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Consolidated Tache Mines

&

Investments Limited

Report on

Induced Polarization Survey

FRIPP TOWNSHIP CLAIM GROUP

SUMMARY

Induced polarization surveys were run on a group of 16 claims in Fripp Township. Three anomalous zones were located. Two drill targets were located in Zone A. More I.P. work will be required on Zone B and C if drilling on Zone A is encouraging.

It is recommended that the showing on line 3 S be tested with drilling and that Zone A be drilled on lines 5 S and 6 S. A budget for this work would be \$ 15,000. Encouraging results would require additional money.

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FRIPP TOWNSHIP CLAIM GROUP

I. INTRODUCTION

Consolidated Tache Mines & Investments Ltd. holds a group of 16 claims in Fripp Township, Porcupine Mining Division, Ontario. Portions of the township has been mapped in detail by earlier exploration companies. During the winter of 1973 an induced polarization was run over the claims. The results are reported.

II. PROPERTY, LOCATION AND ACCESS

The property comprises 16 contiguous unpatented mining claims in the central portion of Fripp Township, Porcupine Mining Division. The claims are as follows:

- P 352959-62 inclusive (4 claims)
- P 362920 - 24 inclusive (6 claims)
- P 366190 - 95 inclusive (6 claims)

Access to the area is by aircraft from South Porcupine a distance of 20 miles.

### III. GENERAL GEOLOGY

The Keewatin - type rocks appear to have been intruded by concordant bodies of ultrabasic rock consisting mostly of peridotite, pyroxenite, and dunite and later intruded by large masses of diorite, quartzdiorite and granite, possibly of Algonian age. Diabase dykes have cut all the above rock types.

The ultrabasic sill extends for about one mile in and east of Bruce Lake. There were only three or four ultrabasic outcrops to be found, but its general extent is outlined by ground magnetics.

Diorite is the commonest rock-type in the area. The ultrabasic sills are almost entirely encased in diorite and have a sharp contact with the diorite.

### IV. ECONOMIC GEOLOGY

The ultrabasic sill on P.352959 was investigated for sulphide mineralization. Sulphides occur in the outcrop and in 1964, limited drilling of shallow holes on the outcrop located chalcopyrite and pentlandite in the peridotite. The assays were not reported in government files. Examination of the altered peridotite showed areas of sulphide mineralization containing chalcopyrite and pyrrhotite. This pyrrhotite may in part be pentlandite. Hollinger's drilling appeared to be assessment drilling because they were only shallow and under

the showings. The mineralization is not conductive. The sulphides would likely respond to induced polarization.

The surface outcrop showed a north-south striking zone of sulphides about 5% total sulphides. Five feet of width, these sulphides were bounded by overburden on the east. The sulphides were exposed for 50 feet of strike. This surface exposure likely corresponds to a 31 foot drill intersection of Hollinger's in one of the six holes drilled where altered peridotite contained pyrite, chalcopyrite and pyrrhotite varying in abundance from minor to massive. The copper-nickel values in the surface exposure are estimated less than 1% combined across the five foot width. In one of Hollinger's reports, the surface showing was described as follows; "A minor zone of chalcopyrite and violaritized pentlandite associated with magnetite and pyrrhotite in peridotite on claim P-51125 near the west contact of the ultrabasic contains minor low grade nickel and minor diss.copper in surface samples, but packsack drill holes did not show any improvement in the zone."

## V. HISTORY

In the early sixties, Hollinger Exploration mapped this area in detail and carried out extensive magnetic and electromagnetic surveys. They located the copper-nickel showing on P.352959 and drilled several shallow holes. These shallow holes gave sulphide mineralization and like the other ultrabasic bodies in

Texmont area and Langmuir Township warrant drilling to depth. Hollinger was discouraged by its gold exploration in the area. Interest was diverted from the area following the base-metal discovery in Kidd Township in 1964 and the claims were acquired by new interests.

## VI. INDUCED POLARIZATION SURVEY

The dipole-dipole survey was run along north-east south-west grid lines spaced at 400 foot and 800 foot intervals.

The entire property was covered and is shown on the accompanying plan. The electrode separation was 200 feet and 100 feet and ~~four~~ <sup>three</sup> dipole receiver readings were taken from each transmitter.

dipole.

The psuedo profiles are fold-outs in the back of the report and the anomalous zones are marked as three grades: definite (solid), probable (vertical bars) and possible (diagonal bars).

These are also shown on the plan map (scale 1" = 400'). The frequencies employed were 0.3 and 5.0 <sup>hertz</sup> c.p.s. A brief explanation of the operation and understanding of I.P. is included in the appendix. The equipment used was a McPhar Model ~~654~~ <sup>660</sup> multi <sup>?</sup> frequency I.P. unit.

The earlier drilling, holes shown on small map, was located on the mineralized outcrop and did not test the areas of better I.P. anomalies. The anomalies tend to vary vertically as well as along strike. An old drill hole on line 7 S at 14 E may have tested an I.P. anomaly there and similarly a hole

at 6 E line 14 S (unsurveyed) may have tested the strike extension of the anomaly at 6 E line 13S.

The following zones were outlined in the survey:

Zone A - This Z shaped zone was traced from line 22S (and may extend north) to line 9 S. Other anomalies on lines 11S and 13 S may represent a southward extension.

The zone branches between L5S and L8S. It would appear that none of the drilling to date has tested this anomaly.

Two holes are recommended on this zone one on L5S at 8E and one on line 6S at 1W.

Zone B - Usually occurs along the lakeshore at the ends of the lines. If drilling of Zone A is encouraging more detail I.P. should be carried out on Zone B.

Zone C - This may be several unconnected zones. One hole was drilled on line 7 S. If the drilling of Zone A is encouraging more detail I.P. should be carried out on Zone C to delineate possible drill targets.

## VII CONCLUSIONS AND RECOMMENDATION

The induced polarization survey located three anomalous zones. Zone A is well outlined and earlier drilling did not test this anomaly. The zones B and C require further I.P. detail before they can be assessed as drill targets.

## Induced Polarisation

### Theory and Method of Survey

Induced Polarisation (I.P.) surveys refer to a measurement of the blocking or back voltage - polarisation of metallic conductors in a medium of ionic solution conduction.

This electro-chemical relationship occurs whenever metallic-type minerals such as base metal sulphides have an electrical current pass through them. In ordinary resistivity surveys, the current travels by conduction through the ions present in the water content of the ground. This is possible because almost all of the minerals have a much higher resistivity than the aqueous portion of the ground. A group of "metallic" type minerals have specific resistivities much lower than the ground water.

The I.P. effect occurs at the interfaces, where the mode of conduction from ionic in solutions to electronic in the metallic minerals is present in the rock.

The blocking action or induced polarisation which depends on the energies necessary to allow ions to give up or receive electrons from the metallic surface, increases with the time that a direct current is allowed to pass through the rock. Thus as ions accumulate against the

metallic interface the resistance to current flow increases. In time these excess ions reduce the amount of current flow through the metallic particle. This phenomena is repeated at each of the infinite number of solution-metal interfaces present in the metallic rich rock.

When the direct current voltage that is used to cause a direct current is cut off, then the charged ions forming the polarization return to their normal position. This movement of charge creates a small, but measurable current flow on the surface of the ground.

Using an alternating current source, the effective resistivity of the system will change with the frequency of the switching.

The recorded values of the per cent frequency effect or F.E. are a measurement of the polarization in the rock mass. An often more useful quantity is the metal factor (M.F.) which is obtained by normalizing the F.E. for varying resistivities.

I.P. is used in the search for disseminated metallic sulphides of less than 20% by volume.

Field procedure in most I.P. surveys is as follows.

Current is applied to the ground at two points x feet apart. The potentials are measured at two other



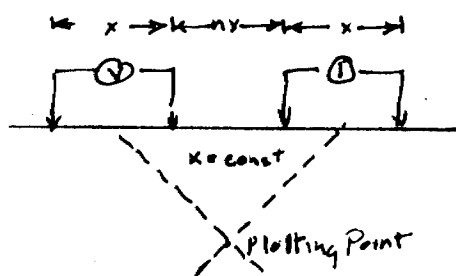
points  $x$  feet apart in line with the current electrodes and the separation of the near current and potential electrodes is  $nx$  where  $n=1, 2, 3$ , etc.

The measurements are made along a picket line with constant distance  $nx$  feet employed between the nearest current and potential electrodes and several values of  $n$  may be employed ( $n=1, 2, 3$  etc.).

In plotting the results, the values of the apparent resistivity, metal factor, the percentage frequency effect measured for each set of electrodes are plotted at the intersection of two imaginary lines drawn from the centre of the current and potential electrodes at  $45^\circ$  to the surface to meet at a mid point below the electrode array. Each of the three quantities are plotted in upright psuedo-sections.

Instrument: McPhar 660  
 Frequency: 5 c.p.s and 0.3 c.p.s.  
 Province: Ont  
 Township: Paris  
 Claims: see report.

Electrode Configuration



It is recommended that several holes be drilled under the showing on line 3A. This should be followed by drilling of the I.P. anomalies on lines 5S and line 6S.

A budget for this work would be:

(A) Drilling under the showing  
500 feet @ \$10.00 foot \$ 5,000.00

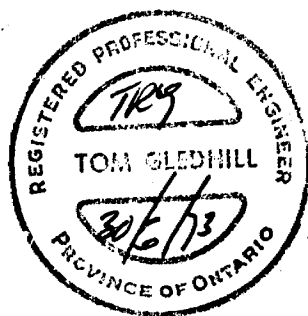
(B) Drilling of anomalies in Zone A  
1,000 feet @ \$10.00 foot \$10,000.00

Total \$15,000.00

(C) Contingent on the results of A and B above,  
more I.P. and diamond drilling may be required.

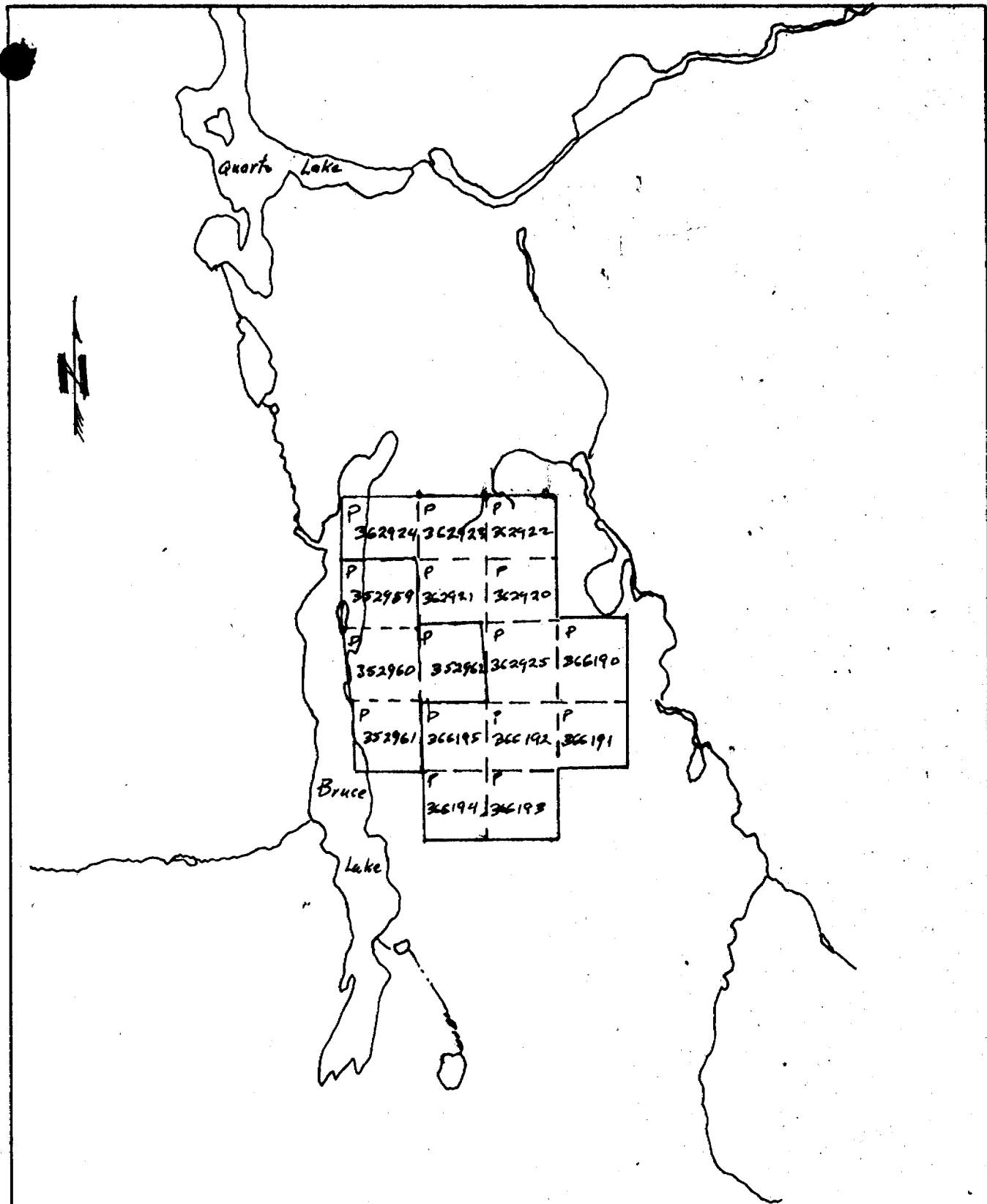
June 30, 1973

Respectfully submitted,



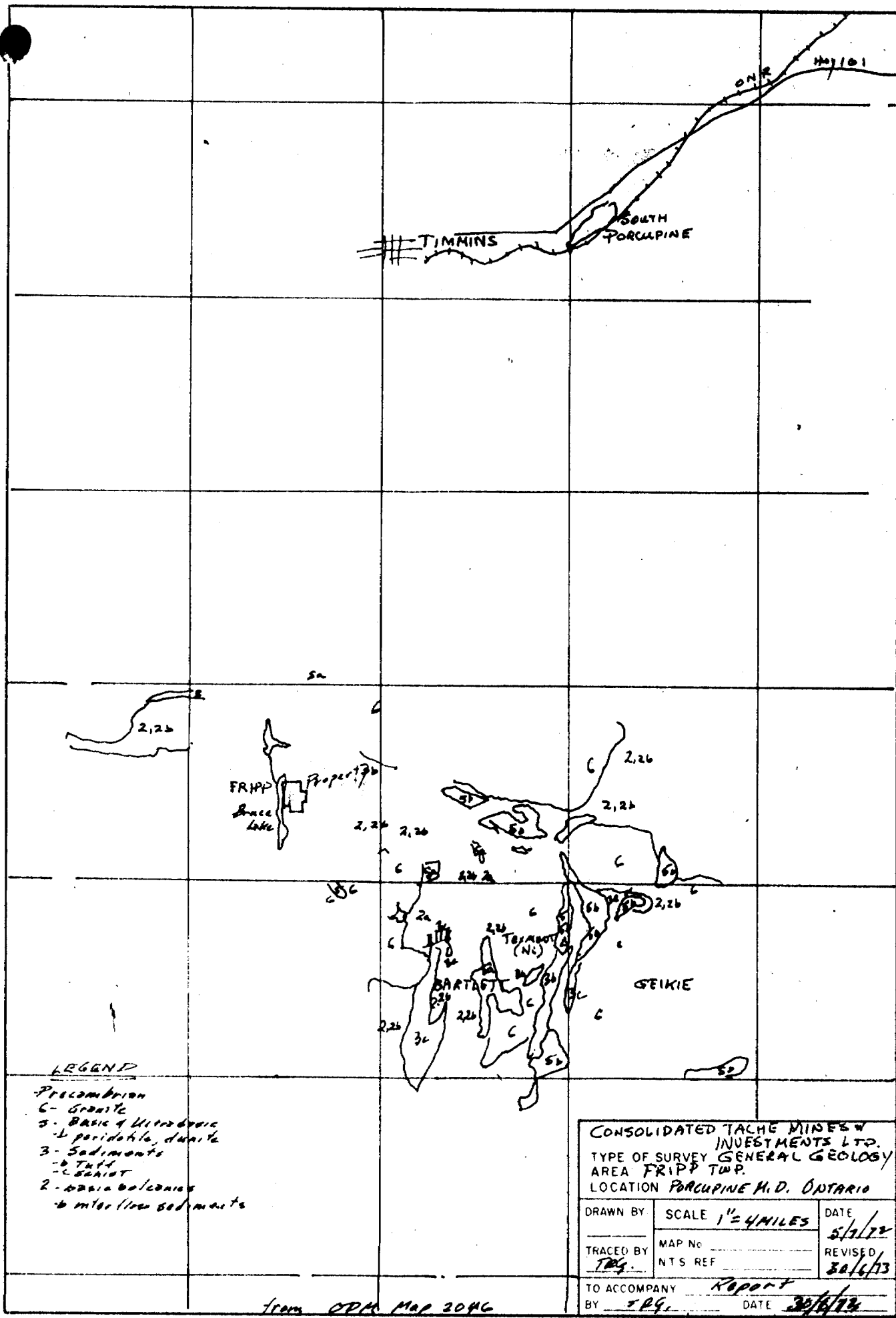
*Tom Gledhill*  
Tom, Gledhill, B.A. P. Eng.

2.1273



CONSOLIDATED TACHE MINES INVESTMENT CO. TYPE OF SURVEY AREA CLAIM MAP LOCATION FRIPP TWP, FORCUMANN D. DISTRICT		
DRAWN BY	SCALE 1" = 2640'	DATE 5/1/92
TRACED BY TLR	MAP No	REVISED 2/16/93
TO ACCOMPANY BY TLR		DATE 3/16/93

FRIPP TWP.  
 MUSGROVE TWP. 3M  
 4M



TIMMINS SOUTH PORCUPINE

FRUPP  
Bruce  
Lake

BARTAGT  
TOURNAI (N)

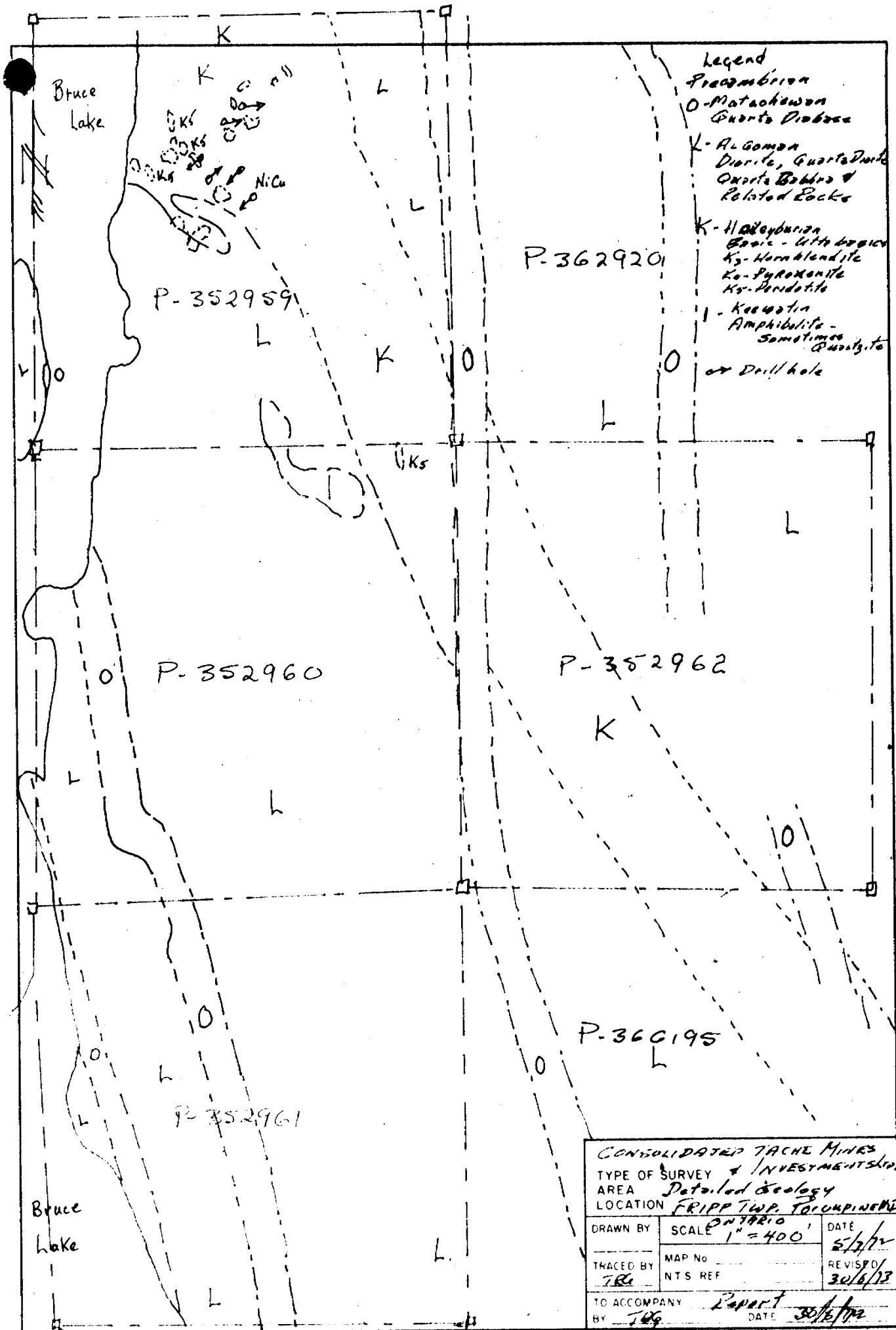
SEIKIE

**LEGEND**

- PreCambrian
- C - Granite
- 5 - Basic & Ultrabasic
  - L peridotite, diorite
- 3 - Sediments
  - b Tuff
  - c Siltst
- 2 - Basal volcanics
  - b inter / low sediments

CONSOLIDATED TACHE MINES & INVESTMENTS LTD. TYPE OF SURVEY GENERAL GEOLOGY AREA FRUPP TWP. LOCATION PORCUPINE M.D. ONTARIO		
DRAWN BY	SCALE 1" = 4 MILES	DATE 5/17/72
TRACED BY T.P.S.	MAP No	REVISED 8/6/73
TO ACCOMPANY Report		DATE 8/6/73
BY T.P.S.		

from OPM Map 304C

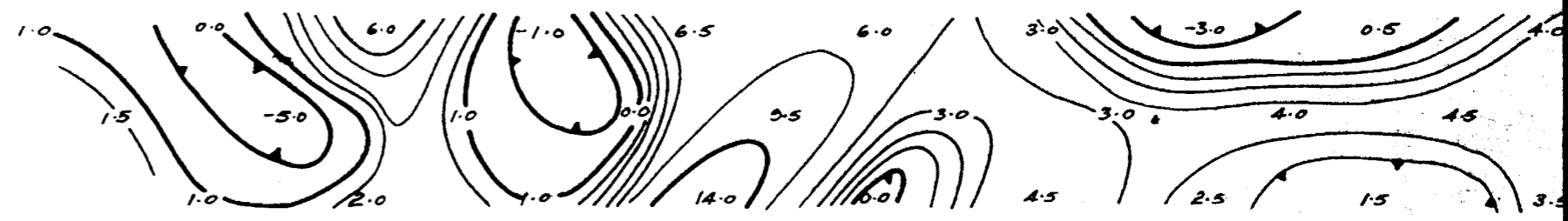
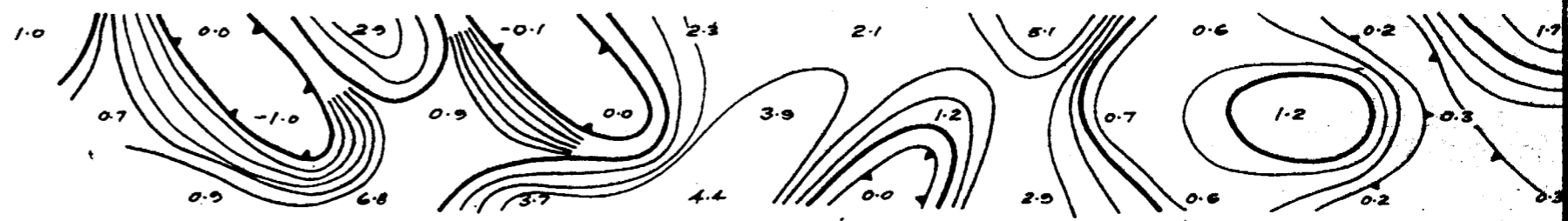
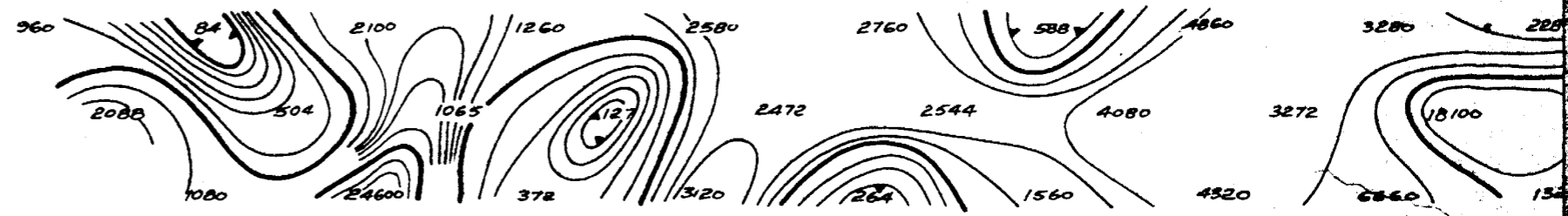


CONSOLIDATED TACHE MINES		
TYPE OF SURVEY & INVESTMENT		
AREA Detailed Geology		
LOCATION FRIPP TWP. TORONTO		
DRAWN BY	SCALE 1" = 400'	DATE 5/2/72
TRACED BY TRG	MAP No.	REVISED 30/6/72
TO ACCOMPANY Report		DATE 30/6/72
BY TRG		

Lake 00

6E

12E



LINE NO. 3

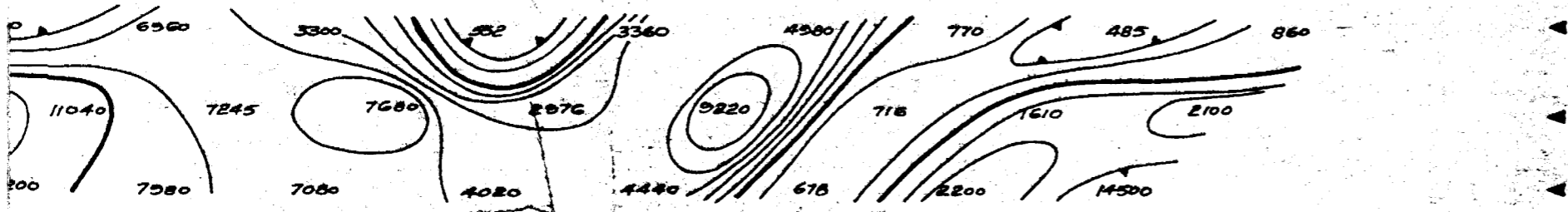
18E

24E

Pond  
30E

36E

**INDUCED POLARIZATION  
AND  
RESISTIVITY SURVEY**  
for  
**CONSOLIDATED TACHE MINES  
& INVESTMENTS LIMITED**  
**FRIPP TOWNSHIP GROUP  
ONTARIO**

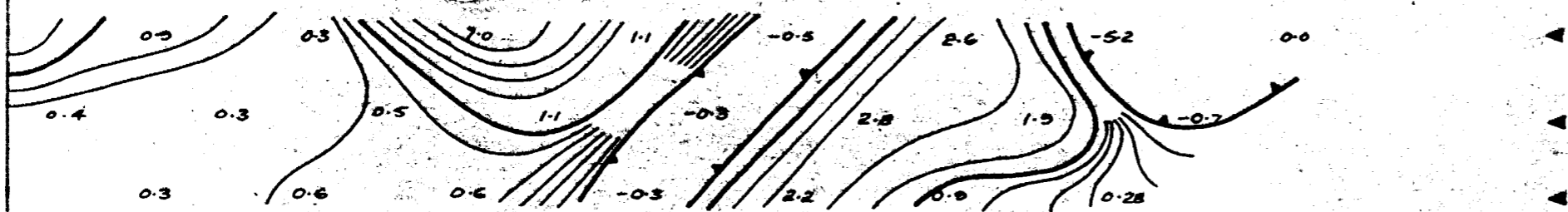
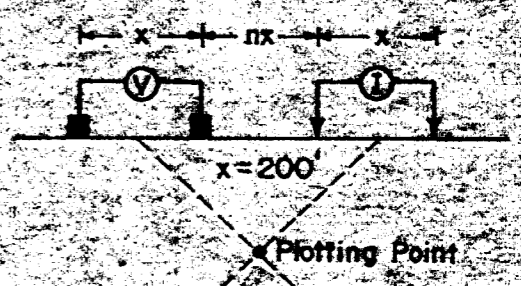


▲ n = 1  
▲ n = 2  
▲ n = 3

Apparent Resistivity  
(ohm feet)

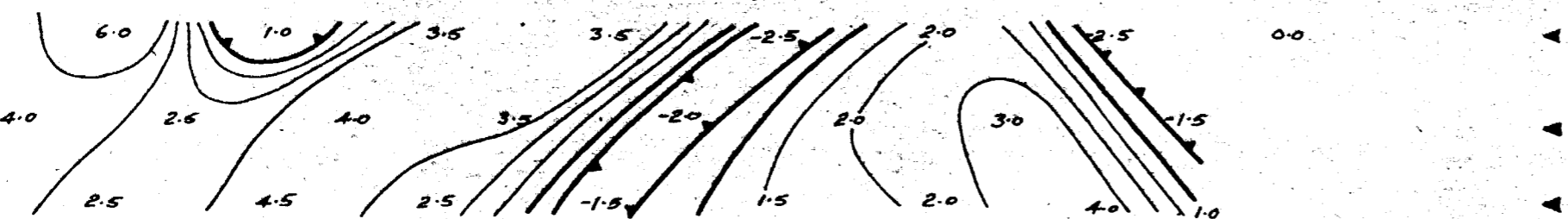
**LINE NO 35**

**ELECTRODE CONFIGURATION**



▲ n = 1  
▲ n = 2  
▲ n = 3

Metal Factor



▲ n = 1  
▲ n = 2  
▲ n = 3

Frequency Effect  
(%)

SCALE 1" = 200 feet, DATE March 1973  
Contours of logarithmic multiples of  
10, 15, 20, 30, 50, 75 & 100

LINE NO 35

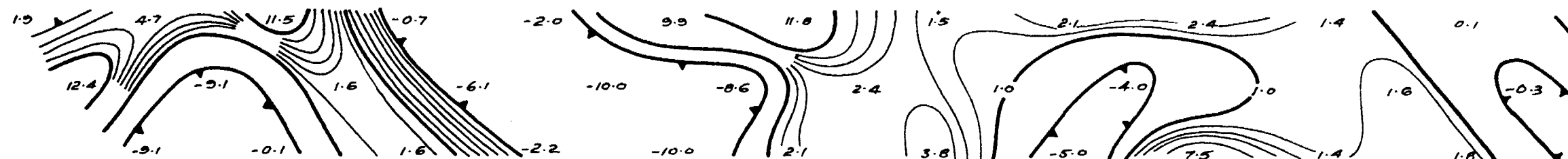
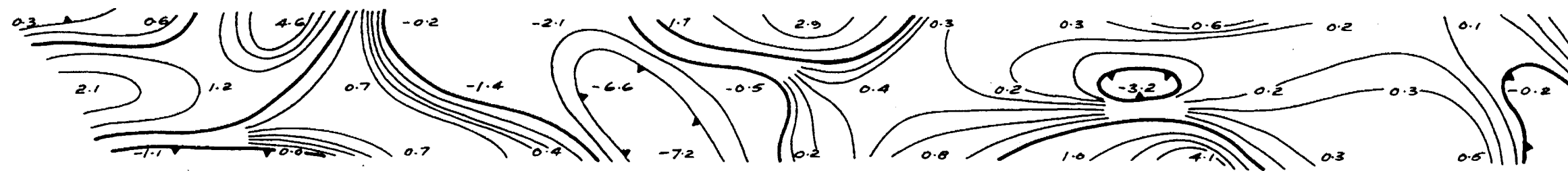
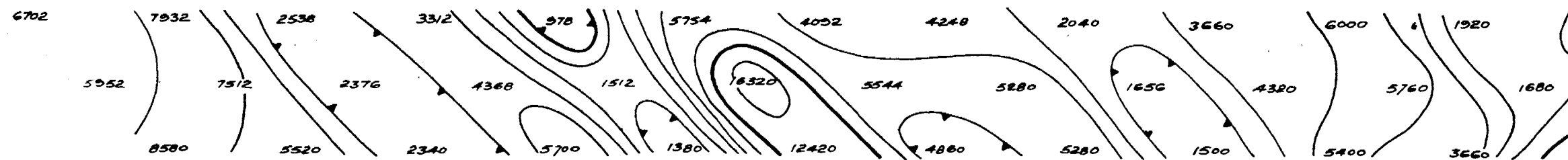
12W

6W

00

6E

12E







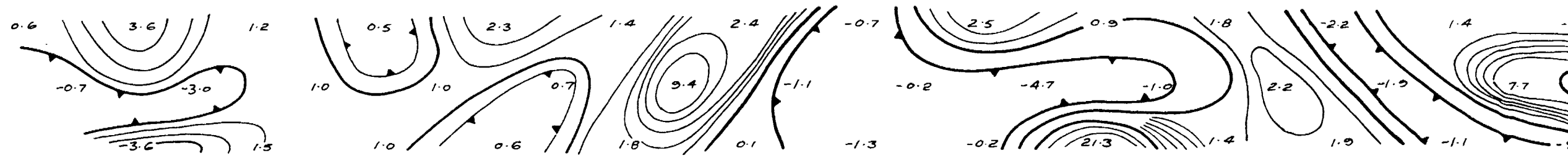
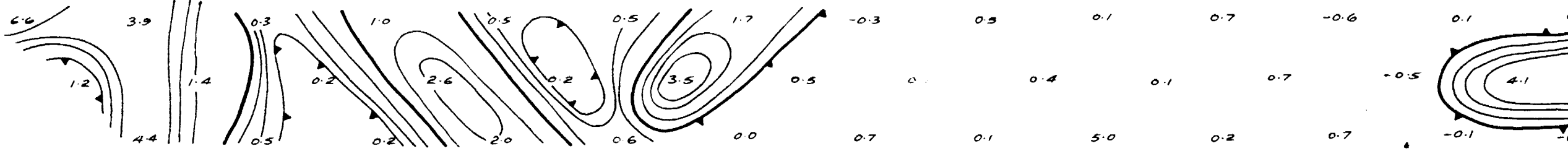
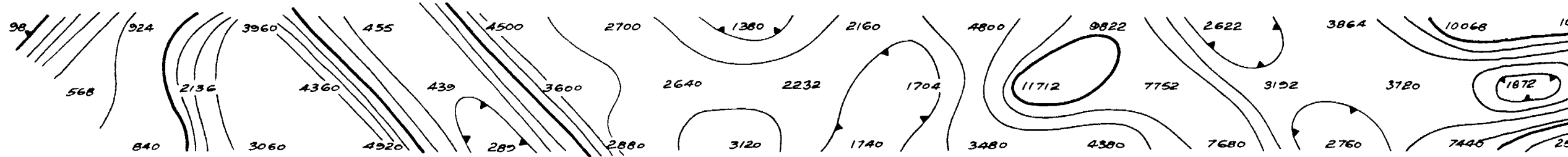
18W

12W

6W

00

6E









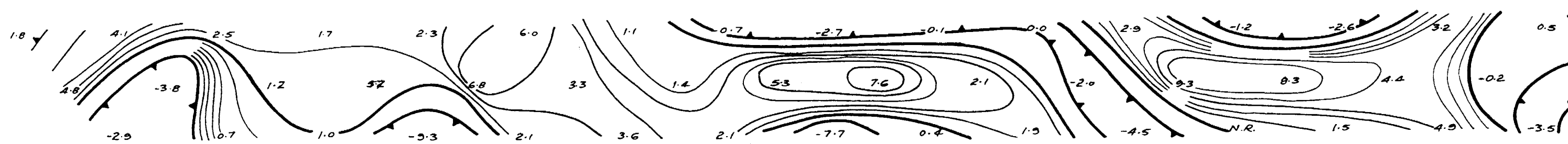
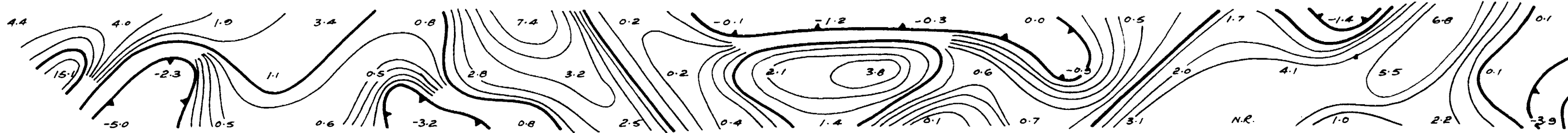
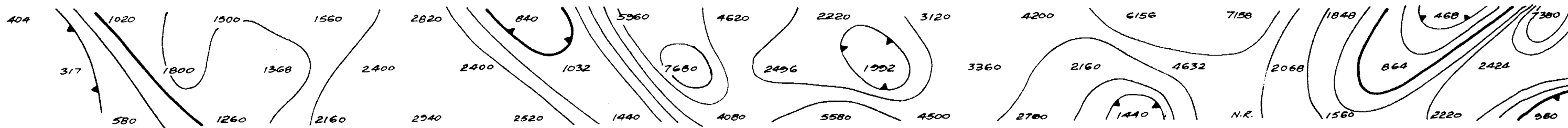
12W

6W

00

6E

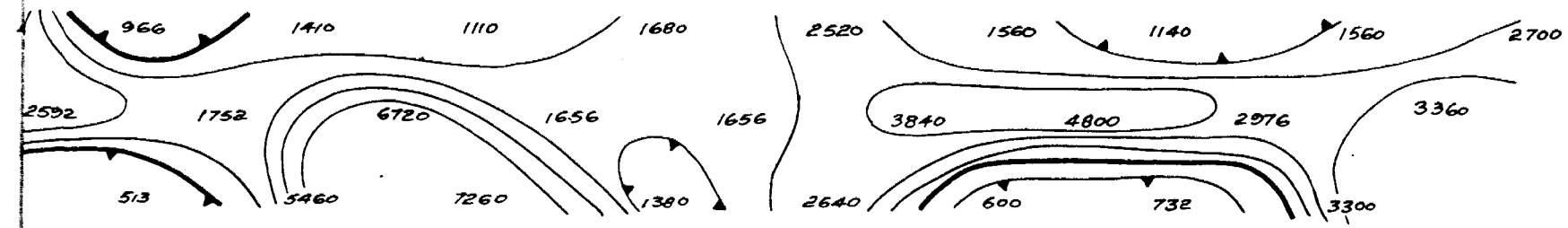
12E



18E 24E 30E 36E

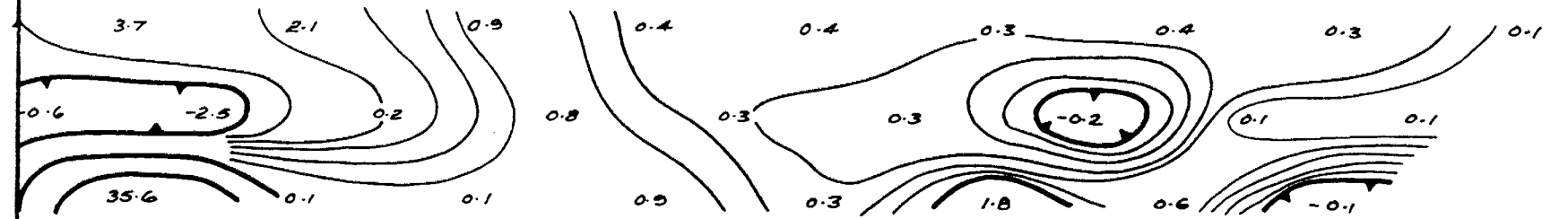
INDUCED POLARIZATION  
AND  
RESISTIVITY SURVEY  
for  
CONSOLIDATED TACHE MINES  
& INVESTMENTS LIMITED  
FRIPP TOWNSHIP GROUP  
ONTARIO

LINE NO. 7S



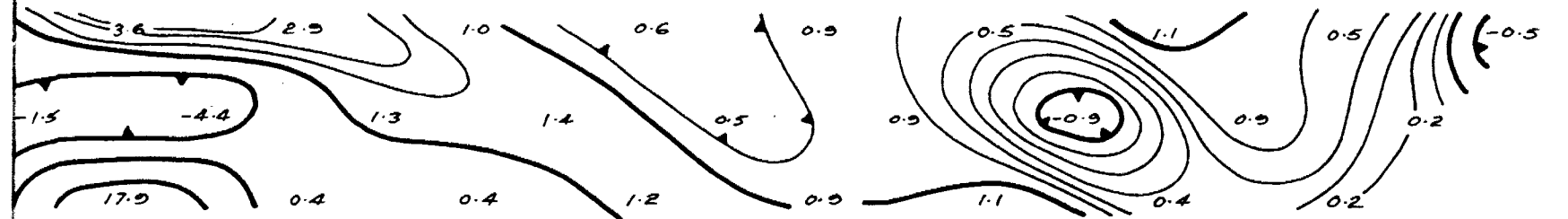
Apparent Resistivity  
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◀ n = 2  
◀ n = 3



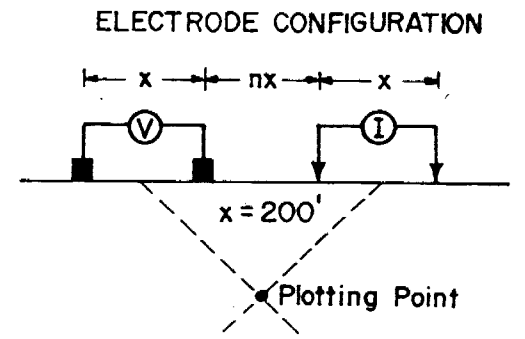
Metal Factor

◀ n = 1  
◀ n = 2  
◀ n = 3



Frequency Effect  
(%)

◀ n = 1  
◀ n = 2  
◀ n = 3



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Contours at logarithmic multiples of  
10, 15, 20, 30, 50, 75 & 100

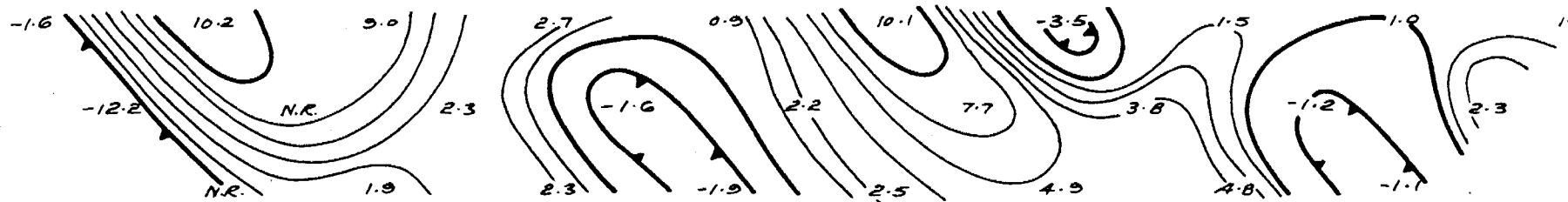
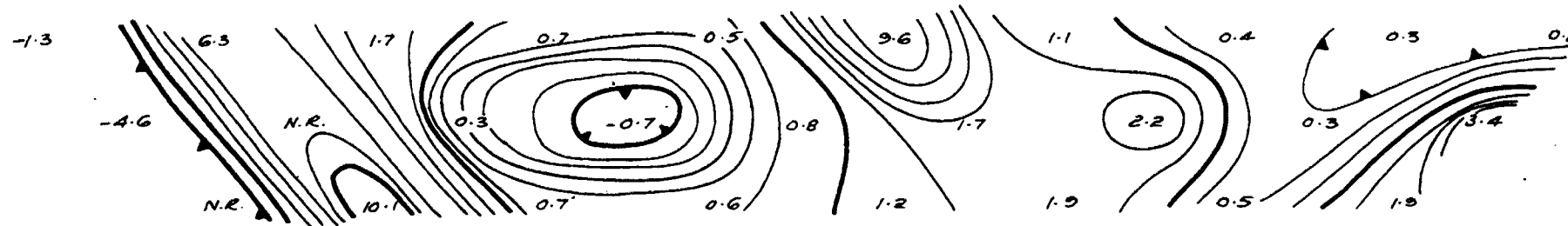
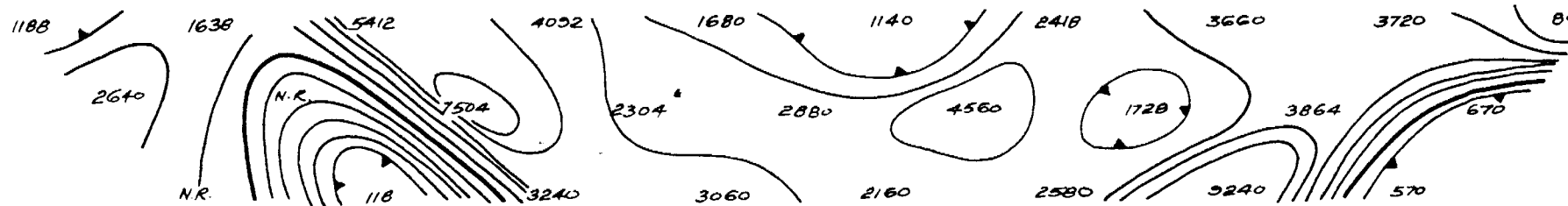
LINE NO. 7S

6W

00

6E

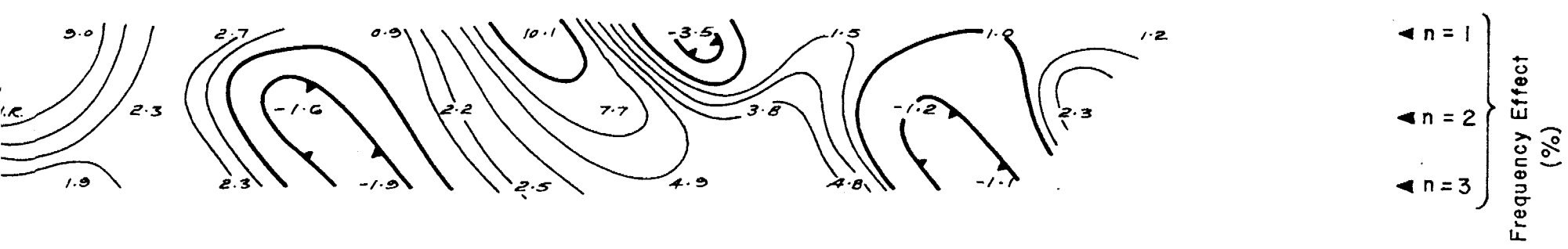
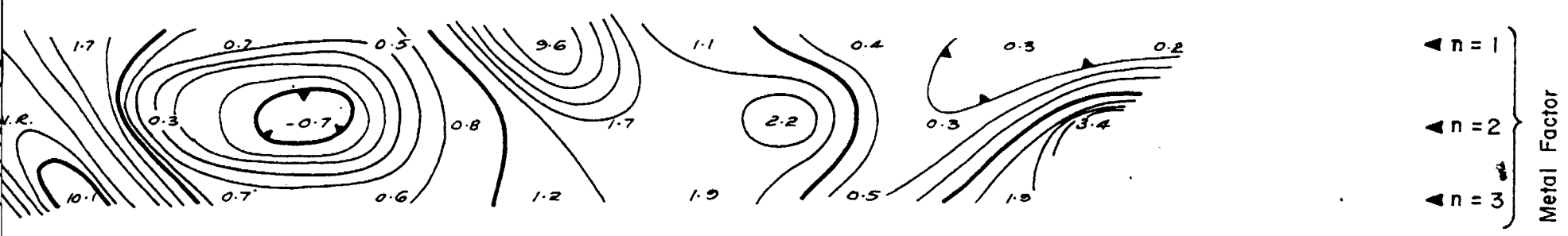
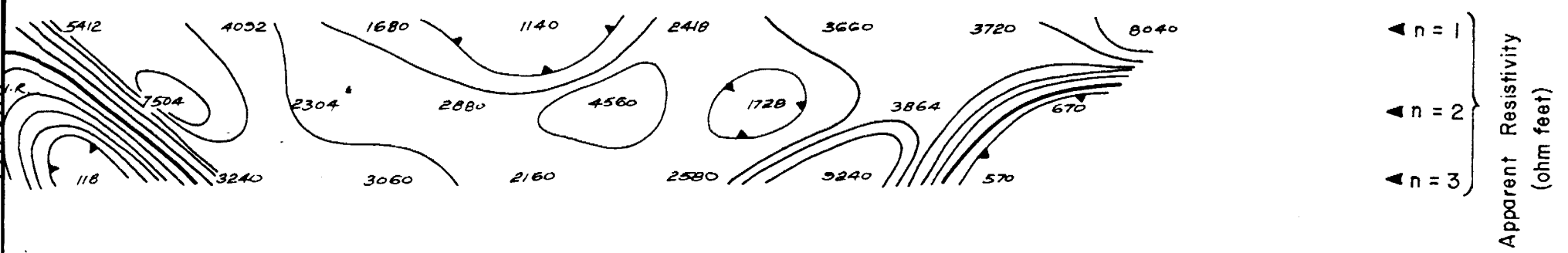
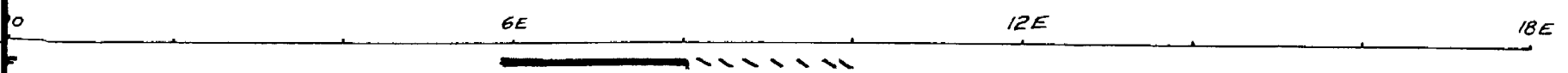
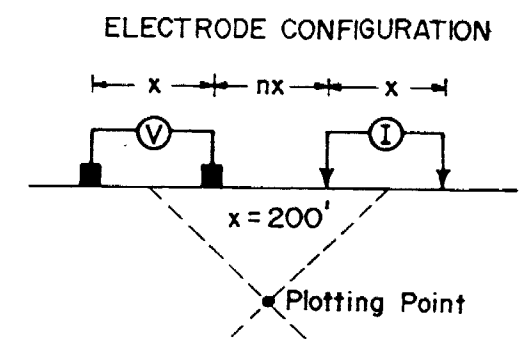
12E





INDUCED POLARIZATION  
AND  
RESISTIVITY SURVEY  
for  
CONSOLIDATED TACHE MINES  
& INVESTMENTS LIMITED  
  
FRIPP TOWNSHIP GROUP  
ONTARIO

LINE NO. 6S



SCALE 1" = 200 feet, DATE March 1973  
Contours at logarithmic multiples of  
10, 15, 20, 30, 50, 75 & 100

LINE NO. 6S

4W

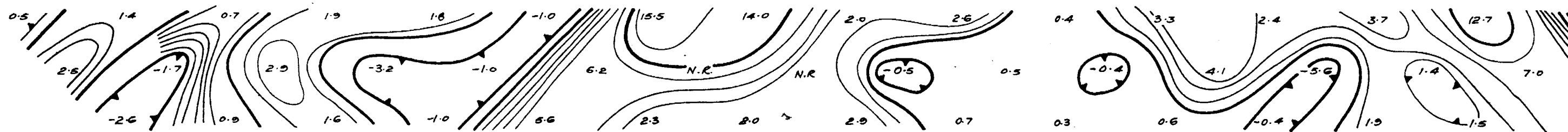
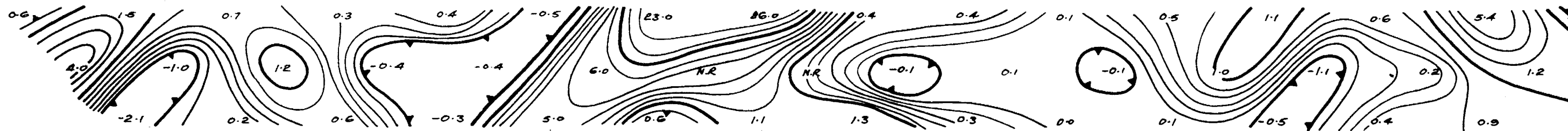
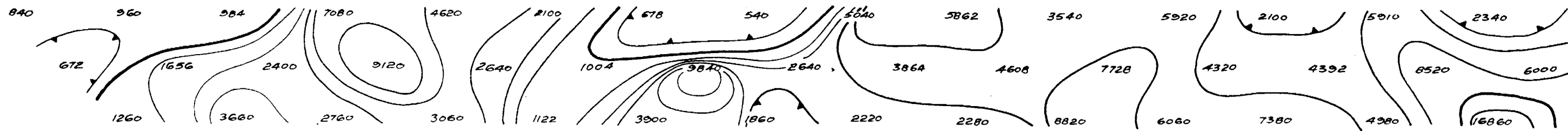
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6E

12E

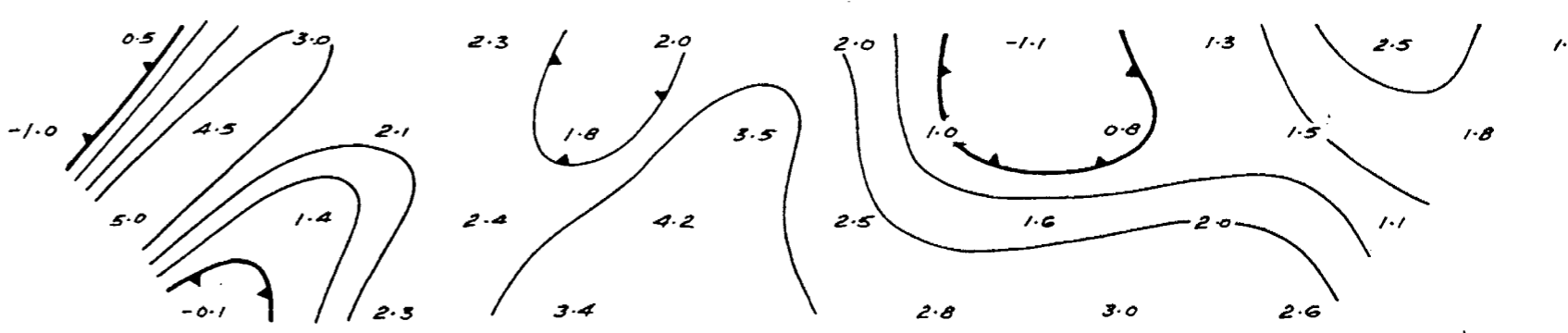
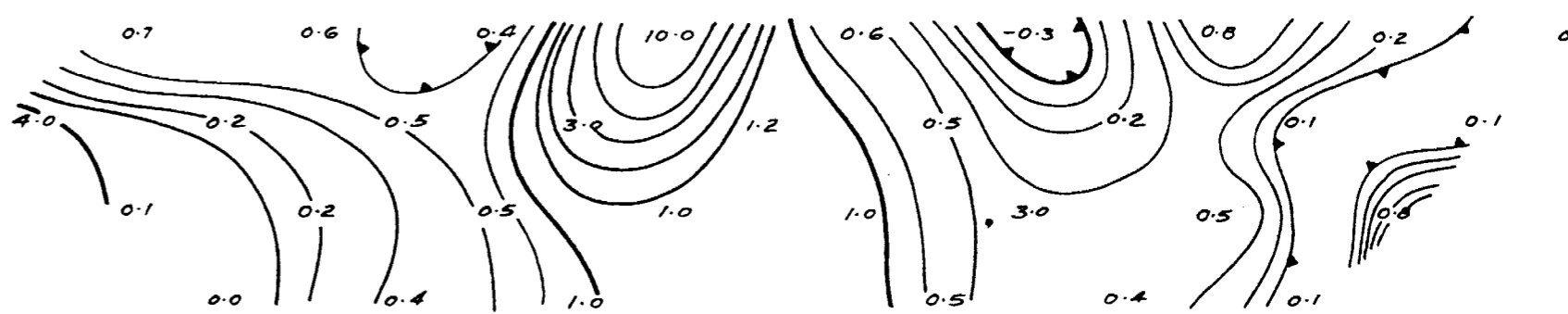
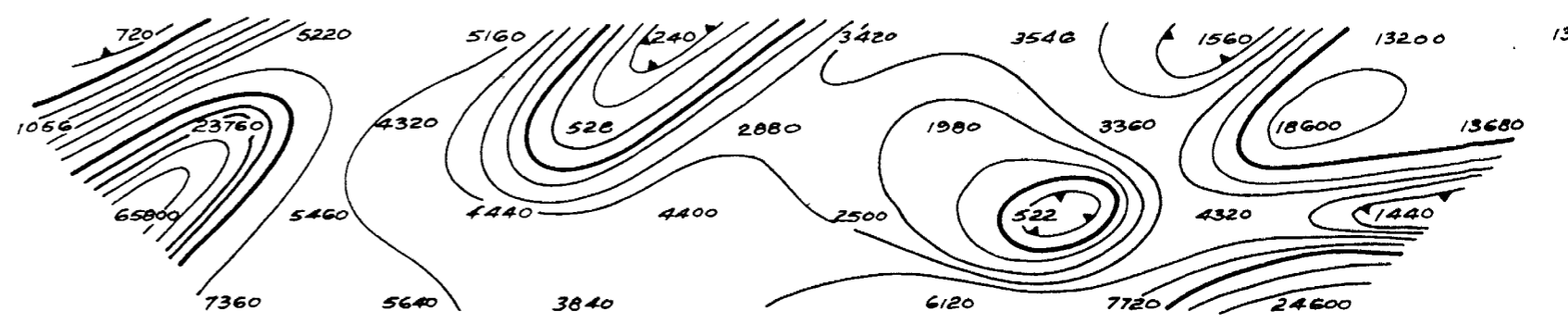
18E

24E



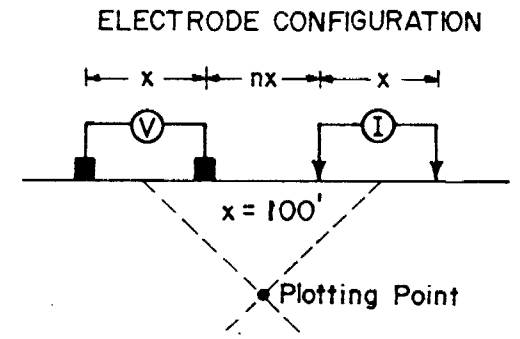
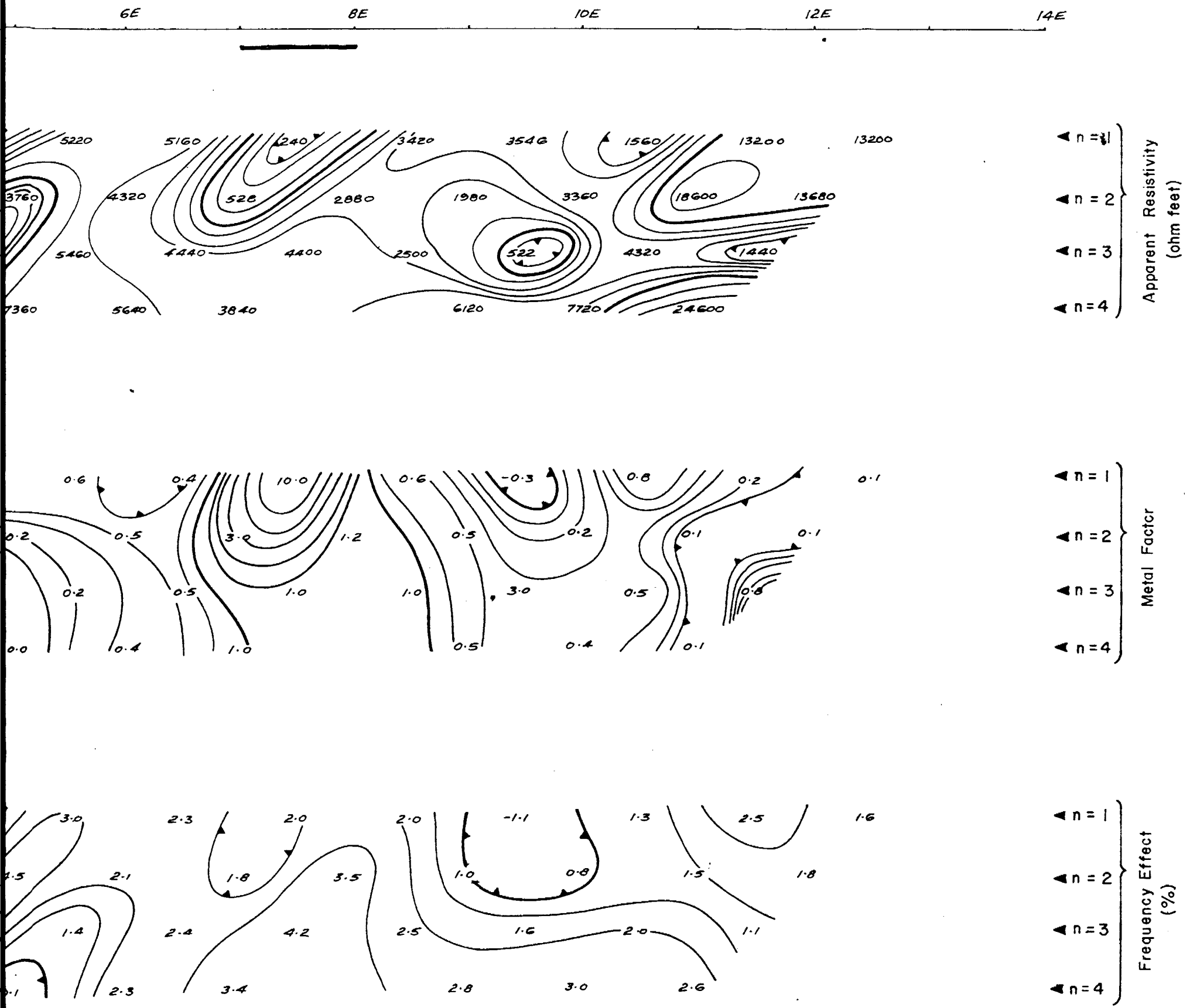


4E 6E 8E 10E 12E



**INDUCED POLARIZATION  
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for  
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& INVESTMENTS LIMITED**  
**FRIPP TOWNSHIP GROUP  
ONTARIO**

LINE NO. 5S (detail)



SCALE 1" = 100 feet, DATE March 1973  
Contours at logarithmic multiples of  
10, 15, 20, 30, 50, 75 & 100

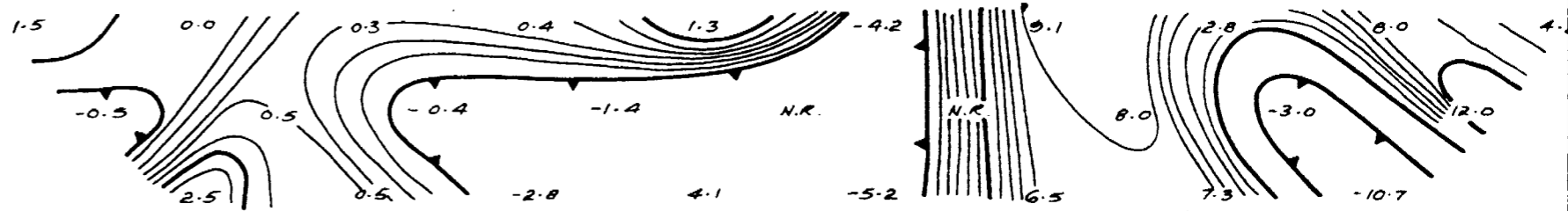
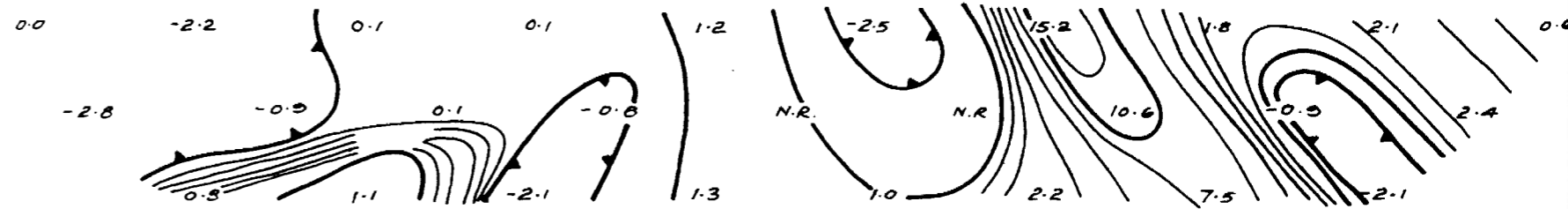
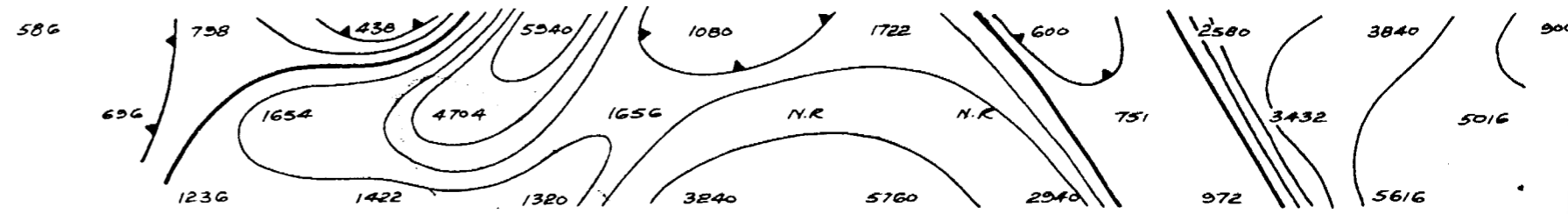
LINE NO. 5S (detail)

6W

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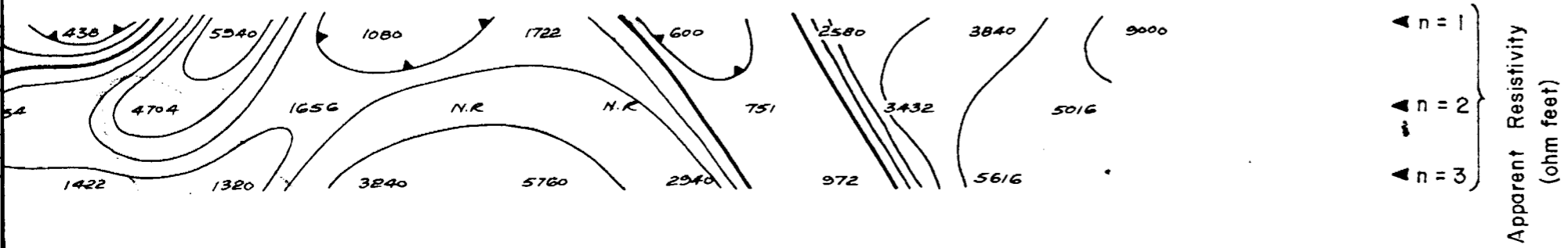
6E

12E

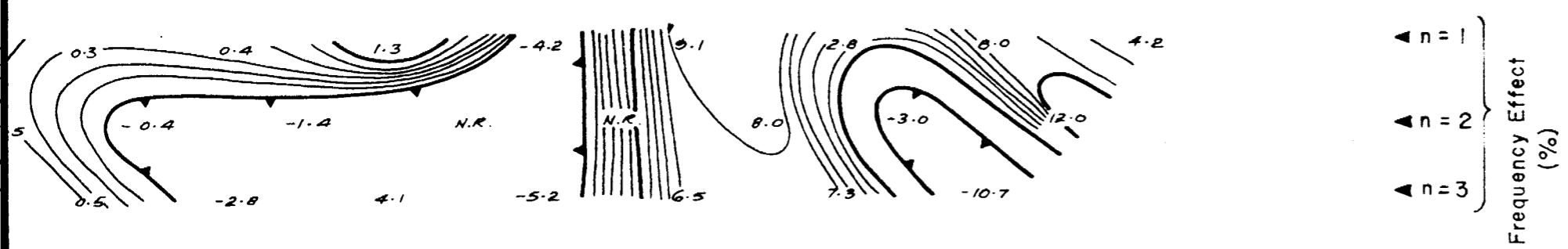
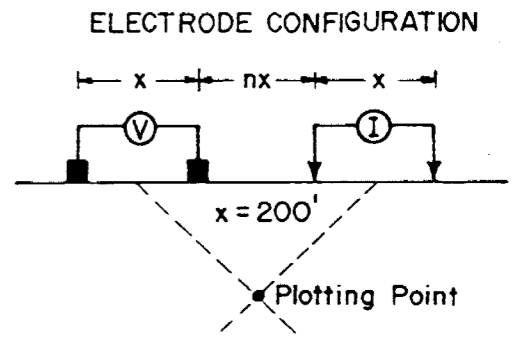
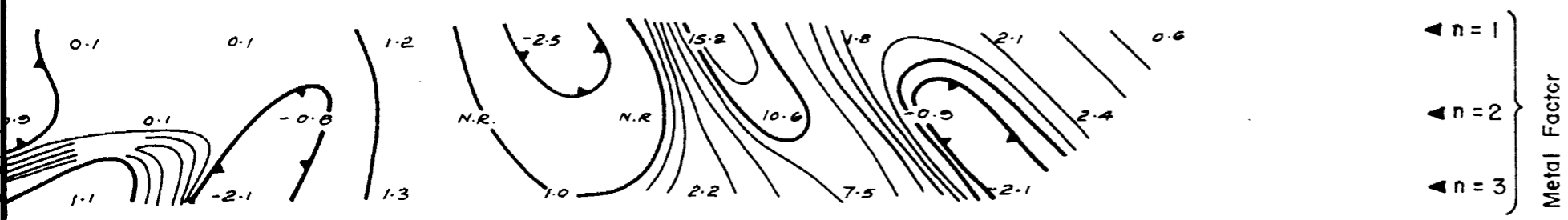


6E 12E 18E

INDUCED POLARIZATION  
AND  
RESISTIVITY SURVEY  
for  
CONSOLIDATED TACHE MINES  
& INVESTMENTS LIMITED  
FRIPP TOWNSHIP GROUP  
ONTARIO



LINE NO. 4S



SCALE 1" = 200 feet, DATE March 1973  
Contours at logarithmic multiples of  
10, 15, 20, 30, 50, 75 & 100

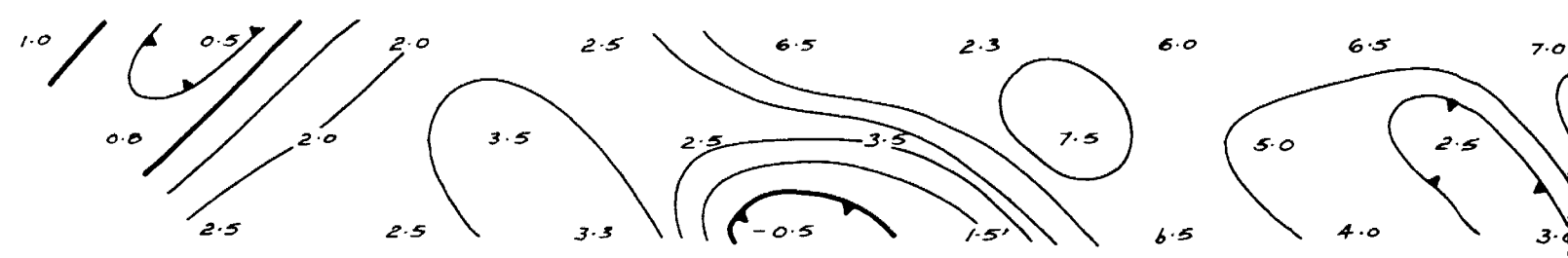
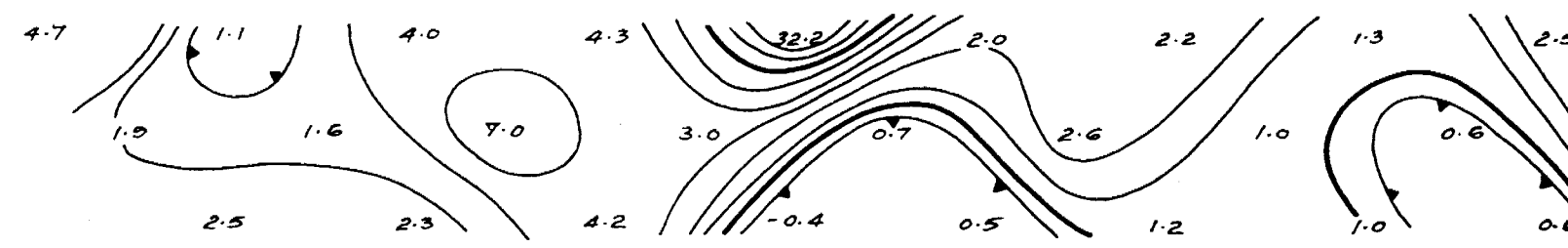
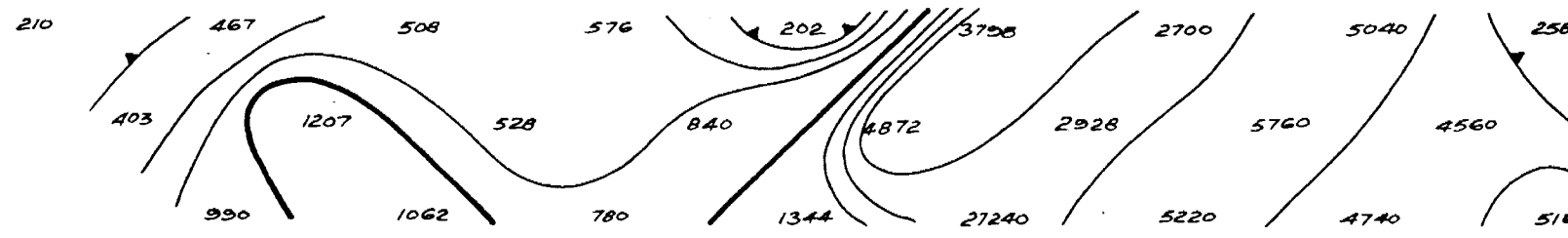
LINE NO. 4S

4W

00

6E

12E

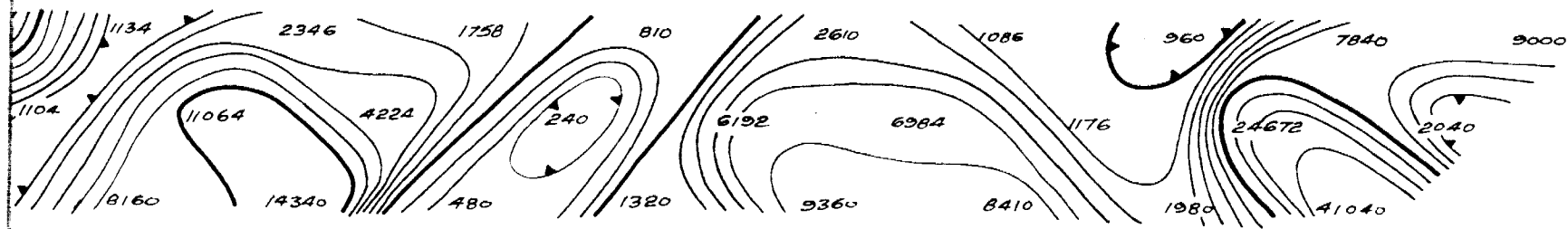




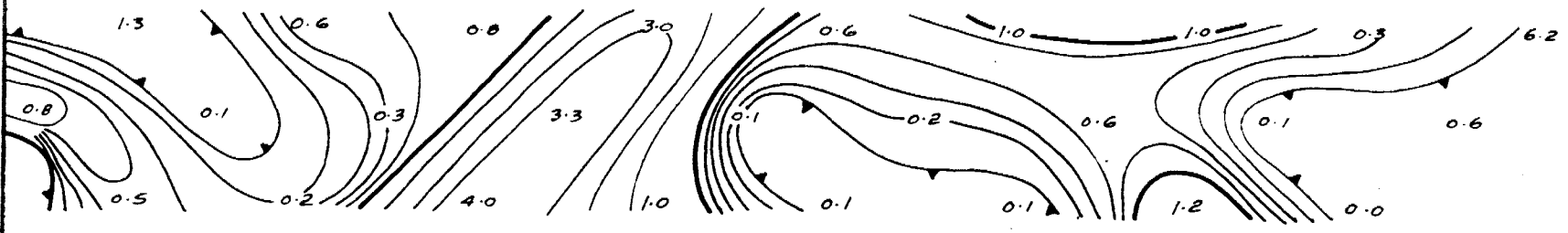




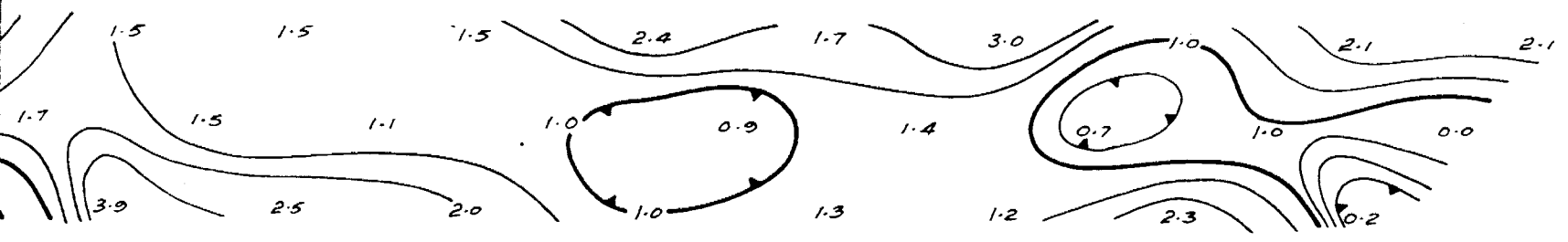
18E 24E 30E



▲ n = 1  
 ▲ n = 2  
 ▲ n = 3  
 Apparent Resistivity (ohm feet)



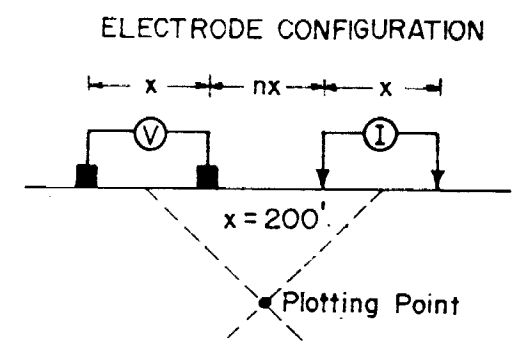
▲ n = 1  
 ▲ n = 2  
 ▲ n = 3  
 Metal Factor



▲ n = 1  
 ▲ n = 2  
 ▲ n = 3  
 Frequency Effect (%)

INDUCED POLARIZATION AND RESISTIVITY SURVEY for CONSOLIDATED TACHE MINES & INVESTMENTS LIMITED FRIPP TOWNSHIP GROUP ONTARIO

LINE NO. 15S



SCALE 1" = 200 feet, DATE March 1973  
 Contours at logarithmic multiples of 10, 15, 20, 30, 50, 75 & 100

LINE NO. 15S

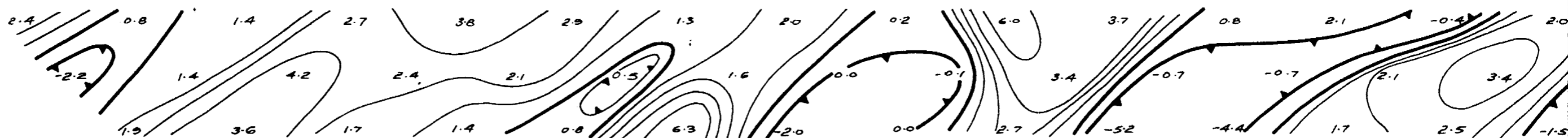
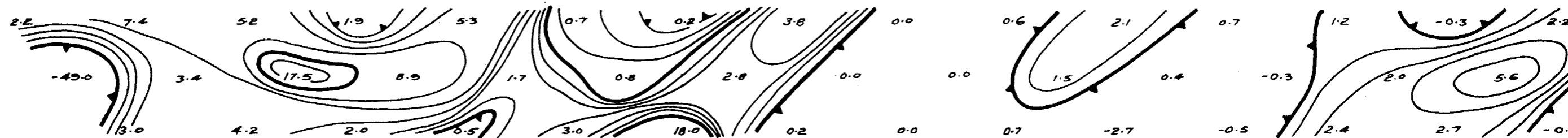
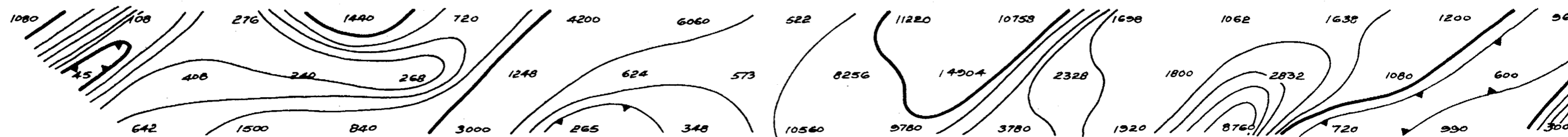
4W

00

6E

12E

18E



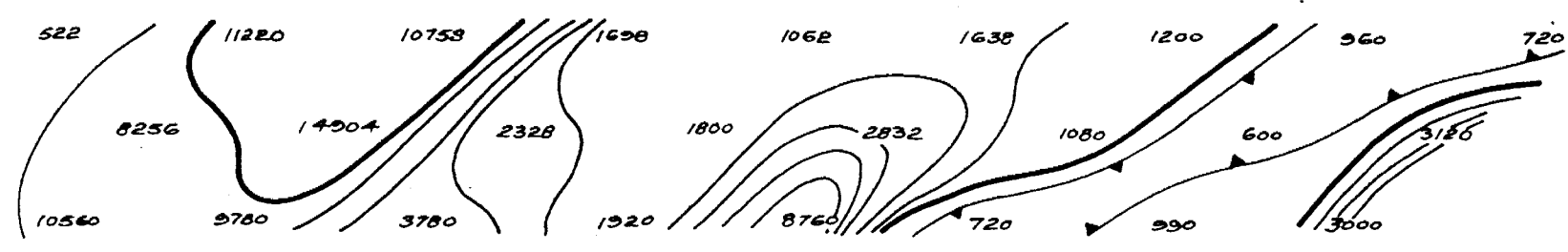
12E

18E

24E

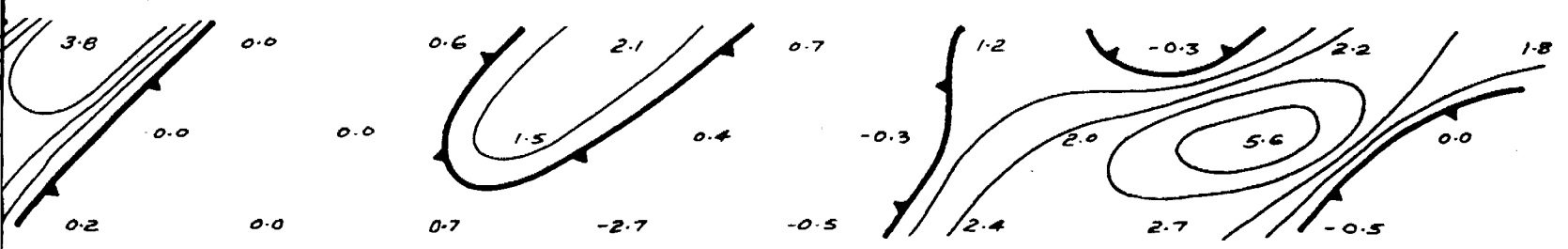
INDUCED POLARIZATION  
AND  
RESISTIVITY SURVEY  
for  
CONSOLIDATED TACHE MINES  
& INVESTMENTS LIMITED  
FRIPP TOWNSHIP GROUP  
ONTARIO

LINE NO. 13S



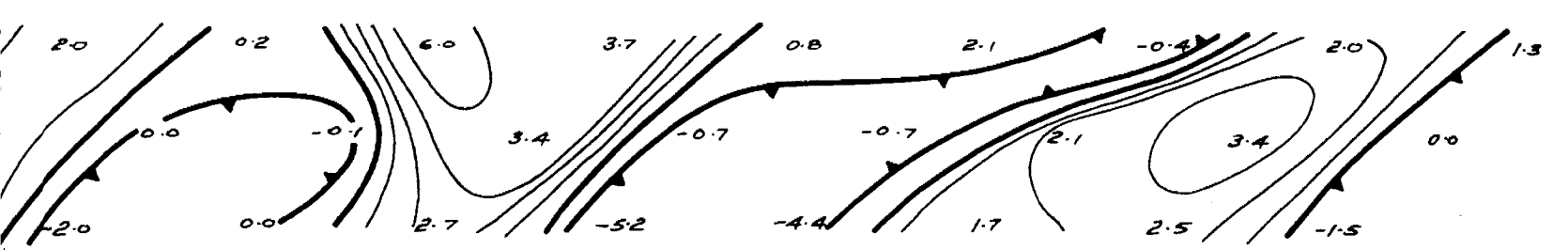
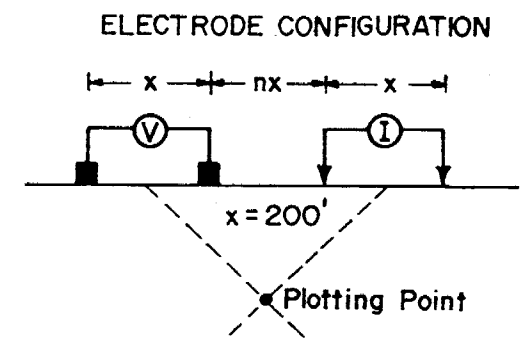
Apparent Resistivity  
(ohm feet)

▲ n = 1  
▲ n = 2  
▲ n = 3



Metal Factor

▲ n = 1  
▲ n = 2  
▲ n = 3



Frequency Effect (%)

▲ n = 1  
▲ n = 2  
▲ n = 3

SCALE 1" = 200 feet, DATE March 1973  
Contours at logarithmic multiples of  
10, 15, 20, 30, 50, 75 & 100

LINE NO. 13S

GEOPHYSICAL - GEOLOGICAL  
TECHNICAL DATA



42A03NW0030 2.1273 FRIPP

900

RECEIVED

AUG 16 1973

PROJECTS  
SECTION

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.

Type of Survey Induced Polarization  
Township or Area Frisip  
Claim holder(s) Consolidated Tache Mines  
& Investments Ltd.  
Author of Report Tom Sedhill  
Address 21 Sandalwood Place  
Covering Dates of Survey Dec 1/72 March 31/73  
(linecutting to office)  
Total Miles of Line cut 18 miles

MINING CLAIMS TRAVERSED  
List numerically

<u>IP</u>	<u>352959</u>	(prefix)	(number)
	<u>352960</u>		
	<u>352961</u>		
	<u>352962</u>		
	<u>362920</u>		
	<u>362921</u>		
	<u>362922</u>		
	<u>362923</u>		
	<u>362924</u>		
	<u>362925</u>		
	<u>366190</u>		
	<u>366191</u>		
	<u>366192</u>		
	<u>366193</u>		
	<u>366194</u>		
	<u>366195</u>		
TOTAL CLAIMS		<u>16</u>	

SPECIAL PROVISIONS CREDITS REQUESTED	Geophysical	DAYS per claim
ENTER 40 days (includes line cutting) for first survey.	--Electromagnetic	_____
	--Magnetometer	_____
	--Radiometric	_____
ENTER 20 days for each additional survey using same grid.	--Other <u>IP</u>	<u>40</u>
	Geological	_____
	Geochemical	_____

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)  
Magnetometer \_\_\_\_\_ Electromagnetic \_\_\_\_\_ Radiometric \_\_\_\_\_  
(enter days per claim)  
DATE: Aug 15/73 SIGNATURE: Tom Sedhill  
Author of Report or Agent

PROJECTS SECTION  
Res. Geol. \_\_\_\_\_ Qualifications 63.1085  
Previous Surveys L.D see attached sheet

Checked by \_\_\_\_\_ date \_\_\_\_\_

GEOLOGICAL BRANCH \* See "Mandays" breakdown

Approved by \_\_\_\_\_ date \_\_\_\_\_

GEOLOGICAL BRANCH \_\_\_\_\_

Approved by \_\_\_\_\_ date \_\_\_\_\_

OFFICE USE ONLY

If space insufficient, attach list

Show instrument technical data in each space for type of survey submitted or indicate "not applicable"

## GEOPHYSICAL TECHNICAL DATA

### GROUND SURVEYS

Number of Stations 1000 Number of Readings 3000  
Station interval 200' and 100'  
Line spacing 400'  
Profile scale or Contour intervals 200' and 100' per mile  
(specify for each type of survey)

### MAGNETIC

Instrument \_\_\_\_\_  
Accuracy - Scale constant \_\_\_\_\_  
Diurnal correction method \_\_\_\_\_  
Base station location \_\_\_\_\_

### 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 M<sup>4</sup>Phan 660  
Time domain \_\_\_\_\_ Frequency domain   
Frequency 0.3 and 5 c.p.s. Range \_\_\_\_\_  
Power \_\_\_\_\_  
Electrode array dipole - dipole  
Electrode spacing 100' and 200'  
Type of electrode Standard steel rods.

PRICE TWP. M.307

McKEOWN TWP. M.299

McARTHUR TWP. M.298

MUSGROVE TWP. M.304

# FRIPP

DISTRICT OF  
TIMISKAMING

PORCUPINE  
MINING DIVISION

SCALE: 1-INCH 40 CHAINS

### LEGEND

- PATENTED LAND Ⓟ
- CROWN LAND SALE C.S.
- LEASES Ⓞ
- 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 C.

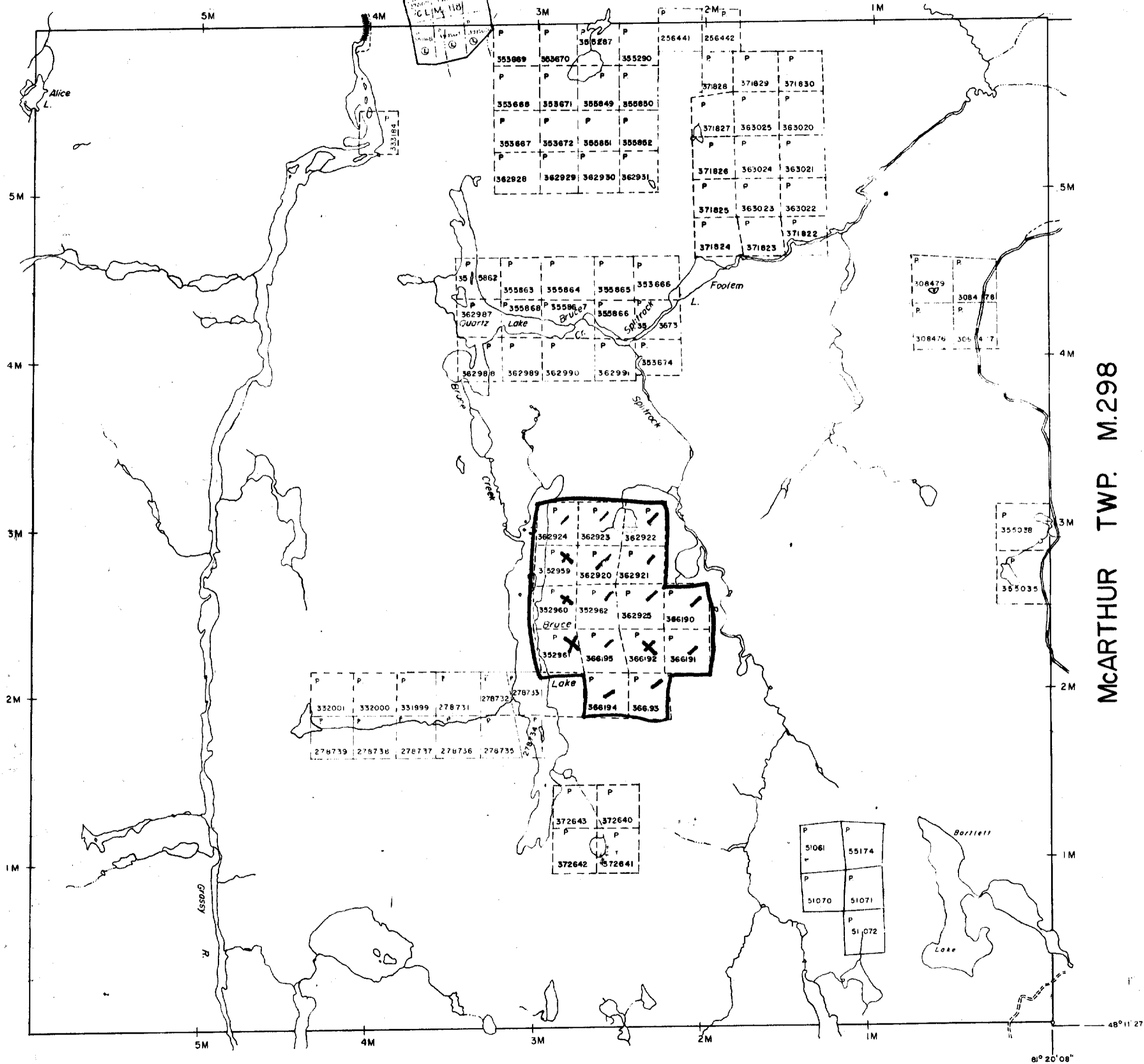
### NOTES

400' Surface Rights Reservation around all lakes and rivers.

MINING LANDS  
 DATE OF ISSUE  
 AUG 17 1973  
 MINISTRY  
 OF NATURAL RESOURCES

PLAN NO. **M.281**

ONTARIO  
MINISTRY OF NATURAL RESOURCES  
SURVEYS AND MAPPING BRANCH



2.1273



185M

185M

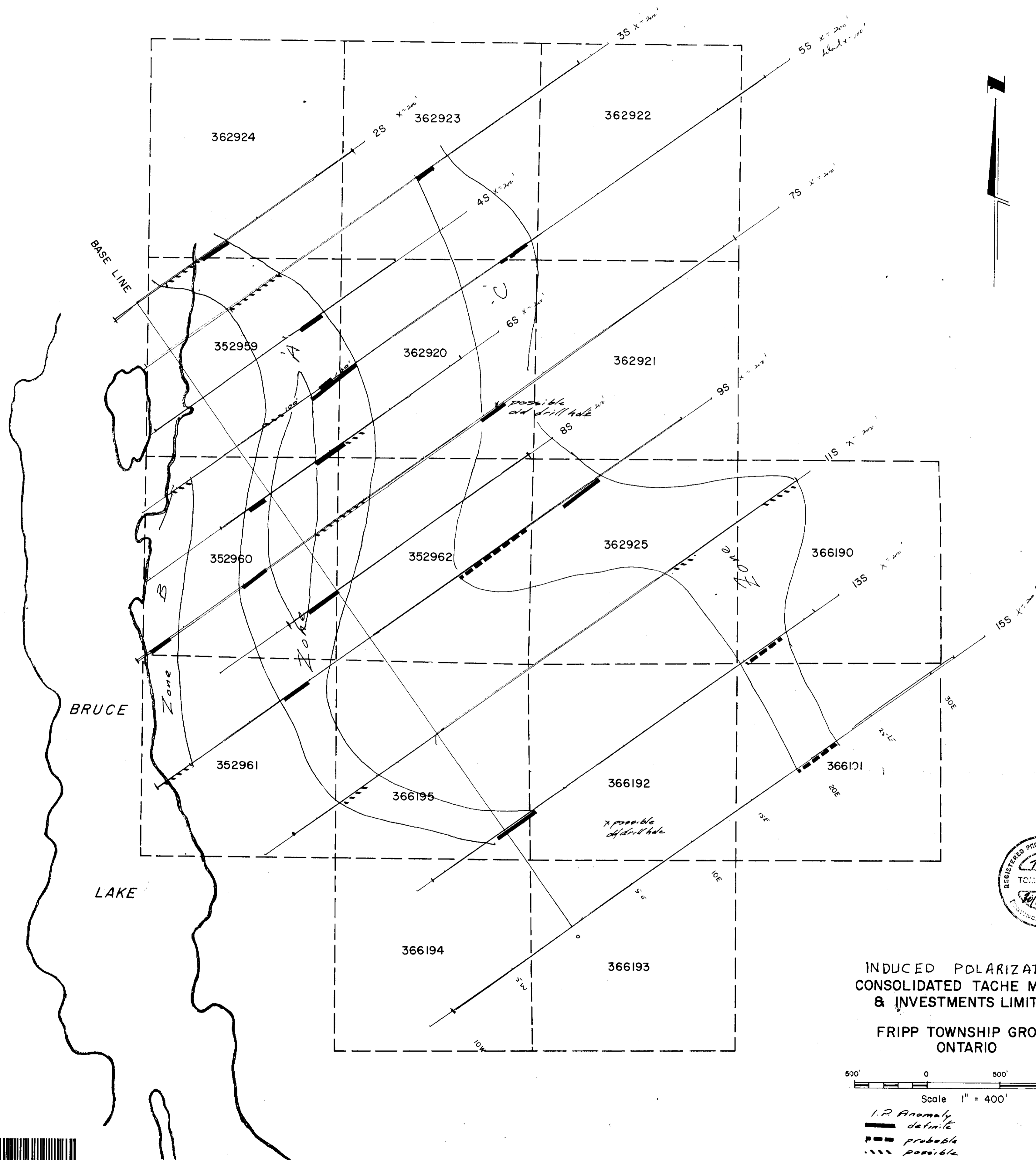
FRIPP TWP

FRIPP TWP

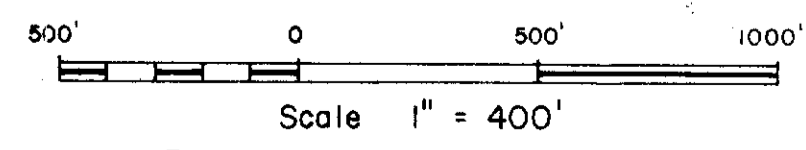
185M

185M





INDUCED POLARIZATION  
CONSOLIDATED TACHE MINES  
& INVESTMENTS LIMITED  
FRIPP TOWNSHIP GROUP  
ONTARIO



- I.P. Anomaly
- definite
- probable
- possible

