



32004SE0356 2.4155 SKEAD

ASSESSMENT REPORT BY THE CANADIAN NICKEL CO., LTD

010

MAGNETOMETER SURVEY  
SKEAD AND HEARST TOWNSHIP, ONTARIO  
LARDER LAKE MINING DIVISION  
DISTRICT OF TIMISKAMING  
NTS: 31-M-13 and 32-D-4

RECEIVED

SEP 25 1981

MINING LANDS SECT

INTRODUCTION

The magnetometer survey was conducted to outline magnetic responses which can be correlated with geological features. The results will help in the geological interpretation and to assess the property for its economical potential. The survey was conducted during the periods of December 6 to 11, 1980 and March 23 to 31, 1981.

PROPERTY

The property consists of 82 contiguous mining claims in Hearst and Skead Township. They are owned by Superior Northwest Inc. and were optioned by the Canadian Nickel Company in 1980. The claim numbers are:

Hearst - L442071-74	4	claims
Skead - L341839	1	"
L396274-87	14	"
L400700-05	6	"
L442043-58	16	"
L442060-61	2	"
L442063	1	"
L442070	1	"
L467136-37	2	"
L467147	1	"
L511757-64	8	"
L523058-72	15	"
L531332-34	3	"
L531337-38	2	"
L531350-54	5	"
L511355	1	"

LOCATION AND ACCESS

The property is located 11 kilometres south of the town of Larder Lake in the Larder Lake Mining Division. Access is by highway 624 which passes through the central part of the property and then by small bush roads that extend to remote parts of the claim block.

### PREVIOUS EXPLORATION

Gold was discovered about 1920 and prospecting was carried out during the 1920's and into the 1930's. During that time pitting, trenching and some diamond drilling was carried out which are still evident today. A shaft was sunk just to the north of the claim block to a reported depth of 500 feet with lateral work on the 215 and 415 foot levels. During the late 1970's, geophysical and geochemical surveys were carried out on the ground. Riocanex had a portion of the ground under option during 1979-80 and they completed eight boreholes totalling 829 metres.

A total intensity magnetic survey was conducted over the central part of the area. The survey is described in two reports by R.A. MacGregor - Benson Creek Project, Feb. 12, 1980 and Lincoln-Nipissing Project, July 21, 1980. Detailed geological mapping was carried out by the Canadian Nickel Company during the summers of 1980 and 1981. These results are presented in a report by J. E. Mullock in July 1981.

### OBJECTIVE

The purpose of this survey was to complete the magnetic survey to cover the claim group. Also some of the ground was not covered previously because of poor accessibility during periods of high water. This survey will help the geological interpretation especially in these areas where the overburden cover is extensive.

### SURVEY GRID

The previously established grid was extended to cover the area staked. Two base lines had been established forming an angle of  $14^{\circ}$  to each other. The lines were cut and chained where possible to the claim boundary. The lines are spaced 100 metres apart with stations chained in and marked with pickets every 25 metres along these lines. The line cutting was completed in December 1980.

### INSTRUMENTS

Two types of magnetometers were used for this survey.

a) A proton procession magnetometer, Model G 816 built by Exploranium-Geometrics. This instrument measures the absolute total intensity of the earth's magnetic field directly in the range of 20,000 to 90,000 gammas. It has a sensitivity of  $\pm 1$  gamma in that range. The gradient tolerance is better than 450 gammas per meter.

b) A fluxgate magnetometer model MF-1 manufactured by Scintrex Ltd. This instrument measures the vertical component of the earth's magnetic field in gammas in a range of  $\pm 100,000$  gammas, in five (5) ranges of sensitivity. Normally the magnetometer is set in the field to a background to about 1500 gammas in the range of 0 to 3,000 gammas.

The magnetometer has a sensitivity of  $\pm 50$  per scale division in this setting.

#### SURVEY PROCEDURE

A magnetic base station was established near the highway. The magnetometer used was checked in to this base station at the beginning and the end of a day of surveying. To detect possible drift and diurnal variations, readings were repeated in a looping fashion after intervals of not more than two hours of survey. If required, corrections were applied to the readings taken during these intervals.

#### PLOTTING PROCEDURE

To make the readings of the proton magnetometer comparative with those of the fluxgate magnetometer a constant value of 57398 gammas was added to the readings of the fluxgate magnetometer. The error introduced by this manipulation is small for practical purposes. The values of the magnetic readings were plotted on maps of a scale of 1:2500. The magnetic results are presented as contour maps with a contour interval of 500 gammas. An index map shows the relative position of the map sheets in relation to the topography.

#### RESULTS

The contour maps show the magnetic intensity changes over short distances, indicating that the area is covered only by a thin layer of overburden. Comparing the results with the geological maps, shows a good correlation of the major units with the magnetic responses is evident. Very strong magnetic anomalies occur in the central part of the area outlining mainly the peridotite rich in magnetite. All volcanic phase and sediments show up as areas of lower magnetic intensity. The same can be said about the mafic gabbro which gives low magnetic reading.

#### STATISTICS

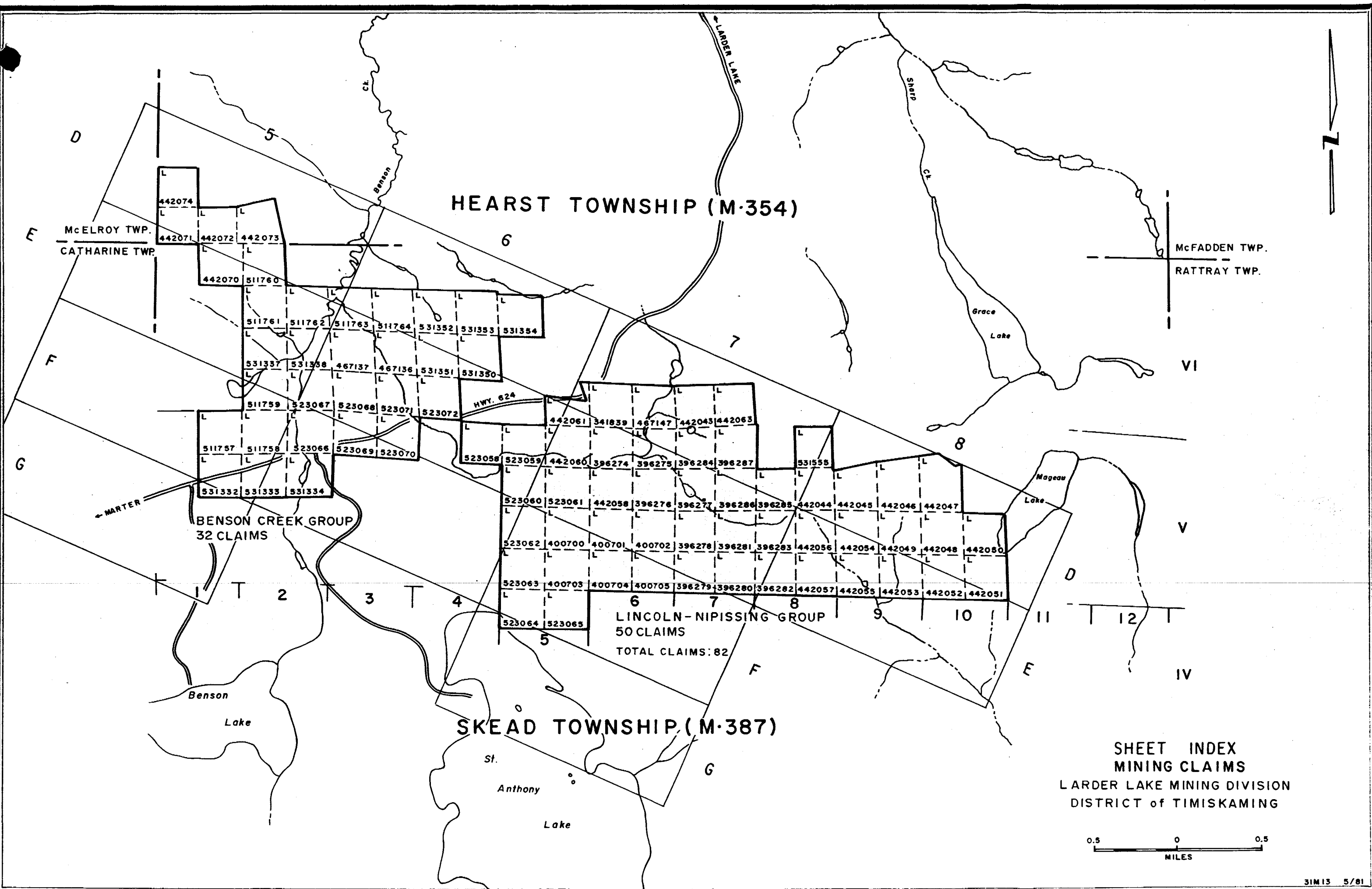
Total lines cut and chained	127 km
Total readings at 25 metre intervals	2,388
Total line distance magnetic survey	59.2
Contour interval	500 gammas



E. K. Berrer, M.Sc.  
Staff Geophysicist  
Canadian Nickel Company Ltd.  
Copper Cliff, Ontario

HEARST TOWNSHIP (M-354)

SKEAD TOWNSHIP (M-387)



BENSON CREEK GROUP  
32 CLAIMS

LINCOLN-NIPISSING GROUP  
50 CLAIMS  
TOTAL CLAIMS: 82

SHEET INDEX  
MINING CLAIMS  
LARDER LAKE MINING DIVISION  
DISTRICT OF TIMISKAMING





Ministry of Natural Resources

GEOPHYSICAL - GEOLOGICAL TECHNICAL DATA STATEMENT



32004SE0356 2.4155 SKEAD

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

RECEIVED

SEP 25 1981

MINING LANDS SE

900

Type of Survey(s) Geophysical (Magnetometer)
Township or Area Skead Twp.
Claim Holder(s) Superior Northwest Inc.

Survey Company Canadian Nickel Company Limited
Author of Report E.K. Berrer, c/o Canadian Nickel Company
Address of Author Ltd., Copper Cliff, Ontario POM 1N0
Covering Dates of Survey May 1, 1980-Mar, 31, 1981
Total Miles of Line Cut

MINING CLAIMS TRAVERSED
List numerically
Table with columns for prefix and number, listing claims like L 396278, L 396279, etc.

SPECIAL PROVISIONS CREDITS REQUESTED
Table with columns for Geophysical and DAYS per claim, listing Electromagnetic (20), Magnetometer, Radiometric, Other, Geological, Geochemical.

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)
Magnetometer Electromagnetic Radiometric
(enter days per claim)

DATE: Sept. 21, 1981 SIGNATURE: [Signature]
Author of Report or Agent

Res. Geol. Qualifications 2.1526

Previous Surveys
Table with columns: File No., Type, Date, Claim Holder

TOTAL CLAIMS 10

If space insufficient, attach list

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS - If more than one survey, specify data for each type of survey

Number of Stations \_\_\_\_\_ Number of Readings \_\_\_\_\_

Station interval \_\_\_\_\_ Line spacing \_\_\_\_\_

Profile scale \_\_\_\_\_

Contour interval \_\_\_\_\_

MAGNETIC

Instrument Exploranium - Geometrics Model G816 and Scintrex MF-1

Accuracy - Scale constant \_\_\_\_\_ Sensitivity - Proton Mag + 1 gamma, MF-1 Fluxgate + 50 gamma

Diurnal correction method Looping

Base Station check-in interval (hours) Less than 2 hours

Base Station location and value Near Hwy. Benson Creek Grid, Co-ord. 00/1000S: 59,590 gammas

ELECTROMAGNETIC

Instrument \_\_\_\_\_

Coil configuration \_\_\_\_\_

Coil separation \_\_\_\_\_

Accuracy \_\_\_\_\_

Method:  Fixed transmitter  Shoot back  In line  Parallel line

Frequency \_\_\_\_\_  
(specify V.L.F. station)

Parameters measured \_\_\_\_\_

GRAVITY

Instrument \_\_\_\_\_

Scale constant \_\_\_\_\_

Corrections made \_\_\_\_\_

Base station value and location \_\_\_\_\_

Elevation accuracy \_\_\_\_\_

INDUCED POLARIZATION RESISTIVITY

Instrument \_\_\_\_\_

Method  Time Domain  Frequency Domain

Parameters - On time \_\_\_\_\_ Frequency \_\_\_\_\_

- Off time \_\_\_\_\_ Range \_\_\_\_\_

- Delay time \_\_\_\_\_

- Integration time \_\_\_\_\_

Power \_\_\_\_\_

Electrode array \_\_\_\_\_

Electrode spacing \_\_\_\_\_

Type of electrode \_\_\_\_\_

**NOTES**

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

All unpatented mining claims accepted subject to survey, Section 118 of the Mining Act (R.S.O. 1970).

**SAND and GRAVEL**

M.T.C. PIT No. 1230

**DATE OF ISSUE**

**OCT 17 1981**

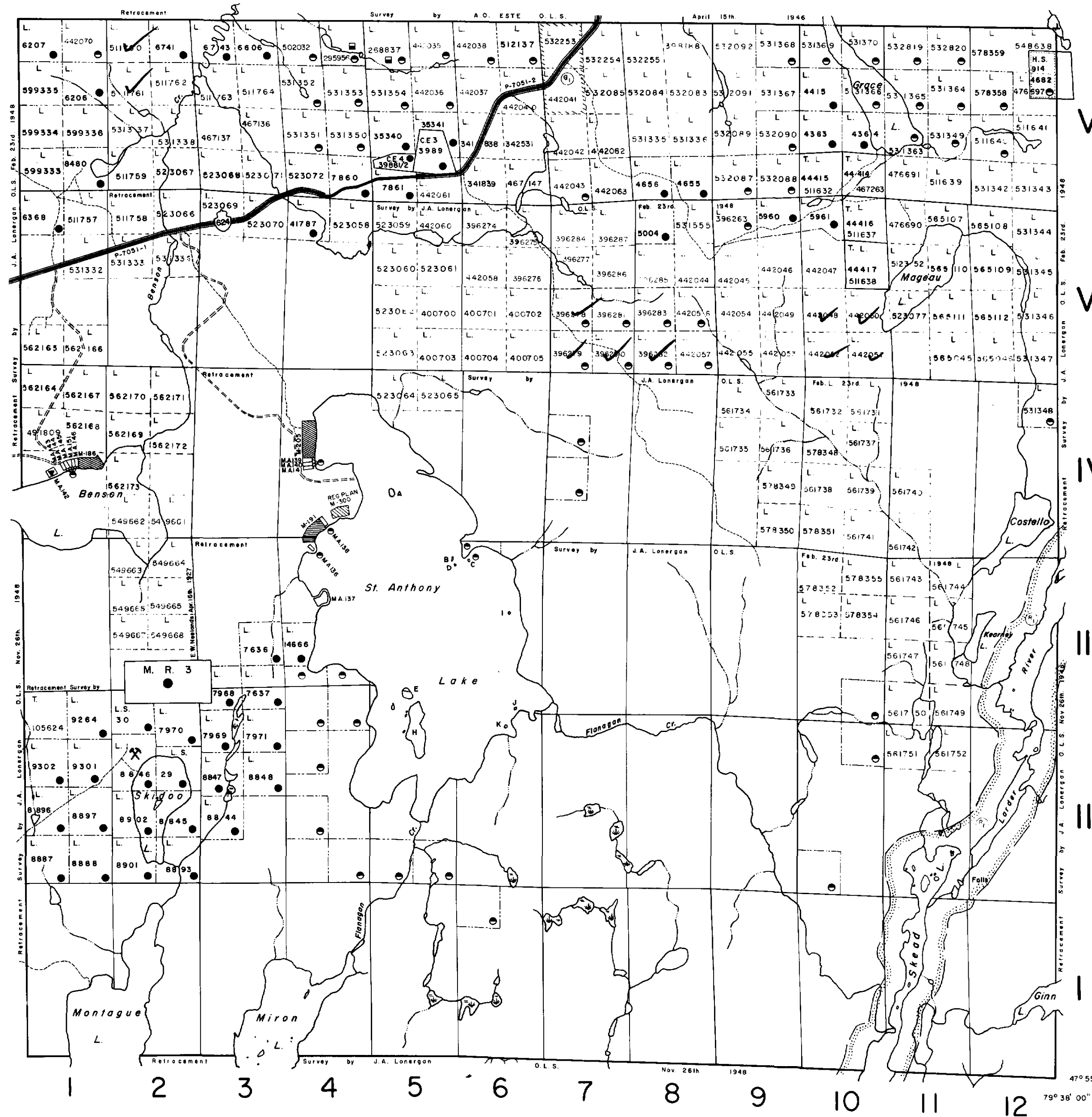
Ministry of Natural Resources  
TORONTO

Areas withdrawn from staking under Section 43 of the Mining Act. (R.S.O. '70)

Order No.	File	Date	Disposition
W 11 / 79	188522	June 19 '79	surface & mining rights.

**HEARST TP. M.354**

**CATHARINE TP. M.336**

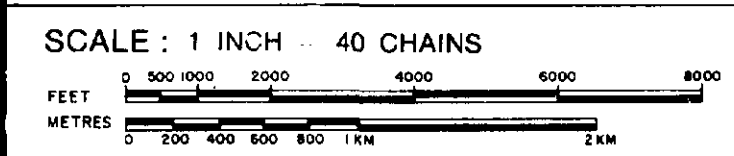


**LEGEND**

- 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	C.S.
ORDER-IN-COUNCIL	OC
RESERVATION	⊕
CANCELLED	⊗
SAND & GRAVEL	⊙



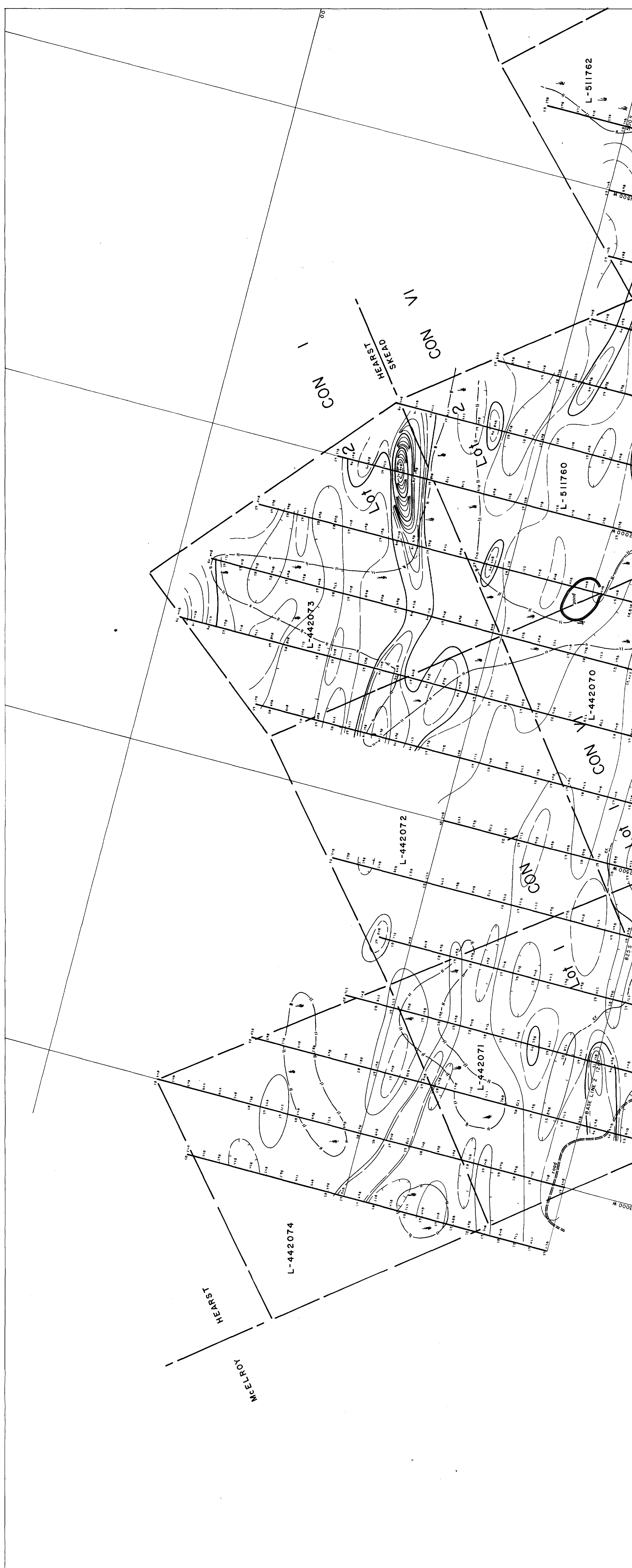
ACRES	HECTARES
40	16

TOWNSHIP  
**SKEAD**  
DISTRICT *2.4155*  
TIMISKAMING  
MINING DIVISION  
LARDER LAKE

Ministry of Natural Resources  
Ontario Surveys and Mapping Branch

Date 10/4/74 Plan No. **M.387**





Canadian Nickel Company Limited  
 CANICO-SUPERIOR NORTHWEST INC.  
 MAGNETIC SURVEY

Project: BENSON CREEK GRID  
 Area: SKEAD (M-387) and HEARST (M-384) TFS.  
 Supervisor: R. A. Bennett  
 Instrument: Scintrex MF-1 Fluorite  
 Survey date: 12/80, 3/81  
 Compiled by: D. Low/H. Kalaba  
 Drawn by: W.E.M.  
 Date drawn: 4/81  
 Scale: 1:2500  
 File: N.T.S. 31M 13

LEGEND

- Magnetic reading in gammas: 40-250
- Contour interval: 500 gammas
- Isomagnetic lines: 5000
- 500
- 100
- Relative low: 1000
- Diamond drill site: 1000

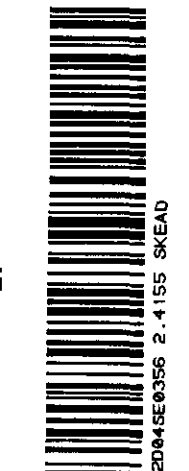
CANICO SURVEY

1 5 6  
 C D E

0 100 100  
 METRES

SHEET D-5  
 FIGURE

210





Canadian Nickel Company Limited  
Copper Cliff, Ontario  
POM 110

SHEET FIGURE  
D-6

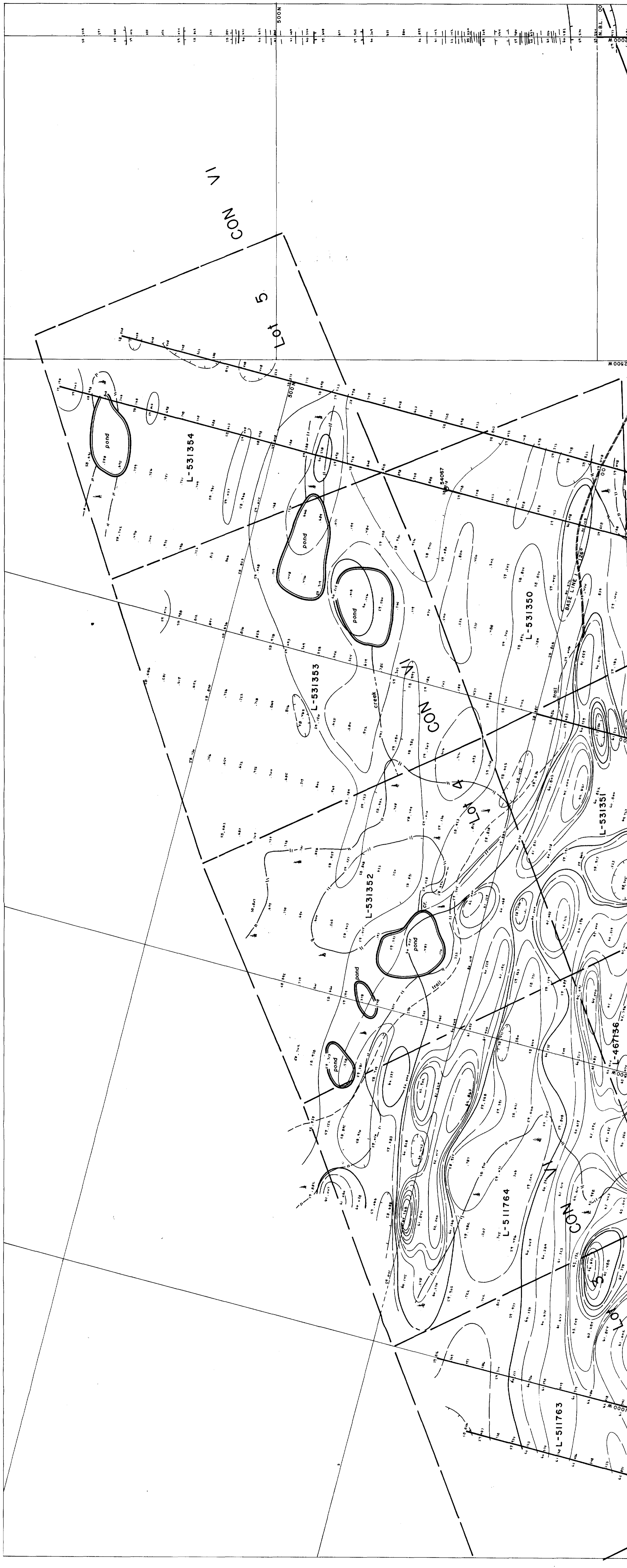
Project: Bason Creek and Lincoln Nipping Grids Area: SKEAD TOWNSHIP (M-387)  
Supervisor: R.A. Bennett Instrument: Geometrics Proton-GS16 Survey date: 12/80, 3/81  
Compiled by: D. Low/H. Kalaba Drawn by: W.E.N. Date: 4/81  
Scale: 1:2500 File: N.T.S. 31M 13

LEGEND

- Magnetic reading in gammas: 500
- Contour interval: 500
- Isomagnetic lines: 500
- Relative low: 500
- Diamond drill site: 500

CANICO SURVEY

5 6 7  
C  
D  
E

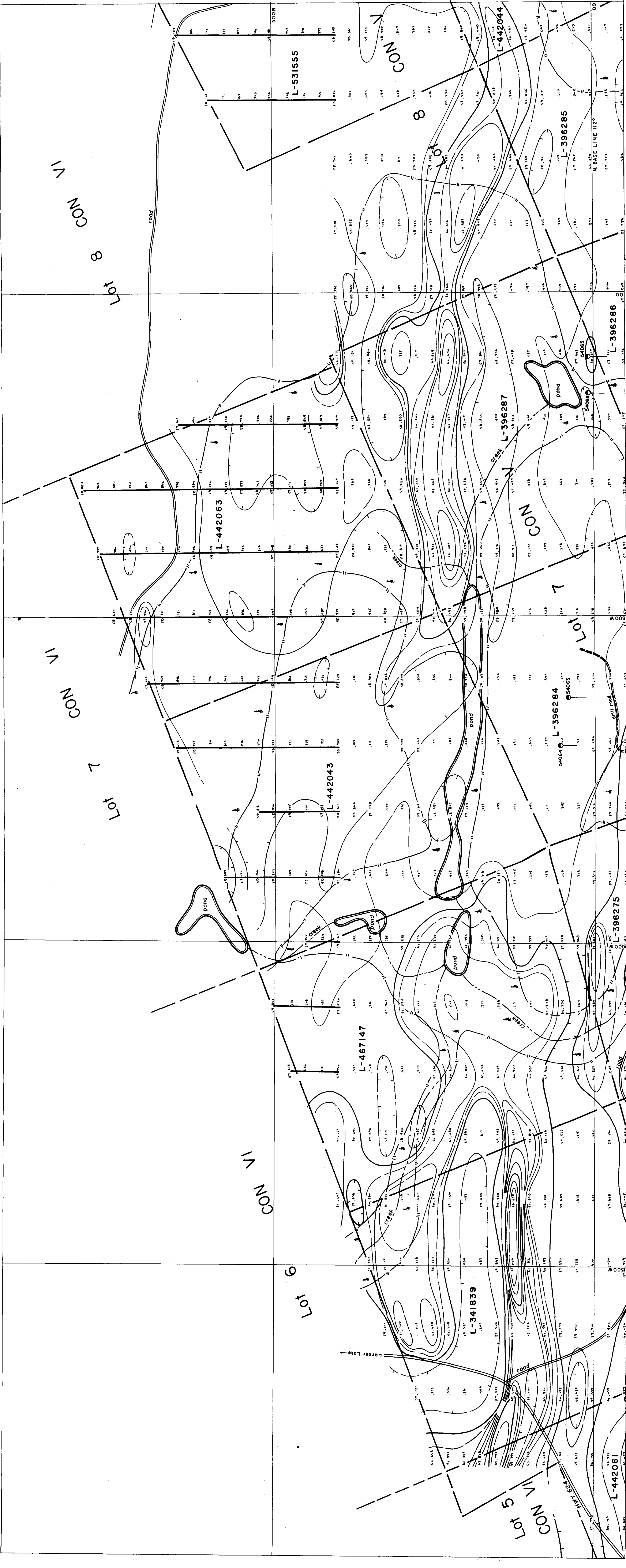


CON W  
Lot 8

CON W  
Lot 7

CON W  
Lot 6

CON W  
Lot 5



Canadian Nickel Company Limited  
CANICO-SUPERIOR NORTHWEST, INC.  
MAGNETIC SURVEY

Project: LINCOLN-NIPISSING GRID  
Area: SHEAD TOWNSHIP (M. 387)  
Supervisor: R.A. Bennett  
Instrument: Geomatics Profom-6016  
Survey date: 12/80, 3/81  
Compiled by: D. Low/M. Kaldob  
Drawn by: W.E.M.  
Date drawn: 4/81  
Scale: 1:2500  
File: N15. 31113

FIGURE  
SHEET  
D-7

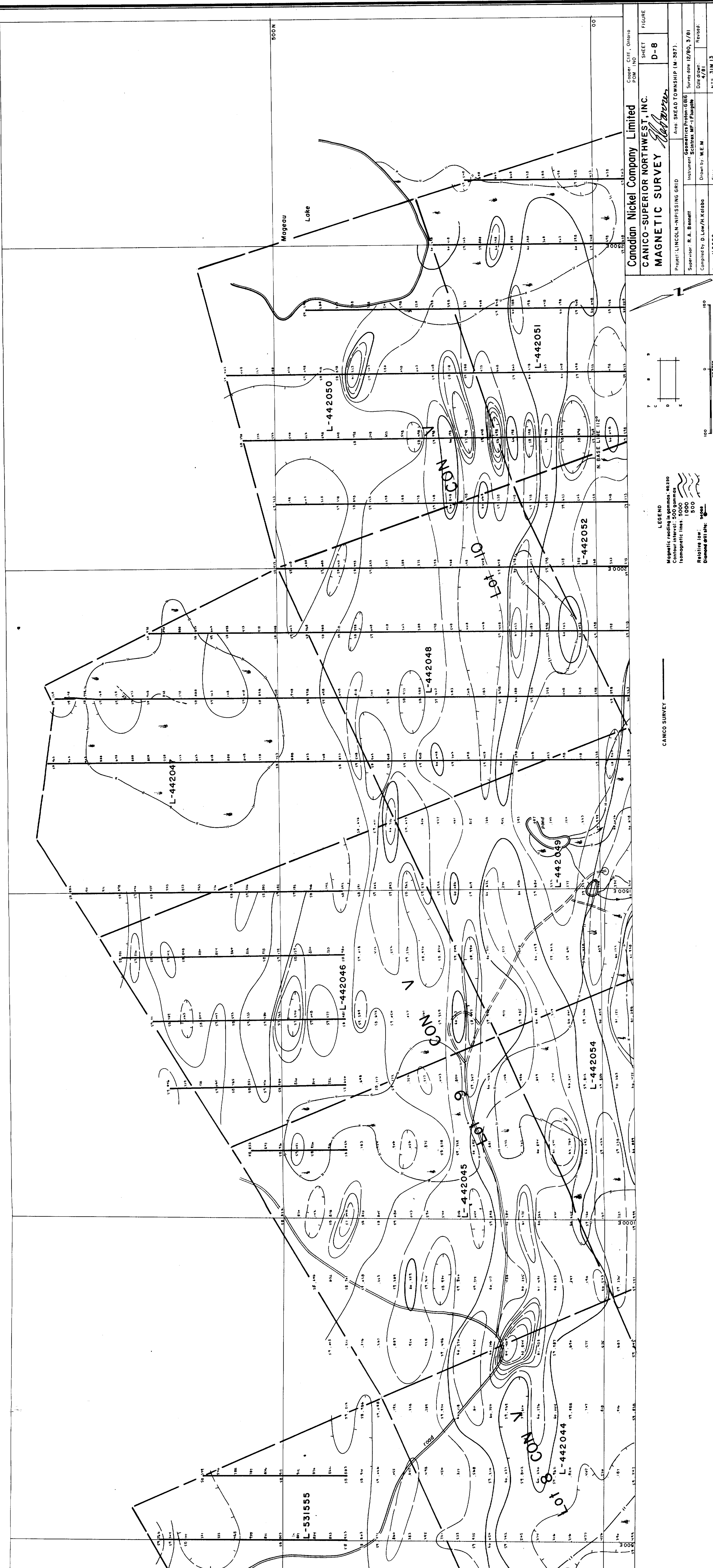
LEGEND

- Magnetic reading in gauss - 54236
- Contour interval: 500 metres
- Isomagnetic lines: 1000, 500
- Relative low: 54064
- Diamond site: 54062

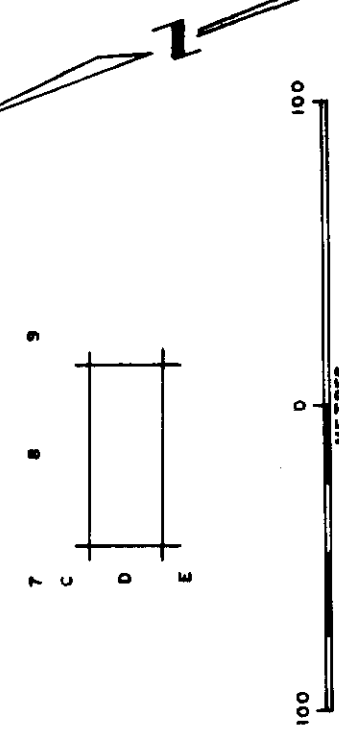
CANICO SURVEY

0 100 200 METRES





**LEGEND**  
 Magnetic reading in gammas: 40,250  
 Contour interval: 500 gammas  
 Isomagnetic lines: 5000  
 1000  
 500  
 Relative low:   
 Diamond drill site:

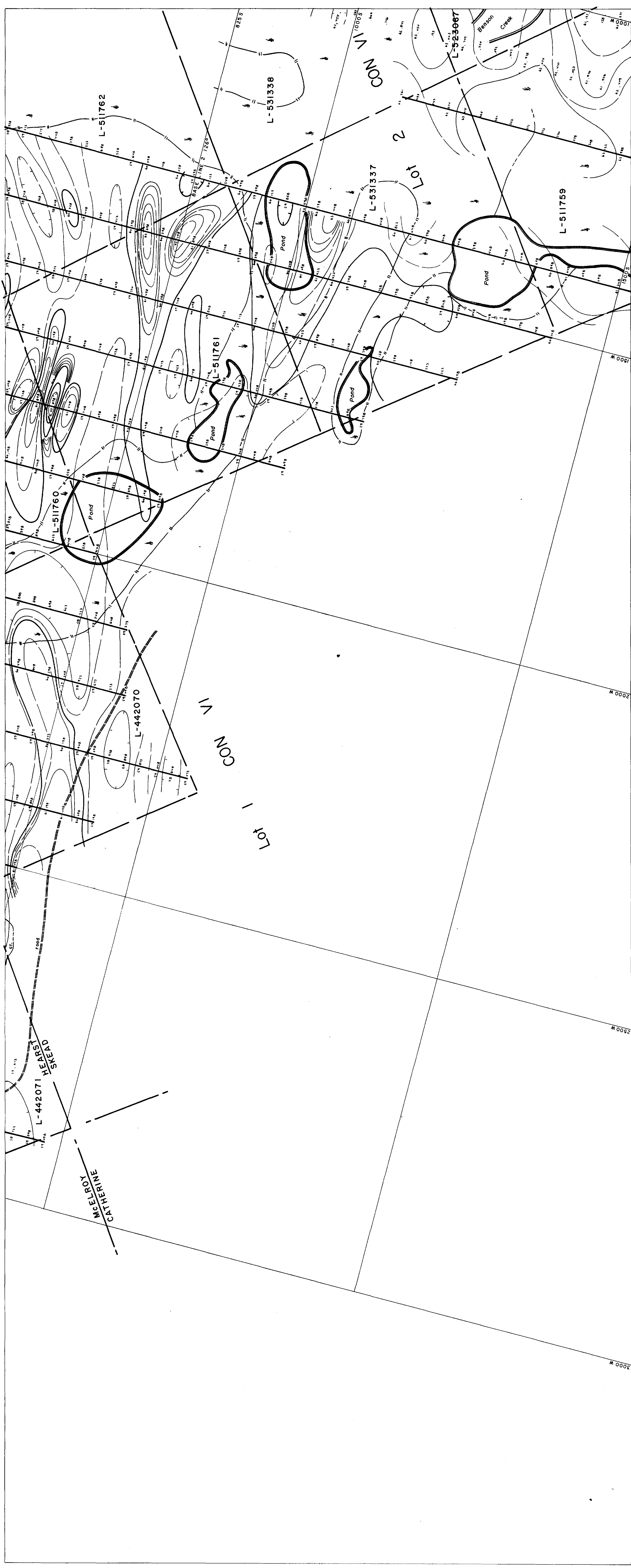


Canadian Nickel Company Limited  
 Copper Cliff, Ontario  
 P.O. Box 100

**CANICO - SUPERIOR NORTHWEST, INC.**  
**MAGNETIC SURVEY**

Project: LINCOLN-NIPISSING GRID Area: SKEAD TOWNSHIP (M. 387).  
 Supervisor: R. A. Bennett Instrument: Geomatics Position: 6816 Survey date: 12/80, 3/81  
 Compiled by: D. Low/H. Karaba Drawn by: W.E.M. Date drawn: 4/81 Revised:  
 Scale: 1:2500 File: NTS 31M 13

SHEET: D-8  
 FIGURE:



Canadian Nickel Company Limited  
 CANICO-SUPERIOR NORTHWEST, INC.  
 MAGNETIC SURVEY  
 E-5

Project: BENSON CREEK GRID  
 Area: SKAD TOWNSHIP (M-387)  
 Supervisor: R.A. Bennett  
 Instrument: Geomatics Proton-GB16  
 Compiled by: D. Low/H. Kalaba  
 Drawn by: W.E.M.  
 Date drawn: 4/81  
 Revised:  
 Scale: 1:2500  
 File: NTS 31M 13

CAPER, CHIF, Ontario  
 PGM, IND

SHEET  
 FIGURE

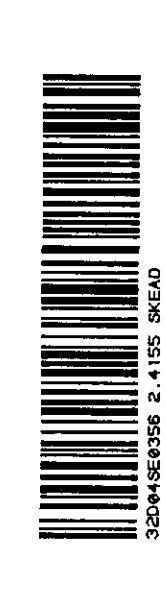
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 Contour interval: 500 gammas  
 Isomagnetic lines: 5000  
 1000  
 500  
 Relative low: 5000  
 Diamond chf site: 5000

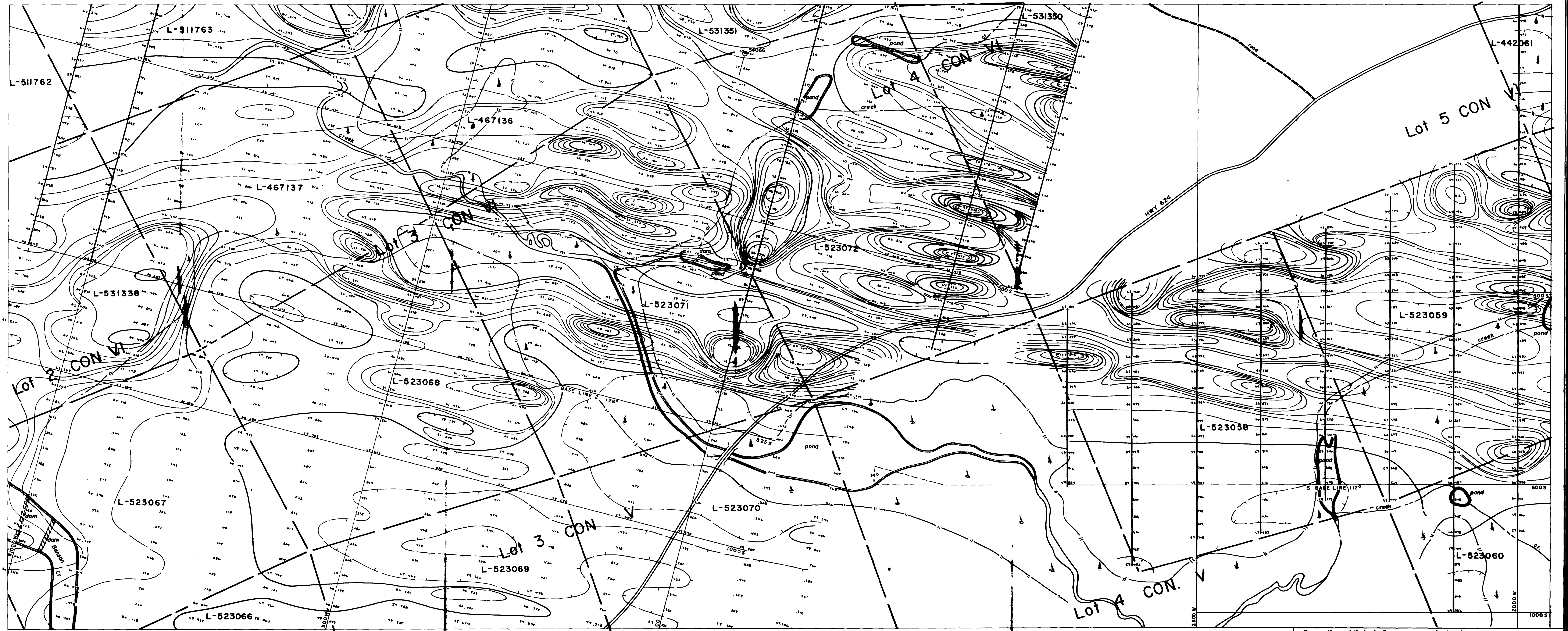
CANICO SURVEY

4 5 6  
 0 100 200 METRES

2000 W  
 1500 W  
 1000 W

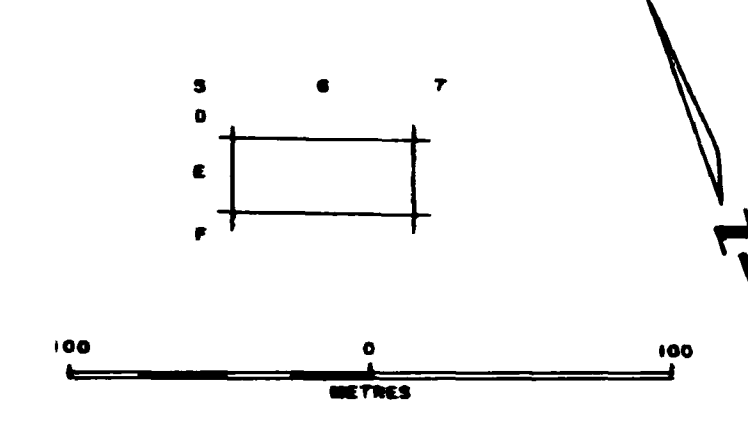
2000 W  
 1500 W  
 1000 W





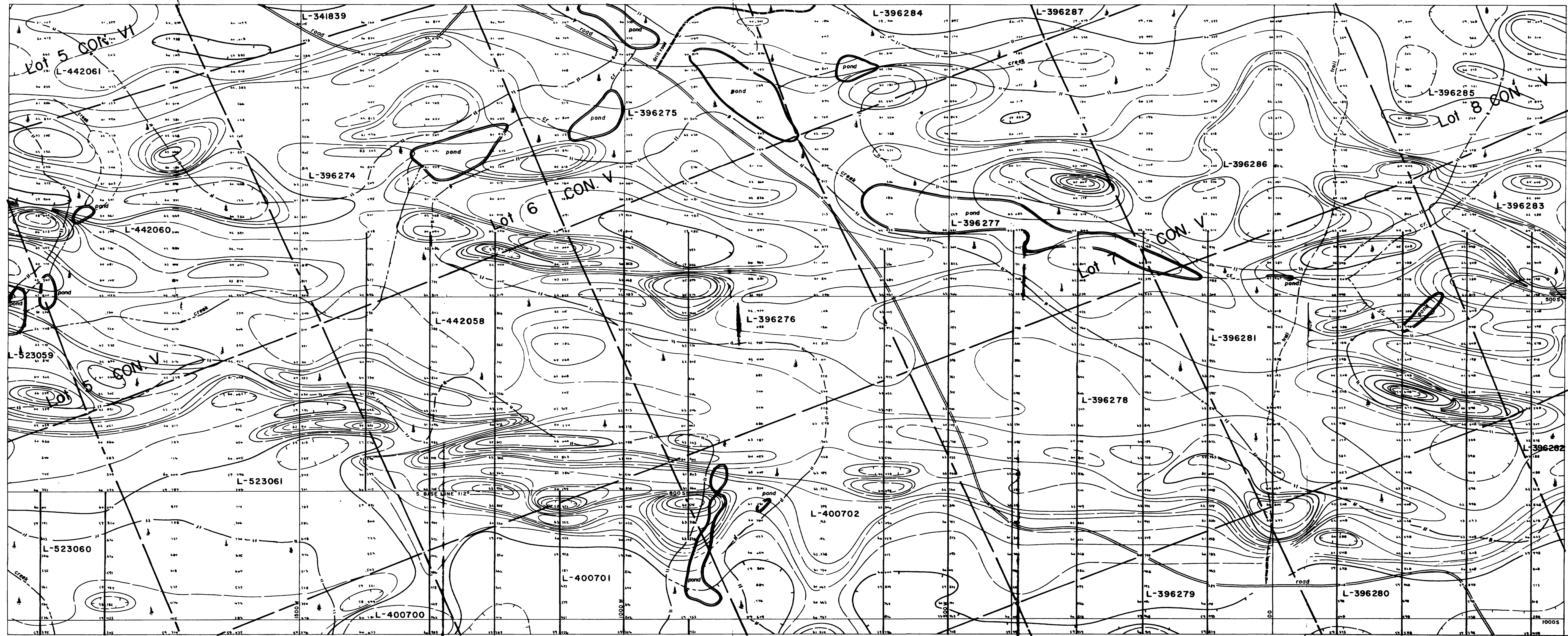
CANICO SURVEY

**LEGEND**  
 Magnetic reading in gamma: 60,200  
 Contour interval: 500 gamma  
 Isomagnetic lines: 5000, 1000, 500  
 Relative low: 5000  
 Diamond drill site:



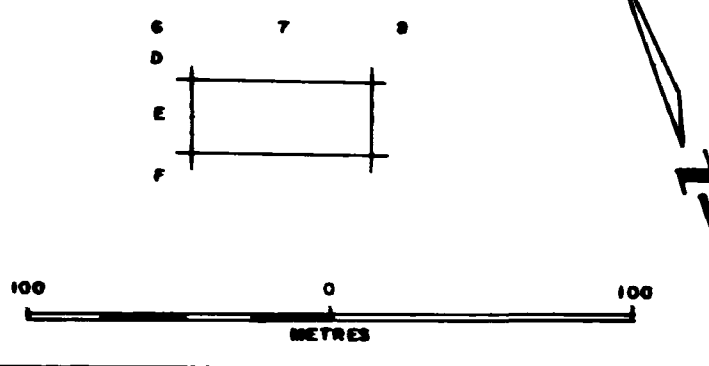
<b>Canadian Nickel Company Limited</b>		Copper Cliff, Ontario	
<b>CANICO-SUPERIOR NORTHWEST, INC.</b>		POM 110	
<b>MAGNETIC SURVEY</b>		SHEET	FIGURE
		E-6	
Project: Benson Creek and Lincoln-Nipissing Grids		Area: SKEAD TOWNSHIP (M-387)	
Supervisor: R. A. Bennett	Instrument: Geometrics Proton-GB16	Survey date: 12/80, 3/81	
Compiled by: D. Low/M. Kolaba	Drawn by: W.E.M.	Date drawn: 4/81	Revised:
Scale: 1:2500	File:	NTS 31M 13	





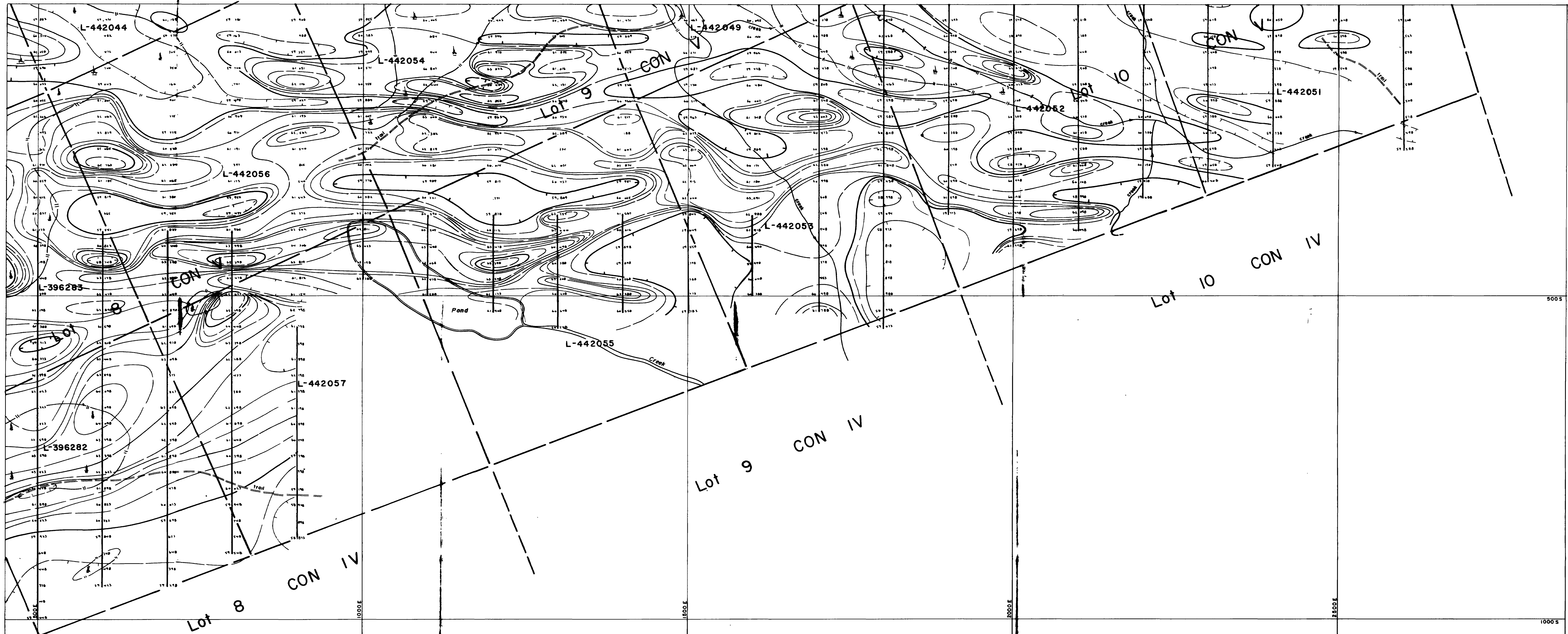
CANICO SURVEY

**LEGEND**  
 Magnetic reading in gamma: on line  
 Contour interval: 500 gamma  
 Isomagnetic lines: 5000  
 1000  
 500  
 Relative low:  
 Diamond site:



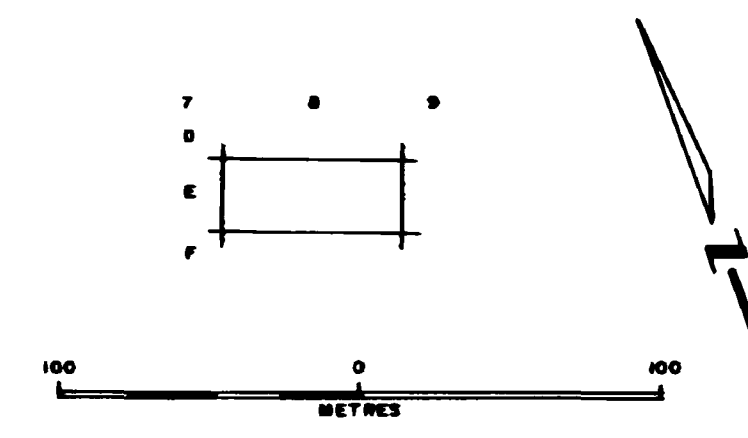
<b>Canadian Nickel Company Limited</b>		Copper Cliff, Ontario	
<b>CANICO-SUPERIOR NORTHWEST INC.</b>		POW 110	
<b>MAGNETIC SURVEY</b>		SHEET	FIGURE
		E-7	
Project LINCOLN-MISSISSIPPI GRID		Area SKEAD TOWNSHIP (M-387)	
Supervisor R. A. Bennett	Instrument Geometrics Proton-6816	Survey date 12/80, 3/81	
Compiled by D. Lewis/Kalaba	Station MF-1 Flanagan	Drawn by W.E.M.	Date drawn 4/81
Scale 1:2500	File	Revised	
		N.T.S. 31M 13	





CANICO SURVEY

**LEGEND**  
 Magnetic reading in gamma: 60,200  
 Contour interval: 500 gamma  
 Isomagnetic lines: 5000, 1000, 500  
 Relative low: 50000  
 Diamond drill site:



Canadian Nickel Company Limited		Copper Cliff, Ontario	
CANICO-SUPERIOR NORTHWEST, INC.		POM 1ND	
MAGNETIC SURVEY		SHEET	FIGURE
		E-8	
Project LINCOLN-NIPissing GRID		Area SKEAD TOWNSHIP (M-387)	
Supervisor R. A. Bennett	Instrument Geometrics Proton-6816	Survey date 12/80, 3/81	
Compiled by D. Low/H. Keleba	Drawn by W. E. M.	Date drawn 4/81	Revised
Scale 1:2500	File	NTS 31M 13	

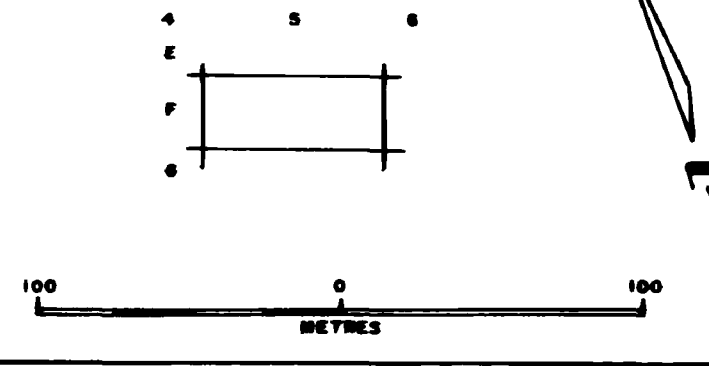
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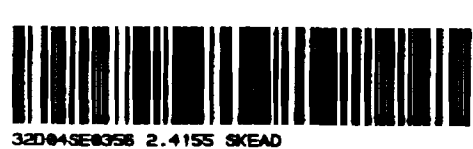


CANICO SURVEY ———

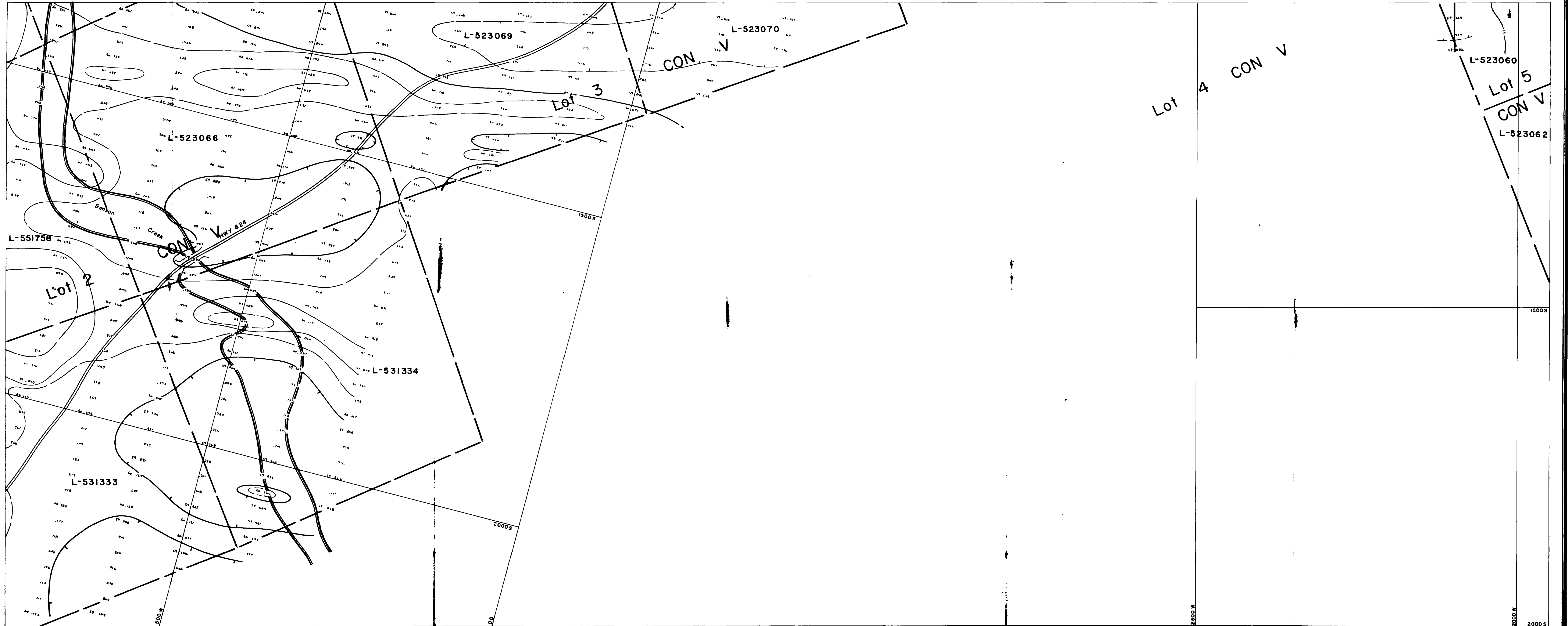
**LEGEND**  
 Magnetic reading in gammas: 60,000  
 Contour interval: 500 gammas  
 Isomagnetic lines: 5000  
 1000  
 500  
 Relative low:  
 Diamond drill site:



<b>Canadian Nickel Company Limited</b>		Copper Cliff, Ontario	
<b>CANICO-SUPERIOR NORTHWEST, INC.</b>		POM INO	
<b>MAGNETIC SURVEY</b>		SHEET	FIGURE
		F-5	
Project BENSON CREEK GRID		Area SKEAD TOWNSHIP (M-387)	
Supervisor R.A. Bennett	Instrument Geometrics Proton-6816	Survey date 12/80, 3/81	
Compiled by D. Law/H. Kelso	Drawn by W.E.M.	Date drawn 4/81	Revised
Scale 1:2500	File	NTS SIM 13	

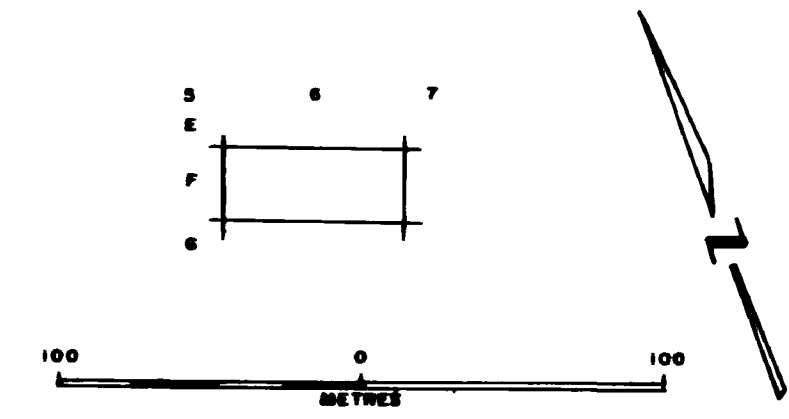






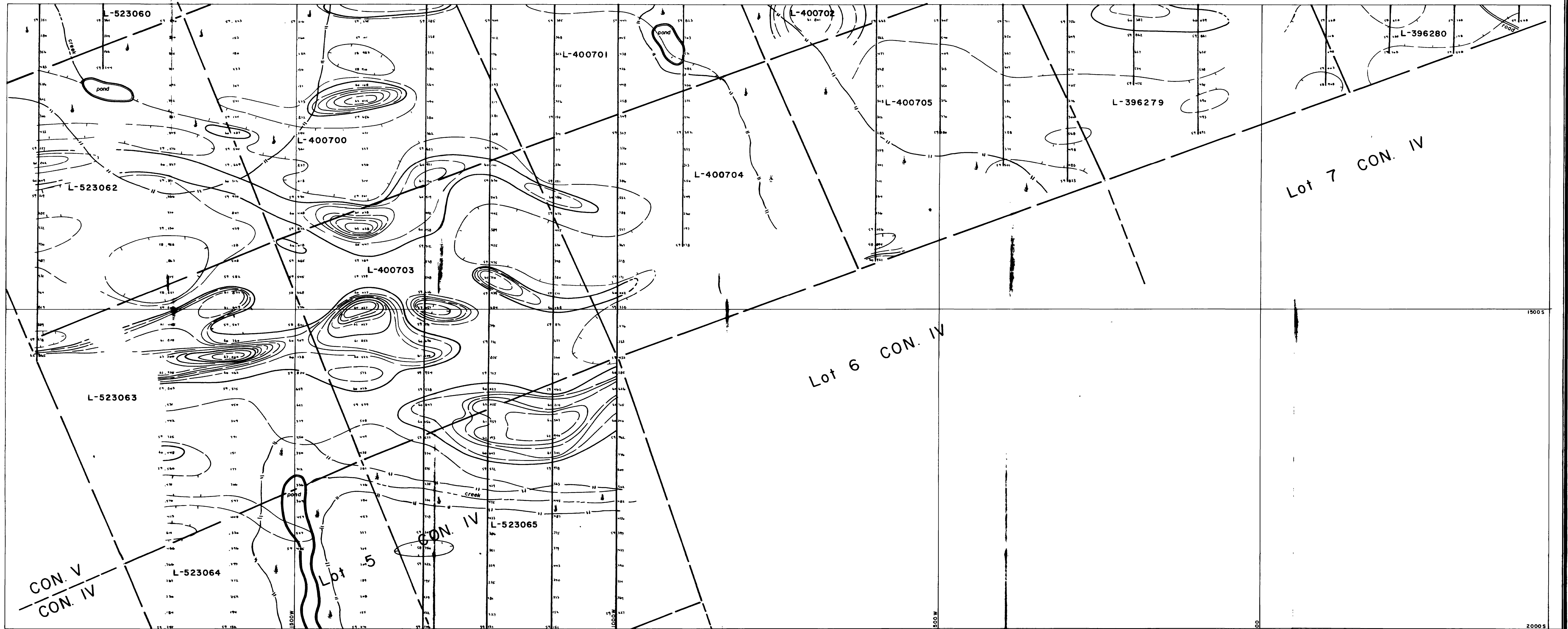
CANICO SURVEY ———

**LEGEND**  
 Magnetic reading in gammas: 60,230  
 Contour interval: 500 gammas  
 Isomagnetic lines: 5000  
 1000  
 500  
 Relative low: 5000  
 Diamond drill site:



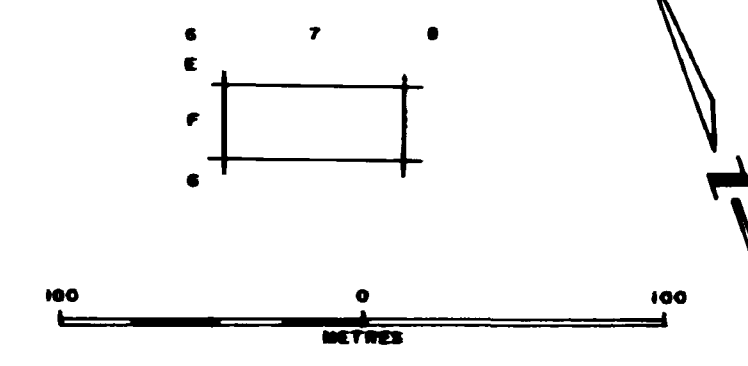
<b>Canadian Nickel Company Limited</b>		Copper Cliff, Ontario	
<b>CANICO-SUPERIOR NORTHWEST, INC.</b>		POW. IND.	
<b>MAGNETIC SURVEY</b>		SHEET	FIGURE
		F-6	
Project Benson Creek and Lincoln-Nipissing Grids		Area SKEAD TOWNSHIP (M-387)	
Supervisor R. A. Bennett	Instrument Geometrics Proton-6016	Survey date 12/80, 3/81	
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Scale 1:2500	File	NTS 31M 13	



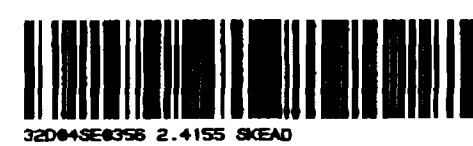


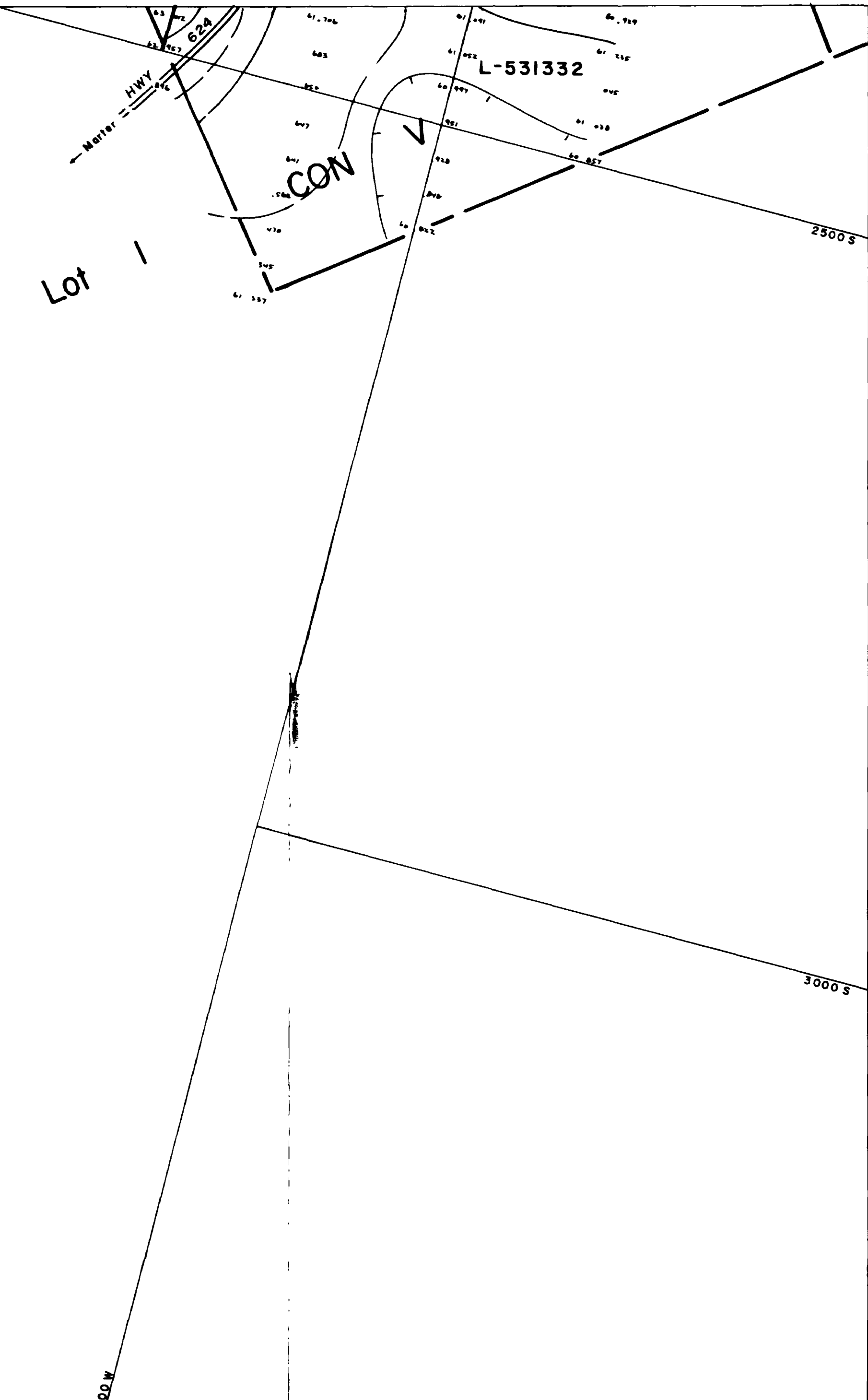
CANICO SURVEY ———

**LEGEND**  
 Magnetic reading in gamma: 60250  
 Contour interval: 500 gammas  
 Isomagnetic lines: 5000, 1000, 500  
 Relative low: 5000  
 Diamond with dot: 5000



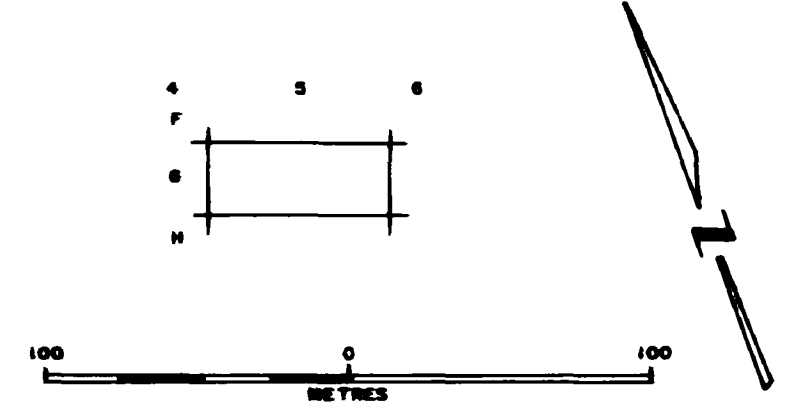
Canadian Nickel Company Limited		Copper Cliff, Ontario	
CANICO-SUPERIOR NORTHWEST, INC.		POM 110	
MAGNETIC SURVEY		SHEET	FIGURE
		F-7	
Project LINCOLN-NIPISSING GRID		Area SKEAD TOWNSHIP (M-387)	
Supervisor R.A. Bennett	Instrument Geometrics Proto-G816 Sciatrix MF-1 Flusgate	Survey date 12/80, 3/81	
Compiled by D. Law/H. Kalaba	Drawn by W.E.W.	Date drawn 4/81	Revised
Scale 1:2500	File	NTS 31M13	





CANICO SURVEY

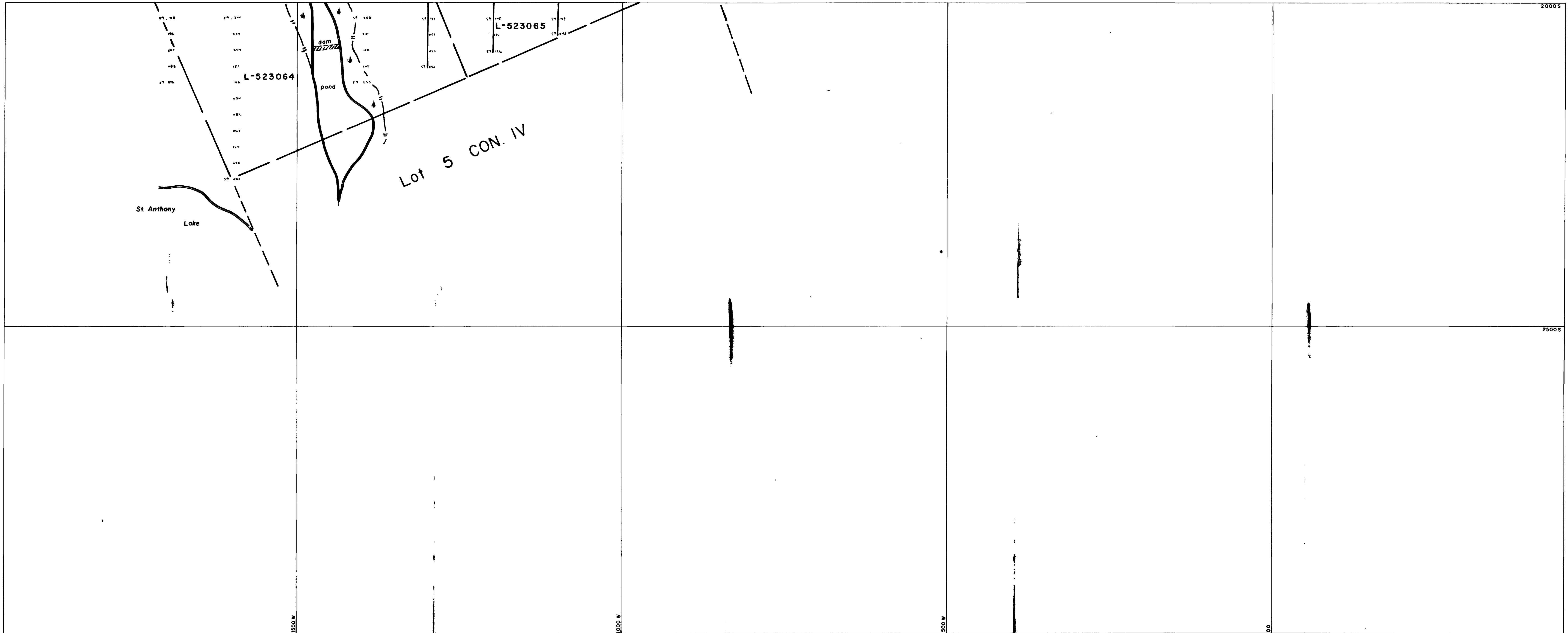
**LEGEND**  
 Magnetic reading in gammas: 60,200  
 Contour interval: 500 gammas  
 Isomagnetic lines: 5000  
 1000  
 500  
 Relative low: 5000  
 Diamond drill site:



<b>Canadian Nickel Company Limited</b>		Copper Cliff, Ontario	
<b>CANICO-SUPERIOR NORTHWEST, INC.</b>		POM 1ND	
<b>MAGNETIC SURVEY</b>		SHEET	FIGURE
		G-5	
Project: BENSON CREEK GRID		Area: SKEAD TOWNSHIP (M-587)	
Supervisor: R.A. Bennett	Instrument: Geomatics Proton-6816	Survey date: 12/80, 3/81	
Compiled by: D. Law/H. Kallala	Drawn by: W.E.M.	Date drawn: 4/81	Revised:
Scale: 1:2500	File:	N.T.S. 31M 13	

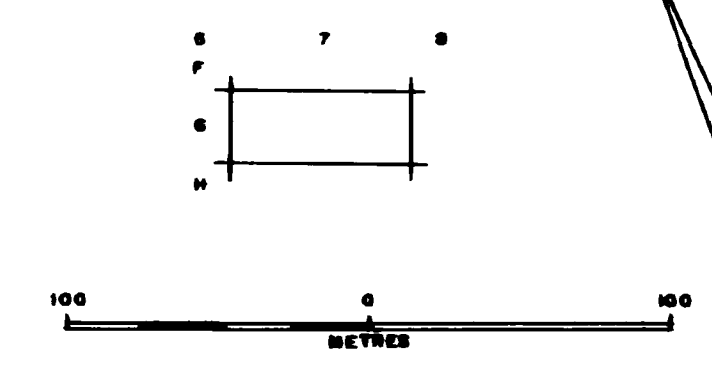
24155





CANICO SURVEY

**LEGEND**  
 Magnetic reading in gammas: 40,200  
 Contour interval: 500 gammas  
 Isomagnetic lines: 5000, 1000, 500  
 Relative low: 5000  
 Diamond drill site:



<b>Canadian Nickel Company Limited</b>		Copper Cliff, Ontario	
CANICO-SUPERIOR NORTHWEST INC.		POM 1100	
<b>MAGNETIC SURVEY</b>		SHEET	FIGURE
		6-7	
Project: LINCOLN-NIPISSING GRID		Area: SKEAD TOWNSHIP (M-387)	
Supervisor: R. A. Bennett	Instrument: Geometrics Proton-G816	Survey date: 12/80, 3/81	
Compiled by: D. Low/H. Kabele	Drawn by: W. E. M.	Date drawn: 4/81	Revised:
Scale: 1:2500	File:	NTS 31M 13	

