

SUMMARY

Geological, electrical and magnetic surveys have been completed on a group of sixty-eight claims held along the Northeast Arm of Lake Timagami by Geoscientific Prospectors Ltd. Sixteen electrical anomalies have been indicated. Diamond drilling of similar anomalies to the southwest of this property has intersected copper-nickel mineralization. As the next step in exploring these claims, it is recommended that a preliminary drilling program of 3500 feet be carried out to test seven of the anomalies indicated by the surveys. Further drilling will depend upon the results obtained. This drilling should be guided by detailed electrical surveys of the anomaly zones.

INTRODUCTION

The Northeast Arm of lake Timagami group of Geoscientific Prospectors Ltd. consists of sixty-eight claims along the Northeast Arm of Lake Timagami in Briggs township, Province of Ontario. These claims are numbered T32583-T32591 incl., T32539 and T32540, T31785-T31833 incl., T31777-T31782 incl., T31771 and T31772.

The property is readily accessible by boat from the town of Timagami which is located about six miles to the Northeast on the Northeast Arm of Lake Timagami.

CHARACTER OF THE AREA

Somewhat over half of the area covered by the present survey consists of water claims in Lake Timagami. The land claims are all on the north shore of the northeast arm of the lake. Outcrop areas consist largely of rolling hills and ridges covered by a thin layer of drift or moss with very few large continuous areas of rock exposed. Valleys between the ridges are typically swampy with a thick growth of cedar.

PREVIOUS WORK

The most recent geological mapping in the area was done by W. W. Moorehouse in 1941 for the Ontario Dept. of Mines on a scale of one mile to the inch.

Ref. W. W. Moorehouse - The Northeastern Portion of the Timagami Lake area., Ont. Dept. of Mines, Annual Report, Vol. LI, Part VI, 1942.

A Bibliography is included in this report.

GENERAL GEOLOGY

The consolidated rocks of the area consist of Keewatin-type volcanic rocks with local sedimentary bands, which are probably interbedded. Intruding these rocks are granite, porphyry, diorite and diabase.

Keewatin-type Rocks

The Keewatin-type rocks include a wide variety of basic to intermediate flows and pyroclastics. Due to the intimate association of these rock types, and because of the poor rock exposures, basic and intermediate lavas and pyroclastics have not been separated in detail. In a general way, however, three belts of volcanic rocks can be indicated.

The southern belt, which is the best defined, consists largely of grey-green rocks which have a fresher appearance than the typical greenstones to the north. These rocks, which outcrop on the southern row of islands, which includes islands 127 and 156, are believed to be mostly intermediate volcanic fragmentals. Included in this series are some agglomerates, basaltuffs and massive volcanics, probably flows.

Outcropping on the northern row of islands, which includes islands 132 and 150, is a series composed largely of dark green, fine-grained basic tuffs with some agglomerates and massive basic to intermediate flows. Locally they are highly sheared and altered to chlorite schist. This belt, of predominantly basic tuffs, can be separated only in a very general way from the volcanic rocks to the north which consist largely of basic flows, but include numerous tuff bands.

Near the mouth of the Tetapaga River, at the eastern edge of the area mapped, fine bedded quartzite, greywacke and tuffs outcrop on a series of small islands and shoals. Included in these sediments and waterlain tuffs are magnetite-rich bands up to two inches in width.

Near and on the shore of the mainland opposite islands 150 and 99 are outcrops of iron formation. The iron formation horizon, where exposed, consists of jasper, chert, magnetite and tuff. On the shore between lines 96E and 100E, an outcrop of iron-formation breccia, with jasper and chert fragments up to four inches, is exposed.

Because of the intimate association of the volcanic flows and pyroclastics on the mainland, and because of the poor rock exposures, it is not possible to separate these rock types. Massive fine to medium-grained basic volcanic types predominate. It is believed that these rocks are predominantly flows, but may represent in part sill-like intrusive bodies. Interbedded pyroclastics include fine-grained basic tuffs, which often contain appreciable magnetite as well developed but small crystals; and agglomerates containing fragments of acid to basic volcanic material. Pillow lavas were identified in only one place on the property.

A peculiar breccia was noted near line 4E about 100 feet north of the baseline. This breccia contains angular fragments of diabase, grey feldspar, porphyry, and fine-grained basic volcanic rocks in a fine-grained basic matrix.

In the north and northwest sections of the property near the granite, considerable fine hornblende is developed and the rocks in places approach amphibolites. It is believed that these rocks represent basic volcanics, recrystallized by the granite intrusive to the north and west.

#### Basic Intrusives

Small dikes of diorite, altered gabbro and amphibolite were noted cutting the volcanic rocks exposed on the islands in the lake portion of the property. In addition, several outcrops of coarse-grained basic rocks have been mapped as gabbro and diorite.

#### Acid Intrusives

The north boundary of the property borders on the southern edge of a large granite mass. This intrusive is a massive pink granite porphyry with large feldspar crystals. Several smaller dikes and/or plugs of similar composition were noted, south of Command Lake, and along the baseline in the vicinity of line 8OE. Small dikes of grey feldspar porphyry and felsite outcrop on the mainland and some of the islands in Lake Timagami.

### STRUCTURAL GEOLOGY

In general dips on the mainland are steep towards the south, whereas on the islands the dips are vertical or steep towards the north. Good rock exposures are too few, however, to work out the folding.

The Northeast Arm of Lake Timagami is a strong linear feature and highly sheared rocks outcrop on the islands to the northeast of the area surveyed. There is little doubt that a major shear zone traverses the southern section of the property.

Strong shearing was also noted on the northern side of island 159.

### ECONOMIC GEOLOGY

Until recently, prospecting along the Northeast Arm of Lake Timagami has largely been directed towards finding gold deposits. Within the last two years copper-nickel deposits have been found and are being explored by diamond drilling. These deposits which are on strike with the property being discussed in this report have been traced at intervals by drilling and surface work for a distance of five miles.

### GEOPHYSICAL SURVEYS

The Northeast Arm claims of Geoscientific Prospectors Ltd. were surveyed in the course of a regional survey, using an airborne magnetometer.

Geophysical surveys carried out include a magnetometer survey on land and water claims, an electrical resistivity survey on the water claims, and an electrical self-potential survey on the land claims.

An Askania vertical magnetometer with a sensitivity of 25 gammas per scale division was used for the magnetometer survey carried out on the ground, and the ice of Lake Timagami.

The electrical resistivity method employed 60-cycle alternating current. Readings of potential difference between potential electrodes were made with a high-sensitivity vacuum-tube voltmeter. Earth resistivities were calculated and plotted as resistivity times 100 log 10.

The self-potential survey was carried out, using a potentiometer.

#### DISCUSSION OF GEOPHYSICAL RESULTS

##### Electrical Resistivity Survey

The electrical resistivity survey indicated a number of anomalies of possible economic importance, having a general northeast trend. These anomalies, or resistivity lows, are indicated by letters on the accompanying maps.

Anomaly "A" is a broad resistivity low about 500 feet south of the mainland and west of island 159. Because of its size, and relatively low resistivity, this anomaly is of particular interest.

Anomalies "B" and "C" are small fairly broad features located east of Anomaly "A" and near a zone of shearing on island 159. Anomaly "D" is a linear zone, extending to the northeast from south of island 159.

Anomalies "E", "F" and "G" extend along a zone south of islands 152 and 150. This is a strong anomaly zone with very low resistivities indicated in places, and may be of major importance.

Three anomalies of limited extent, anomalies "H", "I" and "J" are indicated to the south of Islands 157, 127 and 153.

Anomalies "K" and "L" lie close to the iron formation near the outlet of the Tetapaga River. Anomaly "K" has been drilled and was found to be due to pyrite in iron formation and tuffs. The eastern extension of Anomaly "K" has been indicated on the mainland by an electrical self-potential survey.

Anomaly "M", near the south shore of the northeast arm of Lake Timagami, is a long, continuous resistivity low which probably follows the deep water channel of the Arm. The channel probably marks a strong zone of shearing which is reflected in the electrical results. Anomaly "M" is strongest and broadest south of island 127.

Southwest of Anomaly "A" a local resistivity low, Anomaly "N", is indicated.

### Electrical Self-Potential Survey

At the eastern end of the area surveyed near the mouth of the Tetapaga River, the self-potential survey traced out the eastern extension of Anomaly "K" discussed above. Old trenches on the anomaly expose pyrite mineralization.

Two self-potential anomalies "O" and "P" are indicated east of Hay Lake. Anomaly "O" is a fairly broad feature and probably indicates a sizeable concentration of sulphides. Anomaly "P" is probably the expression of disseminated sulphide mineralization.

### Magnetic Survey

The southern section of the area is characterized by low magnetic intensities and flat relief. This section is believed to be underlain by intermediate volcanic rocks with more acid volcanic rocks near the south shore of the Arm.

Near the north shore of the Arm and for slightly over a quarter mile inland from the lake, there is a number of linear magnetic highs, striking in a northeast direction parallel to the shoreline. These magnetic highs are largely the expression of magnetite in basic tuffs and flows. An iron formation band is indicated along the shore at the eastern end of the area, extending about a quarter mile into the water. At the western end of the property, about 300 feet from the shore another band of iron formation, roughly on strike with the band mentioned above can be traced as a magnetic high.

To the east of the northern part of Hay Lake the strike as indicated by the magnetics is roughly north-south, probably due to folding as a result of granite intrusion.

### CONCLUSIONS AND RECOMMENDATIONS

The results of the work to date have indicated a number of resistivity anomalies in the lake and one self-potential anomaly on the land claims, Anomaly "O". Drilling of similar anomalies on ground to the southwest has intersected copper and nickel mineralization. It is recommended that certain of these anomalies be investigated by diamond drilling.

If possible, most of the resistivity anomalies should be tested during the winter when drilling can be done from the ice, and the anomalies cross-sectioned by relatively short holes. The anomaly areas should be outlined in detail in advance of drilling by taking readings along lines spaced 100 feet apart to obtain data on the areas between the lines already surveyed at 400 foot intervals.

A preliminary program of 3500 feet of diamond drilling is recommended to test resistivity anomalies "A", "E", "F", "G", "H" and "M" and self-potential anomaly "O". If favourable results are obtained, further drilling should be done, including testing of all the electrical anomalies.

J. C. Franz

Respectfully submitted

MINING GEOPHYSICS CORPORATION LIMITED

Toronto,  
Dec. 17, 1952.

N. B. Keevil

LIST OF ACCOMPANYING MAPS FOR  
MINING GEOPHYSICS CORPORATION REPORT NO. 334.

Index Map-----Scale 1" - 1320'

Legend

Aeromagnetic Map-----Scale 1" - 1320'

Magnetic and Geological Maps,  
Scale 1" - 200'

Electrical Maps,  
Scale 1" - 200'

N E 202

N E 202

N E 203

N E 203

N E 204

N E 204

N E 302

N E 302

N E 303

N E 303

N E 304

N E 304

N E 403

N E 403

N E 404

N E 404

LEGEND

TO ACCOMPANY MINING GEOPHYSICS REPORT NO. 334











GEOLOGICAL AND GEOPHYSICAL SURVEYS

OF

GEOSCIENTIFIC PROSPECTORS LTD. OLADES

NORTHEAST ARM OF LAKE TIMAGAMI

BRIGGS TWP., ONT.

-  7 DIABASE DIKE
-  6 ACID INTRUSIVES; 6F FELSITE; 6A APLITE  
6P FELDSPAR PORPHYRY; 6G GRANITE
-  6 BASIC INTRUSIVES; 6B DIORITE;  
6A ALTERED GABBRO, AMPHIBOLITE
-  4 GREYWACKE, TUFT, QUARTZITE; 4B SHEARED;  
4I MAGNETITE-RICH; 4L LIMESTONE
-  3I BANDED IRON FORMATION
-  3 BASIC VOLCANICS; 3A AGGLOMERATE;  
3F FINE-GRAINED FRAGMENTALS, TUFTS;  
3M MASSIVE; 3S SHEARED; 3G GRANITIZED
-  2 INTERMEDIATE VOLCANICS; 2A AGGLOMERATE;  
2F FINE-GRAINED FRAGMENTALS; 2S SHEARED.
-  1 ACID VOLCANICS; 1A AGGLOMERATE;  
1F FINE-GRAINED FRAGMENTALS; 1P RHYOLITE PORPHYRY
-  STRIKE AND DIP OF FORMATIONS
-  STRIKE AND DIP OF SCHISTOSITY

NOTE: VALUES ON MAGNETIC MAPS IN GAUSS.

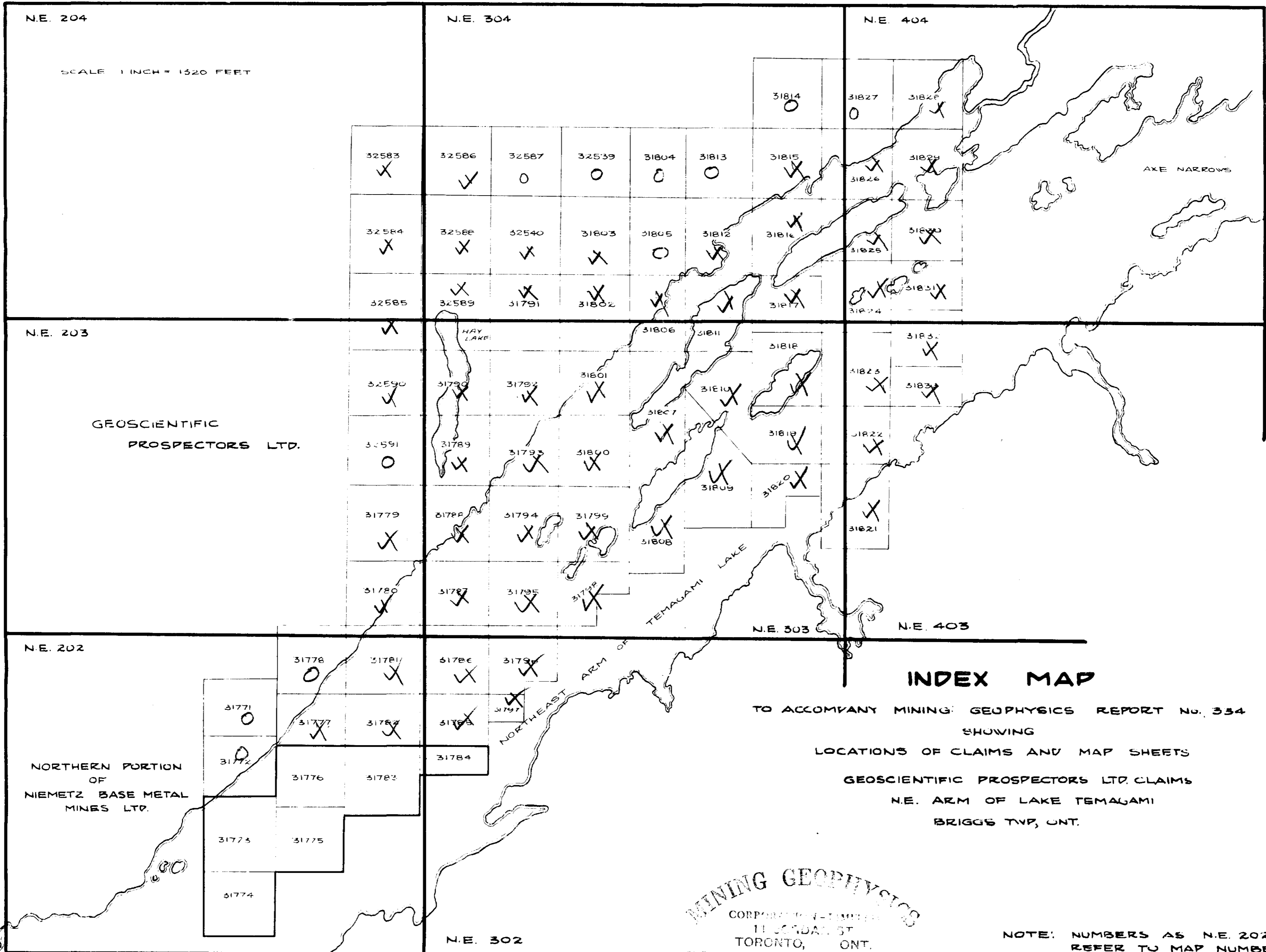
VALUES ON ELECTRICAL MAPS;

(a) ON LAND PORTIONS - NEGATIVE SELF-POTENTIAL  
IN MILLIVOLTS.

(b) ON WATER PORTIONS - EARTH RESISTIVITIES AS  
100 LOG 10 OHM-CMS.

MINING GEOPHYSICS  
GEOLOGICAL AND GEOPHYSICAL SURVEYS  
TORONTO, ONT.

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TO ACCOMPANY REPORT NO. 334	COPY NO. 3



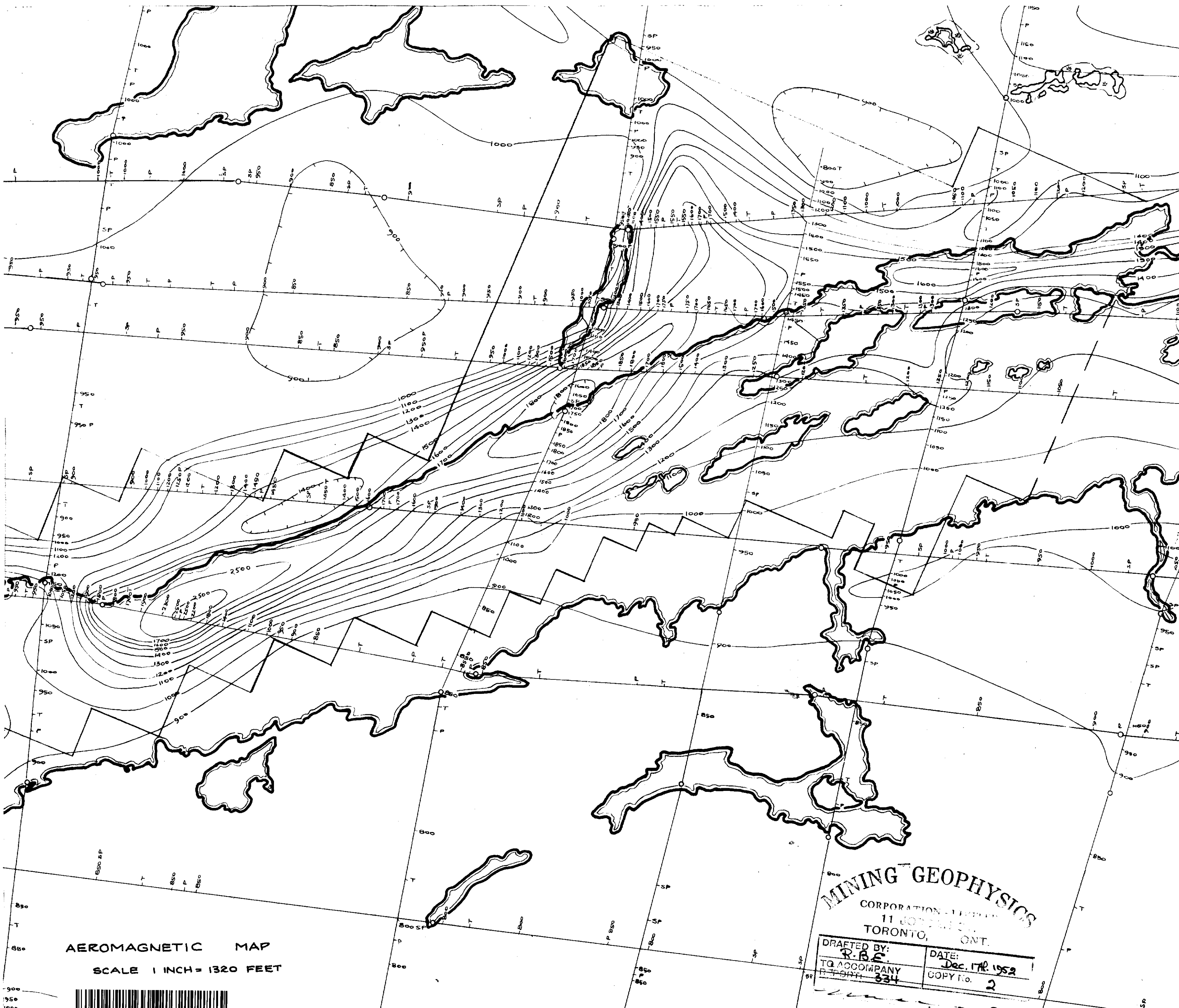
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NOTE: NUMBERS AS N.E. 202 REFER TO MAP NUMBERS







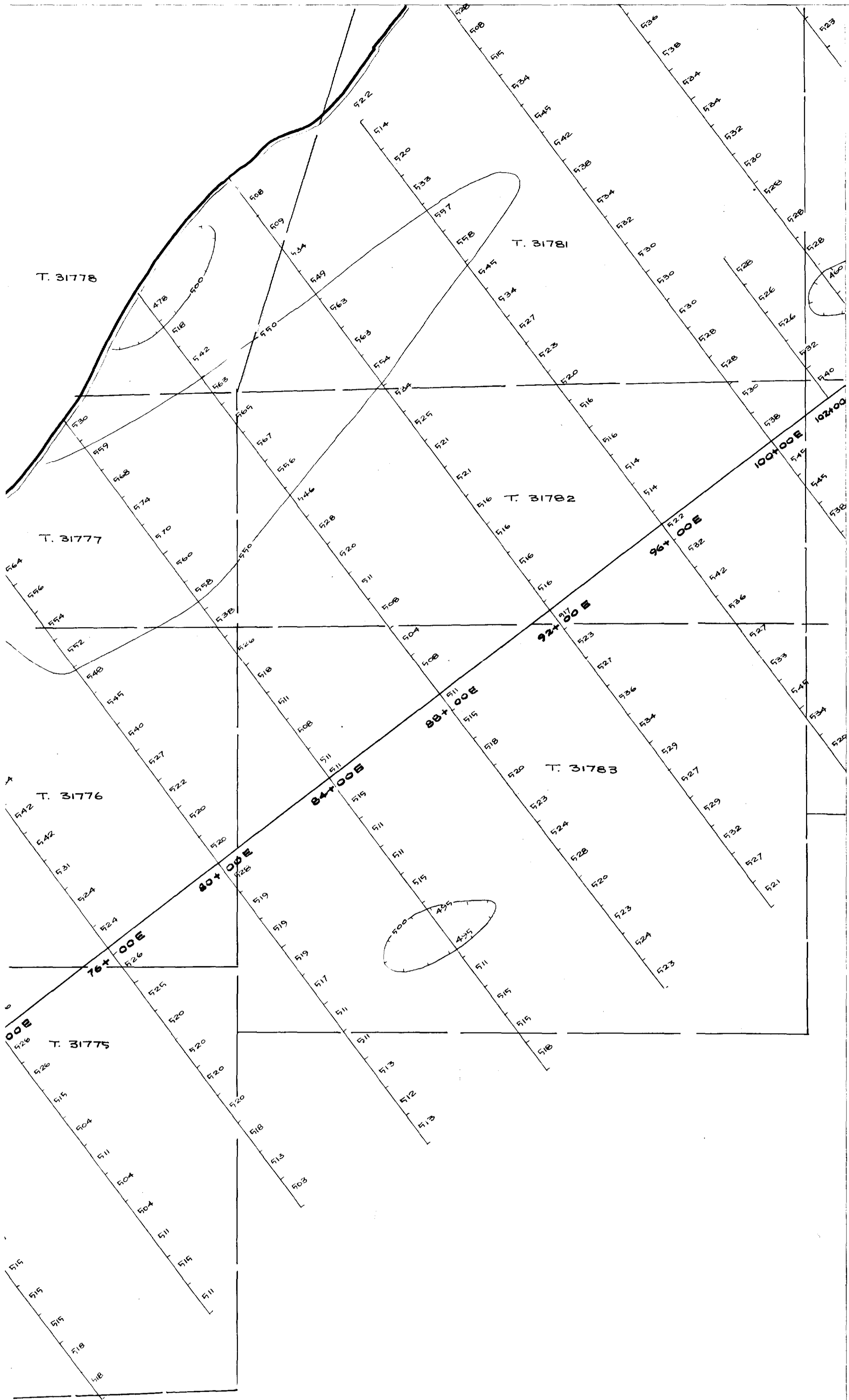
AEROMAGNETIC MAP  
SCALE 1 INCH = 1320 FEET



31M45W0070 63.337 BRIGGS

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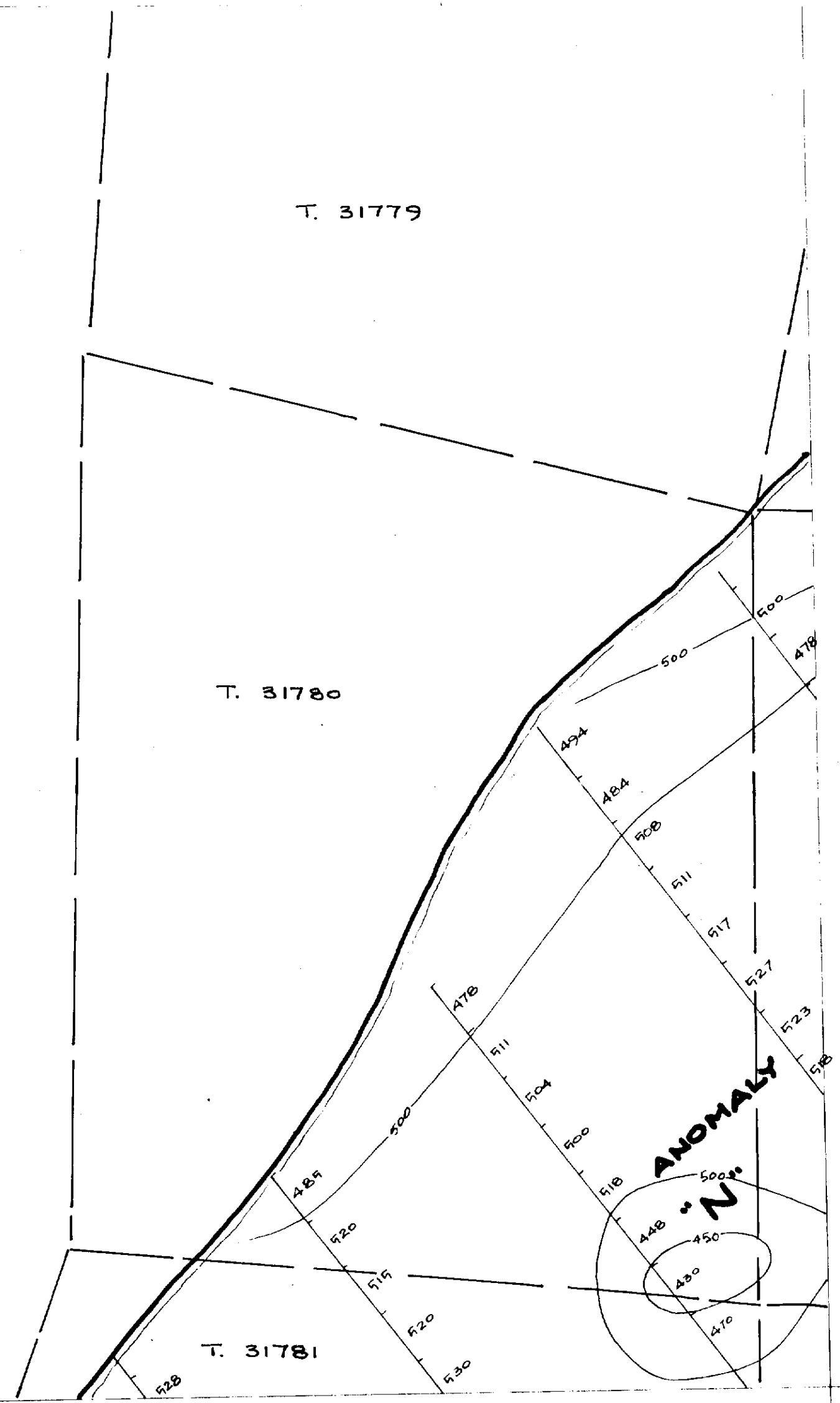


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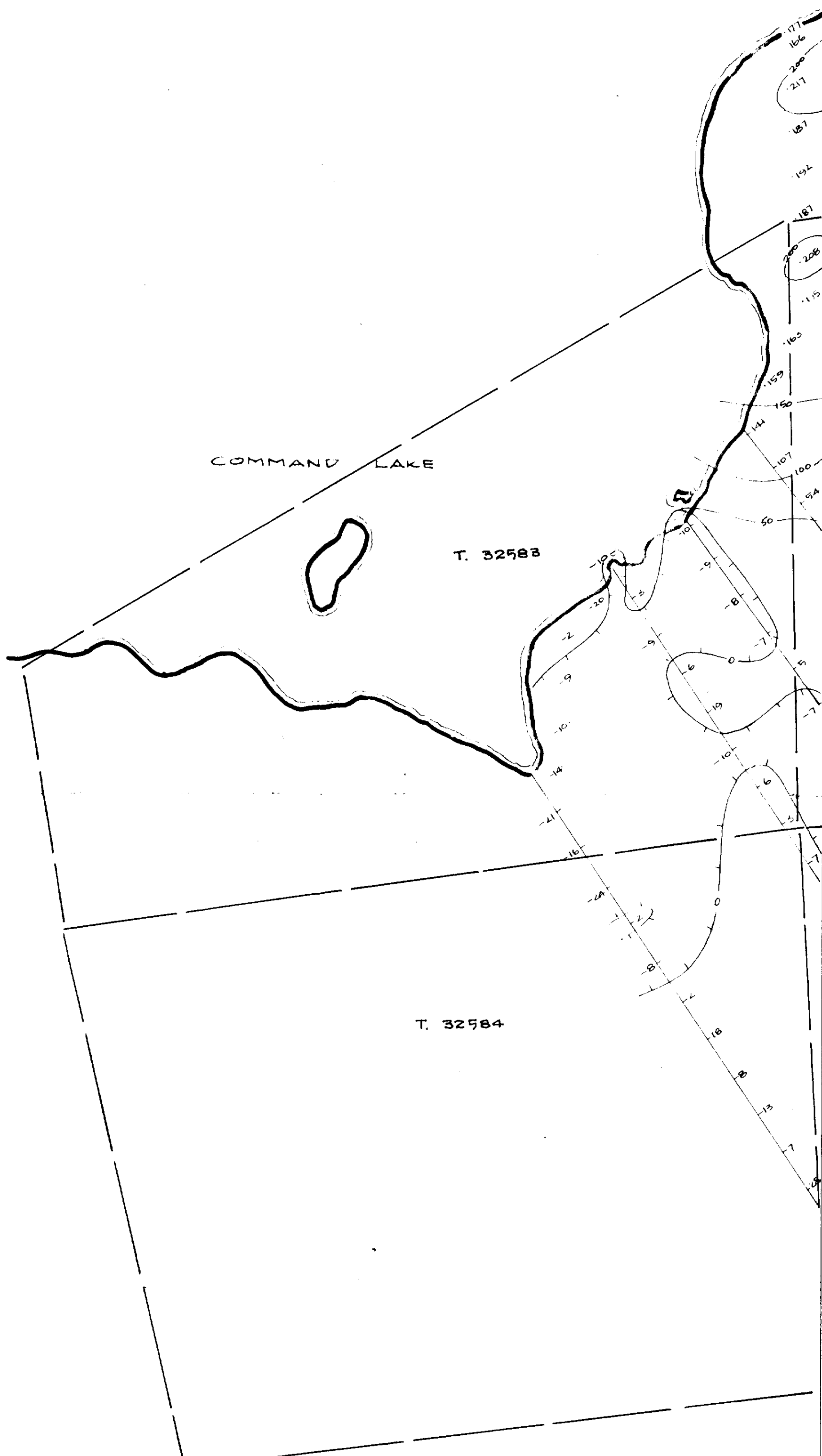
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ELECTRICAL MAP N.E. 203



31M045W0070 63.337 BRIGGS



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ELECTRICAL MAP N.E. 204



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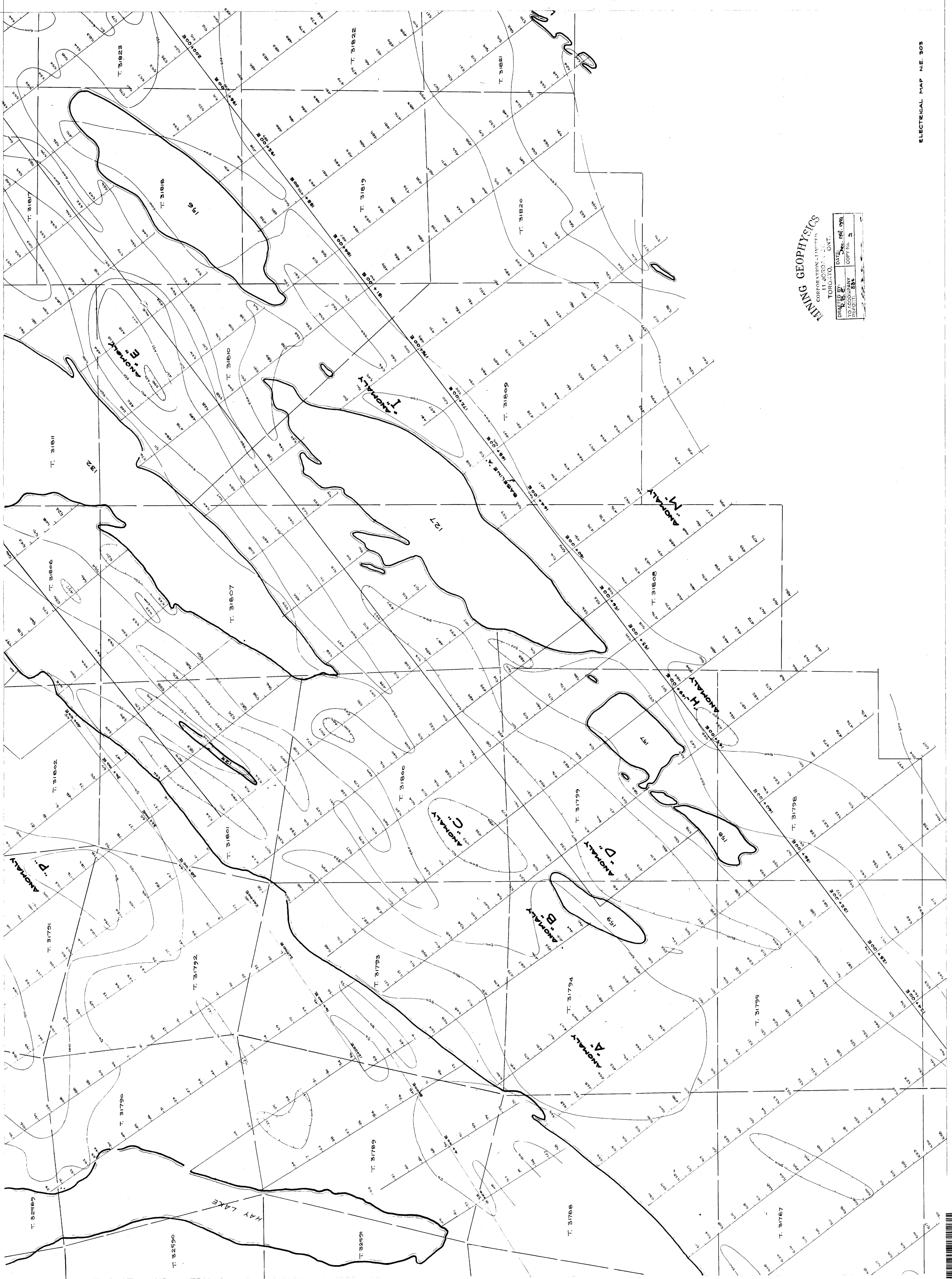
ELECTRICAL MAP N.E. 302



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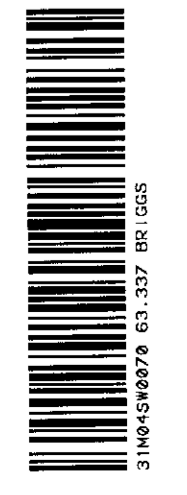
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TO ACCOMPANY REPORT: 334	COPY No. 2





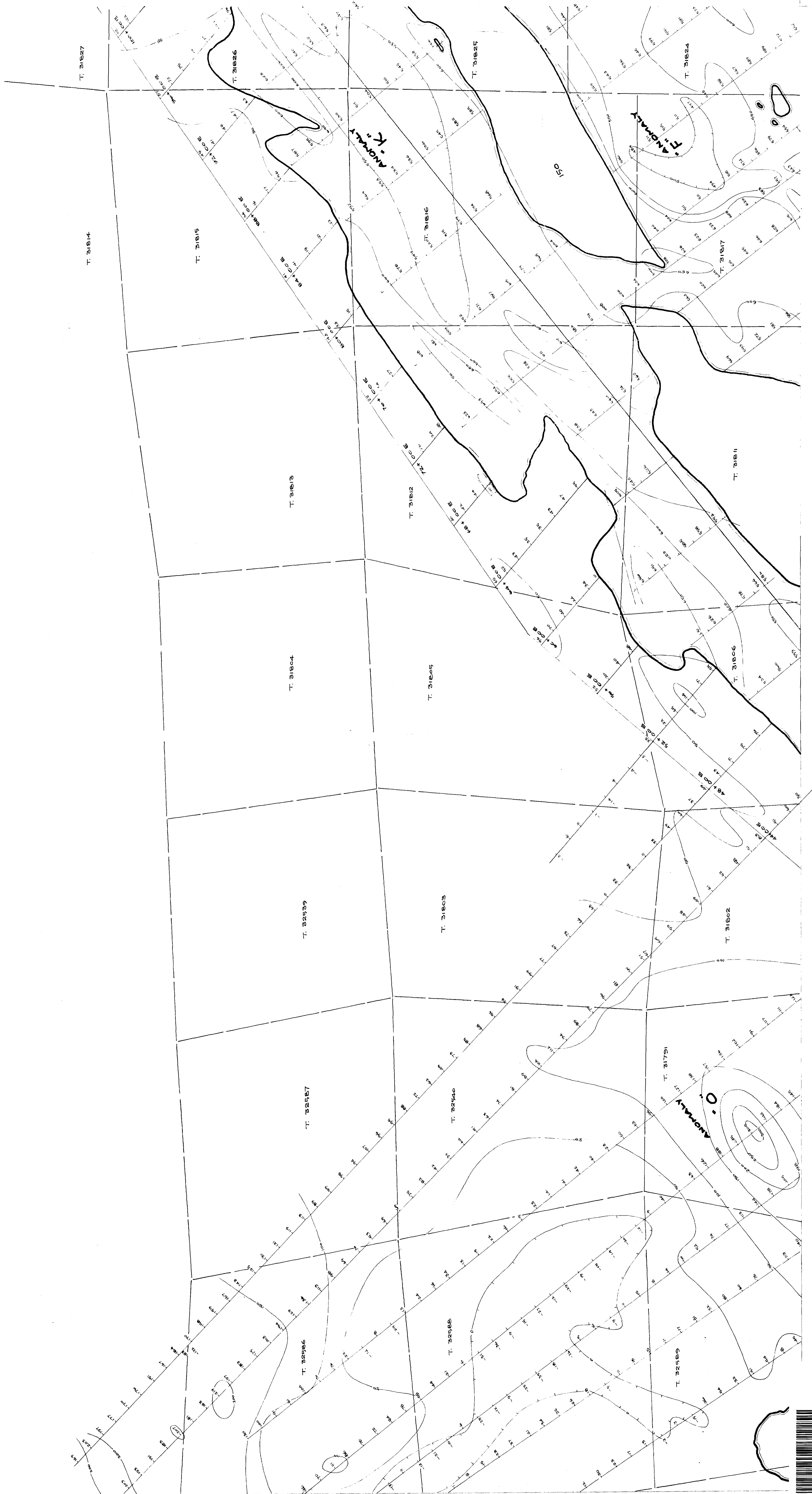
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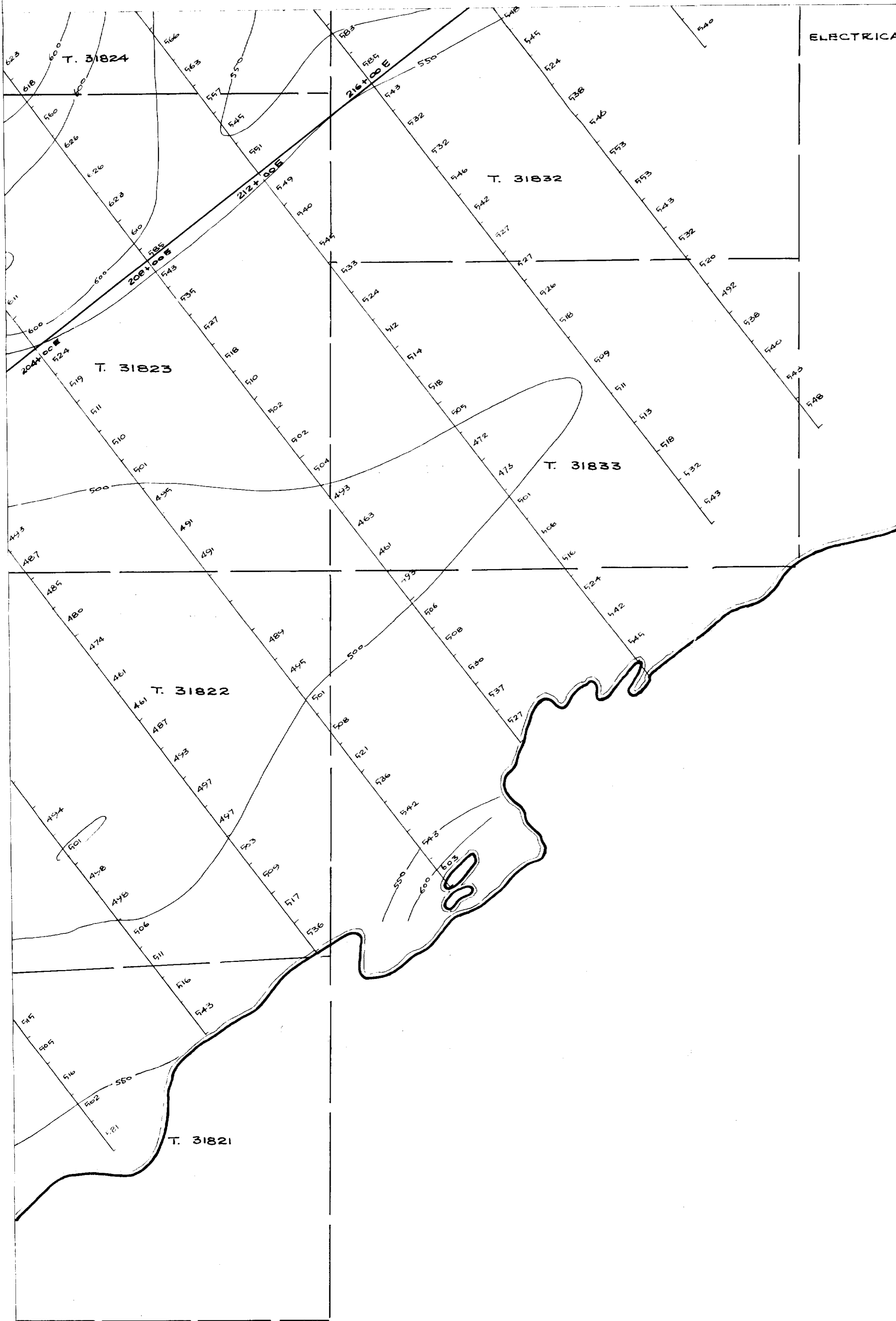
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 TO ACCOMPANY REPORT NO. **2**



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SHEET NO. 5



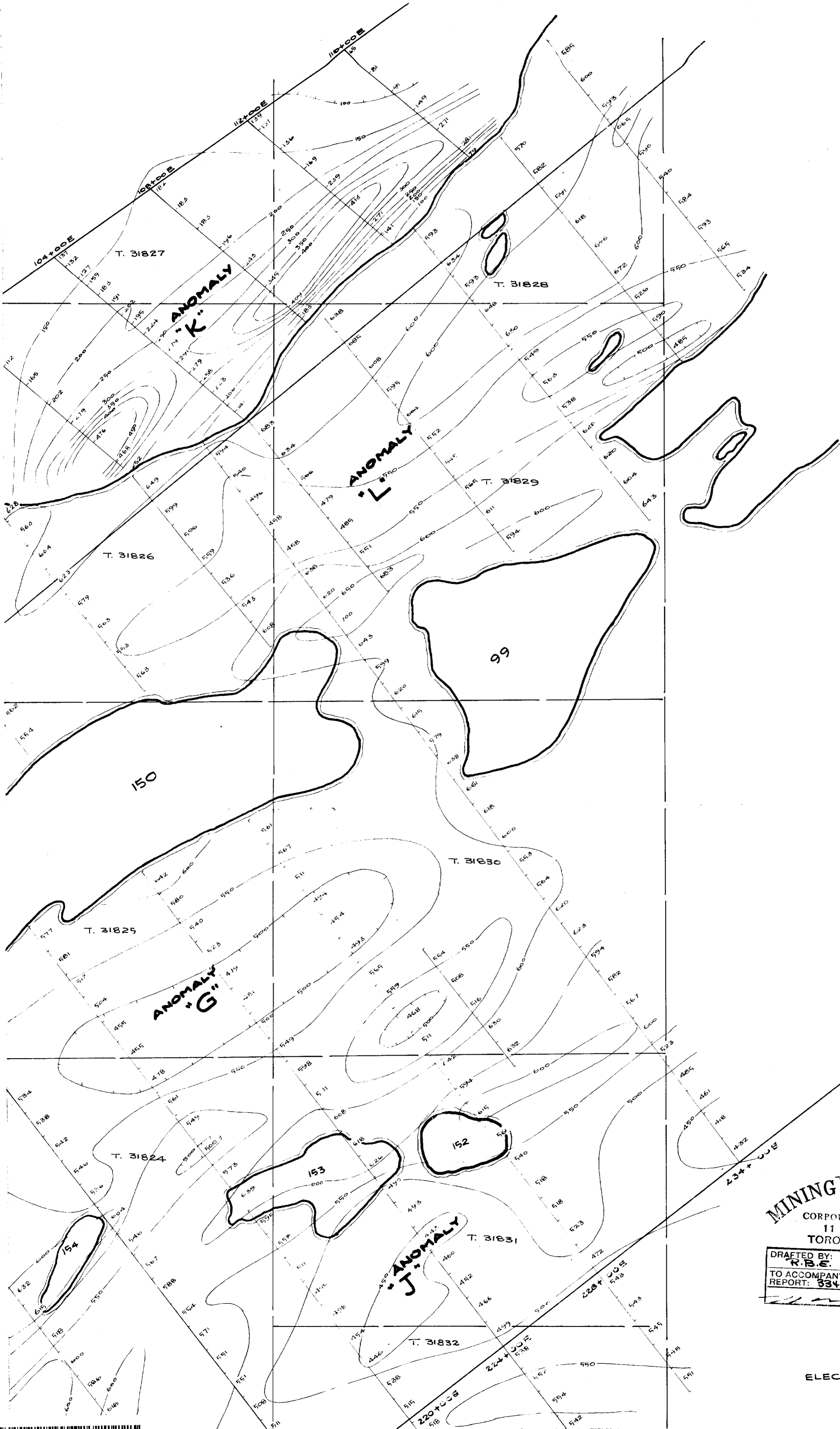


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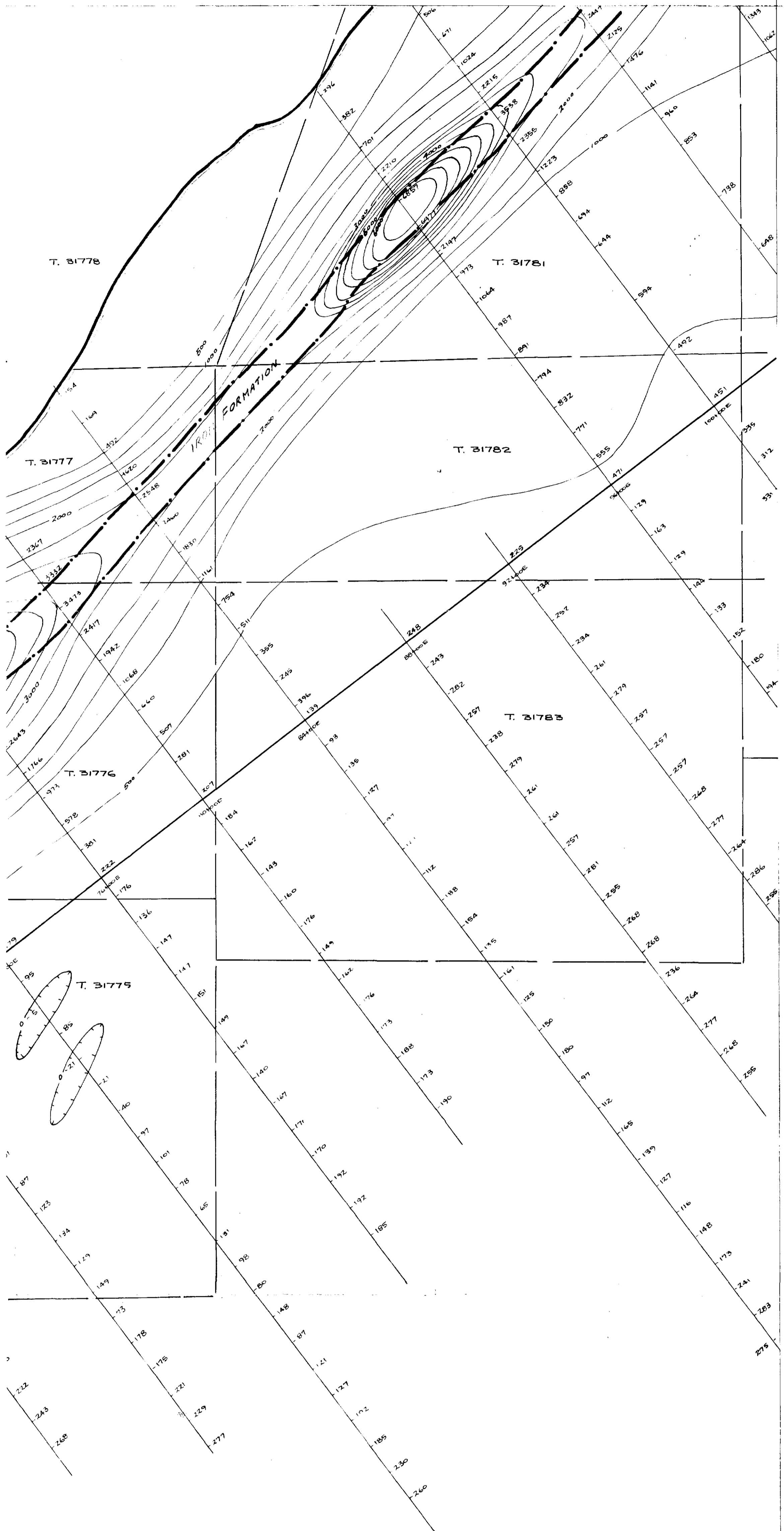




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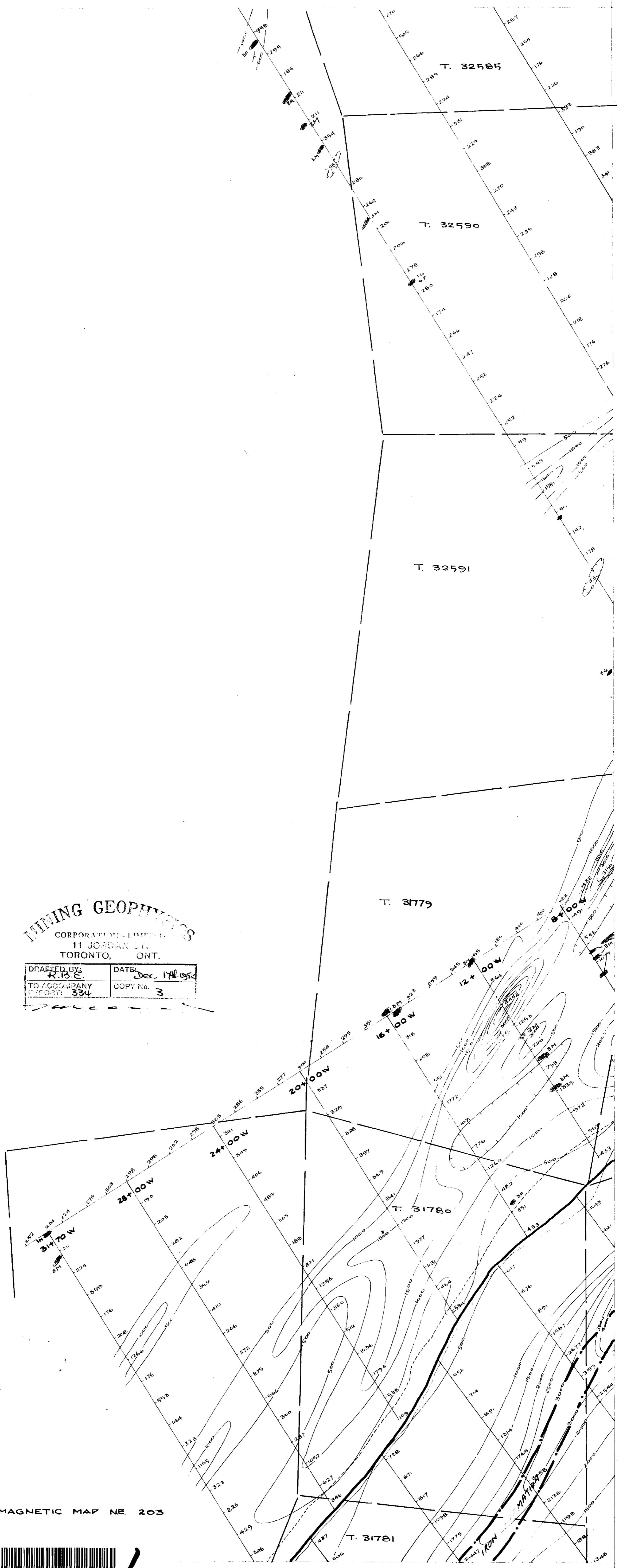
MAGNETIC MAP N.E. 202



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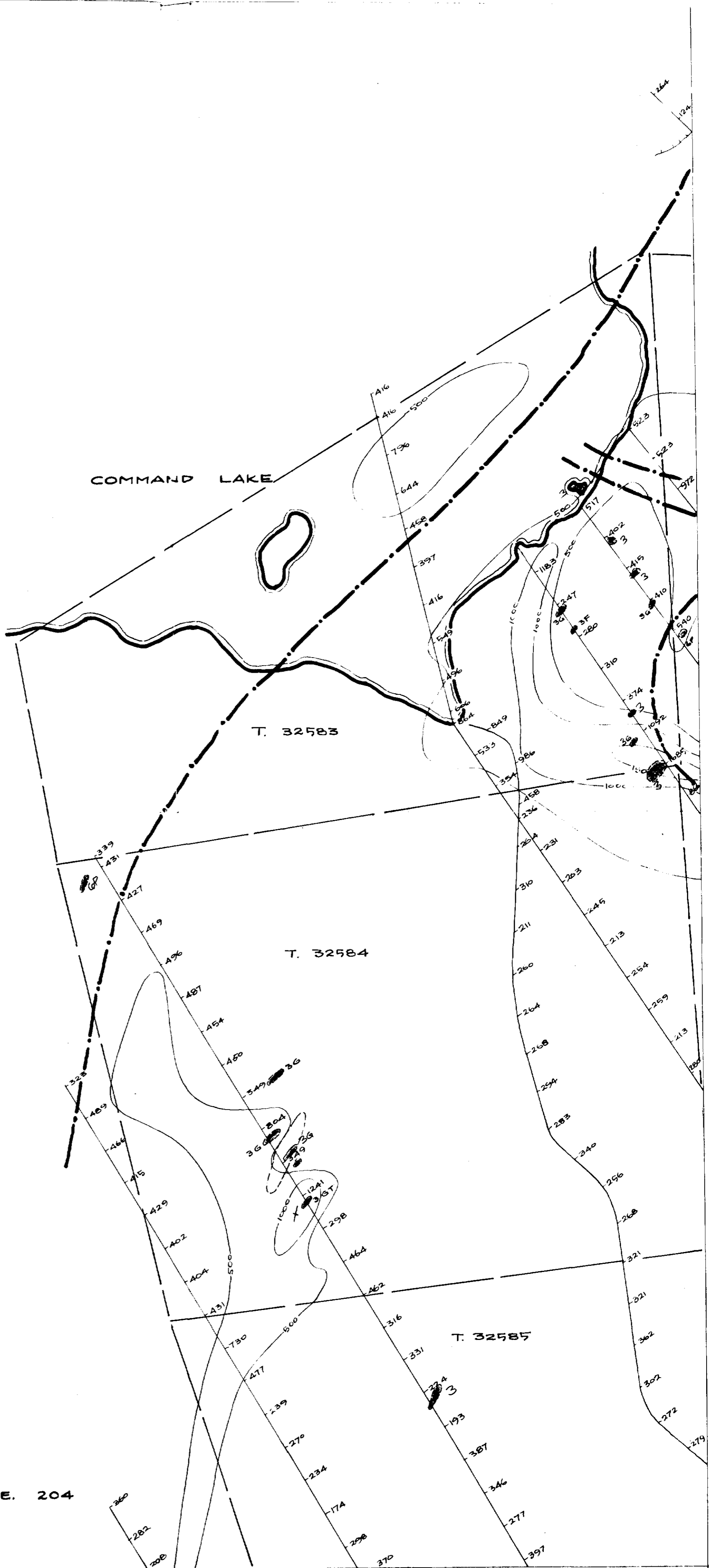
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MAGNETIC MAP NE. 203



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MAGNETIC MAP N.E. 204



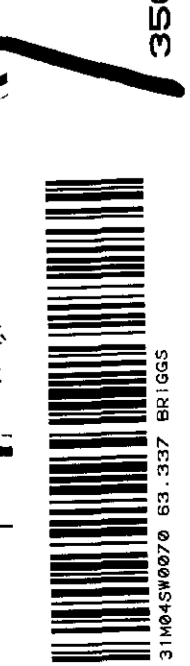
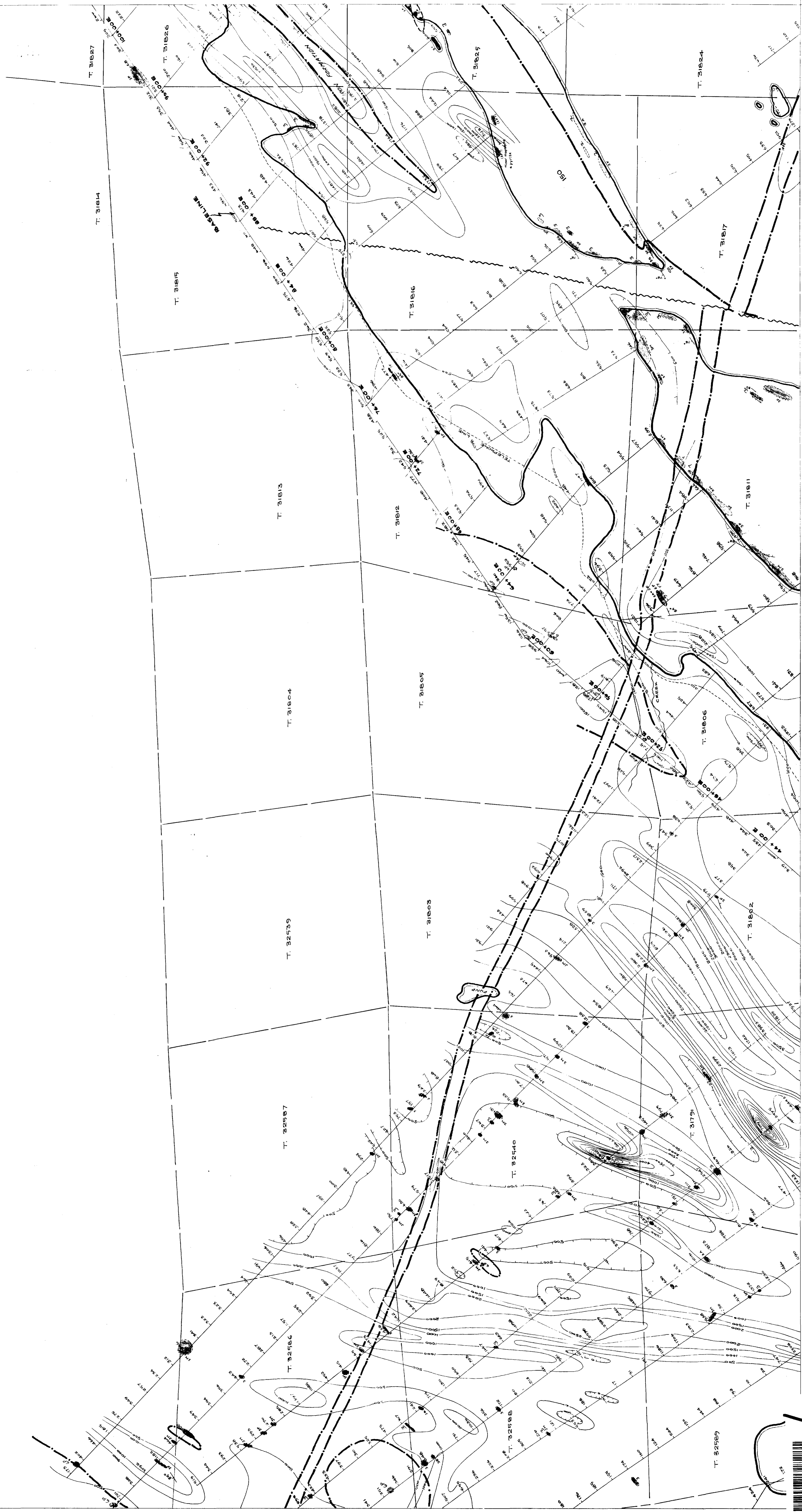
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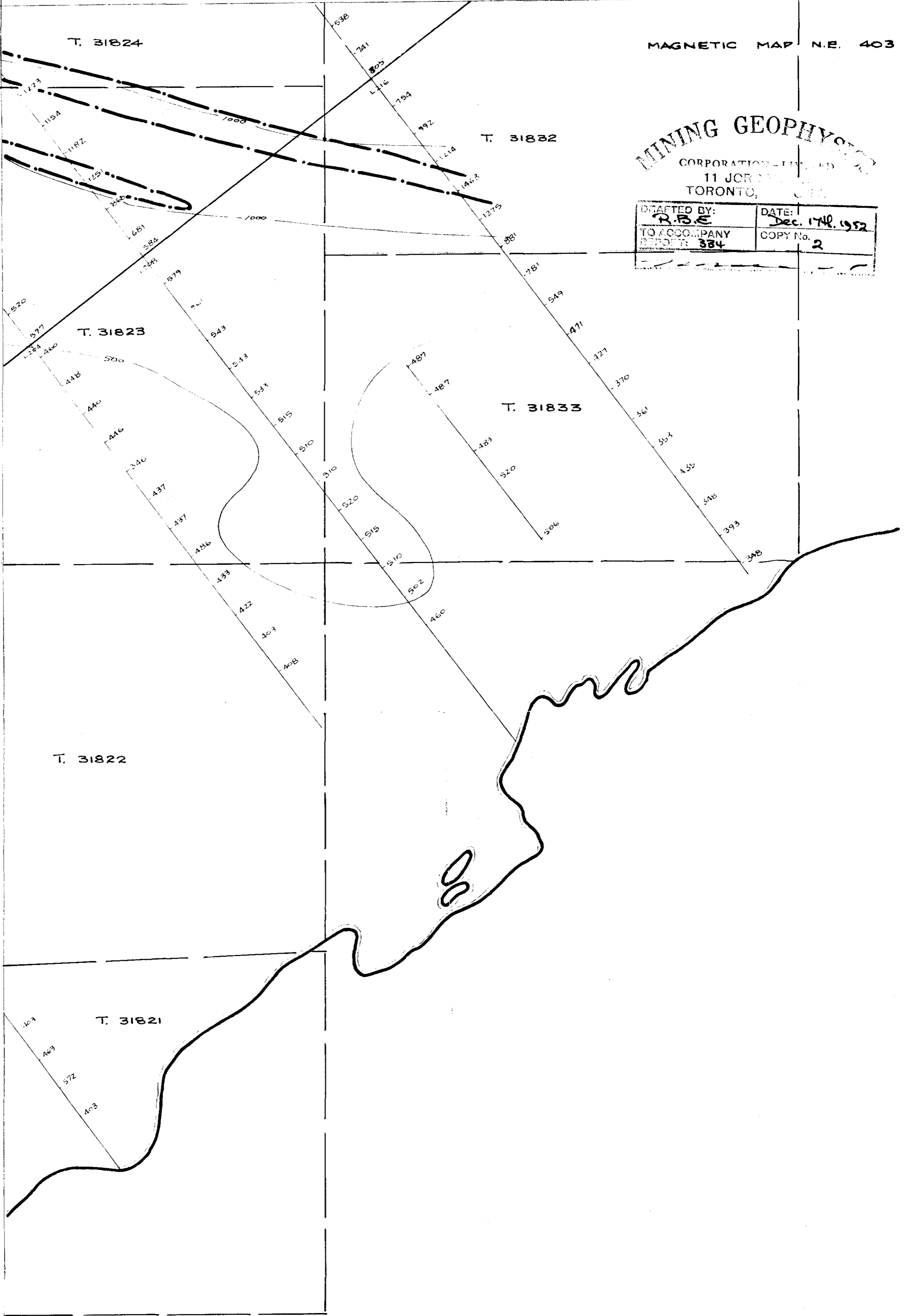
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CORPORATION LIMITED  
TORONTO, CANADA  
DRAWN BY: J. B. B. (J.B.B.)  
CHECKED BY: J. B. B. (J.B.B.)  
RECORD NO.: 334  
COPY NO.: 3



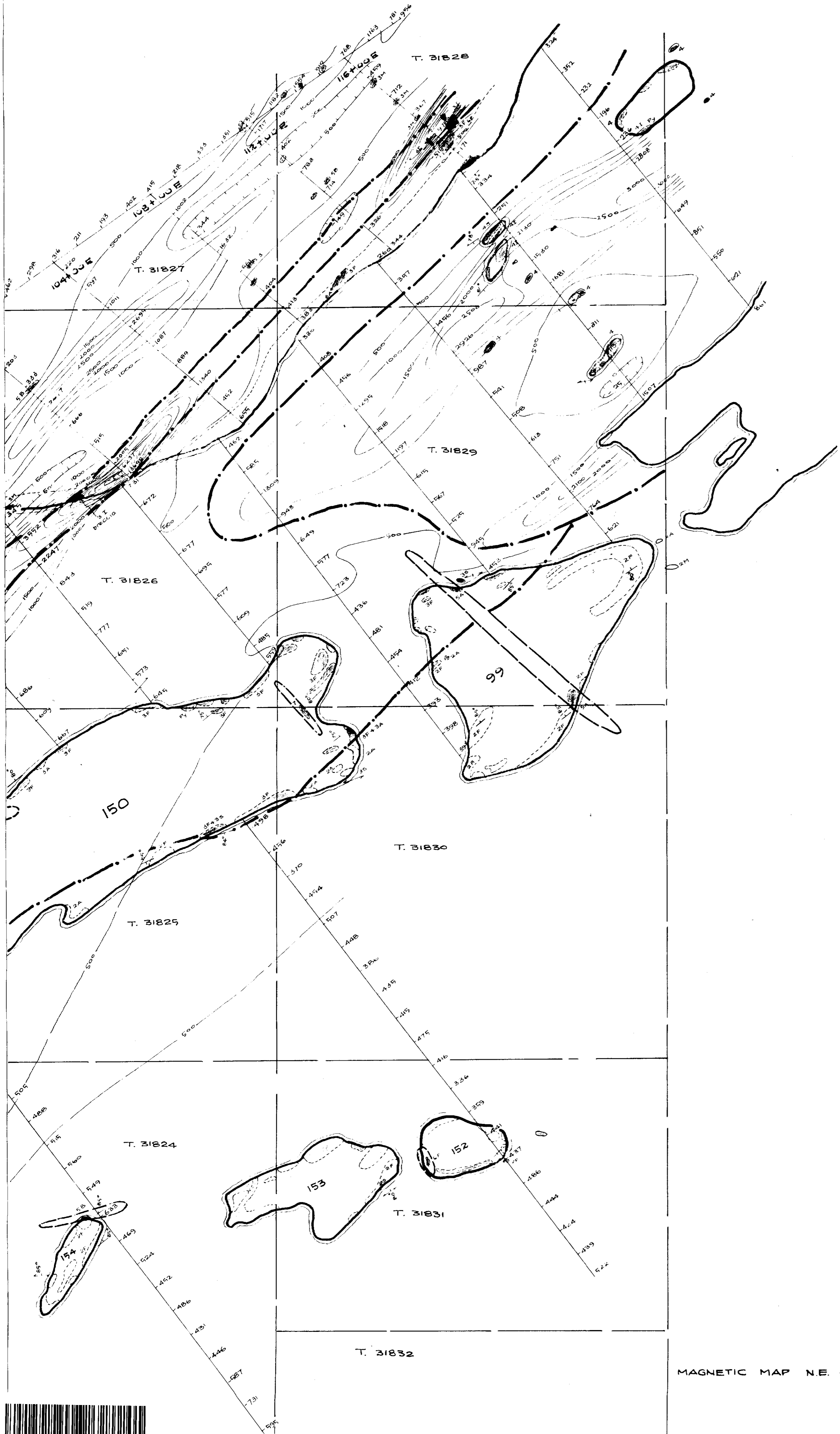
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MAGNETIC MAP N.E. 404



31M045W0870 63.337 BRIGGS