



52J04SW0010 52K01SW0034 WHIPPER LAKE

010

**MAGNETOMETER AND ELECTROMAGNETIC
SURVEYS ON THE BERRY, HIGHWAY
AND GOODIE CREEK GROUPS
PREPARED FOR
NAHANNI MINES LIMITED**

B & C LTD.

MINING LAMPS 1983
DERRY, MICHENER, BOOTH & WAHL

D. G. Wahl, P.Eng.
Consulting Engineer

Toronto, Canada
October 14, 1983

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of Derry, Michener, Booth & Wahl.

2.6093

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LIST OF MAPS (IN POCKETS)

HIGHWAY GROUP

- 101 MAGNETOMETER SURVEY
- 102 VLF-EM 16 SURVEY
- 103 ELECTROMAGNETIC SURVEY 444 Hz
- 104 ELECTROMAGNETIC SURVEY 1777 Hz

GOODIE CREEK GROUP

- 201 MAGNETOMETER SURVEY
- 202 VLF-EM 16 SURVEY
- 203 ELECTROMAGNETIC SURVEY 444 Hz
- 204 ELECTROMAGNETIC SURVEY 1777 Hz

BERRY GROUP

- 301 MAGNETOMETER SURVEY
- 302 VLF-EM 16 SURVEY
- 303 ELECTROMAGNETIC SURVEY 444 Hz
- 304 ELECTROMAGNETIC SURVEY 1777 Hz

(i)

SUMMARY

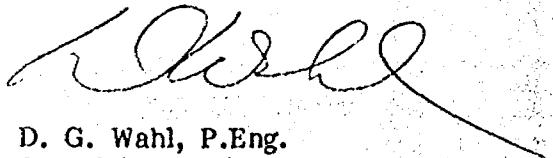
Magnetometer and electromagnetic surveys were carried out on behalf of Nahanni Mines Limited by Derry, Michener, Booth & Wahl (DMBW) on three claim groups in the Sioux Lookout area, designated as the Berry Group, Highway Group and Goodie Creek Group, during the period from August 25 through September 3, 1983, inclusive.

Table 1, on the following page, summarizes the results of the geophysical surveys.

It is recommended that the conductors listed in Table 2, Page (iii), be tested by diamond drilling.

Respectfully submitted,

DERRY, MICHENER, BOOTH & WAHL



D. G. Wahl, P.Eng.
Consulting Engineer

Toronto, Canada
October 14, 1983

Table IMAGNETOMETER AND ELECTROMAGNETIC SURVEYS

<u>Group</u>	<u>Conductor</u>	<u>Strike</u>	<u>Dip</u>	<u>Length</u>	<u>Width</u>	<u>Depth</u>	<u>Conductivity</u>	<u>Mag. Assoc.</u>	<u>Inferred Causative Body</u>
Berry	BG-1	Easterly	near vertical	1.2 km	variable up to 10 m	12 m to 48 m	224 mhos @ 1777 Hz 900 mhos @ 444 Hz	direct up to 5800 nT	Sulphides (pyrrhotite) Volcanoclastic metasediment Lapilli tuff
Highway	HG-1	Easterly	near vertical	300 m	variable up to 10 m	27 m to 30 m	74 mhos @ 1777 Hz 90 mhos @ 444 Hz	flanks weak mag	Sulphides, graphite ? Clastic metasediment
<hr/>									
	HG-2A & 2B	Easterly	near vertical to 80°N	700 m	variable up to 35 m	15 m to 24 m	35 mhos @ 1777 Hz 150 mhos @ 444 Hz	direct up to 1600 nT	Sulphides (pyrrhotite) Clastic metasediment
<hr/>									
Goodie Creek	GCG-1	Easterly	flat	400 m	narrow indeterminate	low	no mag assoc.	overburden	
	GCG-2	Easterly	near vertical	720 m	20 m	10 m to 27 m	17 mhos @ 1777 Hz 150 mhos @ 444 Hz	flanking mag assoc.	Sulphide facies Iron formation
<hr/>									

Table 2

PROPOSED DIAMOND DRILL HOLES

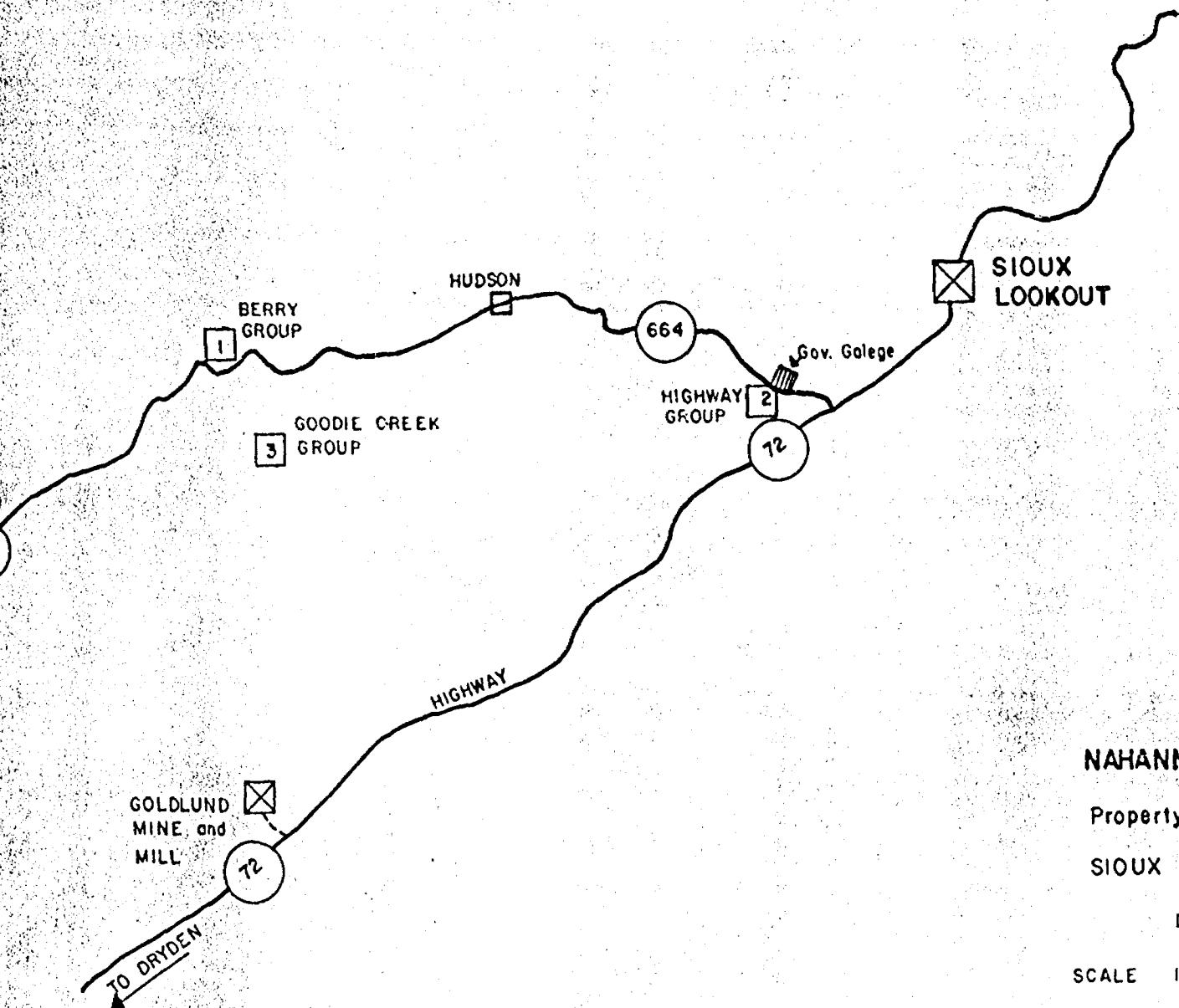
<u>Group</u>	<u>Conductor</u>	<u>Drill Hole</u>	<u>Location</u>				<u>Length</u>	<u>Overburden</u>
			<u>Line</u>	<u>Station</u>	<u>Azimuth</u>	<u>Dip</u>		
Berry Highway	BG-1	No. 1	1+00W	1+00N	Southeast along line	-60°	125 m	≈ 10 m
	HG-1	No. 2	3+00W	3+35S	South along line	-60°	150 m	25 - 30 m
	HG-2a & 2b	No. 3	1+00W	0+50S	South along line	-60°	150 m	≈ 25 m
Goodie Creek	GCG-2	No. 4	3+00W	1+00N	South along line	-60°	150 m	18 - 27 m

1.0 INTRODUCTION

The following report details the results of the magnetometer and electromagnetic surveys carried out on behalf of Nahanni Mines Limited by Derry, Michener, Booth & Wahl (DMBW) on three claim blocks designated as the Berry Group, Highway Group and the Goodie Creek Group (Figure 1).

The magnetometer survey was carried out using a Scintrex MP-2 total field proton precession magnetometer. The total magnetic field intensity data was recorded at 25 m stations at an observed elevation of 2 m above ground level, with a sensitivity of ± 1 nT. Diurnal fluctuations were monitored and all data was adjusted accordingly. The magnetic data is presented as corrected station values, above the local background of 59,000 nT, and as a contoured interpretation of these data.

The electromagnetic surveys were carried out using a Geonics, VLF, EM-16 and a Maxmin II horizontal loop survey unit in the maximum coupled mode. The VLF in-phase and quadrature response parameters were recorded with an accuracy of $\pm 1\%$, at 25 m stations. The transmitting station used during the survey is located in Cutler, Maine and broadcasts at an assigned frequency of 17.8 Hz. All data was plotted as line profiles at a vertical scale of 1 cm to 10%. The in-phase and quadrature response parameters for the Maxmin II were recorded with an accuracy of $\pm 1\%$, at 25 m stations on two frequencies 444 Hz and 1777 Hz, utilizing a 100 m Tx-Rx coil separation. All data was corrected for topography and plotted as line profiles at a vertical scale of 1 cm to 10%.



NAHANNI MINES LIMITED

Property Location Sketch

SIOUX LOOKOUT AREA

DMBW - 1983

SCALE 1 inch : 4 miles (approx)

1" = 4 mi

2.0 BERRY GROUP

2.1 INTRODUCTION

The Berry claim group is situated in the Whipper Lake area, Patricia Mining Division, District of Kenora and consists of the following twelve unpatented, contiguous mining claims (Figure 2).

Pa-590158*
Pa-590159*
Pa-590160
Pa-590161*

Pa-590162*
Pa-590163*
Pa-590164*
Pa-590165

Pa-590166
Pa-705961*
Pa-705962*
Pa-705963*

GAC LTD.

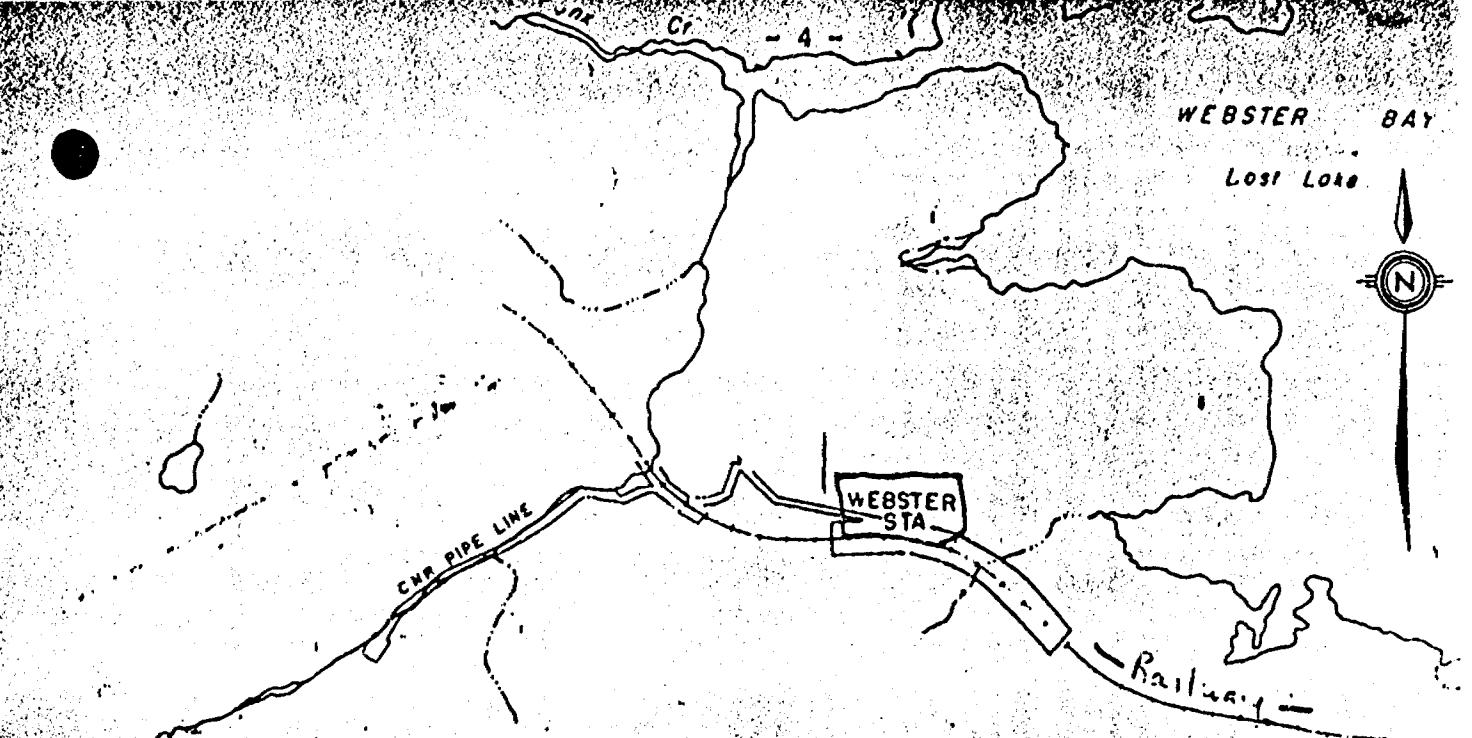
The recently completed ground geophysical surveys, however, only covered nine of the aforementioned claims so designated with an asterisk.

The property is readily accessible by car southwest from Sioux Lookout via Highway 72 to Highway 664, which is then followed westerly past the CNR station at Hudson, to a point approximately 3 km northeast of Goodie Lake, at which point the road crosses the southeast corner of the property on claim Pa-590160.

WEBSTER BAY

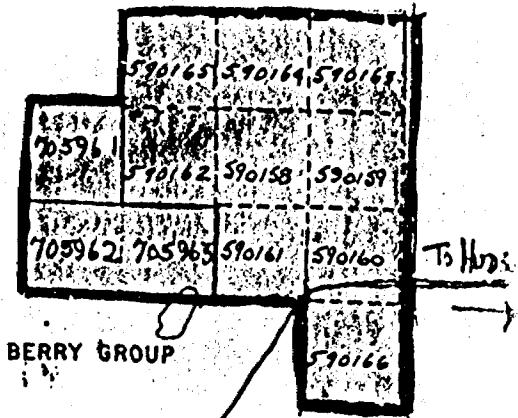
LOST LOBO

N



TRY
WT E2

CORRAL
FILE:
2124428
2124429



65M 6th BASE LINE
NIVEN 1907

64M

Goodie

63M

64

62M

LOBO

O

Goodie

HICKEN

665

H.E.P.C.

Claim Location Sketch

2 inches to 1 mile

Figure 2

2.2 LINE CUTTING

The line cutting was carried out by Ken Bernier of Sioux Lookout during the period from August 15th through August 19th, 1983, inclusive. The survey grid, consisting of 9.675 km of line, was oriented such that the baseline trends S70°W with grid lines trending N20°W at 100 m intervals along the baseline. Twenty-five metre stations were established on all lines.

2.3 GEOPHYSICAL SURVEYS

The ground geophysical surveys were carried out during the period from August 25th through August 27th, inclusive, under the direct supervision of R.E. Routledge, M.Sc.

2.3.1 Magnetometer Survey

The magnetometer survey (Ref. Map 301) was able to further define the regional magnetic trends mapped on the property by the Geological Survey of Canada and published in Geophysical Paper 1147G.

The results of the magnetometer survey indicate the property to be underlain by a metavolcanic-metasedimentary sequence, which has been intruded by a younger granite.

The metavolcanic unit has been magnetically inferred to underlie the southern one-third and northeastern one-quarter of the survey area and is characterized by broad, uniform regions of moderate magnetic relief, up to 3,000 nT above local background. This unit has been interpreted to be an easterly striking, near-vertically dipping intermediate to mafic flow.

The metasedimentary unit has been magnetically inferred to underlie the central portion of the survey area and is characterized by a narrow lenticular magnetic anomaly up to 5,800 nT above local background. This unit has been interpreted to be either an easterly striking, near vertical dipping clastic sediment or a lean iron formation.

The remaining northwestern one-quarter of the survey area has been magnetically inferred to be underlain by a granitic intrusive and is characterized by a broad region of low uniform magnetic relief in the range of 300 to 800 nT above local background.

2.3.2 Geonics VLF Electromagnetic Survey

The VLF electromagnetic survey (Ref. Map 302) identified a major anomalous conductive zone, designated as BG-1, striking easterly across the central portion of the survey area. BG-1 exhibits strong uniform conductivity along the entire 1.2 km strike length and is characterized by a sharp, large amplitude in-phase cross-over, up to 120% (+60 to -60), over a horizontal distance of 100 m. Associated with this anomalous in-phase response is an equally anomalous reverse sense quadrature

response, of up to 60% (-30 to +30), over a horizontal distance of 200 m. BG-1 appears to be open along strike to the east and to the west.

Conductor BG-1 lies coincident with the magnetically inferred metasedimentary unit striking easterly across the central portion of the property.

2.3.3 Maxmin II Horizontal Loop Electromagnetic Survey

The Maxmin II horizontal loop electromagnetic survey (Ref. Maps 303 and 304) was able to further define the easterly striking anomaly BG-1 identified on the property as a result of the VLF electromagnetic survey.

The electromagnetic response parameters indicate that conductor BG-1 is a near vertical conductor sheet, up to 18 m wide, exhibiting a conductivity thickness of up to 224 mhos at 1777 Hz and 900 mhos at 444 Hz. This four-fold increase in the conductivity, with a decrease in frequency, indicates that BG-1 is an excellent bedrock conductor. The response parameters also suggest that the conductor appears to weaken to the east. Depth to top calculations indicate that from 12 to 48 m of glacial till lie atop the conductor.

As was the case with the VLF data the horizontal loop defined the conductor lying coincident with the magnetically inferred metasedimentary unit.

2.4 CONCLUSIONS

Conductor BG-1 is an excellent near-surface, easterly trending conductor exhibiting a near vertical dip.

The causative body of conductor BG-1 is thought to be a highly conductive volcanoclastic metasediment or lapilli tuff containing a high percentage of sulphides (mainly pyrrhotite) with minor amounts of graphite.

2.5 RECOMMENDATIONS

It is recommended that anomaly BG-1 be tested by diamond drilling.

Figure 3 presents the location of the proposed diamond drill hole and illustrates the geophysically inferred orientation of the causative body.

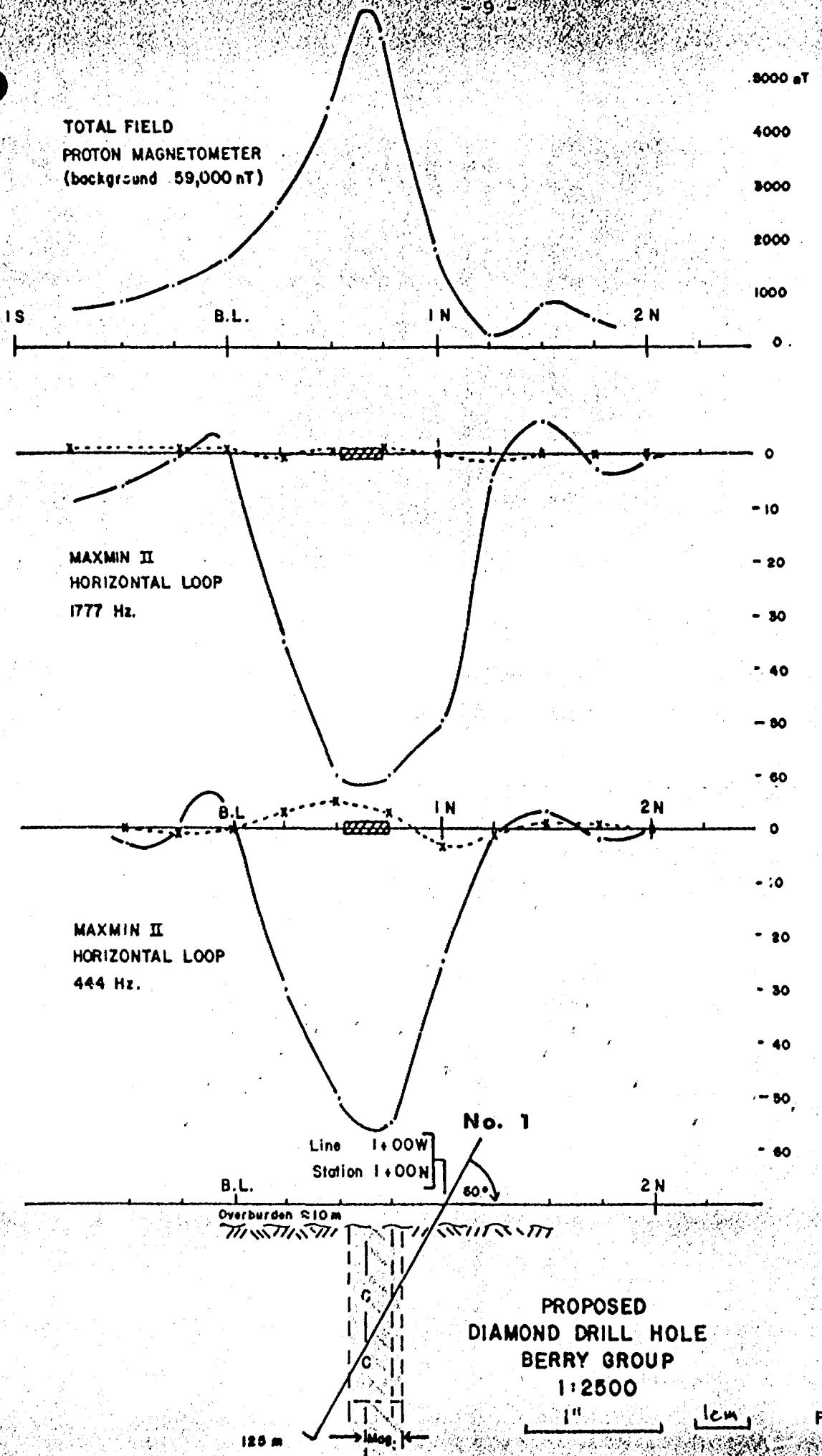


FIGURE 3

3.0 HIGHWAY GROUP

3.1 INTRODUCTION

The Highway Group is situated in Drayton Township, Patricia Mining Division, District of Kenora and consists of the following four unpatented, contiguous mining claims (Figure 4).

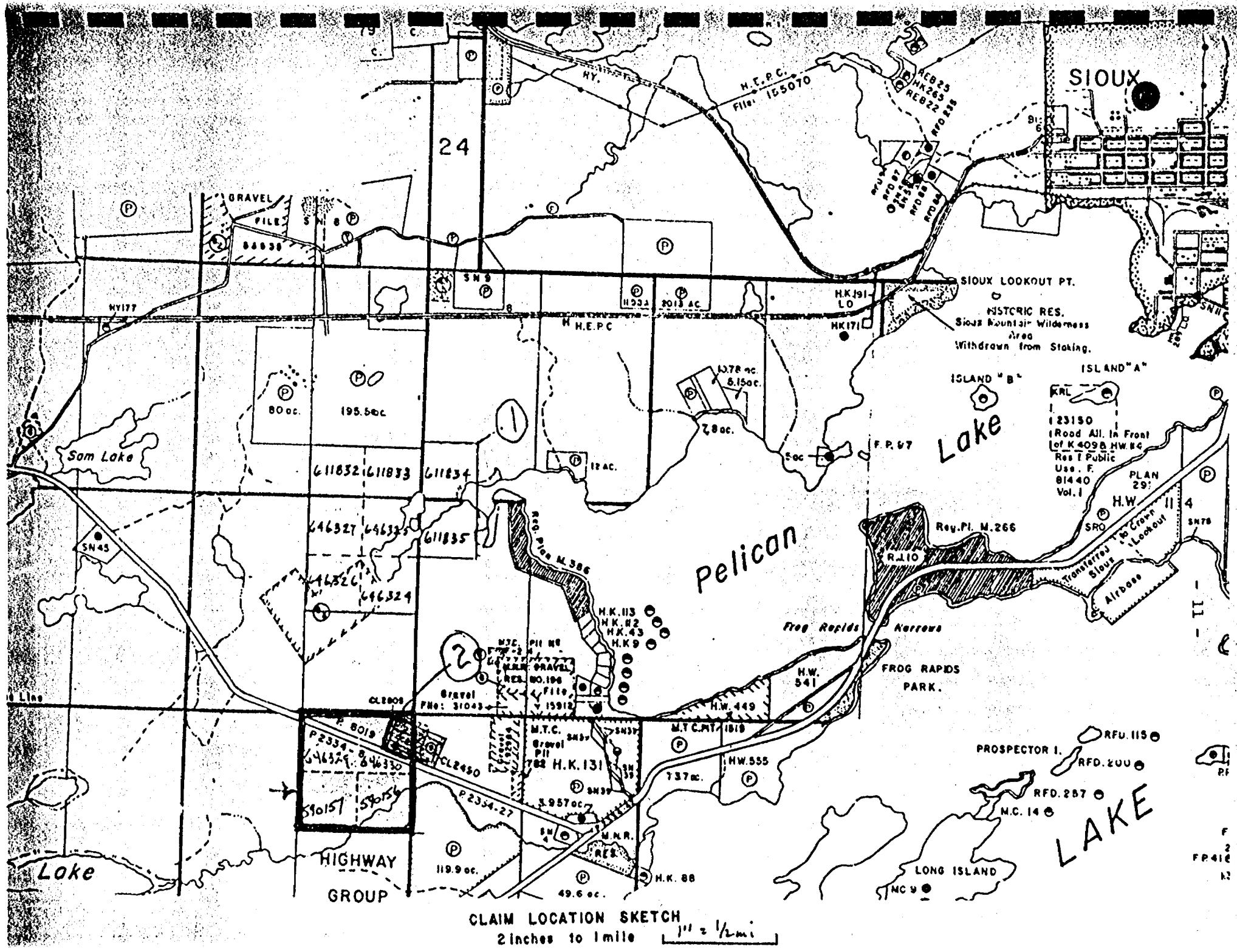
Pa-590156 Pa-646329

Pa-590157 Pa-646330

The property is conveniently accessible by car southwest from Sioux Lookout via highway 72, to highway 664, which is then followed westerly for a distance of 1.2 km, at which point the highway crosses the northern half of the property.

3.2 LINE CUTTING

The line cutting was carried out by Ken Bernier of Sioux Lookout during the period from August 20 through August 23, 1983, inclusive. The survey grid, consisting of 6.325 line km, was oriented east-west with grid lines trending north-south at 100 m intervals along the baseline. Twenty-five metre stations were established on all lines.



CLAIM LOCATION SKETCH

2 inches to 1 mile $\frac{1}{2}'' = \frac{1}{2}\text{mi}$

3.3 GEOPHYSICAL SURVEYS

The ground geophysical surveys were carried out during the period from August 28 through August 29, 1983, inclusive, under the direct supervision of R. E. Routledge, M.Sc.

3.3.1 Magnetometer Survey

The magnetometer survey (Ref. Map 101) was able to further define the regional magnetic trends mapped on the property by the Geological Survey of Canada and published in Geophysical Papers 1138G and 1147G.

The results of the magnetometer survey indicate the property to be underlain by a metasedimentary sequence consisting predominately of clastic metasediments interbedded with arkose.

The clastic metasediments have been magnetically inferred to occupy the southern half and northern quarter of the survey area and are characterized by somewhat erratic magnetic relief in the range of 1,000 nT to 3,000 nT above local background.

The magnetically inferred arkosic unit occupies a 150 m wide zone, interbedded with the clastic metasediments, lying parallel to and immediately north of the baseline and is characterized by a region of moderately low uniform magnetic relief in the range of 900 to 1,000 nT above local background.

3.3.2 Geonics VLF Electromagnetic Survey

The VLF electromagnetic survey (Ref. Map 102) identified two anomalous conductive zones, designated as HG-1 and HG-2a and 2b, on the property.

Conductor HG-1 is located in the southwest corner of the property on claim Pa-590157 and is identified by a very weak, low angle, in-phase response accompanied by much more diagnostic reverse sense quadrature response. The poor in-phase response could be an indication of varved clay in the underlying glacial tuff.

Conductors HG-2a and 2b are centrally located within the survey area and will be discussed together because it is felt that they are part of the same easterly trending anomalous conductive horizon. Both conductors exhibit moderately strong conductivity along the entire 700 m composite strike length. The zone is characterized by a moderate in-phase response accompanied by a much more diagnostic reverse sense quadrature response. As was the case with HG-1, the in-phase response for HG-2a and 2b is thought to be distorted, to some extent, by the presence of varved clays in the glacial till. Both conductors are open along strike to the east and west.

3.3.3 Maxmin II Horizontal Loop Electromagnetic Survey

The Maxmin II horizontal loop electromagnetic survey (Ref. Maps 103 and 104) was able to further define the VLF anomalies identified on the property.

The electromagnetic response parameters indicate that conductor HG-1 is a near-vertical, possibly southerly dipping conductive sheet, up to 10 m wide and exhibits a conductivity thickness of up to 74 mhos at 1777 Hz and 90 mhos at 444 Hz. The most increase in the conductivity with a decrease in frequency indicates that HG-1 is a valid bedrock conductor. The response parameters also suggest that the conductor weakens to the east and strengthens to the west. HG-1 is open along strike to the west. Depth to top calculations indicate that from 27 to 30 m of glacial till, with varved clay interbeds, lie atop the conductor.

Conductor HG-1 appears to lie on the southern flank of a weak, 25-30 nT, magnetic anomaly.

The electromagnetic response parameters indicate that conductors HG-2a and 2b are both part of the same easterly trending zone, up to 35 m wide exhibit a conductivity thickness on line 1+00W of up to 25 mhos at 1777 Hz and 150 mhos at 444 Hz.

This increase in conductivity with a decrease in frequency indicates that HG-2a and 2b are excellent bedrock conductors. The response parameters also suggest that this conductive zone appears to weaken along strike in both directions. Depth to top calculations indicate that from 15 to 24 m of glacial till lie atop the zone.

Conductors HG-2a and 2b were found to be directly associated with a region of above background magnetic relief in the range of 1200-1600 nT.

3.4 CONCLUSIONS

Conductor HG-1 is a good, easterly trending, bedrock conductor lying with a clastic metasedimentary unit exhibiting a near-vertical to southerly dip.

Conductors HG-2a and 2b are both part of the same anomalous, easterly trending, conductive zone inferred to lie within a magnetically definable bed within the clastic metasediments, at or near the contact with the arkosic unit. The causative body of conductors HG-2a and 2b is thought to be sulphide mineralization associated with the stratigraphic unit within the clastic metasediments.

3.5 RECOMMENDATIONS

It is recommended that three claims be staked adjacent to Pa-590157 to cover the possible western continuation of conductors HG-1 and HG-2a.

It is also recommended that anomaly HG-1 and anomalous zone HG-2a and 2b be tested by diamond drilling.

Figures 5 and 6 present the locations of the proposed diamond drill holes and illustrate the geophysically inferred orientation of the causative bodies.

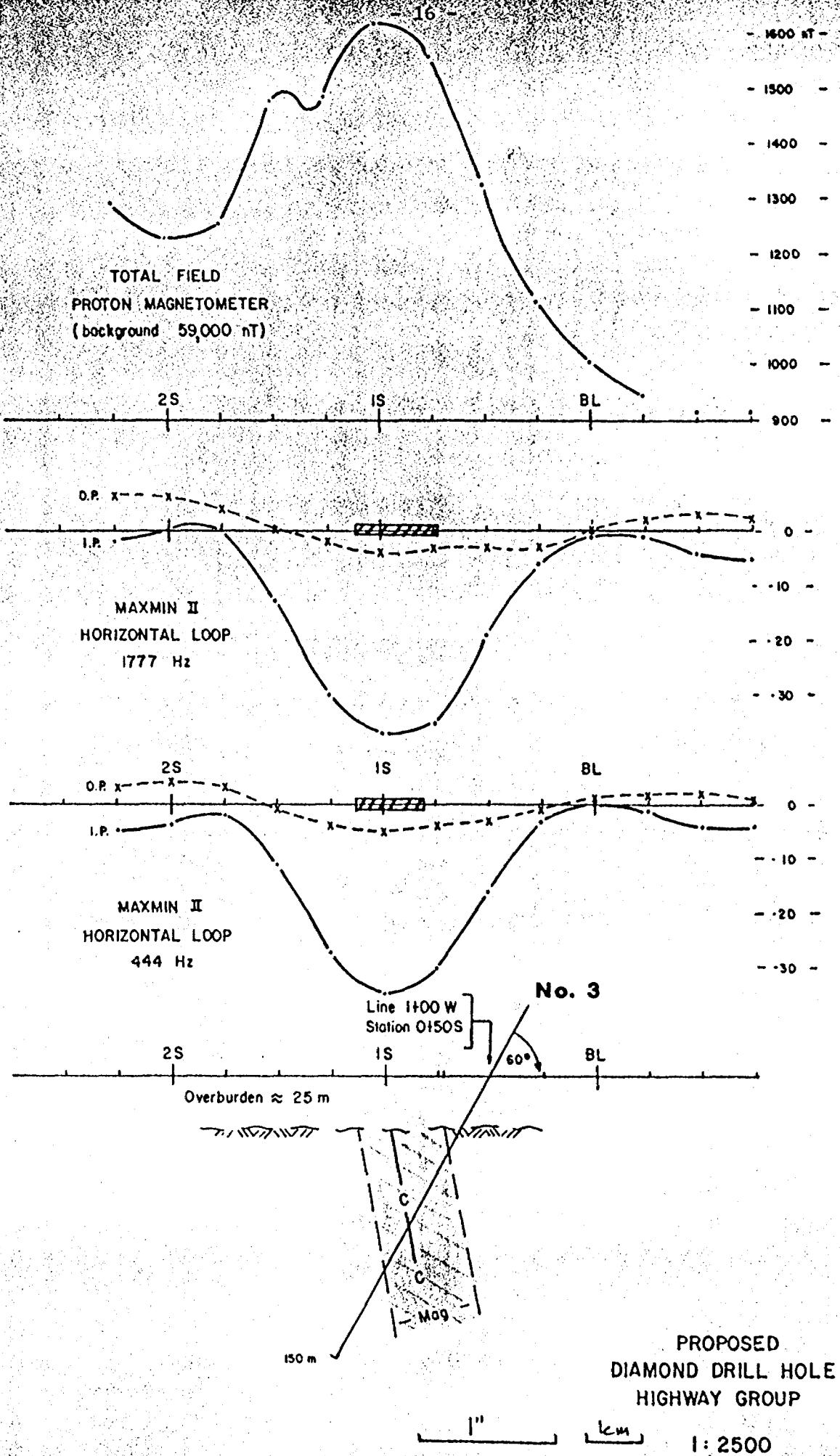
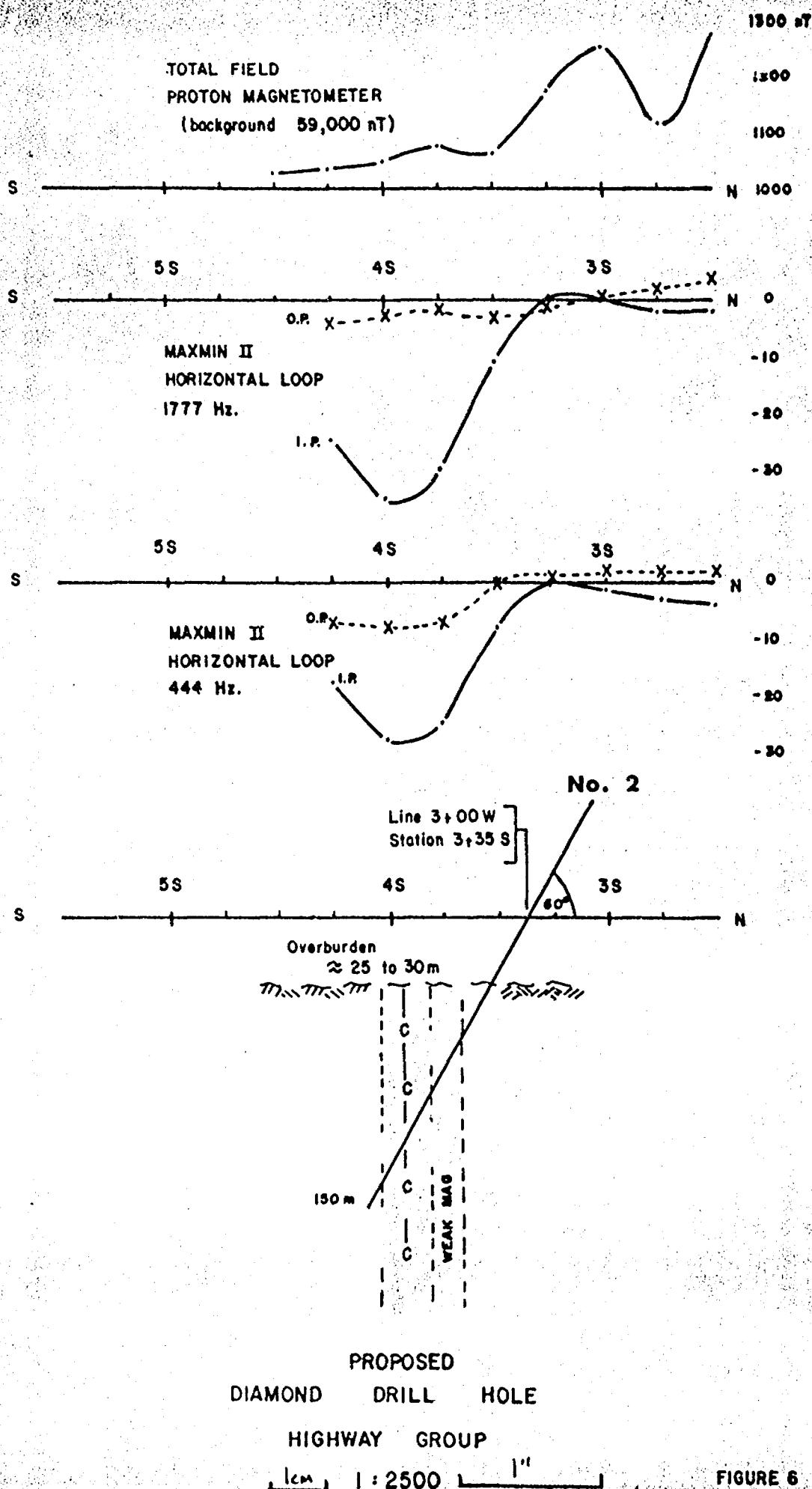


FIGURE 5



4.0 GOODIE CREEK GROUP

4.1 INTRODUCTION

The Goodie Creek claim group is situated in Lamond Township, Patricia Mining Division, District of Kenora and consists of the following six unpatented, contiguous mining claims (Figure 7).

Pa-590160	Pa-590169	Pa-590171
Pa-590167	Pa-590170	Pa-590172

The property is readily accessible by truck southwest from Sioux Lookout, via Highway 72 to Highway 664, which is then followed westerly to Goodie Creek, a distance of approximately 30 km; at which point an old bush road trends southeasterly to the H.E.P.C. transmission line which crosses the northwest corner of the property.

4.2 LINE CUTTING

The line cutting was carried out by Ken Bernier of Sioux Lookout during the period from August 24 through August 30, 1983, inclusive. The survey grid, consisting of 5.425 line km, was oriented east-west with grid lines trending north-south at 100 m intervals along the baseline. Twenty-five metre stations were established on all lines.

WHIPPER LAKE AREA M-2574

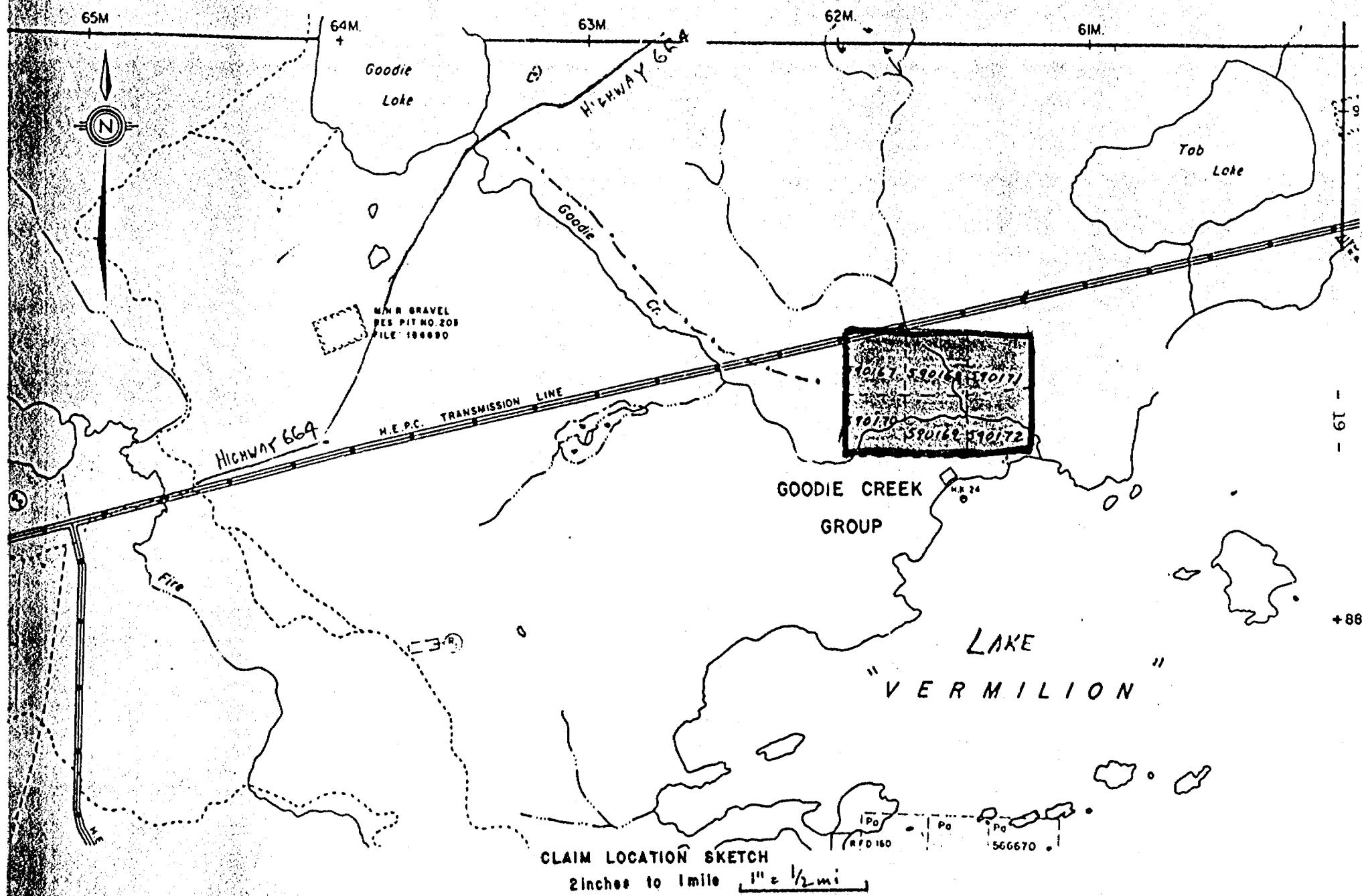


Figure 7

4.3 GEOPHYSICAL SURVEYS

The ground geophysical surveys were carried out during the period from August 30 through September 3, 1983, inclusive, under the direct supervision of R. E. Routledge, M.Sc.

4.3.1 Magnetometer Survey

The magnetometer survey (Ref. Map 201) was able to further define the regional magnetic trends mapped on the property by the Geological Survey of Canada and published in Geophysical Paper 1157G.

The results of the magnetometer survey indicate the property to be underlain by metavolcanic-metasedimentary sequence.

The metavolcanic unit has been magnetically inferred to underlie almost 80% of the survey area and is characterized by broad uniform regions of low to moderate magnetic relief, in the range of 900 to 1,450 nT above local background. This unit has been interpreted to be an easterly striking, near-vertically dipping intermediate to mafic flow.

The metasedimentary unit has been magnetically inferred to occupy the remaining 20% of the survey area, being confined to a band of approximately 100 m wide, striking easterly across the northern half of the survey area, and is characterized by a narrow lenticular magnetic anomaly of up to 4,647 nT above local background. This unit has been interpreted as a near-vertically dipping iron formation.

4.3.2 Geonics VLF Electromagnetic Survey

The VLF electromagnetic survey (Ref. Map 202) identified two anomalous conductive zones, designated as GCG-1 and GCG-2 on the property.

Conductor GCG-1 is located in the southwest corner of the property and is identified by a moderate, low angle, in-phase response accompanied by a very weak much less definitive similar sense quadrature response. The moderate, low angle, in-phase response coupled with the weak similar sense quadrature response suggests that GCG-1 is a poor conductor.

Conductor GCG-2 is located in the north central portion of the survey area lying approximately parallel to, and 50 to 100 m. north of the baseline and is characterized by an erratic, low angle, in-phase response accompanied by a moderately strong reverse sense quadrature response. The erratic, low angle, in-phase response coupled with the moderately strong, reserve sense, quadrature response, suggests that GCG-2 is a good conductor associated with a region of high magnetic gradients. Conductor GCG-2 was found to lie along the southern flank of a major magnetic anomaly inferred to be an easterly trending iron formation.

4.3.3 Maxmin II Horizontal Loop Electromagnetic Survey

The Maxmin II horizontal loop electromagnetic survey (Ref. Maps 203 and 204) was able to further define the VLF anomalies identified on the property.

The electromagnetic response parameters indicate that conductor GCG-1 is a very weak conductor up to 25 m wide and exhibits little if any in-phase response and only a very weak quadrature response. The response parameters suggest that conductor GCG-1 is a very poor conductor and could reflect conductive overburden or an extremely deep conductor.

The electromagnetic response parameters indicate that conductor GCG-2 is a near-vertical conductive sheet of indeterminate width and exhibits a conductivity thickness of up to 37 mhos at 1777 Hz and 150 mhos at 444 Hz. This four-fold increase in the conductivity with a decrease in frequency indicates that GCG-2 is an excellent, near-surface bedrock conductor. The response parameters also suggest that the conductivity is variable along its 700 m strike length. Sixty-cycle interference from the power transmission lines, located north of the conductor, has distorted the northern shoulder resulting in the somewhat inferred dip and width extent of the conductor. Depth to top calculations indicate that from 10 to 27 m of overburden lie atop the conductor.

As defined by the VLF survey conductor GCG-2 lies along the southern flank of an easterly trending magnetic anomaly.

4.4 CONCLUSIONS

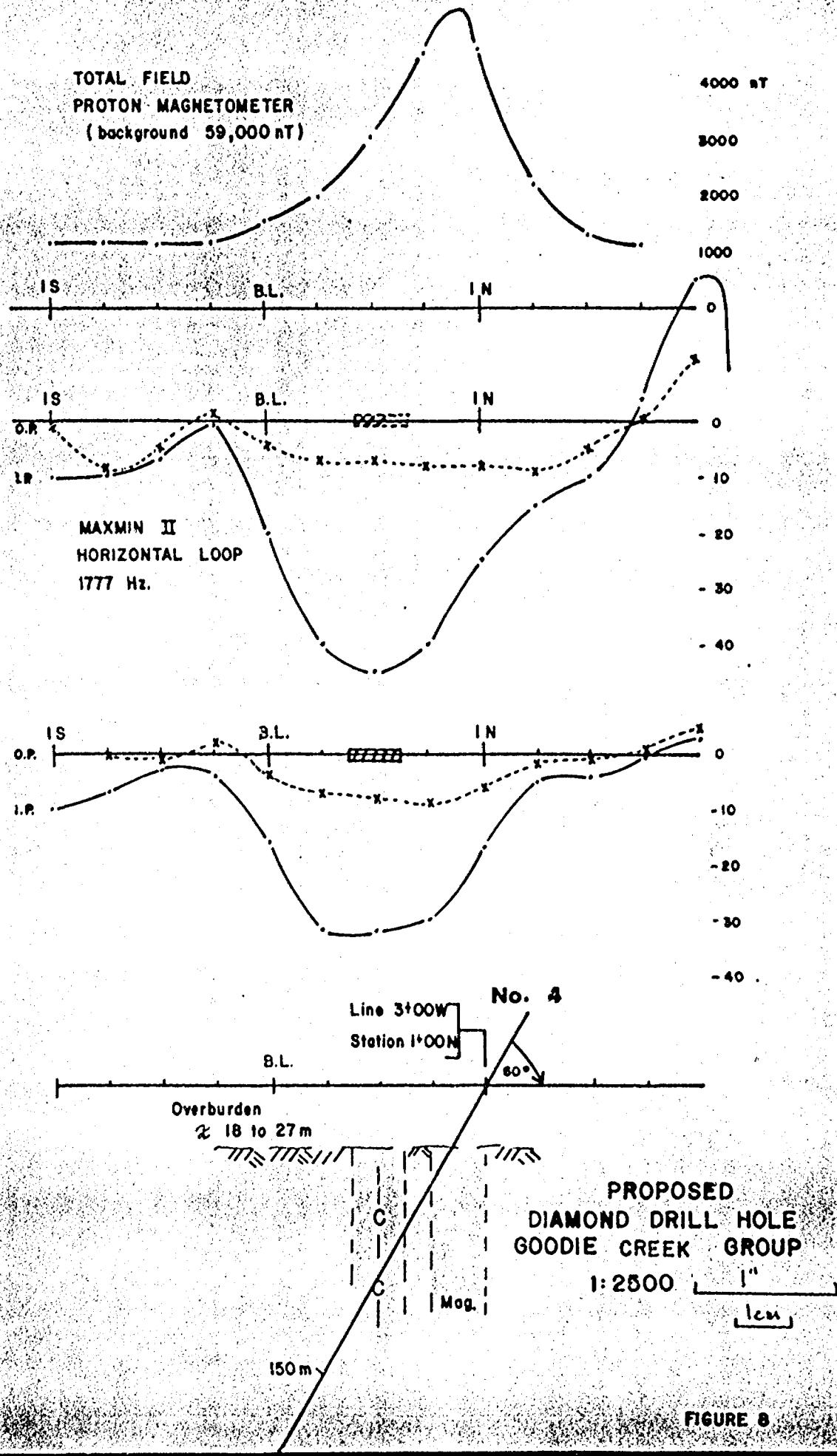
Conductor GCG-2 is a poor conductor and is probably a reflection of conductive overburden.

Conductor GCG-2 is an excellent near-surface vertically dipping conductor lying on the southern flank of a strong regional magnetic anomaly interpreted to be an iron formation. Conductor GCG-2 could possibly be the sulphide facies of this iron formation.

4.5 RECOMMENDATIONS

It is recommended that conductor GCG-2 be tested by diamond drilling.

Figure 8 presents the location of the proposed diamond drill hole and illustrates the geophysically inferred orientation of the causative body.





S2J04SW0010 S2K01SW0034 WHIPPER LAKE

natural Resources

File _____

900

DGICAL - GEOCHEMICAL
ATA STATEMENT

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
 FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
 TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) Magnetometer-Electromagnetic (VLF & Maxmin)

Township or Area Whipper Lake-Drayton-Lamond

Claim Holder(s) Nahanni Mines Ltd.

Suite 1107-330 Bay St., Toronto

Survey Company Derry, Michener, Booth & Wahl

Author of Report D. G. Wahl, P.Eng.

Address of Author Suite 2302-401 Bay St., Toronto

Covering Dates of Survey Aug. 15/83 to Oct. 14/83
(line cutting to office)

Total Miles of Line Cut 21.425 km

SPECIAL PROVISIONS
CREDITS REQUESTEDENTER 40 days (includes VLF
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 (Maxmin II)	20
Geological	
Geochemical	

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

DATE: Oct. 14/83

SIGNATURE:

Author of Report or Agent

Res. Geol. Qualifications 63.2859

Previous Surveys

File No.	Type	Date	Claim Holder
.....
.....
.....
.....
.....

MINING CLAIMS TRAVESED
List numerically

Pa 590158	✓	.....
Pa 590159	✓	.....
.....
..Pa..590161	✓	.....
..Pa..590162	✓	.....
..Pa..590163	✓	.....
..Pa..590164	✓	.....
..Pa..705961	✓	.....
..Pa..705962	✓	.....
..Pa..705963	✓	.....
..Pa..590156	✓	.....
..Pa..590157	✓	.....
..Pa..646329	✓	.....
..Pa..646330	✓	.....
..Pa..590160	✓	.....
..Pa..590162	✓	.....
..Pa..590169	✓	.....
..Pa..590170	✓	.....
..Pa..590171	✓	.....
Pa 590172	✓	.....
TOTAL CLAIMS	19	.....

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations 857 each Mag-VLF-Maxmin Number of Readings 857 each Mag-VLF-Maxmin

Station interval 25 m Line spacing 100 m

Profile scale cm to 100 for both VLF and Maxmin

Contour interval 200 nT & 1000 nT as required for structural definition

MAGNETIC

Instrument Scintrex MP-2 Total Field Proton Precession Magnetometer

Accuracy - Scale constant ± 1 nT

Diurnal correction method Closed loop - time extrapolation

Base Station check-in interval (hours) Half hour

Base Station location and value All Baseline - Grid line intercepts have been established as base stations.

ELECTROMAGNETIC

Instrument Geonics VLF EM-16 Apex Maxmin II

Coil configuration Coplanar

Coil separation Maxmin Tx-Rx 100 m

Accuracy $\pm 1\%$ In-phase & quadrature

Method: Fixed transmitter (vlf) Shoot back In line (Maxmin) Parallel line

Frequency Cutler Main 17.8 kHz - Maxmin II 444 Hz & 1777 Hz
(specify V.L.F. station)

Parameters measured In-phase and quadrature

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

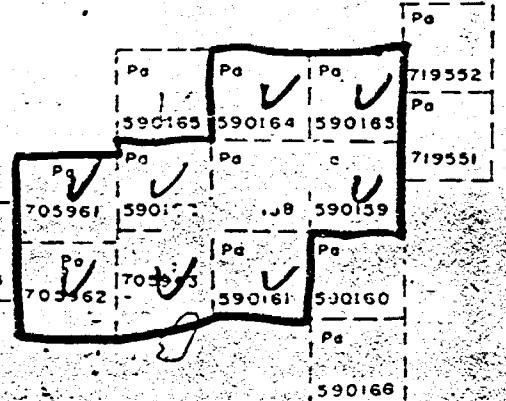
Vaughan Lake Area (M-2271)

52k/01SW
Area of
WHIPPER LK
M-2574
Scale: 1" = 40 chains

LAG
SEUL
INDIAN
RESERVE
NO. -28

**VERMILION ADDITIONAL
FOR STATUS REFER TO TWP PLAN
(M-2273)**

FILE: 183840	Po C	7336737	Po. ① 329958 Gravel	Po. ① 23506	Po. ① 23503
183840	Po C	338751	Po. ① 329957	Po. ① 23503	Po. ① 23504
	GRAVEL	F-183840			
Po	Po	Po	Po	Po	Po
338750	366872	566871	366870	366869	366868
566866	566867	566968	566869		
Po	Po	Po	Po	Po	Po
566862	366865				
Po	Po				
566863	566864				



-65M 8.8 BASE LINE

三

63 M

162M

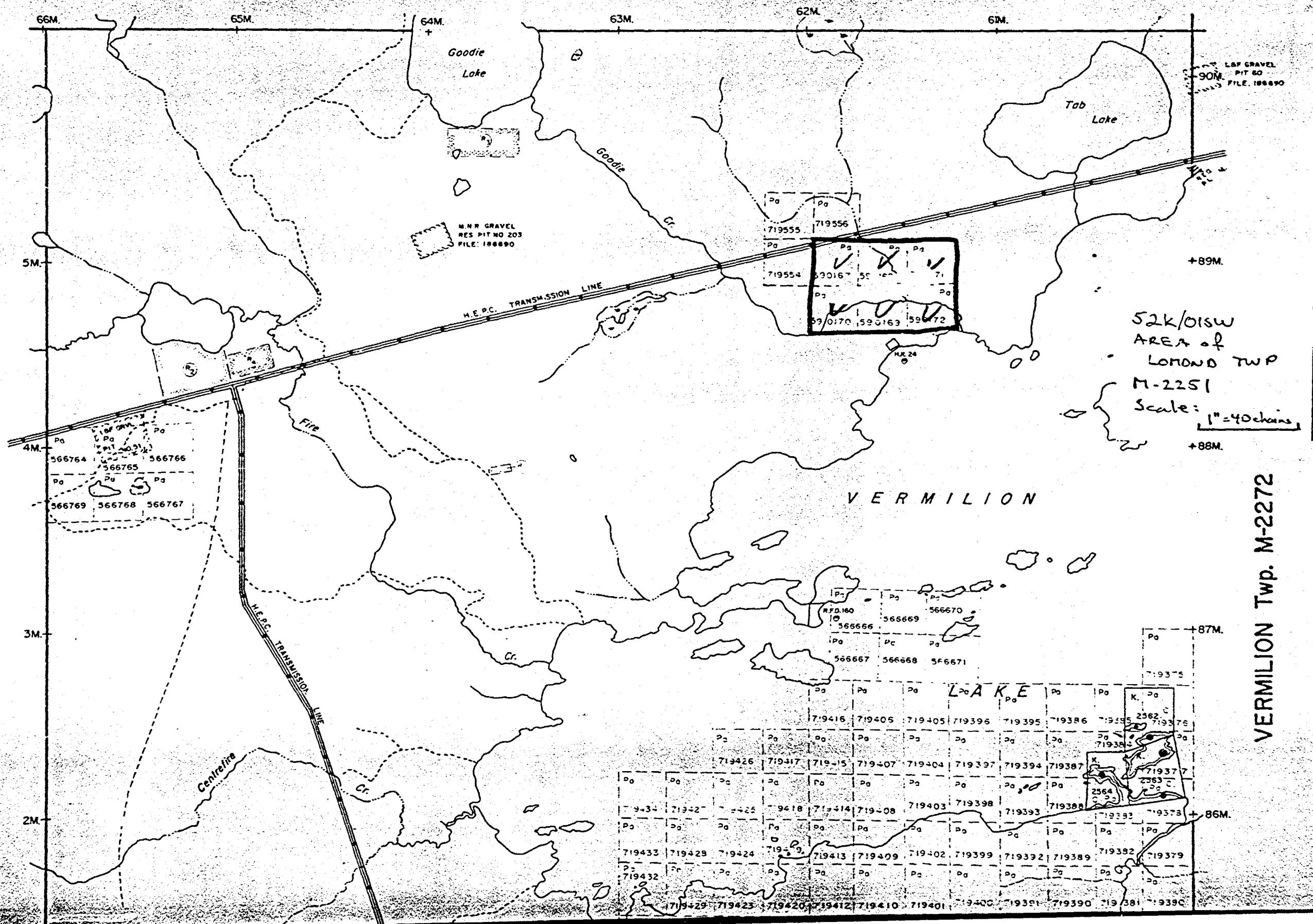
51M

11

三

WHIPPER LAKE AREA M-2574

McILRAITH Twp. M-1852



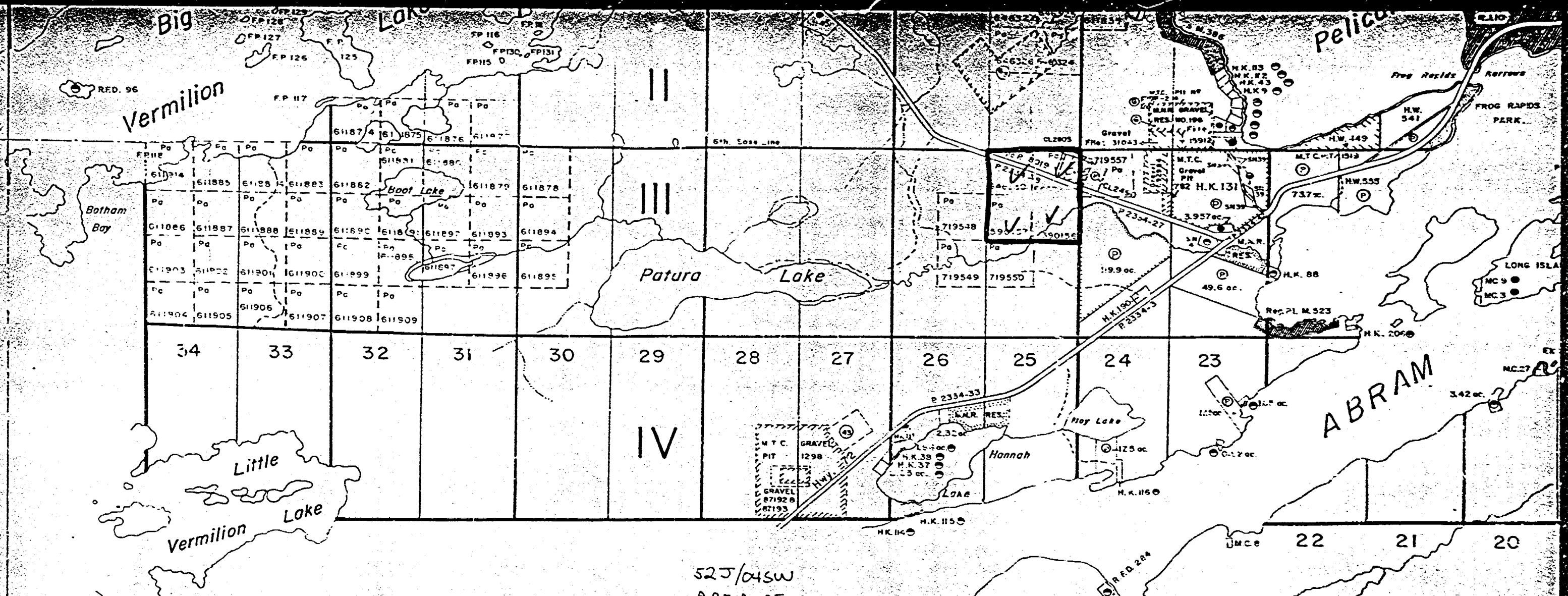
400' surface rights re-
lakes and rivers.

WITHDRAW	
S.R. - SURFACE RIGHTS Order No.	Date
1. W.C2/79	25/6/79
2. W.3/80	22/12/80
3. #57/82	2/11/82
4. #55/82	2/11/82

DATE
FEB
Ministry of

PATENTED LAND
PATENTED FOR SURFACE
LEASE
LICENSE OF OCCUPATION
CROWN LAND SALES
LOCATED LAND
CANCELLED
MINING RIGHTS ONLY
SURFACE RIGHTS ONLY
HIGHWAY & ROUTE NO.
ROADS
TRAILS
RAILWAYS
POWER LINES
MARSH OR MUSKEG
MINES

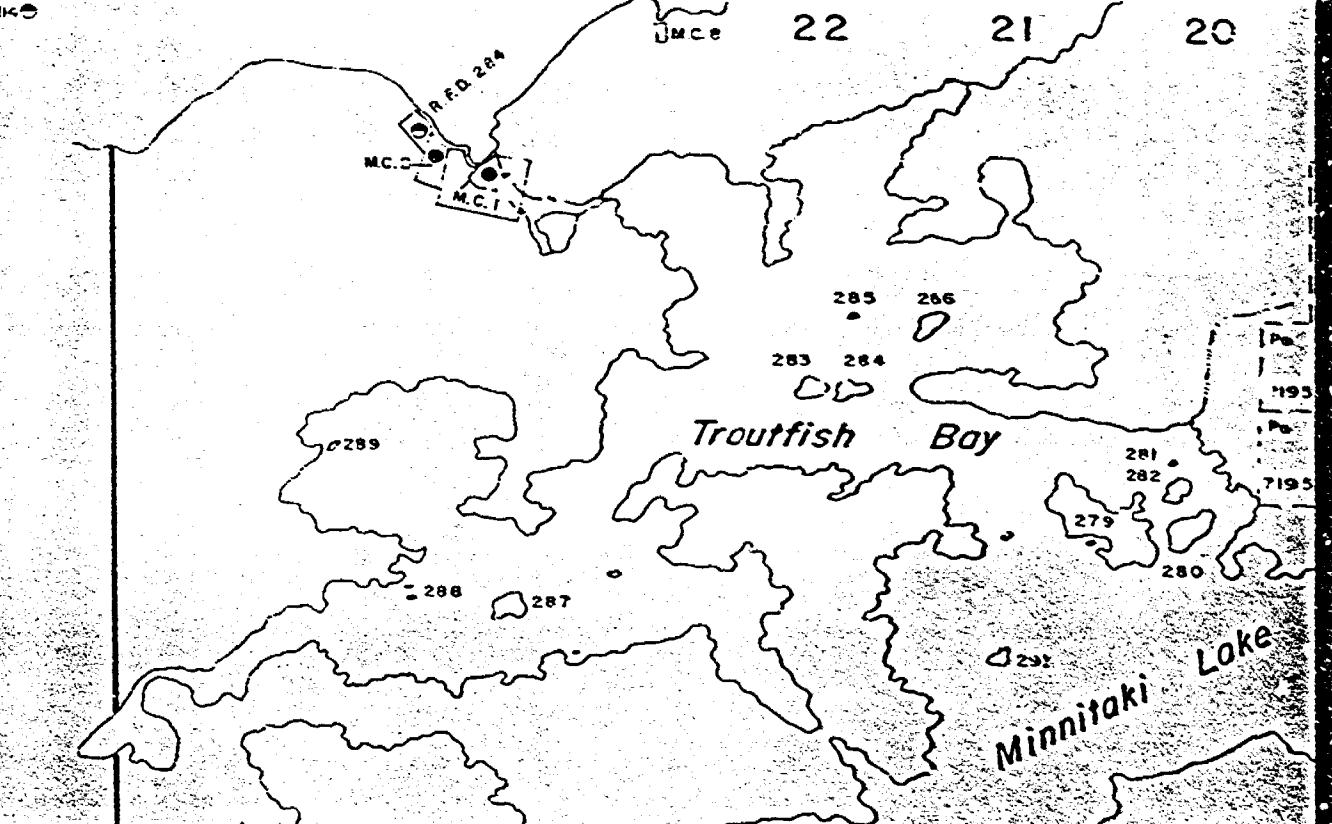
*used only with summer reso-



JORDAN TWP. (M. 2245)

PARNES LAKE AREA M 2150

92°00'00"





Ministry of
Natural
Resources
Ontario

Report of Work
(Geophysical, Geological,
Geochemical and Expenditures)

F. M.

Mining Lands

Type of Survey(s)

Magnetometer - Electrometer (VLF and MaxMin)

Instructions

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

Note:

83-114

The Mining Act

Township or Area

Lamond Two M-2251

Claim Holder(s)

Nahanni Mines Limited

Prospector's Licence No.

T-951

Address

Suite 1107, 330 Bay Street, Toronto, Ontario, M5H 2S8

Survey Company

Derry, Michener, Booth & Wahl

Date of Survey (from & to)

15 08 83 14 10 83

Total Miles of Line Cut

5.425 km

Name and Address of Author (of Geo-Technical report)

D.G. Wahl, P.Eng., Suite 2302, 401 Bay Street, Toronto, Ontario M5H 2Y4

Credits Requested per Each Claim in Column(s) at right

Special Provisions

For first survey:

Enter 40 days. (This
includes line cutting)

Geophysical

Days per
Claim

VLR Electromagnetic

40

- Magnetometer

20

- Radiometric

- Other MaxMin

20

Geological

Geochemical

Mining Claims Traversed (List in numerical sequence)

Mining Claim

Expend.

Days Cr.

Prefix

Number

Mining Claim

Prefix

Number

Expend.

Days Cr.

Pa. 590168 (590168)

80

590167

80

590169

80

590170

80

590171

80

590172

80

RECEIVED

OCT 28 1983

MINING LANDS SECTION

PATRICIA MINING DIV.

RECEIVED

OCT 20 1983

A.M.

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

P.M.

4 5 6

86

See work statement

Received

10/20/83

Branch Director

Patricia Mining Division



Ministry of
Natural
Resources
Geotechnical
Report
Approval

File
2.6093
2.6093

Mining Lands Comments

report not signed
report not signed

To: Geophysics Mr. R Barlow

Comments

Approved

Wish to see again with corrections

Date

Jan 13/84

Signature

R Barlow

To: Geology - Expenditures

Comments

Approved

Wish to see again with corrections

Date

Signature

To: Geochemistry

Comments

L-①

Approved

Wish to see again with corrections

Date

Signature

To: Mining Lands Section, Room 6462, Whitney Block. (Tel: 5-1380)



Ministry of
Natural
Resources
Ontario

Technical Assessment
Work Credits

File

2.6093

Date

March 29, 1984

Mining Recorder's Report of
Work No 83-114, 115, 116

Recorded Holder:

NAHANNI MINES LIMITED

Township or Area:

DRAYTON, LAMOND AND WHIPPER LAKE AREA

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	
Electromagnetic _____ MAX MIN 20 days	PA 590157 to 59 inclusive 590161 to 64 inclusive 646330 705961 - 62
Magnetometer _____ days	
Radiometric _____ days	
Induced polarization _____ days	
Other _____ days	
Section 77 (19) See "Mining Claims Assessed" column	
Geological _____ days	
Geochemical _____ days	
Marine <input type="checkbox"/> Airborne <input type="checkbox"/>	
Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/>	
<input checked="" 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.	

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

15 DAYS MAX MIN

PA 590167
590170 to 72 inclusive
646329
705963

10 DAYS MAX MIN

PA 590156
590168 - 69

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
Natural
Resources

Technical Assessment
Work Credits

File

2.6093

Date

March 29, 1984

Mining Recorder's Report of
Work No. 83-114,115,

116

Recorded Holder

NAHANNI MINES LIMITED

Township or Area

DRAYTON, LAMOND & WHIPPER LAKE AREA

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	
VLF _____ days	PA 590157 to 59 inclusive
Electromagnetic _____ days	590161 to 64 inclusive
Magnetometer _____ days	646329 - 30
Radiometric _____ days	705961 to 63 inclusive
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 checked="" 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.	

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

30 DAYS VLF AND
15 DAYS MAGNETOMETER

PA 590156
590167
590169 to 72 inclusive

20 DAYS VLF AND
10 DAYS MAGNETOMETER

PA 590168

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;

B2B (83/6)

2.6093

119, 115, 116

1983-12-12

2.6093

Mr. Albert Hanson
Mining Recorder
Ministry of Natural Resources
P.O. Box 669
Sioux Lookout, Ontario
POV 2TJ

Dear Sir:

We have received reports and maps for a Geophysical (Electromagnetic and Magnetometer and V.L.F.) survey submitted under Special Provisions (credit for Performance and Coverage) on mining claims PA 590156 et al in the Townships of Drayton and Lamond and the Area of Whiper Lake.

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

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: (416) 965-1380

A. Barr:mc
Nahanni
cc: Nahanni
Mines Limited
Suite 1107
330 Bay Street
Toronto, Ontario
M5H 2S8

cc: D.G. Wahl P.Eng.
Suite 2302
401 Bay Street
Toronto, Ontario
M5H 2Y4



Ministry of
Natural
Resources

APRIL 14/84

1984 03 29

Your File: 83-114,115,116
Our File: 2.6093

Mr. Albert Hanson
Mining Recorder
Ministry of Natural Resources
P.O. Box 669
Sioux Lookout, Ontario
POV 2T0

Dear Sir:

Enclosed are two copies of a Notice of Intent with statements listing a reduced rate of assessment work credits to be allowed for a technical survey. Please forward one copy to the recorded holder of the claims and retain the other. In approximately fifteen days from the above date, a final letter of approval of these credits will be sent to you. On receipt of the approval letter, you may then change the work entries on the claim record sheets.

For further information, if required, please contact
Mr. F.W. Matthews at 416/965-6918.

Yours very truly,

A handwritten signature in black ink, appearing to read "S.E. Yundt".

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: 416/965-1316

D. Kinzig:mc

Encls.

cc: Nahanni Mines Limited
Suite 1107
330 Bay Street
Toronto, Ontario
M5H 2S8

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



Ministry of
Natural
Resources
Ontario

Notice of Intent
for Technical Reports

1984 03 29

2.6093/83-114.115,116

An examination of your survey report indicates that the requirements of The Ontario Mining Act have not been fully met to warrant maximum assessment work credits. This notice is merely a warning that you will not be allowed the number of assessment work days credits that you expected and also that in approximately 15 days from the above date, the mining recorder will be authorized to change the entries on his record sheets to agree with the enclosed statement. Please note that until such time as the recorder actually changes the entry on the record sheet, the status of the claim remains unchanged.

If you are of the opinion that these changes by the mining recorder will jeopardize your claims, you may during the next fifteen days apply to the Mining and Lands Commissioner for an extension of time. Abstracts should be sent with your application.

If the reduced rate of credits does not jeopardize the status of the claims then you need not seek relief from the Mining and Lands Commissioner and this Notice of Intent may be disregarded.

If your survey was submitted and assessed under the "Special Provision-Performance and Coverage" method and you are of the opinion that a re-appraisal under the "Man-days" method would result in the approval of a greater number of days credit per claim, you may, within the said fifteen day period, submit assessment work breakdowns listing the employees names, addresses and the dates and hours they worked. The new work breakdowns should be submitted direct to the Lands Management Branch, Toronto. The report will be re-assessed and a new statement of credits based on actual days worked will be issued.

2.6093

1984 05 03

Your File: 83-114,115,116
Our File: 2.6093

Mr. Albert Hanson
Mining Recorder
Ministry of Natural Resources
P.O. Box 669
Sioux Lookout, Ontario
POV 2T0

Dear Sir:

RE: Notice of Intent dated March 29, 1984.
Geophysical (Electromagnetic & Magnetometer
and V.L.F.) Survey on Mining Claims
PA 590156 et al in the Townships of Drayton
and Lamond and the area of Whipper Lake.

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,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: (416) 965-6918

D. Kinzig:sc

cc: Nahanni Mines Limited
Suite 1107
330 Bay Street
Toronto, Ontario
M5H 2S8

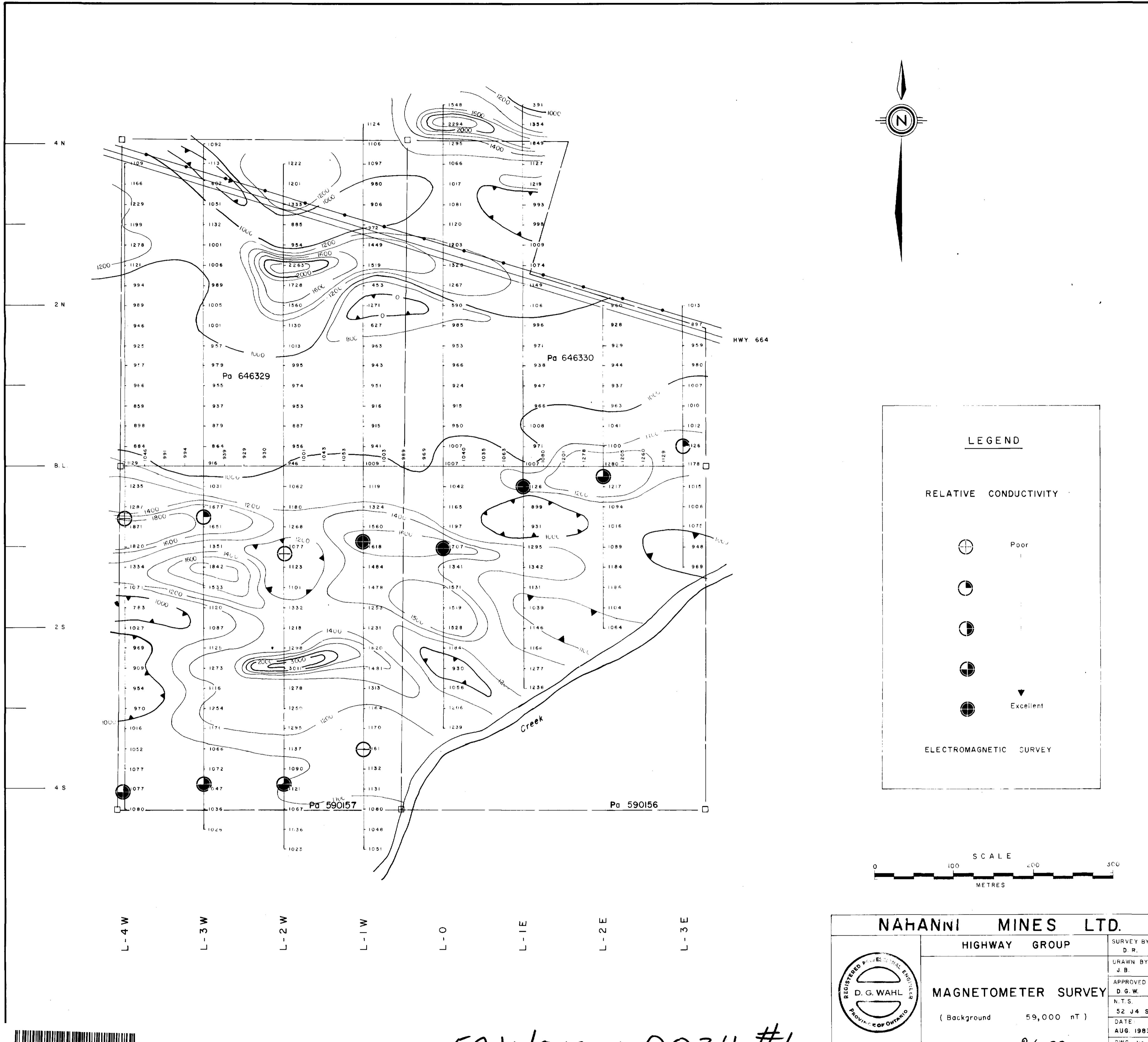
cc: Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

cc: Resident Geologist
Sioux Lookout, Ontario

**FOR ADDITIONAL
INFORMATION**

SEE MAPS:

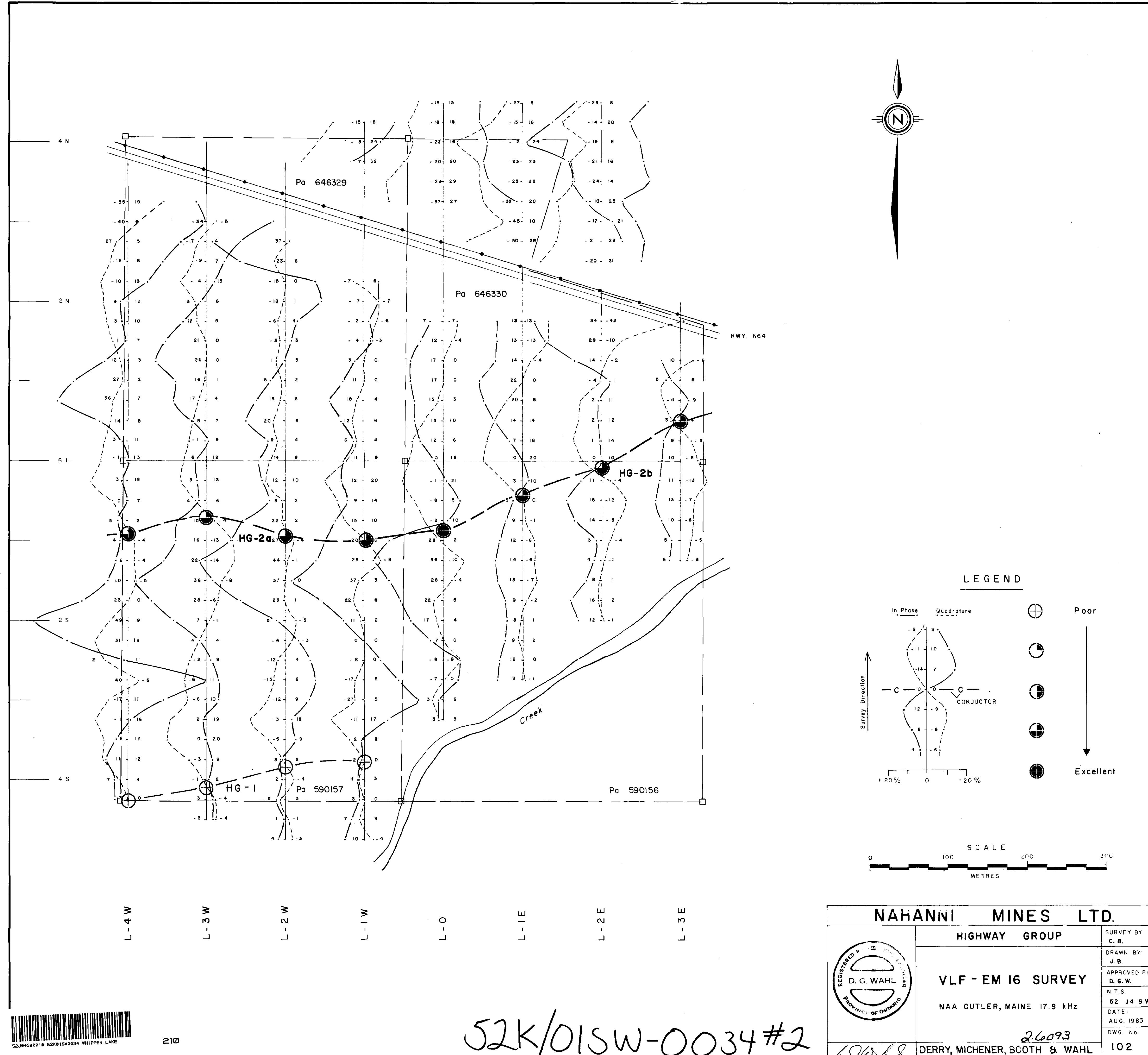
52K/01SW-0034 # 1-12

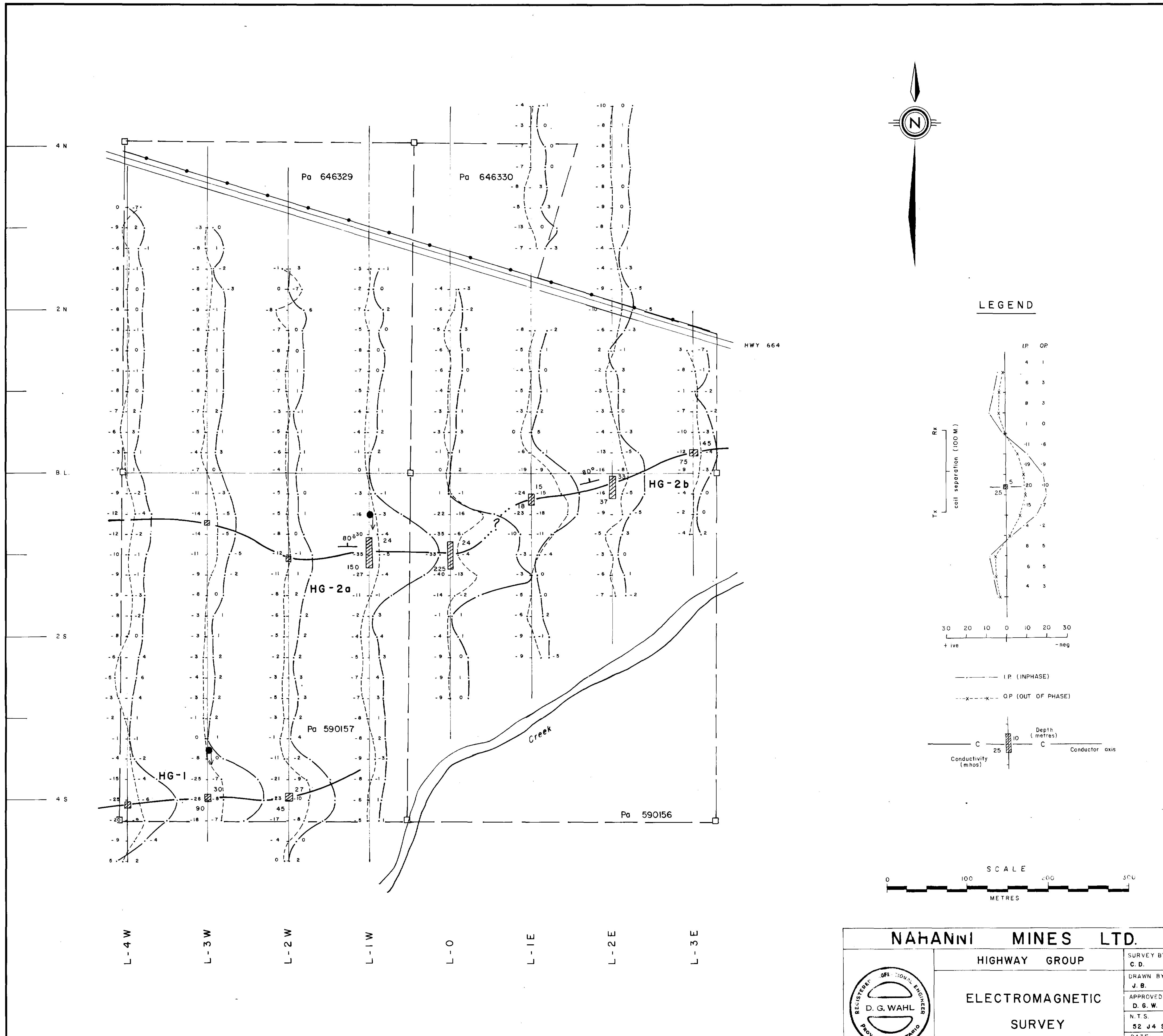


52J4SW0010 52K01SW0034 WHIPPER LAKE

200

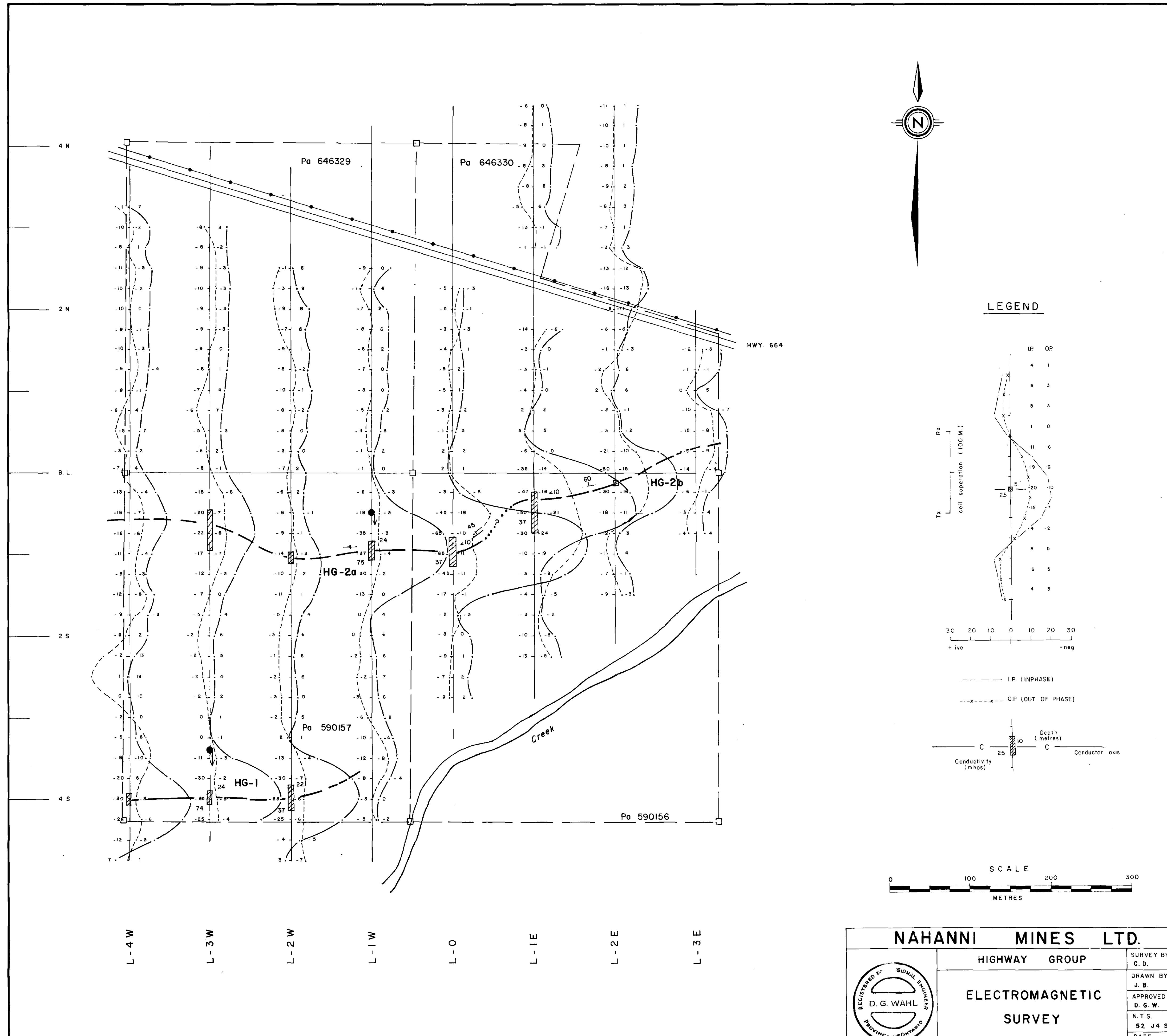
	HIGHWAY GROUP	SURVEY BY D.R.
	MAGNETOMETER SURVEY	DRAWN BY: J.B.
APPROVED BY D.G.W.		
N.T.S. 52 J4 S.W.		
DATE AUG. 1983		
DWG. NO 101		

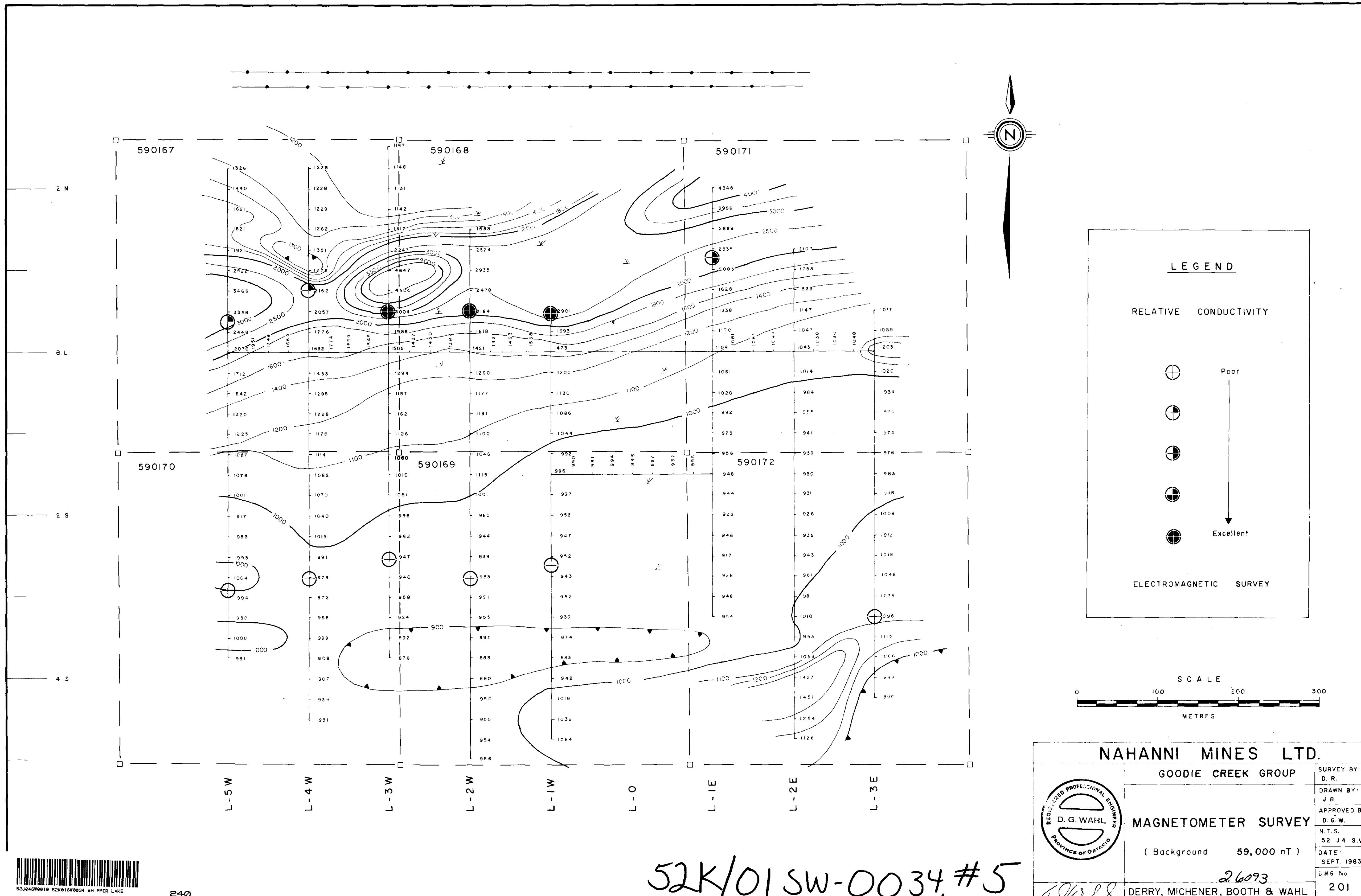


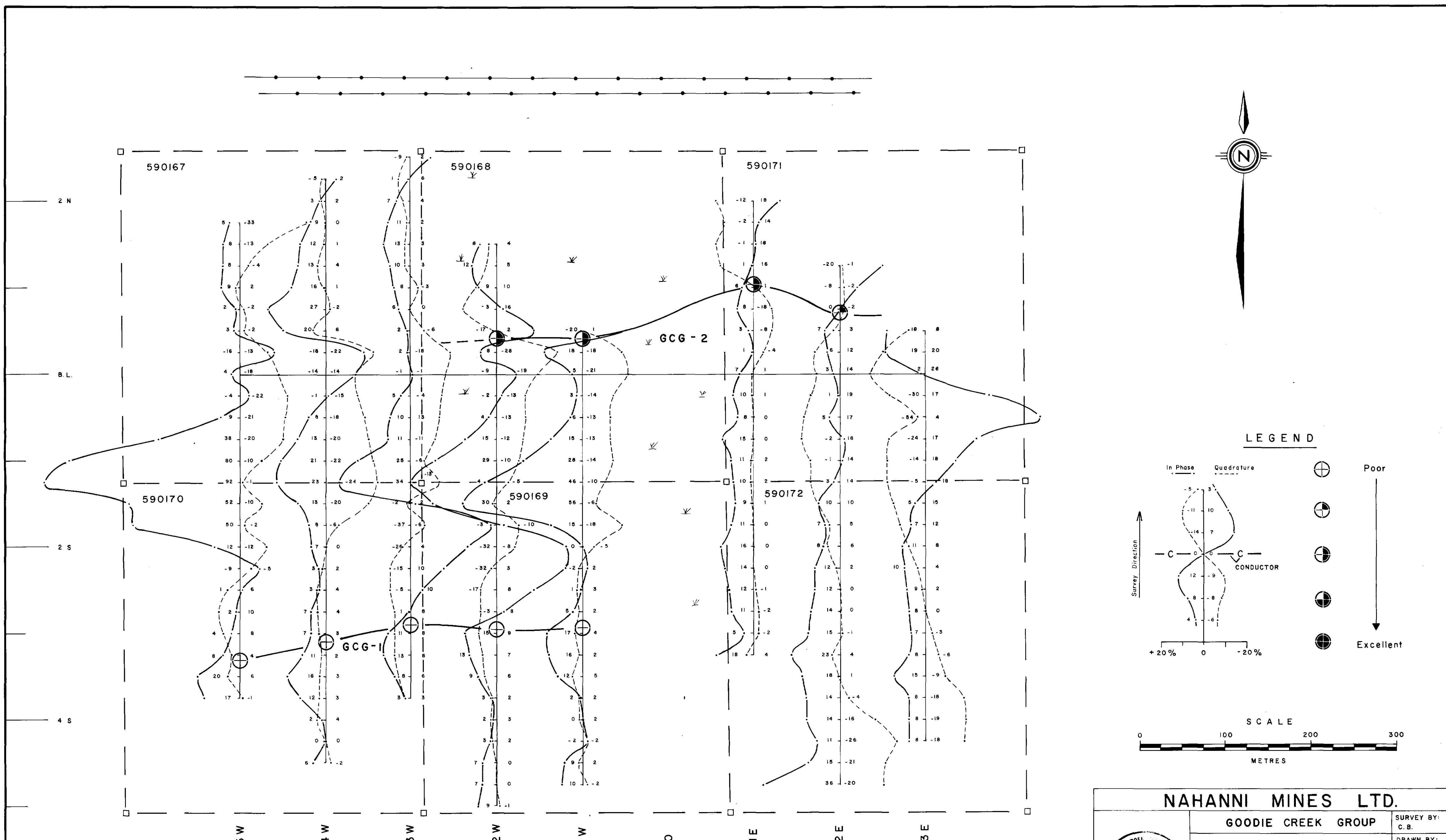


52J04SW0010 52K01SW0034 WHIPPER LAKE

SURVEY BY
C.D.
DRAWN BY:
J.B.
APPROVED BY:
D.G.W.
N.T.S.
52 J 4 S.W.
DATE:
AUG. 1963
DWG. No:
103







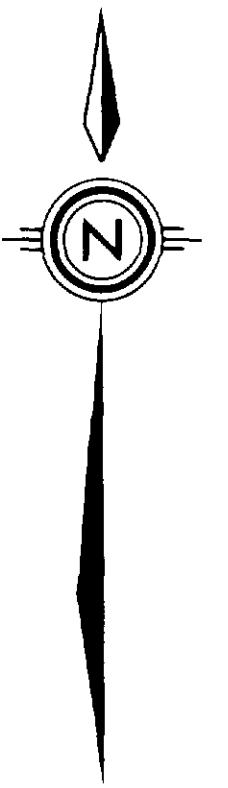
NAHANNI MINES LTD.		GOODIE CREEK GROUP	SURVEY BY: C.B.
		VLF - EM 16 SURVEY	DRAWN BY: J.B.
		NAA CUTLER, MAINE 17.8 kHz	APPROVED BY: D.G.W.
		26093	N.T.S. 52 J4 S.W.
			DATE: SEPT. 1983
			DWG. No. 202

K. Wahl

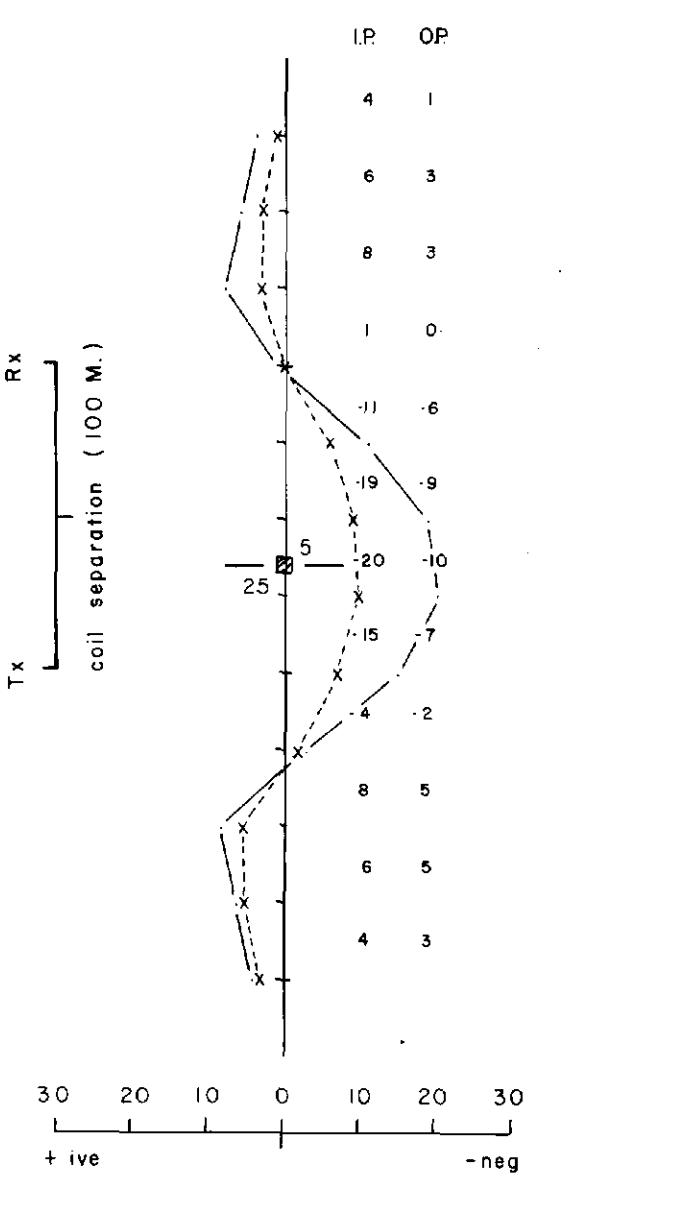


52K01SW0010 52K01SW0034 WHIPPER LAKE

52K01SW-0034, #6



LEGEND



— I.P. (INPHASE)
 - - - X - - O.P. (OUT OF PHASE)
 C Depth (metres)
 C Conductor axis
 Conductivity (mhos)

SCALE
0 100 200 300 METRES

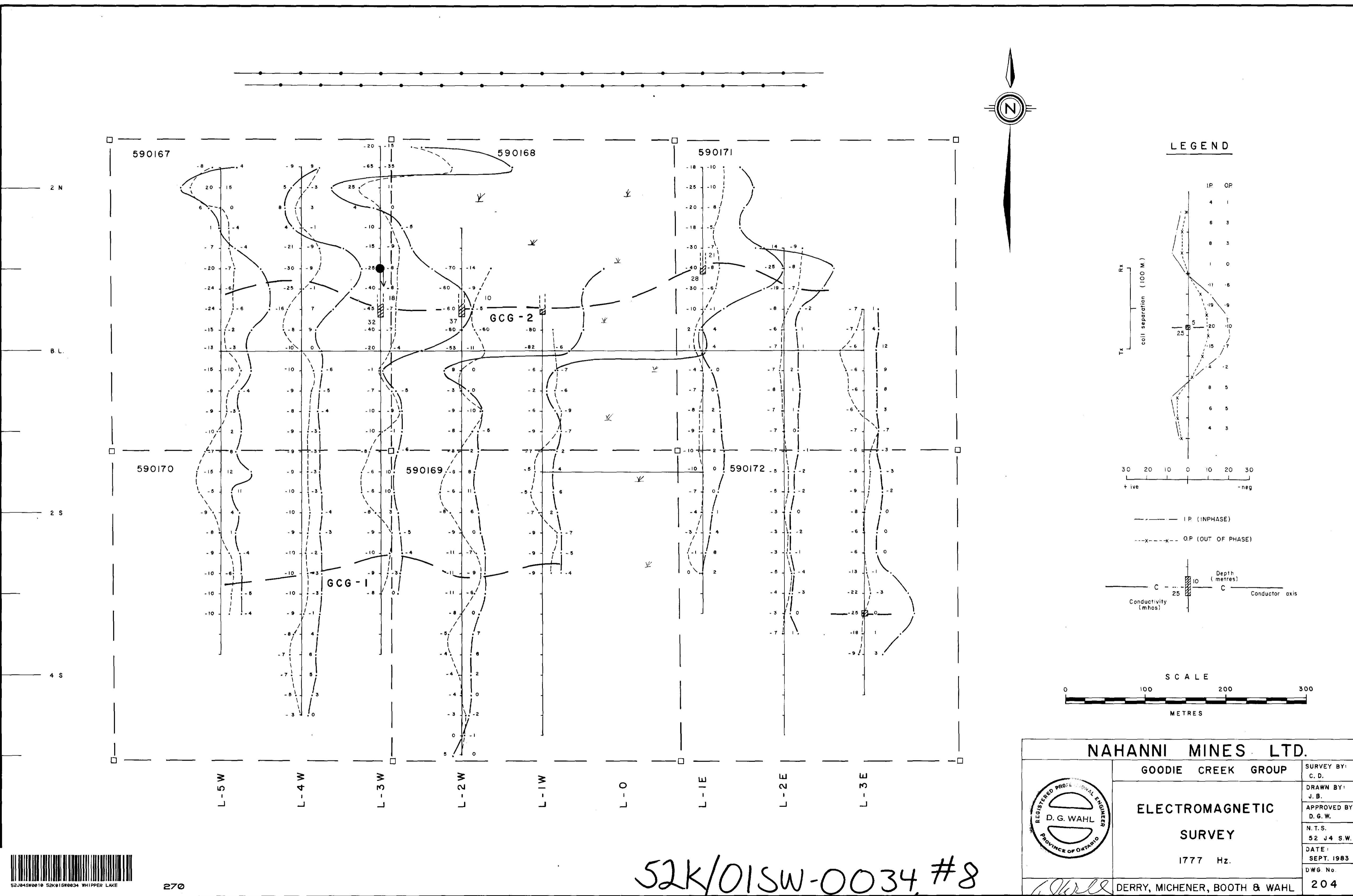
NAHANNI MINES LTD.		SURVEY BY: C.D.
GOODIE CREEK GROUP		DRAWN BY: J.B.
ELECTROMAGNETIC		APPROVED BY: D.G.W.
SURVEY		N.T.S. 52 J4 S.W.
		DATE: SEPT. 1983
		DWG. No: 203

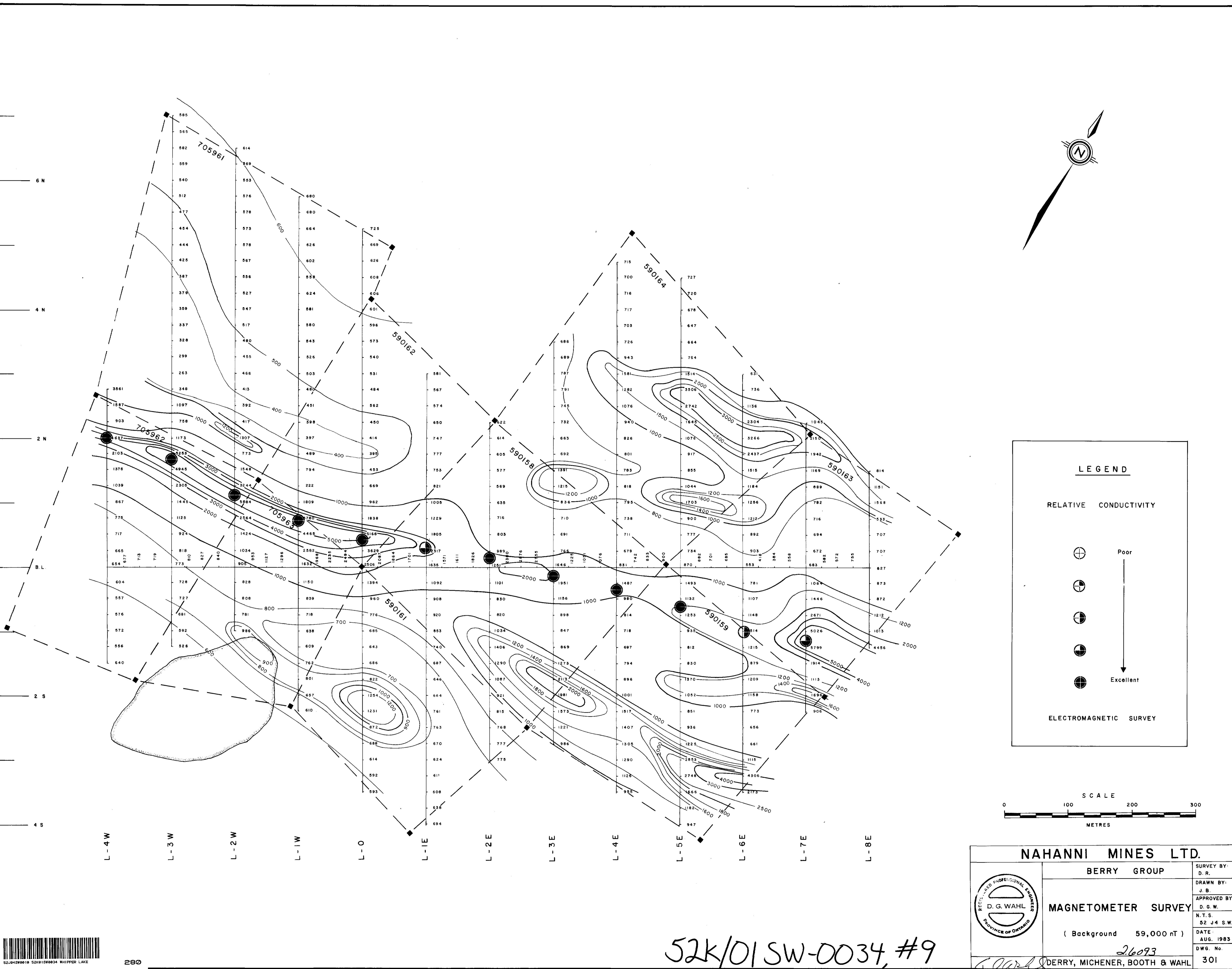
REGISTERED PROF.
 D.G. WAHL
 ENGINEER
 PROVINCE OF ONTARIO
 26093
 DERRY, MICHENER, BOOTH & WAHL

444 Hz.

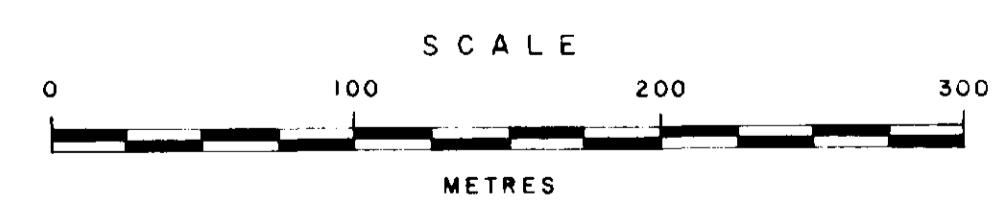
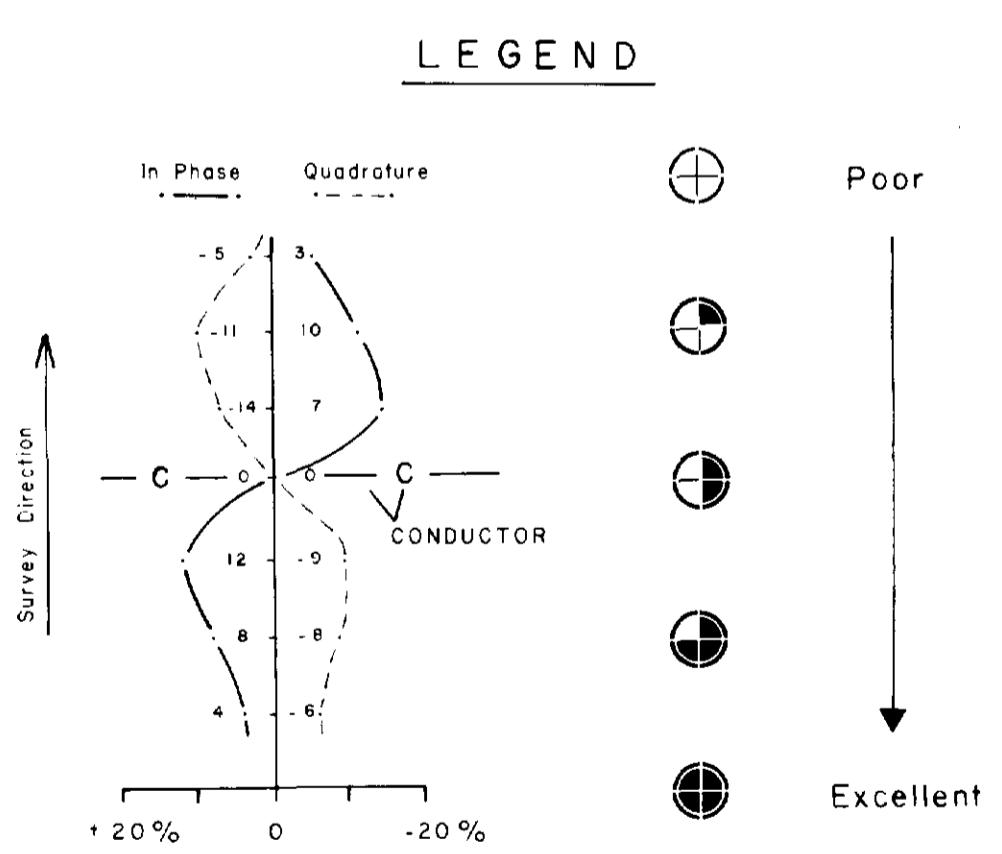
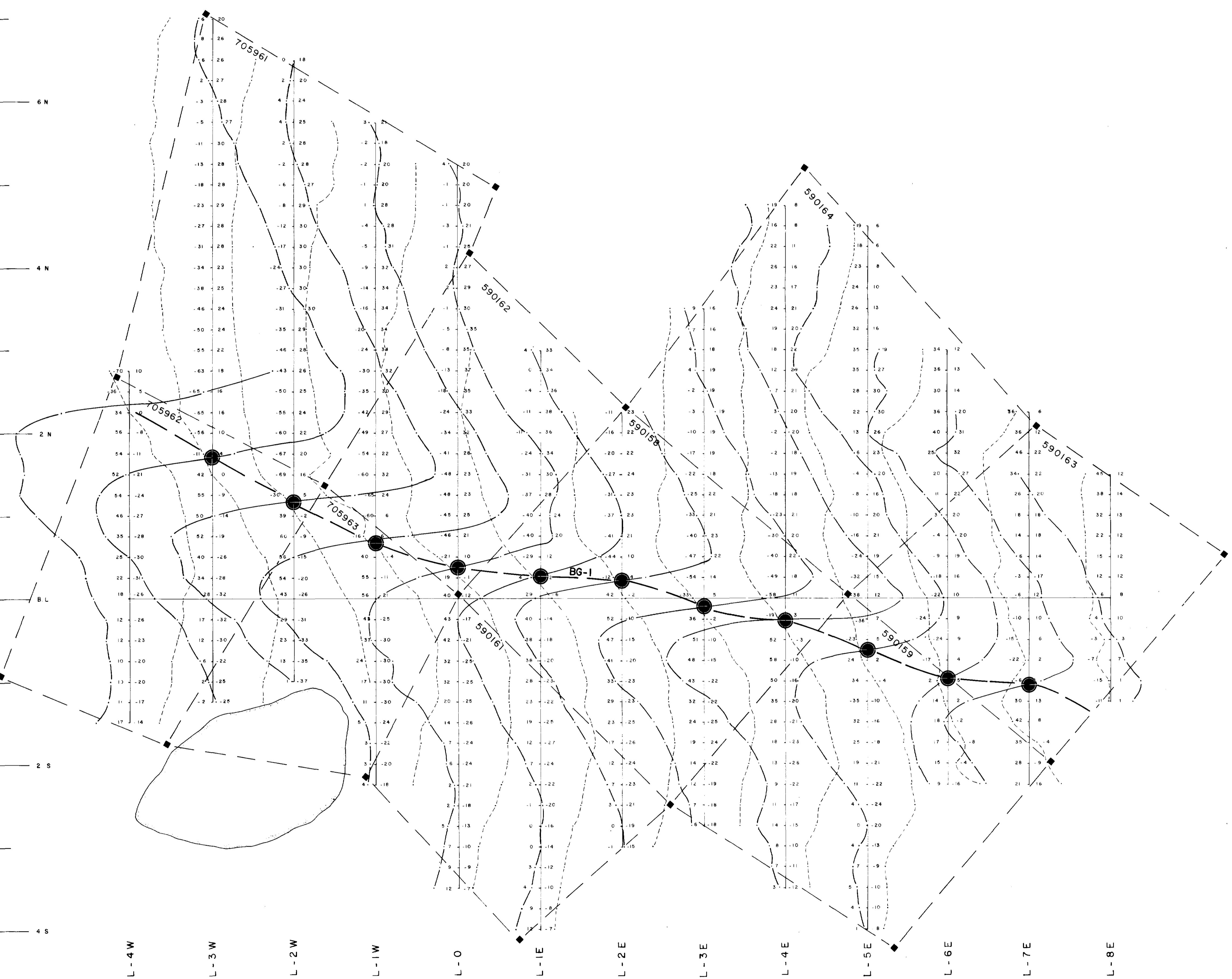
52K/01SW-0034 #7







52K/01 SW-0034, #9



NAHANNI MINES LTD.	
BERRY GROUP	
VLF - EM 16 SURVEY	
NAA CUTLER, MAINE 17.8 kHz.	
DERRY, MICHENER, BOOTH & WAHL	

D.G. WAHL
PROFESSIONAL ENGINEER
PROVINCE OF ONTARIO

SURVEY BY:
C.B.
DRAWN BY:
J.B.
APPROVED BY:
D.G.W.
N.T.S.
52 J4 S.W.
DATE:
AUG. 1983
DWG. NO:
302

26093



52K/01SW-0034 #10

