A REPORT

on

MAGNETOMETER & VLF SURVEYS over part of the GERARD BASTARACHE PROPERTY

ELLIOTT AND TANNAHILL TOWNSHIPS, ONTARIO

Toronto, Ontario
December 1989

L.G. Hobbs, P.Eng

Index

added from OP 89-15 on
Aug 12/91

October 11, 1989

GERARD BASTARACHE

General Geology: (work to be done on 5 claims of 10 claim group)

Rock types on the Elliott Township 5-claim property of Gerard Bastarache are Blake River Group calc-alkalic extrusive and intrusive volcanics and interflow sediments west of a reddish syenite "plug" i.e. boss that is in Tannahill Township to the east. Stratification trends generally northeast and faces (tops) northwest.

Ground magnetic and electromagnetic anomalies determined by Bastarache's survey using Barringer's proton precession, and fluxgate, and VLFEM trend seemingly parallel to stratification, i.e. might be stratabound. Economic-type mineralization consists of pyrite, pyrrhotite, chalcopyrite and sphalerite. Pyrrhotite might cause the magnetically anomalous trend; in any case these calc-alkalic andesites are relatively flat magnetically. The mineralization exposed by stripping is in flow top breccia gangue quartz and carbonate between volcanic fragments, and in silicified interflow sediments.

NOTE: If desired more information call:
The Howard Lovell (Geologist) P... (705) 642-3222 Attention 170
at Kirkland Lake Ore Laboratory.

General

In November 1989 the author did Magnetometer and Very Low Frequency (VLF) Electromagnetic surveys over part of the Gerard Bastarache property in Elliott and Tannahill townships, Ontario. Snow cover at the time of the surveys allowed only cursory outcrop examination in the survey area but prospecting done earlier by Mr. Bastarache had revealed considerable amounts of pyrrhotite and associated low gold values in the area. The surveys were thus intended to help outline possible sulphide concentrations as a guide to further work.

Property, Access and Topography

In November 1989 the Bastarache property consisted of 20 staked mining claims located along the mutual boundary of Elliott and Tannahill townships and numbered as follows:

Claim	Township
L1110715-26	Elliott
L1110729-30	Elliott
L1110756-57	Elliott
L1112143	Elliott
L1112144-46	Tannahill

The surveys described herein covered claims L1110715, L1110716, L1110720, L1110721 and L1110756, all in Elliott township.

The property is easily accessible by vehicle via Highway 66 east of Kirkland Lake to the Harker/Holloway Mineral Access road and then north about 18 miles to a point where a good timber haulage road branches east and crosses the Bastarache property. This is the road shown on the survey map.

Topographically the claim group occupies an area of low hills and ridges with rock outcroppings separated by low ground with till, clay and gravel cover. Vegetation present includes spruce, birch, balsam, jackpine, poplar and a variety of alder and other brush.

Previous Work

A search of the Ontario Ministry of Northern Development and Mines' assessment work files in Toronto shows no record of previous work on the Bastarache claim group in Elliott township. However, several work files covering exploration programs in the area of the gold showing on claim L26639 in Tannahill township, which lies 1/4 mile east of the surveyed area and adjoining Bastarache's claim L1112146, were found and examined. Because this showing is partially the basis for work on the Bastarache group and because it is located such a short distance away from the surveyed area, the following work history summary is presented.

1931 V. Jordan staked the showing for Teck-Hughes Gold Mines Ltd. after discovering gold 6500 ft. northwest of Pinaws Lake. Pits, trenching and a winter road were completed.

1932 Claims allowed to lapse.

1935 Claims restaked by J.A.M. McClosky.

1936 Optioned to Erie Canadian Mines Ltd. Report by G.L. Holbrooke refers to gold values in (1) widely spaced, narrow (2") quartz veins striking N45E to N70E and dipping 60 degrees south and (2) in a porphyry dike up to 18 inches wide, striking east-southeast and dipping 15 degrees north. This occurrence is traceable for 1/2 mile and assays up to 0.33 ounces of gold per ton were obtained over 18 inches. Grab samples yielded up to 0.85 ounces of gold per ton.

No further work was recorded on the group from that era but six claims were brought to patent and are believed to be held by A.W. White.

1988 File 2.11268 (OMNDM) describes an airborne magnetometer and VLF electromagnetic survey flown over recently staked claims which adjoin both the A.W. White patent group and the Bastarache group. The survey, by H. Ferdeber Geophysics Ltd., was done for W. Golden and T. Obradovich, holders of the claim group. The survey, which was flown on north-south lines at nominal 300 ft. spacings, detected five conductors trending east-westerly, one of which would correlate with the above mentioned showings on claim L26639. If projected a few hundred feet west, this conductor would enter the Bastarache property in Elliott township near the south east corner of claim L1110756.

Control System

A control system, consisting of 0.9 miles of base line and 7.4 miles of cross lines, was cut prior to surveying. The base line was laid out at an azimuth of 29 degrees (true) and located to cross the best mineralized area as determined by Mr. Bastarache's prospecting. Cross lines were variably spaced from 150 ft. separation to 400 ft. separation to provide more detail in the most promising area. Pickets were established at 100 ft. intervals along the lines.

Geology

The property is situated within the Abitibi volcanic belt of the Superior Province of the Canadian Shield. This environment is host to a number of major gold and base metal producing centres including the mines at Kirkland Lake, Timmins, Noranda, Val d'Or and numerous other mineral occurrences. The Abitibi belt is made up of a complex of Early Precambrian (Archean) volcanics, sediments and intrusive bodies ranging in composition from felsic to ultrabasic. Pleistocene deposits of glacial till, gravel, clay and sand together with Recent alluvial and peat deposits cover the greater part of the Abitibi.

The Bastarache property itself is underlain by metamorhosed volcanic pillowed flows, pillow breccias, tuffs, massive flows and amygdaloidal flows of the Calc-Alkaline suite as defined by L.S. Jensen in OGS Report 165 (1978). Just south of it is an intrusive gabbro body and a mile to the south-east, in Tannahill township, an intrusive of monzonite/syenite. A small outcrop of syenite and pegmatite is also found about 1/4 mile east of the property. Strikes of the volcanics, where observable in outcrop, appear to be east-westerly with tops to the north.

Structurally, the property lies on the south limb of a large east-west trending synclinorium which is bounded by two faults, the Destor-Porcupine fault to the north and the Larder Lake fault to the south. The latter fault, along which are located the Kirkland Lake and Larder Lake gold mining camps passes about 15 miles to the south of the property and the Destor-Porcupine passes about 12 miles to the north. Subsidiary faulting in the immediate property area, as identified by Jensen, is inferred largely from air photo linears and trends both north-westerly and north-easterly.

The closest known mineral occurrence to the Bastarache property, other than the gold values found on the property itself, is a gold showing about 1500 ft. to the east of the property boundary in Tannahill township. A brief summary of the work history of the showing is included in the section of this report entitled Previous Work.

Magnetometer Survey

1. Instrument and Method

A GEM Systems GSM-8 proton magnetometer reading total magnetic field was used for the survey. Diurnal corrections were made by the time-linear method from base stations at L 3S,BL and L 3S,1E. Readings were taken with the operator facing north and check-in times varied up to 2 hours. Generally diurnal variations were less than 20 hertz during the reading periods.

2. Results

A map of the reduced magnetometer readings accompanies this report. All readings were corrected for diurnal variation and are reduced to a base of 58,000 Hz. The resulting plotted readings varied between -7 and 553 Hz. A few readings were also taken between the lines near 7N in the area of the baseline which read up to 618 Hz and readings taken near the baseline in the area of 3+50N read as high as 675 Hz. These readings were not plotted for reasons of clarity but correspond to an area of sulphide mineralization explored in 1989 by Bastarache and may be caused by concentrations of pyrrhotite or magnetite.

Examination of the magnetic contour map shows:

1. Magnetic contours have a north-easterly elongation.

2. Most of the readings lie between 350 and 450 Hz, reflecting the volcanics which predominantly underlie the survey area.

3. Tighter contours in the middle of the map area reflect less overburden and more topographic relief. Outcrop is more common north of the road with overburden increasing to the south and also on the north claim (L1110715)

4. The 400 Hz contour which trends along and parallel to the baseline from L3S to L12N corresponds closely to the 40 degree contour shown on the Fraser filter map in the same area. This is the area where prospecting has uncovered a flow breccia and pyrrhotite mineralization. It is also the location of a low gully which trends generally along the base line. It is unclear at this stage of exploration how much of the VLF anomaly may be due to bedrock conductivity as opposed to overburden effects.

Very Low Frequency (VLF) Electromagnetic Survey

1. Instrument and Method

A Geonics EM-16 VLF receiver tuned to Annapolis was used for the survey. Readings were taken with the operator facing easterly (90 degrees from the transmission direction). Annapolis (NSS) was chosen as the transmitting station because of its slightly better direction relative to both recognized sets of topographic and structural linears in the survey area and, therefore, to any contained conductive mineralization. It was also considered that conductivity related to gold concentrations in this location (on the west flank of the nearby syenite dome) would possibly strike north-southerly due to the local effect of the intrusive on the strike of the host rocks.

2. Plots

Maps showing survey results in both profiled and contoured formats are attached to this report. The contour map is derived from the original In-phase survey readings (shown on the profile map) by a mathematical process called "Fraser filtering". As the derived number is the result of using four sequential readings along a line and is plotted at the mid-point of the four, the Fraser filtered readings do not quite reach the edges of the surveyed area. In addition, only readings taken at the standard 100 ft. stations were used in the derivation. Quadrature (Out of phase) readings are not used for this plot.

3. Results

Examination of the accompanying survey maps shows the following:

1. Five zones showing readings in excess of 20 degrees are outlined on the Fraser filter survey maps and are designated Anomalies A to E. Of these, only A and B lie sufficiently within the surveyed area to be clearly defined, the others lying at the edges of the survey and being only partly visible.

2. Zone A shows filtered readings of over 60 degrees and trends about 2000 ft. along the base line. In-phase crossovers are sharp, consistent with the shallow overburden in this location. Quadrature readings also cross in phase with the In-phase readings from line 1+50N northward, the area in which the claim holder uncovered disseminated sulphides in bedrock. The anomaly is probably due, at least partly, to the topographic low gully which it tracks. In any case, the gully may be related to differential weathering of an underlying shear or mineralized zone.

3. Zone B enters the surveyed area from the south and crosses claim L1110756 near its west line, ending just north of the claim. It shows filtered readings of over 60 degrees and produces broad In-phase crossovers with no Quadrature response except very weakly on lines 1+50S and 3S. It crosses an area of deeper overburden which explains the broad crossovers and seems to track a topographic gully. It is probably due to overburden causes.

4. Zone C is only partly visible, lies on the west edge of claim L1110720 and shows at least one filtered reading over 100 degrees. The In-phase crossover is broad and no significant quadrature readings are present. However the anomaly is only partly defined and Quadrature readings at the ends of lines 9S and 15S may be starting to cross over in reverse phase to the In-phase readings. In this case a true conductor would be indicated. The anomaly should be further defined by extending and reading the necessary lines.

5. Zone D is another zone entering claim L1110720 from the south and is incomplete. Where it shows on lines 15S and 18S however it is very weak and is not considered significant. It may be an offsett extension of Zone A along a northwesterly striking linear which strikes roughly from claim L1110721, post 4 to just east of claim L1110720, post 2 and is observable on the Fraser Filter map. This would interpret the linear as a fault with right hand throw. If it is a fault and has left hand throw, Anomaly C might be interpreted as an offsett extension of Anomaly A.

6. Zone E lies on the east edge of claim L1110756 and is also incomplete. It shows strong In-phase crossovers which are sharp on lines 3S and 4+50S and broader on lines 0, 1+50S and 6S. The Quadrature readings on lines 0 and 1+50S cross in reverse phase possibly indicating a true bedrock conductor. There is a beaver pond at the east end of line 6S so overburden conductivity may be contributing to the anomaly. However, this zone is considered to be worth further detailing and exploration. Unfortunately the zone lies in an overburdened area so surface prospecting may not be effective. It also occurs at the edge of the Bastarache property.

Summary and Recommendations

1. It is recommended that anomalous VLF zones be further qualitatively evaluated by checking these areas with another, more discriminating, electromagnetic instrument such as a Maxmin or equivalent.

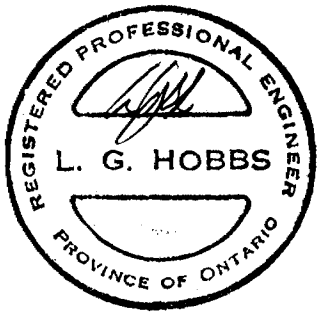
2. An Induced Polarization (IP) survey would probably be the most effective system for locating the disseminated sulphide mineralization with which the gold mineralization found so far on the claims seems to be associated. The author saw stripped outcrop in the baseline, 3N area in which several percent of pyrite/pyrrhotite were visible in coarse flow breccia. If assaying proves this association to be gold bearing on the Bastarache property, it is recommended that Induced Polarization surveying be used to guide further work such as stripping.

3. Consideration should also be given to evaluating any anomalies by means of geochemical sampling. Twig, mull or soil sampling could be tried by running a few profiles over the better anomalies and assaying the samples for gold and possibly other tracer elements such as mercury. The author has found this approach is relatively low in cost and is sometimes effective if overburden is shallow. If significant differences in gold content are detectable, stripping could be concentrated where higher gold or tracer values are obtained.

4. Our use of the Annapolis transmitting station necessarily caused enhanced response from conductors with north-southerly orientation in line with the direction to the transmitting station and poor response from conductors oriented at right angles to it. Annapolis was used because of the local orientation of bedrock on the west side of the intrusive dome in south-west Tannahill township partly in an attempt to find conductive zones lying conformably within the host volcanics. However, an airborne VLF survey conducted on the claim group immediately east of our survey area and flown on north-south lines detected conductivity striking east-westerly on the north edge of the dome which would enter the Bastarache property at a point somewhere near VLF Anomaly E. This conductor may be a cross-cutting feature and, by its orientation, difficult to detect using the transmitter at Annapolis. Because this conductor is at least spatially related to the gold mineralization found on claim L26639, consideration should be given to surveying at least part of the Bastarache ground using a more favourably located transmitter for east-westerly conductors, such as Cutler Me.

5. The shallow overburden in the area of Anomaly A suggests stripping by means of a backhoe or bulldozer would be a logical means of obtaining assay material.

L.G. Hobbs, P.Eng
December 22, 1989
(Bastarac.fw2)



References

1. Jensen, L.S., 1978: Geology of Thackeray, Elliott, Tannahill and Dokis townships, district of Cochrane; Ontario Geological Survey Report 165.

2. Map 2205, Timmins-Kirkland Lake; Geological Compilation Series; Scale 1 inch to 4 miles.

3. Various assessment work files at Assessment Files Office, Ontario Ministry of Northern Development and Mines, Toronto.

Certificate of Qualification

I, L.G. Hobbs, do hereby certify:

1. That I reside at 86 Fairway Drive, Aurora, Ontario.

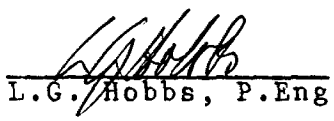
2. That I have office facilities at 80 Richmond Street west, Toronto, Ontario.

3. That I hold a BASc. degree in Engineering from the University of Toronto (1958).

4. That I am a member of the Association of Professional Engineers of Ontario, and have been for over 30 years.

5. That I am a member of The Prospectors and Developers Association of Canada.

6. That I have practised my profession as a geologist since my graduation from university.



L.G. Hobbs, P.Eng

DOCUMENT No. W9008•147

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Ministry of Northern Development and Mines

Ontario

Instructions
- Please type or print.

Mining Act

Report of Work
(Geophysical, Geological and Geoche

2.1

32D05NE0029 2.13338 TANNAHILL 900

Type of Survey(s): GEOPHYSICAL SURVEY	
Recorded Holder(s): GERARD BASTARACHE	Prospector's Licence No.: M-15468
Address: 309 TWEEDSMUIR AVE KIRKLAND LAKE, ONTARIO P2N 3M8	Telephone No.: 568-8107
Survey Company: LARRY HOBBS CONSULTING	
Name and Address of Author (of Geo-Technical Report): LARRY G. HOBBS ENG. 86 FAIRWAY DR AURORA ONTARIO L4G 2H4	Date of Survey (from & to): 20 11 89 (Day Mo Yr) 25 11 89 (Day Mo Yr)

Credits Requested per Each Claim in Columns at right

Special Provisions		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical	
	- Electromagnetic	20
	- Magnetometer	40
For each additional survey using the same grid: Enter 20 days (for each)	- Other	
	Geological	
	Geochemical	
Man Days	Geophysical	Days per Claim
Complete reverse side and enter total(s) here	- Electromagnetic	
	- Magnetometer	
	- Other	
	Geological	
	Geochemical	
Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Other	

Total miles flown over claim(s).

Date	Recorded Holder or Agent (Signature)
May 24/90	[signature]

Mining Claims Traversed (List in numerical sequence)

Prefix	Number	Prefix	Number	Prefix	Number
L	1110715				
	1110716				
	1110721				
	1110720				
	1110756				

RECEIVED JUL 03 1990 MINING LANDS SECTION

ONTARIO GEOLOGICAL SURVEY ... JUL 2? 1990 RECEIVED

Total number of mining claims covered by this report of work. 5

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in this Report of Work, having performed the work or witnessed same during and/or after its completion and annexed report is true.

Name and Address of Person Certifying: [signature] 304 Tweedsmuir Ave Kirkland Lake Ont

Telephone No.	Date	Certified By (Signature)
568-8107	May 24 1990	[signature]

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder	Received Stamp
300	May 24/90	[signature] for	RECEIVED 90 MAY 24 AM 9 12 ... DIVISION
	Date Approved as Recorded	Provincial Manager, Mining Lands	
	10 July 90	[signature]	

1362 (89/06)

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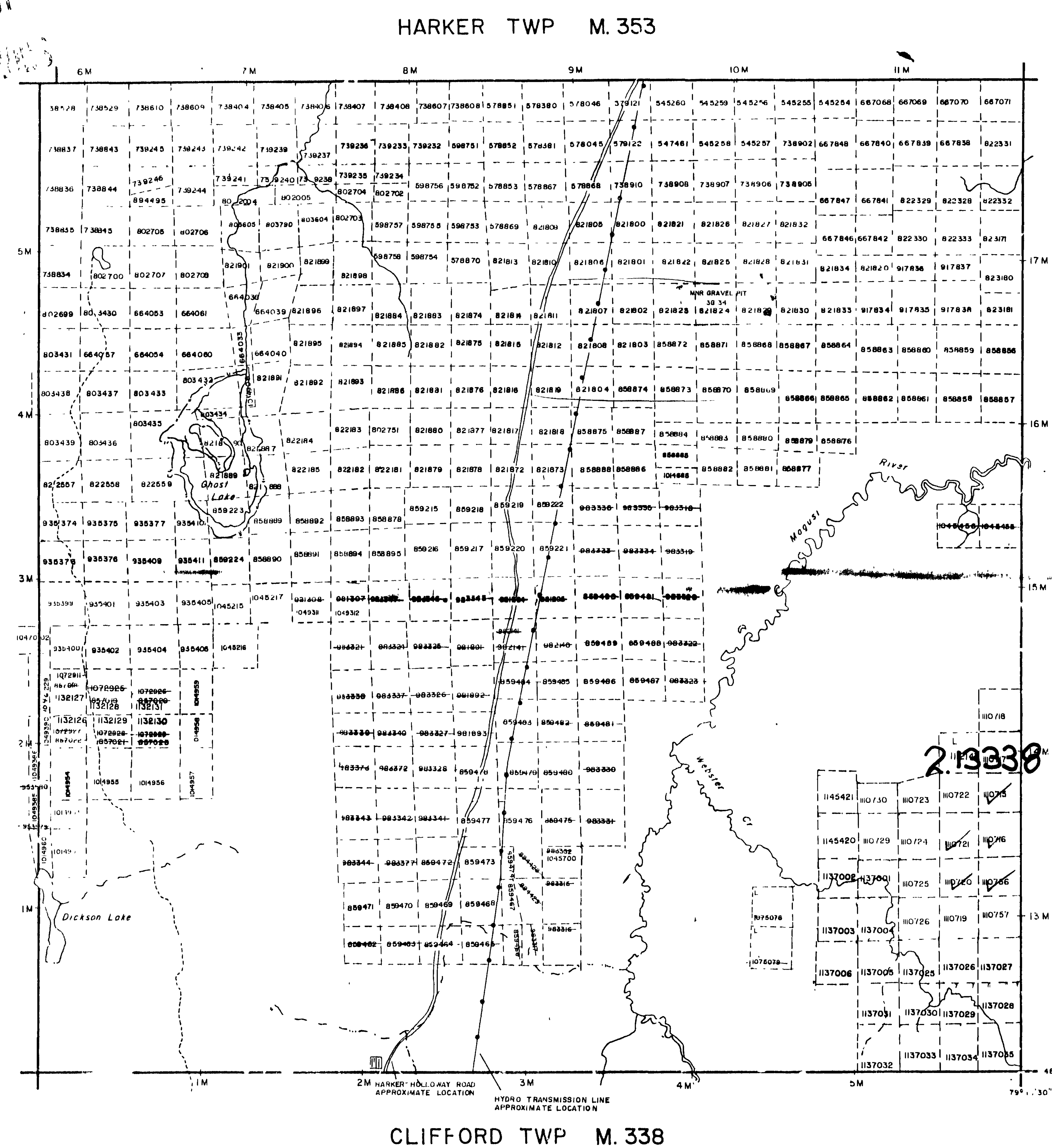

NOTES

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

NOTICE OF FORESTRY ACTIVITY

THIS TOWNSHIP/AREA FALLS WITHIN THE ABITIBI MANAGEMENT UNIT AND MAY BE SUBJECT TO FORESTRY OPERATIONS
THE MNR UNIT FORESTER FOR THIS AREA CAN BE CONTACTED AT P O BOX 129
SWASTIKA, ONT
P0K 1T0
705-642-3222

PROPOSED CAMPSITE (LAND ROLL)

THE INFORMATION T
APPEARS ON THIS
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GUARANTEED. THO
WISHING TO STAKE
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SULT WITH THE MIN
RECORDER, MINISTRY
NORTHERN DEVEL
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DITIONAL INFORMATI
ON THE STATUS OF
LANDS SHOWN HEREO

LEGEND

PATENTED LAND	Ⓟ or ● *
PATENTED FOR SURFACE RIGHTS ONLY	*
LEASE	Ⓛ
LICENCE OF OCCUPATION	L.O.
CROWN LAND SALE	C.S.
LOCATED LAND	Loc.
CANCELLED	C.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
HIGHWAY & ROUTE NO	
ROADS	
TRAILS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	⚒

*used only with surrender or certain locations or when ... is limited

TOWNSHIP OF

ELLIOTT

DISTRICT OF
COCHRANE

LARDER LAKE
MINING DIVISION

SCALE : 1 INCH = 40 CHAINS (1/2 MILE)

DATE OF ISSUE
MAY 1 1990
LARDER LAKE
MINING RECORDER'S OFFICE

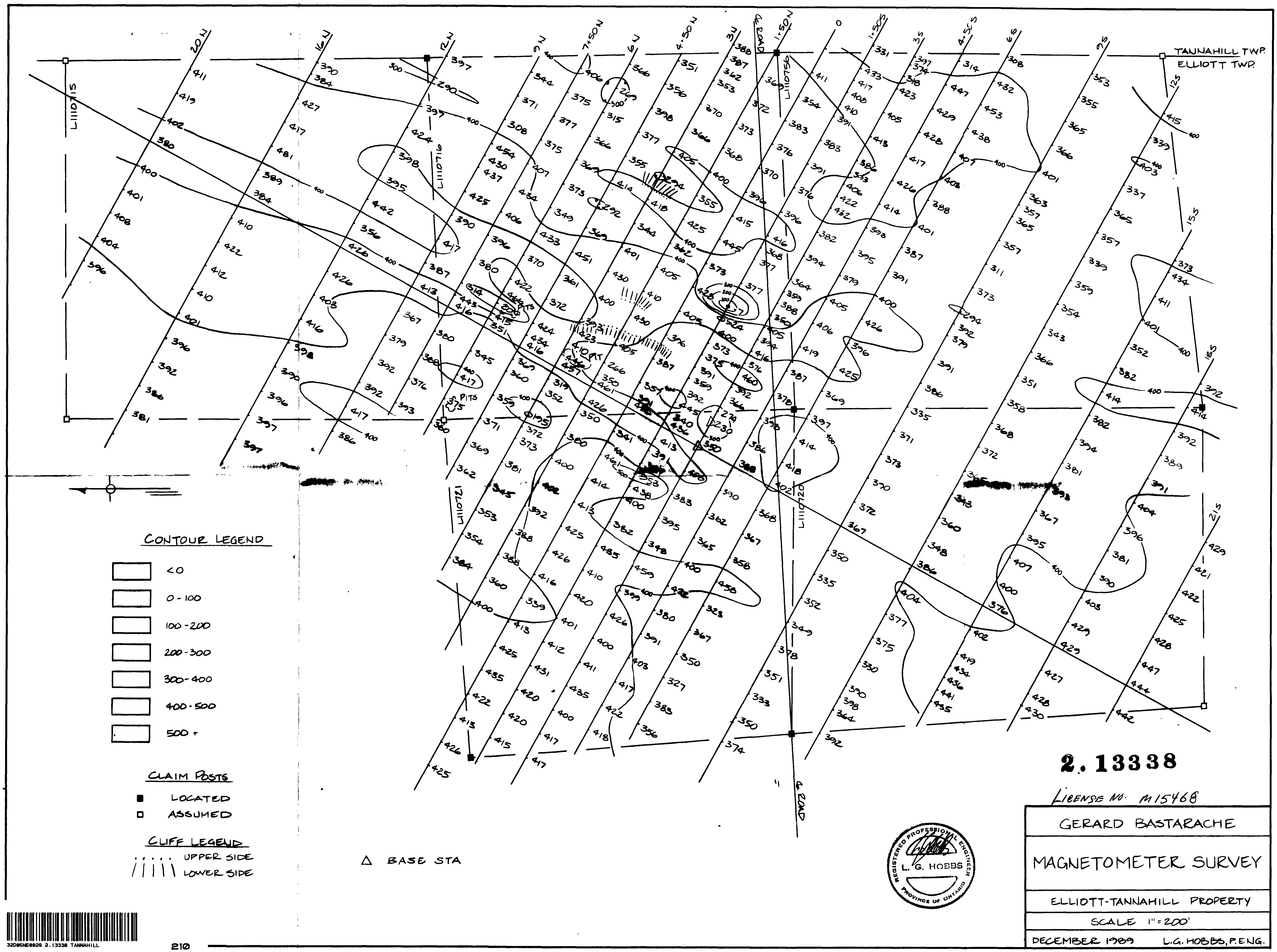
DR ... July 8, 1988
DATE MAY 68

PLAN NO M. 347

MINISTRY OF
NORTHERN DEVELOPMENT
OF MINES

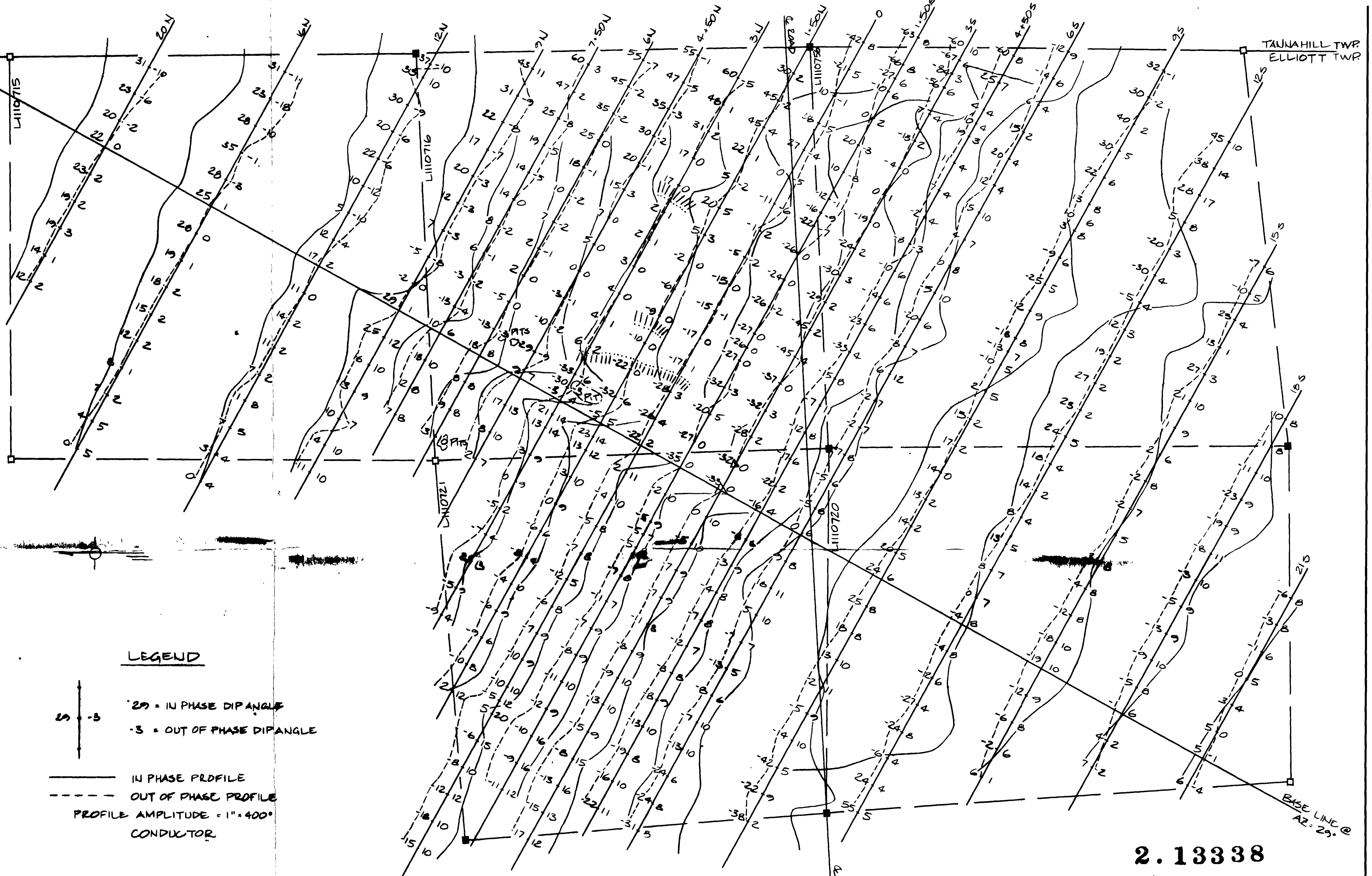
32D05NE0029 2.13338 TANNAHILL

200



32D05NE0029 2.13338 TANNAHILL

210



LEGEND

29 = IN PHASE DIP ANGLE

-3 = OUT OF PHASE DIP ANGLE

——— IN PHASE PROFILE

– – – – OUT OF PHASE PROFILE

PROFILE AMPLITUDE = 1" = 400°

CONDUCTOR

CLAIM POSTS

■ LOCATED

□ ASSUMED

CLIFF LEGEND

. . . . . UPPER SIDE

/ / / / \ LOWER SIDE

TRANSMITTER: ANNAPOLIS, MD.

INSTRUMENT: GEONICS EM16

2.13338

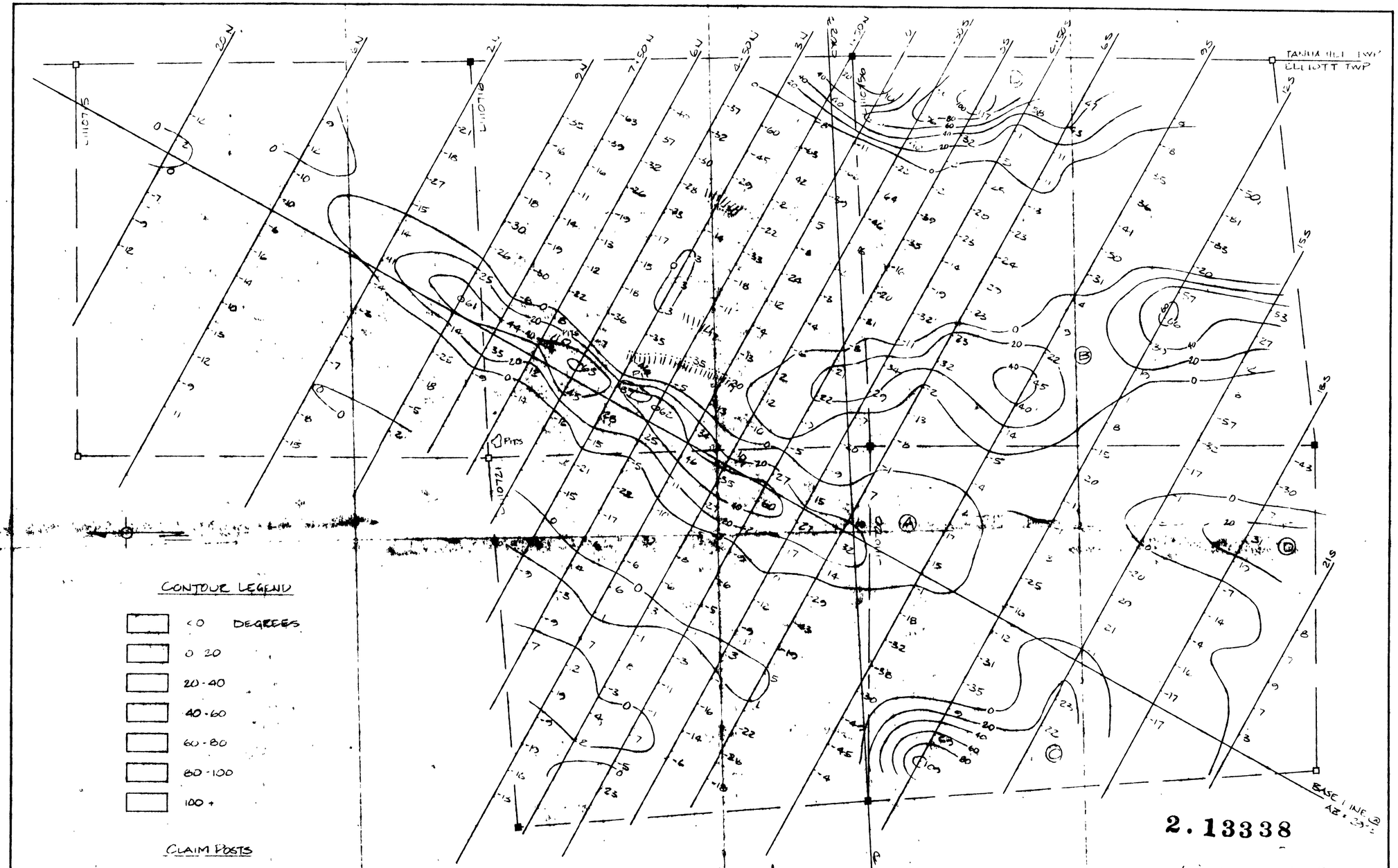
LICENSE No M15468

REGISTERED PROFESSIONAL ENGINEER — L. G. HOBBS — PROVINCE OF ONTARIO

GERARD BASTARACHE
VLF SURVEY
ELLIOTT-TANNAHILL PROPERTY
SCALE 1" = 200'
DECEMBER 1989 L.G.HOBB, P.ENG.

32D05NE0029 2.13338 TANNAHILL

220



CONTOUR LEGEND

	< 0 DEGREES
	0 - 20
	20 - 40
	40 - 60
	60 - 80
	80 - 100
	100 +

CLAIM POSTS

- ■ LOCATED
- □ ASSUMED

CLIFF LEGEND

- ..... UPPER SIDE
- ///// LOWER SIDE

TRANSMITTER: ANNAPOLIS, MD.

INSTRUMENT: GEONICS EM16

REGISTERED PROFESSIONAL ENGINEER
L. G. HOBBS
PROVINCE OF ONTARIO

2.13338

LICENSE NO M1546

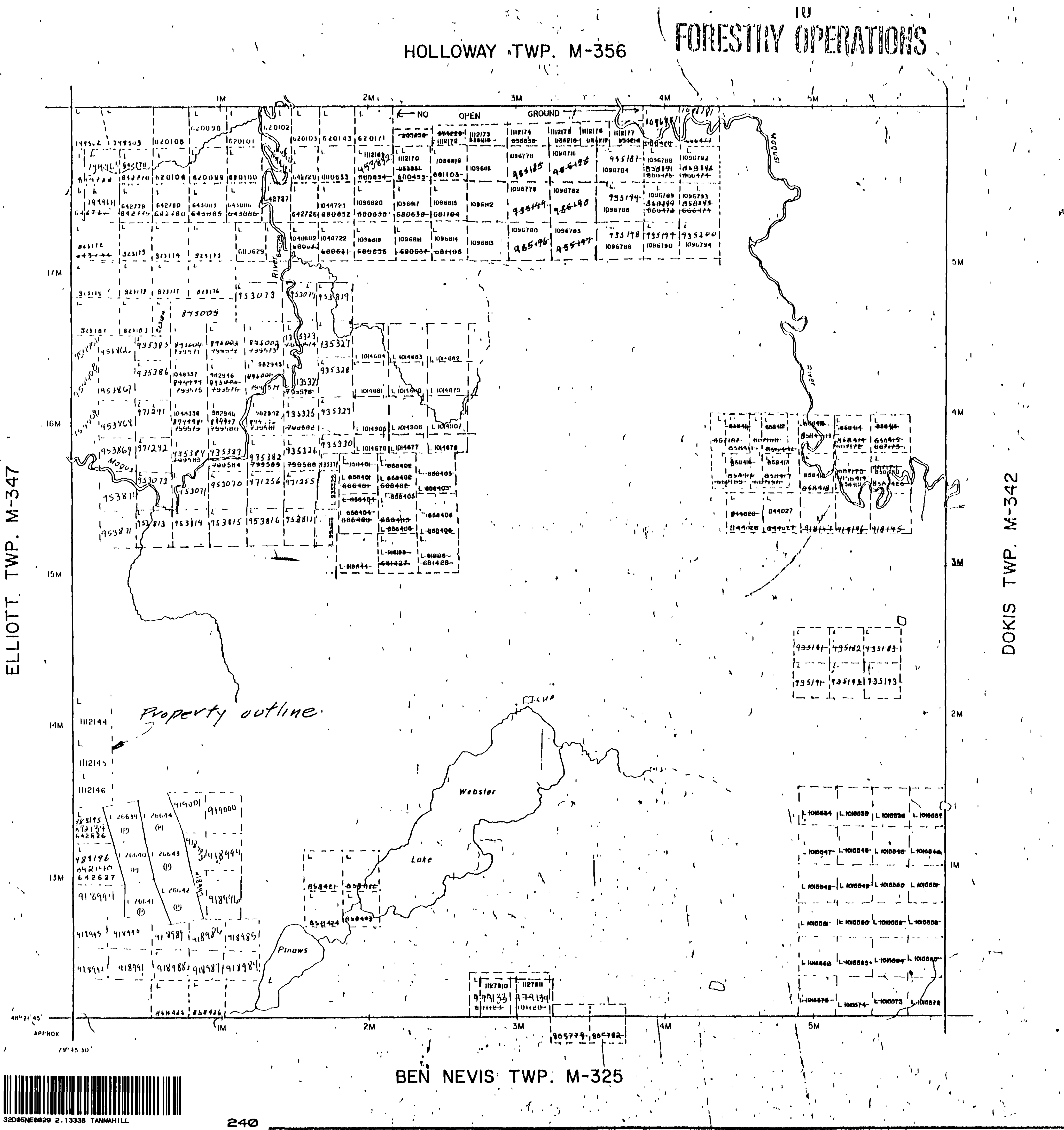
GERARD BASTARACHE

VLF SURVEY
FRASER FILTER

ELLIOTT-TANNAHILL PROPERTY

SCALE 1 = 200'

DECEMBER 1983 L.G. HOBBS, P.ENG



32D05NE0029 2.13338 TANNAHILL

240

NOTES

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DATE OF ISSUE
NOV 6 1989
LARDER LAKE
MINING RECORDER'S OFFICE

NOTICE OF FORESTRY ACTIVITY

THIS TOWNSHIP / AREA FALLS WITHIN THE ABITIBI MANAGEMENT UNIT AND MAY BE SUBJECT TO FORESTRY OPERATIONS
THE MNR UNIT FORESTER FOR THIS AREA CAN BE CONTACTED AT: P.O. BOX 129
SWASTIKA, ONT.
P0K 1T0
705-642-3222

LEGEND

PATENTED LAND	(P) or ◯
PATENTED FOR SURFACE RIGHTS ONLY	
LEASE	(L)
LICENSE OF OCCUPATION	L O
CROWN LAND SALES	C S
LOCATED LAND	Loc
CANCELLED	C
MINING RIGHTS ONLY	M R O
SURFACE RIGHTS ONLY	S R O
HIGHWAY & ROUTE NO	
ROADS	
TRAILS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	

OP 89-15 TOWNSHIP OF 213338

TANNAHILL

DISTRICT OF
COCHRANE

LARDER LAKE
MINING DIVISION

SCALE 1 INCH = 40 CHAINS (1/2 MILE)

DR. R.W. NOBLE		PLAN NO.	M-390
DATE JAN 27, 72			

ONTARIO

MINISTRY OF NATURAL RESOURCES

SURVEYS AND MAPPING BRANCH