



42C16SW0011 2.3209 LIZAR

2.3209

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NICKEL RIM MINES LIMITED
1978 EXPLORATION PROGRAM
LIZAR TOWNSHIP, ONTARIO
N.T.S. 42 C/16

RECEIVED
FEB 01 1980
MINING LANDS SECTION

July 5, 1979

David L. Sannes

INTRODUCTION

Nickel Rim Mines Limited has conducted exploration on a group of sixteen claims in central Lizar Township, Ontario. Work consisted primarily of a drill program totalling 2702 feet in four holes. Allied work included line-cutting, geological mapping, magnetic surveying and general prospecting and sampling.

SUMMARY

Four diamond drill holes were completed at the Old Hiawatha Gold Mine during the summer of 1978. The purpose of the program was to investigate the possibility of improved mineralization with depth in a series of gold-bearing quartz-sericite shear zones which are developed within a trondhjemite intrusive cutting mafic volcanics.

Sampling of the workings by two former operators (Primrock 1969 and Keltic 1974) demonstrated a potential for improved grade and extent of the mineralized shoots with depth. Each had recommended testing the zone below the 400 foot horizon. Nickel Rim's drilling tested the zone between the 360 and 550 foot horizons. Although a series of several strong shear zones is defined and some well developed quartz-sericite shears with mineralized

vein quartz were cut, gold values were low or negligible in all but a few cases. Extremely fine grained native gold is occasionally observed in the drill core. The strike length of the South Zone shear is at least 1/2 mile and probably much greater. Nickel Rim's drilling has tested only a few hundred feet of this length and, therefore, cannot entirely discount the property. Although various exploration possibilities are discussed, no further drilling can be recommended and no major exploration expenditures can now be justified.

LOCATION & ACCESS

Nickel Rim's property consists of sixteen unpatented claims situated near the southwest end of Kabinakagami (Kaby) Lake in central Lizar Township. Access is by float or ski-equipped aircraft from either White River or Hawk Junction (approximately 40 miles to the southwest and 55 miles to the south respectively).

HISTORY

It has been variously reported that gold was first discovered on the property in 1926 or 1931. In 1936, Hiawatha Gold Mines Ltd. was incorporated and acquired the ground. This began a period of active exploration

and development which continued into 1940 and consisted of surface prospecting, trenching, 13,034 feet of surface drilling, the sinking of a shaft to 325 feet with lateral development of 6111 feet on two levels, 2940 feet of underground drilling and mill testing of some 1931 tons. Total gold production is reported to be 179 oz. (or 0.093 oz/t).

Work was discontinued at the outbreak of World War II and was never resumed by Hiawatha. That company's charter was surrendered in 1965, and the ground reverted to the Crown. The property was re-staked in 1965 and optioned to Primrock Mining & Exploration Limited in 1966. Primrock dewatered, rehabilitated, surveyed and sampled the old mine workings. They also drilled two short holes (totalling 250 feet) to test the West Zone 2800 feet southwest of the shaft. Results were encouraging, and an ambitious exploration program was recommended but not carried out. It is reported that in 1971 Bear Creek Gold Mines Limited, in a joint venture with Primrock, carried out magnetic, electromagnetic and geological surveys on the property. Records of this work have not been located.

In 1974 Keltic Mining Corporation Limited acquired the property. Magnetrometer and VLF-EM surveys were carried out in April over water-covered portions of the property. In the summer of 1974, Keltic dewatered the workings and completed systematic sampling and geologic mapping. The results indicated two or three shoots of sub-ore grade material which improved in grade and extent from the upper level to the lower. Testing of the zone at depth by a series of five 600 foot holes was recommended, but not carried out.

Subsequently, the claims lapsed and in 1977 a portion was re-staked. Nickel Rim Mines Limited acquired the property by option in May 1978.

LINE-CUTTING & MAGNETIC SURVEY

Line Cutting:

A 5.6 mile grid system was established over a portion of the property with picket line intervals varying from 100 to 400 feet.

Magnetic Survey:

A Geometrics Model G816 portable proton magnetometer was used. At station intervals of 50 feet, two readings, at a vertical separation of three feet, were taken to establish total field and gradient values. In addition to

the established grid survey, fill-in readings were taken between lines 10E & 6E in order to better define the NW trending diabase dike in the vicinity of drilling sites.

In general, the magnetic patterns correspond to known geological trends and broadly define contacts as shown by the mapping. Diabase dikes are particularly well defined. No structural inferences can be made.

REGIONAL GEOLOGY

The Lizar Township property is situated near the center of a four-mile wide, northeast trending, volcano-sedimentary belt of Precambrian age. The belt is interpreted as a tightly folded syncline with the fold axis passing very near the property.

Mafic to intermediate metavolcanic is the dominant lithology within the belt. Along the southeast flank is a broad sedimentary sequence with minor sulphide facies iron formation and intercalated volcanics.

Bordering the belt on each side are extensive areas of younger, granitic rocks varying in composition from quartz monzonite to quartz diorite. Granitic intrusives also

cut and greatly disrupt the volcano-sedimentary belt. It is a protrusion from the northeast of a trondhjemitic sill which is host to the structure of interest at Lizar.

Common northwest trending and subordinant northeast trending diabase dikes cut all other rock types.

GEOLOGY OF THE PROPERTY

TABLE OF LITHOLOGIC UNITS

Proterozoic

Diabase Dikes
Granitic Pegmatite Dikes
Lamprophyre Dikes

Archean

Quartz-Gold Mineralization
Trondhjemitic (including Quartz Porphyry and
aplitic phases)
Breccia Unit
Pyroxenite
Mafic Volcanics

Volcanics

The mafic volcanic unit is the oldest and most extensive rock type on the property. It consists dominantly of massive, fine-grained flows with indistinct inter-flow margins. Occasionally, narrow zones of small, poorly developed pillows are observed.

The volcanics, as well as all of the other Archean rock types on the property, strike northeast-southwest and dip almost vertically. A pervasive foliation, parallel to this trend, is developed within each of the Archean types, but is strongest in the trondhjemite. This foliation is certainly due to shearing, but probably also represents the present orientation of original flows and bedding.

No sedimentary rock types are mapped within the property, although there are extensive areas of sediments adjacent to the southeast. Narrow, sill-like, felsic units are common within the mafic volcanics and could be rhyolitic tuffs or flows, but are probably aplitic phases of the trondhjemite.

Pyroxenite

A large area of pyroxenite is mapped in the southeast one-third of the property. This is apparently the oldest intrusive type in the area. Two separate sills are noted: the greatest width is at the southwest edge of the mapped area where the exposure is about 350 feet wide. To the northeast, the pyroxenite pinches out near line 6E. The second sill was observed at the shoreline at the south end of line zero. The pyroxenite is fine

to medium-grained, black and quite massive, showing only moderate shearing and no other textural variations.

Breccia Unit

The breccia is a distinctive rock type, but with somewhat arbitrary boundaries. It is characteristically composed of forty to fifty percent volcanic fragments within sheared trondhjemite. The fragments are well distributed, and may be several feet across, although they are usually thin, tabular pieces a few inches to one foot thick and oriented parallel to the schistosity.

The breccia extends some 3000 feet through the center of the peninsula and has a maximum thickness of about seventy feet. It appears to have been a remnant of volcanic within the large trondhjemite sill and has been developed through repeated episodes of shearing and intrusion.

Trondhjemite

This unit is host to all of the important gold occurrences on the property. It comprises not only the large sill, which contains the "South Zone", but should also include the "Quartz Porphyry" of the "North Zone", and all of the numerous felsic sills which are mapped nearby.

Several textural variations are observed within the trondhjemite. These variations are best seen in the drill core where textures are found ranging from medium-grained, non-sheared, unaltered trondhjemite through strongly sheared, little altered schist to strongly sheared, quartz-sericite mineralized zones. Several zones of quartz porphyry schist are cut which in hand specimens could probably not be distinguished from the North Zone quartz porphyry.

All of the trondhjemite may have been intruded during a single event; however, there have subsequently been numerous episodes of shearing and hydrothermal alteration which have produced the existing assemblage of textures.

Quartz-Gold Mineralization

Native gold has been found in association with the most strongly sheared and altered zones in trondhjemite sills. The best mineralized zones are strongly sericitized schists, usually with small quartz "eyes", which probably represent resistant quartz grains from the original trondhjemite. The zones contain varying concentrations of late quartz veinlets which occur as parallel, thin

plates along shearing and range in thickness from one millimeter to five centimeters and rarely as much as ten centimeters.

Gold is found as very fine grains within, or adjacent to, the late quartz. Very minor amounts of sulphide minerals are usually associated with the gold, and also in altered zones where gold was not found. These trace minerals, in order of decreasing abundance are: pyrite, pyrrhotite, chalcopyrite, sphalerite, galena and molybdenite. Sphalerite seems to be the more important indicator mineral for gold.

Proterozoic Intrusives

Three types of late dikes are mapped. These include diabase, lamprophyre and a granitic pegmatite. Relative ages are based upon a few exposures where the intrusive relationships could be seen.

The older dikes are thin lamprophyres which are fairly common, cutting trondhjemite and mafic volcanics. These rarely exceed two feet in width and always run parallel to schistosity.

Granitic pegmatite dikes are seen in only a few places. These are usually less than one foot thick, with irregular contacts running perpendicular to schistosity (northwest-southeast).

Diabase dikes are fairly abundant and are commonly fifty to seventy feet thick. All, except one of the mapped dikes, cut perpendicular to the local trends and dip very steeply or vertically. The exception is a northeast-southwest trending diabase which crosses the schistosity at a small angle and is observed in one case to cut a northwest trending diabase.

CONCLUSIONS

Nickel Rim Mines Limited has drill-tested the down-dip projection of the South Zone mineralization at the old Hiawatha Gold Mine. Four drill holes cut several mineralized, quartz-sericite shear zones in the area of the South Zone projection and some gold-bearing core was recovered.

Assays of the core, however, returned erratic and low gold values as compared to results which were reported for underground samplings by Keltic and Primrock. The

results tend to detract from the possibilities for increased ore potential with depth. It should be kept in mind, however, that the Nickel Rim drilling has tested a relatively small section of the mineralized zone.

RECOMMENDATIONS

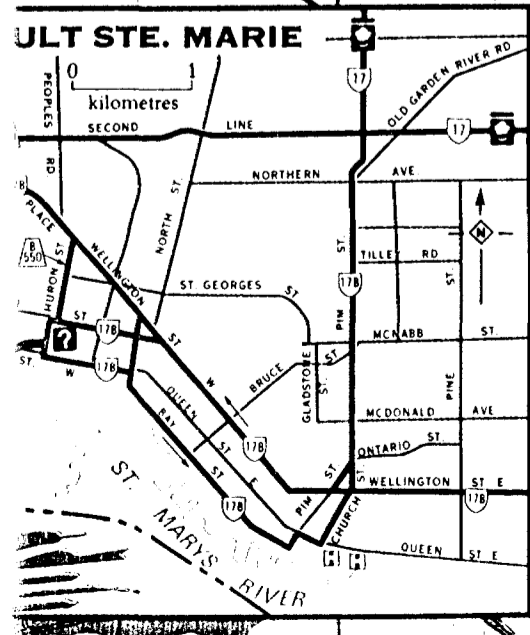
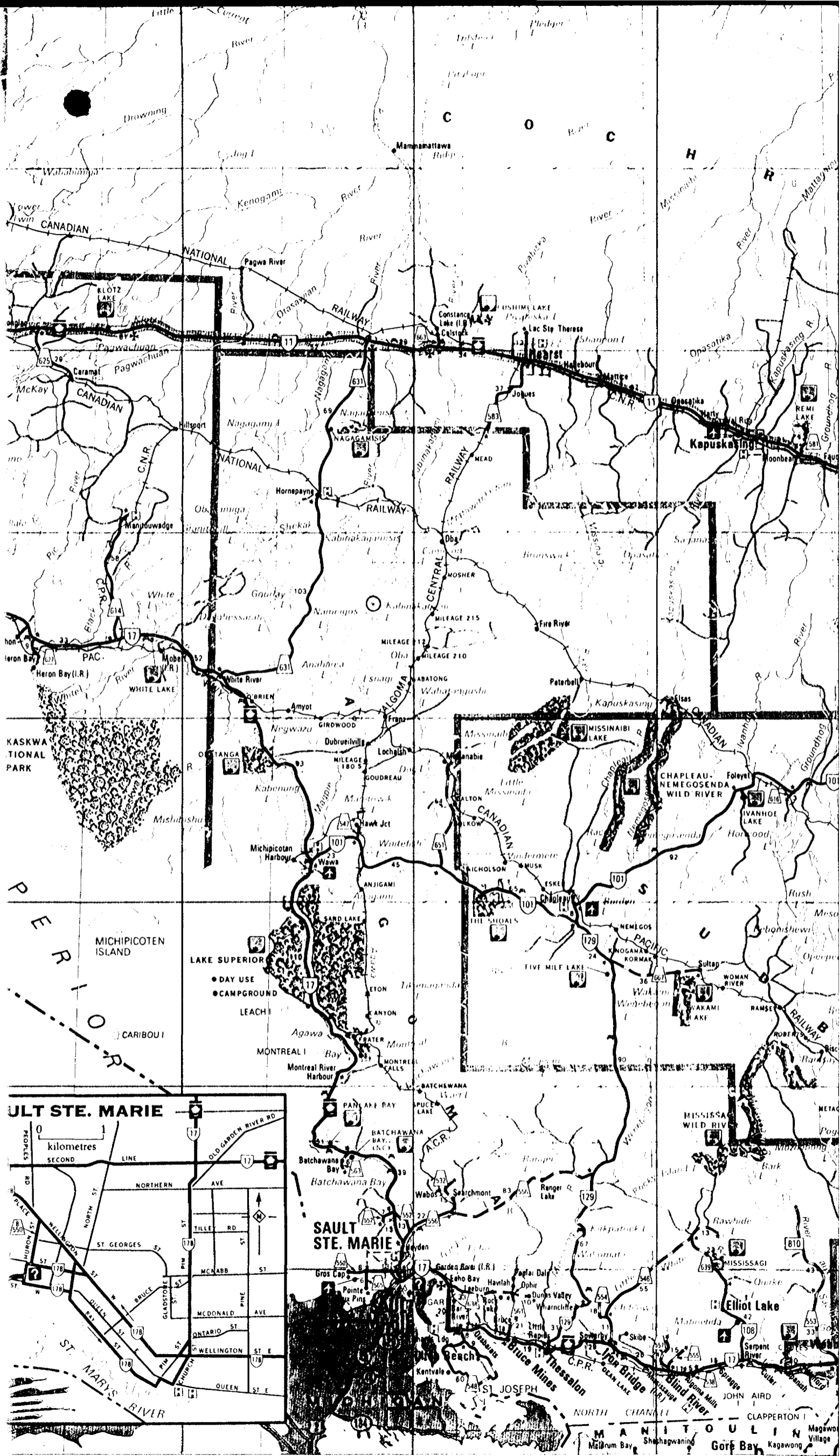
Although the results of the 1978 program preclude further exploration by Nickel Rim, some possibilities for ore are acknowledged, and the following are suggestions for future work by others.

Due to the extensive strike length of the shear zone, a practical approach to future exploration would necessarily be directed toward delimiting favourable sections. Some economical methods might include whole rock geochemistry or soils geochemistry to define mineralized or altered zones. A program of surface stripping and shallow drilling might define dilations or enriched shoots within the shear zone. Favourable results from these programs would be followed up by more detailed drilling on down-plunge projections.



July 5, 1979

David L. Sannes, B.Sc.



86°

85°

84°

83°

Boot

Bay

CT 56

CT 61

CT 60

CT 55

CT 54

Windy Pt.

RY 10
RY 24
L.O.

Tower Site
file 160705

Cabin Site

500684 500690

CT 51

500692 500693 500694

CT 50

CT 53

500695 500696

CT 49

500697

CT 48

500700

407551 407552

500698

500699

407553

407554

CT 47

CT 46

CT 26

Lake

CT 52

CL 2188

MS 38
L

CT 45

CT 27

563

CT 29

CT 43

CT 42

CT 31

CT 30

CT 33

CT 44



- 7 Diabase
- 4 Trondhjemite
- 4a "Quartz Porphyry"
- 3 Breccia Unit
- 2 Pyroxenite
- 1 Mafic Volcanic

N AST.
 GRID NORTH
 37°
 KABINAKAGAMI
 LAKE
 ("KABY L.")

NICKEL RIM MINES LTD
 LIZAR TOWNSHIP
 1 inch = 400 feet
 October 19, 1978
 D. L. Sannes

C.T. 49



- 7 Diabase
- 4 Troodijemite
- 7a "Quartz Porphyry"
- 3 Breccia Unit
- 2 Pyroxenite
- 1 Mafic Volcanic

NICKEL RIM MINES LTD
 LIZAR TOWNSHIP
 1 inch = 400 feet
 October 19, 1978
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NICKEL RIM - LIZAR T

Sample Number	Location	Description	Sample Size	Au oz./t.	Ag oz./t.	
701	5E, 4N	Mill concentrate from remains of jig table (panned a good tail of very fine Au)	1 1/2 to 2 cups	24.22	4.18	
702	5E, 4N	"Ore" from primary (jaw) crusher. (1" minus)	5 lbs.	0.10	Tr	30 elem's.
703	5E, 4N	"Ore" as # 702 - sifted to 1/4" minus (see # 710)	2 lbs.	0.20	Tr	
704	?	Qtz - calcite vein material w/ massive seams of biotite (?), chlorite & actinolite (?) to 1" wide (loose pieces found at mill - similar material seen in volcanics - near and at trond. contacts)	Specs @ 2"	0.47	Tr	
705	6E, 3N	Chips of phyllitic schist (rusty w/ 2-5% py) (random grab from dump)	1 lb.	0.08	Tr	
706	6E, 3N	Chips of altered, silicified trond. schist with vein quartz - (grab from dump)	1 1/2 lb.	0.20	Tr	
707	10+15E 2+50N	Channel sample - North side of Quartz- phyre sill with 6" Quartz vein & 6" wall rock (mafic volcanics)	3 1/2 ft. (5 to 8 lbs)	Tr	Tr	
708	10 to 12E, 0+60S	Grab of chips from "South Zone" shears	2 lbs.	Tr	Tr	
709	10E 1470-2+30S	Grab of chips from breccia unit (volcanics in hand)	3 lbs.	0.12	Tr	
710	5E, 4N	"Ore" - coarse fraction of # 703 (1/4" to 1/2")	4 lbs	0.10	Tr	

360 - 530

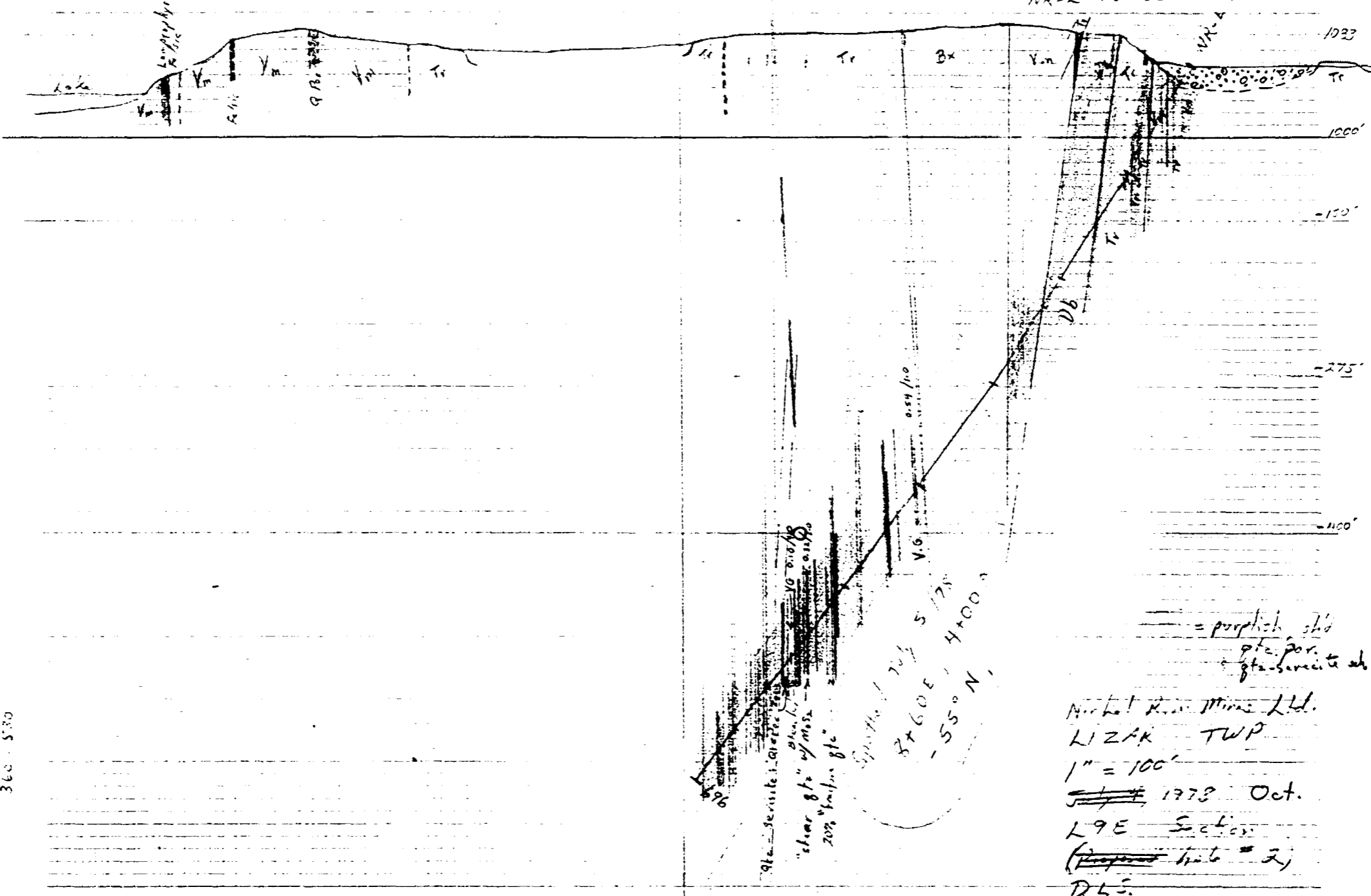
BL #1

143° Ast.

(Grid South)

NR-L 78-2

NR-L 78-2



gts-sericite sh
 "shear gts" w/ mus
 20% "fracture gts"

3x60E 5 175
 -55° N, 4+00'

— = purplish shid
 gts. por.
 gts-sericite sh

North of River Mine Ltd.
 LIZAK TWP
 1" = 100'
 1973 Oct.
 L9E Section
 (Map sheet = 2)
 D.L.S.

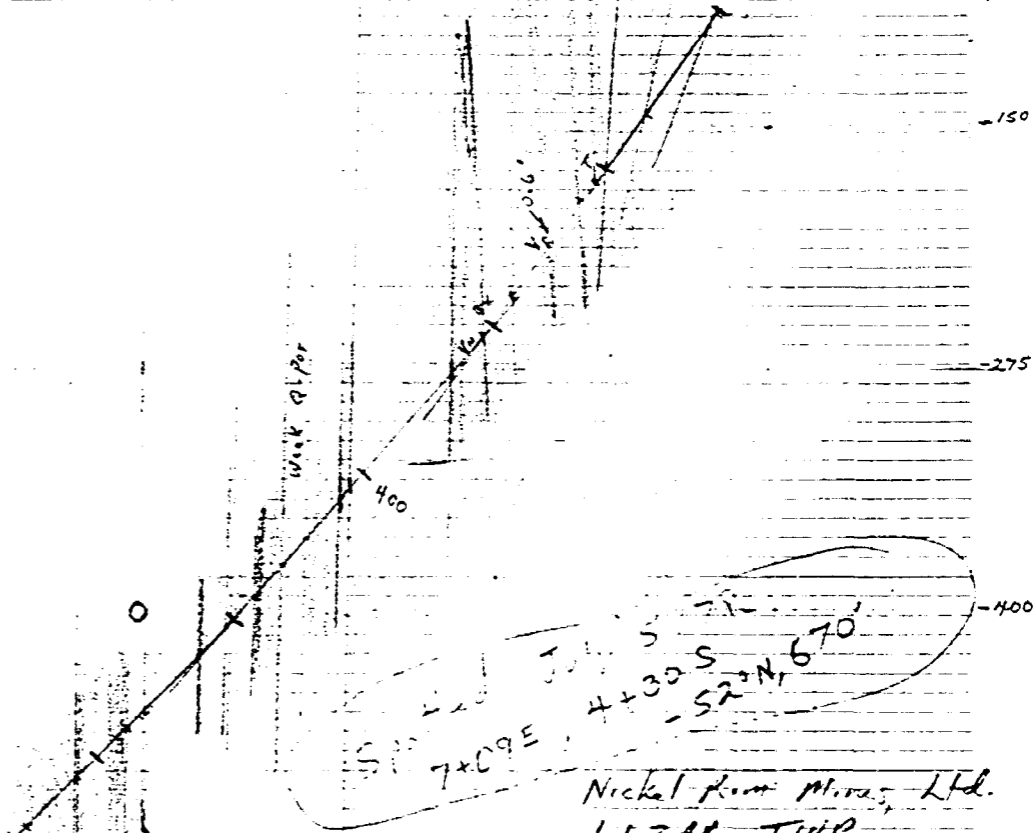
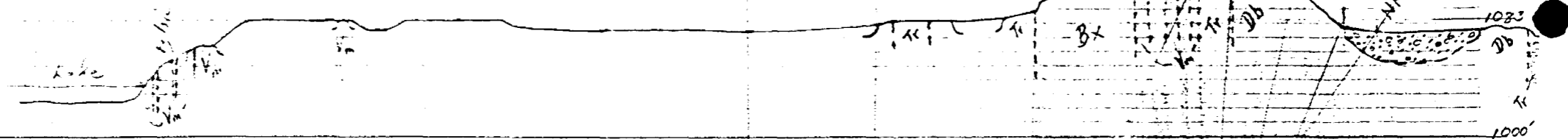
380 - 480

BL #1.

1143° A.L.

(Grid South)

NR-L 78-3

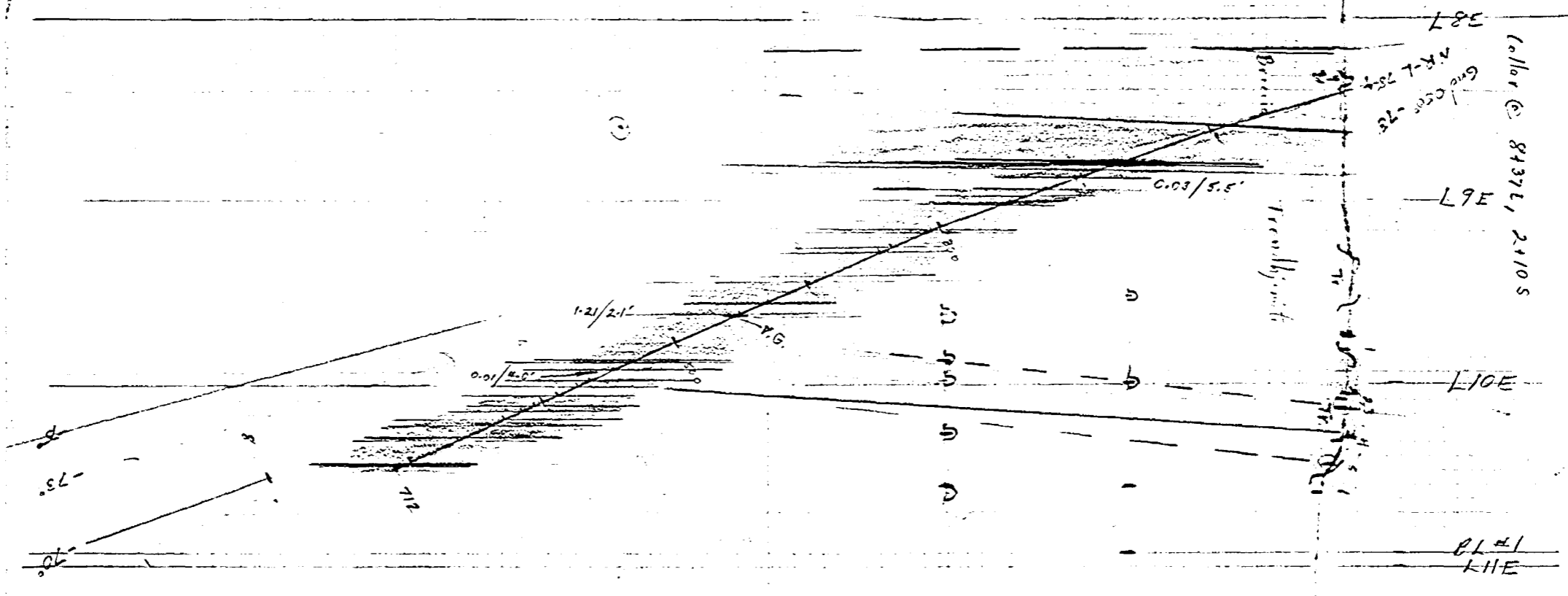


0.05/10' - Main Zone?

Nickel Rom Miras, Ltd.
 LIZAR TWR
 1" = 100'
~~1978~~, 1978 Oct.
 LTE Section
 (~~Proposed~~ hole #3)
 D.L.S.

1143-163

260-550



Section NR-L 78-4

050' Grid
0130 1st
1" = 100'
May 30, 1978 Oct.
D.L.S.

-150' level

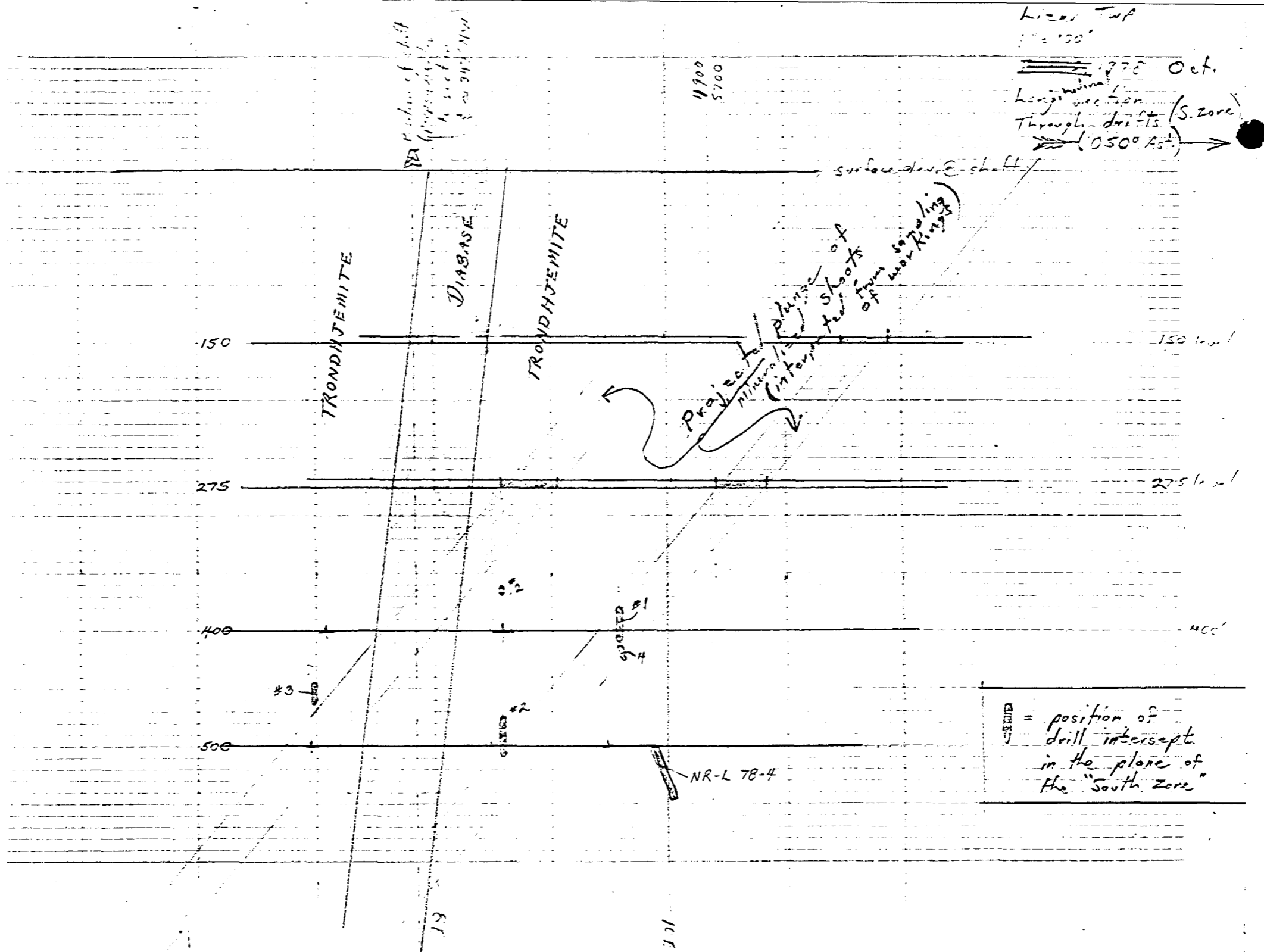
-275' level

1100

500

600

Nickel Rim Mines, Ltd
Kizos Township, Ontario



Position of shaft
 (approximately
 1/2 section
 1/2 to 3/4 NW)

1900
 5700

Local Top
 1778 Oct.
 Long section
 through drifts (S. zone)
 (050° Az) →

TRONDHEMITE

DIABASE

TRONDHEMITE

Projected
 (intercept of
 plane of
 shoots
 from working
 of NW zone)

150

150 level

275

275 level

400

400'

500

#3

#2

#4

NR-L 78-4

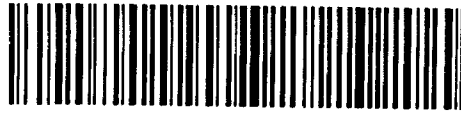
= position of
 drill intercept
 in the plane of
 the "South Zone"

19

19



GEOP



42C16SW0011 2.3209 LIZAR

900

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) Geological and Magnetometer
Township or Area Lizar Township
Claim Holder(s) Mr. Milton C. Halstead
43 Ruby Street, Cobalt, Ont. POJ 1C0
Survey Company
Author of Report D. L. Sannes
Address of Author Suite 1402, 390 Bay St., Toronto
Covering Dates of Survey June 23 - October 5, 1978
(linecutting to office)
Total Miles of Line Cut 5.61

MINING CLAIMS TRAVERSED
List numerically
Geology MAG
P 407552 1/4 not covered
P 407553 1/2 (number)
P 407554 1/2
P 407555 3/4
P 500695 3/4
P 500696 2/3
P 500697 2/8
P 500698
Mag area of claims
MC = 4
20 x 8 = 160 - (8 x 4) = 13 days
Circled mining claim not covered
No Credits
TOTAL CLAIMS 8

SPECIAL PROVISIONS CREDITS REQUESTED
DAYS per claim
Geophysical
-Electromagnetic
-Magnetometer 20
-Radiometric
-Other
Geological 40
Geochemical

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

DATE: Jan. 28, 1980 SIGNATURE: [Signature]
Author of Report or Agent

Res. Geol. [Signature] Qualifications 2,235

Previous Surveys
Table with columns: File No., Type, Date, Claim Holder

OFFICE USE ONLY

If space insufficient, attach list

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations _____ Number of Readings _____
Station interval _____ Line spacing _____
Profile scale _____
Contour interval _____

MAGNETIC

Instrument Geometrics G-816 Proton Precession Magnetometer
Accuracy - Scale constant + 1 gamma
Diurnal correction method Periodic checks at control stations
Base Station check-in interval (hours) (1 hour or less)
Base Station location and value L2E @ Baseline = 1078 gammas

ELECTROMAGNETIC

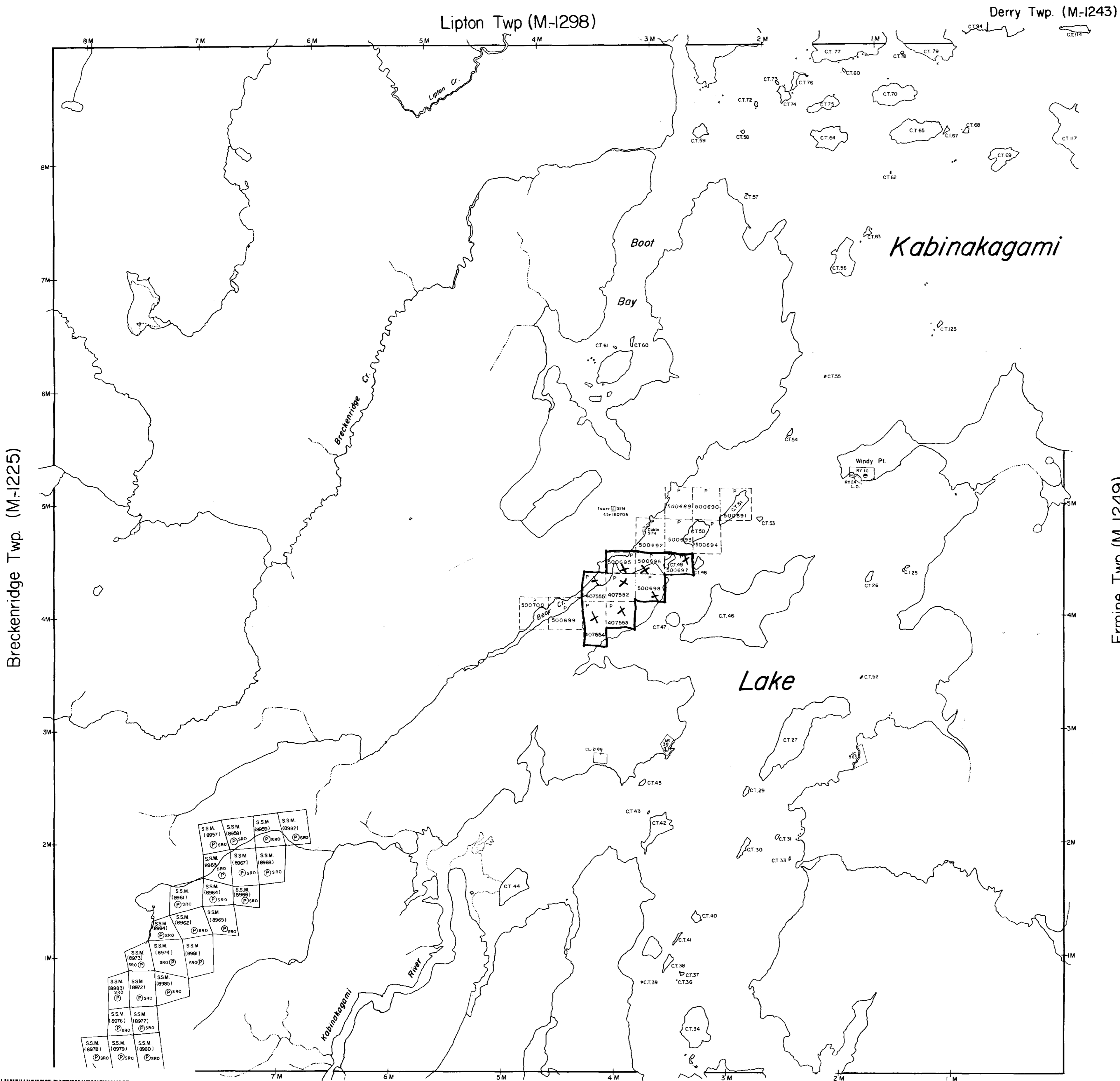
Instrument _____
Coil configuration _____
Coil separation _____
Accuracy _____
Method: [] Fixed transmitter [] Shoot back [] In line [] Parallel line
Frequency _____ (specify V.L.F. station)
Parameters measured _____

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 _____



THE TOWNSHIP OF
 23209
LIZAR
 DISTRICT OF ALGOMA
 PORCUPINE MINING DIVISION
 SCALE: 1-INCH = 40 CHAINS

LEGEND

PATENTED LAND	● or ⊕
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	X
CANCELLED	⊖
PATENTED S.R.O.	⊕

NOTES
 400' surface rights reservation along the shores of all lakes and rivers.

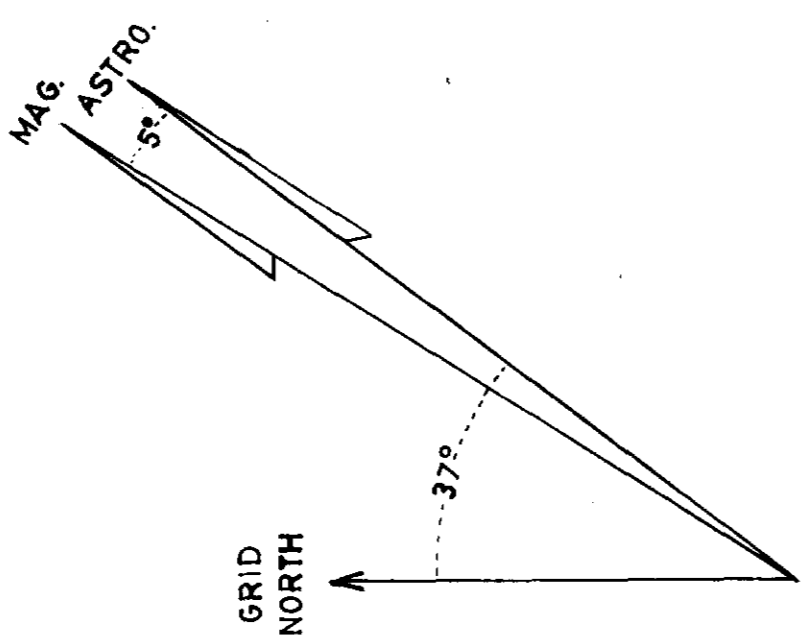
DATE OF ISSUE
 FEB - 4 1980
 SURVEYS AND MAPPING

PLAN NO. **M.1299**
 ONTARIO
 MINISTRY OF NATURAL RESOURCES
 SURVEYS AND MAPPING BRANCH

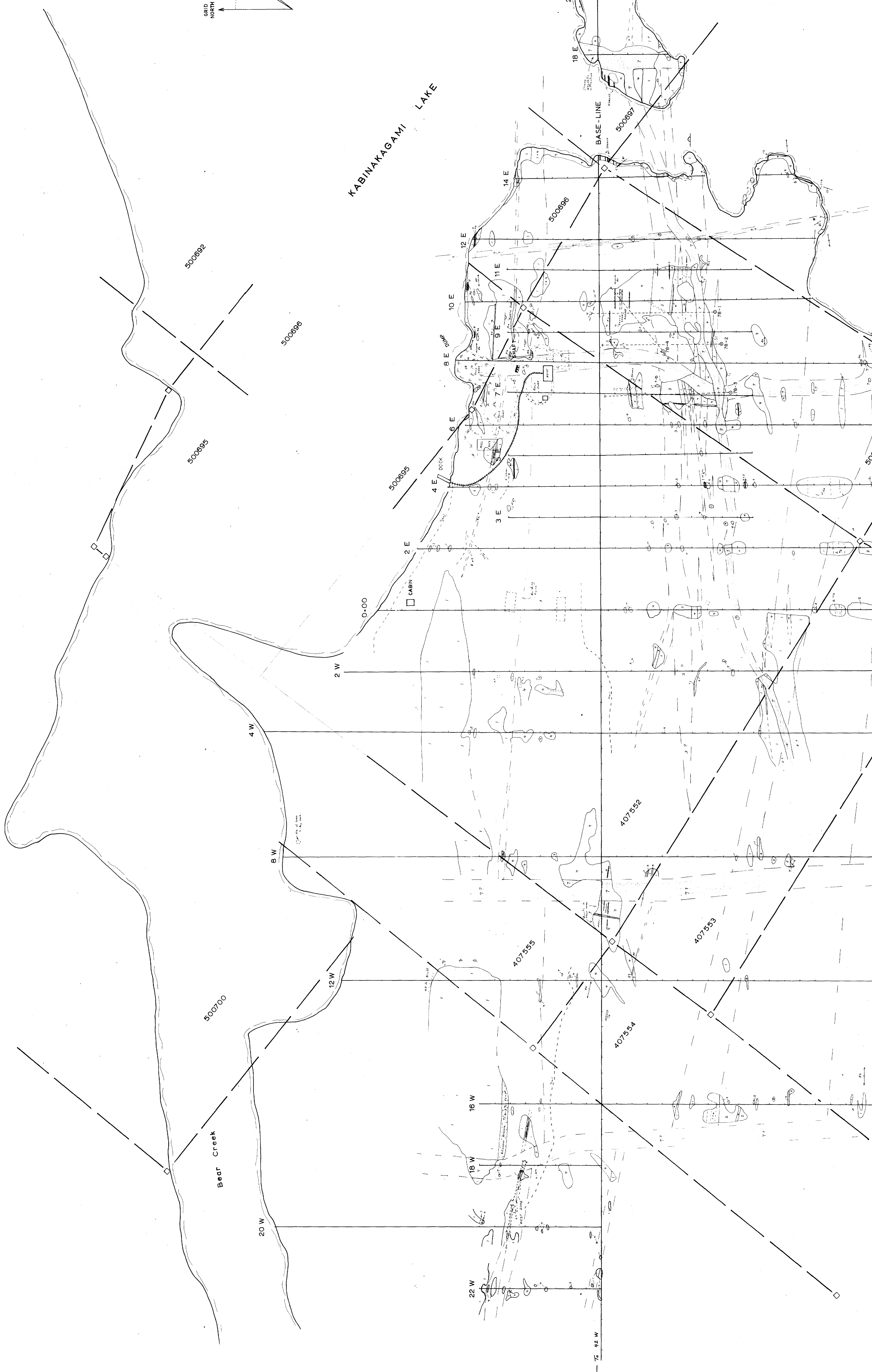
Breckenridge Twp. (M-1225)

Ermine Twp. (M-1249)





KABINAKAGAMI LAKE



500692

500695

500696

500695

22 E

20 E

18 E

BASE-LINE

500697

14 E

12 E

10 E

8 E

6 E

4 E

2 E

2 W

4 W

8 W

12 W

20 W

16 W

18 W

22 W

407552

407555

407553

407554

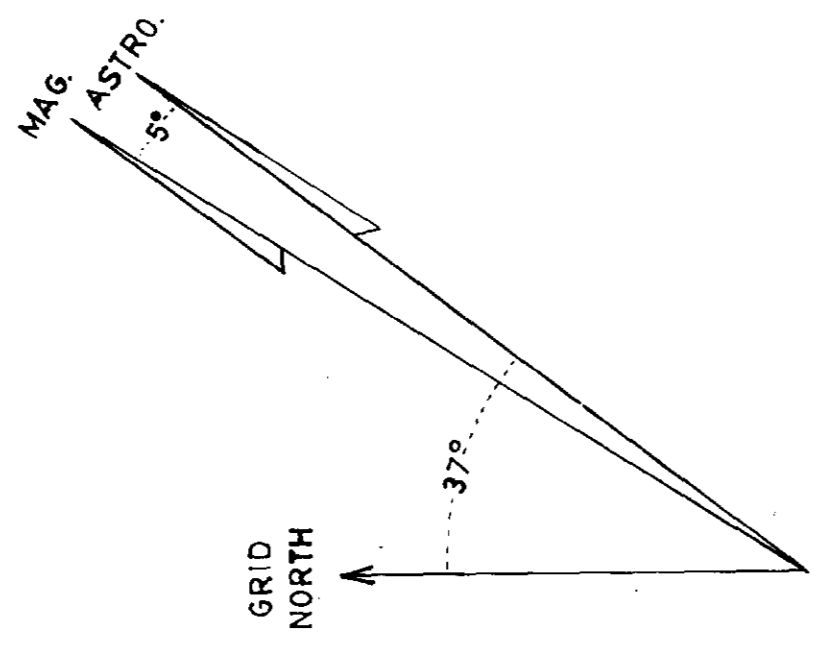
500700

Bear Creek

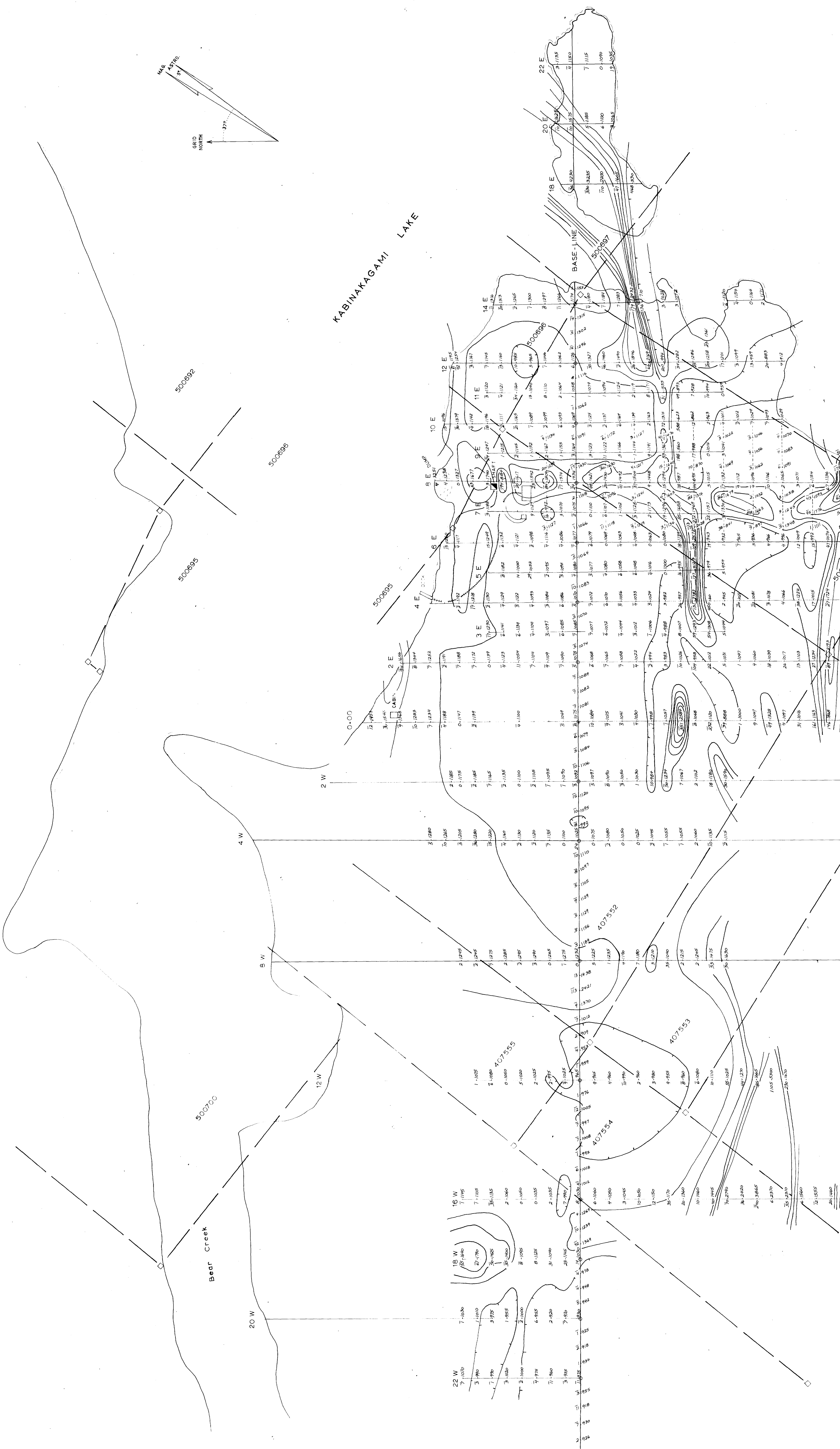
CABIN

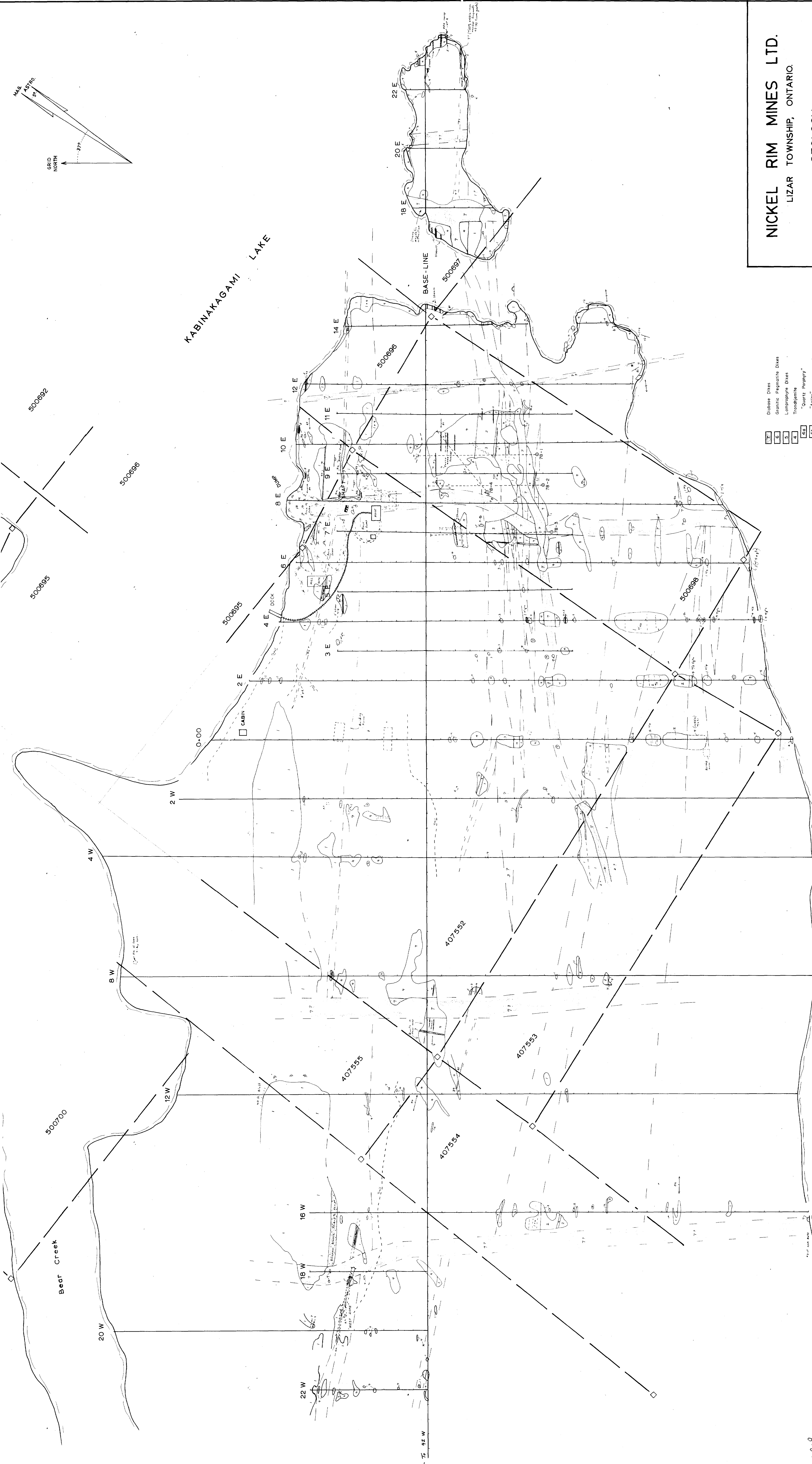
DOCK

75 112 W



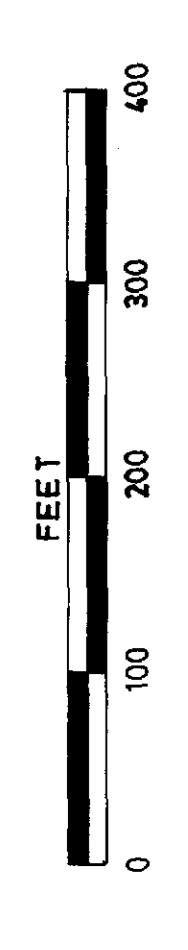
KABINAKAGAMI LAKE





NICKEL RIM MINES LTD.
 LIZAR TOWNSHIP, ONTARIO
GEOLOGY

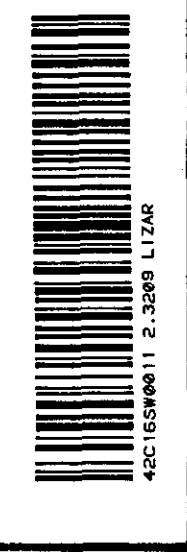
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 N.T.S. 42 C/16

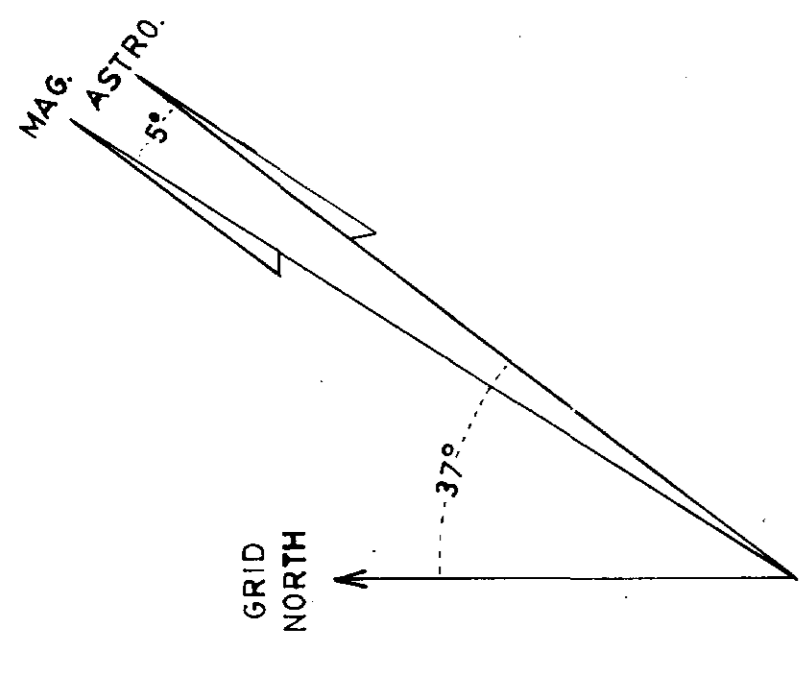


Oct. 1978
 D. L. SANNES

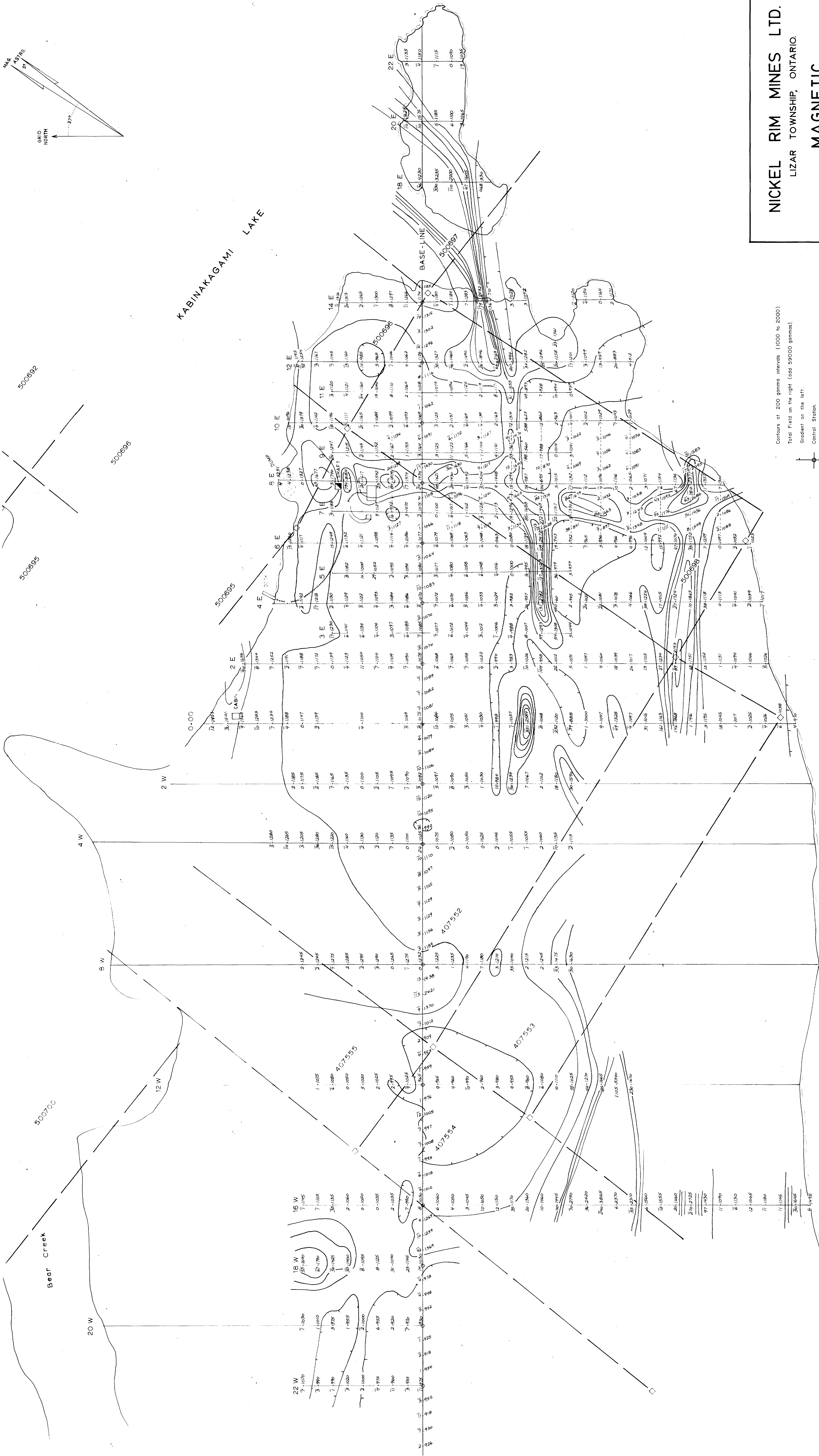
- | | |
|----|--------------------------|
| 7 | Dibase Dikes |
| 6 | Granitic Pegmatite Dikes |
| 5 | Lamprophyre Dikes |
| 4 | Troctolite |
| 3a | "Agile" Quartz Porphyry |
| 3b | 78-3 |
| 2 | Breccia Unit |
| 1 | Pyroxenite |
| 1 | Mafic Volcanics |

2.3.209



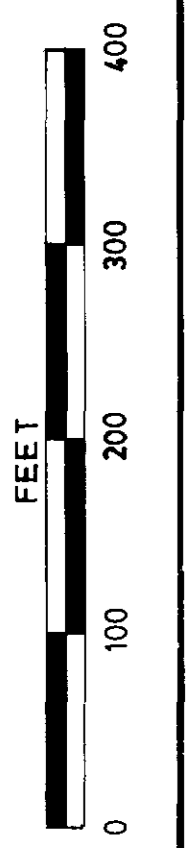


KABINAKAGAMI LAKE



NICKEL RIM MINES LTD.
LIZAR TOWNSHIP, ONTARIO.
MAGNETIC

Scale: 1" = 100'
N.T.S. 42 C/16



Oct. 1978
D. L. Sommes

Contours at 200 gamma intervals (1000 to 2000).
Total field on the right (add 59000 gammas).

Gradient on the left.

Control Station.
Instrument: Geometrics G-86 Proton Precision Magnetometer.
Survey by D.L. Sommes & E.M. Hall: Aug. 1 - Oct. 1, 1978.