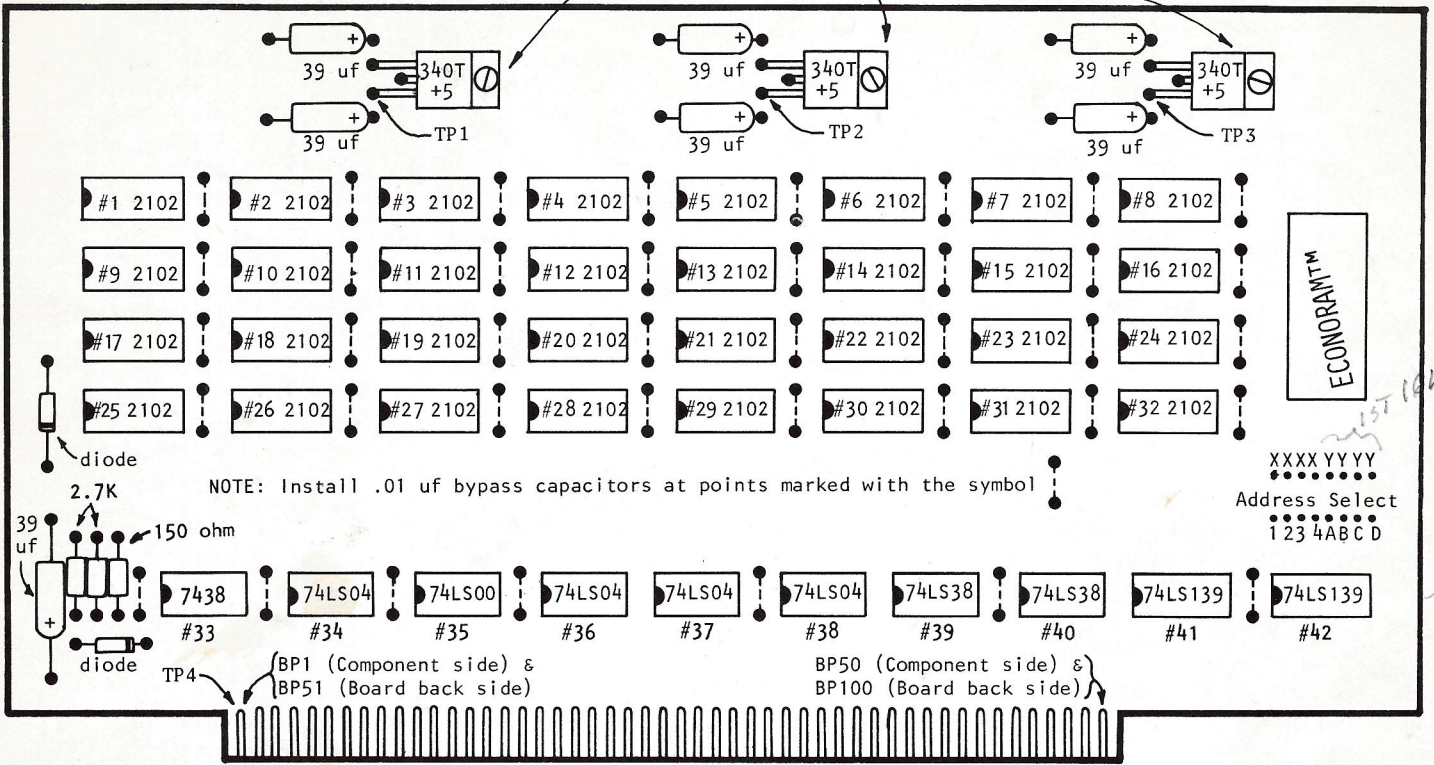


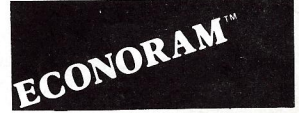
"ECONORAM" 4K X 8 KIT, COMPONENT SIDE

add screws as shown

0000 0000 0000



4Kx8 RAM KIT



ASSEMBLY INSTRUCTIONS

****PRELIMINARIES:** First, check off the parts in your kit against the parts shown on the component layout to familiarize yourself with the various components. Note that the rounded ends of the 39 uf tantalum capacitors are the (+) ends.

****SOLDERING:** Use a fine tip soldering iron, rated at about 25 watts. Use only rosin core solder; using any other type of solder invalidates the warranty. Solder every pin of every socket.

****ORDER OF ASSEMBLY:**

1. Mount the sockets and solder them. To prevent the sockets from falling out as you turn the board over to solder, put a piece of cardboard over the top of the sockets, and turn the board over while holding the cardboard against the sockets to keep them in place.
2. Solder the optional DIP switch into the address select part of the board (the DIP switch mounts as if it were an IC).
3. Check TP1 by taking a VOM and setting it to its highest resistance scale; then connect one probe to ground and one probe to TP1. The reading should read infinite ohms or very close to it. If not, check for solder bridges or a possible (but not very probable) board short.
4. Follow this same test procedure for TP2, TP3, and TP4.
5. Put in all capacitors, noting the polarity of the tantalum types.
6. Check TP1 through TP4 again, but this time with the VOM set on its lowest ohms range. There should be a "kick" on the meter while the capacitors charge, and then the readings should drift up to a much higher setting.
7. Install the 3 resistors and the two diodes (observe polarity).
8. Mount the LM340T/5 regulators on the board, using silicone grease between the sink side of the LM340T and the board. Fasten tight with a nut and bolt, but don't overtighten to prevent cracking the board. This completes assembly.

****ADDRESS SELECT:** This memory board can occupy 1) any of four 16K blocks in your machine, and 2) any 4K block within that 16K. Connecting address select hole A to any one of the Y holes selects the first 16K of memory; B jumpered to Y selects the second 16K of memory; C jumpered to Y selects the third 16K of memory; D jumpered to Y selects the fourth 16K of memory. Similarly, hole 1 jumpered to any hole X selects the first 4K of the 16K block previously selected; hole 2 jumpered to hole X selects the second 4K block; hole 3 jumpered to hole X selects the 3rd 4K block; hole 4 jumpered to X selects the fourth 4K block. This jumpering may be implemented with wire jumpers or a DIP switch.

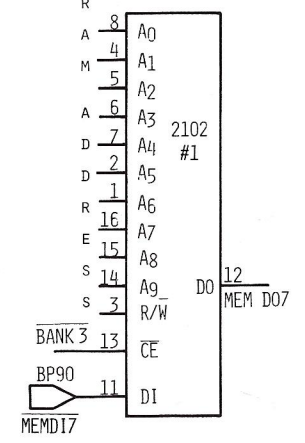
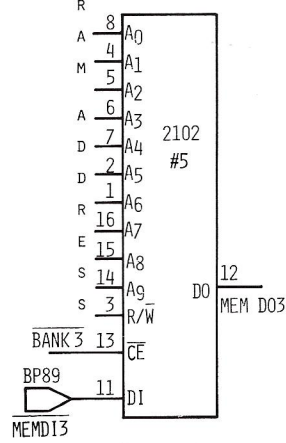
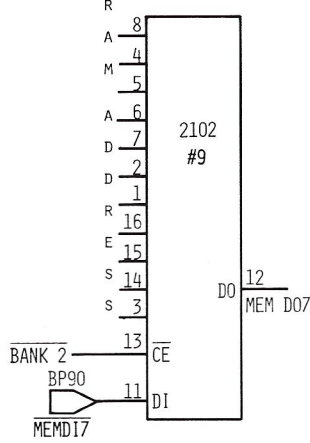
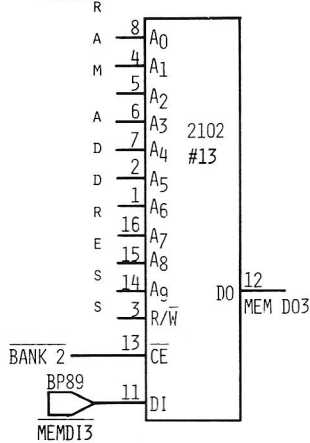
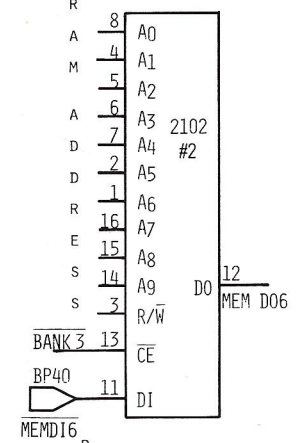
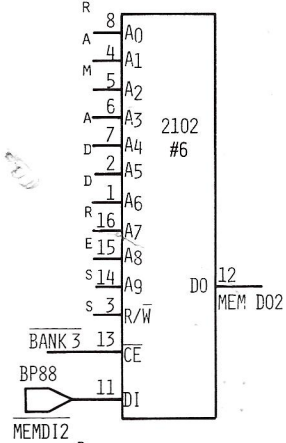
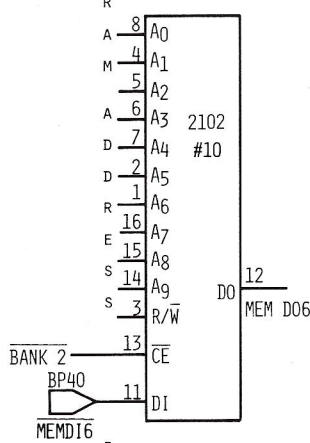
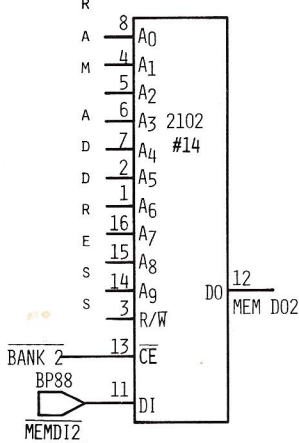
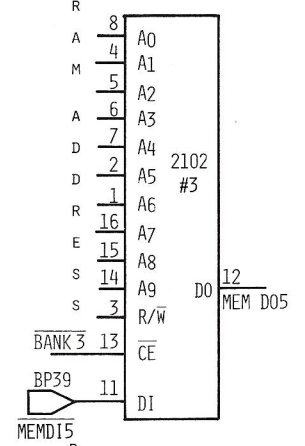
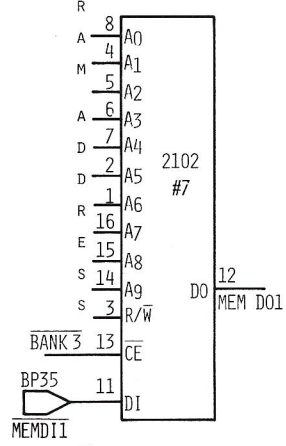
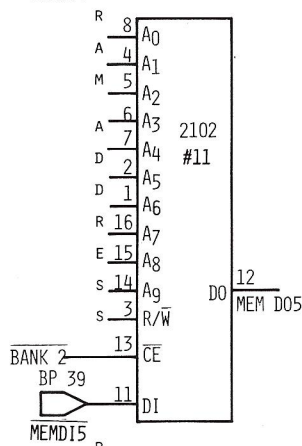
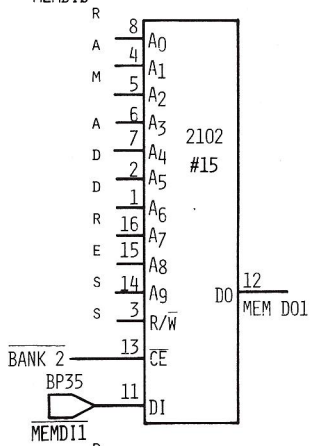
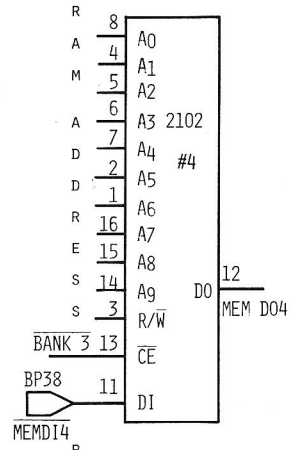
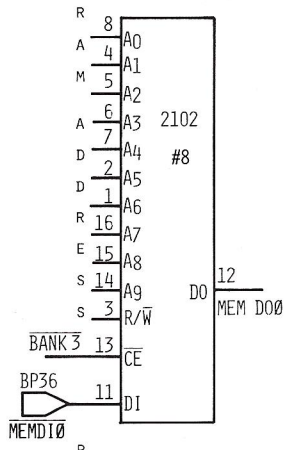
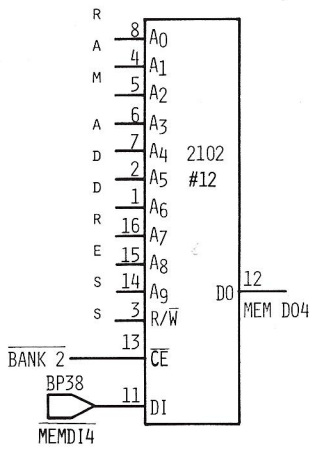
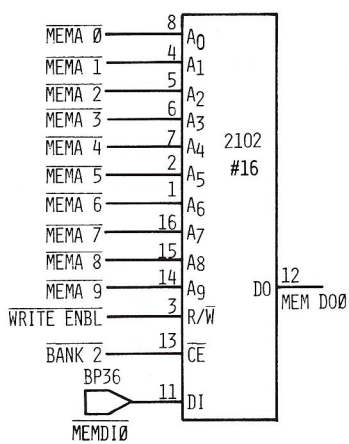
WE HOPE YOU ENJOY ASSEMBLING AND USING "ECONORAM", AND ENJOY GETTING FEEDBACK FROM USERS ON ITS OPERATION AND APPLICATION.

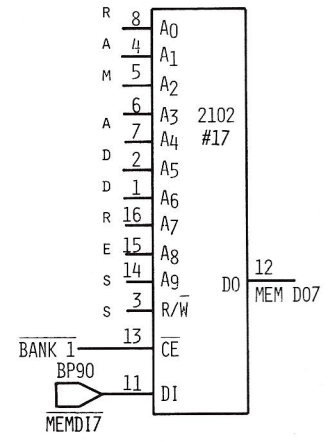
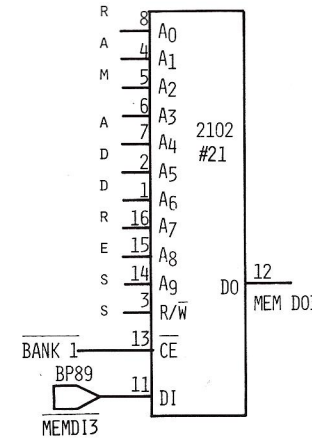
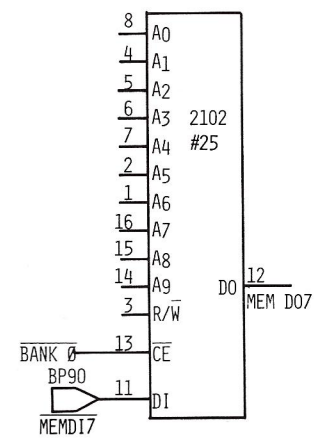
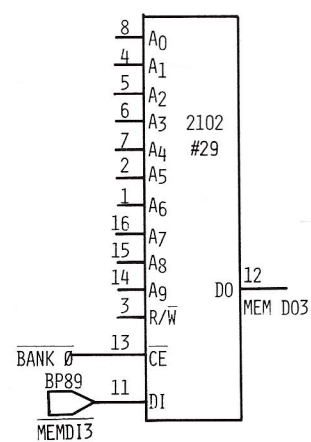
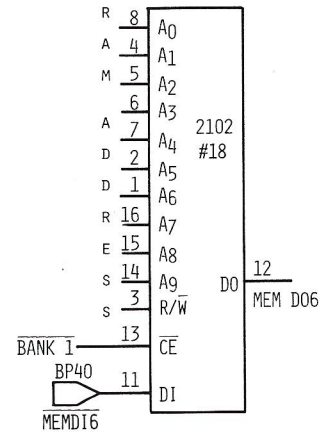
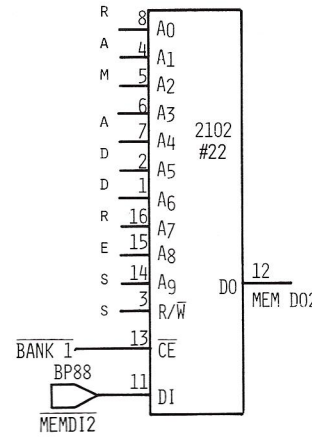
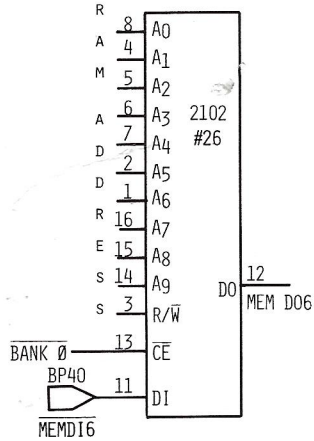
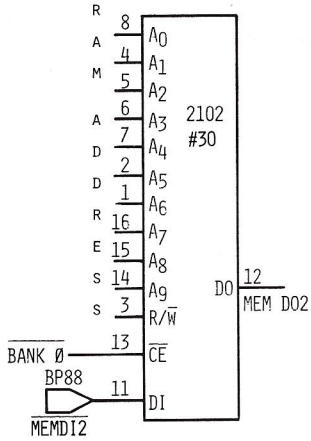
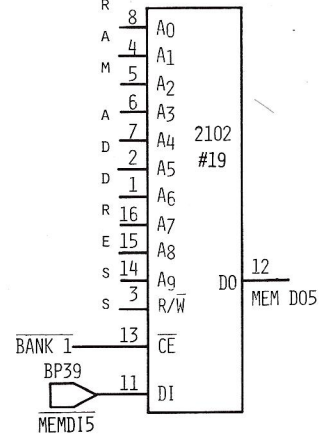
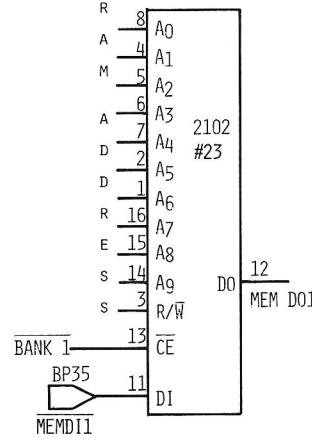
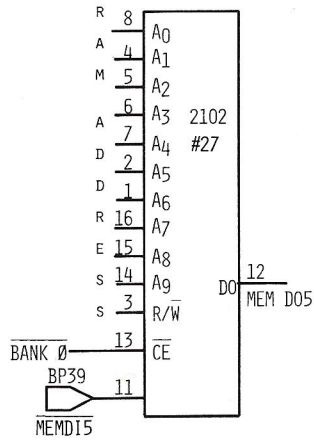
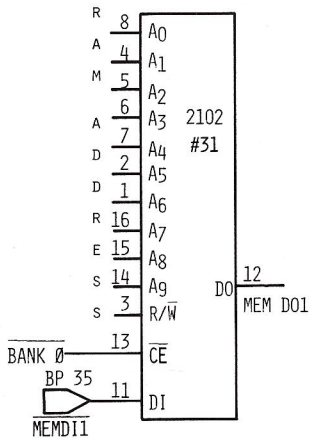
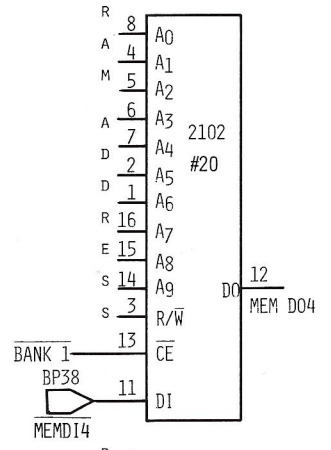
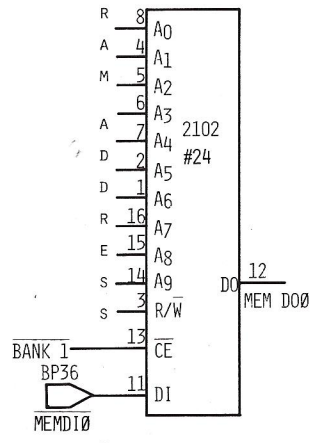
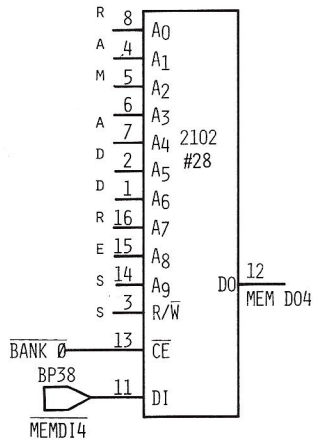
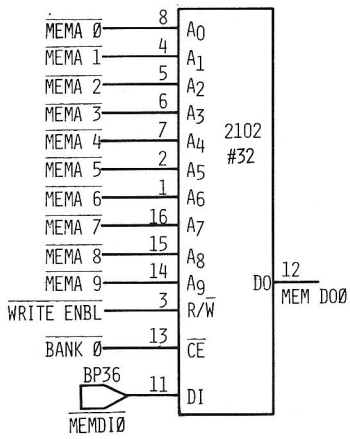
GODBOUT

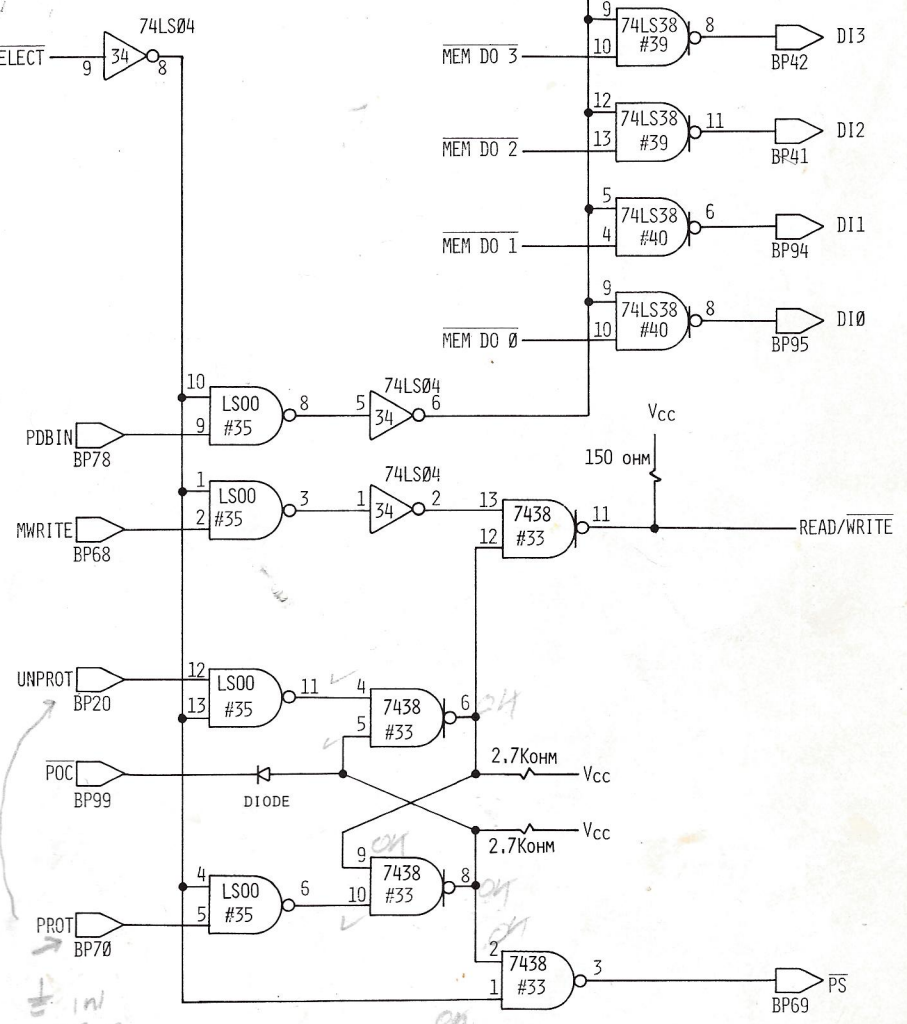
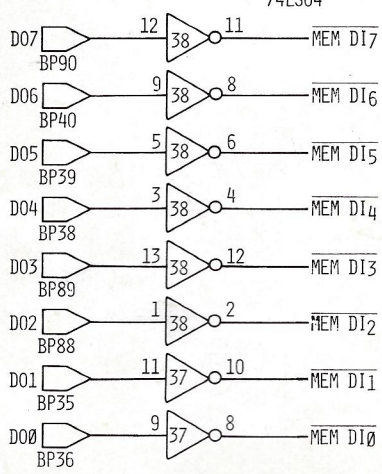
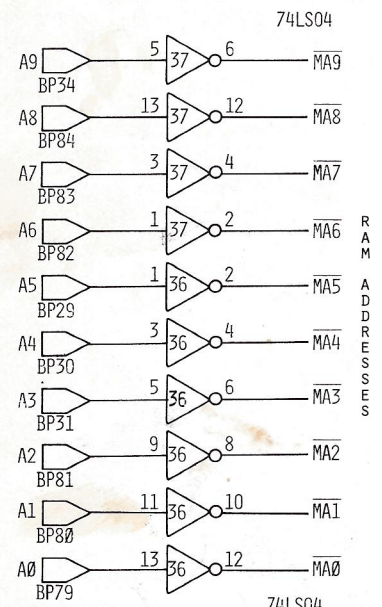
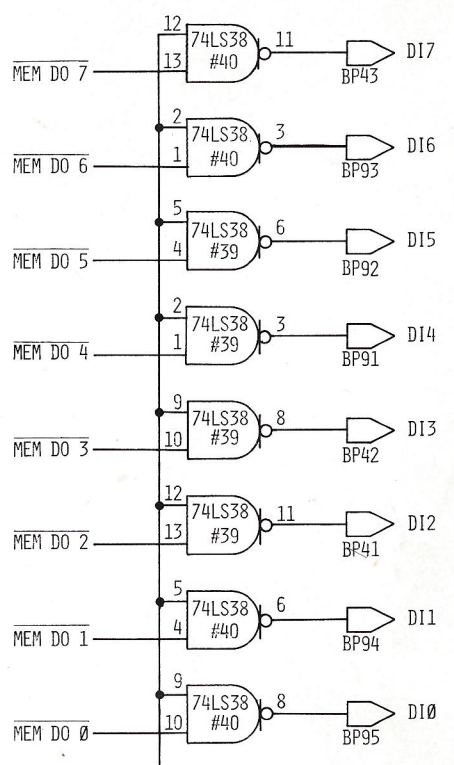
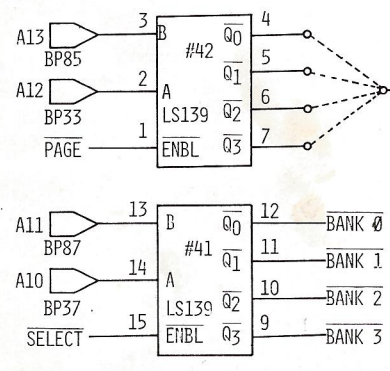
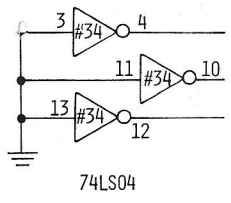
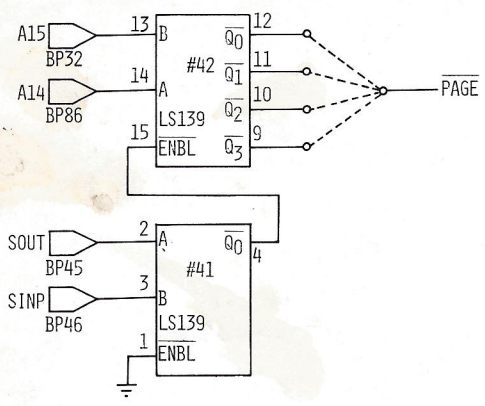
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Plug ECONORAM into your ALTAIR, IMSAI, Polymorphic, etc. computer so that the component side of the board faces the same direction as the component sides of any other boards plugged into your microcomputer system.



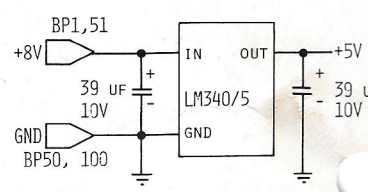






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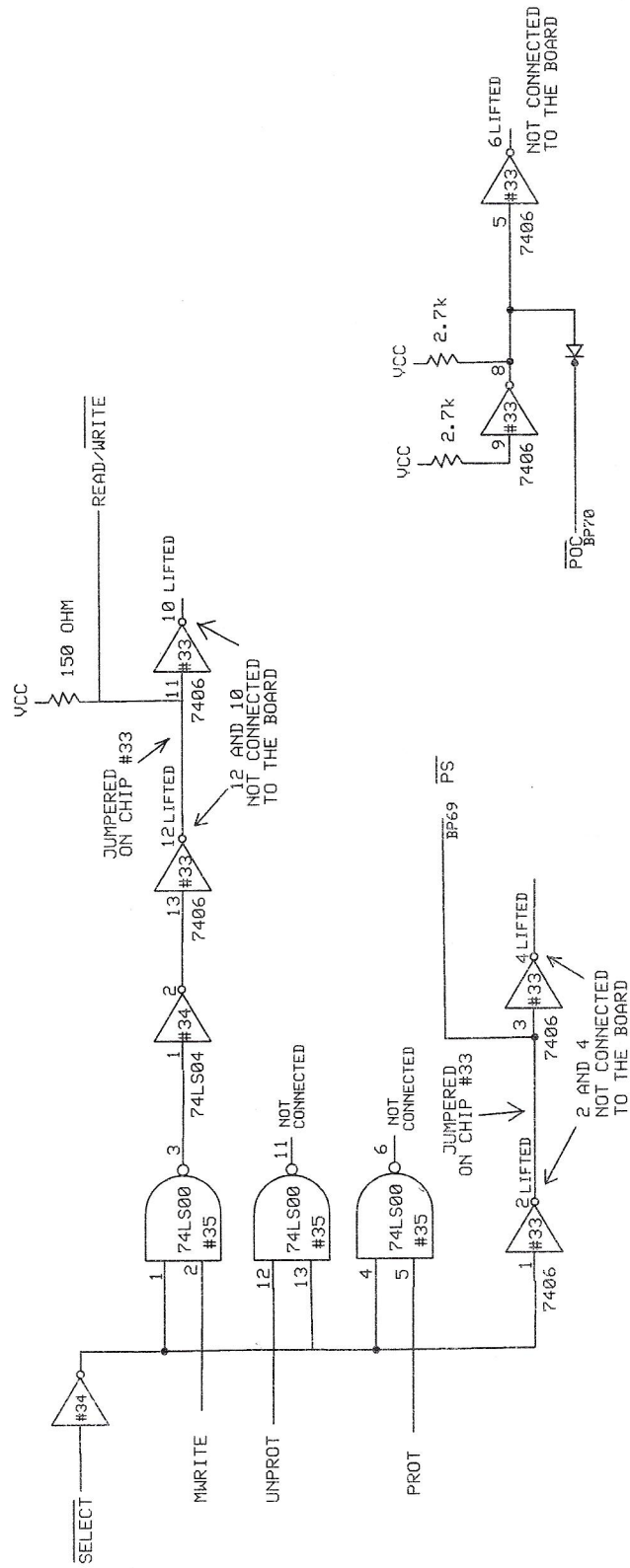
INSTALL 7400 IN/33
 PIN 1 ON 8 OK
 2 LIFT JP3 9 OK
 3 OK 10 LIFT
 4 LIFT 11 JP TO 12
 5 OK 12 JP TO 11 LIFT
 6 LIFT 13 OK
 7 OK 14 OK



3 PLACES

Regarding the note at the bottom of the last schematic, that change is not on the board. The chip in #33 is a 7438. There are no modifications to the board. I wrote that note 40 years ago but have no recollection of why I wrote it. Best I can tell, these early boards had trouble working on later S100 buses, and that change maybe corrected the problem. It was difficult to determine what that change did just by reading the note, so I drew this schematic that modifies the lower right of the last page schematic.

- Replace 7438 at #33 with 7406
- * Lift pin 2 and jumper to pin 3
- * Lift pin 4
- * Lift pin 6
- * Lift pin 10
- * Lift pin 12 and jumper to pin 11



Godbout Modification