



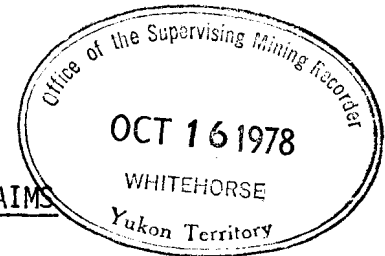
COMINCO LTD.

EXPLORATION

NTS: 105 0/1

WESTERN DISTRICT

27 SEPTEMBER 1978



GEOPHYSICAL SURVEYS ON THE NIDD CLAIMS

MAYO M.D.: YUKON TERRITORY

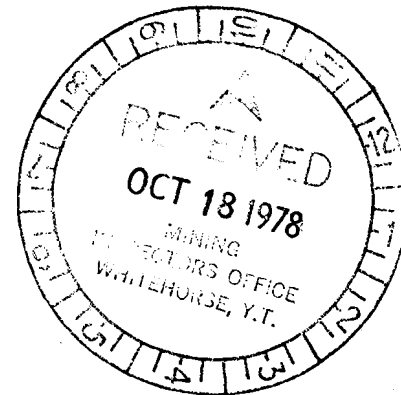
LATITUDE: 63°11'N; LONGITUDE: 130°21'W

WORK PERFORMED

JULY 1 - JULY 11, AUGUST 2, - AUGUST 5

CLAIMS COVERED

191-195, 202-211, 214, 216-237, 347-349, 353-371



SEPTEMBER 1978

090379

ALAN SCOTT  
NIGEL HOPKINS

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Note: All Plate references in the text do not carry the prefix 143-78- for brevity.

<del>APPENDIX I</del>	<del>Statement</del>
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(i)

COMINCO LTD.

EXPLORATION

NTS: 105 0/1

WESTERN DISTRICT

27 SEPTEMBER 1978

GEOPHYSICAL ASSESSMENT REPORT

ON THE NIDD CLAIMS

LIST OF CLAIMS

<u>CLAIM NAME</u>	<u>TAG NUMBER</u>	<u>DATE RECORDED</u>
NIDD 191-195	YA 7383-7387	October 20, 1976
NIDD 202-211	YA 7392-7401	October 20, 1976
NIDD 214	YA 7404	October 20, 1976
NIDD 216-226	YA 7406-7416	October 20, 1976
NIDD 228-237	YA 7417-7426	October 20, 1976
NIDD 347	YA 7427	October 20, 1976
NIDD 348, 349	YA 16356-16357	September 12, 1977
NIDD 353-368	YA 16358-16378	September 12, 1977
NIDD 369-371	YA 16379-16381	September 22, 1977

## INTRODUCTION

During the period of July 1 to July 11, 1978, and August 2 to August 5, 1978, a COMINCO geophysical crew under the direction of COMINCO geophysicist, N.T. Hopkins, conducted gravimetric, horizontal loop electromagnetic and magnetic surveys over portions of the NIDD claims.

The NIDD claim group is located approximately 180 km northeast of the town of Ross River; access is possible by road or fixed wing aircraft to the airstrip at MacMillan Pass, and then by helicopter to the claim group.

This report describes the geophysical surveys that were done on the claims, and briefly discusses the results obtained.

## GEOLOGY

The mineralization sought occurs within a black, carbonaceous, baritic shale of the Canol Formation, and occurs as stratiform laminae of galena and sphalerite to massive pods or lenses of the same mineralization.

Regional geology is discussed in the GSC Paper 761A by S.L. Blusson, 1976. Local geology is discussed by R.C. Carne, Department of Indian and Northern Affairs 1976.

## GEOPHYSICAL SURVEYS

### Gravimetrics

Gravity measurements were made by N.T. Hopkins, using a TEXAS INSTRUMENTS, WORDEN MASTER, quartz spring gravity meter with a scale constant of 0.0823. Readings were taken every 25 meters and tie-ins, within two hour time limits, were made to determine instrument drift. The data was reduced to an arbitrary datum on each line, correcting for instrument drift, elevation and Bouguer density of 2.67 gm/cc. The level survey was carried out by D. Saunders and I. Nicholson, both summer student employees with COMINCO. The lines were surveyed in loops, closing along the baseline. The plan view and profiles of the gravity are found on Plates 4 to 12.

### Horizontal Loop Electromagnetics

During the second visit to the property, an APEX MAX-MIN II electromagnetometer was used in the horizontal loop mode. Two lines were surveyed using a 100 m coil separation, a third line was completed using a 150 m coil separation. All three lines were surveyed with a 25 m station interval and at three frequencies, 444HZ, 888HZ and 3555HZ. This survey was carried out by N. Hopkins and D. Saunders. The MAX-MIN profiles are found on Plates 13 to 15.

### Magnetics

A brief, two day, magnetometer survey was carried out by I. Nicholson and G. Della Valle using a SCINTREX MP-2 total field proton precession magnetometer. The grid baseline was used for establishing magnetic base stations, and tie-ins each hour were made using this baseline so as to correct for diurnal variations in the magnetic field. The station intervals were at 25 meters, with 12½ meter readings taken over anomalous areas. Results are presented in contour plan form on Plate 16.

### DISCUSSION OF RESULTS

#### Gravimetrics

Plate 3 shows a plan view of the gravity anomalies. In all cases the anomalies are very weak; the largest being a 0.4 MGAL anomaly on Line 206E at 2+00N. This 0.4 MGAL anomaly is part of anomalous zone "A", extending on the north side of the baseline from Line 200E to at least 210E. It is open at this eastern end. It attains a maximum width on Line 206E of 230 meters.

A second, weaker anomalous zone paralleling "A", but south of the baseline, is labelled zone "B". It has a peak value of 0.2 MGAL above local background on Line 198E. Its strike and maximum width dimensions are 300 meters and 130 meters, respectively.

#### Horizontal Loop Electromagnetics

The horizontal loop (MAX-MIN II) survey which was done on only three lines, located several conductors.

Some conductors were coincident with gravity anomalies. Gravity anomaly "A", found on all three lines, is coincident with a very broad conductor of at least 50 meters width (Line 204, Plate 14). Gravity anomaly "B", is also coincident on Line 202E (Plate 13) with an EM conductor, but this is a poor conductor having no width using the 100 m coil separation.

The series of very small conductors located between 2+50S and 5+00S on Line 202E (Plate 13) can be explained by the shaley nature of the rock which responds very easily to the MAX-MIN.

A broad conductive zone is located near 5+10S Line 202E (Plate 13), and 4+75S Line 204E (Plate 14) and is open ended to the south.

#### Magnetics

Plate 16 is a plan view of the magnetic relief of the NIDD, with the horizontal loop EM conductors located on the grid. Two zones of higher magnetic relief are seen, zone "X" is centered on Line 206E at 75S and zone "Y" on Line 202E at 4+75S. As these anomalies are located in areas with no outcrop they may indicate local subcroppings of intrusives known to be within the area.

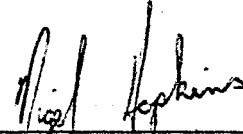
CONCLUSIONS

Gravity and horizontal loop EM have shown themselves to be useful tools in this area. Further work to the east is necessary to close off gravity anomaly "A" as it is still open in this direction. More MAX-MIN is required for better correlation of conductors already located by the previous three lines surveyed. Extension of the magnetic survey to the south near the magnetic anomaly zone "X", and to the west for zone "Y", would add better control to these anomalies.

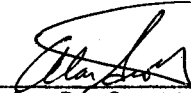
REFERENCES

- 1976: Blusson S.L.: Selwyn Basin, Yukon and District of Mackenzie G.S.C. Paper 761A pp.131-132.
- 1976: R.C. Carne: Geology of the Tom and Jason Zinc-Lead-Barite Deposit, MacMillan Pass, Yukon Territory. Department of Indian and Northern Affairs 1976.

Respectfully submitted:

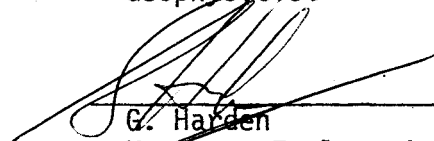


N. W. Hopkins  
Geophysicist



A. R. Scott  
Geophysicist

Endorsed by:

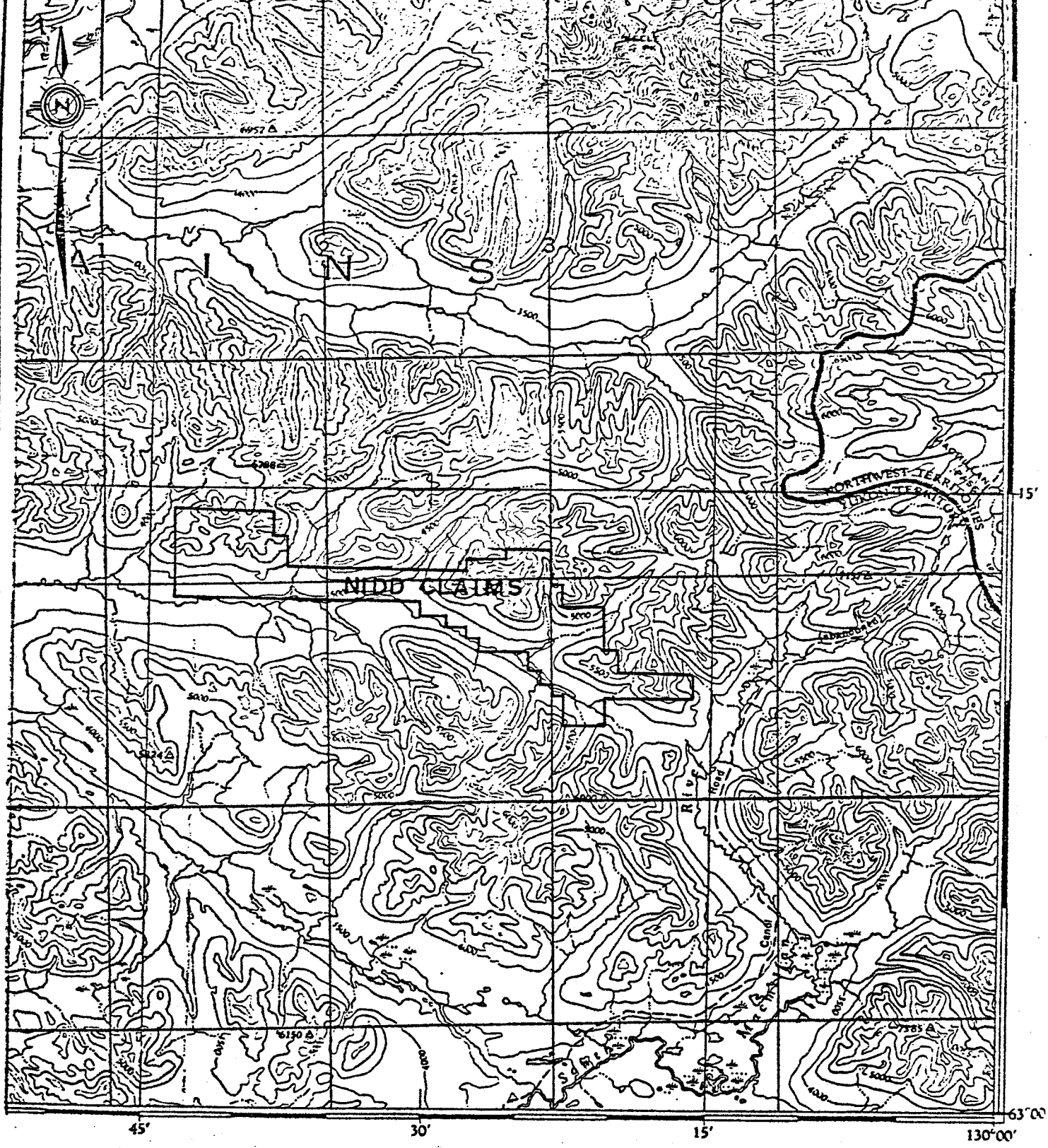


G. Harden  
Manager, Exploration  
Western District

NTH/pm  
27 September 1978

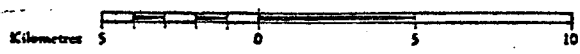
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Mining Recorder (2)  
Western District (1)  
Geophysics File (1)



**NIDD CLAIMS  
MAYO M.D. YUKON  
MACMILLAN PASS AREA**

NTS  
105-0-1  
105-0-2

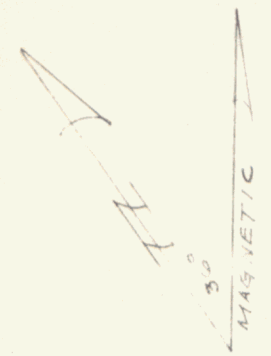


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Revised by	Date	Revised by	Date

**LOCATION MAP**

Scale: 1,250,000      Date: NOV., 1977      Plate 143-78-1

SURVEY DONE JULY 1978



1+00 N

6+00N

5+75N

214  
YA 7404

223  
YA 7413

222  
YA 7412

231  
YA 7421

BASELINE (AUG/78)

216  
YA 7406

3+50N

224  
YA 7415

JASON CLAIM GROUP (CLAIMS IN CONTENTION)

215  
YA 7405

2+50N

2+75N

1+00 S

2+00 S

3+00 S

3+50 S

354  
YA 16361

2+00N

225  
YA 7415

4+00S

4+50S

217  
YA 7407

1+00N

5+00S  
5+25S

BASELINE (JULY/78)

LINE 208E

LINE 210E

LINE 212E

SURVEY DONE AUG 1978

1+00S

1+25S

353  
YA 16359

204  
YA 7394

2+00S

218  
YA 7408

LINE 206E

348  
YA 16357

3+00S

219  
YA 7409

- +—+—+— 1978 ( JULY ) GEOPHYSICS GROUND GRID
- +—+—+— 1978 ( AUG ) GEOPHYSICS GROUND GRID
- — — — — APPROX LOCATION OF CLAIM BOUNDARY OF NIDD CLAIMS
- ==== APPROX LOCATION OF JASON CLAIM GROUP ( IN CONTENTION )

4+00 S

5+00 S

6+00 S

206  
YA 7396

7+00 S

7+00S

6+50S

347  
YA 16357

6+00S

8+00 S

7+75S

349  
YA 16358

7+25S

LINE 204E

9+00 S

LINE 194E

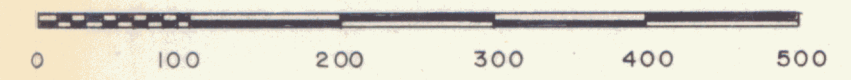
LINE 196E

LINE 198E

LINE 200E

LINE 202E

METRIC



### NIDD CLAIMS

NTS  
105-0-1  
Domco

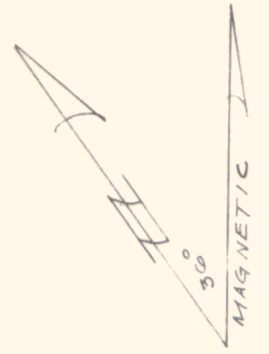
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### CLAIM MAP

MAYO M.D., YUKON

Scale: 1:5000 Date: SEPT 1978 Plate: 143-78-2

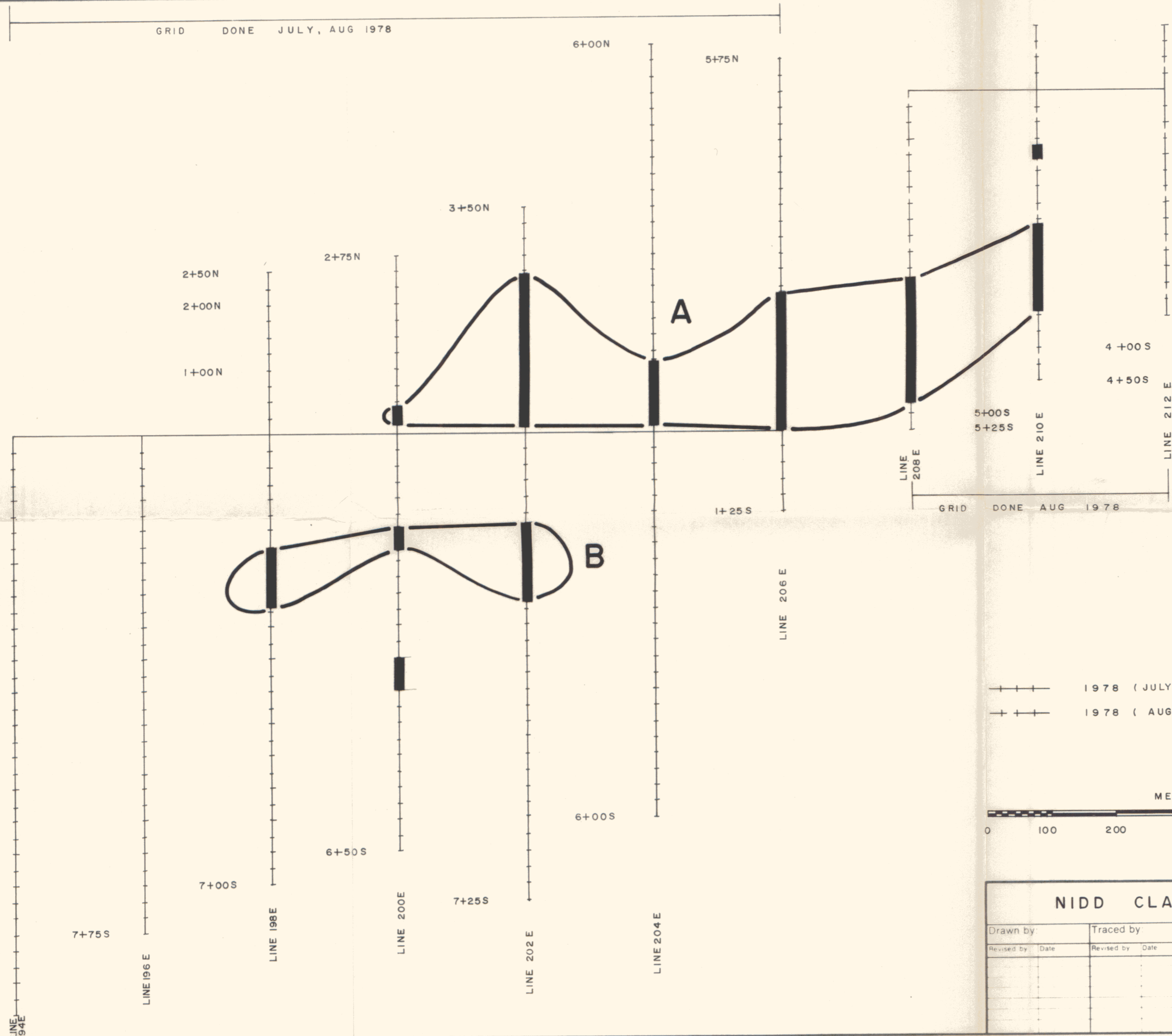


GRID DONE JULY, AUG 1978

BASELINE (JULY/78)

1+00 N  
BASELINE (AUG/78)  
1+00 S  
2+00 S  
3+00 S  
3+50 S

1+00S  
2+00S  
3+00S  
4+00S  
5+00S  
6+00S  
7+00S  
8+00S  
9+00S



LINE 208 E

LINE 210 E

LINE 212 E

LINE 206 E

LINE 204 E

LINE 200 E

LINE 198 E

LINE 196 E

LINE 194 E

GRID DONE AUG 1978

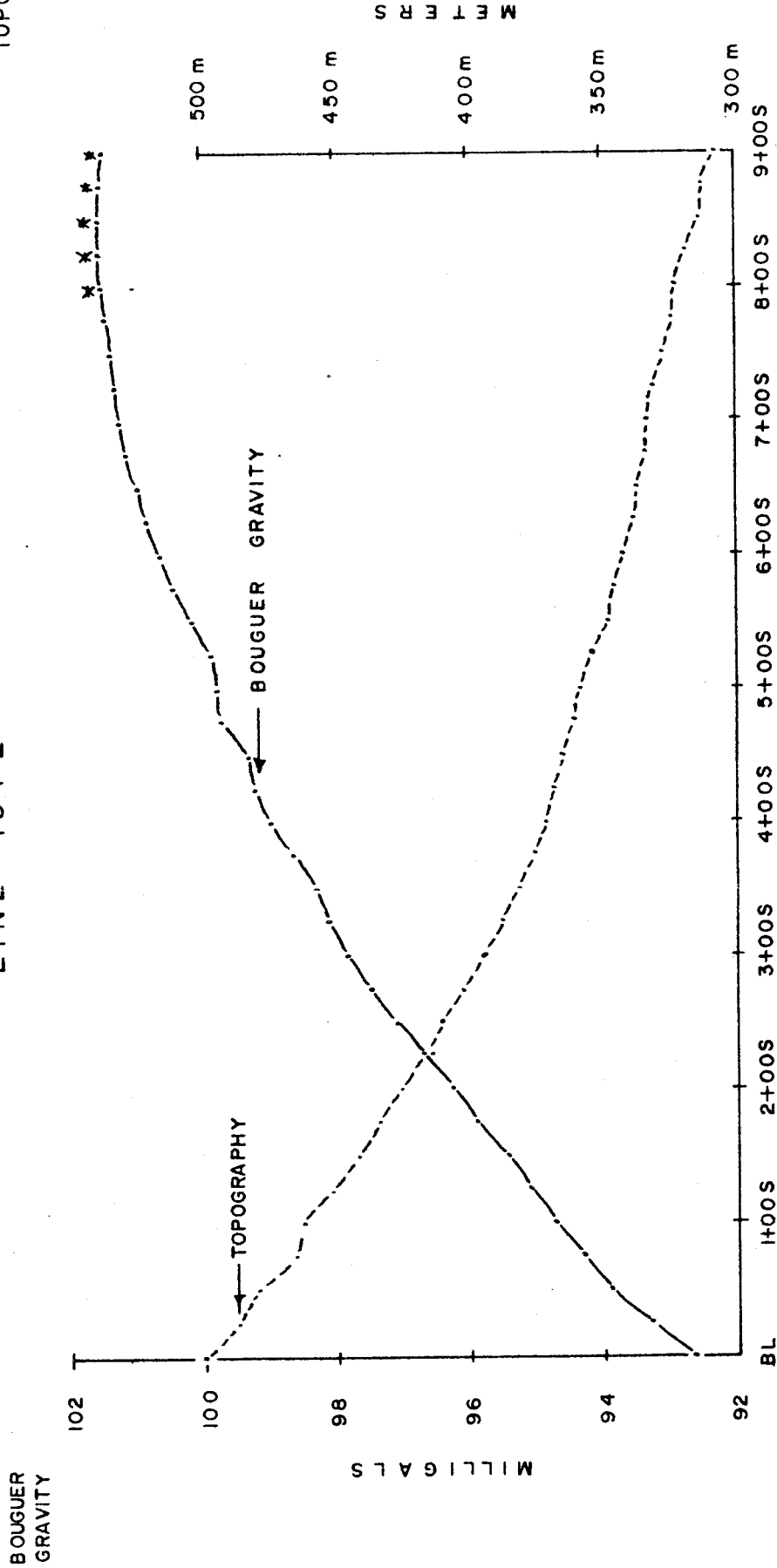
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---+---+--- 1978 ( AUG ) GEOPHYSICS GROUND GRID



<b>NIDD CLAIMS</b>				NTS 105-0-1
Drawn by:	Traced by: <i>Autley</i>			<b>GRAVITY ANOMALIES</b> <b>MAYO M.D., YUKON</b>
Revised by:	Date:	Revised by:	Date:	
Scale: 1:5000			Date: SEPT 1978	Plate: 143-78-3

TOPOGRAPHY

LINE 194 E



INSTRUMENT : WORDEN MASTER, SCALE CONSTANT 0 0823 MILLIGAL / div

BOUGUER DENSITY : 2.67 gm/cc

\* READING UNCERTAIN

NIDD CLAIMS



NTS  
105-0-1

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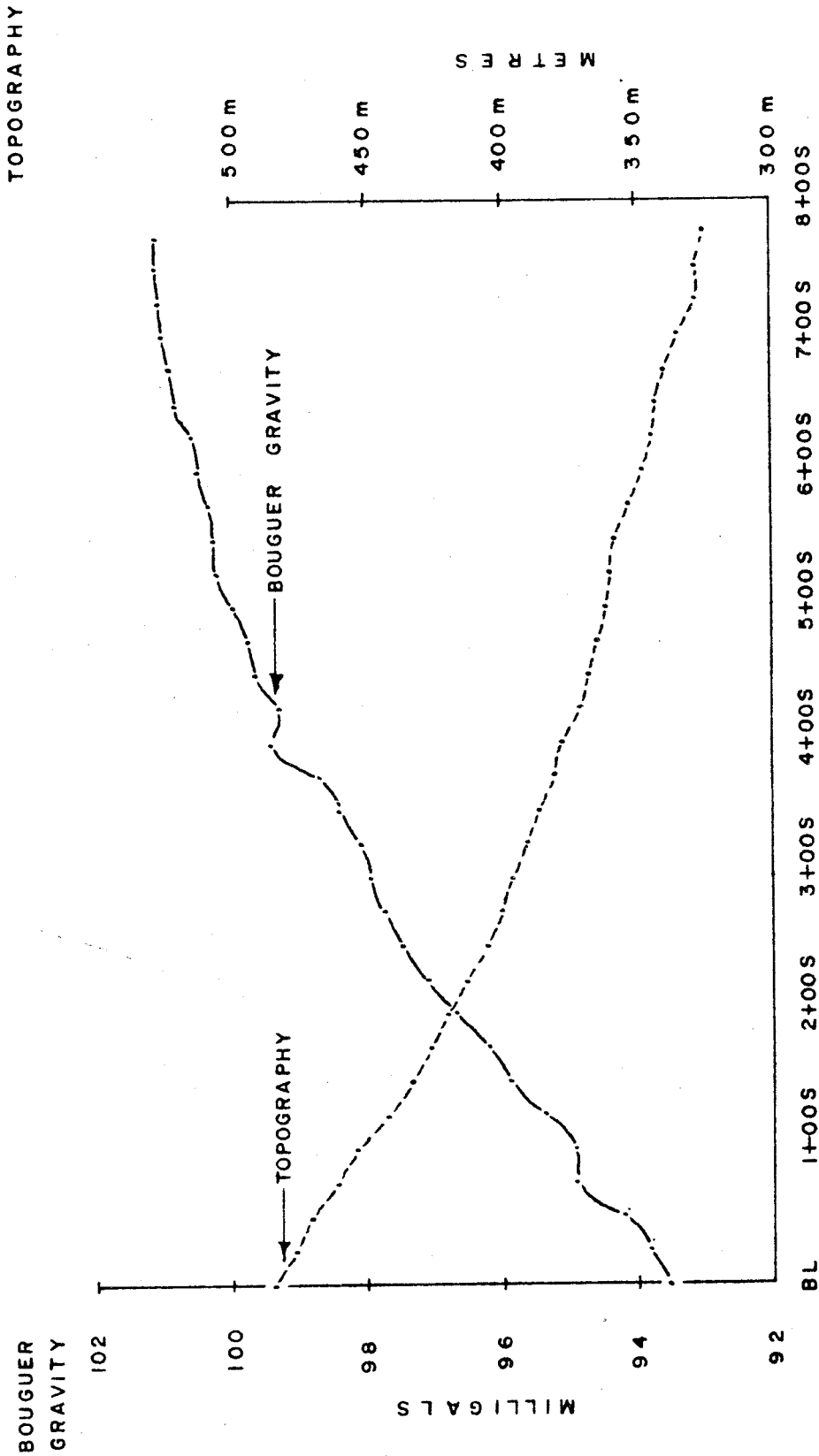
LINE 194 E  
BOUGUER GRAVITY  
MAYO M. D., YUKON

Scale: AS SHOWN

Date: SEPT 1978

Plate: 143-78-4

LINE 196 E



INSTRUMENT: WORDEN MASTER, SCALE CONSTANT 0.0823 MILLIGALS / div

BOUGUER DENSITY: 2.67 gm/cc

\* READING UNCERTAIN

NIDD CLAIMS



NTS

105-0-1

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Revised by	Date	Revised by	Date

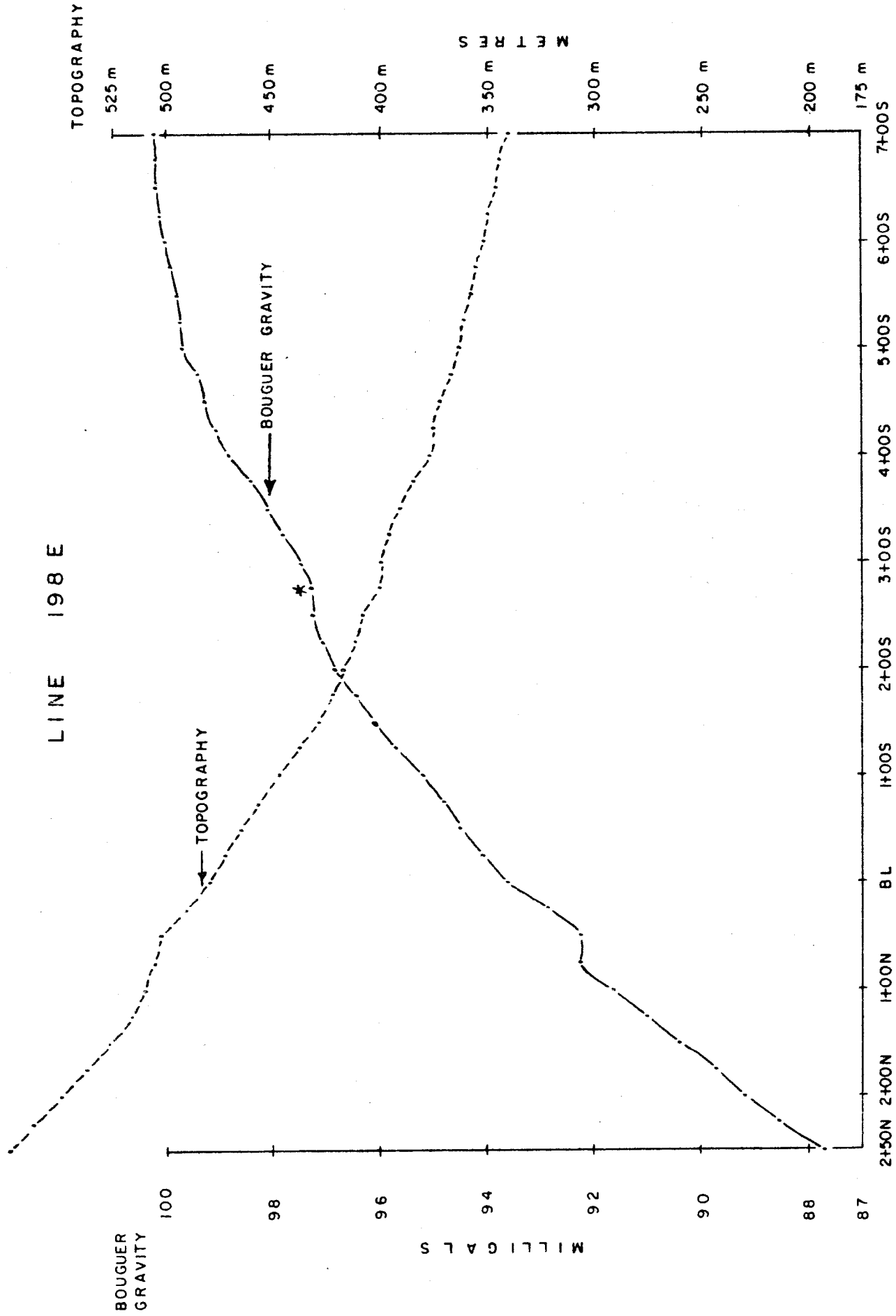
LINE 196 E  
BOUGUER GRAVITY  
MAYO M.D., YUKON

Scale: AS SHOWN

Date: SEPT 1978

Plate 143-78-5

LINE 198 E



INSTRUMENT: WORDEN MASTER, SCALE CONSTANT 0.0823 MILLIGALS/div  
 BOUGUER DENSITY: 2.67 gm/cc  
 \* READING UNCERTAIN

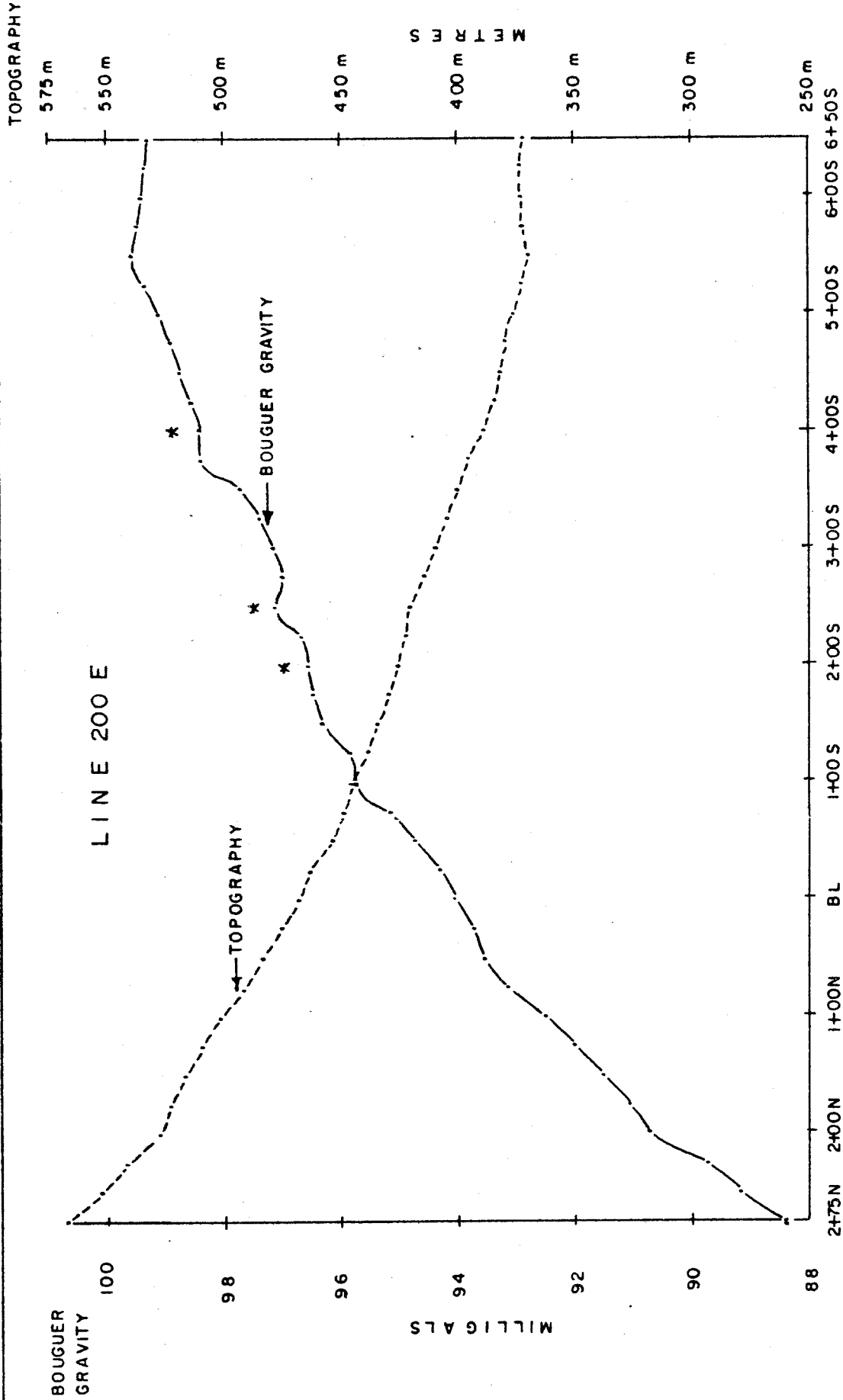
NIDD CLAIMS

NTS  
 105-0-1

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Revised by	Date	Revised by	Date

LINE 198 E  
 BOUGUER GRAVITY  
 MAYO M.D., YUKON

Scale: AS SHOWN      Date: SEPT 1978      Plate: 143-78-6



INSTRUMENT: WORDEN MASTER, SCALE CONSTANT 0.0823 MILLIGALS / div  
 BOUGUER DENSITY: 2.67 gm / cc  
 \* READING UNCERTAIN

NIDD CLAIMS



NTS  
105-0-1

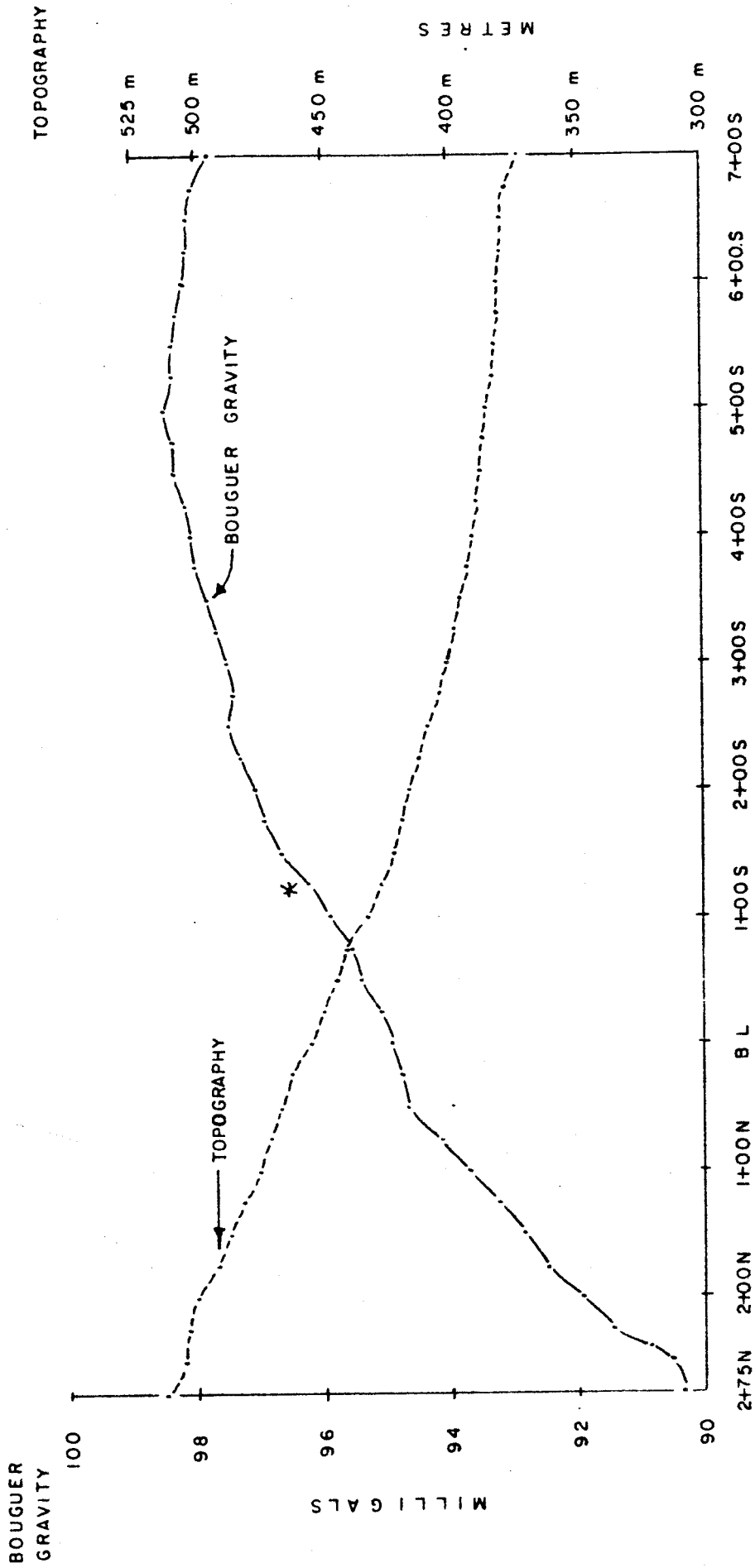
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LINE 200 E  
 BOUGUER GRAVITY  
 MAYO M.D., YUKON

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Revised by:    Date:	Revised by:    Date:

Scale: AS SHOWN      Date: SEPT 1978      Plate: 143-78-7

LINE 202 E



INSTRUMENT: WORDEN MASTER, SCALE CONSTANT 0.0823 MILLIGALS/div

BOUGUER DENSITY: 2.67 gm/cc

\* READING UNCERTAIN

NIDD CLAIMS



NTS  
105-0-1

*WJL*

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Revised by	Date	Revised by	Date

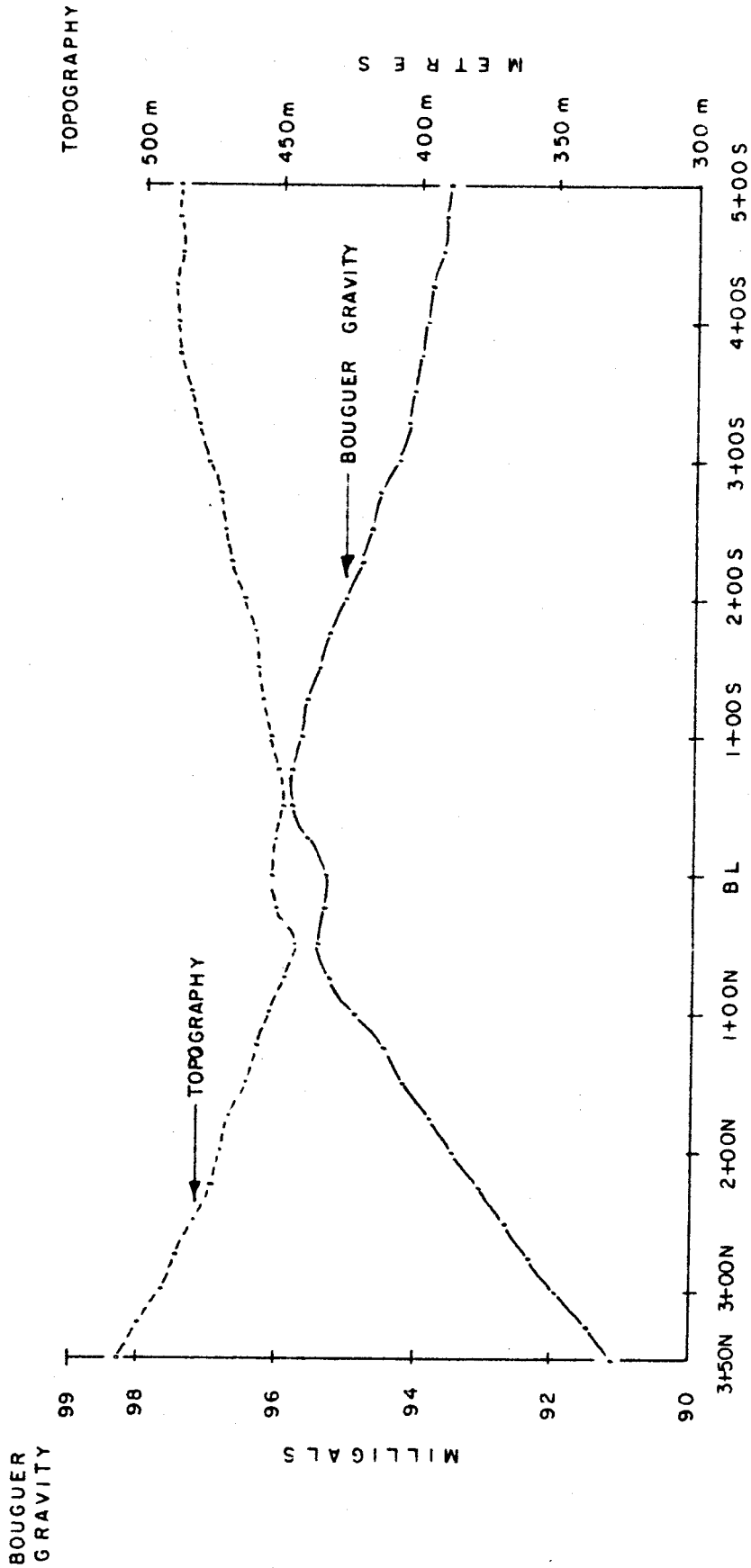
LINE 202 E  
BOUGUER GRAVITY  
MAYO M. D., YUKON

Scale: AS SHOWN

Date: SEPT 1978

Plate  
143-78-8

LINE 204 E



INSTRUMENT: WORDEN MASTER, SCALE CONSTANT 0.0823 MILLIGALS/div  
 BOUGUER DENSITY: 2.67 gm/cc

NIDD CLAIMS



NTS  
105-0-1

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Revised by	Date	Revised by	Date

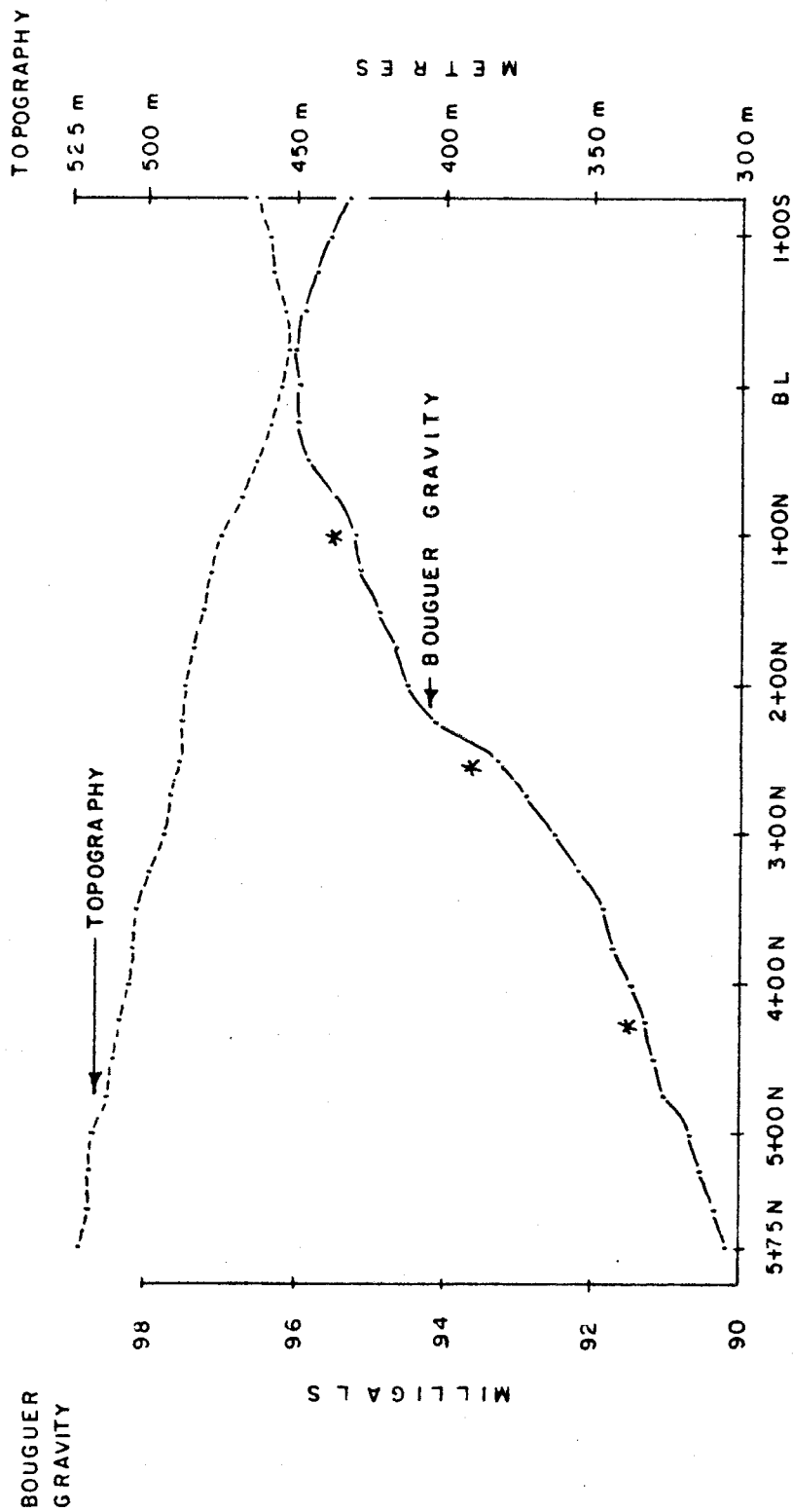
LINE 204 E  
 BOUGUER GRAVITY  
 MAYO M. D., YUKON

Scale: AS SHOWN

Date: SEPT 1978

Plate: 143-78-9

LINE 206 E



INSTRUMENT: WORDEN MASTER, SCALE CONSTANT 0.0823 MILLIGALS / div  
 BOUGUER DENSITY: 2.67 gm / cc  
 \* READING UNCERTAIN

NIDD CLAIMS

*Allen S.A.*



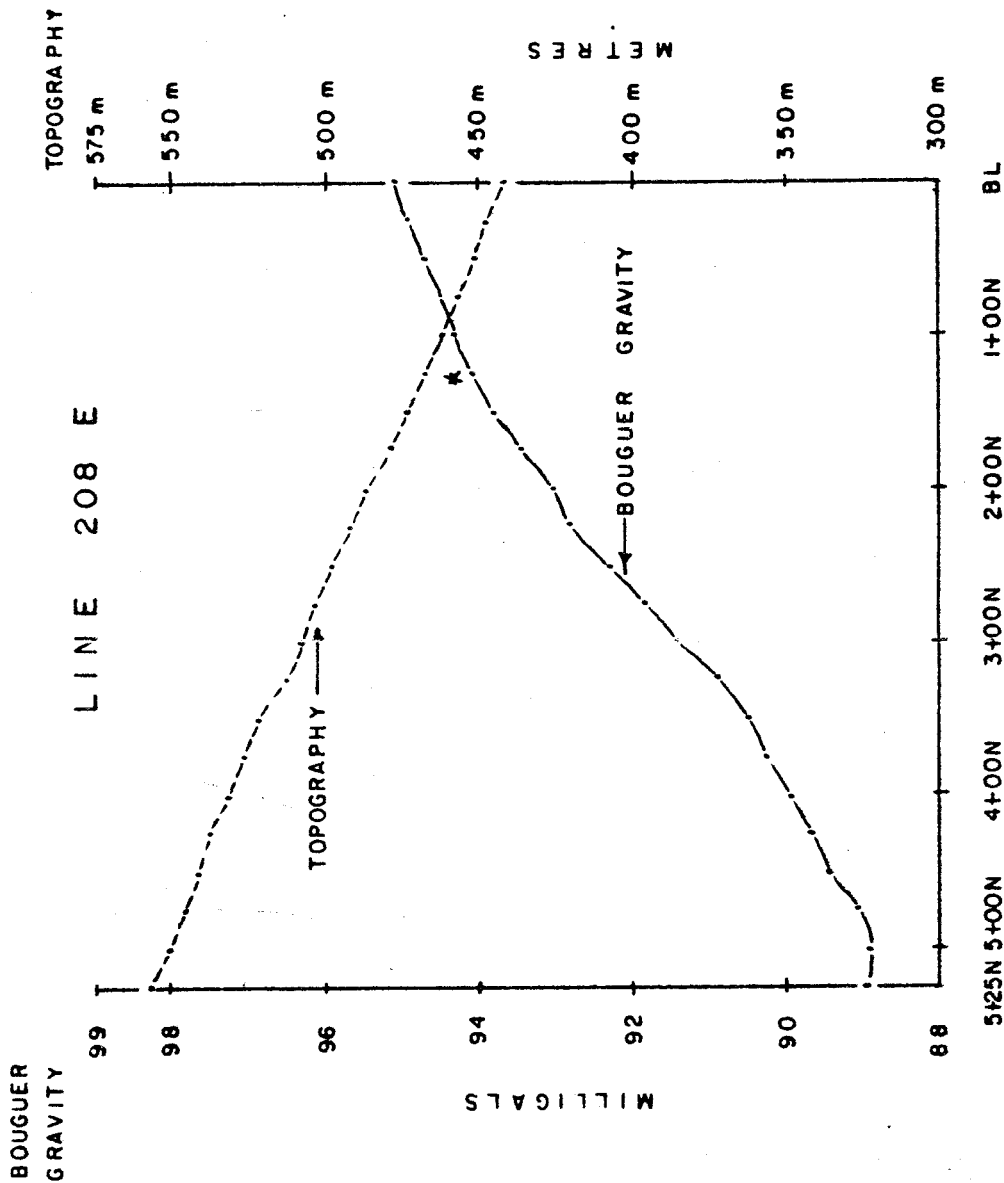
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105-0-1

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Revised by: Date	Revised by: Date

LINE 206 E  
 BOUGUER GRAVITY  
 MAYO M.D., YUKON

Scale: AS SHOWN Date: SEPT 1978

Plate 143-78-10



INSTRUMENT: WORDEN MASTER, SCALE CONSTANT 0.0823 MILLIGALS / div  
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 \* READING UNCERTAIN

N I D D   C L A I M S



NTS  
105-0-1

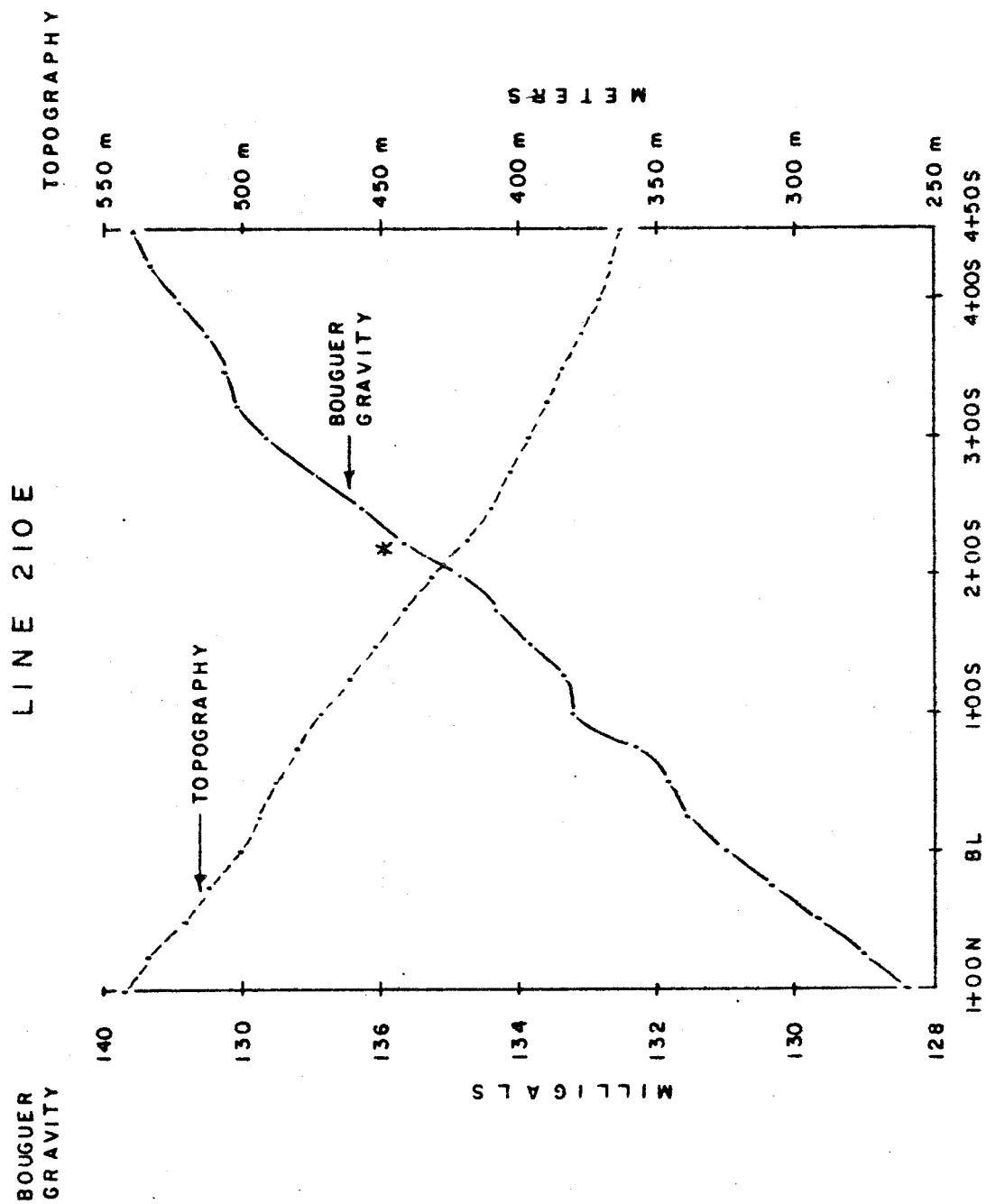
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Revised by	Date	Revised by	Date

LINE 208 E  
 BOUGUER GRAVITY  
 MAYO M.D., YUKON

Scale. AS SHOWN

Date: SEPT 1978

Plate: 143-78-11



INSTRUMENT : WORDEN MASTER, SCALE CONSTANT 0.0823 MILLIGALS /div  
 BOUGUER DENSITY : 2.67 gm/cc  
 \* READING UNCERTAIN

**NIDD CLAIMS**

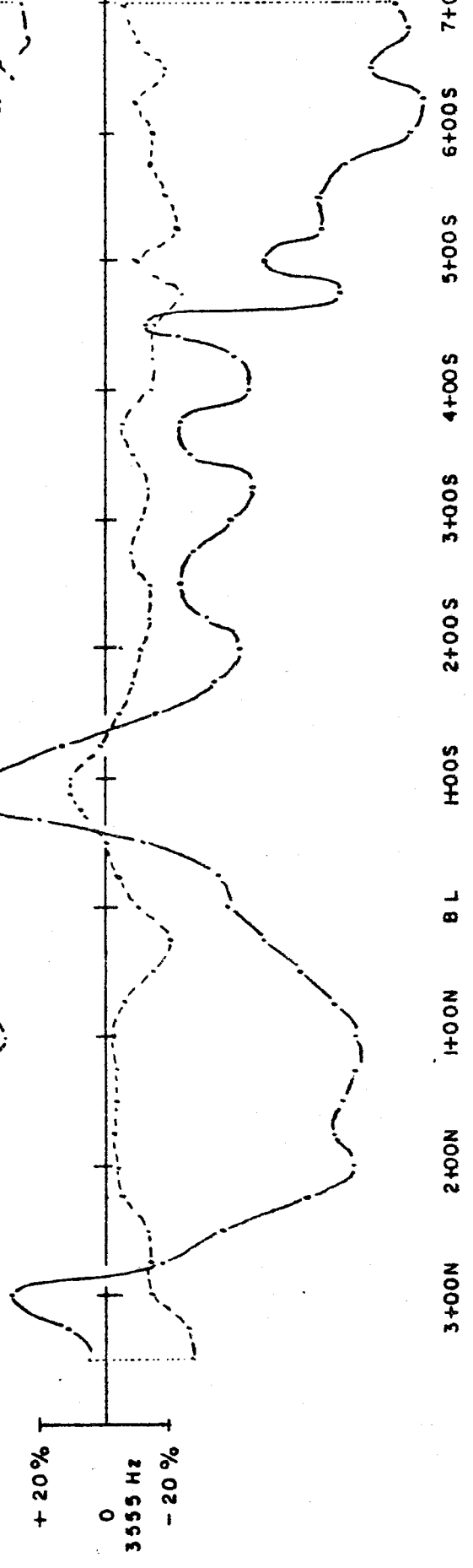
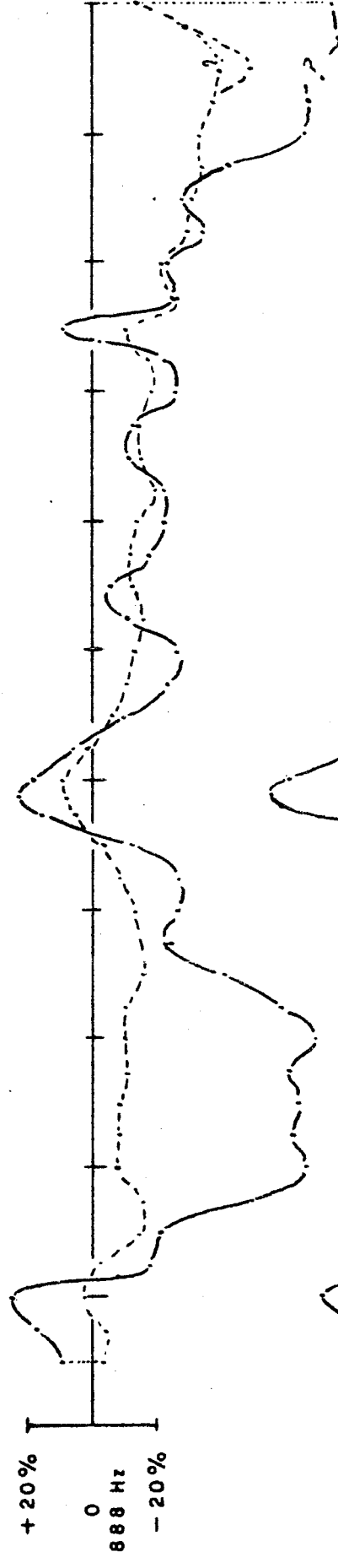
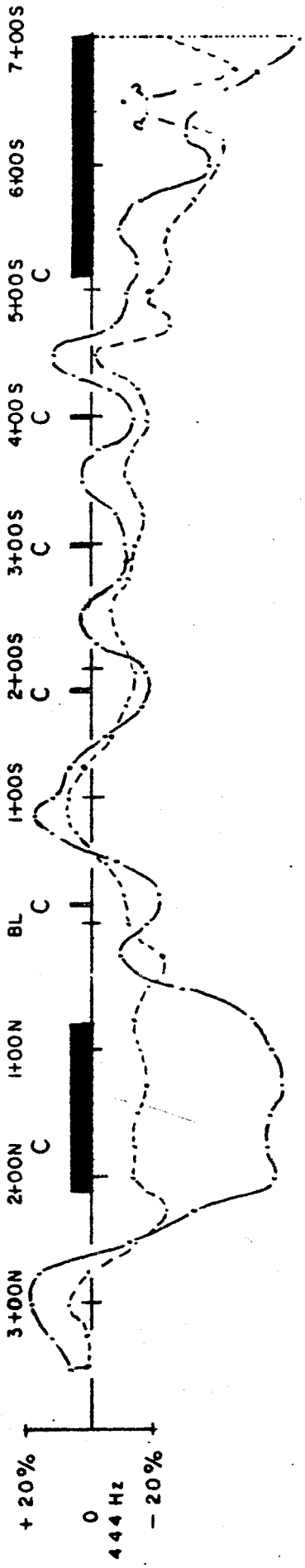


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Revised by	Date	Revised by	Date

*[Signature]*

**LINE 210 E**  
**BOUGUER GRAVITY**  
**MAYO M.D., YUKON**

LINE 202 E



INSTRUMENT : MAX MIN II  
 - - - - IN PHASE  
 - - - - OUT OF PHASE  
 █ CONDUCTOR LOCATION

NIDD CLAIMS

NTS  
 105-0-1

Drawn by:		Traced by:	
Revised by	Date	Revised by	Date

LINE 202 E  
 HORIZONTAL LOOP ELECTROMAGNETIC PROFILES  
 100 m COIL SEPARATION  
 MAYO M. D., YUKON

Scale: 1 : 5000 HORIZ  
 1 cm = 20% VERT  
 Date: SEPT 1978  
 Plate: 143-78-13

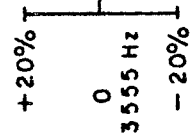
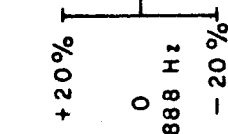
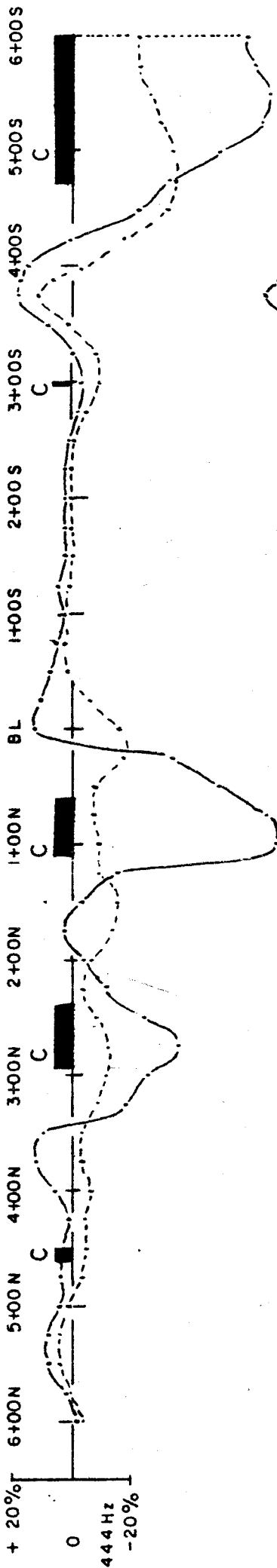
INSTRUMENT : MAX MIN II

— IN PHASE

- - - OUT OF PHASE

■ CONDUCTOR LOCATION

LINE 204  
100 m COIL SEPARATION



6+00S  
5+00S  
4+00S  
3+00S  
2+00S  
1+00S  
BL  
1+00N  
2+00N  
3+00N  
4+00N  
5+00N  
6+00N

NIDD CLAIMS

*Clifford*



N T S  
105-0-1

Drawn by:		Traced by:	
Revised by	Date	Revised by	Date

LINE 204 E  
 HORIZONTAL LOOP ELECTROMAGNETIC PROFILES  
 100 m COIL SEPARATION  
 MAYO M.D., YUKON

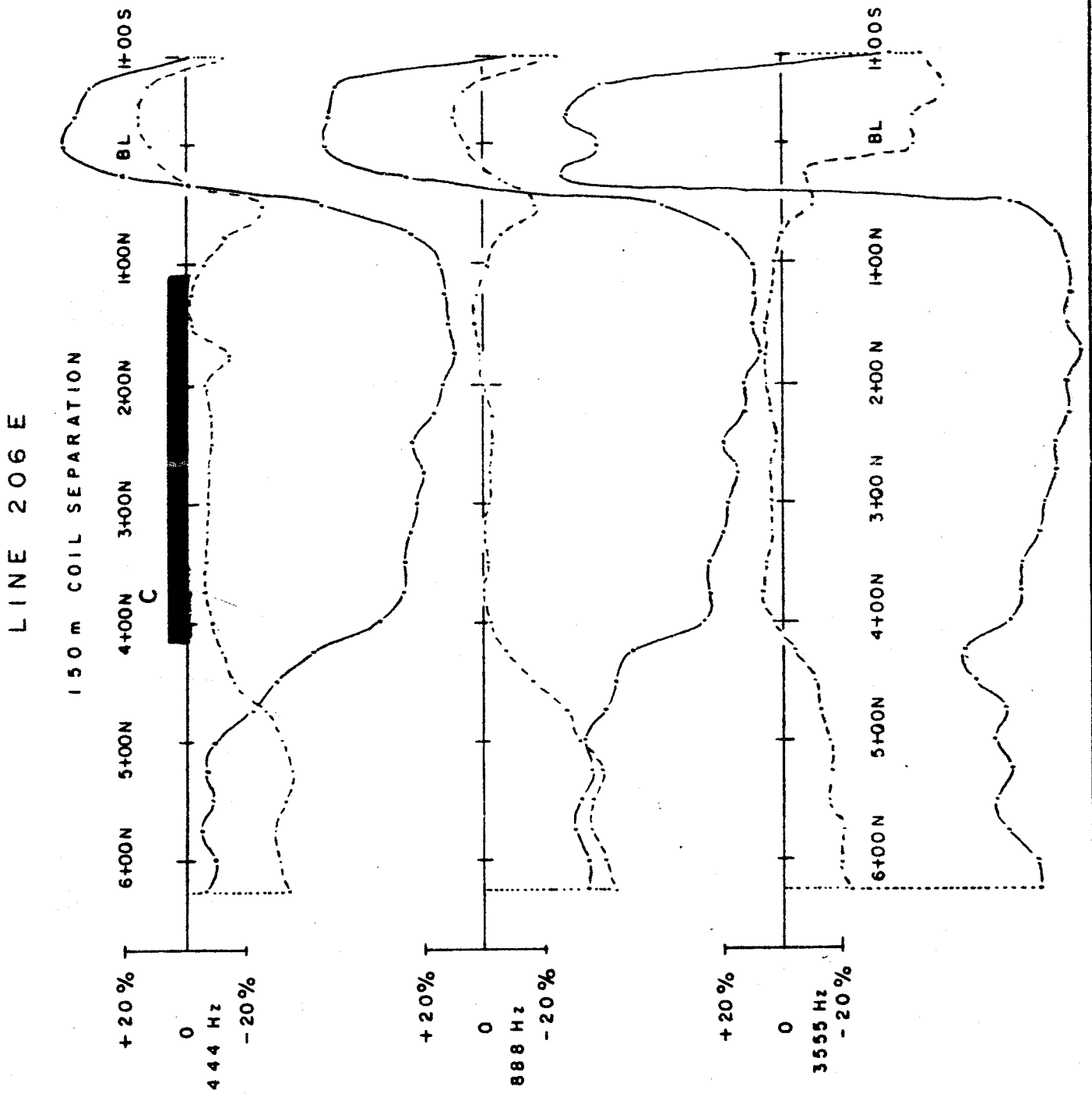
Scale: 1 : 5 000 HORIZ  
1 cm = 20 % VERT

Date: SEPT 1978

Plate: 143-78-14

INSTRUMENT : MAX MIN II

- · — · — · IN PHASE
- OUT OF PHASE
- CONDUCTOR LOCATION



NIDD CLAIMS

NTS  
105-0-1

Drawn by:		Traced by:	
Revised by	Date	Revised by	Date

LINE 206 E  
HORIZONTAL LOOP ELECTROMAGNETIC PROFILES  
150 m COIL SEPARATION  
MAYO M.D., YUKON

Scale: 1:5000 HORIZ  
1cm = 20% VERT

Date: SEPT 1978

Plate: 143-78-15



GRID DONE JULY, AUGUST 1978

BASELINE (JULY/78)

1+00S

2+00S

3+00S

4+00S

5+00S

6+00S

7+00S

8+00S

9+00S

LINE 194E

LINE 196E

LINE 198E

LINE 200E

LINE 202E

LINE 204E

2+50N

2+00N

1+00N

2+75N

3+50N

6+00N

5+75N

3+50N

3+00N

2+50N

2+00N

1+50N

1+00N

0+50N

0+00N

6+00N

5+75N

5+00N

4+50N

4+00N

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