

# Engineering Diagrams Set

**HP 3000 Series III**  
(Products 32421A and 32435A)

19447 Pruneridge Ave., Cupertino, California 95014



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## LIST OF EFFECTIVE PAGES

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## PRINTING HISTORY

New editions incorporate all update material since the previous edition. Update packages, which are issued between editions, contain additional and replacement pages to be merged into the manual by the customer. The date on the title page changes only when a new edition is published. If minor corrections and updates are incorporated, then the manual is reprinted but neither the date on the title page nor the edition change.

First Printing.....APRIL 1980

# GENERAL INFORMATION

This Engineering Diagrams Set provides schematics, component layouts, and signal and power distribution diagrams for the HP 3000 Series III Computer Systems.

Products 32421A and 32435A are included. Many of the diagrams are common to both. THOSE UNIQUE TO ONE OF THE PRODUCTS ARE LABELED ACCORDINGLY.

The Set is divided into four sections. Section 1 contains rack diagrams and power and signal wiring information. Diagrams and tables unique to the 32421A appear first, followed by those for the 32435A; diagrams and tables common to both products appear last.

Section II contains the schematics and component location diagrams for the CPU and Memory Modules. They appear in numerical order.

Section III contains I/O PCA diagrams, in numerical order.

Section IV contains individual power supply diagrams. Those for the 32421A appear first, followed by those for the 32435A.

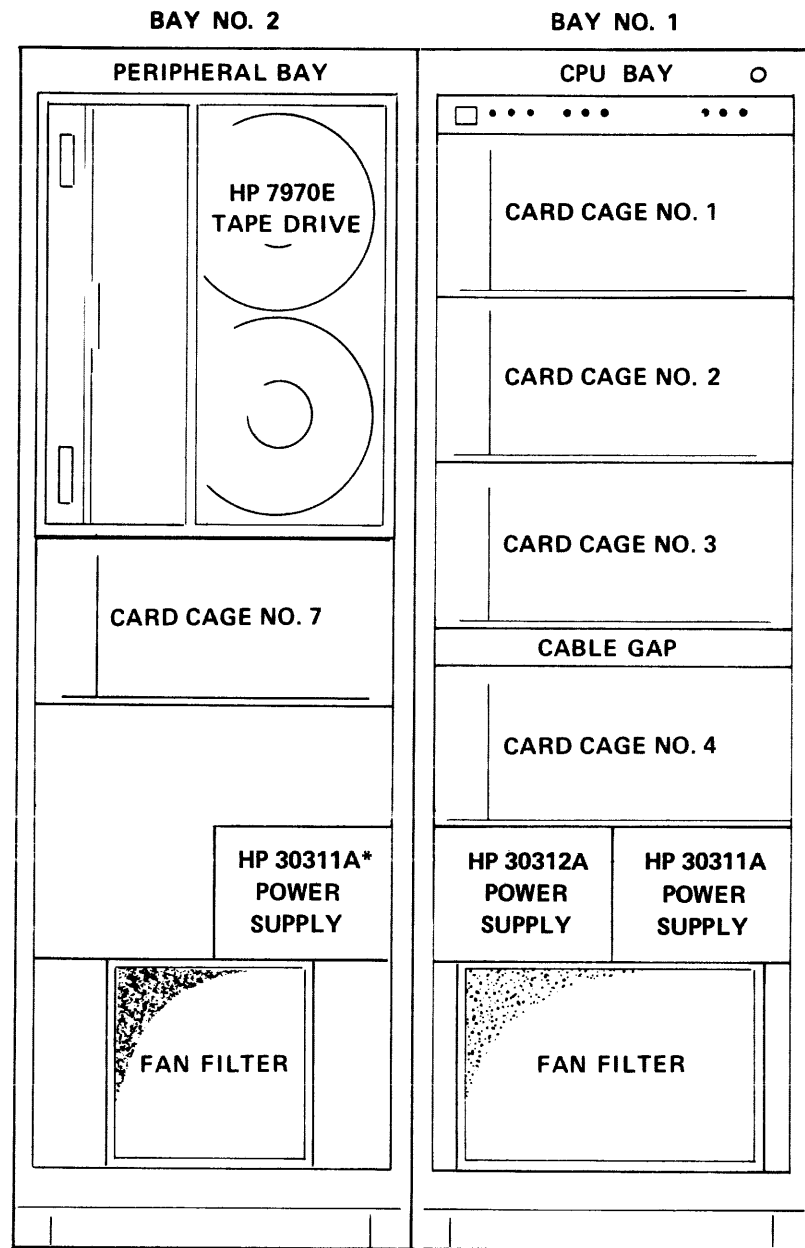
## NOTE

On some diagrams, a box containing dates appears in the upper right corner. THOSE DATES SHOULD BE IGNORED. Each PCA was examined for changes shortly before this set was printed in April 1980.

# SECTION I - RACK DIAGRAMS/POWER AND SIGNAL WIRING LAYOUTS

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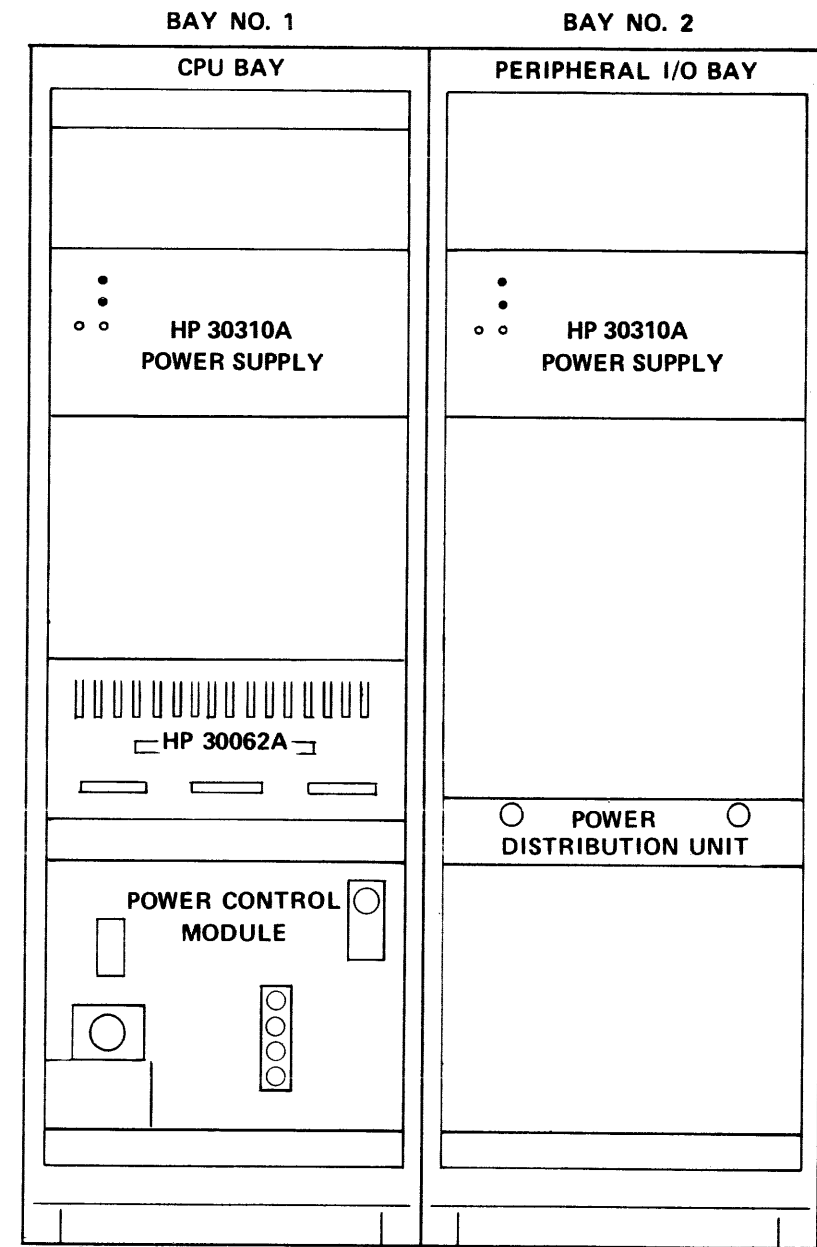
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147001-01

**FRONT VIEW  
(DOORS OMITTED FOR CLARITY)**

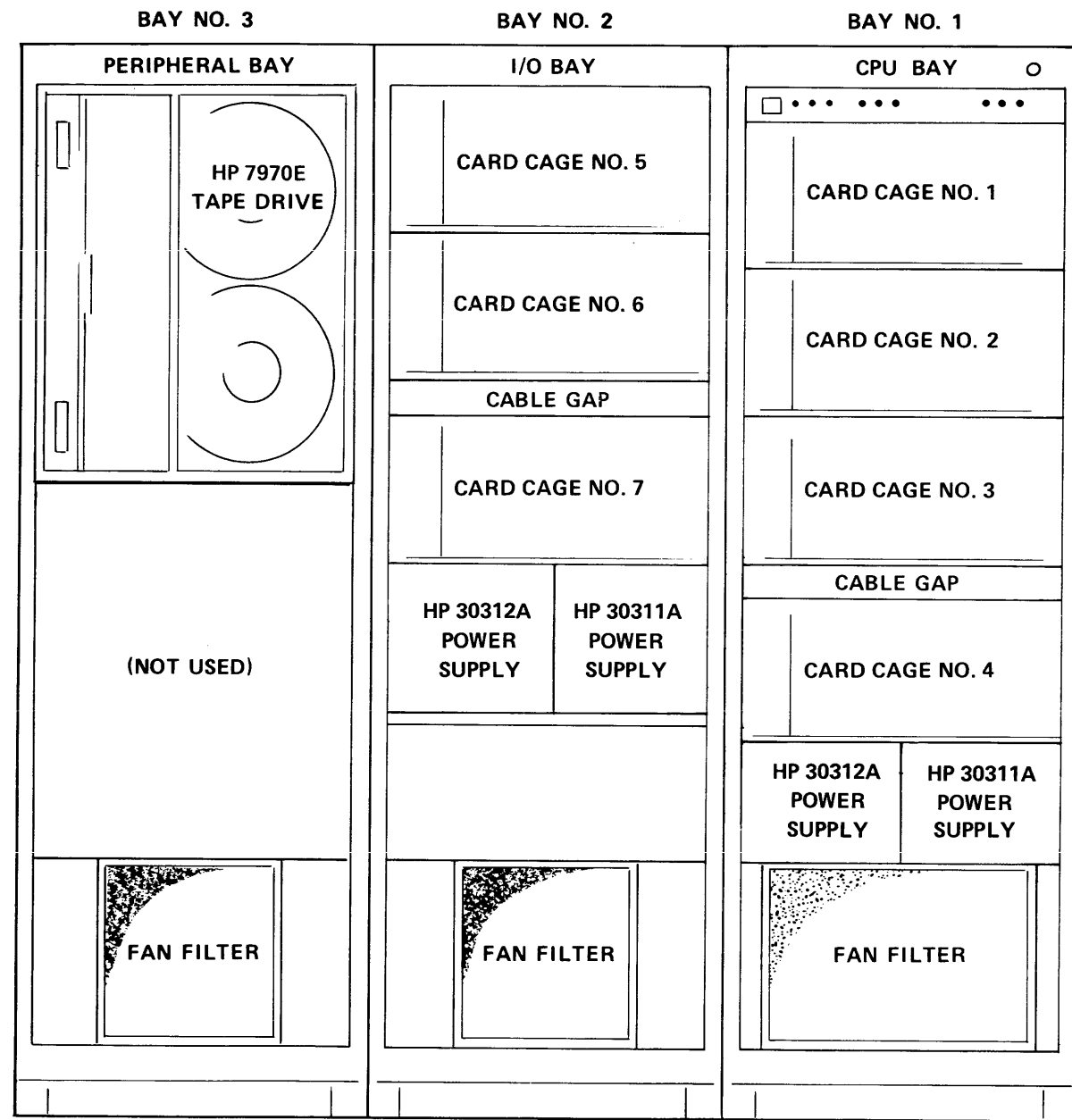
\* Optionally installed at the factory or field installed using the HP 30418A Upgrade Kit for 768K-word or 1024K-word memory.



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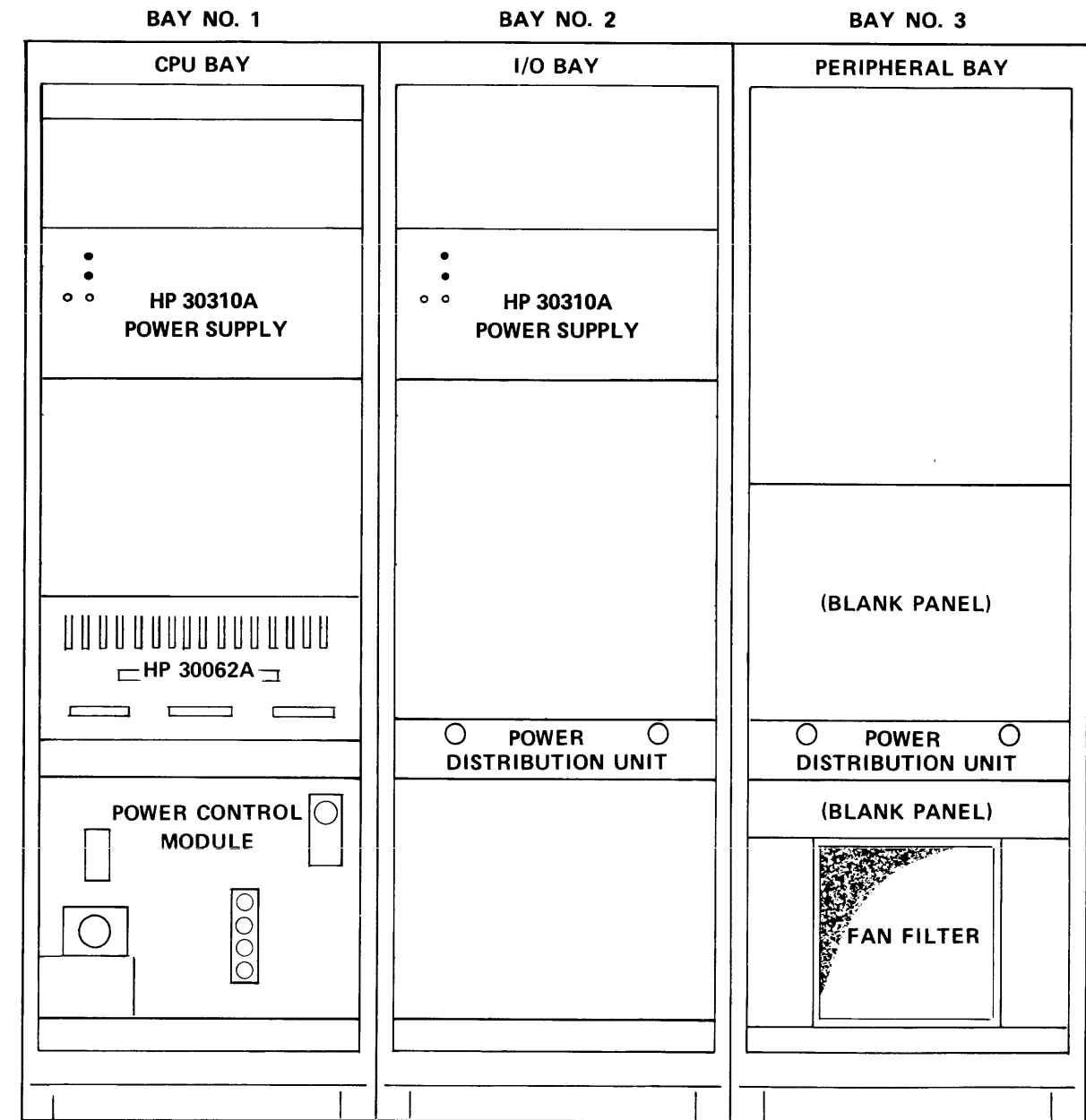
**REAR VIEW  
(DOORS REMOVED FOR CLARITY)**

Figure 1-1. HP 3000 Series III (32421A) Racking Plan, Front and Rear Views



147001-03

FRONT VIEW  
(DOORS OMITTED FOR CLARITY)



147001-04

REAR VIEW  
(DOORS REMOVED FOR CLARITY)

Figure 1-2. HP 3000 Series III (32421A), Option 200, Racking Plan, Front and Rear Views

Table 1-1. PCA Slot Assignments (32421A)

		SLOT	PRINTED CIRCUIT ASSEMBLY
CARD CAGE NO.1	A1	Reserved for maintenance panel PCA.	
	A2	30012-60001 Extended Instruction Set	
	A3	30003-60021 Read Only Memory	
	A4	30003-60022 Skip and Special Field	
	A5	30003-60003 Arithmetic and Logic Unit	
	A6	30003-60004 R Bus	
	A7	30003-60025 S Bus	
	A8	30003-60006 Current Instruction Register	
	A9	30003-60007 Module Control Unit	
	A10	30003-60028 Input Output Processor	
CARD CAGE NO.2	A1	30032-60001 Terminal Data Interface	
	A2	30061-60001 Terminal Control Interface	
	A3	Reserved for 204 Modem capability	
	A4	30009-60002 Fault Logging Interface	
	A5		
	A6	30008-60003 Memory Array (128K)	
	A7	Available to add 128K	
	A8	Available to add 128K	
	A9	Available to add 128K	
	A10	30007-60005 Memory Control and Logging	
CARD CAGE NO.3	A1	Available for add-on memory	
	A2	Available for add-on memory	
	A3	Available for add-on memory	
	A4	Available for add-on memory	
	A5	Available for add-on memory	
	A6		
	A7	30030-60020 Selector Channel Port Controller	
	A8	30030-60021 Selector Channel Register	
	A9	30030-60003 Selector Channel Control	
	A10	30030-60011 Selector Channel Sequencer	
CARD CAGE NO.4	A1	30036-60002 Multiplexer Channel	
	A2	Available for programmed (SIO) or direct I/O.	
	A3	Available for programmed (SIO) or direct I/O.	
	A4	Available for programmed (SIO) or direct I/O.	
	A5	30031-60001 System Clock	
	A6	Interrupt Poll Jumper (IPJ) 30000-60001	
	A7	30229-60001 7905A/20A/25A Interface	
	A8	13037-60028 Disc Controller	
	A9	13037-60024 Error Correction	
	A10	13037-60001 Microprocessor	
CARD CAGE NO.7	A1	Available for programmed (SIO) or direct I/O	
	A2	30215-60002 Magnetic Tape Controller Processor	
	A3	30215-60006 Magnetic Tape Controller	
	A4	Available for programmed (SIO) or direct I/O	
	A5	Available for programmed (SIO) or direct I/O	
	A6	Available for programmed (SIO) or direct I/O	
	A7	Available for programmed (SIO) or direct I/O	
	A8	Available for programmed (SIO) or direct I/O	
	A9	Available for programmed (SIO) or direct I/O	
	A10	Available for programmed (SIO) or direct I/O	

Table 1-2. PCA Slot Assignments (32421A) with HP 30418A Upgrade Kit Installed

		SLOT	PRINTED CIRCUIT ASSEMBLY
CARD CAGE NO.1	A1	Reserved for maintenance panel PCA.	
	A2	30012-60001 Extended Instruction Set	
	A3	30003-60021 Read Only Memory	
	A4	30003-60022 Skip and Special Field	
	A5	30003-60003 Arithmetic and Logic Unit	
	A6	30003-60004 R Bus	
	A7	30003-60025 S Bus	
	A8	30003-60006 Current Instruction Register	
	A9	30003-60007 Module Control Unit	
	A10	30003-60028 Input Output Processor	
CARD CAGE NO.2	A1	30032-60001 Terminal Data Interface	
	A2	30061-60001 Terminal Control Interface	
	A3	Reserved for 203 Modem capability	
	A4	30009-60002 Fault Logging Interface	
	A5		
	A6	30008-60003 Memory Array (128K)	
	A7	30008-60003 Memory Array (128K)	
	A8	30008-60003 Memory Array (128K)	
	A9	30008-60003 Memory Array (128K)	
	A10	30007-60005 Memory Control and Logging	
CARD CAGE NO.3	A1	30007-60004 Memory Control and Logging	
	A2	Slots A2 and A3 are available	
	A3	to add 256K	
	A4	30008-60003 Memory Array (128K)	
	A5	30008-60003 Memory Array (128K)	
	A6		
	A7	30030-60020 Selector Channel Port Controller	
	A8	30030-60021 Selector Channel Register	
	A9	30030-60003 Selector Channel Control	
	A10	30030-60011 Selector Channel Sequencer	
CARD CAGE NO.7	A1	Available for programmed (SIO) or direct I/O	
	A2	30215-60002 Magnetic Tape Controller Processor	
	A3	30215-60006 Magnetic Tape Controller	
	A4	Available for programmed (SIO) or direct I/O	
	A5	Available for programmed (SIO) or direct I/O	
	A6	Available for programmed (SIO) or direct I/O	
	A7	Available for programmed (SIO) or direct I/O	
	A8	Available for programmed (SIO) or direct I/O	
	A9	Available for programmed (SIO) or direct I/O	
	A10	Available for programmed (SIO) or direct I/O	
CARD CAGE NO.4	A1	30036-60002 Multiplexer Channel	
	A2	Available for programmed (SIO) or direct I/O.	
	A3	Available for programmed (SIO) or direct I/O.	
	A4	Available for programmed (SIO) or direct I/O.	
	A5	30031-60001 System Clock	
	A6	Interrupt Poll Jumper (IPJ) 30000-60001	
	A7	30229-60001 7905A/20A/25A Interface	
	A8	13037-60028 Disc Controller	
	A9	13037-60024 Error Correction	
	A10	13037-60001 Microprocessor	

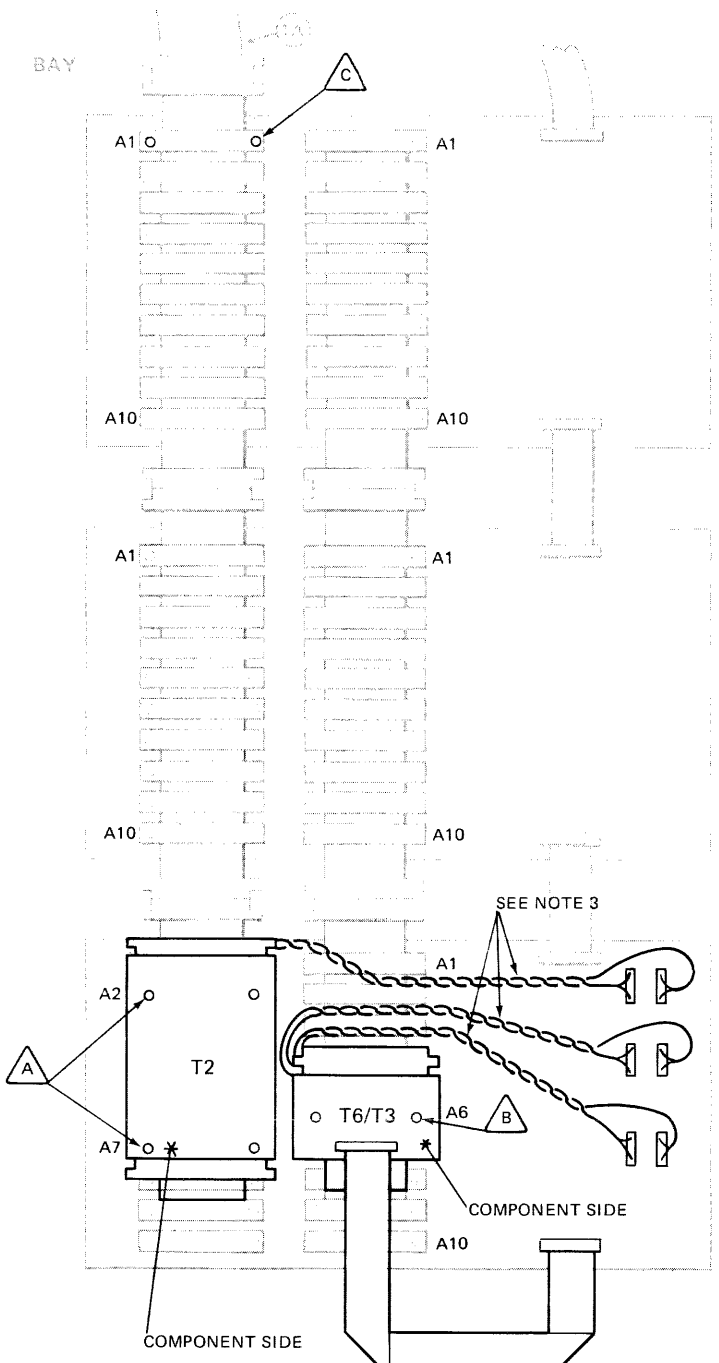
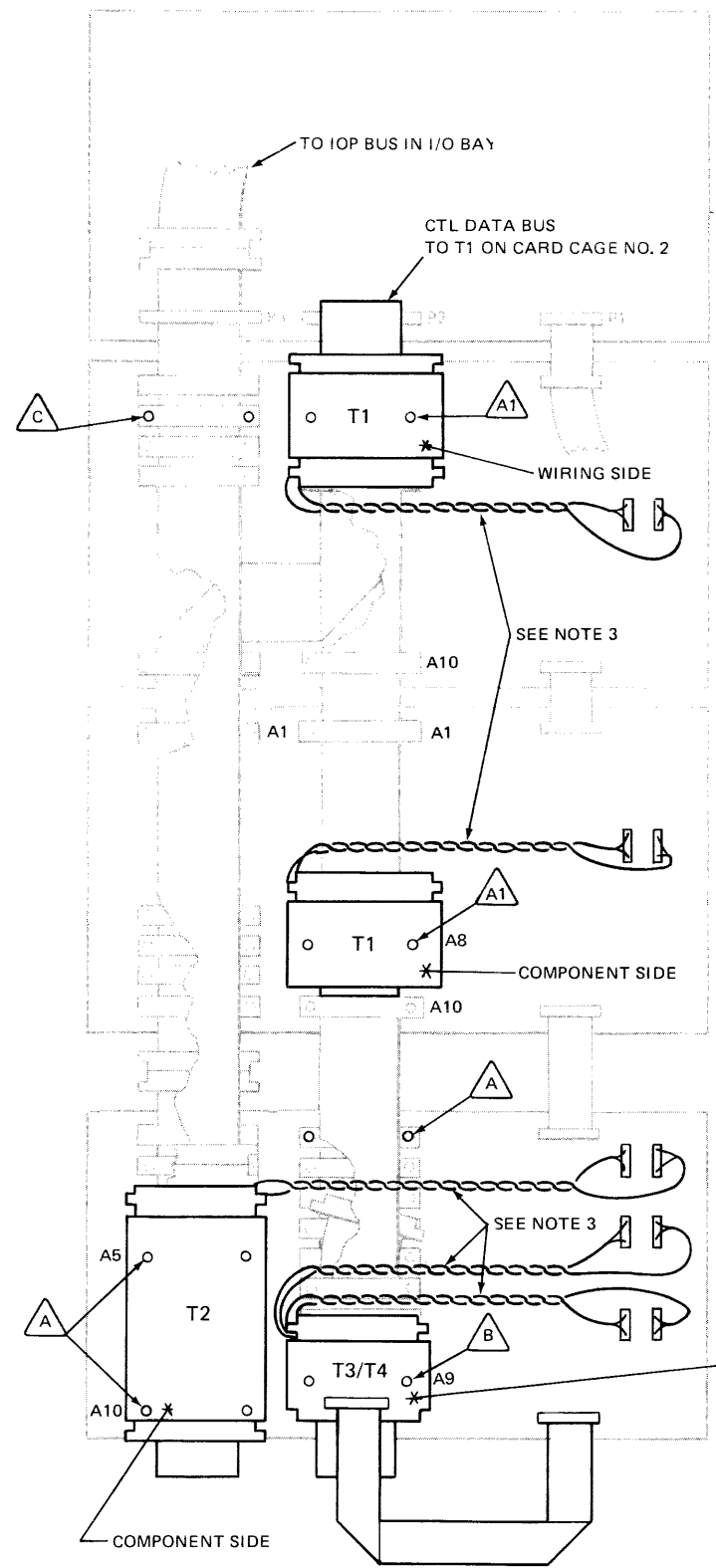


Table 1-3. PCA Slot Assignments (32421A), Option 200

	SLOT	PRINTED CIRCUIT ASSEMBLY		SLOT	PRINTED CIRCUIT ASSEMBLY
CARD CAGE NO.5	A1	30036-60002 Multiplexer Channel	CARD CAGE NO.1	A1	Reserved for maintenance panel PCA.
	A2	30215-60002 Magnetic Tape Controller Processor		A2	30012-60001 Extended Instruction Set
	A3	30215-60006 Magnetic Tape Controller		A3	30003-60021 Read Only Memory
	A4	30031-60001 System Clock		A4	30003-60022 Skip and Special Field
	A5	Available for programmed (SIO) or direct I/O		A5	30003-60003 Arithmetic and Logic Unit
	A6	Available for programmed (SIO) or direct I/O		A6	30003-60004 R Bus
	A7	Available for programmed (SIO) or direct I/O		A7	30003-60025 S Bus
	A8	Available for programmed (SIO) or direct I/O		A8	30003-60006 Current Instruction Register
	A9	Available for programmed (SIO) or direct I/O		A9	30003-60007 Module Control Unit
	A10	Available for programmed (SIO) or direct I/O		A10	30003-60028 Input Output Processor
CARD CAGE NO.6	A1	Available for programmed (SIO) or direct I/O	CARD CAGE NO.2	A1	30032-60001 Terminal Data Interface
	A2	Available for programmed (SIO) or direct I/O		A2	30061-60001 Terminal Control Interface
	A3	Available for programmed (SIO) or direct I/O		A3	Reserved for 203 Modem capability
	A4	Available for programmed (SIO) or direct I/O		A4	30009-60002 Fault Logging Interface
	A5	Available for programmed (SIO) or direct I/O		A5	
	A6	Available for programmed (SIO) or direct I/O		A6	30008-60003 Memory Array (128K)
	A7	Available for programmed (SIO) or direct I/O		A7	Available to add 128K.
	A8	Available for programmed (SIO) or direct I/O		A8	Available to add 128K.
	A9	Available for programmed (SIO) or direct I/O		A9	Available to add 128K.
	A10	Available for programmed (SIO) or direct I/O		A10	30007-60005 Memory Control and Logging
CARD CAGE NO.7	A1	Available for programmed (SIO) or direct I/O	CARD CAGE NO.3	A1	Available for add-on memory
	A2	Available for programmed (SIO) or direct I/O		A2	Available for add-on memory
	A3	Available for programmed (SIO) or direct I/O		A3	Available for add-on memory
	A4	Available for programmed (SIO) or direct I/O		A4	Available for add-on memory
	A5	Available for programmed (SIO) or direct I/O		A5	Available for add-on memory
	A6	Available for programmed (SIO) or direct I/O		A6	
	A7	Available for programmed (SIO) or direct I/O		A7	30030-60020 Selector Channel Port Controller
	A8	Reserved for second disc controller		A8	30030-60021 Selector Channel Register
	A9	Reserved for second disc controller		A9	30030-60003 Selector Channel Control
	A10	Reserved for second disc controller		A10	30030-60011 Selector Channel Sequencer
			CARD CAGE NO.4	A1	Reserved for second Selector Channel
				A2	Reserved for second Selector Channel
				A3	Reserved for second Selector Channel
				A4	IJP 30000-60001
				A5	Reserved for second 7905A/20A/25A Interface
				A6	IJP 30000-60001
				A7	30229-60001 7905A/20A/25A Interface
				A8	13037-60028 Disc Controller
				A9	13037-60024 Error Correction
				A10	13037-60001 Microprocessor

Table 1-4. PCA Slot Assignments (32421A), Option 200, with HP 30418A Upgrade Kit Installed

	SLOT	PRINTED CIRCUIT ASSEMBLY		SLOT	PRINTED CIRCUIT ASSEMBLY
CARD CAGE NO.5	A1	30036-60002 Multiplexer Channel	CARD CAGE NO.1	A1	Reserved for maintenance panel PCA.
	A2	30215-60002 Magnetic Tape Controller Processor		A2	30012-60001 Extended Instruction Set
	A3	30215-60006 Magnetic Tape Controller		A3	30003-60021 Read Only Memory
	A4	30031-60001 System Clock		A4	30003-60022 Skip and Special Field
	A5	Available for programmed (SIO) or direct I/O		A5	30003-60003 Arithmetic and Logic Unit
	A6	Available for programmed (SIO) or direct I/O		A6	30003-60004 R Bus
	A7	Available for programmed (SIO) or direct I/O		A7	30003-60025 S Bus
	A8	Available for programmed (SIO) or direct I/O		A8	30003-60006 Current Instruction Register
	A9	Available for programmed (SIO) or direct I/O		A9	30003-60007 Module Control Unit
	A10	Available for programmed (SIO) or direct I/O		A10	30003-60028 Input Output Processor
CARD CAGE NO.6	A1	Available for programmed (SIO) or direct I/O	CARD CAGE NO.2	A1	30032-60001 Terminal Data Interface
	A2	Available for programmed (SIO) or direct I/O		A2	30061-60001 Terminal Control Interface
	A3	Available for programmed (SIO) or direct I/O		A3	Reserved for 203 Modem capability
	A4	Available for programmed (SIO) or direct I/O		A4	30009-60002 Fault Logging Interface
	A5	Available for programmed (SIO) or direct I/O		A5	
	A6	Available for programmed (SIO) or direct I/O		A6	30008-60003 Memory Array (128K)
	A7	Available for programmed (SIO) or direct I/O		A7	30008-60003 Memory Array (128K)
	A8	Available for programmed (SIO) or direct I/O		A8	30008-60003 Memory Array (128K)
	A9	Available for programmed (SIO) or direct I/O		A9	30008-60003 Memory Array (128K)
	A10	Available for programmed (SIO) or direct I/O		A10	30007-60005 Memory Control and Logging
CARD CAGE NO.7	A1	Available for programmed (SIO) or direct I/O	CARD CAGE NO.3	A1	30007-60005 Memory Control and Logging
	A2	Available for programmed (SIO) or direct I/O		A2	Available to add 128K
	A3	Available for programmed (SIO) or direct I/O		A3	Available to add 128K
	A4	Available for programmed (SIO) or direct I/O		A4	30008-60003 Memory Array (128K)
	A5	Available for programmed (SIO) or direct I/O		A5	30008-60003 Memory Array (128K)
	A6	Available for programmed (SIO) or direct I/O		A6	
	A7	Available for programmed (SIO) or direct I/O		A7	30030-60020 Selector Channel Port Controller
	A8	Reserved for second disc controller		A8	30030-60021 Selector Channel Register
	A9	Reserved for second disc controller		A9	30030-60003 Selector Channel Control
	A10	Reserved for second disc controller		A10	30030-60011 Selector Channel Sequencer
			CARD CAGE NO.4	A1	Reserved for second Selector Channel
				A2	Reserved for second Selector Channel
				A3	Reserved for second Selector Channel
				A4	IJP 30000-60001
				A5	Reserved for second 7905A/20A/25A Interface
				A6	IJP 30000-60001
				A7	30229-60001 7905A/20A/25A Interface
				A8	13037-60028 Disc Controller
				A9	13037-60024 Error Correction
				A10	13037-60001 Microprocessor



- NOTES:
- TERMINATORS ARE IDENTIFIED AS FOLLOWS:
 

TERMINATOR	QUANTITY	PART NUMBER
T1	2	30003-60030
T2	2	30001-60016
T3	2	30001-60021
T4	1*	30030-60015
T6	1	30035-60003
  - PRINTED CIRCUIT EDGE CONNECTOR J1 OF A TERMINATOR PLUGS INTO A FLAT CABLE CONNECTOR TO TERMINATE THE CABLE RUN. CORRECT TERMINATOR ORIENTATION IS ASSURED IF YOU KEEP PINS 49 AND 50 OF THE EDGE CONNECTOR TO THE LEFT WHEN TERMINATING THE FLAT CABLE.
  - EACH TERMINATOR HAS A RED TWISTED PAIR CABLE WHICH CONNECTS FROM EDGE P1 OF THE TERMINATOR PCA TO PINS 2 AND 1 (+5 VOLTS) ON ANY POWER BUS CONNECTOR P1. A BLACK TWISTED PAIR CABLE CONNECTS FROM THE PCA TO PINS 16 AND 15 OF THE SAME POWER BUS CONNECTOR.
  - T1/T4 = T1 IS BENEATH; T4 IS VISIBLE.  
T6/T3 = T6 IS BENEATH; T3 IS VISIBLE.

- = DETAIL A, ITEMS 5, 6, 8
- = DETAIL A, ITEMS 2, 3, 5, 6, 8
- = DETAIL B
- = DETAIL C
- = FLAT CABLE CONNECTORS JOINED WITH EXTENDER BOARDS

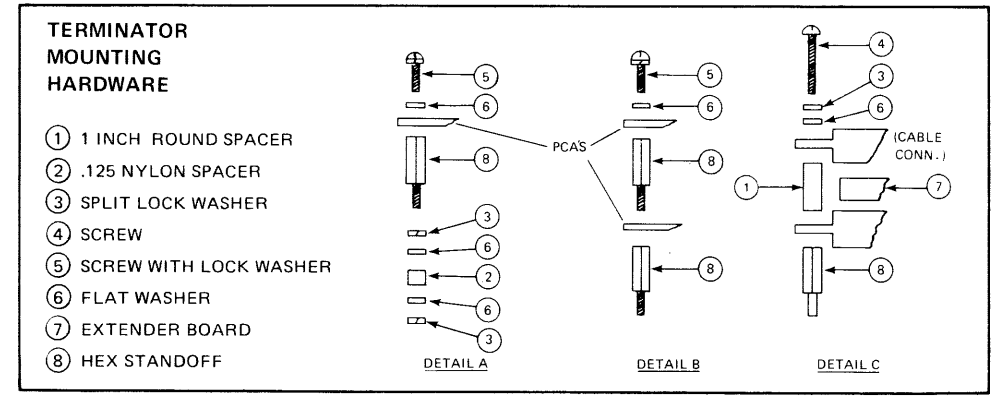
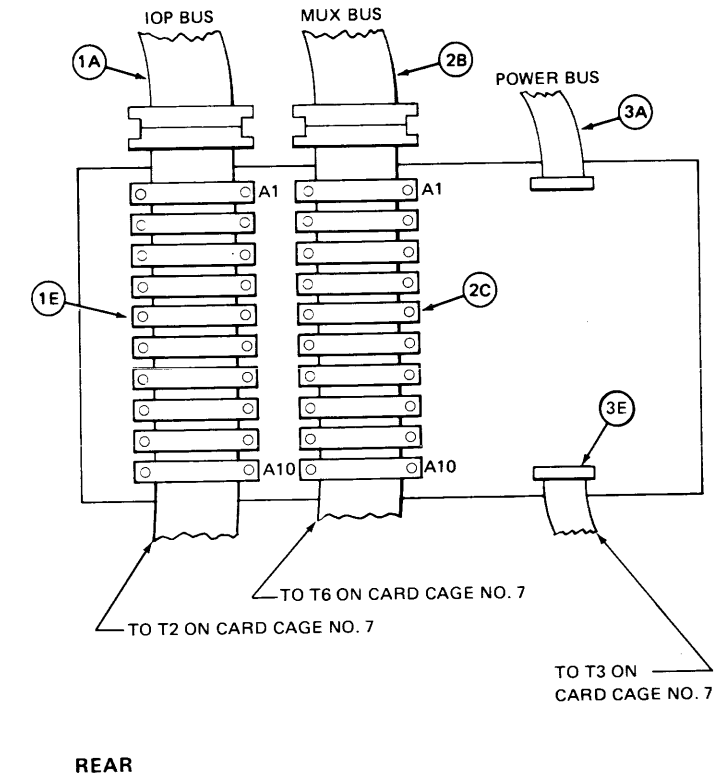
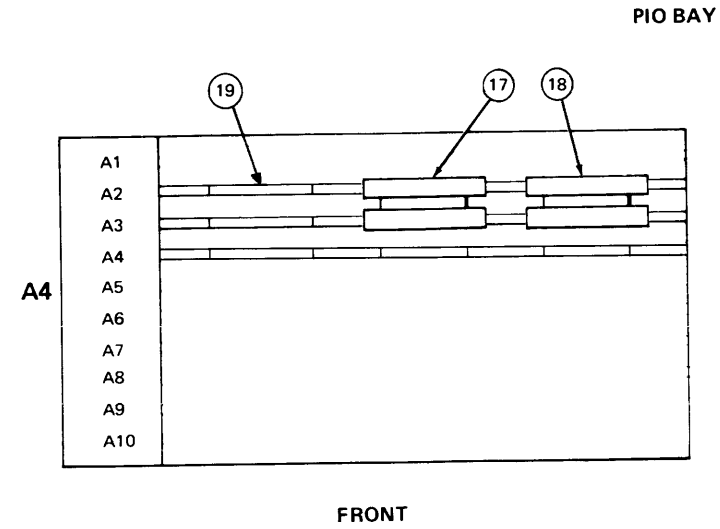
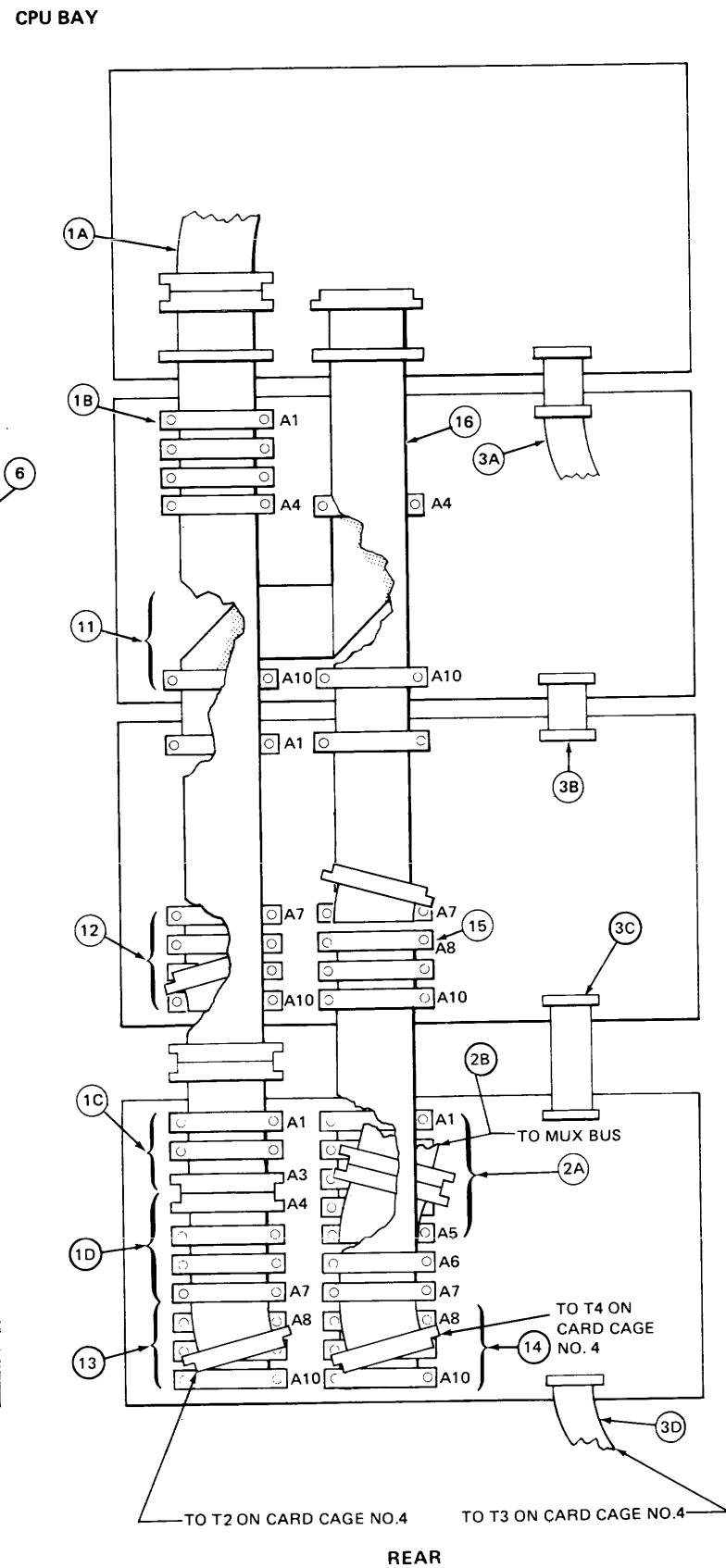
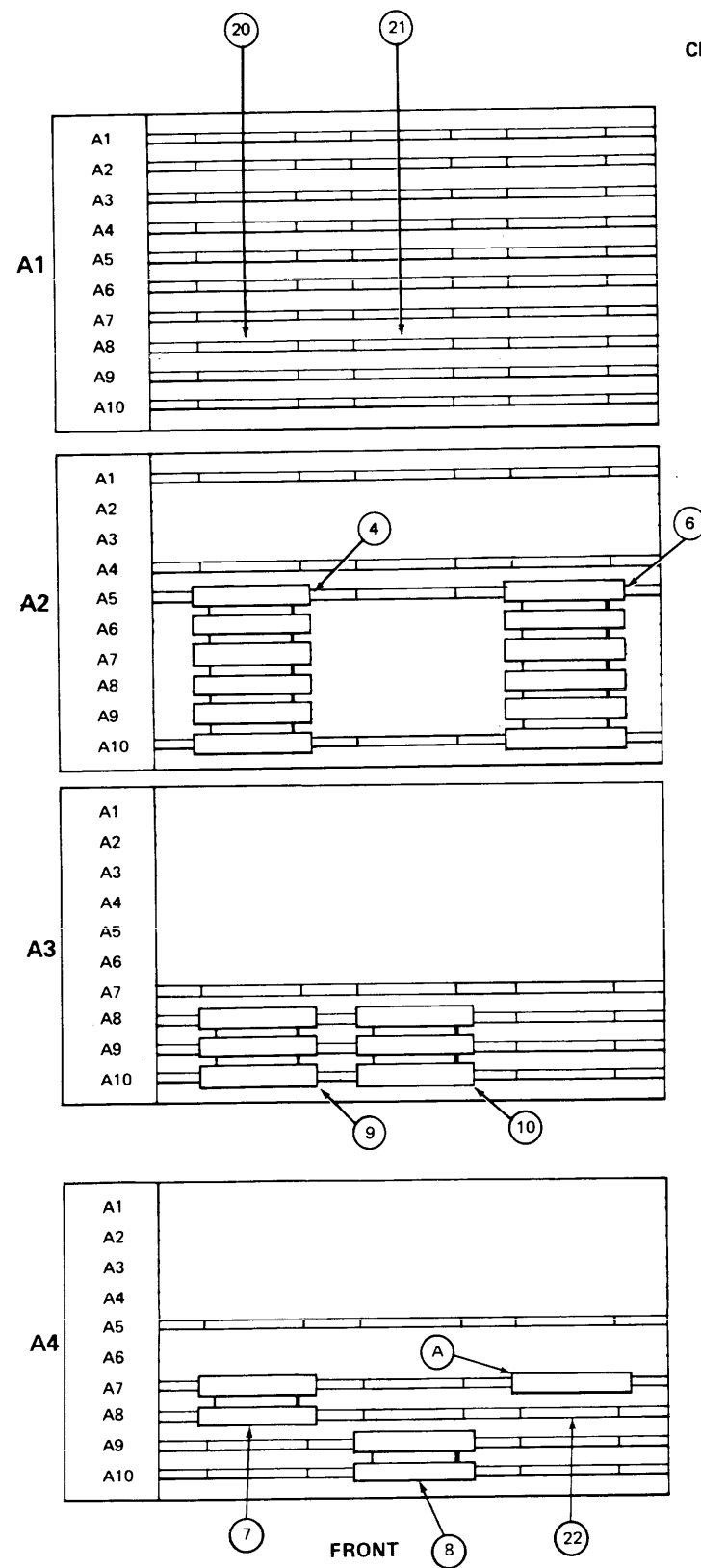
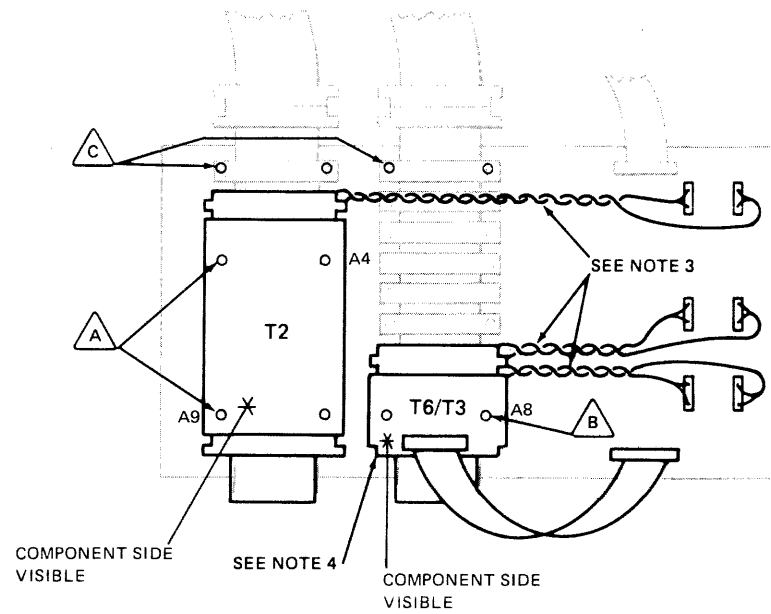
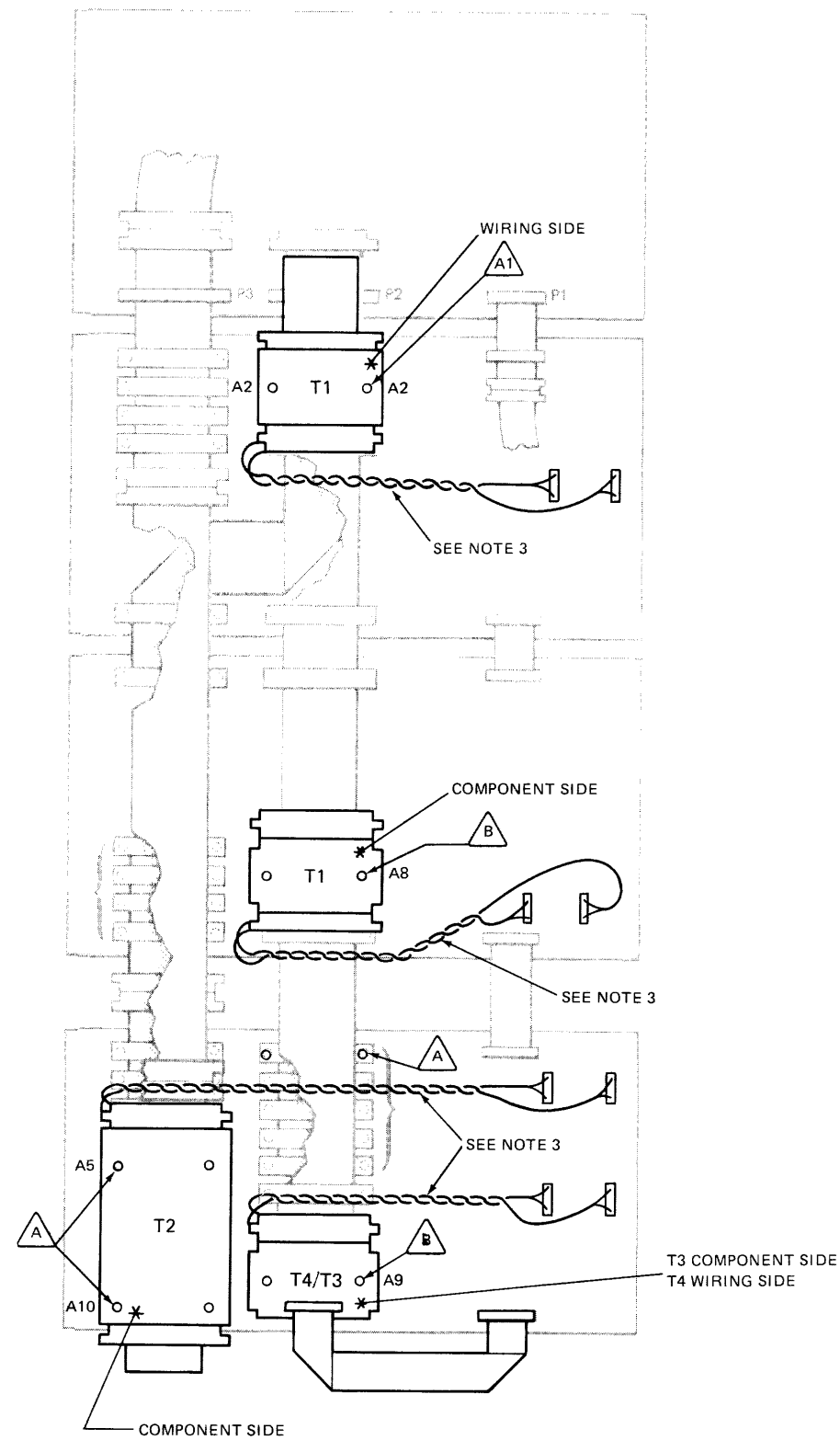


Figure 1-3. Flat Cable Terminators (32421A)

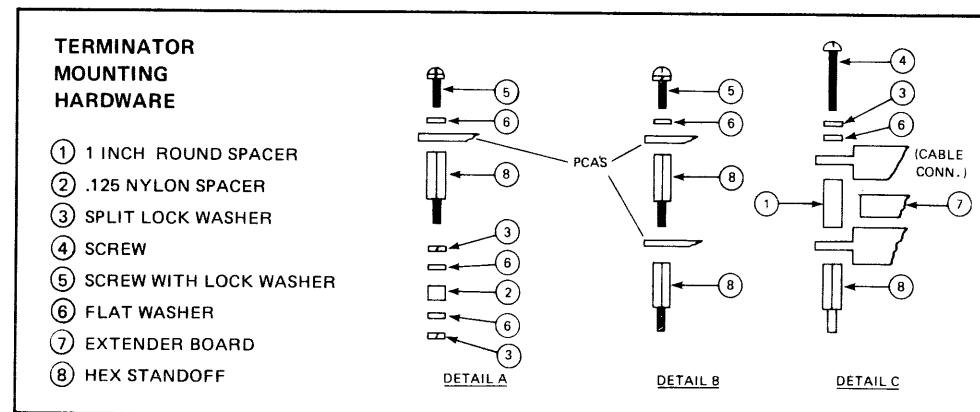


CABLE	PART NUMBER
1A	30000-93068
1B	30000-93132
1C	30000-93131
1D	30000-93117
1E	30000-93041
2A	30000-93130
2B	30000-93068
2C	30000-93041
3A	30000-93007
3B	30000-93004
3C	30000-93005
3D	30001-60034
3E	30001-60034
4	30000-93128
6	30000-93128
7	30000-93052
8	30000-93052
9	30000-93053
10	30000-93053
11	30000-93120
12	30000-93034
13	30000-93043
14	30000-93043
15	30000-93112
16	30000-93124
17	30000-93052
18	30000-93052
19	
20	
21	
22	
TERMINATORS	
T5 = 30229-60003	

Figure 1-4. System Flat Cables (32421A)



- △ A = DETAIL A, ITEMS 5, 6, 8
- △ A1 = DETAIL A, ITEMS 2, 3, 5, 6, 8
- △ B = DETAIL B
- △ C = DETAIL C
- △ D = FLAT CABLE CONNECTORS JOINED WITH EXTENDER BOARDS



NOTES:

1. TERMINATORS ARE IDENTIFIED AS FOLLOWS:

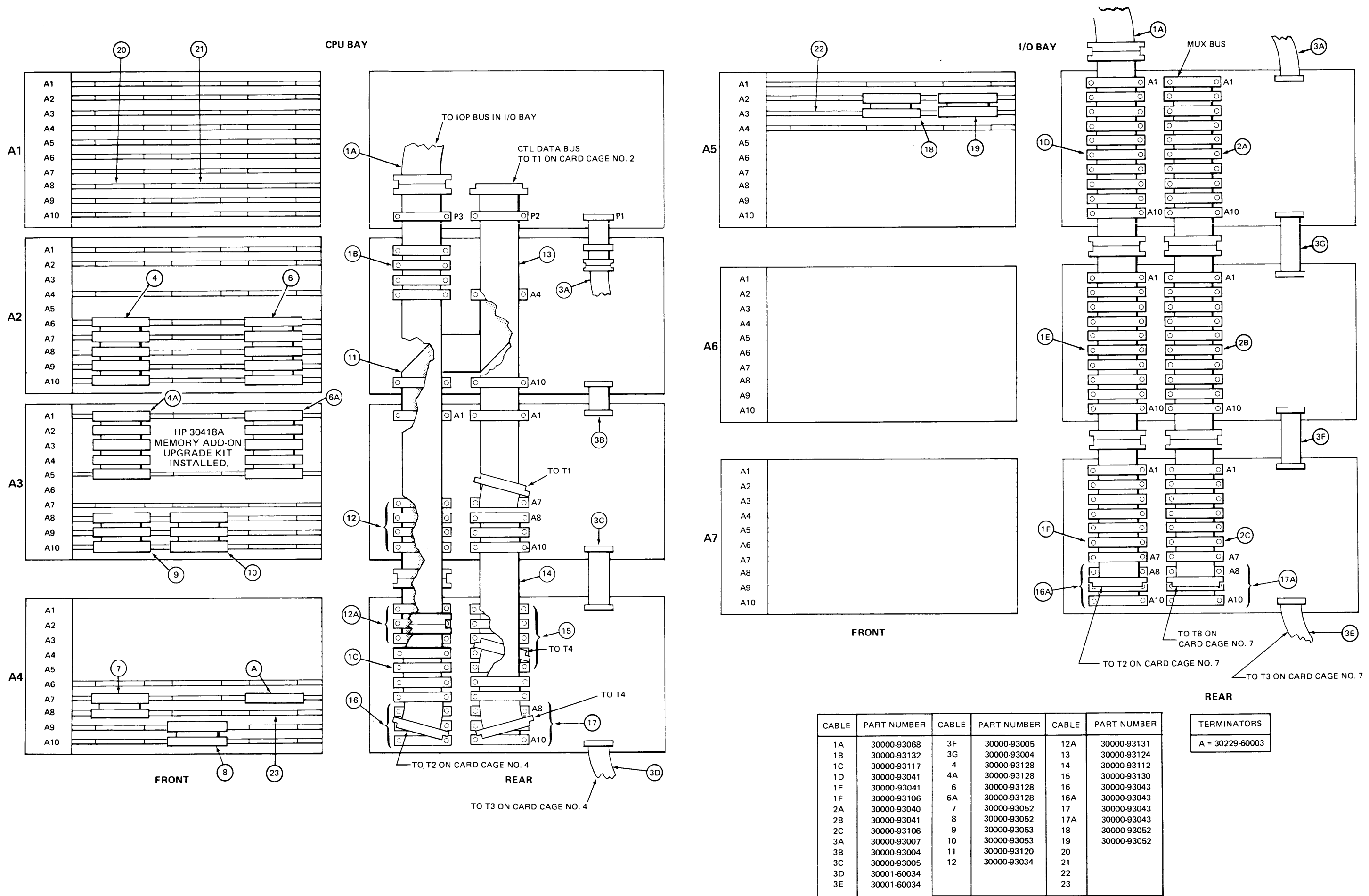
TERMINATOR	QUANTITY	PART NUMBER
T1	2	30003-60030
T2	2	30001-60016
T3	2	30001-60021
T4	1*	30030-60015
T6	1	30035-60003

2. PRINTED CIRCUIT EDGE CONNECTOR J1 OF A TERMINATOR PLUGS INTO A FLAT CABLE CONNECTOR TO TERMINATE THE CABLE RUN. CORRECT TERMINATOR ORIENTATION IS ASSURED IF YOU KEEP PINS 49 AND 50 OF THE EDGE CONNECTOR TO THE LEFT WHEN TERMINATING THE FLAT CABLE.

3. EACH TERMINATOR (EXCEPT T5) HAS A RED TWISTED PAIR CABLE WHICH CONNECTS FROM EDGE P1 OF THE TERMINATOR PCA TO PINS 2 AND 1 (+5 VOLTS) ON ANY POWER BUS CONNECTOR P1. A BLACK TWISTED PAIR CABLE CONNECTS FROM THE PCA TO PINS 16 AND 15 OF THE SAME POWER BUS CONNECTOR.

4. T3/T4 = T1 IS BENEATH; T4 IS VISIBLE.  
T6/T3 = T6 IS BENEATH; T3 IS VISIBLE.

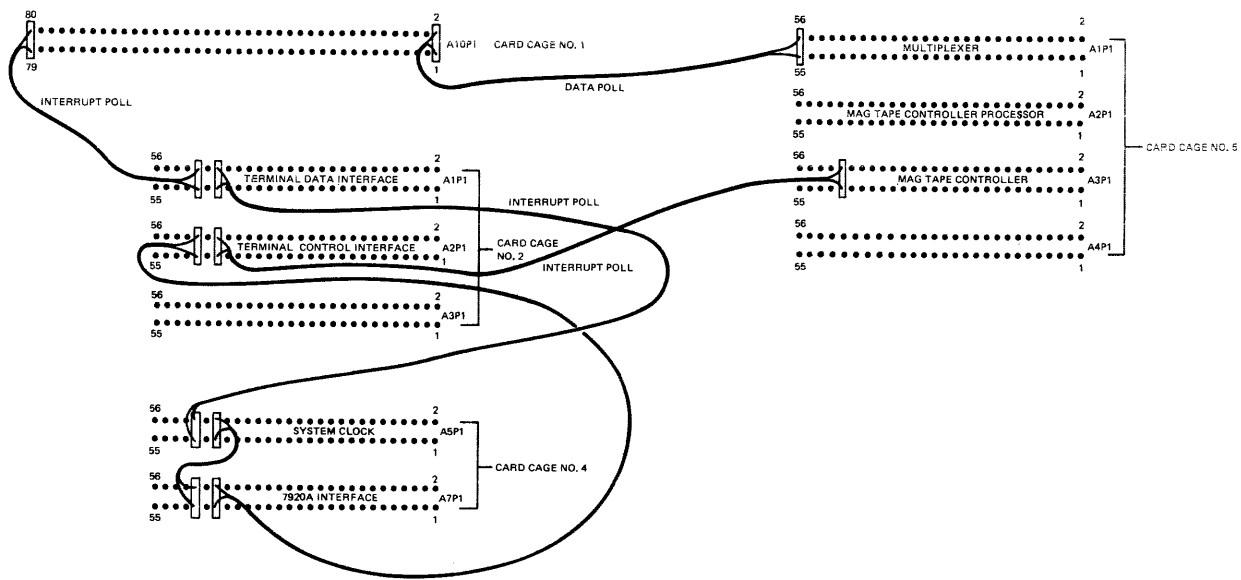
Figure 1-5. Flat Cable Terminators (32421A), with Option 200



CABLE	PART NUMBER	CABLE	PART NUMBER	CABLE	PART NUMBER
1A	30000-93068	3F	30000-93005	12A	30000-93131
1B	30000-93132	3G	30000-93004	13	30000-93124
1C	30000-93117	4	30000-93128	14	30000-93112
1D	30000-93041	4A	30000-93128	15	30000-93130
1E	30000-93041	6	30000-93128	16	30000-93043
1F	30000-93106	6A	30000-93128	16A	30000-93043
2A	30000-93040	7	30000-93052	17	30000-93043
2B	30000-93041	8	30000-93052	17A	30000-93043
2C	30000-93106	9	30000-93053	18	30000-93052
3A	30000-93007	10	30000-93053	19	30000-93052
3B	30000-93004	11	30000-93120	20	
3C	30000-93005	12	30000-93034	21	
3D	30001-60034			22	
3E	30001-60034			23	

TERMINATORS	
A	30229-60003

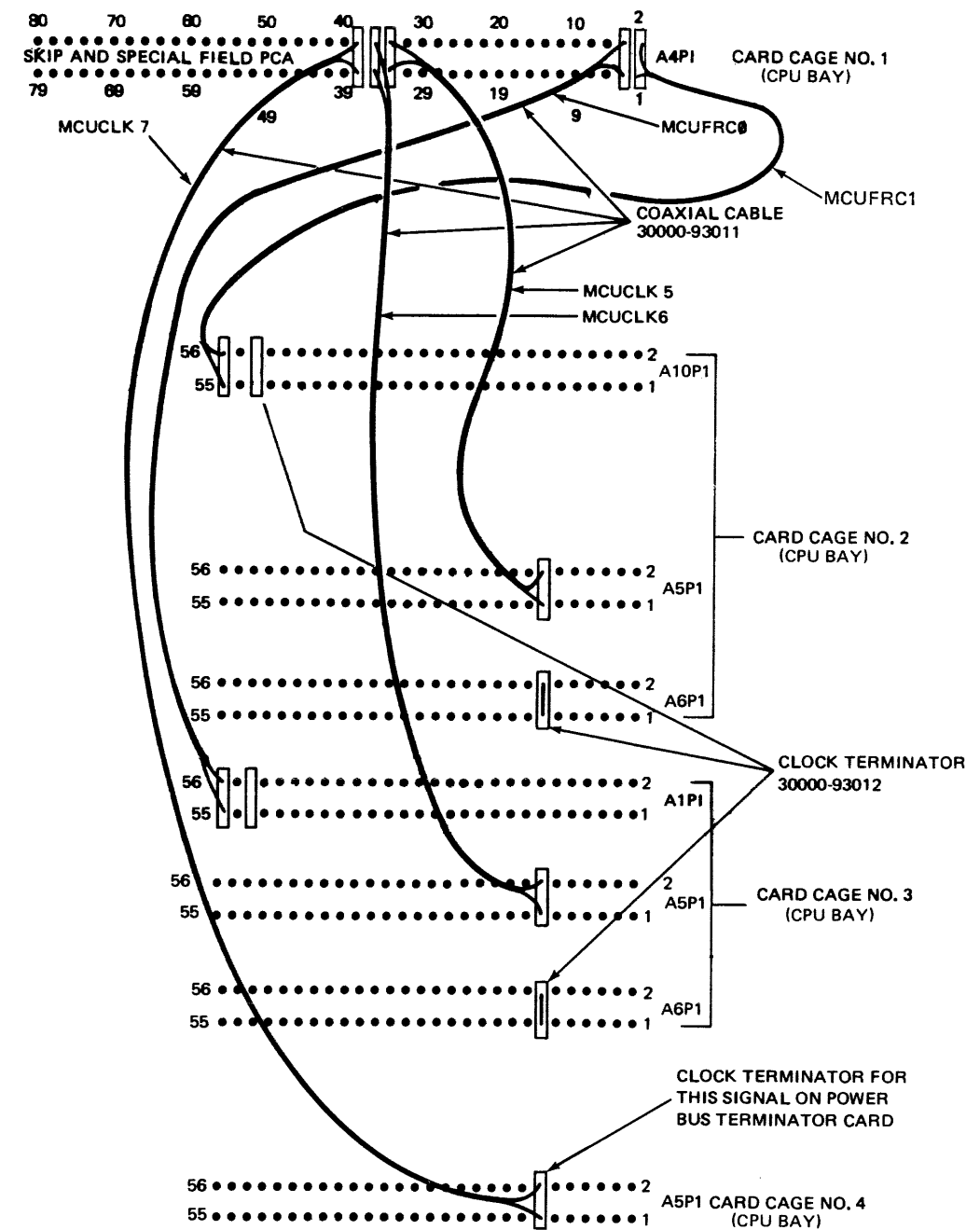
Figure 1-6. System Flat Cables (32421A), with Option 200



NOTES: WHITE OF INTERRUPT POLL AND DATA POLL  
TWISTED PAIRS IS UP (EVEN PIN) AT A10P1  
AND DOWN (ODD PIN) AT I/O INTERFACES.

047001-09

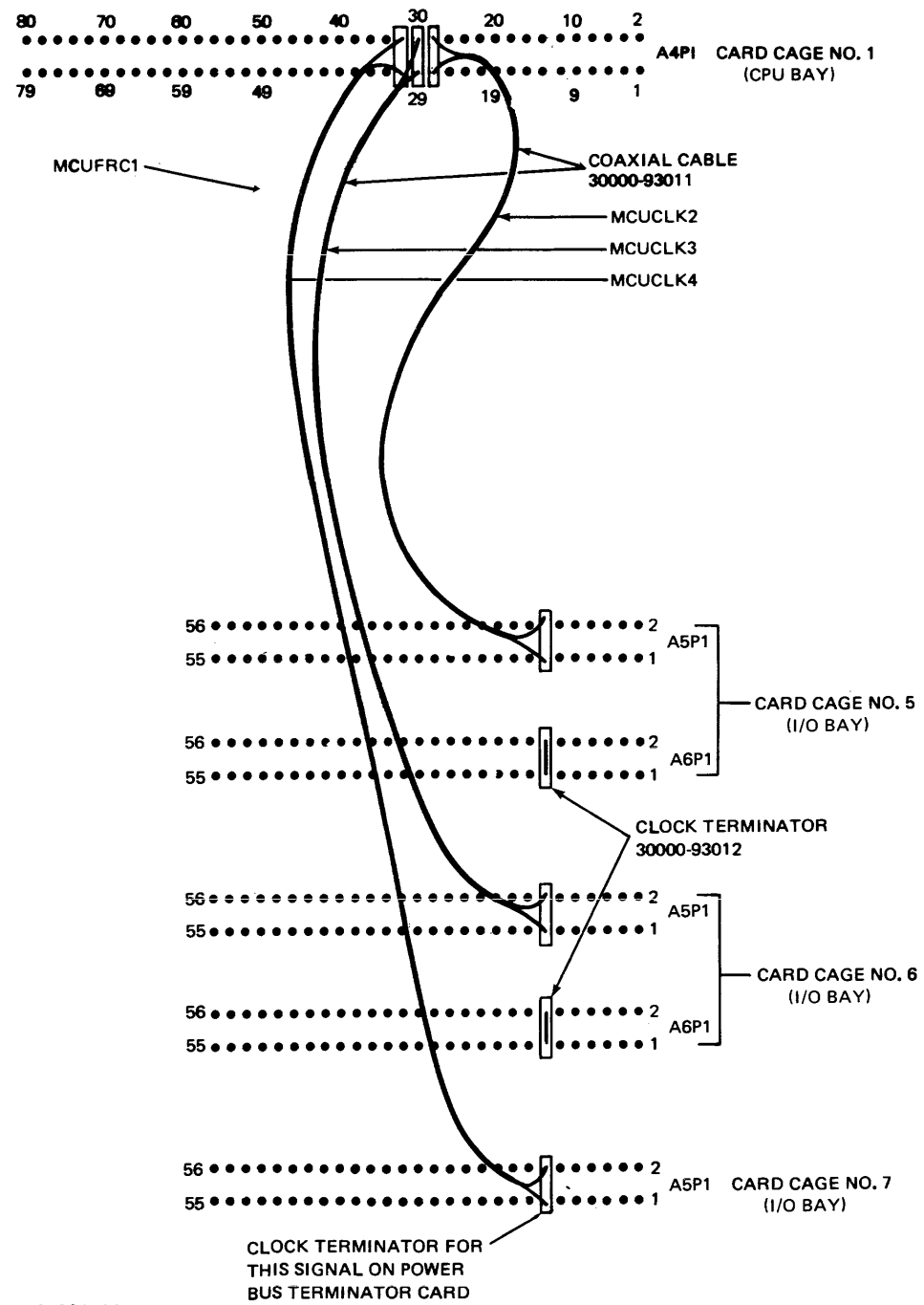
Figure 1-7. Typical Interrupt Poll Cabling (32421A)



NOTE:  
JUMPER W1 ON THE I/O MODULES ARE  
CUT TO ISOLATE THE MCUCCLK TO  
A SINGLE MODULE

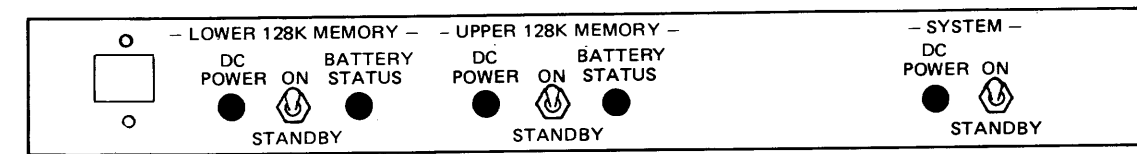
147001-10

Figure 1-8. CPU Bay Clock Jumpers and Terminators (32421A)

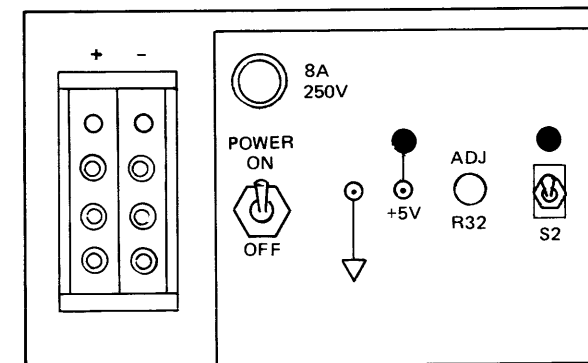


147001-11

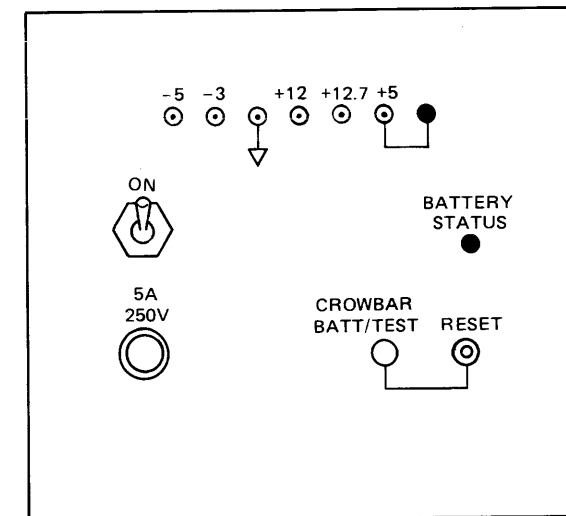
Figure 1-9. I/O Bay Clock Jumpers and Terminators (32421A)



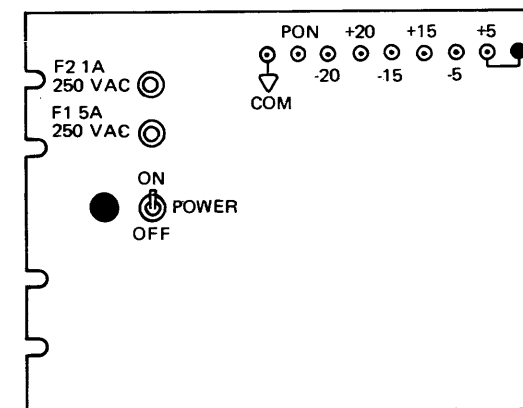
A. DC CONTROL PANEL



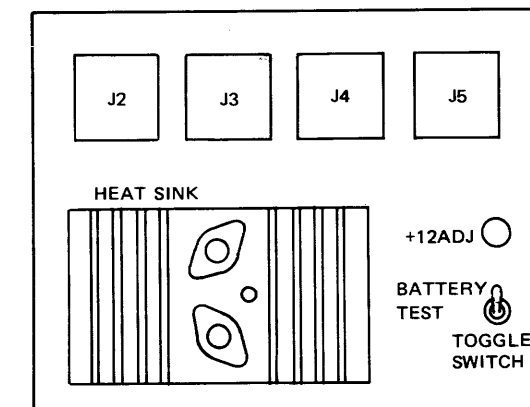
B. HP 30312A POWER SUPPLY



C. HP 30311A POWER SUPPLY



D. HP 30310A POWER SUPPLY



E. HP 30311A POWER SUPPLY (REAR VIEW)

○ = TEST POINT  
● = INDICATOR

147001-12

Figure 1-10. Power Controls and Indicators (32421A)

Table 1-5. Power Control and Indicator Functions (32421A)

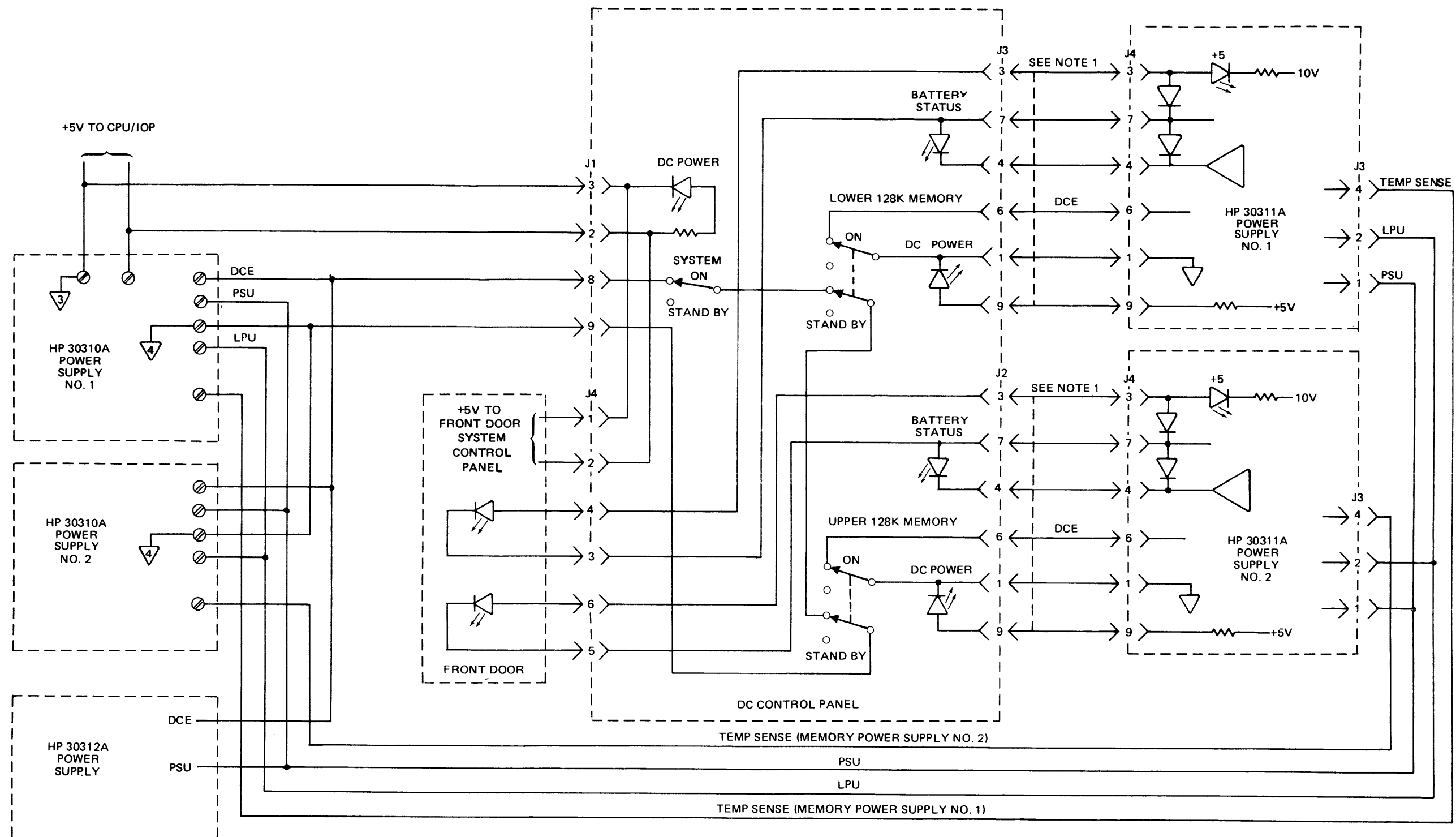
DC Control Panel	Function
SYSTEM ON/STANDBY toggle switch.	In the ON position, enables DC voltage outputs of the HP 30310A and 30312A Power Supplies. In STANDBY, all DC power supply outputs are disabled. Batteries are then sustaining memory.
SYSTEM DC POWER indicator	Implies that system DC power is on by using +5 volts from the HP 30310A Power Supply to light its LED.
UPPER 128K MEMORY ON/STANDBY 2-pole toggle switch	In the ON position, one pole generates a DC Enable signal to its HP 30311A Power Supply. If the power supply is turned on, and if the SYSTEM ON/STANDBY and LOWER 128K MEMORY ON/STANDBY switches are ON, the power supply will power memory and maintain the charge on its battery. If either or both of these other switches are set to STANDBY, the HP 30311A powers memory by its battery backup power to the memory "refresh" circuits.. The second pole maintains continuity of the system DC Enable line which enables the HP 30310A and HP 30312A Power Supply outputs. In the STANDBY position, the system DC Enable line is opened and all DC power supply outputs, except battery backpower to the lower 128K of memory, are disabled.
UPPER 128K MEMORY DC POWER indicator	Indicates that upper memory power is on by using +5 volts from HP 30311A Power Supply No. 2 to light this LED.
UPPER 128K MEMORY BATTERY STATUS indicator	Indicates battery status of HP 30311A Power Supply No. 2 by being on, flashing, or off.
LOWER 128K MEMORY ON/STANDBY toggle switch	In the ON position, one pole generates a DC Enable signal to its HP 30311A Power Supply. If the power supply is turned on, and if the SYSTEM ON/STANDBY and UPPER 128K MEMORY ON/STANDBY switches on ON, the power supply will power memory and maintain the charge on its battery. If either or both of these other switches are set to STANDBY, the HP 30311A powers memory by its battery backup power to the memory "refresh" circuits. The second pole maintains continuity of the system DC Enable line which enables the HP 30310A and HP 30312A Power Supply

LOWER 128K MEMORY DC POWER indicator	outputs. In the STANDBY position, the system DC Enable line is opened and all DC power supply outputs, except battery backpower to the upper 128K of memory are disabled.
LOWER 128K MEMORY BATTERY STATUS indicator	Indicates that lower memory power is on by using +5 volts from HP 30311A Power Supply No. 1 to light this LED.
	Indicates battery status of HP 30311A Power Supply No. 1 by being on, flashing or off.
HP 30310A Power Supply	Function
POWER ON/OFF toggle switch and indicator	Indicator lights when toggle switch is ON connecting AC power to power supply circuits. OFF position disables the HP HP 30310A.
HP 30311A Power Supply	Function
Power ON/OFF toggle switch	In ON position, connects "+20 volts" terminal from the HP 30310A Power Supply to the HP 30311A circuits to maintain the charge on the battery and to develop the required memory operating voltages. Off (down) position disables the HP 30311A and disconnects the battery to prevent discharging.
BATTERY TEST momentary toggle switch	Places power supply in a battery discharge mode for test purposes (simulates a power failure). Lights the battery test indicator.
RESET pushbutton	Resets the battery discharge mode returning the power supply to normal operation. Turns off the battery test indicator.
+5 indicator	When lighted, indicates that +5 volts is being produced by the HP 30311A Power Supply.



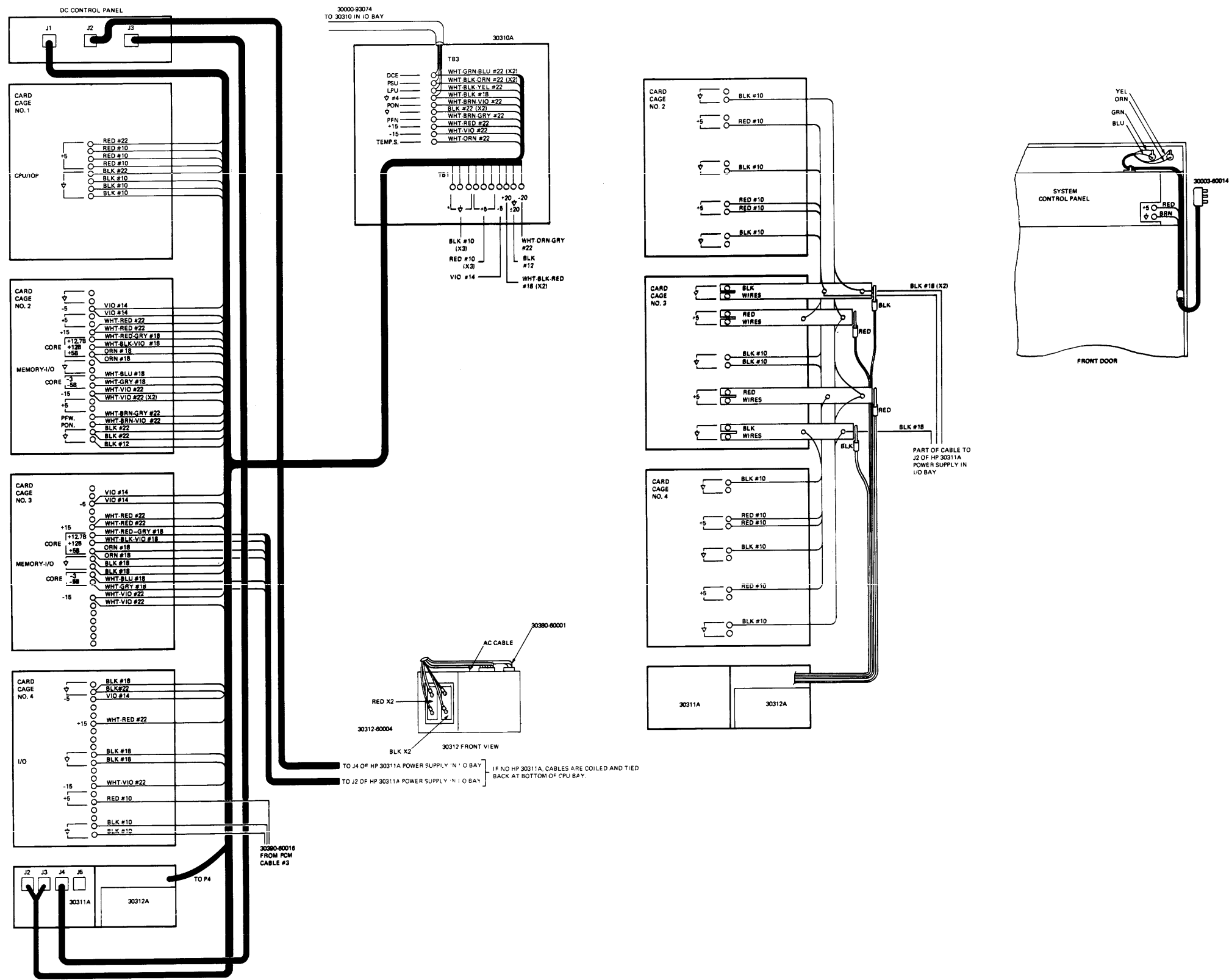
Table 1-5. Power Controls and Indicator Functions (32421A) (Cont.)

<p>CROWBAR/BATT TEST indicator</p> <p>BATTERY STATUS indicator</p>	<p>Used in conjunction with the BATTERY STATUS indicator to determine if the crowbar circuit has fired and shut down the power supply.</p> <p>Indicates battery condition by:</p> <ul style="list-style-type: none"> <li>a. Being on continuously for fully-charged condition. A bad (open) battery will also produce this condition.</li> <li>b. Flashing at 2 Hz when discharging</li> <li>c. Flashing at 0.5 Hz when charging</li> <li>d. Being off if battery is low or not installed.</li> </ul>
<p>HP 30312A Power Supply</p>	<p>Function</p>
<p>POWER ON/OFF toggle switch</p> <p>ADJ R32 potentiometer, S2 momentary toggle switch, and LED</p>	<p>The ON position connects AC power to the power supply circuits. The OFF position removes AC power.</p> <p>The potentiometer is adjusted while the toggle switch is pressed until the LED in the upper right of the front panel lights and just goes out. When the toggle switch is released, the threshold level is incremented by 10 amperes.</p>



- NOTES:
1. ONE 9-CONDUCTOR 30311-60007 CABLE PER 30311A SUPPLY. PINS 2-2, 5-5, AND 8-8 ARE SPARES.
  2. ANY ADDITIONAL HP 30311A POWER SUPPLIES INCLUDED IN THE SYSTEM HAVE CONTROL LINES (EXCEPT TEMP SENSE) PARALLELED.

Figure 1-11. DC Power Control Circuits (32421A)



147001-14

Figure 1-12. CPU Bay DC Wiring (32421A)

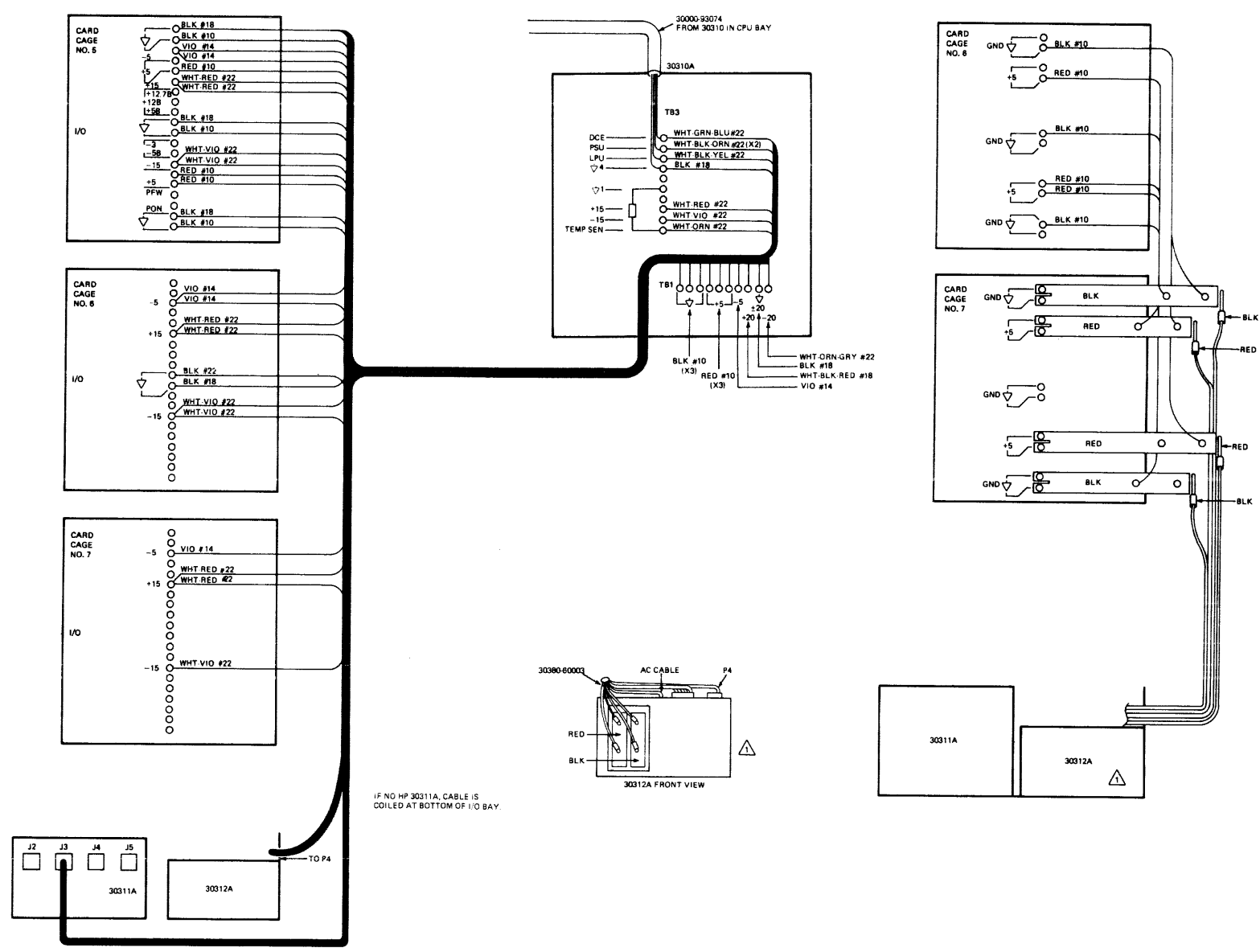


Figure 1-13. I/O Bay DC Wiring (32421A)

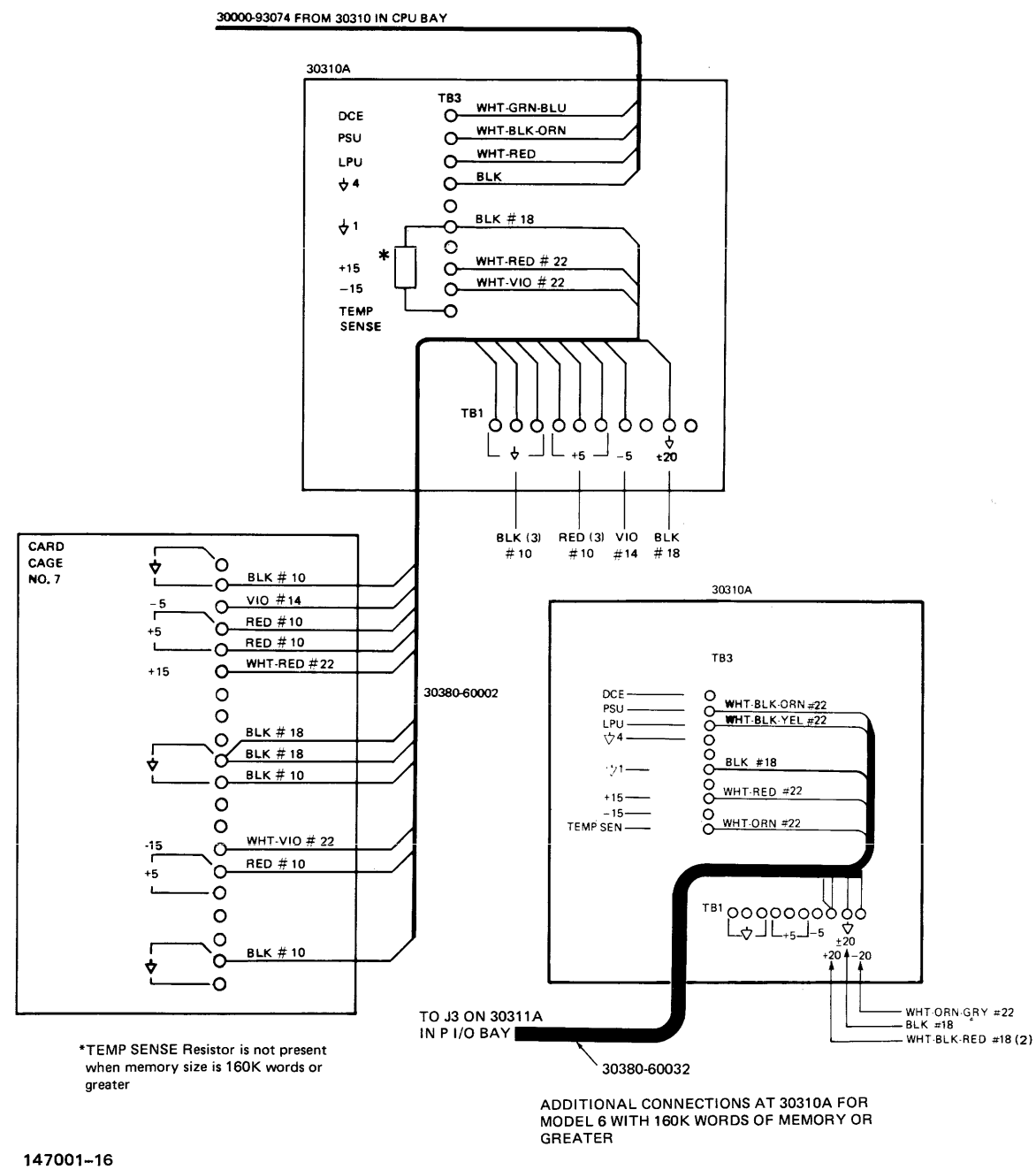


Figure 1-14. Peripheral and I/O Bay DC Wiring (32421A)

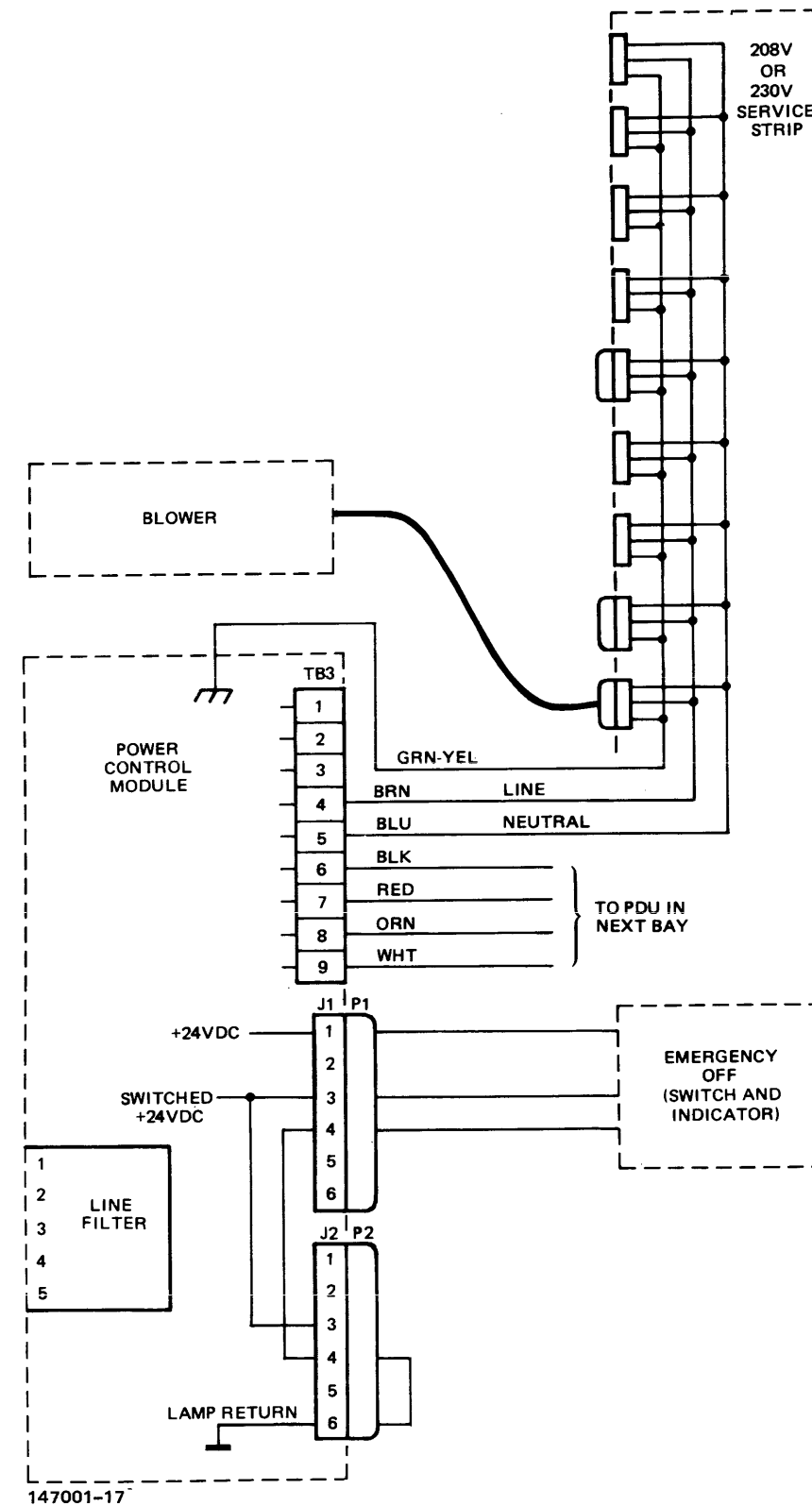


Figure 1-15. AC Distribution, CPU Bay (32421A)

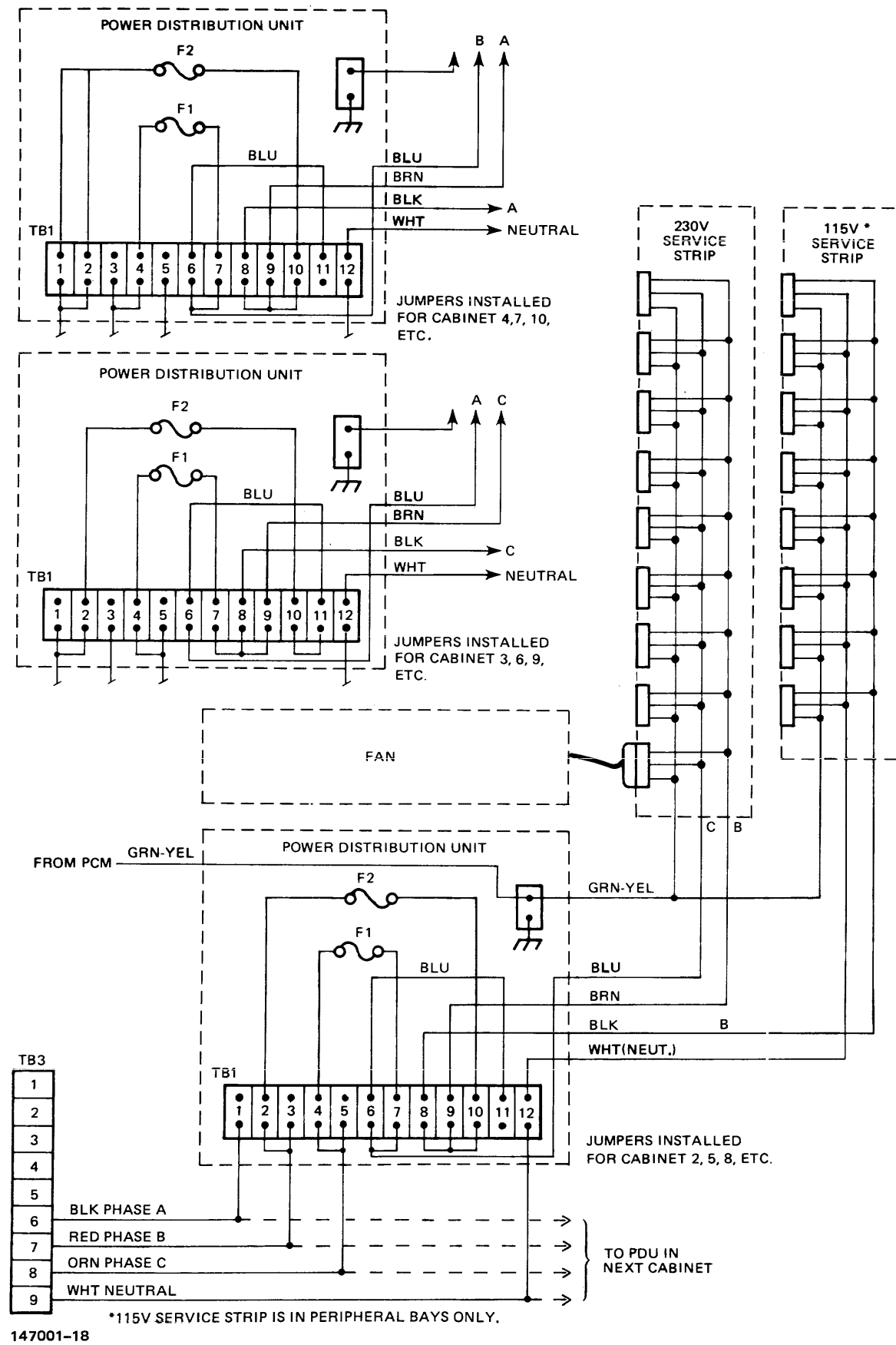


Figure 1-16. AC Distribution, Auxiliary Cabinets (120V/280V, 3Ph, 60 Hz) (32421A)

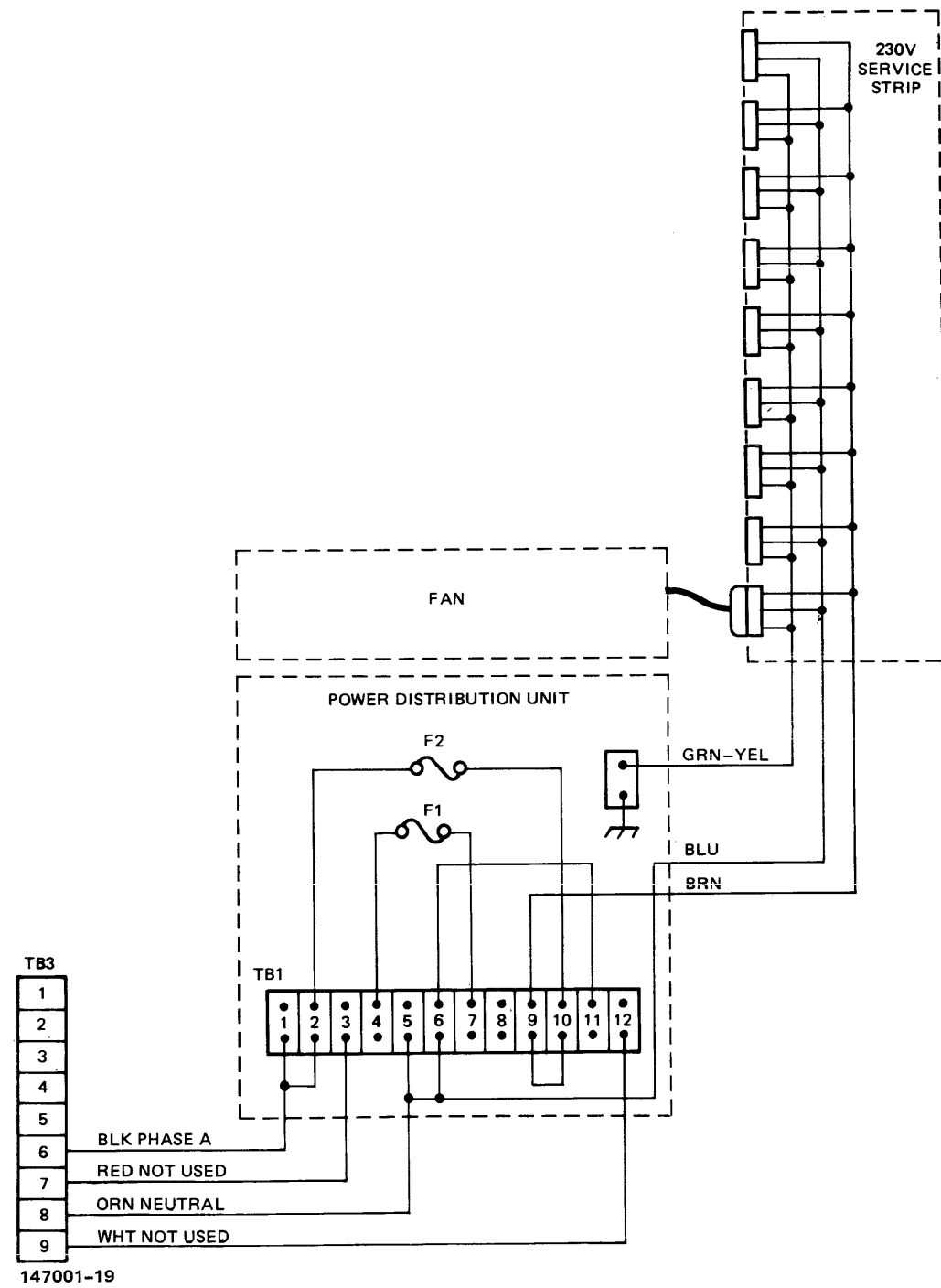
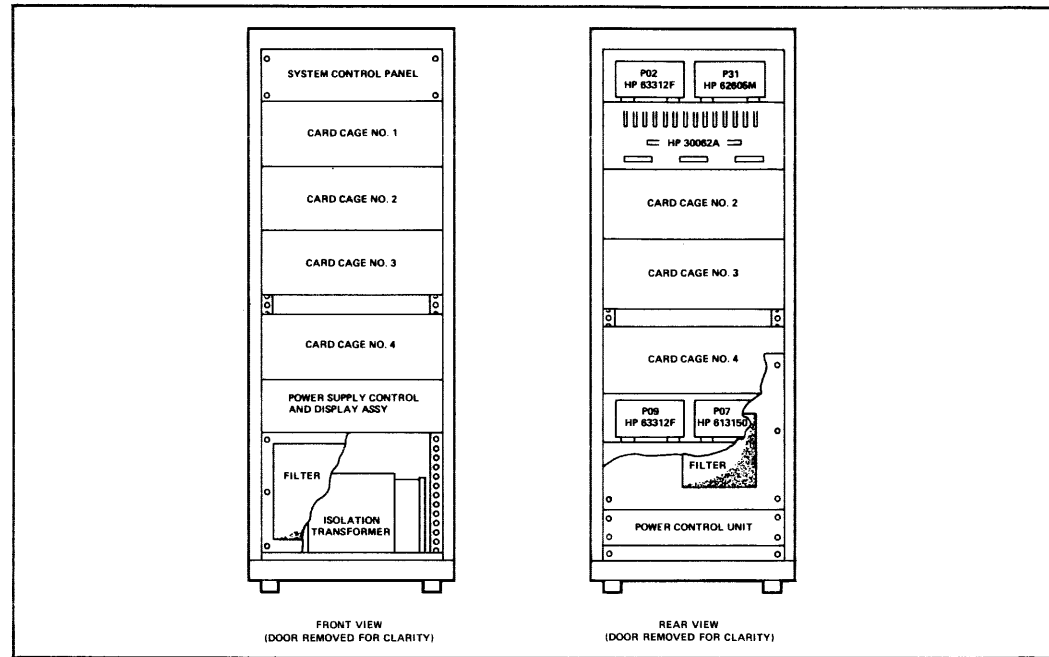


Figure 1-17. AC Distribution, Auxiliary Cabinets (230V, 1Ph, 50 Hz) (32421A)

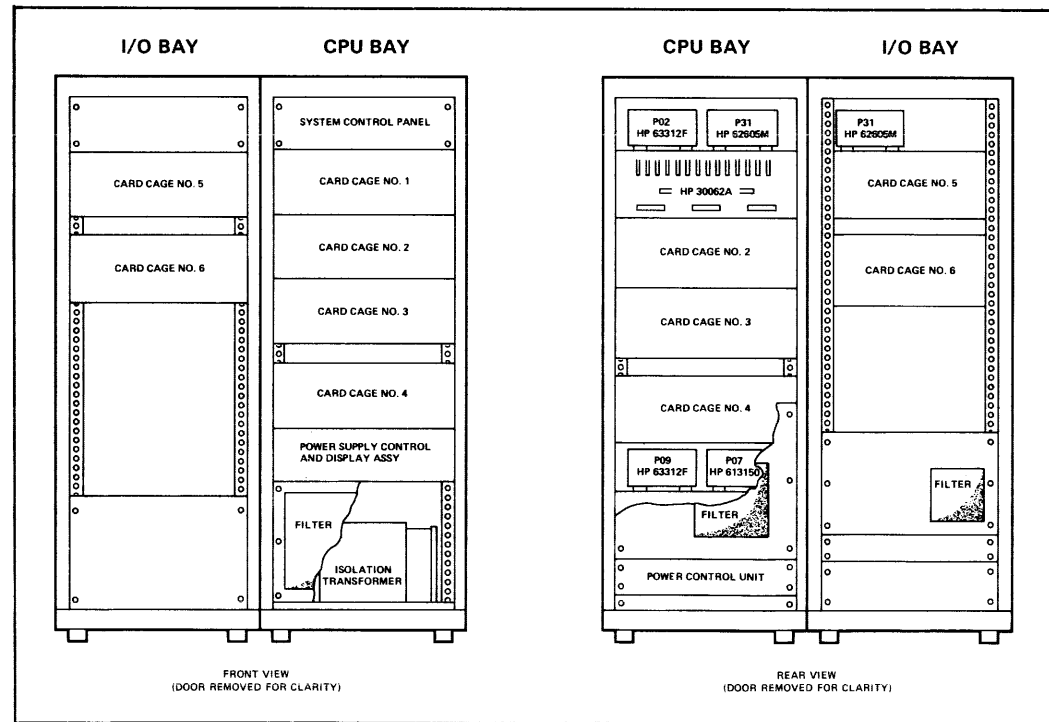


147001-20

Figure 1-18. HP 3000 Series III Computer System (32435A)

Table 1-6. HP 3000 Series III (32435A) PCA Slot Assignments

I/O BAY (OPTION 200)			CPU BAY		
	Slot	PRINTED CIRCUIT ASSEMBLY		Slot	PRINTED CIRCUIT ASSEMBLY
CARD CAGE NO. 5	A1	Available for programmed (SIO) or direct I/O	CARD CAGE NO. 1	A1	Reserved for maintenance panel PCA.
	A2	Available for programmed (SIO) or direct I/O		A2	30012-60001 Extended Instruction Set
	A3	Available for programmed (SIO) or direct I/O		A3	30003-60021 Read Only Memory
	A4	Available for programmed (SIO) or direct I/O		A4	30003-60022 Skip and Special Field
	A5	Available for programmed (SIO) or direct I/O		A5	30003-60003 Arithmetic and Logic Unit
	A6	Available for programmed (SIO) or direct I/O		A6	30003-60004 R Bus
	A7	Available for programmed (SIO) or direct I/O		A7	30003-60025 S Bus
	A8	Available for programmed (SIO) or direct I/O		A8	30003-60006 Current Instruction Register
	A9	Available for programmed (SIO) or direct I/O		A9	30003-60007 Module Control Unit
	A10	Available for programmed (SIO) or direct I/O		A10	30003-60028 Input Output Processor
CARD CAGE NO. 5	A1	Available for programmed (SIO) or direct I/O	CARD CAGE NO. 2	A1	30008-60003 Memory Array (128K)
	A2	Available for programmed (SIO) or direct I/O		A2	Available to add 128K
	A3	Available for programmed (SIO) or direct I/O		A3	Available to add 128K
	A4	Available for programmed (SIO) or direct I/O		A4	Available to add 128K
	A5	Available for programmed (SIO) or direct I/O		A5	30007-60005 Memory Control and Logic #1
	A6	Available for programmed (SIO) or direct I/O		A6	Available to add Memory Control and Logic #2
	A7	Available for programmed (SIO) or direct I/O		A7	Available to add 128K
	A8	Available for programmed (SIO) or direct I/O		A8	Available to add 128K
	A9	Available for programmed (SIO) or direct I/O		A9	Available to add 128K
	A10	Available for programmed (SIO) or direct I/O		A10	Available to add 128K
CARD CAGE NO. 5	A1	Available for programmed (SIO) or direct I/O	CARD CAGE NO. 3	A1	30135-60063 System Clock/FLI
	A2	Available for programmed (SIO) or direct I/O		A2	30032-60001 Terminal Data Interface
	A3	Available for programmed (SIO) or direct I/O		A3	30061-60001 Terminal Control Interface
	A4	Available for programmed (SIO) or direct I/O		A4	30030-60020 Selector Channel Port Controller
	A5	Available for programmed (SIO) or direct I/O		A5	30030-60021 Selector Channel Register
	A6	Available for programmed (SIO) or direct I/O		A6	30030-60003 Selector Channel Control
	A7	Available for programmed (SIO) or direct I/O		A7	30030-60011 Selector Channel Sequencer
	A8	Available for programmed (SIO) or direct I/O		A8	Available for programmed (SIO) or direct I/O
	A9	Available for programmed (SIO) or direct I/O		A9	Available for programmed (SIO) or direct I/O
	A10	Available for programmed (SIO) or direct I/O		A10	Available for programmed (SIO) or direct I/O
CARD CAGE NO. 5	A1	Available for programmed (SIO) or direct I/O	CARD CAGE NO. 4	A1	Available for programmed (SIO) or direct I/O
	A2	Available for programmed (SIO) or direct I/O		A2	Available for programmed (SIO) or direct I/O
	A3	Available for programmed (SIO) or direct I/O		A3	Available for programmed (SIO) or direct I/O
	A4	Available for programmed (SIO) or direct I/O		A4	Available for programmed (SIO) or direct I/O
	A5	Available for programmed (SIO) or direct I/O		A5	Available for programmed (SIO) or direct I/O
	A6	Available for programmed (SIO) or direct I/O		A6	30215-60002 Magnetic Tape Controller Processor
	A7	Available for programmed (SIO) or direct I/O		A7	30215-60006 Magnetic Tape Controller
	A8	Available for programmed (SIO) or direct I/O		A8	30036-60002 Multiplexer Channel
	A9	Available for programmed (SIO) or direct I/O		A9	30229-60001 Disc Control Interface
	A10	Available for programmed (SIO) or direct I/O		A10	



147001-21

Figure 1-19. HP 3000 Series III Computer System (32435A) with Option 200

ENGINEERING RESPONSIBILITY															SEPIA					
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15					
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31					
32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47					

SYM	REVISIONS	DATE	CODE	APPROVED	DATE
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B-30135-60018-51

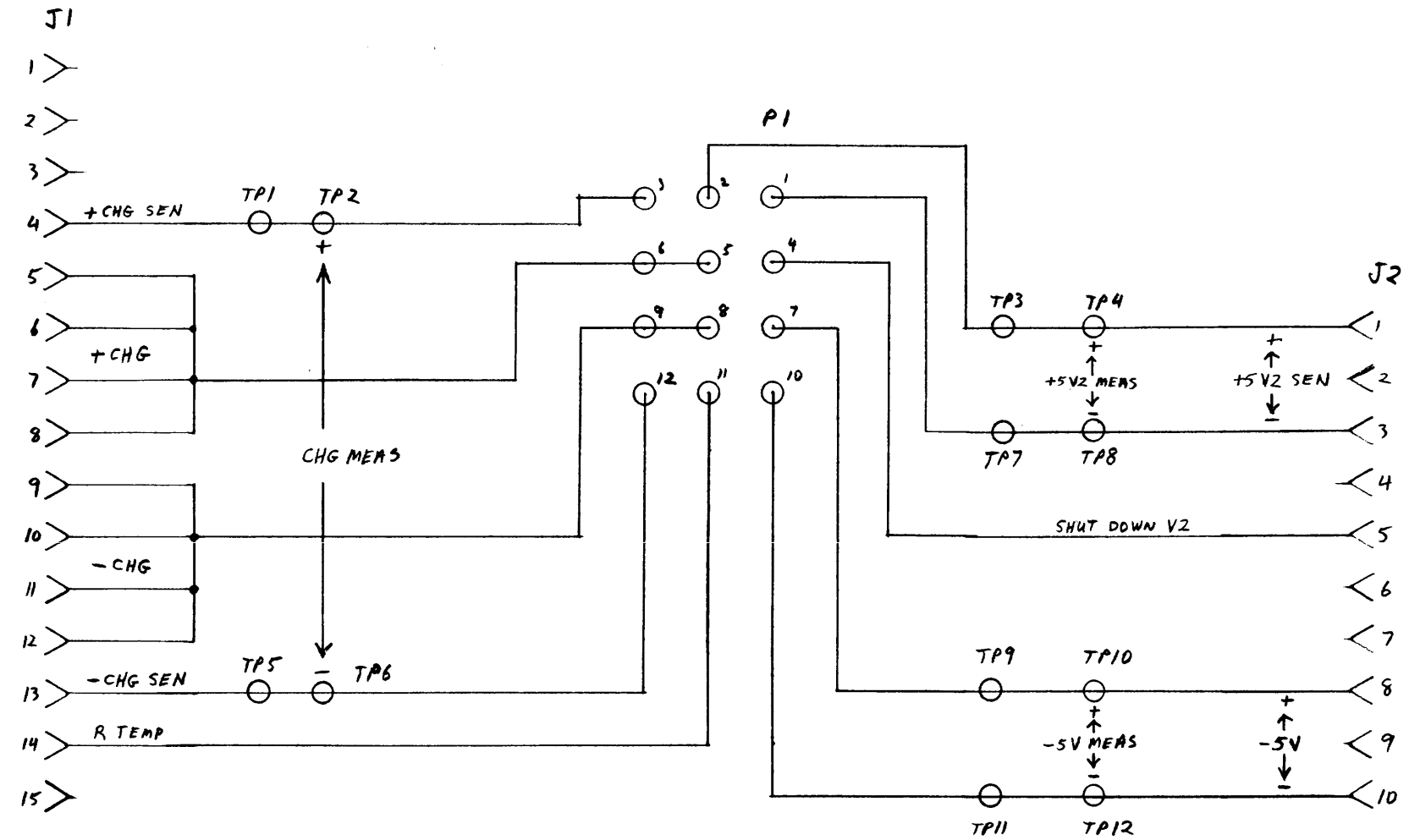


Figure 1-20. P09 Power Distribution PCA (32434A) Sheet 1 of 2



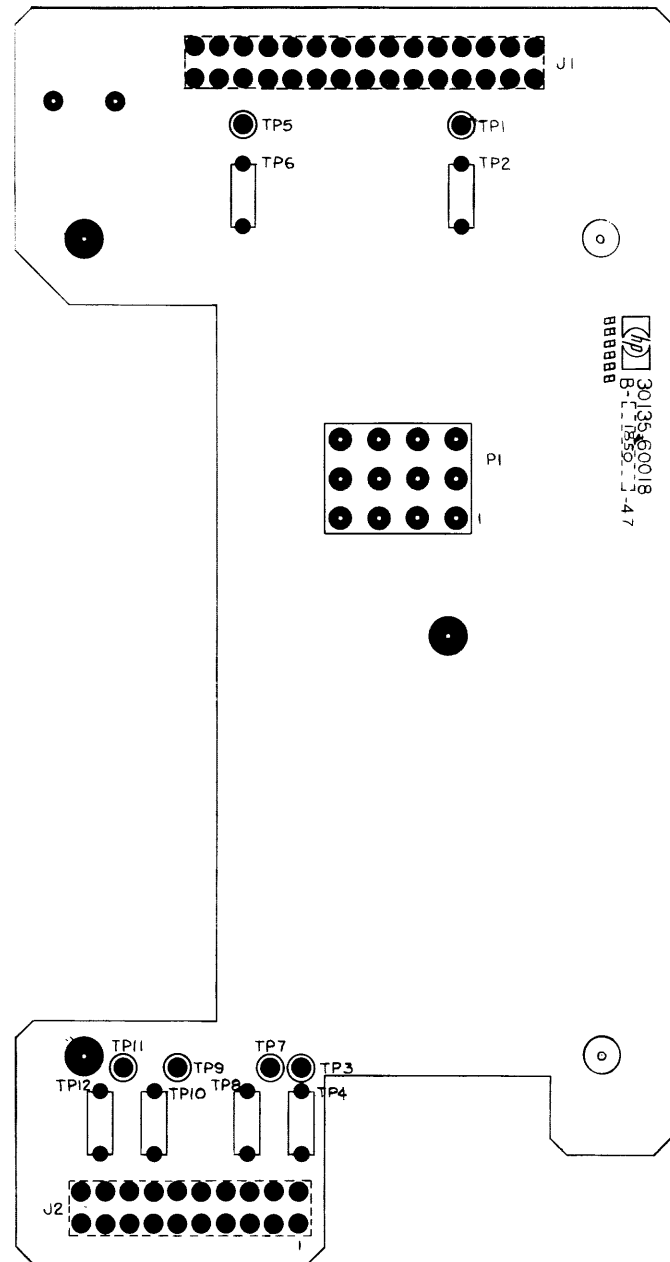
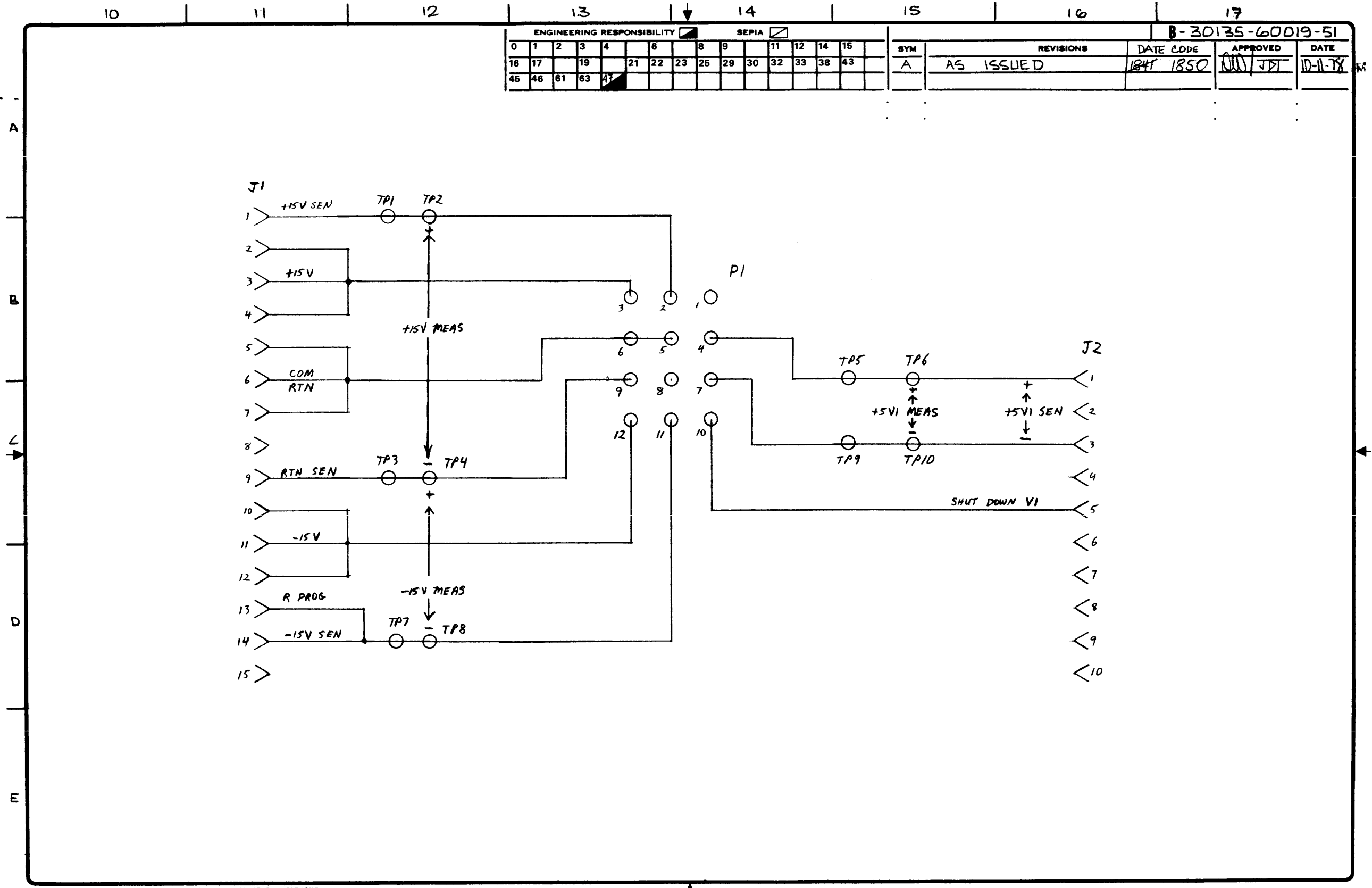


Figure 1-20. P09 Power Distribution PCA (32434A) Sheet 2 of 2



STOCK NO. 8280-0002 PRINTED ON DIEPO NO. 1020-10 CLEARPRINT FADEOUT

Figure 1-21. P02 Power Distribution PCA (32435A) Sheet 1 of 2

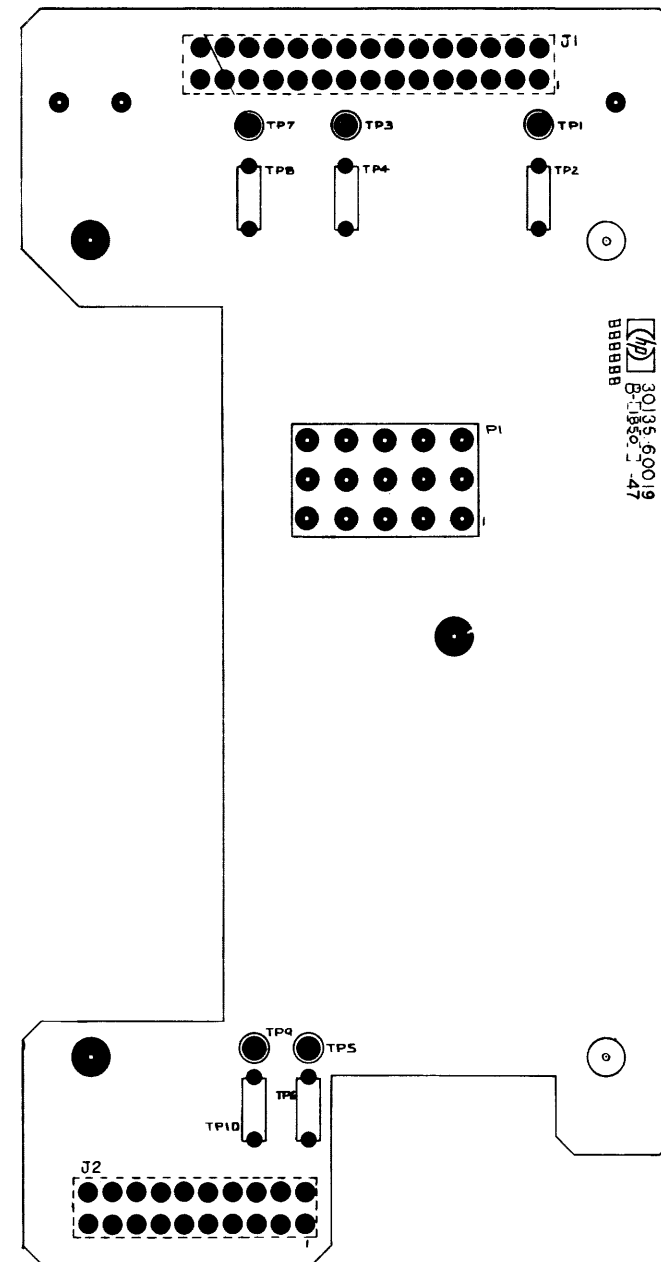


Figure 1-21. P02 Power Distribution PCA (32435A) Sheet 2 of 2



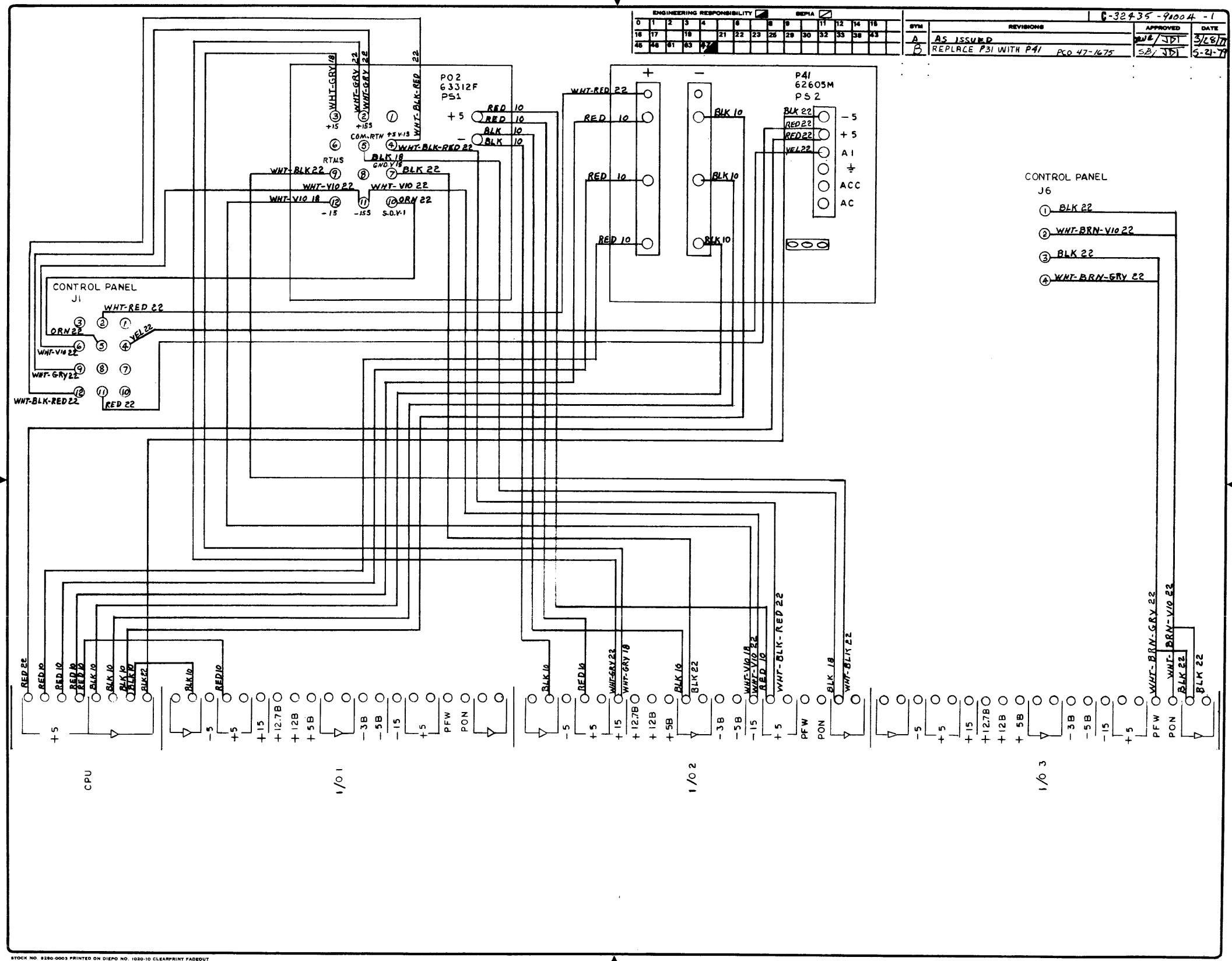
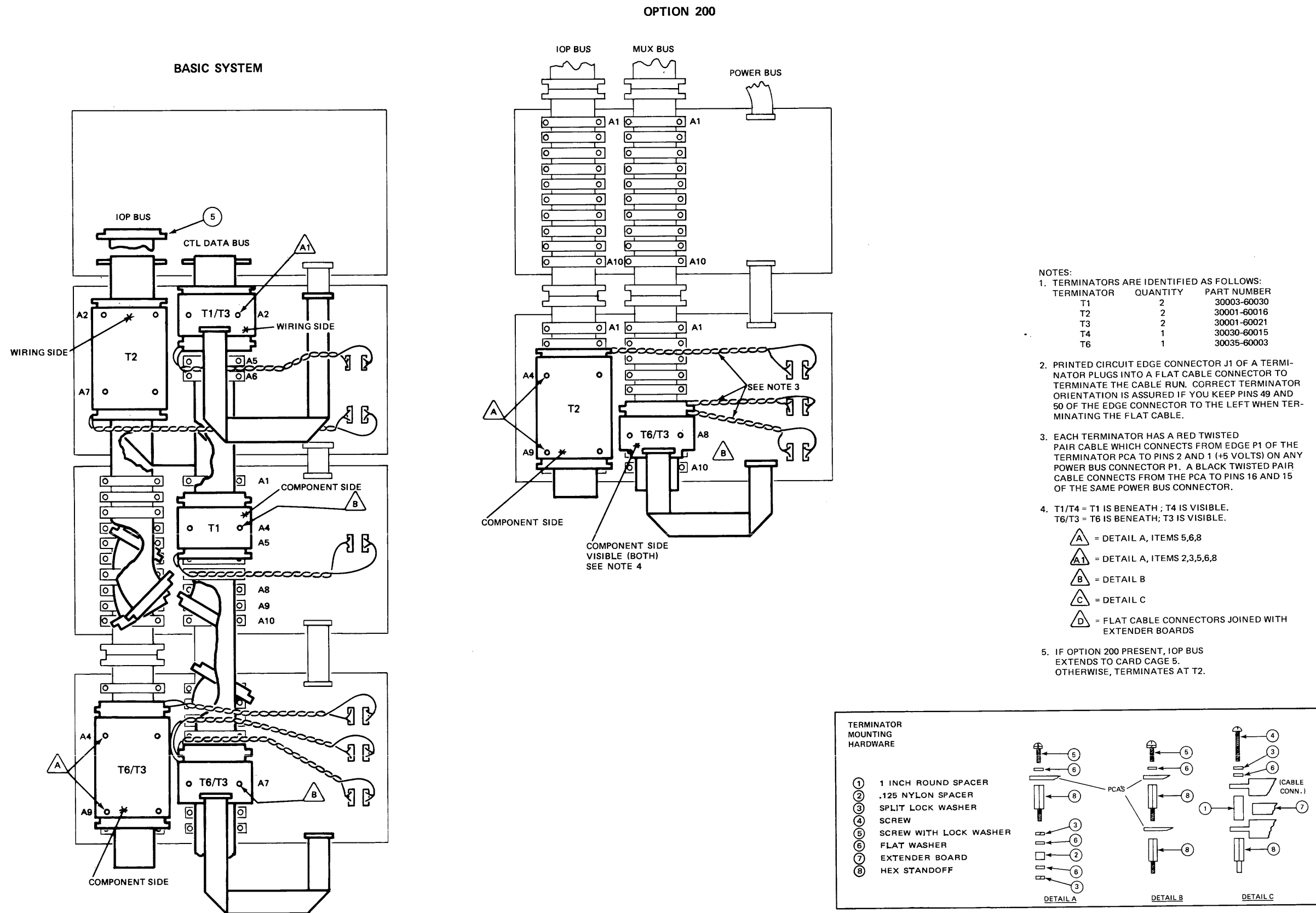
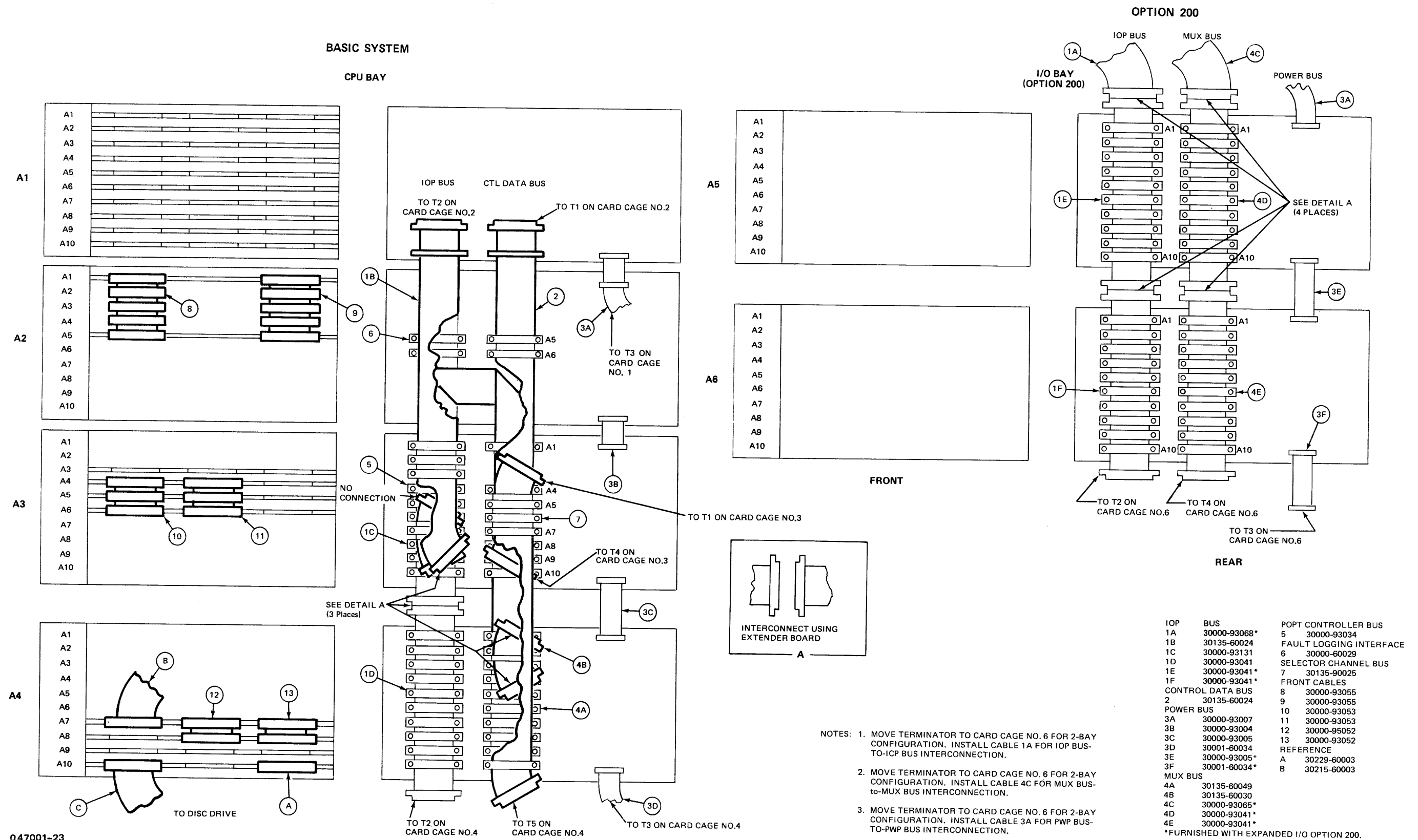


Figure 1-23. P02/P41 System Wiring Diagram (32435A)



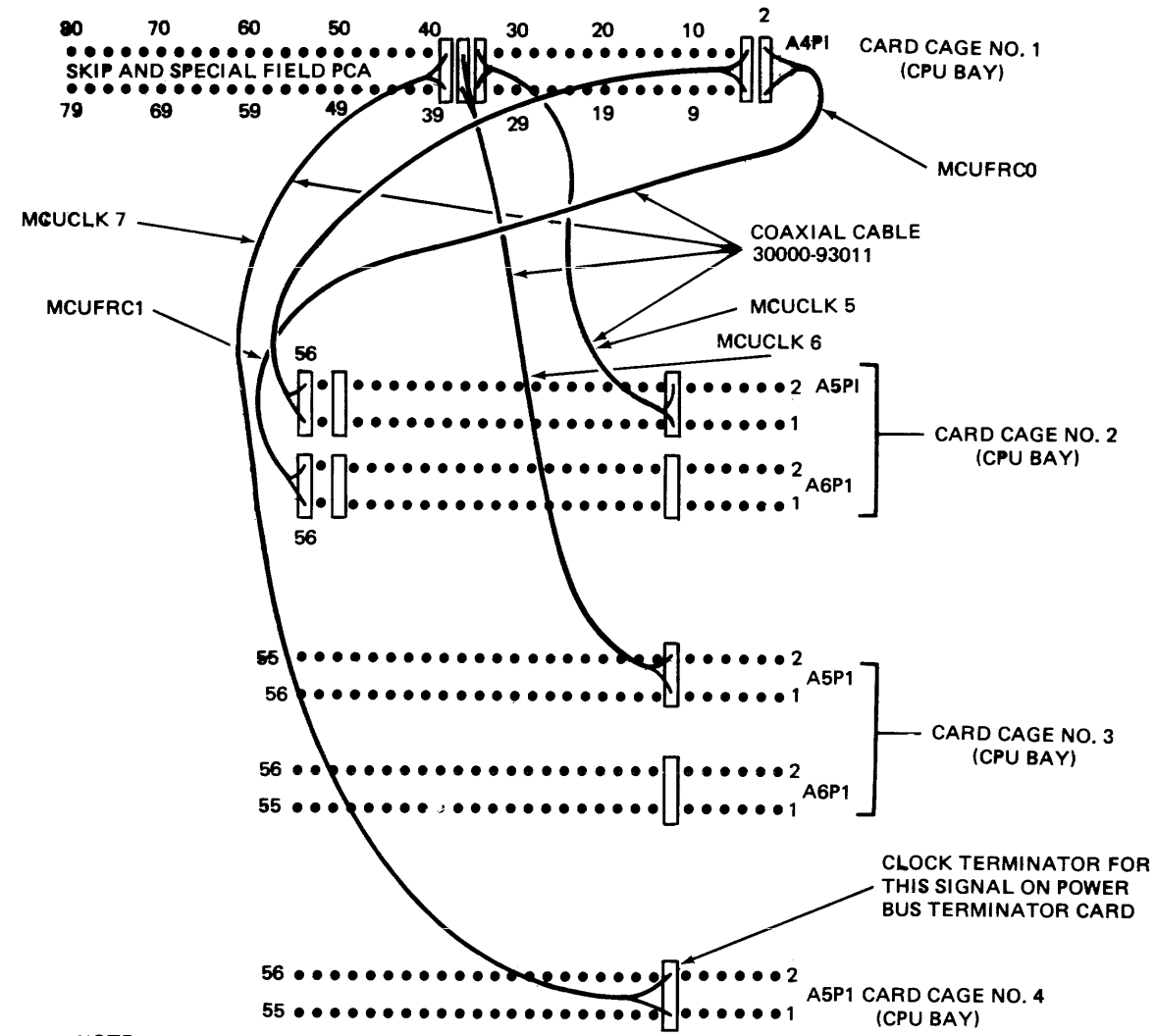
047001-22

Figure 1-24. Flat Cable Terminators (32435A, with Option 200)



047001-23

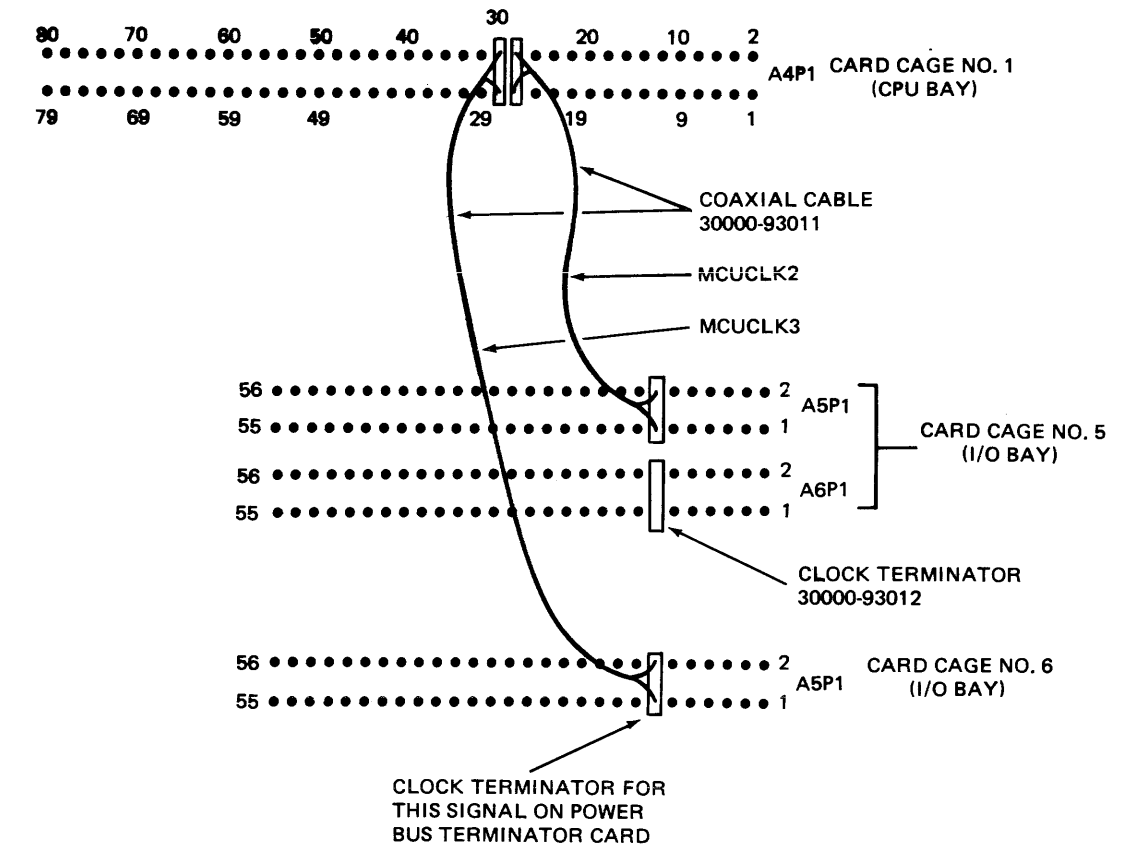
Figure 1-25. System Flat Cables (32435A, with Option 200)



NOTE:  
 JUMPER W1 ON THE I/O MODULES ARE  
 CUT TO ISOLATE THE MCUCLK TO  
 A SINGLE MODULE

147001-24

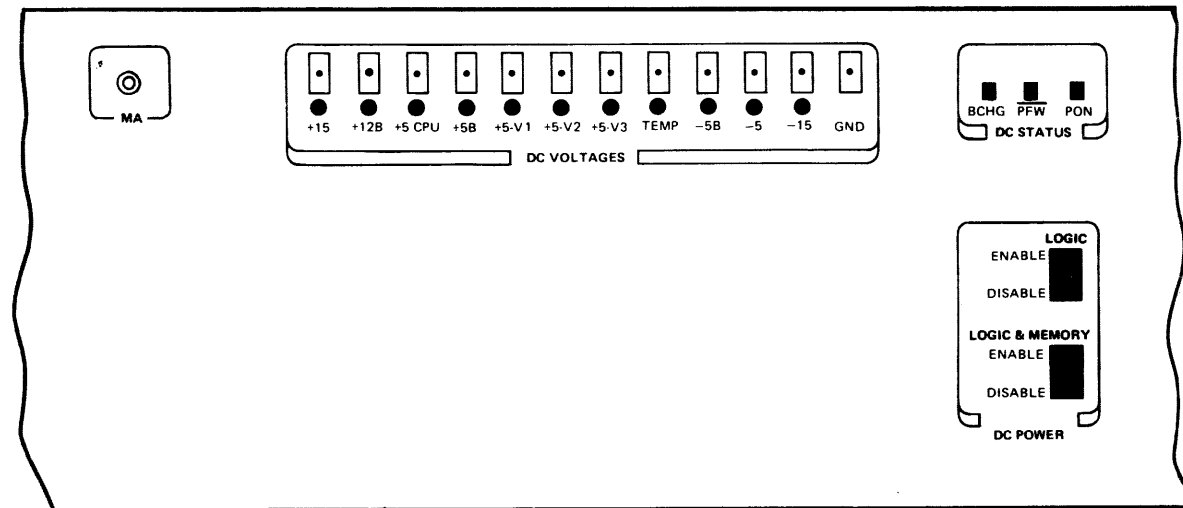
Figure 1-26. CPU Bay Clock Jumpers and Terminators (32435A)



147001-25

Figure 1-27. I/O Bay Clock Jumpers and Terminators (32435A)



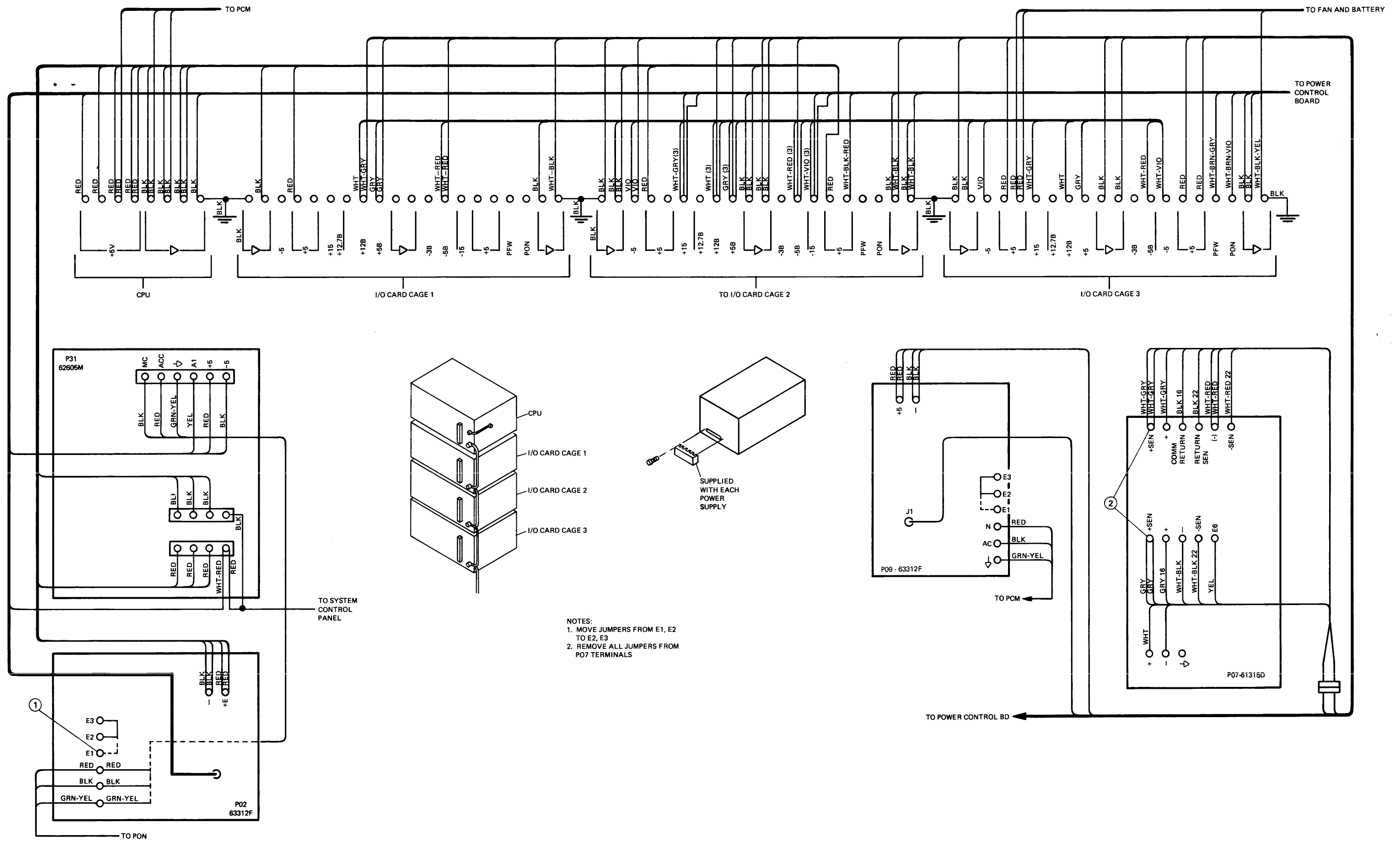


147001-26

Figure 1-28. Power Control and Status Panel (32435A)

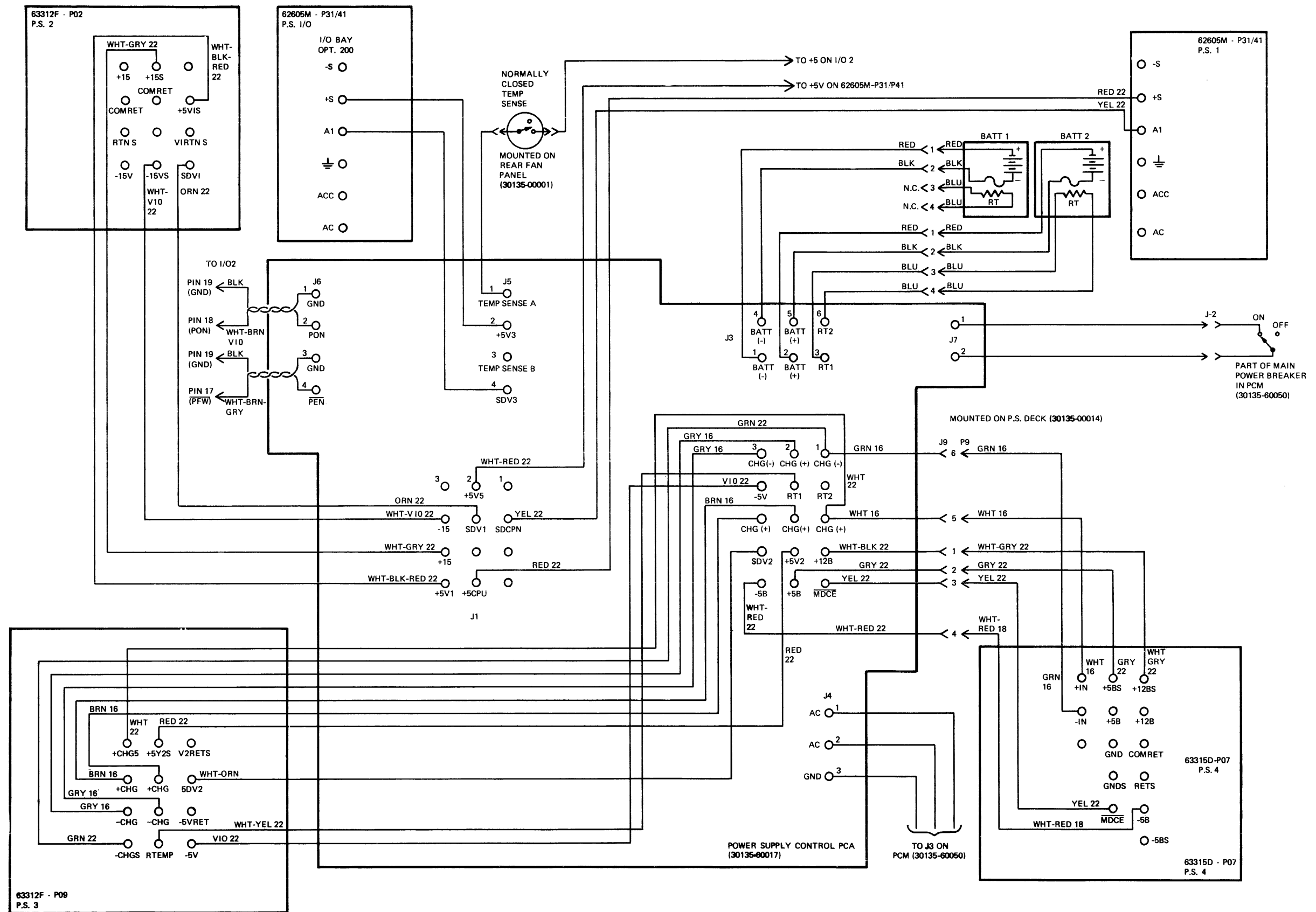
Table 1-7. Power Control and Indicator Functions (32435A)

Control or Indicator	Function
BCHG	Lights steady for fully charged battery, blinks slowly while battery is charging, and blinks rapidly when battery is discharging. Remains unlighted when battery is fully discharged or is missing.
PFW	Lights when input AC power to the system is below specified value.
PON	Lights when AC power is applied to the power supplies and the power supplies are operating properly. Turns off when DC voltages decay because of power loss or a power supply fails.
LOGIC	When set to ENABLE, DC power is applied to all PCASS. When set to DISABLE, DC power is removed from all but memory PCAs.
LOGIC AND MEMORY	When set to ENABLE, DC power is applied to all PCAs, provided that the LOGIC switch is set to ENABLE. When set to DISABLE, all DC power is removed from all PCAs.



047001-27

Figure 1-29. CPU Wiring (32435A)



047001-28

Figure 1-30. DC Power Connections (32435A)

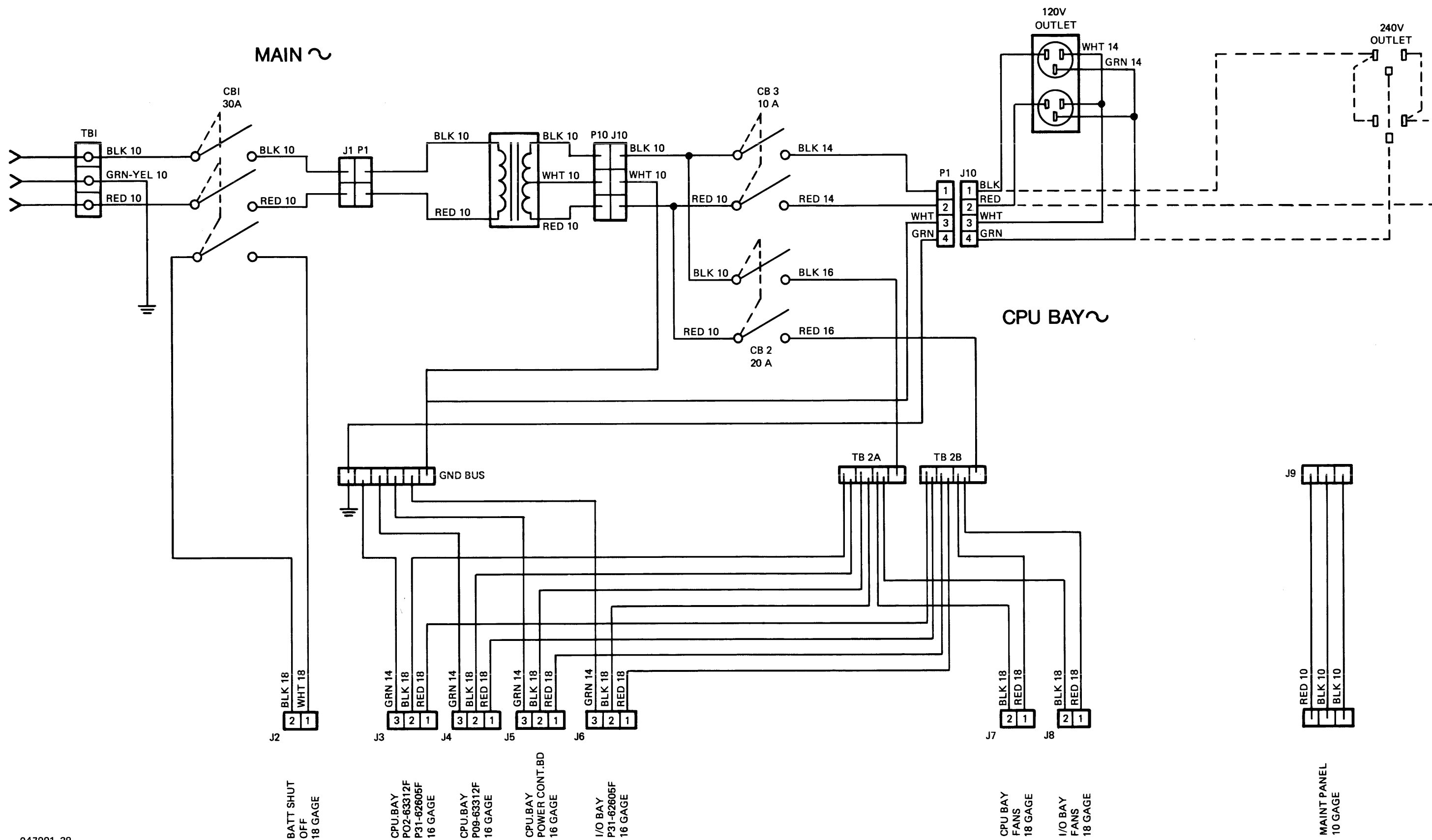


Figure 1-31. AC Power Distribution (32435A)

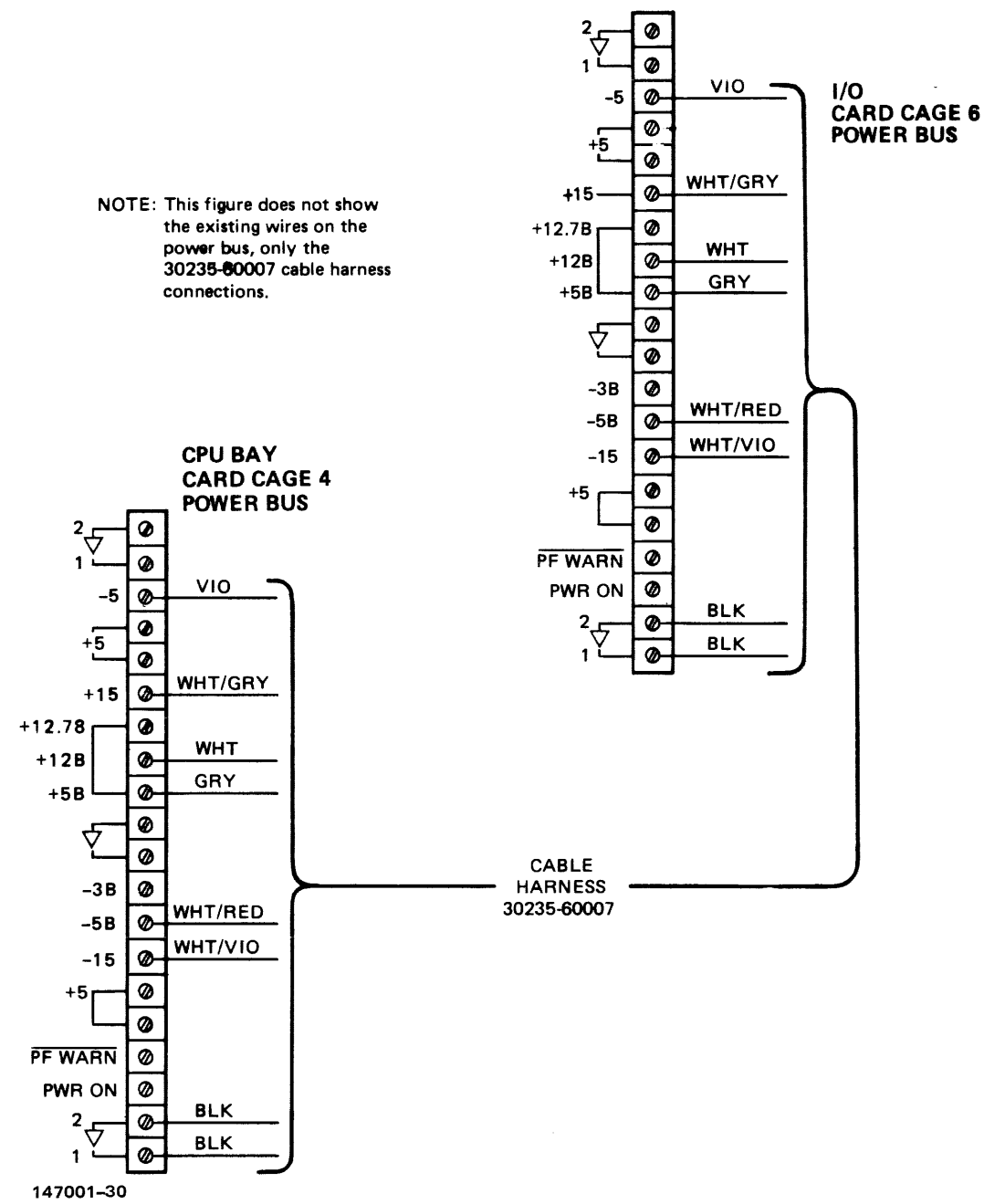
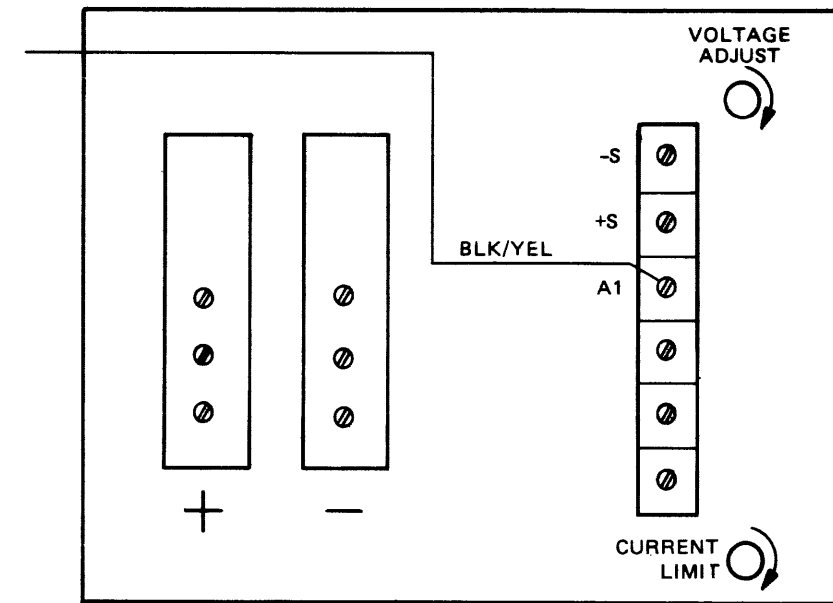


Figure 1-32. Cable Harness, 30235-60007, (32435A, with Option 200)



147001-31

Figure 1-33. Power Bus Connection (32435A, with Option 200)

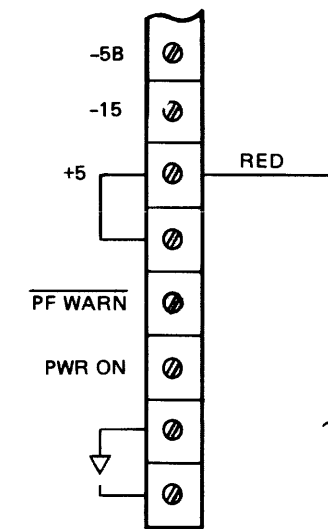


Table 1-8. CPU Backplane Signal Distribution List

SIGNAL	1A1	1A2	1A3	1A4	1A5	1A6	1A7	1A8	1A9	1A10	BUS	SIGNAL	1A1	1A2	1A3	1A4	1A5	1A6	1A7	1A8	1A9	1A10	BUS	
-APE									P2- 7	P2- 7	P2-47	-IOD11										P2*59	P3-36	
-BPINT	P1*30							P1-32				-IOD12										P2*61	P3-38	
-CARRY	P1-65			P1-65	P1*65							-IOD13										P2*62	P3-39	
-CF3				P2*18	P2-18							-IOD14										P2*63	P3-41	
-CLK	P1-78	P1-78		P1*78	P1-78	P1-78	P1-78	P1-78	P1-78	P1-78	P5- 2	-IOD15										P2*64	P3-42	
-CLSR				P1*15		P1-15						-IOD2										P2*33	P3-23	
-CPUINH									P2-48	P2*48		-IOD3										P2*34	P3-24	
-CPULSEL							P1-58		P1*61			-IOD4										P2*41	P3-26	
-CPURST	P2-78	P2-78	P2-78	P2-78	P2*78	P2-78	P2-78	P2-78	P2-78		P5-50	-IOD5										P2*42	P3-27	
-CPURSTS					P2-71			P2*69				-IOD6										P2*43	P3-29	
-DATAPE								P1*11	P1-11			-IOD7										P2*44	P3-30	
-DCTFRZ									P1-47	P1*47		-IOD8										P2*45	P3-32	
-DECSR			P1*22			P1-24		P1-24				-IOD9										P2*46	P3-33	
-DEVN00										P2*18	P3- 8	-IODPRTY										P2* 9	P3- 1	
-DEVN01										P2*24	P3- 9													
-DEVN02										P2*25	P3-11	-IOPACT									P1-22	P1-23		
-DEVN03										P2*26	P3-12	-IORESET					P2*79				P2-79	P2-79		
-DEVN04										P2*27	P3-14	-IORSTSW					P2-70				P2*68			
-DEVN05										P2*28	P3-15	-IOSTEP	P1*45										P1-44	
-DEVN06										P2*29	P3-17	-IOSTROP									P1*17	P1-12		
-DEVN07										P2*30	P3-18	-IOTIMER									P1*29	P1-29		
-DISPLAY	P1*68		P1-68	P1-68		P1-68			P1-68			-IOX12										P2-66	P3-45	
-ENB									P2*18			-IOX13										P2-10	P3- 2	
-ERFRZEN	P1*12								P1-12	P1-15		-IOX14										P2-67	P3-47	
-EXTRP	P1-37											-IOX15										P2-69	P3-48	
-FCLK	P1-79	P1-79	P1-79	P1*79	P1-79	P1-79	P1-79	P1-79	P1-79		P5- 4	-JBNDV				P2-66	P2*66							
-FHB				P1*59	P1-59							-JLUT1			P1*18	P1-12								
-FIELD6					P1*34			P1-15				-JMPFRZ	P1-54			P1*56						P1-31		
-FIELD8					P1*35					P1-35		-JMPJSB1			P2*23	P2-28		P2-28						
-FIELD9					P1*32			P1-31				-JSB1			P1*15	P1-11								
-FRCLK			P1-14	P1*10								-LDACOR								P1-66		P1*66		
-FRUNCLK	P2-35			P2*32								-LDDCOR								P1-50		P1*50		
-FRZ	P1-51			P1-50					P1*46	P1-46		-LSRSPO	P2*23		P2-30									
-HSREQ										P1-37	P1-12	-MCUCLOR										P1*24		
-INCSR		P1*29				P1-27		P1-27				-MCUCLIR										P1*26		
-INCT				P2*74			P2-77					-MCUCL2R										P1*28		
-INTACK											P2-71	P3-50	-MCUCL3R									P1*30		
-INTREQ											P2*65	P3-44	-MCUCL4R									P1*32		
-INTRP1				P2-52				P2*58					-MCUCL5R									P1*34		
-IOCMD0											P2*11	P3- 4	-MCUCL6R									P1*36		
-IOCMD1											P2*17	P3- 6	-MCUCL7R									P1*38		
-IOCMD2											P2*12	P3- 5	-MCUCLK0									P1*23		
-IOD0											P2*31	P3-20	-MCUCLK1									P1*25		
-IOD1											P2*32	P3-21	-MCUCLK2									P1*27		
-IOD10											P2*49	P3-35	-MCUCLK3									P1*29		

Table 1-8. CPU Backplane Signal Distribution List (Continued)

SIGNAL	1A1	1A2	1A3	1A4	1A5	1A6	1A7	1A8	1A9	1A10	BUS	SIGNAL	1A1	1A2	1A3	1A4	1A5	1A6	1A7	1A8	1A9	1A10	BUS
-MCUCLK4				P1*31								-SYSPE									P2*27	P2- 8	P2-48
-MCUCLK5				P1*33								-T=0				P1-74	P1*74						
-MCUCLK6				P1*35								-TESTFRZ									P1-32		
-MCUCLK7				P1*37								-TINT		P2*56							P2-56		P5-48
-MCUFR1R				P1* 4								-TMRUFZR					P2*59				P1-45		
-MCUFRCO				P1* 1								-TRO					P1*34	P1-34					
-MCUFRC1				P1* 3								-TR1					P1*35	P1-35					
-MURST									P2* 1		P2-49	-TR2					P1*36	P1-36					
-MODINH									P2-41			-TR3					P1*37	P1-37					
-MODINHR									P2-42			-UNC1			P1* 5	P1- 5							
-MPIFRZ	P1*34									P1-33		-V0	P2* 9	P2-11	P2*11					P2* 7			P5-10
-NEXT1			P1* 6	P1- 6								-V1	P2*10	P2-12	P2*12					P2* 8			P5-12
-NOP	P2-38			P2-70				P2*70				-V10	P2*31	P2-31	P2*31					P2*31			P5-30
-NOP2				P2*77	P2-77	P2-77				P2-76		-V11	P2*32	P2-32	P2*32					P2*32			P5-32
-NXTG			P1-66			P1*67						-V12	P2*33	P2-33	P2*33					P2*33			P5-34
-OVFL	P1-53				P1-53	P1*44						-V13	P2*34	P2-34	P2*34					P2*34			P5-36
-PADDX						P2-79		P2*79				-V14	P2*41	P2-41	P2*41					P2*41			P5-38
-PANLRD	P1-56		P1*56	P1-54								-V15	P2*42	P2-42	P2*42					P2*42			P5-40
-PFWARN					P1-24						P1- 2	-V2	P2*11	P2-13	P2*13					P2* 9			P5-14
-PNLS	P2-12		P2-14	P2-14	P2*11							-V3	P2*16	P2-16	P2*16					P2*12			P5-16
-POLORSO									P1-26	P1*26		-V4	P2*18	P2-18	P2*18					P2*18			P5-18
-RBR1			P1*55	P1=52			P1-28					-V5	P2*17	P2-17	P2*17					P2*17			P5-20
-RDIOA							P1*64			P1-64		-V6	P2*27	P2-27	P2*27					P2*27			P5-22
-REPN						P2*68	P2-65					-V7	P2*28	P2-28	P2*28					P2*28			P5-24
-REVMCUP						P1*43	P1-56					-V8	P2*29	P2-27	P2-29					P2*29			P5-26
-ROMFCN1			P2*22			P2-24						-V9	P2*30	P2-30	P2*30					P2*30			P5-28
-RORT15			P2*36	P2-36								A0					P2*29		P2-29				
-RORT16			P2*38	P2-38								A1					P2*30		P2-30				
-RORT21			P2*37	P2-32								A15					P2*34		P2-34				
-RSB1			P2* 3	P2- 3								ALPHA			P2-12		P2*12						
-SAME				P1-75	P1*77							AT01								P1* 1		P1- 1	
-SBR				P2-48		P2*46						AT02								P1*10		P1-10	
-SETERR					P1*36				P1-36	P1-36		B12				P1*24				P1-30			
-SF3				P2*17	P2-17							B13				P1*23				P1-12			
-SFQ0						P2-44	P2*44					B14	P2- 7			P2* 7				P2- 7			
-SI									P1*41	P1-41	P1-16	B15	P2- 8			P2* 8				P2- 8			
-SIFRZ									P1-34	P1*34		BCMP								P2*63	P2-62		
-SIFRZ									P1-34	P1*34		BMCUPRTY									P1-75	P1-75	P1*66
-SIOCMP									P1-27	P1*28		BMUX								P1* 1			
-SLOAD	P1*13				P1-13	P1-13		P1-13	P1-13	P1-13		BNDV	P2-14			P2*27				P2-71			
-SO										P1*43	P1-18	BPENDING				P2-54				P2*52			
-SPBBANK				P1-57			P1-62		P1*65			BUSOP1			P1*70							P1-72	
-STEPENR	P1*38									P1-32		CB14								P2*12			P2- 1
-STTR						P1*38	P1-38					CB15								P2*32			P2-73
-SWLDRAR	P2*13			P2-26				P2-11				CCPX	P1-16			P1*16	P1-16					P1-16	P2-45

Table 1-8. CPU Backplane Signal Distribution List (Continued.)

SIGNAL	1A1	1A2	1A3	1A4	1A5	1A6	1A7	1A8	1A9	1A10	BUS	SIGNAL	1A1	1A2	1A3	1A4	1A5	1A6	1A7	1A8	1A9	1A10	BUS
CIR12						P1-58		P1*58				INTCLKM	P1*64			P1-64							
CIR13						P1-57		P1*62				INTG	P2-22			P2*50				P2-51			
CIR14						P1-65		P1*64				INTPOLL										P1*79	
CIR15						P1-66		P1*66				INTRP	P1-63			P2-51				P2*66			
CIR4						P1-49		P1*49				IOERR									P2-50	P2*50	
CIR7					P1-48			P1*50				IOHR									P2-58	P2*58	
CIR8					P1-56			P1*56				IOHREQ									P2*57	P2-57	
CLK	P1-67				P1*76	P1-76			P1-42	P1-48	P1-48	IOHSEL									P2*53	P2-53	
CLKENB	P1*61				P1-61							IOINP	P2-49								P2*56	P2-56	
CMUX	P2-51								P2*64			IOLR									P2-70	P2*70	
CNTRMAX				P2-59			P2*59					IOLREG									P2*68	P2-68	
CPUIN								P1-38	P1*38			IOLSEL									P2*54	P2-54	
CPUSEL							P1-24	P1*24				IOMOP0									P2-51	P2*51	
CUPTIMER	P1-29				P1*33			P1-29	P1-30			IOMOP1									P2-52	P2*52	
DATA POLL										P1*1		IORESET										P1*33	P1-8
DISPFLG	P1-46				P1*46			P1-46				IOSEL									P2*59		
DPOP						P1-72			P1*71			IOSPE									P2*55	P2-55	
DS						P2-27		P2*25				IOTO1									P2-74	P2*74	
DVSB				P2-56	P2*57							IOTO2									P2-72	P2*72	
EMULATOR		P1*30					P1-25		P1-16			JLUIM				P2*71					P2-54		
ENABLE									P1-70	P1*62		JMP1G	P1-72		P1-77	P1*72							
ENABLE0								P2-15		P2-40		JMP2G	P1-62		P2-43	P2*45						P2-44	
ENABLE1								P2-19		P2-41		LDBREG	P1*70			P1-66							
ENABLE2								P2-17		P2-42		LUTG	P2-79			P2*72					P2-73		
ENABLE3								P2-23		P2-43		MCUCMP	P1-42								P1*41		
ENABLE4								P2*21		P2-44		MCUD0										P1*55	P1-55
ENTIMER	P1*31				P1-31				P1-44		P1-1	MCUD1									P1*55	P1-55	P1*55
EXTCLK				P1-67								MCUD10									P1*59	P1-59	P1*59
EXTINT								P1-10		P1*10		MCUD11									P1*76	P1-76	P1*76
FCLK	P2-1			P2*1	P2-1	P2-1		P2-1				MCUD12									P1*70	P1-70	P1*70
FIELD2					P1*27				P1-14			MCUD13									P1*68	P1-68	P1*68
FIELD4					P1*29			P1-21				MCUD14									P1*73	P1-73	P1*73
FIELD5					P1*28			P1-19				MCUD15									P1*71	P1-71	P1*71
FIELD7					P1*26			P1-8				MCUD2									P1*77	P1-77	P1*77
FLAG1	P1-58			P1*58	P1-58							MCUD3									P1*57	P1-57	P1*57
FLAG2	P1-73			P1*73	P1-73							MCUD4									P1*63	P1-63	P1*63
FLAG3	P2-37			P2-37	P2*33							MCUD5									P1*61	P1-61	P1*61
FROM0								P2*16		P2-25		MCUD6									P1*65	P1-65	P1*65
FROM1								P2*22		P2-26		MCUD7									P1*69	P1-69	P1*69
FROM2								P2*12		P2-27		MCUD8									P1*67	P1-67	P1*67
GND												MCUD9									P1*74	P1-74	P1*74
ICSFLG	P1-47				P1*47		P1-27	P1-47				MCUDPRTY									P1*72	P1-72	P1*72
ILGADR							P1*29		P1-28			MCUERR									P1*75	P1-75	P1*75
INCNAMER				P1*13		P1-16						MCUFRZ					P1-37				P1-25	P1*25	P1*18
INCP				P2*19			P2-25					MEMREF											
INDIRECT				P2-73				P2*72													P1-48		





Table 1-8. CPU Backplane Signal Distribution List (Continued)

SIGNAL	1A1	1A2	1A3	1A4	1A5	1A6	1A7	1A8	1A9	1A10	BUS	SIGNAL	1A1	1A2	1A3	1A4	1A5	1A6	1A7	1A8	1A9	1A10	BUS
ROM20		P1*45	P1*45								P4-33	RORT27	P2-77		P2*77	P2-75							P2-77
ROM21		P1*46	P1*46								P4-34	RPTFCN				P2-10	P2*12						
ROM22		P1*47	P1*47								P4-36	RREGO				P1-51	P1*42						
ROM23		P1*48	P1*48								P4-37	RUNFF	P1-36						P1-26	P1*34			
ROM24		P1*51	P1*51								P4-39	S0					P1- 3	P1* 3	P1* 3	P1* 3	P1* 3	P1* 3	
ROM25		P1*52	P1*52								P4-40	S1					P1- 4	P1* 4	P1* 4	P1* 4	P1* 4	P1* 4	
ROM26		P1*53	P1*53								P4-42	S10					P2- 5	P2* 5	P2* 5	P2* 5	P2* 5	P2* 5	P2* 5
ROM27		P1*54	P1*54								P4-43	S11					P2- 6	P2* 6	P2* 6	P2* 6	P2* 6	P2* 6	P2* 6
ROM28		P1*65	P1*65								P4-45	S12					P2-38	P2*38	P2*38	P2*38	P2*38	P2*38	P2*38
ROM29		P1*67	P1*67								P4-46	S13					P2-37	P2*37	P2*37	P2*37	P2*37	P2*37	P2*37
ROM3		P1*24	P1*24								P4- 6	S14					P2-36	P2*36	P2*36	P2*36	P2*36	P2*36	P2*36
ROM30		P1*69	P1*69								P4-48	S15					P2-35	P2*35	P2*35	P2*35	P2*35	P2*35	P2*35
ROM31		P1*71	P1*71								P4-49	S2					P1- 5	P1* 5	P1* 5	P1* 5	P1* 5	P1* 5	P1* 5
ROM4		P1*23	P1*23								P4- 8	S3					P1- 6	P1* 6	P1* 6	P1* 6	P1* 6	P1* 6	P1* 6
ROM5		P1*25	P1*25								P4- 9	S4					P1-54	P1*54	P1*54	P1*54	P1*54	P1*54	P1*54
ROM6		P1*27	P1*27								P4-11	S5					P1-53	P1*53	P1*53	P1*53	P1*53	P1*53	P1*53
ROM7		P1*26	P1*26								P4-12	S6					P1-52	P1*52	P1*52	P1*52	P1*52	P1*52	P1*52
ROM8		P1*28	P1*28								P4-14	S7					P1-51	P1*51	P1*51	P1*51	P1*51	P1*51	P1*51
ROM9		P1*31	P1*31								P4-15	S8					P2- 3	P2* 3	P2* 3	P2* 3	P2* 3	P2* 3	P2* 3
ROMENB		P2- 6	P2- 6								P5- 8	S9					P2- 4	P2* 4	P2* 4	P2* 4	P2* 4	P2* 4	P2* 4
ROMFNCT2					P1*67				P1-67			SAVEG	P2-45		P2-44	P2*44							P1*50
ROR10			P1*72		P1-66							SCMD	P1-52										
ROR11			P1*73		P1-68							SDFG				P1*71	P1-70						
ROR12			P1*74		P1-71							SF0	P2*66		P2*66			P2*66	P2-66				
ROR13			P1*75		P1-72							SF1	P2*68		P2*68			P2*68	P2-68				
ROR14			P1*76		P1-75							SF2	P2*70		P2*70			P2*70	P2-70				
ROR23			P2* 5	P2- 5								SF3	P2*72		P2*72			P2*72	P2-72				
ROR24			P2*24	P2-24								SF4	P2*74		P2*74			P2*74	P2-74				
RORT10	P2-44				P2*44							SFSAME					P2-28		P2*28				
RORT11	P2-43				P2*43							SHIFTCLK	P1*23				P1-23	P1-23		P1-23	P1-23	P1-24	
RORT12	P2-24				P2*24							SIFG			P1*69	P1-69							
RORT13	P2-25				P2*25							SIODR	P1-48										P1*49
RORT14	P2-46				P2*46							SIODR	P1-24										P1*30
RORT15	P2-53		P2*53	P2-53				P2-53				SIOMAP	PR-25										P1*31
RORT16	P2-55		P2*55	P2-55				P2-55				SIOP	P1- 9										P1* 9
RORT17	P2-58		P2*58	P2-58				P2-58				SKIP	P2-26		P2-26	P2*27		P2-26					
RORT18	P2-57		P2*57	P2-57				P2-57				SKIPNOP1			P1*13	P1- 9							
RORT19	P2-62		P2*62	P2-62				P2-62				SMCO	P1-27										P1*33
RORT20	P1-57		P1*57		P1-57							SP1 0					P1- 1	P1* 1	P1- 9				
RORT21	P1-49		P1*49		P1-49							SP115					P2-31	P2*30					
RORT22	P1-50		P1*50		P1-50							SP1IN					P2*42	P2-42					
RORT23	P2-61		P2*61	P2-61				P2-61				SP1SHIFT					P1*45	P1-45					
RORT24	P2-63		P2*63	P2-63				P2-63				SP3 0					P2-54		P2*54				
RORT25	P2-64		P2*64	P2-64				P2-64				SP315					P2-26	P2-25	P2*26				
RORT26	P2-65		P2*65	P2-65				P2-65				SP3IN					P1*15		P1-15				



Table 1-9. IOP Power Bus (non-Memory Card Cage)

PIN NUMBER		SIGNAL	PIN NUMBER		SIGNAL
56-PIN	20-PIN		56-PIN	20-PIN	
1		+5V	30		
2		+5V	31		Not used
3		+5V	32		Not used
4		+5V	33		Not used
5		PF WARN	34		Not used
6	1	ENTIMER	35		Not used
7	4	Spare	36		Not used
8	3	Spare	37		Not used
9	6	PWR ON	38		Not used
10	5	PWR ON	39		Not used
11	8	IORESET	40		Not used
12	7	IORESET	41	12	HSREQ
13	10	MCUCLKS 2	42	11	
14	9	MCUCCKS	43		1
15			44		1
16			45		IODPE
17		-5V	46		
18		-5V	47		1
19			48		1
20			49	16	SI
21			50	15	SI
22			51		1
23		Not used	52		1
24		Not used	53	18	S0
25		Not used	54	17	S0
26		Not used		55	1
27		Not used	56		1
28		Not used		20	Not used
29				19	Not used

- 1 Reserved for interrupt and data poll connections at backplane.
- 2 On pin 10 of 20-pin connector but isolated from other card cages by removal of resistor R1.

Table 1-10. Central Data Bus

PIN	SIGNAL	PIN	SIGNAL
1	COM	26	FROM1
2	MCUD0	27	FROM2
3	MCUD1	28	MOP0
4	MCUD2	29	MOP1
5	MCUD3	30	COM
6	MCUD4	31	CB14
7	MCUD5	32	SYSPRTY
8	COM	33	READY0
9	MCUD6	34	READY1
10	MCUD11	35	READY2
11	MCUD8	36	READY3
12	MCUD9	37	READY4
13	MCUD10	38	READY5
14	COM	39	COM
15	MCUD11	40	ENABLE0
16	MCUD12	41	ENABLE1
17	MCUD13	42	ENABLE2
18	MCUD14	43	ENABLE3
19	MCUD15	44	ENABLE4
20	MCUDPRTY	45	CB15
21	COM	46	COM
22	T00	47	APE
23	T01	48	SYSPE
24	T02	49	MCUDRST
25	FROM0	50	COM

NOTE: CPU/IOP Connector P2

Table 1-11. IOP Bus

PIN	SIGNAL	PIN	SIGNAL
1	IODPRTY	26	IOD4
2	IOX13	27	IOD5
3		28	
4	IOCMD0	29	IOD6
5	IOCMD1	30	IOD7
6	IOCMD1	31	
7		32	IOD8
8	DEVN00	33	IOD9
9	DEVN01	34	
10		35	IOD10
11	DEVN02	36	IOD11
12	DEVN03	37	
13		38	IOD12
14	DEVN04	39	IOD13
15	DEVN05	40	
16		41	IOD14
17	DEVN06	42	IOD15
18	DEVN07	43	
19		44	INTREQ
20	IODO	45	IOX12
21	IOD1	46	
22		47	IOX14
23	IOD2	48	IOX15
24	IOD3	49	
25		50	INTACK

NOTE: CPU/IOP connector P3

Table 1-12. Current Instruction Register Connector A8J1

PIN	SIGNAL	PIN	SIGNAL
1		26	CIR6 Buffered
2	SYSSWREG0	27	CIR7 Buffered
3	SYSSWREG1	28	PON Buffered
4	SYSSWREG2	29	CIR8 Buffered
5	SYSSWREG3	30	CIR9 Buffered
6	SYSSWREG4	31	CIR10 Buffered
7	SYSSWREG5	32	CIR11 Buffered
8	SYSSWREG6	33	CIR12 Buffered
9	SYSSWREG7	34	CIR13 Buffered
10		35	CIR14 Buffered
11	SYSSWREG8	36	CIR15 Buffered
12	SYSSWREG9	37	
13	SYSSWREG10	38	$\overline{\text{INHAR}}$
14	SYSSWREG11	39	$\overline{\text{SYSHFF}}$
15	SYSSWREG12	40	$\overline{\text{RUNFF}}$
16	SYSSWREG13	41	
17	SYSSWREG14	42	$\overline{\text{RUNSW}}$
18	SYSSWREG15	43	
19		44	$\overline{\text{LDSW}}$
20	CIR0 Buffered	45	
21	CIR1 Buffered	46	$\overline{\text{DUMPSW}}$
22	CIR2 Buffered	47	
23	CIR3 Buffered	48	$\overline{\text{IORSTSW}}$
24	CIR4 Buffered	49	
25	CIR5 Buffered	50	$\overline{\text{CPURST}}$

NOTE: Connector A8J1 is cabled to the system control panel on the front door.

Table 1-13. Current Instruction Register Connector A8J2

PIN	SIGNAL	PIN	SIGNAL
1		26	LDREG
2	PANELSWREG0	27	LDADDR
3	PANELSWREG1	28	
4	PANELSWREG2	29	DISPMEM
5	PANELSWREG3	30	LDMEM
6	PANELSWREG4	31	
7	PANELSWREG5	32	EXECUTE
8	PANELSWREG6	33	SINGLE
9	PANELSWREG7	34	
10		35	INCRADDR
11	PANELSWREG8	36	DECADDR
12	PANELSWREG9	37	
13	PANELSWREG10	38	Not used
14	PANELSWREG11	39	SYSHALTF
15	PANELSWREG12	40	RUNFF
16	PANELSWREG13	41	
17	PANELSWREG14	42	RUNSW
18	PANELSWREG15	43	
19		44	LDSW
20	Not used	45	
21	Not used	46	DUMPSW
22		47	
23	PSRENB	48	IORTSW
24	INHRINT	49	
25		50	CPURST

NOTE: Connector A8J2 is cabled to A1J2 of the CPU card cage when using the maintenance panel.

Table 1-14. Multiplexer Channel Bus

PIN	SIGNAL	PIN	SIGNAL
1	CHANSO	26	SR10
2		27	SR11
3	SRCLOCK	28	SR12
4		29	SR13
5	DEVEND	30	
6		31	SR14
7	ACKSR	32	SR15
8		33	SR0
9	CHANACK	34	SR1
10		35	SR2
11	DEVNOB	36	
12	SIOENABLE	37	SR3
13	EOT	38	SR4
14	JMPMET	39	SR5
15		40	SR6
16	TOGGLEINXFER	41	SR7
17	TOGGLESR	42	
18	TOGGLEOUTXFER	43	PCMD1
19	TOGGLESI00K	44	SETJMP
20		45	PSTATSTB
21	XFERERROR	46	PCONTSTB
22	REQ	47	READNEXTWD
23		48	PWRITESTB
24	SR8	49	SETINT
25	SR9	50	PREADSTB

NOTE: Multiplexer channel connector P2.

Table 1-15. Port Controller Bus

PIN	SIGNAL	PIN	SIGNAL
1	<u>ERR1</u>	26	PCD0
2	LSEL1	27	PCD1
3		28	
4	WPB	29	PCD2
5	STRB1	30	PCD3
6	<u>CWREQ1</u>	31	
7		32	PCD4
8	<u>RRREQ1</u>	33	PCD5
9	T01-1	34	
10		35	PCD6
11	T01-2	36	PCD7
12	<u>ERR2</u>	37	
13		38	PCD8
14	LSEL2	39	PCD9
15	HSEL2	40	
16		41	PCD10
17	<u>STRB2</u>	42	PCD11
18	<u>CWREQ2</u>	43	
19		44	PCD12
20	RREQ2	45	PCD13
21	PB14	46	
22		47	PCD14
23	PB15	48	PCD15
24	Not used	49	
25		50	PCDPRTY

NOTE: Port controller connector P3

Table 1-16. Selector Channel Bus

PIN	SIGNAL	PIN	SIGNAL
1	<u>CHANSO</u>	26	SR13
2		27	SR12
3	<u>SRCLOCK</u>	28	SR11
4		29	SR10
5	<u>DEVEND</u>	30	
6		31	SR9
7	<u>ACKSR</u>	32	SR8
8		33	SR7
9	<u>CHANACK</u>	34	SR6
10		35	SR5
11	<u>DEVNODB</u>	36	
12	<u>SIOENABLE</u>	37	SR4
13	<u>EOT</u>	38	SR3
14	<u>JMPMET</u>	39	SR2
15		40	SR1
16	<u>TOGGLEINXFER</u>	41	SRO
17	<u>CHANSR</u>	42	
18	<u>TOGGLEOUTXFER</u>	43	<u>PCMD1</u>
19	<u>TOGGLESI00K</u>	44	<u>SETJMP</u>
20		45	<u>PSTATSTB</u>
21	<u>XFERERROR</u>	46	<u>PCONTSTB</u>
22	<u>REQ</u>	47	<u>READNEXTWD</u>
23		48	<u>PWRITESTB</u>
24	SR15	49	<u>SETINT</u>
25	SR14	50	<u>PREADSTB</u>

NOTE: Selector channel connector P2

Table 1-17. Selector Channel Connector J1

PIN	SIGNAL	PIN	SIGNAL
1	$\overline{\text{FREEZE}}$	26	$\overline{\text{LDBANK}}$
2	$\overline{\text{RESET}}$	27	
3		28	$\overline{\text{RRREQ}}$
4	$\overline{\text{WPB}}$	29	$\overline{\text{WBA1}}$
5	$\overline{\text{WBB2}}$	30	
6		31	$\overline{\text{WAIT}}$
7	$\overline{\text{WBA2}}$	32	$\overline{\text{XERR}}$
8	$\overline{\text{SENSEACK}}$	33	
9		34	$\overline{\text{WBB1}}$
10	$\overline{\text{CW1}}$	35	$\overline{\text{CWREQ}}$
11	$\overline{\text{TRB1FF}}$	36	
12		37	$\overline{\text{IOPCNTDATA}}$
13	$\overline{\text{JUMPPFF}}$	38	$\overline{\text{DATAINACK}}$
14	$\overline{\text{CHACTIVE}}$	39	
15		40	$\overline{\text{RRDATA}}$
16	$\overline{\text{TRB2FF}}$	41	$\overline{\text{PCRST}}$
17	$\overline{\text{AWBWAIT}}$	42	
18		43	$\overline{\text{IOPCNTWAIT}}$
19	$\overline{\text{CWBWAIT}}$	44	$\overline{\text{PFSENB}}$
20	$\overline{\text{WT}}$	45	
21		46	$\overline{\text{INCWC}}$
22	$\overline{\text{DATAOUT}}$	47	$\overline{\text{ADR}}$
23	$\overline{\text{IOCWWAIT}}$	48	
24		49	$\overline{\text{DATAOUTACK}}$
25	$\overline{\text{IOAWWAIT}}$	50	$\overline{\text{GOACTIVE}}$

Table 1-18. Selector Channel Connector J2

PIN	SIGNAL	PIN	SIGNAL
1	$\overline{\text{FSENB}}$	26	$\overline{\text{RBB2}}$
2	$\overline{\text{TRBENB}}$	27	
3		28	$\overline{\text{RBB1}}$
4	$\overline{\text{LA}}$	29	$\overline{\text{ENDB}}$
5	$\overline{\text{IOPCNTDN}}$	30	
6		31	$\overline{\text{DEVNOADR}}$
7	$\overline{\text{DPE}}$	32	$\overline{\text{IOAWADR}}$
8	$\overline{\text{DATA}}$	33	
9		34	$\overline{\text{RBA2}}$
10	$\overline{\text{WCTC}}$	35	$\overline{\text{CW2}}$
11	$\overline{\text{IOCW4}}$	36	
12		37	$\overline{\text{RPB}}$
13	$\overline{\text{IOCW0}}$	38	$\overline{\text{HSEL}}$
14	$\overline{\text{IOCW1}}$	39	
15		40	$\overline{\text{LDRR}}$
16	$\overline{\text{IOCW2}}$	41	$\overline{\text{STRB}}$
17	$\overline{\text{IOCW3}}$	42	
18		43	$\overline{\text{LSEL}}$
19	$\overline{\text{WFRTC}}$	44	$\overline{\text{WCRO}}$
20	$\overline{\text{INTCLRIL}}$	45	
21		46	$\overline{\text{PCERR}}$
22	$\overline{\text{RBA1}}$	47	$\overline{\text{ILLADR}}$
23	$\overline{\text{LDDEVNO}}$	48	
24		49	$\overline{\text{RESREQ}}$
25	$\overline{\text{IOPCNTADR}}$	50	$\overline{\text{KEND}}$



Table 1-19. Memory Connector J1

PIN	SIGNAL	PIN	SIGNAL
1		26	DATA6
2	Not used	27	
3		28	DATA7
4	Not used	29	
5		30	DATA8
6	Not used	31	
7		32	DATA9
8	Not used	33	
9		34	DATA10
10	Not used	35	
11		36	$\overline{\text{WRITE}}$
12	Not used	37	
13		38	$\overline{\text{READ}}$
14	DATA0	39	
15		40	$\overline{\text{RFSH}}$
16	DATA1	41	
17		42	$\overline{\text{RAS}}$
18	DATA2	43	
19		44	ROW2
20	DATA3	45	
21		46	ROW1
22	DATA4	47	
23		48	ROW0
24	DATA5	49	
25		50	$\overline{\text{CAS}}$

Table 1-20. Memory Connector J3

PIN	SIGNAL	PIN	SIGNAL
1		26	BDO
2	Not used	27	
3		28	DATA11
4	Not used	29	
5		30	DATA12
6	MA0	31	
7		32	DATA13
8	MA1	33	
9		34	DATA14
10	MA2	35	
11		36	DATA15
12	MA3	37	
13		38	C0
14	MA4	39	
15		40	C1
16	MA5	41	
17		42	C2
18	MA6	43	
19		44	C3
20	Not used	45	
21		46	C4
22	$\overline{\text{DISWEC}}$	47	
23		48	C5
24	BD1	49	
25		50	Not used

Table 1-21. Error Logging Interface Cable

PIN	SIGNAL	PIN	SIGNAL
1	$\overline{\text{DISWEC}}$	26	
2		27	ELAD7
3	Not used	28	
4		29	ELAD6
5	$\overline{\text{SELECT}}$	30	
6		31	ELAD5
7	$\overline{\text{L/U IMB}}$	32	
8		33	ELAD4
9	$\overline{\text{PRESET}}$	34	
10		35	ELAD0
11	Not used	36	
12		37	ELAD1
13	$\overline{\text{ELDS}}$	38	
14		39	ELAD2
15	$\overline{\text{ELAV}}$	40	
16		41	ELAD3
17	SELECTED	42	
18		43	$\overline{\text{DATA IN}}$
19	ELAW	44	
20		45	Not used
21	ELAD8	46	
22		47	Not used
23	ELAD9	48	
24		49	Not used
25	$\overline{\text{DATAOUT}}$	50	

Table 1-22. IOP Power Bus (Memory Card Cage)

PIN NUMBER		SIGNAL	PIN NUMBER		SIGNAL
56-PIN	20-PIN		56-PIN	20-PIN	
1		+5V	30		
2		+5V	31		-5VB
3		+5V	32		-5VB
4		+5V	33		
5	2	$\overline{\text{PFWARN}}$	34		
6	1	ENTIMER	35		+5VB
7	4	Not used	36		+5VB
8	3	Not used	37		+12VB
9	6	PWRON	38		+12VB
10	5	PWRON	39		+12.7VB
11	8	IORESET	40		+12.7VB
12	7	IORESET	41	12	Not used
13	10	$\overline{\text{MCUCLK}}$	42	11	Not used
14	9	$\overline{\text{MCUCLK}}$	43		Not used
15			44		Not used
16			45		Not used
17		Not used	46	13	Not used
18		Not used	47		Not used
19			48		Not used
20			49	16	SI
21			50	15	$\overline{\text{SI}}$
22			51		$\overline{\text{MCUFRCOUT}}$
23		Not used	52		$\overline{\text{MCUFRCOUT}}$
24		Not used	53	18	S0
25		Not used	54	17	S0
26		Not used	55		$\overline{\text{MCUFRCIN}}$
27		Not used	56		$\overline{\text{MCUFRCIN}}$
28		Not used		20	Not used
29				19	Not used

Table 1-23. Mag Tape Interface Connector J2

PIN	SIGNAL	PIN	SIGNAL
1		26	Not used
2		27	ROM16
3	ROM4	28	ROM0
4	Not used	29	ROM17
5	ROM5	30	ROM1
6	Not used	31	ROM18
7	ROM6	32	ROM2
8	Not used	33	ROM19
9	ROM7	34	ROM3
10	Not used	35	Not used
11	ROM8	36	Not used
12	Not used	37	RAR0
13	ROM9	38	RAR1
14	Not used	39	RAR2
15	ROM10	40	RAR3
16	Not used	41	RAR4
17	ROM11	42	RAR5
18	Not used	43	RAR6
19	ROM12	44	RAR7
20	Not used	45	RAR8
21	ROM13	46	RAR9
22	Not used	47	RAR10
23	ROM14	48	RAR11
24	Not used	49	
25	ROM15	50	

Table 1-24. Mag Tape Interface Connector J3

PIN	SIGNAL	PIN	SIGNAL
1		26	FLG5
2	$\overline{\text{CLEAR}}$	27	FLG2
3	$\overline{\text{T0}}$	28	FLG3
4	$\overline{\text{T3}}$	29	FLG0
5	$\overline{\text{T2}}$	30	FLG1
6	ROR9	31	Not used
7	UDS	32	EXTSEL
8	INPUT STROBE	33	Not used
9	FLG10	34	Not used
10	LOS	35	Not used
11	FLG14	36	Not used
12	FLG12	37	Not used
13	FLG16	38	Not used
14	FLG15	39	$\overline{\text{T1}}$
15	ROR8	40	Not used
16	FLG17	41	Not used
17	ROR11	42	Not used
18	ROR7	43	Not used
19	WT1	44	Not used
20	ROR10	45	Not used
21	FLG13	46	Not used
22	FLG11	47	Not used
23	FLG6	48	Not used
24	FLG7	49	Not used
25	FLG4	50	

Table 1-25. Mag Tape Interface to Tape Unit

PIN	SIGNAL	PIN	SIGNAL
1	Not used	26	Not used
2	SING TRK ERR	27	Not used
3	SELECT CMD 0	28	Not used
4	SELECT CMD 1	29	ID BURST
5	SELECT CMD 2	30	WRCLK
6	SELECT CMD 3	31	MULT TRK ERR
7	END OF BLOCK	32	TAPE MARK
8	READ CLK	33	WRITE DATA 0
9	READ DATA PRY	34	WRITE DATE 1
10	WRT DATA PRY	35	WRITE DATA 6
11	WRITE RESET	36	WRITE DATA 7
12	STAT 800/1600	37	WRITE DATA 4
13	LOAD POINT	38	WRITE DATA 5
14	READY	39	WRITE DATA 2
15	FILE PROTECT	40	WRITE DATA 3
16	END OF TAPE	41	READ DATA 6
17	FORWARD	42	READ DATA 7
18	REVERSE	43	READ DATA 4
19	WRITE	44	READ DATA 5
20	OFF LINE	45	READ DATA 2
21	REWIND	46	READ DATA 3
22	WRRST	47	READ DATA 0
23	Not used	48	READ DATA 1
24	Not used	49	Not used
25	Not used	50	Not used

Table 1-26. 7920A/7925A Disc Interface to Device Controller

PIN	SIGNAL	PIN	SIGNAL
1	+5V	26	Not used
2	+5V	27	IBUS3
3	IFNO	28	CLEAR
4	IFN2	29	ENID
5	IFN1	30	Not used
6	IFN3	31	IFCLK
7	FLG3	32	Not used
8	IBUS4	33	
9	FLG0	34	
10	IBUS5	35	+5V
11	FLG6	36	+5V
12	IBUS6	37	IBUS8
13	IFNVALID	38	IBUS12
14	IBUS7	39	IBUS9
15		40	IBUS13
16		41	IBUS10
17	Not used	42	IBUS14
18	POWERFAIL	43	IBUS11
19		44	IBUS15
20		45	Not used
21	IBUS0	46	FLG7
22	+5V	47	FLG1
23	IBUS1	48	FLG8
24	Not used	49	
25	IBUS2	50	

Table 1-27. 7920A/7925A Disc Controller Connector J2

PIN	SIGNAL	PIN	SIGNAL
1		26	ROM0
2		27	ROM1
3	ROM19	28	Not used
4	ROM18	29	RAR2
5	ROM7	30	Not used
6	ROM6	31	RAR1
7	ROM5	32	Not used
8	ROM4	33	RAR0
9	ROM17	34	Not used
10	ROM16	35	ROM15
11	ROM8	36	Not used
12	ROM9	37	ROM14
13	ROM10	38	Not used
14	Not used	39	ROM13
15	ROM11	40	Not used
16	Not used	41	ROM12
17	RAR7	42	ROM23
18	Not used	43	ROM22
19	RAR6	44	Not used
20	Not used	45	ROM21
21	RAR5	46	Not used
22	RAR4	47	ROM20
23	RAR3	48	Not used
24	ROM2	49	
25	ROM3	50	

Table 1-28. 7920A/7925A Disc Controller Connector P2

PIN	SIGNAL	PIN	SIGNAL
1		26	EXTFLG5
2	$\overline{\text{CLEAR}}$	27	EXTFLG2 (EOW)
3	CYCLECLK	28	EXTFLG3
4	Not used	29	EXTFLG0
5	EXTFLG16	30	EXTFLG1
6	XADDR2	31	$\overline{\text{M12}}$
7	UBOUT	32	EXTSEL
8	INPUT	33	$\overline{\text{M13}}$
9	EXTFLG8	34	$\overline{\text{M11}}$
10	LBOUT	35	$\overline{\text{M14}}$
11	EXTFLG12	36	$\overline{\text{M10}}$
12	EXTFLG10	37	$\overline{\text{M15}}$
13	EXTFLG14	38	$\overline{\text{M9}}$
14	EXTFLG13	39	TESTCLK
15	XADDR3	40	$\overline{\text{M8}}$
16	EXTFLG15	41	$\overline{\text{M3}}$
17	XADDR0	42	$\overline{\text{M4}}$
18	XADDR4	43	$\overline{\text{M2}}$
19	CLKDISABLE	44	$\overline{\text{M5}}$
20	XADDR1	45	$\overline{\text{M1}}$
21	EXTFLG11	46	$\overline{\text{M6}}$
22	EXTFLG9		$\overline{\text{M0}}$
23	EXTFLG6	48	$\overline{\text{M7}}$
24	EXTFLG7	49	Not used
25	EXTFLG4	50	

Table 1-29. 7920A/7925A Disc Controller Connector P3

PIN	SIGNAL	PIN	SIGNAL
1		26	READ NRZ DATA
2	30MHZ	27	
3		28	Not used
4	+5V	29	
5		30	Not used
6	$\overline{\text{INHCRCLK}}$	31	
7		32	DATACLK
8	Not used	33	
9		34	TESTCLR
10	WRITEDATATEST	35	
11		36	SYNC
12	$\overline{\text{WRITECLK}}$	37	
13		38	TEST OUTPUT
14	WRITETEST	39	
15		40	Not used
16	+5V	41	
17		42	Not used
18	+5V	43	
19		44	ECCSERIALDATA
20	Not used	45	
21		46	Not used
22	READTEST	47	
23		48	Not used
24	$\overline{\text{READCLK}}$	49	
25		50	CLOCKINHIBIT

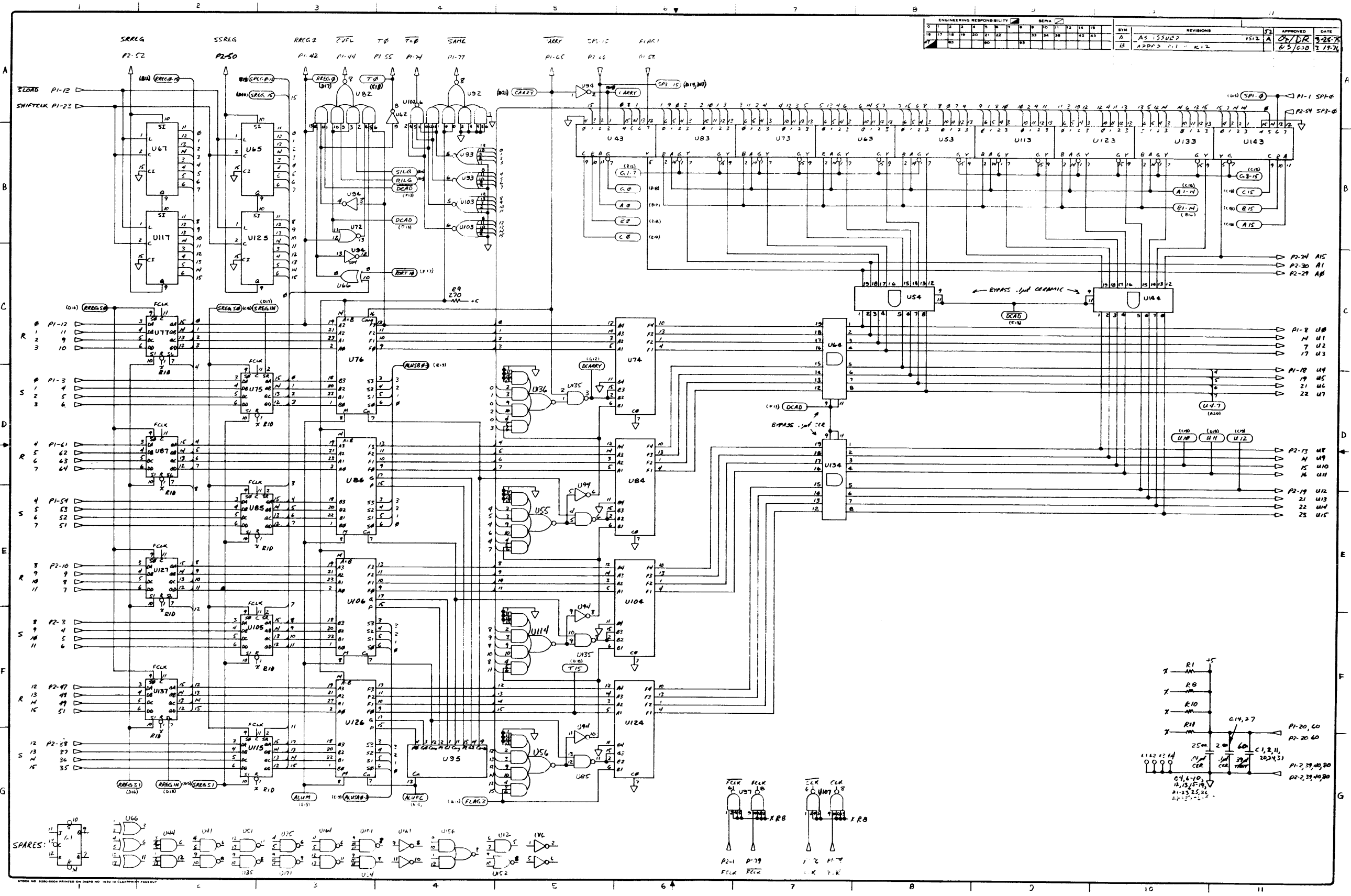
Table 1-30. Disc Controller to 7920A/7925A Disc Drive

PIN	SIGNAL	PIN	SIGNAL
1	+5V	26	Not used
2	+5V	27	CBUS7
3	CBUS0	28	Not used
4	CBUS11	29	
5	CBUS1	30	Not used
6	CBUS10	31	
7	CBUS2	32	Not used
8	CBUS9	33	
9	CBUS3	34	
10	CBUS8	35	+5V
11		36	+5V
12		37	Not used
13	Not used	38	CBUS12
14		39	Not used
15		40	CBUS13
16		41	Not used
17	Not used	42	CBUS14
18	Not used	43	Not used
19		44	CBUS15
20		45	
21	CBUS4	46	
22	+5V	47	
23	CBUS5	48	
24	Not used	49	
25	CBUS6	50	

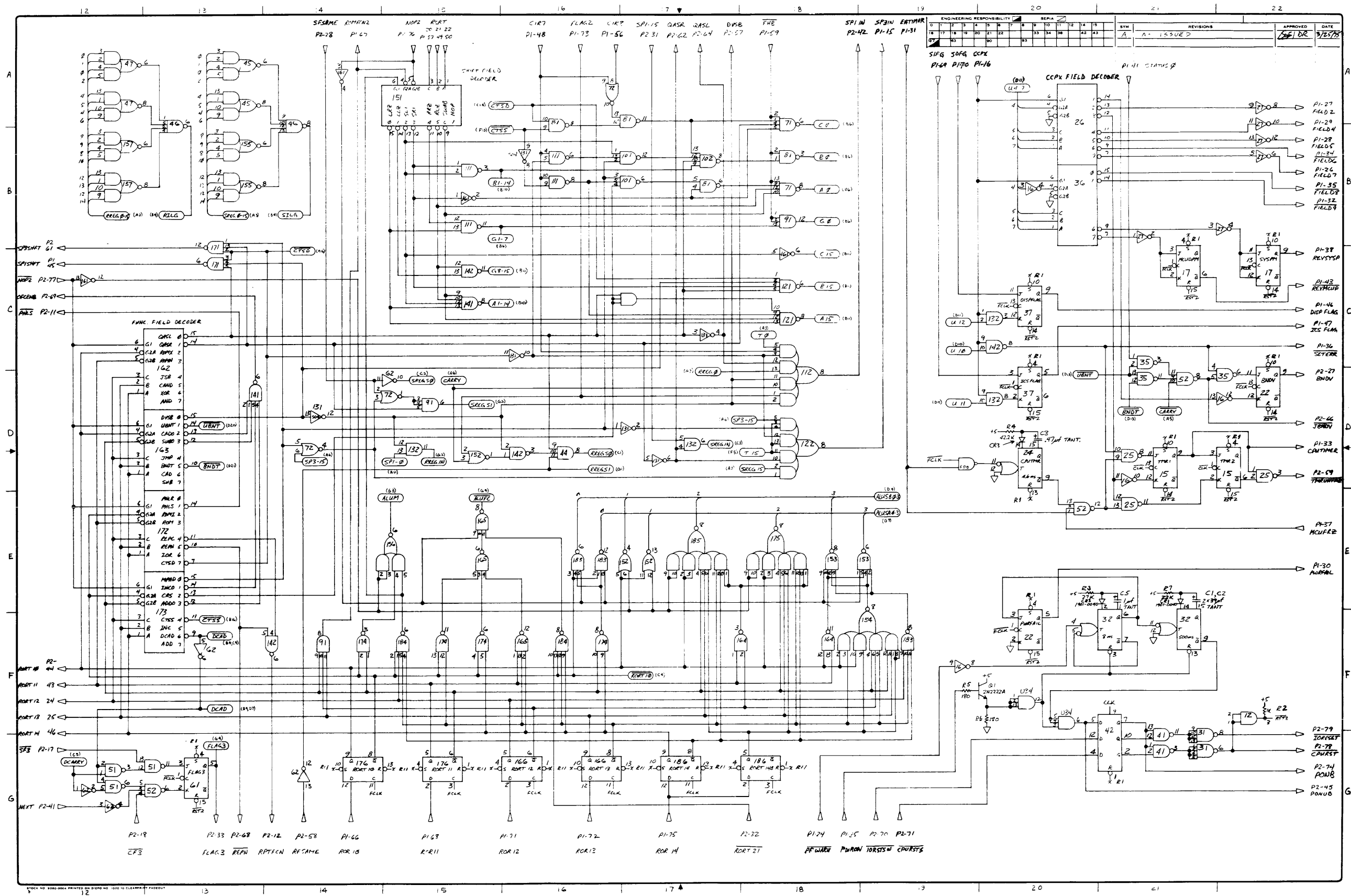
# SECTION II - CPU AND MEMORY PCAS

## CONTENTS

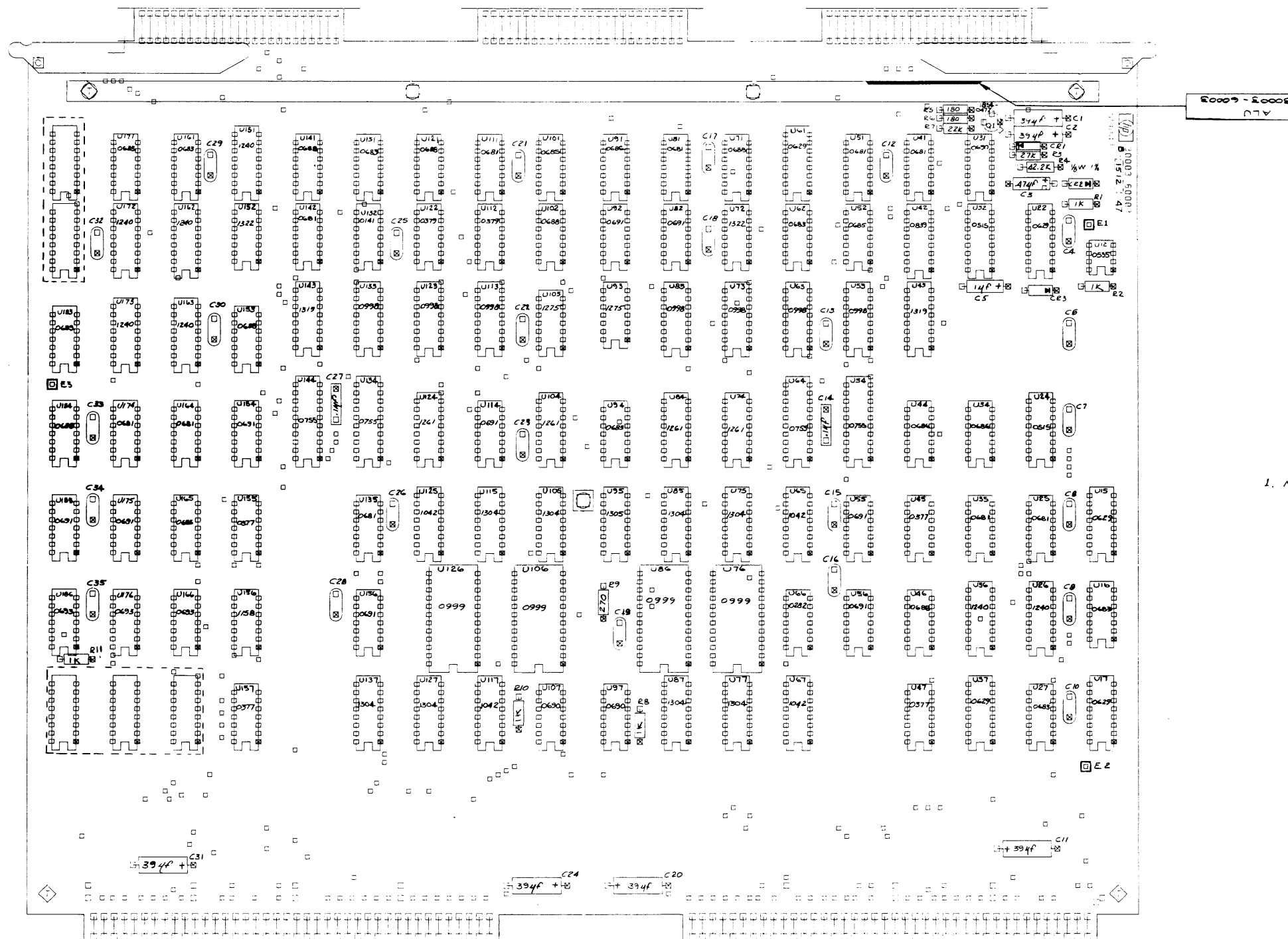
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30003-60022.....	SSF
30003-60025.....	S BUS
30003-60028.....	IOP
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30008-60003.....	SMA
30009-60002.....	FLI
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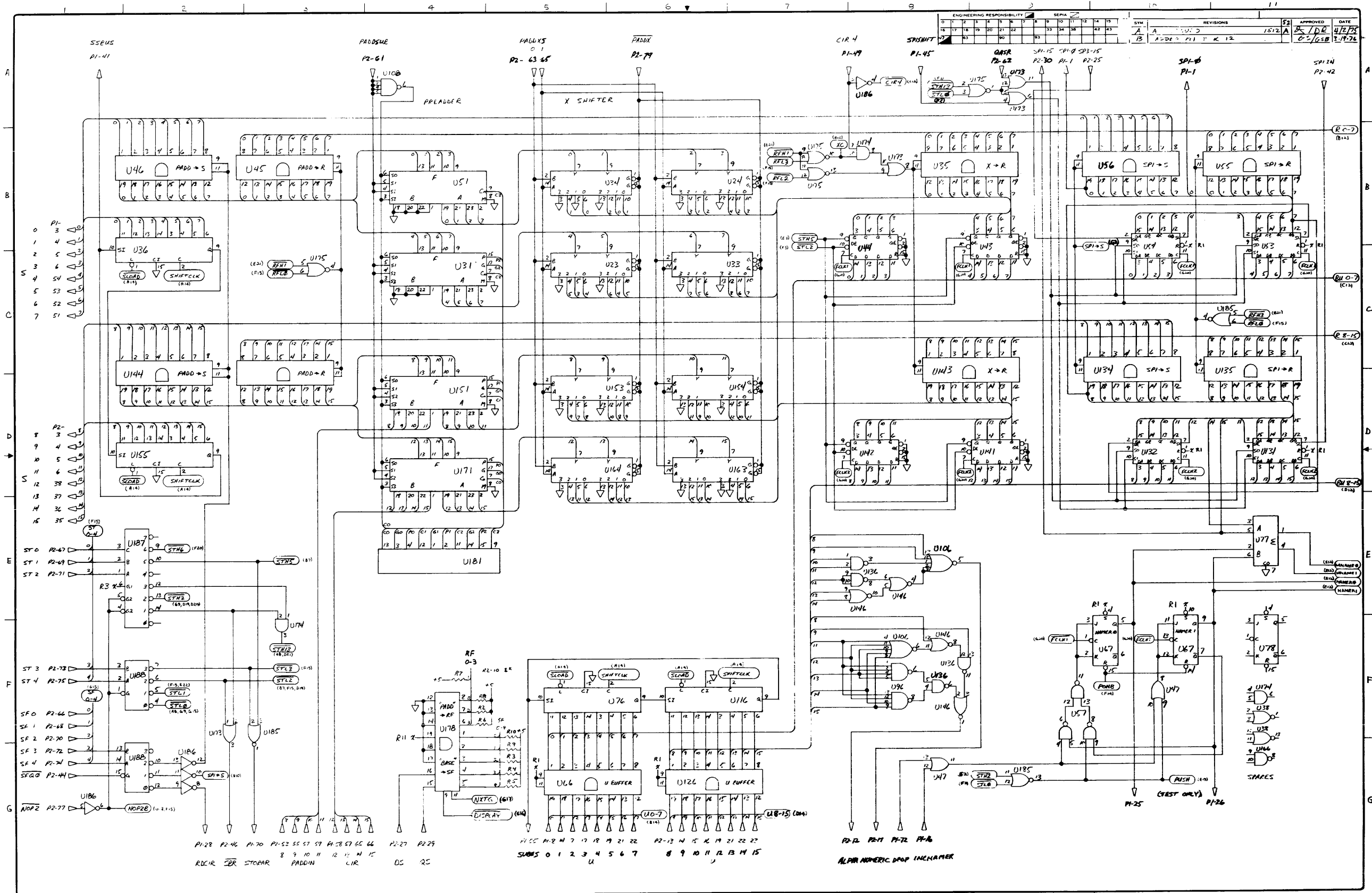




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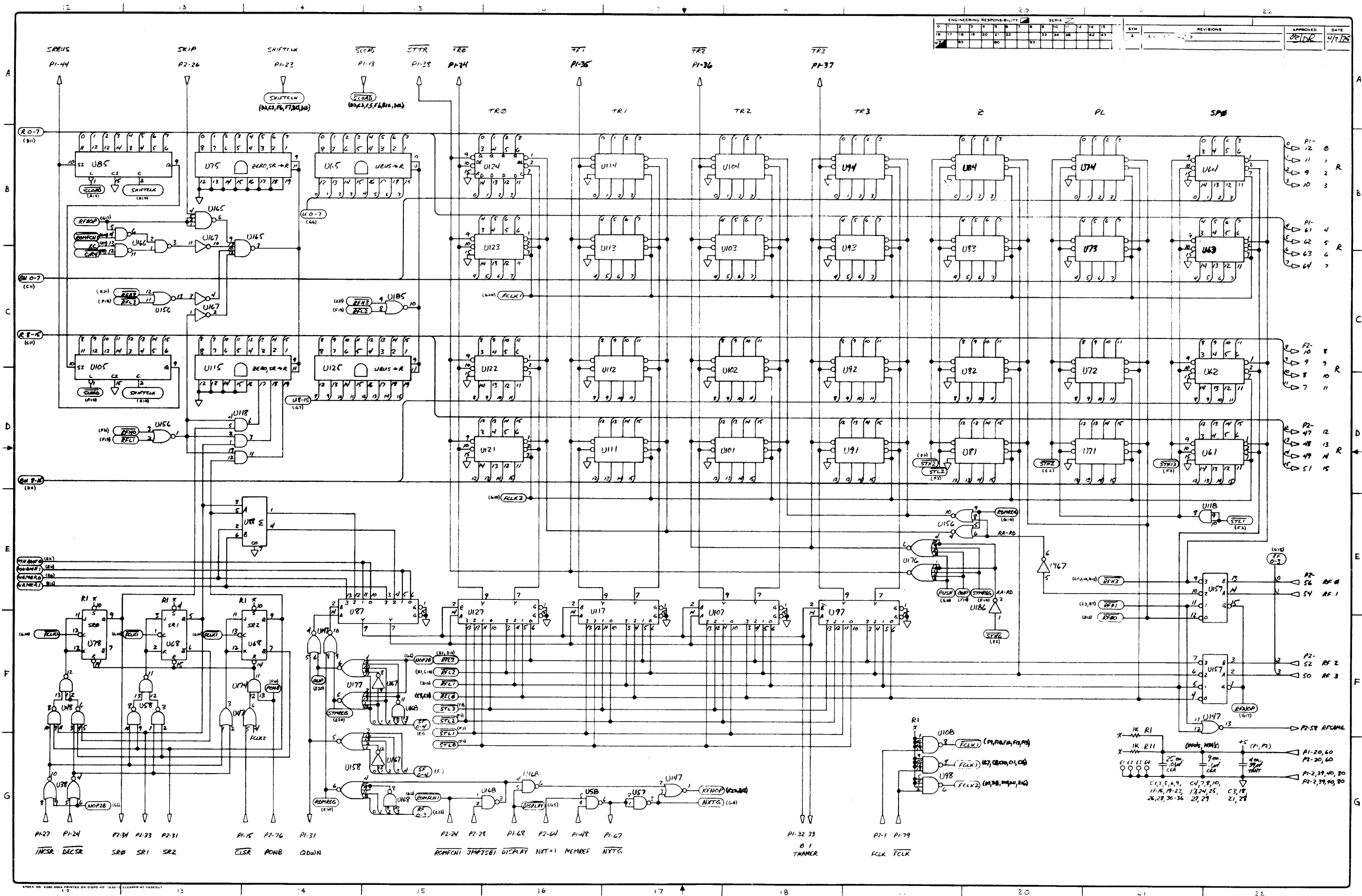


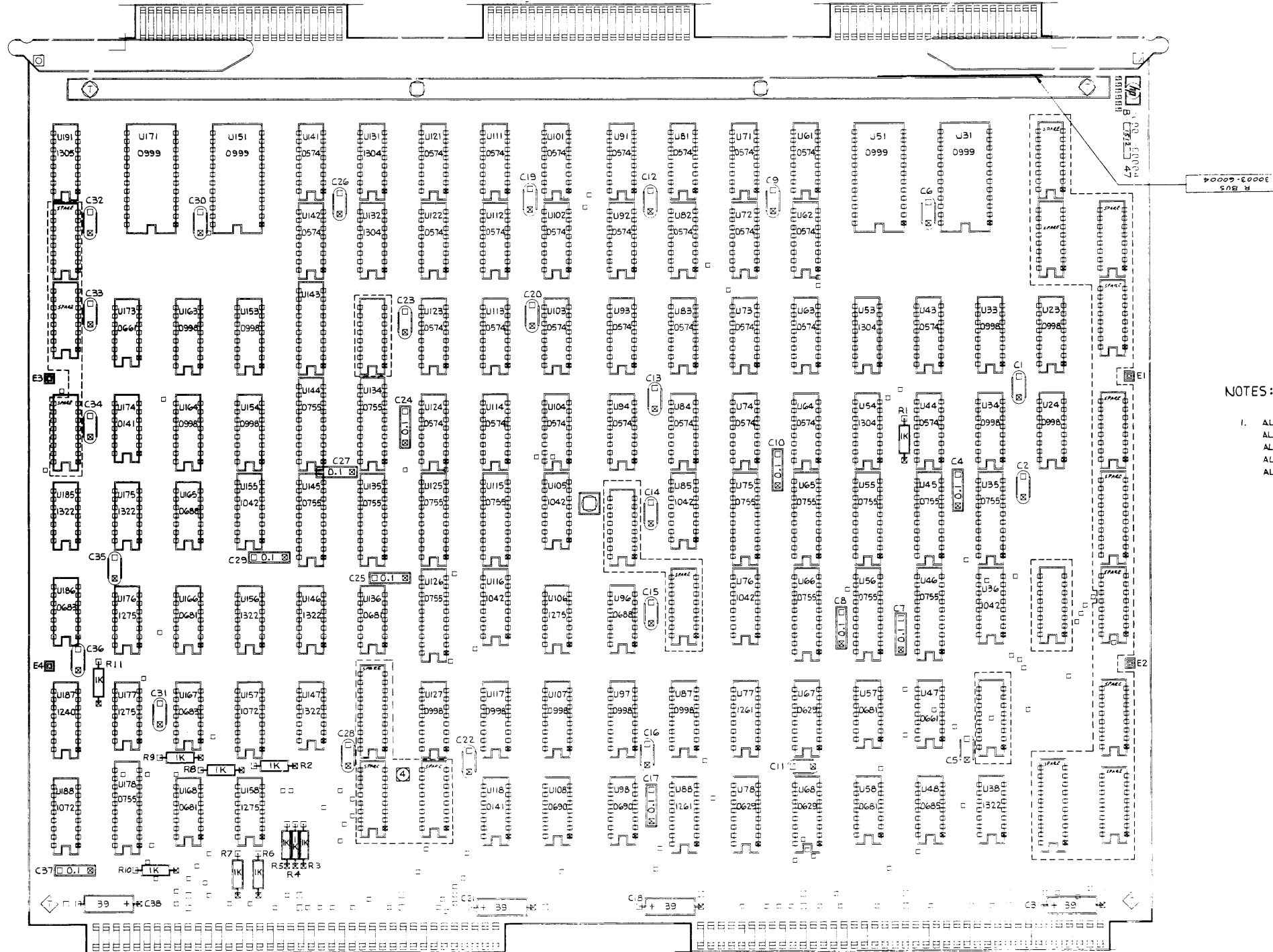
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 ALL CAPACITANCE IN MICRO FARADS  
 ALL .01 CAPACITORS ARE CERAMIC DISC  
 ALL DIODES ARE 1901-0040  
 ALL IC'S ARE 1820-



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CHECKED	BY	15/12/85	BY
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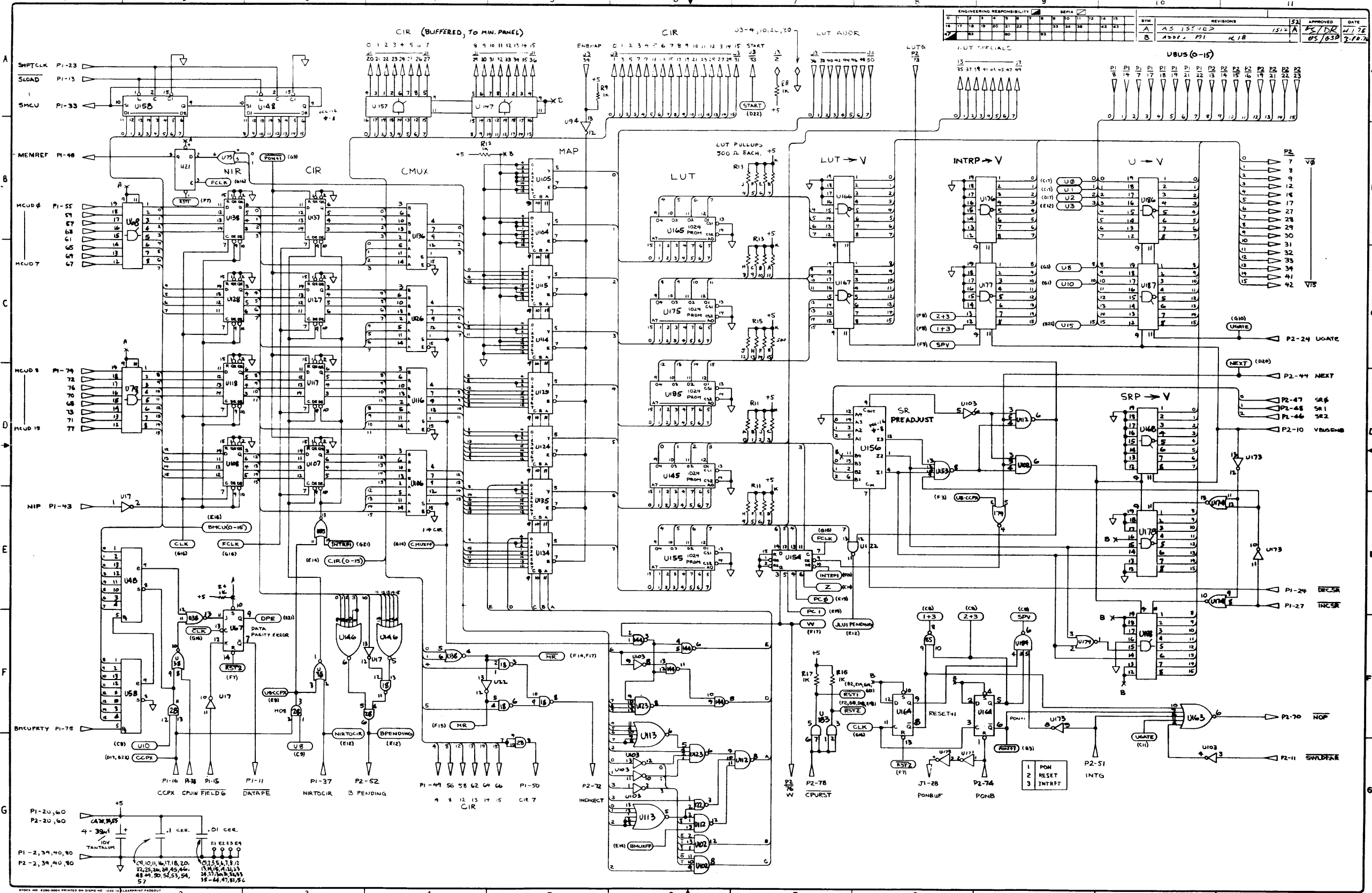
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 PADDX P2-79  
 CIR-4 P1-49  
 SPLINT P1-45  
 SPL-6 P1-1  
 SPL-4 P1-1  
 SPL-2 P1-1  
 SPL-1 P1-1  
 P1-28 P2-46 P1-70 P1-53 55 57 59 P1-28 57 55 66 P2-27 P2-29  
 RDR R STOR PAR PADDW CIR DS QS  
 P1-28 P2-46 P1-70 P1-53 55 57 59 P1-28 57 55 66 P2-27 P2-29  
 RDR R STOR PAR PADDW CIR DS QS  
 SUBMS 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15  
 U  
 P1-12 P1-11 P1-72 P1-6  
 ALPHA NUMERIC DROP INCREMENT

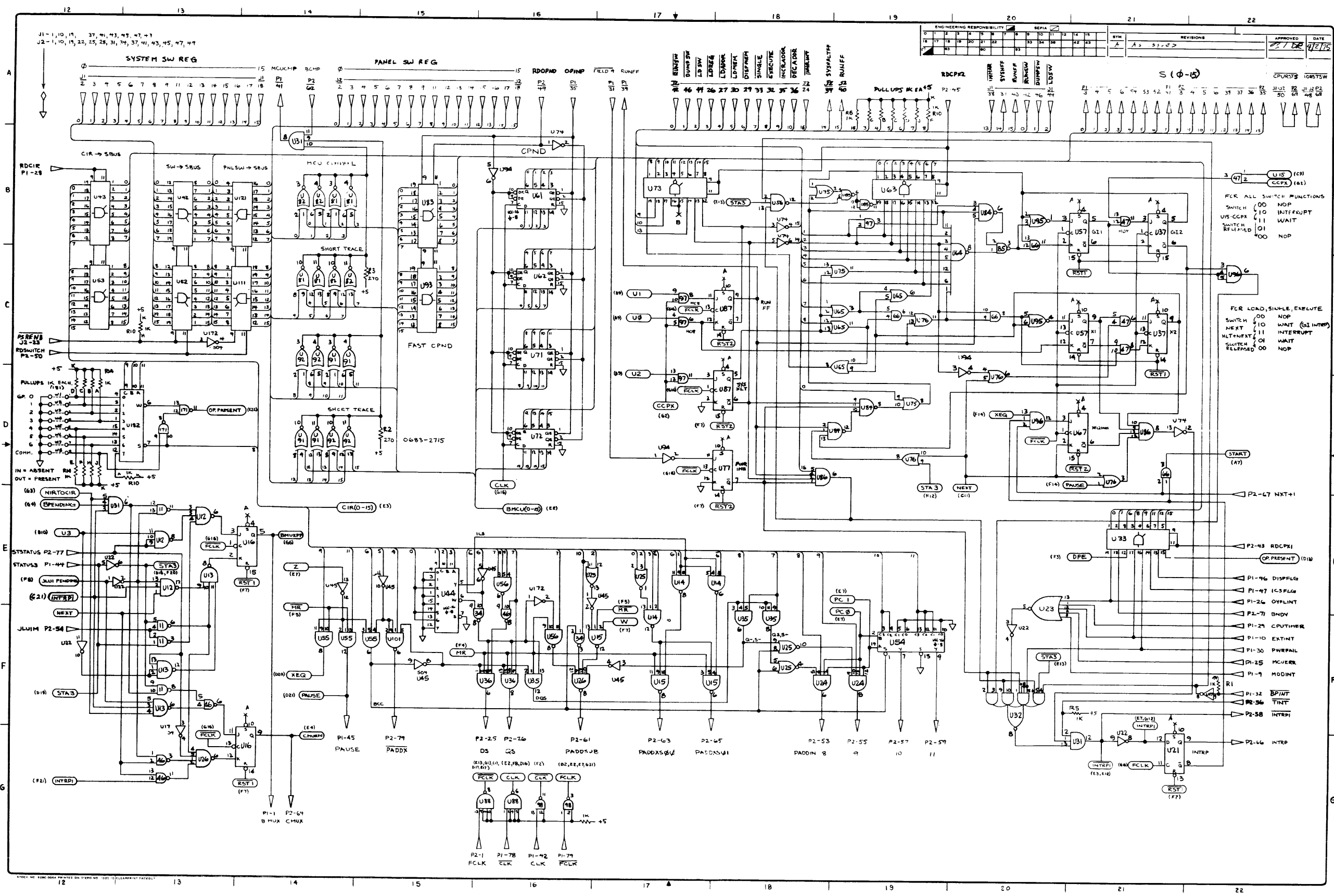


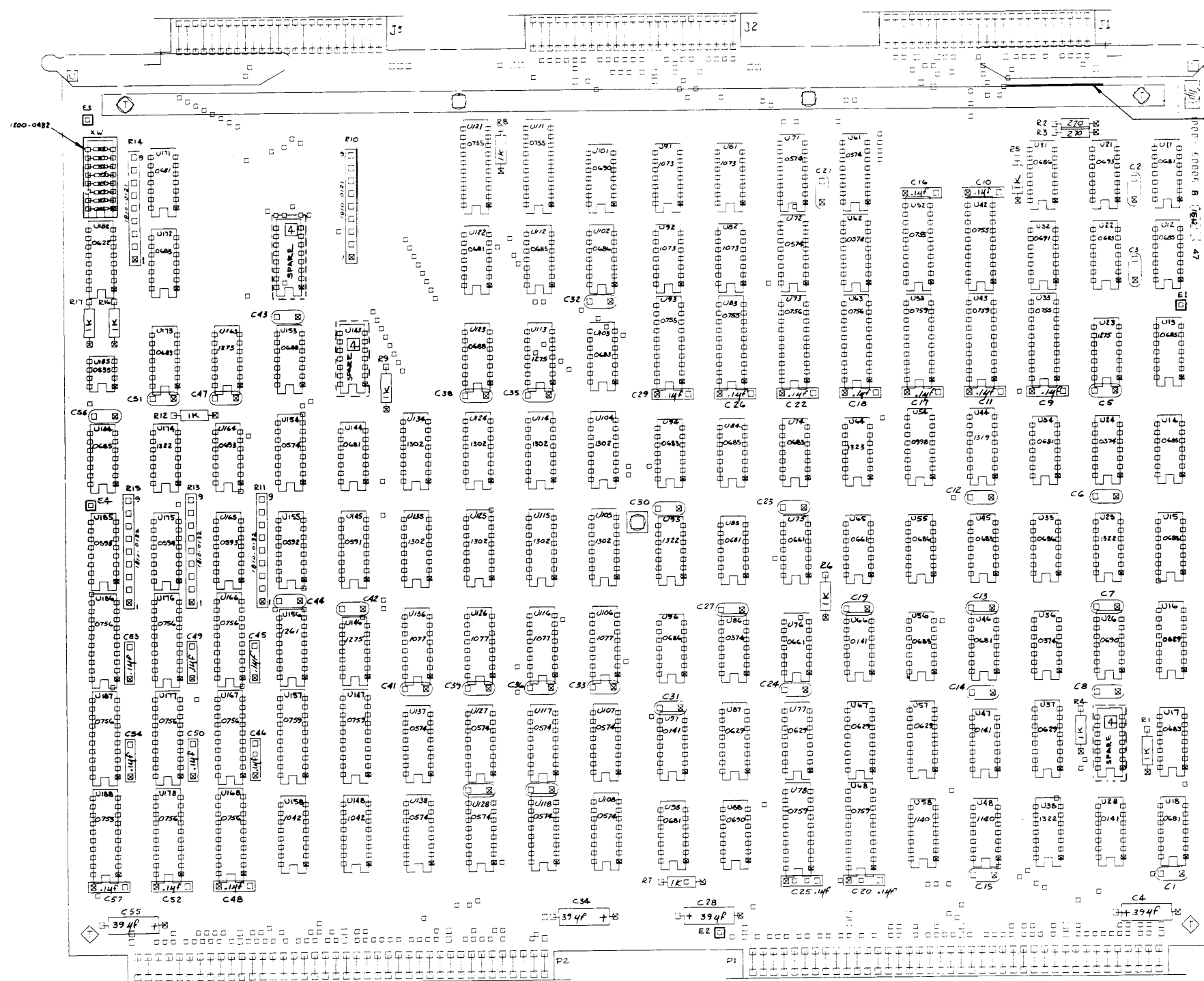


NOTES: UNLESS OTHERWISE SPECIFIED.

1. ALL RESISTORS IN OHMS.
- ALL RESISTORS 1/4W, 5%.
- ALL CAPACITANCE IN MICROFARADS.
- ALL CAPACITORS .01μF CERAMIC DISC.
- ALL IC'S ARE 1820-.....

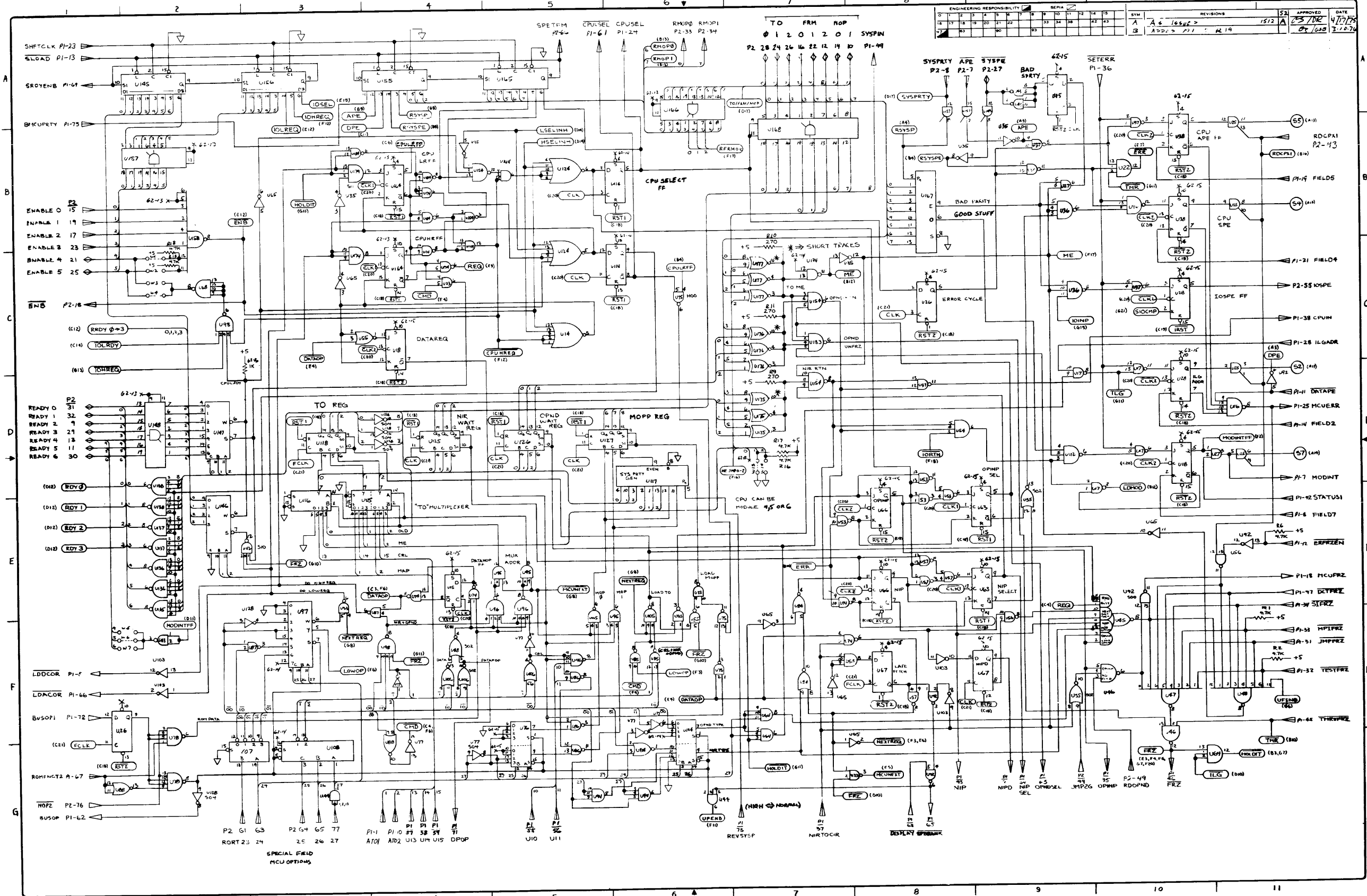




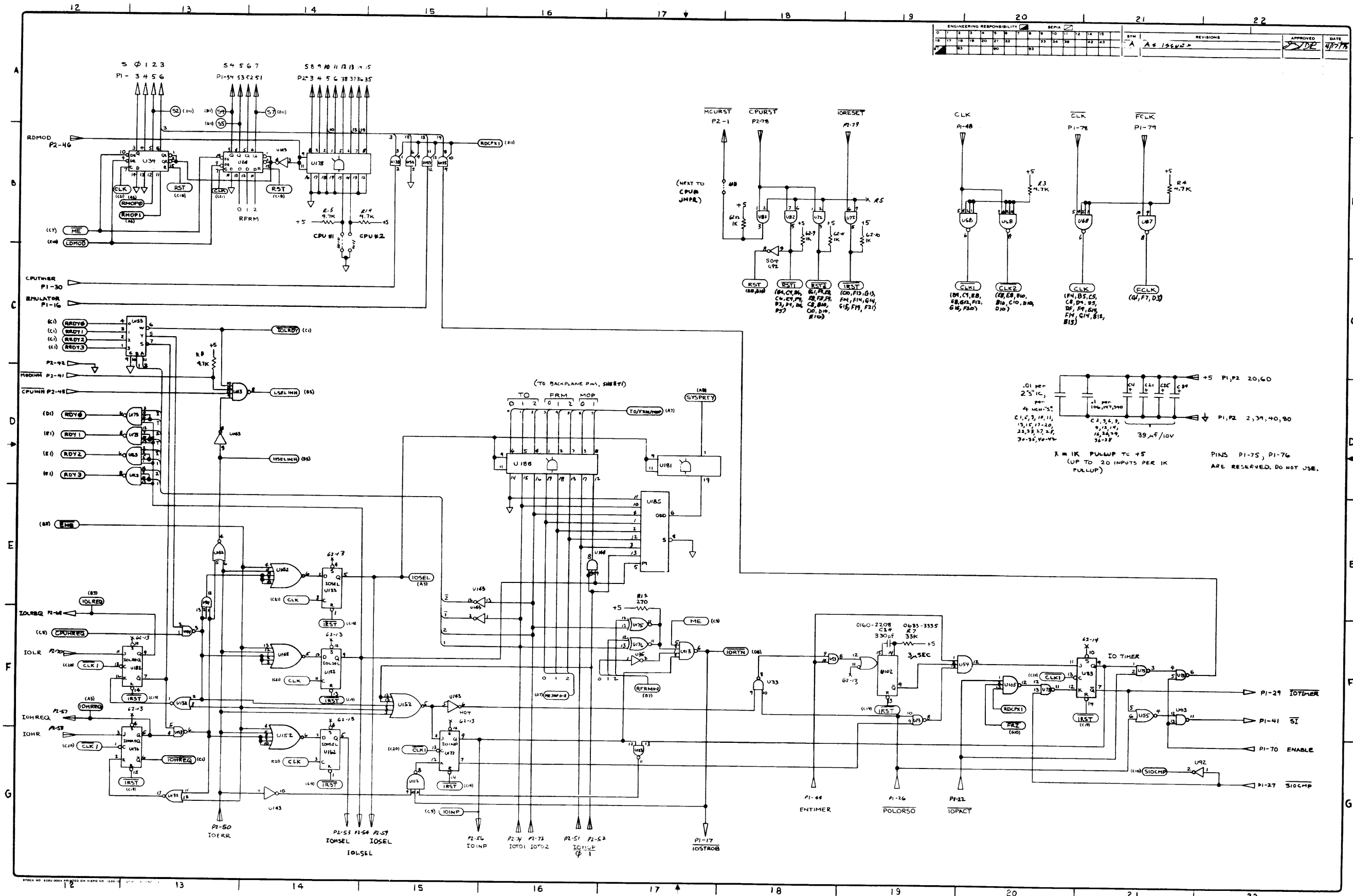


1. UNLESS OTHERWISE NOTED:  
 ALL RESISTANCE IN OHMS  
 ALL RESISTORS ± 5% .25W  
 ALL CAPACITANCE IN MICROFARADS  
 ALL CAPACITORS .014" CER. DISC.  
 ALL IC'S ARE 1820-

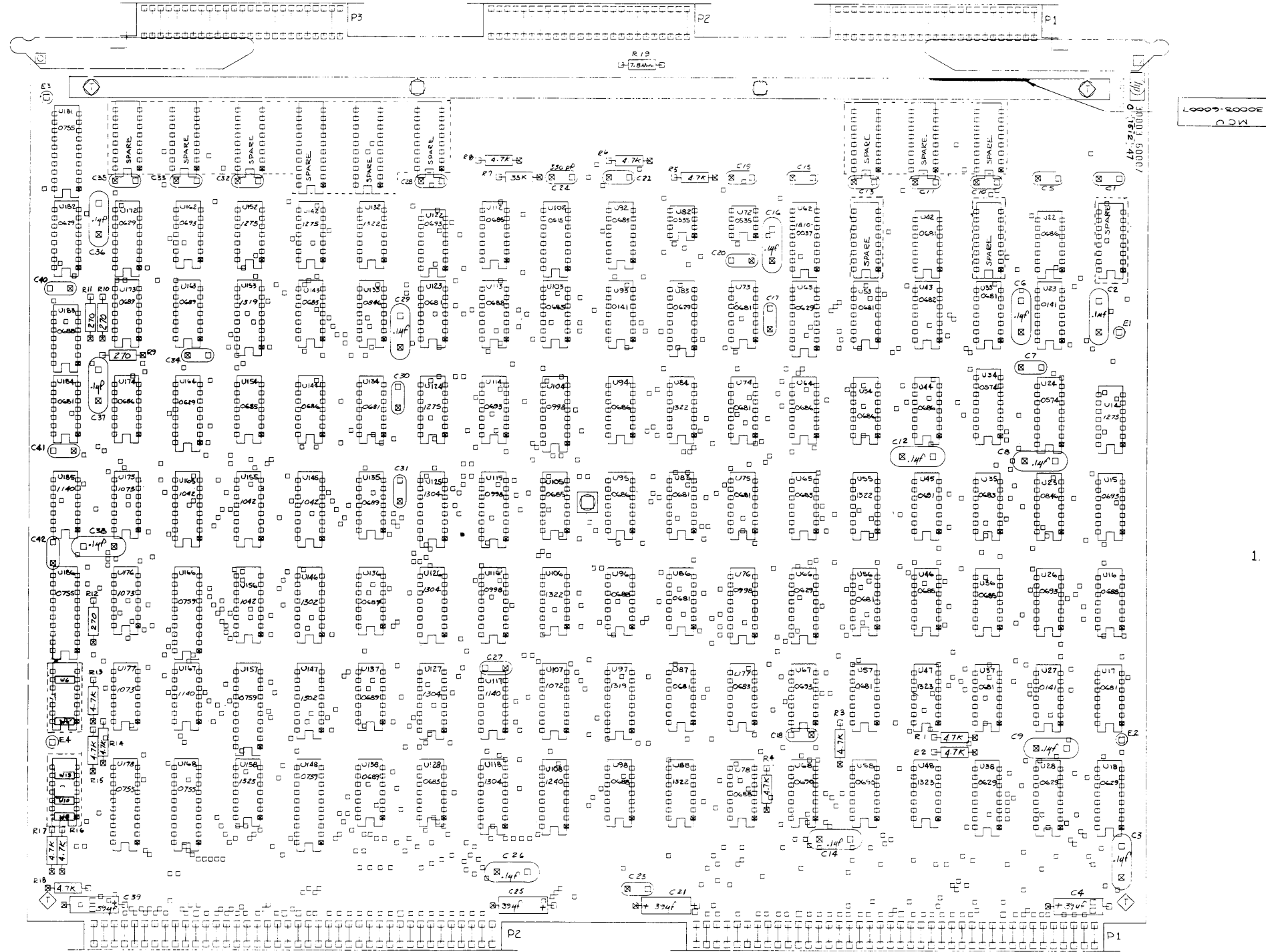




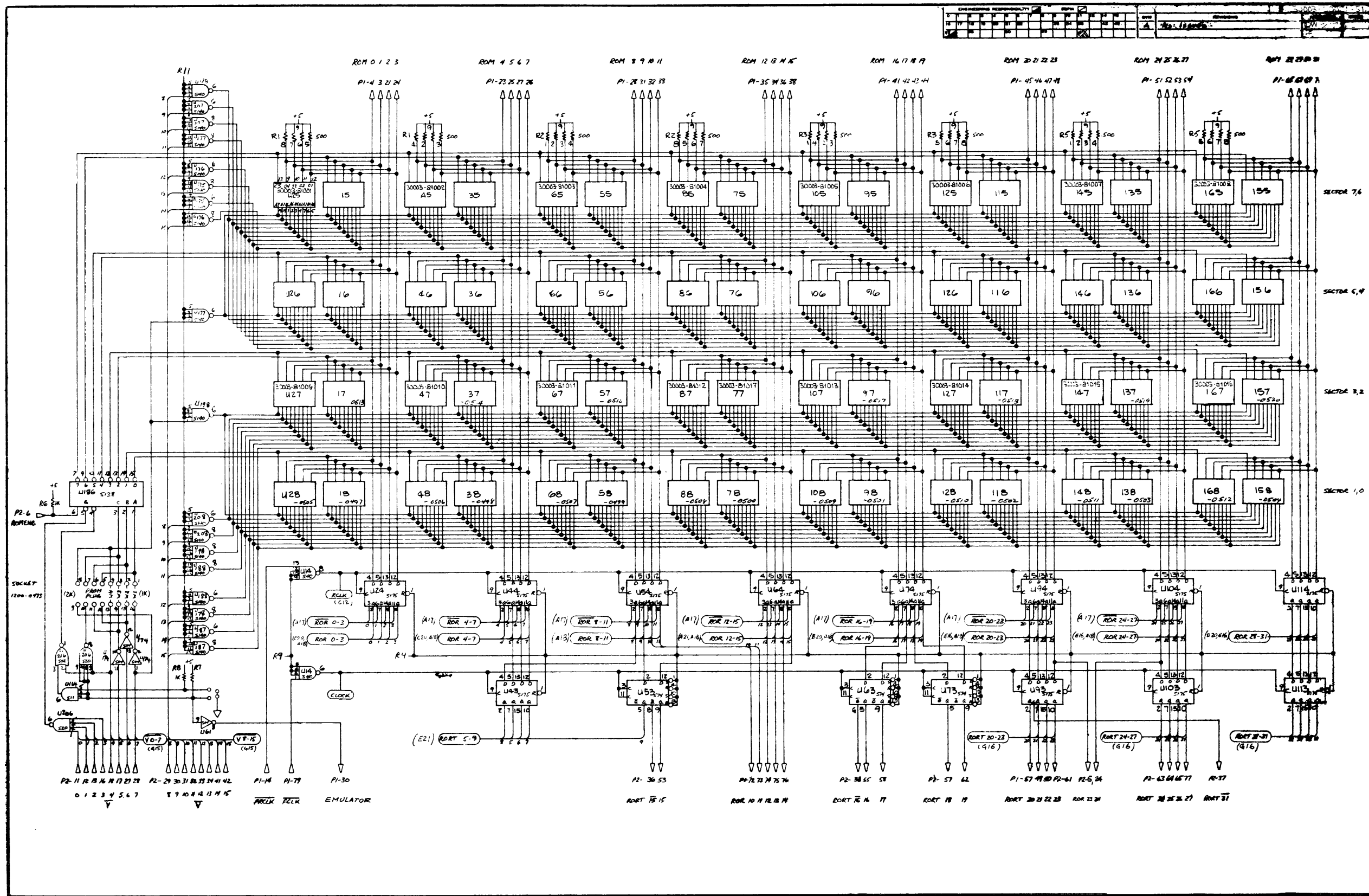
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19	20	21	22	23	24	1/27/75
25	26	27	28	29	30	1/27/75
31	32	33	34	35	36	1/27/75
37	38	39	40	41	42	1/27/75
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49	50	51	52	53	54	1/27/75
55	56	57	58	59	60	1/27/75
SYMBOLS:						
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B ADD. 5 P1: #19						1512

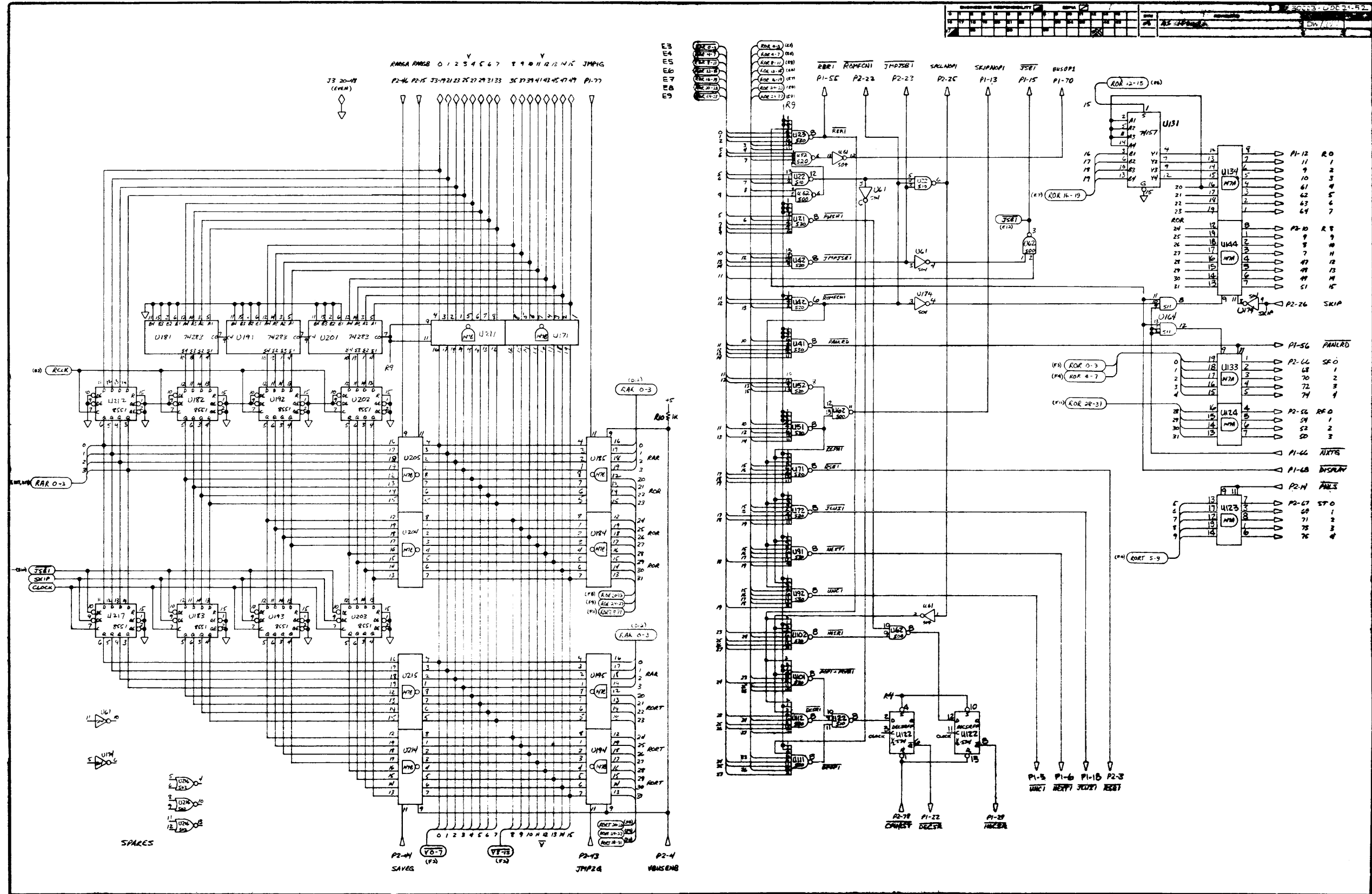


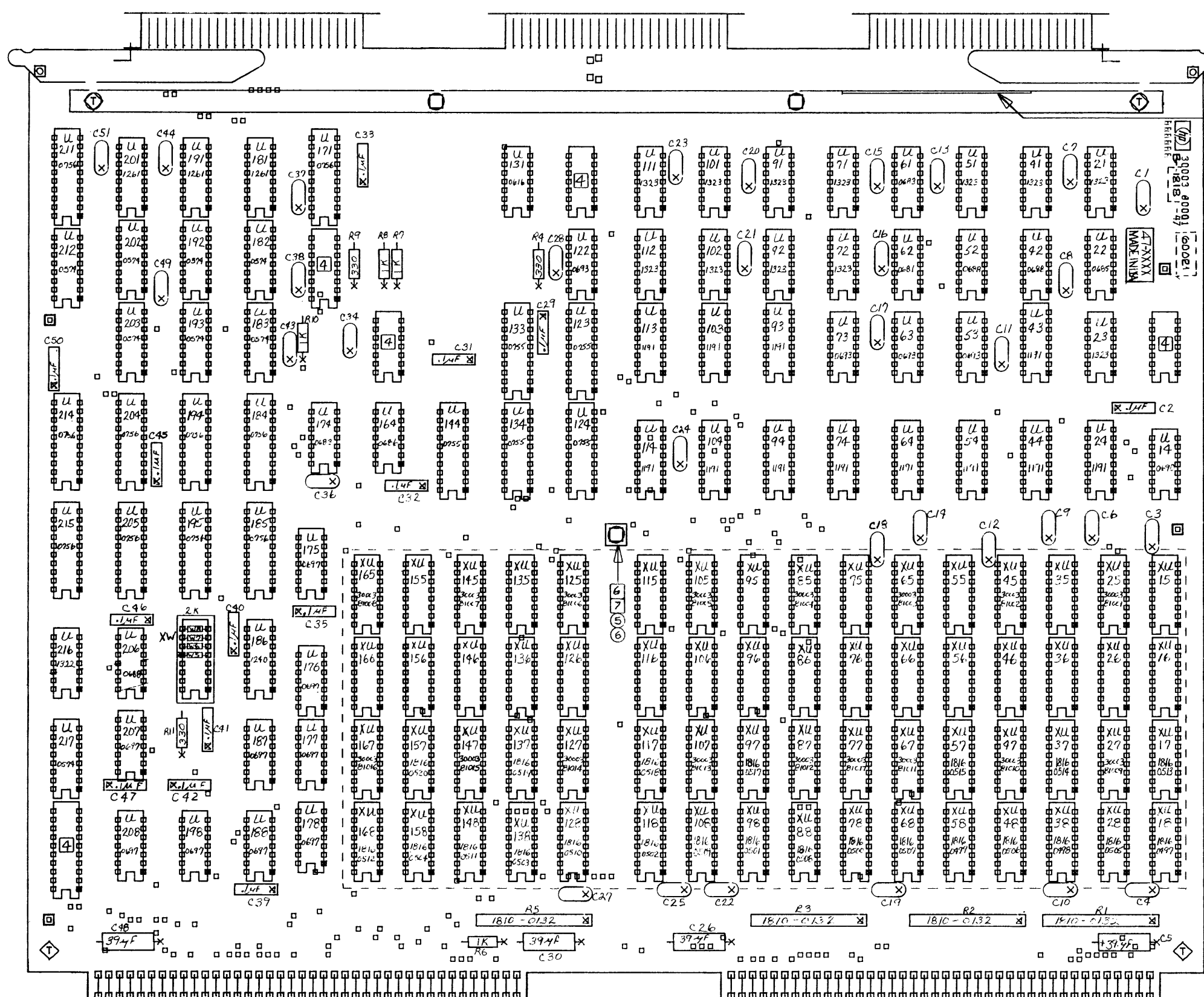
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5				5				5				5									
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20				20				20				20									
21				21				21				21									
22				22				22				22									



1. NOTE:  
UNLESS OTHERWISE SPECIFIED,  
ALL RESISTANCE IN OHMS  
ALL RESISTORS ARE 1/4W 5%  
ALL CAPACITANCE IN MICRO FARADS  
ALL CAPACITORS ARE .01. 060-2085  
IC'S ARE 1820-





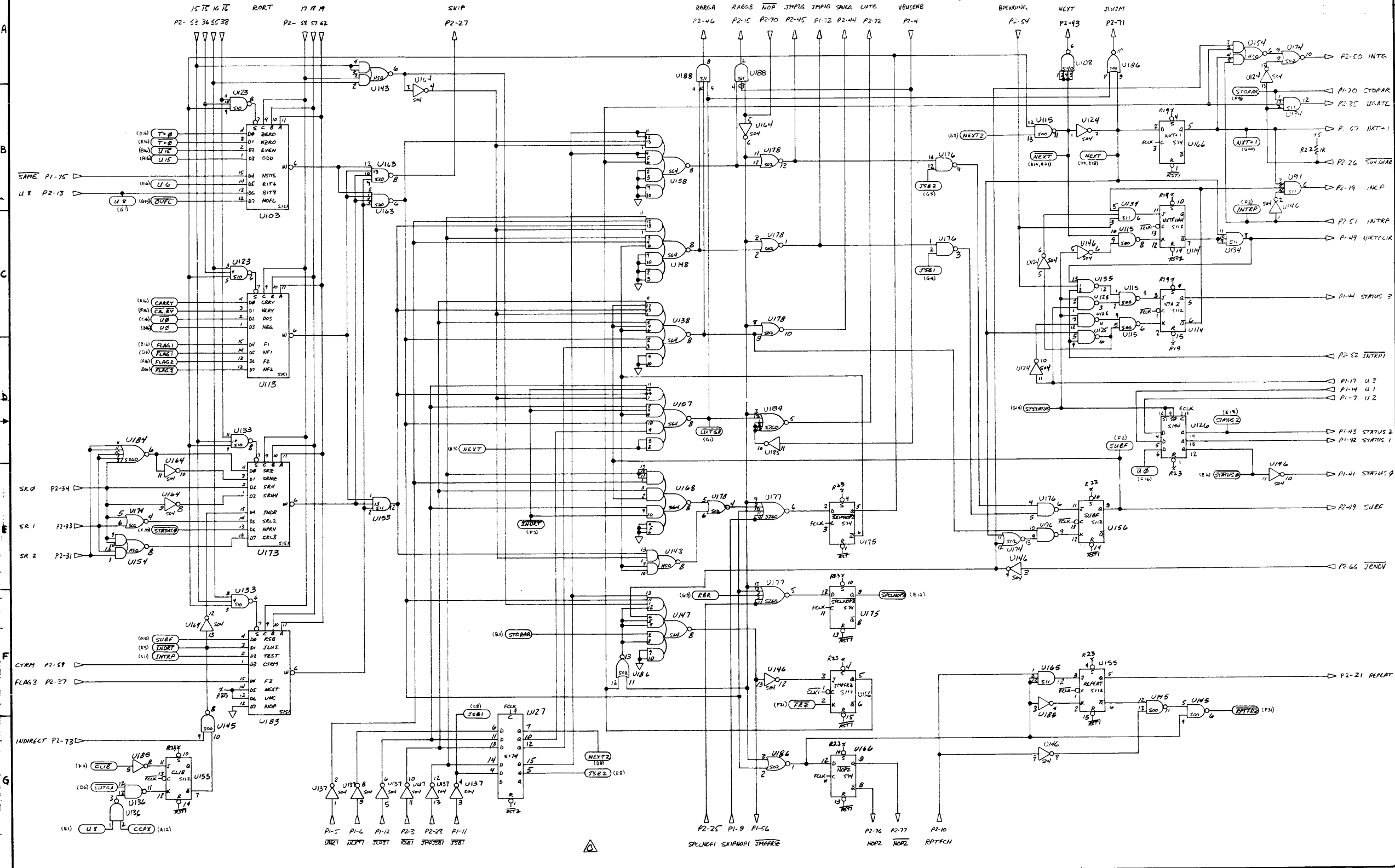


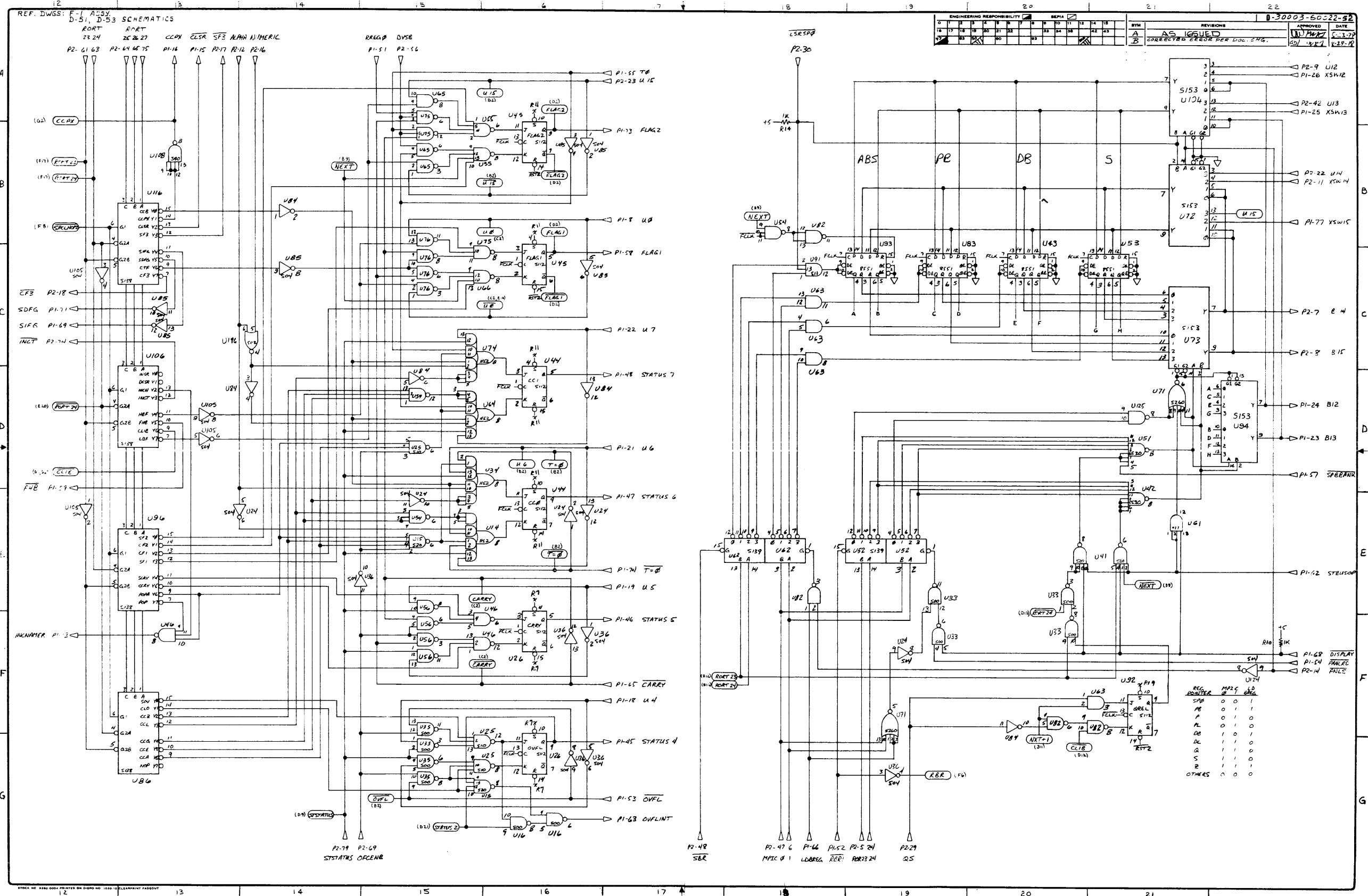
30003-60021  
ROM

NOTE:  
UNLESS OTHERWISE SPECIFIED  
RESISTANCE IN OHMS = 5% .25W  
CAPACITANCE VALUES IN MICRO FARADS  
CAPACITORS ARE .01 CERAMIC DISC.  
ALL I.C.'S ARE 1820-

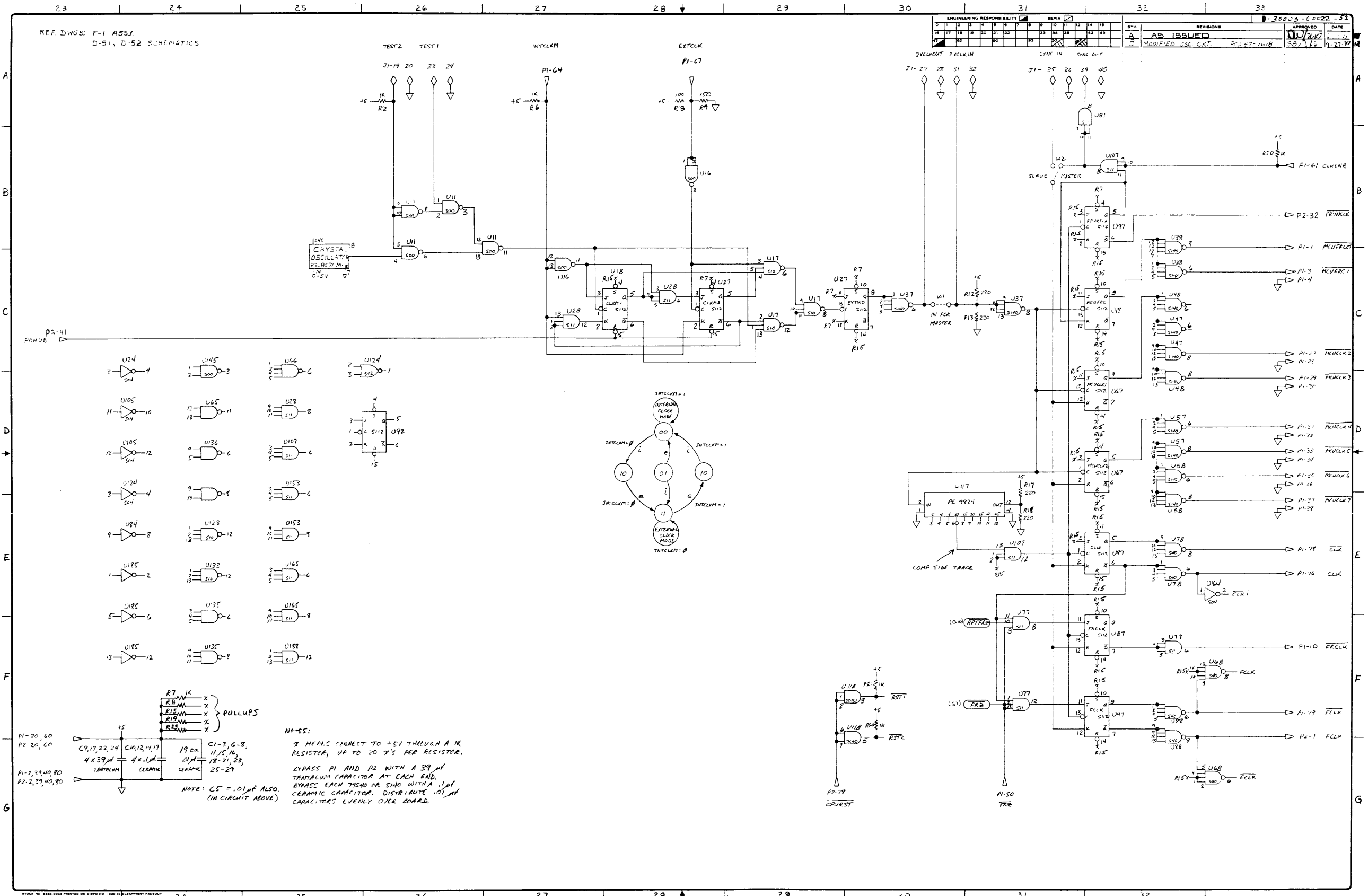
REF DWGS: F-1 ASSY.  
D-52 D-53 SCHEMATICS

ENGINEERING RESPONSIBILITY		REV		DATE	
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4		4		4	
5		5		5	
6		6		6	
7		7		7	
8		8		8	
9		9		9	
10		10		10	
11		11		11	
12		12		12	
13		13		13	
14		14		14	
15		15		15	
16		16		16	
17		17		17	
18		18		18	
19		19		19	
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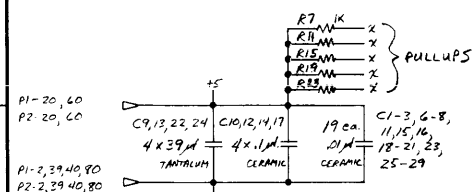
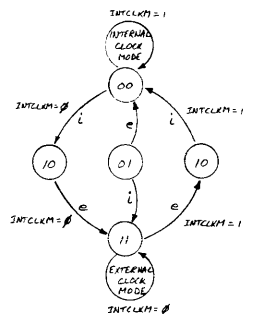
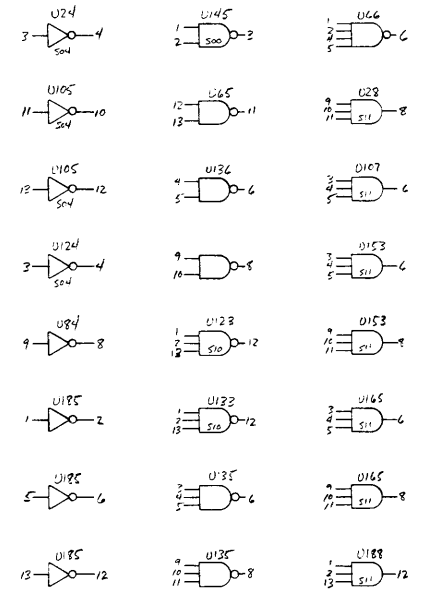




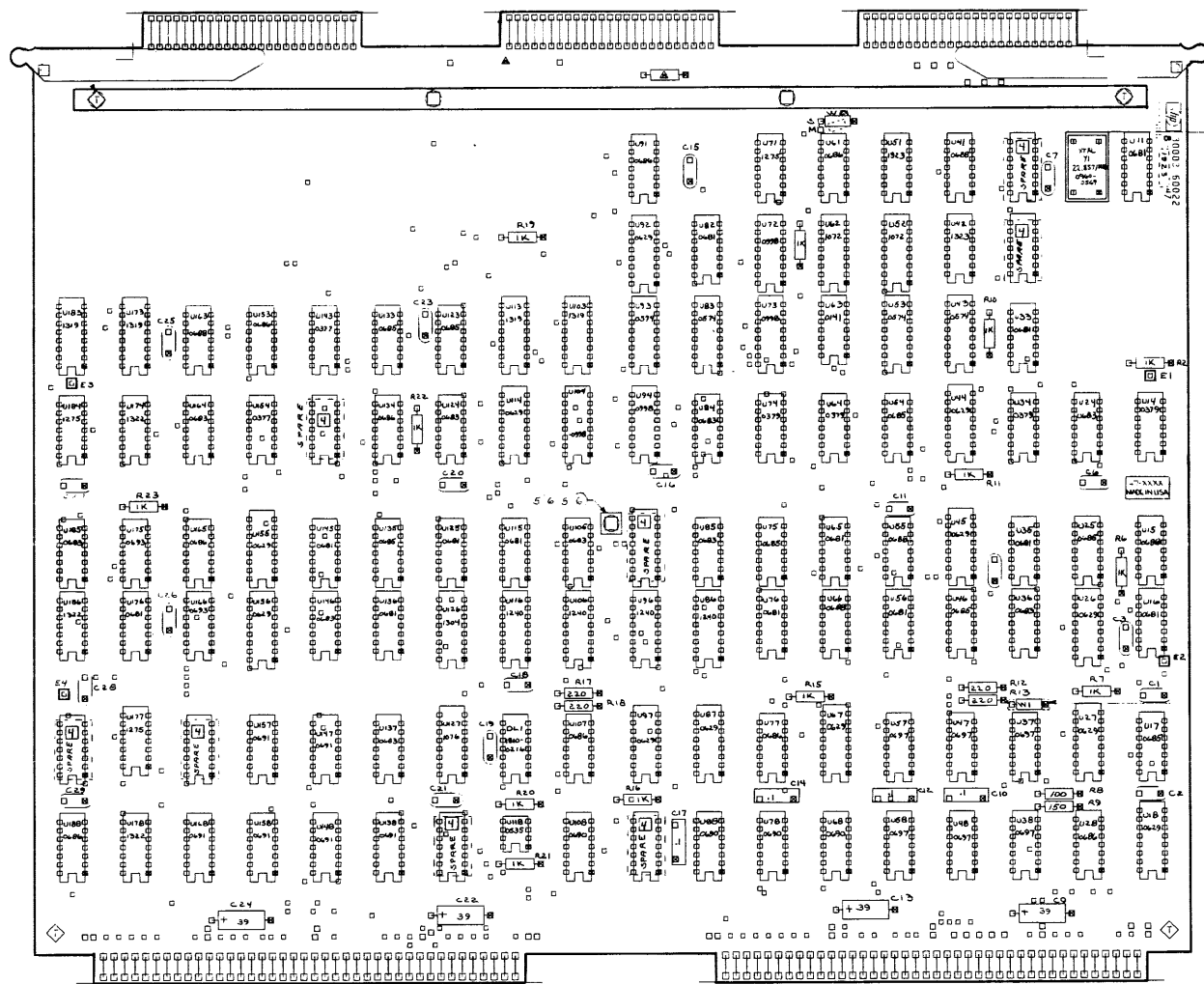


REF. DWGS: F-1 A55J,  
D-51, D-52 SCHEMATICS

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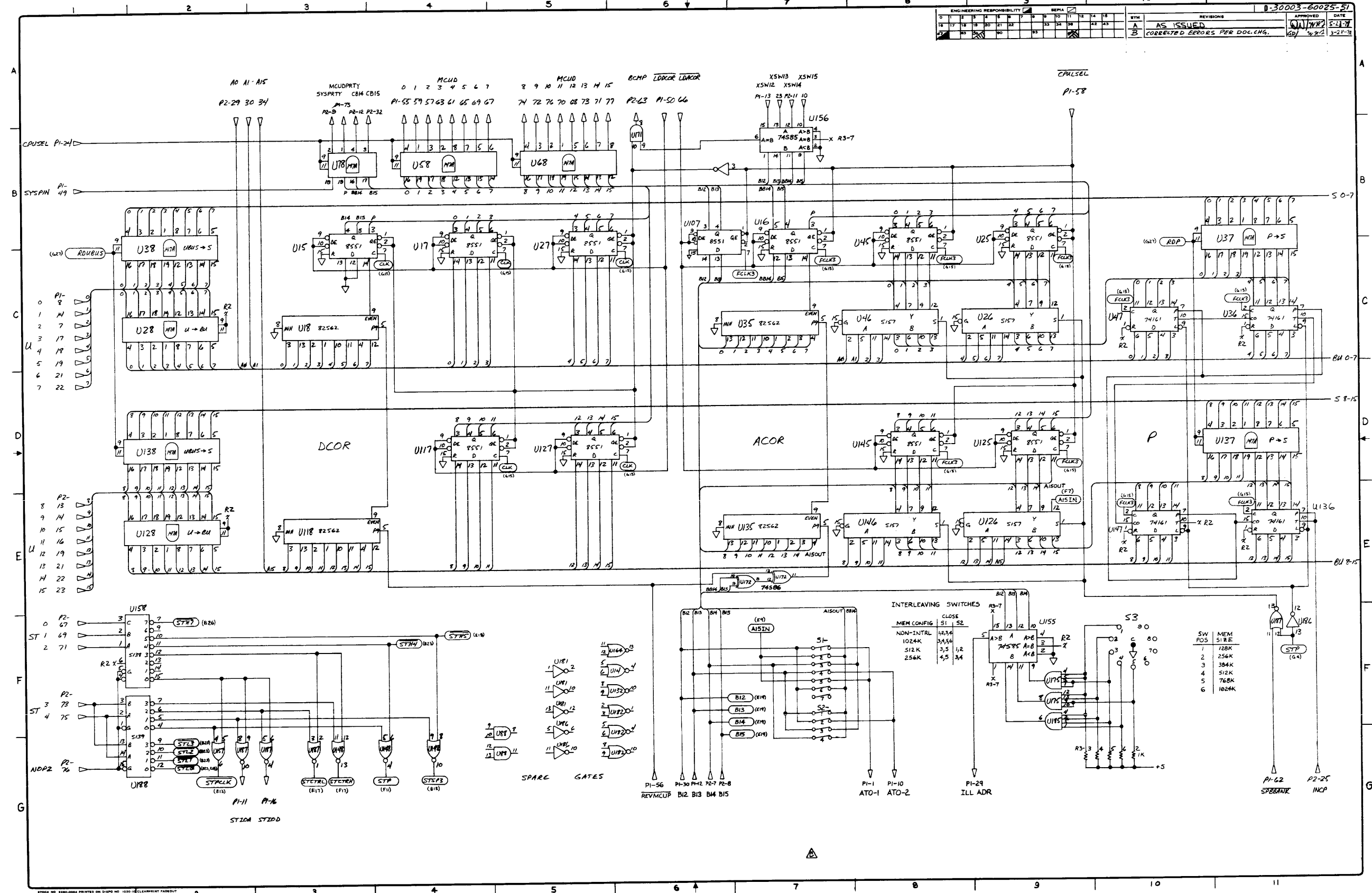
NOTES:  
X MEANS CONNECT TO +5V THROUGH A 1K RESISTOR, UP TO 20 X'S PER RESISTOR.  
BYPASS P1 AND P2 WITH A 39 nF TANTALUM CAPACITOR AT EACH END.  
BYPASS EACH THERM OR SMD WITH A .01 uF CERAMIC CAPACITOR. DISTRIBUTE .01 uF CAPACITORS EVENLY OVER BOARD.  
NOTE: C5 = .01 uF ALSO (IN CIRCUIT ABOVE)

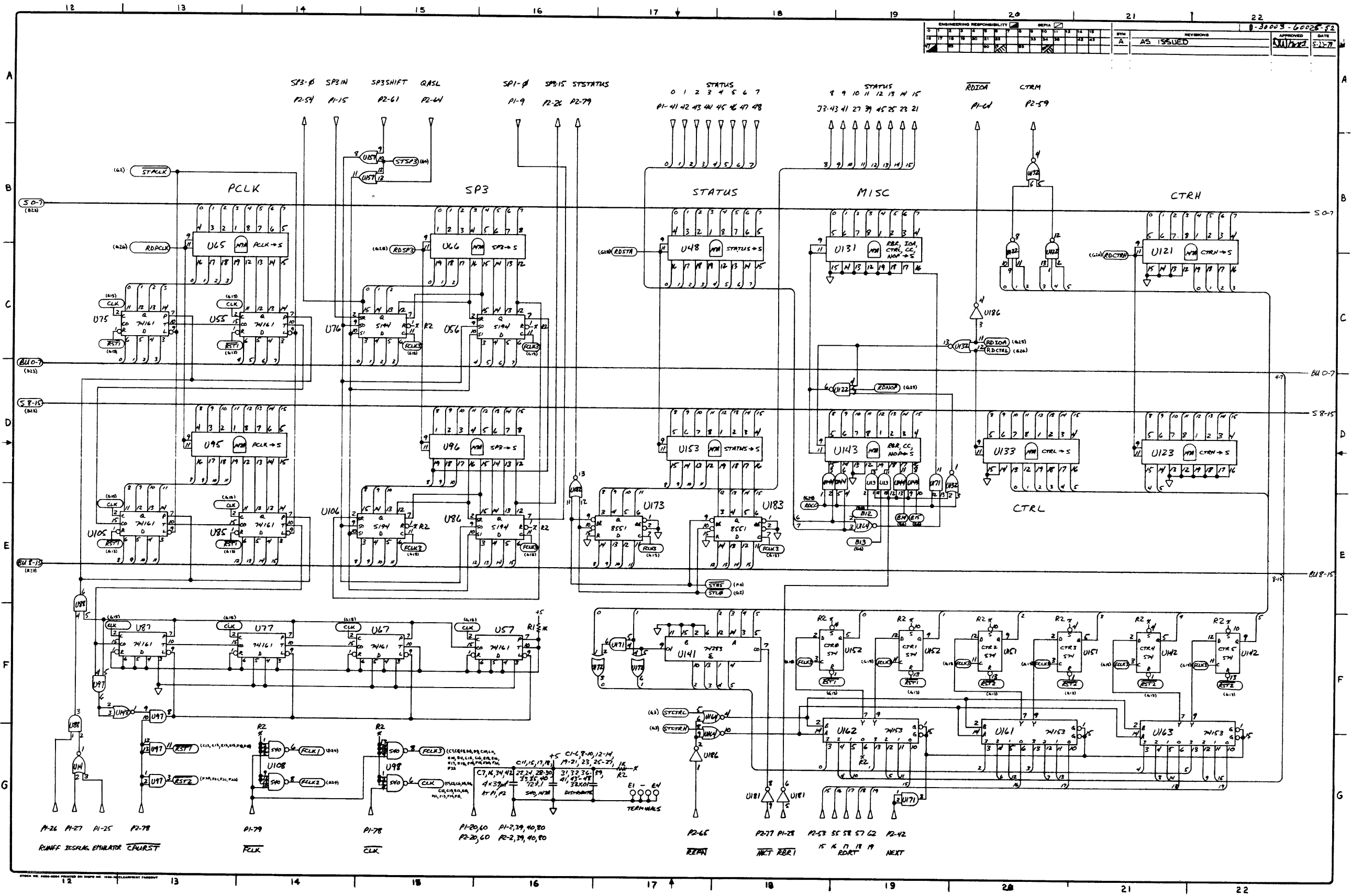


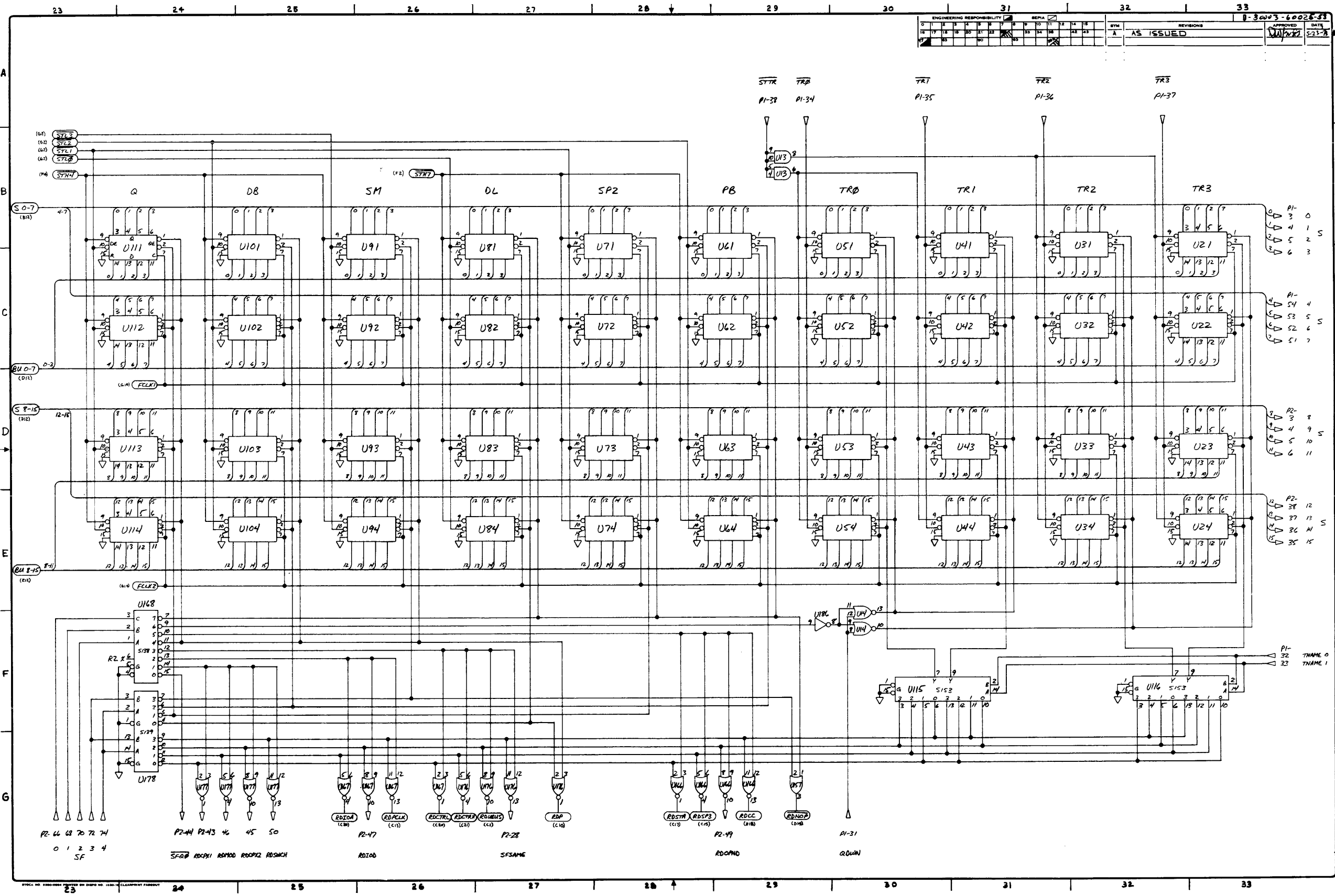
2003-60022 SSF

NOTES:  
 1. UNLESS OTHERWISE SPECIFIED  
 RESISTANCE VALUES ARE IN OHMS  $\pm 5\%$   
 CAPACITANCE VALUES ARE IN MICROFARADS  
 ALL CAPACITORS ARE CERAMIC DISC  
 ALL IC'S ARE 1820-1---

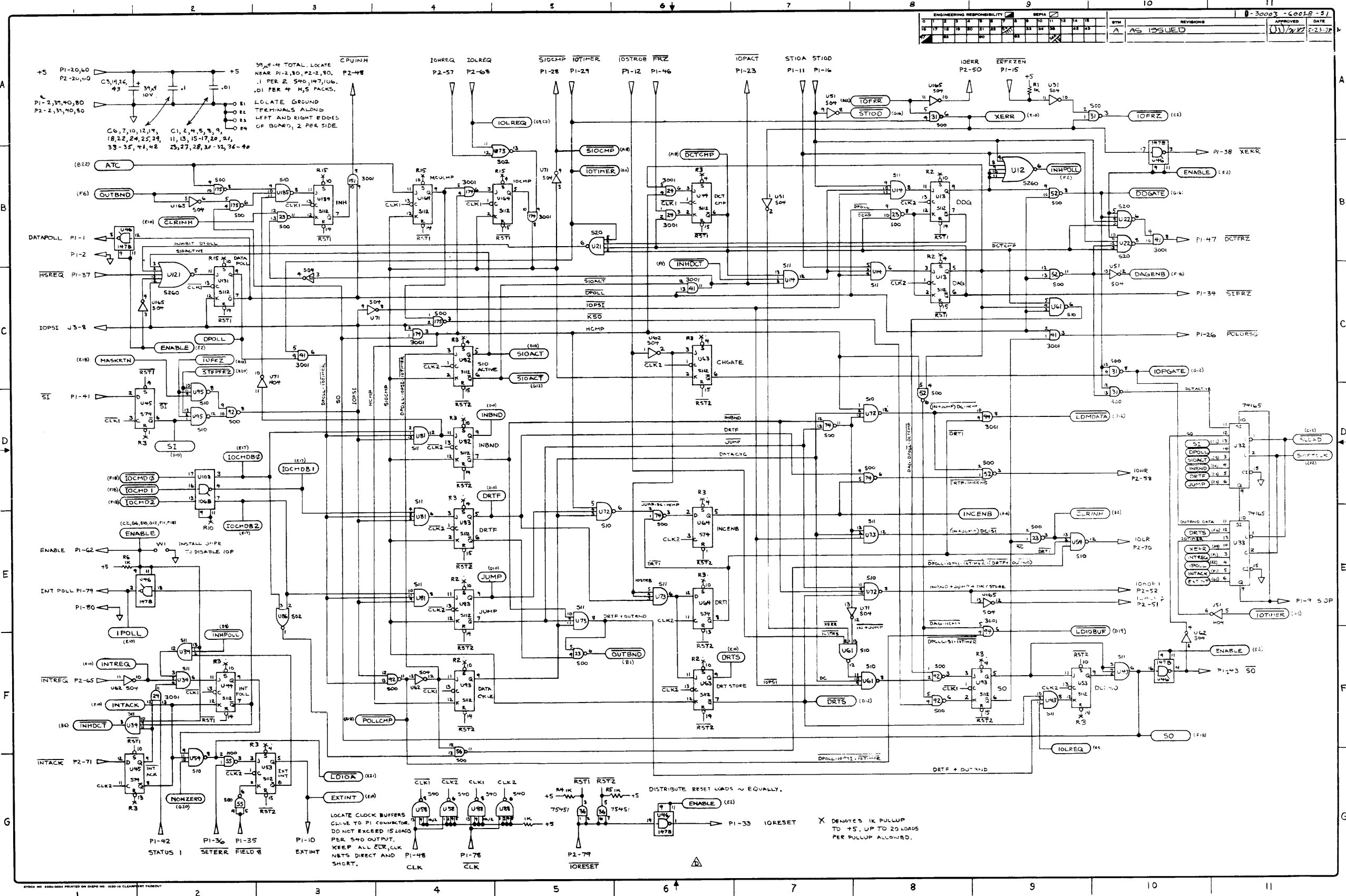
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														AS ISSUED				DATE		DATE	
														CORRECTED ERRORS PER DOC. CHG.				DATE		DATE	





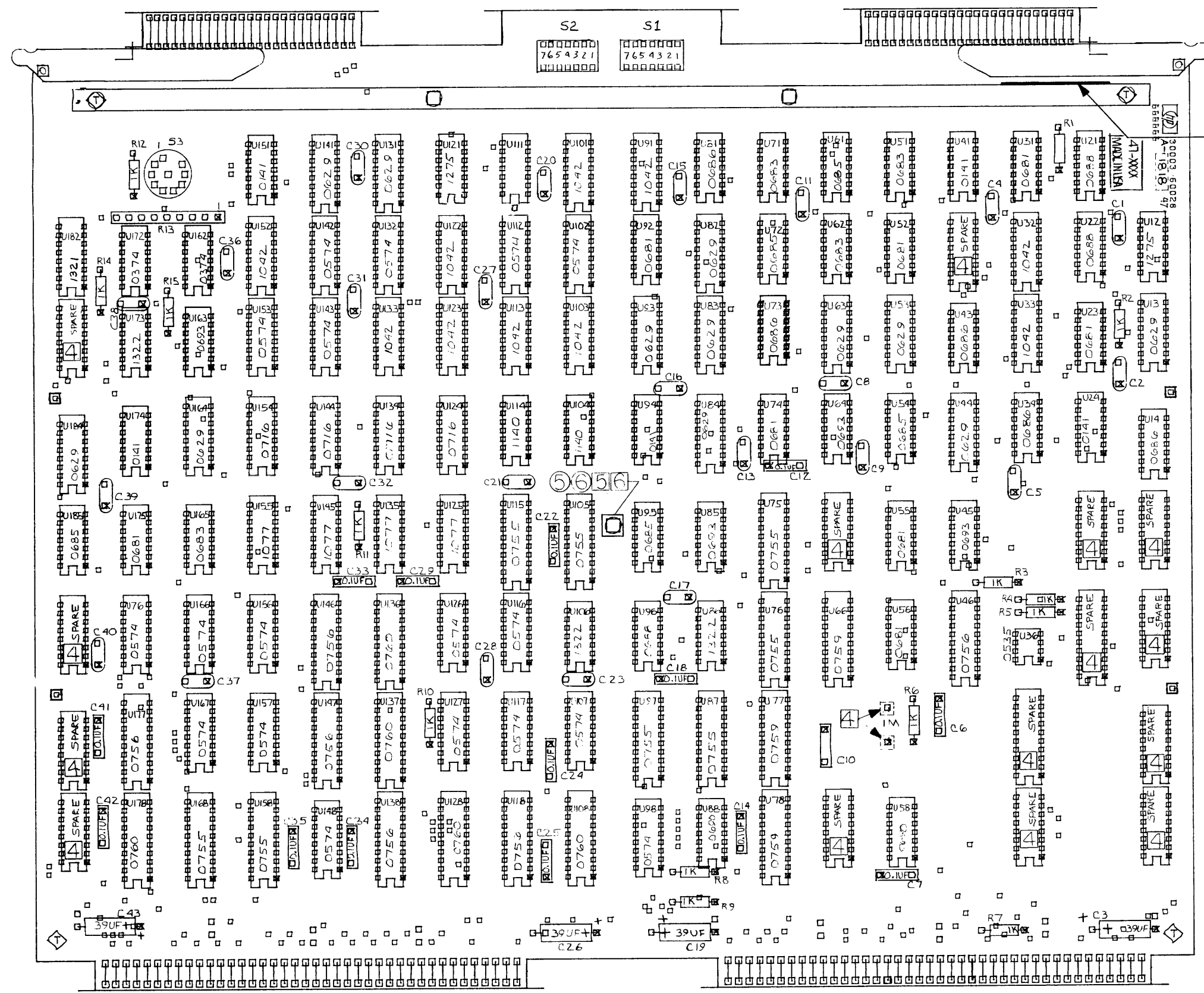






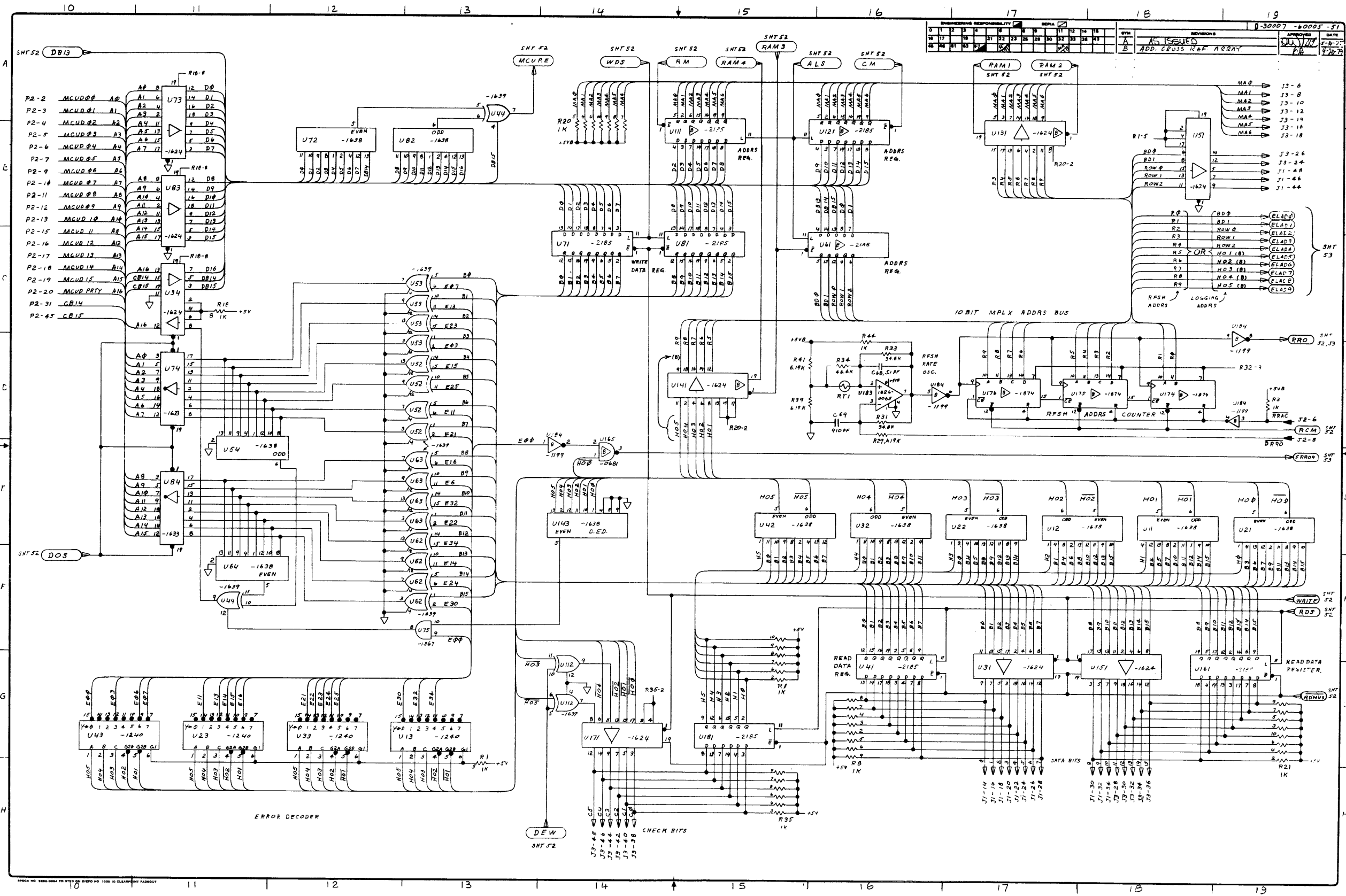


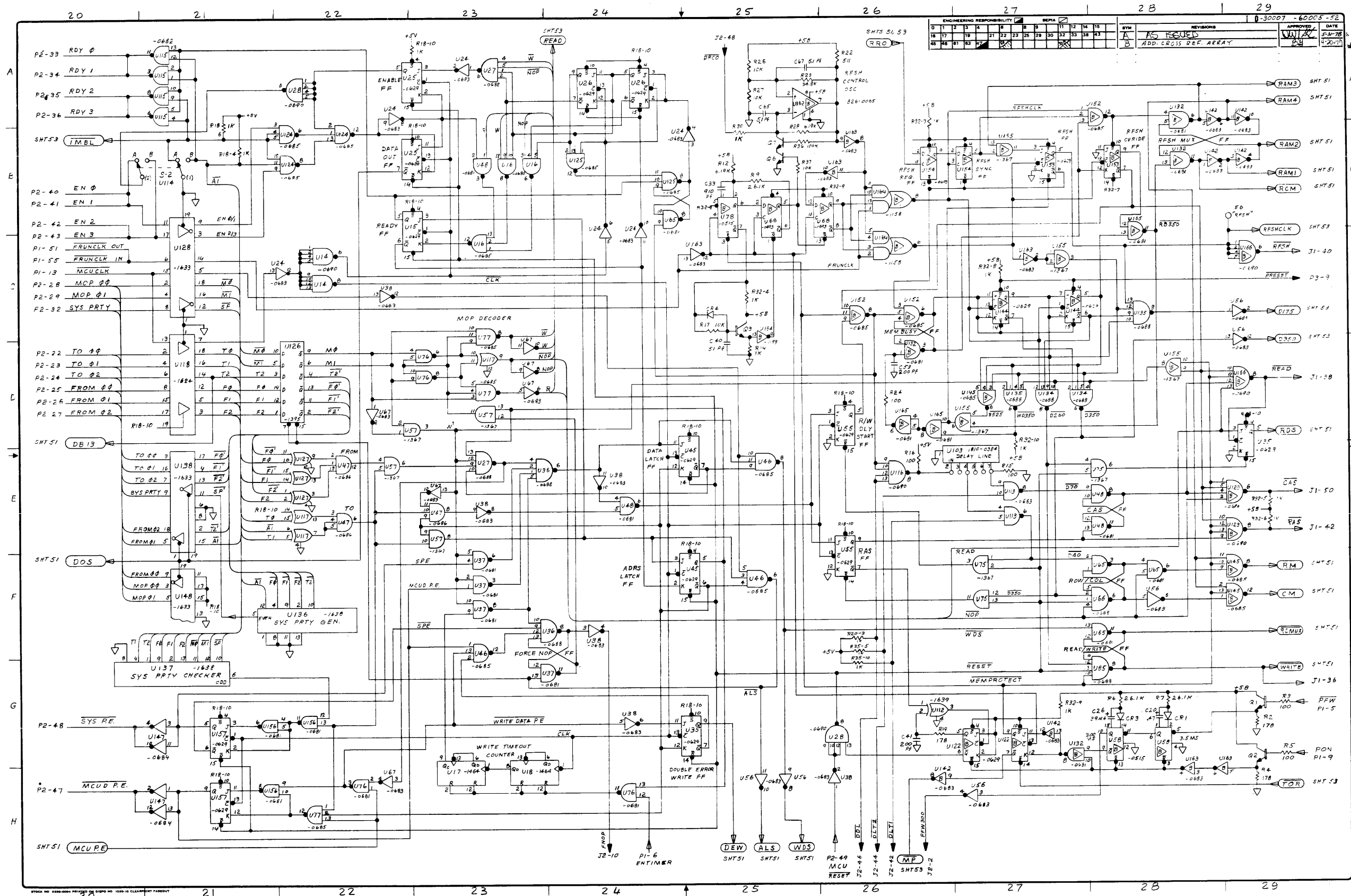




IOP  
3003-60028

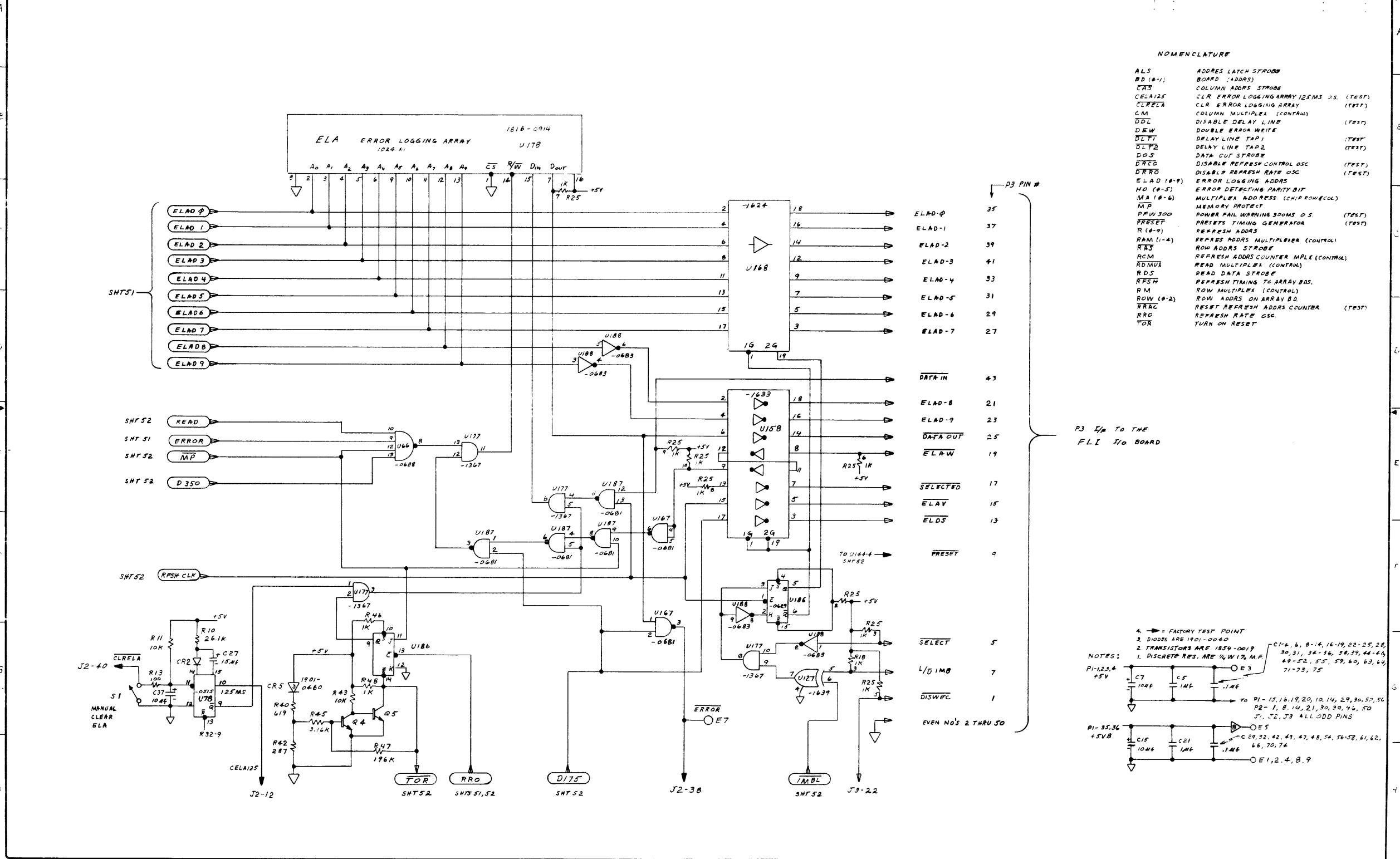
NOTE  
UNLESS OTHERWISE SPECIFIED:  
ALL RESISTORS IN OHMS.  
ALL RESISTORS 1/4W, 5%  
ALL CAPACITORS IN MICROFARADS  
ALL CAPACITORS .01UF CERAMIC DISC  
ALL IC'S ARE 1820-





ENGINEERING RESPONSIBILITY														REVISIONS													
DATE														DATE													
AS ISSUED														ADD. CRGIS REF. ARRAY													
APPROVED														DATE													
DATE														DATE													

ENGINEERING RESPONSIBILITY															REVISED															DATE														
BY: A															DATE: 5-3-78															APPROVED: P.H.														
ADD. CROSS REF. AREA																																												

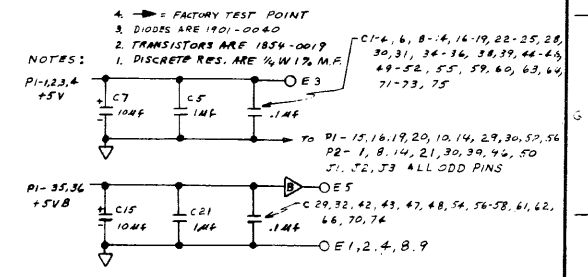


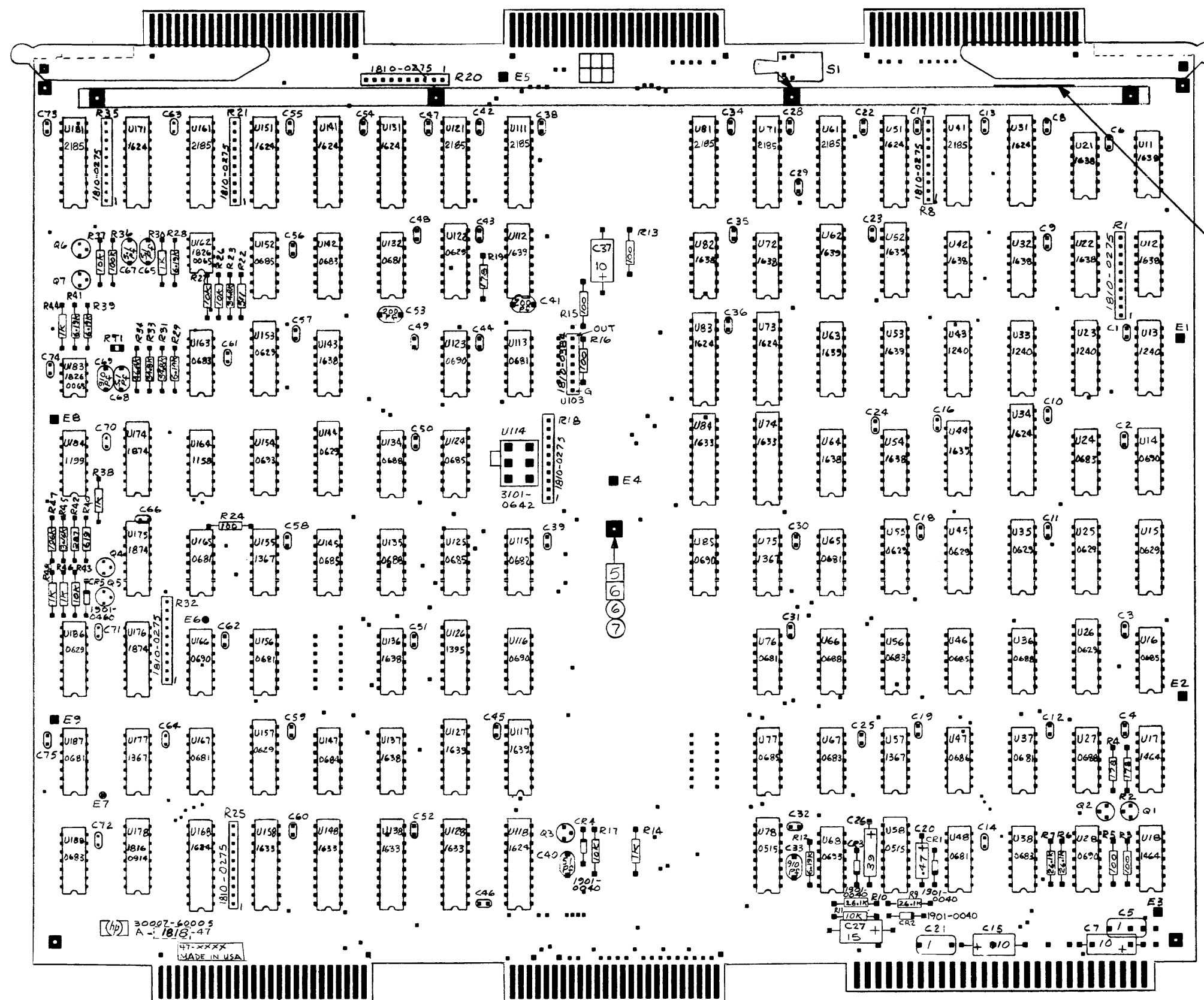
**NOMENCLATURE**

ALS	ADDRESS LATCH STROBE
BD (8-1)	BOARD ADDRESS
CAS	COLUMN ADDRS STROBE
CELA125	CLR ERROR LOGGING ARRAY 125MS D.S. (TEST)
CLRELA	CLR ERROR LOGGING ARRAY (TEST)
CM	COLUMN MULTIPLEX (CONTROL)
DDL	DISABLE DELAY LINE (TEST)
DEW	DOUBLE ERROR WRITE (TEST)
DLT1	DELAY LINE TAP1 (TEST)
DLT2	DELAY LINE TAP2 (TEST)
DOS	DATA OUT STROBE
DRCD	DISABLE REFRESH CONTROL OSC (TEST)
DRRO	DISABLE REFRESH RATE OSC (TEST)
ELAD (8-9)	ERROR LOGGING ADDRS
EO (8-5)	ERROR DETECTING PARITY BIT
MA (8-6)	MULTIPLEX ADDRESS (CHIP ROW/CLK)
MP	MEMORY PROTECT
PMW 300	POWER FAIL WARNING 300MS D.S. (TEST)
PRESET	PRESETS TIMING GENERATOR (TEST)
R (8-9)	REFRESH ADDRS
RAM (1-4)	REFRESH ADDRS MULTIPLEXER (CONTROL)
RAS	ROW ADDRS STROBE
RCM	REFRESH ADDRS COUNTER MPLX (CONTROL)
RDML	READ MULTIPLEX (CONTROL)
RDS	READ DATA STROBE
RFSH	REFRESH TIMING TO ARRAY BQS.
RM	ROW MULTIPLEX (CONTROL)
ROW (8-2)	ROW ADDRS ON ARRAY BQ.
RTRC	RESET REFRESH ADDRS COUNTER (TEST)
RRO	REFRESH RATE OSC
TDR	TURN ON RESET

P3 PIN #	
35	ELAD-0
37	ELAD-1
39	ELAD-2
41	ELAD-3
33	ELAD-4
31	ELAD-5
29	ELAD-6
27	ELAD-7
43	DATA IN
21	ELAD-8
23	ELAD-9
25	DATA OUT
19	ELAW
17	SELECTED
15	ELAV
13	ELDS
4	PRESET
5	SELECT
7	L/DIMB
1	DISWPC
	EVEN NO'S 2 THRU 50

P3 PINS TO THE FLI I/O BOARD



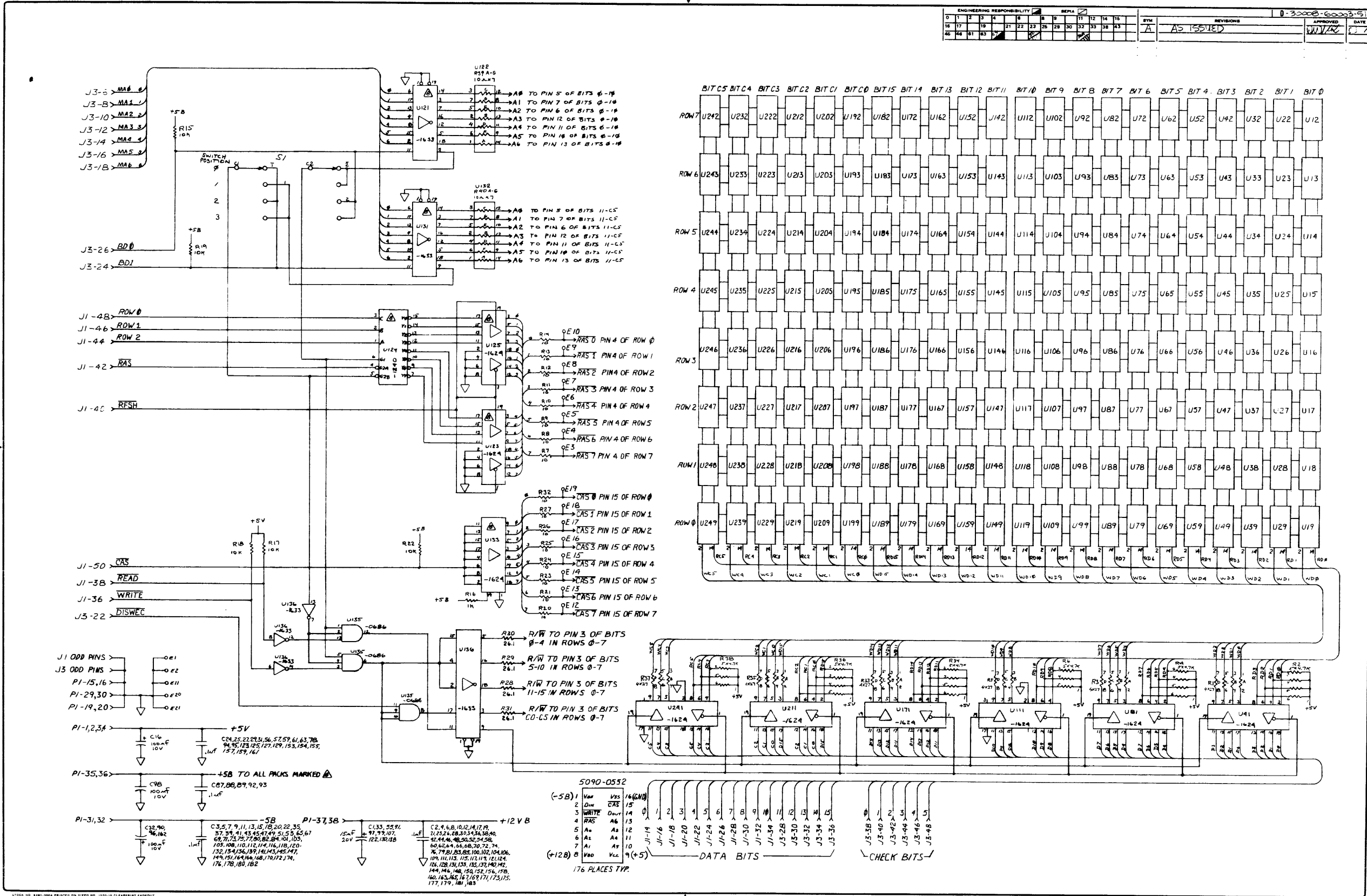


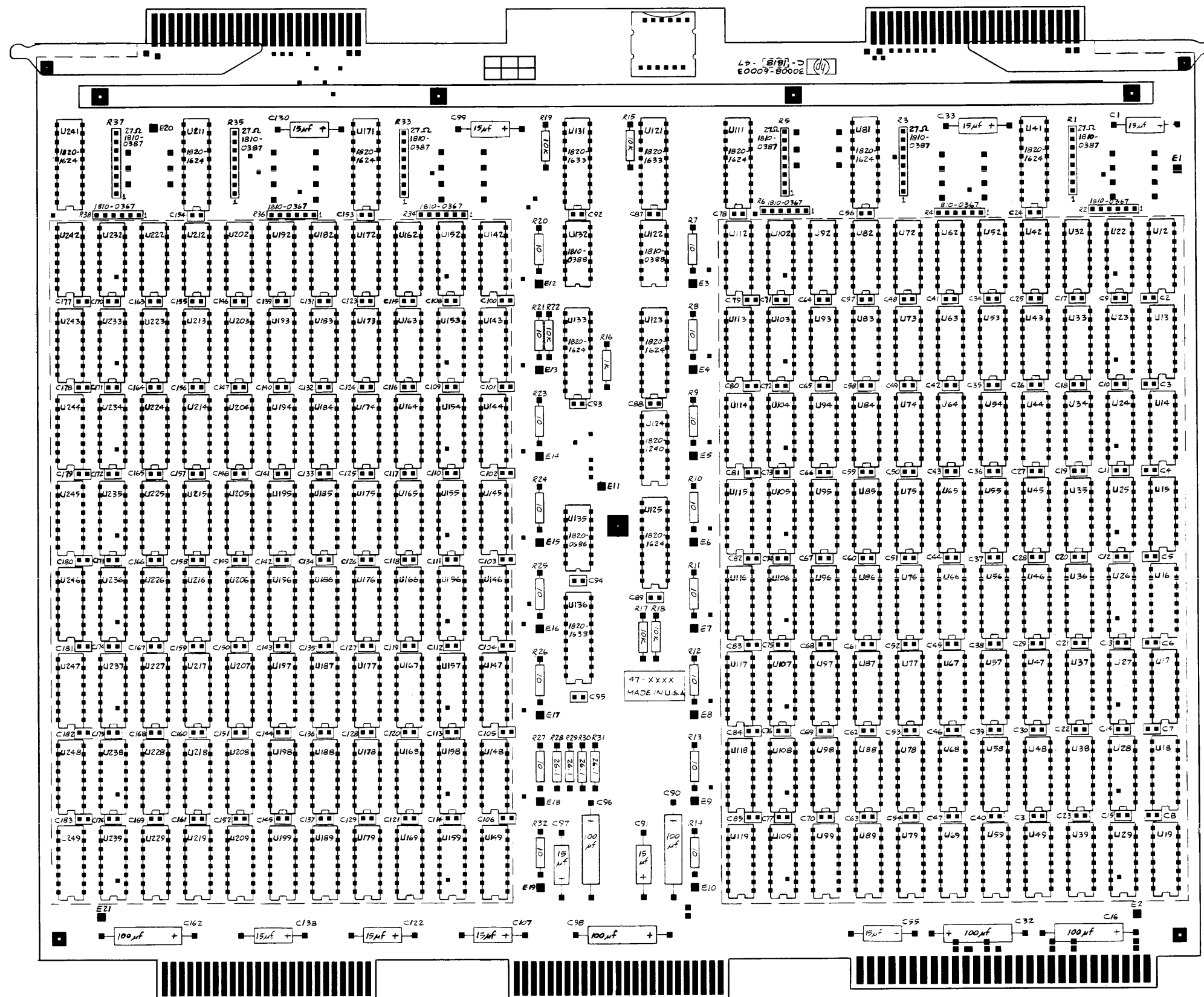
30007-60005  
MEM CTL/LOG

NOTE:  
1. UNLESS OTHERWISE SPECIFIED:  
ALL RESISTANCE IN OHMS  
ALL RESISTORS 1/8W 1%  
ALL CAPACITANCE IN MICROFARADS  
ALL CAPACITORS .1MFD  
ALL IC'S ARE 1820-  
ALL TRANSISTORS 1854-0013

(hp) 30007-60005  
A-1818-47  
47-XXXX  
MADE IN USA

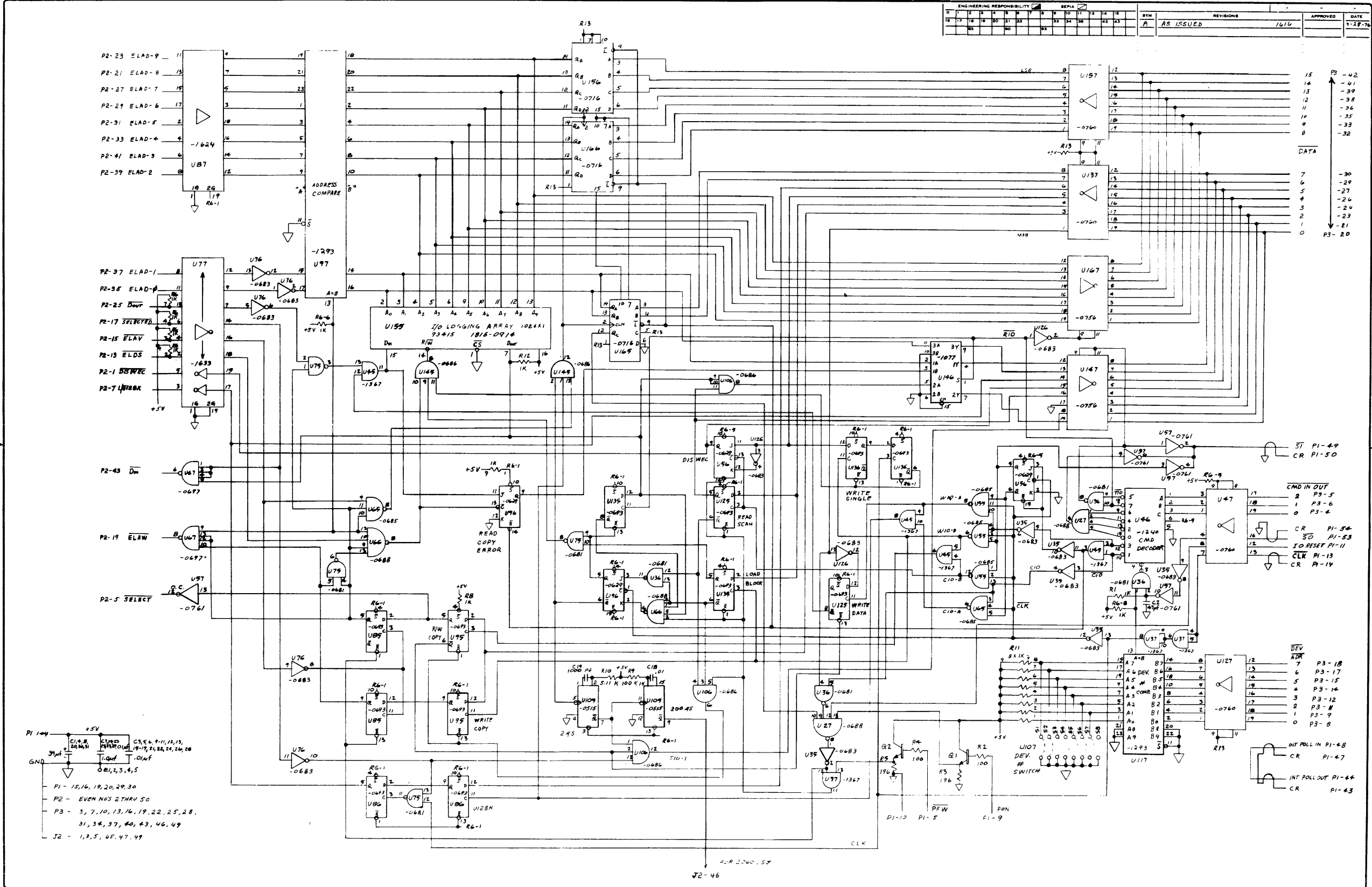
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BYM												AS ISSUED												DATE																										





NOTE:  
 1. UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE IN OHMS  
 ALL RESISTORS 1/8W, 1%  
 ALL CAPACITANCE IN MICROFARADS  
 ALL CAPACITORS 1/4F 0160-4083  
 ALL I.C.'S 5090-0552

ENGINEERING RESPONSIBILITY												REVISED		APPROVED		DATE	
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BYM												AS ISSUED		1/16		1-27-76	



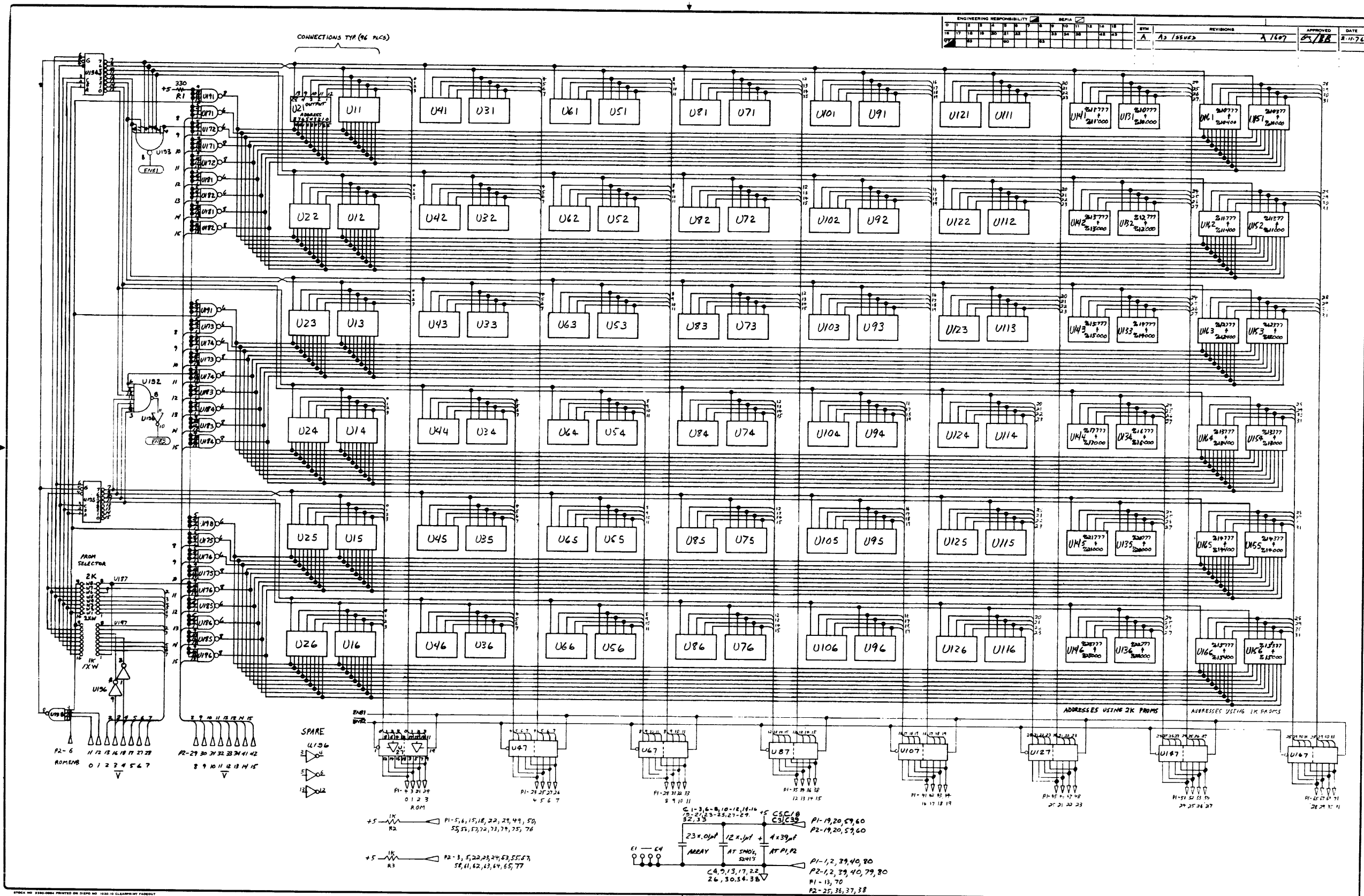
- PI - 15, 16, 19, 20, 29, 30  
 P2 - EVEN NOS 2 THRU 50  
 P3 - 3, 7, 10, 13, 16, 19, 22, 25, 28, 31, 34, 37, 40, 43, 46, 49  
 J2 - 1, 3, 5, 45, 47, 49

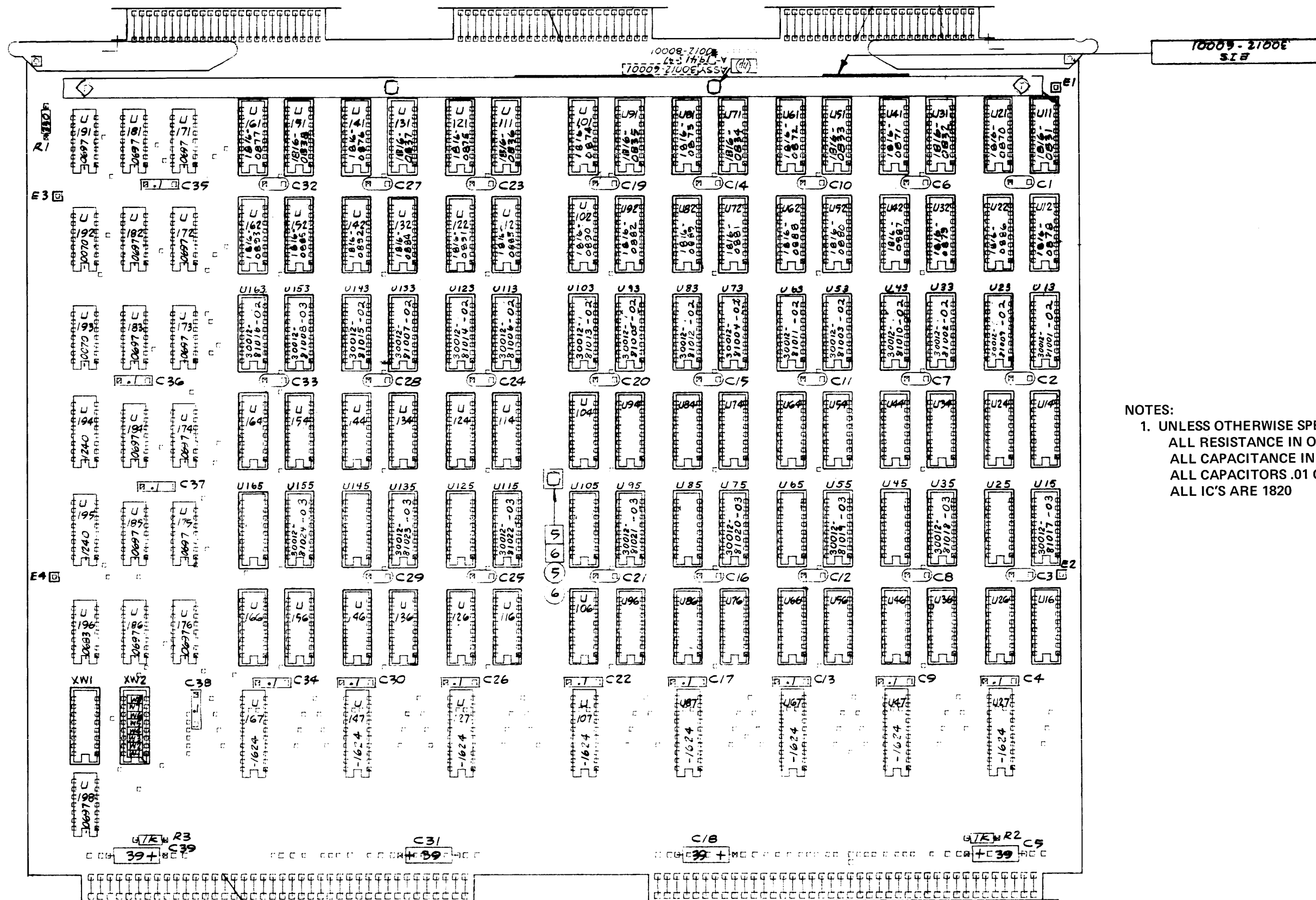


30009-60002  
FLI



- NOTES:  
 1. UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE IN OHMS  
 ALL RESISTORS 1/4 W 1%  
 ALL CAPACITANCE IN MICROFARADS  
 ALL CAPACITORS .01UF CER. DISC.  
 ALL IC'S 1820-XXXX



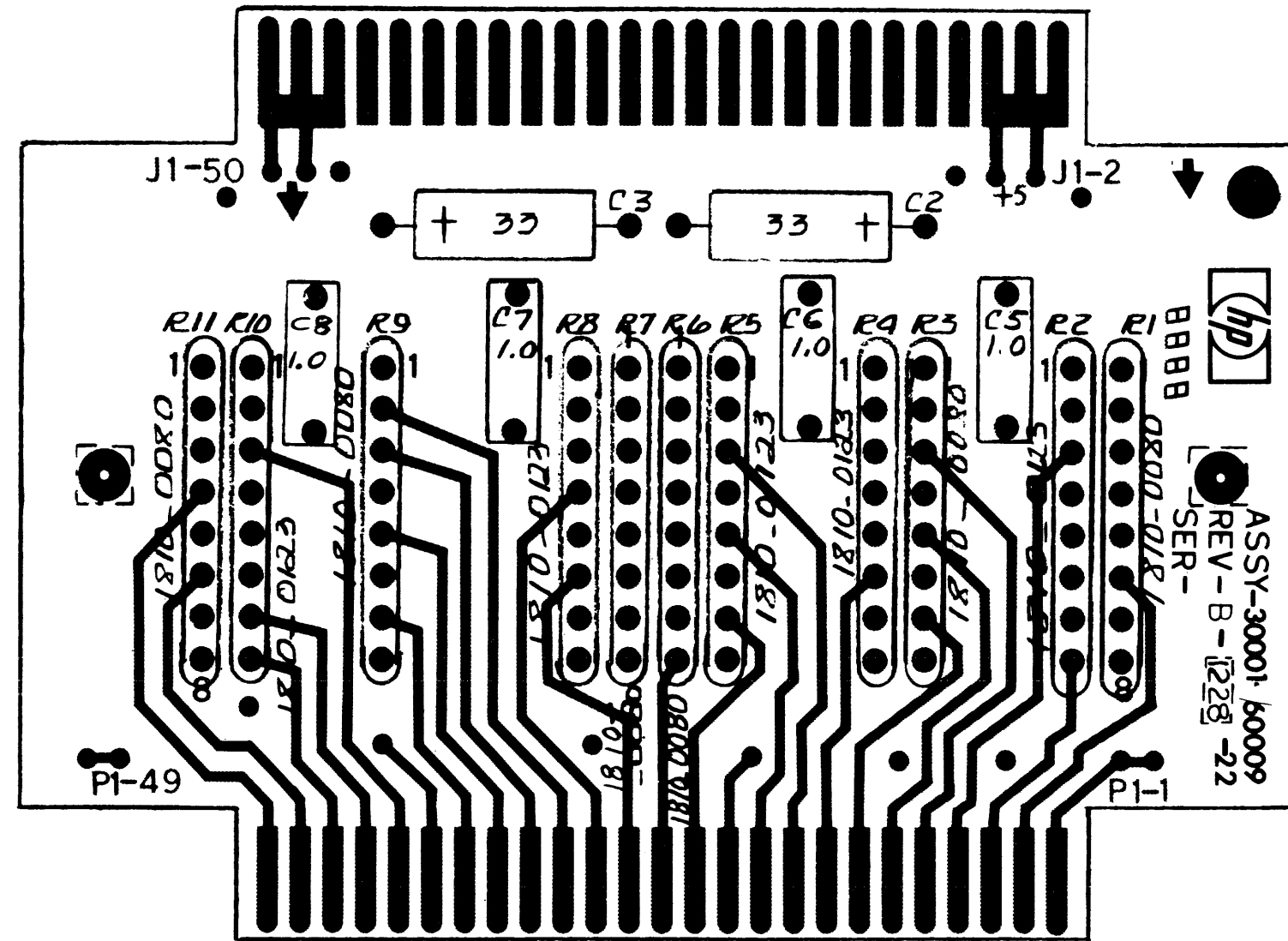


- NOTES:
- UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE IN OHMS  
 ALL CAPACITANCE IN MICROFARADS  
 ALL CAPACITORS .01 CERAMIC DISC  
 ALL IC'S ARE 1820

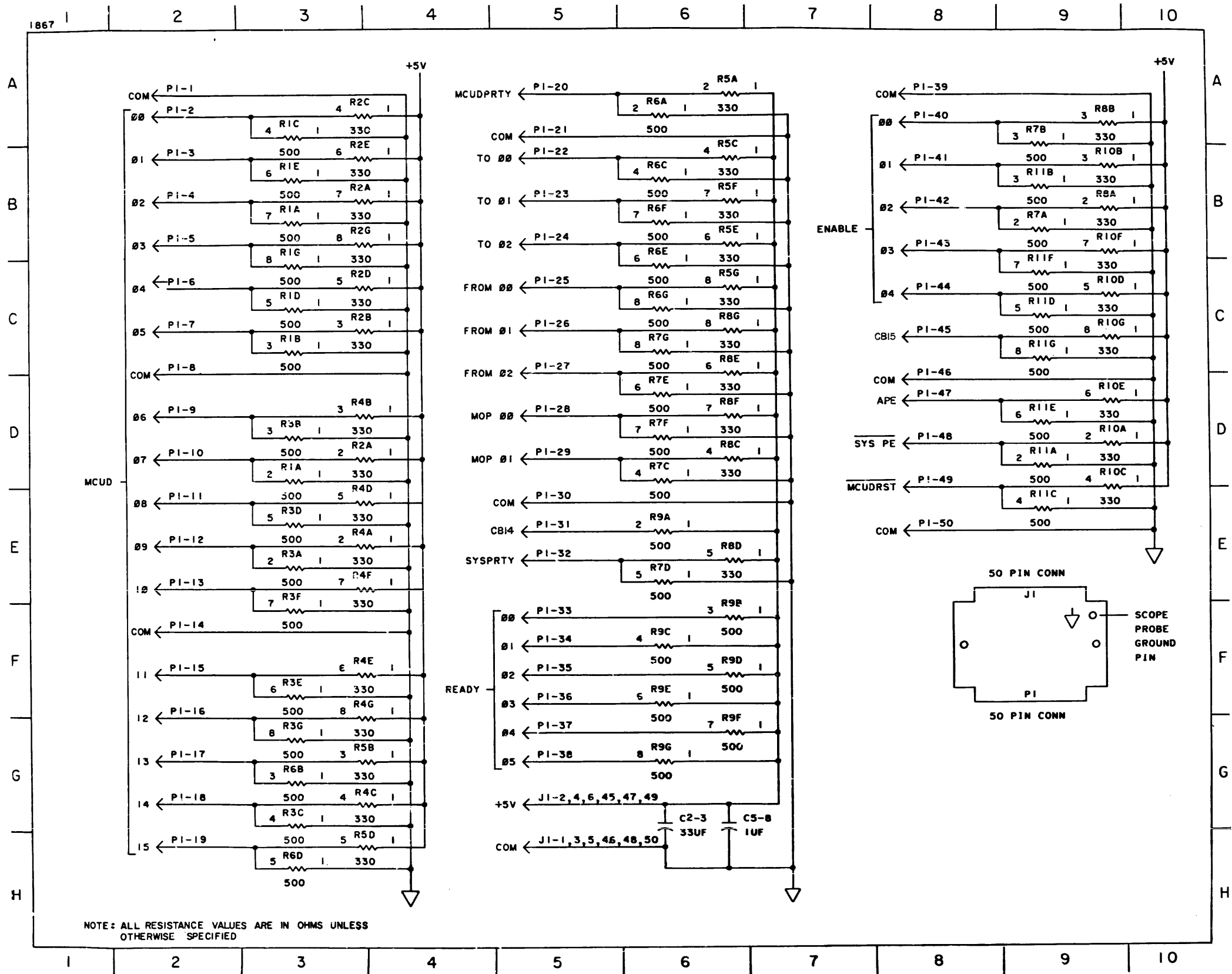
# SECTION III - I/O PCAS

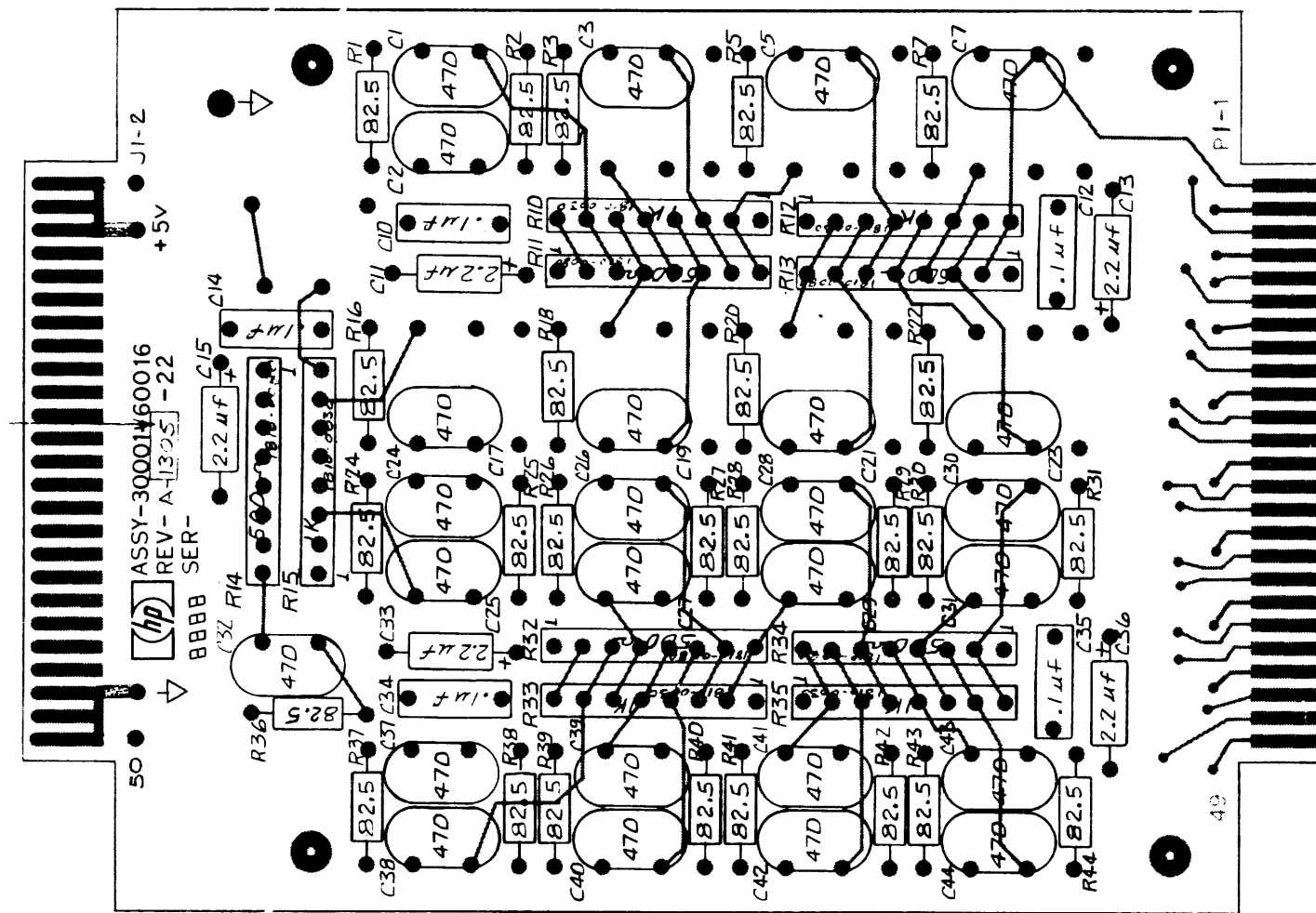
## CONTENTS

PCA NO.	NAME
-----	----
30001-60009.....	CTL Bus Terminator
30001-60016.....	IOP Bus Terminator
30001-60021.....	Power Bus Terminator
30003-60011.....	System Control Panel
30010-60001.....	Intelligent Network Processor--MPU
30010-60002.....	Intelligent Network Processor--DCI
30030-60003.....	Selector Channel Control
30030-60011.....	Selector Channel Sequencer
30030-60015.....	Selector Channel Bus Terminator
30030-60020.....	Selector Channel Port Controller
30030-60021.....	Selector Channel Register
30031-60001.....	System Clock
30032-60001.....	Terminal Data Interface
30032-60006.....	Terminal Connector/Multiplexer Panel
30033-60001.....	Selector Channel Maintenance
30035-60003.....	Multiplexer Channel Bus Terminator
30036-60002.....	Multiplexer Channel
30049-60003.....	Diagnostic Hardware Assembly
30050-60001.....	Universal Interface (TTL)
30050-60008.....	Card Reader Punch Interface
30051-60001.....	Universal Interface (Diff.)
30055-60001.....	Synchronous Single-Line Controller
30061-60001.....	Terminal Control Interface
30135-60063.....	System Clock/Fault Logging Interface
30202-60001.....	Disc File Read/Write
30202-60002.....	Disc File Bus
30202-60003.....	Disc Controller Processor
30206-60001.....	Card Reader Interface
30215-60002.....	Mag Tape Controller Processor
30215-60006.....	9 TRK. Mag Tape Controller
30226-60001.....	Plotter Interface
30229-60001.....	Cartridge Disc Interface
30229-60003.....	Cartridge Disc Terminator
30354-60001.....	Maintenance Panel Assembly
30354-60003.....	Maintenance Panel Interface
30360-60001.....	Hardwired Serial Interface

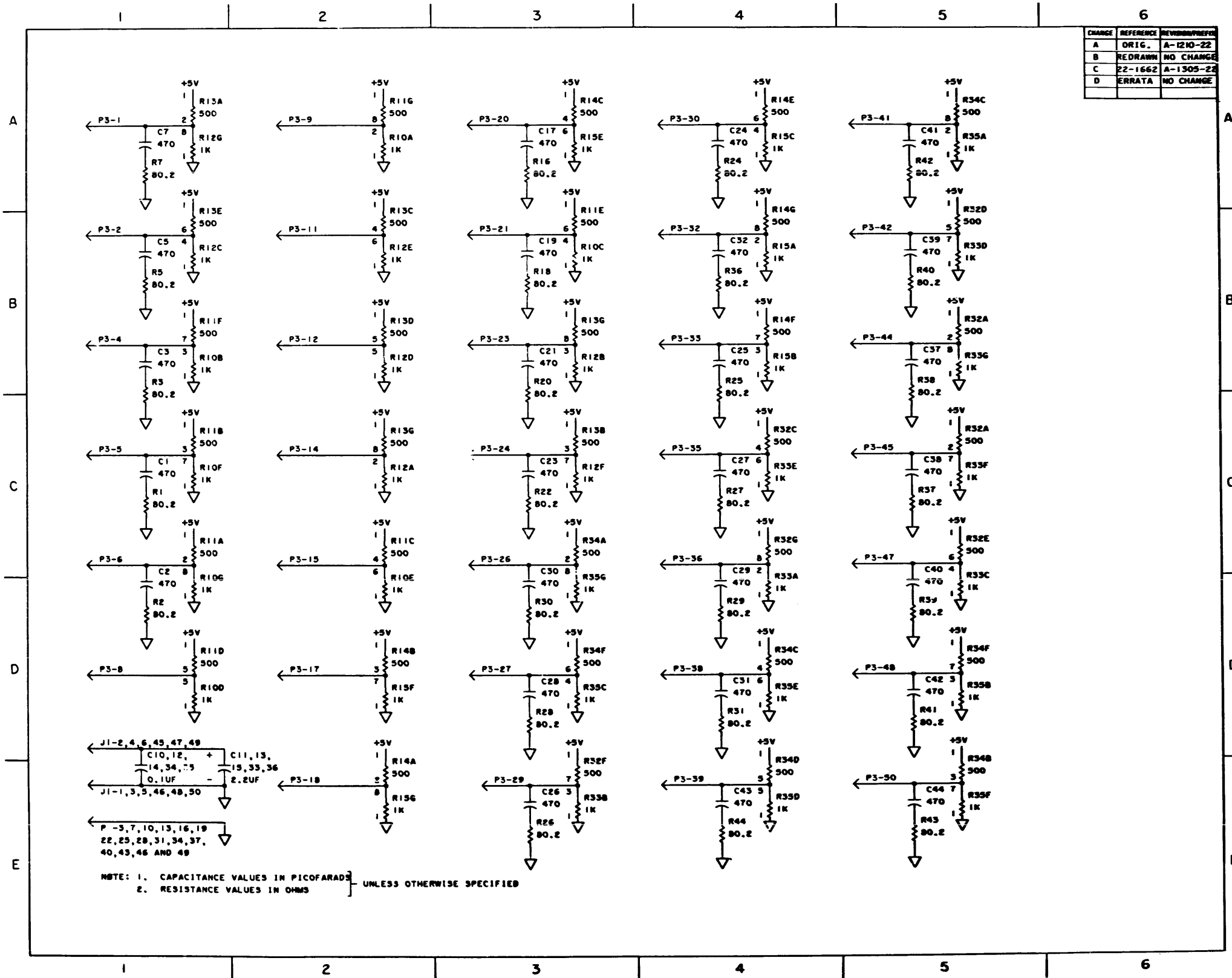


NOTE  
 UNLESS OTHERWISE SPECIFIED,  
 ALL CAPACITANCE IN MICROFARADS.  
 ALL RESISTANCE IN OHMS.

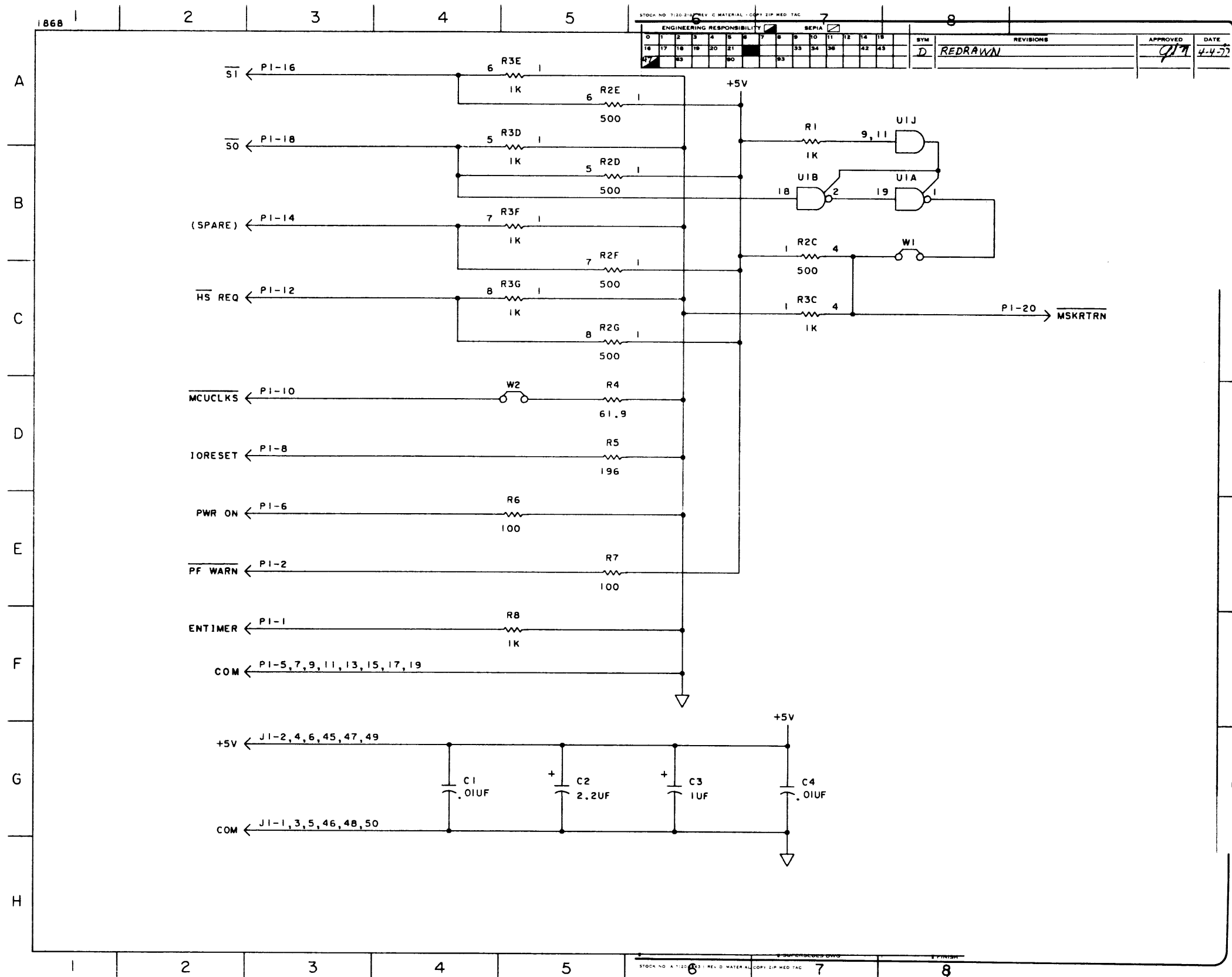


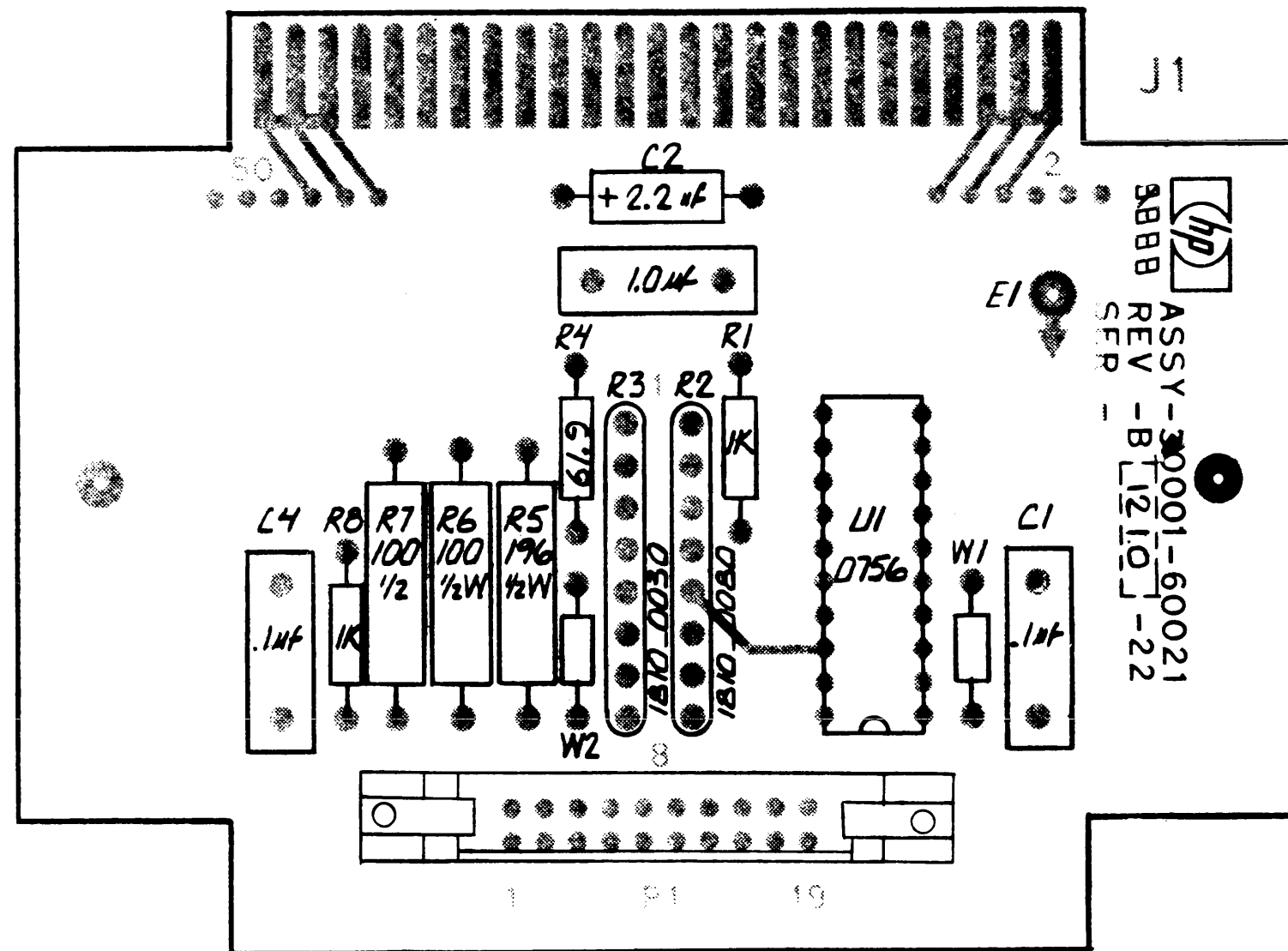


NOTE:  
 1. UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE IN OHMS  
 ALL RESISTORS 1/8W 1% M.F.  
 ALL CAPACITANCE IN PICO FARADS



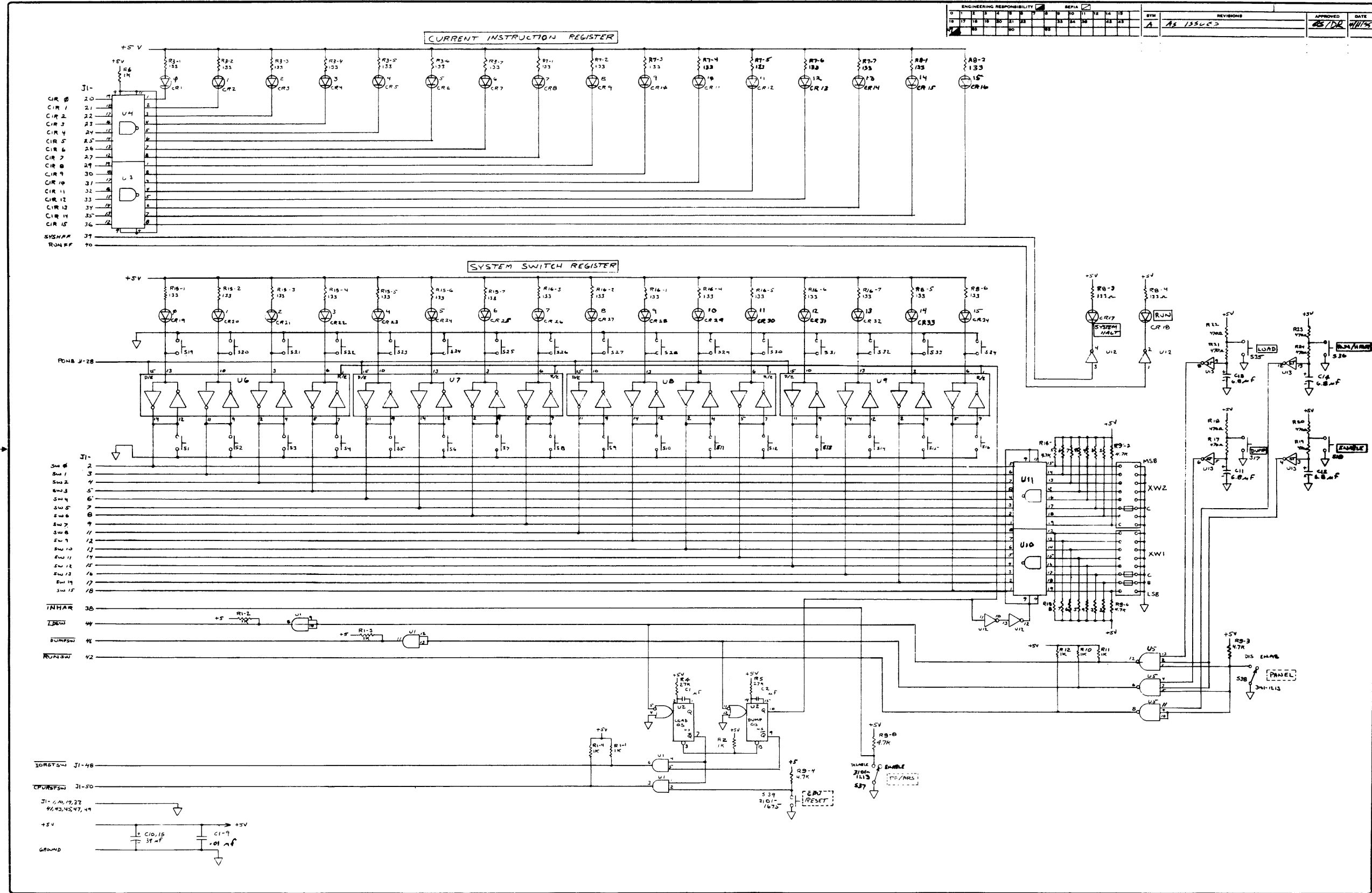


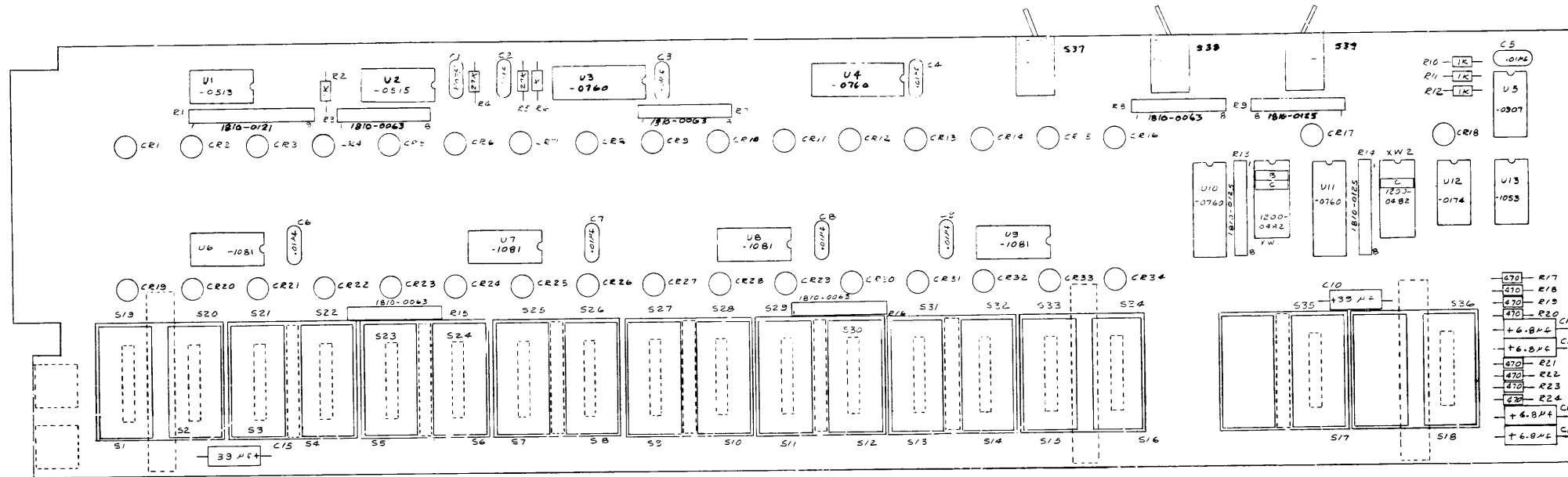




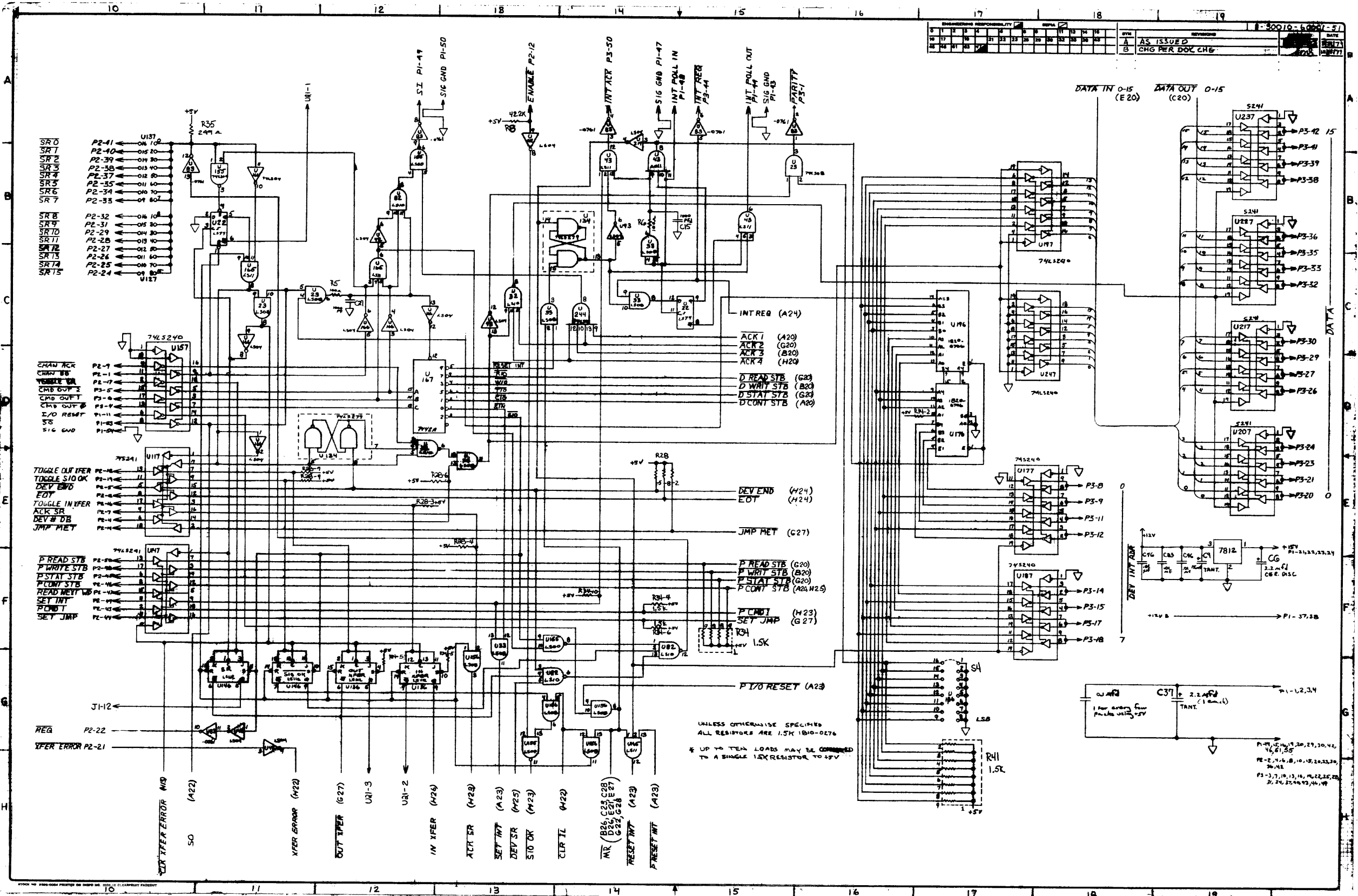
NOTE  
UNLESS OTHERWISE SPECIFIED  
ALL RESISTANCE IN OHMS  
ALL RESISTORS 1/4W-1% MF  
ALL CAPACITANCE IN MICRO FARADS

ENGINEERING RESPONSIBILITY												REVISIONS												APPROVED	DATE									
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	BYM	AS 135063	AS 7/82	4/17/75

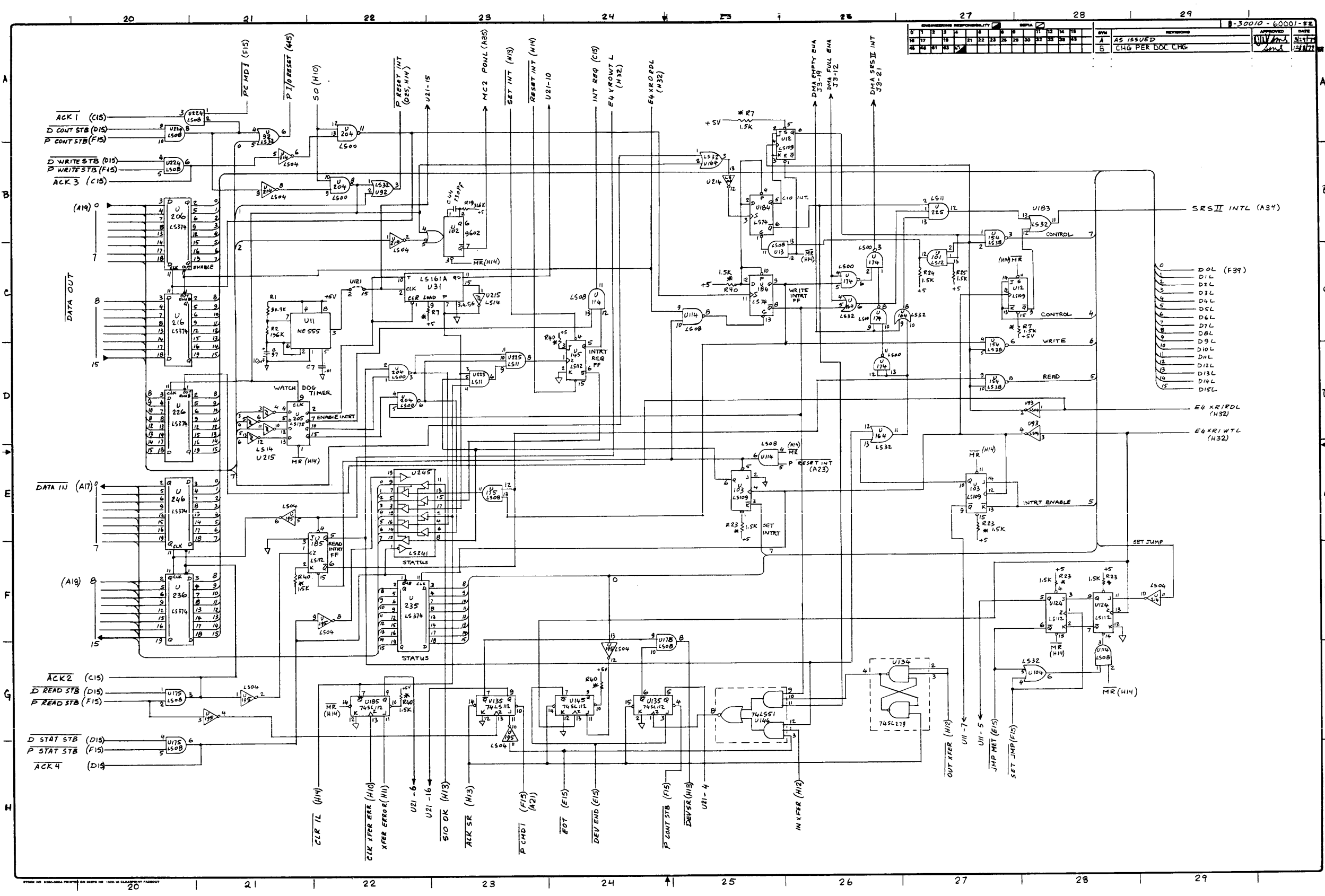




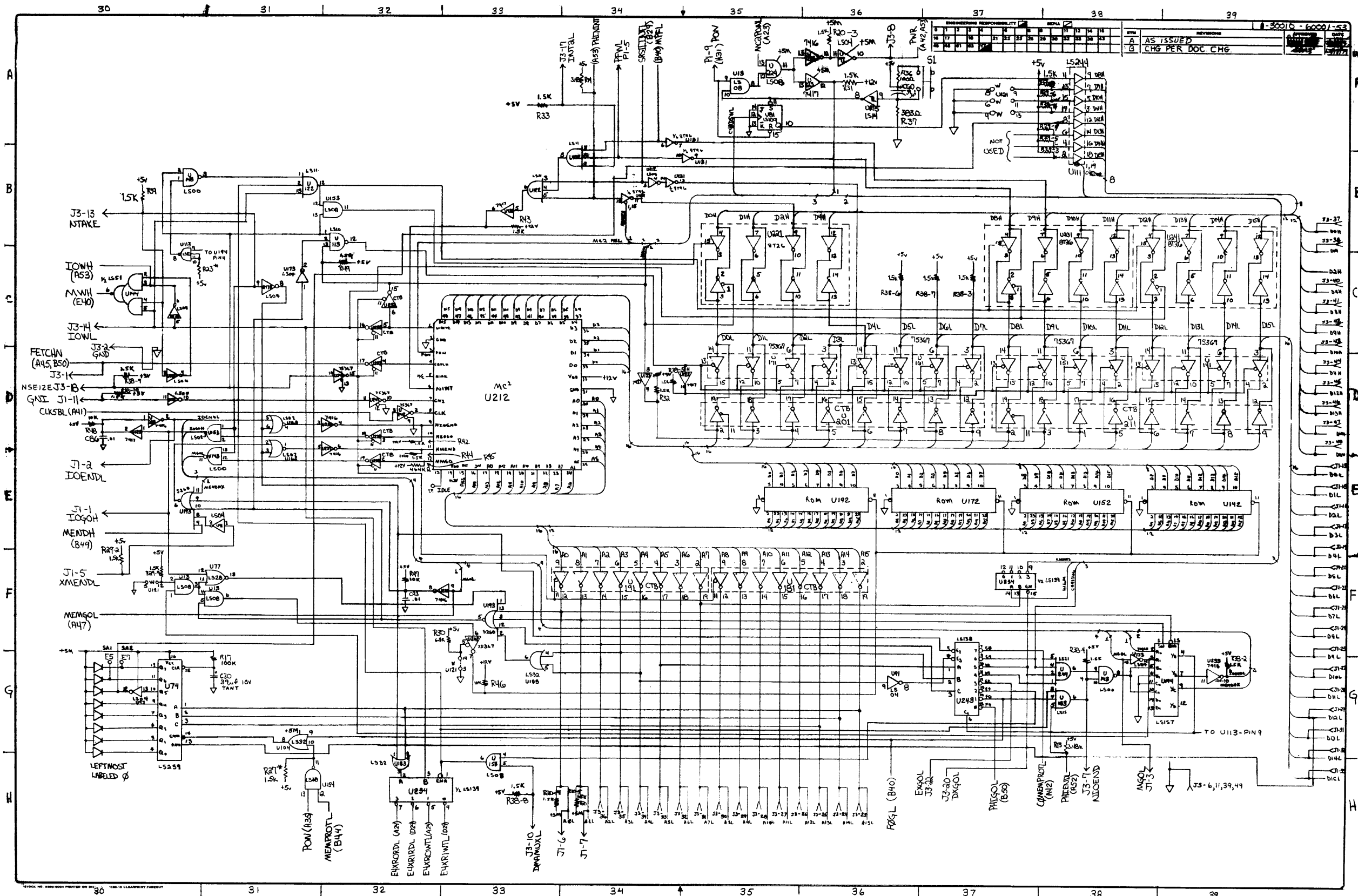
NOTES:  
 1. UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE IN OHMS  
 ALL RESISTORS 1/4W, 5%  
 ALL DIODES 1N90-0525

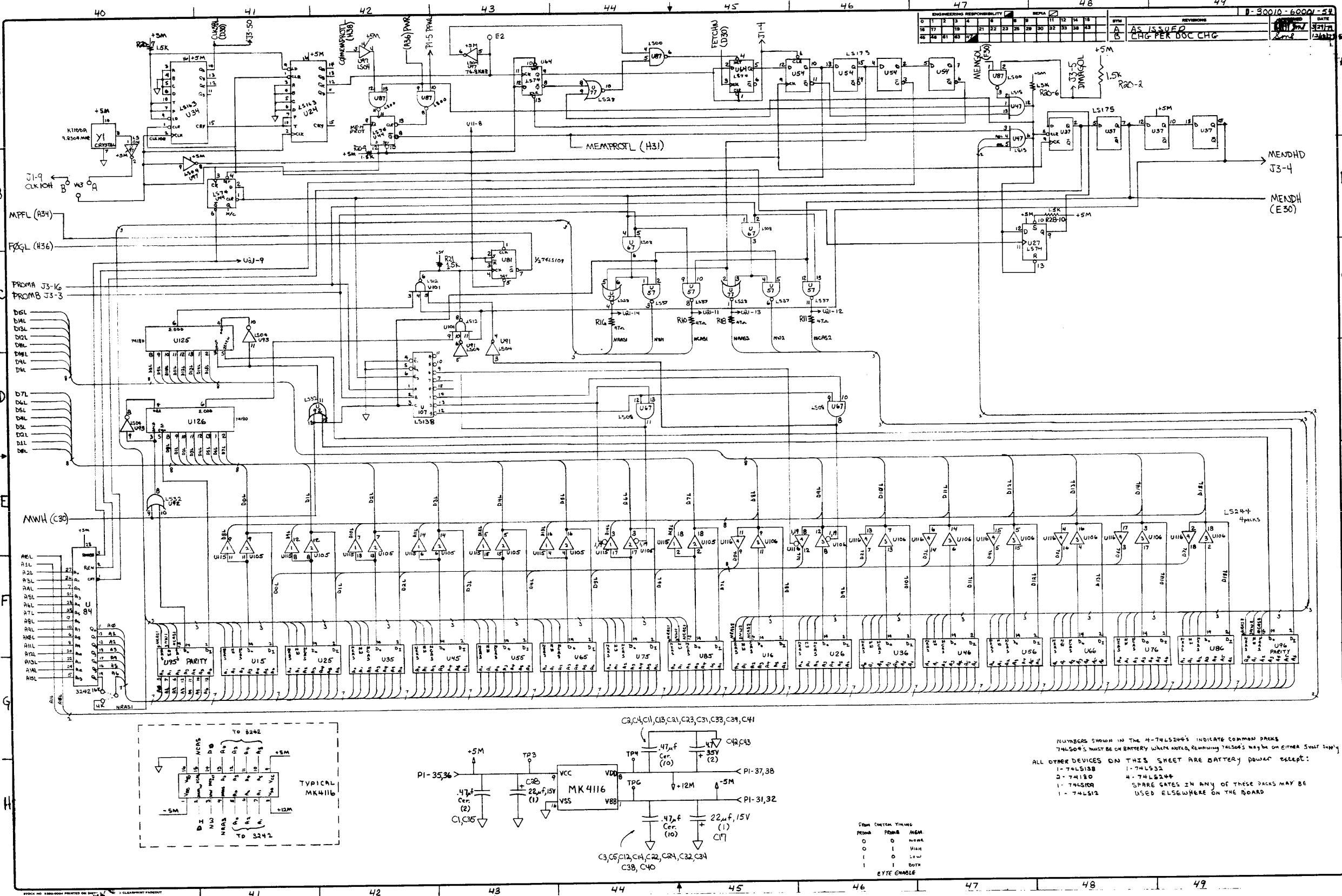


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2	CHG PER DOC 246	...	...

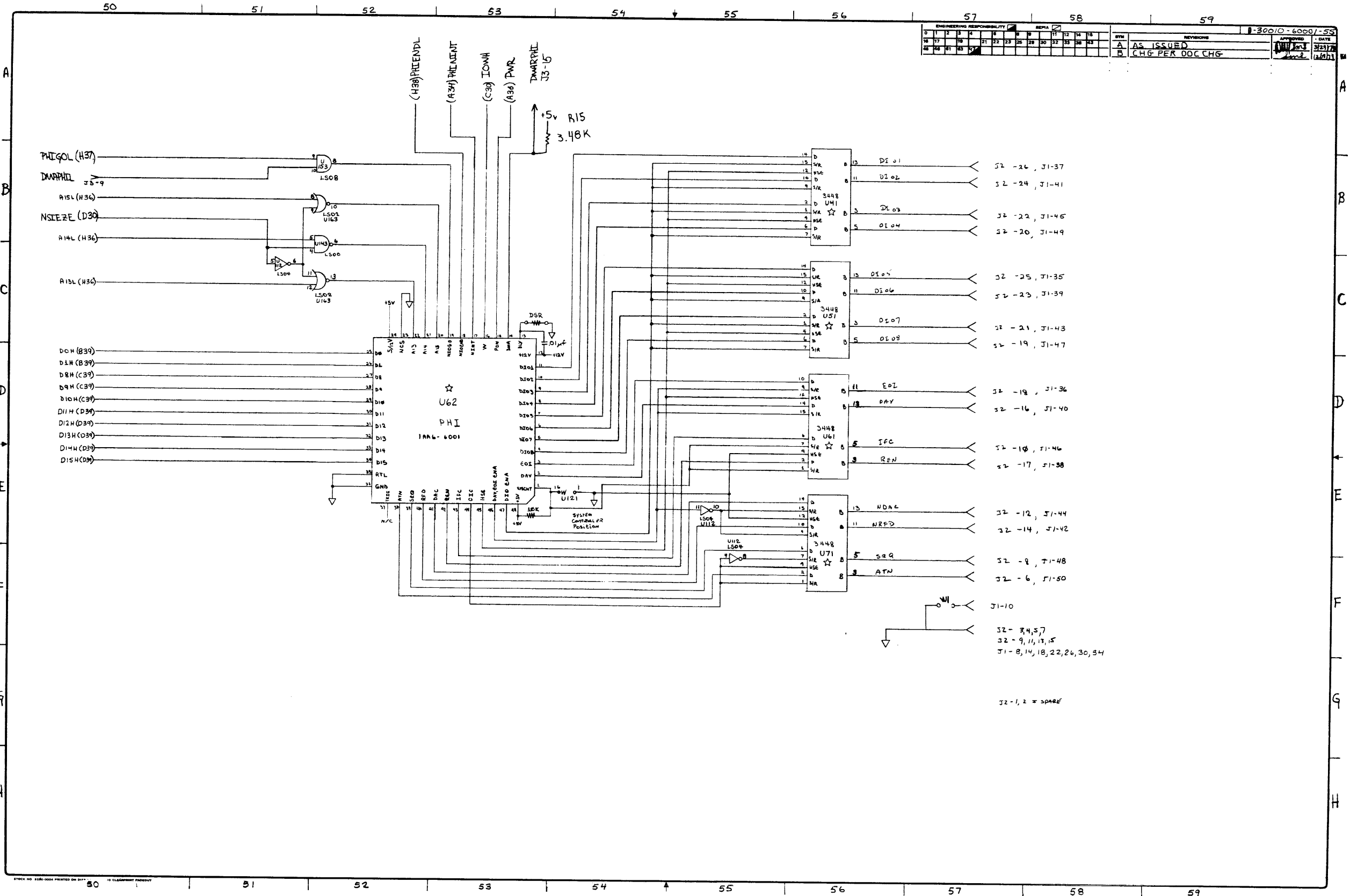


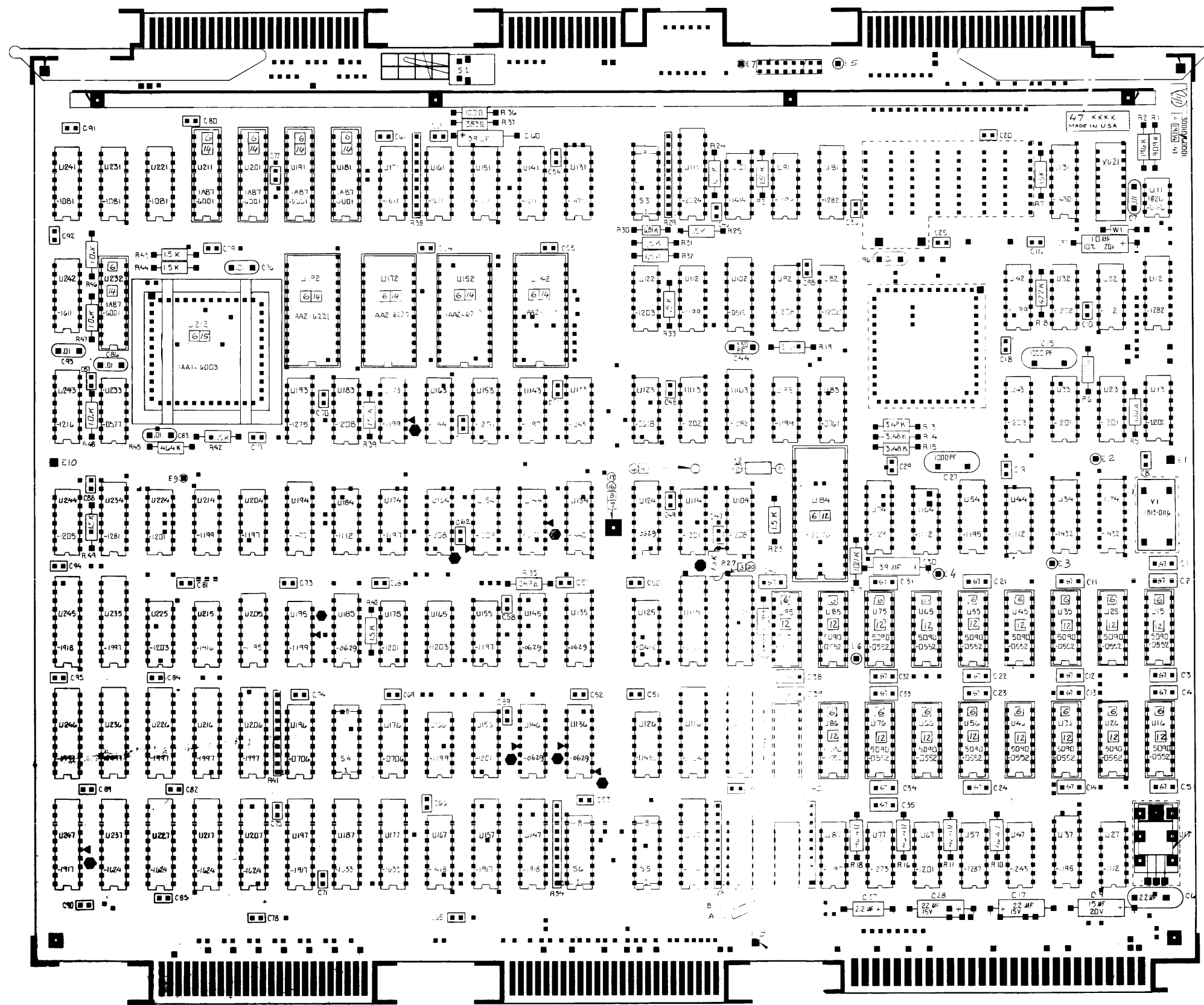
NO.	DESCRIPTION	DATE
1	AS ISSUED	3/27/77
2	CHG PER DOC CHG	1/24/77



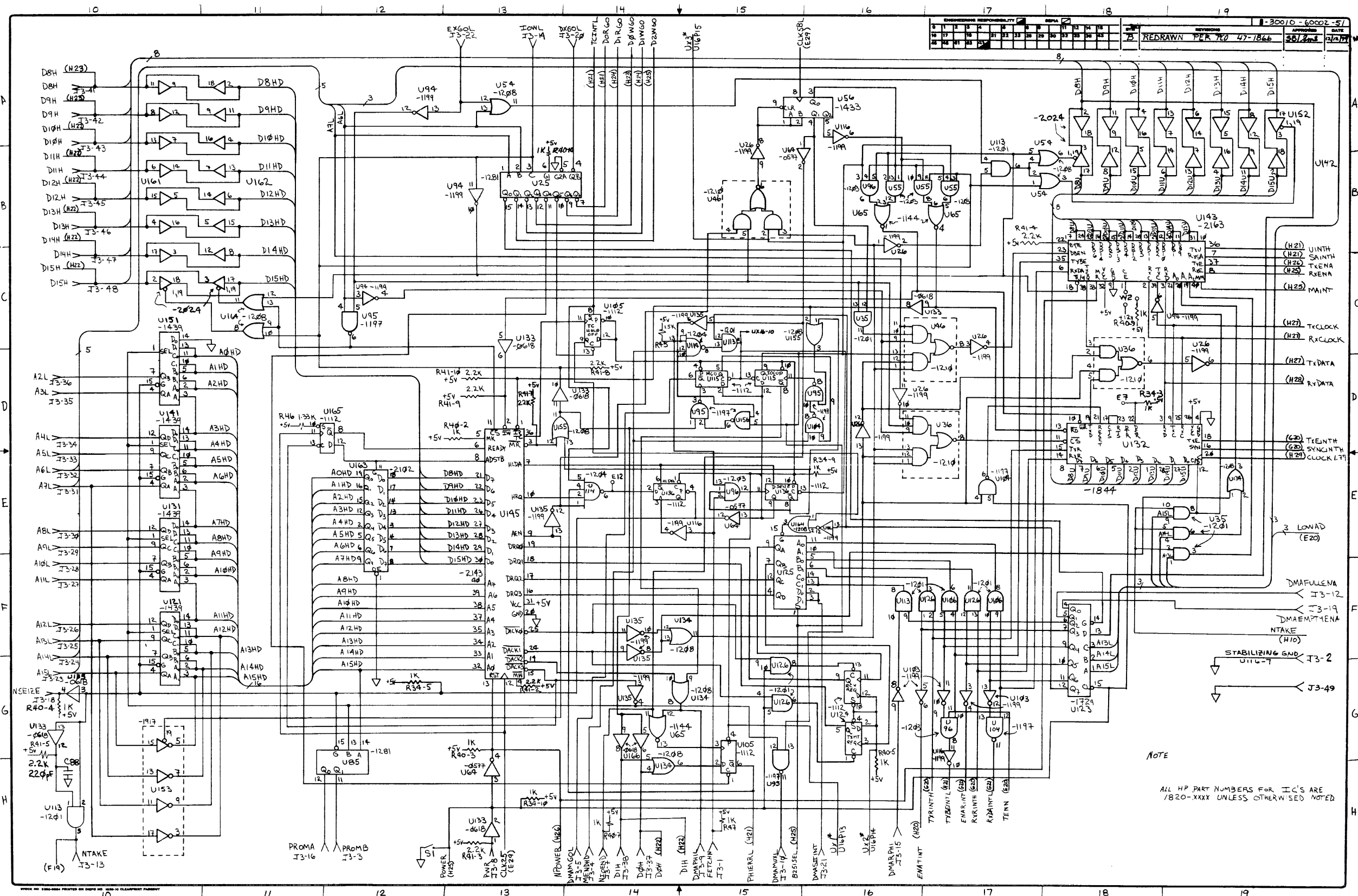


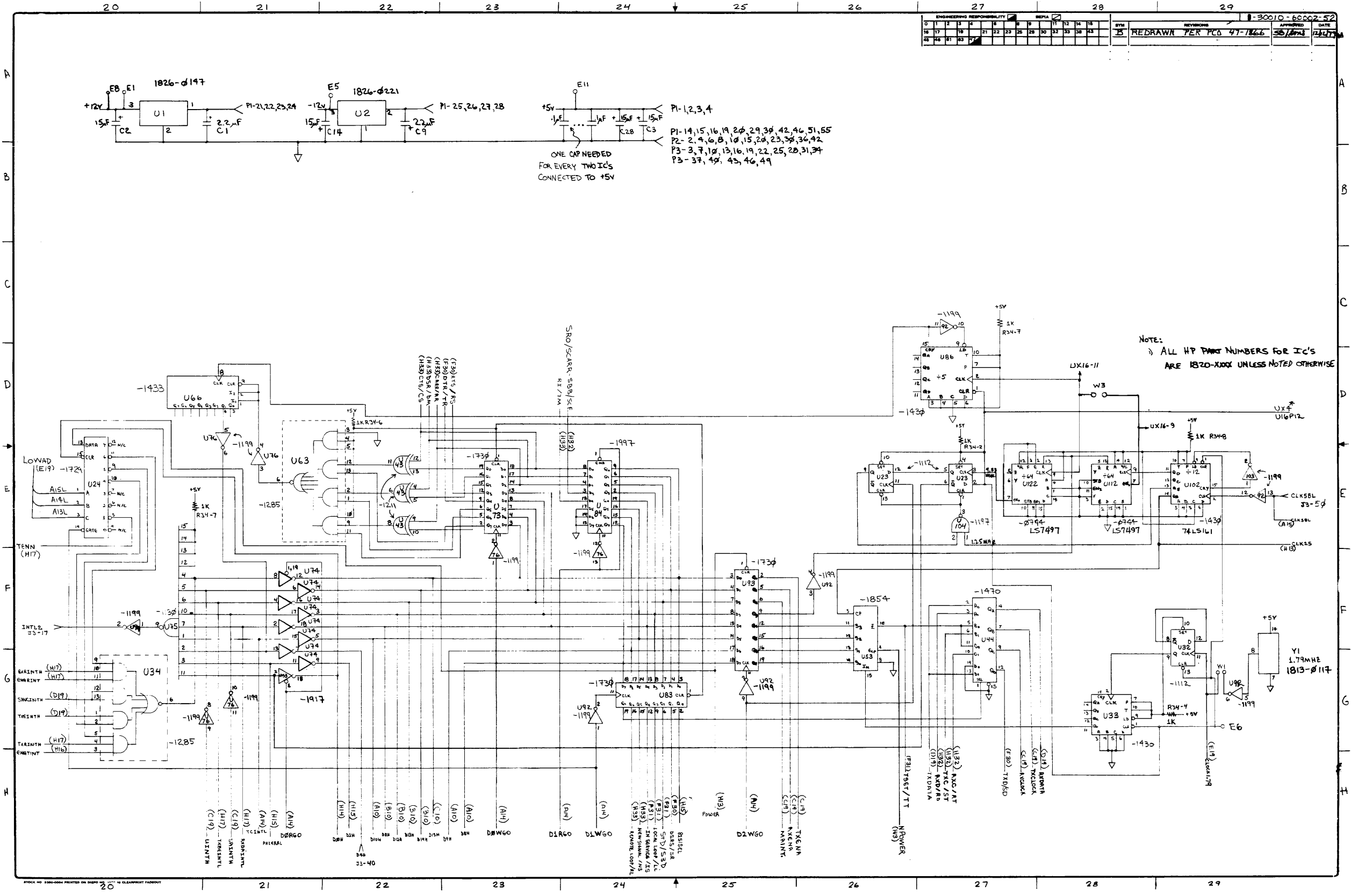






NOTES:  
 UNLESS OTHERWISE SPECIFIED  
 ALL RESISTORS ARE 1/8W  
 ALL RESISTORS ARE 1/8W 5%  
 ALL CAPACITANCE VALUES IN MICROFARADS  
 ALL CAPACITORS ARE .1UF  
 ALL RESISTOR PACKS ARE 1.5K  
 ALL IC'S ARE 182D





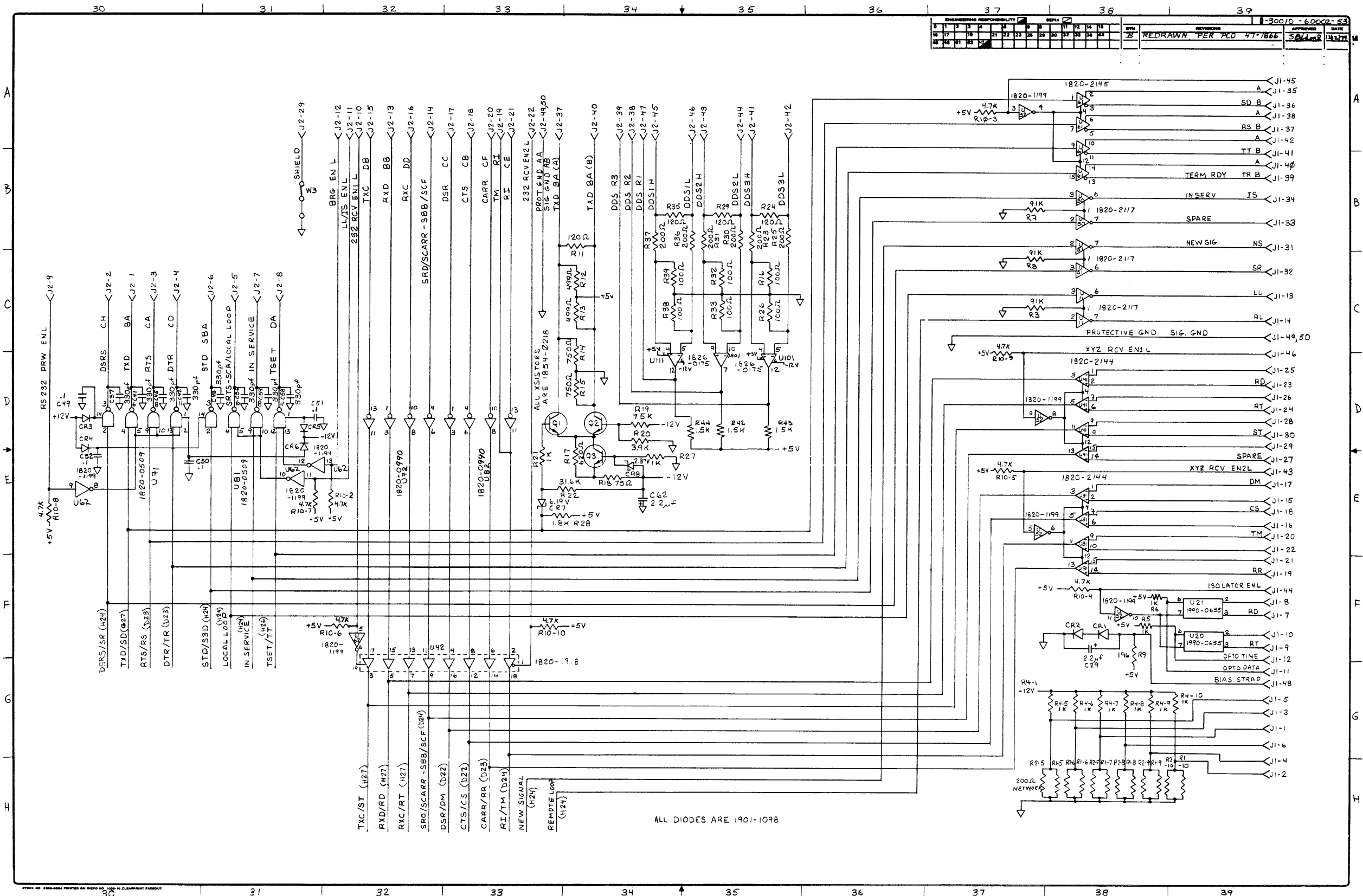
ENGINEERING RESPONSIBILITY														SYN		REVISED		DATE	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60

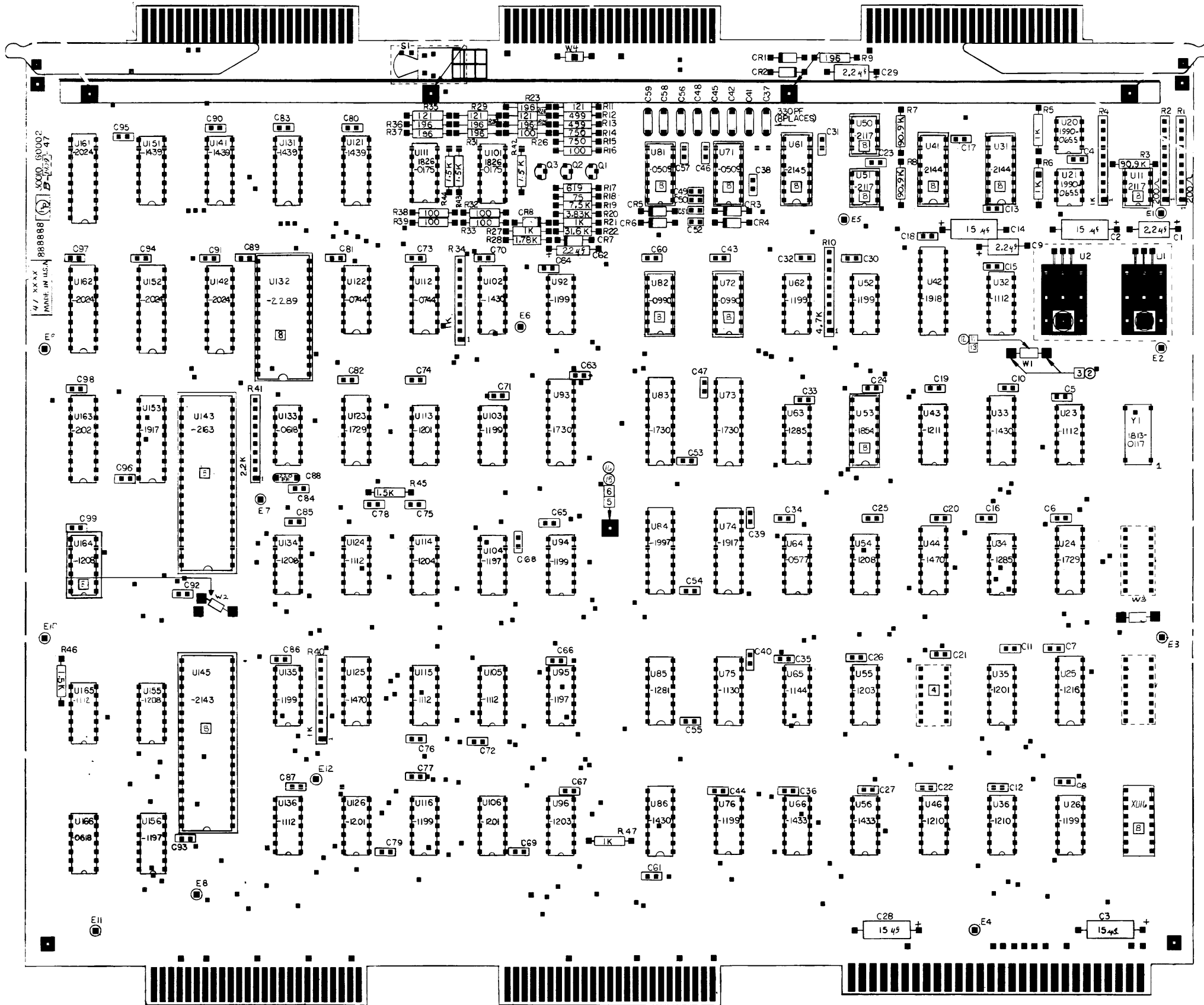
REDRAWN PER PCA 47-1466

ONE CAP NEEDED FOR EVERY TWO IC'S CONNECTED TO +5V

P1-14,15,16,19,20,29,30,42,46,51,55  
P2-2,4,6,8,10,15,20,23,30,36,42  
P3-3,7,10,13,16,19,22,25,28,31,34  
P3-37,40,43,46,49

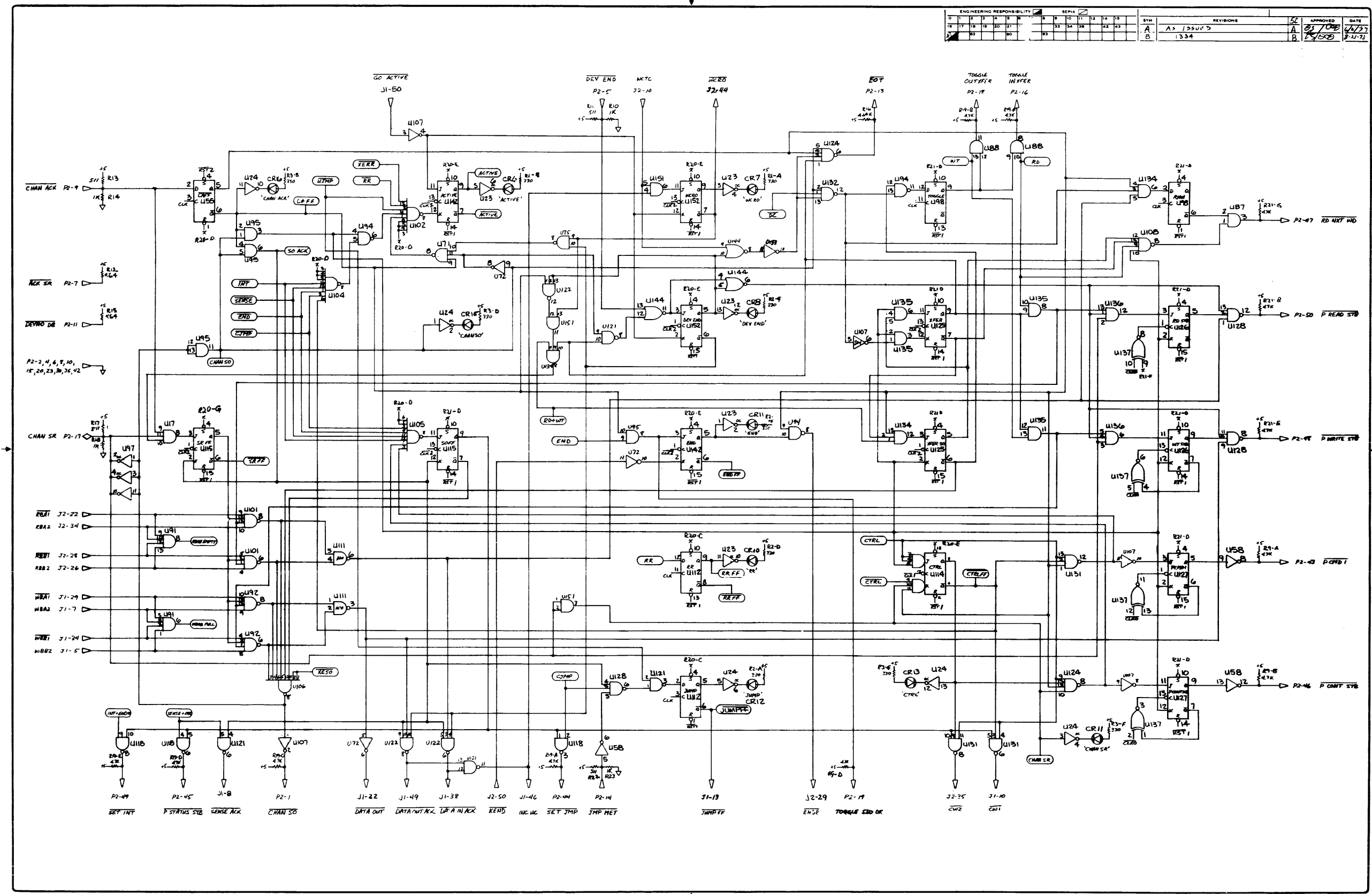
NOTE: ALL HP PART NUMBERS FOR IC'S ARE 1820-XXXX UNLESS NOTED OTHERWISE



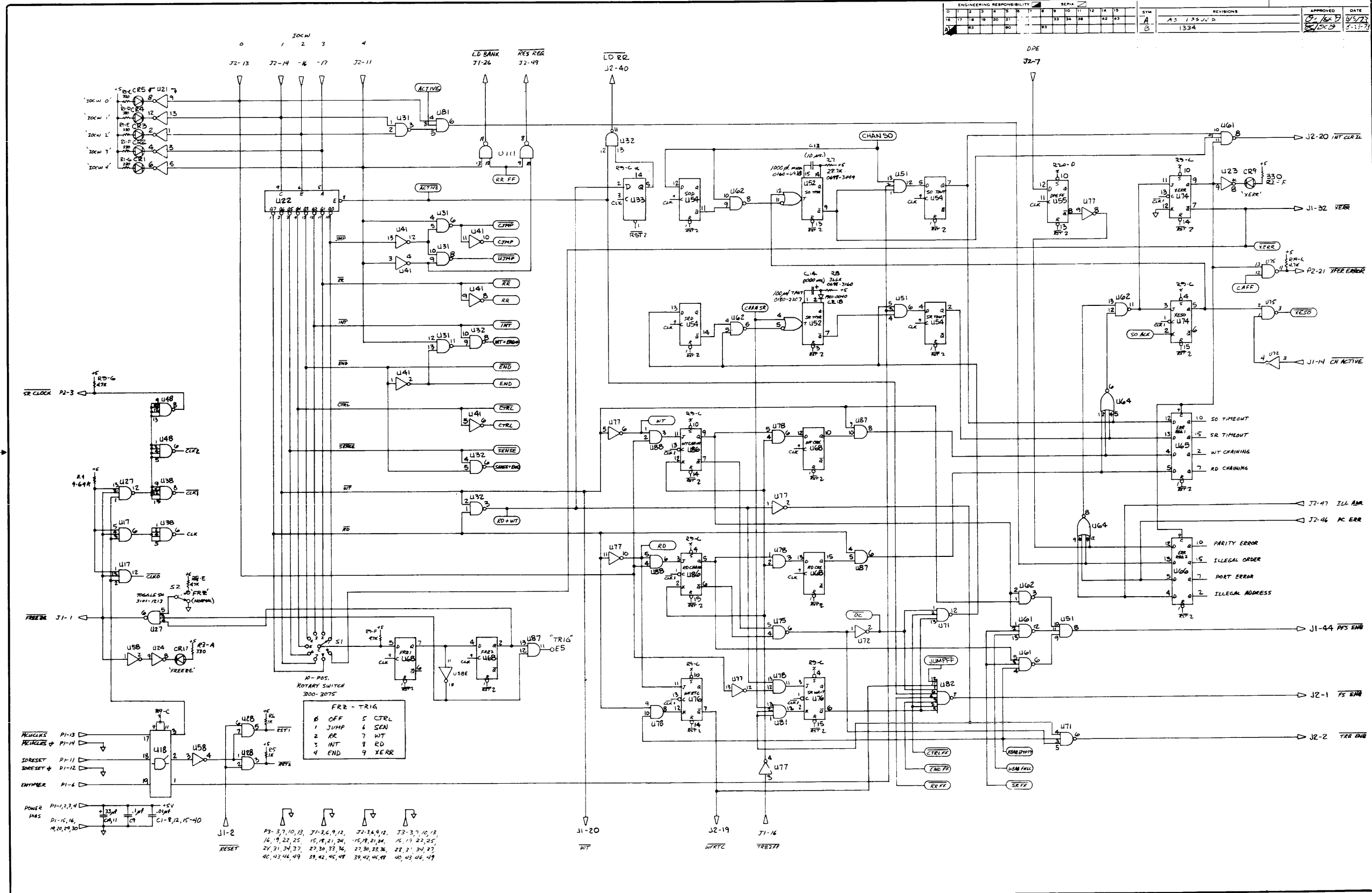


NOTES  
 1 UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE IN OHMS  
 ALL RESISTORS 1/8W, 1%  
 ALL CAPACITANCE IN MICRO-FARADS  
 ALL CAPACITORS ARE .1UF  
 ALL IC'S ARE '820-

ENGINEERING RESPONSIBILITY												REVISE		DATE
1	2	3	4	5	6	7	8	9	10	11	12	BY	APPROVED	DATE
												A	A. J. SULLIVAN	4/1/73
												B		2-11-73

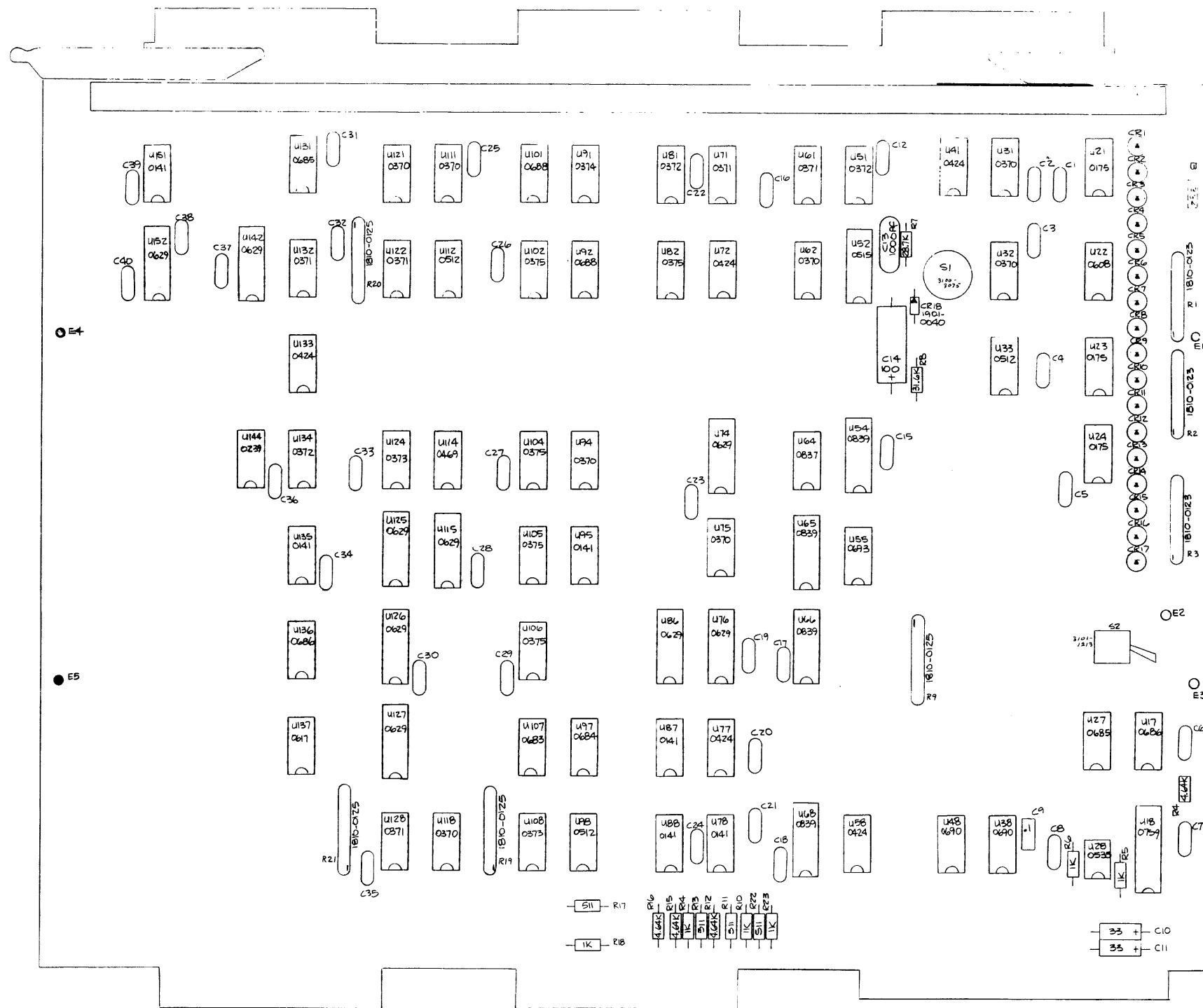


ENGINEERING RESPONSIBILITY														REVISIONS														APPROVED		DATE																																																																					
BY: [Signature]														DATE: 12/29/73														BY: [Signature]		DATE: 12/29/73																																																																					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100





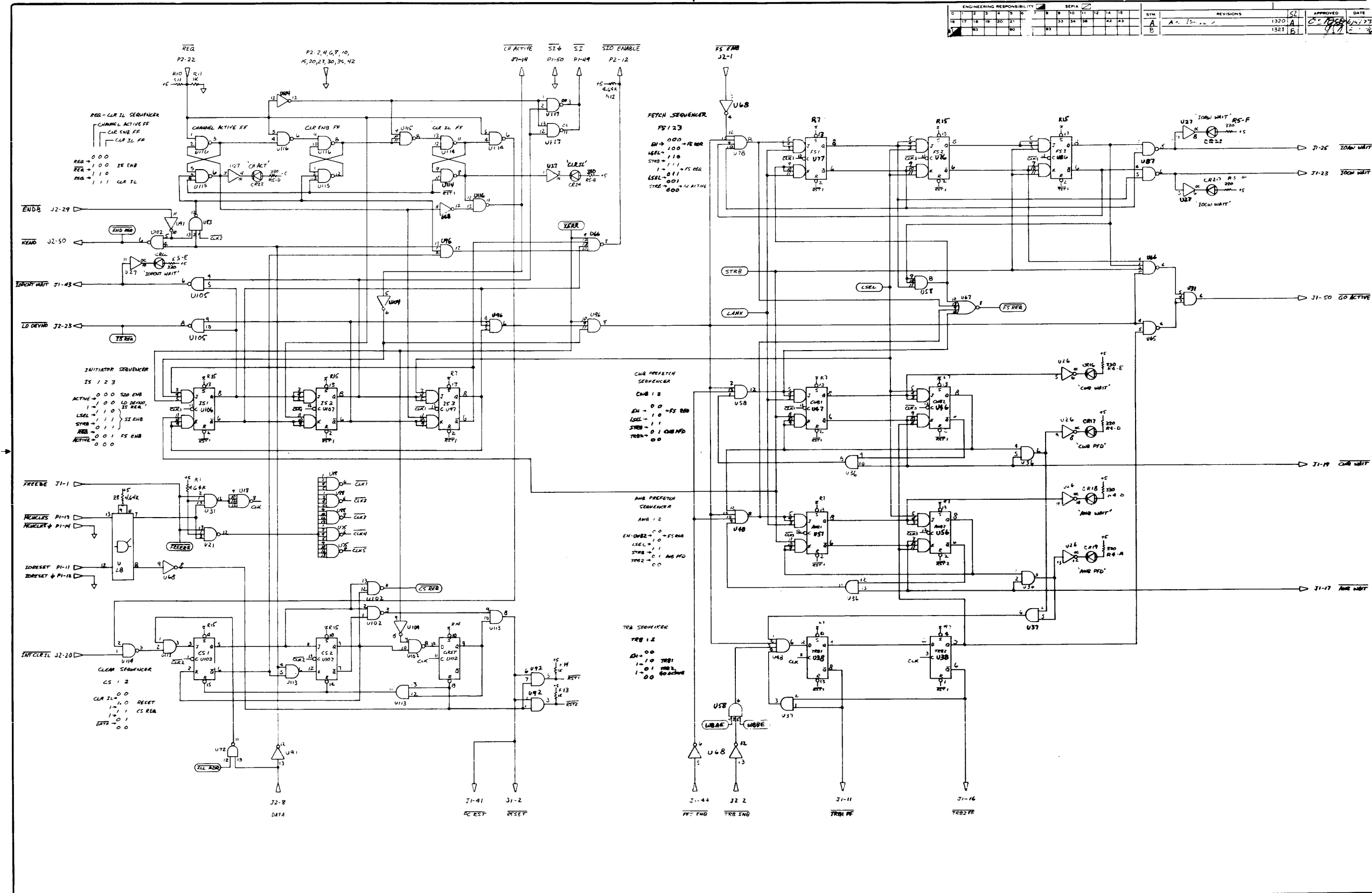
REV	DATE
1	11-13-70
2	11-17-70



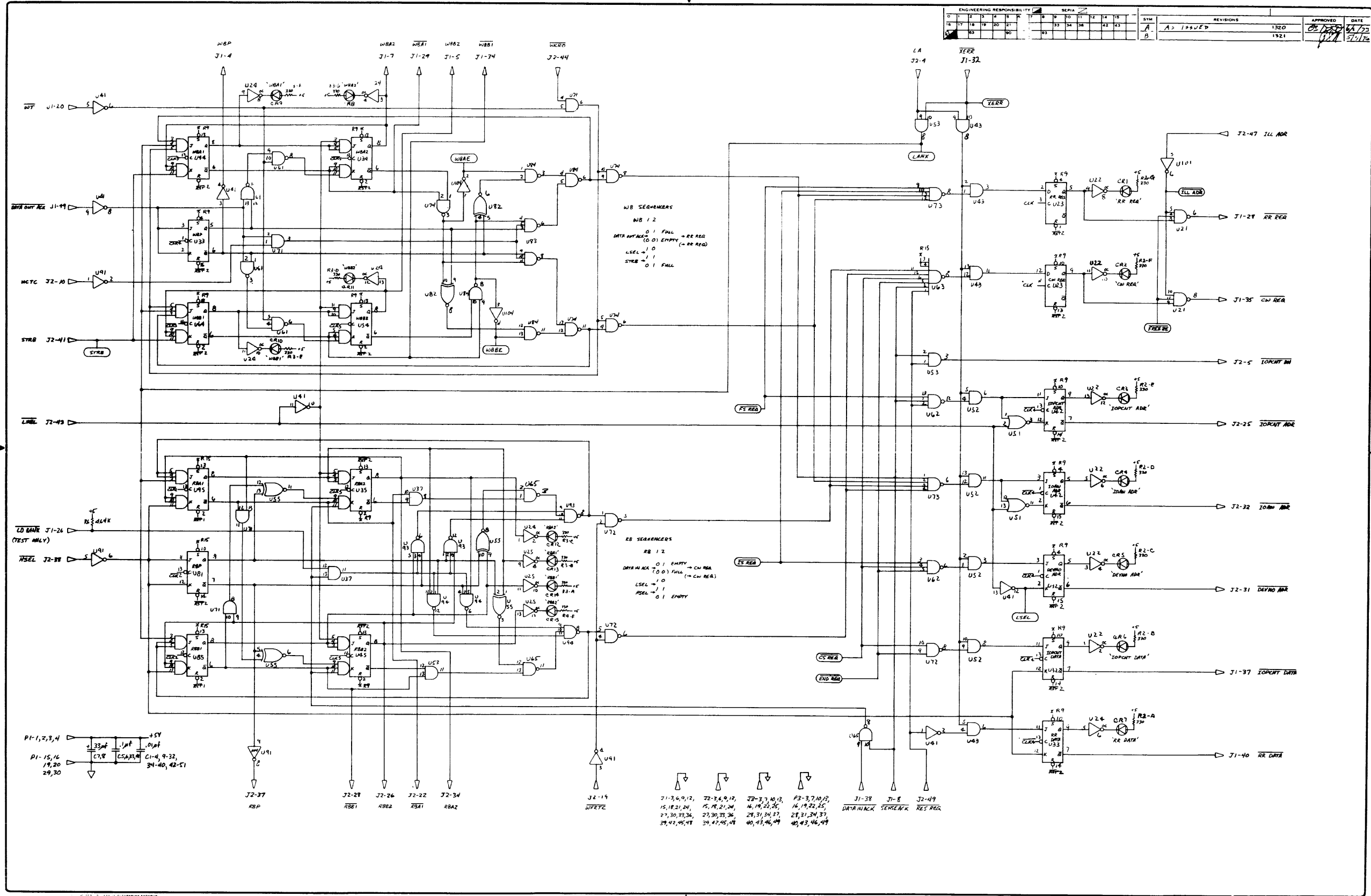
707  
30030-60003  
SELECTOR CHANNEL CONTROL

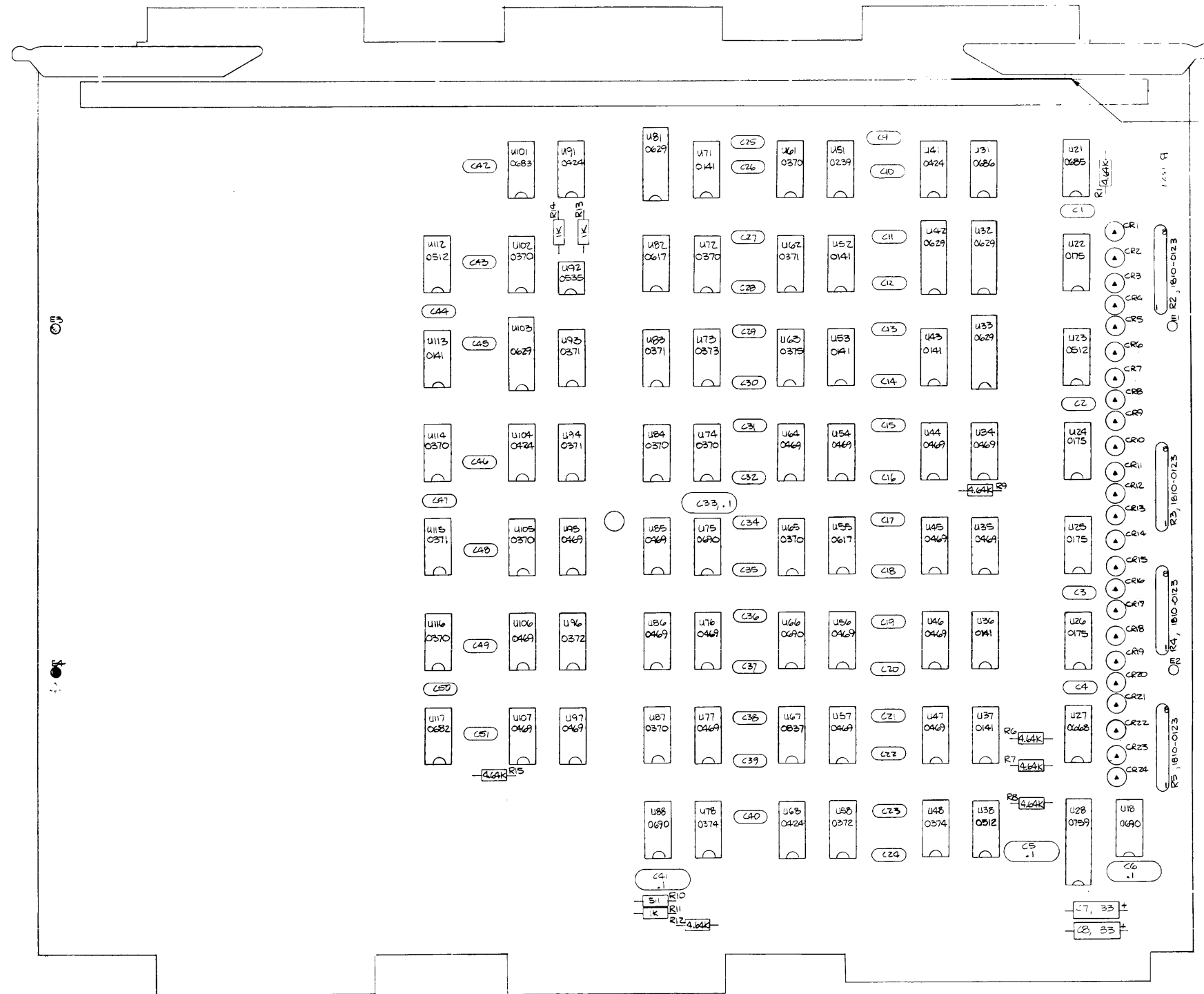
NOTES: UNLESS OTHERWISE SPECIFIED  
 1. ALL RESISTANCE VALUES ARE IN OHMS, ±1% 1/8W.  
 2. ALL CAPACITANCE VALUES ARE IN MICROFARADS, .01 CER DISC.  
 3. ALL IC'S ARE 1820-.....  
 4. ALL IC'S ARE 1990-0404

ENGINEERING RESPONSIBILITY										SERIAL										REVISIONS										APPROVED		DATE	
DESIGNED		CHECKED		DRAWN		APP'D		DATE		NO.		REV.		DATE		NO.		REV.		DATE		NO.		REV.		DATE							



ENGINEERING RESPONSIBILITY		SERIAL		REVISIONS		APPROVED	DATE
0	1	2	3	4	5		
6	7	8	9	10	11		
12	13	14	15	16	17		
18	19	20	21	22	23		
24	25	26	27	28	29		
30	31	32	33	34	35		
36	37	38	39	40	41		
42	43	44	45	46	47		
48	49	50	51	52	53		
54	55	56	57	58	59		
60	61	62	63	64	65		
66	67	68	69	70	71		
72	73	74	75	76	77		
78	79	80	81	82	83		
84	85	86	87	88	89		
90	91	92	93	94	95		
96	97	98	99	100			



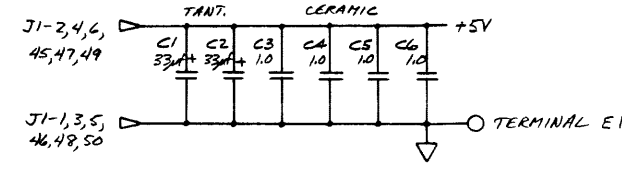
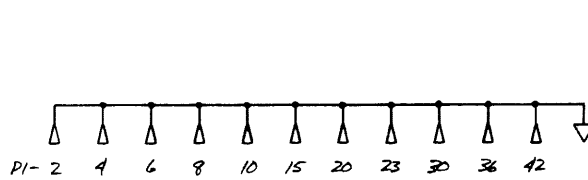


30030-60011  
SEL CHAN SEQUENCER

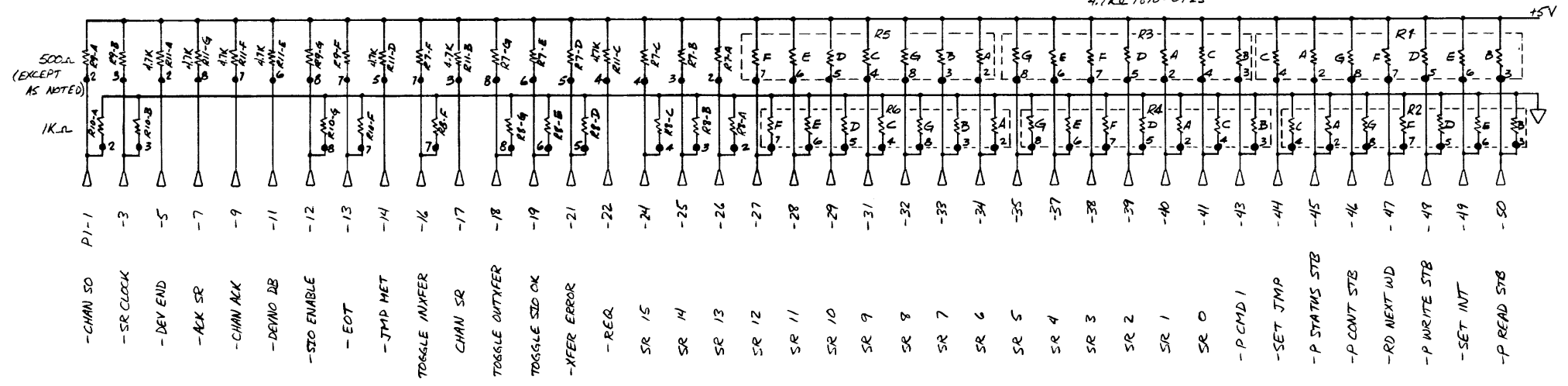
NOTES: UNLESS OTHERWISE SPECIFIED  
 1. RESISTANCE VALUES ARE IN OHMS ± 1% 1/8W  
 CAPACITANCE VALUES ARE IN MICROFARADS ALL CAPS .01 CER DISC  
 DIODES ARE 990-0404.  
 IC5 ARE 1820-.....

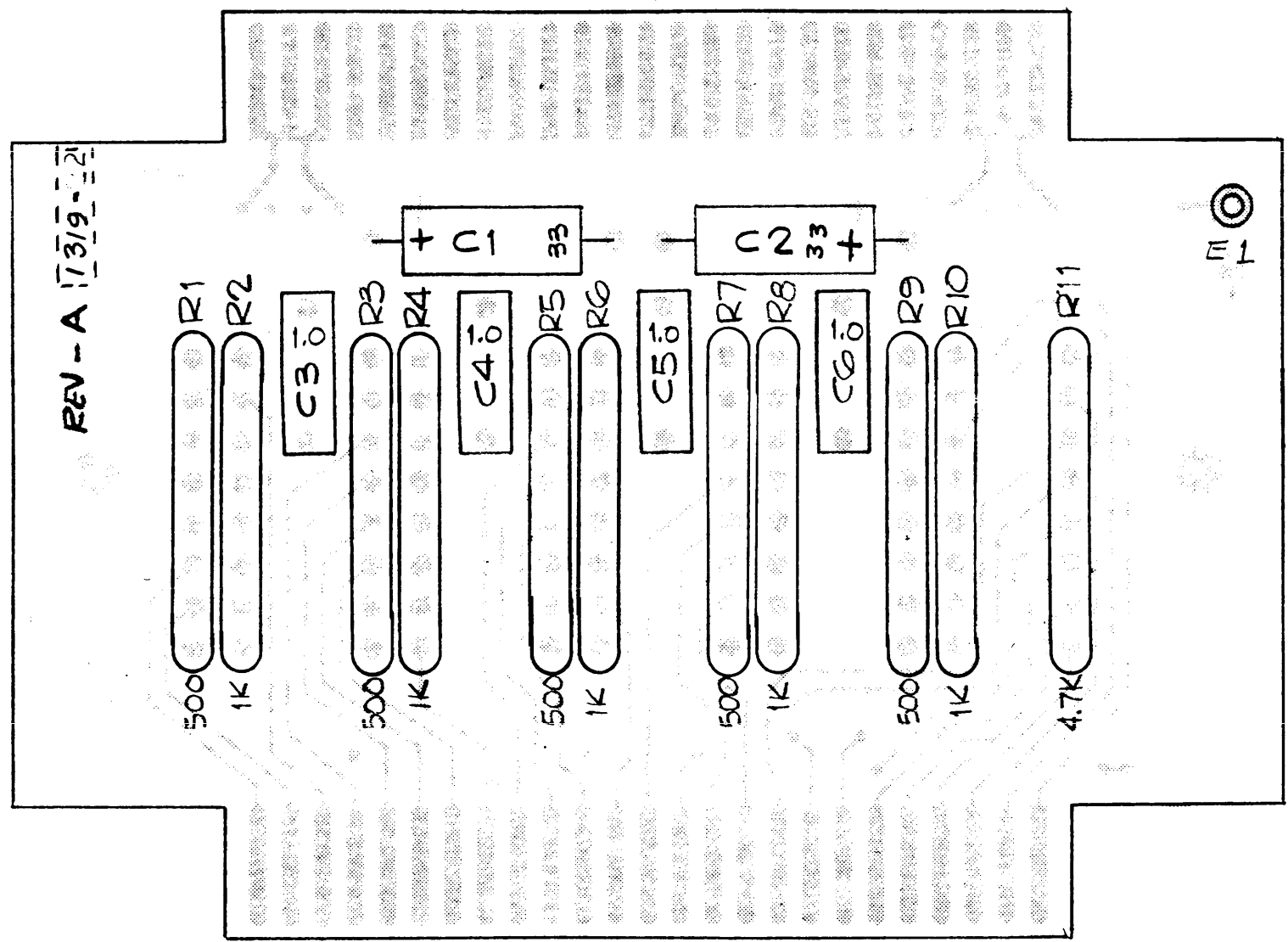
ENGINEERING RESPONSIBILITY														SYM		REVISIONS		APPROVED		DATE	
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	A		A-13505		6-5-72	
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31						
32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47						
48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63						

C-30030-60015-3



USE RESISTOR NETWORKS:  
 1KΩ 1810-0030  
 500Ω 1810-0080  
 4.7KΩ 1810-0125



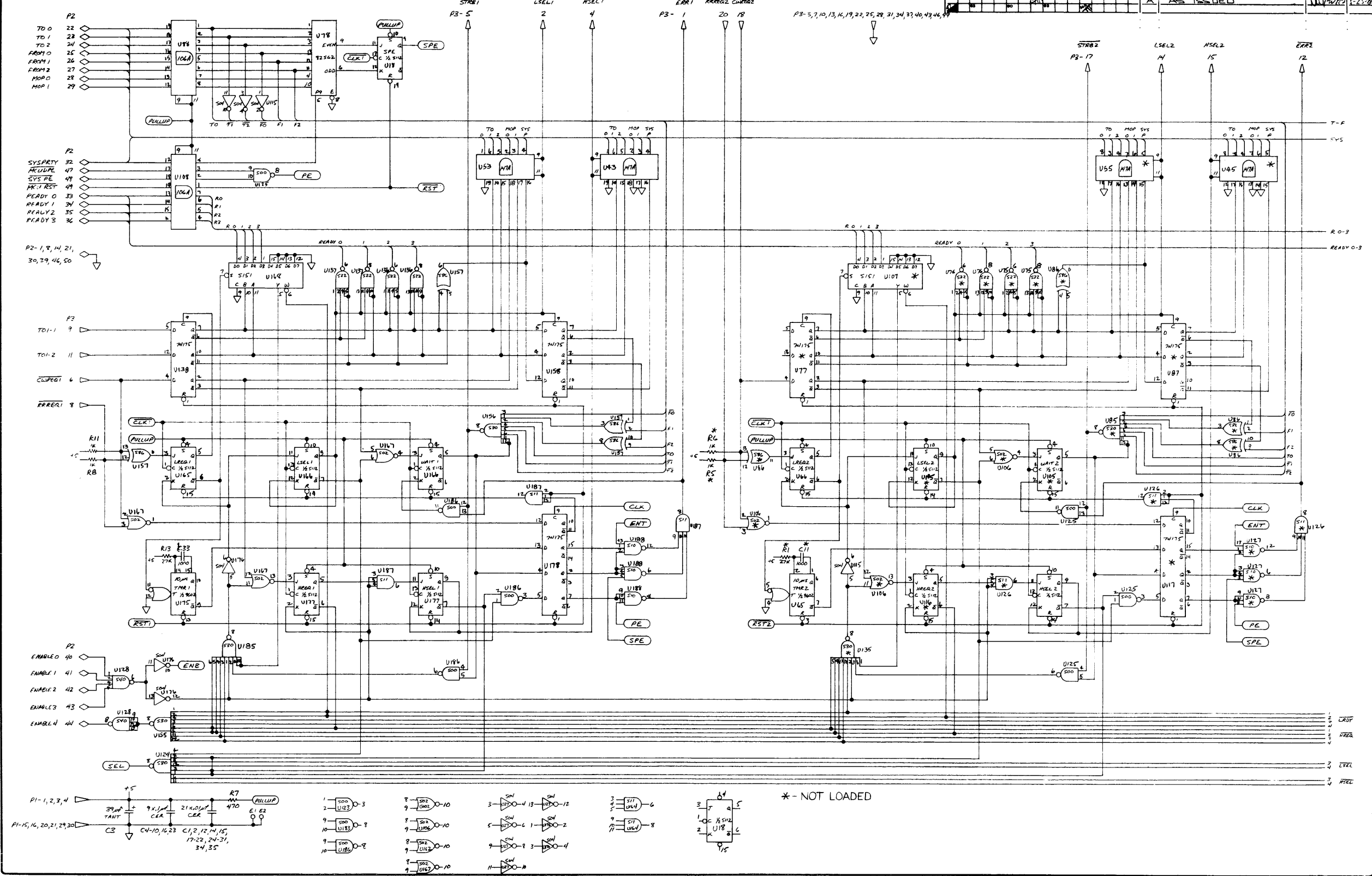


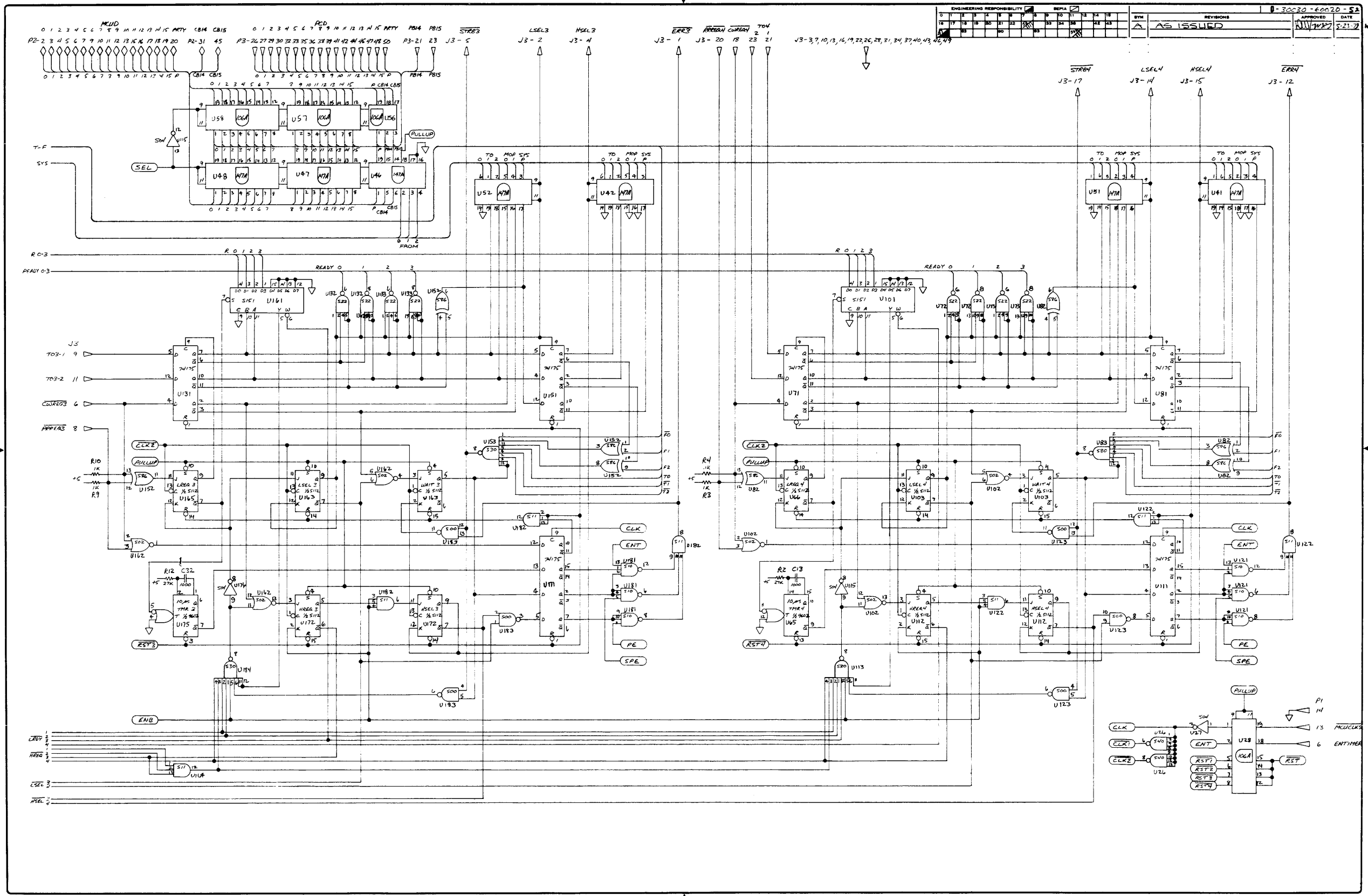
NOTES :

1. UNLESS OTHERWISE NOTED :  
 ALL RESISTANCE IN OHMS  
 ALL CAPACITANCE IN MICROFARADS

REF DWGS: F-1 ASSY.  
D-52 SCHEMATIC

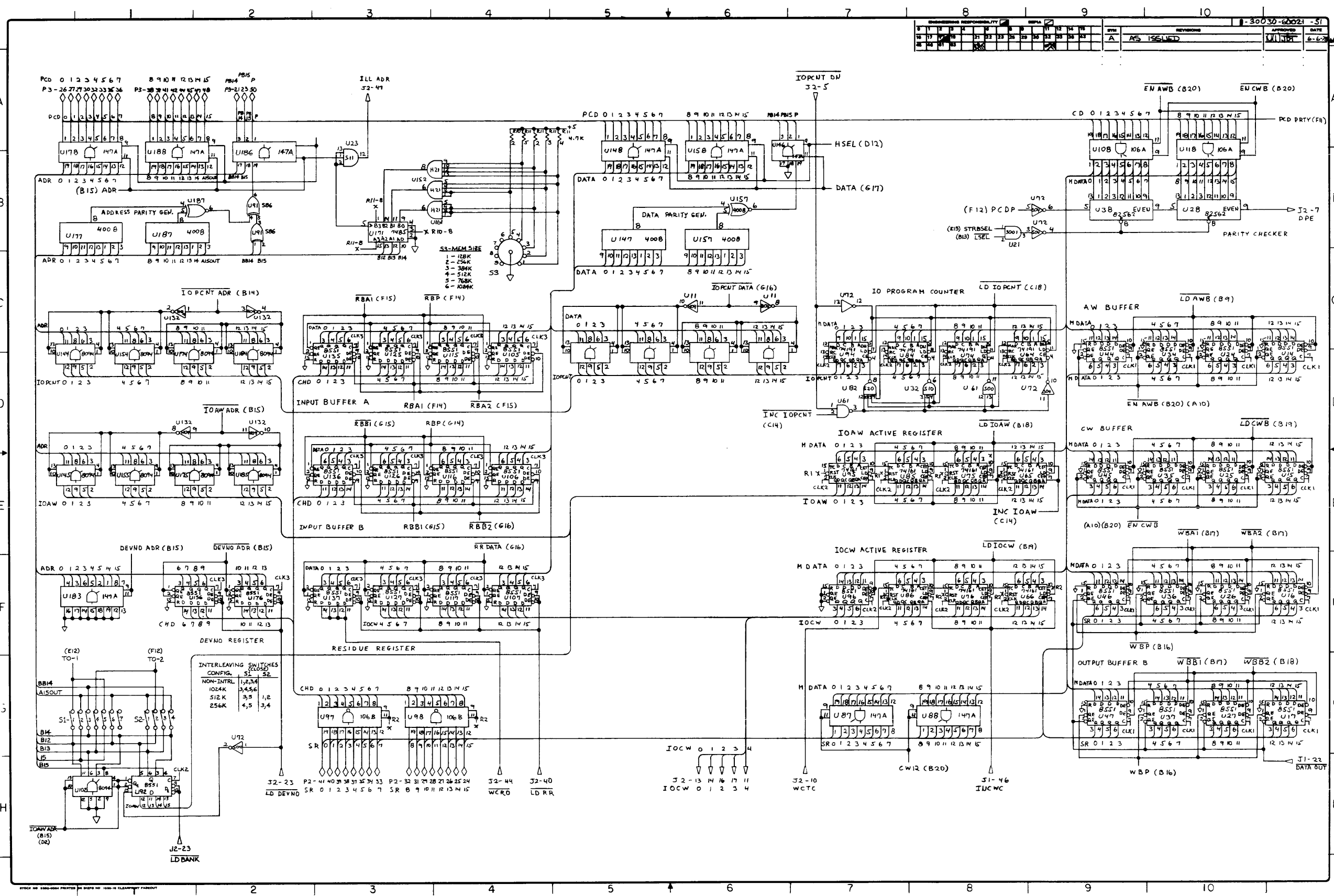
ENGINEERING RESPONSIBILITY														REVISED		APPROVED		DATE	
0	1	2	3	4	5	6	7	8	9	10	11	12	13	AS ISSUED		5-23-78			

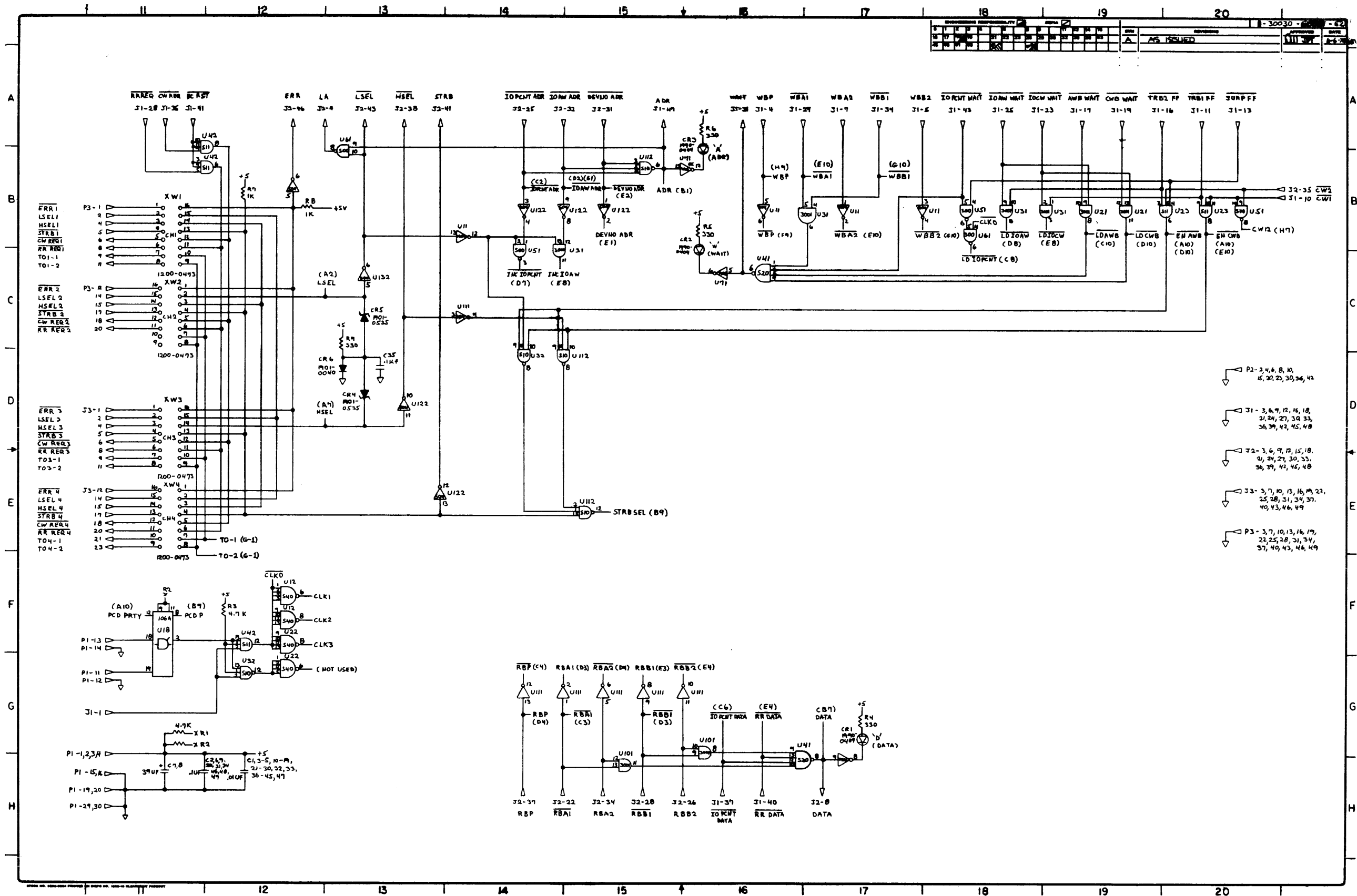


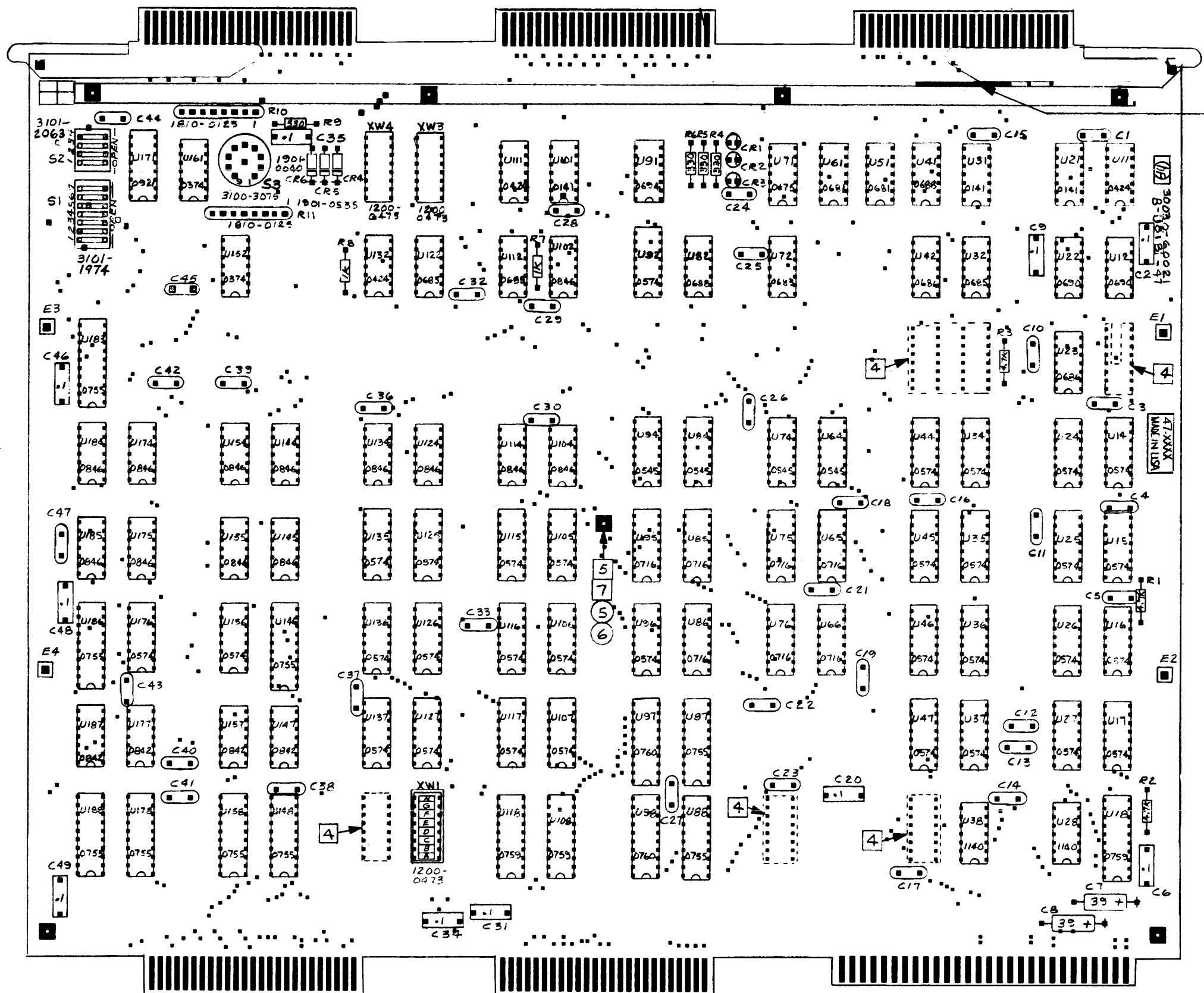


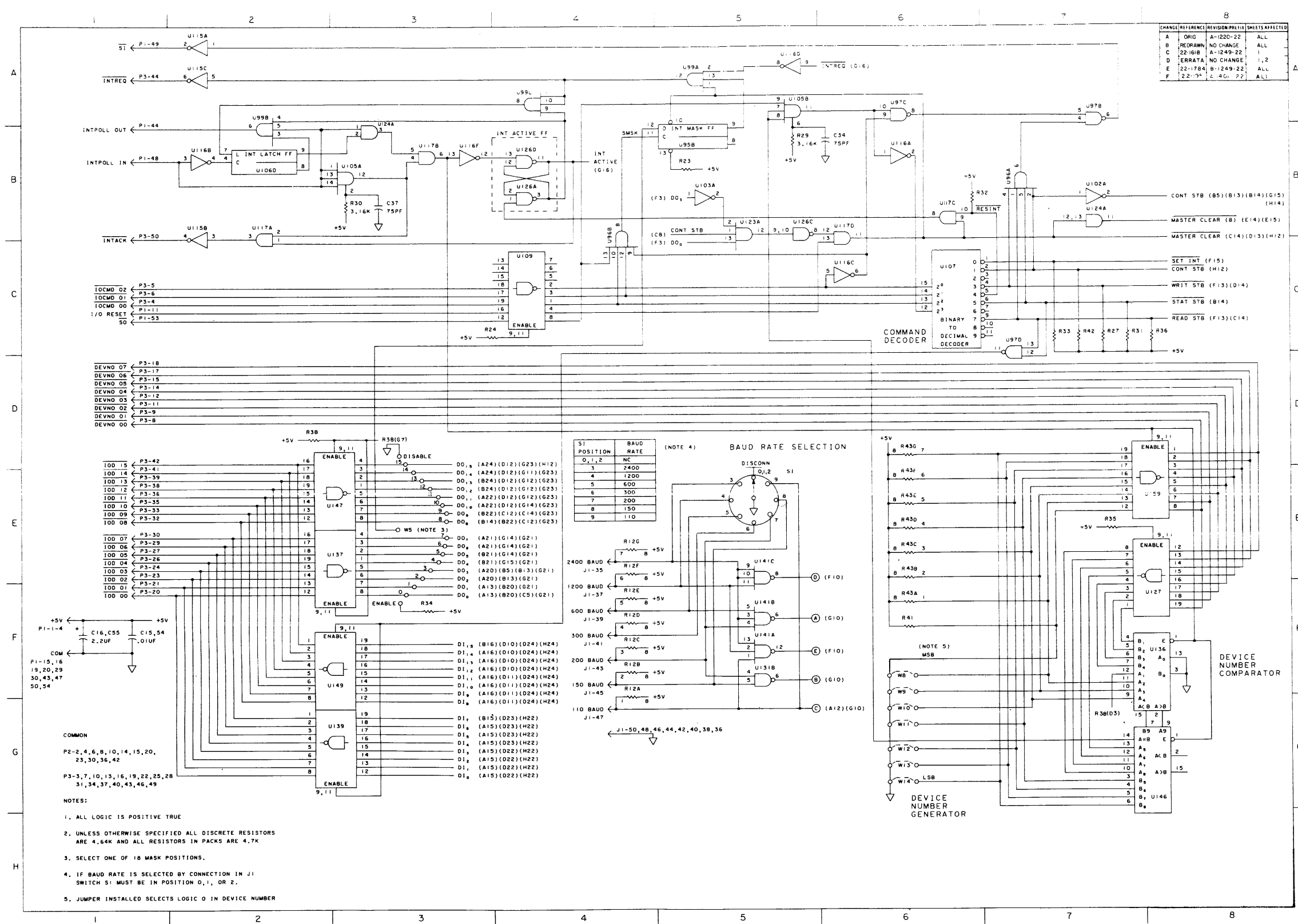


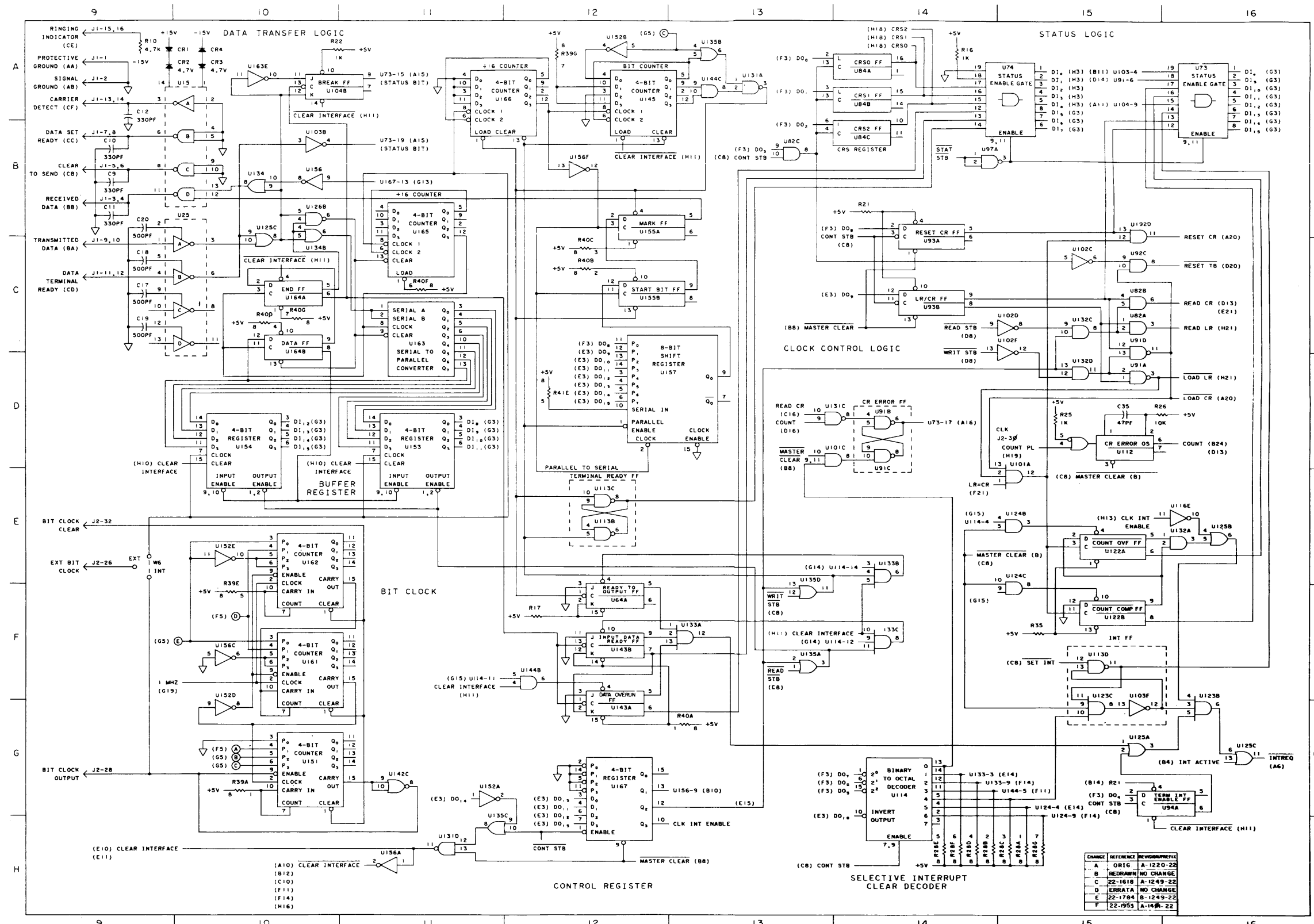




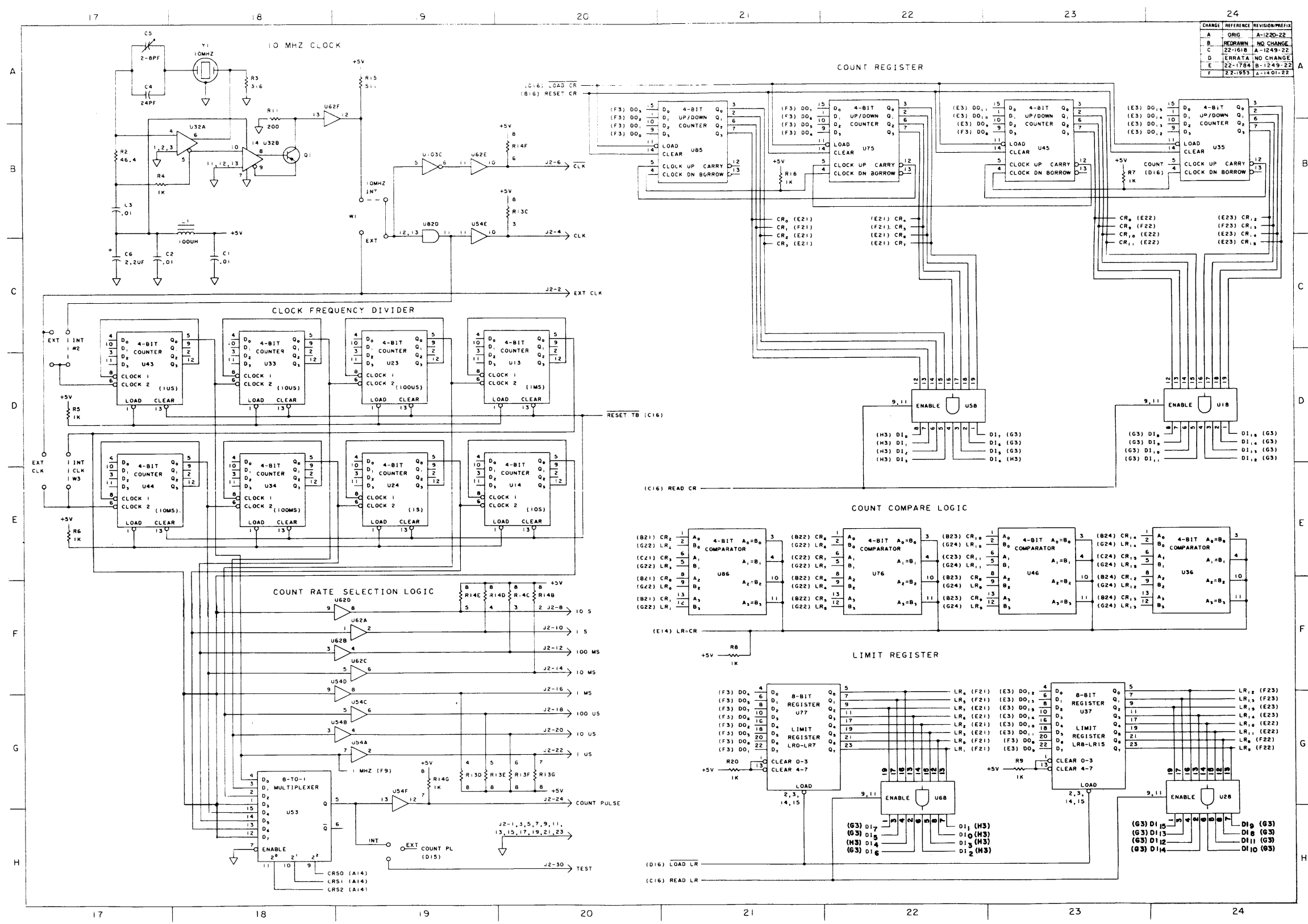




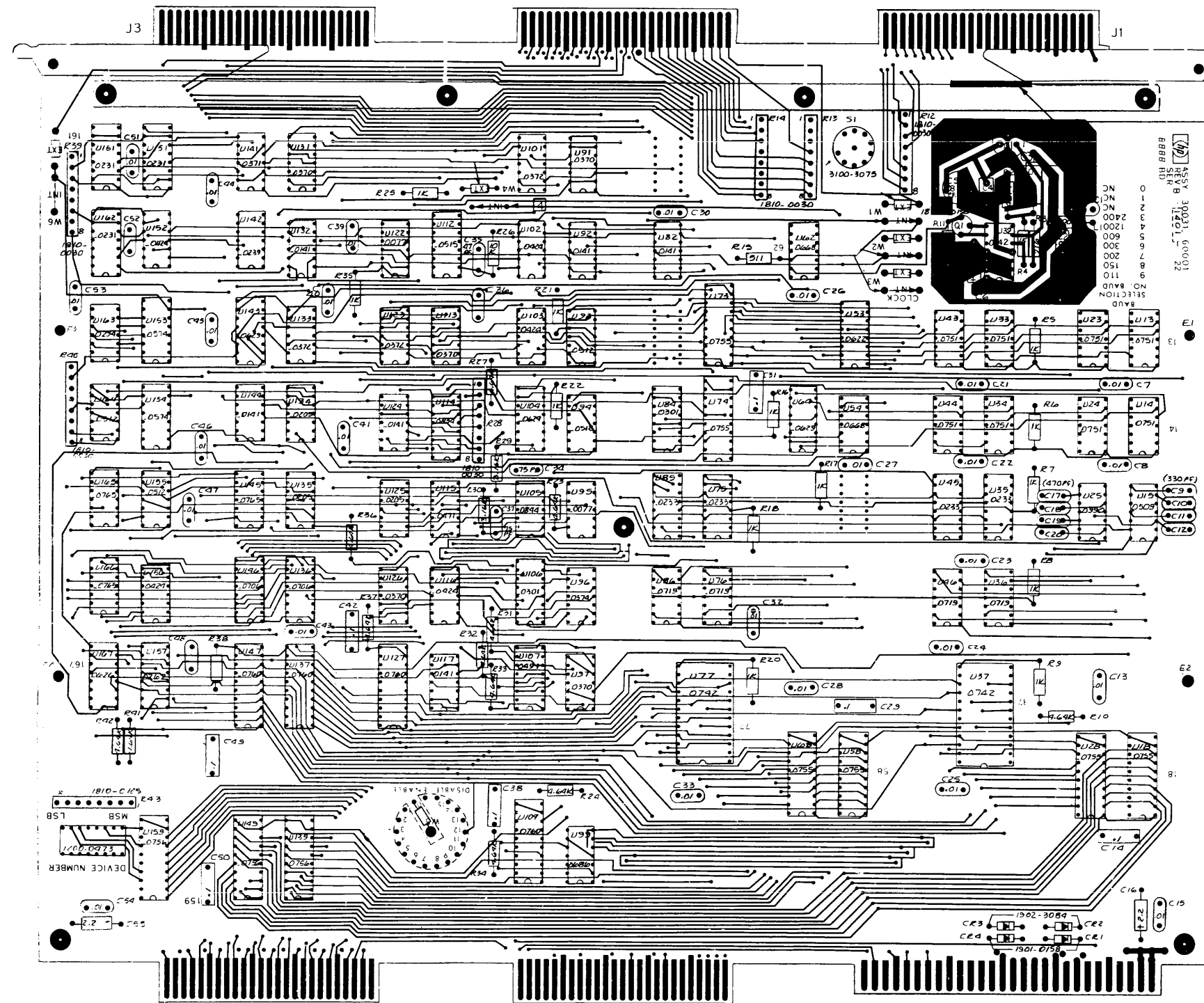




CHANGE	REFERENCE	REVISION/DATE
A	ORIG	A-1220-22
B	REDRAWN	NO CHANGE
C	22-1618	A-1249-22
D	ERRATA	NO CHANGE
E	22-1784	B-1249-22
F	22-1903	A-1249-22



REV	DATE	BY	CHKD	APP'D
A	AS ISSUED			
B	10/22/53, DATE CODE WAS B 1243			
C	10/22/53			
D				
E				
F				
G				
H				
I				
J				
K				
L				
M				
N				
O				
P				
Q				
R				
S				
T				
U				
V				
W				
X				
Y				
Z				



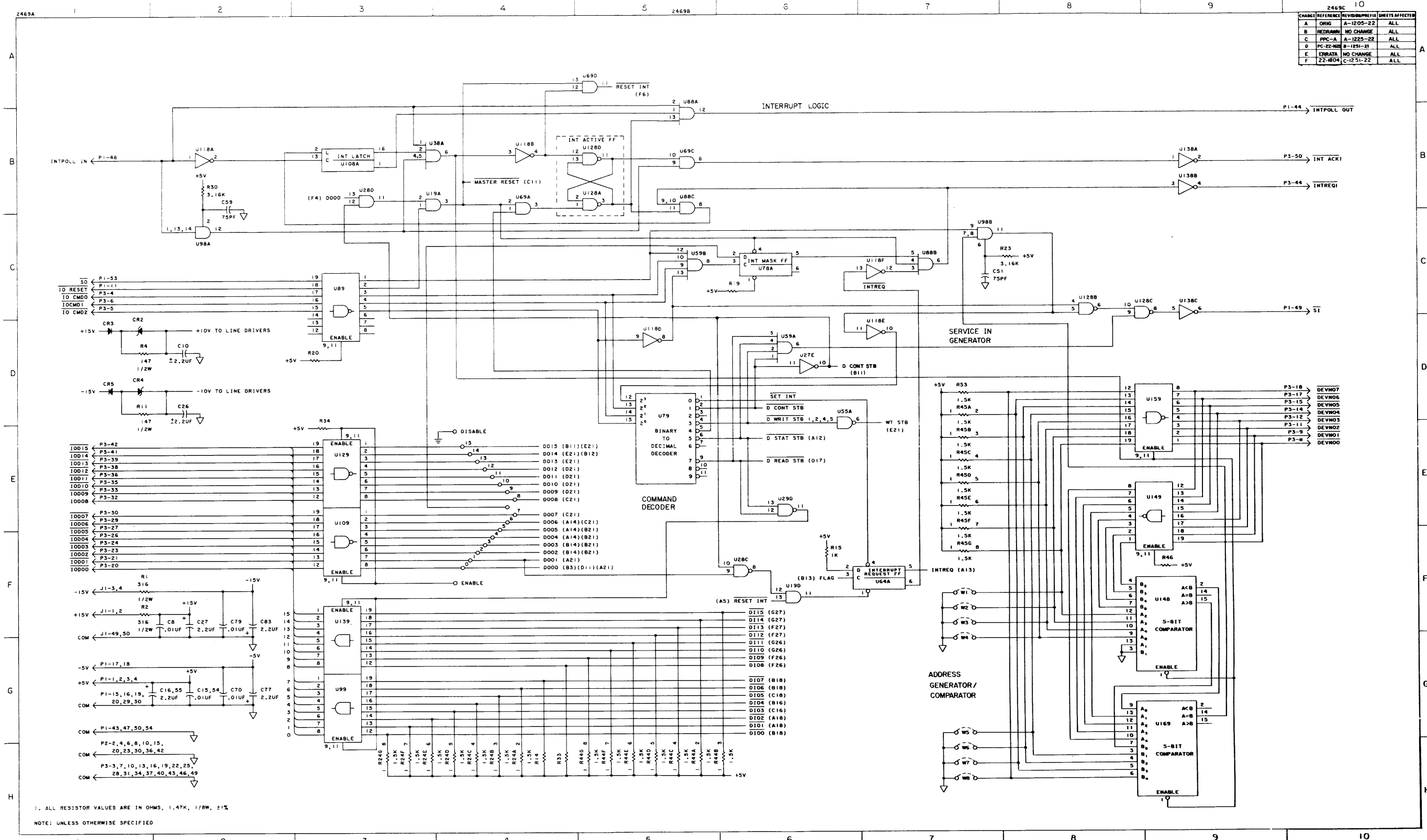
10009-16006  
SYS CLOCK

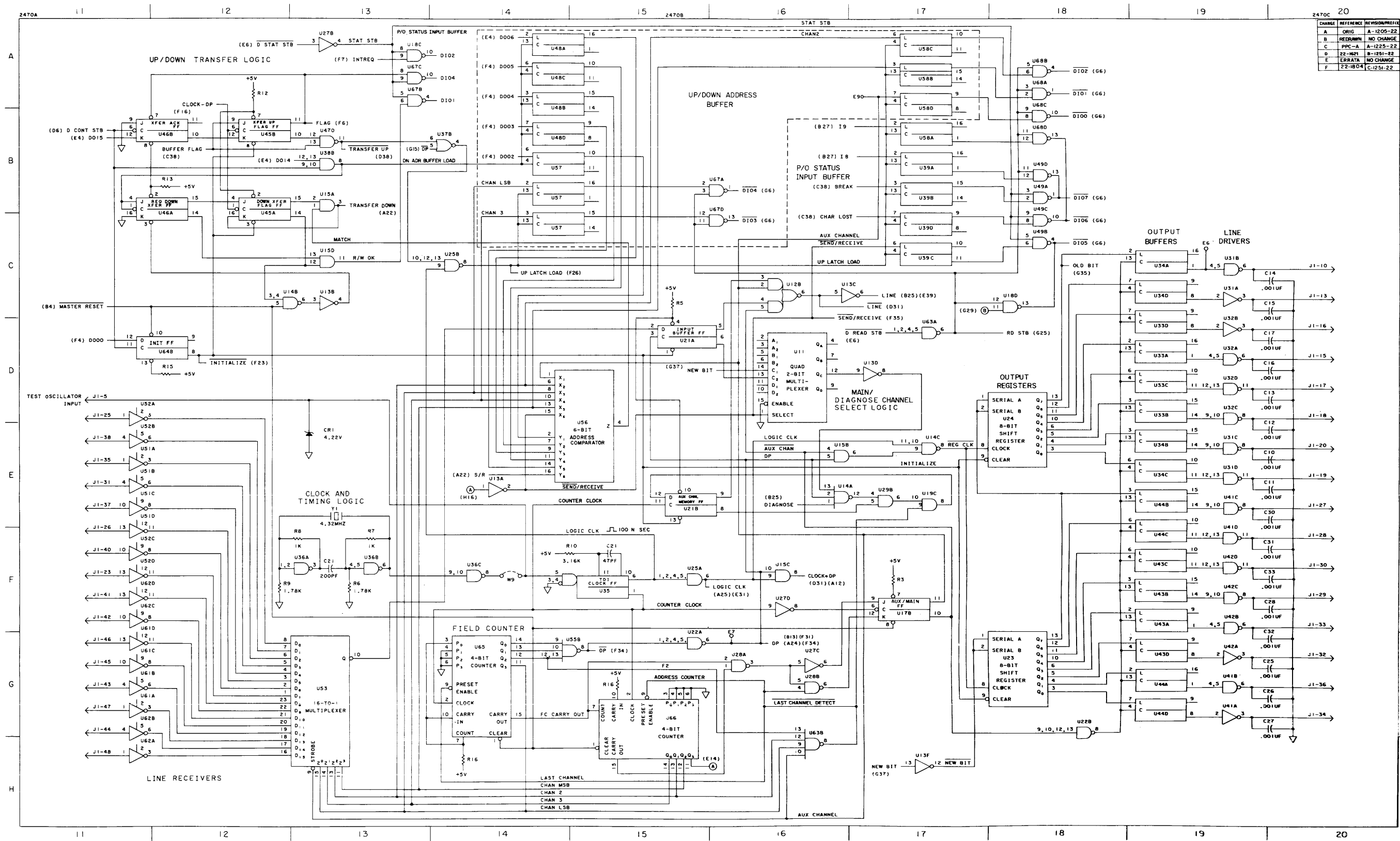
ASSEMBLY 30031, 60001  
REV B 10/11/53  
BBB RD

NOTES:  
1 UNLESS OTHERWISE NOTED:  
ALL RESISTANCE IN OHMS  
ALL RESISTORS 1/4W 1% FILM  
ALL CAPACITANCE IN MICROFARADS  
ALL I.C.'S ARE 1820

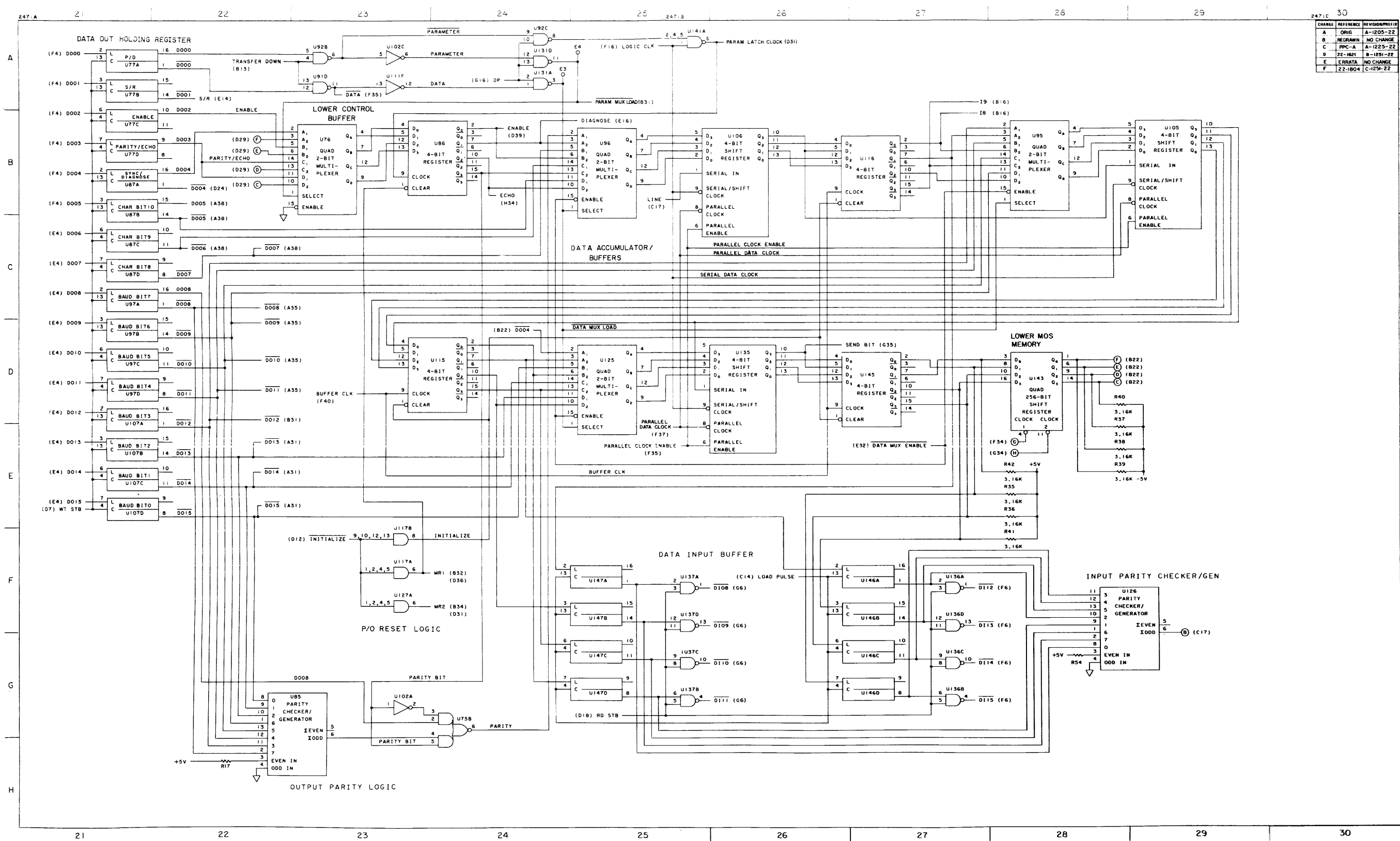


CHANGE	REFERENCE	REVISION	SHEET	AFFECTED
A	ORIG	A-1205-22	ALL	
B	RETRAMM	NO CHANGE	ALL	
C	PPC-A	A-1225-22	ALL	
D	PC-22-804	B-1251-21	ALL	
E	ERRATA	NO CHANGE	ALL	
F	22-804	C-1251-22	ALL	

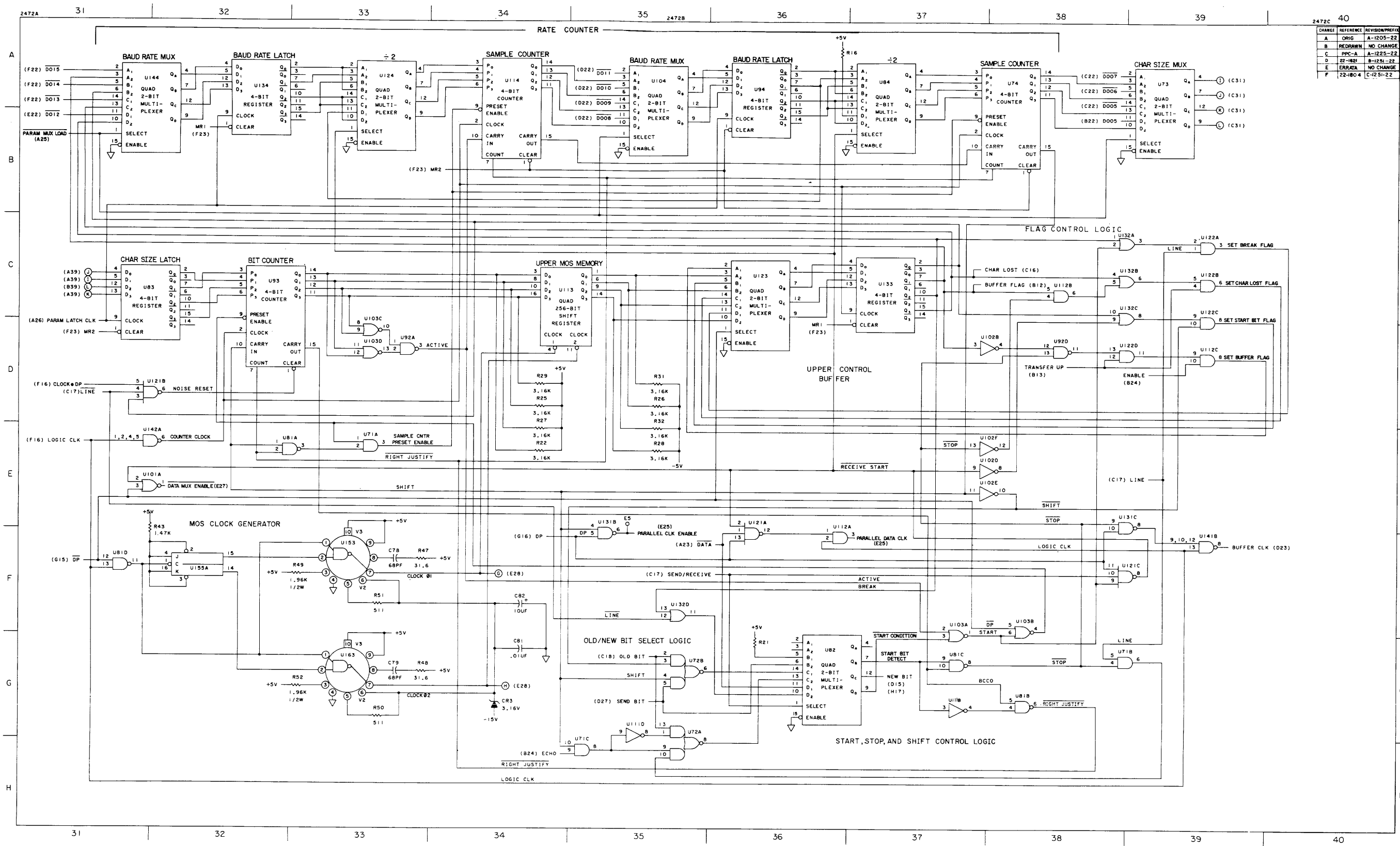




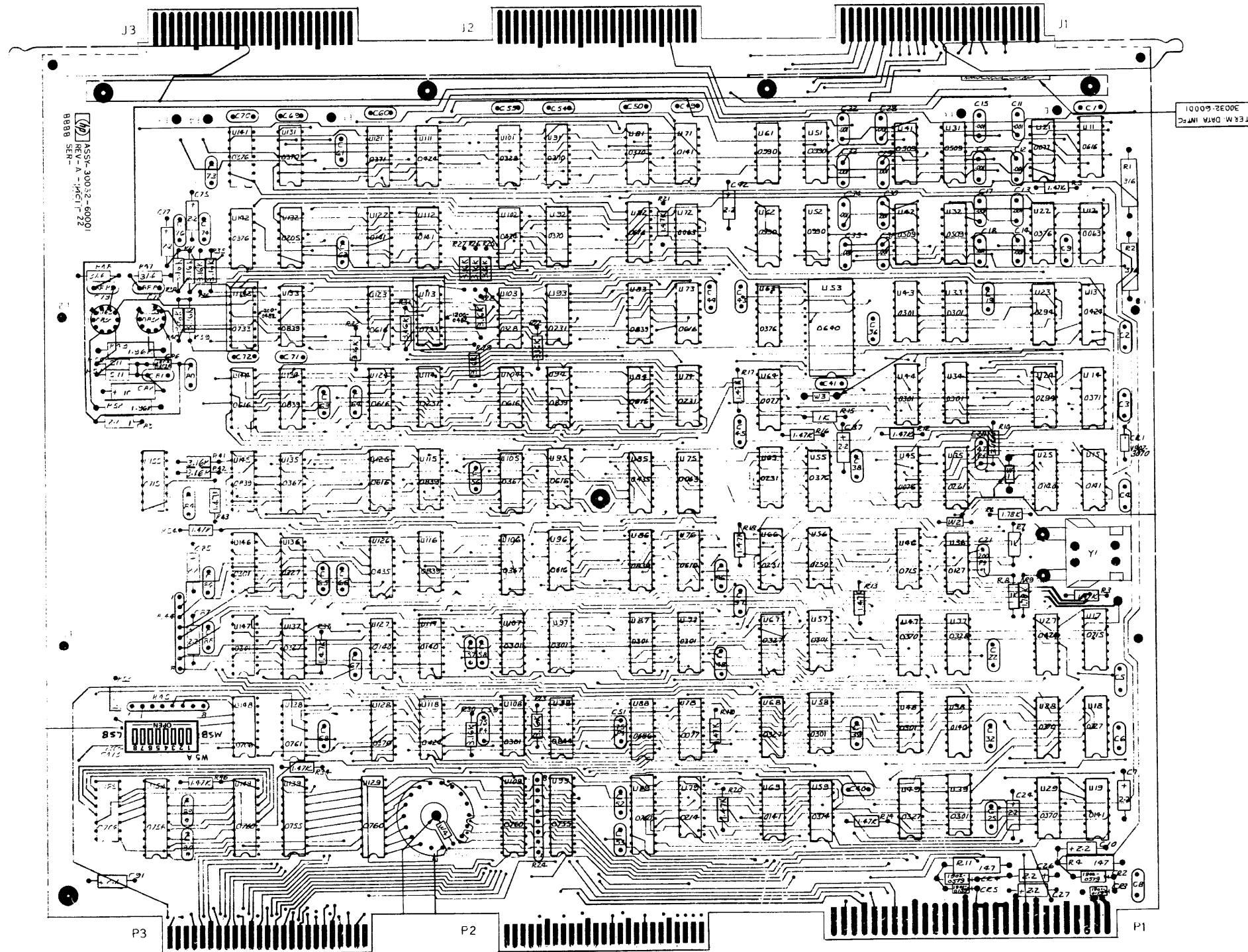
CHANGE	REFERENCE	REVISION/PRIOR
A	ORIG	A-1205-22
B	REDRAWN	NO CHANGE
C	PPC-A	A-1225-22
D	22-1021	B-1251-22
E	ERRATA	NO CHANGE
F	22-1004	C-1251-22

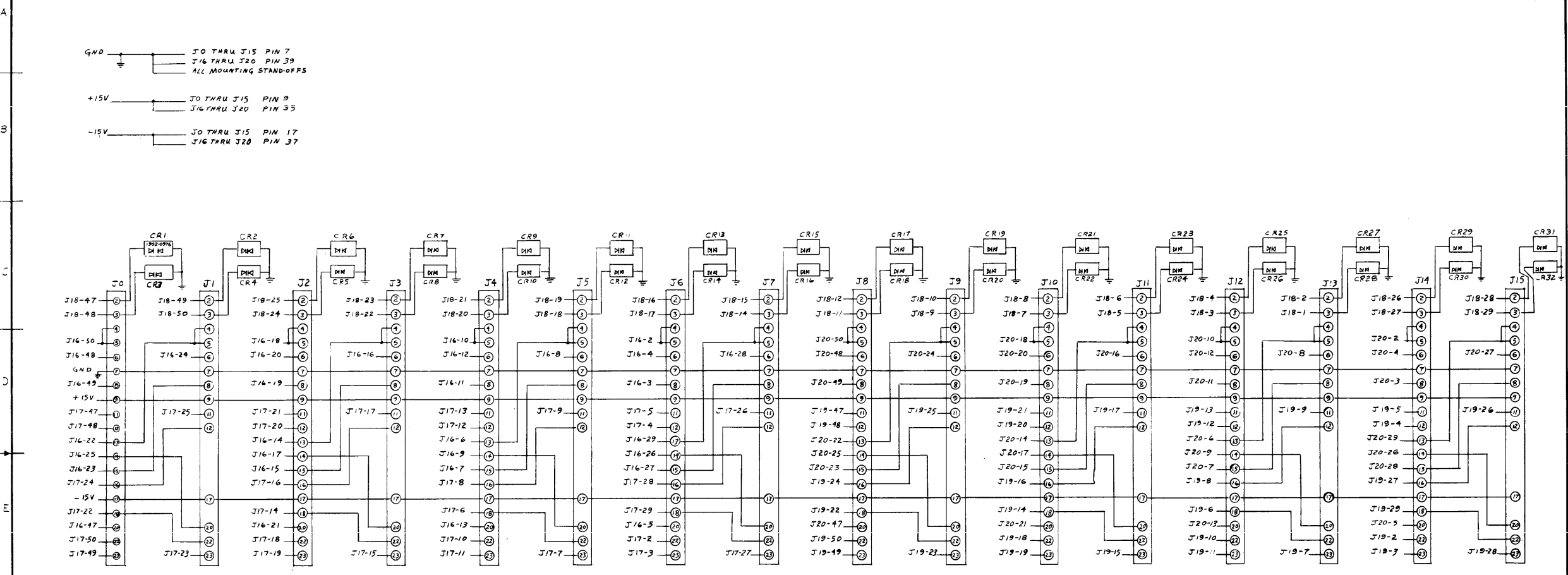


CHANGE	REFERENCE	REVISION/PREFIX
A	ORIG	A-1205-22
B	REDRAWN	NO CHANGE
C	PPC-A	A-1225-22
D	22-1521	B-1251-22
E	ERRATA	NO CHANGE
F	22-1804	C-1251-22



REV	ISSUED	BY	DATE
A	11/17/73	JL	11/17/73
B	CHG. NOTE #7	JL	11/17/73
C	ADDED 303728 201 U.S.P.A.C.	JL	11/17/73

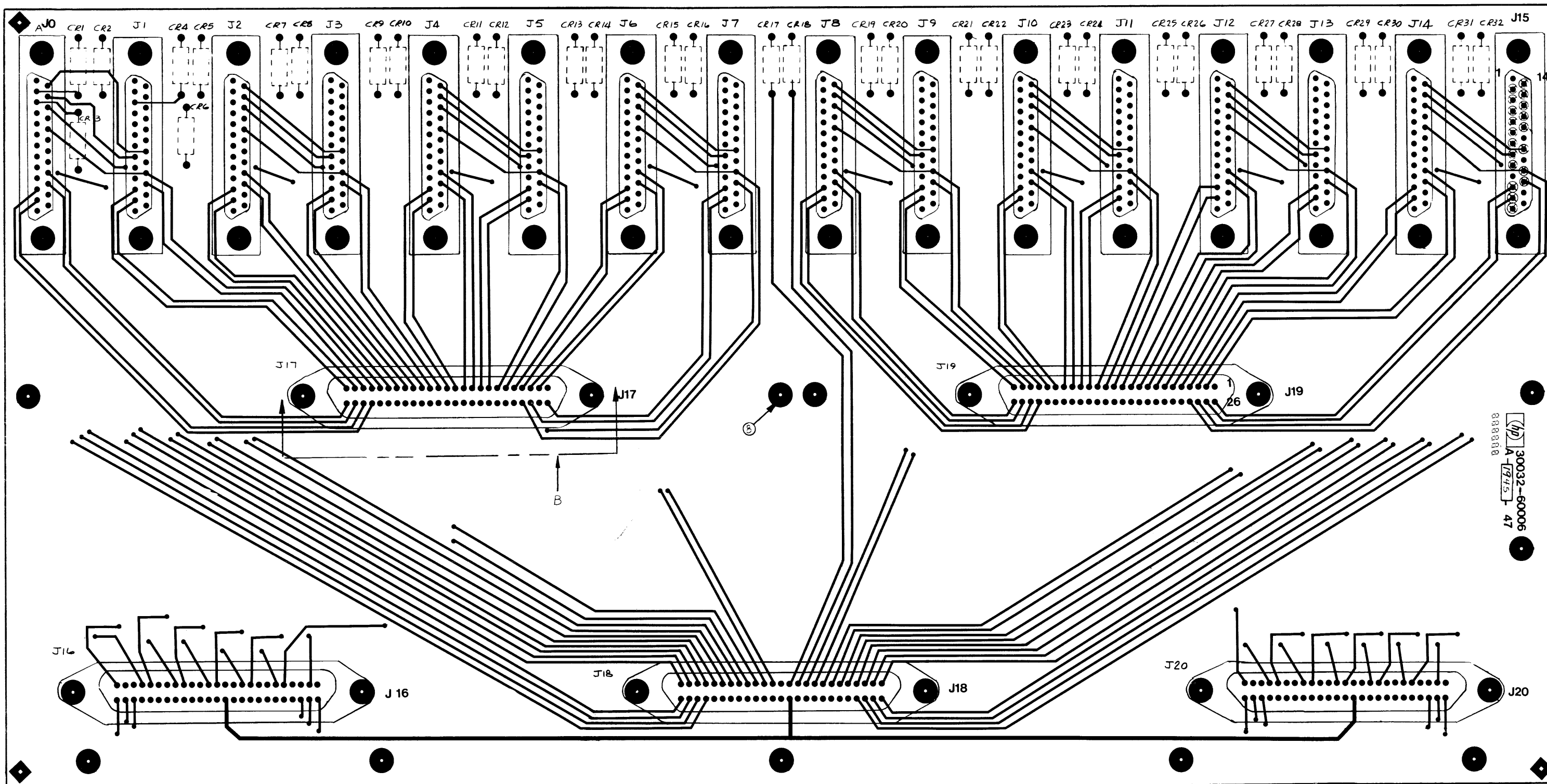




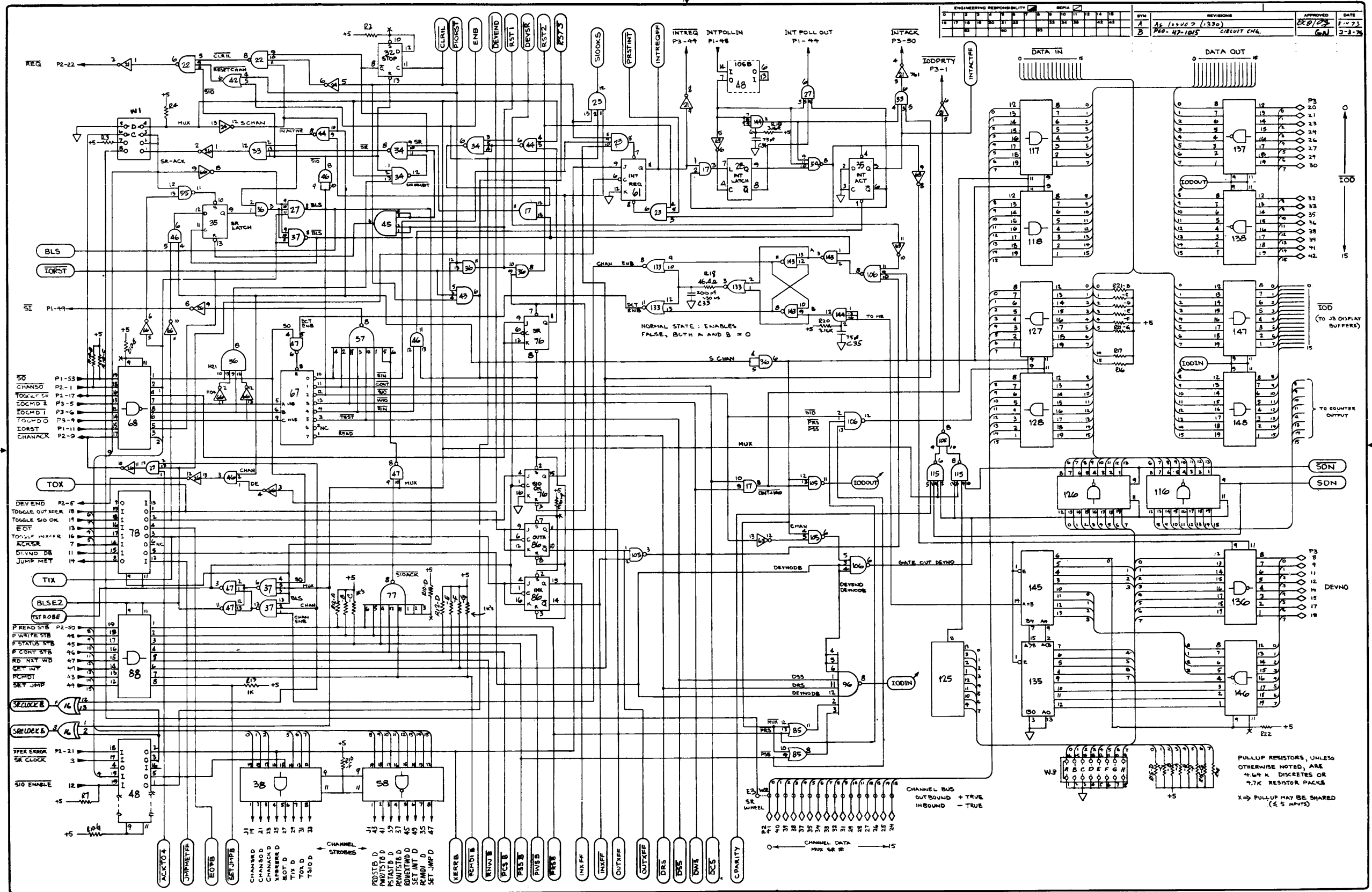
- SIGNAL NAMES
- 1 (C) (CC) STATUS 1 (CHAN #1)
  - 2 (C) (CA) COMMAND 2 (CHAN #1)
  - 3 (C) (SA) COMMAND 1 (CHAN #1)
  - 4 (C) -15V
  - 5 (C) (CB) STATUS 2 (CHAN #1)
  - 6 (C) (CD) COMMAND 1 (CHAN #1)
  - 7 (C) COMM RET-GND
  - 8 (C) (CC) STATUS 1
  - 9 (C) +15V
  - 10 (C) (CB) STATUS 2
  - 11 (C) (CA) COMMAND 2
  - 12 (C) (SA) COMMAND 1
  - 13 (C) (CH) STATUS 2
  - 14 (C) (CH) STATUS 1
- \* THESE SIGNALS PRESENT ON EVEN NUMBER CHANNELS ONLY

NOTE 1: THE TERMS (C), (A), ETC ASSOCIATED WITH EACH SIGNAL NAME ARE EIA RS232C STANDARD DESIGNATIONS FOR SIGNAL INTERFACE LINES.

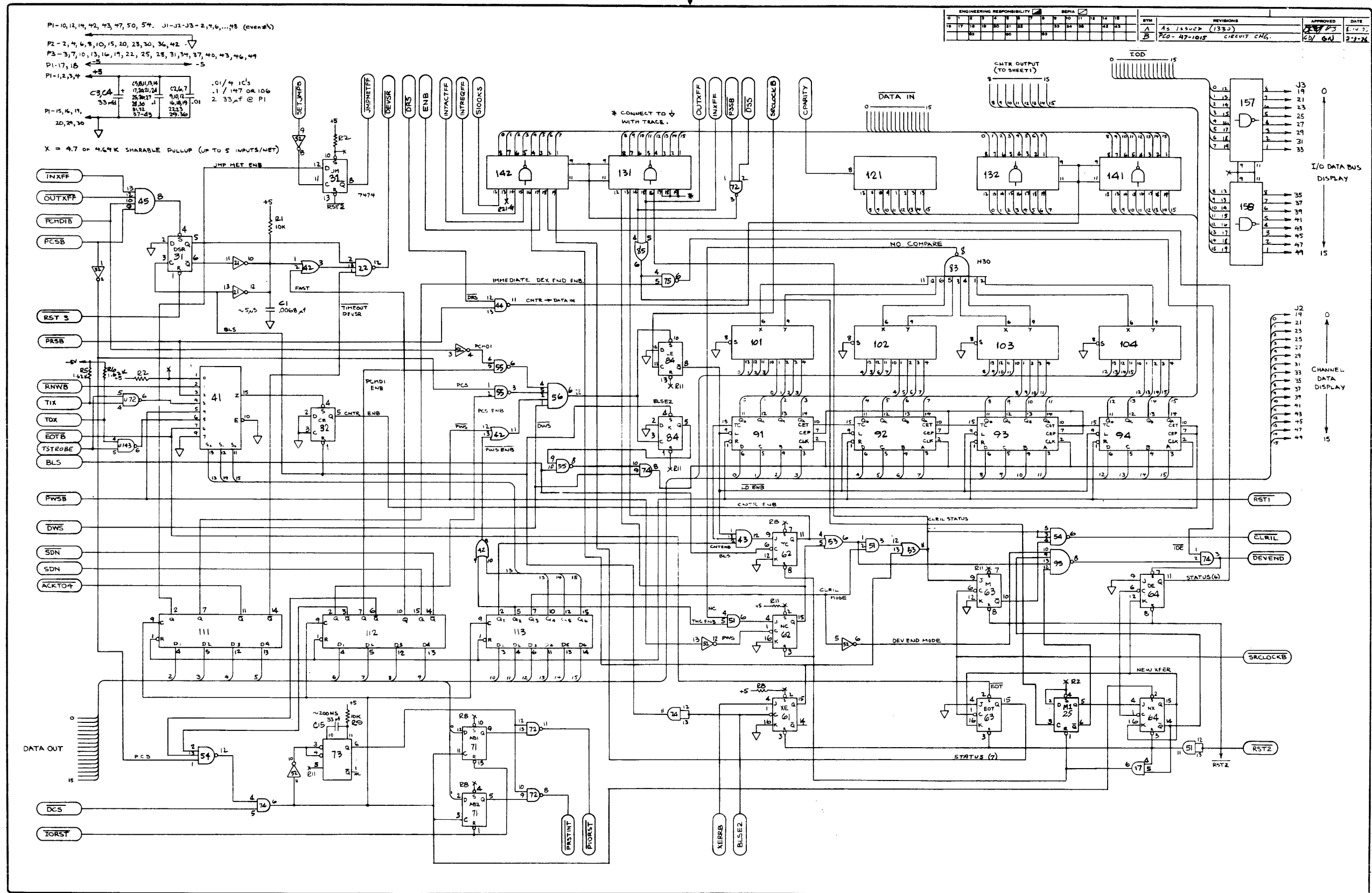
2: THE SIGNALS ON PINS 11, 12, 16, 18, 22, AND 23 ARE AVAILABLE ONLY WHEN TWO TERMINAL CONTROL INTERFACE PCA ARE USED.



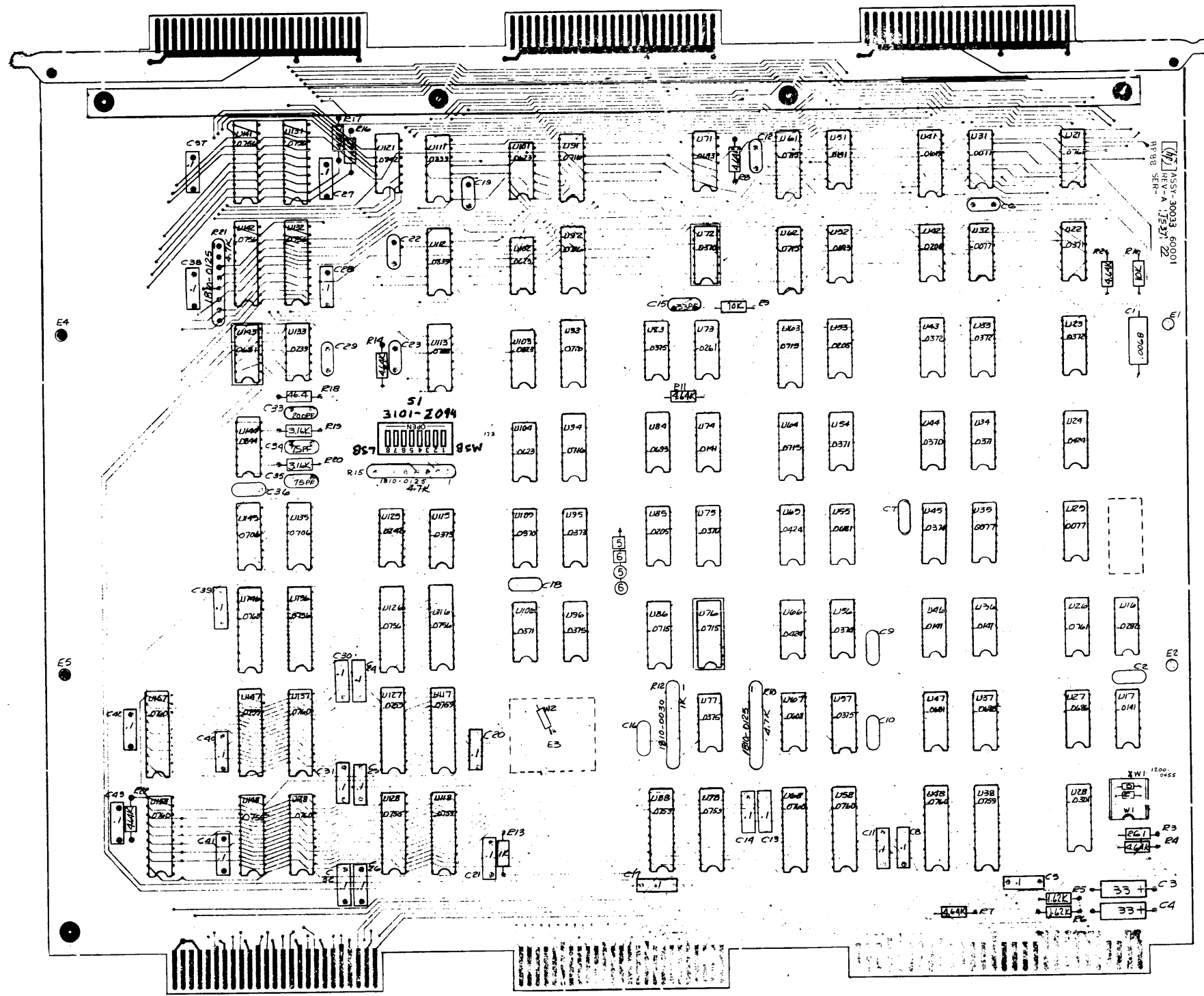
30032-60006  
 A-745  
 47  
 000000





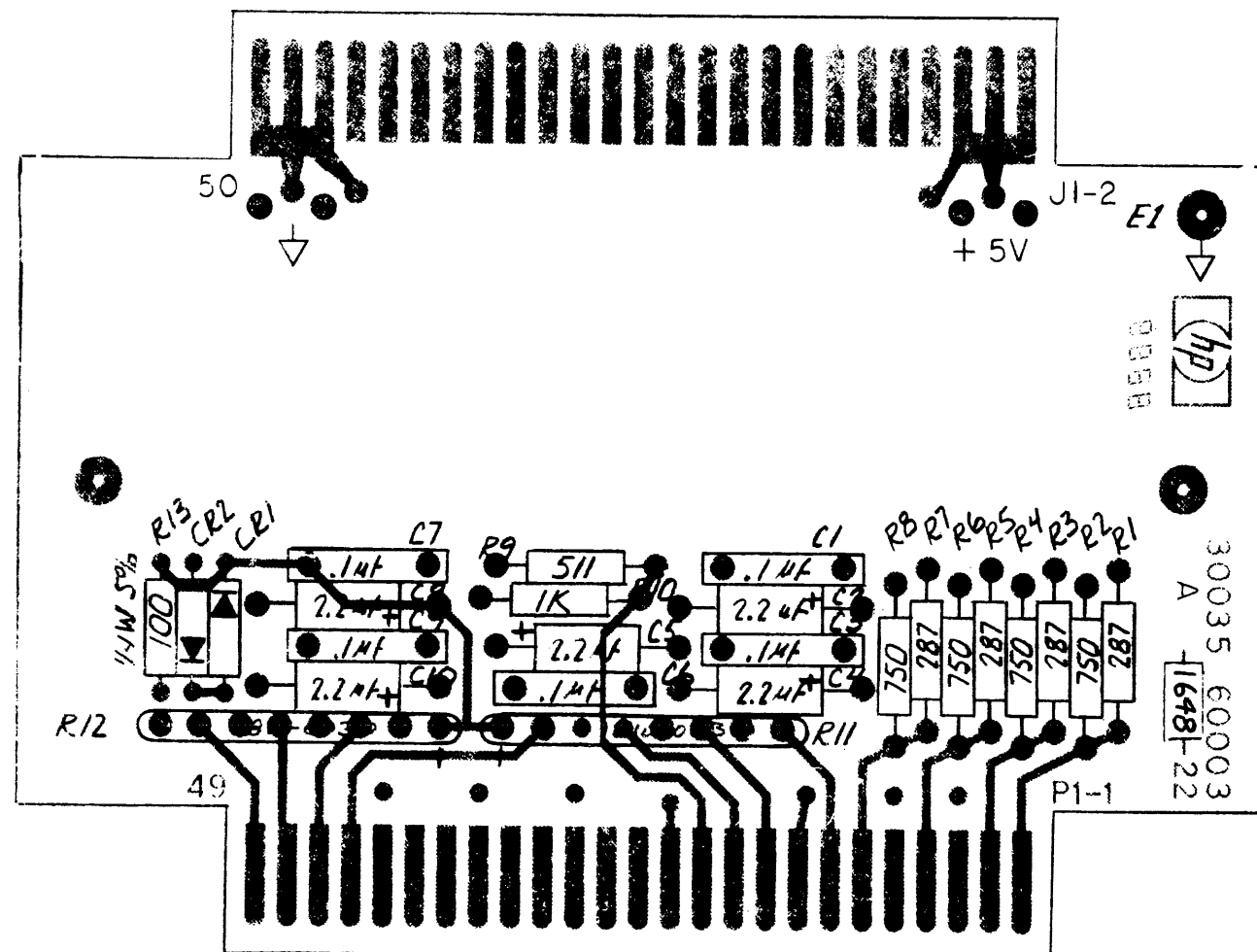


REV.	DESCRIPTION	DATE
A	AS ISSUED	10/15/52
B	REV. DATE: 038 W41 - 0212, U187 - 0112	10/15/52
C	REV. DATE: 038 W41 - 0212, U187 - 0112	10/15/52
D	ADDED 038 W41 ADD. U187	10/15/52
E	REV. DATE: 038 W41 - 0212, U187 - 0112	10/15/52

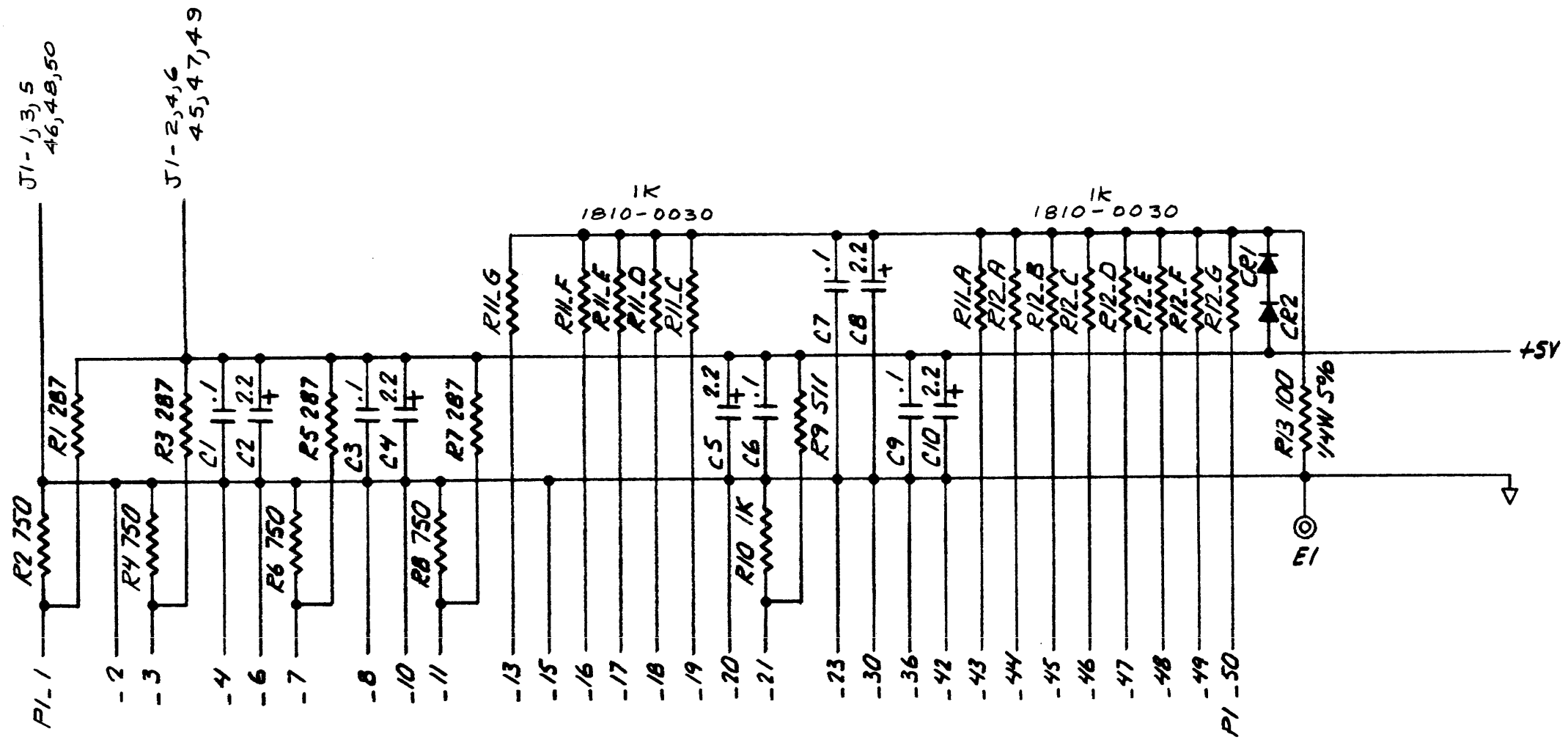


10009-E-6001  
SEL CHAN MAINTNANCE

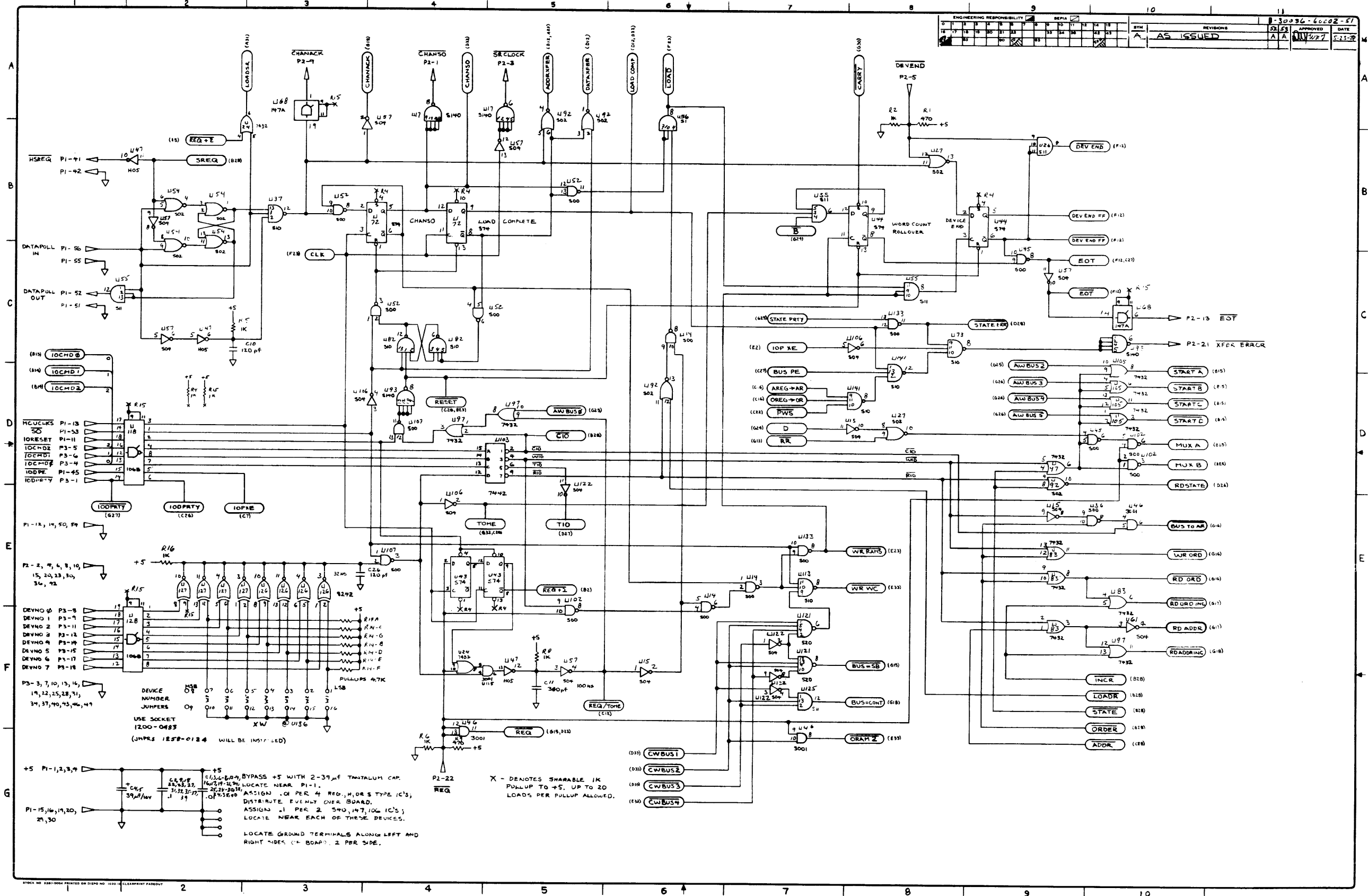
UNLESS OTHERWISE SPECIFIED:  
ALL RESISTORS 1/8W, 1% MF  
ALL CAPACITORS IN MICROFARADS  
ALL CAPACITORS ARE .01 CER. DISC.  
ALL IC'S 1820-



- UNLESS OTHERWISE NOTED  
 ALL RESISTANCE IN OHMS  
 ALL RESISTORS 1/8W 1% M.F.  
 ALL CAPACITANCE IN MICRO-FARADS  
 ALL DIODES #1901-0159



UNLESS OTHERWISE NOTED  
 ALL RESISTANCE IN OHMS  
 ALL RESISTORS 1/8W 1% MF  
 ALL CAPACITANCE IN MICRO FARADS  
 ALL DIODES #1901-0159

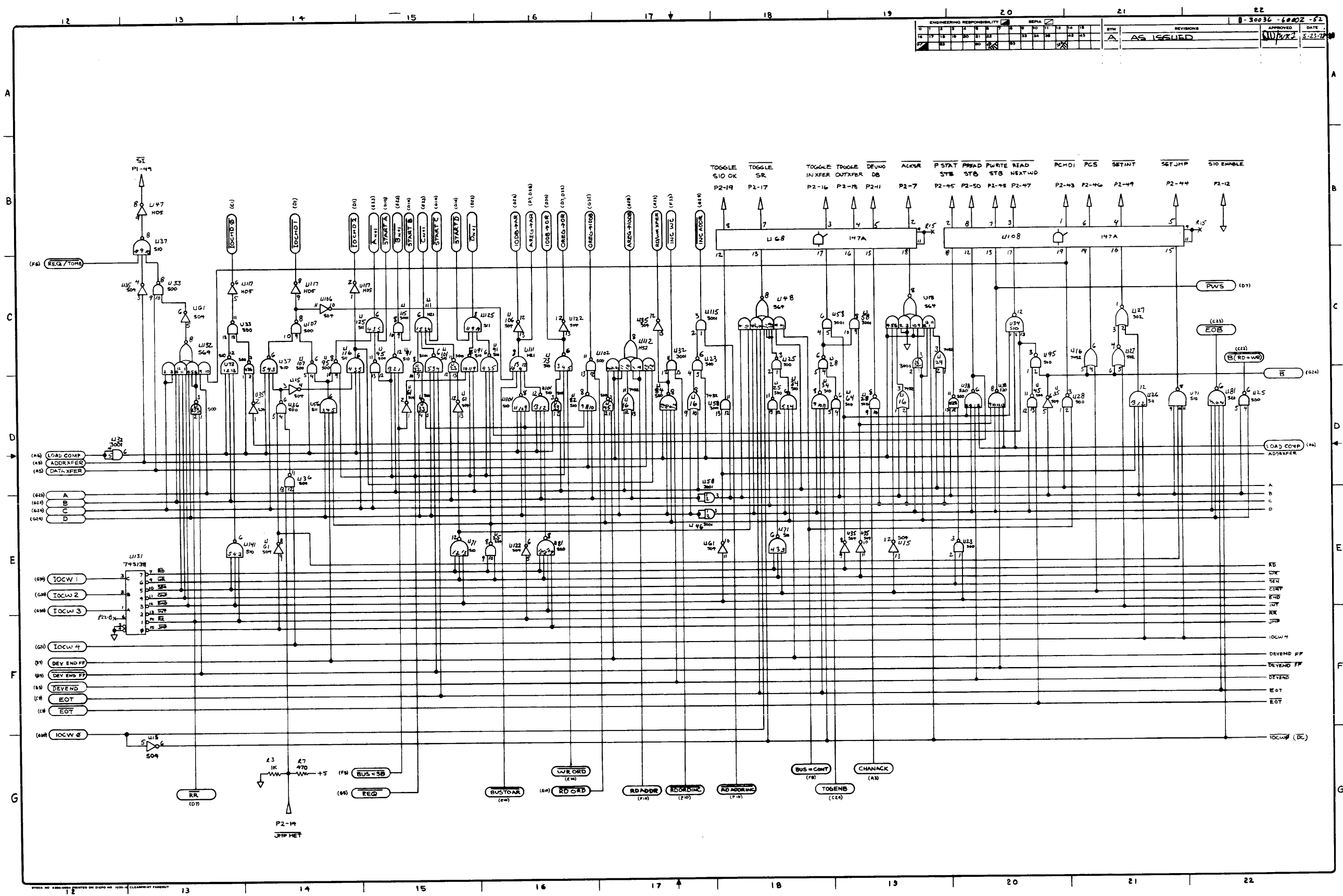


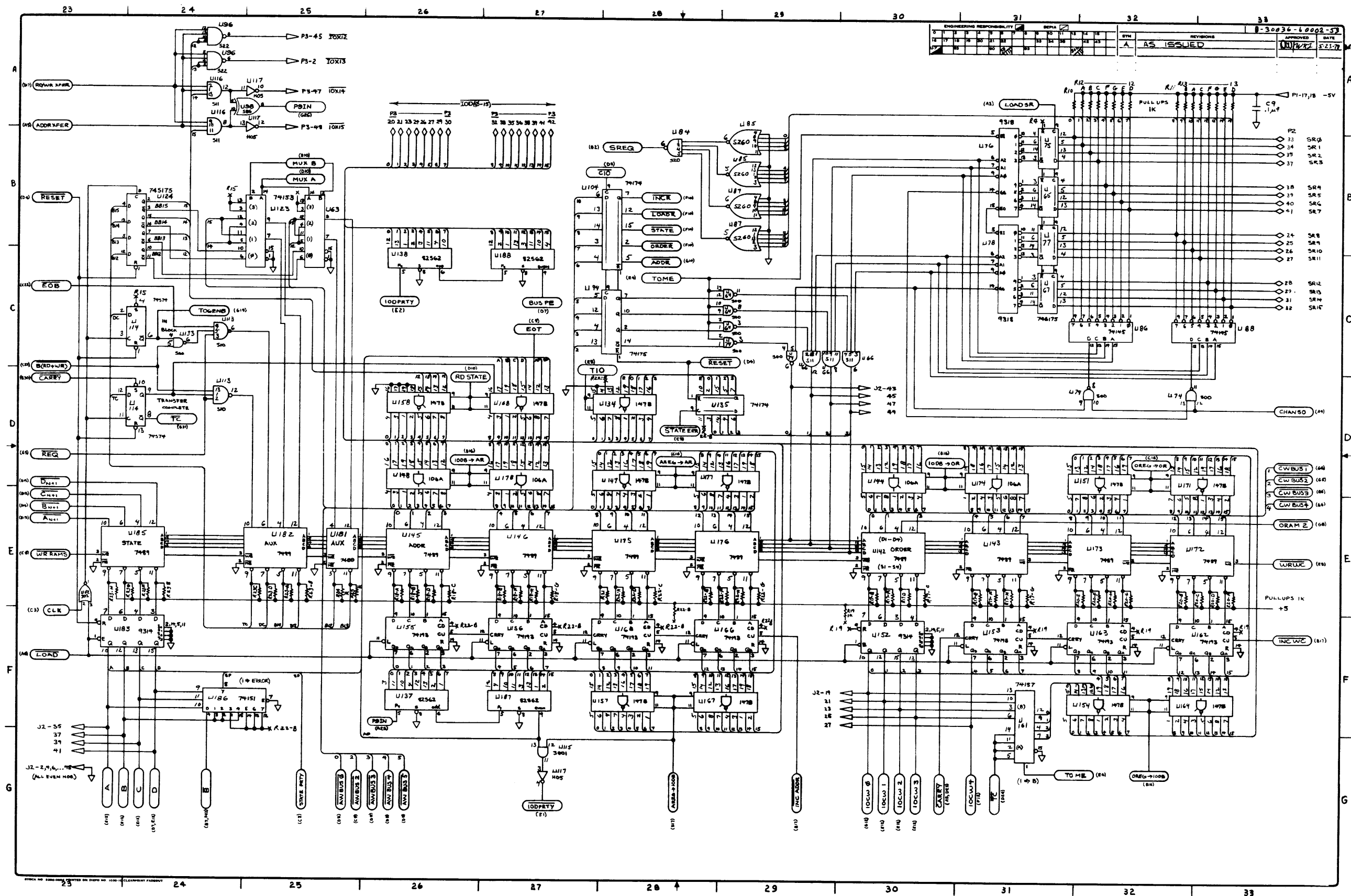
ENGINEERING RESPONSIBILITY														REVISIONS		APPROVED		DATE	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	BY	DATE	BY	DATE		
														AS	ISSUED	AA	11/27		5/23/78

- (B1) IOCHD 0
- (B4) IOCHD 1
- (B8) IOCHD 2

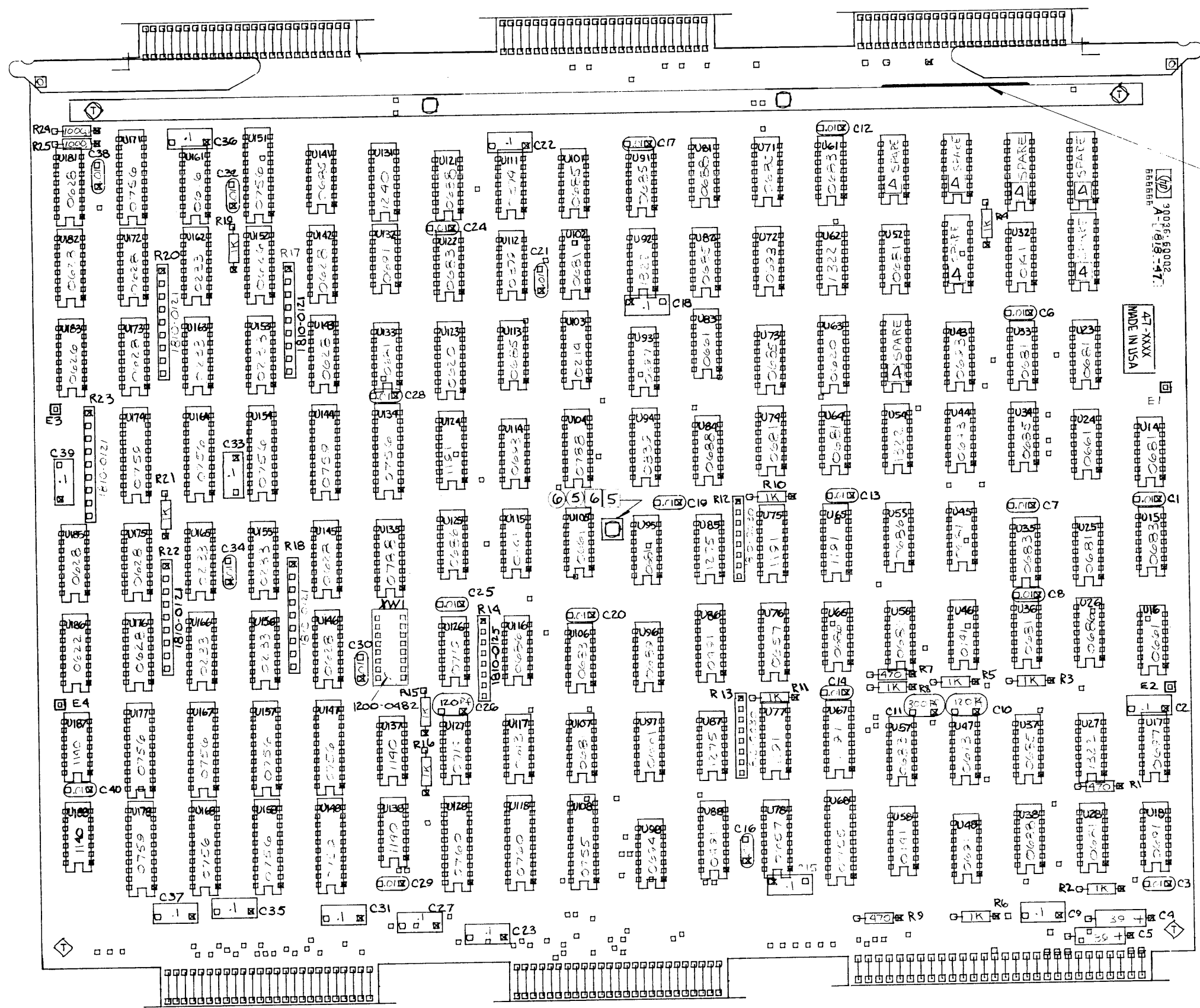
- DEVNO 0 P3-8
- DEVNO 1 P3-9
- DEVNO 2 P3-11
- DEVNO 3 P3-12
- DEVNO 4 P3-14
- DEVNO 5 P3-15
- DEVNO 6 P3-17
- DEVNO 7 P3-18

LOCATE GROUND TERMINALS ALONG LEFT AND RIGHT SIDES (4 BOARD) 2 PER SIDE.





ENGINEERING RESPONSIBILITY		REVISIONS		APPROVED		DATE	
0	1	2	3	4	5	6	7
18	19	20	21	22	23	24	25
26	27	28	29	30	31	32	33
AS ISSUED				U1722		F21-72	

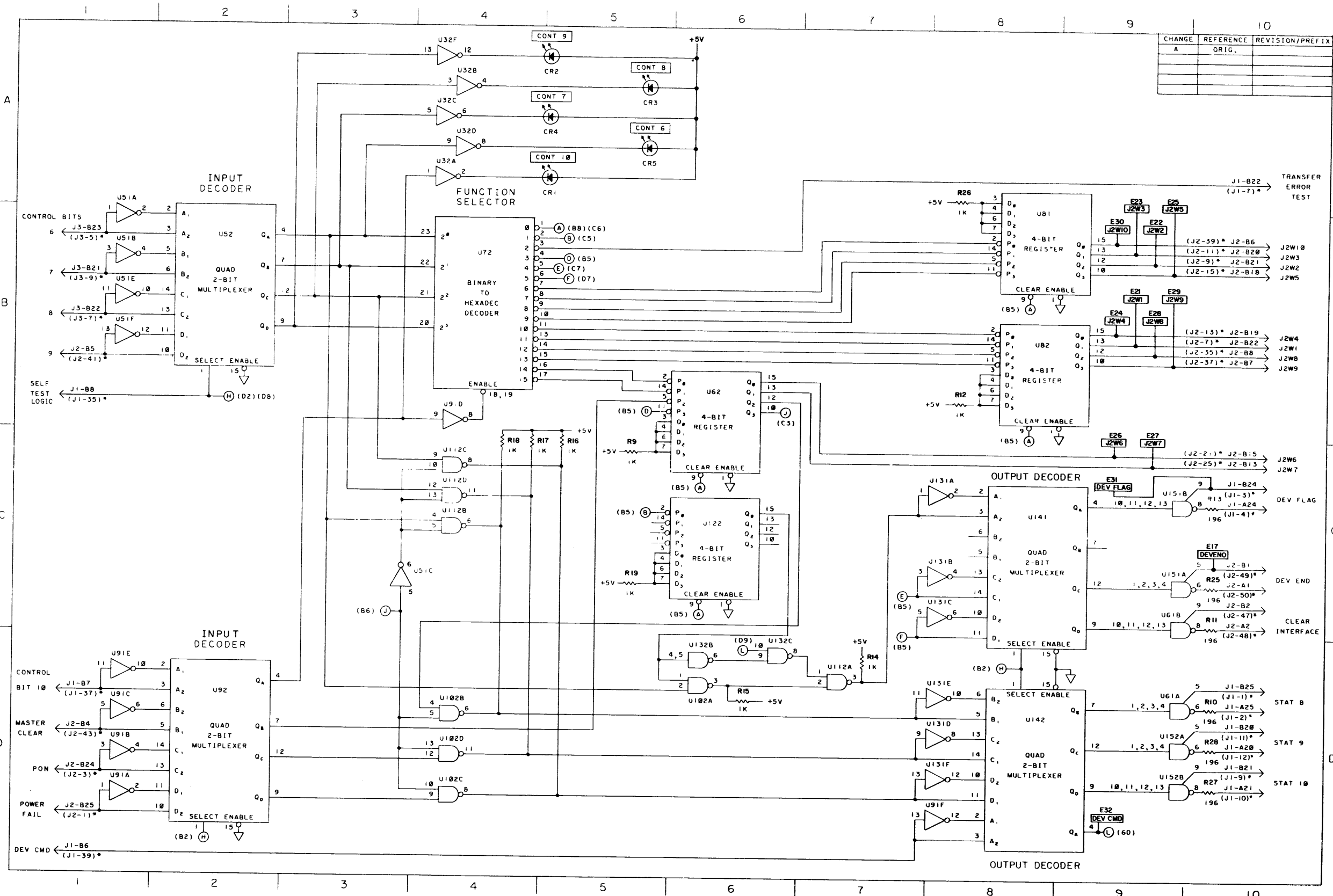


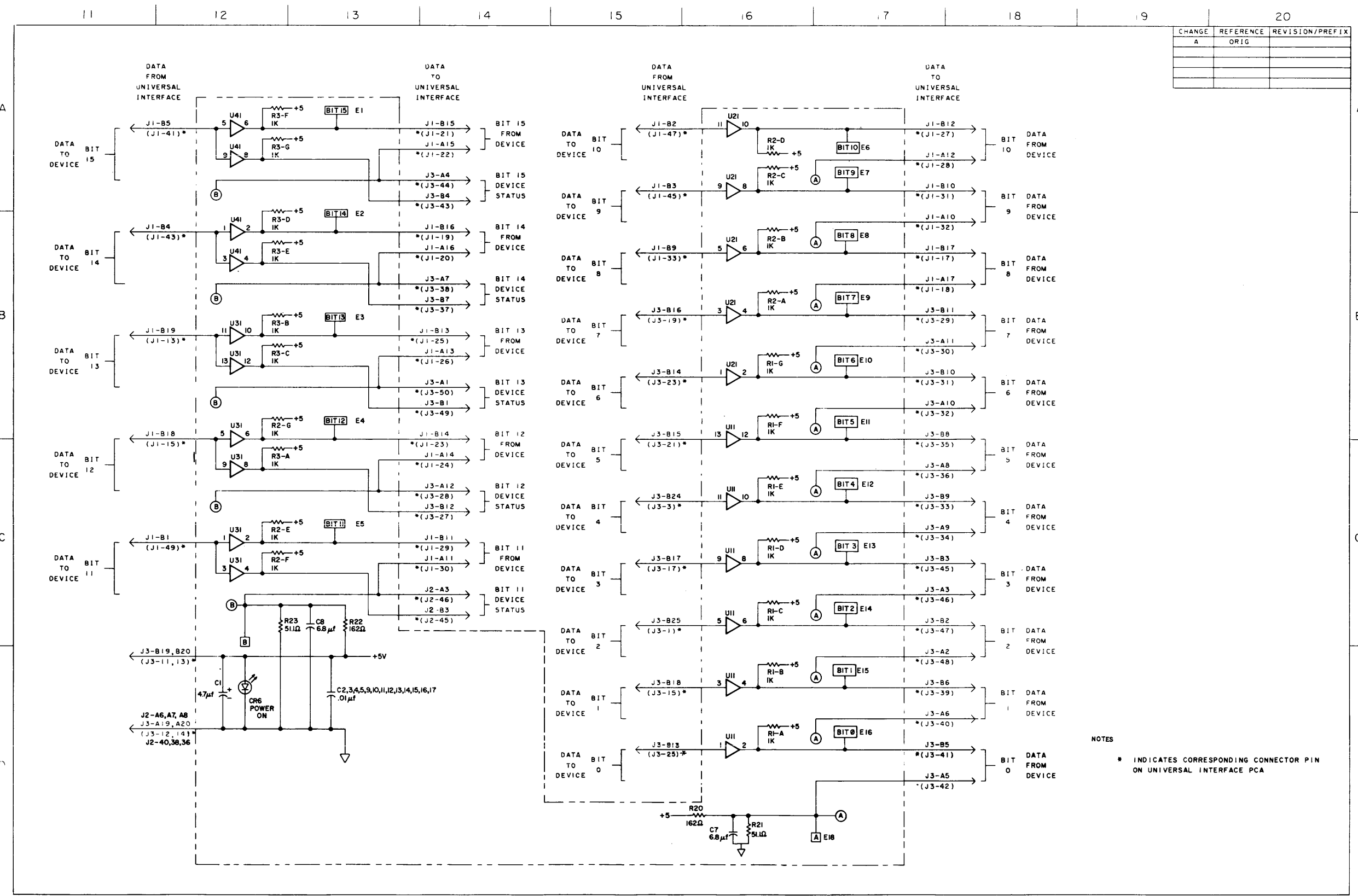
MUX CHAN  
30036-60002

30036: 60002  
A-1(19)8-47

47-XXXX  
MADE IN USA



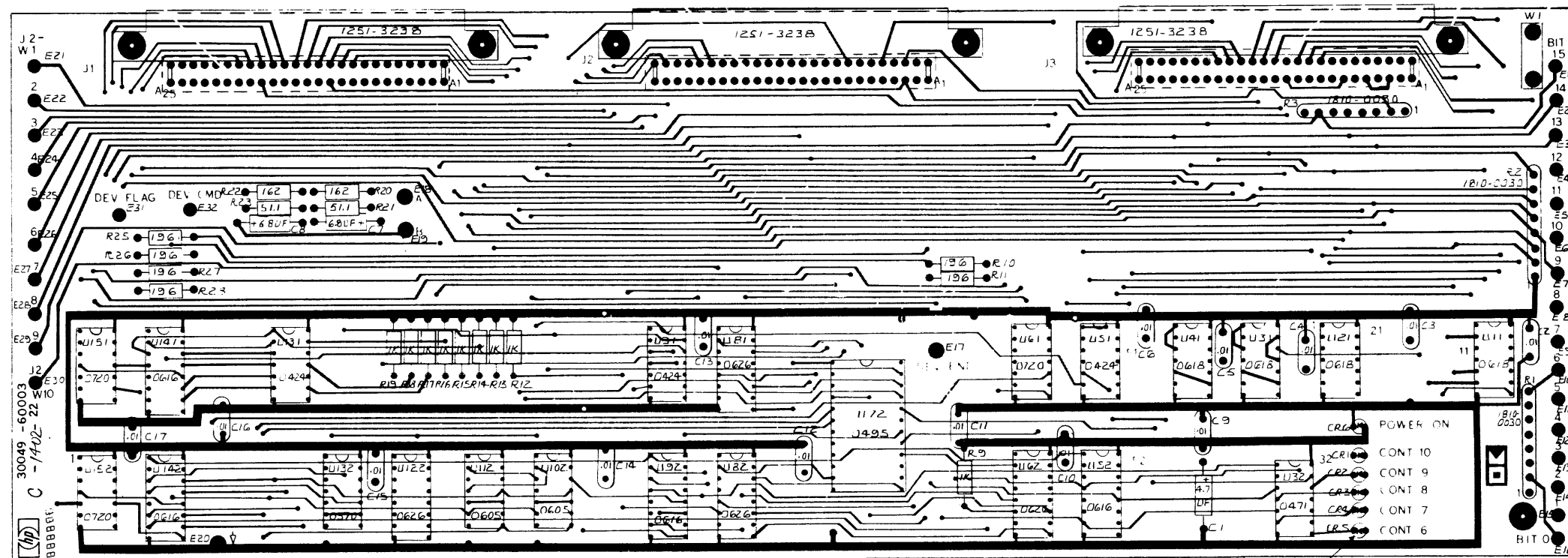




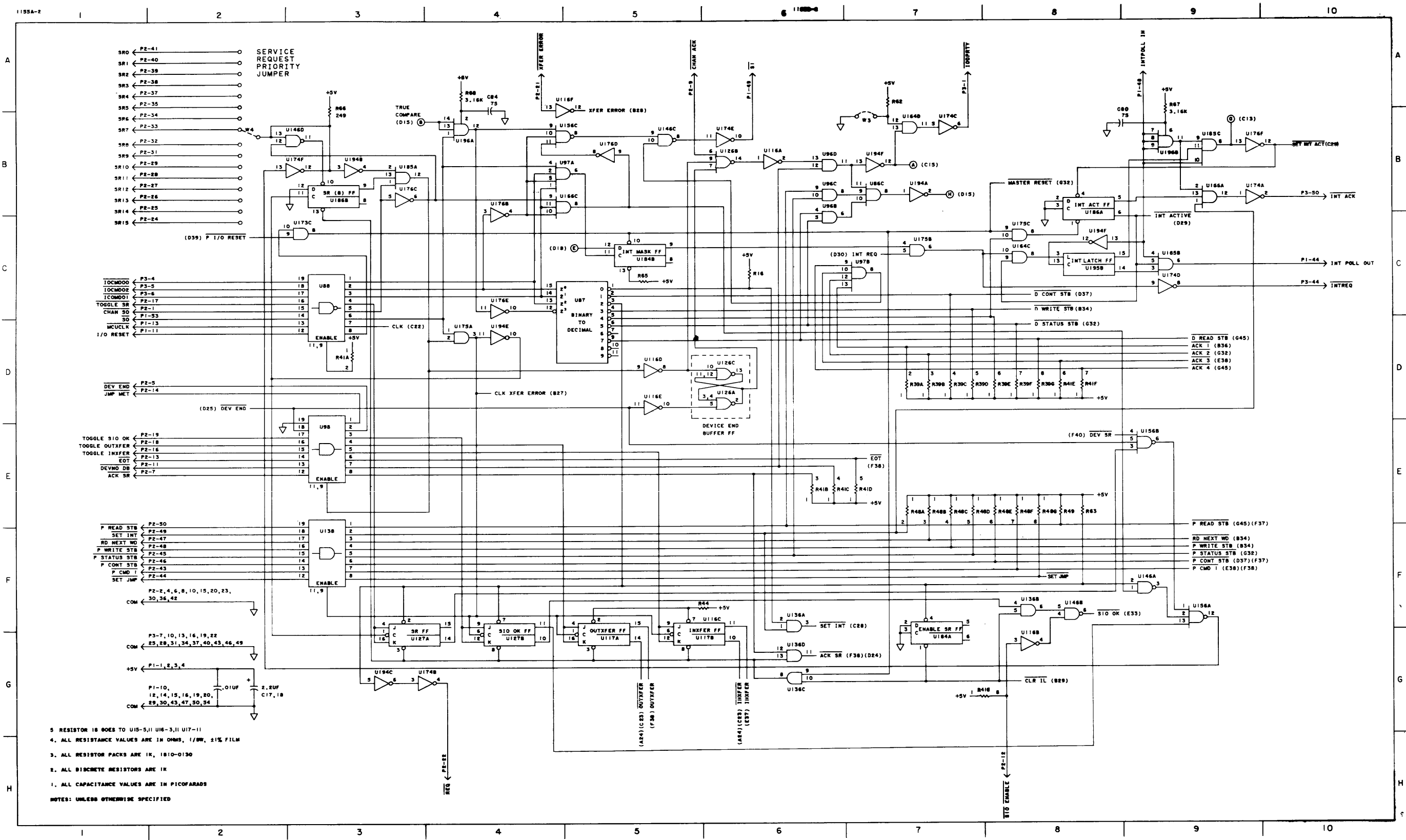
CHANGE	REFERENCE	REVISION/PREFIX
A	ORIG	

NOTES  
 \* INDICATES CORRESPONDING CONNECTOR PIN ON UNIVERSAL INTERFACE PCA

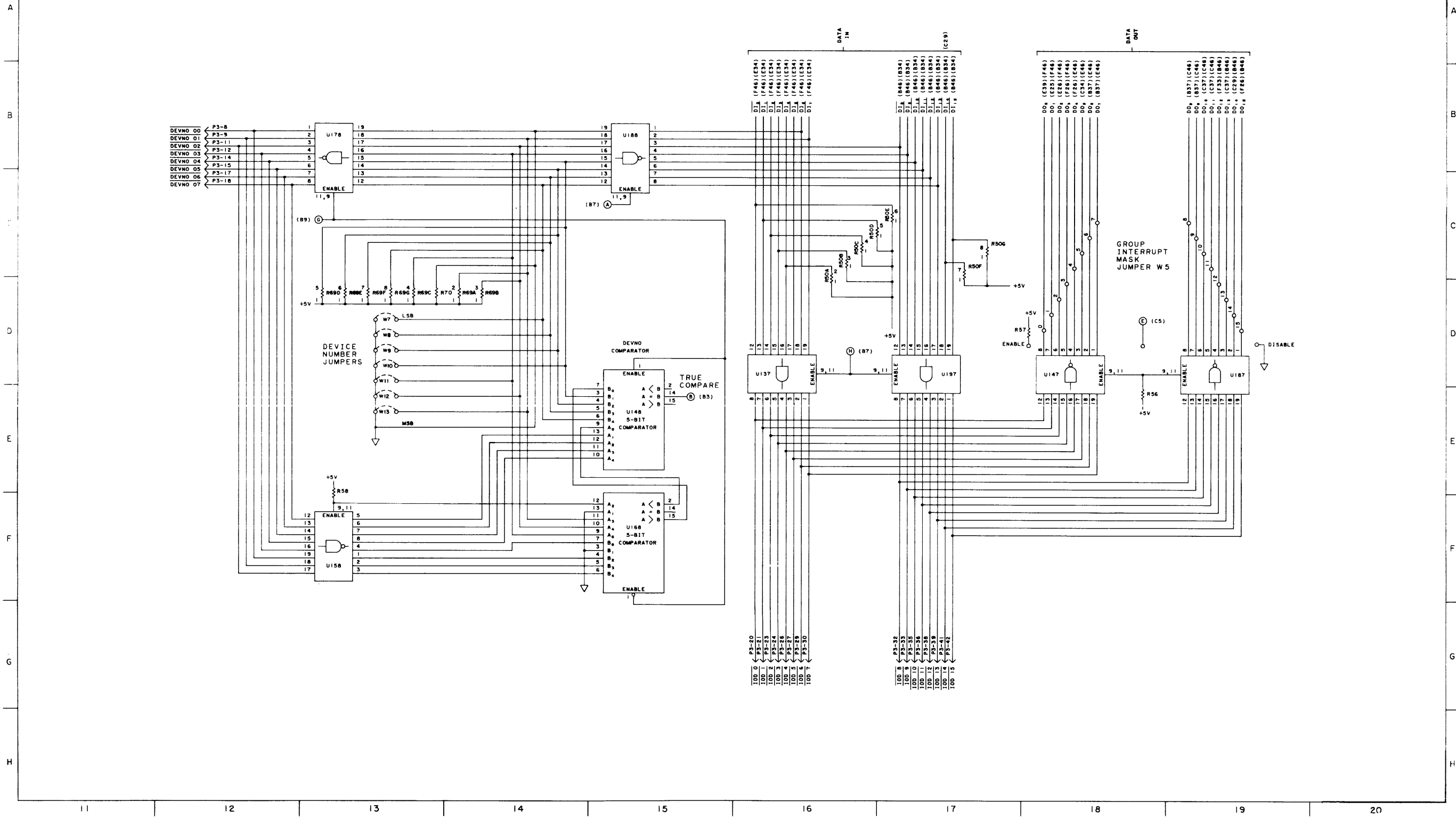
ENGINEERING RESPONSIBILITY														REVISED		APPROVED	DATE	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	BY	REVISIONS			
														C	PCD # 22-1919	RE		4-26-74
														D	CHS # 7-1511 SERO-C-1516, rev 2-24-74			3-2-74

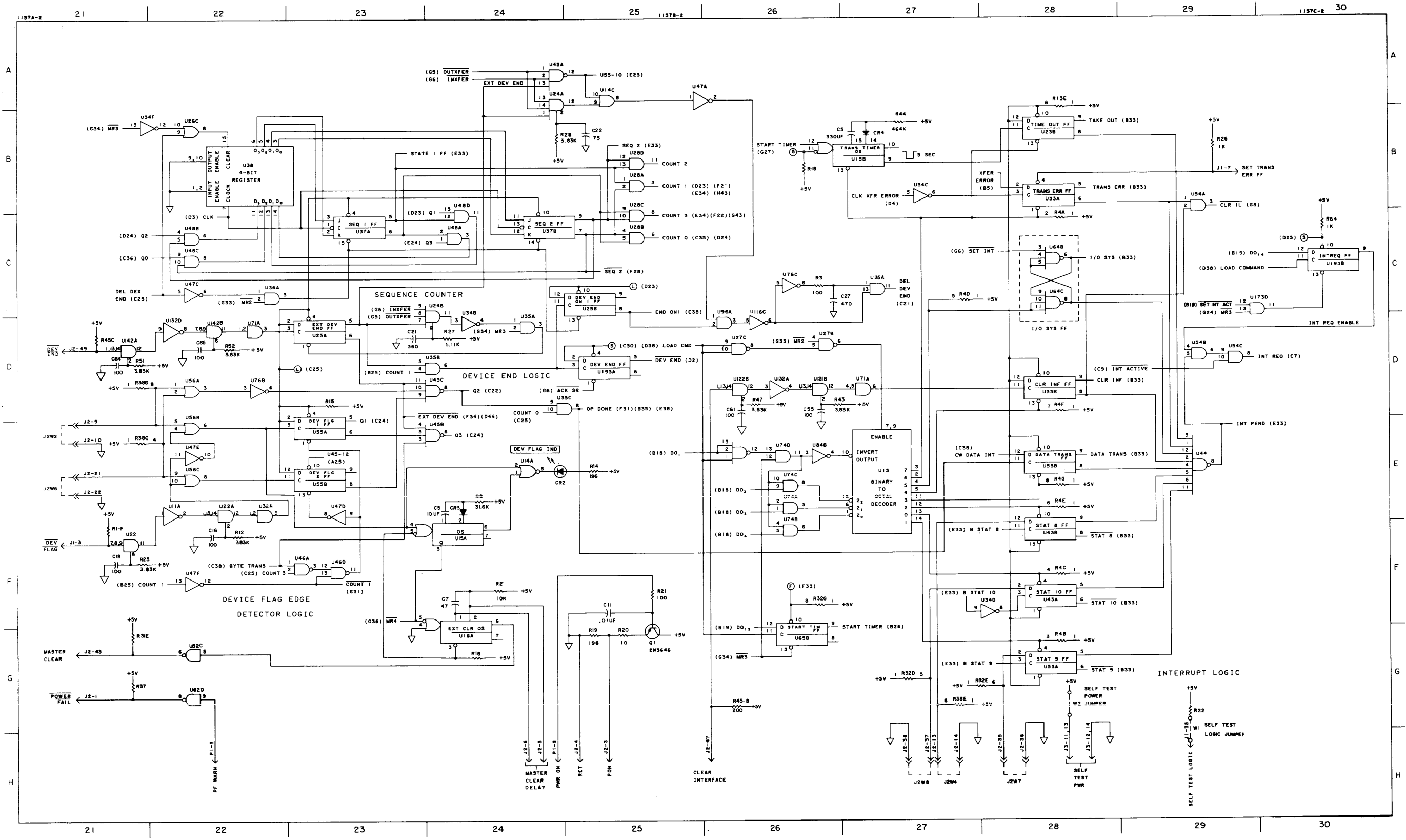


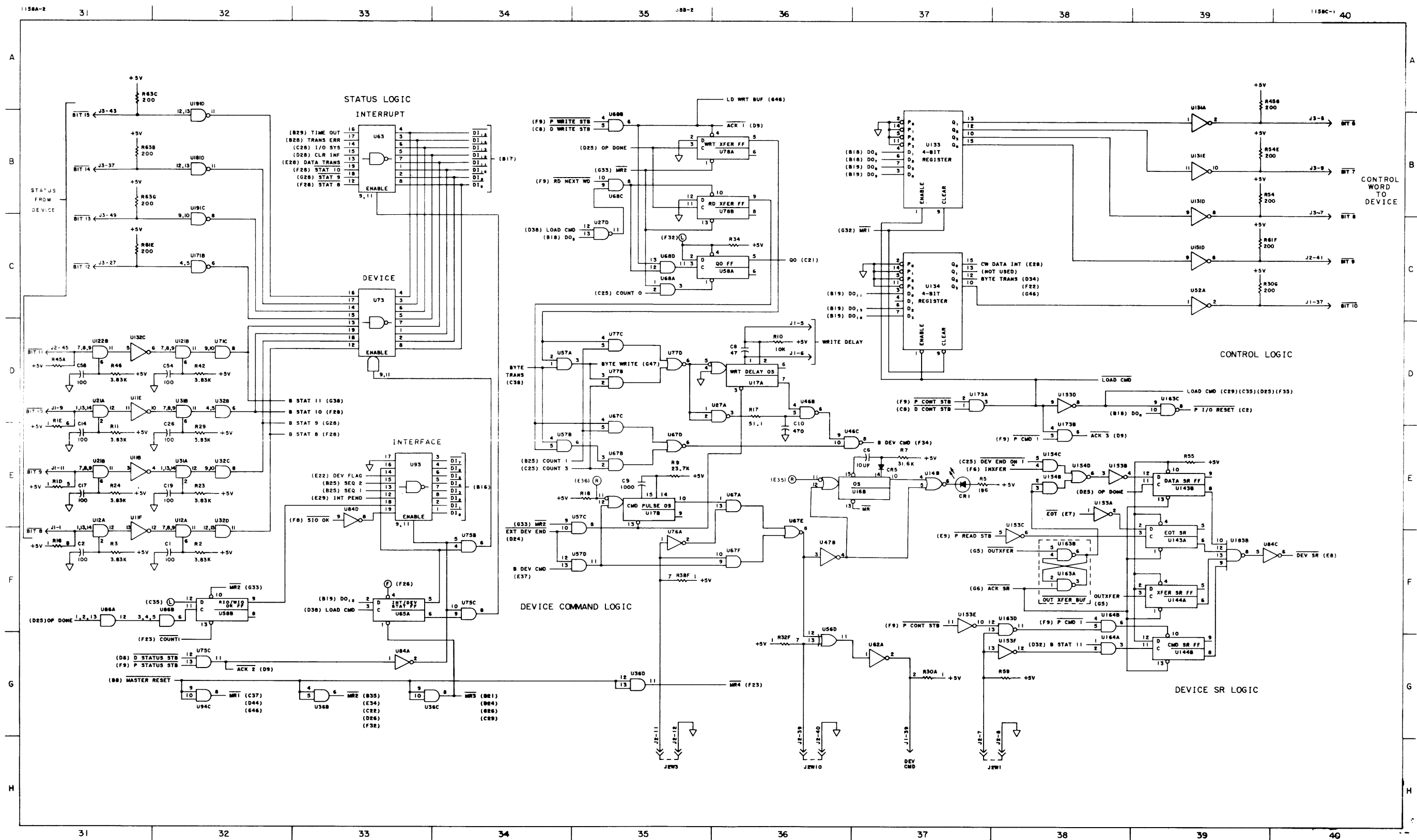
NOTES:  
 1 UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE IN OHMS  
 ALL RESISTORS 1/8W 1%  
 ALL CAPACITANCE IN MICROFARADS  
 ALL IC'S ARE 1820-

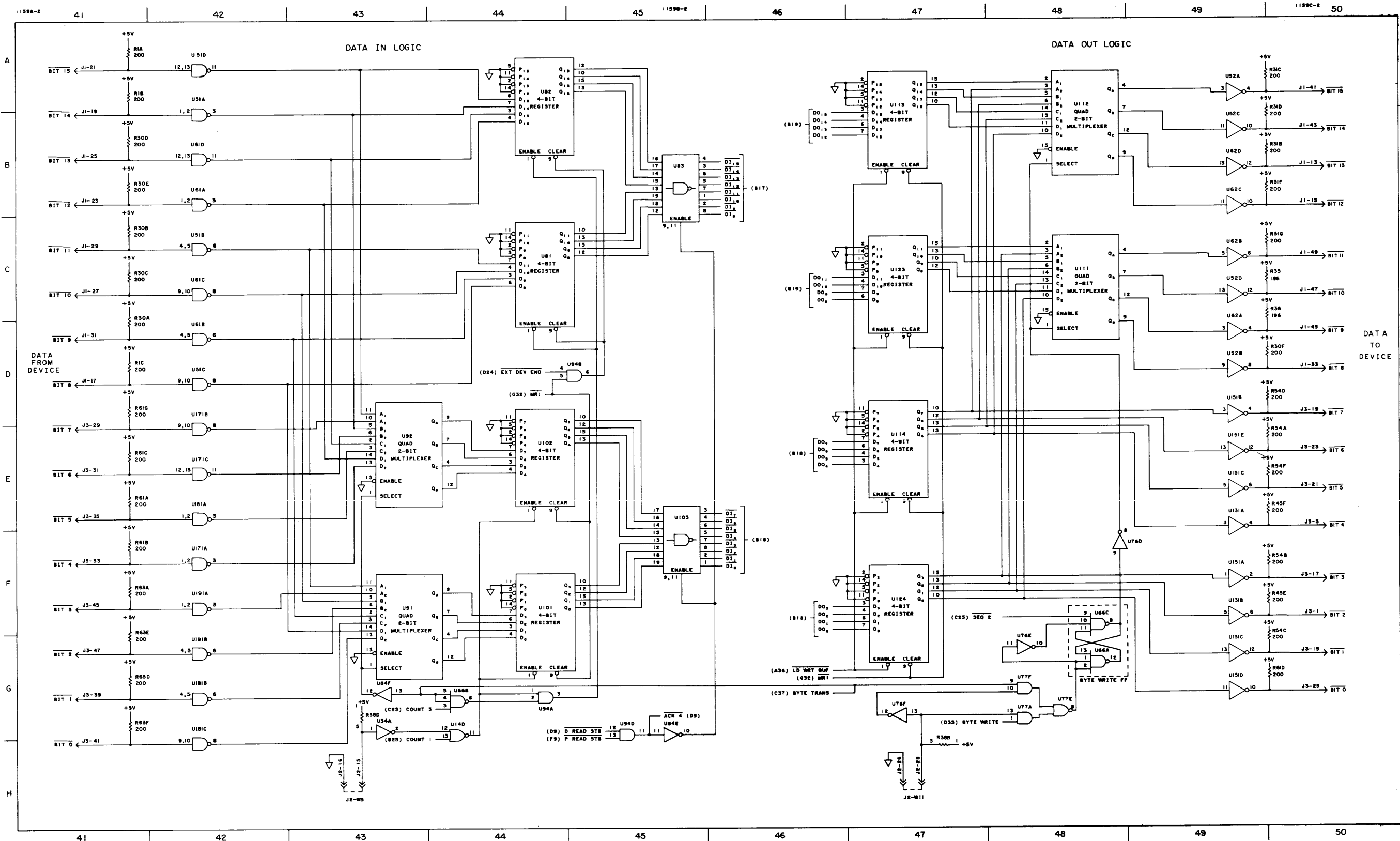


5. RESISTOR 18 GOES TO U15-5, U16-3, U17-11  
 4. ALL RESISTANCE VALUES ARE IN OHMS, 1/8W, 2% FILM  
 3. ALL RESISTOR PACKS ARE 1K, 1810-0130  
 2. ALL DISCRETE RESISTORS ARE 1K  
 1. ALL CAPACITANCE VALUES ARE IN PICOFARADS  
 NOTES: UNLESS OTHERWISE SPECIFIED

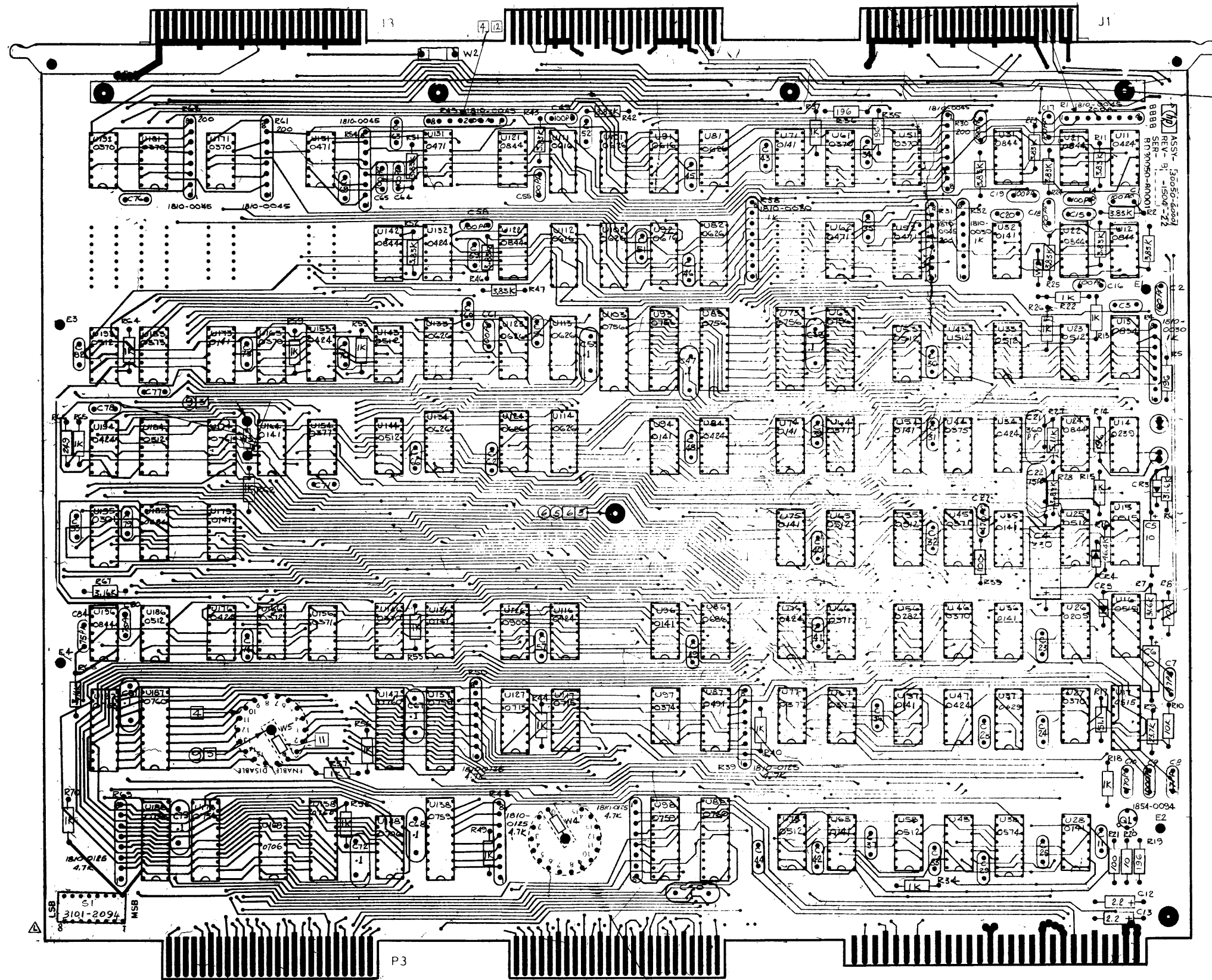






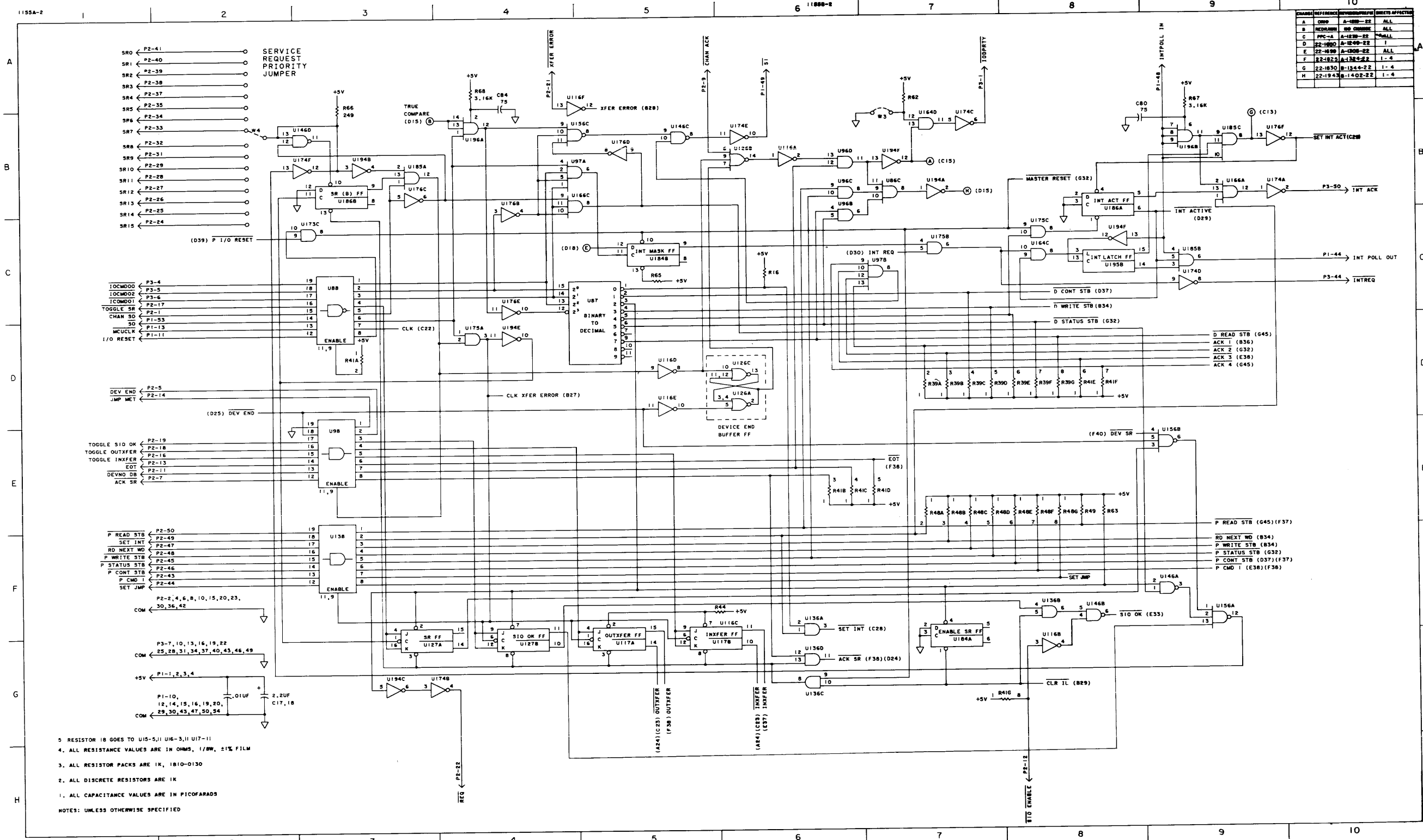




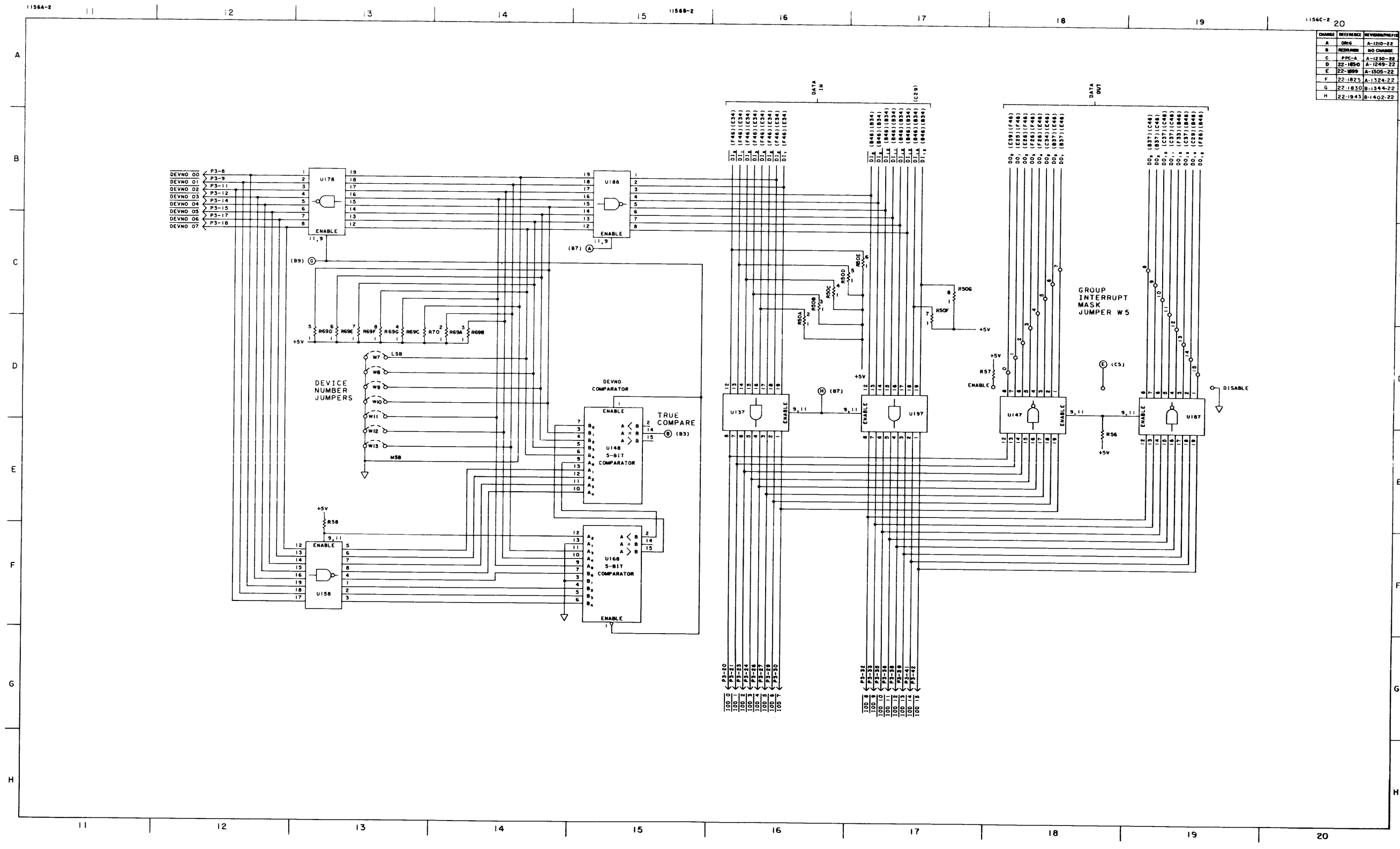


UNIV INTFC (TTL)  
30050-60001

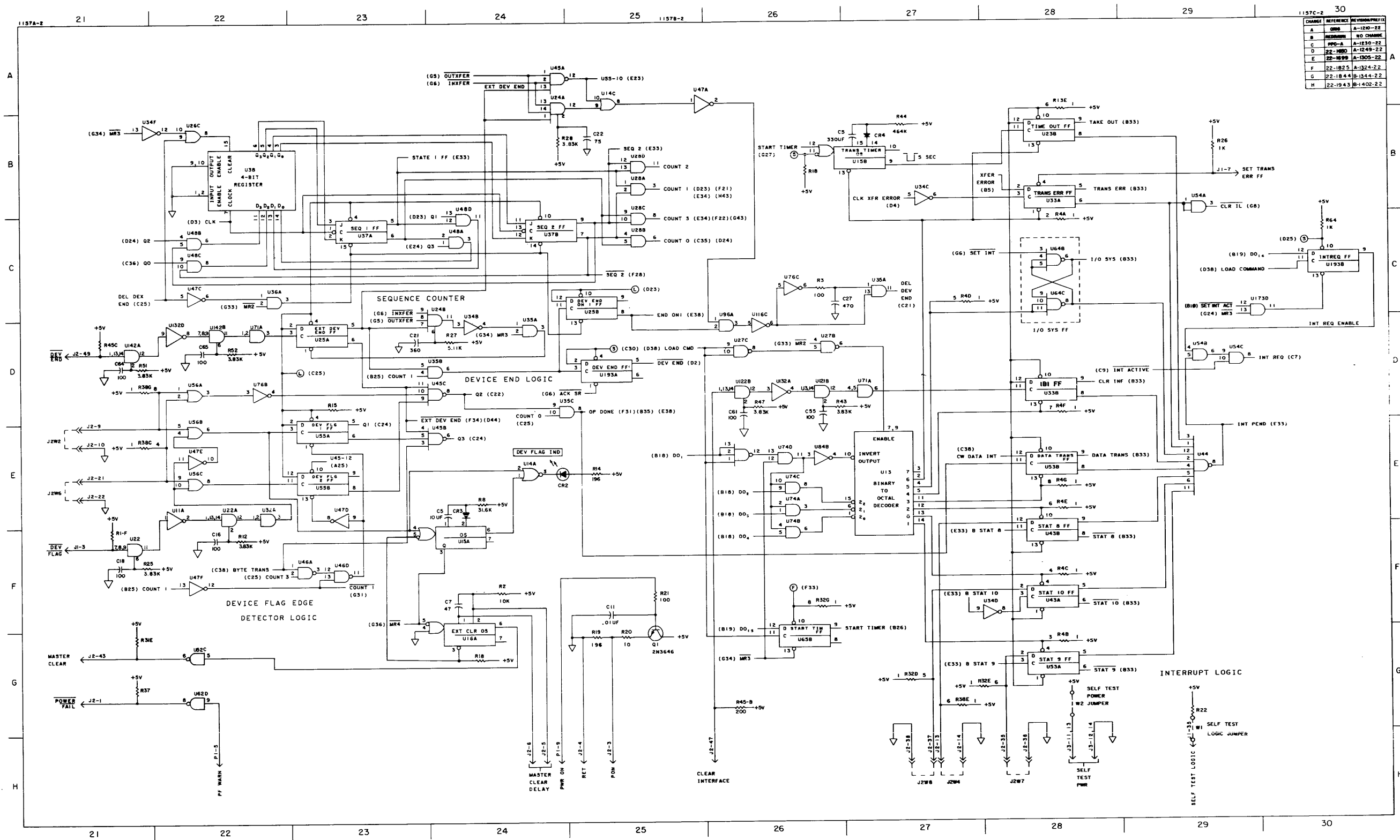
1 NOTE: UNLESS OTHERWISE SPECIFIED  
 ALL RESISTANCE IN OHMS  
 ALL RESISTORS 1/8W ±1% FILM  
 ALL CAPACITORS .01µF CERAMIC DISC  
 ALL DIODES ARE 1901-0081  
 ALL IC'S 1820-



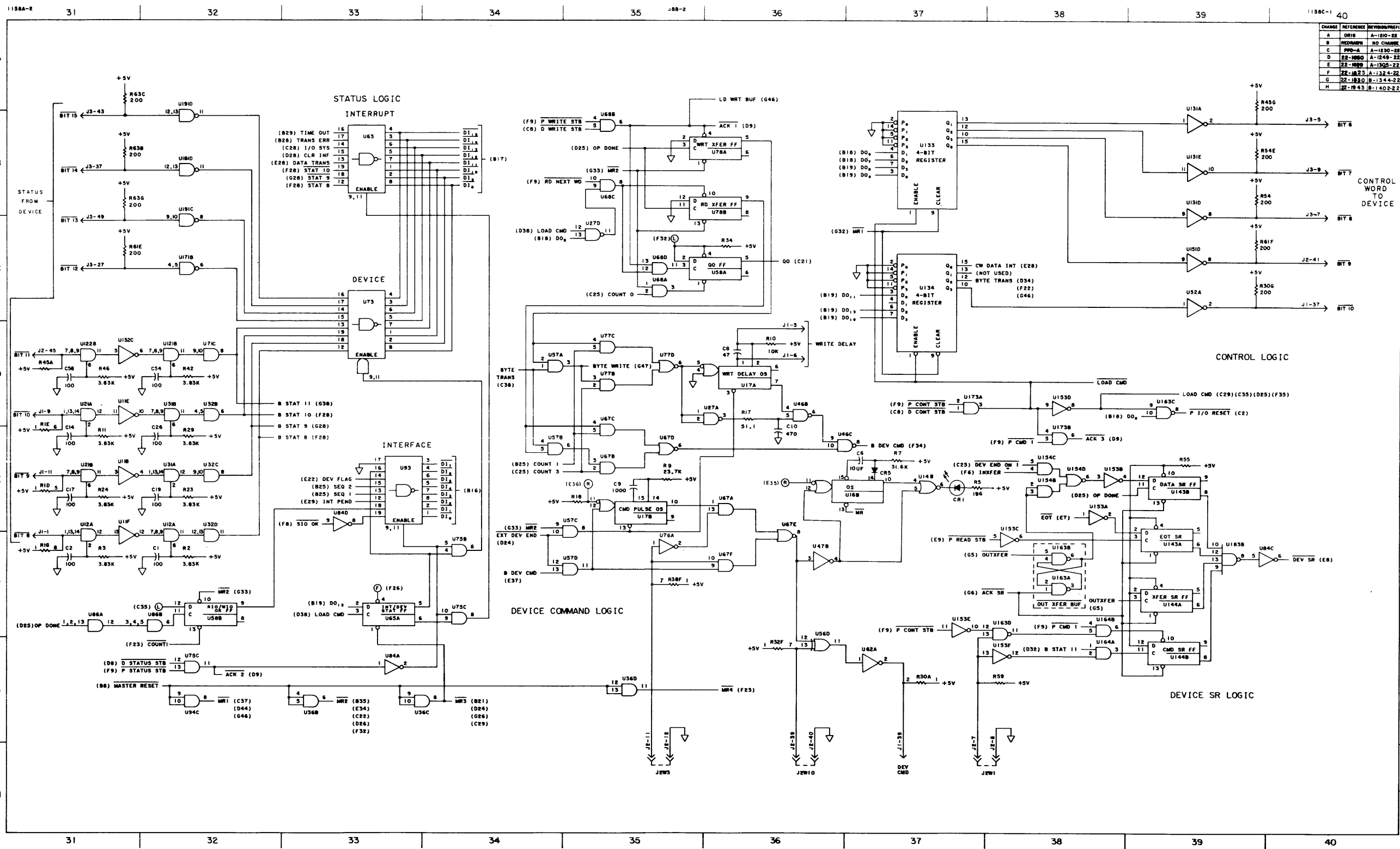
- 5. RESISTOR 18 GOES TO U15-5, U16-3, U17-11
  - 4. ALL RESISTANCE VALUES ARE IN OHMS, 1/8W, ±1% FILM
  - 3. ALL RESISTOR PACKS ARE 1K, 1810-0130
  - 2. ALL DISCRETE RESISTORS ARE 1K
  - 1. ALL CAPACITANCE VALUES ARE IN PICOFARADS
- NOTES: UNLESS OTHERWISE SPECIFIED

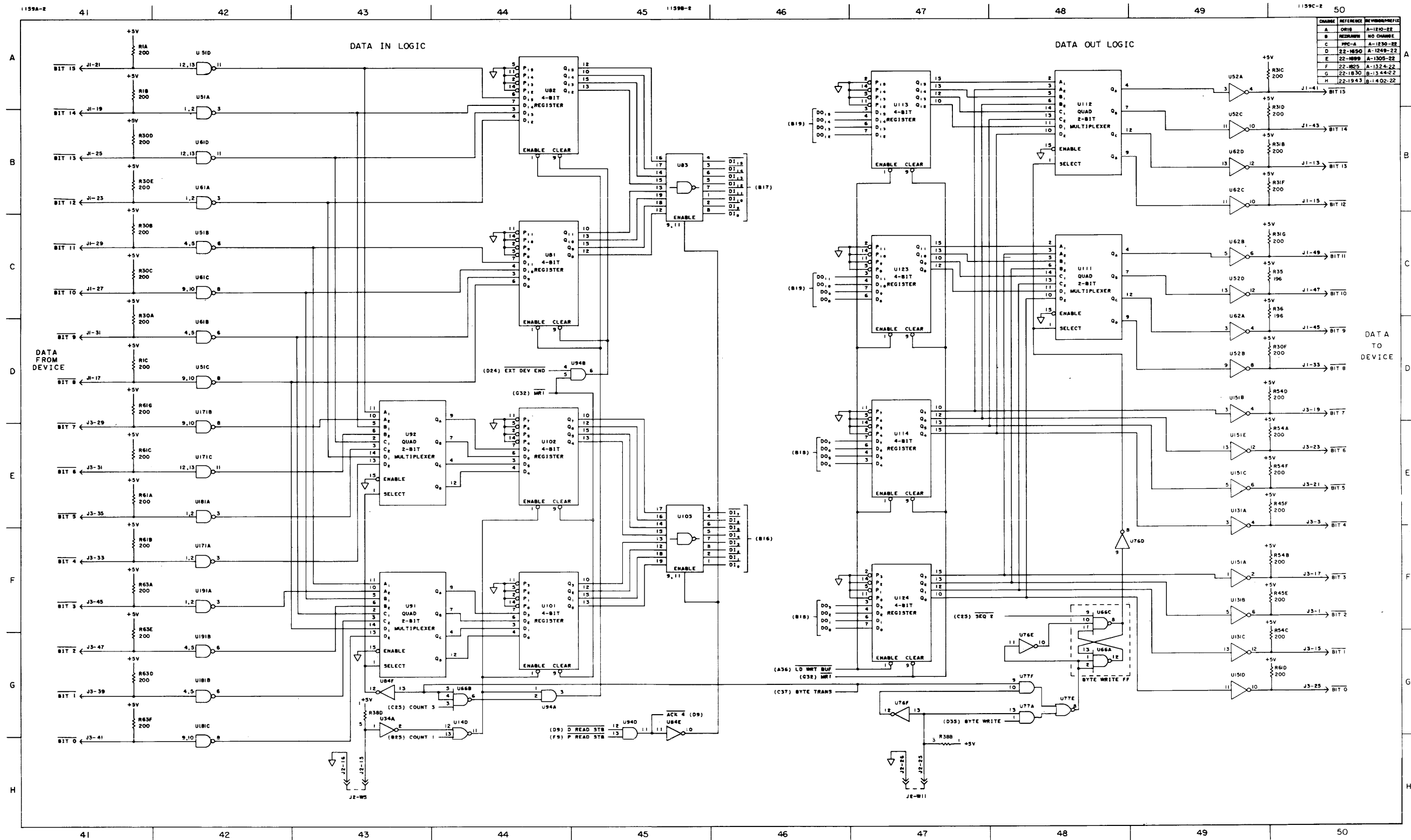


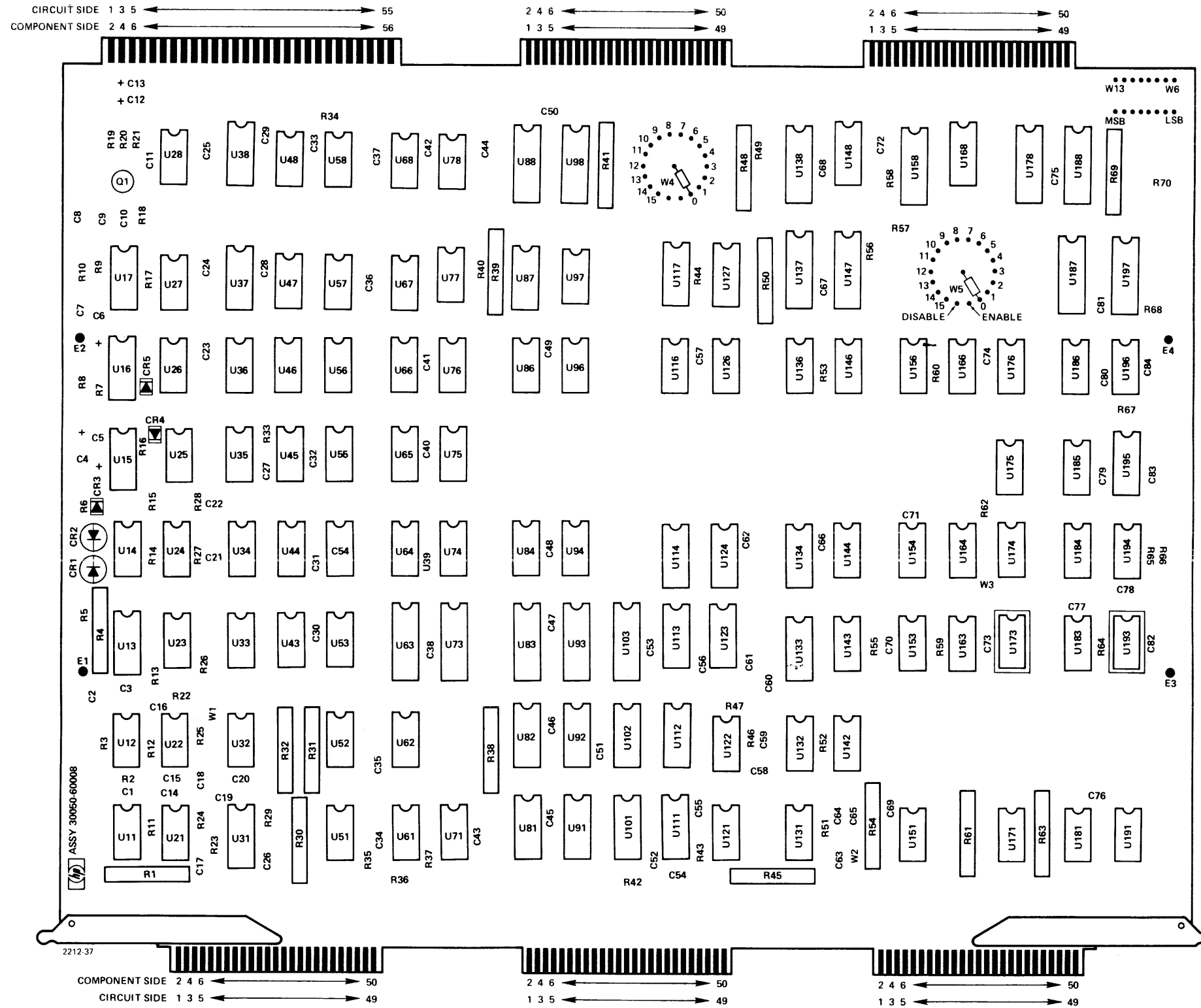
CHANGE	REFERENCE	REVISION/PRIOR
A	ORIG	A-1210-22
B	REVISION	NO CHANGE
C	R7C-4	A-1230-22
D	22-1050	A-1249-22
E	22-1099	A-1305-22
F	22-1825	A-1324-22
G	22-1830	B-1344-22
H	22-1943	B-1402-22

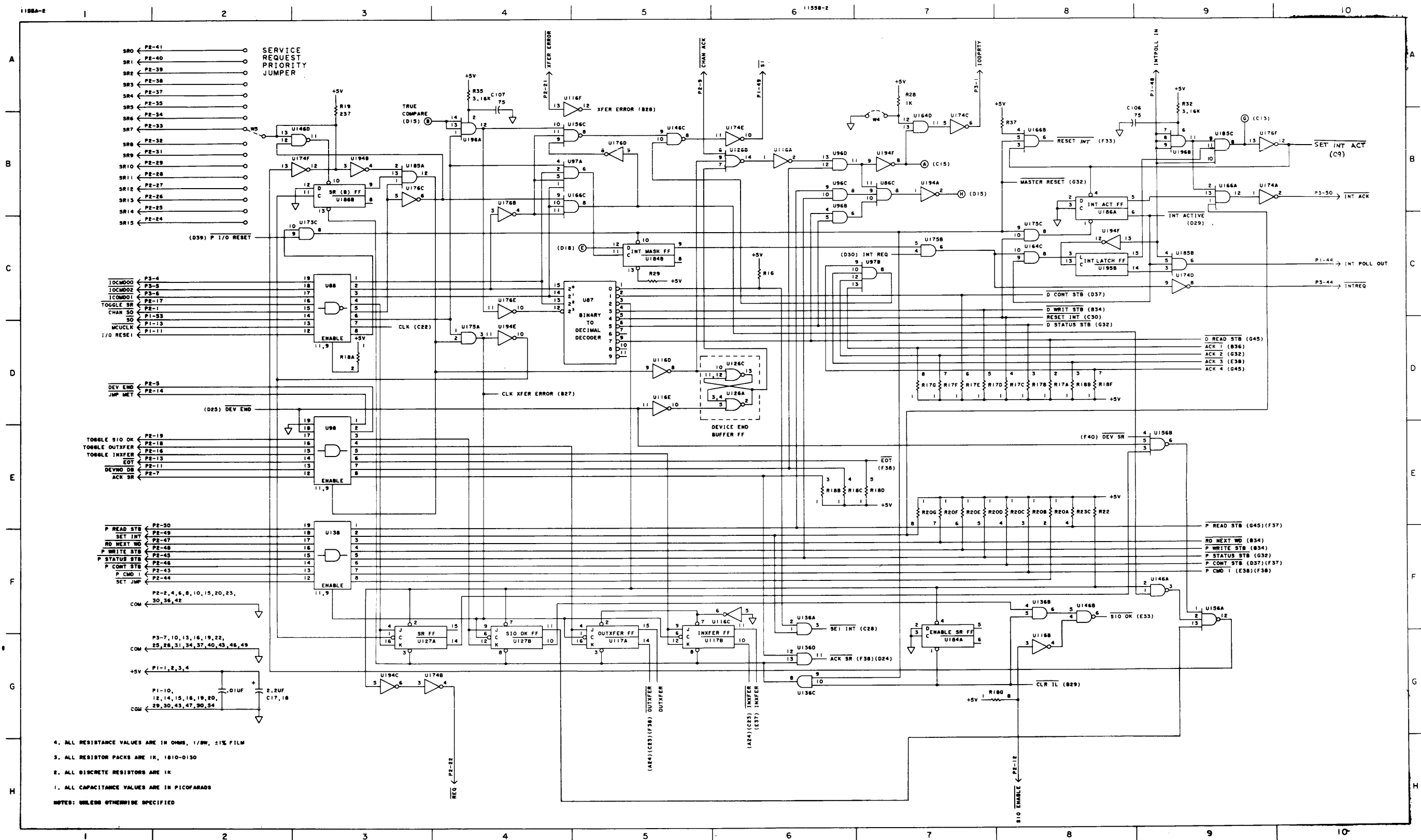


CHANGE	REFERENCE	DESCRIPTION
A	A-1240-22	NO CHANGE
B	A-1830-22	NO CHANGE
C	PPD-A A-1830-22	NO CHANGE
D	22-1880 A-1249-22	NO CHANGE
E	22-1899 A-1305-22	NO CHANGE
F	22-1825 A-1324-22	NO CHANGE
G	22-1844 B-1344-22	NO CHANGE
H	22-1943 B-1402-22	NO CHANGE

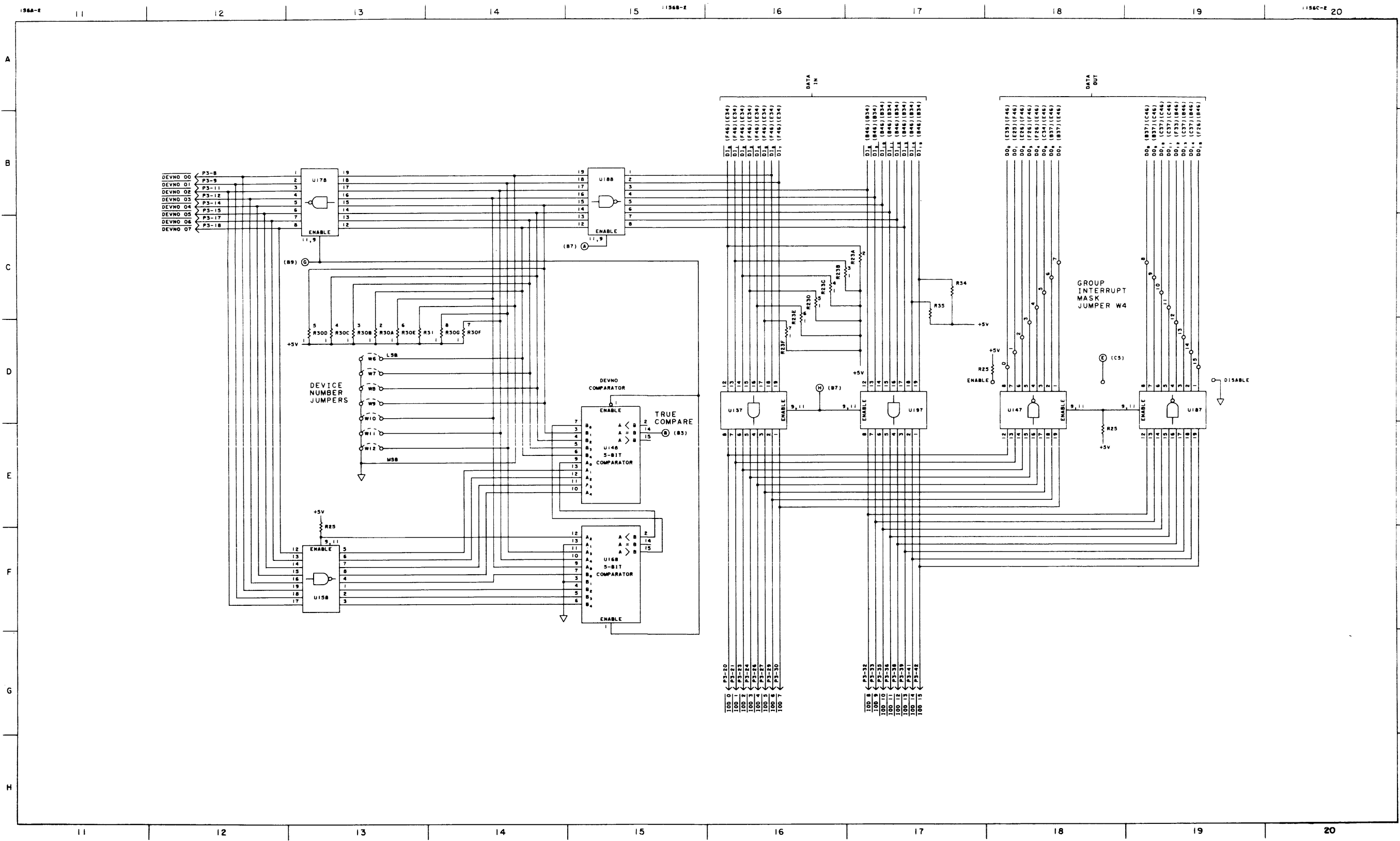


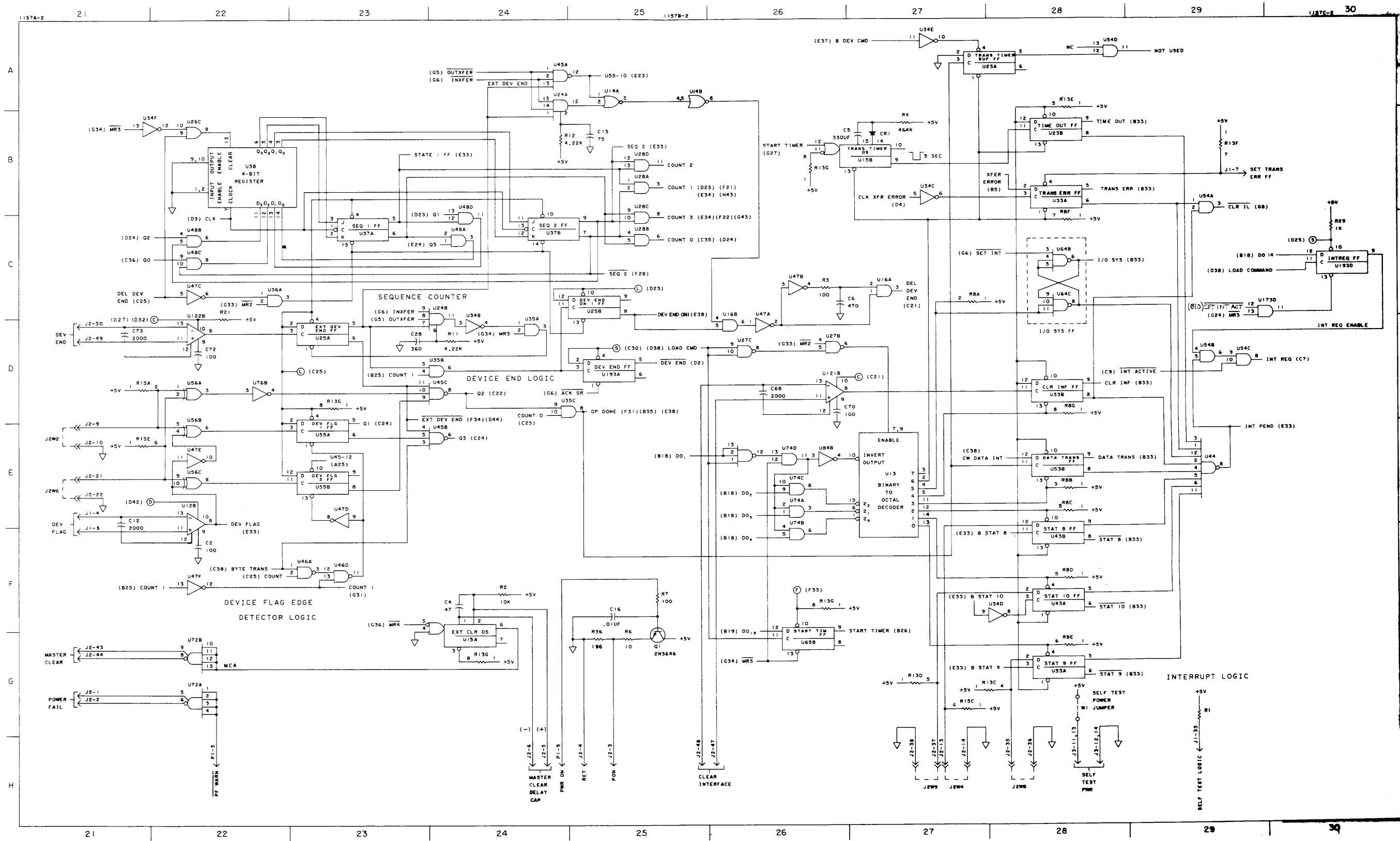


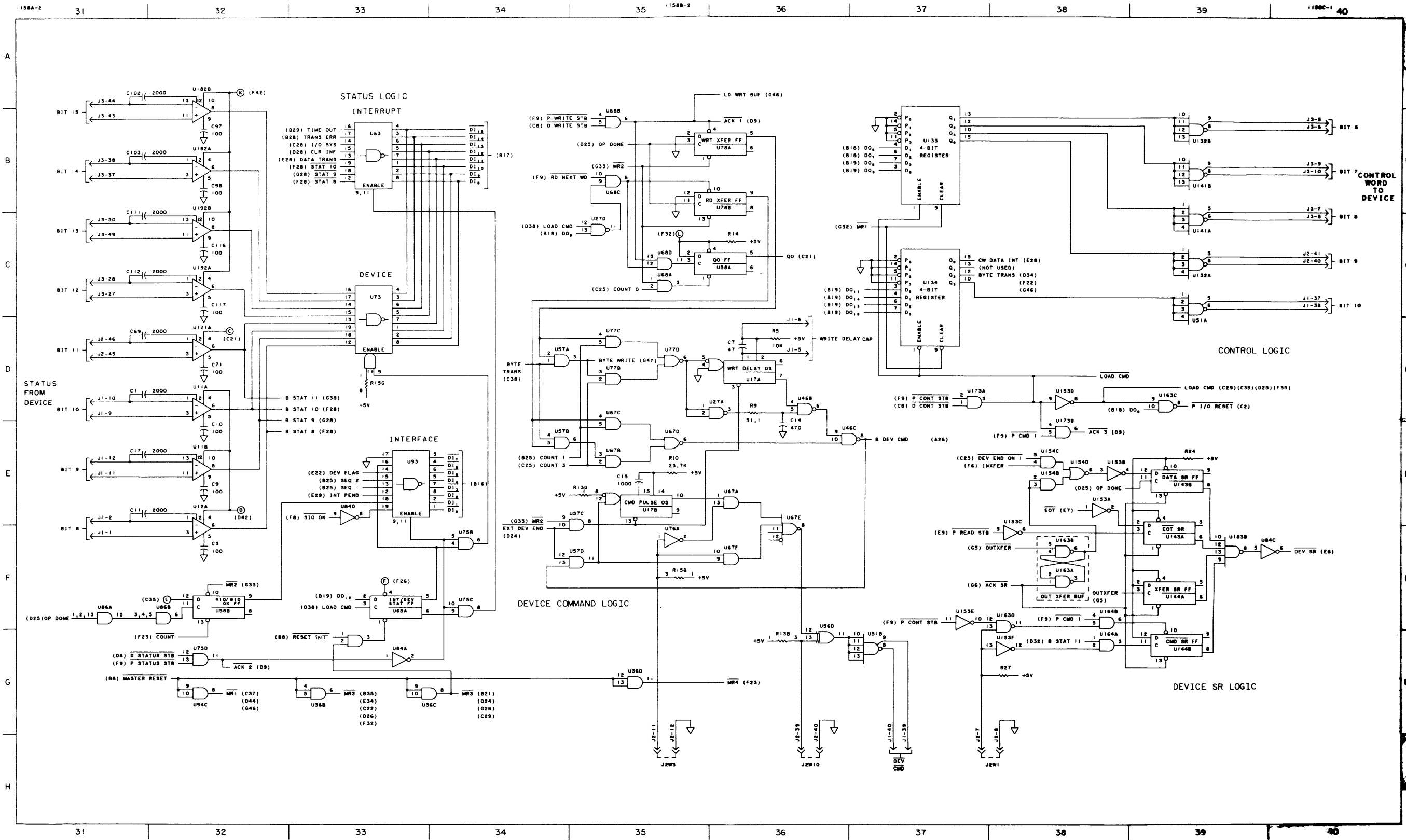


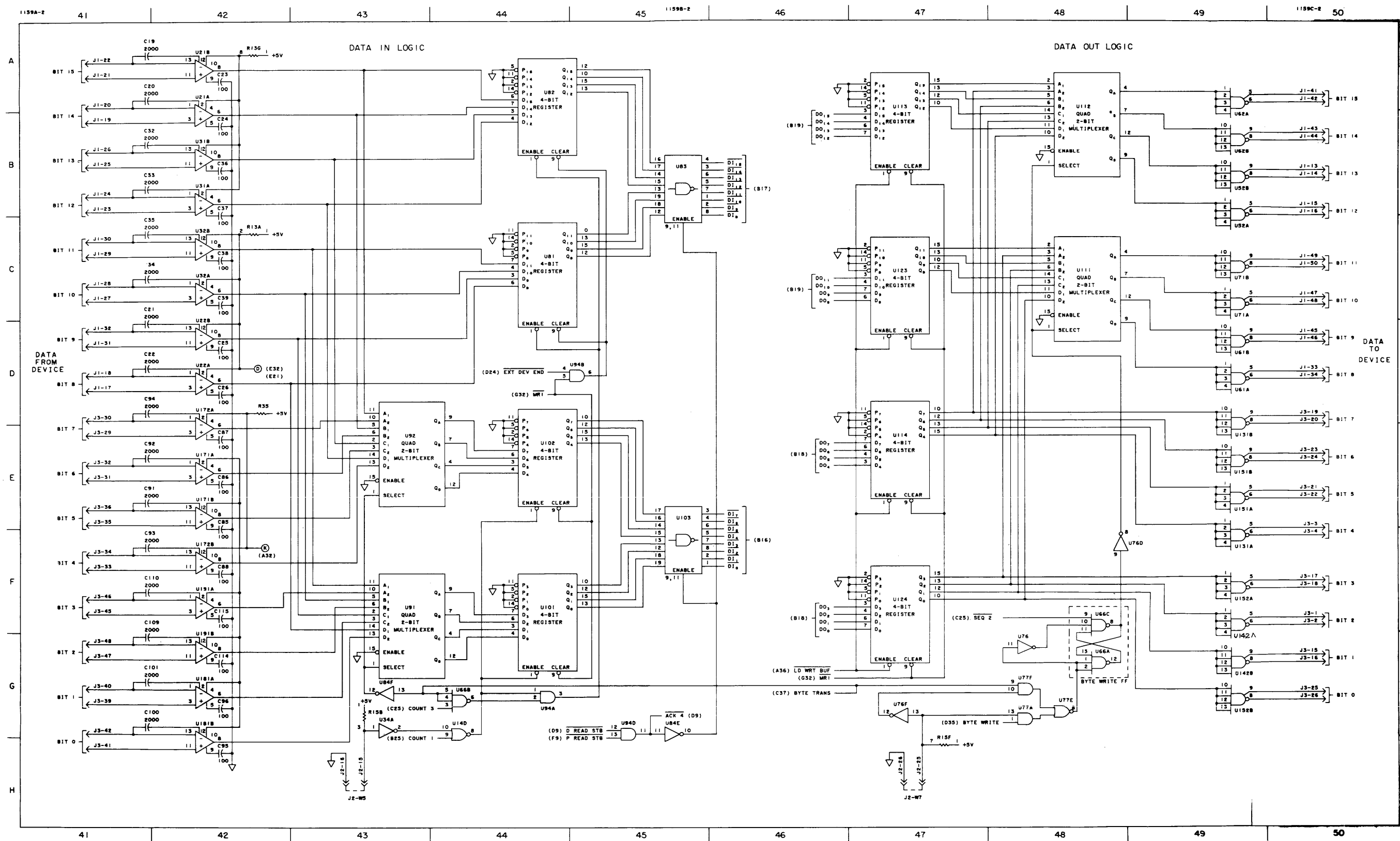


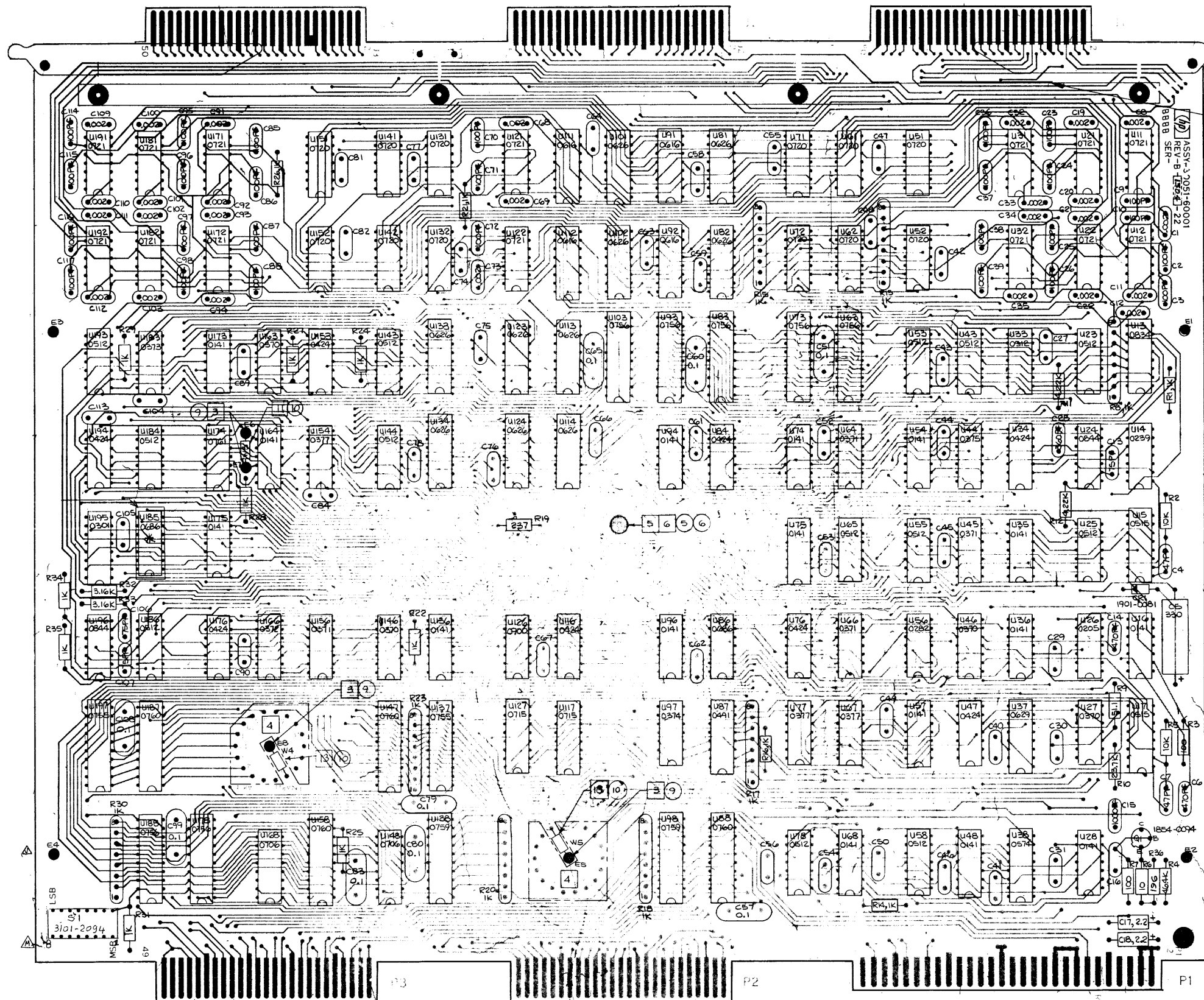






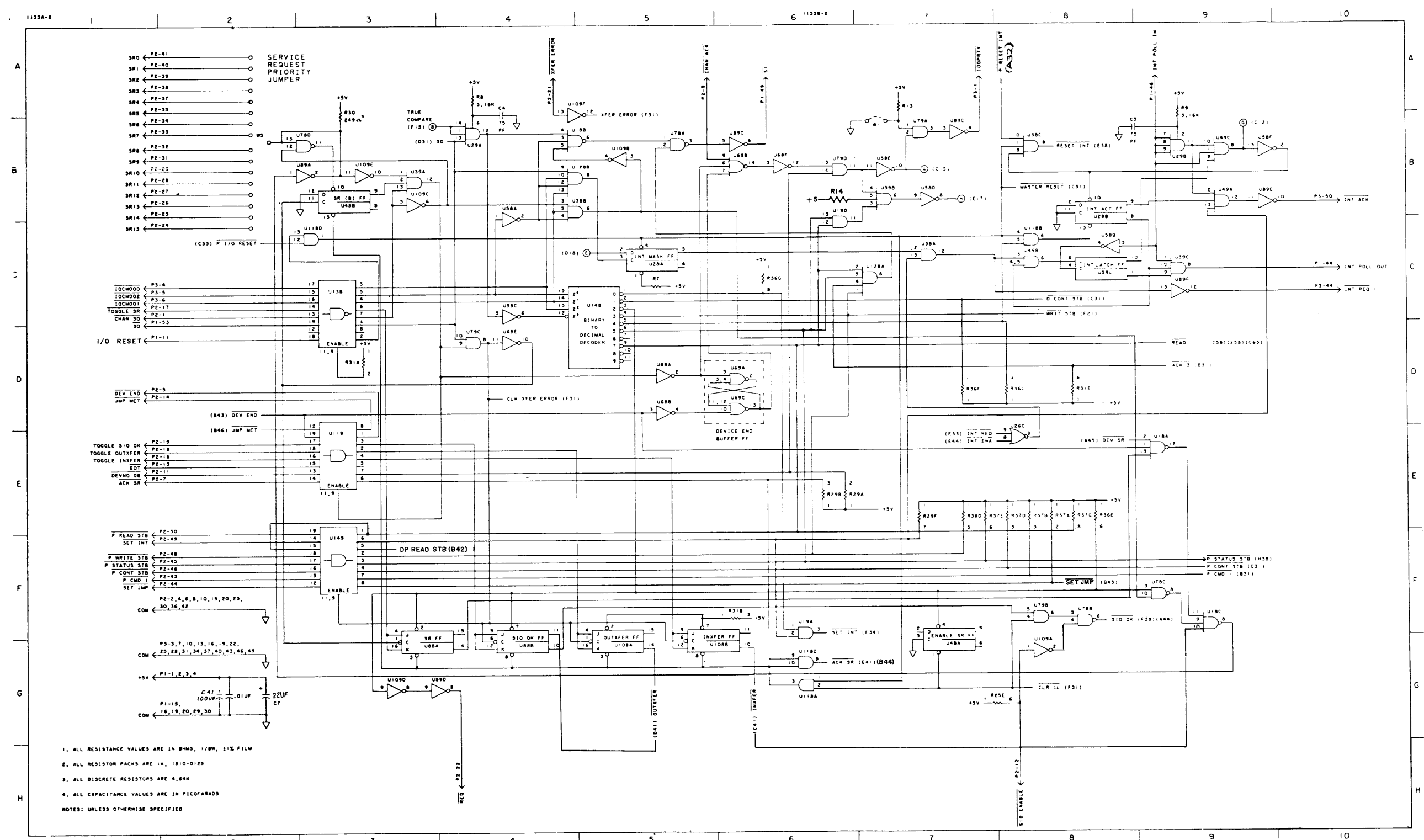




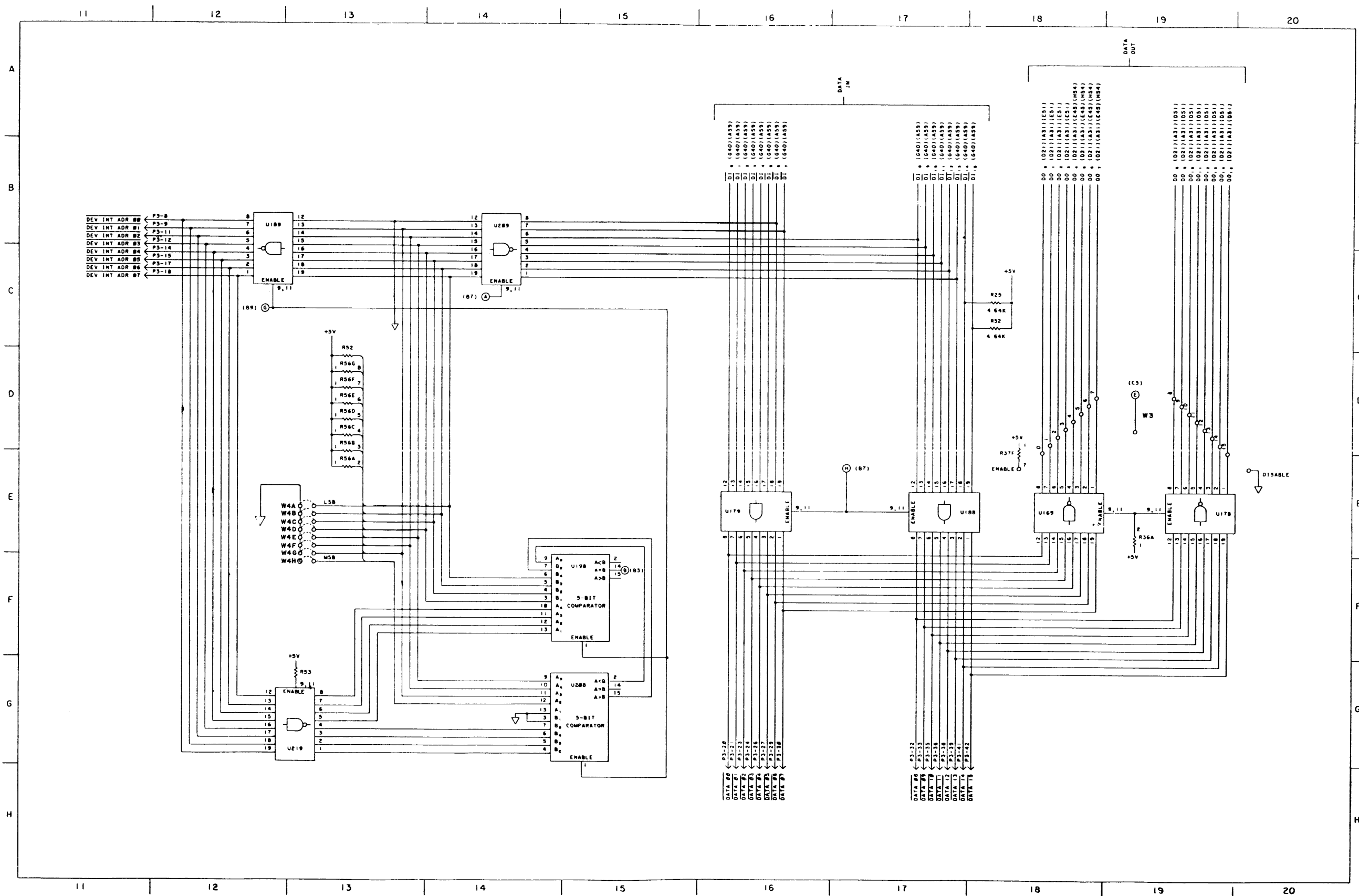


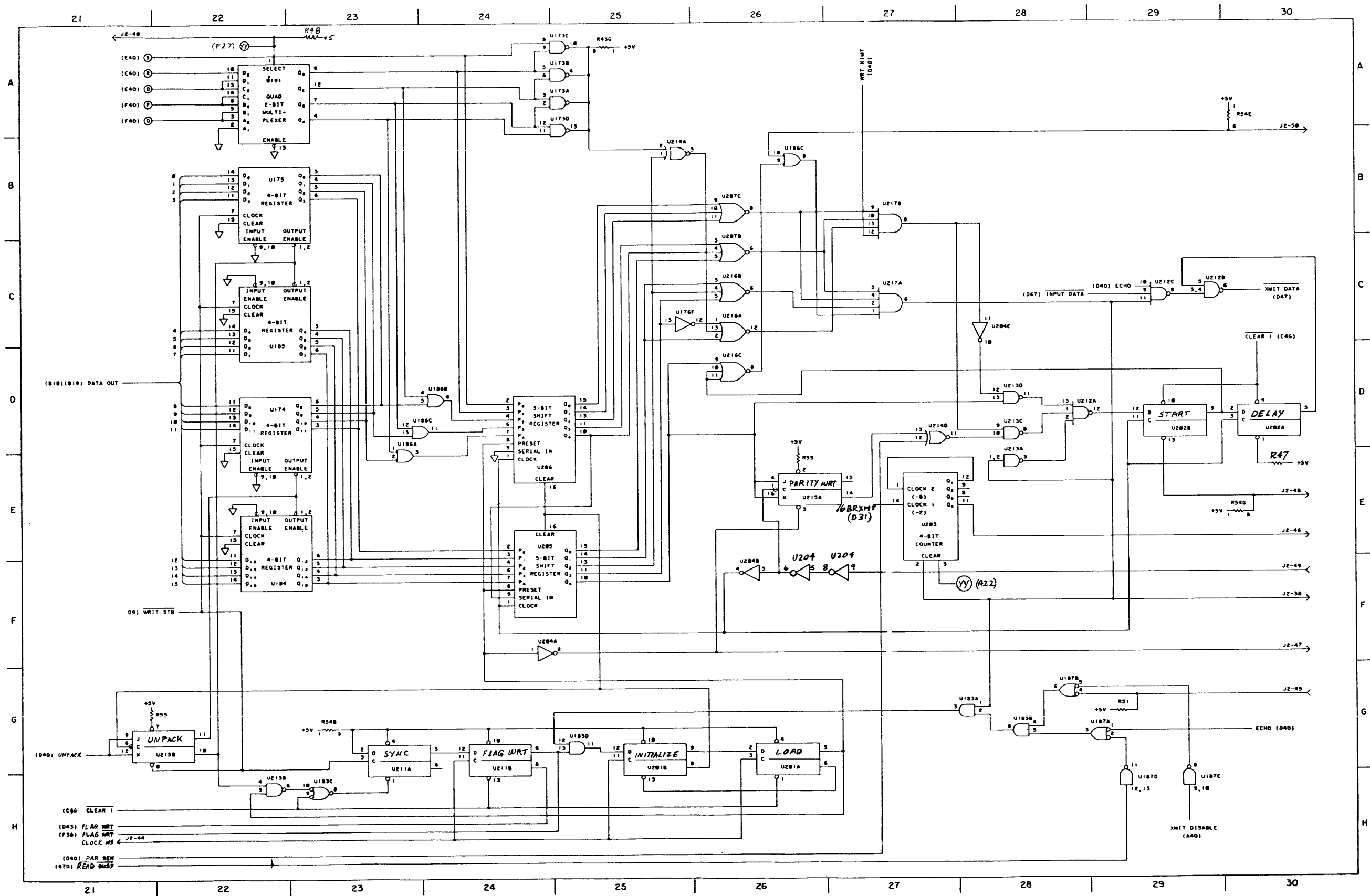
UNIV INTFC (DIFF)  
30051-60001

NOTES: UNLESS OTHERWISE SPECIFIED  
 1. RESISTANCE VALUES ARE IN OHMS  $\pm 1\%$  1/4W  
 CAPACITANCE VALUES ARE IN MICROFARADS  
 CAPACITORS ARE .01 CER DISC.  
 IC'S ARE 1820-

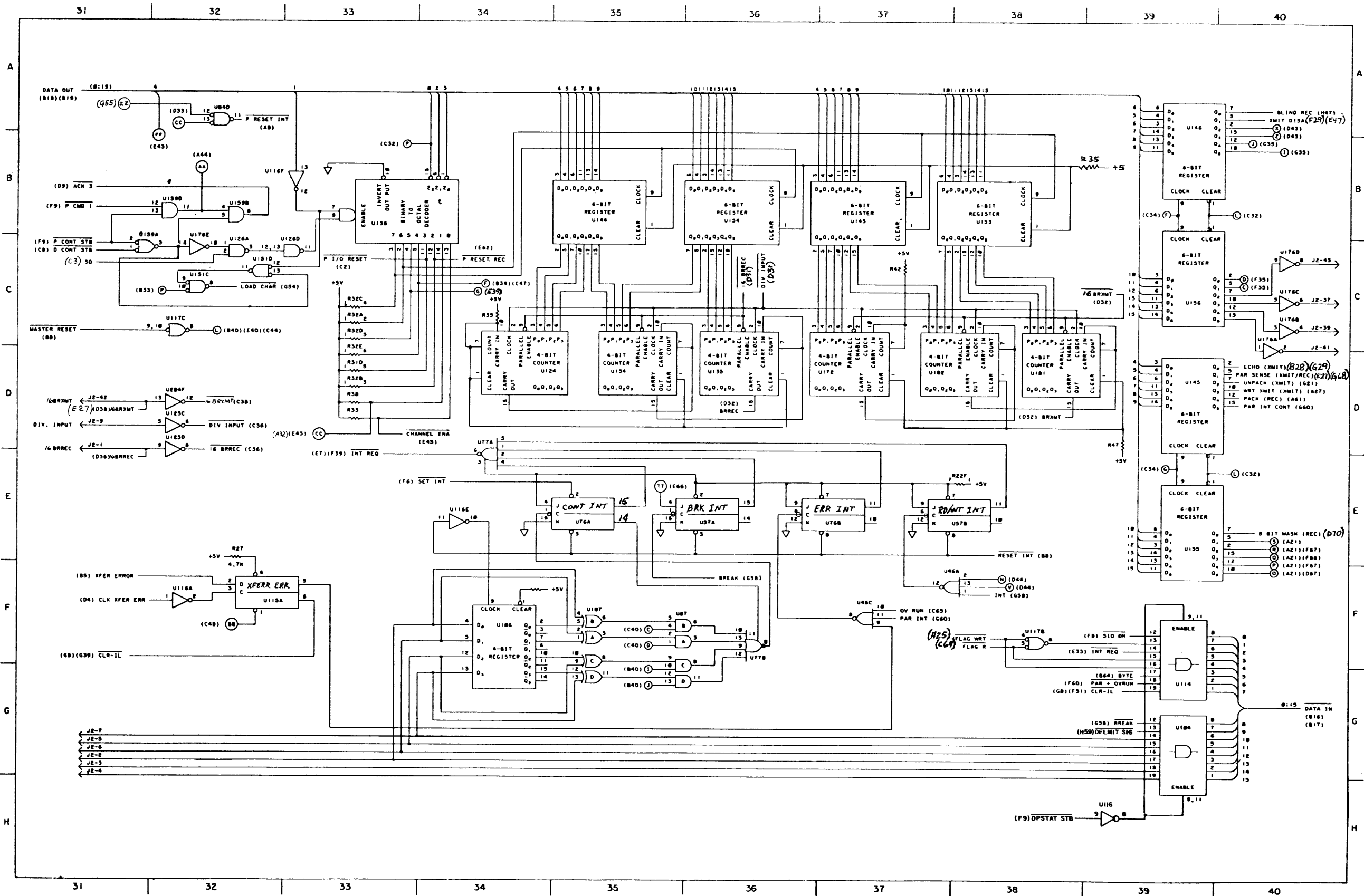


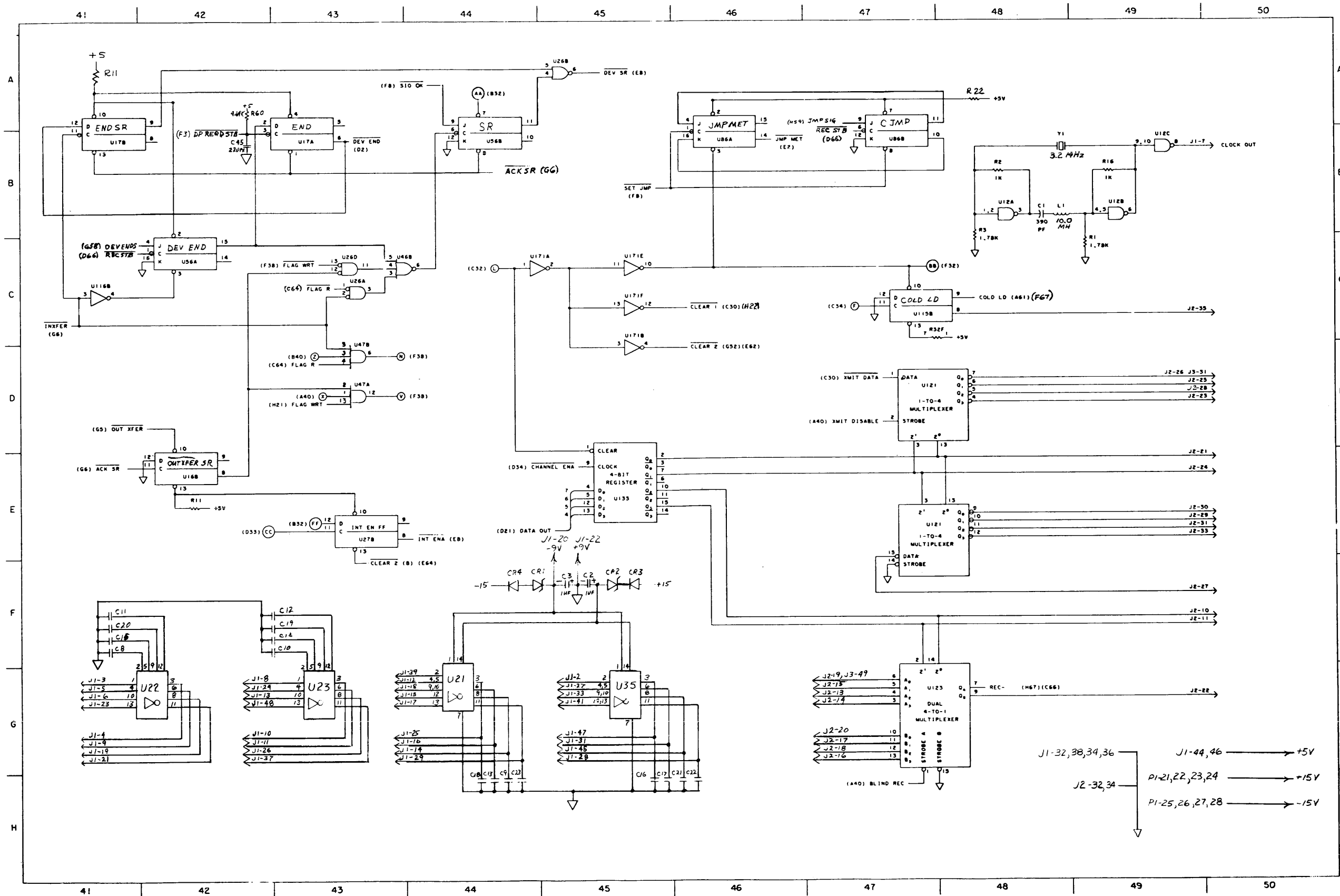
1. ALL RESISTANCE VALUES ARE IN OHMS, 1/8W, 5% FILM
  2. ALL RESISTOR PACKS ARE 1K, 1010-0120
  3. ALL DISCRETE RESISTORS ARE 4.64K
  4. ALL CAPACITANCE VALUES ARE IN PICOFARADS
- NOTES: UNLESS OTHERWISE SPECIFIED

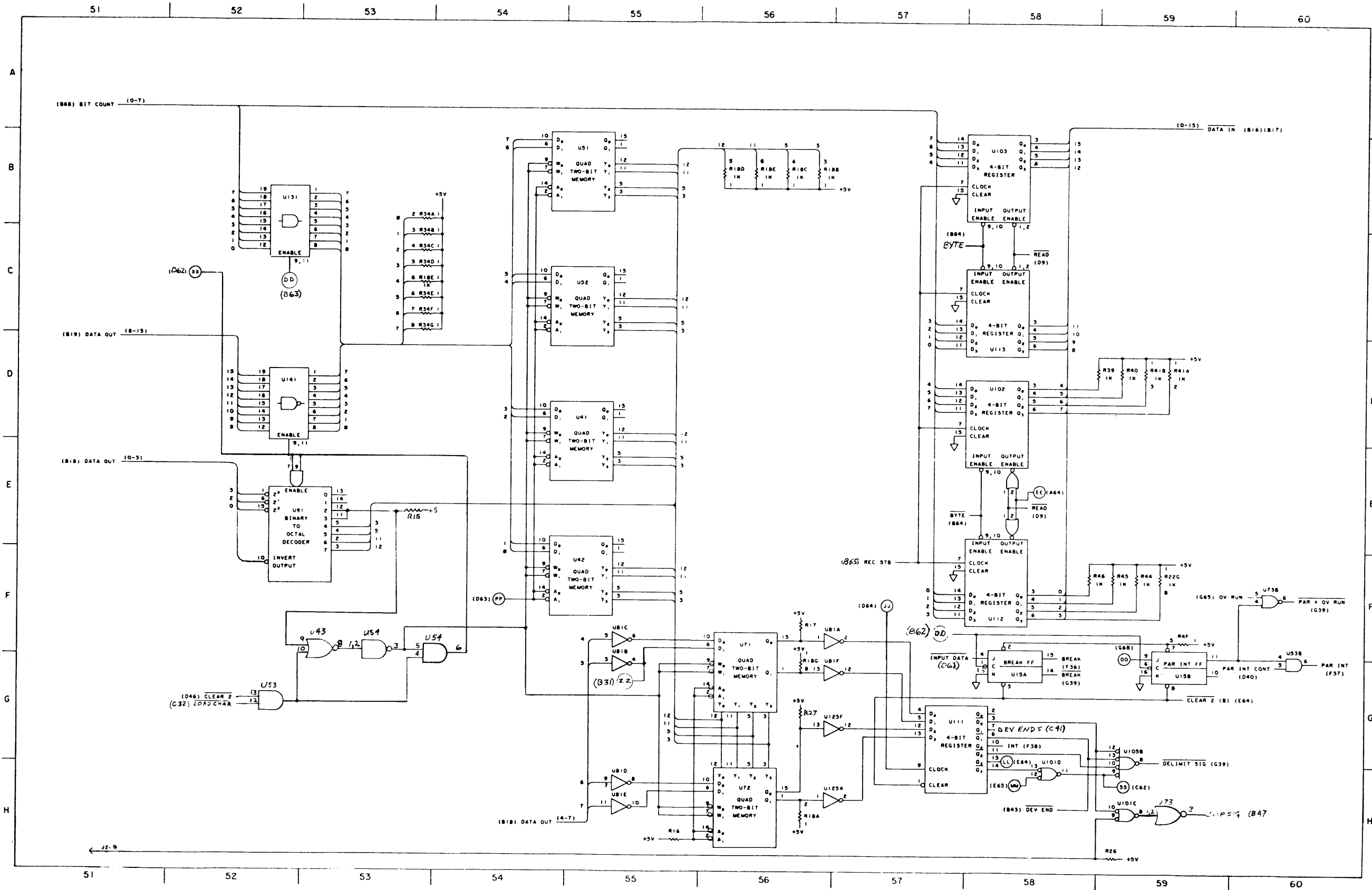


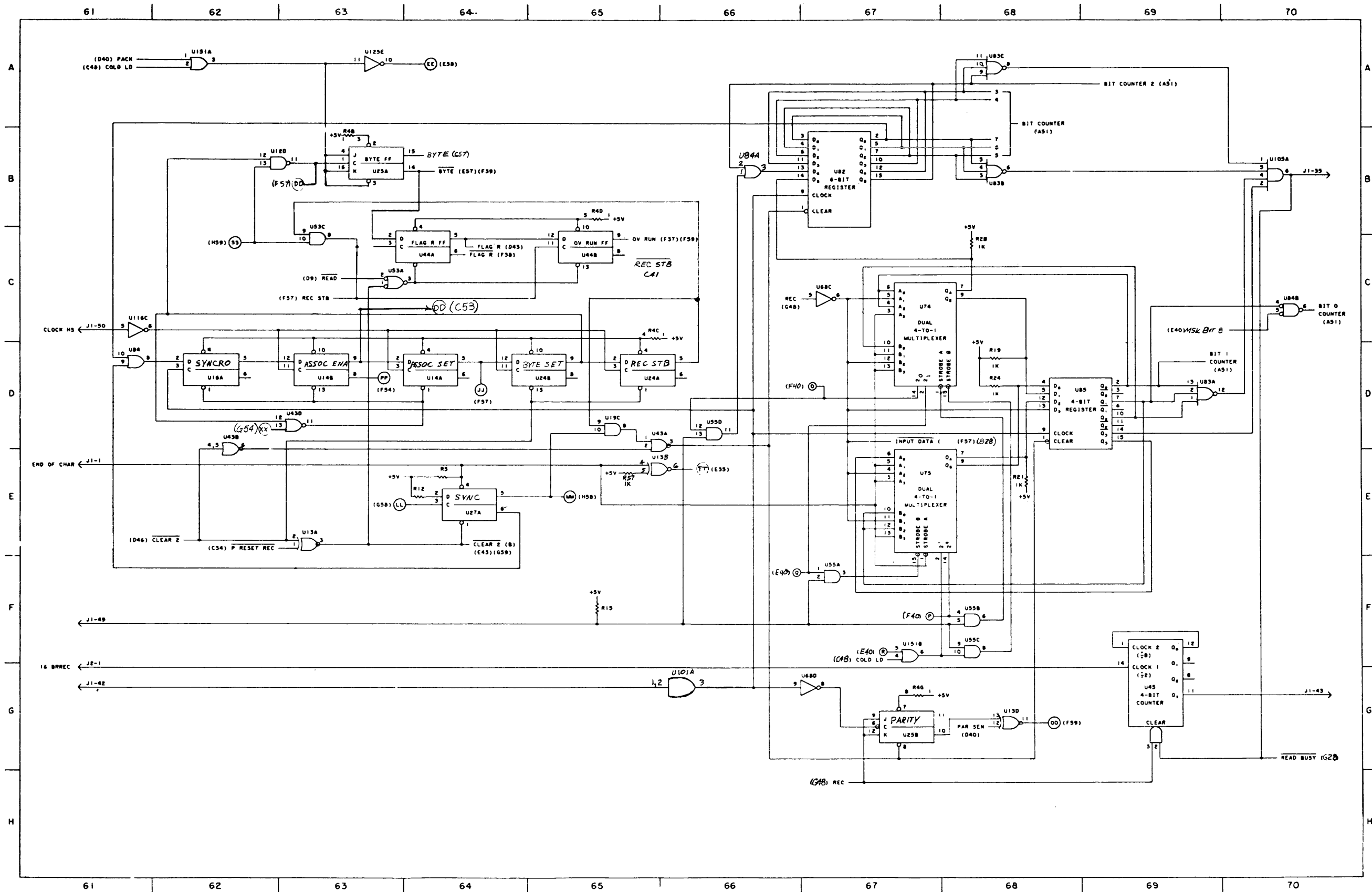




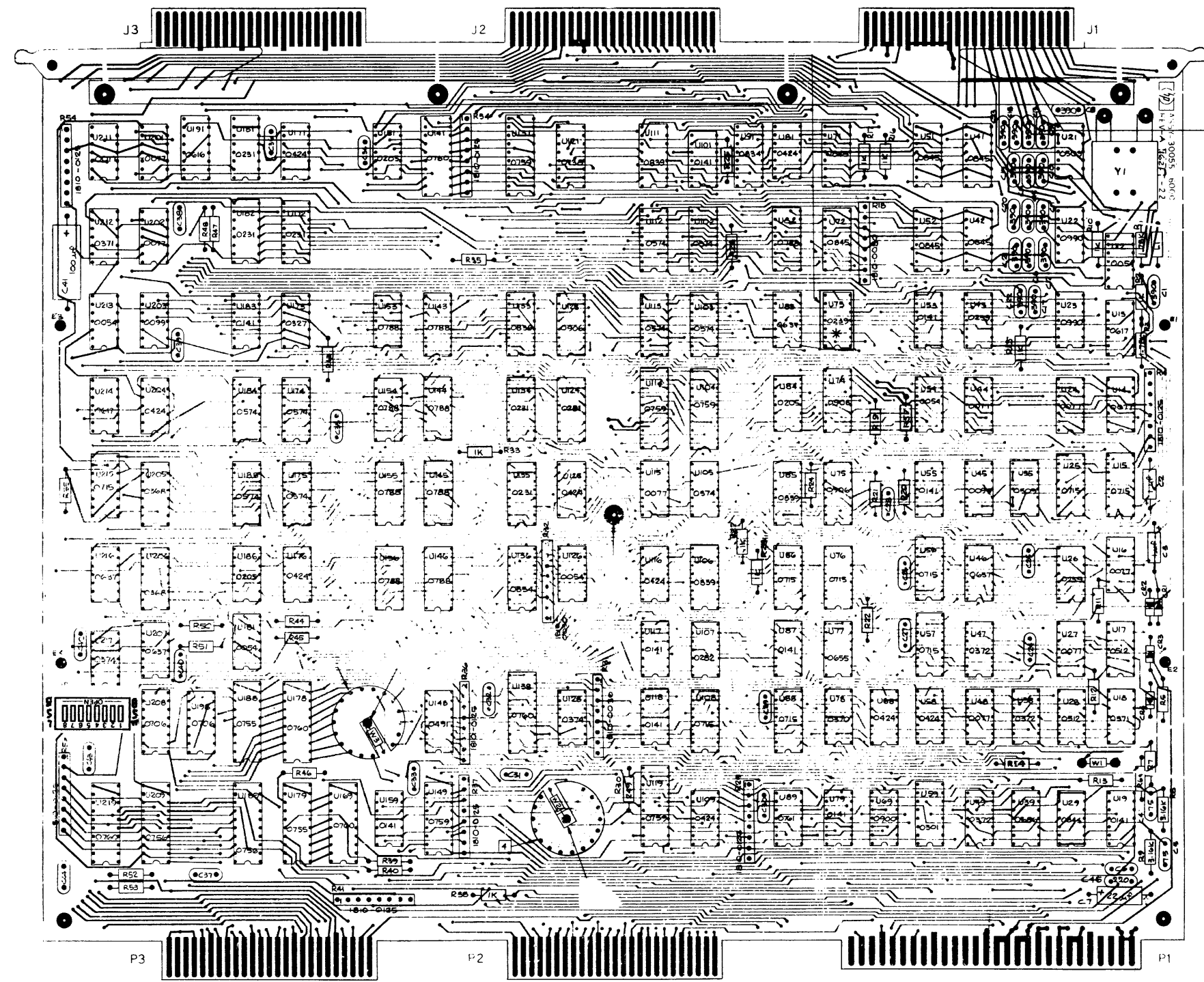








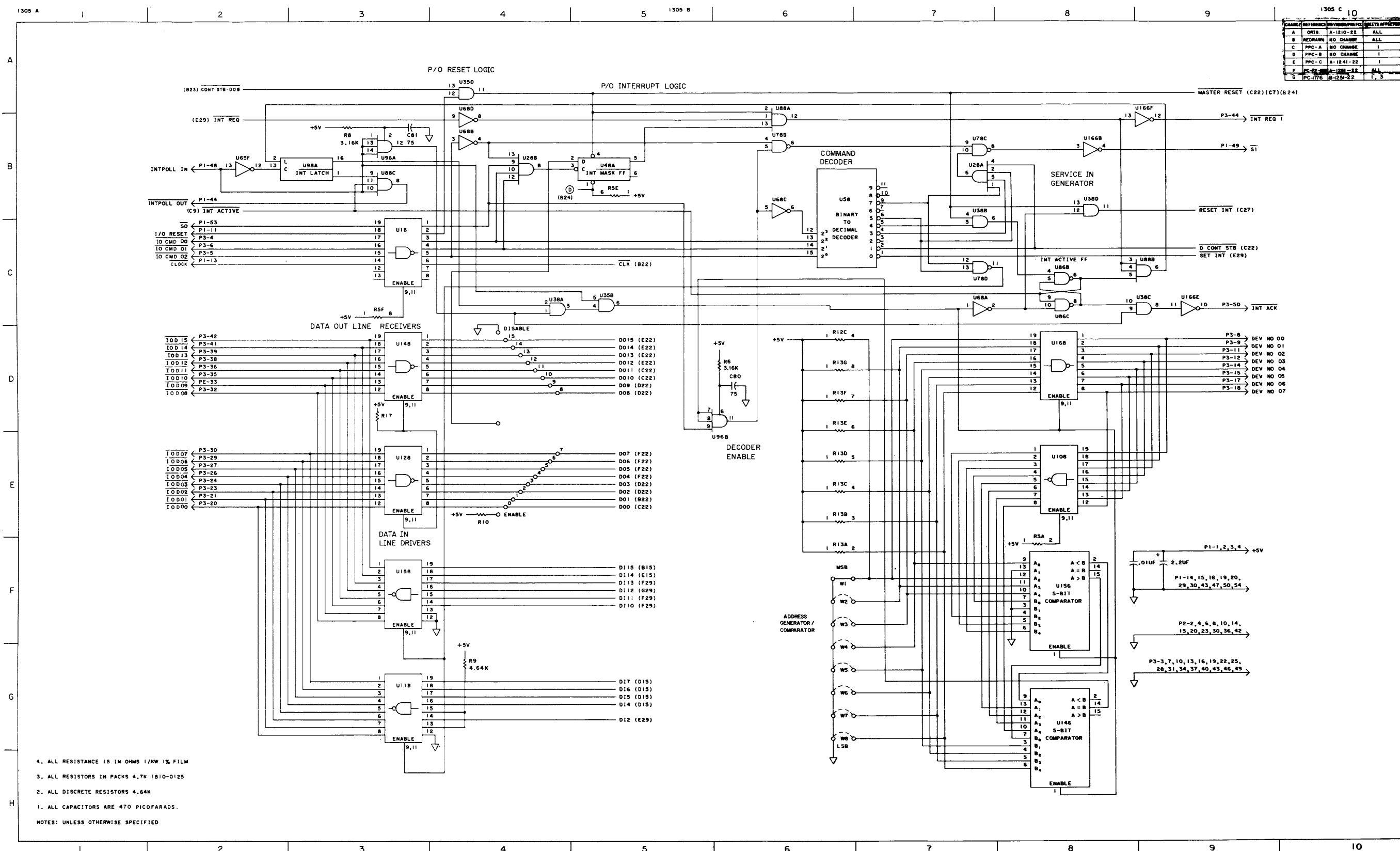
A	AS 155 VLS	155
B	PCB 31128, PCB 31129, PCB 31130, PCB 31131, PCB 31132, PCB 31133, PCB 31134, PCB 31135, PCB 31136, PCB 31137, PCB 31138, PCB 31139, PCB 31140, PCB 31141, PCB 31142, PCB 31143, PCB 31144, PCB 31145, PCB 31146, PCB 31147, PCB 31148, PCB 31149, PCB 31150, PCB 31151, PCB 31152, PCB 31153, PCB 31154, PCB 31155, PCB 31156, PCB 31157, PCB 31158, PCB 31159, PCB 31160, PCB 31161, PCB 31162, PCB 31163, PCB 31164, PCB 31165, PCB 31166, PCB 31167, PCB 31168, PCB 31169, PCB 31170, PCB 31171, PCB 31172, PCB 31173, PCB 31174, PCB 31175, PCB 31176, PCB 31177, PCB 31178, PCB 31179, PCB 31180, PCB 31181, PCB 31182, PCB 31183, PCB 31184, PCB 31185, PCB 31186, PCB 31187, PCB 31188, PCB 31189, PCB 31190, PCB 31191, PCB 31192, PCB 31193, PCB 31194, PCB 31195, PCB 31196, PCB 31197, PCB 31198, PCB 31199, PCB 31200	155
C	AS 155 VLS	155
D	AS 155 VLS	155



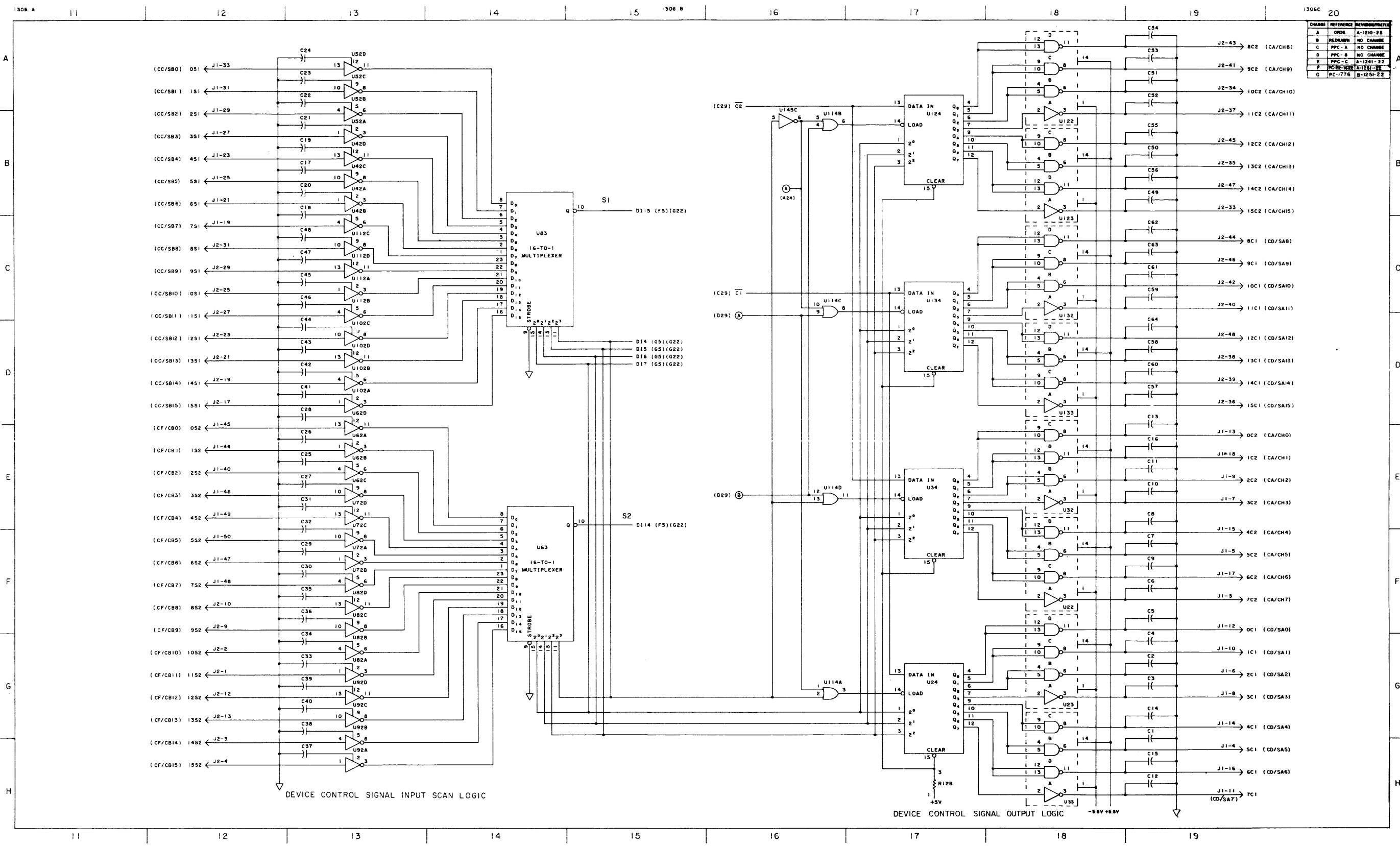
10009-5000R  
 5763 2/17 305 3MLS

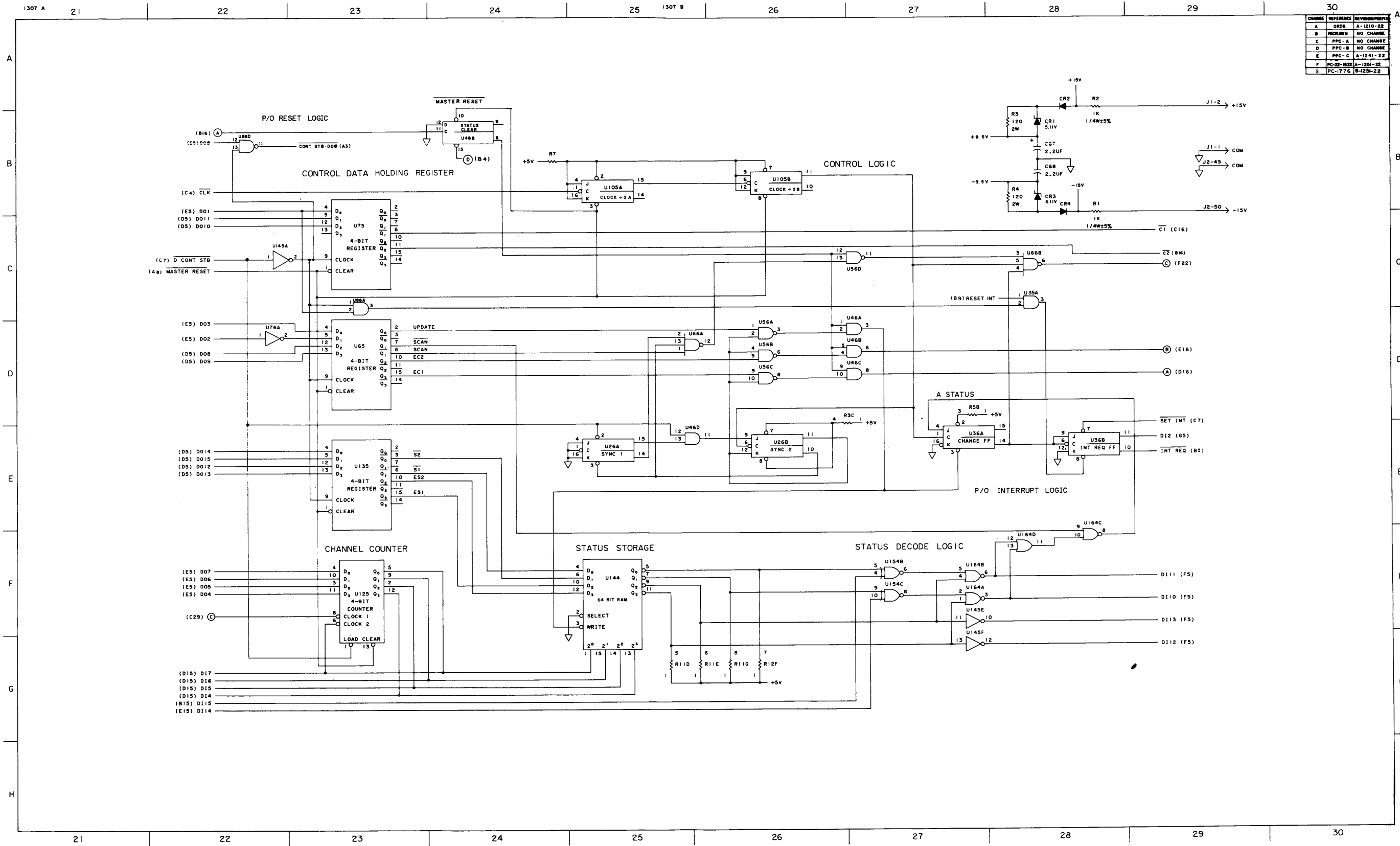
1. UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE IN OHMS  
 ALL RESISTORS 4.5% 1/8 W. 1/2 HF  
 ALL CAPACITORS IN PC  
 ALL CAPACITORS 0.1%  
 ALL DIODES 1N91-0040  
 ALL IC'S 1520-

CHANGE REFERENCE	DESCRIPTION	DATE	BY	APPROVED
A	ORIG	A-1210-22	ALL	
B	REWORK	NO CHANGE	ALL	
C	PPC-A	NO CHANGE	1	
D	PPC-B	NO CHANGE	1	
E	PPC-C	A-1241-22	1	
F	PC-22	A-1251-22	ALL	
G	PC-776	B-1251-22	1, 3	

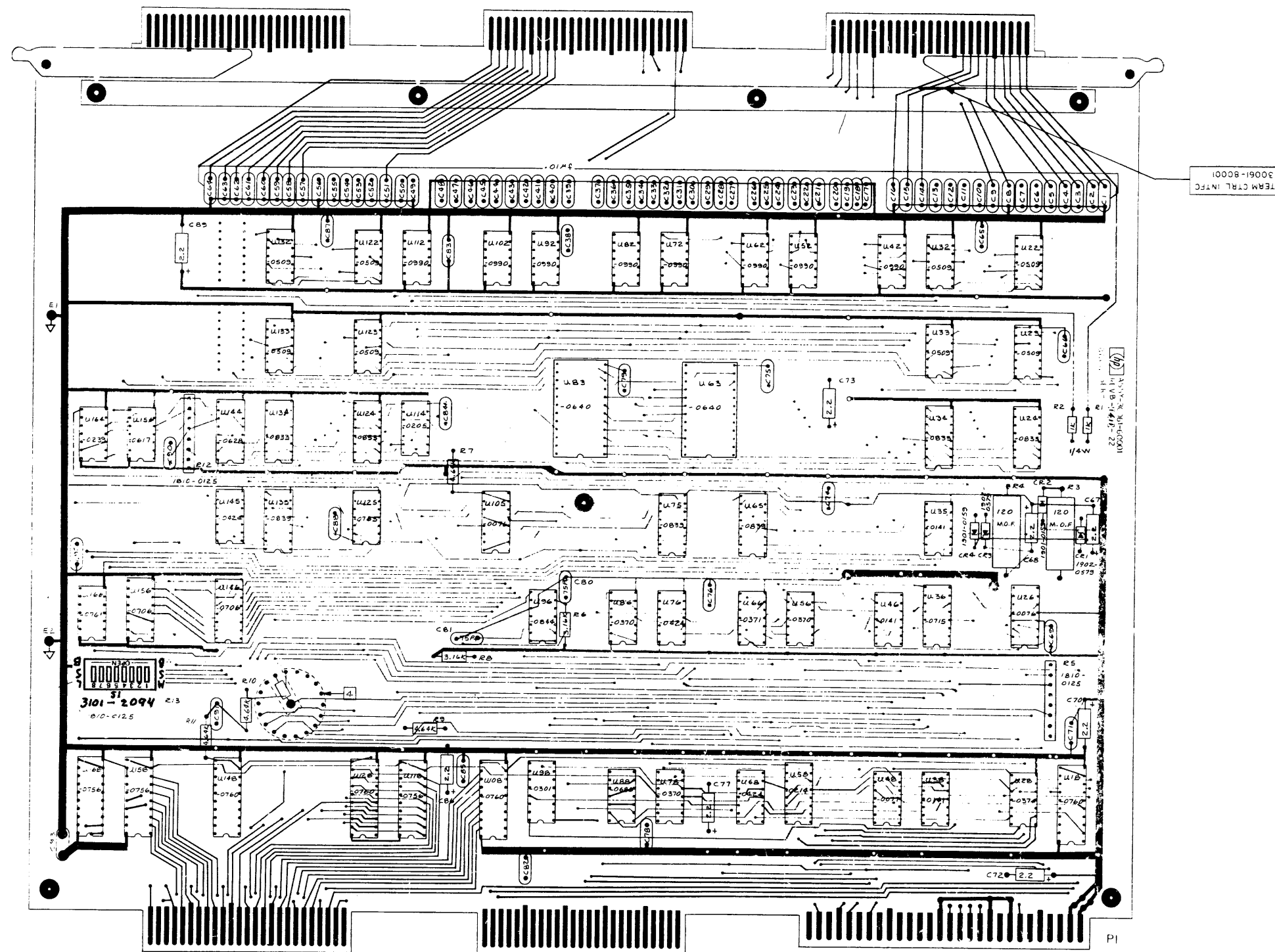


4. ALL RESISTANCE IS IN OHMS 1/KW 1% FILM  
 3. ALL RESISTORS IN PACKS 4.7K 1810-0125  
 2. ALL DISCRETE RESISTORS 4.64K  
 1. ALL CAPACITORS ARE 470 PICOFARADS.
- NOTES: UNLESS OTHERWISE SPECIFIED



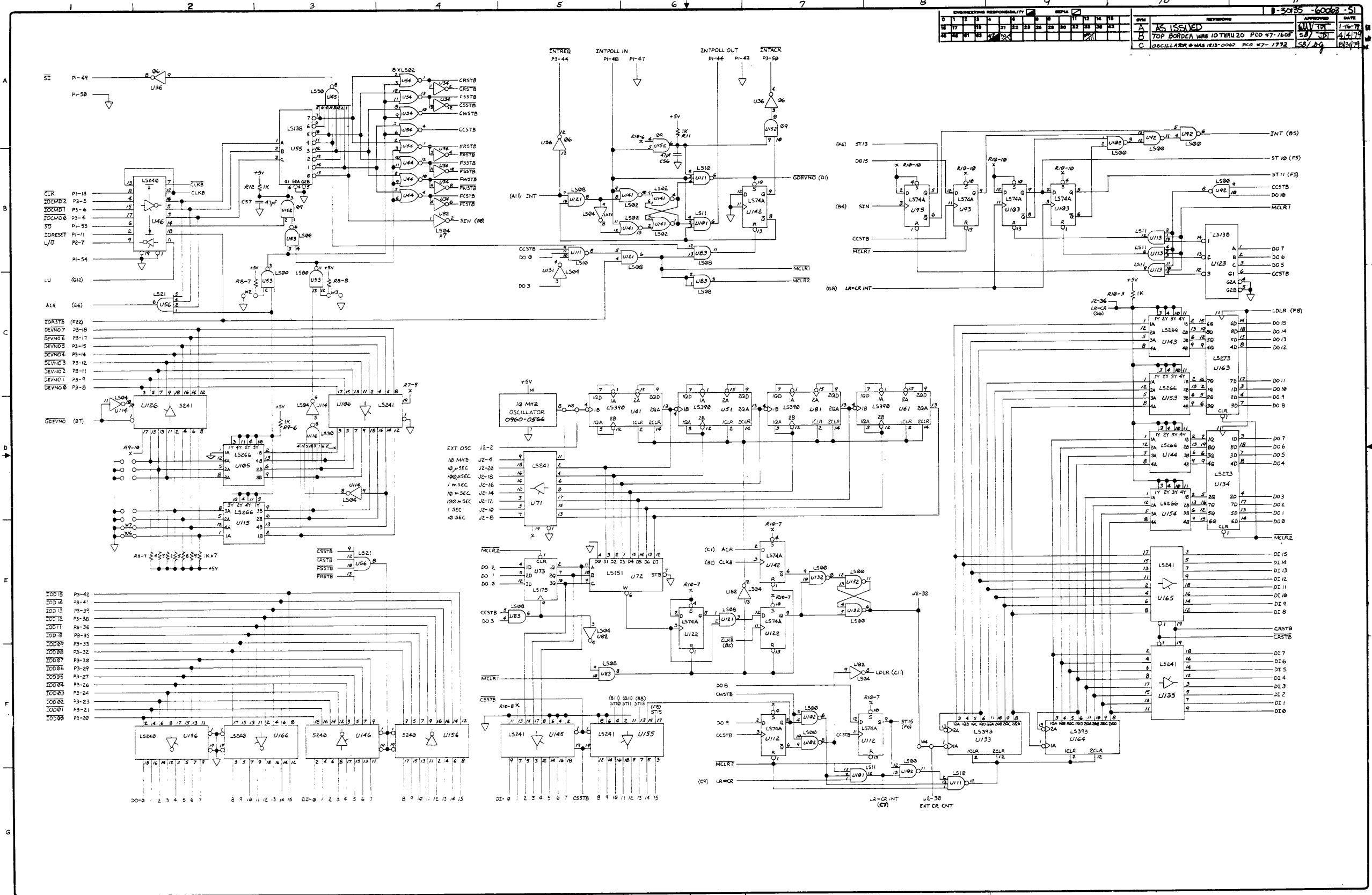






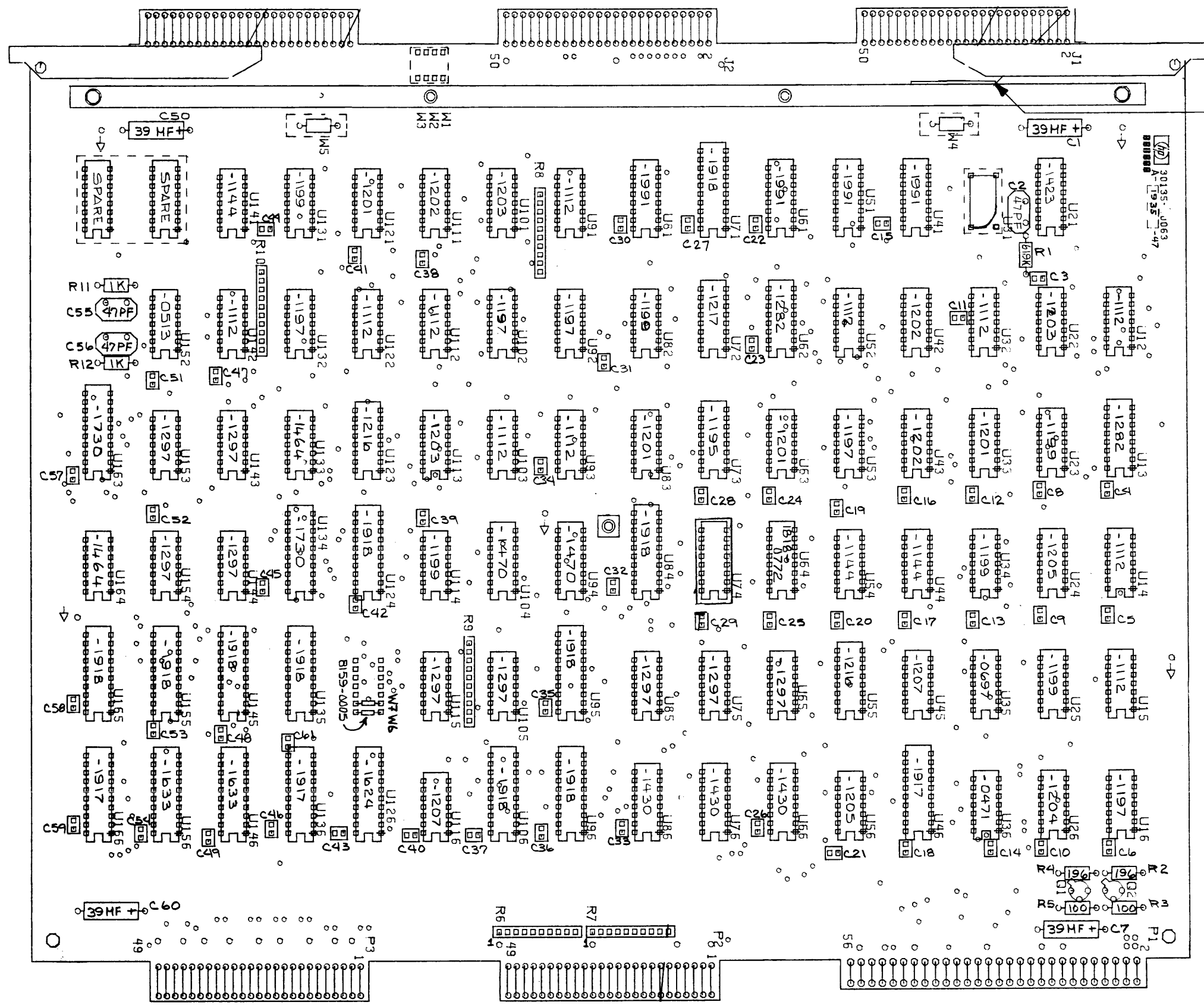
REV	REVISION	APPROVED	DATE
A	AS ISSUED		
B	FOR TESTING, POWER, MEET TEST		1-17-74
C	DATE CODE WAS 190122 PER PC32-2187		7-23-74
D	FOR TESTING, ADD YIELD, 100 AND		1-1-75
E	WORKS		1/18/75

NOTES:  
 1. UNLESS OTHERWISE NOTED:  
 ALL RESISTANCE IN OHMS 1/2W  
 ALL RESISTORS 1/8W  
 ALL CAPACITANCE IN MICRO-FARADS  
 ALL CAPACITORS 50VDC CERAMIC DISC  
 ALL IC ARE 1820-

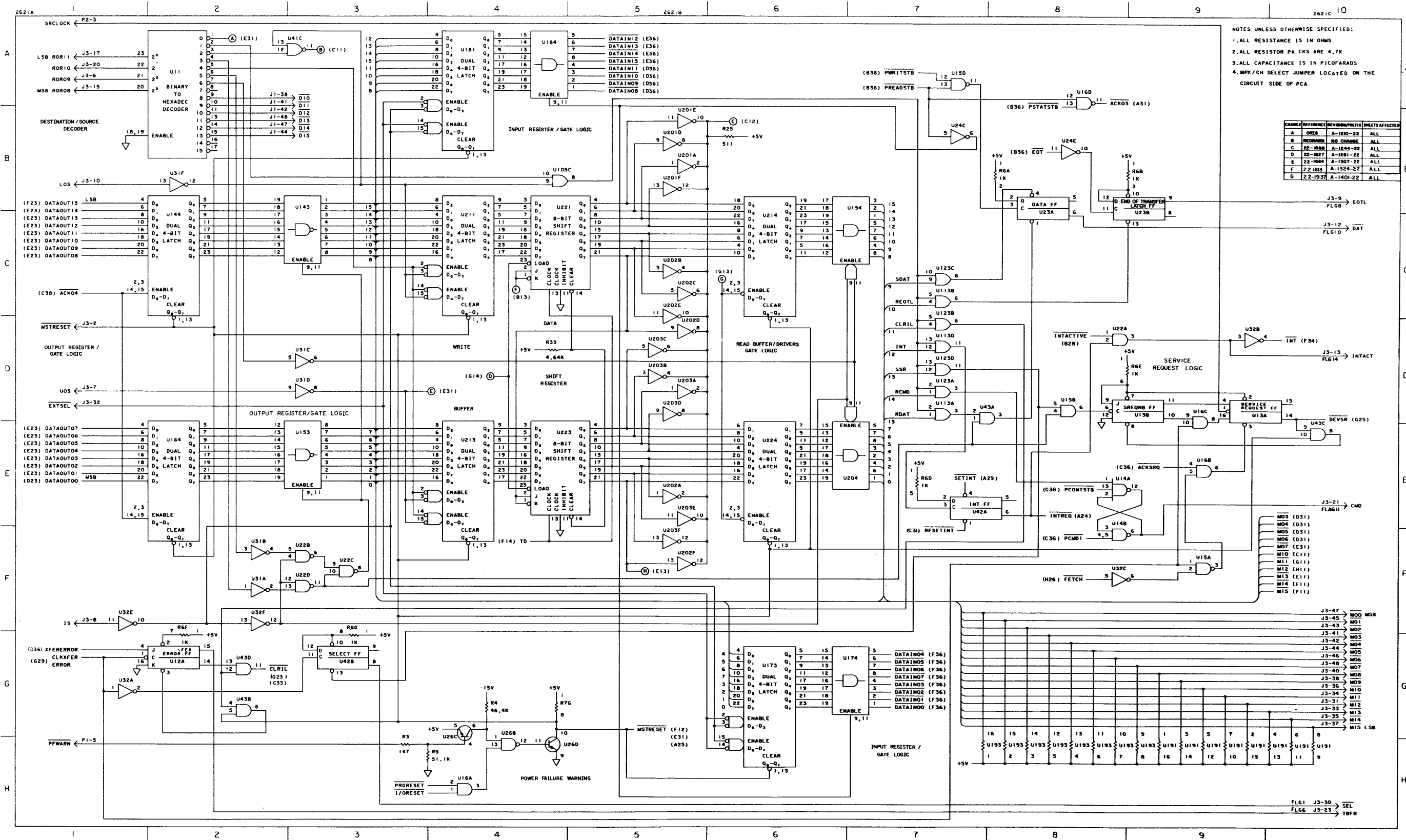




30135-60063

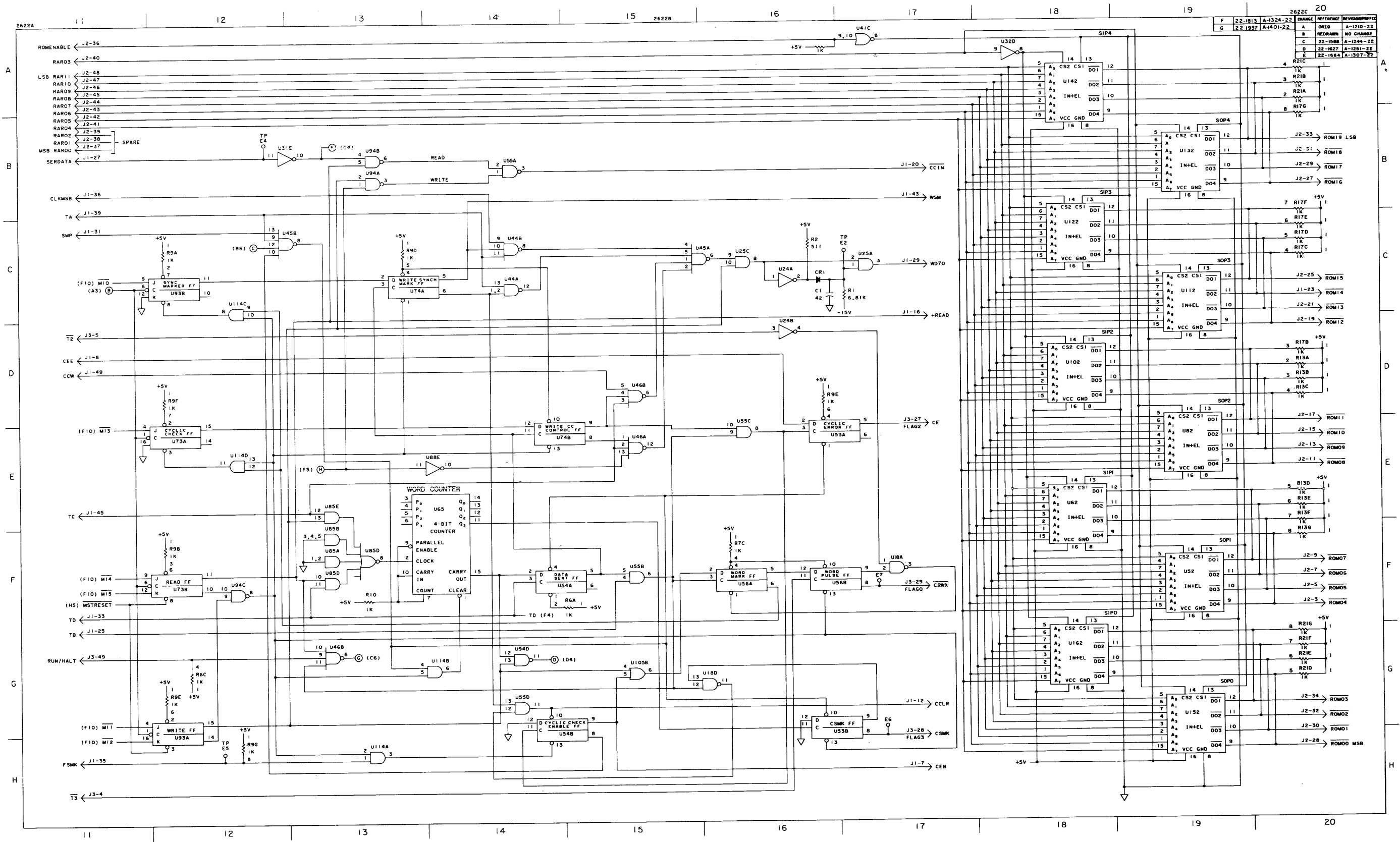


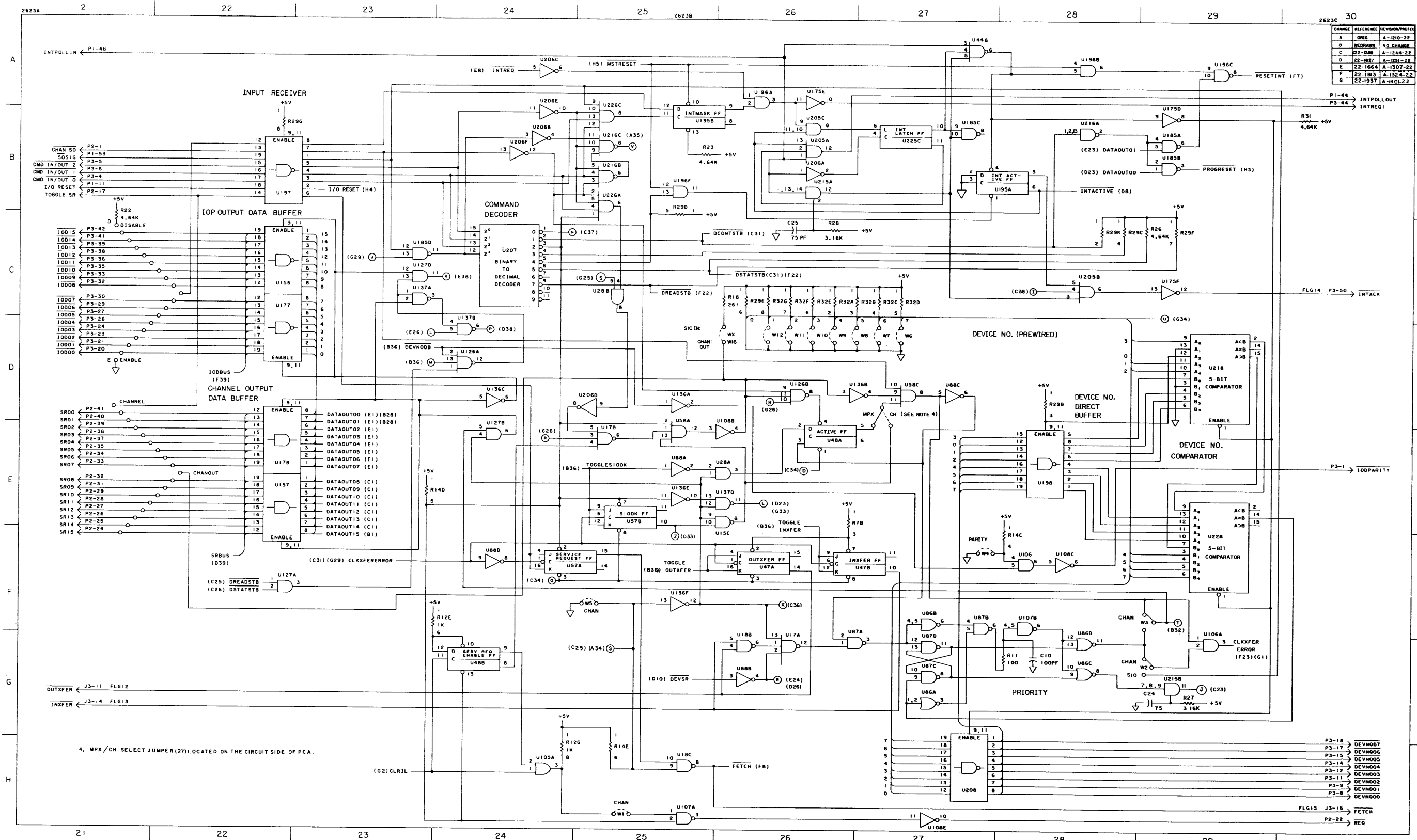
NOTES:  
1. UNLESS OTHERWISE SPECIFIED:  
ALL RESISTANCE IS IN OHMS  
ALL RESISTORS ARE 1/8W, 1%  
ALL RESISTOR NETWORKS ARE 1810-0275  
ALL CAPACITANCE IN MICROFARADS  
ALL TRANSISTORS ARE 1854-0019  
ALL IC'S ARE 1820-



NOTES UNLESS OTHERWISE SPECIFIED:  
 1. ALL RESISTANCE IS IN OHMS  
 2. ALL RESISTOR PACKS ARE 4.7K  
 3. ALL CAPACITANCE IS IN PICOFARADS  
 4. MPX/CH SELECT JUMPER LOCATED ON THE CIRCUIT SIDE OF PCA.

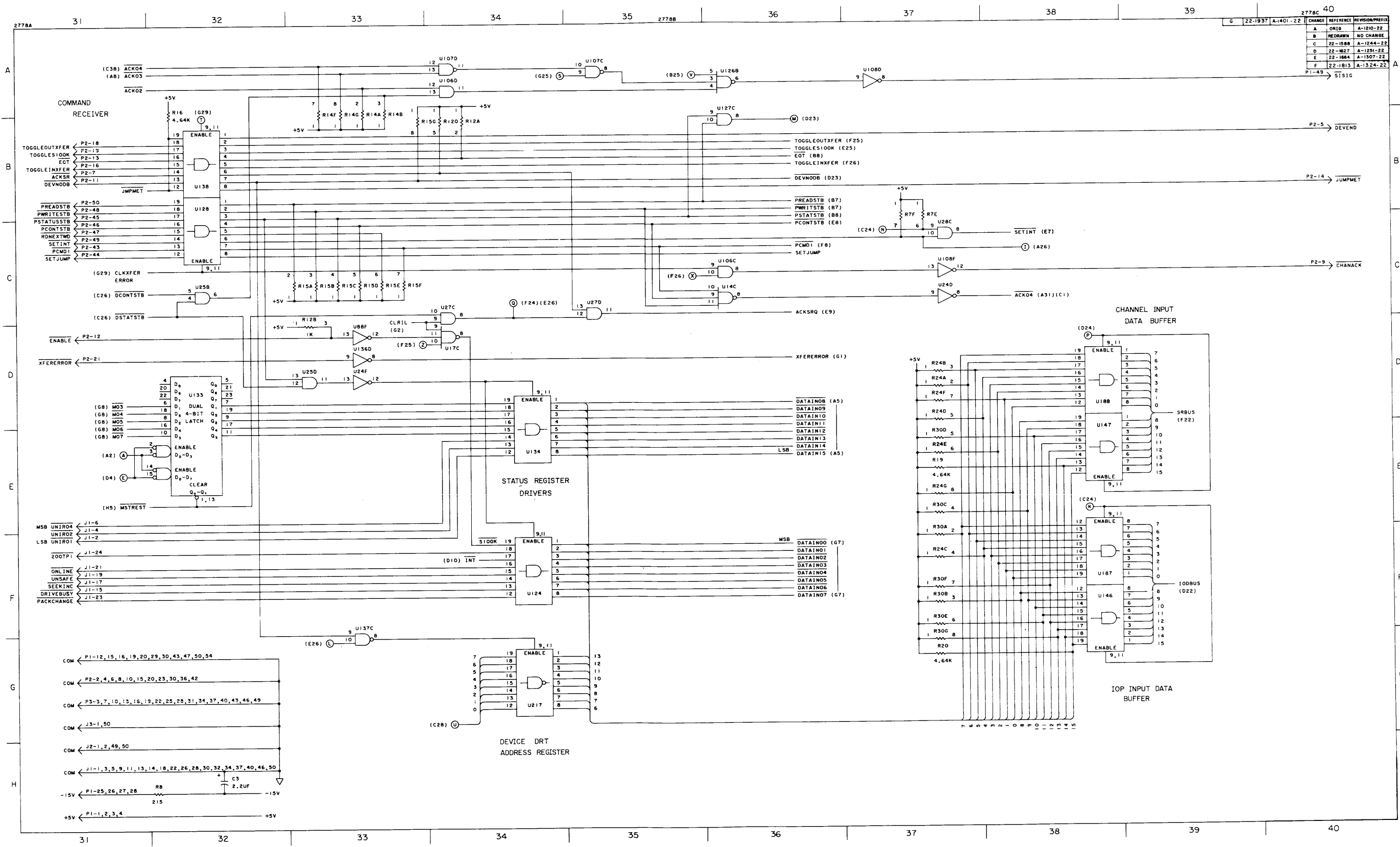
CHANGE	REFERENCE	REVISION/DESCRIPTION	SHEETS AFFECTED
A	0001	2-1970-22	ALL
B	0002	NO CHANGE	ALL
C	22-1008	A-1244-22	ALL
D	22-1027	A-1261-22	ALL
E	22-1004	A-1307-22	ALL
F	22-1015	A-1324-22	ALL
G	22-1935	A-1401-22	ALL





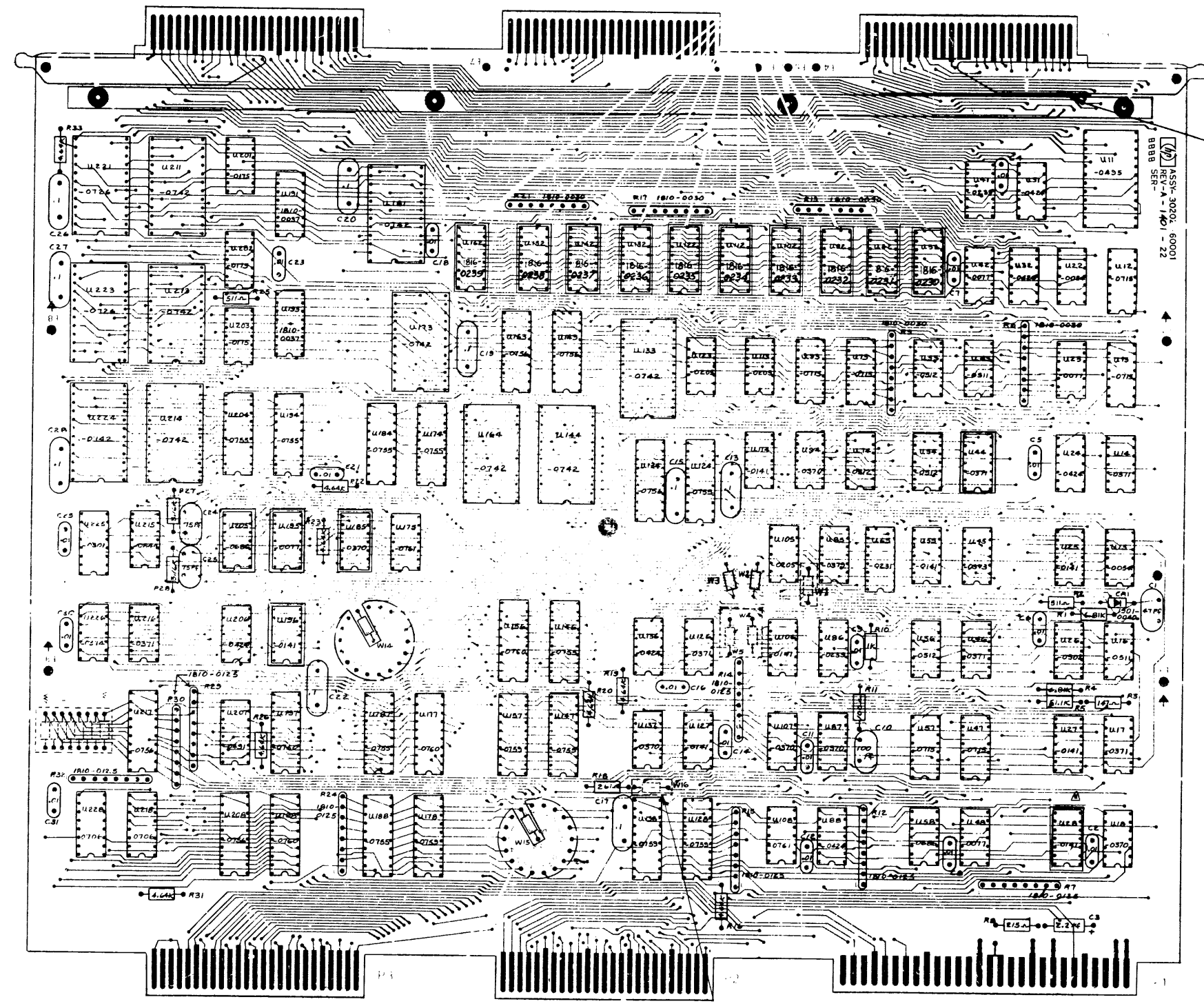
CHANGE	REFERENCE	REVISION
A	ORIG	A-1210-22
B	REDRAWN	A-1244-22
C	22-1508	A-1244-22
D	22-1527	A-1281-22
E	22-1664	A-1307-22
F	22-1813	A-1324-22
G	22-1937	A-1401-22

4. MPX/CH SELECT JUMPER (27) LOCATED ON THE CIRCUIT SIDE OF PCA.





REV	DESCRIPTION	DATE
H	REDRAWN, CHG. NOTE 5, ADD. NOTES: 18, 11, 12, AND ITEMS: 18, 11.	6/2/68 4-3-74
J	ADD. ITEM 17 TO W16, ADD. W16 TO NOTE 11	6/1/68 9-13-74
K	CHG. NOTE 5, ADD. NOTE 18	6/1/68 3-28-75
L	ADDED 3073A, 002, USA4E	6/1/68 5-27-75

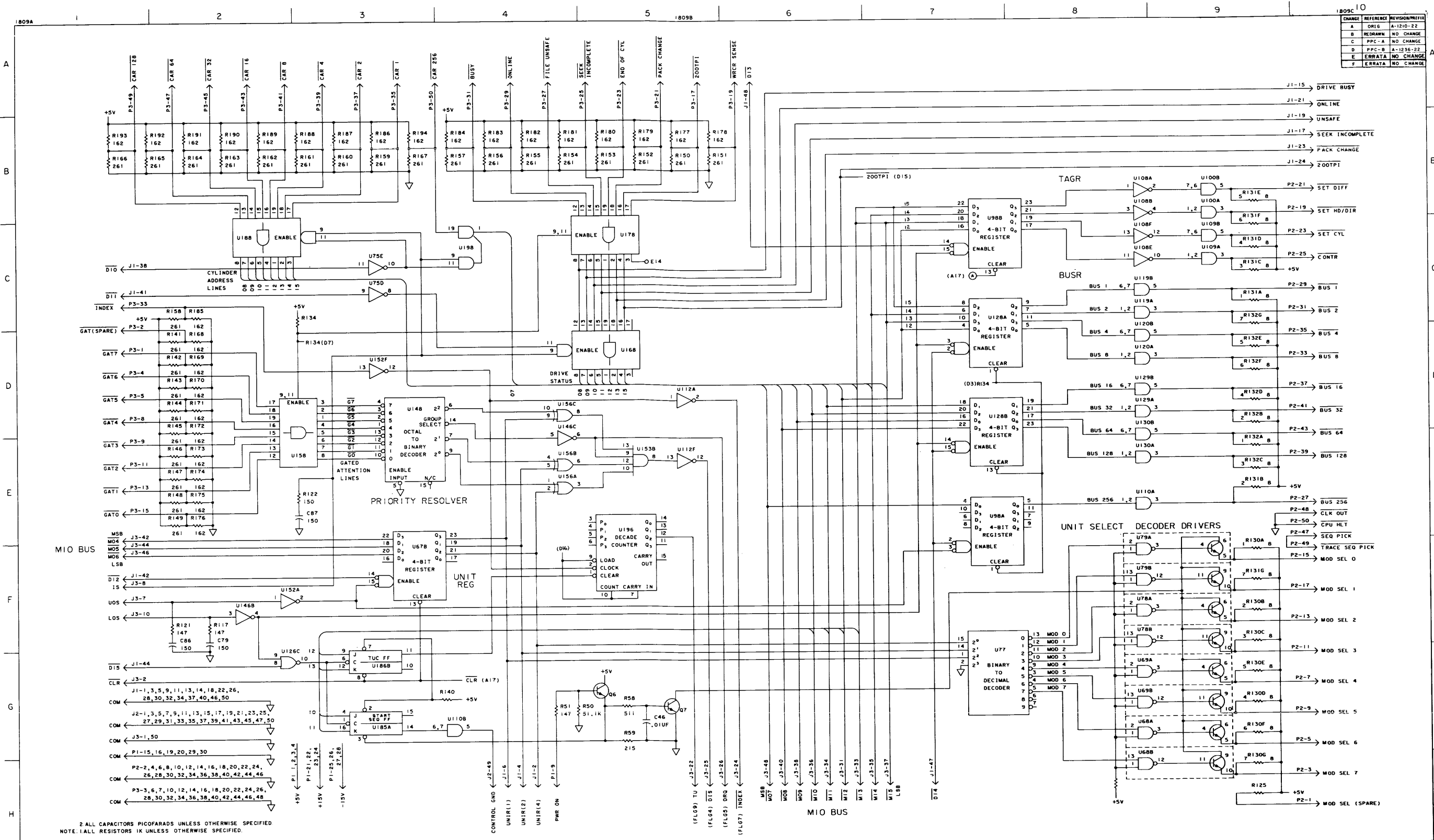


DISC FILE READ/WRITE PCA  
30202-60001

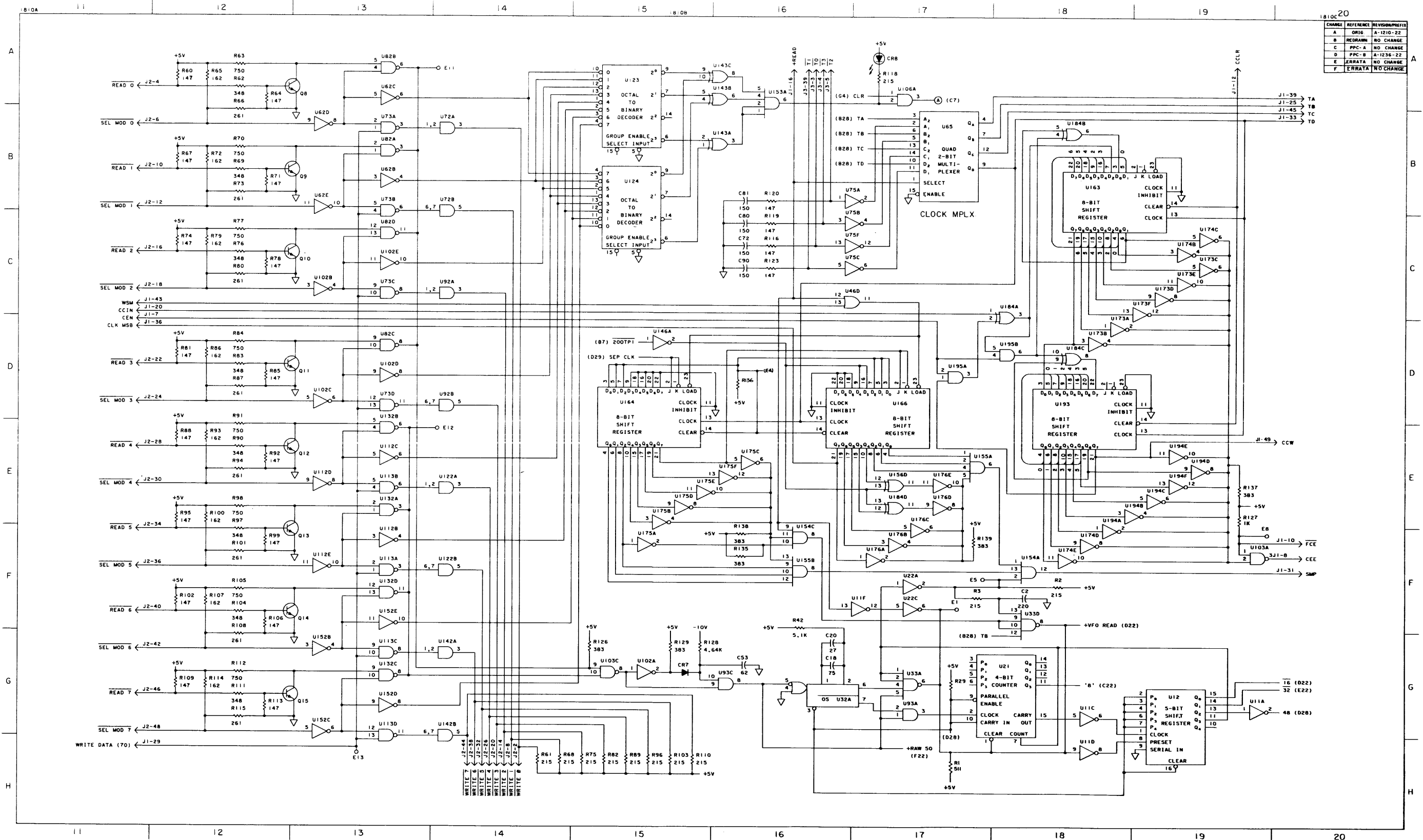
30202-60001  
REV-A-1401-22  
SER-

NOTES  
 1. UNLESS OTHERWISE NOTED  
 ALL RESISTORS IN OHMS  
 ALL RESISTORS 1/8W, 1%, FILM  
 ALL CAPACITANCE IN MICROFARADS  
 ALL I.C.'S ARE 1820-

CHANGE	REFERENCE	REVISION/DATE
A	ORIG	A-1210-12
B	REDRAWN	NO CHANGE
C	PPC-A	NO CHANGE
D	PPC-B	A-1236-22
E	ERRATA	NO CHANGE
F	ERRATA	NO CHANGE

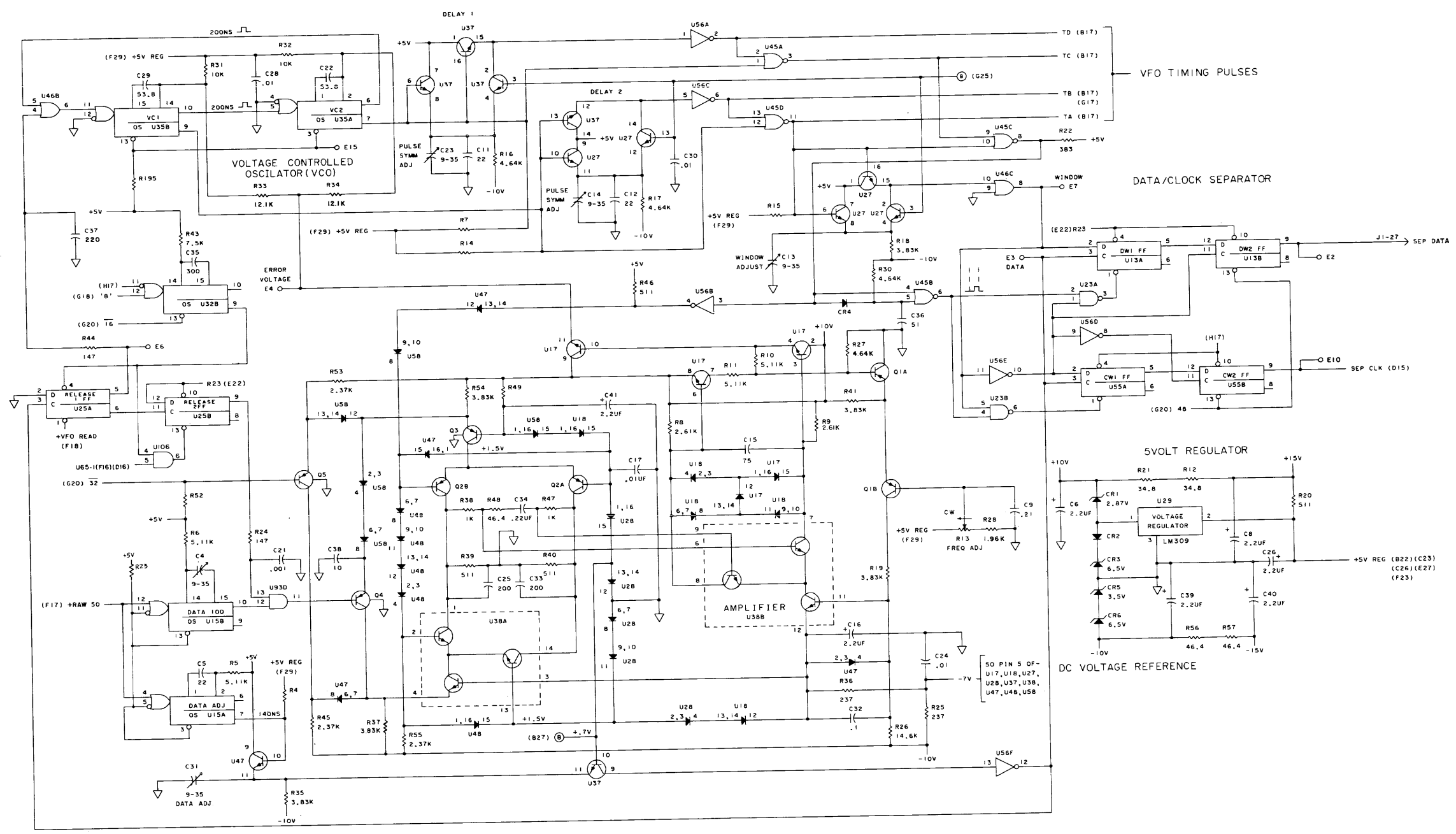


2 ALL CAPACITORS PICOFARADS UNLESS OTHERWISE SPECIFIED  
 NOTE: 1 ALL RESISTORS 1K UNLESS OTHERWISE SPECIFIED.

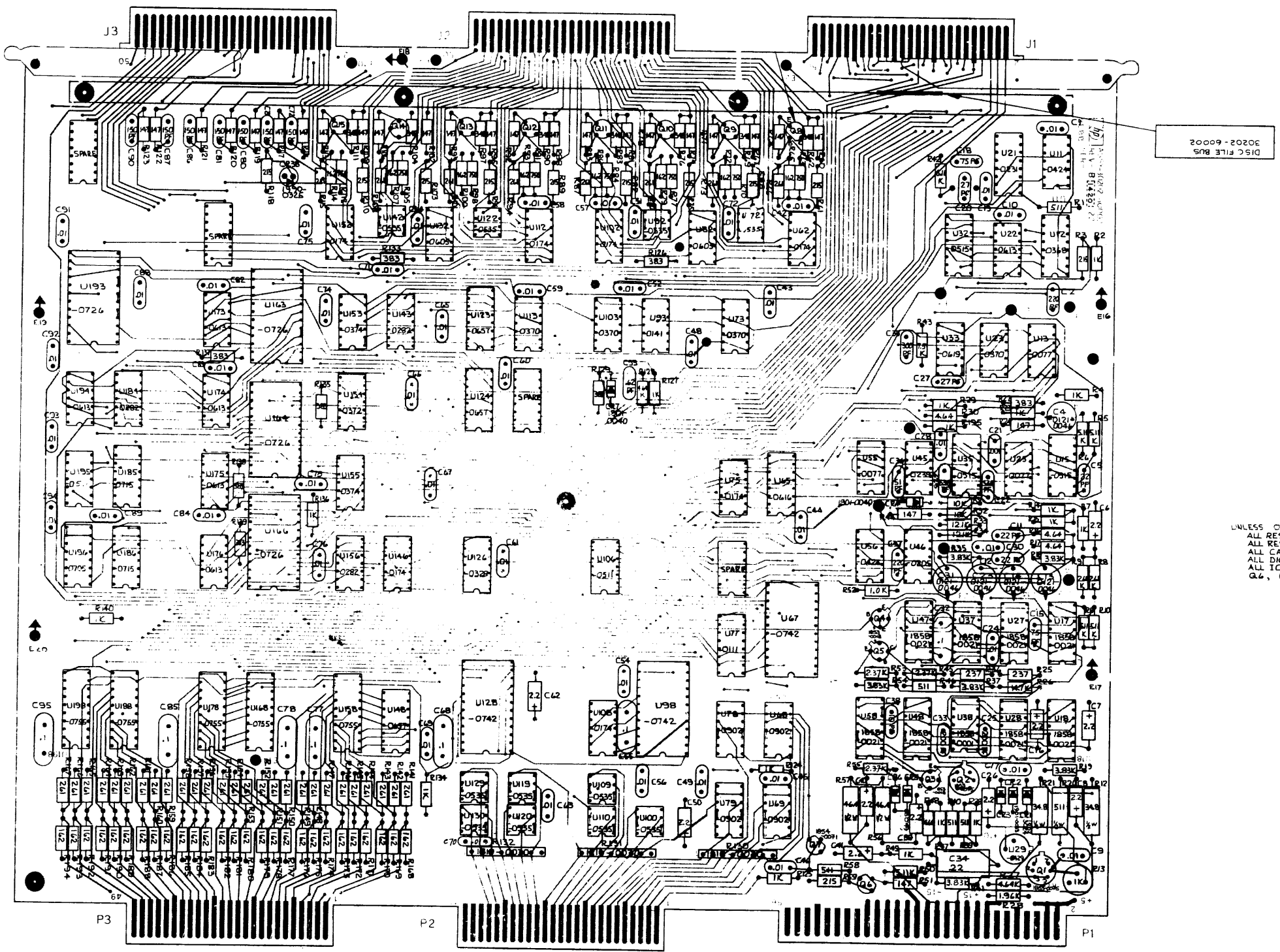


CHANGE	REFERENCE	REVISION/PREFIX
A	ORIG	A-1210-22
B	REGRAMM	NO CHANGE
C	PPC-A	NO CHANGE
D	PPC-B	A-1236-22
E	ERRATA	NO CHANGE
F	ERRATA	NO CHANGE

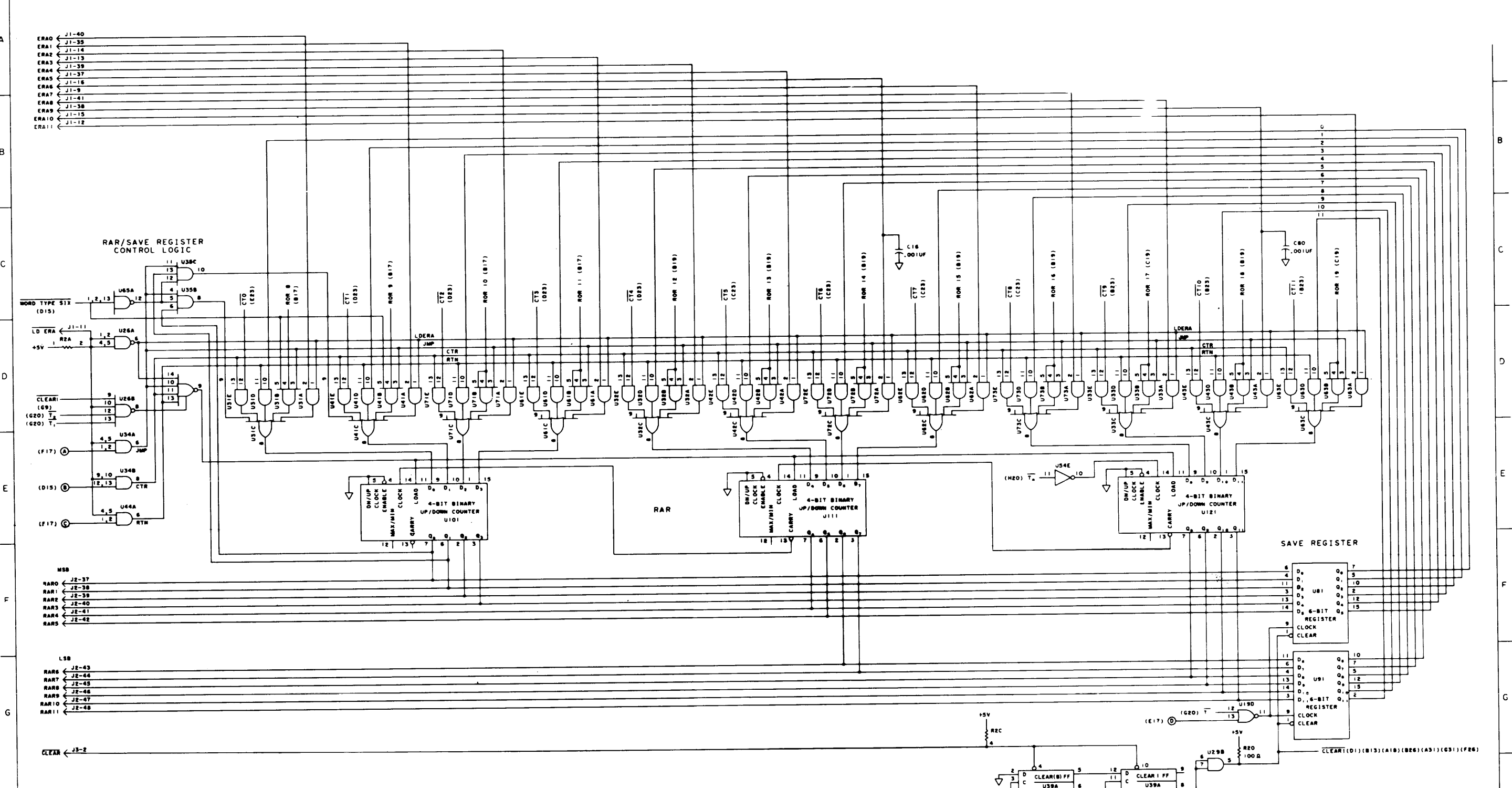
CHANGE	REFERENCE	REVISION	DATE
A	ORIG	A-1210-22	
B	REWORK	NO CHANGE	
C	PPC-A	NO CHANGE	
D	PPC-B	A-1236-22	
E	ERRATA	NO CHANGE	
F	ERRATA	NO CHANGE	



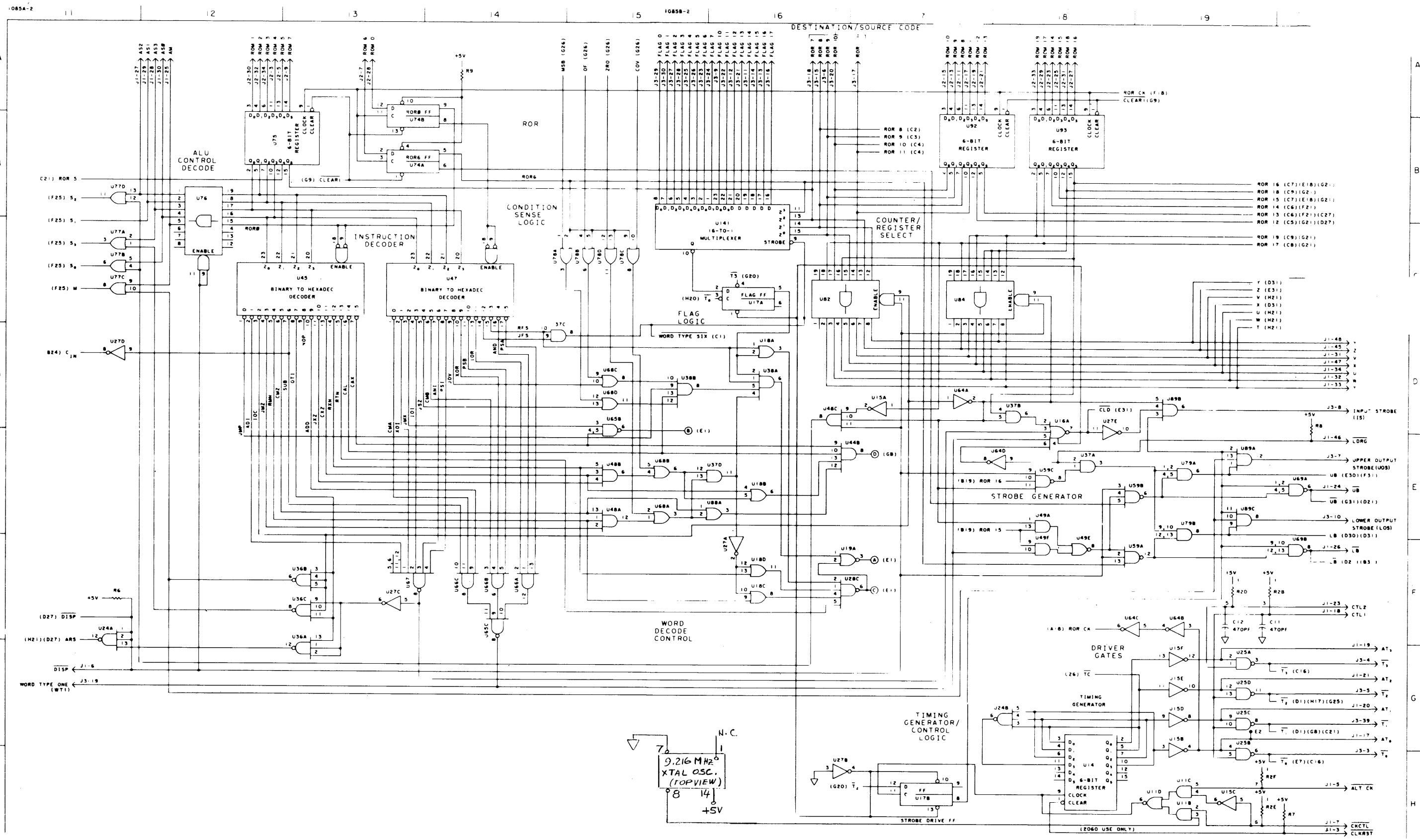
REV	DATE	BY	CHKD
A	10-20-72	J. J. ...	J. J. ...
B	10-20-72	J. J. ...	J. J. ...
C	10-20-72	J. J. ...	J. J. ...
D	10-20-72	J. J. ...	J. J. ...

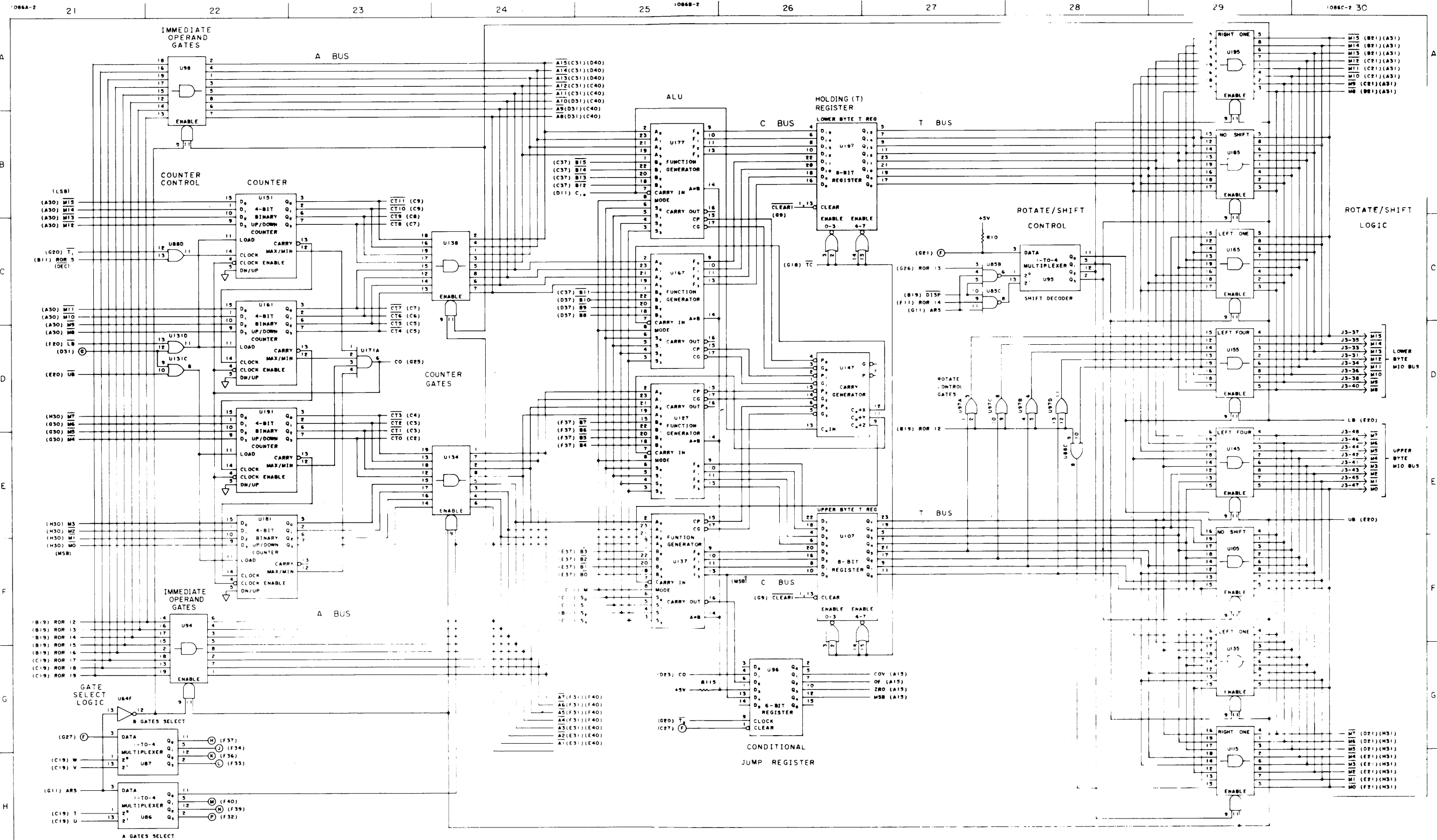


UNLESS OTHERWISE NOTED:  
 ALL RESISTORS 1/8W 10% FILM  
 ALL RESISTORS IN OHMS  
 ALL CAPACITANCE IN MICROFARADS  
 ALL DIODES 1502-3119  
 ALL IC'S ARE 1820-  
 Q4, Q8-15 - 1854-0094

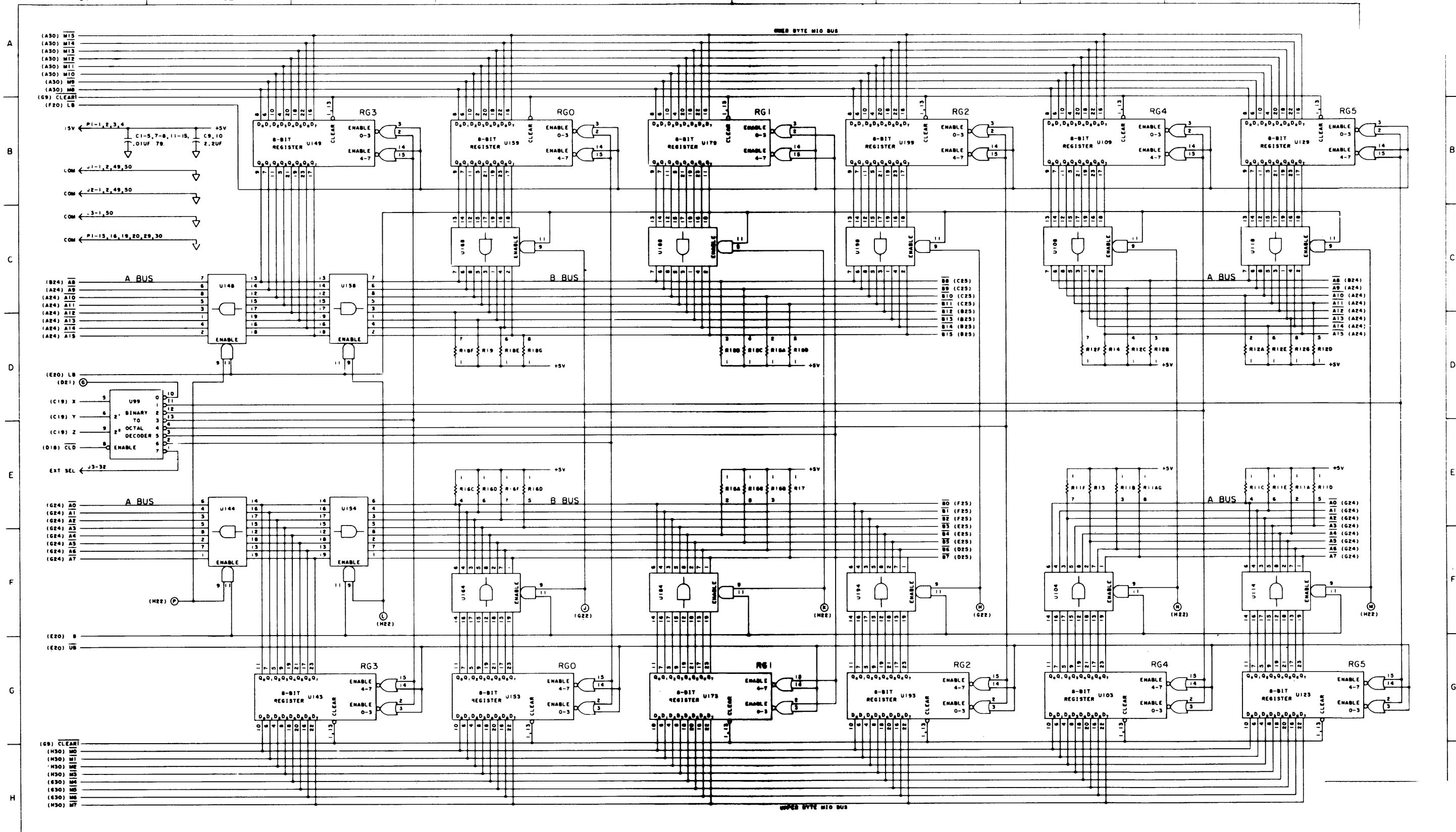


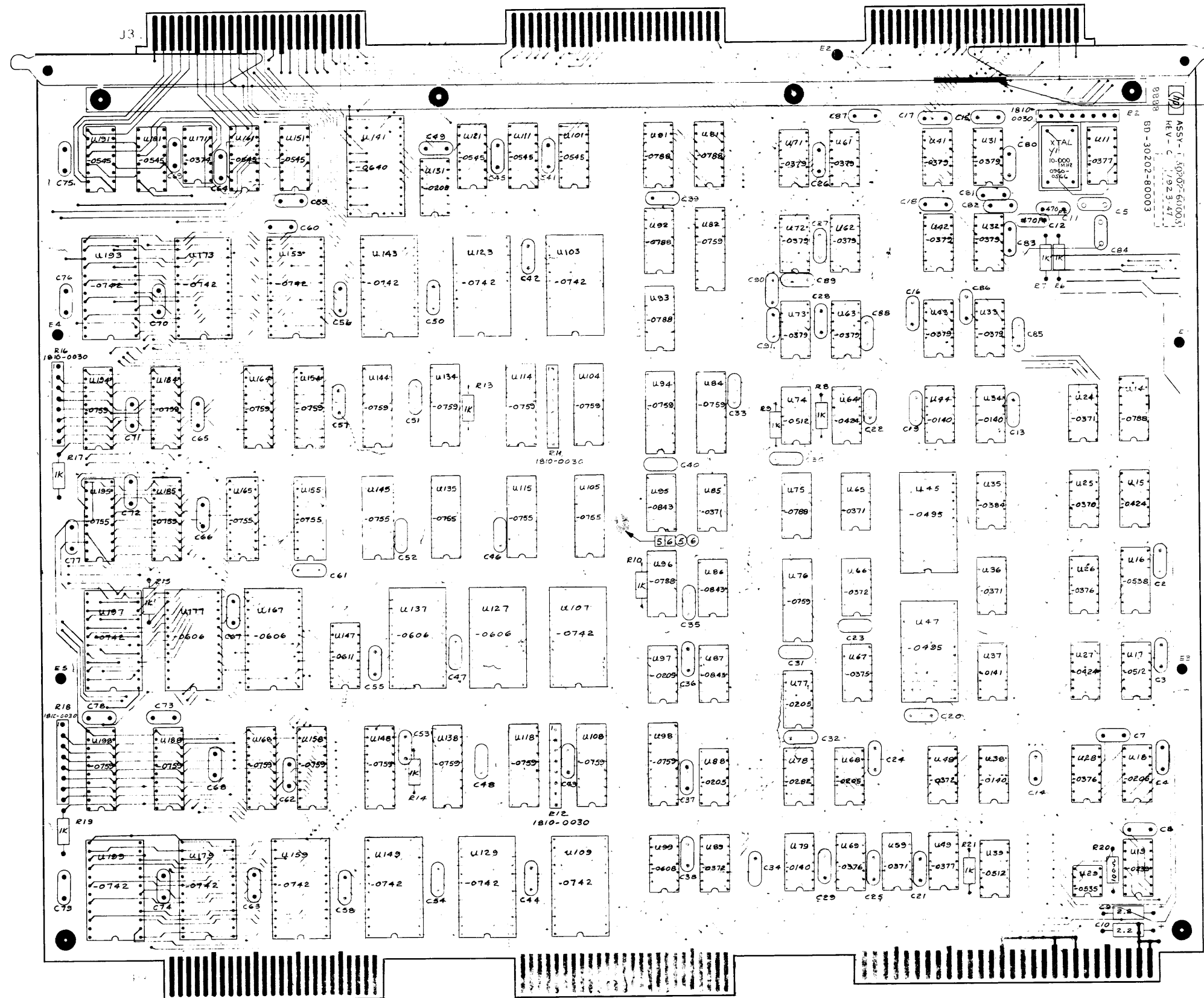
NOTES:  
 3. ALL LOGIC IS POSITIVE TRUE  
 2. UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE 1K  
 1. CRYSTAL FREQUENCY MAY VARY WITH DIFFERENT SUBSYSTEMS









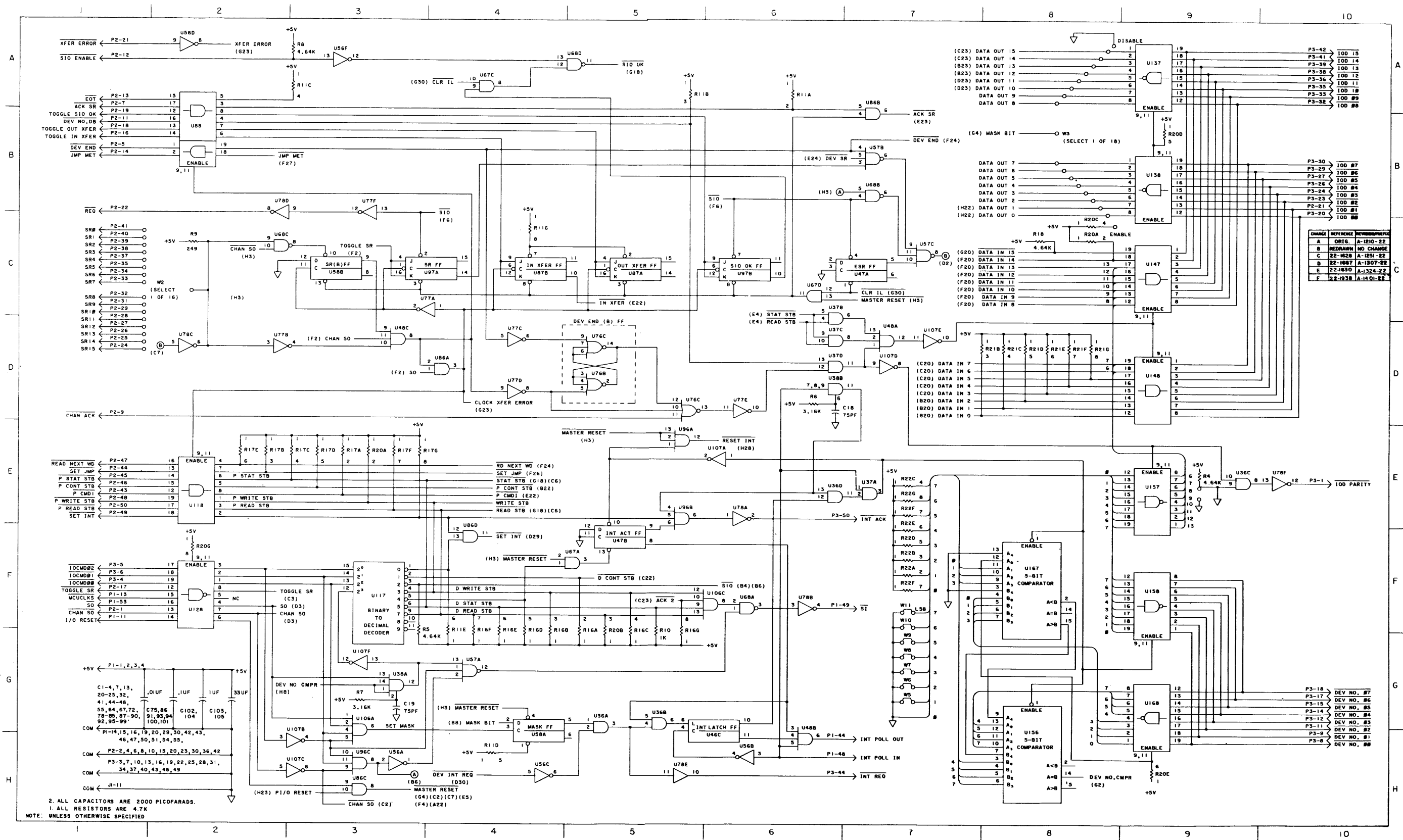


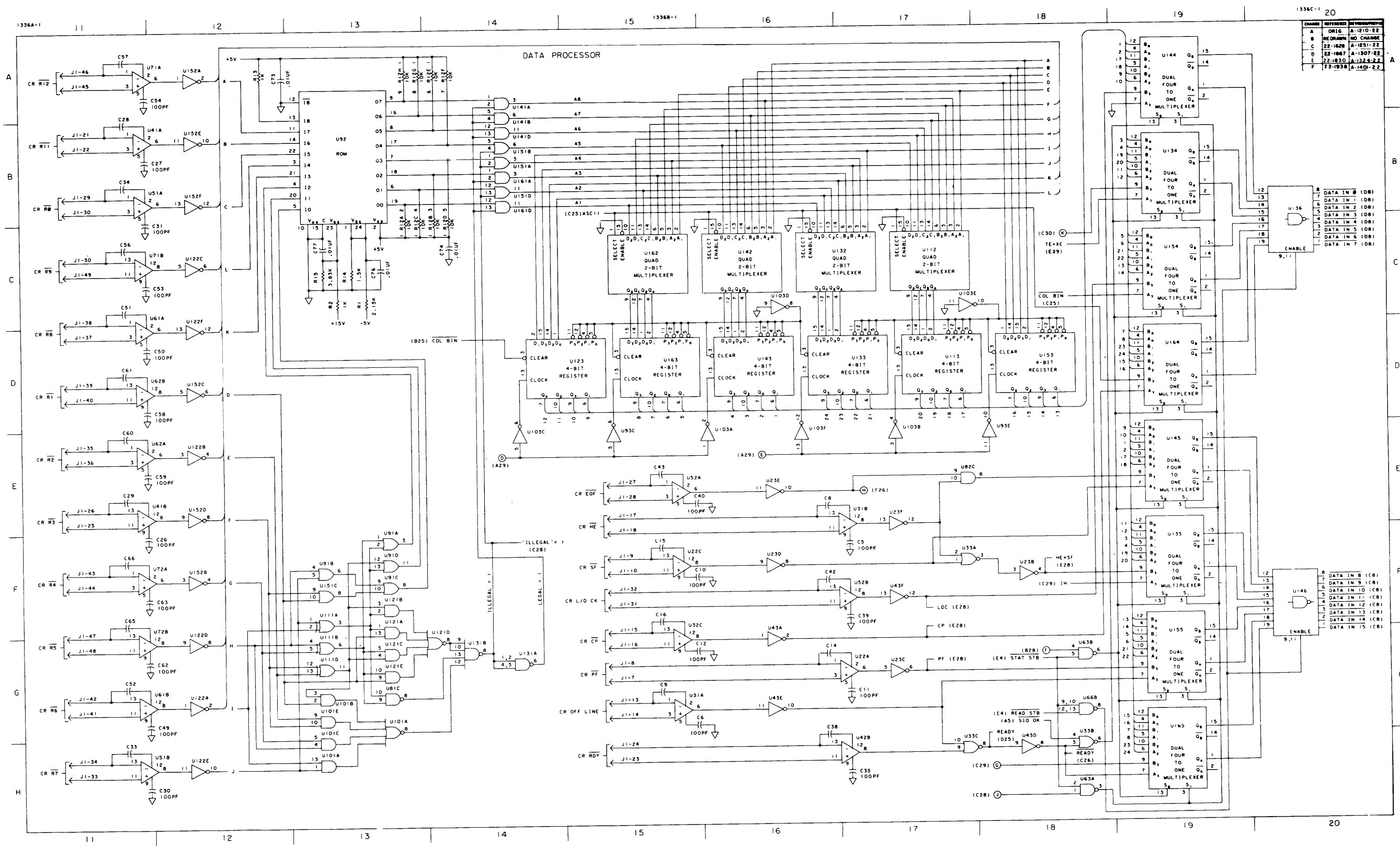
30202-60003  
REV - C  
1/923-47

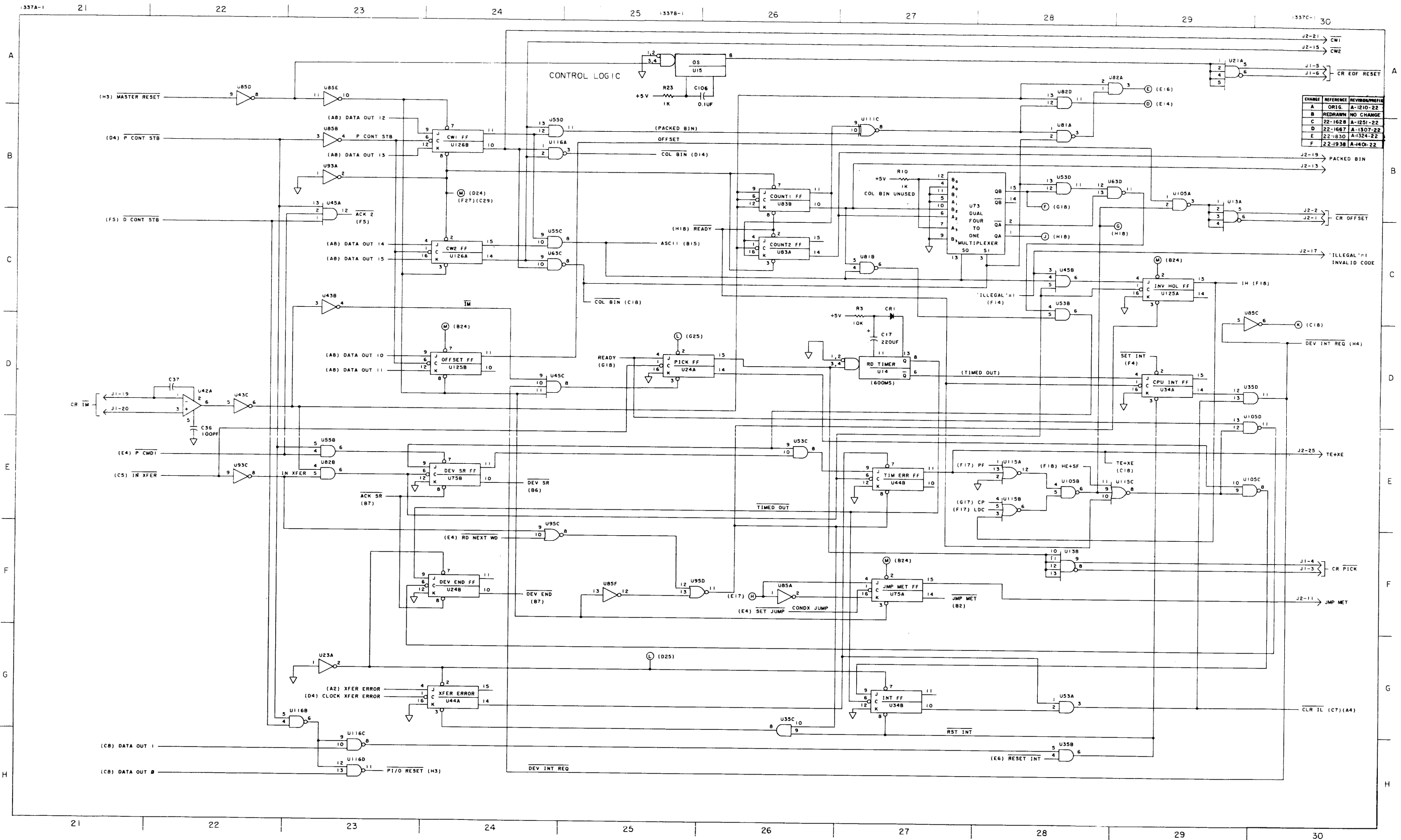
ASSY - T 30202-60003  
REV - C  
1/923-47  
8888 BD-30202-80003

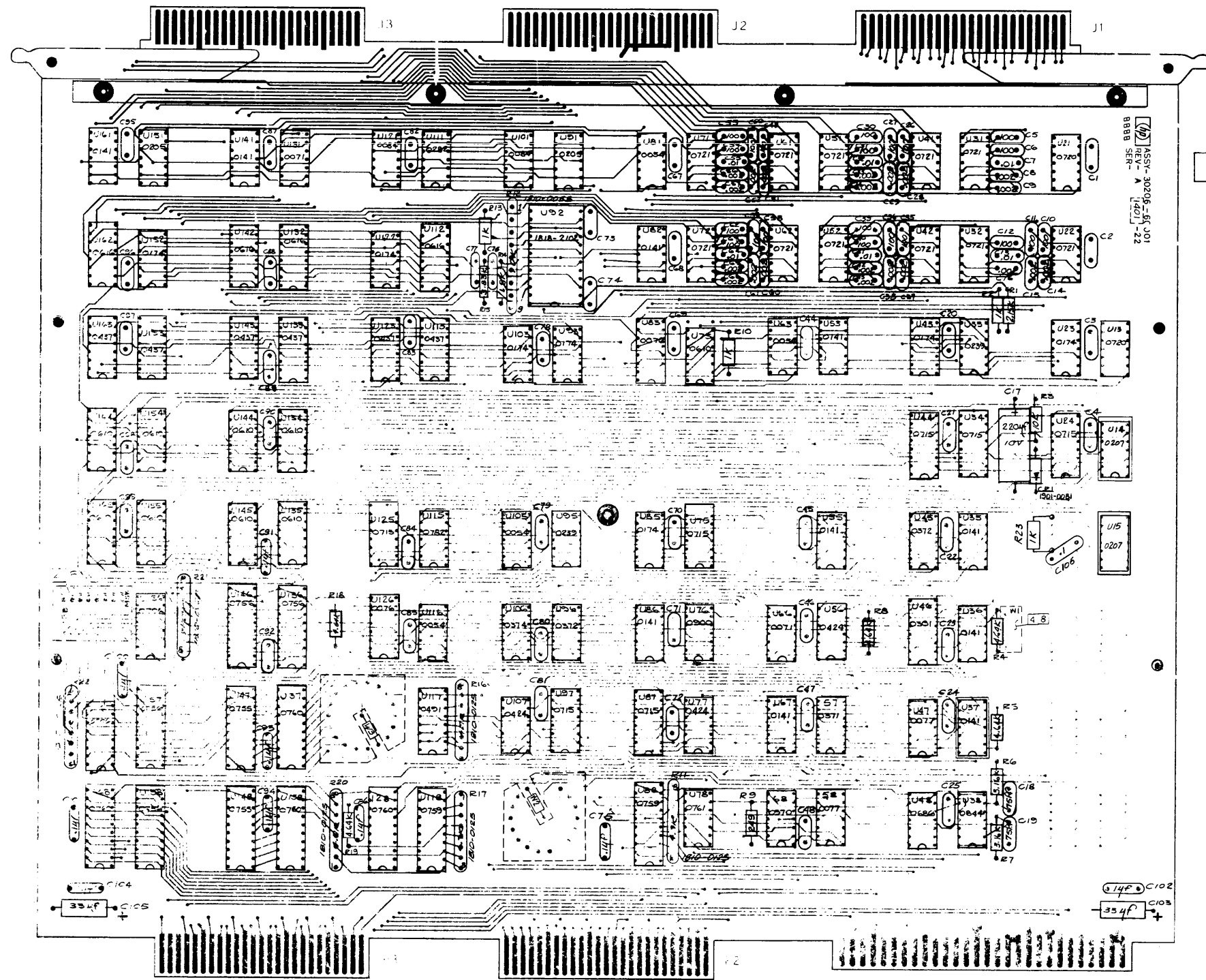
NOTES

- 1 UNLESS OTHERWISE NOTED
- ALL RESISTANCE IN OHMS
- ALL RESISTORS 1/8W 1% F
- ALL CAPACITANCE IN MICRO FARADS
- ALL CAPACITORS .01M<sup>2</sup> CER. DISC
- ALL IC'S ARE 1820-NXX





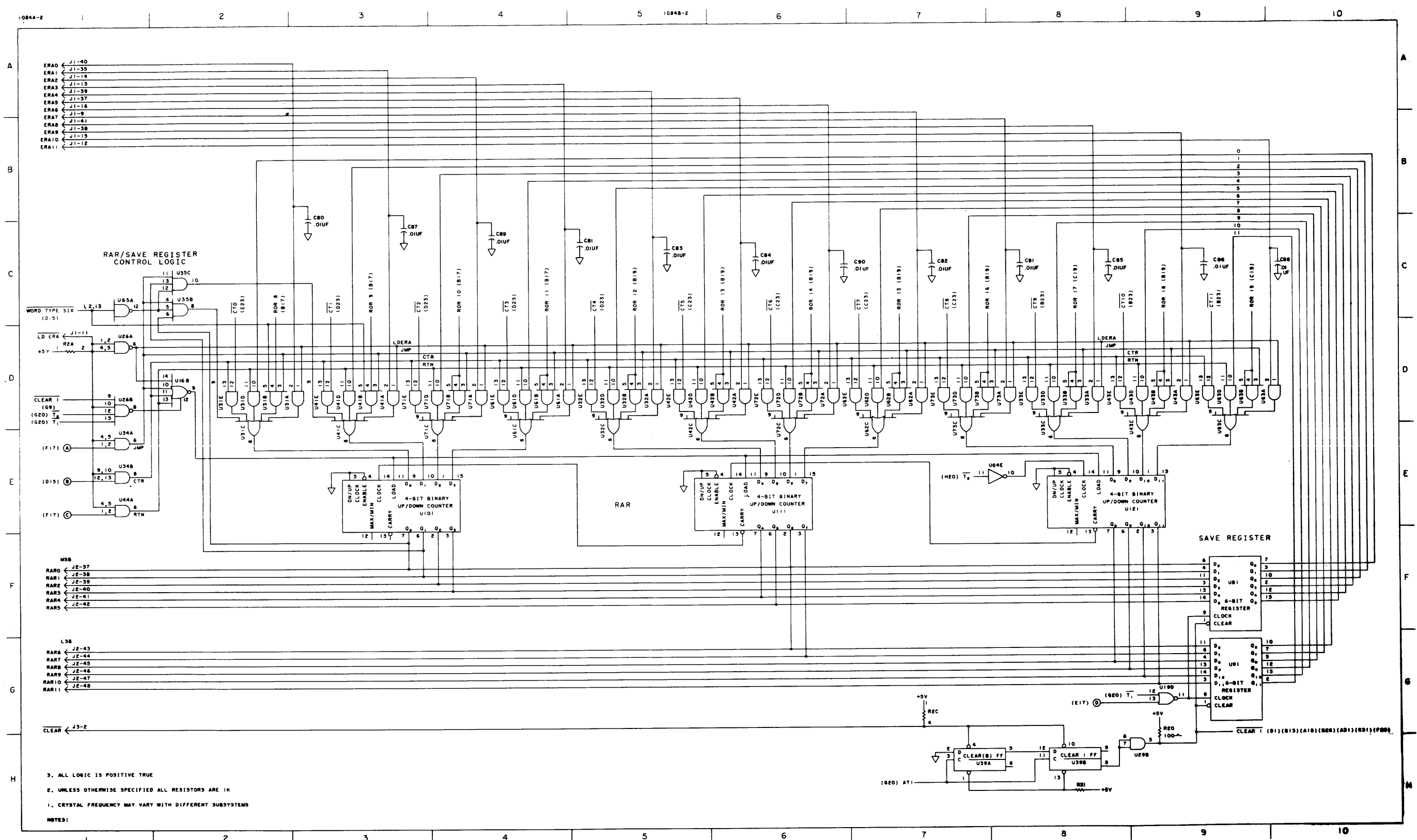




REV	AS ISSUED	REVISED	DATE
A	AS ISSUED		11-19-78
B	U15 & U16 SOCKET ADDED - DATE CODE WAS 1225 - C-14C-3 ADDED - R17 & C18 ADDED	12/21/78	12-23-78
C	DATE CODE WAS 1211 - PC 22-1667	11/17/79	12-23-78
D	PCO#21-1938 LOGO WAS #1307	11/17/79	12-23-78
E	PCO#21-1938 LOGO WAS #1334	11/17/79	12-23-78
F	ADDED 3157A.021 USAqe	11/17/79	12-23-78

30206-60001  
LD RDR INTFC

NOTES:  
1. UNLESS OTHERWISE SPECIFIED:  
ALL RESISTANCE IN OHMS  
ALL RESISTORS 1/4W 1% FILM  
ALL CAPACITANCE IN MICROFARADS  
ALL CAPACITORS 0.1UF CER DISC  
ALL IC'S ARE #820-



ERA0 ← J1-40  
 ERA1 ← J1-39  
 ERA2 ← J1-14  
 ERA3 ← J1-13  
 ERA4 ← J1-38  
 ERA5 ← J1-37  
 ERA6 ← J1-16  
 ERA7 ← J1-9  
 ERA8 ← J1-41  
 ERA9 ← J1-38  
 ERA10 ← J1-15  
 ERA11 ← J1-12

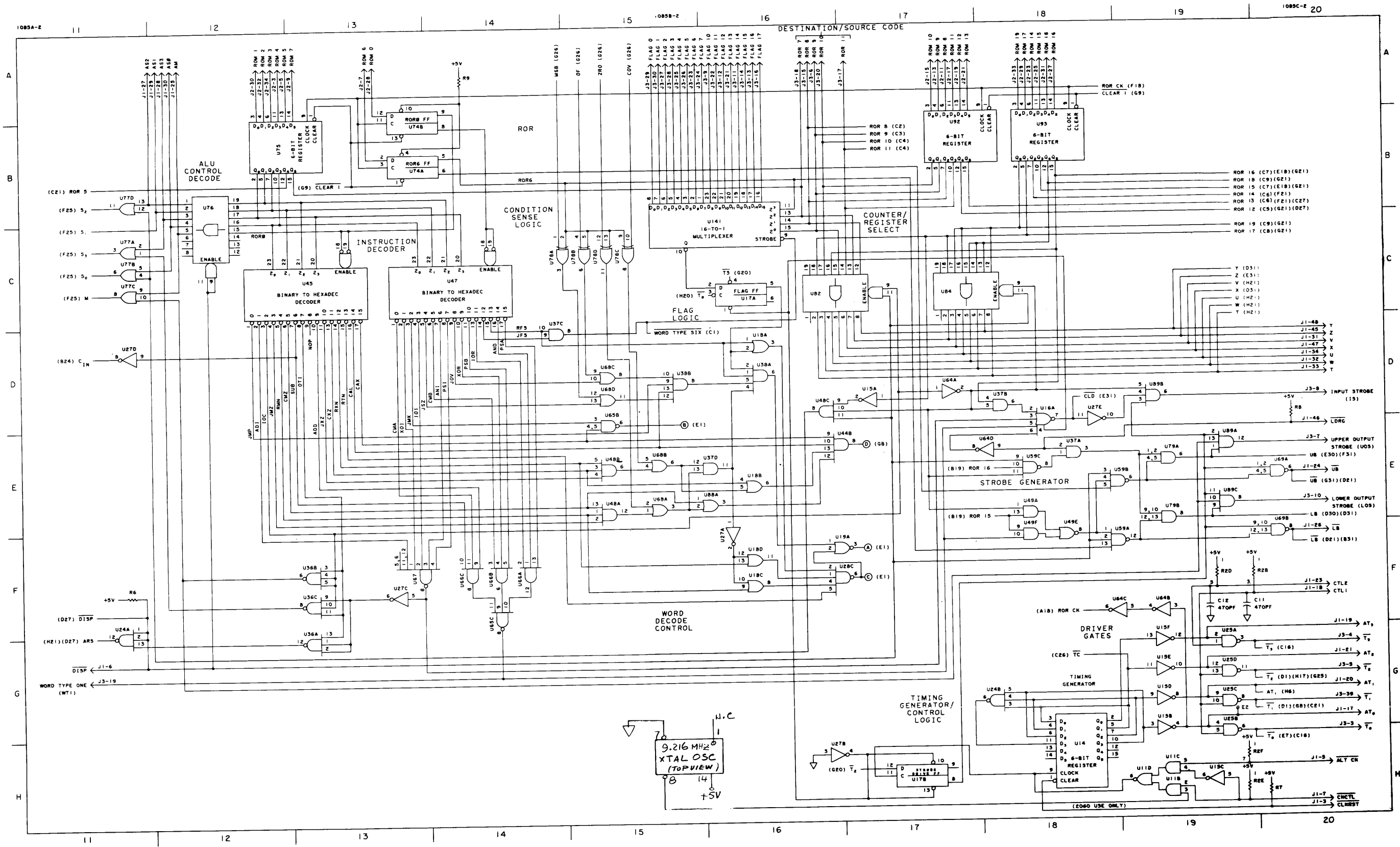
LD ERA ← J1-11  
 CLEAR 1 (G9) T<sub>A</sub>  
 (G20) T<sub>A</sub>  
 (G20) T<sub>A</sub>  
 (F17) T<sub>A</sub>  
 (D15) T<sub>A</sub>  
 (F17) T<sub>A</sub>

MSB  
 RAR0 ← J2-37  
 RAR1 ← J2-38  
 RAR2 ← J2-39  
 RAR3 ← J2-40  
 RAR4 ← J2-41  
 RAR5 ← J2-42

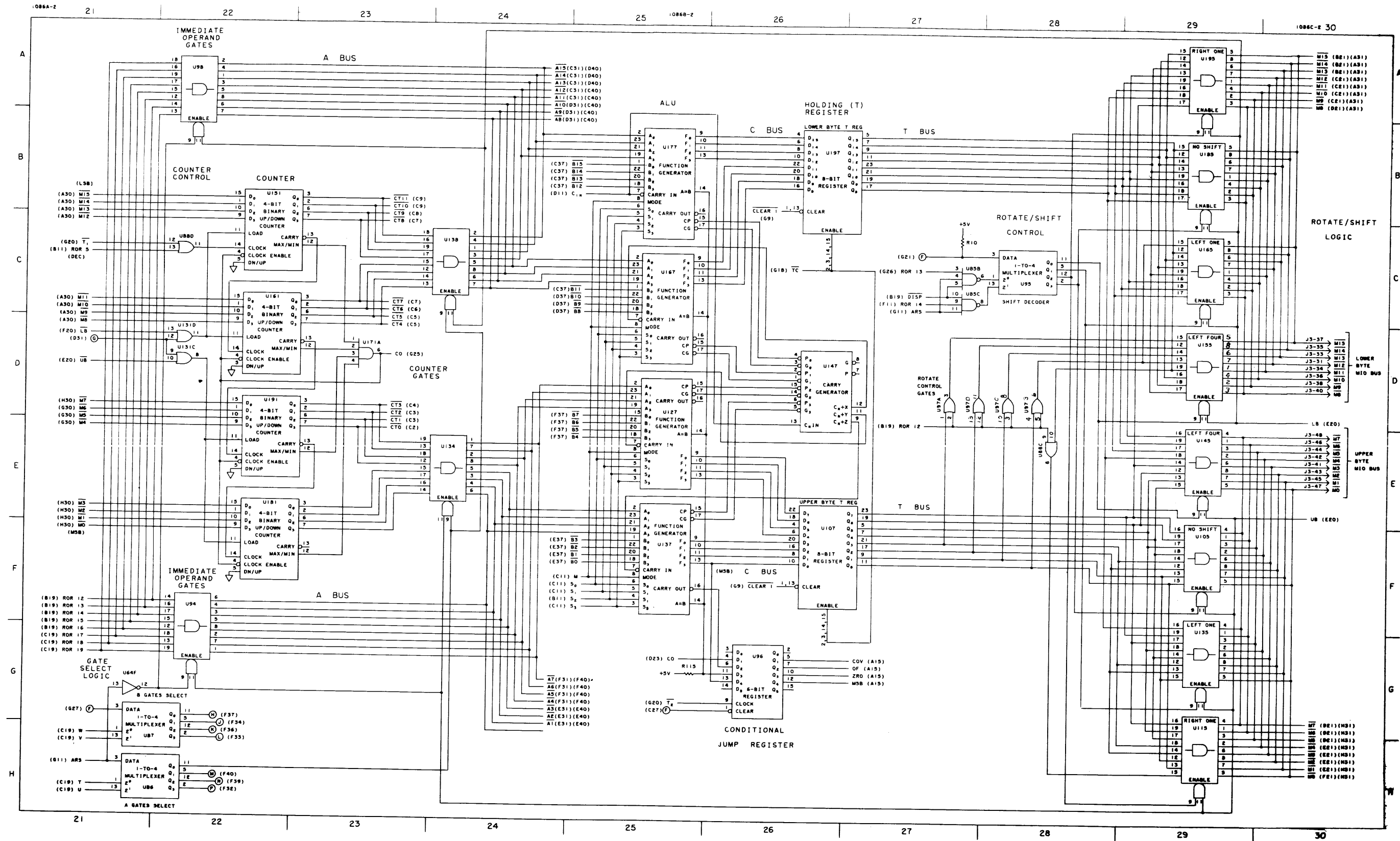
LSB  
 RAR6 ← J2-43  
 RAR7 ← J2-44  
 RAR8 ← J2-45  
 RAR9 ← J2-46  
 RAR10 ← J2-47  
 RAR11 ← J2-48

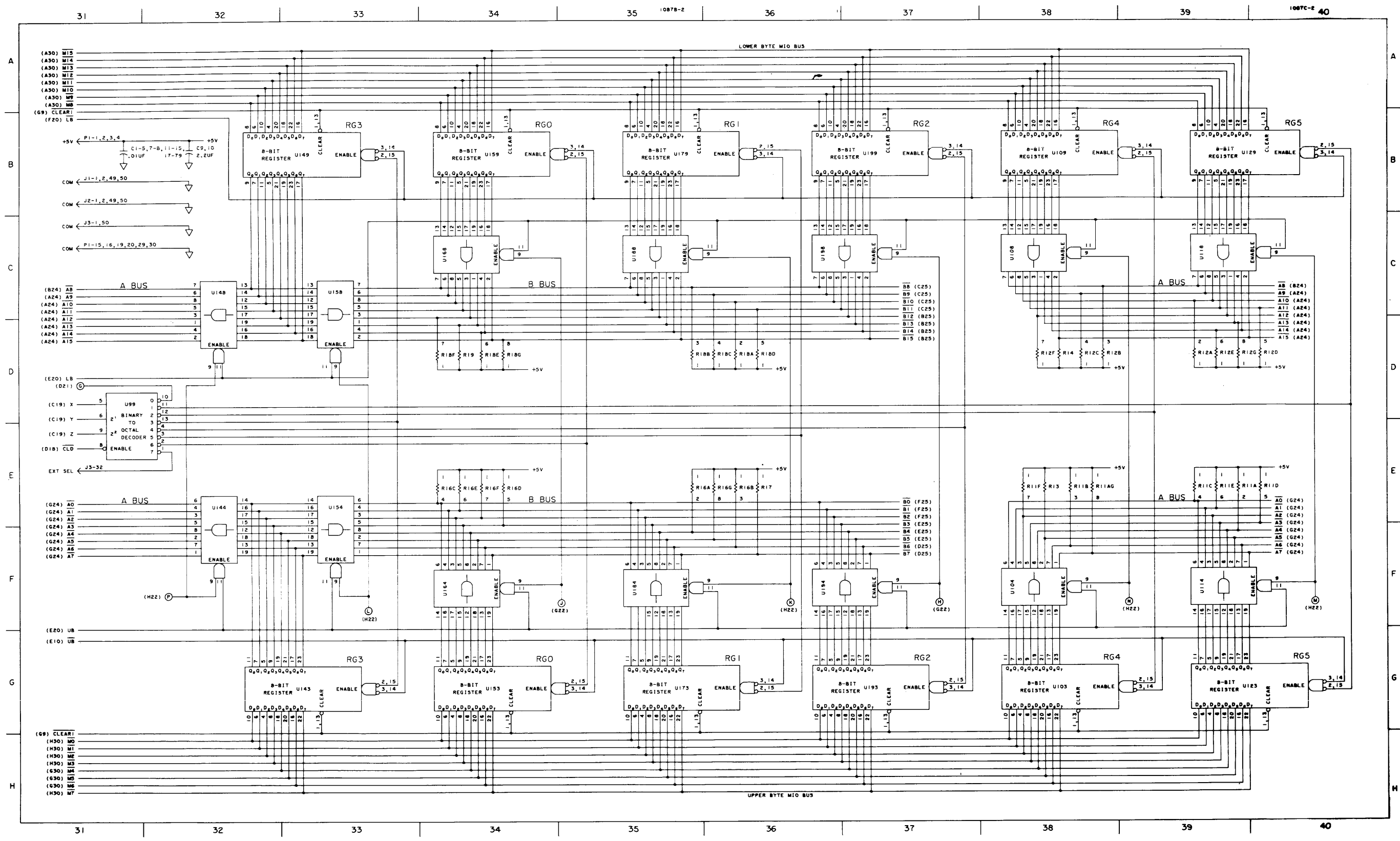
CLEAR ← J3-2

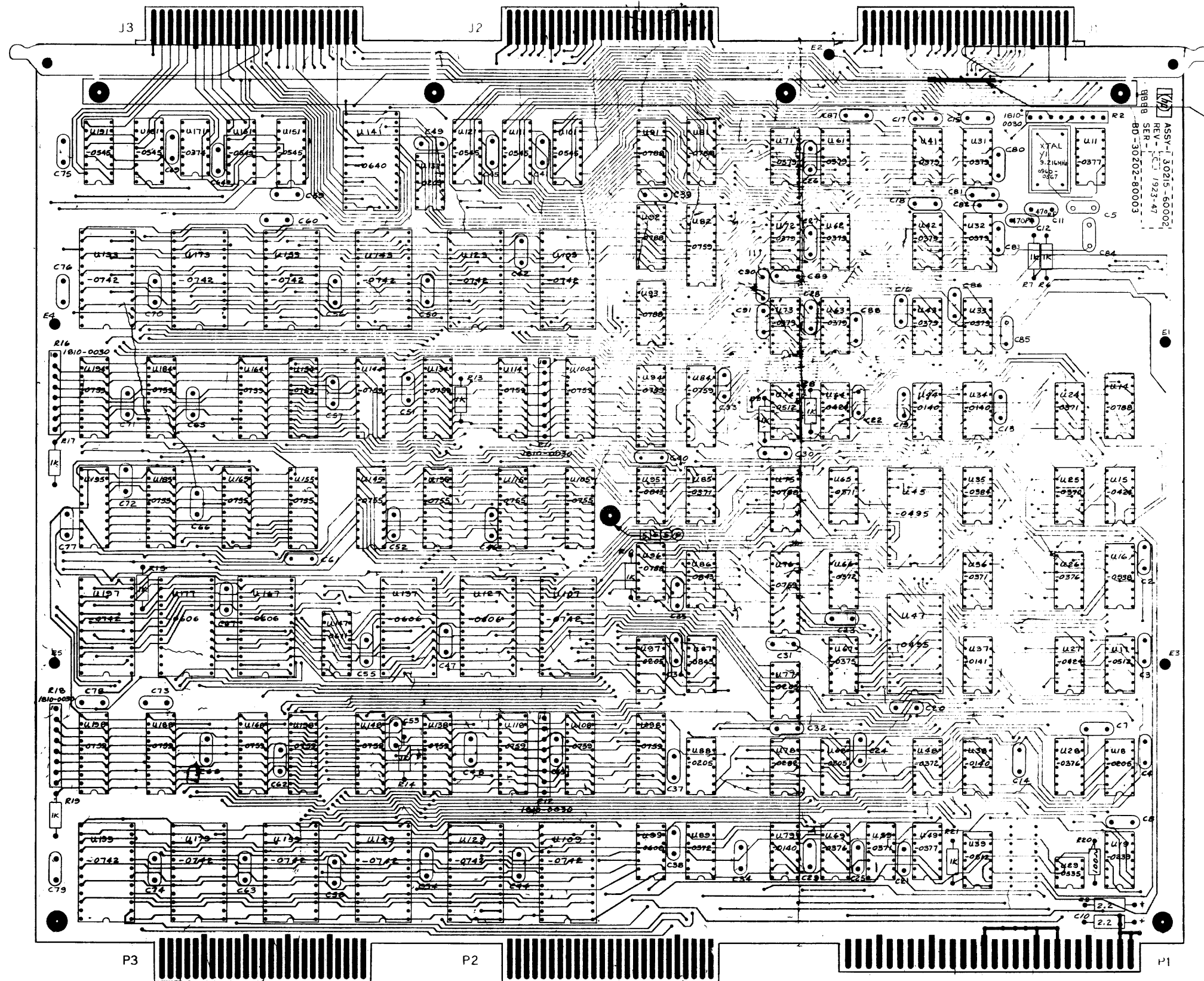
3. ALL LOGIC IS POSITIVE TRUE  
 2. UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE 1K  
 1. CRYSTAL FREQUENCY MAY VARY WITH DIFFERENT SUBSYSTEMS  
 NOTES:





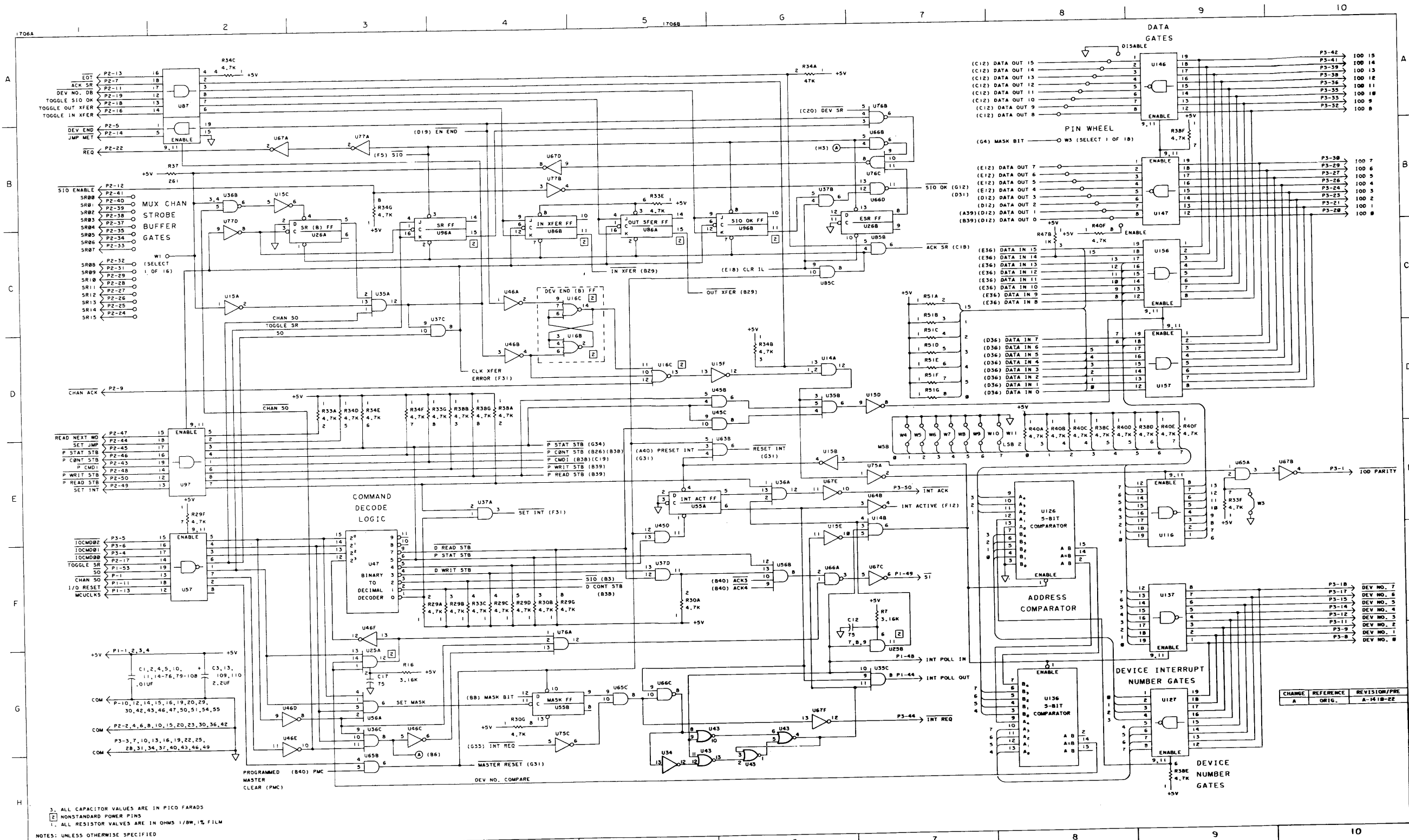




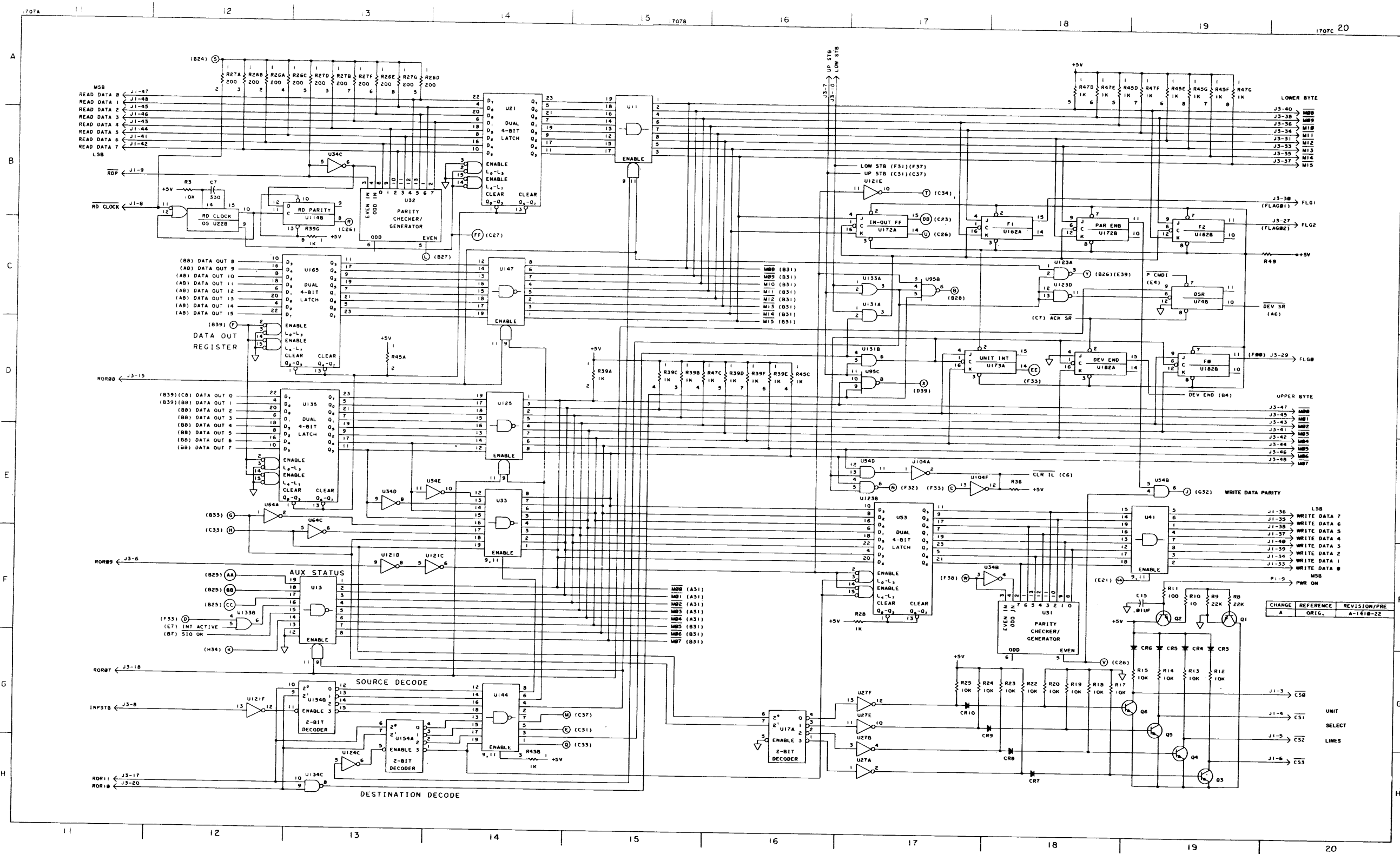


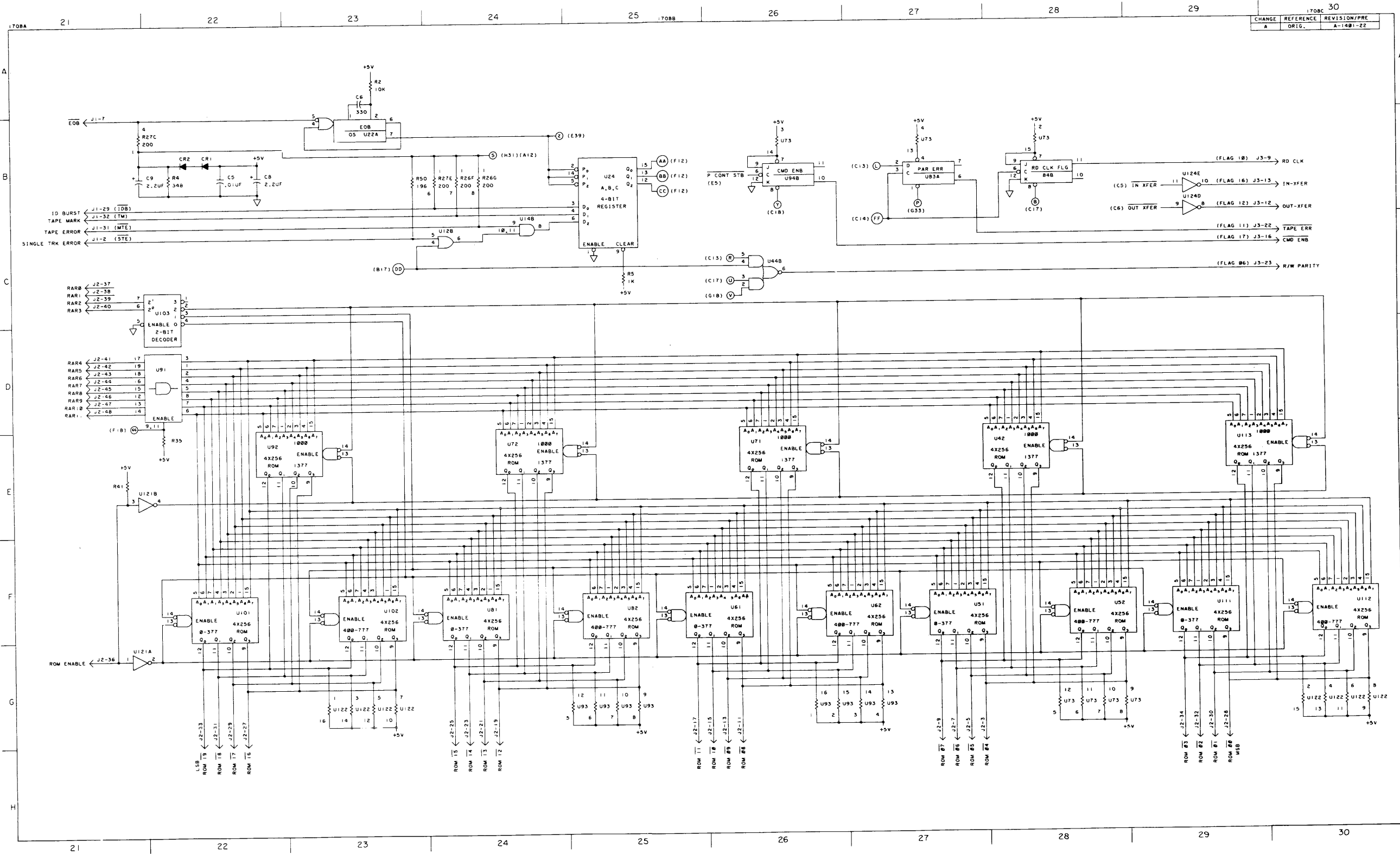
ASSY: 30215-60002  
 REV: 1923-47  
 SER: BD-30202-80003  
 MAG TAPE CTRLR PROC  
 30215-60002

NOTES  
 1 UNLESS OTHERWISE NOTED  
 ALL RESISTANCE IN OHMS  
 ALL RESISTORS 1/8W 1% F  
 ALL CAPACITANCE IN MICRO FARADS  
 ALL CAPACITORS .01MFD CER. DISC  
 ALL IC'S ARE 1820-NH

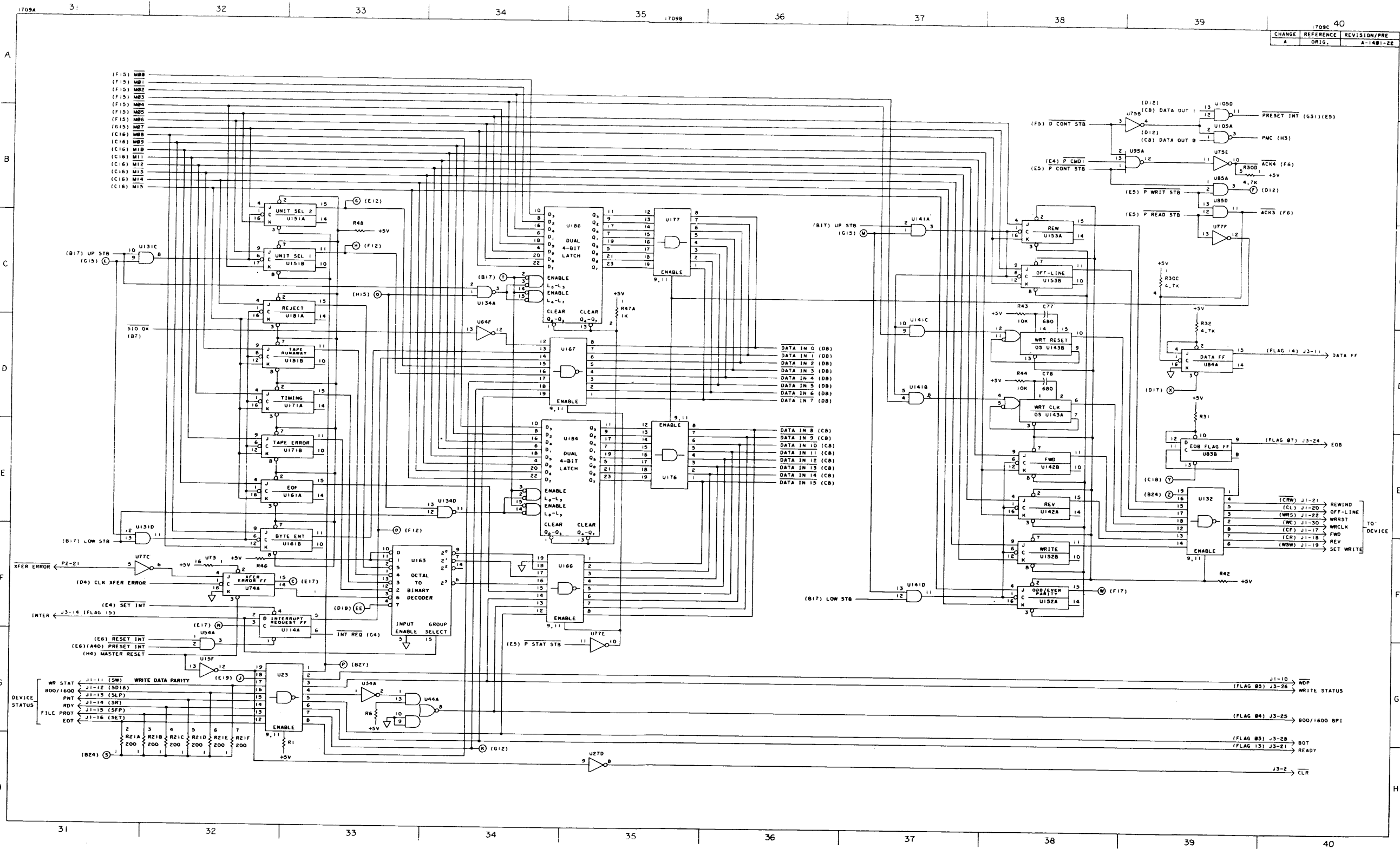


3. ALL CAPACITOR VALUES ARE IN PICO FARADS  
 [E] NONSTANDARD POWER PINS  
 1. ALL RESISTOR VALUES ARE IN OHMS 1/8W, 1% FILM  
 NOTES: UNLESS OTHERWISE SPECIFIED

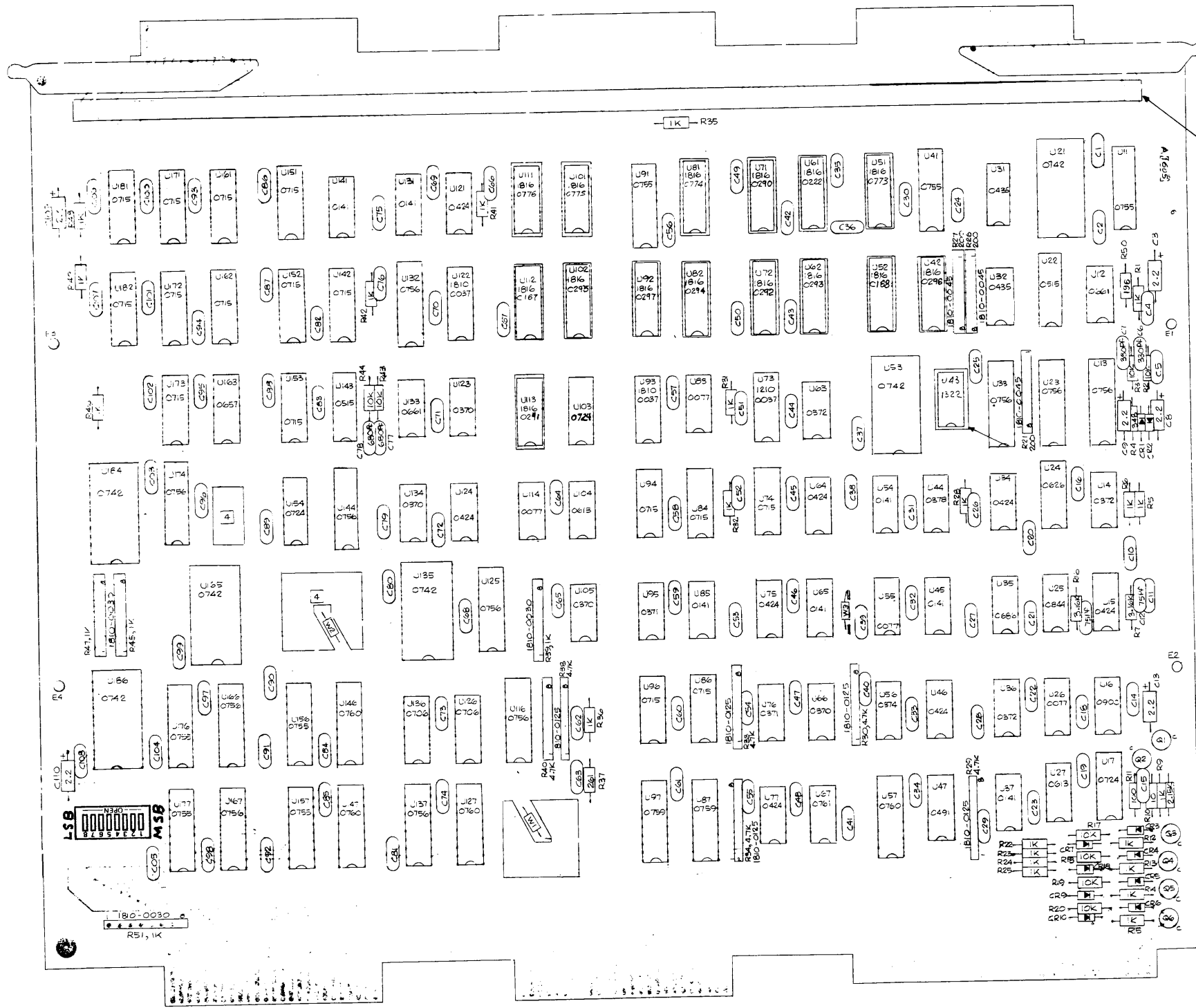




CHANGE	REFERENCE	REVISION/PRE
A	ORIG.	A-1481-22



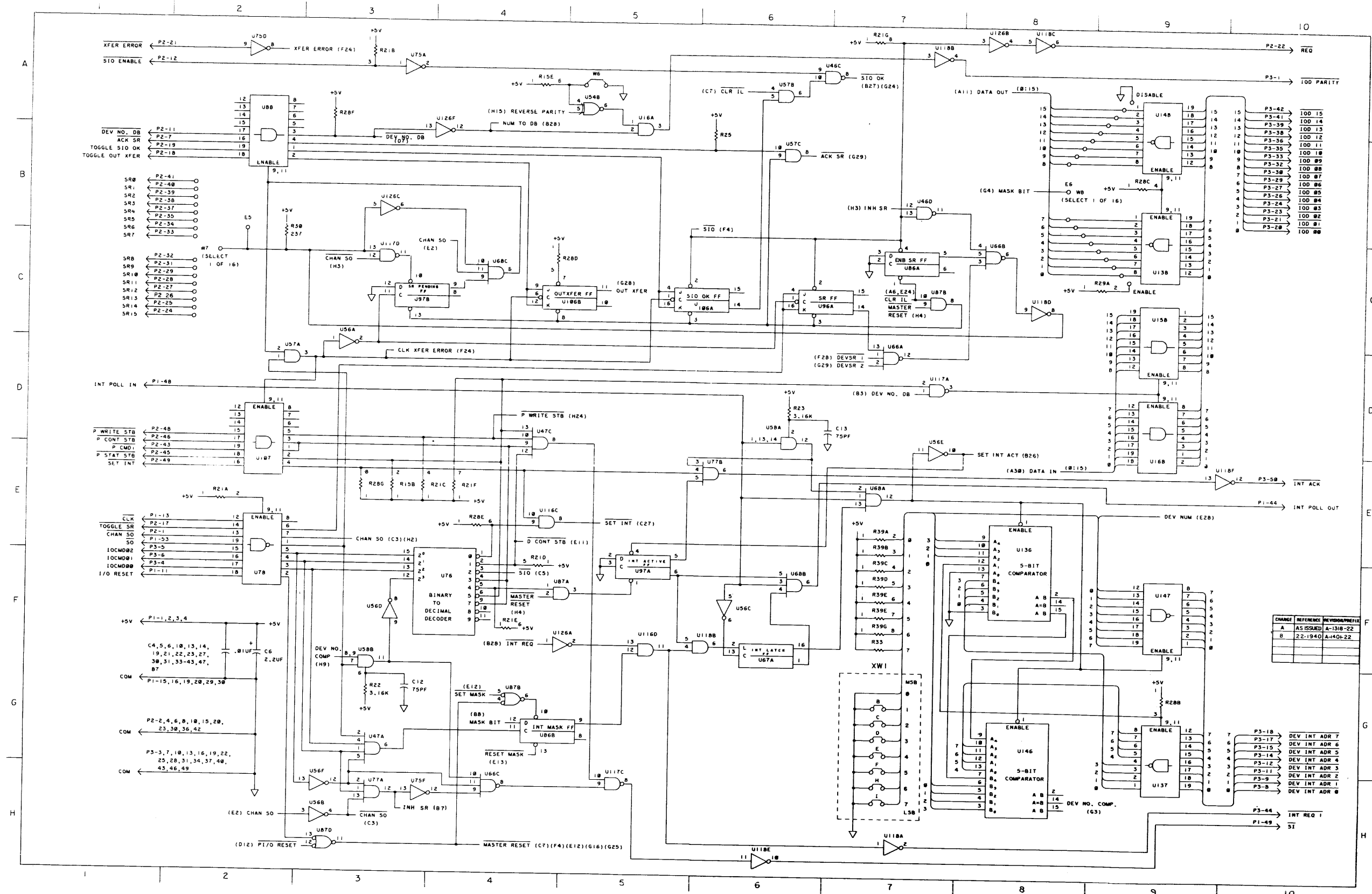
A	REWORK: ADD NOTE 7.13 CHG.	2-3-76
D	REVISED NOTE 11	9-24-75
E	REVISED NOTE 11	10-9-75
F	REVISED NOTE 11	2-3-76



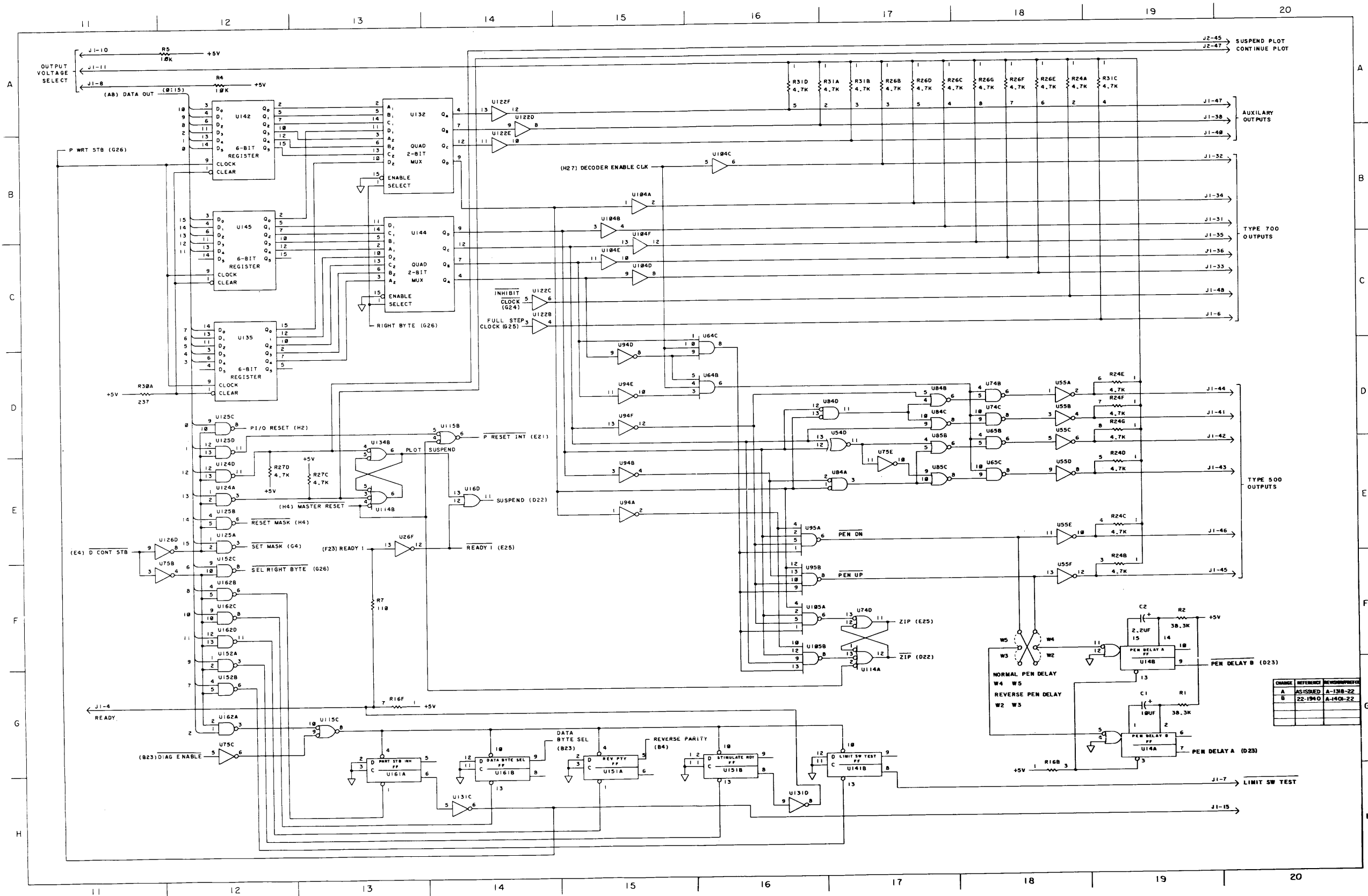
MAG TAPE (9 TRACK) CONTROLLER  
30215-60006

- NOTES:
- UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE IN OHMS  
 ALL RESISTORS 1/8W 1%  
 ALL CAPACITANCE IN MICROFARADS  
 ALL CAPACITORS .01UF CERAMIC DISC  
 ALL DIODES 90-C081  
 ALL IC'S ARE 820-  
 ALL TRANSISTORS ARE 854-0477  
 W1-W2 ARE 859-0005

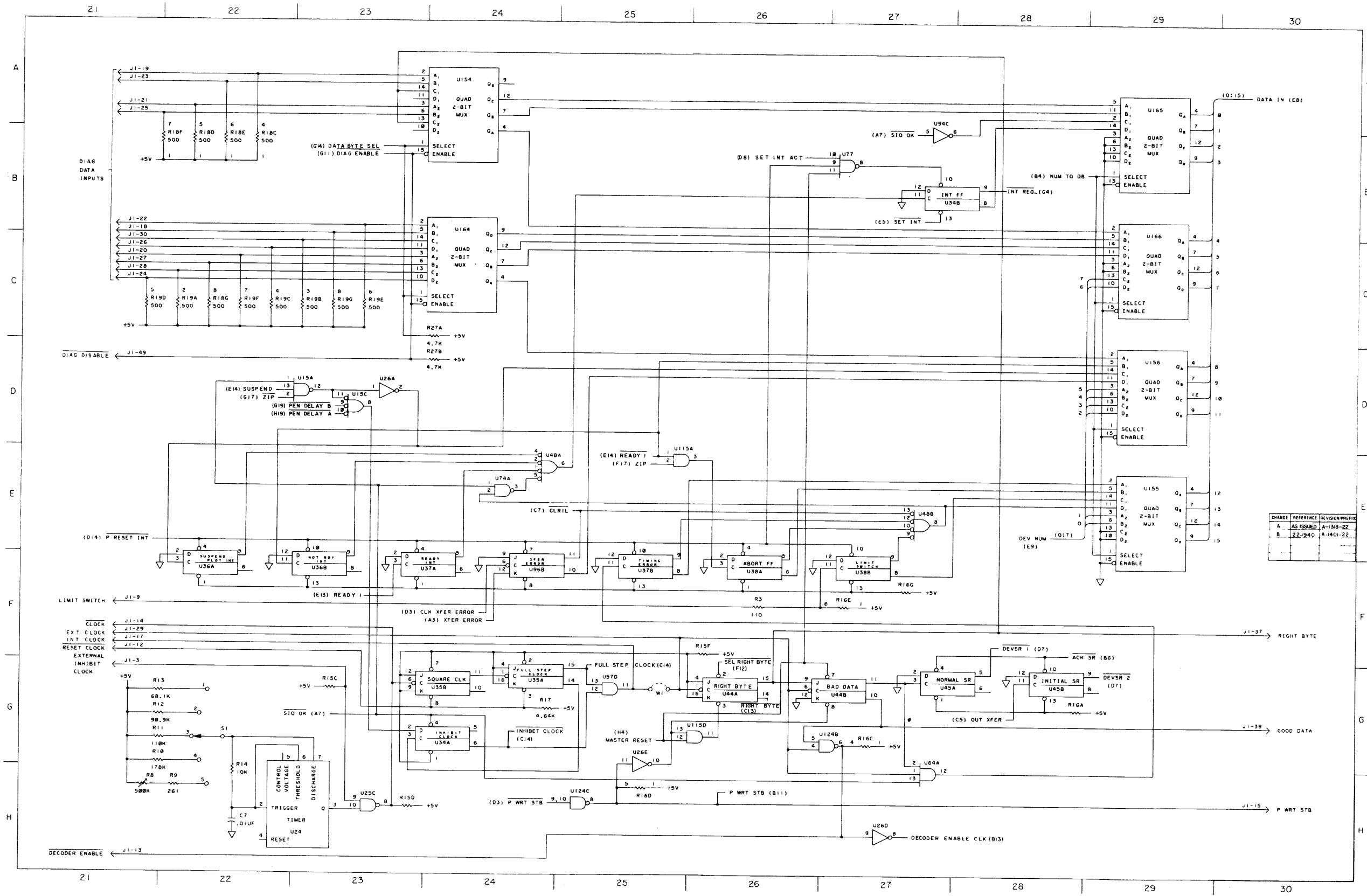




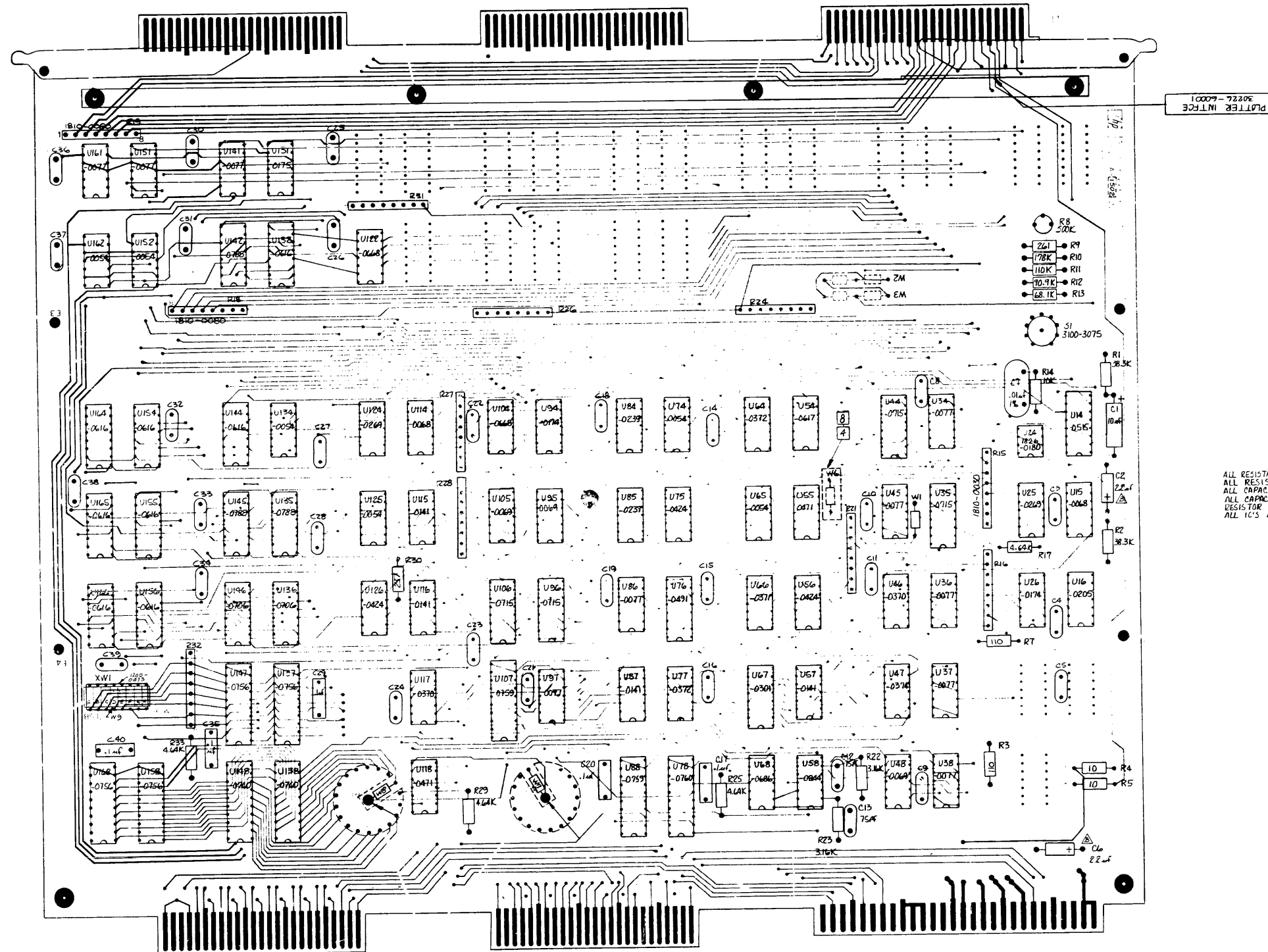
CHANGE	REFERENCE	REVISION/DATE
A	AS ISSUED	A-1318-22
B	22-1940	A-1401-22

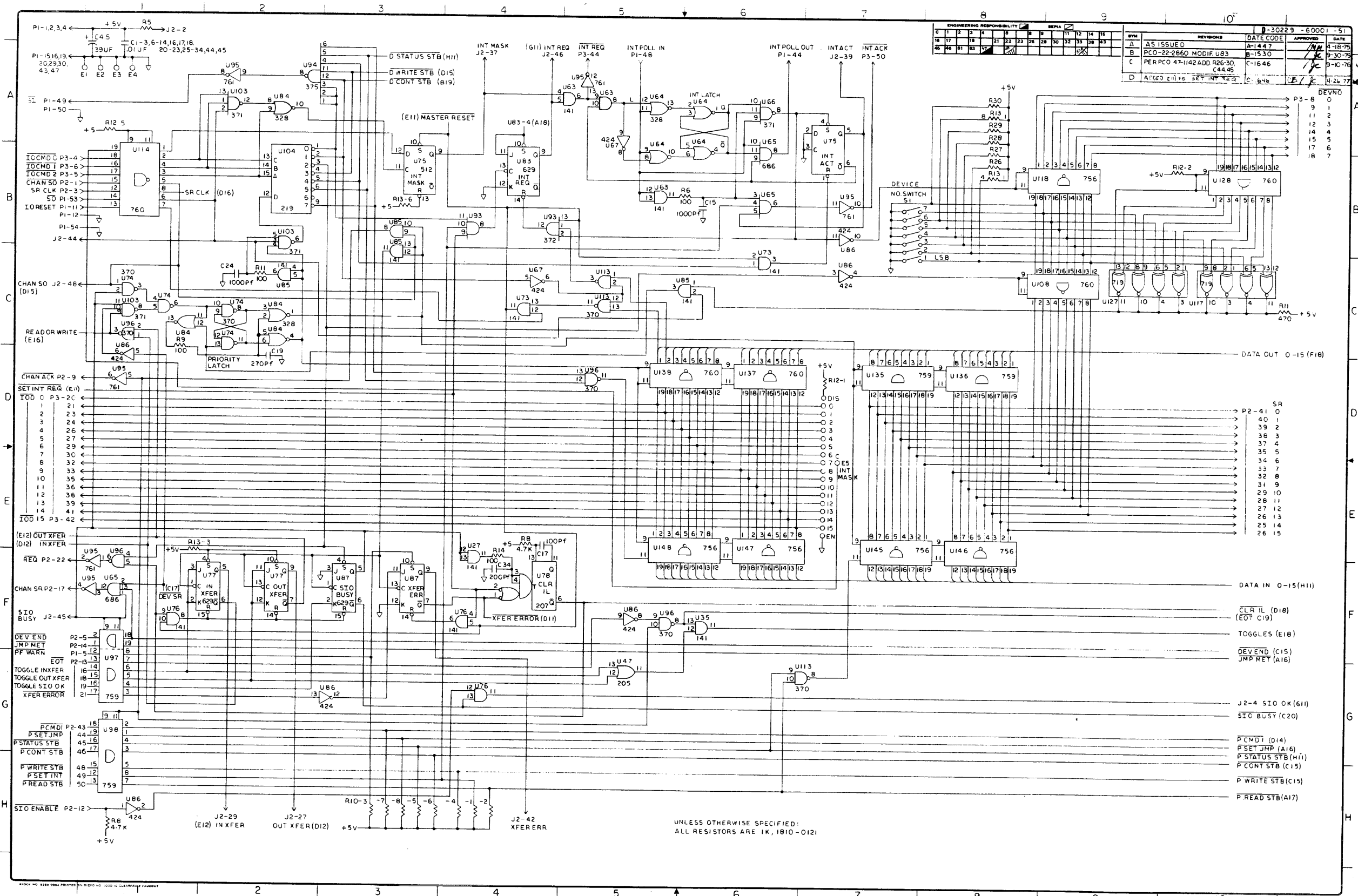


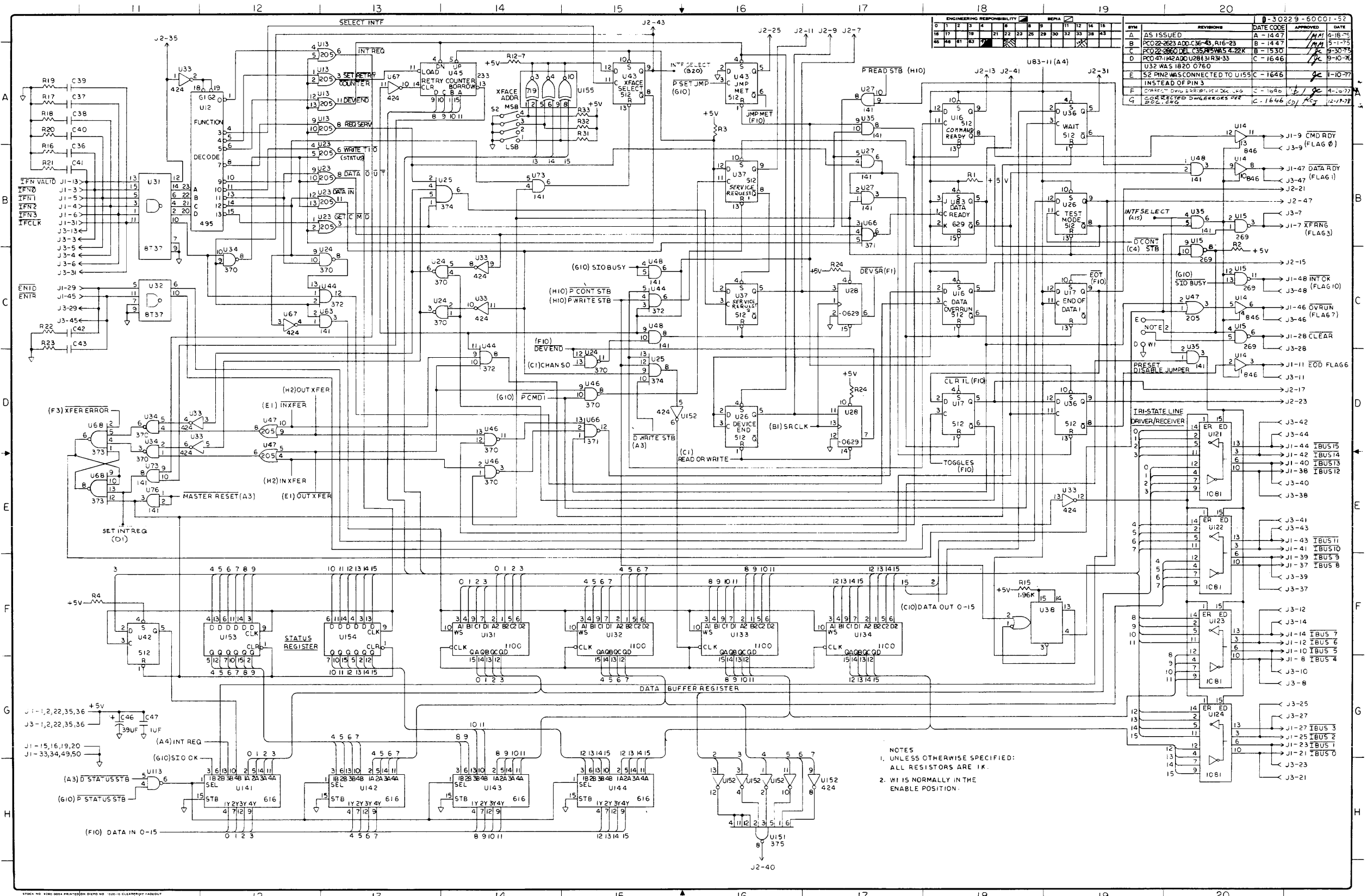
CHANGE	REFERENCE	REVISION
A	AS ISSUED	A-130-22
B	22-1940	A-140-22

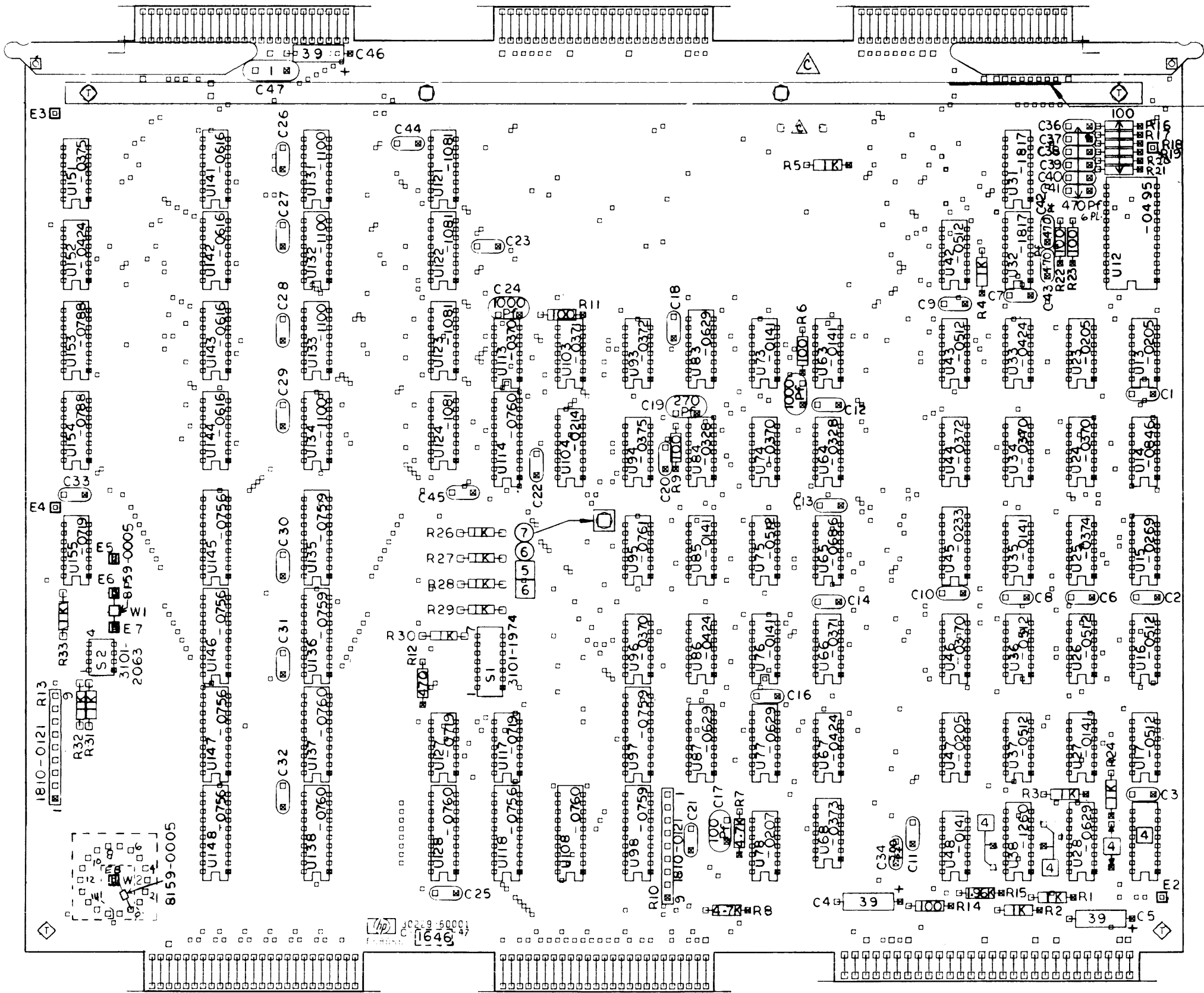


REV.	ISSUED	DATE
A	AS ISSUED	1/15/75
B	CHANGE PLATE FOR C8 AND C6	2/11/75
C	PCO. 17.060. DATE CODE WAS A1518	1-11-75
D	REWORK 1810-0125 TO 500K	5-23-75
E	PCO. 17.111. REVISED W48 W49, ADD 17843, DATE CODE WAS A-1401-22	8-29-75

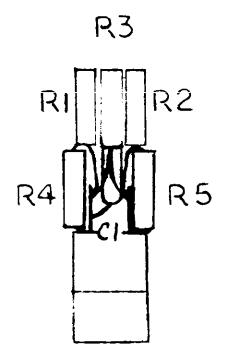
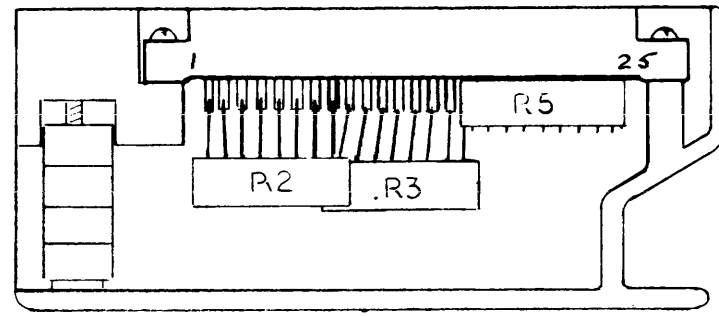
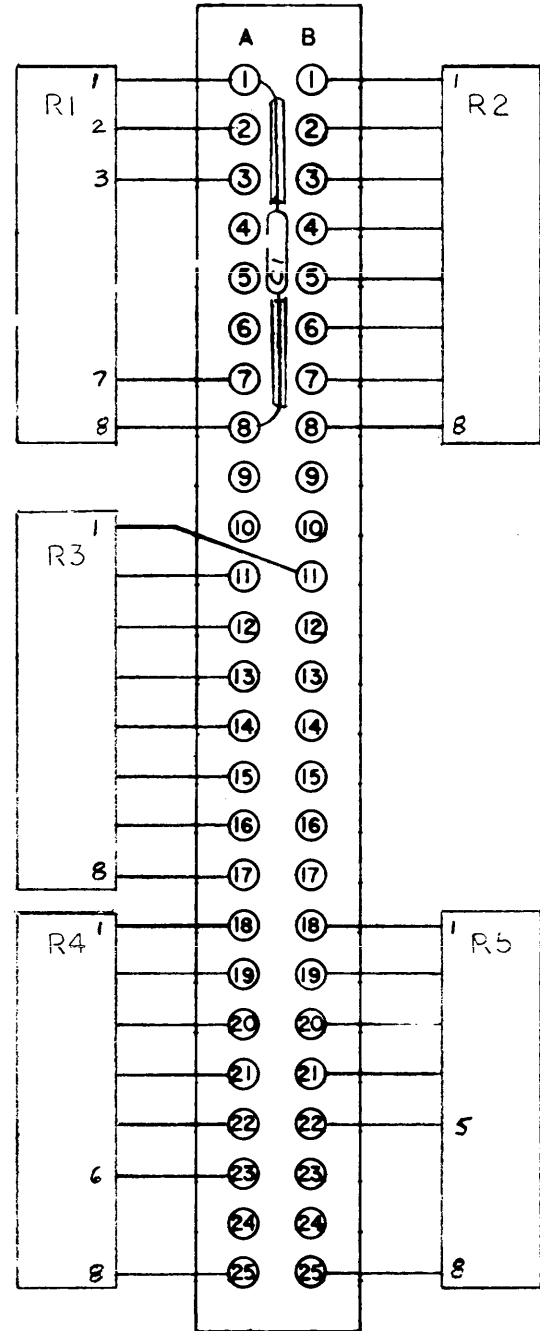




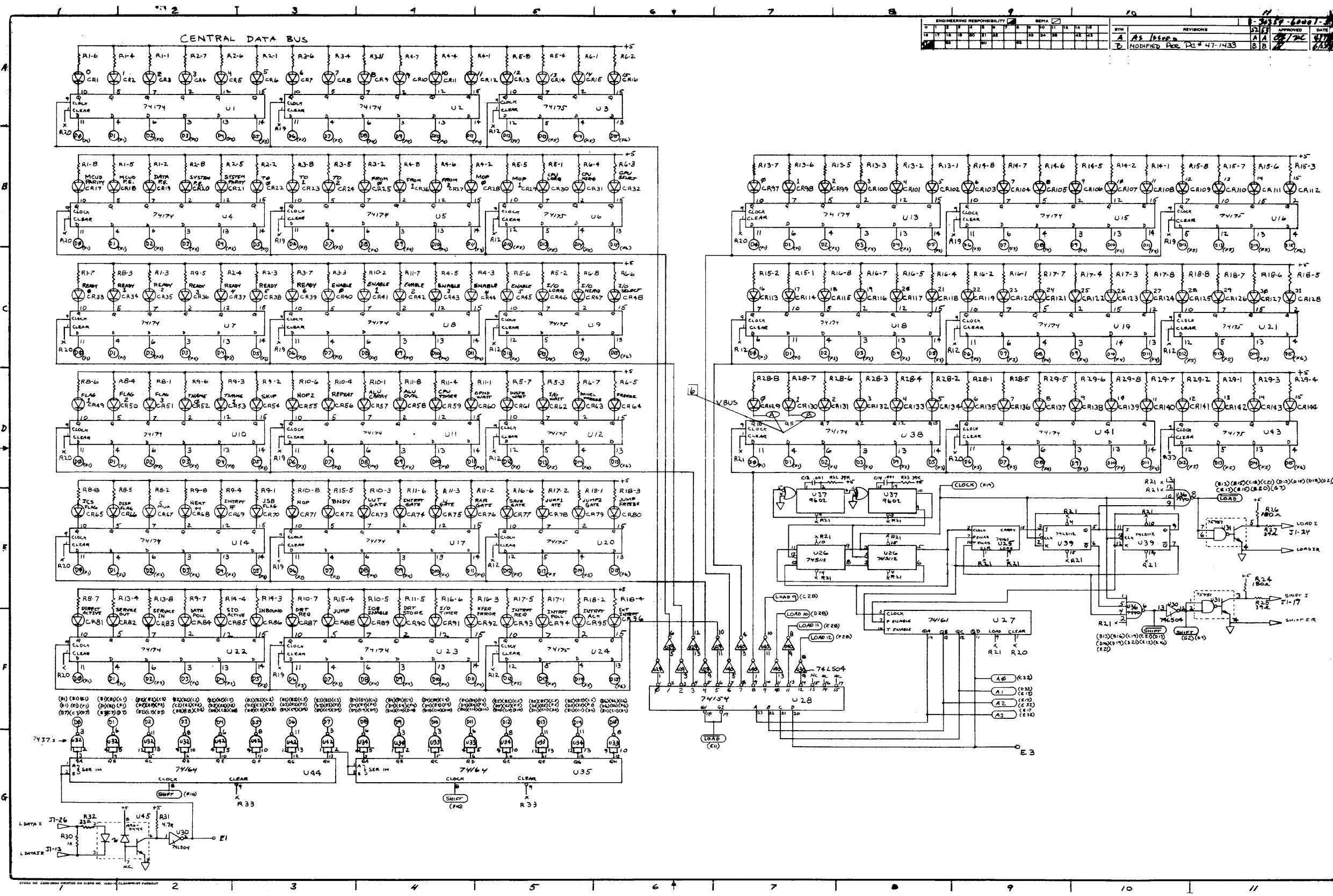




- NOTES:
- UNLESS OTHERWISE SPECIFIED  
 ALL RESISTANCE IN OHMS  
 ALL RESISTORS 1/4W 5%  
 ALL CAPACITANCE IN MICROFARADS  
 ALL CAPACITORS .01 CERAMIC DISC  
 ALL IC'S ARE 1820 -

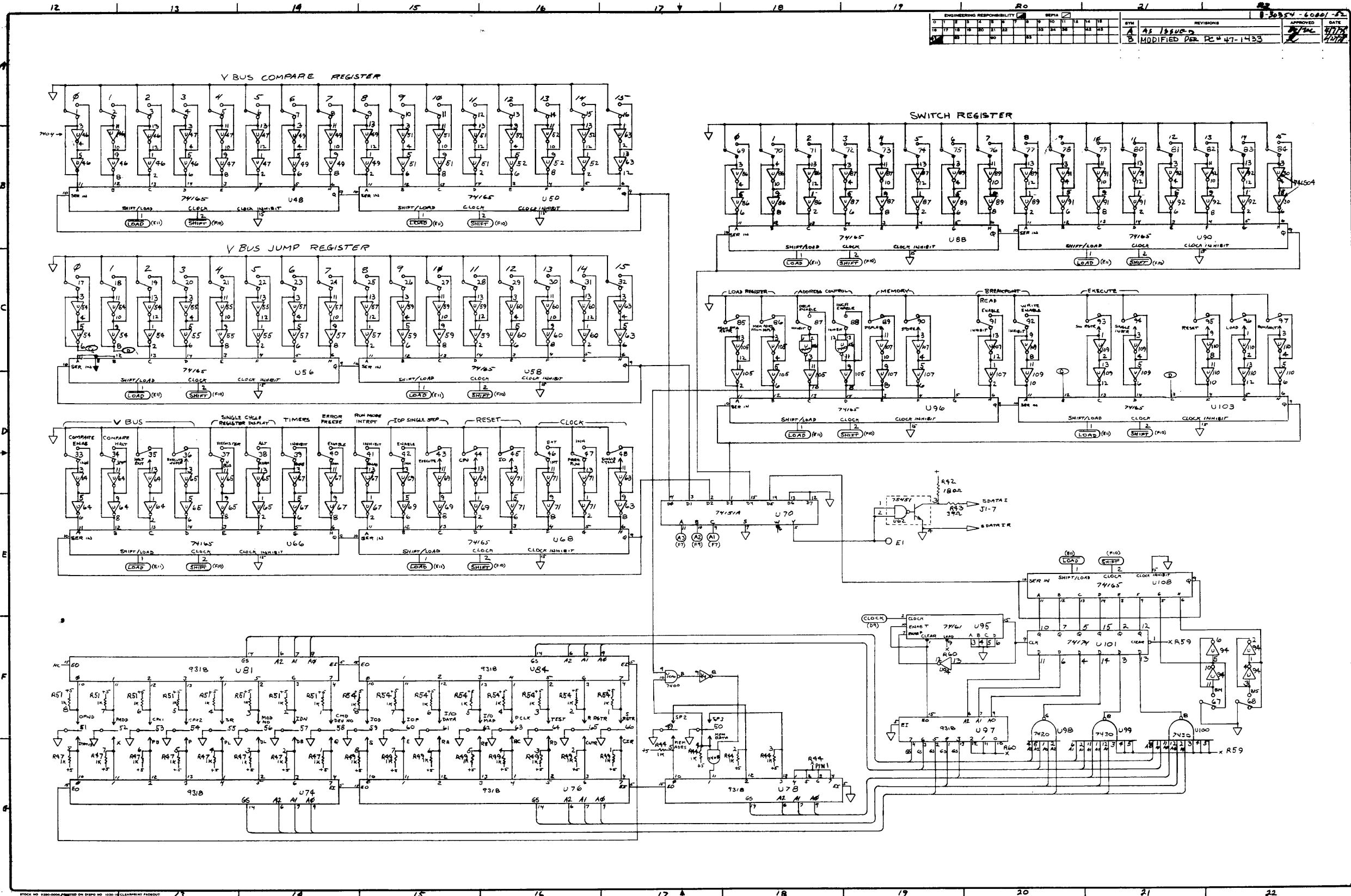


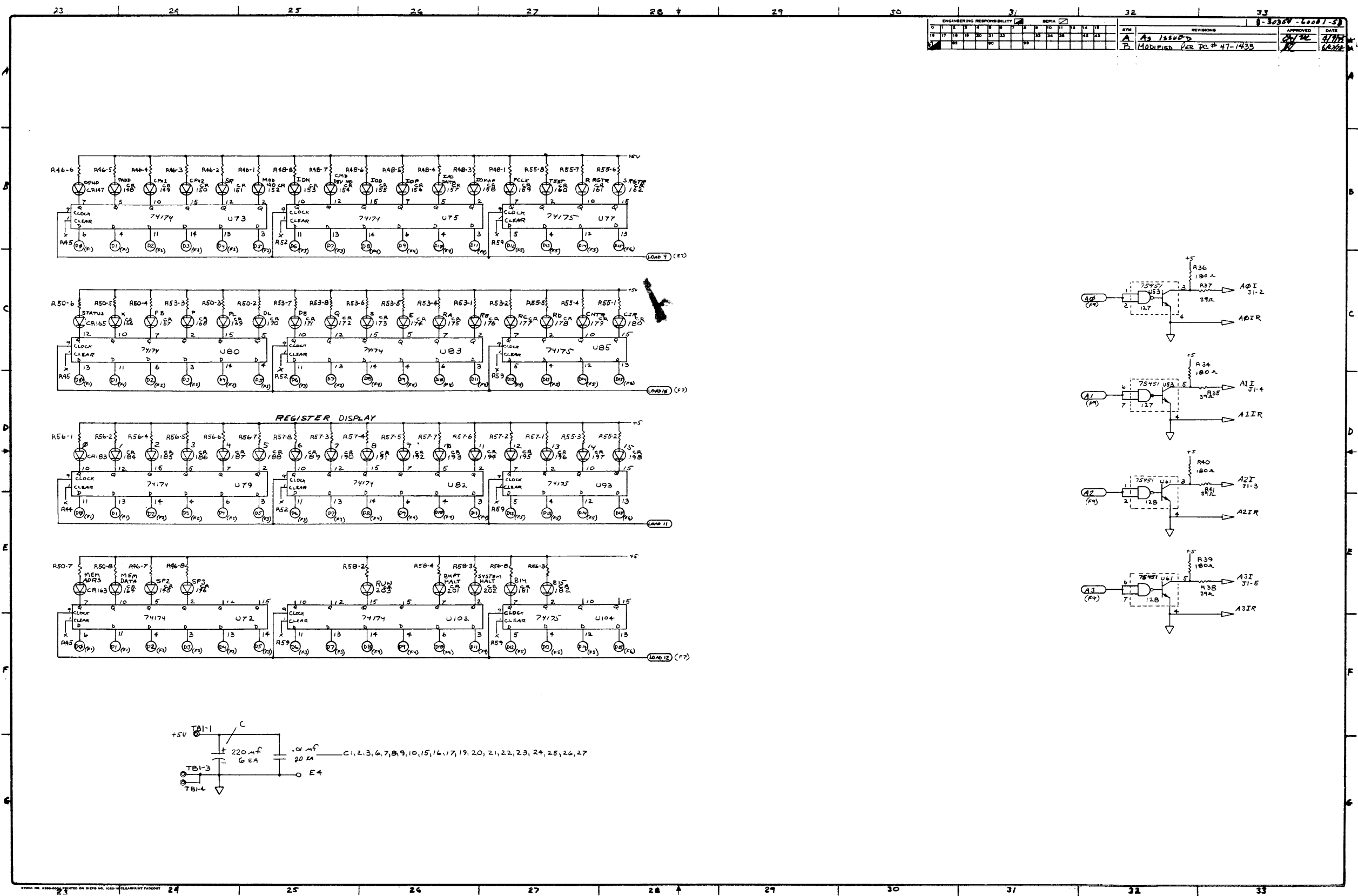




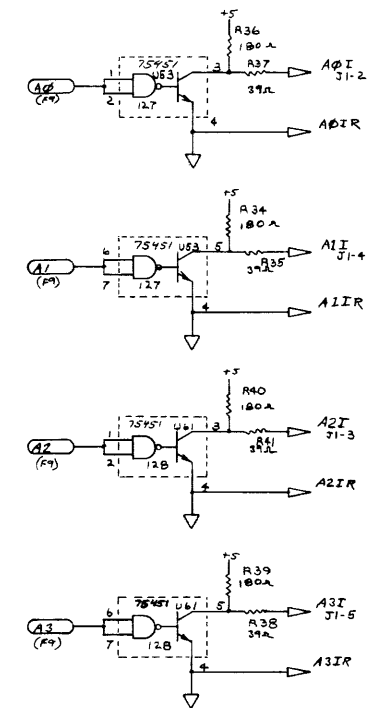
ENGINEERING RESPONSIBILITY		REVISIONS		DATE
DESIGNED	BY	REVISED	BY	DATE
DRAWN	BY	REVISED	BY	DATE
CHECKED	BY	REVISED	BY	DATE
APPROVED	BY	REVISED	BY	DATE

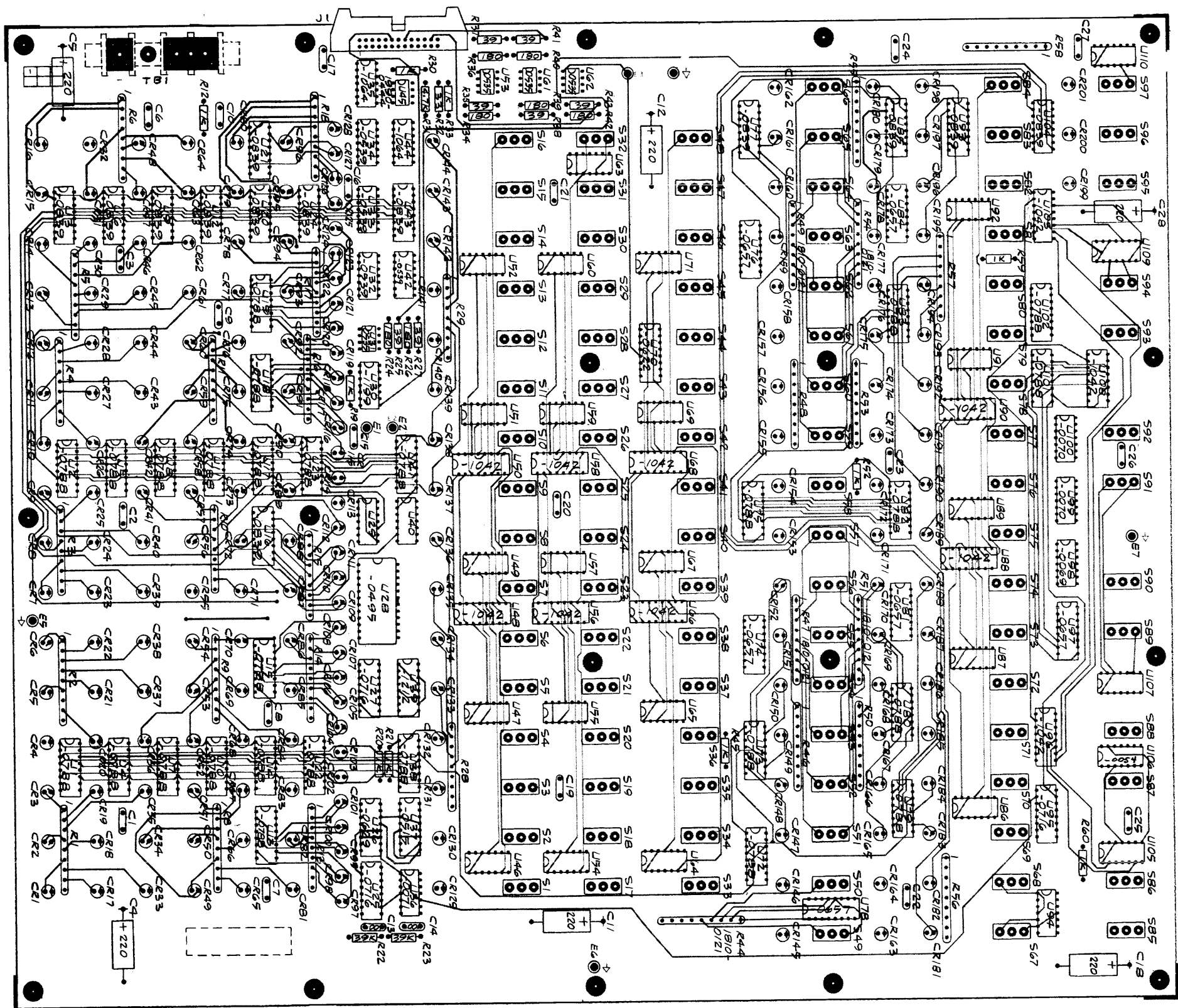
30354-60001-2  
 A 35 Issues  
 B MODIFIED Dec 12 47-1433  
 B B





ENGINEERING RESPONSIBILITY		REPA	32	33	
18	19	20	21	22	23
A As Issued		APPROVED		DATE	
B Modified per DC # 47-1433		3/7/82		6/22/82	

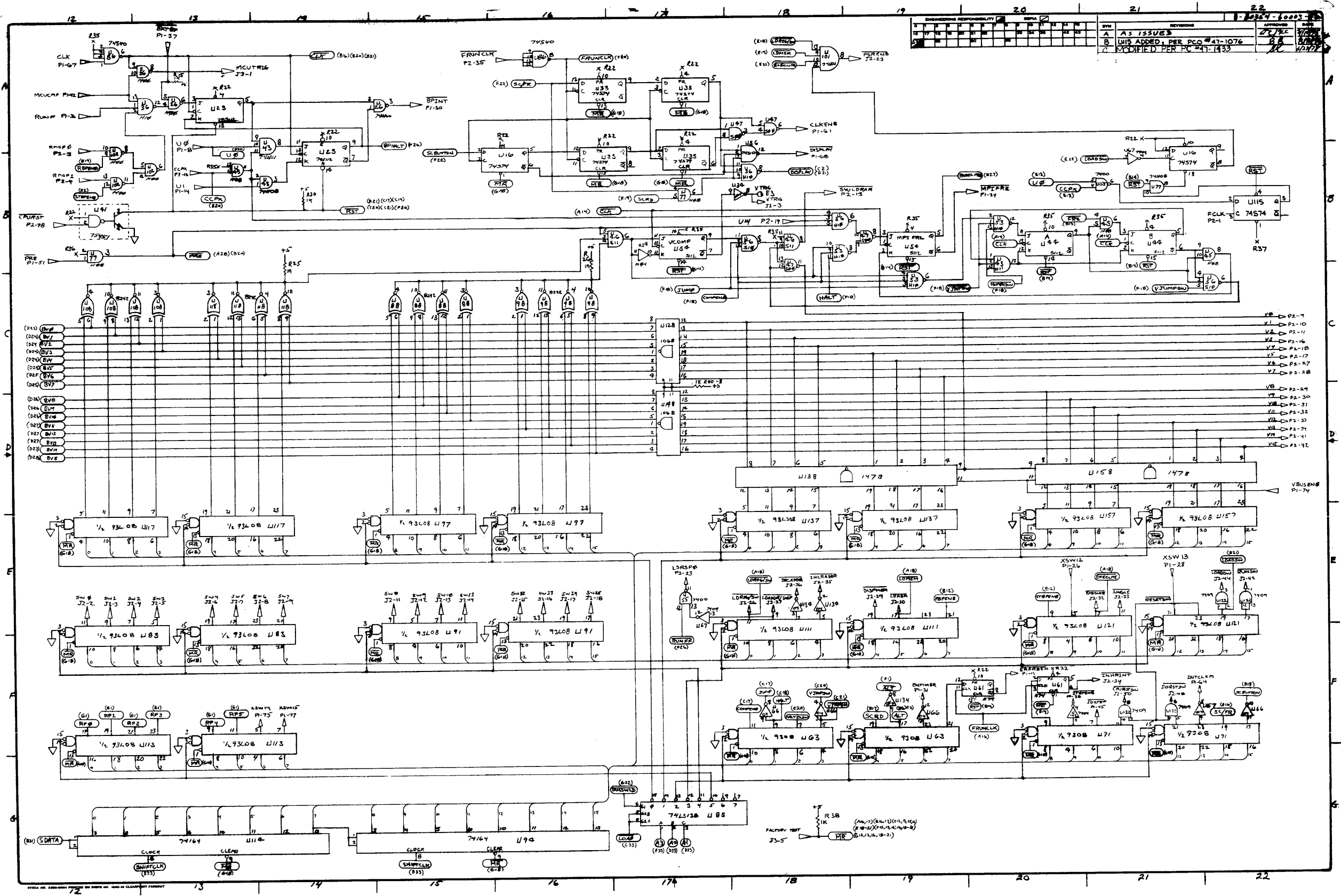


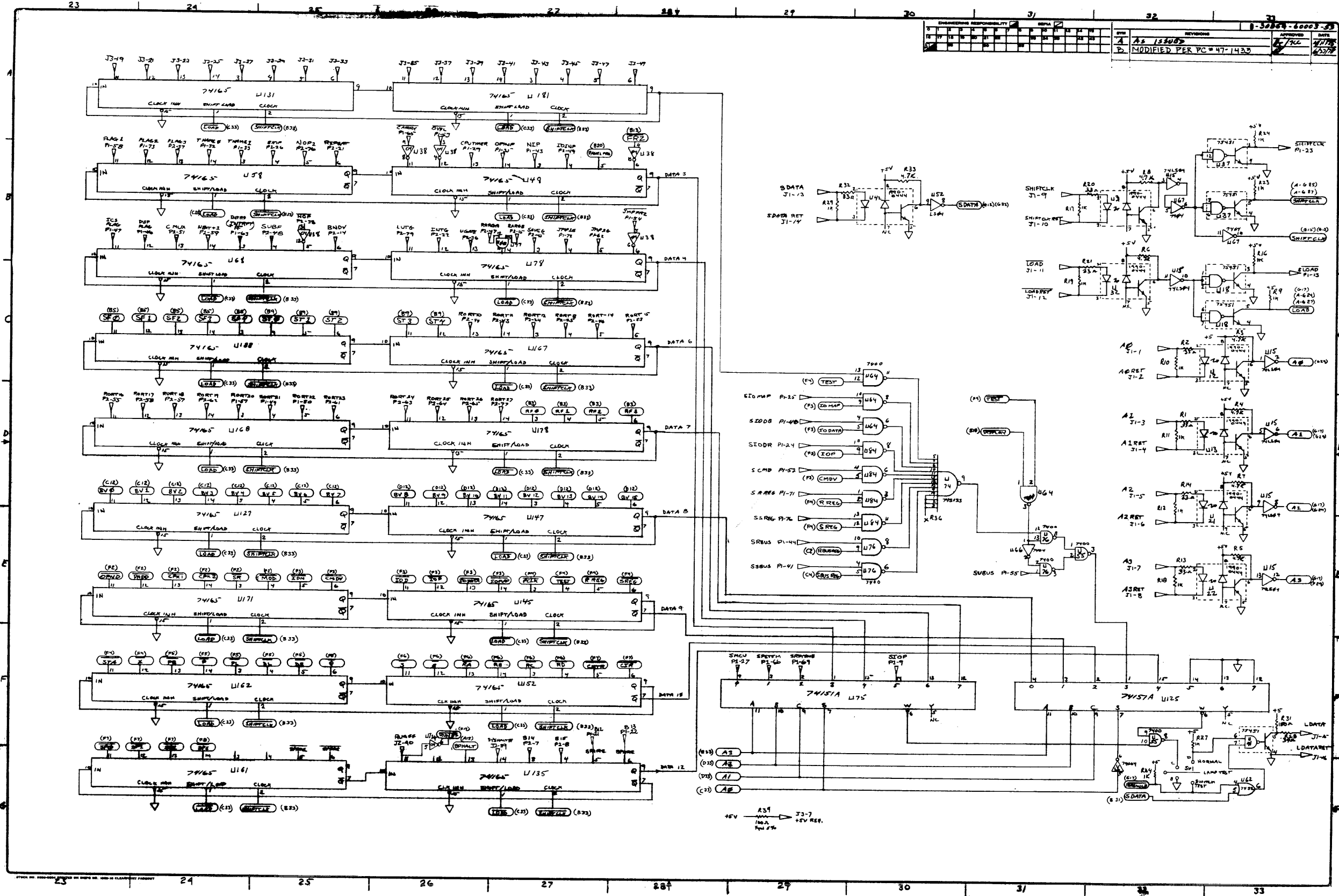


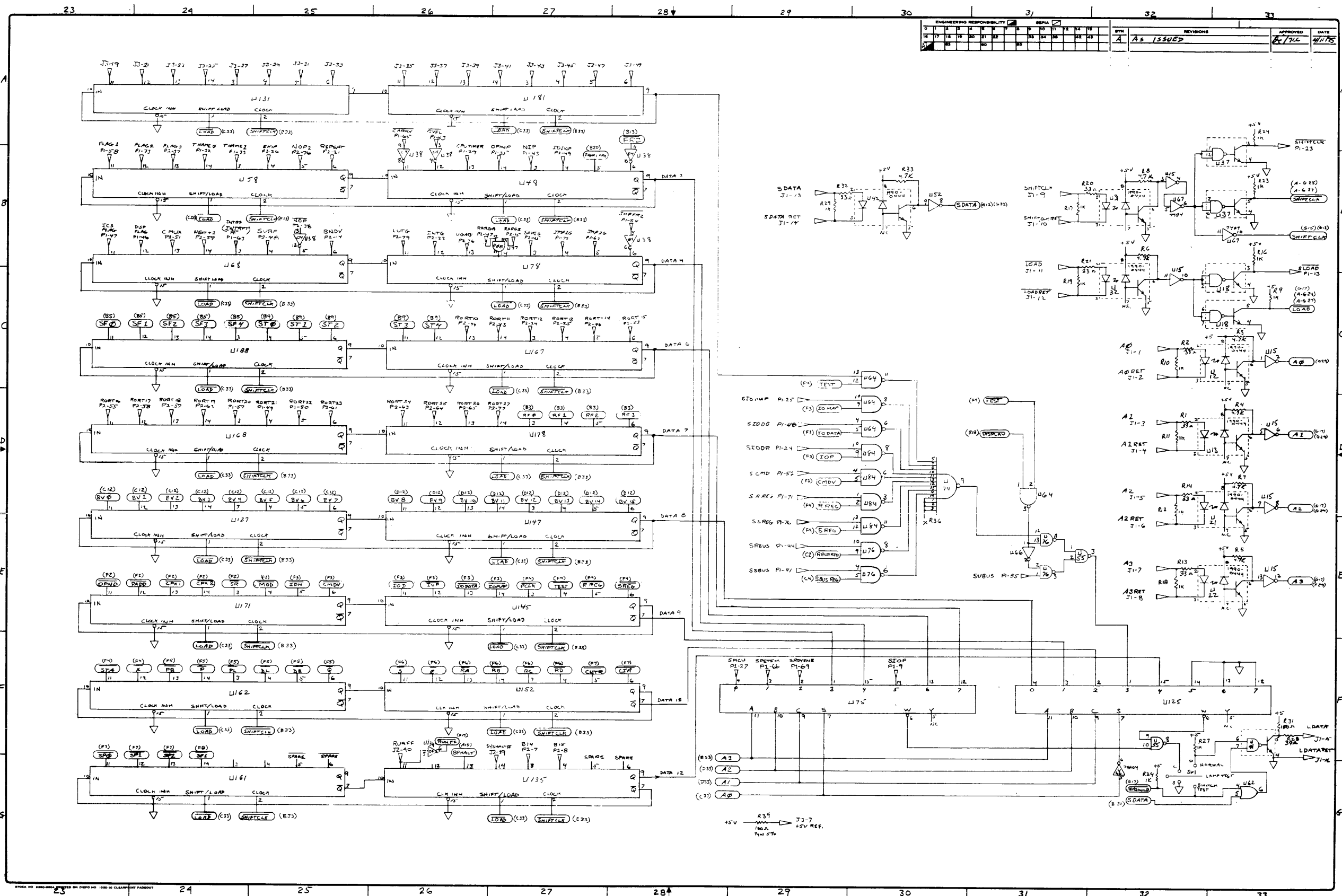
NOTES:

1. UNLESS OTHERWISE SPECIFIED:
  - ALL RESISTANCE IN OHMS
  - ALL RESISTORS ARE 1/4 W, 99%
  - ALL CAPACITANCE IN MICROFARADS
  - ALL CAPACITORS ARE .01 CERAMIC DISC
  - ALL DIODES ARE 1990-0410
  - ALL RESISTOR NETWORKS ARE 200-5L 1810-0163
  - ALL I.C.'S ARE 1820-0174
  - ALL SWITCHES ARE 3101-1967 (CK 7101-70646E)
  - S49-S66 ARE 3101-1968 (CK 7105-CENTRA OFF)
  - S35, 36, 43-45, 48, 85, 86, 89,
  - 90, 93-97 ARE 3101-1966 (CK 7108-MOMENTARY)

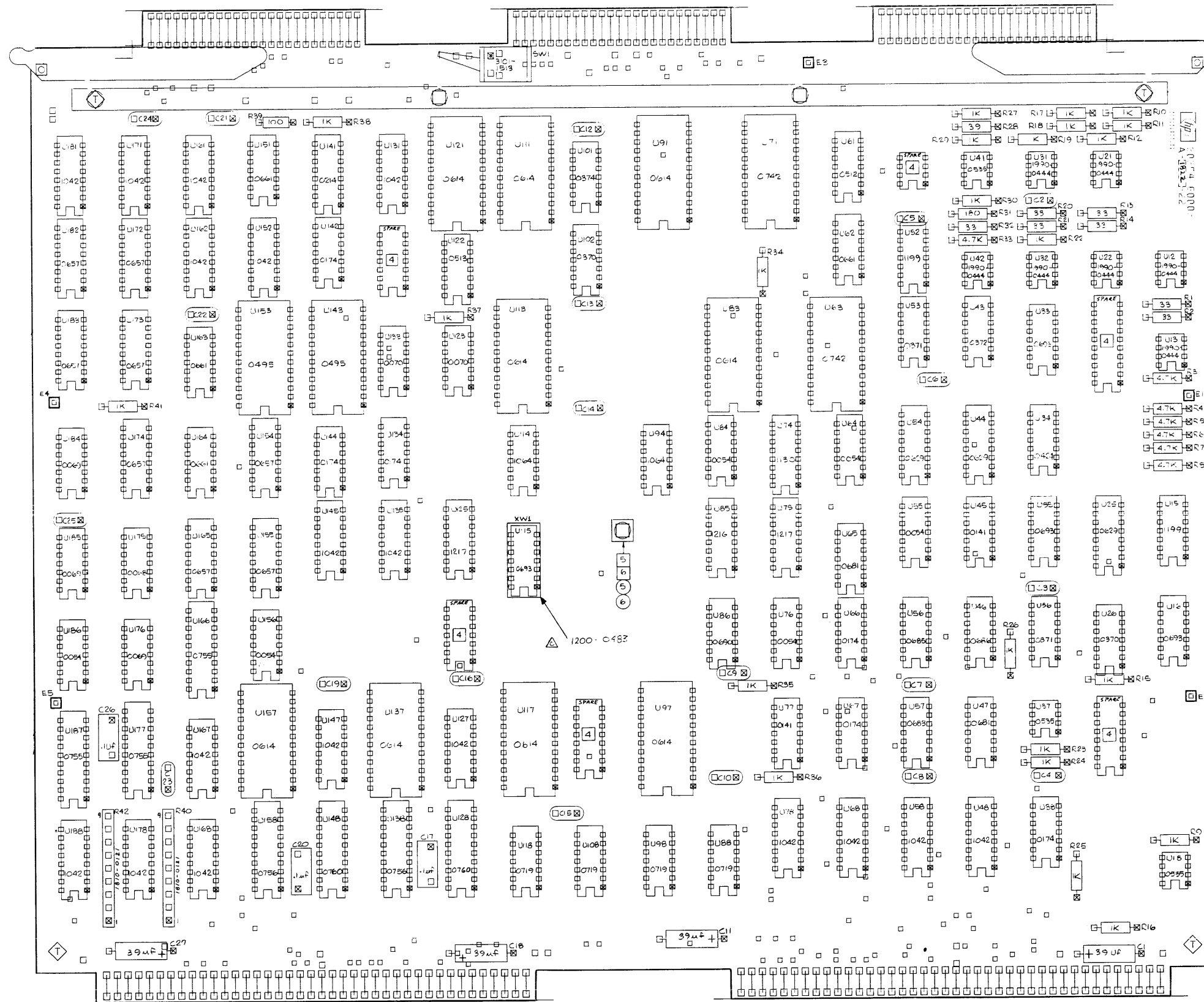






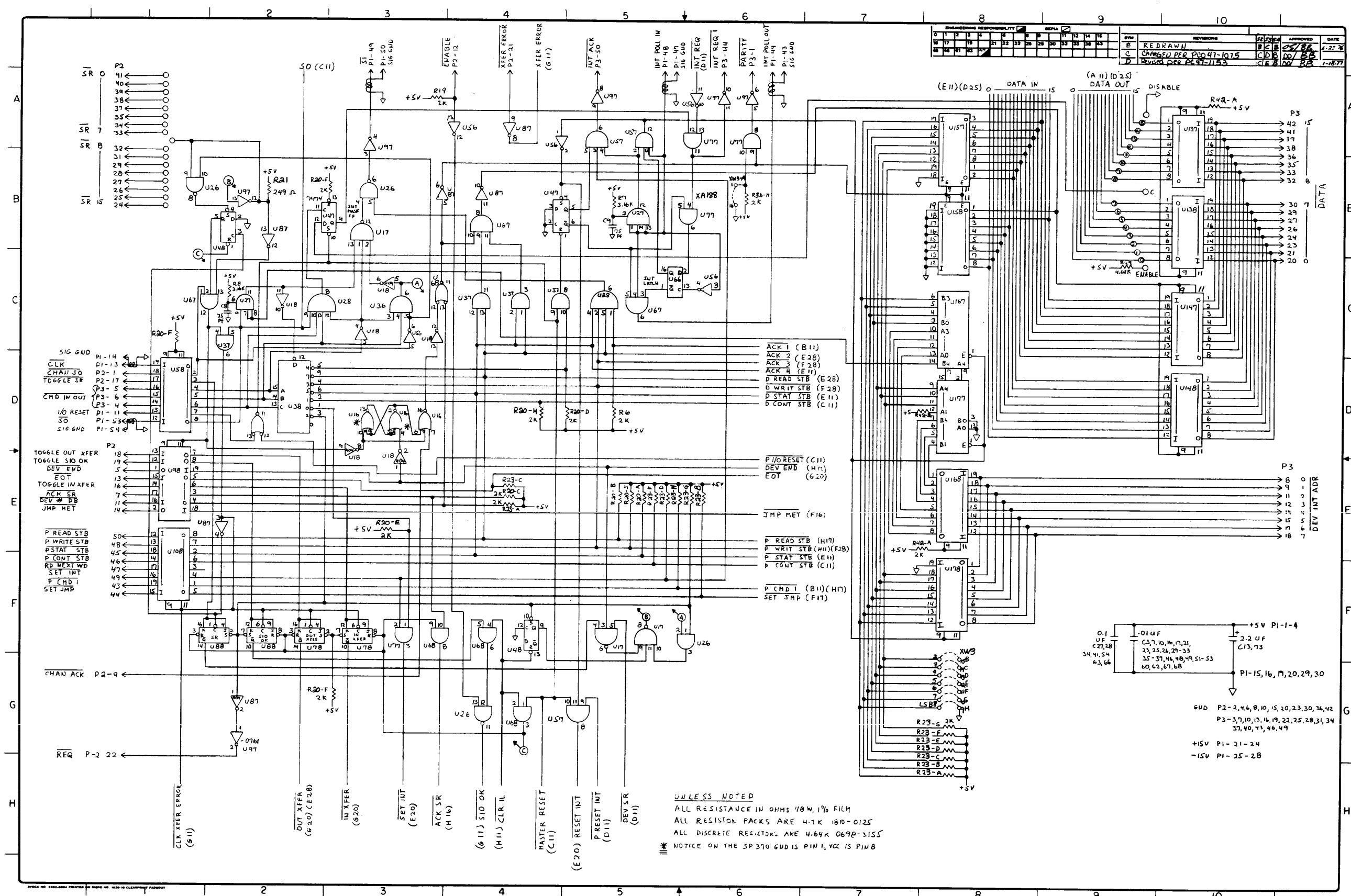




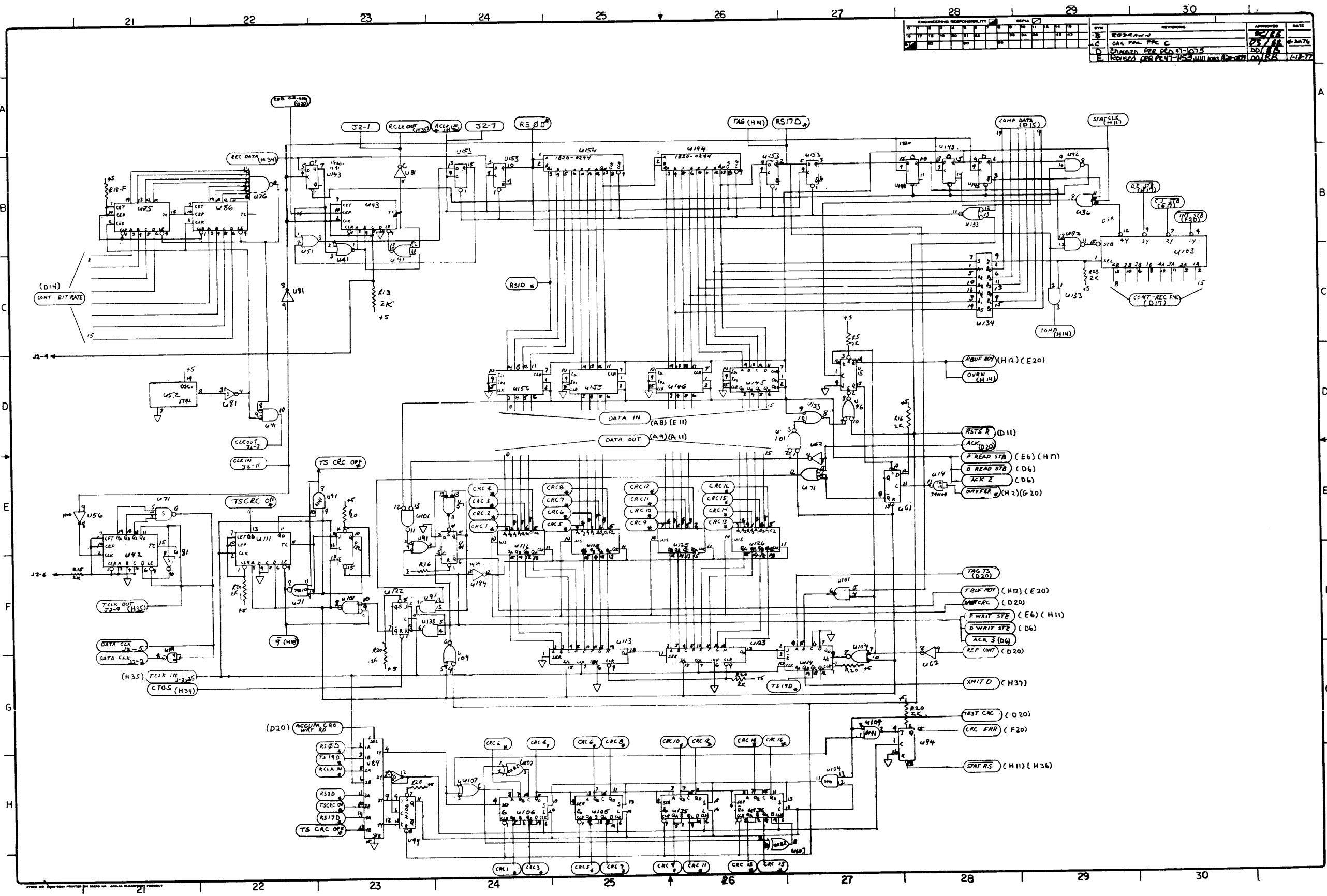


30354-60003  
 12-1-78  
 78

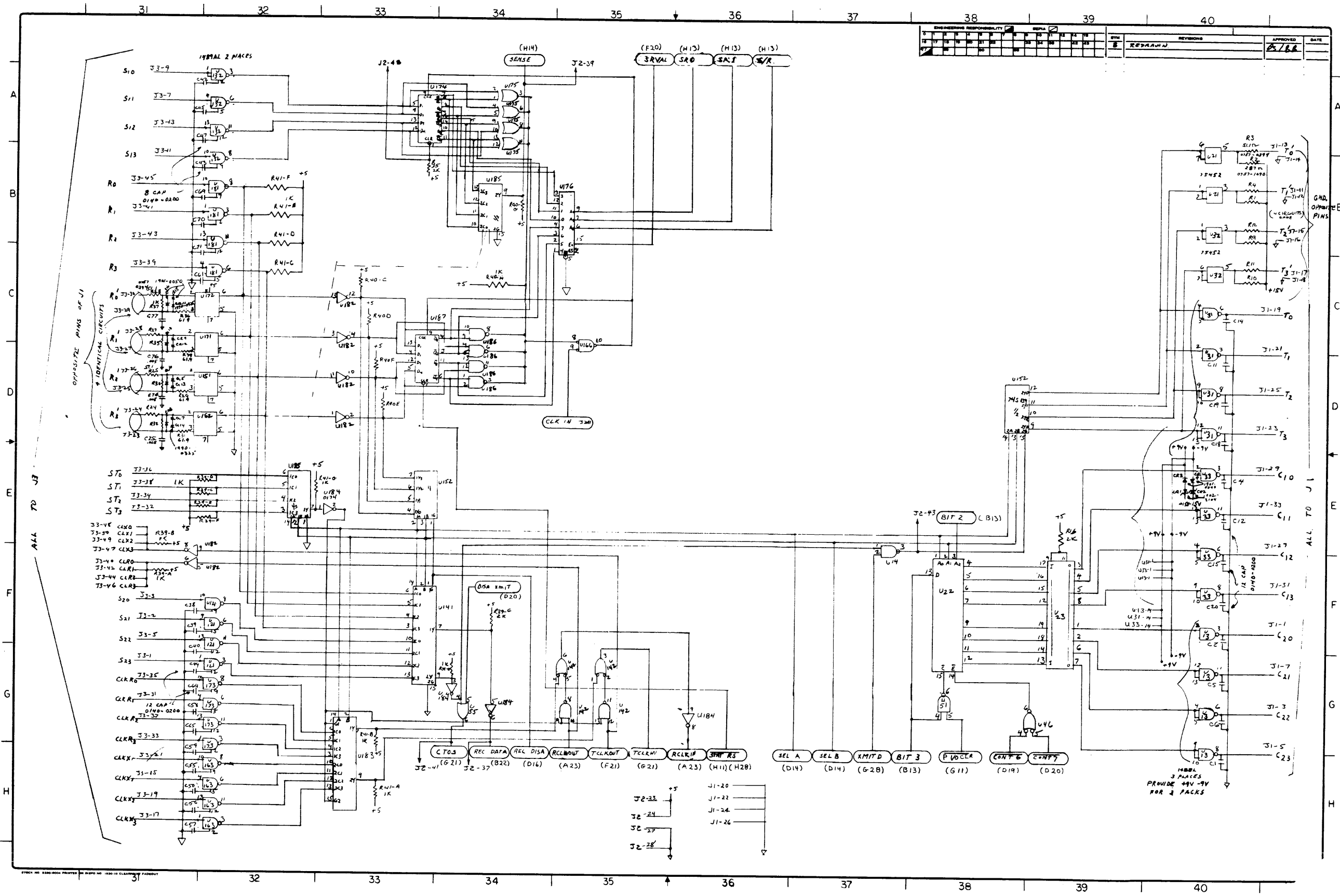
NOTES -  
 1. UNLESS OTHERWISE NOTED:  
 ALL RESISTANCE IN OHMS  
 ALL RESISTORS 1/4W 5%  
 ALL CAPACITANCE IN MICROFARADS  
 ALL CAPACITORS 50VDC CERAMIC 0.50  
 ALL IC'S ARE 1620-XXXXX





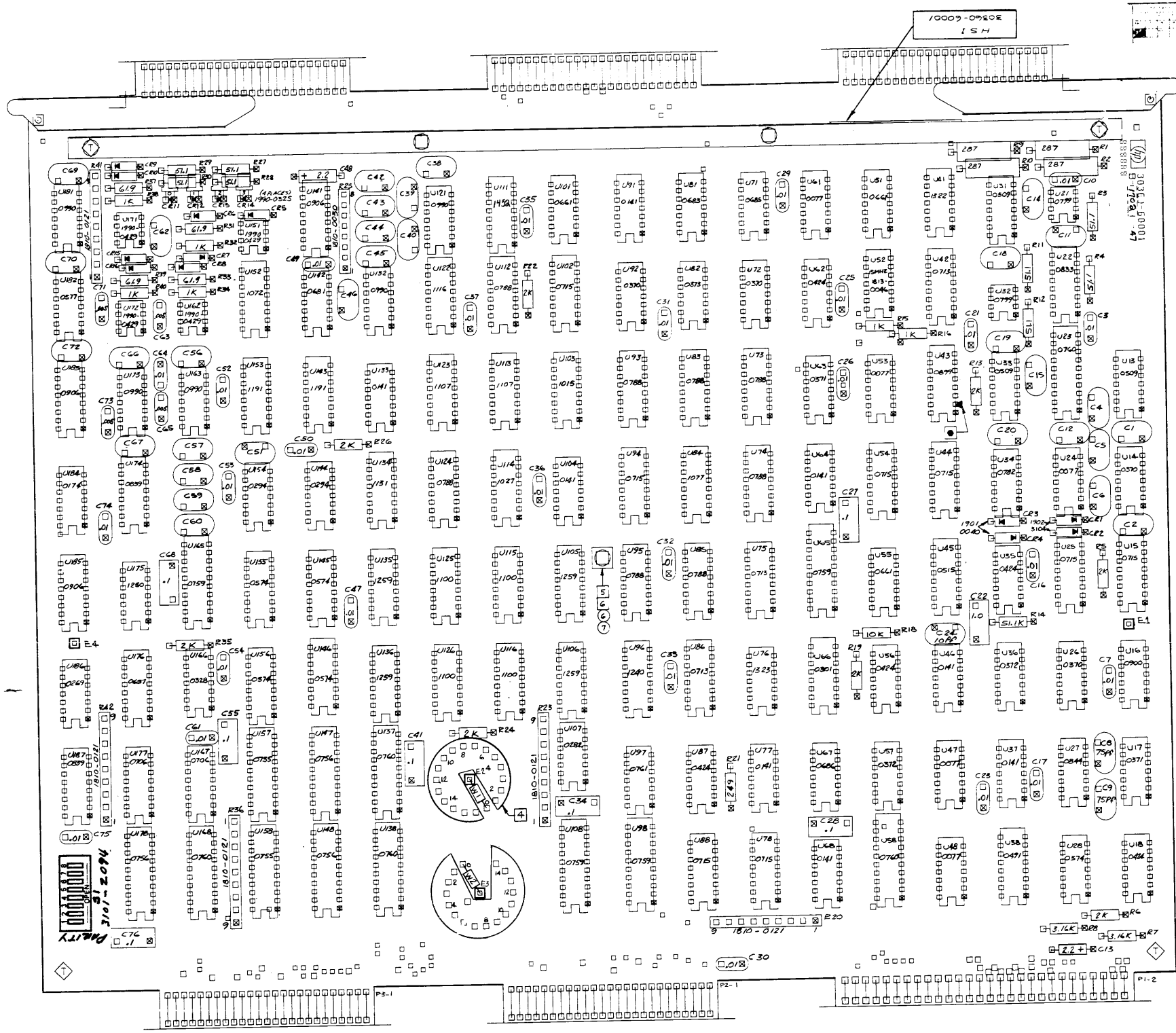


ENGINEERING RESPONSIBILITY		REVISED	DATE
DESIGNED BY	W. J. W.	1	12/18/76
CHECKED BY	G. A. P.	2	12/18/76
APPROVED BY	P. E. C.	3	12/18/76
REVISIONS	1. REVISED PER P. E. C. 12/18/76 2. REVISED PER P. E. C. 12/18/76 3. REVISED PER P. E. C. 12/18/76		



A: As Issued  
B: Deleted R17 per 10/16/88  
C: Revised per 10/16/88

10003-0920E  
I S H

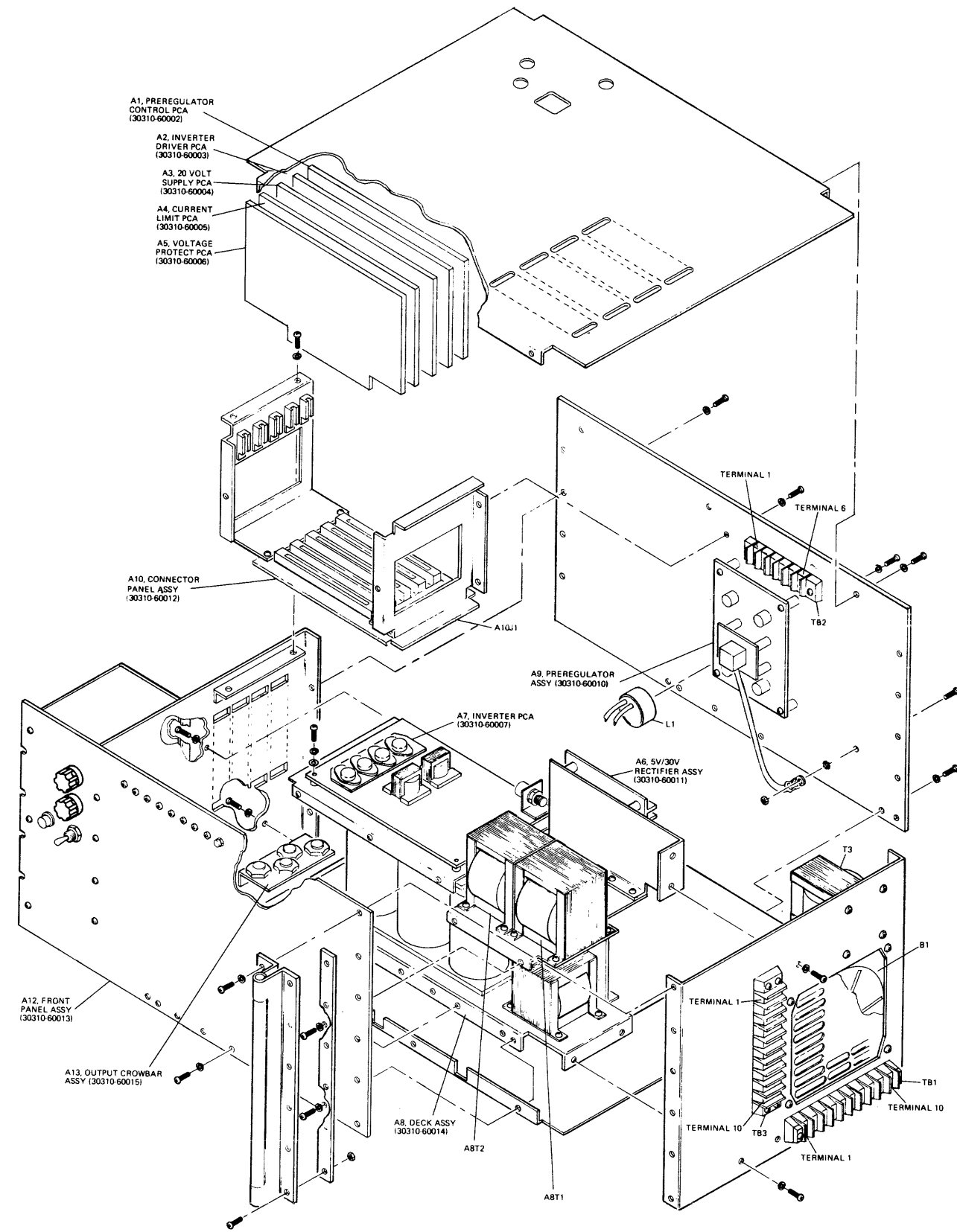


- NOTES:
- UNLESS OTHERWISE SPECIFIED;  
 ALL RESISTANCE IN OHMS  
 ALL CAPACITANCE IN MICRO FARADS  
 ALL CAPACITORS ARE 500 P.P.  
 ALL DIODES ARE 1N91-0050  
 ALL IC'S 1820-

# SECTION IV - INDIVIDUAL POWER SUPPLIES

## CONTENTS

NUMBER	DESCRIPTION
-----	-----
(None).....	32421A--30310A Power Supply, Exploded View
30310-60002.....	A1, Preregulator
30310-60003.....	A2, Inverter Driver
30310-60004.....	A3, 20-Volt Supply
30310-60005.....	A4, Current Limit
30310-60006.....	A5, Voltage Protect
30310-60011.....	A6, 5V/30V Rectifier
30310-60007.....	A7, Inverter
30310-60014.....	A8, Deck Assembly
30310-60010.....	A9, Preregulator
30310-60013.....	A12, Front Panel of 30310A Supply
30310-60015.....	A13, Output Crowbar
(None).....	"Power Supply, 30310A"
30311-60002.....	30311A Power Supply, Mother PCA
30311-60003.....	Control PCA
30311-60005.....	Heat Sink
30311-60006.....	Battery Pack
30312-60001.....	30312A Power Supply, Assembly
30312-60002.....	30312A Interface
30135-60016.....	32435A--Power Control Display PCA
30135-60017.....	DC Power Control PCA



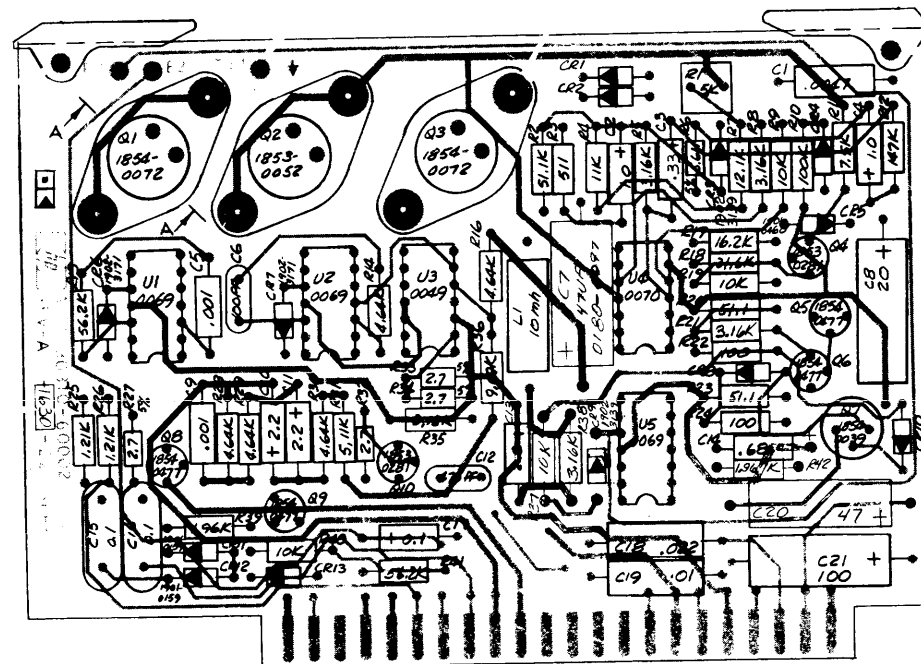
32421A ONLY HP 30310A Power Supply, Exploded View



ENGINEERING RESPONSIBILITY		SEP 14	REV	DATE	BY	CHKD	DATE
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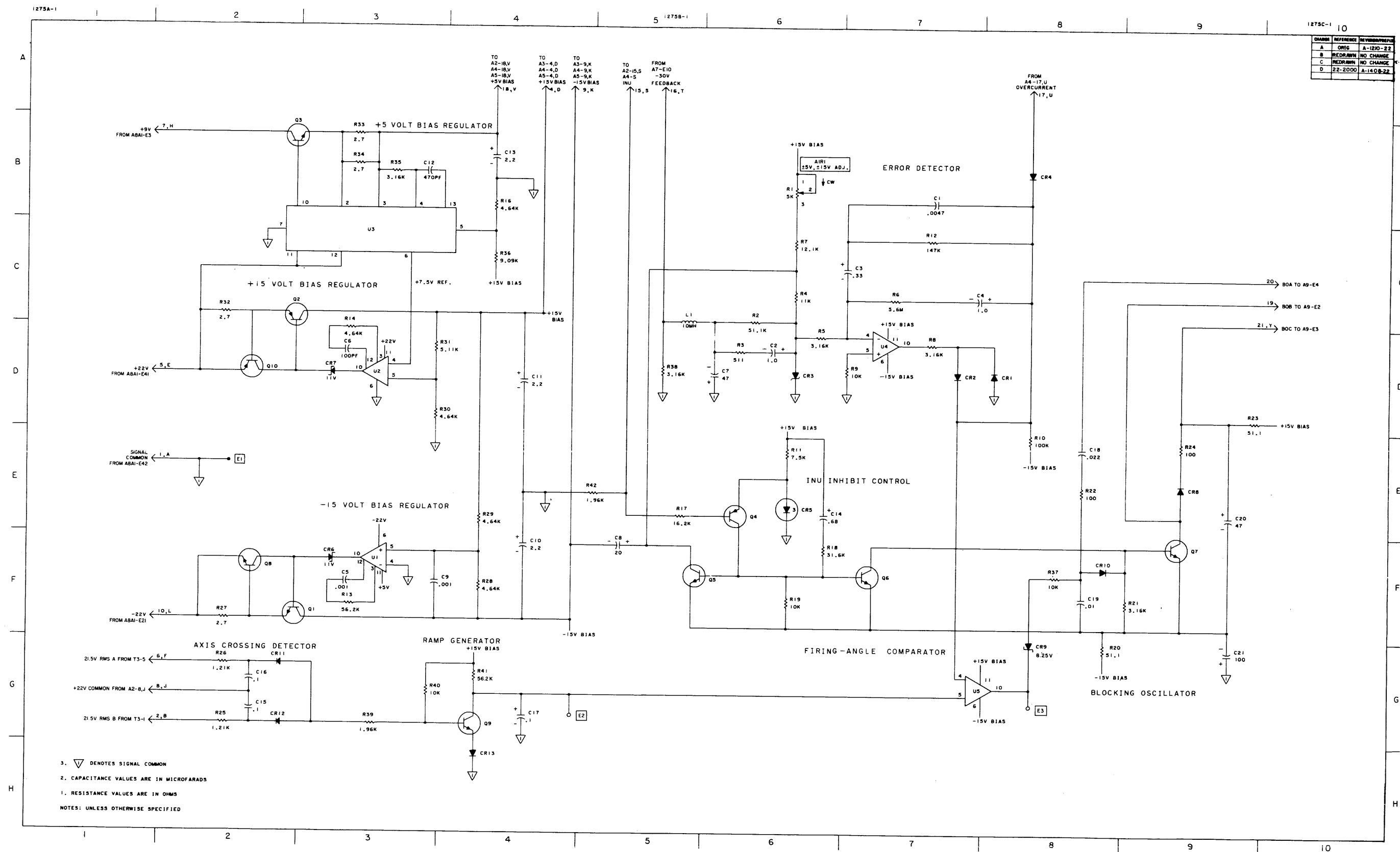
  

REV	DESCRIPTION	DATE	BY	CHKD
A	AS ISSUED (A-1210)	3-20-72		
B	PCB 23-2000, CUG, PLACE FOR C3 C23 WAS 1901-0033, DATE CODE WAS 1210-72	4-1-74		
C	ADDED 303 DA 001 ASM 92	8-9-75		
D	30310-60024 WAS 30300A 22 2779	9-3-75		
E	REVISED PER PCL 47-1079	8-19-76		
F	DELETE P/N 0380-0305 PCL 47-1116	10-13-76		



NOTES :

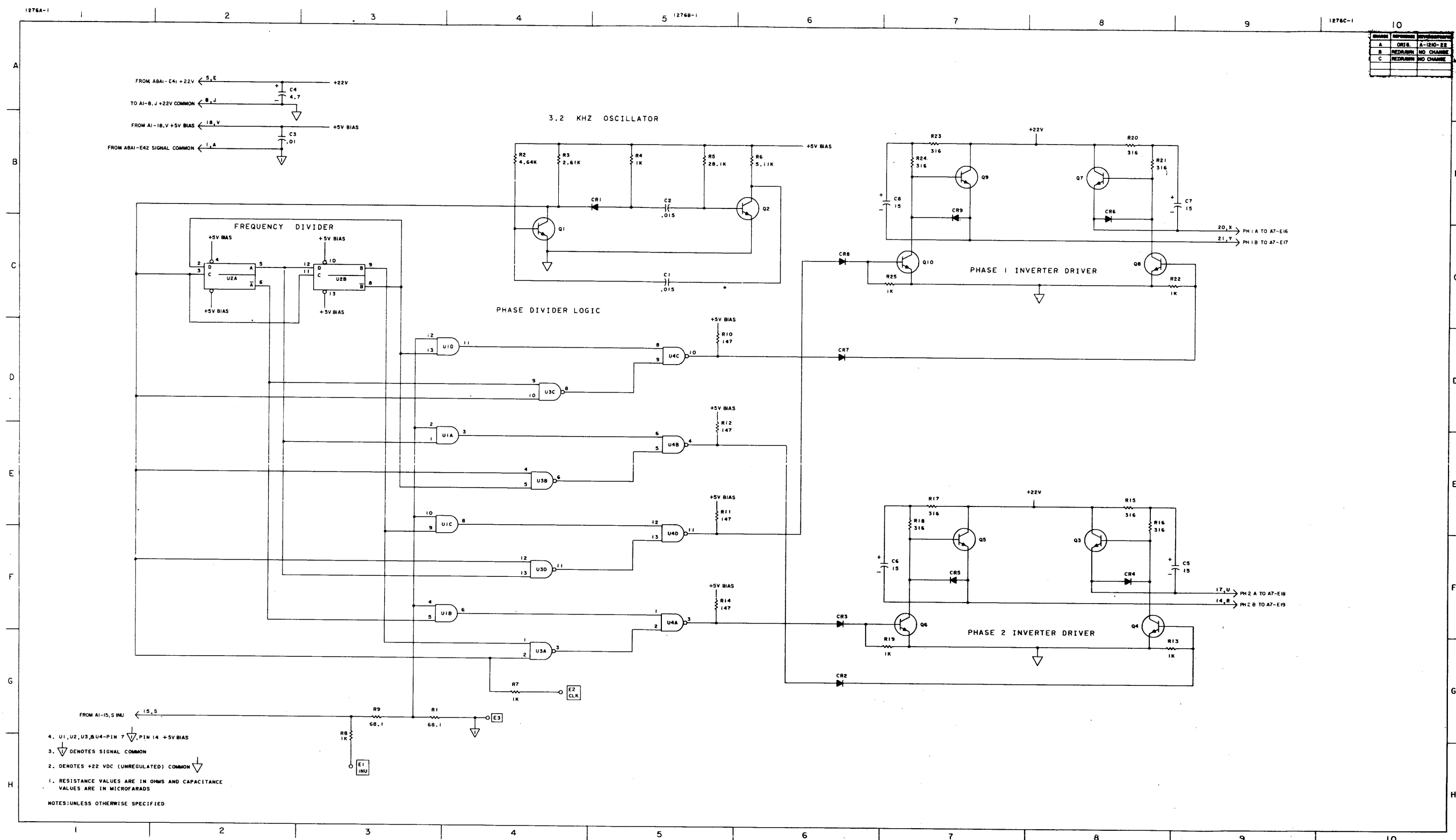
- UNLESS OTHERWISE SPECIFIED  
ALL RESISTANCE IN OHMS  
ALL RESISTOR 1/4W, ±1%  
ALL CAPACITANCE IN MICROFARADS  
ALL DIODES # 1901-0023  
ALL IC'S ARE # 1826-

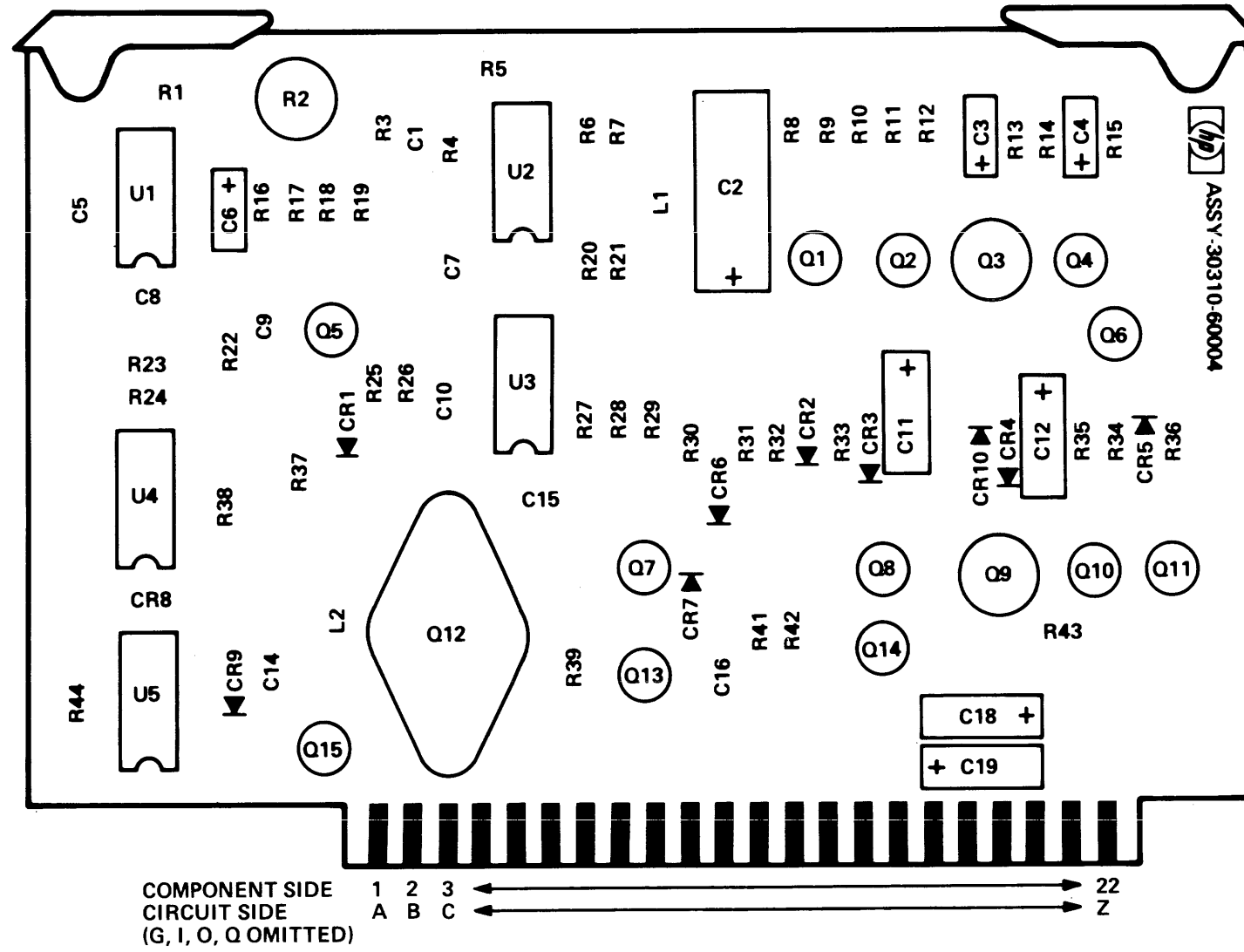


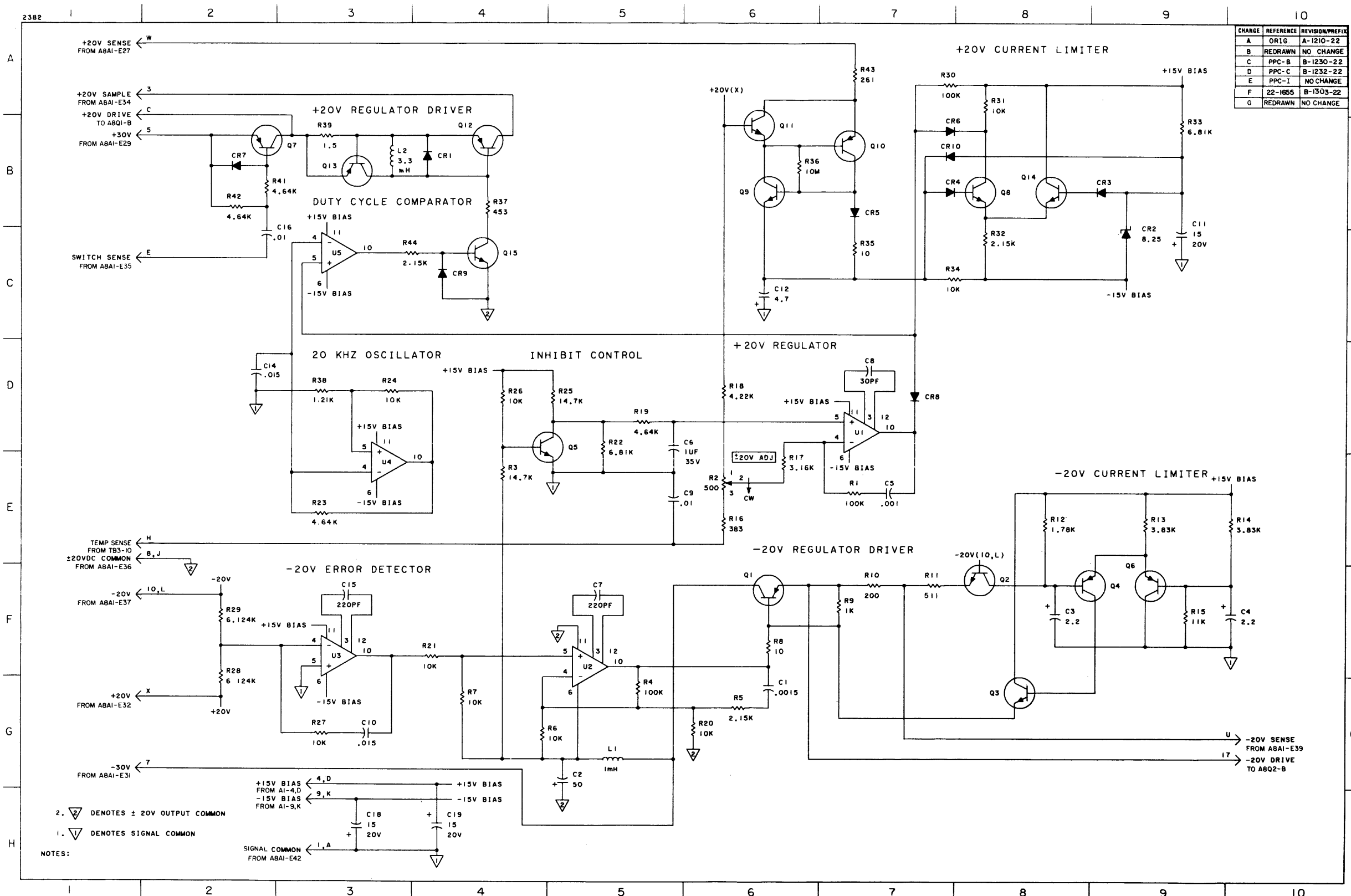
CHANGE	REFERENCE	REVISION
A	ORIG	A-1210-22
B	REDRAWN	NO CHANGE
C	REDRAWN	NO CHANGE
D	22-2000	A-1408-22

3.  $\nabla$  DENOTES SIGNAL COMMON  
 2. CAPACITANCE VALUES ARE IN MICROFARADS  
 1. RESISTANCE VALUES ARE IN OHMS  
 NOTES: UNLESS OTHERWISE SPECIFIED





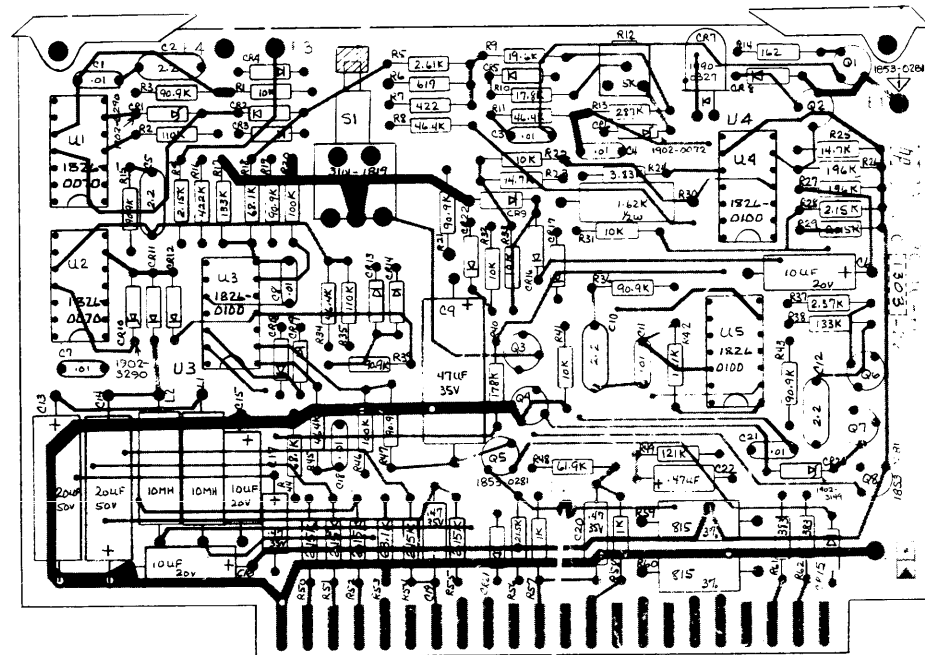




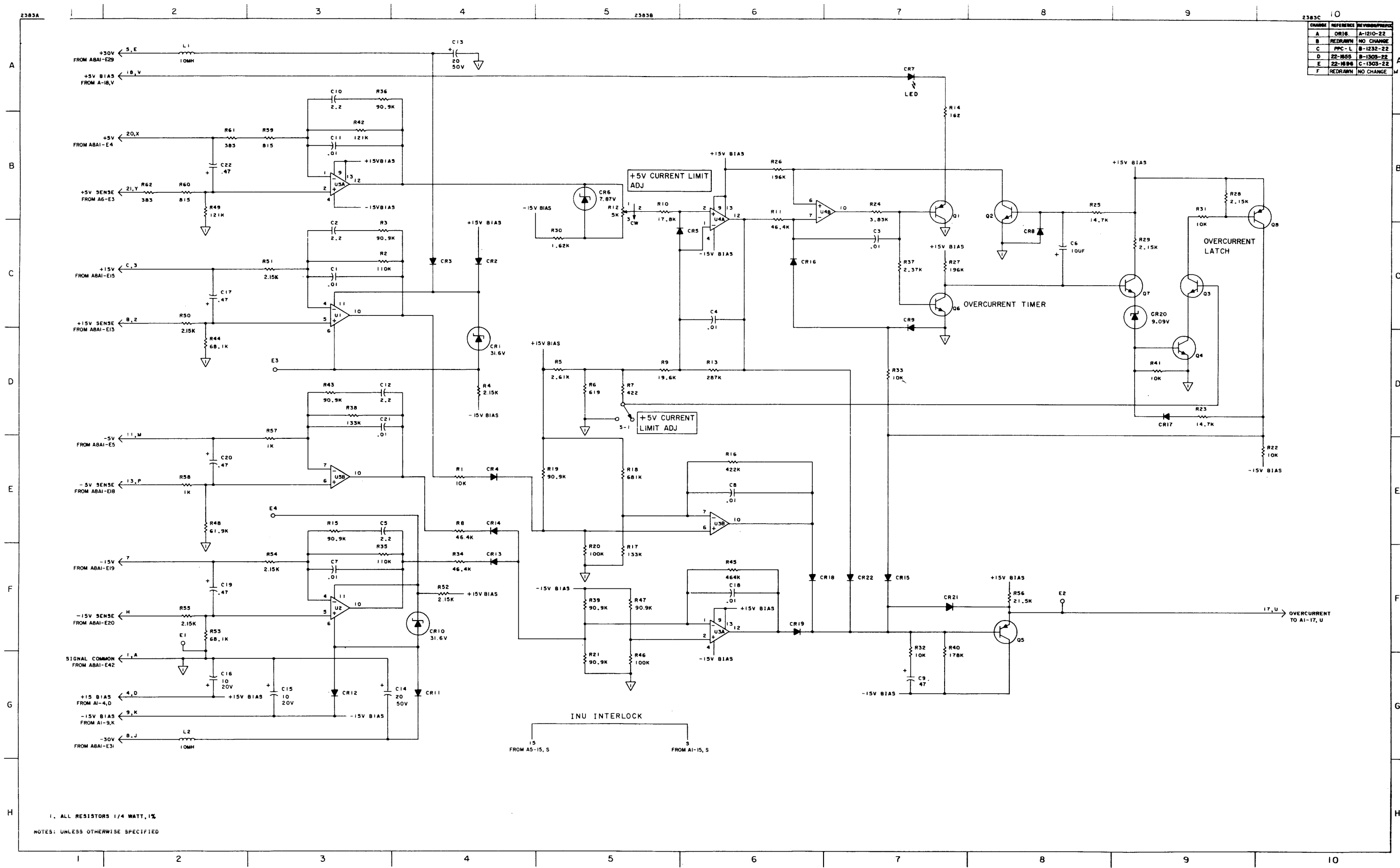
CHANGE	REFERENCE	REVISION/PREFIX
A	ORIG.	A-1210-22
B	REDRAWN	NO CHANGE
C	PPC-B	B-1230-22
D	PPC-C	B-1232-22
E	PPC-I	NO CHANGE
F	22-1655	B-1303-22
G	REDRAWN	NO CHANGE

NOTES:  
 2. ▽ DENOTES ± 20V OUTPUT COMMON  
 1. ▽ DENOTES SIGNAL COMMON

A	AS ISSUED PCO# 22-2008	G2	1/17/77
B	R50,51,54,55 WERE INCORRECT MARKED 1K	CD	11/21/78
C	ADDED 30376 A 001 U3A4E	WT	5/27/78
D	30310-4002A WAS 30310A, PC 22 277	WT	4-3-78



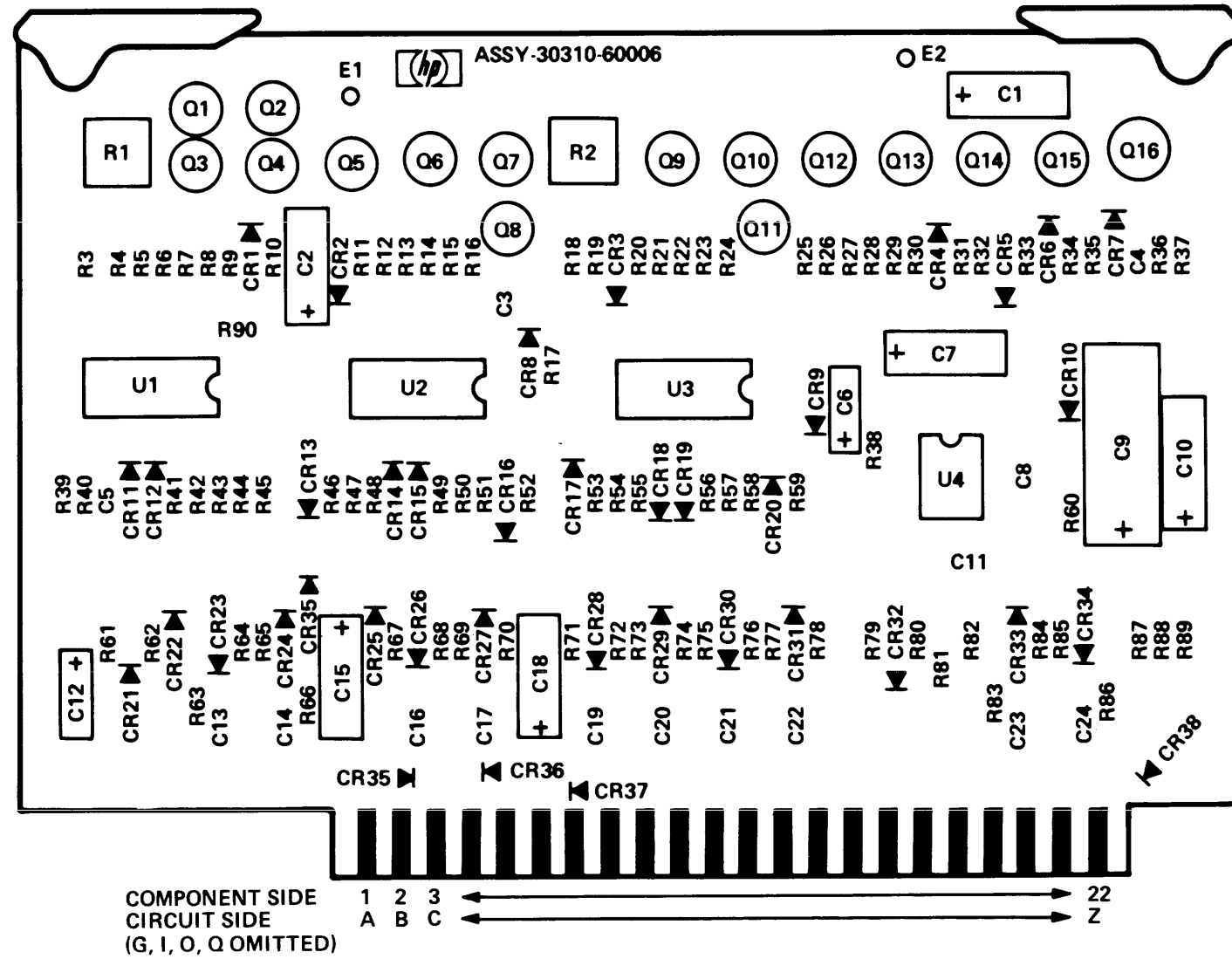
UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE IN OHMS  
 ALL RESISTORS 1/4W 1%MF  
 ALL CAPACITANCE IN MICROFARADS  
 ALL CAPACITORS .01UF CERAMIC DISC  
 ALL DIODES 1901-0033  
 ALL TRANSISTORS 1854-0477

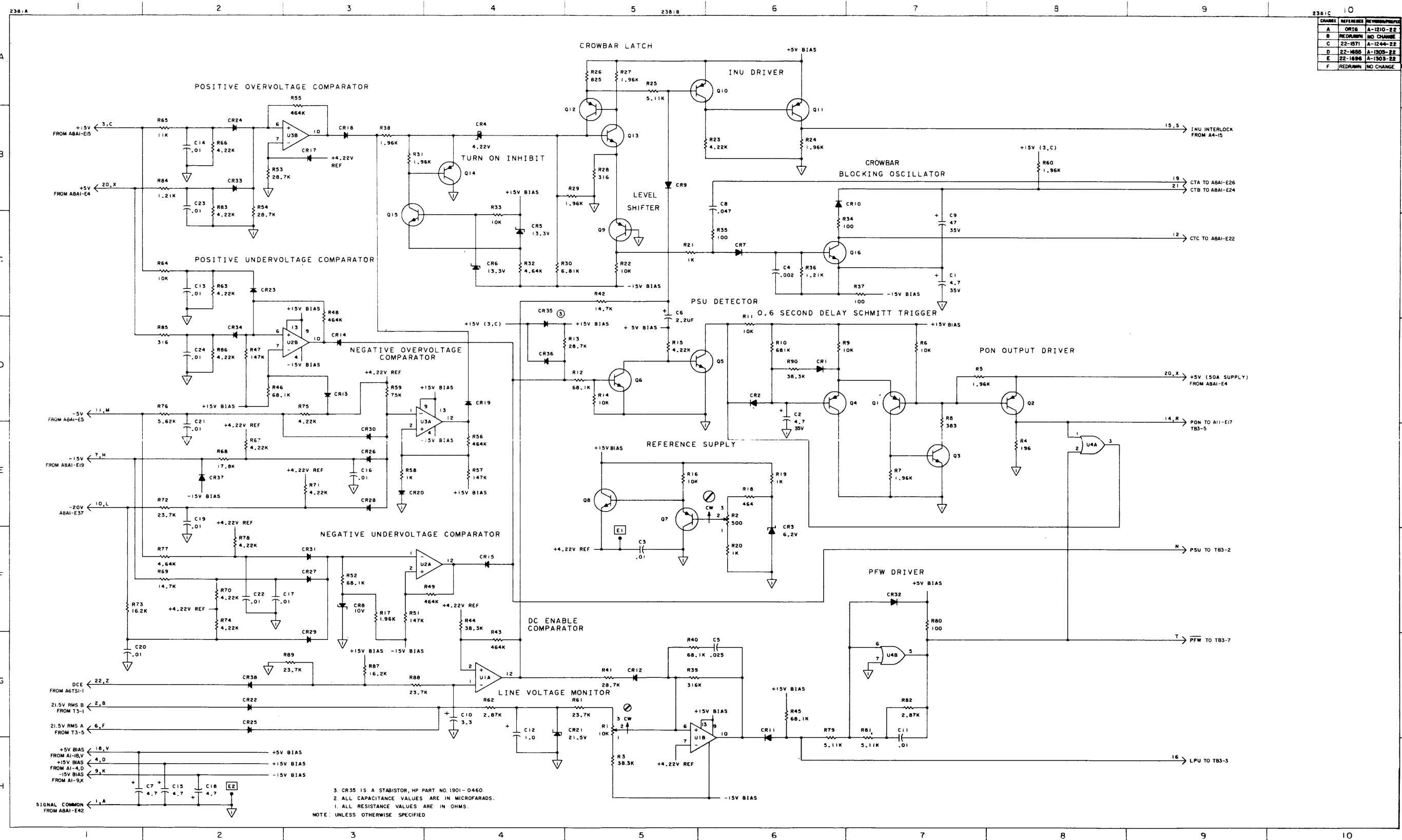


CHANGE	REFERENCE	REVISION/DATE
A	ORIG.	A-1210-22
B	REDRAWN	NO CHANGE
C	PPC - L	B-1232-22
D	22-1655	B-1503-22
E	22-1656	C-1503-22
F	REDRAWN	NO CHANGE

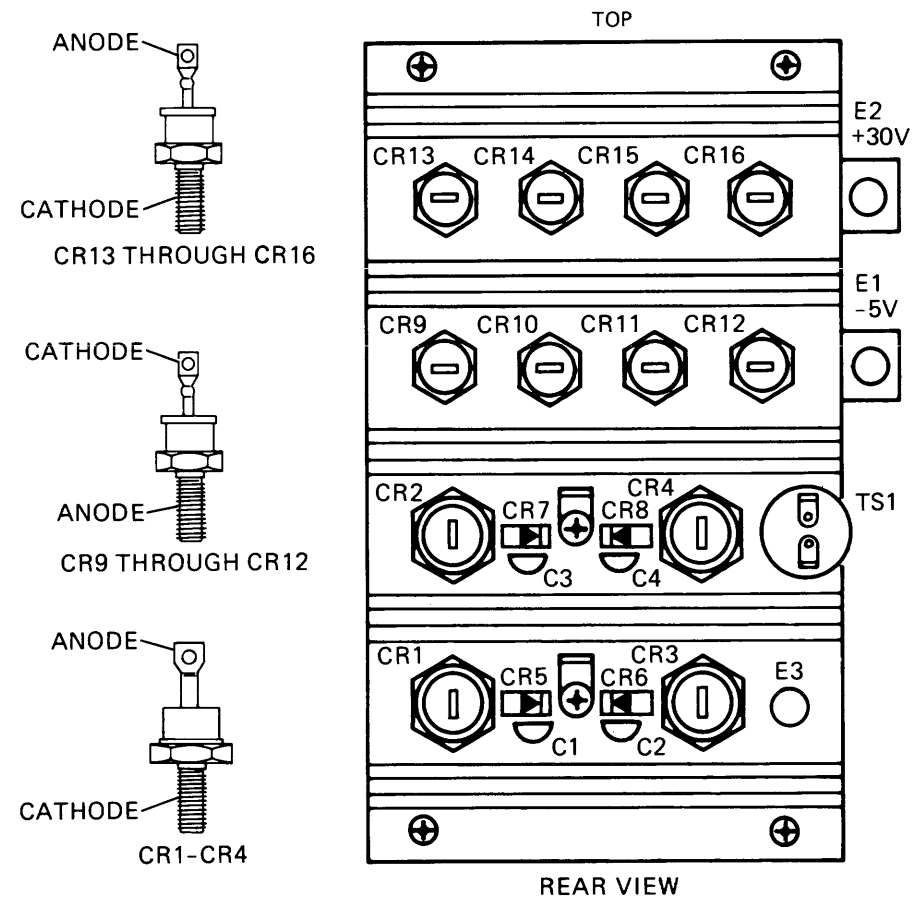
1. ALL RESISTORS 1/4 WATT, 1%  
 NOTES: UNLESS OTHERWISE SPECIFIED







CHANGE	REFERENCE	REVISION/DESCRIPTION
A	ORIG	A-1210-22
B	REDRAWN	NO CHANGE
C	22-1571	A-1244-22
D	22-1686	A-1303-22
E	22-1686	A-1303-22
F	REDRAWN	NO CHANGE

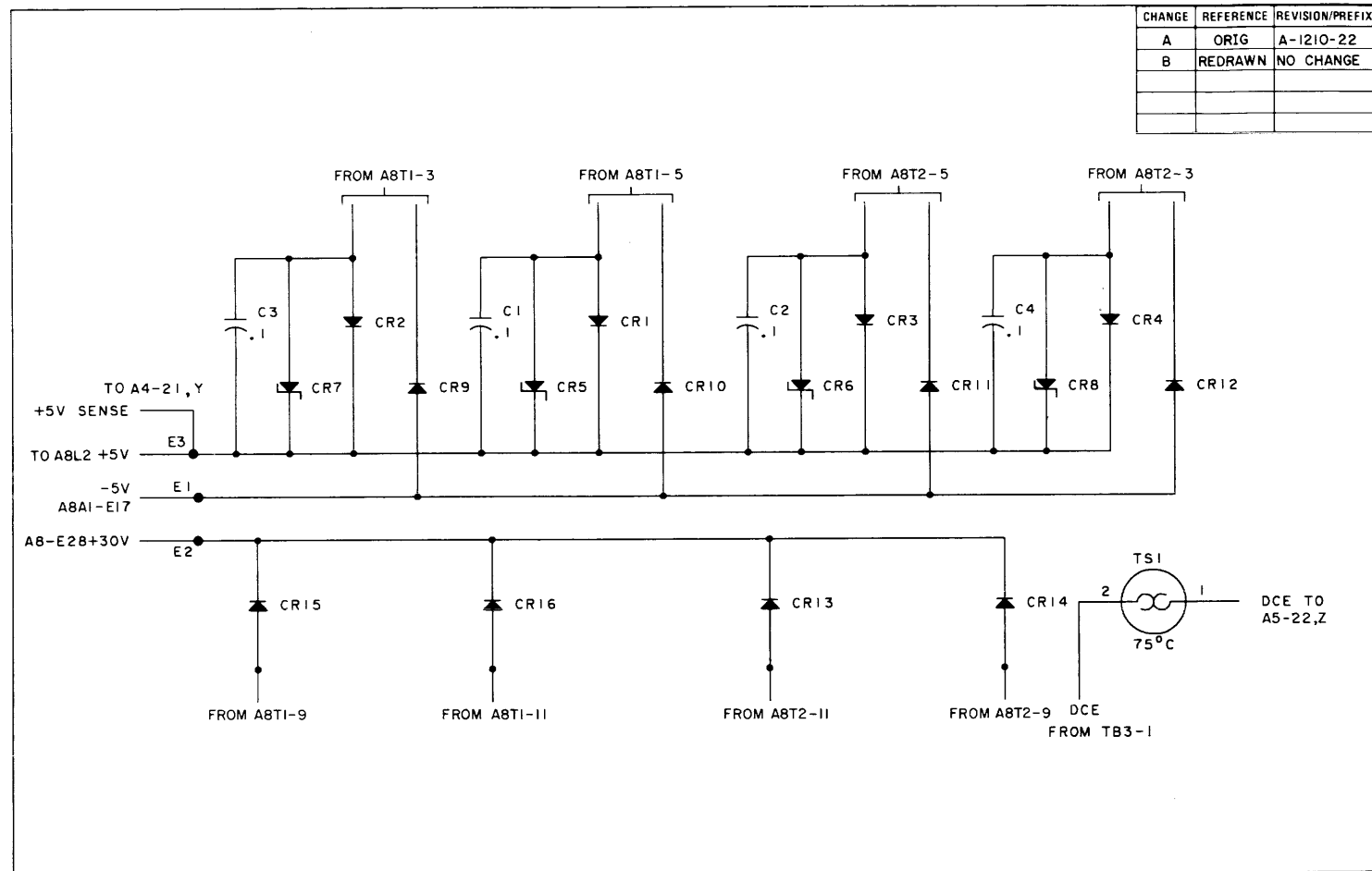


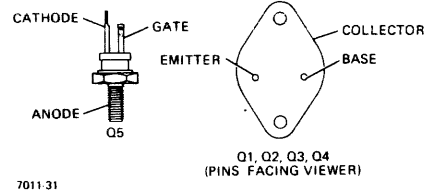
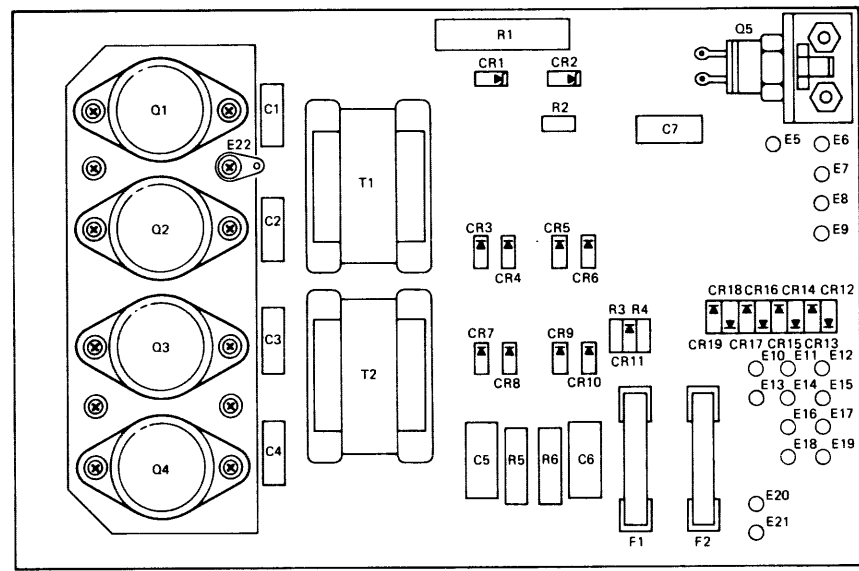
7011-26

NOTES:

1. CAUTION. HEAT SINK IS +5V WITH RESPECT TO POWER SUPPLY CHASSIS.
2. WHEN INSTALLING DIODES IN THIS ASSEMBLY, USE THERMAL COMPOUND (HP STOCK NO. 6040-0239) ON BOTH SIDES OF INSULATING WASHERS OR ON METAL WASHER AND DIODE MOUNTING SURFACE.
3. TIGHTEN MOUNTING NUTS FOR CR1 THROUGH CR4 TO 30 IN.-LBS (0.35 kg-m).
4. TIGHTEN MOUNTING NUTS FOR CR9 THROUGH CR16 TO 15 IN.-LBS (0.17 kg-m).
5. REFERENCE DESIGNATION PREFIX IS A6.

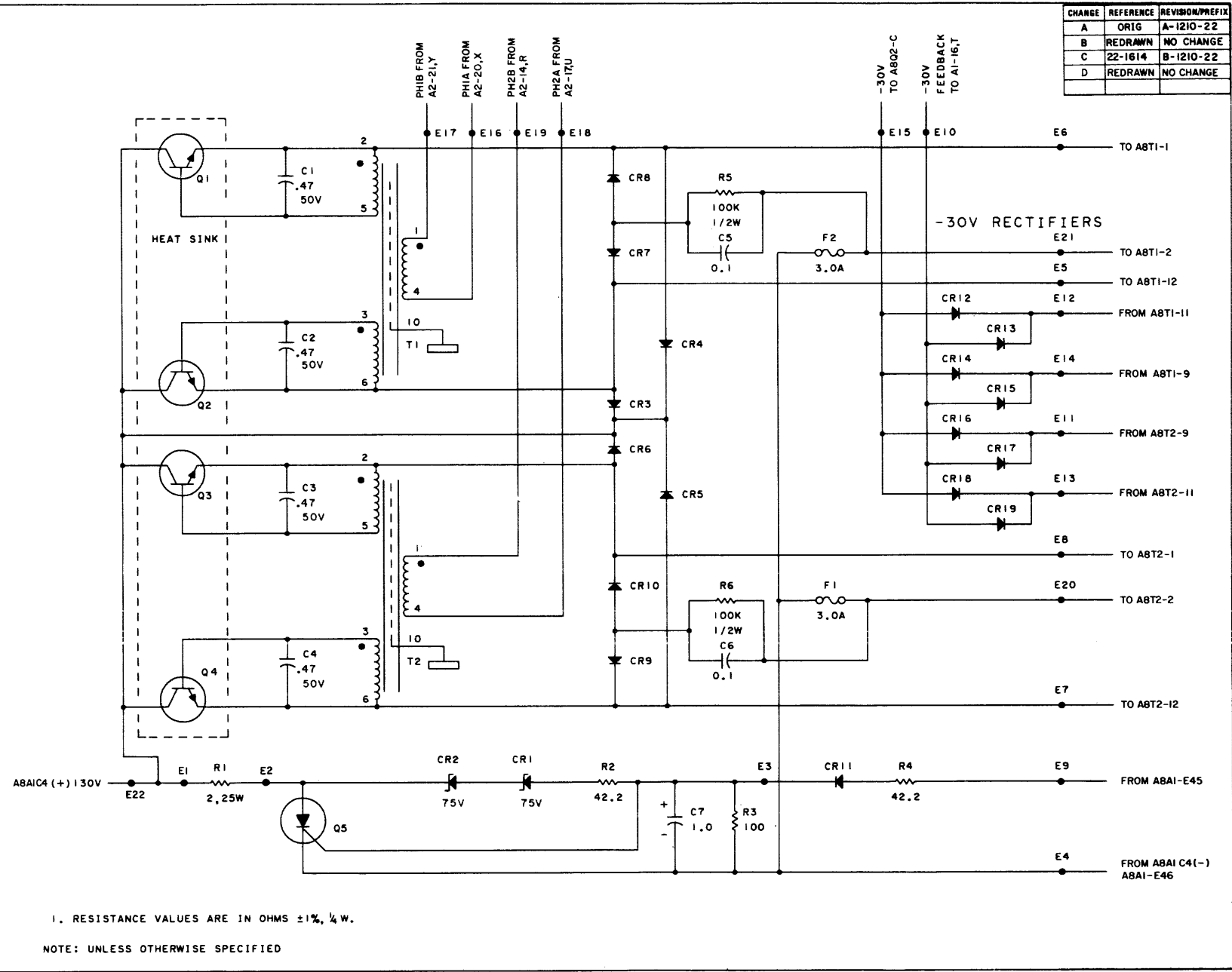
1304-1

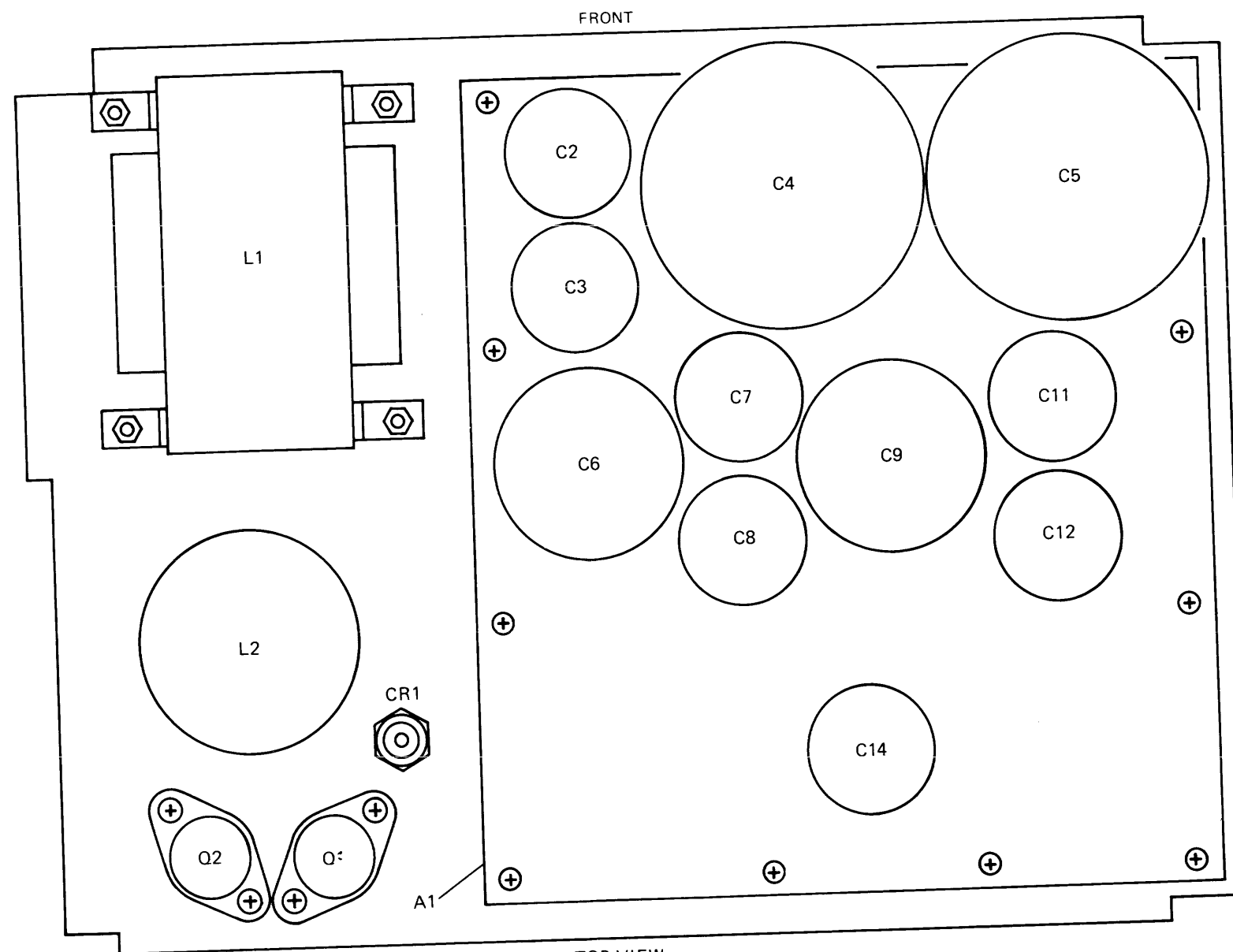




- NOTES:
1. WHEN INSTALLING Q1, Q2, Q3, OR Q4, USE THERMAL COMPOUND (HP STOCK NO. 6040-0239) BETWEEN TRANSISTOR AND HEAT SINK.
  2. WHEN INSTALLING Q5, TIGHTEN MOUNTING NUT TO 15 IN. LBS (0.17 kg-m).
  3. REFERENCE DESIGNATION PREFIX IS A7.

CHANGE	REFERENCE	REVISION/PREFIX
A	ORIG	A-1210-22
B	REDRAWN	NO CHANGE
C	22-1614	B-1210-22
D	REDRAWN	NO CHANGE



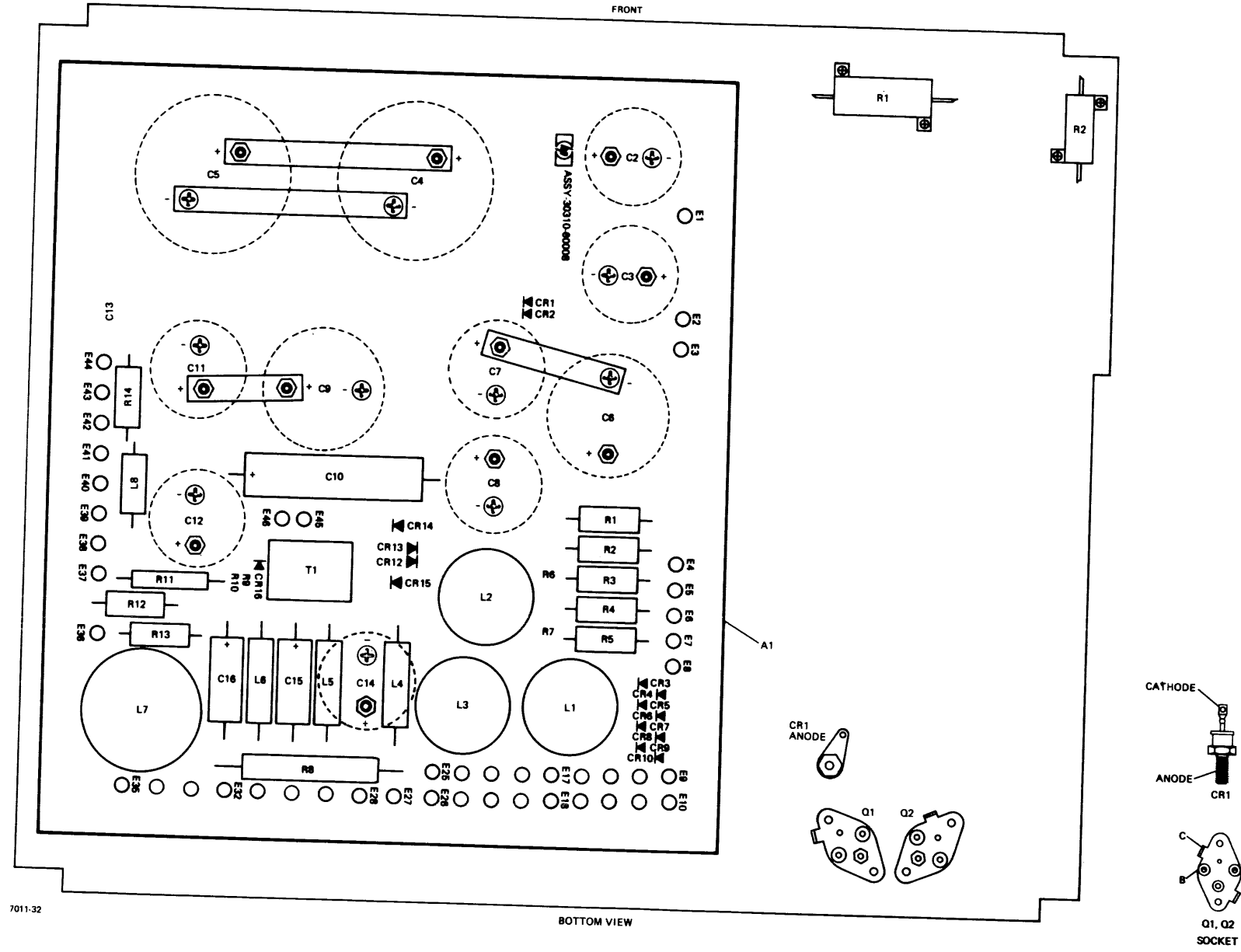


7011-33

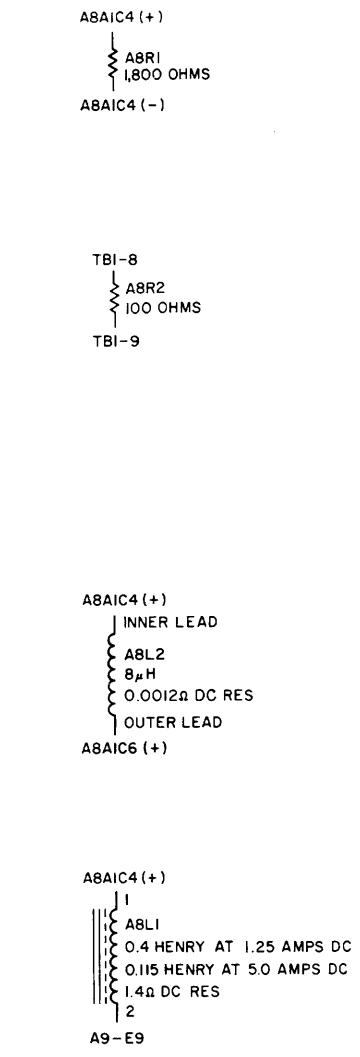
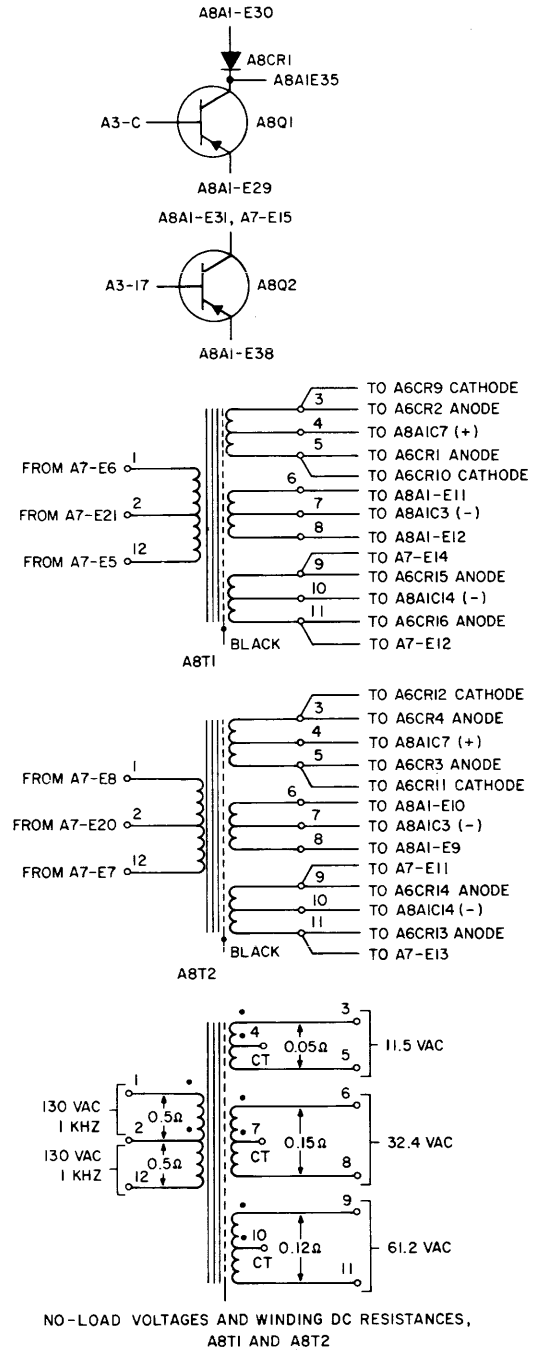
TOP VIEW

NOTES:

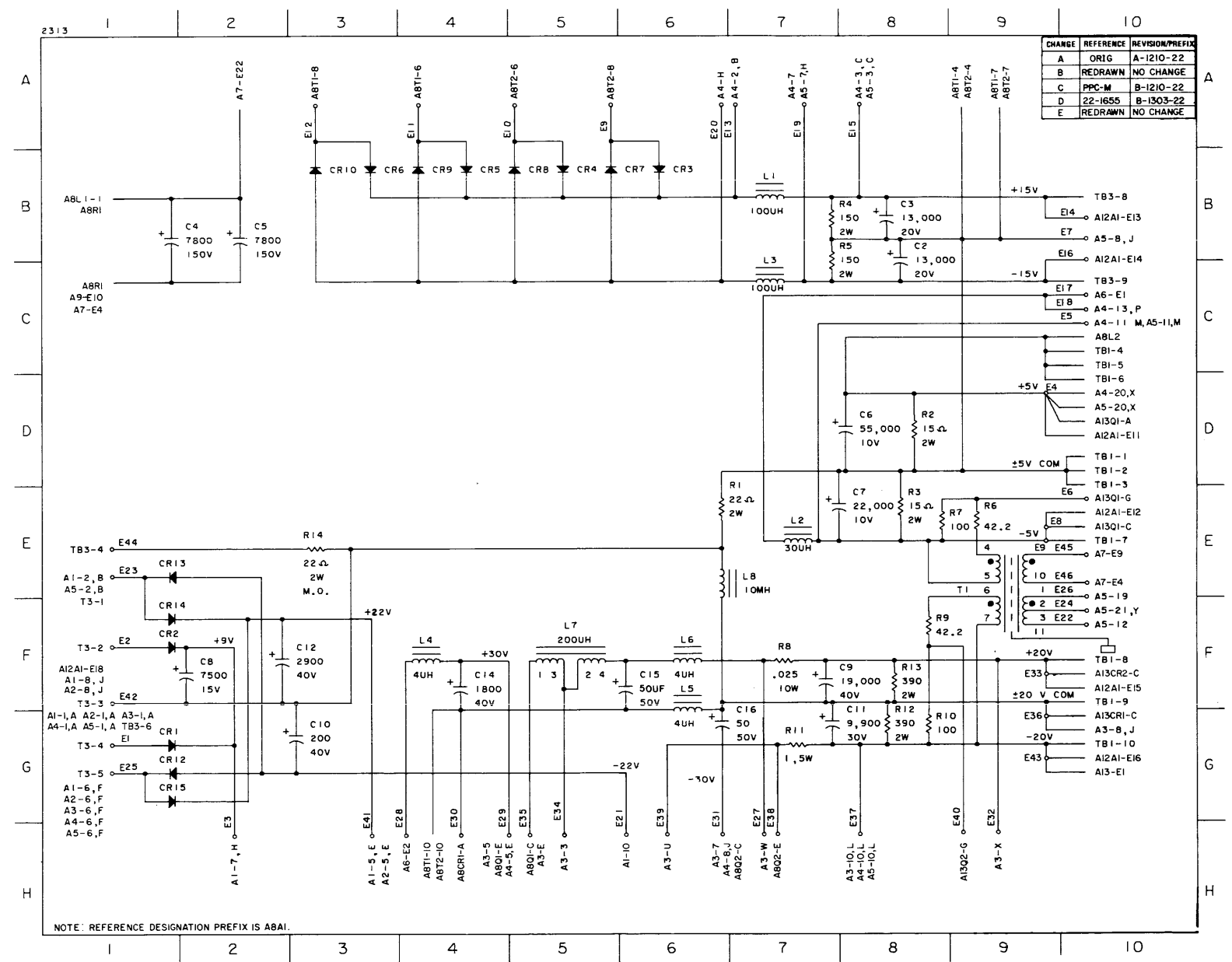
1. FOR CLARITY T1 AND T2, SITUATED ABOVE L1, ARE NOT SHOWN.
2. WHEN INSTALLING Q1 OR Q2 IN THE TRANSISTOR SOCKET, USE THERMAL COMPOUND (HP STOCK NO. 6040-0239) ON BOTH SIDES OF INSULATING WASHER.
3. TIGHTEN MOUNTING NUT FOR CR1 TO 15 IN.-LBS (0.17 kg-m).
4. COMPONENTS MAY VARY SLIGHTLY FROM LOCATIONS SHOWN.
5. REFERENCE DESIGNATION PREFIX IS A8.

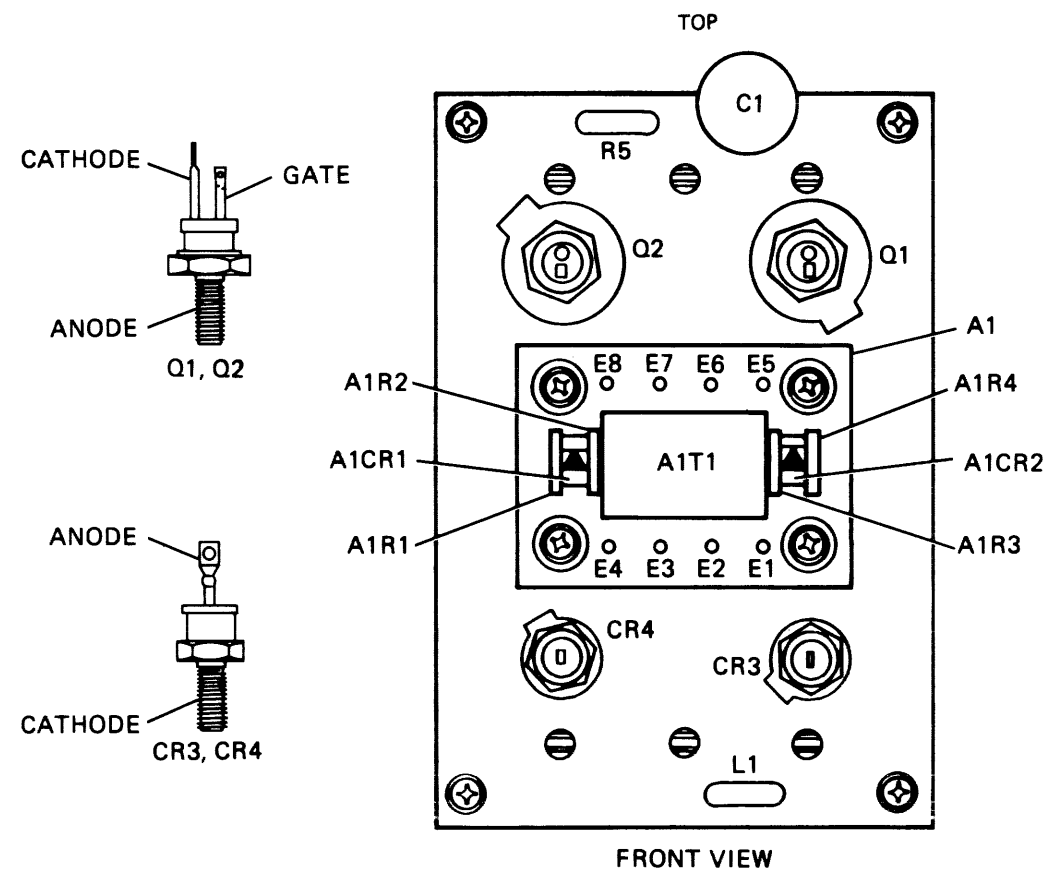


7011-32



NOTE:  
ON LOW-RESISTANCE RANGES SOME OHMMETERS APPLY AC TO THE COMPONENT BEING MEASURED. THEREFORE AN ACCURATE READING WILL NOT BE FURNISHED FOR INDUCTIVE COMPONENTS.

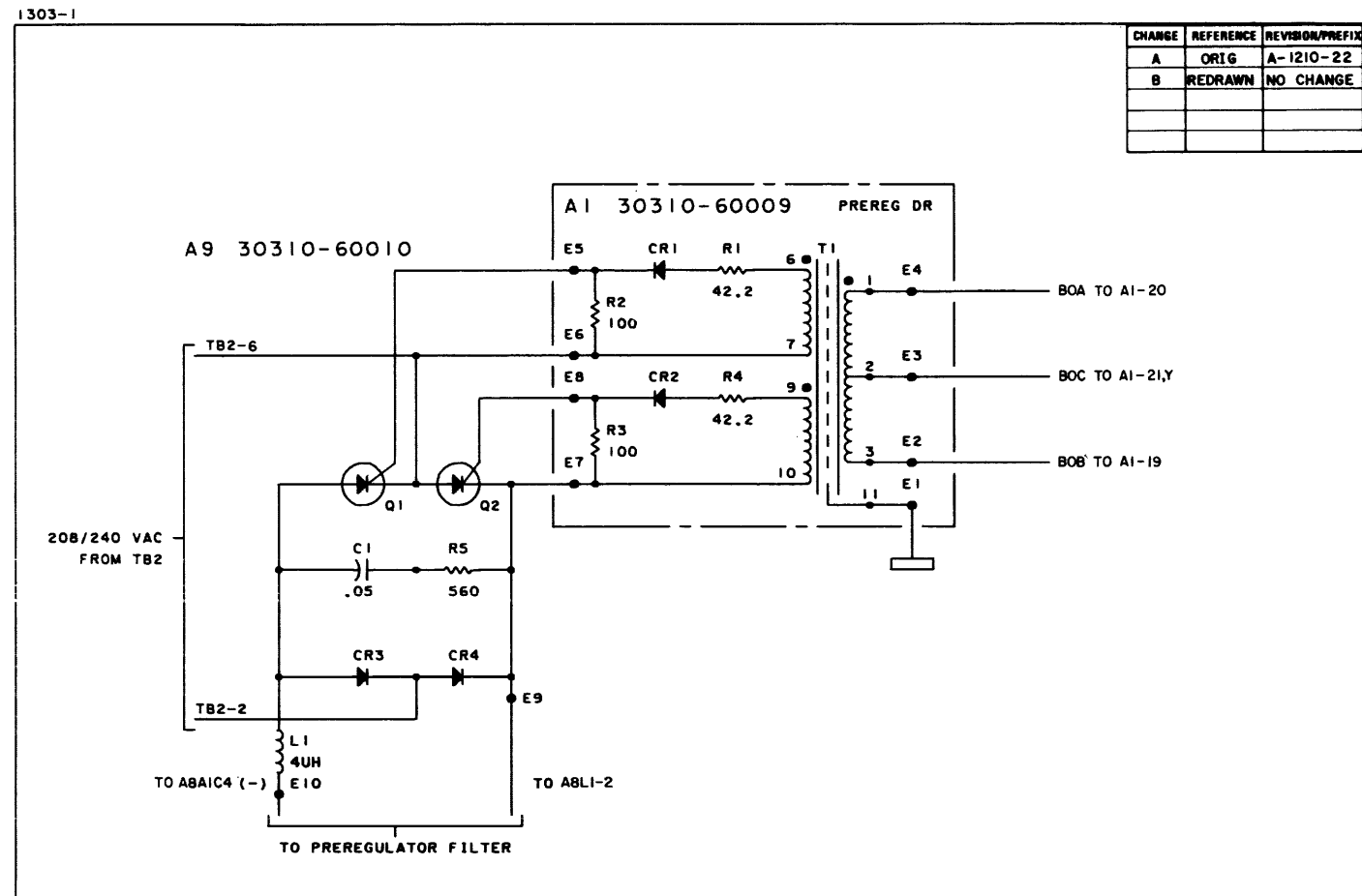




NOTES:

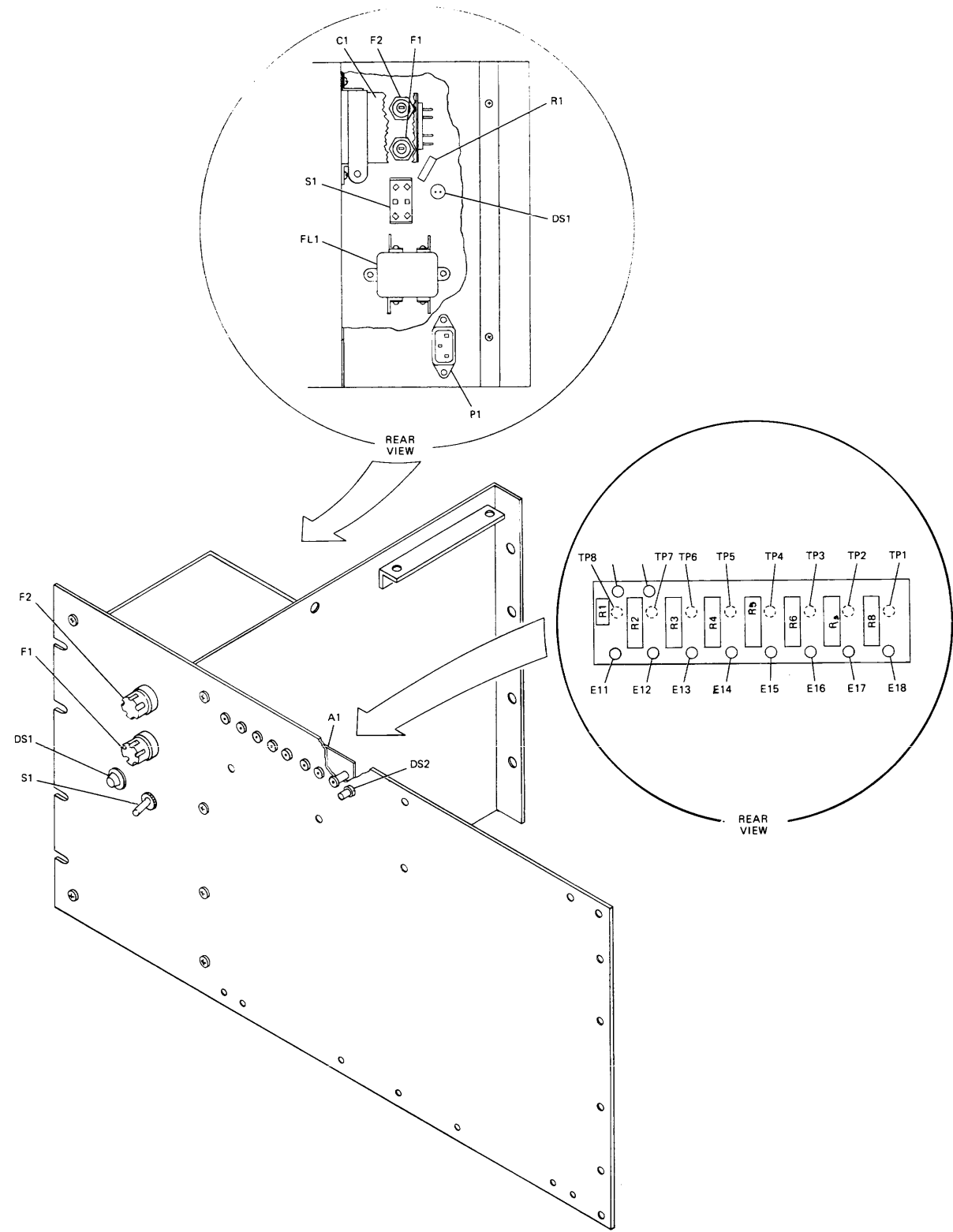
1. WHEN INSTALLING SEMICONDUCTOR DEVICES IN THIS ASSEMBLY, USE THERMAL COMPOUND (HP STOCK NO. 6040-0239) ON BOTH SIDES OF INSULATING WASHERS.
2. TIGHTEN ALL SEMICONDUCTOR MOUNTING NUTS TO 15 IN.-LBS (0.17 kg-m).
3. WHEN INSTALLING PLASTIC SCREWS USE THREAD SEALANT (HP STOCK NO. 0470-0013). DO NOT TIGHTEN EXCESSIVELY.
4. REFERENCE DESIGNATION PREFIX IS A9.

7011-30

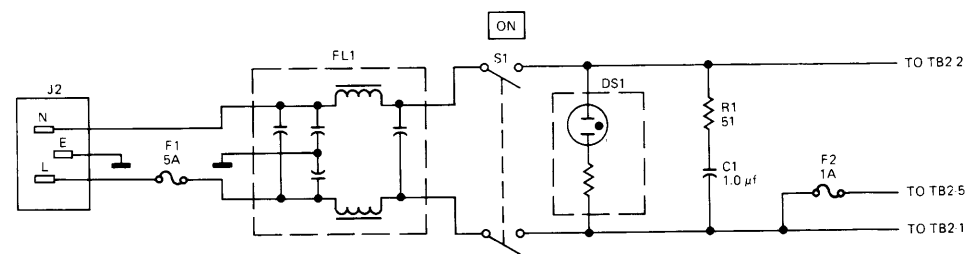
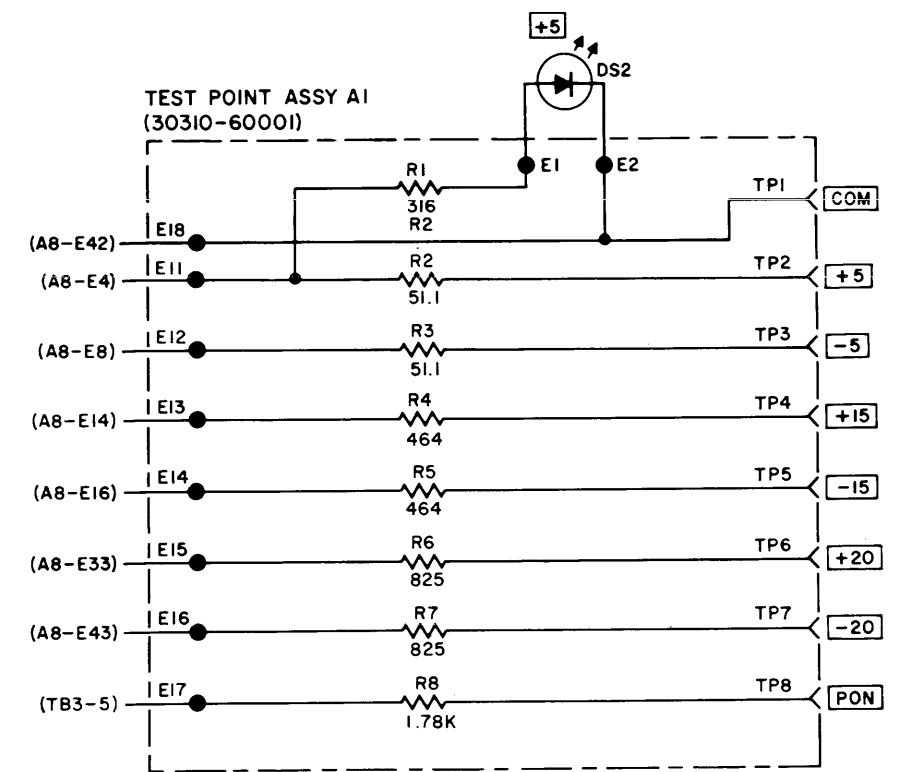


CHANGE	REFERENCE	REVISION/PREFIX
A	ORIG	A-1210-22
B	REDRAWN	NO CHANGE

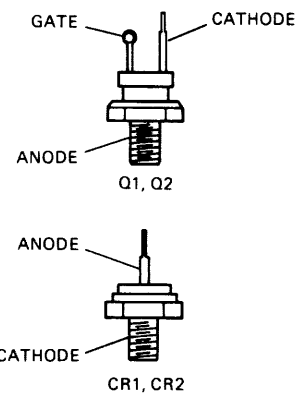




7011-28

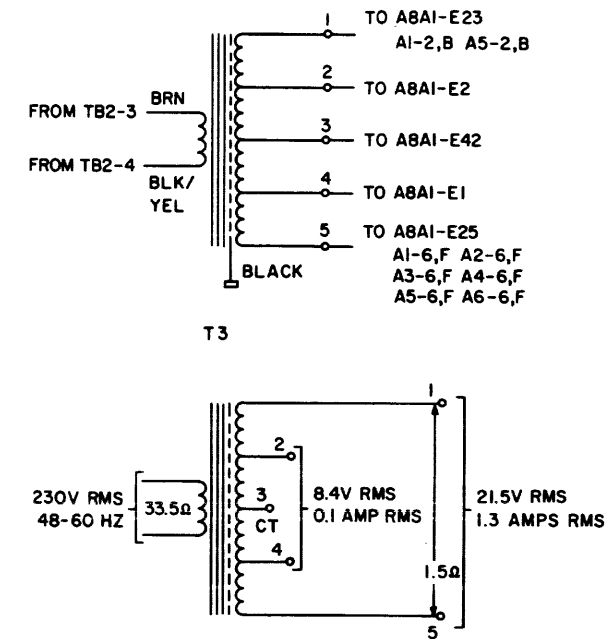
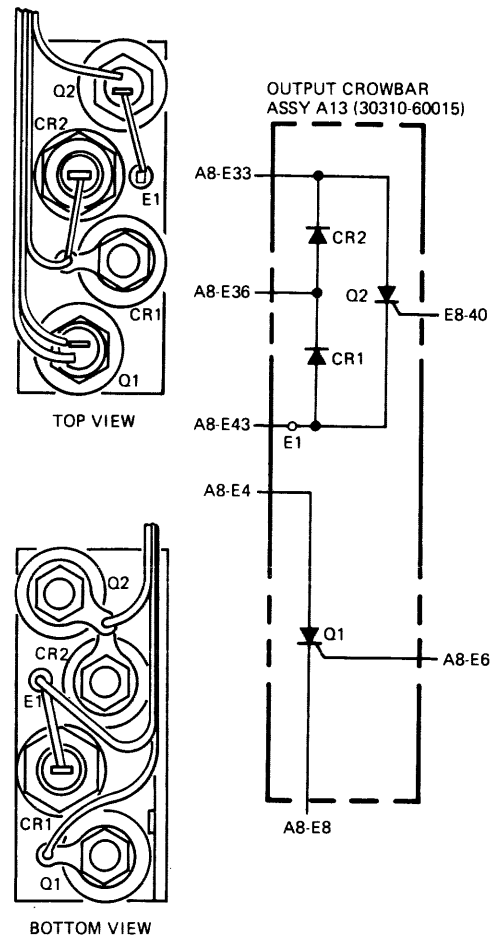


NOTES:  
 1. RESISTANCE VALUES ARE IN OHMS.  
 2. REFERENCE DESIGNATION PREFIX IS A12.



- NOTES:
1. WHEN INSTALLING SEMICONDUCTOR DEVICES IN THIS ASSEMBLY, USE THERMAL COMPOUND (HP STOCK NO. 6040-0239) ON BOTH SIDES OF MOUNTING WASHERS.
  2. TIGHTEN MOUNTING NUTS TO 15 IN.-LBS (0.17 kg-m).
  3. REFERENCE DESIGNATION PREFIX IS A13.

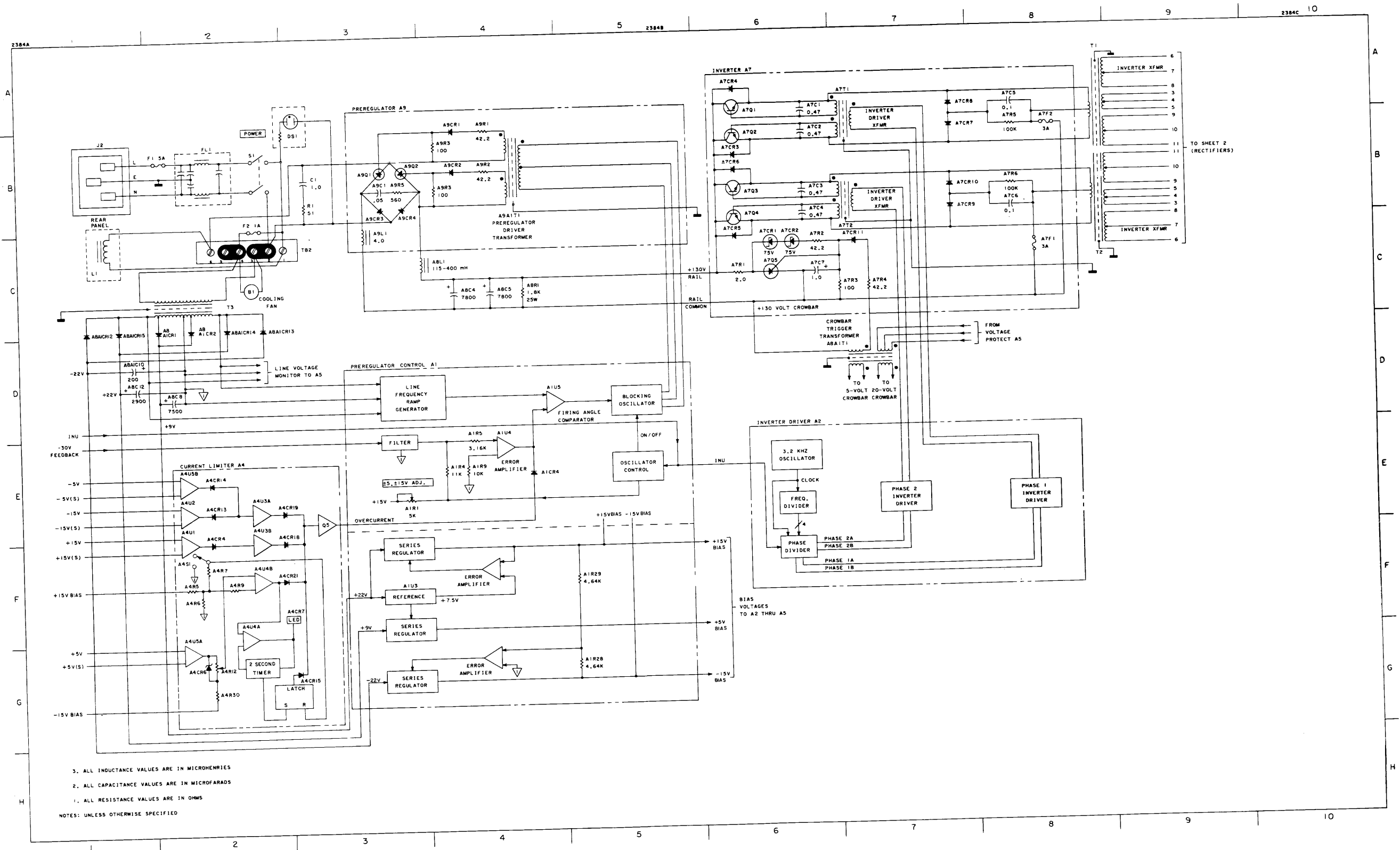
7011-27



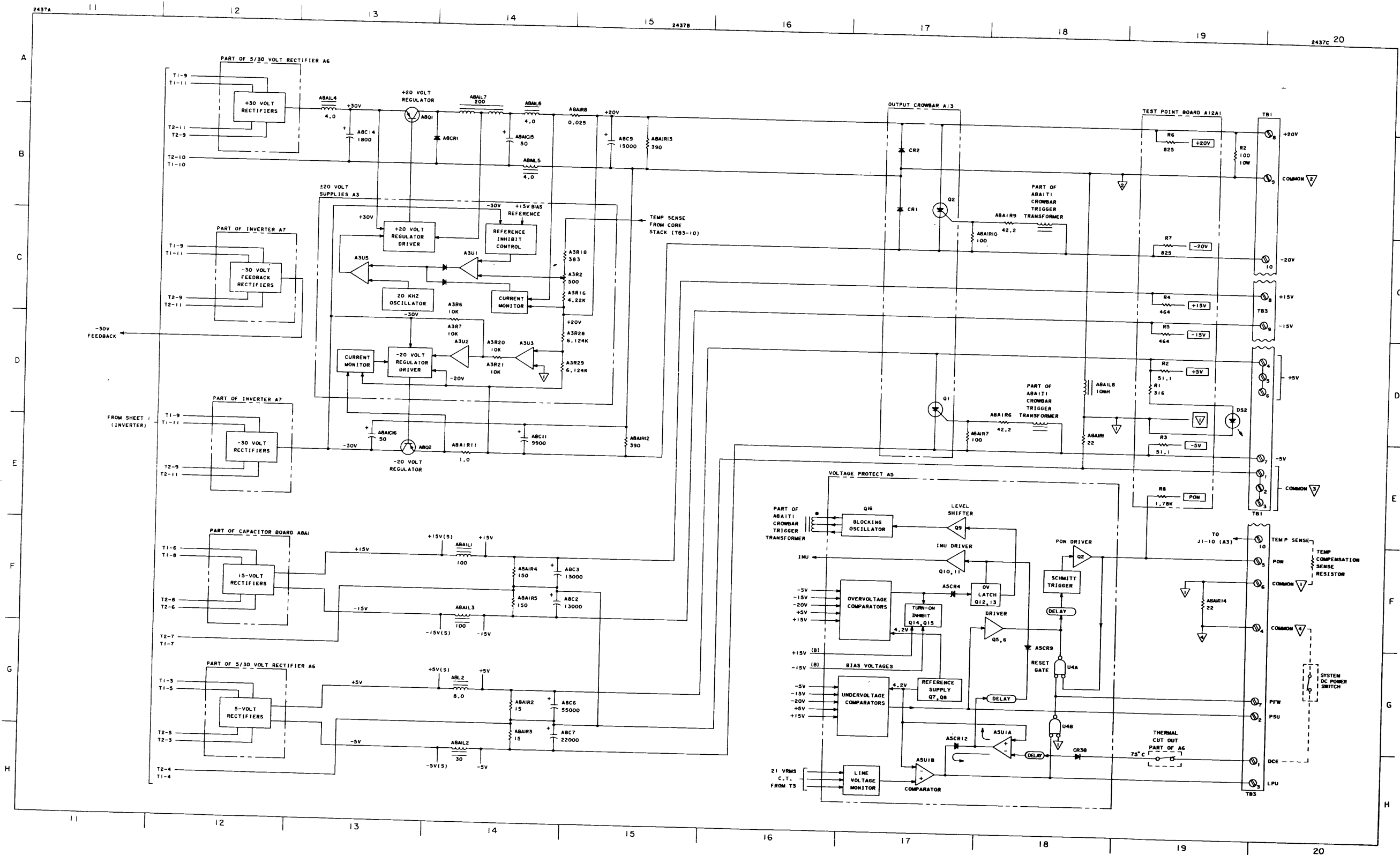
NO-LOAD VOLTAGES AND WINDING DC RESISTANCES, T3

NOTE:  
ON LOW-RESISTANCE RANGES SOME OHMMETERS APPLY AC TO THE COMPONENT BEING MEASURED. THEREFORE AN ACCURATE READING WILL NOT BE FURNISHED FOR INDUCTIVE COMPONENTS.

FAN B1, CHOK L1, TRANSFORMER T3

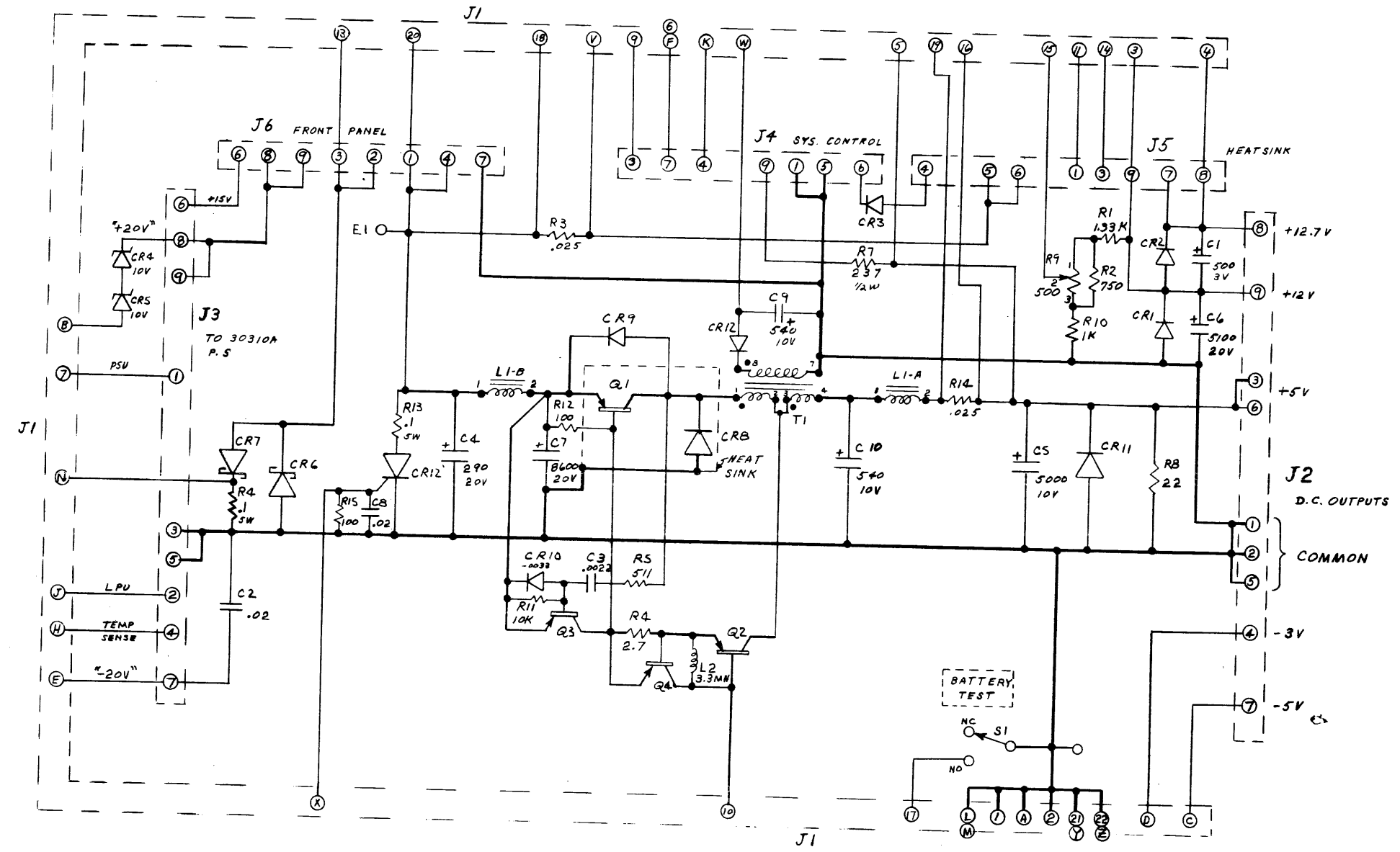


3. ALL INDUCTANCE VALUES ARE IN MICROHENRIES  
 2. ALL CAPACITANCE VALUES ARE IN MICROFARADS  
 1. ALL RESISTANCE VALUES ARE IN OHMS  
 NOTES: UNLESS OTHERWISE SPECIFIED



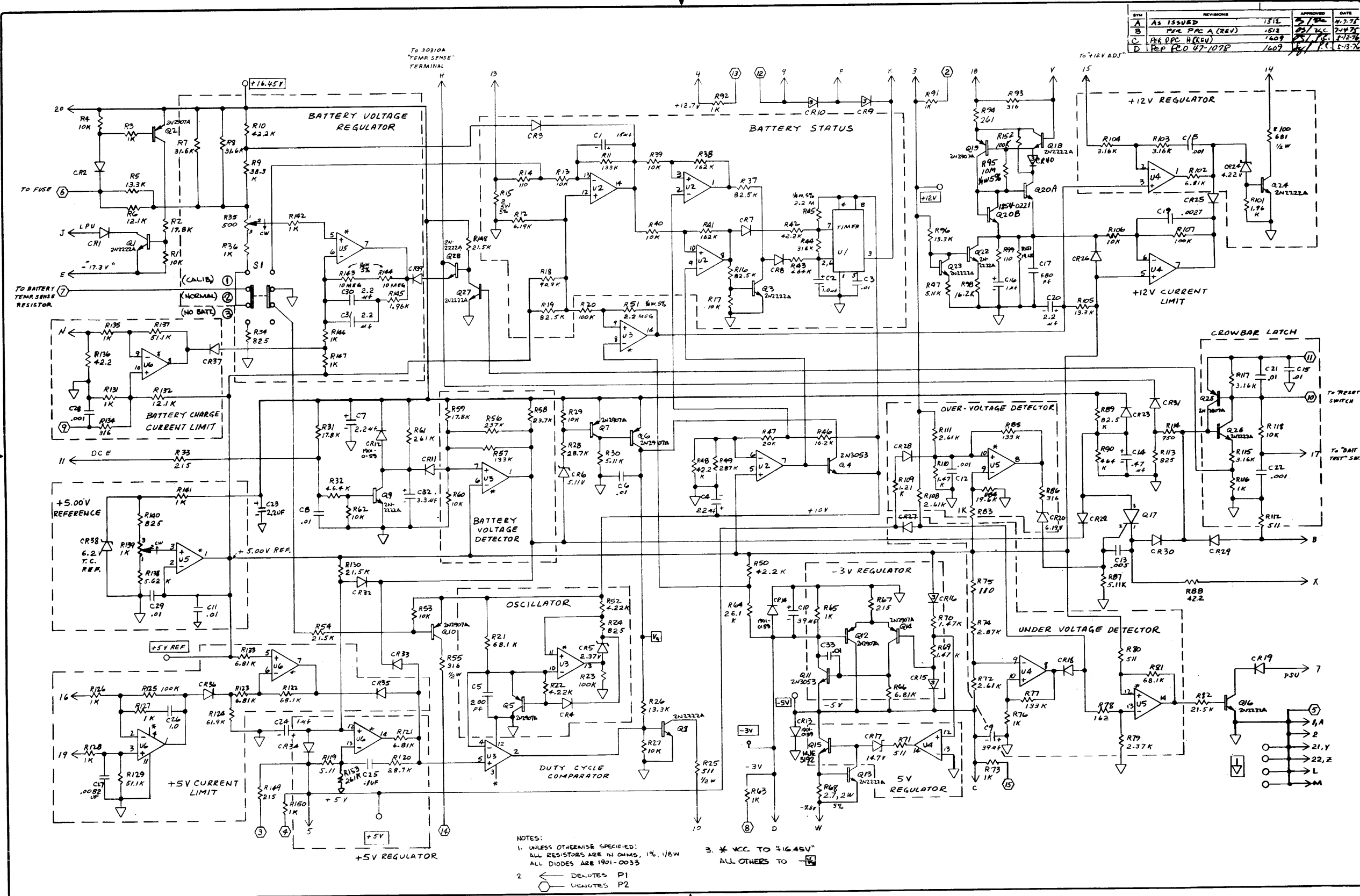


SYM	REVISIONS	APPROVED	DATE
A	A2 135UCD	BS/72	4/11/75





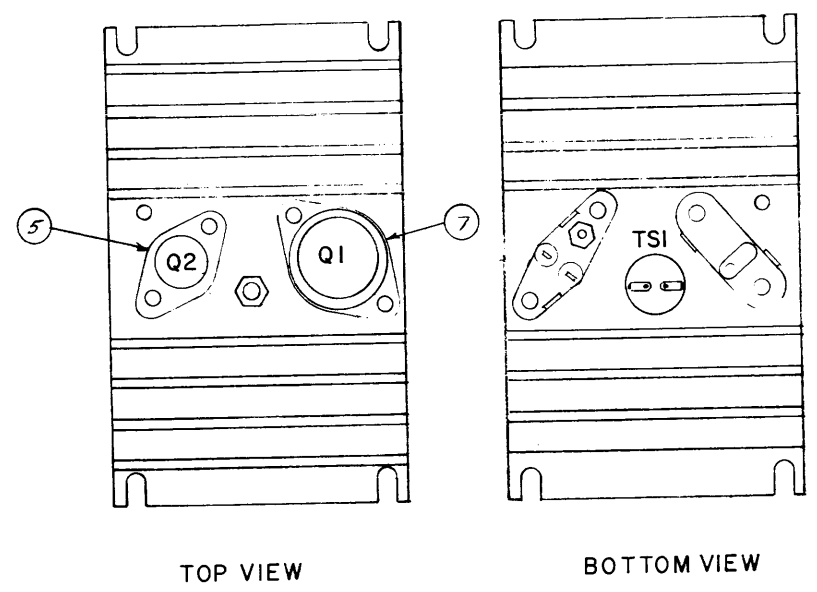
REV	REVISIONS	APPROVED	DATE
A	As ISSUED	1512	12/7/72
B	FOR PFC A (REV)	1512	12/7/72
C	FOR DPC H (REV)	1609	12/12/72
D	FOR PFC D 47-1078	1609	12/12/72



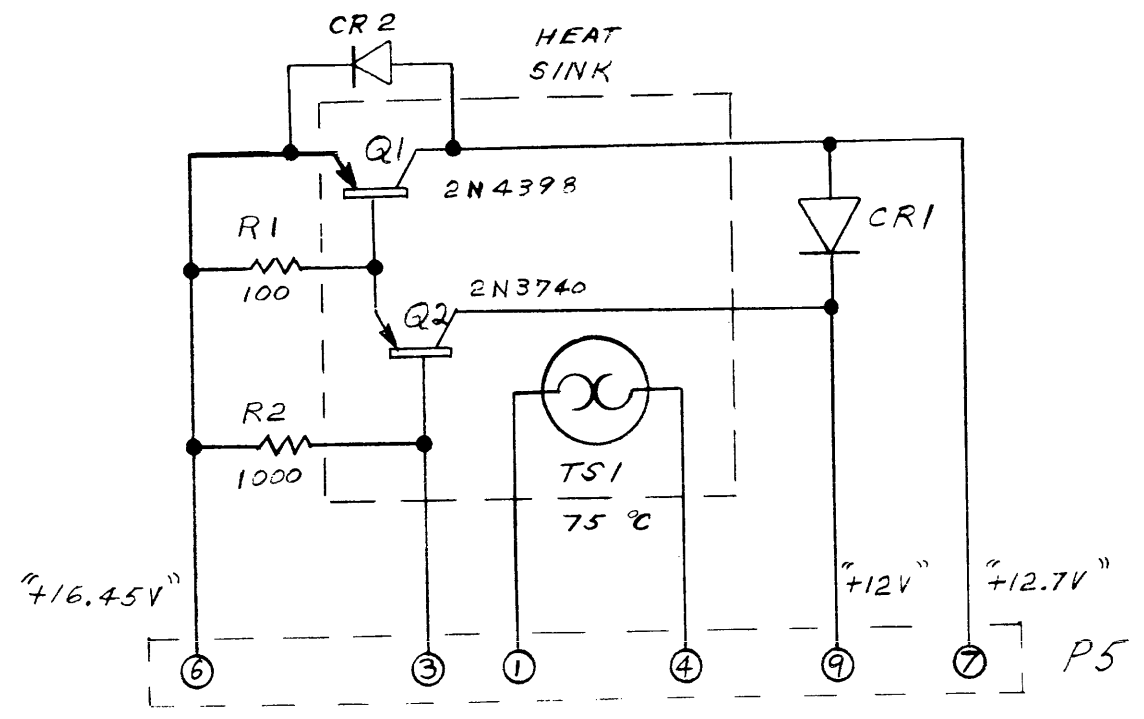
NOTES:  
 1. UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTORS ARE IN OHMS, 1%, 1/8W  
 ALL DIODES ARE 1901-0033  
 2. ← DENOTES P1  
 ○ DENOTES P2  
 3. \* VCC TO 31645V  
 ALL OTHERS TO -14



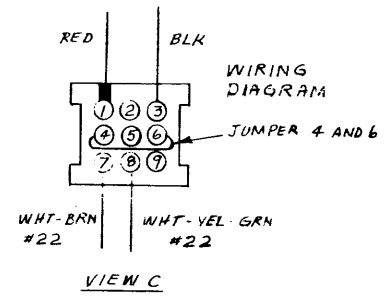
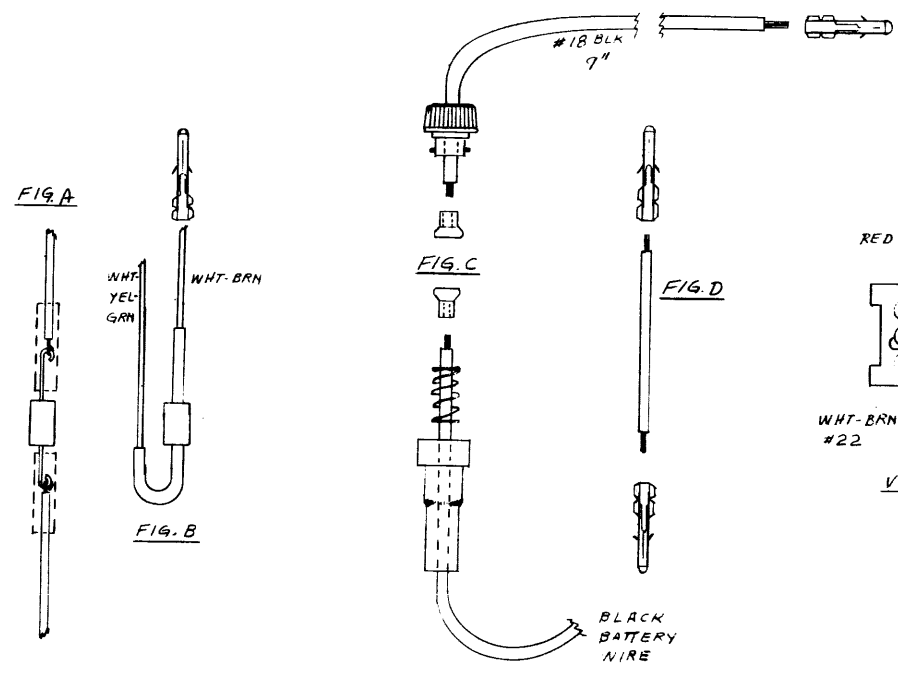
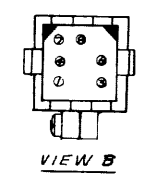
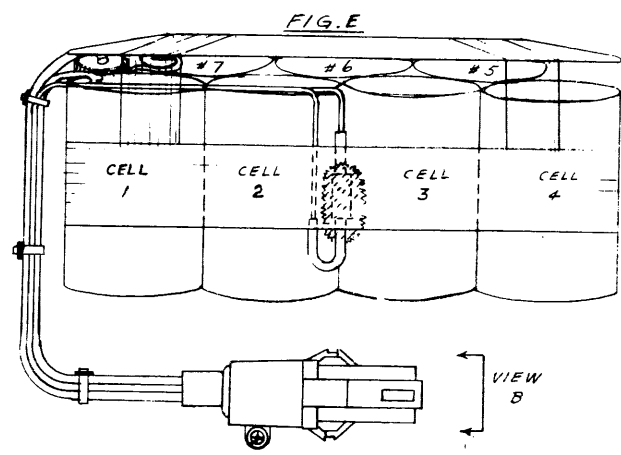
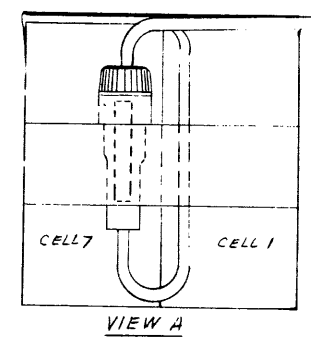
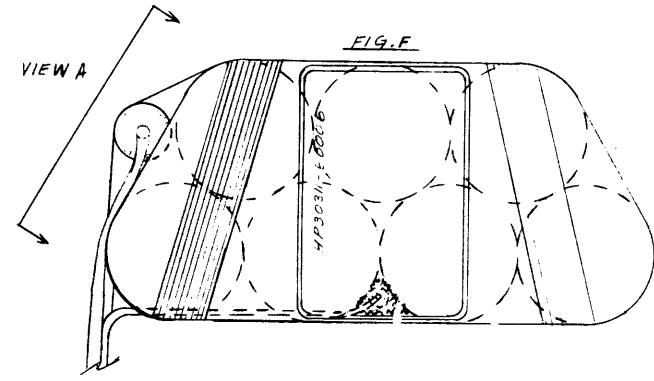
A AS ISSUED



- Q1 1853-0310
- Q2 1853-0052
- TS1 3103-0015

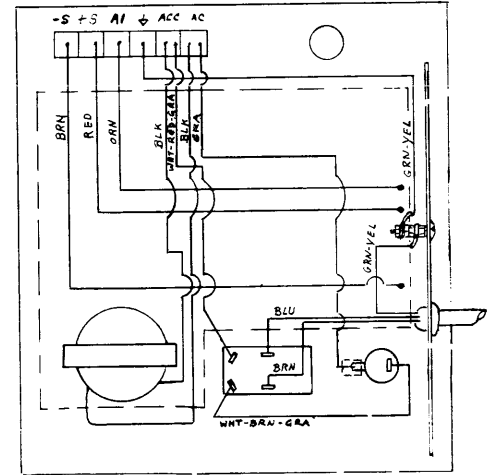
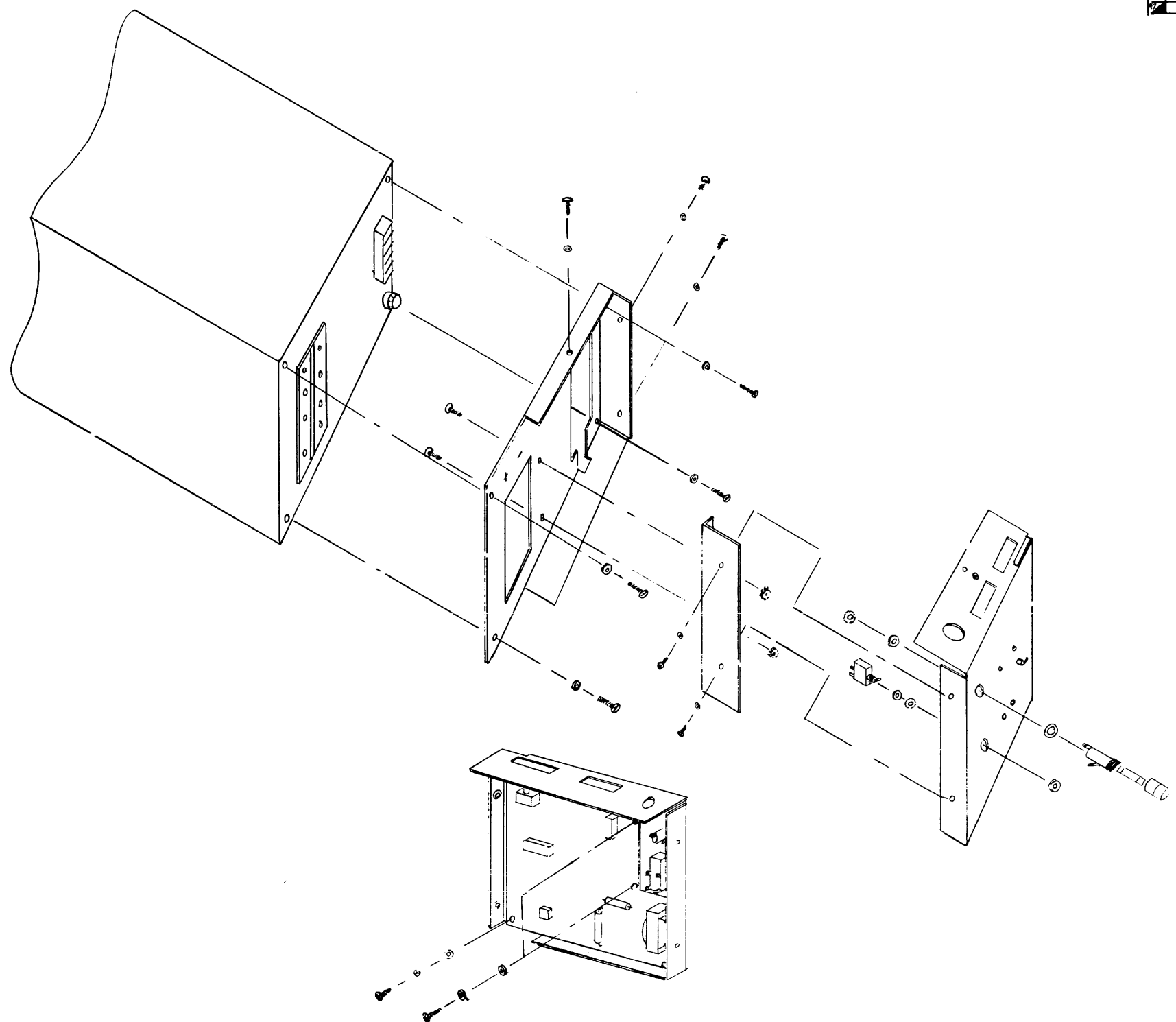


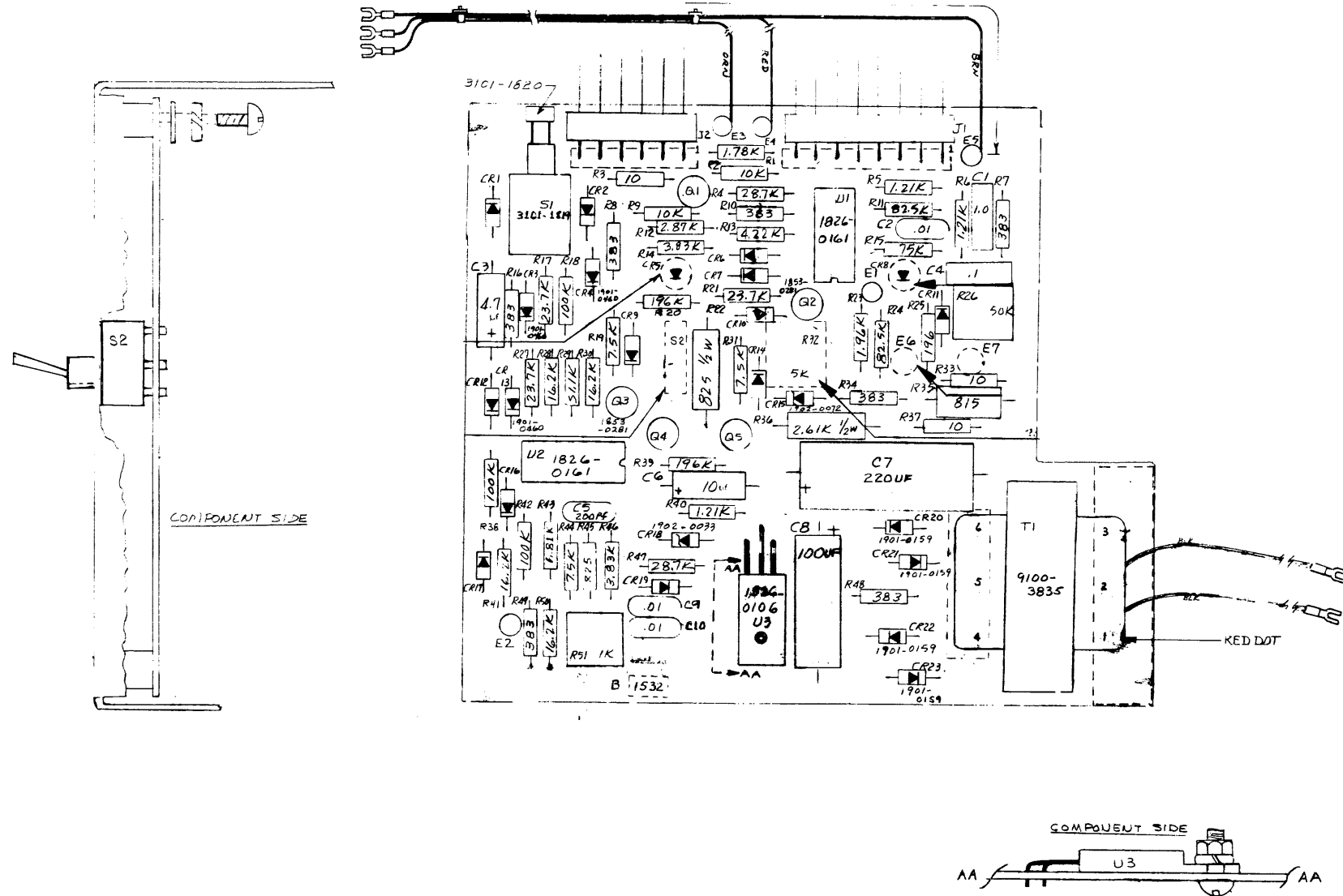
SYM	REVISIONS	APPROVED	DATE
A		PL	7/2/73



3 PRINTED ON DIEPC NO. 1020-10 CLEARPRINT FADEOUT

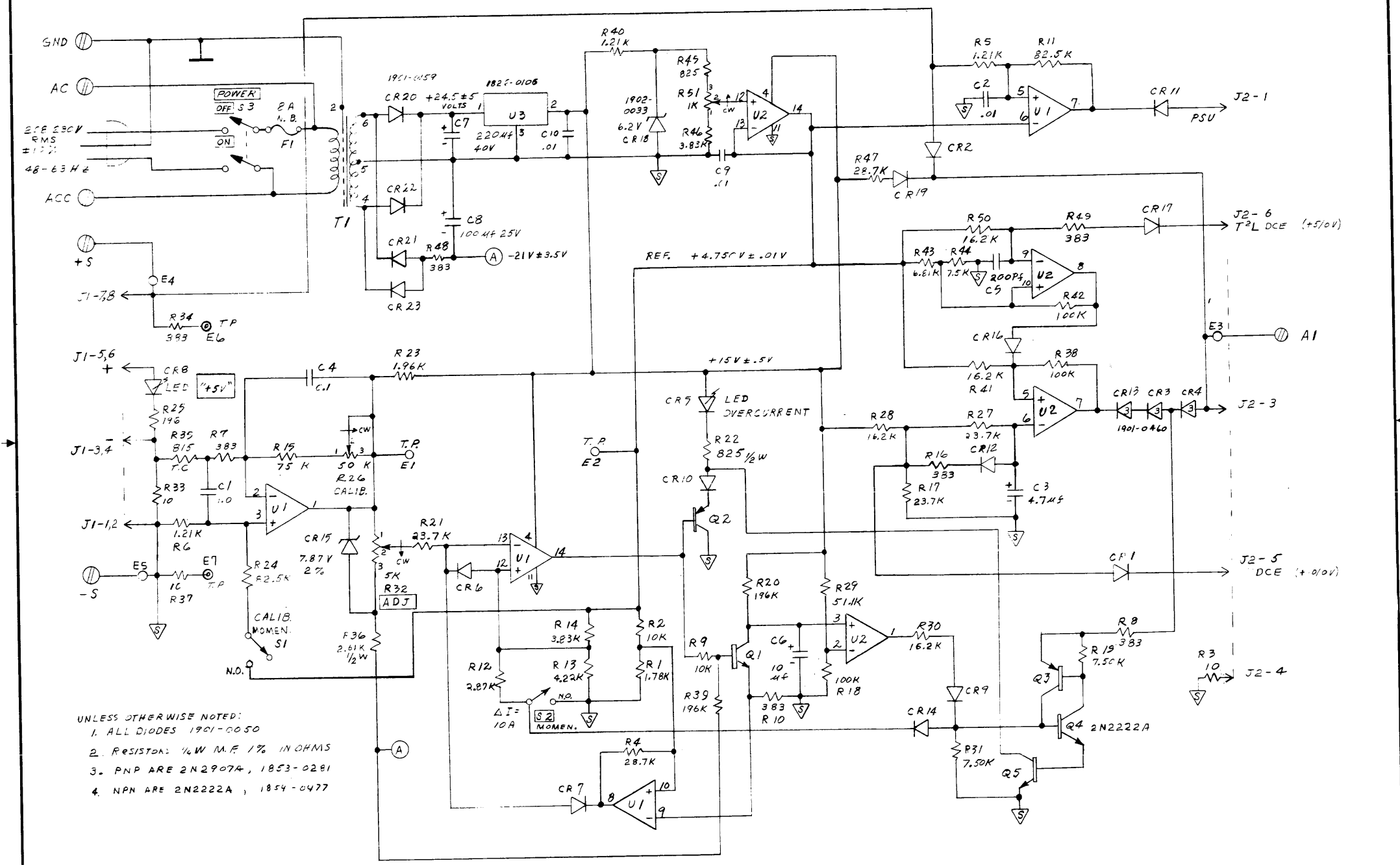
ENGINEERING RESPONSIBILITY												SEPIA		REVISIONS		APPROVED	DATE		
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	SYM			
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	A	As Issued		2/2/76
32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	B	REL PER DEC CHG		8/11/76
48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	C	Deleted Item 14, Item 2, GTY WAS 1.		9/3/76





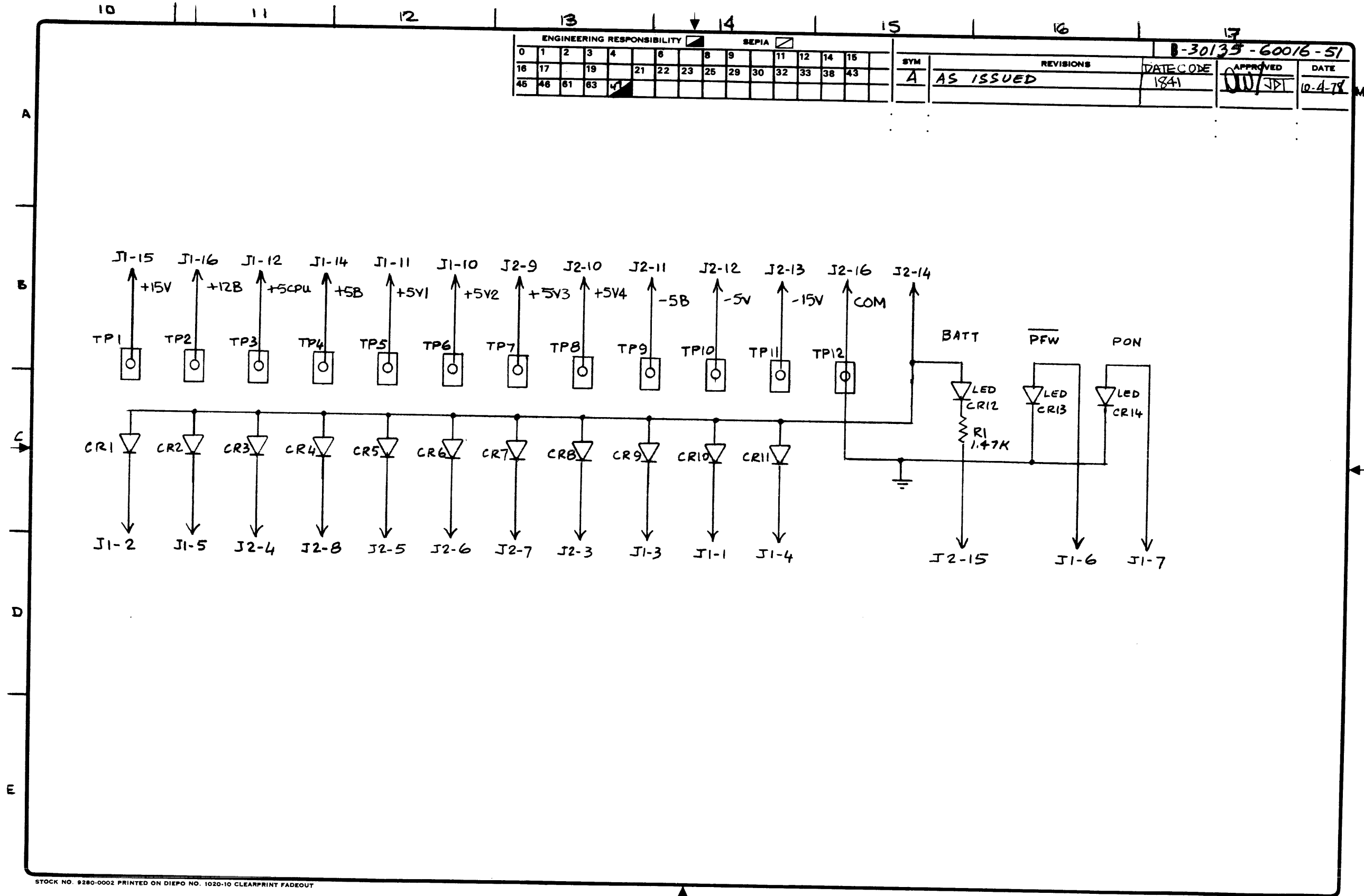
NOTES:  
 1. UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE IN OHMS  
 ALL RESISTORS 1/8W, 1%  
 ALL CAPACITANCE IN MICROFARADS  
 ALL TRANSISTORS - 1854-0477  
 ALL DIODES - 1901-0090

ENGINEERING RESPONSIBILITY										SEPIA					REVISIONS					APPROVED	DATE	
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	A3 ISSUED					1532	5/7/76
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31							
32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47							

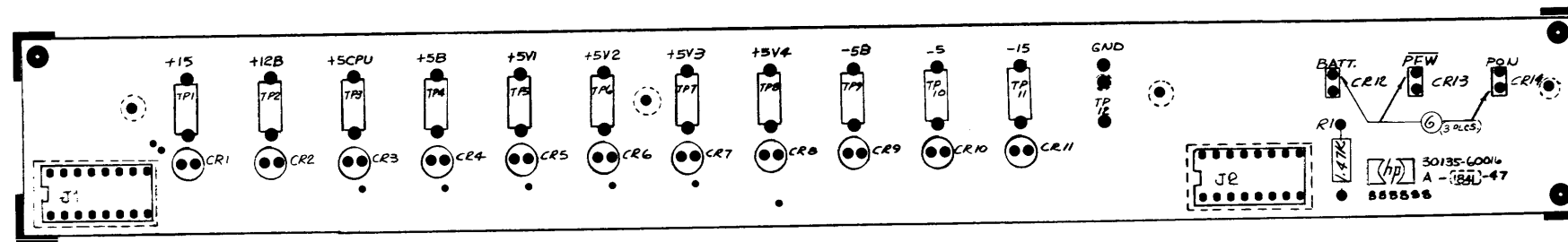


- UNLESS OTHERWISE NOTED:
1. ALL DIODES 1901-0050
  2. RESISTOR: 1/2W M.F. 1% IN OHMS
  3. PNP ARE 2N2907A, 1853-0281
  4. NPN ARE 2N2222A, 1854-0477

STOCK NO. 3280-0003 PAPER K&E 10 8548

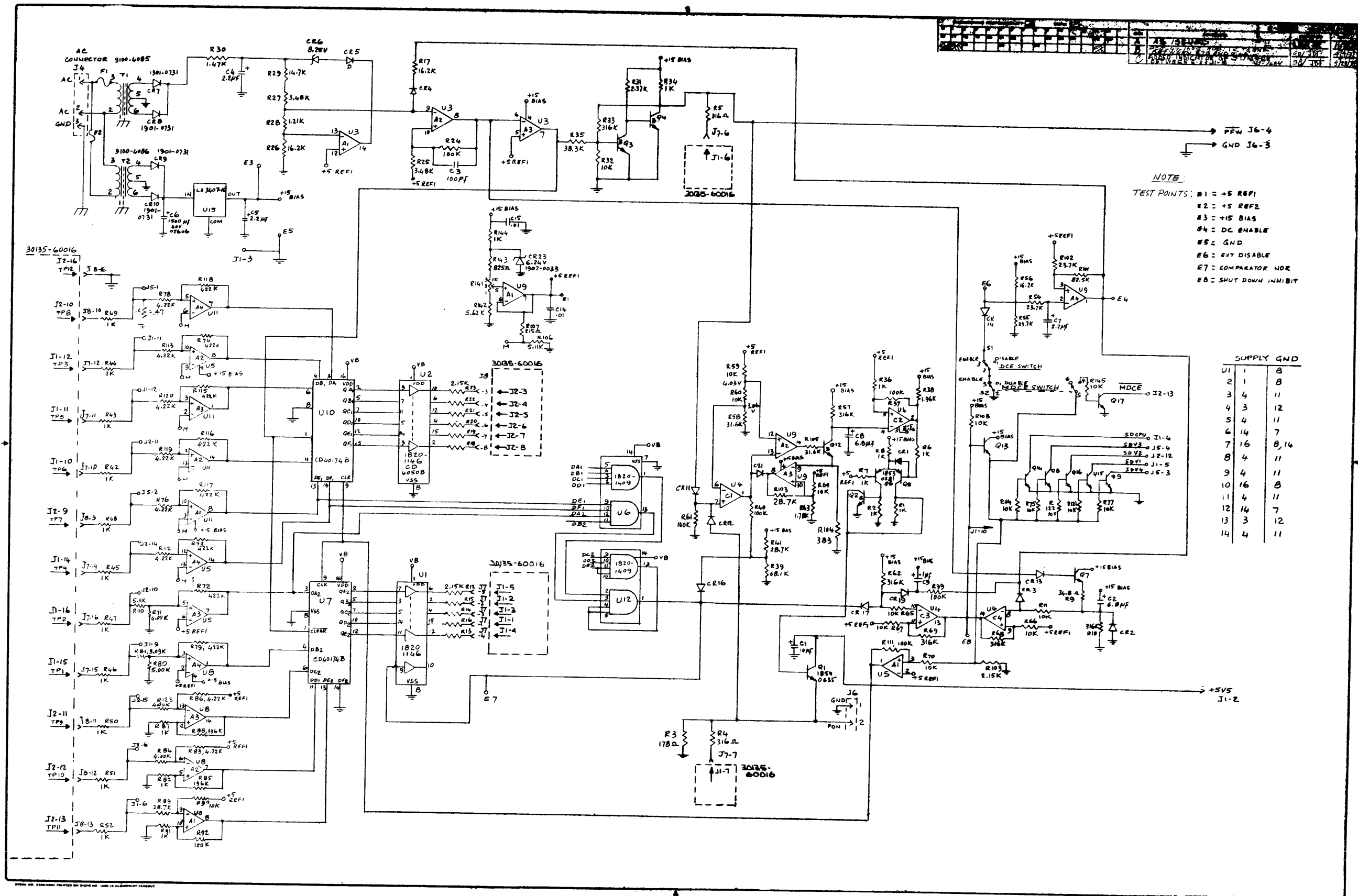


STOCK NO. 9280-0002 PRINTED ON DIEPO NO. 1020-10 CLEARPRINT FADEOUT



NOTES

- 1. UNLESS OTHERWISE SPECIFIED:
- ALL RESISTANCE IN OHMS V/W 170.
- ALL LEDS ARE 1790-0486
- ALL TEST POINTS ARE 1251-1395

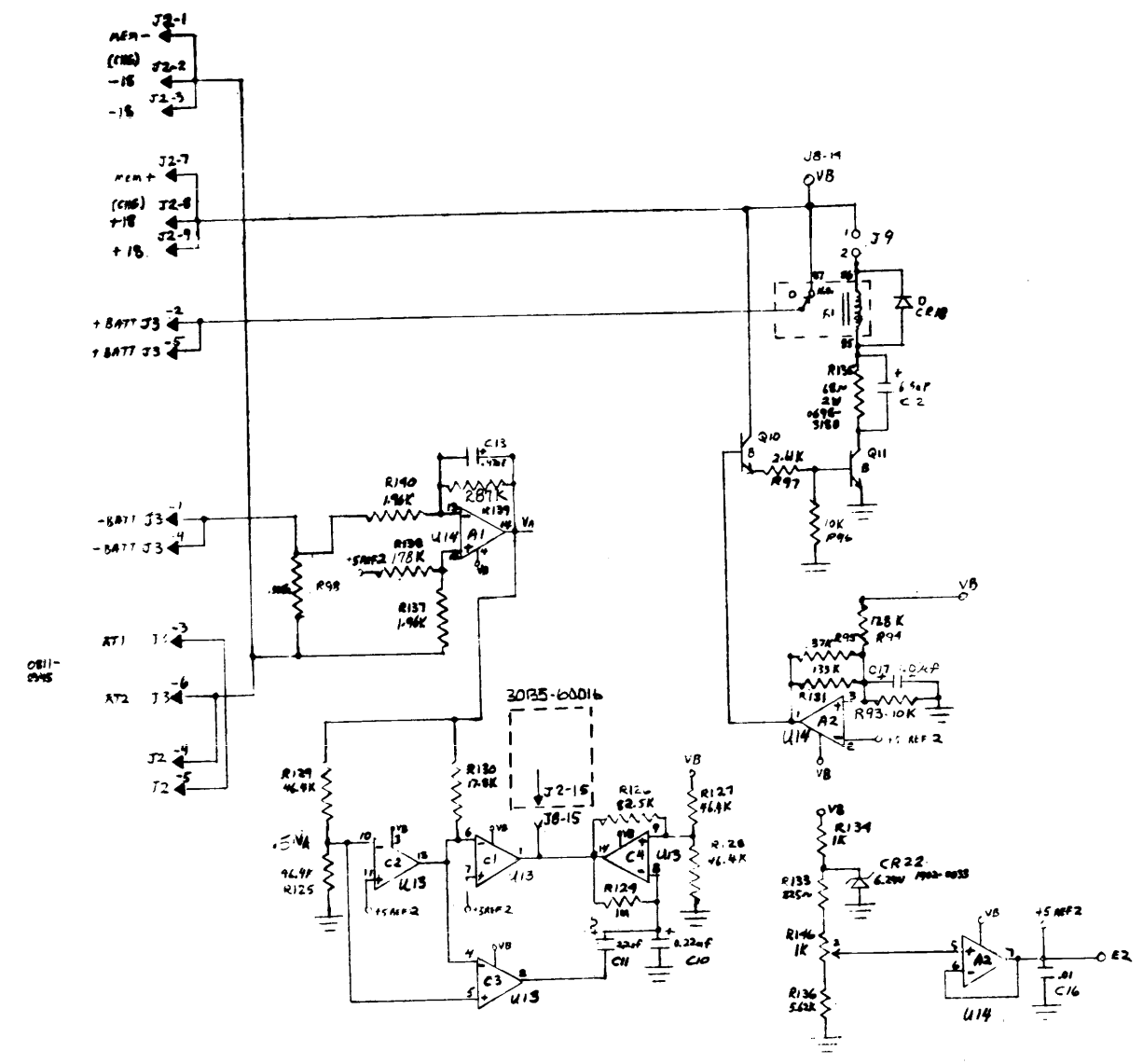


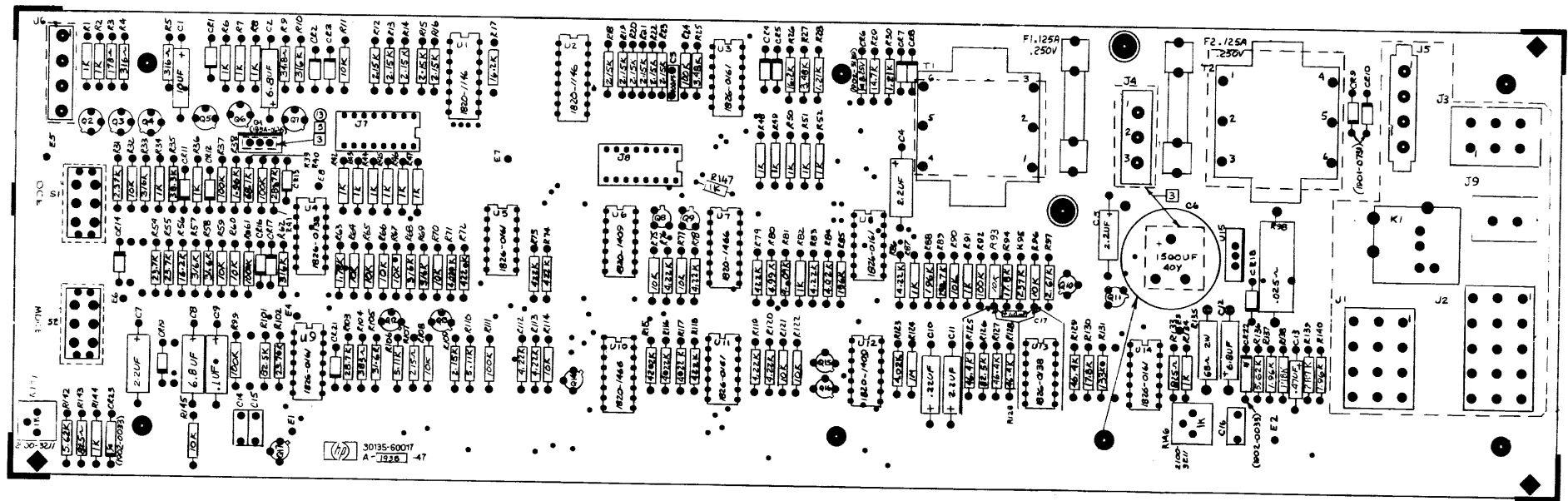
NOTE:  
 TEST POINTS: E1 = +5 REF1  
 E2 = +5 REF2  
 E3 = +5 BIAS  
 E4 = DC ENABLE  
 E5 = GND  
 E6 = EXT DISABLE  
 E7 = COMPARATOR NOR  
 E8 = SHUT DOWN INHIBIT

SUPPLY GND		
U1	1	8
2	1	8
3	4	11
4	3	12
5	4	11
6	14	7
7	16	8, 14
8	4	11
9	4	11
10	16	11
11	4	11
12	14	7
13	3	12
14	4	11



ENGINEERING RESPONSIBILITY																		DEPT		REVISED		DATE																	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
																		A		B		C																	
																		A		B		C																	
																		A		B		C																	





NOTES:  
 1. UNLESS OTHERWISE SPECIFIED  
 ALL RESISTORS ARE 1/8W 1%  
 ALL DIODES ARE 1N4148  
 ALL TRANSISTORS ARE 2N3904