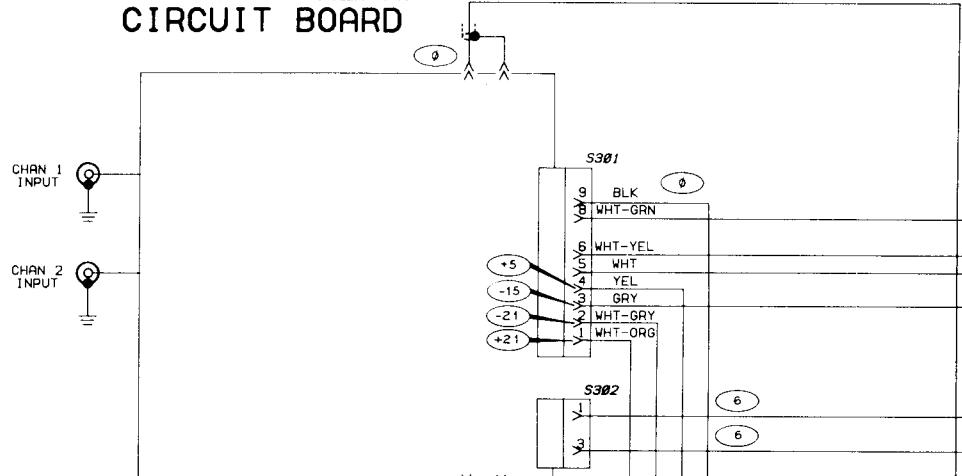
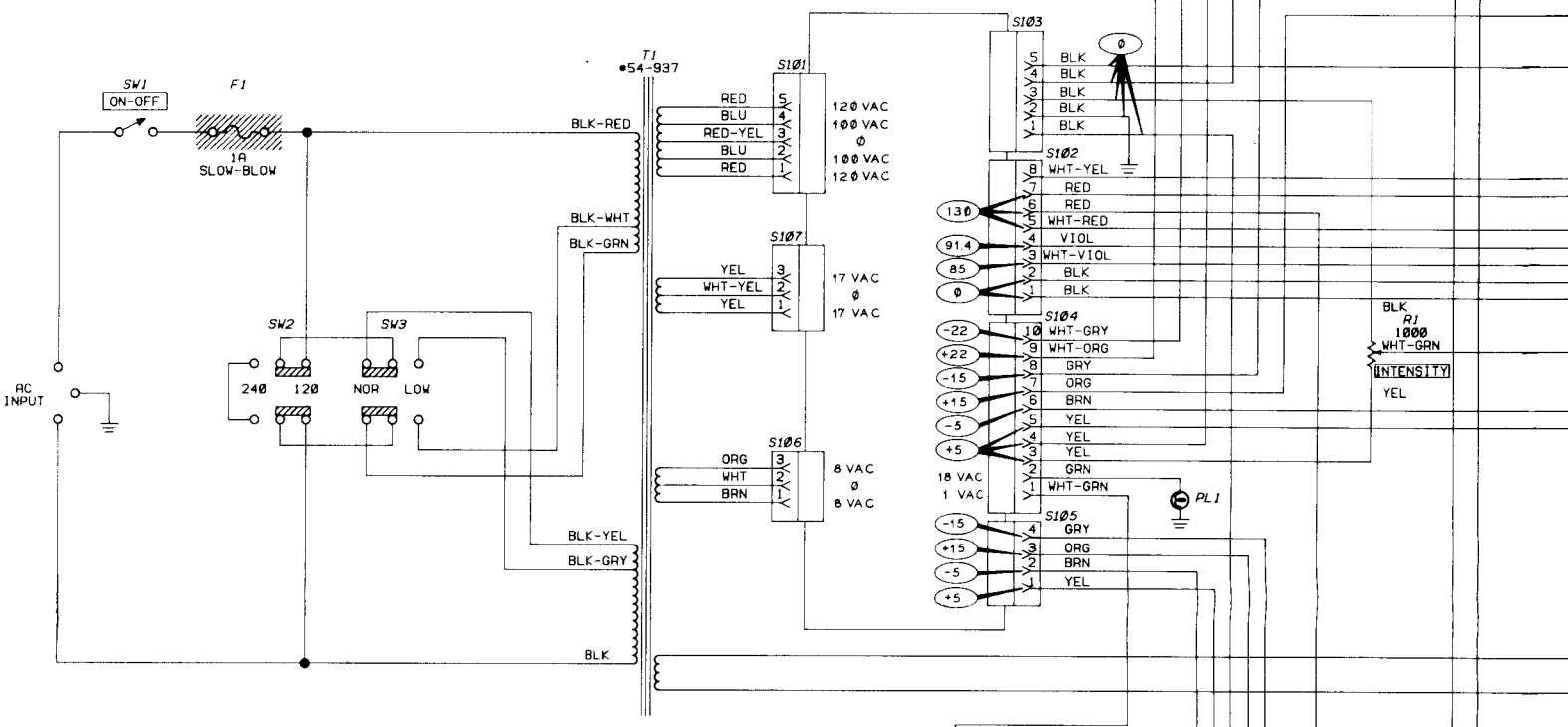


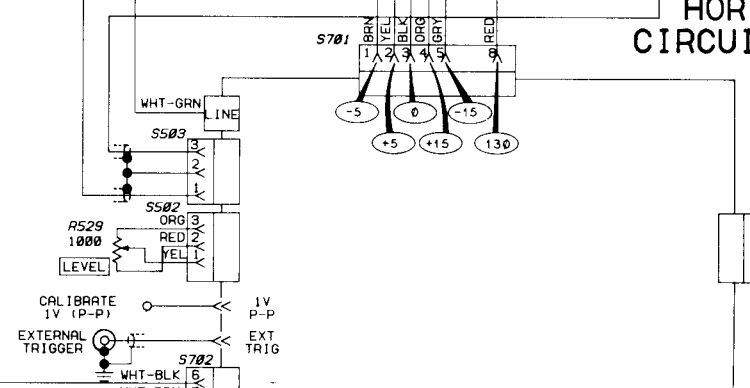
VERTICAL PREAMP CIRCUIT BOARD



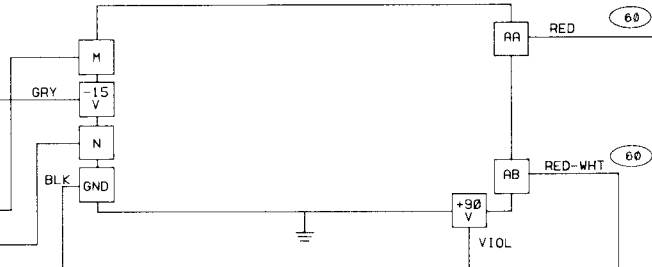
LOW VOLTAGE CIRCUIT BOARD



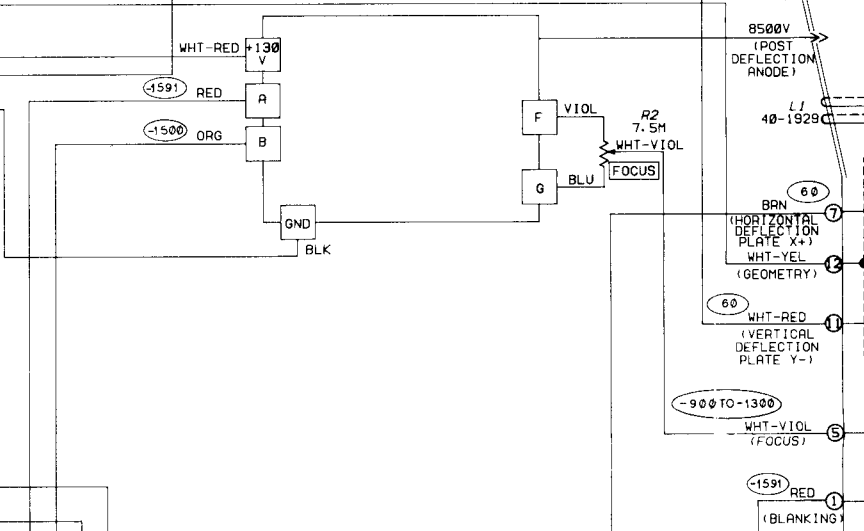
HORI CIRCUI



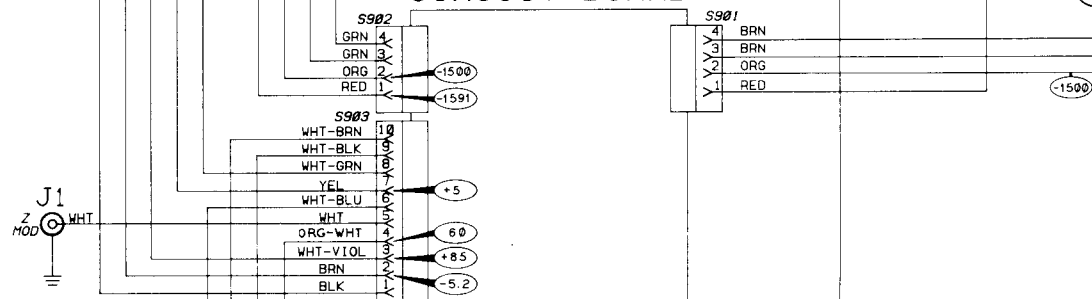
VERTICAL DEFLECTION CIRCUIT BOARD



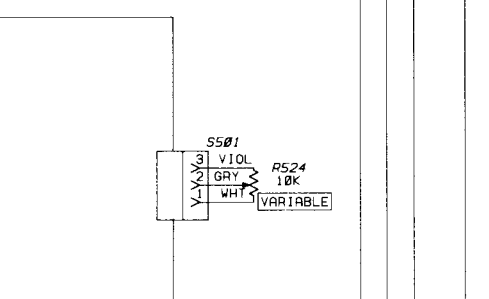
HIGH VOLTAGE CIRCUIT BOARD



BLANKING CIRCUIT BOARD



HORIZONTAL CIRCUIT BOARD



SCHEMATIC OF THE HEATHKIT® 35 MHz DUAL TRACE OSCILLOSCOPE MODEL IO-4235/SO-4235

NOTES:

1. ALL CAPACITOR VALUES ARE IN μF UNLESS OTHERWISE SPECIFIED.
2. ALL RESISTORS ARE 1/4 WATT, 5% UNLESS MARKED OTHERWISE. RESISTOR VALUES ARE IN OHMS (K=1,000; M=1,000,000).
3. INDICATES A LETTERED WIRE CONNECTION ON A CIRCUIT BOARD.
4. \perp INDICATES CHASSIS GROUND.
5. ∇ INDICATES CIRCUIT BOARD GROUND.
6. INDICATES A PART MOUNTED ON THE CHASSIS, ALTHOUGH ITS LOCATION IN THE SCHEMATIC SUGGESTS ANOTHER LOCATION.

7. CIRCUIT COMPONENT NUMBERS ARE IN THE FOLLOWING GROUPS:

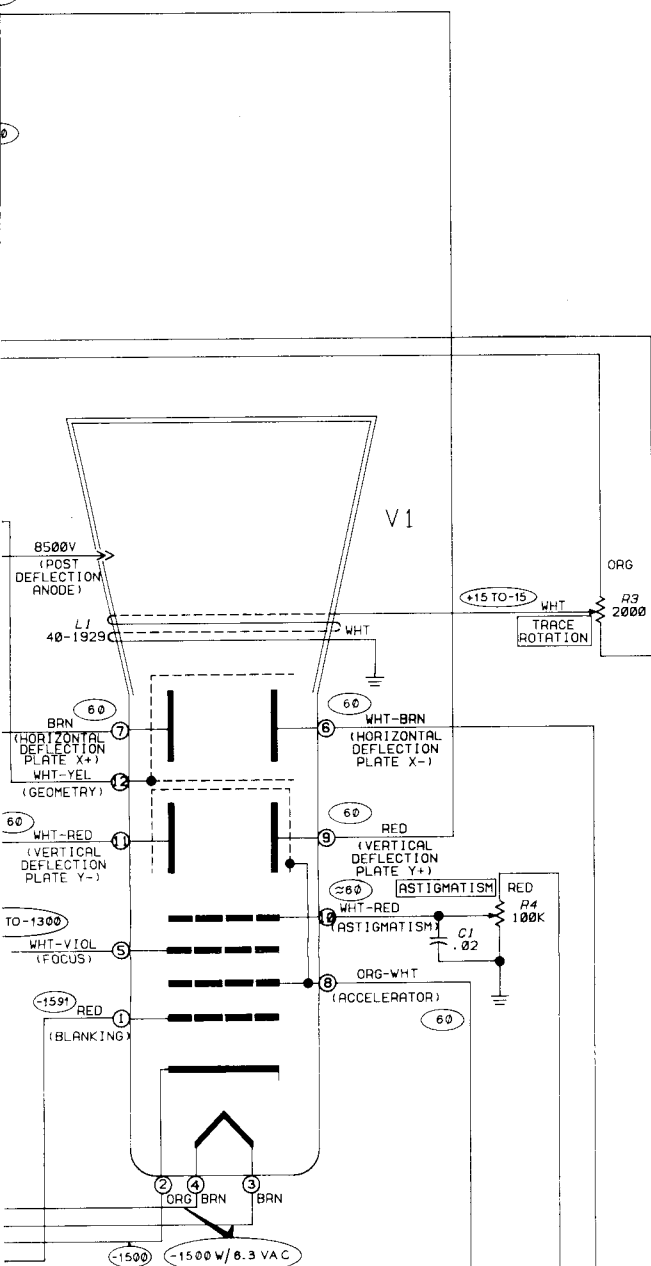
- 1-99 ° PARTS ON THE CHASSIS.
- 101-199 PARTS ON THE LOW VOLTAGE CIRCUIT BOARD.
- 201-299 PARTS ON THE HIGH VOLTAGE CIRCUIT BOARD.
- 301-399 PARTS ON THE VERT PREAMP CIRCUIT BOARD.
- 401-499 PARTS ON THE VERTICAL DEFLECTION CIRCUIT BOARD.
- 501-599 PARTS ON THE A TIME BASE CIRCUIT BOARD.
- 601-699 PARTS ON THE B TIME BASE CIRCUIT BOARD.
- 701-899 PARTS ON THE HORIZONTAL CIRCUIT BOARD.
- 901-999 PARTS ON THE BLANKING CIRCUIT BOARD.

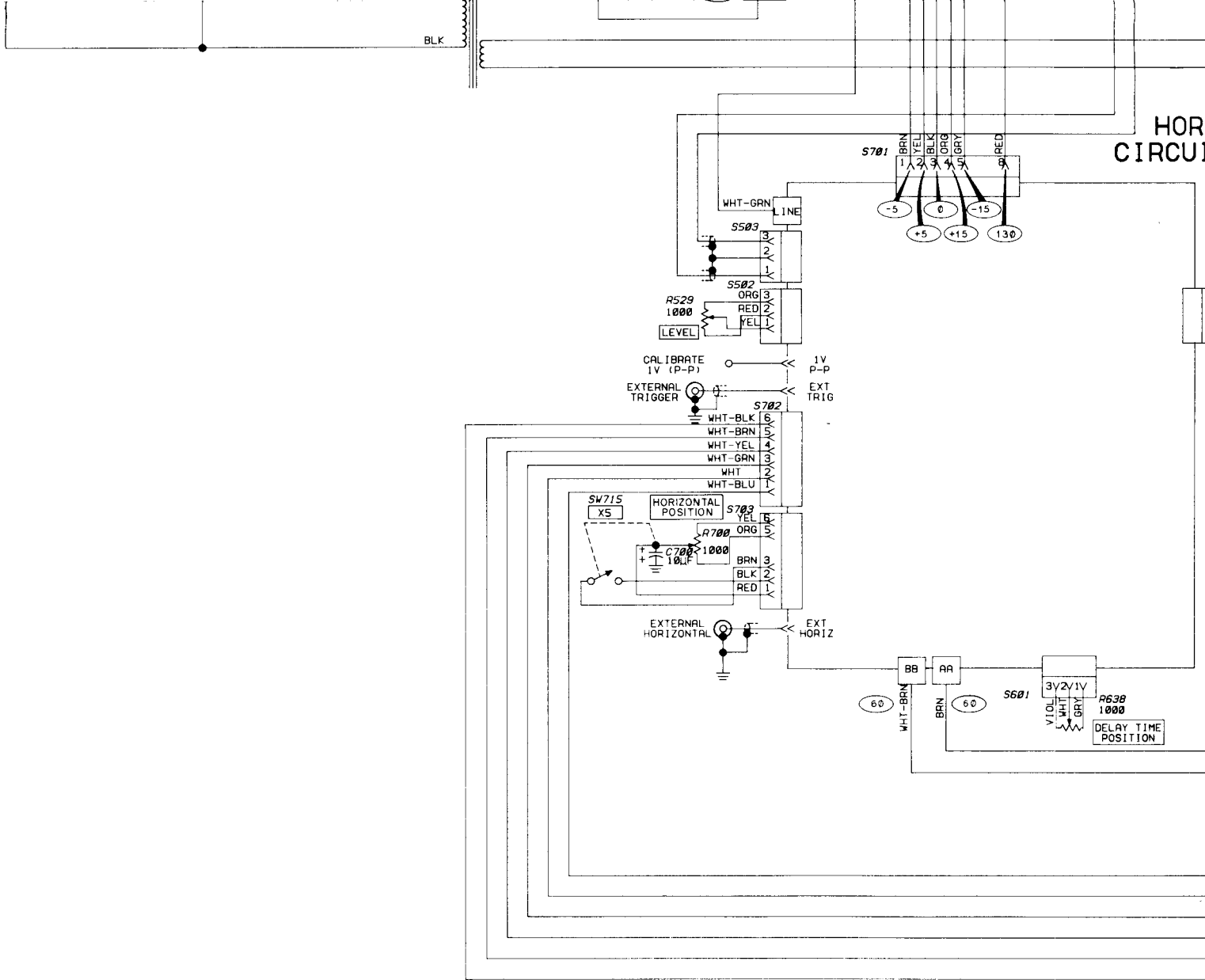
8. INDICATES A DC VOLTAGE MEASURED FROM THE POINT INDICATED TO GROUND WITH THE VERTICAL AMPLIFIERS BALANCED AND THE HORIZONTAL POSITION CONTROL CENTERED. VOLTAGE MAY VARY $\pm 20\%$. OTHER SWITCHES ARE SET AS FOLLOWS:

VERTICAL DISPLAY - Y1
HORIZONTAL DISPLAY - EXT HORIZ
TRIGGER MODE - NORM
TRIG COUPLING - AC
TRIGGER SELECT - LINE, +

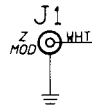
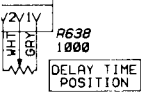
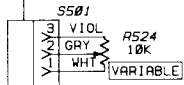
9. ALL WAVEFORMS ARE MEASURED FROM THE POINT INDICATED TO GROUND. THE FRONT PANEL CONTROLS ARE SET AS FOLLOWS:

HORIZONTAL POSITION - FOR TRACE TO START AT LEFT EDGE OF SCREEN.
HORIZONTAL DISPLAY - A INTEN BY B.
TRIGGER MODE - AUTO

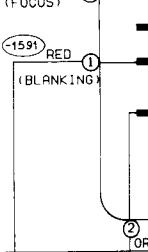
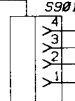
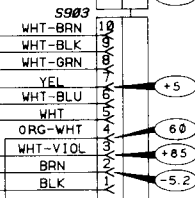
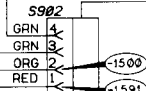


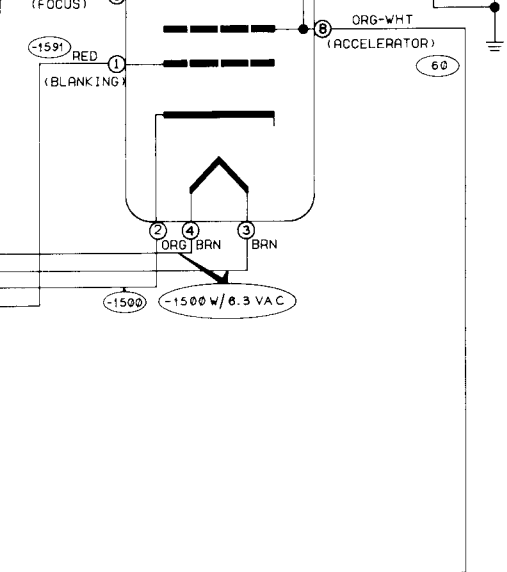


HORIZONTAL CIRCUIT BOARD



BLANKING CIRCUIT BOARD





901-999 PARTS ON THE BLANKING CIRCUIT BOARD.

8. ○ INDICATES A DC VOLTAGE MEASURED FROM THE POINT INDICATED TO GROUND WITH THE VERTICAL AMPLIFIERS BALANCED AND THE HORIZONTAL POSITION CONTROL CENTERED. VOLTAGE MAY VARY $\pm 20\%$. OTHER SWITCHES ARE SET AS FOLLOWS:

VERTICAL DISPLAY - Y1
 HORIZONTAL DISPLAY - EXT HORIZ
 TRIGGER MODE - NORM
 TRIG COUPLING - AC
 TRIGGER SELECT - LINE, +

9. ALL WAVEFORMS ARE MEASURED FROM THE POINT INDICATED TO GROUND. THE FRONT PANEL CONTROLS ARE SET AS FOLLOWS:

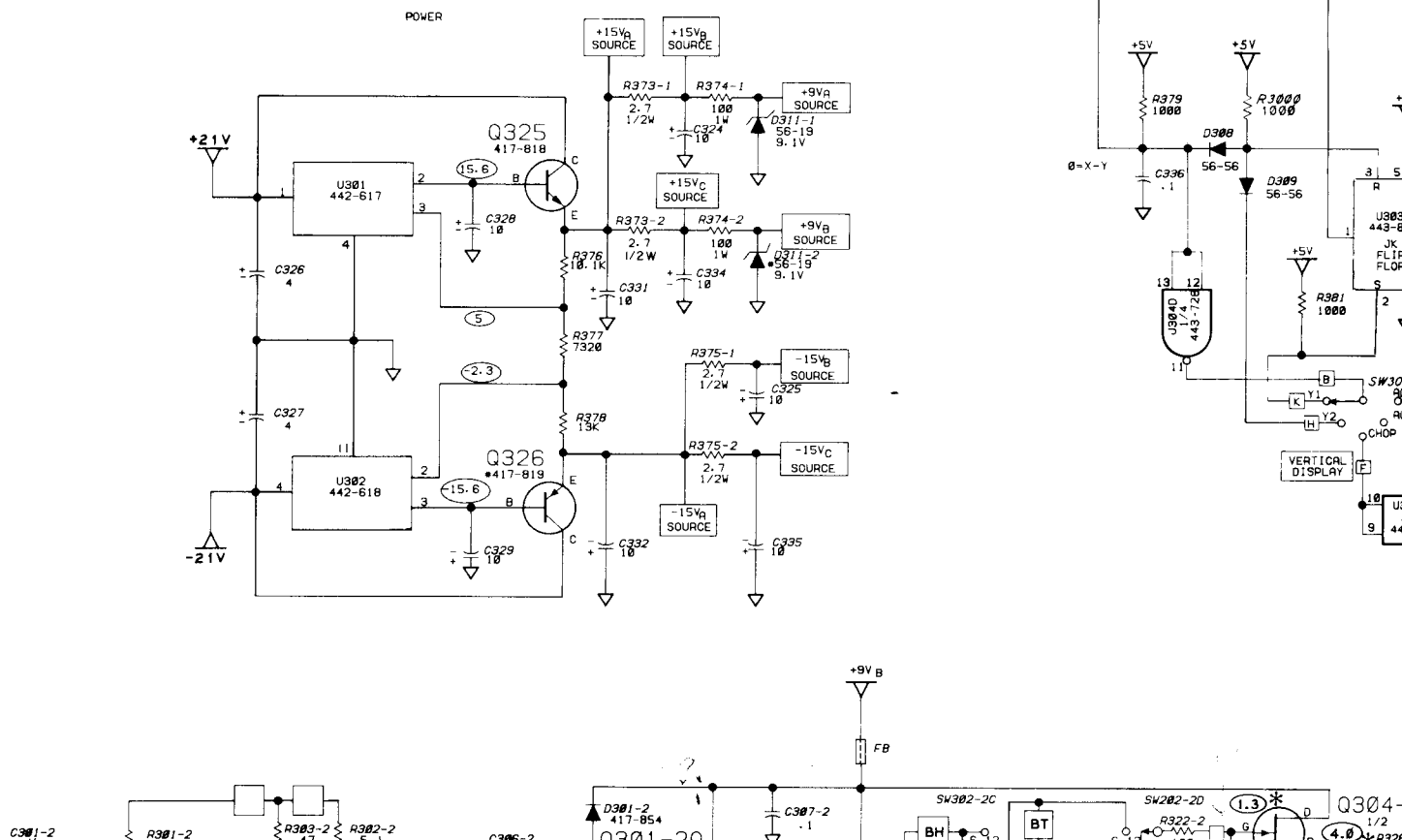
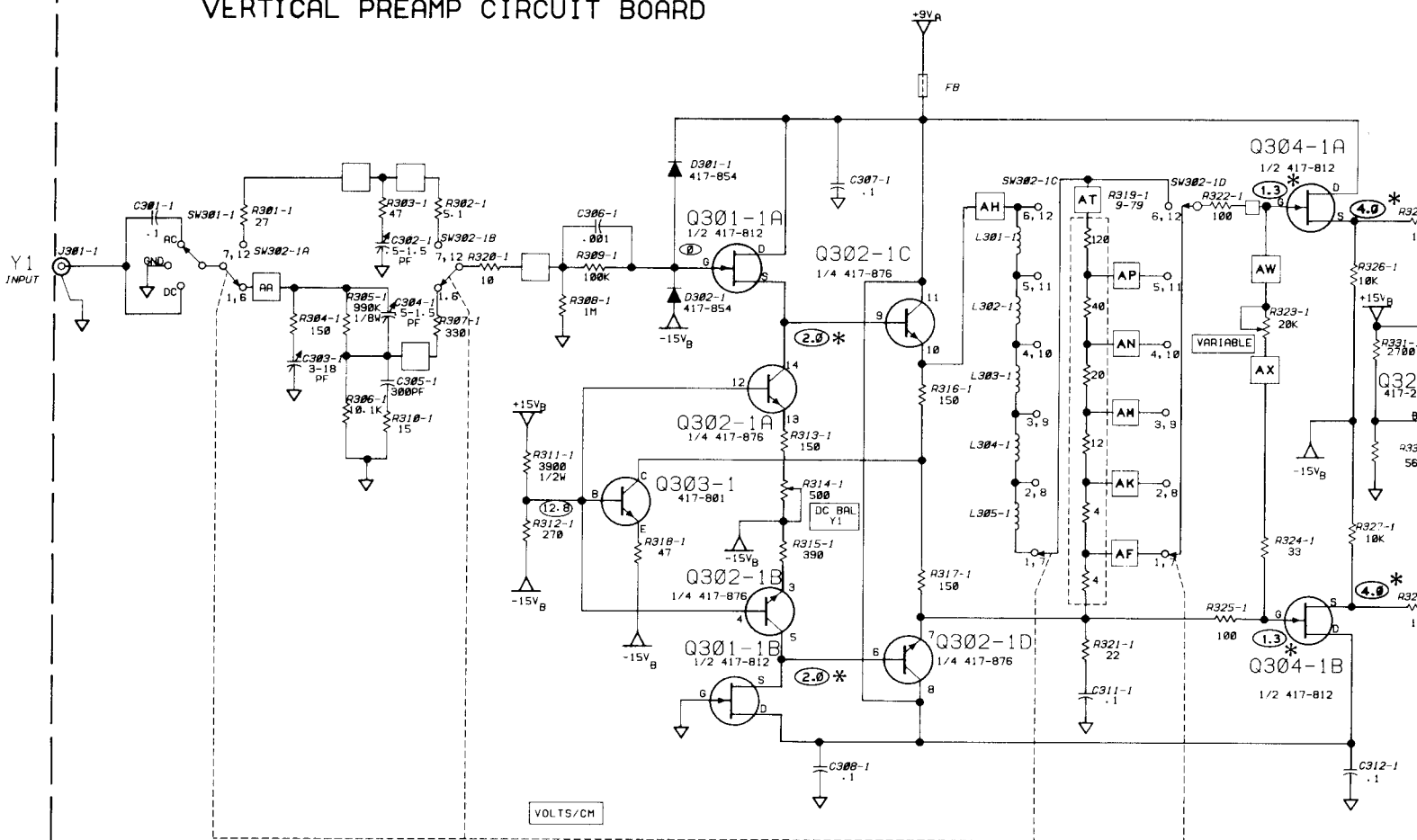
HORIZONTAL POSITION - FOR TRACE TO START AT LEFT EDGE OF SCREEN.
 HORIZONTAL DISPLAY - A INTEN BY B.
 TRIGGER MODE - AUTO
 TRIGGER COUPLING - AC
 TRIGGER SELECT - Y1+

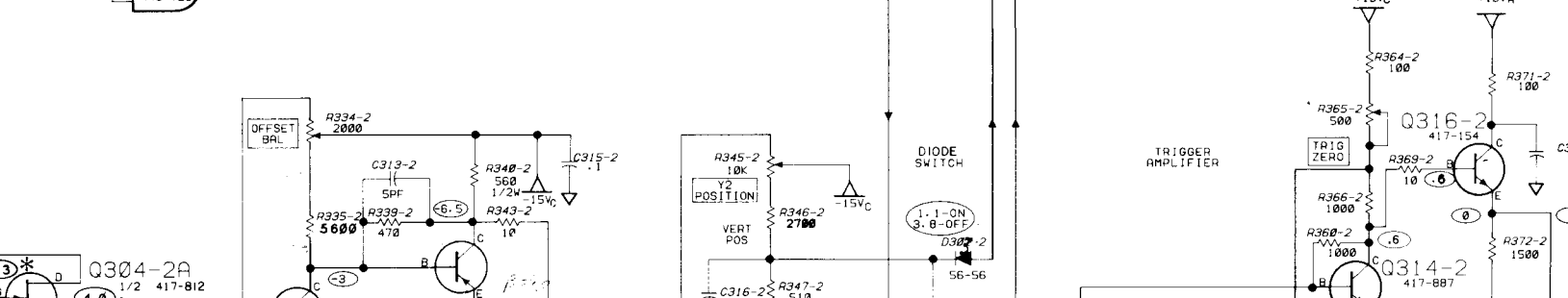
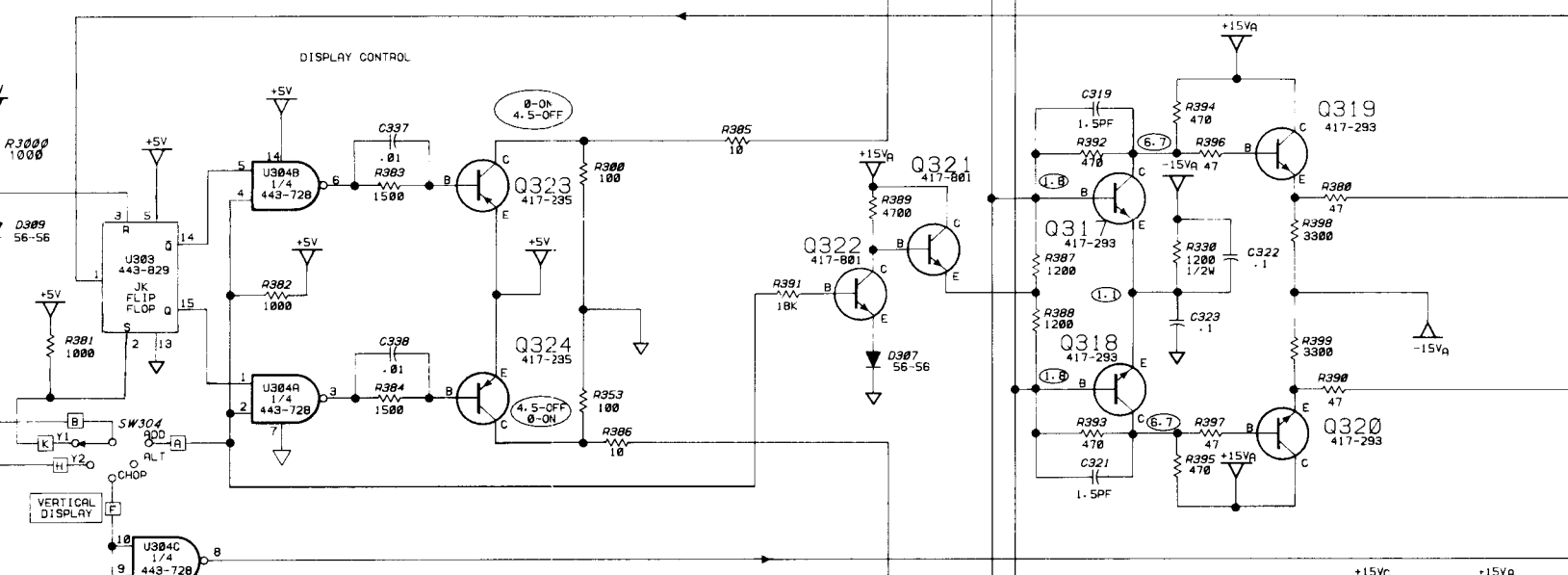
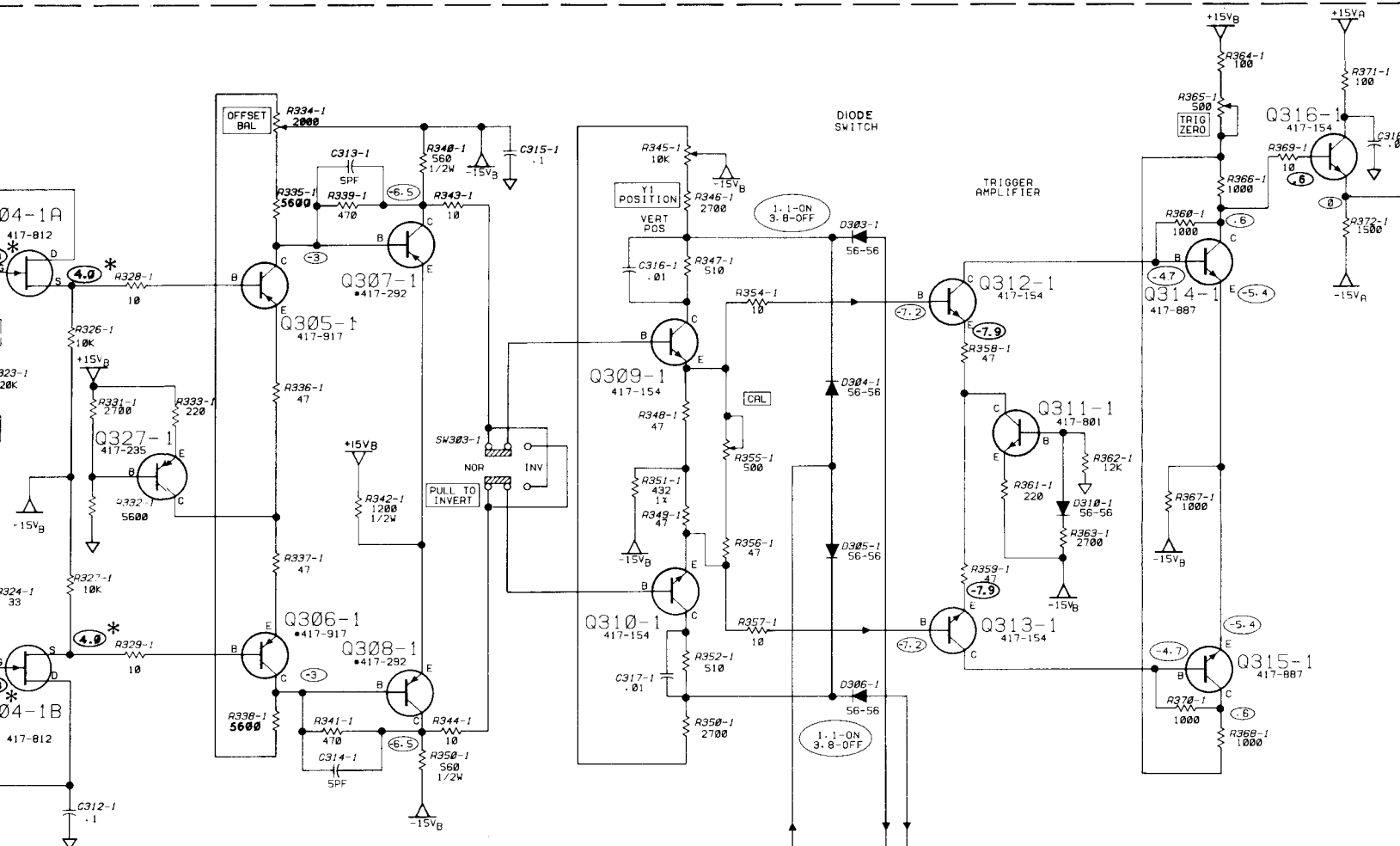
10. TRANSISTOR TRANSISTOR LOGIC (TTL) LEVELS ARE AS FOLLOWS: A LOGIC 0, OR LOW, IS < 0.8 VOLTS. A LOGIC 1, OR HIGH, IS > 2.0 VOLTS BUT < 5.5 VOLTS. A LOGIC 0 CONTROLS SET/RESETS.
11. ECL LEVELS ARE AS FOLLOWS: A LOGIC 0, OR LOW, IS -1.6 VOLTS. A LOGIC 1, OR HIGH, IS -0.9 VOLT. A LOGIC 1 CONTROLS SET/RESETS.
12. ONLY IN CHOP MODE.

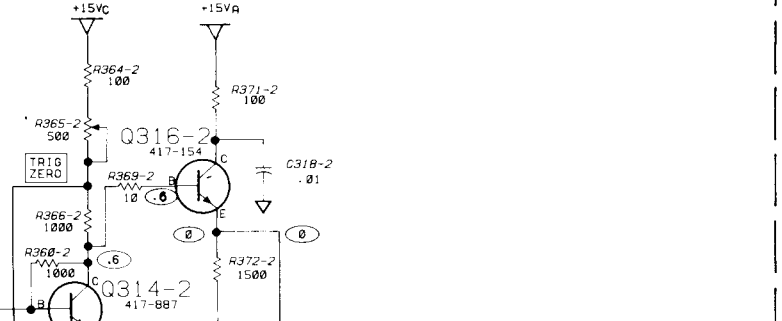
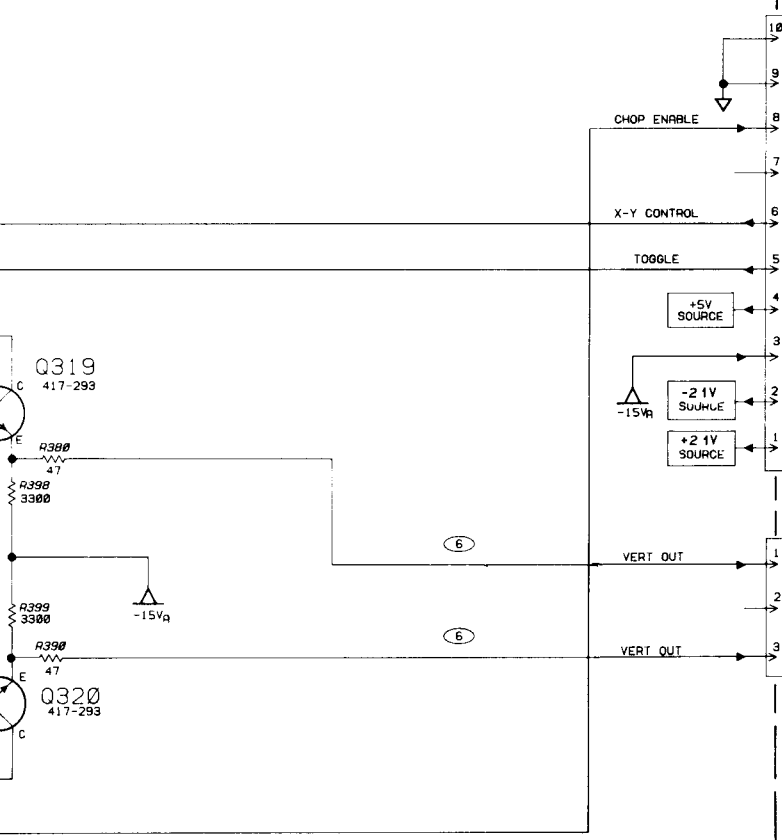
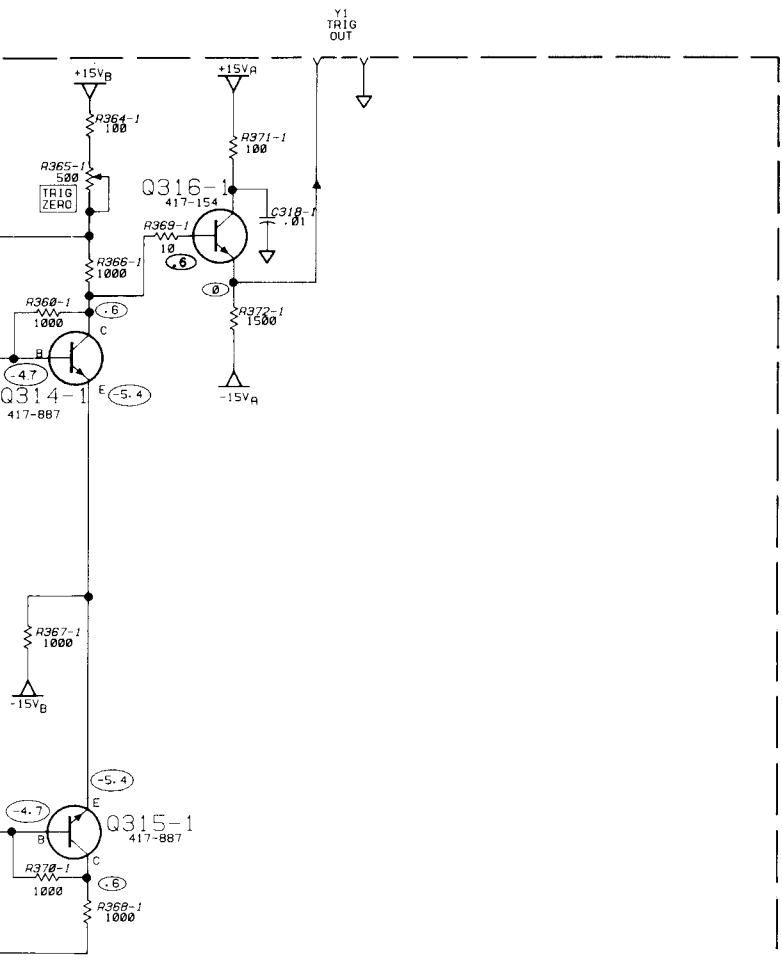
IO-4235 595-2246
 SO-4235 595-2237
 ONE OF FOUR

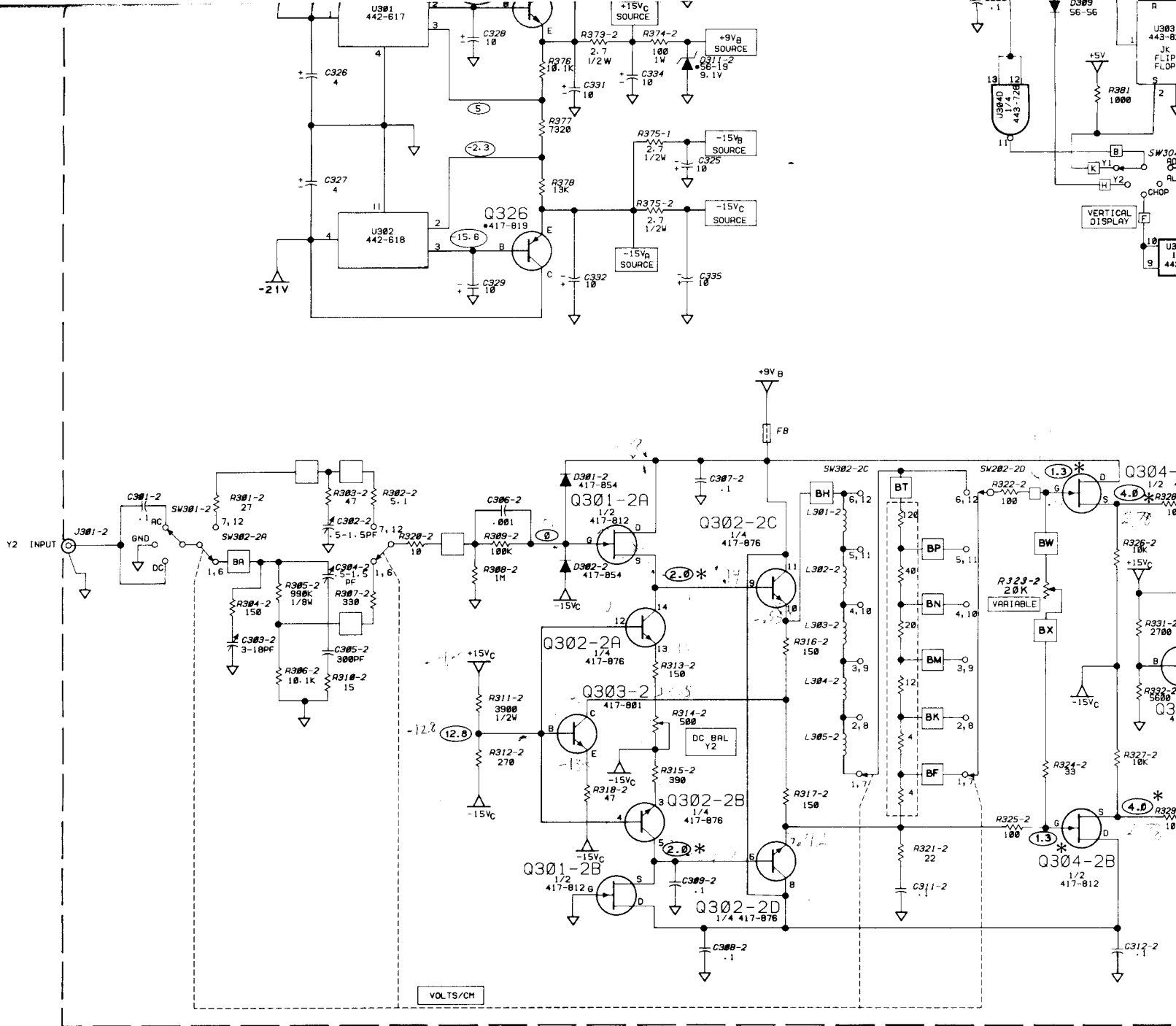
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VERTICAL PREAMP CIRCUIT BOARD

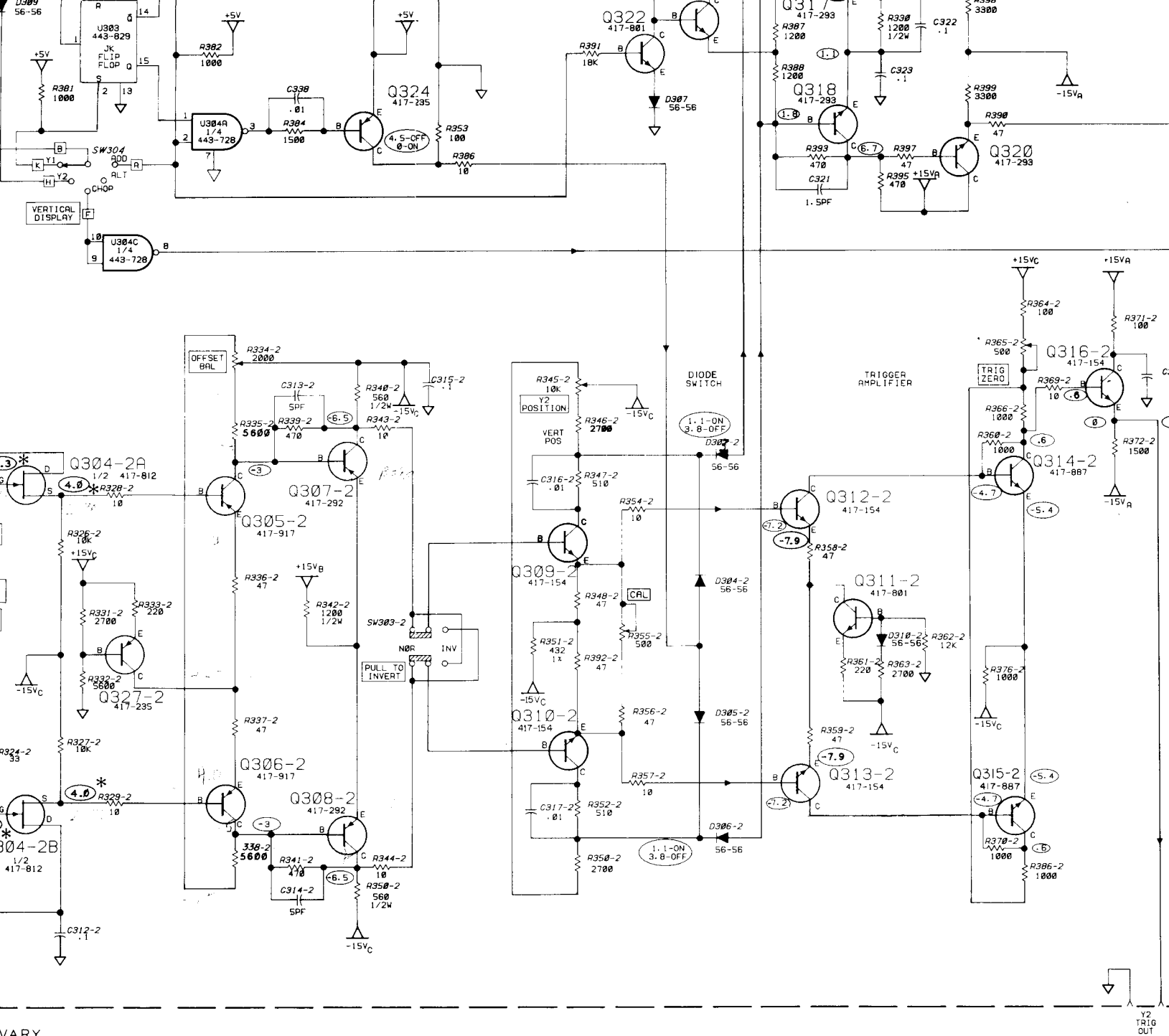






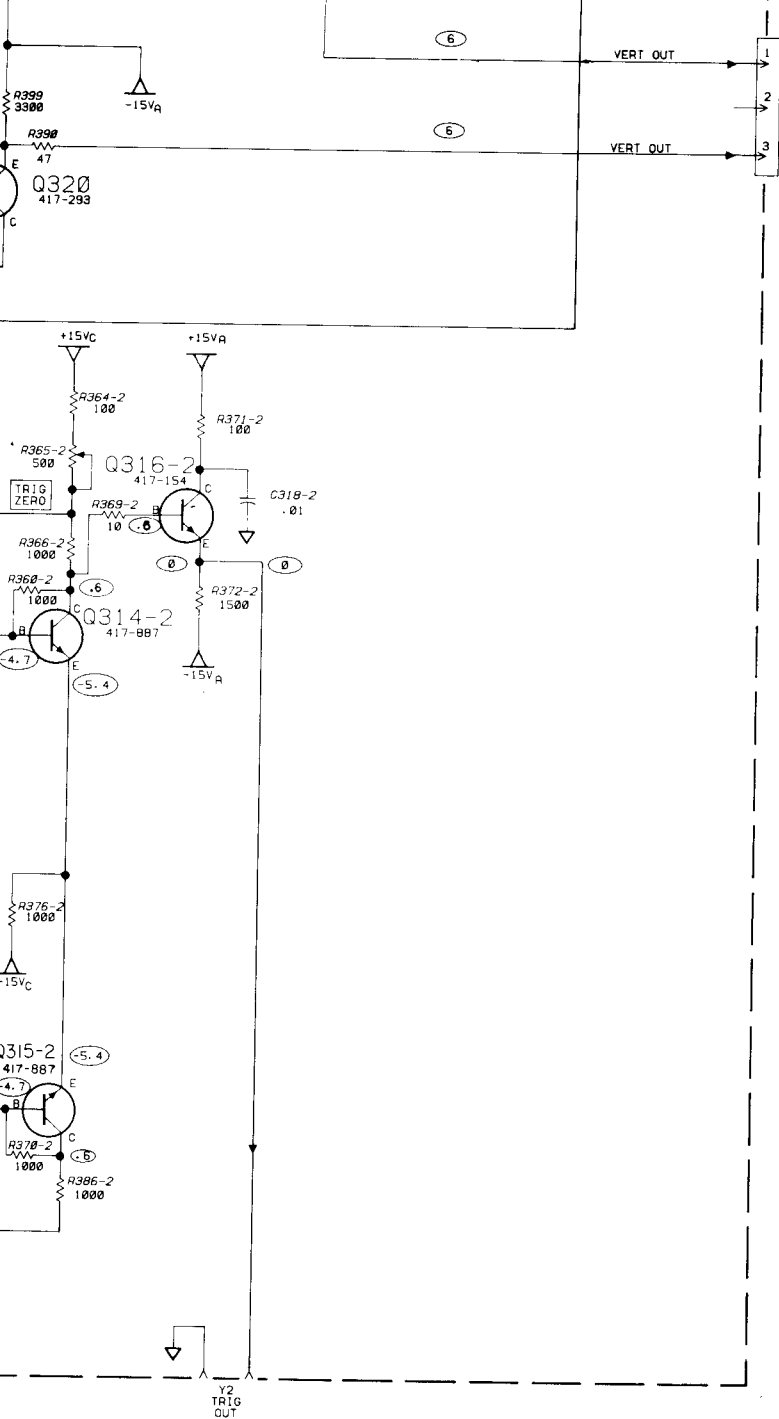


* STAGES MUST BALANCE, BUT LEVELS MAY VARY.



VARY.

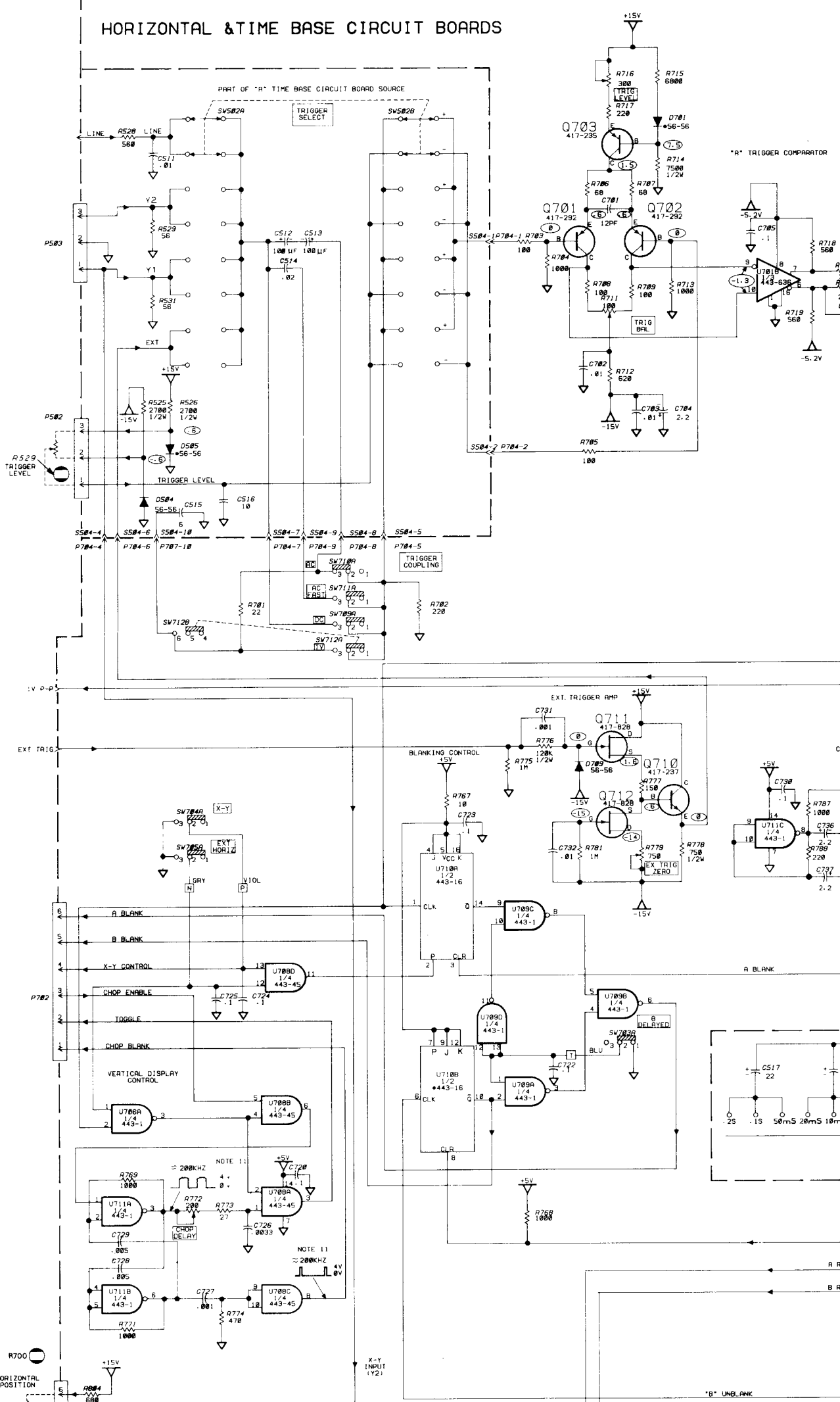
Y2 TRIG OUT

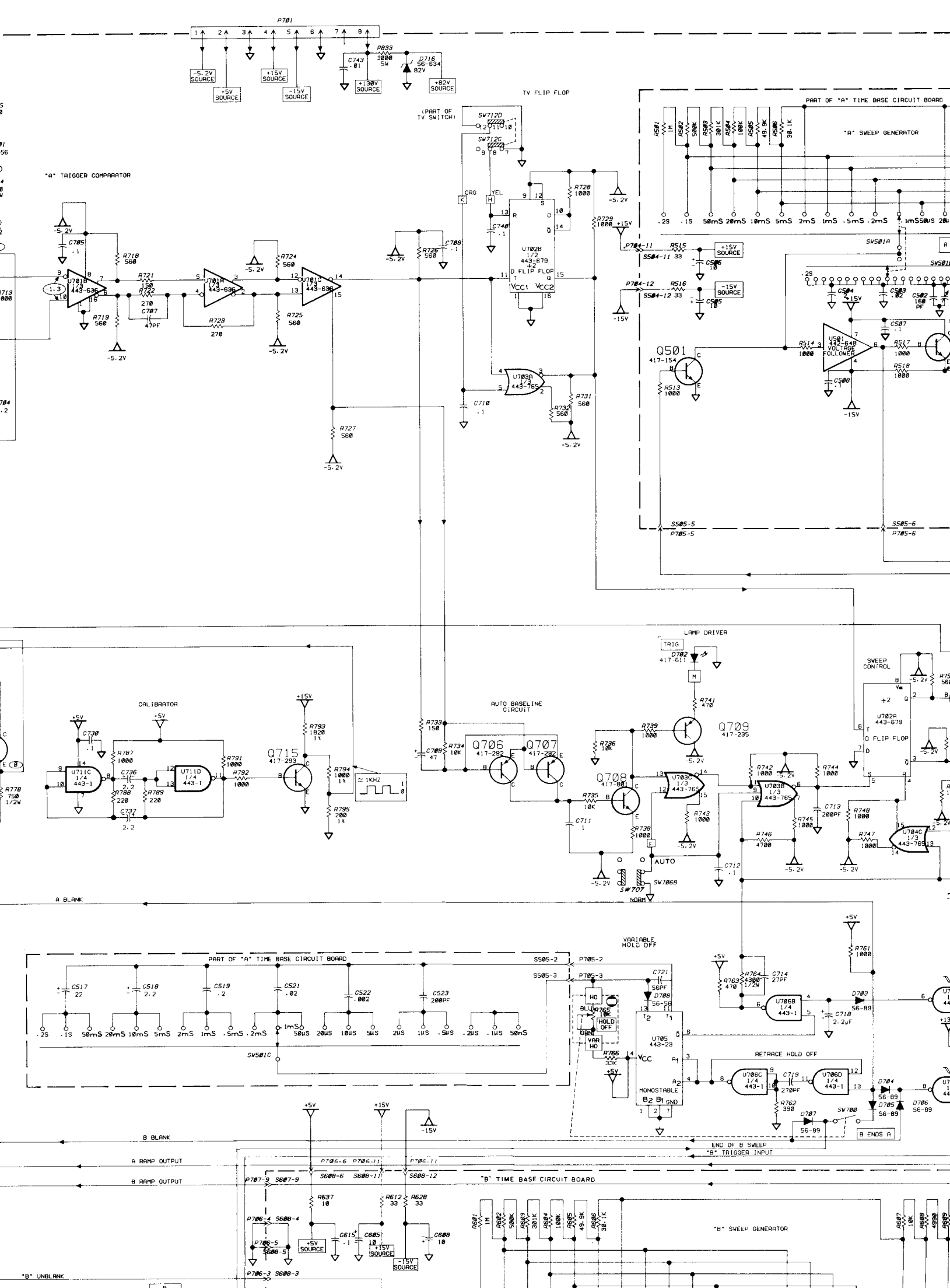


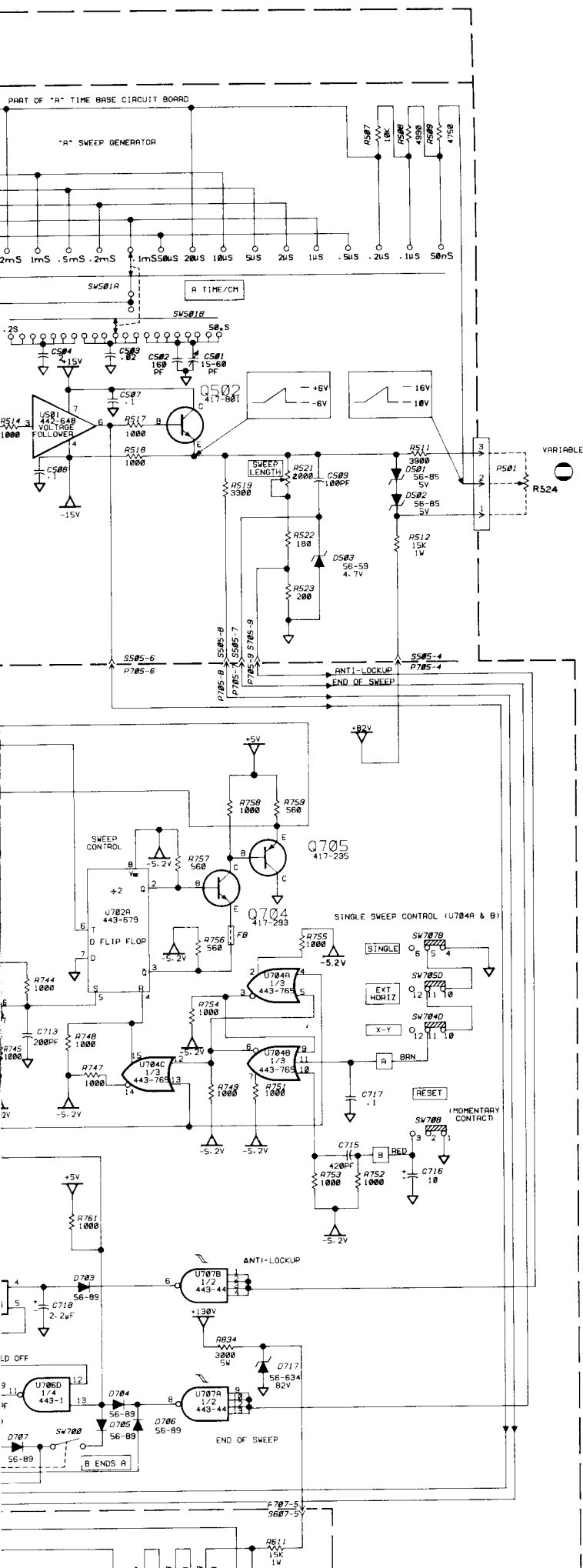
IO-4235 595-2246
 SO-4235 595-2237
 TWO OF FOUR

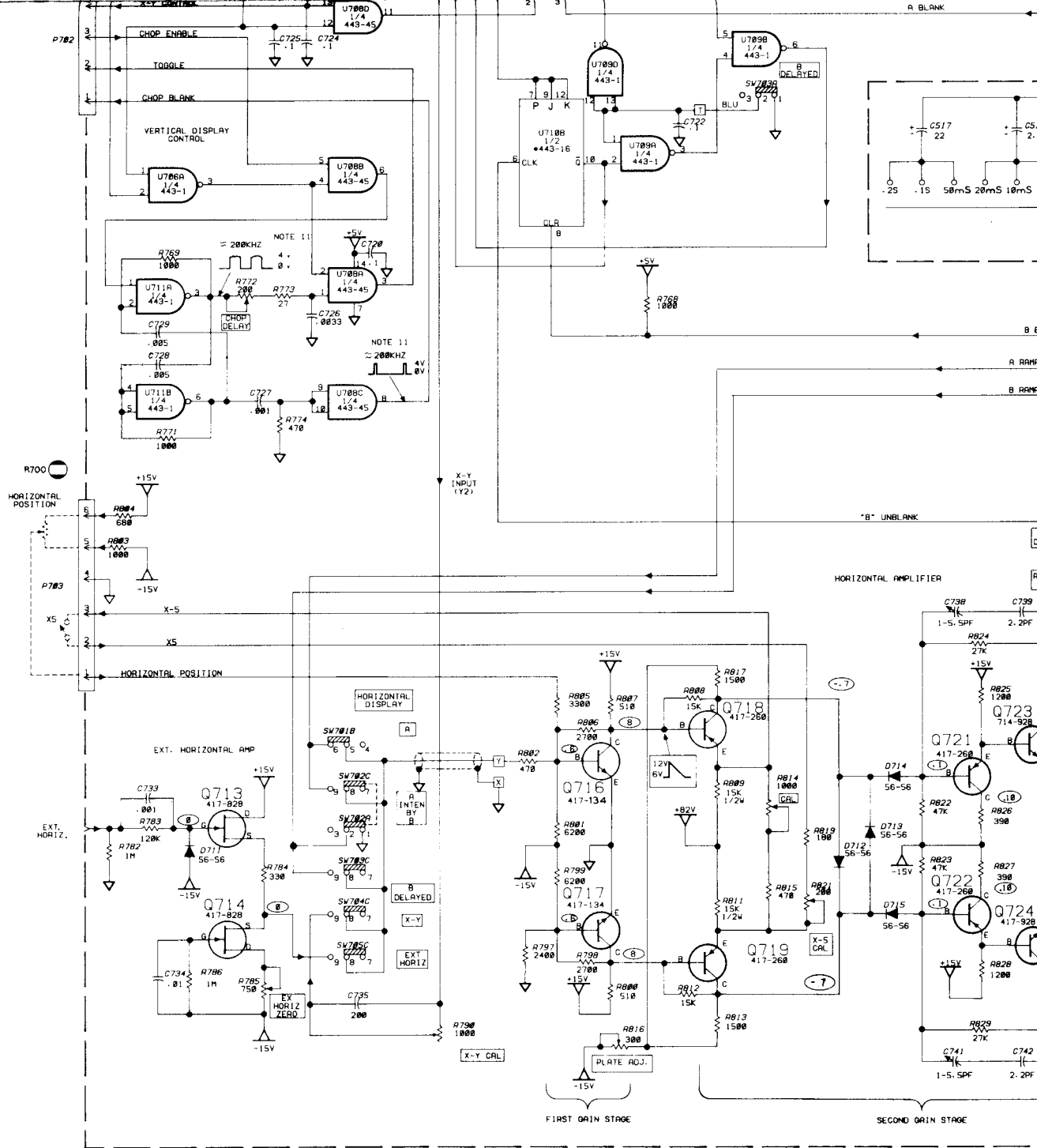
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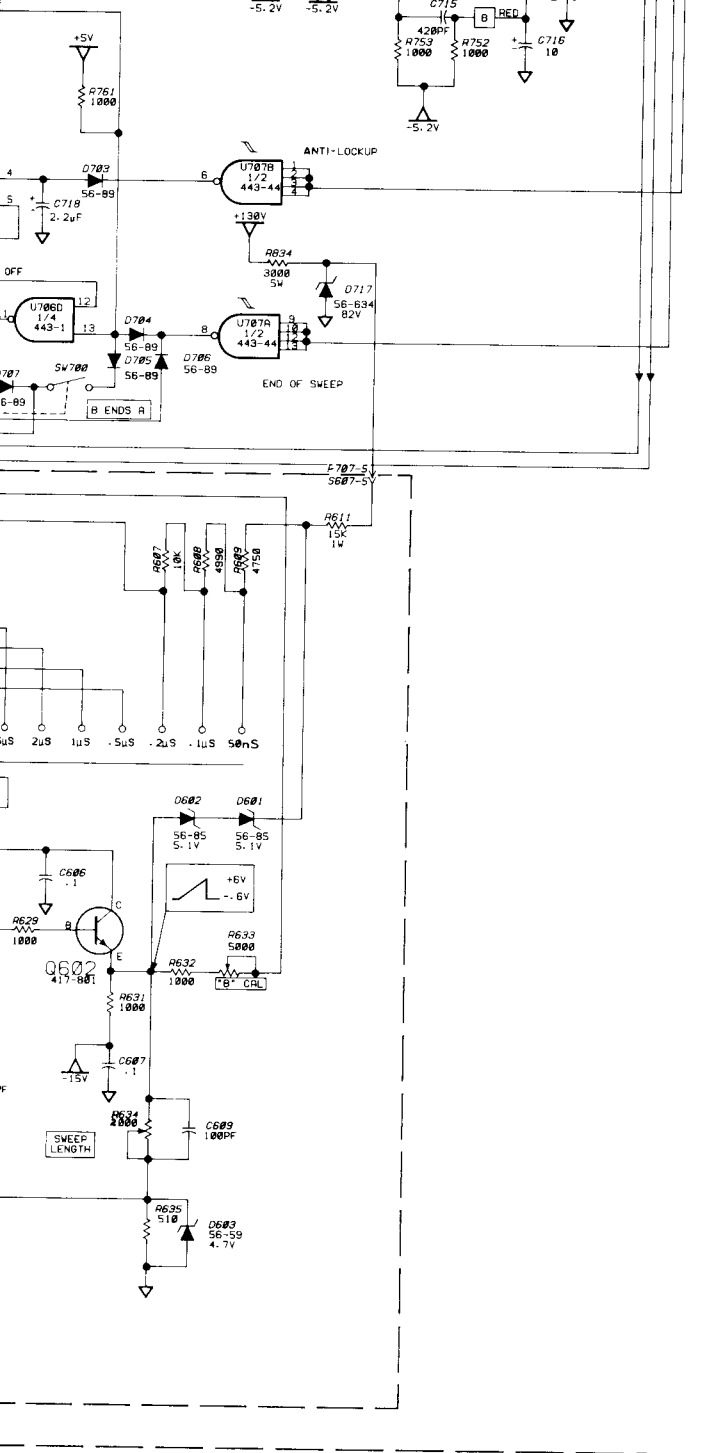
HORIZONTAL & TIME BASE CIRCUIT BOARDS







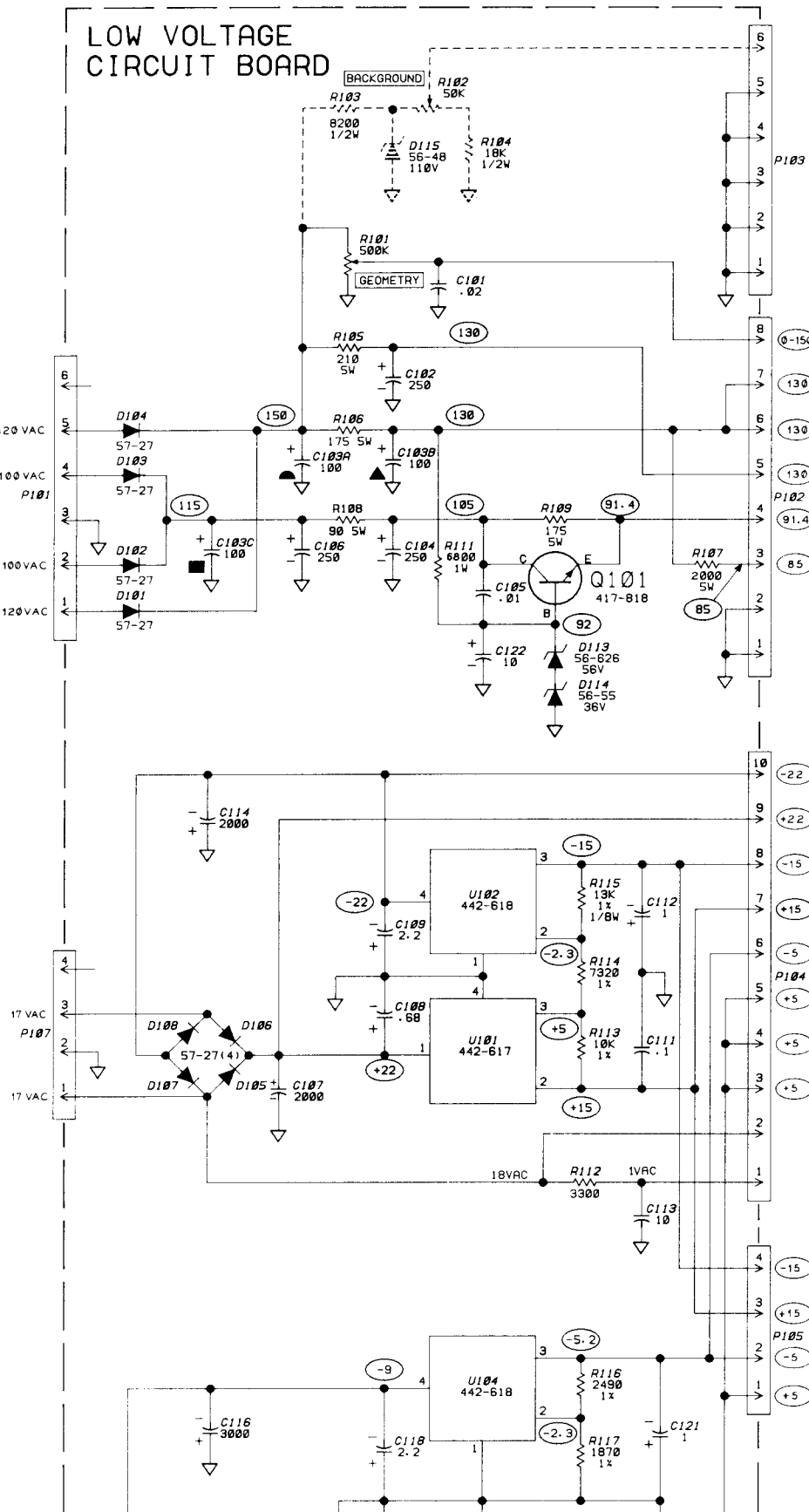




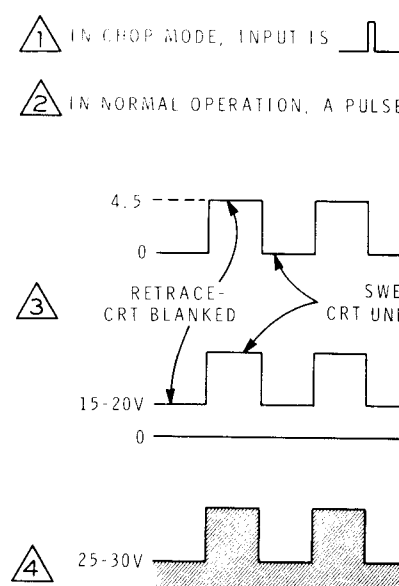
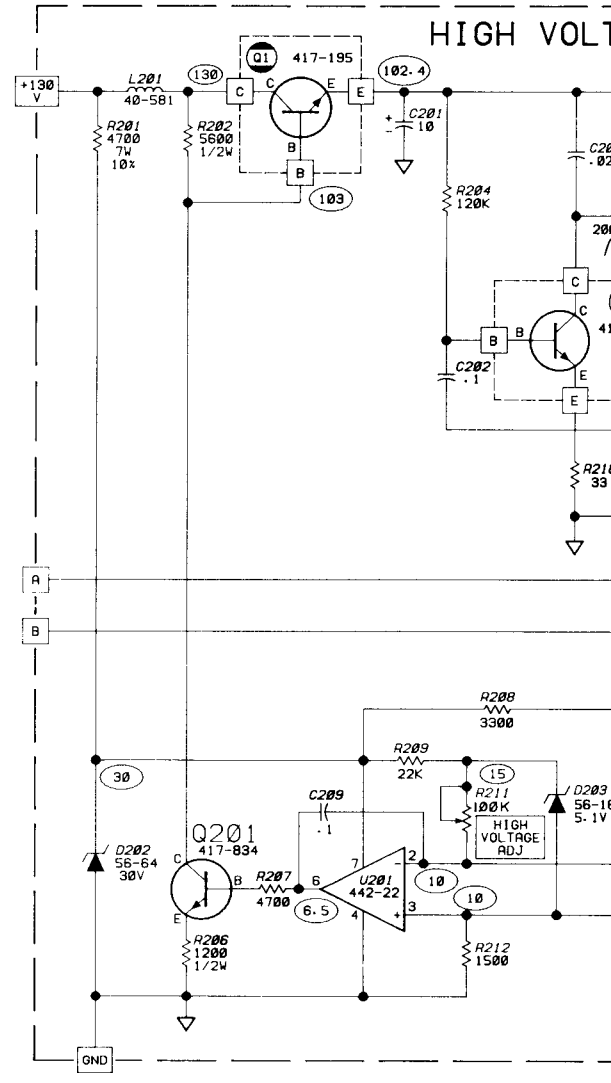
IO-4235 595-2246
 SO-4235 595-2237
 THREE OF FOUR

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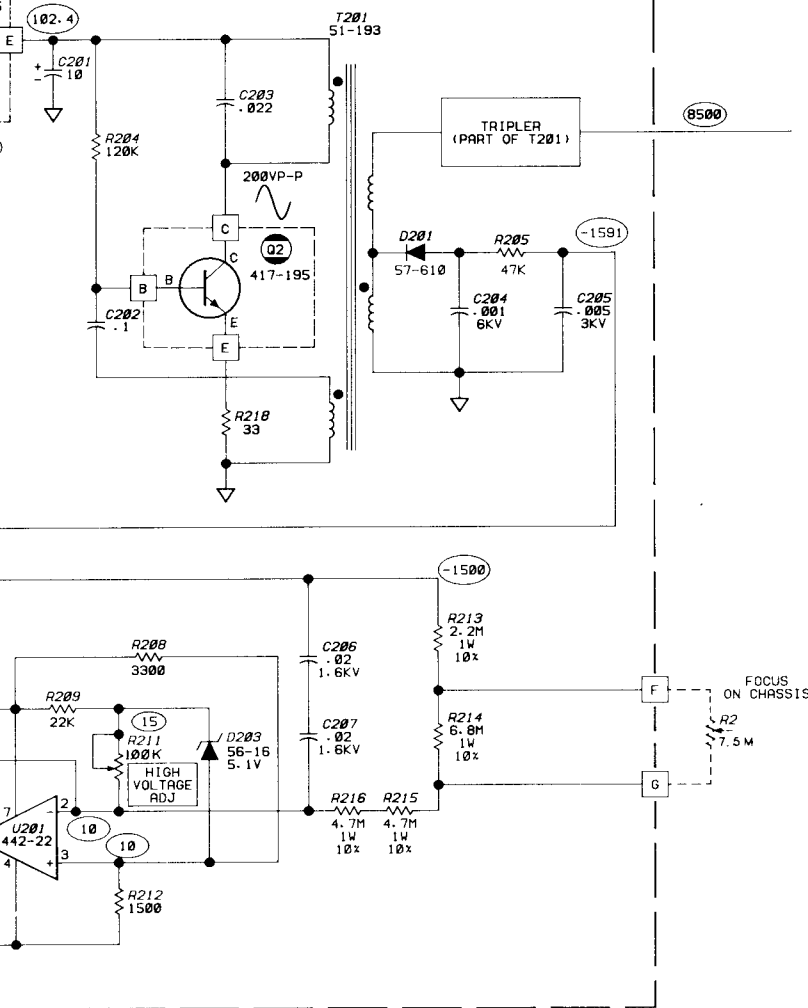
LOW VOLTAGE CIRCUIT BOARD




HIGH VOLT

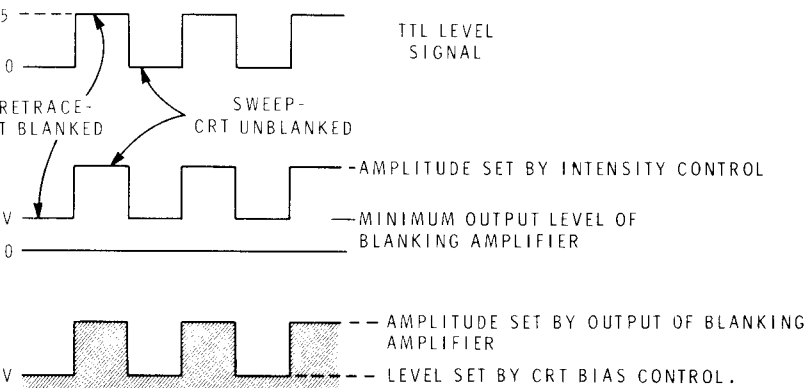


HIGH VOLTAGE CIRCUIT BOARD

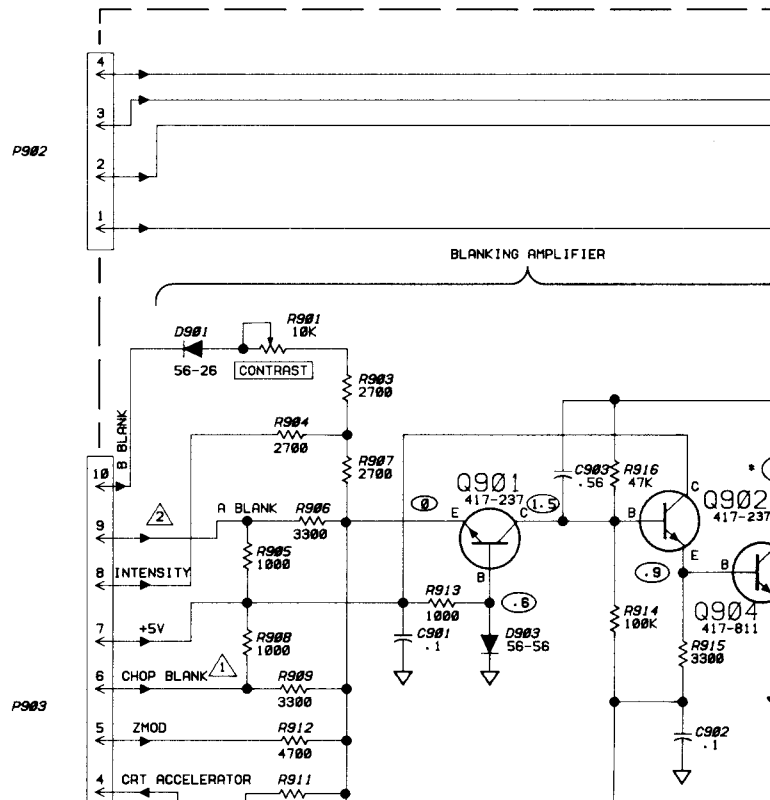
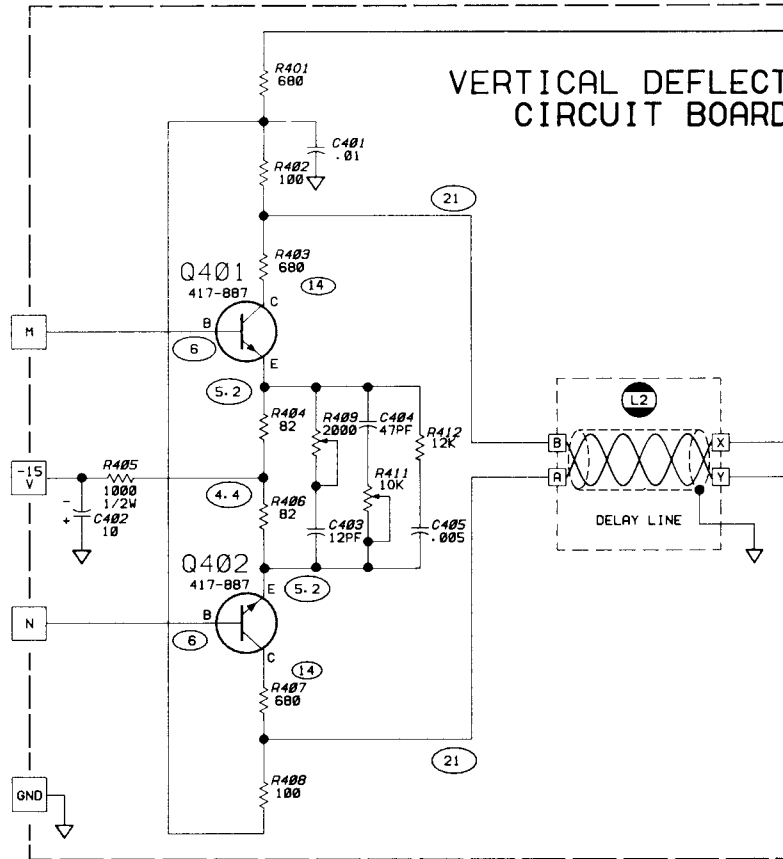


OP MODE, INPUT IS  4.5 AT 200KHZ RATE.

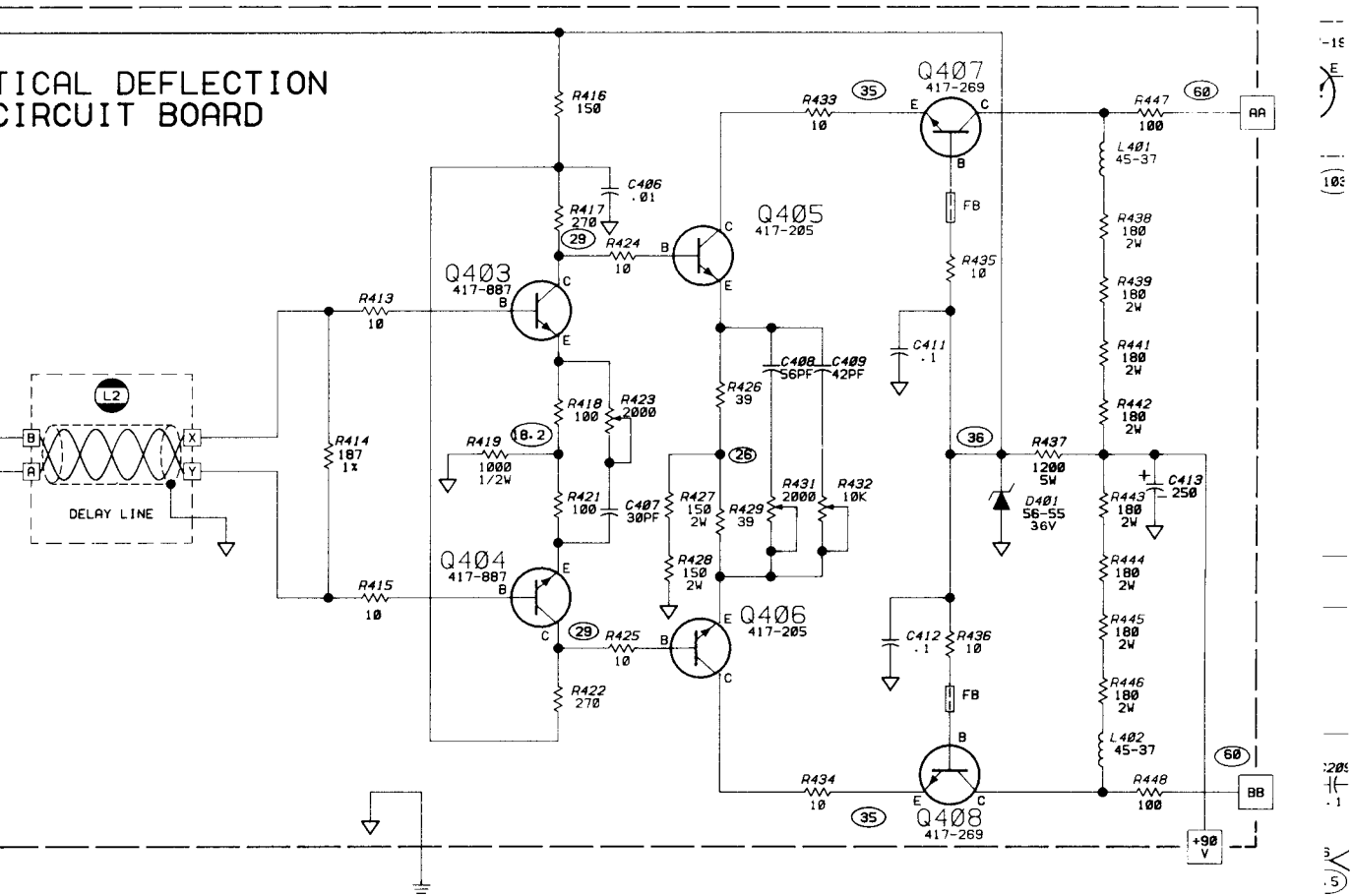
NORMAL OPERATION, A PULSE BLANKS THE CRT AFTER EACH SWEEP.



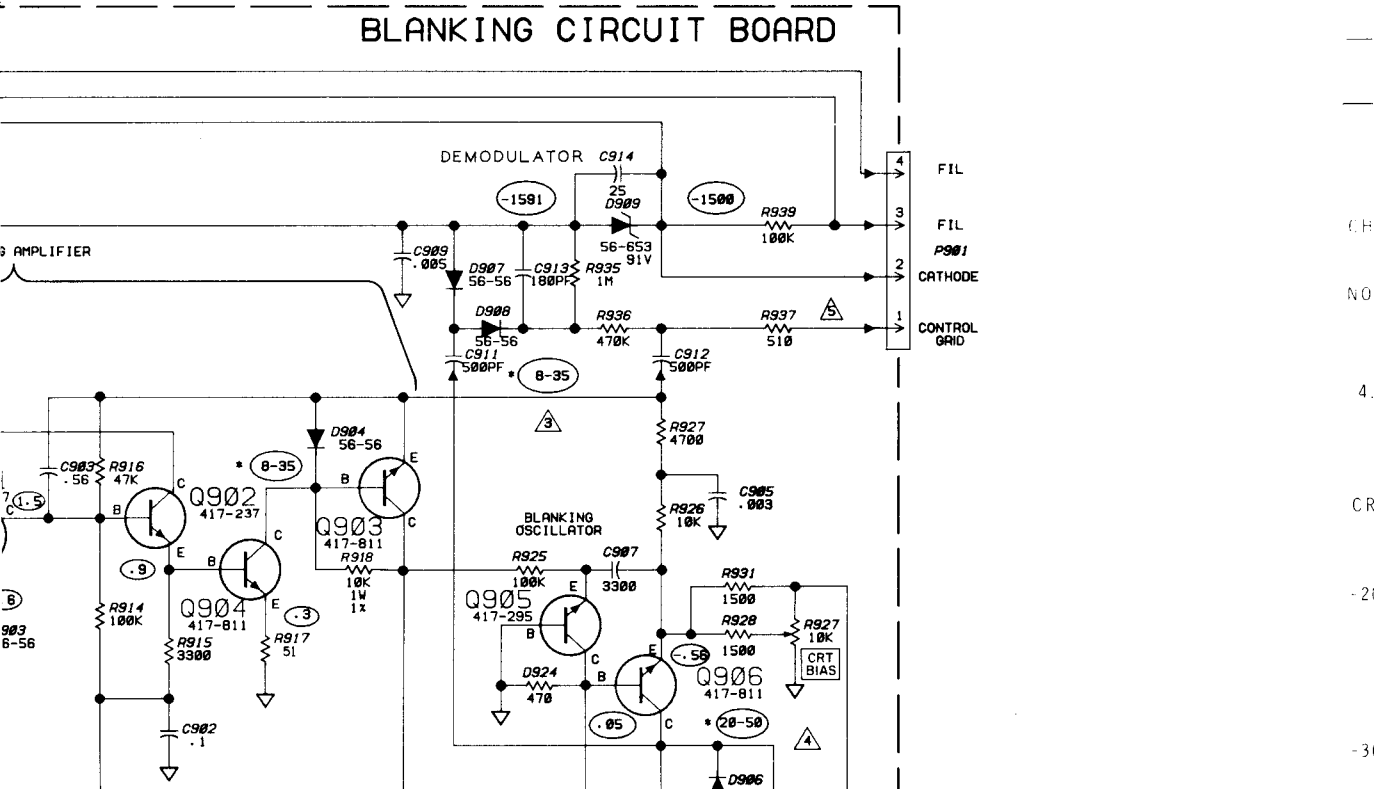
VERTICAL DEFLECTOR CIRCUIT BOARD

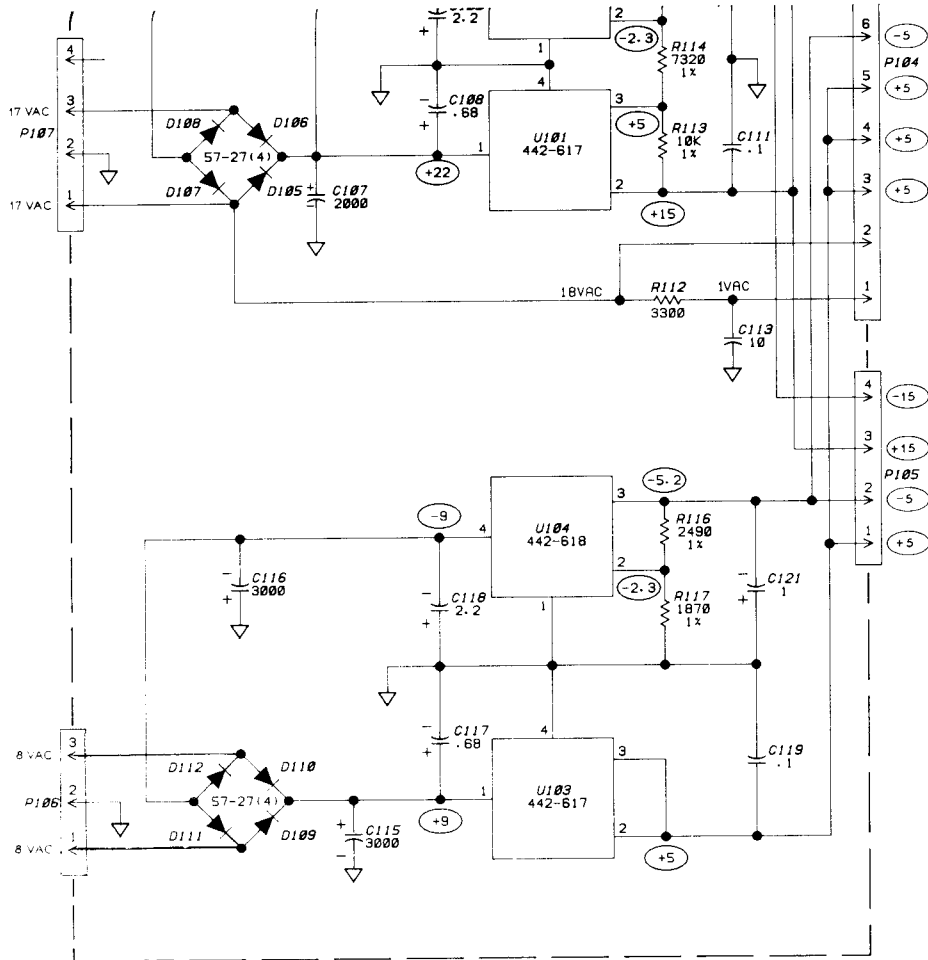


OPTICAL DEFLECTION CIRCUIT BOARD



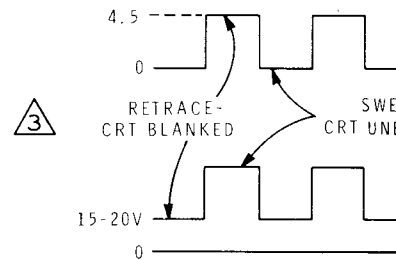
BLANKING CIRCUIT BOARD





① IN CHOP MODE, INPUT IS

② IN NORMAL OPERATION, A PULSE



⑤ CAUTION: DO NOT MEASURE UNLESS INPUT OF THE MEASURING INSTRUMENT IS

THE COMPOSITE SIGNAL AS SEEN ON THE CRT

