



## Apple II Reference Manual

<http://www.turbo-2.com/apple/>

The main logic board of your Apple has been modified to reduce electromagnetic interference. This means that it is different from the Apple boards which are described in the Apple II Reference Manual. It will not, however, behave differently in any specific way unless you have changes made to it.

You will know you have a new main board by looking at the white F on the far left side of the board. You'll see there this nine digit number 820-0044-xx, where xx is the revision level.

The major differences in the new main board are described below. Also, the attached schematics show the areas in which this board is different from earlier boards. You may wish to note these differences in your Apple II Reference manual, on the pages which correspond to the schematics here.

\* The new board does not have RAM configuration blocks. This means the RAM Integrated Circuits (ICs) which give your Apple its memory MUST be 16K bit ICs. All of the RAM ICs in your Apple are within the white-outlined box on the board. If you add memory to your Apple, make sure all the ICs you add in this box are 16K Apple RAM.

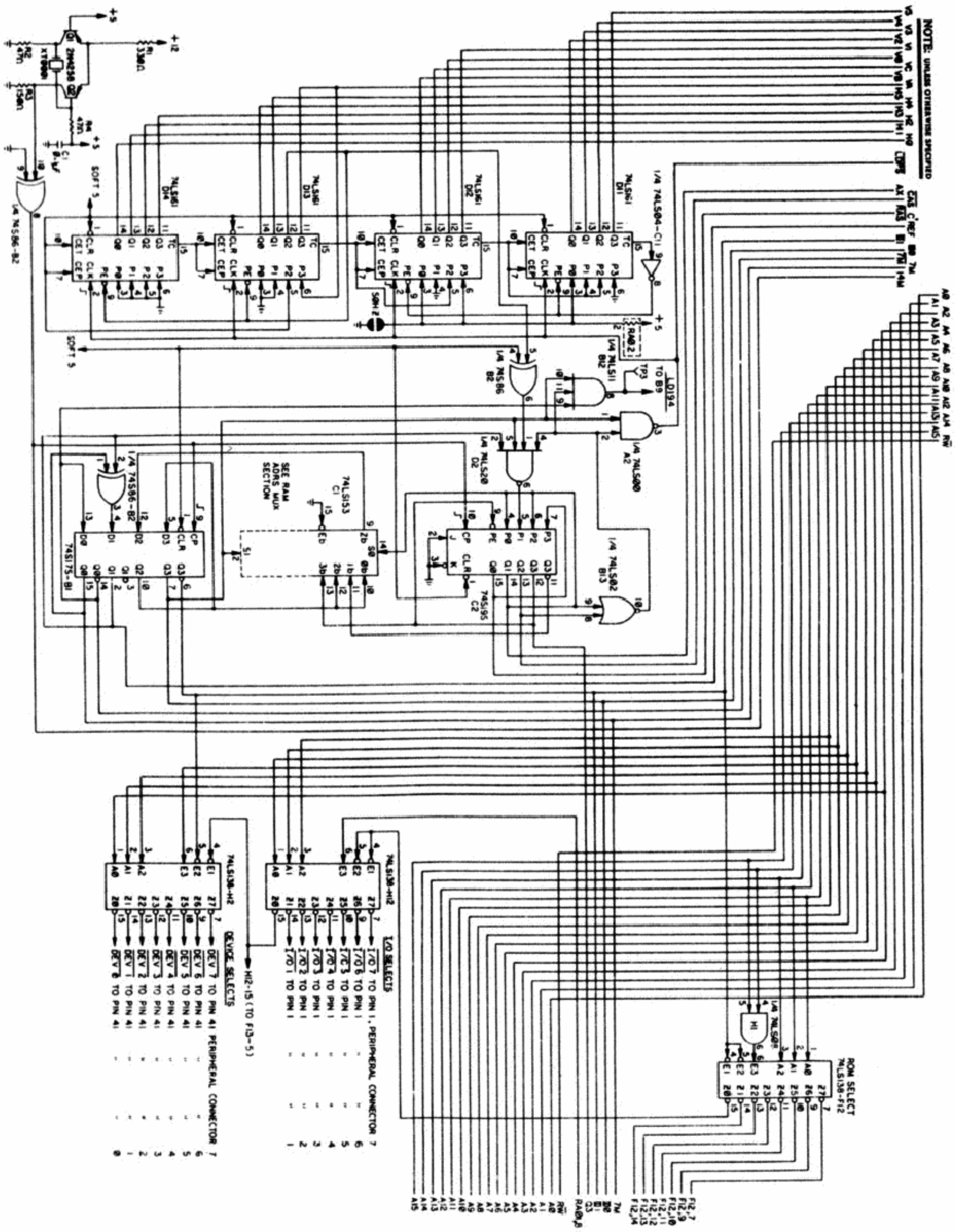
\* The IC which controlled the configuration blocks in the older versions of the Apple II board is no longer there. It was formerly in the E2 position on the Apple board (in the row labeled E, the second IC from the left of the board) and was marked 74LS139.

\* This new board has a different character generator ROM IC. The character generator ROM IC determines what style of lettering, or character set, you'll see on your monitor or terminal screen. The new character generator ROM is found next to the Keyboard socket on the main board. This 2316B ROM has more space than the former 2513 character generator ROM, so that it's possible to have more than one character set available. The 2316B ROM can also be replaced with a 2716 EPROM, which allows you to program and change your own character sets.

\* An inverter circuit has been added in the H2 line, which is a video synchronization signal. This alters the video synchronization pulse rate of the Apple so that it is more compatible with video monitors that have digital synchronization circuitry.

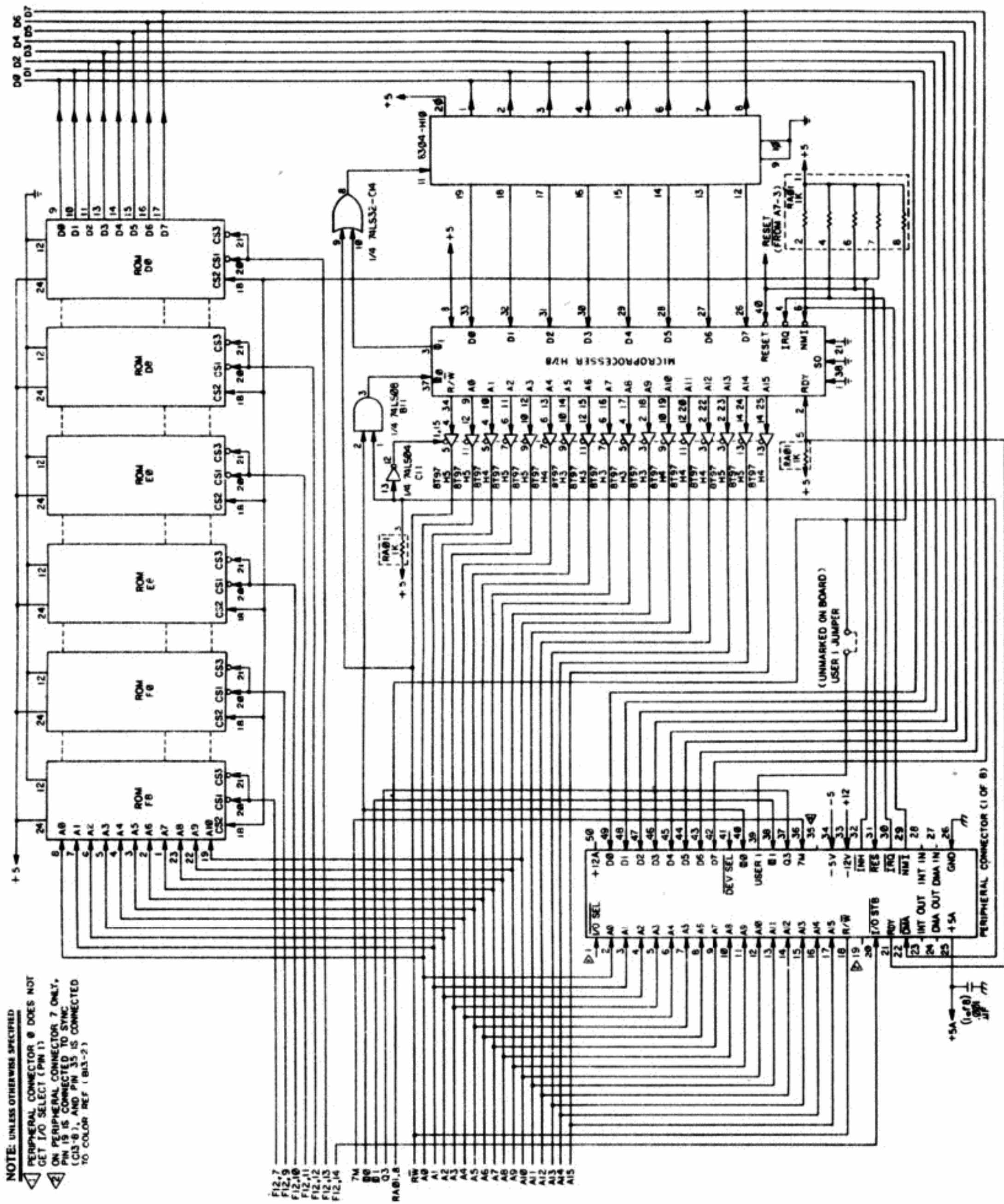
\* The color killer circuit, which damps out the color burst when your Apple is in text mode, has an added cutout circuit. The color burst is cut off in the logic circuit before it gets to the tank circuit. This gives you good black and white text, even if your color monitor has a sensitive color burst detector.

\* The power and ground system has been redesigned. The +5V and ground bus on the rear of the board have been interchanged so that the +5V bus is on the top of the board and the ground is on the bottom. A grounding bar has been added under the board to ensure electrical contact between the board and the metal baseplate. Additional filters have been added to further reduce the EMI emission levels.

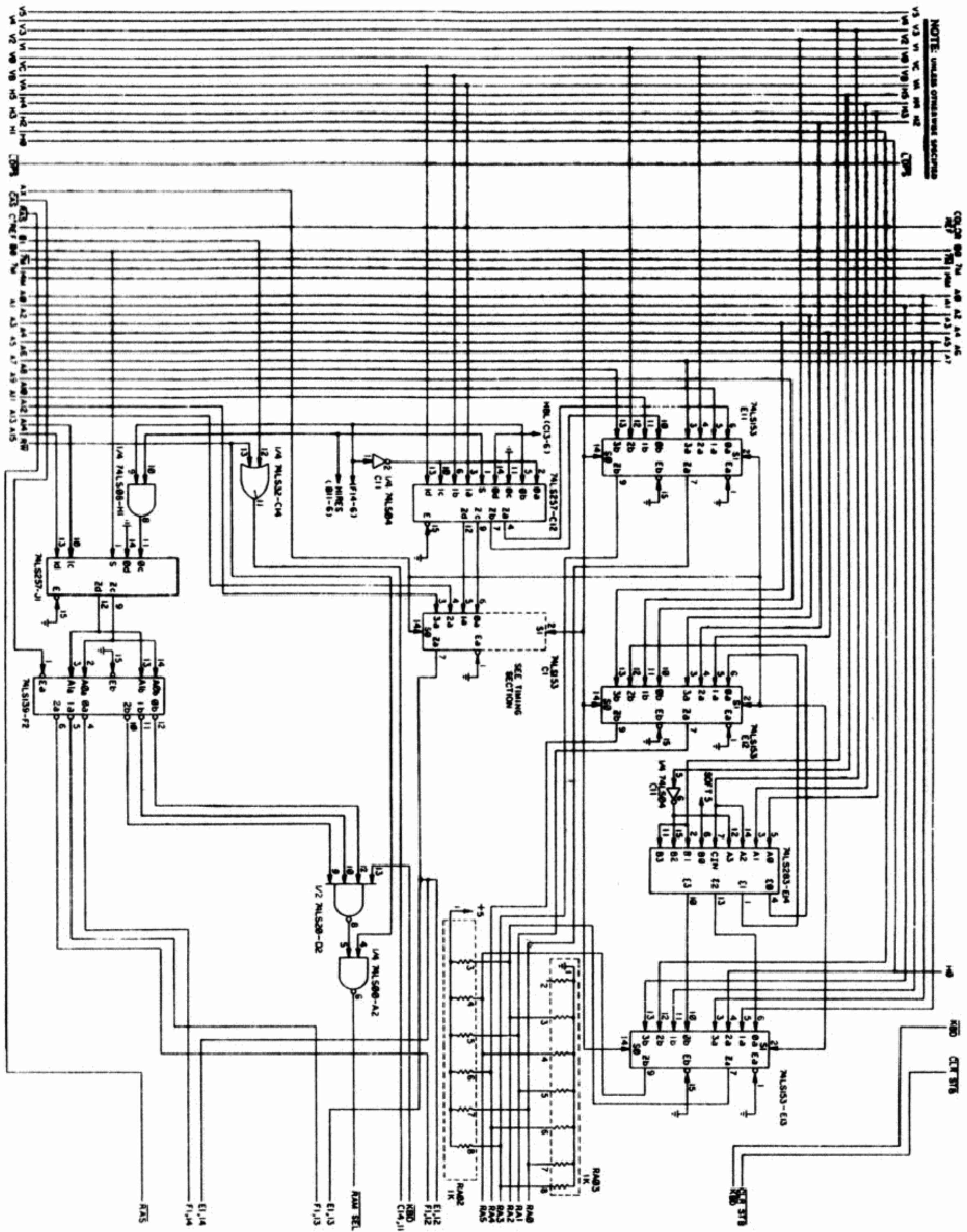


Replaces Figure 22-1. Schematic Diagram of the Apple II



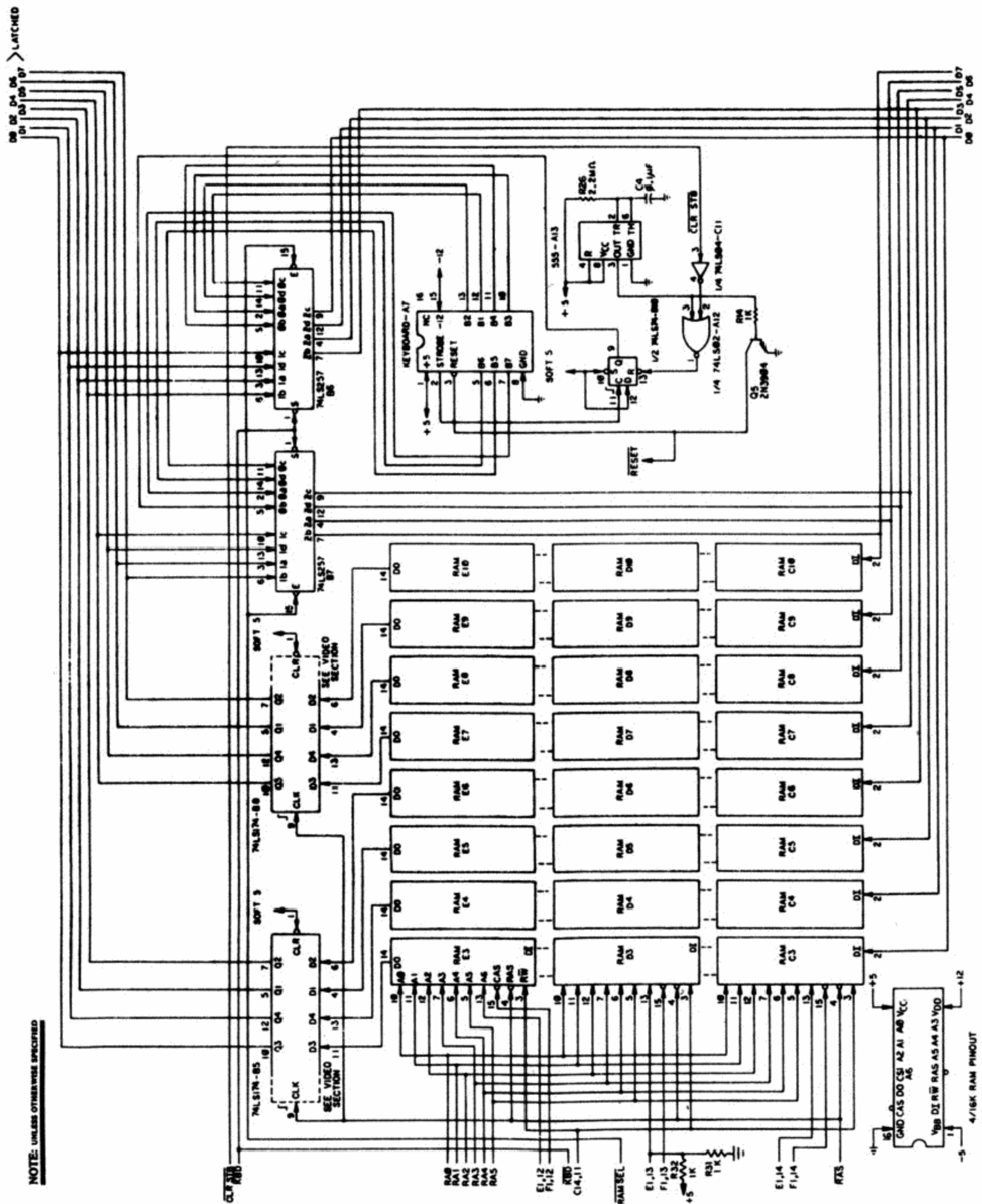


Replaces Figure 22-2. Schematic Diagram of the Apple II

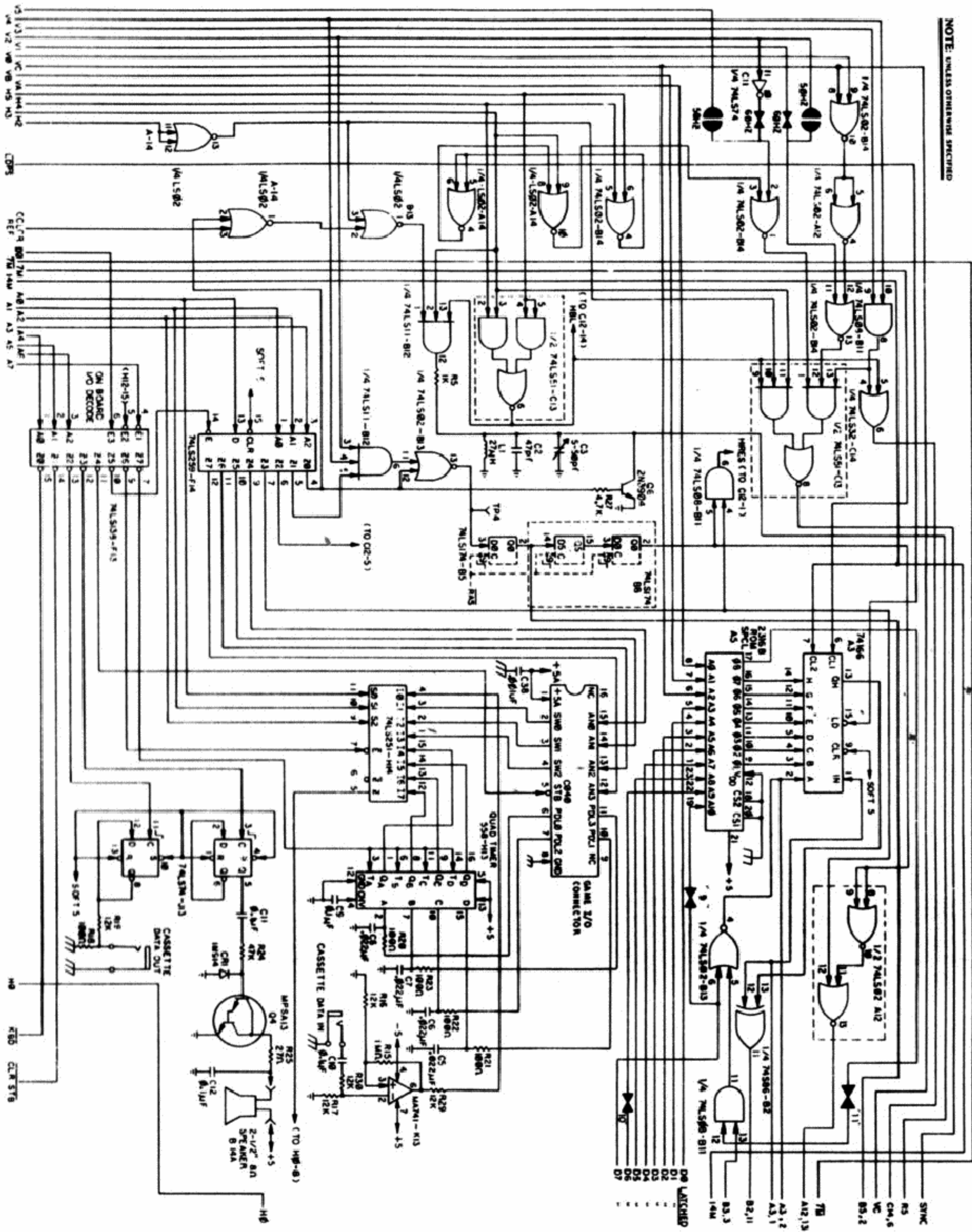


Replaces Figure 22-3. Schematic Diagram of the Apple II



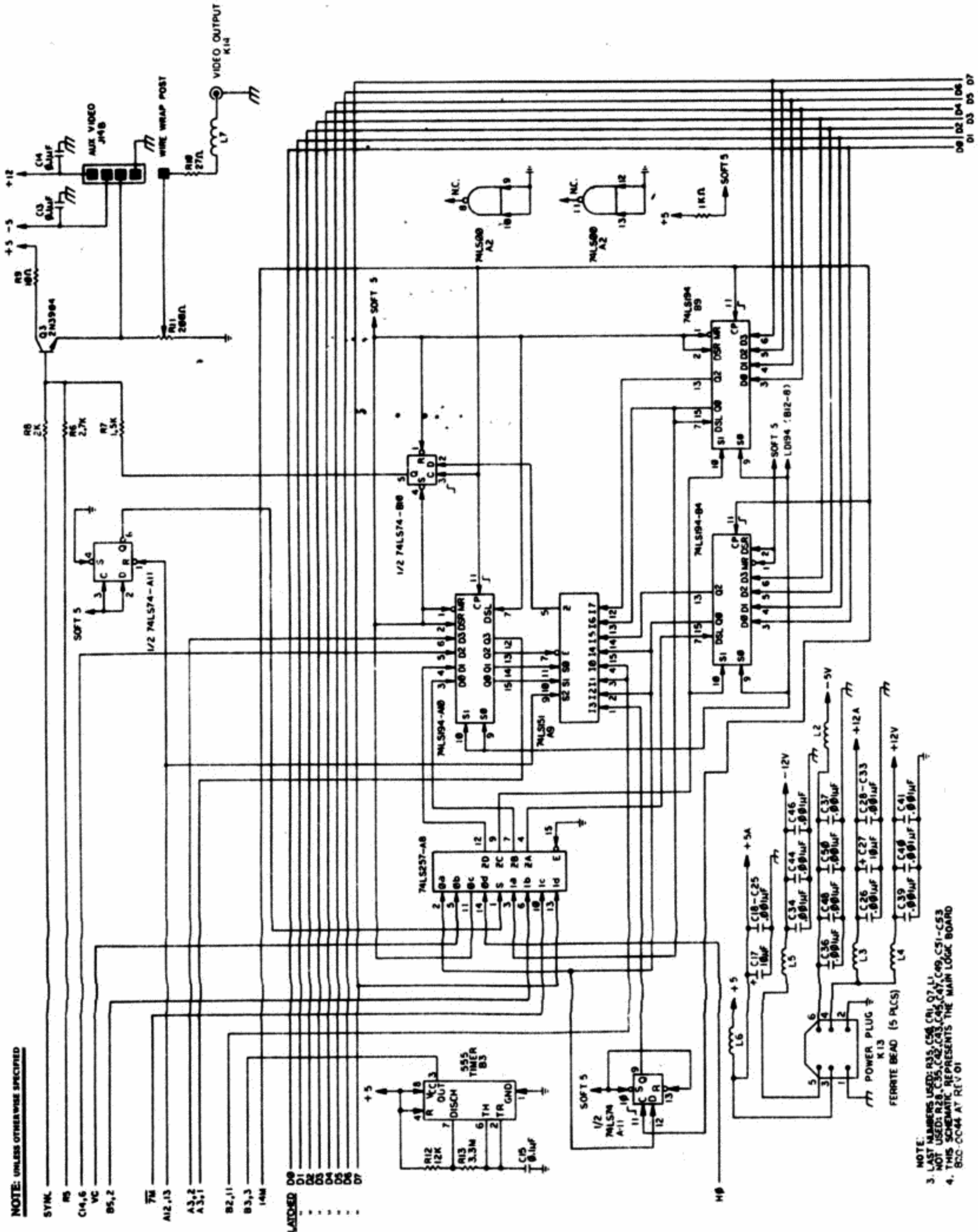


Replaces Figure 22-4. Schematic Diagram of the Apple II



NOTE: UNLESS OTHERWISE SPECIFIED

Replaces Figure 22-5. Schematic Diagram of the Apple II



NOTE: UNLESS OTHERWISE SPECIFIED

- SYNC
- R5
- C14,6
- VC
- B5,2
- 7M
- A12,13
- A3,2
- A3,1
- B2,11
- B3,3
- 14M
- LATCHED
- D0
- D1
- D2
- D3
- D4
- D5
- D6
- D7

NOTE:  
 3. LAST NUMBERS USED: R35, C56 (R1, D7, L1, NOT USED); R28, C35, C42, C43, C45, C47, C49, C51-C53  
 4. THIS SCHEMATIC REPRESENTS THE MAIN LOGIC BOARD  
 5. SZC-CC44 AT REV 01

Replaces Figure 22-6. Schematic Diagram of the Apple II