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Title

Bevatron H Magnet 18 x 36 8" Gap

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1957-11-01

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UNIVERSITY OF
CALIFORNIA

*Radiation
Laboratory*

For Reference

Not to be taken from this room

BERKELEY, CALIFORNIA

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UCRL-8161 ✓

RADIATION LABORATORY - UNIVERSITY OF CALIFORNIA - BERKELEY ENGINEERING NOTE	JOB NUMBER 4310-11	FILE NO MT-68	PAGE 1/7
SUBJECT BEVATRON H MAGNET 18 x 36 8" Gap	NAME L. G. Ratner ✓		DATE November 11, 1957

Magnetic measurements were made on this magnet (Assembly Drawing UCRL 9A1103) on October 31 and November 1. Flux density at the center, median plane was measured with a nuclear fluxmeter whose accuracy is of the order of $\pm 0.02\%$. Longitudinal and transverse profiles were measured with a Rawson-Lush rotating coil gaussmeter (rated accuracy $\pm 1.0\%$ of full scale). The results of the longitudinal and transverse runs were plotted as a percent of central field versus position (pages 6, 7). High field runs were plotted as flux density versus position (pages 4, 5). Flux density versus magnet current is plotted on page two. The high field magnetization was plotted separately, page 3, in order to show magnet efficiency in this region.

Current and voltages were also measured and are shown in the following table.

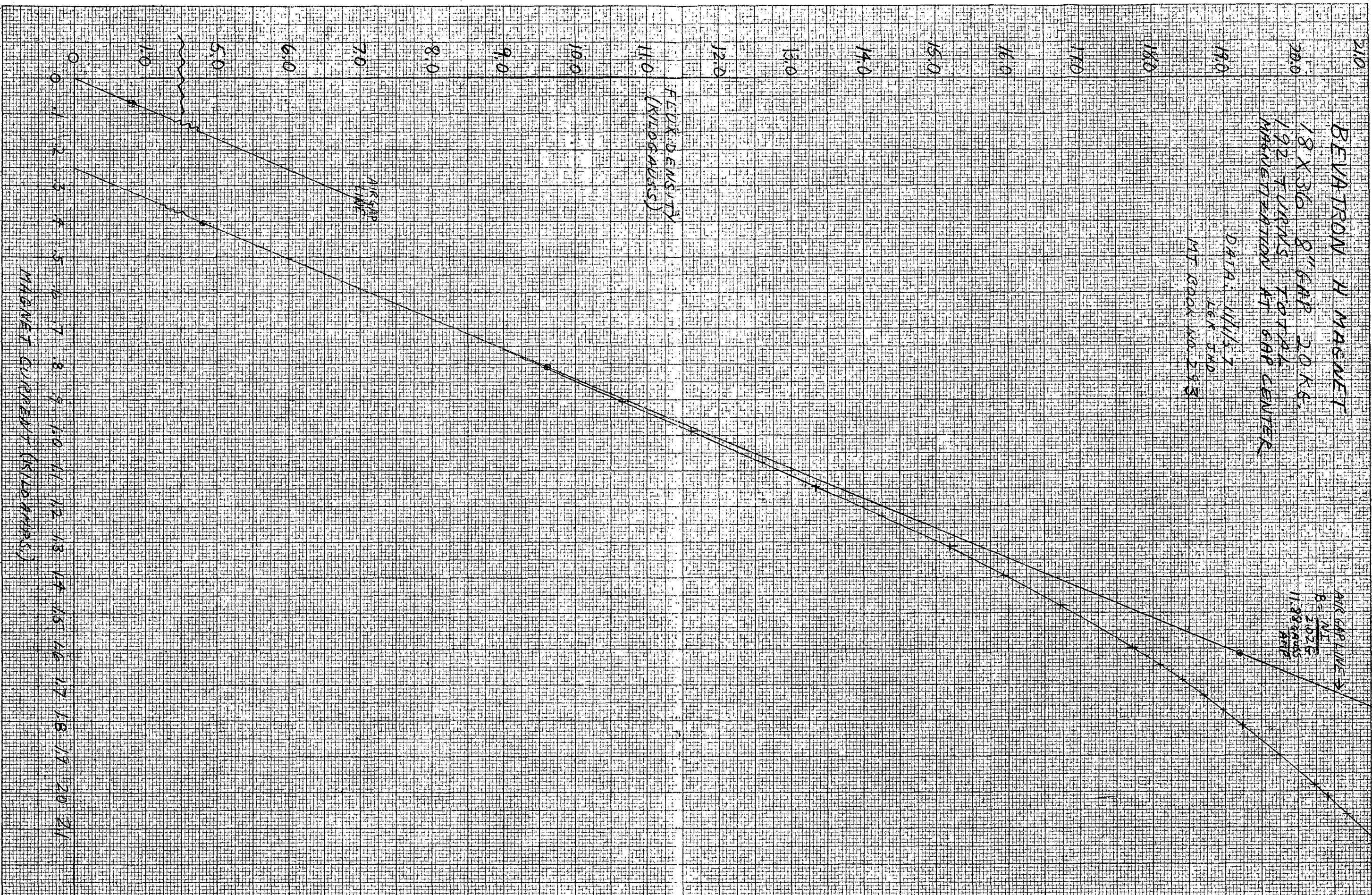
<u>P_{in} (PSI)</u>	<u>P_{out} (PSI)</u>	<u>ΔP</u>
81	32	49 at flow board
74	55	19 at magnet

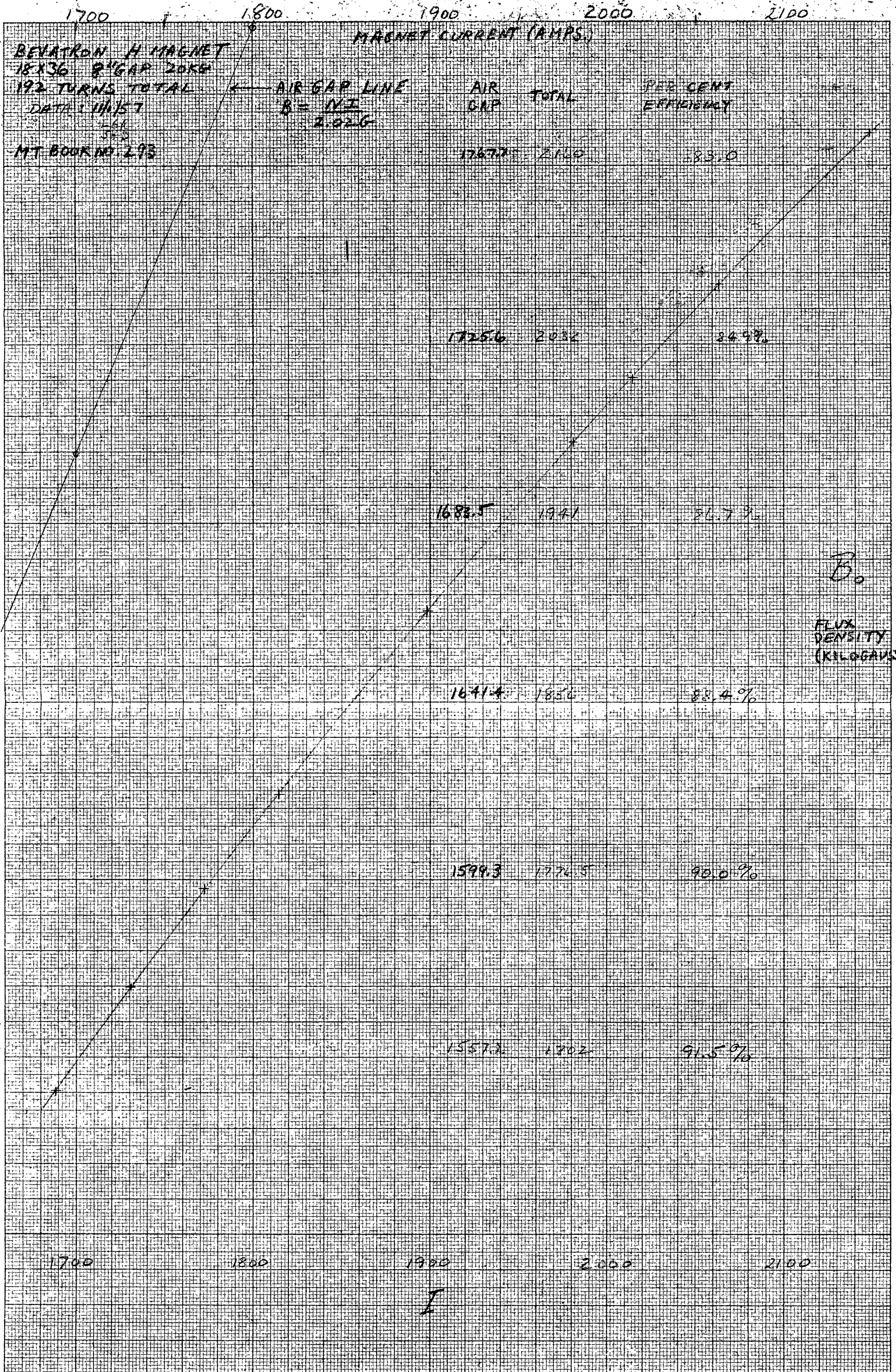
<u>E (volts)</u>	<u>I (amps)</u>	<u>Power (KW)</u>
24.4	328.6	8.0
69.3	917.6	63.6
82.3	1086.3	89.4
95.4	1252.2	119.5
109.1	1420.9	155.0
123.0	1588.8	195.4
137.8	1756.3	242.0
158	1997.2	315.6

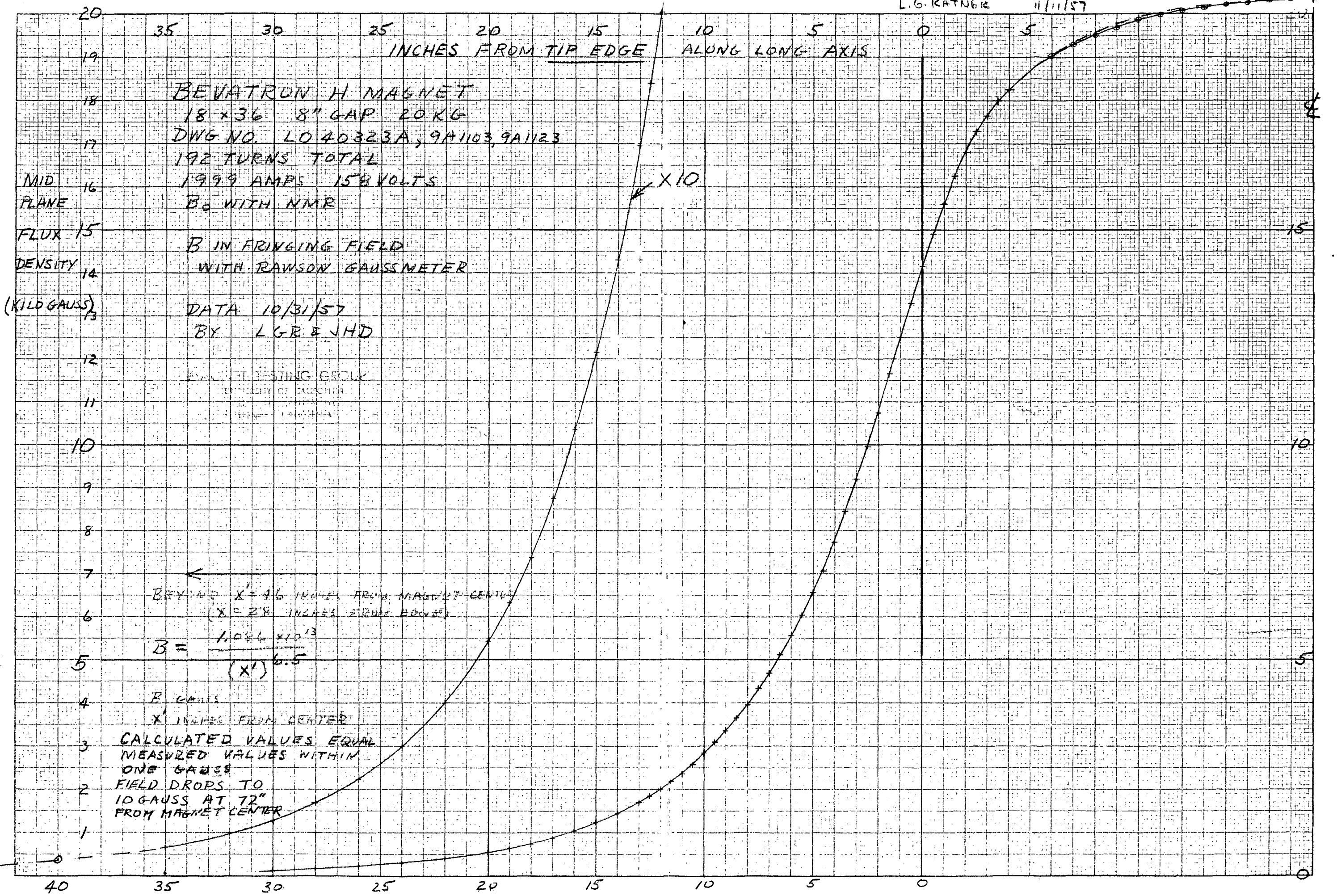
water temperature outlet 38-1/2° C

Initial Distribution:

- Magnet Test Group (3)
- E. Lofgren (3)
- K. Lou (1)
- G. Lambertson (1)
- H. Heckman (1)
- W. Dudziak (1)
- L. Agnew (1)







10 X 10 TO THE 1/2 INCH 359T-11LG
 MADE IN U.S.A.
 1/2" X 1/2" X 1/2" SERR CO. ALBANY NY

BEVATRON H MAGNET
 18X36 8" GAP ZONE
 192 TURNS TOTAL

+ B₀ = 20,326 GAUSS 1999.2 AMPS.
 O B₀ = 16,973 GAUSS 1509.1 AMPS.
 A B₀ = 12,043 GAUSS 1026.9 AMPS.

DATA: 11/1/57 LGR JWB
 MT BOOK NO. 293

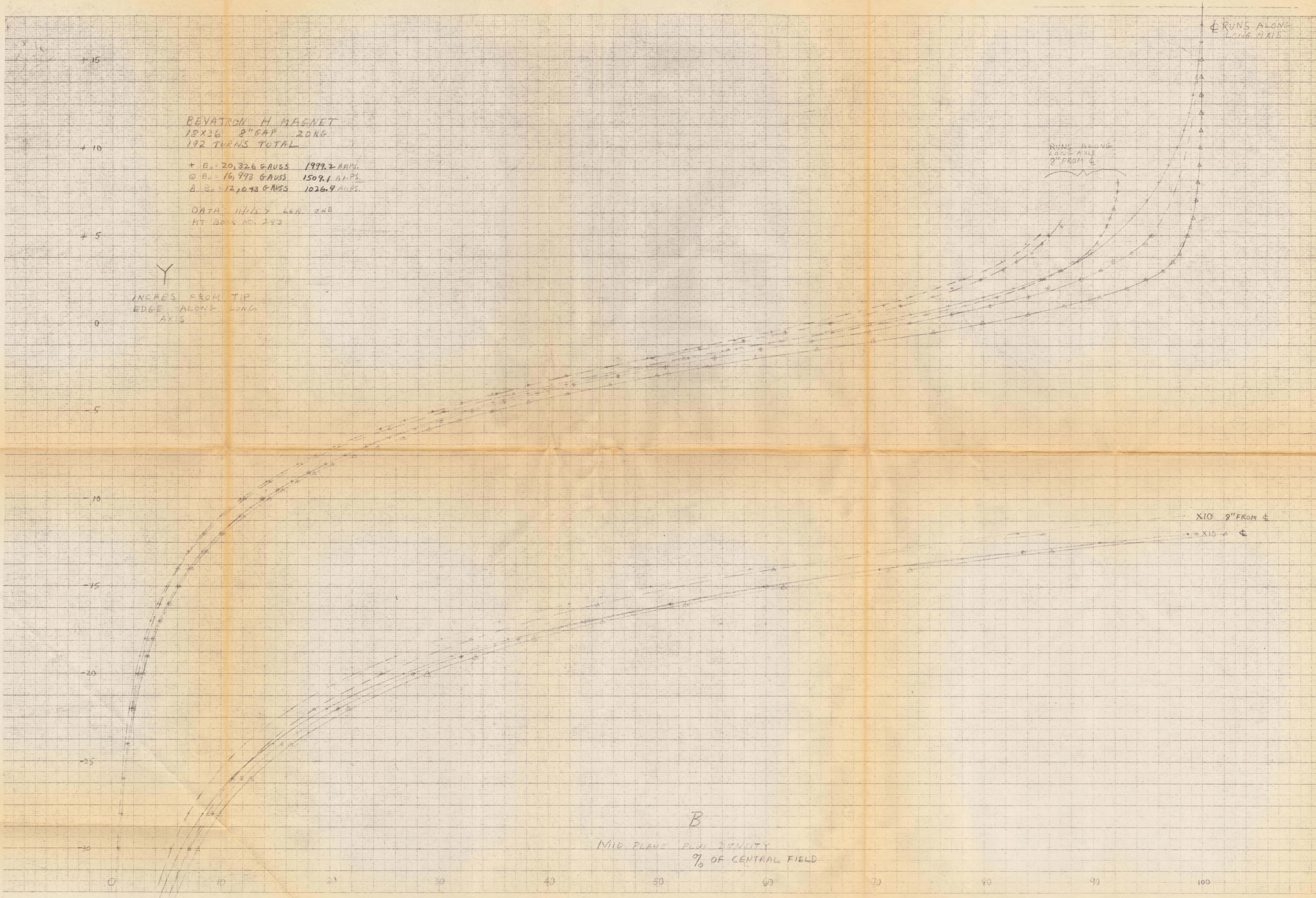
INCHES FROM TIP
 EDGE ALONG LONG
 AXIS

☉ RUNS ALONG
 LONG AXIS

RUNS ALONG
 LONG AXIS
 8" FROM ☉

X10 8" FROM ☉
 X10 ☉

B
 MID PLANE FLUX DENSITY
 % OF CENTRAL FIELD

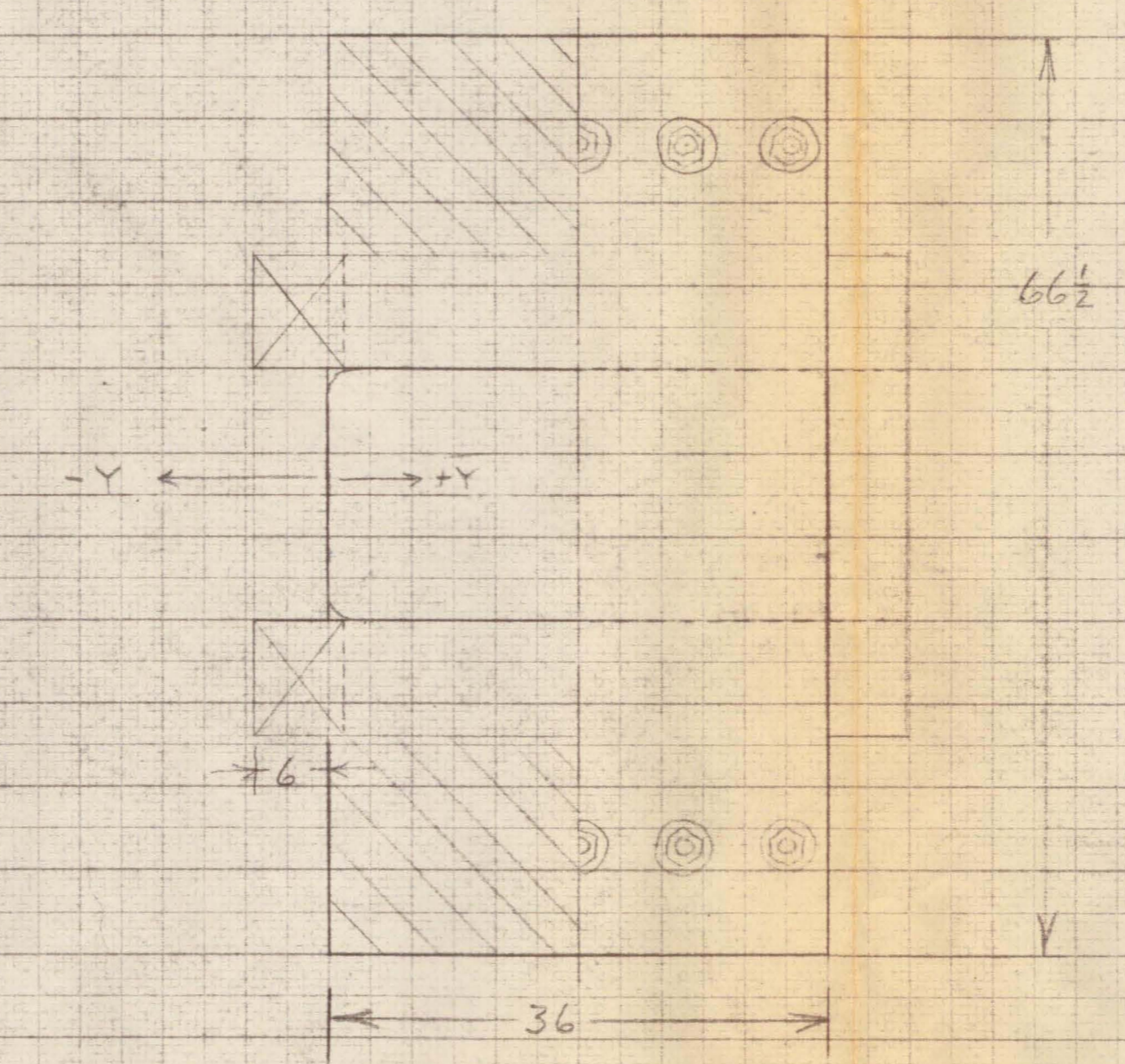
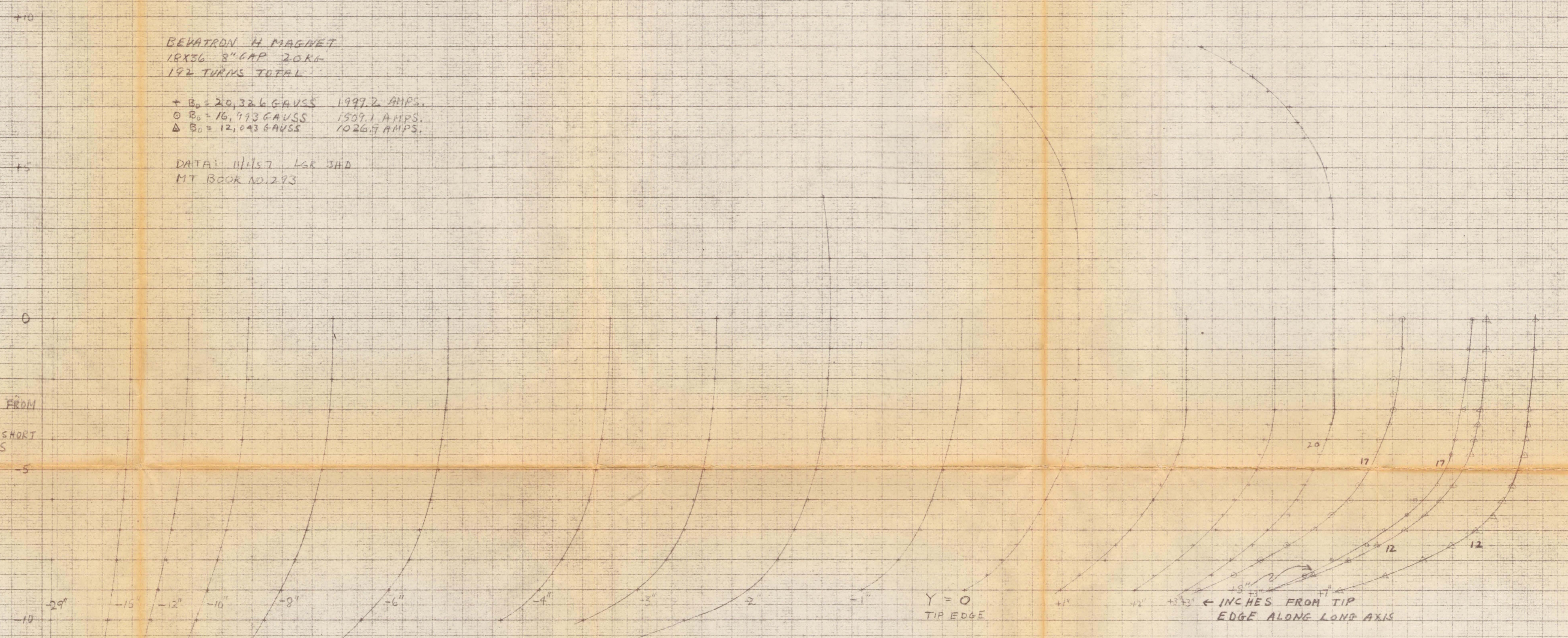


BEVATRON H MAGNET
 18X36 8" GAP 20K
 192 TURNS TOTAL

+ $B_0 = 20,326$ GAUSS 1997.2 AMPS.
 0 $B_0 = 16,993$ GAUSS 1597.1 AMPS.
 Δ $B_0 = 12,043$ GAUSS 1026.7 AMPS.

DATA: 11/11/57 LGR SAD
 MT BOOK NO. 293

X
 INCHES FROM
 ↓
 ALONG SHORT
 AXIS



B MID PLANE FLUX DENSITY
 % OF CENTRAL FIELD