GEOPHYSICAL SURVEY

on the

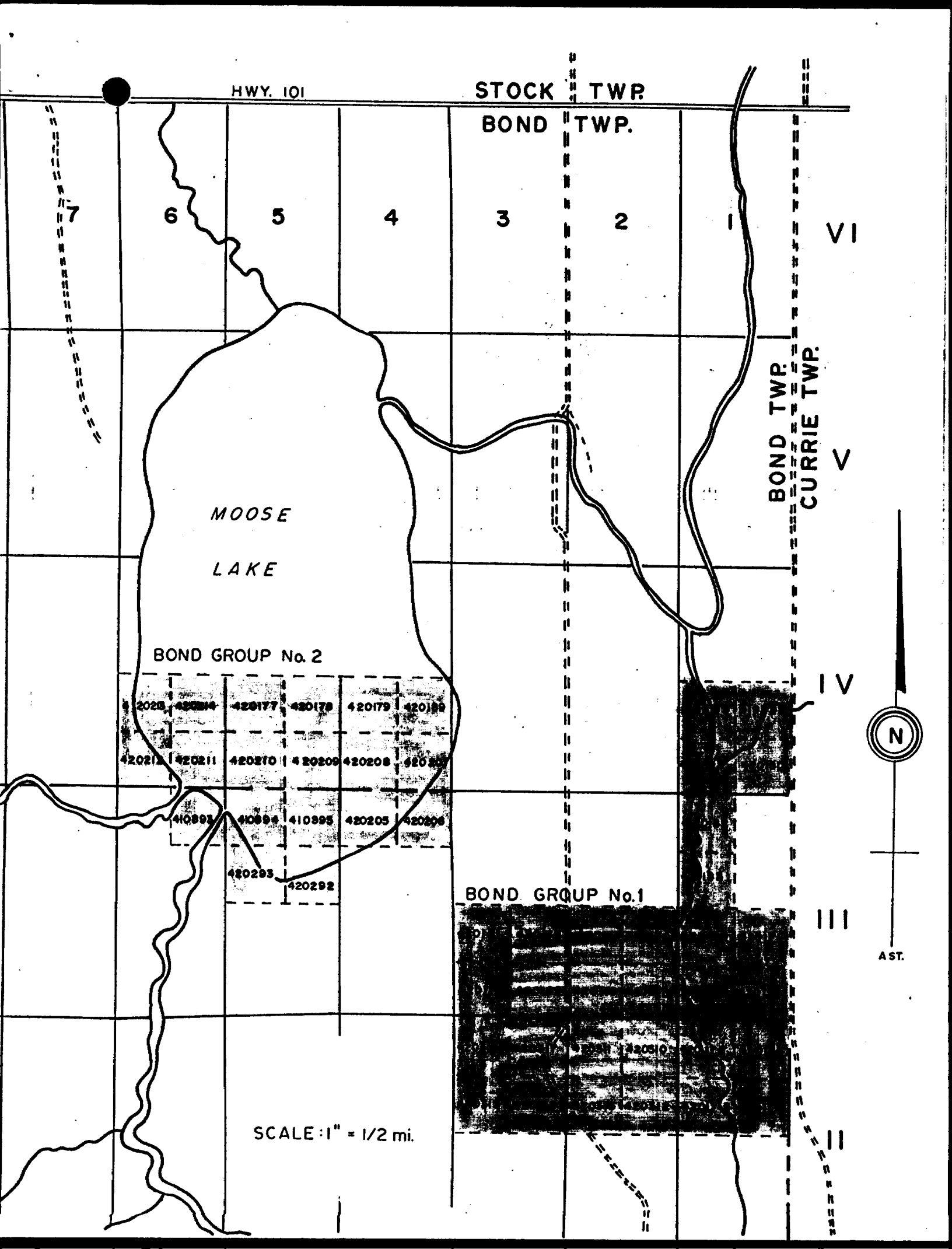
BOND GROUPS 1 AND 2

of

Hollinger Mines Limited
Bond Township, Ontario

H. Z. Tittley, P.Eng.

Timmins, Ontario
June 10, 1976


HWY. 101
STOCK TWP.
BOND TWP.
7
6
5
4
3
2
1
VI
V
IV
III
II
BOND TWP.
CURRIE TWP.
MOOSE
LAKE
BOND GROUP No. 2
420215
420214
420177
420178
420179
420180
420212
420211
420210
420209
420208
420207
410893
410894
410895
420205
420206
420293
420292
BOND GROUP No. 1
420510
N
AST.
SCALE: 1" = 1/2 mi.

INTRODUCTION

A horizontal loop electromagnetic survey was conducted during the winter of 1976 on two groups of mining claims held by Hollinger Mines Limited in Bond Township, Ontario.

The Bond #1 Group , adjoining the east boundary of the Township, consists of 30 claims, while the Bond #2 group containing 19 claims is mainly overlain by the waters of Moose Lake in the central part of the Township.

Although several conductive zones have been mapped in an area of low resistive clays, only one anomaly, in the southeastern part of Group #1, appears definitely due to a bedrock source.

PROPERTY, LOCATION and ACCESS

Group #1 consists of 30 unpatented mining claims staked for Hollinger Mines during April 1975.

The claims are: P-419998 and P-419999
P-420161 to P-420176 inclusive
P-420180 to P-420183 inclusive
and P-420310 to P-420317 inclusive

They occupy lot 1 in the S½ of concession 4 and the NW¼ of concession 3 and also the S½ of concession 3 and the N½ of concession 2 in lots 1, 2 and 3.

Group #2 consists of 19 unpatented mining claims also staked in April 1975.

These claims are: P-410893 to P-410895 inclusive
P-420177 to P-420179 inclusive
P-420189
P-420205 to P-420214 inclusive
P-420292 and P-420293

They occupy the S½ of lots 4, 5 and 6, concession 4, the N¼ of lot 4, the N½ of lot 5 and the NE¼ of the N½ of lot 6 in concession 3.

Bond Township is 24 miles east of Timmins and 12 miles west of Matheson. Highway 101, linking these two communities, follows the north boundary of the Township.

Access to the first group is provided by the poorly travelled Bond-Currie boundary road which extends from Shillington on highway 101 for four miles to the south end of the property.

Moose Lake is accessible from highway 101 west of Shillington via the two usually navigable branches of the Driftwood river.

TOPOGRAPHY

Bond Township is located in the clay belt which extends across northern Ontario and Quebec. As evidenced by the absence of banks along the south shore of Moose Lake and the Little Driftwood river which extends across the No. 1 group, the area is principally a flood plain. The forest cover consists of alders in the lower parts followed by stands of cedar, spruce and fir. Poplar ridges in lots 2 and 3, concessions 2 and 3, are associated with exposures of the bedrock.

SURVEY METHOD

Linecutting

Group #1: From a point 1060 ft. north of the line between concession 2 and 3 along the east Township boundary, the 00 base line was cut to the west for 7600 feet. From this base line, lines 400 feet apart were cut and chained to the north and south for 1700 feet and 3900 respectively. At 48+00N a second base line was extended west from the Township boundary for 2600 feet from which lines 400 feet apart were established north to 70N and south to cover claims P-420182 and P-420183. Including the base lines, a total of 29.07 miles of survey lines with stations 100 feet apart were thus established.

Group #2: From a point along the west shore of Moose

lake, near the north-west corner of the property, the 00 base line was extended easterly across the ice on the lake for 7600 feet. Due to the unavailability of suitable topographic features during the winter, the line originally intended to bear due east along the north claim boundary was subsequently found to bear at 99 degrees.

Lines normal to the base were extended southerly to the south boundary with stations at 100 foot spacings.

Electromagnetic Survey

The electromagnetic survey was conducted along the established grids using an EM-17 unit manufactured by Geonics Limited of Toronto, Ontario. Readings were taken at every 100 foot station or less with coils 400 feet apart in the horizontal co-planar mode.

SURVEY RESULTS

The results of the survey on both claim groups are profiled on the accompanying map entitled H.E.M. Survey at a scale of 400 feet to 1 inch. The anomalies labelled A to H are located within the No. 1 group while the letters I to O are attributed to anomalies detected on group No. 2.

Of the 15 anomalies worth labelling, only anomaly "A" displays a sufficiently high ratio of in-phase to out-of-phase to be classed as a definite bedrock conductor. Anomaly "B" appears to be the extension of the "A" but across the river, the ratios have dropped considerably.

Anomalies "H" and "M" may be due to a shear zone through the area.

The remaining anomalies with the exception of "O" are all believed due to variations in the thickness of the overlying conductive clays.

CONCLUSIONS

Anomaly "A" should be covered by a detail grid, surveyed by the same method and drilled.

The revision of the remaining anomalies should be based on the outcome drilling.

Respectfully submitted,

H. Z. Tittley P. Eng.

H. Z. Tittley, P.Eng.

June 10, 1976.

Ontario

Ministry of N

GEOPHYSICAL – GEOL
TECHNICAL D

42A07NE0168 2.2136 BOND

900

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

Type of Survey(s) Geophysical Electromagnetic

Township or Area Bond Township

Claim Holder(s) Hollinger Mines Limited
Box 320, Timmins, Ontario

Survey Company Hollinger Mines Limited

Author of Report H. Z. Tittley

Address of Author 147 Hemlock Street, TIMMINS, Ont.

Covering Dates of Survey Feb. 1, 1976 to June 10, 1976
(linecutting to office)

Total Miles of Line Cut 19.00

SPECIAL PROVISIONS
CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
–Electromagnetic	40
–Magnetometer	
–Radiometric	
–Other	
Geological	
Geochemical	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: June 10/76 SIGNATURE: H. Z. Tittley
Author of Report or Agent

Res. Geol. _____ Qualifications 63.2513

Previous Surveys

File No.	Type	Date	Claim Holder
No previous work filed on this area			

MINING CLAIMS TRAVERSED
(List numerically)

(prefix)	(number)
P	410893
P	410894
P	410895
P	420177
P	420178
P	420179
P	420189
P	420205
P	420206
P	420207
P	420208
P	420209
P	420210
P	420211
P	420212
P	420213
P	420214
P	420292
P	420293

TOTAL CLAIMS 19 Claims

If space insufficient, attach list

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations 927 Number of Readings 847

Station interval 100 feet Line spacing 400 feet

Profile scale 1" = 40%

Contour interval

MAGNETIC

Instrument

Accuracy – Scale constant

Diurnal correction method

Base Station check-in interval (hours)

Base Station location and value

ELECTROMAGNETIC

Instrument Geonics H.E.M. 17

Coil configuration Horizontal Co-planar

Coil separation 400'

Accuracy ± 1% In-phase ± 2% Quadrature

Method: ☐ Fixed transmitter ☐ Shoot back ☒ In line ☐ Parallel line

Frequency (specify V.L.F. station)

Parameters measured In-phase (Real) Quadrature (Imaginary)

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

File 2.2136

Ontario

Ministry of Natural Resources

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA 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) Geophysical Electromagnetic

Township or Area Bond Township

Claim Holder(s) Hollinger Mines Limited
Box 320, Timmins, Ontario

Survey Company Hollinger Mines Limited

Author of Report H. Z. Tittley

Address of Author 147 Hemlock Street, TIMMINS, Ont.

Covering Dates of Survey Feb. 10, 1976 to June 10, 1976
(linecutting to office)

Total Miles of Line Cut 29.07

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
–Electromagnetic	40
–Magnetometer	
–Radiometric	
–Other	
Geological	
Geochemical	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: June 10/76 SIGNATURE: H. Z. Tittley P.Eng
Author of Report or Agent

Res. Geol. _____ Qualifications 63.2613

Previous Surveys

File No.	Type	Date	Claim Holder
No previous work filed on this area.			
		LD	

MINING CLAIMS TRAVERSED
List numerically

(prefix) (number)

P 419998
419999
420161
420162
420163
420164
420165
420166
420167
420168
420169
420170
420171
420172
420173
420174
420175
420176
420180
420181
420182
420183
420310
420311
420312
420313
420314
420315
420316
420317

TOTAL CLAIMS: 30 Claims

If space insufficient, attach list

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations 1433 Number of Readings 1353

Station interval 100 feet Line spacing 400 feet

Profile scale 1" = 40%

Contour interval

MAGNETIC

Instrument

Accuracy – Scale constant

Diurnal correction method

Base Station check-in interval (hours)

Base Station location and value

ELECTROMAGNETIC

Instrument Geonics EM-17

Coil configuration Horizontal Co-planar

Coil separation 400 feet

Accuracy ± 1% in-phase ± 2% Quadrature

Method: ☐ Fixed transmitter ☐ Shoot back ☒ In line ☐ Parallel line

Frequency 1600 Hz (specify V.L.F. station)

Parameters measured In-phase (Real) Quadrature (Imaginary)

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

BOND TOWNSHIP

2.2136

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

PORCUPINE MINING DIVISION

DISTRICT OF COCHRANE

M.331

SCALE 40 CHAINS TO ONE INCH

STOCK TWP.

N

MACKLEM TWP.

CURRIE TWP.

VI

V

IV

III

II

I

Moose Lake

L.O. 4024

S.R.O.

P 420338

L 44199

SHERATON TWP.

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

NOTE

LEGEND

PATENTED LANDS ..... (P)
CROWN LAND SALES ..... (S) or C.S.
LOCATED LANDS ..... Loc
LICENSE OF OCCUPATION .. L.O.
LEASES (L)

200 ft.

MOOSE LAKE

GROUP No. 2

420213 420214 420177 420178 420179 420189

0+00 Base Line

420212 420211 420210 420209 420208 420207

410893 410894 410895 420205 420206

420293 420292

RIVER

DRIFTWOOD

GROUP

420161 420162 420163

0+00 Base Line

420170 420169 420168

420316 420317 420311

420315 420314 420313

39+00 S Tie Line

CON. III
CON. II

Lot 6 Lot 5 Lot 4 Lot 3

CON. V
CON IV

2

420189

0+00 Base Line

L

420207

420206

O

CON. IV
CON. III

72E

76E

GROUP No.1

420161 420162 420163 420164 420165 420171

G F E

0+00 Base Line

420170 420169 420168 420167 420166 420172

D C B A

420316 420317 420311 420310 420176 420173

420315 420314 420313 420312 420175 420174

39+00 S Tie Line

76 W 72 W 68 W 64 W 60 W 56 W 52 W 48 W 44 W 40 W 36 W 32 W 28 W 24 W 20 W 16 W 12 W 8 W 4 W

CON. III
CON. II

4

Lot 3 Lot 2 Lot 1

BOND TWP.
CURRIE TWP.

H

419999 419998

48+00 N Base Line

420181 420180

RIVER

DRIFTWOOD

LITTLE

420182

420183

N

AST.

0+00 B.L. (Detail Grid)

HOLLINGER MINES LTD.

BOND GROUPS 1 & 2

H.E.M. SURVEY

(1600 Hz.)

BOND TWP. ONT.

SCALE : 1 inch = 400 ft.

CLAIM POST

LEGEND

+20% 0 -20%

Coil
400
Coil

Conductor

In-Phase Quadrature

Good Anomaly
Medium Anomaly
Poor Anomaly

REGISTERED PROFESSIONAL ENGINEER
H. Z. TITTLEY
PROVINCE OF ONTARIO

H. Z. Tittley P.Eng.

Plan 2.2136