Q-1	FET - 5462
Q-2	FET
Q-3	FET
Q-4	NPN — 3568
Q-5	PNP — 3638
Q-6	NPN — 3568
Q-7	40409
Q-8	40410
Q-9	FET
Q-10	FET

+50MA
−20MA

D-1	1N914
D-2	"
D-3	9.1V ZENER
D-4	1N914
D-5	"
D-6	"
D-7	"

IC-1	LM 318 OP-AMP
IC-3	LM 318 OP-AMP
IC-4	SG4501N REGULATOR
IC2	MC1494 DIP

R-10	OUTPUT OFFSET
R-12	X_0
R-13	Y_0
R-16	SCALE FACTOR

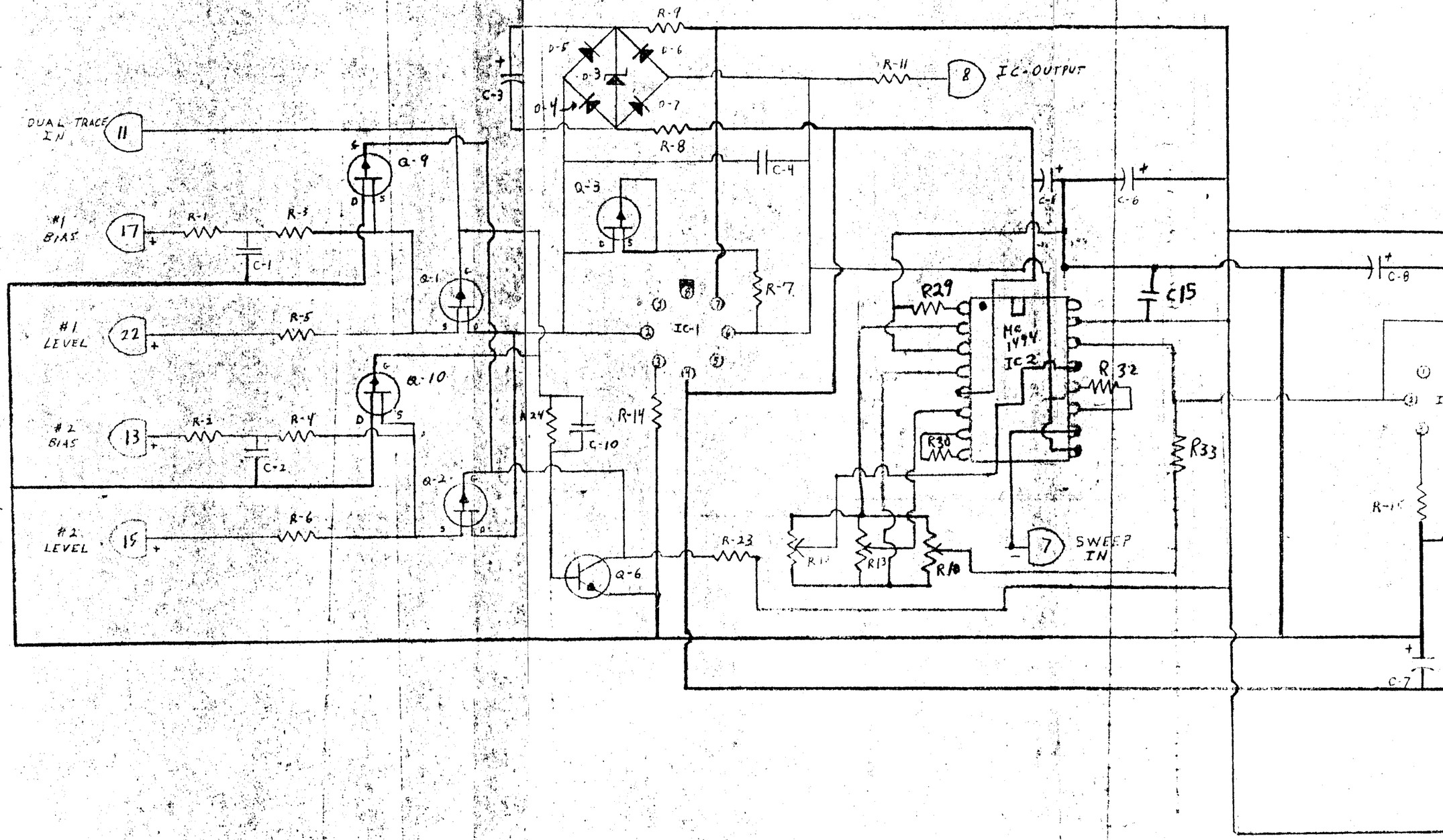
C-1	.1 Cer	
C-2	.1 Cer	
C3	15uf 20V	
C-4	5PF	
C-5	15uf 20V	
C-6	15uf 20V	
C-7	15uf 20V	
C-8	15uf 20V	
C9	5PF	
C-10	100PF	
C-11	10uf 25V	
C-12	10uf 25V	
C-13	.1uf Cer	
C-14	.1uf Cer	
C15	.1 n	

R-1	510Ω
R2	510Ω
R-3	4.7K
R4	4.7K
R5	4.7K
R6	4.7K
R-7	10K
R-8	15K
R-9	15K
R-10	5K POT (20K)
R-11	1K
R-12	20K POT
R-13	20K POT
R-14	2.7K
R-15	10K
R-16	100K pot
R-17	10K
R-18	10K
R-19	4.7Ω
R-20	4.7Ω
R-21	75 Ω
R-22	75 Ω
R23	10K
R24	33K
R25	75Ω
R26	75Ω
R27	.5Ω DALE
R28	.5Ω DALE
R29	12K
R30	27K
~~R31~~	~~1K~~
R32	15K
R33	47K

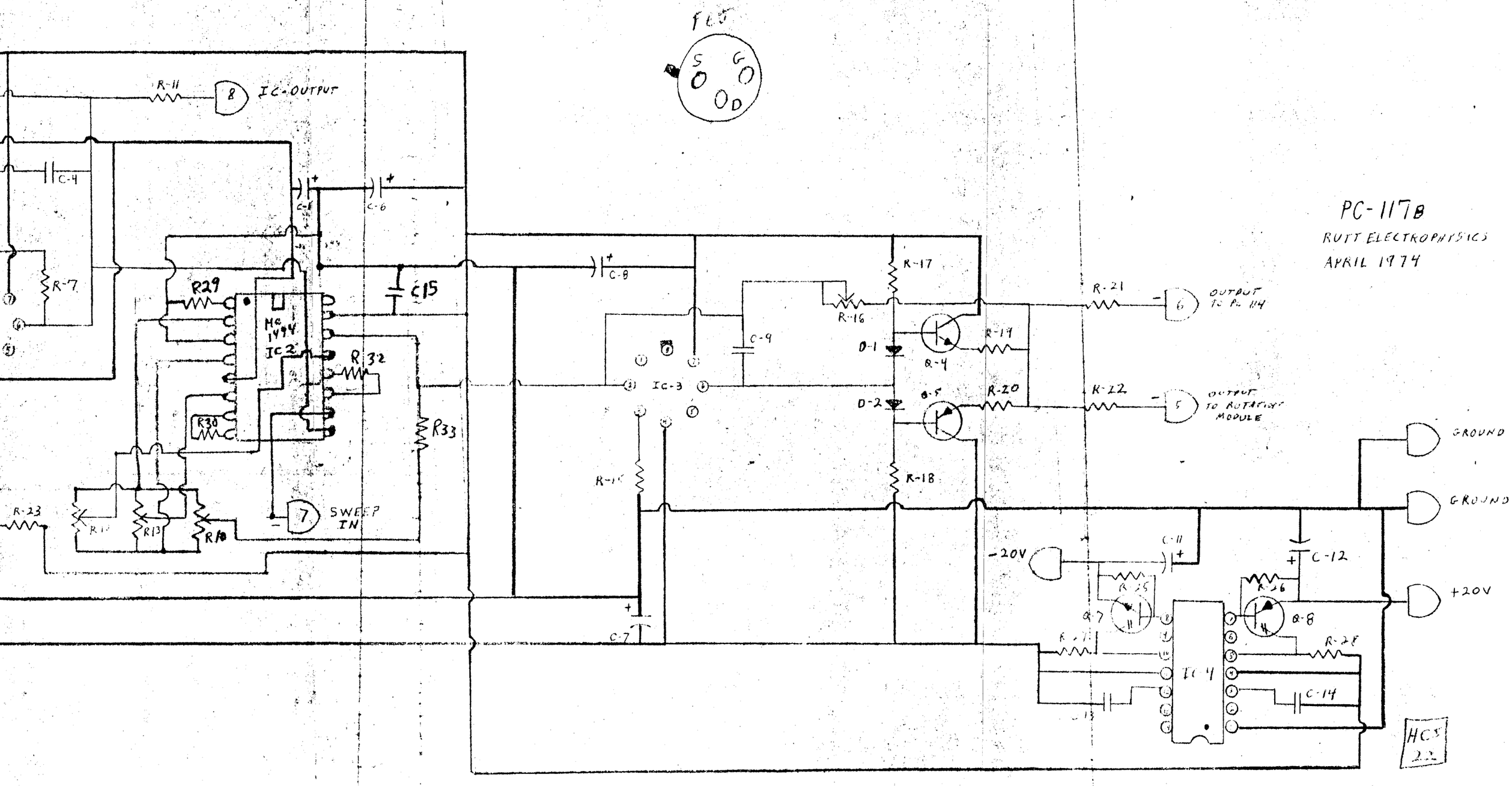
WHERE IS

PC-117

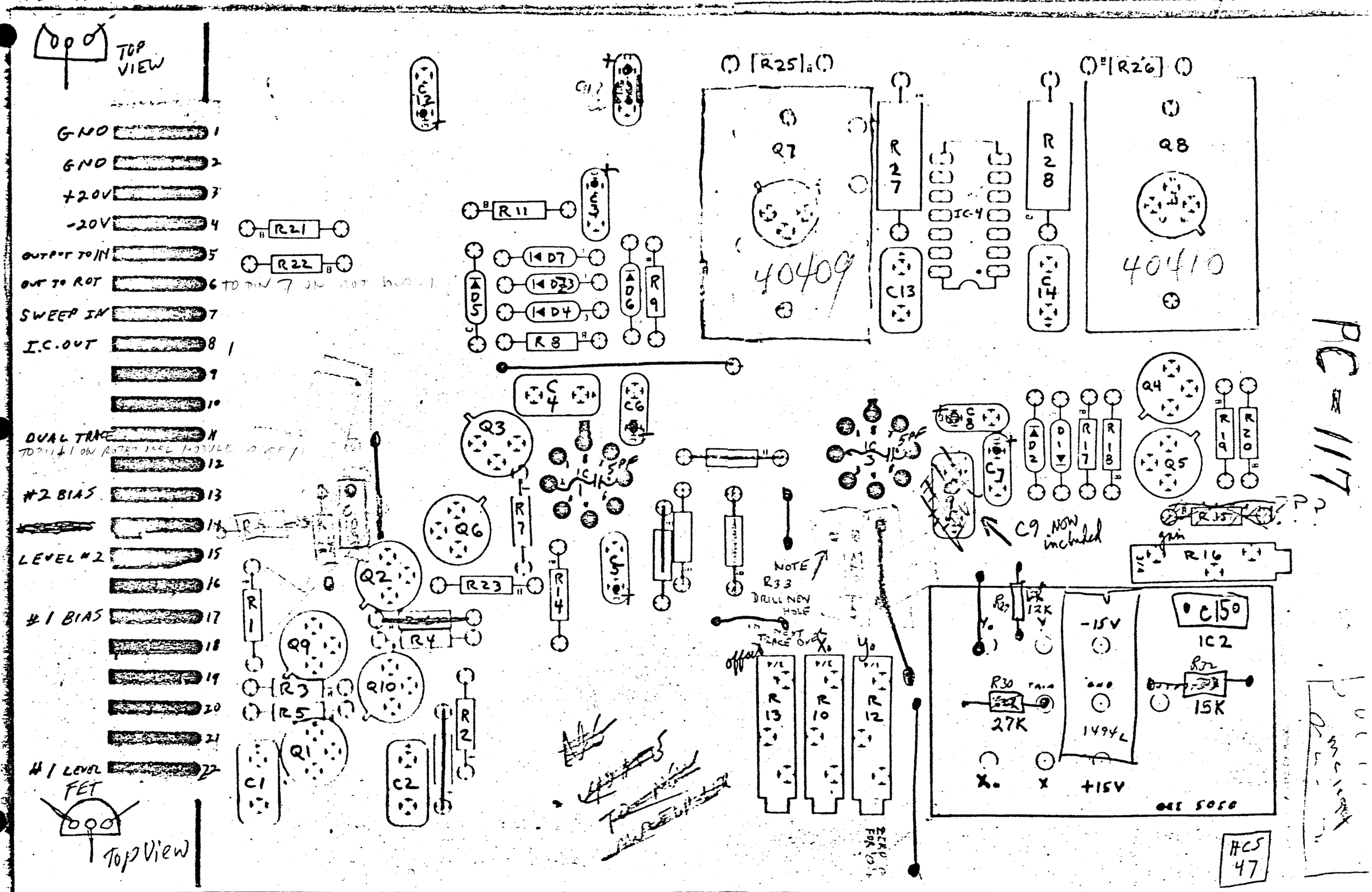
HCS 39

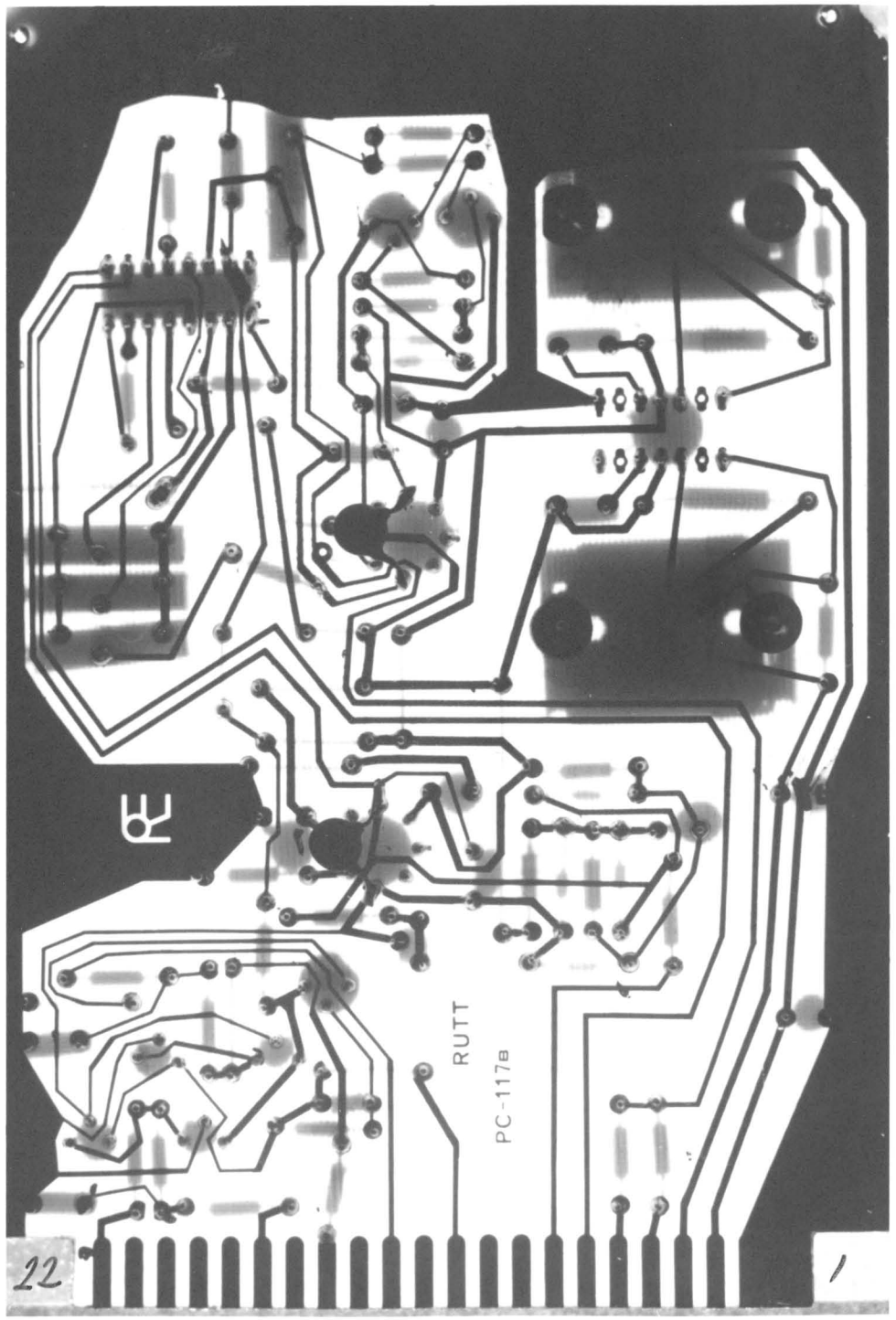


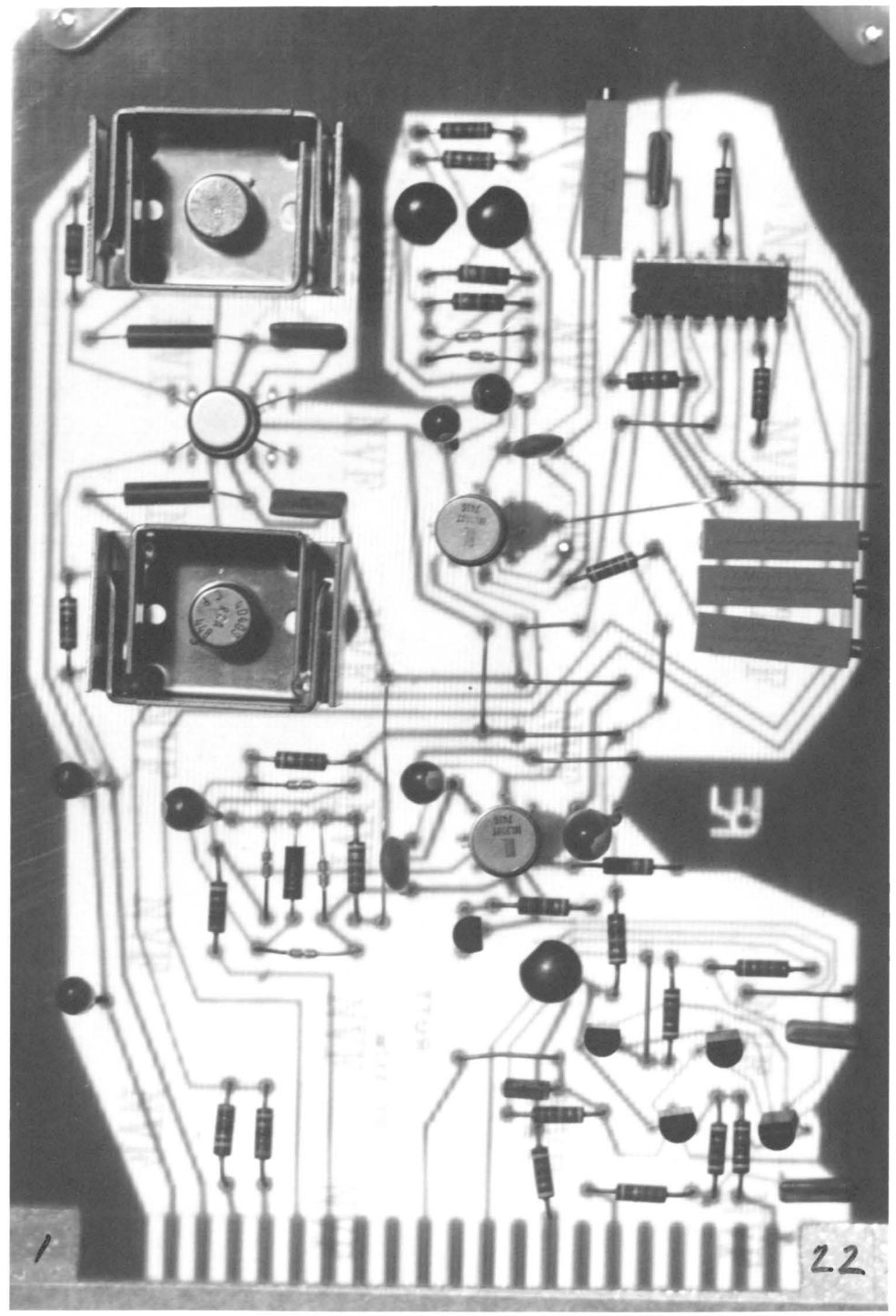
DUAL TRACE IN
11
#1 BIAS
17
R-1
R-3
C-1
Q-9
#1 LEVEL
22
R-5
Q-1
#2 BIAS
13
R-2
R-4
C-2
Q-10
#2 LEVEL
15
R-6
Q-2
C-3
D-5
D-6
D-3
D-4
D-7
R-9
R-8
R-11
8
IC-OUTPUT
C-4
Q-3
R-7
IC-1
R24
C-10
R-14
Q-6
R-23
R29
Mc 1494 IC2
R30
R32
R33
R13
R10
7
SWEEP IN
C-5
C-6
C15
C-8
C-7



PC-117B
RUTT ELECTROPHYSICS
APRIL 1974
FET
S
G
D
R-11
8
IC-OUTPUT
C-4
C-5
C-6
R-7
R29
MC 1494
IC2
C15
R32
R30
R33
R-23
R12
R13
R10
7
SWEEP IN
C-8
C-9
IC-3
R-15
C-7
R-16
R-17
D-1
D-2
Q-4
Q-5
R-19
R-20
R-18
R-21
6
OUTPUT TO PC 114
R-22
5
OUTPUT TO ROTATION MODULE
GROUND
GROUND
+20V
-20V
C-11
C-12
R-25
R-26
Q-7
Q-8
R-27
R-28
IC-4
C-14
C-13
HCS 22


TOP VIEW
GND 1
GND 2
+20V 3
-20V 4
OUTPUT TO IN 5
OUT TO ROT 6
SWEEP IN 7
I.C. OUT 8
9
10
DUAL TRACE 11
12
#2 BIAS 13
14
LEVEL #2 15
16
#1 BIAS 17
18
19
20
21
#1 LEVEL 22
FET
Top View
R21
R22
R11
D7
D3
D4
R8
D5
D6
R9
C4
C6
Q3
Q6
Q2
Q9
Q10
Q1
R1
R3
R5
R4
R7
R23
R14
C1
C2
R2
R25
Q7
40409
R27
C13
IC-4
R28
C14
R26
Q8
40410
C8
C7
D2
D1
R17
R18
Q4
Q5
R19
R20
R15
gain
R16
C9 NOW included
NOTE
R33
DRILL NEW HOLE
IN NEXT TRACE OVER
offset
R13
R10
R12
12K
-15V
C15
IC2
R30
27K
1494L
R32
15K
+15V
HCS 47
PC 117


RUTT
PC-117B
22
1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