IMPRIMIS

Now a part of Seagate Technology

SABRE EIGHT-INCH MODULE DRIVE

PA8B1
PA8E1

DIAGRAMS

WARNING

Do not attempt to install, operate, or repair the unit, before you read the important safety information located directly after the table of contents in this manual. Failure to follow that and other safety precautions in this manual could cause injury to yourself or others.

WARNING

This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of the FCC Rules which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

If the operator or status/control panel (component assembly) is not installed in the inner drawer, it is your responsibility to provide any additional RFI shielding or grounding needed to ensure FCC Class A compliance.

KOR 0756

IMPRIMIS

SABRE
EIGHT-INCH MODULE DRIVE

PA8B1
PA8E1

DIAGRAMS

HARDWARE MAINTENANCE MANUAL VOL. 3

83325650

REVISION RECORD

REVISION	DESCRIPTION
A (10-31-86)	Manual Released.
B (01-24-88)	Incorporate Class I ECOs DJ29245, 29263, 29275, 29279, 29291, 29311, 29320, 29363, 29364, 29365, 29374, 29384, 29406, 29415, 29416, 29418, 29419, 29421, 29422, 29425, 29431, 29451, 29453, 29465, 29561; Class II ECOs DJ29232, 29240, 29310, 29328, 29454, 29455, 29587; Technical changes. This obsoletes all previous editions.
C (01-28-89)	Incorporate Class I ECOs DJ29667, 29668, 29699, 29772, 29788, 29855, 29882, 29936; Class II ECOs DJ29636, 29637, 29723, 29759, 29805, 29812, 29839, 29854; Technical changes.
D (09-27-89)	Incorporate Class I ECOs DJ29922, 40208, 40228, 40229, 40234, 40273, 40280; Class II ECOs DJ40177, 40221, 40227, 40354; Technical changes.

REVISION LETTERS I, O, Q AND X ARE NOT USED.

Technical Publications Department
5950 Clearwater Drive
Minnetonka, MN 55343

We value your comments. A Comment Sheet is provided at the back of this manual.

Printed in the United States of America

LIST OF EFFECTIVE PAGES

This manual is at revision D. Each page in your manual should be at the revision level listed below. The "Div" is a colored divider page.

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3B-1	B
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3B-3	C
3B-4	C
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4B-11	D
4B-12	D
4B-13	D
4B-14	D
4B-15	D
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4B-17	D
Blank	-
S-5 Div	-

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5-11	C
5-12	C
5-13	D
5-14	C
5-15	C
5-16	C
5-17	C
5-18	C
5-19	C
5-20	C
5-21	C
5-22	C
5-23	C
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S-6A Div	-
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6A-2	B
6A-3	B
6A-4	B

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6B-10	D
6B-11	D
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S-7 Div	-
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Rtn Env	-
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Cover	-

PREFACE

This manual contains maintenance information for the Imprimis PA8B1 and PA8E1 SABRE eight-inch module drive. It is prepared for customer engineers and other technical personnel directly involved with maintaining the drive.

The information in this manual is presented as follows.

Section 1 - Introduction to Diagrams.

Section 2 - Status/Control Panel and Operator Panel Diagrams

Section 3 - Arm Matrix Board Diagrams

Section 4 - I/O Board Diagrams

Section 5 - Control Board Diagrams

Section 6 - Read/Write Board Diagrams

Section 7 - Miscellaneous Diagrams

Section 1 describes the conventions used throughout the diagrams and provides more information about how the diagrams are organized.

The following manuals apply to the SABRE and are available from:

Imprimis Technology Incorporated
Customer Services
5950 Clearwater Drive
Minnetonka, MN 55343

Phone: (612) 931-8612
Fax: (612) 931-8817

Publication No.	Title
83325630	PA8B1 Hardware Maintenance Manual, Volume 1 (contains general description, operation, ionstallation and checkout information, and parts data)
83325640	PA8B1 Hardware Maintenance Manual, Volume 2 (contains theory of operation and maintenance)

Publication No.	Title
83325650	PA8B1 Hardware Maintenance Manual, Volume 3 (contains diagrams)
83325660	Reference Card (summarizes status codes and diagnostic operation)

The following table lists the drives covered by this manual:

Equipment Number	Interface	Data Capacity (MB)	Sector Length
PA8B1A	SCSI (Differential)	368	512 Bytes
PA8B1B	SCSI (Single-ended)	368	512 Bytes
PA8B1C	SCSI (Differential)	368	256 Bytes
PA8B1D	SCSI (Single-ended)	368	256 Bytes
PA8E1A	SCSI (Differential)	500	512 Bytes
PA8E1B	SCSI (Single-ended)	500	512 Bytes
PA8E1C	SCSI (Differential)	500	256 Bytes
PA8E1D	SCSI (Single-ended)	500	256 Bytes
PA8E1E*	SCSI (Differential)	500	512 Bytes

* This drive has an additional voltage converter to permit operation with a power supply providing fewer output voltages than the standard supply.

CONTENTS

FIGURES

TABLES

IMPORTANT SAFETY INFORMATION AND PRECAUTIONS

Use of proper safety and repair techniques is important for safe, reliable operation of this unit. Service should be done only by qualified persons. We recommend the procedures in this manual as effective ways of servicing the unit. Some procedures require the use of special tools. For proper maintenance and safety, you must use these tools as recommended.

The procedures in this manual and labels on the unit contain warnings and cautions that must be carefully read and followed to minimize or eliminate the risk of personal injury. The warnings point out conditions or practices that may endanger you or others. The cautions point out conditions or practices that may damage the unit, possibly making it unsafe for use.

You must also understand that these warnings and cautions are not exhaustive. We cannot possibly know, evaluate, and advise you of all the ways in which maintenance might be performed or the possible risk of each technique. Consequently, we have not completed any such broad evaluation. If you use a non-approved procedure or tool, first ensure that the method you choose will not risk either your safety or unit performance.

For the safety of yourself and others, observe the following warnings and precautions.

- Perform all maintenance by following the procedures in this manual.
- Follow all cautions and warnings in the procedures and on unit labels.
- Use the special tools called out in the procedures.
- Use sound safety practices when operating or repairing the unit.
- Use caution when troubleshooting a unit that has voltages present. Remove power from unit before servicing or replacing parts.
- Wear safety glasses when servicing units.
- Wear safety shoes when removing or replacing heavy parts.
- Use only designated Imprimis replacement parts. Non-Imprimis replacement parts can adversely affect safety in addition to degrading reliability, increasing maintenance downtime, and voiding warranty coverage.

(continued on next page)

- Use care while working with the power supply because line voltages are always present when the ac power cord is connected to a power source. Setting the power supply switch to position "0" disables dc power to the drive but has no effect on ac power within the supply. For complete safety, remove the ac power plug from the site power outlet.

- In case of fire or other emergency, isolate the drive from main power by removing the drive power plug from the ac outlet. In situations where pulling the plug is not possible or practical, use the system main power disconnect to isolate the drives from main power.

- When the drive is mounted in an equipment rack or cabinet, ensure that the internal temperature of the rack or cabinet will not exceed the limits defined for the drive. Where units are stacked vertically, pay special attention to the top where temperatures are usually highest.

- This drive is designed to be installed and operated in accordance with IEC380, IEC435, VDE805, VDE806.

- Follow the precautions listed under Electrostatic Discharge Protection.

- If the power supply is placed on a bench for testing, position the supply so all ventilation holes are open, to allow proper air flow to internal components.

- Do not attempt to disassemble the module. It is not field repairable. Replace the entire module assembly if it is defective.

- Do not operate the drive over an extended period of time without the top cover installed.

- If the power supply is connected to an IT network, ensure that the input voltage is limited to 230 volts.

- Do not attempt to disassemble the power supply. It is not field repairable. Replace the entire supply if it is defective.

- Always deenergize drive before removing or installing circuit boards, cables, or any other electrical components.

- If you do not use a recommended Imprimis power supply, ensure that the supply meets the specifications in this manual and is designed to be used in accordance with IEC380, IEC435, VDE805, VDE806.

ABBREVIATIONS

A	Ampere	CH	Channel
A/D	Analog/Digital	CHK	Check
ABR	Absolute Reserve	CKTS	Circuits
ABV	Above	CLK	Clock
ac	Alternating Current	CLR	Clear
ACK	Acknowledge	cm	Centimetre
ADD	Address	CNTR	Counter
ADDR	Address	COMP	Comparator
ADJ	Adjust	CONT	Control
ADRS	Address	CONTD	Continued
AGC	Automatic Gain Control	CT	Center Tap
ALT	Alternate	CYL	Cylinder
AM	Address Mark	D/A	Digital to Analog
AME	Address Mark Enable	dc	Direct Current
AMP	Amplifier, Ampere	DET	Detect
ASSY	Assembly	DEV	Device
BLW	Below	DIFF	Differential
C	Celsius	DIV	Division
CB	Circuit Breaker	DLY	Delay
CDA	Complete Drive Assembly	DRVR	Driver

ABBREVIATIONS (Contd)

ECL	Emitter Coupled Logic
ECO	Engineering Change Order
EMD	Eight-Inch Module Drive
EN	Enable
ENBL	Enable
EXT	Extended
EXT	External
F	Fahrenheit, Fuse
FCO	Field Change Order
FDBK	Feedback
FIG	Figure
FLT	Fault
FND	Found
FSD	Fixed Storage Drive
ft	Foot
FTU	Field Test Unit
FWD	Forward
GND	Ground
HD	Head
HEX	Hexagon
Hg	Mercury
HI	High
HR	High Resolution
HYST	Hysteresis
Hz	Hertz
IC	Integrated Circuit
IDENT	Identification
IMF	Inner Module Fault
in	Inch
IND	Index
INTRPT	Interrupt
I/O	Input/Output
IPB	Illustrated Parts Breakdown
IPS	Inches per Second
IRQ	Interrupt Request
kg	Kilogram
kPa	Kilopascal
kW	Kilowatt
lb	Pound
LED	Light Emitting Diode

ABBREVIATIONS (Contd)

LO	Low
LSI	Large Scale Integration
LTD	Lock to Data
m	Metre
MAX	Maximum
MB	Megabyte
MCU	Microporcessor Control Unit
MEM	Memory
MHz	Megahertz
mm	Millimetre
MP	Microprocessor
MPU	Microprocessor Unit
MRK	Mark
ms	Millisecond
MTR	Motor
mV	Millivolt
NC	No Connection
NORM	Normal
NRZ	Non Return to Zero
ns	Nanosecond
OC	On Cylinder
OS	One-Shot
OSC	Oscillator
P	Plug
PD	Peak Detect
PDI	Peripheral Device Interface
pF	Picofarad
PG	Page
PHH	Phillips Head
PLO	Phase Lock Oscillator
PROC	Procedure
PROG	Programmable
PS	Power Supply
PWR	Power Supply
RCVR	Receiver
RD	Read
RDY	Ready
REF	Reference

ABBREVIATIONS (Contd)

REQ	Request
RES	Resolution
RET	Return
REV	Reverse, Revision
RGTR	Register
r/min	Revolutions Per Minute
RTM	Reserve Timer
RTZ	Return to Zero
R/W	Read/Write
s	Second
S/C	Series Code
SEL	Select
SEQ	Sequence
SPD	Speed
SS	Sector Switch
SW	Switch
T	Tracks to go
TF	Thread Forming
TIM	Timer
TP	Test Point
TSP	Troubleshooting Procedure
TTL	Transistor-Transistor Logic
uF	Microfarad
us	Microsecond
V	Volts, Voltage
Vbb	Bias Voltage
VCC	Bias Voltage
VCO	Voltage Controlled Oscillator
W	Watts
W/	With
W/O	Without
W PROT	Write Protect
W+R	Write or Read
W·R	Write and Read
WOK	Write OK
WRT	Write
WSV	Write Select Verify
XFR	Transfer
Ω	Ohms
$	Hexadecimal Address

SECTION 1

INTRODUCTION TO DIAGRAMS

INTRODUCTION TO DIAGRAMS 1

INTRODUCTION

This section contains block diagrams and an explanation of the diagram conventions. The diagram conventions provide the necessary information to understand and use the diagrams. The diagram conventions are:

- Symbology
- Abbreviations
- Logic Levels
- Signal Names
- Logic Arrangement
- Intersheet References

Block diagrams for the drives appear at the end of this section.

SYMBOLOGY

The diagrams contain a modified version of ANSI standard Y32.14 logic symbology (see figure 1-1). The logic symbols for integrated circuits contain a qualifying symbol, and element identifier, and a location code.

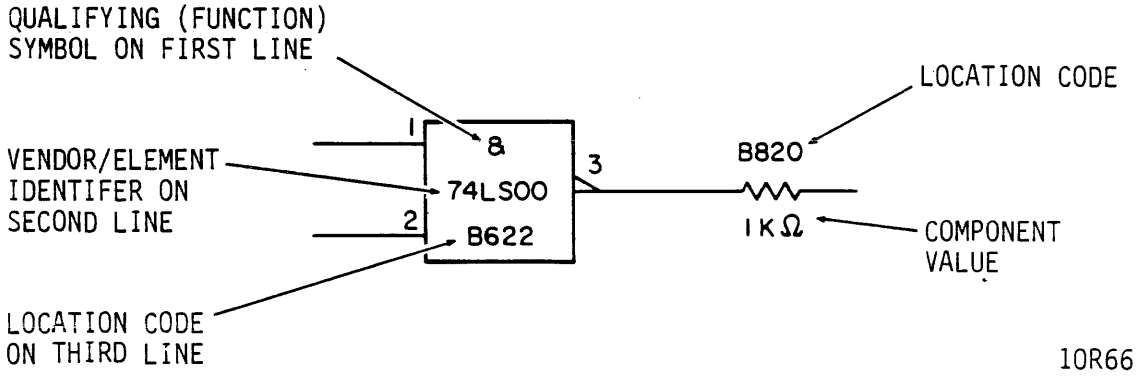


Figure 1-1. Logic Symbology

QUALIFYING (FUNCTION) SYMBOL

The qualifying symbol denotes the basic operation being performed by the integrated circuit.

ELEMENT IDENTIFIER

The second line of any symbol contains the vendor/element identifier. This number identifies the integrated circuit type.

LOCATION CODE

The location code identifies the location of each component on the circuit board. The location code is a four-character XXYY designation related to an X-Y grid defined on the edges of the circuit board. To avoid confusion, the "XX" characters are alpha-numeric and the "YY" characters are numeric. Figure 1-2 shows a circuit board with a component at location code B622, which is the intersection of grid lines B6 (X) and 22 (Y).

ABBREVIATIONS

Standard abbreviations from ANSI Y1.1 are used whenever possible. Refer to the list of abbreviations contained in the front matter for a definition of all abbreviations used in the diagrams.

LOGIC LEVELS

Three types of logic are used in the drives that this manual applies to: TTL logic, ECL logic, and CMOS logic. Logic levels for the three types are shown in table 1-1. Different circuit configurations and temperatures may result in legitimate readings that fall outside of the typical range. Such readings should be suspect only in the event of problems.

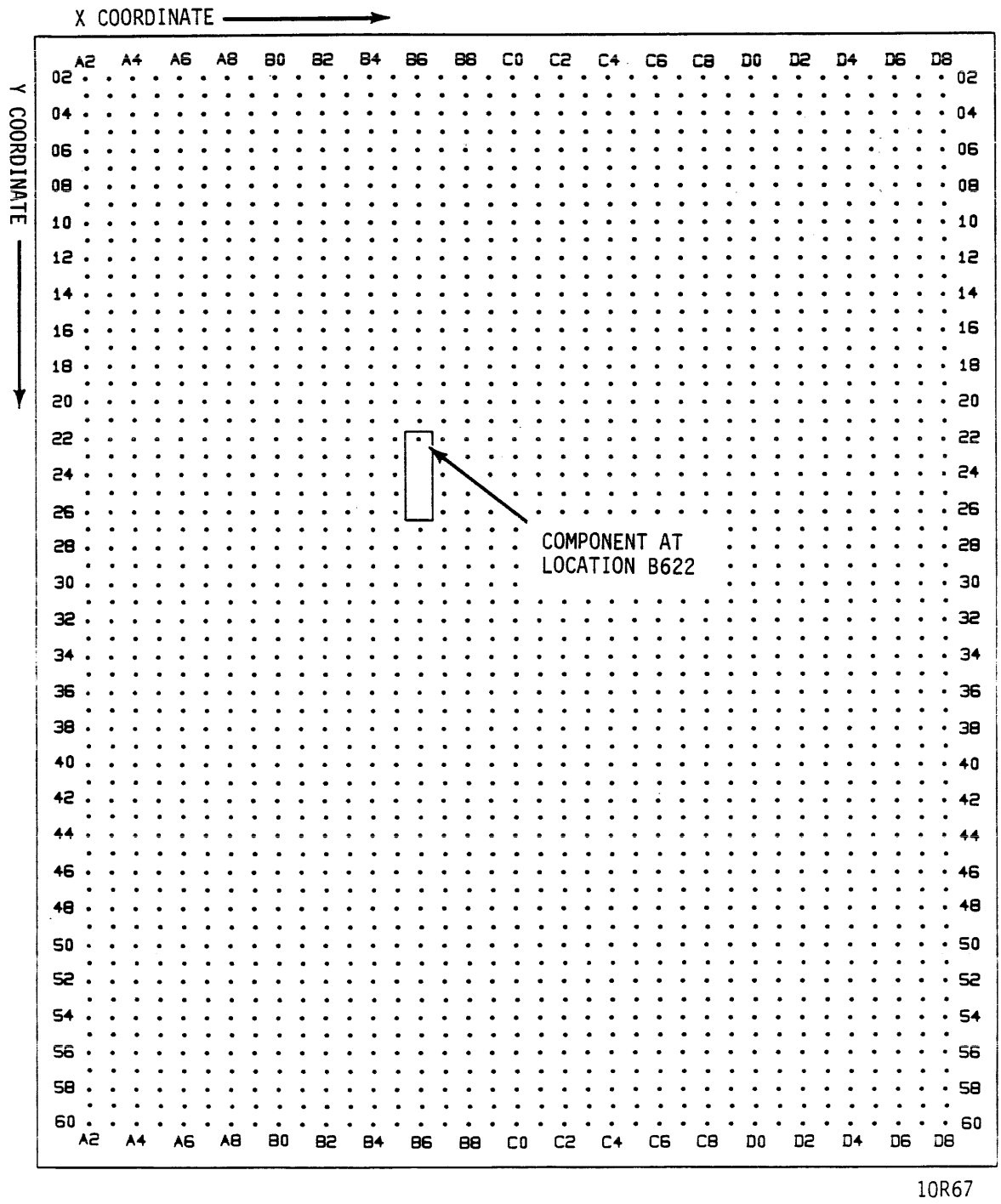


Figure 1-2. Location Code Example

TABLE 1-1. LOGIC VOLTAGE LEVELS

Logical State	Nominal Voltage	Typical Range
TTL "1"	3.3 V	2.0 V to 3.3 V*
TTL "0"	0.2 V	0.2 V to 0.8 V
ECL "1"	-0.924 V	-0.96 V to -0.81 V
ECL "0"	-1.75 V	-1.65 V to -1.85 V
CMOS "1"	5.0 V	3.5 V to 5.0 V
CMOS "0"	0 V	0 V to 1.5 V

*Measuring a TTL open collector voltage may result in a reading that is close to the actual power supply voltage.

SIGNAL NAMES

Input and output signals are labeled to reflect their particular function. If an output signal has no connection, and therefore no function, it is labelled "NC" to indicate no connection. The polarity (logical state) of a signal is identified by a plus or minus sign before the signal name. A plus sign before a signal name indicates that the signal is active when the logic level is high or in a logical "1" state. A minus sign before a signal name indicates that the signal is active when the logic level is low or in a logical "0" state. Refer to the discussion on logic levels.

LOGIC ARRANGEMENT

Logic diagrams for the drive consist of overall block diagrams and independent diagram sets for the circuit boards. The diagram sets are presented in the order given in table 1-2.

Each diagram set consists of one or more sheets with each sheet identified by the sheet number which appears in the lower right-hand corner of the page. The first sheet in each set, the cover sheet, is described in the following paragraph.

TABLE 1-2. CONTENTS OF DIAGRAMS

Card Type	Cross Reference Number	Equipment Numbers Covered	Title
	10XX	ALL	Block Diagram
_VZX	21XX	ALL	Status/Control Panel
_WRX	22XX	ALL	Operator Panel
_VZX	31XX	PA8B1	Arm Matrix Board
_WRX	32XX	PA8E1	Arm Matrix Board
_XLX	41XX	PA8B1B/D PA8E1B/D	SCSI Interface Single-Ended I/O Board
_XJX	42XX	PA8B1A/C PA8E1A/C	SCSI Interface Differential I/O Board
_WAX	51XX	PA8B1/G2 PA8H1	Control Board
_XEX	51XX	PA8E1	
_VYX	61XX	PA8B1	Read/Write Board
_WYX	62XX	PA8E1	Read/Write Board
_WVX	7001	ALL	Connector Adapter Board

LOGIC DIAGRAM COVER SHEETS

The logic diagram cover sheet is the first sheet of each logic set. It contains power and ground connections.

BOARD TYPE

The board type designation is shown on sheet 1 in the title block.

INTERSHEET REFERENCES

Each logic diagram is assigned a four-digit cross-reference number and a two-digit sheet number. The first two digits of the cross-reference number indicate the assigned set number, and the last two digits indicate the sheet number within that set. Table 1-2 lists the cross-reference number for each logic diagram set. The following paragraphs discuss how to trace signals from one point to another in the diagrams and refer to both the sheet numbers and the cross-reference numbers.

The procedure for tracing signals in the logic diagrams depends on whether the signal path continues on the same sheet, on another sheet in the same logic set, or on a sheet in a different logic set. These three cases are symbolized differently in the logic and are discussed separately in the following paragraphs. Figure 1-3 shows how to trace signals within one logic set. Figure 1-4 shows how to trace signals between two logic sets.

When a logic signal is continued on the same sheet but cannot be shown in series, "line of sight" arrows along with a letter within a circle are used to indicate signal origin and destination.

When a logic signal is continued on another sheet of the same logic set, that sheet number appears next to a hexagon containing a designating letter. This same letter is then shown where the signal is continued.

When a signal continues on a sheet of another logic set, it follows a path through a foil or a cable from one circuit board to another. Each logic set has one or more cross-reference lists preceding it. The cross-reference lists show all the external connections for the board described in the logic set (in columns designated FROM). In adjacent columns (designated TO) you will find the mating connection for each board connector and one or more cross-reference numbers showing where the signal continues in other logic sets.

In using the cross-reference lists, you only need to look at one intermediate page in tracing a signal from one logic set to another. For example, suppose that you are troubleshooting an SMD interface drive. You are interested in finding the origin of a particular signal on the control board. What do you do?

1. Note the connector and pin where that signal enters the control board.

2. Flip to the beginning of the control board diagrams and locate the cross-reference list relating to your drive.

3. On the cross-reference list, find connector and pin noted in step 1.

4. Alongside the connector/pin entry, find the cross-reference number for the diagram where the signal originates. The mating connector/pin appears to the right of the cross-reference number.

5. Go to the diagram page you found in step 4. Look for the signal with the same name that appeared in the other logic set. The connector and pin for that signal should agree with the information you obtained in step 4.

BLOCK DIAGRAMS

Beginning on page 1-10 you will find block diagrams for each type of drive described in this manual. The block diagrams show how the different circuit boards interconnect.

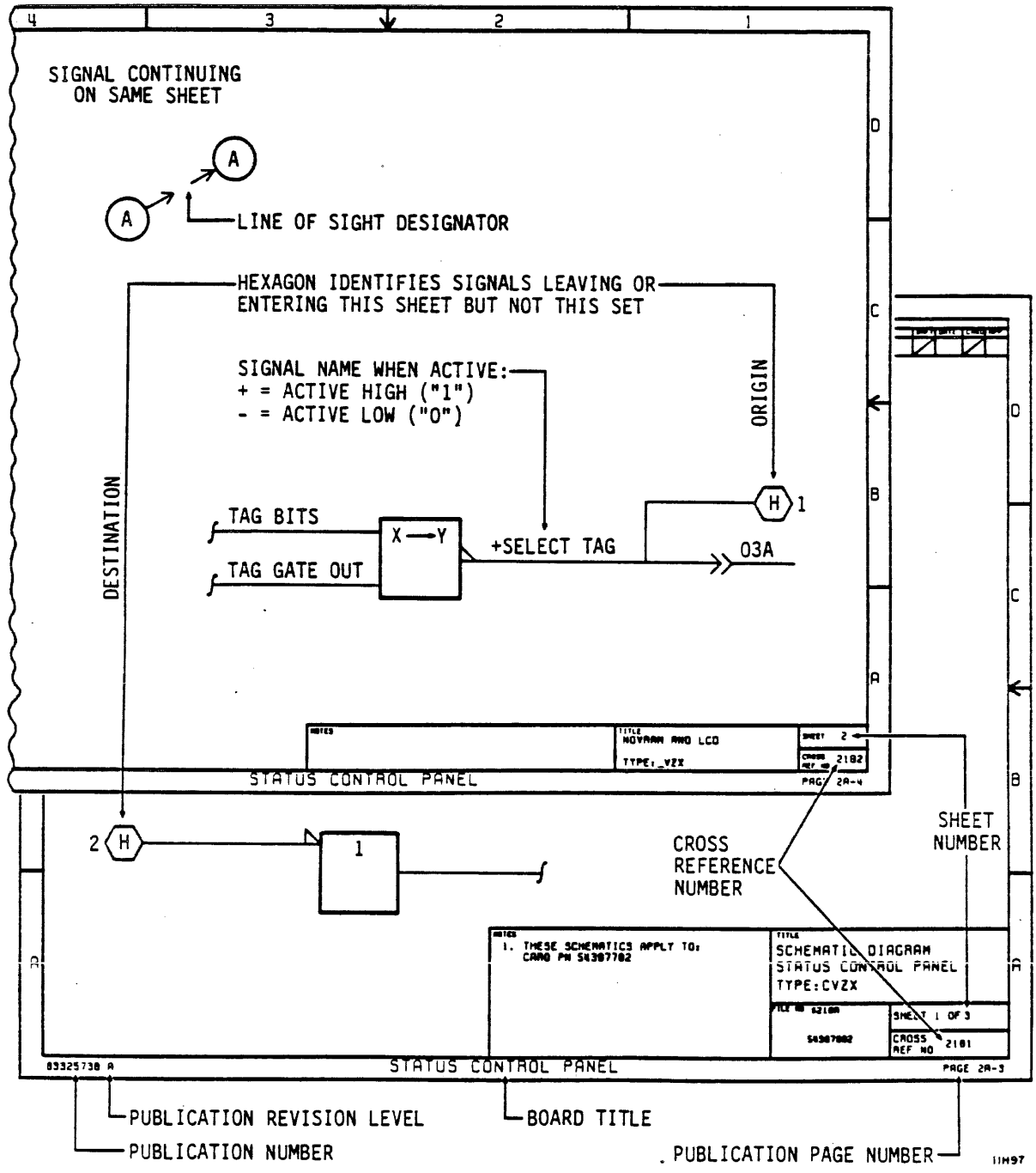


Figure 1-3. Tracing Signals Within One Logic Set

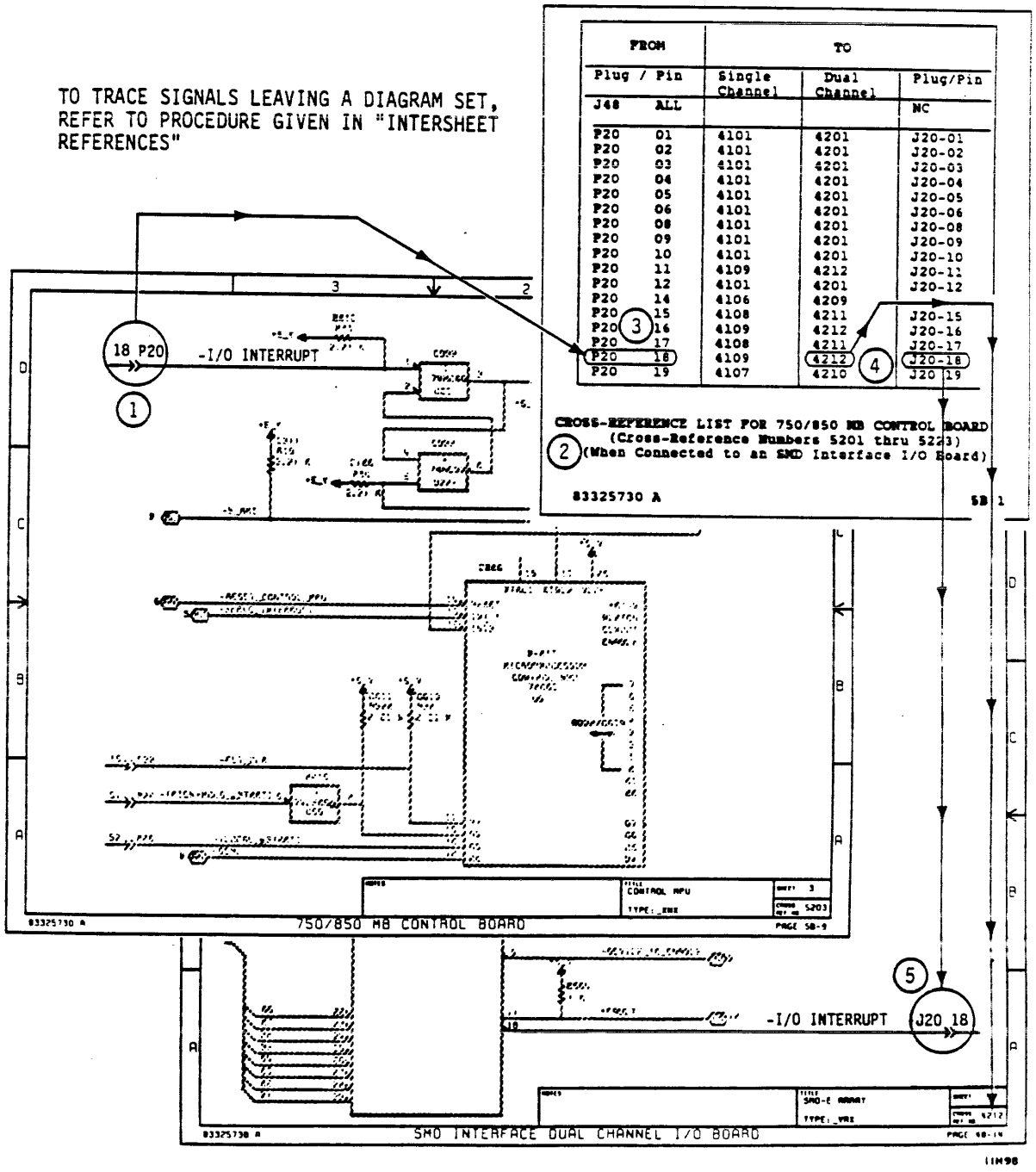
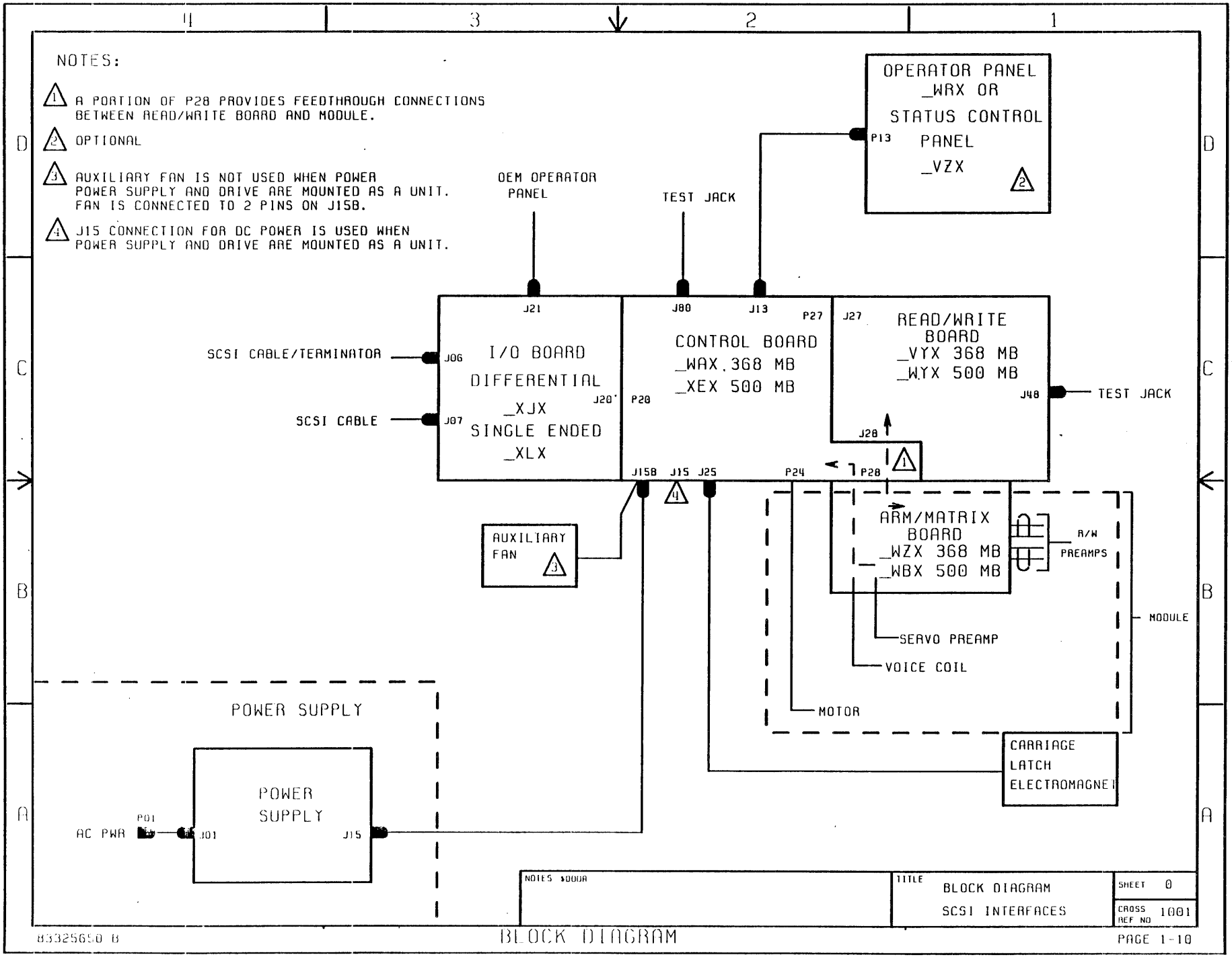


Figure 1-4. Tracing Signals Between Logic Sets


NOTES:
1 A PORTION OF P28 PROVIDES FEEDTHROUGH CONNECTIONS BETWEEN READ/WRITE BOARD AND MODULE.
2 OPTIONAL
3 AUXILIARY FAN IS NOT USED WHEN POWER POWER SUPPLY AND DRIVE ARE MOUNTED AS A UNIT. FAN IS CONNECTED TO 2 PINS ON J15B.
4 J15 CONNECTION FOR DC POWER IS USED WHEN POWER SUPPLY AND DRIVE ARE MOUNTED AS A UNIT.
OPERATOR PANEL _WRX OR STATUS CONTROL PANEL _VZX
P13
OEM OPERATOR PANEL
TEST JACK
J21
J80
J13
P27
J27
READ/WRITE BOARD _VYX 368 MB _WYX 500 MB
J48
TEST JACK
SCSI CABLE/TERMINATOR
J06
I/O BOARD DIFFERENTIAL _XJX SINGLE ENDED _XLX
J20
P20
CONTROL BOARD _WAX 368 MB _XEX 500 MB
SCSI CABLE
J07
J28
P28
J15B
J15
J25
P24
AUXILIARY FAN
ARM/MATRIX BOARD _WZX 368 MB _WBX 500 MB
R/W PREAMPS
MODULE
SERVO PREAMP
VOICE COIL
MOTOR
CARRIAGE LATCH ELECTROMAGNET
POWER SUPPLY
POWER SUPPLY
AC PWR
P01
J01
J15
NOTES SOURCE
TITLE
BLOCK DIAGRAM
SCSI INTERFACES
SHEET 0
CROSS REF NO 1001
8332650 B
BLOCK DIAGRAM
PAGE 1-10

SECTION 2

STATUS/CONTROL PANEL AND OPERATOR PANEL DIAGRAMS

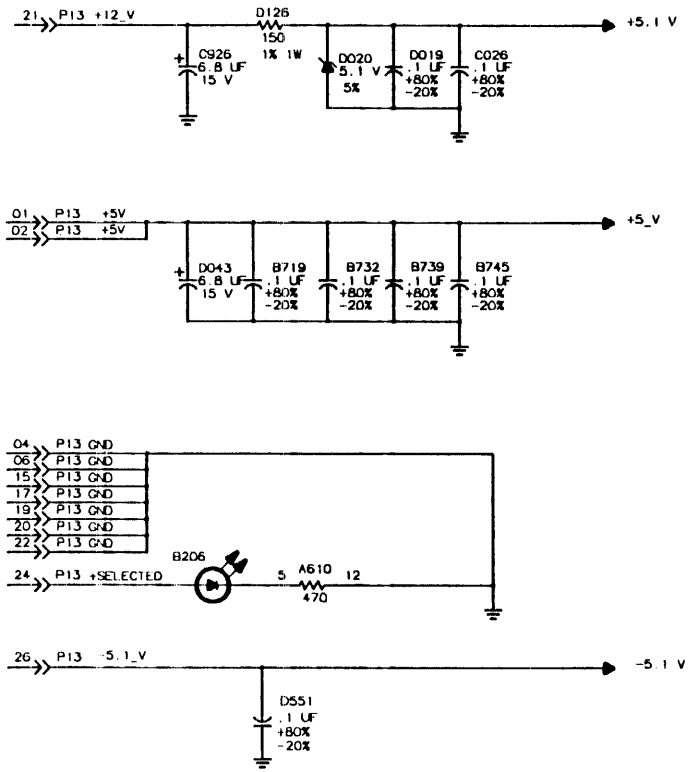
SECTION 2A

STATUS/CONTROL PANEL

FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
P13	01	5101	J13-01
P13	02	5101	J13-02
P13	03	5103	J13-03
P13	04	5101	J13-04
P13	05	5116	J13-05
P13	06	5101	J13-06
P13	07	5116	J13-07
P13	08	5116	J13-08
P13	09	5116	J13-09
P13	10	5116	J13-10
P13	11	5116	J13-11
P13	12	5116	J13-12
P13	13	5116	J13-13
P13	14	5116	J13-14
P13	15	5101	J13-15
P13	16	5103	J13-16
P13	17	5101	J13-17
P13	18	5103	J13-18
P13	19	5101	J13-19
P13	20	5101	J13-20
P13	21	5102	J13-21
P13	22	5101	J13-22
P13	23	5106	J13-23
P13	24	5116	J13-24
P13	25	5103	J13-25
P13	26	5101	J13-26

CROSS-REFERENCE LIST FOR STATUS/CONTROL PANEL (Cross-Reference Numbers 2101 thru 2103)

REVISION RECORD						
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APP
A	DJ40121	RELEASE BY ECO	CD	1-6-88		



NOTES:
1. UNLESS OTHERWISE SPECIFIED:

   ALL 20 PIN ICS HAVE PIN 10 CONNECTED TO GROUND AND PIN 20 CONNECTED TO +5V.

   ALL RESISTOR PACK RESISTORS, .15W 2%.

   ALL TRANSISTORS, 2N3250, 50211100.

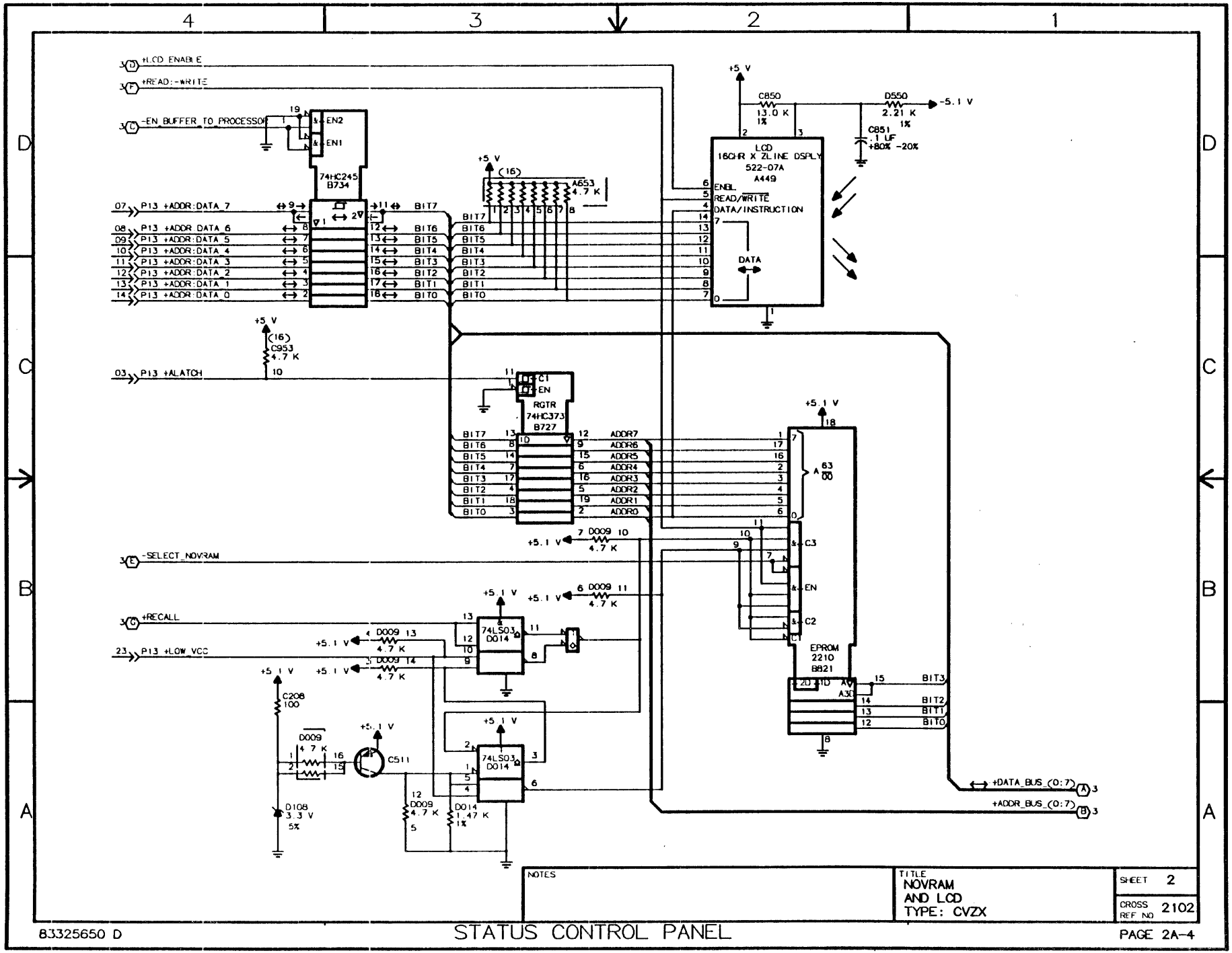
NOTES
1. THESE SCHEMATICS APPLY TO:
   CARD PN 54397704

TITLE
SCHEMATIC DIAGRAM
STATUS/CONTROL PANEL
TYPE: CVZX

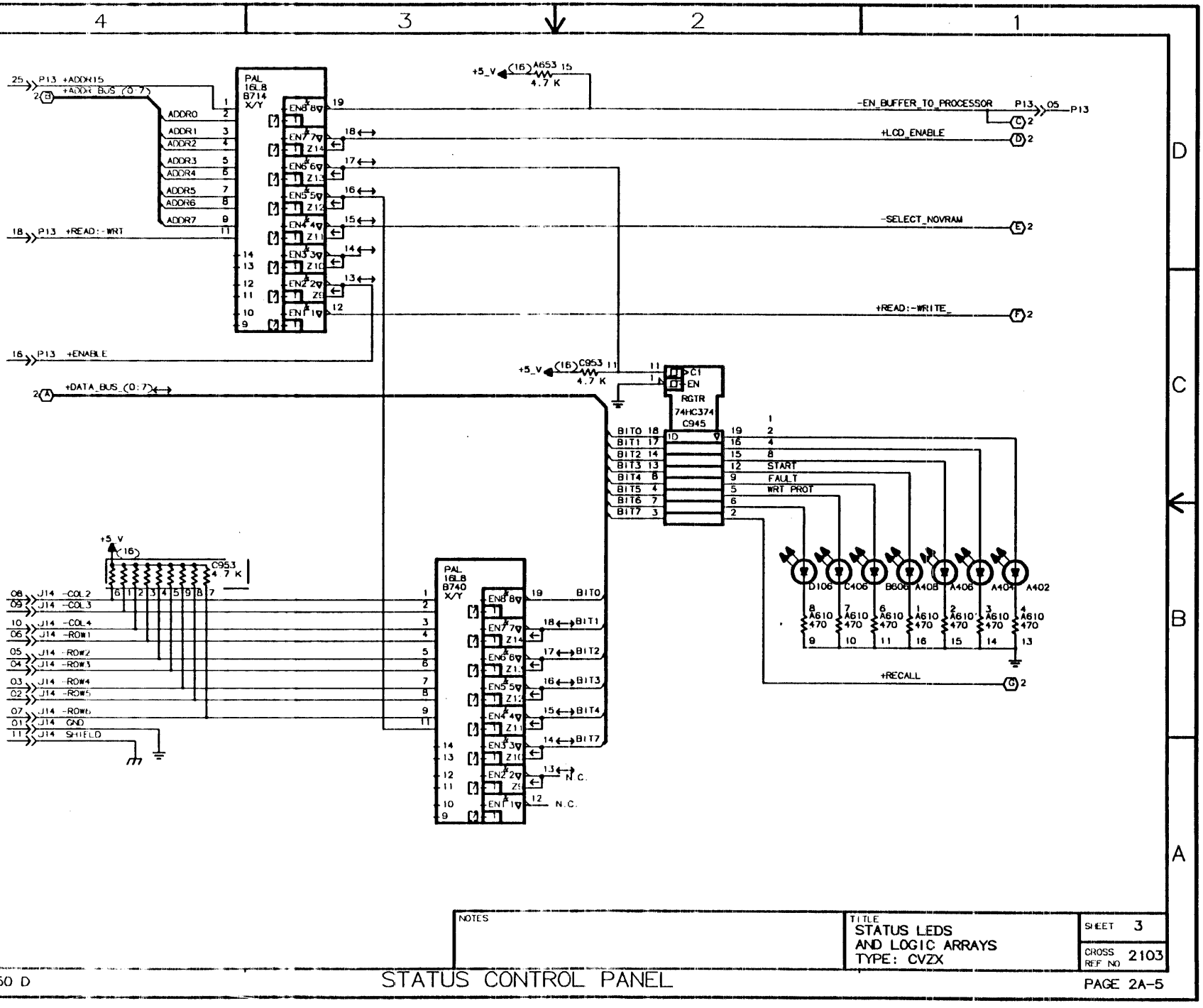
FILE NO $210A
54397804

SHEET 1 OF 3

CROSS REF NO 2101



NOTES	TITLE	SHEET 2
	NOVRAM AND LCD TYPE: CVZX	CROSS REF NO 2102


4
3
2
1
D
C
B
A
PAL 16L8 B714 X/Y
PAL 16L8 B740 X/Y
ADDR0
ADDR1
ADDR2
ADDR3
ADDR4
ADDR5
ADDR6
ADDR7
25 P13 +ADDR15
+ADDR_BUS_(0:7)
18 P13 +READ:-WRT
16 P13 +ENABLE
+DATA_BUS_(0:7)
+5_V
A653 15
4.7 K
-EN_BUFFER_TO_PROCESSOR
P13 05 P13
+LCD_ENABLE
-SELECT_NOVRAM
+READ:-WRITE_
C953 11
RGTR 74HC374 C945
BIT0 18
BIT1 17
BIT2 14
BIT3 13
BIT4 8
BIT5 4
BIT6 7
BIT7 3
START
FAULT
WRT PROT
+RECALL
D106
C406
B606
A408
A406
A404
A402
A610 470
C953 4.7 K
08 J14 -COL2
09 J14 -COL3
10 J14 -COL4
06 J14 -ROW1
05 J14 -ROW2
04 J14 -ROW3
03 J14 -ROW4
02 J14 -ROW5
07 J14 -ROW6
01 J14 GND
11 J14 SHIELD
BIT0
BIT1
BIT2
BIT3
BIT4
BIT7
N.C.
N.C.
NOTES
TITLE
STATUS LEDS
AND LOGIC ARRAYS
TYPE: CVZX
SHEET 3
CROSS REF NO 2103
83325650 D
STATUS CONTROL PANEL
PAGE 2A-5

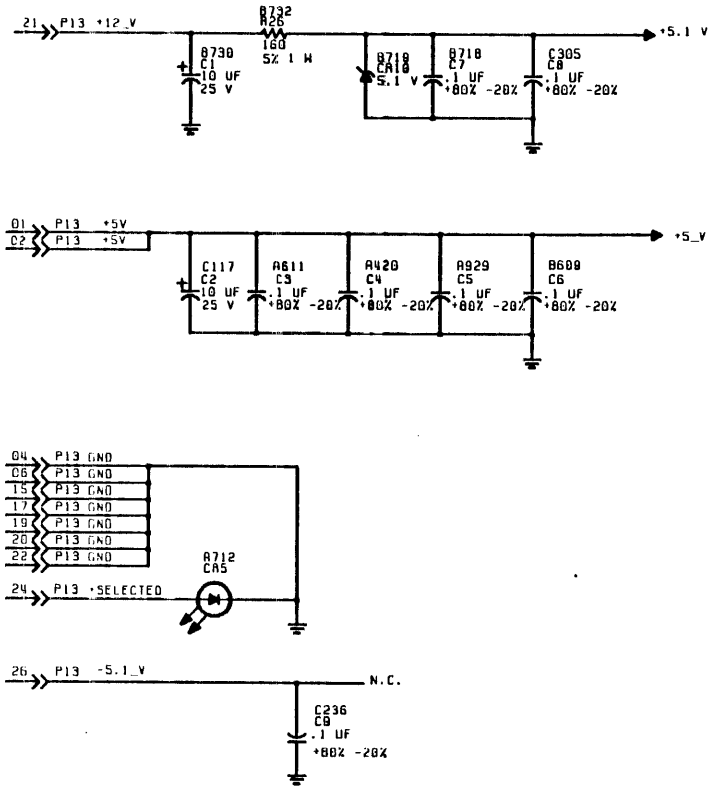
SECTION 2B

OPERATOR PANEL

FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
P13	01	5101	J13-01
P13	02	5101	J13-02
P13	03	5103	J13-03
P13	04	5101	J13-04
P13	05	5116	J13-05
P13	06	5101	J13-06
P13	07	5116	J13-07
P13	08	5116	J13-08
P13	09	5116	J13-09
P13	10	5116	J13-10
P13	11	5116	J13-11
P13	12	5116	J13-12
P13	13	5116	J13-13
P13	14	5116	J13-14
P13	15	5101	J13-15
P13	16	5103	J13-16
P13	17	5101	J13-17
P13	18	5103	J13-18
P13	19	5101	J13-19
P13	20	5101	J13-20
P13	21	5102	J13-21
P13	22	5101	J13-22
P13	23	5106	J13-23
P13	24	5116	J13-24
P13	25	5103	J13-25
P13	26	5101	J13-26

CROSS-REFERENCE LIST FOR OPERATOR PANEL (Cross-Reference Numbers 2201 thru 2203)

REVISION RECORD					
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APP
A	DJ23000	A RELEASED		07-21-88		



NOTES:
1. UNLESS OTHERWISE SPECIFIED:

   ALL 28 PIN ICS HAVE PIN 14 CONNECTED TO GROUND AND PIN 28 CONNECTED TO +5V.

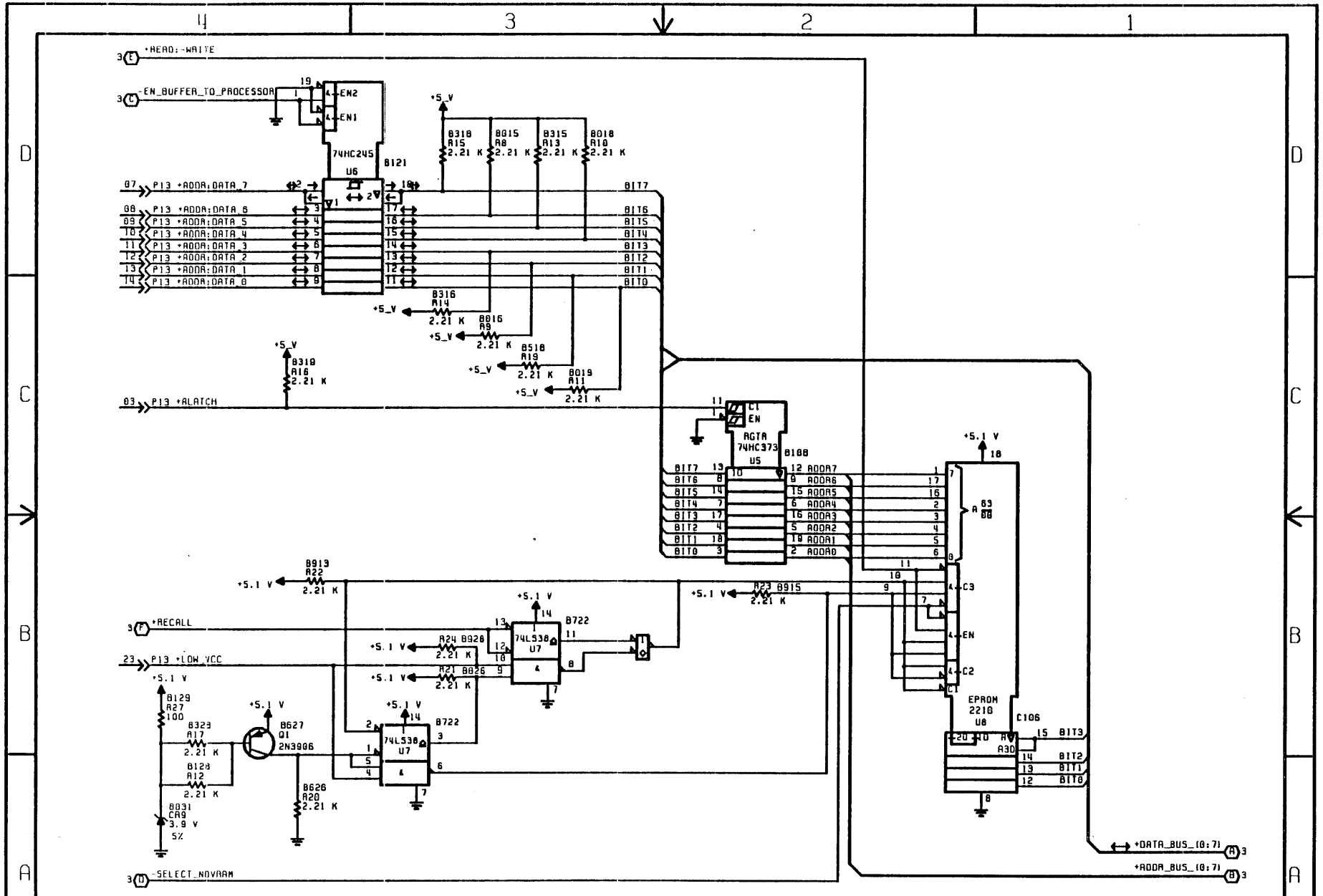
NOTES
1. THESE SCHEMATICS APPLY TO:
   CARD PN 54404100

TITLE
SCHEMATIC DIAGRAM
OPERATOR PANEL
TYPE: AWRX

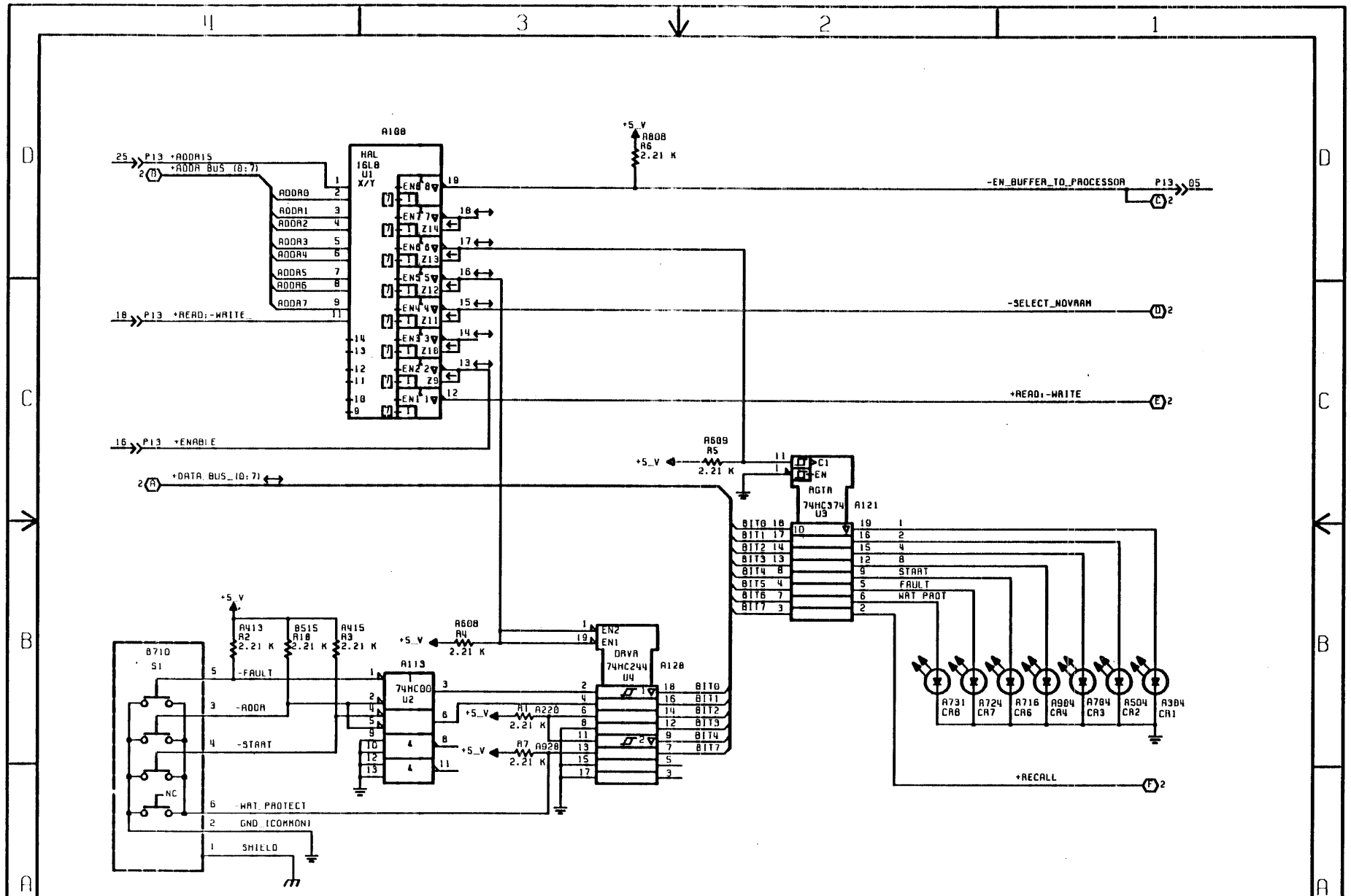
FILE NO $220A
54404200

SHEET 1 OF 3

CROSS REF NO 2201



NOTES	TITLE	SHEET 2
	NOVRAM AND ADDRESS LATCH TYPE: _WAX	CROSS REF NO 2202



NOTES	TITLE	SHEET 3
	STATUS LEDS AND ADDRESS DECODE ARRAY TYPE: _WRX	CROSS REF NO 2203

SECTION 3

ARM MATRIX BOARD DIAGRAMS

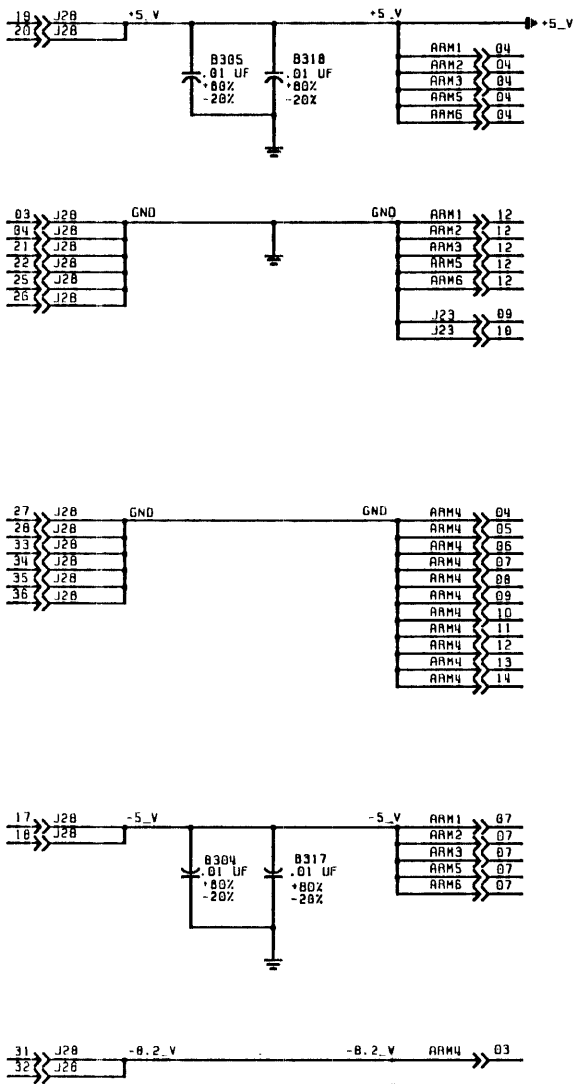
SECTION 3A

368 MB ARM MATRIX BOARD

FROM		TO	
Plug / Pin		R/W Board	Plug/Pin
J28	01	61/6204	P28-01
J28	02	61/6204	P28-02
J28	03	61/6201	P28-03
J28	04	61/6201	P28-04
J28	05	61/6204	P28-05
J28	06	61/6204	P28-06
J28	07	61/6204	P28-07
J28	08	61/6205	P28-08
J28	09	61/6205	P28-09
J28	10	61/6206	P28-10
J28	11	61/6205	P28-11
J28	12	61/6205	P28-12
J28	13	61/6205	P28-13
J28	14	61/6205	P28-14
J28	15	61/6205	P28-15
J28	16	61/6205	P28-16
J28	17	61/6201	P28-17
J28	18	61/6201	P28-18
J28	19	61/6201	P28-19
J28	20	61/6201	P28-20

FROM		TO		
Plug / Pin		Control Board	R/W Board	Plug/Pin
J28	21		61/6201	P28-21
J28	22		61/6201	P28-22
J28	23		61/6204	P28-23
J28	24		61/6204	P28-24
J28	25		61/6201	P28-25
J28	26		61/6201	P28-26
J28	27	5109	61/6201	P28-27
J28	28	5109	61/6201	P28-28
J28	29	5109	61/6204	P28-29
J28	30	5109	61/6204	P28-30
J28	31	5101	61/6201	P28-31
J28	32	5101	61/6201	P28-32
J28	33	5101	61/6201	P28-33
J28	34	5101	61/6201	P28-34
J28	35	5118	61/6201	P28-35
J28	36	5118	61/6201	P28-36
J28	37	5118	61/6201	P28-37
J28	38	5118	61/6201	P28-38
J28	39	5118	61/6201	P28-39
J28	40	5118	61/6201	P28-40

CROSS-REFERENCE LIST FOR 368 MB ARM MATRIX BOARD (Cross-Reference Numbers 3101 thru 3102)



REVISION RECORD						
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APP
A	DJ23000 DJ29454	A RELEASED	HH	10-6-87	SS	
B	DJ29636	INCORP DWBX-04 BLNK	SLP	6-04-88		

NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   ALL DIODE ARRAYS, 50241882.

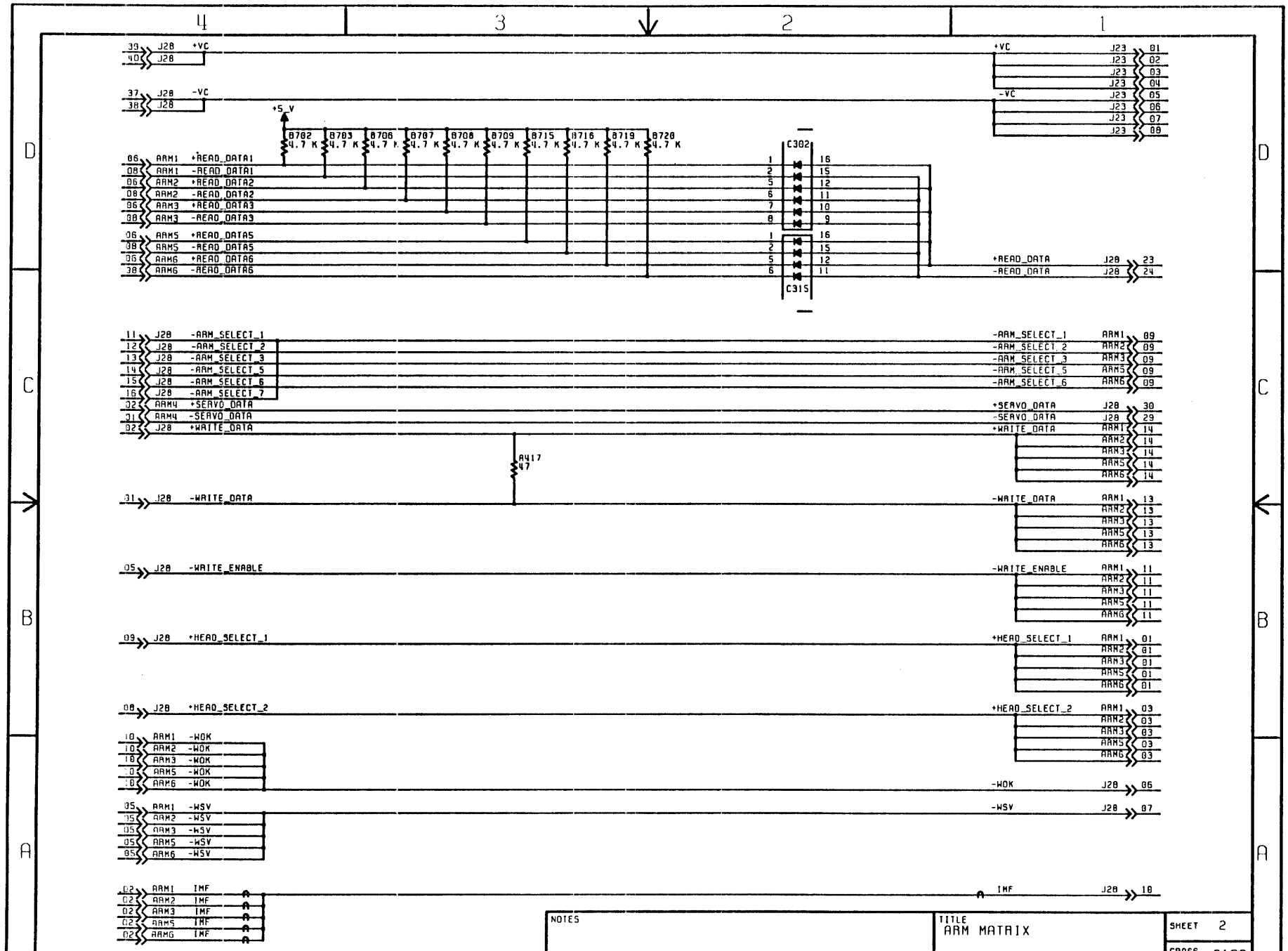
NOTES
1. THESE SCHEMATICS APPLY TO:
   CARD PN 54398504

TITLE
SCHEMATIC DIAGRAM
ARM MATRIX (368 MB)
TYPE: DWBX

FILE NO $310A
54398604

SHEET 1 OF 2

CROSS REF NO 3101


4
3
2
1
+VC
-VC
+5_V
R702 4.7 K
R703 4.7 K
R706 4.7 K
R707 4.7 K
R708 4.7 K
R709 4.7 K
R715 4.7 K
R716 4.7 K
R719 4.7 K
R720 4.7 K
C302
C315
+READ_DATA1
-READ_DATA1
+READ_DATA2
-READ_DATA2
+READ_DATA3
-READ_DATA3
+READ_DATA5
-READ_DATA5
+READ_DATA6
-READ_DATA6
+READ_DATA
-READ_DATA
-ARM_SELECT_1
-ARM_SELECT_2
-ARM_SELECT_3
-ARM_SELECT_5
-ARM_SELECT_6
-ARM_SELECT_7
+SERVO_DATA
-SERVO_DATA
+WRITE_DATA
R417 47
-WRITE_DATA
-WRITE_ENABLE
+HEAD_SELECT_1
+HEAD_SELECT_2
-WOK
-WSV
IMF
NOTES
TITLE
ARM MATRIX
TYPE:DWBX
SHEET 2
CROSS REF NO 3102
83325650 C
368 MB ARM MATRIX BOARD
PAGE 3A-4

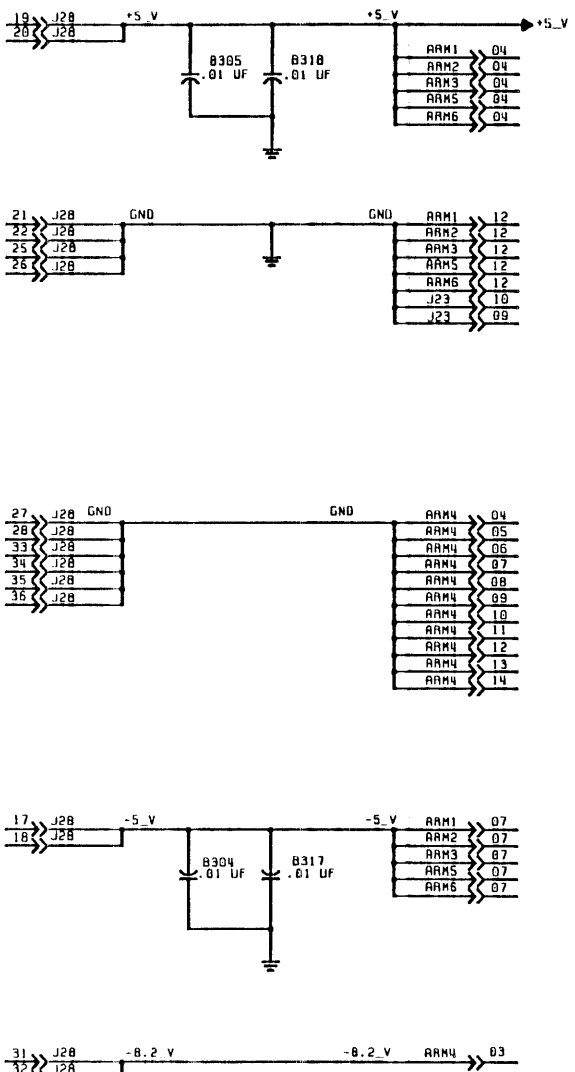
SECTION 3B

500 MB ARM MATRIX BOARD

FROM		TO	
Plug / Pin		R/W Board	Plug/Pin
J28	01	61/6204	P28-01
J28	02	61/6204	P28-02
J28	03	61/6201	P28-03
J28	04	61/6201	P28-04
J28	05	61/6204	P28-05
J28	06	61/6204	P28-06
J28	07	61/6204	P28-07
J28	08	61/6205	P28-08
J28	09	61/6205	P28-09
J28	10	61/6206	P28-10
J28	11	61/6205	P28-11
J28	12	61/6205	P28-12
J28	13	61/6205	P28-13
J28	14	61/6205	P28-14
J28	15	61/6205	P28-15
J28	16	61/6205	P28-16
J28	17	61/6201	P28-17
J28	18	61/6201	P28-18
J28	19	61/6201	P28-19
J28	20	61/6201	P28-20

FROM		TO		
Plug / Pin		Control Board	R/W Board	Plug/Pin
J28	21		61/6201	P28-21
J28	22		61/6201	P28-22
J28	23		61/6204	P28-23
J28	24		61/6204	P28-24
J28	25		61/6201	P28-25
J28	26		61/6201	P28-26
J28	27	5109	61/6201	P28-27
J28	28	5109	61/6201	P28-28
J28	29	5109	61/6204	P28-29
J28	30	5109	61/6204	P28-30
J28	31	5101	61/6201	P28-31
J28	32	5101	61/6201	P28-32
J28	33	5101	61/6201	P28-33
J28	34	5101	61/6201	P28-34
J28	35	5118	61/6201	P28-35
J28	36	5118	61/6201	P28-36
J28	37	5118	61/6201	P28-37
J28	38	5118	61/6201	P28-38
J28	39	5118	61/6201	P28-39
J28	40	5118	61/6201	P28-40

CROSS-REFERENCE LIST FOR 500 MB ARM MATRIX BOARD (Cross-Reference Numbers 3201 thru 3202)



REVISION RECORD						
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APP
A	0J23080 0J29455	CLASS B CREATED AND RELEASED BY ECO.	BJP	11-18-8[illegible]	S.S.	
B	0J29637	INCORP BWZX-01 BLANK	SLP	08-05-86		

NOTES:
1. UNLESS OTHERWISE SPECIFIED:
ALL DIODE ARRAYS, 50241802.

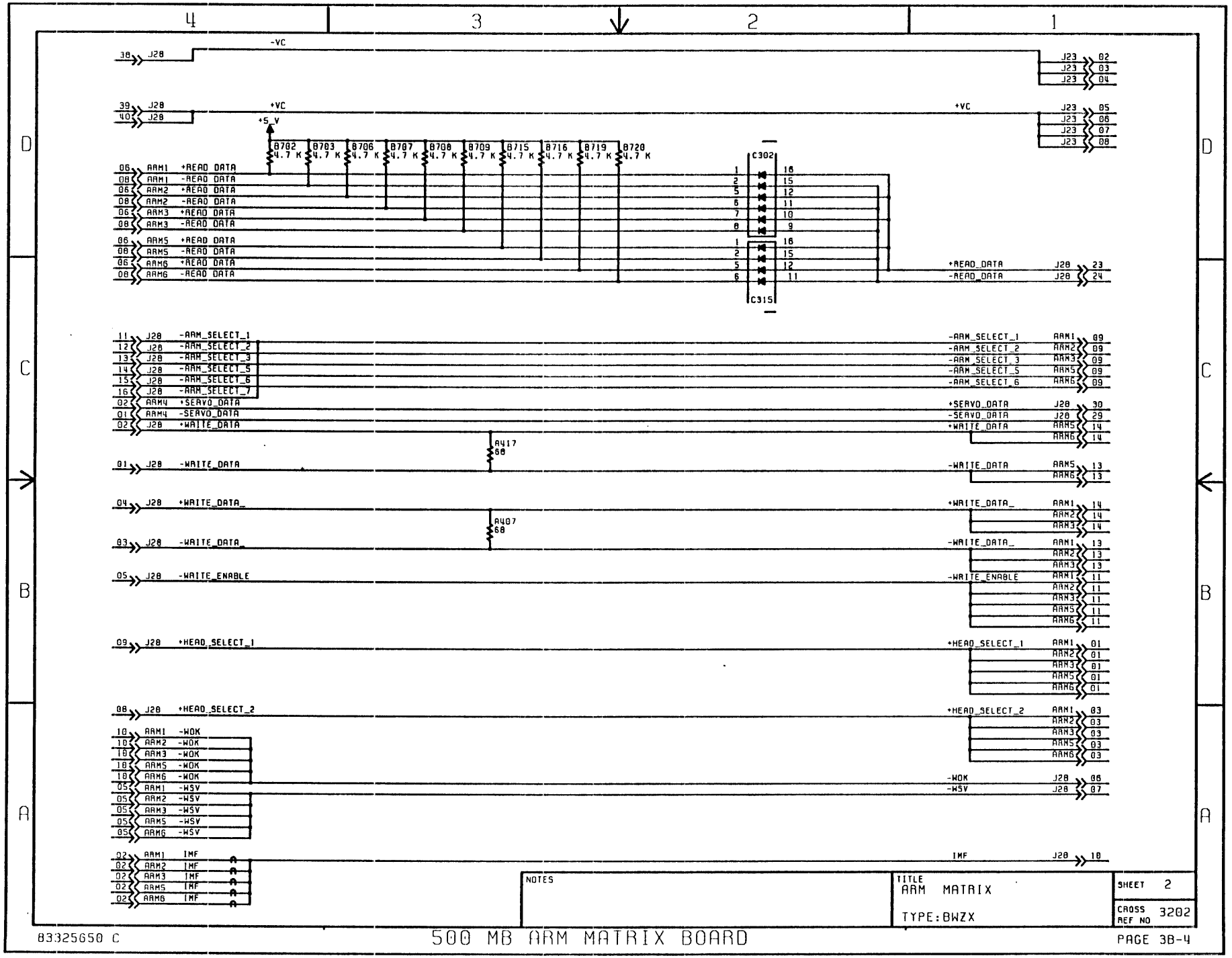
NOTES
1. THESE SCHEMATICS APPLY TO:
CARD PN 54407301

TITLE
SCHEMATIC DIAGRAM
ARM MATRIX (500 MB)
TYPE:BWZX

FILE NO 8320A
54407401

SHEET 1 OF 2

CROSS REF NO 3201


4
3
2
1
D
C
B
A
-VC
+VC
+5 V
J28
J23
R702 4.7 K
R703 4.7 K
R706 4.7 K
R707 4.7 K
R708 4.7 K
R709 4.7 K
R715 4.7 K
R716 4.7 K
R719 4.7 K
R720 4.7 K
C302
C315
ARM1 +READ DATA
ARM1 -READ DATA
ARM2 +READ DATA
ARM2 -READ DATA
ARM3 +READ DATA
ARM3 -READ DATA
ARM5 +READ DATA
ARM5 -READ DATA
ARM6 +READ DATA
ARM6 -READ DATA
+READ_DATA
-READ_DATA
-ARM_SELECT_1
-ARM_SELECT_2
-ARM_SELECT_3
-ARM_SELECT_5
-ARM_SELECT_6
-ARM_SELECT_7
ARM4 +SERVO_DATA
ARM4 -SERVO_DATA
+SERVO_DATA
-SERVO_DATA
+WRITE_DATA
-WRITE_DATA
R417 68
+WRITE_DATA_
-WRITE_DATA_
R407 68
-WRITE_ENABLE
+HEAD_SELECT_1
+HEAD_SELECT_2
ARM1 -WOK
ARM2 -WOK
ARM3 -WOK
ARM5 -WOK
ARM6 -WOK
ARM1 -WSV
ARM2 -WSV
ARM3 -WSV
ARM5 -WSV
ARM6 -WSV
-WOK
-WSV
ARM1 IMF
ARM2 IMF
ARM3 IMF
ARM5 IMF
ARM6 IMF
IMF
NOTES
TITLE
ARM MATRIX
TYPE:BWZX
SHEET 2
CROSS REF NO 3202
83325650 C
500 MB ARM MATRIX BOARD
PAGE 3B-4

SECTION 4

I/O BOARD DIAGRAMS

SECTION 4A

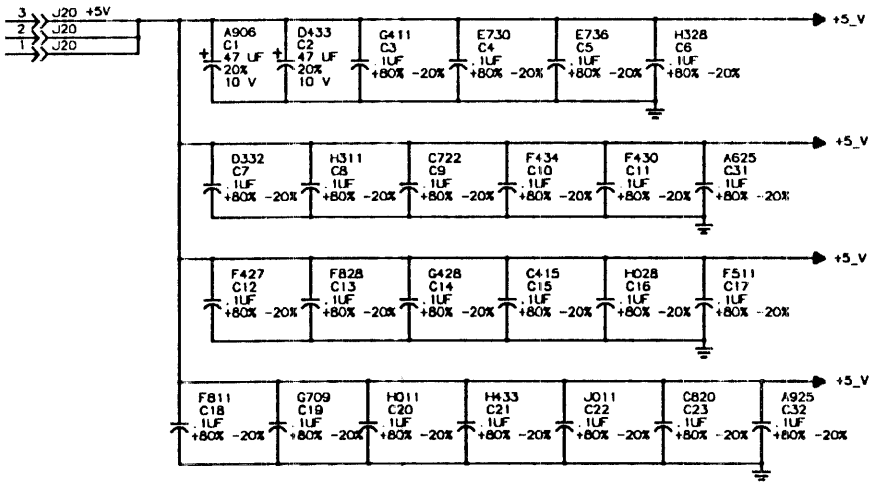
SCSI INTERFACE SINGLE-ENDED I/O BOARD

FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
J20	01	5101	P20-01
J20	02	5101	P20-02
J20	03	5101	P20-03
J20	04	5106	P20-04
J20	05	5101	P20-05
J20	06	5101	P20-06
J20	08	5101	P20-08
J20	09	5101	P20-09
J20	10	5101	P20-10
J20	11	5103	P20-11
J20	12	5101	P20-12
J20	14	5101	P20-14
J20	15	5114	P20-15
J20	17	5114	P20-17
J20	18	5103	P20-18
J20	19	5103	P20-19
J20	23	5102	P20-23
J20	24	5114	P20-24
J20	25	5113	P20-25
J20	26	61/6206	P27-10

FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
J20	27	5113	P20-27
J20	30	61/6206	P20-30
J20	31	5103	P20-31
J20	32	5103	P20-32
J20	33	5114	P20-33
J20	34	5116	P20-34
J20	35	5116	P20-35
J20	36	5116	P20-36
J20	37	5116	P20-37
J20	38	5116	P20-38
J20	39	5116	P20-39
J20	40	5116	P20-40
J20	41	5116	P20-41
J20	42	5116	P20-42
J20	43	61/6205	P27-02
J20	44	61/6205	P27-03
J20	46		Not Used
J20	47	61/6205	P27-01
J20	48	61/6205	P27-04
J20	49	5113	P20-49

FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
J20	51	5113	P20-51
J20	52	5103	P20-52
J20	53	61/6206	P27-12
J20	55	61/6207	P27-07
J20	57	61/6206	P27-06
J20	58	61/6207	P27-08
J20	59	5106	P20-59
J20	60	5106	P20-60
J20	61-70		Not Used
J20	71	5115	P20-71
J20	72	5115	P20-72
J20	73	5115	P20-73
J20	74	5115	P20-74
J20	75	5114	P20-75
J20	76	5114	P20-76
J20	77	5114	P20-77
J20	78	5114	P20-78
J20	79	5114	P20-79
J20	80	5114	P20-80

CROSS-REFERENCE LIST FOR SCSI INTERFACE SINGLE-ENDED I/O BOARD (Cross-Reference Numbers 4101 thru 4111)



REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APP
A	DJ23000 DJ29666	RELEASE BY ECO		03-31-86		

REVISION RECORD

NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   ALL 8 PIN ICS HAVE PIN 4 CONNECTED TO GROUND AND PIN 8 CONNECTED TO +5V.
   ALL 14 PIN ICS HAVE PIN 7 CONNECTED TO GROUND AND PIN 14 CONNECTED TO +5V.
   ALL 16 PIN ICS HAVE PIN 8 CONNECTED TO GROUND AND PIN 16 CONNECTED TO +5V.
   ALL 18 PIN ICS HAVE PIN 18 CONNECTED TO GROUND AND PIN 9 CONNECTED TO +5V.
   ALL 20 PIN ICS HAVE PIN 10 CONNECTED TO GROUND AND PIN 20 CONNECTED TO +5V.
   ALL o—o INDICATES SM 0 OHM RESISTOR JUMPERS.
2. IC IS NOT ON ASSEMBLY.

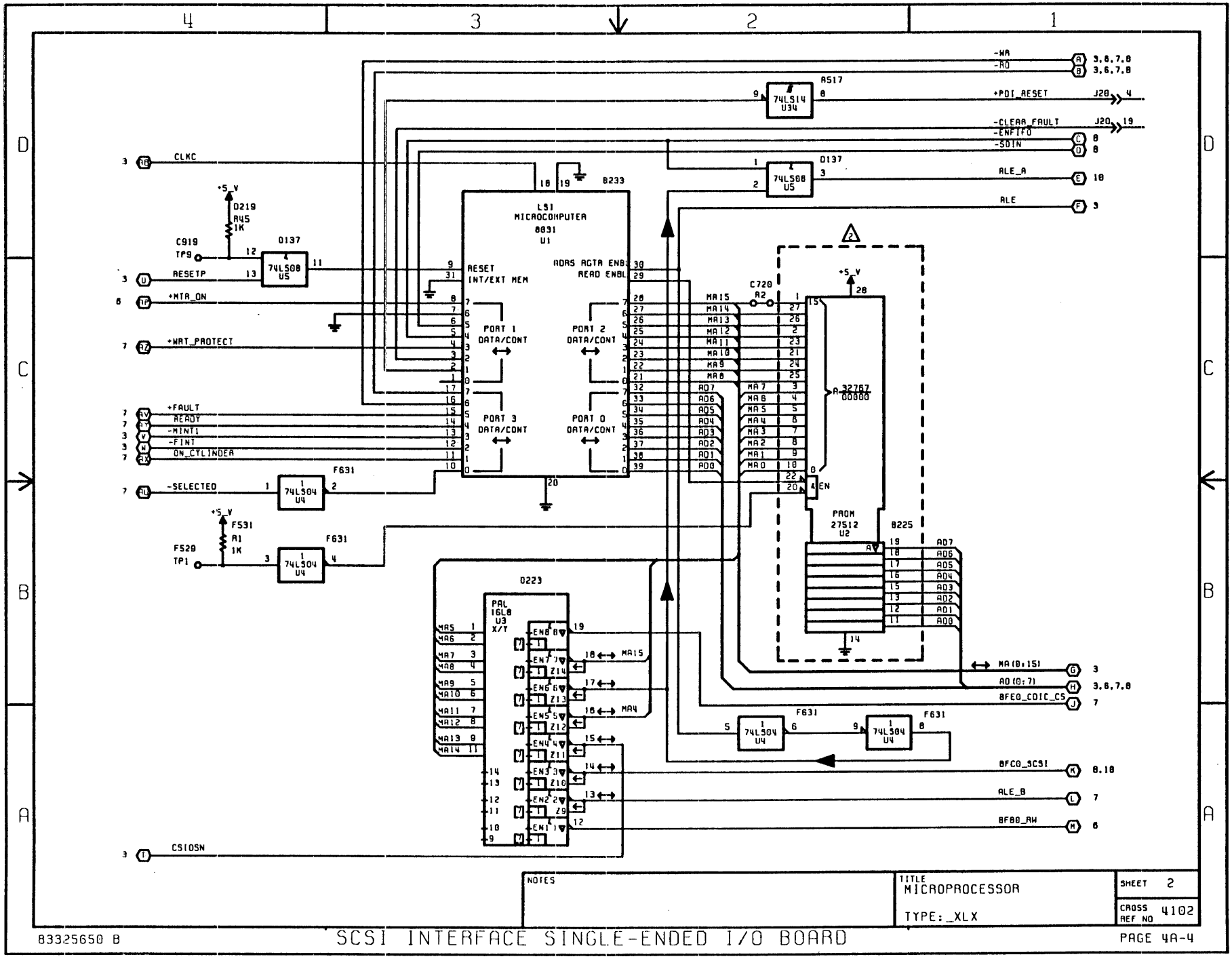
NOTES
1. THESE SCHEMATICS APPLY TO:
   CARD PN 54411701-09

TITLE
SCHEMATIC DIAGRAM
EMA SCSI (O.C.)
TYPE: CXLX(BXKX)

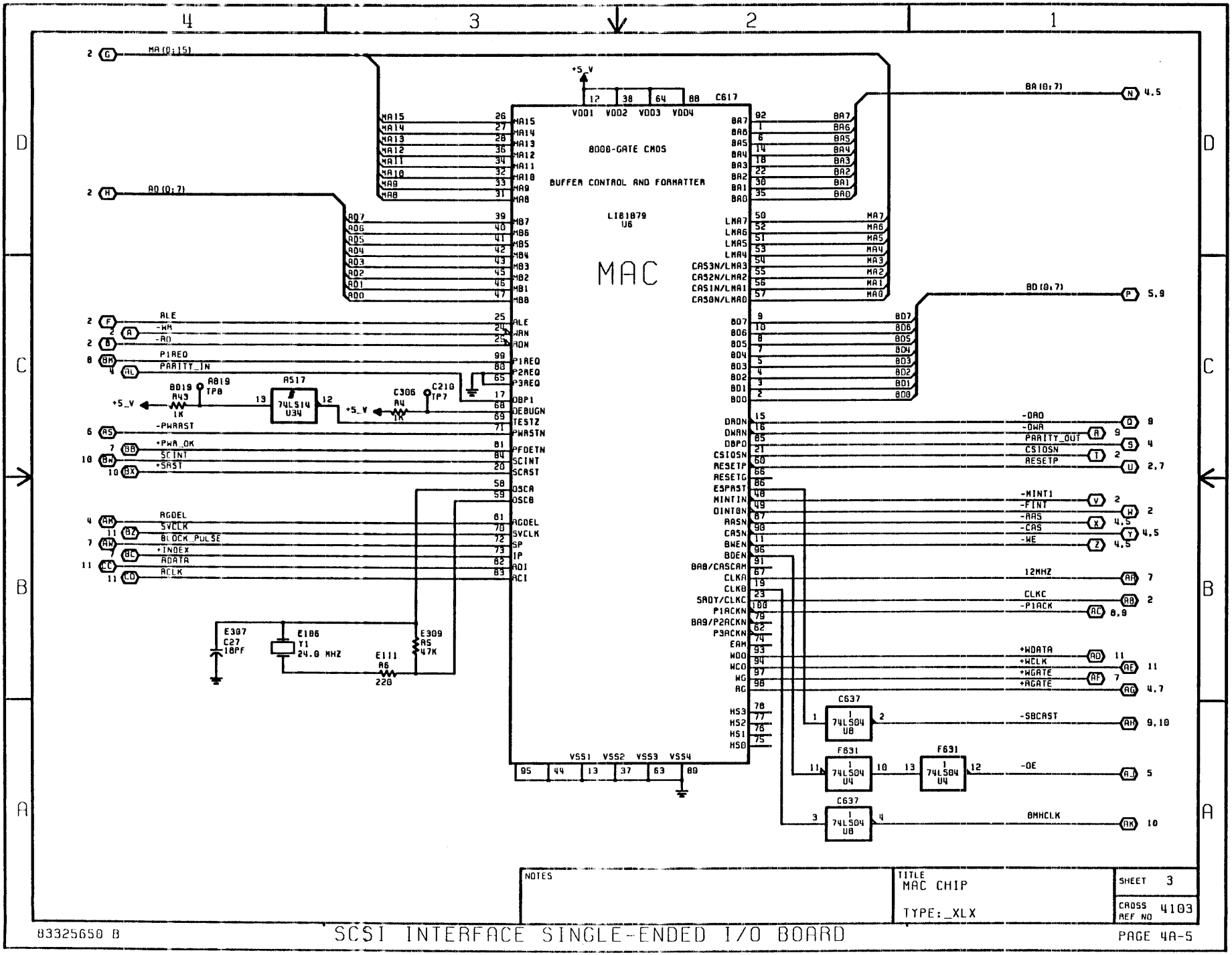
FILE NO $430A
54411402

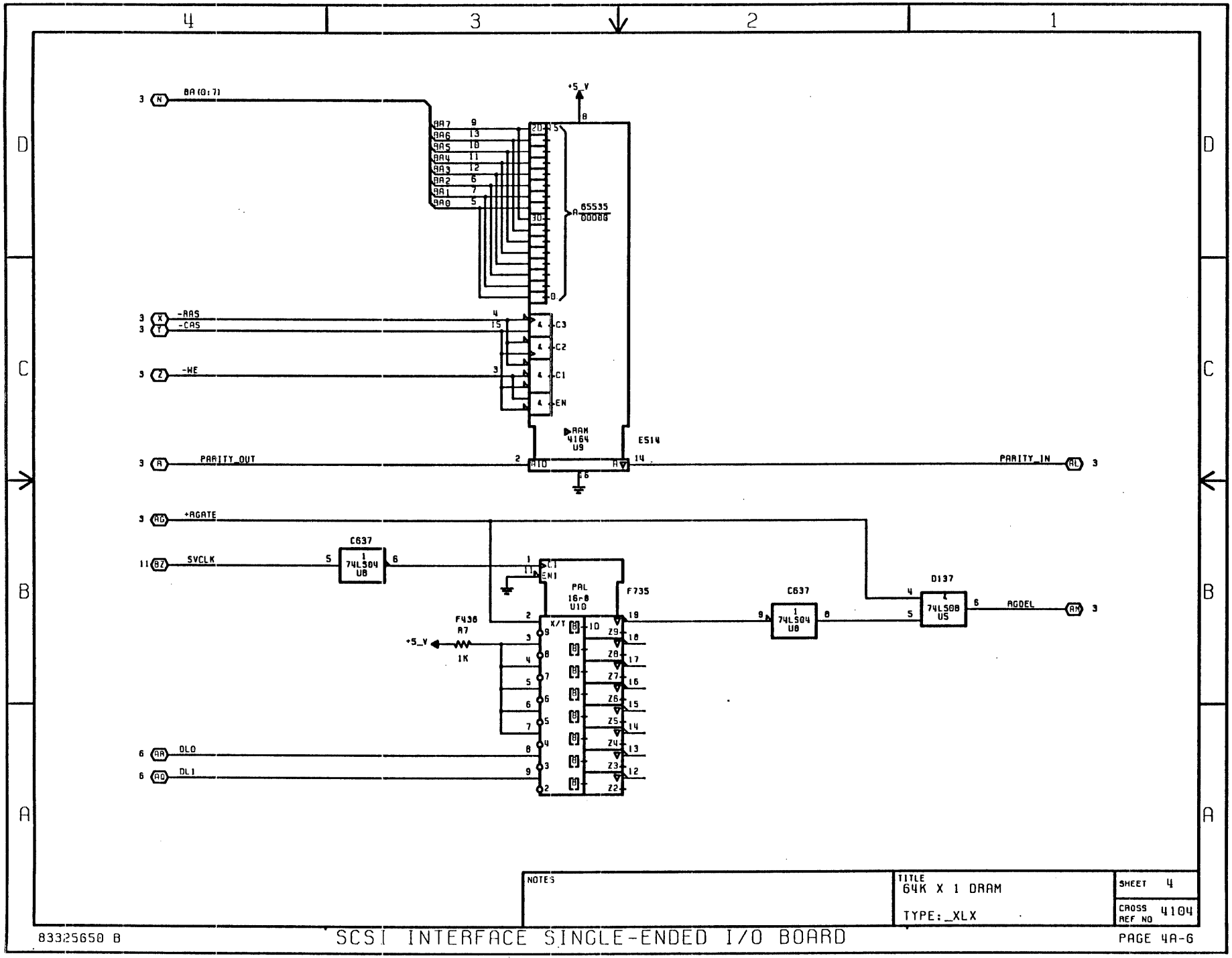
SHEET 1 OF 11

CROSS REF NO 4101



NOTES	TITLE	SHEET
	MICROPROCESSOR	2
	TYPE: _XLX	CROSS REF NO 4102


MAC
8000-GATE CMOS
BUFFER CONTROL AND FORMATTER
LI81879
U6
C617
MA(0:15)
AD(0:7)
BA(0:7)
BD(0:7)
ALE
-WR
-RD
P1REQ
PARITY_IN
-PWRRST
+PWR_OK
SCINT
+SRST
AGDEL
SVCLK
BLOCK_PULSE
+INDEX
ADATA
ACLK
12MHZ
CLKC
-P1ACK
+WDATA
+WCLK
+WGATE
+AGATE
-SBCRST
-OE
8MHCLK
-DRD
-DWR
PARITY_OUT
CSIOSN
RESETP
-MINT1
-FINT
-RAS
-CAS
-WE
E307 C27 18PF
E186 Y1 24.0 MHZ
E111 A6 220
E309 A5 47K
A819 TP8
A817 74LS14 U34
C306 A4 1K
C210 TP7
A819 A43 1K
C637 74LS04 U8
F631 74LS04 U4
NOTES
TITLE
MAC CHIP
TYPE: _XLX
SHEET 3
CROSS REF NO 4103



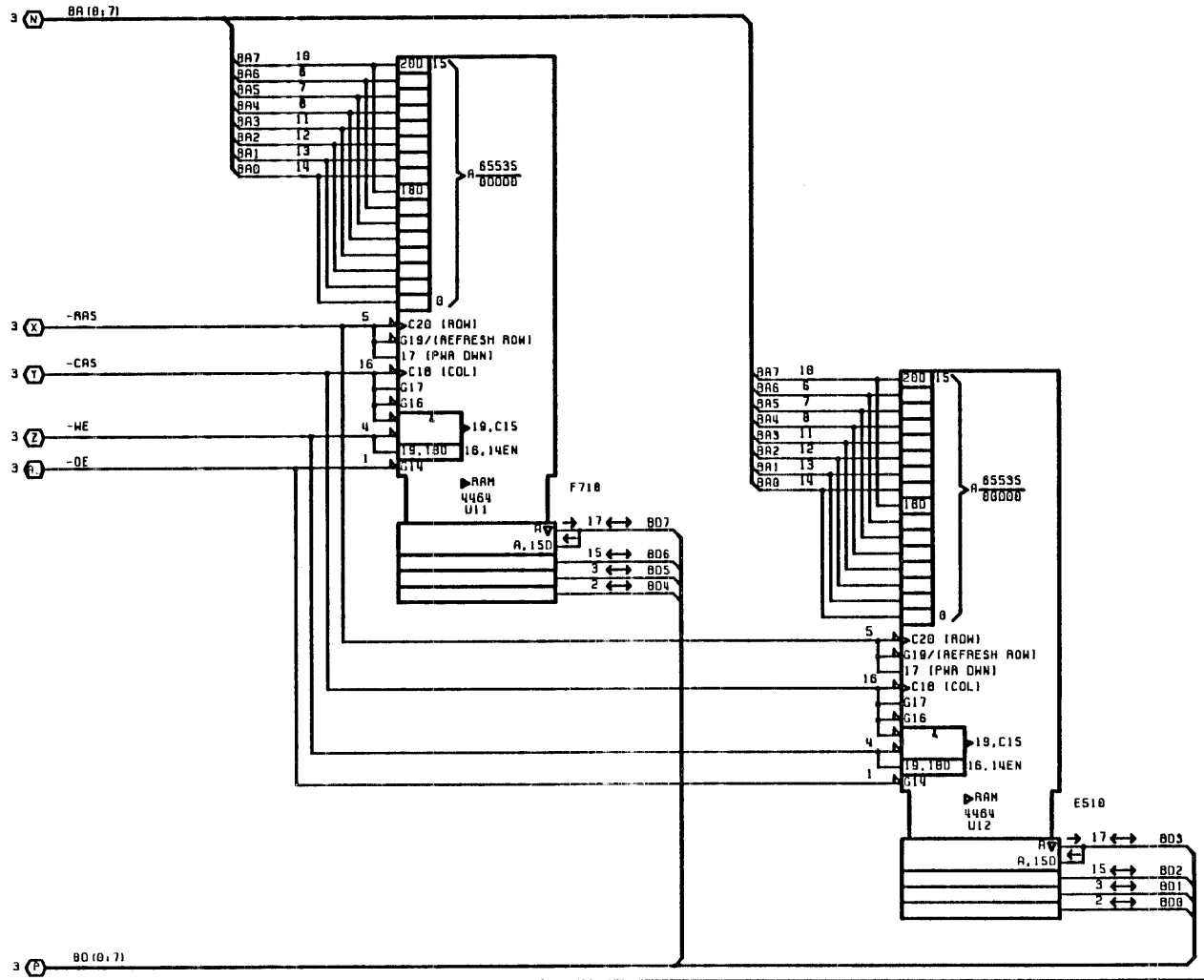
NOTES

TITLE
64K X 1 DRAM

TYPE: _XLX

SHEET 4

CROSS REF NO 4104



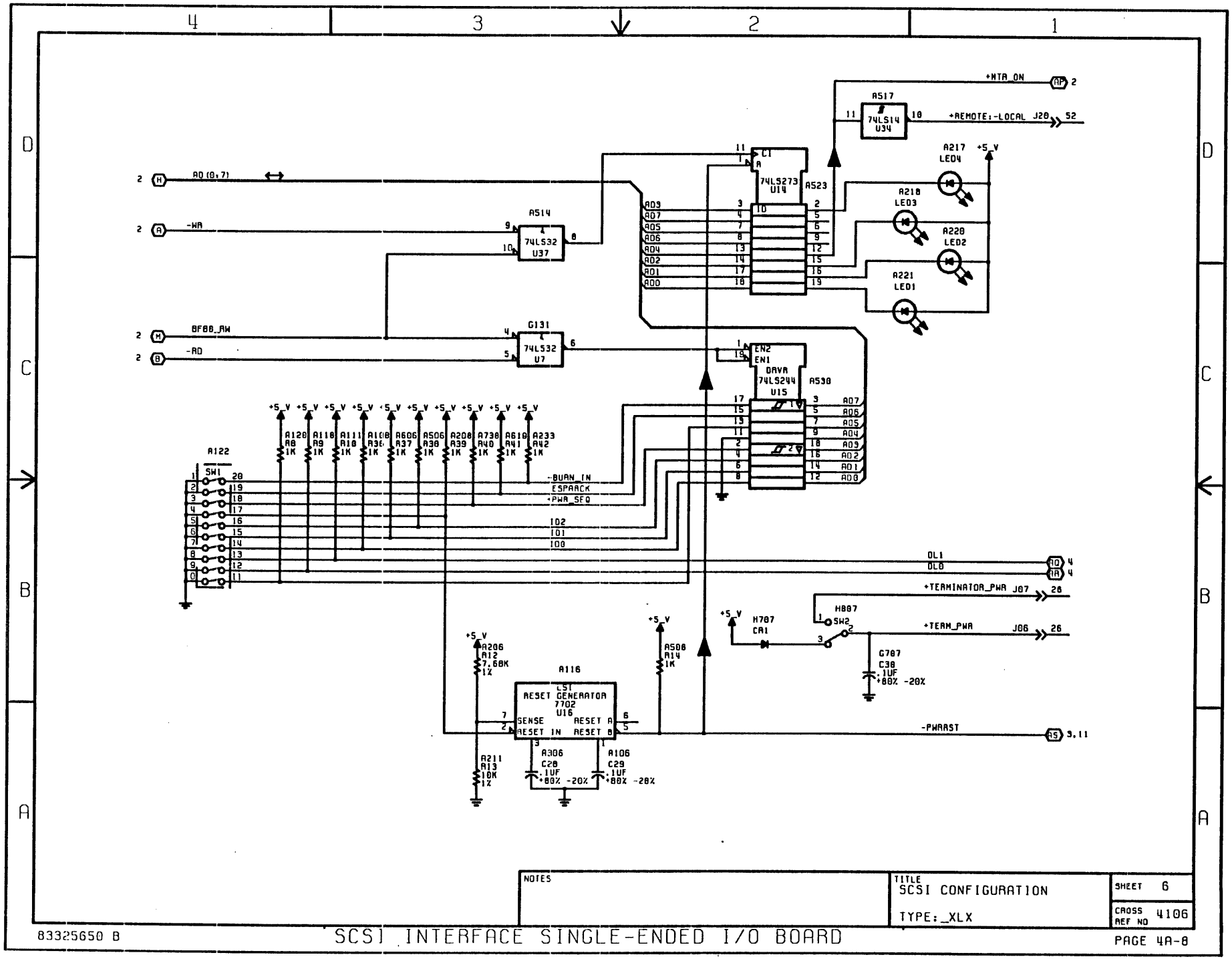
NOTES

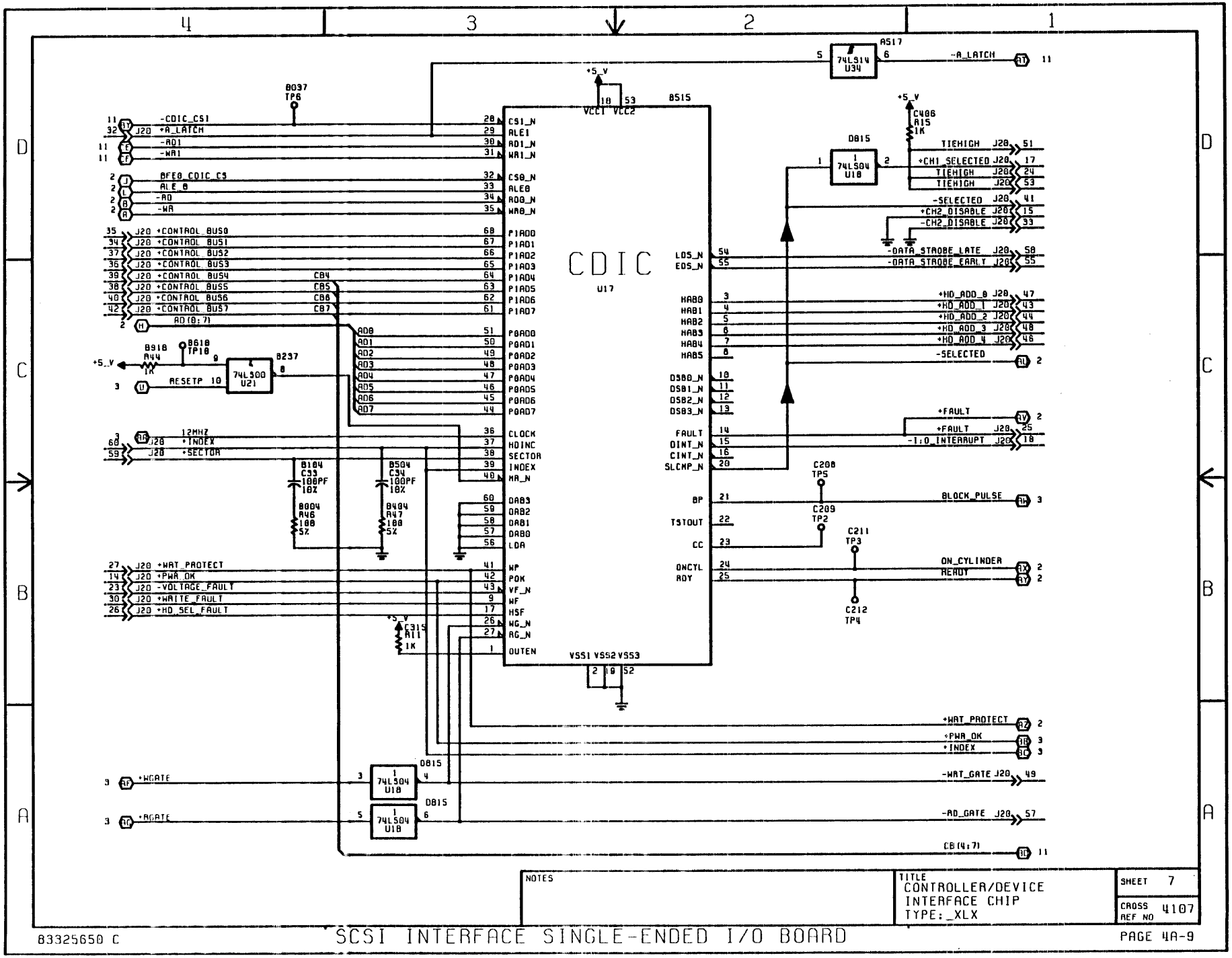
TITLE
64K X 4 DRAM

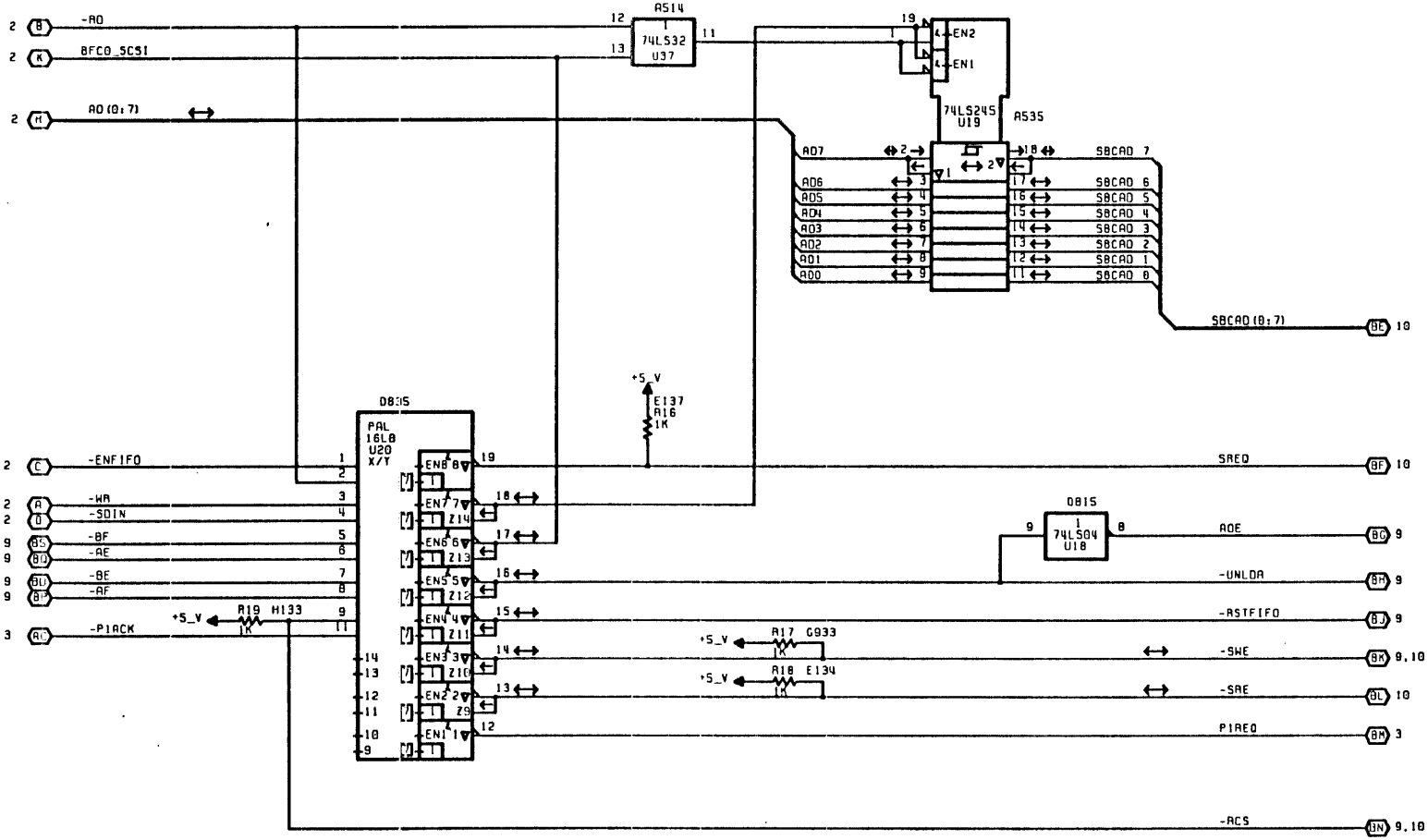
TYPE: _XLX

SHEET 5

CROSS REF NO 4105


4
3
2
1
D
C
B
A
AD (0:7)
-WR
BF88_RW
-RD
A514
74LS32
U37
G131
74LS32
U7
A523
74LS273
U14
A517
74LS14
U34
+MTR_ON
+REMOTE:-LOCAL J28
52
A217 LED4
A218 LED3
A220 LED2
A221 LED1
+5_V
DAVR
74LS244
U15
A530
A122
SW1
A120 A8 1K
A118 A9 1K
A111 A10 1K
A108 A36 1K
A606 A37 1K
A506 A38 1K
A208 A39 1K
A738 A40 1K
A618 A41 1K
A233 A42 1K
-BUAN_IN
ESPARCK
+PWR_SEQ
ID2
ID1
ID0
DL1
DL0
+TERMINATOR_PWR J07
28
H887
SW2
H787
CR1
+TERM_PWR
J06
26
G787
C38
.1UF
+80% -20%
A116
LSI
RESET GENERATOR
7702
U16
SENSE
RESET IN
RESET A
RESET B
-PWRRST
3,11
A206
A12
7.68K
1%
A211
A13
10K
1%
A306
C28
.1UF
+80% -20%
A106
C29
.1UF
+80% -20%
A508
A14
1K
NOTES
TITLE
SCSI CONFIGURATION
TYPE: _XLX
SHEET 6
CROSS REF NO 4106
83325650 B
SCSI INTERFACE SINGLE-ENDED I/O BOARD
PAGE 4A-8


CDIC
U17
74LS14 U34
74LS04 U18
74LS00 U21
-A_LATCH
-CDIC_CS1
*A_LATCH
-AD1
-WR1
BFE0_CDIC_CS
ALE_0
-RD
-WR
*CONTROL_BUS0
*CONTROL_BUS1
*CONTROL_BUS2
*CONTROL_BUS3
*CONTROL_BUS4
*CONTROL_BUS5
*CONTROL_BUS6
*CONTROL_BUS7
AD(0:7)
RESETP
12MHZ
*INDEX
*SECTOR
*WAT_PROTECT
*PWR_OK
-VOLTAGE_FAULT
*WRITE_FAULT
*HD_SEL_FAULT
*WGATE
*RGATE
CS1_N
ALE1
AD1_N
WR1_N
CS0_N
ALE0
AD0_N
WR0_N
P1AD0
P1AD1
P1AD2
P1AD3
P1AD4
P1AD5
P1AD6
P1AD7
P0AD0
P0AD1
P0AD2
P0AD3
P0AD4
P0AD5
P0AD6
P0AD7
CLOCK
HDINC
SECTOR
INDEX
HA_N
DAB3
DAB2
DAB1
DAB0
LDA
WP
POK
VF_N
WF
HSF
WG_N
RG_N
OUTEN
LOS_N
EOS_N
HAB0
HAB1
HAB2
HAB3
HAB4
HAB5
DSB0_N
DSB1_N
DSB2_N
DSB3_N
FAULT
DINT_N
CINT_N
SLCMP_N
BP
TSTOUT
CC
ONCYL
RDY
VCC1 VCC2
VSS1 VSS2 VSS3
+5_V
TIEHIGH
+CH1_SELECTED
-SELECTED
+CH2_DISABLE
-CH2_DISABLE
-DATA_STROBE_LATE
-DATA_STROBE_EARLY
+HD_ADD_0
+HD_ADD_1
+HD_ADD_2
+HD_ADD_3
+HD_ADD_4
+FAULT
-I:O_INTERRUPT
BLOCK_PULSE
ON_CYLINDER
READY
-WAT_GATE
-RD_GATE
CB(4:7)
NOTES
TITLE
CONTROLLER/DEVICE
INTERFACE CHIP
TYPE:_XLX
SHEET 7
CROSS REF NO 4107
83325650 C
SCSI INTERFACE SINGLE-ENDED I/O BOARD
PAGE 4A-9

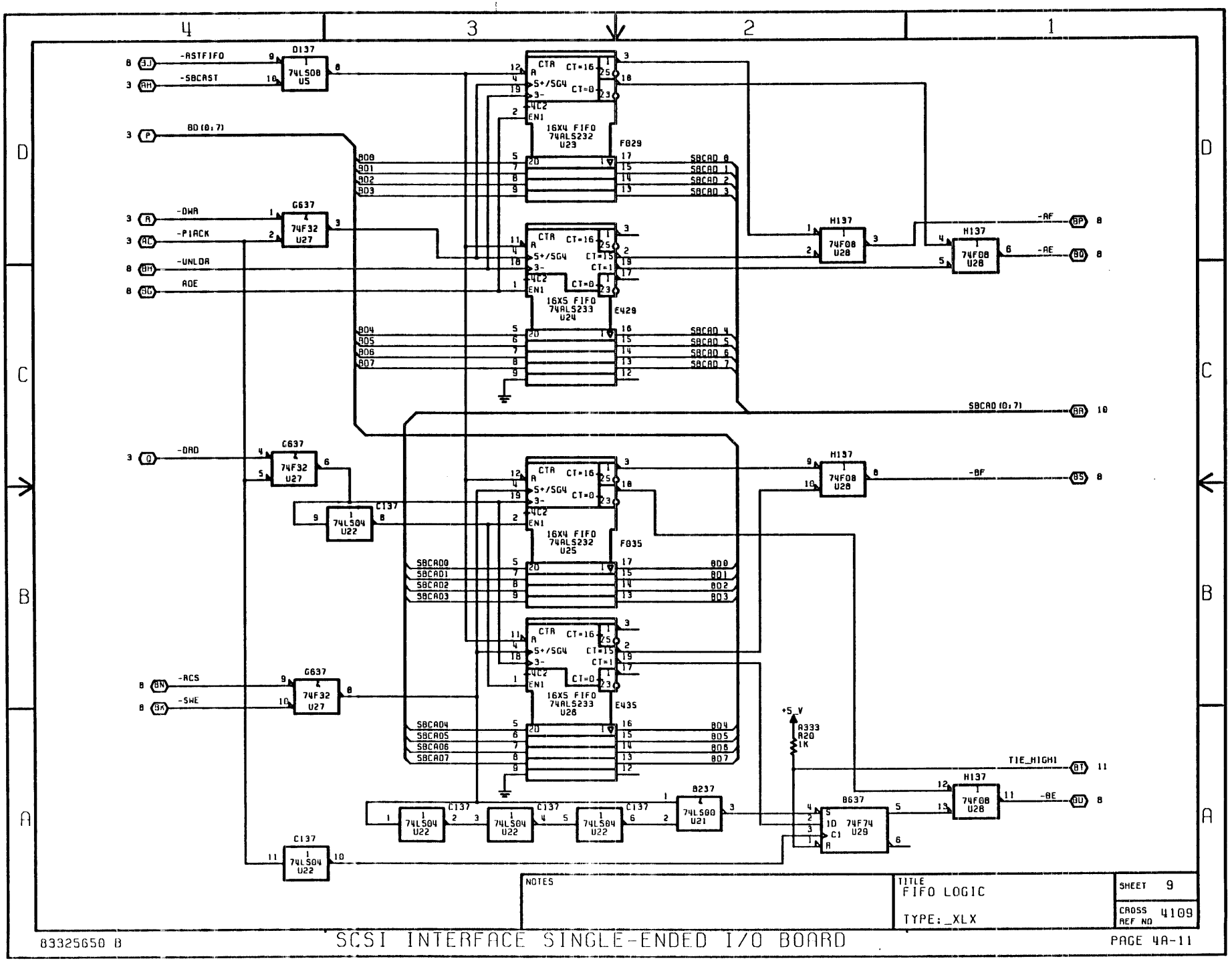


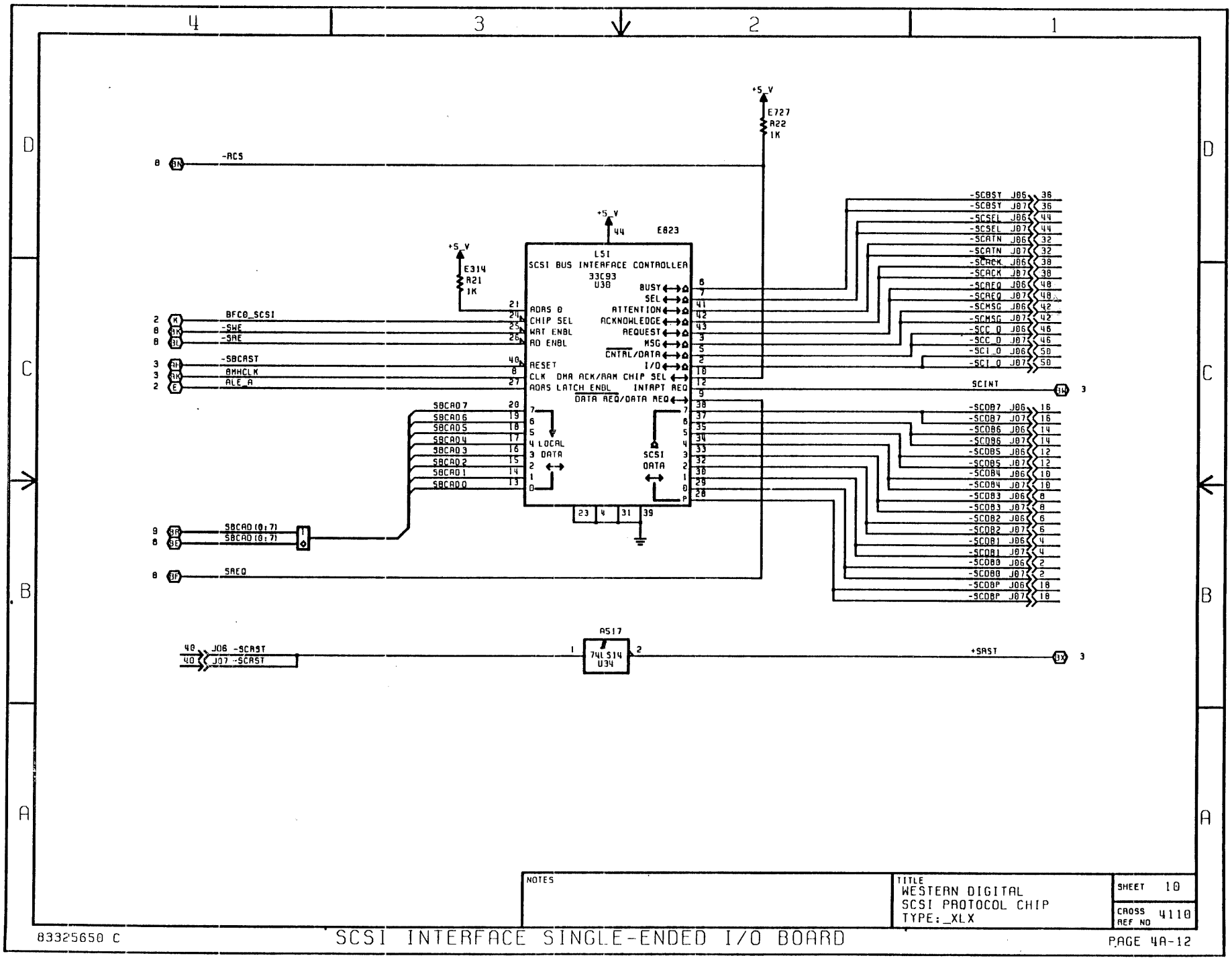
NOTES

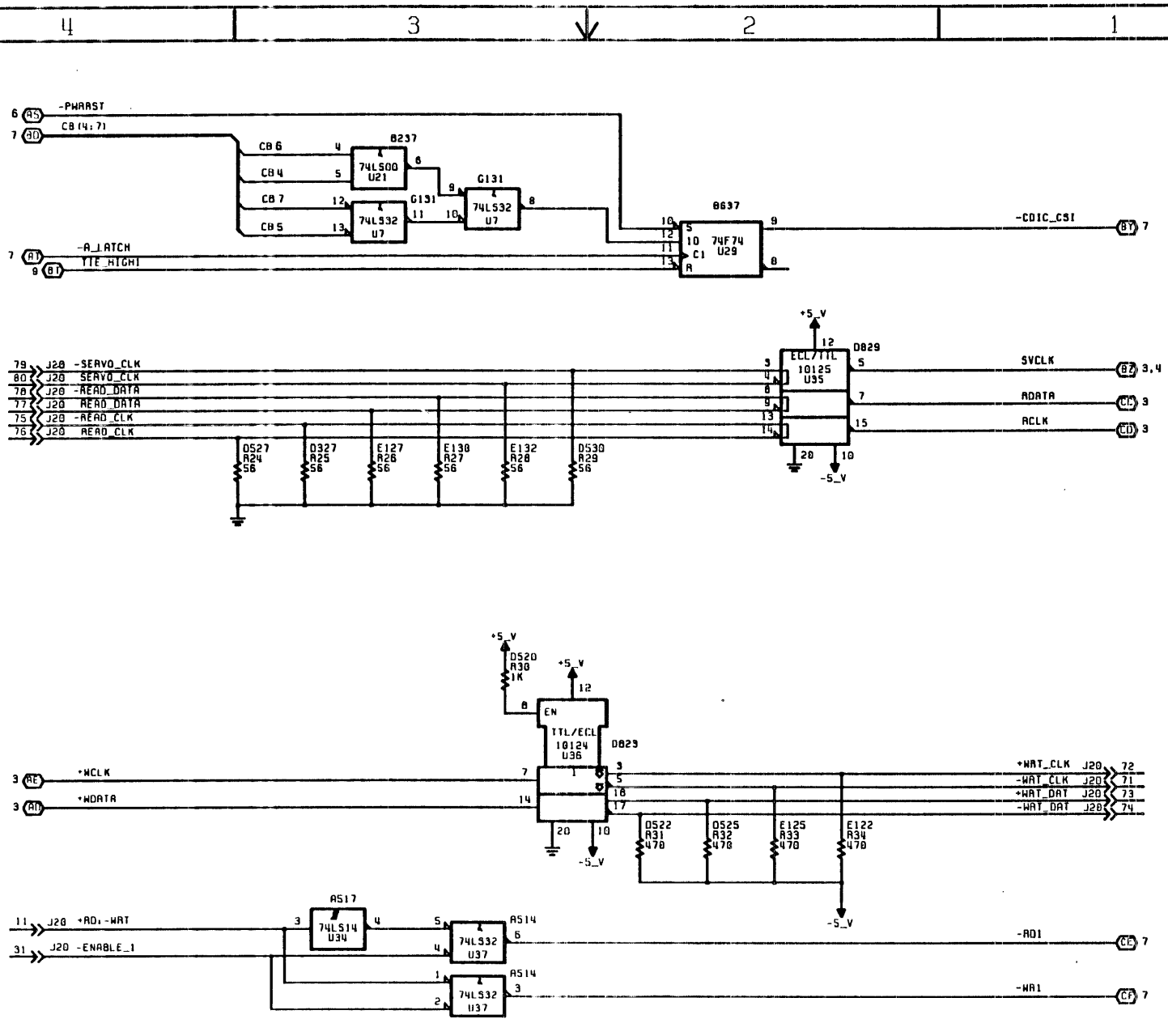
TITLE
FIFO CONTROL
SIGNALS
TYPE: _XLX

SHEET 8

CROSS REF NO 4108


4
3
2
1
D
C
B
A
-ASTFIFO
-SBCAST
D137
74LS08
U5
BD(0:7)
16X4 FIFO
74ALS232
U23
F029
SBCAD 0
SBCAD 1
SBCAD 2
SBCAD 3
-DWR
-PIACK
-UNLDR
AOE
G637
74F32
U27
16X8 FIFO
74ALS233
U24
E428
SBCAD 4
SBCAD 5
SBCAD 6
SBCAD 7
H137
74F08
U28
-AF
-AE
SBCAD(0:7)
-DRD
C137
74LS04
U22
16X4 FIFO
74ALS232
U25
F035
SBCAD0
SBCAD1
SBCAD2
SBCAD3
BD0
BD1
BD2
BD3
-BF
-ACS
-SWE
16X8 FIFO
74ALS233
U26
E435
SBCAD4
SBCAD5
SBCAD6
SBCAD7
BD4
BD5
BD6
BD7
+5 V
A333
R20
1K
TIE_HIGH
B237
74LS00
U21
B637
74F74
U29
-BE
NOTES
TITLE
FIFO LOGIC
TYPE: _XLX
SHEET 9
CROSS REF NO 4109
83325650 B
SCSI INTERFACE SINGLE-ENDED I/O BOARD
PAGE 4A-11


4
3
2
1
D
C
B
A
+5_V
E727
A22
1K
-RCS
E823
LSI
SCSI BUS INTERFACE CONTROLLER
33C93
U38
BUSY
SEL
ATTENTION
ACKNOWLEDGE
REQUEST
MSG
CNTRL/DATA
I/O
INTRPT REQ
DATA REQ/DATA REQ
ADAS 0
CHIP SEL
WAT ENBL
AD ENBL
RESET
CLK DMA ACK/RAM CHIP SEL
ADAS LATCH ENBL
SCSI DATA
E314
A21
1K
BFC0_SCSI
-SWE
-SAE
-SBCAST
BMHCLK
ALE_A
SBCAD 7
SBCAD 6
SBCAD 5
SBCAD 4
SBCAD 3
SBCAD 2
SBCAD 1
SBCAD 0
SBCAD (0:7)
SBCAD (0:7)
SAEQ
SCINT
-SCBST J06 38
-SCBST J07 36
-SCSEL J06 44
-SCSEL J07 44
-SCATN J06 32
-SCATN J07 32
-SCACK J06 30
-SCACK J07 30
-SCAEQ J06 48
-SCAEQ J07 48
-SCMSG J06 42
-SCMSG J07 42
-SCC_D J06 46
-SCC_D J07 46
-SCI_O J06 50
-SCI_O J07 50
-SCD87 J06 16
-SCD87 J07 16
-SCD86 J06 14
-SCD86 J07 14
-SCD85 J06 12
-SCD85 J07 12
-SCD84 J06 10
-SCD84 J07 10
-SCD83 J06 8
-SCD83 J07 8
-SCD82 J06 6
-SCD82 J07 6
-SCD81 J06 4
-SCD81 J07 4
-SCD80 J06 2
-SCD80 J07 2
-SCDBP J06 18
-SCDBP J07 18
A517
74LS14
U34
J06 -SCRST
J07 -SCRST
+SRST
NOTES
TITLE
WESTERN DIGITAL
SCSI PROTOCOL CHIP
TYPE:_XLX
SHEET 10
CROSS REF NO 4110



NOTES	TITLE	SHEET
	DISK XCVRS	11
	TYPE: _XLX	CROSS REF NO 4111

SECTION 4B

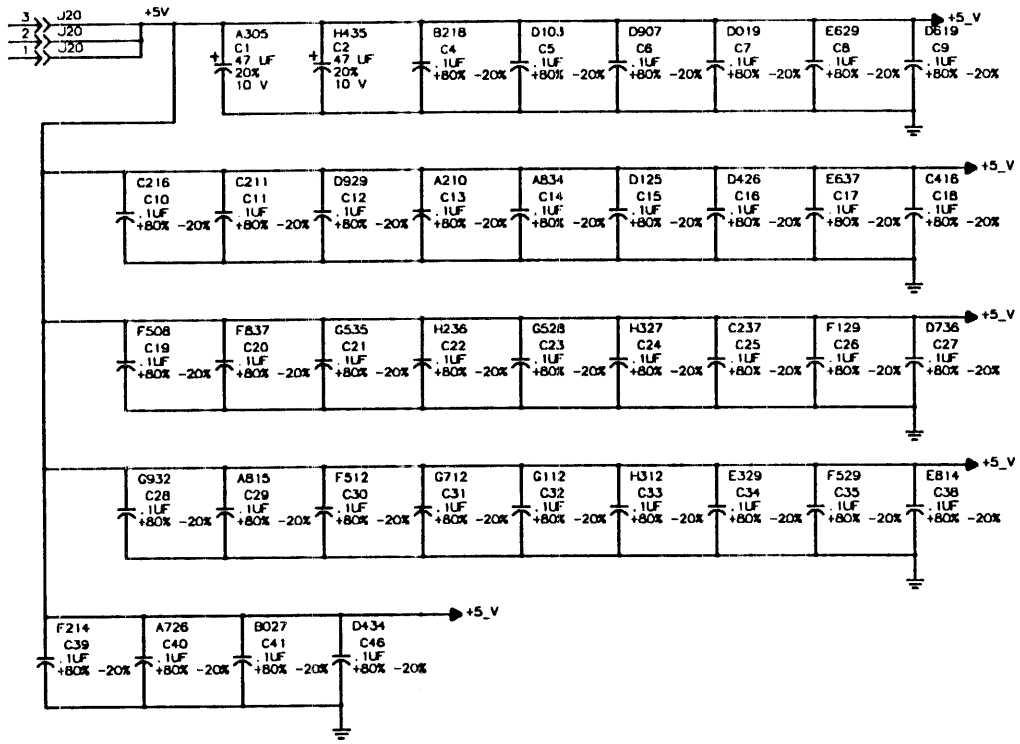
SCSI INTERFACE DIFFERENTIAL I/O BOARD

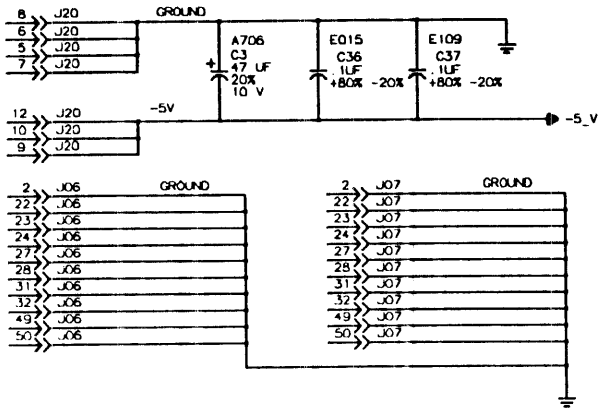
FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
J20	01	5101	P20-01
J20	02	5101	P20-02
J20	03	5101	P20-03
J20	04	5106	P20-04
J20	05	5101	P20-05
J20	06	5101	P20-06
J20	08	5101	P20-08
J20	09	5101	P20-09
J20	10	5101	P20-10
J20	11	5103	P20-11
J20	12	5101	P20-12
J20	14	5101	P20-14
J20	15	5114	P20-15
J20	17	5114	P20-17
J20	18	5103	P20-18
J20	19	5103	P20-19
J20	23	5102	P20-23
J20	24	5114	P20-24
J20	25	5113	P20-25
J20	26	61/6206	P27-10

FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
J20	27	5113	P20-27
J20	30	61/6206	P27-09
J20	31	5103	P20-31
J20	32	5103	P20-32
J20	33	5114	P20-33
J20	34	5116	P20-34
J20	35	5116	P20-35
J20	36	5116	P20-36
J20	37	5116	P20-37
J20	38	5116	P20-38
J20	39	5116	P20-39
J20	40	5116	P20-40
J20	41	5116	P20-41
J20	42	5116	P20-42
J20	43	61/6205	P27-02
J20	44	61/6205	P27-03
J20	46		Not Used
J20	47	61/6205	P27-01
J20	48	61/6205	P27-04
J20	49	5113	P20-49

FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
J20	51	5113	P20-51
J20	52	5103	P20-52
J20	53	61/6206	P27-12
J20	55	61/6207	P27-07
J20	57	61/6206	P27-06
J20	58	61/6207	P27-08
J20	59	5106	P20-59
J20	60	5106	P20-60
J20	61-70		Not Used
J20	71	5115	P20-71
J20	72	5115	P20-72
J20	73	5115	P20-73
J20	74	5115	P20-74
J20	75	5114	P20-75
J20	76	5114	P20-76
J20	77	5114	P20-77
J20	78	5114	P20-78
J20	79	5114	P20-79
J20	80	5114	P20-80

CROSS-REFERENCE LIST FOR SCSI INTERFACE DIFFERENTIAL I/O BOARD (Cross-Reference Numbers 4201 thru 4215)





REVISION RECORD

REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APP
A	DJ23000 DJ29854	CLASS A RELEASED BY ECO	SLP	9-2-88		

NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   ALL 8 PIN ICS HAVE PIN 4 CONNECTED TO GROUND AND PIN 8 CONNECTED TO +5V.
   ALL 14 PIN ICS HAVE PIN 7 CONNECTED TO GROUND AND PIN 14 CONNECTED TO +5V.
   ALL 16 PIN ICS HAVE PIN 8 CONNECTED TO GROUND AND PIN 16 CONNECTED TO +5V.
   ALL 18 PIN ICS HAVE PIN 18 CONNECTED TO GROUND AND PIN 9 CONNECTED TO +5V.
   ALL 20 PIN ICS HAVE PIN 10 CONNECTED TO GROUND AND PIN 20 CONNECTED TO +5V.
   ALL O—O INDICATES SM 0 OHM RESISTOR JUMPERS.
2. IC IS NOT ON ASSEMBLY.

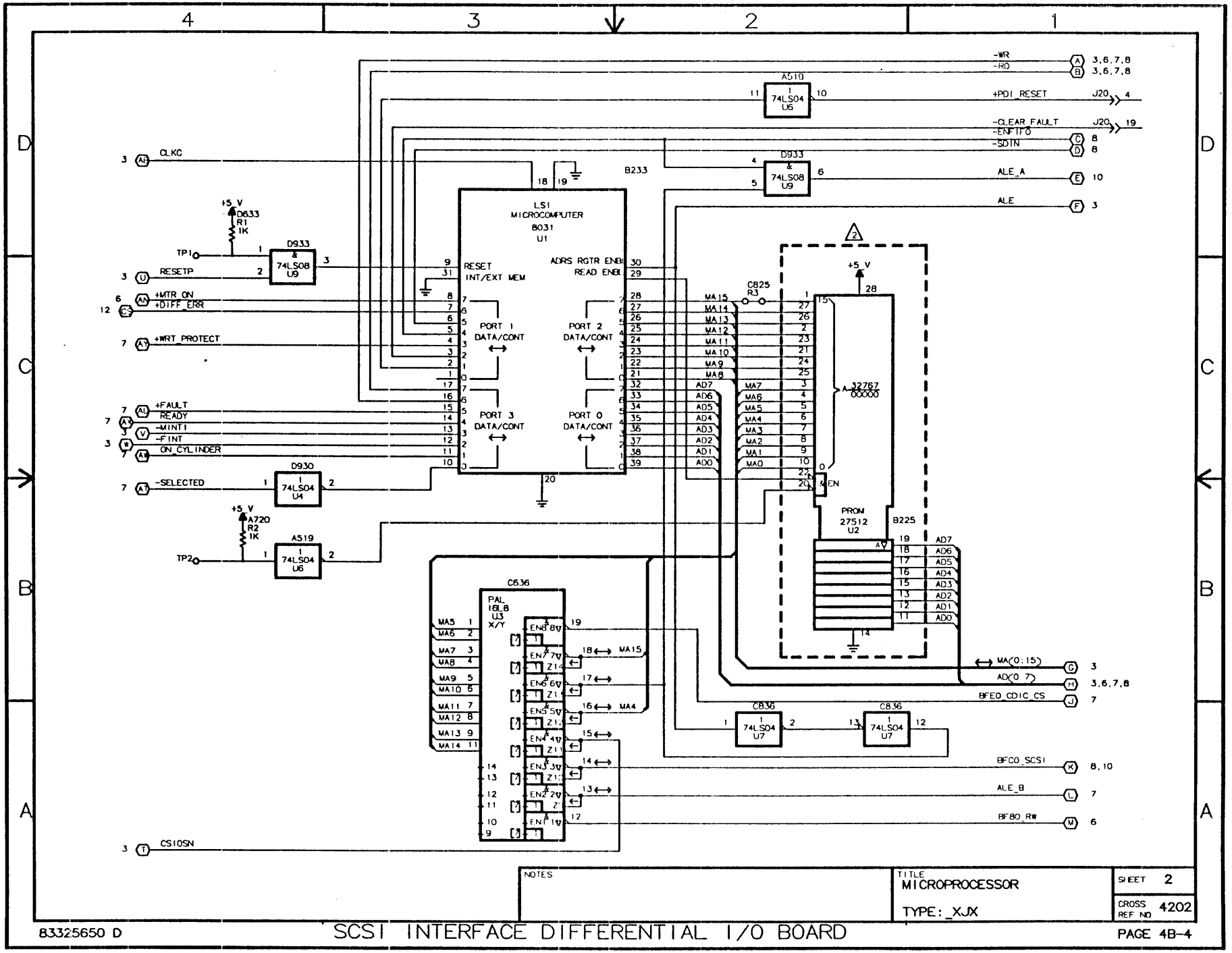
NOTES
1. THESE SCHEMATICS APPLY TO:
   CARD PN 54410901-20 (GXJX)
   54410917 (KXJX)

TITLE
SCHEMATIC DIAGRAM
SCSI SBR (DIFFERENTIAL)
TYPE: G/KXJX (E/FWPX)

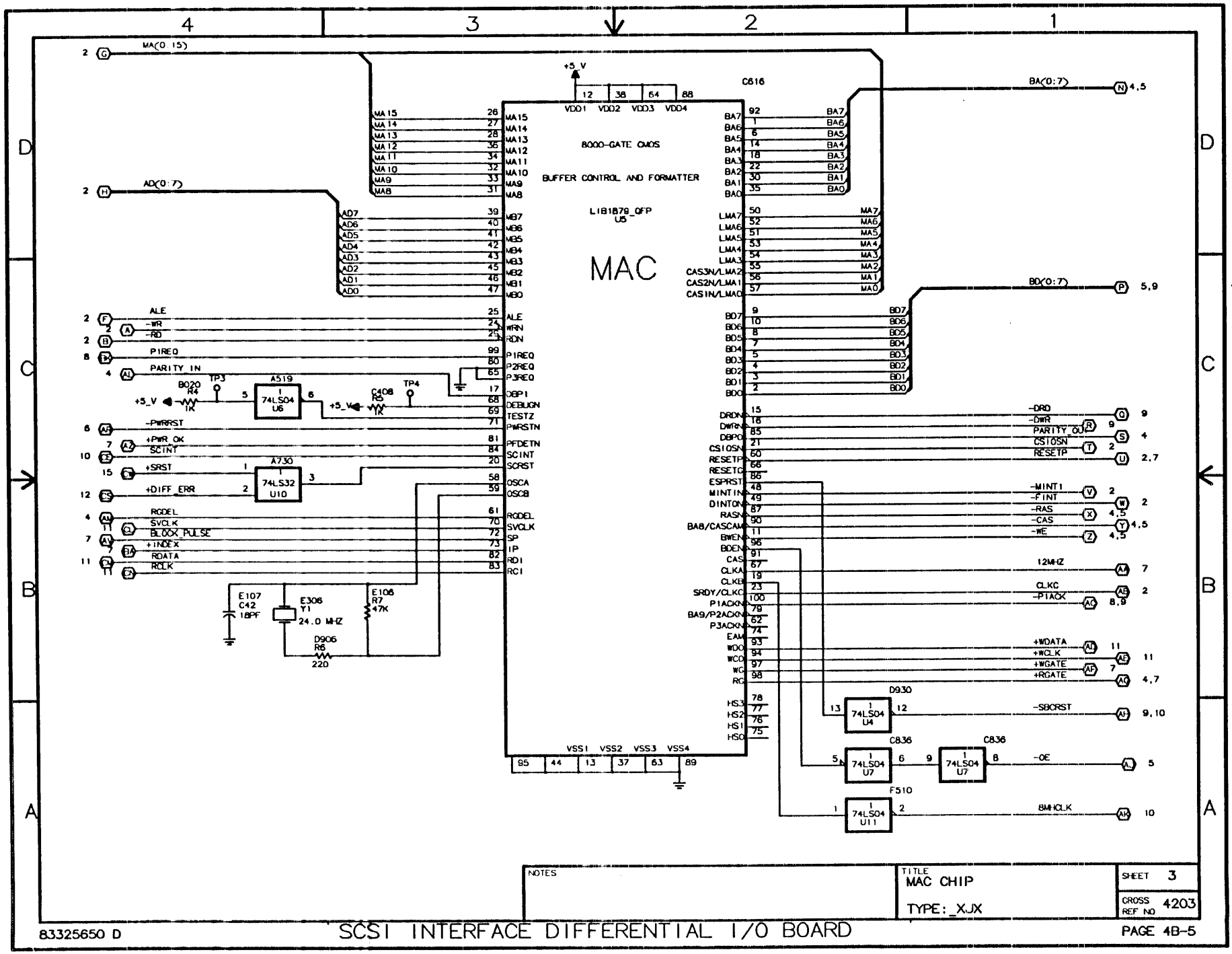
FILE NO 5420A
54403408

SHEET 1 OF 15

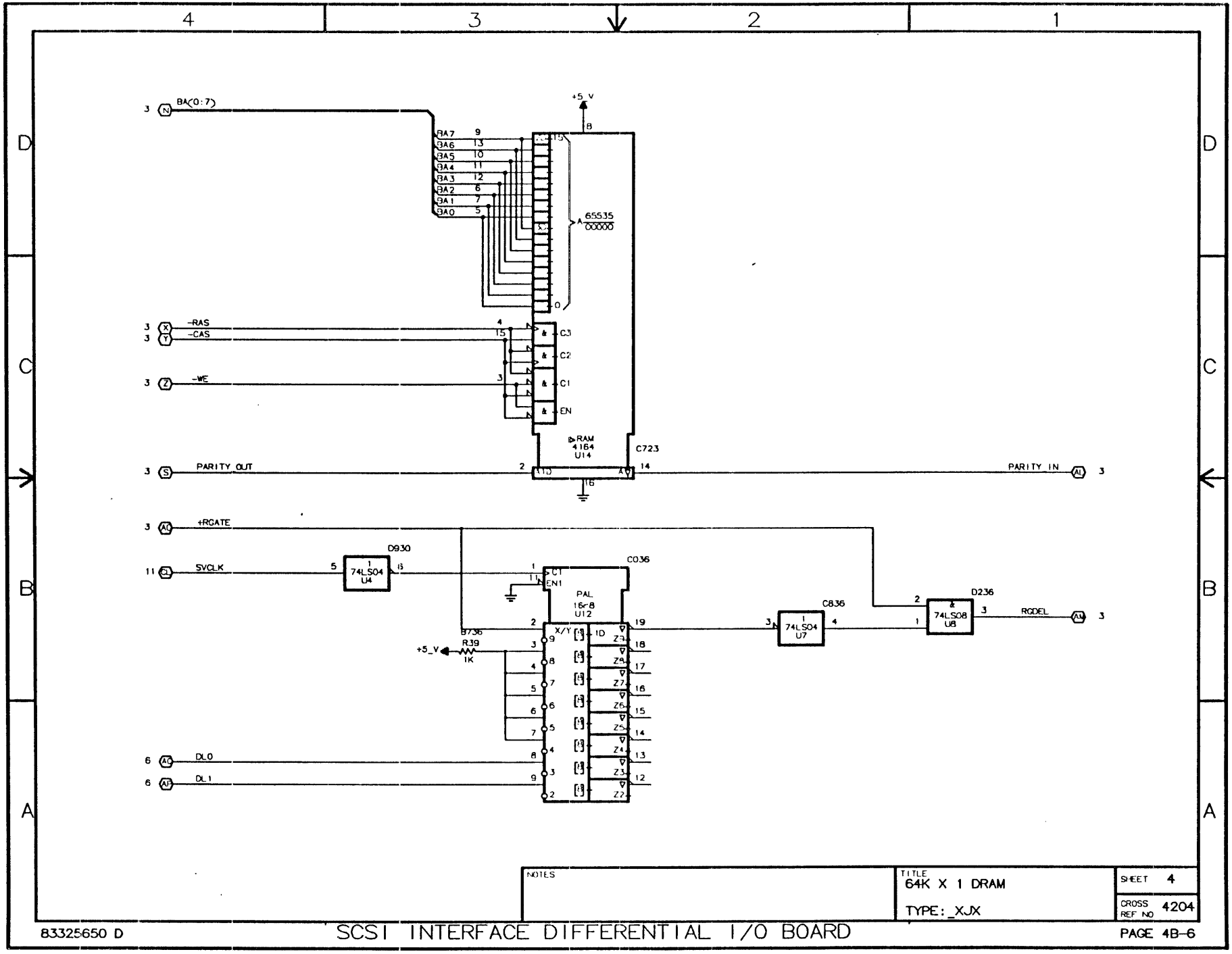
CROSS REF NO 4201

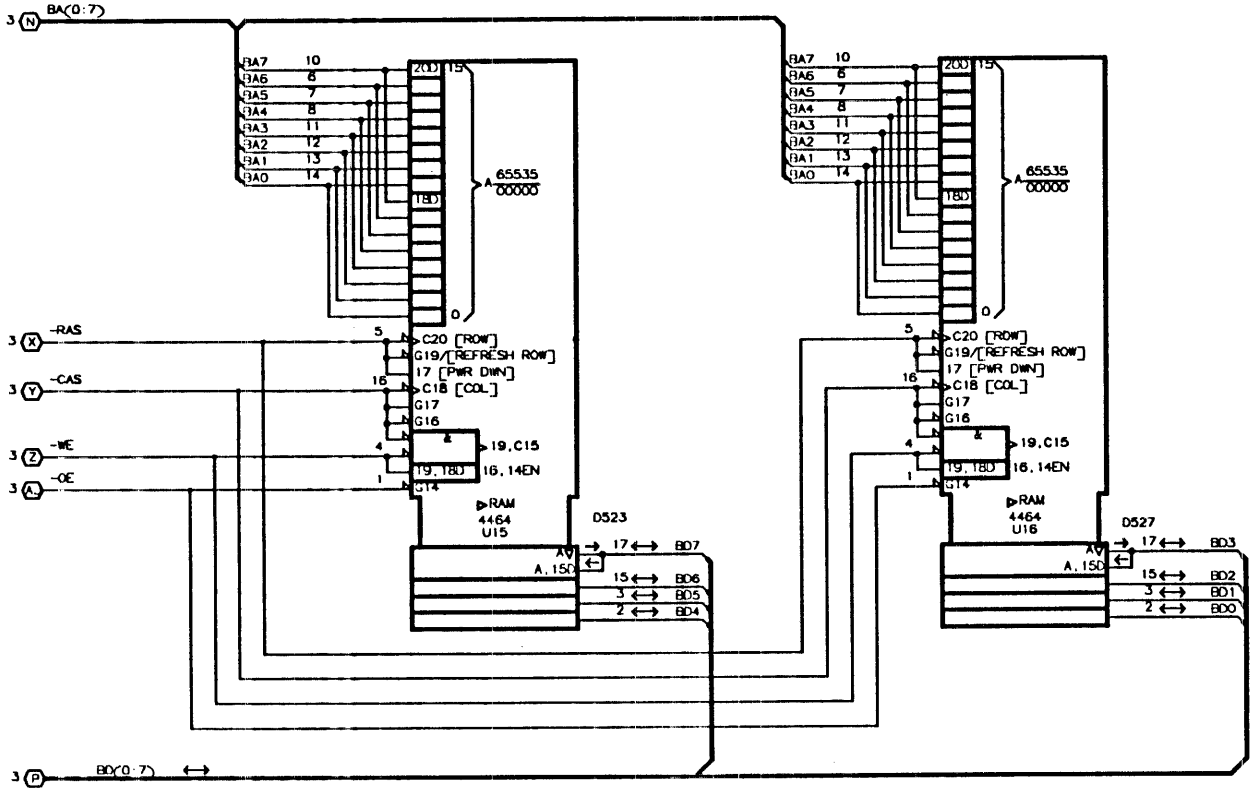


NOTES	TITLE: MICROPROCESSOR	SHEET 2
	TYPE: _XJX	CROSS REF NO 4202

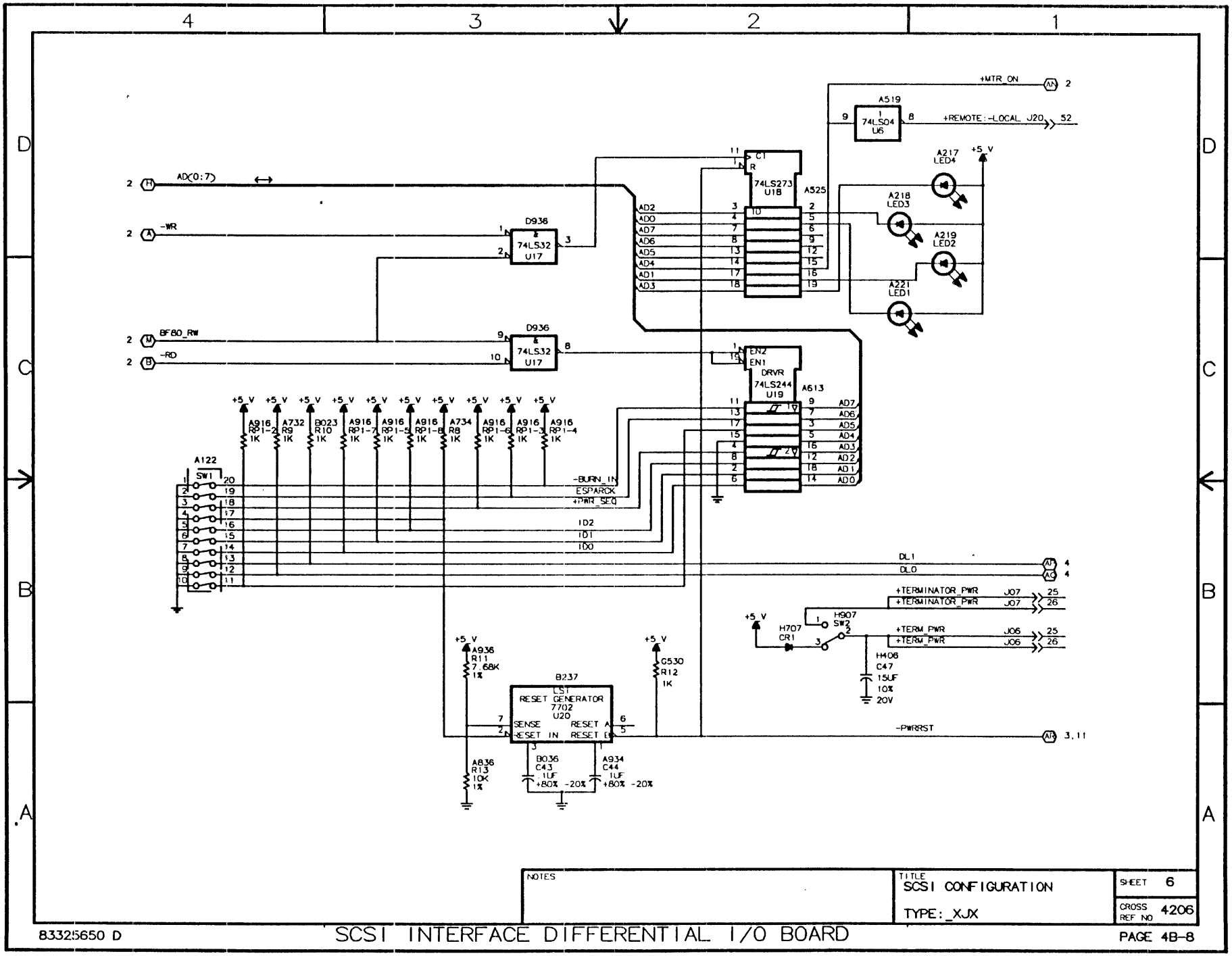


NOTES	TITLE	SHEET
	MAC CHIP	3
	TYPE: _XJX	CROSS REF NO 4203


4
3
2
1
D
C
B
A
BA(0:7)
+5_V
BA7
BA6
BA5
BA4
BA3
BA2
BA1
BA0
65535
00000
-RAS
-CAS
-WE
C3
C2
C1
EN
RAM
4164
U14
C723
PARITY_OUT
PARITY_IN
+RGATE
D930
SVCLK
74LS04
U4
C036
PAL
16r8
U12
X/Y
R39
1K
C836
74LS04
U7
D236
74LS08
U8
RGDEL
DL0
DL1
NOTES
TITLE
64K X 1 DRAM
TYPE: _XJX
SHEET 4
CROSS REF NO 4204
83325650 D
SCSI INTERFACE DIFFERENTIAL I/O BOARD
PAGE 4B-6



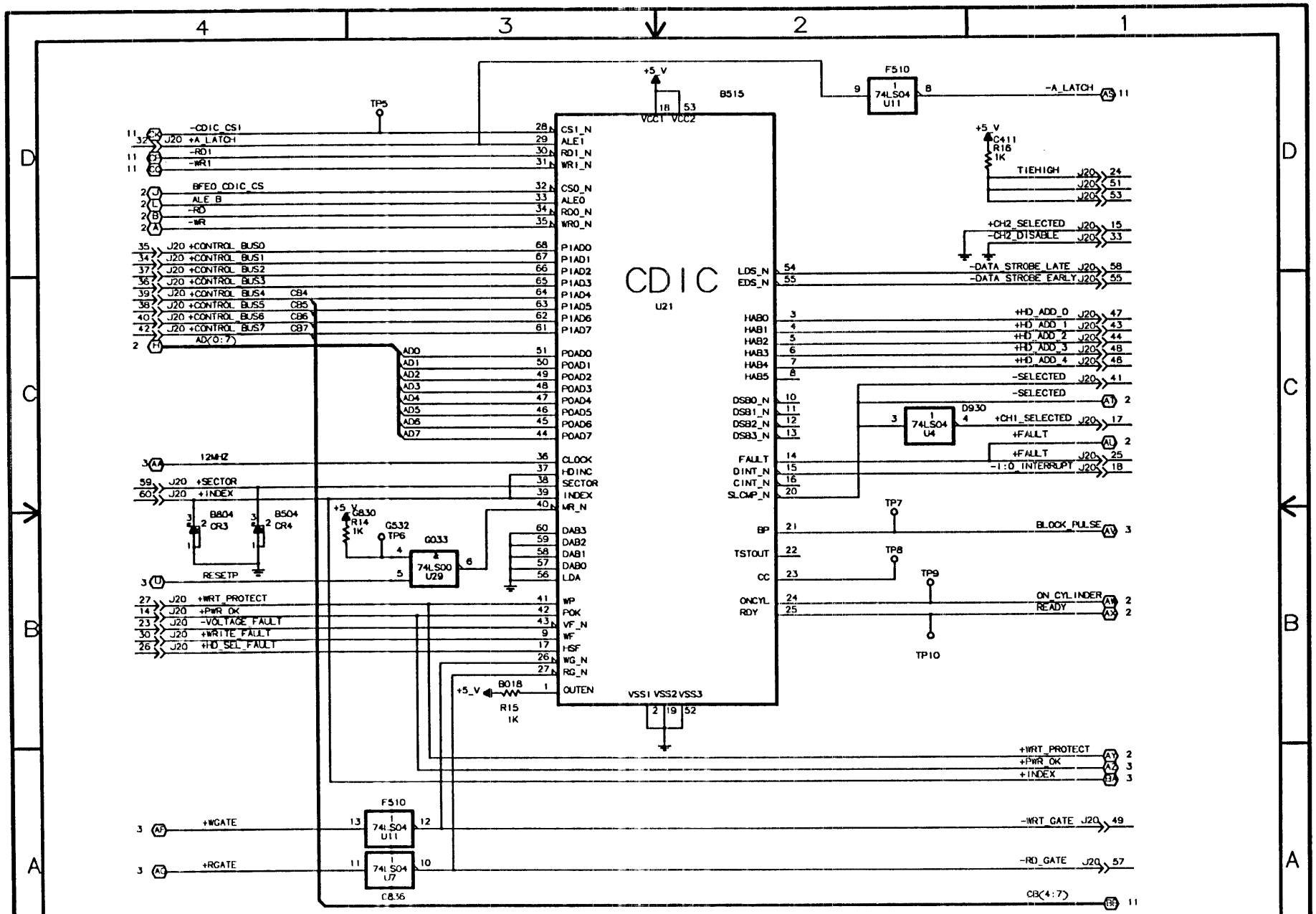
NOTES	TITLE	SHEET
	64K X 4 DRAM	5
	TYPE: _XJX	CROSS REF NO 4205



NOTES	TITLE	SHEET
	SCSI CONFIGURATION TYPE: _XJX	6 CROSS REF NO 4206

83325650 D

SCSI INTERFACE DIFFERENTIAL I/O BOARD



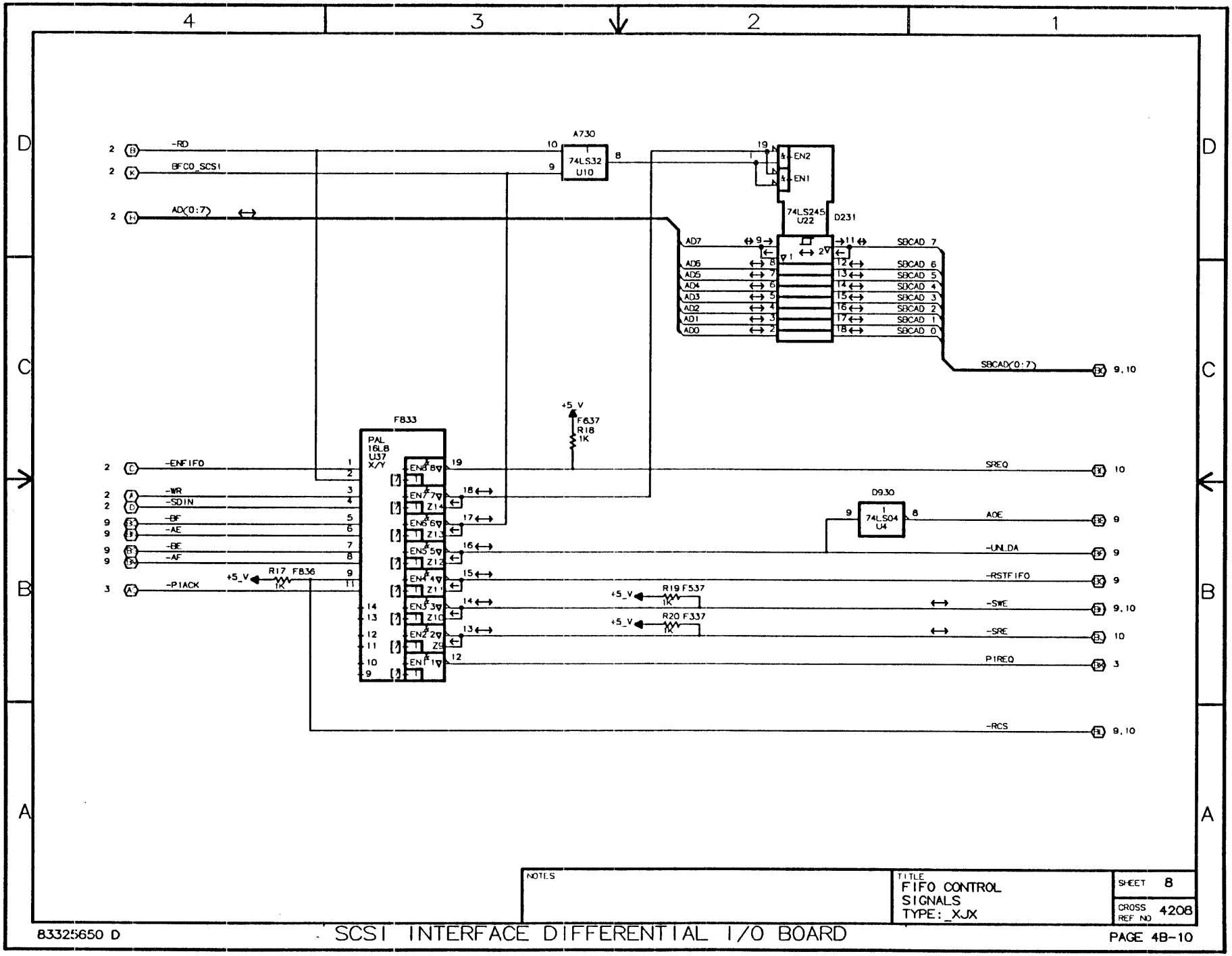
NOTES

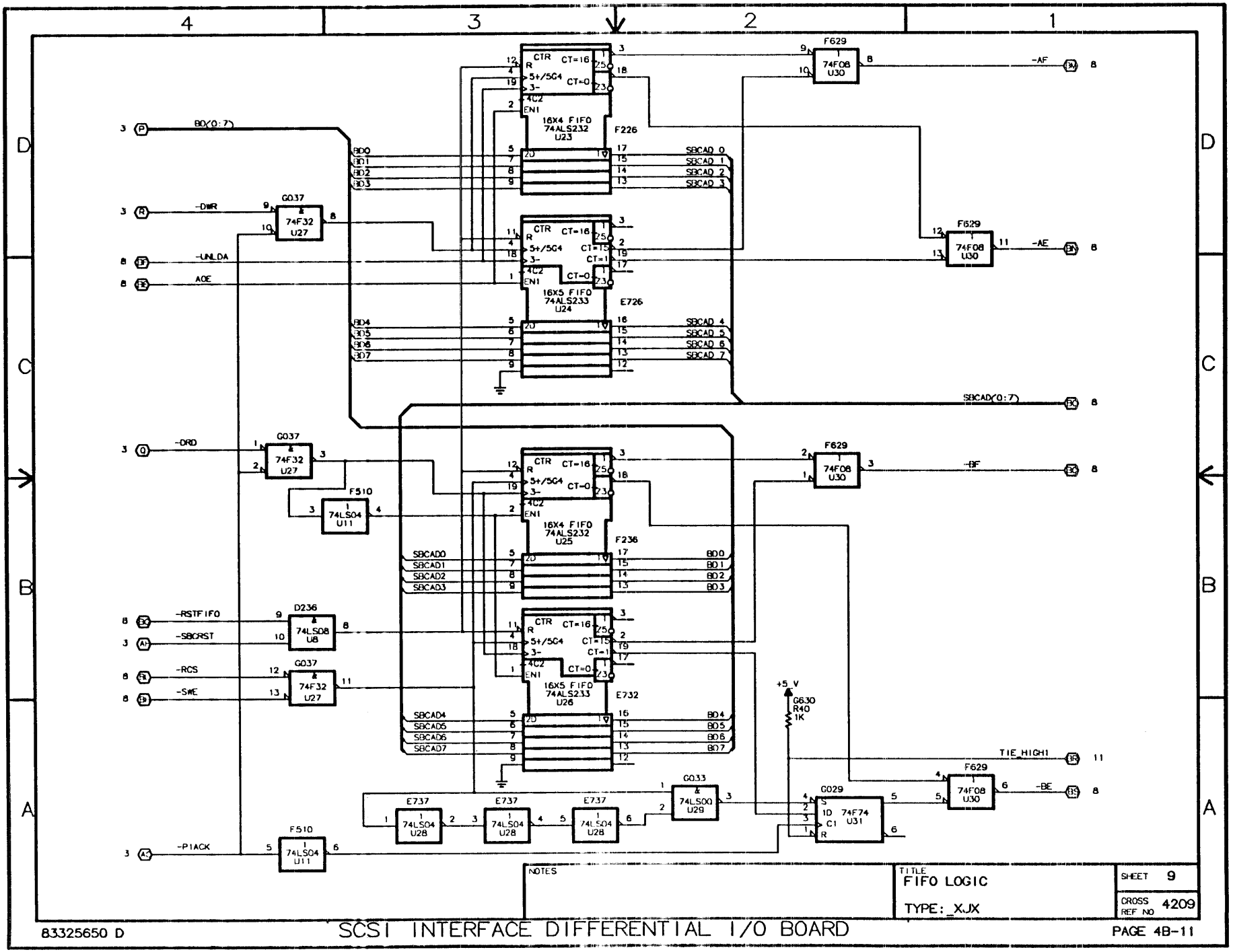
TITLE
CONTROLLER/DEVICE
TYPE: XJX

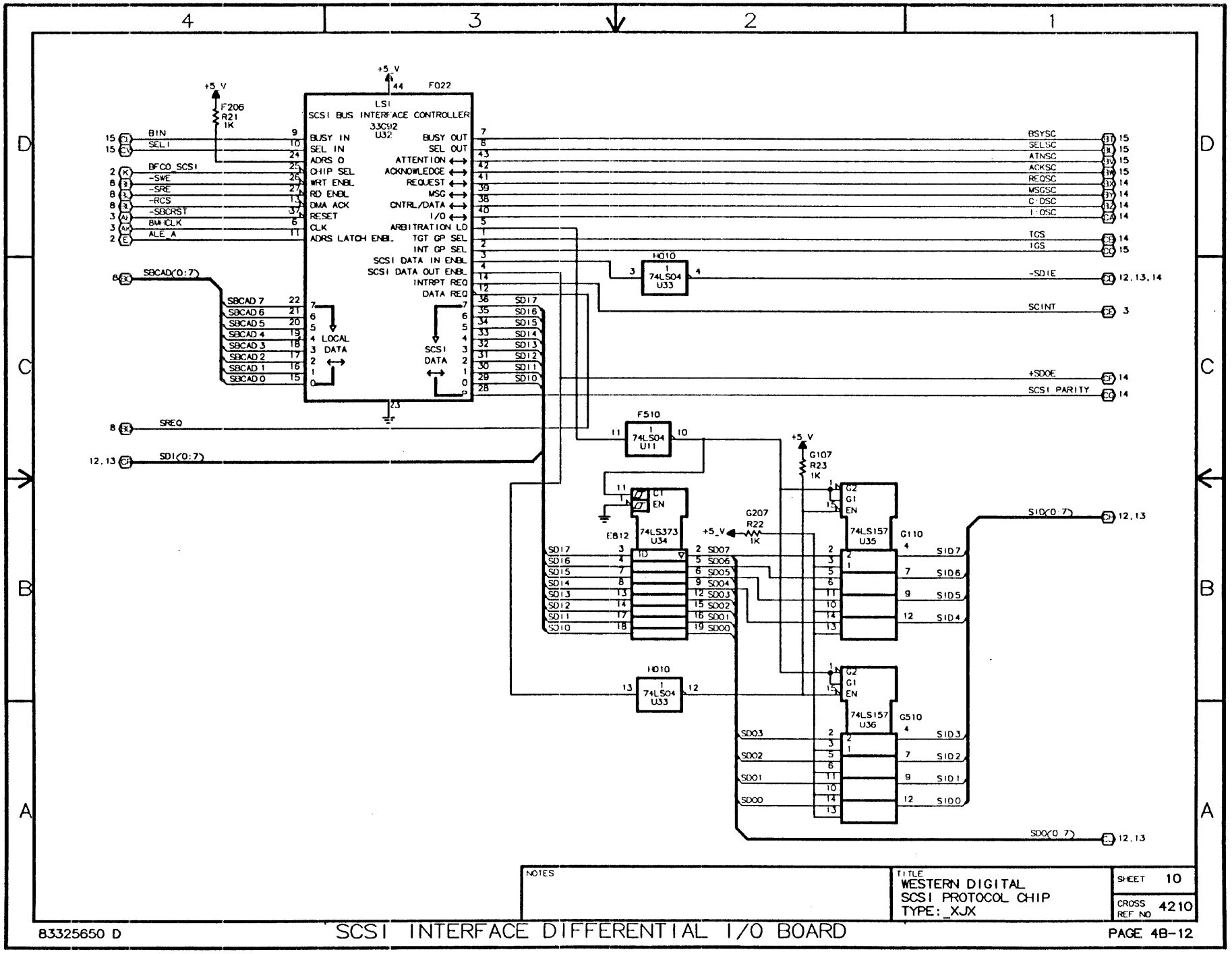
SHEET 7
CROSS REF NO 4207

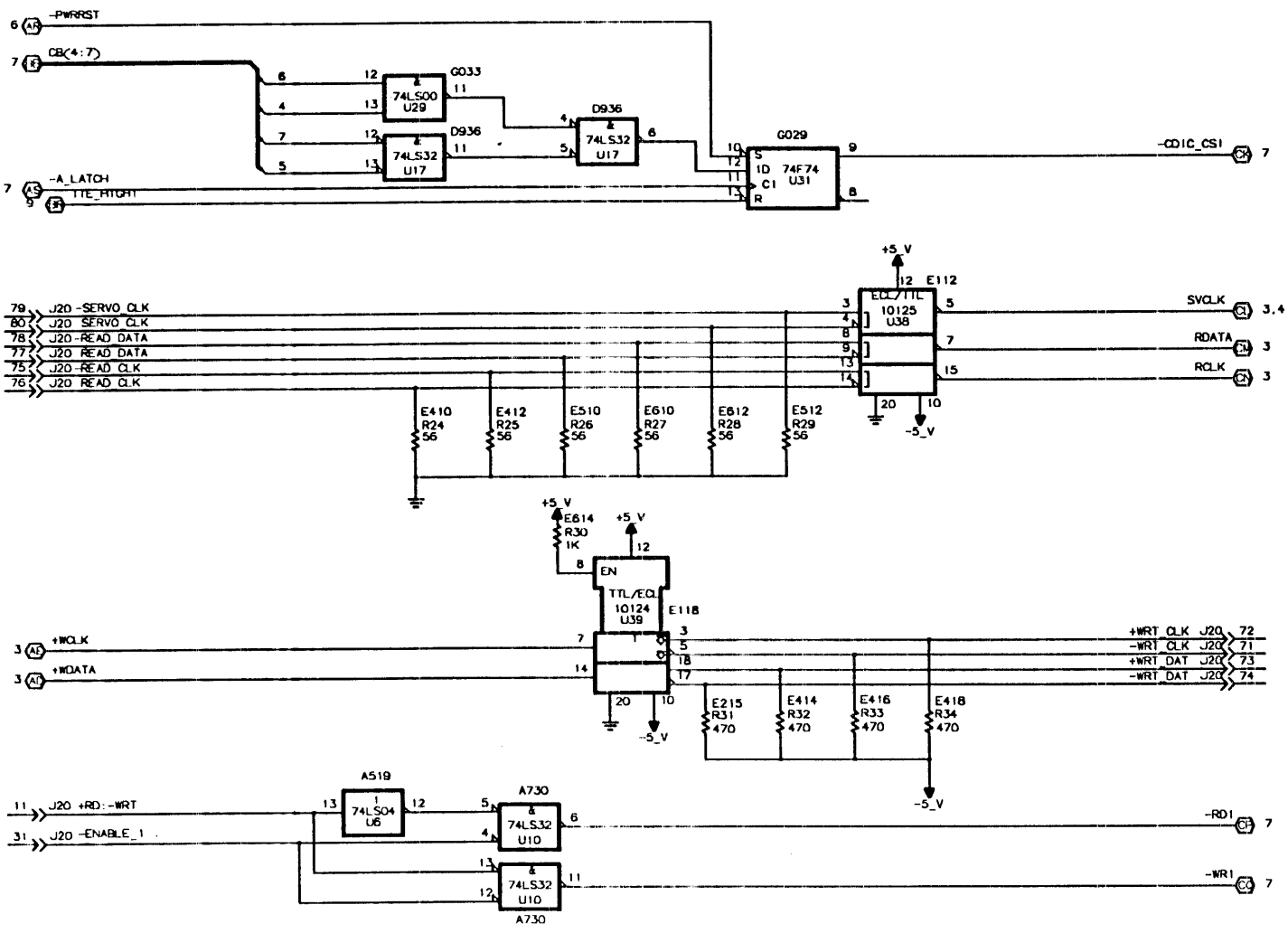
83325650 D

SCSI INTERFACE DIFFERENTIAL I/O BOARD


4
3
2
1
A730
74LS32
U10
74LS245
U22
D231
-RD
BFCO_SCSI
AD(0:7)
AD7
AD6
AD5
AD4
AD3
AD2
AD1
AD0
SBCAD 7
SBCAD 6
SBCAD 5
SBCAD 4
SBCAD 3
SBCAD 2
SBCAD 1
SBCAD 0
SBCAD(0:7)
9, 10
+5_V
F637
R18
1K
F833
PAL
16L8
U37
X/Y
-ENFIFO
-WR
-SDIN
-BF
-AE
-BE
-AF
-PIACK
R17 F836
SREQ
D930
74LS04
U4
AOE
-UNLDA
-RSTFIFO
R19 F537
-SWE
R20 F337
-SRE
PIREQ
-RCS
NOTES
TITLE
FIFO CONTROL
SIGNALS
TYPE: _XJX
SHEET 8
CROSS REF NO 4208
83325650 D
SCSI INTERFACE DIFFERENTIAL I/O BOARD
PAGE 4B-10


4
3
2
1
D
C
B
A
BD(0:7)
-DWR
-UNLDA
AOE
-DRD
-RSTFIFO
-SBCRST
-RCS
-SWE
-PIACK
-AF
-AE
-BF
-BE
SBCAD(0:7)
TIE_HIGH1
+5 V
R630
R40
1K
16X4 FIFO
74ALS232
U23
F226
16X5 FIFO
74ALS233
U24
E726
16X4 FIFO
74ALS232
U25
F236
16X5 FIFO
74ALS233
U26
E732
G037
74F32
U27
F510
74LS04
U11
D236
74LS08
U8
G033
74LS00
U29
E737
74LS04
U28
F629
74F08
U30
G029
1D 74F74
U31
SBCAD 0
SBCAD 1
SBCAD 2
SBCAD 3
SBCAD 4
SBCAD 5
SBCAD 6
SBCAD 7
BD0
BD1
BD2
BD3
BD4
BD5
BD6
BD7
NOTES
TITLE
FIFO LOGIC
TYPE: XJX
SHEET 9
CROSS REF NO 4209
83325650 D
SCSI INTERFACE DIFFERENTIAL I/O BOARD
PAGE 4B-11


4
3
2
1
D
C
B
A
LSI
SCSI BUS INTERFACE CONTROLLER
33C92
U32
F022
+5_V
F206
R21
1K
BIN
SEL I
BFCO_SCSI
-SWE
-SRE
-RCS
-SBCRST
BMICLK
ALE_A
BUSY IN
SEL IN
ADRS 0
CHIP SEL
WRT ENBL
RD ENBL
DMA ACK
RESET
CLK
ADRS LATCH ENBL
BUSY OUT
SEL OUT
ATTENTION
ACKNOWLEDGE
REQUEST
MSG
CNTRL/DATA
I/O
ARBITRATION LD
TGT GP SEL
INT GP SEL
SCSI DATA IN ENBL
SCSI DATA OUT ENBL
INTRPT REQ
DATA REQ
SBCAD(0:7)
SBCAD 7
SBCAD 6
SBCAD 5
SBCAD 4
SBCAD 3
SBCAD 2
SBCAD 1
SBCAD 0
LOCAL DATA
SCSI DATA
SD17
SD16
SD15
SD14
SD13
SD12
SD11
SD10
SREQ
SDI(0:7)
H010
74LS04
U33
F510
U11
BSYSC
SELSC
ATNSC
ACKSC
REQSC
MSGSC
C_DSC
I_OSC
TGS
IGS
-SDIE
SCINT
+SDOE
SCSI PARITY
E812
74LS373
U34
CT
EN
G207
R22
1K
G107
R23
1K
G110
74LS157
U35
G510
U36
G2
G1
EN
SID(0:7)
SID7
SID6
SID5
SID4
SID3
SID2
SID1
SID0
SDO(0:7)
SD07
SD06
SD05
SD04
SD03
SD02
SD01
SD00
NOTES
TITLE
WESTERN DIGITAL
SCSI PROTOCOL CHIP
TYPE:_XJX
SHEET 10
CROSS REF NO 4210
B3325650 D
SCSI INTERFACE DIFFERENTIAL I/O BOARD
PAGE 4B-12



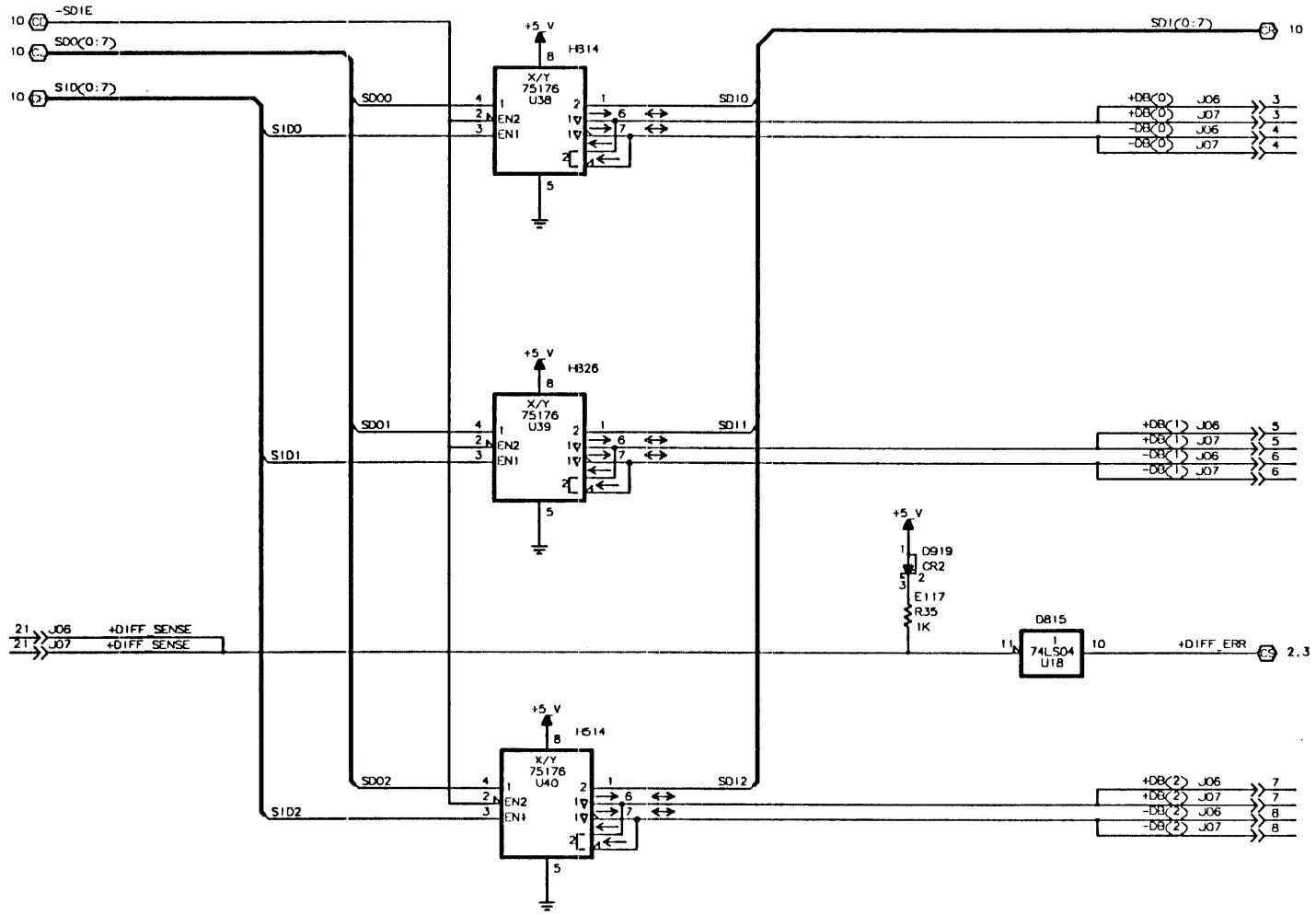
NOTES

TITLE
DISK XCVRS

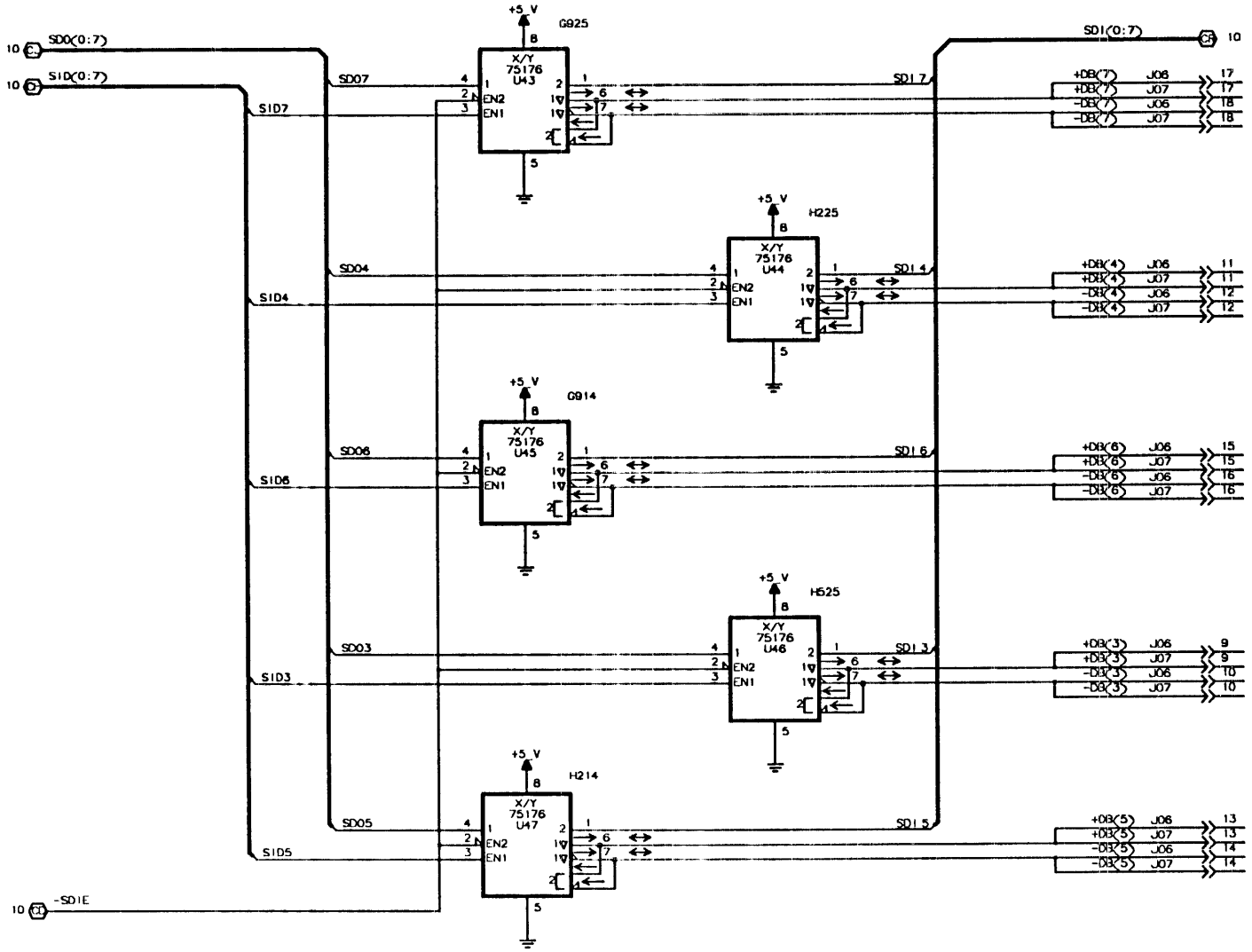
TYPE: _XJX

SHEET 11

CROSS REF NO 4211



NOTES	TITLE	SHEET 12
	SCSI DIFFERENTIAL XCVRS TYPE: _XJX	CROSS REF NO 4212

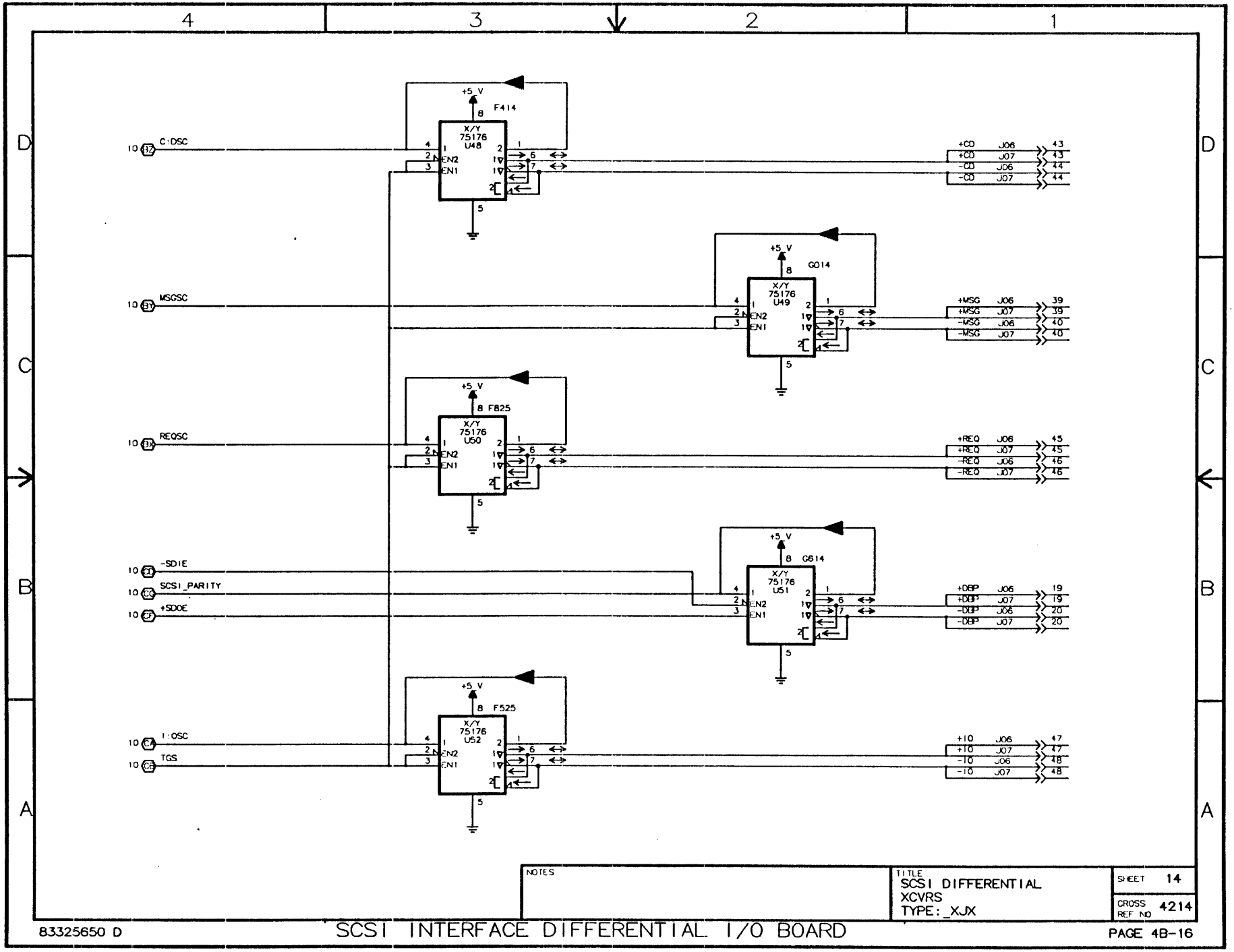


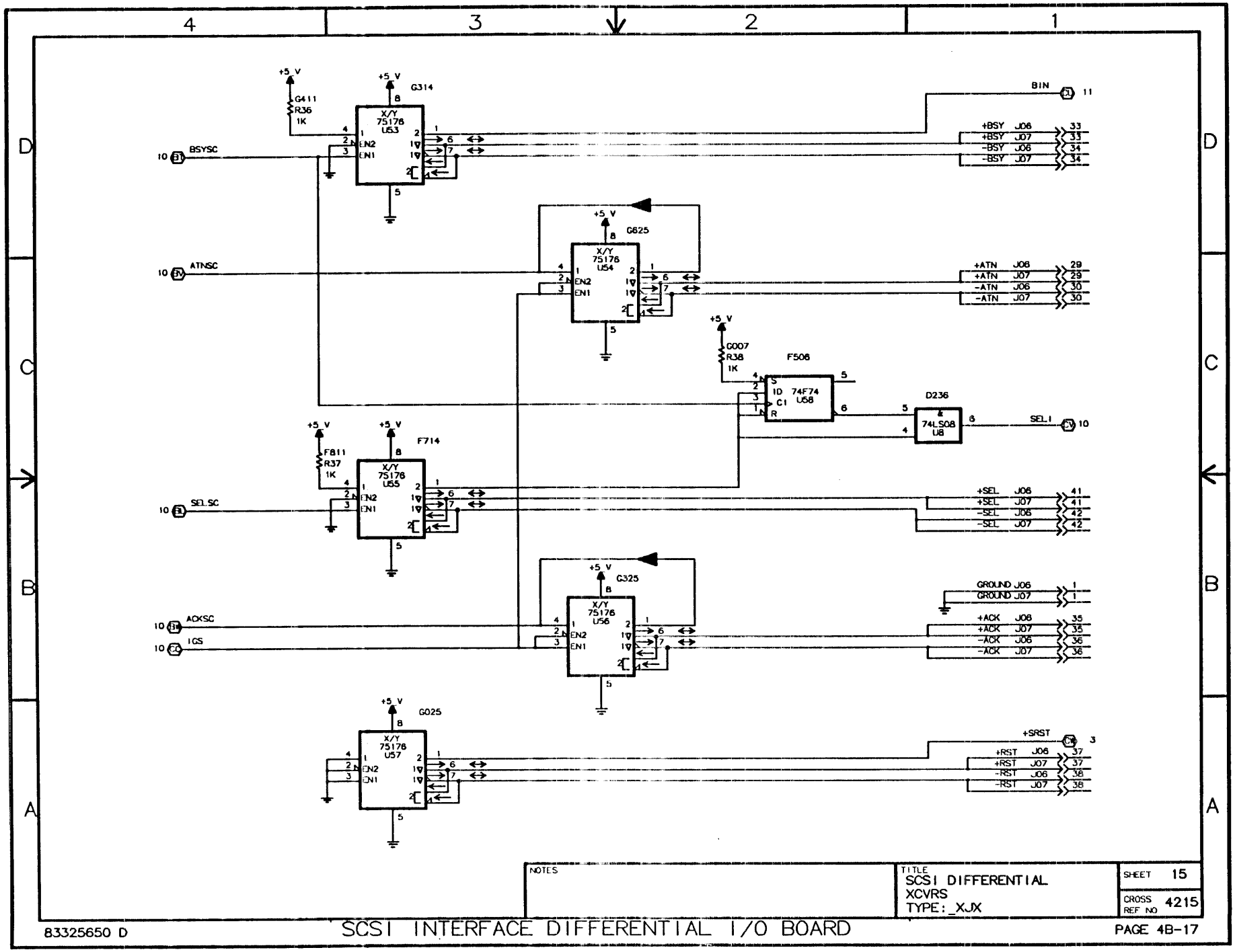
NOTES

TITLE
SCSI DIFFERENTIAL
XCVRS
TYPE: _XJX

SHEET 13

CROSS REF NO 4213


4
3
2
1
D
C
B
A
+5_V
F414
X/Y
75176
U48
EN2
EN1
10 C:DSC
+CD J06 43
+CD J07 43
-CD J06 44
-CD J07 44
G014
U49
10 MSGSC
+MSG J06 39
+MSG J07 39
-MSG J06 40
-MSG J07 40
F825
U50
10 REQSC
+REQ J06 45
+REQ J07 45
-REQ J06 46
-REQ J07 46
G614
U51
10 -SDIE
10 SCSI_PARITY
10 +SDOE
+DBP J06 19
+DBP J07 19
-DBP J06 20
-DBP J07 20
F525
U52
10 I:OSC
10 TGS
+IO J06 47
+IO J07 47
-IO J06 48
-IO J07 48
NOTES
TITLE
SCSI DIFFERENTIAL
XCVRS
TYPE: _XJX
SHEET 14
CROSS REF NO 4214


4
3
2
1
D
C
B
A
+5 V
G411
R36
1K
G314
X/Y
75176
U53
EN2
EN1
BSYSC
BIN
+BSY J06
+BSY J07
-BSY J06
-BSY J07
G625
U54
ATNSC
+ATN J06
+ATN J07
-ATN J06
-ATN J07
G007
R38
F506
74F74
U58
D236
74LS08
U8
SEL I
F811
R37
F714
U55
SELSC
+SEL J06
+SEL J07
-SEL J06
-SEL J07
G325
U56
ACKSC
IGS
GROUND J06
GROUND J07
+ACK J06
+ACK J07
-ACK J06
-ACK J07
G025
U57
+SRST
+RST J06
+RST J07
-RST J06
-RST J07
NOTES
TITLE
SCSI DIFFERENTIAL
XCVRS
TYPE: _XJX
SHEET 15
CROSS REF NO 4215

SECTION 5

CONTROL BOARD DIAGRAMS

FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
J13	01	21/2201	P13-01
J13	02	21/2201	P13-02
J13	03	21/2202	P13-03
J13	04	21/2201	P13-04
J13	05	21/2203	P13-05
J13	06	21/2201	P13-06
J13	07	21/2202	P13-07
J13	08	21/2202	P13-08
J13	09	21/2202	P13-09
J13	10	21/2202	P13-10
J13	11	21/2202	P13-11
J13	12	21/2202	P13-12
J13	13	21/2202	P13-13
J13	14	21/2202	P13-14
J13	15	21/2201	P13-15
J13	16	21/2203	P13-16
J13	17	21/2201	P13-17
J13	18	21/2203	P13-18
J13	19	21/2201	P13-19
J13	20	21/2201	P13-20
J13	21	21/2201	P13-21
J13	22	21/2201	P13-22
J13	23	21/2202	P13-23
J13	24	21/2201	P13-24
J13	25	21/2203	P13-25
J13	26	21/2201	P13-26
J15A/B	ALL		Pwr Sup
J15B	14		Fan
J15B	15		Fan
J48	ALL		NC

FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
P20	01	41/4201	J20-01
P20	02	41/4201	J20-02
P20	03	41/4201	J20-03
P20	04	41/4202	J20-04
P20	05	41/4201	J20-05
P20	06	41/4201	J20-06
P20	08	41/4201	J20-08
P20	09	41/4201	J20-09
P20	10	41/4201	J20-10
P20	11	41/4211	J20-11
P20	12	41/4201	J20-12
P20	14	41/4207	J20-14
P20	15	41/4207	J20-15
P20	16	NC	J20-16
P20	17	41/4207	J20-17
P20	18	41/4207	J20-18
P20	19	41/4202	J20-19
P20	22	NC	J20-22
P20	23	41/4207	J20-23
P20	24	41/4207	J20-24
P20	25	41/4207	J20-25
P20	26	NC	J20-26
P20	27	41/4207	J20-27
P20	28	NC	J20-28
P20	29	NC	J20-29
P20	30	NC	J20-30
P20	31	41/4211	J20-31
P20	32	41/4207	J20-32
P20	33	41/4207	J20-33
P20	34	41/4207	J20-34
P20	35	41/4207	J20-35
P20	36	41/4207	J20-36

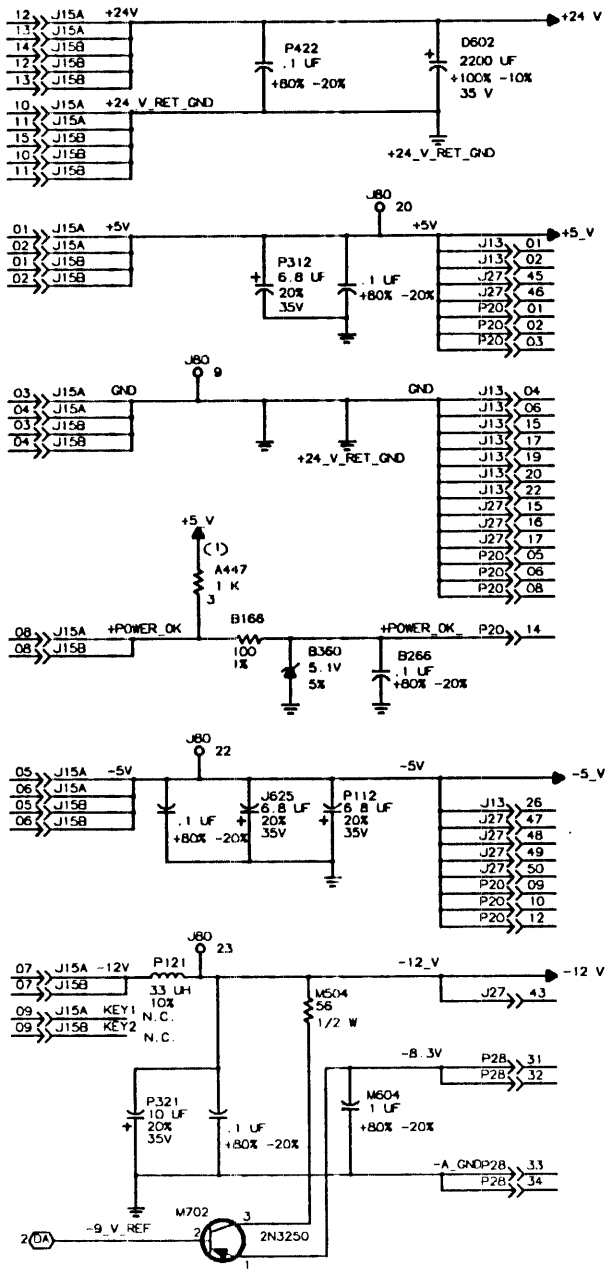
FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
P20	37	41/4207	J20-37
P20	38	41/4207	J20-38
P20	39	41/4207	J20-39
P20	40	41/4207	J20-40
P20	41	41/4207	J20-41
P20	42	41/4207	J20-42
P20	43	NC	J20-43
P20	44	NC	J20-44
P20	45	NC	J20-45
P20	46	NC	J20-46
P20	47	NC	J20-47
P20	48	NC	J20-48
P20	49	41/4207	J20-49
P20	51	41/4207	J20-51
P20	52	41/4206	J20-52
P20	53	NC	J20-53
P20	55	NC	J20-55
P20	57	NC	J20-57
P20	58	NC	J20-58
P20	59	41/4207	J20-59
P20	60	41/4207	J20-60
P20	61	NC	J20-61
P20	62	NC	J20-62
P20	63	NC	J20-63
P20	64	NC	J20-64
P20	65	NC	J20-65

CROSS-REFERENCE LIST FOR CONTROL BOARD (Cross-Reference Numbers 5101 thru 5121), Sheet 1 of 2

FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
P20	66	NC	J20-66
P20	67	NC	J20-67
P20	68	NC	J20-68
P20	69	NC	J20-69
P20	70	NC	J20-70
P20	71	41/4211	J20-71
P20	72	41/4211	J20-72
P20	73	41/4211	J20-73
P20	74	41/4211	J20-74
P20	75	41/4211	J20-75
P20	76	41/4211	J20-76
P20	77	41/4211	J20-77
P20	78	41/4211	J20-78
P20	79	41/4211	J20-79
P20	80	41/4211	J20-80
P24	ALL		Motor

FROM		TO		
Plug / Pin		Arm Matrix	R/W Board	Plug/Pin
P28	27	31/3201	61/6201	J28-27
P28	28	31/3201	61/6201	J28-28
P28	29	31/3202	61/6204	J28-29
P28	30	31/3202	61/6204	J28-30
P28	31	31/3201	61/6201	J28-31
P28	32	31/3201	61/6201	J28-32
P28	33	31/3201	61/6201	J28-33
P28	34	31/3201	61/6201	J28-34
P28	35	31/3201	61/6201	J28-35
P28	36	31/3201	61/6201	J28-36
P28	37	31/3202	61/6201	J28-37
P28	38	31/3202	61/6201	J28-38
P28	39	31/3202	61/6201	J28-39
P28	40	31/3202	61/6201	J28-40

CROSS-REFERENCE LIST FOR CONTROL BOARD (Cross-Reference Numbers 5101 thru 5121), Sheet 2 of 2



REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APP
A	DJ23000 DJ29467	CLASS A RELEASED BY ECO	BJP	11-10-87	S.S.	
B	DJ29587	ENGINEERING CHANGE	HDH	21188	SS	
C	DJ29868	CLASS A RELEASE	SLP	88-02-04		
D	DJ40177	RESISTOR CHANGE	JPS	02-15-89		
E	DJ40354	RESISTOR CHANGE	JB	7/20/89		
F	DJ40472	RESISTOR CHANGE	DJN	9/26/89		

NOTES:
1. UNLESS OTHERWISE SPECIFIED:

ALL 8 PIN ICS HAVE PIN 4 CONNECTED TO GROUND AND PIN 8 CONNECTED TO +5V.

ALL 14 PIN ICS HAVE PIN 7 CONNECTED TO GROUND AND PIN 14 CONNECTED TO +5V.

ALL 16 PIN ICS HAVE PIN 8 CONNECTED TO GROUND AND PIN 16 CONNECTED TO +5V

ALL 20 PIN ICS HAVE PIN 10 CONNECTED TO GROUND AND PIN 20 CONNECTED TO +5V

ALL 24 PIN ICS HAVE PIN 12 CONNECTED TO GROUND AND PIN 24 CONNECTED TO +5V

ALL RESISTOR PACK RESISTORS, .125W 3%.

ALL DIODES, 50241403.

3 DELAY TIME FOR REFERENCE ONLY.

4 DIODE ARRAY, 50241802.

5 TEST SELECT RESISTORS TO BE SELECTED FROM DRAWING 94357500 AND INSERTED DURING CARD TEST, PER CARD TEST REQUIREMENT. NOMINAL VALUE SHOWN FOR TEST SELECT RESISTOR AT LOCATION H829.

6 IC IS NOT ON ASSEMBLY

7 CONNECTOR IS NOT ON ASSEMBLY

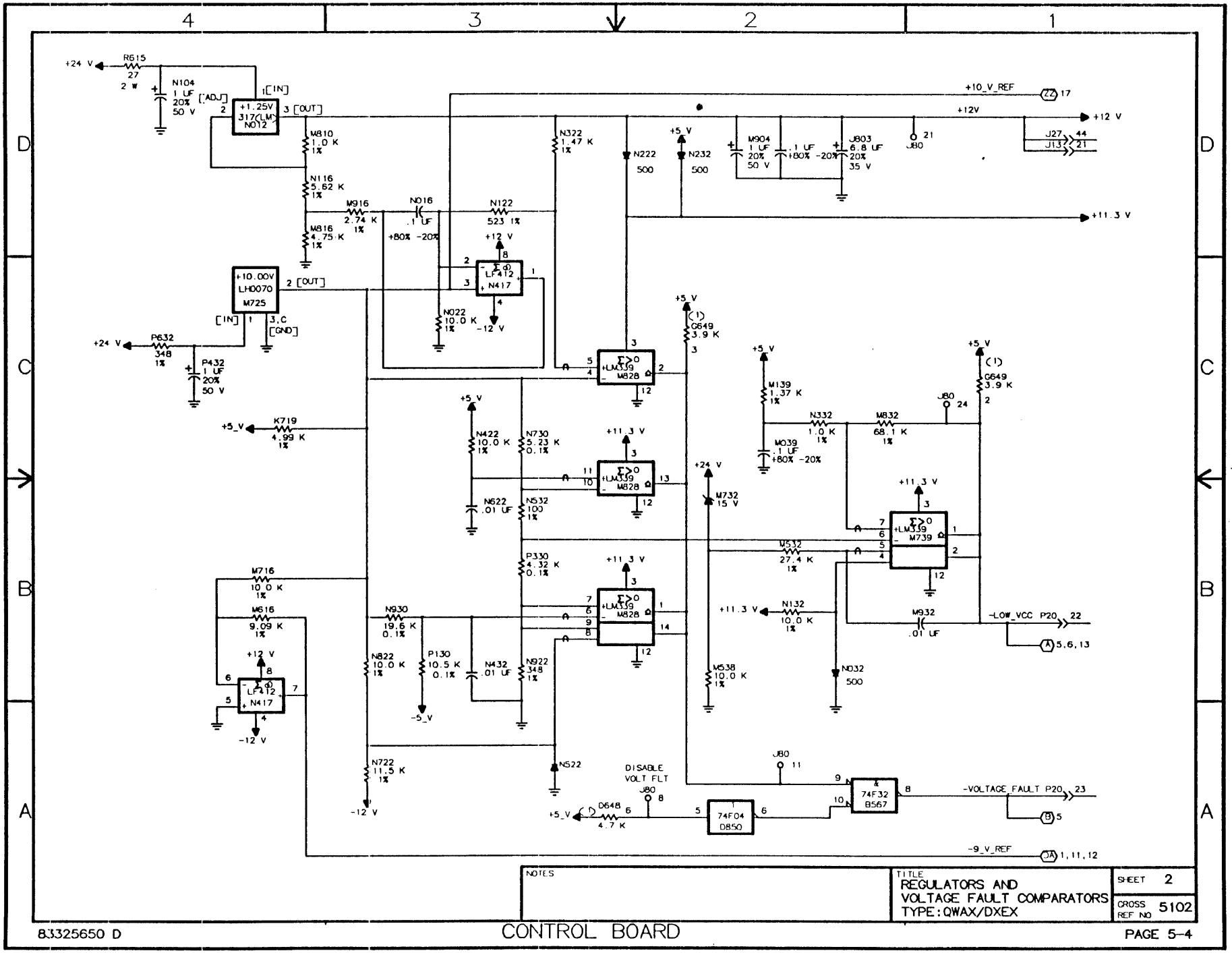
NOTES
1. THESE SCHEMATICS APPLY TO:
CARD PN 54398101-23 (QWAX)
54409301-10 (DXEX)

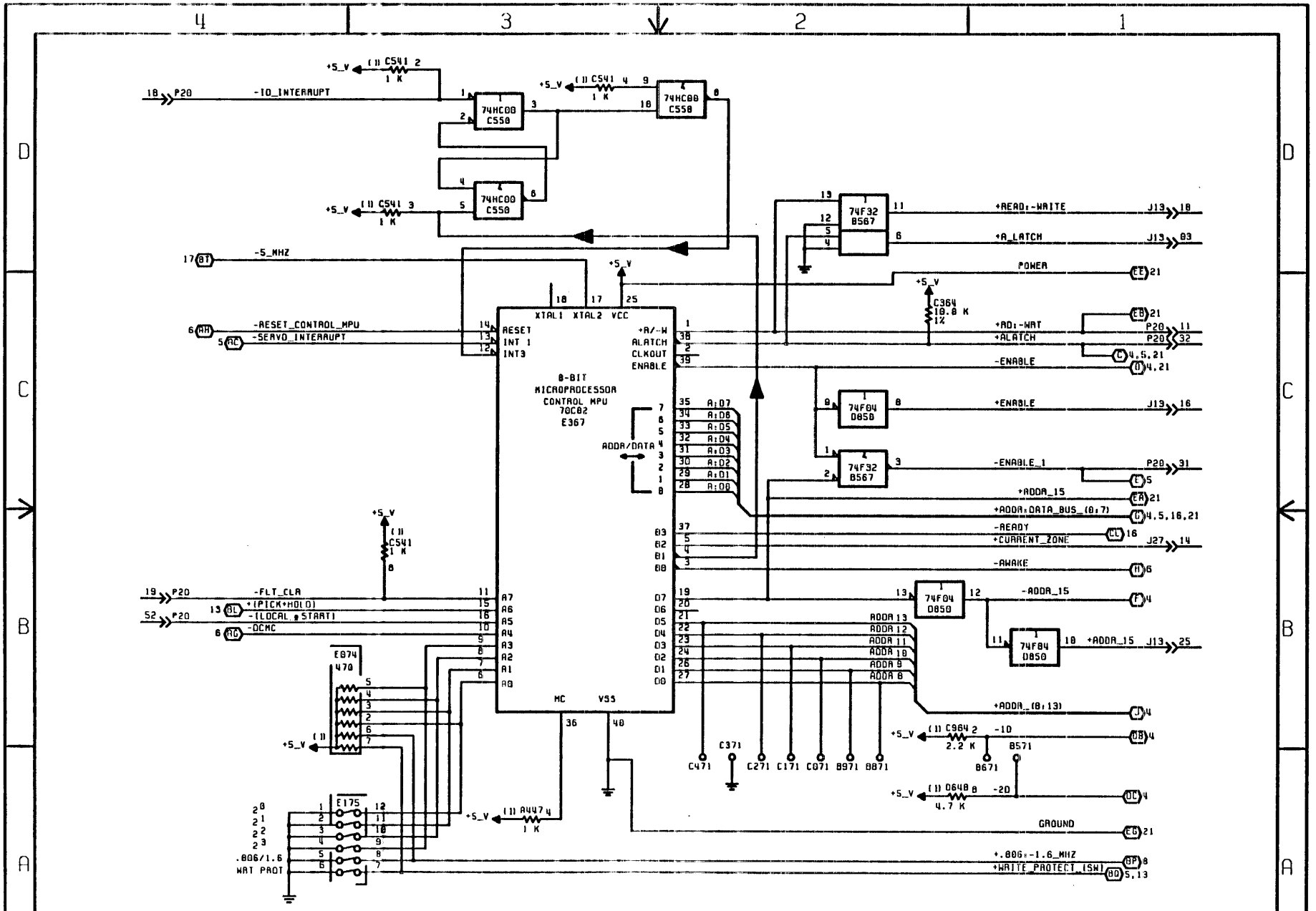
TITLE
SCHEMATIC DIAGRAM
CONTROL BOARD
TYPE: QWAX/DXEX(GVXX)

FILE NO $510A
54397010

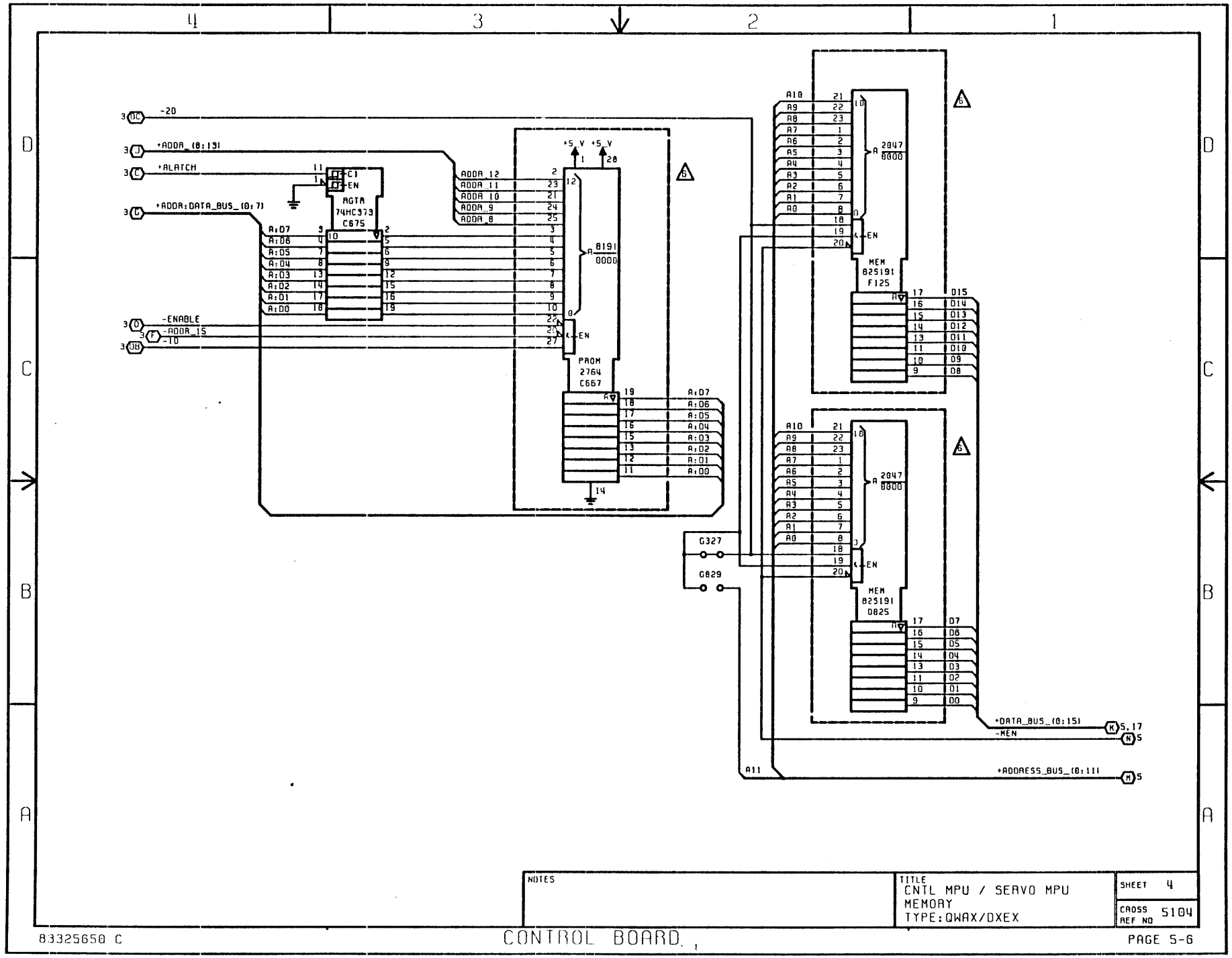
SHEET 1 OF 21

CROSS REF NO 5101

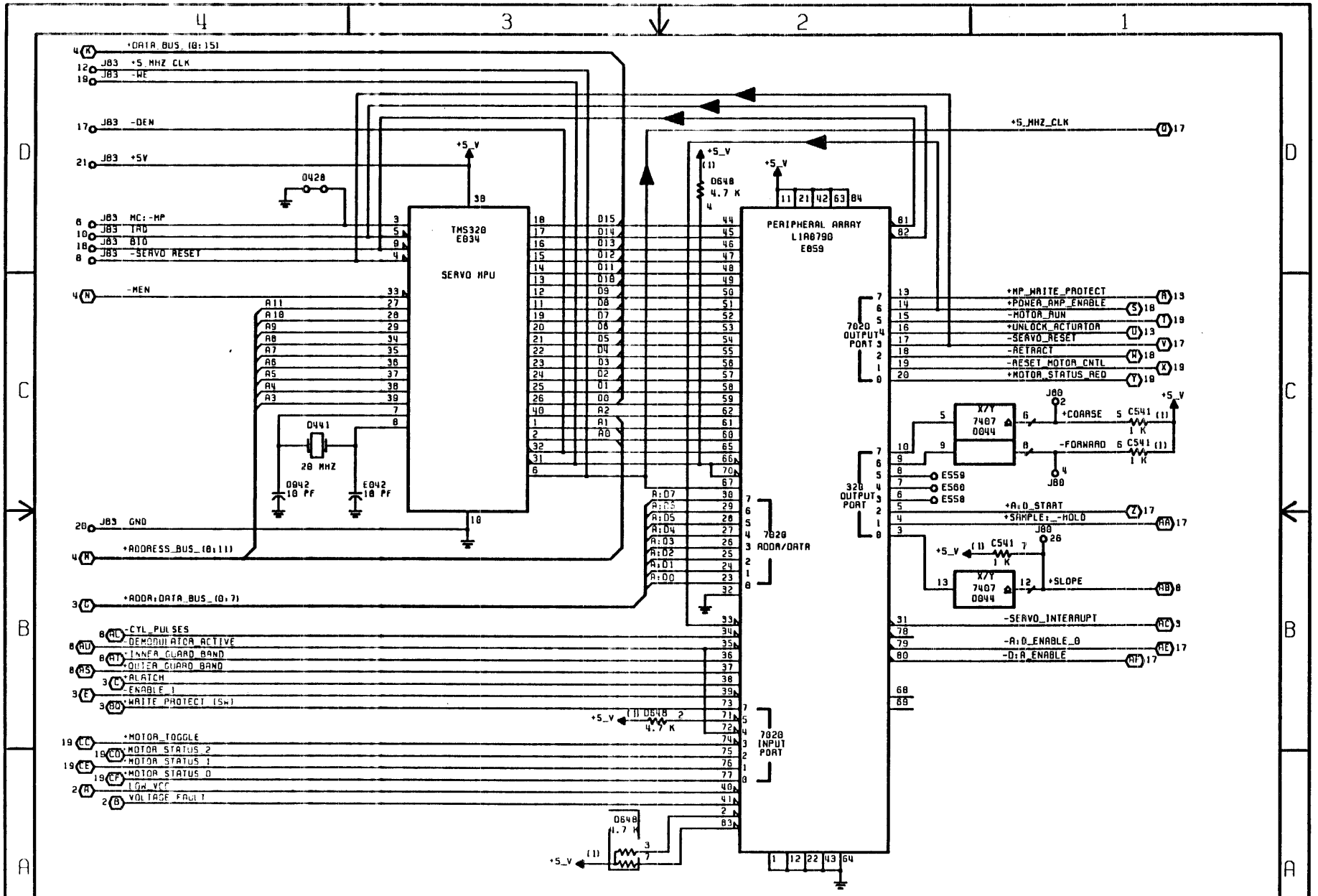

4
3
2
1
D
C
B
A
+24 V
R615
27
2 W
N104
1 UF
20%
50 V
+1.25V
317(LM)
N012
[ADJ]
[IN]
[OUT]
M810
1.0 K
1%
N116
5.62 K
1%
M816
4.75 K
1%
M916
2.74 K
1%
N016
.1 UF
+80% -20%
N122
523 1%
+10.00V
LH0070
M725
[IN]
[OUT]
[GND]
P632
348
1%
P432
1 UF
20%
50 V
LF412
N417
N022
10.0 K
1%
-12 V
+12 V
+10_V_REF
+12V
+11.3 V
+5 V
N322
1.47 K
1%
N222
500
N232
500
M904
1 UF
20%
50 V
.1 UF
+80% -20%
J803
6.8 UF
20%
35 V
J80
J27
J13
G649
3.9 K
M139
1.37 K
1%
M039
.1 UF
+80% -20%
N332
1.0 K
1%
M832
68.1 K
1%
K719
4.99 K
1%
+5_V
N422
10.0 K
1%
N730
5.23 K
0.1%
N622
.01 UF
N532
100
1%
P330
4.32 K
0.1%
+24 V
M732
15 V
M716
10.0 K
1%
M616
9.09 K
1%
N830
19.6 K
0.1%
N822
10.0 K
1%
P130
10.5 K
0.1%
-5_V
N432
.01 UF
N922
348
1%
M532
27.4 K
1%
N132
10.0 K
1%
M932
.01 UF
-LOW_VCC P20
M538
10.0 K
1%
N032
500
N722
11.5 K
1%
N522
DISABLE
VOLT FLT
D648
4.7 K
74F04
D850
74F32
B567
-VOLTAGE_FAULT P20
-9_V_REF
NOTES
TITLE
REGULATORS AND
VOLTAGE FAULT COMPARATORS
TYPE: QWAX/DXEX
SHEET 2
CROSS REF NO 5102



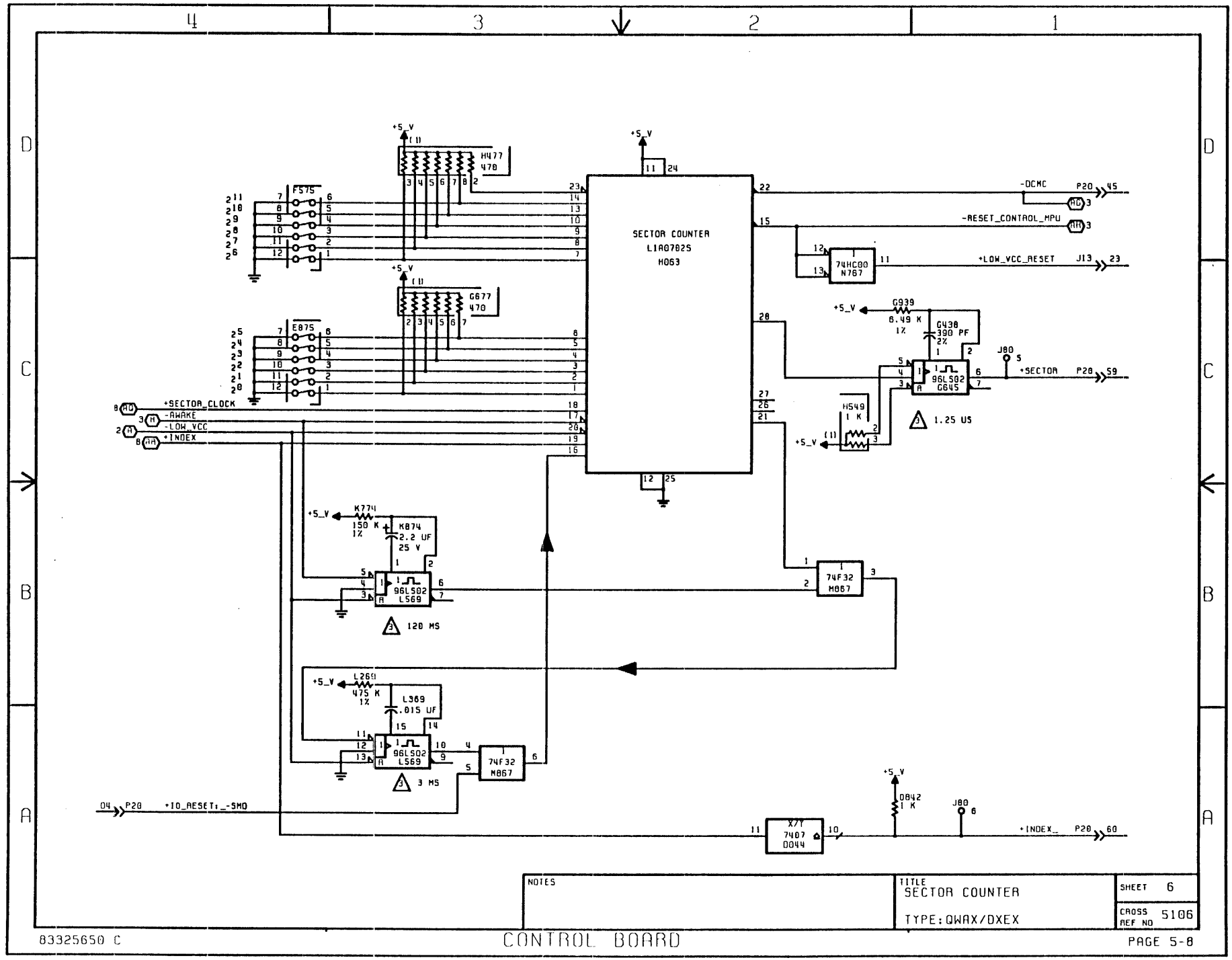
NOTES	TITLE	SHEET
	CONTROL MPU TYPE:QWAX/DXEX	3
		CROSS REF NO 5103



NOTES	TITLE	SHEET
	CNTL MPU / SERVO MPU MEMORY TYPE:QWAX/DXEX	4
		CROSS REF NO 5104



NOTES	TITLE 320 AND PERIPHERAL ARRAY TYPE:QWAX/DXEX	SHEET 5 CROSS REF NO 5105



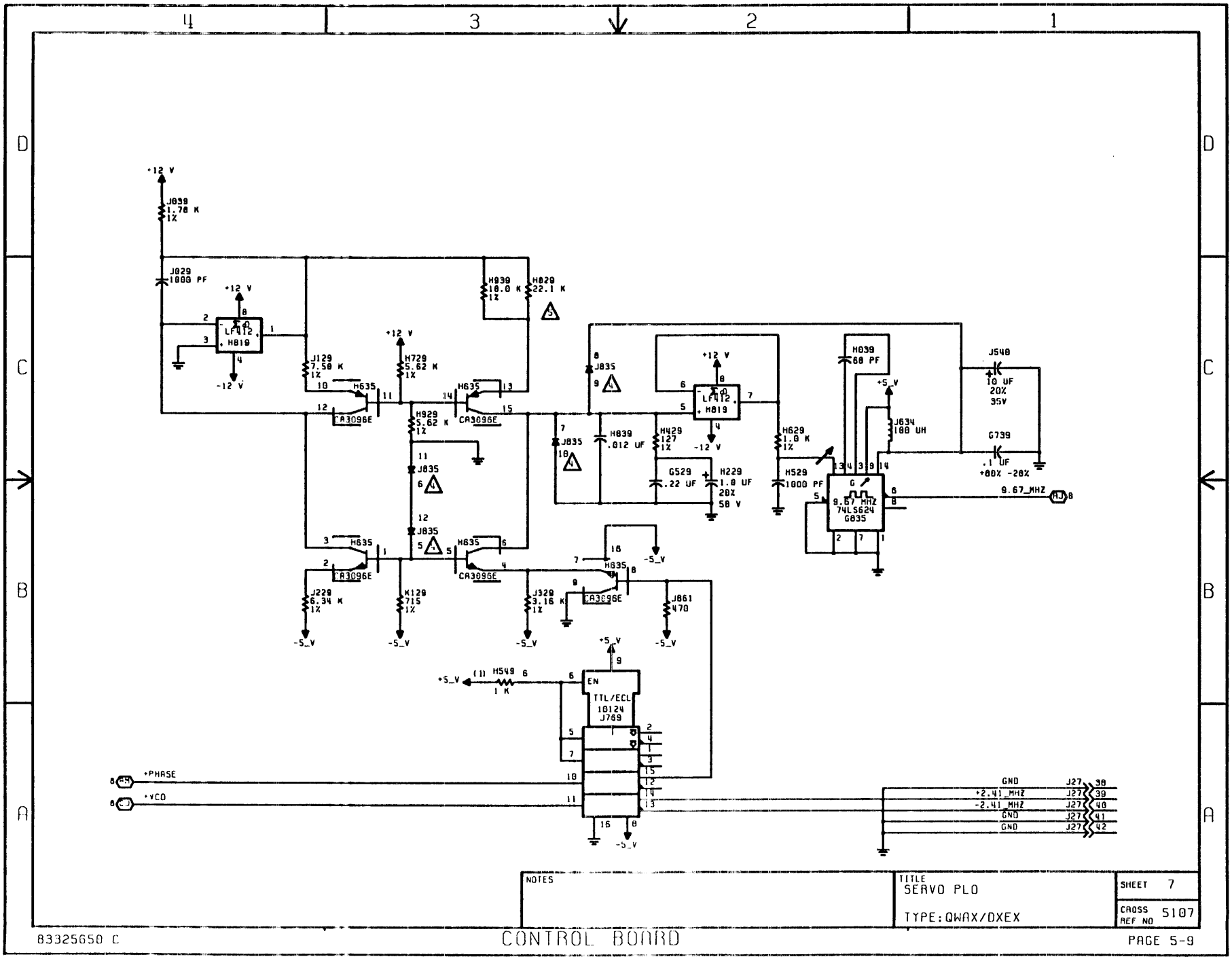
NOTES

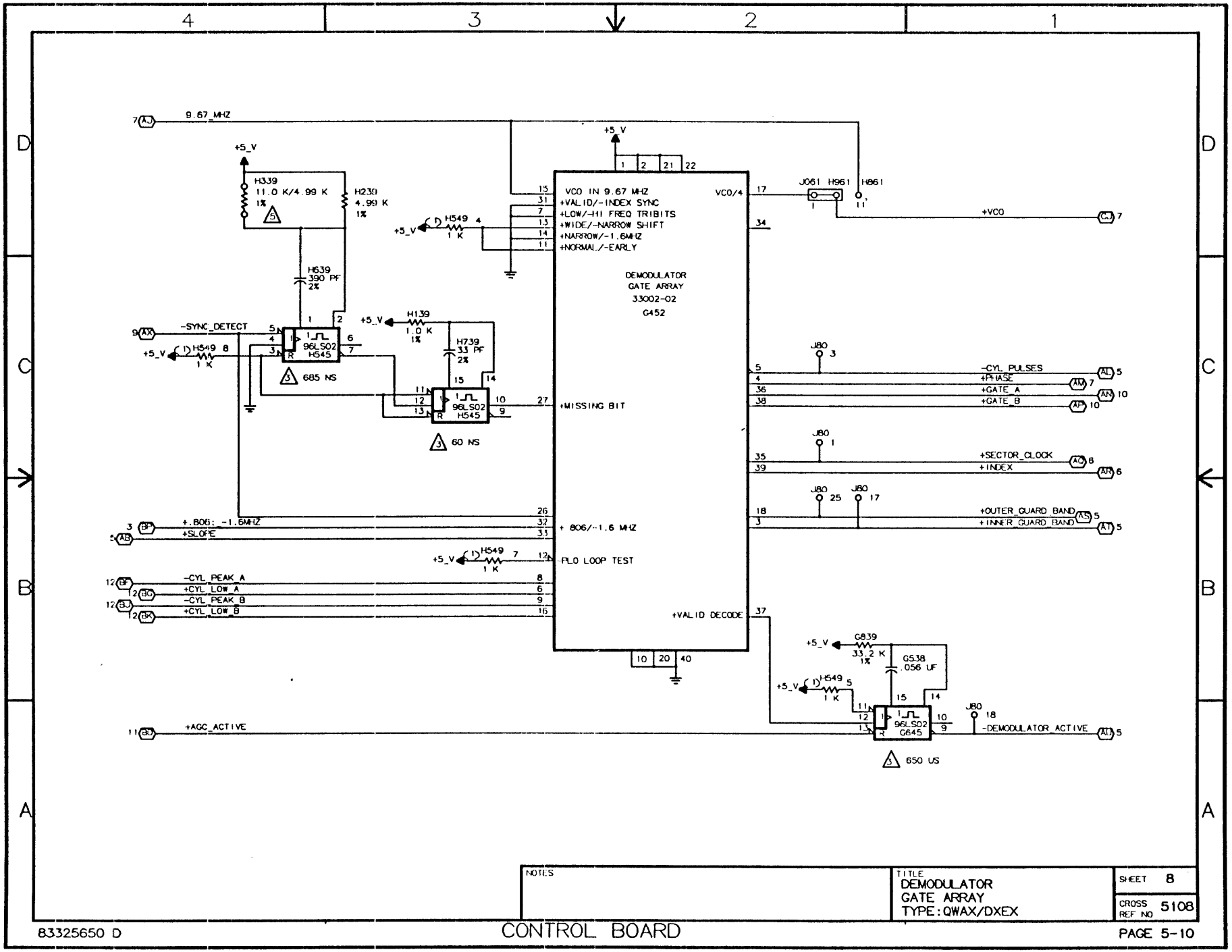
TITLE
SECTOR COUNTER

TYPE: QWAX/DXEX

SHEET 6

CROSS REF NO 5106


4
3
2
1
D
C
B
A
+12 V
J038
1.78 K
1%
J029
1000 PF
LF412
H819
-12 V
J129
7.50 K
1%
H729
5.62 K
1%
H635
CA3096E
H929
5.62 K
1%
H039
10.0 K
1%
H029
22.1 K
1%
J835
H839
.012 UF
H429
127
1%
G529
.22 UF
H229
1.0 UF
20%
50 V
H629
1.0 K
1%
H529
1000 PF
H039
68 PF
J634
100 UH
J540
10 UF
20%
35V
G739
.1 UF
+80% -20%
+5_V
9.67_MHZ
74LS624
G835
J229
6.34 K
1%
K129
715
1%
J329
3.16 K
1%
J861
470
-5_V
H549
1 K
EN
TTL/ECL
10124
J769
+PHASE
+VCO
GND
+2.41_MHZ
-2.41_MHZ
J27
NOTES
TITLE
SERVO PLO
TYPE:QWAX/DXEX
SHEET 7
CROSS REF NO 5107
83325650 C
CONTROL BOARD
PAGE 5-9

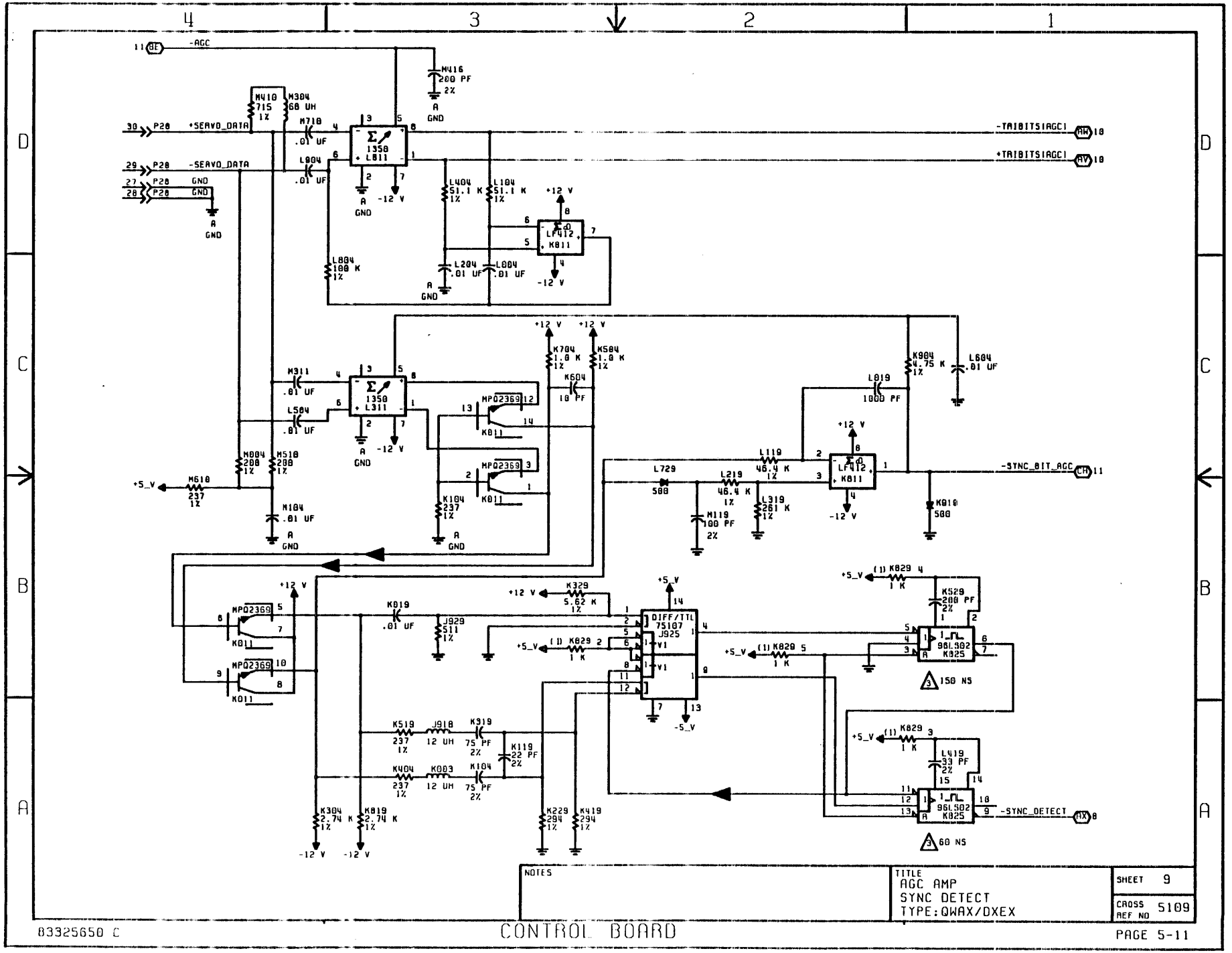


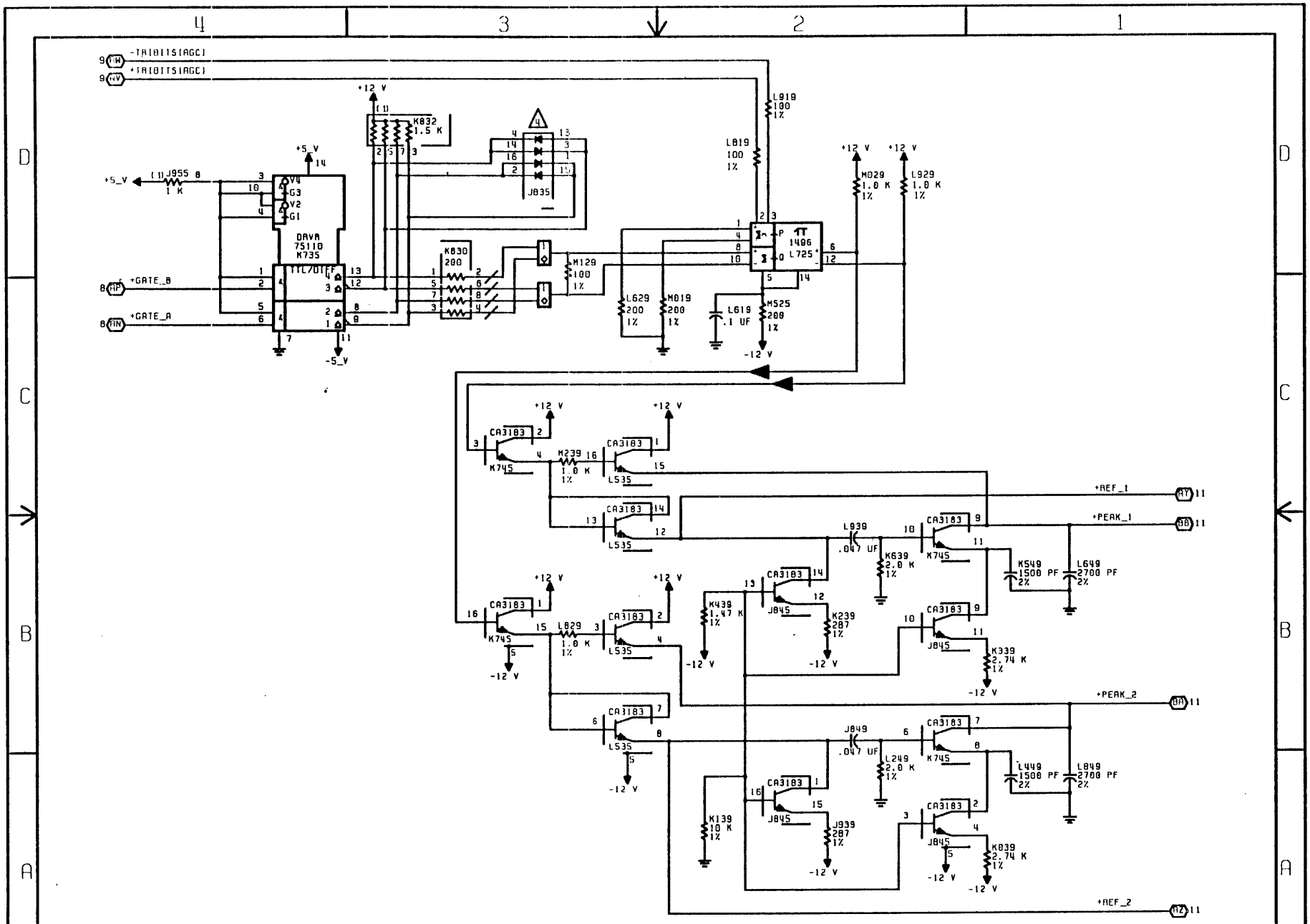
NOTES

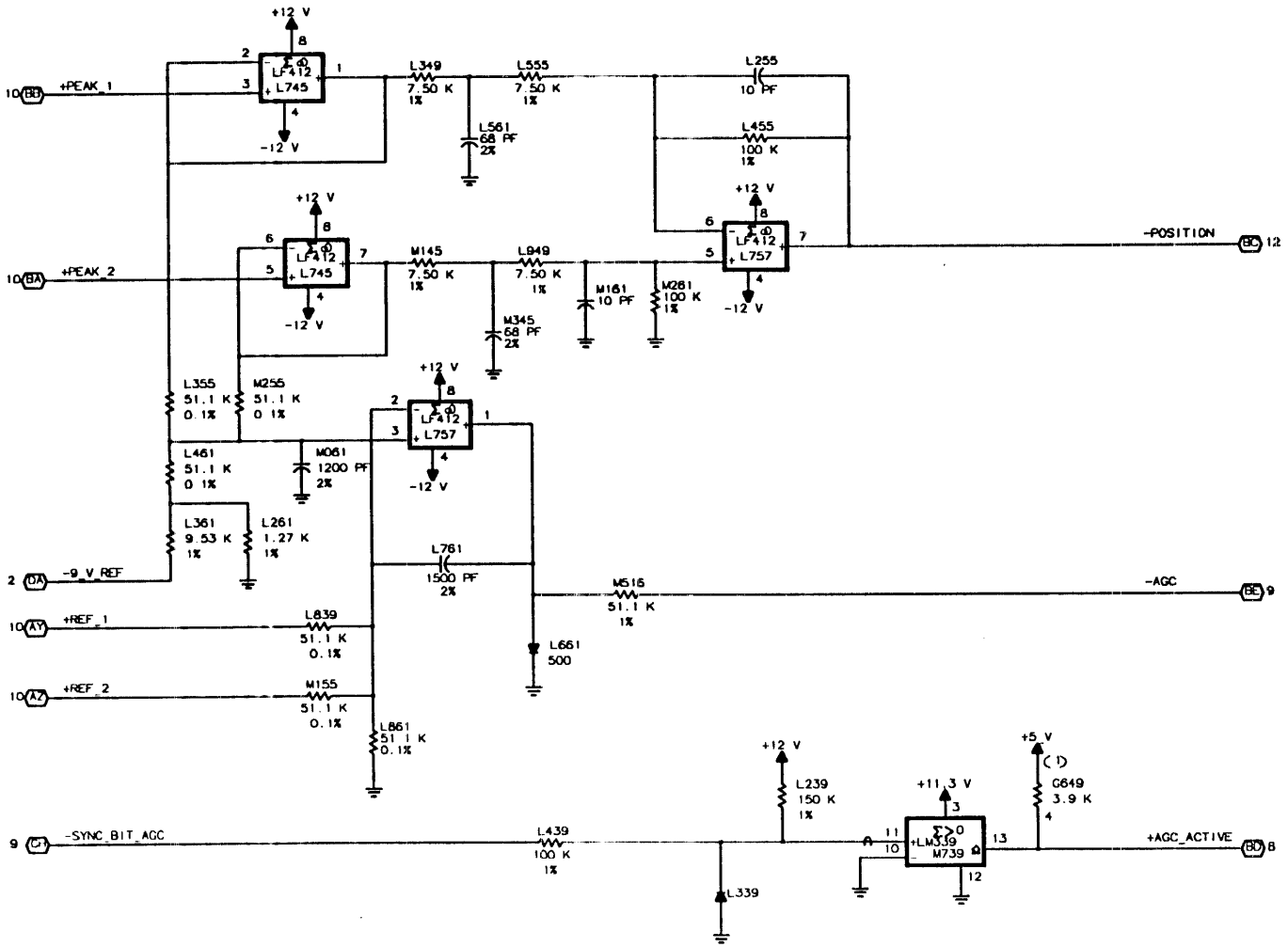
TITLE
DEMODULATOR
GATE ARRAY
TYPE: QWAX/DXEX

SHEET 8

CROSS REF NO 5108


-AGC
M416 200 PF 2%
M410 715 1%
M304 68 UH
M718 .01 UF
30 P28 +SERVO_DATA
29 P28 -SERVO_DATA
27 P28 GND
28 P28 GND
L804 .01 UF
1350 L811
L404 51.1 K 1%
L104 51.1 K 1%
L804 100 K 1%
L204 .01 UF
L004 .01 UF
LF412 K811
-TAIBITSIAGC!
+TAIBITSIAGC!
M311 .01 UF
L504 .01 UF
1350 L311
K704 1.8 K 1%
K504 1.8 K 1%
K604 10 PF
MPQ2369 K811
MPQ2369 K011
K004 200 1%
K510 200 1%
M618 237 1%
M104 .01 UF
K104 237 1%
K804 4.75 K 1%
L604 .01 UF
L819 1000 PF
L729 500
L219 46.4 K 1%
L119 46.4 K 1%
L319 261 1%
M119 100 PF 2%
K810 500
-SYNC_BIT_AGC
K019 .01 UF
J929 511 1%
K329 5.62 K 1%
DIFF/TTL 75107 J925
K829 1 K
K529 200 PF 2%
961502 K825
150 NS
K519 237 1%
J918 12 UH
K919 75 PF 2%
K119 22 PF 2%
K404 237 1%
K003 12 UH
K104 75 PF 2%
L419 33 PF 2%
60 NS
K304 2.74 K 1%
K819 2.74 K 1%
K229 294 1%
K419 294 1%
-SYNC_DETECT
NOTES
TITLE
AGC AMP
SYNC DETECT
TYPE:QWAX/DXEX
SHEET 9
CROSS REF NO 5109


-TRIBIT5(AGC)
+TRIBIT5(AGC)
+12 V
+5_V
-5_V
-12 V
DAVA
75110
K735
TTL/DTL
1486
+GATE_B
+GATE_A
CA3183
+REF_1
+PEAK_1
+PEAK_2
+REF_2
NOTES
TITLE
SERVO TRIBIT
DECODER
TYPE: QWAX/DXEX
SHEET 10
CROSS REF NO 5110

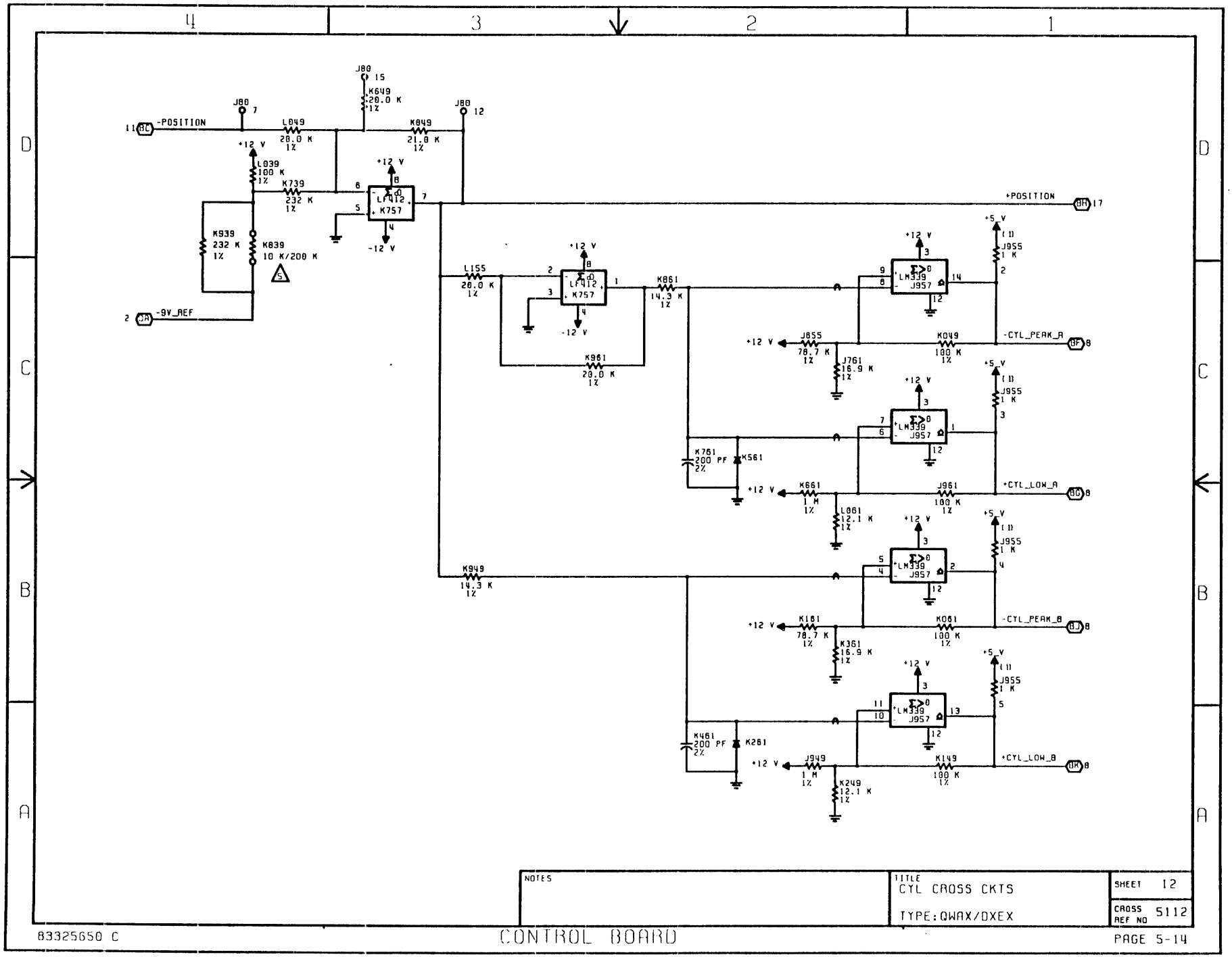


NOTES:

TITLE
DIFF POSITION AMP
AND AGC
TYPE: QWAX/DXEX

SHEET 11

CROSS REF NO 5111



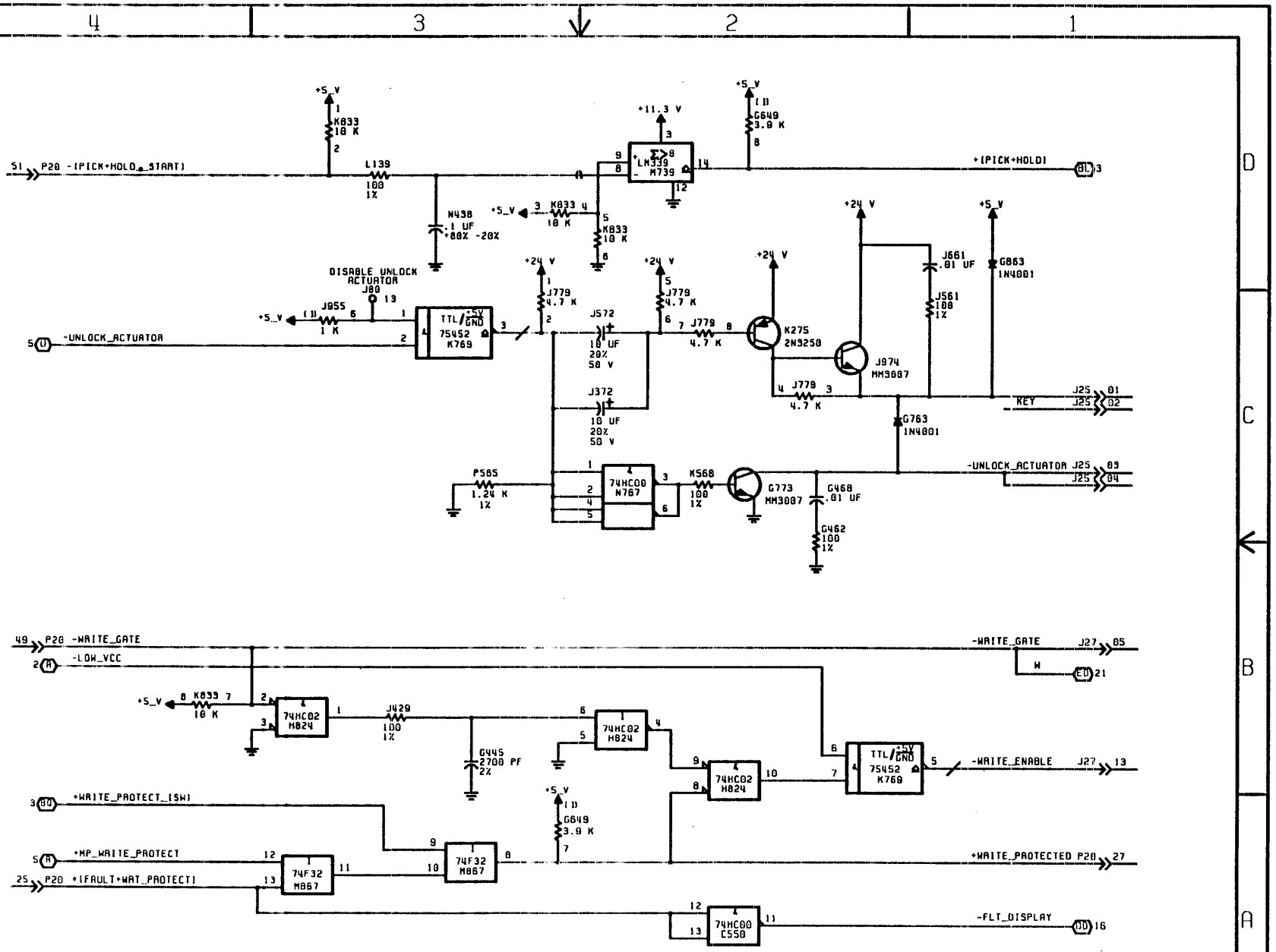
NOTES

TITLE
CYL CROSS CKTS

TYPE: QWAX/DXEX

SHEET 12

CROSS REF NO 5112



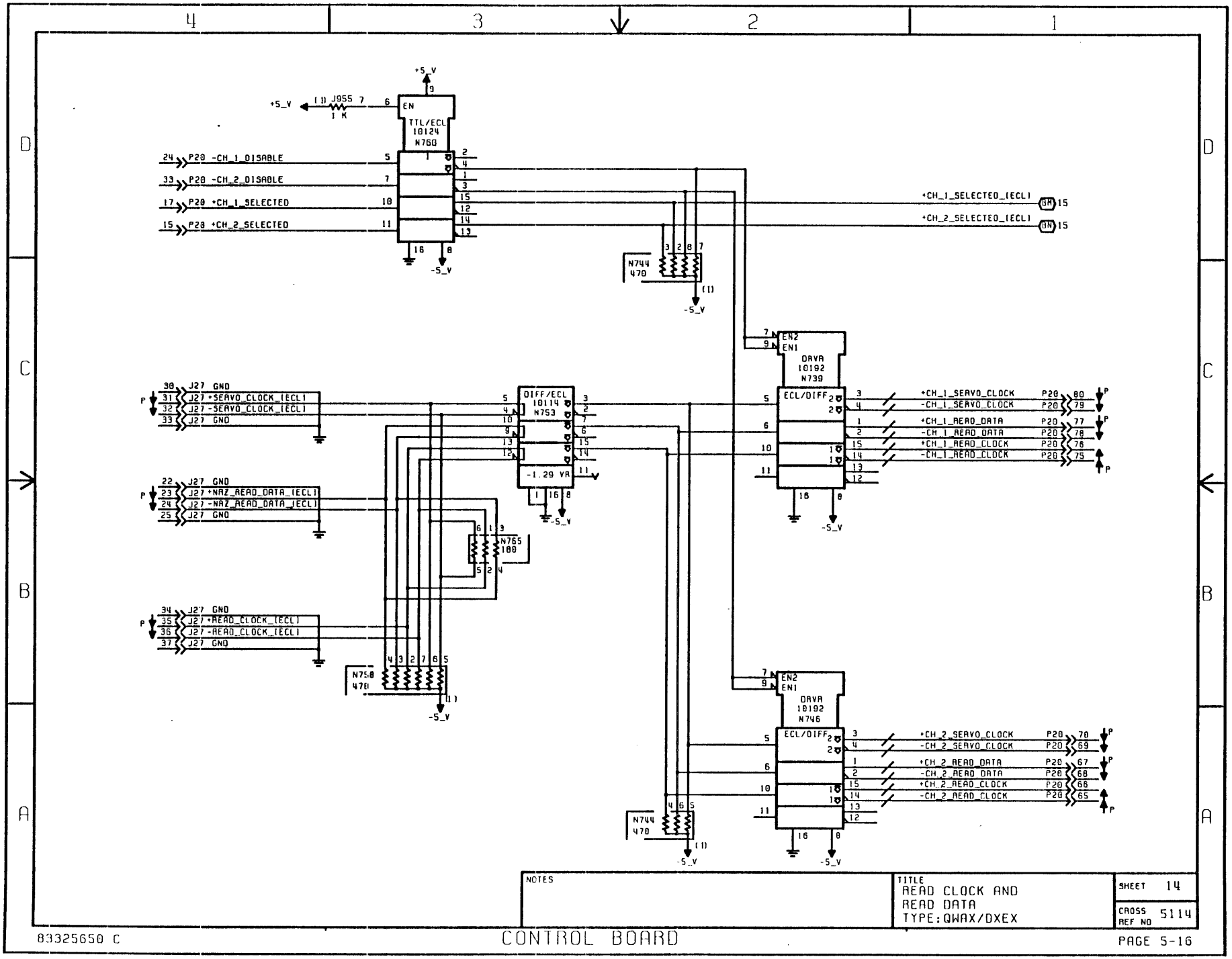
NOTES

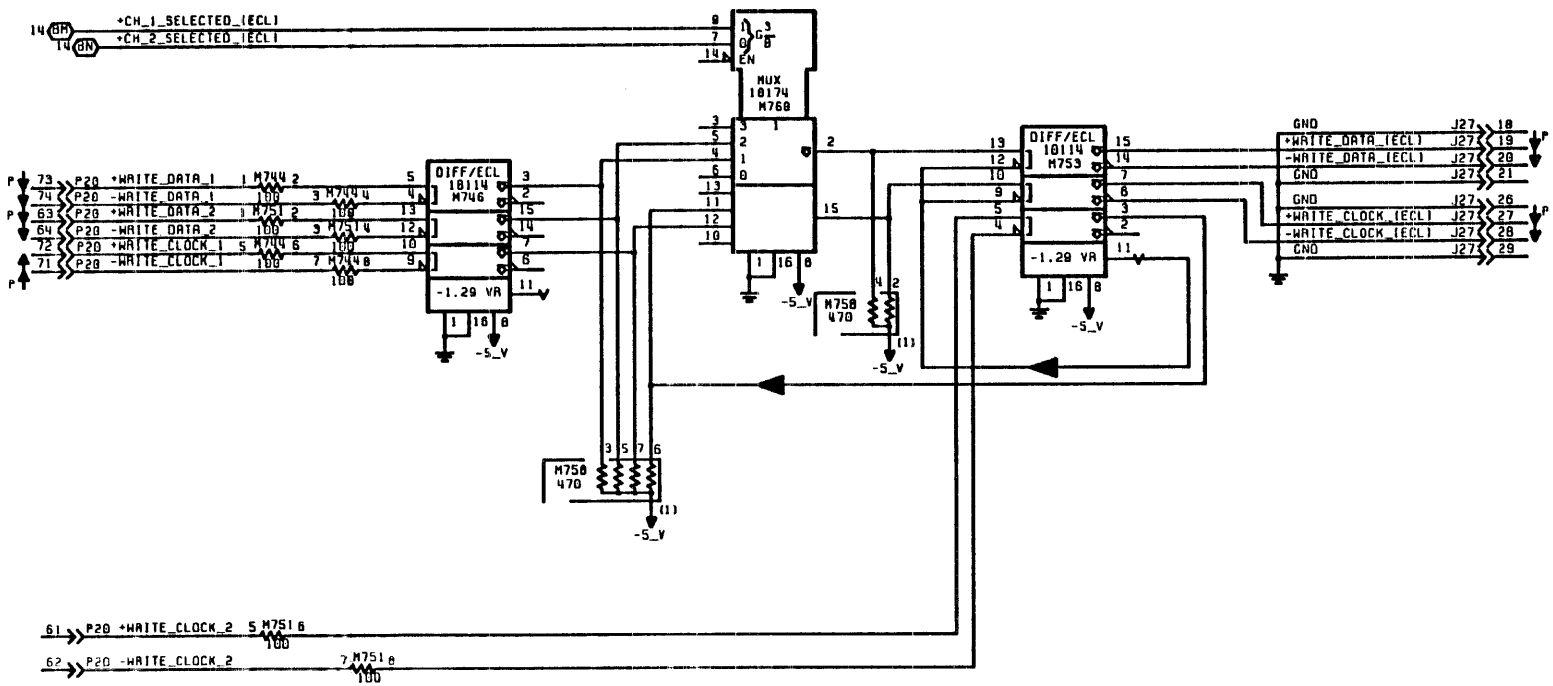
TITLE
INTERLOCKS

TYPE: QWAX/DXEX

SHEET 13

CROSS REF NO 5113


4
3
2
1
D
C
B
A
+5_V
TTL/ECL
10124
N760
EN
P20 -CH_1_DISABLE
P20 -CH_2_DISABLE
P20 +CH_1_SELECTED
P20 +CH_2_SELECTED
+CH_1_SELECTED_(ECL)
+CH_2_SELECTED_(ECL)
N744
470
-5_V
DIFF/ECL
10114
N753
-1.29 VR
J27 GND
J27 +SERVO_CLOCK_(ECL)
J27 -SERVO_CLOCK_(ECL)
J27 +NRZ_READ_DATA_(ECL)
J27 -NRZ_READ_DATA_(ECL)
J27 +READ_CLOCK_(ECL)
J27 -READ_CLOCK_(ECL)
N765
100
N758
470
DAVA
10192
N739
N746
ECL/DIFF
EN2
EN1
+CH_1_SERVO_CLOCK
-CH_1_SERVO_CLOCK
+CH_1_READ_DATA
-CH_1_READ_DATA
+CH_1_READ_CLOCK
-CH_1_READ_CLOCK
+CH_2_SERVO_CLOCK
-CH_2_SERVO_CLOCK
+CH_2_READ_DATA
-CH_2_READ_DATA
+CH_2_READ_CLOCK
-CH_2_READ_CLOCK
P20
NOTES
TITLE
READ CLOCK AND
READ DATA
TYPE: QWAX/DXEX
SHEET 14
CROSS REF NO 5114

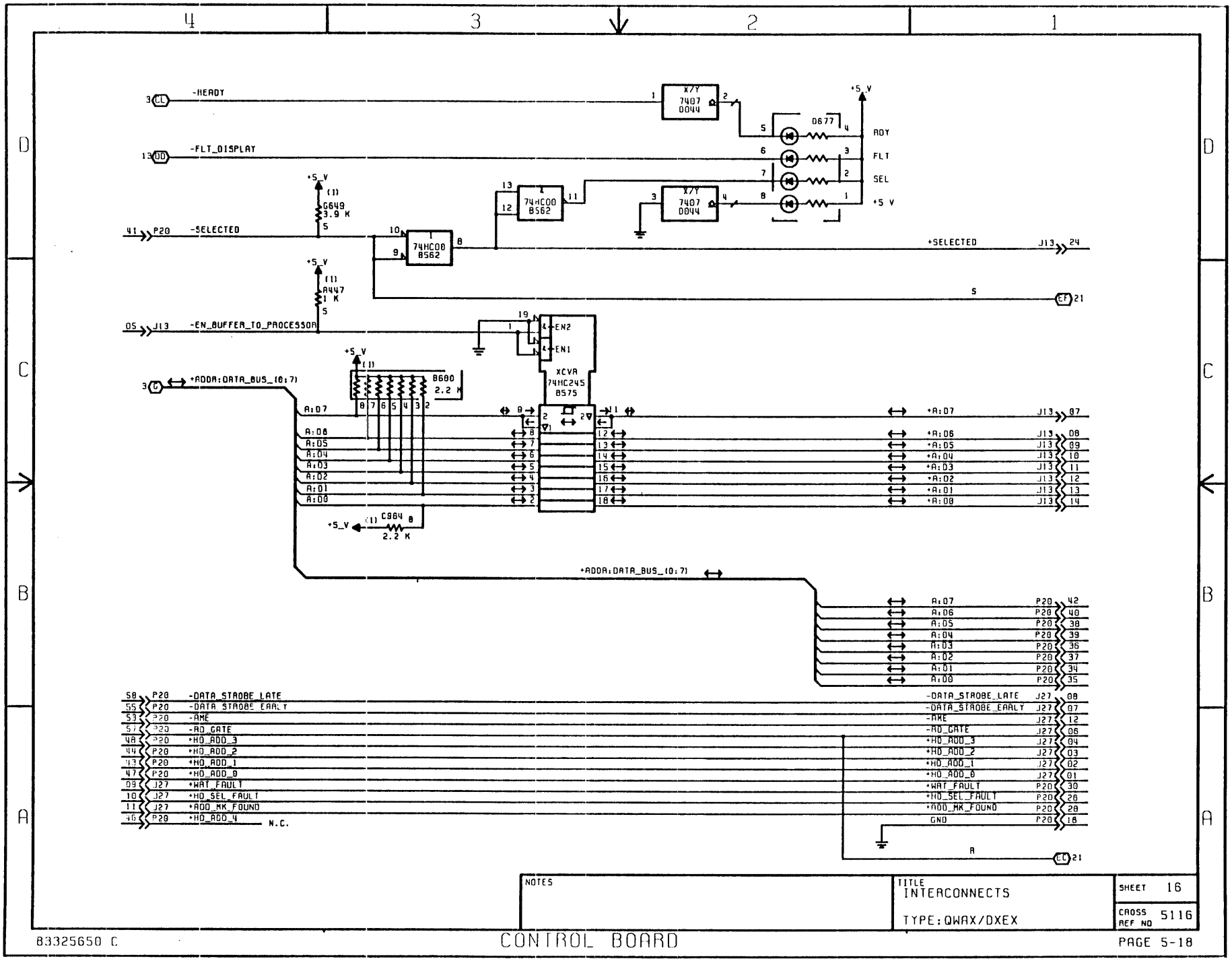


NOTES

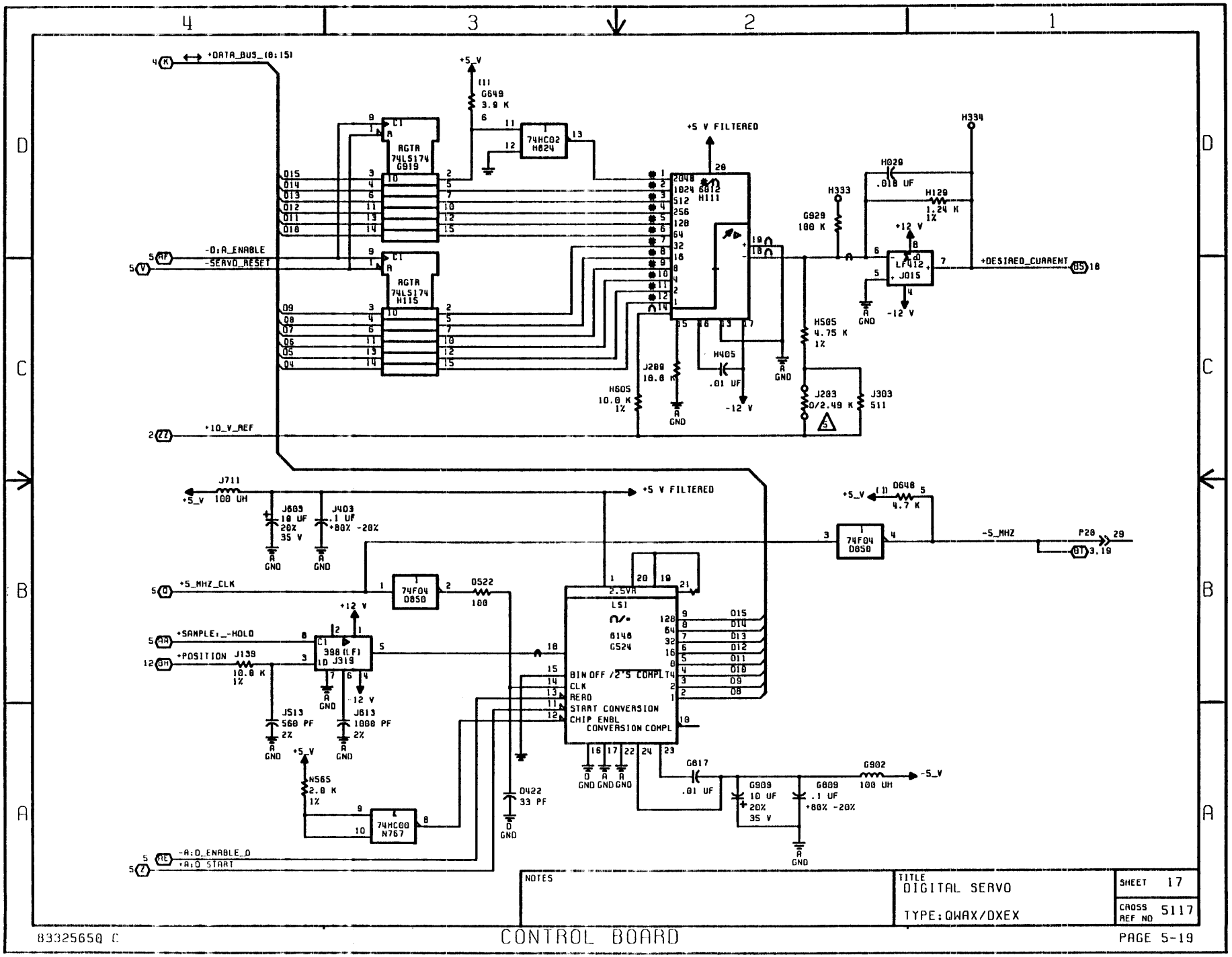
TITLE
WRITE CLOCK AND
WRITE DATA
TYPE:QWAX/DXEX

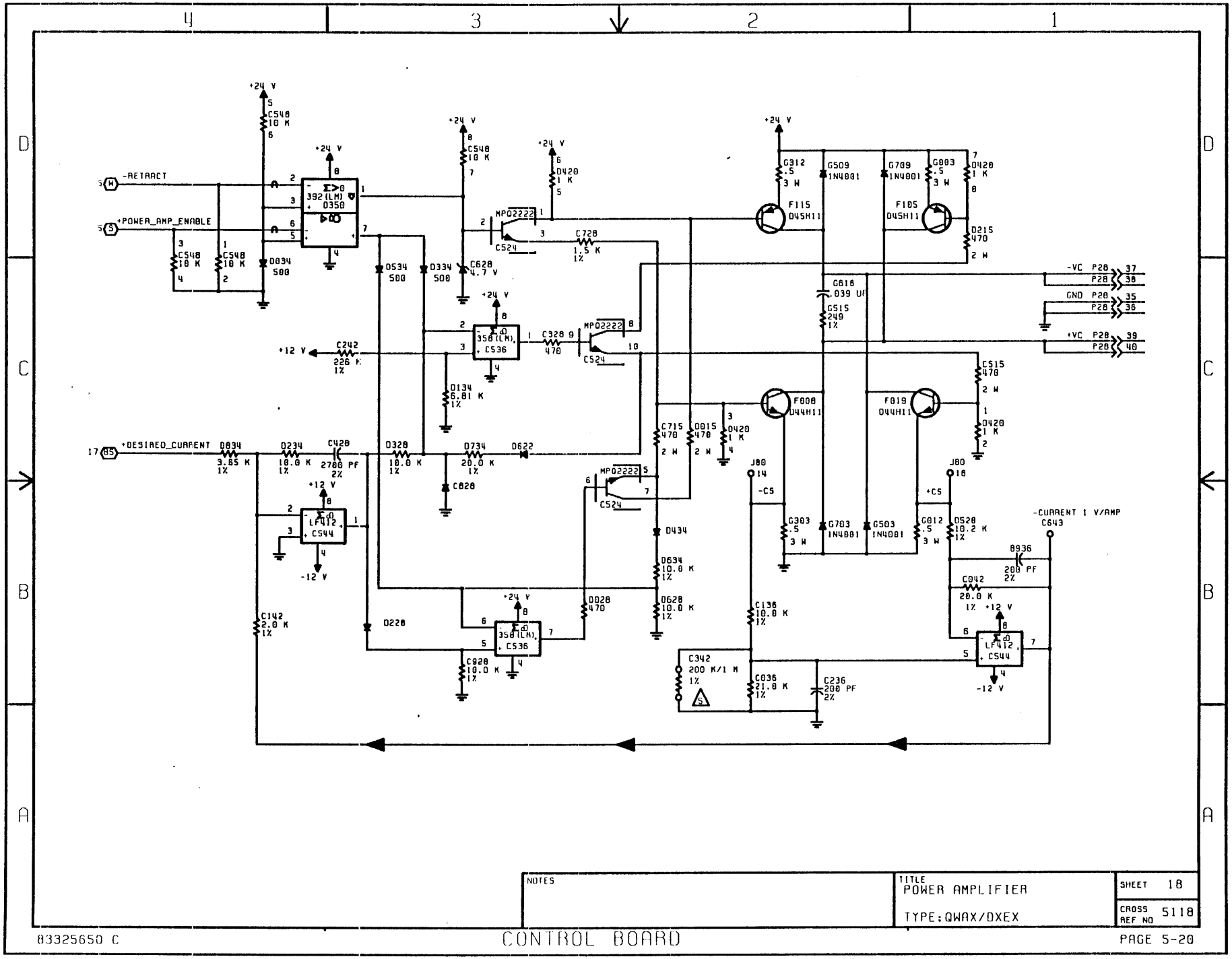
SHEET 15

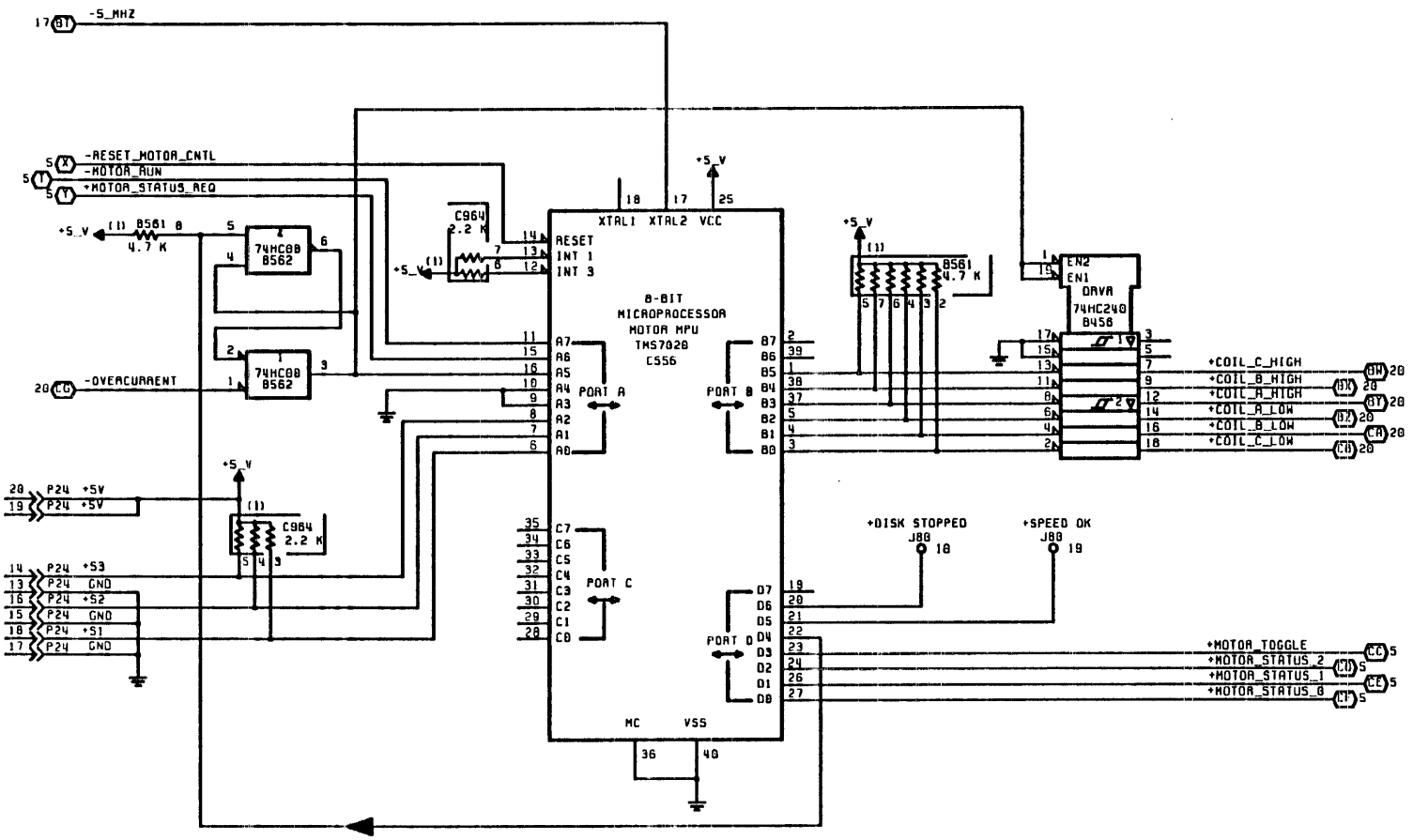
CROSS REF NO 5115



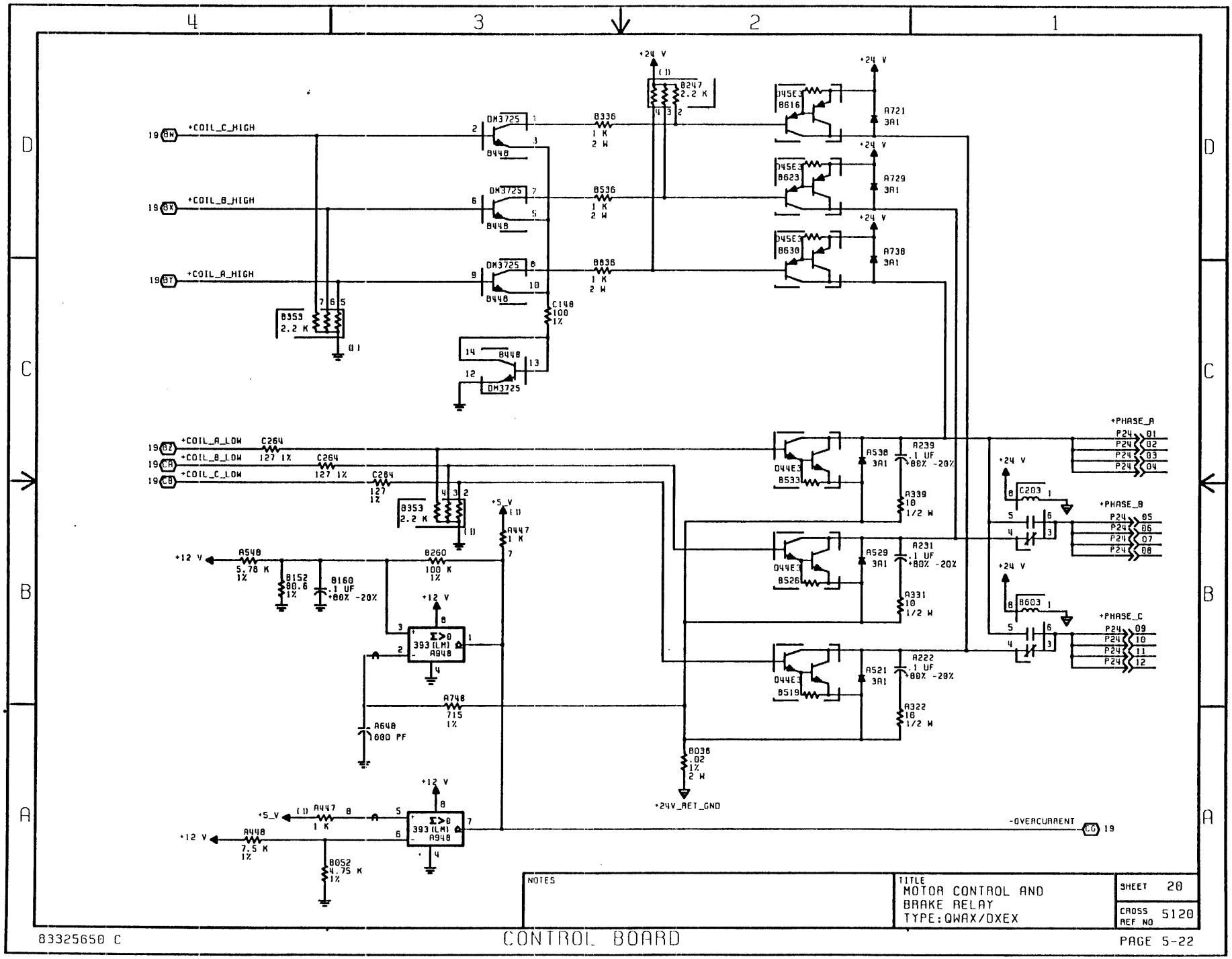
NOTES	TITLE	SHEET 16
	INTERCONNECTS	CROSS REF NO 5116
	TYPE: QWAX/DXEX	

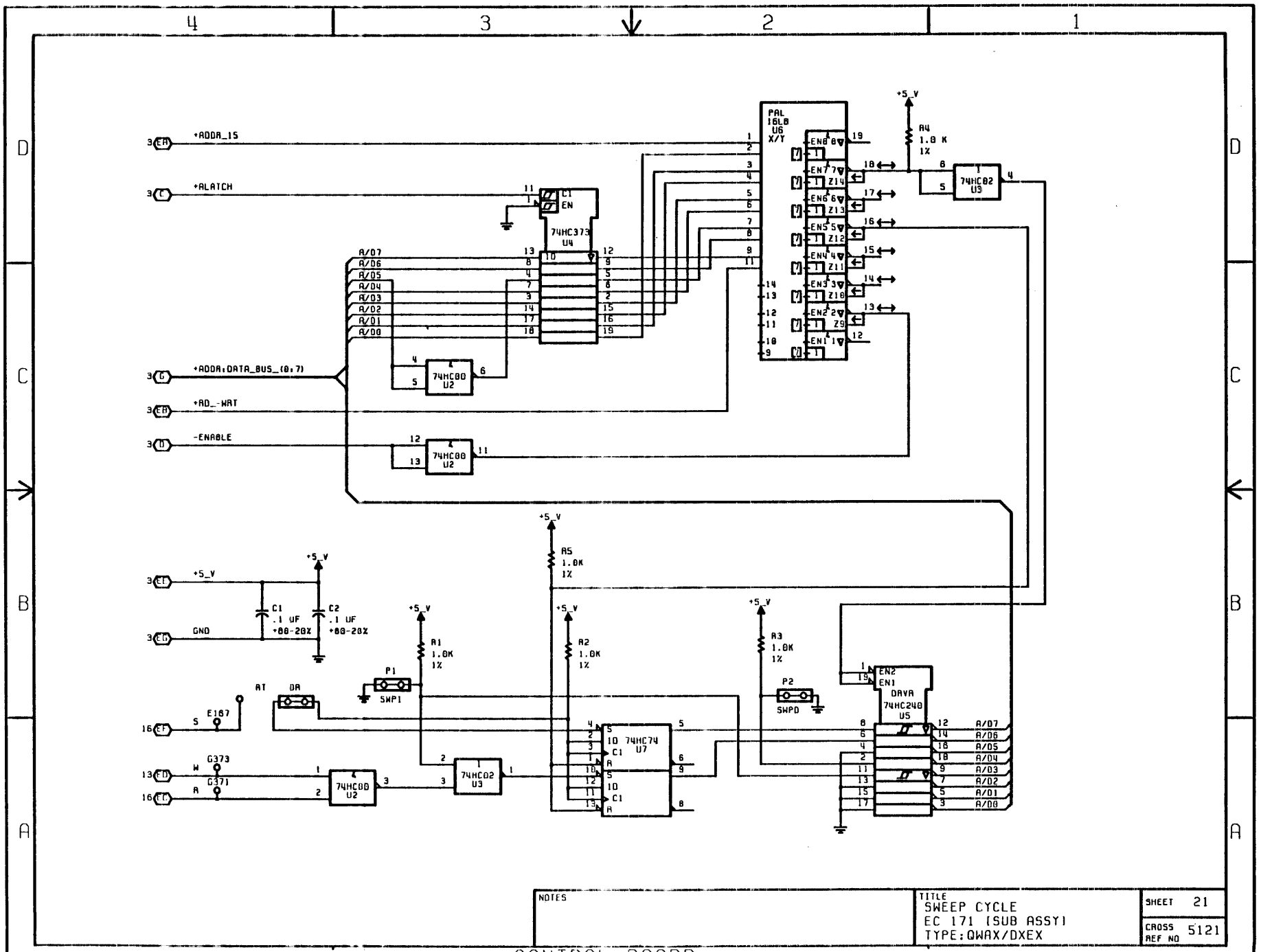

+DATA_BUS_(0:15)
+5_V
G649 3.9 K
74HC02 H824
RGTR 74LS174 G819
RGTR 74LS174 H115
+5 V FILTERED
H334
H029 .018 UF
H333
G929 100 K
H129 1.24 K 1%
+12 V
LF412 J015
+DESIRED_CURRENT
-12 V
H505 4.75 K 1%
H405 .01 UF
J209 10.0 K
H605 10.0 K 1%
J203 0/2.49 K
J303 511
-D:A_ENABLE
-SERVO_RESET
+10_V_REF
J711 100 UH
J603 10 UF 20% 35 V
J403 .1 UF +80% -20%
+5_MHZ_CLK
74F04 D850
D522 100
+SAMPLE:_-HOLD
+POSITION
J139 10.0 K 1%
398 (LF) J319
J513 560 PF 2%
J613 1000 PF 2%
N565 2.0 K 1%
74HC00 N767
LSI 6148 G524
BIN OFF /2'S COMPL
CLK
READ
START CONVERSION
CHIP ENBL
CONVERSION COMPL
D422 33 PF
G817 .01 UF
G909 10 UF 20% 35 V
G809 .1 UF +80% -20%
G902 100 UH
-5_V
-5_MHZ
P20 3.19
D648 4.7 K
-A:D_ENABLE_D
+A:D_START
NOTES
TITLE
DIGITAL SERVO
TYPE:QWAX/DXEX
SHEET 17
CROSS REF NO 5117


-RETRACT
+POWER_AMP_ENABLE
+DESIRED_CURRENT
-VC P28 37 P28 38
GND P28 35 P28 36
+VC P28 39 P28 40
-CURRENT 1 V/AMP C643
+24 V
+12 V
-12 V
-C5
+C5
J80 14
J80 16
NOTES
TITLE
POWER AMPLIFIER
TYPE:QWAX/DXEX
SHEET 18
CROSS REF NO 5118
83325650 C
CONTROL BOARD
PAGE 5-20



NOTES	TITLE: MOTOR MPU TYPE: QWAX/DXEX	SHEET 19 CROSS REF NO 5119


+COIL_C_HIGH
+COIL_B_HIGH
+COIL_A_HIGH
+COIL_A_LOW
+COIL_B_LOW
+COIL_C_LOW
+24 V
+5_V
+12 V
+24V_RET_GND
-OVERCURRENT
+PHASE_A
+PHASE_B
+PHASE_C
B336 1 K 2 W
B536 1 K 2 W
B836 1 K 2 W
B247 2.2 K
B353 2.2 K
C148 100 1%
C264 127 1%
A721 3A1
A729 3A1
A738 3A1
A538 3A1
A529 3A1
A521 3A1
A239 .1 UF +80% -20%
A231 .1 UF +80% -20%
A222 .1 UF +80% -20%
A339 10 1/2 W
A331 10 1/2 W
A322 10 1/2 W
A548 5.78 K 1%
B152 80.6 1%
B160 .1 UF +80% -20%
B260 100 K 1%
A447 1 K
A748 715 1%
A648 000 PF
B038 .02 1% 2 W
A448 7.5 K 1%
B052 4.75 K 1%
C203
B603
393 (LM)
NOTES
TITLE
MOTOR CONTROL AND BRAKE RELAY
TYPE: QWAX/DXEX
SHEET 20
CROSS REF NO 5120



NOTES

TITLE
SWEEP CYCLE
EC 171 (SUB ASSY)
TYPE:QWAX/DXEX

SHEET 21

CROSS REF NO 5121

SECTION 6

READ/WRITE DIAGRAMS

SECTION 6A

368 MB READ/WRITE BOARD

FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
J28	01	31/3202	P28-01
J28	02	31/3202	P28-02
J28	03	3101/3202	P28-03
J28	04	3101/3202	P28-04
J28	05	31/3202	P28-05
J28	06	31/3202	P28-06
J28	07	31/3202	P28-07
J28	08	31/3202	P28-08
J28	09	31/3202	P28-09
J28	10	31/3202	P28-10
J28	11	31/3202	P28-11
J28	12	31/3202	P28-12
J28	13	31/3202	P28-13
J28	14	31/3202	P28-14
J28	15	31/3202	P28-15
J28	16	31/3202	P28-16
J28	17	31/3201	P28-17
J28	18	31/3201	P28-18
J28	19	31/3201	P28-19
J28	20	31/3201	P28-20

FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
J28	21	31/3201	P28-21
J28	22	31/3201	P28-22
J28	23	31/3202	P28-23
J28	24	31/3202	P28-24
J28	25	31/3201	P28-25
J28	26	31/3201	P28-26
J28	27	5109	P28-27
J28	28	5109	P28-28
J28	29	31/3202	P28-29
J28	30	31/3202	P28-30
J28	31	5101	P28-31
J28	32	5101	P28-32
J28	33	5101	P28-33
J28	34	5101	P28-34
J28	35	5118	P28-35
J28	36	5118	P28-36
J28	37	5118	P28-37
J28	38	5118	P28-38
J28	39	5118	P28-39
J28	40	5118	P28-40

FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
J48	ALL		NC
P27	01	41/4207	J20-47
P27	02	41/4207	J20-43
P27	03	41/4207	J20-44
P27	04	41/4207	J20-48
P27	05	5113	J27-05
P27	06	41/4207	J20-57
P27	07	41/4207	J20-55
P27	08	41/4207	J20-58
P27	09	41/4207	J20-30
P27	10	41/4207	J20-26
P27	11	NC	J20-28
P27	12	41/4207	J20-53
P27	13	5113	J27-13
P27	14	5103	J27-14
P27	15	5101	J27-15
P27	16	5101	J27-16
P27	17	5101	J27-17
P27	18	5115	J27-18

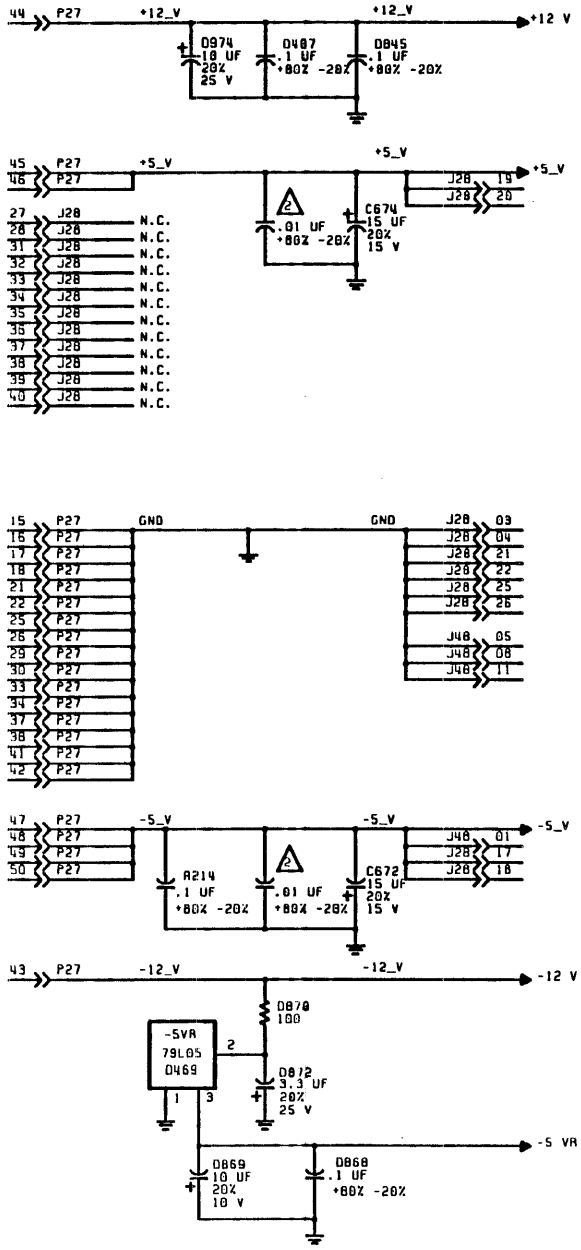
CROSS-REFERENCE LIST FOR READ/WRITE BOARD (Cross-Reference Numbers 6101 thru 6108), Sheet 1 of 2

FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
P27	19	5115	J27-19
P27	20	5115	J27-20
P27	21	5115	J27-21
P27	22	5114	J27-20
P27	23	5114	J27-23
P27	24	5114	J27-24
P27	25	5114	J27-25
P27	26	5115	J27-26
P27	27	5115	J27-27
P27	28	5115	J27-28
P27	29	5115	J27-29
P27	30	5114	J27-30
P27	31	5114	J27-31
P27	32	5114	J27-32
P27	33	5114	J27-33
P27	34	5114	J27-34
P27	35	5114	J27-35
P27	36	5114	J27-36
P27	37	5114	J27-37
P27	38	5107	J27-38

FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
P27	39	5107	J27-39
P27	40	5107	J27-40
P27	41	5107	J27-41
P27	42	5107	J27-42
P27	43	5101	J27-43
P27	44	5102	J27-44
P27	45	5101	J27-45
P27	46	5101	J27-46
P27	47	5101	J27-47
P27	48	5101	J27-48
P27	49	5101	J27-49
P27	50	5101	J27-50

CROSS-REFERENCE LIST FOR READ/WRITE BOARD (Cross-Reference Numbers 6101 thru 6108), Sheet 2 of 2

REVISION RECORD						
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APP
A	DJ23000 DJ29283	CLASS A RELEASE	BJP	04-16-87	S.S.	



NOTES:

1. UNLESS OTHERWISE SPECIFIED:

   ALL 14 PIN ICS HAVE PIN 7 CONNECTED TO GROUND AND PIN 14 CONNECTED TO +5V.

   ALL 16 PIN ICS HAVE PIN 8 CONNECTED TO GROUND AND PIN 16 CONNECTED TO +5V.

   ALL DIODES SILICON, 24553502.

   ALL RESISTOR PACK RESISTORS, 1/8 W 3%.

   ALL DELAY LINES, 94393901.

   ALL TRANSISTOR ARRAYS, PNP MPQ4258 15165543.

2. SEE TABLE FOR .01 UF FILTER CAPACITOR LOCATIONS.

3. DELAY TIME FOR REFERENCE ONLY.

4. TRANSISTOR ARRAY, NPN, MPQ2222, 50212600.

5. TRANSISTOR ARRAY, NPN, MPQ2369, 50213300.

6. RESISTORS C527 AND D459 MAY OR MAY NOT BE PRESENT. IF PRESENT, VALUE TO BE SELECTED FROM DRAWING 94357500 DURING CARD TEST. PER CARD TEST REQUIREMENTS.

7. HYBRID, LOW RESOLUTION 15185090.

8. HYBRID, HIGH RESOLUTION 15185080.

NOTES

1. THESE SCHEMATICS APPLY TO:
   CARD PN 54397305

TITLE

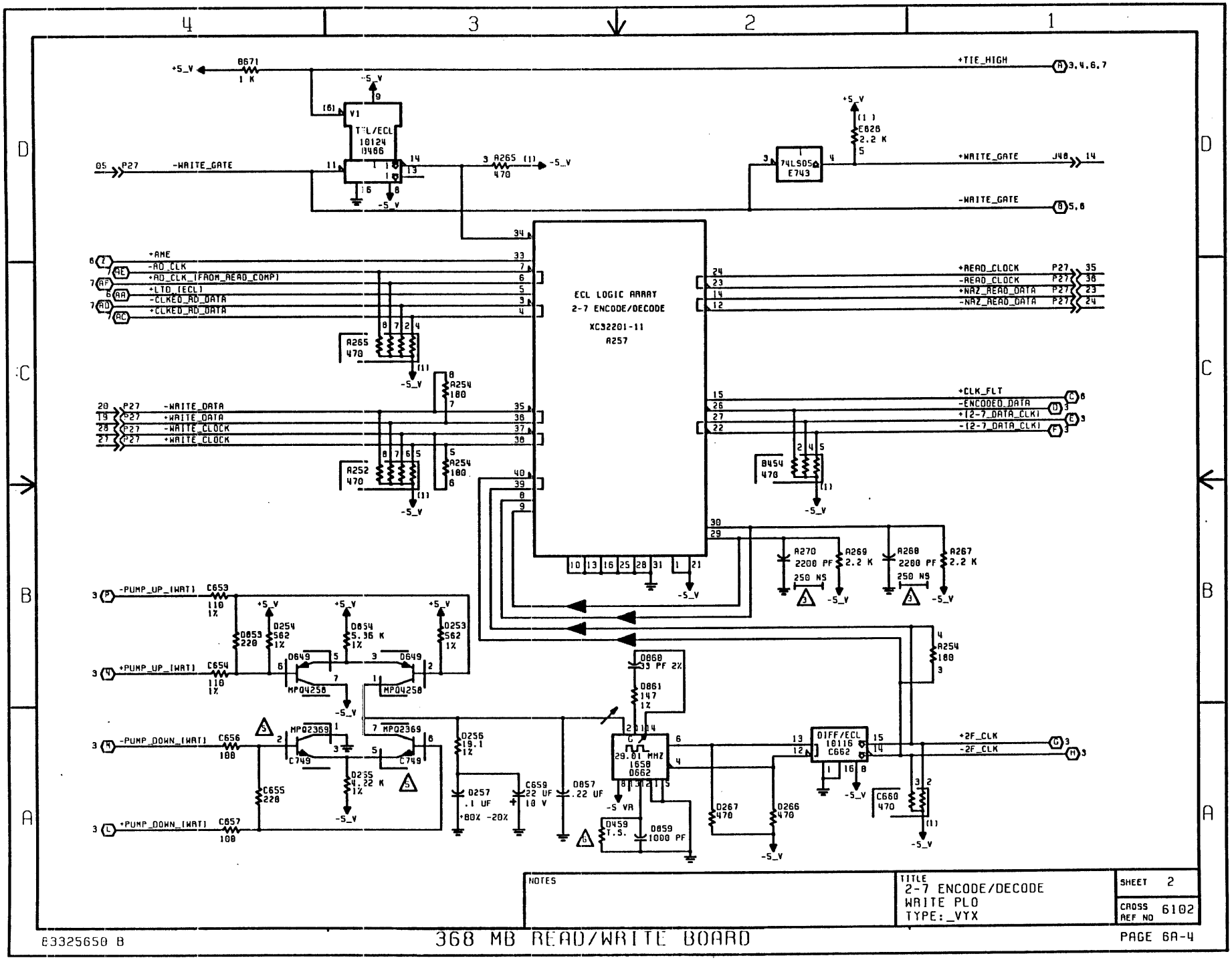
SCHEMATIC DIAGRAM
READ/WRITE PLO (368 MB)
TYPE: FVYX

FILE NO $610A

53397405

SHEET 1 OF 8

CROSS REF NO 6101

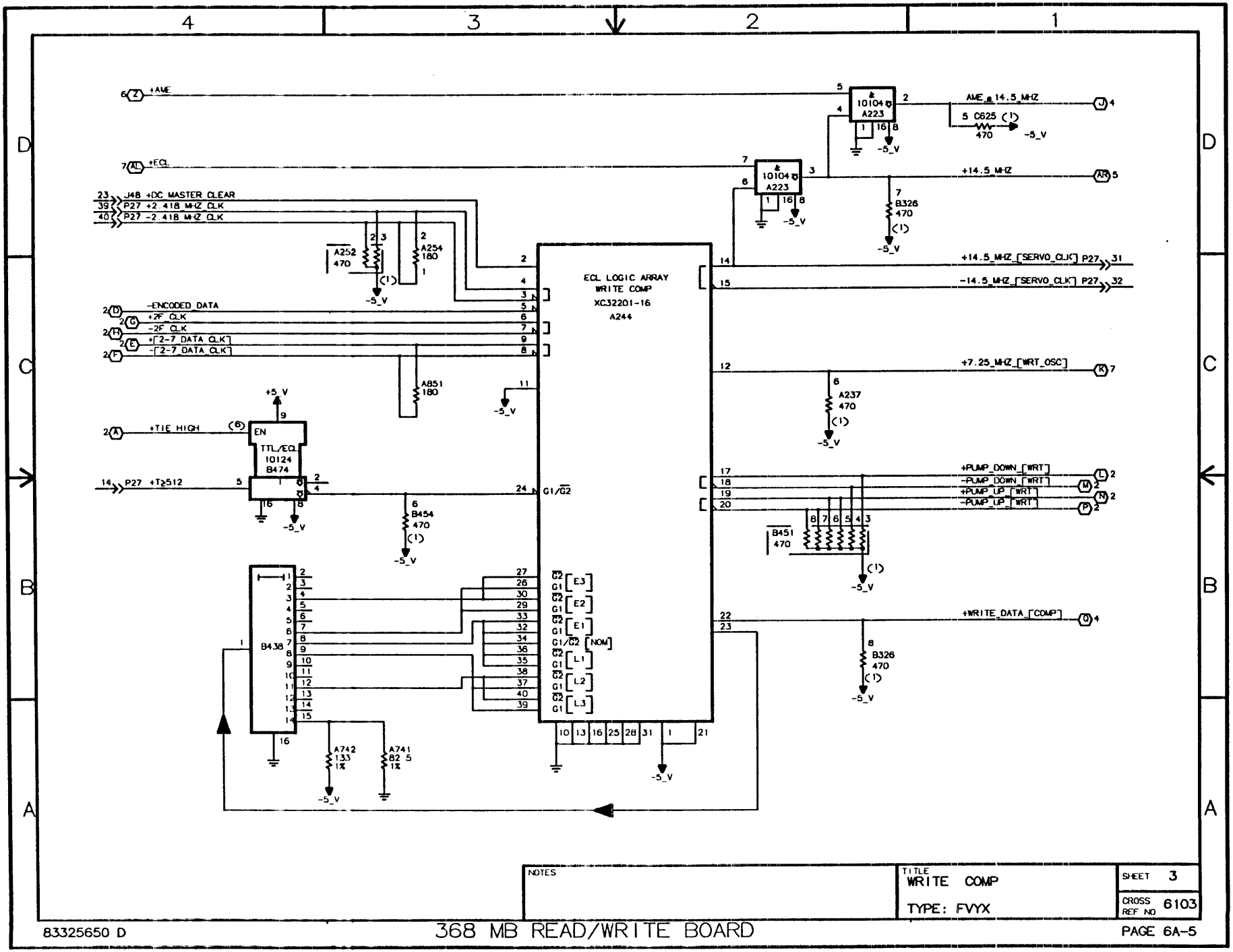


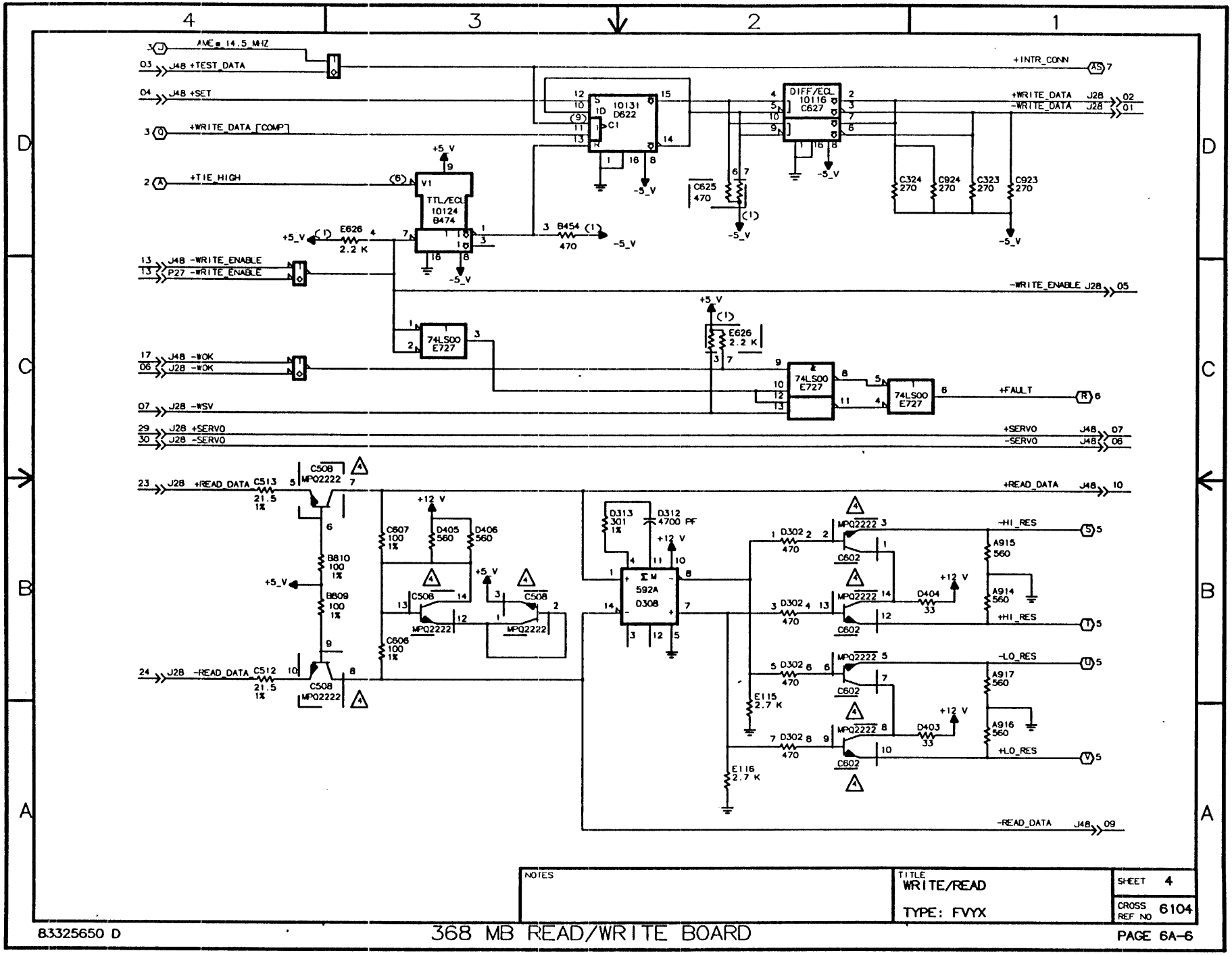
NOTES

TITLE
2-7 ENCODE/DECODE
WRITE PLO
TYPE:_VYX

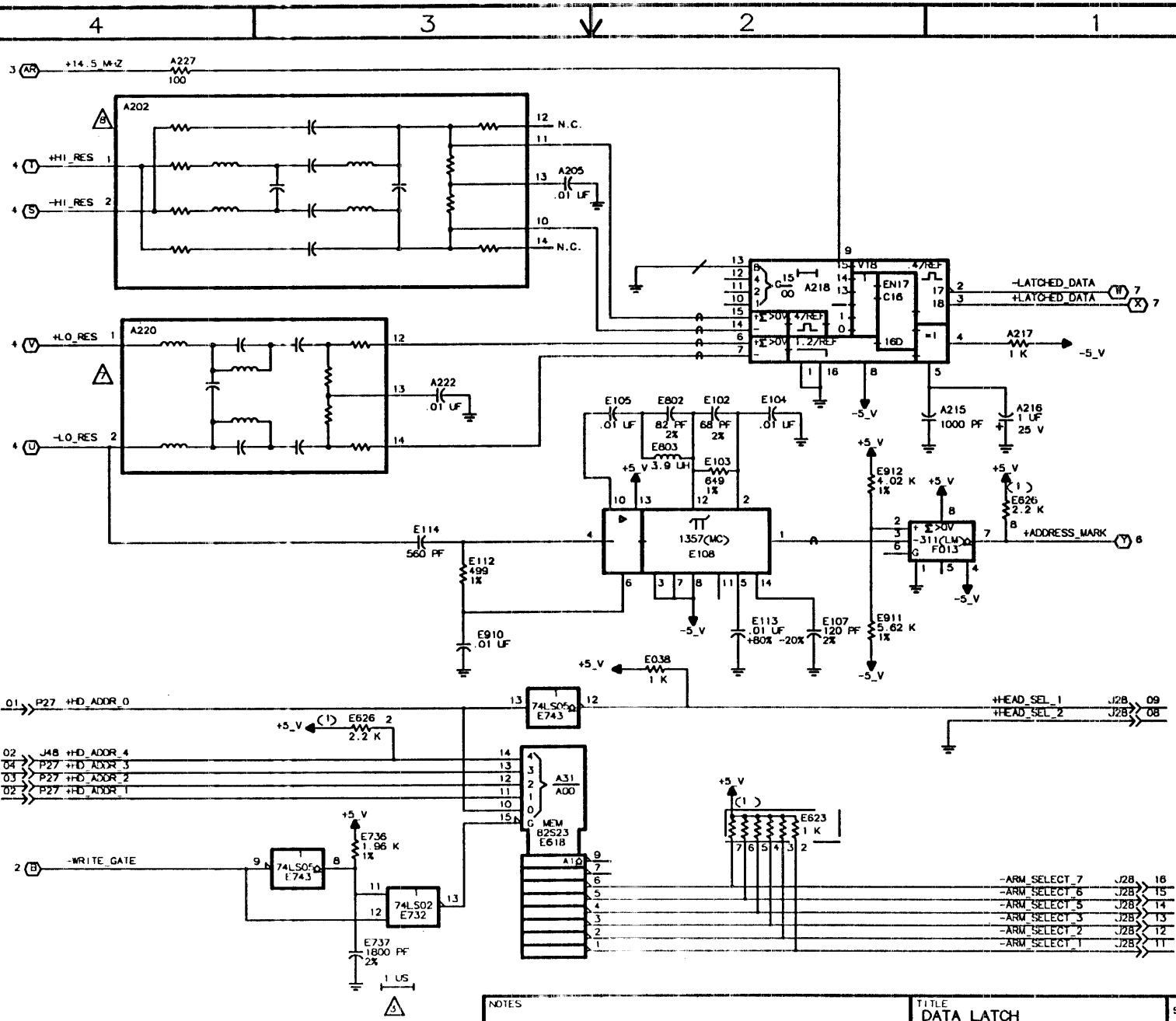
SHEET 2

CROSS REF NO 6102


4
3
2
1
D
C
B
A
ECL LOGIC ARRAY
WRITE COMP
XC32201-16
A244
+AME
+ECL
J48 +DC MASTER CLEAR
P27 +2 418 MHZ CLK
P27 -2 418 MHZ CLK
-ENCODED_DATA
+2F CLK
-2F CLK
+[2-7 DATA CLK]
-[2-7 DATA CLK]
+TIE HIGH
P27 +T≥512
AME_@ 14.5 MHZ
+14.5 MHZ
+14.5 MHZ [SERVO CLK] P27
-14.5 MHZ [SERVO CLK] P27
+7.25 MHZ [WRT OSC]
+PUMP DOWN [WRT]
-PUMP DOWN [WRT]
+PUMP UP [WRT]
-PUMP UP [WRT]
+WRITE DATA [COMP]
-5_V
+5_V
NOTES
TITLE
WRITE COMP
TYPE: FVYX
SHEET 3
CROSS REF NO 6103
83325650 D
368 MB READ/WRITE BOARD
PAGE 6A-5



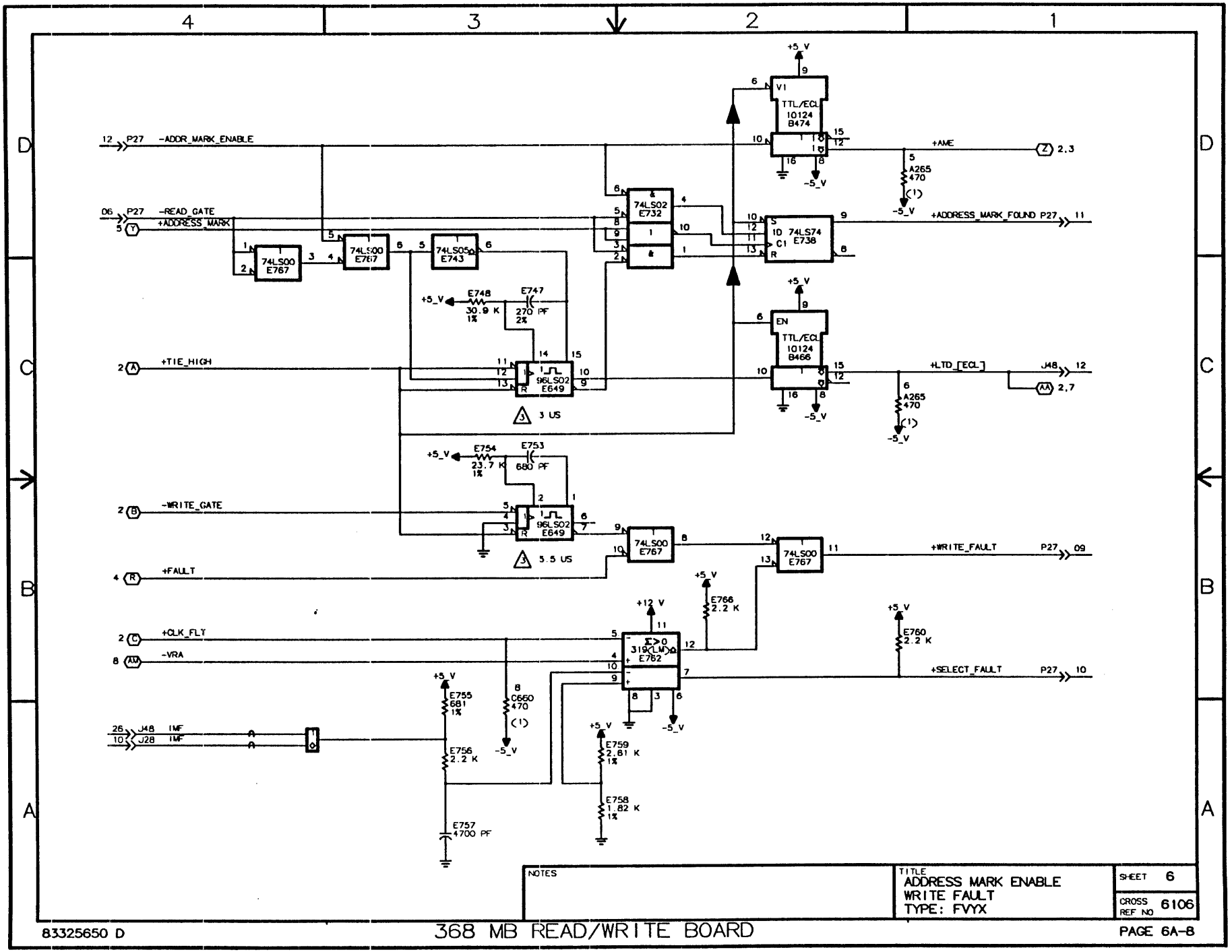
NOTES	TITLE	SHEET
	WRITE/READ	4
	TYPE: FVYX	CROSS REF NO 6104

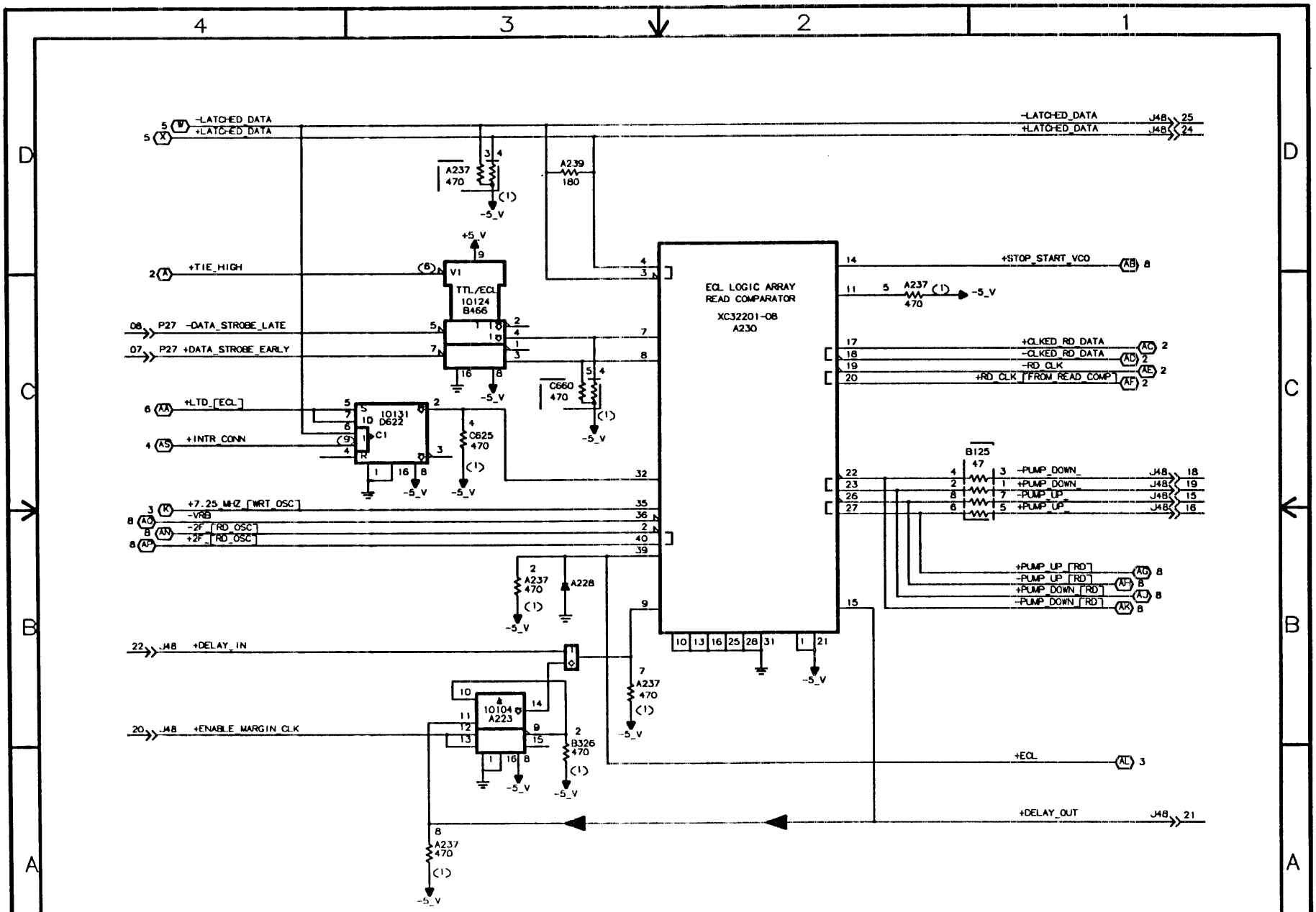


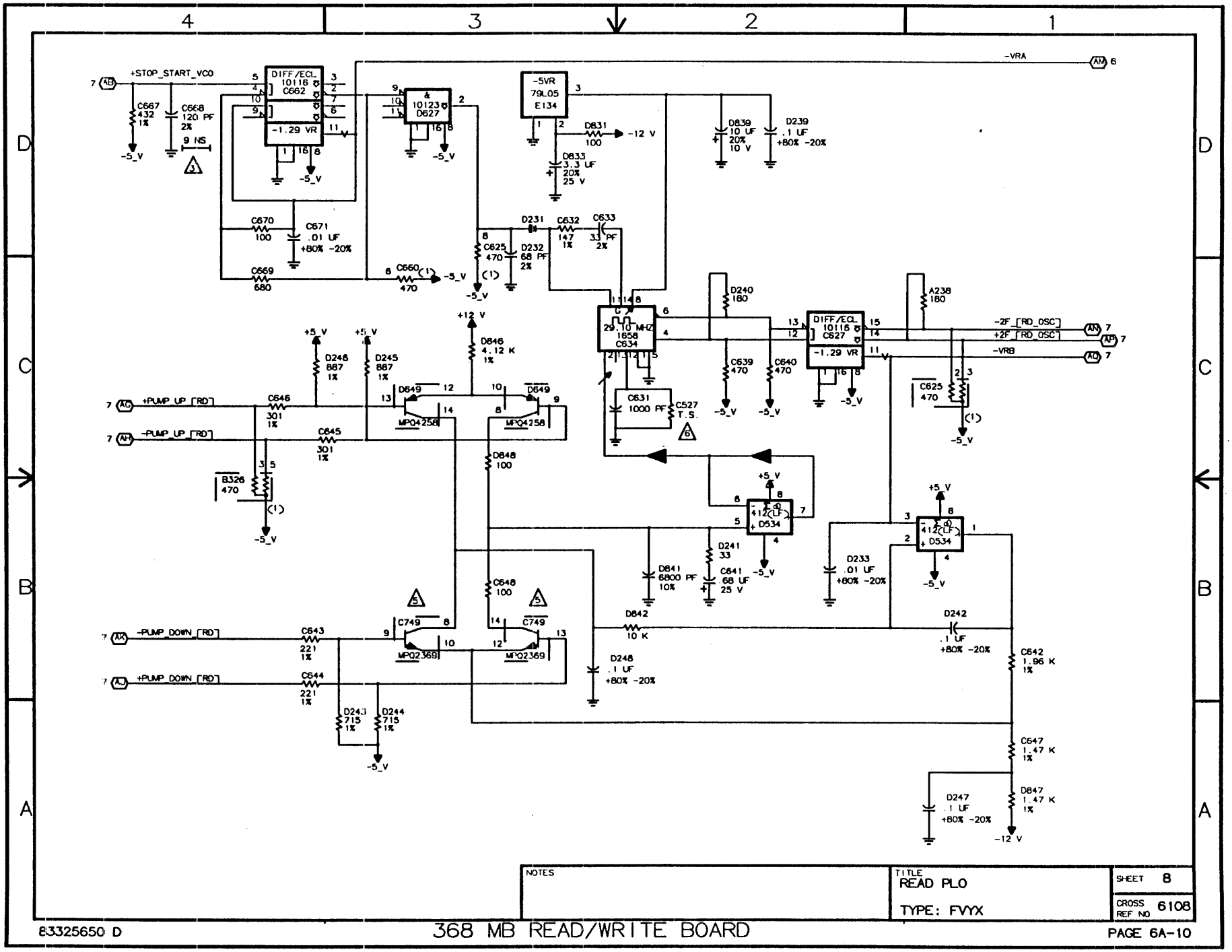
NOTES

TITLE
DATA LATCH
READ ADDRESS MARK DETECTOR
TYPE: FVYX

SHEET 5
CROSS REF NO 6105


4
3
2
1
D
C
B
A
12 P27 -ADDR_MARK_ENABLE
06 P27 -READ_GATE
5 Y +ADDRESS_MARK
2 A +TIE_HIGH
2 B -WRITE_GATE
4 R +FAULT
2 C +CLK_FLT
8 AM -VRA
26 J48 IMF
10 J28 IMF
74LS00 E767
74LS00 E767
74LS05 E743
74LS02 E732
74LS74 E738
96LS02 E649
96LS02 E649
74LS00 E767
74LS00 E767
TTL/ECL 10124 B474
TTL/ECL 10124 B466
319 LM E762
E748 30.9 K 1%
E747 270 PF 2%
E754 23.7 K 1%
E753 680 PF
E755 681 1%
E756 2.2 K
E757 4700 PF
C660 470
E759 2.81 K 1%
E758 1.82 K 1%
E766 2.2 K
E760 2.2 K
A265 470
3 US
3 5.5 US
+5_V
-5_V
+12 V
+AME
Z 2.3
+ADDRESS_MARK_FOUND P27 11
+LTD_[ECL]
J48 12
AA 2,7
+WRITE_FAULT P27 09
+SELECT_FAULT P27 10
NOTES
TITLE
ADDRESS MARK ENABLE
WRITE FAULT
TYPE: FVYX
SHEET 6
CROSS REF NO 6106
83325650 D
368 MB READ/WRITE BOARD
PAGE 6A-8


4
3
2
1
D
C
B
A
-LATCHED_DATA
+LATCHED_DATA
J48 25
J48 24
A237 470
A239 180
-5_V
+5_V
+TIE_HIGH
TTL/ECL 10124 B466
P27 -DATA_STROBE_LATE
P27 +DATA_STROBE_EARLY
C660 470
+LTD_[ECL]
+INTR_CONN
10131 1D D622
C625 470
ECL LOGIC ARRAY READ COMPARATOR
XC32201-08
A230
+STOP_START_VCO
+CLKED_RD_DATA
-CLKED_RD_DATA
-RD_CLK
+RD_CLK [FROM READ_COMP]
B125 47
-PUMP_DOWN_
+PUMP_DOWN
-PUMP_UP
+PUMP_UP
+7.25_MHZ [WRT_OSC]
-VRB
-2F [RD_OSC]
+2F [RD_OSC]
A228
+PUMP_UP [RD]
-PUMP_UP [RD]
+PUMP_DOWN [RD]
-PUMP_DOWN [RD]
+DELAY_IN
+ENABLE_MARGIN_CLK
10104 A223
B326 470
+ECL
+DELAY_OUT
NOTES
TITLE
READ COMPARATOR
TYPE: FVYX
SHEET 7
CROSS REF NO 6107
83325650 D
368 MB READ/WRITE BOARD
PAGE 6A-9


4
3
2
1
D
C
B
A
+STOP_START_VCO
DIFF/ECL 10116 C662
-1.29 VR
10123 D627
-5VR 79L05 E134
-VRA
C667 432 1%
C668 120 PF 2%
9 NS
C670 100
C671 .01 UF +80% -20%
C669 680
C660 470
D831 100
-12 V
D833 3.3 UF 20% 25 V
D839 10 UF 20% 10 V
D239 .1 UF +80% -20%
D231
C632 147 1%
C633 33 PF 2%
C625 470
D232 68 PF 2%
29.10 MHZ 1658 C634
C631 1000 PF
C527 T.S.
D240 180
C639 470
C640 470
DIFF/ECL 10116 C627
A238 180
-2F_[RD_OSC]
+2F_[RD_OSC]
-VRB
C625 470
+12 V
D846 4.12 K 1%
D248 887 1%
D245 887 1%
+PUMP_UP_[RD]
-PUMP_UP_[RD]
C646 301 1%
C645 301 1%
MPQ4258
D649
B326 470
D848 100
D534
D241 33
C641 .68 UF 25 V
D841 6800 PF 10%
D233 .01 UF +80% -20%
D242 .1 UF +80% -20%
C642 1.96 K 1%
C647 1.47 K 1%
D847 1.47 K 1%
D247 .1 UF +80% -20%
C648 100
C749
MPQ2369
-PUMP_DOWN_[RD]
+PUMP_DOWN_[RD]
C643 221 1%
C644 221 1%
D842 10 K
D248 .1 UF +80% -20%
D243 715 1%
D244 715 1%
-5_V
+5_V
NOTES
TITLE
READ PLO
TYPE: FVYX
SHEET 8
CROSS REF NO 6108
83325650 D
368 MB READ/WRITE BOARD
PAGE 6A-10

SECTION 6B

500 MB READ/WRITE BOARD

FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
J28	01	31/3202	P28-01
J28	02	31/3202	P28-02
J28	03	3101/3202	P28-03
J28	04	3101/3202	P28-04
J28	05	31/3202	P28-05
J28	06	31/3202	P28-06
J28	07	31/3202	P28-07
J28	08	31/3202	P28-08
J28	09	31/3202	P28-09
J28	10	31/3202	P28-10
J28	11	31/3202	P28-11
J28	12	31/3202	P28-12
J28	13	31/3202	P28-13
J28	14	31/3202	P28-14
J28	15	31/3202	P28-15
J28	16	31/3202	P28-16
J28	17	31/3201	P28-17
J28	18	31/3201	P28-18
J28	19	31/3201	P28-19
J28	20	31/3201	P28-20

FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
J28	21	31/3201	P28-21
J28	22	31/3201	P28-22
J28	23	31/3202	P28-23
J28	24	31/3202	P28-24
J28	25	31/3201	P28-25
J28	26	31/3201	P28-26
J28	27	5109	P28-27
J28	28	5109	P28-28
J28	29	31/3202	P28-29
J28	30	31/3202	P28-30
J28	31	5101	P28-31
J28	32	5101	P28-32
J28	33	5101	P28-33
J28	34	5101	P28-34
J28	35	5118	P28-35
J28	36	5118	P28-36
J28	37	5118	P28-37
J28	38	5118	P28-38
J28	39	5118	P28-39
J28	40	5118	P28-40

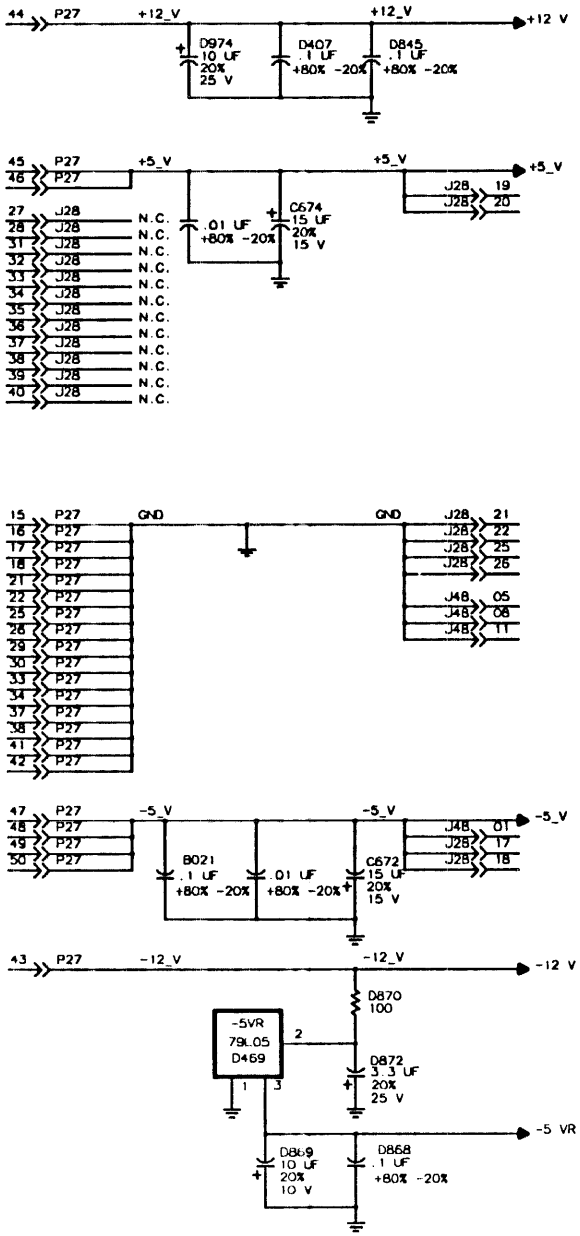
FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
J48	ALL		NC
P27	01	41/4207	J20-47
P27	02	41/4207	J20-43
P27	03	41/4207	J20-44
P27	04	41/4207	J20-48
P27	05	5113	J27-05
P27	06	41/4207	J20-57
P27	07	41/4207	J20-55
P27	08	41/4207	J20-58
P27	09	41/4207	J20-30
P27	10	41/4207	J20-26
P27	11	NC	J20-28
P27	12	41/4207	J20-53
P27	13	5113	J27-13
P27	14	5103	J27-14
P27	15	5101	J27-15
P27	16	5101	J27-16
P27	17	5101	J27-17
P27	18	5115	J27-18

CROSS-REFERENCE LIST FOR READ/WRITE BOARD (Cross-Reference Numbers 6201 thru 6208), Sheet 1 of 2

FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
P27	19	5115	J27-19
P27	20	5115	J27-20
P27	21	5115	J27-21
P27	22	5114	J27-20
P27	23	5114	J27-23
P27	24	5114	J27-24
P27	25	5114	J27-25
P27	26	5115	J27-26
P27	27	5115	J27-27
P27	28	5115	J27-28
P27	29	5115	J27-29
P27	30	5114	J27-30
P27	31	5114	J27-31
P27	32	5114	J27-32
P27	33	5114	J27-33
P27	34	5114	J27-34
P27	35	5114	J27-35
P27	36	5114	J27-36
P27	37	5114	J27-37
P27	38	5107	J27-38

FROM		TO	
Plug / Pin		Cross Ref No.	Plug/Pin
P27	39	5107	J27-39
P27	40	5107	J27-40
P27	41	5107	J27-41
P27	42	5107	J27-42
P27	43	5101	J27-43
P27	44	5102	J27-44
P27	45	5101	J27-45
P27	46	5101	J27-46
P27	47	5101	J27-47
P27	48	5101	J27-48
P27	49	5101	J27-49
P27	50	5101	J27-50

CROSS-REFERENCE LIST FOR READ/WRITE BOARD (Cross-Reference Numbers 6201 thru 6208), Sheet 2 of 2



REVISION RECORD						
REV	ECO	DESCRIPTION	DRN	DATE	CHK	APP
A	DJ23000 DJ29322	CLASS B RELEASE BY ECO	D.N.	06-24-8	S.S.	
B	DJ29852	CLASS A RELEASED	SKJ	13-06-85		

NOTES:

1 UNLESS OTHERWISE SPECIFIED:

ALL 14 PIN ICS HAVE PIN 7 CONNECTED TO GROUND AND PIN 14 CONNECTED TO +5V.

ALL 16 PIN ICS HAVE PIN 8 CONNECTED TO GROUND AND PIN 16 CONNECTED TO +5V.

ALL DIODES SILICON, 24553502.

ALL RESISTOR PACK RESISTORS, 1/8 W 3%.

ALL DELAY LINES, 94393900.

ALL TRANSISTOR ARRAYS, PNP MPQ4258 15165543.

2 USED ON BWYX ONLY.

3 DELAY TIME FOR REFERENCE ONLY.

4 TRANSISTOR ARRAY, NPN, MPQ2222, 50212600.

5 TRANSISTOR ARRAY, NPN, MPQ2369, 50213300.

6 RESISTORS C527 AND D459 MAY OR MAY NOT BE PRESENT. IF PRESENT, VALUE TO BE SELECTED FROM DRAWING 94357500 DURING CARD TEST, PER CARD TEST REQUIREMENTS.

NOTES

1. THESE SCHEMATICS APPLY TO: CARD PN 54406901-03

TITLE

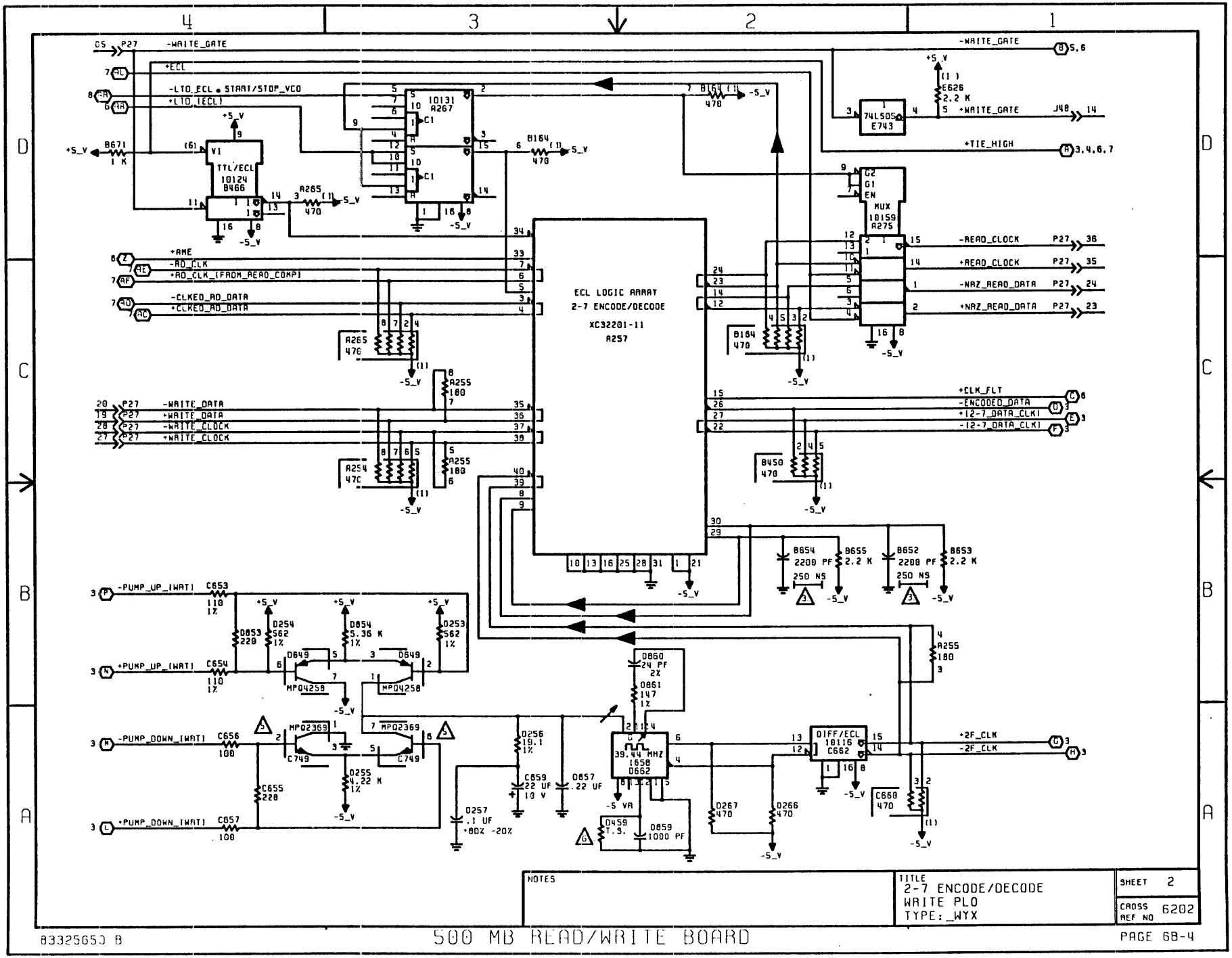
SCHEMATIC DIAGRAM
READ/WRITE (500 MB)
TYPE: BWYX/CWYX

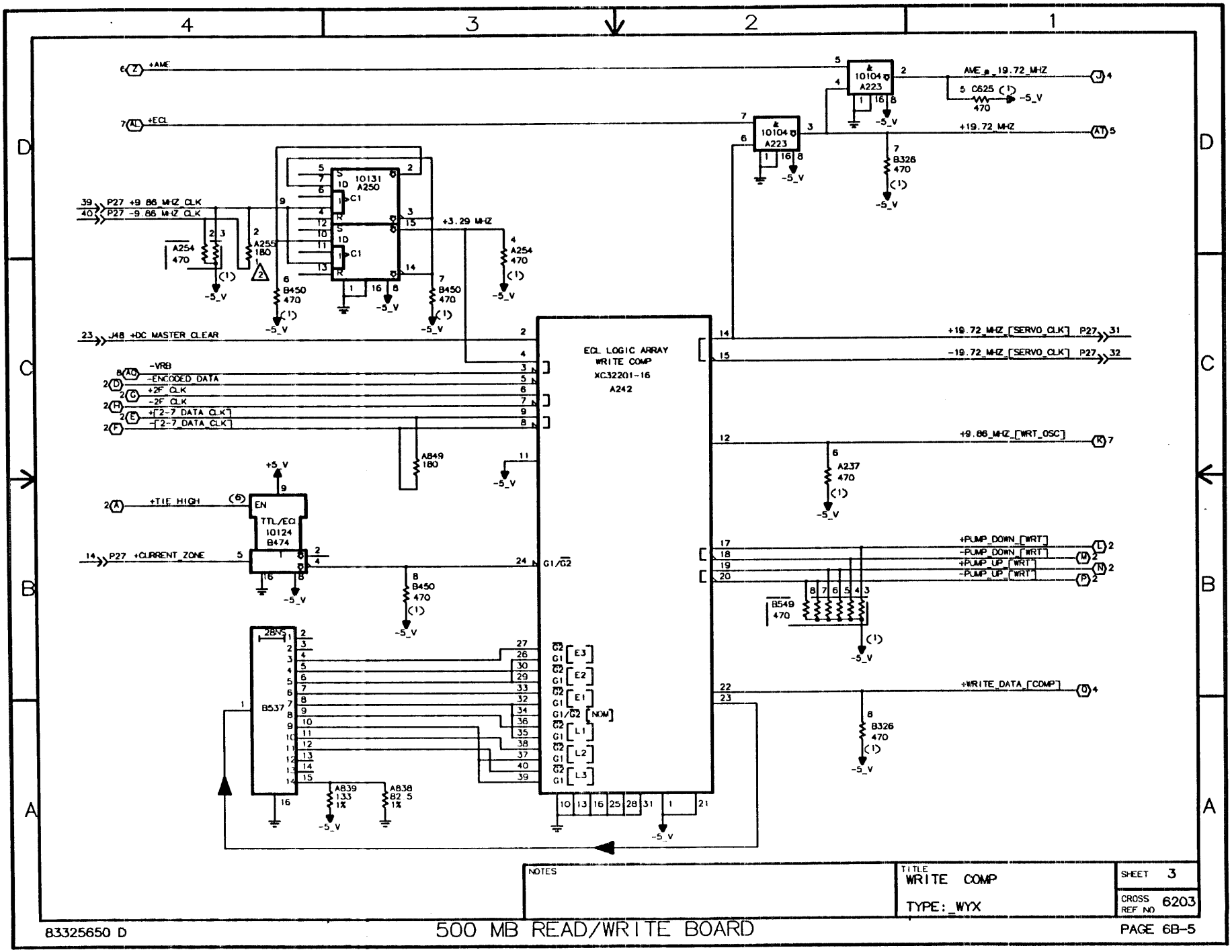
FILE NO 5620A

54407003

SHEET 1 OF 8

CROSS REF NO 6201

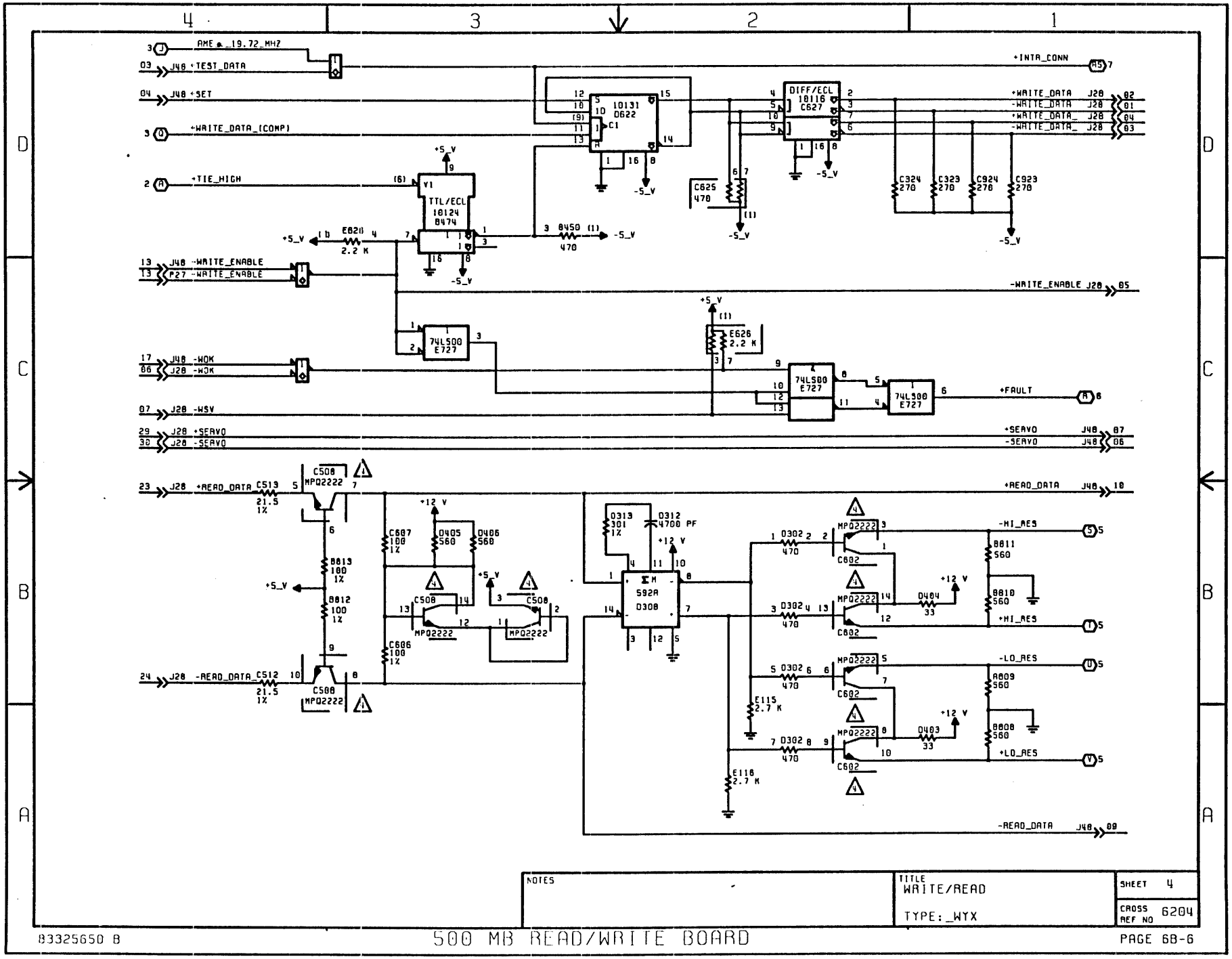

-WRITE_GATE
+ECL
-LTO_ECL • START/STOP_VCO
+LTO_(ECL)
-WRITE_DATA
+WRITE_DATA
-WRITE_CLOCK
+WRITE_CLOCK
+AME
-RD_CLK
+RD_CLK_(FROM_READ_COMP)
-CLKED_RD_DATA
+CLKED_RD_DATA
ECL LOGIC ARRAY
2-7 ENCODE/DECODE
XC32201-11
A257
-READ_CLOCK
+READ_CLOCK
-NRZ_READ_DATA
+NRZ_READ_DATA
+CLK_FLT
-ENCODED_DATA
+12-7_DATA_CLK
-12-7_DATA_CLK
-PUMP_UP_(WAT)
+PUMP_UP_(WAT)
-PUMP_DOWN_(WAT)
+PUMP_DOWN_(WAT)
39.44 MHZ
+2F_CLK
-2F_CLK
+TIE_HIGH
NOTES
TITLE
2-7 ENCODE/DECODE
WRITE PLO
TYPE: _WYX
SHEET 2
CROSS REF NO 6202
8332565J B
500 MB READ/WRITE BOARD
PAGE 6B-4



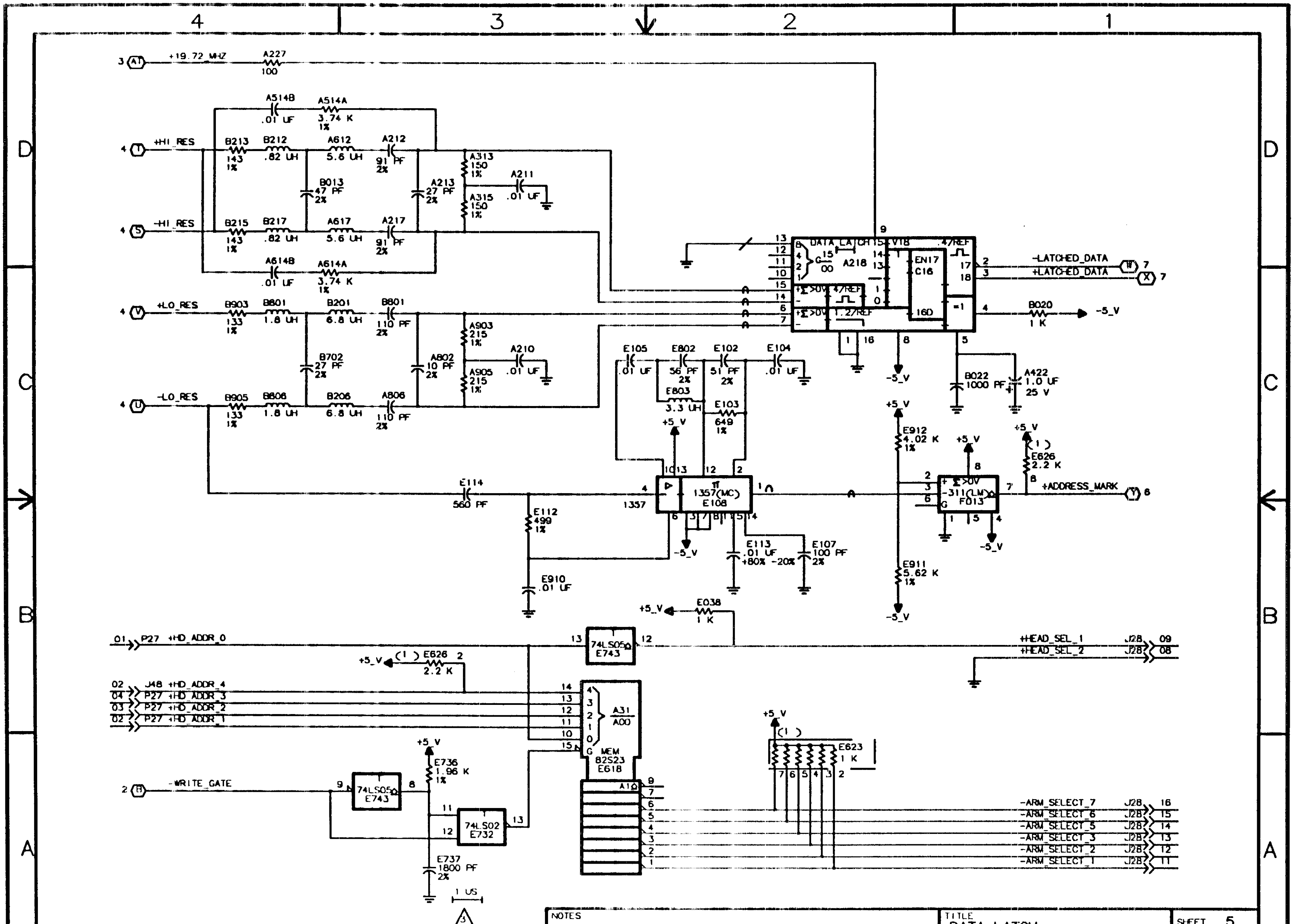
NOTES

TITLE
WRITE COMP
TYPE: WYX

SHEET 3
CROSS REF NO 6203



NOTES	TITLE	SHEET
	WRITE/READ	4
	TYPE: _WTX	CROSS REF NO 6204

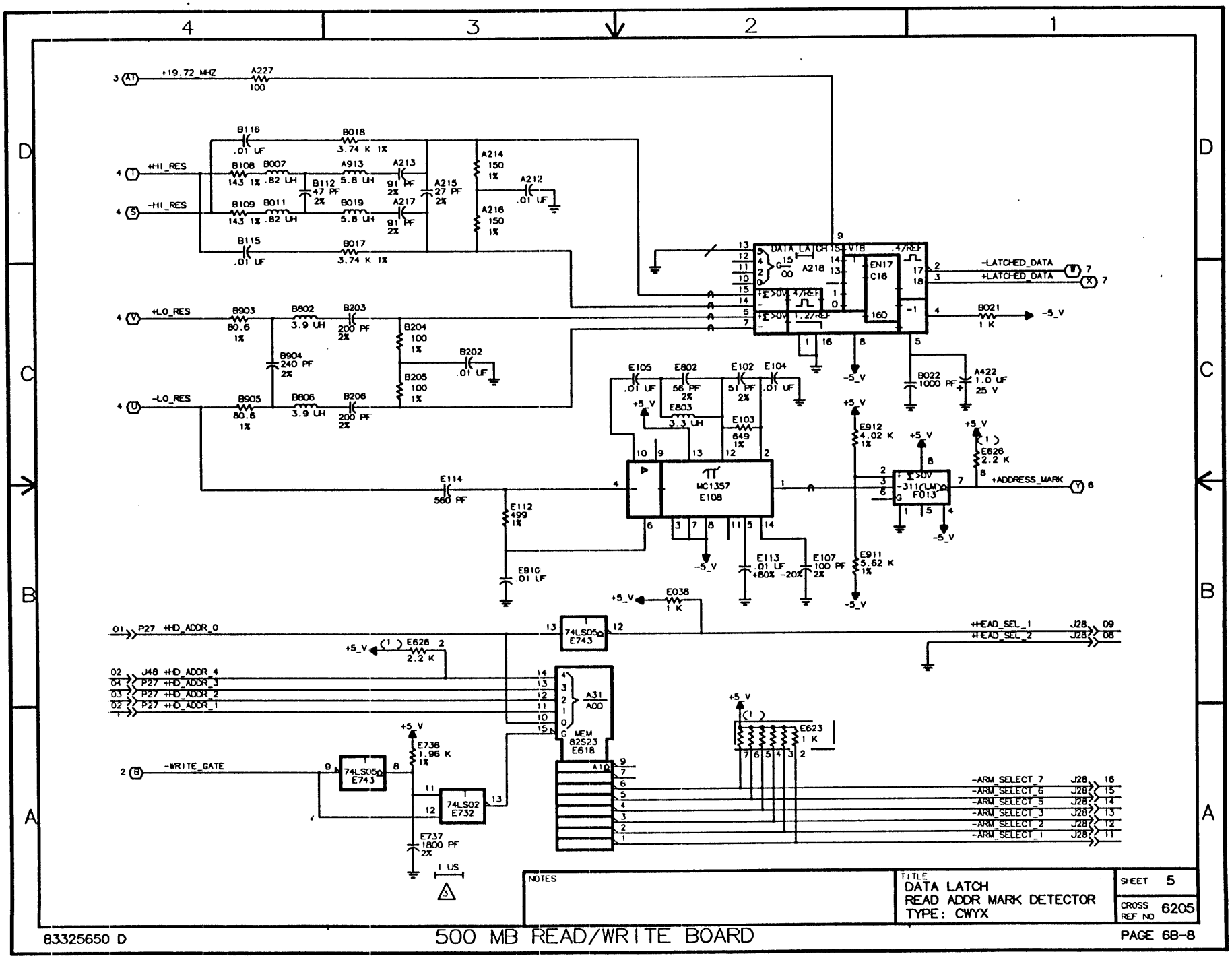


NOTES

TITLE
DATA LATCH
READ ADDR MARK DETECTOR
TYPE:BWYX

SHEET 5

CROSS REF NO 6205

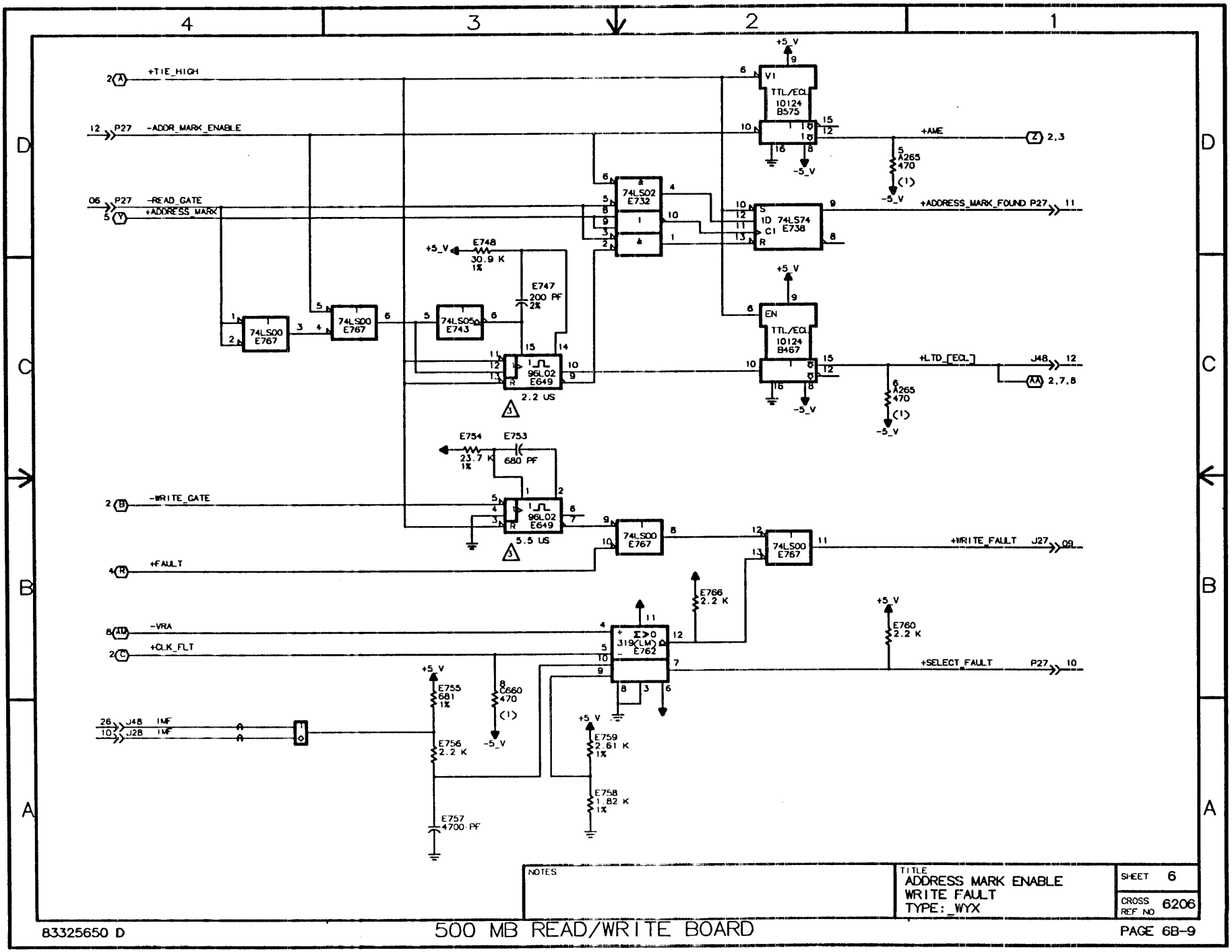


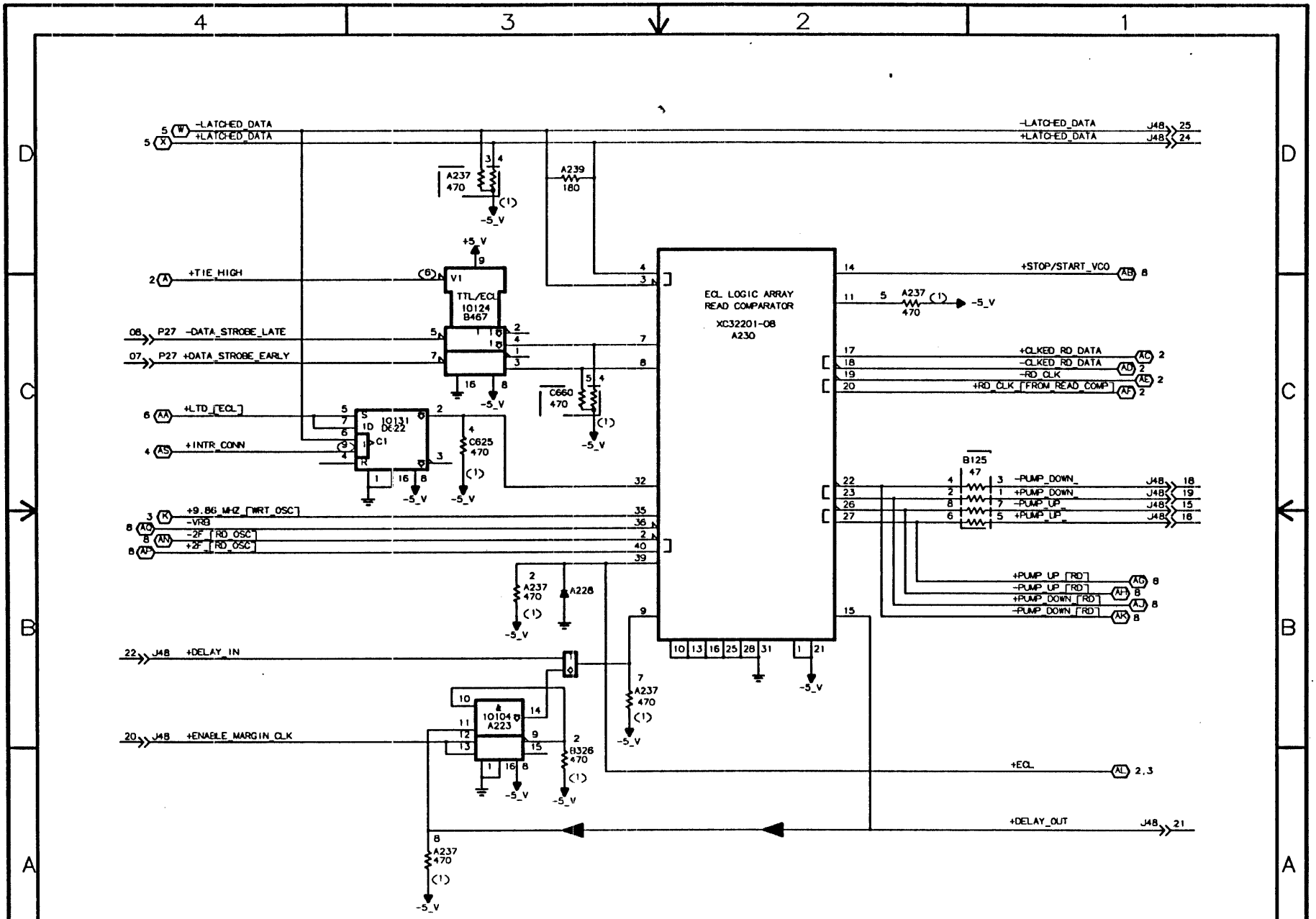
NOTES

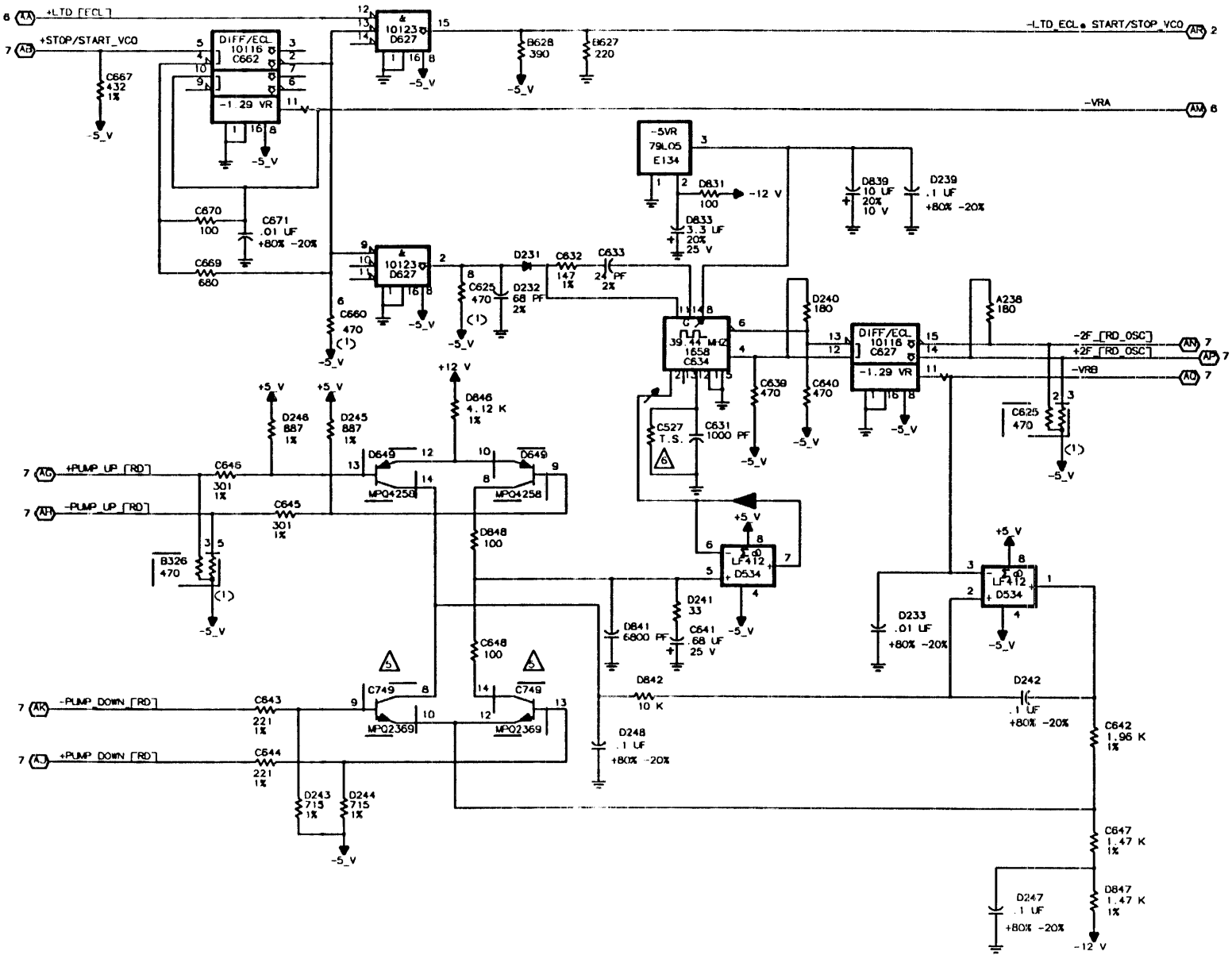
TITLE
DATA LATCH
READ ADDR MARK DETECTOR
TYPE: CWYX

SHEET 5

CROSS REF NO 6205


4
3
2
1
D
C
B
A
+TIE_HIGH
-ADDR_MARK_ENABLE
-READ_GATE
+ADDRESS_MARK
-WRITE_GATE
+FAULT
-VRA
+CLK_FLT
+5_V
-5_V
V1
TTL/ECL
10124
B575
+AME
+ADDRESS_MARK_FOUND P27
74LS02
E732
74LS74
E738
74LS00
E767
74LS05
E743
E748
30.9 K
1%
E747
200 PF
2%
96L02
E649
2.2 US
EN
B467
+LTD_[ECL]
J48
E754
23.7 K
1%
E753
680 PF
5.5 US
+WRITE_FAULT
J27
E766
2.2 K
E760
2.2 K
319(LM)
E762
+SELECT_FAULT
P27
E755
681
1%
C660
470
(1)
E756
2.2 K
E757
4700 PF
E759
2.61 K
1%
E758
1.82 K
1%
A265
470
(1)
J48 IMF
J28 IMF
NOTES
TITLE
ADDRESS MARK ENABLE
WRITE FAULT
TYPE: WYX
SHEET 6
CROSS REF NO 6206
83325650 D
500 MB READ/WRITE BOARD
PAGE 6B-9


-LATCHED_DATA
+LATCHED_DATA
A237 470
A239 180
-5_V
+5_V
+TIE_HIGH
TTL/ECL 10124 B467
P27 -DATA_STROBE_LATE
P27 +DATA_STROBE_EARLY
+LTD_ECL
+INTR_CONN
10131 DC22
C660 470
C625 470
ECL LOGIC ARRAY READ COMPARATOR
XC32201-08
A230
+STOP/START_VCO
+CLKED_RD_DATA
-CLKED_RD_DATA
-RD_CLK
+RD_CLK FROM_READ_COMP
B125 47
-PUMP_DOWN_
+PUMP_DOWN_
-PUMP_UP_
+PUMP_UP_
+9.86_MHZ WRT_OSC
-VRB
-2F RD_OSC
+2F RD_OSC
A228
+DELAY_IN
+ENABLE_MARGIN_CLK
10104 A223
B326 470
+ECL
+DELAY_OUT
J48
NOTES
TITLE
READ COMPARATOR
TYPE: _WYX
SHEET 7
CROSS REF NO 6207



NOTES

TITLE
READ PLO

TYPE: _WYX

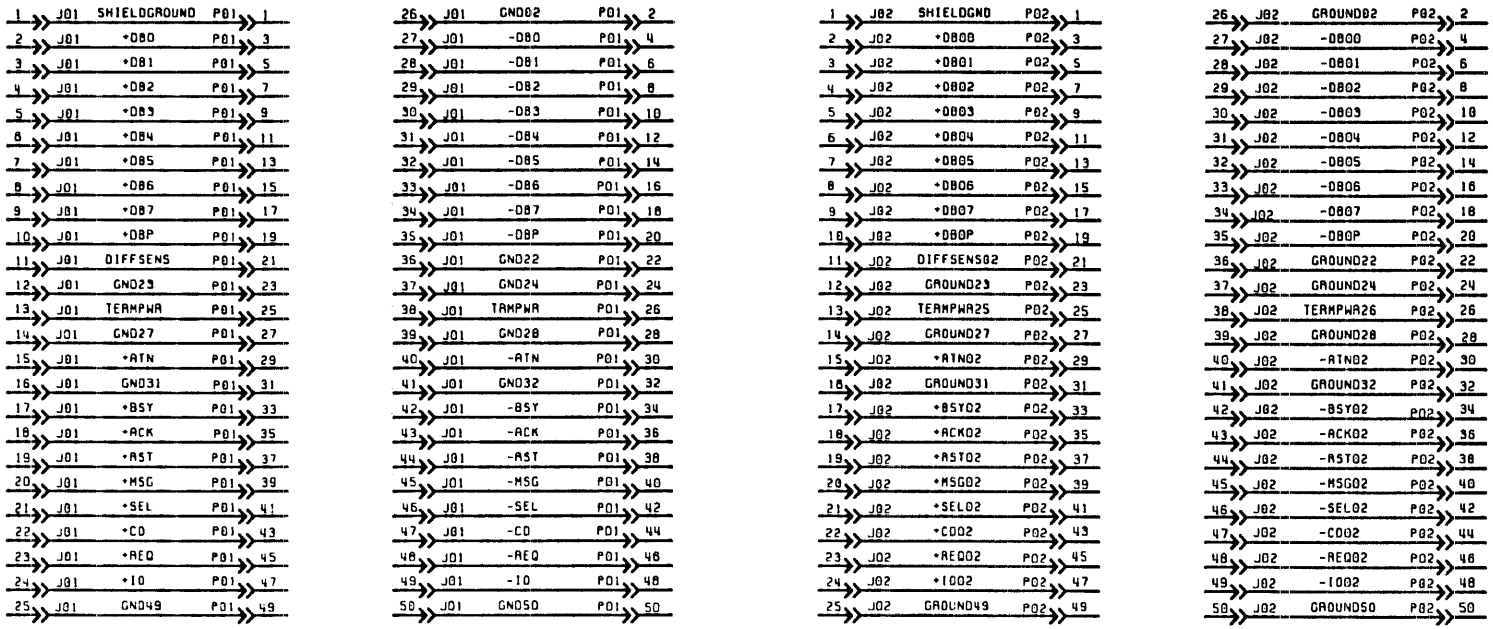
SHEET 8

CROSS REF NO 6208

SECTION 7

MISCELLANEOUS DIAGRAMS

REVISION RECORD						
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APP
A	DJ23000	A RELEASED		07-21-86		



NOTES
1. THESE SCHEMATICS APPLY TO:
CARD PN 54405700

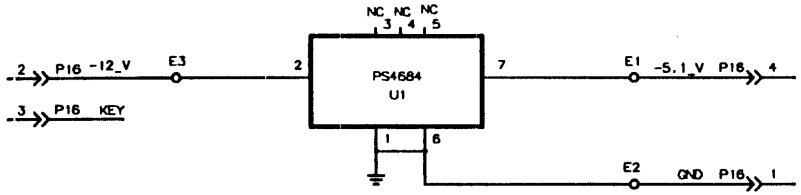
TITLE
SCHEMATIC DIAGRAM
ADAPTER
TYPE: AWVX

FILE NO $700A
54405800

SHEET 1 OF 1

CROSS REF NO 7000

REVISION RECORD						
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APP
A	DJ29674	CLASS C RELEASE	SLP	03-17-87		
B	DJ29773	CLASS A RELEASE	SLP	07-10-87		



NOTES
1. THESE SCHEMATICS APPLY TO:
CARD PN 54414126

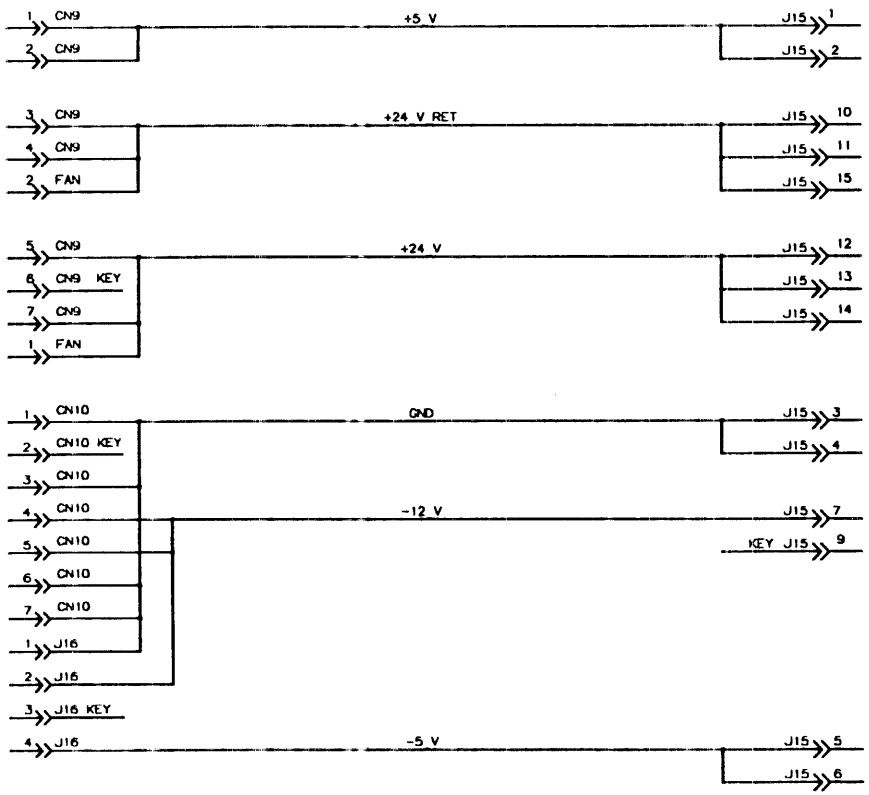
TITLE
SCHEMATIC DIAGRAM
VOLTAGE CONVERTER
TYPE: BXSX

FILE NO $710A
54414226

SHEET 1 OF 1

CROSS REF NO 7101

PART NO RANGE	REVISION RECORD REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APP
05 THRU 05	A	DJ40151	CLASS C RELEASED		1-26-89		



NOTES
1. THESE SCHEMATICS APPLY TO:
CARD PN 54404905

TITLE
SCHEMATIC DIAGRAM
TYPE: FWTX

FILE NO $720A
54405005

SHEET 1 OF 1

CROSS REF NO 7202

COMMENT SHEET

Manual Title:

Publication No: **Revision:**

Name: _____

Company: _____

Street Address: _____

City: _____ **State:** _____ **Zip Code:** _____

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