

CUSTOMER NAME J.E. Medical w/o# 9808
Assembly Drawings
 SERIAL # 820239904
 NAME OF HOST COMPUTER RSCP

NOTICE

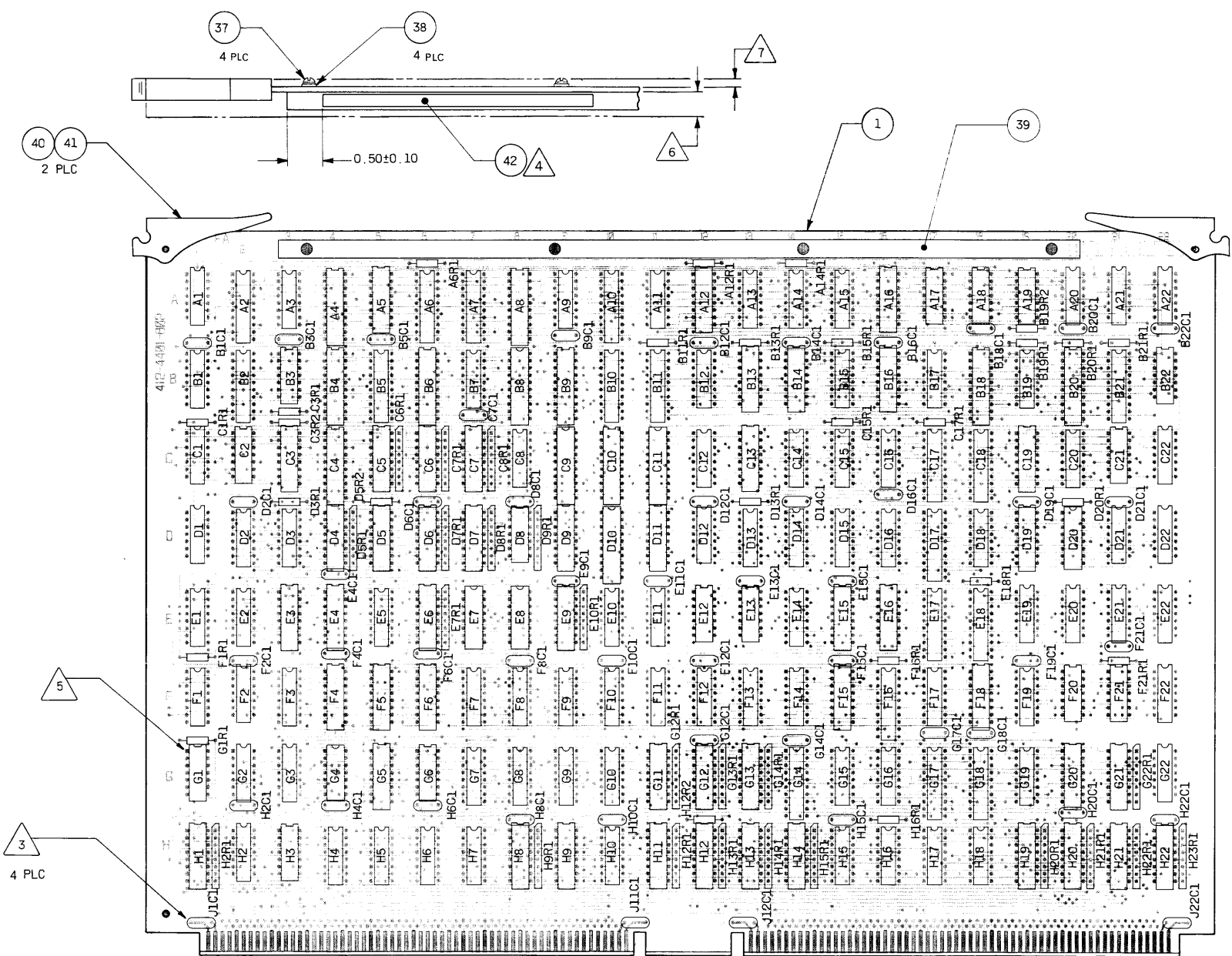
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This document contains schematics, topologies, power supplies, wiring diagrams, etc.

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REVISIONS					
REV	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE
01	EN #040	INITIAL LEVEL 2 RELEASE			
A	ECO 80106	LEVEL 3 RELEASE			
B	ECO 80272	CORRECT G14-18 FLOATING			
C	ECO 80392	CHANGE TO 1K PULLUPS			



45	H12R2, H16R1
44	A18
36	A4, A7, B2
35	A2, A6, A8, A10, B4, B5, B10, B11
34	B6, B8, B9, C4, C9, C10, C11, D10
33	G11, G12, G13, G21, H1, H8, H11, H12, H13, H14, H19, H20, H21, H22
32	D20
31	B1, E1, F1
30	A11, A12, A13, A14, A15, B13, B14, B15, B16, C5, C6, C7, C8, C12, C13, C14, C15, C16, D2, D3, D6, D7, D13, D14, D15, D16, E2, E4, E5, E6, E9, E10, E14, E15, E16, F3, F4, F5, F6, F7, F8, F9, F10, F14, F15, G5, H6, H7
29	A16
28	A3, A5, A9, B12
27	B17, C19, C20, E3, F11, F12, F18, G8, G9, G15, G16, G19, G20, H5, H10, H16, H17, H18
26	B21
25	E11, F13, G7, G10, H4, H9, H15
24	A19, B22, E19
23	B18, B20, C17, C18, D17, E17, E18, F16, G14, G17, G18
22	D12
21	B7, B19, D9, D11, D18, D19, F17
20	C3, F19
19	D4, D5, E7, E8
18	A22, C22, G2, H2, H3
17	A1
16	C2
15	A21, D21
14	B3, G3, G6, F2
13	D22, E12
12	A20, C1, D1, G1, F21
11	C21, E13, E22
10	G4
9	A17, D8, E20, E21, F20, F22
8	J1C1, J11C1, J12C1, J22C1
7	B1C1, B3C1, B5C1, B9C1, B12C1, B14C1, B16C1, B18C1, B20C1, B22C1, C7C1, D2C1, D6C1, D8C1, D12C1, D14C1, D16C1, D19C1, D21C1, E4C1, E9C1, E11C1, E13C1, E15C1, F2C1, F4C1, F6C1, F8C1, F10C1, F12C1, F15C1, F19C1, F21C1, G12C1, G14C1, G17C1, G18C1, H2C1, H4C1, H6C1, H8C1, H10C1, H15C1, H20C1, H22C1
6	G12R1, G13R1, G14R1, G22R1, H2R1, H9R1, H12R1, H13R1, H14R1, H15R1, H20R1, H21R1, H22R1, H23R1
5	G22
4	C6R1, C7R1, C8R1, D5R1, D7R1, D8R1, D9R1, E7R1, E10R1
3	A6R1, B11R1, B21R1,
2	A12R1, A14R1, B13R1, B15R1, B19R1, B19R2, B20R1, C1R1, C3R1, C3R2, C15R1, C17R1, D3R1, D5R2, D13R1, D20R1, F1R1, F21R1, G1R1, E18R1, F16R1

- 10 DESIGNATIONS IN PARENTHESES "()" DENOTES CONTINUITY CHECK POINT FROM FEED-THRU HOLE.
 - 9 FT DENOTES FEED-THRU HOLE.
 - 8 MODIFY WITH CUTS AND STRAPS AS SHOWN ON SHEET 3. REWORK TABLE ON SHEET 3 PROVIDES CONTINUITY CHECK POINTS WHICH MAY BE USED AS NECESSARY TO VERIFY LOCATIONS.
 - 7 MAXIMUM COMPONENT HEIGHT ABOVE BOARD SURFACE ON SOLDER SIDE IS 0.090.
 - 6 MAXIMUM COMPONENT HEIGHT ABOVE BOARD SURFACE ON COMPONENT SIDE IS 0.310.
 - 5 SQUARE PADS INDICATE ORIENTATION OF PIN 1 ON IC'S, AND R-PAKS
 - 4 INK STAMP OR TYPE IDENTIFICATION CHARACTERS AS REQUIRED ON LABEL AND APPLY IN POSITION AS SHOWN.
 - 3 OBSERVE POLARITY WHEN INSTALLING COMPONENT.
- NOTES: UNLESS OTHERWISE SPECIFIED
2. INSTALL ALL COMPONENTS PER REFERENCE DESIGNATORS.
 - 1 REFER ALL ITEMS TO PARTS LIST, SAME PART NUMBER AS THIS DRAWING.

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
 FRACTIONS ± _____
 ANGLES ± _____
 3 PLACE DEC. ± _____
 2 PLACE DEC. ± _____
 MATERIAL: _____

PROJ. ENG. *John C. Young* DATE 4-7-80
 DRAWN BY *John C. Young* DATE 10-3-79
 CHECK BY *Frank Miller* DATE 10-9-79
 MFG. ENG. *R. H. Calder* DATE 4-7-80

FLOATING POINT SYSTEMS, INC. POB# 23489 Portland OR 97223
 DRAWING TITLE
 ETCH CIRCUIT BOARD ASSEMBLY,
 401-B,
 FLOATING ADDER
 SIZE CODE IDENT. NO. DRAWING NO. REV.
 D 56504 612-4401-002 C
 DO NOT SCALE DRAWING SCALE NONE SHEET 1 OF 4

ECO # 82353

DRAWING NO. 612-4401-002

SHEET 1

8

7

6

5

4

3

2

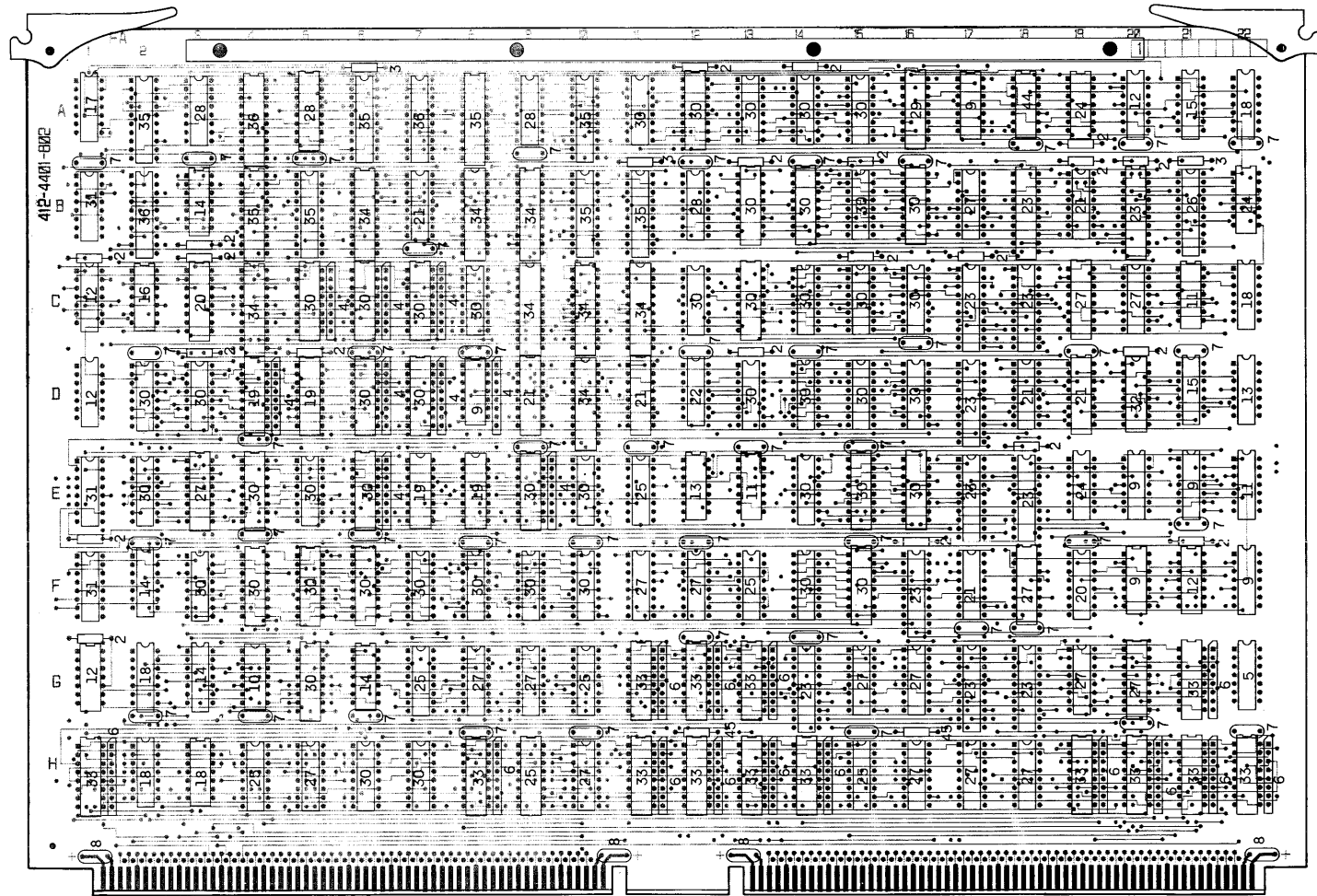
1

D

C

B

A



COMPONENT SIDE

THIS VIEW FOR REFERENCE ONLY.

COMPONENTS ARE IDENTIFIED WITH
ITEM NUMBERS.

SHT

2

DRAWING NO.

612-4401-002

B

A

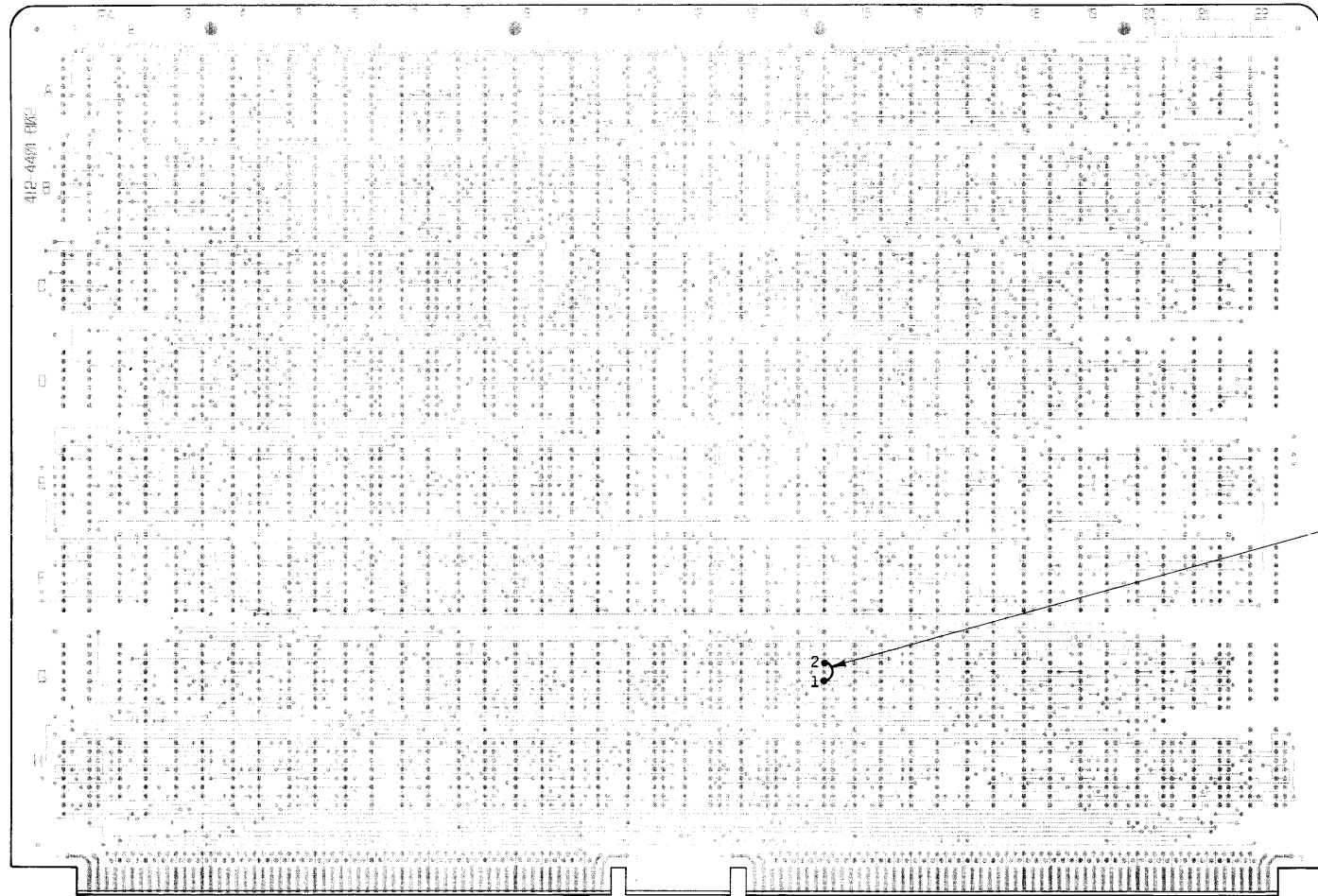
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	612-4401-002	C
SCALE	NONE	SHEET 2	OF 4

D

C

B

A



COMPONENT SIDE

46

8

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UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES
 FRACTIONS ± _____
 ANGLES ± _____
 3 PLACE DEC. ± _____
 2 PLACE DEC. ± _____

ENGR	DATE
DRN BY	DATE
CHK BY	DATE
PROD RELEASE	DATE

MATERIAL:

FLOATING POINT SYSTEMS, INC. P.O. Box 23489 Portland OR 97223			
DRAWING TITLE ETCH CIRCUIT BOARD ASSEMBLY, 401-B, FLOATING ADDER			
SIZE D	CODE IDENT. NO. 56504	DRAWING NO. 612-4401-002	REV C
SCALE NONE		SHEET 3 OF 4	

X	1-2	G14-16	G14-18	COMPONENT
ADD STRAP	CUT ETCH	DESIGNATOR	FROM TO	SIDE
CONTINUITY CHECK POINTS				
REWORK TABLE				
8	9	10		

612-4401-002

8

7

6

5

4

3

2

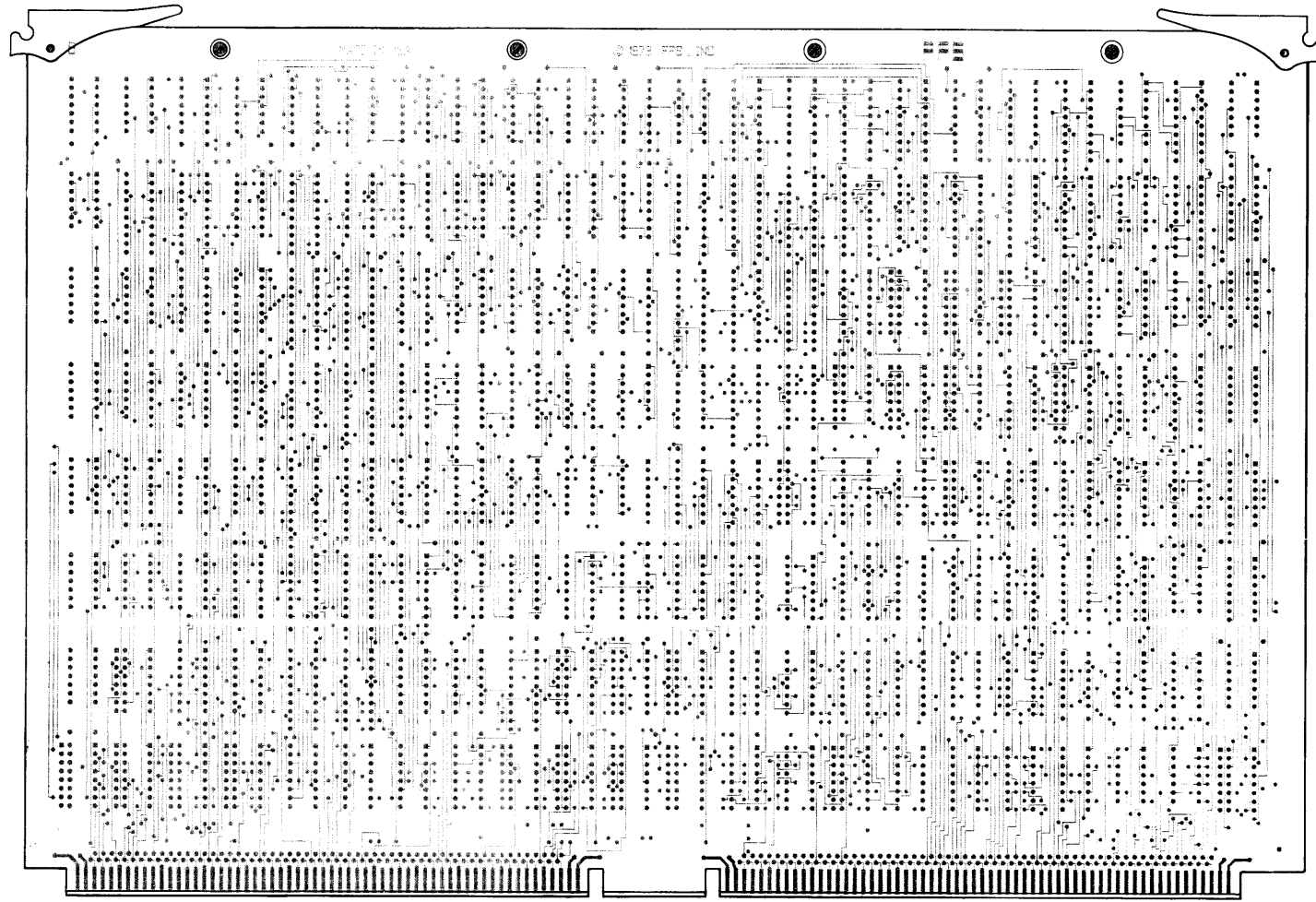
1

D

C

B

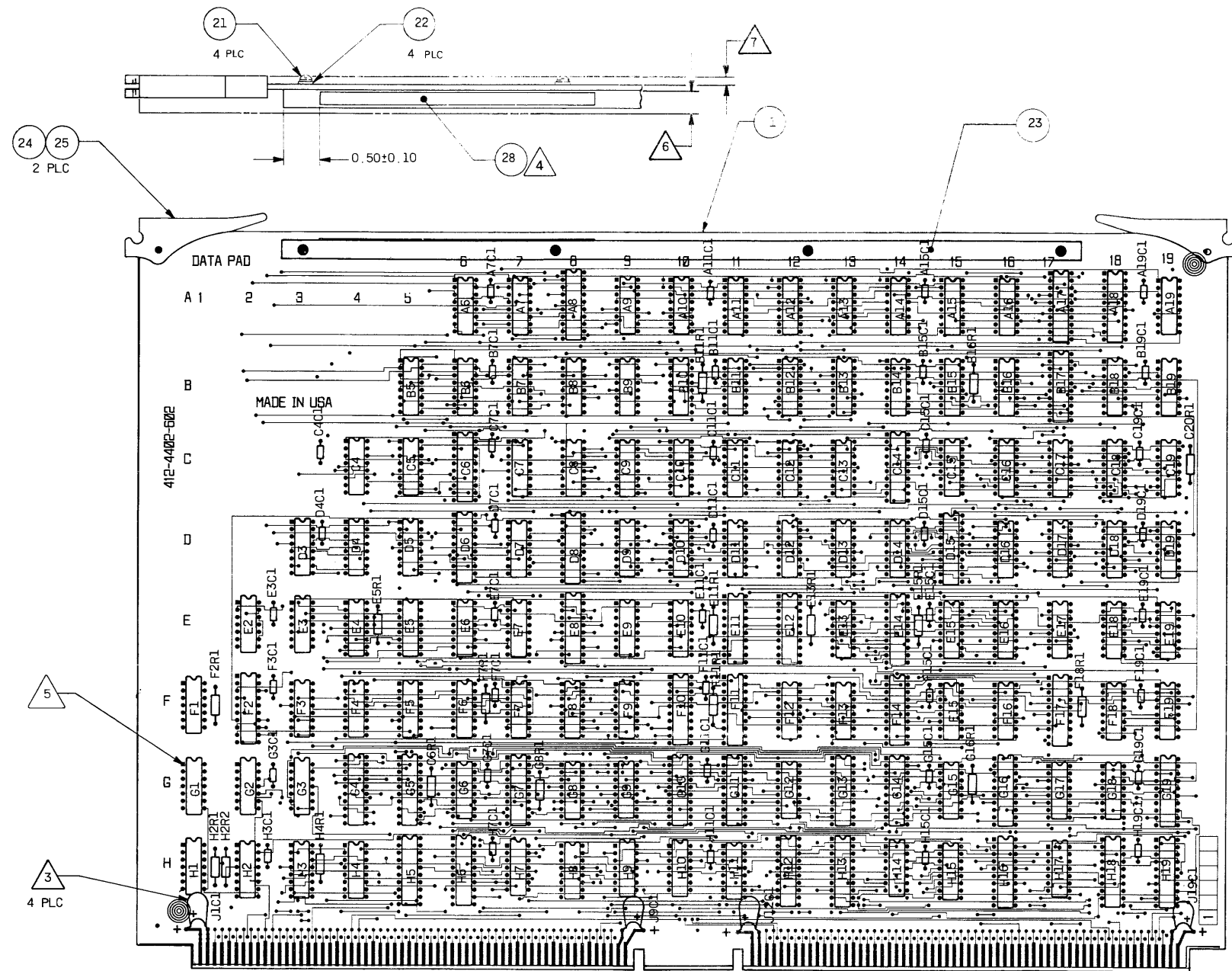
A



SOLDER SIDE

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	612-4401-002	C
SCALE	NONE	SHEET 4	OF 4

REVISIONS					
REV	AUTH	DESCRIPTION	ZONE	APVD/DATE	CHK/DATE
01	ECO 79117	INITIAL LEVEL 2 RELEASE, 106101			
02	ECO 79614	PARTS LIST CORRECTIONS			
03	ECO 79679	PARTS LIST CORRECTION			
A	ECO 80063	LEVEL 3 RELEASE			
B	ECO 80259	ADD PAGE 3 REWORK SHEET			



COMPONENT SIDE

- 10 DESIGNATIONS IN PARENTHESES "()" DENOTES CONTINUITY CHECK POINT FROM FEED-THRU HOLE.
 - 9 FT DENOTES FEED-THRU HOLE.
 - 8 MODIFY WITH CUTS AND STRAPS AS SHOWN ON SHEET 3, REWORK TABLE ON SHEET 3 PROVIDES CONTINUITY CHECK POINTS WHICH MAY BE USED AS NECESSARY TO VERIFY LOCATIONS.
 - 7 MAXIMUM COMPONENT HEIGHT ABOVE BOARD SURFACE ON SOLDER SIDE IS 0.090.
 - 6 MAXIMUM COMPONENT HEIGHT ABOVE BOARD SURFACE ON COMPONENT SIDE IS 0.310.
 - 5 SQUARE PADS INDICATE ORIENTATION OF PIN 1 ON IC'S, AND R-PAKS
 - 4 INK STAMP OR TYPE IDENTIFICATION CHARACTERS, ASSEMBLY PART NUMBER, REVISION LEVEL PER THIS DRAWING, AND SERIAL NUMBER AS ASSIGNED ON LABEL, APPLY IN POSITION AS SHOWN.
 - 3 OBSERVE POLARITY WHEN INSTALLING COMPONENT.
2. INSTALL ALL COMPONENTS PER REFERENCE DESIGNATORS
- 1 REFER ALL ITEMS TO PARTS LIST, SAME PART NUMBER AS THIS DRAWING.

NOTES; UNLESS OTHERWISE SPECIFIED:

20	F12, G12, G17, G18, H11
19	A19, B7, B9, B14, B18, C4, C7, C13, D7, D9
18	E14, F14, H5
17	E11, E12, G10, G11, G16, H16
16	A17, B17, D6, D15, E8
15	B16, C16, C17, D10, D16, D17, D18, E6, E7, E9, E10, E15, E16, E17, E18, E19, F8, F9, F15, F16, F18, F19, G8, G9, H8
14	A8, A18, C6, C14, D8, F2, F10, F11, G4, G7, G13, G19, H12, H13, H18, H19
13	F17, G5, G14, H6
12	H2
11	B10, B11, B12, B13, B15, B19, C11, C15, C18, C19, D3, D4, D11, D13, D14, D19, E4, E5, E13, F3, F4, F5, F6, F7, F13, G6, G15, H3, H4, H15
10	A6, A7, A9, A10, A11, A12, A13, A14, A15, A16, B5, B6, B8, C5, C8, C9, C10, C12, D5, D12
9	F1, H1
8	G2, G3
7	E3, G1
6	E2
5	J1C1, J9C1, J12C1, J19C1
4	A7C1, A11C1, A15C1, A19C1, B7C1, B11C1, B15C1, B19C1, C4C1, C7C1, C11C1, C15C1, C19C1, D4C1, D7C1, D11C1, D15C1, D19C1, E3C1, E7C1, E11C1, E15C1, E19C1, F3C1, F7C1, F11C1, F15C1, F19C1, G3C1, G7C1, G11C1, G15C1, G19C1, H3C1, H7C1, H11C1, H15C1, H19C1
3	H7, H9, H10, H14, H17
2	B11R1, B16R1, C20R1, E5R1, E11R1, E13R1, E15R1, F2R1, F7R1, F11R1, F18R1, G6R1, G8R1, G16R1, H2R1, H2R2, H4R1

ITEM	REFERENCE DESIGNATION
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ECO # 82353

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
 FRACTIONS = $\frac{\quad}{\quad}$
 ANGLES = \angle
 3 PLACE DEC. ± 0.005
 2 PLACE DEC. \pm

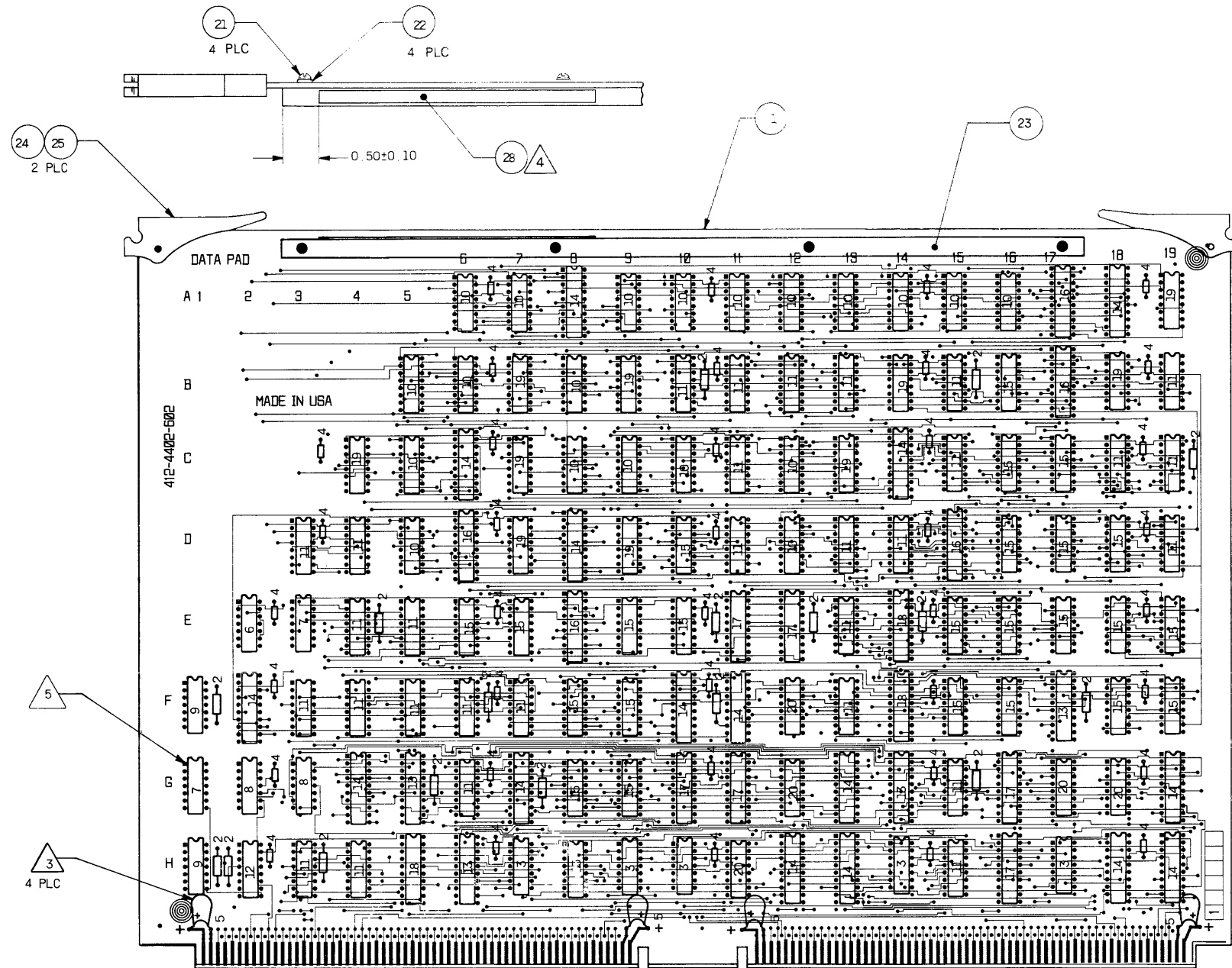
MATERIAL: 1

ENGR: *Paul Cook* DATE: 1-1-79
 DRN BY: *R.S. THURMAN* DATE: 5/22/79
 CHK BY: *CHINH NGUYEN* DATE: 5-25-79
 PROD RELEASE DATE: *Ken Bensch* 12-6-79

FLOATING POINT SYSTEMS, INC. PO Box 23499 Portland OR 97223

DRAWING TITLE
 ETCH CIRCUIT BOARD ASSEMBLY,
 402-B,
 DATA PAD

SIZE	CODE IDENT. NO.	DRAWING NO.	REV
D	56504	612-4402-003	B



COMPONENT SIDE

THIS VIEW FOR REFERENCE ONLY.

COMPONENTS ARE IDENTIFIED WITH ITEM NUMBERS.

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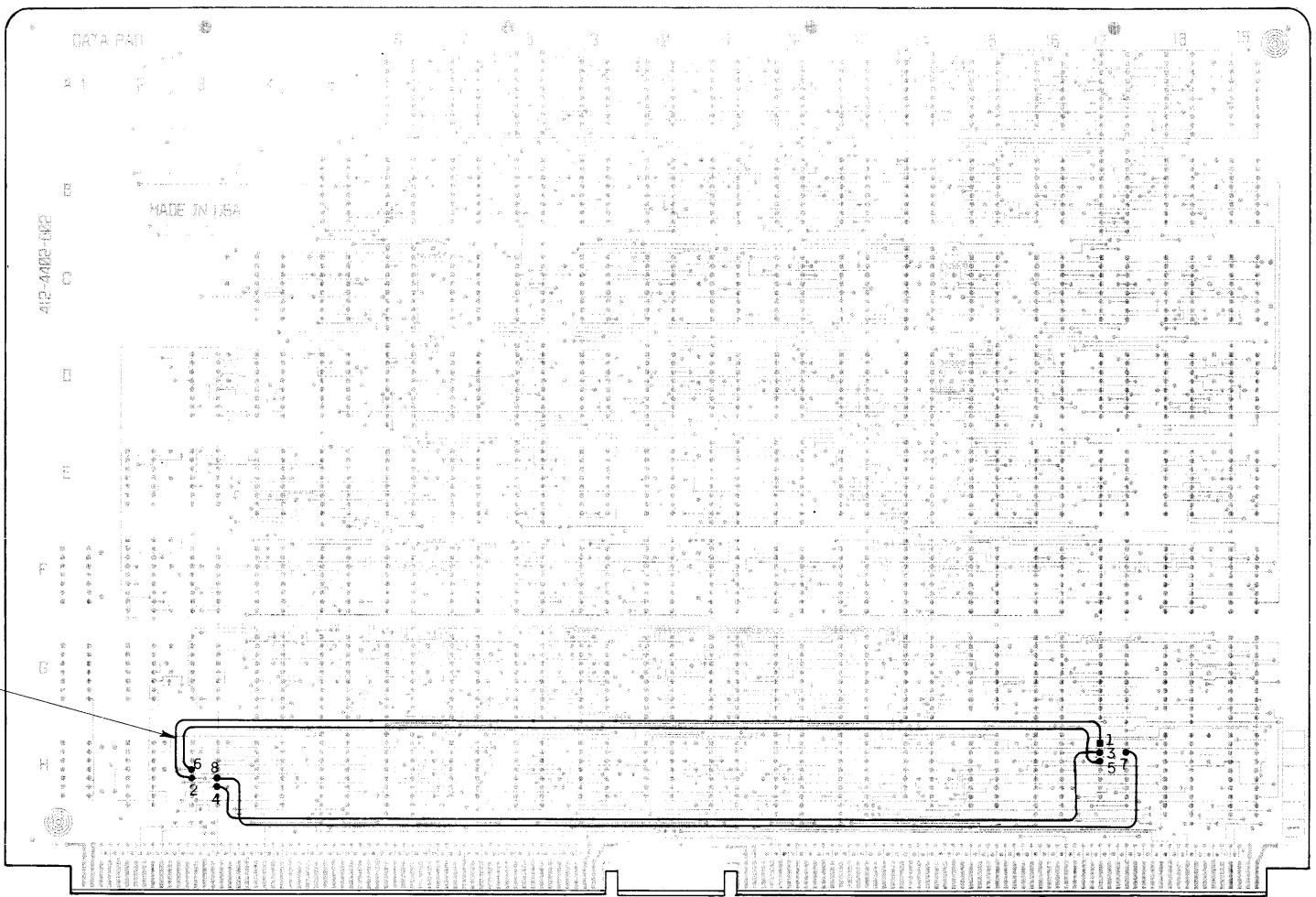
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FRACTIONS ± _____		DRN BY	DATE	
ANGLES ± _____		CHK BY	DATE	
3 PLACE DEC. ± _____		PROD RELEASE	DATE	
2 PLACE DEC. ± _____		MATERIAL:		DRAWING TITLE ETCH CIRCUIT BOARD ASSEMBLY, 402-B, DATA PAD
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.	
D	56504	612-4402-003	B	
SCALE	NONE	SHEET	2 OF 4	

612-4402-003 SH. 2



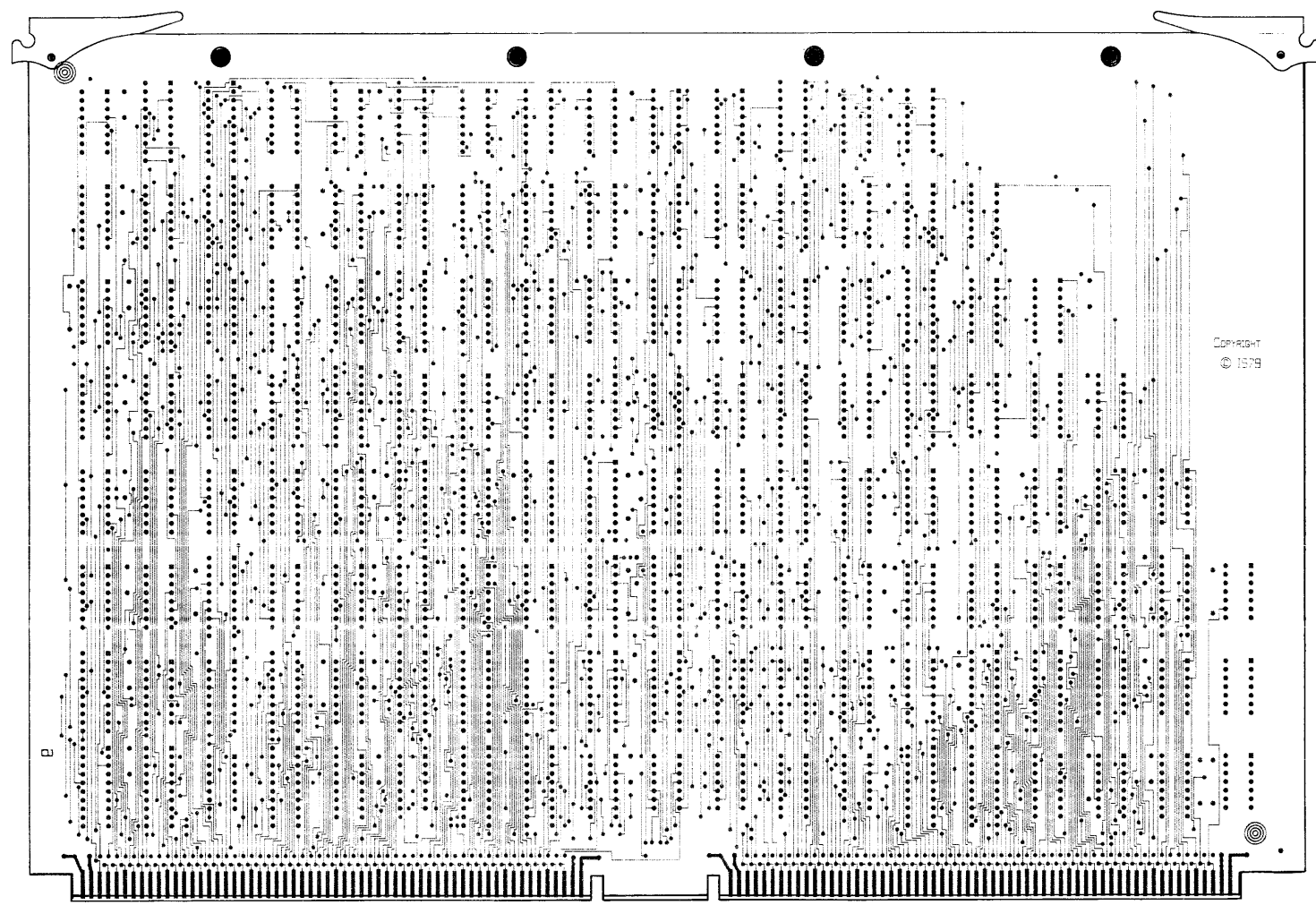
29

COMPONENT SIDE

X		7-8	H17-13	H3-12	COMPONENT
X		5-6	H17-3	H3-4	↑
X		3-4	H17-2	H3-11	↓
X		1-2	H17-1	H3-5	COMPONENT
ADD STRAP	CUT	ETCH	DESIGNATOR	FROM TO	SIDE
				CONTINUITY CHECK POINTS	

REWORK TABLE				
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.	
D	56504	612-4402-003	B	


DRAWING NO. 612-4402-003
SHT 3



SOLDER SIDE

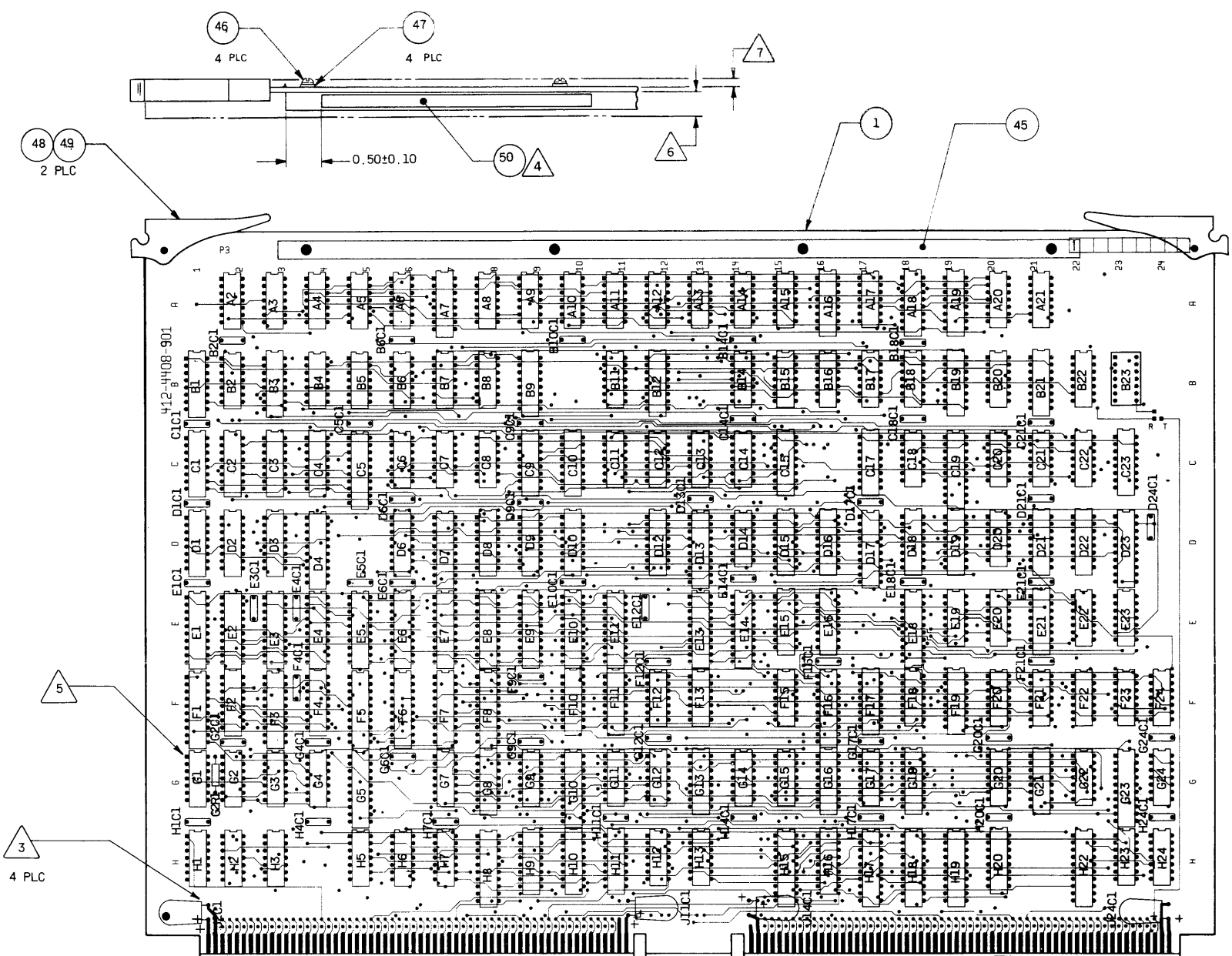
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FRACTIONS = _____		DRN BY	DATE	
ANGLES = _____		CHK BY	DATE	
3 PLACE DEC. = _____		PROD RELEASE	DATE	
2 PLACE DEC. = _____				DRAWING TITLE
MATERIAL:				ETCH CIRCUIT BOARD ASSEMBLY, 402-B, DATA PAD
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.	
D	56504	612-4402-003	B	
SCALE	NONE	SHEET	4	OF 4

612-4402-003

REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK / DATE
01	ECO 79723	LEVEL 1 RELEASE		APC 1-27-80	SWB 1/29
A	ECO 80155	ADD REWORK INSTRUCTIONS		APC 4-18-80	DOB 4/18
B	ECO 80346	NEW SCHEMATIC		APC 3/15/80	C.O. 7/8
C	ECO 80505	ADD CLOCK STRAP OPTION		MJH 6/25/81	
D	ECO 81161	CORRECT POWER-UP PROBLEM ON TORST*		MJH 5-11-81	C. NGORSEN 5-11-81



44	F16
43	F3, F7
42	C1, C3, C4, D3, D10, D15
41	A16, C10, C23, D12, D18, F19, G18, H9, H10
40	A18, D8, F17
39	G8
38	A8, A15, C8
37	G15, H7, H24
36	C19, E14, F1
35	F12, G20, H6, H12, H13
34	A21, E20, G11
33	C9, D19
32	C5, D7, D23, E2, E4, E5, E6, E7, E8, E9, E10, E18, F5, F6, F8, G5, G10, H17, H18, H22
31	D4, D13, D17, E1, E3, E11, E13, G23, H8, H15, H19
30	A13, B8, F24
29	B1, D9, D16
28	D1, D2, D6, E15, E16, F2, F4, F10
27	C2, D21
26	A7, A19, B9, B12, B21, C15, C17, E21, F11, G13, G16, G21, H16, H20
25	A11, B11, B14, B16, D14, G17
24	A2, A14, C13
23	A10, F18
22	A20, E19
21	A5, A9, A12, B4, B15, B17, B18, C11, F13, G12
20	G1
19	C6
18	A4, A6, B2, B20, C12, C21, E23, F23, G4, G24
17	B22, G22
16	D22
15	B3
14	H11
13	B19
12	A17, C14, D20, F22
11	B5, B6, G14
10	C20, F15, F20, F21, G7
9	C7, C22, E22, H1, H2, H3, H23
8	A3, B7, G3, G9
7	B23
6	G2, H5
5	C18
4	J2C1, J11C1, J14C1, J24C1
3	B2C1, B6C1, B10C1, B14C1, B18C1, C1C1, C5C1, C9C1, C14C1, C18C1, C21C1, D1C1, D6C1, D9C1, D13C1, D17C1, D21C1, D24C1, E1C1, E3C1, E4C1, E5C1, E6C1, E10C1, E12C1, E14C1, E18C1, E21C1, F4C1, F9C1, F12C1, F16C1, F21C1, G2C1, G4C1, G6C1, G9C1, G12C1, G17C1, G20C1, G24C1, H1C1, H4C1, H7C1, H11C1, H14C1, H17C1, H20C1, H24C1,
2	G2R1

- 10 DESIGNATIONS IN PARENTHESES "()" DENOTES CONTINUITY CHECK POINT FROM FEED THRU HOLES.
 - 9 FT DENOTES FEED-THRU HOLE.
 - 8 MODIFY WITH CUTS AND STRAPS AS SHOWN ON SHEET 3. REWORK TABLE ON SHEET 3 PROVIDES CONTINUITY CHECK POINTS WHICH MAY BE USED AS NECESSARY TO VERIFY LOCATIONS
 - 7 MAXIMUM COMPONENT HEIGHT ABOVE BOARD SURFACE ON SOLDER SIDE IS 0.090
 - 6 MAXIMUM COMPONENT HEIGHT ABOVE BOARD SURFACE ON COMPONENT SIDE IS 0.310.
 - 5 SQUARE PADS INDICATE ORIENTATION OF PIN 1 ON IC'S, AND R-PAKS
 - 4 MARK LABEL WITH APPROPRIATE INFORMATION PER FPS STD 10.018 AND INSTALL APPROXIMATELY WHERE SHOWN.
 - 3 OBSERVE POLARITY WHEN INSTALLING COMPONENT.
2. INSTALL ALL COMPONENTS PER REFERENCE DESIGNATORS.
- 1 REFER ALL ITEMS TO PARTS LIST, SAME PART NUMBER AS THIS DRAWING.
- NOTES: UNLESS OTHERWISE SPECIFIED

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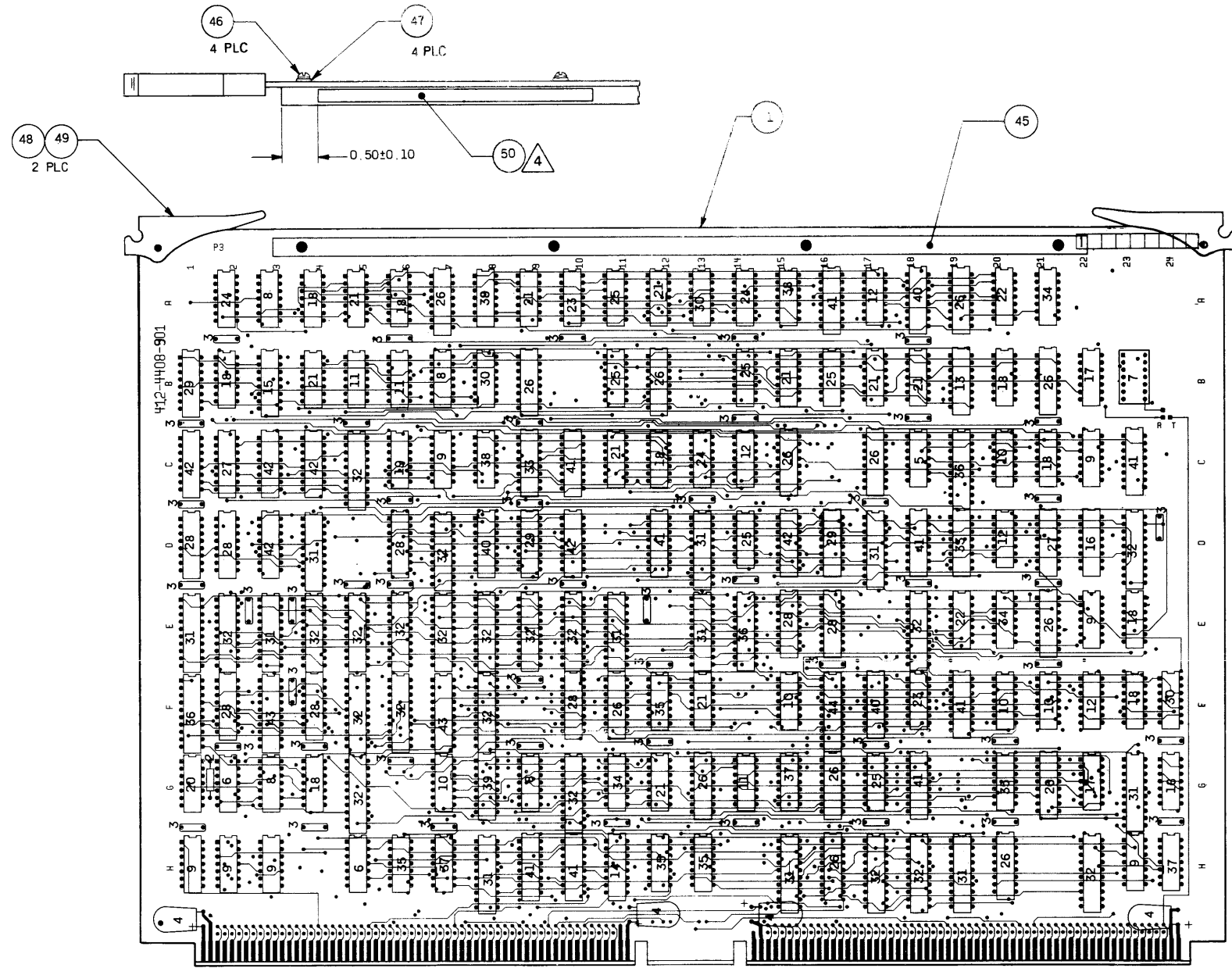
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ECO#82281

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
 FRACTIONS ± _____
 ANGLES ± _____
 3 PLACE DEC. ± _____
 2 PLACE DEC. ± _____
 MATERIAL: _____
 FINISH: _____

PROJ. ENG. *John C. Young* DATE 1-27-80
 DRAWN BY *John C. Young* DATE 9-13-79
 CHECK BY *Dorothy W. Baker* DATE 4/18/80
 MFG. ENG. *R.H. Caldwell* DATE 4/21/80

FLOATING POINT SYSTEMS, INC. PO Box 23489 Portland OR 97223
 DRAWING TITLE
 ETCH CIRCUIT BOARD ASSEMBLY,
 408-A,
 P-3
 SIZE CODE IDENT. NO. DRAWING NO. REV.
 D 56504 612-4408-005 D
 DO NOT SCALE DRAWING SCALE NONE SHEET 1 OF 4



COMPONENT SIDE

THIS VIEW FOR REFERENCE ONLY.

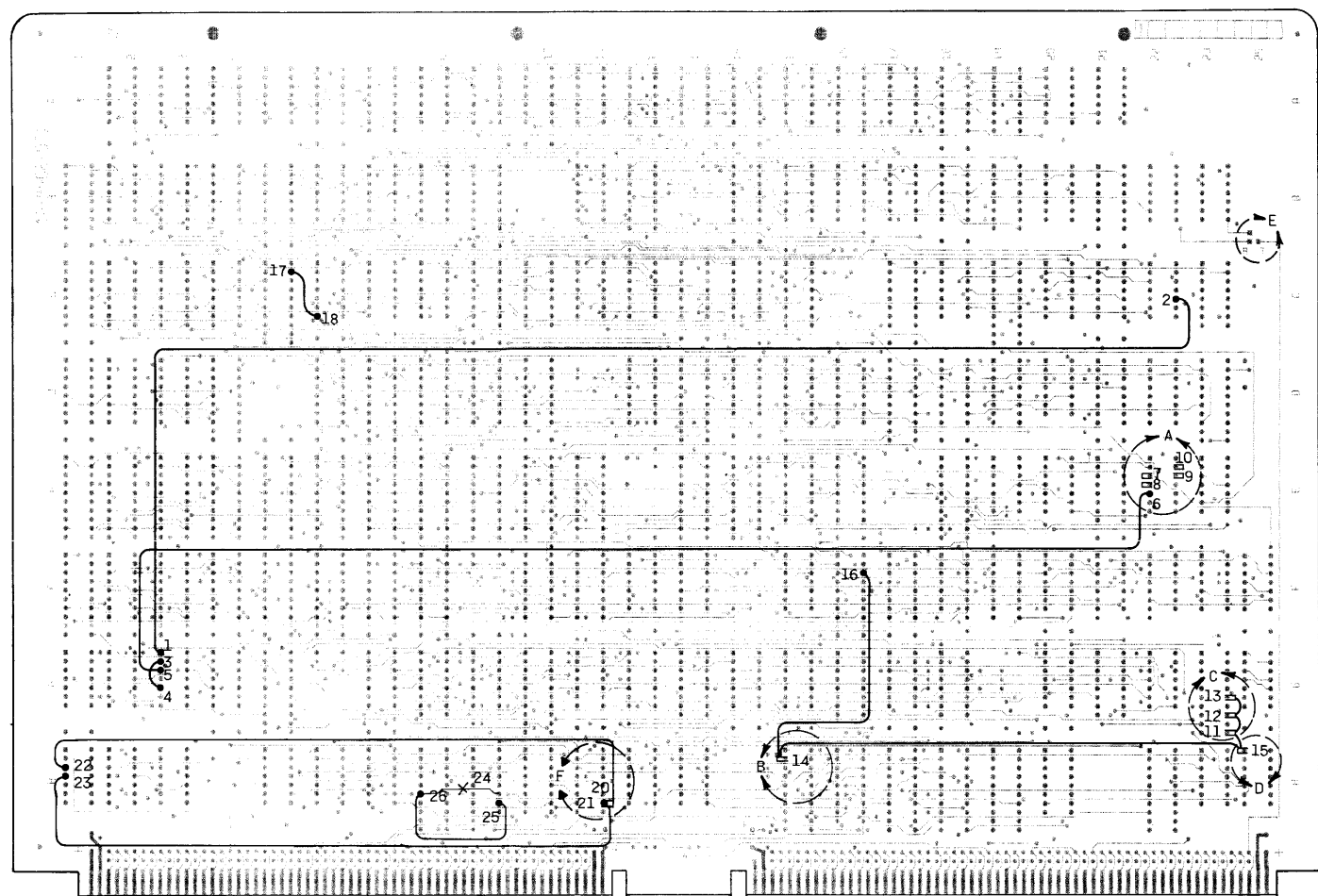
COMPONENTS ARE IDENTIFIED WITH ITEM NUMBERS

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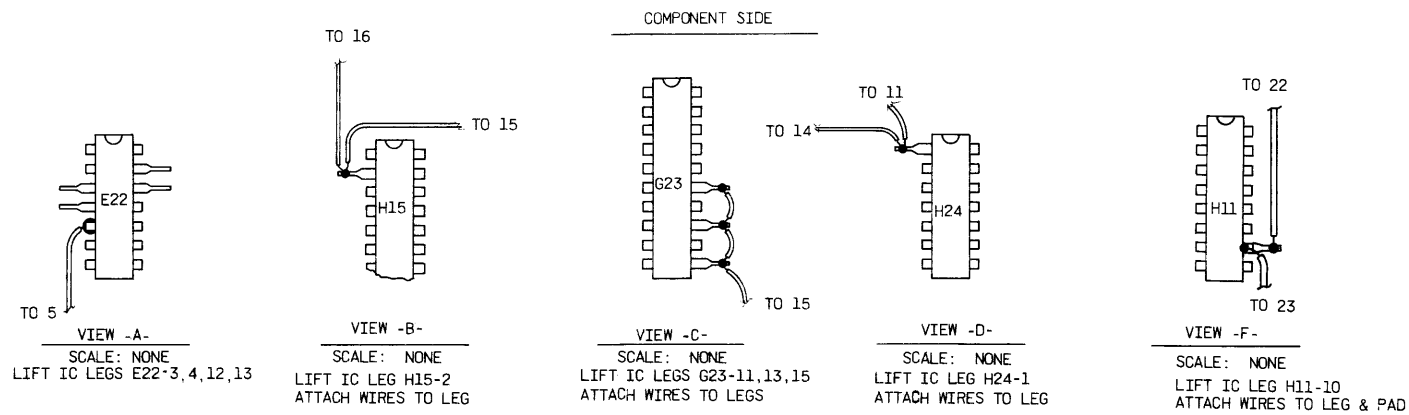
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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS ± _____ ANGLES ± _____ 3 PLACE DEC. ± _____ 2 PLACE DEC. ± _____ MATERIAL: _____	ENGR	DATE
	DRN BY	DATE
	CHK BY <i>C. OLSEN</i>	DATE <i>9-8-88</i>
	PROD RELEASE	DATE

FLOATING POINT SYSTEMS, INC. P.O. Box 23489 Portland OR 97223			
DRAWING TITLE ETCH CIRCUIT BOARD ASSEMBLY, 408-A, P-3			
SIZE D	CODE IDENT. NO. 56504	DRAWING NO. 612-4408-005	REV D
SCALE NONE	SHEET 2 OF 4		



VIEW -E-
 SCALE: NONE
 SYSTEM CLOCK STRAP TO BE
 INSTALLED AFTER BOARD TEST



X		25-26	H9-10	H8-6	COMPONENT
	X	24	H9-11	FT (H8-6)	COMPONENT
X		21-23	H11-10 (PAD)	H1-4	COMPONENT
X		20-22	H11-10 (LEG)	H1-3	COMPONENT
LIFT IC LEG		20-21	H11-10 (LEG)	H11-10 (PAD)	COMPONENT
	X	19	F16-18	H15-2	SOLDER
X		17-18	C5-19	C6-7	COMPONENT
X		14-16	H15-2 (LEG)	F16-18	
X		14-15	H15-2 (LEG)	H24-1 (LEG)	
X		12-13	G23-13 (LEG)	G23-15 (LEG)	
X		11-15	G23-11 (LEG)	H24-1 (LEG)	
X		11-12	G23-11 (LEG)	G23-13 (LEG)	
X		5-6	G3-3	E22-5	
X		3-4	G3-2	G3-5	
X		1-2	G3-1	C22-10	
LIFT IC LEG		15	H24-1 (LEG)	H24-1 (PAD)	
		14	H15-2 (LEG)	H15-2 (PAD)	
		13	G23-15 (LEG)	G23-15 (PAD)	
		12	G23-13 (LEG)	G23-13 (PAD)	
		11	G23-11 (LEG)	G23-11 (PAD)	
		10	E22-13 (LEG)	E22-13 (PAD)	
		9	E22-12 (LEG)	E22-12 (PAD)	
		8	E22-4 (LEG)	E22-4 (PAD)	
LIFT IC LEG		7	E22-3 (LEG)	E22-3 (PAD)	COMPONENT
ADD STRAP	CUT	ETCH	DESIGNATOR	FROM CONTINUITY CHECK POINTS	TO SIDE

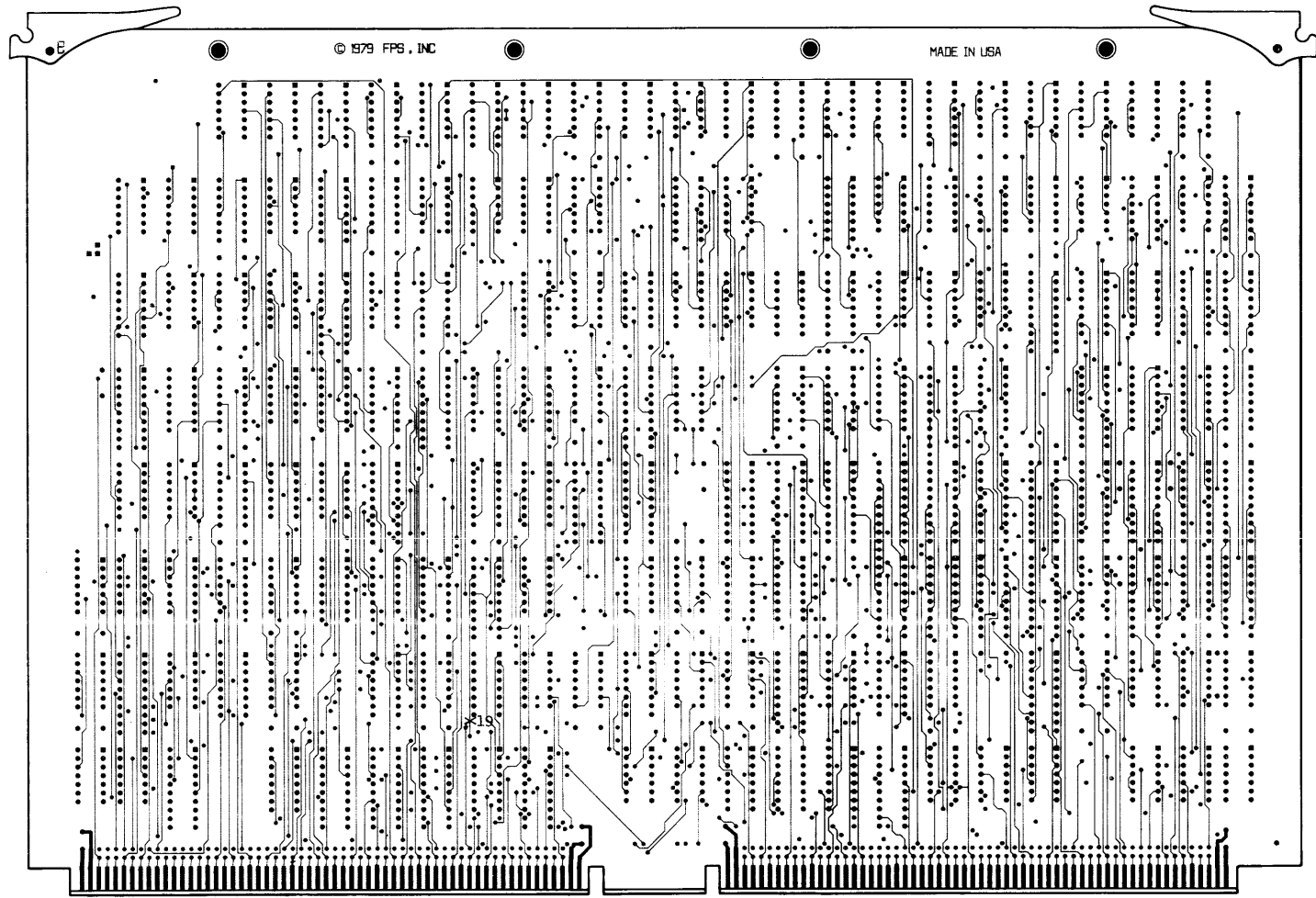
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		ENGR	DATE	FLOATING POINT SYSTEMS, INC. F0 Box 23489 Portland OR 97223 DRAWING TITLE ETCH CIRCUIT BOARD ASSEMBLY, 408-A, P-3								
FRACTIONS 1/16	DRN BY	DATE	DATE									
ANGLES 1/2	CHK BY	DATE	DATE									
3 PLACE DEC. 1/100	<i>C. OLSEN</i>	DATE	DATE									
2 PLACE DEC. 1/100	PROD RELEASE	DATE	DATE									
MATERIAL:	<table border="1"> <tr><td>SIZE</td><td>CODE IDENT. NO.</td><td>DRAWING NO.</td><td>REV</td></tr> <tr><td>D</td><td>56504</td><td>612-4408-005</td><td>D</td></tr> </table>			SIZE	CODE IDENT. NO.	DRAWING NO.	REV	D	56504	612-4408-005	D	REWORK TABLE
SIZE	CODE IDENT. NO.	DRAWING NO.	REV									
D	56504	612-4408-005	D									
SCALE NONE												
SHEET 3 OF 4												

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612-4408-005

A



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MADE IN USA

SOLDER SIDE

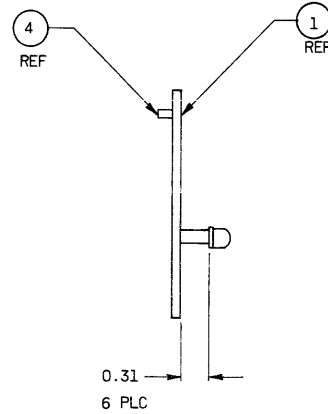
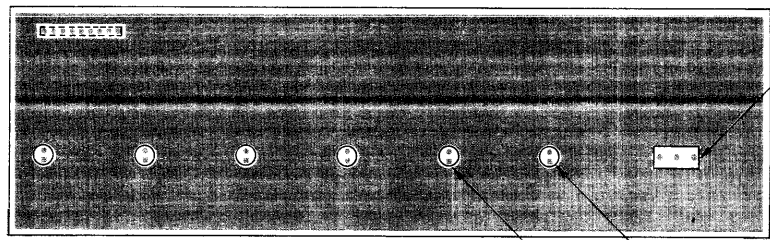
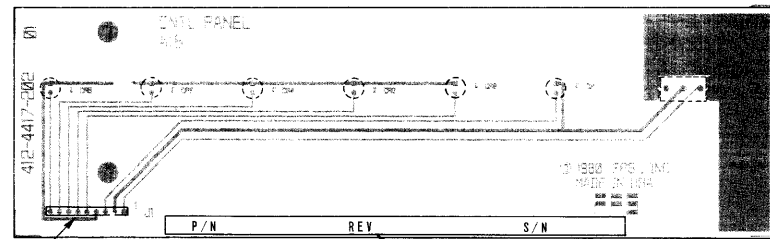
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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		ENGR	DATE
FRACTIONS ± _____	DRN BY	DATE	
ANGLES ± _____	CHK BY	DATE	
3 PLACE DEC. ± _____	C. OLSEN	9-8-80	
2 PLACE DEC. ± _____	PROD RELEASE	DATE	
MATERIAL:			

FLOATING POINT SYSTEMS, INC. PO Box 23489 Portland OR 97223			
DRAWING TITLE			
ETCH CIRCUIT BOARD ASSEMBLY, 408-A, P-3			
SIZE	CODE IDENT. NO.	DRAWING NO.	REV
D	56504	612-4408-005	D
SCALE	NONE	SHEET	4 OF 4

REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE
A	ECC 80530	LEVEL 3 RELEASE		APV 7/11/81	2-7-81



4

6 3

2

3 4

5 4

5 PLC

6. INTERPRETATION OF DIMENSIONS & TOLERANCES PER ANSI Y14.5.

5. ITEM NUMBERS ON PARTS LIST ARE SHOWN IN BALLOONS AND/OR PARENTHESES.

4 SQUARE PADS DENOTES CATHODE END OF LIGHT EMITTING DIODE. FLAT SIDE OF DIODE BODY DENOTES CATHODE.

3 MARK LABEL WITH APPROPRIATE INFORMATION PER FPS STD 10.018 AND INSTALL APPROXIMATELY WHERE SHOWN.

2. INSTALL ALL COMPONENTS PER REFERENCE DESIGNATORS.

1. REFER ALL ITEMS TO PARTS LIST, SAME PART NUMBER AS THIS DRAWING.

NOTES: UNLESS OTHERWISE SPECIFIED

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		PROJ. ENG. <i>R. W. Cox</i>	DATE 7-11-81	FLOATING POINT SYSTEMS, INC. PO Box 23488 Portland OR 97223
FRACTIONS ±	_____	DRAWN BY <i>Ray K. Smith</i>	DATE 10-8-80	
ANGLES ±	_____	CHECK BY <i>John W. Kume</i>	DATE 10-10-80	DRAWING TITLE
3 PLACE DEC. ±	_____	MFG. ENG. <i>R.G. Peterson</i>	DATE 2-13-81	ETCH CIRCUIT BOARD ASSEMBLY, 417-B, CONTROL PANEL
2 PLACE DEC. ±	_____			SIZE CODE IDENT. NO. DRAWING NO. REV.
		DO NOT SCALE DRAWING		D 56504 612-4417-002 A
		SCALE NONE		SHEET 1 OF 1

8

7

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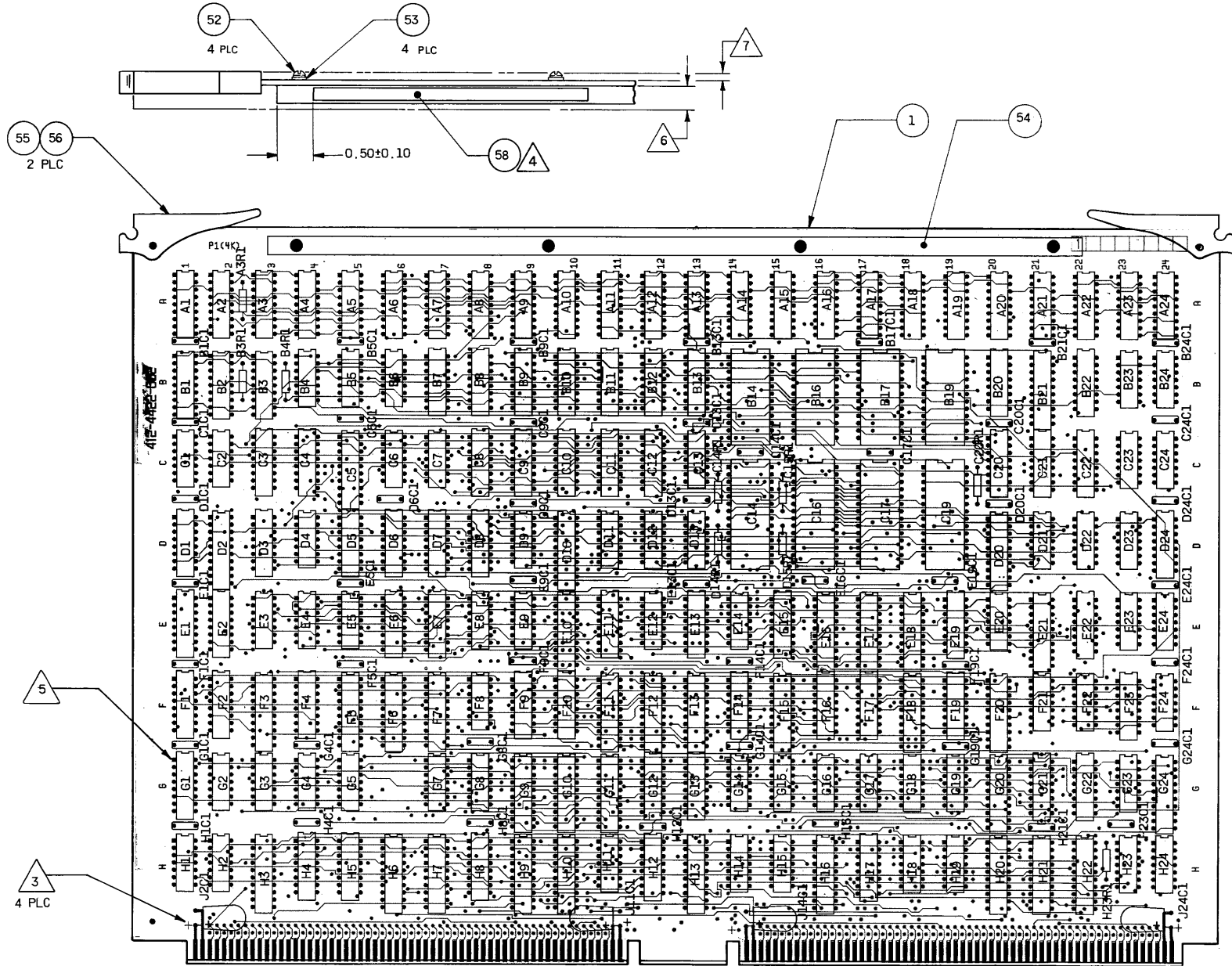
5

4

3

2

1



COMPONENT SIDE

- 10 DESIGNATIONS IN PARENTHESES "()" DENOTES CONTINUITY CHECK POINT FROM FEED-THRU HOLES.
- 9 FT DENOTES FEED-THRU HOLE.
- 8 MODIFY WITH CUTS AND STRAPS AS SHOWN ON SHEET 3 AND 4. REWORK TABLE ON SHEET 3 PROVIDES CONTINUITY CHECK POINTS WHICH MAY BE USED AS NECESSARY TO VERIFY LOCATIONS.
- 7 MAXIMUM COMPONENT HEIGHT ABOVE BOARD SURFACE ON SOLDER SIDE IS 0.090.
- 6 MAXIMUM COMPONENT HEIGHT ABOVE BOARD SURFACE ON COMPONENT SIDE IS 0.310.
- 5 SQUARE PADS INDICATE ORIENTATION OF PIN 1 ON IC'S, AND R-PAKS
- 4 INK STAMP OR TYPE IDENTIFICATION CHARACTERS AS REQUIRED ON LABEL AND APPLY IN POSITION AS SHOWN.
- 3 OBSERVE POLARITY WHEN INSTALLING COMPONENT.

2. INSTALL ALL COMPONENTS PER REFERENCE DESIGNATORS.

1 REFER ALL ITEMS TO PARTS LIST, SAME PART NUMBER AS THIS DRAWING.

NOTES: UNLESS OTHERWISE SPECIFIED

REVISIONS					
REV	AUTH	DESCRIPTION	ZONE	APVD/DATE	CHK/DATE
01	EN #037	INITIAL LEVEL 2 RELEASE			
02	ECO 79659	CHANGE LABEL			
A	ECO 80177	LEVEL 3 RELEASE			
B	ECO 80258	CORRECT ITEM #50			
C	ECO 80495	CHANGE RES. LOC.			

CONTINUED ON SHEET 2

39	G17, G23
38	B24, C13, C23, D12
37	F8
36	H4, H5, H8, H12
35	E11, E15, E19, F9, F10, F14, F16, F19
34	B21, D2, D20, E10, E16, E17, E18, F3, F6, F7, F11, F12, F13, F15, F18, G9, G11, G20, G24, H3, H6, H7, H9, H10, H16, H20, H21
33	H22
32	E24
31	G21
30	D3, E7, F2
29	G22
28	E20, H11
27	E14
26	H23
25	G14, H24
24	B4, B5
23	D13, E12, F24
22	C24, G16
21	G8
20	B6, G7
19	B13
18	B14, B16, B17, B19
17	B9, B10, B12, C12, D5, E1
16	E22, F4, G12, H17
15	C4, G1
14	C6, G2
13	C1, E5, E23, G3, H1, H18
12	D4, D9, D23, E3, G15, H14
11	B23, D11, D22, E4, F21, G5, G19, H2, H19
10	E9, F22, G4, H15
9	J2C1, J11C1, J14C1, J24C1
8	B1C1, B5C1, B9C1, B13C1, B17C1, B21C1, B24C1, C1C1, C5C1, C9C1, C13C1, C14C1, C17C1, C20C1, C24C1, D1C1, D6C1, D9C1, D13C1, D20C1, D24C1, E1C1, E5C1, E9C1, E13C1, E16C1, E19C1, E24C1, F1C1, F5C1, F9C1, F14C1, F19C1, F24C1, G1C1, G4C1, G8C1, G14C1, G19C1, G24C1, H1C1, H4C1, H8C1, H12C1, H16C1, H21C1, H23C1,
7	C2, D21, E8
6	C7
5	C14R1, C15R1
4	C20R1
3	D14R1, D15R1
2	A3R1, B3R1, B4R1, H23R1

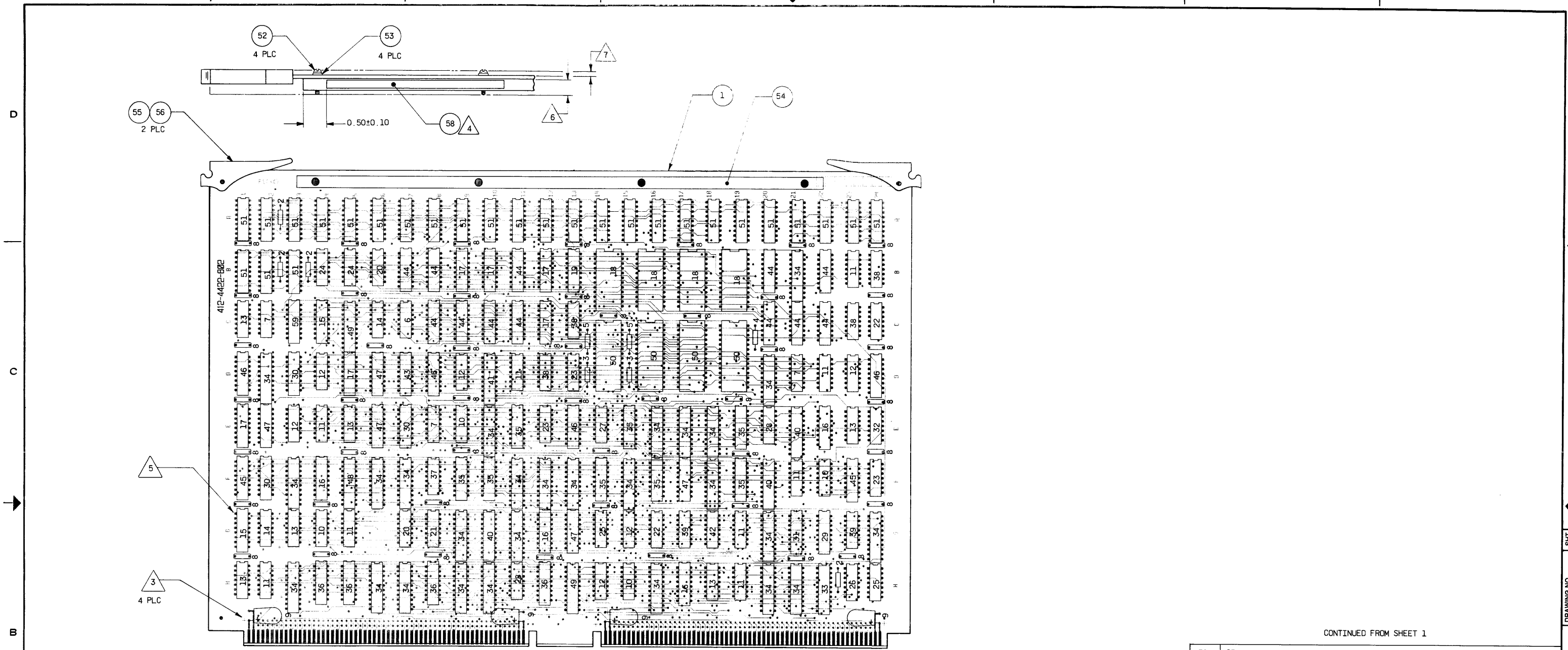
ITEM	REFERENCE DESIGNATION
ENGR	DATE
DRN BY	DATE
CHK BY	DATE
PROD RELEASE	DATE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		FLOATING POINT SYSTEMS, INC. P.O. Box 23489 Portland OR 97222			
FRACTIONS ±	_____	DRAWING TITLE ETCH CIRCUIT BOARD ASSEMBLY, 422-B, PROCESSOR 1, 4K RAM			
ANGLES ±	_____				
3 PLACE DEC. ±	_____				
2 PLACE DEC. ±	_____	SIZE	CODE IDENT. NO.	DRAWING NO.	REV
		D	56504	612-4422-002	C
MATERIAL:		SCALE	SHEET 1 OF 4		

ECO # 82353

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412-4422-B02

COMPONENT SIDE

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COMPONENTS ARE IDENTIFIED WITH
ITEM NUMBERS.

CONTINUED FROM SHEET 1

59	C3
51	A1, A2, A3, A4, A5, A6, A7, A8, A9, A10, A11, A12, A13, A14, A15, A16, A17, A18, A19, A20, A21, A22, A23, A24, B1, B2, B3
50	C14, C16, C17, C19
49	C5, H13
48	F5
47	D6, E2, E6, F17, G13
46	D1, D8, D24, E13
45	F1, F23
44	B7, B8, B11, B20, B22, C8, C9, C10, C11, C20, C21, C22
43	D7
42	G18
41	D10
40	E21, F20, G10
ITEM	REFERENCE DESIGNATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS ± _____ ANGLES ± _____ 3 PLACE DEC. ± _____ 2 PLACE DEC. ± _____		ENGR _____ DATE _____	FLOATING POINT SYSTEMS, INC. PO Box 23489 Portland OR 97223 DRAWING TITLE ETCH CIRCUIT BOARD ASSEMBLY, 422-B, PROCESSOR 1, 4K RAM
MATERIAL: _____		DRN BY _____ DATE _____	
		CHK BY _____ DATE _____	
		PROD RELEASE _____ DATE _____	
SIZE	CODE IDENT. NO.	DRAWING NO.	REV
D	56504	612-4422-002	C
SCALE	NONE	SHEET	2 OF 4

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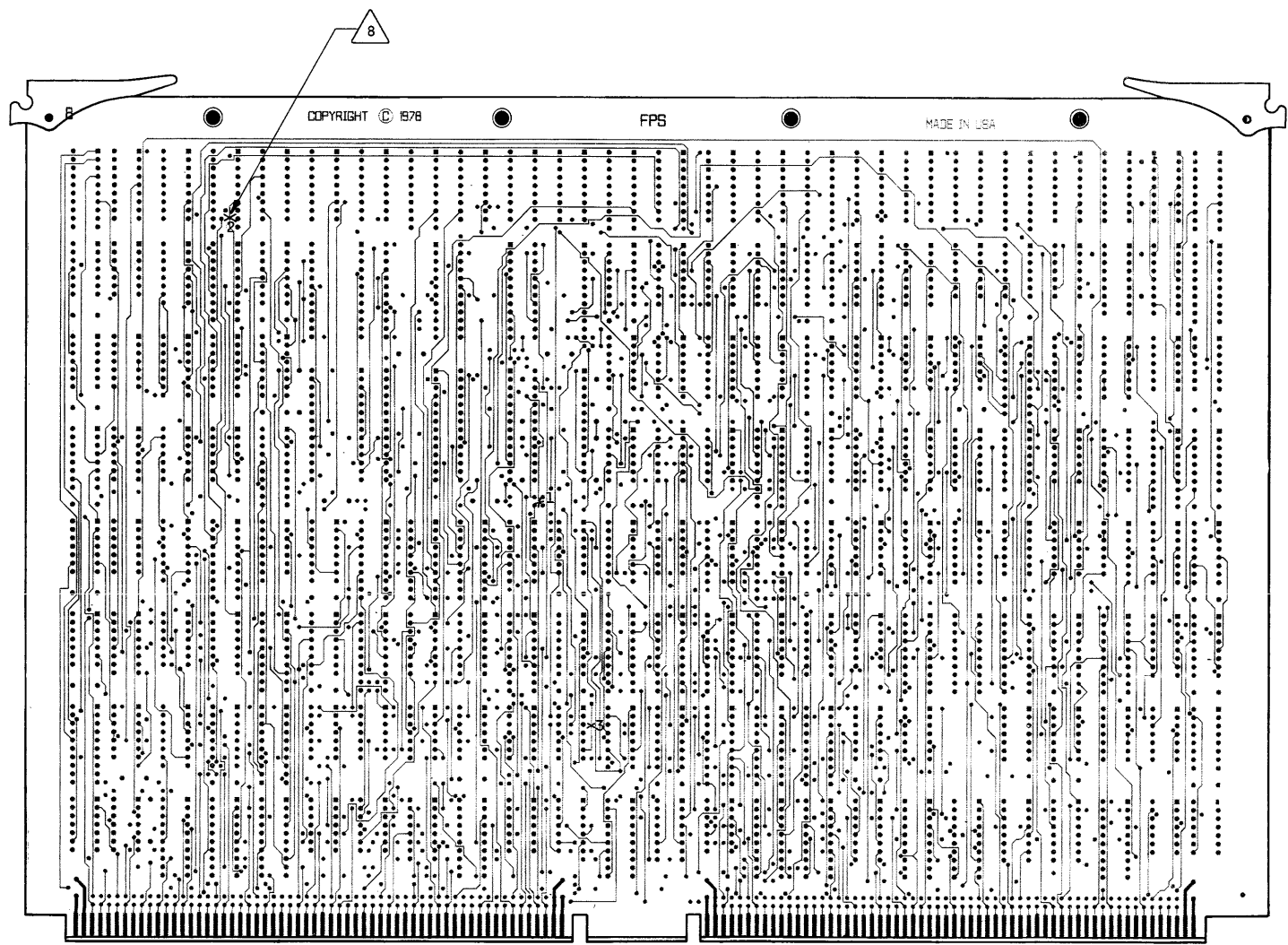
1

D

C

B

A



SOLDER SIDE

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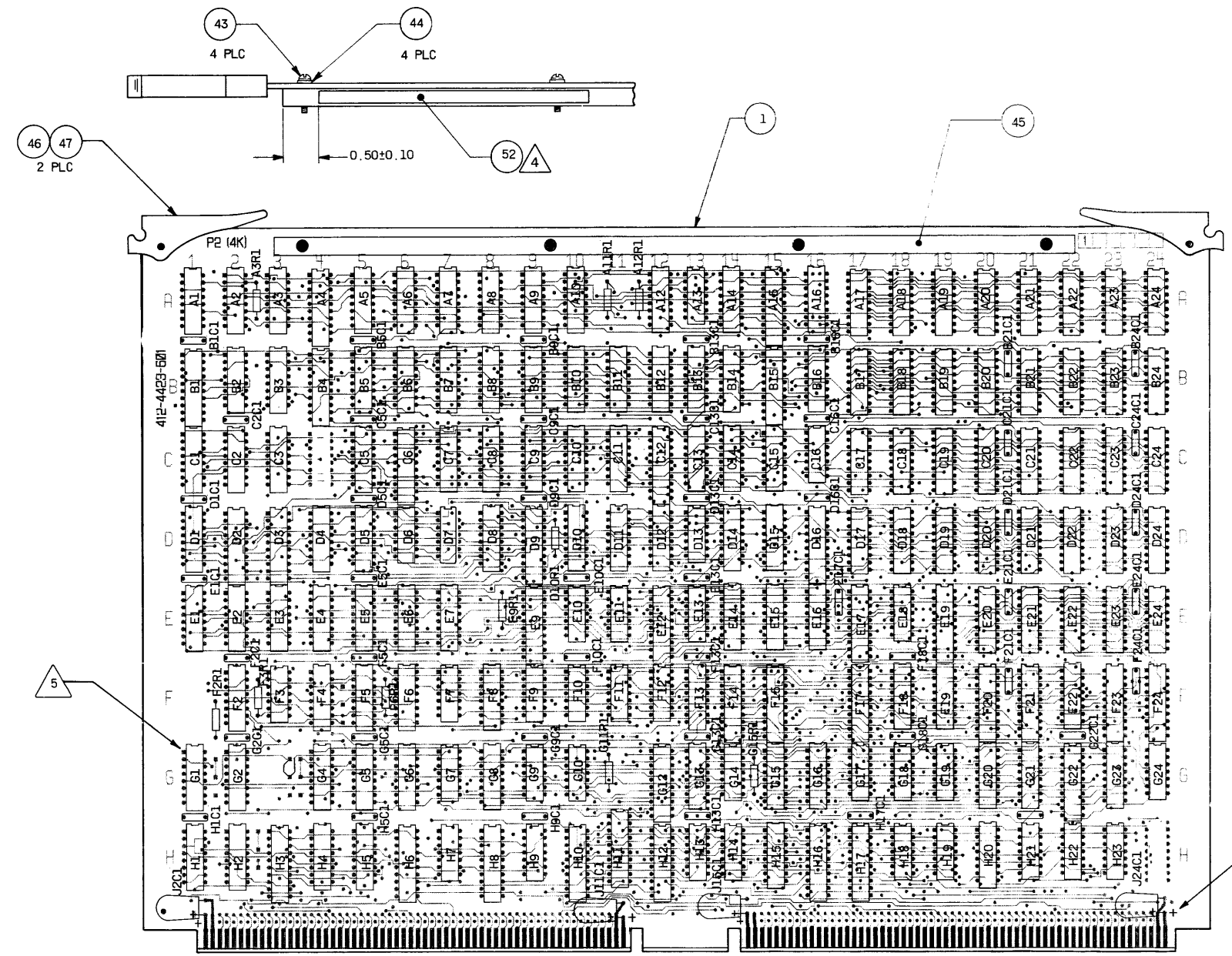
UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES
 FRACTIONS ± _____
 ANGLES ± _____
 3 PLACE DEC. ± _____
 2 PLACE DEC. ± _____
 MATERIAL: _____

ENGR	DATE
DRN BY	DATE
CHK BY	DATE
PROD RELEASE	DATE

FLOATING POINT SYSTEMS, INC. P.O. Box 23489 Portland OR 97223			
DRAWING TITLE			
ETCH CIRCUIT BOARD ASSEMBLY, 422-B, PROCESSOR 1, 4K RAM			
SIZE	CODE IDENT. NO.	DRAWING NO.	REV
D	56504	612-4422-002	C
SCALE	NONE	SHEET	4 OF 4

DRAWING NO. 612-4422-002 SHEET 4

REVISIONS					
REV	AUTH	DESCRIPTION	ZONE	APVD/DATE	CHK/DATE
01	EN #037	INITIAL LEVEL 2 RELEASE		<i>[Signature]</i> 9/7/79	
02	ECO 79701	ENGINEERING CHANGES		<i>[Signature]</i> 8-31-79	
A	ECO 80098	LEVEL 3 RELEASE		<i>[Signature]</i> 9-4-79	<i>[Signature]</i> 3-20-80



CONTINUED ON SHEET 2

ITEM	REFERENCE DESIGNATION
37	H10
36	D9, E9
35	B7, D4, D14
34	H15
33	B9, B12, C9, D8, E7
32	F12
31	H19
30	A4, A15, B1, B4, B15, D2, E12, E17, F17
29	F9, H18, H22
28	A2, A12, A14, B2, B8, C8, C11, E14
27	H13
26	D5, E4, F8
25	E15, E16, F13, F18, F19, F22, G5, G6, G13, G20, G21, G23, H1, H2
24	C6, C12, D3, D16, E19, F20, F21, F23, F24, G12, G22, H8, H12, H16
23	F15, H3, H6, H11, H17
22	G4, G8, H4, H5
21	E5, E6, G1, G2
20	A8, C7
19	A7, B5, B14, C2, C15, E2
18	A5, A6, B6, B13, C1, C3, C5, C13, C14, D15, E1, E3
17	G15, G16, H20
16	E10, H7, H9
15	F10
14	G18
13	E11, F11, G7, G17, H21
12	C16, E18, G14
11	F7
10	A1, A3, A16, B3, B10, B11, B16, D1, F2, F5, F6
9	A9
8	G24, H23
7	F3, G9
6	A13, E13, G10, G19
5	J2C1, J11C1, J15C1, J24C1
4	B1C1, B5C1, B9C1, B13C1, B16C1, B21C1, B24C1, C2C1, C5C1, C9C1, C13C1, C16C1, C21C1, C24C1, D1C1, D5C1, D9C1, D13C1, D16C1, D21C1, D24C1, E1C1, E5C1, E10C1, E13C1, E17C1, E21C1, E24C1, F2C1, F5C1, F10C1, F13C1, F18C1, F21C1, F24C1, G2C1, G5C1, G9C1, G13C1, G18C1, G22C1, H1C1, H5C1, H9C1, H13C1, H17C1, H21C1
3	A3R1, F3R1, F6R1
2	A11R1, A12R1, D10R1, E9R1, F2R1, G11R1, G15R1

- 5 SQUARE PADS INDICATE ORIENTATION OF PIN 1 ON IC'S. AND R-PAKS
 - 4 INK STAMP OR TYPE IDENTIFICATION CHARACTERS AS REQUIRED ON LABEL AND APPLY IN POSITION AS SHOWN.
 - 3 OBSERVE POLARITY WHEN INSTALLING COMPONENT.
 - 2. INSTALL ALL COMPONENTS PER REFERENCE DESIGNATORS.
 - 1 REFER ALL ITEMS TO PARTS LIST, SAME PART NUMBER AS THIS DRAWING.
- NOTES: UNLESS OTHERWISE SPECIFIED

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 FRACTIONS ± _____
 ANGLES ± _____
 3 PLACE DEC. ± _____
 2 PLACE DEC. ± _____

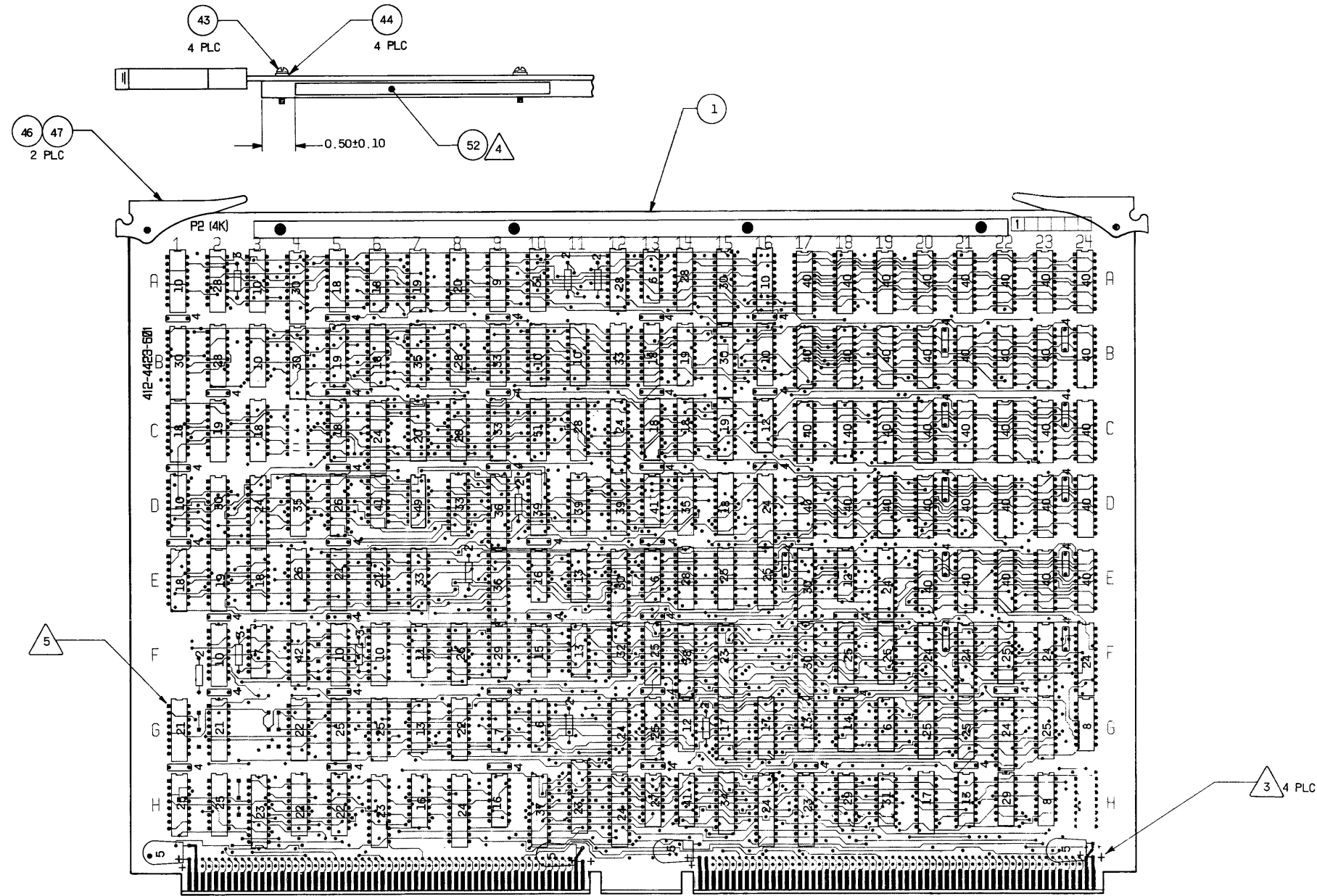
MATERIAL: 1

ENGR *Michael Stamba* DATE 9-7-79
 DRN BY *JOHN C. YOUNG* DATE 8-31-79
 CHK BY *J. Wilke* DATE 9-4-79
 PROD RELEASE DATE
R.H. Caldwell 3/21/80

FLOATING POINT SYSTEMS, INC. PO Box 23489 Portland OR 97223
DRAWING TITLE
 ETCH CIRCUIT BOARD ASSEMBLY,
 423-A,
 PROCESSOR 2, 4K RAM (2.5K TMA)

SIZE	CODE IDENT. NO.	DRAWING NO.	REV
D	56504	612-4423-003	A
SCALE	NONE	SHEET 1	OF 4

DRAWING NO. 612-4423-003 SHT 1



COMPONENT SIDE

THIS VIEW FOR REFERENCE ONLY.

COMPONENTS ARE IDENTIFIED WITH ITEM NUMBERS.

CONTINUED FROM SHEET 1

51	A10, C10
49	D7
42	F4
41	D6, D13, H14
40	A17, A18, A19, A20, A21, A22, A23, A24, B17, B18, B19, B20, B21, B22, B23, B24, C17, C18, C19, C20, C21, C22, C23, C24, D17, D18, D19, D20, D21, D22, D23, D24, E20, E21, E22, E23, E24
39	D10, D11, D12
38	F14
ITEM	REFERENCE DESIGNATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
FRACTIONS ± _____
ANGLES ± _____
3 PLACE DEC. ± _____
2 PLACE DEC. ± _____

MATERIAL:

ENGR	DATE
DRN BY	DATE
CHK BY	DATE
PROD RELEASE	DATE

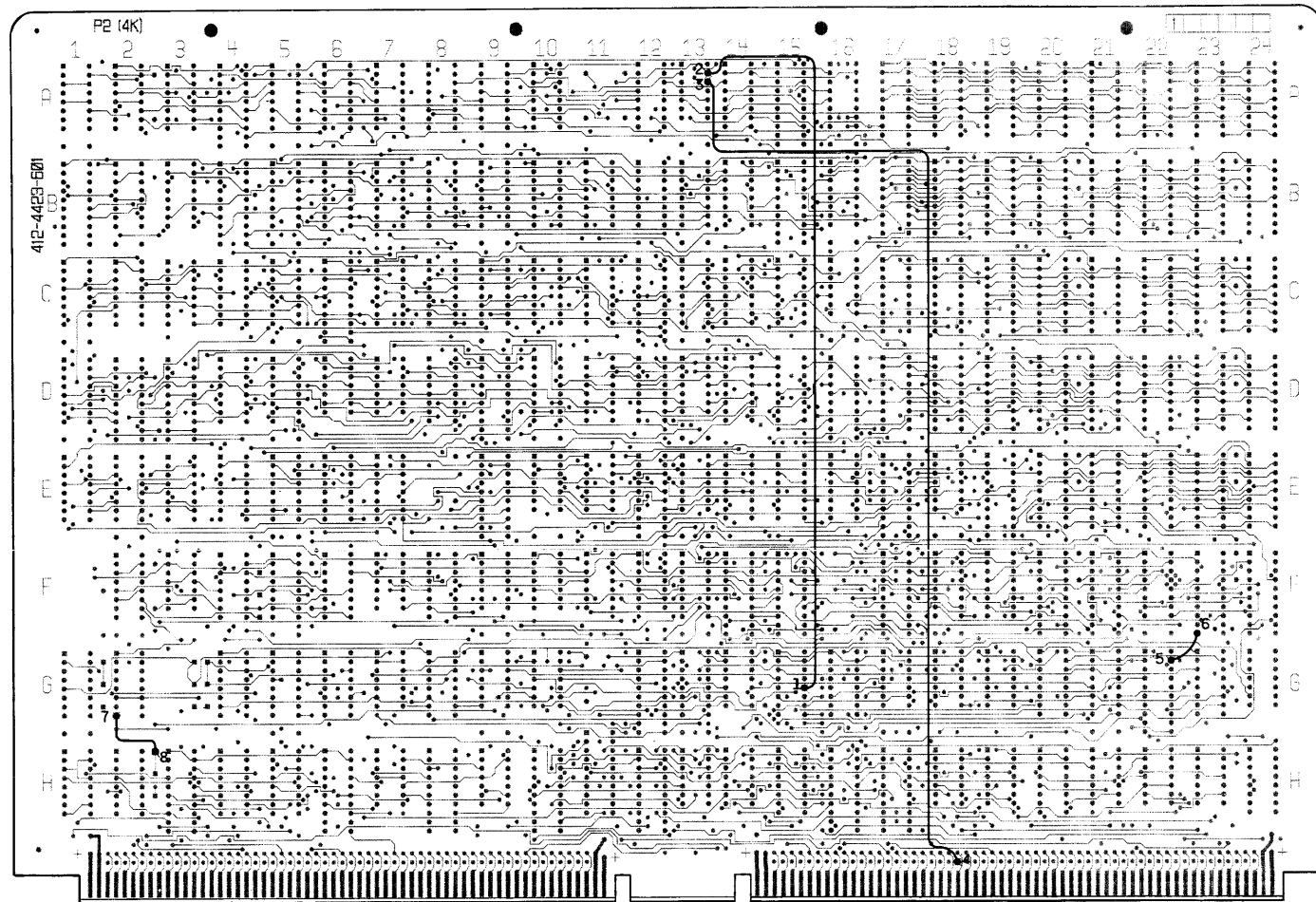
FLOATING POINT SYSTEMS, INC. <small>PO Box 23409 Portland OR 97223</small>			
DRAWING TITLE			
ETCH CIRCUIT BOARD ASSEMBLY, 423-A, PROCESSOR 2, 4K RAM (2.5KTMA)			
SIZE	CODE IDENT. NO.	DRAWING NO.	REV
D	56504	612-4423-003	A
SCALE	NONE	SHEET 2	OF 4

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DRAWING NO. 612-4423-003

SHEET 2



COMPONENT SIDE

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UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES
 FRACTIONS ± _____
 ANGLES ± _____
 3 PLACE DEC. ± _____
 2 PLACE DEC. ± _____
 MATERIAL: _____

X		7-8	G2-8	FT (H2-13)	COMPONENT
X		5-6	G22-19	F23-10	↑
X		3-4	A13-12	E. C. (FT)B48	↓
X		1-2	G15-12	A13-13	COMPONENT
ADD STRAP	CUT	ETCH	DESIGNATOR	FROM TO	SIDE
				CONTINUITY CHECK POINTS	

REWORK TABLE
 ▲ ▲ ▲

ENGR _____ DATE _____
 DRN BY _____ DATE _____
 CHK BY _____ DATE _____
 PROD RELEASE _____ DATE _____

FLOATING POINT SYSTEMS, INC. PDBox 23489 Portland OR 97222

DRAWING TITLE
 ETCH CIRCUIT BOARD ASSEMBLY,
 423-A,
 PROCESSOR 2, 4K RAM (2.5K TMA)

SIZE	CODE IDENT. NO.	DRAWING NO.	REV
D	56504	612-4423-003	A
SCALE	NONE	SHEET	3 OF 4

612-4423-003
 3/13

8

7

6

5

4

3

2

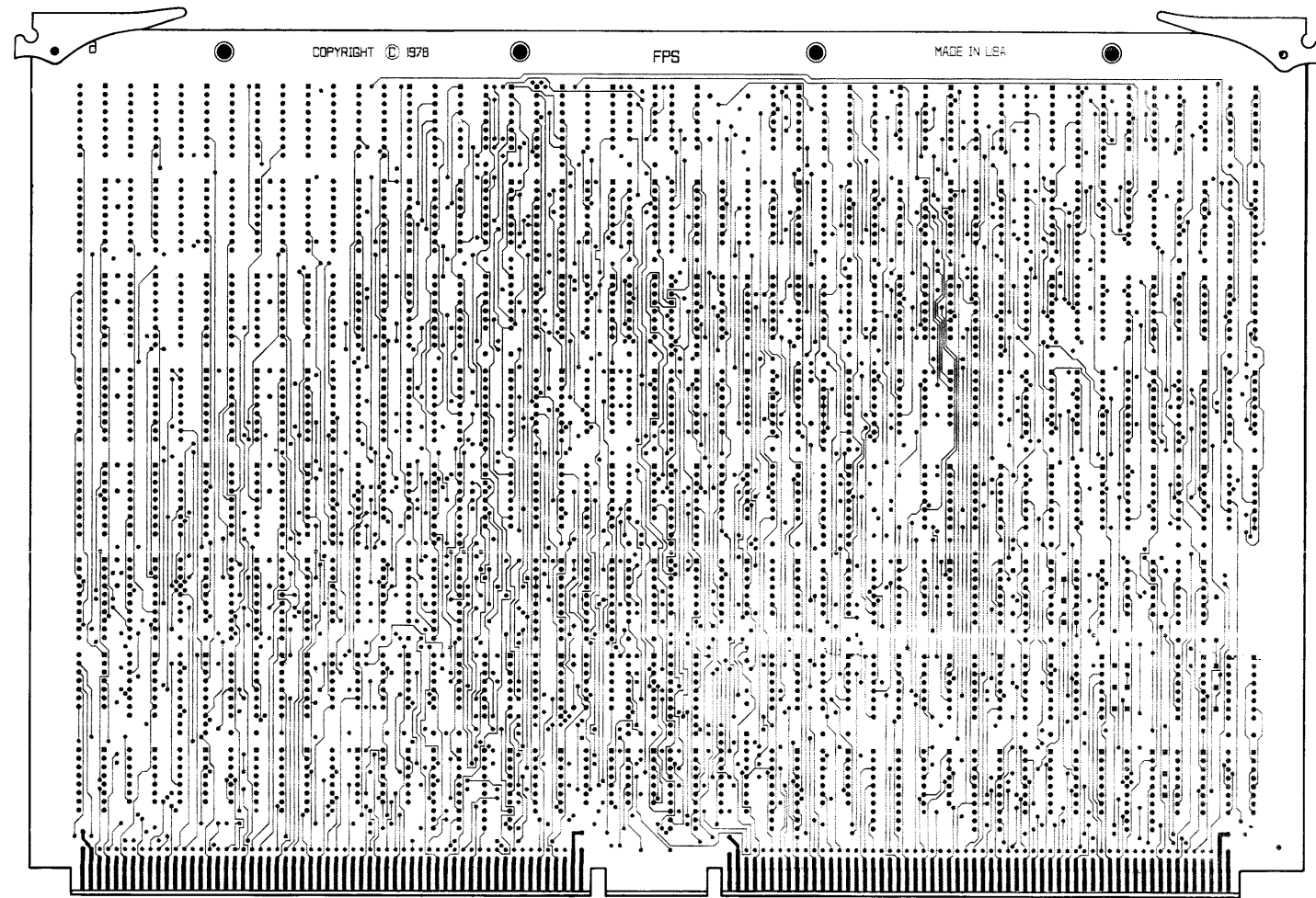
1

D

C

B

A



SOLDER SIDE

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

FRACTIONS ± _____
ANGLES ± _____
3 PLACE DEC. ± _____
2 PLACE DEC. ± _____

MATERIAL:

ENGR	DATE
DRN BY	DATE
CHK BY	DATE
PROD RELEASE	DATE

FLOATING POINT SYSTEMS, INC. PO Box 23489 Portland OR 97223

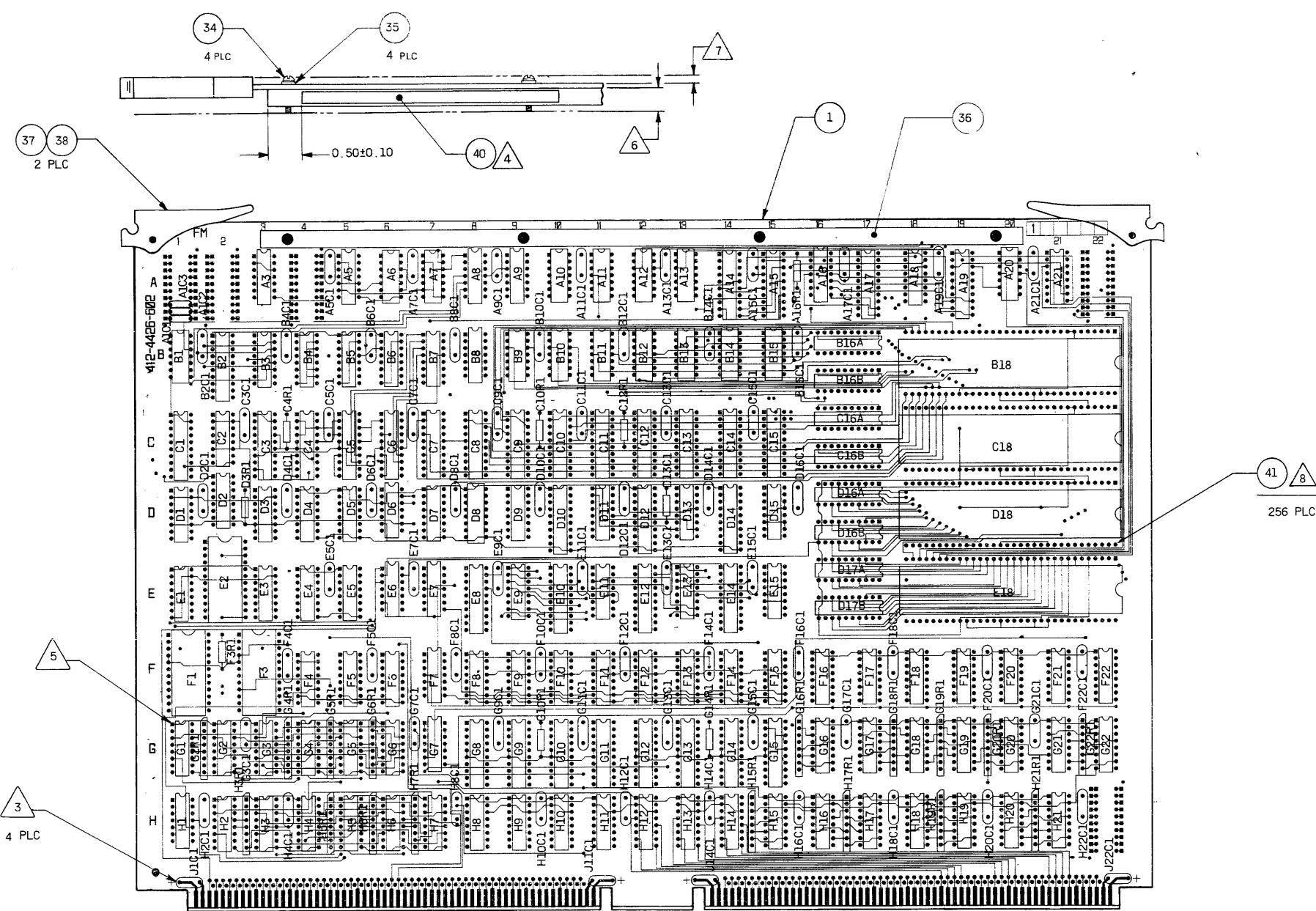
DRAWING TITLE
ETCH CIRCUIT BOARD ASSEMBLY,
423-A,
PROCESSOR 2, 4K RAM (2.5KTMA)

SIZE	CODE IDENT. NO.	DRAWING NO.	REV
D	56504	612-4423-003	A

SCALE NONE SHEET 4 OF 4

DRAWING NO. 612-4423-003 SHT 4

REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE
D1	EN #40	INITIAL LEVEL 2 RELEASE		<i>[Signature]</i> 11/8/79	
A	ECO 80116	LEVEL 3 RELEASE		<i>[Signature]</i> 4-2-80	<i>[Signature]</i> Oct 4/80
B	ECO 80181	CORRECT PUSH A1 & A2	D1	<i>[Signature]</i> 5-2-80	<i>[Signature]</i> Oct 4/80
C	ECO 80260	CORRECT PUSH/ SCALE		<i>[Signature]</i> 11/15/80	<i>[Signature]</i>



44	A1C2, A1C3
43	A1C1
33	B18, C18, D18, E18
32	A15, B2, C15, E8, E10, E12, E14
31	G1, G2, G3, G4, G5, G6, H2, H3, H4, H5, H6, H7
30	D8
29	D4, D5, E4, E5
28	F8, F9, F10, F11, F12, F13, F14, F15
27	D7
26	A9
25	A14, A17, A19, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, G8, G9, G10, G11, G12, G13, G14, G15
24	D10, D12, D14
23	B16A, B16B, C16A, C16B, D16A, D16B, E16A, E16B
22	A21, C2, D1, D3, F4, F5, F6
21	D15, E15, F16, F17, F18, F19, F20, F21, F22, G16, G17, G18, G19, G20, G21, G22, H8, H9, H10, H11, H12, H13, H14, H15, H16, H17, H18, H19, H20, H21
20	B4, B5, B6
19	C1, C3
18	A10, A11, A12, A13, A20, B9, B10, B11, B12, B13, B14, B15
17	D2, E1, E3
16	E7, F7
15	A8
14	A16
13	A18, B3, B7, D9, D11, D13, E9, E11, E13
12	E2, F1, F3
11	A5
10	D6
9	B8, E6, H1
8	A6, A7, B1
7	A3, G7
6	J1C1, J11C1, J14C1, J22C1
5	A5C1, A7C1, A9C1, A11C1, A13C1, A15C1, A17C1, A19C1, A21C1, B2C1, B4C1, B6C1, B8C1, B10C1, B12C1, B14C1, B16C1, C3C1, C5C1, C7C1, C9C1, C11C1, C13C1, C15C1, D2C1, D4C1, D6C1, D8C1, D10C1, D12C1, D14C1, D16C1, E5C1, E7C1, E9C1, E11C1, E13C1, E15C1, F4C1, F6C1, F8C1, F10C1, F12C1, F14C1, F16C1, F18C1, F20C1, F22C1, G3C1, G7C1, G9C1, G11C1, G13C1, G15C1, G17C1, G21C1, H2C1, H4C1, H8C1, H10C1, H12C1, H14C1, H16C1, H18C1, H20C1, H22C1
4	G2R1, G4R1, G5R1, G6R1, G16R1, G18R1, G19R1, G20R1, G22R1, H3R1, H5R1, H6R1, H7R1, H15R1, H17R1, H19R1, H21R1
3	A16R1, C4R1, C10R1, C12R1, D3R1, D13R1, G10R1, G14R1
2	F3R1

- 11 DESIGNATIONS IN PARENTHESES "()" DENOTES CONTINUITY CHECK POINT FROM FEED-THRU HOLES.
 - 10 FT DENOTES FEED-THRU HOLE.
 - 9 MODIFY WITH CUTS AND STRAPS AS SHOWN ON SHEET 3. REWORK TABLE ON SHEET 3 PROVIDES CONTINUITY CHECK POINTS WHICH MAY BE USED AS NECESSARY TO VERIFY LOCATIONS.
 - 8 SOLDER ITEM 41 (256 PLC) IN PLACE BEFORE INSERTION OF ITEM 33.
 - 7 MAXIMUM COMPONENT HEIGHT ABOVE BOARD SURFACE ON SOLDER SIDE IS 0.090.
 - 6 MAXIMUM COMPONENT HEIGHT ABOVE BOARD SURFACE ON COMPONENT SIDE IS 0.310.
 - 5 SQUARE PADS INDICATE ORIENTATION OF PIN 1 ON IC'S, AND R-PAKS
 - 4 INK STAMP OR TYPE IDENTIFICATION CHARACTERS AS REQUIRED ON LABEL AND APPLY IN POSITION AS SHOWN.
 - 3 OBSERVE POLARITY WHEN INSTALLING COMPONENT.
2. INSTALL ALL COMPONENTS PER REFERENCE DESIGNATORS.
- 1 REFER ALL ITEMS TO PARTS LIST, SAME PART NUMBER AS THIS DRAWING.
- NOTES: UNLESS OTHERWISE SPECIFIED

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ECO #82353

PROJ. ENG. <i>[Signature]</i>	DATE 10/12/79	FLOATING POINT SYSTEMS, INC. P.O. Box 23489 Portland OR 97223
DRAWN BY <i>[Signature]</i>	DATE 9-21-79	
CHECK BY <i>[Signature]</i>	DATE 10-1-79	
MFG. ENG. <i>[Signature]</i>	DATE 10-18-79	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS ± _____ ANGLES ± _____ 3 PLACE DEC. ± 0.005 2 PLACE DEC. ± _____ MATERIAL: _____		DRAWING TITLE ETCH CIRCUIT BOARD ASSEMBLY, 426-B, FLOATING MULTIPLIER
DO NOT SCALE DRAWING		SIZE CODE IDENT NO. DRAWING NO. REV. D 56504 612-4426-003 C
SCALE NONE		SHEET 1 OF 4

DRAWING NO. 612-4426-003

A

8

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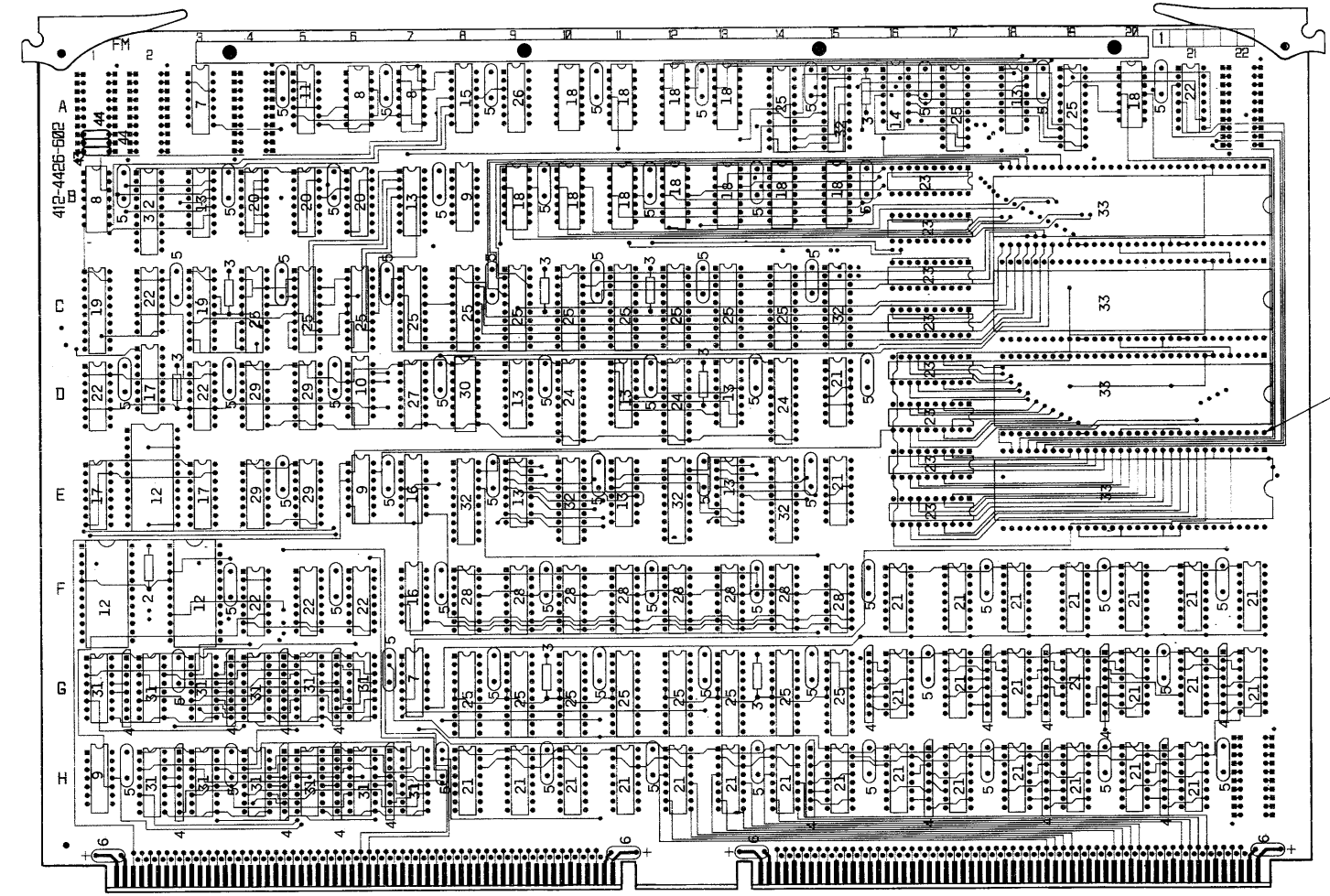
1

D

C

B

A



41 8
256 PLC

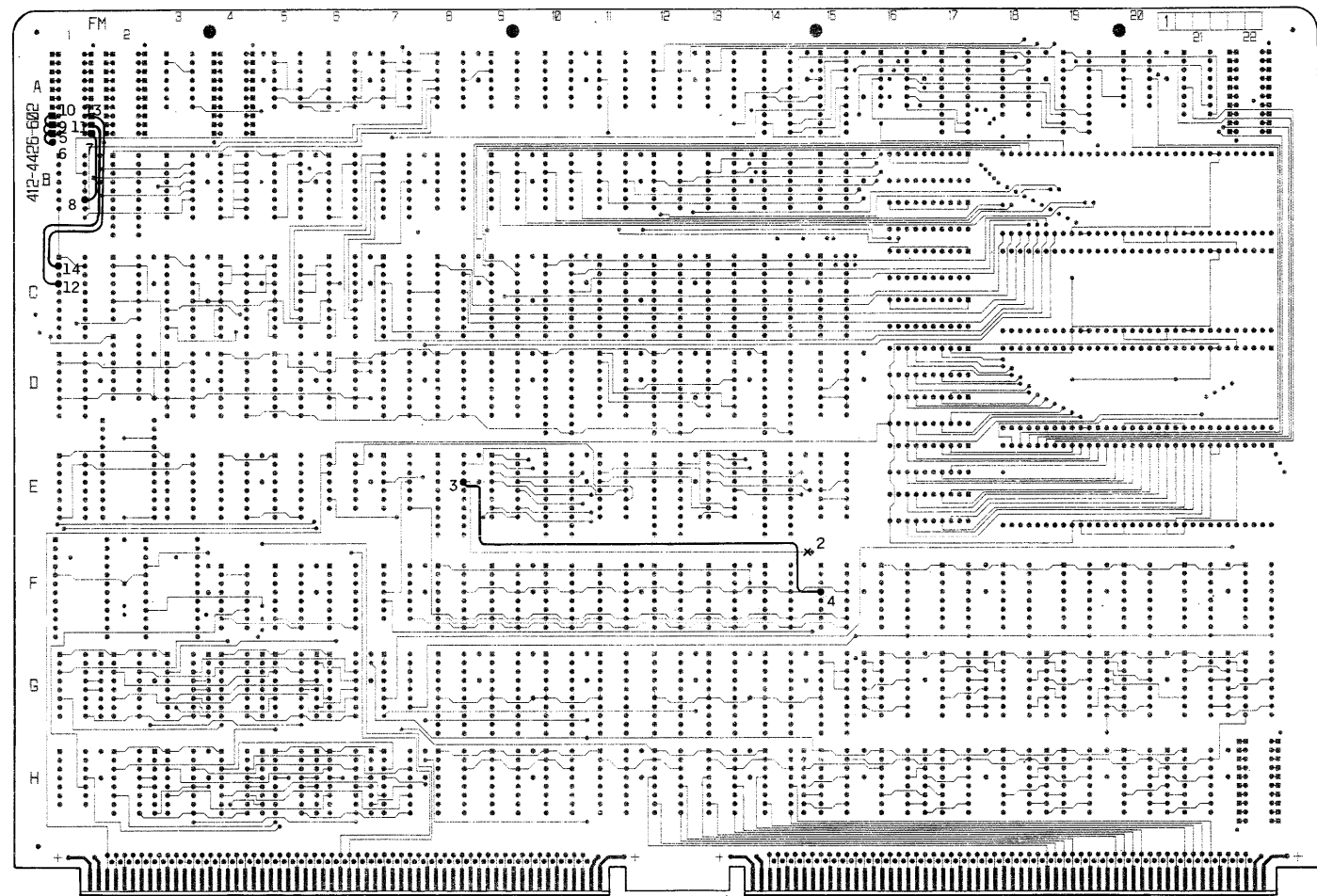
COMPONENT SIDE

THIS VIEW FOR REFERENCE ONLY.
COMPONENTS ARE IDENTIFIED WITH
ITEM NUMBERS.

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	612-4426-003	C
SCALE	SHEET 2 OF 4		

DRAWING NO.
612-4426-003

SHT
2



COMPONENT SIDE

X		13-14	A1-13	C1-2	COMPONENT	
X		11-12	A1-12	C1-4	COMPONENT	
X		9-10	A1-9	A1-8	COMPONENT	
X		5-9	A1-10	A1-9	COMPONENT	
X		7-8	A1-11	B1-9	COMPONENT	
X		5-6	A1-10	FT (GND)	COMPONENT	
X		3-4	E8-17	F15-4	COMPONENT	
	X	2	E8-17	F15	COMPONENT	
	X	1		F15-4	SOLDER	
ADD STRAP	CUT	ETCH	DESIGNATOR	FROM CONTINUITY CHECK POINTS	TO CONTINUITY CHECK POINTS	SIDE

REWORK TABLE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

FRACTIONS ± _____

ANGLES ± _____

3 PLACE DEC. ± _____

2 PLACE DEC. ± _____

MATERIAL: _____

ENGR	DATE
DRN BY	DATE
CHK BY	DATE
PROD RELEASE	DATE

FLOATING POINT SYSTEMS, INC. P.O. Box 23489 Portland OR 97223

DRAWING TITLE
ETCH CIRCUIT BOARD,
426-B,
FLOATING MULTIPLIER

SIZE	CODE IDENT. NO.	DRAWING NO.	REV
D	56504	612-4426-003	C

SCALE NONE SHEET 3 OF 4

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612-4426-003

8

7

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4

3

2

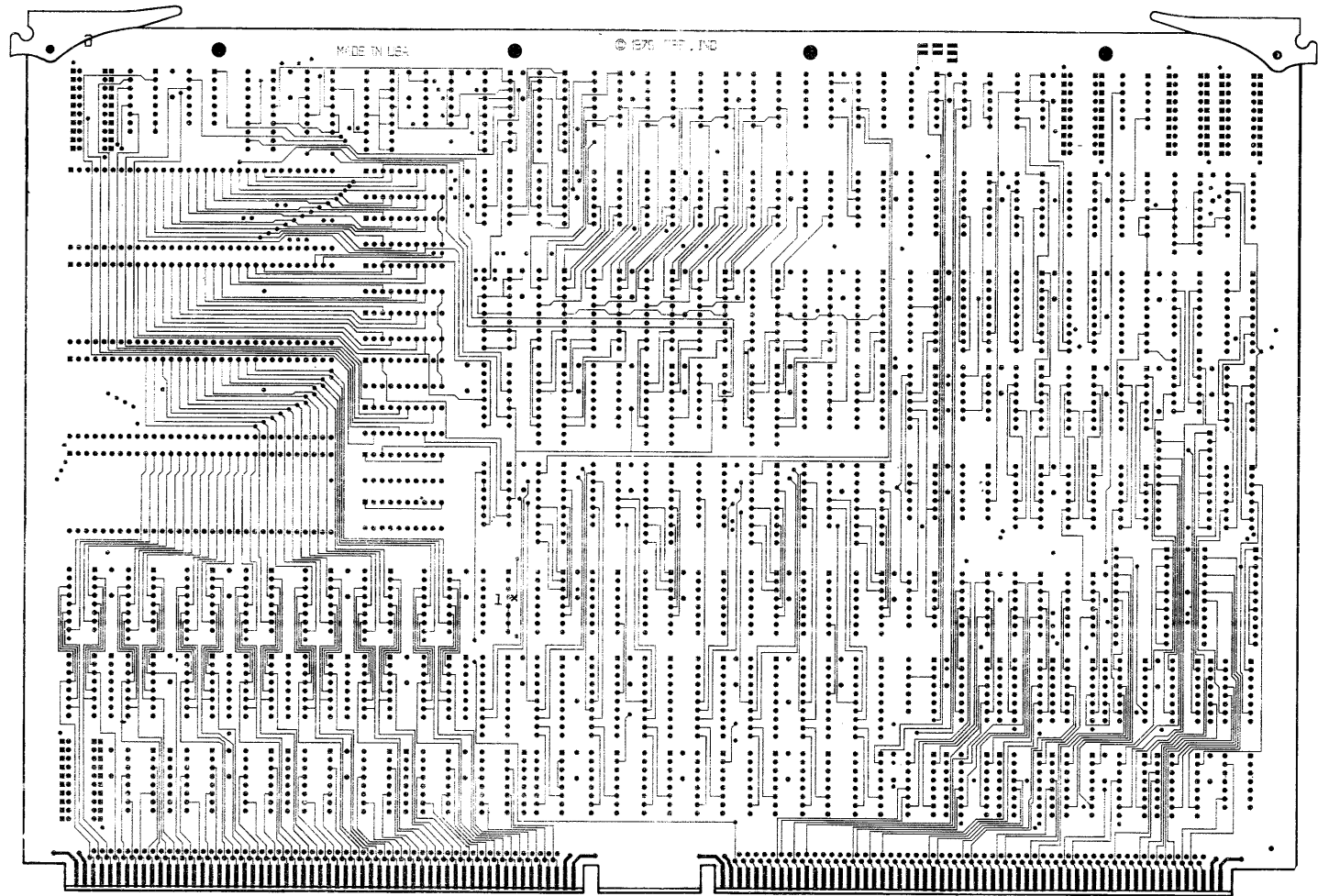
1

D

C

B

A



SOLDER SIDE

D

C

B

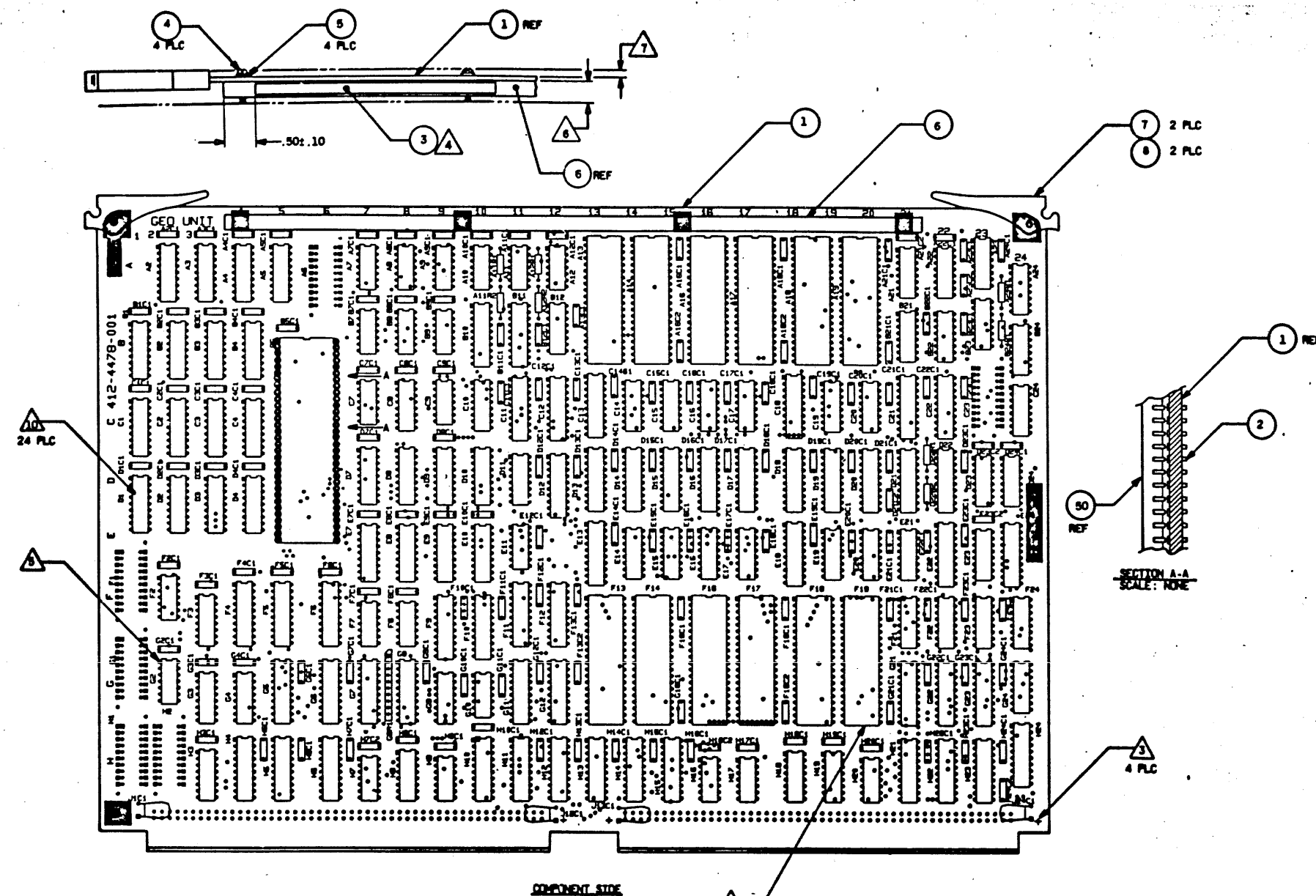
A

SIZE	CODE IDENT. NO.	DRAWING NO.	REV
D	56504	612-4426-003	C
SCALE	NONE	SHEET 4	OF 4

DRAWING NO. 612-4426-003

SHT 4

REV.	AUTH.	DESCRIPTION	ZONE	APPROV. DATE	CHK. DATE
01	EN #231	LEVEL 1 RELEASE		01/19/62	01/19/62



- ▲ INSTALL SOCKET, ITEM NUMBER 54, AT LOCATIONS A13, A14, A16, A17, A18, A19, F13, F14, F16, F17, F18 AND F19.
 - ▲ INSTALL SOCKET, ITEM NUMBER 52, AT LOCATIONS A2, A3, A4, A5, B1, B2, B3, B4, C1, C2, C3, C4, D1, D2, D3, D4, D7, D8, D9, D10, E7, E8, E9, E10.
 - 9. INTERPRETATION OF DIMENSIONS AND TOLERANCES PER ANSI Y14.5.
 - 8. ITEM NUMBERS ON PARTS LIST ARE SHOWN IN BALLOONS AND/OR PARENTHESES.
 - ▲ MAXIMUM COMPONENT HEIGHT ABOVE BOARD SURFACE ON SOLDER SIDE IS .090.
 - ▲ MAXIMUM COMPONENT HEIGHT ABOVE BOARD SURFACE ON COMPONENT SIDE IS .310.
 - ▲ SQUARE PADS INDICATE ORIENTATION OF PIN 1 ON IC'S AND R-PAKS.
 - ▲ MARK LABEL WITH APPROPRIATE INFORMATION PER FPS STD 10.018 AND INSTALL APPROXIMATELY WHERE SHOWN.
 - ▲ OBSERVE POLARITY WHEN INSTALLING COMPONENT.
2. INSTALL ALL COMPONENTS PER REFERENCE DESIGNATORS.
1. REFER ALL ITEMS TO PARTS LIST, SAME PART NUMBER AS THIS DRAWING.
- NOTE: UNLESS OTHERWISE SPECIFIED:

CONTINUED ON SHEET 2

37	G24
36	A22, A23, A24, B22, B23, C14, C15, C16, C17, C19, C20, C24, E14, E15, E16, E17, E19, E20, E21, E23, F22, F24
35	G10
34	H20
33	A12
32	A8
31	F7
30	A9, A10
29	F8, G2
28	C13, C18, C21, D21, E13, E18, H11
27	H7
26	H17
25	G12, H10, H15, H22, H23
24	H12
23	A21, B12, B21, F21, F23
22	C10
21	G9
20	D11, H8, H18, H19
19	H9
18	C8
17	B8, E11
16	A7, H16
15	B7, F2
14	J1C1, J12C1, J13C1, J24C1
13	A2C1, A3C1, A4C1, A5C1, A7C1, A8C1, A9C1, A10C1, A11C1, A12C1, A13C1, A16C1, A16C2, A18C1, A18C2, A21C1, A21C2, A22C1, A23C1, A23C2, A24C1, B1C1, B2C1, B3C1, B4C1, B5C1, B7C1, B8C1, B9C1, B11C1, B12C1, B21C1, B22C1, B23C1, C1C1, C2C1, C3C1, C4C1, C7C1, C8C1, C9C1, C11C1, C12C1, C13C1, C14C1, C15C1, C16C1, C17C1, C18C1, C19C1, C20C1, C21C1, C22C1, C23C1, D1C1, D2C1, D3C1, D4C1, D7C1, D9C1, D12C1, D13C1, D14C1, D15C1, D16C1, D17C1, D18C1, D19C1, D20C1, D21C1, D21C2, D23C1, D23C2, D24C1, E7C1, E8C1, E9C1, E10C1, E12C1, E14C1, E15C1, E16C1, E17C1, E18C1, E19C1, E20C1, E21C1, E22C1, E23C1, E23C2, F2C1, F3C1, F4C1, F5C1, F6C1, F7C1, F8C1, F10C1, F11C1, F12C1, F13C1, F13C2, F16C1, F18C1, F18C2, F21C1, F22C1, F23C1, F24C1, G2C1, G3C1, G4C1, G6C1, G7C1, G9C1, G10C1, G11C1, G12C1, G16C1, G21C1, G22C1, G23C1, G24C1, H3C1, H5C1, H6C1, H7C1, H7C2, H8C1, H9C1, H10C1, H12C1, H13C1, H14C1, H15C1, H16C1, H16C2, H17C1, H18C1, H19C1, H20C1, H22C1, H23C1, H24C1, H24C2
12	G8R1
11	A11R2, A12R2, A24R1, D22R2
10	A12R1, D22R1
9	A11R1, B24R1

ITEM	REFERENCE DESIGNATION
12	G8R1
11	A11R2, A12R2, A24R1, D22R2
10	A12R1, D22R1
9	A11R1, B24R1

PROJ. ENG.	DATE	 FLOATING POINT SYSTEMS, INC. <small>FORM 1000 Revised 01-1958</small>
DRAWN BY	DATE	
CHK. BY	DATE	
MFG. ENG.	DATE	
DRAWING TITLE		ETCH CIRCUIT BOARD ASSEMBLY, 478, GEO UNIT, ROOF
SIZE	CODE IDENT. NO.	
DRAWING NO.		612-4478-002
REV.		01

DO NOT SCALE DRAWING

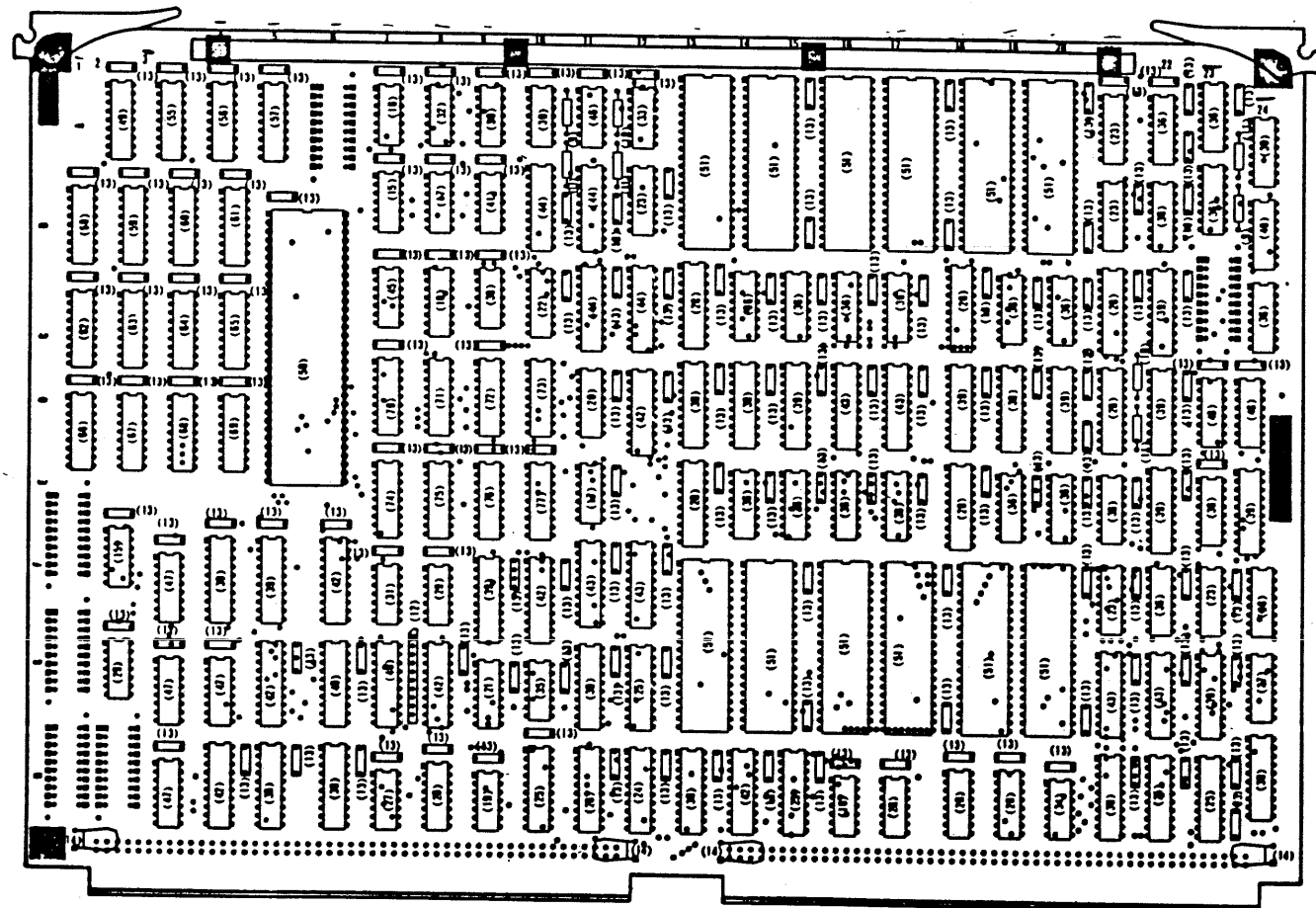
SCALE 1/1

SHEET 1 OF 4

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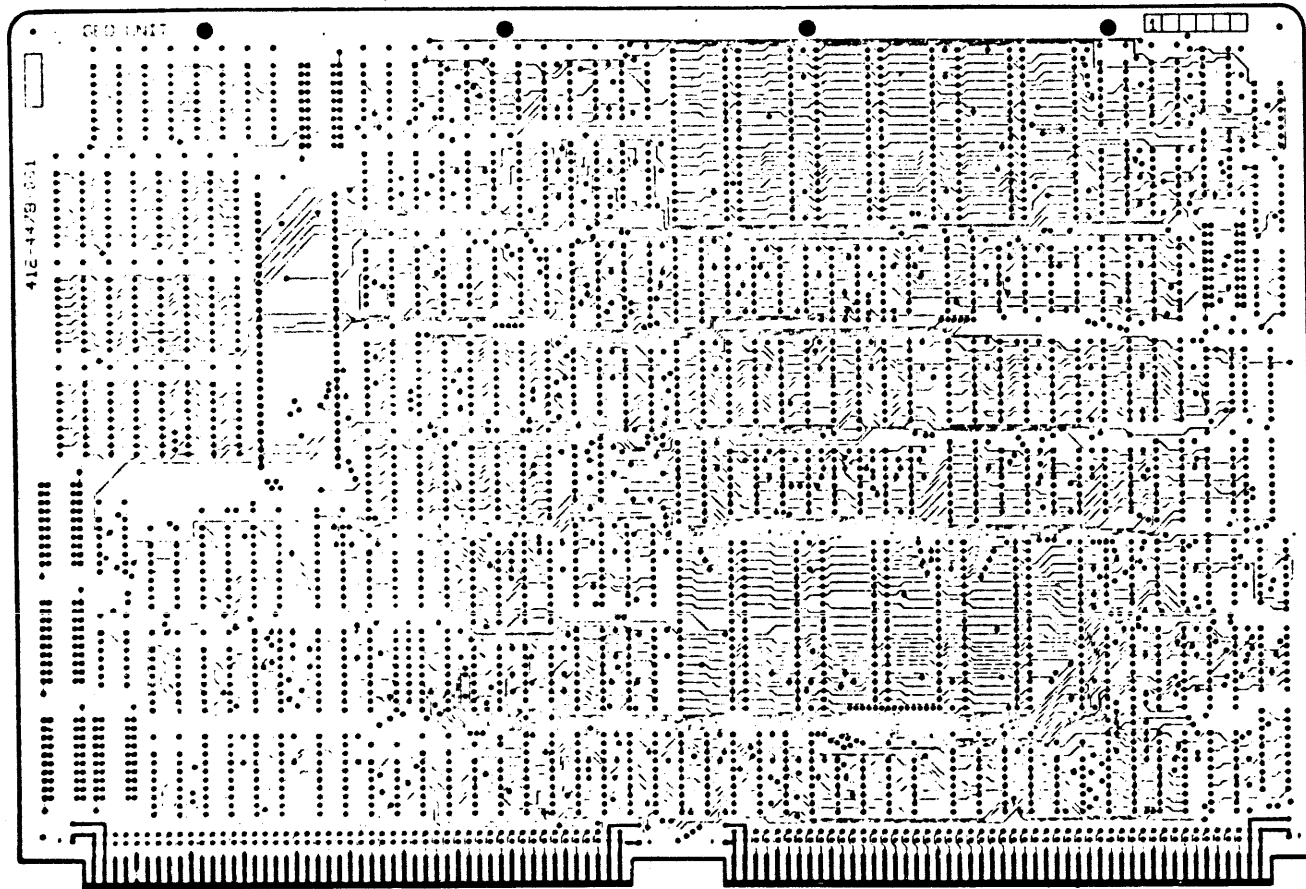
COMPONENT SIDE

ISSUED
AUG 25 1982

77	E10		
76	E9		
75	E8		
74	E7		
73	D10		
72	D9		
71	D8		
70	D7		
69	D4		
68	D3		
67	D2		
66	D1		
65	C4		
64	C3		
63	C2		
62	C1		
61	B4		
60	B3		
59	B2		
58	B1		
57	A5		
56	A4		
55	A3		
51	A13, A14, A16, A17, A18, A19, F13, F14, F16, F17, F18, F19		
50	B5		
49	A2		
48	B24, D23, D24		
47	F3, G3, G4, H3		
46	A11		
45	C7		
44	B10, B11, C11, C12		
43	D16, D17, F11, F12, G21, G22		
42	D12, F6, F10, G5, G8, H4, H14		
41	B9		
40	G6, G7		
39	C22, D13, D14, D15, D16, D19, D20, D22, E22, E24, F4, F5, F9, G11, G23, H5, H6, H13, H21, H24		
38	C9		
ITEM	REFERENCE DESIGNATION		
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	612-4478-002	01
SCALE 1/1			SHEET 2

DRAWING NO. 612-4478-002

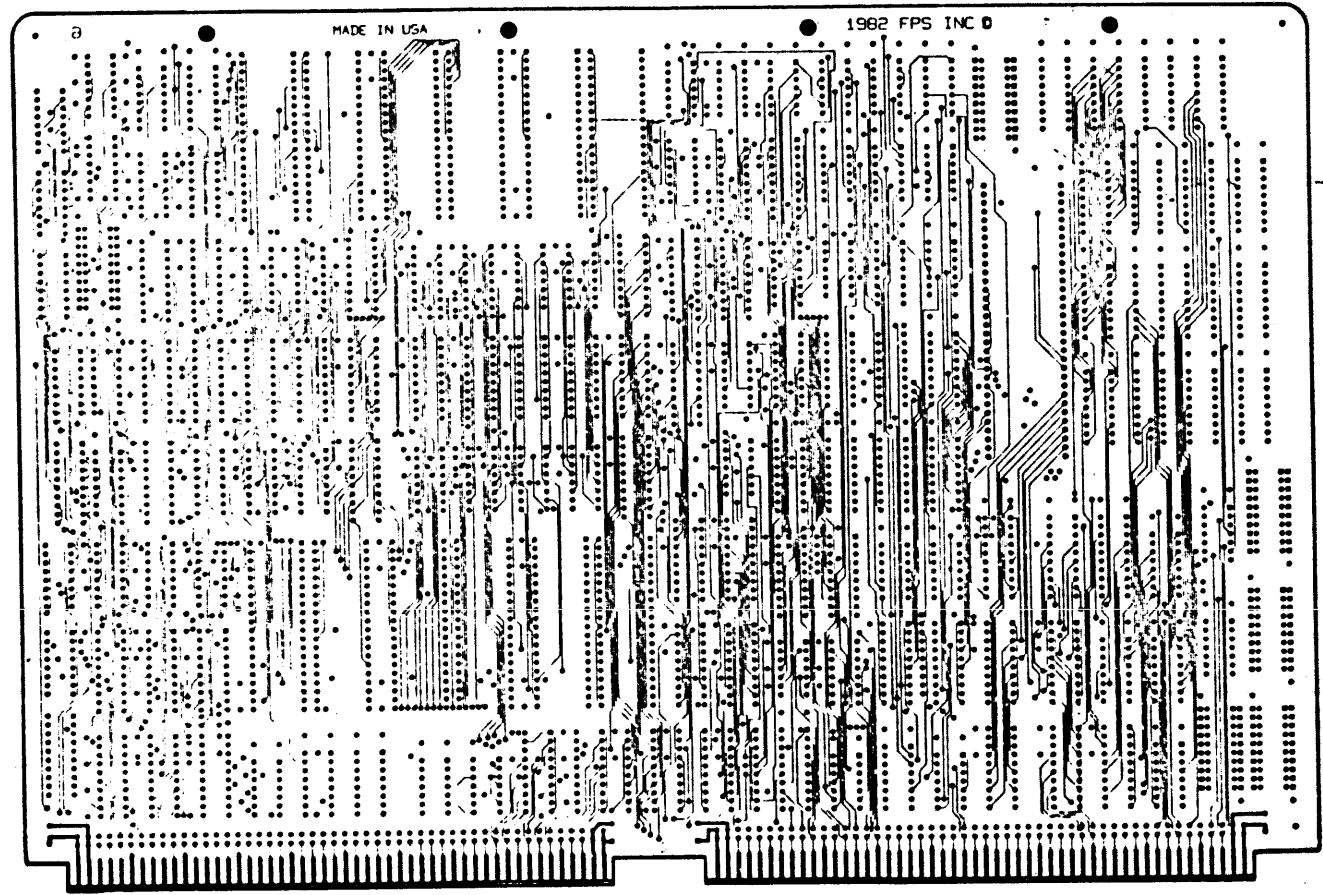
SHEET 2



COMPONENT SIDE

ADD STRAP	CUT ETCH	DESIGNATOR	FROM	TO	SIDE
	△	△	REWORK TABLE		
			SIZE	CODE IDENT. NO.	DRAWING NO.
			D	56504	612-4478-002
			SCALE	1/1	SHEET 3

DRAWING NO. 612-4478-002 SHEET 3



SOLDER SIDE

ADD STRAP	CUT	ETCH	DESIGNATOR	FROM	TO	SIDE
	△	△	△	REWORK TABLE		
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.			
D	58504	612-4478-002	01			
SCALE	1/1	SHEET		4		

DRAWING NO. 612-4478-002
SHEET 4