GEOLOGICAL REPORT

HANNA LAKE CLAIMS

MINISS RIVER PROJECT

THE HANNA MINING COMPANY

ONTARIO

by

Nelson Hogg

District Geologist, The Hanna Mining Company

May 10th, 1968

INTRODUCTION

The Hanna Lake property [illegible] Mining Company in March, [illegible], for the purpose of [illegible], which is a northerly continuation of iron formation on the property of Northern Canada Mines Limited. A magnetometer survey was completed on the claims in 1966, and geological mapping was completed in 1967.

LOCATION AND ACCESS

The property can be reached by aircraft on pontoons or skis from Sioux Lookout where three air charter companies are based, or from Savant Lake by special arrangement. The distance from Sioux Lookout is 60 miles and from Savant Lake is 20 miles in a direct line. Highway No. 599, between Savant Lake and Pickle Lake, is 5 miles to the east of Hanna Lake in a direct line, but the only tractor road, which is suitable for winter hauling, is nearly 10 miles long. It would not be difficult to construct a road from the west side of Hanna Lake along an esker that trends in a northeasterly direction, to Highway No. 599 at a point about 30 miles north of Savant Lake. This road would be about 7 miles long.

PROPERTY, OWNERSHIP AND DESCRIPTION OF WORK

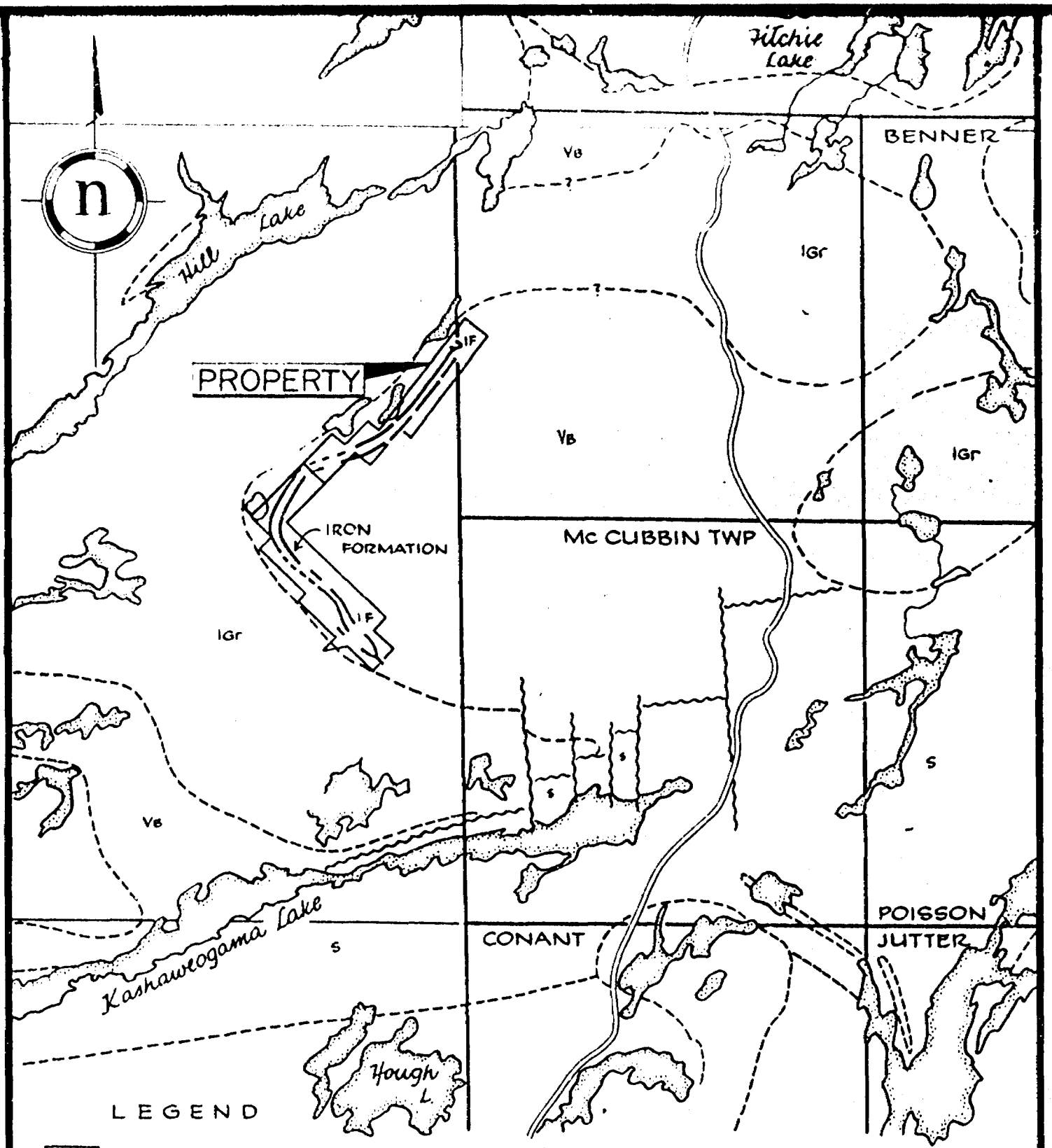
The property comprises 23 mining claims number 1 Pa 36590 - 36612 in the Patricia Mining Division. They were staked for The Hanna Mining Company, of Room 805, 69 Yonge Street, Toronto 1, and the work was done by employees of The Hanna Mining Company.

Lines were cut at 200 foot intervals in areas of special interest, and at 400 foot intervals throughout the rest of the property. Geological mapping was done by Nelson Hogg, John R. Strunk, and Robert M. Galbraith, all geologists on the staff of The Hanna Mining Company in the period from August 22nd until October 5th, 1967.

PREVIOUS WORK

The claims were originally staked in 1956 by prospectors working for Northern Canada Mines Limited. After doing reconnaissance magnetometer work along the claim lines, and prospecting, the claims were dropped, and no further work was done on them until they were re-staked by Hanna in 1966.

Hanna carried out a magnetometer survey and mapped the claims in detail geologically. Six drill holes having a total length of 1,757 feet have been drilled on the property, and their locations are shown on the accompanying geological maps.



THE HANNA MINING COMPANY

MINISS RIVER PROJECT

GENERAL GEOLOGY

Scale: 1in to 2miles

From O.D.M Map P 354. Miniss Lake Sheet

The only published geological map covering this area is the Miniss Lake Sheet - Map No. P. 354 of the Ontario Department of Mines, at a scale of 1" = 1 mile. It shows the Hanna Lake claim group on the north edge of an elliptical area of basic volcanic rocks bounded on the north and west by granite, and on the south by interbedded acid volcanic and sedimentary rocks. The amphibolitized basic volcanics include lenticular bands of tuff and iron formation which are complexly folded. Pillow lavas provide the only evidence of sequence in the volcanics, and suggest that the large elliptical mass of greenstones is a complexly folded synclinal structure.

The Hanna Lake claim group follows the contact between amphibolitized basic volcanic rocks and granitic rocks, trending about N40°E. However there are few outcrops of granite becuase the contact zone is covered by glacial deposits for most of the length of the property.

TABLE OF FORMATIONS

Cenozoic
  Pleistocene - sand, gravel, till

Precambrian
  Archean
    Acid Intrusive Rocks - granite

    Basic Intrusive Rocks
      Hornblendite
      Gabbro
      Undifferentiated Basic Dikes

    Basic Volcanic Rocks
      Banded Iron Formation
      Tuff
      Pillow Lavas
      Massive Lava
      Fragmental Lava

BASIC VOLCANIC ROCKS

Most of the property is underlain by basic volcanic rocks, which include massive flows and sills and pillowed flows, tuffs, and banded iron formation. The basic flows and tuffs are metamorphosed in the amphibolite facies and metamorphism has proceeded to the point where contacts between units are obscured. The rock mapped as coarse hornblendite may be the coarse textured portion of a thick flow or sill. Altered plagioclase feldspar is megascopically visible in the coarser basic volcanic rocks and can generally be identified in the finer-grained varieties with the aid of a

less frequently have well developed pillow structures, which consistently face to the southeast. Some of the fine-grained lavas have rounded fragments of almost similar composition and partly re-digested. These fragmental [illegible] generally underlie iron formation, particularly east of the baseline. Between lines 140 and 144 North, tuffs with narrow bands of lean iron formation, reach a thickness of 200 feet, which is the largest exposure on the property. The tuffs are amphibolitized and quite similar to some of the fine textured, sheared lavas, but they exhibit good compositional banding.

Banded iron formation occurs in beds of considerable continuity throughout the basic volcanic sequence. Eight parallel bands occur on line 168 North. Most of the bands are less than 20 feet thick, but it reaches a maximum width of 400 feet between line 206 and 208 North. Some of the narrow bands are essentially chert and iron silicates with less than 10% magnetite. The two principal bands cross the south boundary of the property west of the baseline. They are continuations of the two iron formation bands that contain the main iron deposits on the property of Northern Canada Mines Limited, which adjoins to the southwest. They have been investigated by drill holes 20 on line 54+40 North, holes 64 and 65 on line 64 North, holes 67 and 68 on line 192 North, and hole 69 on line 208 North. These bands reach widths that are of economic interest in the area south of line 72 North, and in the area north of line 180 North. However the grade of iron in the form of magnetite decreases toward the north and the iron formation contains a greater percentage of lean material. For purposes of mapping the iron formation is subdivided into four categories according to magnetic iron content, the distinction being made visually with the aid of a hand magnet. The subdivisions are:

IF_1 - Estimated to contain 30% magnetic iron
IF_2 - Estimated to contain 20 - 30% magnetic iron
IF_3 - Estimated to contain 10 - 20% magnetic iron
IF_4 - Estimated to contain 10% magnetic iron

Sharp contacts often occur between lean IF_4 and the other varieties because much of the IF_4 is a ferruginous chert with little iron. However, there are gradations both across the strike and along the strike from one variety to another. Very little iron formation on the property contains more than 30% iton. The normal iron formation, including IF_2 and IF_3 varieties, is made up of magnetite iron silicates, and a minor amount of cherty quartz. The iron silicates are gray, yellow and green varieties of grunerite-cummingtonite. Individual bands vary in thickness from less than 1/8 inch to more than 1 inch, but generally they are in the range of 1/4 to 1/2 inch. The banding is often highly crenulated and contorted and in general gives the impression that it absorbed much of the movement during folding. Narrow sills and dikes of amphibolitized basic rock cut the iron formation.

Rocks mapped as basic intrusive include hornblendite, gabbro, and undifferentiated basic dikes.

knobby weathered surfaces. It is massive and is made up almost entirely of tabular hornblende crystals up to 1/2 inch in diameter, with minor feldspar. Between line 60N and 64N there are exposures that exhibit a sharp contact between coarse hornblendite and fine-grained basic lava, but more often the contact is difficult to define. These intrusions are probably sill-like bodies that are contemporaneous with the basic volcanics.

Gabbro, in dikes about 25 feet wide, has been mapped in three places between lines 56 and 64 North. The dikes are well-defined and cut across the strike of the lavas. They are plagioclase amphibolites with a gabbroic texture, and are thought to be gabbros that have undergone the same metamorphic history as the lavas.

Narrow, fine textured basic dikes cut the iron formation in a few places. They are so similar to the lavas in texture and composition that they are not recognized in the areas of volcanic rock. They are thought to be contemporaneous with the lavas.

ACID INTRUSIVE ROCKS

The only exposures of granite are along the west boundary of the property north of line 200 North. The contact between granite and basic volcanic rocks is obscured by glacial deposits, but there are a large number of large glacial erratics of granite that probably have not moved far. These suggest that the granite-volcanic contact is on the claims, striking roughly parallel to the west boundary.

PLEISTOCENE

The area to the east of the baseline has good rock exposures and has only a thin covering of ground moraine with low hills of boulders and sand. To the west of the baseline there is a heavy covering of glacial material and few exposures of bedrock. From the south boundary to line 104 North an esker with a crown about 200 feet wide follows the west boundary. From line 104 North to Hanna Lake at line 120, the western part of the claims is mainly swampy with stunted spruce, bounded by hills of sand and boulders. North of the lake are hills of sand and large boulders which reach dimensions of 40 feet in diameter, mostly of granitic rock. To the north of line 160 North, the boulder hills terminate and the west side of the property is covered by swamp with stunted spruce trees.

The attitude of the volcanic formations is outlined by the iron formation bands, which have been traced with the aid of [illegible]. The [illegible] plexly folded internally, but the bands are quite [illegible], suggesting that much of the regional movement was taken up in the iron formation bands. The only direct evidence of the facing of beds is in pillow lava, which is well exposed along the east side of the claims, and consistently faces to the east. The two principal iron formation bands are operated by 250 to 500 feet of amphibolitized basic volcanic rocks. These two bands may merge near the north end of the property, but the westerly band weakens to the extent that the structure is in doubt. Minor folds plunge to the southeast at a variety of angles, from 35° to 65°.

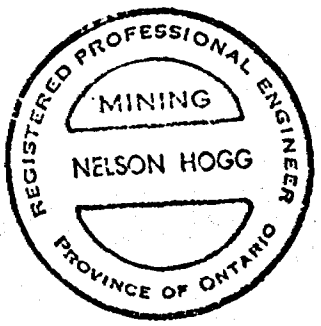
Regional shearing strikes about N65°E and dips steeply to the south, cutting the strike of bedding at a small angle. It is probably a product of metamorphism and related to the major fold axes. Close to the granite contact the foliation in the volcanics becomes more gneissic in nature and strikes parallel to the contact.

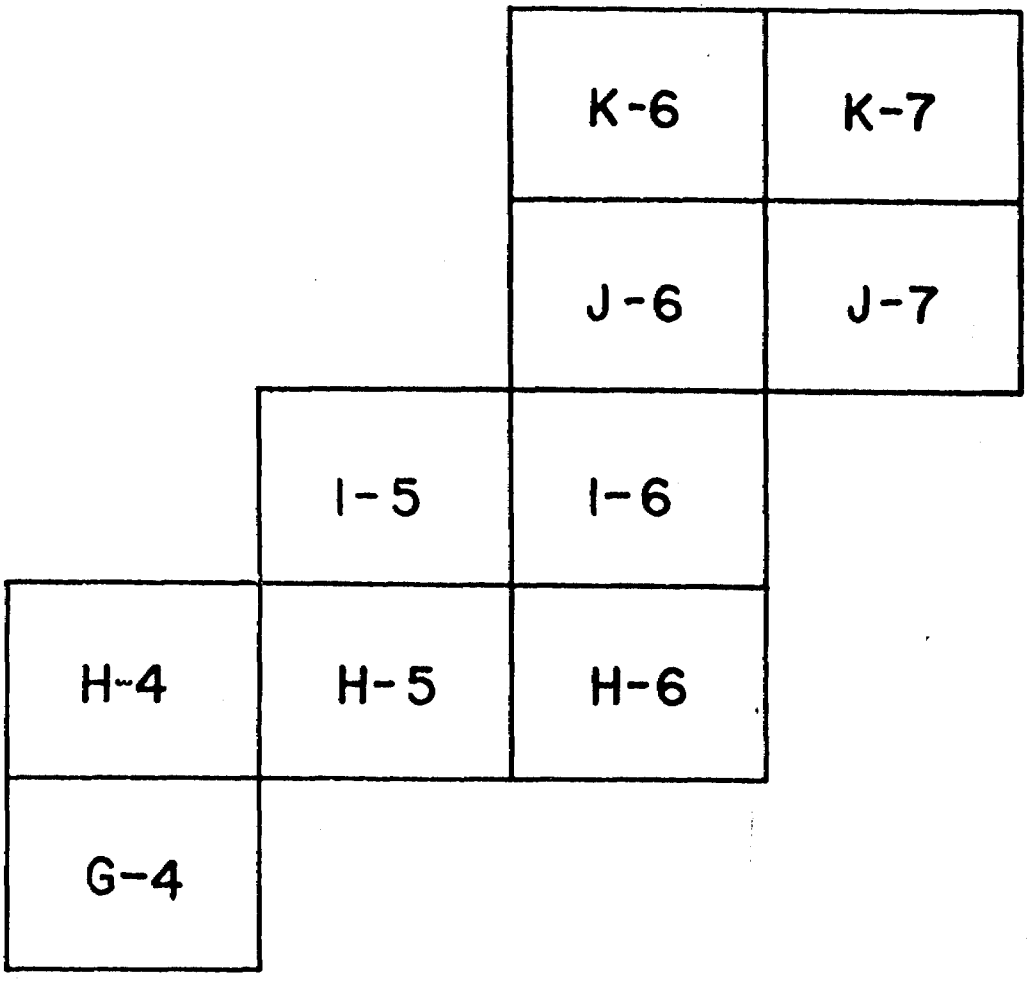
ECONOMIC GEOLOGY

The iron formation is of interest because of its proximity to the Northern Canada Iron deposits. No other minerals of economic interest were observed during the work. The iron formation is generally too narrow to be of interest, but there are wider lenses near the south boundary from line 54+40 North to line 70+00 North, and from line 190+00 North to line 210+00 North. In the former case it reaches a width of 200 feet, but is cut up by dikes and sills. In the latter cases it reaches a width of 400 feet but is generally lean in magnetite content.

Nelson Hogg

Nelson Hogg,





THE HANNA MINING COMPANY

MINISS RIVER PROJECT

INDEX MAP

Showing Geological Map Sheets at 1" = 100'

April 1969 Scale 1" = 3000'

Edgar Smith

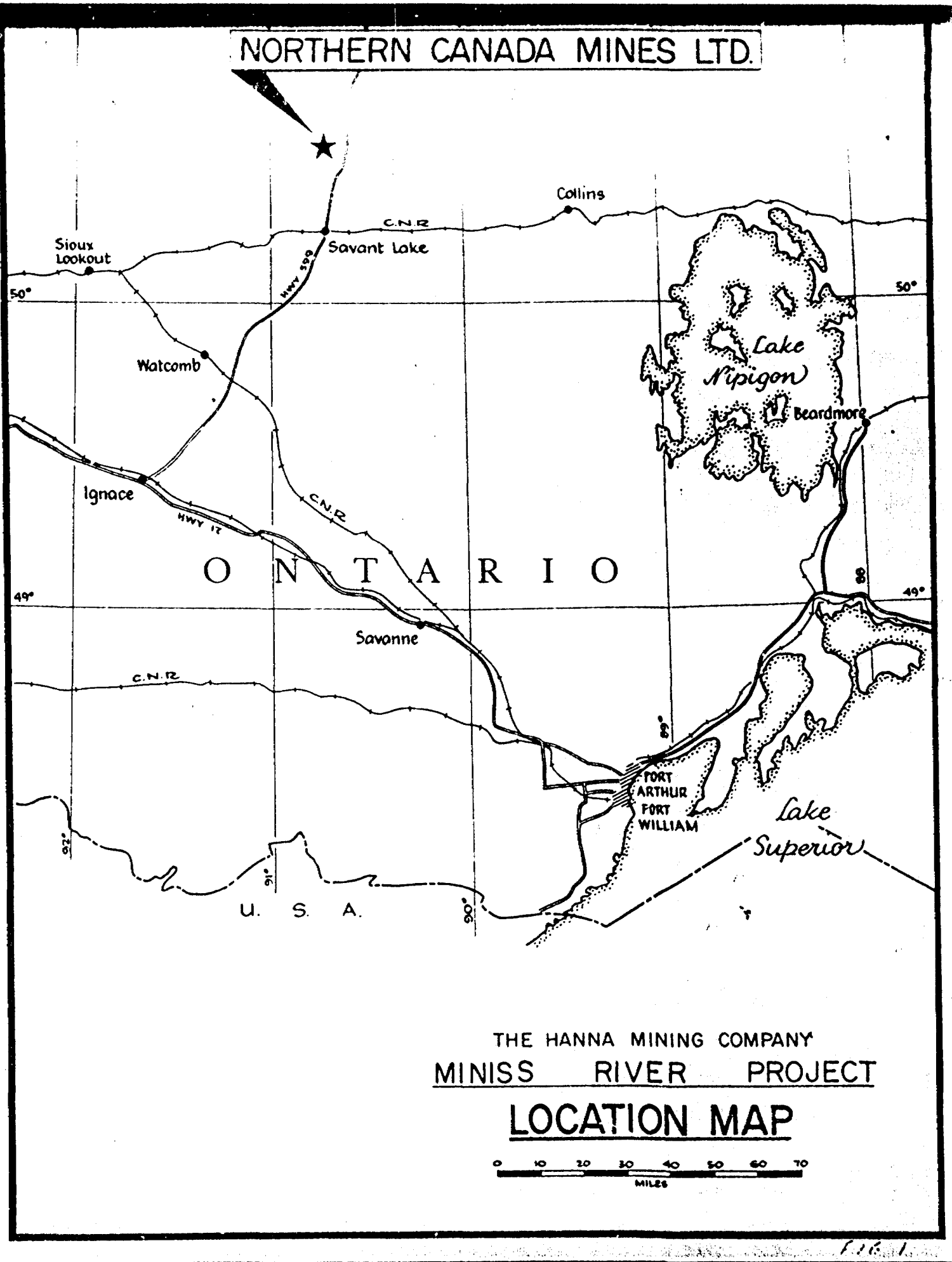

NORTHERN CANADA MINES LTD.
Collins
C.N.R
Savant Lake
Sioux Lookout
HWY 599
50°
Watcomb
Lake Nipigon
Beardmore
Ignace
HWY 17
C.N.R
ONTARIO
49°
Savanne
C.N.R
FORT ARTHUR
FORT WILLIAM
Lake Superior
92°
91°
90°
U. S. A.
THE HANNA MINING COMPANY
MINISS RIVER PROJECT
LOCATION MAP
0 10 20 30 40 50 60 70
MILES

Fig. 1

THE HANNA MINING COMPANY

MAGNETOMETER REPORT

on the

MINISS RIVER IRON PROSPECT

March, 1967

INTRODUCTION:

During the 1966 field season a magnetometer survey was conducted on the 23 claims of The Hanna Mining Company located in the Hill Lake-Solitude Lake Area of northwestern Ontario.

The purpose of the survey was to outline the northeast extension of the magnetic iron formation found on the Northern Canada Mines Ltd. property.

PROPERTY AND LOCATION:

The Miniss River property consists of 23 contiguous claims in the Hill Lake-Solitude Lake area of the Patricia Mining Division. The Hanna Mining Company, 100 Erieview Plaza, Cleveland, Ohio, is the recorded holder of the claims, Pa36590-36612 inclusive.

Although the property is located 4 to 6 miles west of Highway 599 and 20 miles due north of Savant Lake, a station on the C.N.R., access was by float equipped aircraft from Sioux Lookout, a distance of 58 miles.

PREVIOUS WORK:

This property was originally part of a 203 claim group staked and examined by Northern Canada Mines Ltd. in 1956-57. During the summer of 1957 a magnetometer survey was conducted for Northern Canada along the picket controlled claim lines. Thirteen of the survey lines crossed the present property at quarter mile intervals.

GEOLOGY:

Although the geology of this claim group has not been mapped the information available indicates the main rock types to be "greenstone", magnetic iron formation and granite. The magnetic iron formation occurs within a series of amphibolitic volcanic rocks. Granite is known to be present in the northern corner of claim Pa36611.

SURVEY DETAILS:

A transit controlled base line was cut the length of the property, 3.3 miles, and picket lines, totalling 21.4 miles, were cut at 400' intervals. Claims Pa36605-12 required more detail, therefore the line spacing was 200' intervals. The base line and picket lines were cut and chained between July 11th and September 26th.

The actual magnetic survey was carried out between October 1st and 15th using a Jalander Electronic Magnetometer. This instrument measures the vertical component and has a sensitivity of about 10 gammas, with a range of 250,000 gammas positive or negative. Readings were taken every 25' over or near anomalous areas and every 50' over non-anomalous areas.

SURVEY RESULTS:

The results of the magnetometer survey show the two bands of magnetic iron formation continue to the northeast through most of the Hanna claim group from the Northern Canada property. The two magnetic bands are separated by 200 - 600 feet of non-magnetic material, assumed to be basic volcanic rocks.

The two main bands are made up of distinct lenses or pods and can be traced almost continuously from L54+50N to L210N. The anomalous lenses or pods are several hundred to several thousand feet long and up to 250 feet wide. The magnetite bands are estimated to be 50 to 100 feet thick but are often less than 40 feet thick.

A third anomalous band about 3000 feet long occurs on claims Pa36603 and 36606 (Sheet I-6) northwest of the main anomalies and is believed to be part of the folded west band. Numerous small anomalies occur to the southeast of the main bands of iron formation.

The nose of a fold, believed to be a northeast plunging anticline, is located between L206N and L210N (see Sheets J-6 and J-7).

A complete evaluation of the property will not be made until the geology has been mapped.

REFERENCES:

1. Missisa Lake Sheet, O.D.M. Prelim. Geol. Map No. 284.

2. Drill Log - D.D.H. 20 (217 feet) Hanna 1966

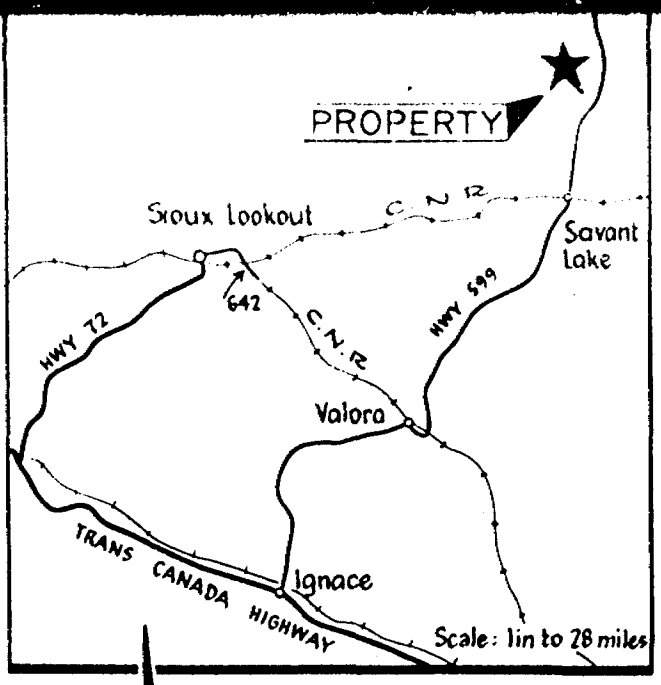
3. Field notes by D. W. Hattie, Geologist

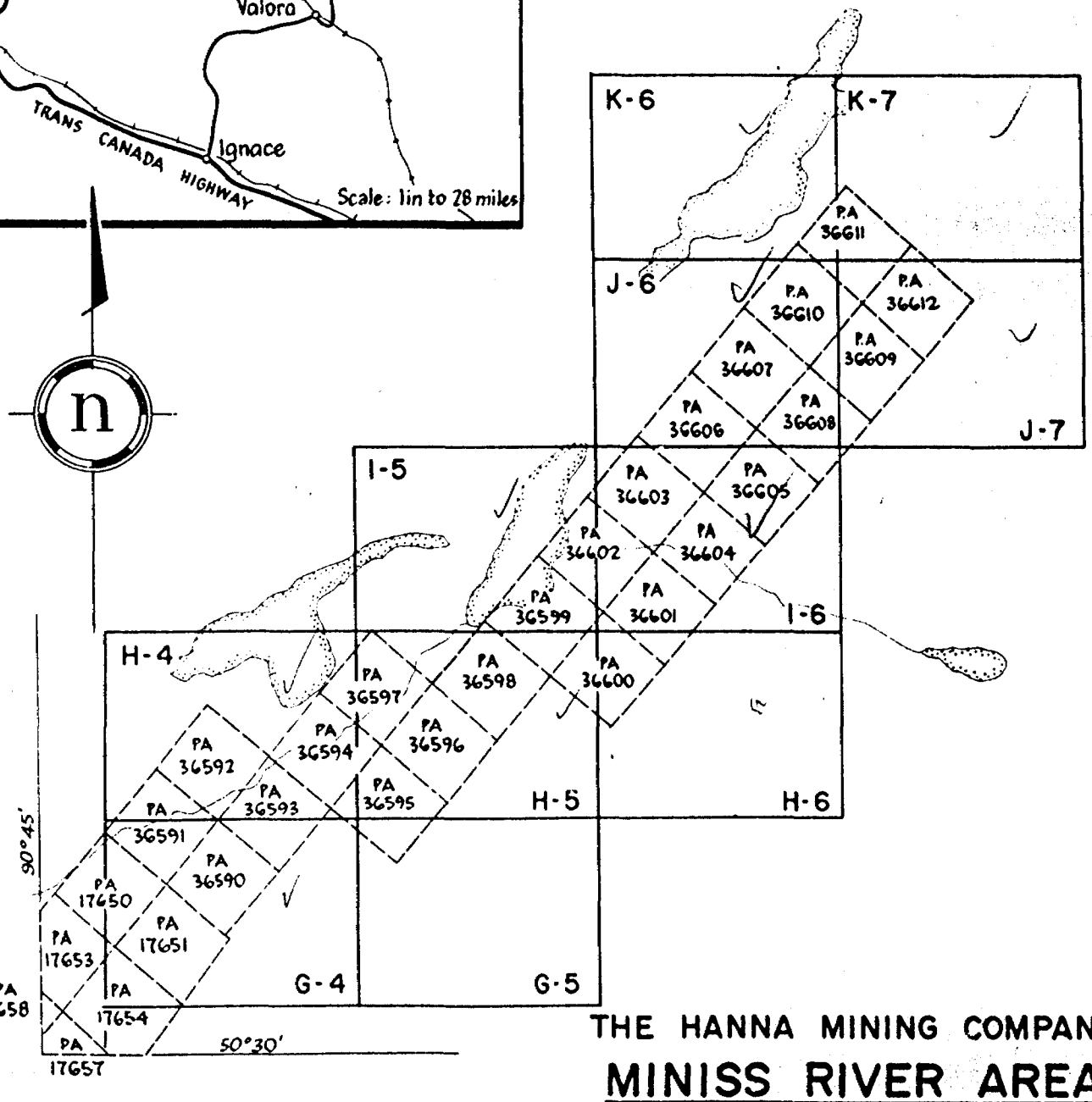
4. Magnetic profiles - Northern Canada Mines Ltd., 1957.

March 21st, 1967.

R. L. Winston

R. L. WINSTON,
Geologist.





THE HANNA MINING COMPANY

MINISS RIVER AREA

PATRICIA MINING DIVISION

INDEX MAP

Scale: 1in to 2640ft

ASSESSMENT WORK DETAILS

[illegible]

[illegible] A. [illegible], Kakabeka Falls, Ontario

Party Chief Nelson Hogg

Consultant

52J10SE0017 52J10SE0015 SOLITUDE LAKE

900

COVERING DATES

Line Cutting July - October, 1967

Field and Office July, 1967 - May 1968

INSTRUMENT DATA

Make, Model and Type

Scale Constant or Sensitivity
or provide copy of instrument data from Manufacturer's brochure

Total Number of Stations Within Claim Group

Number of Miles of Line cut Within Claim Group X 25

ASSESSMENT WORK CREDITS REQUESTED

Geological Survey 40 Days per Claim

Geophysical Survey ____ Days per Claim

MINING CLAIMS TRAVERSED

Pa 86590 - Pa 86612 inclusive

TOTAL 23 claims

[illegible] [illegible] 17th, [illegible] SIGNED Nelson Hogg
Nelson Hogg

A separate form is required for each type of survey

1. Type of Survey ....Magnetometer

2. Township or Area [illegible] lake area

3. Claims traversed by survey Pa 36590, 36591, 36592, 36593, 36594,
36595, 36596, 36597, 36598, 36599, 36600, 36601, 36602, 36603, 36604, 36605, 36606,
36607, 36608, 36609, 36610, 36611, 36612

4. Number of Miles of Line Cut 24.6 Flown

*5. Number of Stations Established 5304

*6. Make and type of Instrument Used Jalander Type No. 46-65

*7. Scale Constant or Sensitivity Maximum accuracy 10 gammas

*8. Frequency Used and Power Output

9. Summary of Assessment Credits (details on reverse side)

Total 8 hour Technical Days (Include Consultants, Draughting etc.) 51

Total 8 hour Line-Cutting Days 113

Calculation

51 (Technical) × 7 = 357 + 113 (Line-cutting) = 470 ÷ 23 (Number of claims) = 20.4 (Assessment credits per claim)

The dates listed on this form represent working time spent entirely within the limits of the above listed claims [x] Check
If otherwise, please explain

Dated: March 9, 1967 Signed: Robert L. Winston

Note: (A) * Complete only if applicable.
(B) Complete list of names, addresses and dates on reverse side.
(C) Submit separate breakdown for each type of survey.
(D) Submit in duplicate.

1. FIELD WORK

Type of Work	Name & Address	Dates Worked	Number of 8 hour days
Magnetometer operator	D. Hattie, Toronto	Oct. 1 - 15	18
Supervisor	B. L. Winston, Toronto	July 11 - Oct. 15	6

2. CONSULTANTS

Name & Address	Dates Worked (specify in field or office)	Number of 8 hour days

3. DRAUGHTSMAN, TYPING, OTHERS (specify)

Name & Address	Type of Work	Dates Worked	Number of 8 hour days
Des O'Shannessy, Toronto	Drafting	Jan. 13 - Feb. 28, 1967	10
D. Hattie, Toronto	Drafting	Dec. 15 - 20, 1966	4
A. Little, Toronto	Drafting	Aug. 1 - 8th, 1966	2
B. L. Winston, Toronto	Supervision and interpretation	Dec. 15 - Mar. 9	11

TOTAL 8 HOUR TECHNICAL DAYS 51

4. LINE-CUTTING

Name	Address	Dates Worked	Number of 8 hour days
A. Broome	Kakabeka Falls, Ont.	Sept. 6-26	21
V. Bernicot	Sioux Lookout, Ont.	Sept. 8 - 26	19
T. Bonca	New York	July 11 - Aug. 3	12
A. Little	Toronto	July 27 - Aug. 11	8
W. Lampkin	North Bay, Ont.	July 20 - Aug. 11	14
I. Ivanowich	Sioux Lookout, Ont.	July 11 - July 29	14
K. Bayly	Sioux Lookout, Ont.	July 11 - Aug. 11	25

TOTAL 8 HOUR LINE-CUTTING DAYS 113

MINING DIVISION
ONTARIO
TORONTO 2, ONTARIO
TEL. 365-1322

DEPARTMENT OF MINES

September 5, 1968

Mr. K. R.Clemiss
Mining Recorder
Court House
Sioux Lookout, Ontario

Dear Mr. Clemiss:

The Hanna Mining Co. has stated that they are not prepared to furnish additional survey material as was required and are not interested in receiving assessment credit for the survey.

You are hereby authorized to delete the geological credits of 40 days recorded against each of the claims listed below on March 5, 1968:

Pa 38455 to 38481 inclusive
Pa 38483 to 38485 inclusive
Pa 38502 to 38519 inclusive
Pa 39297 to 39299 inclusive

Yours very truly,

/fc

Fred W. Matthews
Mining Recorder

cc: Hanna Mining Company
805 - 69 Yonge Street
Toronto 1, Ontario

Attn: Mr. N. Hogg

Mr. H. L. King
Resident Geologist
203 Main St. S.
Kenora, Ontario

Assessment Work Credits

Township or Area: [illegible]

Number of Assessment work days per claim: **Special Provisions**

Geophysical -

Geological - **40 days per claim**

Geochemical -

Mining Claims:

Radiometric -

PA 36590 to 36617 incl.

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; Radiometric - 20

OFFICE OF MINING RECORDER

February 7, 1968

Dr. J. C. Davies,
Resident Geologist,
Ontario Department of Mines,
203 Main Street,
KENORA, Ontario.

Dear Sir:

Please find enclosed herewith, diamond drill logs and sketches, submitted by The Hanna Mining Company.

Map sheets M-1804 -M-2054

Assessment work completed on mining claims:

Pa-36590	Pa-36773
36591	36775
36609	37676
36610	38465
36612	

Yours very truly,

K. R. Clemiss,
Mining Recorder.

KRC/mj
encls.

ONTARIO
DEPARTMENT OF MINES
Mining Lands Branch

PARLIAMENT BUILDINGS
TORONTO 2, ONTARIO

August 15, 1957.

Dear Sir:

Subject: Geophysical and Geological Surveys

The assessment work credits as shown on the attached list have been approved as of the above date. Please inform the recorded holder and so indicate on your records.

Yours truly,

for R. V. Scott,
Director.

/cae
Att.

cc: The Hanna Mining Co.

Dr. J. C. Davies,

Mr. K. R. Clemiss,
Mining Recorder,
Sioux Lookout, Ont.

FILE 63.2115

THE MINING ACT

ASSESSMENT WORK CREDITS

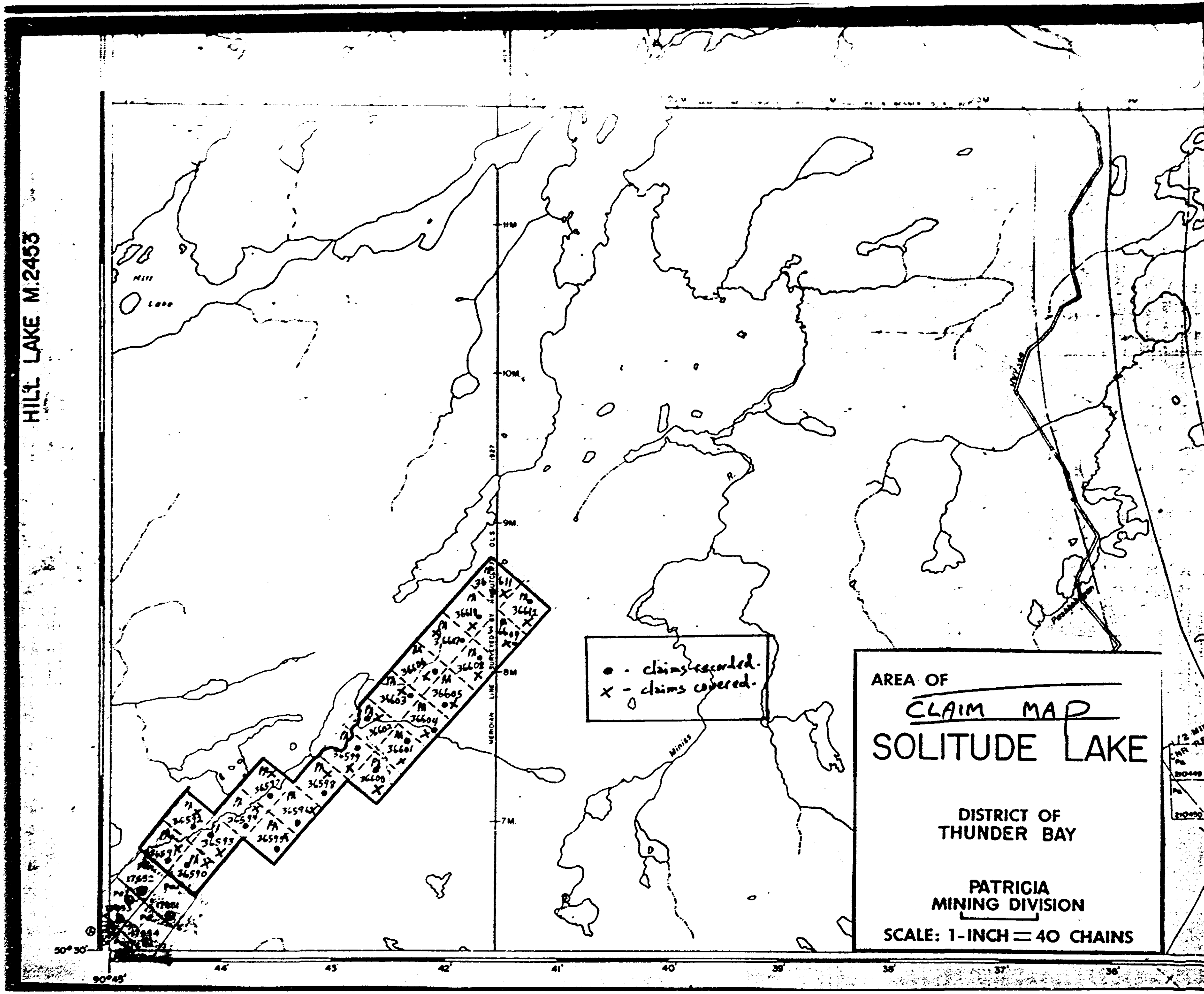
NAME: THE HANNA MINING CO. LTD.

TOWNSHIP OR AREA SOLITUDE LAKE AREA

Number of Assessment work days per claim:

Geophysical 20.4 Magnetometer Geological

Mining Claims: PA 36590 to 36612 incl.


HILL LAKE M.2453
• - claims recorded.
X - claims covered.
AREA OF
CLAIM MAP
SOLITUDE LAKE
DISTRICT OF
THUNDER BAY
PATRICIA
MINING DIVISION
SCALE: 1-INCH = 40 CHAINS
MERIDIAN LINE SURVEYED BY
11M
10M
9M
8M
7M
50°30'
90°45'
44'
43'
42'
41'
40'
39'
38'
37'
36'
36611
36612
36609
36610
36608
36606
36605
36603
36604
36602
36601
36599
36600
36598
36597
36596
36595
36594
36593
36590
17852
17861
Miniss

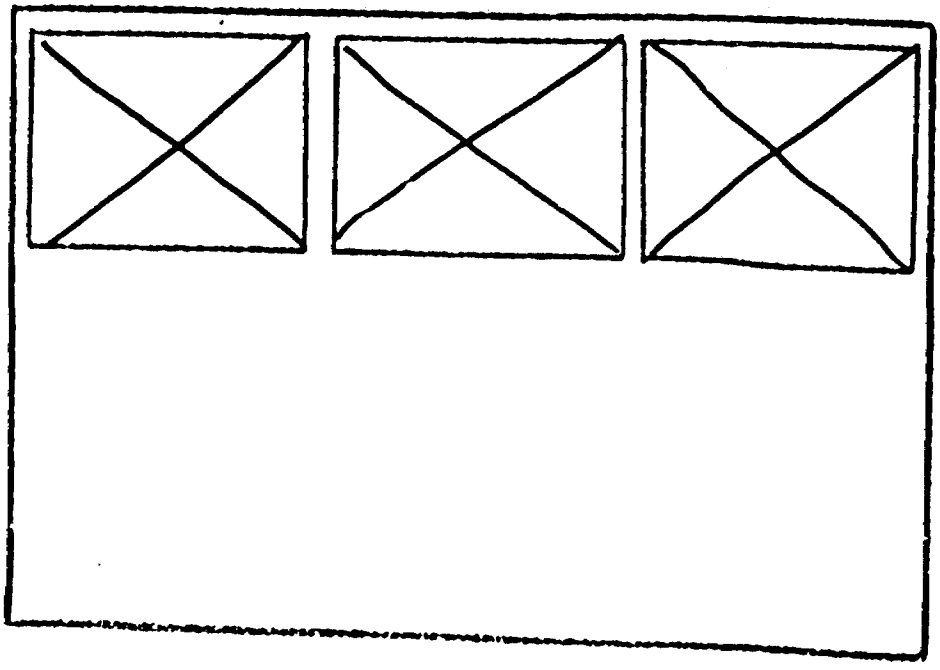
MAP(S) IDENTIFIED AS

52 J/10 SE - 0015 #1

52 J/10 SE - 0015 #2

52 J/10 SE - 0015 #3

LOCATED IN THE MAP CHANNEL IN THE FOLLOWING SEQUENCE (X)



FOR ADDITIONAL

INFORMATION

SEE MAPS:

52 J/10 SE-0015 # (4-20)

25,000 | 17,000

24,000

23,000

22,000 | 13,000

Esker

Sand
Jackpine and Spruce

Sand-
Jackpine & Spruce

Pa 36591

Pa 36590

Pa 36593

D.D.H. 65

D.D.H. 64

D.D.H. 20

L 68+00N

L 72+00N

L 76+00N

L 80+00N

North Azt.

Boulders

Spruce

Small Spruce

Sand and Boulders

Sand & Boulders

Boulders & Sand
Mixed Bush

Jackpine

Spruce and Muskeg

Muskeg

Lange

Small Spruce

LEGEND

I_{Gr}	Igr	Granite (Granitic rocks)
I_B	IB	Basic Intrusives (Amphibolite)
IF_1	IF_1	Iron Formation +30% magnetite
IF_2	IF_2	" " 20-30% "
IF_3	IF_3	" " 10-20% "
IF_4	IF_4	" " 10% or less "
V_B	V_B	Intermediate to basic volcanics
M_{hb}	M_{hb}	Hornblendite

SYMBOLS

a	amphibole
m	magnetite
s	Fe silicates
f or fs	feldspar
hb	hornblende
ch	chert
q	quartz
py	pyrite
po	pyrrhotite
hbt	hornblendite
graph	graphite
tu	Tuff
frags	fragments
msv	massive
fng	fine grained
mdg	medium grained
csg	coarse grained

Beaver dam
Swamp outline
Swamp
Marshy swamp
Stream
Creek
Drill road
Trail or old drill road
Esker
Surveyed claim line
Unsurveyed " "
Picket line, base line same symbol but heavier
Camp
Drill hole
Small outcrop
Outcrop
Geological boundary as indicated by magnetic survey
Strike & dip
Strike & dip of schistosity

THE HANNA MINING COMPANY

MINISS RIVER AREA

PATRICIA MINING DIVISION, ONTARIO

GEOLOGICAL PLAN

0 100 200 300 feet

Scale 1 in to 100 ft.

G-4

Field work by Nelson Hogg
Date 1967

Interpretation by G.H.
Date 1968

Revised
Revised
N.T.S. No. 52 J 7 8:0

52J10SE0015 SOLITUDE LAKE

200

52J/10SE-0015 #1

LEGEND

I_{Gr}	Igr	Granite (Granitic rocks)
I_B	IB	Basic Intrusives (Amphibolite)
IF_1	IF_1	Iron Formation + 30 % magnetite
IF_2	IF_2	" " 20-30 % "
IF_3	IF_3	" " 10 - 20 % "
IF_4	IF_4	" " 10% or less "
V_B	VB	Intermediate to basic volcanics
M_{Hb}		Hornblendite

SYMBOLS

a	amphibole
m	magnetite
s	Fe silicates
f or fs	feldspar
hb	hornblende
ch	chert
q	quartz
py	pyrite
po	pyrrhotite
hbt	hornblendite
graph	graphite
tu	Tuff
frags	fragments
msv	massive
fng	fine grained
mdg	medium grained
csg	coarse grained

- Beaver dam
- Swamp outline
- Swamp
- Marshy swamp
- Stream
- Creek
- Drill road
- Trail or old drill road
- Esker
- Surveyed claim line
- Unsurveyed " "
- Picket line, base line same symbol but heavier
- Camp — Camp
- Drill hole
- Small outcrop
- Outcrop
- Geological boundary as indicated by magnetic survey
- Strike & dip
- Strike & dip of schistosity

28,000 13,000 14,000 15,000 16,000 17,000 28,000

27,000 26,000 25,000

North Azi.

L 96+00N L 92+00N L 88+00N L 84+00N L 80+00N L 76+00N L 72+00N L 68+00N L 64+00N L 60+00N

Pa 36597 Pa 36594 Pa 36592. Pa 36593 Pa 36595 Pa 36591

Spruce Pond Esker Sand Grassy Jackpine Flooded Alders Boulders Sand & Boulders Muskeg - Small Spruce Sand - Few Boulders Sand - Jackpine Sand - Jackpine Esker Sand

Loon 65

THE HANNA MINING COMPANY
MINISS RIVER AREA
PATRICIA MINING DIVISION, ONTARIO

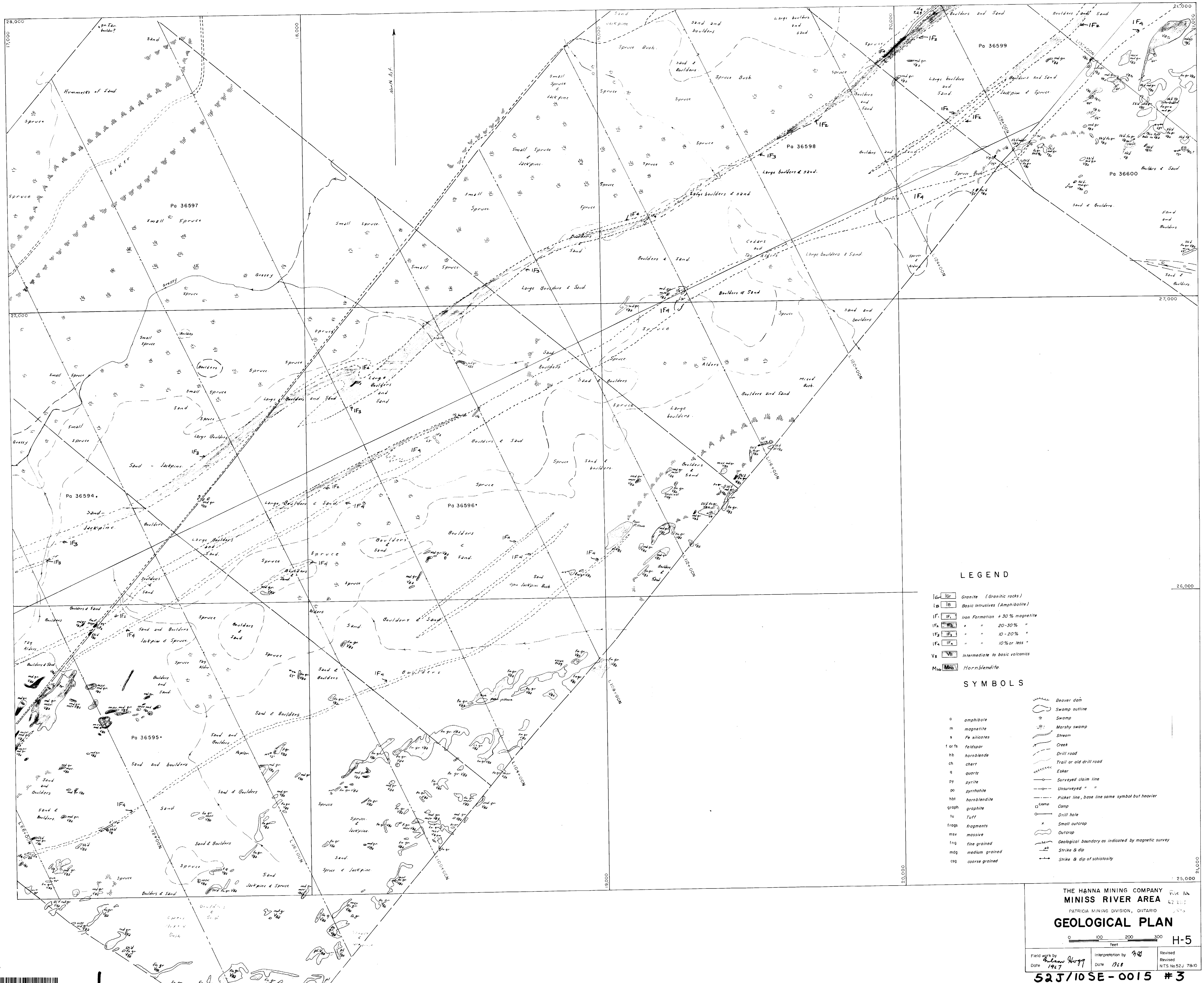
GEOLOGICAL PLAN

0 100 200 300 feet
Scale - 1 in. to 100 ft.

H-4

Field work by Melvin Hogg Date 1967
Interpretation by J. A. Date 1968
Revised
Revised
N.T.S. No. 52 J 7 & 10

52 J/10 SE - 0015 #2



THE HANNA MINING COMPANY
MINISS RIVER AREA
PATRICIA MINING DIVISION, ONTARIO
GEOLOGICAL PLAN
H-5
Field work by
Date 1967
Interpretation by
Date 1968
Revised
Revised
NTS No 52J 7810
52J/10SE-0015 #3
LEGEND
IGr Granite (Granitic rocks)
IB Basic Intrusives (Amphibolite)
IF1 Iron Formation + 30% magnetite
IF2 20-30%
IF3 10-20%
IF4 10% or less
VB Intermediate to basic volcanics
MHb Hornblendite
SYMBOLS
a amphibole
m magnetite
s Fe silicates
f or fs feldspar
hb hornblende
ch chert
q quartz
py pyrite
po pyrrhotite
hbt hornblendite
graph graphite
tu Tuff
frags fragments
msv massive
fng fine grained
mdg medium grained
csg coarse grained
Beaver dam
Swamp outline
Swamp
Marshy swamp
Stream
Creek
Drill road
Trail or old drill road
Esker
Surveyed claim line
Unsurveyed " "
Picket line, base line same symbol but heavier
Camp
Drill hole
Small outcrop
Outcrop
Geological boundary as indicated by magnetic survey
Strike & dip
Strike & dip of schistosity
Pa 36594
Pa 36595
Pa 36596
Pa 36597
Pa 36598
Pa 36599
Pa 36600
North Ast.

THE HANNA MINING COMPANY
MINISS RIVER AREA
PATRICIA MINING DIVISION, ONTARIO

GEOLOGICAL PLAN

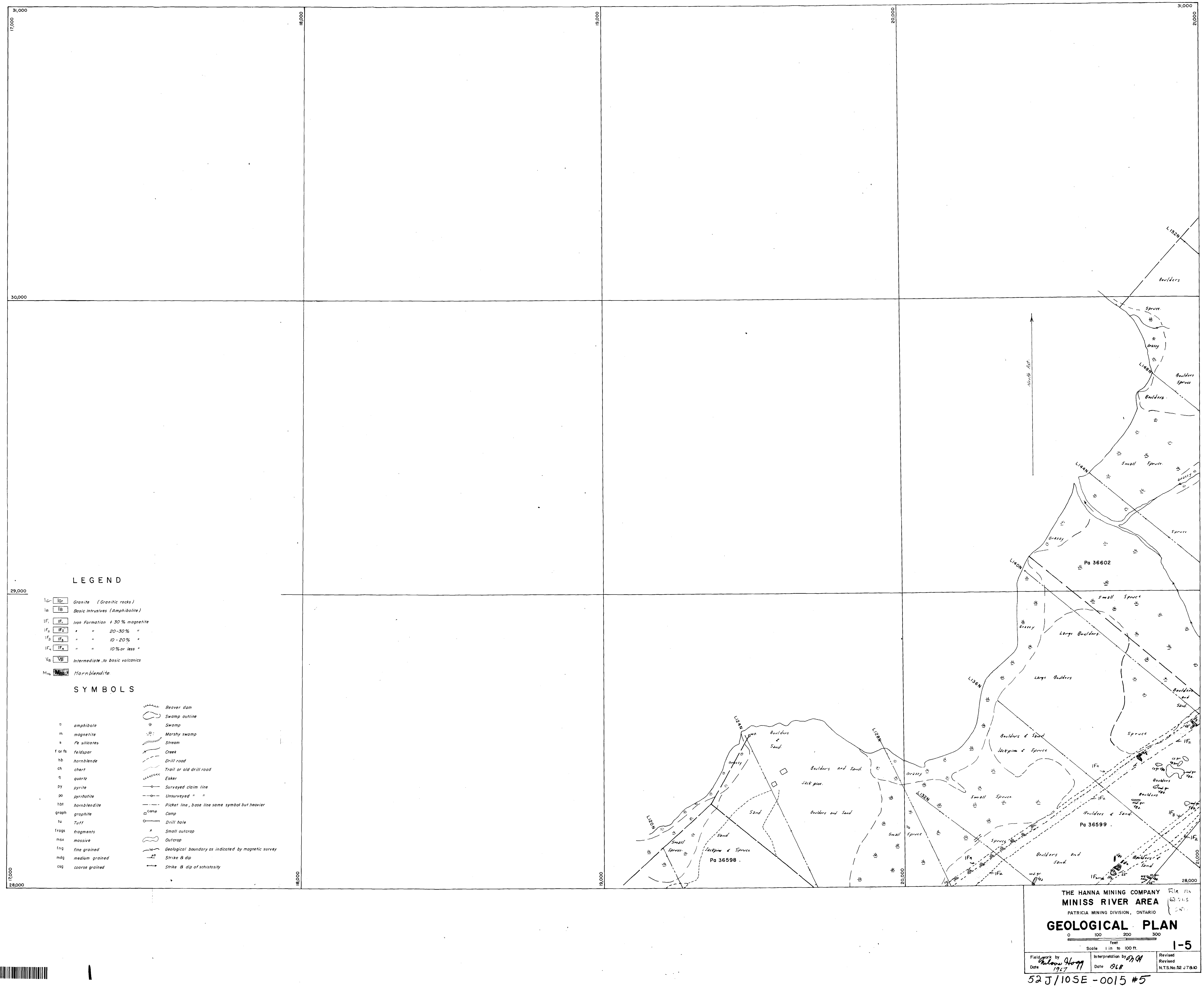
0 100 200 300 feet
Scale 1 in. to 100 ft.

H-6

File No. 63.2115

Field work by Milaus Hogg	Interpretation by	Revised
Date 1967	Date	Revised
		N.T.S. No.52 J7810

52J/10SE-0015 #4


THE HANNA MINING COMPANY
MINISS RIVER AREA
PATRICIA MINING DIVISION, ONTARIO
GEOLOGICAL PLAN
0 100 200 300
feet
Scale 1 in to 100 ft.
1-5
Field work by Wilson Hogg
Date 1967
Interpretation by D.G.
Date 1968
Revised
Revised
N.T.S. No. 52 J 7 & 10
52J/10SE-0015 #5
LEGEND
IGr Granite (Granitic rocks)
IB Basic Intrusives (Amphibolite)
IF1 Iron Formation + 30% magnetite
IF2 " " 20-30% "
IF3 " " 10-20% "
IF4 " " 10% or less "
VB Intermediate to basic volcanics
MHb Hornblendite
SYMBOLS
a amphibole
m magnetite
s Fe silicates
f or fs feldspar
hb hornblende
ch chert
q quartz
py pyrite
po pyrrhotite
hbt hornblendite
graph graphite
tu Tuff
frags fragments
msv massive
fng fine grained
mdg medium grained
csg coarse grained
Beaver dam
Swamp outline
Swamp
Marshy swamp
Stream
Creek
Drill road
Trail or old drill road
Esker
Surveyed claim line
Unsurveyed " "
Picket line, base line same symbol but heavier
Camp
Drill hole
Small outcrop
Outcrop
Geological boundary as indicated by magnetic survey
Strike & dip
Strike & dip of schistosity
31,000
30,000
29,000
28,000
17,000
18,000
19,000
20,000
21,000
North Ast.
L152N
L148N
L144N
L140N
L136N
L132N
L128N
L124N
L120N
Pa 36602
Pa 36599
Pa 36598
Boulders
Spruce
Grassy
Small Spruce
Large Boulders
Boulders and Sand
Boulders & Sand
Jackpine & Spruce
Jack pine
Sand
IF2
IF3
IF4

THE HANNA MINING COMPANY
MINISS RIVER AREA
PATRICIA MINING DIVISION, ONTARIO

GEOLOGICAL PLAN

0 100 200 300 feet
Scale 1 in. = 100 ft.

1-6

Field work by Melanie Hogg Date 1967
Interpretation by MH Date 1968
Revised
Revised
NTS No 52J/7 & 10

52J/10SE-0015 #6

LEGEND

- IGr — Granite (Granitic rocks)
- IB — Basic Intrusives (Amphibolite)
- IF1 — Iron Formation + 30 % magnetite
- IF2 — " " 20-30 % "
- IF3 — " " 10-20 % "
- IF4 — " " 10 % or less "
- VB — Intermediate to basic volcanics
- Hornblendite

SYMBOLS

- a amphibole
- m magnetite
- s Fe silicates
- f or fs feldspar
- hb hornblende
- ch chert
- q quartz
- py pyrite
- po pyrrhotite
- hbt hornblendite
- graph graphite
- tu Tuff
- frags fragments
- msv massive
- fng fine grained
- mdg medium grained
- csg coarse grained

- Beaver dam
- Swamp outline
- Swamp
- Marshy swamp
- Stream
- Creek
- Drill road
- Trail or old drill road
- Esker
- Surveyed claim line
- Unsurveyed " "
- Picket line, base line same symbol but heavier
- Camp
- Drill hole
- Small outcrop
- Outcrop
- Geological boundary as indicated by magnetic survey
- Strike & dip
- Strike & dip of schistosity

31,000 30,000 29,000 24,000 23,000 25,000 26,000 21,000

34,000 | 22,000 | 23,000 | 24,000

21,000

33,000

32,000

31,000

LEGEND

I_{Gr}	Igr	Granite (Granitic rocks)
I_B	IB	Basic Intrusives (Amphibolite)
IF_1	IF_1	Iron Formation + 30 % magnetite
IF_2	IF_2	" " 20-30 % "
IF_3	IF_3	" " 10 - 20% "
IF_4	IF_4	" " 10% or less "
V_B	VB	Intermediate to basic volcanics
M_{Hb}	Mhb	Hornblendite.

SYMBOLS

a	amphibole
m	magnetite
s	Fe silicates
f or fs	feldspar
hb	hornblende
ch	chert
q	quartz
py	pyrite
po	pyrrhotite
hbt	hornblendite
graph	graphite
tu	Tuff
frags	fragments
msv	massive
fng	fine grained
mdg	medium grained
csg	coarse grained

- Beaver dam
- Swamp outline
- Swamp
- Marshy swamp
- Stream
- Creek
- Drill road
- Trail or old drill road
- Esker
- Surveyed claim line
- Unsurveyed " "
- Picket line, base line same symbol but heavier
- Camp
- Drill hole
- Small outcrop
- Outcrop
- Geological boundary as indicated by magnetic survey
- Strike & dip
- Strike & dip of schistosity

L204N L202N L200N L198N L196N L194N L192N L190N L188N L186N L184N L182N L180N L178N L176N L174N L172N L170N

Pa 36610 Pa 36609 Pa 36608 Pa 36607 Pa 36606 Pa 36605 Pa 36603

THE HANNA MINING COMPANY

MINISS RIVER AREA

PATRICIA MINING DIVISION, ONTARIO

GEOLOGICAL PLAN

0 100 200 300 feet

Scale: 1 in to 100 ft.

J 6

Field work by [illegible] Date 1967

Interpretation by [illegible] Date 1968

Revised

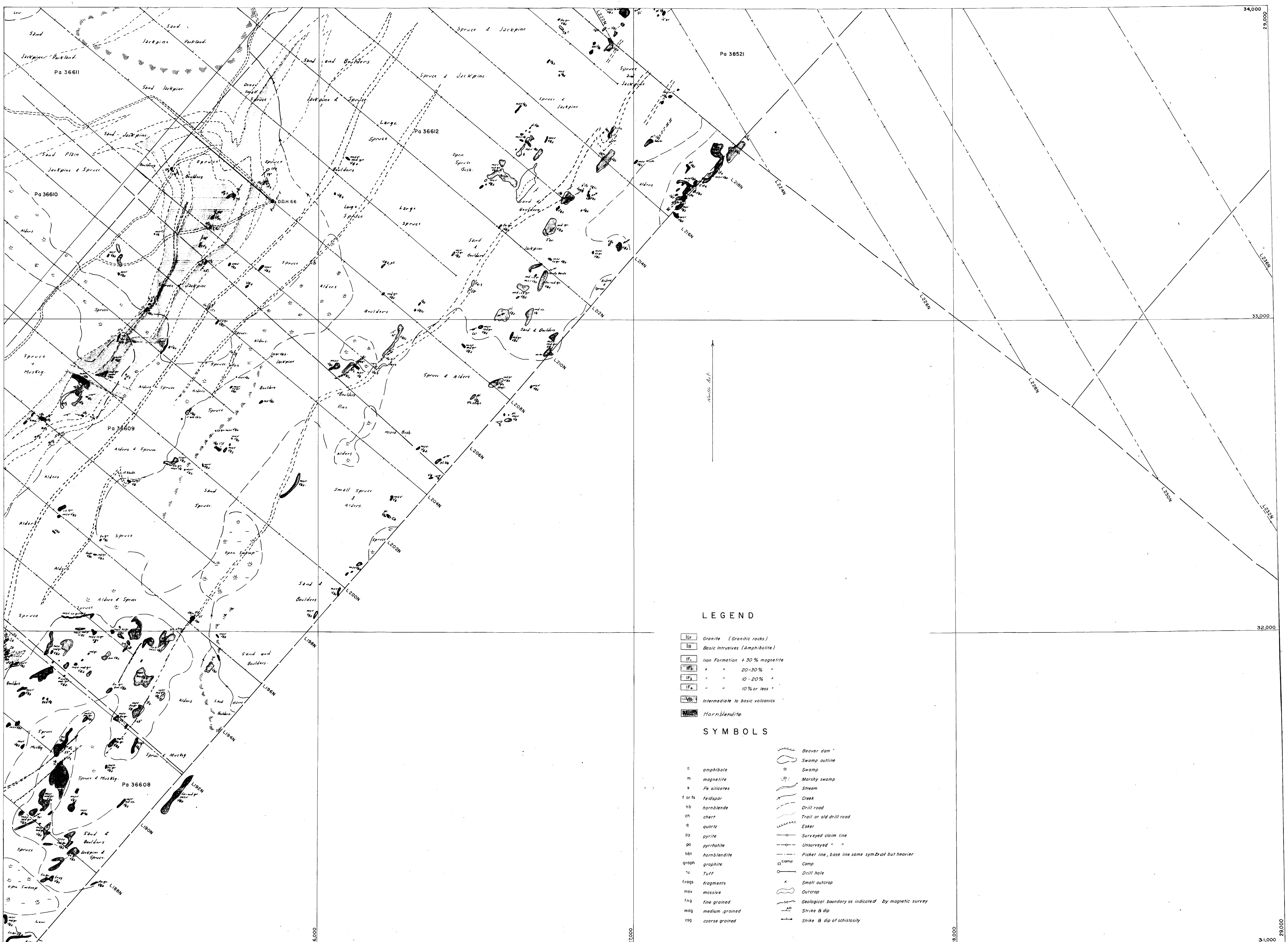
Revised

NTS. No. 52 J 7 B 10.

52J1105E0017 52J1105E0015 SOLITUDE LAKE

260

52 J/10 SE - 0015 #7



THE HANNA MINING COMPANY

MINISS RIVER AREA

PATRICIA MINING DIVISION, ONTARIO

GEOLOGICAL PLAN

Scale: 1 in. to 100 ft.

J 7

Field work by J. R. Strunk | Date 1967

Interpretation by [illegible] | Date 1968

Revised

Revised

N.T.S. No. 52 J-7 & 10

52 J/10SE-0015 #8

270

THE HANNA MINING COMPANY
MINISS RIVER AREA
PATRICIA MINING DIVISION, ONTARIO

GEOLOGICAL PLAN

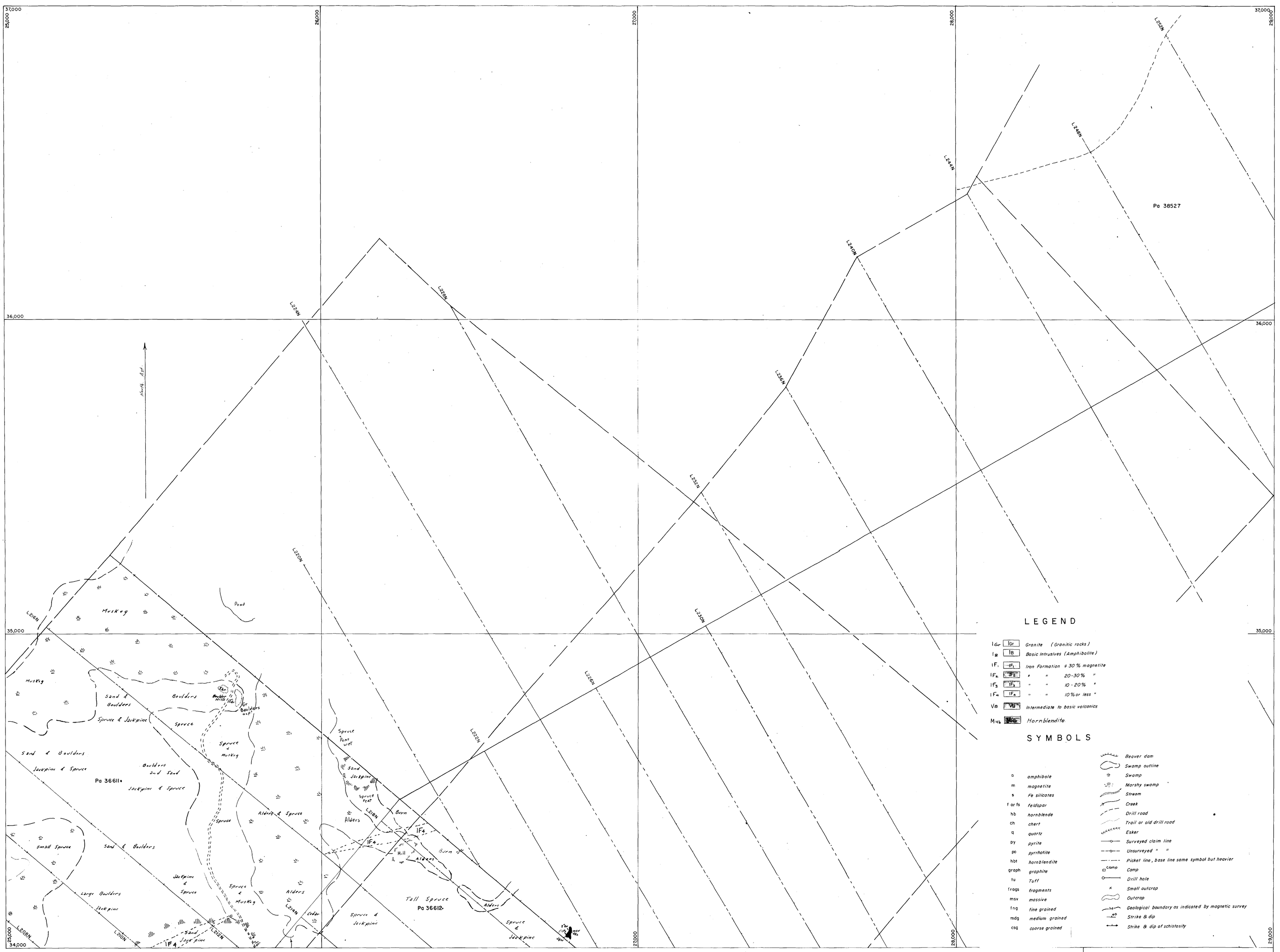
0 100 200 300
feet
Scale: 1 in. to 100 ft.

K-6

Field work by J. R. STRUNK	Interpretation by MW	Revised
Date 1967	Date 1968	Revised
		N.T.S. No. 52 J-7 8 10

File 63.2115

52 J/10 SE-0015 #9



LEGEND

- IGr (Gr) — Granite (Granitic rocks)
- IB (B) — Basic Intrusives (Amphibolite)
- IF1 (F1) — Iron Formation + 30 % magnetite
- IF2 (F2) — " " 20-30 % "
- IF3 (F3) — " " 10-20 % "
- IF4 (F4) — " " 10% or less "
- VB (VB) — Intermediate to basic volcanics
- MHb (Hb) — Hornblendite

SYMBOLS

a	amphibole
m	magnetite
s	Fe silicates
f or fs	feldspar
hb	hornblende
ch	chert
q	quartz
py	pyrite
po	pyrrhotite
hbt	hornblendite
graph	graphite
tu	Tuff
frags	fragments
msv	massive
fng	fine grained
mdg	medium grained
csg	coarse grained

- Beaver dam
- Swamp outline
- Swamp
- Marshy swamp
- Stream
- Creek
- Drill road
- Trail or old drill road
- Esker
- Surveyed claim line
- Unsurveyed " "
- Picket line, base line same symbol but heavier
- Camp (Camp)
- Drill hole
- Small outcrop
- Outcrop
- Geological boundary as indicated by magnetic survey (M)
- Strike & dip (40°)
- Strike & dip of schistosity

THE HANNA MINING COMPANY

File No 63.2115

MINISS RIVER AREA

PATRICIA MINING DIVISION, ONTARIO

GEOLOGICAL PLAN

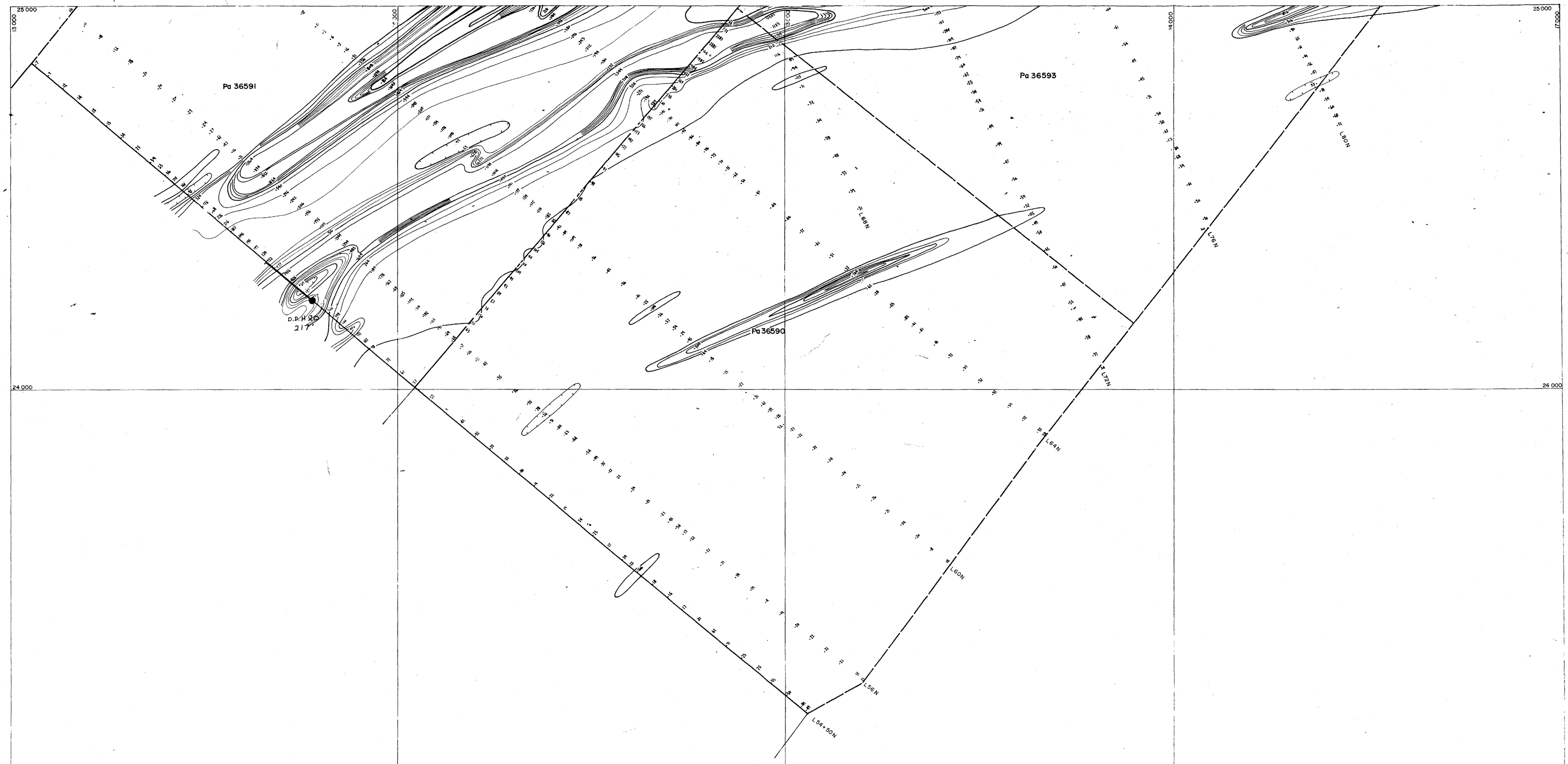
0 100 200 300 feet

Scale 1 in to 100 ft.

K-7

Field work by J. R. STRUNK	Interpretation by	Revised
Date 1967	Date 1968	Revised
		N.T.S. No. 52 J 7 B 10

52 J/10 SE - 0015 #10



LEGEND

.264 Magnetic station-gammas x 100

Magnetic Low

10000, 50000, 100000 Gamma Contour

10000 Gamma Interval

N

G-4

THE HANNA MINING COMPANY

MINISS RIVER AREA

PATRICIA MINING DIVISION, ONTARIO

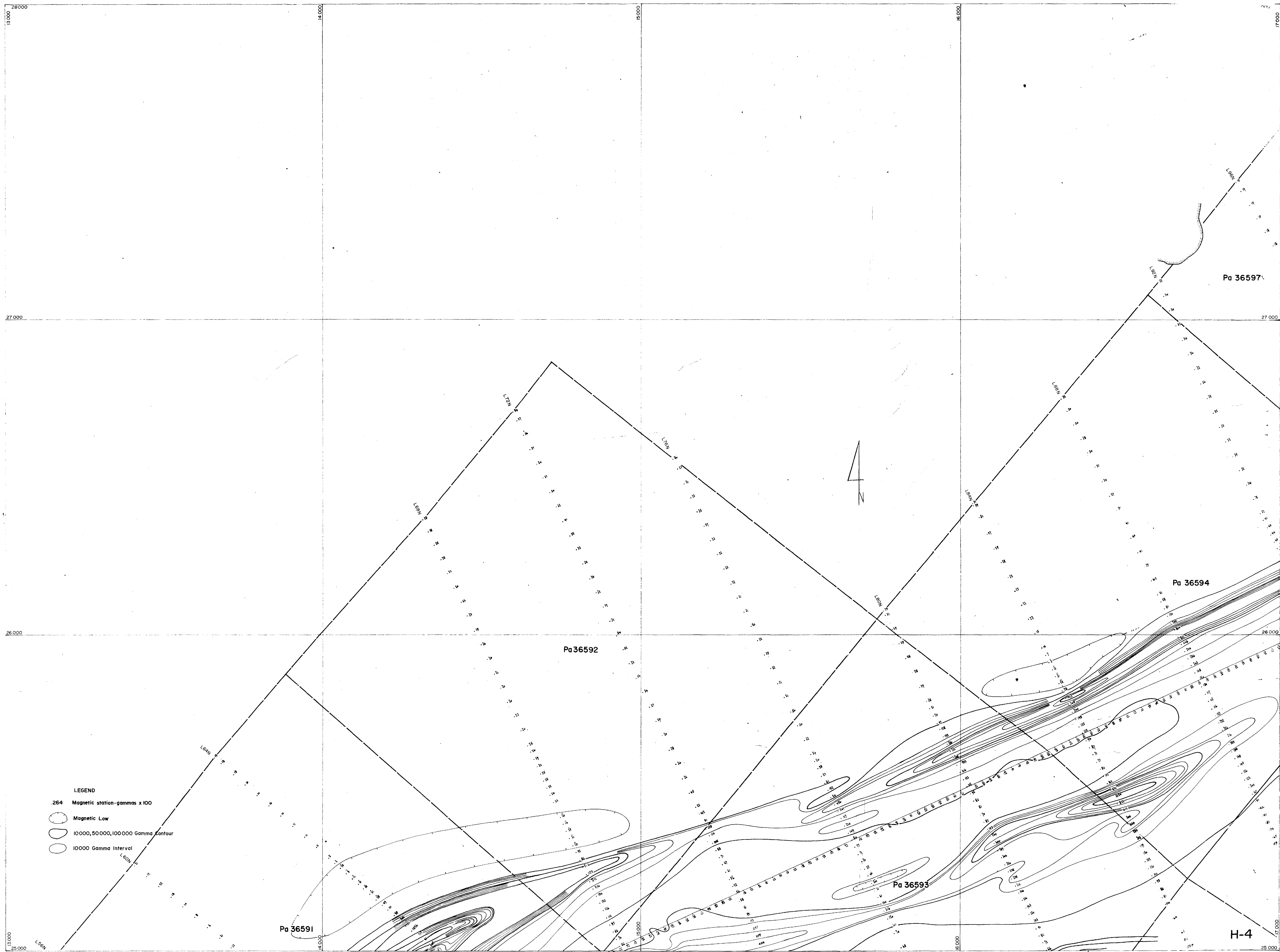
MAGNETOMETER SURVEY

0 100 200 300 feet

Scale 1 in to 100 ft

Field work by D. Hattie	Interpretation by R. Winston	Revised
Date Oct. 1966	Date Feb. 1967	Revised
		N.T.S. No. 52 J 7 & 10

52J/10SE-0015 #11



THE HANNA MINING COMPANY
MINISS RIVER AREA
PATRICIA MINING DIVISION, ONTARIO

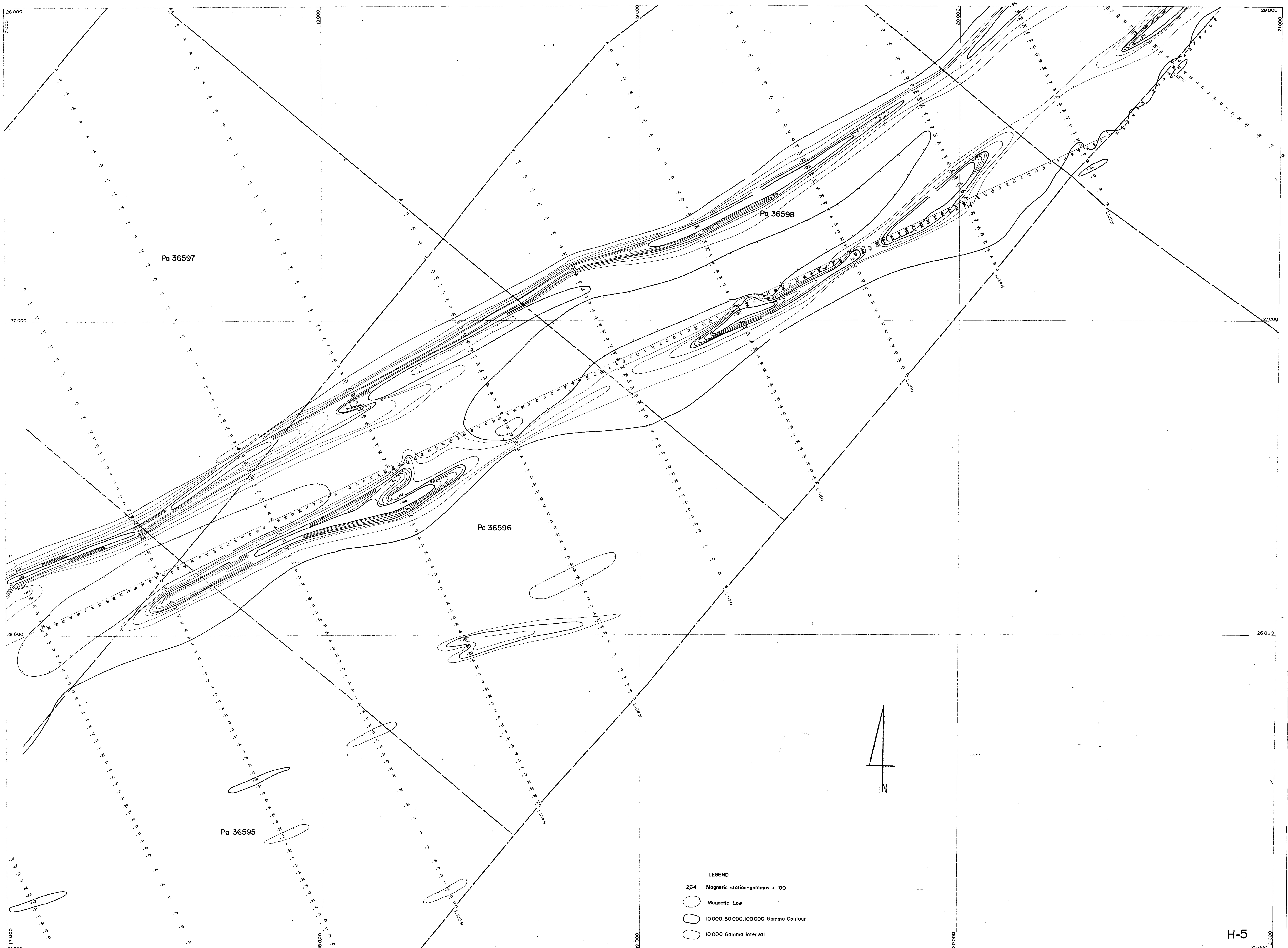
MAGNETOMETER SURVEY

0 100 200 300
feet
Scale: 1 in. to 100 ft.

Field work by D. Hattie	Interpretation by R. Winston	Revised
Date Oct. 1966	Date Feb. 1967	Revised N.T.S. No. 52 J 7 & 10

52 J/10SE-0015 #12

310



THE HANNA MINING COMPANY
MINISS RIVER AREA
PATRICIA MINING DIVISION, ONTARIO

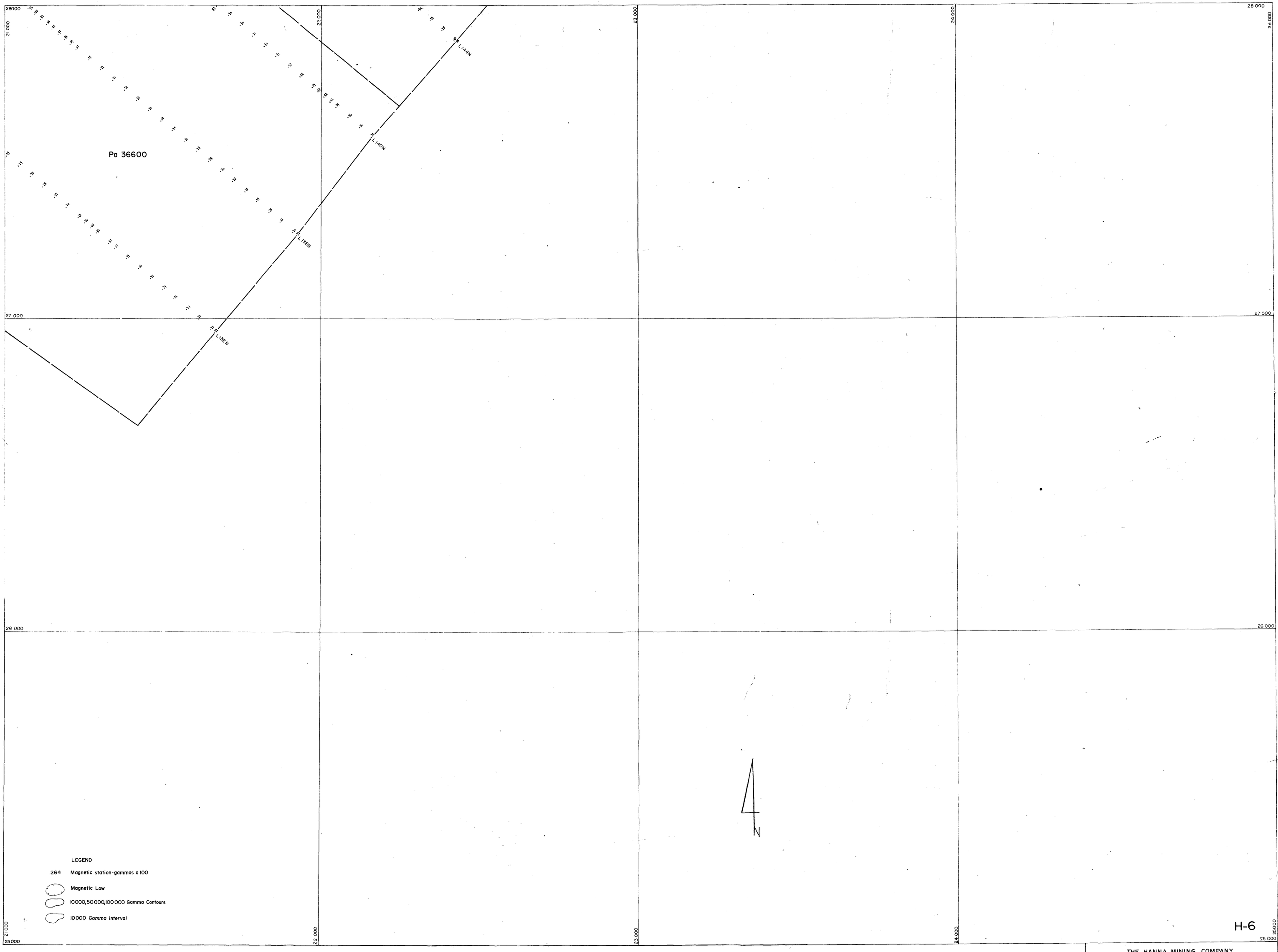
MAGNETOMETER SURVEY

Scale: 1 in. to 100 ft.

Field work by D. Hallix	Interpretation by R. Wealon	Revised
Date Oct. 1966	Date Feb. 1967	Revised
		N.T.S. No. 52J 7810

52 J/10 SE-0015 #13

320



LEGEND

264 Magnetic station-gammas x 100

Magnetic Low

10000,50000,100000 Gamma Contours

10000 Gamma Interval

THE HANNA MINING COMPANY

MINISS RIVER AREA

PATRICIA MINING DIVISION, ONTARIO

MAGNETOMETER SURVEY

0 100 200 300 feet

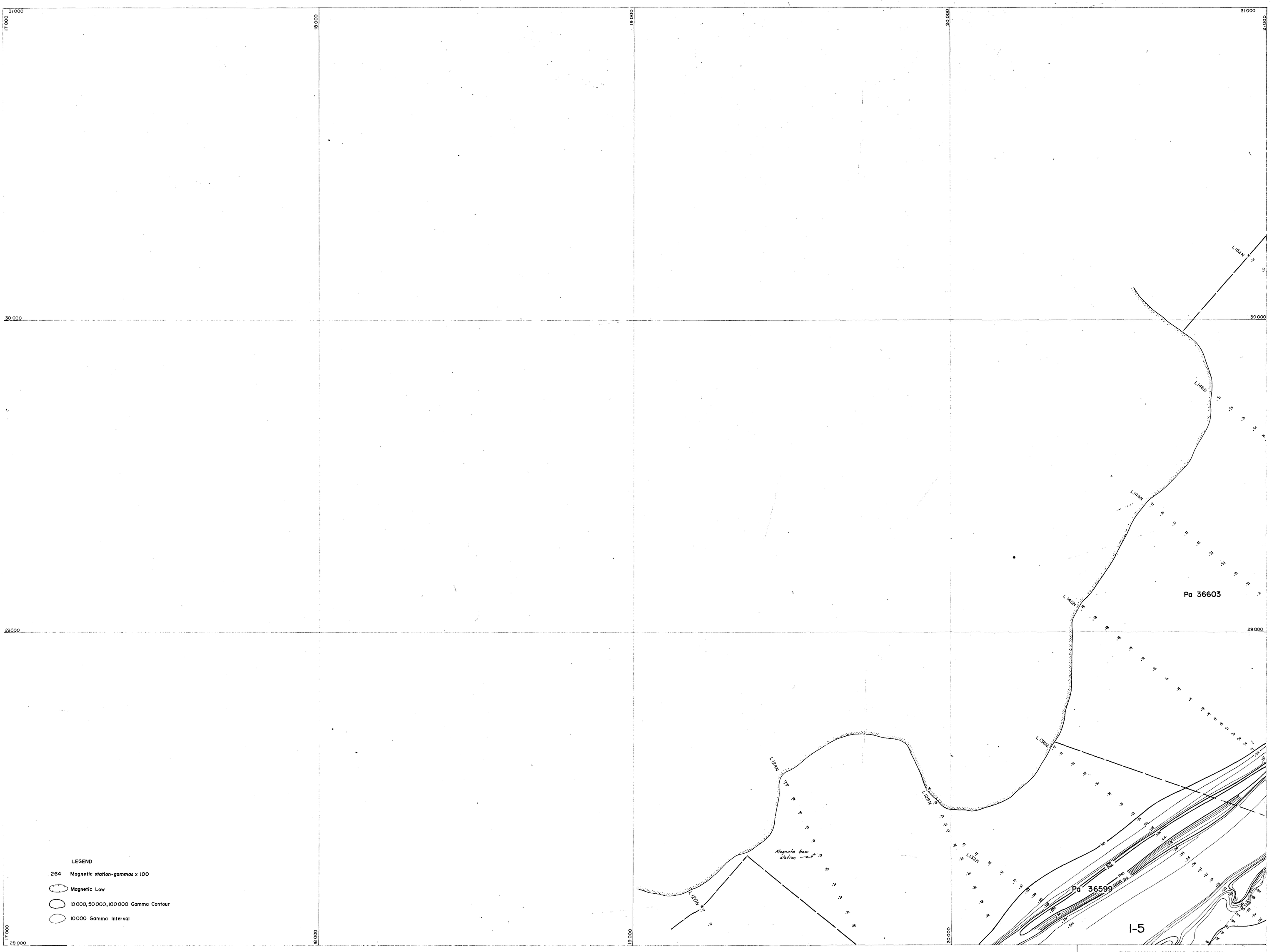
Scale 1 in to 100 ft

Field work by D. Hattie	Interpretation by R. Winston	Revised
Date Oct. 1966	Date Feb. 1967	Revised
		N.T.S. No. 52 J 7E10

52J10SE0017 52J10SE0015 SOUTHEAST LAKE

330

52 J/10 SE -0015 #14



LEGEND

264 Magnetic station-gammas x 100

Magnetic Low

10 000, 50 000, 100 000 Gamma Contour

10 000 Gamma Interval

THE HANNA MINING COMPANY

MINISS RIVER AREA

PATRICIA MINING DIVISION, ONTARIO

MAGNETOMETER SURVEY

0 100 200 300 feet

Scale: 1 in. to 100 ft.

Field work by D. Hattie	Interpretation by R. Watston	Revised
Date Oct. 1966	Date Feb. 1967	Revised
		N.T.S. No. 52 J 7&10

52 J/10SE—0015 #15

THE HANNA MINING COMPANY
MINISS RIVER AREA
PATRICIA MINING DIVISION, ONTARIO

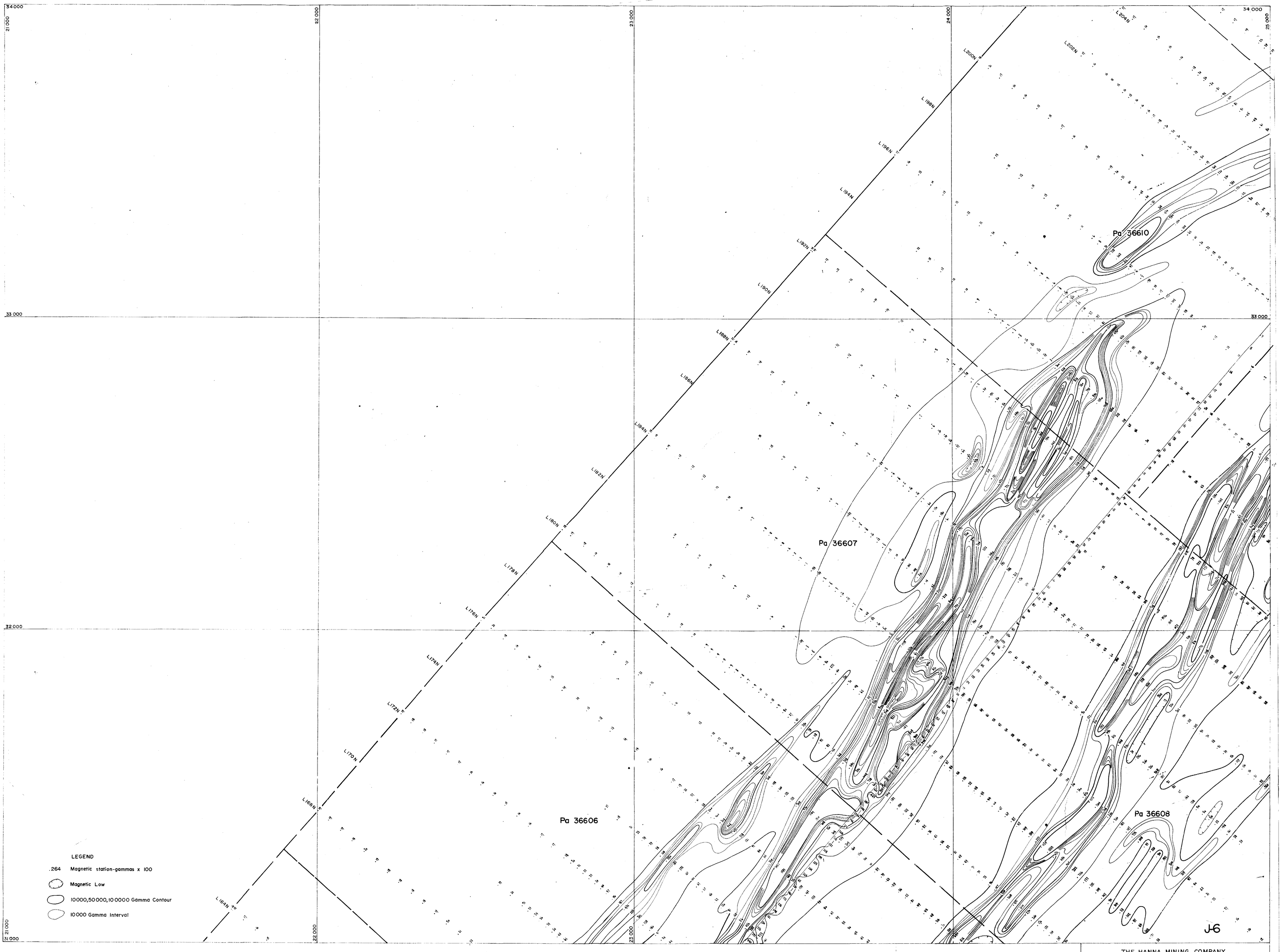
MAGNETOMETER SURVEY

0 100 200 300 feet
Scale: 1 in. to 100 ft.

Field work by D. Hattie	Interpretation by R. Wisbin	Revised
Date Oct. 1966	Date Feb. 1967	Revised
		NTS No. 52 J 7 & 10

52 J/10 SE-0015 #16

350



THE HANNA MINING COMPANY

MINISS RIVER AREA

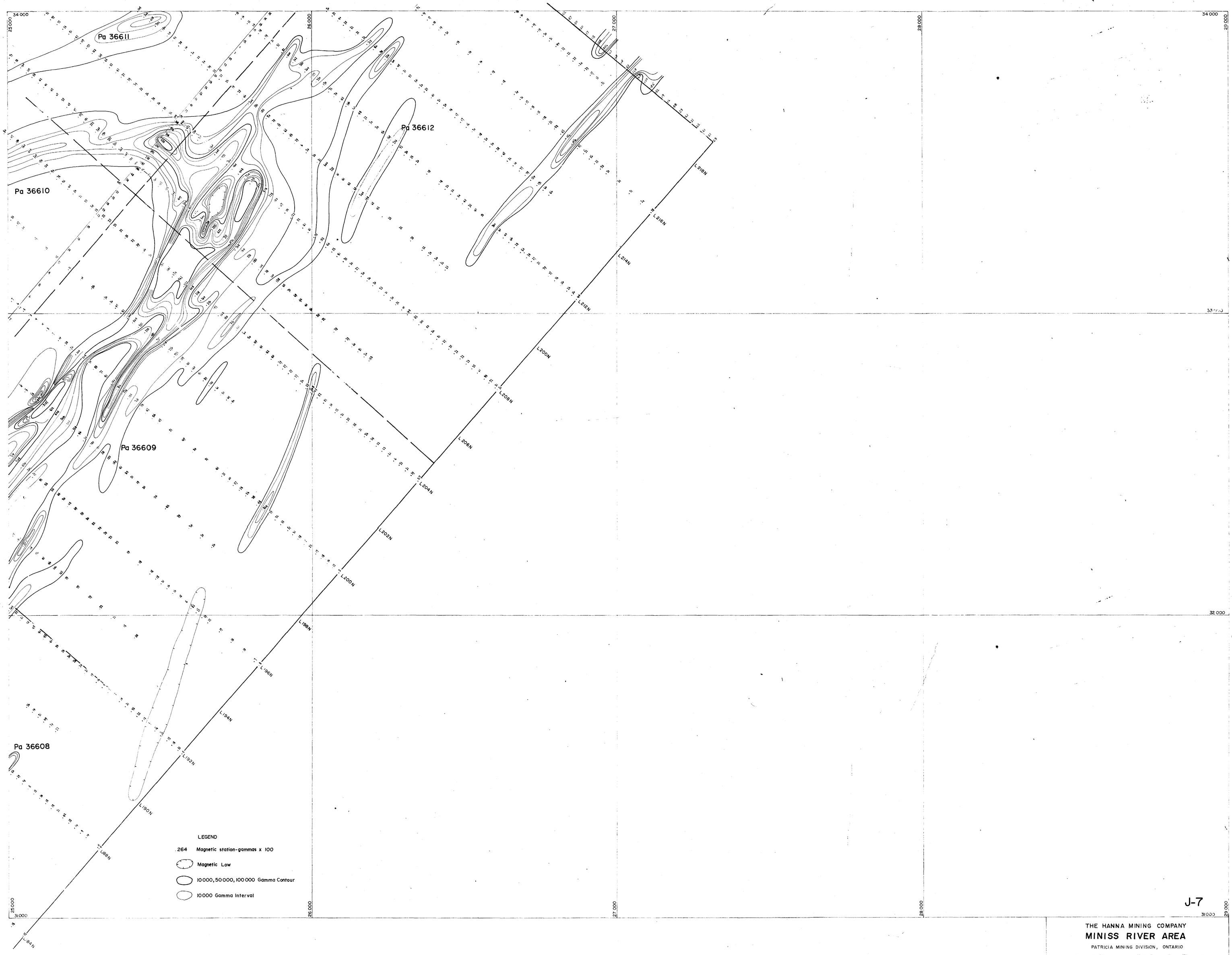
PATRICIA MINING DIVISION, ONTARIO

MAGNETOMETER SURVEY

0 100 200 300
feet
Scale: 1 in to 100 ft.

Field work by D. Hattie	Interpretation by R. Winston	Revised
Date Oct. 1966	Date Feb. 1967	Revised
		NTS No 52 J 7 8 10

52J/10SE-0015 #17



J-7

THE HANNA MINING COMPANY

MINISS RIVER AREA

PATRICIA MINING DIVISION, ONTARIO

MAGNETOMETER SURVEY

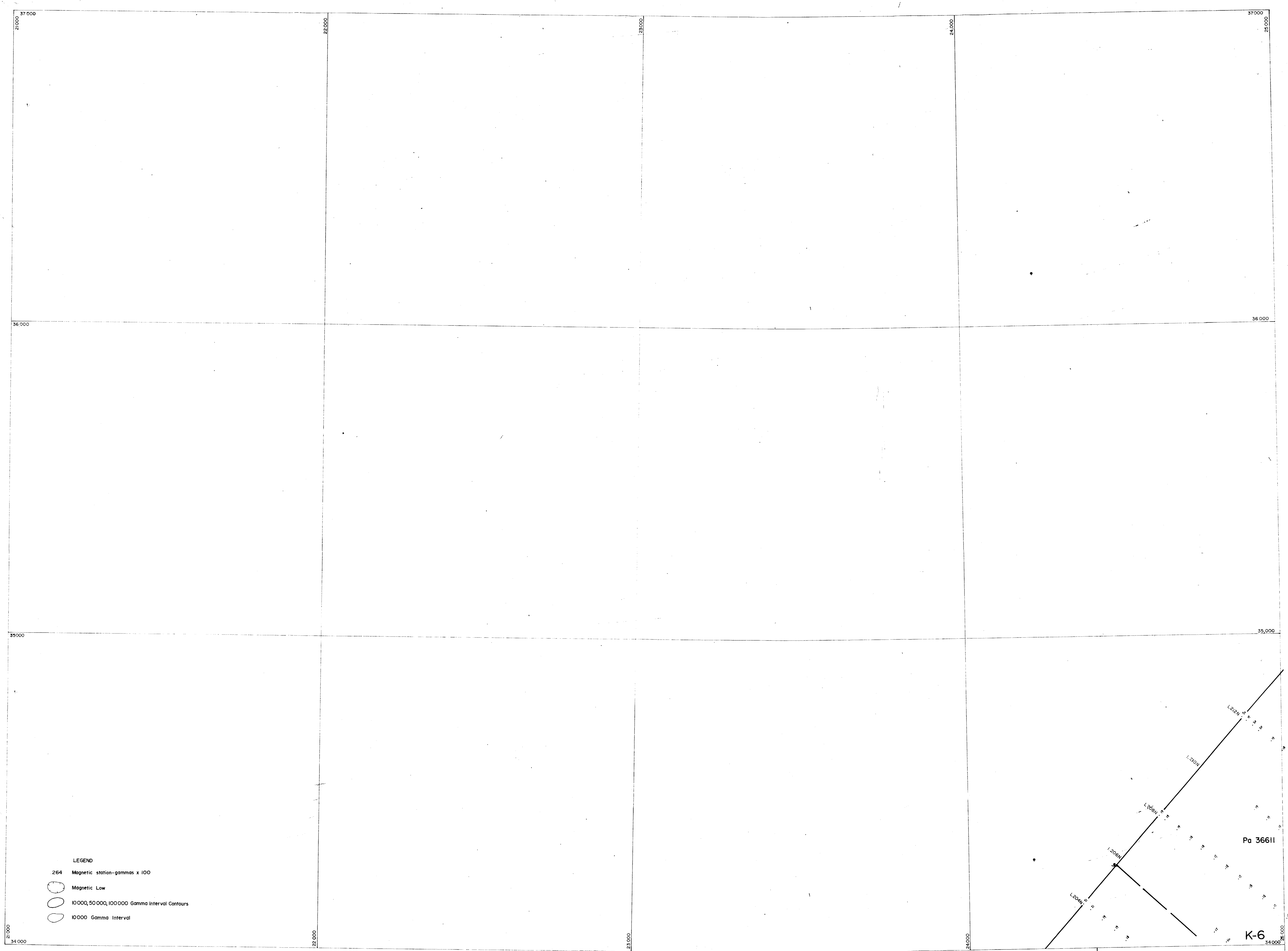
0 100 200 300 feet

Scale 1 in. to 100 ft.

Field work by D. Hattie	Interpretation by R. Winston	Revised
Date Oct. 1966	Date Feb 1967	Revised N.T.S. No. 52 J 7 B 10

52 J/10 SE-0015 #18

370



THE HANNA MINING COMPANY
MINISS RIVER AREA
PATRICIA MINING DIVISION, ONTARIO

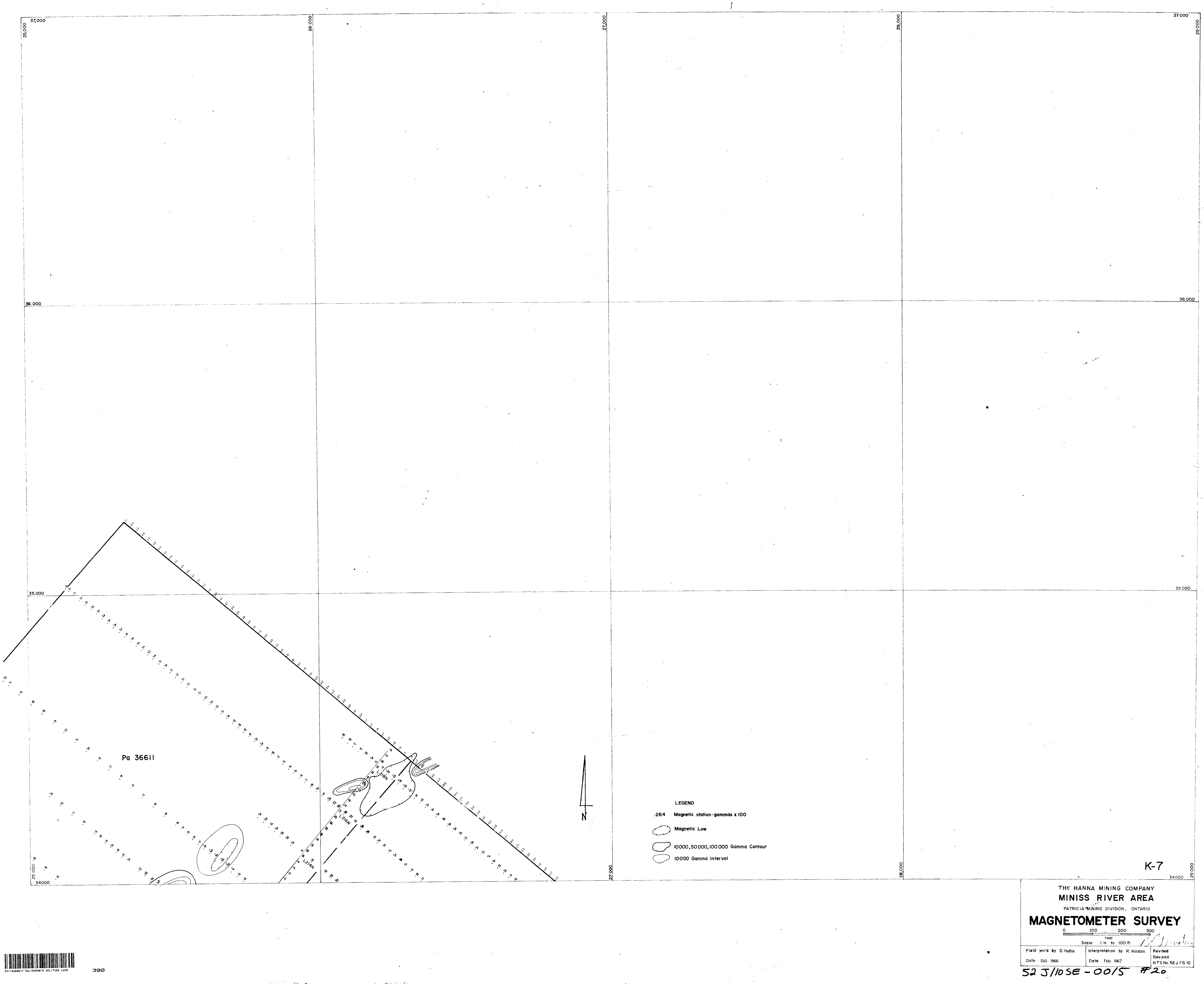
MAGNETOMETER SURVEY

Scale: 1 in to 100 ft

Field work by D. Hattie	Interpretation by R. Winston	Revised
Date Oct. 1966	Date Feb. 1967	Revised N.T.S. No. 52 J 7 & 10

52 J/10 SE-0015 #19

380


37,000
36,000
35,000
34000
25,000
26,000
27,000
28,000
29,000
Pa 36611
L18N
L16N
L14N
N
LEGEND
.264 Magnetic station-gammas x 100
Magnetic Low
10000,50000,100000 Gamma Contour
10000 Gamma Interval
K-7
THE HANNA MINING COMPANY
MINISS RIVER AREA
PATRICIA MINING DIVISION, ONTARIO
MAGNETOMETER SURVEY
0 100 200 300
feet
Scale 1 in. to 100 ft
Field work by D. Hattie
Date Oct. 1966
Interpretation by R. Winston
Date Feb. 1967
Revised
Revised
NTS No. 52 J 7-6-10
52 J/10SE-0015 #20
390