

Oxford Instruments Description of Work

7 Oct 92

The magnet cryostat was unpacked and assembled, leak checked and then cooled.

The magnet was run to 5.1 T (using only Z₂ switch heater).

The magnet was run 4 more times at a maximum rate of 4 A/min.

The magnet and Z_{1/2} shims were put persistent and left over night.

The SPS20 heater output was increased and the magnet swept to 5.1 T with all heaters on.

The cryostat boil off was: 3.23 l/min He₄ gas @ 48%
5.6 l/min N₂ gas @ 95%.

The magnetometer was calibrated with a span of 5.1 T

The temperature indicator was recalibrated

The magnet problem was caused by the Z₂ shim switch not opening when all the switch heaters were on. Therefore the Z₂ shim would couple with

the magnet as it was swept. The current induced was enough to quench the Z₂ shim, giving voltage kicks and high boil off from the cryostat.

By changing the SPS20 voltage to 220V the heater output has increased from 32 to 36 mA with all the heaters on (36 → 41 mA with just the Z₂).

Now the magnet can be swept with either all heaters on or just the Z₂ heater on.

7 Oct - 92

Seppo Penttila
SEPPO PENTTILA

CWitcher

ELECTRICAL CHECK.

PENTTILA

6/5/92

TEST POINT	RESISTANCE	RESISTANCE	RESISTANCE	RESISTANCE
NET S-E	51.8Ω @ RT	41.4Ω @ 77K	0	@ 4.2K
S - gnd	>20M	>20M	>20M	>20M
WITH HEATERS 10B-1A	112.3Ω	117.3	110.9	104
-3A	110.6	114.0	109.3	100
-4A	111.5	114	109.4	100
-5A	111.5	115	109.6	100
-6A	111.0	114	109.1	101
-9B	113.7	115.8	112.4	105
10B - gnd	>20M	7 Oct 92	>20M	>20M
-mag	>20M		>20M	>20M
1,2B - 4,5B	27.7Ω		9.0Ω	0
1B - gnd	>20M		>20M	>20M
1B - 10B	>20M		>20M	>20M
1 3c - 4c	310Ω	297.4	342Ω	365
RADLETS 2 -5c	320.9	309.6	396	385
3 -6c	347.0	337	415	414
4 -7c	343	340	421	418
-gnd	>20M		>20M	>20M
5 3D-4D	353	351	419	419
6 -5D	357	372	433	444
*7 -6D	351	334	391	407
*8 -7D	389	355	447	432
*9 -8D	325	340	397	390
*10 -9D	351	353	414	404
-gnd	>20M		>20M	>20M
7 Oct 92			7 Oct 92	
1/2 HEATERS E - 2E	35Ω		34	
3E - 2E	35		33	
- 7E - 8E	2.5		2.1	
ROBE - 9E	2.5		2.1	
- 10E	2.5		2.2	
-gnd	>20M			

4.88 KΩ 3.92
~~4.91~~ 5.61
~~4.97~~ 4.78
~~5.01~~ 5.71
 >20M

New values
 7 Oct 1992
 CWM.

7 Oct 92

Note new positions
 *7
 *8
 *9
 *10

PENTTILA 6/5/92

D SENSORS.

- 1 Top He₄ can
- 2 Bottom He₄ can
- 3 Top magnet
- 4 Bottom magnet
- 5 Heater block on side with blowout tube
- 6 " " " " without " "
- 7 ~~Bottom N₂ tail~~ N₂ jacket 7 out 92
- 8 ~~By window on N₂ tail~~ N₂ jacket
- 9 ~~N₂ jacket~~ By window on N₂ Tail
- 10 ~~N₂ jacket~~ Bottom of N₂ tail.

E N₂ Heaters to remove precool N₂ from magnet.

1-2 side with blowout tube

2-3 " without " " "

NIA.

Pass 30V through pins 2-3, watch the temperature change on sensor 6, and the boil off of N₂ gas from the cryostat (~10.5 lmi) when the liquid N₂ has been boiled off the sensor will show a sharp increase in temperature and the flow rate will drop. This will take about 3 hours.

Outside Cave.

Radial Plots

76.06 Amps

-16.35 Z, -10.00 Z

0.00 X 0.00 Y

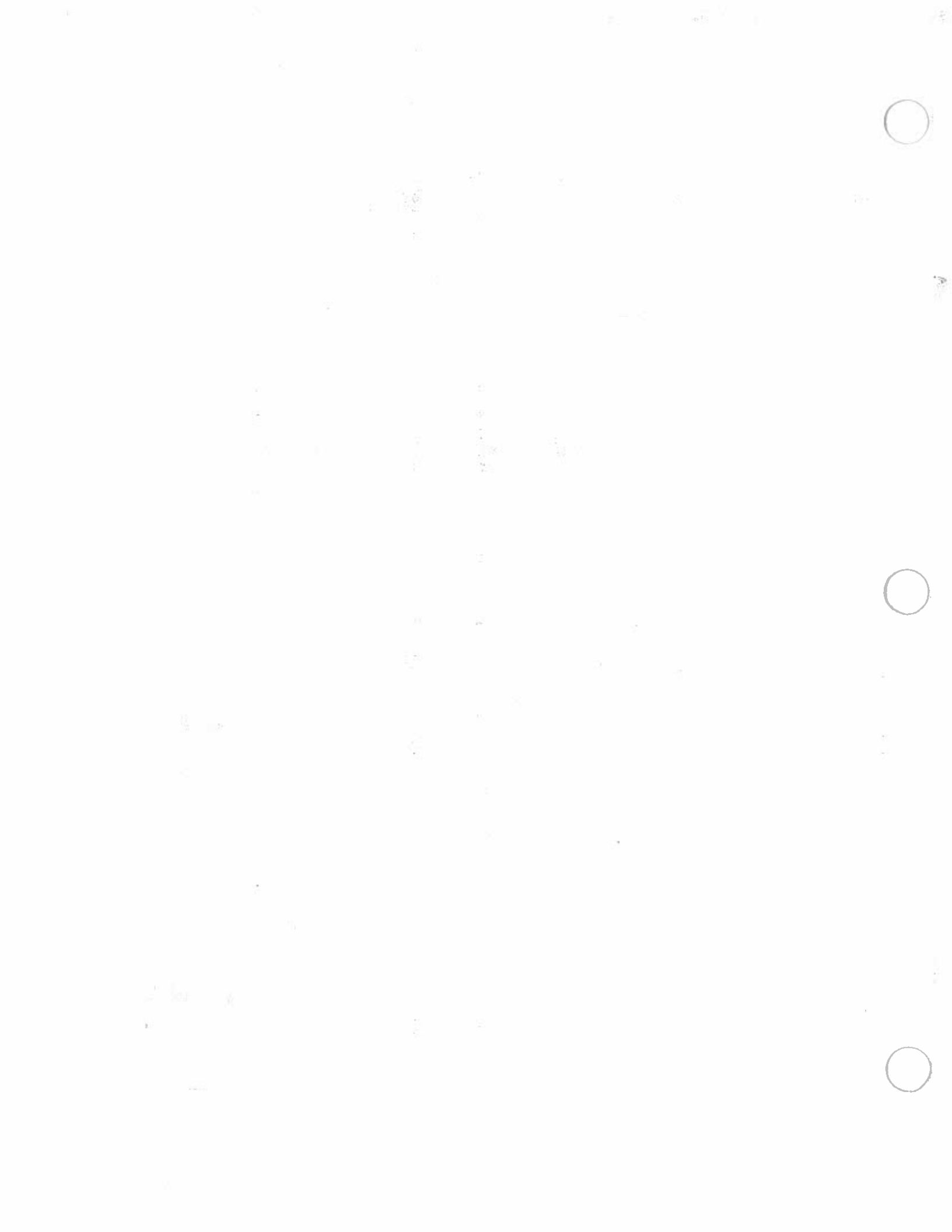
Plotted on ϕ of ~ 80 mm

Position :	43.3 cm	42.3 cm	41.3 cm
0°	33.2949 MHz	33.2983 MHz	33.2961
30°	940	974	956
60°	928	958	948
90°	928	953	946
120°	934	954	948
150°	942	957	952
180°	946	961	955
210°	946	963	955
240°	943	965	952
270°	942	968	952
300°	945	976	956
330°	950	983	961
360°	949	983	961

AXIAL PLOT IN CAVE.

PENTILA 6/5/92

44.0	32	69070	MH ₃
43.8		69003	
6		68947	
4		68906	
2		68879	
43.0		68854	
42.8		88835	
6		68826	
4		68817	
2		68811	
42.0		68810	
41.8		68809	
6		68808	
4		68806	
2		68806	
41.0		68807	
40.8		68810	
6		68818	
4		68827	
2		68841	
40.0		68864	
8		68891	
6		68928	
4		68964	
2		69022	



AXIAL PLOT IN CAVE.

PENTTILA

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X - 3.00 A Z₁ - 16.03 A

Y + 1.18 Z₂ - 8.8

42.5 cm

41.5 cm

40.5

0	32.687700	32.690740	32.687500
30	87500	690740	8770
60	87400	690080	8750
90	87730	690020	8777
120	88690	690260	8844
150	89560	690650	8904
180	89810	690670	8912
210	89420	690320	8863
240	88470	689590	8734
270	87800	689230	8651
300	87330	689410	8630
330	87350	690150	8690
60	87700	690740	8750

MAX 90740 H₃

MIN 86300

4440 H₃

⇒

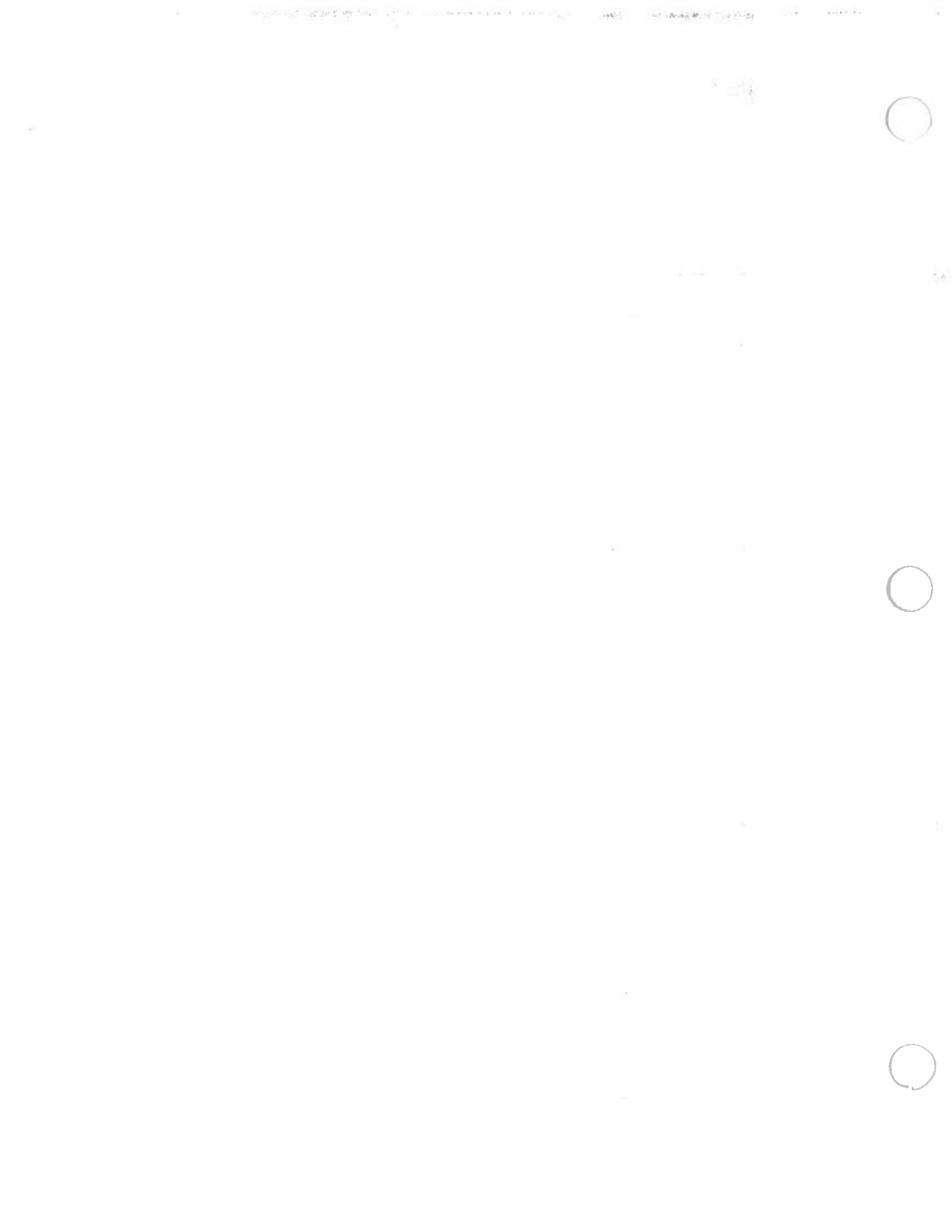
1.36 in 10⁴

AXIAL PLOT IN CAVE.

PENTTILA

6/5/92

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Y + 1.18 Z₂ - 8.8

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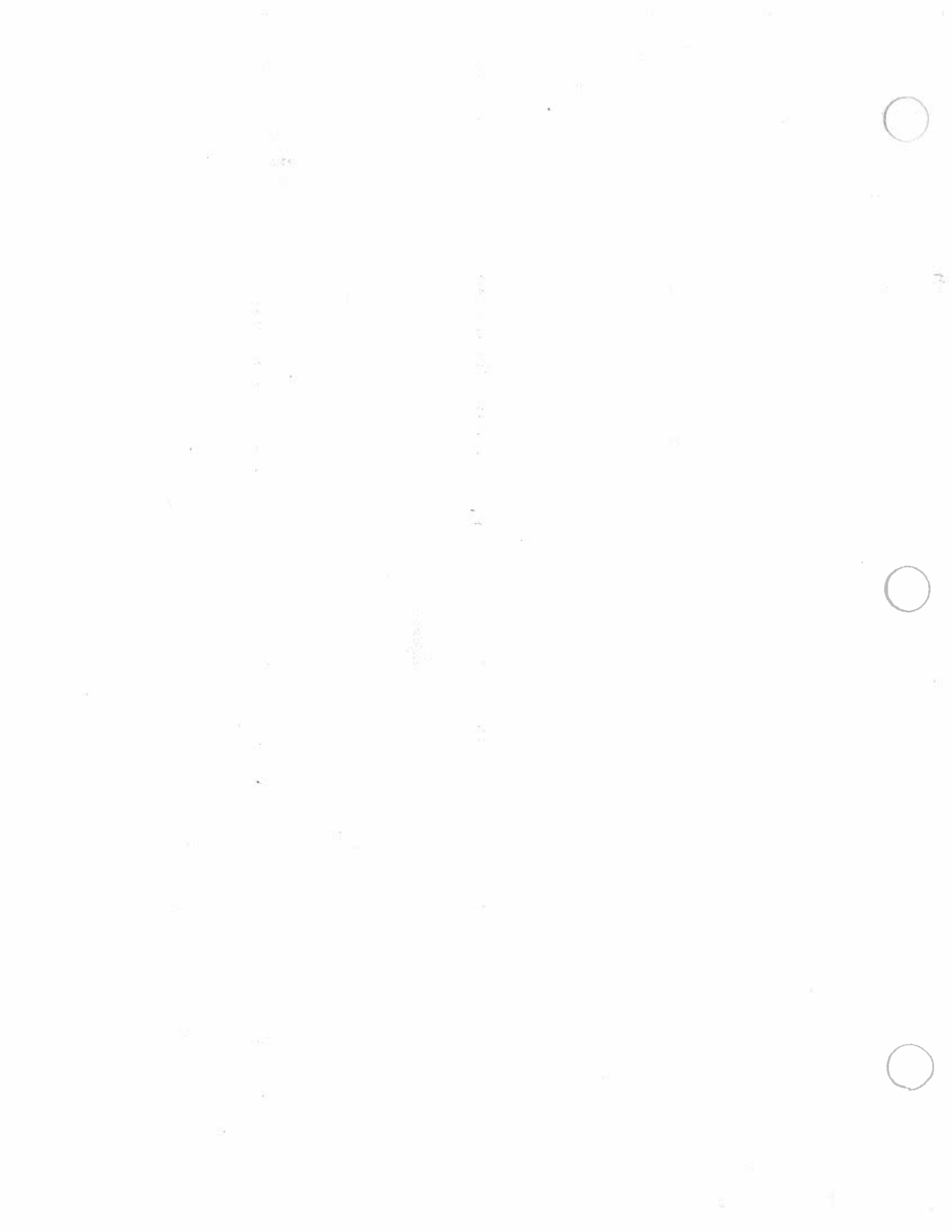
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1.36 in 10⁴



X-3.00A z₁ - 16.03 A

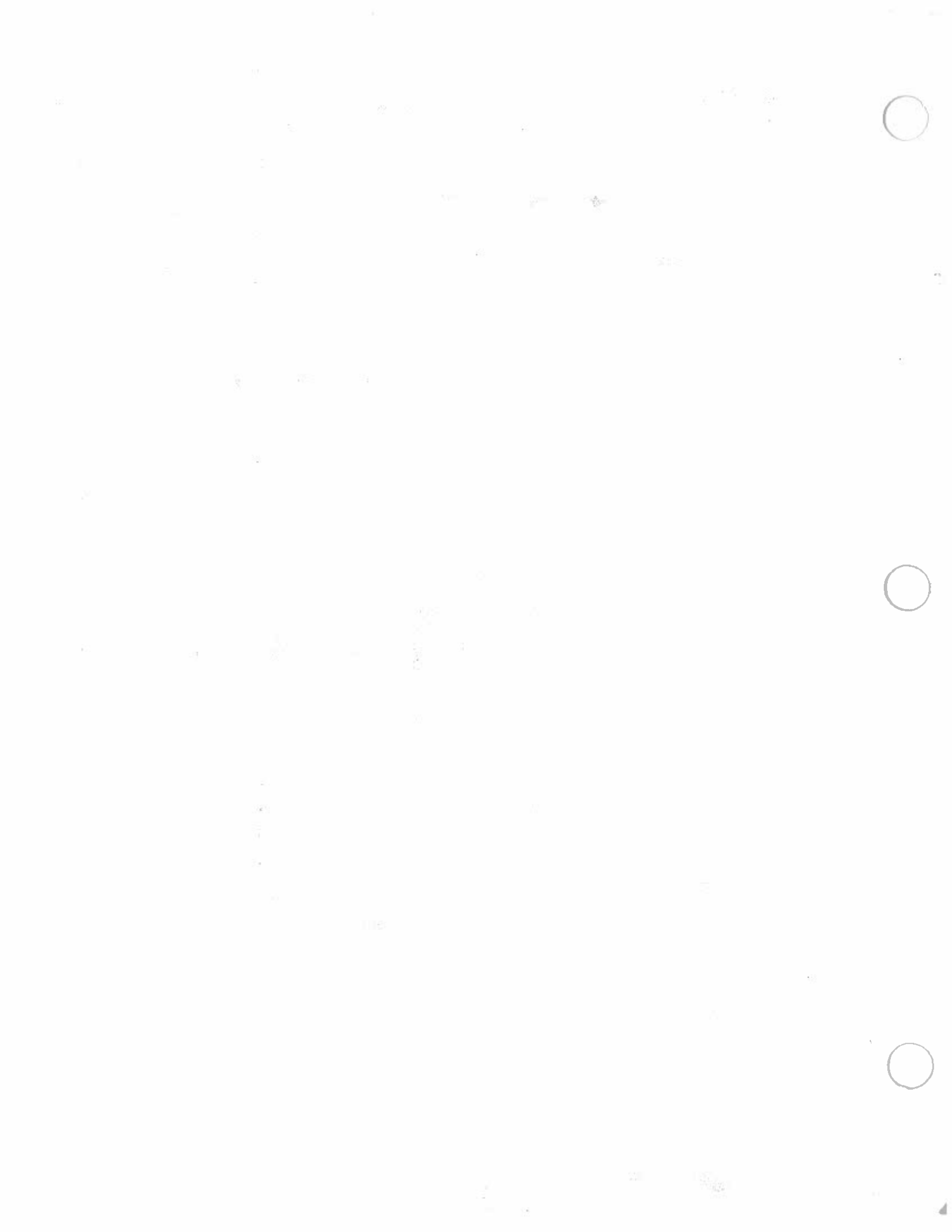
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MAX 90740 H₃

MIN 86300

4440 H₃ ⇒ 1.36 in 104

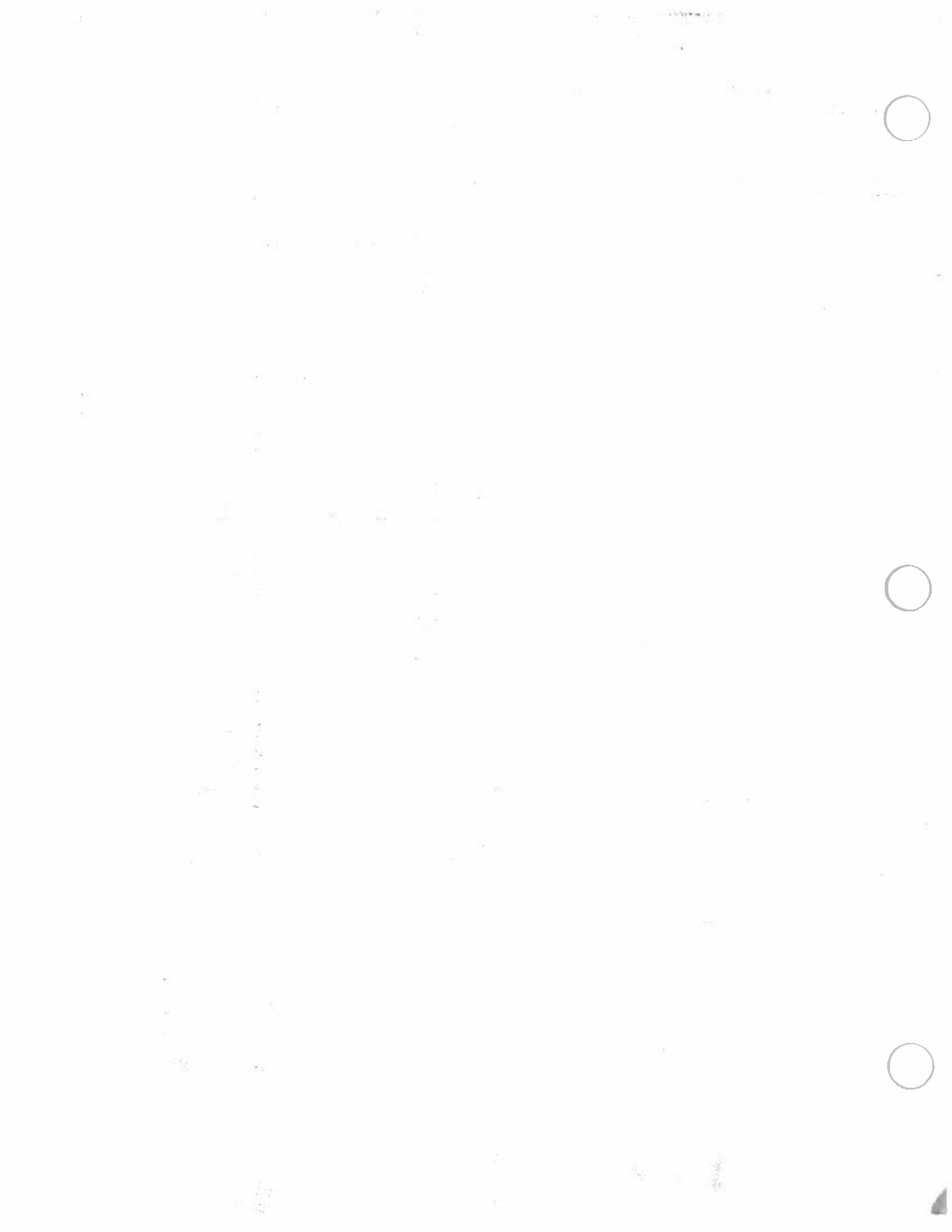


Wardle Cave.

Radial Plots 76.06 Amps -16.35Z, -10.00Z
0.00 X 0.00 Y

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Cur-radial curve.

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