

COMINCO LTD.ExplorationEastern DistrictN.T.S. 42-A-12INDUCED POLARIZATION SURVEYSCLAIMS P 299039 to P 299062 incl.BYERS PROPERTY, ONT.

September 14, 1973

E.O. Andersen

The results from the Induced Polarization survey performed on the property is presented in contour form on the accompanying Plate # 2.

GEOLOGY AND TOPOGRAPHY OF THE SURVEY AREA:

No detailed geological information of the survey area is available at the time of writing. Published geological maps (i.e. Preliminary Map P.698 "Pamour Sheet") indicate that the area in general is early Precambrian with felsic intrusive rocks.

On the east side, approximately along the township boundary, is a belt of mafic to intermediate metavolcanics.

The survey area is flat topographically with only minor relief. An outcrop extends along the base line from approximately 36S to 66S. The western half of the grid is swampy with no outcrops.

THE INDUCED POLARIZATION METHOD:

The survey was performed with a Scintrex Mark VII time domain (pulse-type) induced polarization unit. This equipment consists of a Newmont type remote triggered receiver and a 2.5 kW transmitter operating with a current-off time of two seconds. The system measures the apparent resistivity of the ground in ohmmeters and the decay voltage during the current-off period. The chargeability "M" measured in milliseconds is the normalized integral of the transient voltage between 0.45 seconds and 1.1. seconds after current cut-off. The 0.45 second delay time allows most electromagnetic induction transients, switching transients and interline coupling effects to disappear before measurements are made. A number of consecutive integrations of "M" are taken per station and the average value used so as to reduce telluric noise effects and other interference.

The Newmont type receiver also has the ability to measure the area "over" the discharge curve, starting with its amplitude at 0.45 seconds after the interruption of the primary current, and continuing to 1.75 seconds. This is called the "L" measurements. The ratio of the two quantities L and M gives an indication of the discharge curve form. Significant departures from normal ratios suggests electromagnetic or interline coupling.

Anomalous induced polarization responses may result from metallic sulphides, graphitic and carbonaceous material, as well as from clay minerals, chlorite, sericite, serpentized rocks and other platy minerals derived from weathering, etc. It is not always possible on the basis of induced polarization data alone to discriminate between these potential sources of anomalous polarization.

RESULTS OF IP SURVEY:

The chargeability has in general a background level of 2 to 5 milliseconds. Minor variations within this range are readily explained by normal lithological and overburden variations. The background levels per gradient array block can be different due to changes in current channelling, however, this does not influence the overall value of the data and its interpretability.

Two major zones with strong induced polarization responses were encountered. In addition, there are two smaller zones and a couple of isolated anomalies with weaker responses.

On Plate # 2, one zone of high chargeability, marked A is shown on lines 20S to 32S. Peaks are on lines 20S and 24S at 11+50W (5.4 and 9.3 milliseconds, respectively), 28S at 9+50W (10.8 milliseconds) and 32S at 10+50W (9.7 milliseconds).

On line 12S a single induced polarization anomaly occurs. The peak value is 7 milliseconds at 13+50W and coincides with a magnetic high (1700 gammas). The possibility exists that this anomaly is caused by an extension of Zone A₂, even though no apparent response is observed on line 16S.

A second major zone (B) is observed along the base line extending from line 48S to line 72S. Basically, the strike direction is north-south, but from the results of the gradient array the conclusion is drawn that several smaller zones probably exist, offset to each other, possibly by faults.

Chargeability values range from 10 to 20 milliseconds with peak values at 4+50W on line 48S (10.2 milliseconds) 3+00W on line 52S (12.5 milliseconds), 5+50W on line 56S (12.5 milliseconds), 2+50W on line 60S (20.3 milliseconds), 0+50E (presumed location, since the current electrode location prevented further extension towards the east) on line 64S (12.0 milliseconds), 0+50W on line 72S.

A small zone (C) with rather weak responses is located on lines 32S, 36 S and 40S with induced polarization anomaly peaks at 38+50W, 36+50W, and 36+50, respectively. The highest chargeability value is on line 36S (8.5 milliseconds) and a small depression in resistivity coincides with the peak. There is no marked magnetic or electromagnetic coincidence with this zone.

Zone D extends over lines 76S, 80S and 84S with peak locations at 13+50W, 14+50W and 16+50W, respectively. Chargeability values are in the order of 6 to 8 milliseconds.

There are no apparent high magnetic or electromagnetic values over this zone.

A single anomaly appears on line 64S at 22+50W. The peak chargeability value is 9 milliseconds. No coincidence with magnetic or electromagnetic highs is present. The profile shows a negative chargeability to the west of the peak and a more gradual decay of positive chargeability to the east. This suggests that the causative body may be flat lying or shallowly dipping to the east and is probably within about 50 feet of surface.

Some smaller single line peaks were detected, e.g. line 12S station 49+50W, together with general background increases, e.g. west part of line 36S, no emphasis is placed upon this type of behaviour at the present time.

Submitted by:

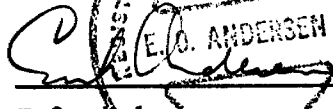
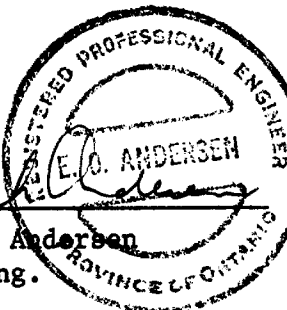

E.O. Andersen
P. Eng.


TABLE 1

Current electrode locations for the gradient array and lines surveyed from each location.

<u>Current Electrode Locations</u>	<u>Lines Surveyed</u>
Line 12S at 17E and 43W	L 0 to L 28S 0+50E to 27+50W
Line 12S at 9W and 69W	L 0 to L 28S 26+50W to 53+50W (exception L0, L4S and L12S to 52+50W)
Line 44S at 17E and 43W	L 32S to L 60S 0+50E to 27+50W
Line 44S at 9W and 69W	L 32S to L 60S 26+50W to 53+50W
Line 76S at 17E and 43W	L 64S to L 92S 0+50E to 27+50W (L 68S from 2+50E)
Line 76S at 9W and 69W	L 64S to L 92S 26+50W to 53+50W (L 68S to 55+50W)





42A12NE0855 2.1303 BYERS

900

File 2.1303

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.

RECEIVED
SEP 20 1973

PROJECTS
SECTION

Type of Survey Induced Polarization
Township or Area Byers Twp.
Claim holder(s) Cominco Ltd.
Author of Report E.O. Andersen
Address Cominco Ltd., 1700 - 120 Adelaide St. W., Toronto, Ontario
Covering Dates of Survey _____
(linecutting to office)
Total Miles of Line cut 23

MINING CLAIMS TRAVERSED
List numerically

P299039 (prefix) P299061 (number)

P299040 P299062

P299041

P299042

P299043 299035

P299044 to

P299045 299038 incl

P299046

P299047

P299048

P299049

P299050

P299051

P299052

P299053

P299054

P299055

P299056

P299057

P299058

P299059

P299060

TOTAL CLAIMS 24

SPECIAL PROVISIONS
CREDITS REQUESTED

DAYS
per claim

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

ENTER 20 days for each
additional survey using
same grid.

Geophysical

-Electromagnetic _____

-Magnetometer _____

-Radiometric _____

-Other (I.P.) 20

Geological _____

Geochemical _____

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

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

DATE: 14 Sept 73 SIGNATURE: Erik Andersen
Author of Report or Agent

PROJECTS SECTION

Res. Geol. _____ Qualifications 2.259

Previous Surveys L.D.

Checked by 2.617 (EM) received credits for
linecutting done in 1970
on this file.

GEOLOGICAL BRANCH _____

Approved by _____ date _____

GEOLOGICAL BRANCH _____

Approved by _____ date _____

OFFICE USE ONLY

If space insufficient, attach list

Show instrument technical data in each space for type of survey submitted or indicate "not applicable"

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS

Number of Stations 1220 Number of Readings 1220
Station interval 100 feet
Line spacing 400 feet
Profile scale or Contour intervals Contour interval 1.0 millisecond
(specify for each type of survey)

MAGNETIC

Instrument _____
Accuracy - Scale constant _____
Diurnal correction method _____
Base station location _____

ELECTROMAGNETIC

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

GRAVITY

Instrument _____
Scale constant _____
Corrections made _____
Base station value and location _____

Elevation accuracy _____

INDUCED POLARIZATION -- RESISTIVITY

Instrument Scintrex Mark VII
Time domain Frequency domain _____
Frequency _____ Range _____
Power 2.5 Kw. transmitter
Electrode array gradient array
Electrode spacing potential electrodes: 100 ft. current electrodes: 6000 ft.
Type of electrode steel stakes

Moberly Twp. (M.550)

THE TOWNSHIP OF
OF
BYERS

DISTRICT OF
COCHRANE

PORCUPINE
MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

- PATENTED LAND
- CROWN LAND SALE
- LEASES
- LOCATED LAND
- LICENSE OF OCCUPATION
- MINING RIGHTS ONLY
- SURFACE RIGHTS ONLY
- ROADS
- IMPROVED ROADS
- KING'S HIGHWAYS
- RAILWAYS
- POWER LINES
- MARSH OR MUSKEG
- MINES
- CANCELLED



NOTES

400' Surface Rights Reservation are all lakes and rivers.

- MINING LANDS -
DATE OF ISSUE
SEP 20 1973
MINISTRY OF NATURAL RESOURCES

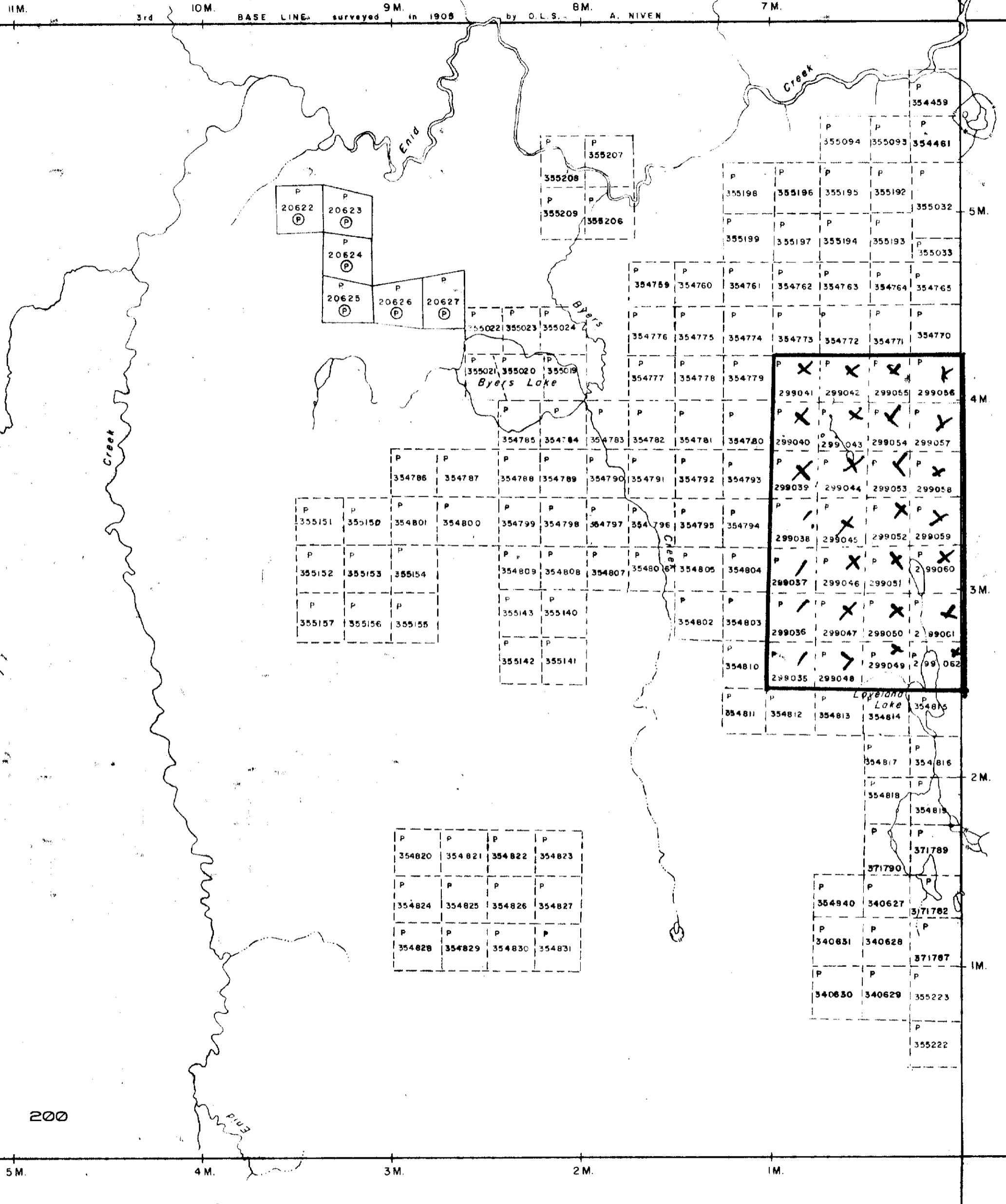
PLAN NO. **M-265**

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

Fortune Twp. (M.813)

Loveland Twp. (M.293)

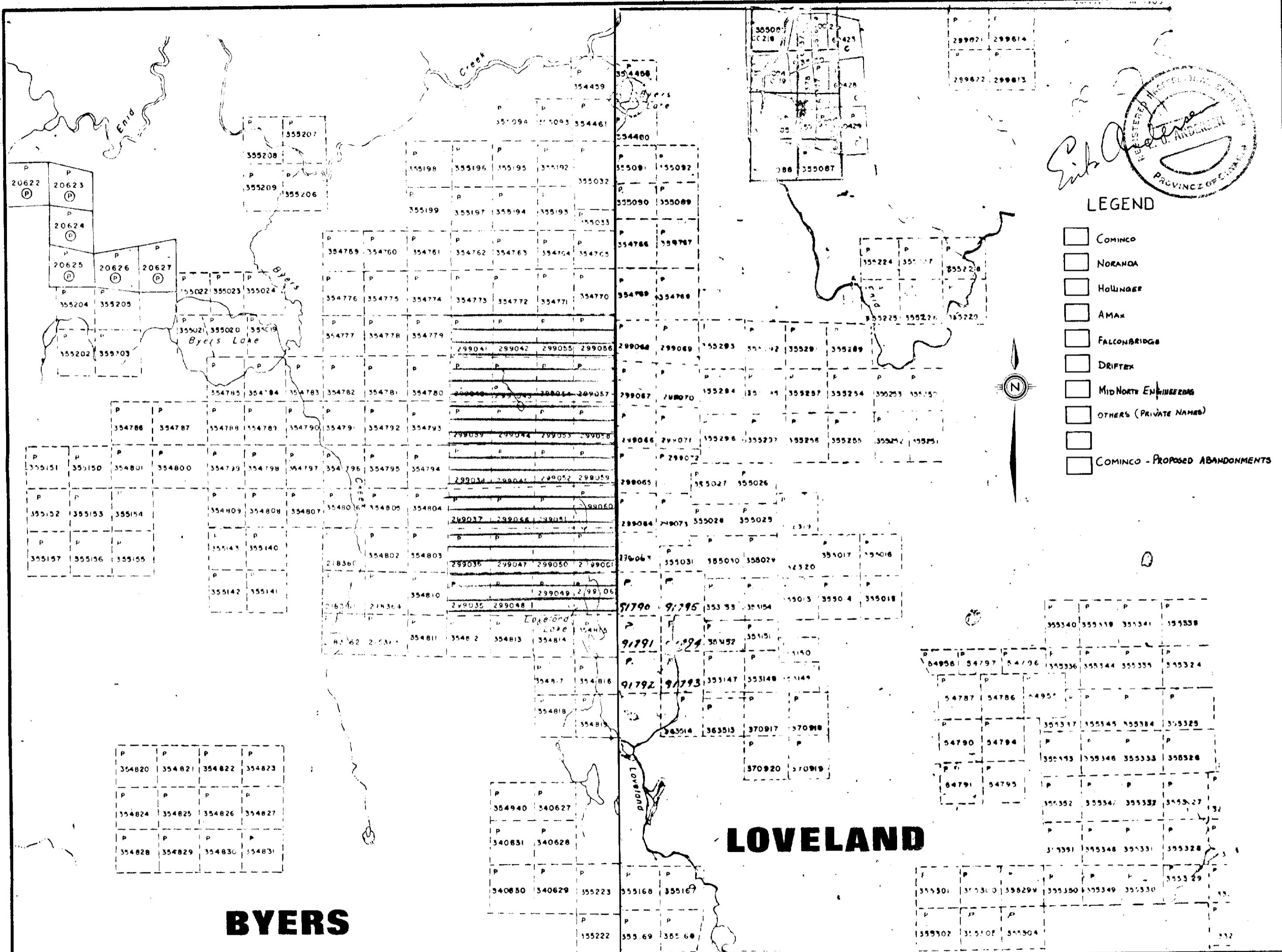
Côté Twp. (M.271)



42A12NE0855 2.1323 BYERS

200

2 1303



Erik Anderson
 REGISTERED PROFESSIONAL ENGINEER
 E. J. ANDERSON
 PROVINCE OF ONTARIO

LEGEND

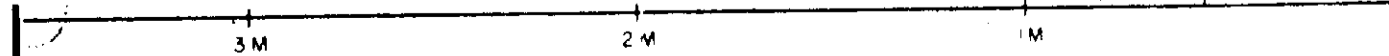
- COMINCO
- NORANDA
- HOLLINGER
- AMAX
- FALCONBRIDGE
- DRIFTEX
- MIDNORTH ENGINEERING
- OTHERS (PRIVATE NAMES)
- COMINCO - PROPOSED ABANDONMENTS

BYERS

LOVELAND

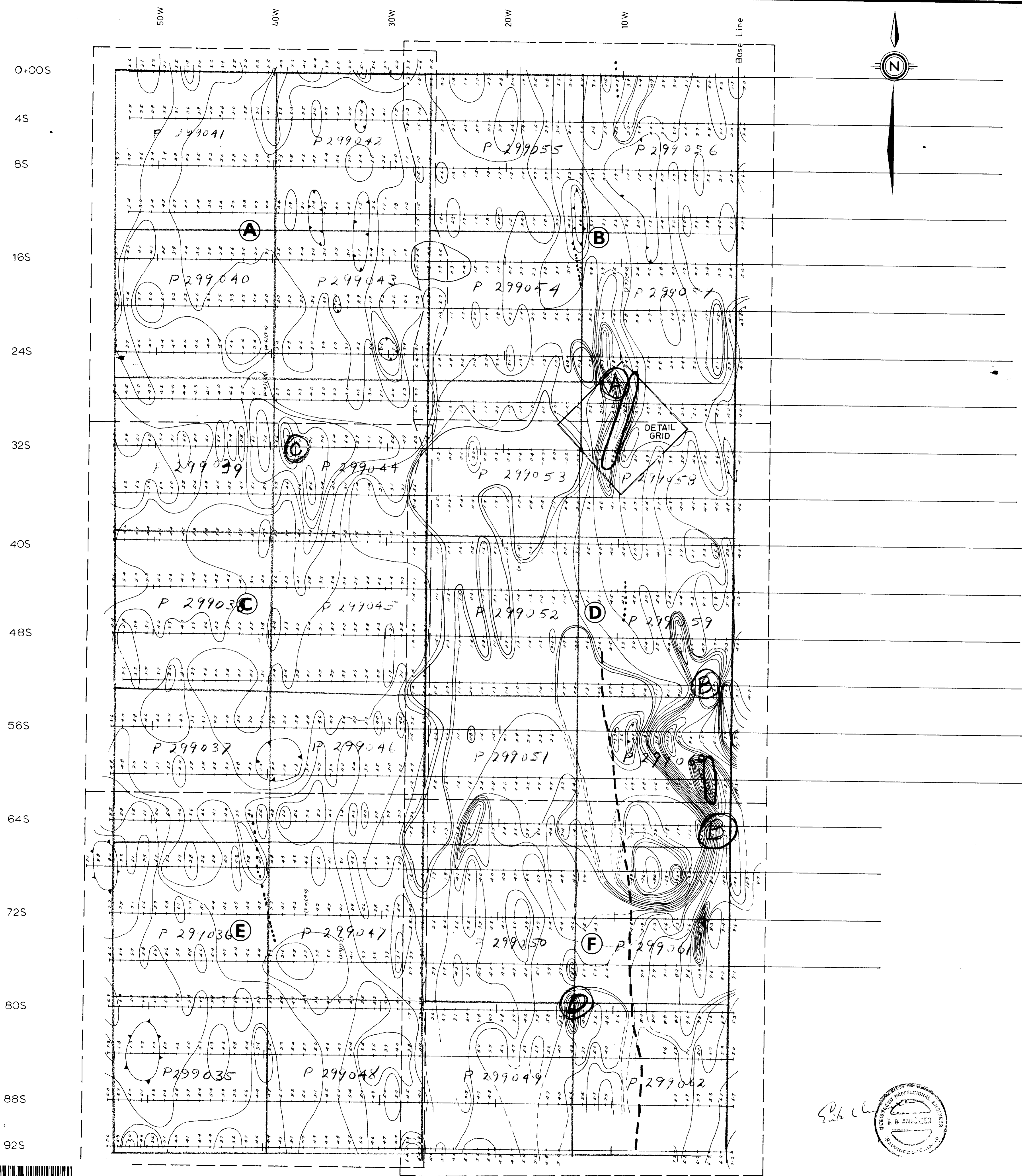


210



6E Twp (M 271)

Drawn by: MERD		Traced by:		BYERS PROPERTY CLAIM PLAN
Revised by	Date	Revised by	Date	
				Scale: 1" = 1/2 mile
				Date: 2-5-73
				Plate: /



LEGEND

SURVEY BY : SEIGEL & ASSOCIATES
 INSTRUMENT: SCINTREX MARK VII (TIME DOMAIN)
 (2.5 KW TRANSMITTER)

ARRAY : GRADIENT ARRAY

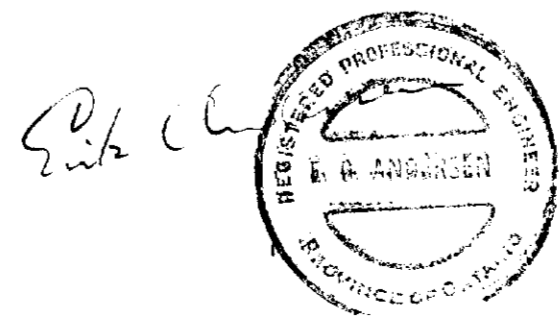
CURRENT ———— POTENTIAL ————
 PLOTTING POINT

6000 FT ———— 100 FT ————

GRADIENT ARRAY BLOCK : (A)

CONTOUR INTERVAL : 1.0 msec.

EM CONDUCTORS
 DEFINATE :
 PROBABLE :
 POSSIBLE :



Drawn by: EOA	Traced by: KB	BYERS PROJECT GRADIENT IP SURVEY
Revised by: _____	Revised by: _____	
Scale: 1 inch = 400 feet		Plate: 2

