

MR. VIKING FIELD CONVERSION KIT

FROGGER, ZAXXON
and UP'N DOWN

Bally

MIDWAY MFG. CO.

10601 W. Belmont Avenue
Franklin Park, Illinois 60131
U.S.A.



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WARNING

THIS GAME MUST BE GROUNDED. FAILURE TO DO SO MAY RESULT IN DESTRUCTION TO ELECTRONIC COMPONENTS.

WARNING: This equipment generates, uses, and can radiate radio frequency energy and if not used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a CLASS A computing device pursuant to SUBPART J of PART 15 of FCC RULES, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

ELECTRICAL BULLETIN: FOR ALL APPARATUS COVERED BY THE CANADIAN STANDARDS ASSOCIATION (CSA) STANDARD C22.2 NO. 1, WHICH EMPLOYS A SUPPLY CORD TERMINATED WITH A POLARIZED 2-PRONG ATTACHMENT PLUG.

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

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Bally MIDWAYTM

Invites You To Use

**OUR TOLL FREE NUMBERS FOR
SERVICE INFORMATION CONCERNING THIS GAME, OR ANY
OTHER BALLY MIDWAY GAME YOU NOW HAVE ON LOCATION.**

**CALL US FOR PROMPT, COURTEOUS
ANSWERS TO YOUR PROBLEMS.**

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PINBALL → Continental U.S. 1-800-323-3555

Bally MIDWAYTM

10601 West Belmont Avenue, Franklin Park, Illinois, 60131

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MR. VIKING
FIELD CONVERSION KITS

GENERAL:

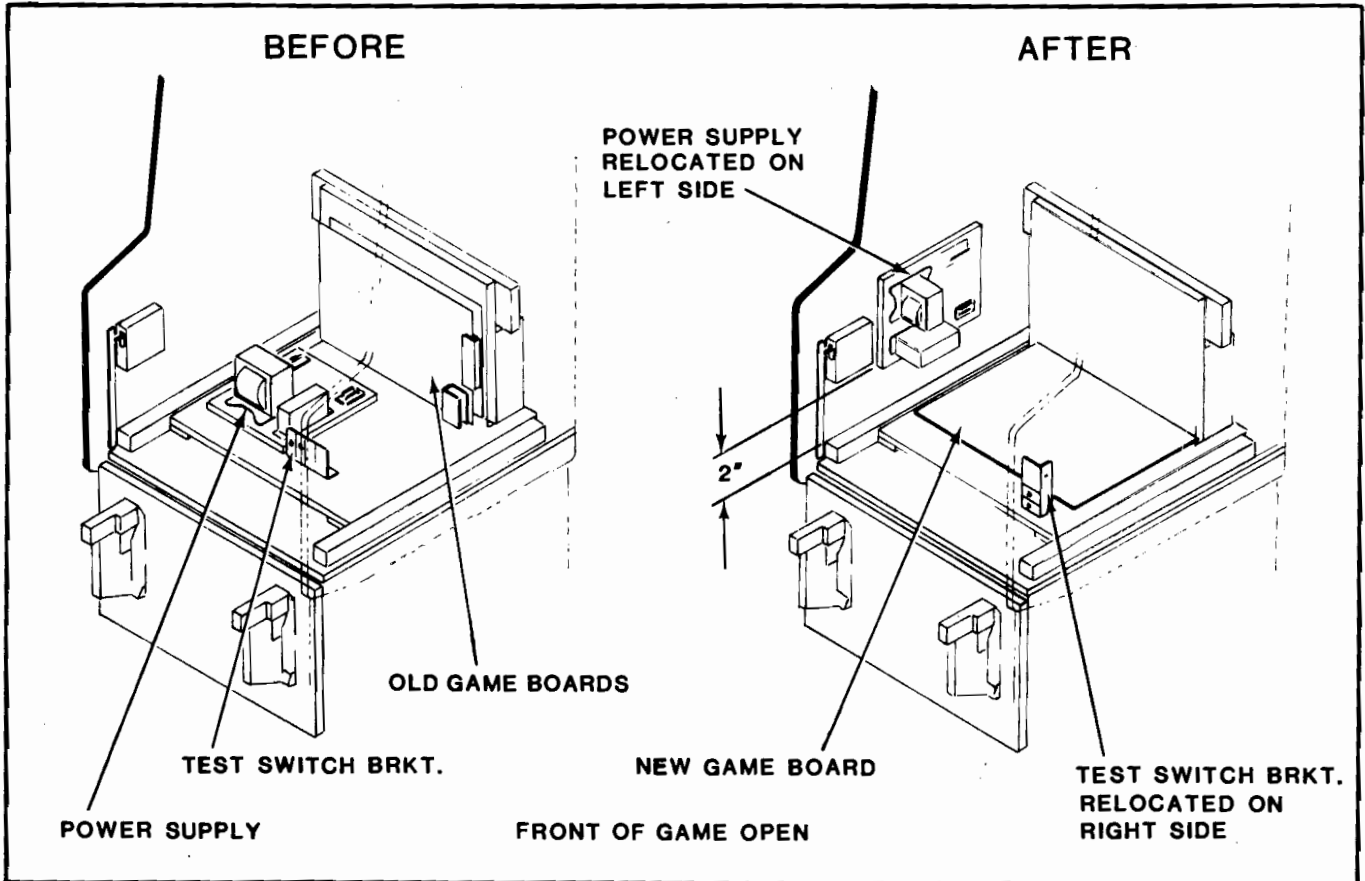
The basic purpose of this instruction sheet is to give you some simple guide lines for converting your ZAXXON, FROGGER and UP'N DOWN games to MR. VIKING games.

Turn your game OFF, unplug it from it's power source, and open all its access doors.

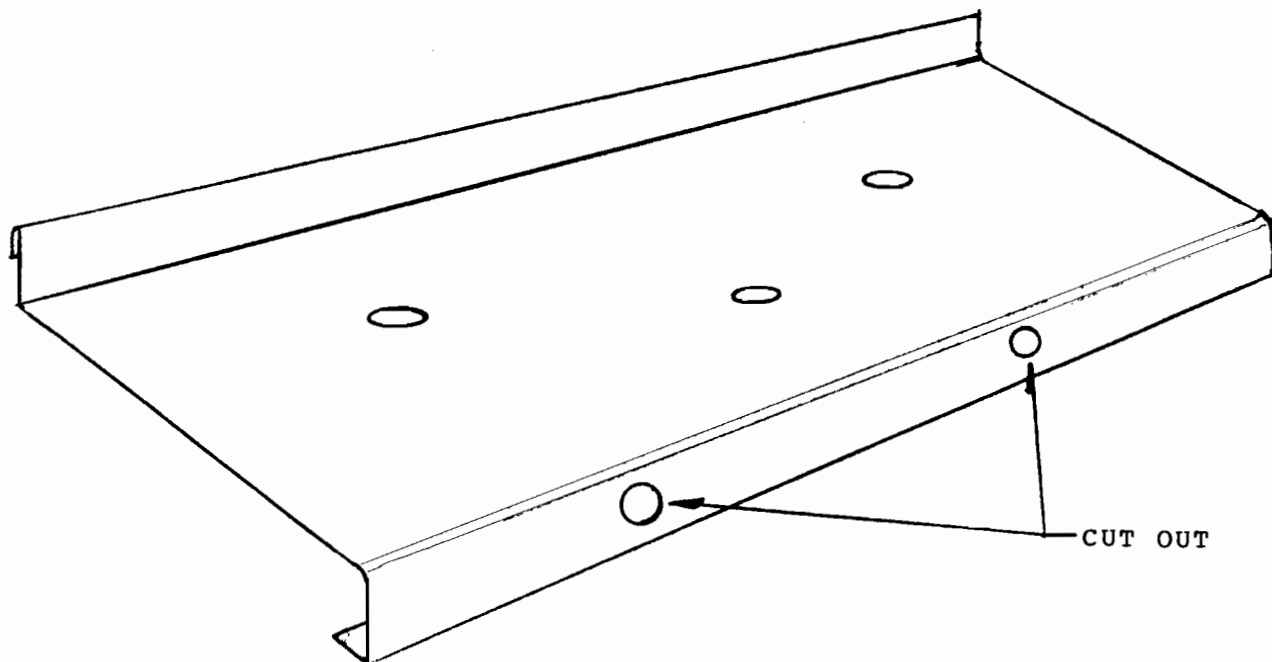
NOTE: Refer to the attached "**BEFORE**" and "**AFTER**" drawings to help you identify the various parts talked about in this Instruction Sheet.

Z A X X O N T O M R . V I K I N G C O N V E R S I O N

1. Disconnect and remove the ZAXXON game boards and set them aside.
2. Relocate the games Power Supply as shown, observing the critical measurements pointed out in the **AFTER** drawing.
3. Relocate the game's Self-Test Switch Assembly as shown in the **AFTER** drawing.
4. Install the **NEW** game board as shown in the **AFTER** drawing and connect it to it's cabling.
5. Remove the screws from the Header Retaining Bracket and replace the Header.
6. Remove your old Control Panel, modify it as shown in the following illustration.
7. **MODIFY YOUR GAMES WIRING AS FOLLOWS:**
 - A. Insert one end of the 39" long **BLACK** wire into pin 8 of the 44 position Edge Connector of the Logic P.C. Board. Insert the other end of this 39" long **BLACK** wire into an open pin of the cabinet cable harnes half of the Control Panel Universal Cable Connector.
 - B. Insert one end of the 23" long **BLACK** wire into the mating open pin of the Control Panel cable harness half of the Control Panel Universal Cable Connector.
 - C. Locate the 14" long **BLACK** wire. Now twist one end of this wire together with the free end of the above 23" long **BLACK** wire and solder them both to the **TOP TAB** of the Fire Button.
 - D. The other end of the 14" long **BLACK** wire is to be soldered to the **TOP TAB** of the Second Fire Button.
 - E. Take one of the two 4" long **YELLOW/BLACK** wires and solder one end of this wire to the **BOTTOM TAB** of the Fire Button. Now solder it's other end to the wire that is common to all switches.
 - F. Take the remaining 4" long **YELLOW/BLACK** wire and solder one end of this wire to the **BOTTOM TAB** of the Second Fire Button. Now solder it's other end to the wire that is common to all switches.
8. Install the Decals provided with your Conversion Kit **OVER** those currently on your game. See the Decal Installation Instruction Section of this booklet.
9. Install the Game Play Instruction Label on the Main-Display-Glass in a manner so as not to block the players view of the game.
10. Secure your games access doors, reconnect it to it's power source, turn it ON, and check to see if your picture appears upside down and reversed.



CONTROL PANEL OVERLAY
APPLICATION INSTRUCTIONS



1. REMOVE ALL CONTROLS
2. APPLY NEW OVERLAY AFTER REMOVING PROTECTIVE BACKING SHEET. ALIGN TOP 3 HOLES & WRAP OVERLAY AROUND ENDS PER SKETCH.
3. WITH SHARP KNIFE CUT OUT HOLES FOR PLAYER 1, PLAYER 2.
4. REASSEMBLE CONTROLS AS ORIGINALLY MOUNTED.

- A. If it is O.K., run a Self-Test and go on to Step 11 below.
 - B. If the picture is upside down and reversed, (LEFT is RIGHT and RIGHT is LEFT), go to the MONITOR MODIFICATIONS SECTION where it is explained how to correct this condition.
11. When through completing a positive Self-Test (everything checks good), your game is ready for use.

LIST OF MAJOR PARTS
INCLUDED IN YOUR CONVERSION KIT
ZAXXON TO MR. VIKING CONVERSION

<u>PART NO.</u>	<u>DESCRIPTION</u>
AB02-00002-0000	CONVERSION CABLE ASSY.
A084-91743-AA94	INTERFACE BOARD ASSY.
A084-91750-AA92	MR. VIKING LOGIC ASSY.
M051-00A93-A012	CONVERSION KIT INSTRUCTION MANUAL
M051-00A94-A009	GAME PLAY INSTRUCTION LABEL
M051-00121-A010	SERIAL NUMBER LABEL
M051-00122-0000	MANUAL REQUEST POST CARD
0A92-00300-0000	PARTS CATALOG - MR. VIKING
0A93-00900-00XF	HEADER
0B07-00901-0100	CONTROL SHELF OVERLAY
0B07-00903-0100	RIGHT SIDE DECAL
0B07-00903-0200	LEFT SIDE DECAL

W A R N I N G ! !

THIS FROGGER TO MR. VIKING

CONVERSION KIT CAN ONLY BE USED

IN FROGGER GAMES HAVING A

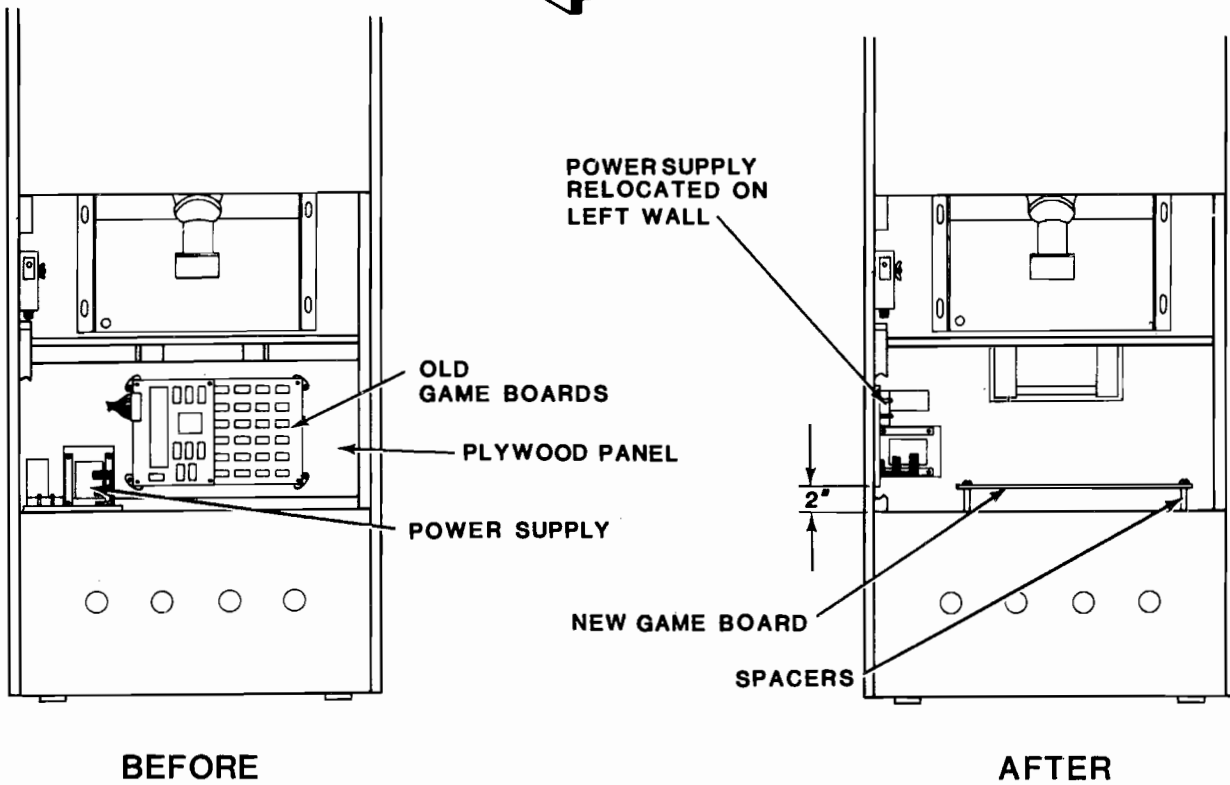
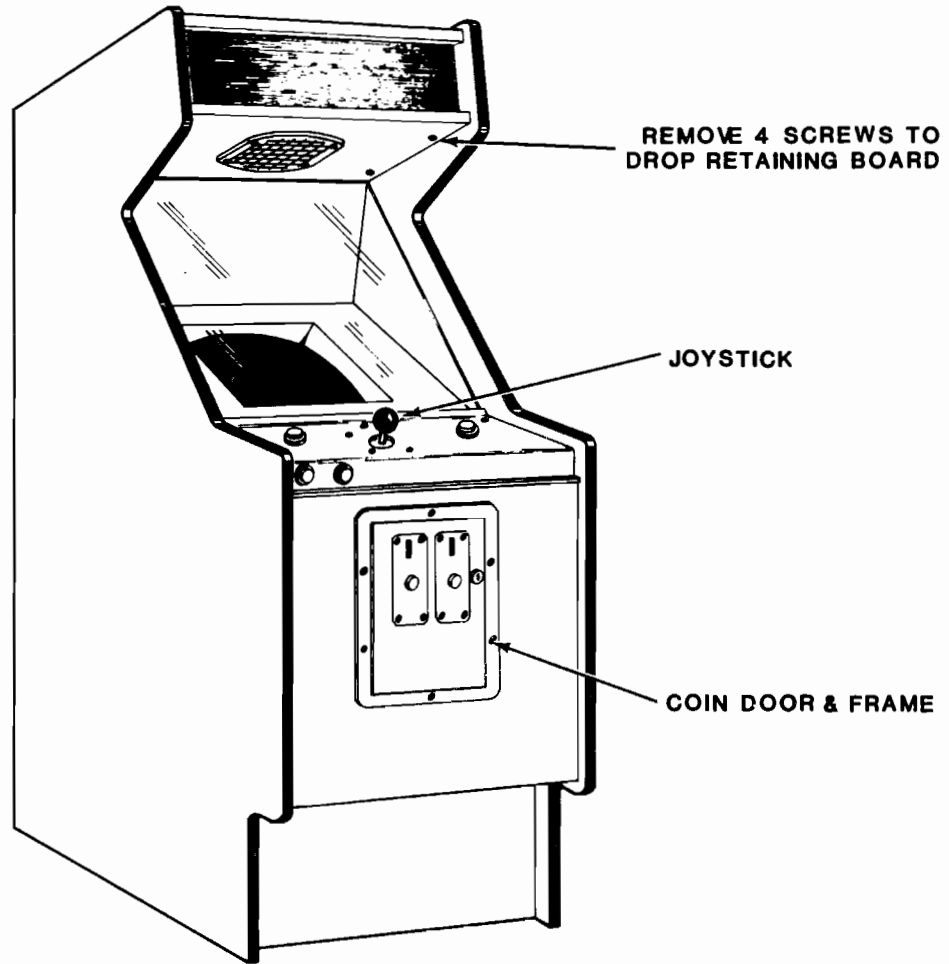
SEPARATE POWER SUPPLY

FROGGER TO MR. VIKING CONVERSION

1. Disconnect and remove the FROGGER game boards and set them aside.

NOTE: You may also want to remove the games Coin Door and Frame Assembly at this point to give you more room to work on the next several Steps.

2. Disconnect and remove the game's Control Panel (held in place by bolts with wing-nuts from underneath).
3. Remove the plywood panel the FROGGER game boards were mounted on.
4. Relocate the games Power Supply as shown, observing the critical measurements pointed out in the **AFTER** drawing.
5. Install the **NEW** game board as shown in the **AFTER** drawing and connect it to it's cabling.
6. Remove your games old Control Panel and set it aside.
7. **MODIFY YOUR GAMES WIRING AS FOLLOWS:**
 - A. Insert one end of a 39" long **BLACK** wire into pin 8 of the 44 position Edge Connector of the Logic P.C. Board. (The signal carried by this wire is **PLAYER 1 FIRE.**) Insert the other end of this 39" long **BLACK** wire into the open pin in the cabinet cable harness half of the Control Panel Universal Cable Connector which will match up with the wire coming from the **PLAYER 1 FIRE** Button.
 - B. Insert one end of the second 39" long **BLACK** wire into pin 9 of the 44 position Edge Connector of the Logic P.C. Board. (The signal carried by this wire is **PLAYER 1 BOMB.**) Insert the other end of this 39" long **BLACK** wire into the open pin in the cabinet cable harness half of the Control Panel Universal Cable Connector which will match up with the wire coming from the **PLAYER 1 BOMB** Button.
8. Install the Game Play Instruction Label over the current one on your game.
9. Remove the screws from the Speaker and Header Retaining Board as shown (it will drop down) and replace the Header.
10. Replace your games Control Panel Assembly with the **NEW** one provided in your Conversion Kit.
11. Reinstall the game's Coin Door and Frame Assembly if you removed it previously.
12. Install the Decals provided with your Conversion Kit **OVER** those currently on your game. See the Decal Installation Instruction Section of this booklet.
13. Secure your games access doors, reconnect it to it's power source, turn it **ON**, and check to see if your picture appears upside down and reversed.
 - A. If it is O.K., run a Self-Test and go on to Step 14 below.
 - B. If the picture is upside down and reversed, (**LEFT** is **RIGHT** and **RIGHT** is **LEFT**), go to the **MONITOR MODIFICATIONS SECTION** where it is explained how to correct this condition.
14. When through completing a positive Self-Test (everything checks good), your game is ready for use.



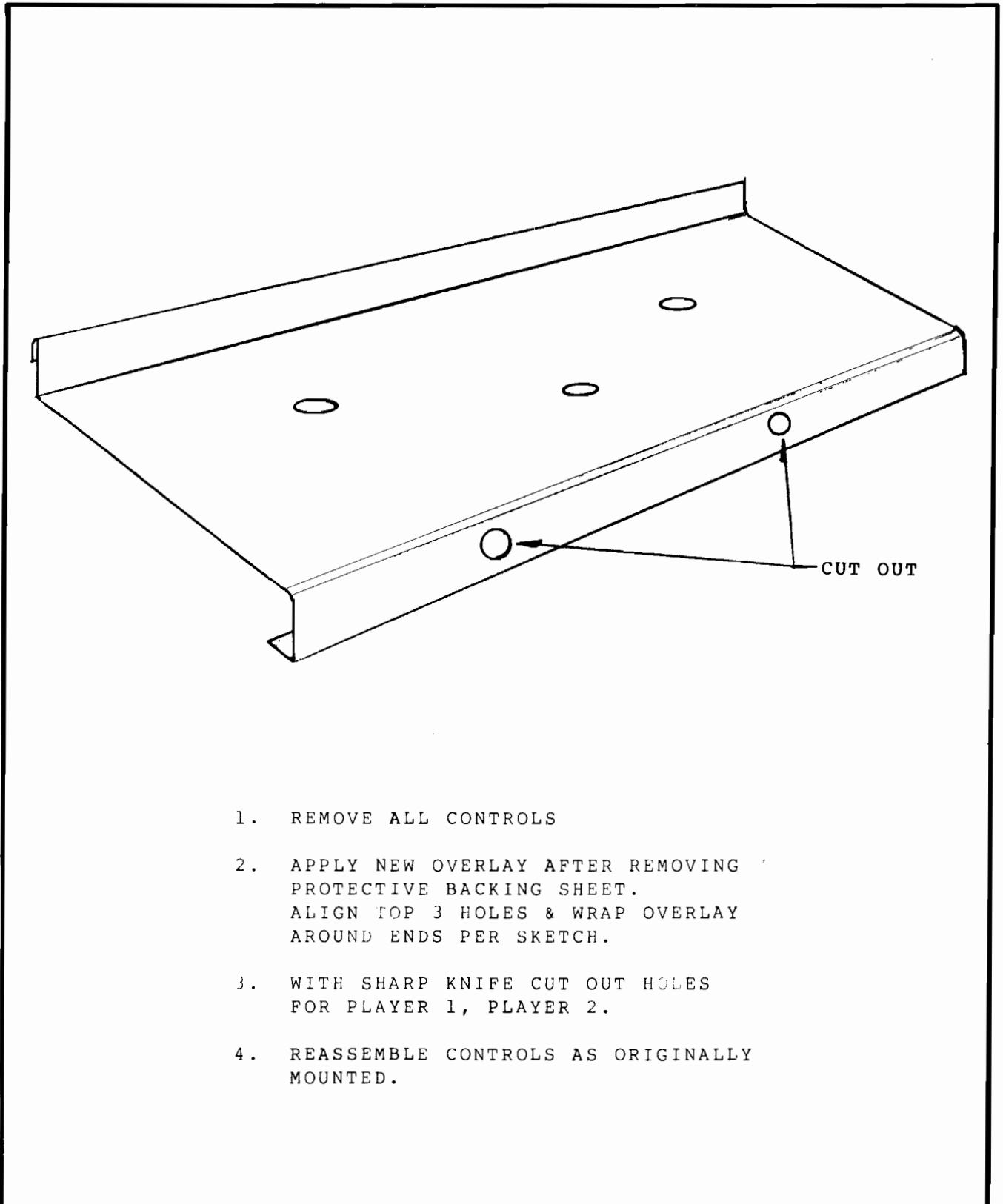
LIST OF MAJOR PARTS
INCLUDED IN YOUR CONVERSION KIT
FROGGER TO MR. VIKING CONVERSION

<u>PART NO.</u>	<u>DESCRIPTION</u>
AB02-00002-0000	CONVERSION CABLE ASSY.
A084-91742-AA93	INTERFACE BOARD ASSY.
A084-91750-AA92	MR. VIKING LOGIC ASSY.
AA93-00005-0000	CONTROL SHELF ASSEMBLY
M051-00A93-A009	GAME PLAY INSTRUCTION LABEL
M051-00A93-A012	CONVERSION KIT INSTRUCTION MANUAL
M051-00121-A010	SERIAL NUMBER LABEL
M051-00122-0000	MANUAL REQUEST POST CARD
0A92-00300-0000	PARTS CATALOG - MR. VIKING
0A93-00900-00XF	HEADER
0B07-00904-0100	RIGHT SIDE DECAL
0B07-00904-0200	LEFT SIDE DECAL

UP'N DOWN TO MR. VIKING CONVERSION
FROM
ZAXXON CONVERTED TO UP'N DOWN

1. Disconnect and remove the UP'N DOWN game board.
2. Replace the EPROMS indicated in the following illustration with those provided in your Conversion Kit.
3. Install the NEWLY modified game board as shown in the AFTER drawing and connect it to it's cabling.
4. Remove the screws from the Header Retaining Bracket and replace the Header.
5. Remove and disassemble your Control Panel so that you can install the new Control Panel Overlay. (See the following illustration.)
6. Reassemble your Control Panel and modify it's wiring as follows so that the Joystick Trigger acts as a FIRE Button causing Mr. Viking to shoot arrows and the Push Buttons will cause him to throw Bombs, Missiles, etc.
7. CHECK TO SEE THAT YOUR GAMES WIRING CONFORMS TO THE FOLLOWING (MODIFY IT WHERE NEEDED):
 - A. Insert one end of the 39" long BLACK wire into pin 8 of the 44 position Edge Connector of the Logic P.C. Board. Insert the other end of this 39" long BLACK wire into an open pin of the cabinet cable harnes half of the Control Panel Universal Cable Connector.
 - B. Insert one end of the 23" long BLACK wire into the mating open pin of the Control Panel cable harness half of the Control Panel Universal Cable Connector.
 - C. Locate the 14" long BLACK wire. Now twist one end of this wire together with the free end of the above 23" long BLACK wire and solder them both to the TOP TAB of the Fire Button.
 - D. The other end of the 14" long BLACK wire is to be soldered to the TOP TAB of the Second Fire Button.
 - E. Take one of the two 4" long YELLOW/BLACK wires and solder one end of this wire to the BOTTOM TAB of the Fire Button. Now solder it's other end to the wire that is common to all switches.
 - F. Take the remaining 4" long YELLOW/BLACK wire and solder one end of this wire to the BOTTOM TAB of the Second Fire Button. Now solder it's other end to the wire that is common to all switches.
8. Install the Decals provided with your Conversion Kit OVER those currently on your game. See the Decal Installation Instruction Section of this booklet.
9. Install the Game Play Instruction Label on the Main-Display-Glass in a manner so as not to block the players view of the game.

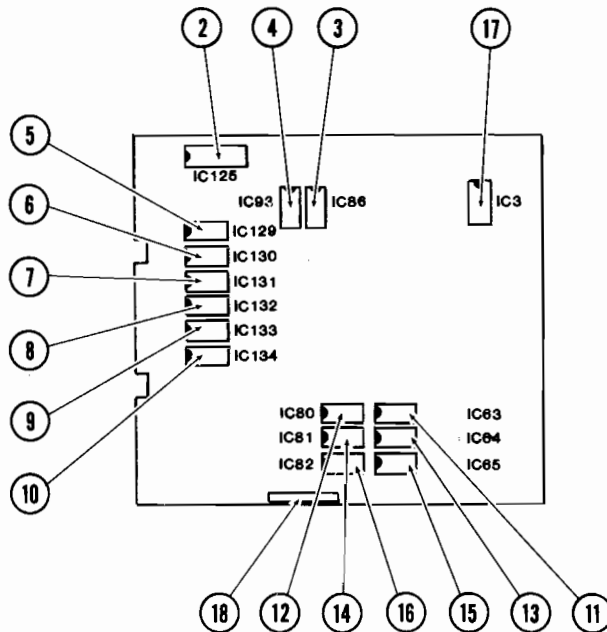
CONTROL PANEL OVERLAY
APPLICATION INSTRUCTIONS

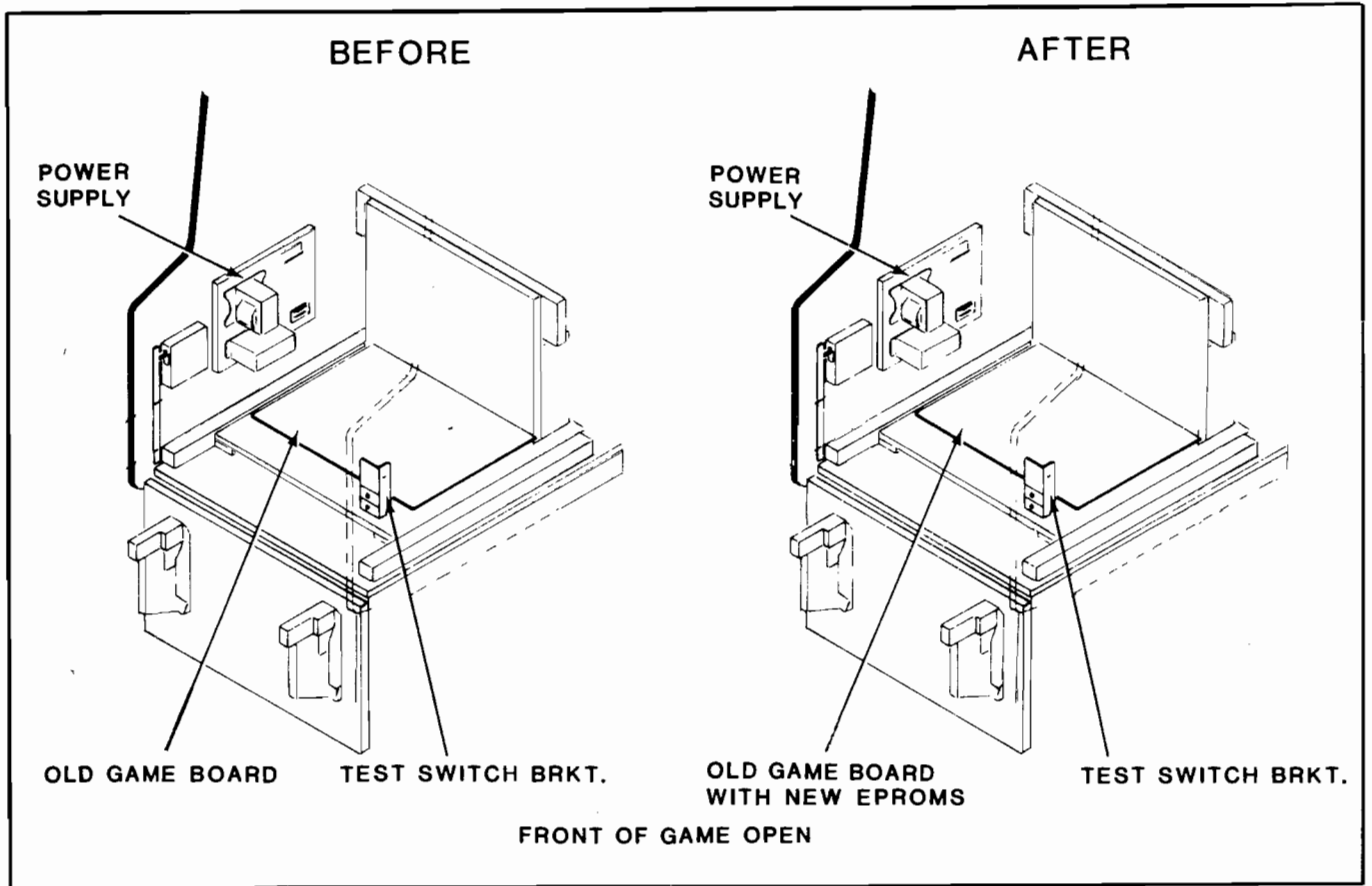


1. REMOVE ALL CONTROLS
2. APPLY NEW OVERLAY AFTER REMOVING PROTECTIVE BACKING SHEET. ALIGN TOP 3 HOLES & WRAP OVERLAY AROUND ENDS PER SKETCH.
3. WITH SHARP KNIFE CUT OUT HOLES FOR PLAYER 1, PLAYER 2.
4. REASSEMBLE CONTROLS AS ORIGINALLY MOUNTED.

M R. V I K I N G P A R T S L O C A T I O N S

<u>DRAWING NUMBER</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>	<u>I.C. NUMBER</u>
2	315-5041	CUSTOM IC	I.C. 125
3	316-5749	EPROM	I.C. 86
4	316-5750	EPROM	I.C. 93
5	316-5873	EPROM	I.C. 129
6	316-5874	EPROM	I.C. 130
7	316-5875	EPROM	I.C. 131
8	316-5876	EPROM	I.C. 132
9	316-5755	EPROM	I.C. 133
10	316-5756	EPROM	I.C. 134
11	316-5757	EPROM	I.C. 63
12	316-5758	EPROM	I.C. 80
13	316-5759	EPROM	I.C. 64
14	316-5760	EPROM	I.C. 81
15	316-5761	EPROM	I.C. 65
16	316-5762	EPROM	I.C. 82
17	316-5763	EPROM	I.C. 3





10. Install and secure your games modified Control Panel.
11. Secure your games access doors, reconnect it to it's power source, turn it ON, and check to see if your picture appears upside down and reversed.
 - A. If it is O.K., run a Self-Test and go on to Step 12 below.
 - B. If the picture is upside down and reversed, (LEFT is RIGHT and RIGHT is LEFT), go to the MONITOR MODIFICATIONS SECTION where it is explained how to correct this condition.
12. When through completing a positive Self-Test (everything checks good), your game is ready for use.

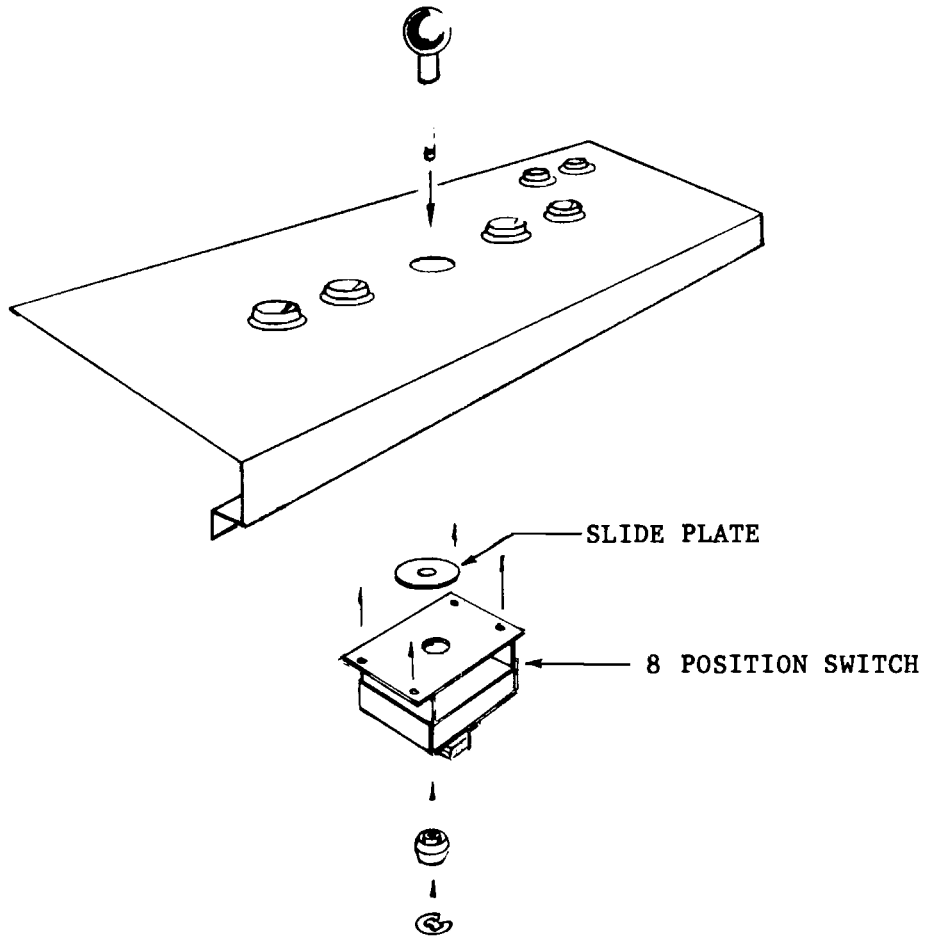
LIST OF MAJOR PARTS
INCLUDED IN YOUR CONVERSION KIT
UP'N DOWN TO MR. VIKING CONVERSION
FROM
ZAXXON CONVERTED TO UP'N DOWN

<u>PART NO.</u>	<u>DESCRIPTION</u>
AB02-00002-0000	CONVERSION CABLE ASSY.
A084-91743-AA94	INTERFACE BOARD ASSY.
M051-00A92-A012	LOGIC BOARD LABEL
M051-00A93-A012	CONVERSION KIT INSTRUCTION MANUAL
M051-00A94-A009	GAME PLAY INSTRUCTION LABEL
M051-00121-A010	SERIAL NUMBER LABEL
M051-00122-0000	MANUAL REQUEST POST CARD
0A92-00300-0000	PARTS CATALOG - MR. VIKING
0A93-00900-00XF	HEADER
0B07-00903-0100	RIGHT SIDE DECAL
0B07-00903-0200	LEFT SIDE DECAL
0B07-00901-0100	CONTROL SHELF OVERLAY
Q315-05041-0000	CUSTOM I.C.
0A92-00803-0001	EPROM
0A92-00803-0002	EPROM
0A92-00803-0003	EPROM
0A92-00803-0004	EPROM
0A92-00803-0005	EPROM
0A92-00803-0006	EPROM
0A92-00803-0007	EPROM
0A92-00803-0008	EPROM
0A92-00803-0009	EPROM
0A92-00803-0010	EPROM
0A92-00803-0011	EPROM
0A92-00803-0012	EPROM
0A92-00803-0013	EPROM
0A92-00803-0014	EPROM
0A92-00803-0015	EPROM

UP'N DOWN TO MR. VIKING CONVERSION
FROM
FROGGER CONVERTED TO UP'N DOWN

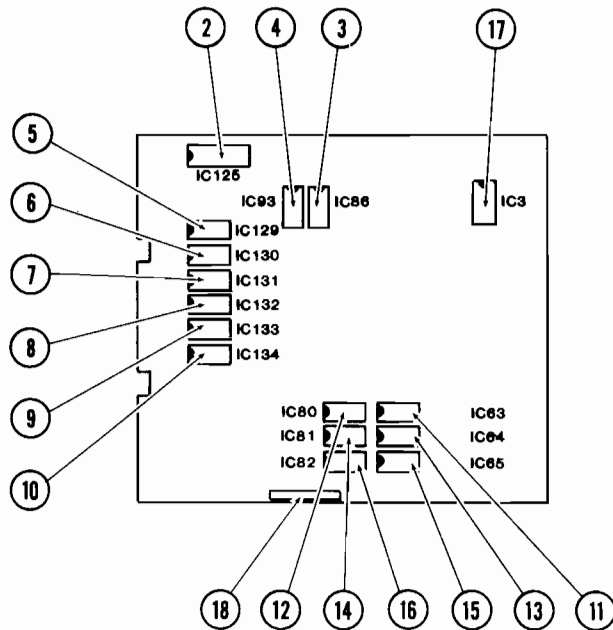
1. Disconnect and remove the UP'N DOWN game board.
2. Replace the EPROMS indicated in the following illustration with those provided in your Conversion Kit.
3. Install the NEWLY modified game board as shown in the AFTER drawing and connect it to it's cabling.
4. Remove the screws from the Speaker and Header Retaining Board as shown (it will drop down) and replace the Header.
5. Remove your old Control Panel.
6. Remove the Joystick from your old Control Panel and install it in the Control Panel provided with your Conversion Kit. (See the following illustration.) It is wired in an identical manner to it's previous wiring.
7. CHECK TO SEE THAT YOUR GAMES WIRING CONFORMS TO THE FOLLOWING (MODIFY IT WHERE NEEDED):
 - A. Insert one end of the 39" long BLACK wire into pin 9 of the 44 position Edge Connector of the Logic P.C. Board. Insert the other end of this 39" long BLACK wire into an open pin of the cabinet cable harnes half of the Control Panel Universal Cable Connector.
 - B. Insert one end of the 23" long BLACK wire into the mating open pin of the Control Panel cable harness half of the Control Panel Universal Cable Connector.
 - C. Locate the 14" long BLACK wire. Now twist one end of this wire together with the free end of the above 23" long BLACK wire and solder them both to the TOP TAB of the Bomb Button.
 - D. The other end of the 14" long BLACK wire is to be soldered to the TOP TAB of the Second Bomb Button.
 - E. Take one of the two 4" long YELLOW/BLACK wires and solder one end of this wire to the BOTTOM TAB of the Bomb Button. Now solder it's other end to the wire that is common to all switches.
 - F. Take the remaining 4" long YELLOW/BLACK wire and solder one end of this wire to the BOTTOM TAB of the Second Bomb Button. Now solder it's other end to the wire that is common to all switches.
 - G. After performing the above, you still have 4 wires left in your Conversion Kit. Two of which are BLACK and 14" long and two of which are YELLOW/BLACK and 4" long. These may be used to jumper the Fire Buttons on your Control Panel together and to connect them to the Center Fire Button on your joystick.
8. Install the Decals provided with your Conversion Kit **OVER** those currently on your game. See the Decal Installation Instruction Section of ~~this~~ booklet.
9. Install the Game Play Instruction label over the current one on your game.

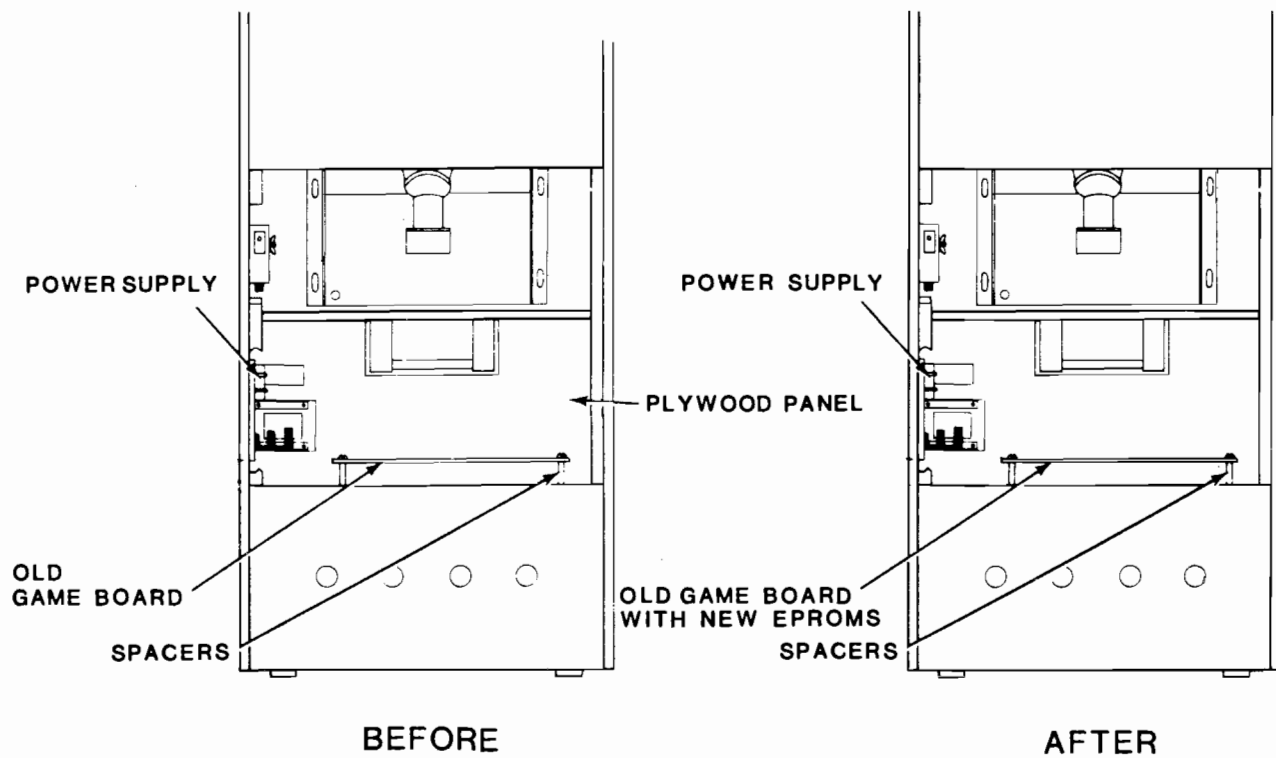
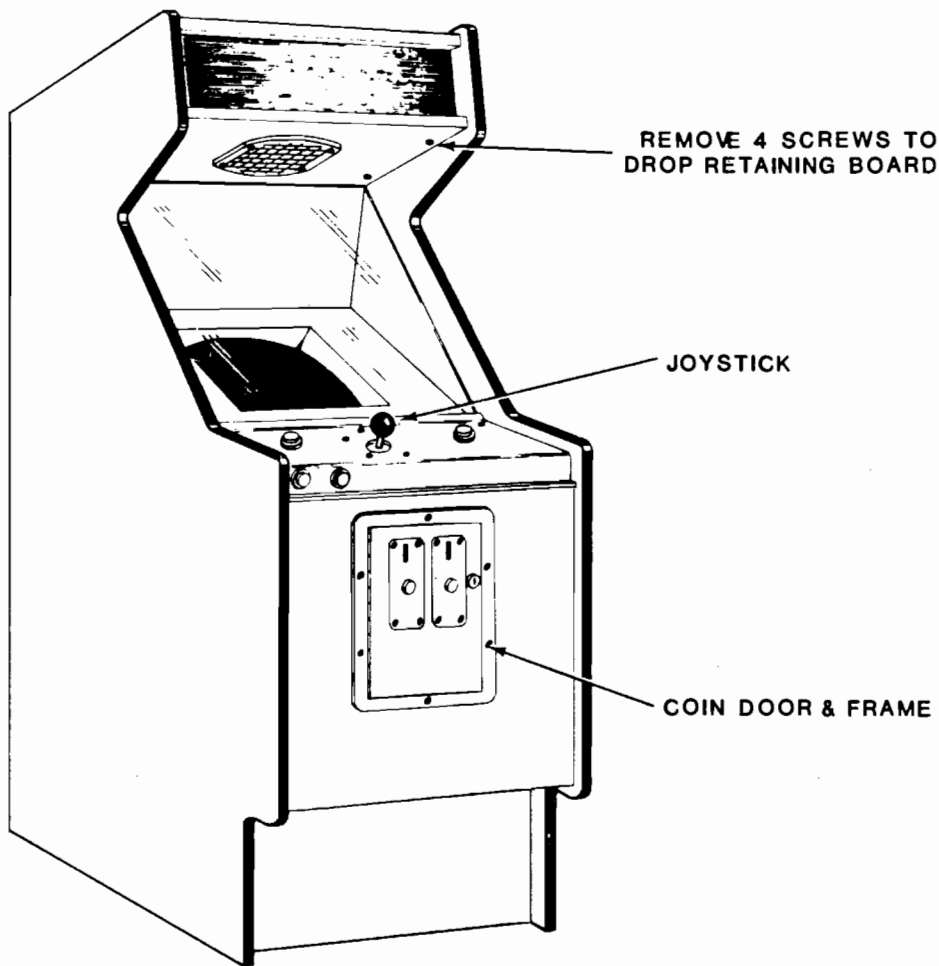
CONTROL SHELF CONVERSION



MR. VIKING PARTS LOCATIONS

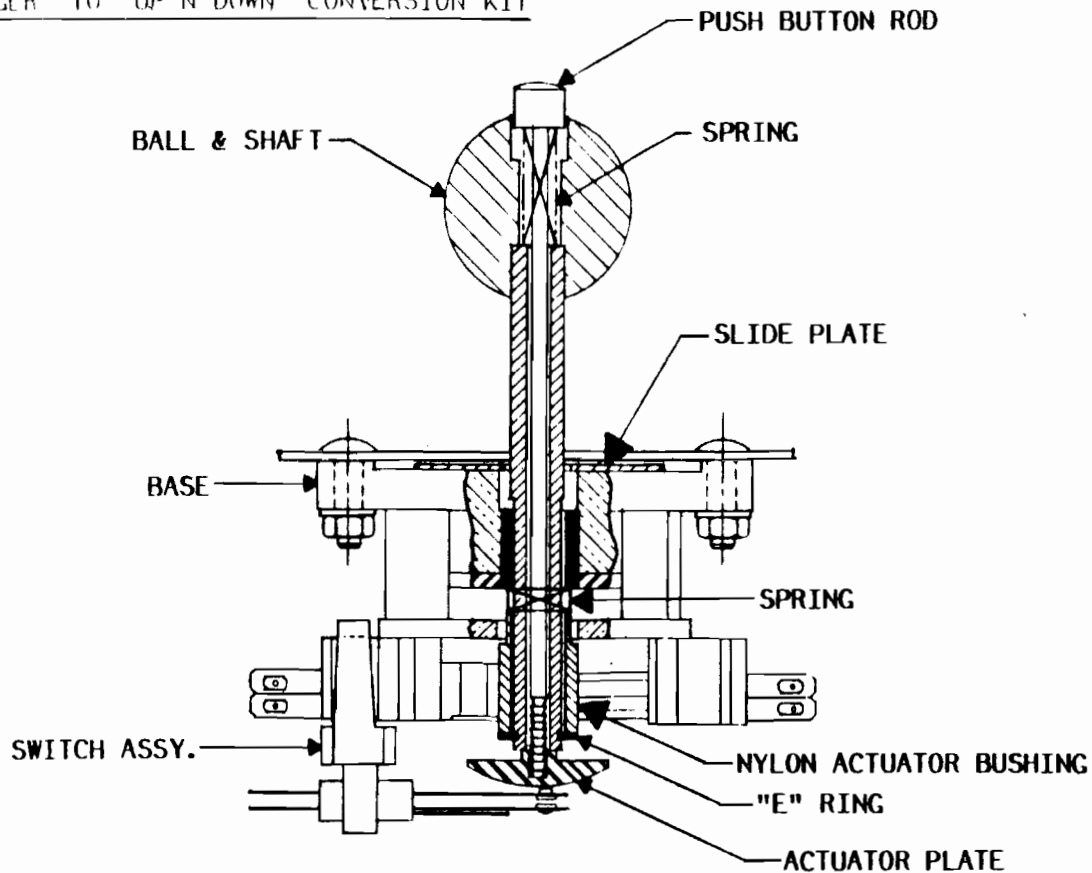
<u>DRAWING NUMBER</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>	<u>I.C. NUMBER</u>
2	315-5041	CUSTOM IC	I.C. 125
3	316-5749	EPROM	I.C. 86
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9	316-5755	EPROM	I.C. 133
10	316-5756	EPROM	I.C. 134
11	316-5757	EPROM	I.C. 63
12	316-5758	EPROM	I.C. 80
13	316-5759	EPROM	I.C. 64
14	316-5760	EPROM	I.C. 81
15	316-5761	EPROM	I.C. 65
16	316-5762	EPROM	I.C. 82
17	316-5763	EPROM	I.C. 3





JOY STICK ASSEMBLY & WIRING INSTRUCTIONS

FROGGER TO UP'N DOWN CONVERSION KIT



ASSEMBLY INSTRUCTIONS:

YOUR KIT COMES WITH THE JOYSTICK DISASSEMBLED (10 SEPARATE PARTS).

1. REMOVE THE OLD JOYSTICK ASSEMBLY. SAVE IT'S MOUNTING HARDWARE. (NOTE HOW THE OLD WIRES ARE CONNECTED SO YOU CAN RECONNECT THEM IN THE SAME MANNER TO THE NEW ASSEMBLY WHEN IT IS INSTALLED.)
2. ASSEMBLE BASE AND SIDE PLATE WITH OLD HARDWARE.
3. INSERT BALL AND SHAFT AND SECURE WITH "E" RING **AFTER** ASSEMBLING SPRING AND NYLON ACTUATOR BUSHING.
4. INSERT PUSH BUTTON ROD AND SPRING INTO BALL AND SHAFT ASSEMBLY AND CAPTIVATE BY PUSHING ON ACTUATOR PLATE. (PUSH TO BOTTOM OF ACTUATOR PLATE.)
5. SNAP ON SWITCH ASSEMBLY. WIRE PER INSTRUCTIONS BELOW.
6. REWIRE NEW SWITCHES IN THE SAME MANNER THAT THE OLD ONES WERE WIRED.

WIRING INSTRUCTIONS:

1. CONNECT THE 6" LONG YELLOW-RED WIRE TO ONE OF THE "JUMP BUTTON TABS". CONNECT THE OTHER END OF THE YELLOW-RED 6" LONG WIRE TO THE WIRE THAT IS COMMON TO ALL SWITCHES ON THE CONTROL PANEL.
2. CONNECT THE 2 1/2" LONG GREEN-BLACK WIRE TO THE **OTHER** "JUMP BUTTON TAB". INSTALL THE REMAINING END OF THIS GREEN-BLACK 2 1/2" LONG WIRE INTO **ANY OPEN PIN** OF THE CONTROL PANEL'S 9 POSITION UNIVERSAL CONNECTOR.
3. CONNECT THE 3/8" LONG GREEN-BLACK WIRE TO PIN 15 OF THE **EXISTING CABLE** EDGE CONNECTOR. RUN THE OTHER END OF THIS GREEN-BLACK 3/8" LONG WIRE TO THE MAIN CABLE HARNESS HALF OF THE CONTROL PANEL 9 POSITION UNIVERSAL CONNECTOR. INSTALL THIS END OF THE WIRE INTO THE **MATING OPEN PIN** (SO IT WILL CONNECT WITH THE WIRE INSTALLED IN STEP 2 ABOVE - IN THE OTHER HALF OF THE CONTROL PANEL'S UNIVERSAL CONNECTOR - WHEN IT IS PUT TOGETHER).

10. Install and secure your games Replacement Control Panel.
11. Secure your games access doors, reconnect it to it's power source, turn it ON, and check to see if your picture appears upside down and reversed.
 - A. If it is O.K., run a Self-Test and go on to Step 12 below.
 - B. If the picture is upside down and reversed, (LEFT is RIGHT and RIGHT is LEFT), go to the MONITOR MODIFICATIONS SECTION where it is explained how to correct this condition.
12. When through completing a positive Self-Test (everything checks good), your game is ready for use.

LIST OF MAJOR PARTS
INCLUDED IN YOUR CONVERSION KIT
UP'N DOWN TO MR. VIKING CONVERSION
FROM
FROGGER CONVERTED TO UP'N DOWN

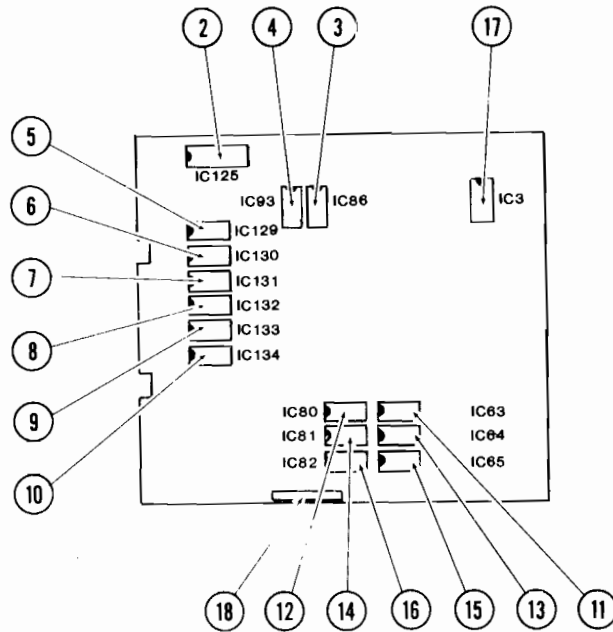
<u>PART NO.</u>	<u>DESCRIPTION</u>
AA95-00004-0000	CONTROL SHELF ASSY.
AB02-00002-0000	CONVERSION CABLE ASSY.
A084-91742-AA93	INTERFACE BOARD ASSY.
M051-00A92-A012	LOGIC BOARD LABEL
M051-00A93-A009	GAME PLAY INSTRUCTION LABEL
M051-00A93-A012	CONVERSION KIT INSTRUCTION MANUAL
M051-00121-A010	SERIAL NUMBER LABEL
M051-00122-0000	MANUAL REQUEST POST CARD
0A92-00300-0000	PARTS CATALOG - MR. VIKING
0A93-00900-00XF	HEADER
0B07-00904-0100	RIGHT SIDE DECAL
0B07-00904-0200	LEFT SIDE DECAL
Q315-05041-0000	CUSTOM I.C.
0A92-00803-0001	EPROM
0A92-00803-0002	EPROM
0A92-00803-0003	EPROM
0A92-00803-0004	EPROM
0A92-00803-0005	EPROM
0A92-00803-0006	EPROM
0A92-00803-0007	EPROM
0A92-00803-0008	EPROM
0A92-00803-0009	EPROM
0A92-00803-0010	EPROM
0A92-00803-0011	EPROM
0A92-00803-0012	EPROM
0A92-00803-0013	EPROM
0A92-00803-0014	EPROM
0A92-00803-0015	EPROM

U P ' N D O W N T O M R . V I K I N G C O N V E R S I O N

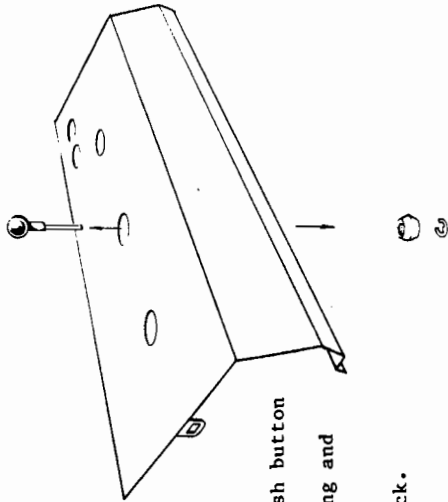
1. Disconnect and remove the UP'N DOWN game board.
2. Replace the EPROMS indicated in the following illustration with those provided in your Conversion Kit.
3. Reinstall the NEWLY modified game board exactly as it was previously and reconnect it to it's cabling.
4. Remove the screws from the Header Retaining Bracket and replace the Header.
5. Remove and disassemble your Control Panel so that you can install the new Control Panel Overlay and additional Push Buttons. (See the following illustration.)
6. Reassemble your Control Panel and modify it's wiring as follows so that the RED Push Buttons cause Mr. Viking to shoot arrows and the YELLOW Push Buttons will cause him to throw Bombs, Missiles, etc.
7. CHECK TO SEE THAT YOUR GAMES WIRING CONFORMS TO THE FOLLOWING (MODIFY IT WHERE NEEDED):
 - A. Insert one end of the 39" long BLACK wire into pin 8 of the 44 position Edge Connector of the Logic P.C. Board. Insert the other end of this 39" long BLACK wire into an open pin of the cabinet cable harness half of the Control Panel Universal Cable Connector.
 - B. Insert one end of the 23" long BLACK wire into the mating open pin of the Control Panel cable harness half of the Control Panel Universal Cable Connector.
 - C. Locate the 14" long BLACK wire. Now twist one end of this wire together with the free end of the above 23" long BLACK wire and solder them both to the TOP TAB of the Fire Button.
 - D. The other end of the 14" long BLACK wire is to be soldered to the TOP TAB of the Second Fire Button.
 - E. Take one of the two 4" long YELLOW/BLACK wires and solder one end of this wire to the BOTTOM TAB of the Fire Button. Now solder it's other end to the wire that is common to all switches.
 - F. Take the remaining 4" long YELLOW/BLACK wire and solder one end of this wire to the BOTTOM TAB of the Second Fire Button. Now solder it's other end to the wire that is common to all switches.
8. Install the Decals provided with your Conversion Kit OVER those currently on your game. See the Decal Installation Instruction Section of this booklet.
9. Install the Game Play Instruction Label on the new Main-Display-Glass in the space provided.

MR. VIKING PARTS LOCATIONS

<u>DRAWING NUMBER</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>	<u>I.C. NUMBER</u>
2	315-5041	CUSTOM IC	I.C. 125
3	316-5749	EPROM	I.C. 86
4	316-5750	EPROM	I.C. 93
5	316-5873	EPROM	I.C. 129
6	316-5874	EPROM	I.C. 130
7	316-5875	EPROM	I.C. 131
8	316-5876	EPROM	I.C. 132
9	316-5755	EPROM	I.C. 133
10	316-5756	EPROM	I.C. 134
11	316-5757	EPROM	I.C. 63
12	316-5758	EPROM	I.C. 80
13	316-5759	EPROM	I.C. 64
14	316-5760	EPROM	I.C. 81
15	316-5761	EPROM	I.C. 65
16	316-5762	EPROM	I.C. 82
17	316-5763	EPROM	I.C. 3

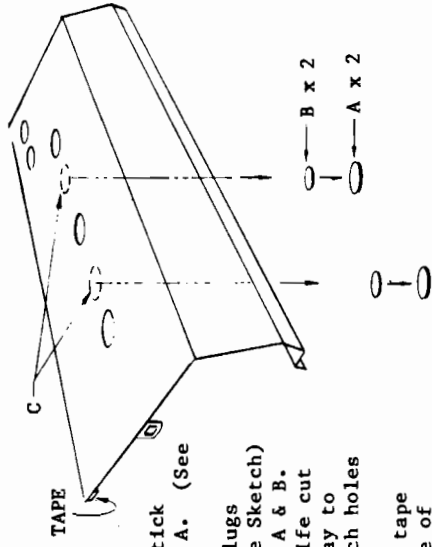


INSTRUCTIONS FOR CONTROL SHELF CONVERSION



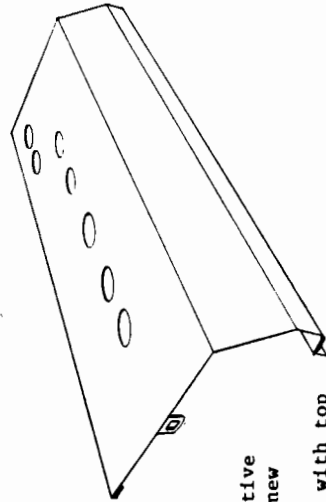
STEP A

1. Remove all push button switches.
2. Remove 'E' ring and Actuator from joystick.
3. Remove joystick.



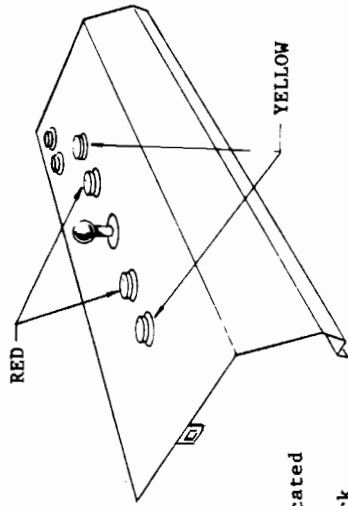
STEP B

1. Remove Self Stick Covers marked A. (See Sketch)
2. Remove hole plugs marked B. (See Sketch)
3. Discard parts A & B.
4. With sharp knife cut present overlay to open new switch holes marked C.
5. Remove sponge tape from underside of shelf & discard.



STEP C

1. Remove protective backing from new overlay.
2. Align overlay with top holes & wrap around ends per sketch.



STEP D

1. Install new P.B. switches as indicated per sketch.
2. Reinstall joystick components.
3. Proceed to wire 2 new red P.B. switches. See "Control Shelf Wiring Instructions".

10. Remove and replace your games old Main-Display-Glass with the new one provided in your Conversion Kit.
11. Install and secure your games modified Control Panel.
12. Secure your games access doors, reconnect it to it's power source, turn it ON, and check to see if your picture appears upside down and reversed.
 - A. If it is O.K., run a Self-Test and go on to Step 13 below.
 - B. If the picture is upside down and reversed, (LEFT is RIGHT and RIGHT is LEFT), go to the MONITOR MODIFICATIONS SECTION where it is explained how to correct this condition.
13. When through completing a positive Self-Test (everything checks good), your game is ready for use.

LIST OF MAJOR PARTS
INCLUDED IN YOUR CONVERSION KIT
UP'N DOWN TO MR. VIKING CONVERSION

<u>PART NO.</u>	<u>DESCRIPTION</u>
AA92-00006-0000	GAME PLAY INSTRUCTION CARD WITH TAPE
AA97-00004-0000	CONTROL CABLE
AB02-00002-0000	CONVERSION CABLE ASSY.
M051-00A92-A012	LOGIC BOARD LABEL
M051-00A93-A012	CONVERSION KIT INSTRUCTION MANUAL
M051-00121-A010	SERIAL NUMBER LABEL
M051-00122-0000	MANUAL REQUEST POST CARD
0A92-00900-00XF	HEADER
0B07-00900-00XF	MAIN-DISPLAY-GLASS
0B07-00901-0000	CONTROL SHELF OVERLAY
0B07-00905-0100	RIGHT SIDE DECAL
0B07-00905-0200	LEFT SIDE DECAL
0017-00032-0093	PUSH BUTTON SWITCH
0017-00103-0054	5/8 - 11 PAL NUT
0151-00804-0002	YELLOW PUSH BUTTON ASSY.
0151-00804-0008	RED PUSH BUTTON ASSY.
0A92-00300-0000	PARTS CATALOG - MR. VIKING
Q315-05041-0000	CUSTOM I.C.
0A92-00803-0001	EPROM
0A92-00803-0002	EPROM
0A92-00803-0003	EPROM
0A92-00803-0004	EPROM
0A92-00803-0005	EPROM
0A92-00803-0006	EPROM
0A92-00803-0007	EPROM
0A92-00803-0008	EPROM
0A92-00803-0009	EPROM
0A92-00803-0010	EPROM
0A92-00803-0011	EPROM
0A92-00803-0012	EPROM
0A92-00803-0013	EPROM
0A92-00803-0014	EPROM
0A92-00803-0015	EPROM

MONITOR MODIFICATIONS SECTION

If the picture in your modified game is upside down and reversed (LEFT is RIGHT and RIGHT is LEFT); depending on the monitor contained in your game; this condition can be fixed in one of the following ways.

TURN THE POWER TO YOUR GAME OFF!!

MONITOR: ELECTROHOME - YOKE WIRES SOLDERED IN PLACE AT BOTH ENDS. REFER TO DRAWING #1

By the picture tube, cut the 4 yoke wires (RED, WHITE, GRAY, and BROWN). **BE SURE** to leave enough room to strip them and splice them back together as shown in Drawing #1.

MONITOR: ELECTROHOME - YOKE WIRES PLUGGED INTO THE MONITOR'S P.C. BOARD. REFER TO DRAWING #2

You will see the yoke wires (BROWN, WHITE, GRAY, and RED) plugged into the monitor's P.C. Board at it's back right-hand corner, just below the flyback. See Drawing #2 Figure A.

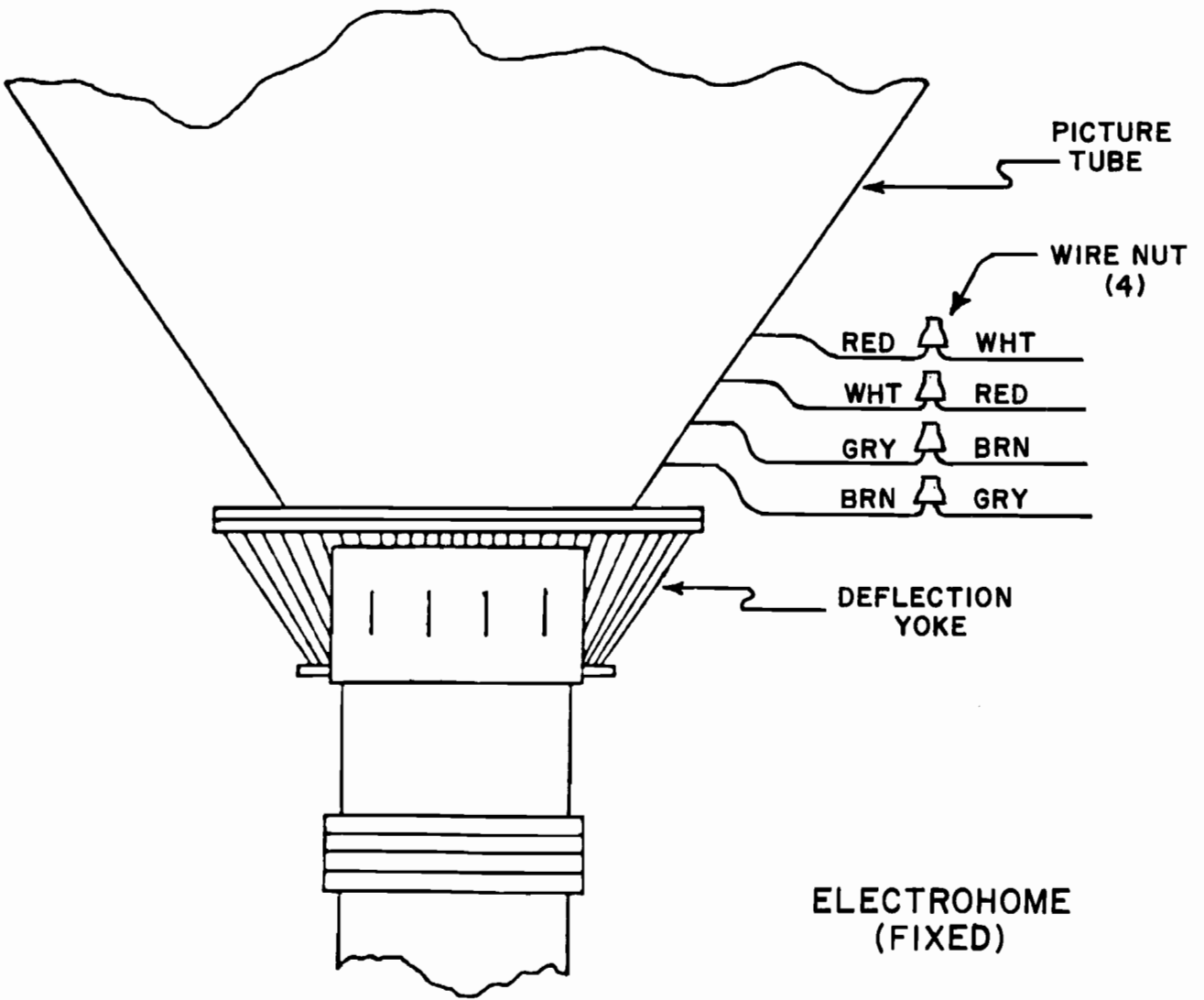
Unplug them and reconnect them as shown in Drawing #2 Figure B.

MONITOR: WELLS GARDNER - YOKE WIRES PLUGGED DIRECTLY INTO THE YOKE. REFER TO DRAWING #3

You will see the yoke wires (YELLOW, BLUE, RED, and GREEN) plugged into the monitor's yoke. Unplug them and switch the pairs indicated in Drawing #3.

UPON COMPLETION OF MODIFICATIONS:

Return to the procedure you left to come to this section, at the point you left it, and complete that procedure.



DRAWING 1

FIGURE A

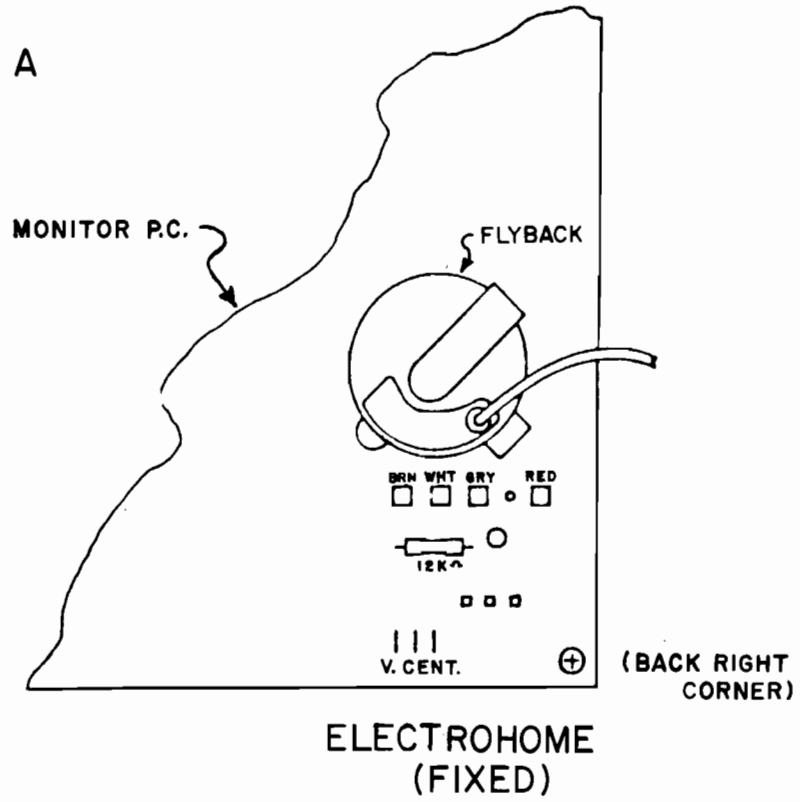
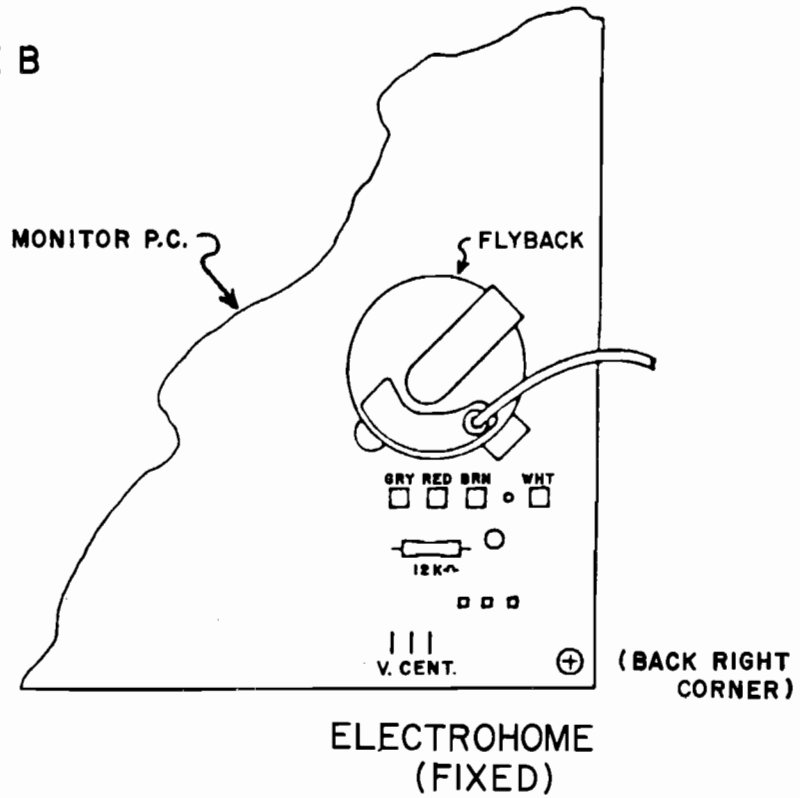
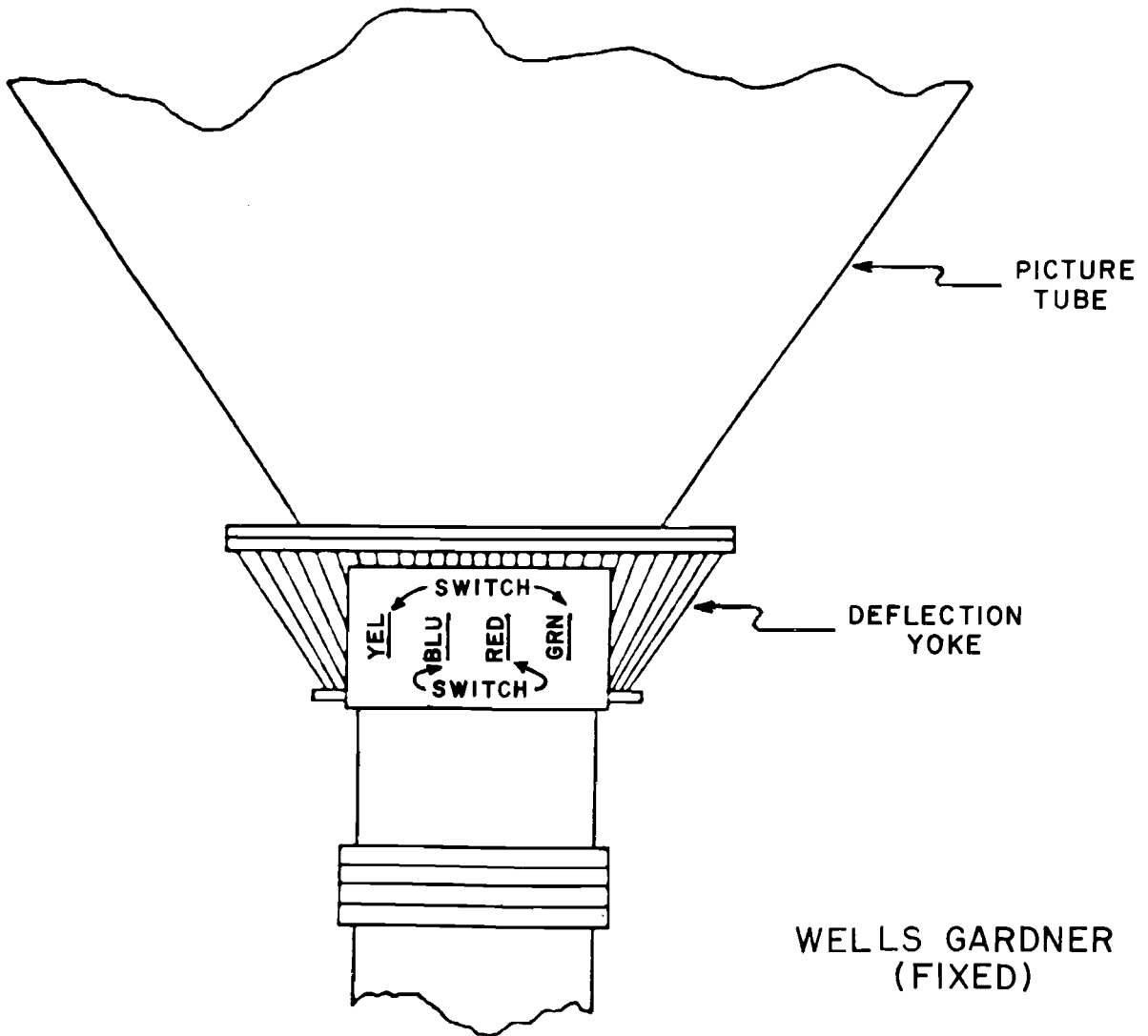


FIGURE B





WELLS GARDNER
(FIXED)

DRAWING 3

DECAL INSTALLATION INSTRUCTIONS

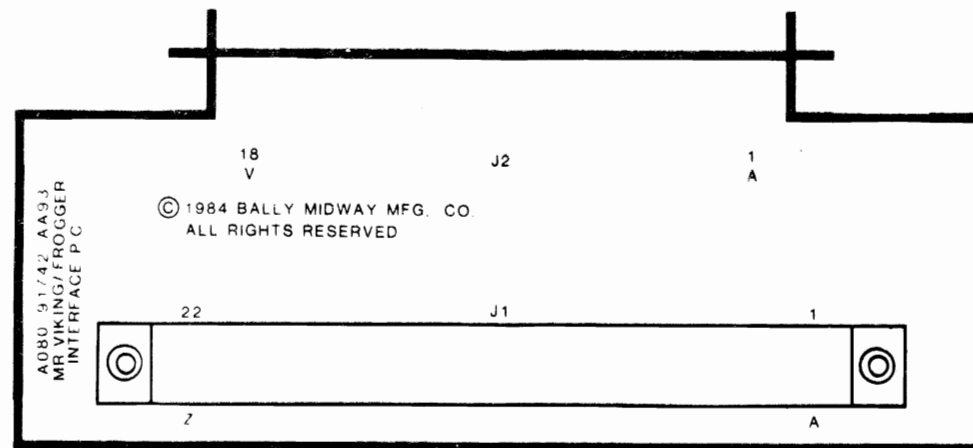
I M P O R T A N T N O T E:

READ THE FOLLOWING INSTRUCTIONS THROUGH COMPLETELY AT LEAST ONCE **BEFORE** ATTEMPTING TO INSTALL THE DECAL(S) THEY CONCERN!!

THE DECAL(S) ARE COMPOSED OF THREE (3) PARTS: 1)A HEAVY WAXED BACKING SHEET WHICH COVERS THE STICKY SIDE OF THE DECAL, 2) THE DECAL ITSELF, AND 3)A THIN MASKING SHEET WHICH IS ON THE FRONT SIDE OF THE DECAL TO PROTECT IT AND TO AID IN ITS INSTALLATION.

******* TO INSTALL THE DECAL(S), PROCEED AS FOLLOWS: *******

1. **BE SURE** THE AREA WHERE YOU ARE GOING TO APPLY THE DECAL IS CLEAN AND FREE OF ALL DIRT, GREASE, AND GRIME.
2. USING ANY **SPRAY-ON GLASS CLEANER**, THOROUGHLY WET DOWN THE AREA WHERE YOU INTEND TO PUT THE DECAL.
3. REMOVE THE **HEAVY WAXED BACKING SHEET** FROM THE DECAL BY POSITIONING IT FACE UP ON A FLAT SURFACE; GOING TO **ANY CORNER**; AND BENDING THIS CORNER UP SLIGHTLY TO SEPARATE THE DECAL AND THIN MASKING SHEET FROM THE **HEAVY WAXED BACKING SHEET**.
4. **SLOWLY AND CAREFULLY** PEEL THE HEAVY WAXED BACKING SHEET AWAY FROM THE DECAL AND MASKING SHEET.
5. PLACE THE DECAL ON THE GAME CABINET **OVER THE WET** GLASS CLEANER YOU JUST APPLIED. (THIS WILL ALLOW A **SMALL** AMOUNT OF FINAL **POSITIONING** TO BE DONE AFTER THE DECAL IS APPLIED TO THE GAME CABINET.)
6. SMOOTH THE DECAL.
7. ALLOW THE DECAL TO BECOME FIRMLY AFFIXED TO THE GAME **BEFORE** PROCEEDING TO THE NEXT STEP.
8. REMOVE THE **THIN MASKING SHEET** FROM THE DECAL AT THIS TIME BY MOISTENING IT WITH A WET CLOTH OR SPONGE. RUB WITH FINGER TIPS (**NOT NAILS**) FROM A CORNER EDGE TOWARD ITS CENTER. PEEL THE THIN MASKING SHEET BACK OVER ITSELF TO REMOVE IT. **DO NOT** PULL IT STRAIGHT AWAY FROM THE CABINET.



DESIGNATION LIST

CROSS REFERENCE LIST

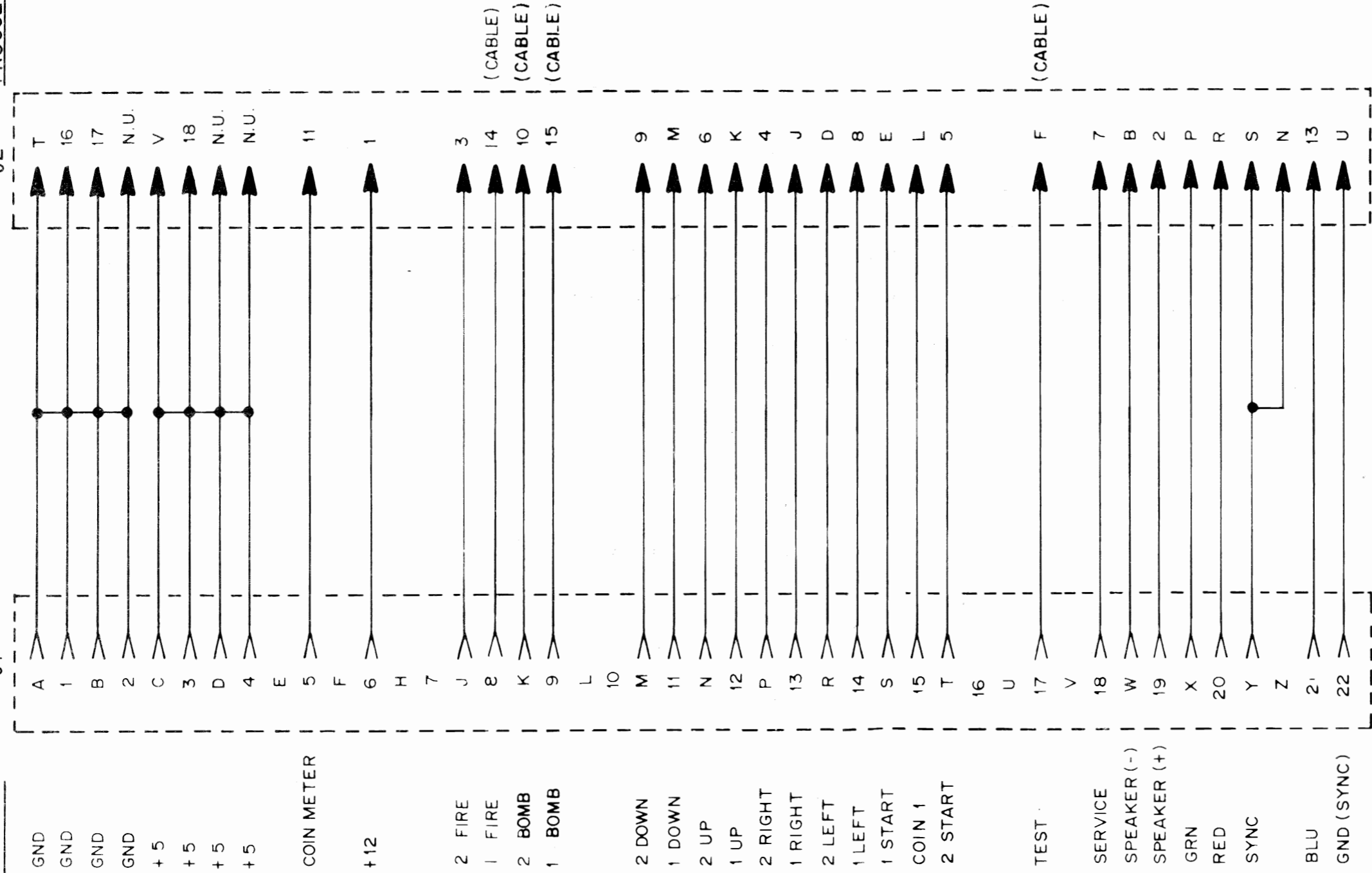
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J1	DUAL 22 PIN EDGE CONN	DUAL 22 PIN EDGE CONN.	1	J1	0017-00021-0395
PCB	MR VIKING/FROGGER INTERFACE	MR VIKING/FROGGER I INTERFACE	1	P.C.B.	A080-91742-AA93

PROJECT ENG J SZERSZEN

DIM TOLERANCES DO NOT SCALE DWG	MR VIKING <i>MM</i> 5/7/84 <i>MM</i>	<i>Bally</i> MIDWAY MFG CO	REVISIONS M 0 5 1 0 0 A 9 3 A 0 1 0
		MR VIKING / FROGGER INTERFACE ASSEMBLY DRWG A080-91742-AA93	

MR. VIKING

FROGGER



PROJECT ENG: J SZERSZEN

USED ON MR. VIKING

REVISIONS

Betty / MIDWAY MFG. CO.

FRANKLIN PK ILL

SCALE FULL

NO REQD 1 PER

HEAT TREAT

DIM. TOLERANCES UNLESS SPECIFIED

DRN M.W.

CKD.

MR. VIKING / FROGGER INTERFACE P.C.

SCHEMATIC DWG

MAT'L

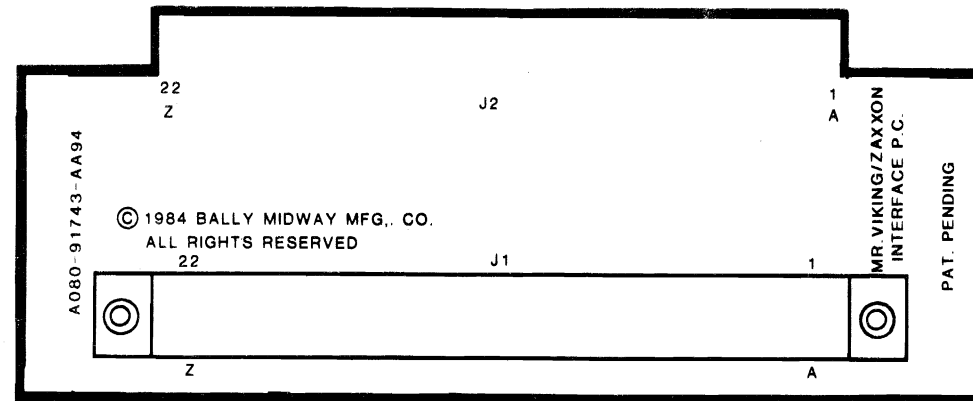
FINISH

DATE 5/ 4/84

A080 - 91742 - AA93

PART NO

M051 - 00A93-A011



DESIGNATION LIST

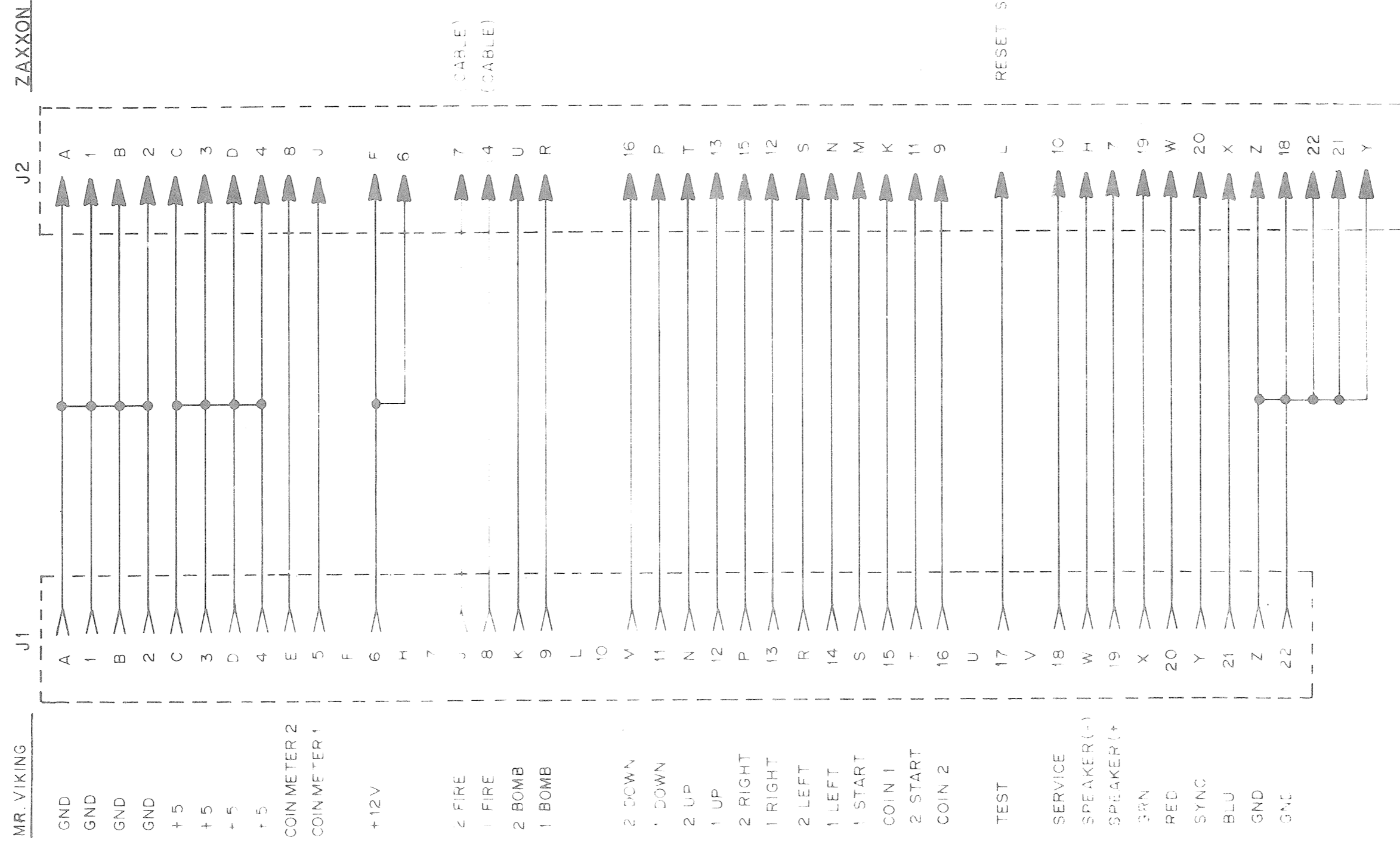
<u>DESIGNATION</u>	<u>DESCRIPTION</u>
J1	DUAL 22 PIN EDGE CONN.
P.C.B.	MR. VIKING / ZAXXON INTERFACE

CROSS REFERENCE LIST

<u>DESCRIPTION</u>	<u>QTY</u>	<u>DESIGNATION</u>	<u>PART NO.</u>
DUAL 22 PIN EDGE CONN.	1	J1	0017-00021-0395
MR. VIKING / ZAXXON INTERFACE	1	P.C.B.	A080-91743-AA94

PROJECT ENG: J.SZERSZEN		THIS DRAWING IS CONFIDENTIAL & PROPRIETARY TO BALLY MIDWAY CO.		
DIM. TOLERANCES UNLESS OTHERWISE SPEC. CONCENTRICITY TYP. 002 FRACTIONAL + 1/64 DECIMAL ± 005 HOLE DIA. + 002 -- 000 ANGLE ± 1/2° DO NOT SCALE DWG.		MR. VIKING M.M. 5/7/84		Bally MIDWAY MFG. CO. FRANKLIN PARK, IL 60131
		MR. VIKING / ZAXXON INTERFACE ASSEMBLY DRWG A080-91743-AA94		REVISIONS PART NO. M-0-5-1-0-0-A-9-4-A-0-1-0

BRUNING-40-107



PROJECT ENG. J SZERSZEN

DO NOT SCALE UP

DIM TOLERANCES UNLESS SPECIFIED

DRG. *M. V.*

CHKD.

DATE 5/4/84

HEAT TREAT

MAT'L

FINISH

SCALE FULL

MR. VIKING / ZAXXON INTERFACE P.C. SCHEMATIC DWG
A080 - 91743 - A494

USED ON MR. VIKING

NO REQ'D

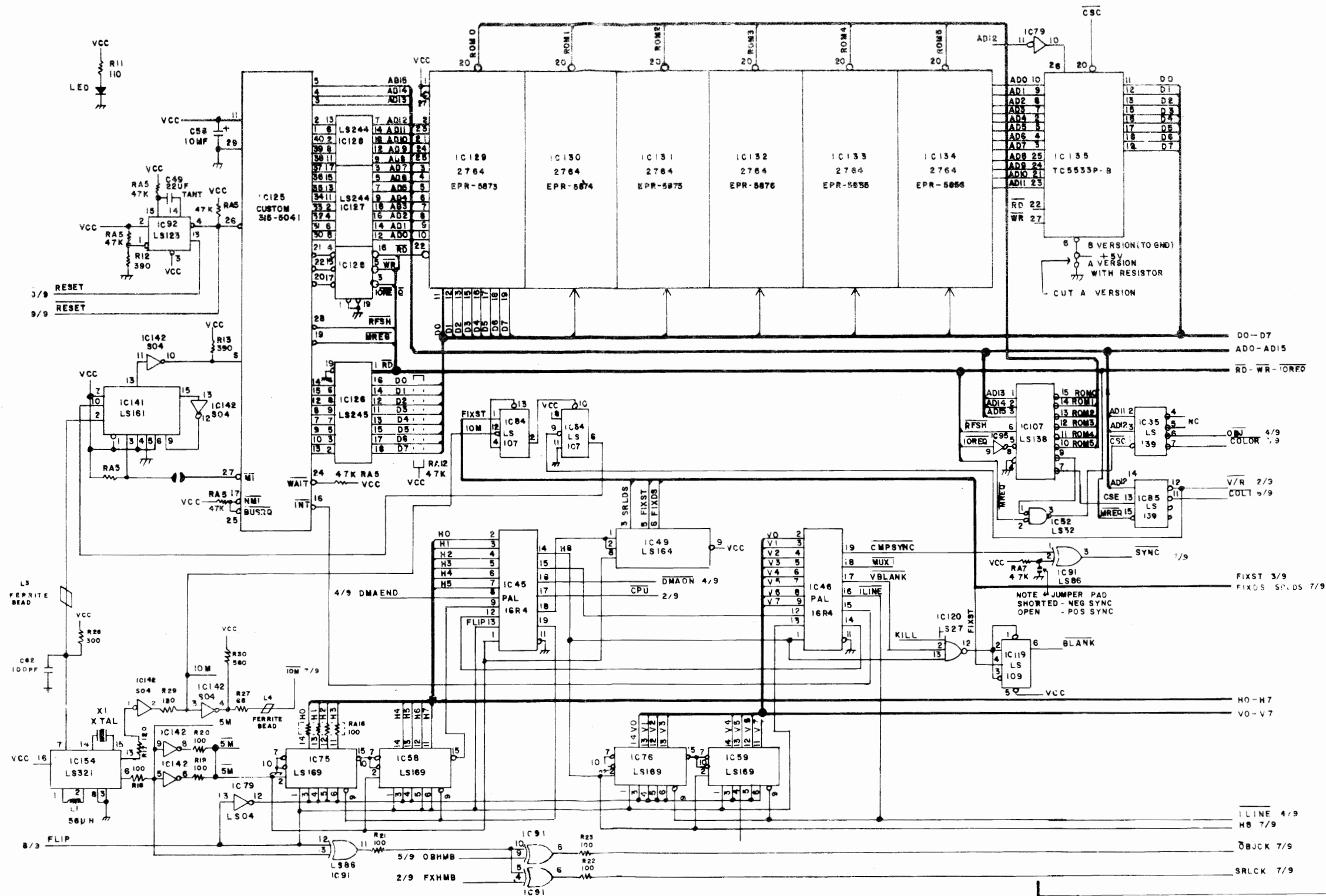
PER

REVISIONS

Betty / MIDWAY MFG. CO.
FRANKLIN PK ILL

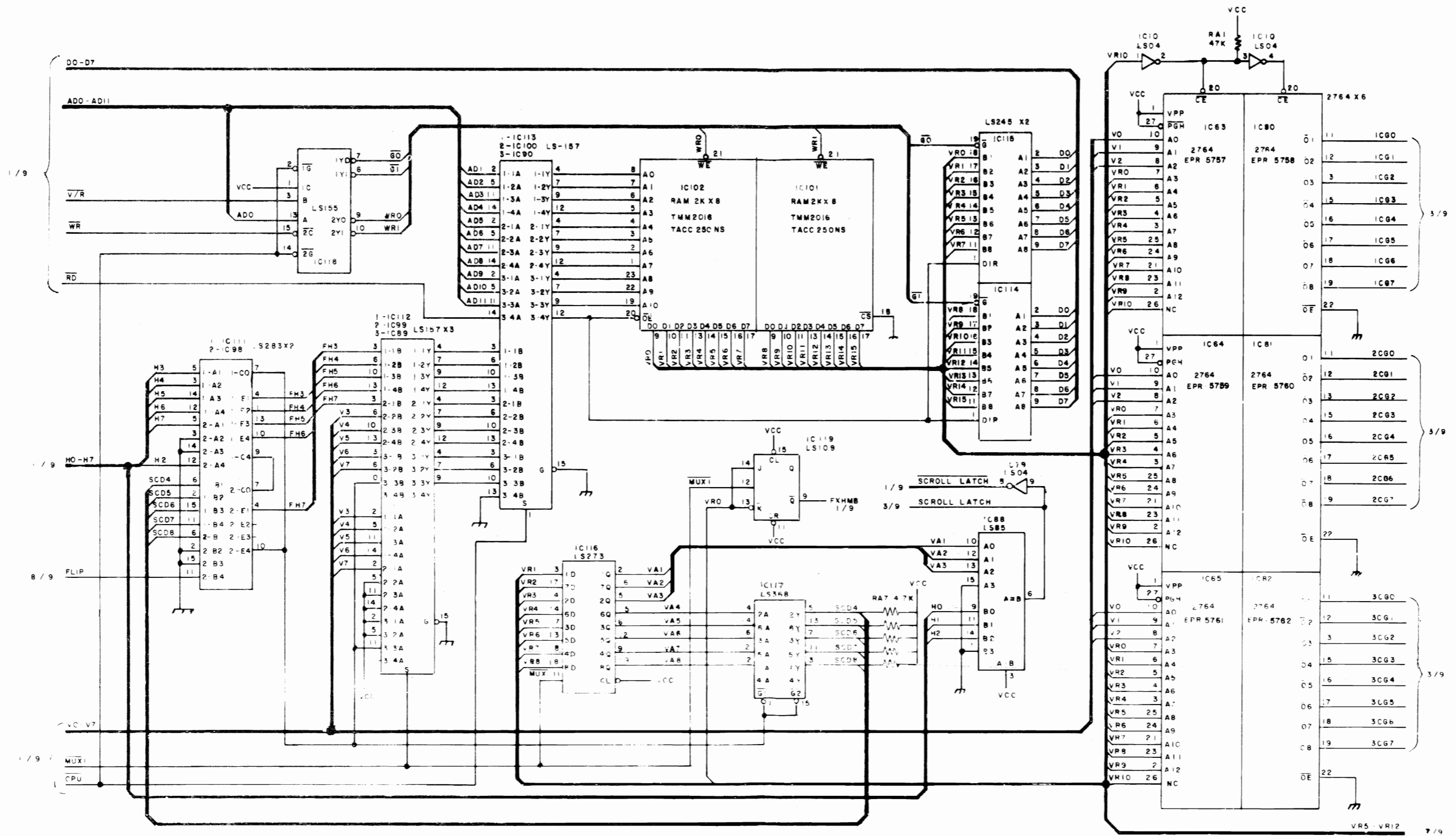
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M051 - 00A94-A01



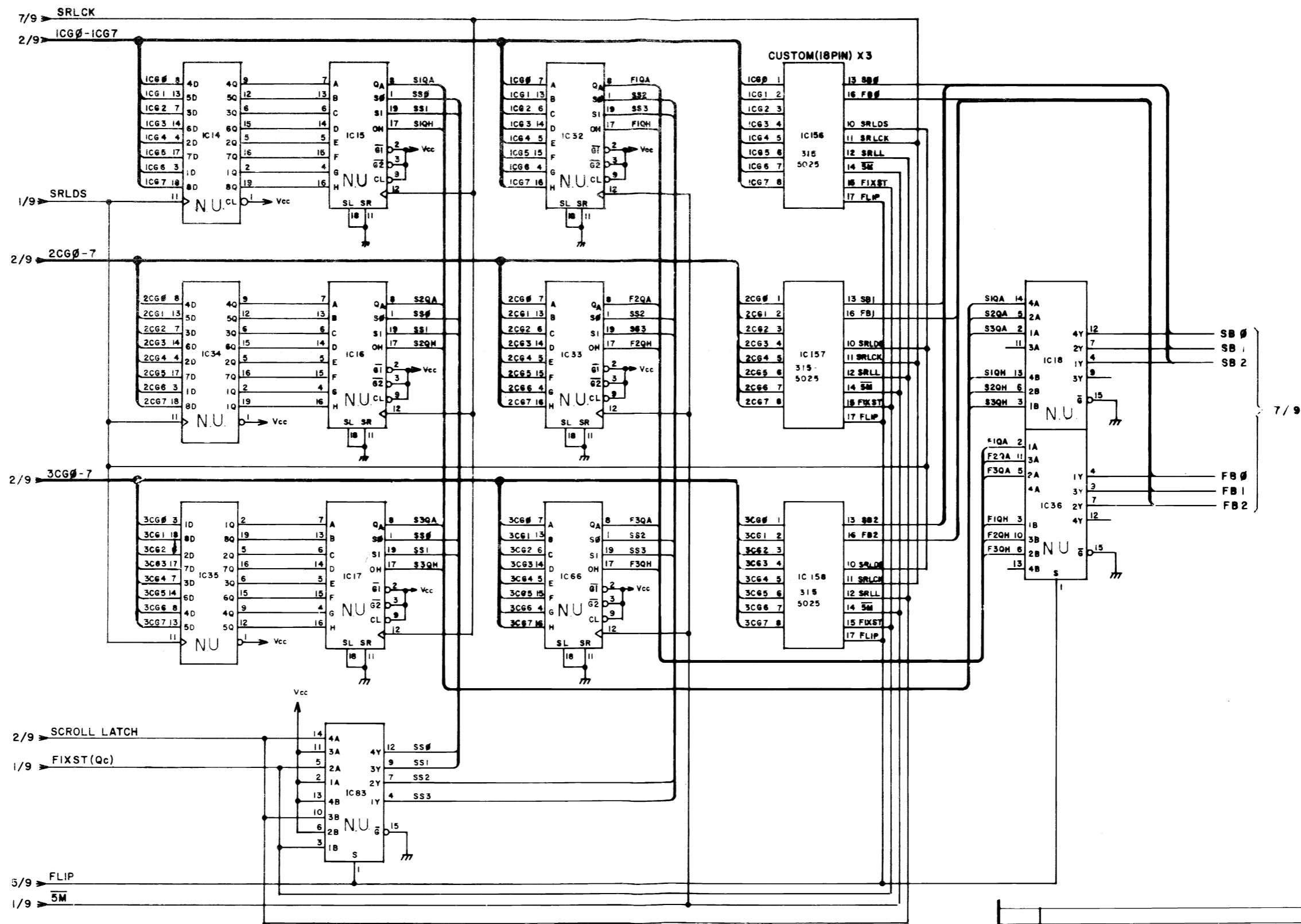
REVISIONS	

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DO NOT SCALE DWG		HEAT TREAT	SCALE	NO. REQ'D	
DIM TOLERANCES UNLESS SPECIFIED		MAT'L.	SCHEMATIC DWG.		PART NO.
DRAWN: <i>JMS</i>		FINISH	MR. VIKING LOGIC P.C.		M051 - 00A92-A011
DATE: 5/21/84		PAGE: 1 OF 9			



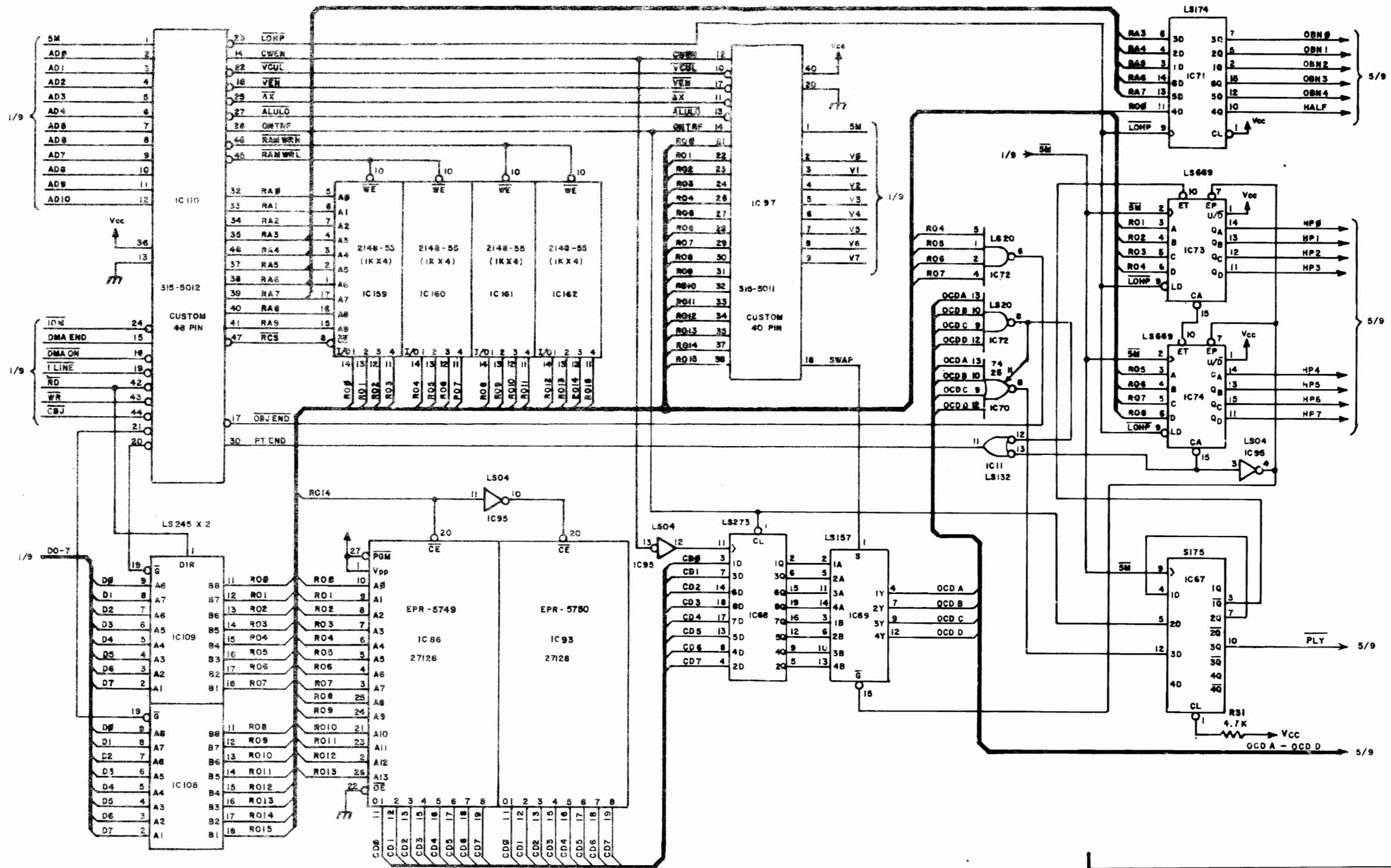
REVISIONS	

PROJECT ENG: J SZERSZEN		USED ON MR VIKING		<i>Bally</i> / MIDWAY MFG. CO. FRANKLIN PK ILL	
DO NOT SCALE DWG		HEAT TREAT	SCALE FULL		
DIM TOLERANCES UNLESS SPECIFIED		DRW. BAK	MAT'L	SCHMATIC DWG MR VIKING LOGIC P.C.	
		CKD.	FINISH	PART NO M051-00A92-A011	
		DATE 5/21/84		PAGE 2 OF 9	



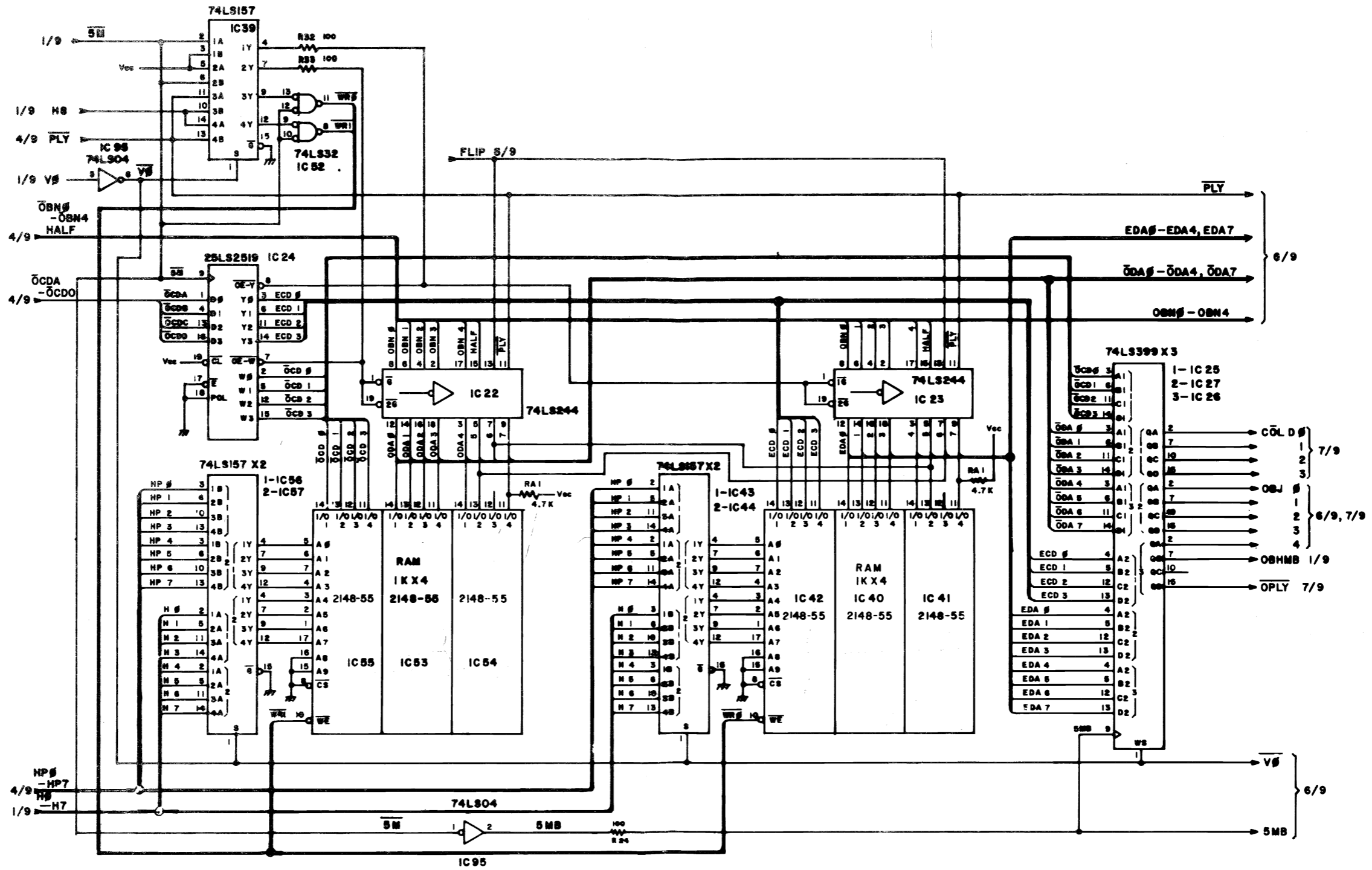
REVISIONS	

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DO NOT SCALE DWG		HEAT TREAT	SCALE	NO. REQ'D	
DIM TOLERANCES UNLESS SPECIFIED		ORIG. <i>RLW</i>	MAT'L.	SCHEMATIC DRAWING	
CONCENTRICITY ± 0.005		CRD.	FINISH	MR. VIKING LOGIC P.C.	
FRACTIONAL ± 0.005		DATE 5/21/84		A080-91750-AA92 PAGE 3 OF 9	
DECIMAL ± 0.005				PART NO. M051-00A92-A011	
HOLE DIA + 0.02 0.00					



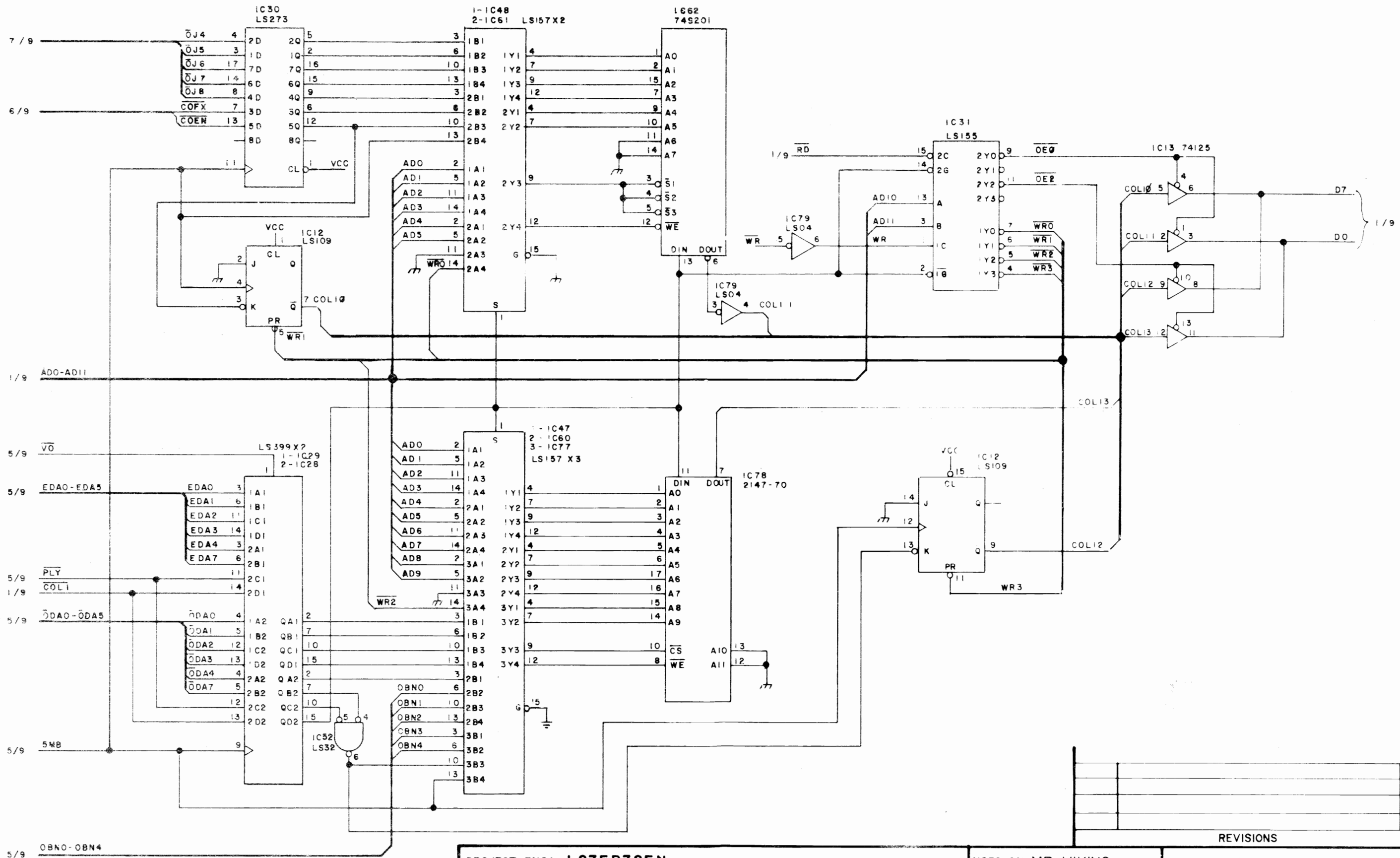
REVISIONS	

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DO NOT SCALE DWG.		HEAT TREAT	SCALE	NO. REQ'D 1 PER	
DIM. TOLERANCES UNLESS SPECIFIED		DRN. RLW	MAT'L.	SCHEMATIC DWG. MR. VIKING LOGIC PC.	
CONCENTRICITY TYP. 0.03		CKD.	FINISH	PART NO. M051 - 00A92-A011	
FRACTIONAL 1/64		DATE 5/21/84		PAGE 4 OF 9	
DECIMAL 0.005					
HOLE DIA. +0.02 0.00					



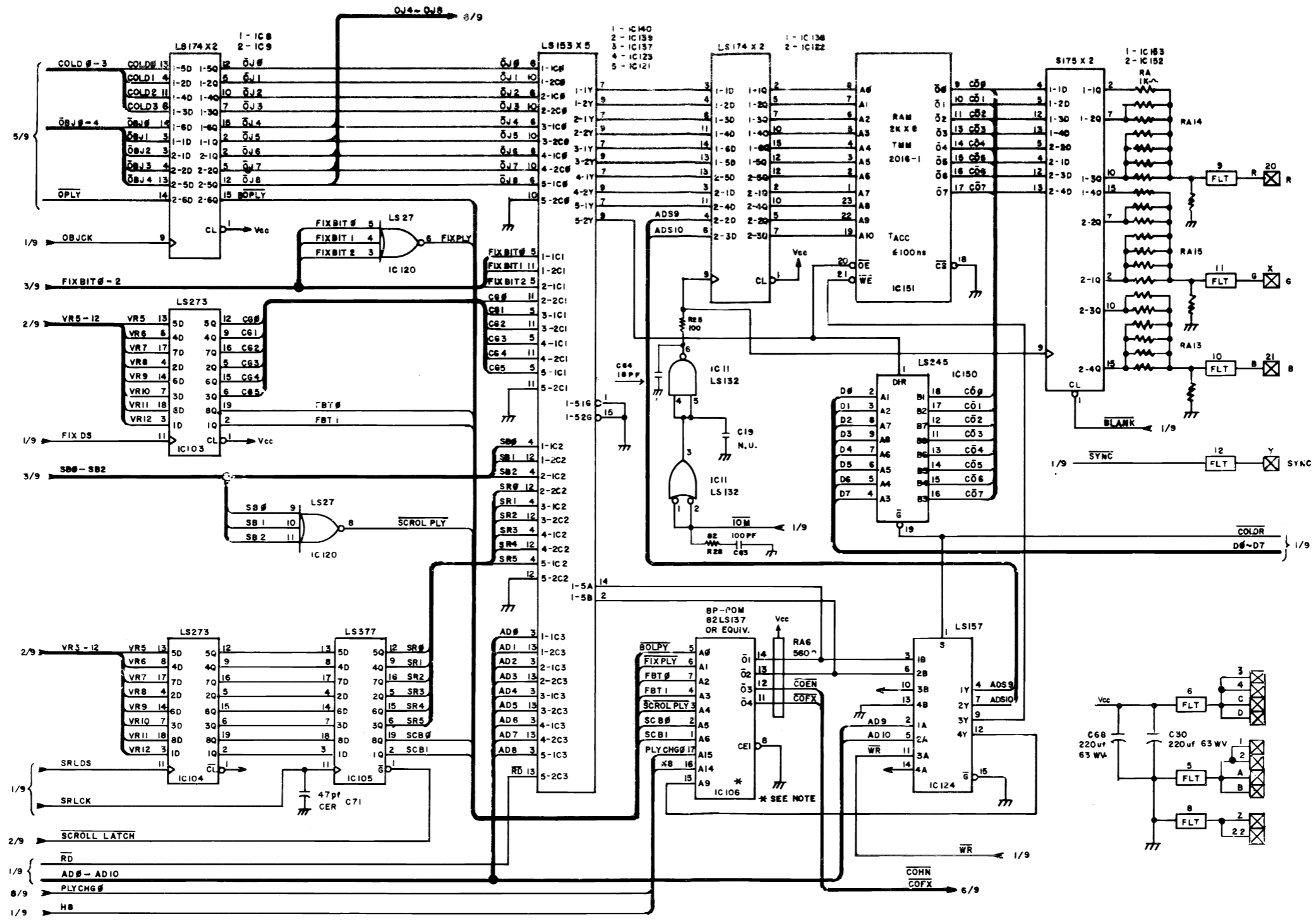
3-300	ADDED R32 & R33	REV. D.	RLW
REVISIONS			

PROJECT ENG: J. SZERZEN		USED ON MR. VIKING		 FRANKLIN PK ILL	
DO NOT SCALE DWG		SCALE	NO. REQ'D		
DIM TOLERANCES UNLESS SPECIFIED		DATE: 5/21/84	SCHEMATIC DRAWING		PART NO.
DIM TOLERANCES UNLESS SPECIFIED FRACTIONAL DECIMAL HOLE DIA		DATE: 5/21/84	MR. VIKING LOGIC P.C. A080-91750-AA92		MO51 - 00A92-A011
			PAGE 5 OF 9		



REVISIONS	

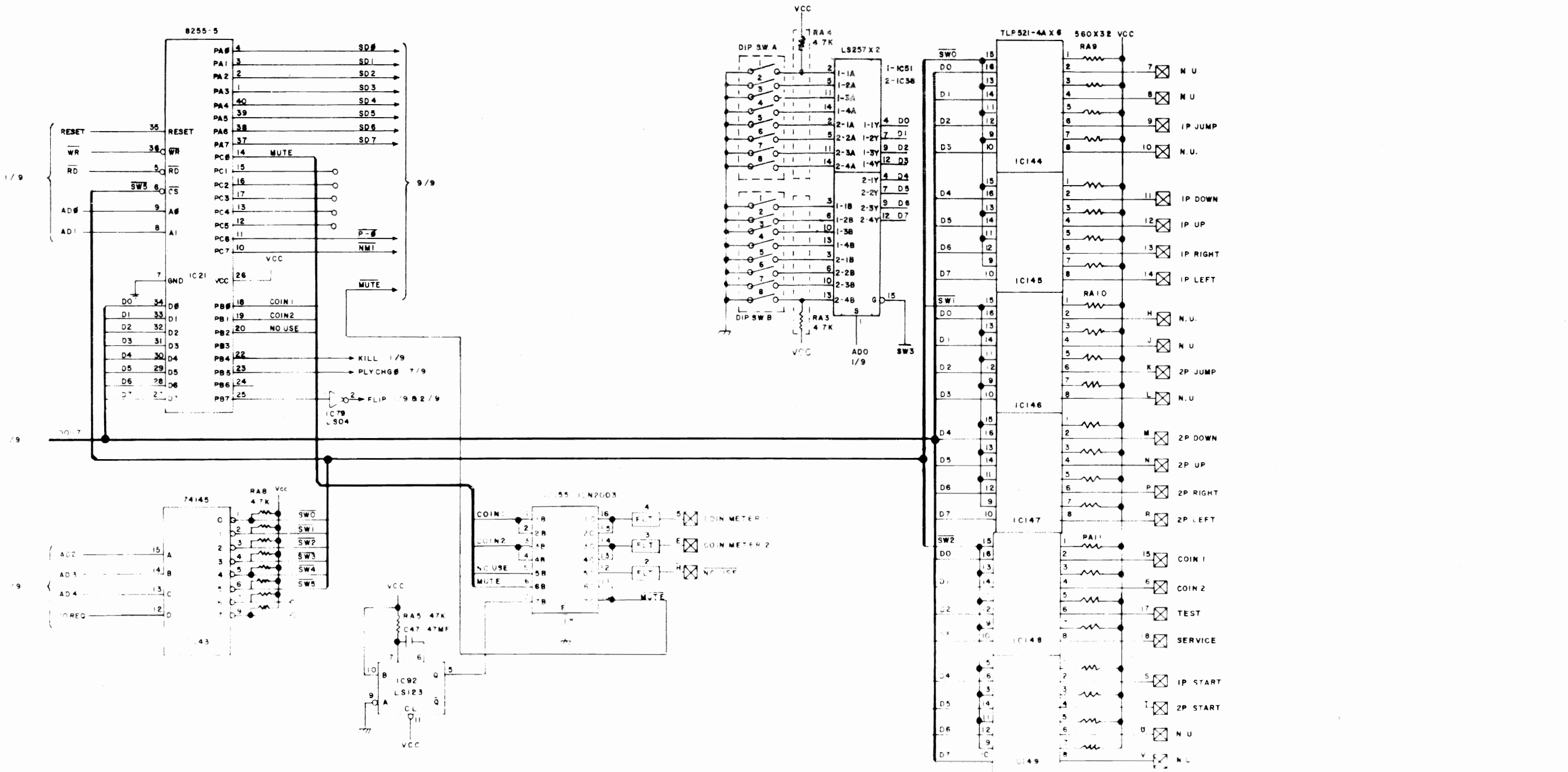
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DIM TOLERANCES UNLESS SPECIFIED		DRN. BAK	MAT'L.	MR. VIKING LOGIC PC. SCHEMATIC	
CENTRITY T-H 001		CKD.	FINISH	A080-91750-AA92	
FRACTIONAL 1:50		DATE 5/21/84		PAGE 6 OF 9	
DECIMAL 0.005				PART NO M051-00A92-A011	
HOLE DIA +0.02 0.00					



NOTE:
PIN #S FOR IC106 REFER TO PCB
SILKSCREEN WHICH IS FOR AN 18 PIN
CHIP.

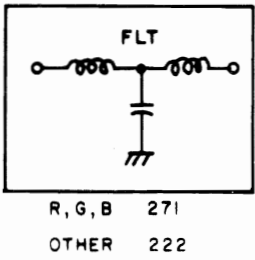
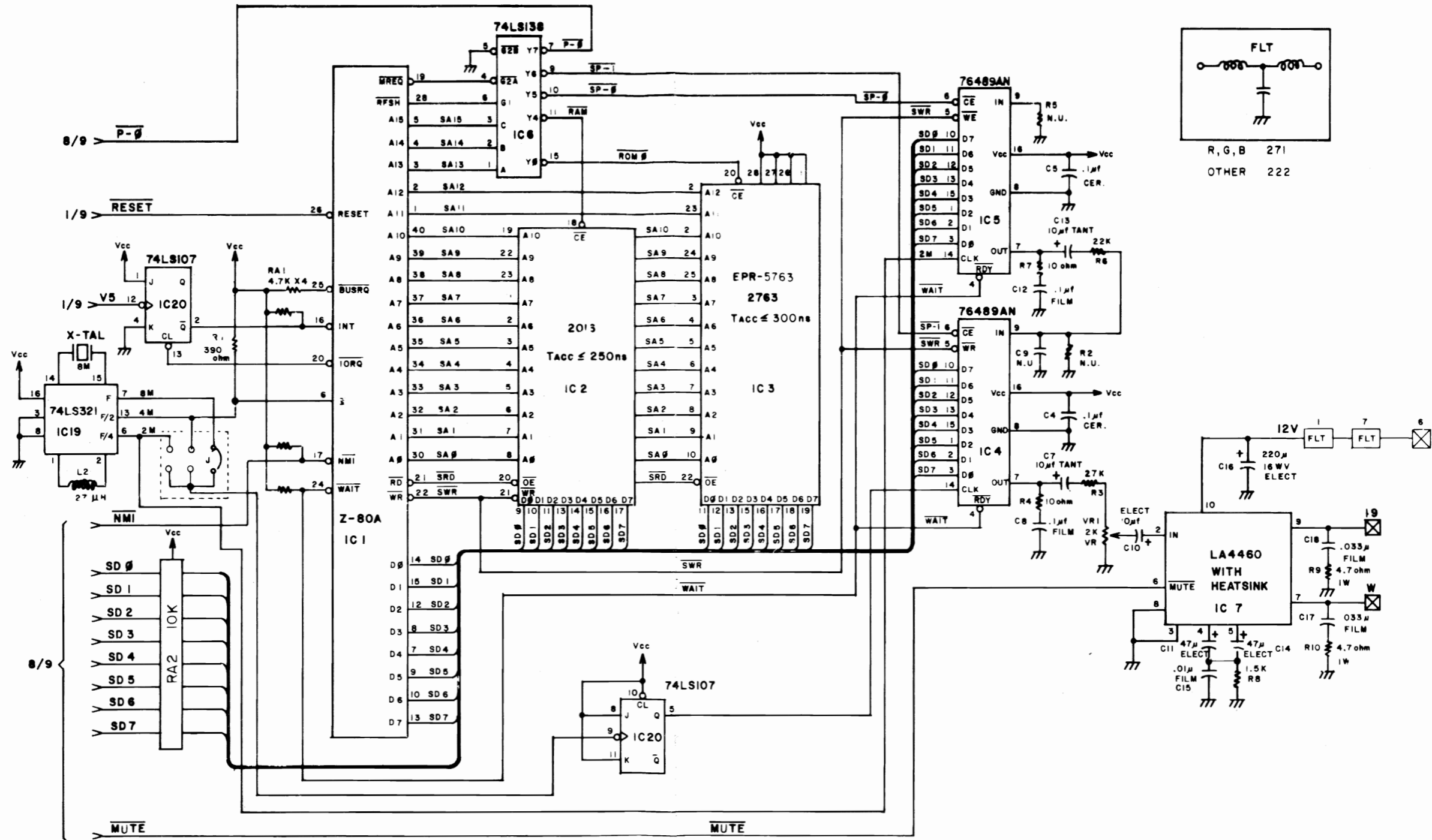
REVISIONS	

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DO NOT SCALE DWG		HEAT TREAT		NO. REQ'D	
DIM TOLERANCES UNLESS SPECIFIED		SCALE		PART NO.	
CONCENTRICITY TYP. 0.05		FRAC. 1/64		M051 - 00A92-A011	
DECIMAL 0.005		HOLE DIA. +0.02 0.00		FRANKLIN PK. ILL.	
DATE 5/21/84		SCHEMATIC DWG. MR. VIKING LOGIC P.C.		PAGE 7 OF 9	



REVISIONS	

PROJECT ENG J. SZERZSEN		USED ON MR VIKING		Bally / MIDWAY MFG. CO.	
DRAWN BAK		HEAT TREAT	SCALE FULL	NO REQ'D / PER	
DATE 5/21/84		MAT'L	MR VIKING LOGIC PC. SCHEMATIC		PART NO
		FINISH	A080-91750-AA92		M051-00A92-A011
			PAGE 8 of 9		



REVISIONS	

PROJECT ENG: J. SZERSZEN		USED ON MR. VIKING		Bally / MIDWAY MFG. CO. FRANKLIN PK ILL	
DO NOT SCALE DWG		HEAT TREAT	SCALE		
DIM TOLERANCES UNLESS SPECIFIED		DRW. <i>CL</i>	MAT'L.	SCHEMATIC DRAWING MR. VIKING LOGIC P.C. A080-91750-AA92 PAGE 9 OF 9	
CONCENTRICITY ± 0.005		CKD.	FINISH		
HOLE DIA. + 0.02 0.00		DATE 5/21/84		M051 - 00A92-A011	