



42A11NE0541 2.5347 EVELYN

010

" GRADIOMETER "

REPORT

ALLERSTON OPTION

MATHESON - EVELYN TWP.

FOR

ST. JOE CANADA INC.

RECEIVED

JAN 13 1983

MINING LANDS SECTION

September 10th, 1982

J.C. Grant

Exsics Expl. Ltd.

*Qual.
enclosed*

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INTRODUCTION

This report deals with a gradiometer survey, carried out by Exsics Exploration Ltd. for St. Joe Canada Inc. The results of the survey are explained, in detail, within this report.

LOCATION AND ACCESS

The survey area is located approximately 20 miles northeast of Timmins. Access to the grid was by road from Timmins to the Matheson Evelyn Township line. An Argo was used for access to and from the survey grid.

GRID CHARACTERISTICS

The survey grid was divided into two groups. Group 1 covered Lots 7 to 10, Concessions VI of Matheson Township and Lots 8 to 11, Concession 1 of Evelyn Township. Group 2 covered Lots 4 to 6, Concession VI of Matheson Township.

The actual claims covered are listed below.


Group 1		Group 2
P 632852	P 393105	P 393738
P 632853	P 393104	P 393739
P 452498	P 393103	P 393740
P 452499	P 452461	P 393741
P 452500	P 452462	P 617737
P 617738	P 452463	P 628018
P 624601	P 452464	P 628017
P 624600	P 624629	P 618931
P 393110	P 624630	P 618 932
P 393109	P 617736	
P 393108	P 617735	
P 393107	P 617734	
P 393106	P 617733	

CERTIFICATE

I, John Grant, hereby certify that:

- 1) I am a 1975 graduate of the three year program in Geological Technology at the Cambrian College of Applied Arts and Technology and I have worked subsequently as Chief Geophysicist for Teck Exploration (5 years) and Exsics Exploration Ltd.

- 2) The field work described in the attached report was carried out under my supervision and the interpretation and conclusions contained therein are based on my training and professional experience.



John Grant,
Exsics Exploration Ltd.

M A P S

GRID 1: Topography, Claims; Gradiometer Survey

GRID 2: Topography, Claims: Grdiometer Survey

APPENDIX A

The PPM-500, Omnimag, Vertical Gradiometer is by EDA Instruments Inc. The unit is capable of taking both total field and gradient readings at the same time.

The PPM-500 gradiometer is a differential magnetometer in which the spacing between the sensors is fixed (ie, 1 meter). The difference in the field intensity at each sensor divided by the distance which separates the sensors is the gradient measured at the mid point of the sensor spacing. The sensors are incorporated in a rigid pole which ensures that the sensors are at a fixed distance above the terrain every time that a reading is taken.

The gradiometer measures a gradient expressed in gammas per meter. The accuracy of the unit is 0.01 gammas per meter.

The unit is a portable, one man operation which can be programmed, in advance for line spacing, line position and station interval. The unit records and stores the readings at the push of a button and it also advances the station and storage space automatically. The unit is attached to the DCU printer for field data dump.

SURVEY RESULTS

Gradiometer results for Group # 2

The overall gradient survey showed major structure trends striking generally east-west across the entire grid. The strike length to these zones vary from 100 meters to 800 meters.

The gradient survey results on L 800ME and L 1200ME show direct areas of high associated with the MM 11 results called zone A. This gradient high extends to the east off the grid as well as to the west of L 800ME to L 100ME.

A second gradient trend of east-west strike is associated with the MM 11 zone B response to the north of the baseline located on L 1200ME and L 1600ME.

A third gradient trend flanks, a moderate MM 11 response on L 2000ME, to the south.

In conclusion, the gradient survey detailed numerous zones across the grid which may be in fact due to geological structure at depth. Also, the gradient highs associated with the MM 11 zones are of interest and should stimulate further EM to the east and west for more detail.

SURVEY RESULTS

Gradiometer results for Group # 1

The gradient survey of this group showed major structural trends striking east-west across the survey grid. The majority of structure is evident in the central and western sections of the grid and little to no response from lines 0+00 to 1100ME.

The absence of structure in the western portion of the grid may be suggesting that the strike of the area is changing in this area. This is supported by the Mag contour of the area which changes from east-west to north-south as you progress from L 400ME to L 0+00.

The gradient survey has direct correlation with the weak to moderate MaxMin responses noted on L 2000ME and L 2400ME at 475MN and 450MN respectively.

There is also a correlation of sorts with the MM 11 response noted on L 2400ME at 140MN. The MM 11 response is situated between two gradient highs trends striking east-west.

In conclusion, the gradient survey generally corresponds to the Magnetic trends of the survey area. Also, because of the correlation of the gradient and MM 11 responses, the areas of interest stated above should be further studied in detail.

TYPE OF SURVEY

The gradiometer survey was carried out using EDA's PPM-500 Gradiometer. All crosslines, tielines and baselines were read at 12.5 meter intervals on both groups 1 and 2.

The field data was obtained by attaching the PPM 500 to a DCU 400 thermal printer, also manufactured by EDA Instruments.

Detailed explanations of the PPM-500 and DCU-400 thermal printer are included in the back of this report as Appendix A.

LINECUTTING

A total of 54 kilometers of grid lines were cut on Group 1. The Baseline azimuth was 090 degrees. Cross lines were chained at 100 meter intervals with station intervals chained at 25 meter intervals.

A total of 23 kilometers of grid lines were cut on Group 2. The Baseline azimuth was 090 degrees. Cross lines were chained at 100 meter intervals with station intervals chained at 25 meter intervals.

#484 2.5347
4



42A11NE0541 2.5347 EVELYN

900

The Mini

Type of Survey(s) GRADIOMETER-GEOPHYSICAL		Township or Area MATHESON + Evelyn	
Claim Holder(s) ST. JOE CANADA INC.		Prospector's Licence No. T1109	
Address 159 BAY STREET, SUITE 614, TORONTO, ONTARIO M5J 1J7			
Survey Company EXSICS EXPLORATION LTD.		Date of Survey (from & to) 15 6 82 15 7 83	
Name and Address of Author (of Geo-Technical report) JOHN C. GRANT, P.O. BOX 1880, TIMMINS ONTARIO		Total Miles of line Cut 2.5347	

Credits Requested per Each Claim in Columns at right		
Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	20
For each additional survey: using the same grid: Enter 20 days (for each)	Geological	
	Geochemical	
	Geophysical	
	Geological	
Man Days Complete reverse side and enter total(s) here	Geophysical	Days per Claim
	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
Airborne Credits Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	Days per Claim
	Magnetometer	
	Radiometric	

Mining Claims Traversed (List in numerical sequence)

Mining Claims Traversed (List in numerical sequence)			Mining Claims Traversed (List in numerical sequence)		
Prefix	Number	Expend. Days Cr.	Prefix	Number	Expend. Days Cr.
P	632852		P	617735	
	632853			617734	
	452498			617733	
	452499			393738	
	452500			393739	
	617738			393740	
	624601			393741	
	624600			617737	
	393110			628018	
	393109			628017	
	393108			618931	
	393107			618932	
	393106				
	393105				
	393104				
	393103				
	452461				
	452462				
	452463				
	452464				
	624629				
	393124				
	624630				
	393124				
	617736				

RECORDED
JAN 17 1983
Receipt No.

RECEIVED
JAN 20 1983

Expenditures (excludes power stripping)	
Type of Work Performed	Performed on Claim(s)
RECEIVED	
Calculation of Expenditures and Credits	
Total Expenditures	Total Days Credits
\$	+ 15 =

MINING LANDS
claims covered by this report of work. 35

Instructions
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

For Office Use Only	
Total Days Cr. Recorded	Date Recorded
700	January 18/83
Date Approved as Recorded	Branch Director
July 25/83	Regional Mining Recorder

Date	Recorded Holder or Agent (Signature)
Jan. 5, 1983	David Molloy

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

Name and Postal Address of Person Certifying	
David E. Molloy, 221 Pandora Cres., Kitchener	
Ontario, N2H 3E5	
Date Certified	Certified by (Signature)
Jan. 5/83	David Molloy



GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL
TECHNICAL DATA STATEMENT

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(s) Gradiometer Survey
Township or Area Matheson / Evelyn Twp.
Claim Holder(s) St. Joe Canada Inc.
159 Bay St., Toronto, Ontario
Survey Company Exsics Exploration Limited
Author of Report John C. Grant
Address of Author P.O. Box 1880, Timmins, Ontario
Covering Dates of Survey June to July 1982
(linecutting to office)
Total Miles of Line Cut 80 km

MINING CLAIMS TRAVERSED
List numerically

(prefix) (number)

see list attached

If space insufficient, attach list

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

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: September 5/82

SIGNATURE: John C. Grant
Author of Report or Agent

Res. Geol. _____ Qualifications _____

Previous Surveys

File No.	Type	Date	Claim Holder

TOTAL CLAIMS 35

OFFICE USE ONLY

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

Number of Stations 2000 Number of Readings 4000
 Station interval 12.5 meters Line spacing 100 meters
 Profile scale _____
 Contour interval _____

MAGNETIC

Instrument EDA, PPM500 Gradiometer
 Accuracy – Scale constant 0.1 gamma
 Diurnal correction method no diurnal variations for gradiometer
 Base Station check-in interval (hours) _____
 Base Station location and value Lot 11, Conc. 2, Mountjoy Twp.
 * (see others below)

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 _____

SELF POTENTIAL

Instrument _____ Range _____

Survey Method _____

Corrections made _____

RADIOMETRIC

Instrument _____

Values measured _____

Energy windows (levels) _____

Height of instrument _____ Background Count _____

Size of detector _____

Overburden _____

(type, depth - include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey Gradiometer Survey

Instrument EDA PPM500 Gradiometer

Accuracy ± 15 PPM @ 23°C, 50 PPM over operating temp. range

Parameters measured for the PPM500 Gradiometer, the gradient is defined as $T = (F)_{\text{lower sensor}} - (F)_{\text{upper sensor}}$.

Additional information (for understanding results) The units primary purpose is to measure and store total earth's mag field and the vertical gradient. The gradiometer measures a gradient expressed in gammas per meter.

AIRBORNE SURVEYS

Type of survey(s) _____

Instrument(s) _____
(specify for each type of survey)

Accuracy _____
(specify for each type of survey)

Aircraft used _____

Sensor altitude _____

Navigation and flight path recovery method _____

Aircraft altitude _____ Line Spacing _____

Miles flown over total area _____ Over claims only _____

GEOCHEMICAL SURVEY - PROCEDURE RECORD

Numbers of claims from which samples taken _____

Total Number of Samples _____

Type of Sample _____
(Nature of Material)

Average Sample Weight _____

Method of Collection _____

Soil Horizon Sampled _____

Horizon Development _____

Sample Depth _____

Terrain _____

Drainage Development _____

Estimated Range of Overburden Thickness _____

SAMPLE PREPARATION

(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis _____

General _____

ANALYTICAL METHODS

Values expressed in: per cent
p. p. m.
p. p. b.

Cu, Pb, Zn, Ni, Co, Ag, Mo, As, -(circle)

Others _____

Field Analysis (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Field Laboratory Analysis

No. (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Commercial Laboratory (_____ tests)

Name of Laboratory _____

Extraction Method _____

Analytical Method _____

Reagents Used _____

General _____



Ontario

Ministry of
Natural
Resources

Geotechnical
Report
Approval

File 2.5347

Feb 2/83

Mining Lands Comments

~~Report not prepared~~

To: Geophysics

Mr Barlow

Comments

Approved

Wish to see again with corrections

Date

April 29/83

Signature

[Signature]

To: Geology - Expenditures

Comments

Approved

Wish to see again with corrections

Date

Signature

To: Geochemistry

Comments

L.D.

Approved

Wish to see again with corrections

Date

Signature

To: Mining Lands Section, Room 6462, Whitney Block.

(Tel: 5-1380)

2983 01 26

2.5347

Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

We have received reports and maps for a Geophysical
(Gradiometer) Survey submitted under Special Provisions
(credit for Performance and Coverage) on Mining Claims
P 632852 et al in the Township of Matheson.

This material will be examined and assessed and a
statement of assessment work credits will be issued.

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: 416/965-1380

DW:sc

cc: St. Joe Canada Inc
Toronto, Ontario

cc: John C. Grant
Timmins, Ontario

P 632852-	✓		458464-	✓			
853-	✓		624629-	1/4			
452498-	✓		624630-	✓			
499-	✓		617736-	✓			
500-	✓		617735-	✓			
617738-	✓		734-	✓			
624601-	✓		733-	✓			
624600-	✓		393738-	✓			
393110-	✓		739-	✓			
393109-	✓		740-	✓			
108-	✓		741-	✓			
107-	✓		617737-	✓			
106-	✓		628018-	✓			
105-	✓		017-	✓			
104-	✓		618931-	✓			
103-	✓		932	✓			
452461-	✓						
462-	✓				35-		
463-	✓						

Little Twp.

THE TOWNSHIP
OF
EVELYN

DISTRICT OF
COCHRANE
PORCUPINE
MINING DIVISION

SCALE: 1-INCH= 40 CHAINS

LEGEND

- PATENTED LAND Ⓟ
- CROWN LAND SALE Ⓢ or 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

NOTES

This township lies within the Municipality of CITY OF TIMMINS.

Withdrawn from staking under Section 27 of the Mining Act (R.S.O. 1970)

File	Date	Disposition
W. 28/75 134839	4/6/75	S.R.O.
W. 19/78 188543	10/16/78	S.R.O.
Geological Nature Reserve	4/2/80	File 188543
Public Access Res. 136416	9/7/58	S.R.O.
M.N.R. Reserve, S.R.O.	25/7/58	File 160705
Public Access Res., S.R.O.	8/11/56	File 134836
Public Access Res., S.R.O.	20/9/56	File 134833

DATE OF ISSUE
JUL 20 1983
Ministry of Natural Resources
400' Surface Rights Zoning Reservation around all lakes & rivers.

Flooding Rights Reserved to 903' Contour to H.E.P.C. Around Frederick House Lake.

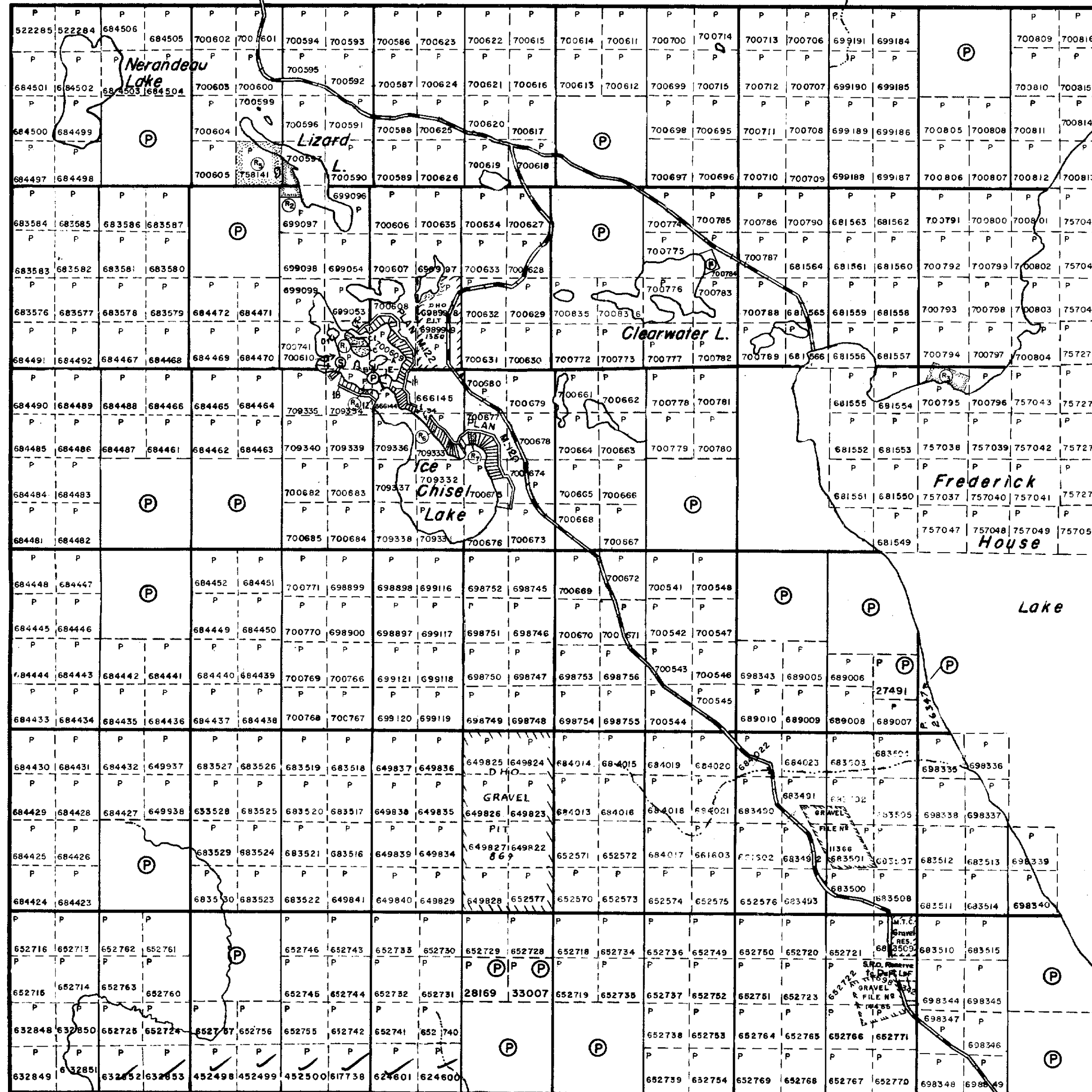
PLAN NO.- M-277

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

Gowan Twp.

Dundonald Twp.

VI
V
IV
III
II
I



12 11 10 9 8 7 6 5 4 3 2 1

Matheson Twp.

25347



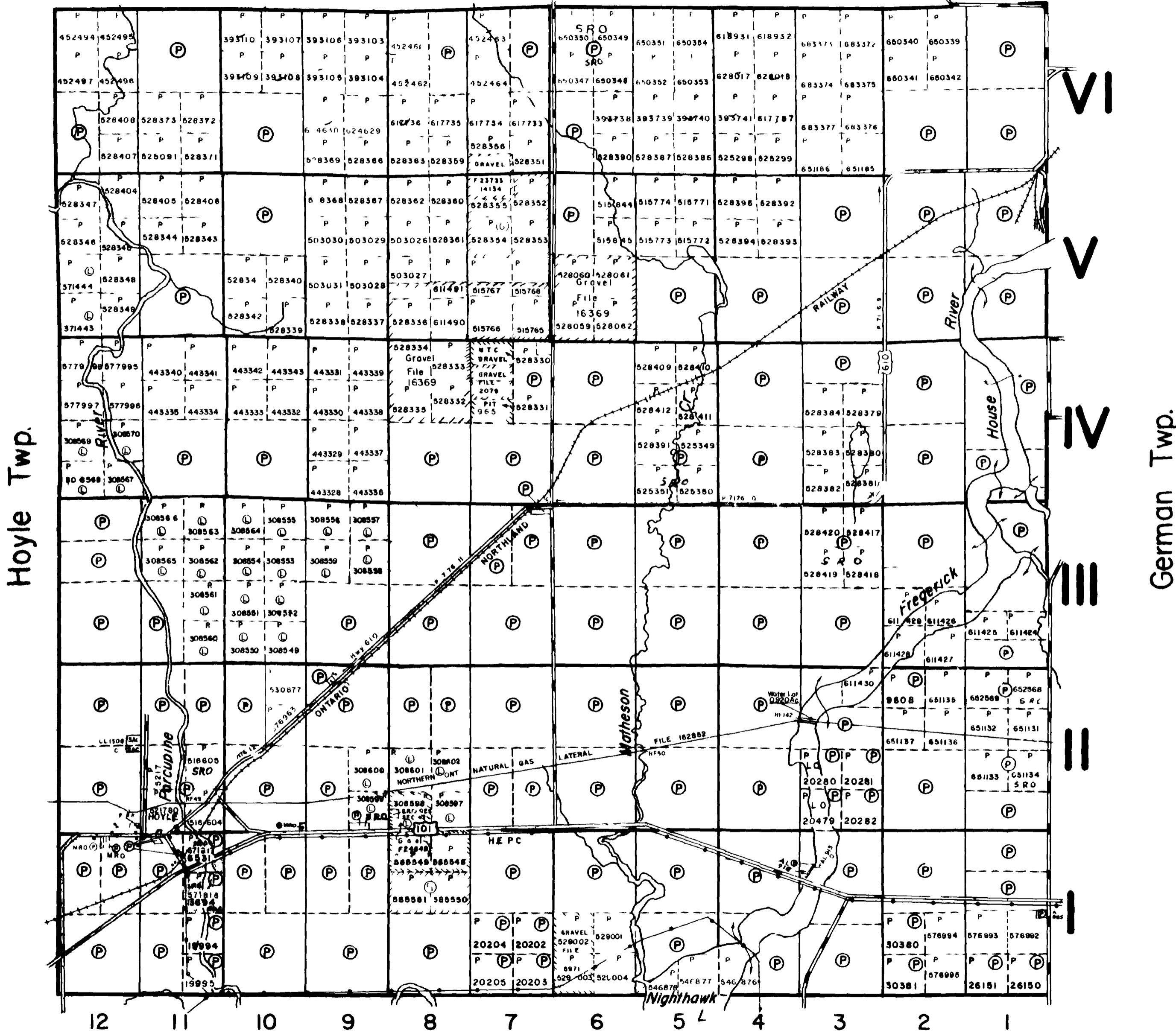
42A11NE0541 2.5347 EVELYN

Evelyn Twp.

THE TOWNSHIP OF
OF
MATHESON

DISTRICT OF
COCHRANE
PORCUPINE
MINING DIVISION

SCALE 1-INCH=40 CHAINS



LEGEND

PATENTED LAND	(P)
CROWN LAND SALE	(S) or (CS)
LEASES	(L)
LOCATED LAND	Loc
LICENSE OF OCCUPATION	LO
MINING RIGHTS ONLY	MRO
SURFACE RIGHTS ONLY	SRO
ROADS	—
IMPROVED ROADS	—
KING'S HIGHWAYS	—
RAILWAYS	—
POWER LINES	—
MARSH OR MUSKOGEE	—
MINES	—

NOTES

Reserve Flooding Rights to 903' Contour to HEPC on Frederick House River.

400' Surface rights reservation around all lakes & rivers

This township lies within the Municipality of CITY of TIMMINS

RESERVATIONS

SAND AND GRAVEL

(G) QUARRY PLRMT
(MNR) GRAVEL RESERVE FILE 24648

PLAN NO.- M-297

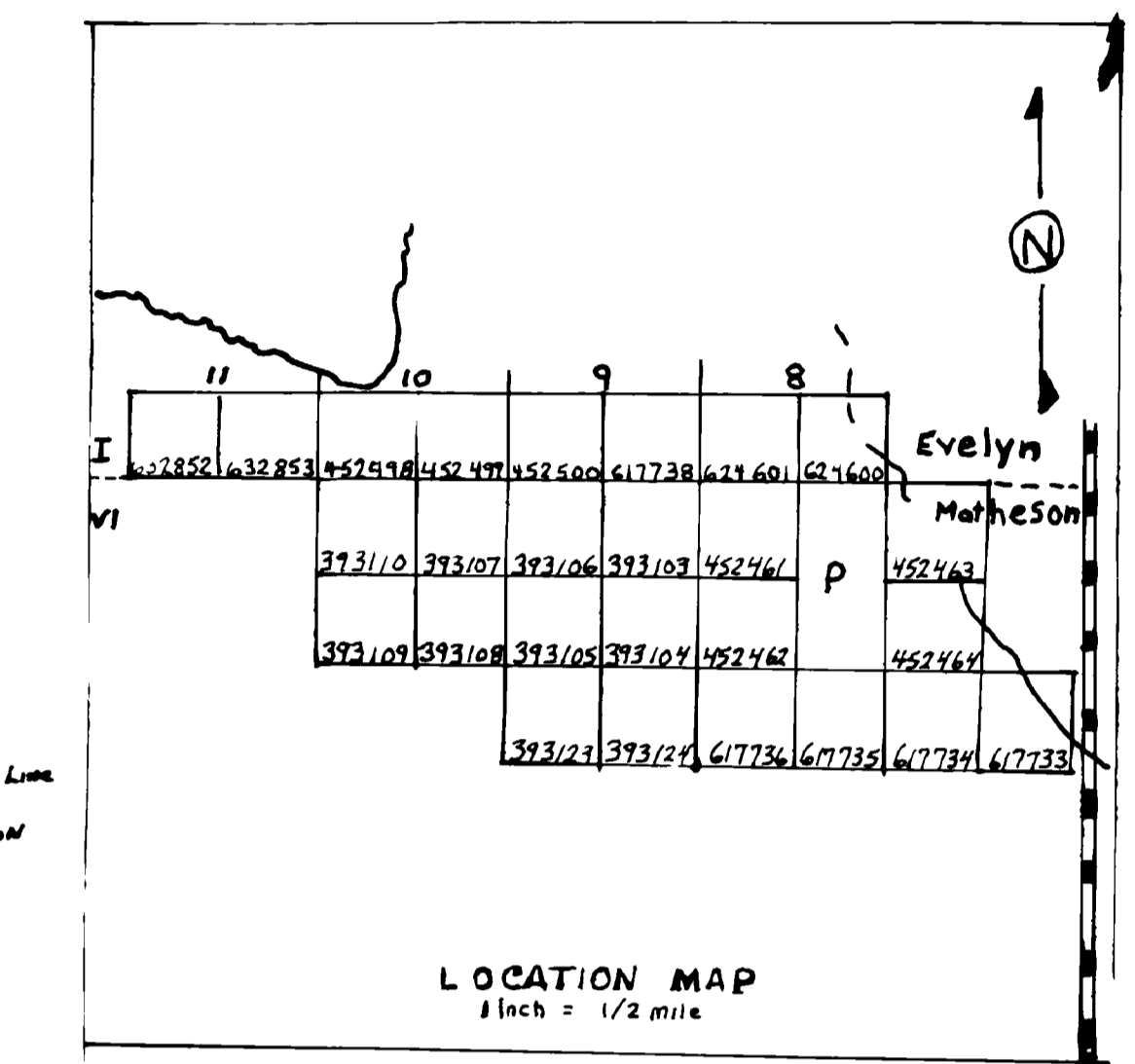
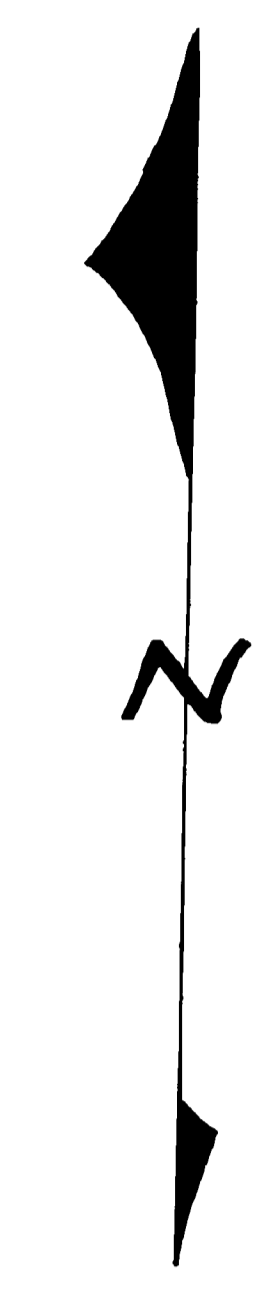
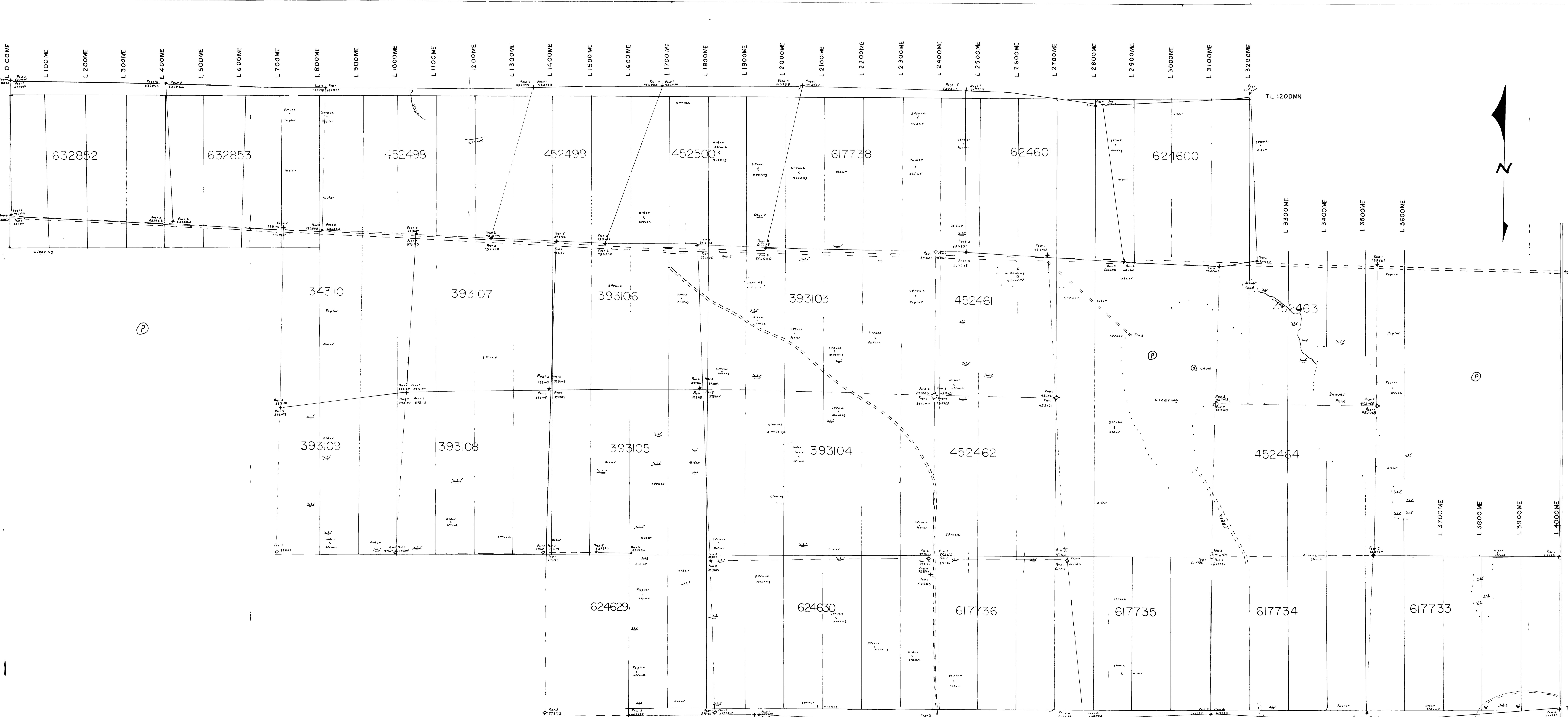
ONTARIO
MINISTRY OF NATURAL RESOURCES

EVELYNE MINING BRANCH

Cody Twp.



42411NE0541 2 5347 EVI TN



KEY

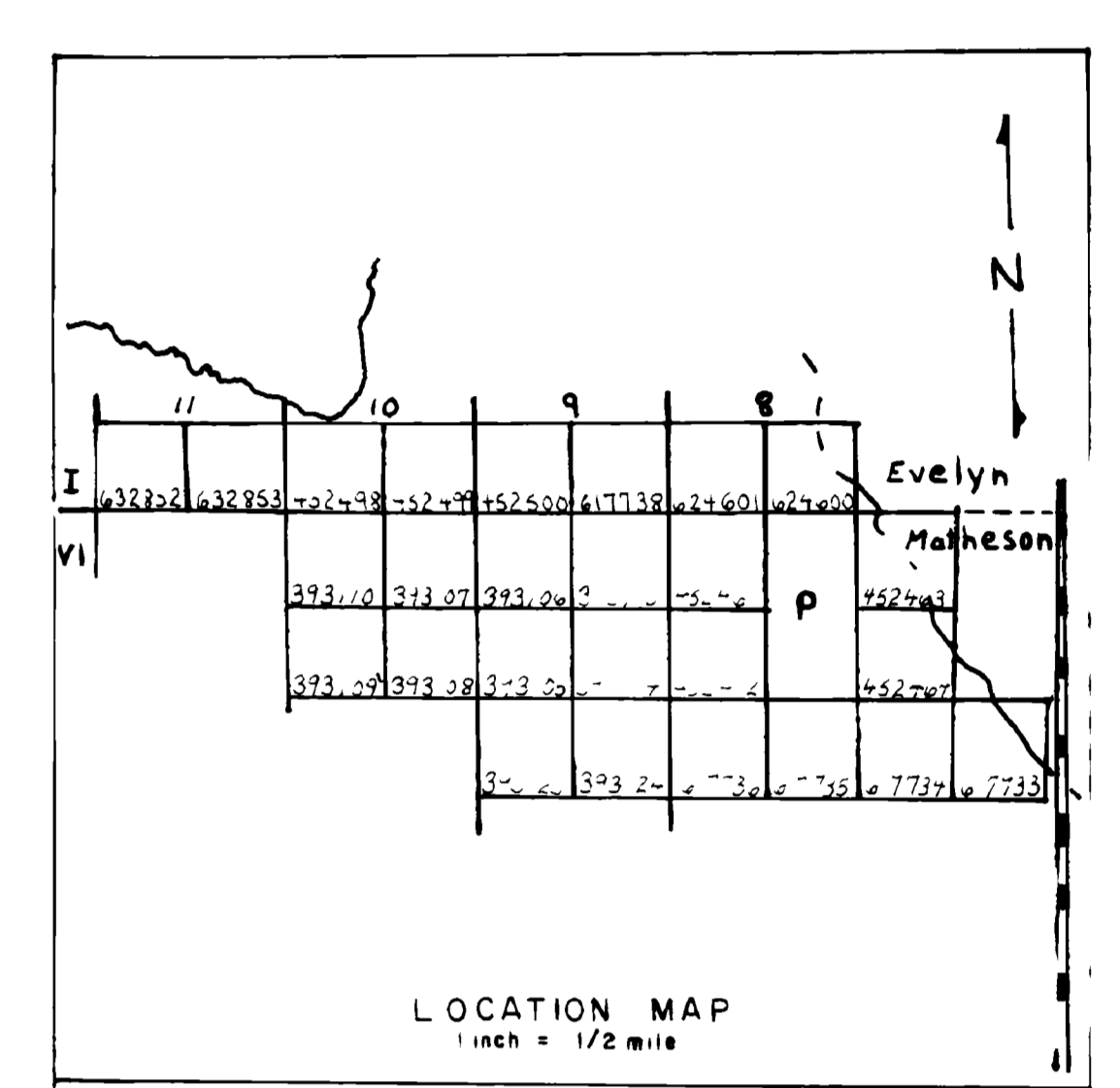
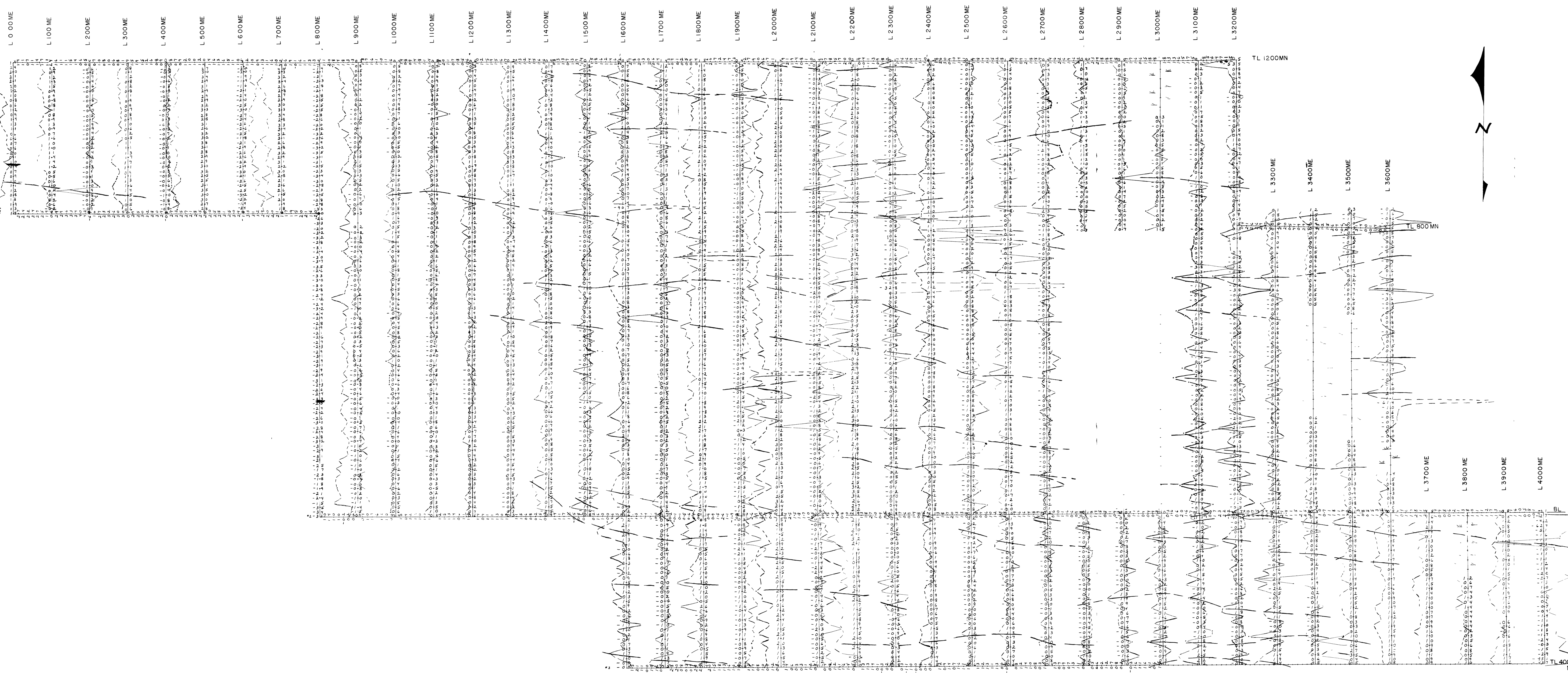
Claim Post, W/ Post	◆	Claim Line	—
Creek	~	Road	==
Lake	○	Bush Road	---
Swamp	⋈	Trail	- - - -
Outcrop	⋈	Hydro Line	— —
Building	□	Drill Hole	⊙

CLIENT ST JOE Canada Inc
 PROJECT Matheson, Evelyn Twps
 GRID: No 1

Scale 1:2500 Date July/1982
 Int Y Collin Drafted By Y Collin

EXSICS EXPLORATION LTD
 BOX 1880 Timmins, Ont
 (705) 267-4151





LEGEND

Total Magnetic Field in gammas 50-200

Magnetic Contour 5 gamma intervals

Magnetic Depression

Base Station Location

Profile Scale 1cm = 1%

Line Base for Profiles 0

Line Base for Profiles 1:400

KEY

Claim Post, Wit Post

Creek

Lake

Swamp

Outcrop

Building

Claim Line

Road

Bush Road

Trail

Hydra Line

Drill Hole

Instrument EDA PPM 500 MAGNETIC GRADIOMETER

CLIENT ST JOE CANADA Inc

PROJECT MATHESON, EVELYN TWP

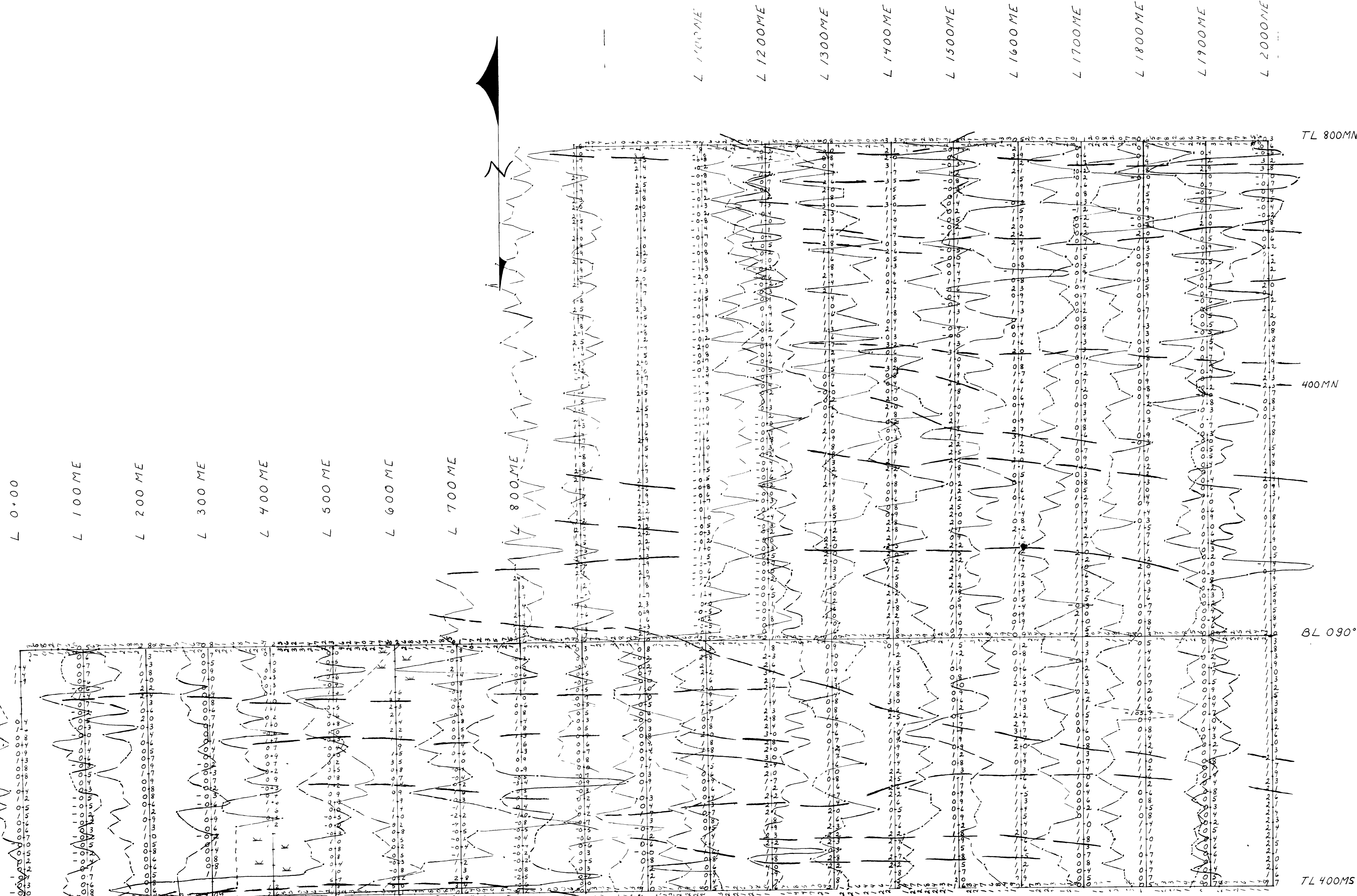
GROUP NO 1

SURVEY GRADIOMETER

Scale 1:2500 Survey Date JUNE / 82

Interpretation J Grant Drafted By R Collin

EXSICS EXPLORATION Ltd
Box 1880 Timmins, Ont
(705) 267-4151



Matheson Twp

VI

Lot 6 Lot 5 Lot 4

LOCATION MAP
1 inch = 1/2 mile

LEGEND

Total Magnetic Field in gammas ↑ 59200

Main Base Station Location ▲

Magnetic Contour 500, 100, 50 gammas ///

Magnetic Depression ◐

Profile Plot —

Line Base For Profiles = 0 =

Profile Scale 1CM = 0.5A =

Instrument EDA'S PPM 500

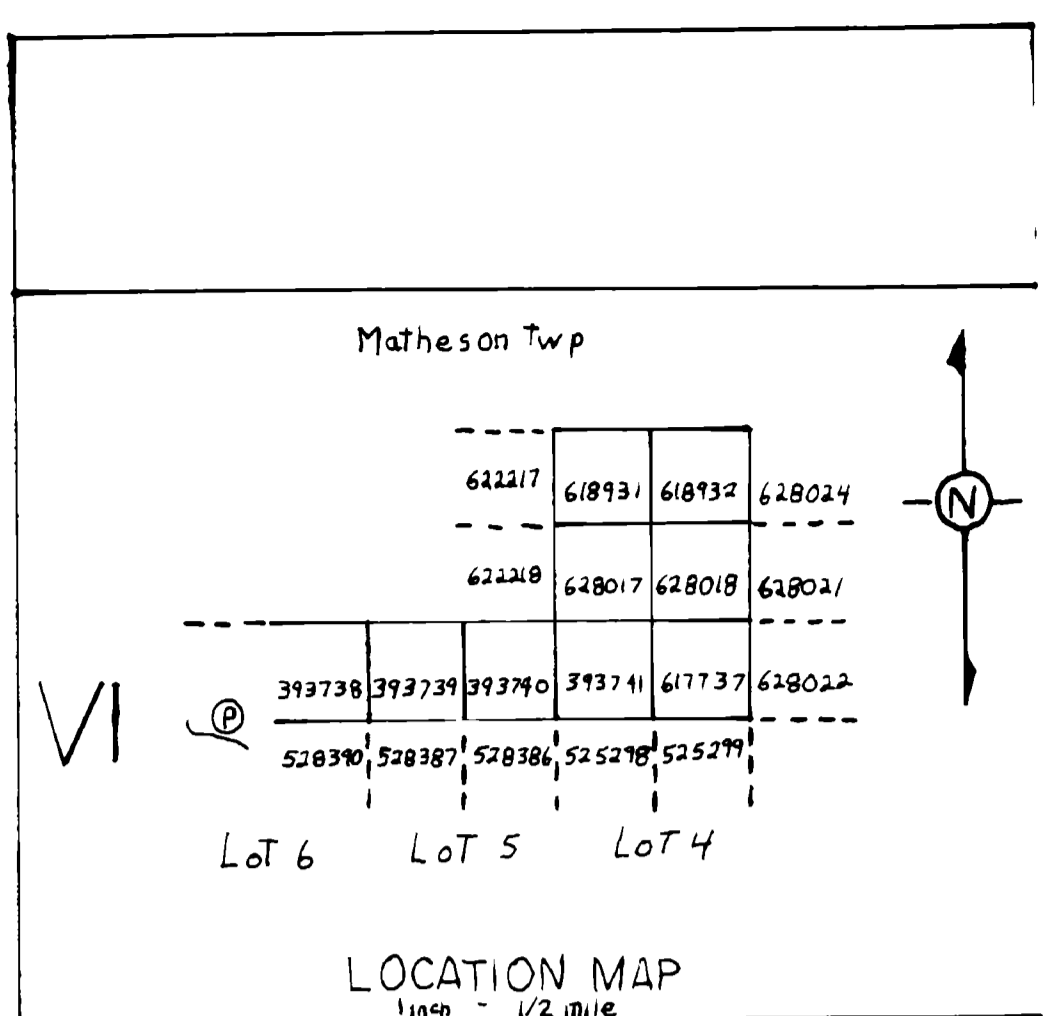
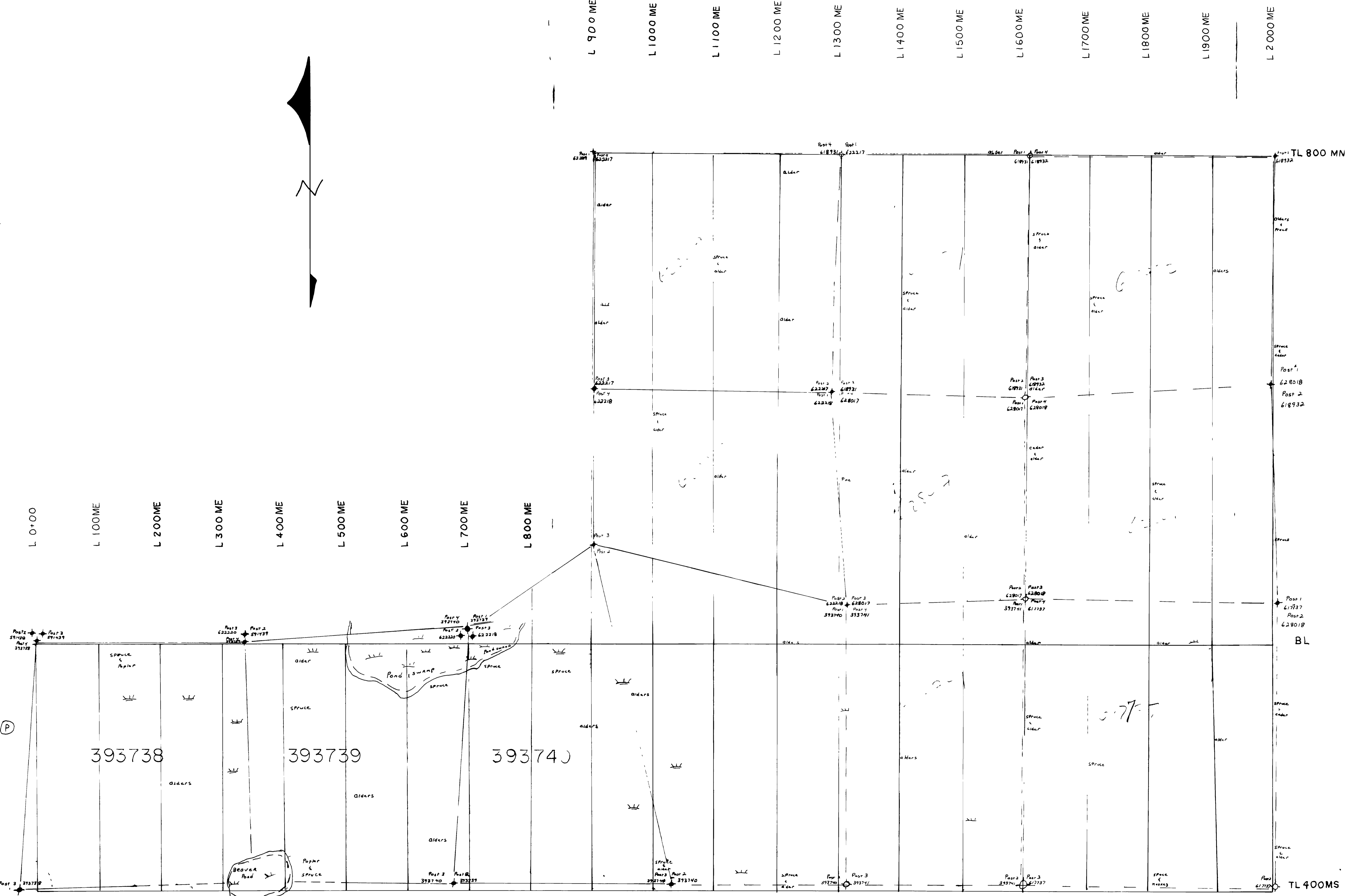
KEY

Claim Post, Wit Post		Claim Line	
Creek		Road	
Lake		Bush Road	
Swamp		Trail	
Outcrop		Hydro Line	
Building		Drill Hole	

CLIENT ST JOE Canada Inc
 PROJECT Matheson, Evelyn Twp
 GRID No 2
 SURVEY Gradiometer

Scale 1:2500	Survey Date June/1982
Interpretation J.C. Grant	Drafted By J.C. Grant

EXSICS EXPLORATION LTD
 BOX 1880 Timmins, Ont
 (705) 267-4151



KEY

Claim Post, Wit Post		Claim Line	
Creek		Road	
Lake		Bush Road	
Swamp		Trail	
Outcrop		Hydro Line	
Building		Drill Hole	

CLIENT ST JOE Canada Inc
PROJECT-Matheson, Evelyn Twps
GRID No 2

Scale 1:2500	Survey Date July /1982
Int Y Collin	Drafted By Y Collin

EXSICS EXPLORATION LTD.
BOX 1880 Timmins, Ont
(705) 267-4151

