

## INTRODUCTION

During the period of February 1 to August 31, 1970 a combined exploration program was carried out on a group of claims held by Canex Aerial Exploration Ltd. The property comprises 32 contiguous claims numbered 242415-242432 inclusive, 213549-213550 inclusive, and 242900-242911 inclusive.

The program started by cutting 18.96 line miles at 400-foot intervals with stations at 100-feet. A combined electromagnetic and magnetometer survey was carried out followed by a gravity survey, geological mapping and diamond drilling.

### Location:

The property is located in Sothman Township, Larder Lake Mining Division, approximately 30 miles west of Matachewan and 40 miles south of Timmins, Ontario.

### Access:

Access to the area is either by vehicle from Timmins or Matachewan via local lumber roads or by air service from South Porcupine.

## TOPOGRAPHY

In general the area is flat. Sand hills and gabbro outcrops comprise the only relief of any significance. Much of the property is underlain by Sothman and Little Reading lakes.

## GEOLOGY

Mapping was carried out at times between June 13 and August 4, 1970 on 14.4 miles of line cut at 400-foot intervals. Where outcropping was more numerous, compass lines were run at 100-foot spacings.

Overburden in the region is very thick (136' vertically in one drill hole) and rock exposure limited to about 2%. As a result much of the geological interpretation is based on:

1. The geology of Sothman Township by E.M. Abraham, O.D.M. Vol. LXII, Part 6, 1953.
2. A ground magnetometer survey by Canex Aerial Exploration Ltd., 1970.
3. A ground magnetometer survey by Dominion Gulf, 1951 (O.D.M. file 63-245).
4. Diamond drilling results from holes drilled by Dominion Gulf, 1951, Kerr Addison, 1966 and Canex Aerial, 1970.

contd. ...

GEOLOGY (contd.)Regional Setting:

Geologically the property is situated on the western rim of a thick sequence of volcanic rocks. These rocks are folded into a broad anticline plunging to the west (Abraham).

Table of Formations

Cenozoic: Unconsolidated sediments - clay, sand, gravel, boulders.

Great unconformity.

Precambrian: Intrusions - gabbro, serpentinized dunite and peridotite.

Intrusive contact.

Acid Volcanics - massive, locally chloritic.

Ultrabasic bodies intrude the volcanic sequence.

ROCK DESCRIPTIONSAcid Volcanics:

Generally the rock is light grey-green, fine grained, locally chloritic and massive. It is found as inclusions in the basic intrusives and here it is chloritized, highly sheared and dark grey.

Dunite:

Typically this rock is granular, medium grained (1-2 m.m.), olive green and serpentinized. The rock was only seen as drill core. In the Kerr Addison hole a considerable amount of picrolite fibre and some chrysotile cross and slip fibre were noted.

Peridotite:

Two areas of peridotite exist on the property and of the two, the one to the southeast is best exposed. The rock is magnetic, fine grained, green-black, highly fractured and serpentinized. On weathered surfaces it is white and slippery. Sulfides are found disseminated throughout, picrolite is common in fractures and one outcrop was seen to have a 1/4" chrysotile filled fracture.

Gabbro:

This rock is the most resistant rock on the property. It is light grey, medium grained (1-2 m.m.) and composed of pyroxene (20-30% and plagioclase (70-80%). In D.D.H. 119-3 small pegmatitic gabbroic dykes cut the main gabbro.

contd. ...

## ROCK DESCRIPTIONS (contd.)

### Conclusions:

The area presents multiple possibilities that deserve checking. These are:

- (a) Ni-Cu mineralization in the ultrabasics (a small deposit is known in the southern part of the township.)
- (b) Asbestos in the ultrabasics.
- (c) Strata bound massive sulfides in the felsic volcanics.

## GEOPHYSICS

A total of 18.96 line miles were surveyed by E.M. and magnetic methods from 826 E.M. stations and 1383 magnetometer stations on cut and chained picket lines at 400-foot intervals with 100-foot station spacing. Over anomalous areas, station intervals were reduced to 50-feet.

Gravity was also carried out on 7100-feet of line with stations at 100-foot intervals establishing 71 gravity stations.

The E.M. unit used was a Ronka MK-IV horizontal loop instrument using a 200-foot coil separation and operating at 876 cps. Both in-phase and out-of-phase readings are recorded.

A Sharpe MF-1 fluxgate magnetometer was used for the survey. The accuracy of this instrument varies from  $\pm 0.5\text{-}1\%$  full scale depending on range being used.

The gravity survey was conducted using a Scintrex CO-2 gravity meter. Corrections made were drift, elevation and Instrument height.

### Results and Conclusions:

E.M. Survey - Two weak, one line anomalies were located on the northern part of the grid. One at 0+00, L36+00S is flanked to the northwest by a magnetic high. Drill hole 119-1 intersected shear zones and a water seam.

The second conductor on B.L. "D" L-6+00N resembles the first as it is also flanked by a magnetic high. It shows a definite in-phase response but little or no out-of-phase. D.D.H. 119-3 cut gabbro throughout its length with the only possible explanation being small dykes of pegmatitic gabbro containing small amounts of pyrrhotite and chalcopyrite on fractures.

Although other anomalous regions were located, conductivity is attributed to topography and overburden effects.

The survey results are inconclusive as only a 200-foot coil separation was used, and overburden is known to exceed 130-feet within the area. Also, when drilling, the casing was sunk mainly through sand with some clay layers.

## GEOPHYSICS (contd.)

Magnetics - The main value of the magnetometer survey was in distinguishing areas of basic and ultrabasic rocks from areas of volcanics. Several small highs were located within the broad magnetic feature and are attributed to topographic highs or to concentrations of magnetite within the peridotite (e.g. the lower part of D.D.H. 119-1).

Gravity - Since asbestos was known to occur within the ultrabasics of the general region, the gravity survey was conducted over the thickest part of the peridotite to locate the gravity lows. D.D.H. 119-2, drilled on the gravity low at L-44+00S, 6+00E, was lost in overburden, thus an evaluation of the method is not possible at this time.

### General Conclusions:

Horizontal loop E.M. is of dubious merit in this area of thick overburden. Also disseminated mineralization could be missed by the method.

An I.P. survey is suggested to either replace or supplement the E.M., Magnetics and Gravity have their uses as described earlier.

## DIAMOND DRILLING

Contractors: Markstay Diamond Drilling of Markstay, Ontario were contracted with to drill in Sothman Township. A drill was moved onto the property on May 9, 1970 and was moved off the property July 15.

### Results:

Hole 119-1 is located on claim 242418 at L-36+00S, 1+75E and was drilled grid west at  $-45^{\circ}$  to intersect a weak E.M. anomaly flanked to the west by a mag. high.

The E.M. anomaly is the result of a water seam at 240-feet and two shear zones at 209-217-feet and 288-feet. There was an increasing amount of magnetite down the hole.

Hole 119-2 was lost at 120-feet in overburden.

Hole 119-3 is located near a surface showing of pyrrhotite and chalcopyrite and was planned to cut a weak E.M. conductor. Co-ordinates of this hole on claim 242416 are 56+60S and 7+30E with a bearing of  $280^{\circ}$  astronomically and a dip of  $50^{\circ}$ .

Conductor is attributed to sulfides filling fractures, particularly in the coarser grained rock and to the presence of magnetite in varying amounts throughout the hole.

Holes 119-1 and 119-3 totalled 939-feet. Logs of the holes are attached in this report.

contd. ...

DIAMOND DRILLING (contd.)Conclusions:

The two drill holes did not intersect interesting sulfide mineralization. The two holes were drilled on the results of a horizontal loop E.M. survey using a separation of 200-feet. Since overburden ranges to over 100-feet, the E.M. data is inconclusive.

Respectively Submitted,

*James G. Burns B.Sc.*

J.G. Burns, Geologist

*F.H. Faulkner*

F.H. Faulkner  
Canex Aerial Exploration Ltd.

JGB/FHF/of

PROPERTY: V.119 Sirola Option

GRID:

## CANEX AERIAL EXPLORATION LTD.

## DIAMOND DRILL LOG

HOLE NO. 119-1

SHEET 1 OF 3

LOCATION: 136S, 1° 75E

BEARING: 235°

DATE COLLARED June 11/70 LOGGED BY: D. Davidson

LATITUDE: CORE SIZE:

DIP: 45°

DATE COMPLETED: July 1 DATE:

DEPARTURE: ELEVATION:

LENGTH: 484'

DRILLED BY: Markstay Diamond Drillers

FOOTAGE	DESCRIPTION	Sample interval	Sample number	% Ni	% Cu	% Zn	oz./Ton Au	oz./Ton Ag
0-108	Overburden							
108-109.5	Fragments of dunite, minor peridotite, cemented together by grey clay.							
109.5-138	Serp. dunite - light green, med. grained, minor section of peridotite, numerous fractures healed with serpentine, magnetite and some chlorite.							
138-142	Serpentinite with sections of serpentized dunite, colour varies from a light to dark green.							
142-190	Serp. dunite, light green in colour, numerous fractures filled with mag. chl. and serp., minor x fibre present in some of the fractures, 20-60° ca.							
190-207	Healed peridotite breccia, perid. frags. highly serpentized and healed by serpentinite, varies in colour - green - red - black, red due to alteration of magnetite or olivine.							
207-218	Shear zone, filled by molten qtz., aplitic in texture resemblance to breccia, various colours, rock is dense and quite heavy.							

PROPERTY V.119 Sirola Option  
GRID:

CANEX AERIAL EXPLORATION LTD.  
DIAMOND DRILL LOG

HOLE NO: 119-1  
SHEET 2 OF 3

LOCATION: BEARING: DATE COLLARED: LOGGED BY:  
LATITUDE: CORE SIZE: DIP: DATE COMPLETED: DATE:  
DEPARTURE: ELEVATION: LENGTH: DRILLED BY:

FOOTAGE	DESCRIPTION	Sample interval	Sample number	% Ni	% Cu.	% Zn.	oz./Ton. Au	oz./Ton. Ag
218-218.5	Healed peridotite breccia - as before.							
218.5-265	Serpentinized peridotite with bands of dunite, minor fractures healed by mag. serp., some x fibre, fractures at 30°-60° ca.							
265-335	Serp. dunite with minor bands of peridotite, numerous fractures @ 10-80° ca, healed with serp., mag., serp. is talcousic, rock is very magnetic, minor x fibre present.							
338-385	Serp. peridotite, with bands of dunite, numerous fractures, healed with mag., pic, minor x fibre 1/32", several veinlets (bands) of magnetite, rock is quite magnetic.							
385-388	Shear zone (as before) flanked by healed peridotite breccia.							
388-484	Serp. peridotite, numerous fracture healed with pic, mag., some fibre (few fractures - 3 - have fibre up to 1/10", but fractures pinch and swell). This peridotite from 440-484 shows signs of further alteration (possibly minor anthophyllite), fine diss. sulphides.							

PROPERTY: V.119 Sirola Option

**GRID:** \_\_\_\_\_

CANEX AERIAL EXPLORATION LTD.  
DIAMOND DRILL LOG

HOLE N°: 119-1

SHEET 3 OF 3

**LOCATION:** \_\_\_\_\_

**BEARING:** \_\_\_\_\_

DATE COLLARED \_\_\_\_\_

LOGGED BY: \_\_\_\_\_

LATITUDE: \_\_\_\_\_ CORE SIZE: \_\_\_\_\_

DIP: \_\_\_\_\_

DATE COMPLETED: \_\_\_\_\_

DATE: \_\_\_\_\_

DEPARTURE \_\_\_\_\_ ELEVATION: \_\_\_\_\_

LENGTH: \_\_\_\_\_

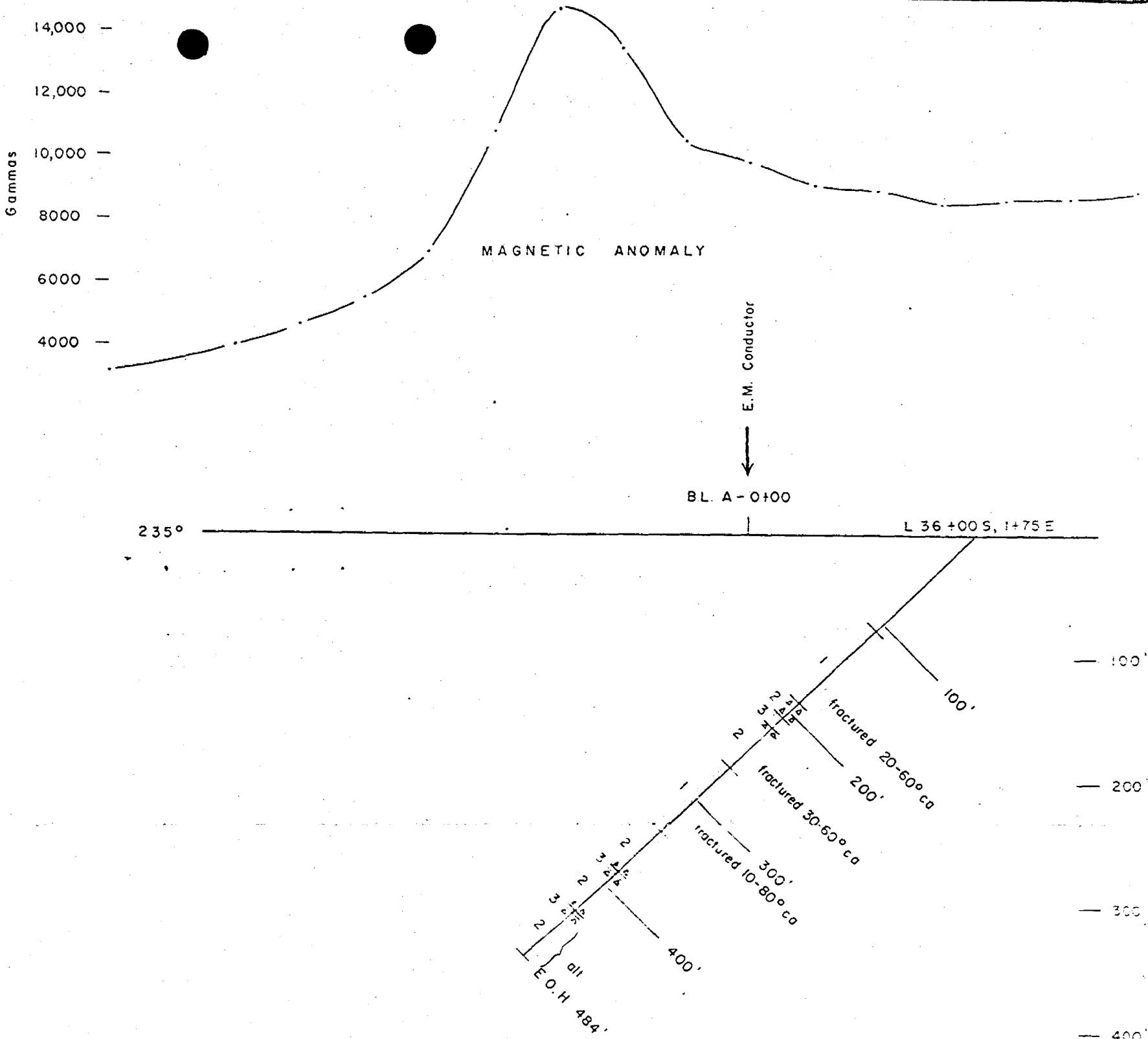
DRILLED BY: \_\_\_\_\_

[View all posts by \[Author Name\]](#) | [View all posts in \[Category\]](#)

### **Engineer**

LEGEND

- [1] Dunite
- [2] Peridotite
- [3] Shear zone - qtz.
- △△△ Healed breccia



DRAWN D. Davidson	SCA [redacted] 1" = 100'	VERTICAL SECTION DDH 119-1 Facing Northwest	CANEX AE
TRACED J.W.	DATE Sept, 1970	C1 L 242418 SIROLA OPTION	
APPROVED		SOTHMAN TWP., ONTARIO	FILE NO. NTS

PROPERTY: V.119 Sirola Option

## CANEX AERIAL EXPLORATION LTD.

HOLE NO: 119-3

GRID: \_\_\_\_\_

## DIAMOND DRILL LOG

SHEET 1 OF 3

LOCATION: Sothman Township BEARING: 280 (astro) DATE COLLARED May 18/70 LOGGED BY: D. Davidson  
 LATITUDE: 74°30'E B.L.A. CORE SIZE: DIP: 50° DATE COMPLETED May 22 DATE:  
 DEPARTURE: 56°60'S ELEVATION: LENGTH: 455 DRILLED BY: Markstay Diamond Drillers

FOOTAGE	DESCRIPTION	Sample interval	Sample number	% Ni.	% Cu.	% Zn.	oz./Ton Au	oz./Ton Ag
0-4	Casing							
4-8	Felsic - pyroxene - gabbro, 15-20% pyroxene, 75-80% felds. altered white on edges well developed xtals of pyrox. and fels. rock, med. grained, light grey colour.							
8-10	Felsic - pyroxene gabbro, fine grained, grey green colour, felds. not altered, well developed xtals.							
10-14	Selective serpentinized felsic gb. mottled green-grey-brown colour, coarse grained, with minor qtz. vein near 14' (probably a fracture zone). (Minor cpy near and in vein < 1%).							
14-128	Gabbro - green grey colour, med. grained. Mg pyroxene serpentinized, altered felds, (minor saussuritization?) numerous fractures at < of 0°-50° ca, healed by serpentine and qtz. Commonly associated with fractures are sulphides, py & cpy, sulphides are found in the disseminated state in the rock, very fine grained < 1%, present in the rock are minor amounts of ilmonite and magnetite.							

PROPERTY: V.119 Sirola Option  
GRCANEX AERIAL EXPLORATION LTD.  
DIAMOND DRILL LOGHOLE N°119-3  
SHEET 2 OF 3LOCATION: BEARING: DATE COLLARED: LOGGED BY:  
LATITUDE: CORE SIZE: DIP: DATE COMPLETED: DATE:  
DEPARTURE: ELEVATION: LENGTH: DRILLED BY:

FOOTAGE	DESCRIPTION	Sample interval	Sample number	% Ni.	% Cu.	% Zn.	oz./Ton. Au	oz./Ton. Ag
128-235	Similar to gabbro above only it is finer grained and contains dikes of diabasic gabbro @ 136', 140' & 140.8. At 165 & 167.5 qtz. veins that contain minor sulphides, mainly cpy.  Note: From 225'-250' gradational change from a green grey serpentинized gabbro to grey non-serpentинized gabbro.							
235-455	Gabbro - medium grained, grey, consisting of 70-80% felds, 30-20% pyrox. felds of two types, white & pale green (white - alteration produce). Well formed pyroxene xtals.  @ 239' & 246' diabasic dykes, coarse grained. In and surrounding dykes concentration of sulphides, cpy 2%, py 1%, po 2-4%, from 323-330 consist of numerous dykes, or one large dyke with band of finer grained gabbro. Small fractures in dykes, are commonly filled with sulphides. Within the last 50' qtz. veins with flakes of enclosed sulphides are common, usually 40°-50° c.a.	245.5- 246.5 328.5- 329 356.5- 357.5	A-1929 A-1930 A-1931	0.01 trace 0.01	0.01 0.12 trace			

Engineer: \_\_\_\_\_

PROPERTY: V.119 Sirola Option

ID: \_\_\_\_\_

CANEX AERIAL EXPLORATION LTD.  
DIAMOND DRILL LOG

HOLE NO.: 119-3

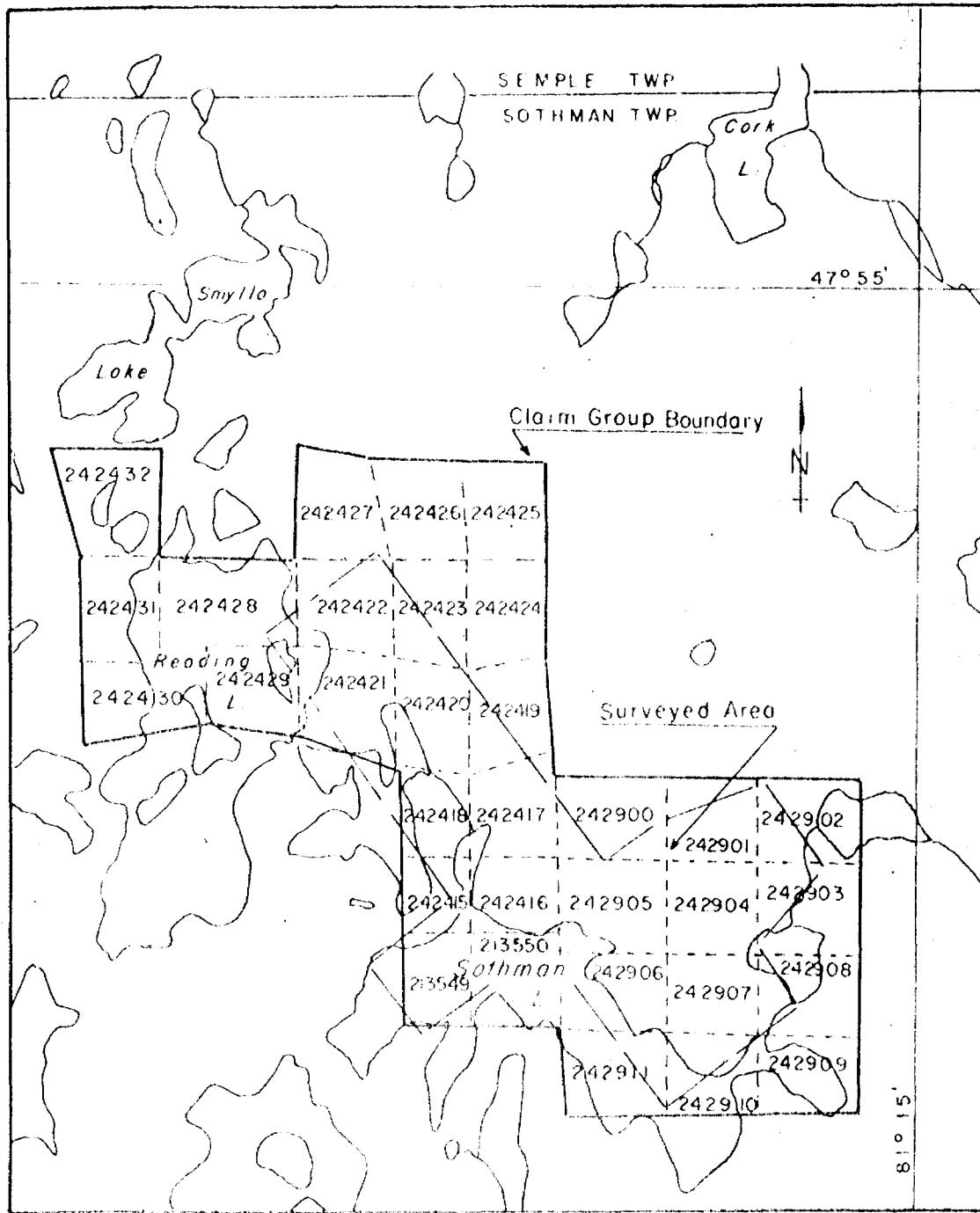
SHEET 3 OF 3

LOCATION: \_\_\_\_\_ BEARING: \_\_\_\_\_ DATE COLLARED: \_\_\_\_\_ LOGGED BY: \_\_\_\_\_

LATITUDE: \_\_\_\_\_ CORE SIZE: \_\_\_\_\_ DIP: \_\_\_\_\_ DATE COMPLETED: \_\_\_\_\_ DATE: \_\_\_\_\_

DEPARTURE: \_\_\_\_\_ ELEVATION: \_\_\_\_\_ LENGTH: \_\_\_\_\_ DRILLED BY: \_\_\_\_\_

**Engineer:** \_\_\_\_\_



#### LOCATION OF SIROLA CLAIM GROUP

Larder Lake Mining Division  
Sothman Twp., Ont.

1" = 2640'

**LEGEND**

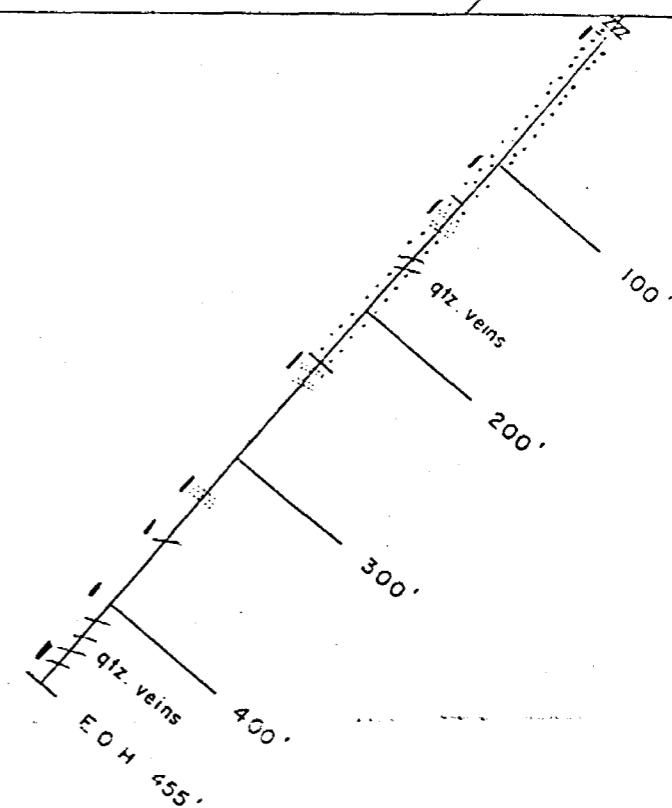
- Gabbro
- Gabbro - felsic
- Gabbro - serpentized
- Gabbro - diabasic
- Sulphides

280°

Astro. N

E. M. Conductivity

56+60 S, 7+30 E



**SAMPLES**

No	From	To	Ni %	Cu %
A 1929	245.5'	246.5'	0.01	0.01
A 1930	328.5'	329.0'	Tr.	0.12
A 1931	356.5'	357.5'	0.01	Tr.

DRAWN D. Davidson	SCALE " = 100'	VERTICAL SECTION DDH 119-3 Facing North	CANEX AE
TRACED <i>g.m.</i>	DATE Sept. 1970	CL. L. 242416 SIROLA OPTION	FILE NO. VTS 41
APPROVED		SOTHMAN TWP., ONTARIO	

Nursery Twp.-M. 1031

Seample Twp.- M' 1100

Kemp Twp. - M. 966

## СРАМНЫЕ МАР

THE TOWNSHIP  
OF

# SOTHMAN

DISTRICT OF  
SUDBURY

LARDER LAKE  
MINING DIVISION

SCALE: 1-INCH=40 CHAINS

LEGEND

- |                       |        |
|-----------------------|--------|
| PATENTED LAND         | (P)    |
| CROWN LAND SALE       | C.S.   |
| LEASES                | (L)    |
| LOCATED LAND          | Loc.   |
| LICENSE OF OCCUPATION | L.O.   |
| MINING RIGHTS ONLY    | M.R.O. |
| SURFACE RIGHTS ONLY   | S.R.O. |
| ROADS                 |        |
| IMPROVED ROADS        |        |
| KING'S HIGHWAYS       |        |
| RAILWAYS              |        |
| POWER LINES           |        |
| MARSH OR MUSKEG       |        |
| MINES                 |        |
| CANCELLED             | (X) C. |

## NOTES

-400' Surface Rights Reservation around  
all Lakes and Rivers.

Flooding Rights - L.O. No. 7191, File No. H62,  
volume No. 4.

**DATE OF ISSUE**

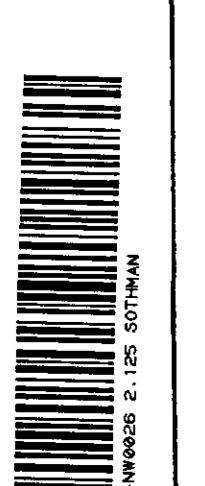
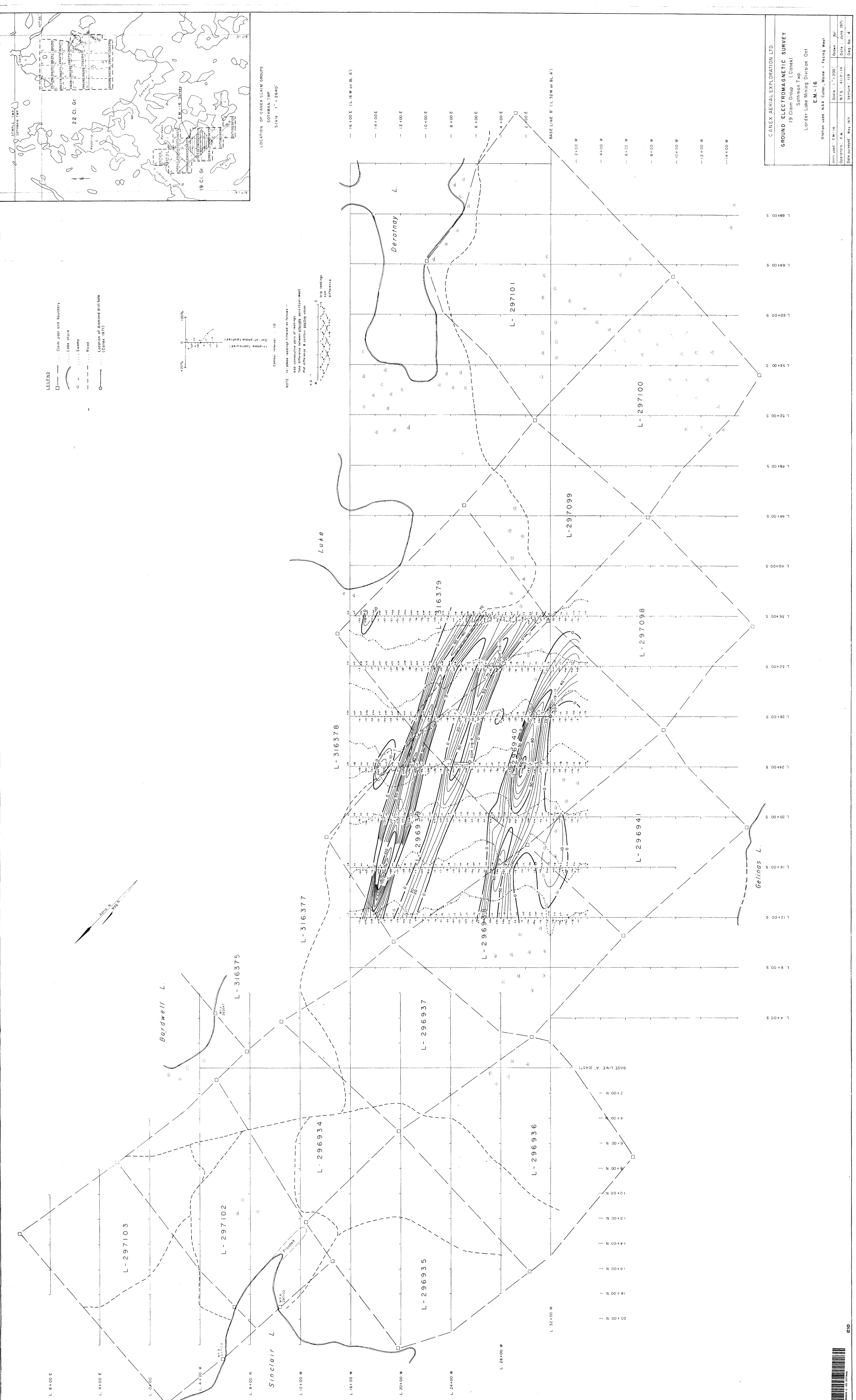
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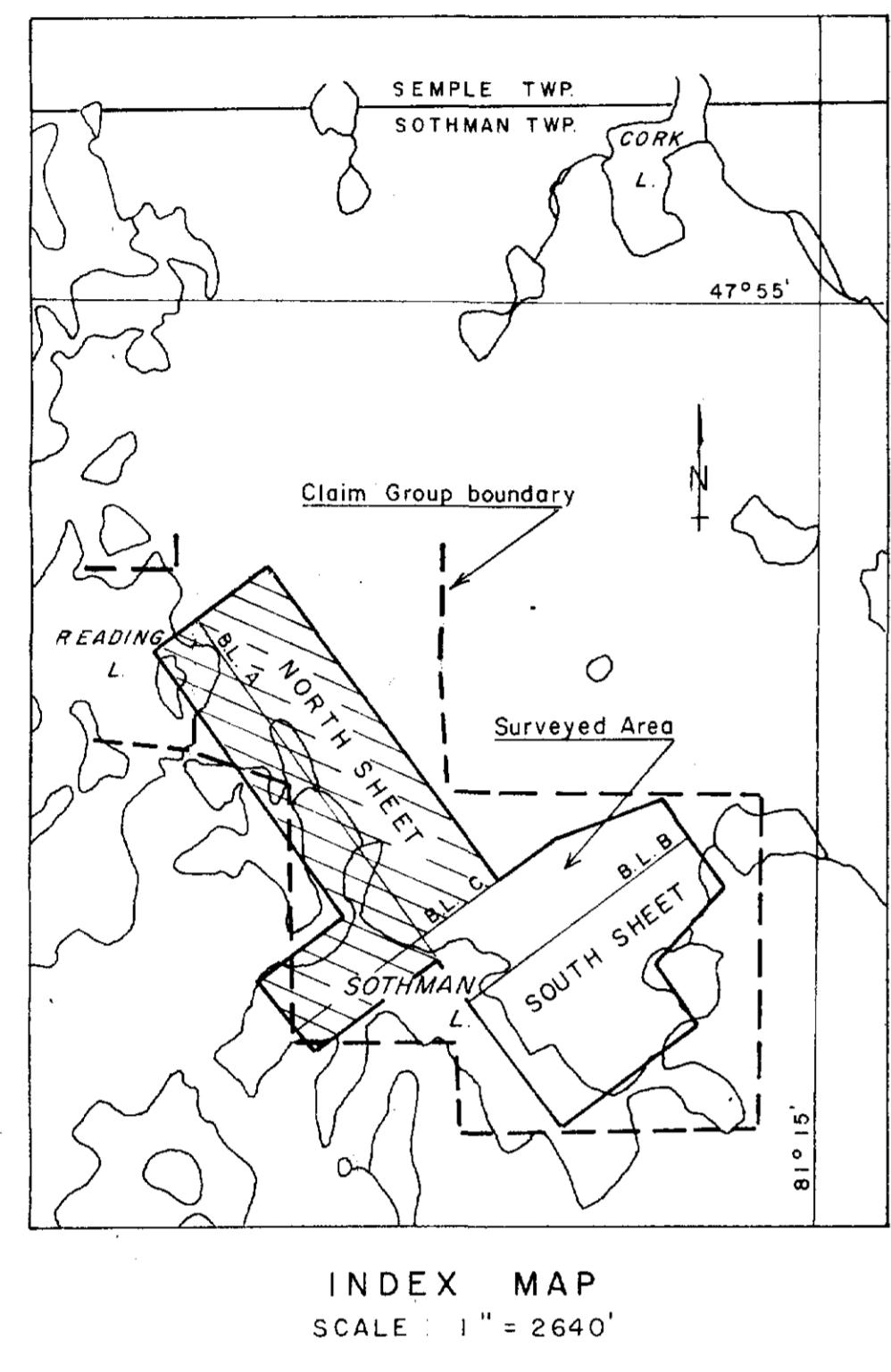
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AND NORTHERN AFFAIRS

PLAN NO.- M-1121


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DEPARTMENT OF MINES  
AND NORTHERN AFFAIRS**

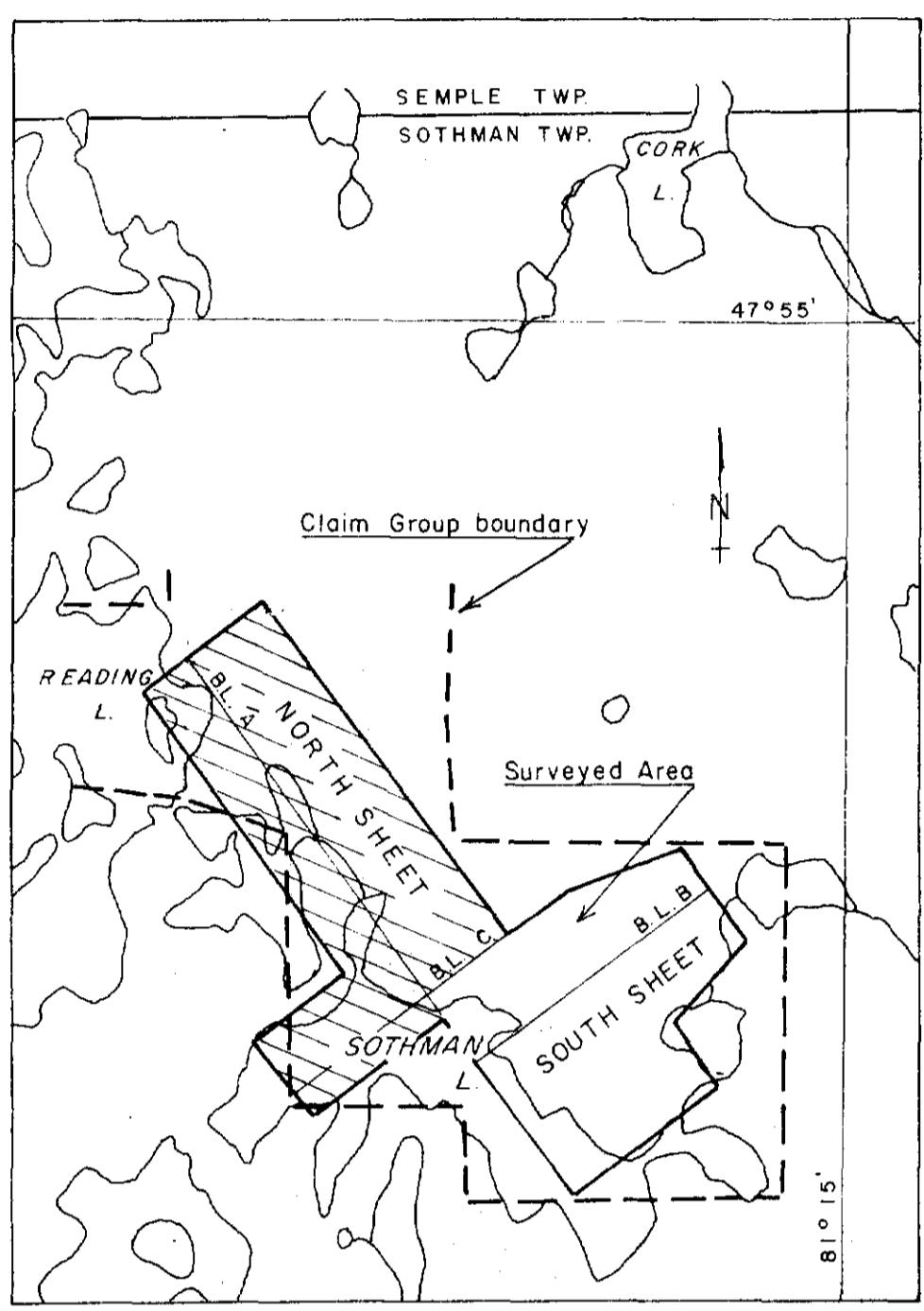




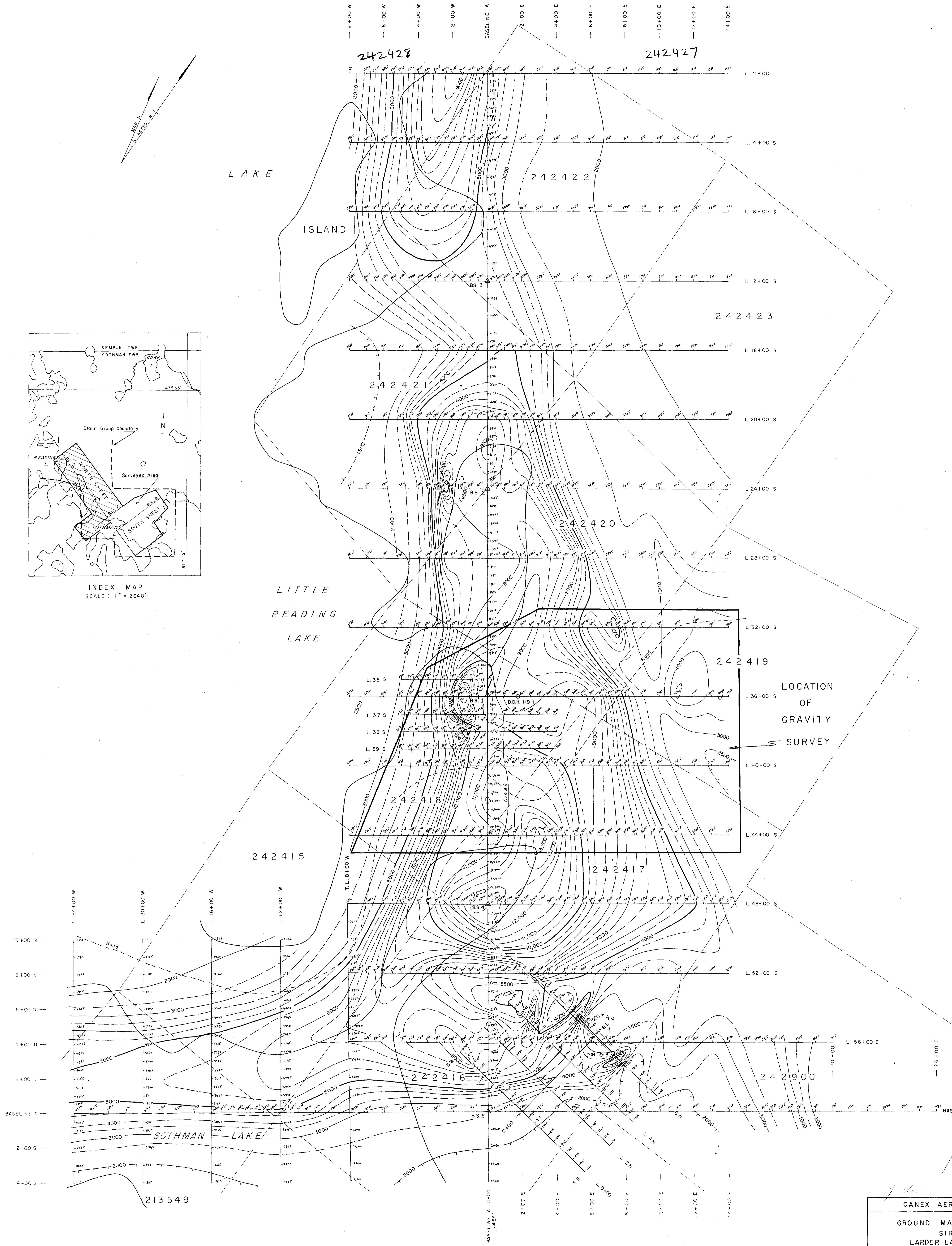


INDEX MAP





INDEX MAP  
SCALE : 1" = 2640'



CANEX AERIAL EXPLORATION LTD.

GROUND MAGNETOMETER SURVEY  
SIROLA OPTION  
LARDER LAKE MINING DIVISION  
SOTHMAN TWP., ONT.

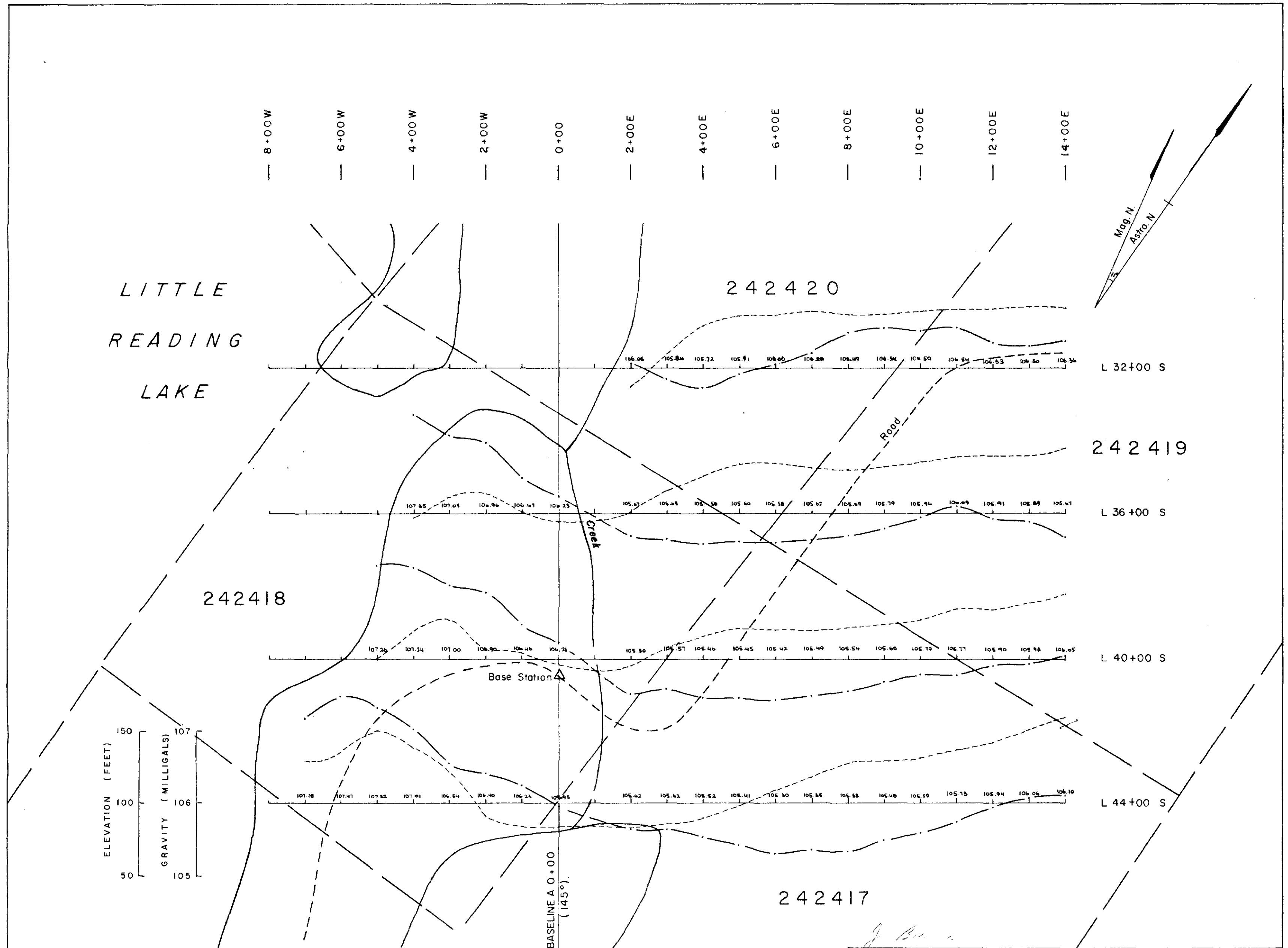
## NORTH SHEET

INSTRUMENT USED : Sharpe MF-1  
OPERATOR : F. H. Faulkner & G. Harron  
DATE SURVEYED : Feb. 21-27, 1970 & April 10, 1970

CONTOUR INTERVAL : 500 gammas

SCALE : 1" = 200'	DRAWN : J.W.
DATE : March 1870	FILE No. : NTS 41-B-14 V. US. EN.

March , 1970 | FILE No. : N.T.S. 4I-P-14 V 119-5N



Adjusted gravity profile - 1 in. = 1.0mgals

Elevation profile - 1 in. = 50 ft.

NOTE : Readings are relative to Base Station  
Assumed observed gravity at B.S. 100mgals  
Assumed elevation at B.S. 100 feet

Instrument used : Scintrex CG-2 Gravity Meter  
Operator : C. Henderson  
Date surveyed : April 9-12, 1970

CANEX AERIAL EXPLORATION LTD.

GRAVITY SURVEY  
SIROLA OPTION  
LARDER LAKE MINING DIVISION  
SOTHMAN TWP., ONT.

NORTH SHEET

SCALE : 1" = 200'


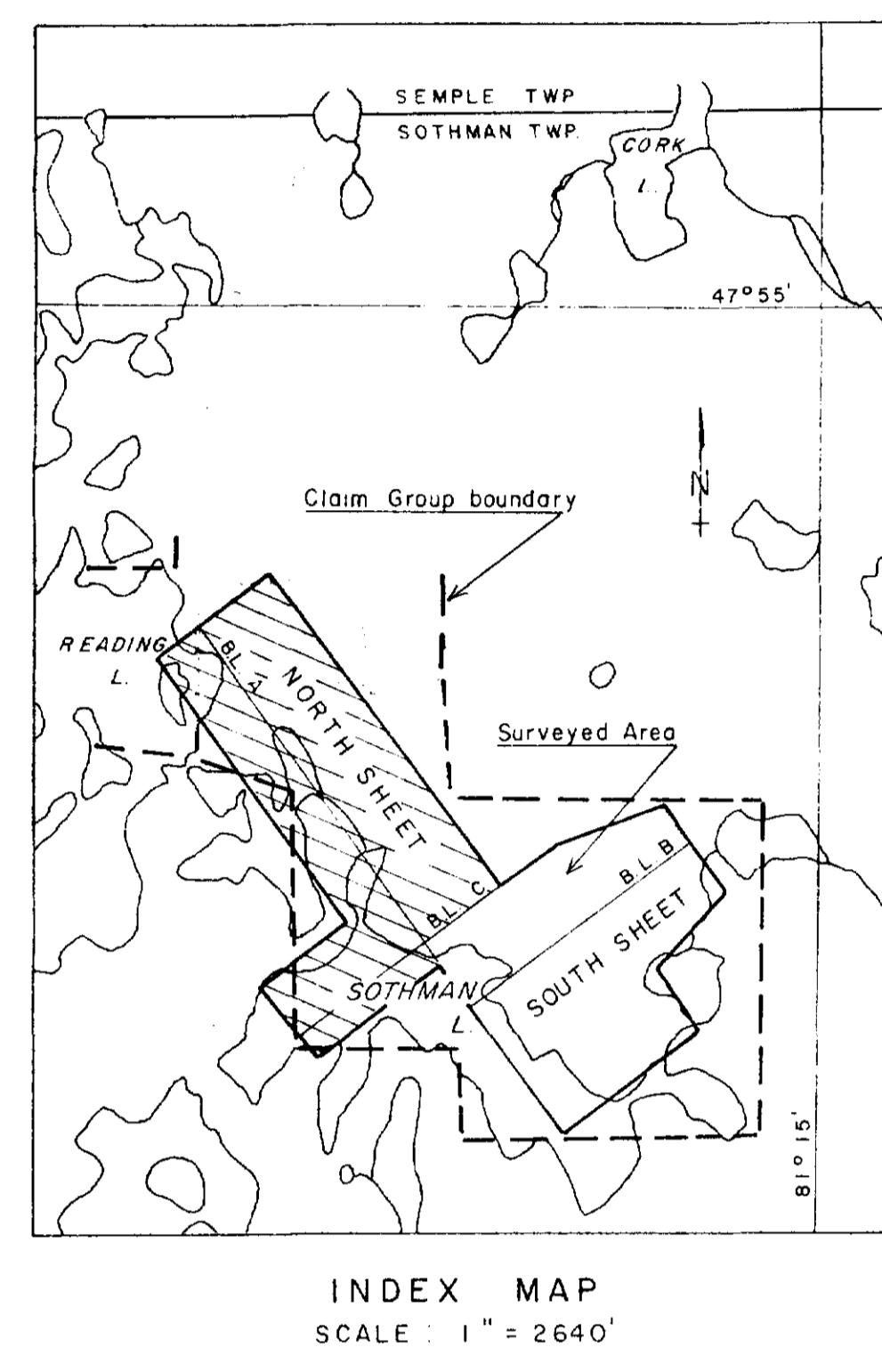
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DATE : Apr. 70

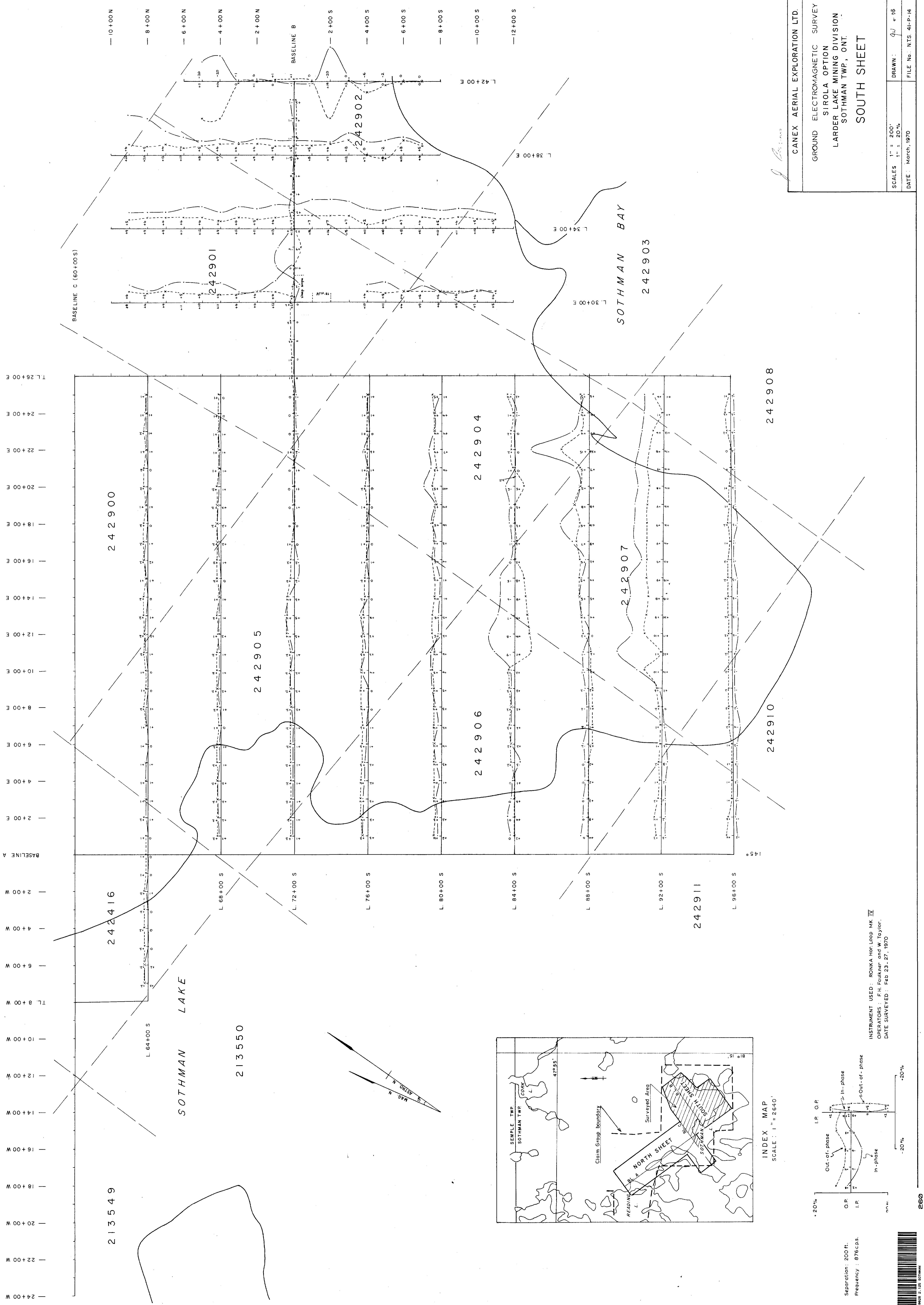
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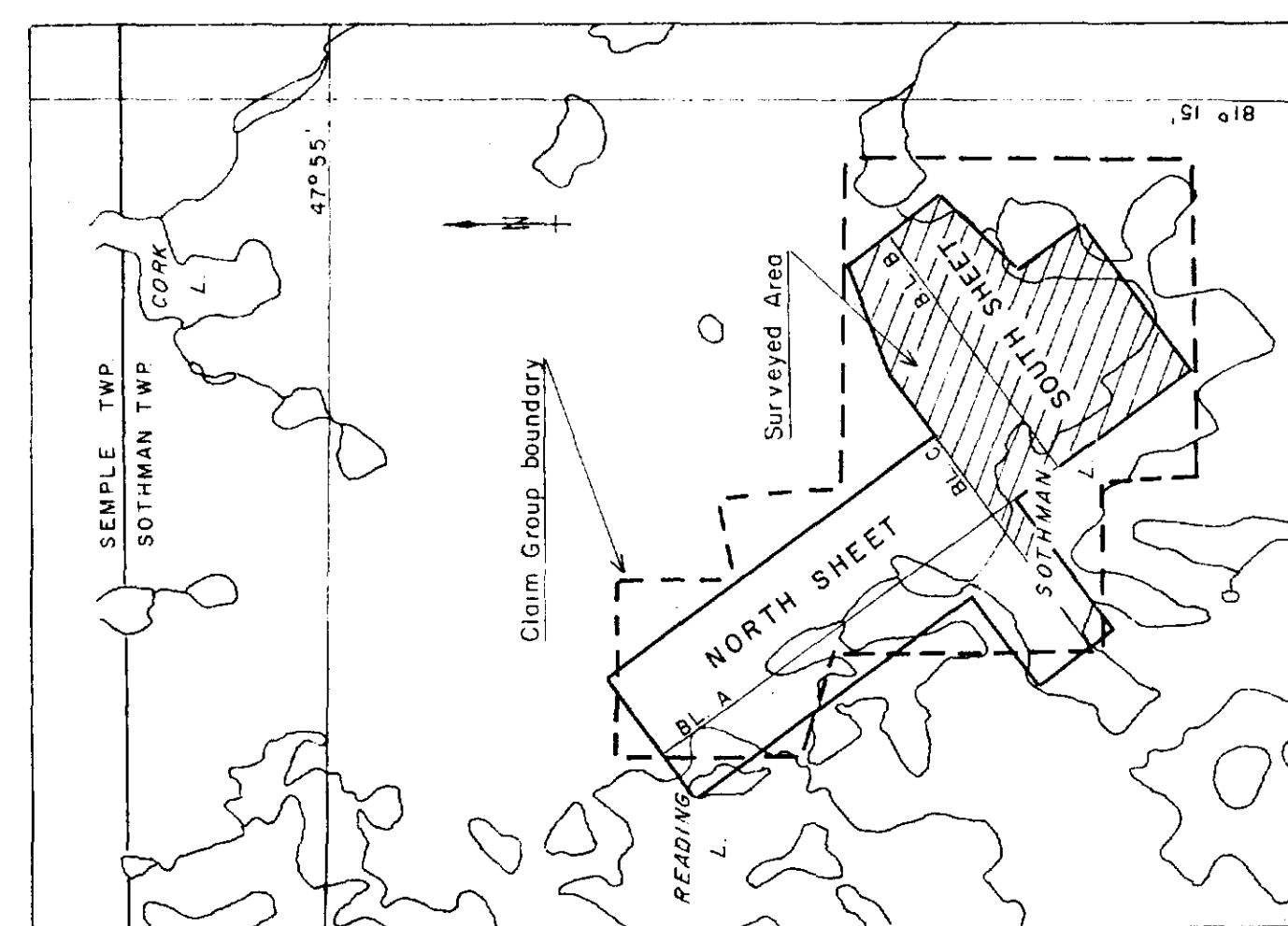
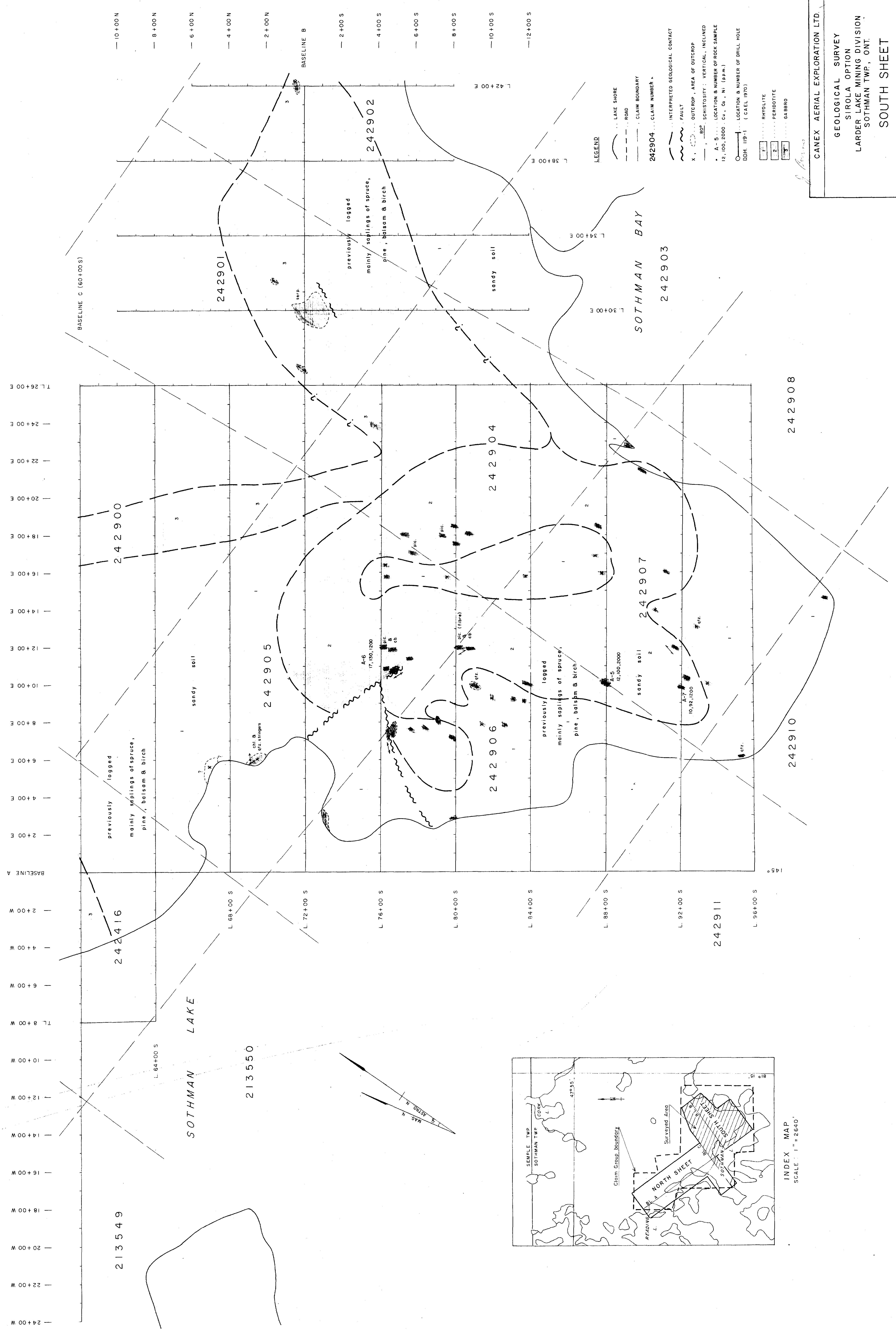
41P14NW0026 2.125 SOTHMAN



CANEX AERIAL EXPLORATION LTD.	
GEOLOGICAL SURVEY	
SIROLA OPTION	
LARDER LAKE MINING DIVISION	
SOTHMAN TWP., ONT	
NORTH SHEET	
Revised: Feb./71	JB
SCALE: 1" = 200'	MAPPED: J.B. & DD TRACED: J.B.
DATE: Sept. 1970	FILE No.: NTS 41-P-14 V 119-7N







INDEX MAP  
SCALE 1 : 2640'