



42A14SE0100 2.13707 TULLY

010

**2.13707**

REPORT ON  
MAGNETOMETER  
and  
VLF EM 16  
SURVEYS

Tully Township  
Porcupine Mining Division  
Ontario

September 1990  
Joe-Anne Salo

*Qual 2.13216*

**RECEIVED**

NOV 30 1990

**MINING LANDS SECTION**



42A14SE0100 2.13707 TULLY

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## TABLE OF CONTENTS

Introduction  
Location and Access  
Property Description  
Survey Methods  
Regional Geology  
Discussion  
Recommendations

### APPENDIX

References  
Qualifications  
Maps  
Survey Data Sheets

#### INTRODUCTION:

This claim was staked in the fall of 1989 by L. Salo, M M-20010. Claim P115368, SW $\frac{1}{4}$ N $\frac{1}{2}$  Lot 7 Concession 4, Tully Township, Porcupine Mining Division.

This report puts forth the results of a magnetometer and a VLF EM16 survey carried out on this claim.

#### LOCATION AND ACCESS:

This Tully Township claim is located 35 km north-east of Timmins.

Access to the property is via highway 101 to Hoyle. At Hoyle use highway 610 to Ice Chest Lake Road. A series of gravel roads put in by the timber companies continue into Little Township where a left branch heads towards Tully Township. At about 1 $\frac{1}{2}$  km, another fork in the road leads west approximately 9 km to the center of Tully Township (the east fork is marked to go to Frederick House River).

There is one bridge that requires repairs but is passable by four wheel drive vehicles. An old logging road can be walked for 1 km to the claim.

#### PROPERTY DESCRIPTION:

This claim P1115368 is located in the south-west quarter of the north half of Lot seven in the fourth concession, Tully Township, Porcupine Mining Division.

The property is low lying with poor drainage. It is covered in spruce, balsam and tag alders. One visible outcrop was seen in the south-west corner of the claim.

SURVEY METHODS:

MAGNETOMETER

A Total Field Magnetometer Survey was carried out in the summer of 1990. A G.S.M. Proton Precession Magnetometer was used for the survey. The operator was Larry Salo of Connaught.

A metric grid was cut with north-south running lines, centered every 100 meters along an east-west baseline. The baseline starts at the number two post of the claim and goes west for 400 meters. Pickets were erected along the grid at 25 meter intervals.

Readings were taken at every station along the grid and baseline.

Due to the survey being only one claim, a control base station was set at the number two post and diurnal drift was corrected by looping with this station.

VLF EM 16

The VLF EM16 Survey was carried out simultaneously to the magnetometer survey. A Geonics EM 16 unit was used for the survey. The operator was Joe-Anne Salo of Connaught.

The transmitting station used for the survey was Cutler, MAINE. All readings were taken while facing north.

REGIONAL GEOLOGY :

Dane Bridges T-3143

"THE TULLY CLAIM GROUP LIES WITHIN THE NORTHWESTERN PART OF THE ARCHEAN ABITIBI GREENSTONE BELT. ONTARIO GEOLOGICAL SURVEY (OGS) MAP 2205 (RYKE ET AL, 1973) SHOWS TULLY TOWNSHIP TO BE UNDERLAIN BY FELSIC VOLCANIC ROCKS IN THE NORTH AND VOLCANIC, ULTRAMAFIC AND SEDIMENTARY ROCKS IN THE SOUTH ..."

The outcrop in the south-west corner of the claim have been identified as "Massive to folliated basaltic flows", as described by Hunt et al, 1980 on preliminary geology mapP699

Tully Township is estimated to have up to 200 feet of overburden.

DISCUSSION:

The magnetometer survey picks up an anomaly in the north central part of the claim. The two magnetic lows on either side of the anomaly seem indicative of showing direction for the anomaly.

The VLF EM16 survey profile and the Fraser Filtered data pick up the magnetic anomaly, however they show a second area of interest in the south-west corner of the grid.

I would wonder if the anomaly in the central part is caused by overburden.

RECOMMENDATIONS:

It is recommended that plugger and or diamond drilling be done on this claim.

1. Stripping of outcrop to expose fresher rock would allow a series of nine plugger holes to open the outcrop. Sampling and assaying would determine if diamond drilling were worth while.
2. Depending upon the results of the above, two diamond drill holes could be put in;

A-A 300 foot hole at 1+25N 3+65W at 45 degrees east of north.

B-A 500 foot hole at 3+00N 2+80W at 35 degrees east of north.

APPENDIX

REFERENCES

BRIDGE, D.A. 1988

Report on Magnetometer Survey on Claim P892794  
Tully Project T-3143

HUNT, D.S. 1980

Tully Township; OGS Preliminary Geology Map P699

PYKE, D.R. 1973

Timmins-Kirkland Lake Geological Compilation Series  
OGS Map 2205



STATEMENT OF QUALIFICATIONS

I, Joe-Anne G. Salo, of Lot 2 Con. 6, German Township, in the Village of Connaught, the City of Timmins, the District of Cochrane, do hereby declare and put forth the following qualifications for demonstrating Professional Competence Equivalence concerning Tully Township Property, for Larry Salo and dated October 17th, 1990.

1. I am a graduate of grade thirteen from Dunbarton High School in Pickering , Ontario 1976
2. I am a M.R.C. graduate from Centennial College in Scarborough, Ontario 1978
3. Geological-Technical Course-H.Z. Tittley 1982
4. Geological Drafting Course-Hollinger Mines Ltd., 1983
5. I am a self taught prospector, studying geology and working continuously since May 1980.
6. Field School in Mining Geophysics, Haileybury School of Mines June 1990
7. I have no interest in the Larry Salo Property, Tully Township, and will receive no further payment other than my fees.

Joe-Anne G. Salo

Pioneered and patented exclusively by Geonics Limited, the VLF method of electromagnetic surveying has been proven to be a major advance in exploration geophysical instrumentation.

Since the beginning of 1965 a large number of mining companies have found the EM16 system to meet the need for a simple, light and effective exploration tool for mining geophysics.

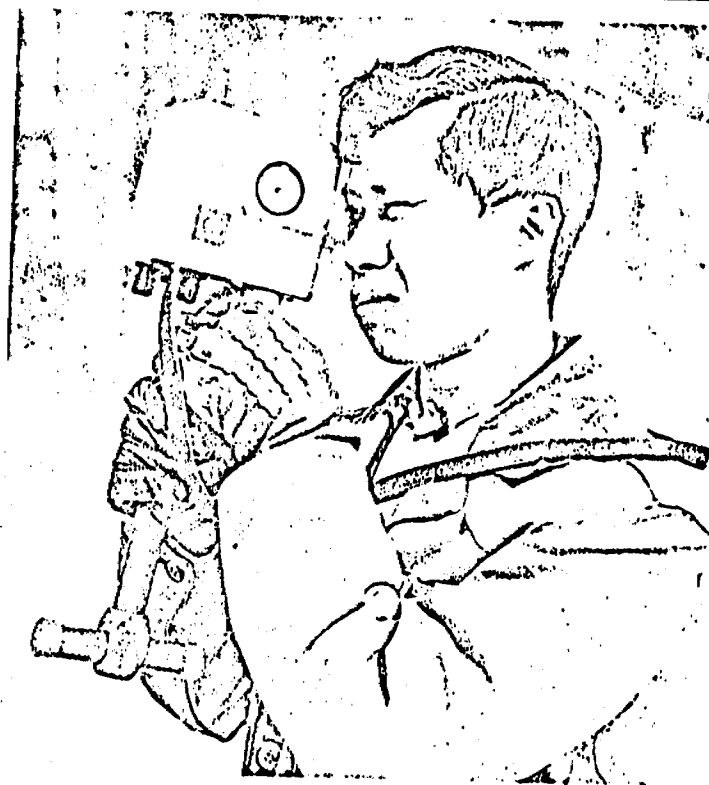
The VLF method uses the military and time standard VLF transmissions as primary field. Only a receiver is then used to measure the secondary fields radiating from the local conductive targets. This allows a very light, one-man instrument to do the job. Because of the almost uniform primary field, good response from deeper targets is obtained.

The EM16 system provides the *in-phase* and *quadrature* components of the secondary field *with the polarities indicated*.

Interpretation technique has been highly developed particularly to differentiate deeper targets from the many surface indications.

#### Principle of Operation

The VLF transmitters have vertical antennas. The magnetic signal component is then horizontal and concentric around the transmitter location.



## Specifications

|                            |  |                             |   |
|----------------------------|--|-----------------------------|---|
| Source of primary field    | VLF transmitting stations.   | Reading time                | 10-40 seconds depending on signal strength.   |
| Transmitting stations used | Any desired station frequency can be supplied with the instrument in the form of plug-in tuning units. Two tuning units can be plugged in at one time. A switch selects either station.  | Operating temperature range | -40 to 50° C.   |
| Operating frequency range  | About 15-25 kHz.   | Operating controls          | ON-OFF switch, battery testing push button, station selector, switch, volume control, quadrature, dial $\pm 40\%$ , inclinometer dial $\pm 150\%$ .     |
| Parameters measured        | (1) The vertical in-phase component (tangent of the tilt angle of the polarization ellipsoid).<br>(2) The vertical out-of-phase (quadrature) component (the short axis of the polarization ellipsoid compared to the long axis). | Power Supply                | 6 size AA (penlight) alkaline cells. Life about 200 hours.  |
| Method of reading          | In-phase from a mechanical inclinometer and quadrature from a calibrated dial. Nulling by audio tone.  | Dimensions                  | 42 x 14 x 9 cm (16 x 5.5 x 3.5 in.)   |
| Scale range                | In-phase $\pm 150\%$ ; quadrature $\pm 40\%$ .   | Weight                      | 1.6 kg (3.5 lbs.)   |
| Readability                | $\pm 1\%$ .  | Instrument supplied with    | Monotonic speaker, carrying case, manual of operation, 3 station selector plug-in tuning units (additional frequencies are optional), set of batteries. |
|                            |  | Shipping weight             | 4.5 kg (10 lbs.)  |



**GEONICS LIMITED**

Designers & manufacturers  
of geophysical instruments

subsidiary of  
Deering Milliken Inc.

2 Thorncliffe Park Drive,  
Toronto/Ontario/Canada  
M4H 1H2  
Tel: 425-1824  
Cables: Geonics

2. SPECIFICATIONS

RESOLUTION: 1 gamma, 0.5 gamma optional

ACCURACY:  $\pm 1$  gamma over operating range

RANGE: 20,000-100,000 gamma in 23 overlapping steps

GRADIENT TOLERANCE: Up to 5000 gamma/metre

OPERATING MODES: MANUAL PUSHBUTTON, new reading every 1.85 sec., display active between readings

CYCLING, pushbutton initiated, 1.85 sec. period

SELFTTEST, pushbutton controlled, 7 sec. period

OUTPUT: VISUAL: 5 digit 1 cm (0.4") high Liquid Crystal Display, visible in any ambient light

DIGITAL: Multiplied precession frequency and gating pulse

ANALOG: Optional 0-99 or 0-999 gamma

EXTERNAL TRIGGER: Permits externally triggered operation with periods longer than 1.85 sec. (optional minimum period 0.9 sec.)

POWER REQUIREMENTS: 12V 0.7A peak, 5mA standby

POWER SOURCE: INTERNAL: 12V 0.75Ah NiCd rechargeable battery 3,000 readings per full charge

EXTERNAL: 12-18V

BATTERY CHARGER: Input: 110/220V 50/60Hz; output: 14V 75mA DC

OPERATING TEMPERATURE: -35 to +55C

DIMENSIONS: CONSOLE: 15x8x15cm (6x3 $\frac{1}{2}$ x6")

SENSOR: 14x7cm dia (5 $\frac{1}{2}$ x3" dia)

STAFF: 175cm (70") extended, 53cm (21") collapsed, or 4 45cm (18") sections

WEIGHT: 2.7kg (6 lb)

THE SCHOOL OF MINES  
Haileybury Campus of  
Northern College of Applied Arts and Technology

APPENDIX TO REPORT  
FIELD PROCEDURE FOR A MAGNETOMETER SURVEY

The Magnetometer deflection depends on the total vertical intensity and is made up of:

- a) A large part which does not vary with time or position on the property
- b) A small part which varies with time, called the diurnal variation
- c) A part which varies over the property, called the anomaly value

It is necessary to eliminate (a) and (b) and to measure (c). The first may be eliminated by subtracting a constant value from all the final calculated values in the survey.

The second may be eliminated by measuring diurnal changes and subtracting them from the results at each station. The residual after these corrections are made is known as the anomaly value.

Setting Up Base Stations

To obtain a graph showing the variation of the magnetic field during a day it is necessary to establish a series of stations over the property whose value is known. These base stations should be so placed that one or another may be conveniently read at least every hour. The base line across a property is useful for a line of such stations, as are tie lines which are not more than one half mile from the base line.

To set out the base stations the following procedure is suggested.

1. Read base A, then B, then C, then D and return to A
2. Read base D, E, F, G and return to B
3. Continue until all base stations are covered
4. Tabulate the results as in the example below -

| STATION | TIME | READING<br>GAMMAS | DIURNAL<br>CORRECTION | CORRECTED<br>BASE VALUE |
|---------|------|-------------------|-----------------------|-------------------------|
| Base A  | 9.00 | 1190              | 0                     | 1190                    |
| Base B  | 9.10 | 1060              | $1/4 \times 35 = 9$   | 1051                    |
| Base C  | 9.20 | 828               | $2/4 \times 35 = 18$  | 810                     |
| Base D  | 9.30 | 1245              | 27                    | 1228                    |
| Base A  | 9.40 | 1225              | 35                    | 1190                    |

Note that base A has increased from 1190 to 1225 in 40 minutes. To bring the value back to 1190 one must subtract 35 gammas. The assumption is made that the increase has been regular hence Base B must have  $1/4 \times 35$  subtracted and so on. A continuation of the calculation is carried out for all base stations.

## 1.2 EARTH'S MAGNETIC FIELD

Figure 1 shows nominal distribution of Earth's magnetic field in kilogammas, with dotted lines separating equatorial and polar regions. In polar regions an inclination of magnetic field vector is closer to vertical, while in equatorial regions it is nominally horizontal. To obtain the best precession signal and superior quality of operation, the sensor must be aligned accordingly. Orientation line at the side of the sensor should be oriented vertically in polar regions and horizontally in equatorial regions. Although maximum signals are achieved by aligning the sensor orientation line close to the actual direction of the magnetic field, it is generally not necessary to go beyond horizontal/vertical orientation mentioned above.

Range position on a front panel of the instrument should initially be selected closest to a nominal value of magnetic field shown for particular region in fig.1. As local distributions of magnetic field could be considerably altered, a proper range position should be determined by first valid reading of the magnetometer (first two digits of the display show a real magnetic field value for the place of measurement). During a survey, the field value may change beyond initially used range and the Range switch position should be adjusted accordingly, although the GSM-8 will generally work correctly on several adjacent ranges.

Local ferromagnetic objects like screws, nuts, pocket knives, nickel coins, wristwatches, tools etc. may impair the quality of measurement by modifying the value of local magnetic field being measured or in drastic cases by even destroying the proton precession signal due to excessive gradients. For best results ferromagnetic objects should be kept away from the sensor. NiCd batteries, although slightly magnetic, do not produce visible effect on measurements if the sensor is installed on the staff and kept at arms length away from the operator and the console. For back-pack installation of the sensor a nonmagnetic set of batteries is recommended.

# 60492

DOCUMENT NO  
W 9006-6



Nov. 83

Mining Act

Report of Work  
(Geophysical, Geological and Geochemical S

900

|  |   |   |
|--|---|---|
| Type of Survey(s)<br><b>MAGNETOMETER, VLFEM 16</b>   | Mining Division<br><b>PORCUPINE</b>       | Township or Area<br><b>TULLY TOWNSHIP</b>                     |
| Recorded Holder(s)<br><b>L. SALO</b>   | Prospector's Licence No.<br><b>M20010</b> |   |
| Address<br><b>Gen Del Connaught Ontario</b>  |   | Telephone No.<br><b>363-2108</b>                              |
| Survey Company<br><b>LWS Research</b>  |   |   |
| Name and Address of Author (of Geo-Technical Report)<br><b>J. SALO G.D. Connaught Ont.</b> |   | Date of Survey (from & to)<br><b>22, 08, 90 to 23, 08, 90</b> |

Credits Requested per Each Claim in Columns at right

Mining Claims Traversed (List in numerical sequence)

| Special Provisions   | Geophysical                          | Days per Claim |
|--|--------------------------------------|----------------|
| For first survey:  | - Electromagnetic                    | 40             |
| Enter 40 days. (This includes line cutting)                        | - Magnetometer                       | 20             |
| For each additional survey: using the same grid:                   | - Other                              |                |
| Enter 20 days (for each)   | Geological                           |                |
|  | Geochemical                          |                |
| Man Days   | Geophysical                          | Days per Claim |
| Complete reverse side and enter total(s) here                      | - Electromagnetic                    |                |
|  | - Magnetometer                       |                |
|  | - Other                              |                |
|  | Geological                           |                |
|  | Geochemical                          |                |
| Airborne Credits   | Electromagnetic                      | Days per Claim |
| Note: Special provisions credits do not apply to Airborne Surveys. | Magnetometer                         |                |
|  | Other                                |                |
| Total miles flown over claim(s).                                   |                                      |                |
| Date   | Recorded Holder or Agent (Signature) |                |

| Mining Claim  |         | Mining Claim |        | Mining Claim |   |
|---|---------|--------------|--------|--------------|---|
| Prefix  | Number  | Prefix       | Number | Prefix       | Number  |
| P.  | 1115368 |              |        |              |   |
| <div style="border: 2px solid black; padding: 5px; display: inline-block;"> <b>ONTARIO GEOLOGICAL SURVEY</b><br/> <b>ASSESSMENT FILES</b><br/> <b>OFFICE</b><br/> <b>FEB 5 1991</b><br/> <b>RECEIVED</b> </div> <div style="border: 2px solid black; padding: 5px; display: inline-block; margin-left: 20px;"> <b>RECEIVED</b><br/> <b>OCT 22 1990</b><br/> <b>MINING LANDS SECTION</b> </div> <div style="border: 2px solid black; padding: 5px; display: inline-block; margin-left: 20px; margin-top: 20px;"> <b>RECORDED</b><br/> <b>OCT - 3 1990</b> </div> |         |              |        |              |   |
|   |         |              |        |              | Total number of mining claims covered by this report of work. |
|   |         |              |        |              | 1   |

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in this Report of Work, having performed the work or witnessed same during and/or after its completion and annexed report is true.

Name and Address of Person Certifying  
**Joc-Anne G. SALO**  
**Ontario PON. 1A0**

Telephone No. **363-2108**

Date **Oct 3/90**

Certified By (Signature) *J. G. Salo*

For Office Use Only

|   |   |  |
|---|---|--|
| Total Days Cr. Recorded<br><b>60</b>          | Date Recorded<br><b>OCT 3/90</b>                              | Mining Branch<br><i>Robert Pembrey</i> |
| Date Approved as Recorded<br><i>Jan 24/91</i> | Professional Manager, Mining Lands<br><i>Ron C. Goshinski</i> |  |

Received Stamp

**RECEIVED**

**OCT 3 1990**

*1.5 x 101*

NOTES

400' surface rights reservation along the shores of all lakes and rivers.

(R) MINING AND SURFACE RIGHTS WITHDRAWN FROM PROSPECTING, STAKING, SALE OR LEASE, SECTION 36 OF THE MINING ACT RSO 1980 ORDER NO. W-50186 DATED 86-MAY-21

SURFACE AND MINING RIGHTS RECDENED TO PROSPECTING, STAKING, SALE OR LEASE UNDER SECTION 36 OF THE MINING ACT RSO 1980 EFFECTIVE 30-SEP-01 AT 7AM E.S.T. ORDER NO. O-P 5/90 NR DATED 30-AUG-31

(MINING CLAIMS P-522427,28 P-522441,42 P-522445,46)

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES AND ACCURACY IS NOT GUARANTEED THOSE WISHING TO STAKE MIN



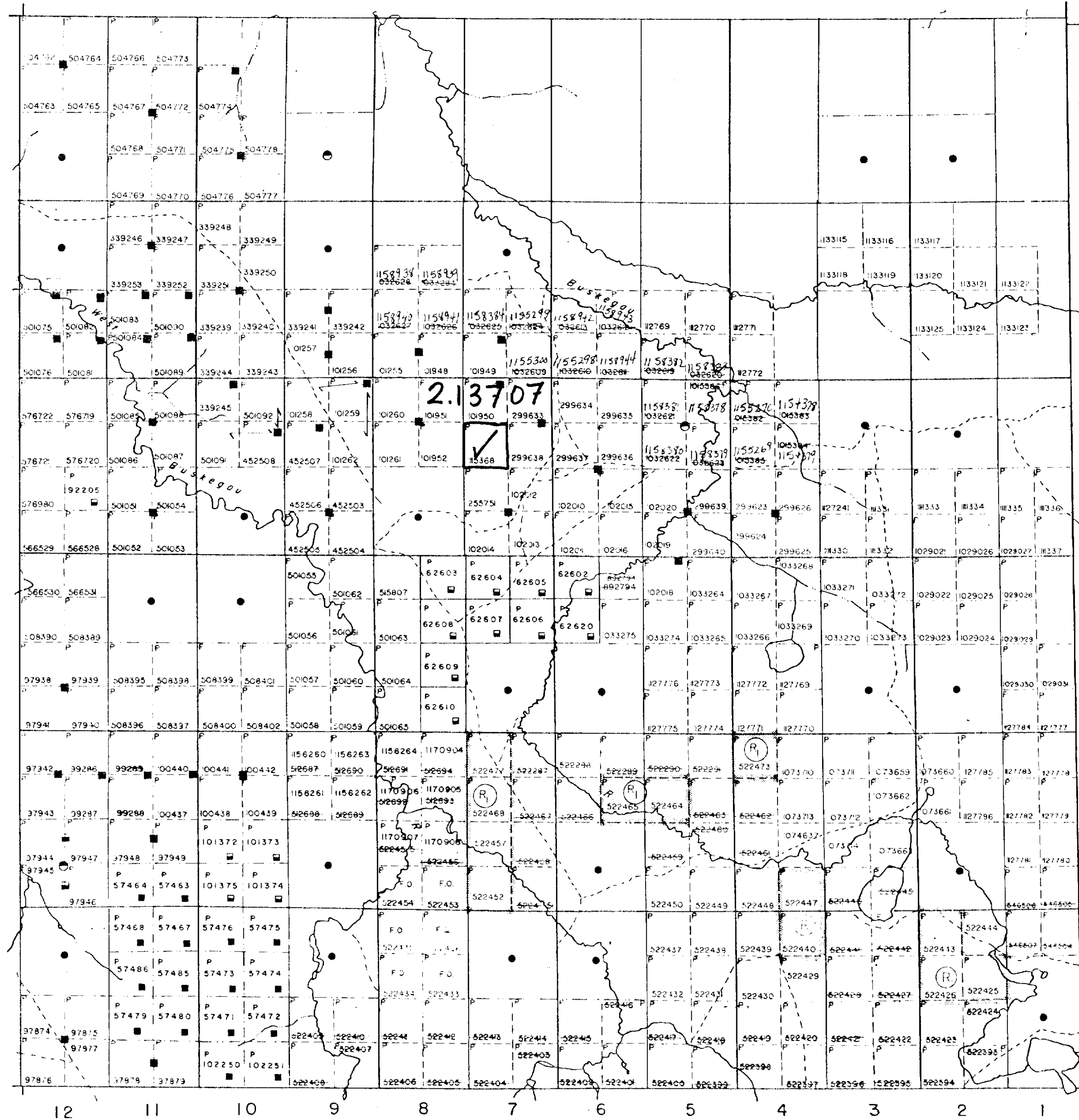
42A145E0100 2.13707 TULLY

200

LANDS SHOWN HEREON

DUFF Tp. M.466

PROSSER Tp. M.571



GOWAN Tp. M.285

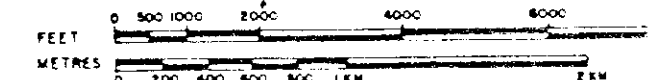
LEGEND

- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES:
  - TOWNSHIPS, BASE LINES, ETC.
  - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES:
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES

DISPOSITION OF CROWN LANDS

| TYPE OF DOCUMENT                | SYMBOL |
|---------------------------------|--------|
| PATENT, SURFACE & MINING RIGHTS |        |
| " SURFACE RIGHTS ONLY           |        |
| " MINING RIGHTS ONLY            |        |
| LEASE, SURFACE & MINING RIGHTS  |        |
| " SURFACE RIGHTS ONLY           |        |
| " MINING RIGHTS ONLY            |        |
| LICENCE OF OCCUPATION           |        |
| CROWN LAND SALE                 |        |
| ORDER-IN-COUNCIL                |        |
| RESERVATION                     |        |
| CANCELLED                       |        |
| SAND & GRAVEL                   |        |

SCALE: 1 INCH = 40 CHAINS



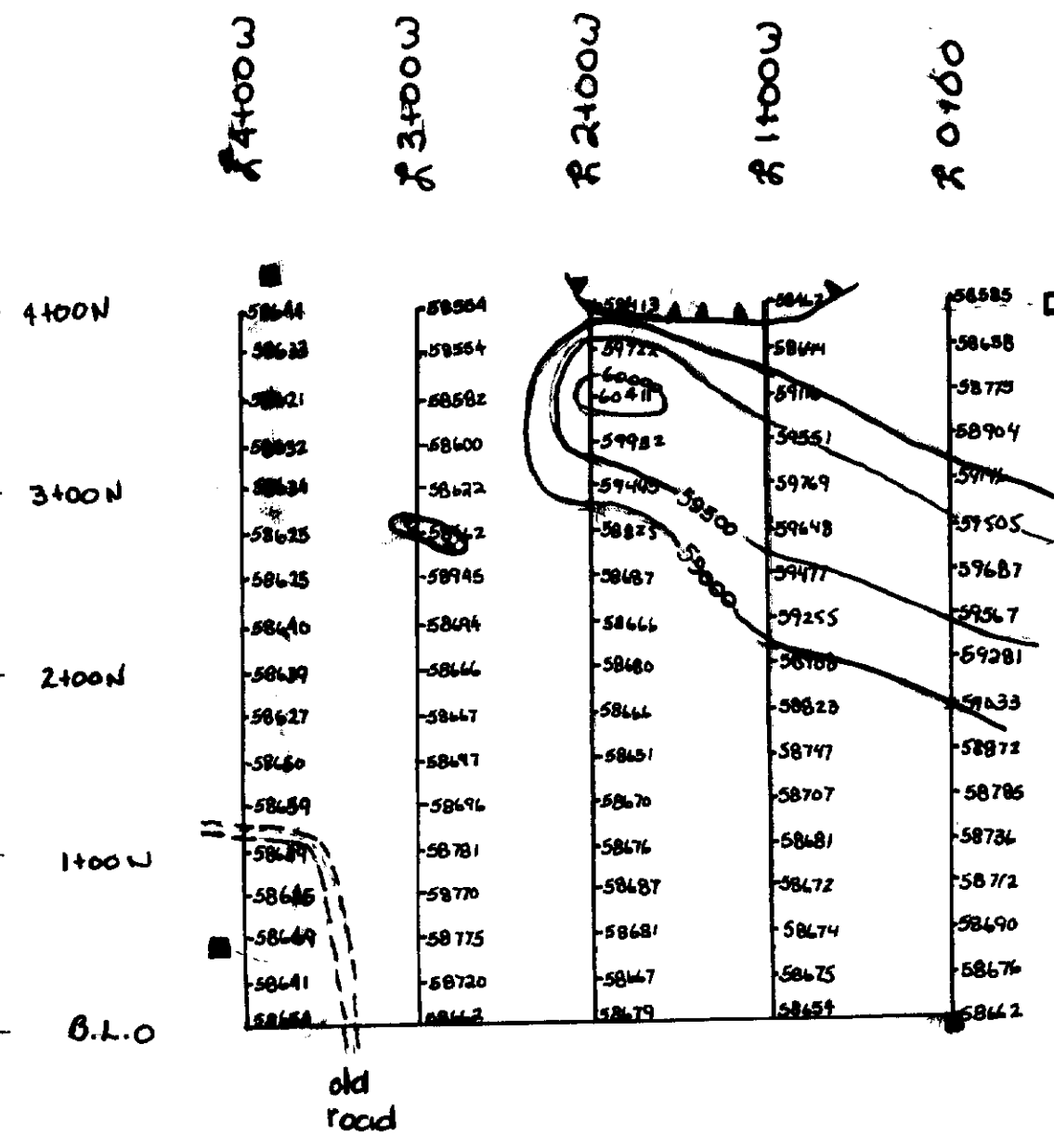
| ACRES | HECTARES |
|-------|----------|
| 40    | 16       |

TOWNSHIP  
**TULLY**  
 DISTRICT  
 COCHRANE  
 MINING DIVISION  
 PORCUPINE

MINISTRY OF NATURAL RESOURCES  
 Ontario Surveys and Mapping Branch

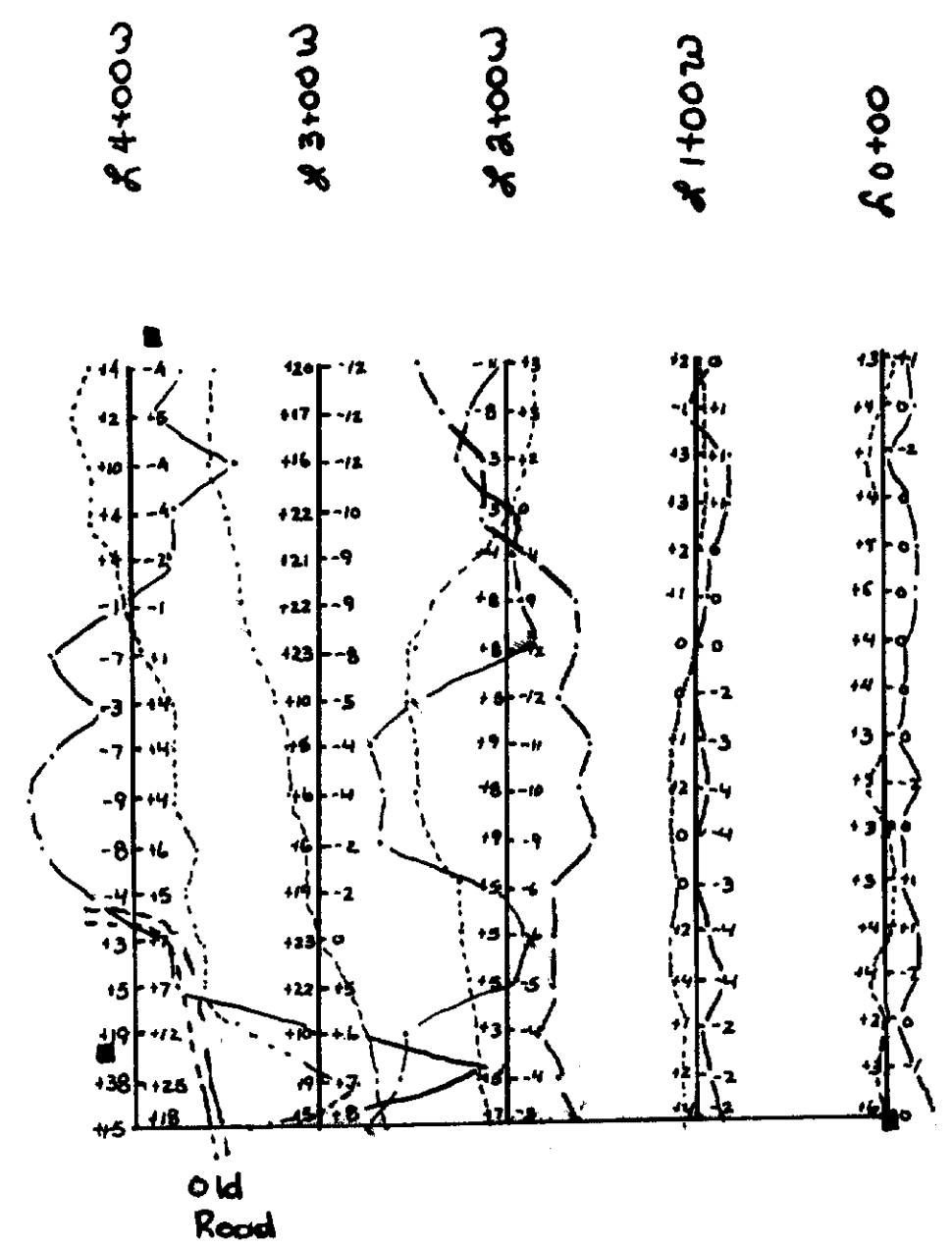
DATE: 1 11 11  
 Plan No. M. 61

Whitney Block  
 Queen's Park, Toronto



MAGNETOMETER  
CONTOUR  
MAP

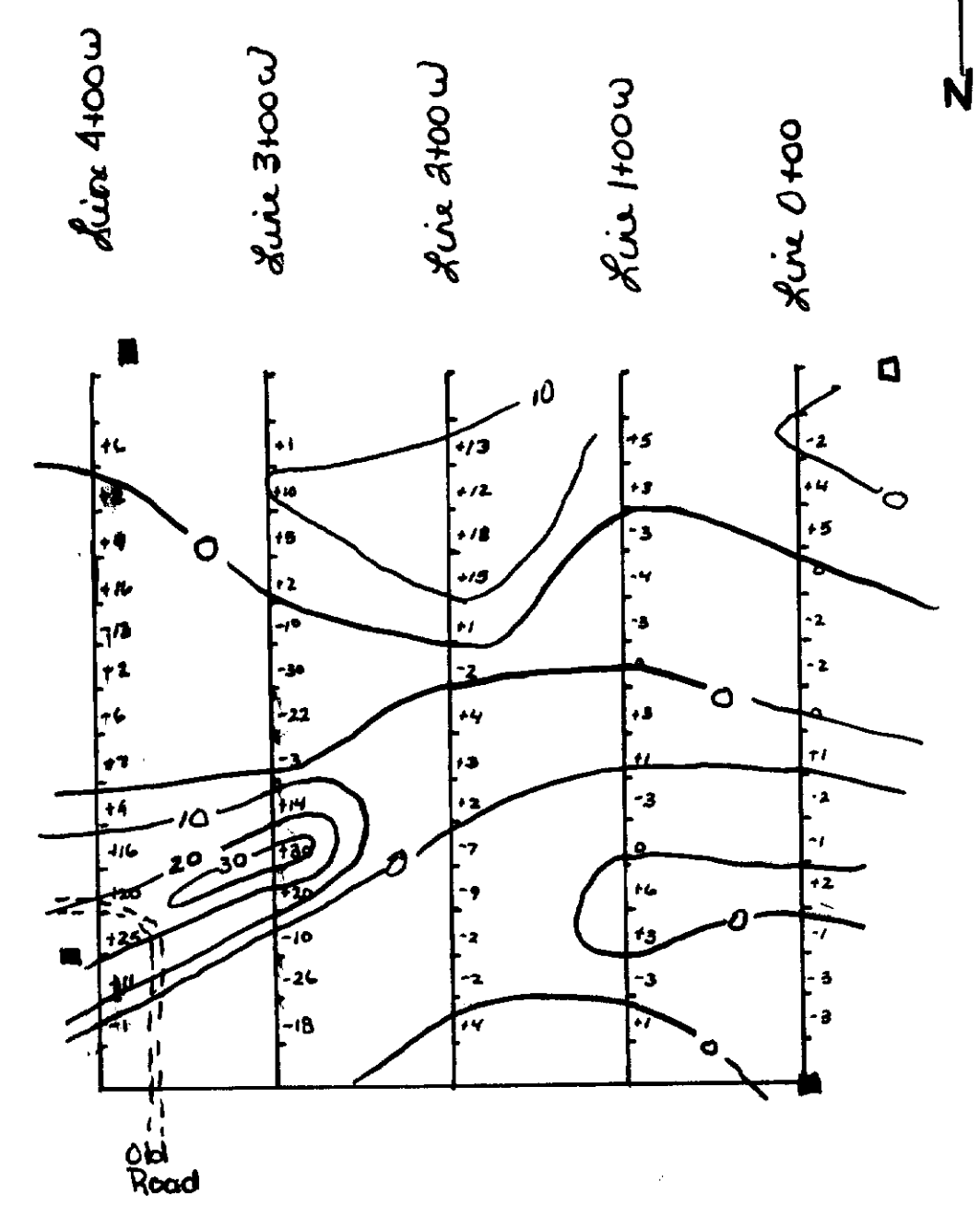
- - Located claim post
- - Unlocated claim post
- +58649 - Magnetometer reading (in gammas)
- 58700 - Contour intervals
- ↖ - Magnetic low



EM-16 VLF  
PROFILE  
MAP

- - Located claim post
- - Unlocated claim post
- +12 - In-phase reading
- 12 - Quadrature reading
- In-phase profile
- Quadrature reading profile

CUTLER, Maine



VLF EM-16  
Fraser Filter  
Contour Map

- - Located claim post
- - Unlocated claim post
- +2 - Second derivative value of filter - inphase value
- - Contour intervals (10)

CUTLER, Maine

Jully Township

|                            |              |                   |
|----------------------------|--------------|-------------------|
| SCALE: 2.5cm = 100m        | APPROVED BY: | DRAWN BY: J. Salo |
| DATE: Sept 10/90           |              | REVISED:          |
| Claim P. 1115368 - J. Salo |              | DRAWING NUMBER:   |
| sw 1/4 N 1/2 Lot 7 Con. 4  |              |                   |

