REPAIR MANUAL

APPENDIX

HR-6000 DIGITAL PALETTE

JANUARY 1995

FILE THIS APPENDIX WITH THE REPAIR MANUAL FOR:

POLAROID DIGITAL PALETTE FILM RECORDER
MODELS: CI3000 AND CI5000 dated October 1990

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Background

> **Note:** This section of the Digital Palette Film Recorder Service Manual covers the HR6000 High-Resolution Digital Palette Color Film Recorder (Figure A-1).

The HR6000 Digital Palette Film Recorder is identical to the CI3000 and the CI5000 Digital Palette Film Recorder except that it contains enhanced Polaroid optics, a high-precision 3" CRT and dynamic focus circuitry. The dynamic focus circuitry produces 4000-line resolution slides which are sharp out to the edges and corners.

The HR6000 Digital Palette Film Recorder reproduces up to 24-bit color image using a proprietary, internal 33-bit color exposure process delivering smooth ramped backgrounds with up to 16.7 million colors.
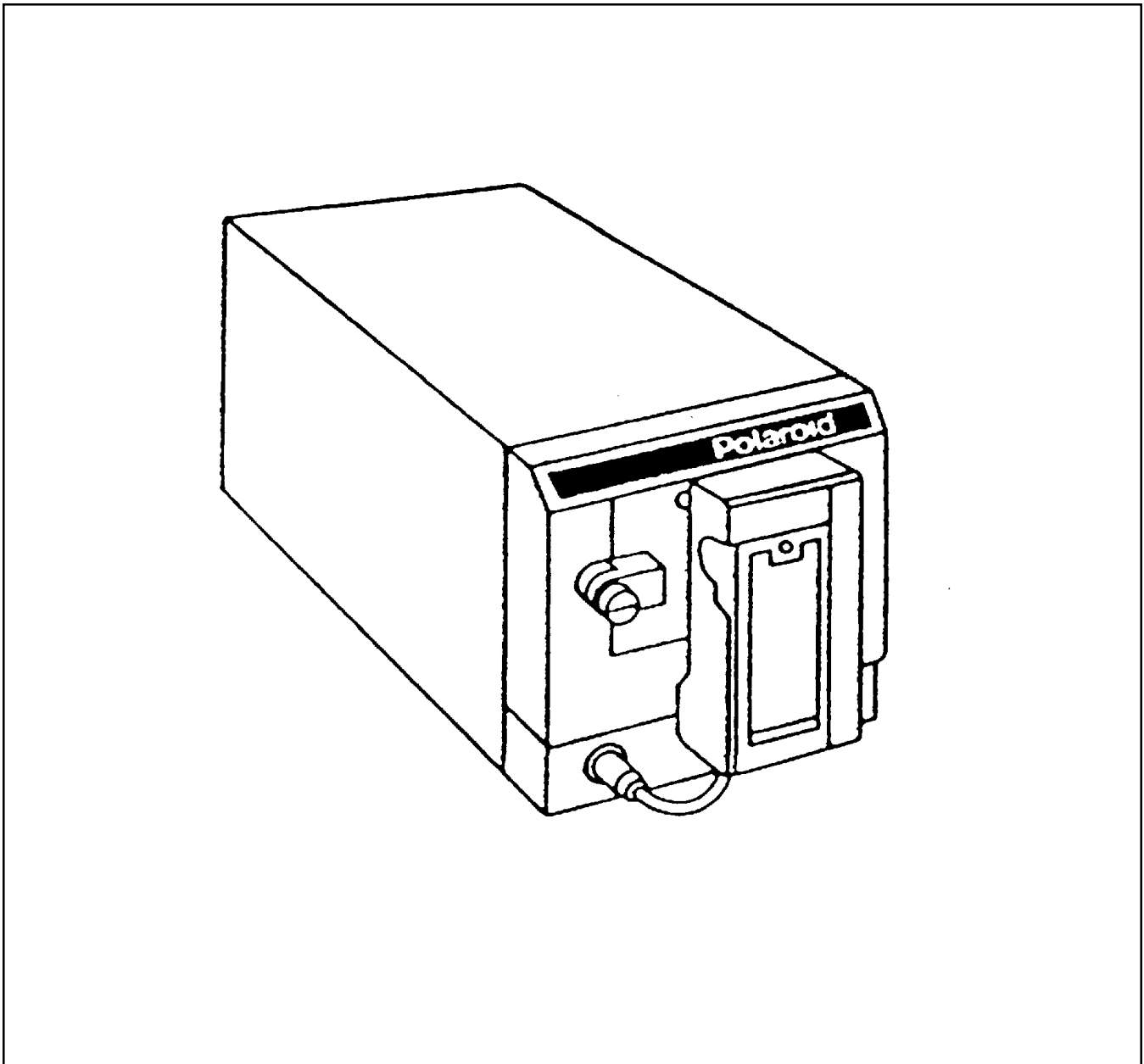

Figure A-1. HR6000 Digital Palette Film Recorder

Features

The HR6000 Digital Palette Film Recorder is used for creating professional-quality 35 mm slides, prints and chromes in minutes from personal computers and workstations.

The HR6000 Digital Palette Film Recorder, for both IBM PC's and compatibles, and Macintosh computers, can utilize more than 20 types of film. It can be equipped with camera backs for the following types of films:

• 35 mm

• 3 1/4 x 4 1/4 pack film

• 3 x 4 autofilm

• 4 x 5 pack film

• bulk film back from third party source

Compatibility

The HR6000 color film recorder is a true **plug** and **play** peripheral with no boards to install in the host computer. It is fully compatible with Macintosh, IBM PC's and PC's compatibles. On both platforms, it supports networking with Zenographics SuperPrint for the Digital Palette for windows; Graphx RasterPlus P/S for
DOS/Windows; and Digital Palette software for Macintosh.

Adjustments

> The HR6000 adjustments are identical to the CI3000 and CI5000 adjustments except for the adjustments described in this Appendix.

Parab

Note: This adjustment is preset at the factory. It should **only** be adjusted if the HR6000 Digital Palette Film Recorder can not be focused properly.

1. Remove the cover from the HR6000 Digital Palette Film Recorder.

2. Set up an oscilloscope as follows:

   - Volts/Div   -   0.1v
   - Trig (Trigger)   -   internal
   - Sweep Time/Div   -   2 usec

3. Connect the oscilloscope to the monitor PC board as follows:

   - Test probe to test point **TP2** (Figure A-2).
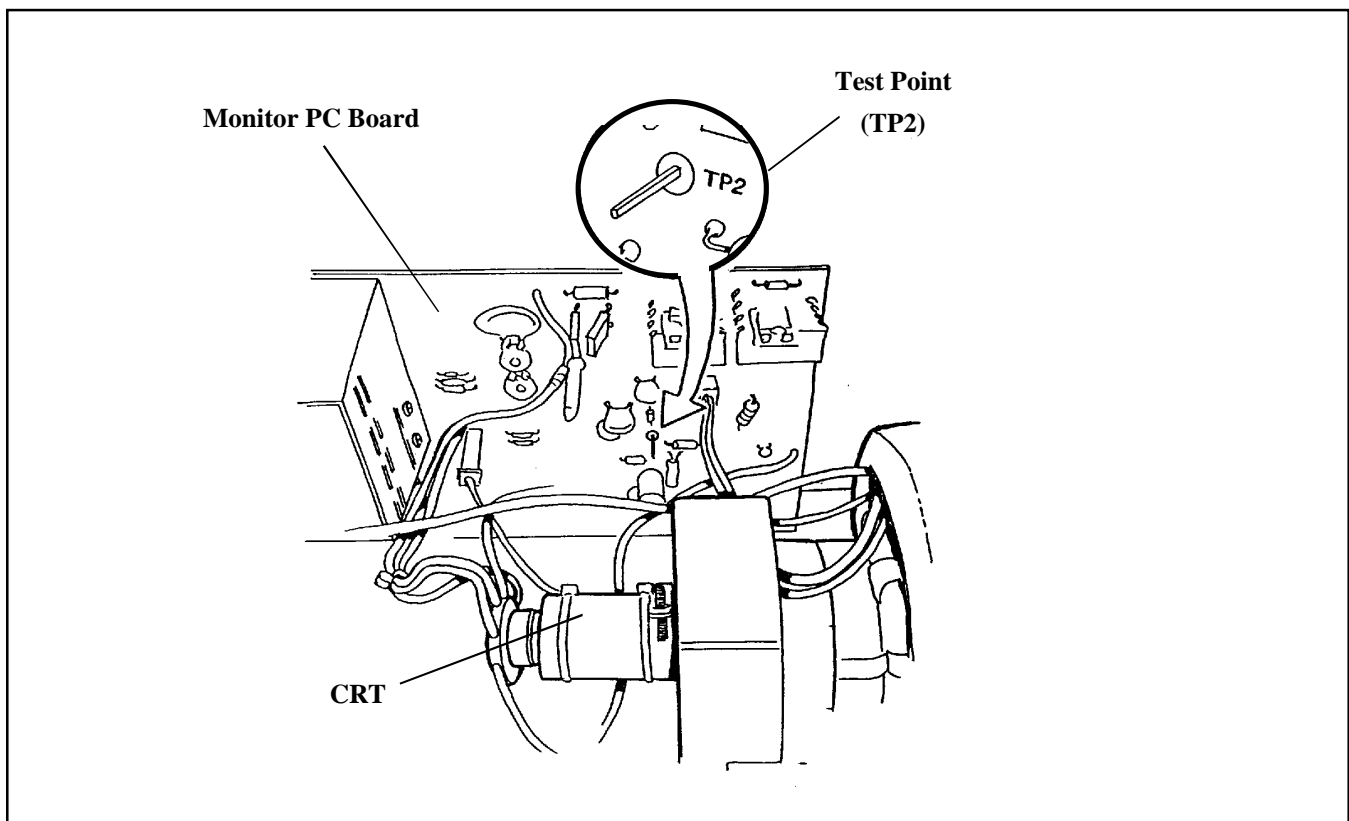   - Ground lead to the chassis of the film recorder.

Figure A-2. Test Point TP2

4. Remove the paper guard from the rear of the monitor PC board.

5. Using a plastic adjustment tool, adjust **PARAB** potentiometer **R49** (Figure A-3) until the signal is just left of center (Figure A-4).
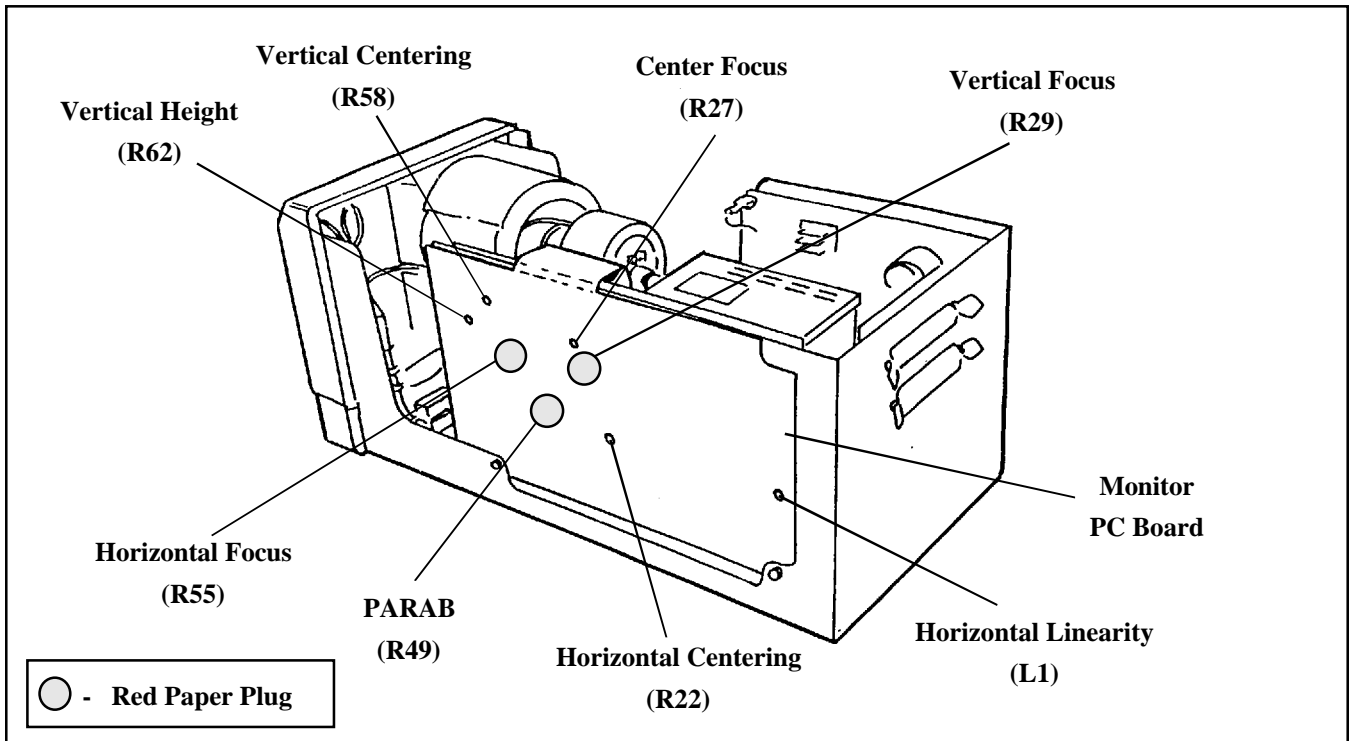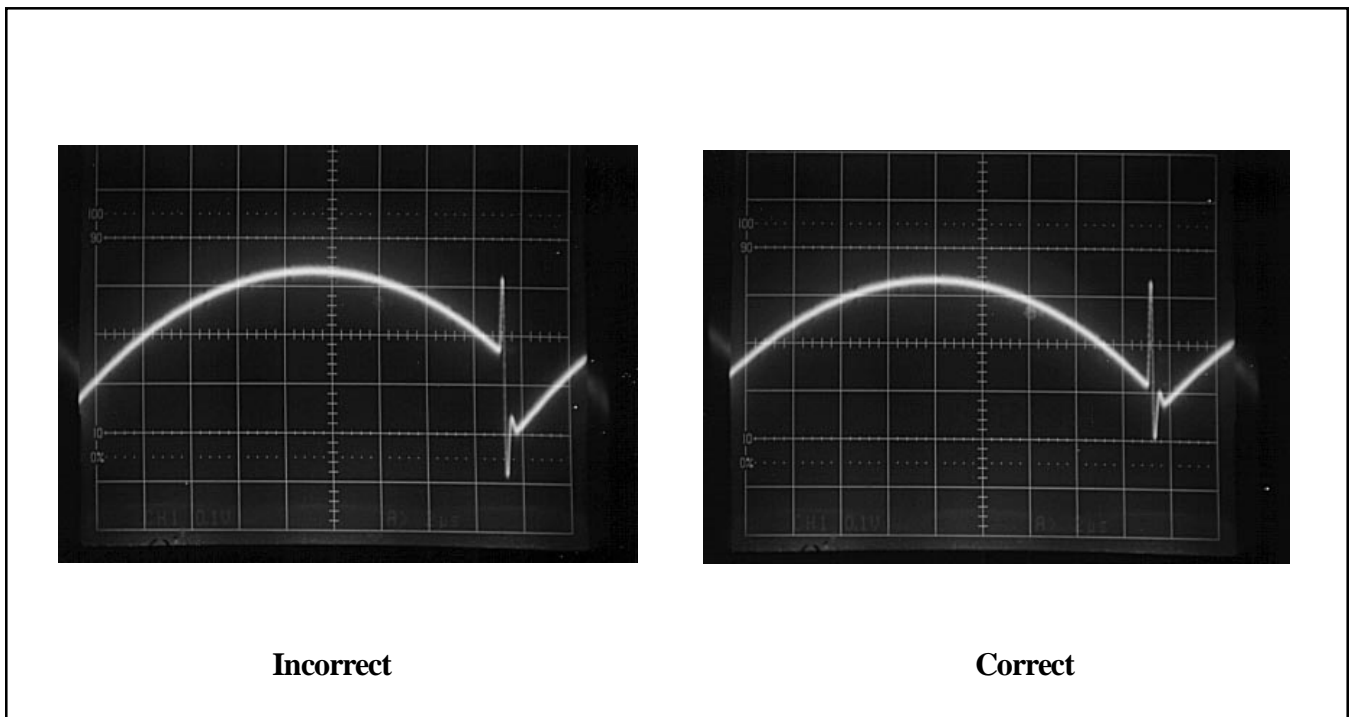

Figure A-3. Monitor PC Board Adjustment Location

Incorrect   Correct

Figure A-4. PARAB Signal

Static Focus

    Note: This adjustment procedure must be performed whenever the monitor PC board is replaced.

1. Remove the cover from the HR6000 Digital Palette Film Recorder.

2. Remove the paper guard from the rear of the monitor PC board.

3. Using a plastic adjustment tool, turn the horizontal focus potentiometer (**R55**) completely clockwise (CW) (Figure A-3).

    Notes: • Turning **R55** completely clockwise adjusts the potentiometer to zero (0).

                 • Potentiometer **R55** is only used with Configuration **"A"**. It will be replaced with a jumper for all subsequent configurations.

4. Connect an ohm meter across the vertical focus potentiometer (**R29**).

5. Using a plastic adjustment tool, adjust the vertical focus potentiometer (**R29**) until the ohm meter reads 270 Kohms.

    Note: Potentiometer **R29** is only used with Configuration **"A"**. It will be replaced with a fixed 270 Kohm resistor for all subsequent configurations.

Centering Focus

> **Note:** This adjustment procedure must be performed whenever the monitor PC board is replaced.

1. Remove the cover from the HR6000 Digital Palette Film Recorder.

2. Remove the paper guard from the rear of the monitor PC board.

3. Mount the mechanical focus gauge (microscope) onto the front of the HR6000 Digital Palette Film Recorder (Figure A-5).

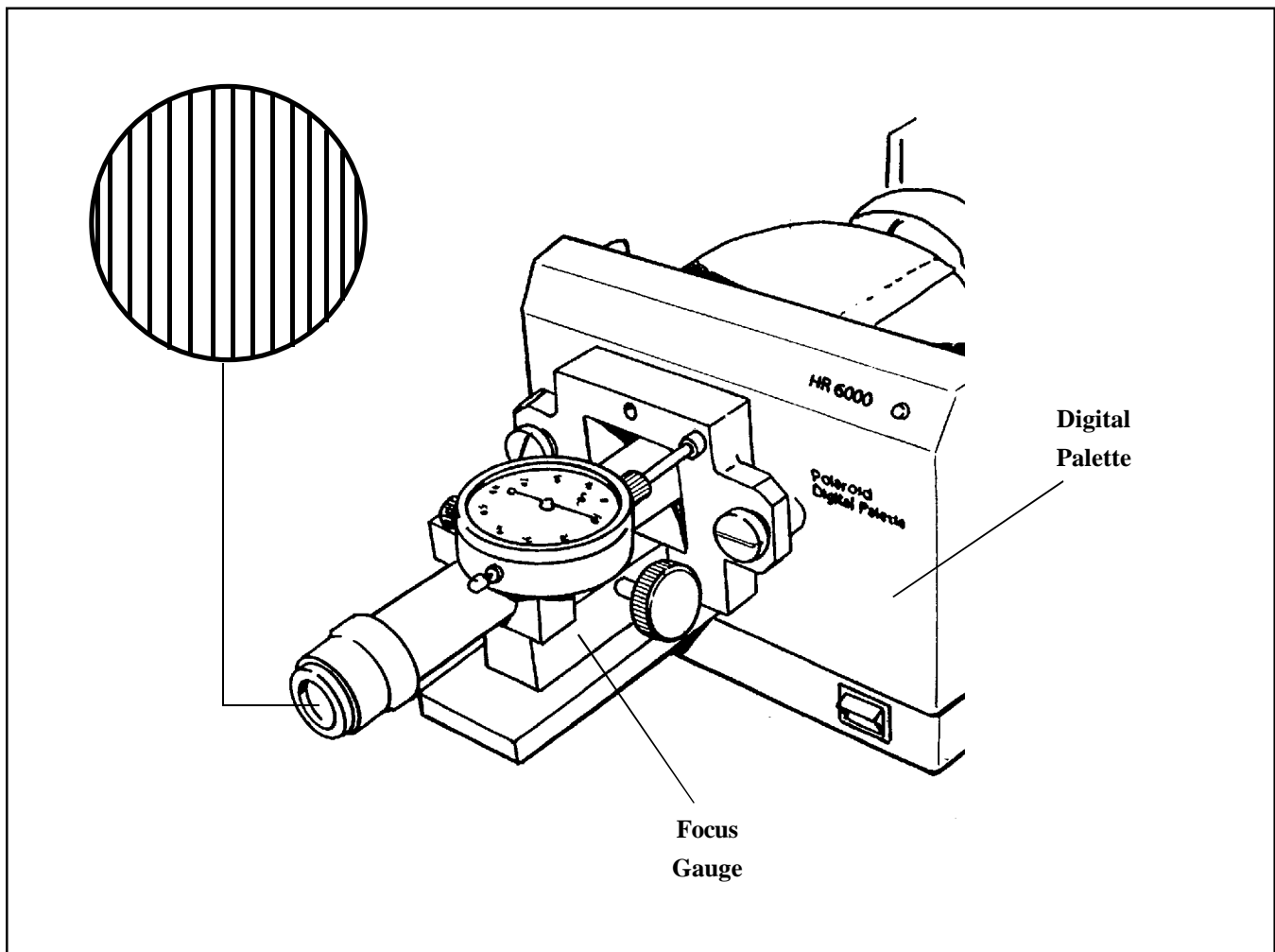4. Adjust the mechanical focus gauge for the best (sharpest) focus (Figure A-5)

Figure A-5. Mechanical Focus Gauge (Microscope) Mounted on Digital Palette Film Recorder

5. Once the best (sharpest) focus is obtained mechanically, adjust the center focus potentiometer (**R27**) for the best (sharpest) focus.

> **Note:** If focus can not be properly adjusted, re-adjust the dynamic focus potentiometer (**R49**) as explained in the Dynamic Focus Adjustment.

AutoLuminant Adjustment

The autoluminant adjustment for the HR6000 Digital Palette Film Recorder is identical to the CI3000/CI5000 Digital Palette Film Recorder except for the following:

Specification	Adjustment/Location
6 ft - l @ 150	R18 - Monitor PC Board
200 @ 6 ft - l	VR1 - Logic PC Board

Note: Refer to the autoLuminant adjustment procedure in Section 5 of the CI3000/CI5000 Service Manual for the steps necessary to adjust the HR6000 autoluminant.

Parts Replacement

CRT Clamp Replacement

Always us a new CRT clamp assembly (**PN 1A7065A**) if a CRT is removed or replaced. Torque the new CRT clamp assembly as follows:

CI3000/CI5000	**HR6000**
96 oz - in	120 oz-in

Schematics and PC Board Layout
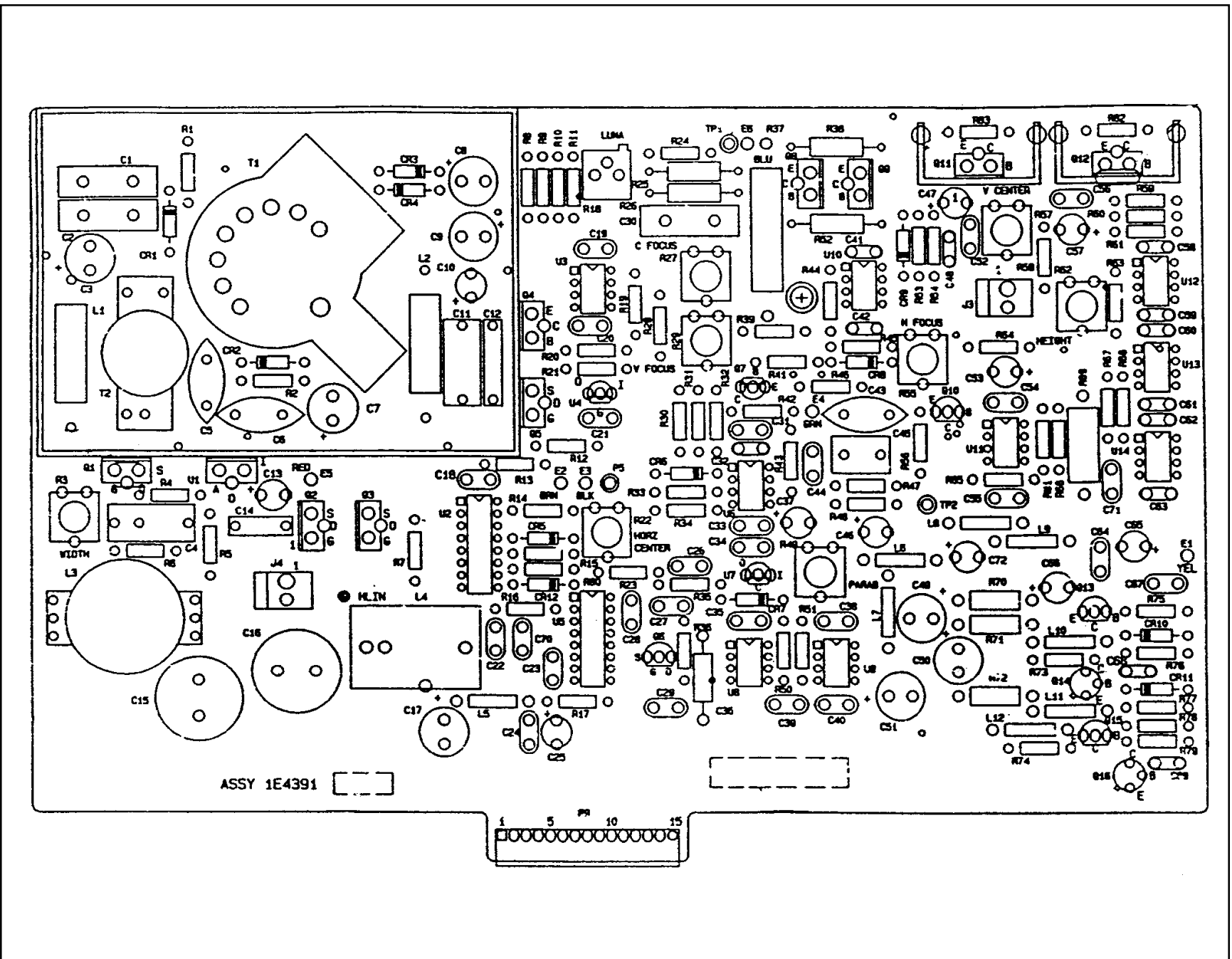
Figure A - 6. Monitor PC Board Layout
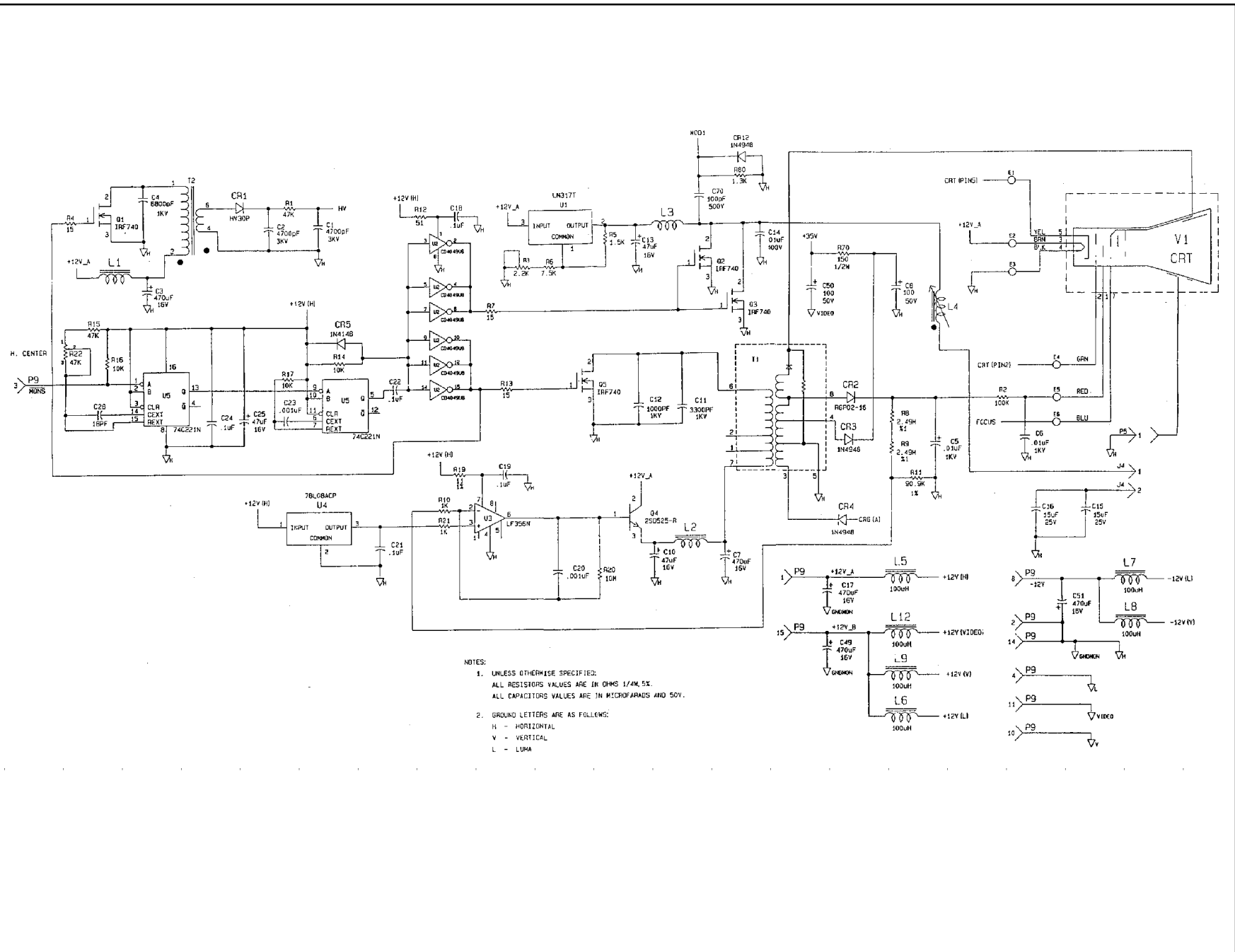
Figure A-7 . Monitor PC Board (Sheet 1 of 2)

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   ALL RESISTORS VALUES ARE IN OHMS 1/4W, 5%.
   ALL CAPACITORS VALUES ARE IN MICROFARADS AND 50V.

2. GROUND LETTERS ARE AS FOLLOWS:
   H - HORIZONTAL
   V - VERTICAL
   L - LUMA

R18 - Autolumina
R27 - Focus
R29 - Vertical Focus
R51 - Parabola
R55 - Horizontal Focus
R57 - Vertical Center
R62 - Height
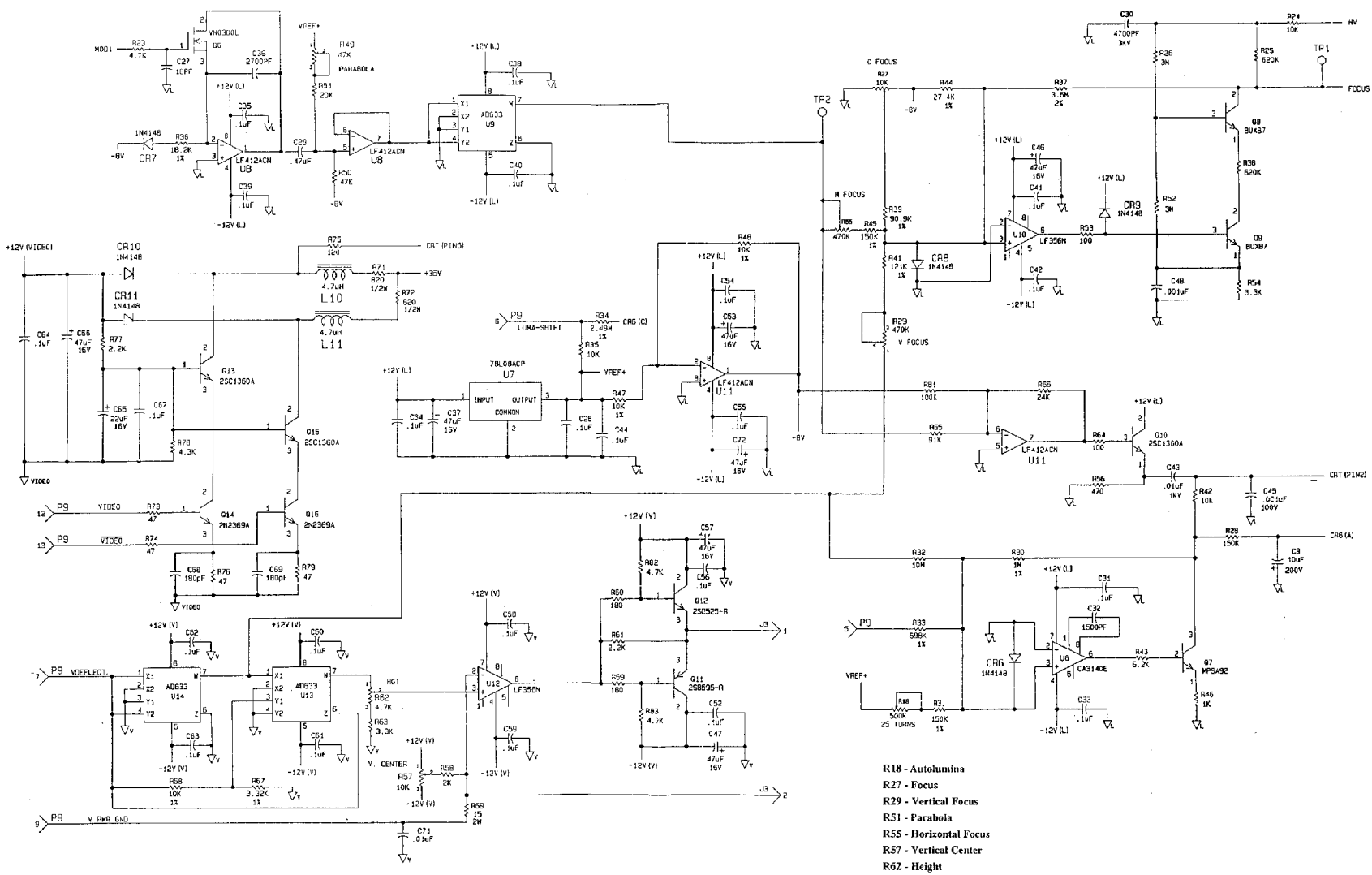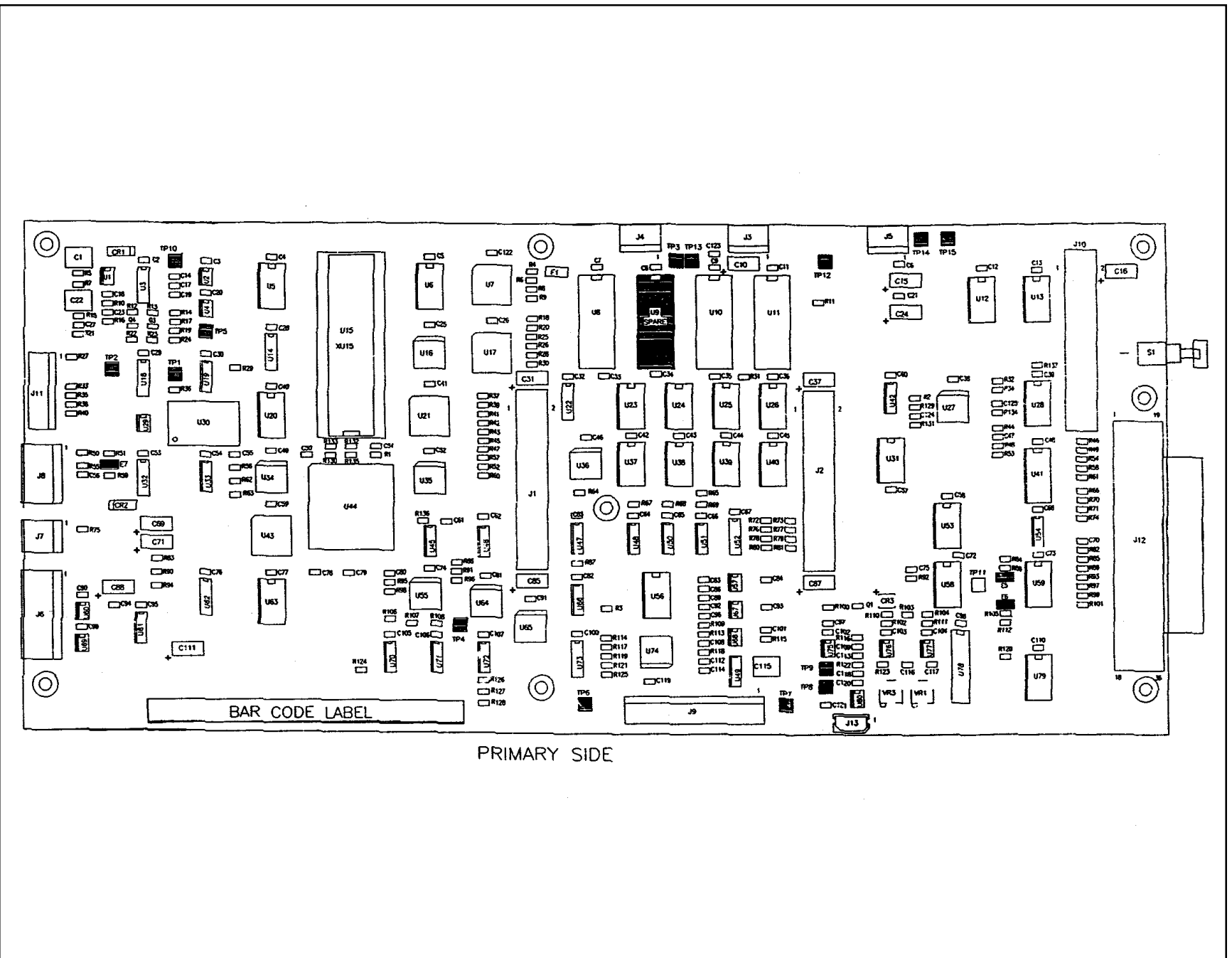
Figure A-9. Logic PC Board Layout

PRIMARY SIDE
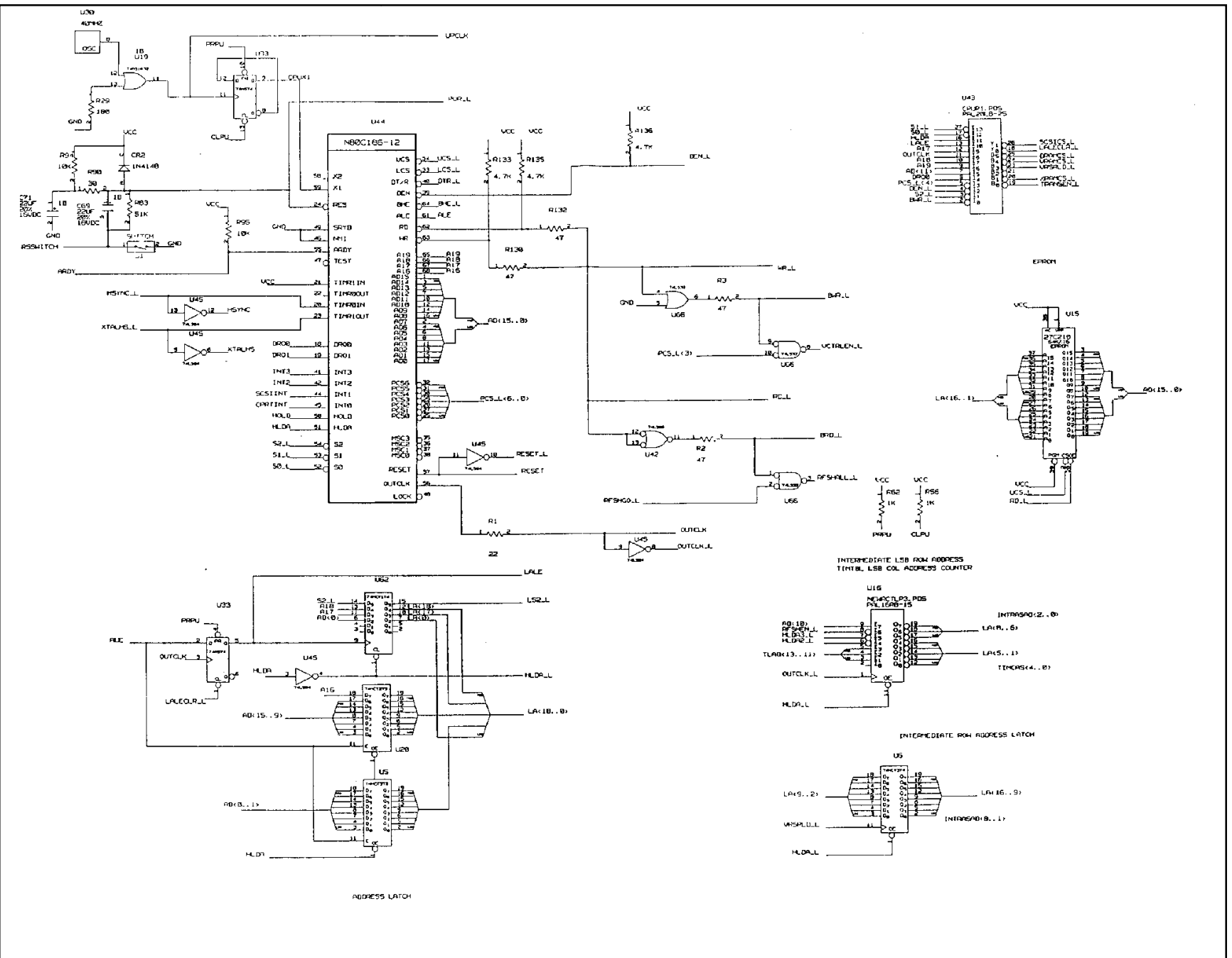
Figure A-10. Logic PC Board (Sheet 2 of 11)

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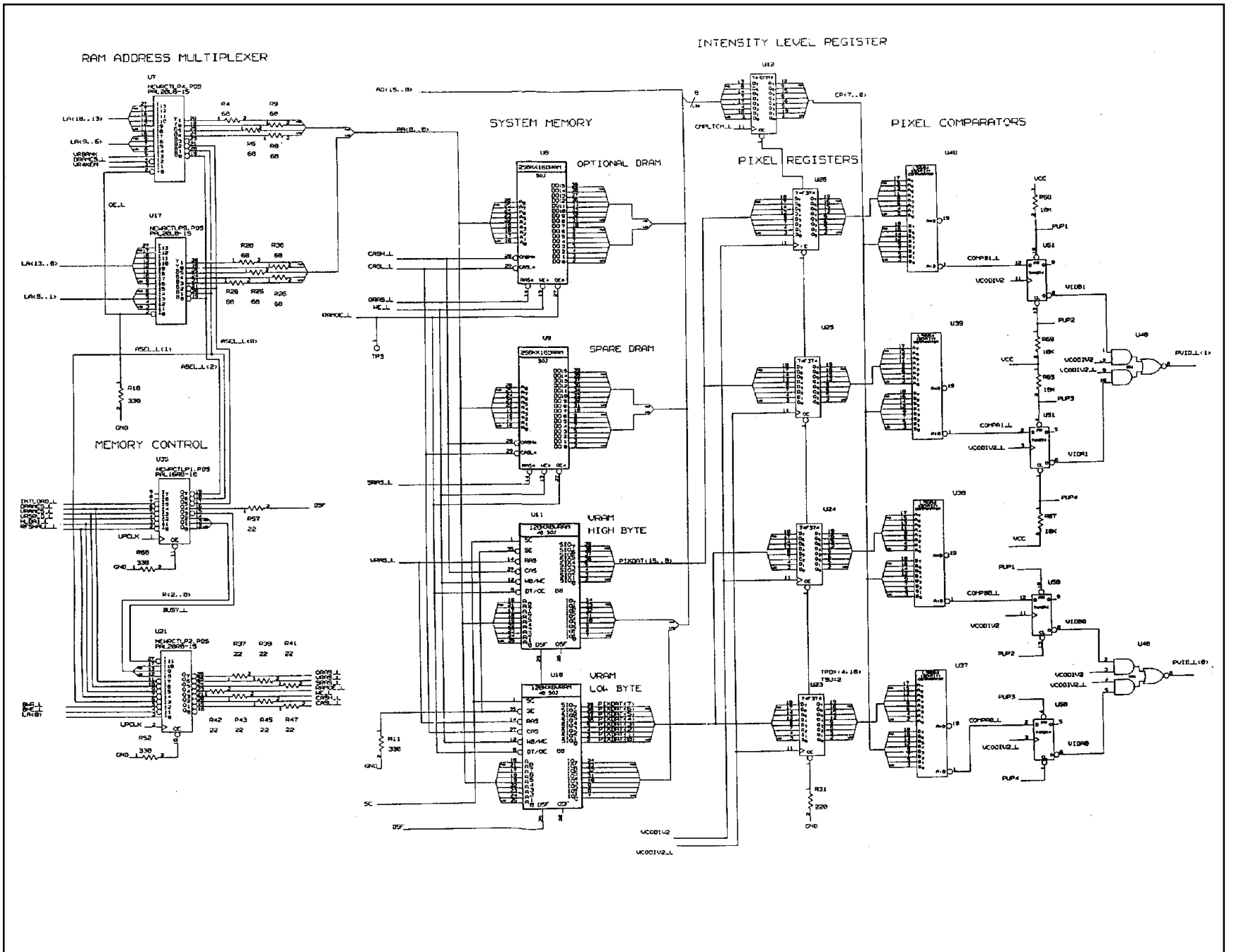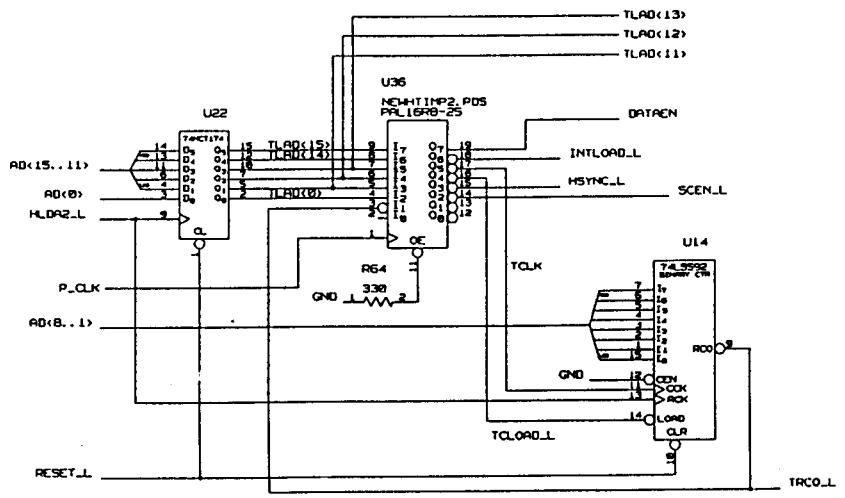
Figure A-11. Logic PC Board (Sheet 3 of 11)

DMA REQUEST AND CONTROL

MS GENERAL I/O REGISTER
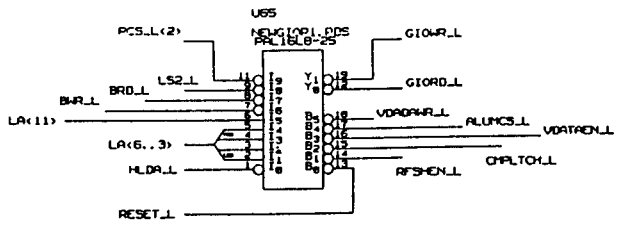
TIME TABLE STATE MACHINE

I/O SPACE DECODE

Figure A-12. Logic PC Board (Sheet 4 of 11)
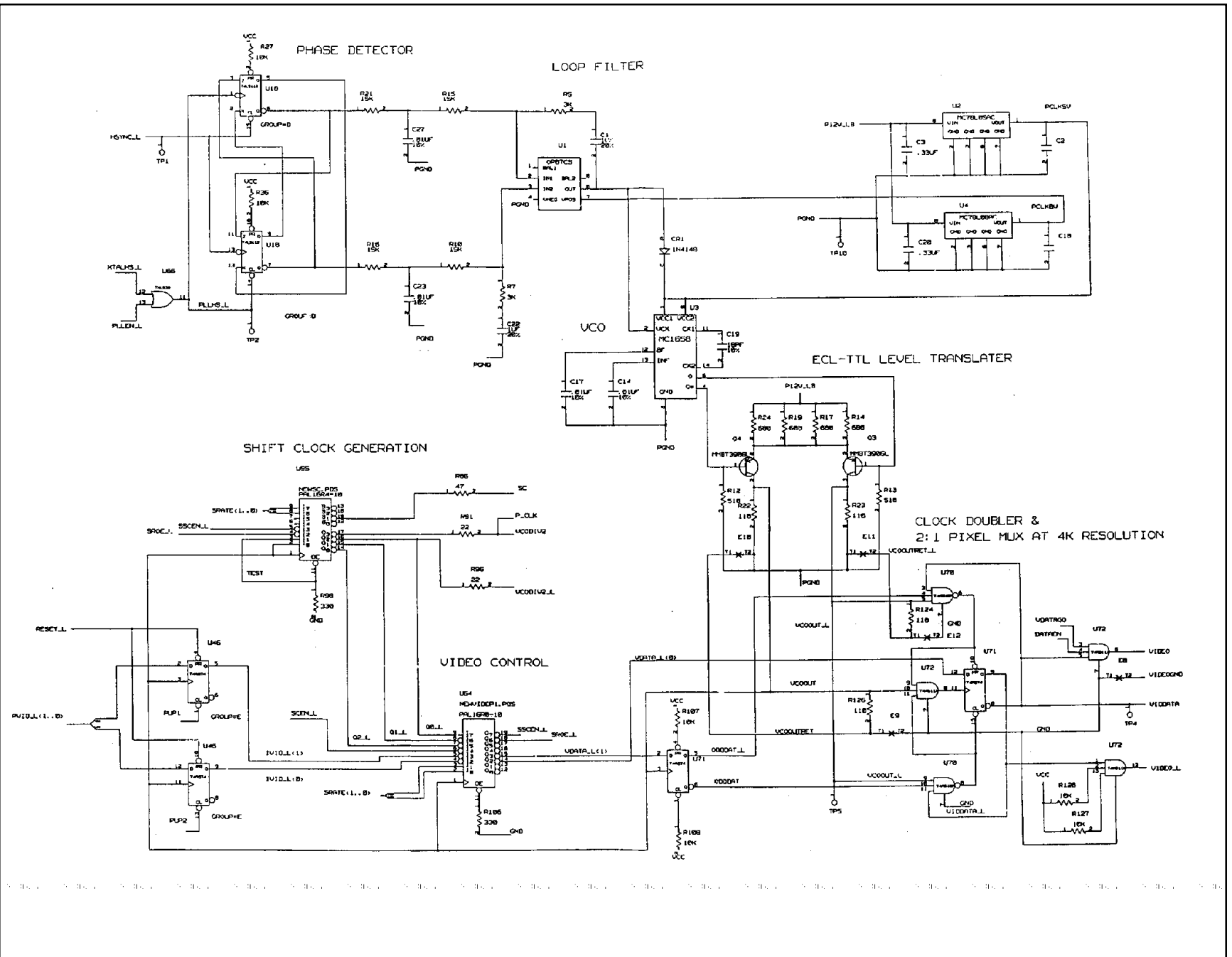
Figure A-13. Logic PC Board (Sheet 5 of 11)

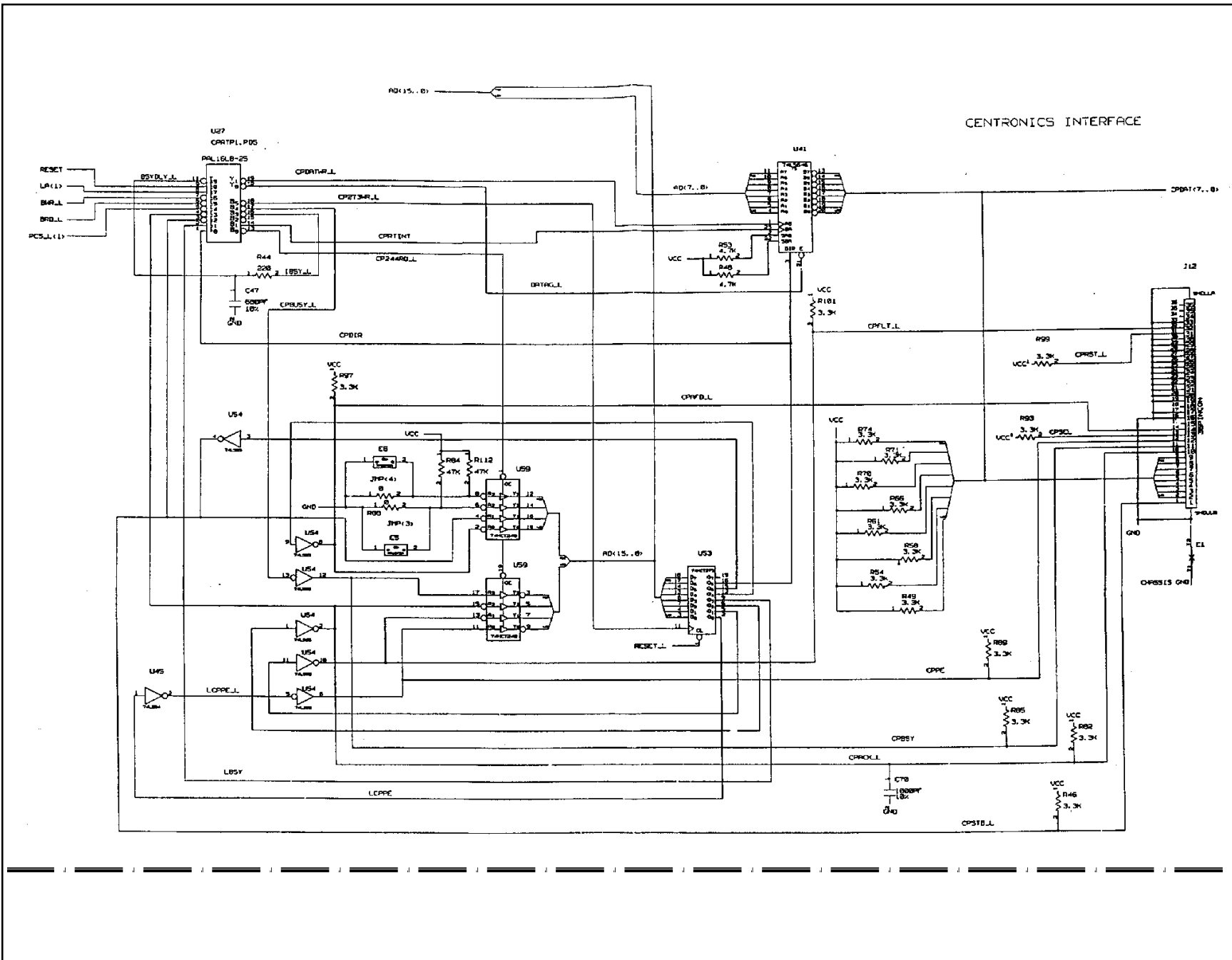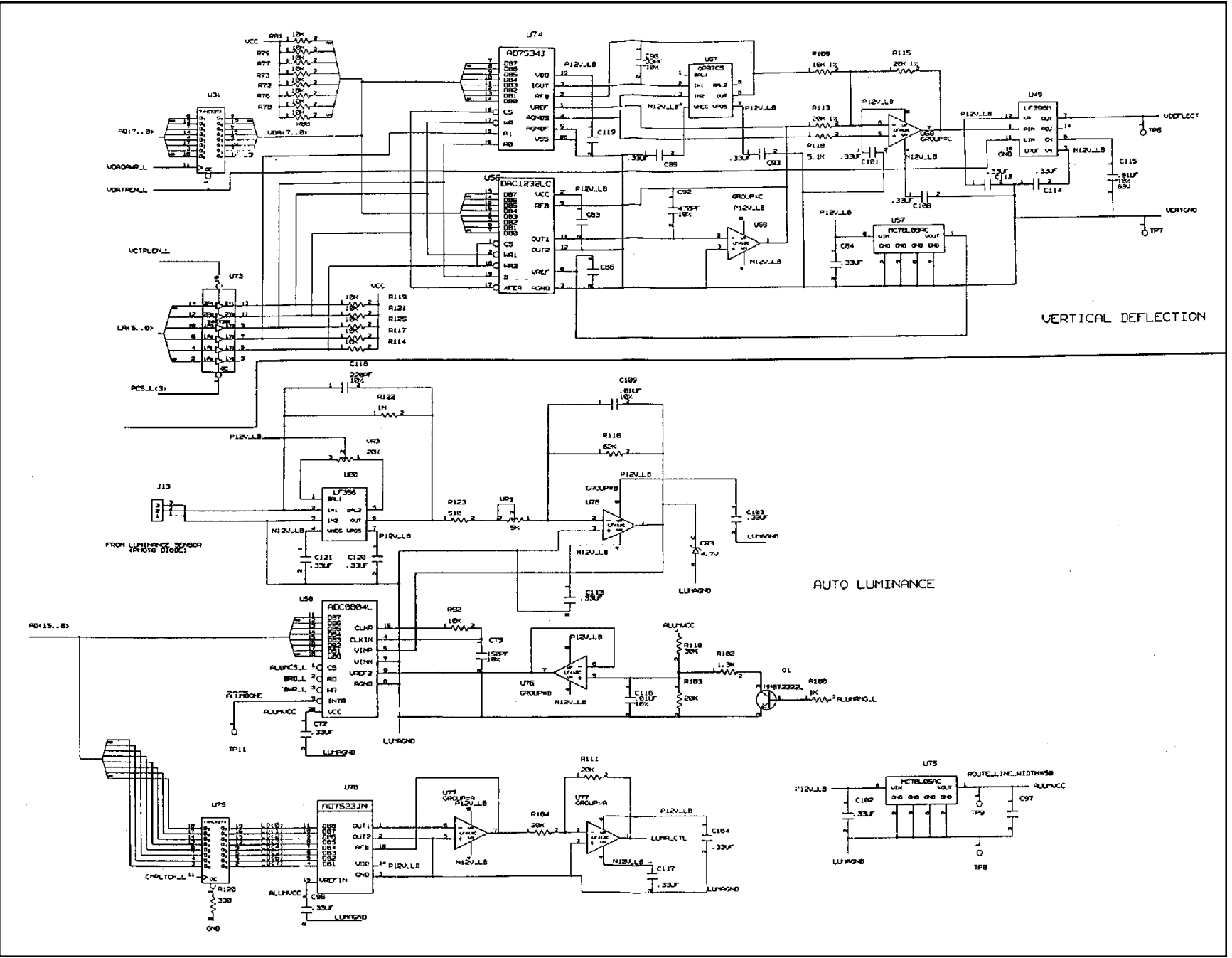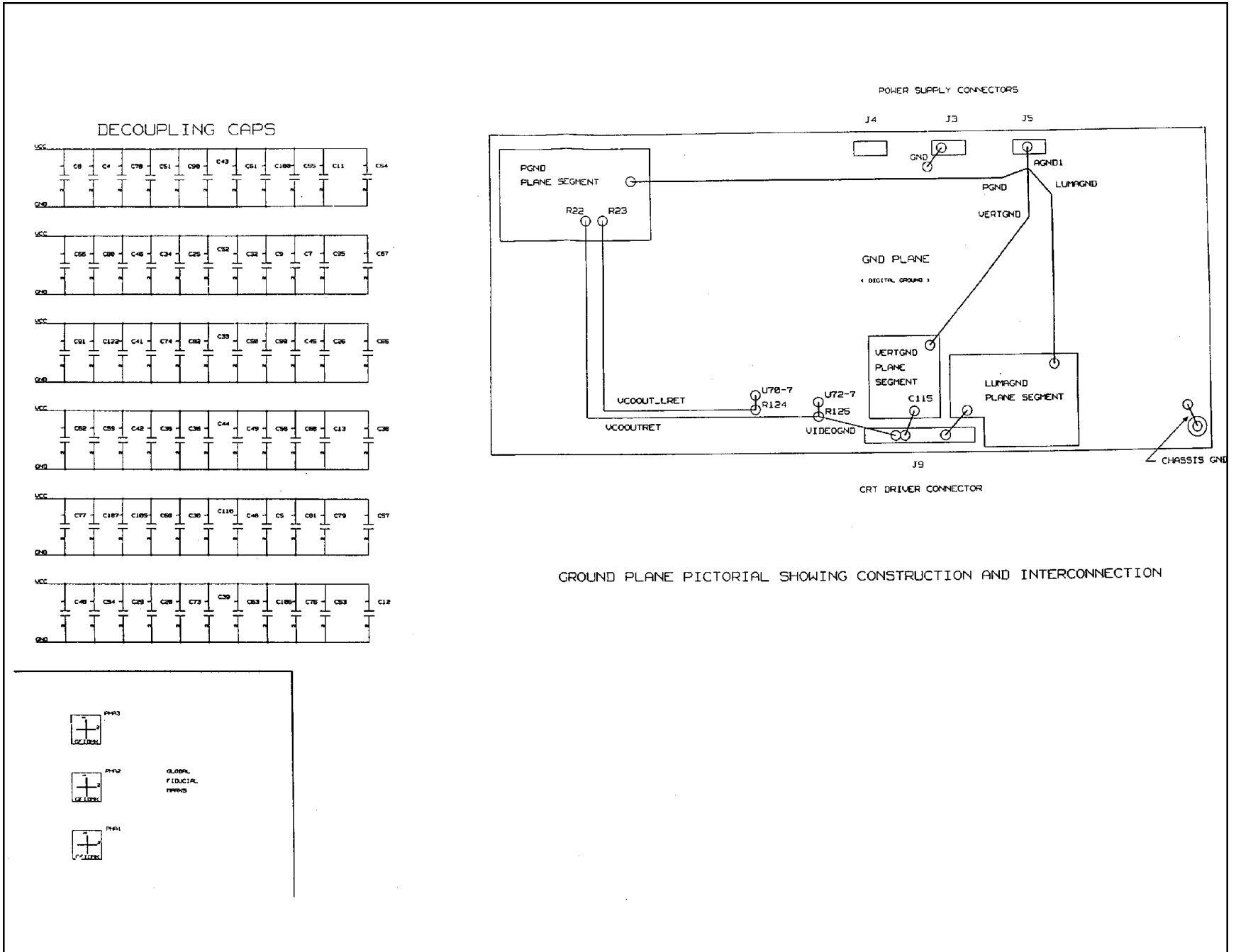A - 22

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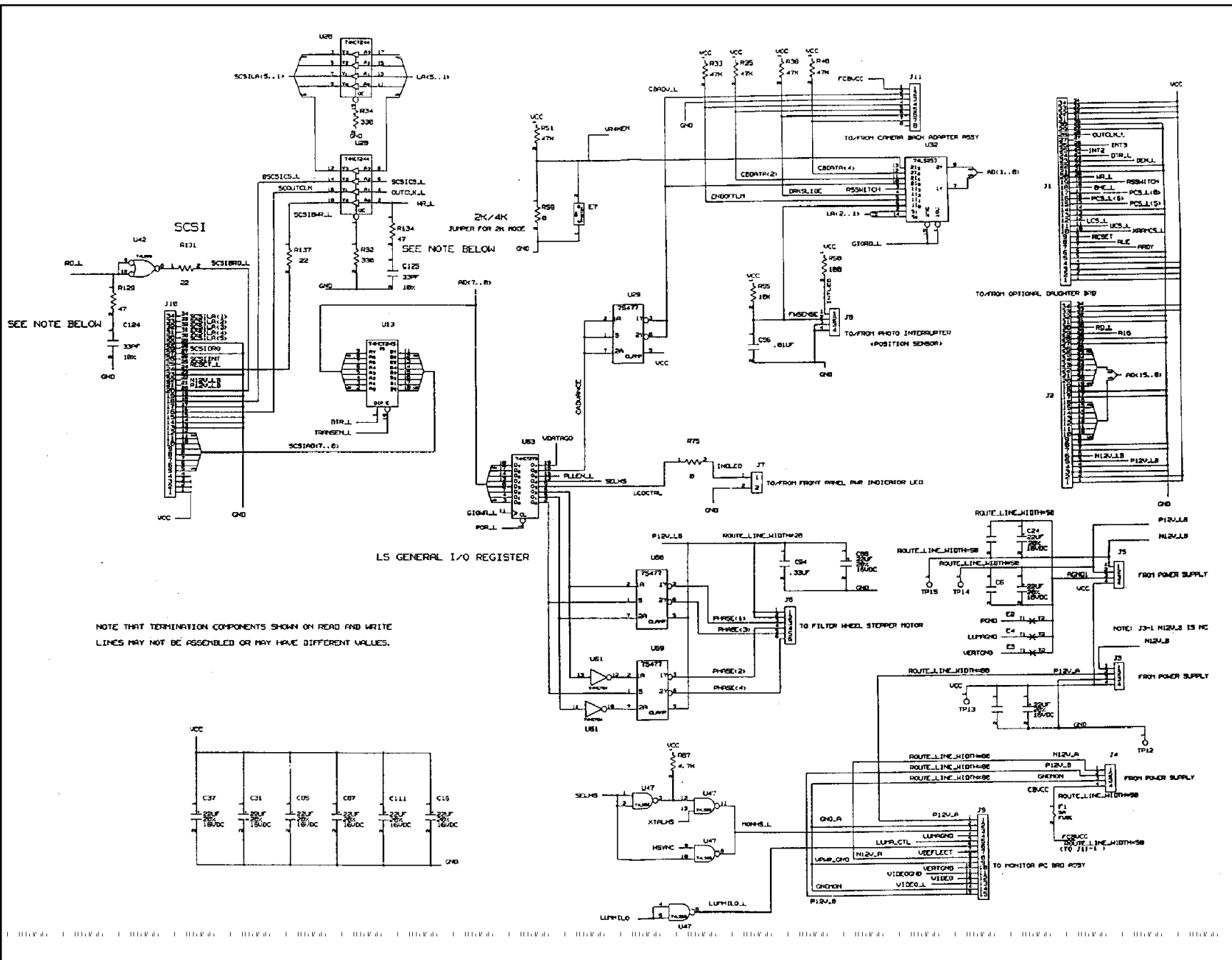
Figure A-14. Logic PC Board (Sheet 6 of 11)

Figure A-15. Logic PC Board (Sheet 7 of 11)

VERTICAL DEFLECTION

AUTO LUMINANCE

DECOUPLING CAPS

POWER SUPPLY CONNECTORS

GROUND PLANE PICTORIAL SHOWING CONSTRUCTION AND INTERCONNECTION