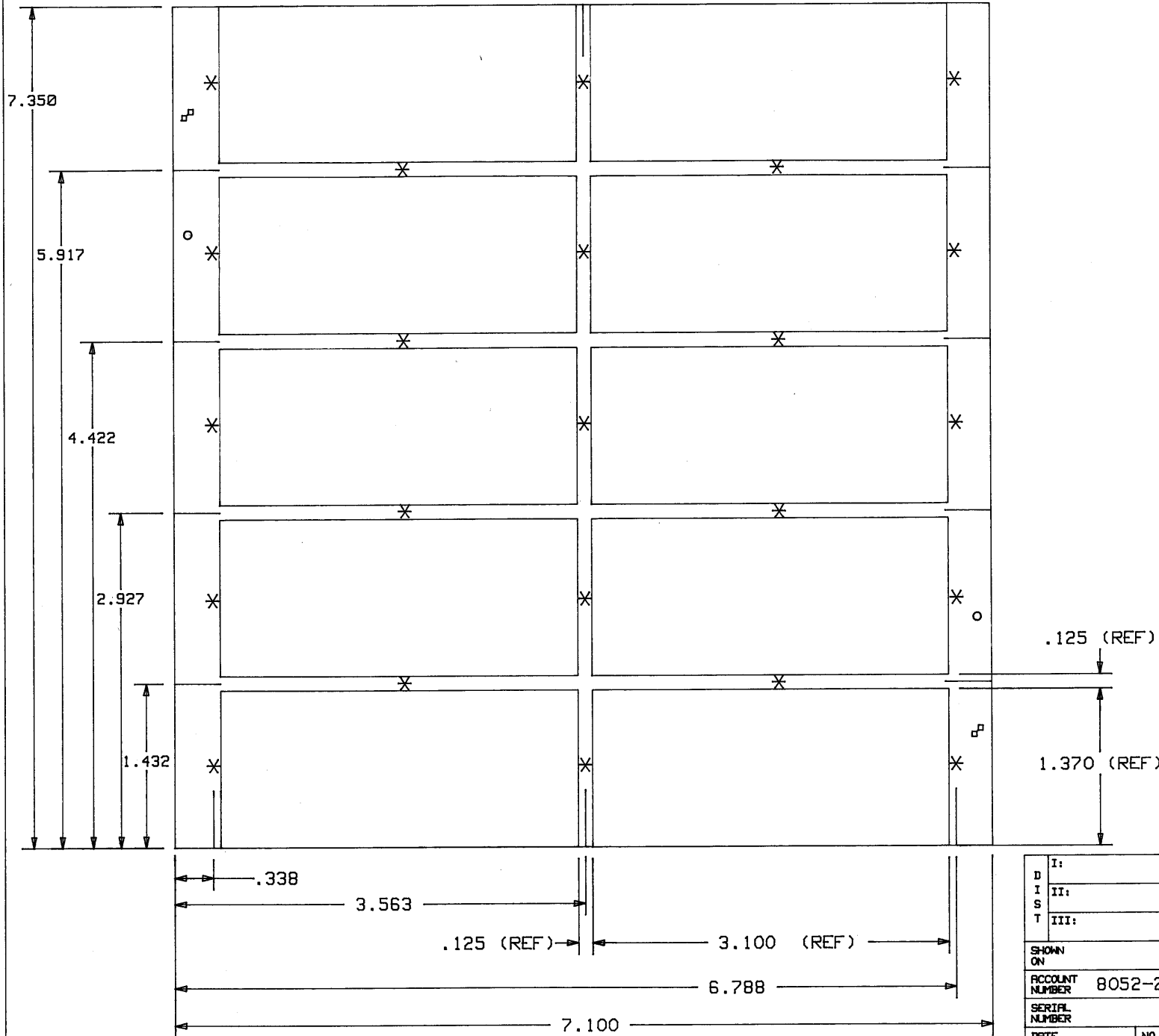


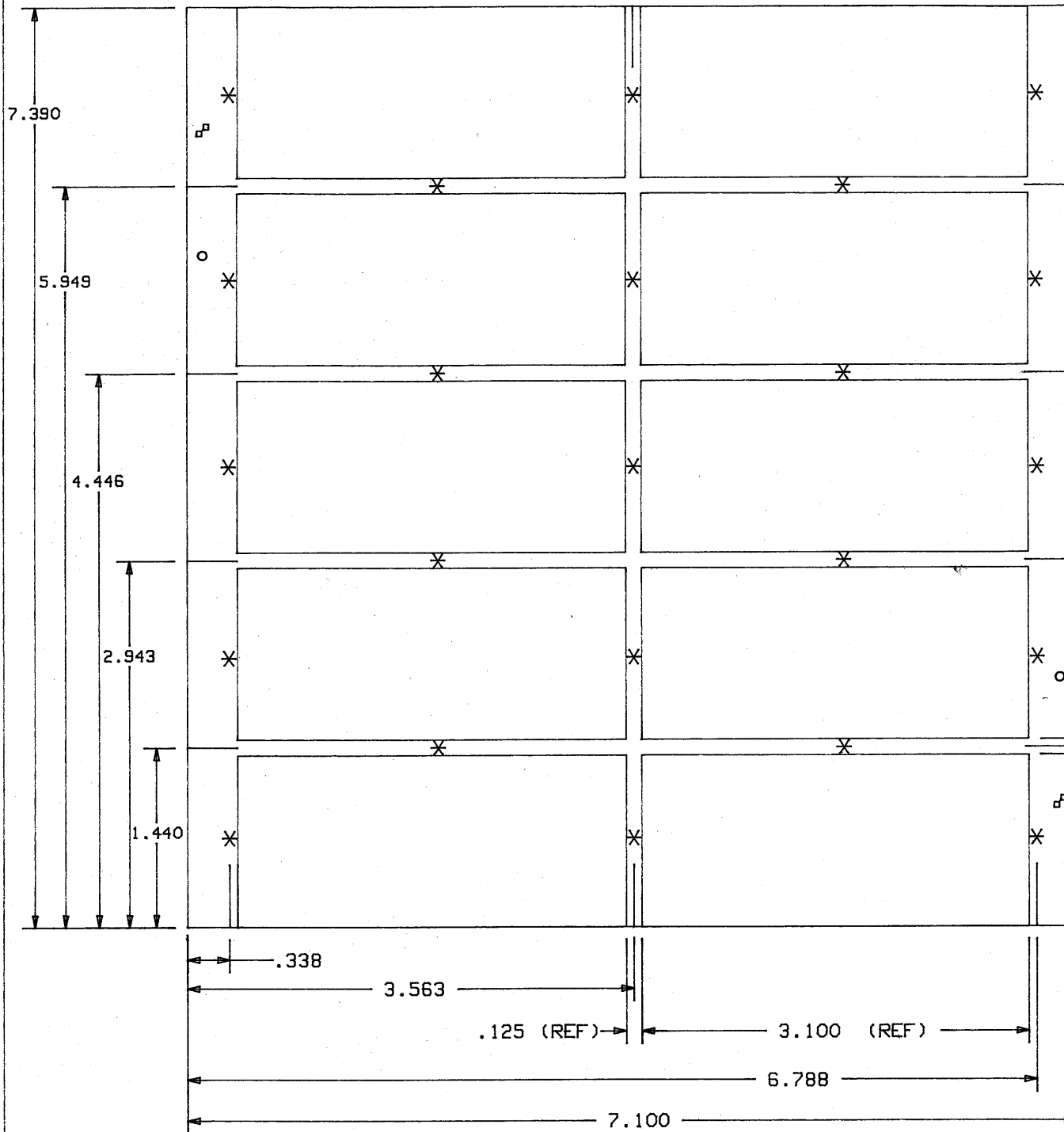
REV.	CHANGES	DRAWN	DATE	CHKD.	DATE
A	ARTWORK REV.A; TAB DIMENSION WAS .100.	JJS	6/4/93		
B	ARTWORK REV.B; WIDTH WAS 1.378; LOW VOLTAGE RESISTORS WERE 1M, SIZE 0805 PACKAGE; DELETED H.V. PIN.	JJS	10/21/93		

NOTES:

- BOARD MATERIAL: .062 THICK G10 PER MIL-P-55617 FL-GEN 062C-1/1-A1A (1 OZ. COPPER EACH SIDE.)
- BOARD PANEL SIZE IS 7.100 +/- .010 X 7.350 +/- .005. SINGLE BOARD 3.100 X 1.370 +/- .005.
- * = APPROXIMATE PLACEMENT OF .050 TABS. SLOTS TO BE .125 WIDE. DIMENSION TOLERANCES TO BE +/- .005.
- REFERENCE DRAWINGS:
24A1063 E-1 a000869e1 HOLE SCHEDULE
24A1063 L-1 a00086911 PC BOARD ASSEMBLY



D I S T		I: TITLE STAR TPC	
		II: INNER/OUTER SECTORS	
		III: ANODE BIAS DISTRIBUTION BOARD (ABDB)	
SHOWN ON		BOARD OUTLINE - A000869U2	
ACCOUNT NUMBER	8052-24	DRAWN	STIRKKINEN
SERIAL NUMBER		CHECKED	
DATE ISSUED		DATE	4/1/93
DATE REQD.		APPROVED	
DEL. TO		ENGINEER	THOMAS NOGGLE
		SCALE	NONE
		FILE NO.	a000869m1
		SIZE	2
		DRAWING NO.	24A1062 M-1
		REV.	B
			SHEET 1 OF 1



REV.	CHANGES	DRAWN	DATE	CHKD.	DATE
A	ARTWORK REV. A; TAB DIMENSION WAS .100.	JJS	6/4/93		

NOTES:

- BOARD MATERIAL: .062 THICK G10 PER MIL-P-55617 FL-GEN 062C-1/1-A1A (1 OZ. COPPER EACH SIDE.)
- BOARD PANEL SIZE IS 7.100 +/- .010 X 7.390 +/- .005. SINGLE BOARD 3.100 X ~~1.378~~ ^{1.370} +/- .005.
- * = APPROXIMATE PLACEMENT OF .050 TABS. SLOTS TO BE .125 WIDE. DIMENSION TOLERANCES TO BE +/- .005.
- REFERENCE DRAWINGS:
 A0008693 E-1 a000869e1 HOLE SCHEDULE
 A0008693 L-1 a00086911 PC BOARD ASSEMBLY

OBSOLETE
10/26/93

D I S T		I:		TITLE		STAR TPC		
		II:				INNER/OUTER SECTORS		
		III:				ANODE BIAS DISTRIBUTION BOARD (ABDB)		
SHOWN ON						BOARD OUTLINE - A000869U2		
ACCOUNT NUMBER	8052-24	DRAWN	STIRKKINEN	DATE	4/1/93	LAWRENCE BERKELEY LABORATORY		
SERIAL NUMBER		CHECKED		DATE		UNIVERSITY OF CALIFORNIA		
DATE ISSUED		APPROVED		DATE		FILE NO.	A000869m1	
DATE REQD.		ENGINEER	THOMAS NOGGLE			SIZE	2	
DEL. TO		SCALE	NONE			DRAWING NO.	A0008962 M-1	
						REV.	A	
							SHEET	1 OF 1

JIM (x7084) -
 TELL ME WHAT YOU THINK - I BELIEVE IT COULD WORK!

DISTANCES

1) BETWEEN CAP. ROWS

2) BETWEEN RES & CAP H.V.

3) BETWEEN CAP & TRACE

4) BETWEEN RES & TRACE

5) BETWEEN RES & CAP

OLD

.070

.045

.053

.030 (MIN)

.030

NEW

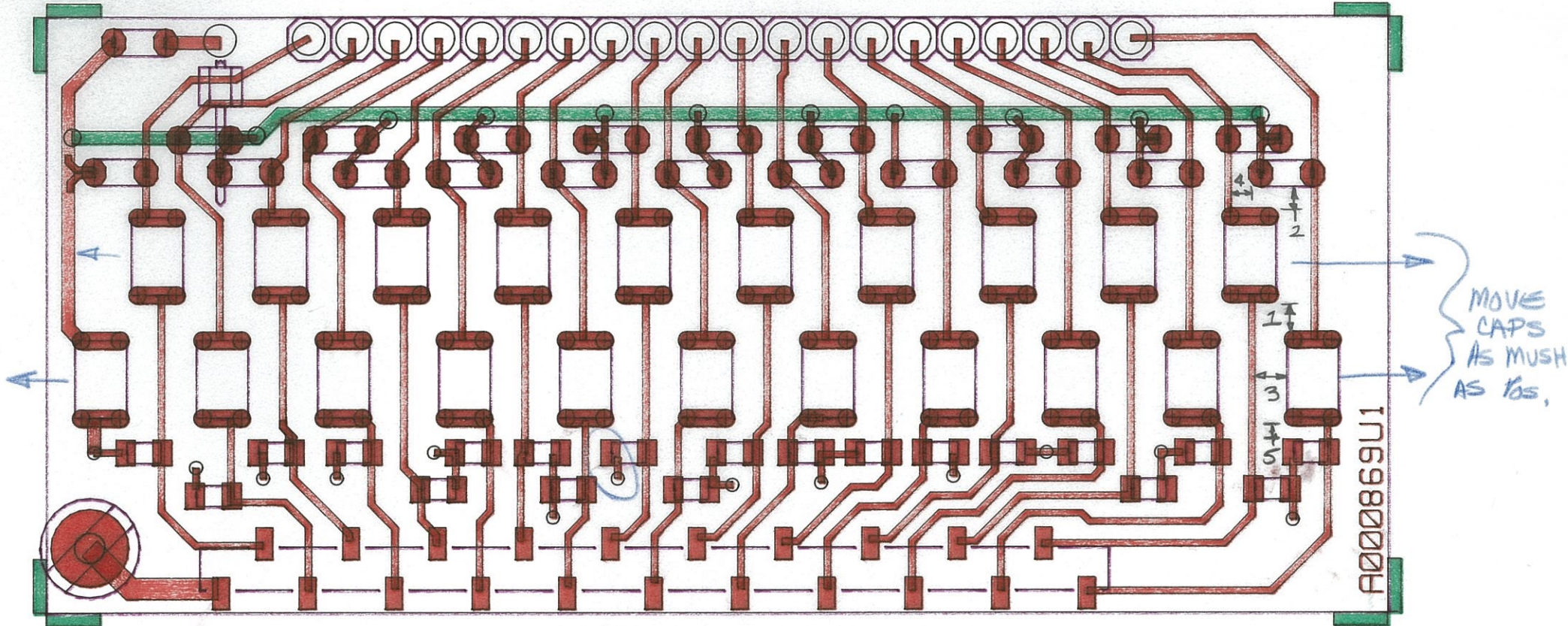
.065

.048

.067

.035 (MIN)

.030



COMPONENT SIDE

SCALE 3:1

FILENAME : a869tmp-d

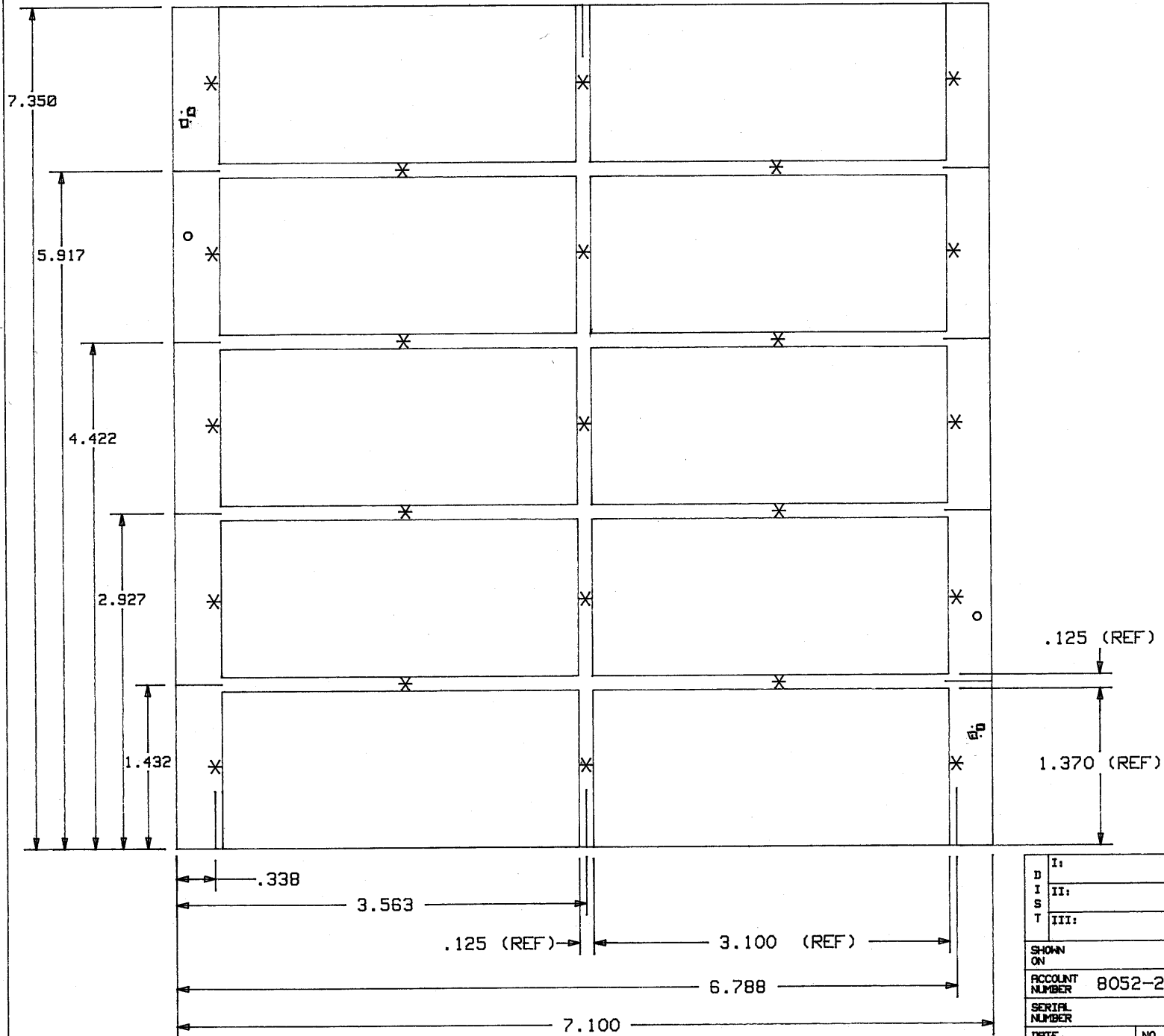
4/26/93

REV.	CHANGES	DRAWN	DATE	CHKD.	DATE
A	ARTWORK REV.A; TAB DIMENSION WAS .100.	JJS	6/4/93		
B	ARTWORK REV.B; WIDTH WAS 1.378; LOW VOLTAGE RESISTORS WERE 1M, SIZE 0805 PACKAGE; DELETED H.V. PIN.	JJS	10/21/93		

NOTES:

- BOARD MATERIAL: .062 THICK G10 PER MIL-P-55617 FL-GEN 062C-1/1-A1A (1 OZ. COPPER EACH SIDE.)
- BOARD PANEL SIZE IS 7.100 +/- .010 X 7.350 +/- .005. SINGLE BOARD 3.100 X 1.370 +/- .005.
- * = APPROXIMATE PLACEMENT OF .050 TABS. SLOTS TO BE .125 WIDE. DIMENSION TOLERANCES TO BE +/- .005.
- REFERENCE DRAWINGS:
A0008693 E-1 a000869e1 HOLE SCHEDULE
A0008693 L-1 a00086911 PC BOARD ASSEMBLY

29A-106



D I S T		TITLE		STAR TPC	
I:		II:		INNER/OUTER SECTORS	
II:		III:		ANODE BIAS DISTRIBUTION BOARD (ABDB)	
III:		SHOWN ON		BOARD OUTLINE - A000869U2	
ACCOUNT NUMBER	8052-24	DRAWN	STIRKKINEN	DATE	4/1/93
SERIAL NUMBER		CHECKED		DATE	
DATE ISSUED		APPROVED		DATE	
DEL. TO		ENGINEER	THOMAS NOGGLE	FILE NO.	a000869m1
		NO. REQD.		SIZE	2
				DRAWING NO.	A0008692 M-1
				REV.	B
		SCALE	NONE		SHEET 1 OF 1

Produced 11/21/93 29A 1062 M 1

PRINT LIST

TITLE: STAR TPC
INNER/OUTER SECTORS
ANODE BIAS DISTRIBUTION BOARD
PANEL OF 10 BOARDS

FILE NO.: a000869p1 REV: A
PRINT NO.: 24A1061 P-1
CHANGES (*) 03/31/94

ENGINEER: THOMAS NOGGLE
DRAFTER: STIRKKINEN

DATE: 12/01/93
PAGE: 1 OF 1

Drawing No.	Chg. Ltr.	Title	
24A1061 C-1 (a000869c1)		PARTS LIST	
24A1061 S-1 (-)		SCHEMATIC - CREATED IN MENTOR GRAPHICS	
24A1063 E-1 (a000869e1)		HOLE SCHEDULE	
24A1062 M-1 (a000869m1)		BOARD OUTLINE	
24A1063 L-1 (a000869l1)		PC BOARD ASSEMBLY	
24A1061 U-1 (a000869u1)	B	ARTWORK FOR SINGLE BOARD	*
24A1061 U-2 (a000869u2)	B	ARTWORK FOR PANEL OF 10 BOARDS	*

NUMBERS WITHIN () REFER TO EGS COMPUTER FILES

PRINT LIST

TITLE: STAR TPC
 INNER/OUTER SECTORS
 ANODE BIAS DISTRIBUTION BOARD
 PANEL OF 10 BOARDS

FILE NO.: a000869p1 REV: A
 PRINT NO.: 24A1061 P-1
 CHANGES (*) 03/31/94

ENGINEER: THOMAS NOGGLE
 DRAFTER: STIRKKINEN

DATE: 12/01/93
 PAGE: 1 OF 1

Drawing No.	Chg. Ltr.	Title	
24A1061 C-1 (a000869c1)		PARTS LIST	
24A1061 S-1 (-)		SCHEMATIC - CREATED IN MENTOR GRAPHICS	
24A1063 E-1 (a000869e1)		HOLE SCHEDULE	
24A1062 M-1 (a000869m1)		BOARD OUTLINE	
24A1063 L-1 (a000869l1)		PC BOARD ASSEMBLY	
24A1061 U-1 (a000869u1)	B	ARTWORK FOR SINGLE BOARD	*
24A1061 U-2 (a000869u2)	B	ARTWORK FOR PANEL OF 10 BOARDS	*

NUMBERS WITHIN () REFER TO EGS COMPUTER FILES

PRINT LIST

TITLE: STAR TPC
 INNER/OUTER SECTORS
 ANODE BIAS DISTRIBUTION BOARD
 PANEL OF 10 BOARDS

FILE NO.: a000869p1 REV: A
 PRINT NO.: 24A1061 P-1
 CHANGES (*) 03/31/94

ENGINEER: THOMAS NOGGLE
 DRAFTER: STIRKKINEN

DATE: 12/01/93
 PAGE: 1 OF 1

Drawing No.	Chg. Ltr.	Title	
24A1061 C-1 (a000869c1)		PARTS LIST	
24A1061 S-1 (-)		SCHEMATIC - CREATED IN MENTOR GRAPHICS	
24A1063 E-1 (a000869e1)		HOLE SCHEDULE	
24A1062 M-1 (a000869m1)		BOARD OUTLINE	
24A1063 L-1 (a000869l1)		PC BOARD ASSEMBLY	
24A1061 U-1 (a000869u1)	B	ARTWORK FOR SINGLE BOARD	*
24A1061 U-2 (a000869u2)	B	ARTWORK FOR PANEL OF 10 BOARDS	*

NUMBERS WITHIN () REFER TO EGS COMPUTER FILES

*

PARTS LIST

TITLE: STAR TPC
 INNER/OUTER SECTORS
 ANODE BIAS DISTRIBUTION BOARD
 (PANEL OF 10 BOARDS)

FILE NO.: a000869c1 REV:
 PRINT NO.: 24A1061 C-1
 CHANGES (*)

ENGINEER: THOMAS NOGGLE
 DRAFTER: STIRKKINEN

DATE: NOVEMBER 30, 1993
 PAGE: 1 OF 1

Reference	Stock No.	Part Type	Description	Qty
-----------	-----------	-----------	-------------	-----

CAPACITORS

C1,C2,C3,C4,C5, C6,C8,C9,C10, C11,C12,C13, C14,C15,C16, C17,C18,C19, C20,C21	NS	.001uF	.001uF,3KV,CERAMIC,SMT, SIZE .120 X .180	210
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RESISTORS

R1,R2,R3,R4,R5, R6,R7,R8,R9, R10,R11,R12, R13,R14,R15, R16,R17,R18, R19,R20,R21, R22,R23,R24, R25,R26,R27, R28,R29,R30, R31,R32,R33, R34,R36,R37, R38,R39,R40, R41	NS	10M	10M,1/8W,5%,SMT,SIZE	410
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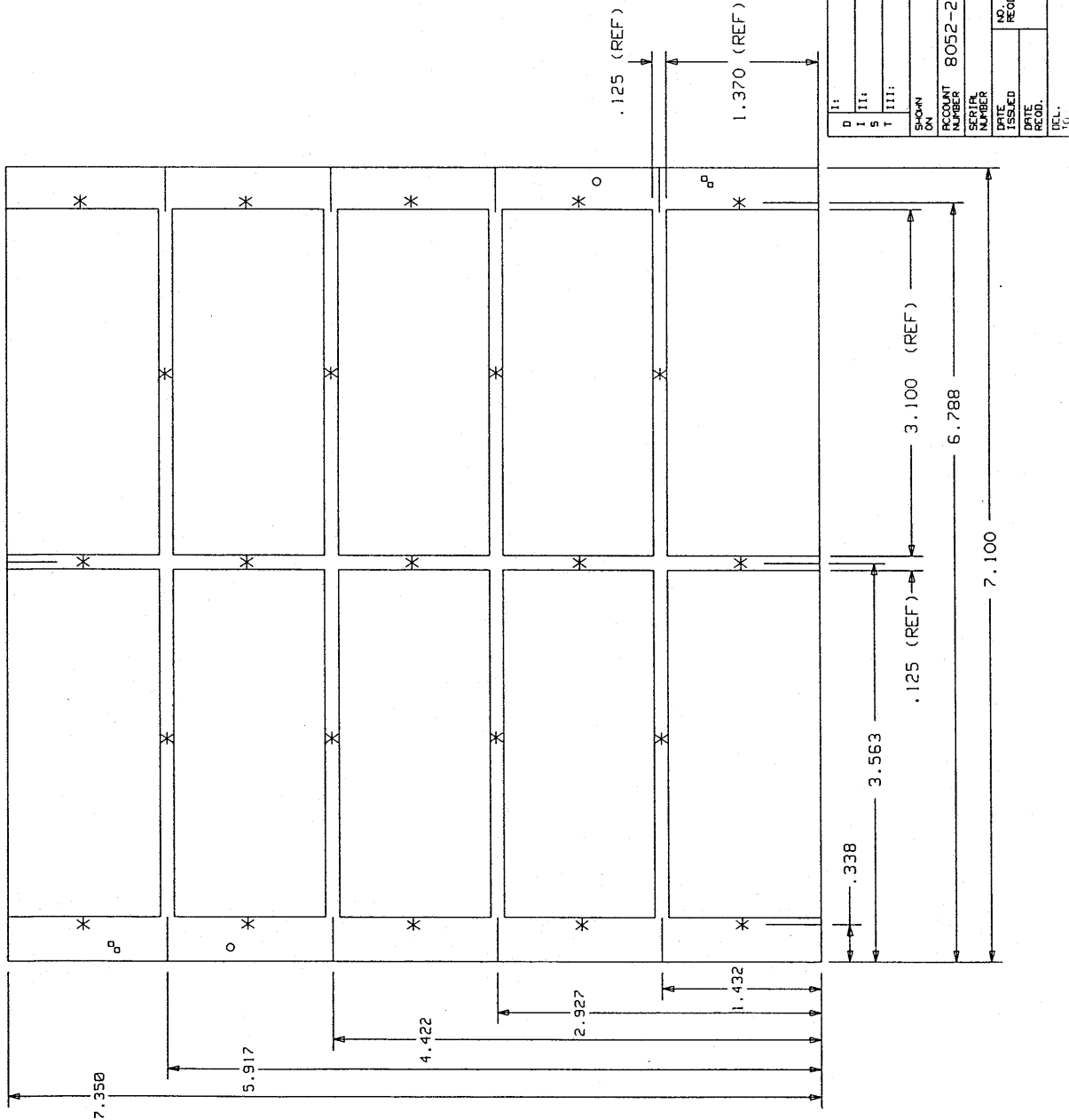
MISCELLANEOUS

J1,J2	NS	CN21SROW	21 PIN,SINGLE ROW CON- NECTOR,STRAIGHT,SAMTEC	10
-	NS	A000869U2	#SSK-121-S-G,SOLDER TAIL 24A1061 U-2,PC BOARD, PANEL OF 10 BOARDS	1

REV.	CHANGES	DRAWN	DATE	CHKD.	DATE
A	ARTWORK REV. A: TAB DIMENSION WAS .100.	JJS	6/4/93		
B	ARTWORK REV. B: WIDTH WAS 1.378; LOW VOLTAGE RESISTORS WERE 1M, SIZE 0805 PACKAGE; DELETED H.V. PIN.	JJS	10/21/93		

NOTES:

- BOARD MATERIAL: .062 THICK G10 PER MIL-P-55617 FL-GEN 062C-1/1-A1A (1 OZ. COPPER EACH SIDE.)
- BOARD PANEL SIZE IS 7.100 +/- .010 X 7.350 +/- .005. SINGLE BOARD 3.100 X 1.370 +/- .005.
- * = APPROXIMATE PLACEMENT OF .050 TABS. SLOTS TO BE .125 WIDE. DIMENSION TOLERANCES TO BE +/- .005.
- REFERENCE DRAWINGS:
 24R1063 E-1 a000869e1 HOLE SCHEDULE
 24R1063 L-1 a00086911 PC BOARD ASSEMBLY



TITLE		DRAWN		DATE	
STAR TPC		STIRKKINEN		4/1/93	
INNER/OUTER SECTORS		CHECKED		DATE	
ANODE BIAS DISTRIBUTION BOARD (ABDB)		APPROVED		DATE	
BOARD OUTLINE - A000869U2		ENGINEER		THOMAS NOGGLE	
LAWRENCE BERKELEY LABORATORY		FILE NO.		a000869m1 2	
UNIVERSITY OF CALIFORNIA		DRAWING NO.		24R1062 M-1	
OFFICE OF ELECTRONICS ENGINEERING		REV.		B	
SCALE		NONE		SHEET 1 OF 1	

REV.	DESCRIPTION	DATE
1	ISSUED	
2	REVISION	

*

PARTS LIST

TITLE: STAR TPC
INNER/OUTER SECTORS
ANODE BIAS DISTRIBUTION BOARD
(PANEL OF 10 BOARDS)

FILE NO.: a000869c1 REV:
PRINT NO.: 24A1061 C-1
CHANGES (*)

ENGINEER: THOMAS NOGGLE
DRAFTER: STJRKJNFN

DATE: NOVEMBER 30, 1993
PAGE: 1 OF 1

Reference	Stock No.	Part Type	Description	Qty
-----------	-----------	-----------	-------------	-----

CAPACITORS

C1,C2,C3,C4,C5, C6,C8,C9,C10, C11,C12,C13, C14,C15,C16, C17,C18,C19, C20,C21	NS	.001uF	.001uF,3KV,CERAMIC,SMT, SIZE .120 X .180	210
---	----	--------	---	-----

RESISTORS

R1,R2,R3,R4,R5, R6,R7,R8,R9, R10,R11,R12, R13,R14,R15, R16,R17,R18, R19,R20,R21, R22,R23,R24, R25,R26,R27, R28,R29,R30, R31,R32,R33, R34,R36,R37, R38,R39,R40, R41	NS	10M	10M,1/8W,5%,SMT,SIZE	410
--	----	-----	----------------------	-----

MISCELLANEOUS

J1,J2	NS	CN215ROW	21 PIN,SINGLE ROW CON- NECTOR,STRAIGHT,SAMTEC #SSK-121-5-6,SOLDER TAIL	10
-	NS	A000869U2	24A1061 U-2,PC BOARD, PANEL OF 10 BOARDS	1

ORIGIN - 1100, 7600

a869u2 (ABDB) - PANEL BOARD OF 10.
a000869u2 = REV. B (10/26/93)

SOLDERPASTE LAYER => #E9 #E19 => a869sp-g ✓

CMD869SP = A869SPX

COMPONENT SIDE => #E5^{P5} #E29 -P29 #E19 #E55 => a869c-g ✓
CMD869C = A869CX

SOLDED SIDE => #E6 #C19 #E29 -P29 #E55 => a869s-g ✓
(PADS & TRACES) #E19
CMD869S = A869SV

SOLDER SIDE => #E24 #C19 = a869sg-g ✓
(GROUND)
CMD869SG = A869SGX

DRILL INFO => C1, #N56 => a869dr-g ✓
CMD869DR = PL869DR X

SP

a869ul-org-d
a869ml-d
SMCn215-d
a869ul-d } REV. A
a869pstar

48x60
90x40
935
895
40

1155
1085
90

REV. B
10/26/93

HP EGS PHOTOPLOT/DRILL POST-PROCESSOR

AUTOFLASH: ON
ERROR MODE: PAUSE ON ERROR
FILL WIDTH MODE: ON

SORT DRILL: MAJOR SORT ON X
SORT PROXIMITY: X: 5.00000000000000L+002 Y: 5.00000000000000L+0
SORT APERTURE: ON

DRILL FORMAT: 5.1
PHOTOPLOT FORMAT: 5.0
DR ORIGIN SOURCE: -1.10L+003, 7.60L+003 OUTPUT: 5.00L+002, 5.00L+002
PH ORIGIN SOURCE: -1.10L+003, 7.60L+003 OUTPUT: 5.00L+002, 5.00L+002

DRILL UNITS FACTOR: 1.00L+000
PHOTOPLOT UNITS FACTOR: 1.00L+000
PHOTOPLOT RESOLUTION: 3.00L+000

NO FILL USE: none specified
NOTE USE: tr10
POLYGON FILL USE: none specified

ATTRIBUTES FILE: /1b1/jobs/a869/RE869DR
WHEEL FILE: /1b1/jobs/a869/W869

CURRENT HP EGS GENERATE SOURCE FILES:
/1b1/jobs/a869/a869dr_g

NO VIRTUAL DRILL FILES HAVE BEEN SPECIFIED.

ACTUAL DRILL FILE:
/1b1/jobs/a869/PL869DR
1 56

NO VIRTUAL PHOTOPLOT FILES HAVE BEEN SPECIFIED.

NO ACTUAL PHOTOPLOT FILES HAVE BEEN SPECIFIED.

TOOL LIST
tool number count diameter

1	2	1.04L+002	} — .016 — .032 — .125	12
2	210	2.00L+001		
3	420	3.80L+001		
4	10	1.25L+002		

642

WHEEL FILE DATA
aperture name
aperture number count type shape width height

No user errors in this run.

***** LBL BOARD A000869U2 REV. [REDACTED] *****
 ***** [REDACTED] *****
 ***** WHEEL W869INFO *****

NEED 2 STANDARD PHOTOPLOTS, 1 COMPOSITE, 3 POSITIVES, 3 NEGATIVES AND
 2 PC BOARDS. PLEASE RETURN DRILL TAPE WITH BOARDS.
 DELIVERY DATE: NOVEMBER 4, 1993 OR AS SOON AS POSSIBLE.

PHOTOPLOT FILES IN POSITIVE FORMAT:

- PL869C - COMPONENT SIDE
- PL869S - SOLDER SIDE (DROP-IN-LAYER)

PHOTOPLOT FILES IN NEGATIVE FORMAT:

- PL869S6 - GROUND PLANE FOR SOLDER SIDE (CLEARANCE LAYER)
- PL869SP - SOLDERPASTE (COMPONENT SIDE)

FOR SOLDER SIDE MAKE A COMPOSITE OF PLOT FILES PL869S (POSITIVE) AND
 PL869S6 (NEGATIVE).

PLEASE MAKE CONTACT COPIES OF PLOT FILES (2) AND OF THE COMPOSITE (1).
 I NEED ONE (1) POSITIVE AND ONE (1) NEGATIVE OF EACH FILE, EMULSION
 DOWN, RIGHT READING. THIS IS A TOTAL OF THREE (3) POSITIVES AND
 THREE (3) NEGATIVES.

PC BOARD MATERIAL: .062 THICK G10 PER MIL-P-55617 FL-GEN
 062C-1/1-A1A (1 OZ COPPER EACH SIDE). THICKNESS IS IN INCHES.
 WE WILL SUPPLY THE G10 MATERIAL. IF YOU NEED MORE MATERIAL CONTACT
 JIM HUNTER AT 510-486-7084.

DRILL INFORMATION IS AS FOLLOWS: (DRILL FILE IS PL869DR)

TOOLING NO.	HOLE DIA.	COUNT
1 and 4	.125	12
2	.016	210
3	.032	420

TOTAL HOLE COUNT = 642.

BOARDS TO BE THROUGH HOLE PLATED.
 SPECIFIED HOLE DIA. SIZES ARE FOR FINISHED HOLES AFTER PLATING.
 BOARDS ARE NOT TO BE SILKSCREENED.
 THERE IS NO SOLDERMASK USED ON THIS BOARD.
 BOARD PANEL SIZE IS 7.100 +/- .010 X 7.350 +/- .005. THESE DIMENSIONS
 ARE IN INCHES. BOARD OUTLINE WAS HAND DELIVERED TO GARY. DRAWING
 NO. A0008692 M-1. PLEASE NOTE SPECS ON THE BOARD OUTLINE IN RESPECT
 TO THE TABS. THERE IS ONE TAB APPROXIMATELY .050" THICK CENTERED ON
 EACH SIDE OF THE SINGLE BOARDS. THE SPACING BETWEEN BOARDS IS .125".
 THE SINGLE BOARD SIZE IS 3.100 X 1.370 +/- .005.

IF THERE ARE ANY QUESTIONS OR PROBLEMS PLEASE CALL -JUDY- (916)
 547-4005 OR -JIM- (510)486-7084.

- tr10 10 circle trace 10;
- tr12 11 circle trace 12;
- tr15 12 circle trace 15;
- tr20 13 circle trace 20;
- tr30 14 circle trace 30;
- tr40 15 circle trace 40;
- tr50 16 circle trace 50;
- tr60 17 circle trace 60;
- tr70 18 circle trace 70;
- tr80 19 circle trace 80;
- tr90 20 circle trace 90;
- tr100 21 circle trace 100;
- tr120 22 circle trace 120;
- tr130 23 circle trace 130;
- tr150 24 circle trace 150;
- f140 23 circle flash 40;
- f150 24 circle flash 50;

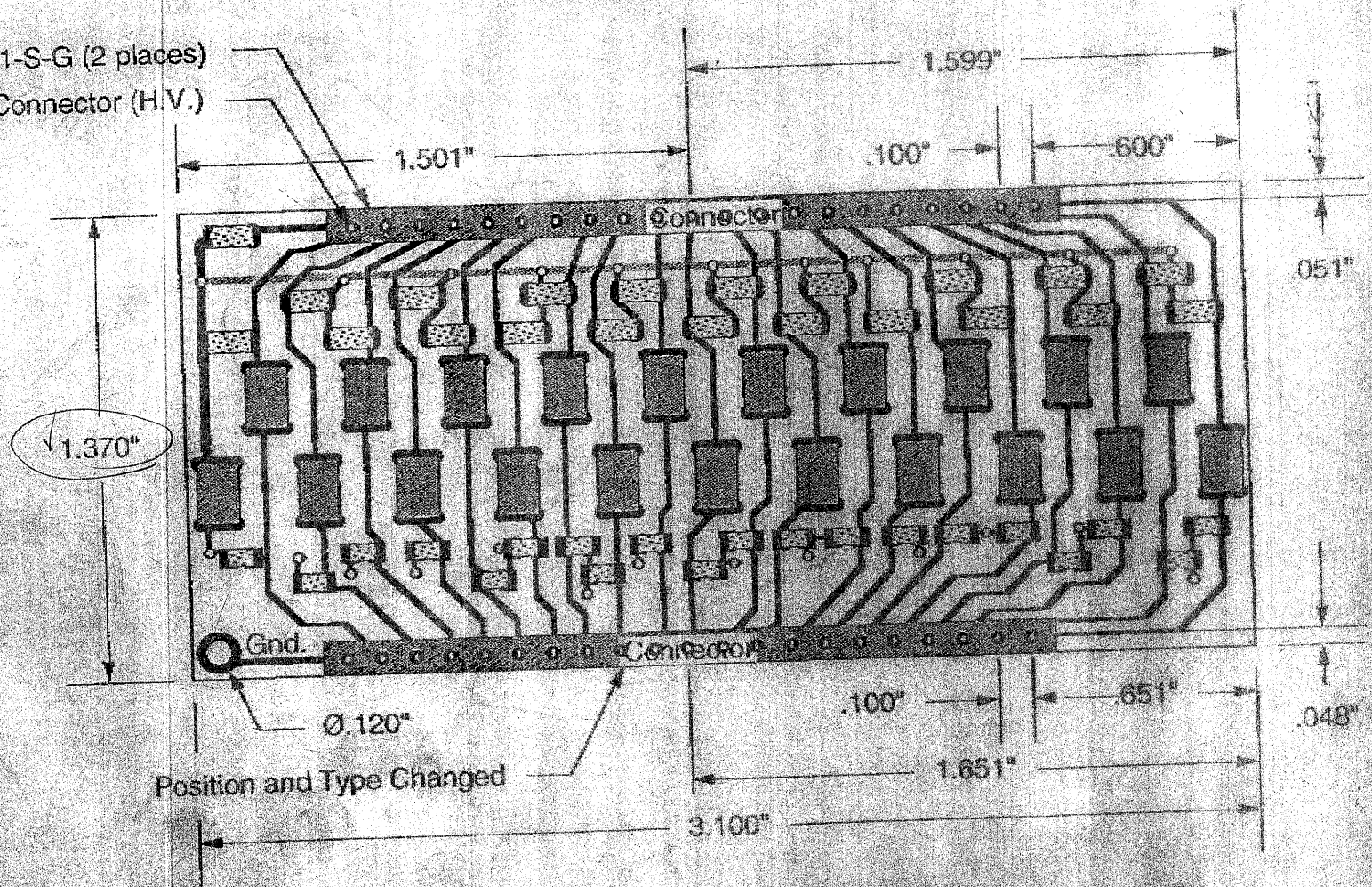
tr130 21 circle trace 130;
tr150 22 circle trace 150;
fl140 23 circle flash 40;
fl150 24 circle flash 50;
fl160 25 circle flash 60;
fl170 26 circle flash 70;
fl175 27 circle flash 75;
fl185 28 circle flash 85;
fl190 29 circle flash 90;
fl1100 72 circle flash 100;
fl1110 73 circle flash 110;
fl1120 30 circle flash 120;
fl1130 31 circle flash 130;
fl1140 32 circle flash 140;
fl1150 33 circle flash 150;
fl1160 34 circle flash 160;
fl1200 35 circle flash 200;
PADEX0 36 rectangle flash 80 55;
PADEX0 37 rectangle flash 55 80;
PADEXR 38 rectangle flash 75 55;
PADEXR 39 rectangle flash 55 75;
ftarget 40 square special 1.0;
fs60 41 square flash 60;
fs70 42 square flash 70;
fs75 43 square flash 75;
fs85 44 square flash 85;
fs100 45 square flash 100;
fs110 46 square flash 110;
fs120 47 square flash 120;
fs130 48 square flash 130;
fs140 49 square flash 140;
fs150 50 square flash 150;
PADEX05 51 rectangle flash 75 55;
PADEX05 52 rectangle flash 55 75;
fr12040 53 rectangle flash 120 40;
fr16040 54 rectangle flash 160 40;
fr4560 55 rectangle flash 45 60;
fr4075 56 rectangle flash 40 75;
fr4030 57 rectangle flash 40 30;
fr13030 58 rectangle flash 130 30;
fr3040 59 rectangle flash 30 40;
fl130 60 circle flash 30;
fl1180 61 circle flash 180;
fs45 62 square flash 45;
fr9040 63 rectangle flash 90 40;
fr2040 64 rectangle flash 20 40;
fr10030 65 rectangle flash 100 30;
fr2060 66 rectangle flash 20 60;
fl14860 67 rectangle flash 48 60;
fl16048 68 rectangle flash 60 48;

ABDB Board (Rev B) & P.C.B. Circuit

10/25/93

AROUND TRACES

Samtec SSK-121-S-G (2 places)
New Pin on Connector (H.V.)

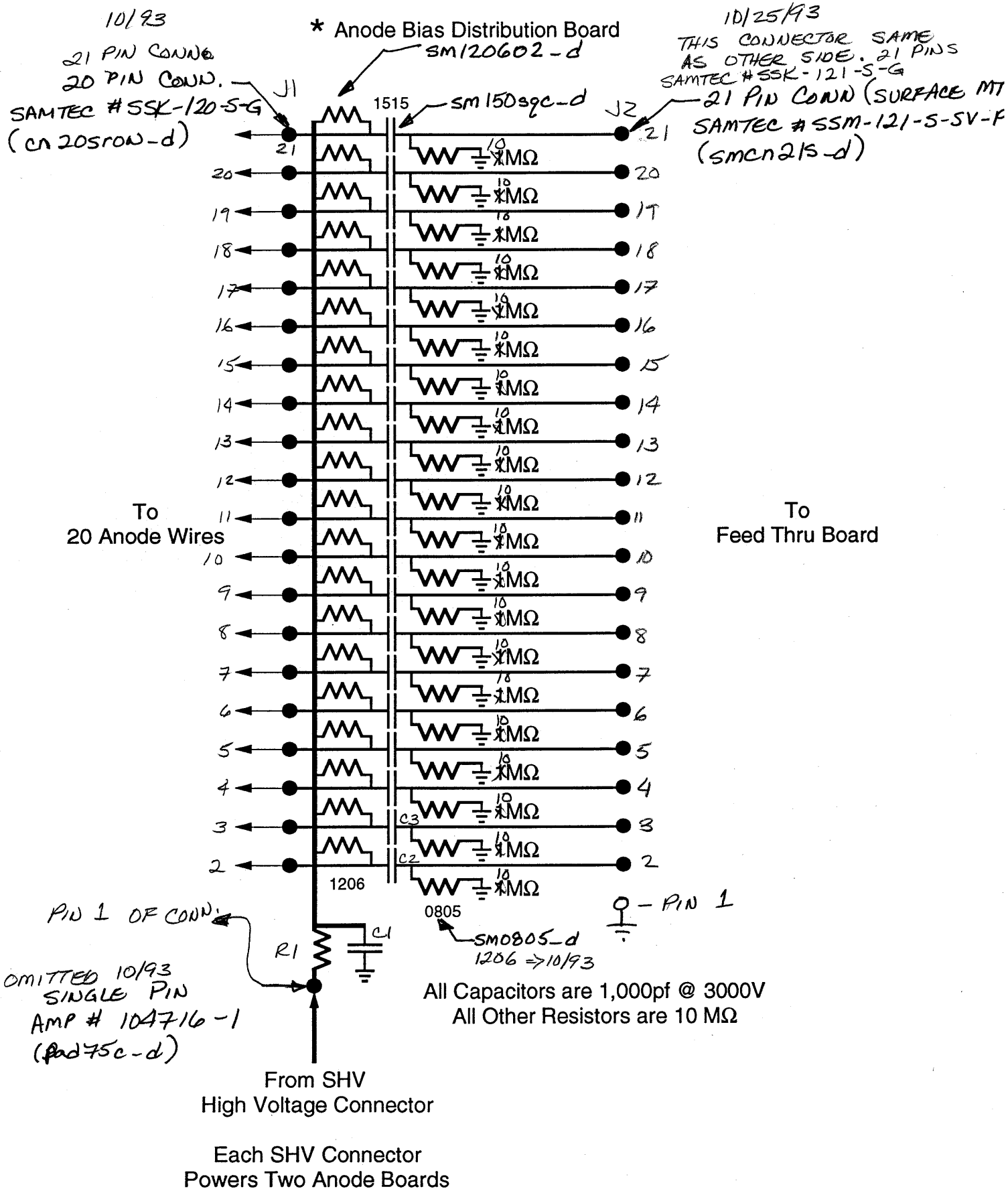


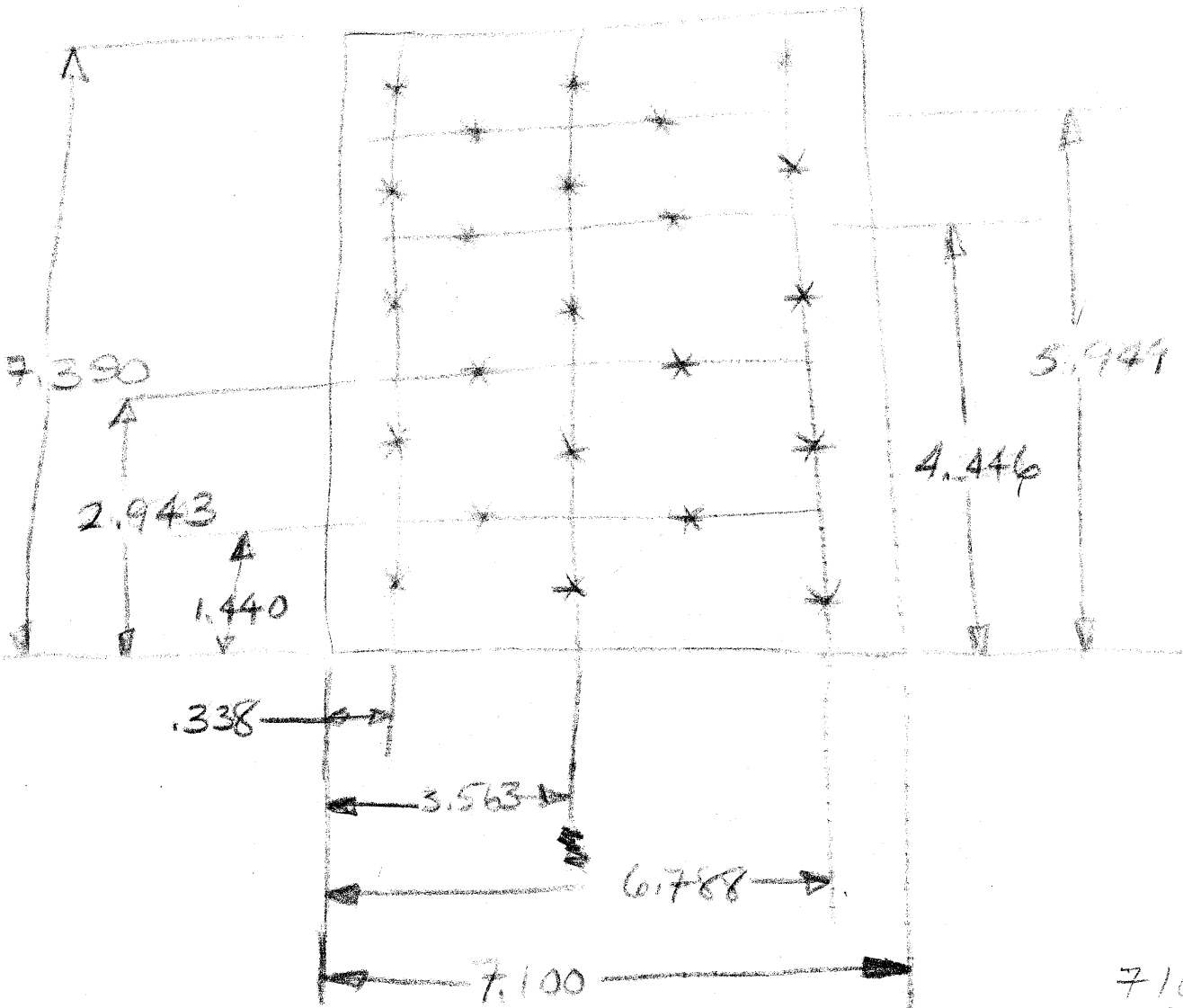
WAS
1.378

1.370"

Position and Type Changed

STAR TPC ABDB* Schematic =REV B.





7100
 400

 6700

- 400, 1440 - 0
- 400, 2943
- 400, 4446
- 400, 5949

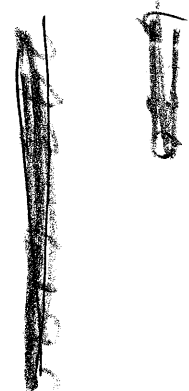
S 231

3100
 .062

~~40' CORNER~~

~~BOB HERRICK~~

~~246-6579~~



***** LBL BOARD A000869U2 *****

 ***** WHEEL W869INFO *****

NEED 2 STANDARD PHOTOPLOTS, 1 COMPOSITE, 3 POSITIVES, 3 NEGATIVES AND
 2 PC BOARDS. PLEASE RETURN DRILL TAPE WITH BOARDS.
 DELIVERY DATE: JUNE 14, 1993 OR AS SOON AS POSSIBLE.
 PHOTOPLOT FILES PL869C - COMPONENT SIDE AND PL869S - SOLDER SIDE (DROP-
 IN-LAYER) ARE IN POSITIVE FORMAT. PLOT FILE PL869S6 - GROUND PLANE FOR
 SOLDER SIDE (CLEARANCE LAYER) AND PL869SP - SOLDERPASTE (COMPONENT
 SIDE) ARE IN NEGATIVE FORMAT.

FOR SOLDER SIDE MAKE A COMPOSITE OF PLOT FILES PL869S (POSITIVE) AND
 PL869S6 (NEGATIVE).

PLEASE MAKE CONTACT COPIES OF PLOT FILES (2) AND OF THE COMPOSITE (1).
 I NEED ONE (1) POSITIVE AND ONE (1) NEGATIVE OF EACH FILE, EMULSION
 DOWN, RIGHT READING. THIS IS A TOTAL OF THREE (3) POSITIVES AND
 THREE (3) NEGATIVES.

PC BOARD MATERIAL: .062 THICK G10 PER MIL-P-55617 FL-GEN
 062C-1/1-A1A (1 OZ COPPER EACH SIDE). THICKNESS IS IN INCHES.
 WE WILL SUPPLY THE G10 MATERIAL. IF YOU NEED MORE MATERIAL CONTACT
 JIM HUNTER AT 510-486-7084.

DRILL INFORMATION IS AS FOLLOWS: (DRILL FILE IS PL869DR)

TOOLING NO.	HOLE DIA.	COUNT
1 and 2	.016	240
3	.032	210
4 and 5	.125	12

TOTAL HOLE COUNT = 462.

BOARDS TO BE THROUGH HOLE PLATED.
 SPECIFIED HOLE DIA. SIZES ARE FOR FINISHED HOLES AFTER PLATING.
 BOARDS ARE NOT TO BE SILKSCREENED.
 THERE IS NO SOLDERMASK USED ON THIS BOARD.

BOARD PANEL SIZE IS 7.100 +/- .010 X 7.390 +/- .005. THESE DIMENSIONS
 ARE IN INCHES. BOARD OUTLINE WILL BE FAXED. DRAWING NO. A0008692
 M-1. PLEASE NOTE SPECS ON THE BOARD OUTLINE IN RESPECT TO THE TABS.
 THERE IS ONE TAB APPROXIMATELY .050" THICK CENTERED ON EACH SIDE
 OF THE SINGLE BOARDS. THE SPACING BETWEEN BOARDS IS .125". THE
 SINGLE BOARD SIZE IS 3.100 X 1.378 +/- .005.

IF THERE ARE ANY QUESTIONS OR PROBLEMS PLEASE CALL -JUDY- (916)
 547-4005 OR -KAZ- (510)486-6530.

- tr10 10 circle trace 10;
- tr12 11 circle trace 12;
- tr15 12 circle trace 15;
- tr20 13 circle trace 20;
- tr30 14 circle trace 30;
- tr40 15 circle trace 40;
- tr50 16 circle trace 50;
- tr60 17 circle trace 60;
- tr70 18 circle trace 70;
- tr80 19 circle trace 80;
- tr90 20 circle trace 90;
- tr100 21 circle trace 100;
- tr120 20 circle trace 120;
- tr130 21 circle trace 130;
- tr150 22 circle trace 150;
- f140 23 circle flash 40;
- f150 24 circle flash 50;

tr150 22 circle trace 150;
f140 23 circle flash 40;
f150 24 circle flash 50;
f160 25 circle flash 60;
f170 26 circle flash 70;
f175 27 circle flash 75;
f185 28 circle flash 85;
f190 29 circle flash 90;
f1100 72 circle flash 100;
f1110 73 circle flash 110;
f1120 30 circle flash 120;
f1130 31 circle flash 130;
f1140 32 circle flash 140;
f1150 33 circle flash 150;
f1160 34 circle flash 160;
f1200 35 circle flash 200;
PADEX0 36 oval flash 75 55;
PADEX0 37 oval flash 55 75;
PADEXR 38 rectangle flash 75 55;
PADEXR 39 rectangle flash 55 75;
ftarget 40 square special 1.0;
fs60 41 square flash 60;
fs70 42 square flash 70;
fs75 43 square flash 75;
fs85 44 square flash 85;
fs100 45 square flash 100;
fs110 46 square flash 110;
fs120 47 square flash 120;
fs130 48 square flash 130;
fs140 49 square flash 140;
fs150 50 square flash 150;
PADEX05 51 oval flash 65 55;
PADEX05 52 oval flash 55 65;
fr12040 53 rectangle flash 120 40;
fr16040 54 rectangle flash 160 40;
fr4560 55 rectangle flash 45 60;
fr4075 56 rectangle flash 40 75;
fr4030 57 rectangle flash 40 30;
fr13030 58 rectangle flash 130 30;
fr3040 59 rectangle flash 30 40;
f130 60 circle flash 30;
f1180 61 circle flash 180;
fs45 62 square flash 45;
fr9040 63 rectangle flash 90 40;
fr2040 64 rectangle flash 20 40;
fr10030 65 rectangle flash 100 30;
fr2060 66 rectangle flash 20 60;

HP EGS PHOTO PLOT/DRILL POST-PROCESSOR

AUTOFLASH: ON
ERROR MODE: PAUSE ON ERROR
FILL WIDTH MODE: ON

SORT DRILL: MAJOR SORT ON X
SORT PROXIMITY: X: 5.00000000000000L+002 Y: 5.00000000000000L+0
SORT APERTURE: ON

DRILL FORMAT: 5.1
PHOTO PLOT FORMAT: 5.0
DR ORIGIN SOURCE: -1.10L+003, 7.60L+003 OUTPUT: 5.00L+002, 5.00L+002
PH ORIGIN SOURCE: -1.10L+003, 7.60L+003 OUTPUT: 5.00L+002, 5.00L+002

DRILL UNITS FACTOR: 1.00L+000
PHOTO PLOT UNITS FACTOR: 1.00L+000
PHOTO PLOT RESOLUTION: 3.00L+000

NO FILL USE: none specified
NOTE USE: tr10
POLYGON FILL USE: none specified

ATTRIBUTES FILE: /1b1/jobs/a869/RE869DR
WHEEL FILE: /1b1/jobs/a869/W869

CURRENT HP EGS GENERATE SOURCE FILES:
/1b1/jobs/a869/a869dr_g

NO VIRTUAL DRILL FILES HAVE BEEN SPECIFIED.

ACTUAL DRILL FILE:
/1b1/jobs/a869/PL869DR
1 56

NO VIRTUAL PHOTO PLOT FILES HAVE BEEN SPECIFIED.

NO ACTUAL PHOTO PLOT FILES HAVE BEEN SPECIFIED.

TOOL LIST

tool number count diameter

1	110	2.00L+001	} .016	240
2	130	1.60L+001		
3	210	3.80L+001	} .032	210
4	10	1.25L+002		
5	2	1.04L+002	} .125	12
<u>462</u>				

WHEEL FILE DATA

aperture name
aperture number count type shape width height

No user errors in this run.

ORIGINAL WORKING SHEET

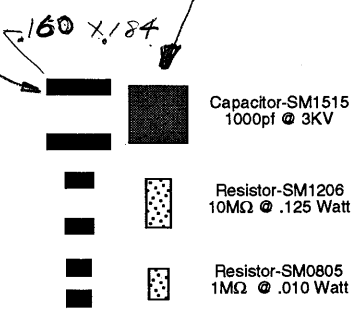
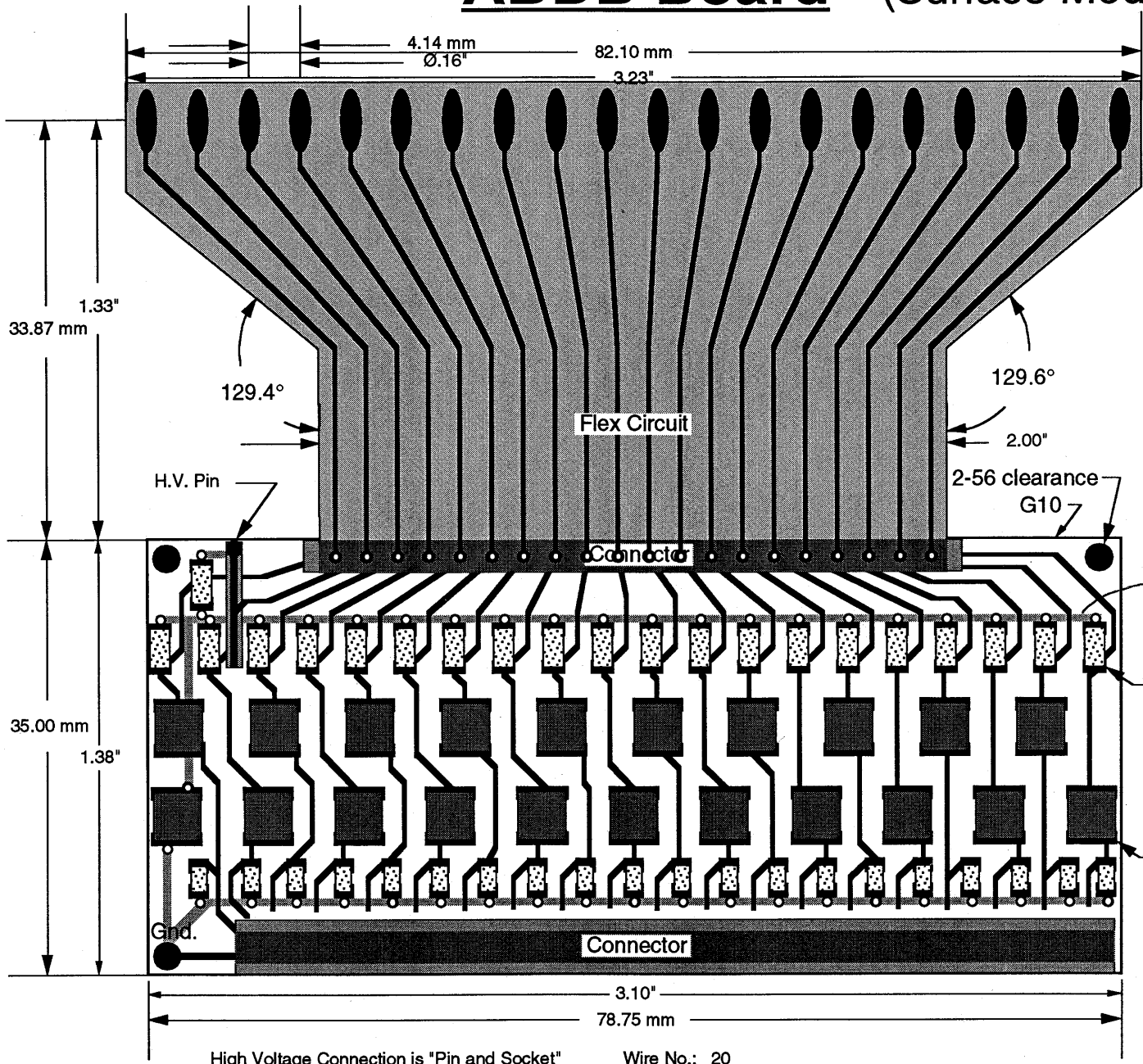
OBSOLETE - 3/17/93

ABDB Board (Surface Mount)

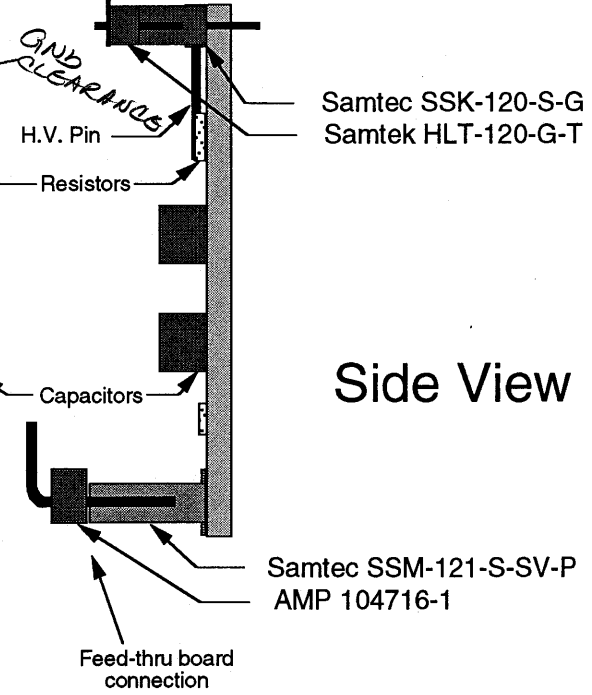
160X40

.150 5Q(BODY)

SM150592



Kapton Flex Circuit
 LAYER 9 => SOLDER PASTE



High Voltage Connection is "Pin and Socket"
 Wire No.: 20
 Wire Pitch: 4 mm

1) ROUND CORNERS ON PADS

Scale: 2X

2) GND NET CLEARANCE FROM BOARD EDGE TO COMP ON HIGH VOLTAGE

MARCH 30, 1993

COMMAND FILE 'cmd869u1'.

```
pre /users/hunter/a869;  
edi a869u1;  
sho -e #i #e2 #e3 #e5 #e6 #e19 #e27 #e26 #e52;  
win :n5 :f;
```

} SINGLE BOARD,
PARTS & TRACES

COMMAND FILE 'cmd869u1g'.

```
pre /users/hunter/a869;  
edi a869u1;  
sho -e #i #e3 #e6 #e19 #e24;  
win :n5 :f;
```

} SINGLE BOARD
GROUND SIDE

COMMAND FILE 'cmd869u2'.

```
pre /users/hunter/a869;  
edi a869u2;  
sho -e #i #e2 #e3 #e5 #e6 #e19 #e27 #e26 #e52;  
win :n5 :f;
```

} PANEL OF 10.
PARTS & TRACES.

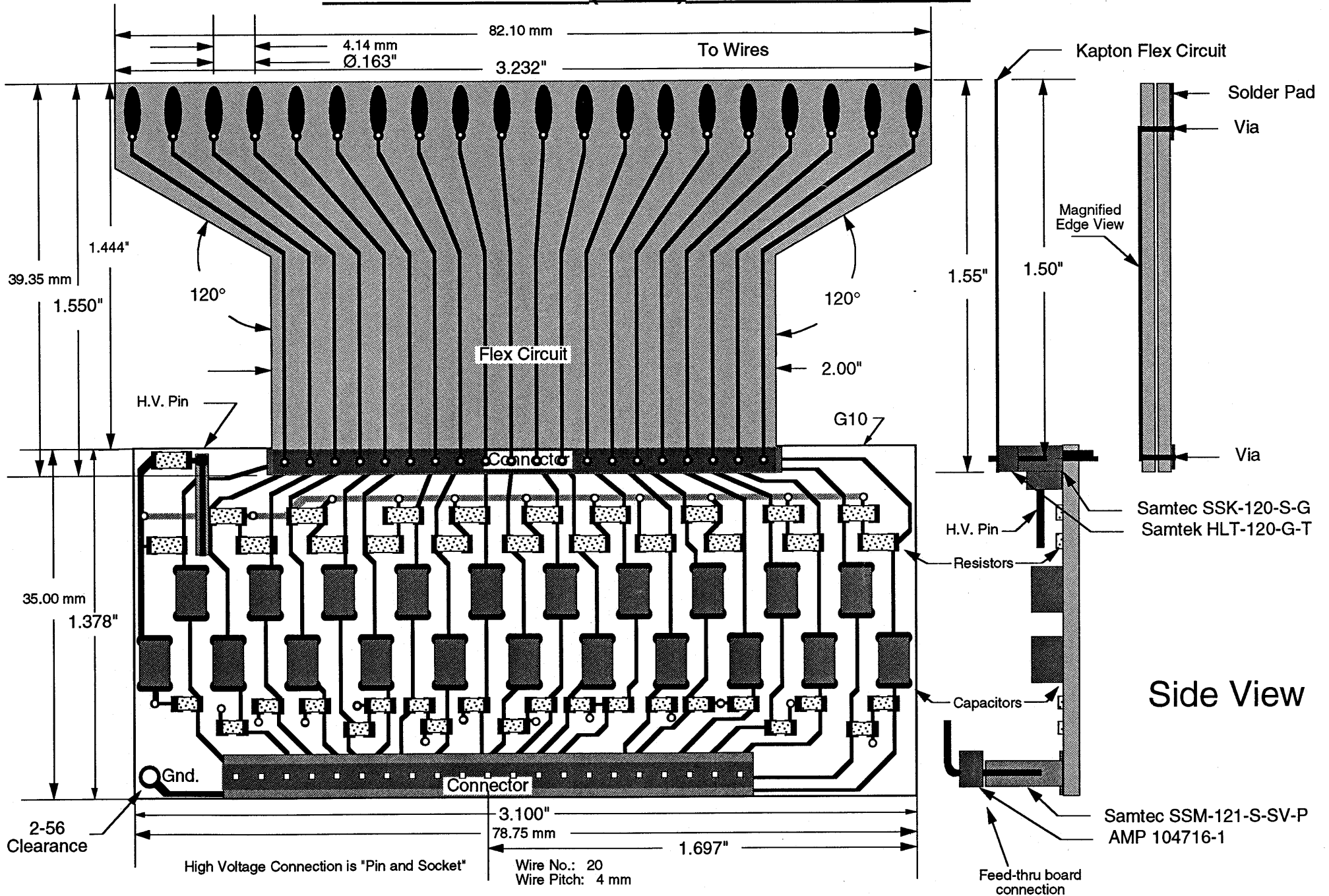
COMMAND FILE 'cmd869u2g'.

```
pre /users/hunter/a869;  
edi a869u2;  
sho -e #i #e3 #e6 #e19 #e24;  
win :n5 :f;
```

} PANEL OF 10.
GROUND SIDE.

GOOD LUCK

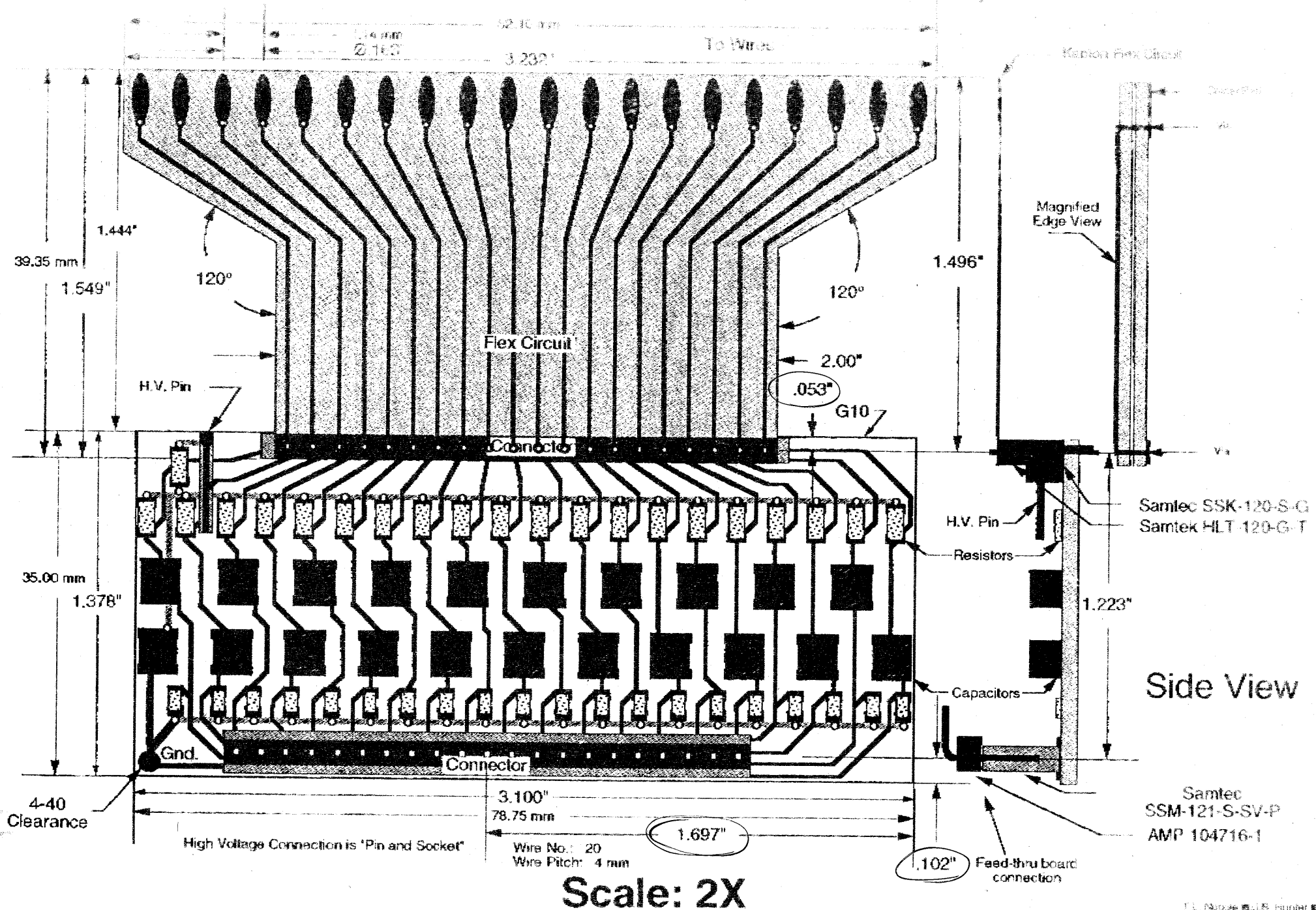
ABDB Board (Rev A) & Flex Circuit



Scale: 2X

ABDB Board (Surface Mount)

3/30/93



Scale: 2X

ORIGIN: -1100, 7600

200089702 - L.D.A.D.

ADEL SIZE:

4200, 7.350

COMPONENT SIDE \Rightarrow #E5 #E3 - P29 #E55 #E19 = 2897C-g

CMD897C = A897C = PL897C

SOLDER SIDE \Rightarrow PADS & TRACE \Rightarrow #E3 #E6 #E19 = 2897s-g

SOLDER SIDE \Rightarrow GROUND PLANE \Rightarrow ~~#E24~~ #E24[#] C19 = 2897g-g
#R19

PRINT LIST

TITLE: STAR TPC
 INNER SECTOR ELECTRONICS
 LITTLE ORPHAN ANODE BOARD
 (PANEL OF 10 24A4511 U-1,
 a000897u1)

FILE NO.: a000897p1 REV:
 PRINT NO.: 24A4511 P-1
 CHANGES (*)

ENGINEER: JIM HUNTER
 DRAFTER: STIRKKINEN

DATE: 04/15/94
 PAGE: 1 OF 1

Drawing No.	Chg. Ltr.	Title
24A4511 C-1 (a000897c1)		PARTS LIST (PANEL)
24A4512 M-1 (a000897m1)		BOARD OUTLINE (PANEL)
24A4512 E-1 (a000897e1)		HOLE SCHEDULE (PANEL)
24A4512 L-1 (a000897l1)		PC BOARD ASSEMBLY (PANEL)
24A4511 U-1 (a000897u1)		PC BOARD - ISOR/10 WIRE (SINGLE BOARD)
24A4511 U-2 (a000897u2)		PC BOARD - ISOR/10 WIRE (PANEL)

** DRAWINGS NOT REQUIRED FOR THIS PACKAGE - SILKSCREEN **

NUMBERS WITHIN () REFER TO EGS COMPUTER FILES

*

PARTS LIST

TITLE: STAR TPC
INNER SECTOR ELECTRONICS
LITTLE ORPHAN ANODE BOARD
(PANEL OF 10 BOARDS)

FILE NO.: a000897c1 REV:
PRINT NO.: 24A4511 C-1
CHANGES (*)

ENGINEER: JIM HUNTER
DRAFTER: STIRKKINEN

DATE: 04/15/94
PAGE: 1 OF 1

Reference	Stock No.	Part Type	Description	Qty
-----------	-----------	-----------	-------------	-----

CAPACITORS

C1,C2,C3,C4,C5, C6,C7,C8,C9, C10,C11	NS	.001uF	.001uF,3KV,CERAMIC,SMT, SIZE .120 X .180	110
--	----	--------	---	-----

RESISTORS

R1,R2,R3,R4,R5, R6,R7,R8,R9, R10,R11	NS	10M	10M,1/8W,5%,SMT,SIZE	110
--	----	-----	----------------------	-----

MISCELLANEOUS

J1	NS	CN11SROW	11 PIN,SINGLE ROW CON- NECTOR,STRAIGHT,SAMTEC #SSK-111-S-G,SOLDER TAIL	10
-	NS	CN1SROW	1 PIN,SINGLE ROW CON- NECTOR,STRAIGHT,SAMTEC #SSK-101-S-G,SOLDER TAIL	4
-	NS	24A4511 U-2 (a000897u2)	24A4511 U-2,PC BD,PANEL OF 10 BOARDS (24A4511 U-1 , a000897u1)	1

4/15/94

HP EGS PHOTO PLOT/DRILL POST-PROCESSOR

AUTOFLASH: ON
ERROR MODE: PAUSE ON ERROR
FILL WIDTH MODE: ON

SORT DRILL: MAJOR SORT ON X
SORT PROXIMITY: X: 5.00000000000000L+002 Y: 5.00000000000000L+0
SORT APERTURE: ON

DRILL FORMAT: 5.1
PHOTO PLOT FORMAT: 5.0
DR ORIGIN SOURCE: -1.10L+003, 7.60L+003 OUTPUT: 5.00L+002, 5.00L+002
PH ORIGIN SOURCE: -1.10L+003, 7.60L+003 OUTPUT: 5.00L+002, 5.00L+002

DRILL UNITS FACTOR: 1.00L+000
PHOTO PLOT UNITS FACTOR: 1.00L+000
PHOTO PLOT RESOLUTION: 3.00L+000

NO FILL USE: none specified
NOTE USE: tri0
POLYGON FILL USE: none specified

ATTRIBUTES FILE: /1b1/jobs/a897/RE897DR
WHEEL FILE: /1b1/jobs/a897/W897

CURRENT HP EGS GENERATE SOURCE FILES:
/1b1/jobs/a897/

NO VIRTUAL DRILL FILES HAVE BEEN SPECIFIED.

ACTUAL DRILL FILE:
/1b1/jobs/a897/A897D
1 56

NO VIRTUAL PHOTO PLOT FILES HAVE BEEN SPECIFIED.

NO ACTUAL PHOTO PLOT FILES HAVE BEEN SPECIFIED.

TOOL LIST

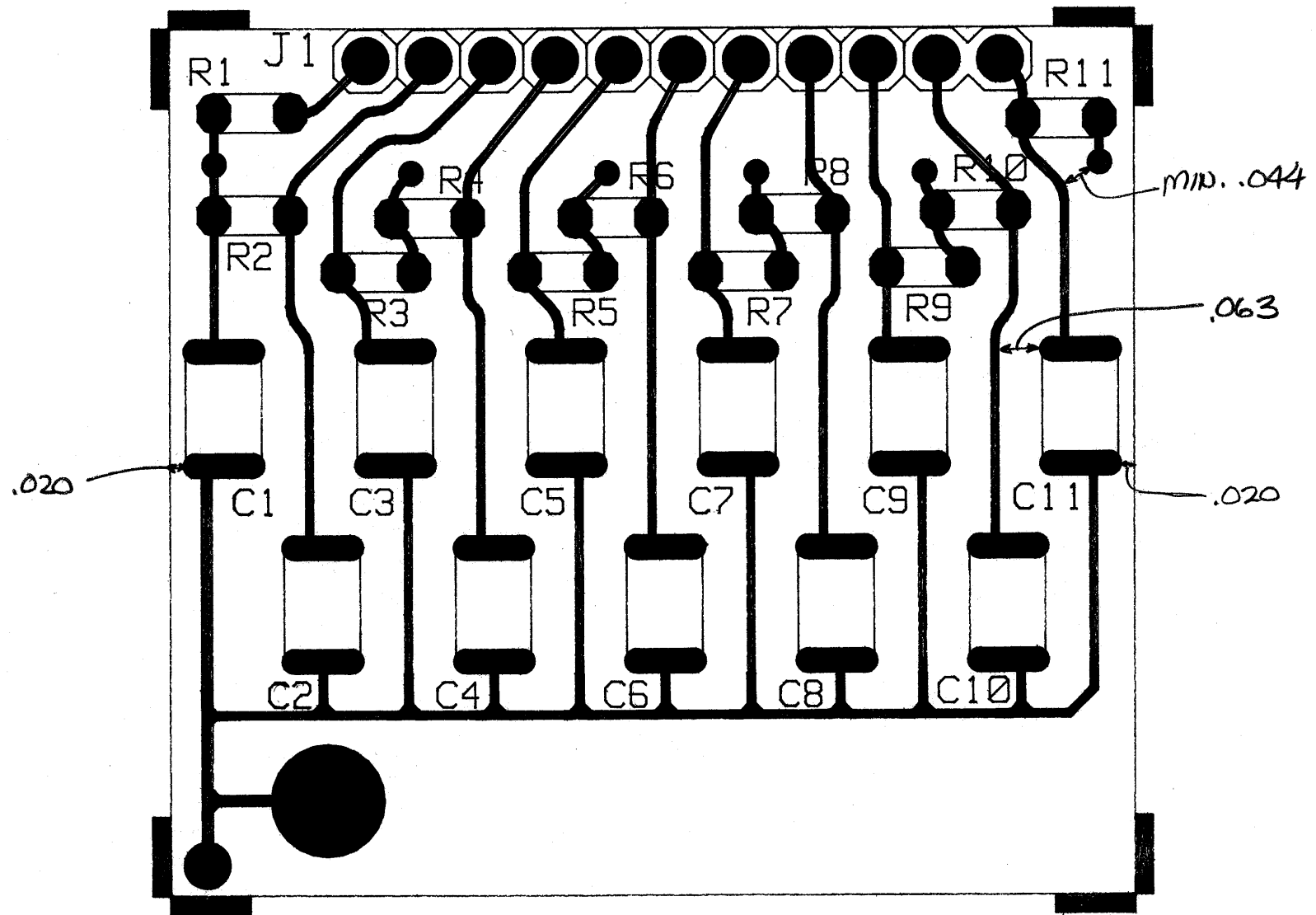
tool number count diameter

1	110	2.60L+001
2	60	2.00L+001
3	10	3.80L+001
4	12	1.25L+002

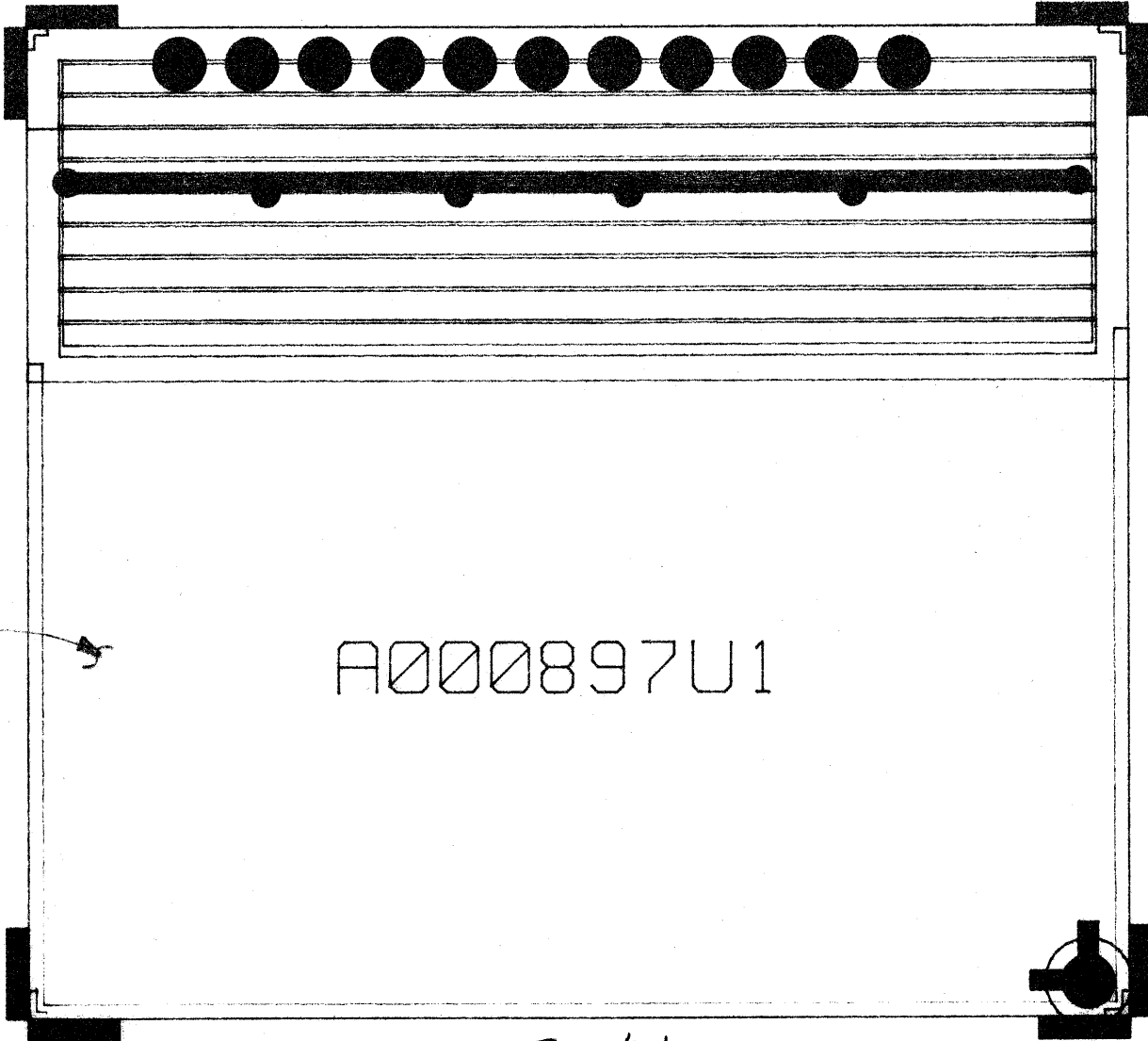
192

WHEEL FILE DATA

aperture name	count	type	shape	width	height
aperture number	count	type	shape	width	height



SCALE 4:1
4/14/94

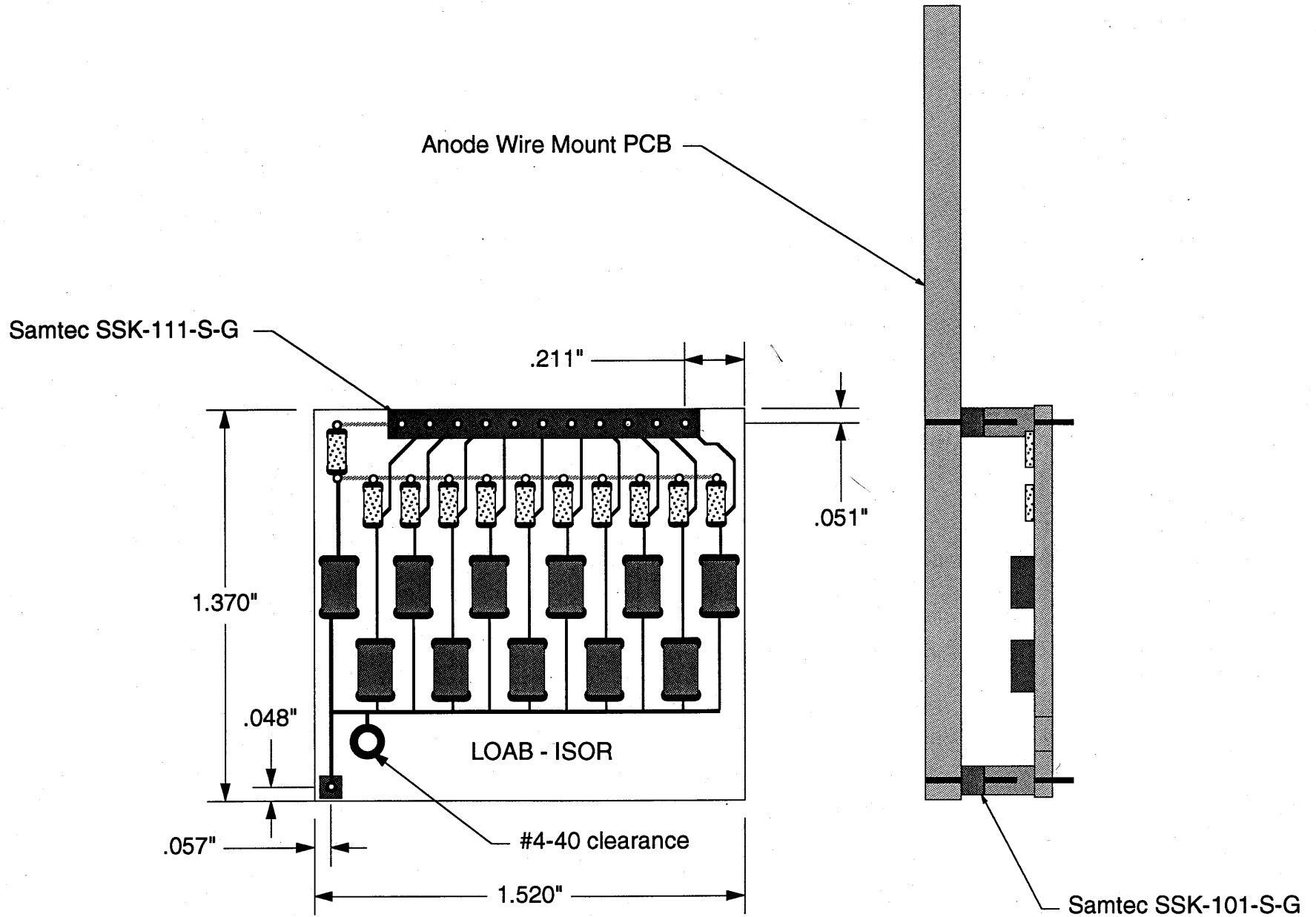


COPPER

A000897U1

SCALE 4:1
4/14/94

Little Orphaned Anode Board - Type ISOR



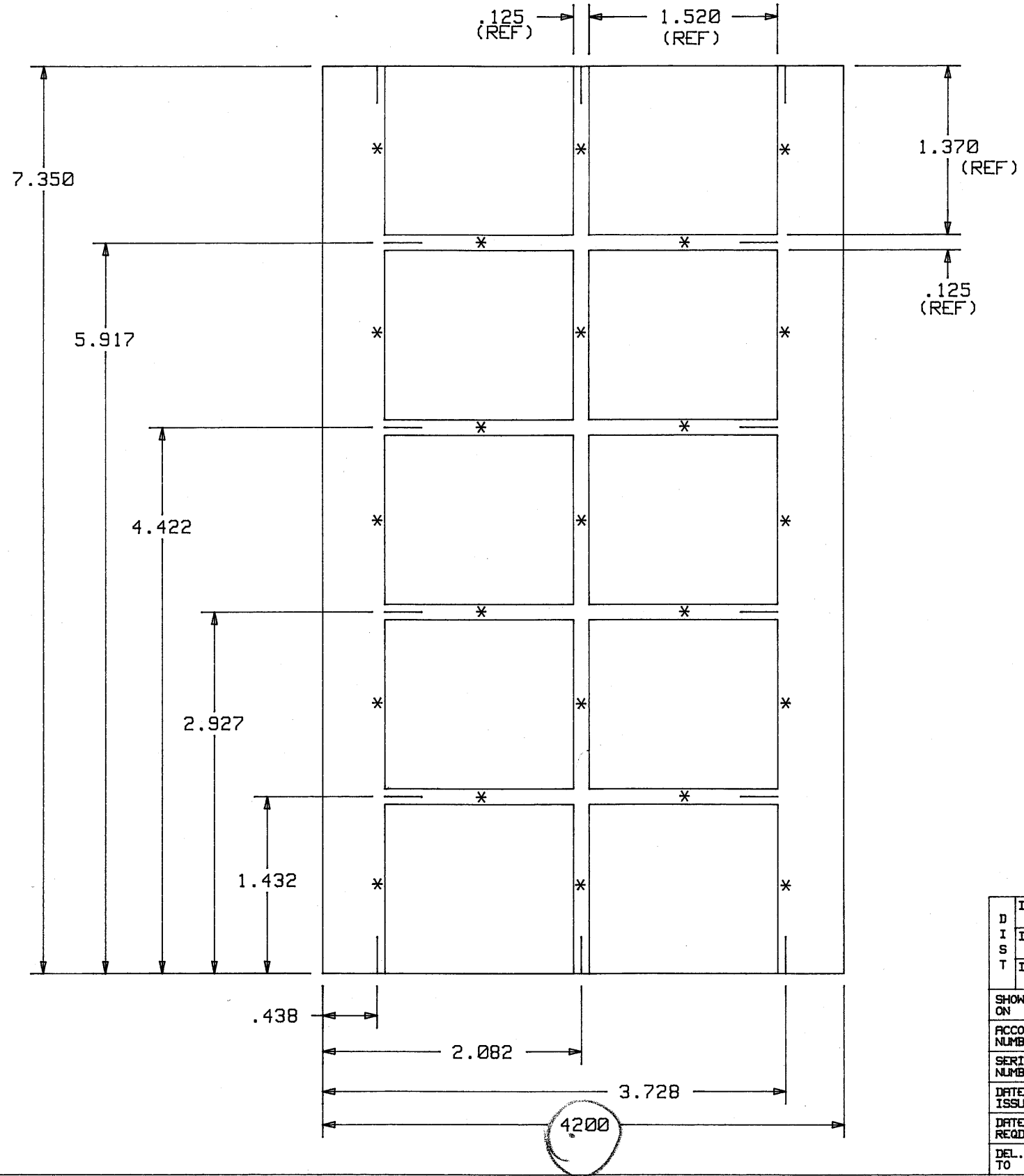
PANEL SIZE
4.200 X 7.350

***** LBL BOARD A000897U2 *****
***** MAY 17, 1994 *****
***** WHEEL W897INFO *****
NEED 1 STANDARD PHOTO PLOT, 1 COMPOSITE, 2 POSITIVES AND 2 NEGATIVES.
FILM SIZE IS APPROXIMATELY 5.500 X 8.200 INCHES.
DELIVERY DATE: MAY 19, 1994 OR SOONER.
PHOTO PLOT FILES IN POSITIVE FORMAT:
PL897C - COMPONENT SIDE
PL897S - SOLDER SIDE (DROP-IN-LAYER)
PHOTO PLOT FILE IS NEGATIVE FORMAT:
PL897G - GROUND PLANE (CLEARANCE LAYER)
FOR COMPOSITE FOR SOLDER SIDE COMBINE FILE PL897S (POSITIVE) WITH FILE
PL897G (NEGATIVE).
PLEASE MAKE CONTACT COPIES OF PLOT FILE (1) AND COMPOSITE (1). I NEED
ONE (1) POSITIVE AND ONE (1) NEGATIVE OF EACH FILE, EMULSION DOWN,
RIGHT READING. THIS IS A TOTAL OF TWO (2) POSITIVES AND TWO (2)
NEGATIVES.
IF THERE ARE ANY QUESTIONS OR PROBLEMS PLEASE CALL -JUDY- (916)
547-4005 OR -JIM- (510)486-7084.

tr10 10 circle trace 10;
tr12 11 circle trace 12;
tr15 12 circle trace 15;
tr20 13 circle trace 20;
tr30 14 circle trace 30;
tr40 15 circle trace 40;
tr50 16 circle trace 50;
tr60 17 circle trace 60;
tr70 18 circle trace 70;
tr80 19 circle trace 80;
tr90 20 circle trace 90;
tr100 21 circle trace 100;
tr120 22 circle trace 120;
tr130 23 circle trace 130;
tr150 24 circle trace 150;
f140 25 circle flash 40;
f150 26 circle flash 50;
f160 27 circle flash 60;
f170 28 circle flash 70;
f175 29 circle flash 75;
f185 30 circle flash 85;
f190 31 circle flash 90;
f1100 32 circle flash 100;
f1110 33 circle flash 110;
f1120 34 circle flash 120;
f1130 35 circle flash 130;
f1140 36 circle flash 140;
f1150 37 circle flash 150;
f1160 38 circle flash 160;
f1200 39 circle flash 200; OVAL
PADEXO 36 rectangle flash 80 55;
PADEXO 37 rectangle flash 55 80;
PADEXR 38 rectangle flash 75 55;
PADEXR 39 rectangle flash 55 75;
ftarget 40 square special 1.0;
fs60 41 square flash 60;
fs70 42 square flash 70;
fs75 43 square flash 75;
fs85 44 square flash 85;
fs100 45 square flash 100;
fs110 46 square flash 110;
fs120 47 square flash 120;
fs130 48 square flash 130;
fs140 49 square flash 140;
fs150 50 square flash 150; OVAL
PADEX05 51 rectangle flash 65 55;
PADEX05 52 rectangle flash 55 65;
fr12040 53 rectangle flash 120 40;
fr16040 54 rectangle flash 160 40;
fr4860 55 rectangle flash 48 60;
fr4075 56 rectangle flash 40 75;
fr4030 57 rectangle flash 40 30;
fr13030 58 rectangle flash 130 30;
fr3040 59 rectangle flash 30 40;
f130 60 circle flash 30;
f1180 61 circle flash 180;
fs45 62 square flash 45;
fr9040 63 rectangle flash 90 40;

COMPONENT SIDE VIEW

REV.	CHANGES	DRAWN	DATE	CHKD.	DATE

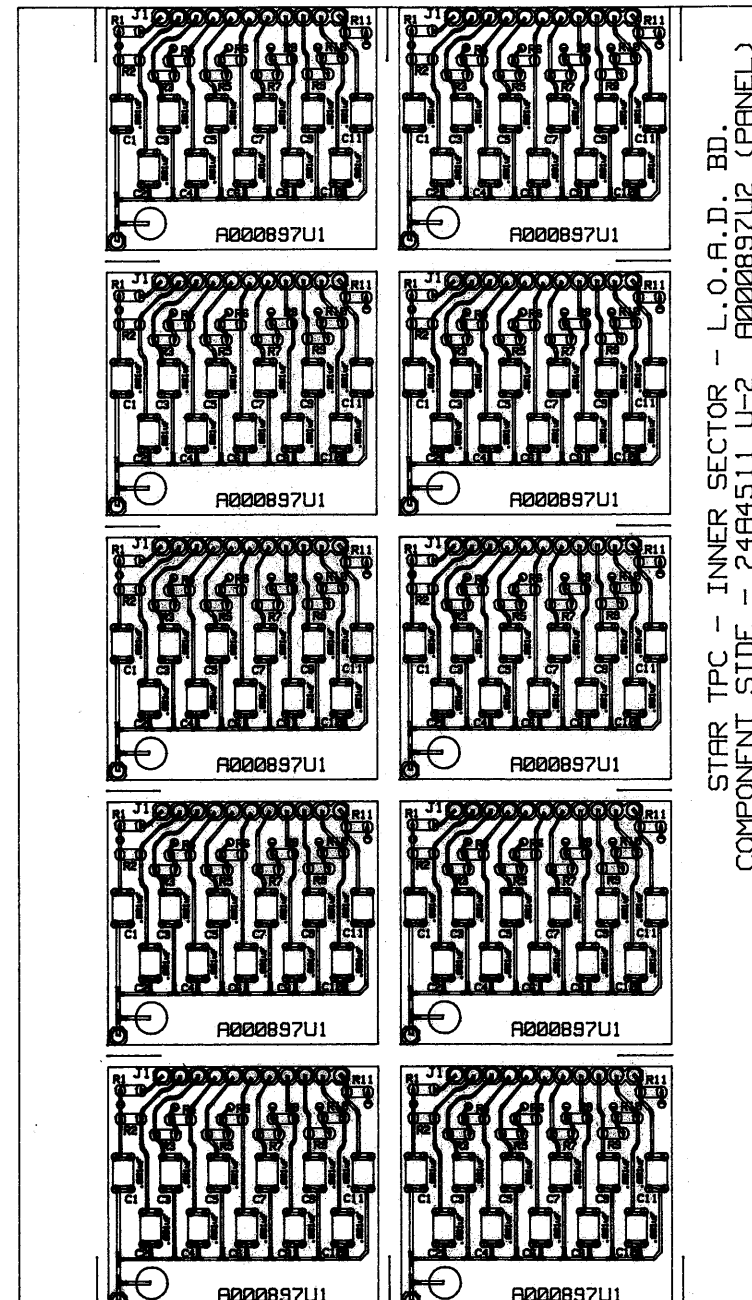


NOTES:

- BOARD MATERIAL: .062 THICK NEMA G10 PER MIL-P-13949G FL-GEN 062C-1/1-A1A (1 OZ. COPPER EACH SIDE).
- PANEL SIZE IS 4.200 +/- .010 X 7.350 +/- .005. SINGLE BOARD SIZE IS 1.520 X 1.370 +/- .005. DIMENSIONS ARE IN INCHES.
- * = APPROXIMATE PLACEMENT OF .050 TABS. SLOTS TO BE .125" WIDE.
- UNSPECIFIED TOLERANCES ARE +/- .005.
- REFERENCE DRAWINGS:
 - 24A4511 C-1 a000897c1 PARTS LIST (PANEL)
 - 24A4512 E-1 a000897e1 HOLE SCHEDULE (PANEL)
 - 24A4512 L-1 a00089711 P.C. BOARD ASSEMBLY (PANEL)
 - ~~(SINGLE BOARD)~~

D I S T		I: TITLE STAR TPC	
		II: INNER SECTOR ELECTRONICS	
		III: LITTLE ORPHAN -NODE BOARD (ISOR) - 10 WIRES	
SHOWN ON		BOARD OUTLINE - PANEL OF 10 (24A4511 U-2)	
ACCOUNT NUMBER	8052-24	DRAWN	DATE
SERIAL NUMBER		STIRKKINEN	04/15/94
DATE ISSUED		CHECKED	DATE
DATE REQD.		APPROVED	DATE
DEL. TO		ENGINEER	FILE NO.
		JIM HUNTER	a000897m1
		SCALE NONE	SIZE
		E2	2
			DRAWING NO.
			24A4512 M-1
			REV.
			SHEET 1 OF 1

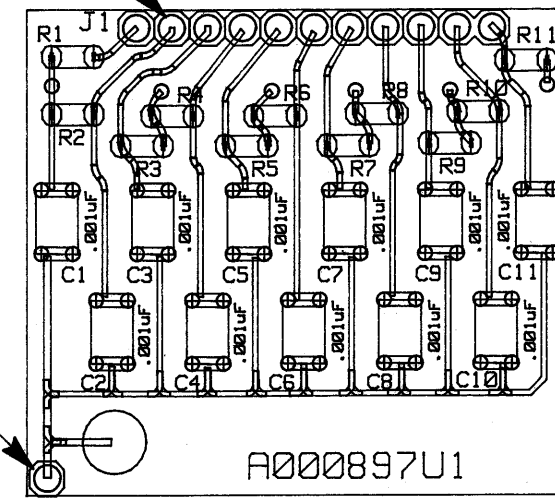
REV.	CHANGES	DRAWN	DATE	CHKD.	DATE



STAR TPC - INNER SECTOR - L.O.A.D. BD.
COMPONENT SIDE - 24A4511 U-2 A000897U2 (PANEL)

11 PIN SOCKET, SAMTEC
#SSK-111-S-G (10 PLACES)

1 PIN SOCKET, SAMTEC
#SSK-101-S-G (10 PLACES)



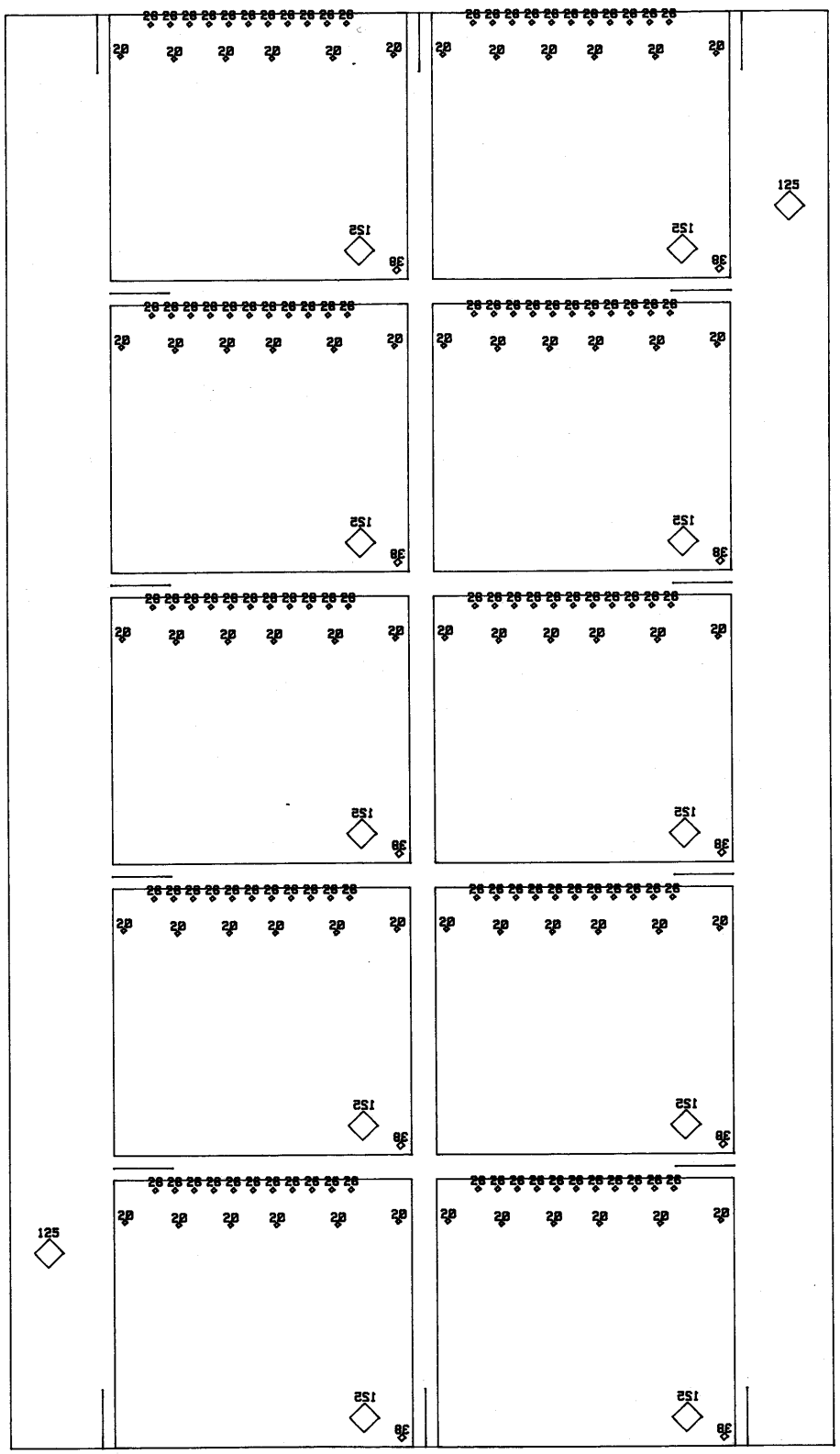
SCALE: ~2:1

NOTES:

- UNLESS OTHERWISE SPECIFIED:
A. RESISTORS ARE 10M, 1/8W, 5%, SURFACE MOUNT, SIZE 1206.
B. CAPACITORS ARE .001uF, 3KV, CERAMIC, SURFACE MOUNT, SIZE .120" X .180".
- PANEL BOARD SIZE IS 4.200 +/- .010 X 7.350 +/- .005. SINGLE BOARD SIZE IS 1.520 X 1.370 +/- .005. DIMENSIONS ARE IN INCHES. BOARD OUTLINE IS 24A4512 M-1 (a000897m1).
- REFERENCE DRAWINGS:
24A4511 C-1 a000897c1 PARTS LIST (PANEL)
24A4512 M-1 a000897m1 BOARD OUTLINE (PANEL)
24A4512 E-1 a000897e1 HOLE SCHEDULE (PANEL)

D I S T	I:	TITLE STAR TPC					
	II:	INNER SECTOR ELECTRONICS					
	III:	LITTLE ORPHAN ANODE BOARD (ISOR)-10 WIRES					
SHOWN ON	P.C. BL. ASSY - PANEL OF 10 (24A4511 U-2)						
ACCOUNT NUMBER	052-24	DRAWN	DATE	LAWRENCE BERKELEY LABORATORY UNIVERSITY OF CALIFORNIA OFFICE OF ELECTRONICS ENGINEERING			
SERIAL NUMBER		STIRKKINEN	04/15/94				
DATE ISSUED		CHECKED	DATE	FILE NO.	SIZE	DRAWING NO.	REV.
DATE REQD.		APPROVED	DATE	a00089711	2	24A4512 L-2	
DEL. TO		ENGINEER	JIM HUNTER	SCALE NONE		E2, E3, E5, E27, E26, E52, E53	SHEET 1 OF 1

REV.	CHANGES	DRAWN	DATE	CHKD.	DATE

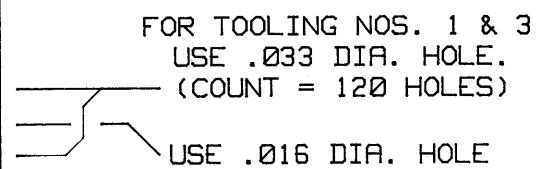


SOLDER SIDE VIEW

NOTES:

- BOARD MATERIAL: .062 THICK NEMA G10 GLASS EPOXY PER MIL-P-13949G FL-GEN 062C-1/1-A1A (1 OZ. COPPER BOTH SIDES).
- SEE HOLE SCHEDULE FOR HOLE SIZES.
- THIS BOARD TO BE THROUGH HOLE PLATED.
- SPECIFIED HOLE DIA. SIZES ARE FOR FINISHED HOLES AFTER PLATING.
- THIS PANEL BOARD IS NOT TO BE SILKSCREENED.
- PANEL SIZE IS 4.200 +/- .010 X 7.350 +/- .005. SINGLE BOARD SIZE IS 1.520 X 1.370 +/- .005. DIMENSIONS ARE IN INCHES. BOARD OUTLINE IS DRAWING 24A4512 M-1 (a000897m1).
- SOLDERMASK IS NOT USED ON THIS BOARD.
- REFERENCE DRAWINGS:
24A4511 C-1 a000897c1 PARTS LIST (PANEL)
24A4512 M-1 a000897m1 BOARD OUTLINE (PANEL)
24A4512 L-1 a000897l1 P.C. BOARD ASSEMBLY (PANEL)

HOLE SCHEDULE		
TOOLING NO.	HOLE DIA.	COUNT
1	.026	110
2	.020	60
3	.038	10
4	.125	12



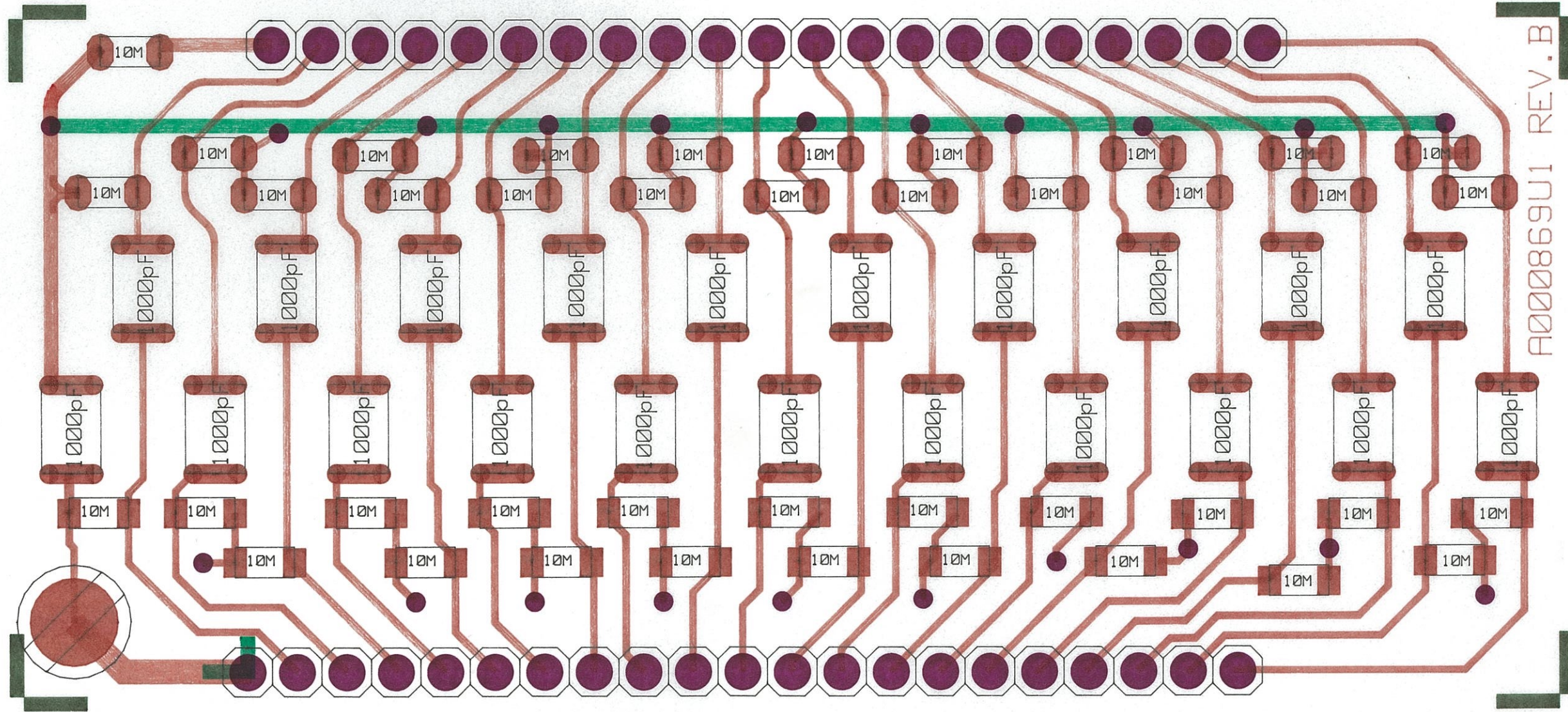
TOTAL HOLE COUNT = 192.

DIS T	I:	TITLE STAR TPC					
	II:	INNER SECTOR ELECTRONICS					
	III:	LITTLE ORPHAN ANODE BOARD (ISOR)-10 WIRES					
SHOWN ON	HOLE SCHEDULE - PANEL OF 10 (24A4511 U-2)						
ACCOUNT NUMBER	8052-24	DRAWN	DATE	LAWRENCE BERKELEY LABORATORY UNIVERSITY OF CALIFORNIA OFFICE OF ELECTRONICS ENGINEERING			
SERIAL NUMBER		STIRKKINEN	04/15/94				
DATE ISSUED	NO. REQD.	APPROVED	DATE	FILE NO.	SIZE	DRAWING NO.	REV.
DATE REQD.		ENGINEER	TIM HUNTER	a000897e1	2	24A4511 E-1	
DEL. TO		SCALE	NONE	C1, E2, E56			SHEET 1 OF 1



A00082A1 REV. B

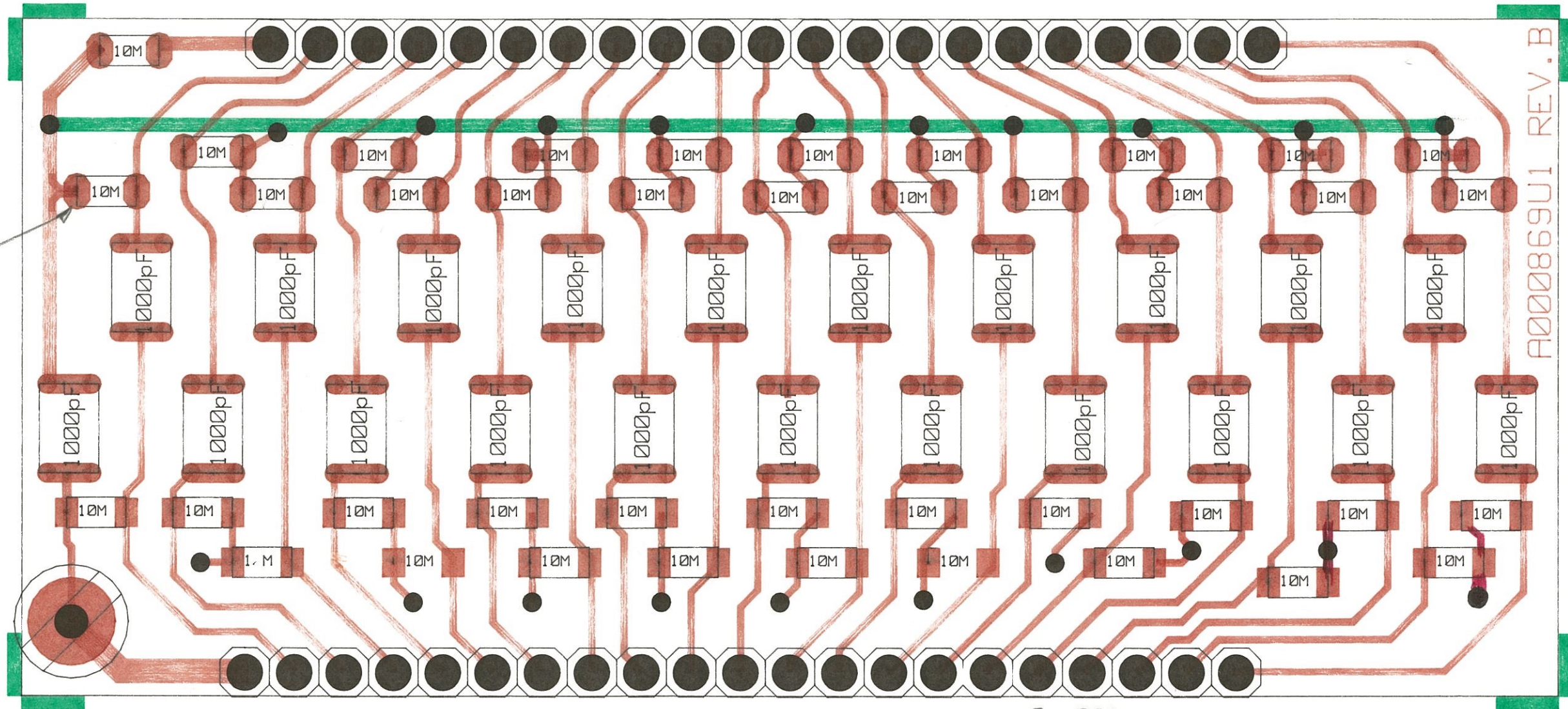
10/27/93
SCALE 4:1



A000869U1 REV.B

10/27/93 SCALE 1:4

ENLARGED
OVAL PADS
BY .010

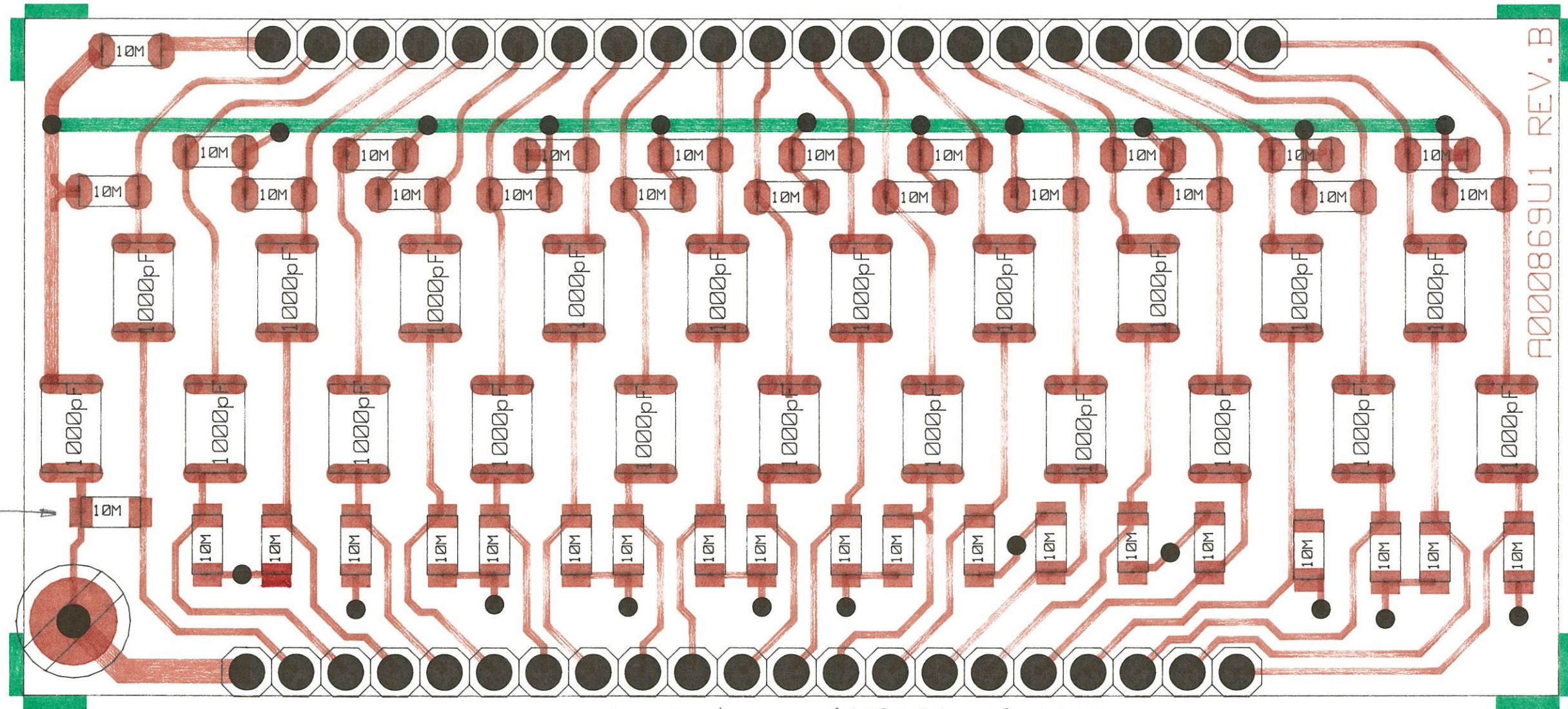


A000869U1 REV. B

SCALE 4:1 OCTOBER 18, 1993

[Handwritten scribbles in blue and green ink]

SIZE
1206



SCALE 4:1 OCTOBER 18, 1993

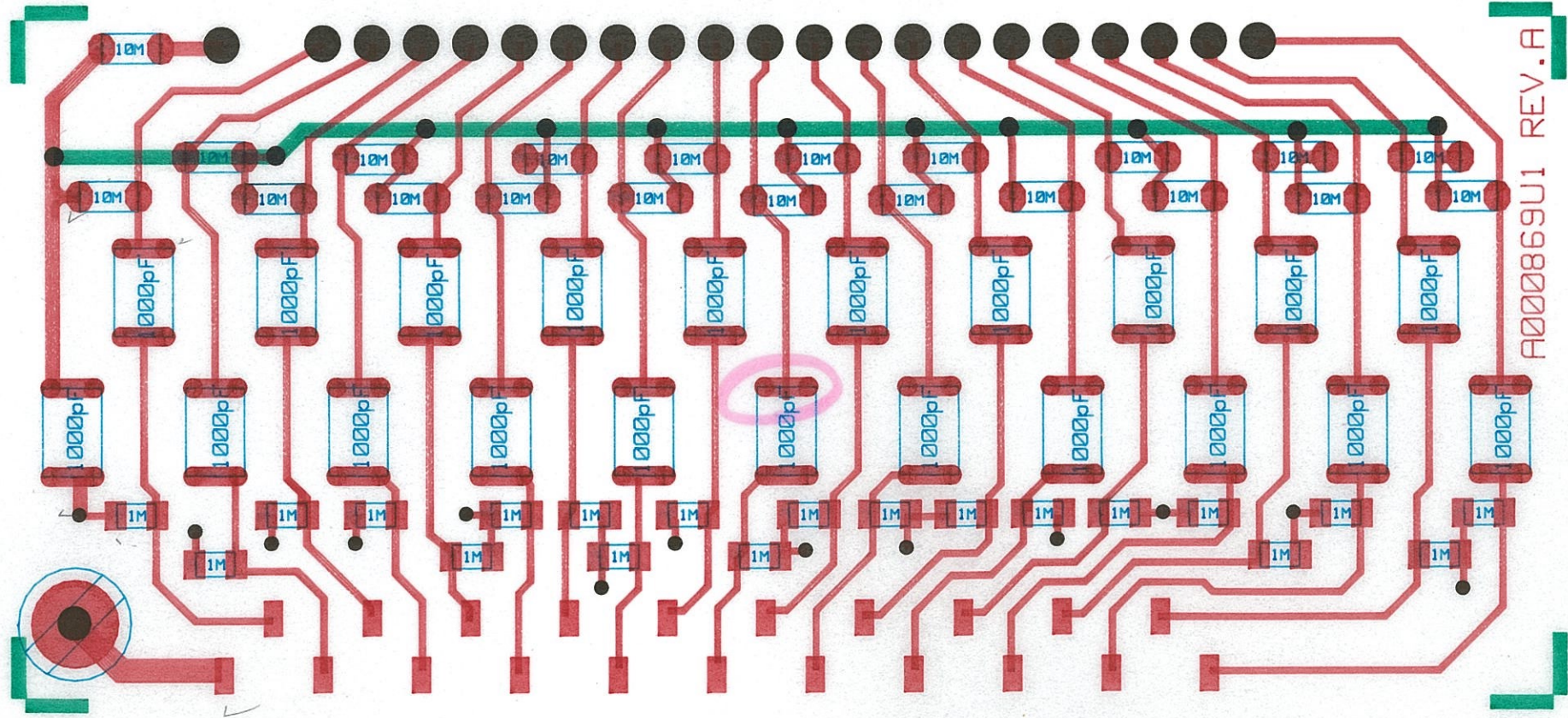
A000869U1 REV. B

20 x 40
100 x 30
35 x 40
20 x 60

140 x 75
45 x 60
90 x 40

8

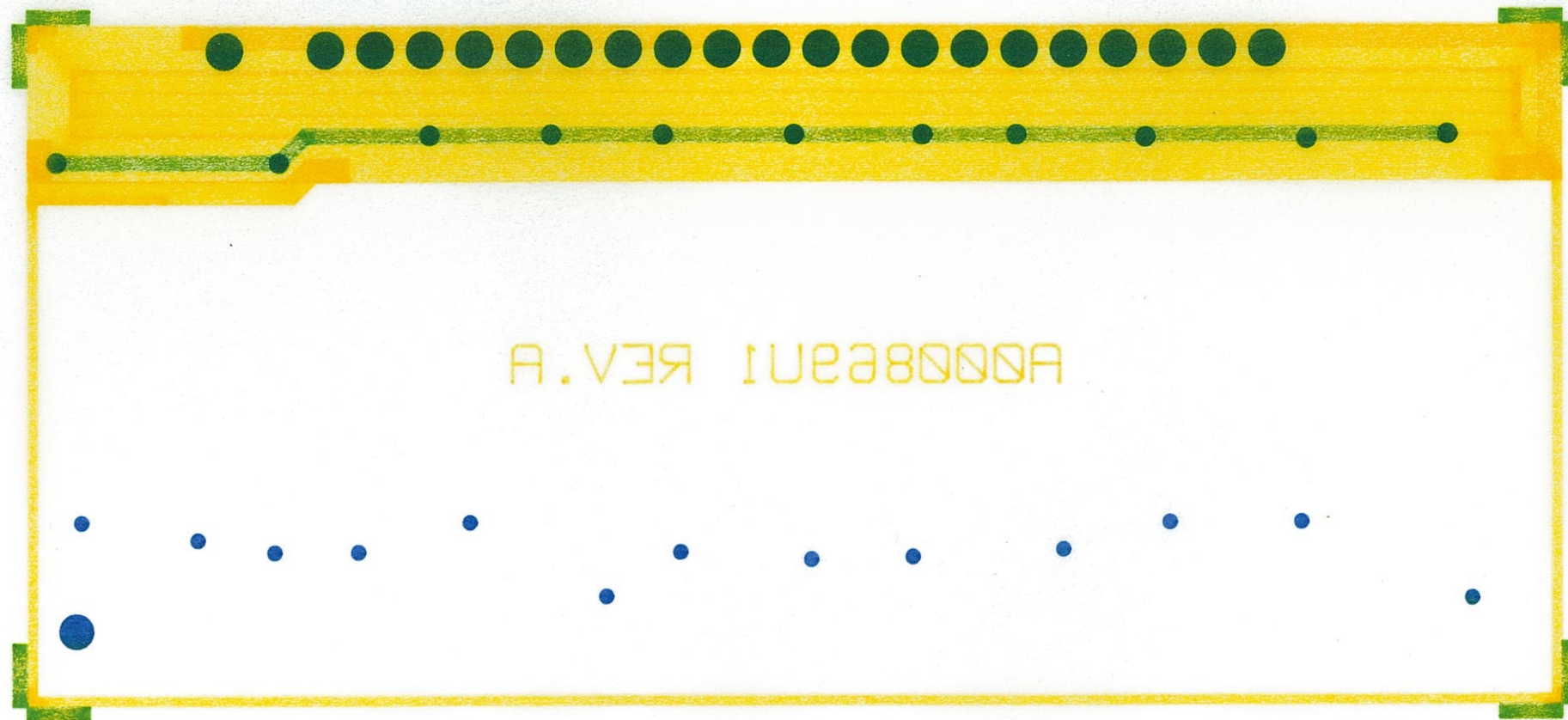
6/4/93



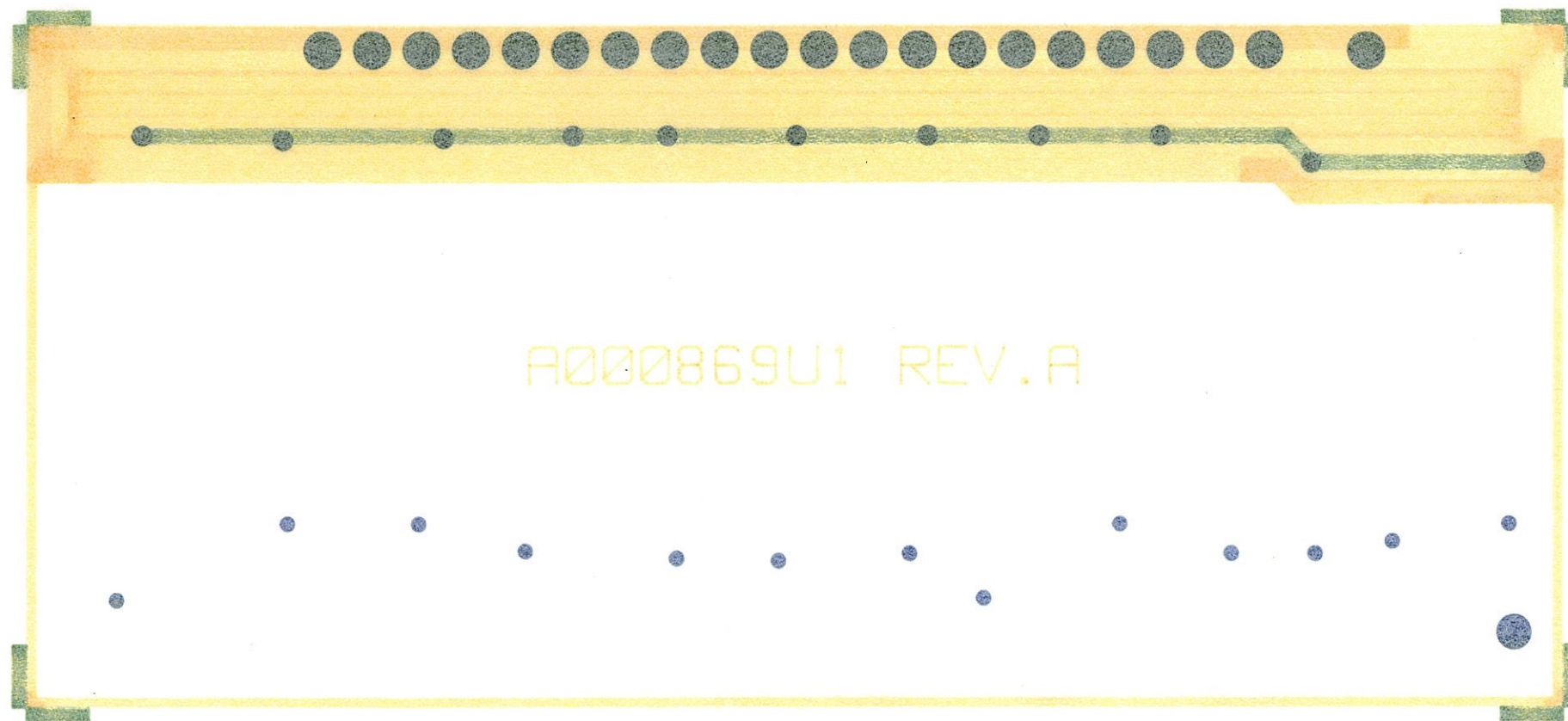
A000869U1 REV.A

810
4
840
110
950

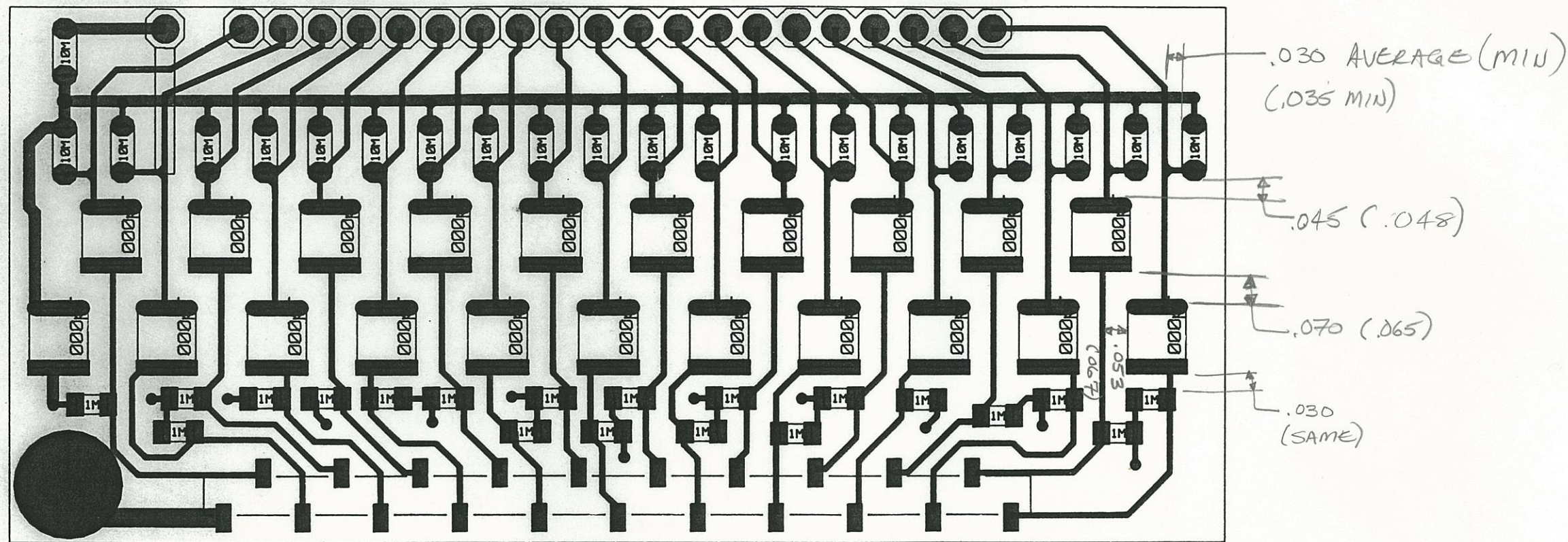
42



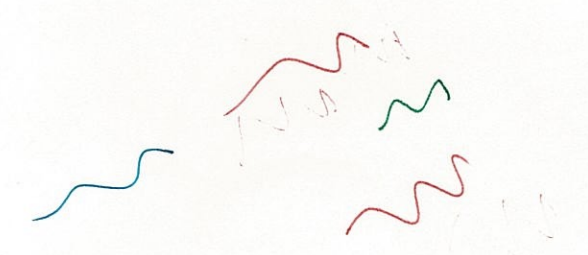
A00882U1 REV.A

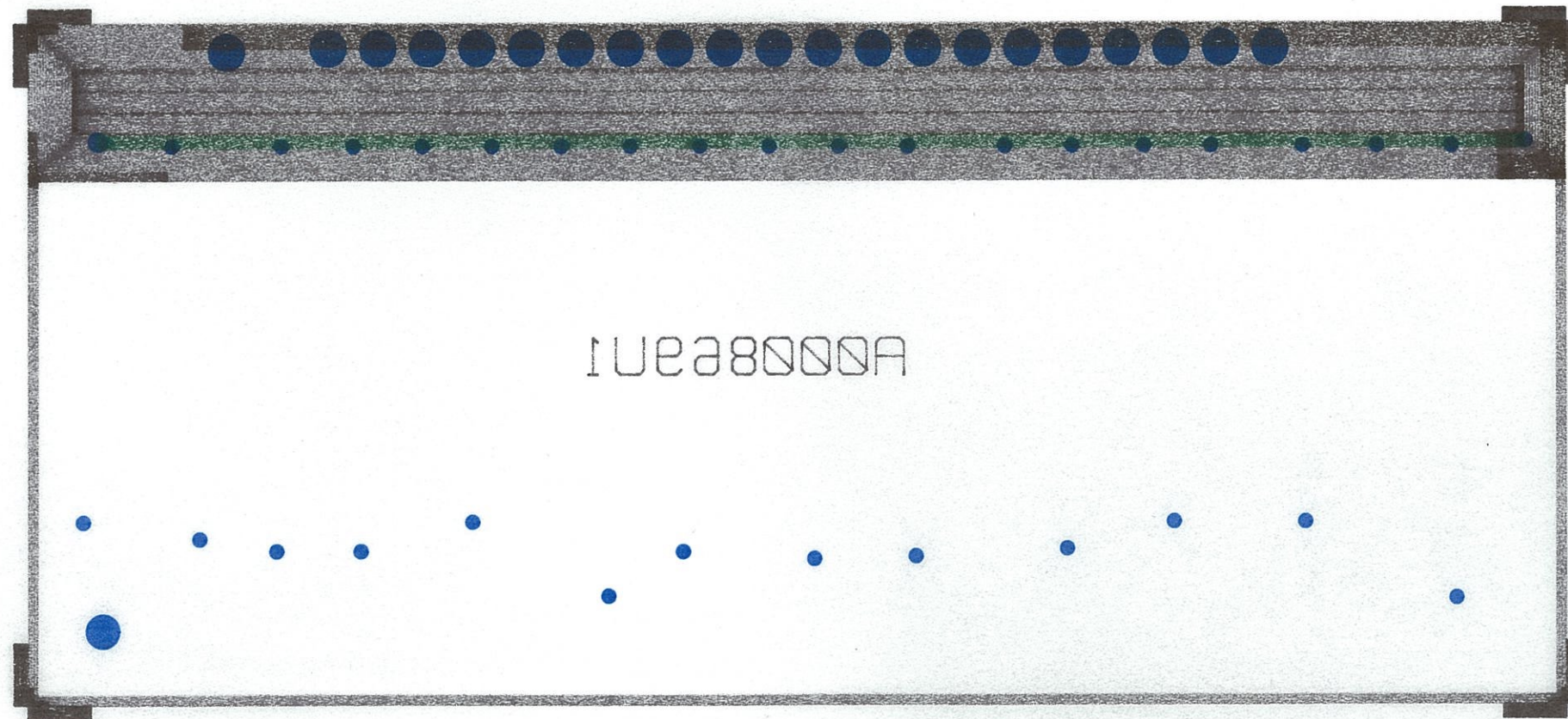


A000869U1 REV.A

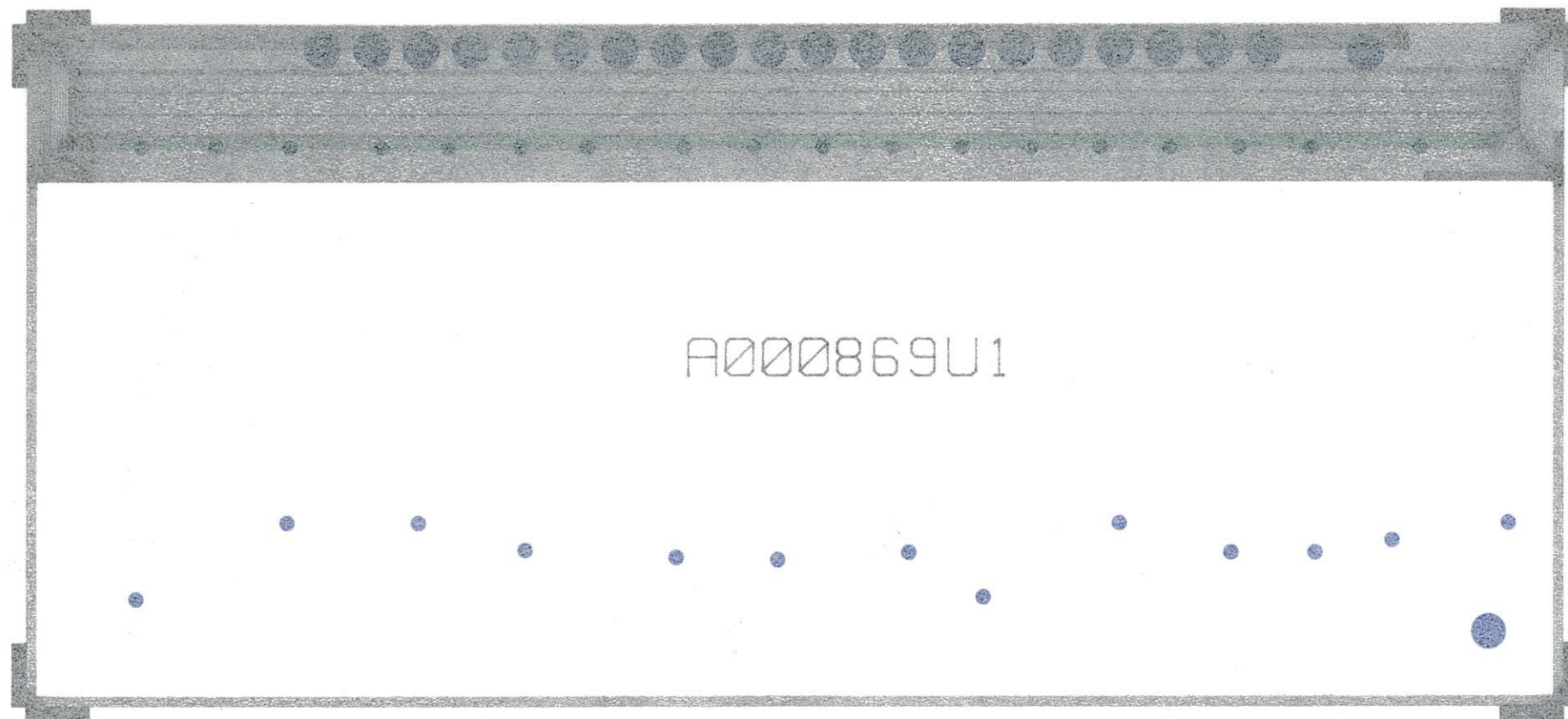


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A00821

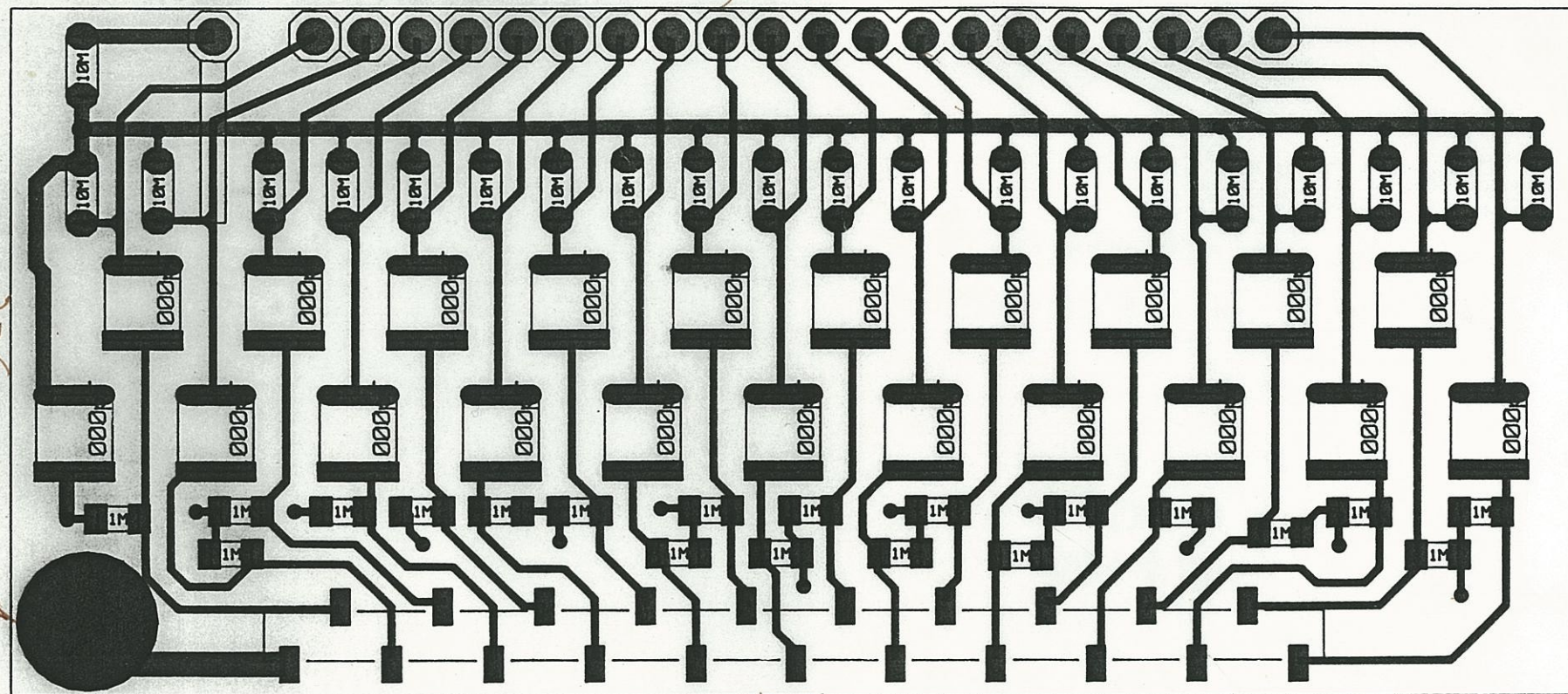


A000869U1

Pad Ex05 = 65 x 55
 RECT. PAD = 120 x 40
 " = 160 x 40
 " = 48 x 60
 " = 40 x 75
 " = 40 x 30
 " = 130 x 30
 " = 30 x 40

CIRCLE FLASH 180
 40 ✓
 30
 75 ✓
~~CIRCLE TRACE 125~~
 SQUARE FLASH 45

SM150sqc-d



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.310
 .125

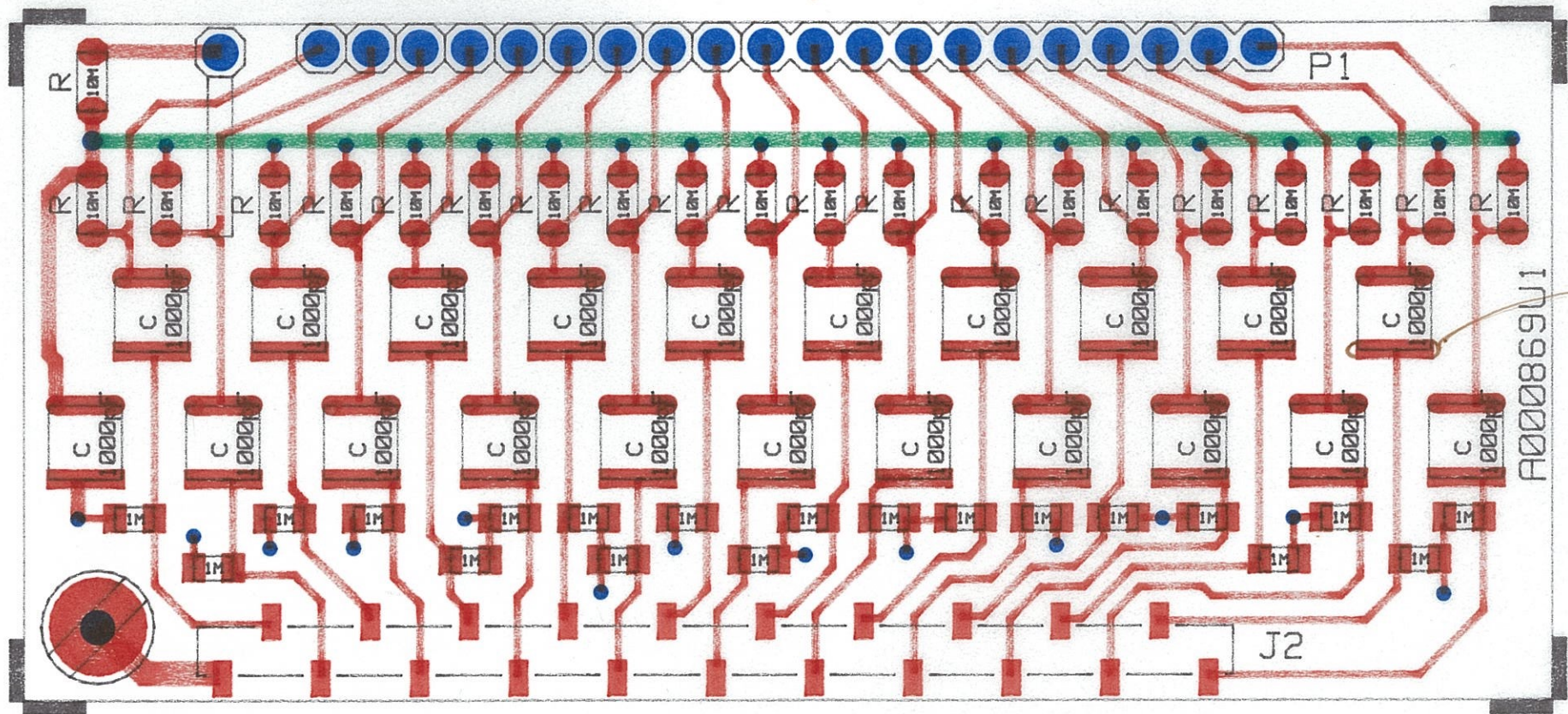
 3.225

1.375
 .125

 1.500

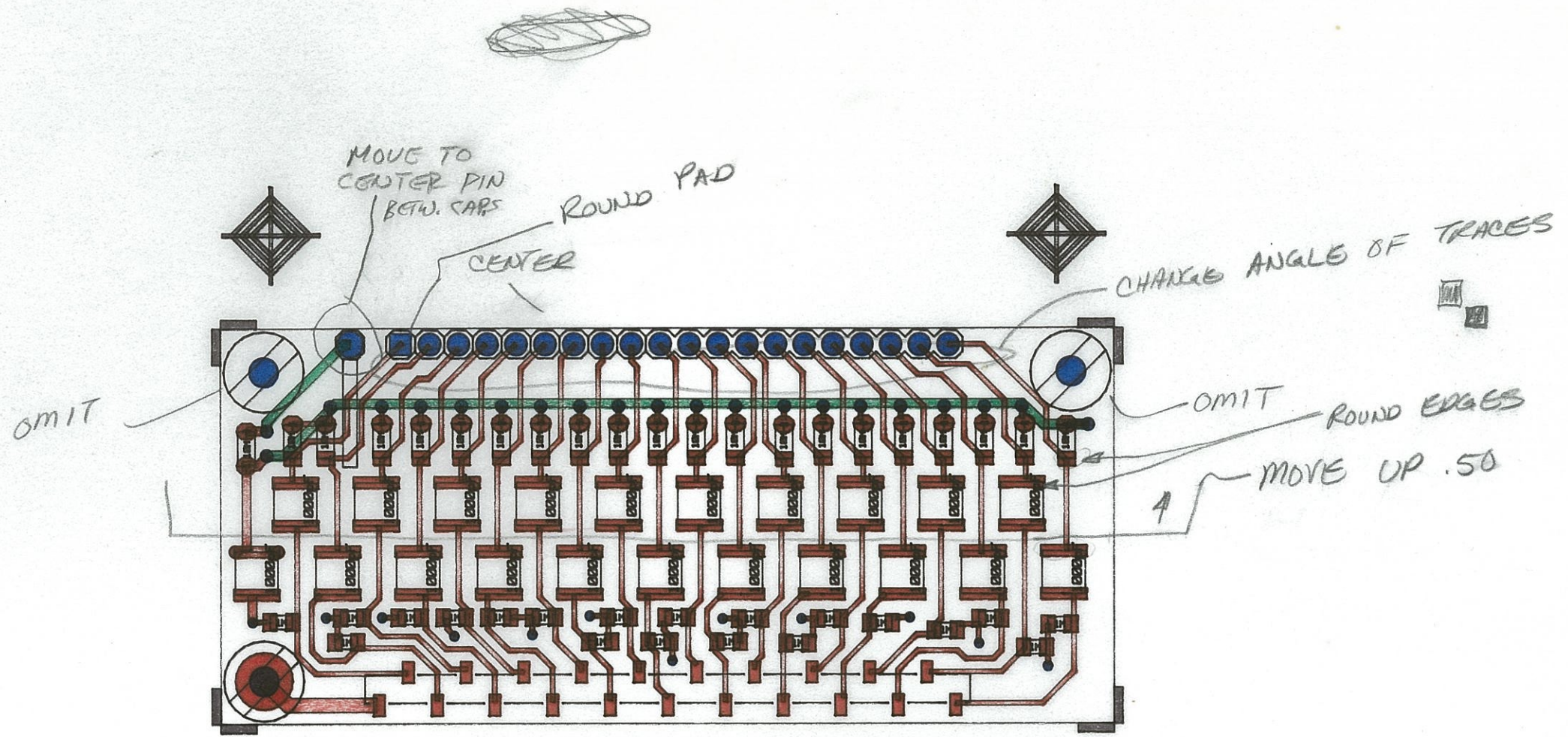
G10
 .042
 GFU

1 disk 2



per Jim Hunter
 3/30/93 round
 all cap pads close
 to high voltage.

cmdu29
 cmdu29



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First version 3/24/93

*2 PANELS
 10 PER PANEL*