| FSCM | DWG NO. | SH | REV |
|---|---|---|---|
| | | | |

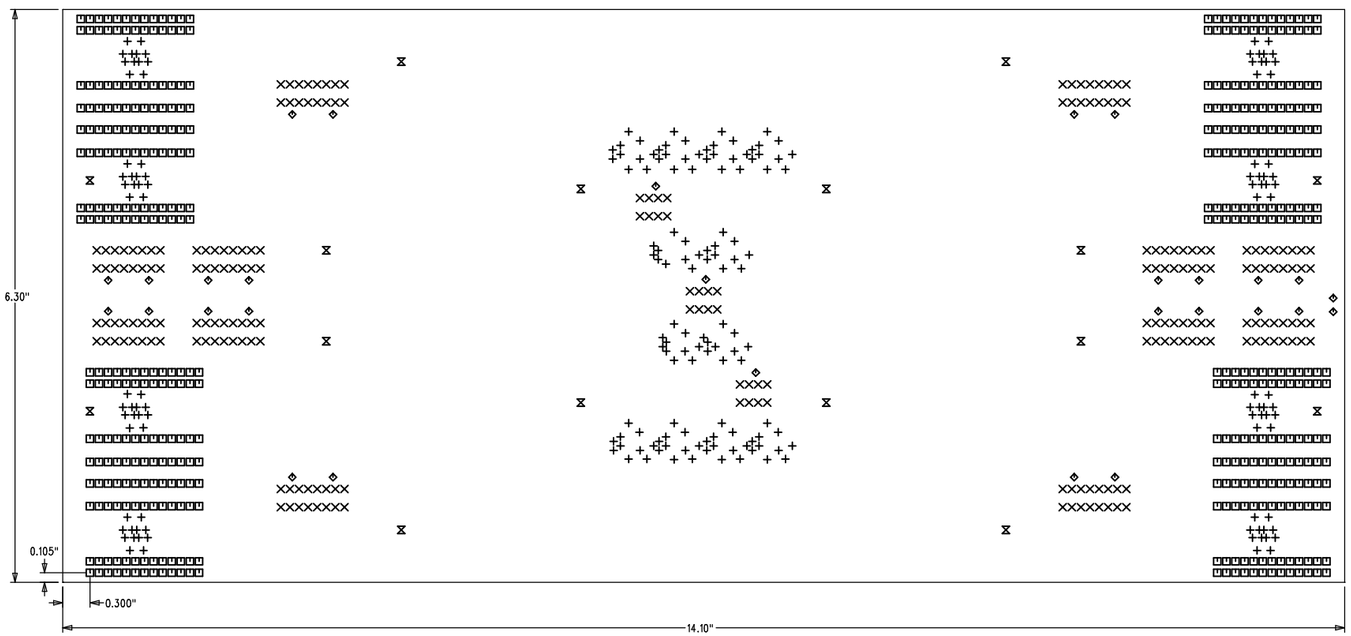
REVISIONS

| ZONE | REV | DESCRIPTION | DATE | APPROVED |
|---|---|---|---|---|
| | | | | |

CONTROLLED IMPEDANCE REQUIREMENTS ARE 50 +/- 5 OHMS

FINISHED CONDUCTOR WIDTH IS .008" ON OUTER LAYERS AND .010" ON INNER LAYERS.
DIELECTRIC SEPERATION BETWEEN LAYERS IS SPECIFIED ON LAYER STACK-UP.

BROOKHAVEN NATIONAL LABORATORY
IO-962-1 REV - 7/27/99
BACK MOTHERBOARD 5




## FABRICATION NOTES (REV 1.0)

1) FINISHED TRACE LINE WIDTHS SHOULD MATCH SUPPLIED GERBER FILES, WITHIN +/-.001.

2) MATERIAL :
☒ FR4 (GF per MIL-P-13949) ☐ GPY (GI per MIL-P-13949) ☐ OTHER

3) COPPER WEIGHT:
OUTER LAYERS : ☐ 1/4 oz. ☐ 1/2 oz. ☒ 1 oz. ☐ 2 oz.
INNER LAYERS : ☐ 1/4 oz. ☐ 1/2 oz. ☒ 1 oz. ☐ 2 oz. ☐ NONE

4) SOLDER MASK
☒ LIQUID PHOTOIMAGEABLE ☐ DRY FILM ☐ NONE
☒ OVER BARE COPPER ☐ OVER TIN LEAD ☐ OVER FULL BODY GOLD
☒ GREEN ☐ RED ☐ BLUE

5) OVERALL BOARD THICKNESS:
☐ 0.062" ☐ 0.093" ☐ 0.125" ☒ 0.168"
☐ +/- 0.005" ☒ +/- 0.007" ☐ +/- 0.010" ☐ OTHER

6) BARE BOARD ELECTRICAL TEST:
☐ TESTED TO GERBER DATA ☒ NO TEST REQUIRED

7) HOLE DIAMETER TOLERANCES ARE: (EXCEPT WHERE NOTED)
PLATED HOLES : +/- 0.003". NON PLATED HOLES : +/- 0.002".

8) SILK SCREEN USING EPOXY BASED INK.
☐ BOTH SIDES ☐ PRIMARY SIDE ☐ SECONDARY SIDE ☒ NONE
☐ WHITE ☐ YELLOW ☐ BLACK

9) MINIMUM ANNULAR RING:
☒ .003" FOR EXTERNAL LAYERS
☒ .002" FOR INTERNAL LAYERS

10) PLANE REGISTRATION:
+/- .005" TO TOP PLANE FOR ALL PLANES

11) MINIMUM PLATING THROUGH ALL HOLES IS:
.001" THICK COPPER

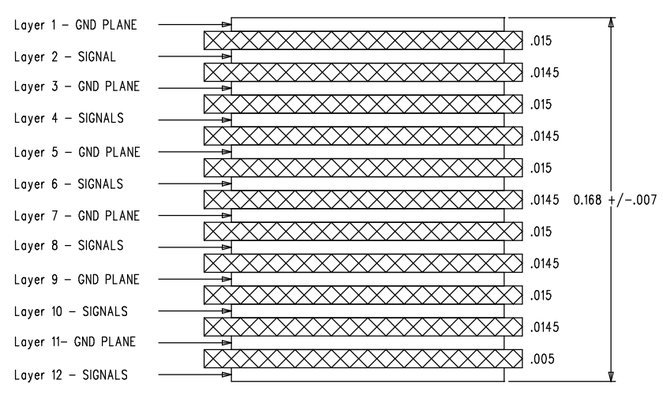
12) WARP AND TWIST:
NOT TO EXCEED .007" PER INCH ACROSS THE DIAGONAL

13) ACCEPTABILITY: (PER LATEST REVISION)
☒ IPC-A-600 ☐ IPC-RB-276 ☐ MIL-P-55110

14) SURFACE MOUNT PADS:
TOP LAYER: 0
BOTTOM LAYER: 360
TOTAL: 360

### HOLE SIZE CHART

| | SYM | SIZE (AFTER PLATING) | QTY | PLATED |
|---|---|---|---|---|
| | + | .022 +.003 -.003 | 216 | YES |
| * | × | .053 +.002 -.002 | 216 | YES |
| * | □ | .057 +.001 -.001 | 416 | YES |
| | ◇ | .060 +.003 -.003 | 29 | YES |
| * | ⧖ | .213 +.003 -.000 | 16 | NO |




| QTY REQD | FSCM NO. | PART OR IDENTIFYING NO. | NOMENCLATURE OR DESCRIPTION | MATERIAL SPECIFICATION |
|---|---|---|---|---|
| | | | | |

| NEXT ASSY | USED ON |
|---|---|
| | |
| | |
| | |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX= ± .010 .XXX= ± .005 ANGLES ± 1/2°

MATERIAL

FINISH

DO NOT SCALE DRAWING

CONTRACT NO.

| APPROVALS | DATE |
|---|---|
| DRAWN K WOLNIEWICZ | 7-27-99 |
| CHECKED | |
| ISSUED | |

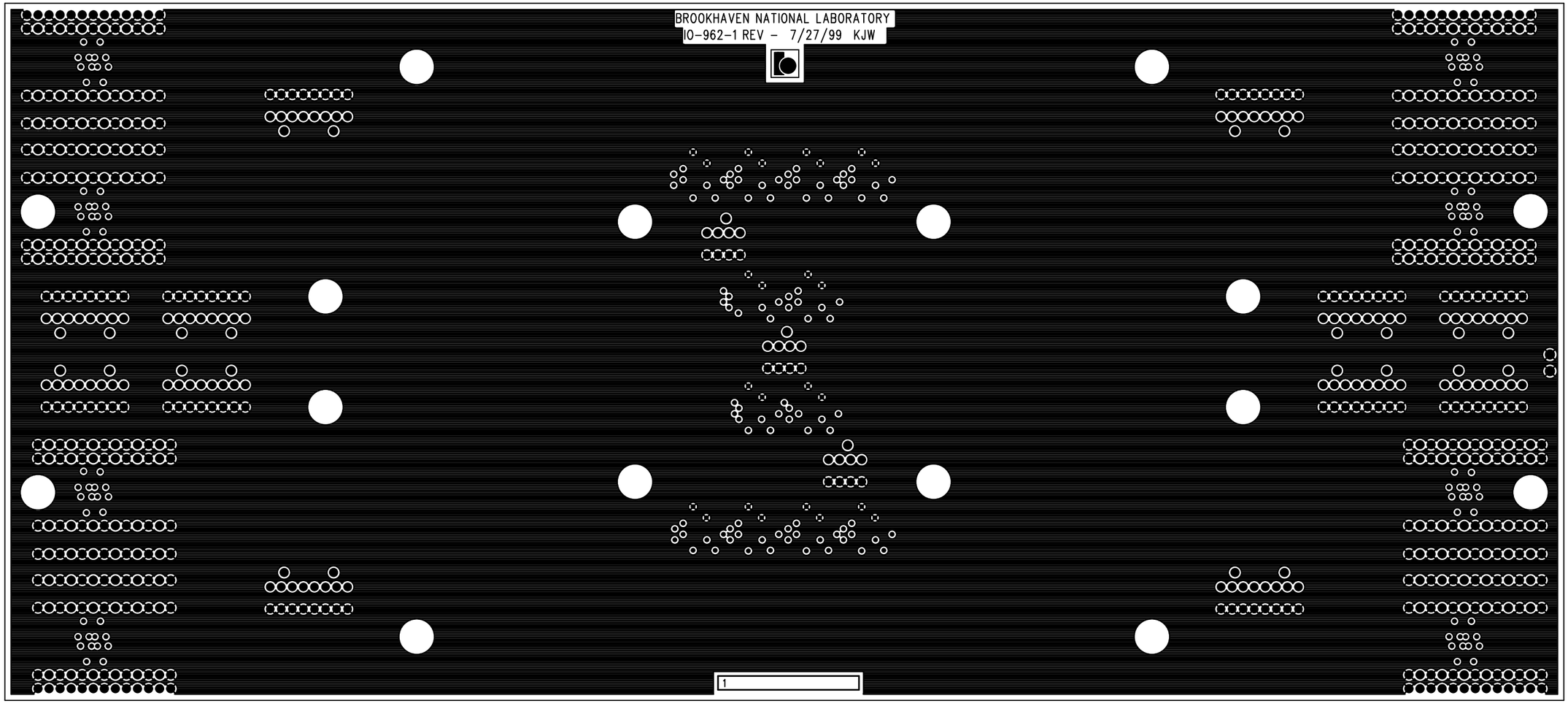
CUSTOMER
BROOKHAVEN NATIONAL LABORATORY
INSTRUMENTATION DIVISION
UPTON, NEW YORK

TITLE
ATLAS MIDDLE/BACK MOTHERBOARD 5
(FORMERLY IO-806-5)

| SIZE | TICKET NO. | DWG NO. | REV. |
|---|---|---|---|
| C | T-1999-115 | IO-962-1 | - |

SCALE 1 : 1 SHEET 1 OF 1

BROOKHAVEN NATIONAL LABORATORY
IO-962-1 REV - 7/27/99
BACK MOTHERBOARD 5
LAYER 1 - GND PLANE



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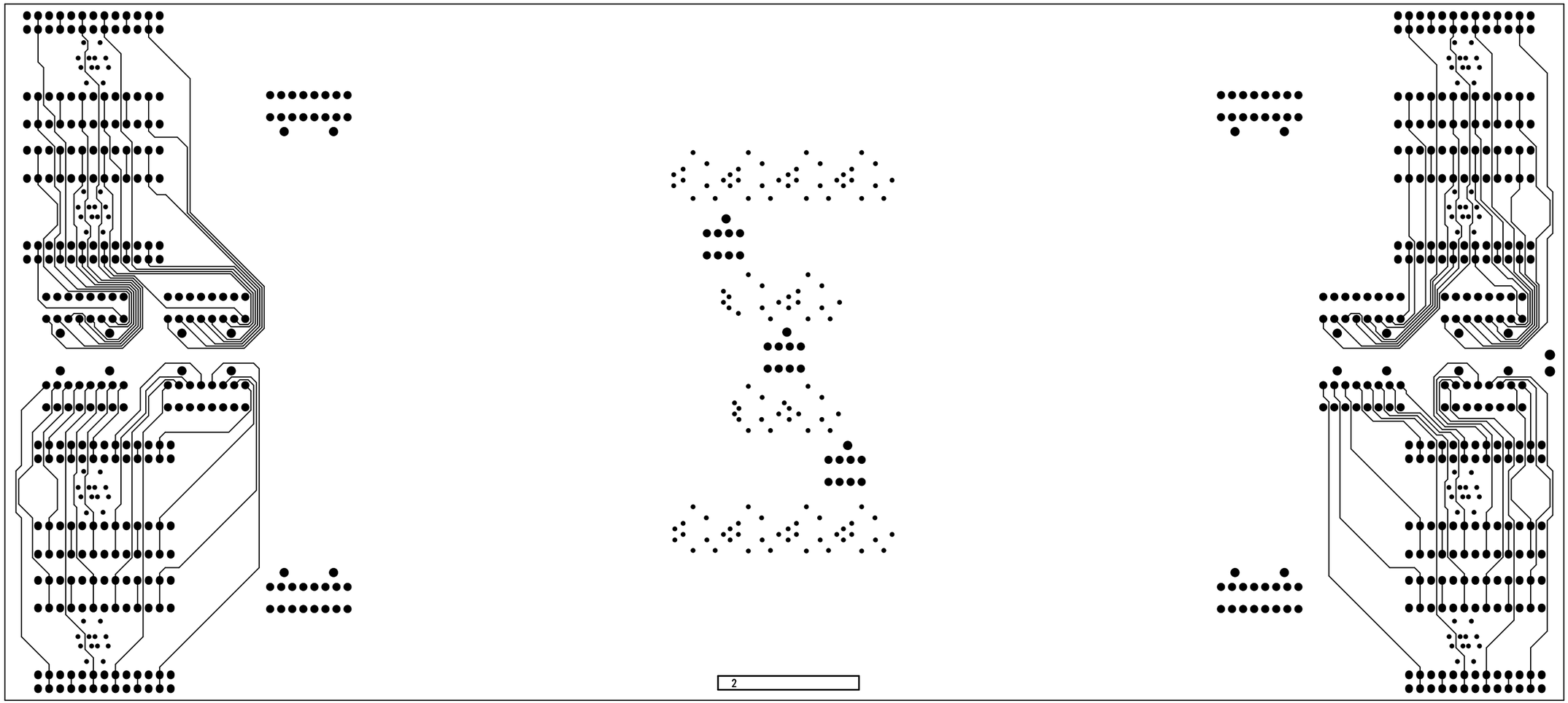
IO-962-1 REV - 7/27/99
BACK MOTHERBOARD 5
LAYER 2 - SIGNALS



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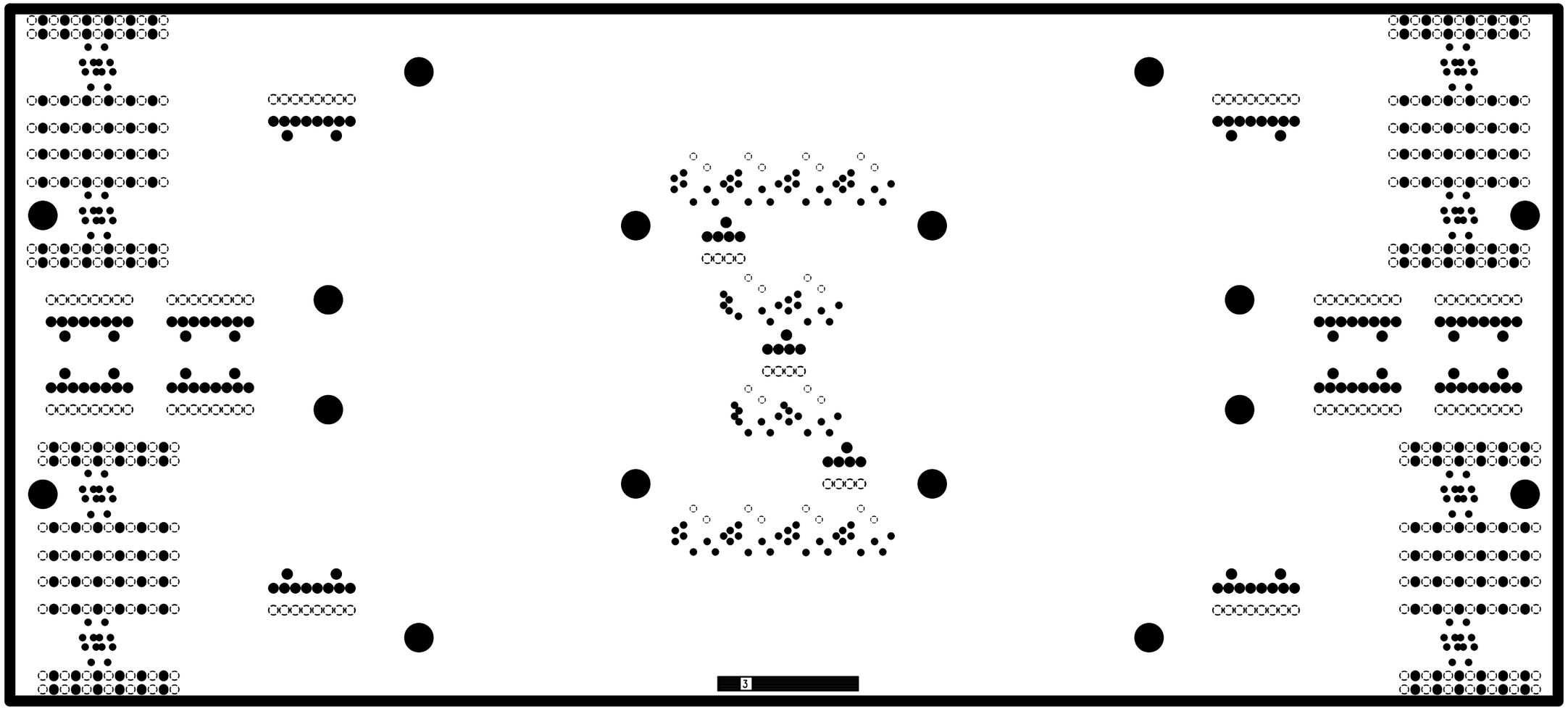
10-962-1 REV - 7/27/99
BACK MOTHERBOARD 5
LAYER 3 - GROUND PLANE



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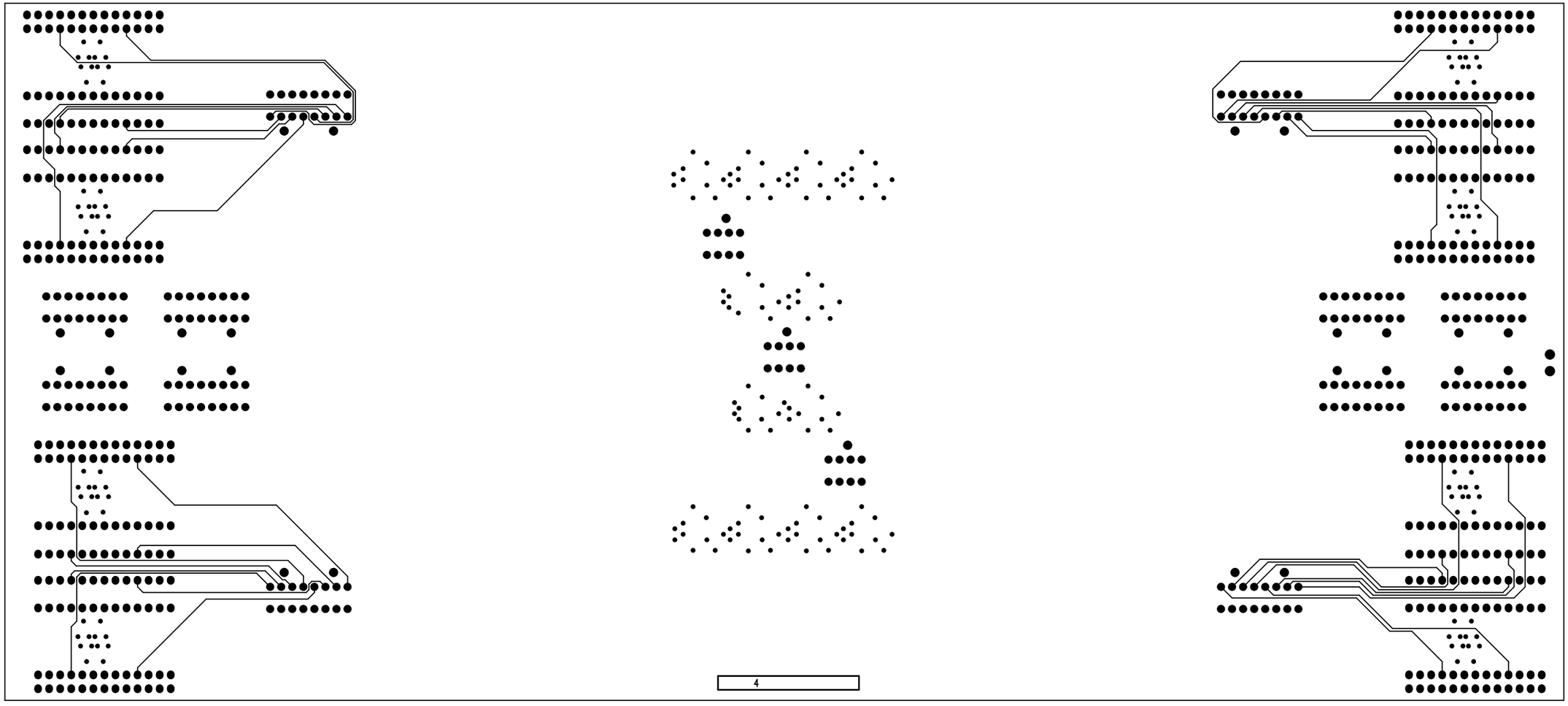
IO-962-1 REV - 7/27/99
BACK MOTHERBOARD 5
LAYER 4 - SIGNALS



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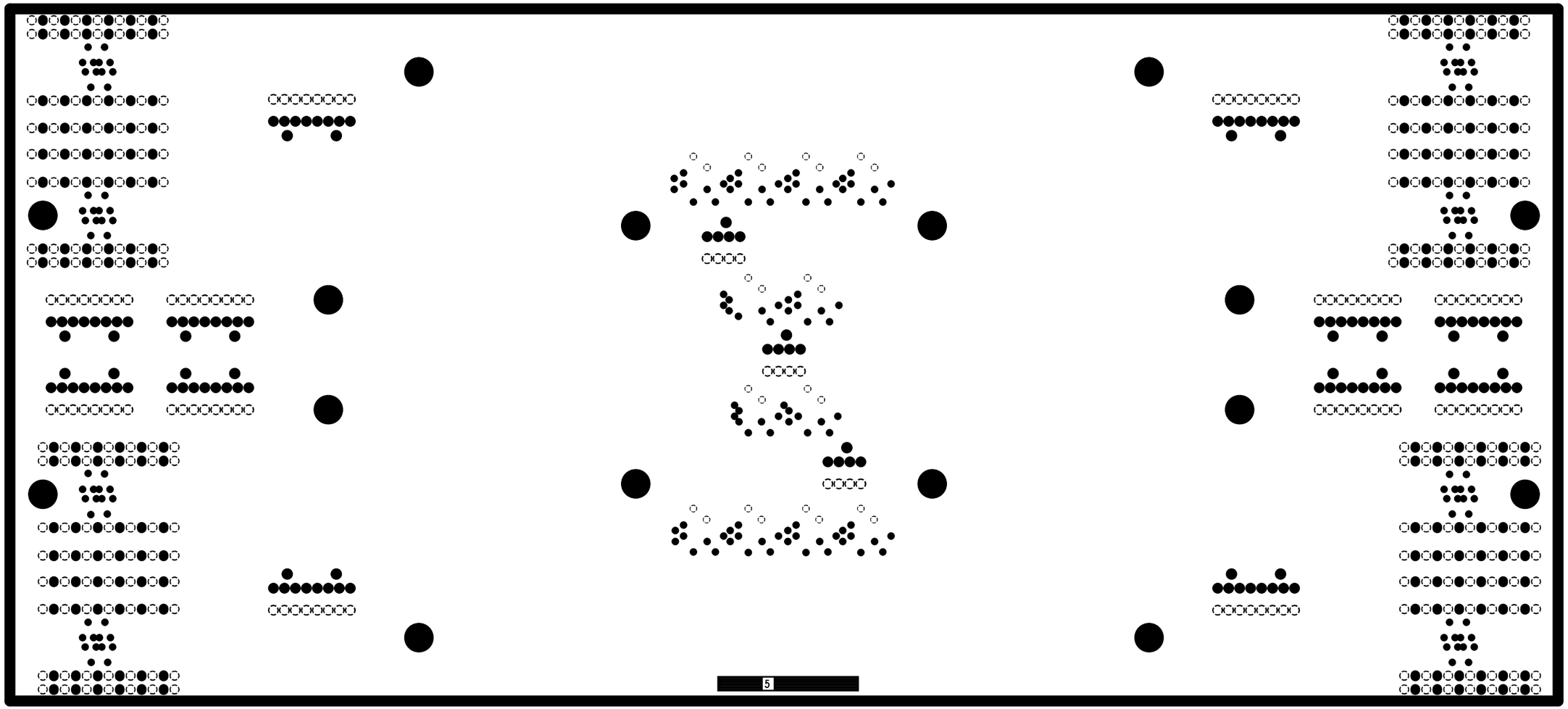
10-962-1 REV - 7/27/99
BACK MOTHERBOARD 5
LAYER 5 - GROUND PLANE



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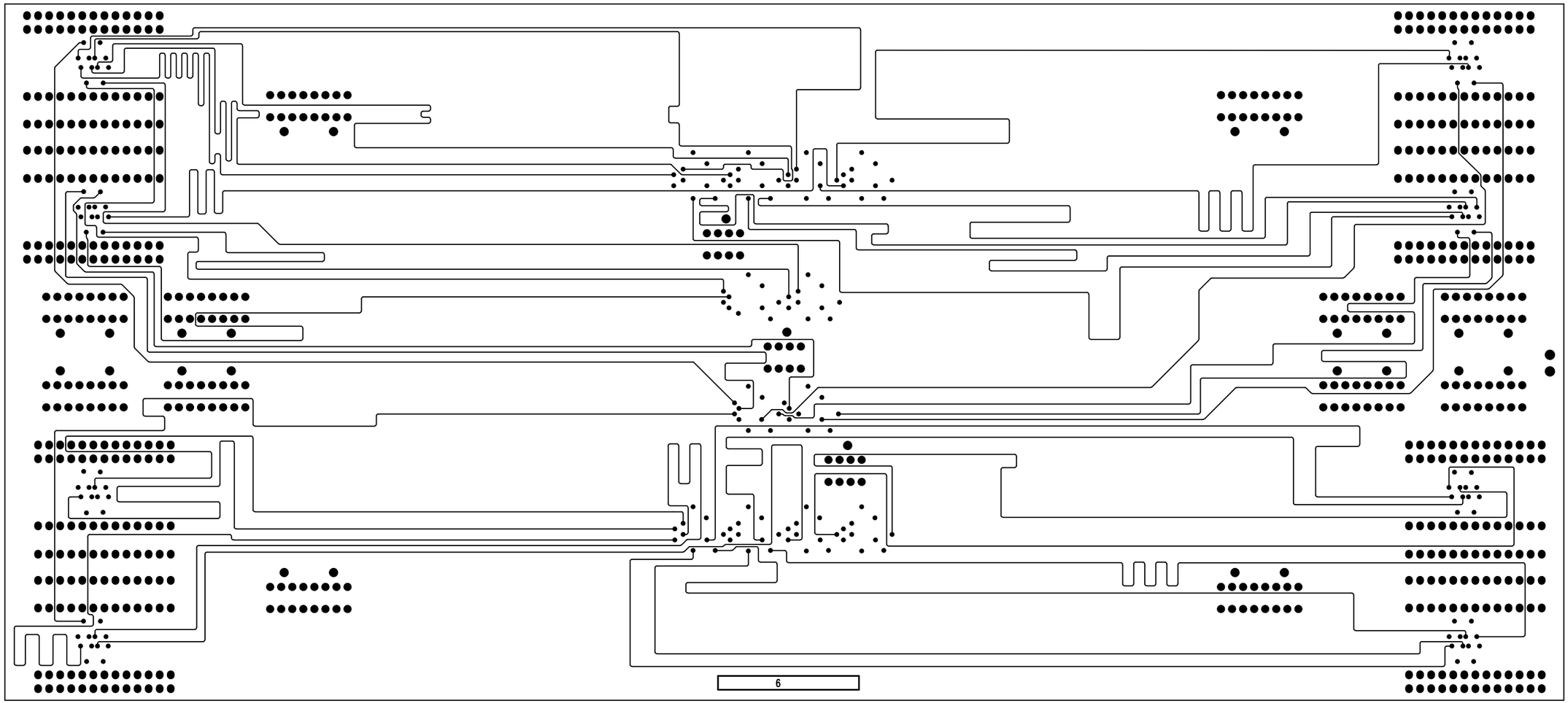
IO-962-1 REV - 7/27/99
BACK MOTHERBOARD 5
LAYER 6 - SIGNALS



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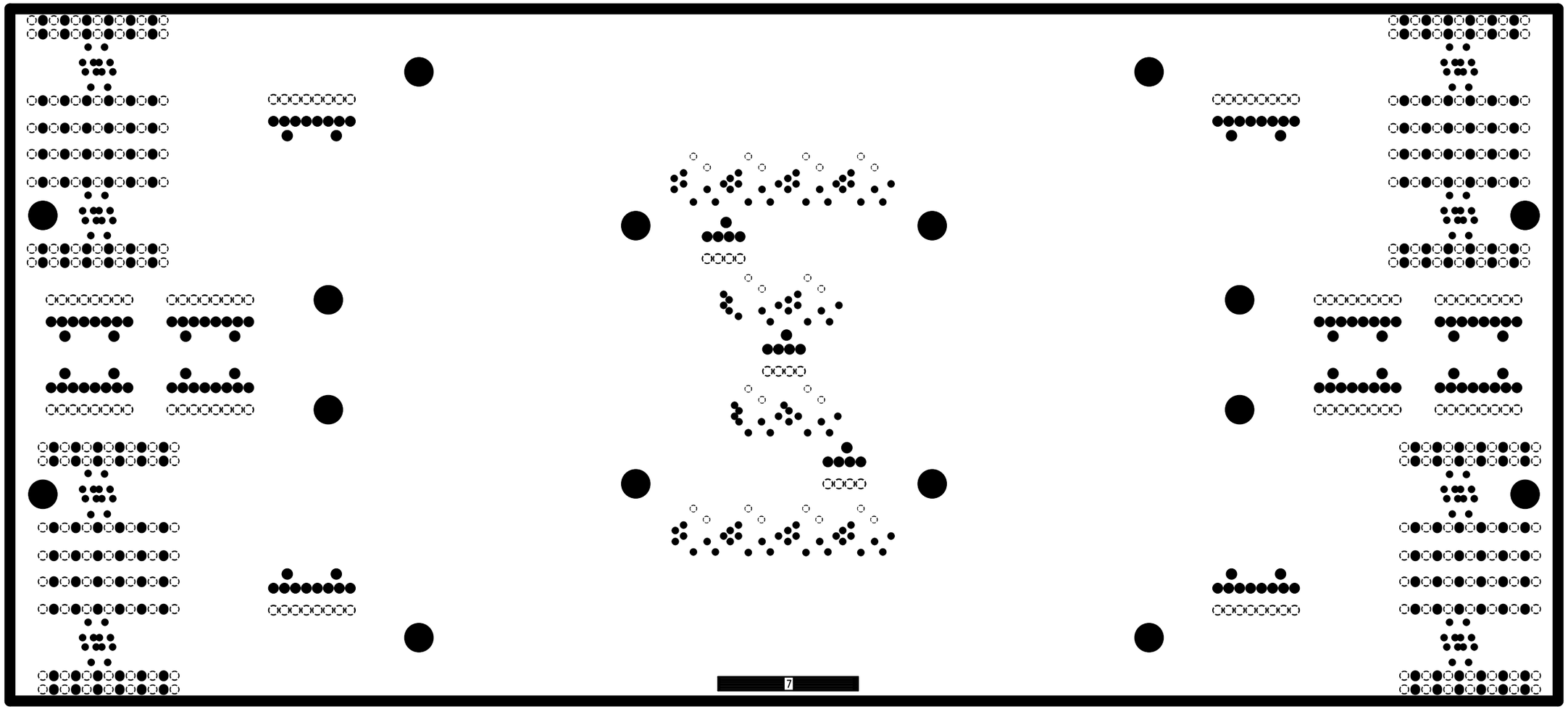
10-962-1 REV - 7/27/99
BACK MOTHERBOARD 5
LAYER 7 - GROUND PLANE



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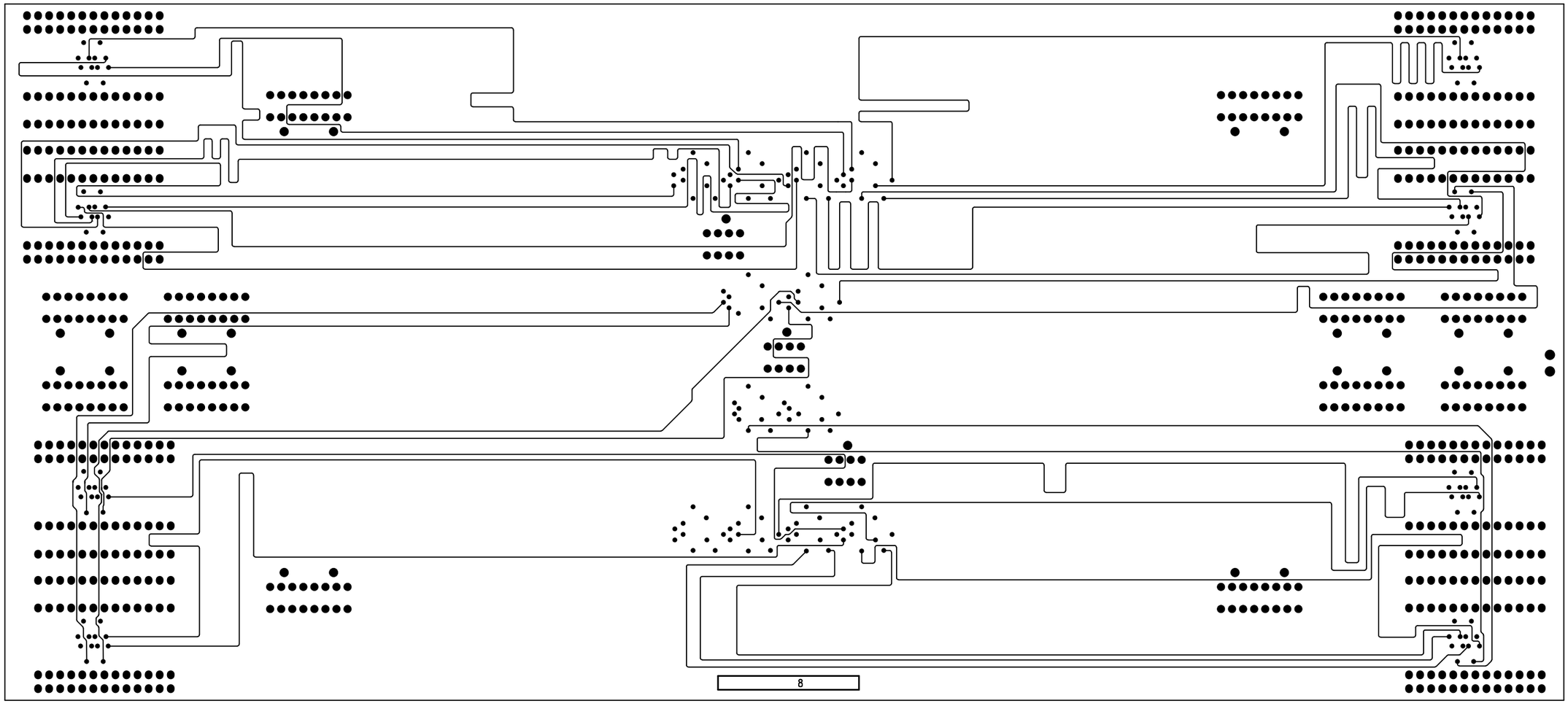
IO-962-1 REV - 7/27/99
BACK MOTHERBOARD 5
LAYER 8 - SIGNALS



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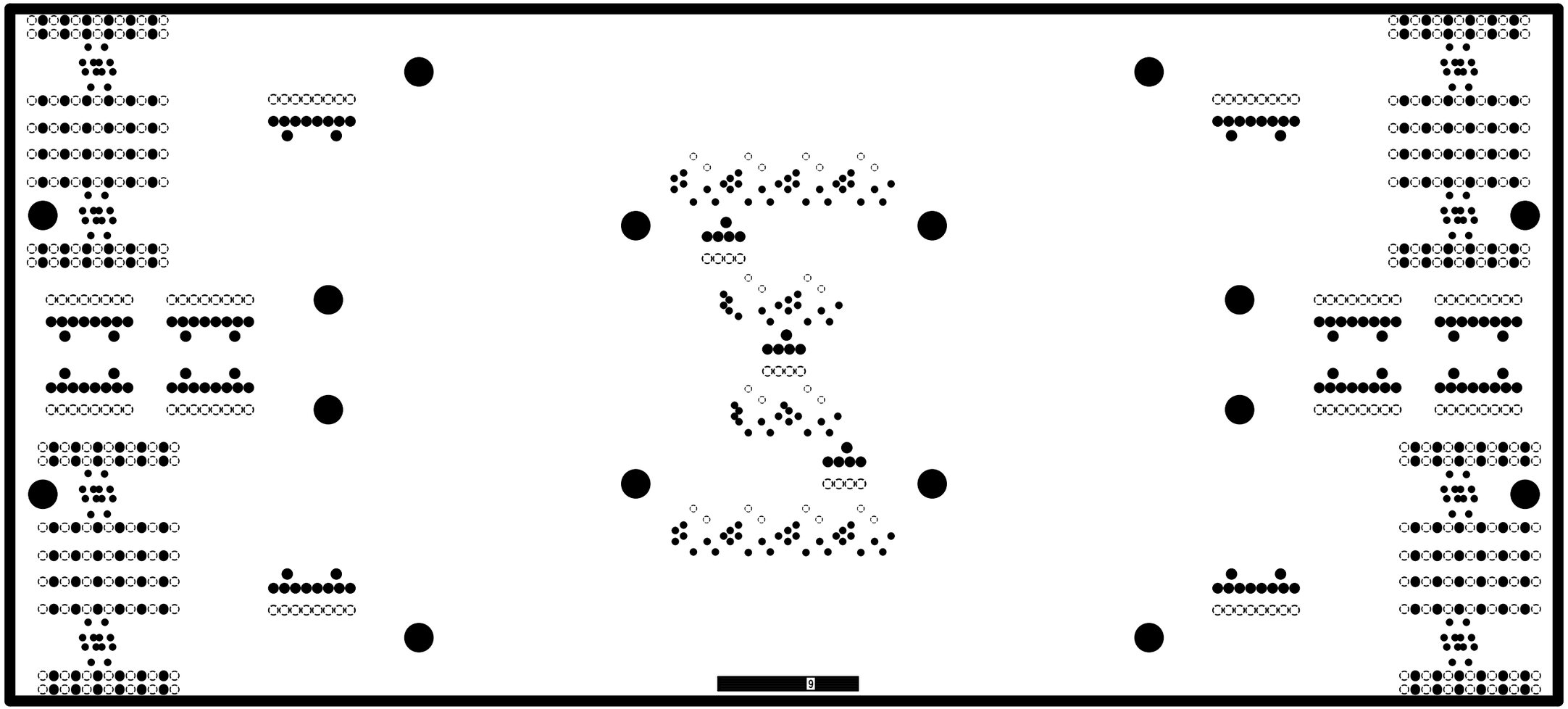
10-962-1 REV - 7/27/99
BACK MOTHERBOARD 5
LAYER 9 - GROUND PLANE



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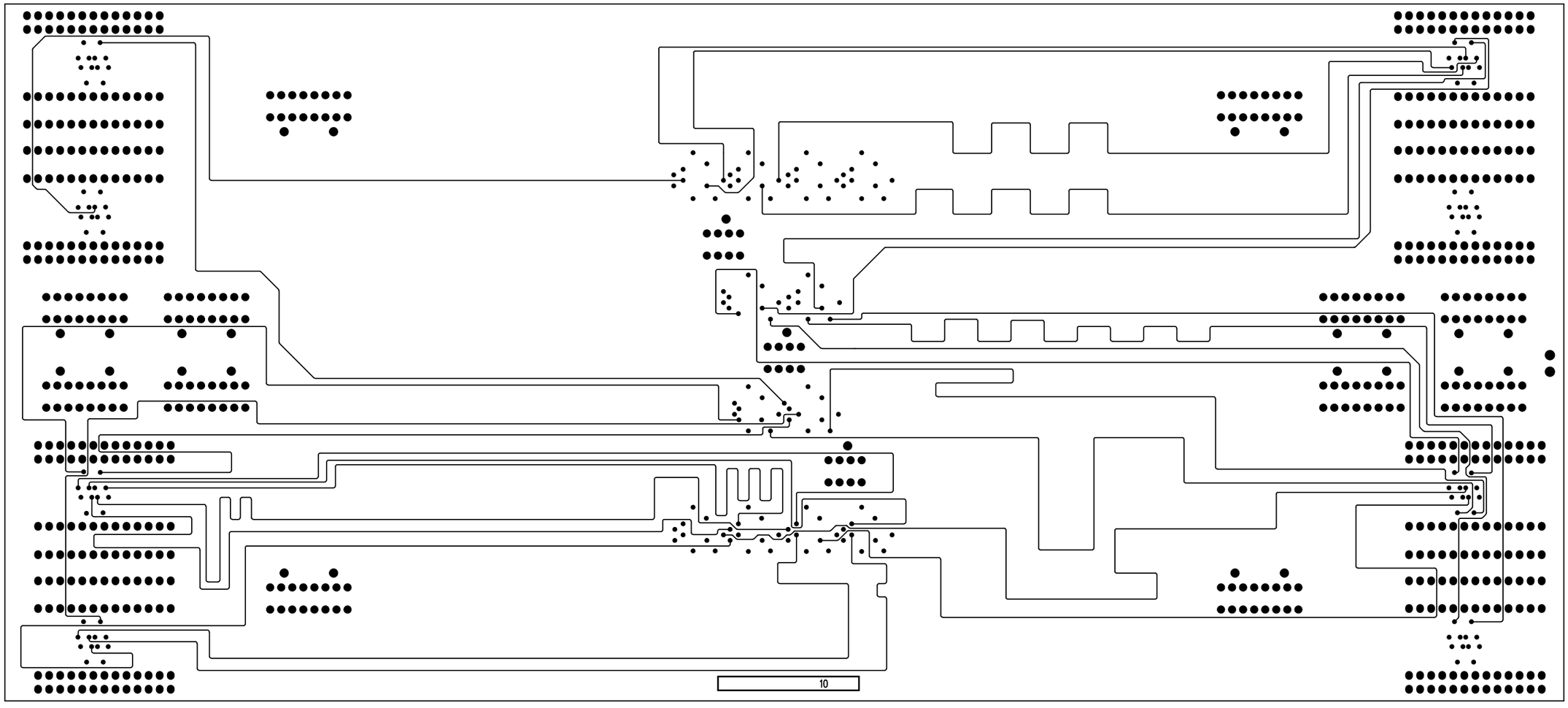
10-962-1 REV - 7/27/99
BACK MOTHERBOARD 5
LAYER 10 - SIGNALS



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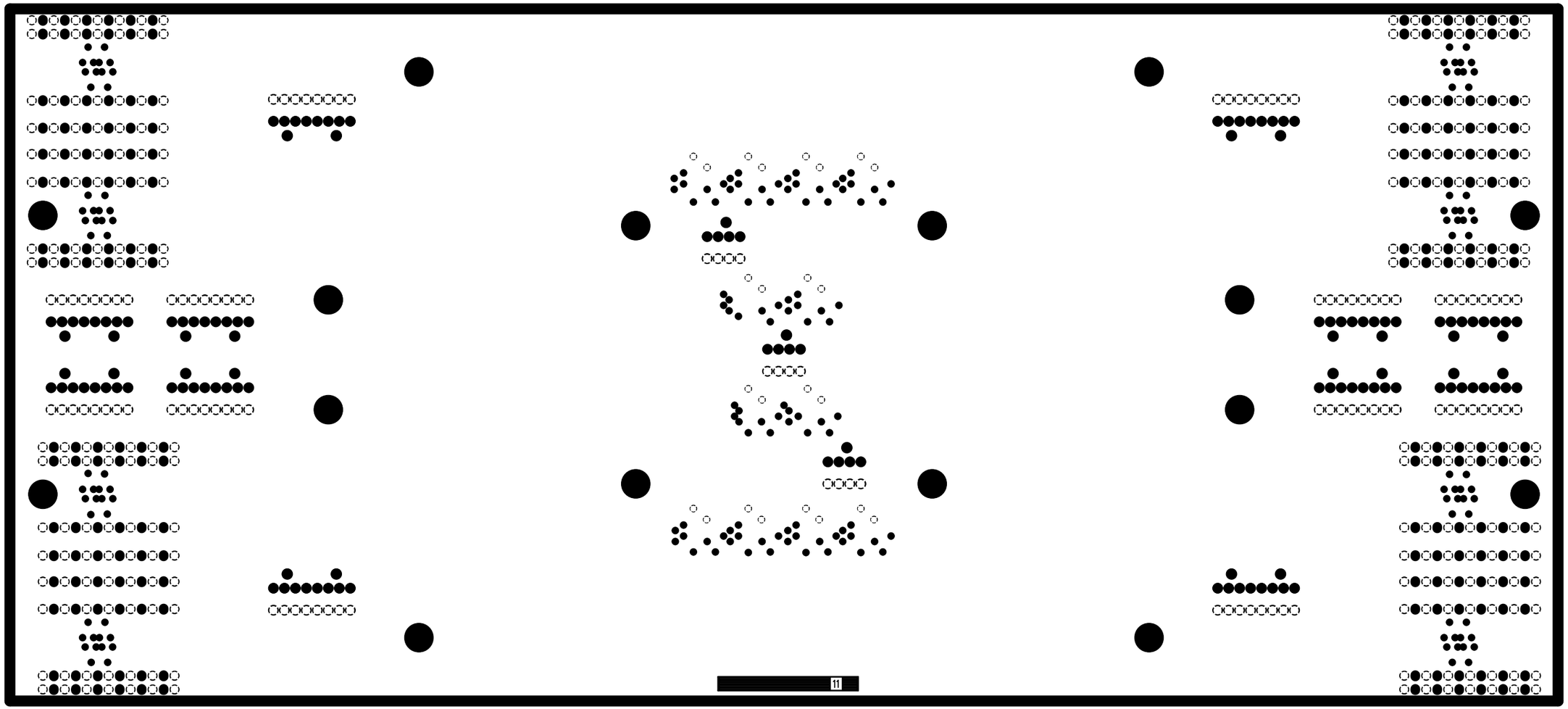
10-962-1 REV - 7/27/99
BACK MOTHERBOARD 5
LAYER 11 - GROUND PLANE



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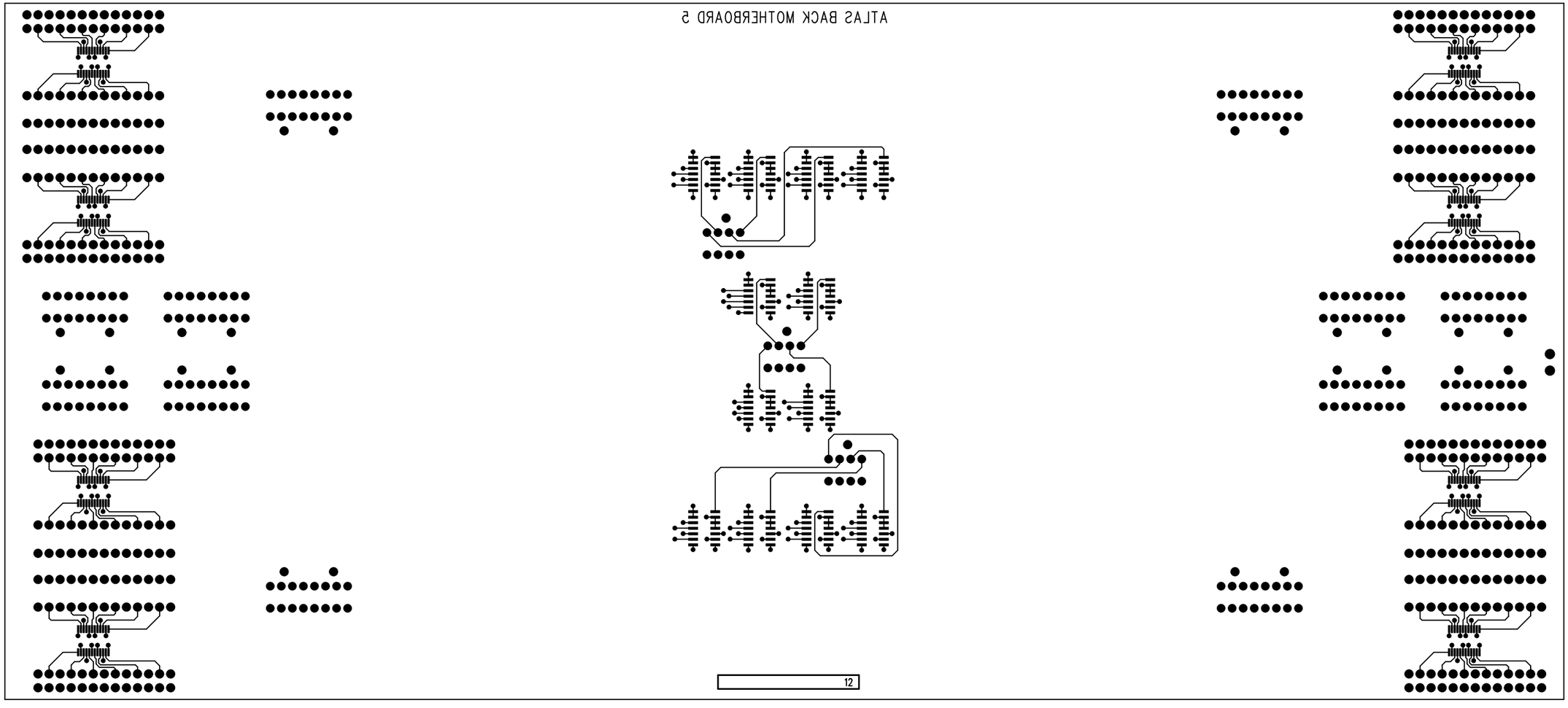
10-962-1 REV - 7/27/99
BACK MOTHERBOARD 5
LAYER 12 - SIGNALS



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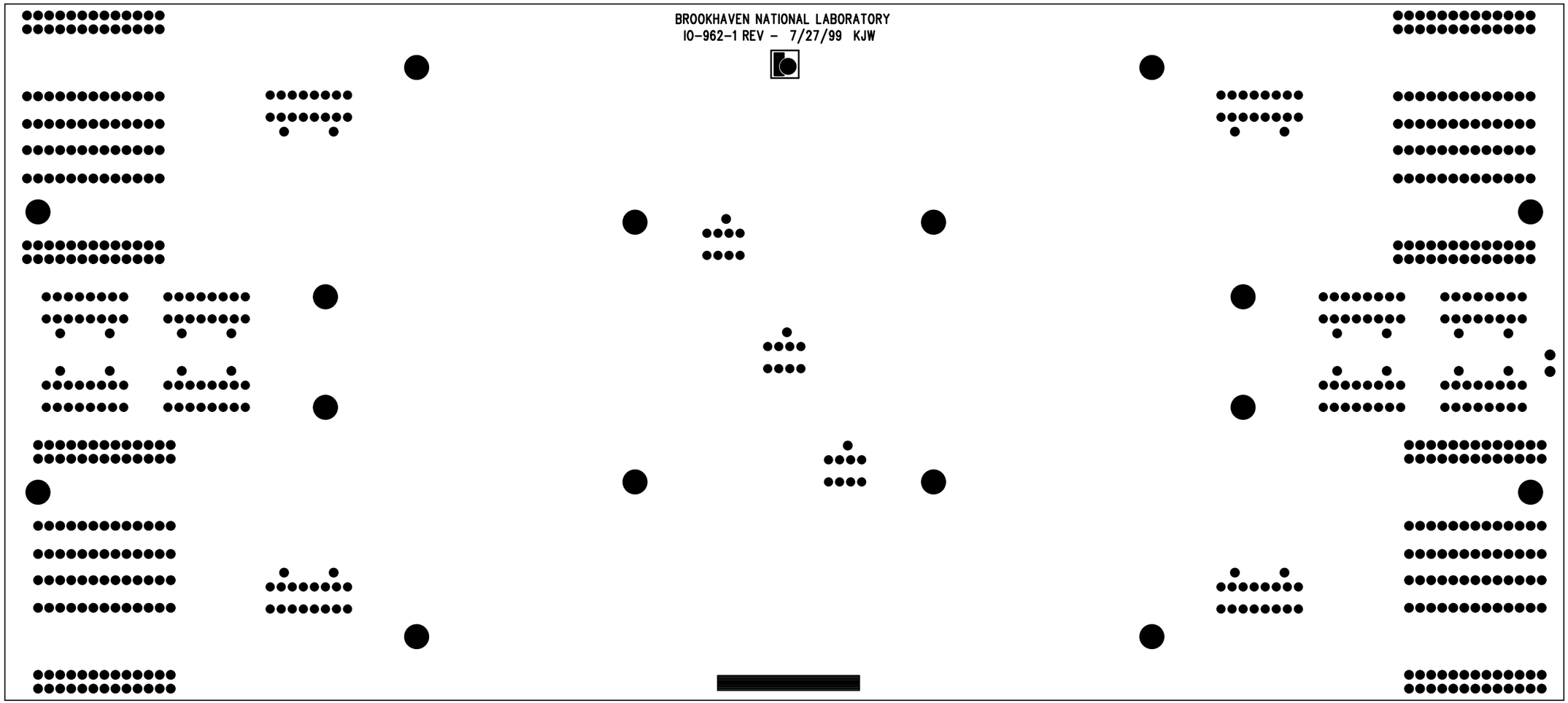
IO-962-1 REV - 7/27/99
BACK MOTHERBOARD 5
SOLDER MASK - TOP



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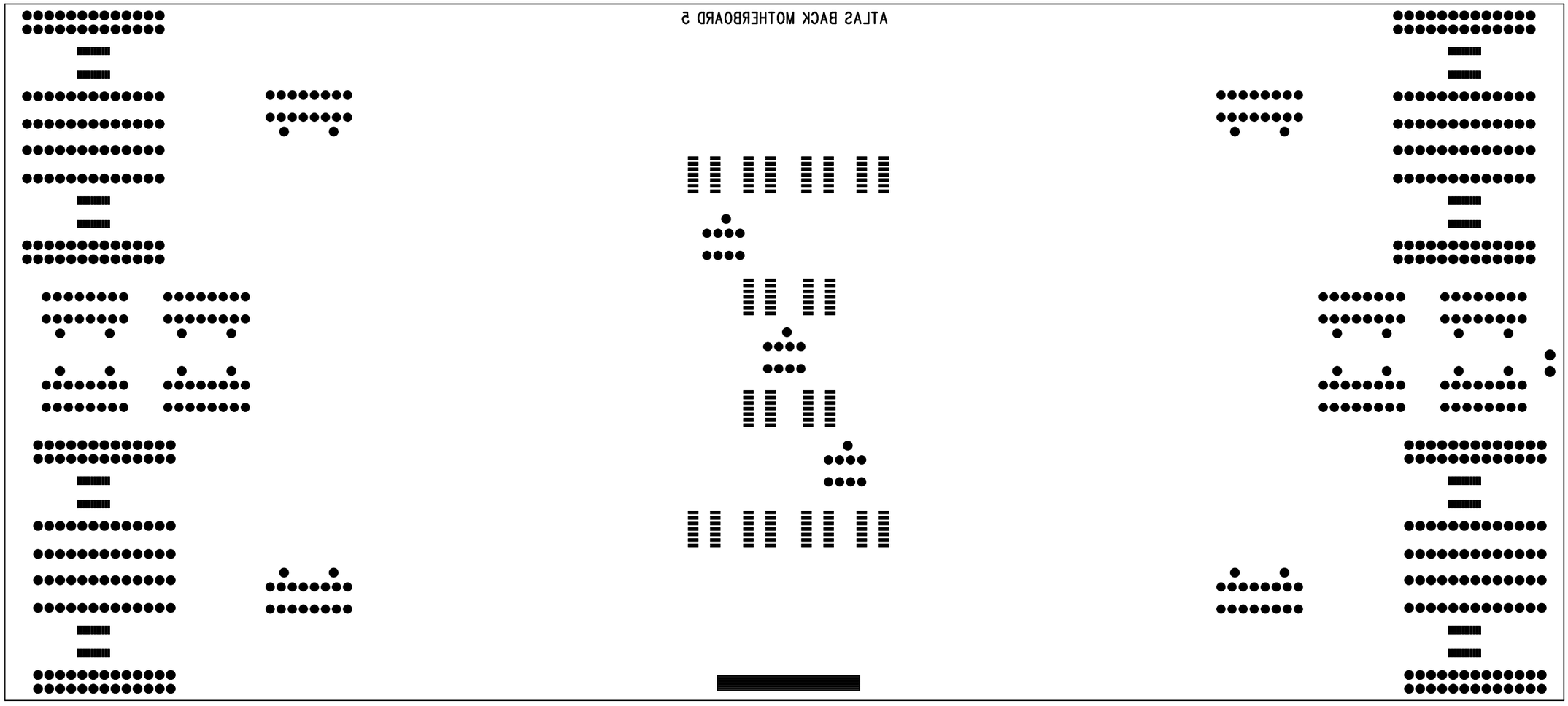
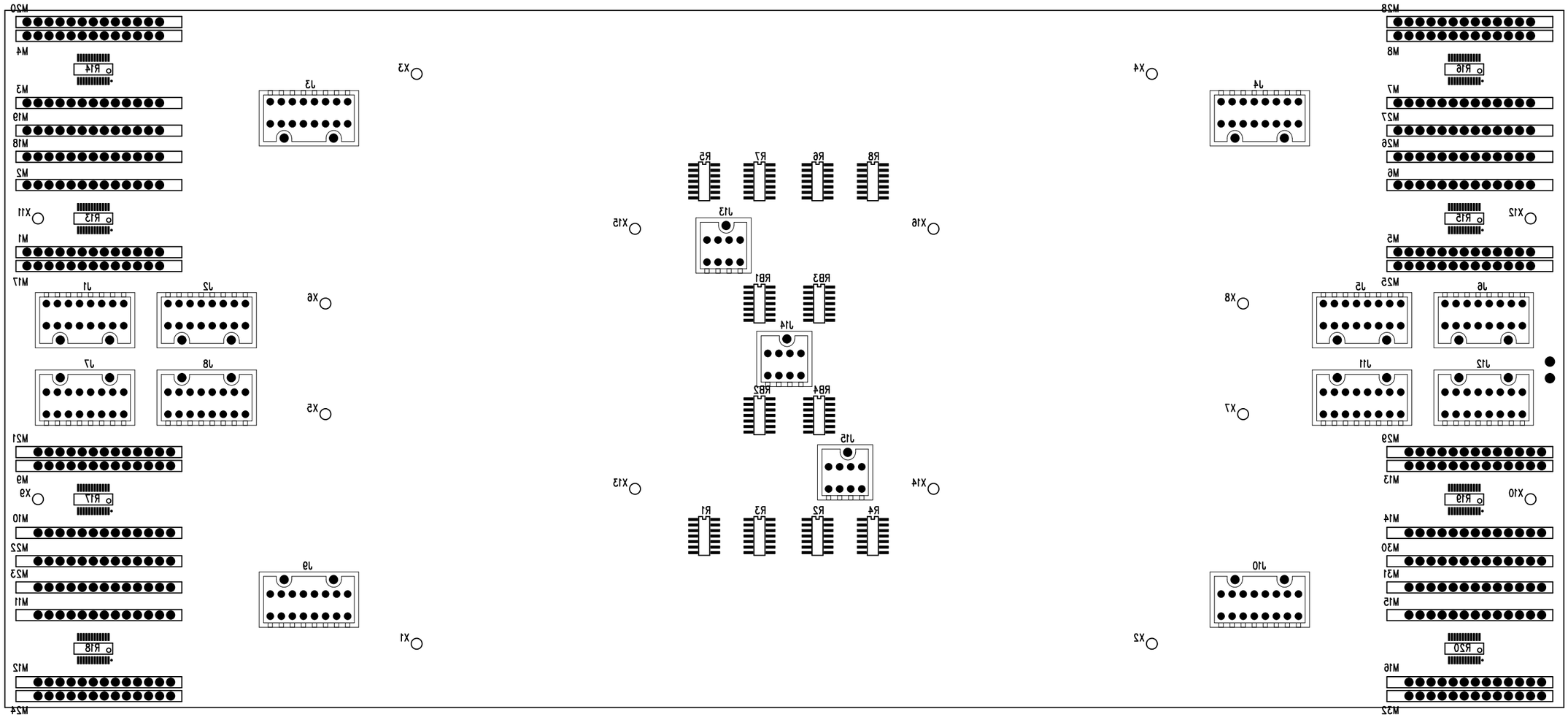
10-962-1 REV - 7/27/99
BACK MOTHERBOARD 5
SOLDER MASK - BOTTOM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10-962-1 REV - 7/27/99
BACK MOTHERBOARD 5
COMPONENT PLACEMENT - BOTTOM