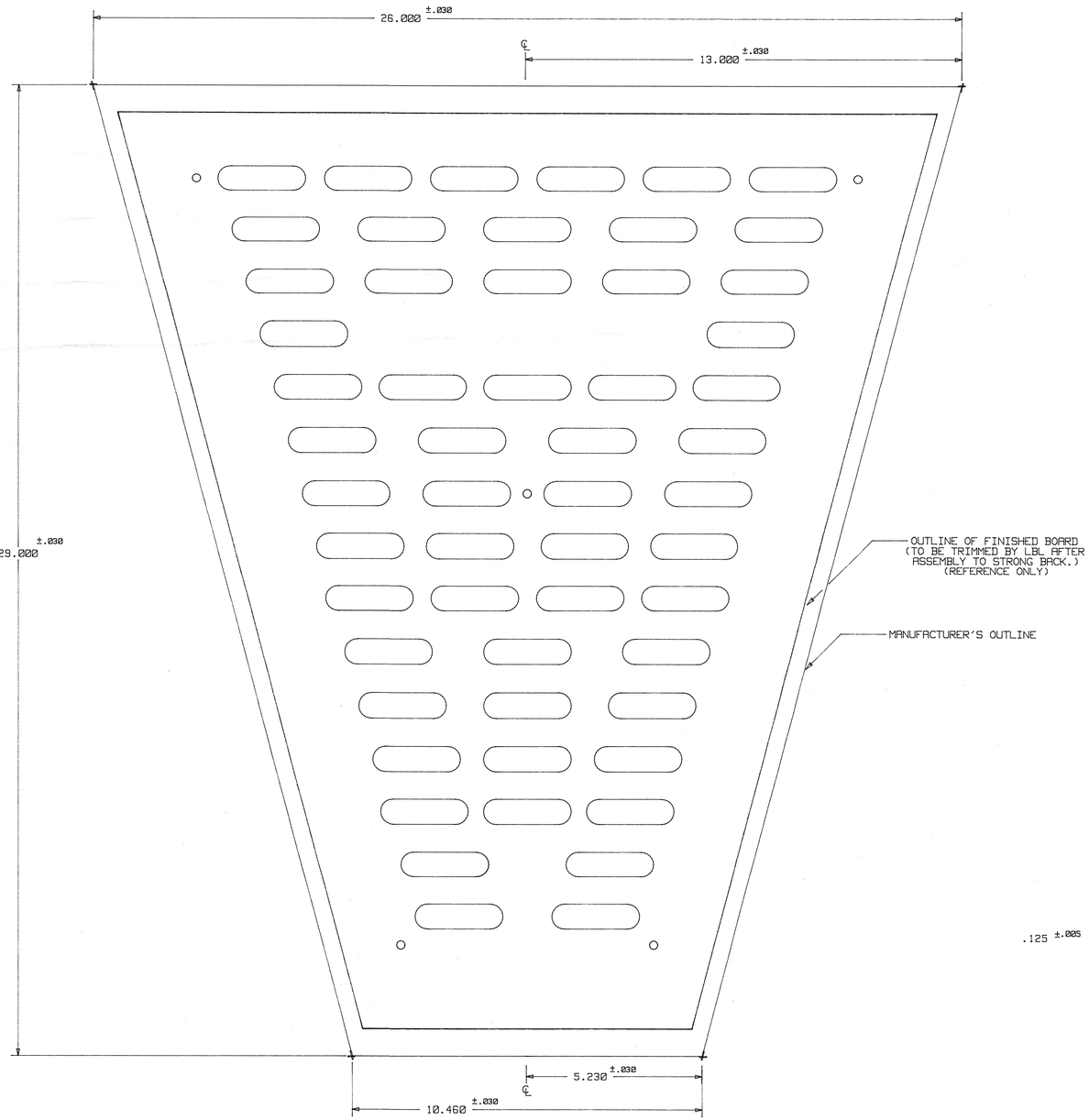
| REV. | CHANGES | DRAWN | DATE | CHKD. | DATE |
|---|---|---|---|---|---|
| | | | | | |

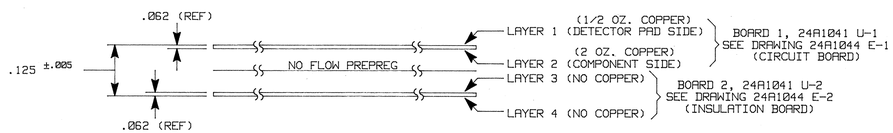



VIEWED FROM CONNECTOR SIDE
WITH INSULATION BOARD

NOTES:

1. BOARD MATERIAL: (4 LAYER BOARD)
   A) BOARD 1 (CIRCUIT BOARD) - GLASS EPOXY LAMINATE TYPE NEMA G10, .062 THICK PER MIL-P-13949G FL-GEN 062C-2/.5-B1B (2 OZ. COPPER FOR LAYER 2 AND 1/2 OZ. COPPER FOR LAYER 1).
   B) BOARD 2 (INSULATION BOARD) - GLASS EPOXY LAMINATE TYPE NEMA G10, .062 THICK PER MIL-P-13949G FL-GEN 062C-.5/.5-B1B (1/2 OZ EACH SIDE, ETCHED AWAY).
2. THERE IS BE TIN PLATING ONLY ON LAYER 2 ON SMT CONNECTOR PADS. THERE IS TO BE NO TIN PLATING THROUGH HOLES. SEE DRAWING 24A1044 E-3.
3. FINISHED BOARD THICKNESS TO BE .125 +/-.005. OVER-ALL DIMENSIONS FOR BOARD ARE 26.000W X 29.000H. DIMENSIONS ARE IN INCHES.
4. PREPREG TO BE NO FLOW TYPE.
5. ARTWORK TO BE PLOTTED ON GLASS FOR REGISTRATION ACCURACY.
6. REFERENCE DRAWINGS:

| | | |
|---|---|---|
| 24A1044 E-1 | a000886e1 | HOLE SCHEDULE - CIRCUIT BOARD |
| 24A1044 E-2 | a000886e2 | ROUTING SCHEDULE - INSULATION BOARD |
| 24A1044 E-3 | a000886e3 | ARTWORK - TIN PLATING |

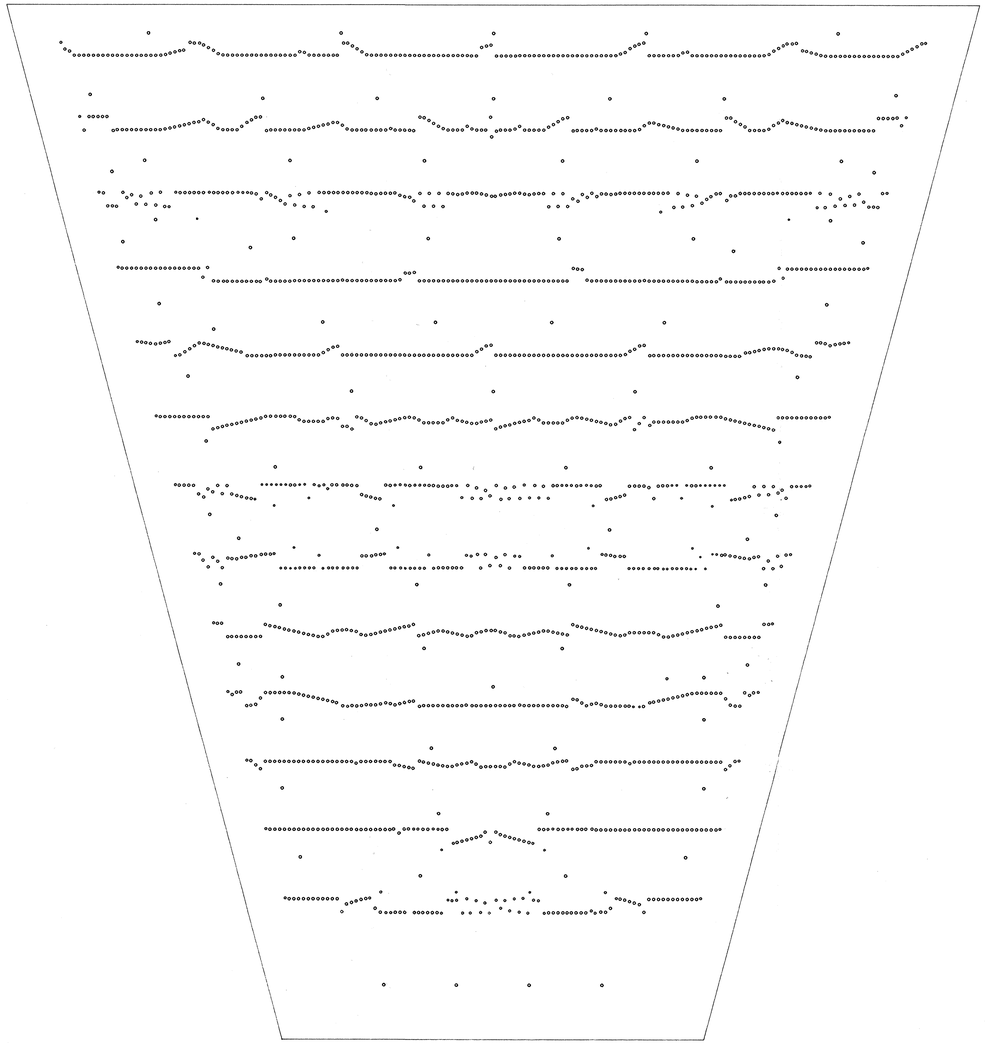



| | | | | | |
|---|---|---|---|---|---|
| DIST I: | | TITLE | STAR TPC | | |
| DIST II: | | | INNER SECTOR | | |
| DIST III: | | | PAD PLANE INNER SECTOR BOARD - 2 LAYER | | |
| SHOWN ON | | | BOARD OUTLINE (a000886u1) | | |
| ACCOUNT NUMBER | 8052-24 | DRAWN STIRKKINEN | DATE 09/13/93 | LAWRENCE BERKELEY LABORATORY | |
| SERIAL NUMBER | | CHECKED | DATE | UNIVERSITY OF CALIFORNIA | |
| DATE ISSUED | NO. REQD. | APPROVED | DATE | OFFICE OF ELECTRONICS ENGINEERING | |
| DATE RECVD. | | ENGINEER THOMAS NOGGLE | | FILE NO. a000886m1 / SIZE 4 / DRAWING NO. 24A1044 M-1 / REV. | |
| DEL. TO | | SCALE NONE | E2,E7 | SHEET 1 OF 1 | |

FRED BESSE 10/21/94

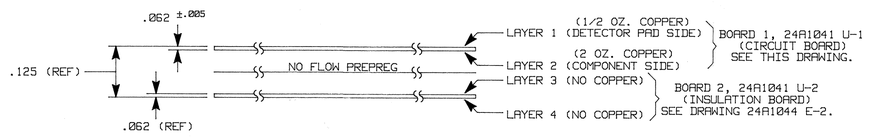
OCTOBER 20, 1994

| REV. | CHANGES | DRAWN | DATE | CHKD. | DATE |
|---|---|---|---|---|---|
| | | | | | |



DETECTOR PAD SIDE VIEW

24A1041 U-1 a000886u1




NOTES:

1. BOARD MATERIAL: (4 LAYER BOARD)
   A) BOARD 1 (CIRCUIT BOARD) - EPOXY GLASS LAMINATE TYPE NEMA G10 .062 THICK PER MIL-P-13949G FL-GEN 062C-2/.5-B1B (2 OZ. COPPER - LAYER 2 AND 1/2 OZ. COPPER - LAYER 1).
   B) BOARD 2 (INSULATION BOARD) - SEE DRAWING 24A1044 E-2 (a000885e2). THERE IS NO COPPER OR CIRCUITRY ON THIS BOARD.
2. THERE IS TO BE TIN PLATING USED ONLY ON LAYER 2 ON SMT CONNECTOR PADS. THERE IS TO BE NO TIN PLATING IN THROUGH HOLES. SEE DRAWING 24A1044 E-3 (a000886e3).
3. FINISHED HOLE SIZE AFTER COPPER PLATING IS .035 DIA. +/-.002 (INCHES). MINIMUM ANNULAR RING SHALL BE ANSI/ IPC-RB-276 CLASS 3. THERE ARE A TOTAL OF 1853 HOLES.
4. CORE AND PREPREG THICKNESS TO BE DETERMINED BY MANUFACTURER PER IPC-L-109A OR MIL-P-13949G. CLASS OF RESIN FLOW: NO FLOW.
5. FINISHED BOARD THICKNESS IS .125 +/-.005".
6. BOARD SIZE IS 26.000W X 10.460W X 29.000H +/-.030. DIMENSIONS ARE IN INCHES. BOARD OUTLINE DRAWING IS 24A1044 M-1 (a000886m1).
7. ARTWORK TO BE PLOTTED ON GLASS FOR REGISTRATION ACCURACY.
8. REFERENCE DRAWINGS:

| | | |
|---|---|---|
| 24A1044 M-1 | a000886m1 | BOARD OUTLINE |
| 24A1044 E-2 | a000886e2 | ROUTING SCHEDULE - INSULATION BOARD |
| 24A1044 E-3 | a000886e3 | ARTWORK - TIN PLATING (LAYER2) |

HOLE SCHEDULE

| TOOLING NO. | HOLE DIA. | COUNT |
|---|---|---|
| 1 | .035 | 1563 |
| 2 | .028 | 155 |
| 3 | .020 | 90 |
| 4 | .026 | 45 |

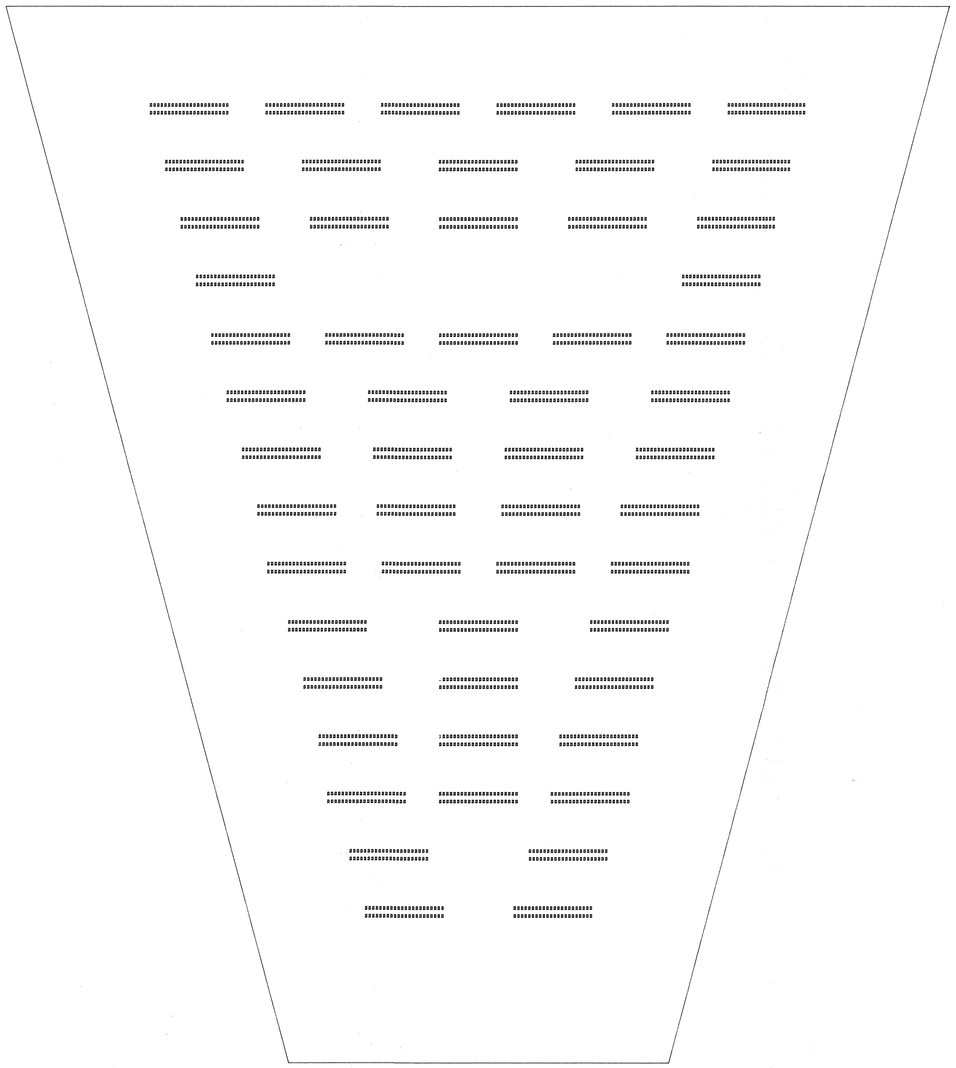
TOTAL HOLE COUNT = 1853.

USE .035 DIA HOLE FOR ALL HOLES.

| | | | |
|---|---|---|---|
| DIST: I: / II: / III: | TITLE: STAR TPC<br>INNER SECTOR<br>PAD PLANE INNER SECTOR BOARD - 2 LAYER<br>HOLE SCHEDULE - BOARD 1 (CIRCUIT BOARD) | | |
| SHOWN ON | | | |
| ACCOUNT NUMBER: 8052-24 | DRAWN: STIRKKINEN | DATE: 09/27/93 | LAWRENCE BERKELEY LABORATORY |
| SERIAL NUMBER | CHECKED | DATE | UNIVERSITY OF CALIFORNIA |
| DATE ISSUED / NO. REQD. | APPROVED | DATE | OFFICE OF ELECTRONICS ENGINEERING |
| DATE RECVD. | ENGINEER: FRED BIESER | FILE NO.: a000886e1 | SIZE: 4 / DRAWING NO.: 24A1044 E-1 / REV. |
| DEL. TO | SCALE: NONE | E14,C29 | SHEET 1 OF 3 |

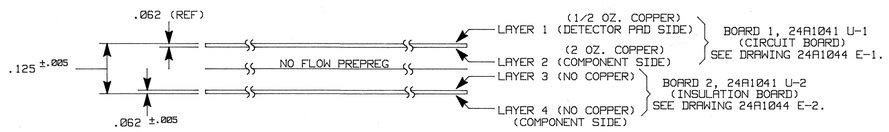
OCTOBER 20, 1994

| REV. | CHANGES | DRAWN | DATE | CHKD. | DATE |
|---|---|---|---|---|---|
| | | | | | |



COMPONENT SIDE (LAYER 2) VIEW

24A1041 U-1 a000886u1



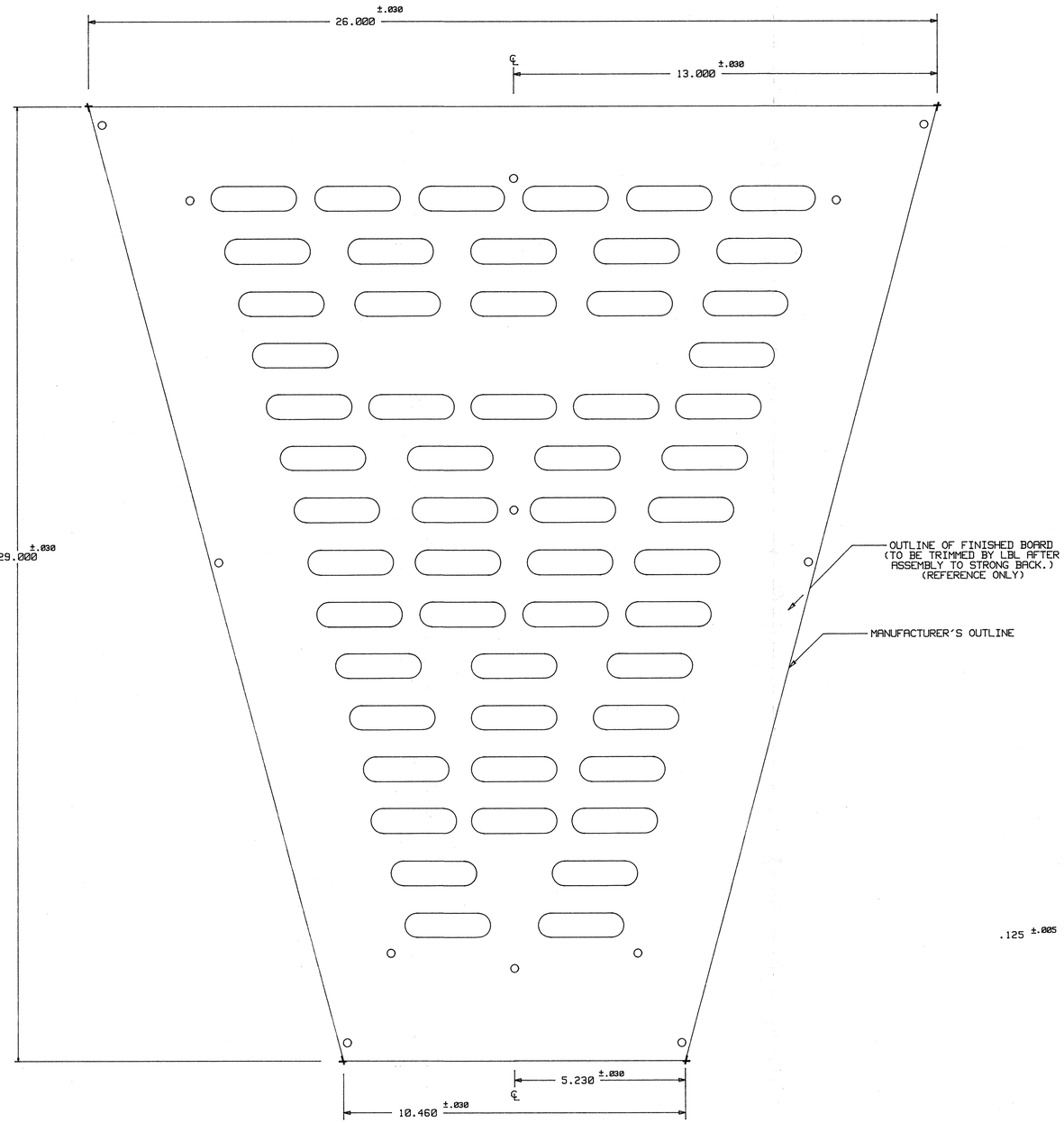

NOTES:

1. THIS DRAWING REPRESENTS THE ARTWORK TO MASK THE BOARD FOR TIN PLATING THE SMT CONNECTOR PADS.
2. THIS IS A MULTILAYER BOARD CONSISTING OF FOUR LAYERS. BOARD MATERIAL IS EPOXY GLASS LAMINATE TYPE NEMA G10. FINISHED BOARD THICKNESS IS .125 +/-.005". BOARD SIZE IS 26.000"W X 10.460"W X 29.000"H +/-.030".
3. ARTWORK TO BE PLOTTED ON GLASS FOR REGISTRATION ACCURACY.
4. REFERENCE DRAWINGS:

| | | |
|---|---|---|
| 24A1044 E-1 | a000886e1 | HOLE SCHEDULE - CIRCUIT BOARD |
| 24A1044 E-2 | a000886e2 | ROUTING SCHEDULE - INSULATION BOARD |
| 24A1044 M-1 | a000886m1 | BOARD OUTLINE |

| | | | | | |
|---|---|---|---|---|---|
| DIST | I: | TITLE | STAR TPC | | |
| | II: | | INNER SECTOR | | |
| | III: | | PAD PLANE INNER SECTOR BOARD - 2 LAYER | | |
| SHOWN ON | | | ARTWORK - TIN PLATING (LAYER 2) | | |
| ACCOUNT NUMBER | 8052-24 | DRAWN STIRKKINEN | DATE 12/20/94 | LAWRENCE BERKELEY LABORATORY | |
| SERIAL NUMBER | | CHECKED | DATE | UNIVERSITY OF CALIFORNIA | |
| DATE ISSUED | NO. REQD. | APPROVED | DATE | OFFICE OF ELECTRONICS ENGINEERING | |
| DATE RCVD. | | | | FILE NO. / SIZE / DRAWING NO. / REV. | |
| DEL. TO | | ENGINEER FRED BIESER | | a000886e3 / 4 / 24A1044 E-3 | |
| | | SCALE NONE | R12,E14 | SHEET 3 OF 3 | |

| REV. | CHANGES | DRAWN | DATE | CHKD. | DATE |
|---|---|---|---|---|---|
| | | | | | |




VIEWED FROM CONNECTOR SIDE
WITH INSULATION BOARD

NOTES:

1. BOARD MATERIAL:
   A) BOARD 1 (CIRCUIT BOARD) - .062 NEMA G10, NON FR4, GLASS EPOXY PER MIL-P-13949E FL-GFN 062C-2/.5-A1A (2 OZ. COPPER - COMPONENT SIDE AND 1/2 OZ. COPPER - DETECTOR PAD SIDE).
   B) BOARD 2 (INSULATION BOARD) - .062 NEMA G10, NON FR4, GLASS EPOXY PER MIL-P-13949E FL-GFN 062C-.5/.5-A1A (1/2 OZ EACH SIDE, ETCHED AWAY)

2. THERE IS NO TIN PLATING ON BOARDS 1 AND 2.

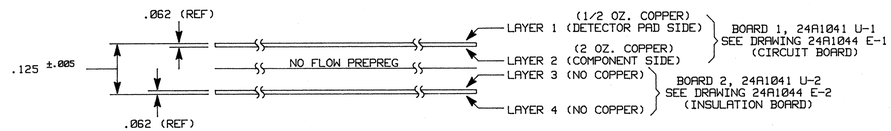
3. THIS IS A MULTILAYER BOARD CONSISTING OF TWO .062 THICK NEMA G10, NON FR4, GLASS EPOXY. TOTAL THICKNESS OF BOARD TO BE .125 +/-.005. DIMENSIONS ARE IN INCHES.

4. PREPREG TO BE NO FLOW TYPE.

5. ARTWORK TO BE PLOTTED ON GLASS FOR STABILITY.

6. REFERENCE DRAWINGS:

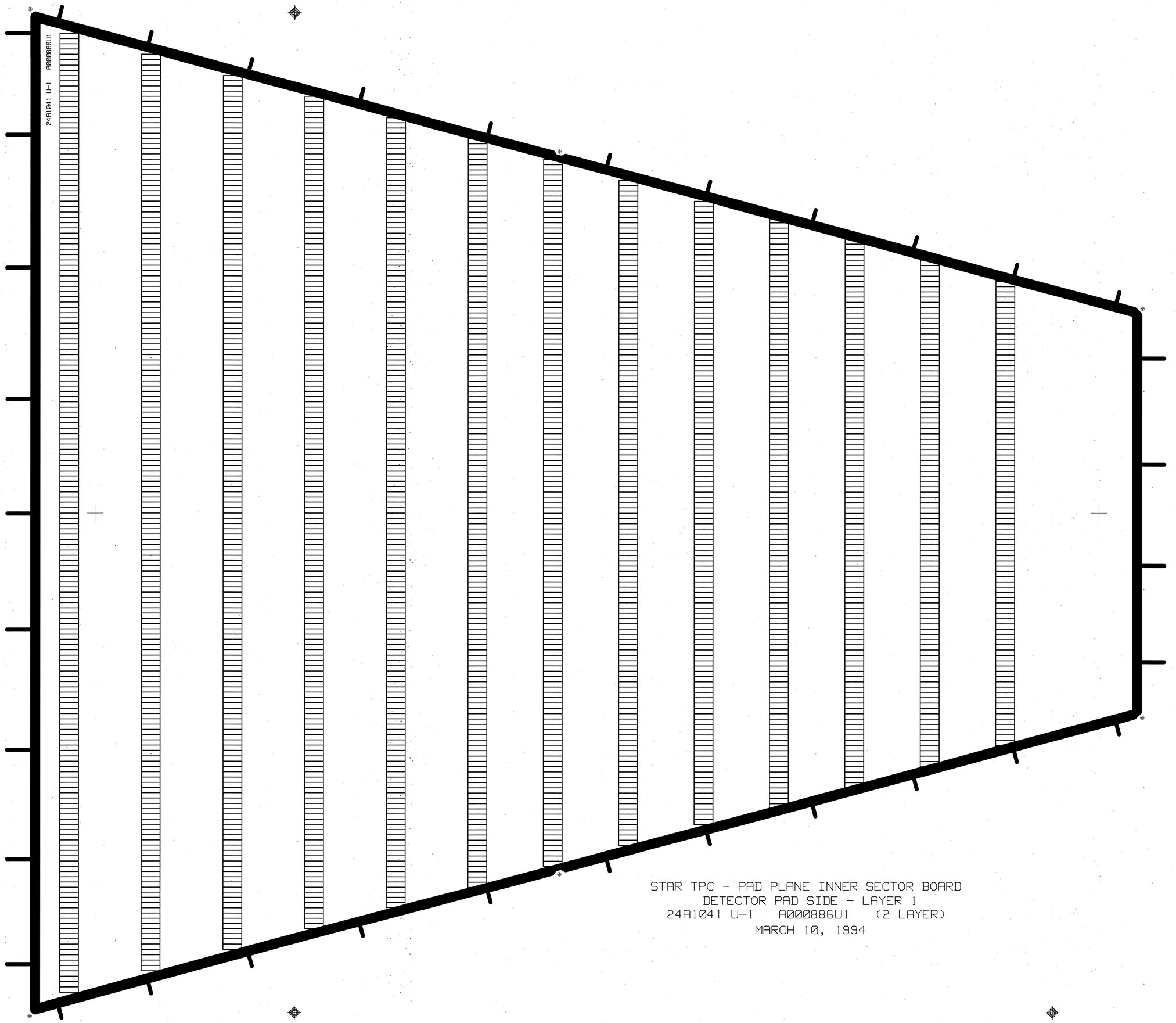
| | | |
|---|---|---|
| 24A1044 E-1 | a000886e1 | HOLE SCHEDULE - CIRCUIT BOARD |
| 24A1044 E-2 | a000886e2 | ROUTING SCHEDULE - INSULATION BOARD |



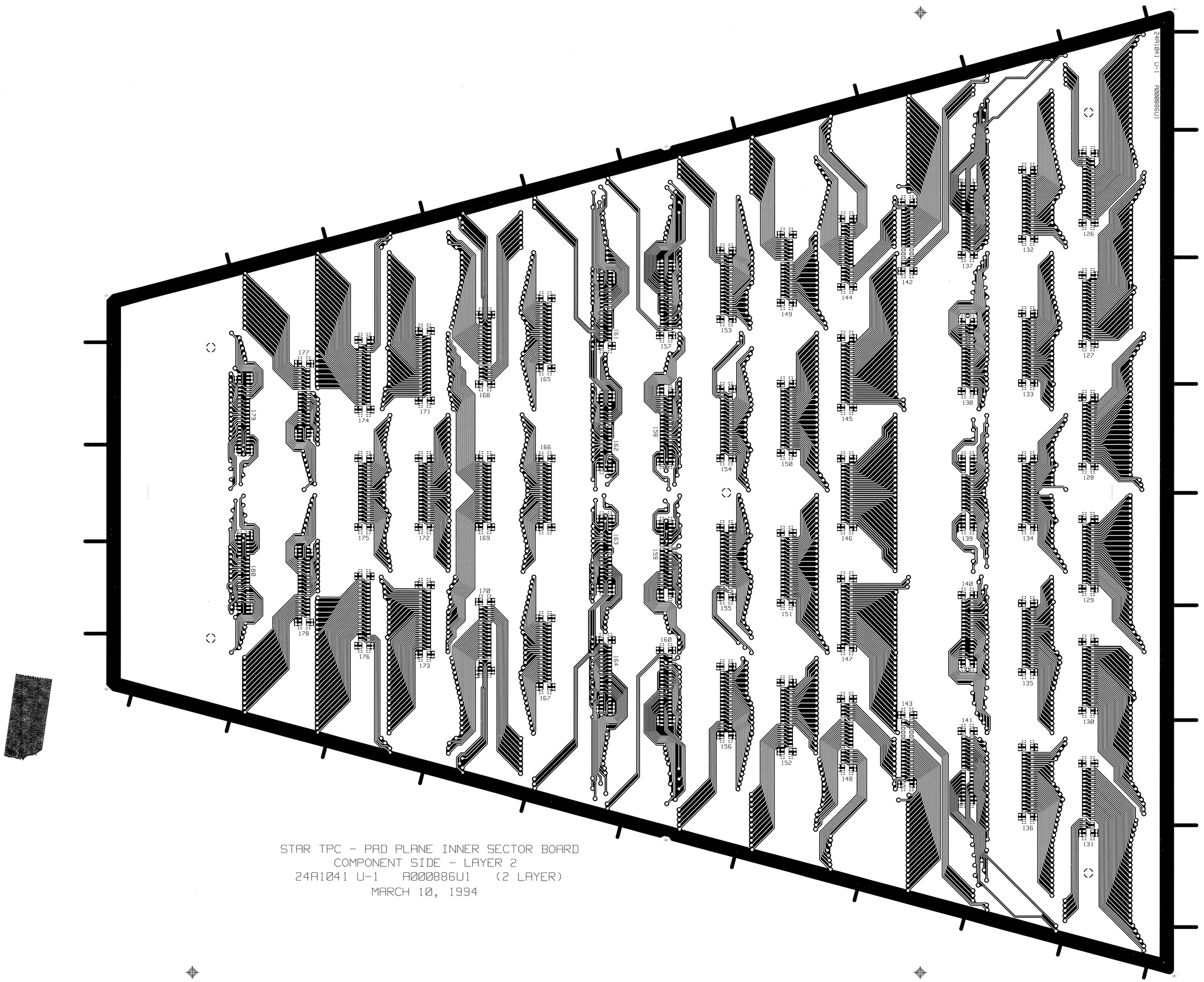

# PRELIMINARY

| | | | | | |
|---|---|---|---|---|---|
| DIST | I: | TITLE | STAR TPC | | |
| | II: | | INNER SECTOR | | |
| | III: | | PAD PLANE INNER SECTOR BOARD - 2 LAYER | | |
| SHOWN ON | | | BOARD OUTLINE (a000886u1 & a000886u2) | | |
| ACCOUNT NUMBER | 8052-24 | DRAWN STIRAKINEN | DATE 09/28/93 | LAWRENCE BERKELEY LABORATORY | |
| SERIAL NUMBER | | CHECKED | DATE | UNIVERSITY OF CALIFORNIA | |
| DATE ISSUED | NO. RECD. | APPROVED | DATE | OFFICE OF ELECTRONICS ENGINEERING | |
| DATE RECD. | | ENGINEER THOMAS NOGGLE | | FILE NO. a000886m1 / SIZE 4 / DRAWING NO. 24A1044 M-1 / REV. | |
| DEL. TO | | SCALE NONE | E2,E7,E14 | SHEET 1 OF 1 | |

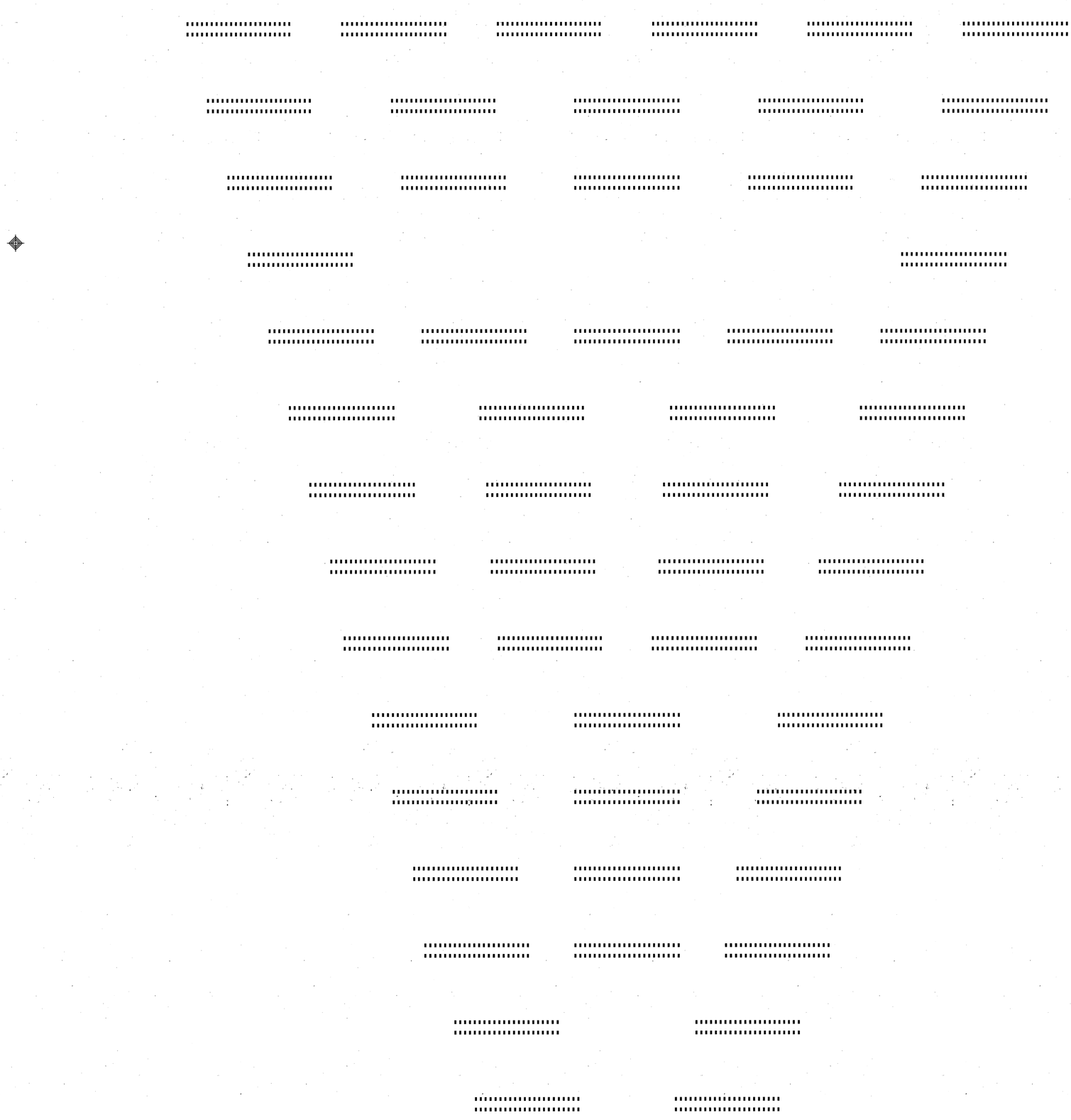
SEPTEMBER 28, 1993




STAR TPC - PAD PLANE INNER SECTOR BOARD
DETECTOR PAD SIDE - LAYER 1
24A1041 U-1 A000886U1 (2 LAYER)
MARCH 10, 1994




STAR TPC - PAD PLANE INNER SECTOR BOARD
COMPONENT SIDE - LAYER 2
24A1041 U-1 A000886U1 (2 LAYER)
MARCH 10, 1994



STAR TPC - PAD PLANE INNER SECTOR BOARD
TIN PLATING FOR CONNECTOR PADS
24A1041 U-1 A000886U1 (2 LAYER)
MARCH 10, 1994