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GEOLOGIC, GEOPHYSICAL
GEOCHEMICAL
INVESTIGATION ON THE
SUN - TIE CLAIM GROUPS
Claim Sheet - 105-K-~~6~~3

F-6

By: W.J. Roberts Sept.1970

015470

Box 6

GEOLOGIC, GEOPHYSICAL, GEOCHEMICAL

INVESTIGATION OF THE

SUN- TIE CLAIMS GROUPS

ANVIL PROJECT

ANVIL DISTRICT, YUKON TERRITORY

Longitude: 133° 15'W
Latitude : 62° 16'N

Claim Sheet - 105-K-6

By:

Wayne J. Roberts

DYNASTY EXPLORATIONS LIMITED

September 10 - September 30, 1970

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TELEPHONE 685-4331

DYNASTY EXPLORATIONS LIMITED

330 MARINE BUILDING
355 BURRARD STREET
VANCOUVER 1, B.C.

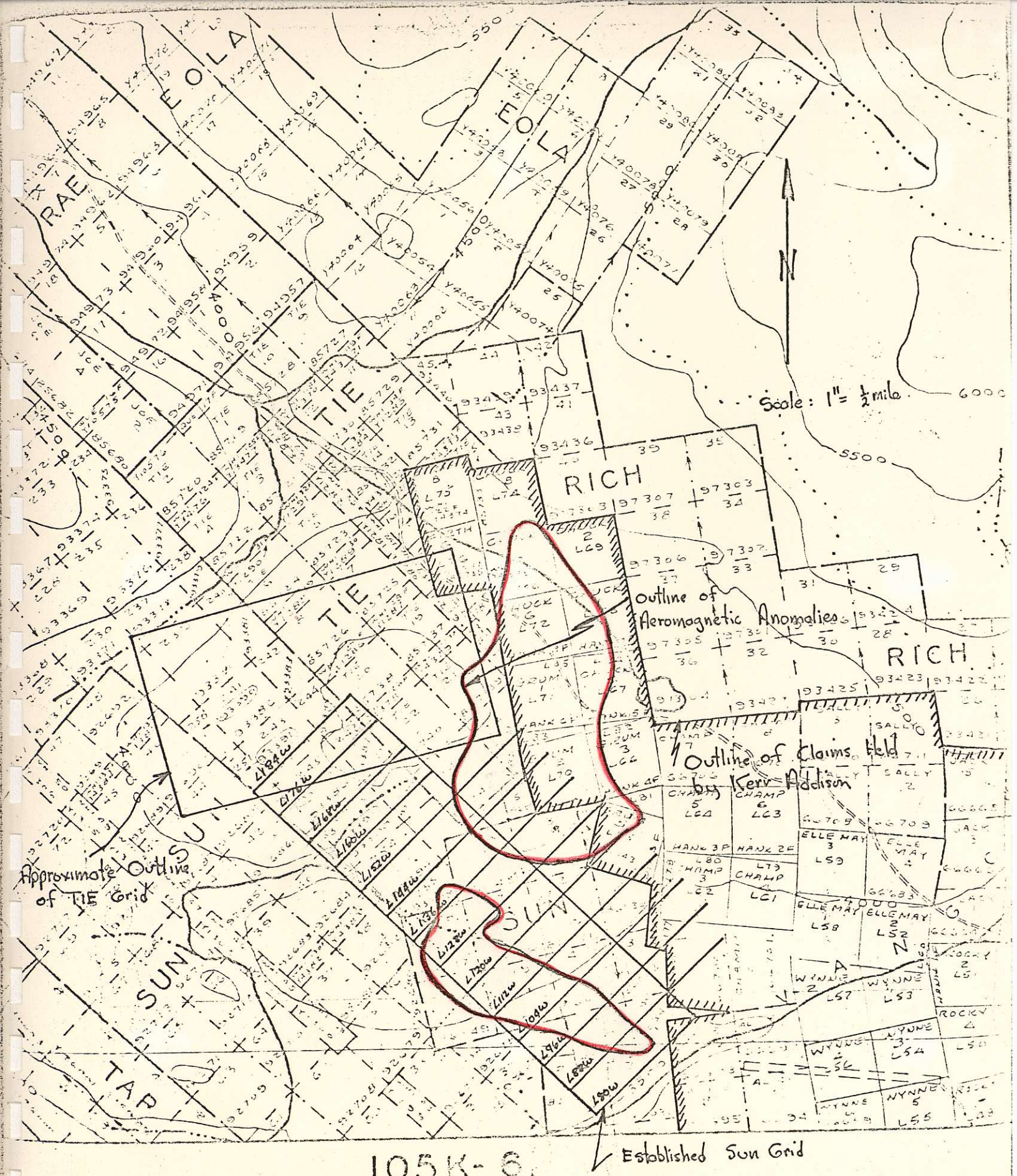
GEOLOGIC, GEOPHYSICAL, GEOCHEMICAL INVESTIGATION OF THE SUN - TIE CLAIM GROUPS

INTRODUCTION

Dynasty Explorations Limited under an agreement with Anvil Mining Corporation, undertook geological, geochemical and geophysical surveys to outline and delineate airborne magnetometer and electromagnetic anomalies located on the Sun and Tie Claim Groups. The Sun and Tie Claims adjoin the Kerr Addison Vangorda Ore deposit to the east as well as reported massive sulphides occuring on the Grum #5, Champ #5 and Champ #3 mineral claims to the north. This mineralization is partially coincident with a large airborne magnetic anomaly extending southward into the Sun - Tie Claims. Possible extentions of the "Champ" massive sulphides may be represented by this feature. A ground magnetometer and gravity survey as well as soil sampling were selected for developing a possible drill target.

LOCATION AND ACCESS

The Sun - Tie Claims are located on the east side of the Pelly River in the Anvil Range, approximately 5 miles south of Mt.


Scale: 1" = ½ mile
N
Outline of Aeromagnetic Anomalies
Outline of Claims Held by Kerr Addison
Approximate Outline of TIE Grid
Established Sun Grid
EOLA
RAE
TIE
RICH
SUN
TAP
105K-6

Mye and 8 miles southeast of the Anvil Mine.

The Blind Creek Road passes through the northern border of the grid area and provides good access. This road branches off the Anvil-Faro Road approximately 6 miles from Faro. Rough Bombardier and Cat trails exist in the grid area, the locations of which are noted on the accompanying Geology map.

REGIONAL GEOLOGY

The Sun - Tie Claims lie within an elongate structural feature of approximately 40 miles length and less than 15 miles width, parallel to the northeast side of the Tintina Trench. The rock units are predominantly Paleozoic meta-sediments, and meta volcanics that appear to be contained in an arch-like, doubly plunging, overturned anticline around the Anvil batholith. Deformation of metasediments (Cambrian?), is intense with many observable separate phases of foliation. Northeast fracturing is prominent with directions paralleling the Tintina fault. Phyllites and quartz-biotite schists of probable Cambrian age appear to be the host rocks for economic sulphide mineralization throughout the belt.

GEOCHEMICAL SURVEYS

a) Survey Techniques

The entire grid area was soil sampled at 200 foot stations on 800 foot spaced picket lines. All samples

were taken from the B-horizon which generally consisted of a pale green to rusty clay textured soil. All samples were placed in Kraft paper bags and subsequently sent to Atlas Explorations Laboratory in Whitehorse for analysis.

b) Analytical Methods

All soil samples were dried and sieved to - 80 mesh and the fines were retained for analysis. 0.5 grams of each sample was digested in aqua regia, diluted, and allowed to settle. Concentrations of Copper, Lead, and Zinc in solution was determined with a Perkin-Elmer 303AA spectrophotometer. The analytical technique was controlled by selected standarized samples.

c) Presentation of Data

All analytical results were plotted on a grid plan to scale 1 inch equals 400 feet, then contoured for individual element interpretation.

d) Interpretation of Results

Copper values generally range between 5 and 40 ppm with few observed in higher ranges. Concentrations above 40 ppm are above threshold. The most prominent copper anomalous area exists between lines 120W and 104W from 72N to 78N with a peak value of 300 ppm. The 'high' is located in a drainage catchment basin, and its representative value is questionable. All other anomalous areas are very limited in extent.

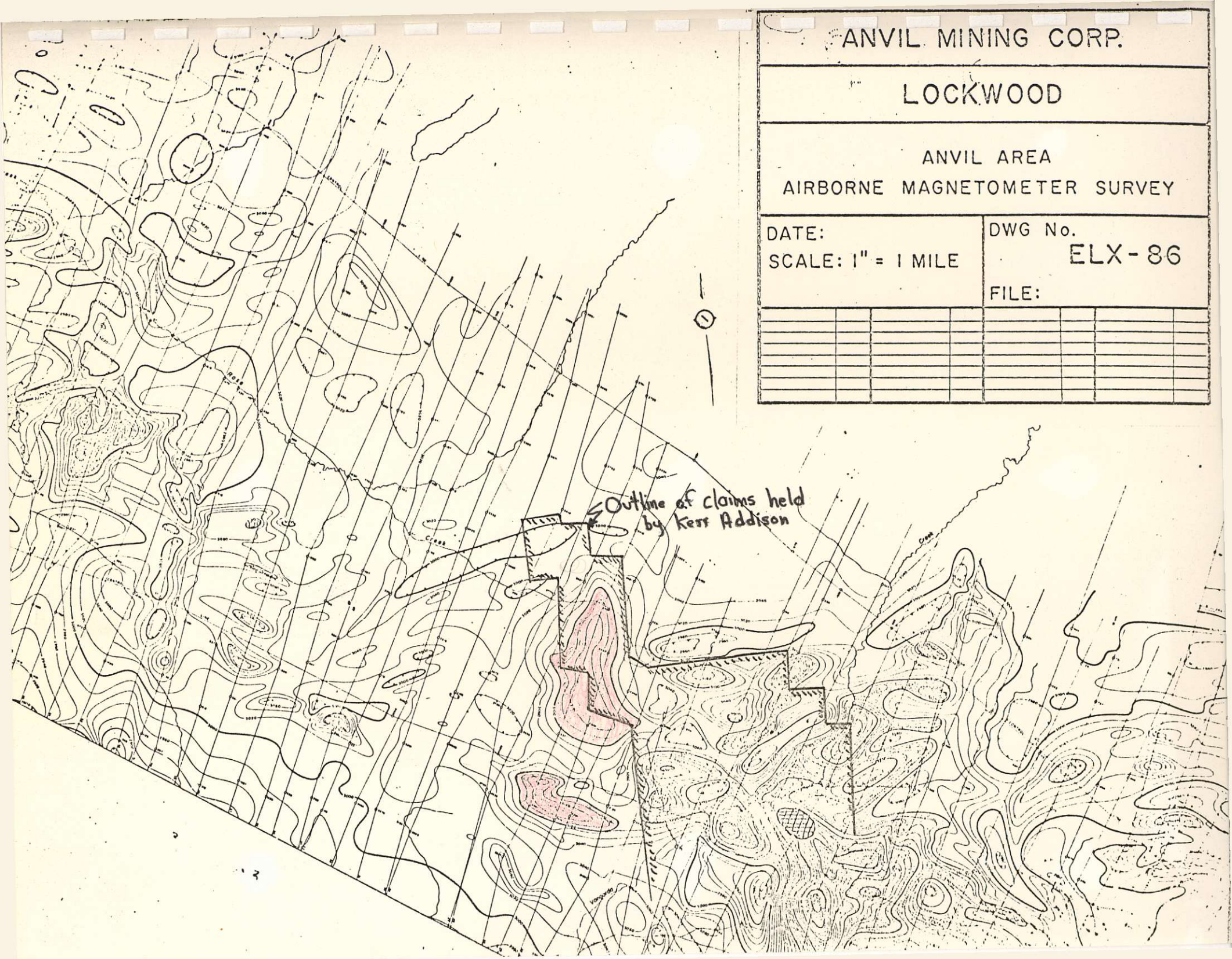
Values obtained for lead content generally range between 5 and 80 ppm with a maximum value of 380 ppm. Concentrations above 80 ppm lead should be considered anomalous. As can be observed on the accompanying Geochemical Contour Map for lead, a large anomaly exists over the northeastern to central portion of the grid, extending from line 80W westward to line 152W. This anomaly is very linear and crosses both topographic as well as geological contacts. There is a general decrease of values to the west and its strike length is parallel to known glacial movements. Most of the anomaly may represent a dispersion train from a mineralized source in the northeastern portion of the grid. Massive sulphides were reported by Kerr Addison on claims Grum #5 and Bix #2.

Zinc values generally range between 10 and 80 ppm, the highest value obtained was 420 ppm. The large anomalous area in zinc is coincident with the elongate lead anomaly and appears to be largely due to glacial dispersion of zinc from a source to the east. Smaller, sporadically located zinc anomalies, some coincident with lead anomalies, remain unexplained.

GEOPHYSICAL SURVEYS

a) Ground Magnetometer Survey

The magnetic survey was conducted over the grid area to outline the southern portion of a large low intensity aeromagnetic anomaly (obtained from a previous airborne survey conducted by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LOCKWOOD
ANVIL AREA
AIRBORNE MAGNETOMETER SURVEY
DATE:
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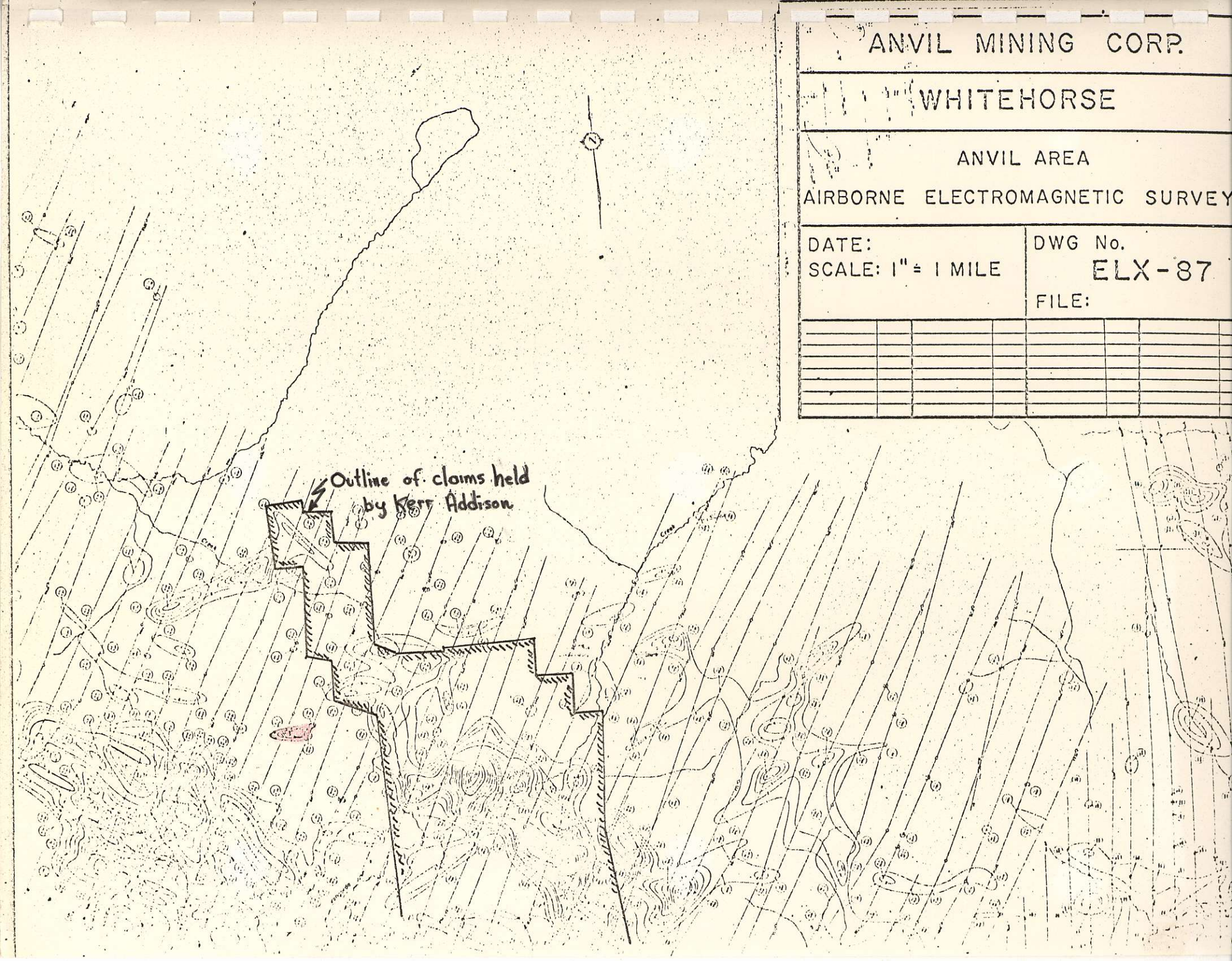
DWG No.
ELX-86
FILE:
Outline of claims held by Kerr Addison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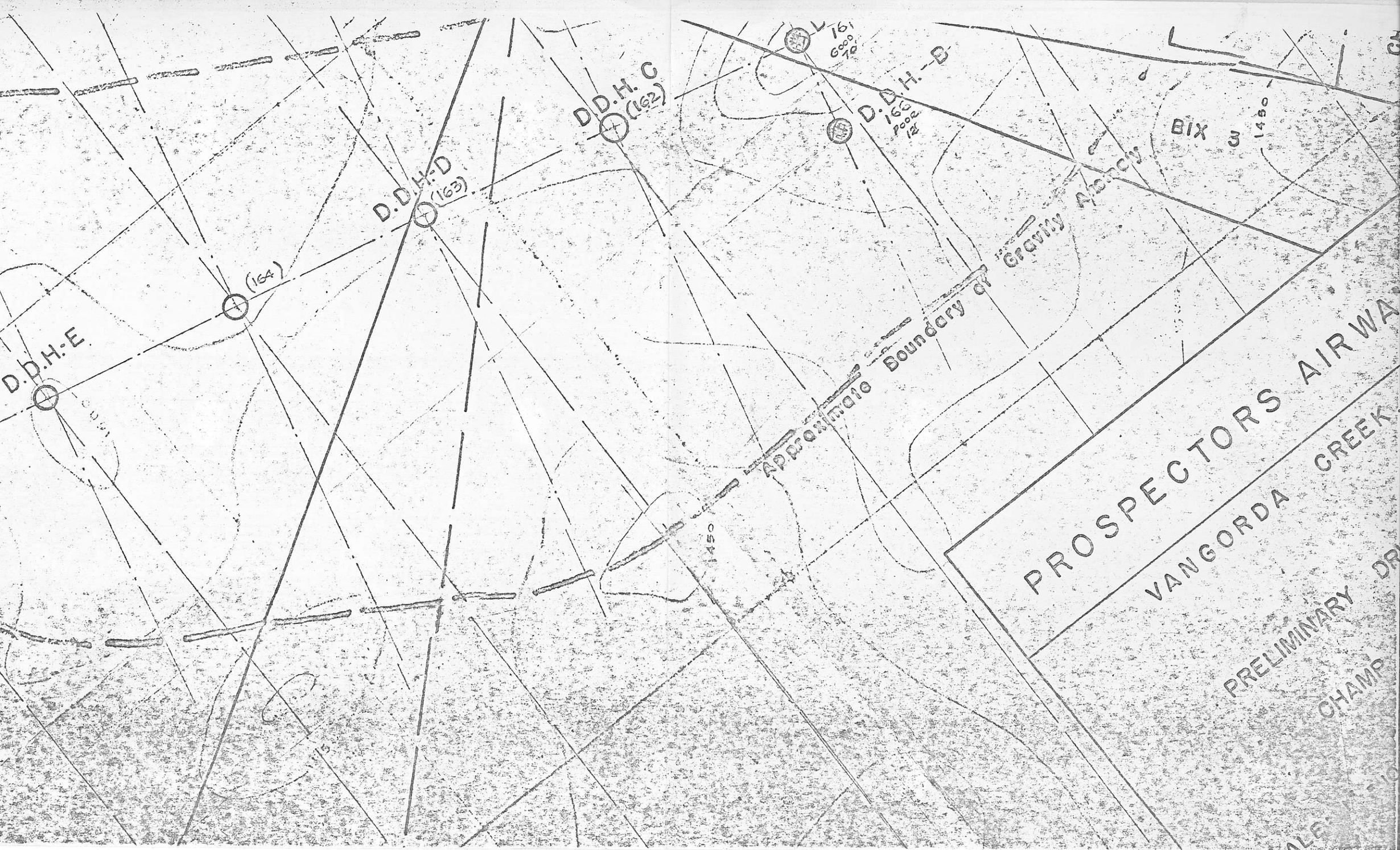
WHITEHORSE
ANVIL AREA
AIRBORNE ELECTROMAGNETIC SURVEY
DATE:
SCALE: 1" = 1 MILE
DWG No.
ELX-87
FILE:
Outline of claims held by Kerr Addison

Anvil.) The magnetic survey was carried out over 800 foot spaced cut lines, readings were taken every 100 feet. All lines were established by compass and chain methods and were cut approximately 2 to 3 feet wide. Grid control was checked by survey of base and tie lines during the gravity survey.

A sharpe MF-1 magnetometer was used, the instrument is hand held and measures the vertical magnetic component by use of an oil-dampered fluxgate which automatically levels itself in the vertical direction. Gamma values can be directly read from the instrument. Prior to the actual magnetometer survey, readings were taken along the base lines at cross line intersection points. These stations were looped and re-read every hour as a means of controlling drift and diurnal variations. With established base stations a rapid and precise check was kept on magnetic variations. Thus the entire survey was kept on a relative basis during day to day operation. All cross lines were read and re-checked at base stations within every hour as a means of checking magnetic variations.

Magnetic results were corrected for both duirnal and drift then plotted on a grid plan with a scale of 400 feet to 1 inch. The data was then profiled with the resulting map included in this report.

There appears to be very little magnetic relief throughout the grid area with a maximum range of roughly 300 gammas. A comparison of surface geology and magnetic results, shows


D.D.H.-E
(164)
D.D.H.-D
(163)
D.D.H. C
(162)
D.D.H.-B
161
GOOD
16'
160
POOR
12'
BIX 3
1450
Approximate Boundary of Gravity Anomaly
1450
PROSPECTORS AIRWA
VANGORDA CREEK
PRELIMINARY
CHAMP

higher magnetic values associated with greenstones. One small outcrop of greenstone was noted on line 124W, 82N, it is not of enough extent to explain the relatively high magnetic area between lines 136W and 108W from stations 72N to 85N. The small magentic high at L 160W, 50N is due to a knob of greenstone. A magnetic low is coincident with a geochemical anomaly (Pb.Zn) in the northeastern corner of the grid.

b) Gravity Survey

GEOLOGY

The grid area appears to be underlain by phyllites and included greenstone lenses, all of probable Cambrian age. The phyllites, mapped as Unit 2, consist of a highly foliated medium grey sericitic type varying to a dark grey to black graphitic phyllite. Outcrop is scarce due to erodiability as compared with the more resistant greenstones. General bedding has strikes of 130 to 170 degrees with gentle dips of less than 30 degrees to the southwest. Major foliations were noted striking 290 degrees and generally plunging less than 20 degrees to the southwest.

Much of the central portion of the grid is underlain by a large elongate body of dark to medium green, foliated to massive chloritic tuffaceous greenstone. Another body has been noted in the southeastern corner of the grid. The greenstone is elongate and parallels the major foliation planes of approximately 300 degrees strike. Gentle dips of less than 30 degrees to the southwest are common along most foliations. Small folds had similar orientations with gentle plunges to the west. In massive material jointing is predominant in a northeast orientation. A small lens of partially dolimitized massive medium grey limestone on lines 128W to 136W at 52N is likely an inclusion in the greenstone unit. A small interval of impure quartzite was also mapped as an interbed within the greenstone body. A small intrusive body formerly mapped to the east of the grid was not observed.

ECONOMIC GEOLOGY

No visible mineralization or pervasive alteration was noted in outcrop within the Sun-Tie grid area. A single boulder containing massive sulphides was found near L 104W, 60N.

CONCLUSIONS AND RECOMMENDATIONS

Present results from geological, geophysical and geochemical surveys have not yet outlined a possible drilling target. A valid decision can only be made when the final gravity survey map is received. An extensive geochemical anomalous zone exists but is likely due to glacial dispersion of sulphides from the Champ claims. It is thought that deeper soil sampling techniques such as rotary or percussion drilling would be useful. Subtle magnetic anomalies appear to be caused by underlying greenstones rather than magnetic sulphides. Higher magnetics are not coincident with anomalous geochemistry.
It is recommended that in the absence of final gravity results that any further assessment of the property consist of soil profiles taken within the geochemical anomalous zone to determine if glacial dispersion has occured.

Respectfully submitted,

Wayne J. Roberts
Geologist

September, 1970

SUN CLAIMS

The expenditures on the Sun Claim Block totalled $1,675.00. This was comprised of five working days, two stand-by days and a prorated $125.00 move in expense.

BOUGUER MAP

The Bouguer Map displays an overall southwest rise in gravity intensity. The general rise is a gentle gradient of two and one-half milligals across the entire prospect. The outstanding feature on this map is a major gravity low present at the north end of Lines 161, 168 and 176. This mass deficient area is a shallow sourced gravity negative having a total magnitude of over two milligals.

RESIDUAL MAP

In the area of the Bouguer gravity low we find a residual gravity negative anomaly having a magnitude of two milligals. This negative anomaly appears as a localized "depression" in the native rock which has probably been filled with gravel and surface till. Scattered over the remainder of the Sun Block are a series of gravity highs having a maximum magnitude of 0.60 milligals. The anomaly situated on Lines 112 and 104 has the greatest magnitude and has the deepest source. In order to equate this anomaly with a lead-zinc-sulphide body we would wish to see a greater magnitude to this feature. The anomaly has good areal extent but the density contrast which gives rise to the anomaly is not great enough to indicate the presence of a massive sulphide body. There is however, always the possibility that the causative mass may be deseminated, and not a concentrated body. Depth-to-source of this body is 600 to 800 feet.

The other anomaly of interest is a positive lying immediately northwest of the large gravity negative previously discussed. This positive feature is caused by a fairly shallow dense mass. Again, we do not see an anomaly as large as we would wish, however, part of the anomaly may be masked to the adjacent negative.

Both of these anomalies are worthy of further evaluation.

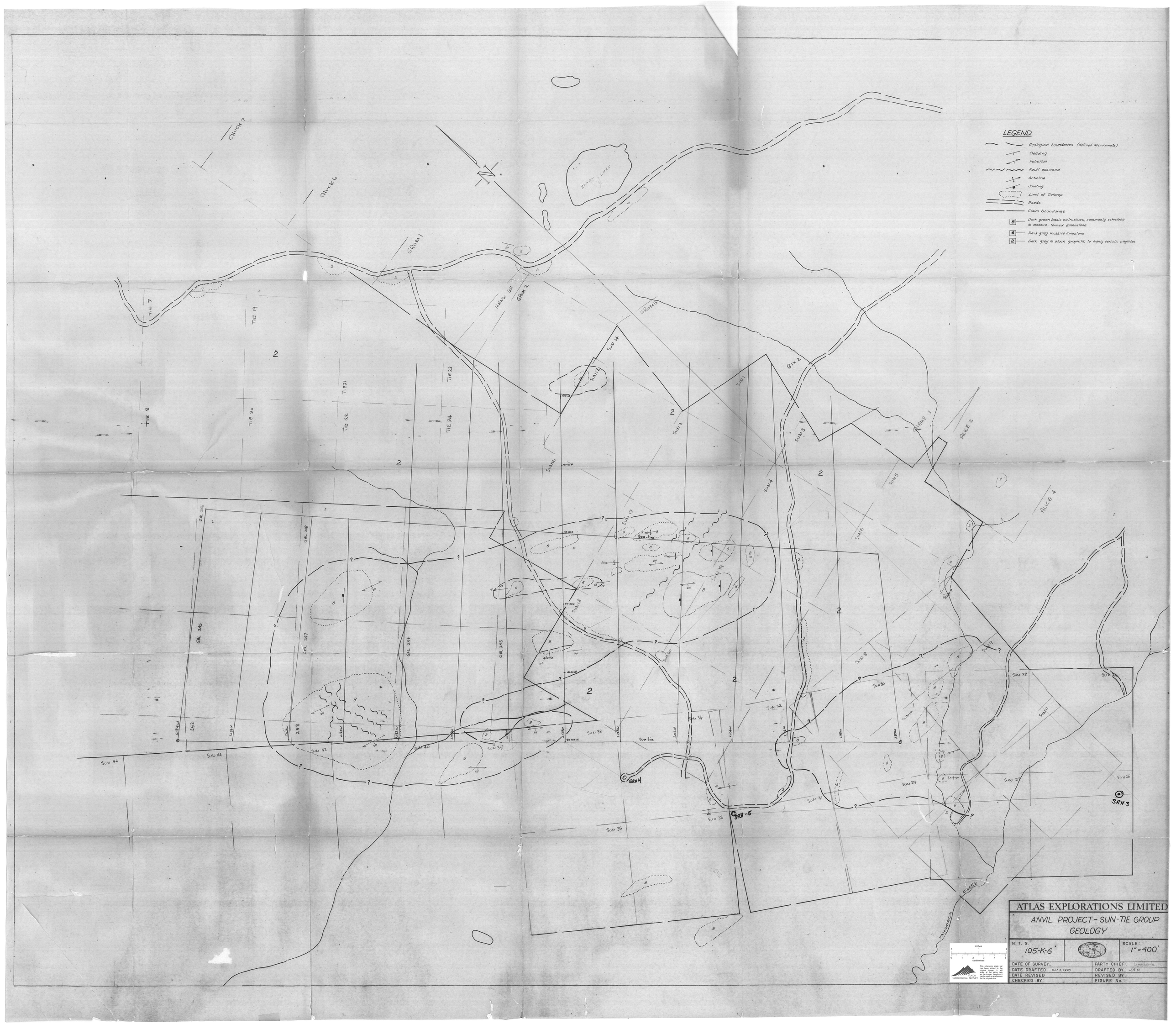
Respectfully submitted by:

OVERLAND EXPLORATION
SERVICES (1969) LTD.

W.T. SALT

DAVID K.Y.CHEN, Prof. Geoph.

WTS/jp


LEGEND
Geological boundaries (defined approximate)
Bedding
Foliation
Fault assumed
Anticline
Jointing
Limit of Outcrop
Roads
Claim boundaries
8 Dark green basic extrusives, commonly schistose to massive, termed greenstone.
6 Dark grey massive limestone.
2 Dark grey to black graphitic to highly sericitic phyllites
CHUCK 7
CHUCK 6
GRUM 1
GRUM 2
GRUM 5
HANK 65
TIE 7
TIE 8
TIE 19
TIE 20
TIE 21
TIE 22
TIE 23
TIE 24
SUN 1
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SUN 46
GIX 2
GIX 1
RAMP 1
ALICE 2
ALICE 4
GBL 246
GBL 248
GBL 245
GBL 247
GBL 254
GBL 255
252
253
Base Line
SRH 4
SRH 5
SRH 3
VANGORDA CREEK
ATLAS EXPLORATIONS LIMITED
ANVIL PROJECT - SUN-TIE GROUP
GEOLOGY
N. T. S.: 105-K-6
SCALE: 1" = 400'
DATE OF SURVEY:
PARTY CHIEF:
DATE DRAFTED: Oct 3, 1970
DRAFTED BY: J.A.D.
DATE REVISED
REVISED BY:
CHECKED BY:
FIGURE No.:
YUKON GEOLOGICAL SURVEY
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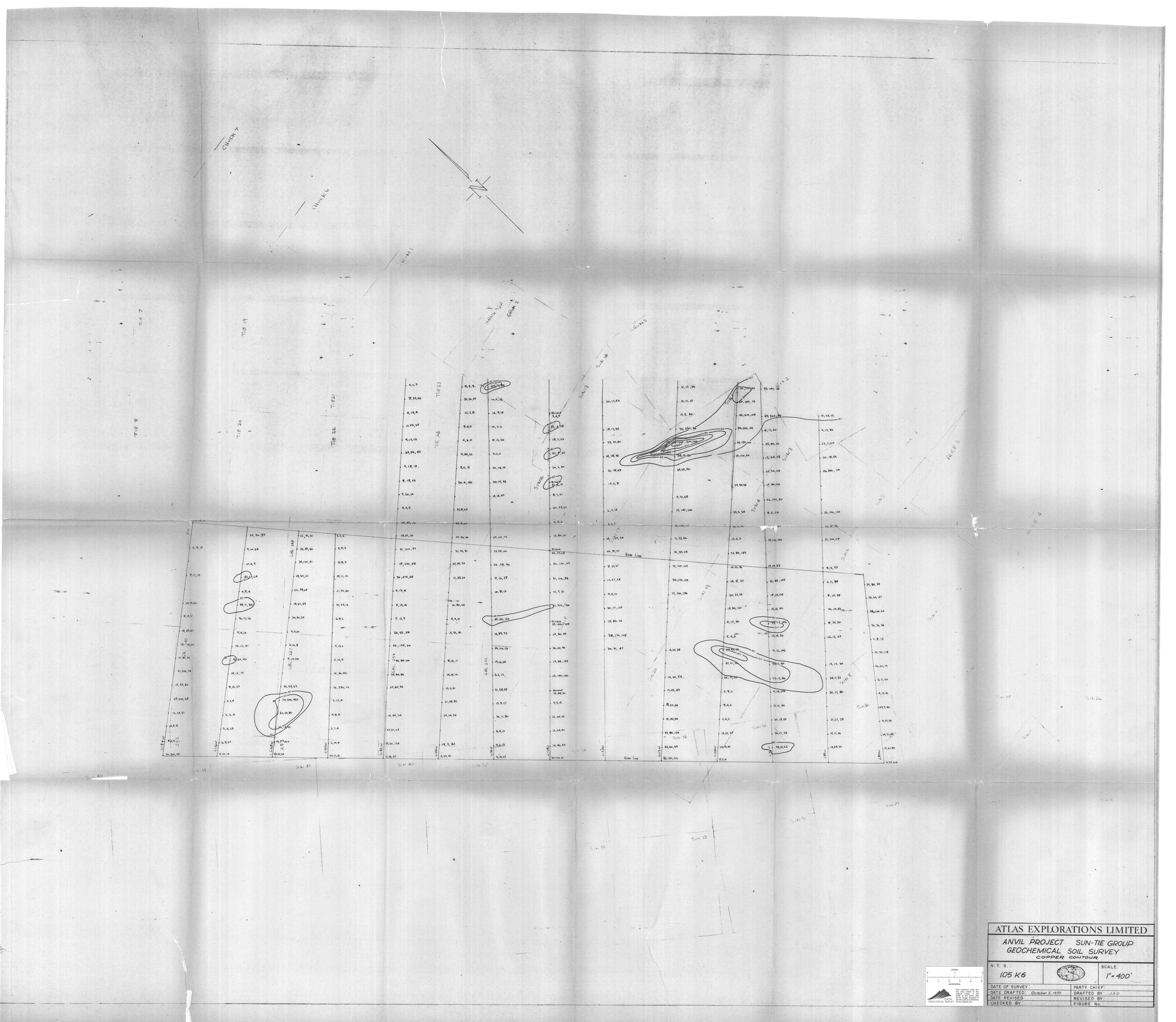
CHUCK 7
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TIE 7
TIE 8
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TIE 21
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GRID 5
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SUN 34
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SUN 36
SUN 38
SUN 39
SUN 40
SUN 42
SUN 46
GRID 2
GRID 3
GRID 4
GRID 5
GRID 6
GRID 7
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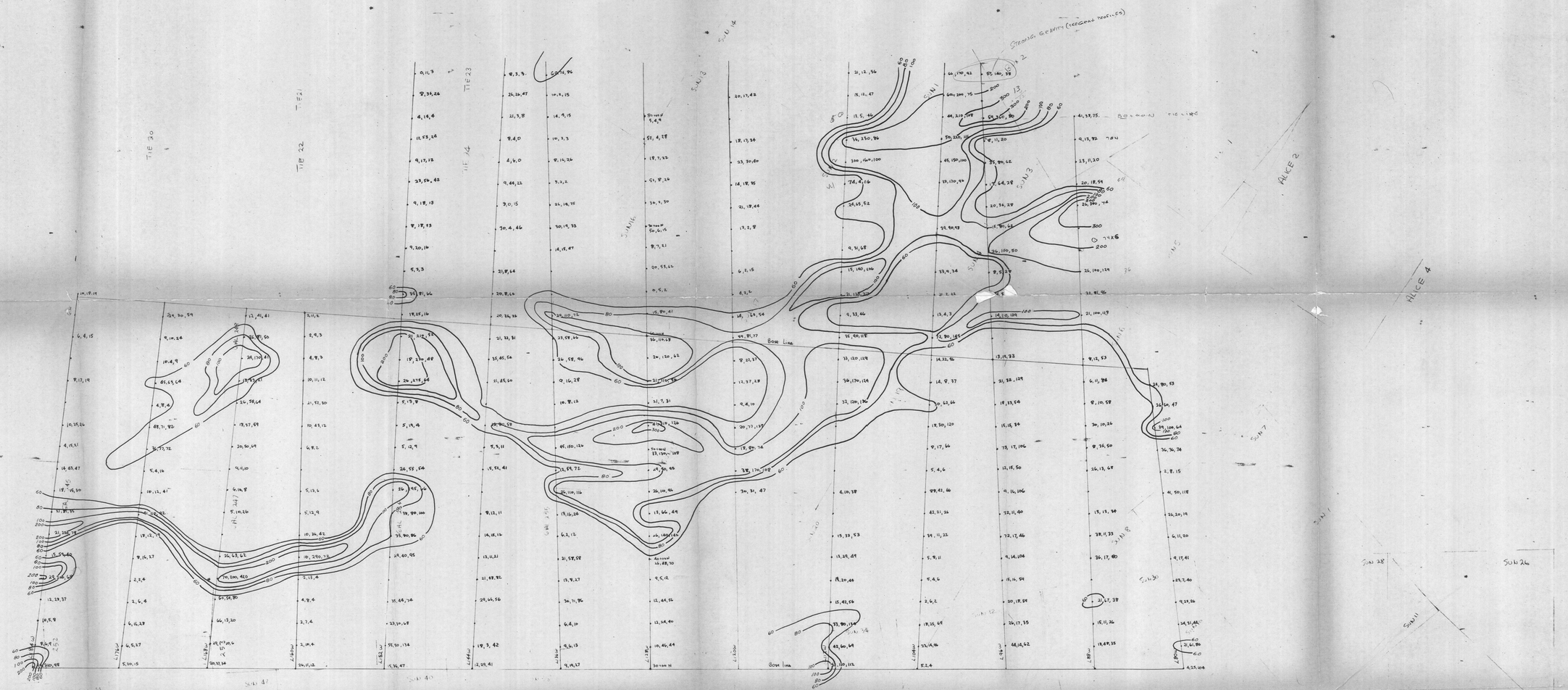

ATLAS EXPLORATIONS LIMITED

ANVIL PROJECT SUN-TIE GROUP
GEOCHEMICAL SOIL SURVEY
LEAD CONTOUR

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DATE DRAFTED: October 4, 1970		DRAFTED BY: J.A.D.
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YUKON GEOLOGICAL SURVEY

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ANVIL PROJECT SUN-TIE GROUP
GEOCHEMICAL SOIL SURVEY
ZINC CONTOUR

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DATE DRAFTED: October 3, 1970		DRAFTED BY: J. A. D.
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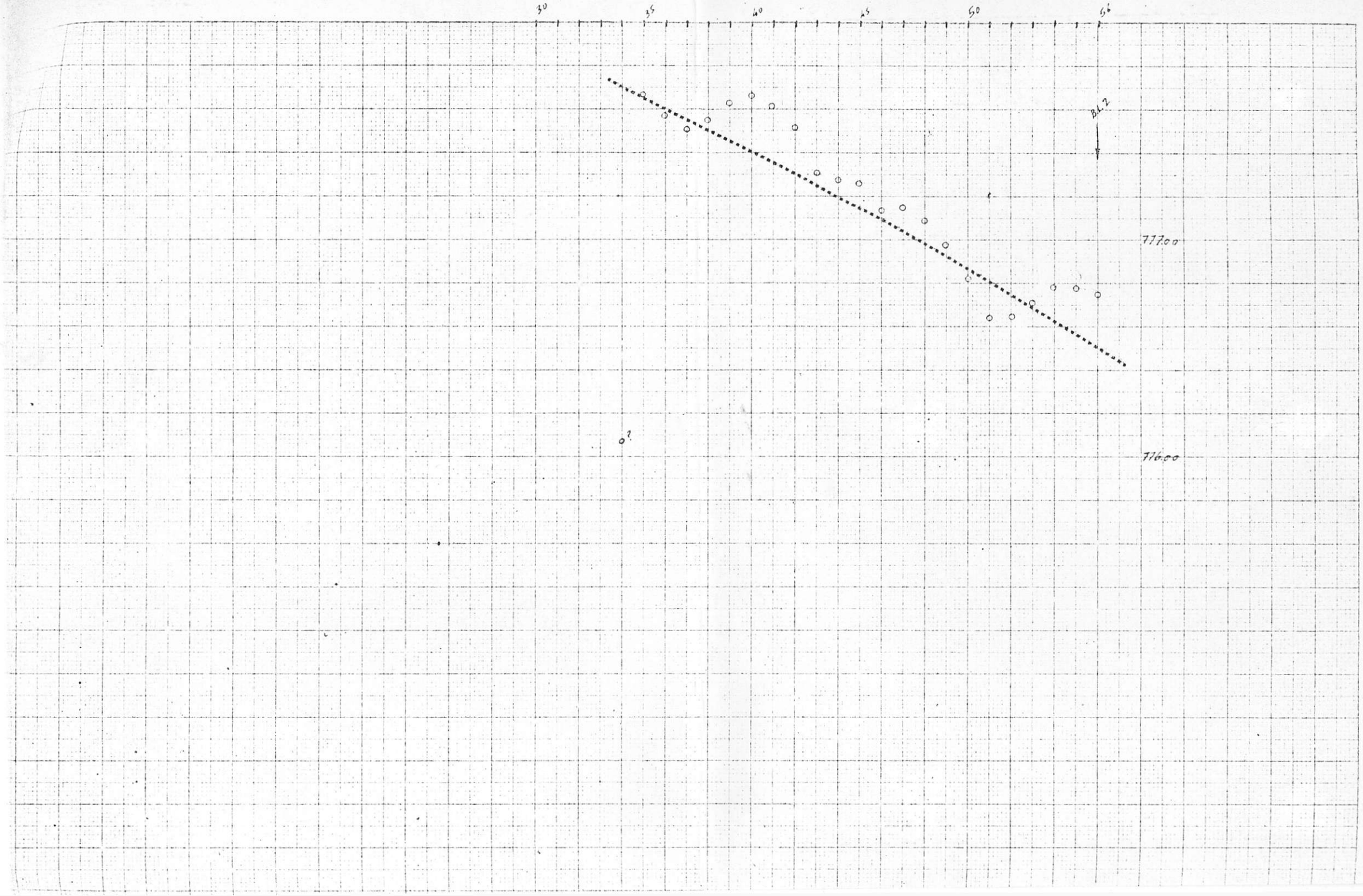

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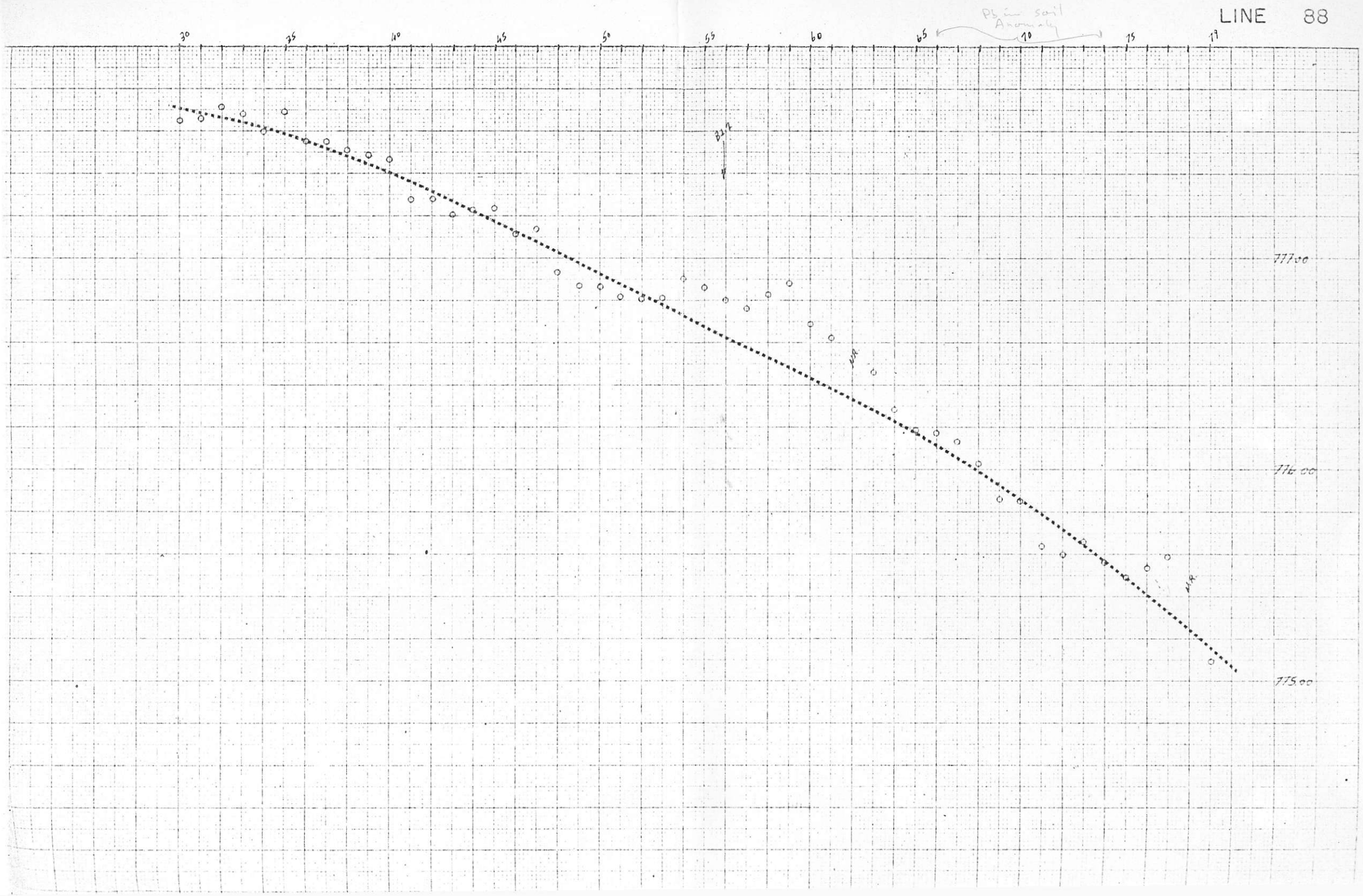
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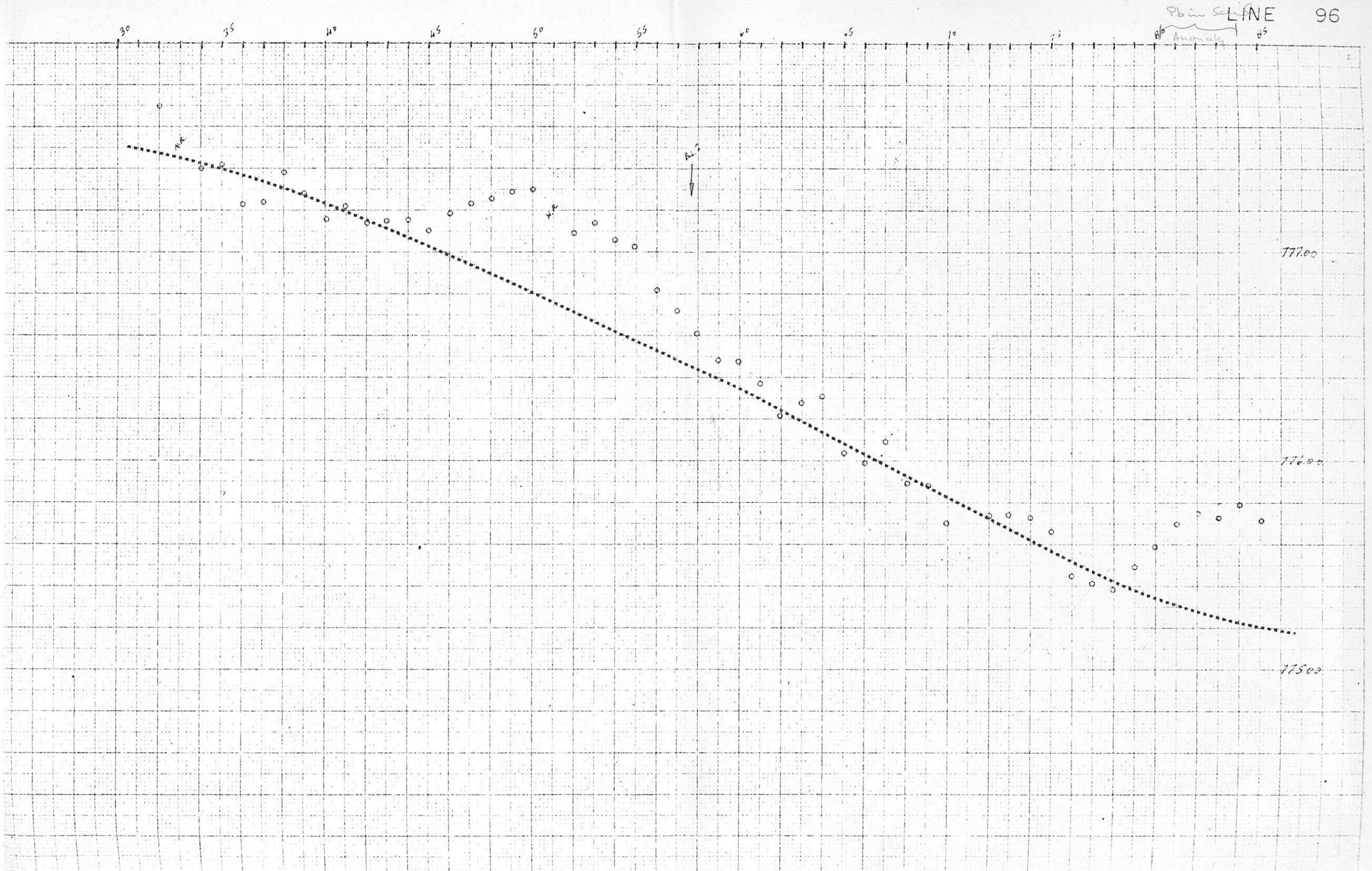
LINE 96
Pb in Sc
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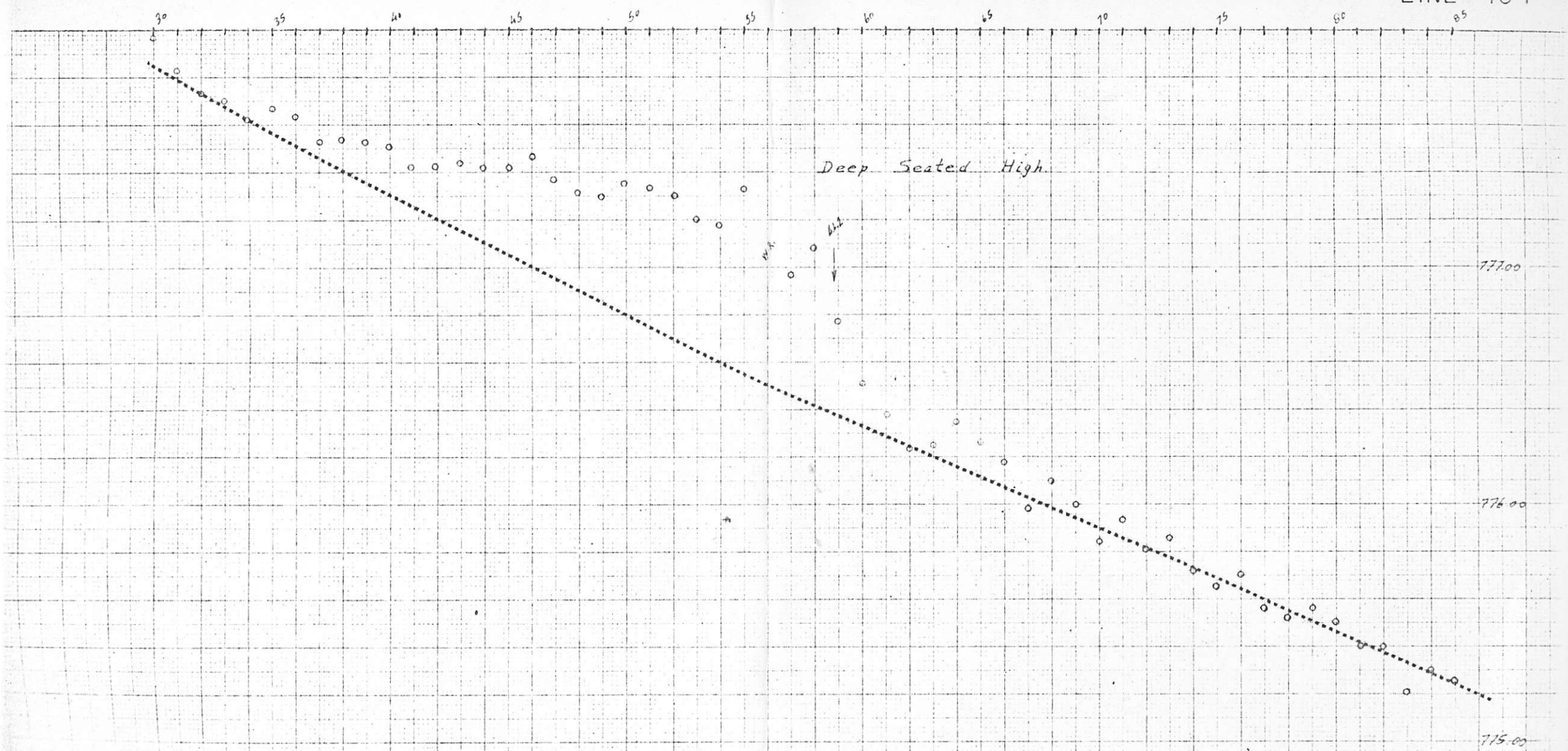
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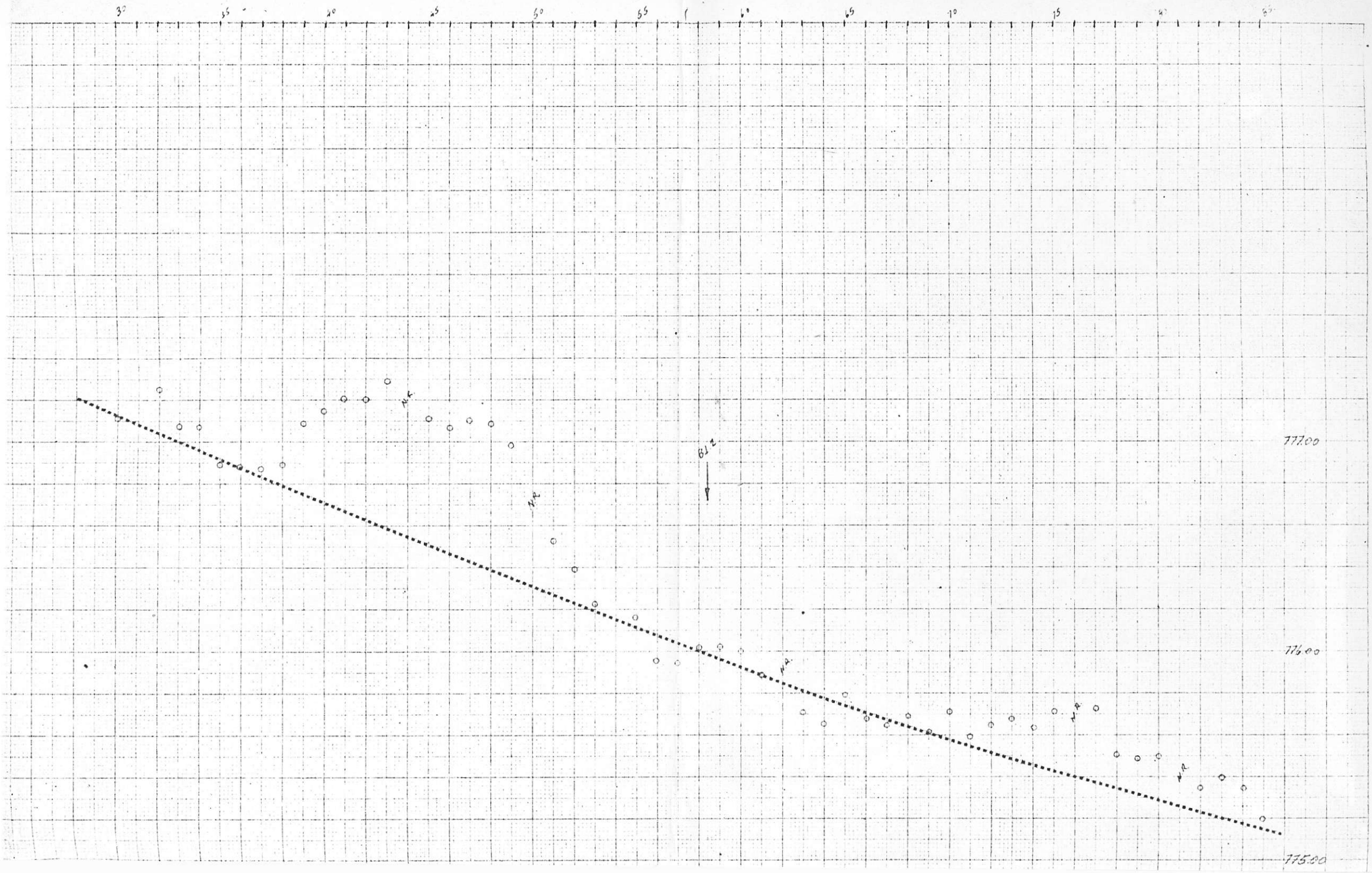
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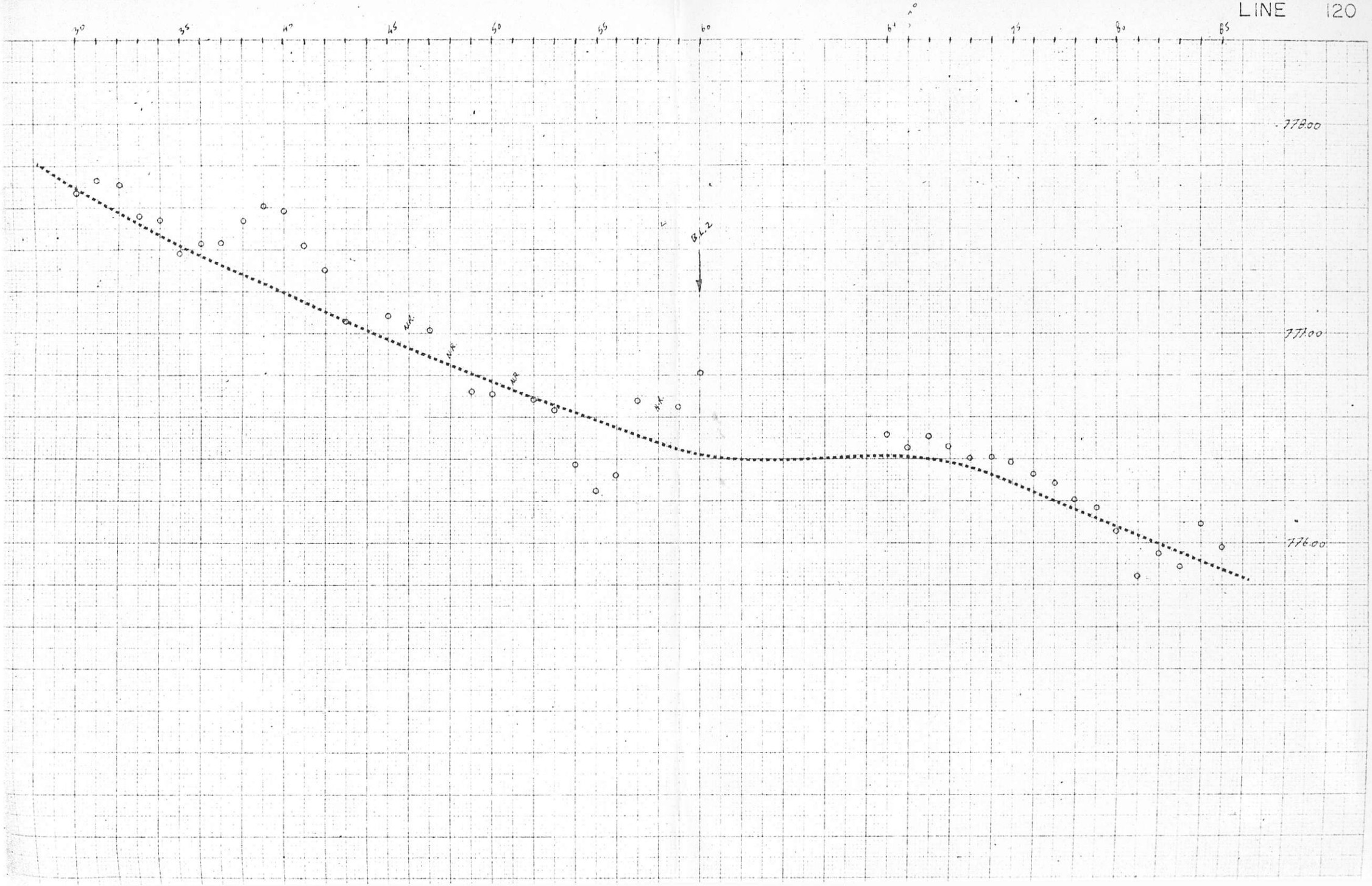
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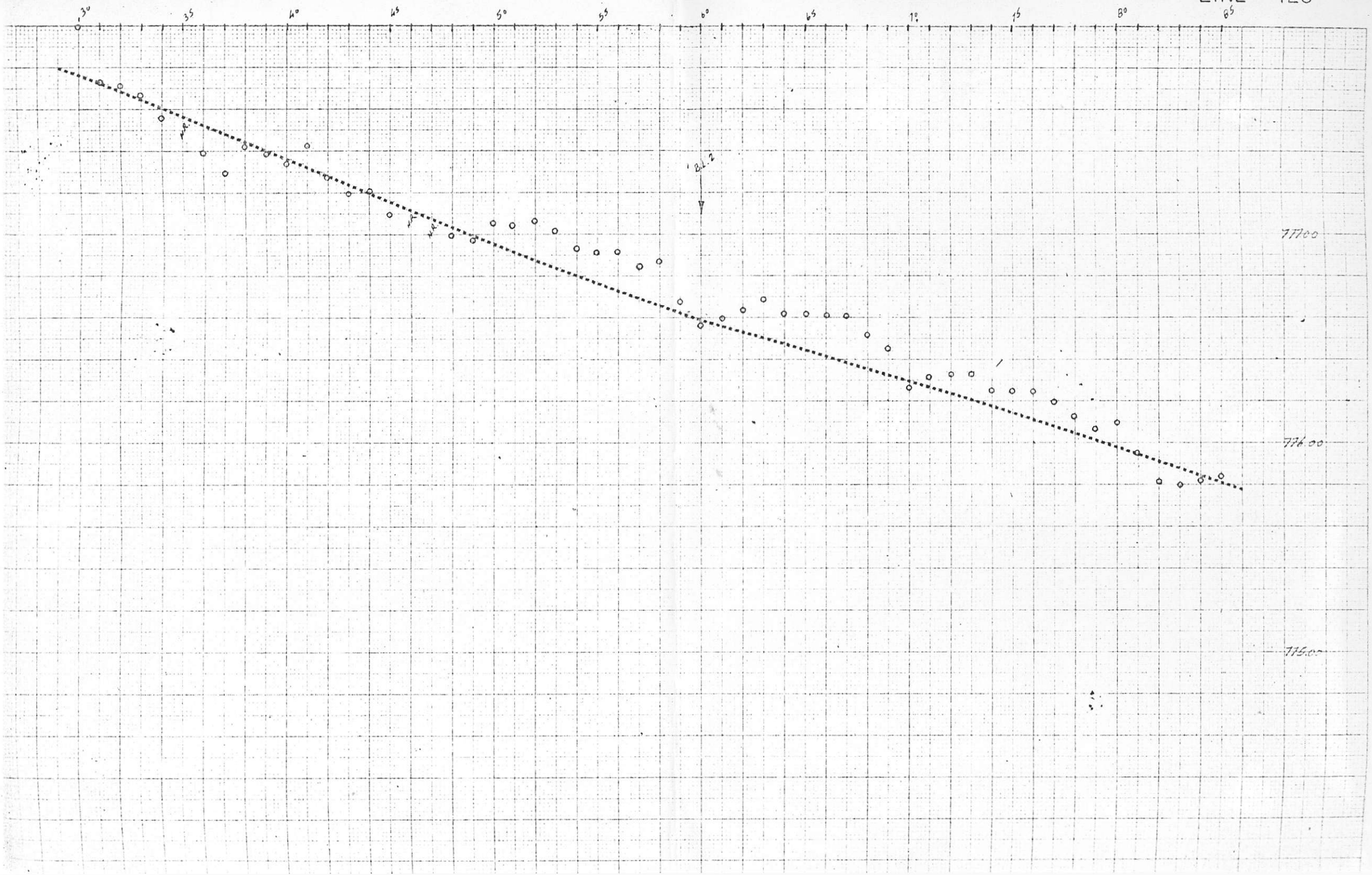

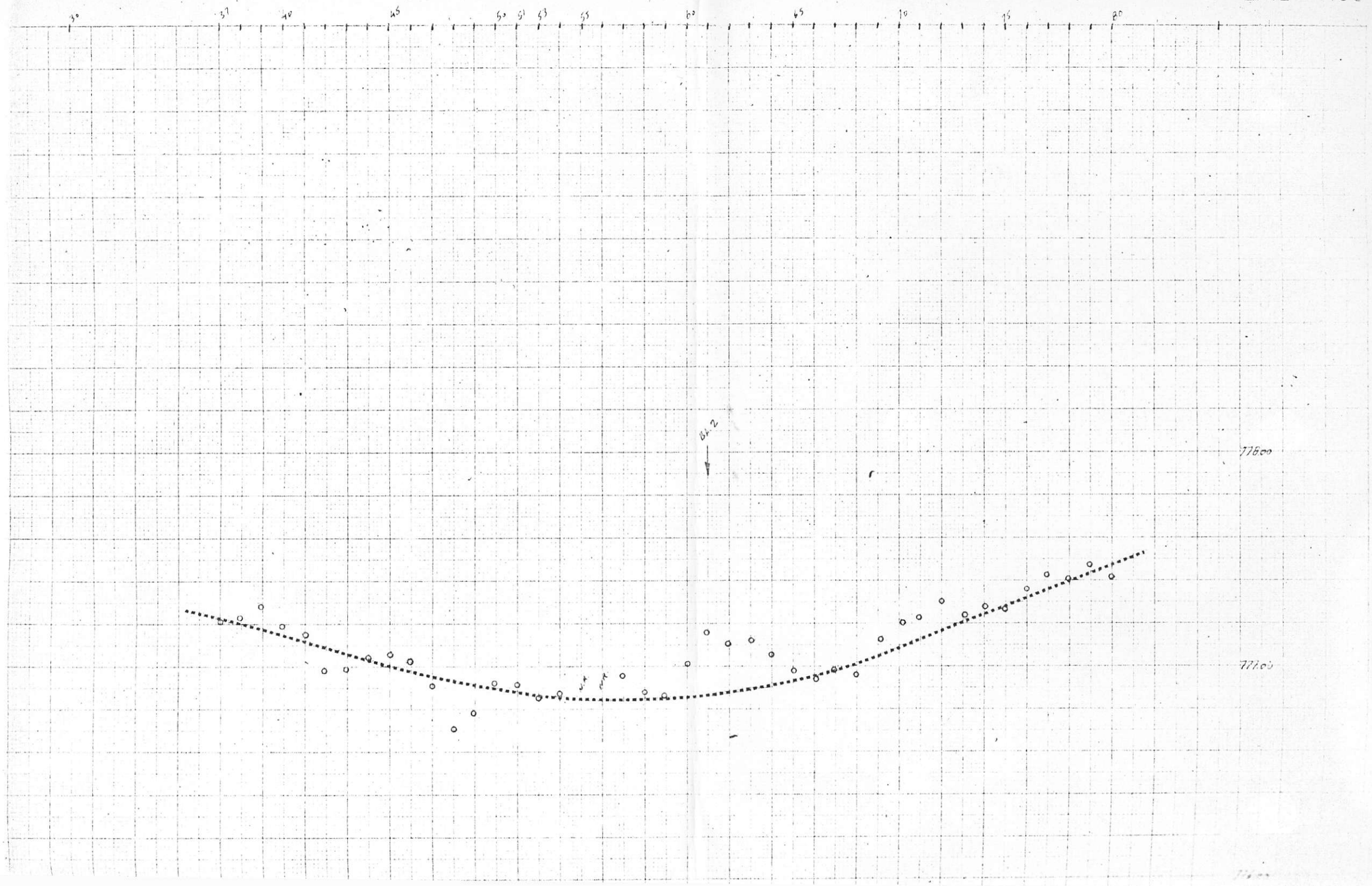
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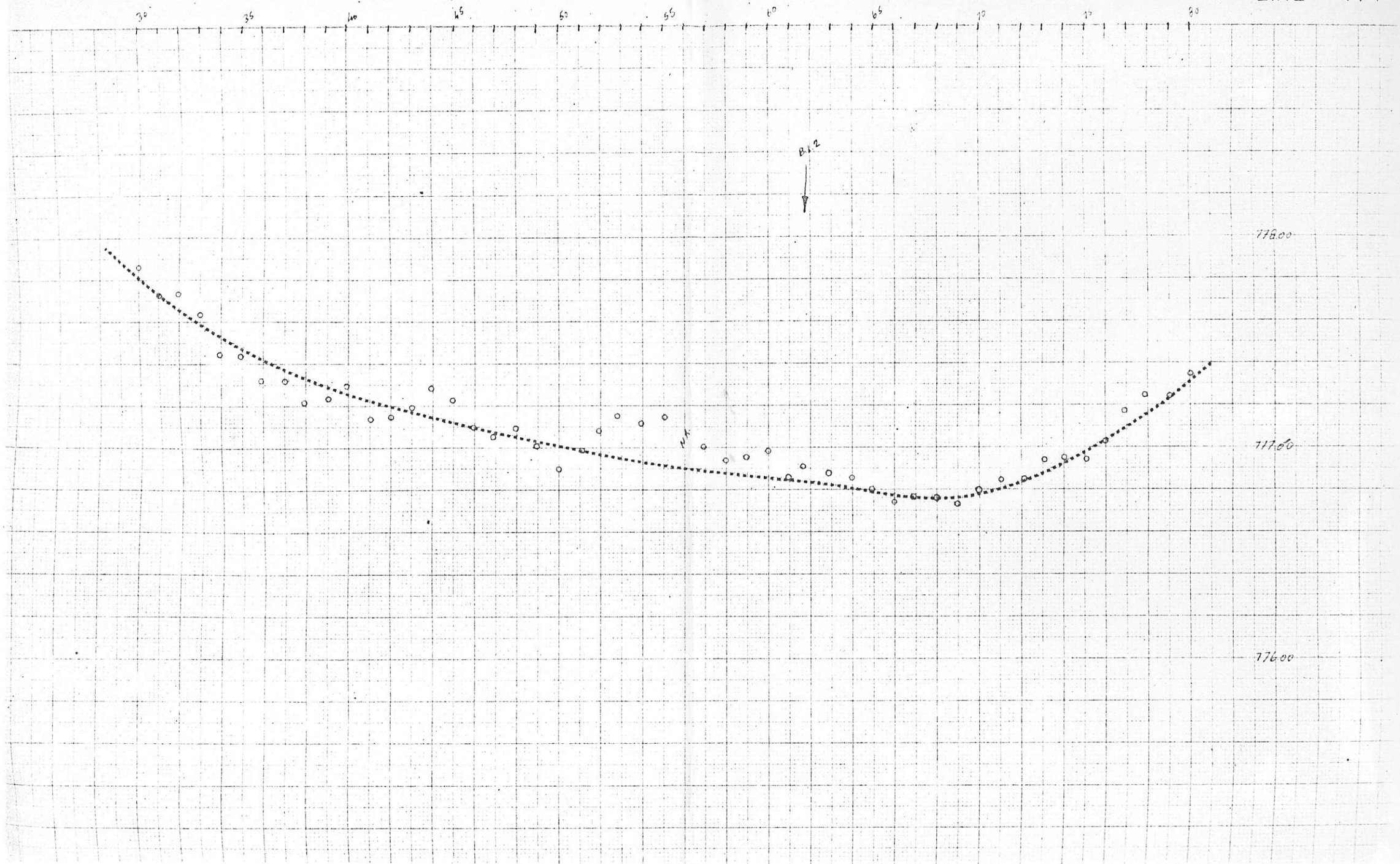

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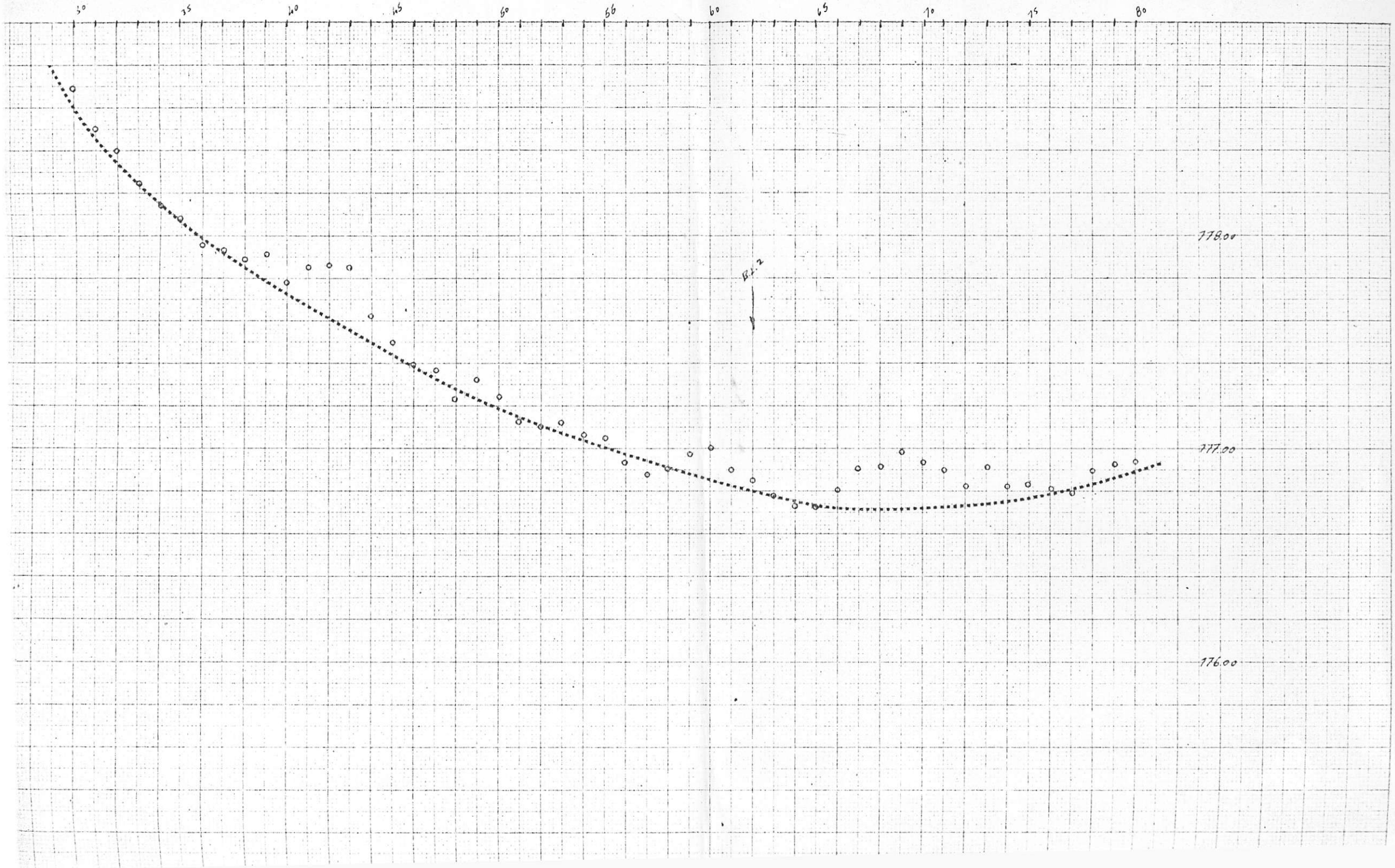

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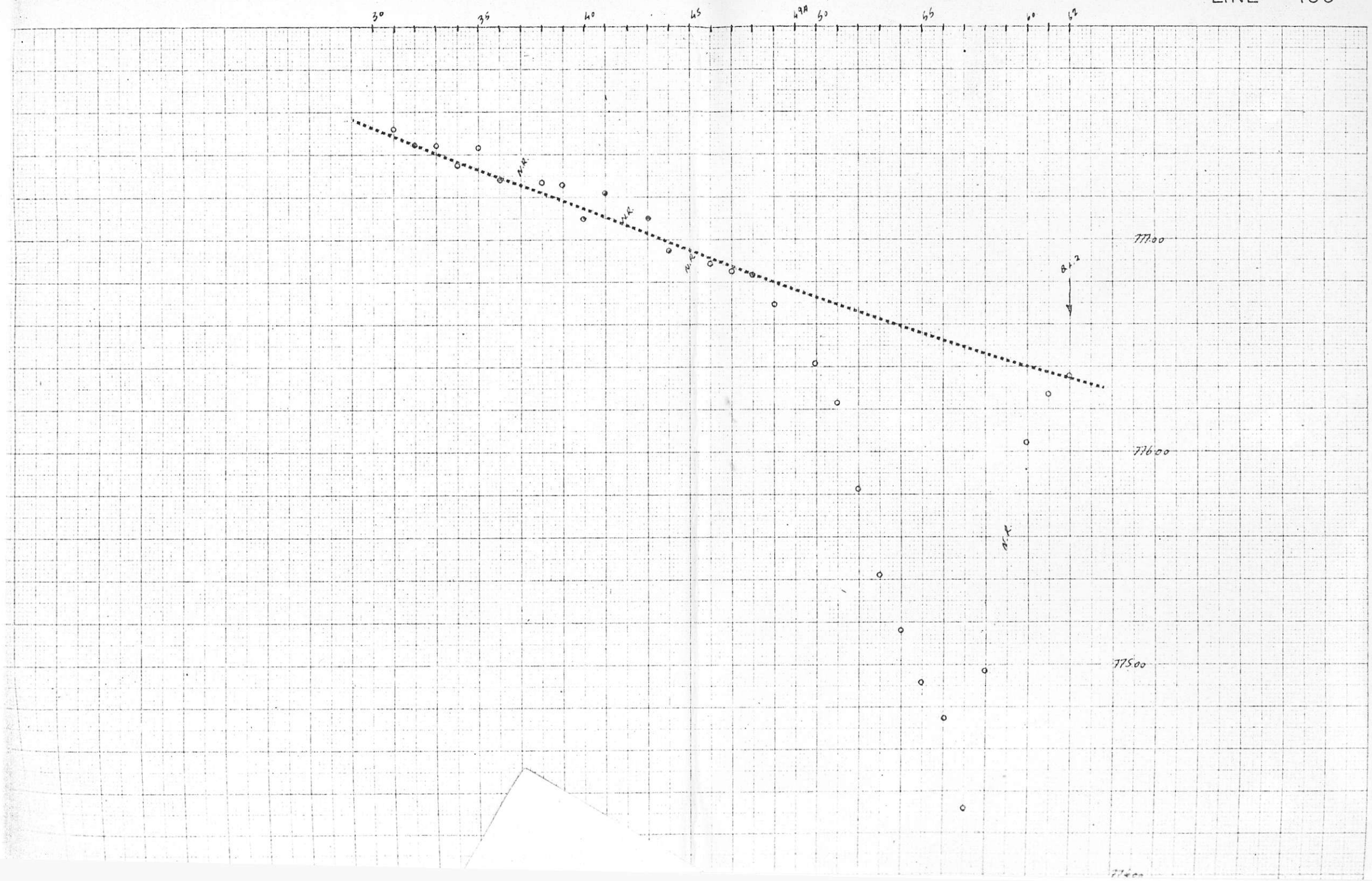

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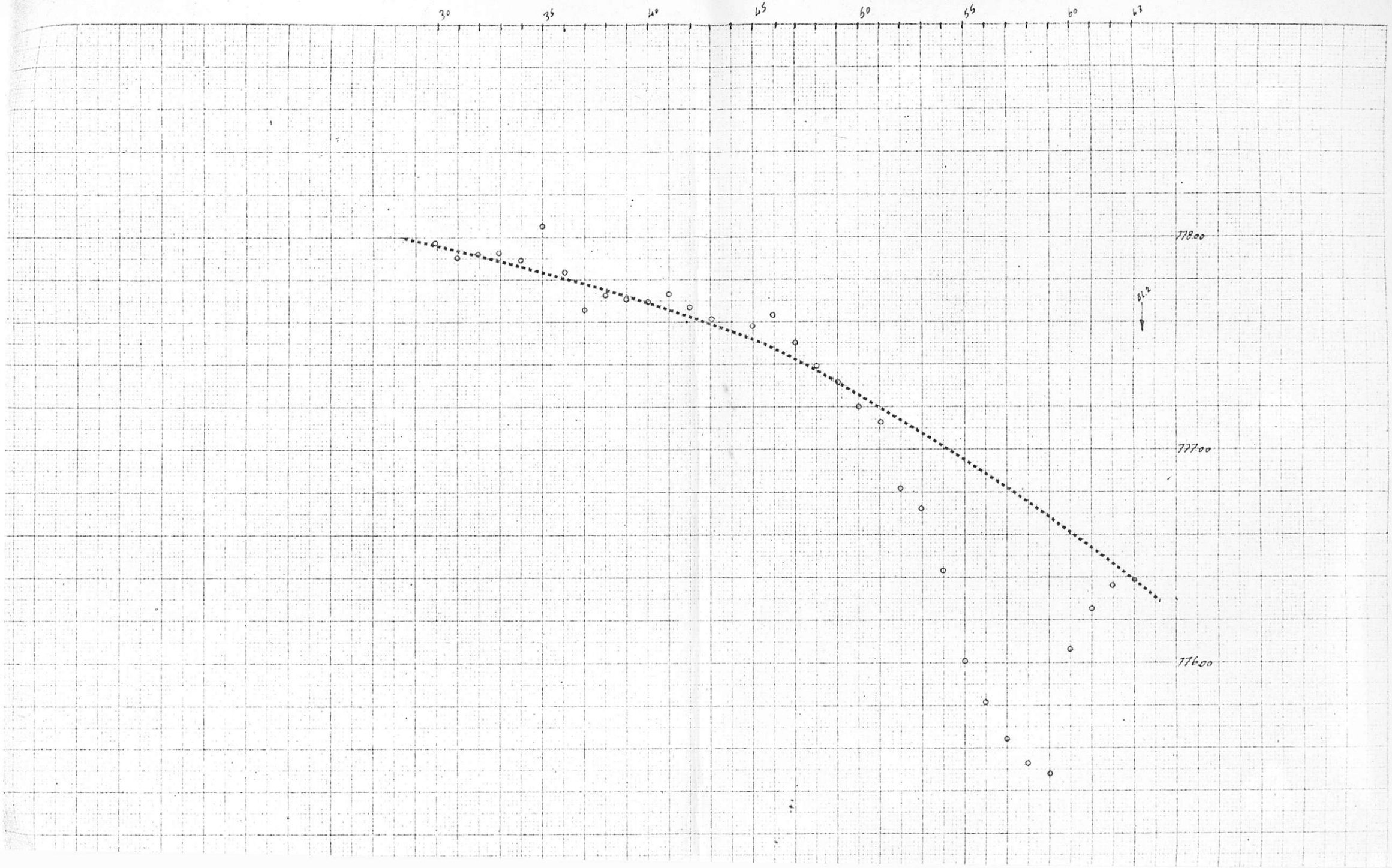

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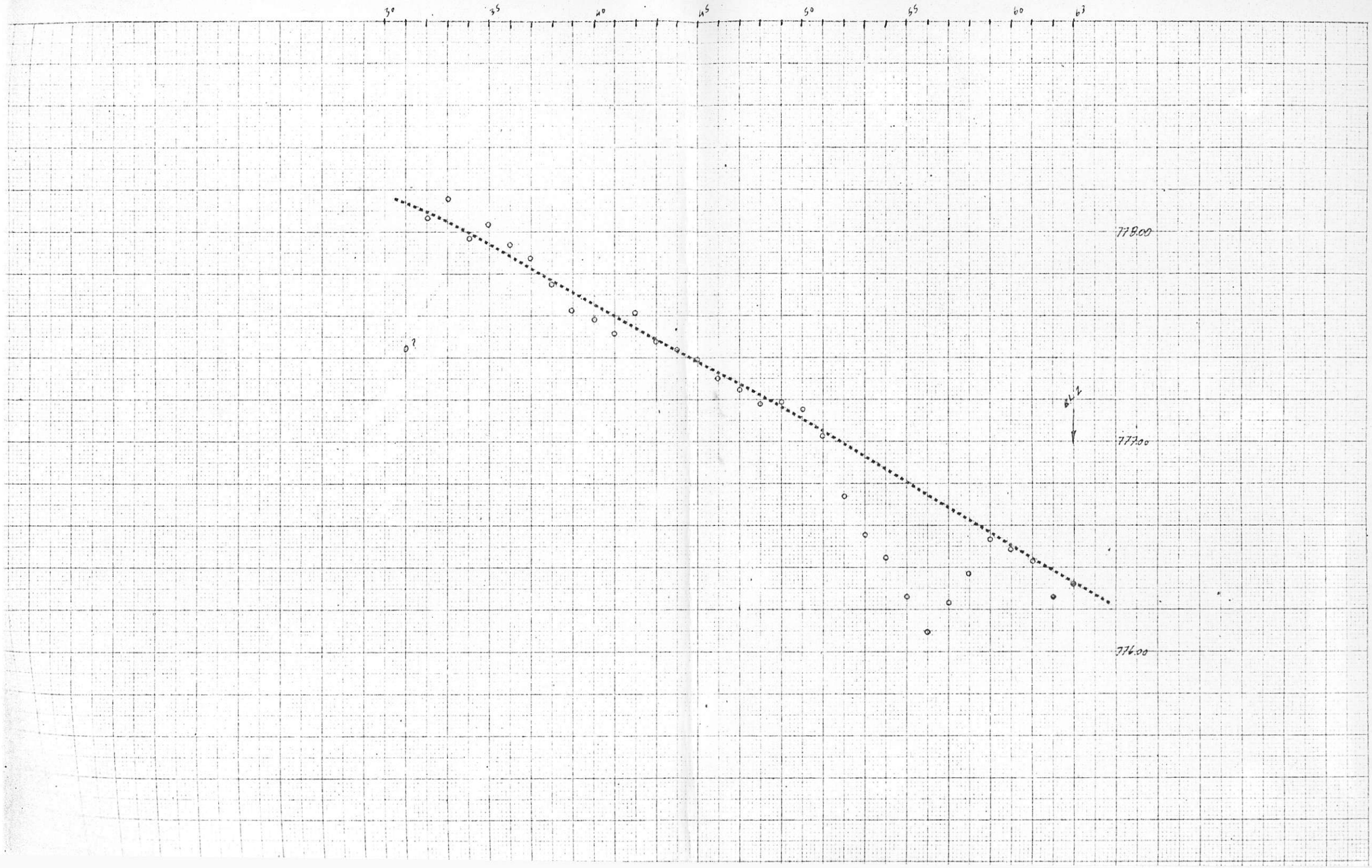
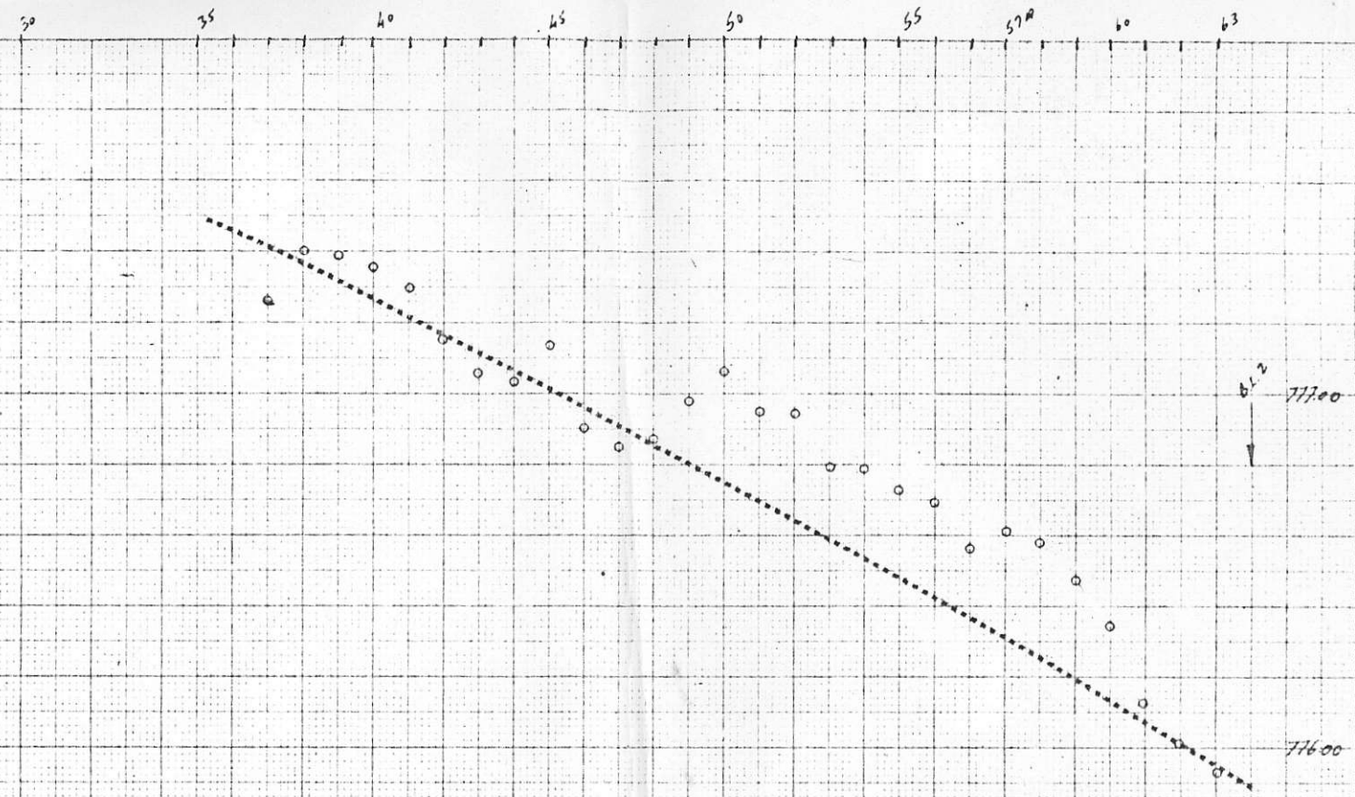
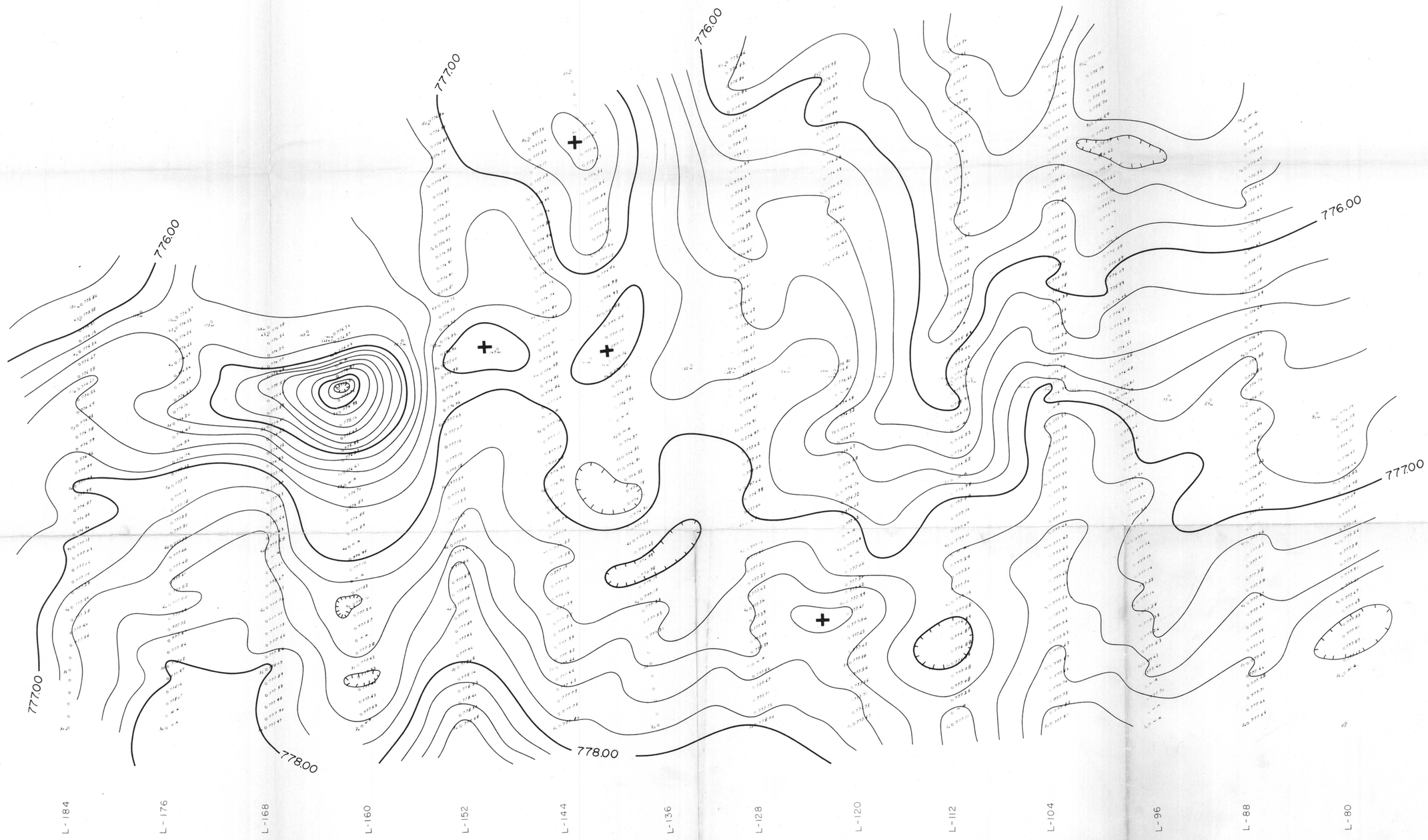


LINE 184





OES

OVERLAND
EXPLORATION SERVICES (1969) LTD.

FOR

ATLAS EXPLORATIONS LIMITED

SUN CLAIM BLOCK

BOUGUER GRAVITY MAP

Scale 1" = 400 ft.

C.I. = 0.20 mgl.

inches 0 1 2

0 1 2 3 4 5 centimetres

YUKON GEOLOGICAL SURVEY

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

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OES

OVERLAND
EXPLORATION SERVICES (1969) LTD.

FOR

ATLAS EXPLORATIONS LIMITED

SUN CLAIM BLOCK

SURFACE ELEVATION MAP

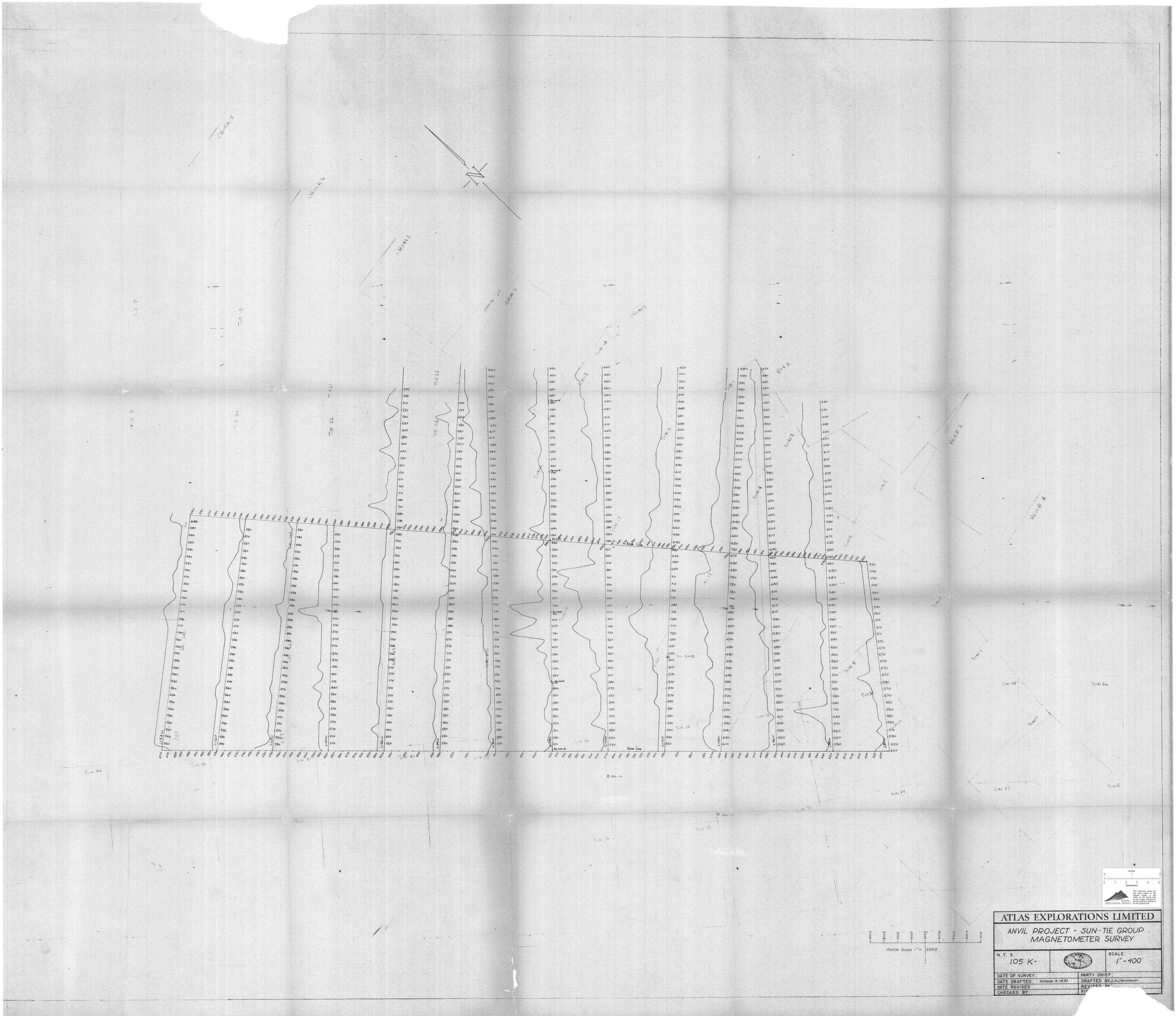
Scale 1" = 400 ft

C.I. 20 FEET

inches
0 1 2
0 1 2 3 4 5
centimetres

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

YUKON GEOLOGICAL SURVEY


CHUCK 7
CHUCK 6
GROM 1
GROM 2
GROM 5
TIE 7
TIE 8
TIE 9
TIE 20
TIE 21
TIE 22
TIE 23
TIE 24
SUN 1
SUN 2
SUN 3
SUN 4
SUN 5
SUN 6
SUN 7
SUN 8
SUN 11
SUN 26
SUN 27
SUN 28
SUN 29
SUN 31
SUN 33
SUN 34
SUN 35
SUN 36
SUN 40
SUN 44
SUN 46
BIX 2
ALICE 2
ALICE 4
71-205
Profile Scale 1" = 200'
ATLAS EXPLORATIONS LIMITED
ANVIL PROJECT - SUN-TIE GROUP
MAGNETOMETER SURVEY
N. T. S.: 105 K-
SCALE: 1" = 400'
DATE OF SURVEY:
DATE DRAFTED: October 3, 1970
DATE REVISED:
CHECKED BY:
PARTY CHIEF:
DRAFTED BY: J. A. Dennisdn
REVISED BY:
YUKON GEOLOGICAL SURVEY
This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.