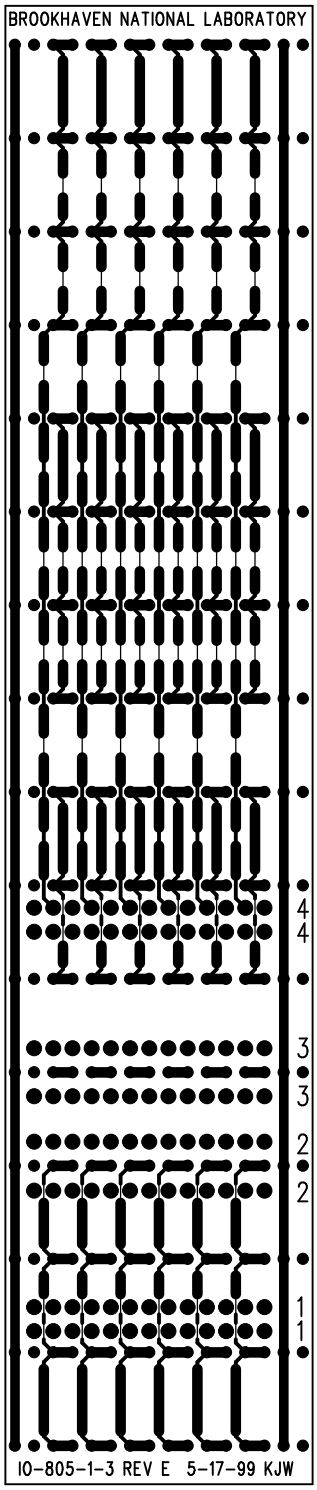
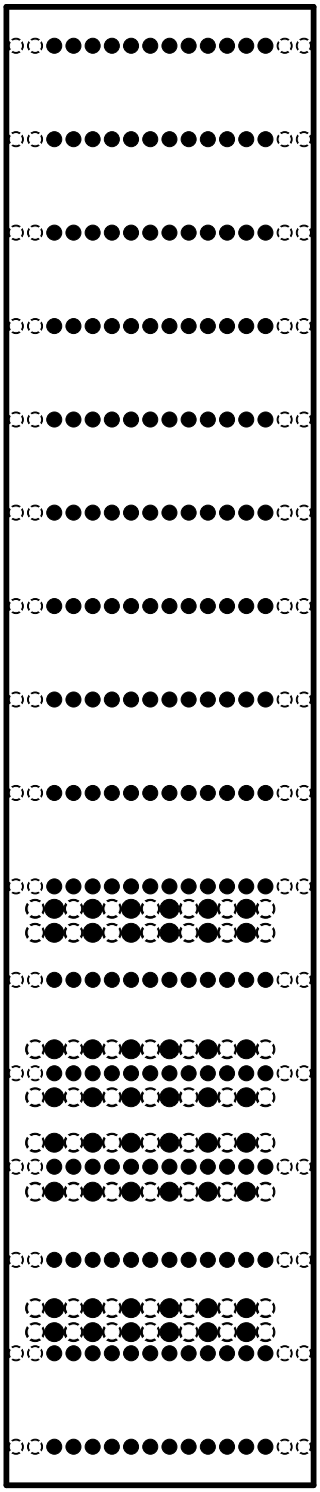
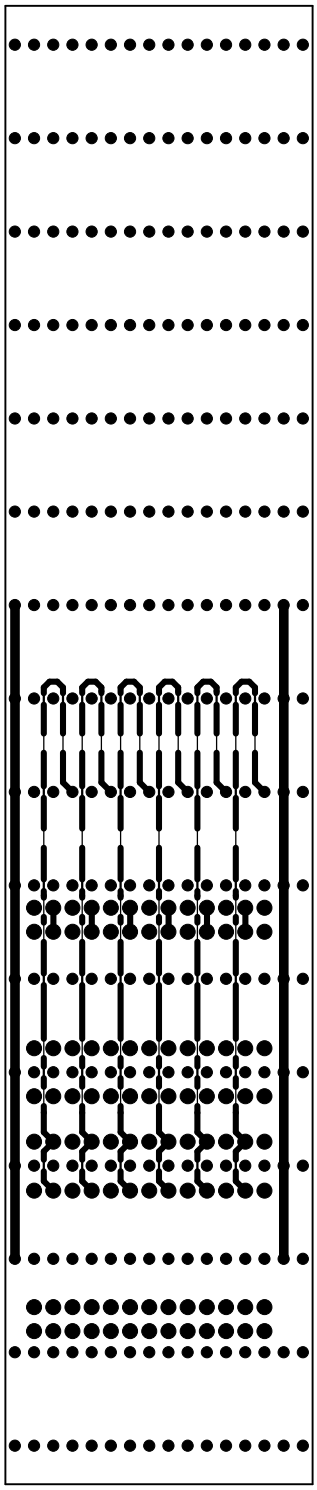
BACK SUMMING BOARD 1
10-805-1-3 REV E
5/17/99 KJW
LAYER 1 - SIGNALS



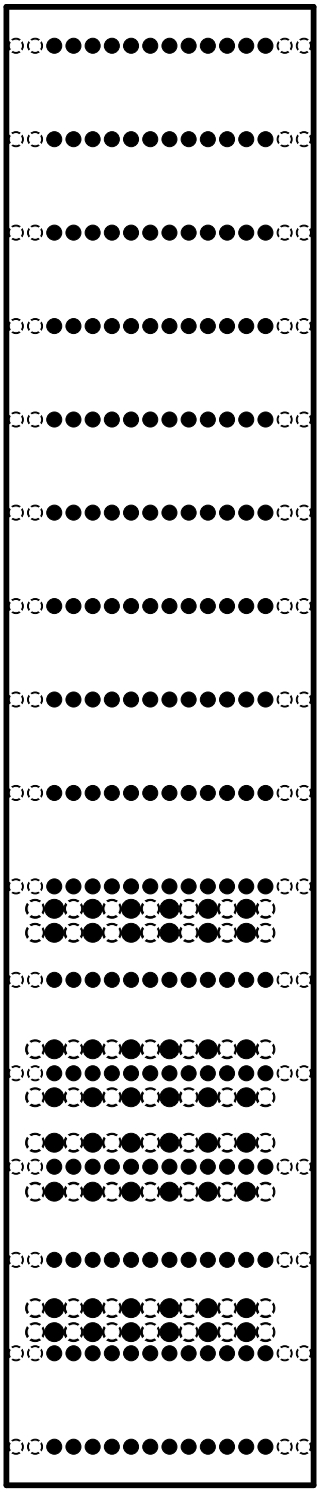
BACK SUMMING BOARD 1
10-805-1-3 REV E
5/17/99 KJW
LAYER 2 - GND



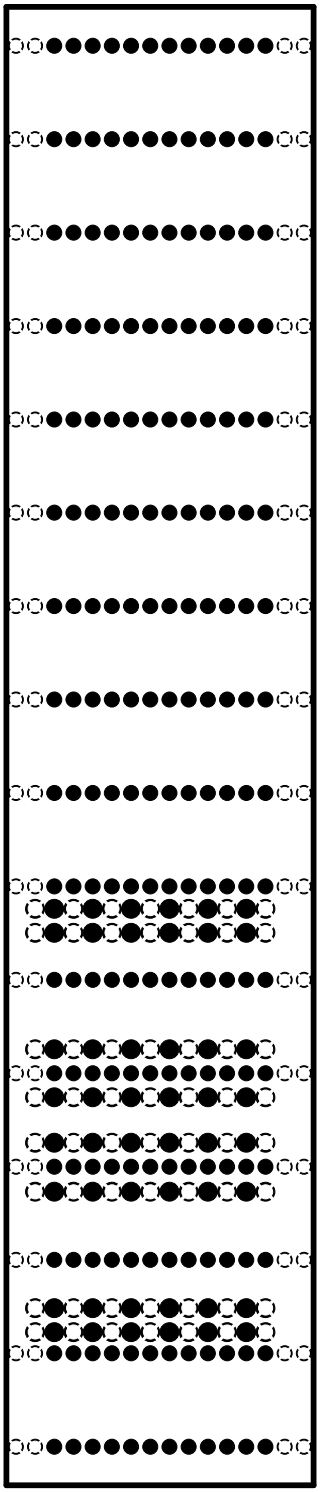
BACK SUMMING BOARD 1
10-805-1-3 REV E
5/17/99 KJW
LAYER 3 - SIGNALS



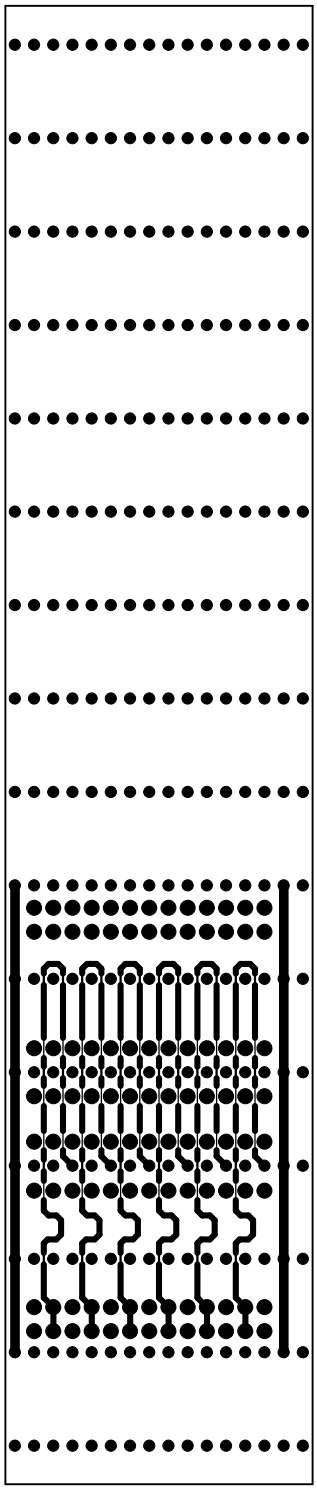
BACK SUMMING BOARD 1
10-805-1-3 REV E
5/17/99 KJW
LAYER 4 - GND



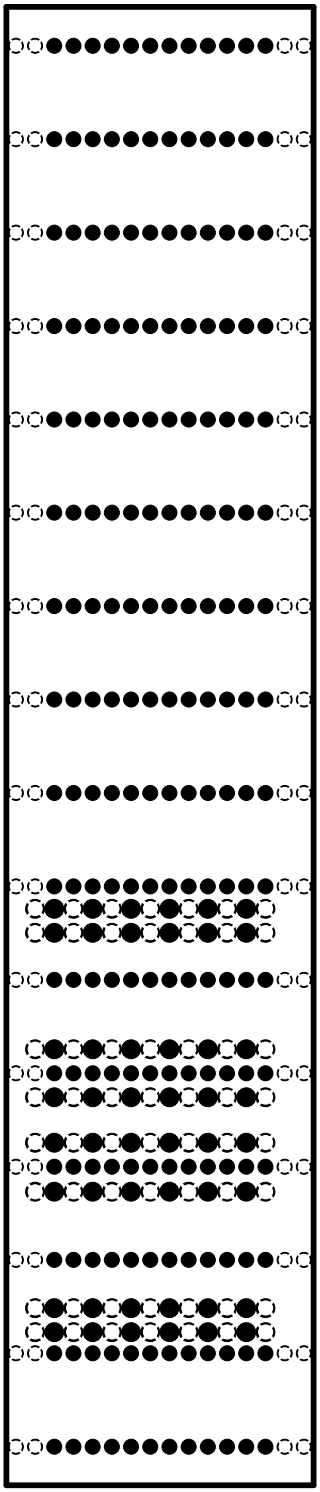
BACK SUMMING BOARD 1
10-805-1-3 REV E
5/17/99 KJW
LAYER 5 - GND



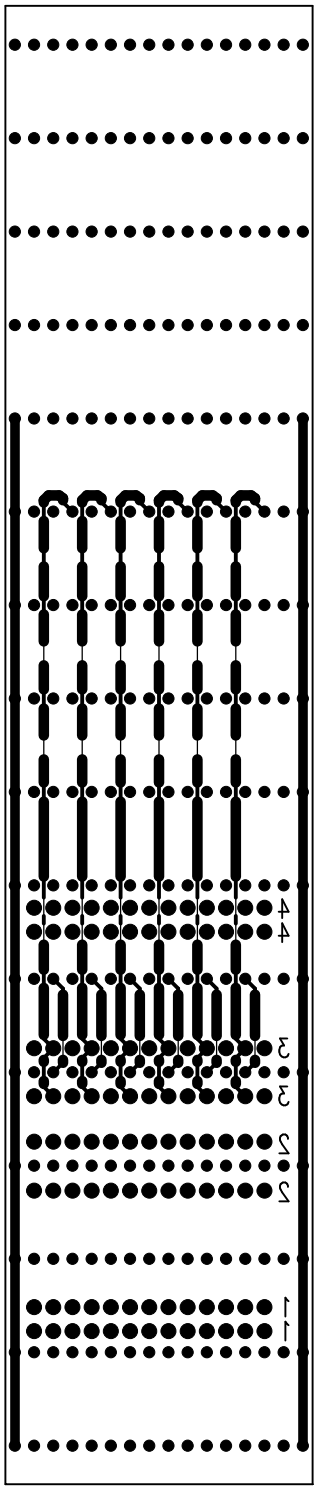
BACK SUMMING BOARD 1
10-805-1-3 REV E
5/17/99 KJW
LAYER 6 - SIGNALS



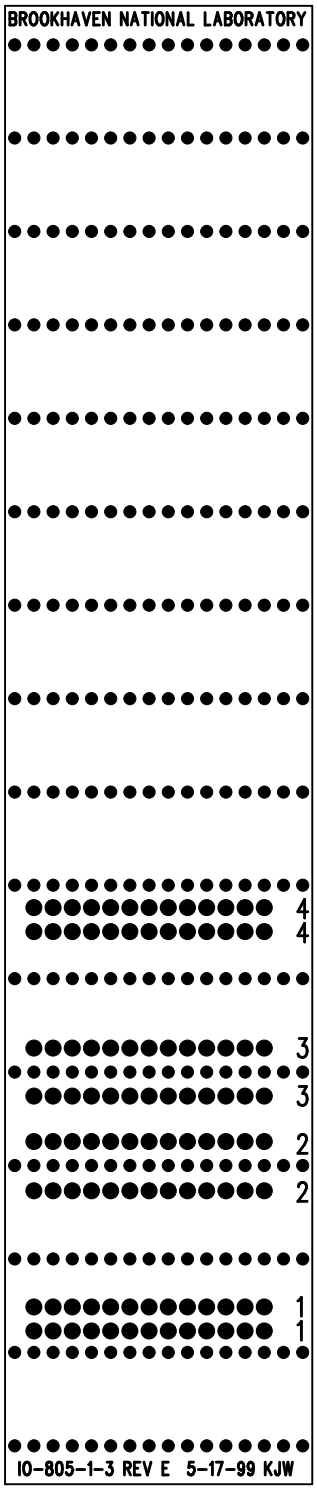
BACK SUMMING BOARD 1
10-805-1-3 REV E
5/17/99 KJW
LAYER 7 - GND



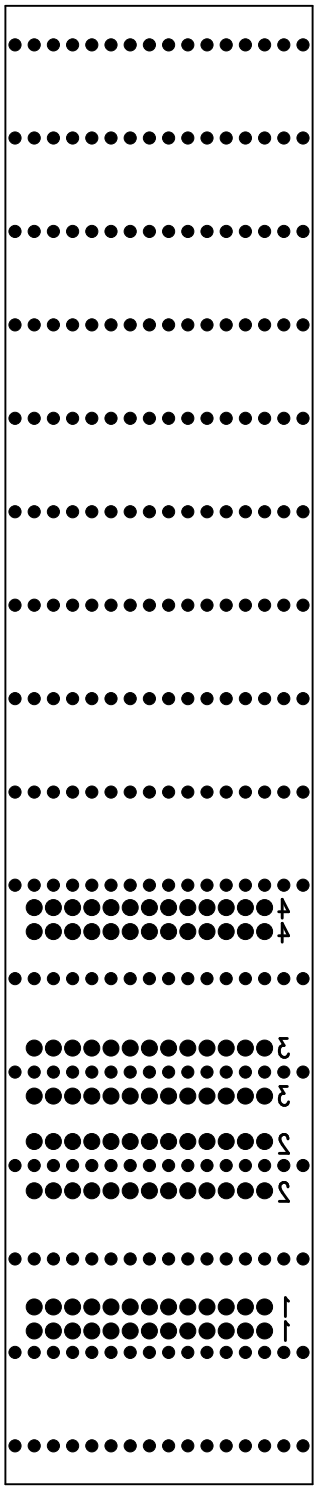
BACK SUMMING BOARD 1
10-805-1-3 REV E
5/17/99 KJW
LAYER 8 - SIGNALS



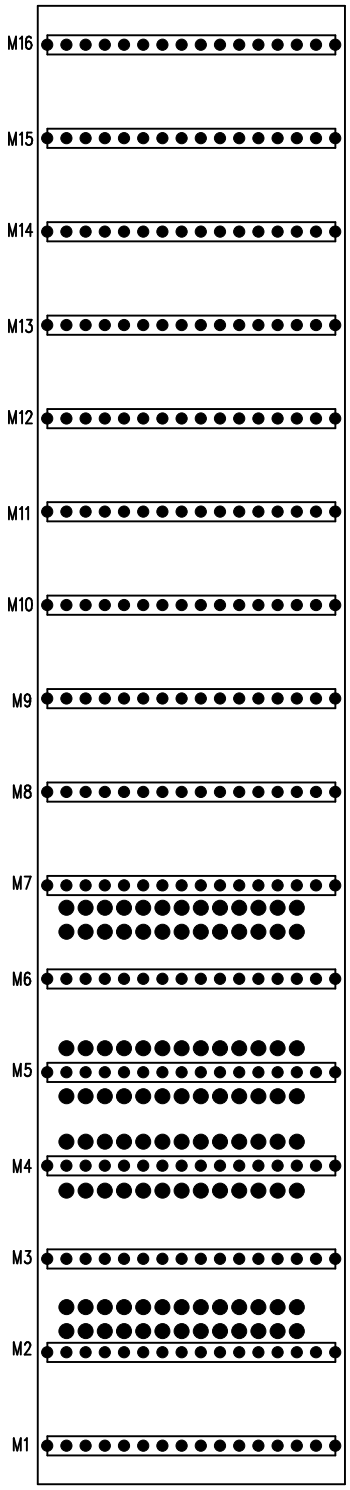
BACK SUMMING BOARD 1
10-805-1-3 REV E
5/17/99 KJW
SOLDER MASK TOP



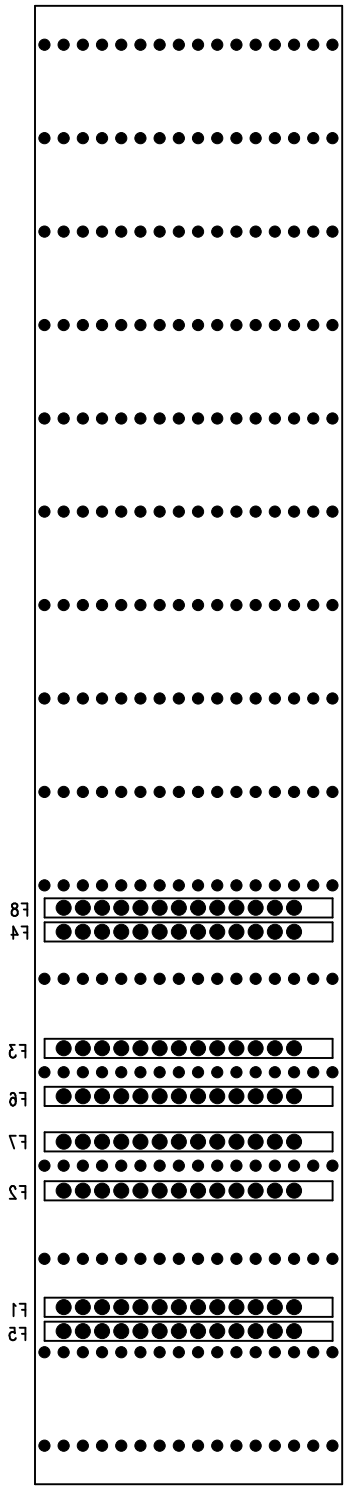
BACK SUMMING BOARD 1
10-805-1-3 REV E
5/17/99 KJW
SOLDER MASK BOTTOM



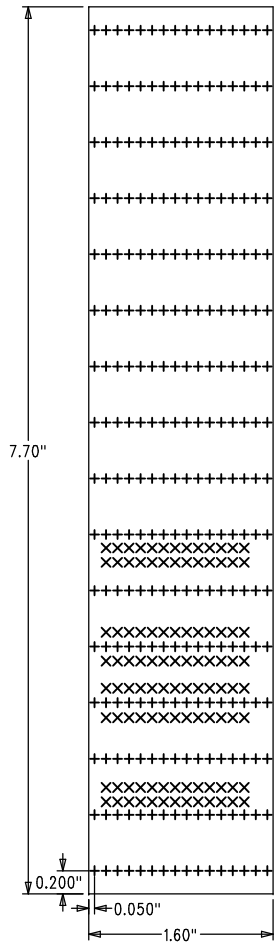
BACK SUMMING BOARD 1
10-805-1-3 REV E
5/17/99 KJW
COMPONENT PLACEMENT - TOP



BACK SUMMING BOARD 1
IO-805-1-3 REV E
5/17/99 KJW
COMPONENT PLACEMENT - BOTTOM



BACK SUMMING BOARD 1
10-805-1-3 REV E
5/17/99 KJW



(VIEWED FROM PRIMARY SIDE)

FABRICATION NOTES (REV 1.0)

1) FINISHED TRACE LINE WIDTHS SHOULD ACHIEVE AN IMPEDANCE OF 10 OHMS +/-10%.

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" ☒ 0.034"
☐ +/- 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

CONTROLLED IMPEDANCE REQUIREMENTS ARE 10 OHMS +/-10%

FINISHED CONDUCTOR WIDTH IS .055" ON OUTER LAYERS AND .0315" ON INNER LAYERS.
DIELECTRIC SEPERATION BETWEEN LAYERS IS SPECIFIED ON LAYER STACK-UP.
THESE NUMBERS ARE FOR REFERENCE ONLY. FINAL WIDTHS AND SEPERATIONS
TO ACHIEVE 10 OHMS IMPEDANCE SHALL BE THE RESPONSIBILITY OF THE BOARD FABRICATOR.

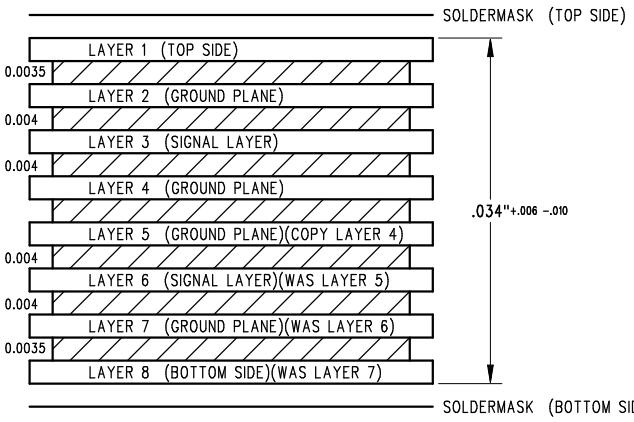
REVISION RECORD

LTR:	ECO NO:	APPROVED:	DATE:

HOLE SIZE CHART

	SYM	SIZE (AFTER PLATING)	QTY	PLATED
	+	.037 +.003 -.003	256	YES
*	×	.0595 +.002 -.002	104	YES

LAYUP DETAIL
8 LAYER



UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
DECIMALS: .XX ± .010, .XXX ± .005, .XXXX ± .005
ANGULAR: ± 1°/2
DO NOT SCALE DRAWING

DRAWN: K WOLNIEWICZ	DATED: 5-17-99	
CHECKED:	DATED:	
QUALITY CONTROL:	DATED:	
RELEASED:	DATED:	

COMPANY: BROOKHAVEN NATIONAL LABORATORY
INSTRUMENTATION DIVISION
UPTON, NY 11973

TITLE: BACK SUMMING BOARD 1

CODE:	SIZE:	DRAWING NO:	REV:
	B	10-805-1	E

SCALE: 1 : 1 SHEET: 1 OF 1