



REPORT ON THE CONDUCT OF AN AIRBORNE  
GEOPHYSICAL SURVEY IN THE MINING DISTRICT OF COCHRANE

During the period May 4, 6, 7, 8, 1964, Hunting Survey Corporation carried out flying operations on a combined magnetometer and electromagnetometer survey over parts of the townships of Reid, Carnegie, Lowland, McDiarmid, Kidd, Cote, Robb and Jamieson.

The work was carried out under contract to Mespi Lines Limited.

The location of the area surveyed is shown on a map accompanying this report.

Two data men were stationed in Timmins to give preliminary information to the client.

Final plotting and preparation of maps were carried out in Hunting's Toronto office.

FLYING SPECIFICATIONS

Flying was carried out by a Beechcraft 18 with a crew of four, i.e. pilot, instrument operator, electronic technician and aircraft engineer.

The technician and engineer did not accompany the aircraft on all survey flights.

Traverses were flown in a N.E./S.W. direction at an average spacing of 660 feet.

Terrain clearance was maintained between 450 and 500 feet, where safety would permit.

Thirty-nine traverses were flown over the area, for a total of 695.5 linear miles.

INSTRUMENTATION

The following instruments were operated during the survey:

1. Gulf magnetometer.
2. Hunting Survey Corporation - Canadian Applied Research Limited dual frequency electromagnetometer measuring the phase displacement of the resultant field with respect to applied field; for frequencies of 400 and 2,300 cycles per second.
3. Modified APN-1 radio altimeter.
4. C.A.R.L.-H.S.C. 35mm discrete frame positioning camera.
5. A four channel curvilinear recorder, showing from top to bottom:
  - (1) Altimeter record and camera fiducial pulses.
  - (2) Magnetometer profile showing variations in the strength of the earth's magnetic field, sensitivity 100 gammas per centimeter across a four centimeter channel.
  - (3) Phase angle of the resultant field with respect to a 2,300 cycle applied field, sensitivity 2° per centimeter across a four centimeter channel.
  - (4) Phase angle of the resultant field with respect to a 400 cycle applied field, sensitivity 1° per centimeter across a four centimeter channel.

6. A two pen rectilinear recorder with a five inch recording width, showing:

- (1) In red ink the terrain clearance record and camera fiducial pulses.
- (2) In black ink the variations in strength of the earth's magnetic field, sensitivity 100 gammas per inch.

NOTE: A pulse was shown on the altimeter record, co-incident with every tenth exposure of the 35mm camera.

This served to relate the records to the terrain over which they were made.

The magnetometer and E.M. detectors were located in separate "birds" towed behind and below the aircraft.

#### MAPS AND DATA COMPILATION

Navigation mosaics were prepared on a scale of 1 inch to 2,640 feet utilizing "Overthrust" mosaics available to the contractor.

For preparation of base maps, uncontrolled mosaics were made on a scale of 1 inch to 1,320 feet, utilizing photographs obtained from the Department of Lands and Forests (Year 1961 photography).

Flight path was established by visual comparison of the 35mm film with the above mentioned mosaics.

Base maps were traced from these mosaics also, showing recognizable planimetric features.

Township boundaries shown on the base maps were positioned by reference to Ontario Department of Mines claim maps.

A map was compiled showing:

- (a) flight traverses and
- (b) magnetic contours referred to an arbitrary datum.

Contour interval was 20 gammas.

A second map was prepared showing:

- (a) flight traverses.
- (b) extent and location of the peak of the observed low frequency anomalies.
- (c) extent of residual low frequency anomalies.
- (d) the phase angle of observed high and low frequency anomalies read at peak values.
- (e) the phase angle of residual high and low frequency anomalies read at peak values.
- (f) value and location of magnetic peaks and lows, referred to on arbitrary datum.

  
R. N. Parkinson P. Eng.

HUNTING SURVEY CORPORATION LIMITED

ADDENDUM

List of Claims located in Loveland, Macdiarmid, Reid and Robb Townships, on which airborne electromagnetic and magnetic surveys are to apply as 40 days assessment credit on each claim.

LOVELAND

Claim Nos.

P-54072 to 54077 inc.  
P-54054 to 54062 inc.  
P-53984 to 53990 inc.  
P-54083 to 54090 inc.  
P-55148 & 55149  
P-55534 to 55536 inc.  
P-55692 to 55705 inc.  
P-55166 to 55169 inc.  
P-53690 & 53691  
P-53696 & 53697  
P-53717 to 53722 inc.  
P-54191 to 54199 inc.  
P-54567  
P-54588 to 54593 inc.  
P-54624 to 54627 inc.  
P-54657 & 54658  
P-55519 to 55527 inc.

Claim Nos.

P-54080 to 54082 inc.  
P-53774  
P-54066 to 54071 inc.  
P-55909 to 55916 inc.  
P-55491  
P-55582 to 55590 inc.  
P-55510 to 55518 inc.  
P-55462 to 55470 inc.  
P-53693 & 53694  
P-53699 & 53700  
P-53928 to 53933 inc.  
P-57787 to 57800 inc.  
P-54571 to 54578 inc.  
P-54603 & 54604  
P-54642 to 54651 inc.  
P-55459 to 55461 inc.  
P-55609 to 55613 inc.

MACDIARMID

P-55769  
P-53973 to 53983 inc.  
P-54628  
P-55471 & 55472  
P-57659 to 57676 inc.

P-55917 to 55953 inc.  
P-54063 to 54065 inc.  
P-55150 to 55151 inc.  
P-55473  
P-57747 to 57755 inc.

REID

P-54629

ROBB

P-53692  
P-53698  
P-54525 to 54527 inc.  
P-54480 & 54481  
P-54494 to 54497 inc.  
P-54528 to 54533 inc.  
P-54548 to 54550 inc.  
P-54771 & 54772  
P-55228 to 55236 inc.  
P-57783 to 57786 inc.

P-53695  
P-53701  
P-54535 & 54536  
P-54484 to 54491 inc.  
P-54516 to 54524 inc.  
P-54537 to 54545 inc.  
P-54763 to 54766 inc.  
P-55200 to 55204 inc.  
P-55242 to 55247 inc.  
P-55545 to 55552 inc.

ADDENDUM

and Cote Township,  
List of Claims located in Robb Township on which airborne electromagnetic  
and magnetic surveys are to apply as 40 days assessment credit on each claim.

ROBB

Claim Nos.

P-52092 to 52104 inc.  
P-50526 to 50529 inc.  
P-50545  
P-50558 & 50559  
P-54271 to 54285 inc.  
P-50683 & 50684  
P-54714 to 54716 inc.  
P-54405 to 54409 inc.  
P-54717 to 54721 inc.  
P-55474 to 55490 inc.  
P-55537 to 55544 inc.  
P-54078 & 54079  
P-50682

Claim Nos.

P-52106 to 52109 inc.  
P-50540 to 50542 inc.  
P-50552  
P-54256 to 54268 inc.  
P-54287 & 54288  
P-54402 to 54404 inc.  
P-51121 & 51122  
P-54424 to 54428 inc.  
P-55453 to 55458 inc.  
P-55528 to 55531 inc.  
P-55555 to 55563 inc.  
P-50546 to 50549 inc.  
P-51120

COTE

P-53703 to 53708 inc.  
~~P-53711 to 53716 inc.~~  
P-54534  
~~P-54462 to 54479 inc.~~  
P-54482 & 54483

P-54492 & 54493  
P-54498 to 54515 inc.  
P-54755 to 54762 inc.  
P-54767 to 54770 inc.

ADDENDUM NO. 2

List of Claims located in Loveland, Macdiarmid, Robb and Cote Townships,  
on which airborne electromagnetic and magnetic surveys are to apply as  
40 days assessment credit on each claim.

LOVELAND

Claim Nos.

P-55797 to 55804 inc. ✓  
P-54827 ✓

Claim Nos.

✓ P-53934  
✓ P-54829 to 54832 inc.

ROBB

P-54778 to 54882 inc. ✓

TO BE DELETED FROM ADDENDUM NO. 1

*Previous amended Feb.*

COTE

P-53711 to 53716 inc.

P-54477 & 54478

LOVELAND

P-53699

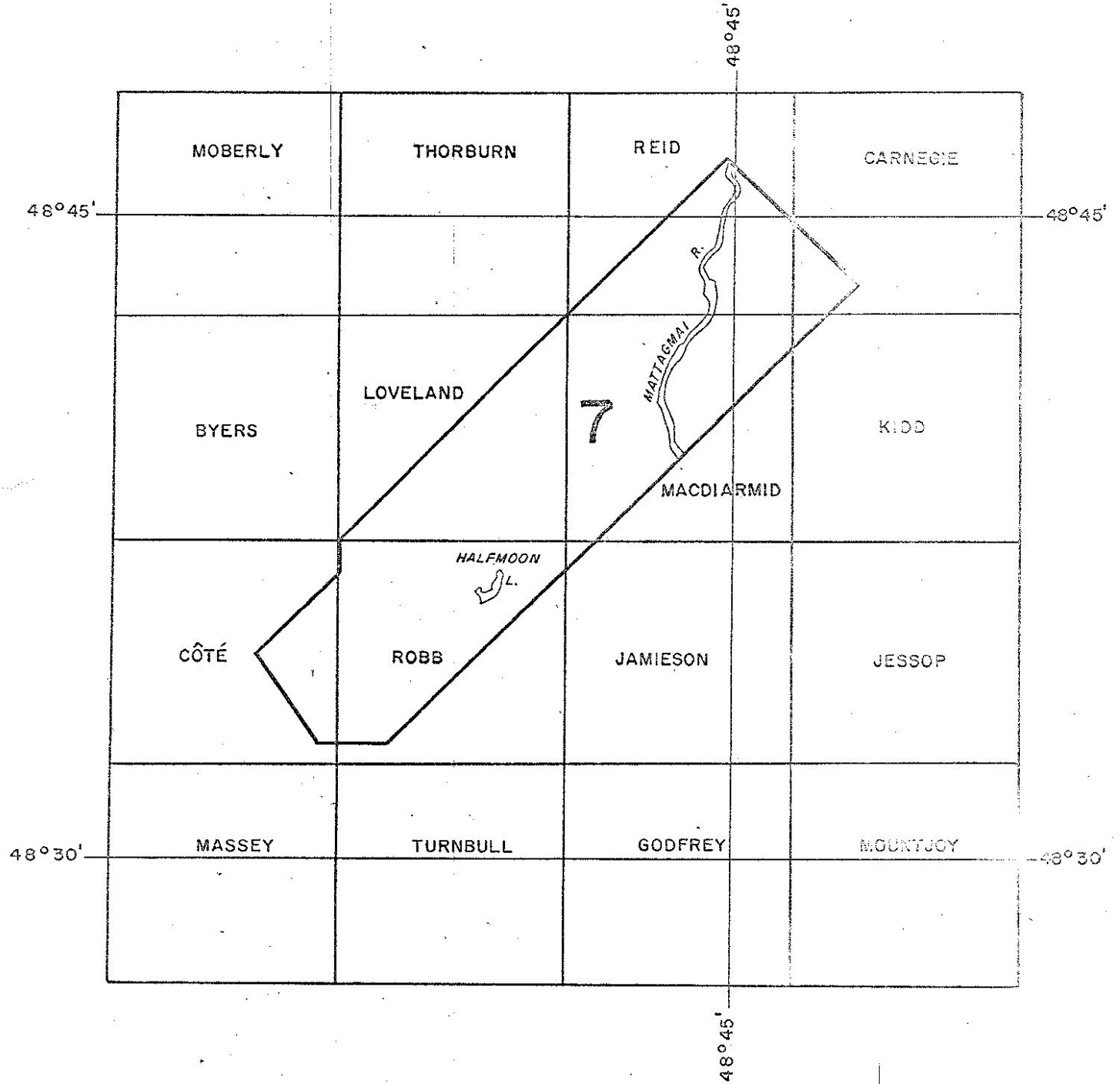
P-53718 to 53722 inc.

MACDIARMID

P-57664 to 57666 inc.  
P-57676

P-57659 to 57662 inc.  
P-57670 & 57671

MESPI MINES LTD.



SCALE: 1 Inch to 4 Miles

63.1294



63.1294



ONTARIO  
DEPARTMENT OF MINES

155 Pine Street South,  
Timmins, Ontario.

RESIDENT GEOLOGIST

December 7th, 1964.

Mr. R. V. Scott,  
Chief, Mining Lands Branch,  
Department of Mines,  
Parliament Buildings,  
Toronto 2, Ontario.

Dear Sir:

Geophysical and Geological Surveys

We wish to acknowledge receipt of the following assessment work received the past two months:

Mespi Mines Ltd.	Your file	63.1294 ✓
Mespi Mines Ltd.	" "	63.1308
Mespi Mines Ltd.	" "	63.1289
Glen L. Silver Mines	" "	63.1256
Atlin Ruffner Mines	" "	63.1323
H. Shlesinger (Rexton Mines)	" "	63.1321
Sheridan Geophysics Ltd. (St. Lucie Expln. Ltd.)	" "	63.1312
S.S. Szetu (Copper Reef Mines)	" "	63.1325
Sulmac Expln. Services (March Minerals)	" "	63.1317
Can. Johns-Manville	" "	63.1320
Patino Mining Corporation	" "	63.1314
Alexo Extension Mines	" "	63.1328
Aldage Mines Ltd.	" "	63.1316
Sulmac Expln. Services	" "	63.1315
O'Leary Malartic Mines	" "	63.1301
PCE Explorations	" "	63.1338
Windfall Oils & Mines	" "	63.1339
Glenn Explorations	" "	63.1335
Mespi Mines Ltd.	" "	63.1327
Hollinger Consolidated	" "	63.1313

Yours very truly,

*H. D. Carlson*

H. D. Carlson,  
Resident Geologist.

/KB

Thorburn Twp. (M.60I)

THE TOWNSHIP OF  
OF  
**LOVELAND**

DISTRICT OF  
COCHRANE

PORCUPINE  
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	— — — — —

NOTES

400' Surface Rights Reservation around  
all lakes and rivers.

DATE OF ISSUE  
JUN 18 1965  
ONTARIO DEPT. OF MINES

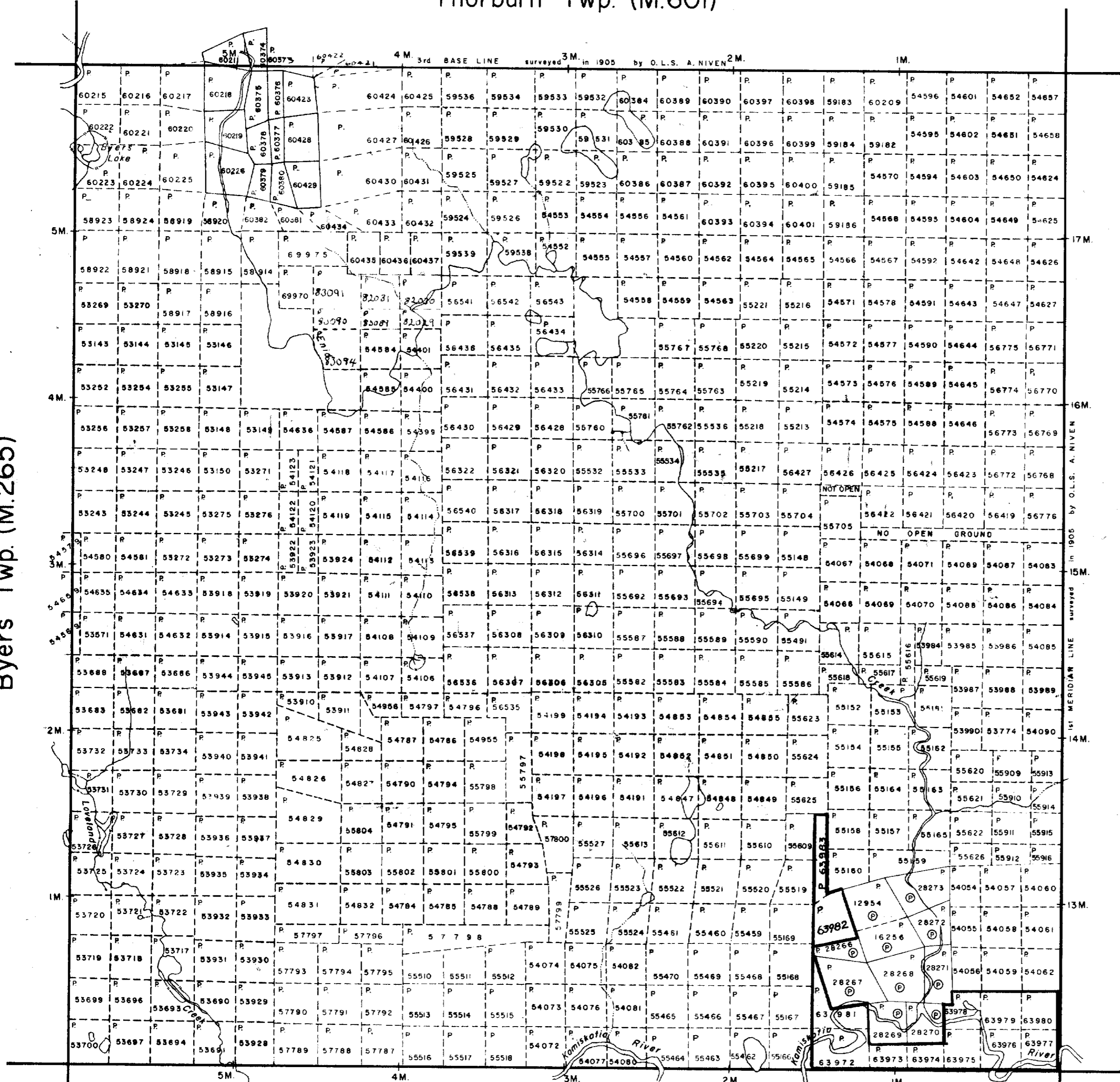
PLAN NO. **M-293**

DEPARTMENT OF MINES

— ONTARIO —

Byers Twp. (M.265)

Macdiarmid Twp. (M.294)



THE  
TOWNSHIP  
OF  
**MACDIARMID**

DISTRICT OF COCHRANE  
PORCUPINE MINING  
DIVISION

SCALE 1 INCH TO 40 CHAINS

**LEGEND**

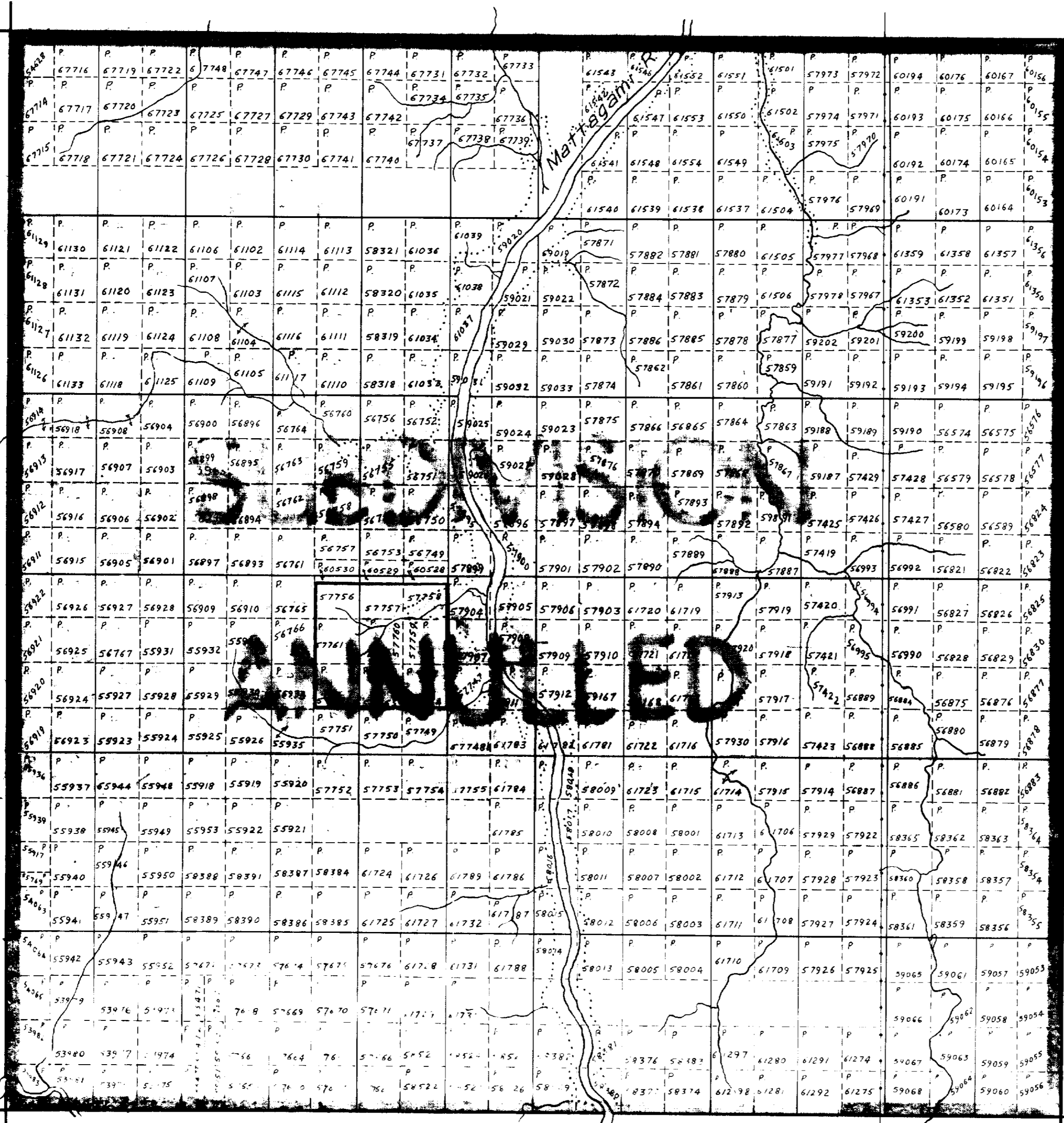
- PATENTED LAND Ⓟ
- CROWN SALE CS or Ⓢ
- LOCATED LAND Loc.
- HYDRO ELECTRIC POWER TRANSMISSION LINE —
- LICENSE OF OCCUPATION L.O.
- LEASES Ⓛ
- MINING RIGHTS ONLY M.R.O.
- SURFACE RIGHTS ONLY S.R.O.
- CANCELLED C.

**NOTES**

FLOODING RIGHTS TO AREAS ON EITHER SIDE OF THE MATTAGAMI R. INDICATED THUS RESERVED TO HEPC OF ONTARIO.

400' Surface rights reservation around all lakes and rivers.

REID TWP.

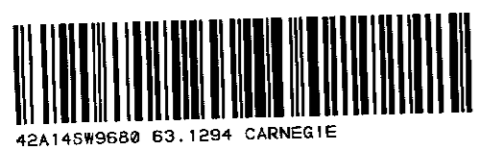


12 11 10 9 8 7 6 5 4 3 2 1

JAMIESON TWP.

M-294

DEPARTMENT OF MINES  
ONTARIO



681277

5M

4M

3M

2M

1M

# COTE

5M

5M

4M

4M

3M

3M

2M

2M

1M

1M

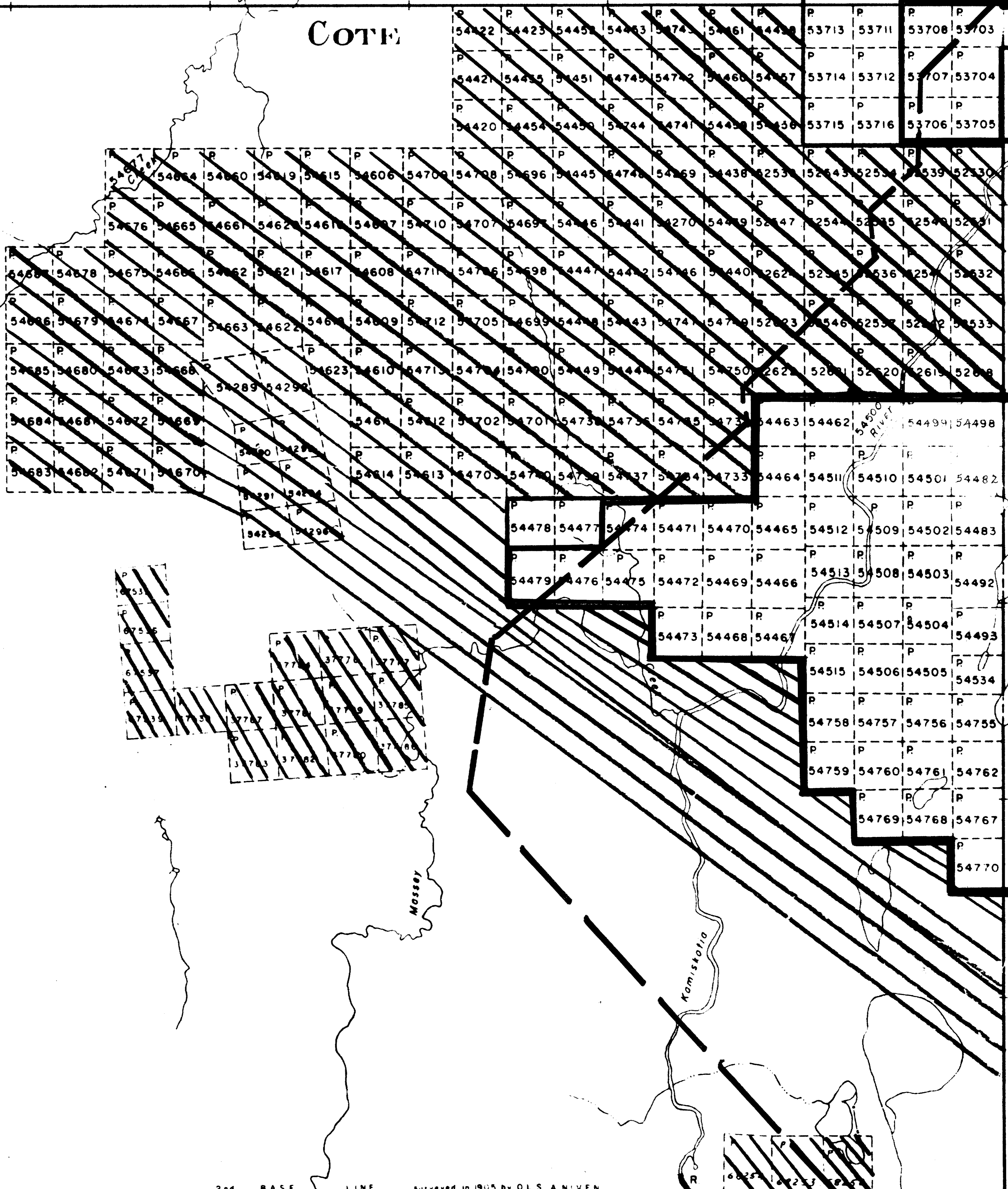
Enid

Mossey

Kamiskafia

Winter Lake

We Comi Lake



220 23M 22M 21M 20M 19M

2nd BASE LINE surveyed in 1905 by OLS AND NIVEN



# LOVELAND

5M

4 M. BASE LINE surveyed in 1905 by O. L. S. A. NIVEN 2M.

1M.

Byers Lake

5M

4M

3M

2M

1M

17M

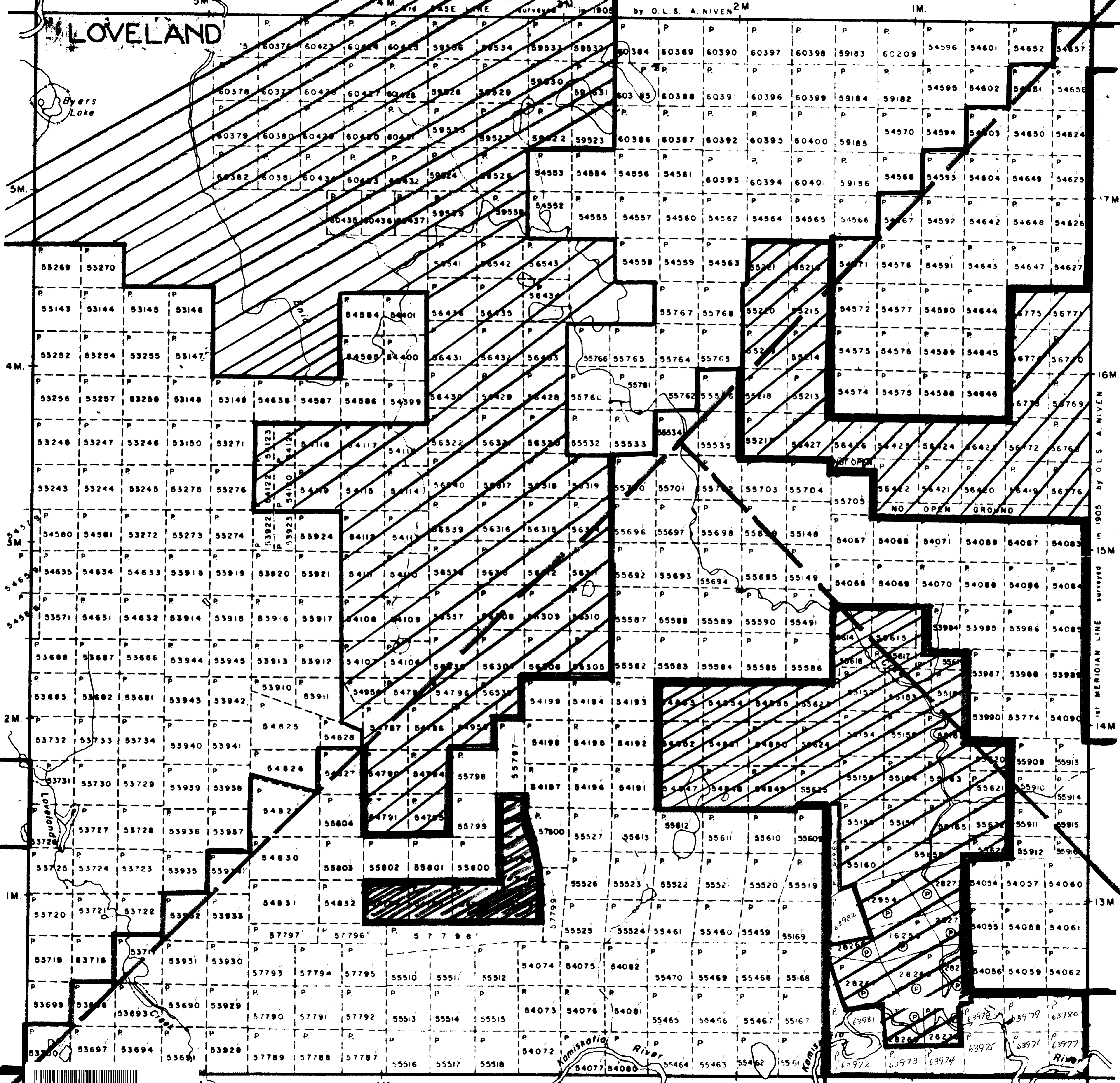
16M

15M

14M

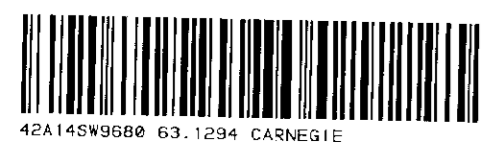
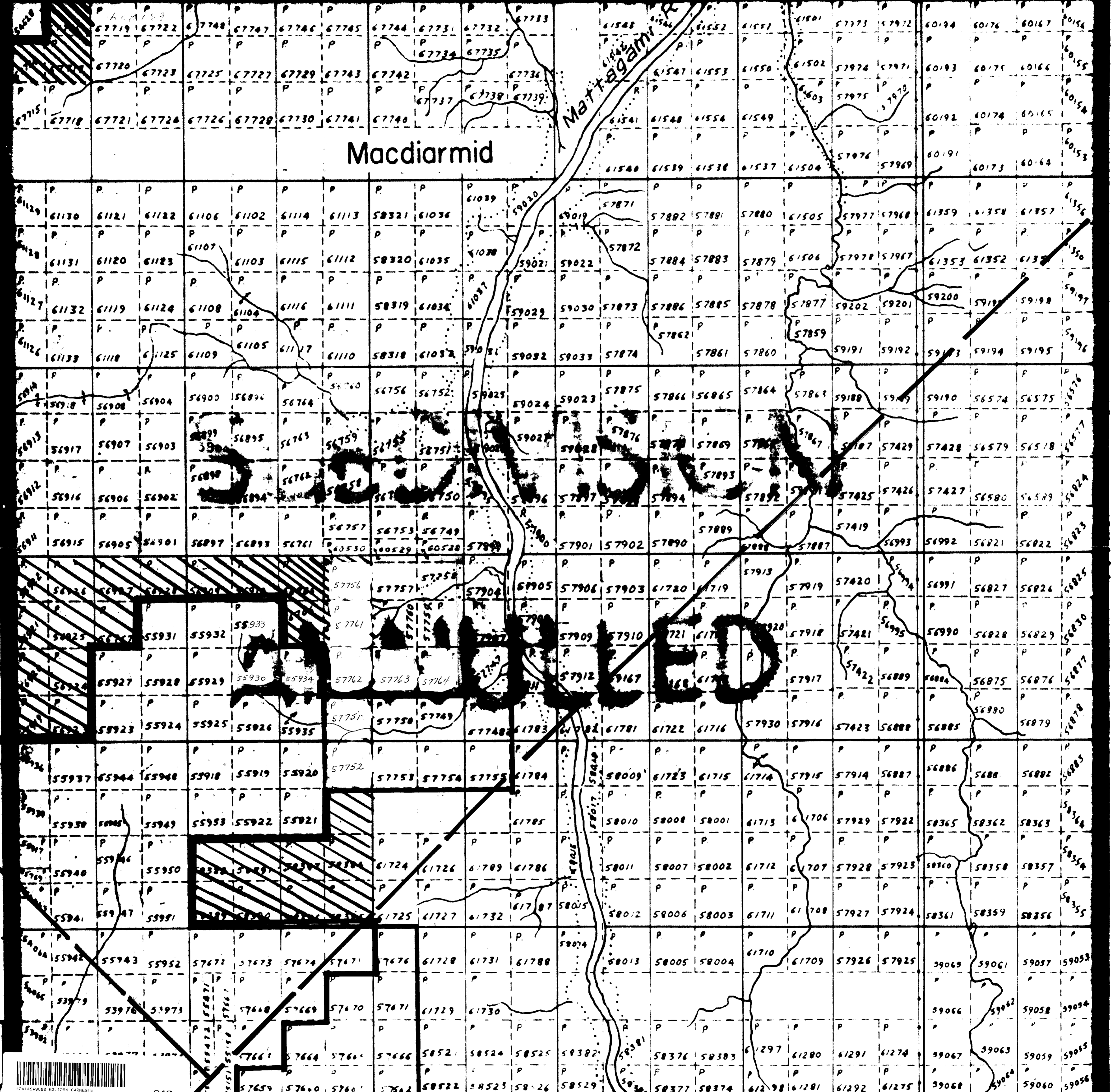
13M

1st MERIDIAN LINE surveyed in 1905 by O. L. S. A. NIVEN

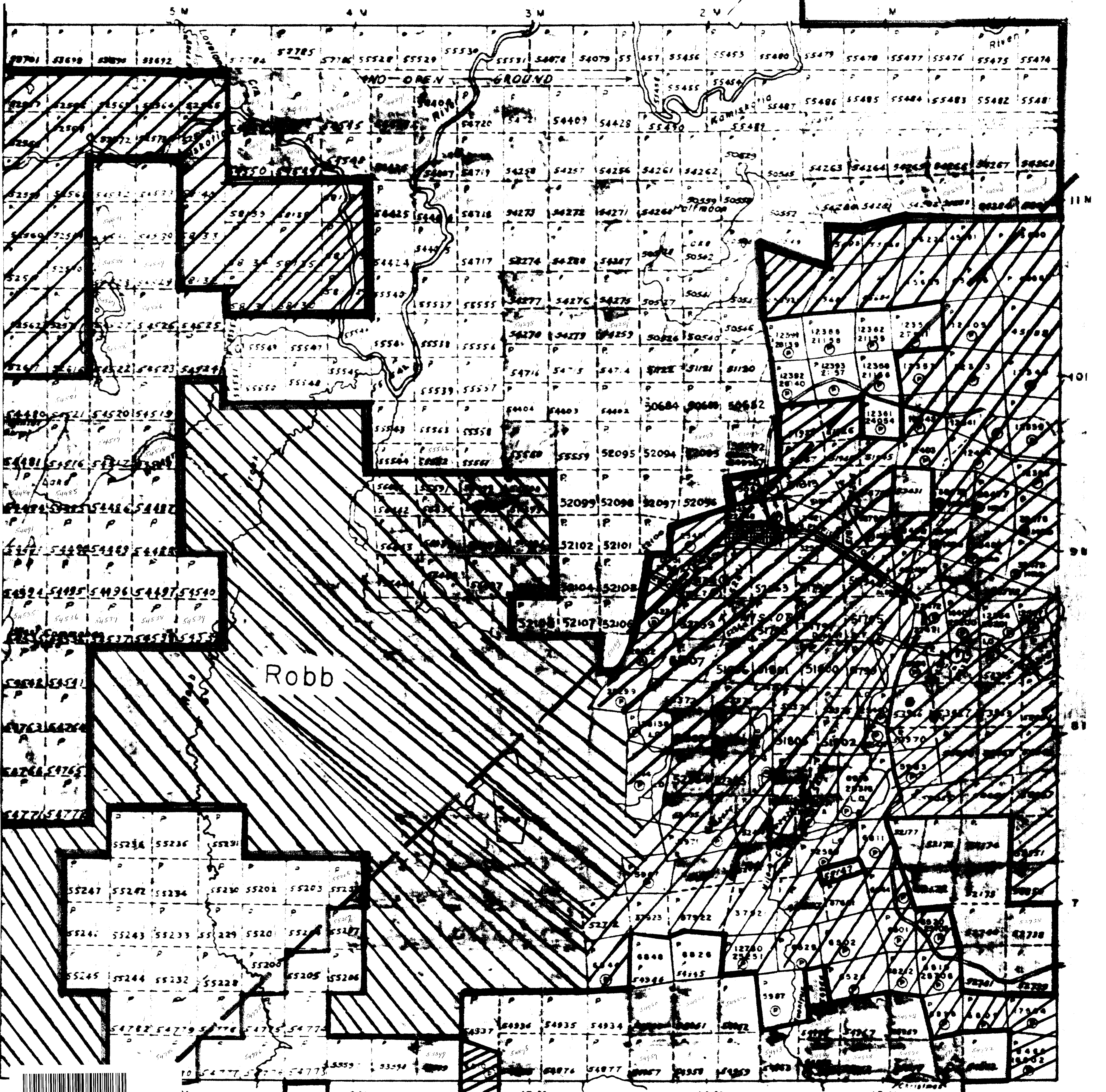


Macdiarmid

Mattegalm







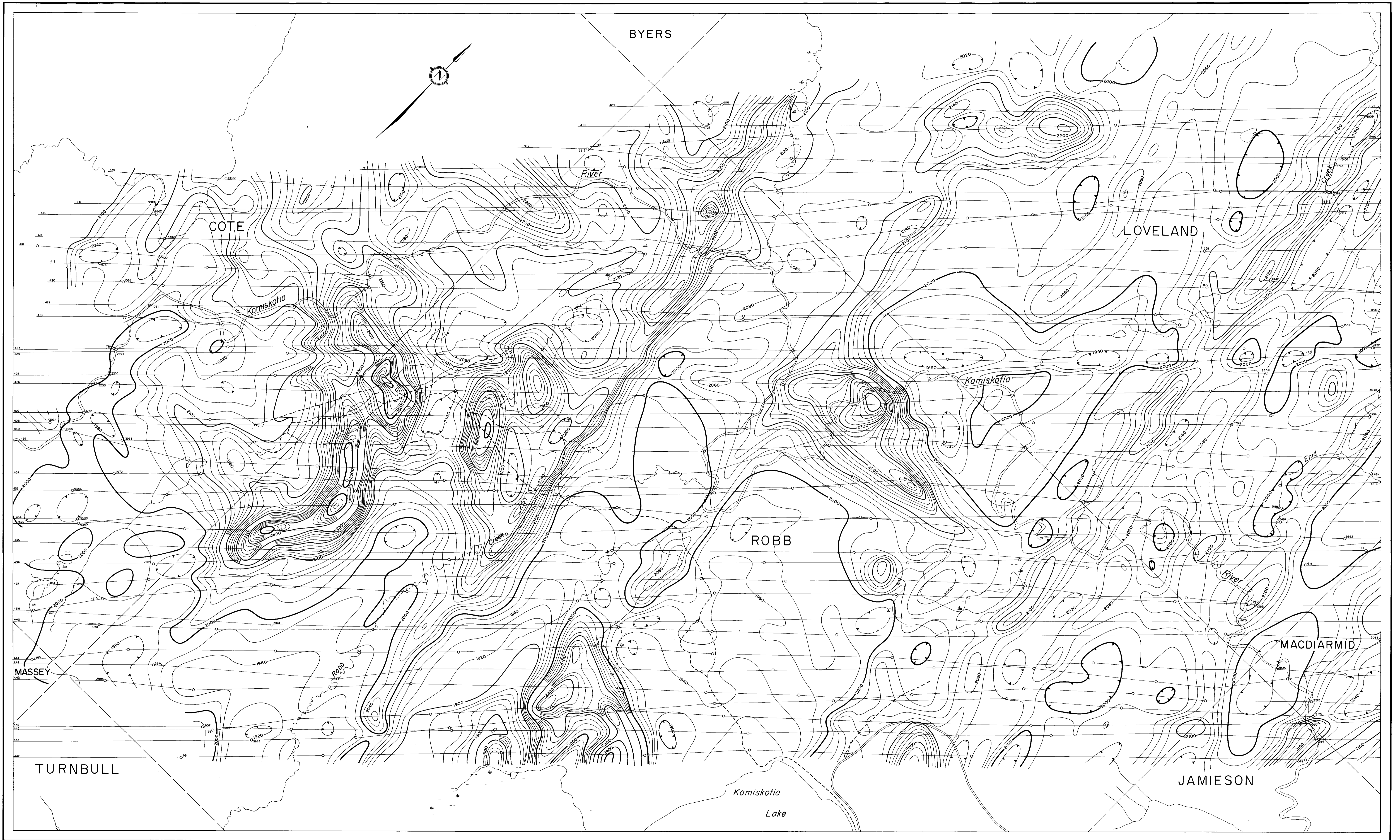
Robb

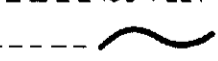

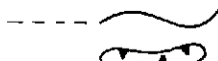

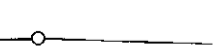



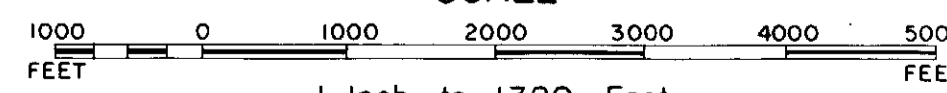


MESPI MINES LIMITED  
AIRBORNE GEOPHYSICAL SURVEY

AREA NO 7

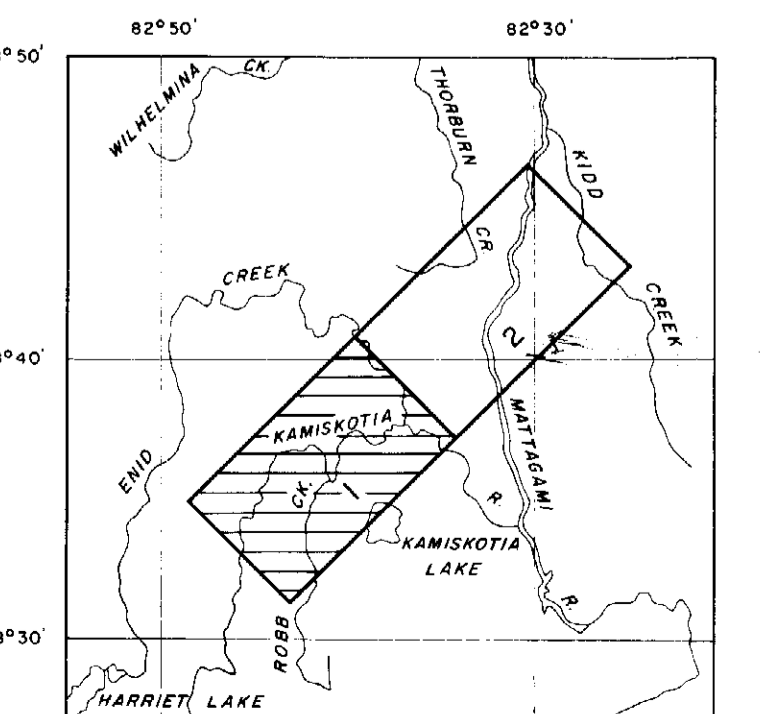


CONTOUR INTERVAL ..... 20 GAMMA  
 MEAN FLIGHT LINE SPACING ..... 660 FEET  
 MEAN TERRAIN CLEARANCE ..... 450 FEET  
 500 GAMMA CONTOUR .....   
 100 GAMMA CONTOUR .....   
 20 GAMMA CONTOUR .....   
 MAGNETIC LOW .....   
 FIDUCIAL POINTS .....   
 FLIGHT LINES ..... 

TIMMINS AREA, ONTARIO  
 MAGNETOMETRIC MAP  
 SCALE  
  
 1 Inch to 1320 Feet

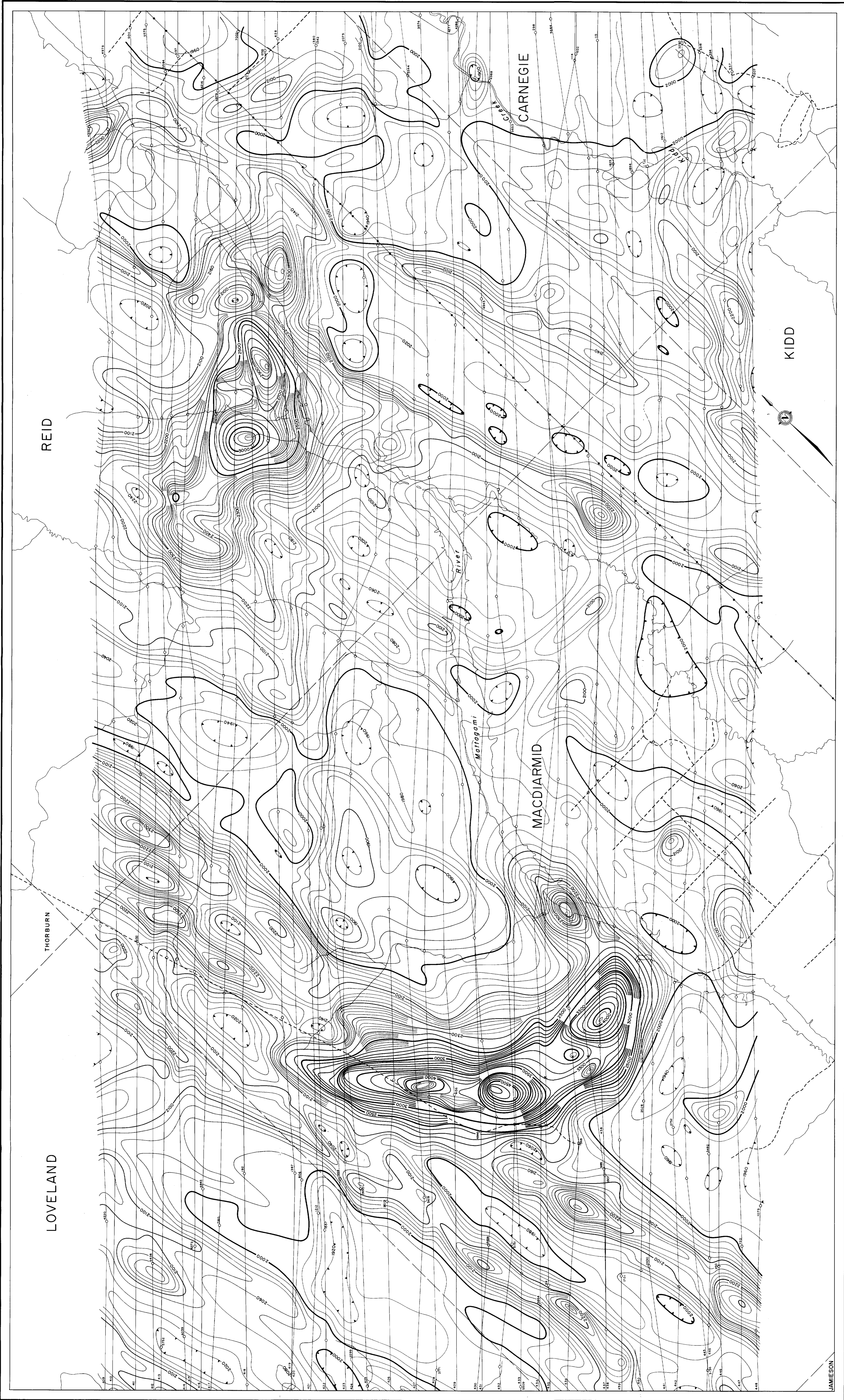
Flown and Compiled by  
 HUNTING SURVEY CORPORATION LIMITED  
 TORONTO, CANADA  
 1964

65-1294  
 Aug  
 (37x2) 9



MESPI MINES LIMITED  
AIRBORNE GEOPHYSICAL SURVEY

AREA No 7



JAMESON

CONTOUR INTERVAL ..... 20 GAMMA  
MEAN FLIGHT LINE SPACING ..... 600 FEET  
MEAN TERRAIN CLEARANCE ..... 450 FEET  
500 GAMMA CONTOUR .....  
100 GAMMA CONTOUR .....  
25 GAMMA CONTOUR .....  
MAGNETIC LOW .....  
FLIGHT POINTS .....  
FLIGHT LINES .....

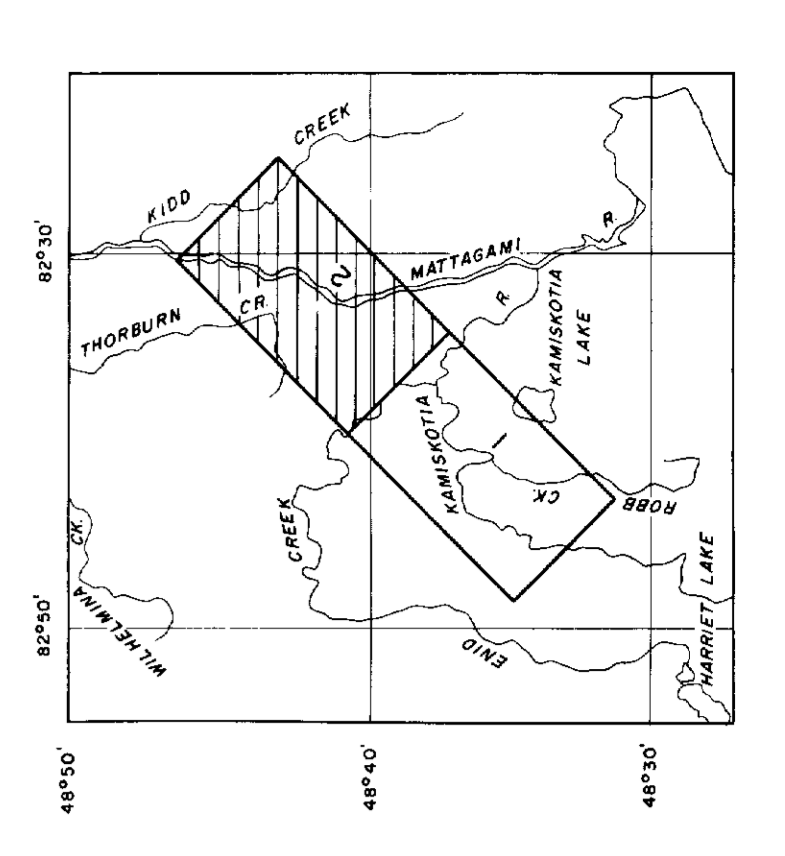
TIMMINS AREA, ONTARIO  
MAGNETOMETRIC MAP

SCALE  
1 inch to 1320 Feet

1000 0 1000 2000 3000 4000 5000  
FEET FEET FEET FEET FEET

Drawn and Compiled by  
HUNTING SURVEY CORPORATION LIMITED  
TORONTO, CANADA  
1964

651294  
651294  
651294

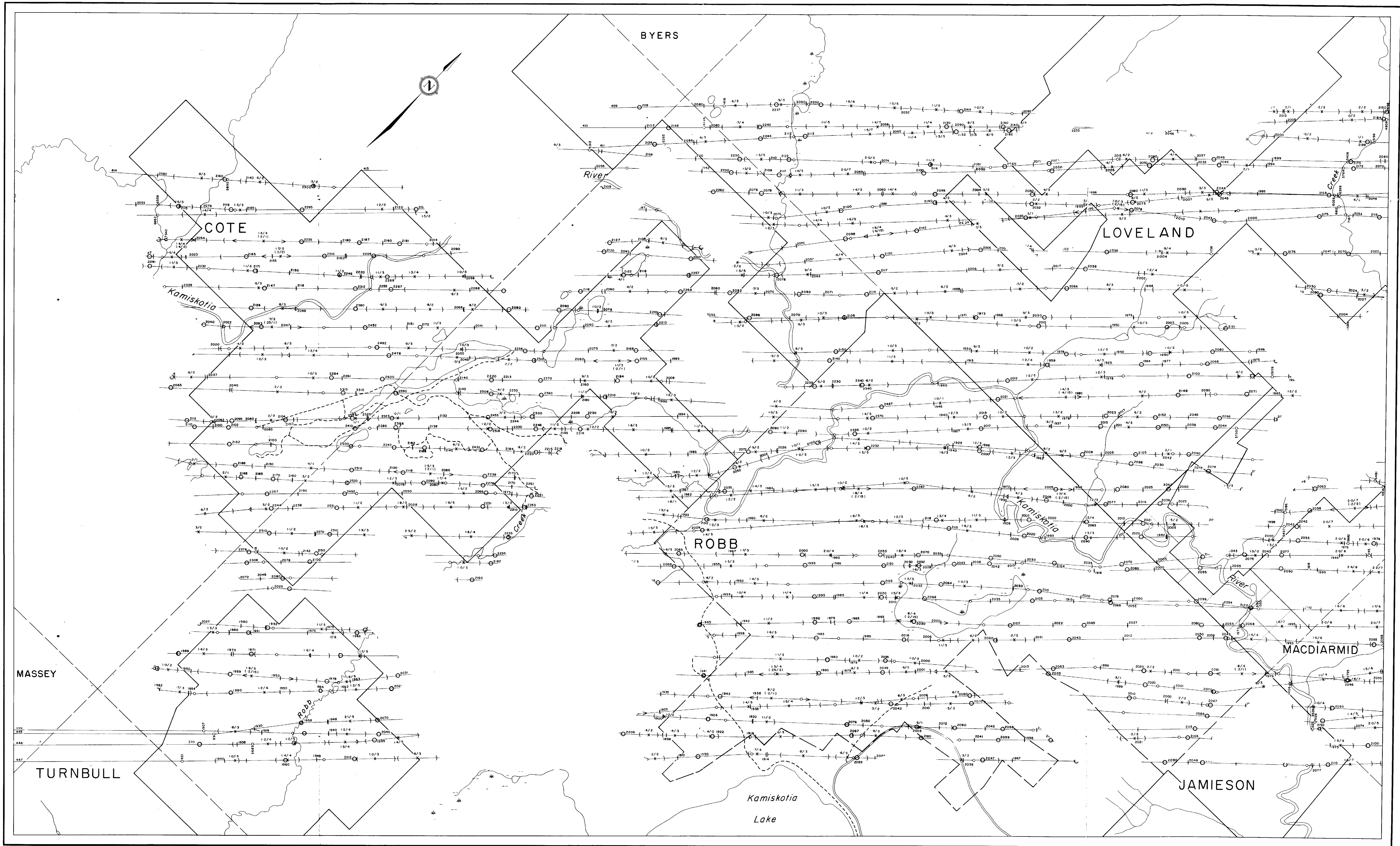


280

SHEET No 2

MESPI MINES LIMITED  
AIRBORNE GEOPHYSICAL SURVEY

AREA NO 7

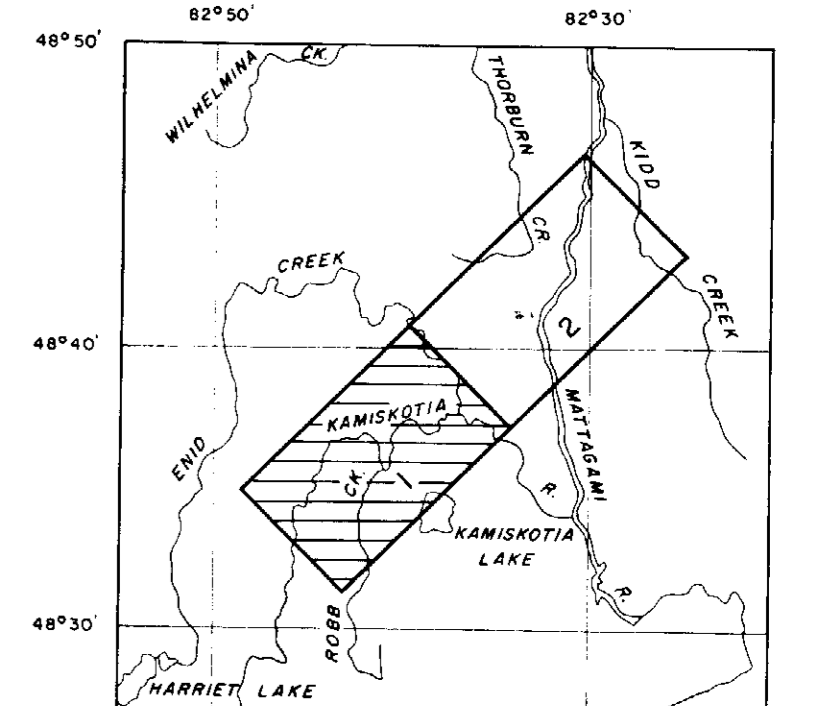


MEAN TERRAIN CLEARANCE ..... 450 FEET  
 MEAN FLIGHT LINE SPACINGS ..... 600 FEET  
 MAGNETIC HIGH ..... 0 5800  
 MAGNETIC LOW ..... 1 3670  
 FIGURAL POINTS ..... 0 2760  
 FLIGHT LINES .....  
 EXTENT OF E.M. ANOMALY .....  
 RESIDUAL E.M. ANOMALY .....  
 PEAK OF E.M. ANOMALY ..... X  
 THE NUMBERS SHOWN AS 4/2 ARE:  
 2500 PHASE CYCLE PEAK VALUES  
 400 PHASE CYCLE PEAK VALUES

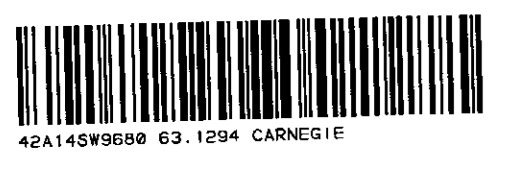
TIMMINS AREA, ONTARIO  
ELECTROMAGNETIC MAP

SCALE  
 1 inch to 1320 Feet

13 1294  
 Flown and Compiled by  
 HUNTING SURVEY CORPORATION LIMITED  
 TORONTO, CANADA  
 1964



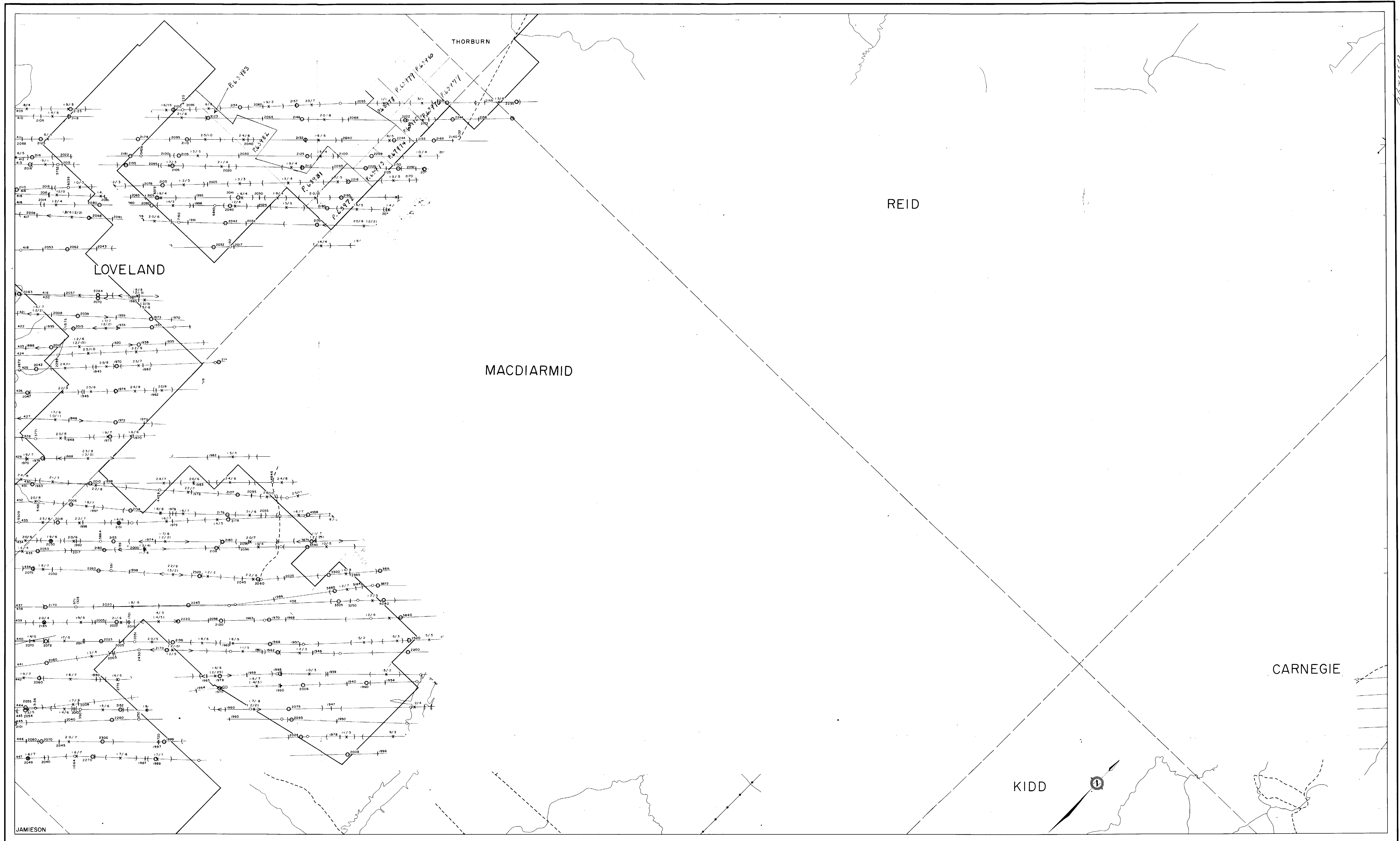
SHEET NO 1



(264) 6

MESPI MINES LIMITED  
AIRBORNE GEOPHYSICAL SURVEY

AREA NO 7



MEAN TERRAIN CLEARANCE ..... 450 FEET  
 MEAN FLIGHT LINE SPACING ..... 660 FEET  
 MAGNETIC HIGH ..... O 3680  
 MAGNETIC LOW ..... I 3670  
 FIDUCIAL POINTS ..... O 2760  
 FLIGHT LINES ..... - - - - -  
 EXTENT OF E.M. ANOMALY ..... < >  
 RESIDUAL E.M. ANOMALY ..... X  
 PEAK OF E.M. ANOMALY ..... X  
 THE NUMBERS SHOWN AS 4/2 ARE  
 2000 PHASE CYCLE PEAK VALUES  
 400 PHASE CYCLE PEAK VALUES

TIMMINS AREA, ONTARIO  
ELECTROMAGNETIC MAP

SCALE  
 1000 0 1000 2000 3000 4000 5000  
 FEET 1 Inch to 1320 Feet

SM  
 (2814)6  
 63-1294

Flown and Compiled by  
 HUNTING SURVEY CORPORATION LIMITED  
 TORONTO, CANADA  
 1964

