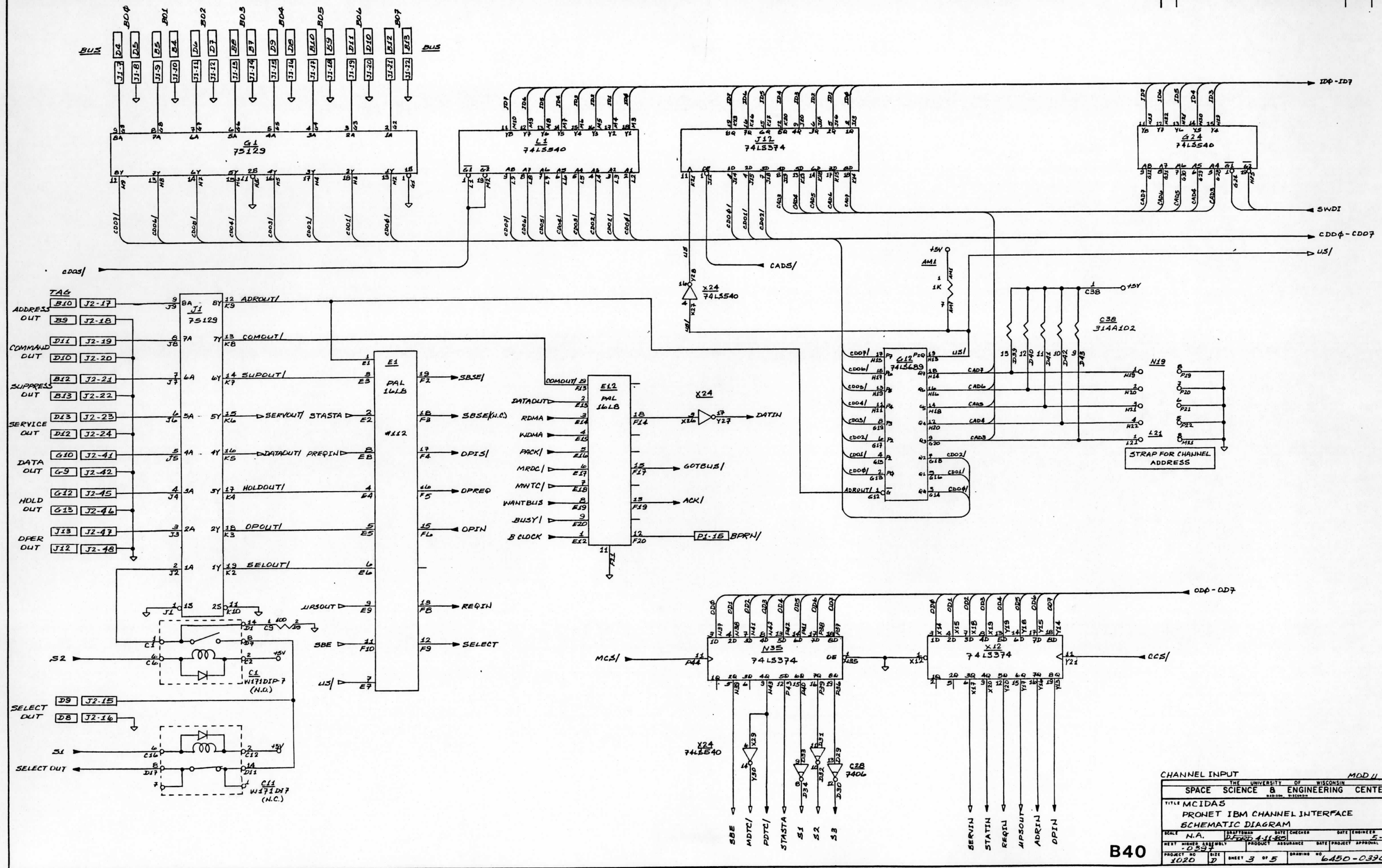
THE UNIVERSITY OF WISCONSIN
SPACE SCIENCE & ENGINEERING CENTER
MADISON, WISCONSIN

TITLE MCTDAS
PRUNET IBM CHANNEL INTERFACE
SCHEMATIC DIAGRAM

SCALE	N.A.	DRAWNMAN	DATE	CHECKER	DATE	ENGINEER	DATE
NEXT HIGHER ASSEMBLY	-0397	PRODUCT	ASSURANCE	DATE	PROJECT	APPROVAL	DATE
PROJECT NO	1020	SIZE	D	SHEET	2 OF 5	DRAWING NO	6450-0396

B39

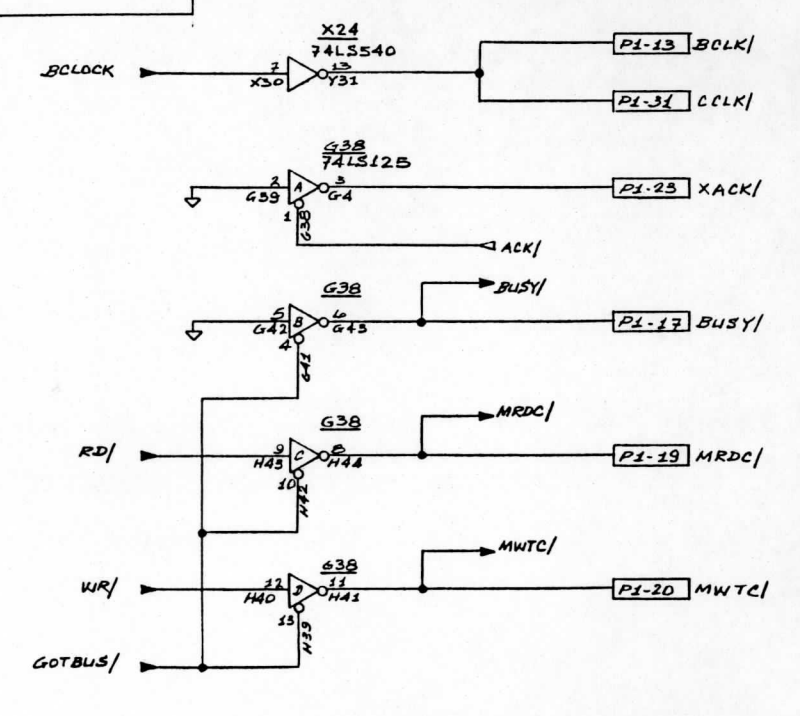
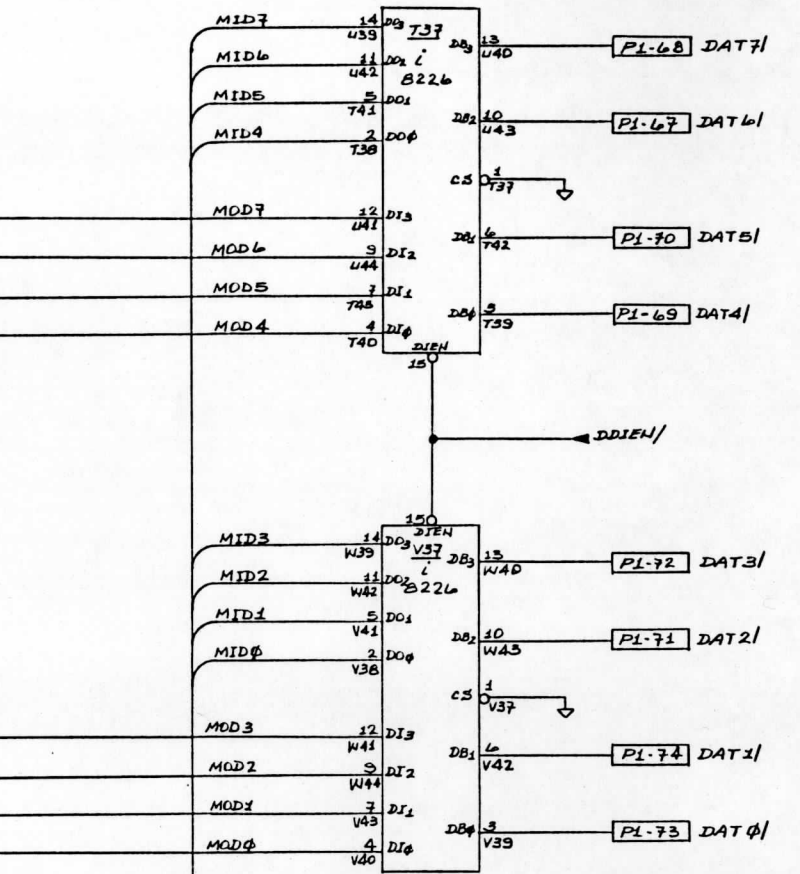
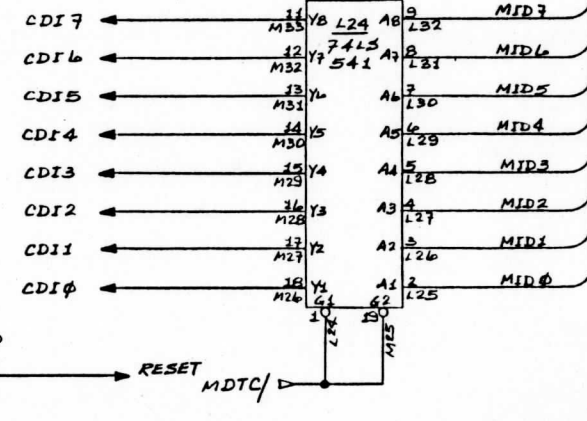
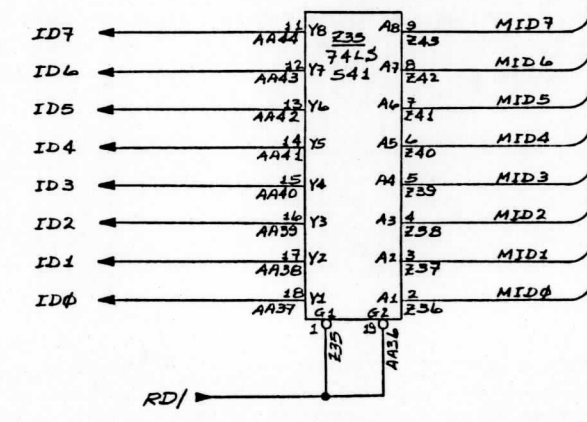
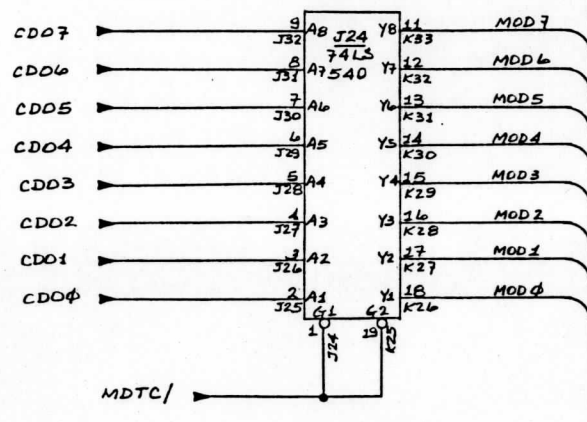
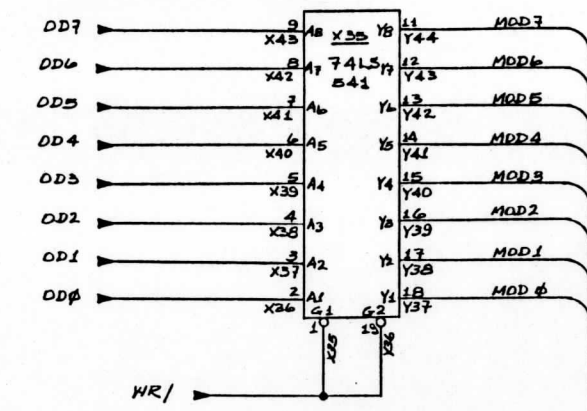
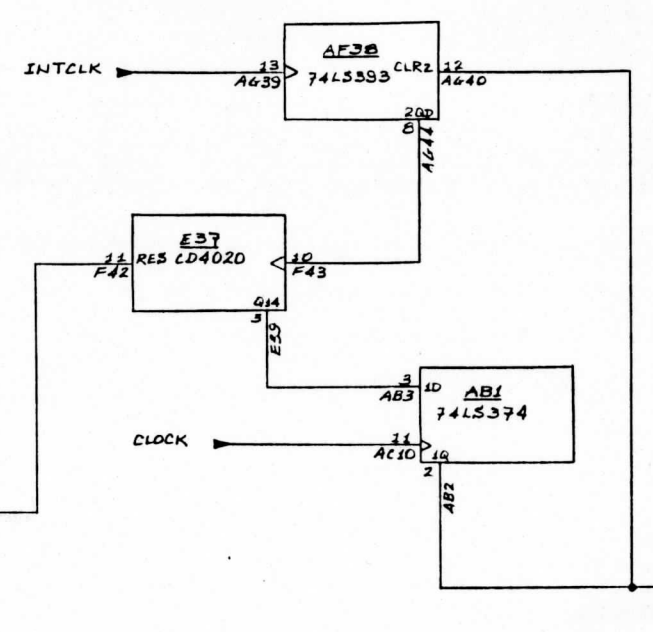
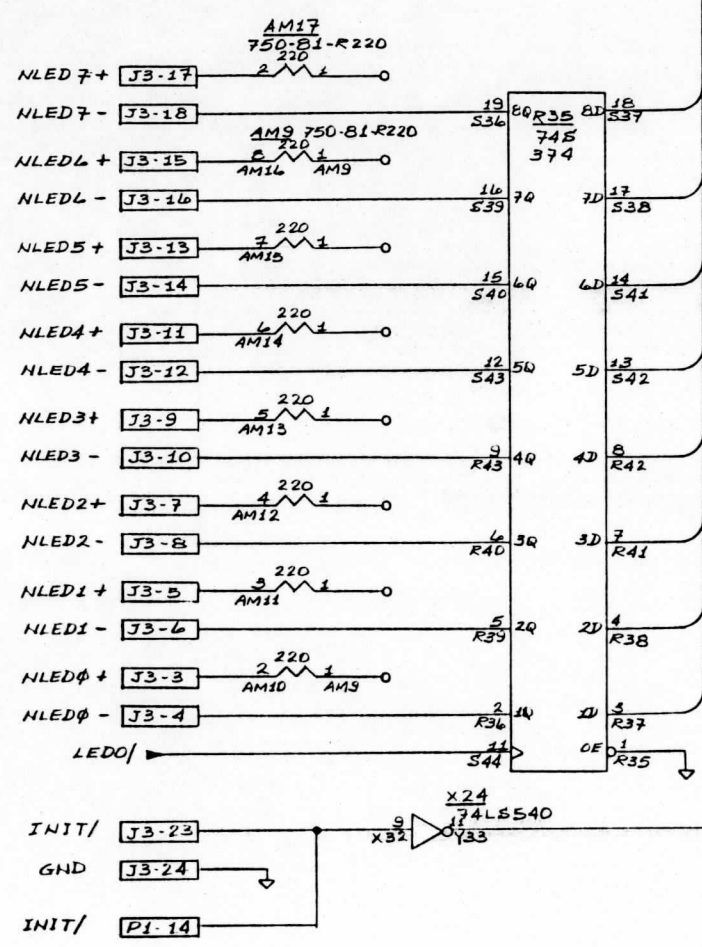
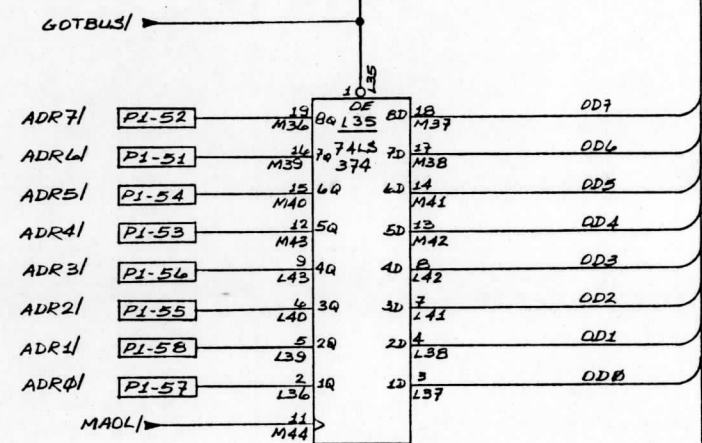
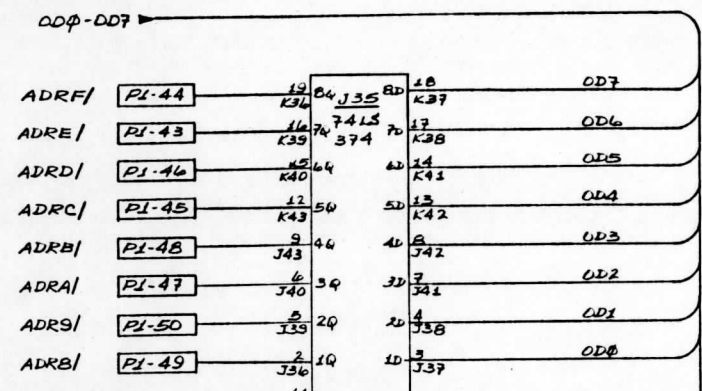
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



CHANNEL INPUT			
THE UNIVERSITY OF WISCONSIN			
SPACE SCIENCE & ENGINEERING CENTER			
TITLE	MCIDAS		
	PRONET IBM CHANNEL INTERFACE		
	SCHEMATIC DIAGRAM		
SCALE	N.A.	DATE	5-2-85
DRAWN BY	D.F. (S)	CHECKED	
PROJECT NO.	1020	PRODUCT ASSURANCE	
SHEET	3	DATE	
OF	5	PROJECT APPROVAL	
DRAWING NO.	6450-0396		

B40

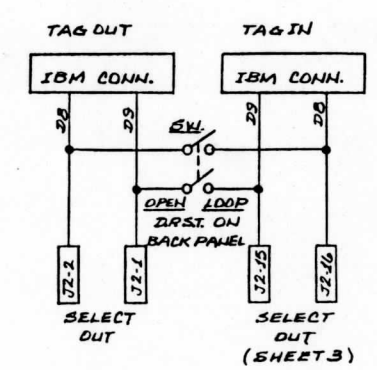
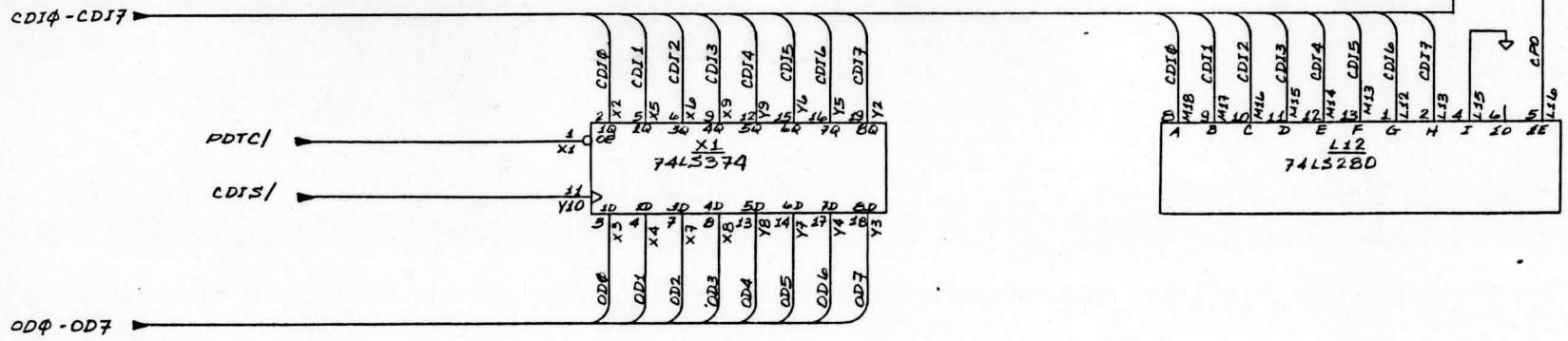
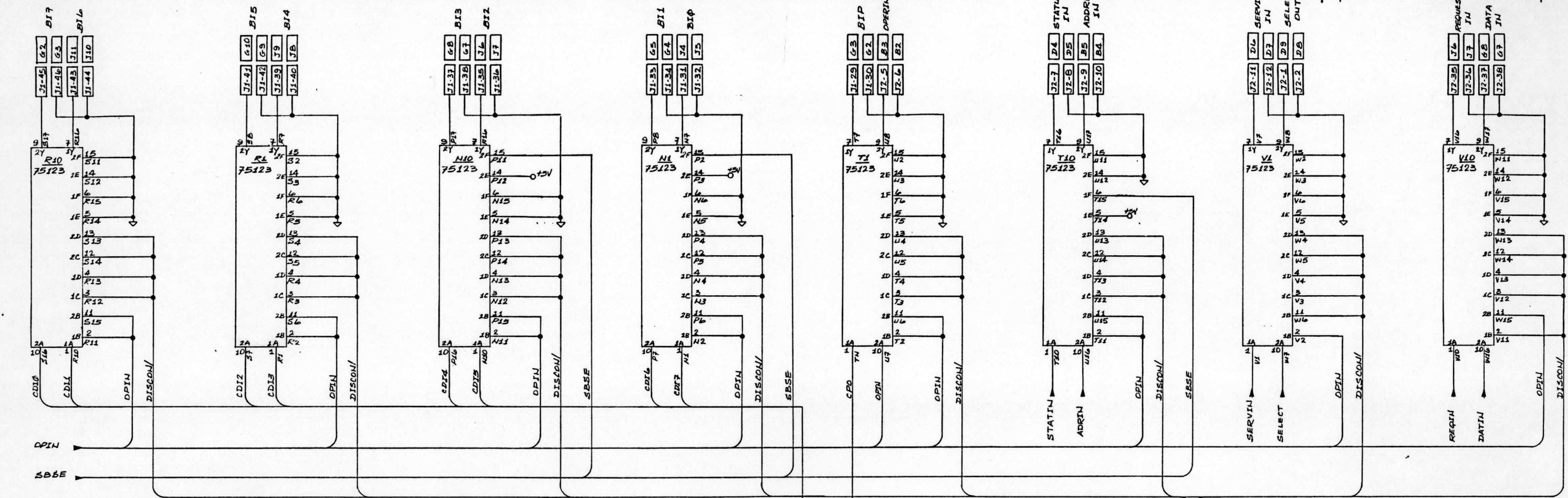
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



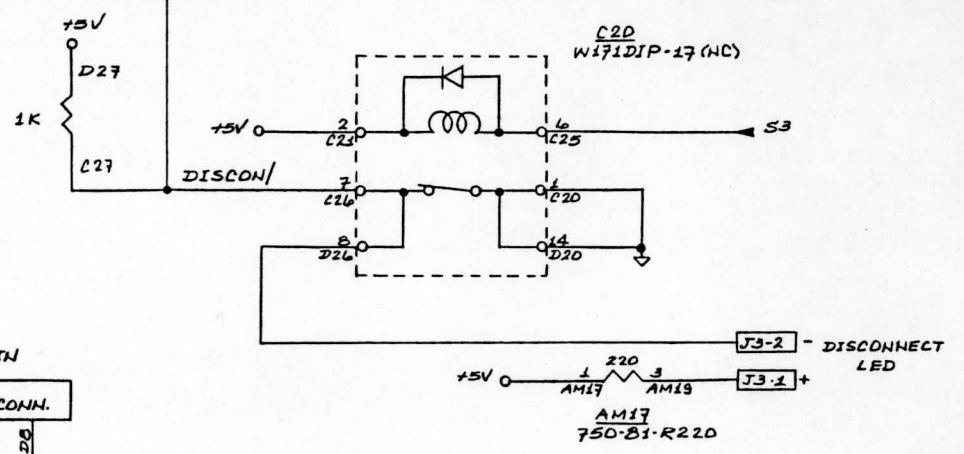
MULTIBUS INTERFACE			
THE UNIVERSITY OF WISCONSIN			
SPACE SCIENCE & ENGINEERING CENTER			
TITLE: MCIDAS PRONET/IBM CHANNEL INTERFACE SCHEMATIC DIAGRAM			
SCALE	DATE	DATE CHECKED	DATE ENGINEER
N.A.	12/20/81	4-11-85	5-2-85
PROJECT NO	SIZE	SHEET	DRAWING NO
1020	D	4 OF 5	6450-0396

B41

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



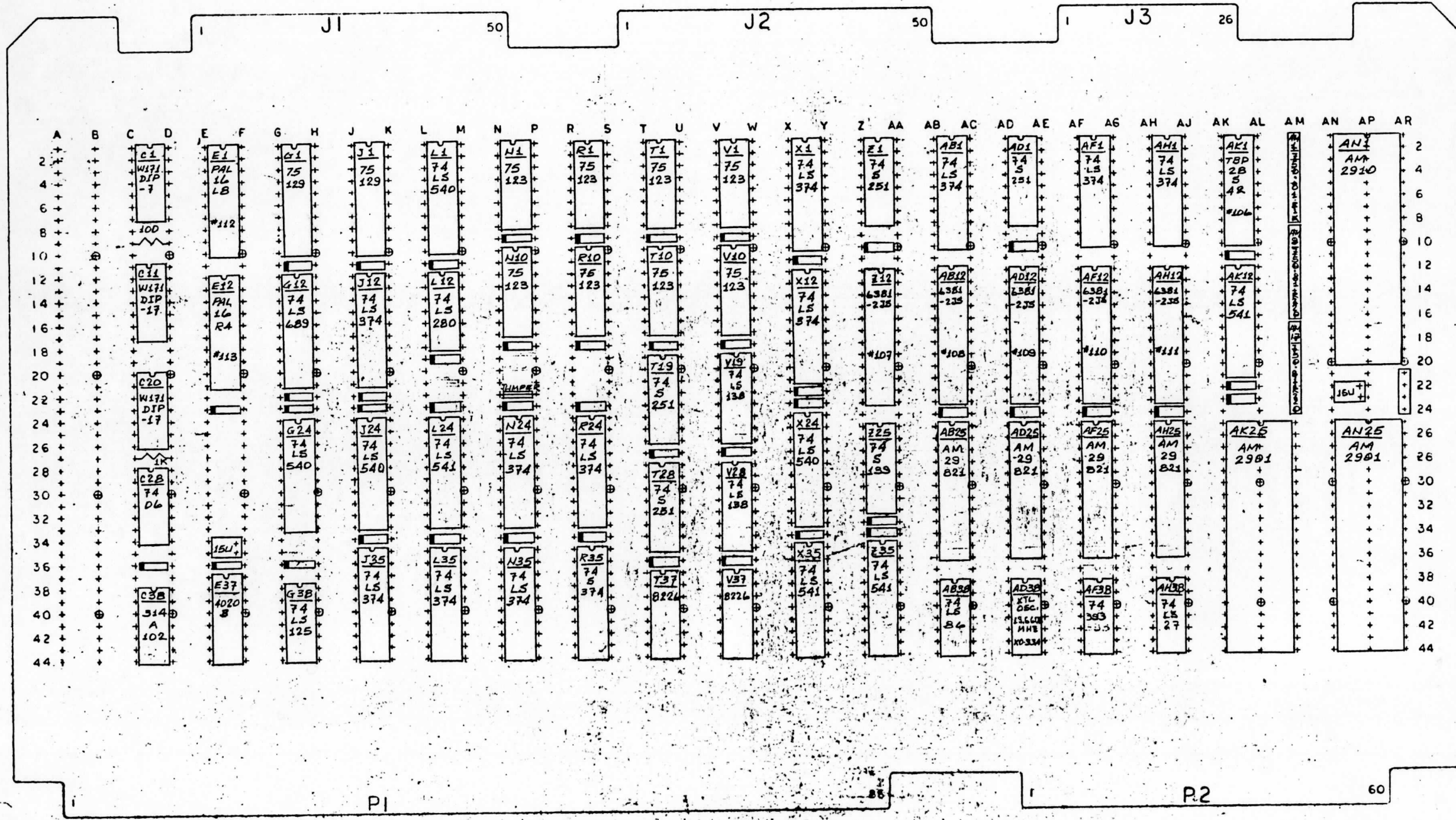
NOTE:
WHEN CHANNEL INTERFACE BOARD IS
REMOVED, SWITCH IN 'ODD' POSITION (CLOSED)
SIMULATES C1 RELAY OPERATION (SHEET 3)



CHANNEL OUTPUT		MOD 4	
THE UNIVERSITY OF WISCONSIN			
SPACE SCIENCE & ENGINEERING CENTER			
TITLE: MCTDAS PRONET/IBM CHANNEL INTERFACE SCHEMATIC DIAGRAM			
SCALE: N.A.	DATE: 4-11-85	CHECKER: D. FORD	DATE: 5-2-85
DESIGNER: N.A.	PROJECT: 1020	PRODUCT: 0397	ASSURANCE: 5
PROJECT NO: 1020	SHEET: 5 OF 5	DRAWING NO: 6450-0396	

B42

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

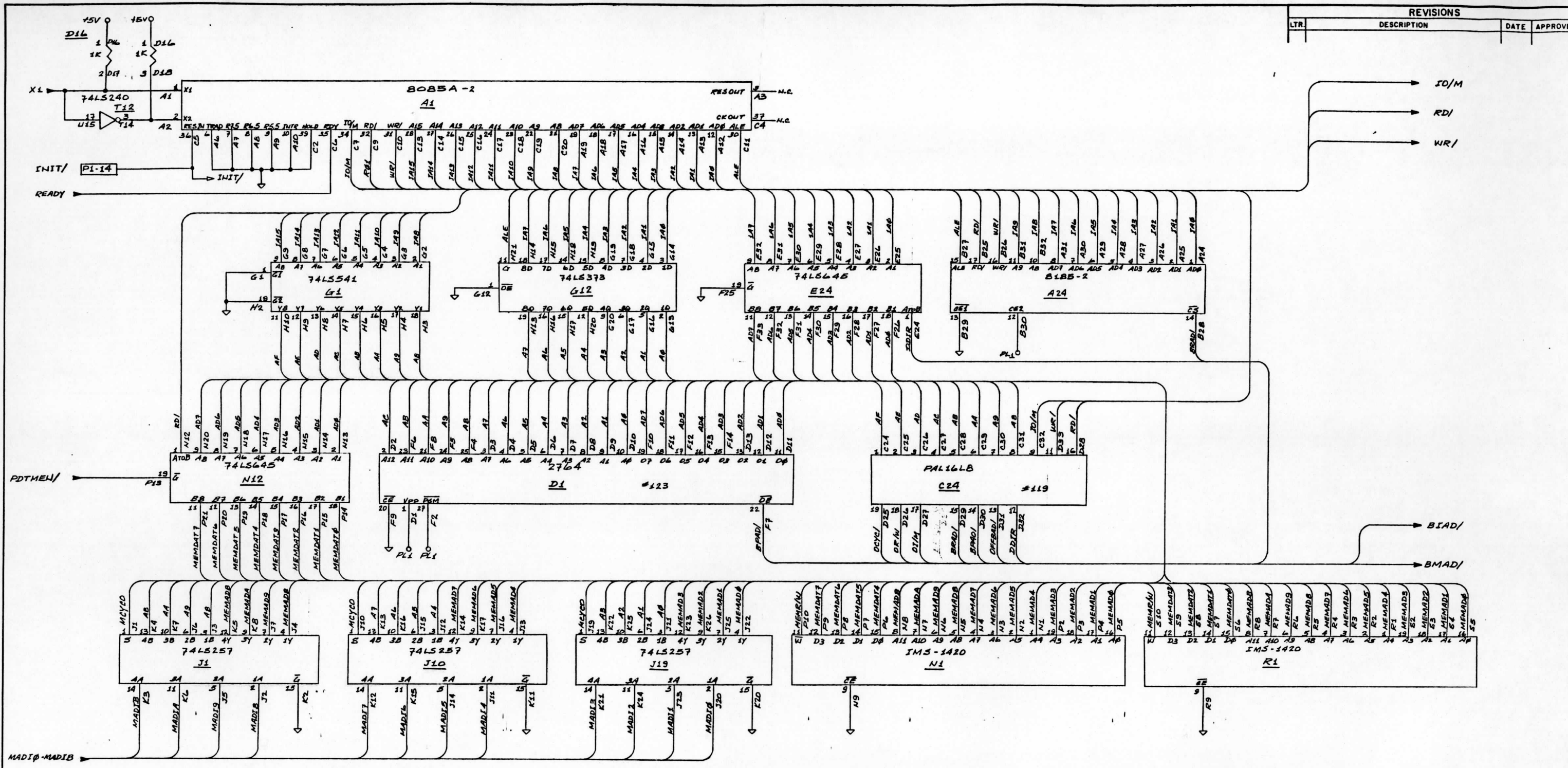


© TENTH ROW DESIGNATION

MOD. U. THE UNIVERSITY OF WISCONSIN
 SPACE SCIENCE & ENGINEERING CENTER
 TITLE MCIDAS 2
 PRONET/IBM CHANNEL INTERFACE
 ASSEMBLY DRAWING
 SCALE 2:1
 PROJECT 6450
 SHEET 1 OF 1
 DRAWING NO. 6450-0397

B43

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



MOD R

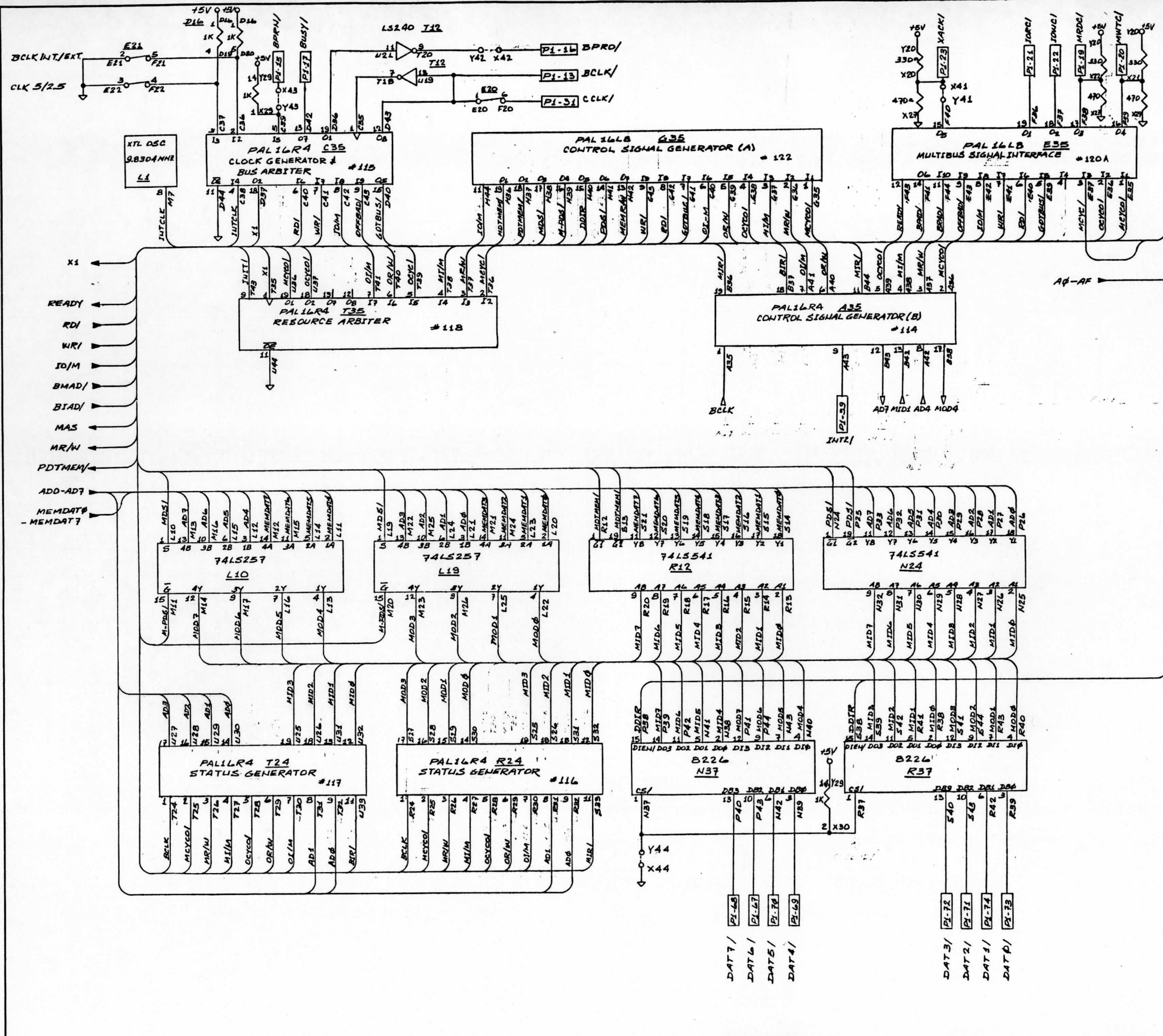
THE UNIVERSITY OF WISCONSIN
SPACE SCIENCE & ENGINEERING CENTER

TITLE MCIDAS
PRNET/MCIDAS TERMINAL INTERFACE
SCHEMATIC INTERFACE

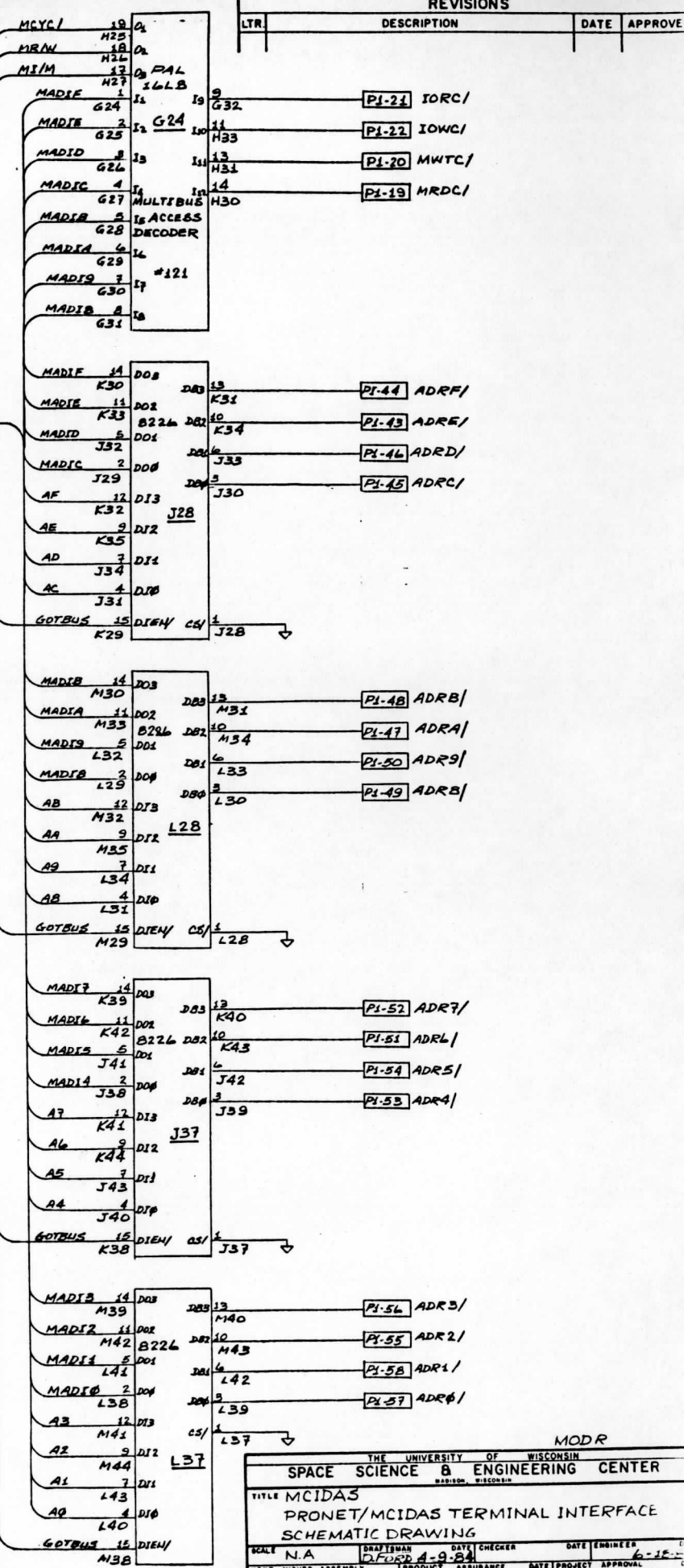
SCALE NA DATE 4-9-84

PROJECT NO 1020 SHEET 1 OF 2 DRAWING NO 6450-0348

B44



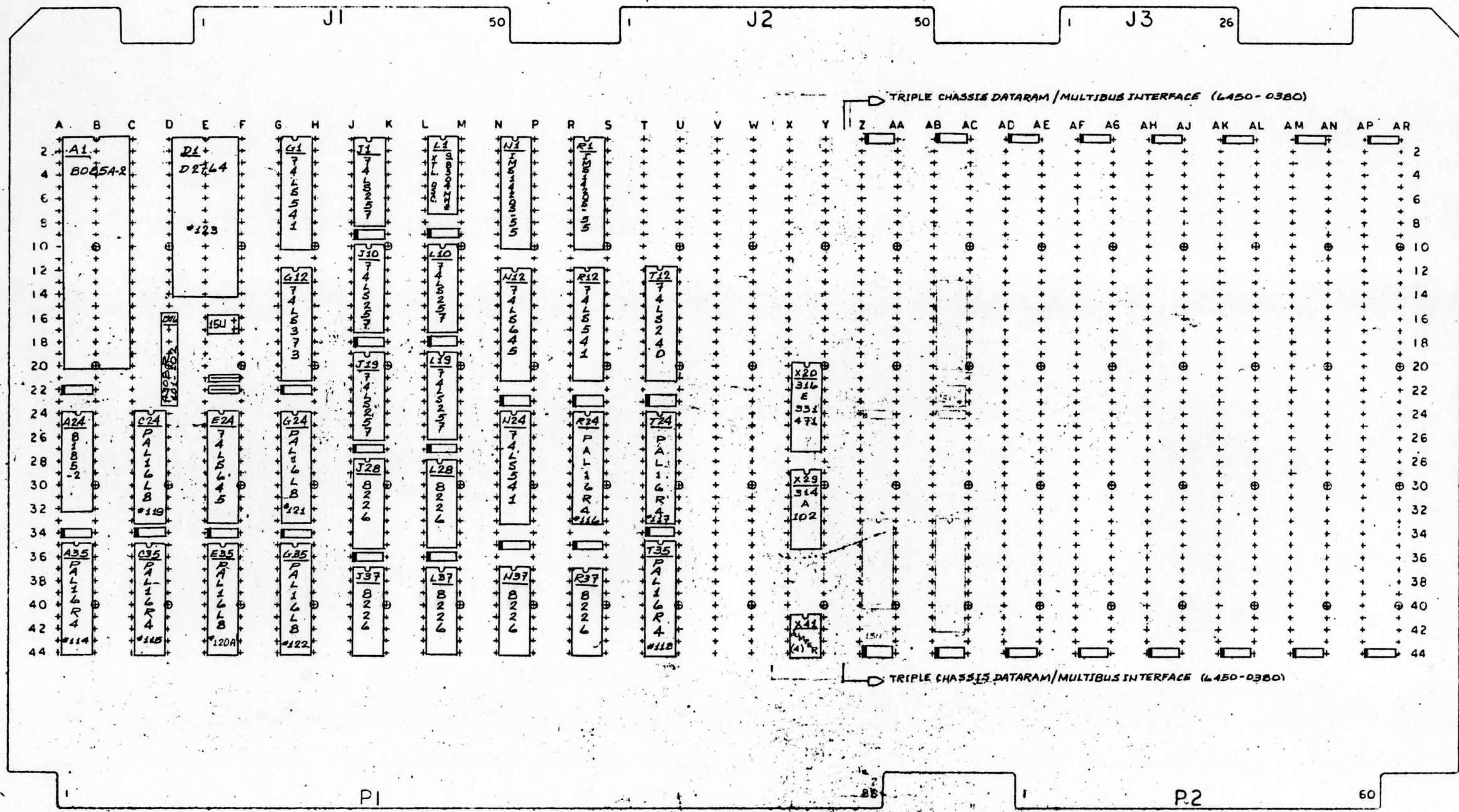
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



THE UNIVERSITY OF WISCONSIN SPACE SCIENCE & ENGINEERING CENTER MADISON, WISCONSIN			
TITLE MCIDAS PRONET/MCIDAS TERMINAL INTERFACE SCHEMATIC DRAWING			
SCALE	DRAWN	CHECKED	DATE
N.A.	D. F. W.	A. G. B.	6-18-84
PROJECT NO.	SHEET	PROJECT	APPROVAL
1020	D	2 OF 2	6450-0398

B45

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

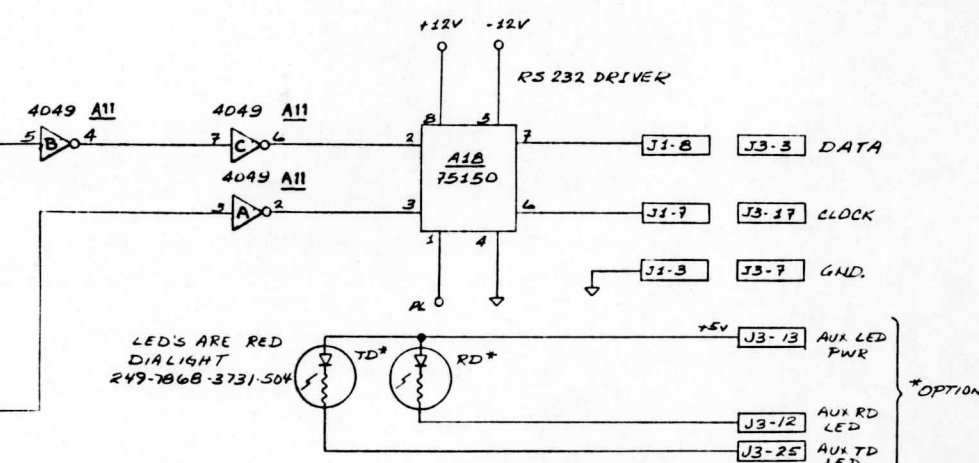
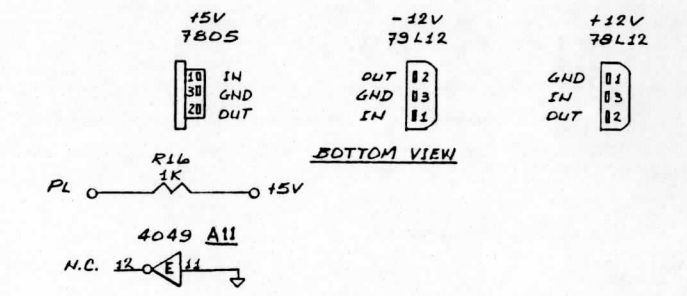
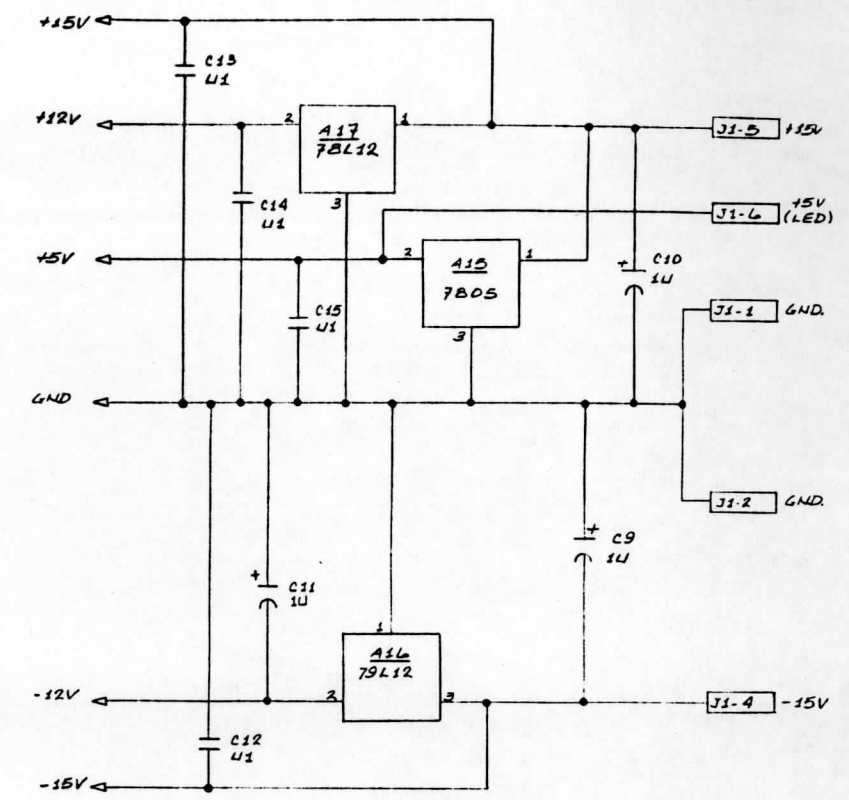
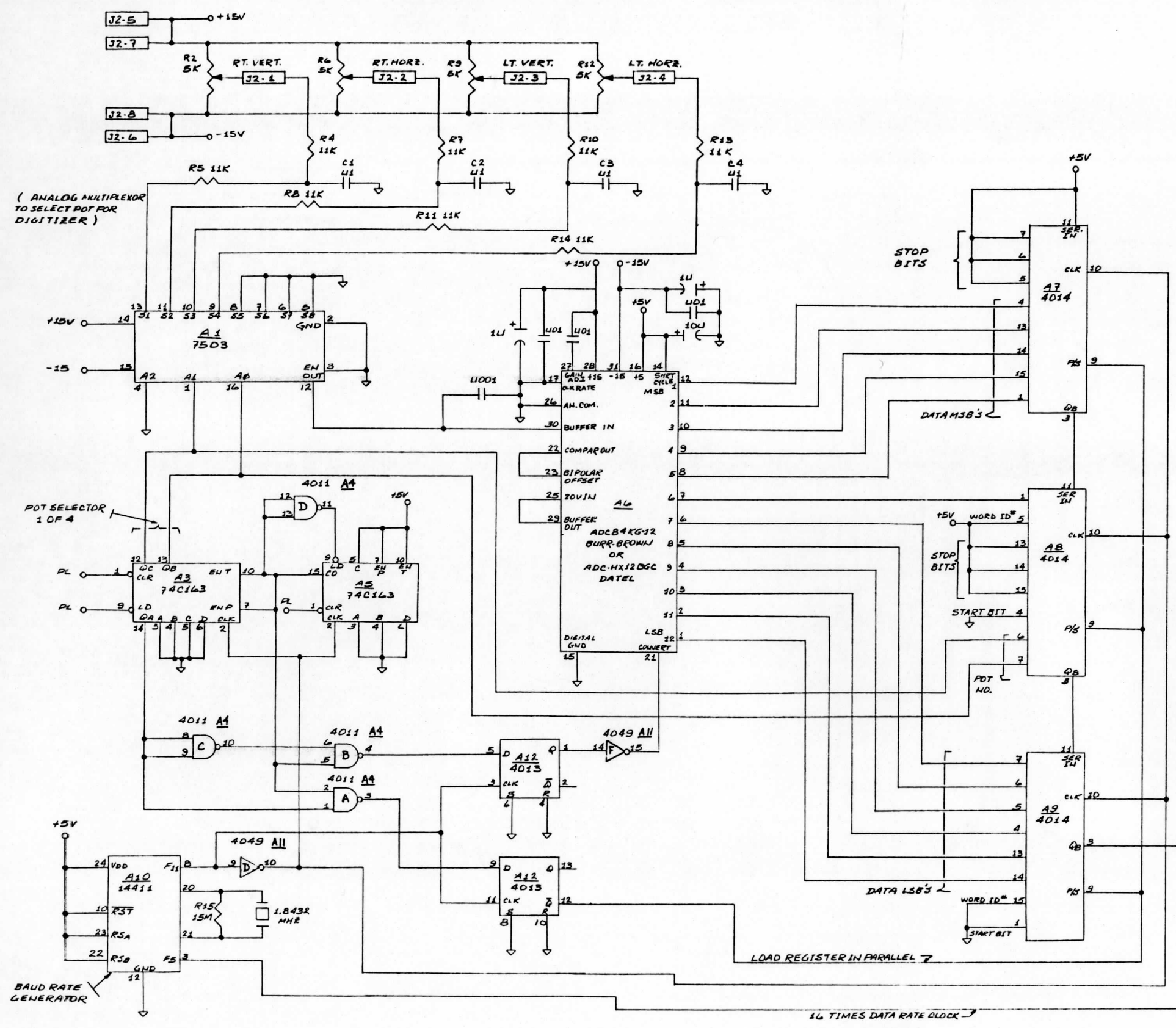


● TENTH ROW DESIGNATION

B46

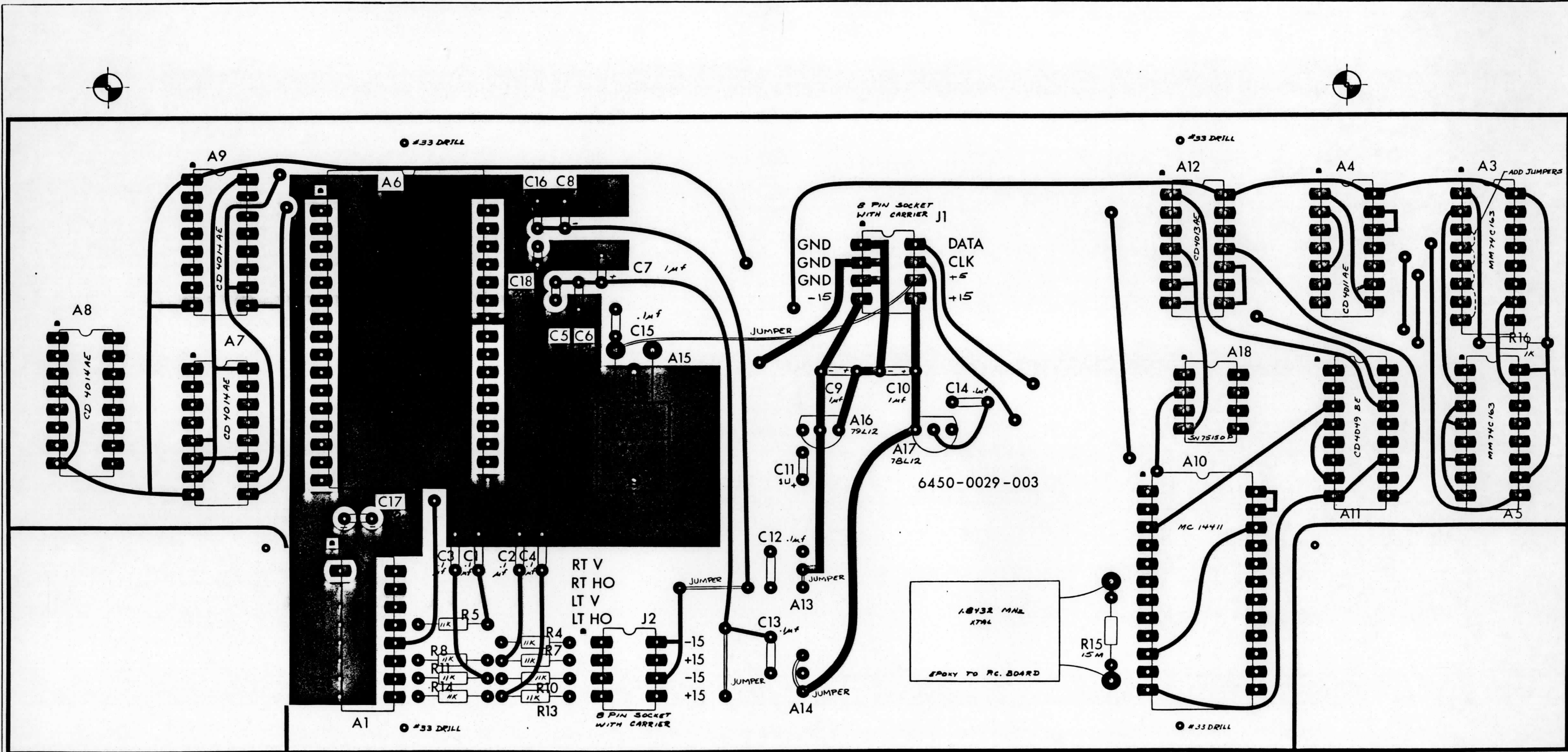
MOD E			
THE UNIVERSITY OF WISCONSIN			
SPACE SCIENCE & ENGINEERING CENTER			
TITLE MCIDAS 2			
PRONET/MCIDAS TERMINAL INTERFACE			
ASSEMBLY DRAWING			
SCALE 2:1	DATE 10 FEB 74	DESIGNER	APP'D
PROJECT NO 6450	DWG NO 0398	SHEET 1 OF 1	REVISION NO 6450-0399

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



B47

MOD B			
THE UNIVERSITY OF WISCONSIN SPACE SCIENCE & ENGINEERING CENTER			
TITLE: KRAFT DIGITAL JOYSTICK SCHEMATIC DIAGRAM			
SCALE: N.A.	DRAWN BY: D.FORD	CHECKED BY: J.S.	DATE: 4-28-86
PROJECT NO: 1800	SHEET: 1 OF 1	DRAWING NO: 6450-0400	DATE: 4-28-86



NOTES:

- 1) ALL HOLES #66 DRILL OR FINISHED DIAMETER OF PLATED THRU HOLES NOT LESS THAN .033" DIAMETER.
- 2) BOARD MATERIAL .060 G-ID DOUBLE SIDED WITH 2oz COPPER
- 3) BOARDS TRIMMED TO THE INSIDE OF THE OUTLINE

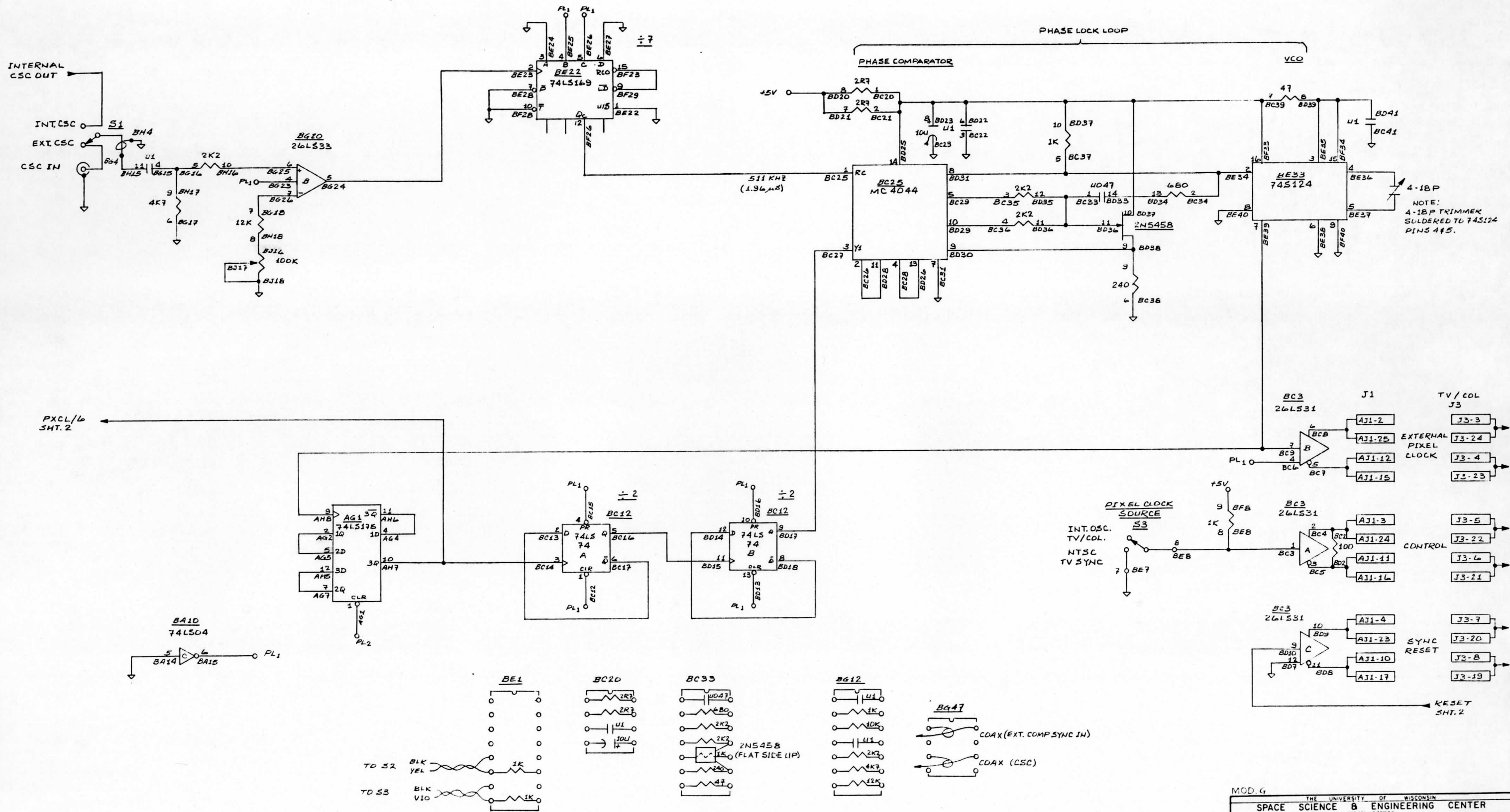
MOD A

THE UNIVERSITY OF WISCONSIN	
SPACE SCIENCE & ENGINEERING CENTER	
MADISON, WISCONSIN	
TITLE McIDAS II KRAFT DIGITAL JOYSTICK ASSEMBLY	
SCALE 4/1	DATE 3-81
DESIGNED BY [Signature]	CHECKED BY [Signature]
PROJECT NUMBER 1800	PROJECT ASSURANCE DATE
DRAWING NO. 6450-0401	DATE [Blank]

B48

SHEET 1 OF 1

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



MOD. G

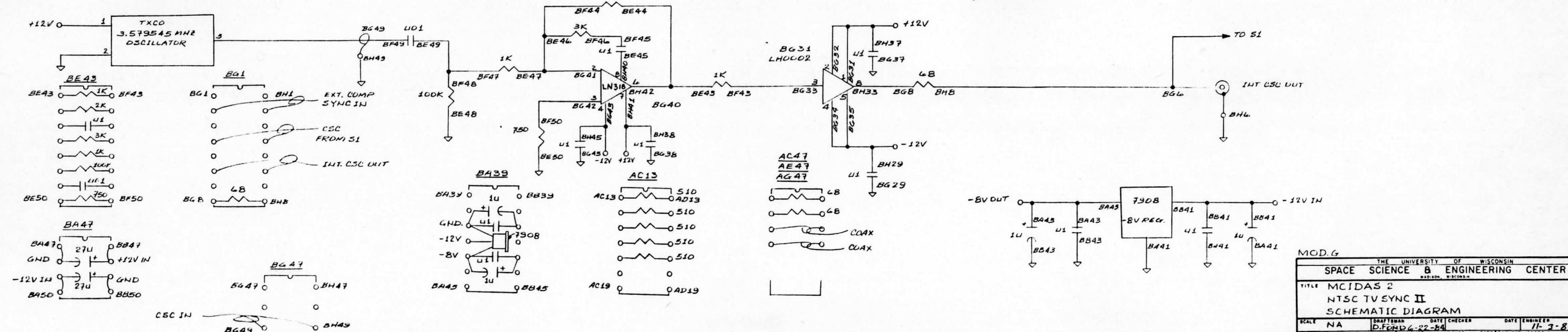
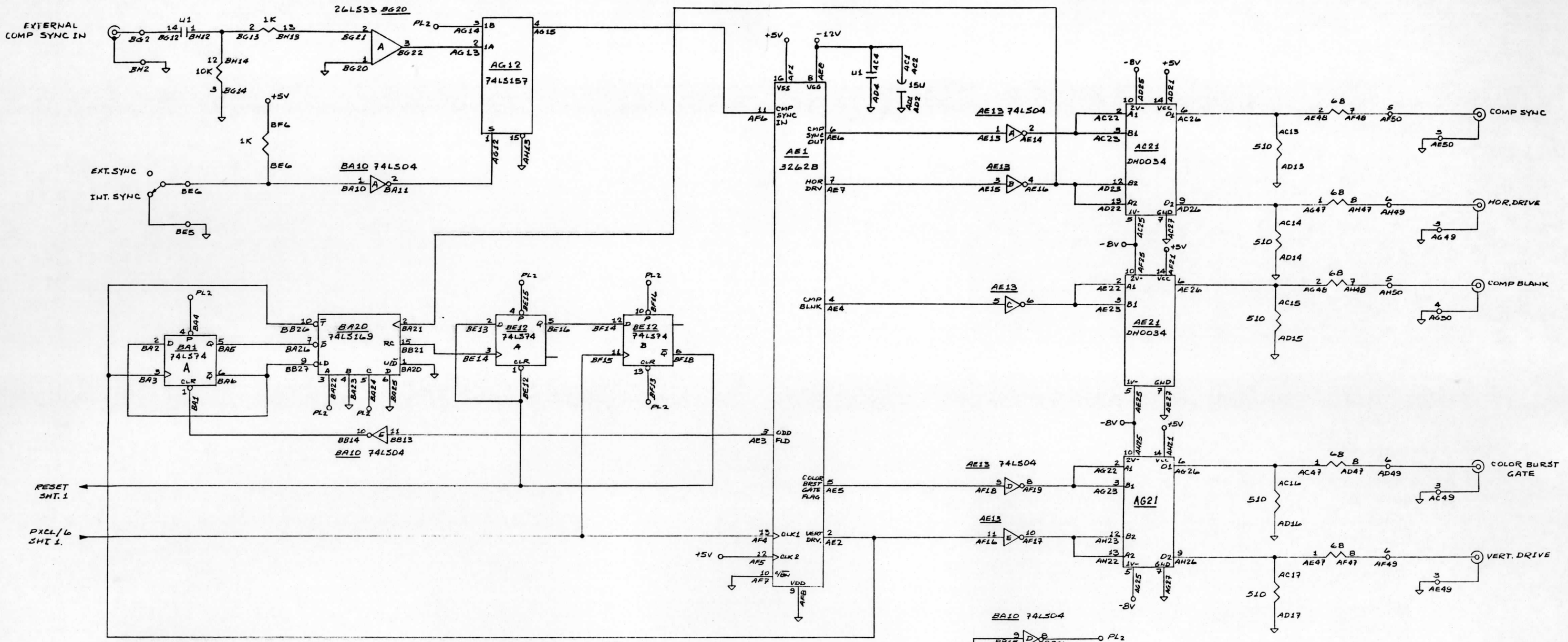
THE UNIVERSITY OF WISCONSIN
SPACE SCIENCE & ENGINEERING CENTER

TITLE: MCIDAS 2
NTSC TV SYNC II
SCHEMATIC DIAGRAM

SCALE: N/A	DRAWN BY: C.F. 6-22-84	DATE CHECKER: 11-3-84	DATE ENGINEER: 11-3-84
NEXT HIGHER ASSEMBLY: 0432	PRODUCT ASSURANCE: 6-22-84	DATE PROJECT APPROVAL: 11-3-84	DATE: 11-3-84
PROJECT NO: 1040	SIZE: SHEET 1 OF 2	DRAWING NO: 6450-D431	

B49

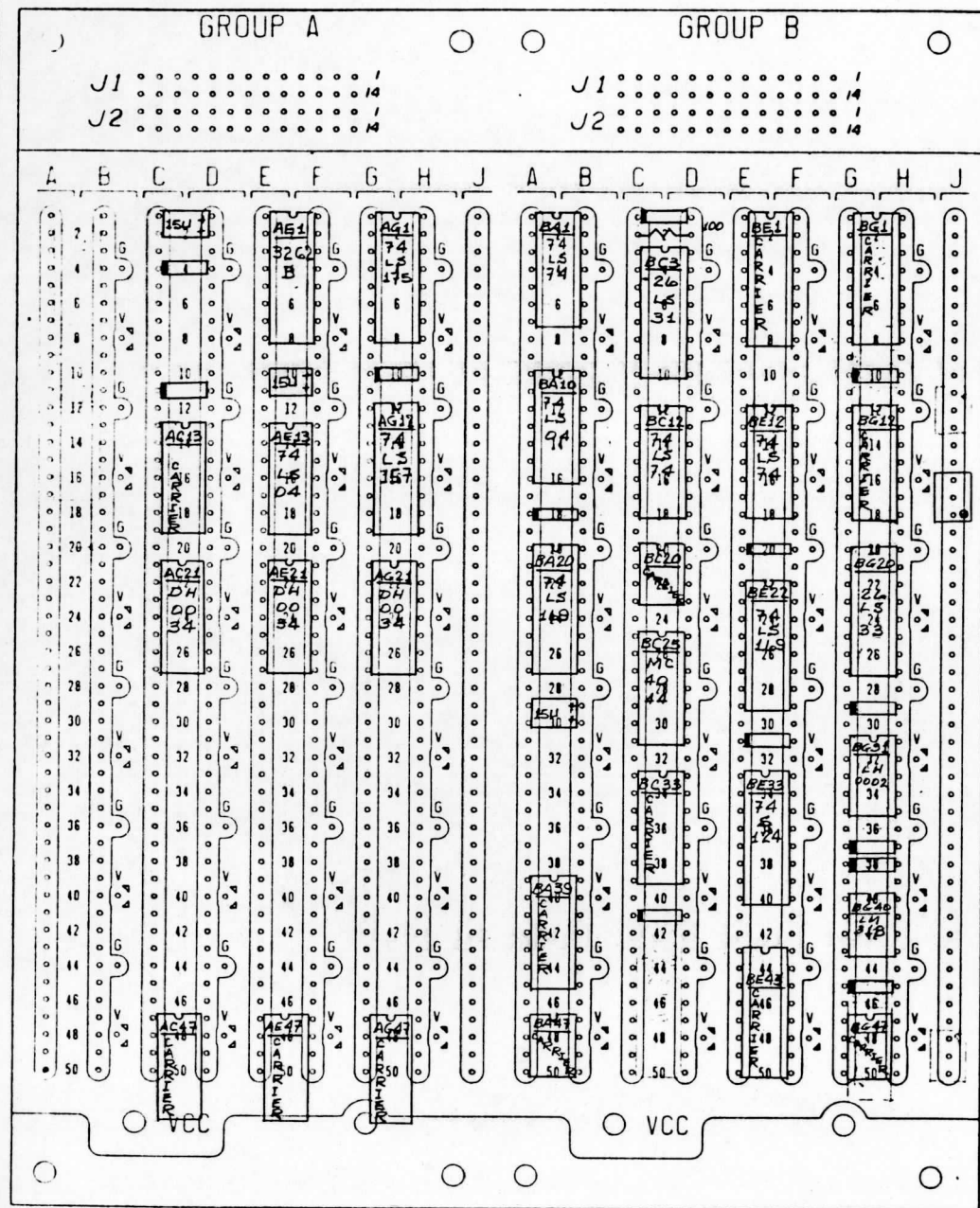
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



B50

MOD. 6			
THE UNIVERSITY OF WISCONSIN SPACE SCIENCE & ENGINEERING CENTER			
TITLE: MCIDAS 2 NTSC TV SYNC II SCHEMATIC DIAGRAM			
SCALE: NA	DRAFTSMAN: D.F.H.	DATE CHECKED: 11-3-86	DATE ENGINEER: 11-3-86
NEXT HIGHER ASSEMBLY: 0432	PRODUCT ASSURANCE: 0432	DATE PROJECT APPROVAL: 11-3-86	DATE: 11-3-86
PROJECT NO: 1040	SIZE: D	SHEET 2 OF 2	DRAWING NO: 6450-0431

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVAL

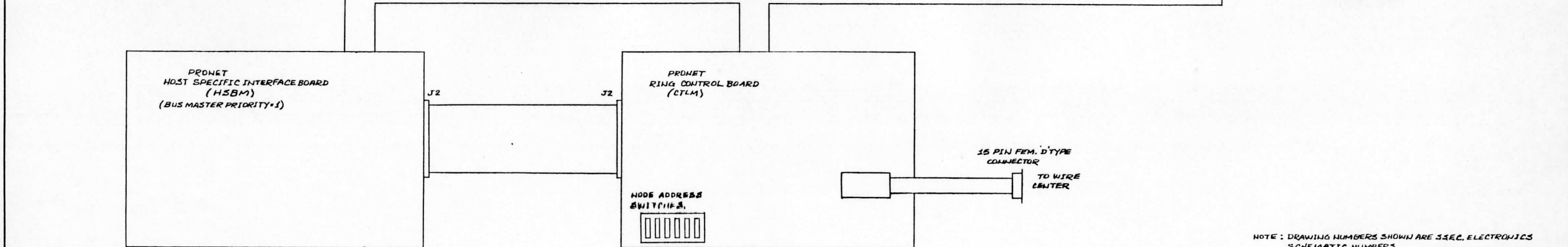
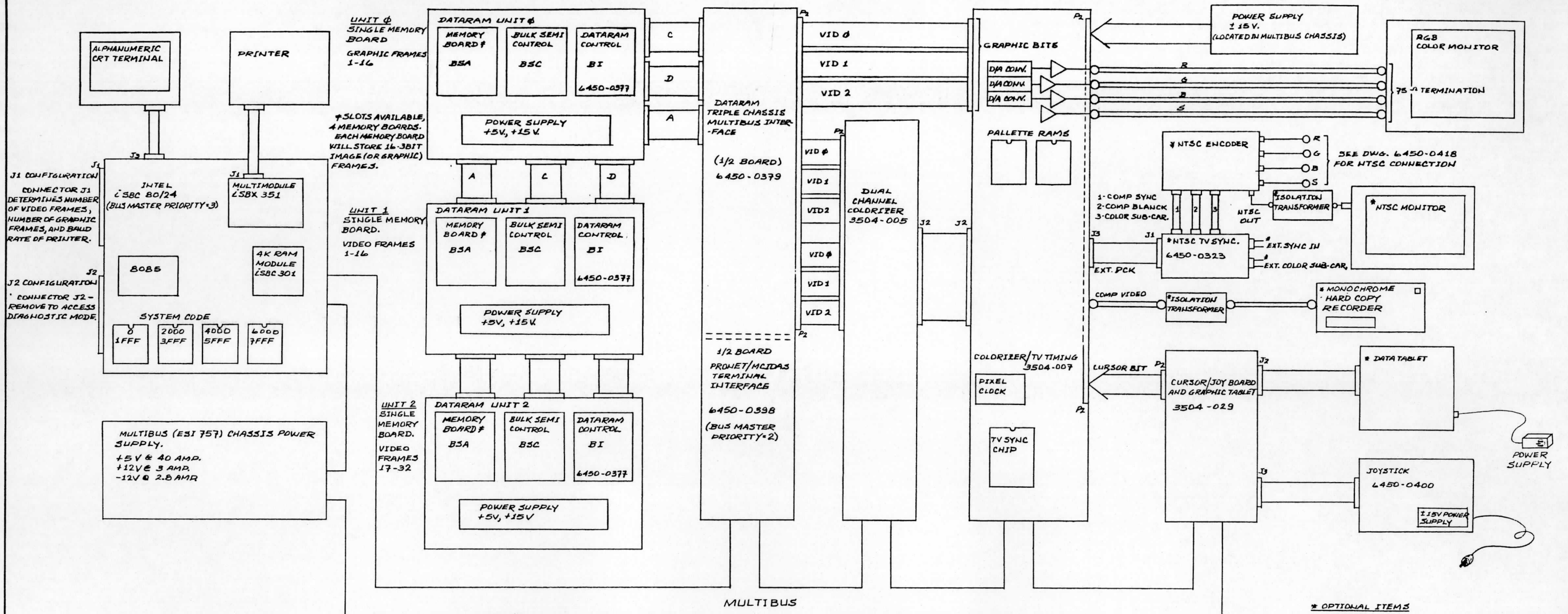


B51

MOD. 6

THE UNIVERSITY OF MICHIGAN			
SPACE SCIENCE & ENGINEERING CENTER			
MCIDAS 2			
NTSC TV SYNC II			
ASSEMBLY DRAWING			
DATE	DESIGNED	CHECKED	DATE
NA	D. FORD	J. S. BAY	
PROJECT NO.	REV.	SHEET	OF
1040	D	1	1
DRAWING NO.			6450-0432

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



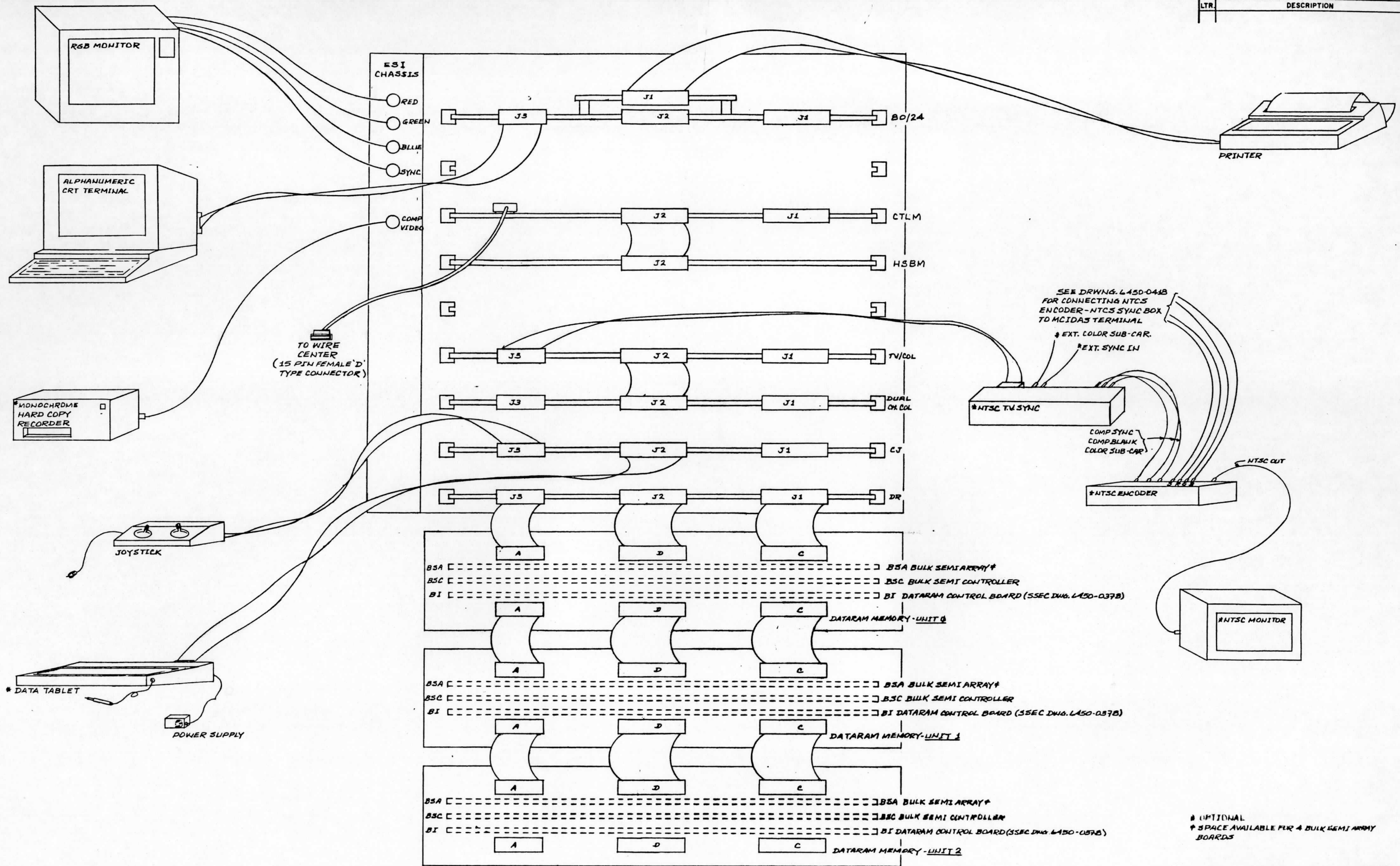
* OPTIONAL ITEMS

NOTE: DRAWING NUMBERS SHOWN ARE SEEC. ELECTRONICS SCHEMATIC NUMBERS.

THE UNIVERSITY OF WISCONSIN					
SPACE SCIENCE & ENGINEERING CENTER					
TITLE: MCIDAS CSIS/DATARAM PRONET TERMINAL BLOCK DIAGRAM					
SCALE: N.A.	DATE: 1-10-84	CHECKER: D.FORD	DATE: 1-10-84	ENGINEER: [Signature]	DATE: [Signature]
NEXT HIGHER ASSEMBLY: 700D	PRODUCT ASSURANCE: D	DATE: 1-10-84	PROJECT APPROVAL: [Signature]	DATE: [Signature]	DATE: [Signature]
PROJECT NO: 700D	SIZE: D	SHEET: 1 OF 2	DRAWING NO: 6450-0449 A	MOD. A	

B52

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



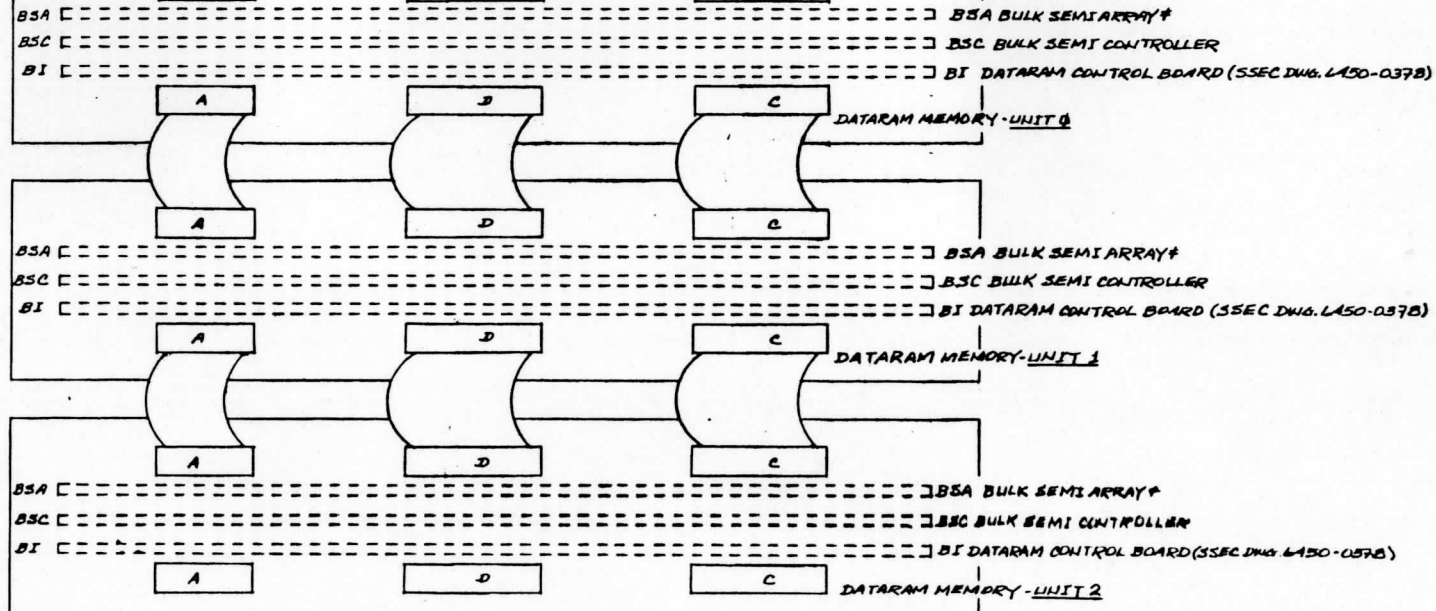
TO WIRE CENTER
(15 PIN FEMALE 'D' TYPE CONNECTOR)

SEE DRWG. L450-0418
FOR CONNECTING NTCS
ENCODER-NTCS SYNC BOX
TO MCIDAS TERMINAL

* EXT. COLOR SUB-CAR.
* EXT. SYNC IN

COMP SYNC
COMP BLANK
COLOR SUB-CAR.

NTSC OUT

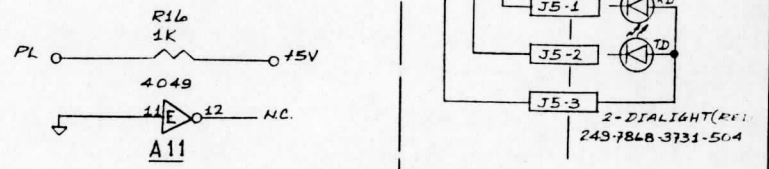
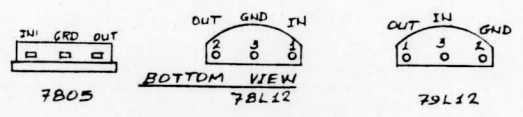
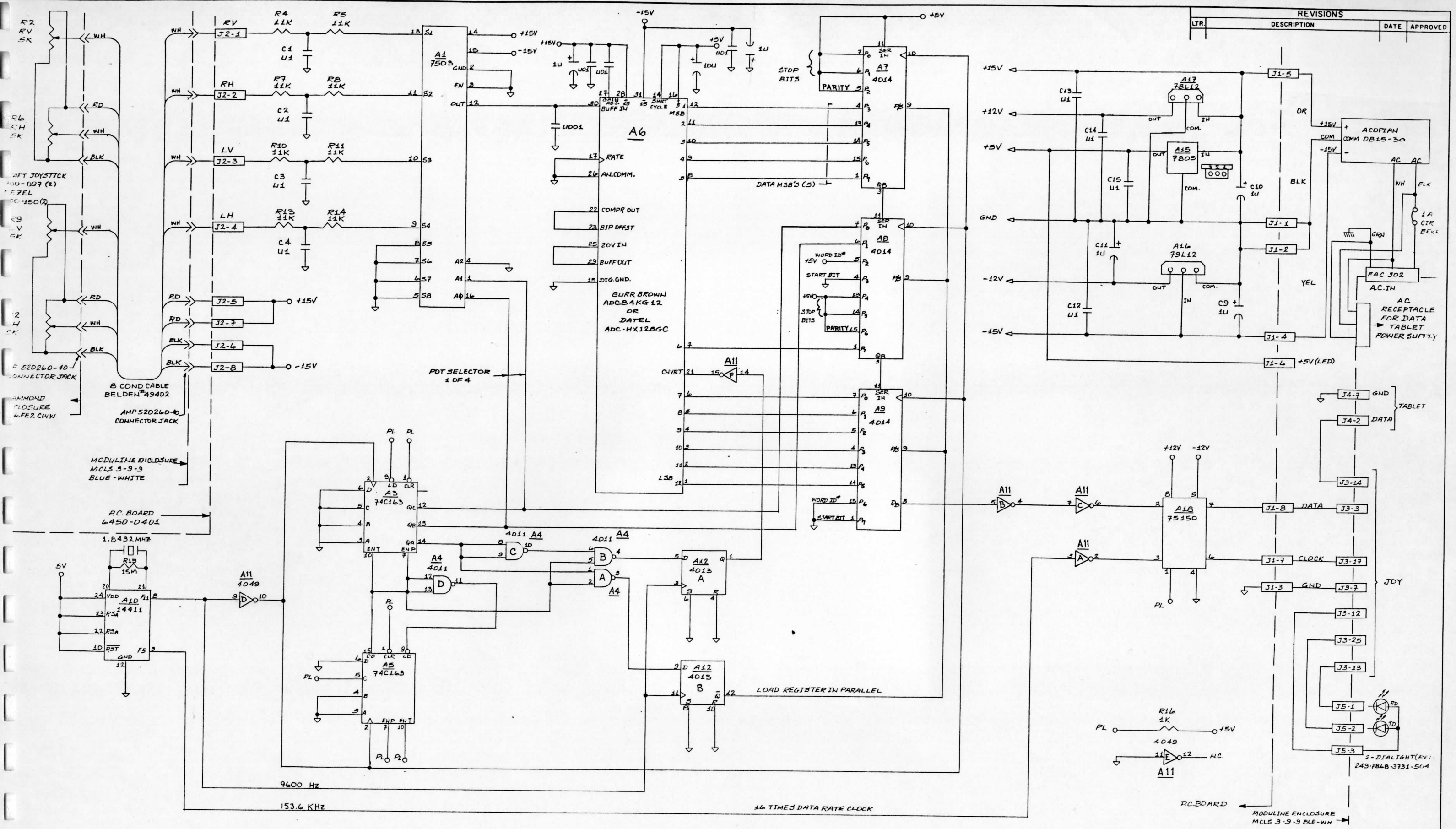


* OPTIONAL
* SPACE AVAILABLE FOR 4 BULK SEMI ARRAY
BOARDS

MOD A			
THE UNIVERSITY OF WISCONSIN			
SPACE SCIENCE & ENGINEERING CENTER			
TITLE MCIDAS			
CSIS/DATARAM PRONET TERMINAL			
BLOCK DIAGRAM			
SCALE N.A.	DRAWN BY D.F.P.	CHECKED 12-10-81	DATE 1-30-86
NEXT HIGHER ASSEMBLY	PRODUCT ASSURANCE	DATE PROJECT APPROVAL	DATE
PROJECT NO 7000	SIZE SHEET 2 OF 2	DRAWING NO L450-0449 A	

B53

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



B54

THE UNIVERSITY OF WISCONSIN SPACE SCIENCE & ENGINEERING CENTER MADISON, WISCONSIN			
TITLE MCIDAS MINIATURE JOYSTICK SCHEMATIC DIAGRAM			
SCALE NTS	DRAFTSMAN D.F. 11-22-86	DATE CHECKER	DATE ENGINEER
NEXT HIGHER ASSEMBLY -1401	PRODUCT ASSURANCE	DATE PROJECT APPROVAL	DATE
PROJECT NO 1015	SIZE D	SHEET 1 OF 1	DRAWING NO 6450-0484

REFERENCE

UW-Madison. Space Science &
Engineering Center.
McIDAS workstation hardware,
Appendix B. Copy 1

REFERENCE

UW-Madison. Space Science &
Engineering Center.
McIDAS workstation hardware,
Appendix B. Copy 1.

DATE	ISSUED TO



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