



North Star Computers, Inc.

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**HORIZON®. HRZ-D MANUAL**  
**ADDENDUM**  
June 1980

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Part Number 25503F

ADDENDUM to: HRZ-D MANUAL, REVISION\_1

JUNE 4, 1980

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- 1) In many HORIZON kits now being shipped, the wires are already connected to the main power transformer in order to expedite convenient assembly. Those who receive and assemble such HORIZON kits should ignore any assembly instructions which involve connecting wires to lugs on the main power transformer. The wires are already connected. In addition, the wire group sack for HORIZONS with pre-wired transformers should contain only the following 15 wires (instead of 26 wires):

4, 13, 14, 15, 16, 17, 18, 21,  
22, 24, 25, 26, 27, 28, and 29

Finally, the power supply parts list for the HRZ should be changed; in kits which include pre-wired transformers, there are only six 10-32x3/8" machine screws instead of ten and eight #10 lock washers instead of twelve.

- 2) The HRZ-D Manual is the proper documentation for North Star's quad capacity HORIZON, HRZ-Q. Quad capacity HORIZON systems are essentially the same as double density HORIZON systems (HRZ-D). They differ from double density systems in that the one or two drives included with quad capacity system are quad capacity drives and not double density drives, as included in a double density system. Furthermore, the blank diskette included with a quad capacity HORIZON system is a double-sided diskette, not a single-sided diskette as included with double density HORIZON systems. In all other ways, the quad capacity HORIZON systems are the same as the current double density HORIZONS.
- 3) The capacitors C5, C6, C8, and C9 will no longer be installed in the HORIZON motherboard. Make the following changes to the HRZ-D Manual, Rev. 1:

PARTS LIST CHANGES

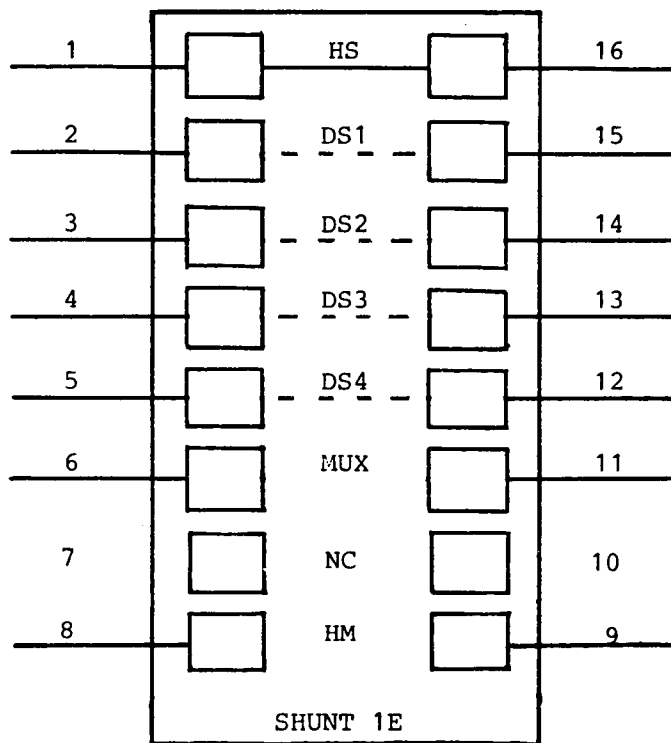
- A. On page 12, in the section titled DISK SUB-SYSTEM (MDS-H) PARTS LIST, delete two .047uf ceramic capacitors from the parts list.
- B. On Page 13, in the section titled SECOND DISK DRIVE (HRZ-DRV) PARTS LIST, delete two .047uf ceramic disc capacitors from the parts list.

## INSTRUCTION CHANGES

- A. On page 37, delete instruction D1 in the section titled DISK DRIVE #1 POWER REGULATION ASSEMBLY.
  - B. On page 38, delete instruction E1 in the section titled DISK DRIVE #2 POWER REGULATION AND CABLE ASSEMBLY.
- 4) The 74LS74 at location 3B on the MDS-AD3 disk controller board must be one of the following:
- A. Any Texas Instruments 74LS74.
  - B. A Signetics with "A" suffix (i.e. 74LS74AN).
  - C. A National with a star after the date code.
- 5) Some HORIZONS systems may be supplied with two 68LS373 (vs 74LS373) integrated circuits to be used only in motherboard locations 9A and 8A.
- 6) The Z80 Technical Manual is no longer included with the HORIZON documentation.
- 7) Most domestic HORIZON systems are now shipped with a 230v/115v Universal transformer instead of a 115v domestic transformer.
- 8) The three 74LS123's used on the MDS-AD3 disk controller board must be Texas Instruments 74LS123.
- 9) The standard HORIZON now comes with the second serial interface, the parallel I/O interface and 12 100-pin edge connectors as standard equipment.
- 10) When using a doubled-sided drive, make certain that the shunt at 1E is properly configured. The connection for HS (Head Select) is connected between pin 1 and 16. To select drive one, (DS1), connect pin 2 to pin 15. To select drive two, (DS2), connect pin 3 to pin 14. To select drive three, (DS3), connect pin 4 to pin 13. To select drive four, (DS4), connect pin 5 to pin 12 and to pin 34 of edge connector J1; also, cut trace from pin 6 of the edge connector. Pin 6 and 11, the (MUX shunt), pins 8 and 9 (the HM shunt) and pins 7 and 10 should not be connected. For proper pin configurations, see the "Double-Sided Drive Select Configuration" diagram on the next page.

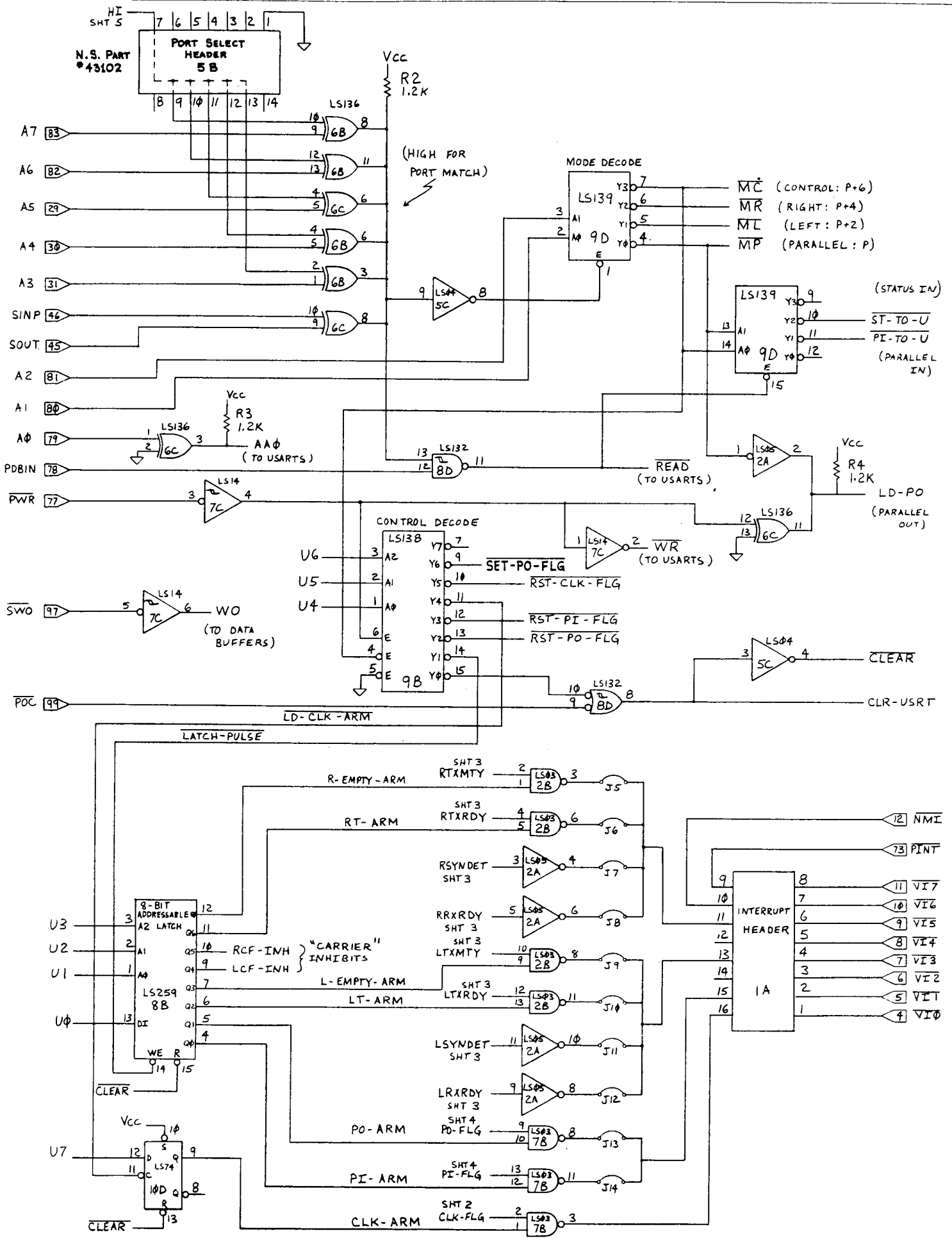
Only the drive plugged in at the end of the ribbon cable should have the DIP resistor network at location 2F plugged in. Additional drives plugged in along the cable should have the resistor package removed.

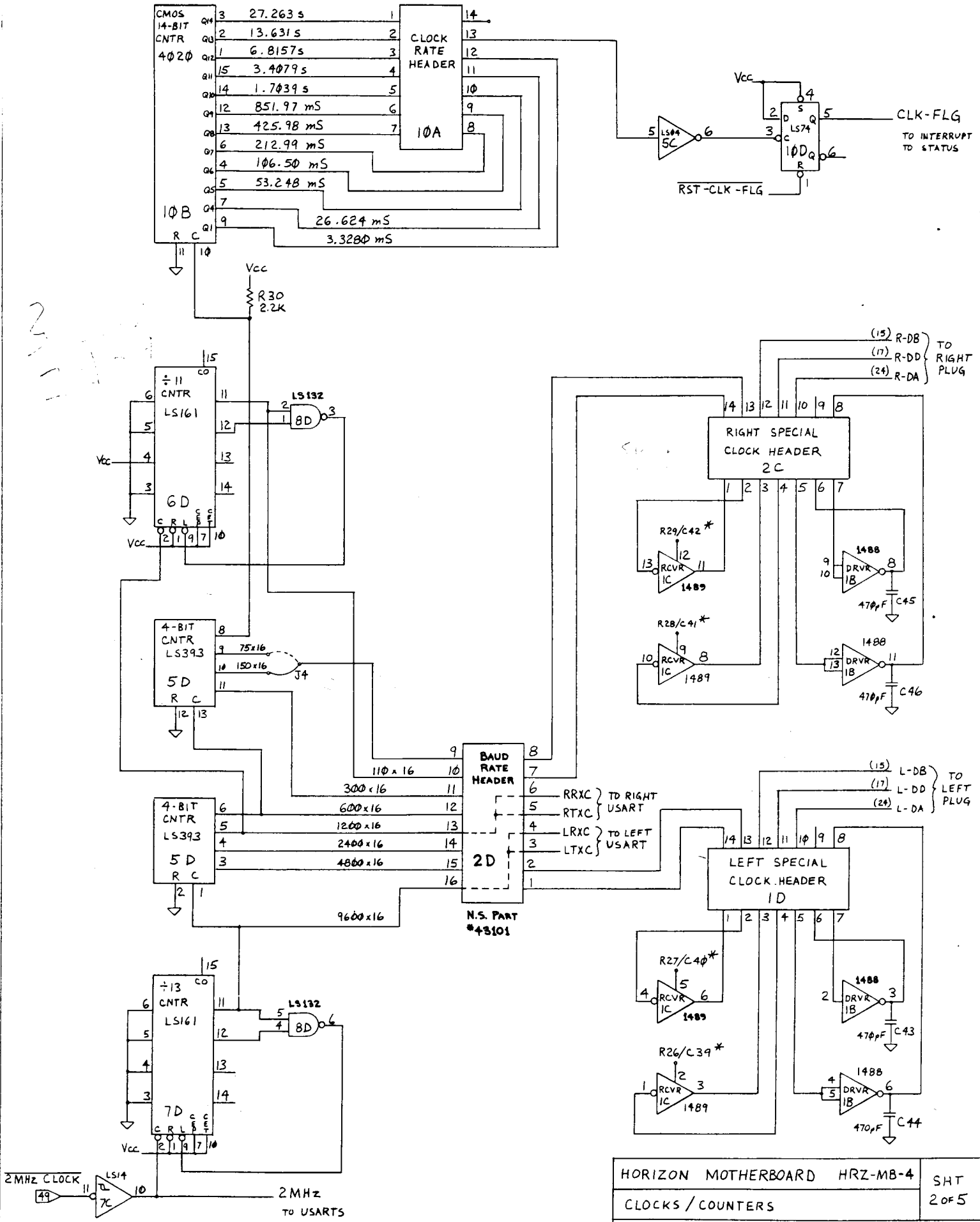
DOUBLE-SIDED DRIVE SELECT CONFIGURATION



11) For all HORIZON Computer Systems containing motherboards marked "HRZ-MB-4", the following five pages of schematic drawings supersede pages 88, 89, 91, and 92 of the HORIZON Manual.

We try to make our documentation as complete, clear and accurate as possible. Your suggestions and feedback on HORIZON System documentation are always welcome.

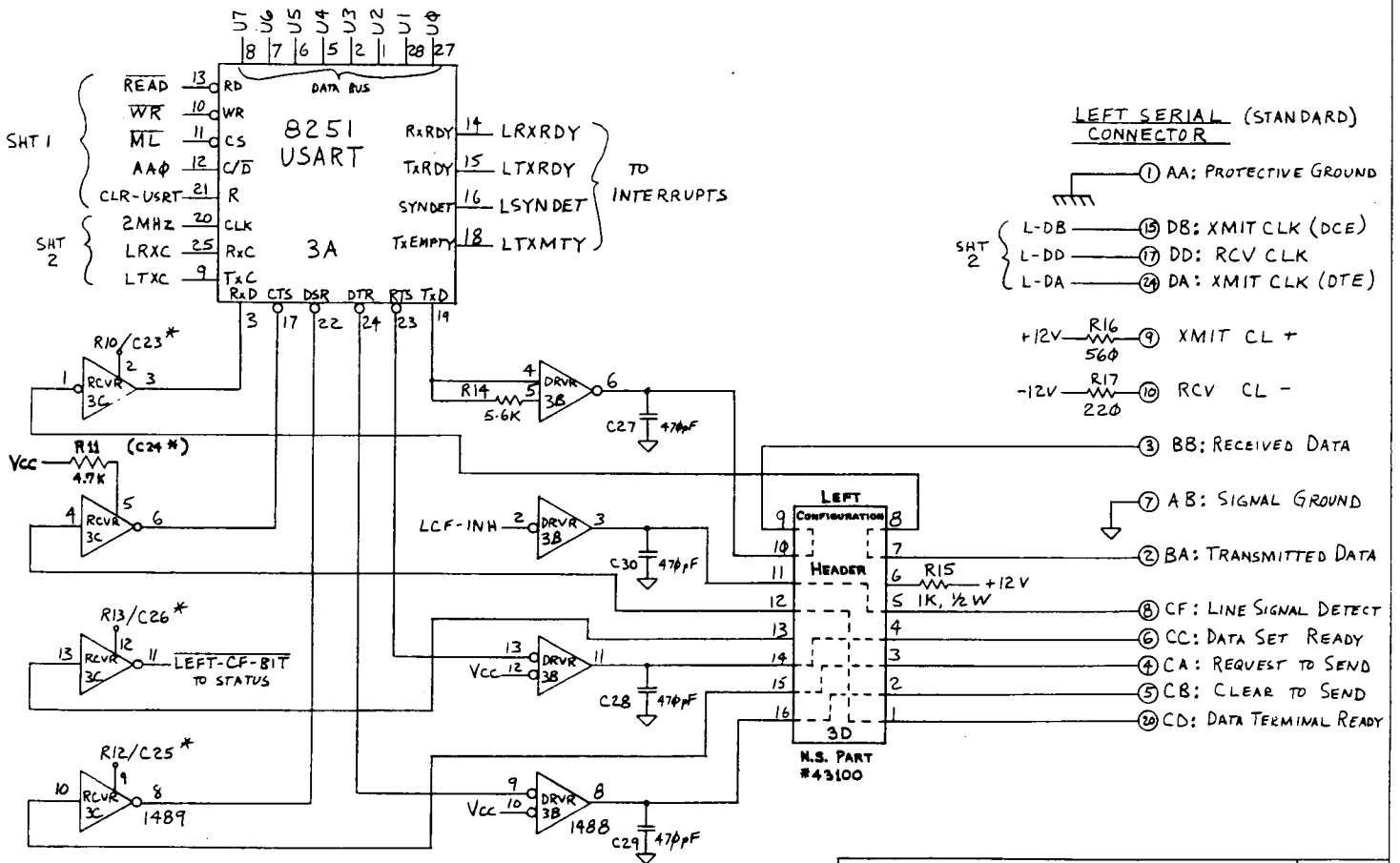
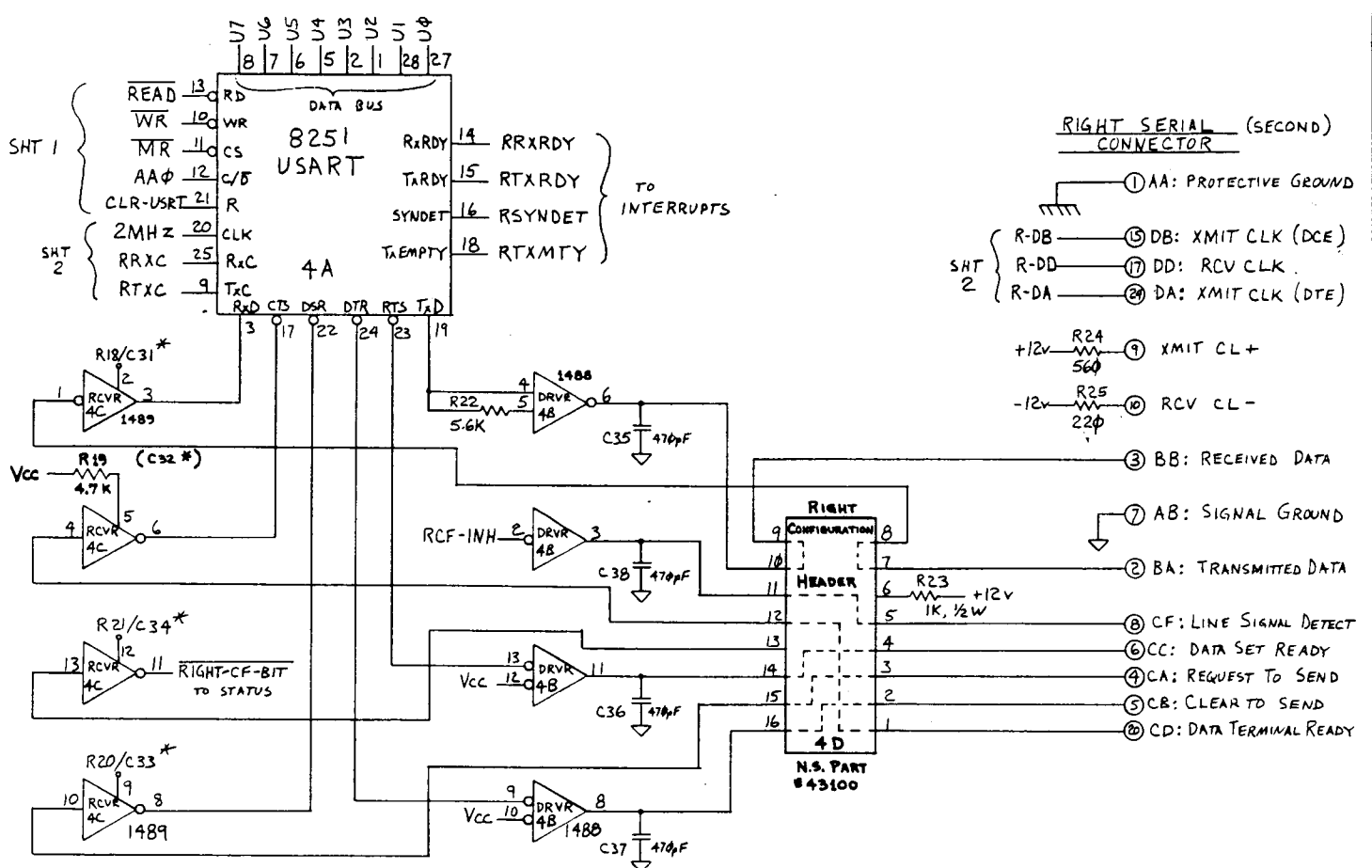




\* SEE NOTE, SHT 3

HORIZON MOTHERBOARD HRZ-MB-4	SHT
CLOCKS/COUNTERS	2 OF 5
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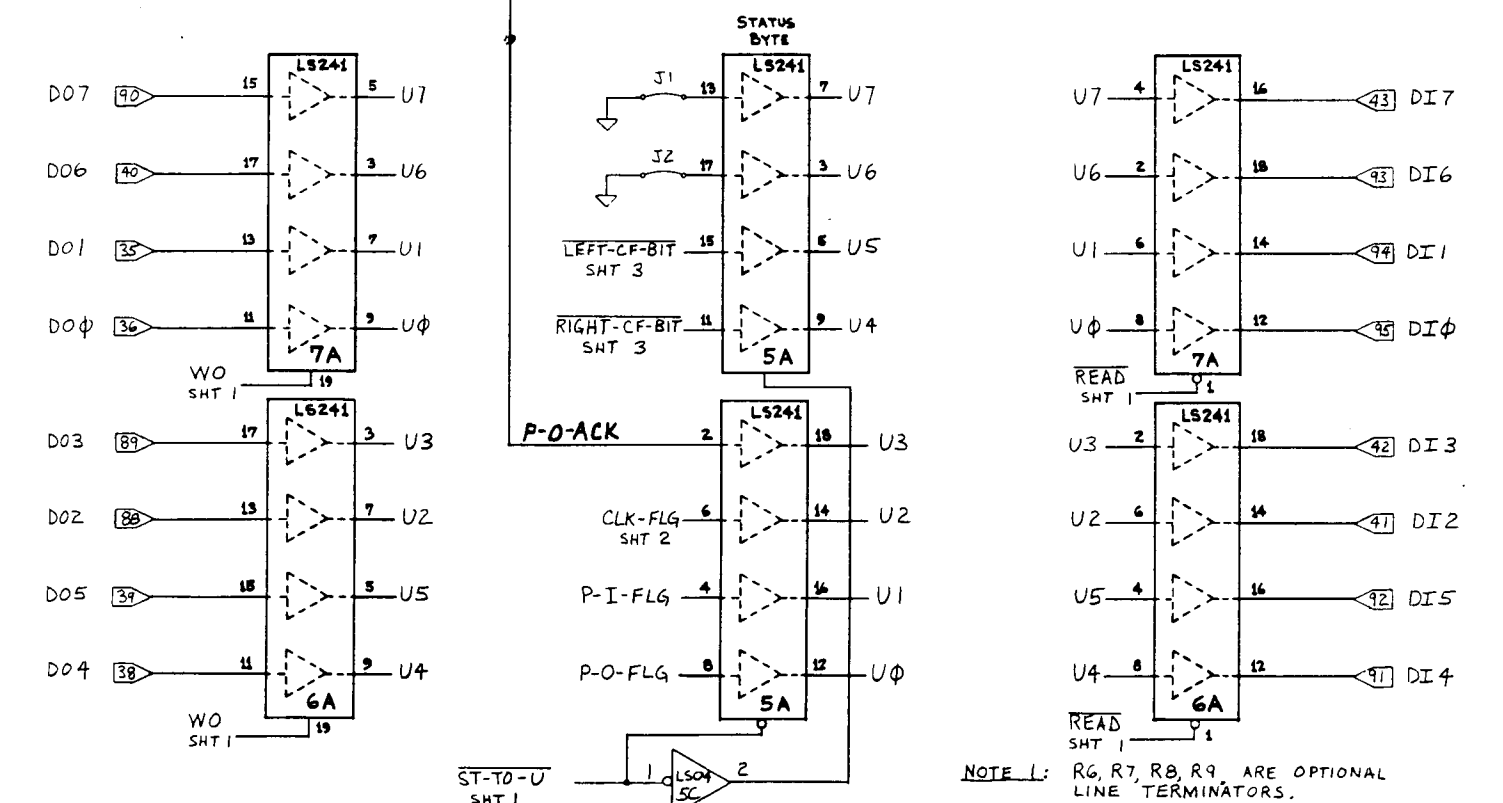
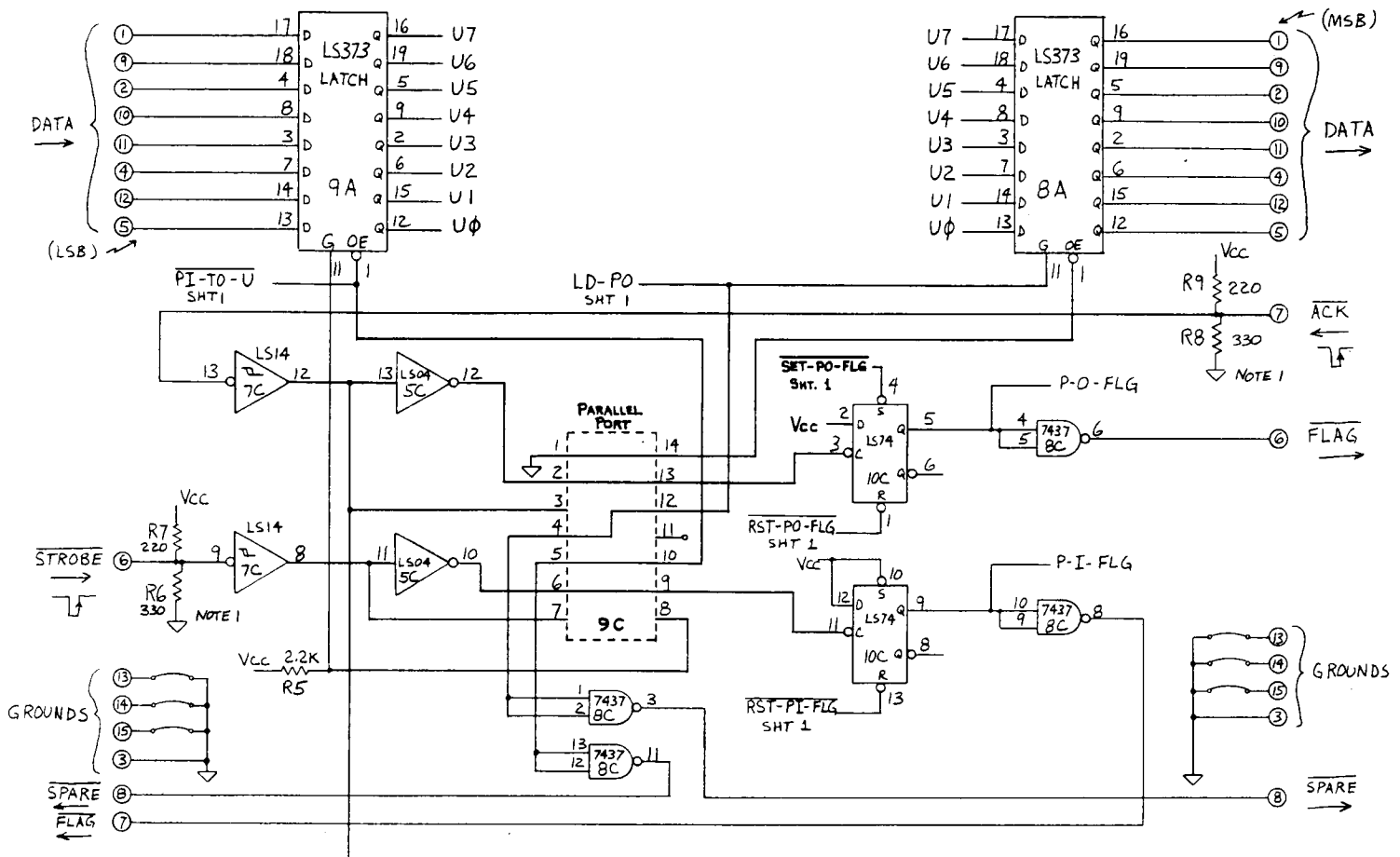


\* NOTE: TO EACH RS232 RECEIVER (12 PLACES), USER MAY ADD RESISTOR TO Vcc OR CAPACITOR TO GND. (4.7K RESISTOR NOMINALLY INSTALLED AT PIN # 5)

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SERIAL PORTS	3 OF 5
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PARALLEL INPUT PORT

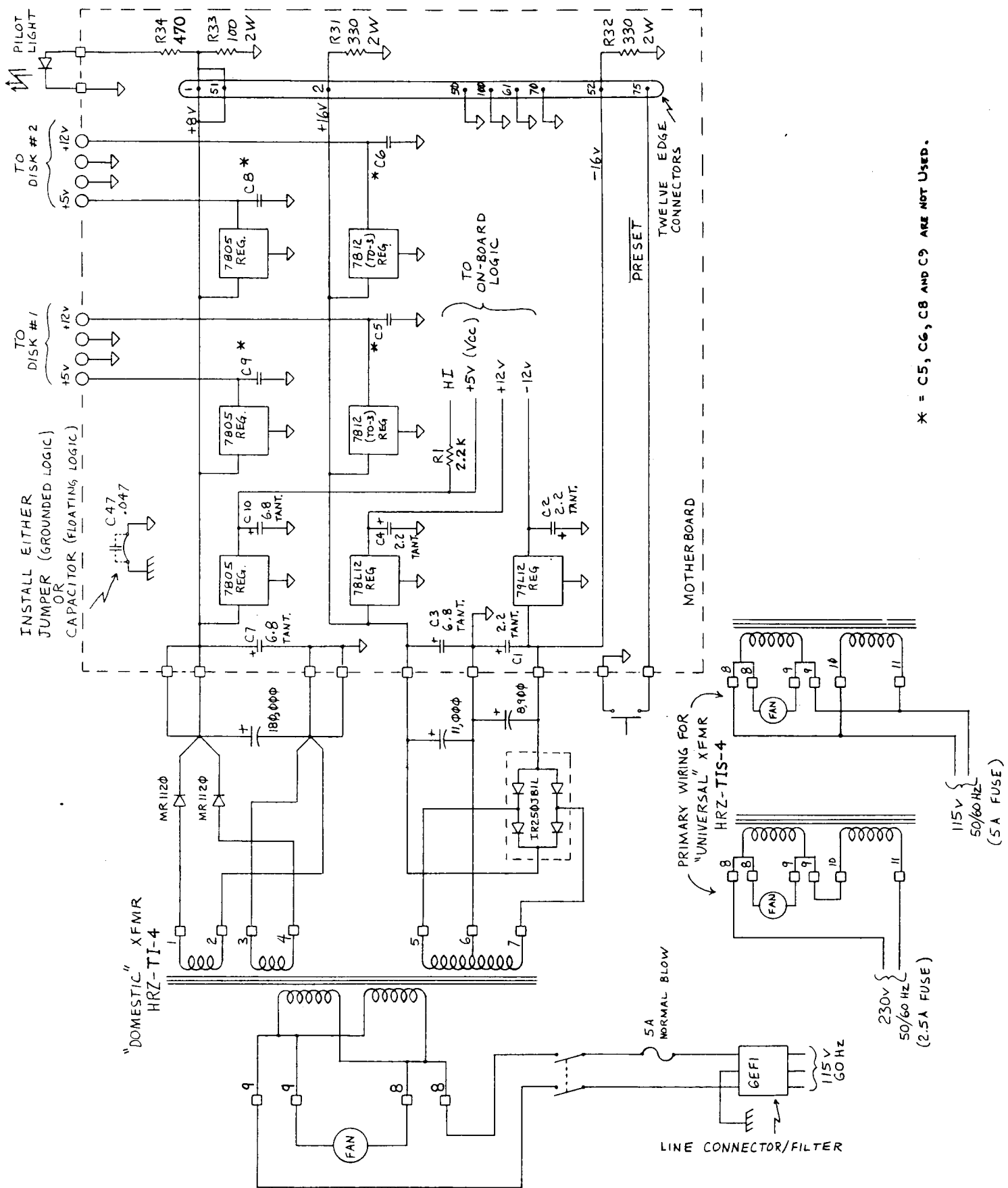
PARALLEL OUTPUT PORT



NOTE 1: R6, R7, R8, R9, ARE OPTIONAL LINE TERMINATORS.

HORIZON MOTHERBOARD HRZ-MB-4		SHT
BUFFERS, STATUS, PARALLEL PORTS		4 of 5
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\* = C5, C6, C8 AND C9 ARE NOT USED.

HORIZON CHASSIS/MOTHERBOARD MB-4	SHT
POWER SUPPLIES	5 of 5
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