

2.1257



42A05SE0177 2.1257 DENTON

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REPORT
ON THE
GEOPHYSICAL SURVEYS
OF
MERIDIAN MINING & EXPLORATION COMPANY LTD. PROPERTY
DENTON TOWNSHIP
PORCUPINE MINING DIVISION
ONTARIO
NTS 42-A-5

INTRODUCTION

The Denton property of Meridian Mining & Exploration Company Ltd. lies in the north half of Denton Township, approximately 18 miles southwest of Timmins, Ontario. The property extends for a distance of approximately five miles east and west, by approximately three-quarters of a mile north and south, and lies about one-half mile south of Highway 101. The property consists of 56 unpatented mining



claims covering a total of approximately 2,240 acres and are numbered: P 326363, P 326364, P 327452 to P 327481 inclusive, P 354403 to P 354420 inclusive, P 354005, P 354006, P 326359 to P 326361 inclusive and P 354543.

Claims P 326363, P 326364 and P 327452 to P 327481 inclusive are under option but the remaining claims were staked on behalf of Meridian.

The property was optioned originally on the strength of a partially drilled gold showing on the east bank of Mahoney Creek in the east portion of the now existing property. The remainder of the property was staked because only a limited amount of geophysical information was available in a geological hospitable area. The current geophysical program was performed in October and November 1972. The survey covered 55 claims with a total of 227,800 feet or 43.1 miles of line along which 2,278 stations were established giving a density of 41.3 stations per claim.

ACCESS

The easiest means of access to the property is gained via Highway 101 extending southwestward from Timmins to Chapleau. An old diamond drill road follows the east bank



of the Mahoney Creek from the highway to the diamond drilling sites at the old Galata gold showing in the eastern part of the claim group. Other roads extend from the highway to current and old logging operations, as well as to the old prospecting sites in the west end of the property. Aircraft may be landed on Carlton Lake in the north central portion of Denton Township immediately north of Highway 101, a few miles north of the property.

TOPOGRAPHY

The property is generally flat and low lying with relief in the order of few tens of feet. Extensive swampy areas are associated with many of the creeks and small lakes on the property. Intervening areas are for the most part low sandy glacial outwash plains supporting pine and spruce forests. Some of the taller hills are underlain by small scattered outcrops.

HISTORY

Since gold mining and more recently base metal mining and prospecting activity has been conducted almost continuously for the past 70 years in the Porcupine camp, no doubt, the Meridian property has been visited on numerous

occasions by a variety of prospectors. The most serious work, however, appears to have been performed in 1945 by Wakemac Denton Gold Mines Limited who held some 20 claims in the westernmost portion of the present Meridian property. Trenching and some diamond drilling was performed in several parts of the property, but apart from a few interesting occurrences and intersections of gold, apparently nothing of economic consequence was found during that period. In 1950, Dominion Gulf Company owned a large portion of the north central portion of the Meridian property extending approximately one-quarter of a mile north of Cripple Creek. A magnetometer survey was conducted over the entire property at that time and a geological map was also completed. Apparently, no drilling was performed, and only a few trenches were blasted in scattered outcrops.

In 1955, Hollinger Consolidated Gold Mines Limited obtained an option from Mr. Galata of Timmins on a gold showing on the east shore of Mahoney Creek about two miles south of Highway 101. Some trenching and approximately 15 holes were drilled on the showing and its extensions, but as only moderately interesting gold values were obtained, the option was allowed to expire.

In 1958 Hollinger again, acquired ground in the



east central portion of Denton Township and adjoining Thorneloe Township. Some electromagnetic and magnetometer surveys were performed, but the results of these surveys could not be obtained for this report.

In 1960 to 1962, Hollinger acquired approximately 20 claims straddling a part of Cripple Creek, approximately one half mile west of Mahoney Creek. The ground extended from the bend of Cripple Creek on the present Meridian property southward for approximately one and one-half miles. A horizontal loop electromagnetic survey was conducted which detected an easterly trending anomaly approximately 1,600 feet long into which four holes were drilled south of the Meridian property. The formations encountered are shown on the preliminary map by the Ontario Department of Mines, but economic mineral intersections are not shown.

GENERAL GEOLOGY

The central and northeastern portion of Denton Township is underlain primarily by intermediate to basic volcanic formations surrounding a central sedimentary core, all of which strike northeastward, and extend into the



large body of Early Precambrian volcanic and sedimentary formations which constitutes the bulk of the economically important geological formations of the Porcupine gold camp. Some acid volcanics appear to straddle Highway 101 in the west central portion of Denton Township, and basic intrusives are shown to occur along the north contact of the sedimentary formations with volcanics to the north crossing Cripple and Mahoney Creeks. These basic intrusives occur in the eastern portion of the Meridian property and are shown in a generalized geological map of the Porcupine geology by S. A. Ferguson in Ontario Department of Mines Publication Volume 67, Part 7, 1957. The above described geological information is shown in greater detail in a preliminary geological map of Denton Township of a scale of 1" to $\frac{1}{4}$ mile published in 1957 by the Ontario Department of Mines.

The sedimentary formations described earlier extend for the entire length of the Meridian property and occur generally in the southern portion of the property. In the southwest corner of the property, however, the Wakemac gold showings occur in greenstones south of the sedimentary formations. In the east part of the property, on the other hand, the Galata gold showings drilled by Hollinger occur near, and along, the contact of basic intrusives to the north, with a narrow band of intermediate volcanics to the



south, both of which lie north of the sedimentary formations. Aeromagnetic interpretation indicates that the basic intrusives extend to Cripple Creek, but the ground magnetometer surveys indicate that they may, in fact, extend approximately one-half mile southwest of the bend in Cripple Creek.

ECONOMIC GEOLOGY

Thirteen holes were drilled in a southwesterly direction in the vicinity of the Galata gold showings on the east shore of Mahoney Creek in the eastern portion of the Meridian property. Visible gold had been encountered in surface trenches in quartz veins striking eastward near the edge of the creek. Economically interesting gold values were encountered in six of the diamond drill holes extending over a length of approximately 600 feet. Averaged values in the drill holes from west to east are indicated below.

| | | |
|--------------|----------------|---------------|
| Drill Hole 1 | .23 ounces/ton | over 7.2 feet |
| Drill Hole 2 | .39 " | over 5.0 feet |
| Drill Hole 3 | .22 " | over 1.5 feet |
| Drill Hole 4 | .32 " | over 5.0 feet |
| Drill Hole 6 | .25 " | over 4.8 feet |
| Drill Hole 8 | .26 " | over 9.0 feet |
| Drill Hole 8 | .18 " | over 3.0 feet |

In each case, the gold values appear to be associated with the basic intrusive which in itself appears



as a relatively narrow apophesis, perhaps extending into the volcanics from the main basic intrusive indicated on the geological maps. A weak magnetic anomaly appears to be associated with the basic intrusive occurring in this gold area. As stated earlier, the magnetic anomaly both in airborne configuration and in ground surveys indicates an extension of this material westward for a distance of approximately one-half mile in the area immediately west of Cripple Creek.

The records filed with the Ministry of Natural Resources do not show evidence of economic mineralization in those portions of the Dominion Gulf and Hollinger surveys conducted on the ground now owned by Meridian.

In the west end of the property, however, visible gold was obtained in the Wakemac workings and at least one grab sample containing arsenopyrite assayed 1.04 ounces gold per ton. Drilling under this showing, however, produced only 0.7 ounces gold per ton over 2.8 feet. The showing in which the mineralization occurs, strikes north 70 degrees east and has been traced for a length of 1,000 feet with eight diamond drill holes. Five trenches were also put down over a length of approximately 300 feet. There appears to be no ground magnetic or electromagnetic correlation with these old gold showings.

GEOPHYSICAL SURVEYS

Electromagnetic and magnetic surveys were conducted during October and November 1972 along lines cut at 300- and 400-foot intervals in a north-south direction from appropriately placed east-west striking base lines traversing the entire property. Stations were established at 100-foot intervals along the picket lines.

The magnetometer survey was conducted with a Sharpe MF-1 fluxgate magnetometer and read to the nearest 10 gammas. Each picket line, where it crossed the base lines, was used as a base station to correct for diurnal variation.

The electromagnetic survey was conducted using the long-wire galvanic (Turan-type) technique. A gasoline-driven generator delivered 250 volts at 0.75 amps at 1,000 Hertz into the survey area along an insulated 18 gauge copper wire grounded at both ends of the survey area. The electromagnetic survey was conducted in two phases because of the property's east-west dimension of approximately five miles versus the narrow north-south dimension averaging approximately one-half mile. The ground electrodes were spaced approximately 13,000 feet, or 2.4 miles, apart for the west half of the survey, and 16,000 feet, or 3.1 miles, apart in the east half.



The horizontal field strength was read at each station with a Custom Industrial Electronic solid state receiver which has a readability of approximately 20 field units. Each field unit is equal to 0.5 nanogauss.

Magnetometer Survey

The results of the magnetometer survey are displayed on east and west sheets of the survey area.

The most notable magnetic anomaly occurs near the old gold showings along Mahoney Creek in P 327465 and coincides with outcrops of basic intrusives in the area. A weaker extension of the anomaly strikes approximately 5,000 feet southwestward and crosses Cripple Creek into claims P 327465 and P 327468. The entire magnetic anomaly is coincident with an aeromagnetic anomaly and with basic formations mapped in the area. There is virtually no electromagnetic reflection of this main magnetic anomaly.

Scattered magnetic highs occur in other portions of the west part of the property namely in claims P 354406, P 354415, P 354413, P 354416 and P 326360. Many of these smaller weak anomalies may represent some iron formation in the volcanic or sedimentary formations or observations made over northerly-striking diabase dikes.



Of economic interest, however, may be the short magnetic anomaly on line 3h in the southeast corner of claim P 354415. While this anomaly is relatively small, it is the only magnetic anomaly that has a coincidence with a similarly sized, but weak, electromagnetic anomaly.

Electromagnetic Survey

The entire property is devoid of any significant electromagnetic anomalies apart from those directly related to the transmitting wire, the grounded electrodes, or the hydro electric line, cutting through the most northwesterly claim, namely P 354417, of the property.

As stated in the discussion under magnetic surveys, however, the only electromagnetic coincidence with a magnetic anomaly is that which occurs in the southeast corner of claim P 354415. The anomaly here rises only some 100 to 120 units above background. Several other such weak anomalies occur on the property, but do not coincide with significant magnetic anomalies.

CONCLUSIONS AND RECOMMENDATIONS

As a result of the electromagnetic and magnetic



surveys performed on this property, only very limited drilling can be recommended on the basis of the geophysical results.

It is recommended that at least one 300-foot diamond drill hole be directed under the relatively low, but fairly sharp, anomaly in the southeast corner of claim P 354415. If the results of this hole indicate the presence of any sulphide mineralization, then the other relatively obvious but, small anomalies in that claim, and the adjoining claim P 354416 to the west, should be drilled.

On the basis of the previous diamond drilling performed on the Galata showing on claim P 327465 on the east shore of Mahoney Creek, and in view of the current high prices of gold, it is recommended that a minimum of eight holes be drilled to a depth of approximately 300 feet to assess the proximities of the values obtained in the past.

With regard to the assays listed previously on page 7, calculations obtained by lumping all the intersections and assay values together, with the proper weighting factor, show that the intersections average 0.27 ounces gold per ton across a width of 4.9 feet. Using today's price of \$80 per



ounce of gold, the average value is \$21.60 per ton. Considering that the values were obtained between Holes 3 and 6 on the property, a distance of 600 feet, it can be assumed that the values will carry a further 50 feet on either side of the extremities. This results in a total length of about 700 feet, and coupled with the average width of 4.9 feet results in approximately 343 tons per vertical foot. To a depth of 100 feet, therefore, the bulk value of the block is \$741,000, but if it is considered, that two of these intersections in the central portion of the drilled off area were obtained at a vertical depth of 350 feet, then the average bulk value considered at \$80 per ounce of gold is \$2,200,000 to a depth of 300 feet. This type of consideration only indicates the possible potential of the mineralized zone. It is seldom, however, that a gold vein extends 700 feet laterally, and to 300 feet vertically without a break. Additional detailed drilling will, of course, help to determine a more reasonably accurate grade and tonnage.

The 13 holes drilled in the gold area range across 1,300 feet in an almost east-west direction, and approximately 600 feet in a north-south direction. The minimum recommended drilling, therefore, of 2,400 feet in eight holes is designed to check the gold mineralization



below and at 50-foot distances away from the previously intersected veins.

It is interesting to note that similar basic intrusives appear to be associated with the gold mineralization at the Buffalo Ankerite mine which produced gold for many years in the Porcupine gold camp. If the association between gold and the basic intrusives at Mahoney Creek, is in fact, real then one must consider that much, or all, of the entire length of 5,000 feet of the basic intrusive body, as indicated by the magnetic contours, may be potential prospecting country. Of great hinderance, of course, is the fact that almost no outcrops occur in this area, and all the prospecting will have to be done by diamond drilling. Any such wildcat drilling, however, can only be justified if it appears that an orebody might develop at the old showings at Mahoney Creek.

The diamond drilling can be started immediately at the gold showing, but it is recommended that a detailed magnetometer survey along lines cut at 100-foot intervals for, perhaps, a length of 1,000 feet over a survey area approximately 4,000 feet in length should be conducted prior to, or at least concurrent with, the drilling program. In view of the great dearth of outcrops in the area, some correlation may be drawn between the magnetic response from

known basic intrusives versus that from the volcanics in the area. If such a differentiation is possible, then better guidance of drilling can be obtained in the overburden areas.

Similarly, it is recommended that a very limited detailed magnetic and perhaps electromagnetic survey should be done in claim F 354415 in order to better delineate the anomaly to be drilled in that claim.

It is recommended also that a certain amount of prospecting and perhaps blasting be conducted especially in the gold area at Mahoney Creek where some outcrops are available. Similarly, some prospecting should be conducted on claim F 354415 to check the small, low-lying outcrops that occasionally occur in that area. It will also be important to reassess the old Wakamac gold showing with prospecting and perhaps one or two short drill holes.

The following is an estimated cost of the outlined program:

| | |
|--|--------------|
| Diamond drilling 3,000 feet at \$12/foot | \$ 36,000 |
| Detailed magnetometer and electromagnetic surveys, line cutting, approximately 8 miles | 5,000 |
| Supervision, geological mapping, travelling, accommodations, etc. | 5,000 |
| Camps, equipment rentals, blasting, prospecting, labour | <u>4,000</u> |
| | \$ 50,000 |

Thunder Bay, Ontario
March 13, 1973

V. OJA, P. ENG.
OJA Limited
Exploration Management
PROFESSIONAL ENGINEER
(MINING)
PROVINCE OF ONTARIO

GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL

RECEIVED

JUL 6 1973

PROJECTS SECTION

TECHNIC



900

ETC.

Type of Survey Geophysical
 Township or Area Denton Township
 Claim holder(s) Meridian Mining & Exploration
Company Ltd.
 Author of Report R. V. Oja
 Address 193 North Court St., Thunder Bay, Ont.
 Covering Dates of Survey Sept. 72 to March 1973
 (linecutting to office)
 Total Miles of Line cut 43.1 miles

MINING CLAIMS TRAVERSED
List numerically

(prefix) (number)

List Attached

TOTAL CLAIMS 55

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

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)
 Magnetometer _____ Electromagnetic _____ Radiometric _____
 (enter days per claim)

DATE: July 3, 1973 SIGNATURE: [Signature]
 Author of Report or Agent

PROJECTS SECTION
 Res. Geol. _____ Qualifications 63.1705
 Previous Surveys L.D. all included

Checked by _____ date _____

GEOLOGICAL BRANCH _____

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 2,278 Number of Readings 2,278
Station interval 100'
Line spacing 300' and 400' see map
Profile scale or Contour intervals (specify for each type of survey)

MAGNETIC

Instrument Sharpe Mf-1 Fluxgate
Accuracy - Scale constant 50 gammas
Diurnal correction method Baseline stations corrected for variation
Base station location Every baseline station used as base station for appropriate picket lines

ELECTROMAGNETIC

Instrument Custom Industrial Electronics Narrow Band Receiver
Coil configuration Grounded (Turam) long wire galvanic system
Coil separation XXXXXXXXXXXX
Accuracy + field units = 50 nanagauss
Method: [X] Fixed transmitter [] Shoot back [] In line [] Parallel line
Frequency 1000 Hz (specify V.L.F. station)
Parameters measured Horizontal Field

GRAVITY

Instrument
Scale constant
Corrections made
Base station value and location
Elevation accuracy

INDUCED POLARIZATION -- RESISTIVITY

Instrument
Time domain Frequency domain
Frequency Range
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 _____

Instrument _____

Accuracy _____

Parameters measured _____

Additional information (for understanding results) _____

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 _____

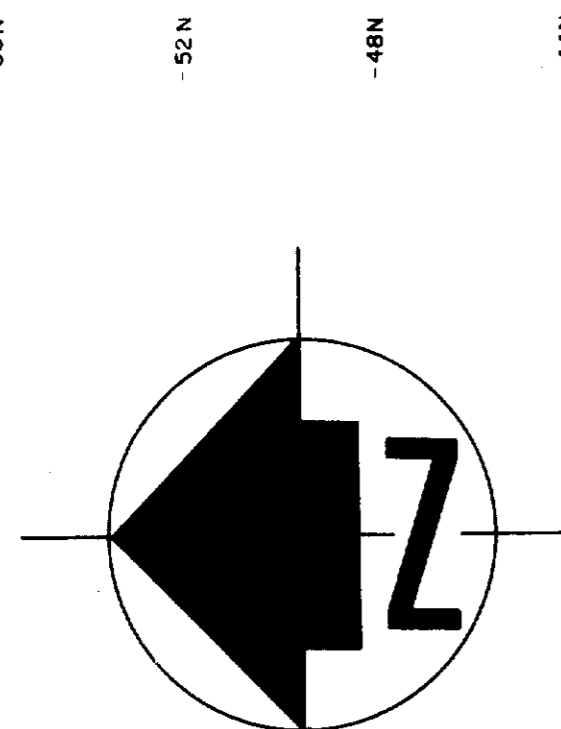
Aircraft altitude _____ Line Spacing _____

Miles flown over total area _____ Over claims only _____

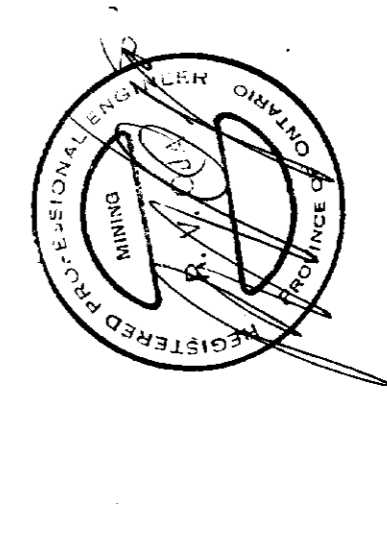
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P 326363
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327452
327453
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327456
327457
327458
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327462
327463
327464
327465
327466
327467
327468
327469
327470
327471
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327481
354403
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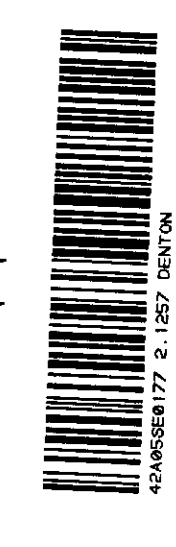
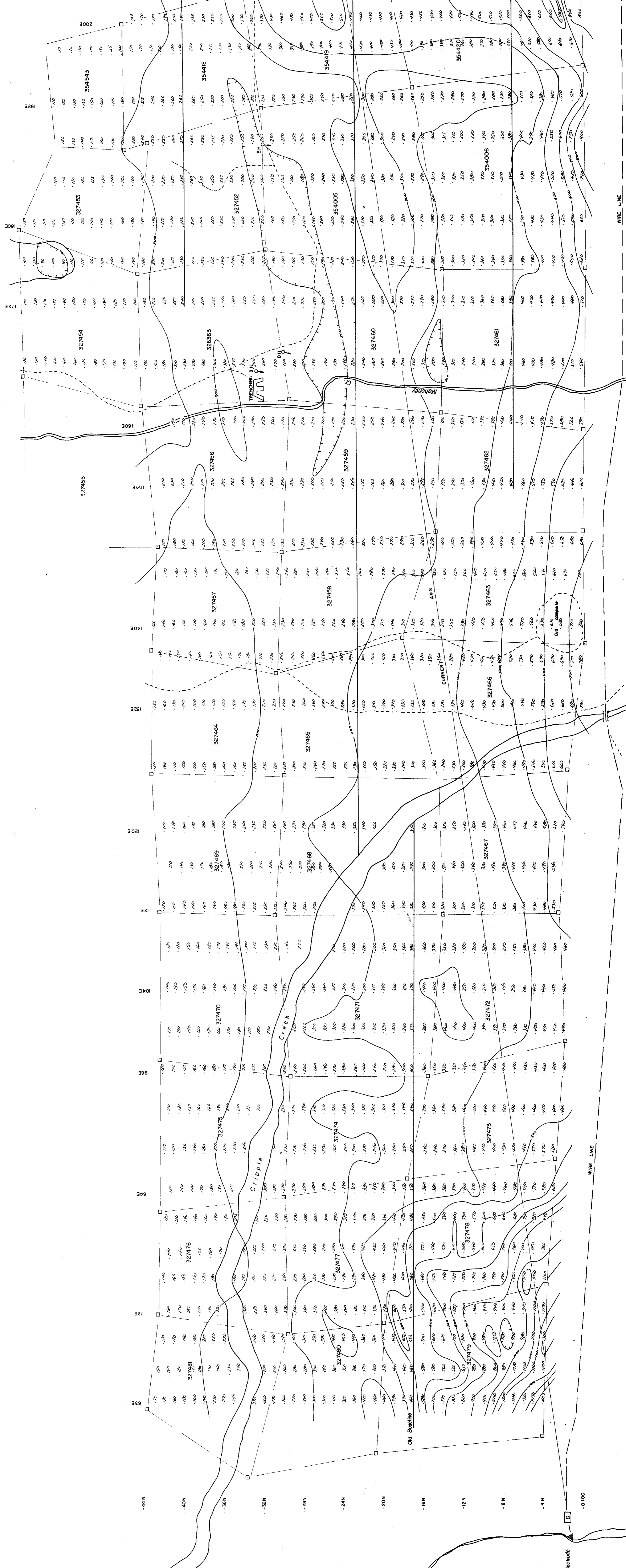
P 354417 $\frac{1}{3}$
354418
354419
354420 $\frac{1}{3}$
354005
354006
326359
326360
326361
~~324543~~ Greenlaw Twp.
Should be 354543

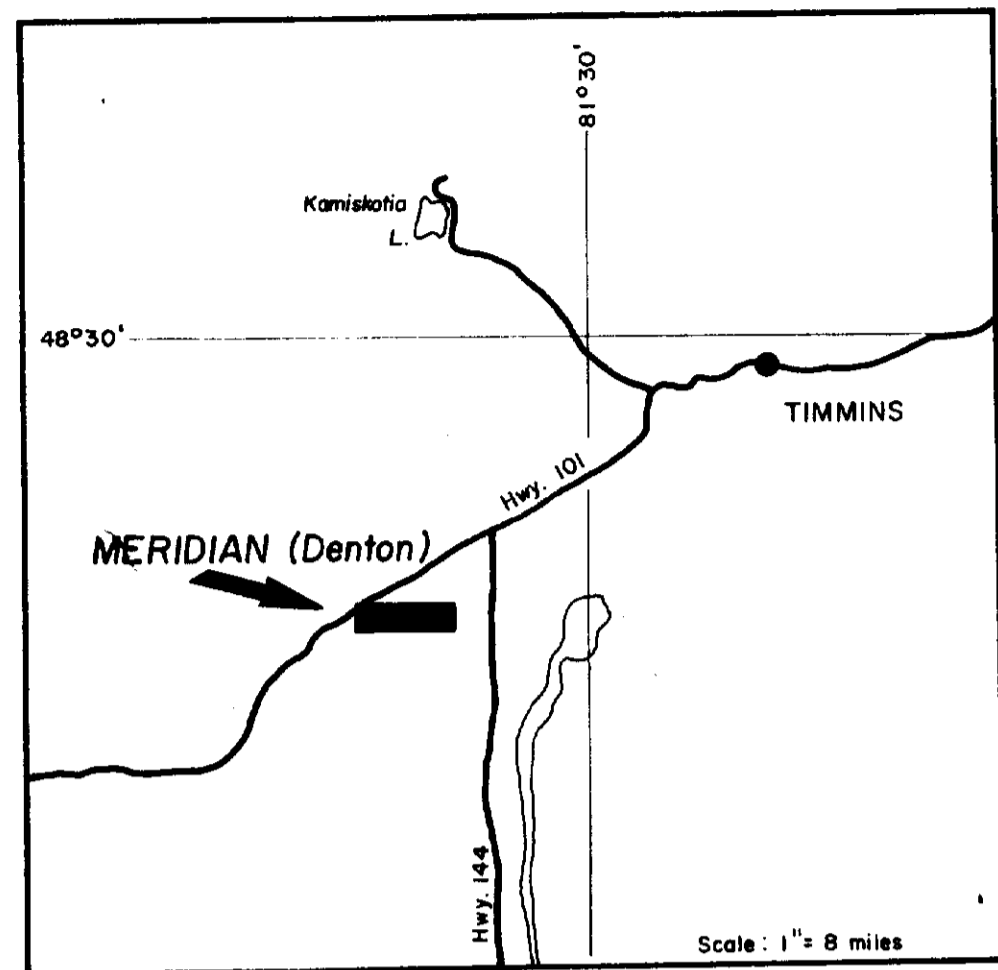


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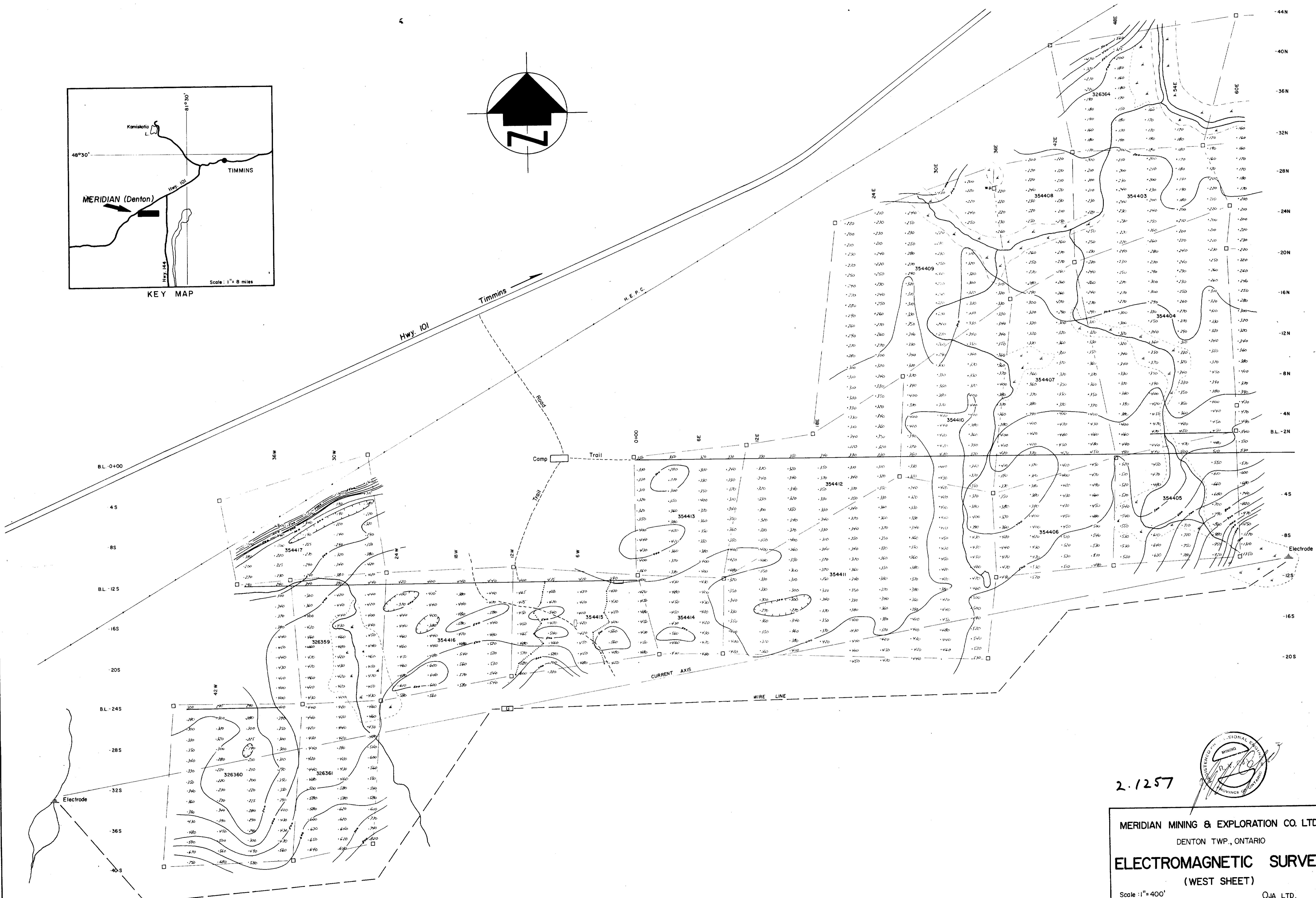
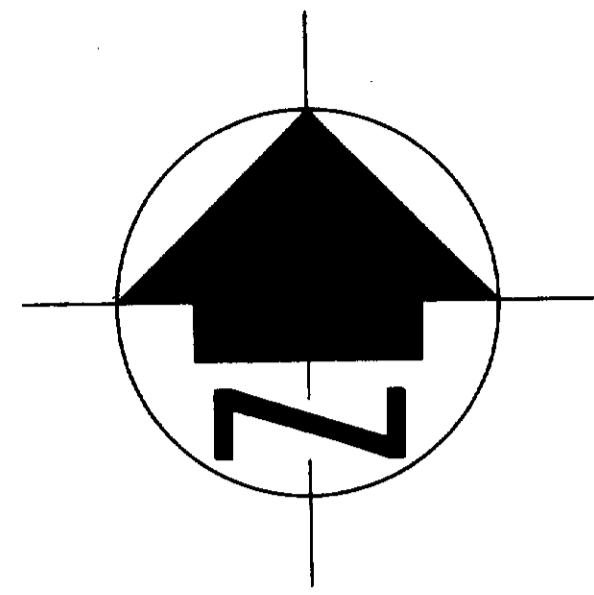


MERIDIAN MINING & EXPLORATION CO. LTD.
DENTON TWP., ONTARIO
ELECTROMAGNETIC SURVEY
(EAST SHEET)
Scale: 1"=400'
February, 1973
O.U.A. LTD.





KEY MAP

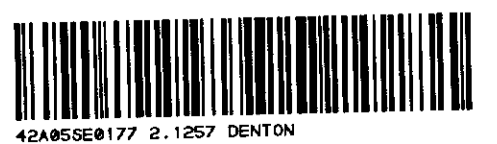


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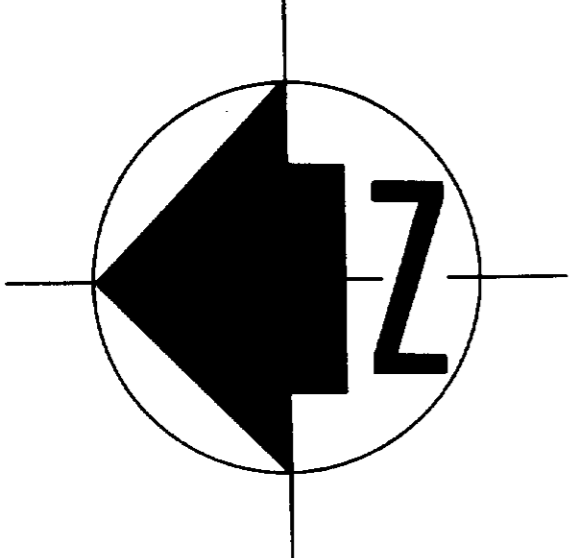


MERIDIAN MINING & EXPLORATION CO. LTD.
 DENTON TWP., ONTARIO
ELECTROMAGNETIC SURVEY
 (WEST SHEET)

Scale: 1" = 400'
 February, 1973
 OJA LTD.

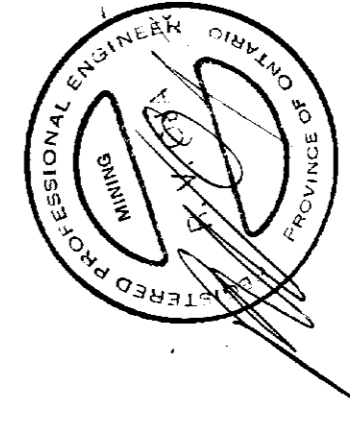


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LAKE

21/257



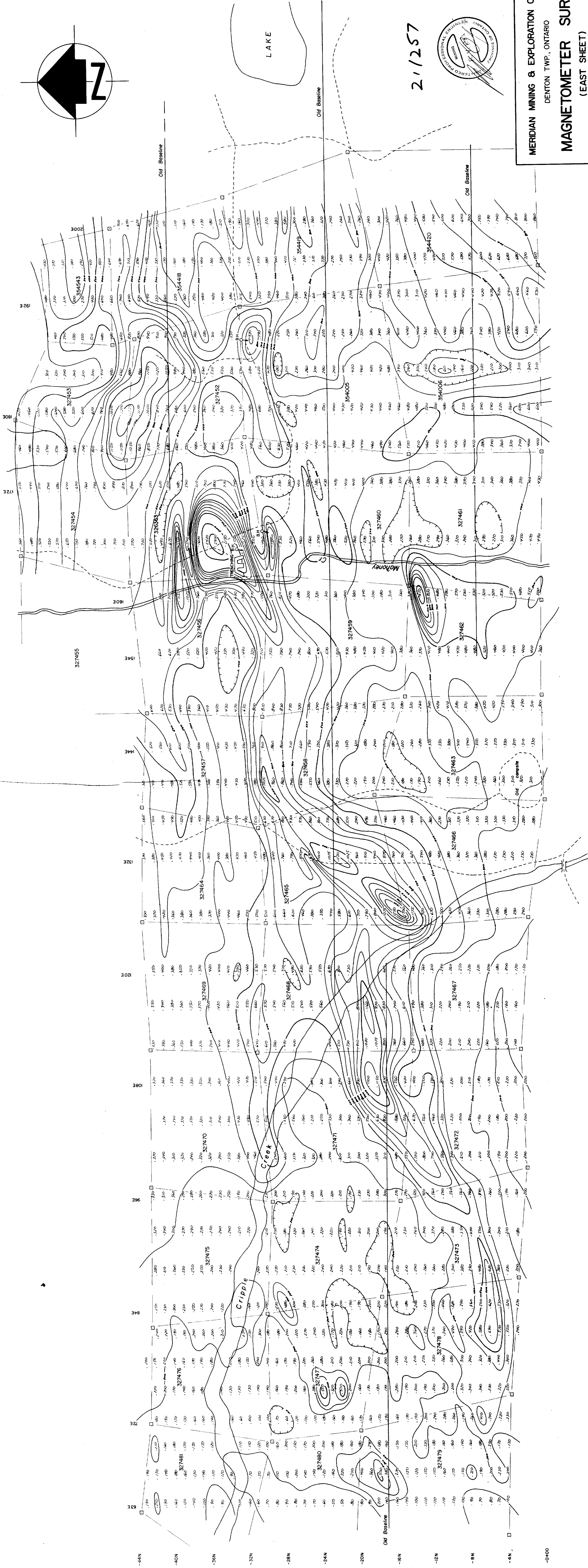
MERIDIAN MINING & EXPLORATION CO. LTD.

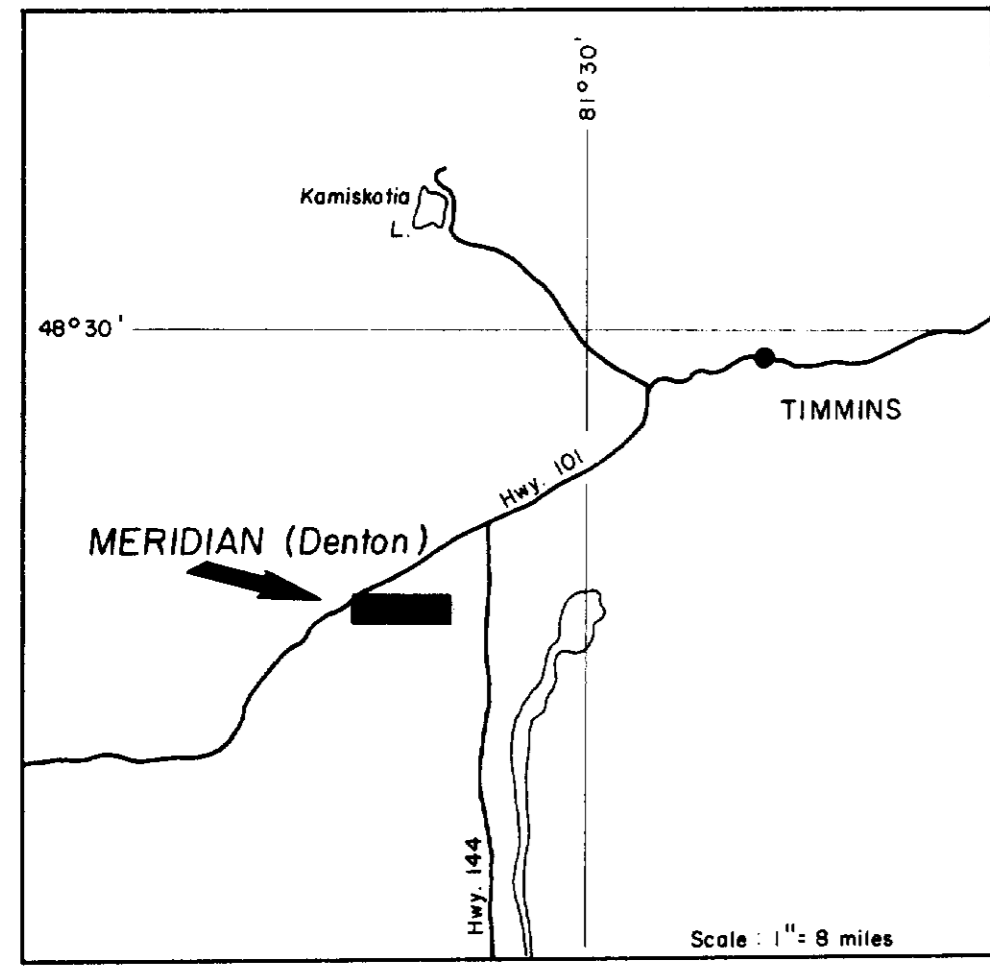
DENTON TWP., ONTARIO

MAGNETOMETER SURVEY
(EAST SHEET)

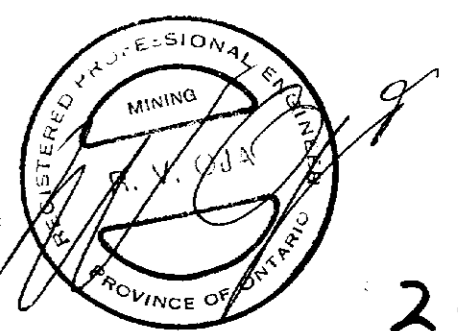
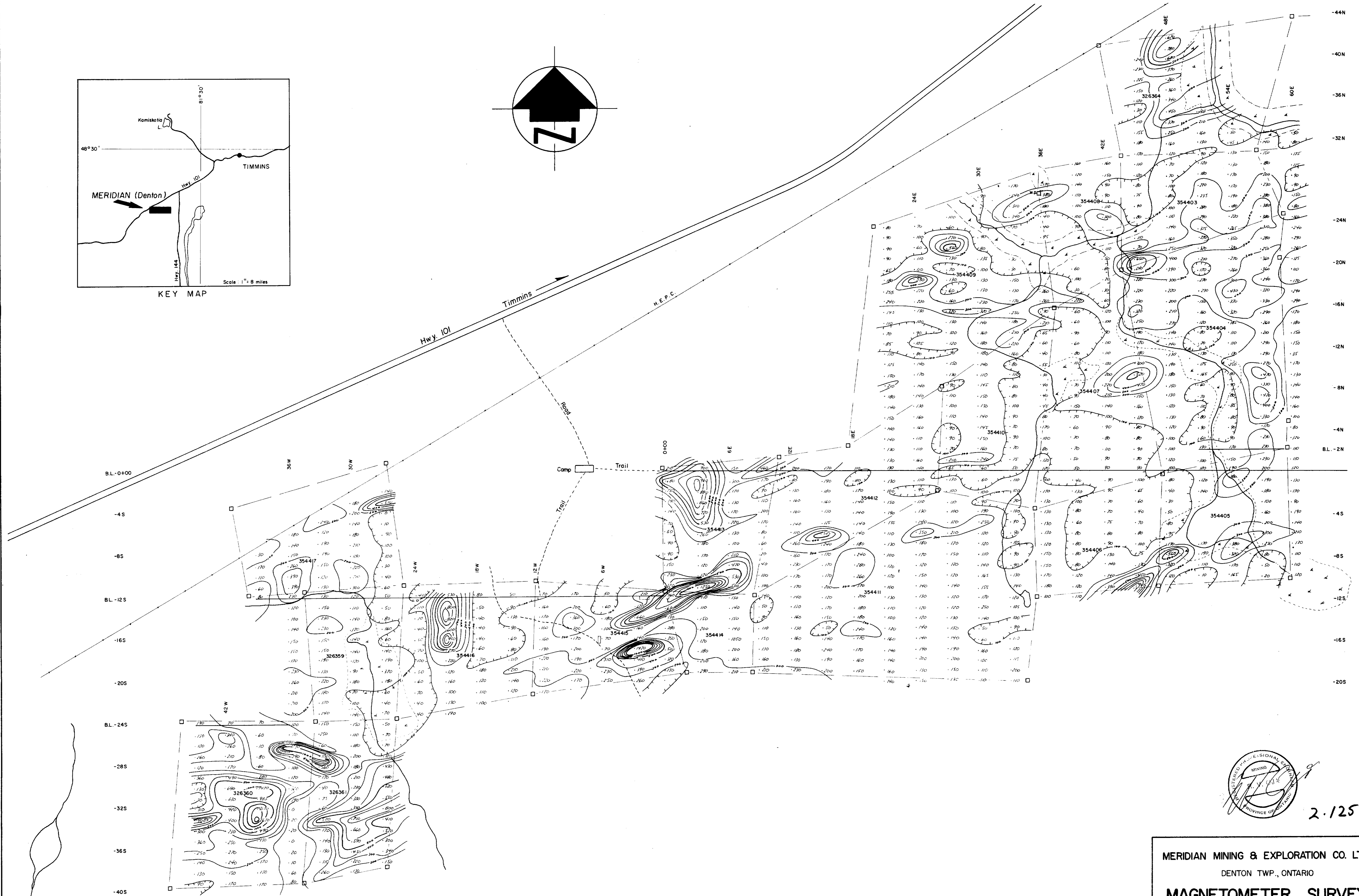
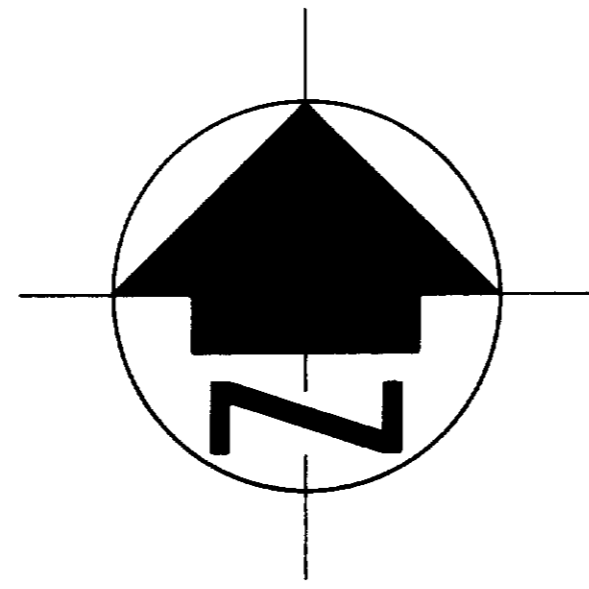
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February, 1973

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KEY MAP



2.1257

MERIDIAN MINING & EXPLORATION CO. LTD.
 DENTON TWP., ONTARIO
MAGNETOMETER SURVEY
 (WEST SHEET)
 Scale: 1" = 400'
 February, 1973
 OJA LTD.