

GEOSEARCH CONSULTANTS LIMITED



42A08NW0282 2.11127 PLAYFAIR

010

VLF Electromagnetic and Magnetic Survey
by
Geosearch Consultants Limited
for
Placer Dome Inc.
on
Project 344 - Obradovich Option
Playfair Township, Ontario
(To Accompany Maps 88-41, 42, 43 A to C)

April 28, 1988

Introduction

A VLF Electromagnetic, and a Total Field Magnetic survey were carried out for Placer Dome Inc. on Project 344, Obradovich Option in February 1988.

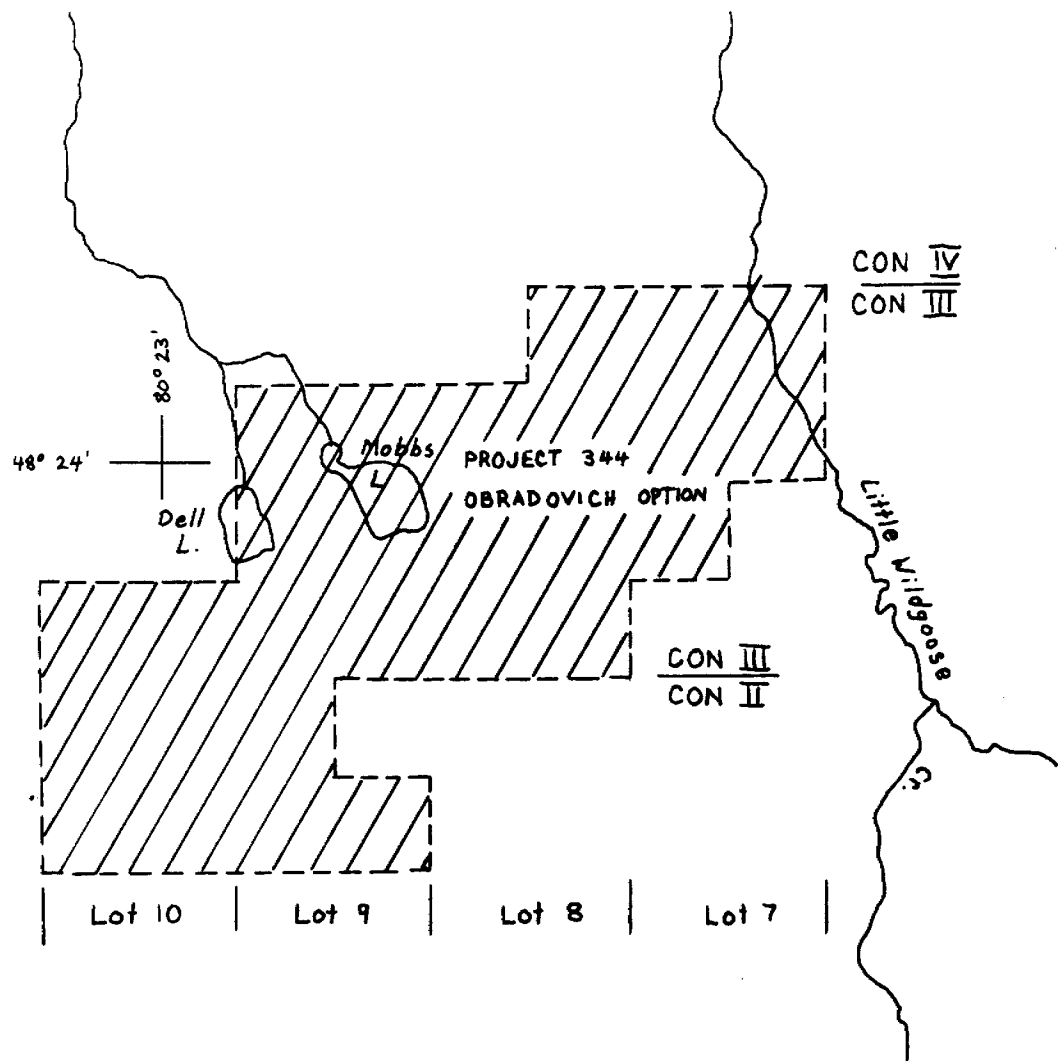
The option consists of 27 unpatented mining claims, a list of which is appended to the back of this report.

The property is located in Concessions II and III, Lots 7 to 10 of Playfair Township, Ontario. Access to the property was made via motor vehicle and snowmobile on secondary roads off of Highway 11, directly south of the town of Ramore, Ontario which is located approximately 3 km northeast of the property.

The purpose of the survey was to locate subsurface geo-electrical conductors and outline geological structures as defined by the magnetics, which may prove conducive for gold mineralization.

A number of VLF-EM conductive horizons were located, none of which are attributed to bedrock conductors. The magnetics outlined a number of E-W trending faults, a N-S trending dyke, as well as a large magnetite rich anomaly.

A technical data sheet is appended to this report. The enclosed maps show the area surveyed and the results obtained.



LOCATION SKETCH

2" to 1 mile
NTS 42-A-8

Results

Magnetic Survey

The magnetic survey outlined a magnetically quiet area with a number of distinct anomalies (Maps 88-41-A to C). The largest of these is a 500 metre wide anomaly centred on a line extending from L18+00E, 2+00S (Map 88-41-C) to L15+00E, 11+00N (Map 88-41-A). This anomaly has amplitudes as high as 14,000 gammas above the background level of 59,000 gammas. Examples of these high values are on L 17+00E, 1+25N (Map 88-41-C) and L16+00, 2+62N (Map 88-41-A). This wide feature appears to have a north-northwest trend and thus may have been better defined with lines cut in an east-west direction. The high amplitudes no doubt reflect large quantities of magnetite in the rock unit.

A second feature outlined is an E-W trending lineament extending from L3+00W, 6+75S (Map 88-41-B) to L15+00E, 1+75S (Map 88-41-c), where it intersects the magnetic plug mentioned above. This lineament is approximately 100 metres wide and has amplitudes ranging from 300 gammas above background at its western extremity, to 5000 gammas closer to the magnetite rich rock unit.

Directly south of this feature is a second magnetic lineament, parallel to the first, extending from L2+00W, 8+50S (Map 88-41-B) to L6+00E, 6+50S (Map 88-41-C). Widths and magnetic amplitudes are similar to those of the previous lineament.

These two lineaments are intersected by a north-south trending, weakly magnetic anomaly. It extends from L1+00E, 12+00S to L2+00E, 0+00 Baseline, (Map 88-41-B). This north-south anomaly is quite narrow, and most likely reflects a diabase dyke known to be common in the region.

VLF-EM Survey

The VLF Electromagnetic survey was completed using the submarine transmitting station near Cutler, Maine. The inphase and quadrature readings were posted and profiled (Maps 88-42-A to C), and the inphase values were also "fraser filtered" to create a contoured anomaly map which is easier to interpret (Maps 88-43-A to C).

It is obvious from the "fraser filtered" contour map that the western half of the grid contains no conductors. The eastern side of the grid contains many apparent conductive horizons. None of these anomalies resembles a classic bedrock conductive response. None of the anomalies correlate well with the structures outlined by the magnetics, with respect to location or trend. It is the view of the author, that these apparent

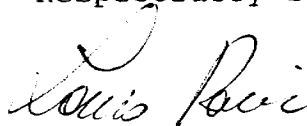
conductive horizons, as delineated by the "fraser filtered" contours are not bedrock conductors, but rather, reflect the hilly topography noted by field personnel during the course of the survey. The western portion, void of conductive responses, is also void of any steep topographical features.

Conclusions and Recommendations

The E-W lineament intersecting the magnetite plug should be investigated further. No drilling is recommended based on the data presented. If conductors were associated with the large magnetite plug, their trend would likely be north-south, and as such would require east-west lines to properly locate them. As the topography is hilly, it is recommended that any further electromagnetic work be completed with a more discerning method such as horizontal loop.

The known geology should be used with the data presented to plan further work.

Respectfully submitted,



Louis Racic, B.Sc.
Geosearch Consultants Limited



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) VLF Electromagnetic & Magnetic
Township or Area Playfair Township
Claim Holder(s) Placer Dome Inc.
Survey Company Geosearch Consultants Limited
Author of Report Louis Racic
Address of Author 360-111 Queen St.E., Toronto
Covering Dates of Survey 06/01/88 - 28/04/88
Total Miles of Line Cut 47.3 km.

MINING CLAIMS TRAVERSED
List numerically

- L 919843
L 935120 - 935124
L 935378 - 935379
L 935424
L 982547 - 982549
L 983130 - 983139
L 983269 - 983273

If space insufficient, attach list

SPECIAL PROVISIONS
CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.
ENTER 20 days for each additional survey using same grid.

Table with columns: Geophysical, Geological, Geochemical, DAYS per claim. Values: Electromagnetic 40, Magnetometer 20.

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

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

DATE: April 28/88 SIGNATURE: [Signature]
Author of Report or Agent

Res. Geol. _____ Qualifications _____

Previous Surveys

Table with columns: File No., Type, Date, Claim Holder. Multiple empty rows.

TOTAL CLAIMS 27

GEOPHYSICAL TECHNICAL DATA

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

Mag - 3645
VLF - 3645

Number of Stations 3645 Number of Readings _____
Station interval 12.5 metres Line spacing 100 metres
Profile scale 1 cm = 20%
Contour interval 25 gammas

MAGNETIC

Instrument EDA Omni IV
Accuracy - Scale constant 0.1 gammas
Diurnal correction method Base station recorder with readings taken at
Base Station check-in interval (hours) 30 second intervals
Base Station location and value Line 14+00E, 0+00 60,021 gammas

ELECTROMAGNETIC

Instrument EDA Omni Plus
Coil configuration -
Coil separation -
Accuracy 1%
Method: Fixed transmitter Shoot back In line Parallel line
Frequency 24.0 kHz - Cutler, Maine NAA
(specify V.L.F. station)
Parameters measured Inphase and quadrature responses of the vertical secondary field

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 _____



Ministry of
Northern Development
and Mines

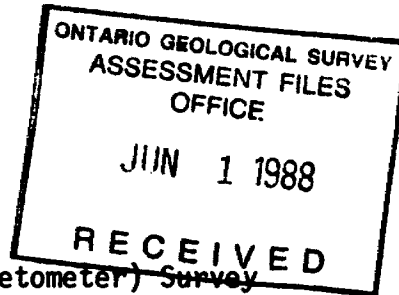
Ontario

Ministère du
Développement du Nord
et des Mines

May 27, 1988

Your File: W8808-084
Our file: 2.11127

Mining Recorder
Ministry of Northern Development and Mines
4 Government Road East
Kirkland Lake, Ontario
P2N 1A2



Dear Sir:

RE: Notice of Intent dated May 10, 1988
Geophysical (Electromagnetic and Magnetometer) Survey
submitted on Mining Claims L 919843 et al
in the Township of Playfair

The assessment work credits, as listed with the above-mentioned
Notice of Intent, have been approved as of the above date.

Please inform the recorded holder of these mining claims and
so indicate on your records.

Yours sincerely,

W.R. Cowan, Manager
Mining Lands Section
Mines and Minerals Division

Whitney Block, Room 6610
Queen's Park
Toronto, Ontario
M7A 1W3

Telephone: (416) 965-4888

AB:pl
Enclosure: Technical Assessment Work Credits

cc: Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

Resident Geologist
Kirkland Lake, Ontario

Placer Dome Inc.
Box 350
IBM Tower, Toronto-Dominion Centre
Toronto, Ontario
M5K 1N3



Recorded Holder
Placer Dome Inc.

Township ~~XXXXXX~~
Playfair Township

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical Electromagnetic <u>40</u> days Magnetometer <u>20</u> days Radiometric _____ days Induced polarization _____ days Other _____ days Section 77 (19) See "Mining Claims Assessed" column Geological _____ days Geochemical _____ days Man days <input type="checkbox"/> Airborne <input type="checkbox"/> Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/> <input type="checkbox"/> Credits have been reduced because of partial coverage of claims. <input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	L.919843 .935120 to 24 inclusive 935378-79 935424 .982547 .983130-31-32 .983134 to 39 inclusive .983269 to 73 inclusive

Special credits under section 77 (16) for the following mining claims

20 days Electromagnetic & 10 days Magnetometer

. L 983133

No credits have been allowed for the following mining claims

not sufficiently covered by the survey insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geological - 40; Geochemical - 40; Section 77(19) - 60.



Ministry of Northern Development and Mines

Report of Work

(Geophysical, Geological, Geochemical and Expenditures)

DOCUMENT No.

W8808-084

Mining Act

2,1127

Instructions: - Please type or print.

- If number of mining claims traversed exceeds space on this form, attach a list.
- Note: - Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.
- Do not use shaded areas below.

Project 344

Type of Survey(s) Magnetic and Electromagnetic	Township or Area Playfair Twp.
Claim Holder(s) Placer Dome Inc.	Prospector's Licence No. T - 837
Address Box 350, IBM Tower, T-D Centre, Toronto, Ontario M5K 1N3	
Survey Company Geosearch Consultants Limited	Date of Survey (from & to) 06 01 88 01 03 88 Day Mo. Yr. Day Mo. Yr.
Name and Address of Author (of Geo-Technical report) Louis Racic, 360 - 111 Queen St. E. Toronto, Ontario M5C 1S2	Total Miles of line Cut 44.2 km.

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	40
	- Magnetometer	20
	- Radiometric	
	- Other	
For each additional survey: using the same grid: Enter 20 days (for each)	Geological	
	Geochemical	
Man Days	Geophysical	Days per Claim
Complete reverse side and enter in MINING LANDS SECTION	Electromagnetic	
	Magnetometer	
	Radiometric	
	Other	
	Geological	
	Geochemical	
Airborne Credits	Geophysical	Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

Mining Claims Traversed (List in numerical sequence)

Mining Claim		Expend. Days Cr.	Mining Claim		Expend. Days Cr.
Prefix	Number		Prefix	Number	
T	919843		T	983272	
	935120			983273	
	935121				
	935122				
	935124				
	935378				
	936379				
	935424				
	982547				
	983130				
	933131				
	983132				
	983133				
	983134				
	983135				
	983136				
	983137				
	983138				
	983139				
	983269				
	983270				
	983271				
	935123				

RECEIVED
MAR 25 1988
MINING LANDS SECTION

Total number of mining claims covered by this report of work.

25

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures \$ ÷ 15 = Total Days Credits

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 1500	Date Recorded MARCH 15, 1988	Mining Recorder M. A. Wenman
	Date Approved as Recorded See Revised statement	Branch Director

Date
March 11/88

Recorded Holder or Agent (Signature)
Robert Hal... [Signature]

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
Louis Racic, 360 - 111 Queen St. E., Toronto, Ontario M5C 1S2

Date Certified
11/03/88

Certified by (Signature)
[Signature]



File _____

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Survey Company Geosearch Consultants Limited
Author of Report Louis Racic
Address of Author 360-111 Queen St.E., Toronto
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(linecutting to office)
Total Miles of Line Cut 47.3 km.

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List numerically

L 919843 ✓
L 935120 - 935124 ✓
L 935378 - 935379 ✓
L 935424 ✓
L 982547 - 982549 ✗
L 983130 - 983139 ✓
L 983269 - 983273 ✓

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**SPECIAL PROVISIONS
CREDITS REQUESTED**

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line cutting) for first
survey.

ENTER 20 days for each
additional survey using
same grid.

	DAYS per claim
Geophysical	
-Electromagnetic	40
-Magnetometer	20
-Radiometric	
-Other	
Geological	
Geochemical	

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

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

DATE: April 28/88 SIGNATURE: Louis Racic
Author of Report or Agent

Res. Geol. _____ Qualifications 2.8017

Previous Surveys

File No.	Type	Date	Claim Holder

TOTAL CLAIMS 27

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

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

Mag - 3645
VLF - 3645

Number of Stations 3645 Number of Readings _____
Station interval 12.5 metres Line spacing 100 metres
Profile scale 1 cm = 20%
Contour interval 25 gammas

MAGNETIC

Instrument EDA Omni IV
Accuracy - Scale constant 0.1 gammas
Diurnal correction method Base station recorder with readings taken at
Base Station check-in interval (hours) 30 second intervals
Base Station location and value Line 14+00E, 0+00 60,021 gammas

ELECTROMAGNETIC

Instrument EDA Omni Plus
Coil configuration -
Coil separation -
Accuracy 1%
Method: Fixed transmitter Shoot back In line Parallel line
Frequency 24.0 kHz - Cutler, Maine NAA
(specify V.L.F. station)
Parameters measured Inphase and quadrature responses of the vertical secondary field

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 _____

Hislop Twp.

Proposed N.O.
Natural Gas
Pipeline

THE TOWNSHIP
OF
PLAYFAIR

DISTRICT OF
COCHRANE

LARDER LAKE
MINING DIVISION

SCALE: 1-INCH=40 CHAINS

LEGEND

- PATENTED LAND (P)
- CROWN LAND SALE LEASES (S) or (CS)
- LOCATED LAND (L)
- LICENSE OF OCCUPATION (L.O.)
- MINING RIGHTS ONLY (M.R.O.)
- SURFACE RIGHTS ONLY (S.R.O.)
- ROADS (R)
- IMPROVED ROADS (R²)
- KING'S HIGHWAYS (K)
- RAILWAYS (R¹)
- POWER LINES (P.L.)
- MARSH OR MUSKEG (M)
- MINES (M²)

NOTES

400' Surface rights reservation around all lakes and rivers.

Ramore Townsite Shown Thus:

Millsite Shown Thus:

Gravel Reserve Shown Thus:

R1 Surface & mineral rights withdrawn from prospecting, staking out sale or lease Sec 36, The Mining Act R.S.O. 1980 Order No. N.R. 105/89 November 29, 1984 7:49 pm (Revised N.R.O. # 9-1886 86-08-18)

(K2) Sec 36/30, w/1/16 - 20/16 m + s - Order for

(K3) 54 m withdrawn to Sec 36, The Mining Act R.S.O. 1980 Order # N.R. 40 29/86 - Apr. 18/86

Sheet #3

PLAN NO. - M. 381

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

McCann Twp.

VI

V

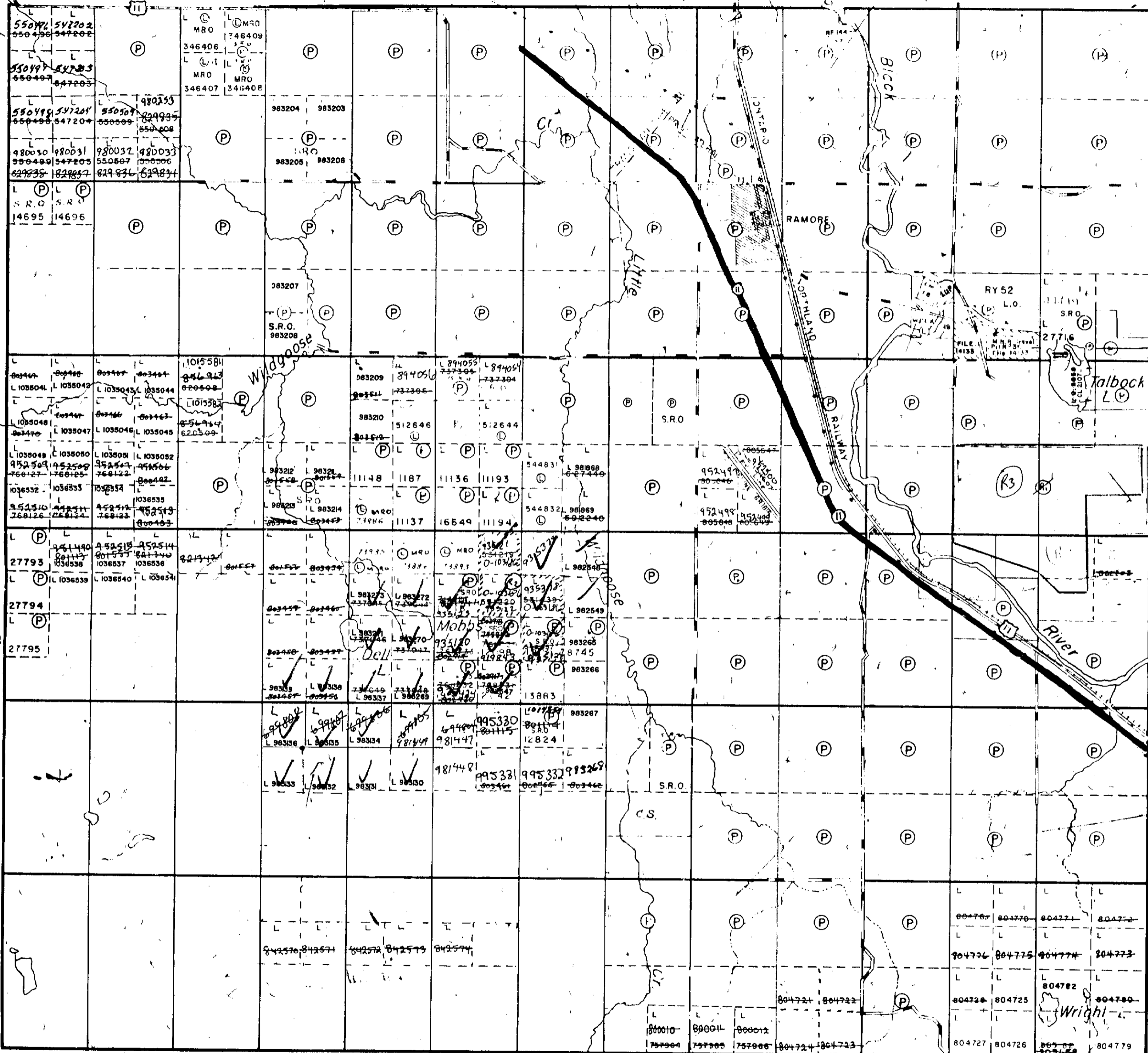
IV

III

II

I

Cook Twp.



13 12 11 10 9 8 7 6 5 4 3 2 1

NOTICE OF FORESTRY ACTIVITY

Black Twp.



42A08N0282 2.11127 PLAYFAIR

200

FOR INFO
705-642-3222

RECEIVED AUGUST 14-1984

B.D.

Hislop Twp.

Proposed N.O. Natural Gas Pipe Line

THE TOWNSHIP OF PLAYFAIR

DISTRICT OF COCHRANE

LARDER LAKE MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

- PATENTED LAND (P)
- CROWN LAND SALE (CS)
- LEASES (S)
- LOCATED LAND (L)
- LICENSE OF OCCUPATION (L.O.)
- MINING RIGHTS ONLY (M.R.O.)
- SURFACE RIGHTS ONLY (S.R.O.)
- ROADS (R)
- IMPROVED ROADS (R₁)
- KING'S HIGHWAYS (R₂)
- RAILWAYS (R₃)
- POWER LINES (P.L.)
- MARSH OR MUSKEG (M)
- MINES (M₁)

NOTES

- 400' Surface rights reservation around all lakes and rivers.
- Ramore Townsite Shown Thus: [Hatched Box]
- Millsite Shown Thus: [Dotted Box]
- Gravel Reserve Shown Thus: [Cross-hatched Box]
- R₁ Surface & Mineral rights withdrawn from prospecting, staking out sale or lease Sec 36, The Mining Act R.S.O. 1980 Order No. NR/05/09 November 29, 1984 7:00 pm (Rescinded N.R.O. # 9/18/84 Sec. 04-18)
- R₂ Sec 36/36, w. r/o 20/31/36 m.r.s - OPEN JOP
- R₃ 5/4 m.w. withdrawn to Sec 36, The Mining Act R.S.O. 1980 Order # N.R. 40 29/1/86 in Apr. 18/86

VI

V

IV

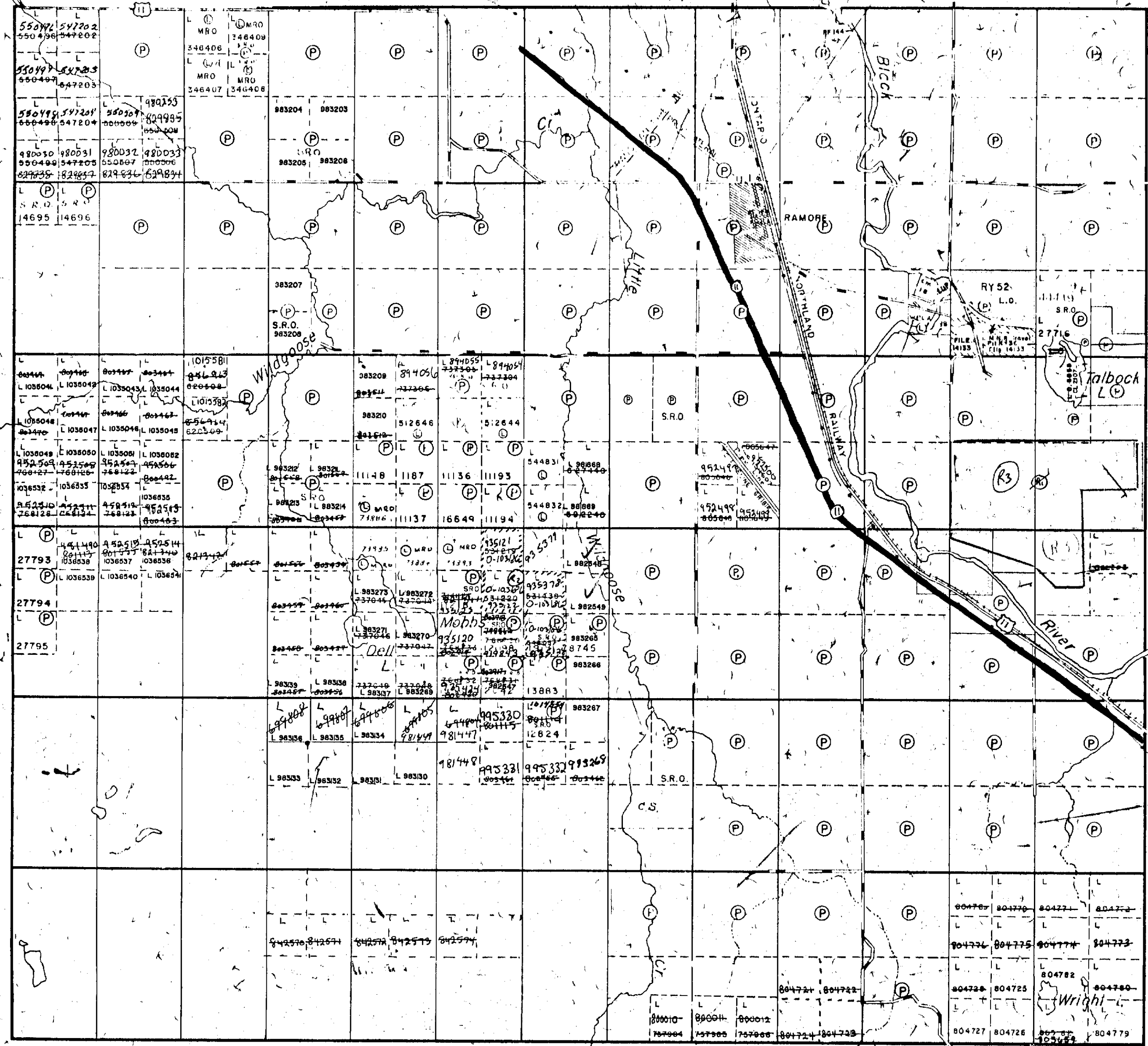
III

II

I

Cook Twp.

McCann Twp.



13 12 11 10 9 8 7 6 5 4 3 2 1

NOTICE OF FORESTRY ACTIVITY

Black Twp.



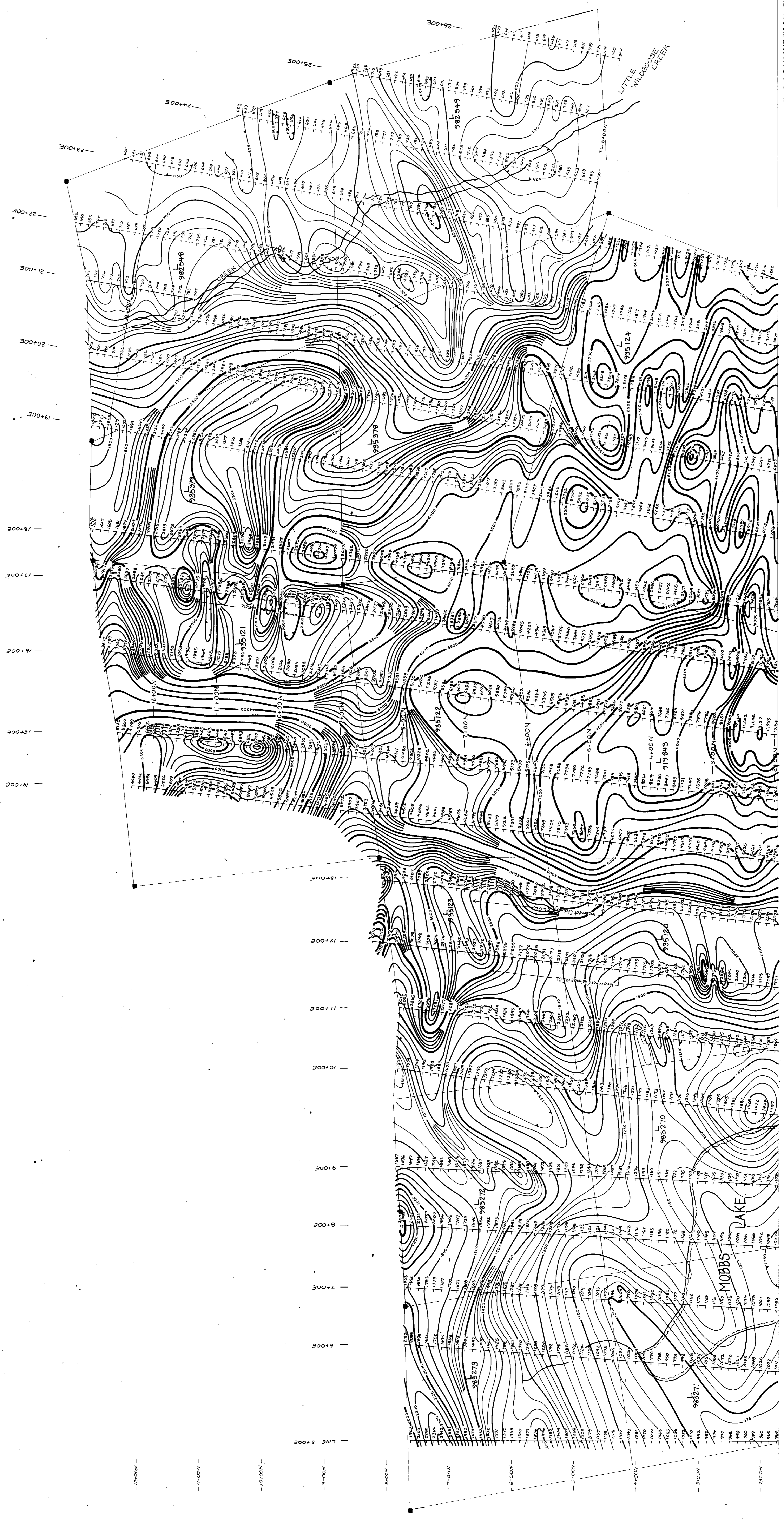
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B.D. 705-642-3222

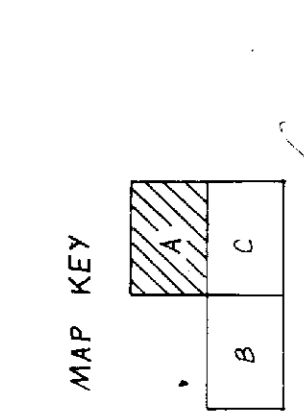
RECEIVED August 14-1984

PLAN NO. - M. 381

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

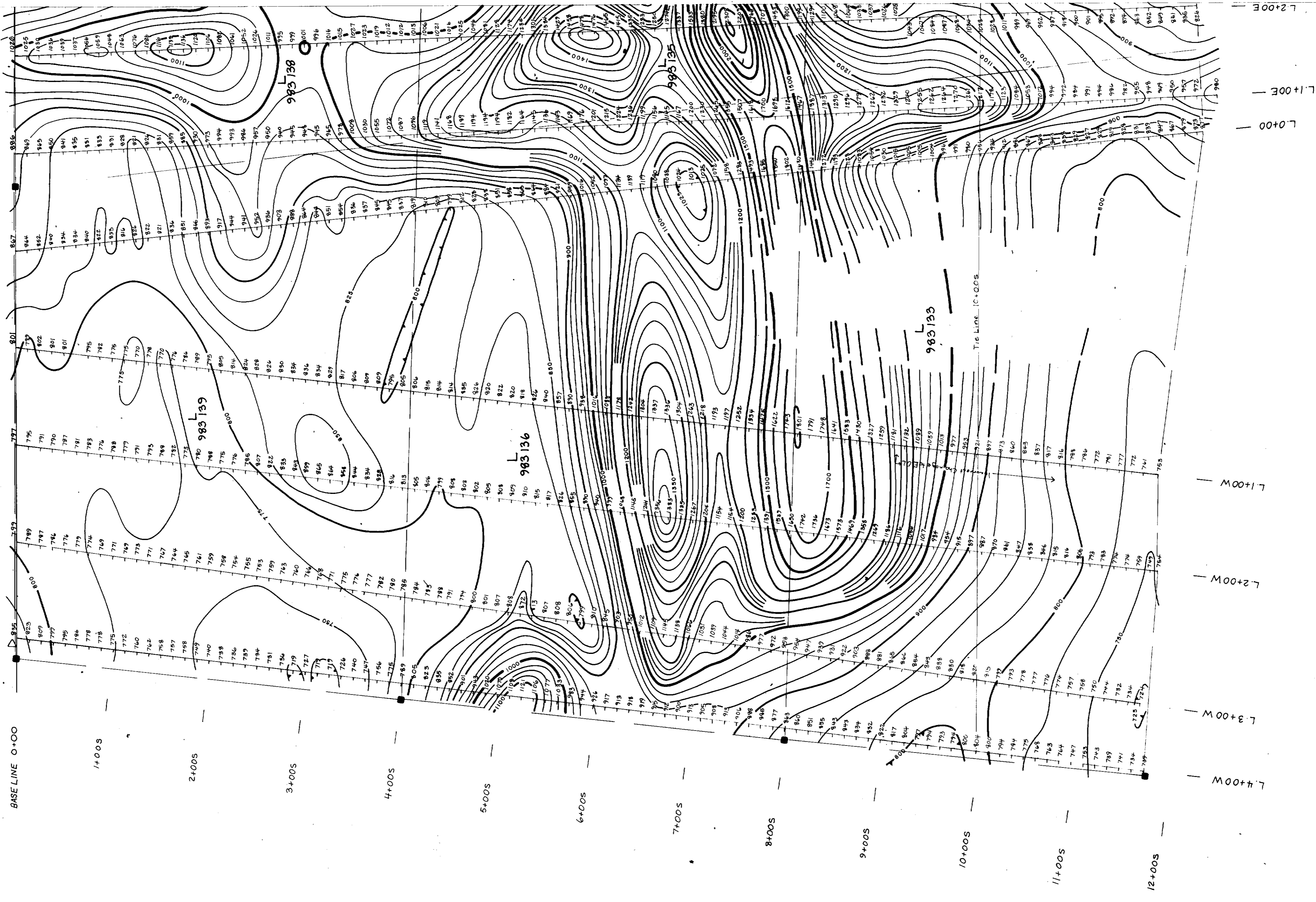


TOTAL FIELD MAGNETIC SURVEY
 BY
 GEOSURCH CONSULTANTS LTD.
 FOR
 PLACER DOME INC.
 PROJECT 344
 PLAYFAIR TWP., ONTARIO
 SCALE 1:2500
 DATE: Feb 1988
 DRAWN: J.A.R.L.A.
 2.11127
 88-41-A

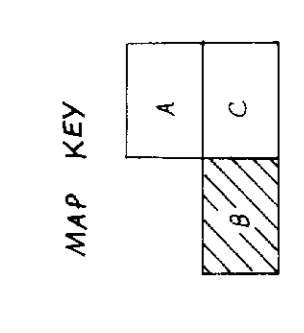


LEGEND
 READINGS IN GAMMAS
 FOR ABSOLUTE VALUES, ADD 58,000 GAMMAS
 TO PLOTTED READINGS

LEGEND
 Contour interval 25 gammas
 25 gamma contour
 100 gamma contour
 500 gamma contour
 2500 gamma contour
 Depression



TOTAL FIELD MAGNETIC SURVEY
 BY
 GEOSURCH CONSULTANTS LTD
 FOR
 PLACER DOME INC
 PROJECT 344
 PLAYFAIR TWP, ONTARIO
 SCALE 1:2500
 DATE: FEB 1988
 DRAWN: JAR, L.R. 2.11188

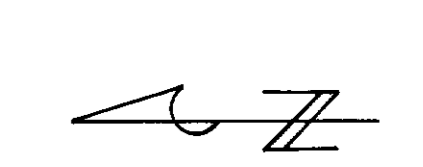


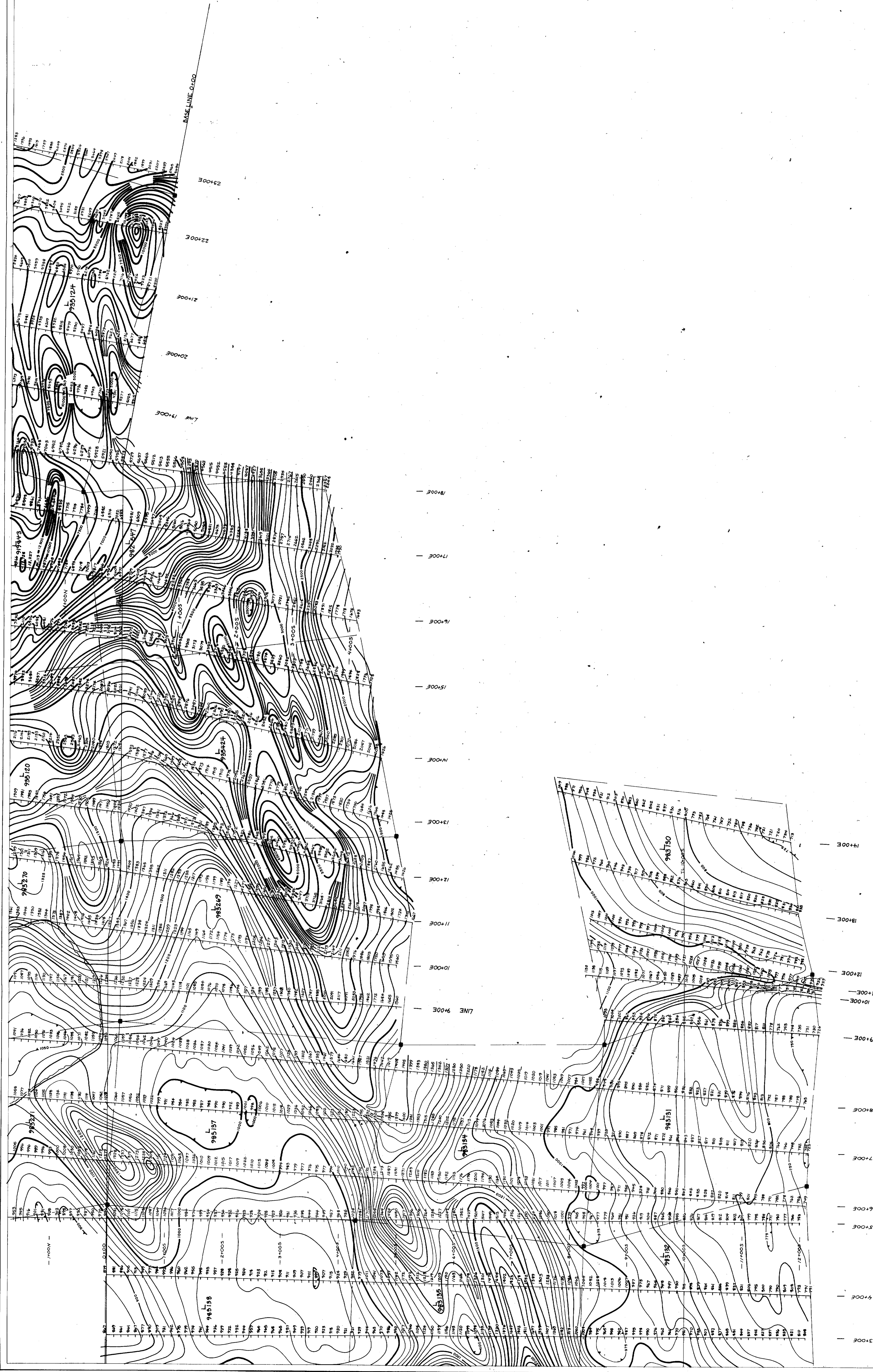
LEGEND

- READINGS IN GAMMAS
- FOR ABSOLUTE VALUES, ADD 56,000 GAMMAS TO PLOTTED READINGS
- ◊ DENOTES BASE STATION, LINE 4+00W, 0+00

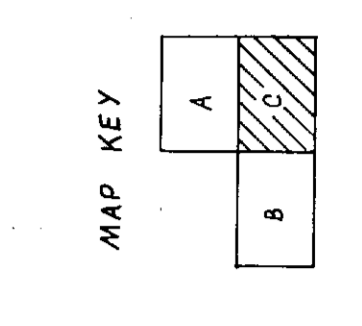
LEGEND

- Contour interval..... 25 gamma
- 25 gamma contour.....
- 100 gamma contour.....
- 500 gamma contour.....
- 2500 gamma contour.....
- Depression.....





TOTAL FIELD MAGNETIC SURVEY
 BY
 GEOSURCH CONSULTANTS LTD.
 FOR
PLACER DOME INC.
PROJECT 344
 PLAINFAIR TWP, ONTARIO
 SCALE 1:1,200
 DATE: FEB 1988
 DRAWN: J.A.R., L.R. **2.111288-41-C**

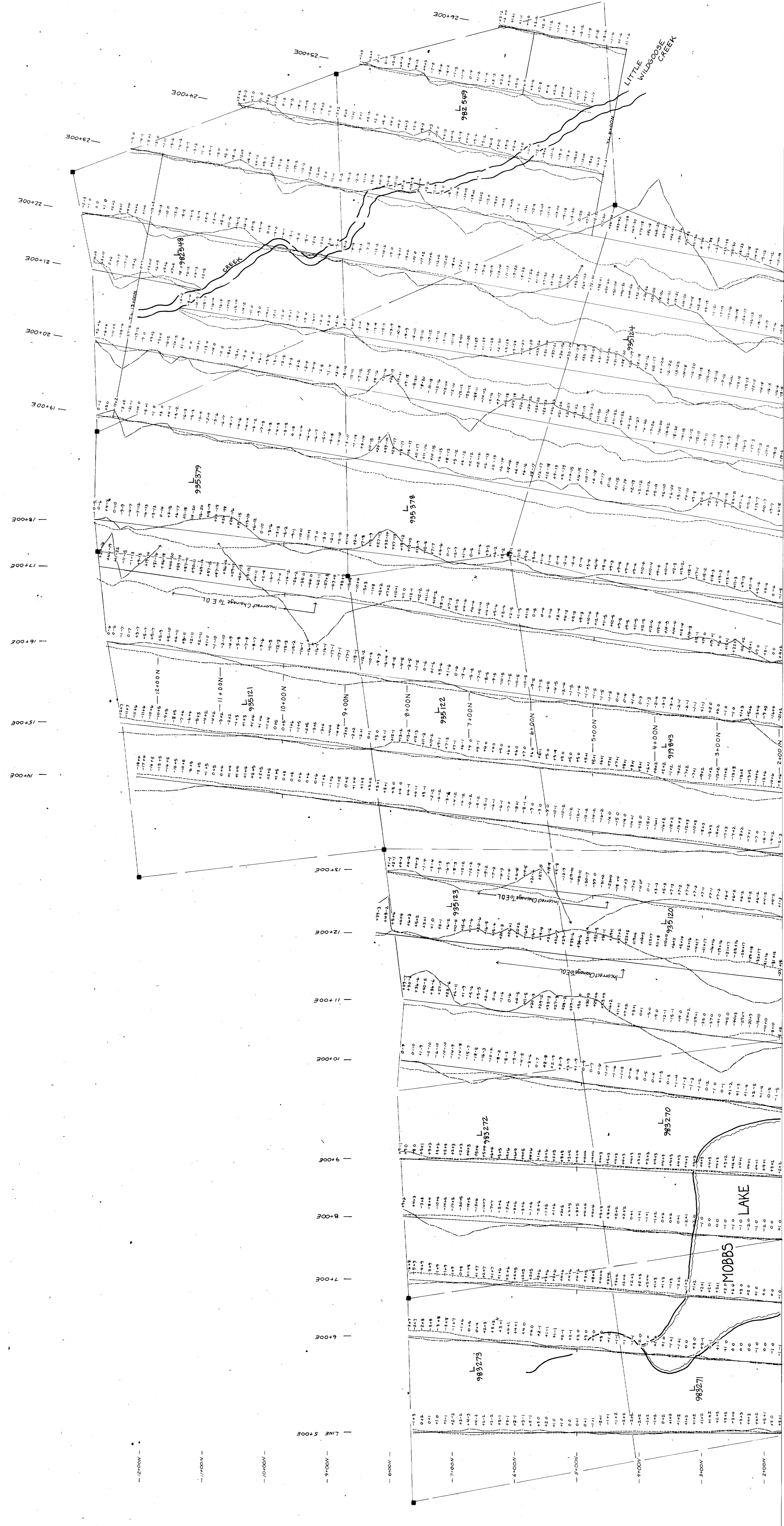


LEGEND
 * READINGS IN GAMMAS
 * FOR ABSOLUTE VALUES, ADD 58,000 GAMMAS
 TO DOTTED READINGS.

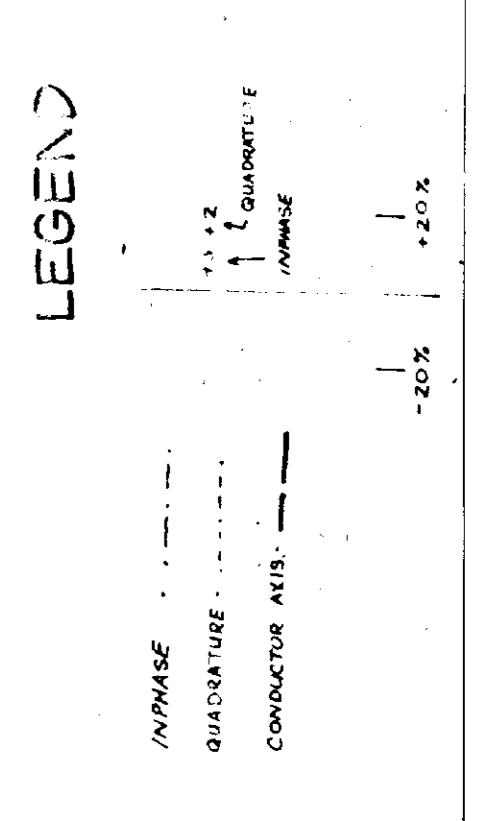
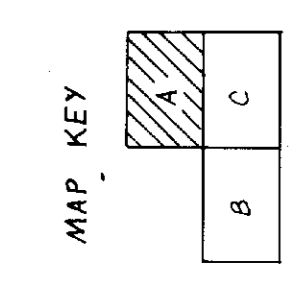
LEGEND
 Contour Interval..... 25 gammas
 25 gamma contour.....
 100 gamma contour.....
 500 gamma contour.....
 2500 gamma contour.....
 Depressions.....

Signature



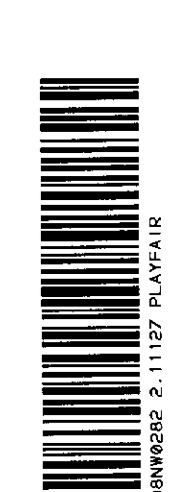


V.L.F. ELECTROMAGNETIC SURVEY
 BY
 GEOSEARCH CONSULTANTS LTD.
 FOR
 PLACER DOME INC.
 PROJECT 344
 PLAYFAIR TWP., ONTARIO
 SCALE 1:2500
 DATE: FEB. 1988
 DRAWN: J.R.R.

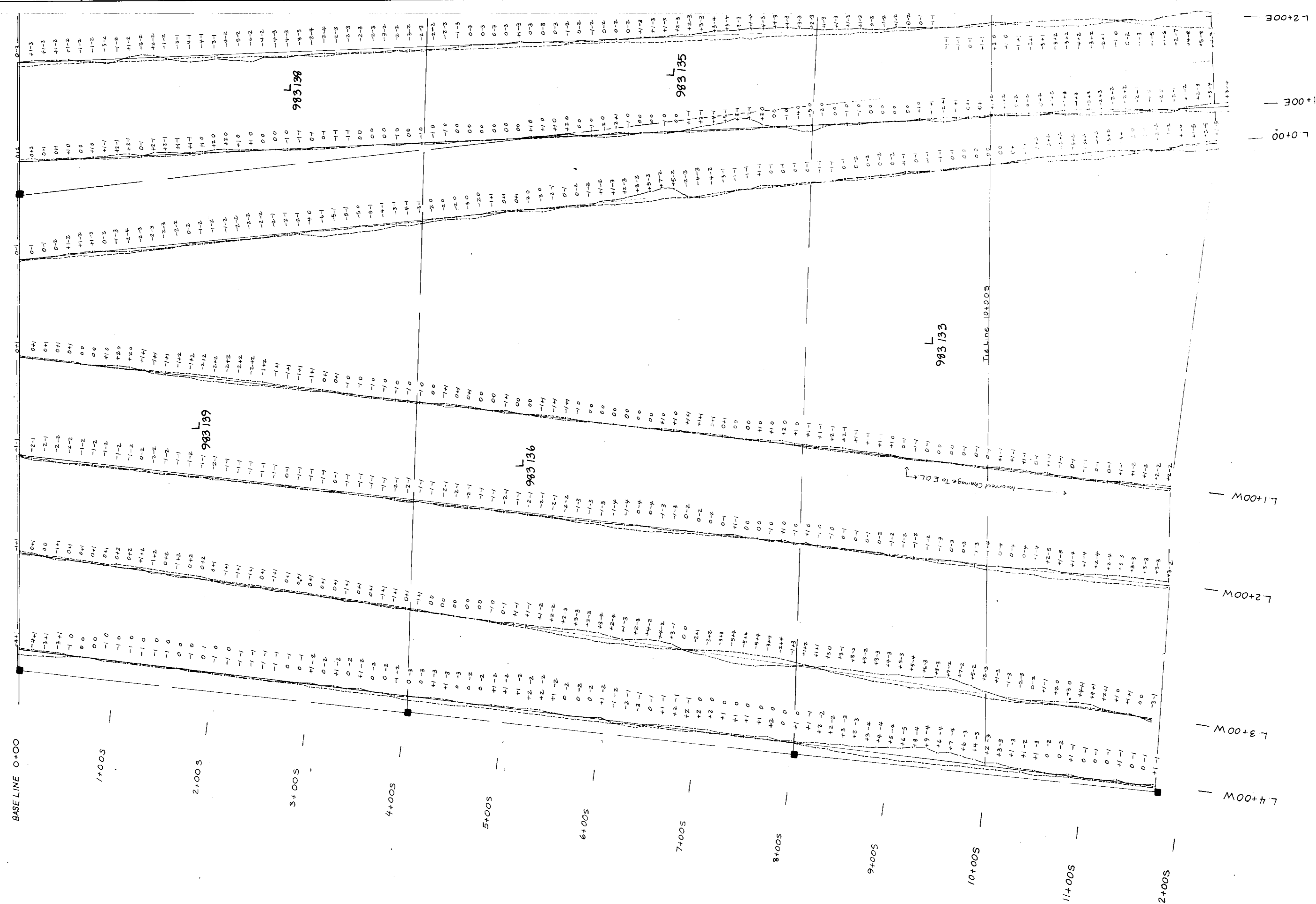


2-11127

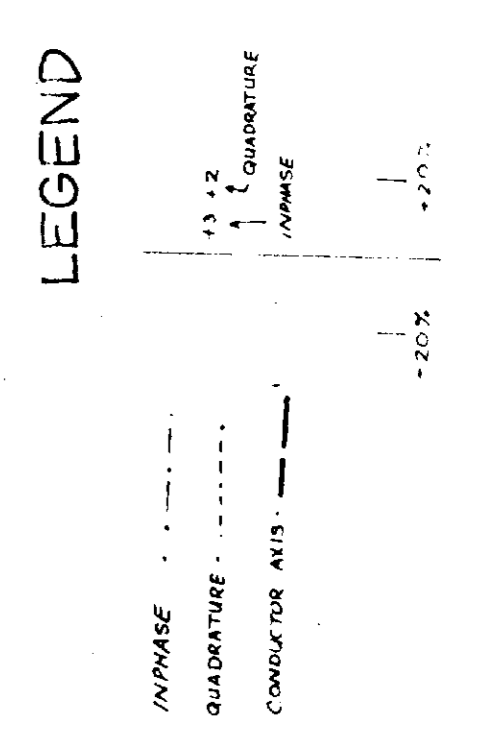
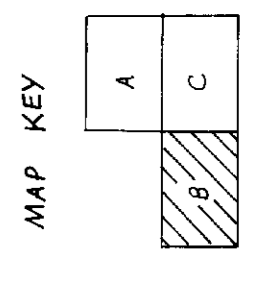
88-42-A



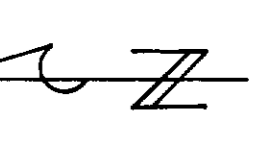
250

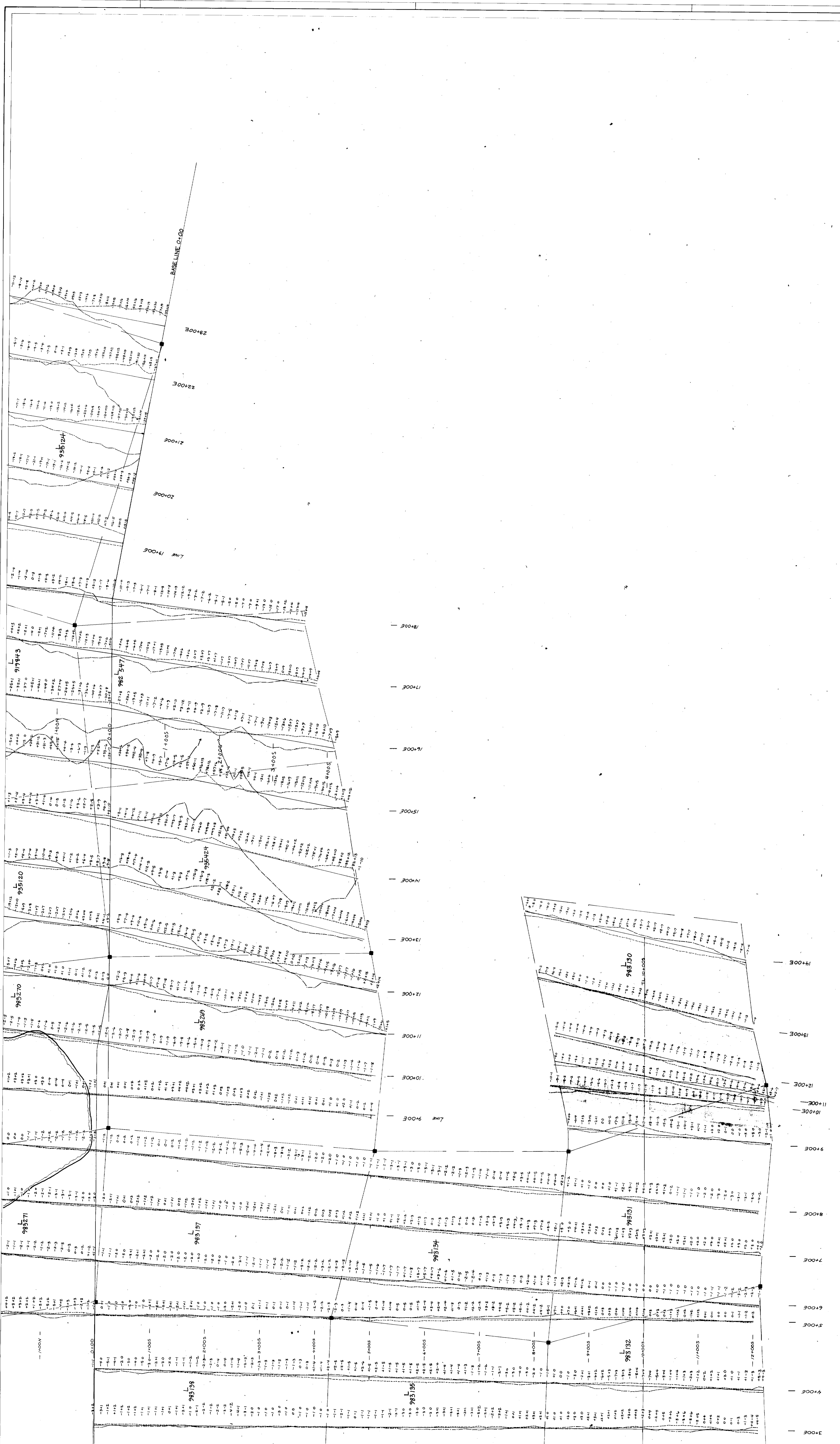


VLF ELECTROMAGNETIC SURVEY
 GEOSURCH CONSULTANTS LTD.
 FOR
PLACER DOME INC
PROJECT 344
 PLAYFAIR TWP, ONTARIO
 SCALE 1:2500
 DATE: FEB. 1988
 DRAWN: JAR.L.R. **2.111** 88-42-B

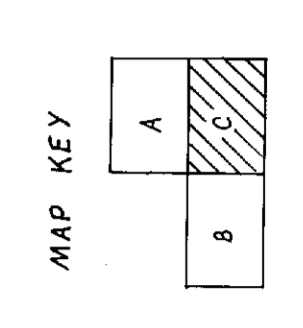
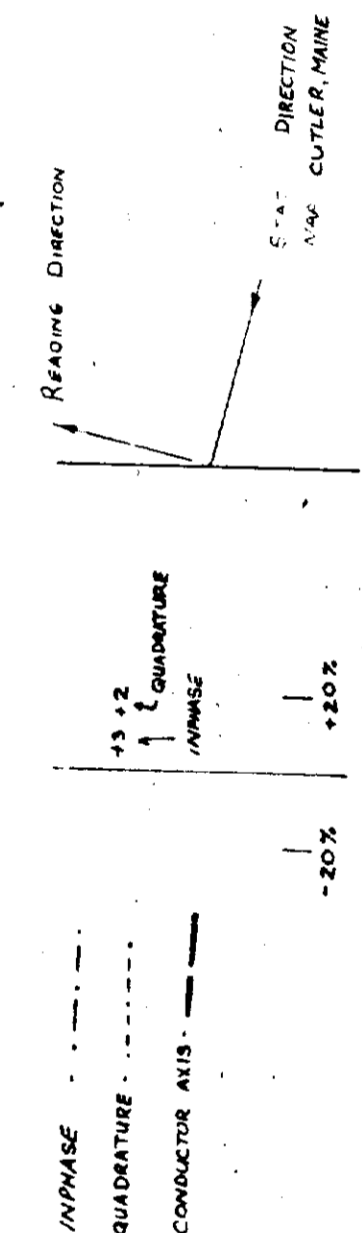


J. L. R.



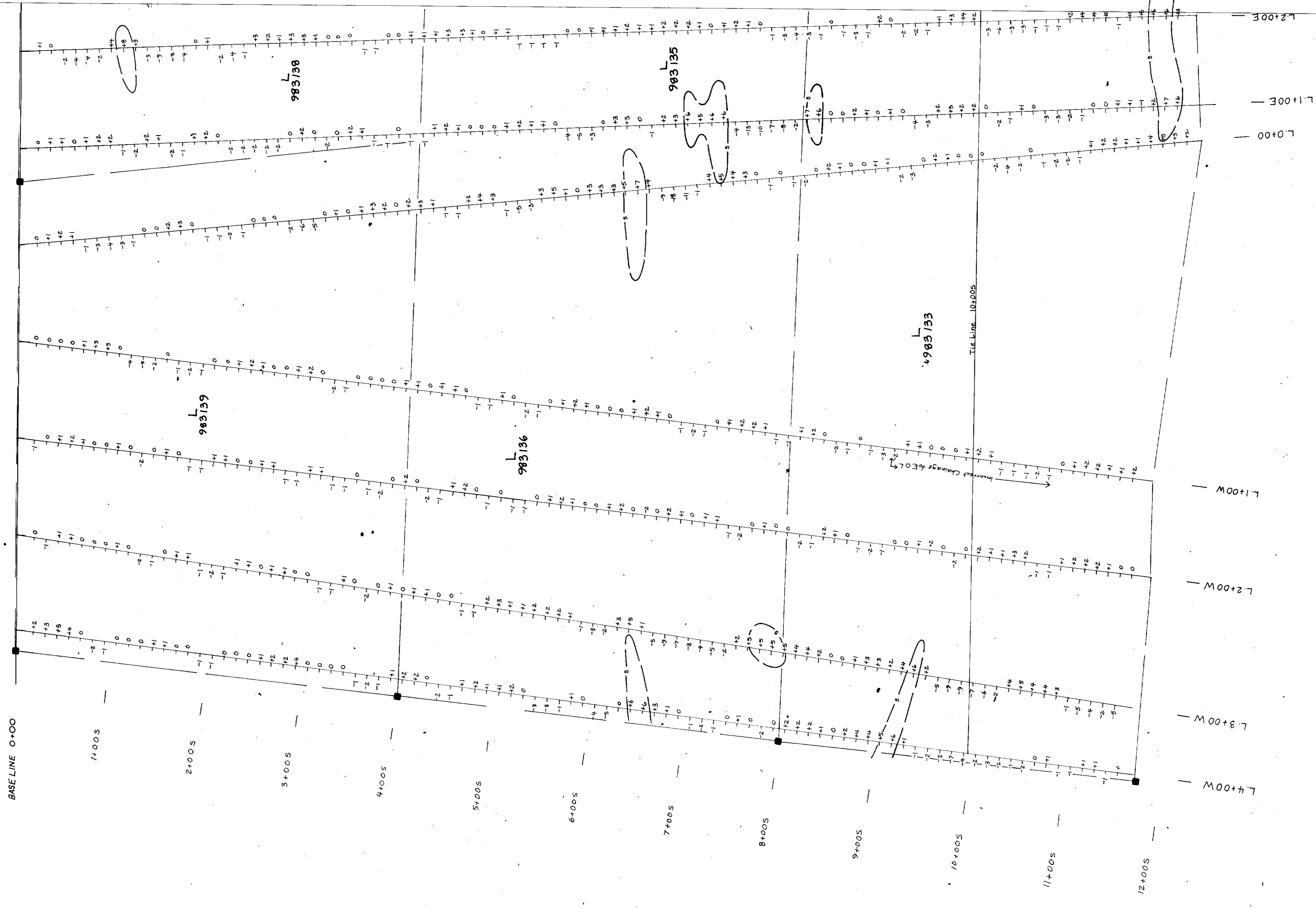


LEGEND

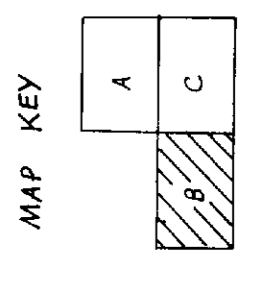


V.L.F. ELECTROMAGNETIC SURVEY
 BY
 GEOSURCH CONSULTANTS LTD.
 FOR
PLACER DOME INC.
PROJECT 344
 PLAYFAIR TWP., ONTARIO
 SCALE 1:1-2500
 DATE: FEB 1988
 DRAWN: JAR

J. J. J.



LEGEND
 Contours of VLF EM Fraser filtered inphase data
 + 5 contour
 + 10 contour
 + 50 contour



PLEASE FILTERED
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 SCALE 1:2500
 DATE: Feb. 1988
 DRAWN: EA

88-43-B
 2.11127

