

Partial AMTS Schematic

This documentation set contains the instructions for converting the AMTS (Advanced Microcomputer Training System) into a test version of the computer with built-in faults that could be switched in using a DIP switch. . It includes diagrams of the following sections of the computer:

1. RAM
2. CPU and bus buffers
3. ROM
4. Address decoding circuitry

Also included are the conversion instructions, as well as drawings showing which circuit traces on the board are modified (tracks cut and connected to the fault DIP switch).

PROCEDURE FOR CONVERTING YOUR AMTS TO A TROUBLE SHOOTING - AMTS

TERMS USED: Component-Side=The Top or Front Side of the AMTS
Solder-Side=The Bottom or Back Side of the AMTS

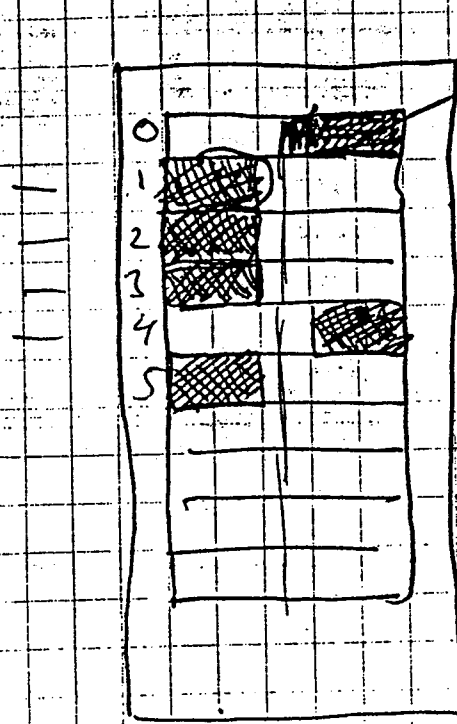
1. Remove the 8080 IC from position 54
2. Remove the 40 pin socket at position 54
3. Remove the Capacitor C-33 from the Component-Side of the board (near pos. 54) to the same location on the Solder-Side of the board.
NOTE THE POLARITY OF THE CAPACITOR
4. Install the 40 pin ZIF Socket gently into position 54 on the Component-Side (with the lever on the side near position 55) and solder into place.
5. Insure that you have done a good job by inserting the 8080 IC properly into the ZIF socket and power-up the AMTS. If the display looks normal to you (8200 showing in the left 4 digits) then continue to the next step. If not, check soldering of the ZIF socket and assure that the 8080 IC was inserted correctly.
YOU SHOULD NOT CONTINUE UNTIL THE PROBLEM IS RESOLVED.
6. Install the 10 position switch in the center of the Interface Area.
(see figure C)
7. Referring to figure D, use a bare piece of 24 gauge wire to supply ground for Faults F,H,I, & J on the Solder-Side. The outer edge of the Solder-Side is a GROUND AREA. Use a blade or the edge of a screw-driver to scratch off any plastic from the GROUND AREA where you intend to solder.
8. Cut Traces according to the attached Drawings (figures 1 and 2-- 2 cuts on the Component-Side, 3 cuts on the Solder-Side). Be careful not to cut any other traces than those shown.
9. Connect the Switches according to figures (3) thru (12) using 28 or 30 gauge wire.
10. Referring to figure C, apply the "NO FAULTS POSITION" label to the left of the dipswitch.
11. Arrange the switches to match the label and power up the AMTS. If it looks normal, go to the next step. If not, check all wiring for shorts, opens, or misplaced wires. Also check again that you cut the correct traces from step #8.
12. Referring to Figure A, modify your original AMTS Plastic cover being very careful for the plastic is very easily cracked.
13. Attach the Modified Plastic cover to the Back side of the AMTS referring to Figure B. This will protect your wiring.
14. Insert the Intra-Connector into the ITS-Connector area of the AMTS and then connect the INTERFACE TRAINING BOARD cable to the Intra-Connector.(if you have an INTERFACE TRAINING BOARD, that is)
15. If you have a black case with your system you may replace the old silver labels with the new GOLD labels supplied with this kit.
16. If you have any problem with your AMTS during this conversion or after you have completed the conversion, call INTEGRATED COMPUTER SYSTEMS for an REA.(Return Equipment Authorization, for repair)

FAULT SWITCHES

142

BOARDS

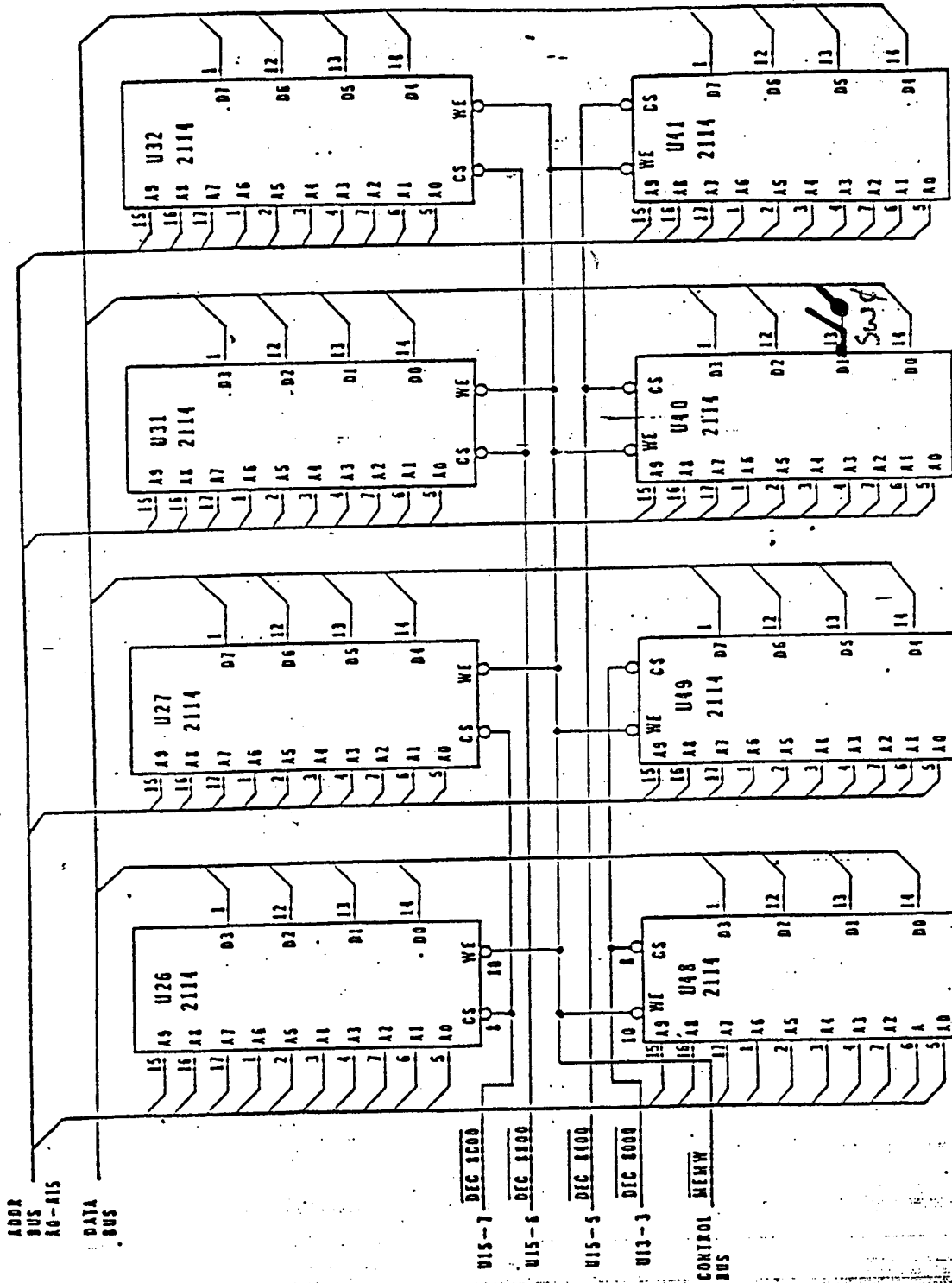
TOP OF AMTS



Depressed portion

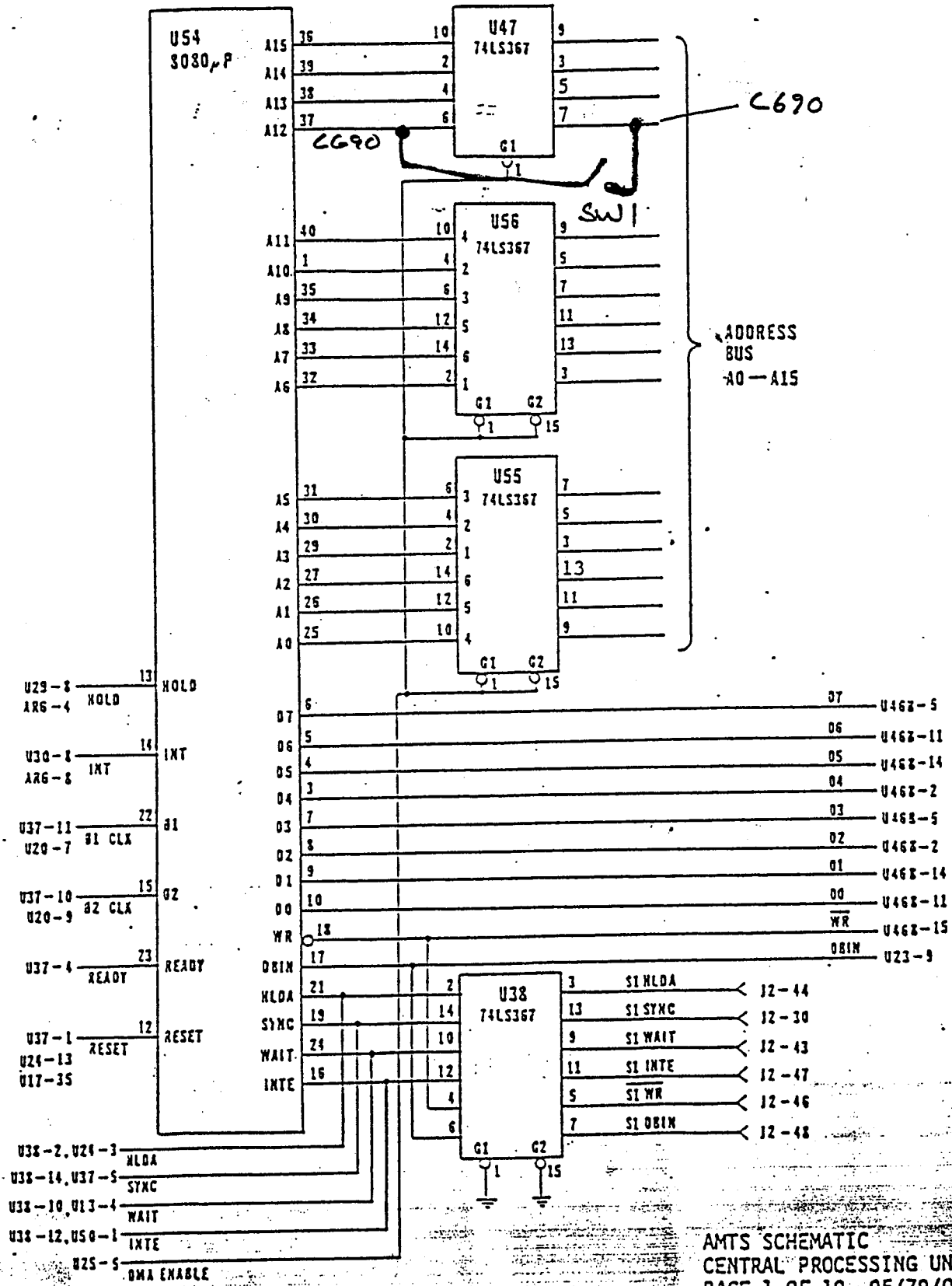
- U40 pin 13 (DI open)
- A12 short on U47
- A0/A1 short
- D7/D6 short
- MemR open
- S100 phantom pull down

Switches shown with faults OUT.



June 1, 1979

COURSE 525A (AMTS) SCHEMATIC



AMTS SCHEMATIC
CENTRAL PROCESSING UNIT
PAGE 1 OF 10 - 05/79/0132
C/7/80

TMS A-1 1/7/80

CHIP SELECTS

U15-12 DEC 0

U15-11 DEC 4 OR 8

U15-10 DEC 8 OR 10

U15-9 DEC C OR 16

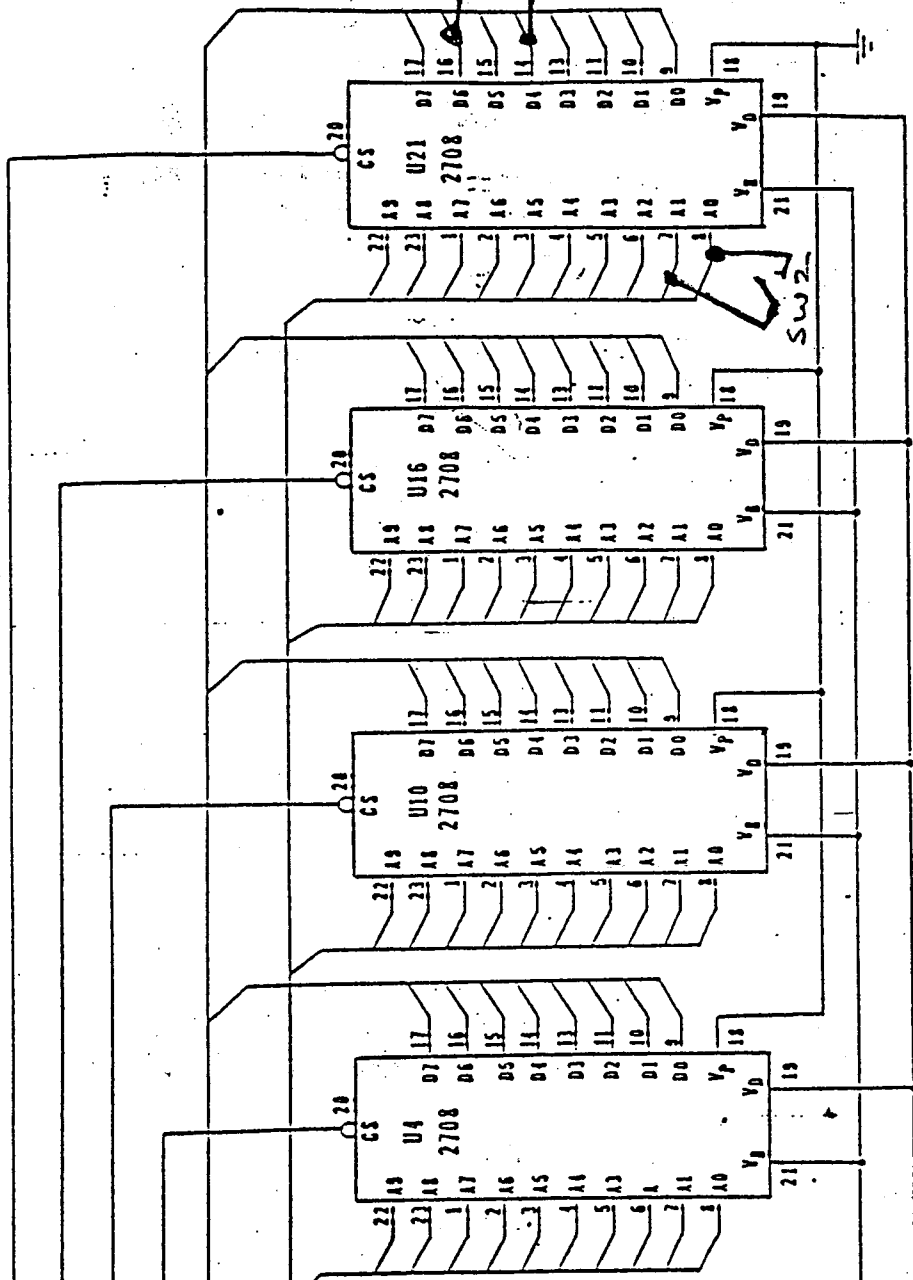
DATA BUS

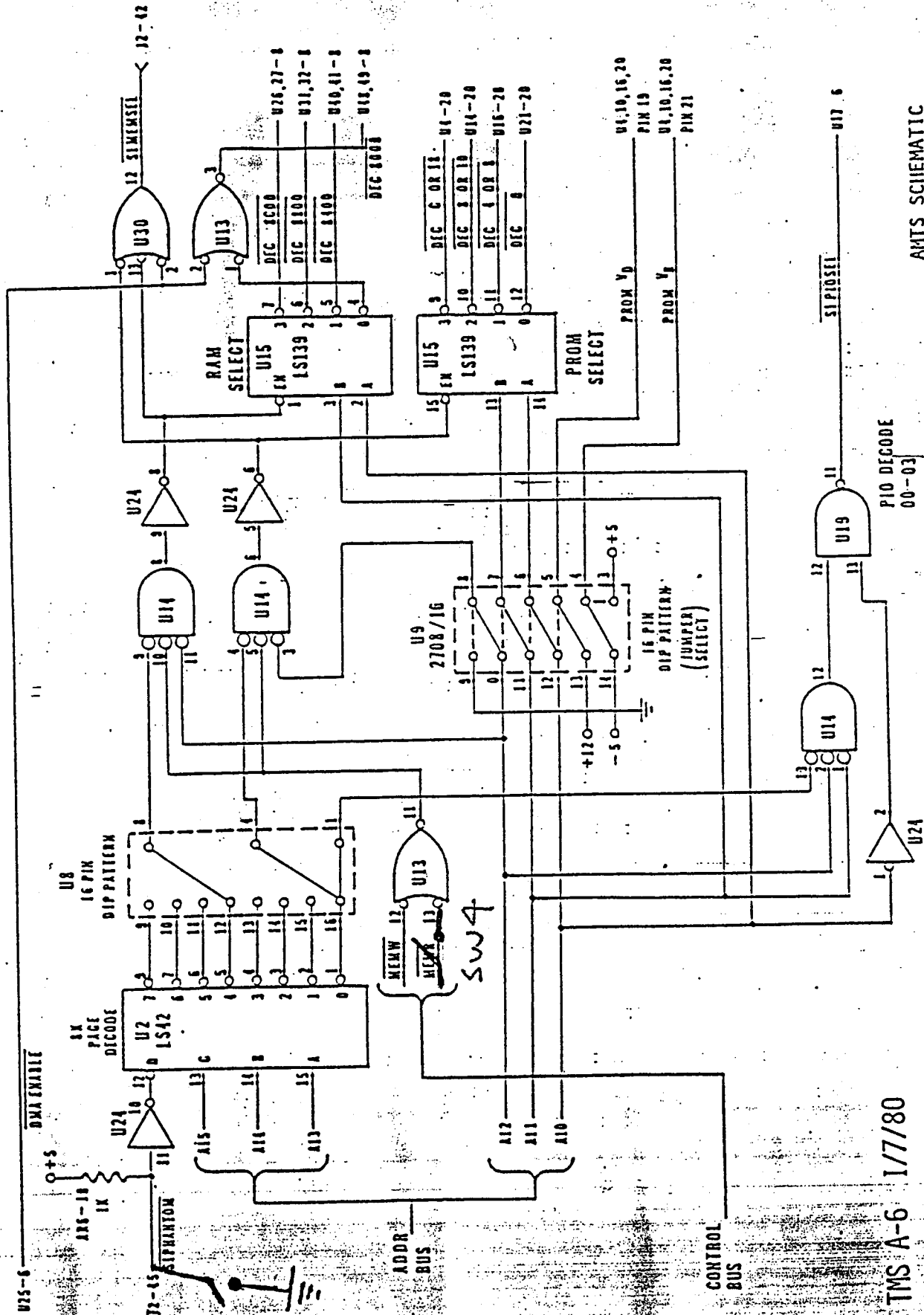
ADDR BUS

A0-A3

U15-4 PROM V₁

U15-5 PROM V₀





AMTS SCHEMATIC
 ADDRESS DECODING
 PAGE 6 OF 10 05/79/0132
 C/7/80

TMS A-6 1/7/80

MODIFIED AMTS PLASTIC COVER.

Fig. A

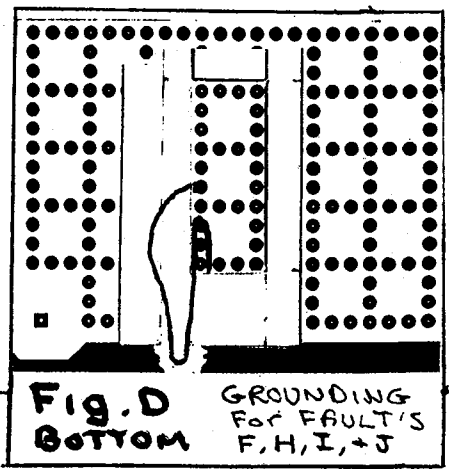
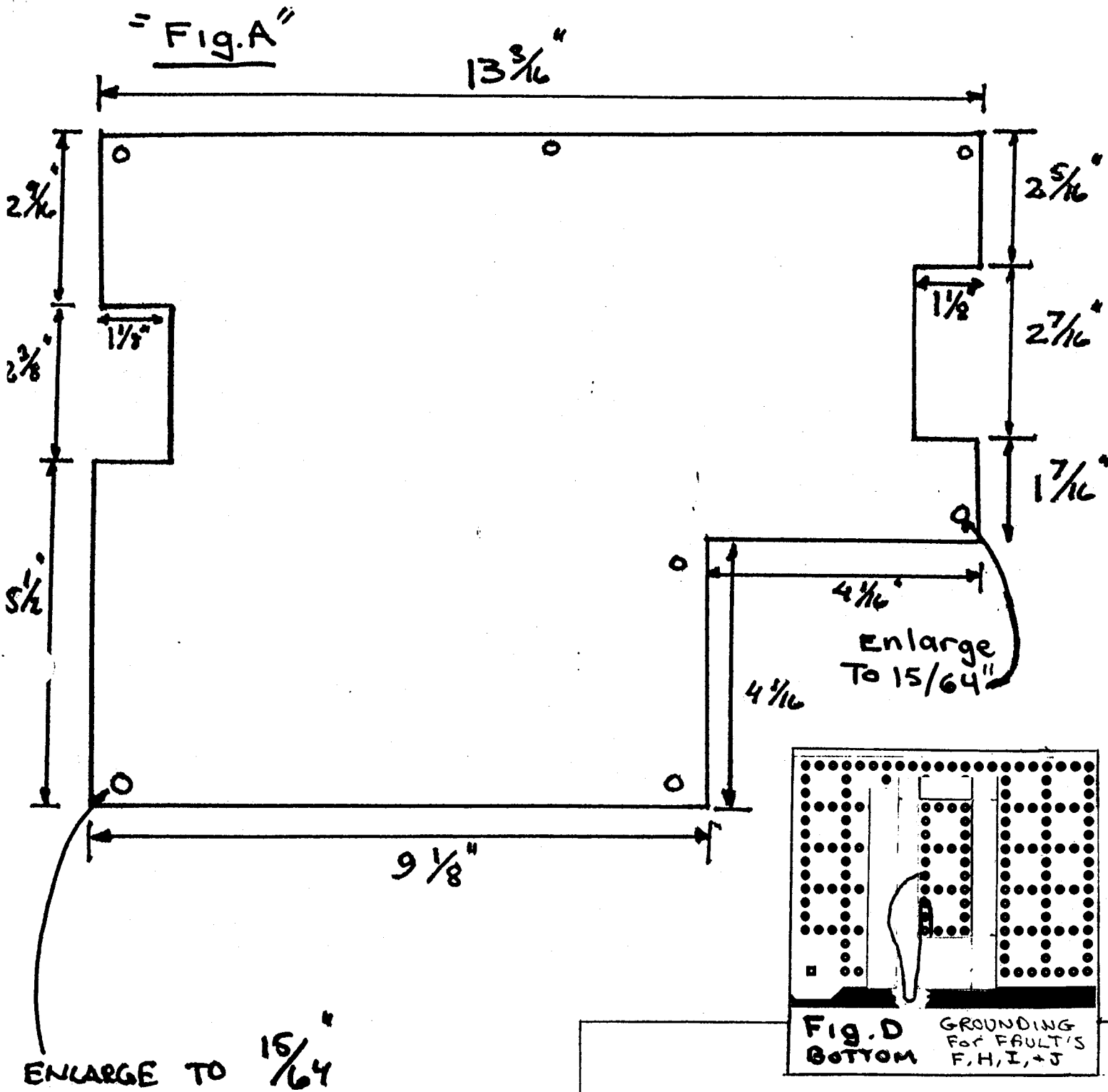


Fig. B
Side view

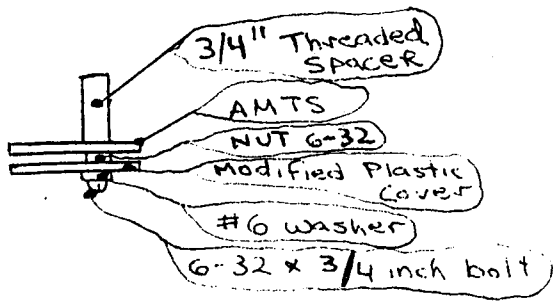
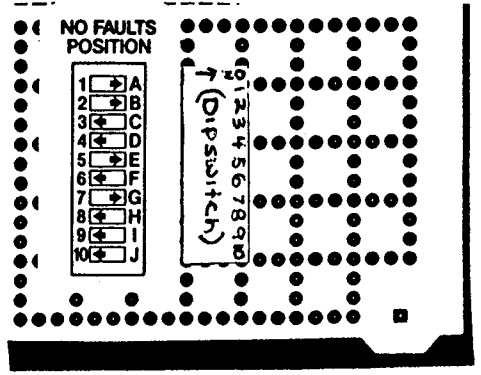


Fig. C
(TOP)



MODIFIED AMTS PLASTIC COVER.

Fig. A

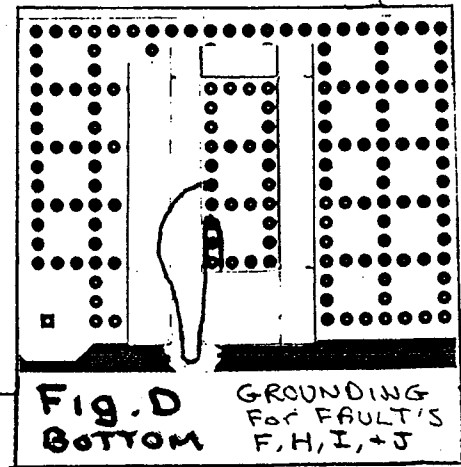
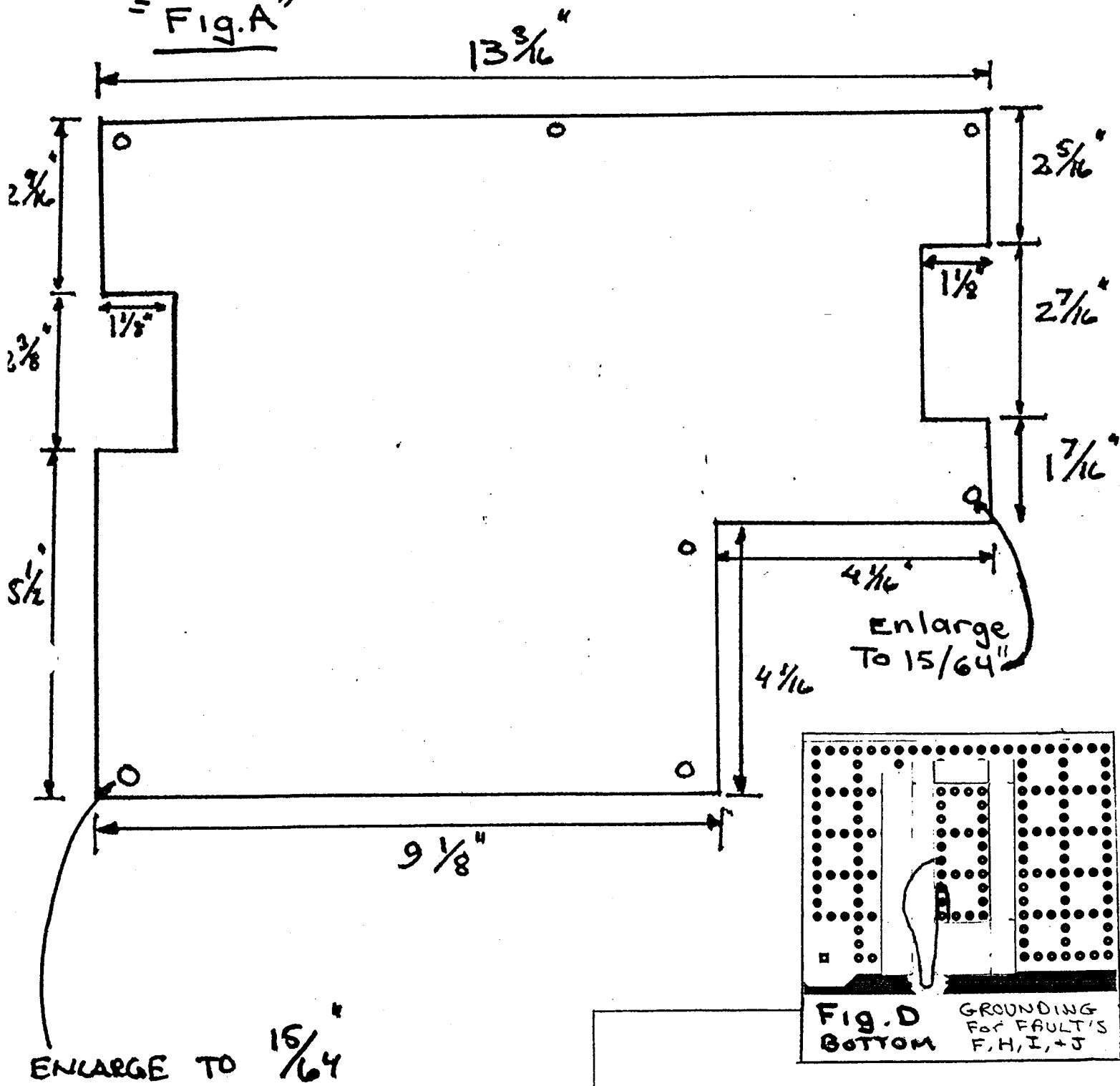


Fig. B
Side view

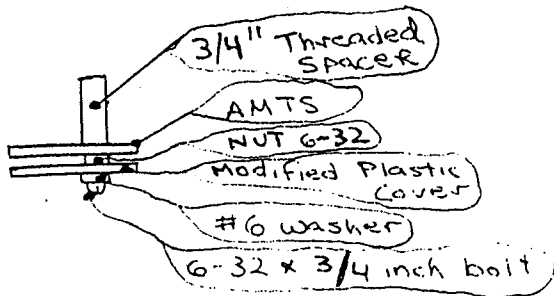
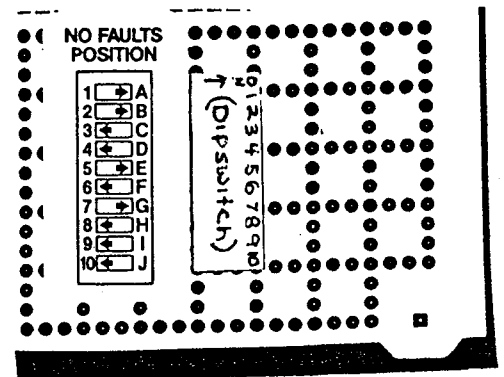
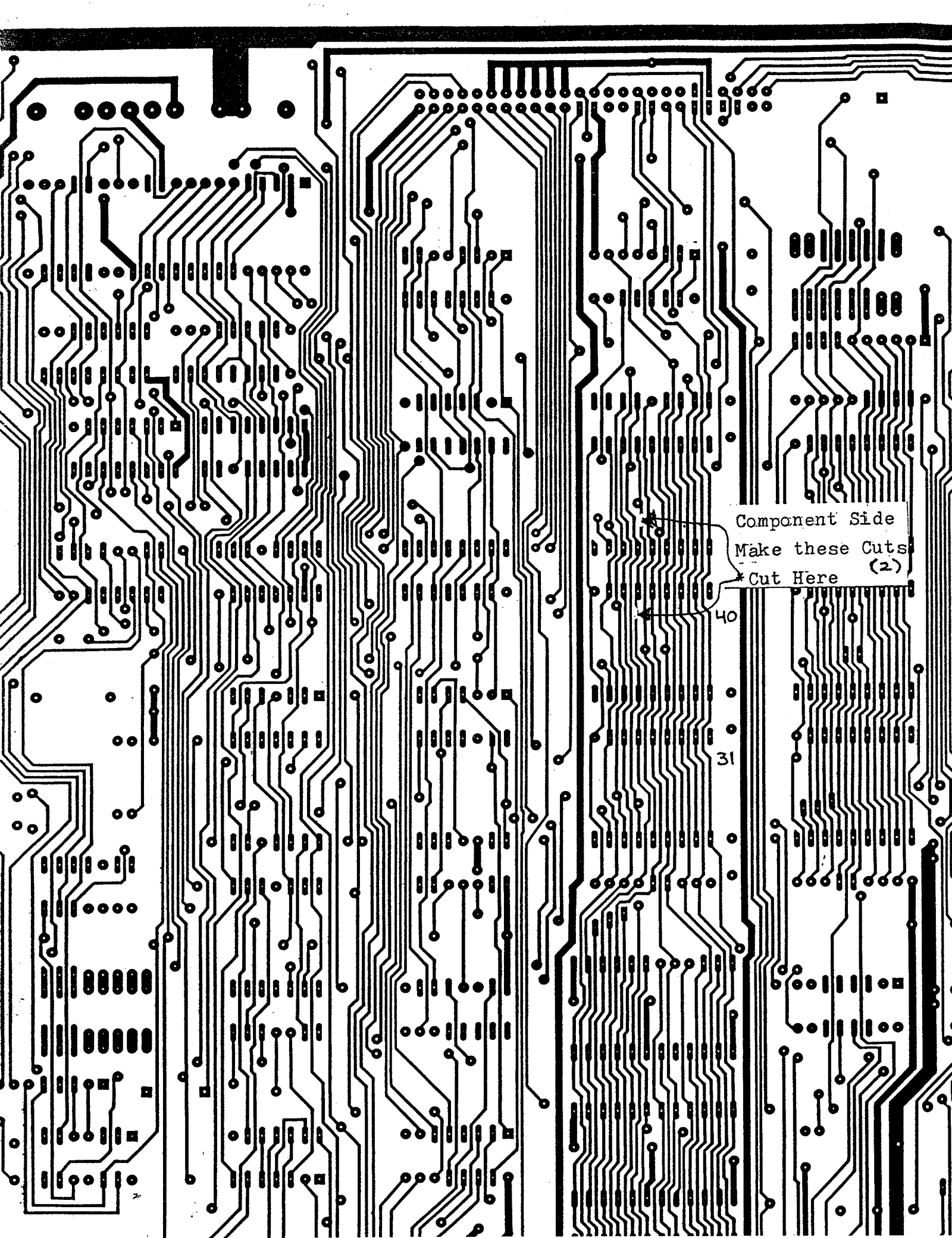


Fig. C
(TOP)

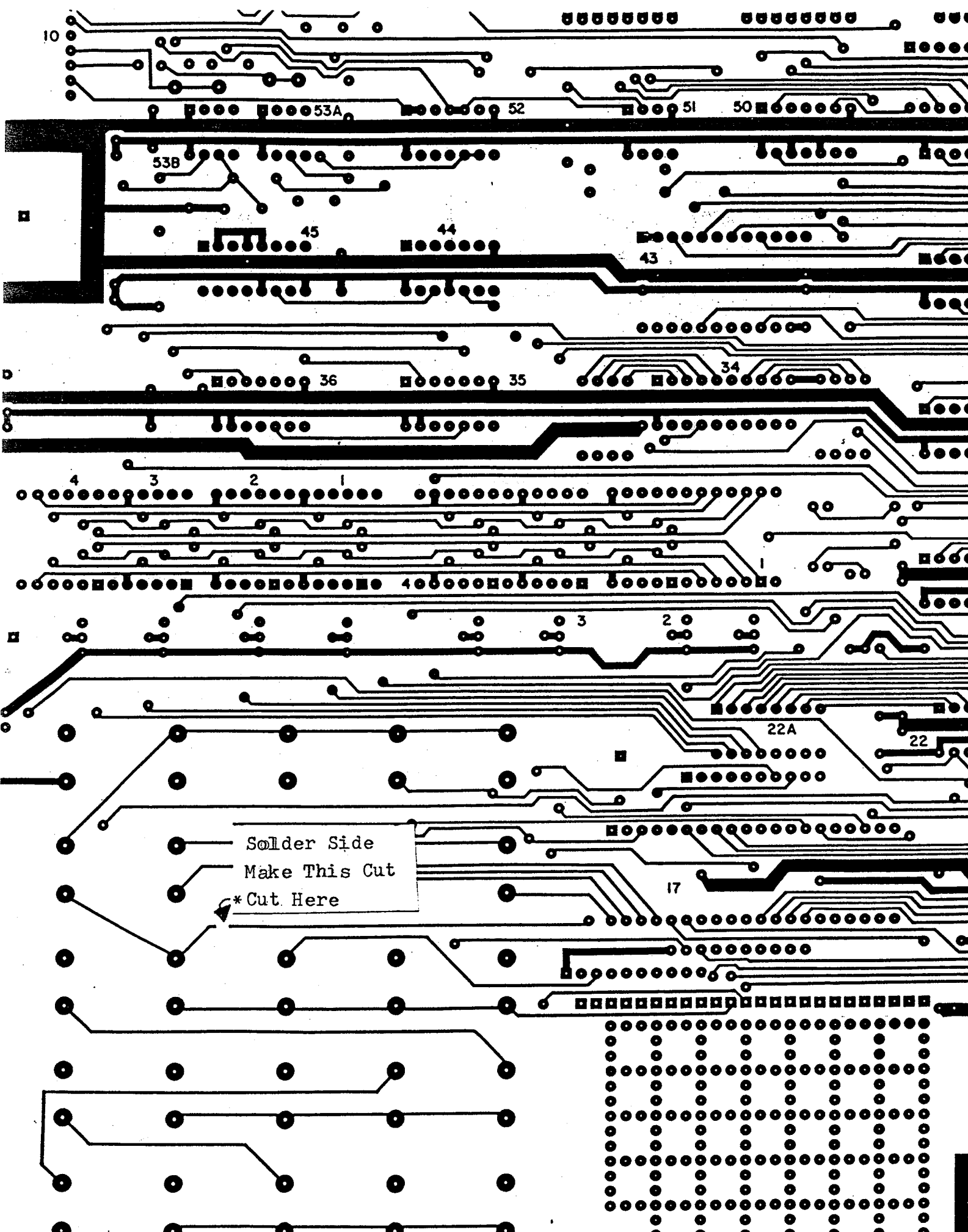




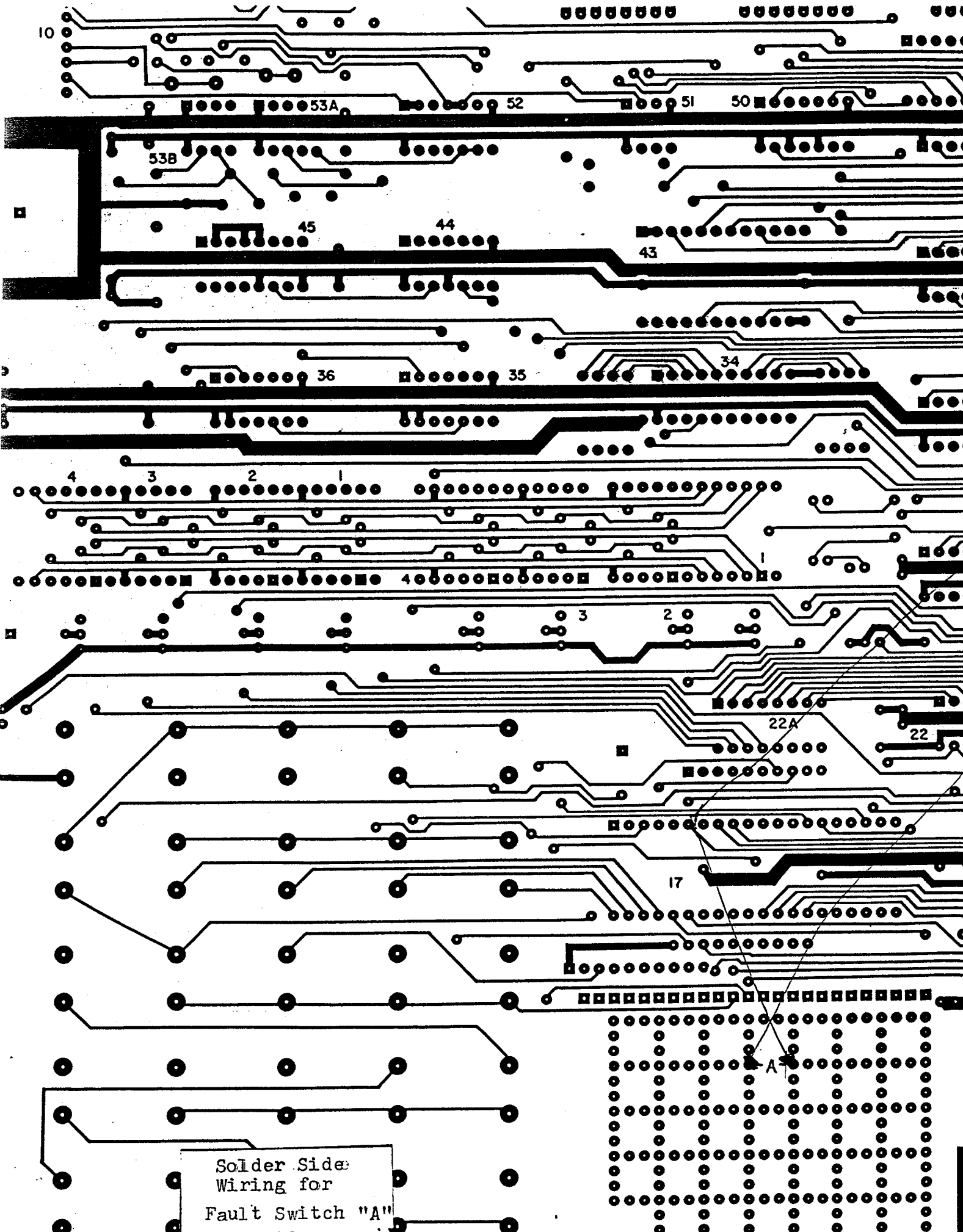
Component Side
Make these Cuts
(2)
Cut Here

40

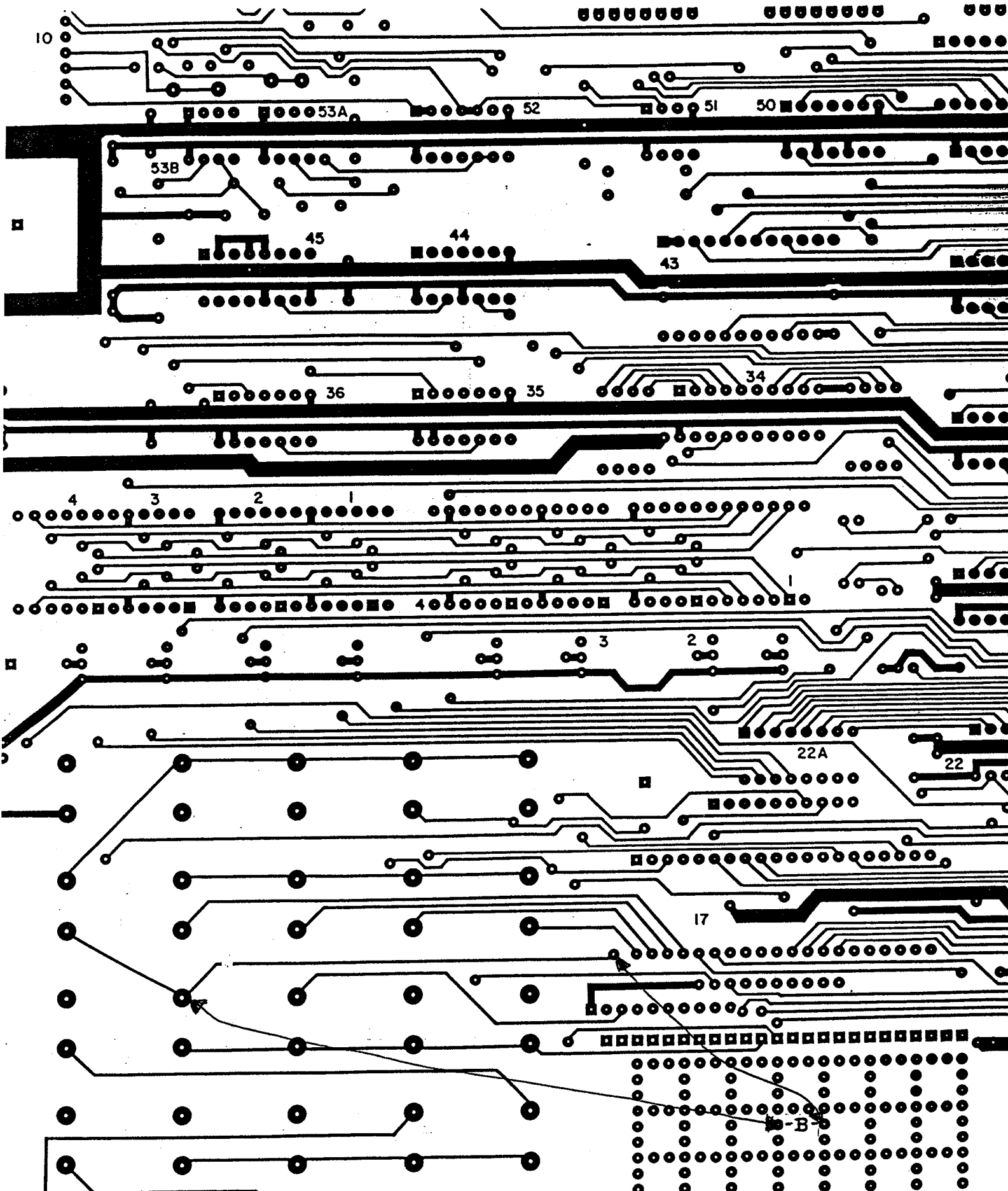
31



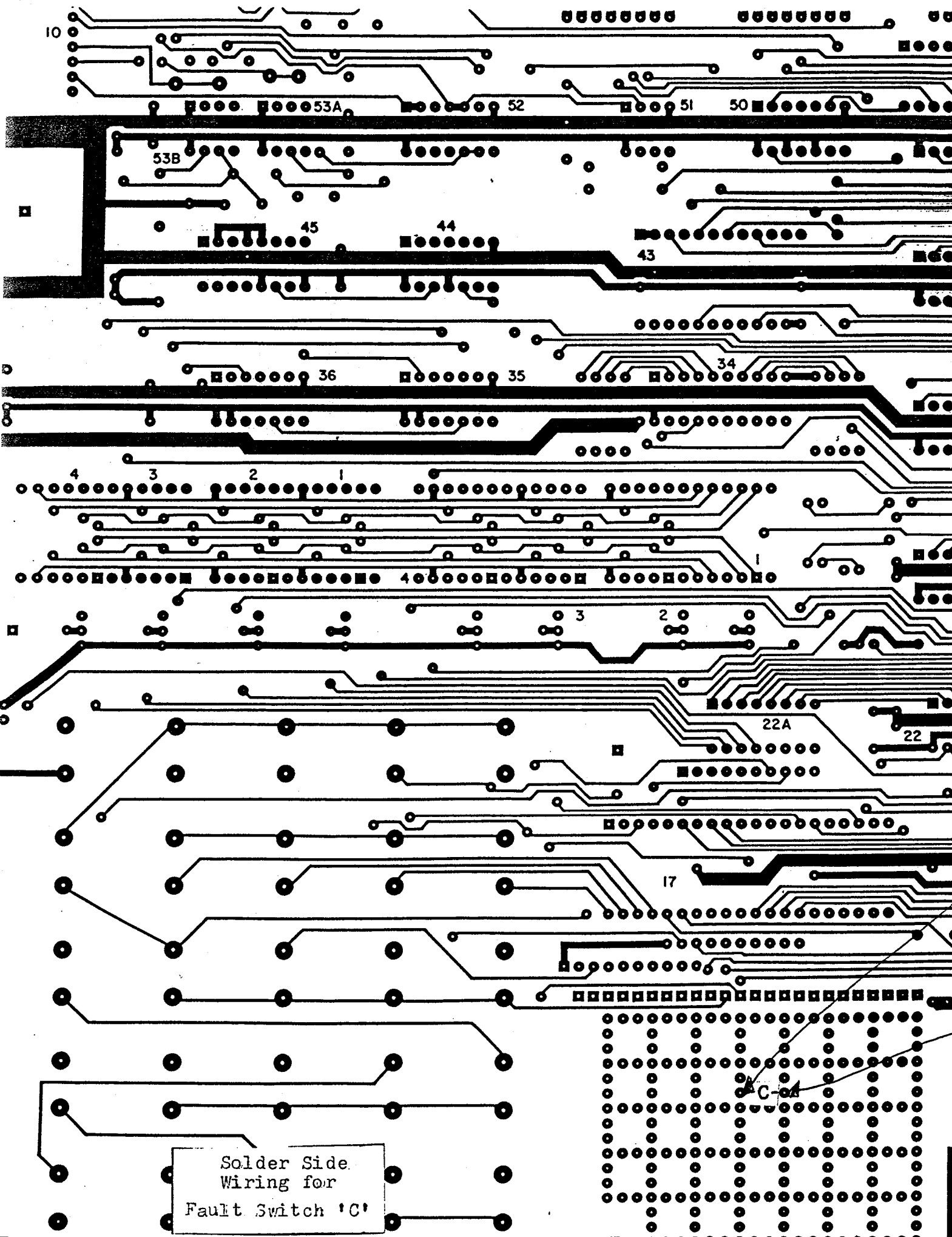
Solder Side
Make This Cut
*Cut. Here



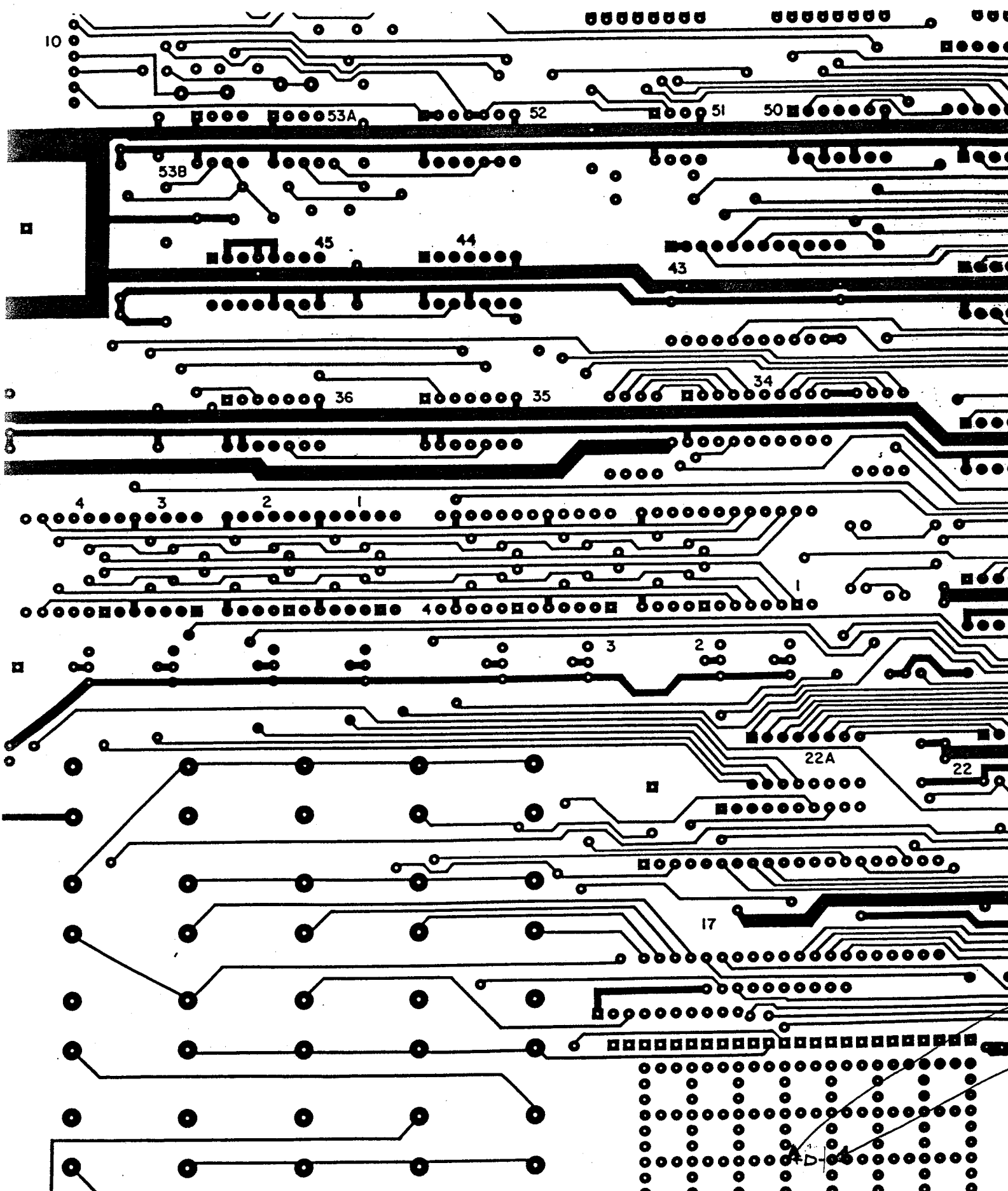
Solder Side
Wiring for
Fault Switch "A"



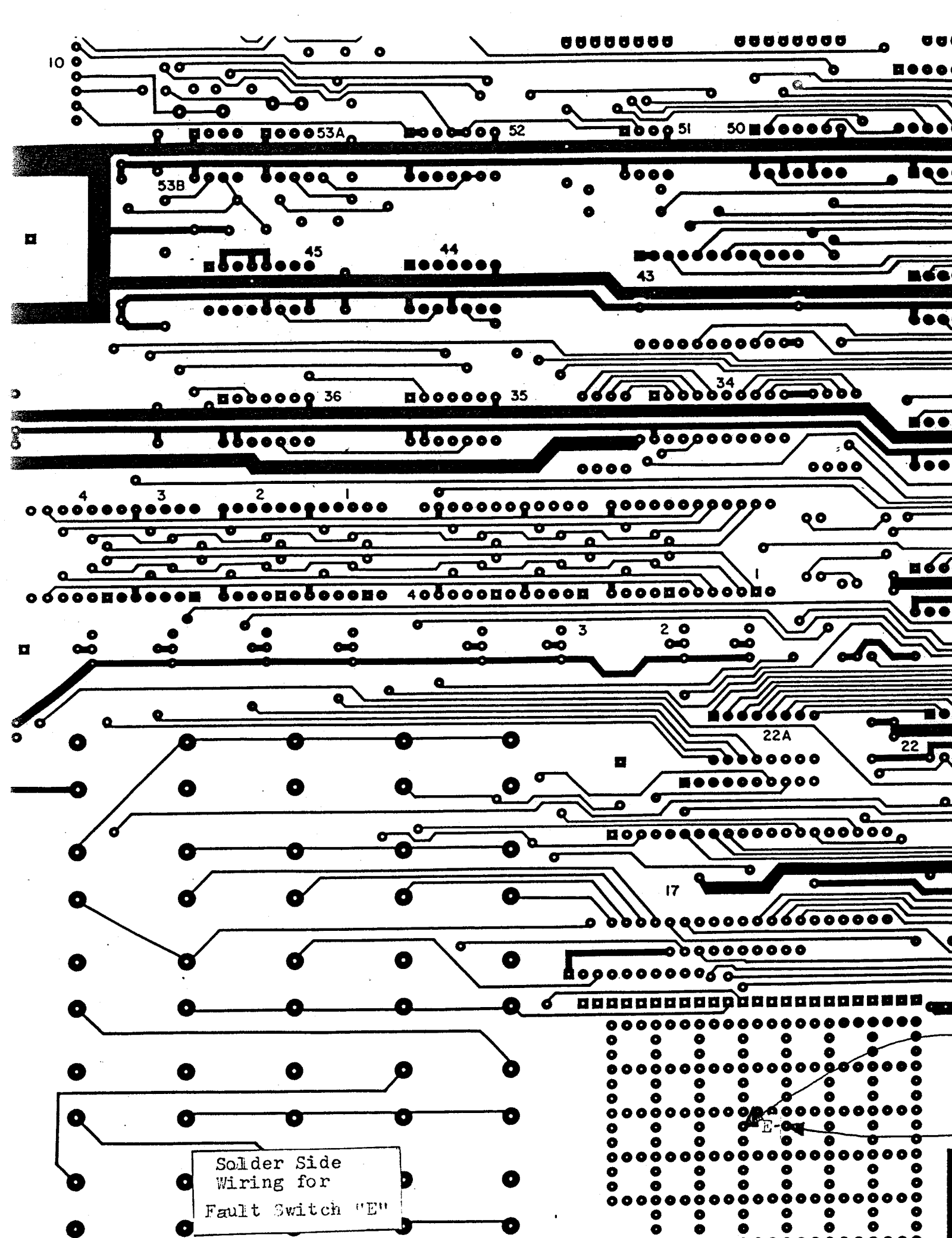
Solder Side
Wiring for
Fault Switch "B"



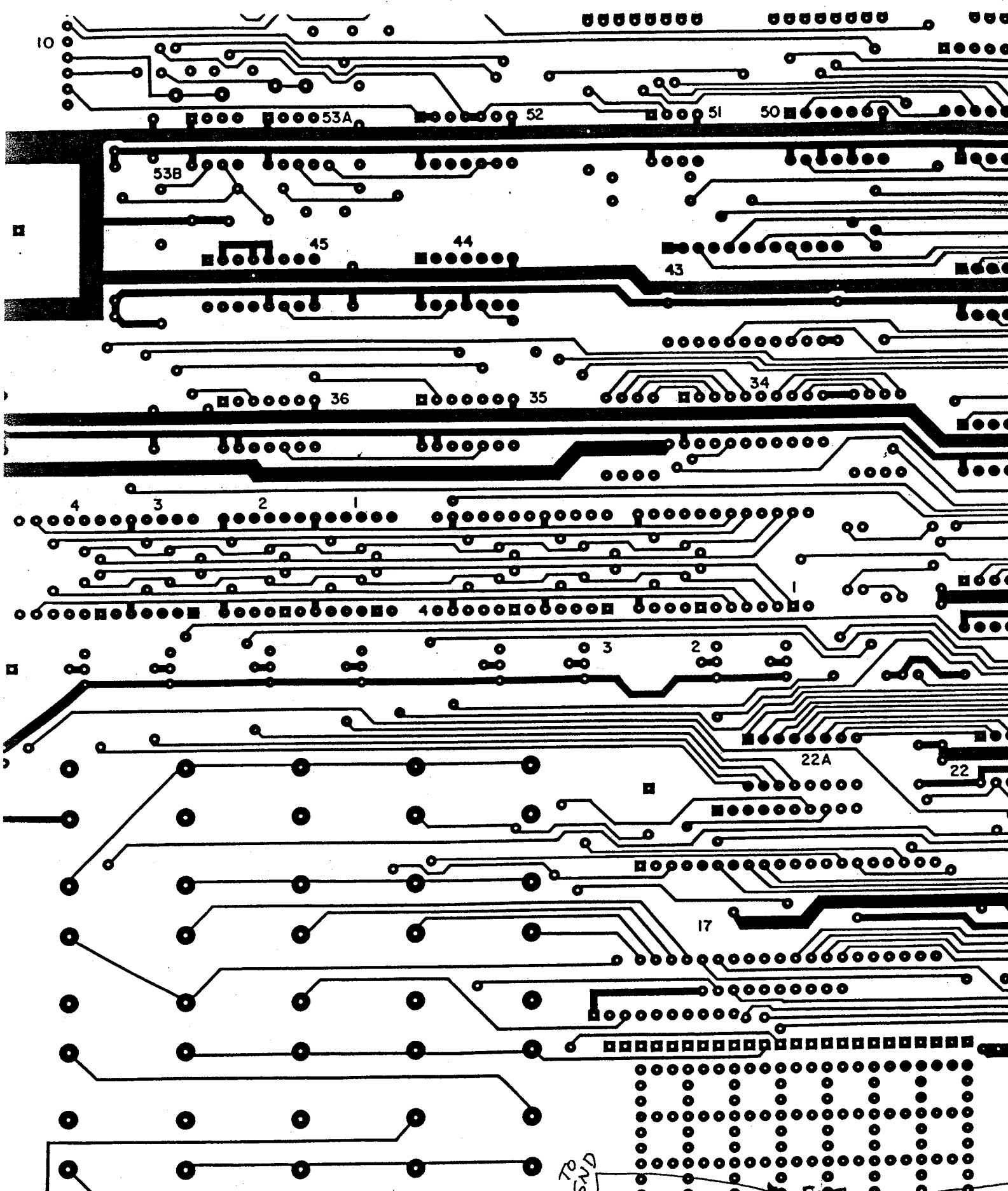
Solder Side
Wiring for
Fault Switch 'C'



Solder Side
Wiring for
Fault Switch "D"

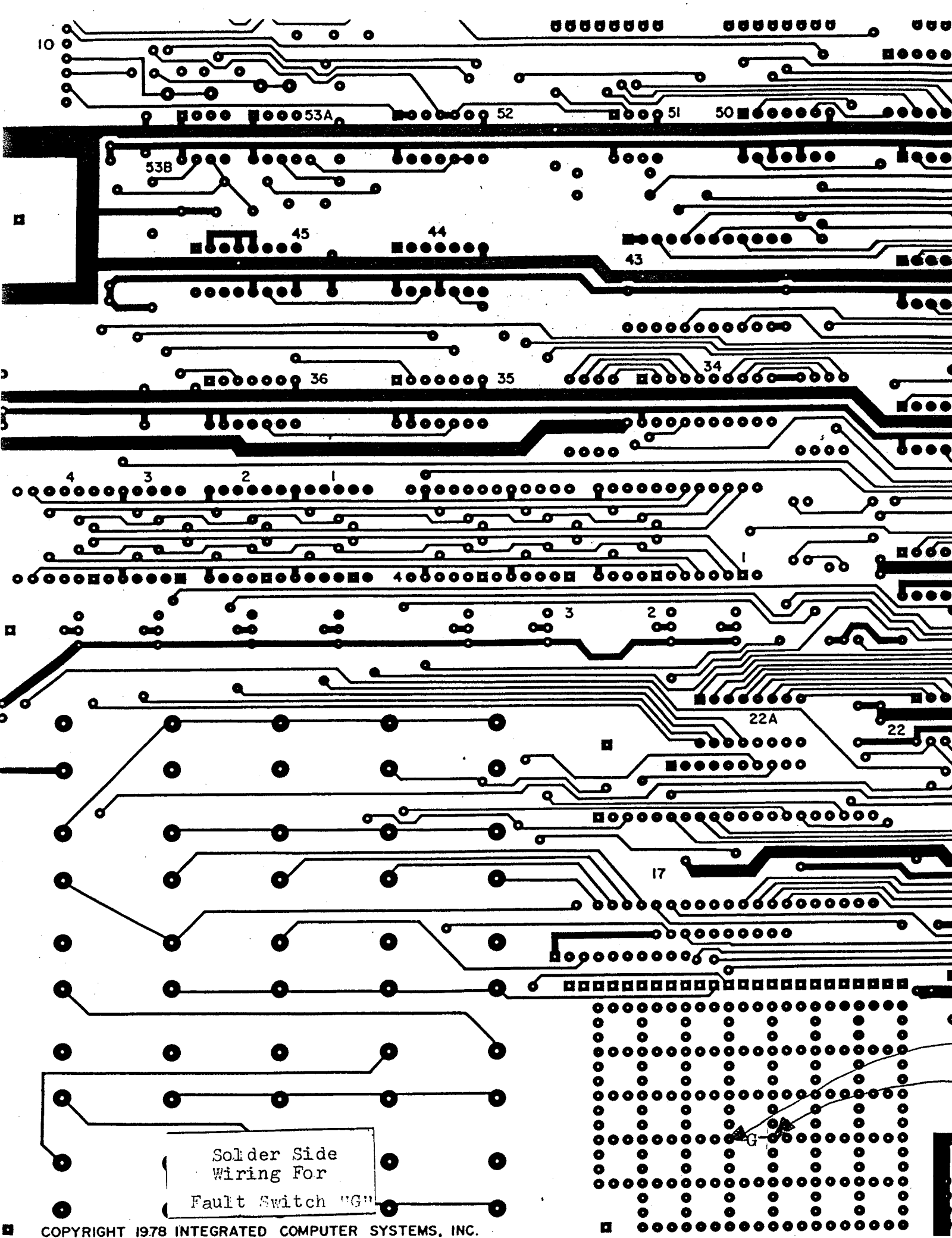


Solder Side
Wiring for
Fault Switch "E"

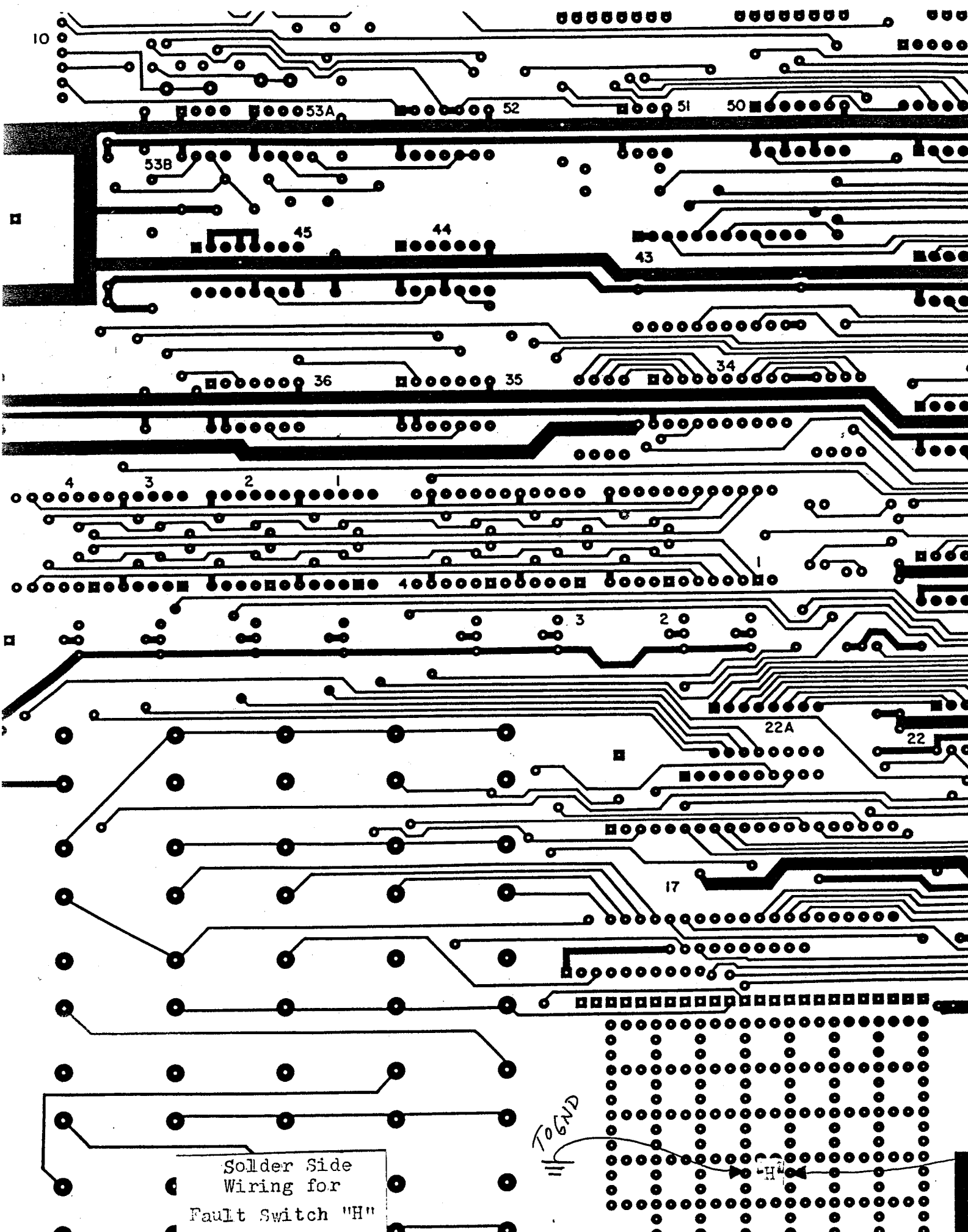


Solder Side
Wiring for
Fault Switch "F"

TO
GND



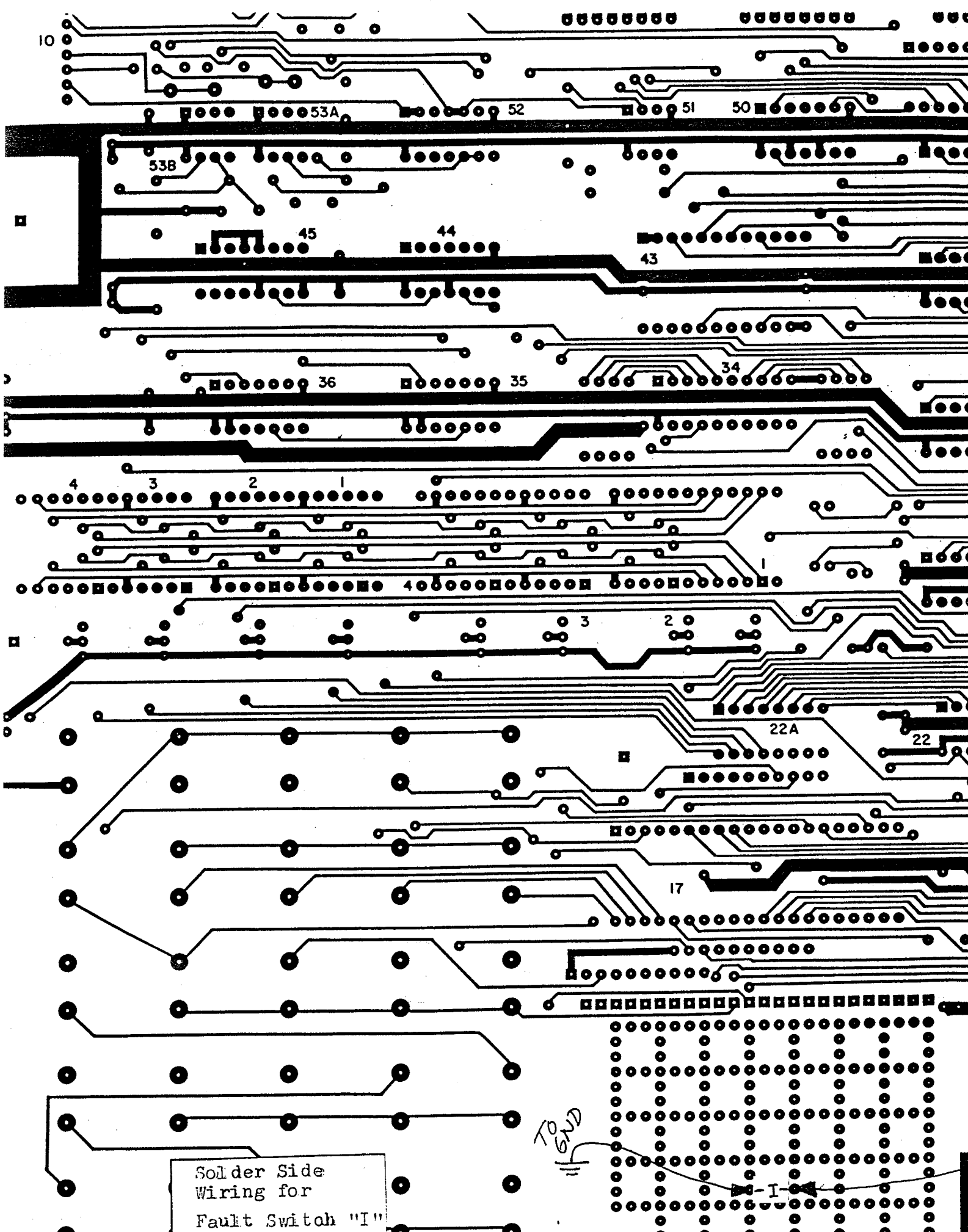
Solder Side
Wiring For
Fault Switch "G"



Solder Side
Wiring for
Fault Switch "H"

TO GND

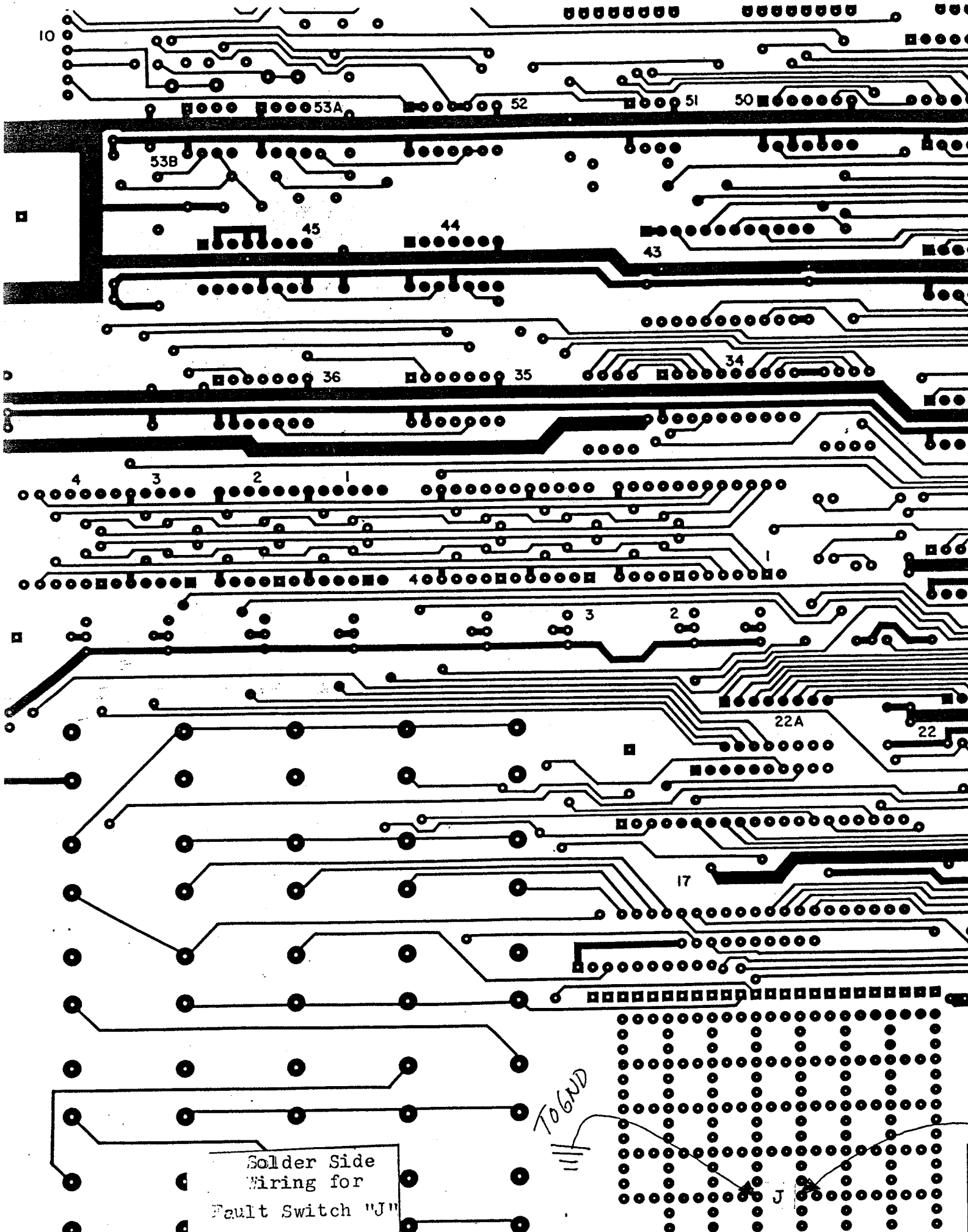
H



Solder Side
Wiring for
Fault Switch "I"

To GND

I



Solder Side
Wiring for
Fault Switch "J"

To GND

J