



42A06NE0049 2.2628 WHITNEY

010

MAX MIN II, I.P., GRAVITY, MAGNETIC SURVEYS
BY
COMINCO LTD.
ON THE
ALLERSTON - DARLING - MEUNIER CLAIMS
(ALAMO PETROLEUM - ROSARIO RESOURCES CANADA LTD.)
WHITNEY TOWNSHIP
PORCUPINE MINING DIVISION

RECEIVED

MAR 10 1978

PROJECTS UNIT

by
R.S. Middleton, P.Eng.
Rosario Resources Canada Ltd.
Suite 310 - 55 Yonge St.
Toronto, Ontario M5E 1J4

February 1978

INTRODUCTION

The following report summarizes ground geophysical surveys carried out by COMINCO Limited in 1977 on claims held by Rosario Resources Canada Ltd. in Whitney Township, Ontario. The majority of this report (Survey methods and interpretation) has been extracted from an internal COMINCO report by J. Hayles, February 1978. Diamond drilling logs for the anomalies outlined in this report have been submitted separately for assessment credit. In addition COMINCO contracted an airborne survey of the property (Dighem and magnetics) which has been filed separately.

Location and Property Description

Whitney Township is in the Porcupine Mining Division of Ontario, approximately six miles east of the town of Timmins. Plate 1 shows the relative position of the claims to the town of Porcupine. The property is located within the Municipality of Timmins in the southwestern portion of Whitney Township bordered approximately by the Township line to the south, Concession III and one half line to the north, Lot 10 line to the west and Lot 5 line to the east. Fifty-seven contiguous claims form the Allerston option group. Nineteen claims have been brought to lease at the time of writing on Allerston claims. The Meunier option consists of two claims and the Darling option consists of 23 patent claims. In addition Rosario held 9 unpatent claims tied onto the Darling claims which were covered by the COMINCO ground survey.

Whitney Twp. Allerston Claims

p.94329	Con I, Lot 10, S $\frac{1}{2}$
94330	" " "
94861	" " "
94862	" " "
94432	Con I, Lot 9, N $\frac{1}{2}$
94433	" " "
94860	" " "
94858	" " "
451043	Con II, Lot 10, S $\frac{1}{2}$, SE $\frac{1}{4}$
55291	Con II, Lot 9, S $\frac{1}{2}$
54993	" " "
380506	" " "
88559	" " "
97745	Con I, Lot 8, S $\frac{1}{2}$
97746	" " "
97747	" " "
100126	" " "
94857	Con I, Lot 8, N $\frac{1}{2}$
94858	" " "
94331	" " "
236225	" " "
443578	Con II, Lot 8, S $\frac{1}{2}$
443579	" " "
420074	" " "
420075	" " "
443586	" " N $\frac{1}{2}$, NE $\frac{1}{4}$
443587	" " N $\frac{1}{2}$, SE $\frac{1}{4}$
420080	Con I, Lot 7, N $\frac{1}{2}$
420081	" " "
420082	" " "
420083	" " "
420330	Con I, Lot 7, S $\frac{1}{2}$
420331	" " "
420332	" " "
420333	" " "
420076	Con II, Lot 7, S $\frac{1}{2}$
420077	" " "
420078	" " "
420079	" " "
444080	Con II, Lot 7, N $\frac{1}{2}$
444083	" " "
444084	" " "
427444	" " "
451039	Con III, Lot 7, S $\frac{1}{2}$
451040	" " "
451042	" " "
451041	" " "
420084	Con I, Lot 6, N $\frac{1}{2}$
420085	" " "
420086	" " "
420087	" " "
443580	Con II, Lot 6, N $\frac{1}{2}$
443581	" " "
443582	" " "
443583	" " "

P. 413433	Con. II, Lot 8, SW $\frac{1}{4}$, N $\frac{1}{2}$
413434	Con. II, Lot 8, NW $\frac{1}{4}$, N $\frac{1}{2}$

TOTAL
(Allerston) 57 claims

Meunier Claims

P. 452637	Con. III, Lot 5, NW $\frac{1}{4}$, S $\frac{1}{2}$
451063	Con. III, Lot 8, SW $\frac{1}{4}$, S $\frac{1}{2}$

Alamo - Rosario Claims P. 482870-482878 incl.

Darling - Wittfield Claims: 23 patented
including P. 19899
19900
19901

Purpose of the Survey

Detailed Max Min II EM Surveying was done by COMINCO to delineate the most conductive portions of some I.P. anomalies previously outlined by ROSARIO and to locate airborne conductors outlined by a 1977 Dighem Survey.

Previous Work

Early prospecting (around 1910) for gold was done on the property. Search for base metals started in the 1960's. The following work has been done on the Allerston portion of the property:

"Canadian Lencourt Mines Limited (ODM Assessment File No. 63.2218, Drill Report No. 22, Whitney Twp.) had work done for them by Watts, Griffis & McQuat Ltd. of Toronto in 1967 on the northern part of the present property. This work consisted of 11.9 miles of line cutting, geological mapping, trenching and sampling. Geophysics included a ground magnetometer and electromagnetic survey. Huntec Limited of Toronto conducted an induced polarization survey over the property as well. Continental Diamond Drilling Limited drilled five holes totalling 1,003 feet. Anomalous silver values were obtained from the sulphide iron formation in the area.

Noranda Mines Limited (ODM Assessment File No. 63.2466, Drill Report No. 10, Whitney Twp.) performed line cutting totalling 21.5 miles and conducted a ground magnetometer and electromagnetic survey over the area. Noranda drilled two holes in 1969 and 1970 totalling 896.8 feet.

In 1966 Canadian Nickel (INCO) (ODM Drill Report No. 12, Whitney Twp.) drilled one hole on claim P. 420081 of 400.0 feet and one hole on claim P. 420083 of 358.0 feet for a total of 758.0 feet.

Ralph Allerston (ODM Drill Report No. 19, Whitney Twp.) drilled one hole on claim P. 55291 totalling 112.0 feet in 1965.

In 1969 Oro Mines Limited (ODM Assessment File No. 63.2675, Drill Report 25, Whitney Twp.) optioned the property. They contracted Kenneth H. Darke, Consulting Geologist of Timmins to conduct an exploration program. Canadian Aero Mineral Surveys Limited (ODM Assessment File No. 63.2730, Whitney Twp) flew 217.0 miles of airborne magnetic and electromagnetic information.

Tri-J Mineral Surveys Limited did a ground magnetic and electromagnetic survey over a cut grid on the property. Bradley Brothers Diamond Drilling Limited drilled nine holes on the property in 1970 for Oro Mines totalling 4370.0 feet. On behalf of Oro Mines Limited, Dolmage Campbell & Associates Limited of Vancouver, B.C conducted a petrographic study of the magnetic bearing rock obtained from diamond drilling. Elemental analysis of selected drill core sections were made by Technical Services Laboratories for CO₂, and CaO and MgO. Follow up work on the same selected core samples was done in 1976 by X-Ray Assay Laboratories Limited for Alamo Petroleum (Rosario) for SiO₂, Al₂O₃ and Fe₂O₃.

K. H. Darke submitted a summary of diamond drilling results in 1971 to Oro Mines, and the logs plus sample descriptions are included in a geological report by R. Middleton, P. Bowen et al (1976).

In April, 1974 and November, 1974, K. H. Darke wrote two reports entitled "Summary Comments on the R. E. Allerston Talc-Magnesite Prospect Whitney Township, Ontario" and "Summary Report on the R. E. Allerston Talc-Magnesite Deposit Whitney Township, Ontario", respectively.

In 1973, R. E. Allerston submitted two samples from surface outcrop to the Ontario Division of Mines for mineralogy and elemental analysis.

In 1964 Union Carbide took a bulk sample from the north talc-magnesite zone at approximately line 6+75E/13 +80N and sent it to Ottawa for metallurgical testing at the Mines Branch. Report IR65-4, Mines Branch Investigation Report by F. H. Hartman was issued January 25, 1965.

In 1976 Rosario carried out detailed geological mapping and sampling of the Allerston claims and also completed a complete ground magnetic survey on the Meunier, Darling and Alamo claims. Portions of Allerston's property and the Darling, Meunier, Alamo groups were covered with IP - Resistivity. VLF EM was done on sections of Allerston's claims. All of this data was filed in 1977 at the ODM.

COMINCO completed 3 drill holes on the Allerston claims and one hole

on the Darling claims (approximately 1200' in total) in August - September 1977. Airborne magnetic and electromagnetic surveys were also flown for COMINCO in 1977 over the eastern part of the property.

Personnel & Survey Dates

The IP survey was done between June 14 and June 24, 1977 by Cominco personnel G. Burton, H. Claridge, M. Claridge, R. Holroyd, M. Wilson and Mr. Lanoix. The HLEM, magnetic and gravity surveys were done by J. Hayles and Mr. Wilson between July 5 and August 6, 1977 with temporary helpers, A. Carpenter and J. Kong.

Statistics

In 1977 ground work by Cominco consisted of 48.4 miles of horizontal loop EM (2480 Rds. \times 2freq.), 4.9 miles of induced polarization, 3.4 miles of gravity and 3.2 miles of magnetic surveys. The HLEM survey covers much the same area as the 1976 magnetic survey by Rosario Resources. Many of the 1970 Canadian Aero Service conductive zones were covered. Induced polarization was done to test certain areas along the north portion of the property. Gravity profiles were run over certain HLEM conductors and magnetic surveys were done to fill in an area neglected in 1976.

A 254 line mile airborne EM and magnetic survey was also done over a large portion of the Alamo (Rosario) property by the high resolution Dighem Ltd. system under contract to Cominco. Unfortunately the airborne survey could only be scheduled for August 9, 1977 after the ground geophysics was complete. The airborne survey extends further east and south than the properties.

The following section is taken from J. Hayles report:

GEOPHYSICS

Ground Geophysics

Methods:

(i) Horizontal Loop EM

Two Max Min II EM units were used for the work. Readings were taken at 444 and 1777 Hz with a 300 foot separation between transmitter and receiver coils. The reference cable was kept taut at each station to help assure proper separation. The lines were well cut out in most areas but pickets were often

out ± 5 feet and were missing in some areas. Most of the grid is flat within ± 10 feet over 500 feet horizontally so coil orientation was no problem. Inphase noise is believed to be within ± 1 percent for the whole survey. Gain and phase mixing of each instrument was checked about every 4 days. Gain was ± 1 percent and phase mixing was within ± 5 percent each time.

(ii) Magnetic Survey

A Barringer Research Ltd. GM-122 total field magnetometer was used for the survey. This instrument is sensitive to one nano Tesla (= one gamma). Four lines, 4200 feet long, were surveyed by Cominco Ltd. to fill in a gap between previous surveys. A base station loop method was used to monitor geomagnetic change and linear drift corrections with time were applied to reduce the data. The 1977 results were reduced to the same approximate level as the 1976 work. The 1976 work by Rosario Resources used a vertical field magnetometer tied to an O.D.M. magnetic base station on the Bristol-Ogden township line near highway 101. Middleton, 1976, notes the magnetic values shown on the grid are 920 nT higher than the Bristol Ogden base.

(iii) Gravity Survey

The gravity survey was done with a Worden Master gravity meter #836 owned by Cominco Ltd. Base station ties were made at least every 60 minutes. A Kern GKO-A automatic optical level was used to measure the elevation of each gravity station to ± 0.02 feet. The level traverses were not looped.

(iv) Induced Polarization

A time domain induced polarization survey was done with a Hunttec Mk III receiver and Phoenix IPT-1 transmitter and Phoenix 2.0 k.Watt motor-generator. An alternated dc current pulse was transmitted at 0.125 Hz and the receiver read four standard sections of the voltage decay curve. Pole-dipole and dipole-dipole arrays were used with "a" spacings of 100 and 200 feet and n separations of 1 and 2, and sometimes 3. The survey was done in conjunction with an equipment test and as a check of the 1976 IP survey. A minor test in the frequency domain, of the Phoenix IPV-1 receiver and IPT-1 transmitter was also done on L 66E.

Data Presentation:

The following plates are included with this (COMINCO) report:

<u>SURVEY TYPE</u>	<u>PLATE NO.</u>	<u>DESCRIPTION</u>	<u>SCALE</u>
	1	Location Map	1 inch = 80 miles 1 inch = 1/4 mile
HLEM * 1.	EM-77-1a	North Sheet @ 444 Hz	1 inch = 400 feet
	EM-77-1b	North Sheet @ 1777 Hz	1 inch = 400 feet
	EM-77-2a	South Sheet @ 444 Hz	1 inch = 400 feet
	EM-77-2b	South Sheet @ 1777Hz	1 inch = 400 feet
Magnetic * 2.	M-77-1	North Sheet	1 inch = 400 feet
	M-77-2	South Sheet	1 inch = 400 feet
IP *3.	IP-77-1	L 36E	
	IP-77-2	L 66E	
	IP-77-3a	Wide spaced reconnaissance grid n = 1	
	IP-77-3b	Wide spaced reconnaissance grid n = 2	

The following composite geophysical profiles are also included which show stacked magnetic, HLEM, IP, gravity, topographic and diamond drill results as follows:

<u>PROFILE NO.</u>	<u>LINES</u>	<u>1977 DRILL HOLE</u>
1	124E	AR-1
2	120E	
3	76E & 80E	AR-2
4	93E & 96E	AR-3
5	56E & 60E	AR-4

*1. A correction is necessary to all the observed EM data presented with this report. Only HLEM interpreters of it will need this correction. All profile amplitudes are too great by a factor of 1.3 so a factor of $1/1.3 = 0.76$ should be used as a correction to give true secondary field strength as a percent of primary.

*2. Most of the data is re-plotted from the Rosario Resources 1976 survey, and is not included in this report since it is a duplication.

*3. M1 and M4 apparent chargeabilities have been plotted here

instead of Newmont standard. Newmont standard decay units can be supplied to any interested readers.

(c) Results

(i) North Sheet

Plates: EM-77-1a, 1b & M-77-1
Profiles: 77-1, 2 & 4

Three conductive zones occur on this section of the Alamo grid. Conductor 1 was drilled by hole AR-1 and seven feet of 30% magnetite and 3% pyrrhotite was intersected within an intermediate tuff. The interpreted conductor depth and ρt are probably in error due to magnetic permeability effect.

Conductor 2 is caused by three 1 to 3 foot wide stringers of 5-20% pyrrhotite and pyrite within an intermediate tuff. Drill hole AR-3 is not along the line in this case so it is more difficult to compare the drill results to the geophysics.

Conductor 3 lies in a wet area near two creeks; it was not possible to cover this zone completely.

In-phase EM responses of +4 to +8 percent occur in a large area shown in blue shading on the plates. In-phase positives in this range are often caused by magnetite rich rocks because magnetite increases the magnetic permeability of the host rock. It is uncommon to see EM permeability effects over such a large area. Strong magnetic anomalies also occur in this area and are roughly coincident with the in-phase positives. The magnetic permeability ratio of rocks in this area is about 1.05 to 1.1 to that of free space.

A correlation of HLEM out-of-phase positives is also possible on the north sheet especially at 1777 Hz (EM-77-1b). These features strike ENE - WSW and extend over several lines. One possible correlation extends over 6000 feet. These features are probably caused by bedrock ridges beneath the overburden or by ridges of dry material, sand or till, bounded by wet clay bearing material. VLF conductors

interpreted by Middleton, 1976 coincide roughly with these effects.

A comparison between the 1976 and 1977 magnetic data along 2400 feet of line gave a relative accuracy of ± 10 nT. The largest magnetic drift was 70 nT in 75 minutes along L84E. The 1977 data fit in well to the 1976 work after reduction. N.W. trending dykes shown on the O.D.M. geology plates do not give good ground magnetic expression.

- (ii) South Sheet Plates: EM-77-2a, 2b & M-77-2
 Profiles: 77-3, 5

Thirteen conductive zones were located on the south sheet section of the Alamo grid. Conductor 13 is caused by a powerline and Conductor 14 lies just north of the grid and is completely covered.

The conductive zones form a complex pattern of trends. Conductors 2 and 3 strike NE - SW while Conductor 4 strikes EW in one area and NW - SE in another. Conductors 4 through 10 are strong and complex; correlation is sometimes difficult between lines.

Conductor 9 is one of the widest and strongest EM conductors covered by Cominco Ltd. crews within the last 10 years. An almost flat lying graphite zone is probably the cause. Pods of economic sulphides within or below this graphitic zone would be difficult targets. Gravity profiles may be useful in this area.

- (iii) I.P. Plates: IP-77-1, 2, 3a & 3b

The only strong indication of disseminated sulphides located in 1977 is over an iron formation near the north property boundary. The iron formation gives apparent chargeabilities in the M1 decay time of 2 to 3 percent and apparent resistivities go down to 30 ohm meters. A high apparent resistivity zone exists just south of the strong IP anomaly on the iron formation. The apparent resistivities of 10,000 to 20,000 ohm-meters occur in an outcrop area of felsic intrusive and felsic to intermediate extrusive rocks. Resistivities in this

range are common for outcrops of this rock type.

Minor amounts of disseminated metallic sulphides are suggested from the IP elsewhere on the property. It is difficult to estimate the amount of overburden masking that may occur since the overburden thickness is unknown in most areas.

Probably the smallest zone of strongly disseminated sulphides that could be hoped to be detected under 50 feet of overburden would measure 25 feet wide by 200 feet long by 150 feet deep.

The IP results along L 66E, in the area of some trenches, suggest nil to minor amounts of disseminated metallic sulphides within about 200 feet of the line.

(iv) Summary of Ground Results:

A summary of all information on all the conductors found on the Alamo grid is shown in the table below:

TABLE 1

GEOCHEMICAL SUMMARY TABLE - ALAMO PROPERTY

CONDUCTOR ID.	SURFACE ELEVATION (ft)	WIDTH (ft)	% (Area)	DEPTH TO TOP (ft)	MAG. ASSOC. 1976	GRAVITY ASSOC. 1977	IP ASSOC. w/v 1976	DRIILLED	EXPLANATION - based on drilling and/or ground scale geology	EXPLORATION EFFICIENCY
1	1600	100	1-10	100-120	200	0.25 flaking	5	AR-1	7 foot section of 30% magnetite & 3% pyrrhotite within an intermediate tuff unit	D
2	4800+	10	20-200	100-200	0-200	0.2 F	15-20	AR-2 AR-3	2-10 feet massive pyrite & pyrrhotite - barren of Pb, Zn, Cu, Au mineral	D
3	3000	10	1-15	100-120	100-100	No Survey	5-10	No	Near iron formation - felsic volcanic contact	B
4	6000 ⁺	0-100 variable - double conduct.	200 ⁺	10-100	complex direct & flaking	No Survey	10-25	No	Iron formation (probably)	C
5	1200? correl. difficult	200-350	10-30	0-50	50 complex	0.1	10-25	No	7 Iron formation (probably)	C
6	2500	200	5-20	50-150	2000 ⁺	No Survey	No Survey	No	7 Iron formation (probably)	C
7	200 ⁺	200	30-70	50-150	200	No Survey	No Survey	AR-4	Graphite abundance	
8,9,10	1600	100-1200	500 ⁺	0-30	complex	No Survey	No Survey	Yes - not by Cimino - no info	flat lying graphite zones?	B
11412	800	1-10 double conductors	20-100?	10-50	complex - double signature	No Survey	-10? Incomplete coverage	No	7 Magnetite	B
11	Power line									
12	Incomplete coverage - conductor off site - probably iron formation									

A-Good
 B-
 C-Poor
 D-
 E-Trace

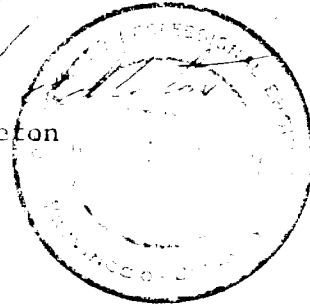
The largest gravity meter drift was 1 division (= .082 milligals) in 40 minutes, usually drift was around 0.6 divisions per hour.

The reduced gravity values are probably accurate to within $\pm 0.05 \times 10^{-3} \text{ cm/sec}^2$ (= ± 0.05 milligals) over all.

Based on the above interpretation by Hayles and other COMINCO geophysicists, 4 holes were drilled to test EM conductors. The location of these holes is given on the EM maps. In the case of holes AR-1, 2, and 3, zones of pyrite (with minor chalcopyrite) mineralization (sulphide iron formation) were encountered in felsic to intermediate tuffs. Hole AR-4 encountered a thick zone of graphite with abundant pyrite. One conductor remains to be tested (referred to as system #3 in the EM maps). This conductor lies in felsic volcanics in contact with a magnetic high (on its south side).

Respectfully submitted,

R. S. Middleton
P. Eng.





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.

DATE 15 1978

PROJECTS UNIT

Type of Survey(s) MAX MIN II
 Township or Area Whitney
 Claim Holder(s) Richard Brown & Co. Ltd.,
2112 1/2 St. George St. Toronto
 Survey Company Compton Ltd.
 Author of Report H. Madorsky & J. Hayler
 Address of Author 7 Forest Hill, Toronto M3J 1G3
 Covering Dates of Survey July 14, 1977 - Aug. 6, 1977
 (line cutting to office)
 Total Miles of Line Cut 18.7 (entire perimeter)

MINING CLAIMS TRAVERSED
 List numerically

<i>See attached</i>
(prefix) (number)
TOTAL CLAIMS <u>347</u>

SPECIAL PROVISIONS CREDITS REQUESTED	DAYS per claim
Geophysical	
Electromagnetic	<u>20</u>
Magnetometer	
Radiometric	
Other	
Geological	
Geochemical	

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

DATE: SIGNATURE:
Author of Report or Agent

Res. Geol. Qualifications

Previous Surveys

File No.	Type	Date	Claim Holder

If space insufficient, attach list

GEOPHYSICAL TECHNICAL DATA.

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

Number of Stations 218 Number of Readings 2480 X 2
Station interval 100 Line spacing 400'
Profile scale 1" = 100'
Contour interval _____

MAGNETIC

Instrument _____
Accuracy - Scale constant _____
Diurnal correction method _____
Base Station check in interval (hours) _____
Base Station location and value _____

ELECTROMAGNETIC

Instrument MAX MIN II
Coil configuration HORIZONTAL LOOP
Coil separation 300 feet
Accuracy ± 2%
Method: Fixed transmitter Shoot back In line Parallel line
Frequency 1777 Hz + 444 Hz
(specify V.L.F. station)
Parameters measured In phase Out of phase

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 _____

Claims Covered by MAX MIN II in Whitney Twp.

for assessment credit

<u>Claim No.</u>	<u>Days Credit</u>
P. 380506	20
P. 413433	20
P. 413434	20
P. 420074	20
P. 420075	20
P. 420076	20
P. 420077	20
P. 420078	20
P. 420079	20
P. 420080	20
P. 420081	20
P. 420082	20
P. 420083	20
P. 420084	20
P. 420085	20
P. 420086	20
P. 420087	20
P. 420330	20
P. 420331	20
P. 420333	20
P. 427444	20
P. 443578	20
P. 443579	20
P. 443580	20
P. 443581	20
P. 443582	20
P. 443583	20
P. 443586	20
P. 443587	20
P. 444080	20
P. 444083	20
P. 444084	20

P. 451039	20	
P. 451040	20	
P. 451041	20	
P. 451042	20	
	-	
P. 479905	20	
P. 479906	20	
P. 482870	20	
P. 482871	20	
P. 482872	20	
P. 482873	20	
P. 482874	20	
P. 482875	20	
P. 482876	20	
P. 482877	20	
P. 482878	20	
P. 382879	20	
P. 482880	20	(partial)

claims

HOYLE TWP. M-287

THE TOWNSHIP
OF
2.2628
WHITNEY

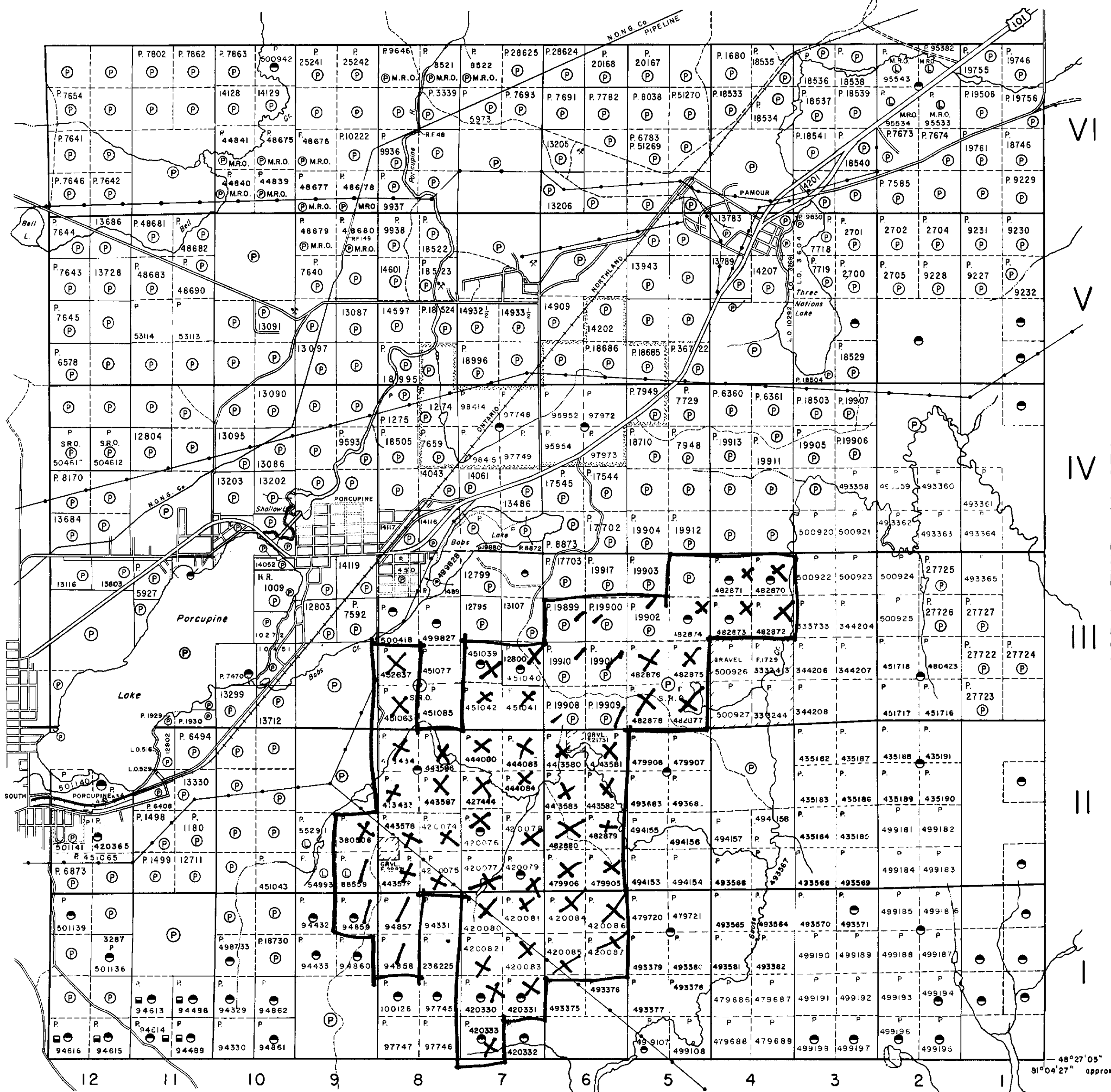
DISTRICT OF
COCHRANE

PORCUPINE
MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

TISDALE TWP. M-315

CODY TWP. M-270



LEGEND

- | | |
|-----------------------|--------|
| PATENTED LAND | (P) |
| CROWN LAND SALE | C.S. |
| LEASES | (L) |
| LOCATED LAND | Loc. |
| LICENSE OF OCCUPATION | L.O. |
| MINING RIGHTS ONLY | M.R.O. |
| SURFACE RIGHTS ONLY | S.R.O. |
| ROADS | (—) |
| IMPROVED ROADS | (—) |
| KING'S HIGHWAYS | (—) |
| RAILWAYS | (—) |
| POWER LINES | (—) |
| MARSH OR MUSKEG | (*) |
| MINES | (X) |
| CANCELLED | (C) |
| S.R.O. PATENTED | (●) |

NOTES

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

This township lies within the Municipality of CITY of TIMMINS.

No disposition of sand and gravel on lands north of C.N.Ry., from May 8, 1964 until further notice. Form D.O.M. file 550.13

Any restakings within stippled area in Lots 5,6,7,8 Con. 4 and 5 subject to rights and privileges granted to Pamour Porcupine Mines Ltd for tailings disposal.

48°27'05"
81°04'27" approx.



42A06NE0049 2.2628 WHITNEY

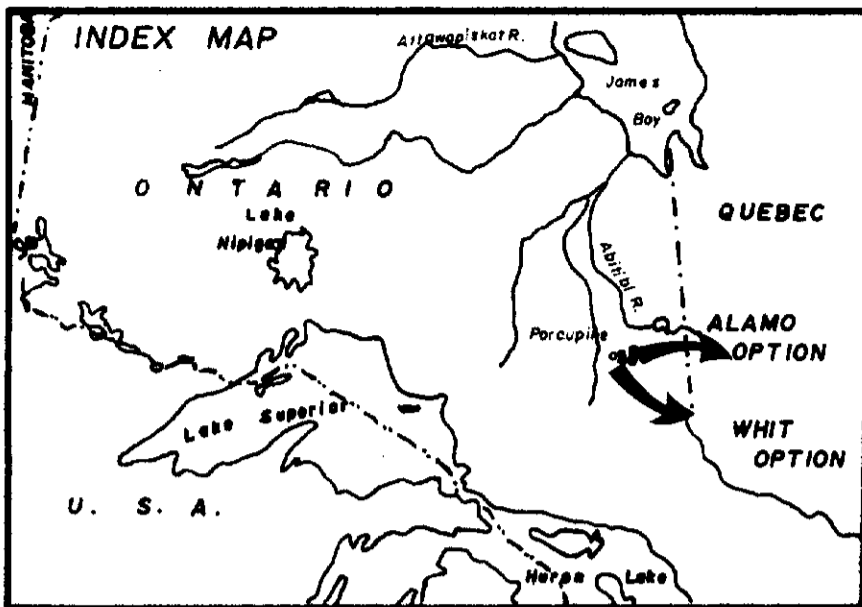
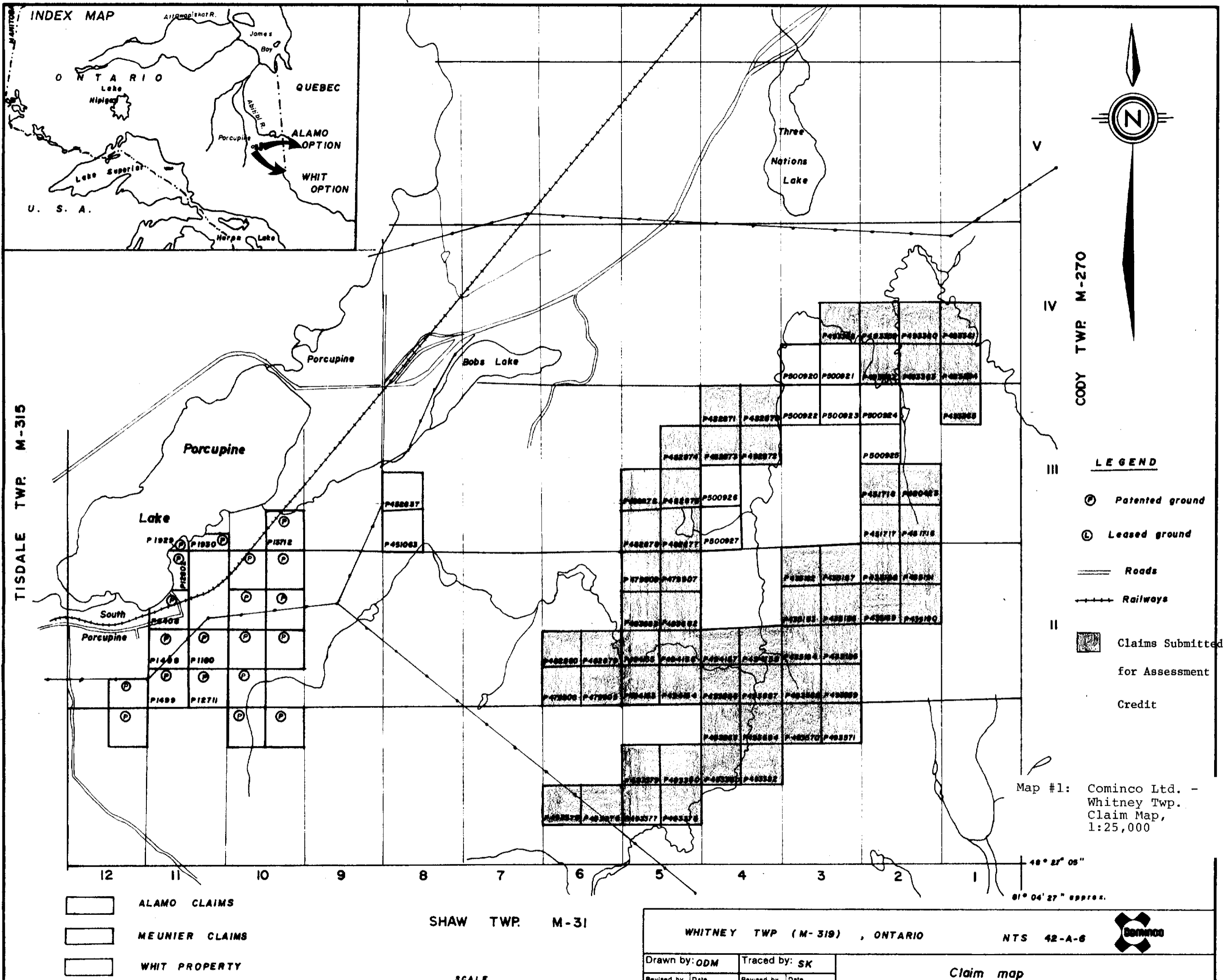
SHAW TWP. M-311

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

Date 10th. JULY 1974 (Rev.)

Whitney Block
Queen's Park, Toronto

M.319



CODY TWP. M-270

- LEGEND**
- ⊙ Patented ground
 - Ⓢ Leased ground
 - ══ Roads
 - +—+—+ Railways
 - ▒ Claims Submitted for Assessment Credit

Map #1: Cominco Ltd. - Whitney Twp. Claim Map, 1:25,000

- ALAMO CLAIMS
- MEUNIER CLAIMS
- WHIT PROPERTY

SHAW TWP. M-31

SCALE



WHITNEY TWP (M-319), ONTARIO

NTS 42-A-6



Drawn by: ODM Traced by: SK

Claim map

ALAMO OPTION & WHIT OPTION

Revised by	Date	Revised by	Date

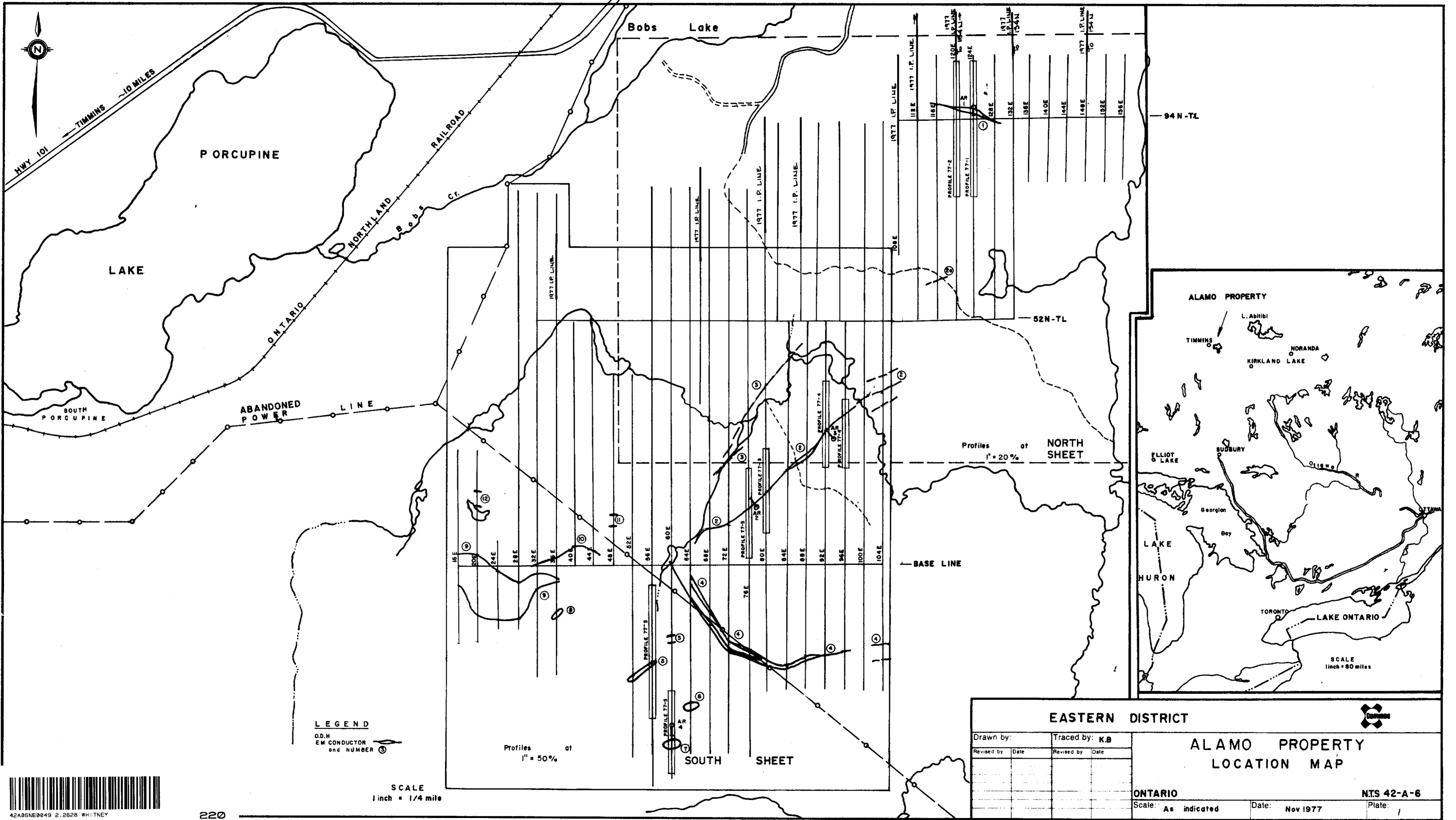
Scale: 1 : 25,000

Date: May, 1977

Plate: 1



42A06NE0049 2.2628 WHITNEY



HWY 101
TIMMINS
10 MILES

PORCUPINE

LAKE

ABANDONED POWER LINE

LEGEND
D.D.H
EM CONDUCTOR
and NUMBER ③

SCALE
1 inch = 1/4 mile

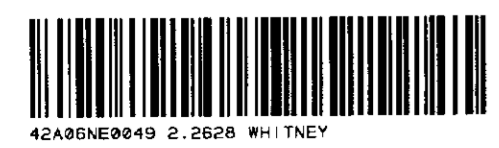
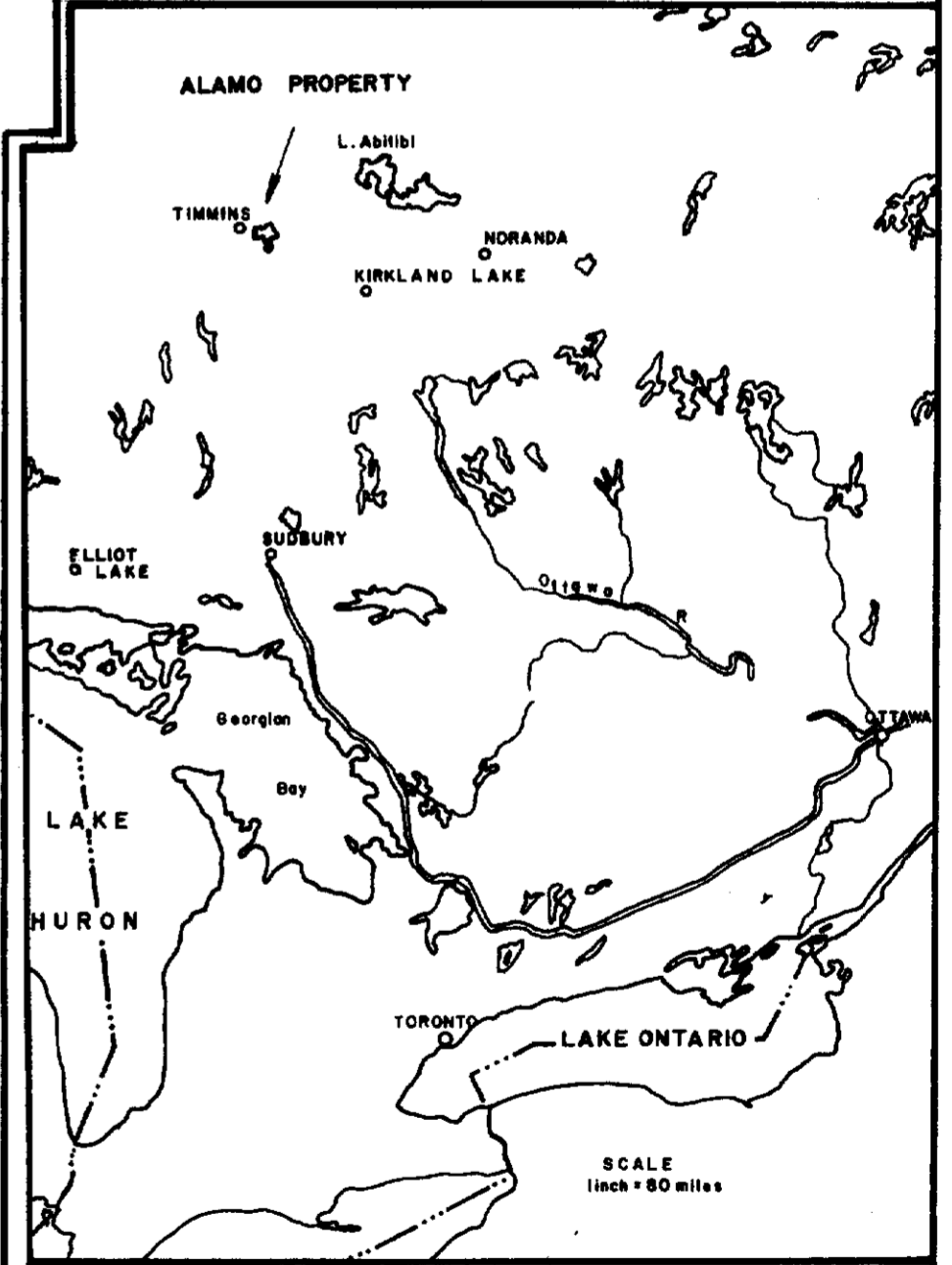
Profiles at
1" = 50%

SOUTH SHEET

Profiles at
1" = 20%
NORTH SHEET

BASE LINE

ALAMO PROPERTY

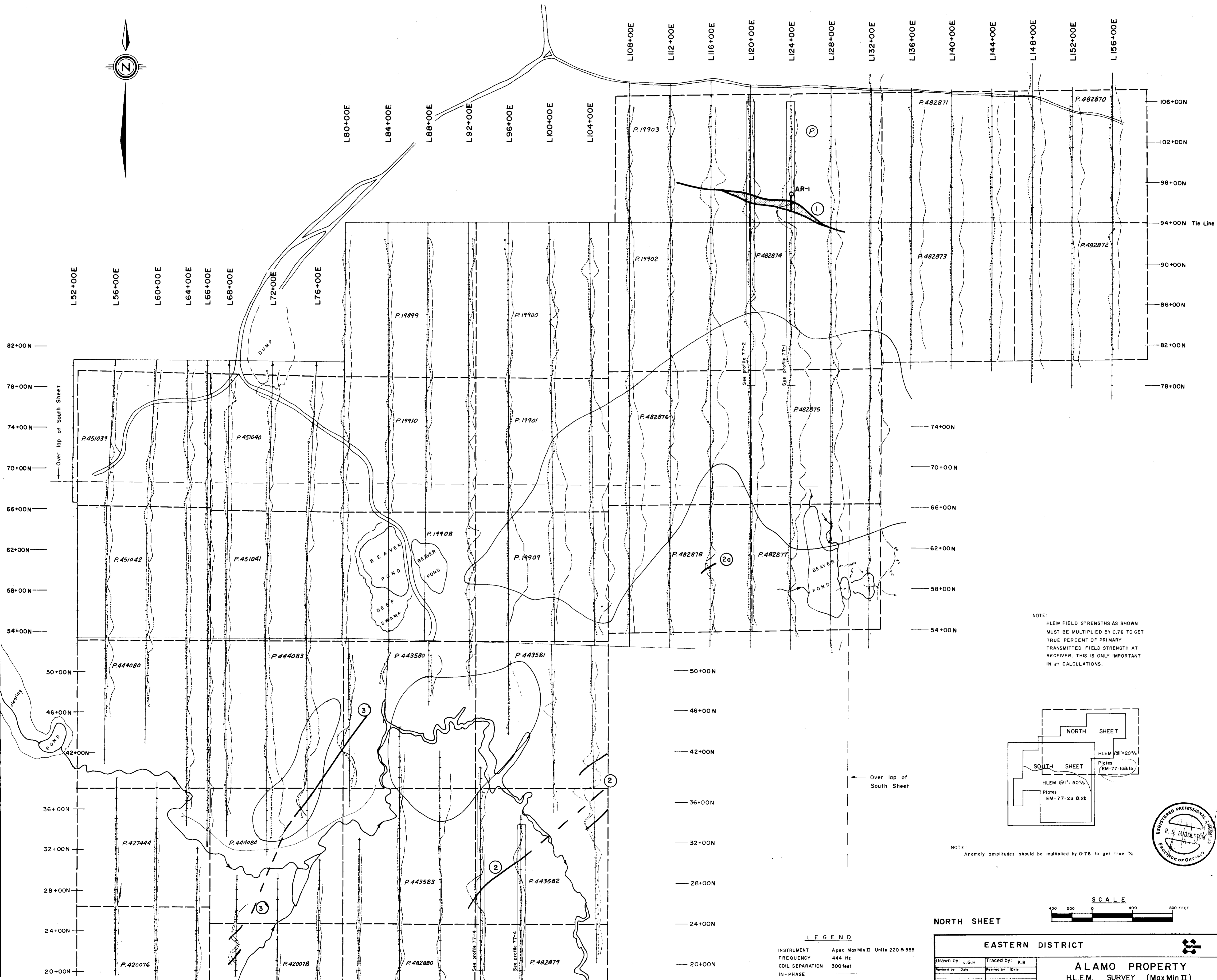
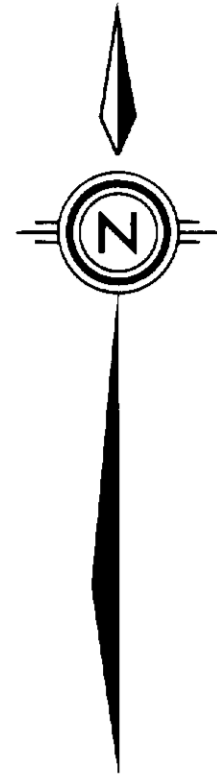


220

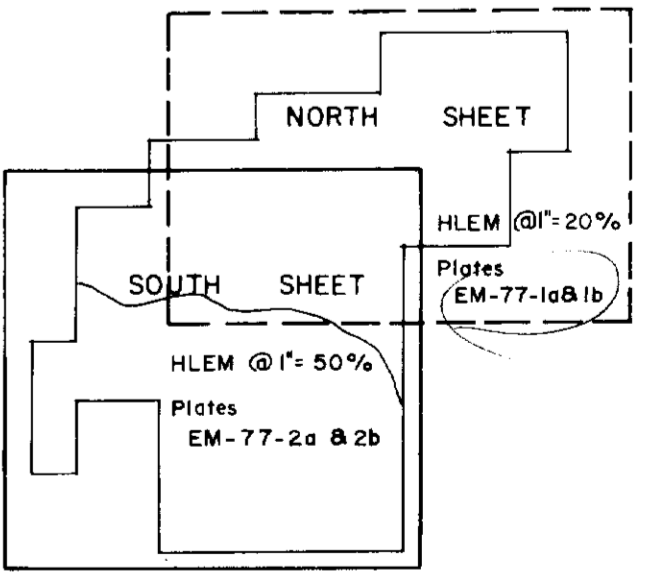
EASTERN DISTRICT			
Drawn by:	Traced by: K.B		
Revised by:	Date:	Revised by:	Date:
ONTARIO		NTS 42-A-6	
Scale:	As indicated	Date:	Nov 1977
		Plate:	1

2.2628

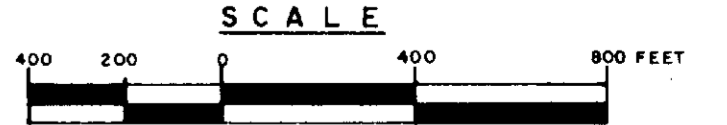
#210-0640



NOTE:
HLEM FIELD STRENGTHS AS SHOWN
MUST BE MULTIPLIED BY 0.76 TO GET
TRUE PERCENT OF PRIMARY
TRANSMITTED FIELD STRENGTH AT
RECEIVER. THIS IS ONLY IMPORTANT
IN π CALCULATIONS.



NOTE:
Anomaly amplitudes should be multiplied by 0.76 to get true %



NORTH SHEET

LEGEND

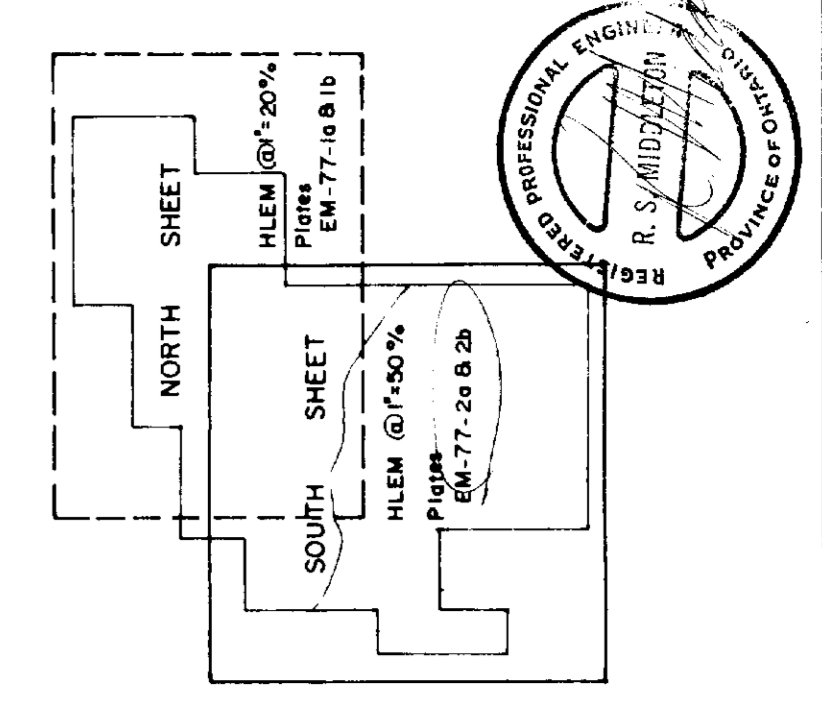
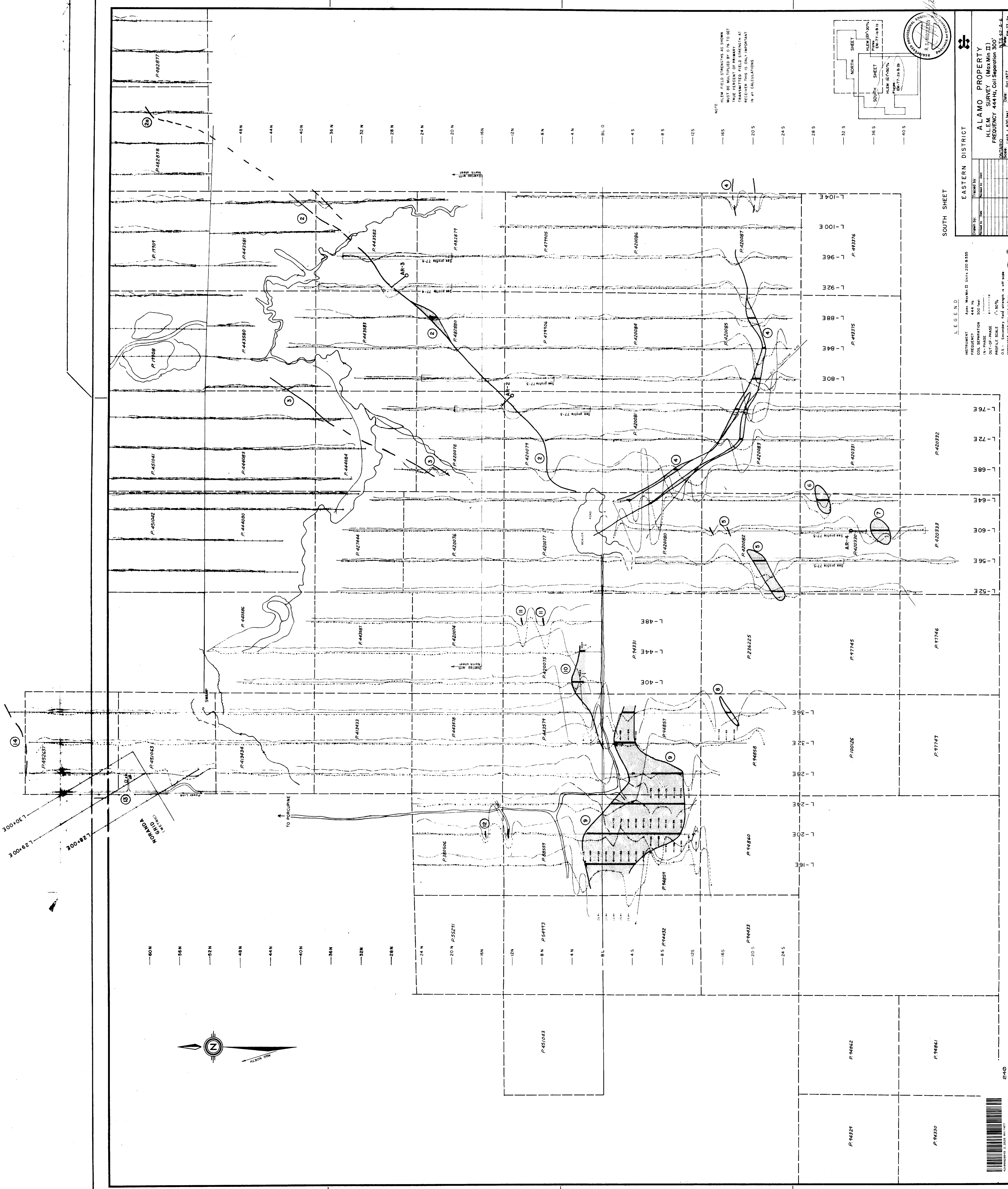
INSTRUMENT	Apex Max Min II Units 220 B.555
FREQUENCY	444 Hz
COIL SEPARATION	300 feet
IN-PHASE
OUT-OF-PHASE
PROFILE SCALE	1" = 20%
Interpreted conductor axis and reference number	
Magnetic bearing rock unit (Interpreted)	

EASTERN DISTRICT	
Drawn by: J.G.H.	Traced by: K.B.
Revised by: Date	Revised by: Date

ALAMO PROPERTY
HLEM SURVEY (Max Min II)
FREQUENCY 444 Hz, Coil Separation 300'

ONTARIO
Scale: 1 inch = 400 feet Date: Oct 1977 Plate: EM-77-1a

NTS 42-A-6
FORM 210-0960



EASTERN DISTRICT

ALAMO PROPERTY
 HLEM SURVEY (Max Min II)
 FREQUENCY 444 Hz, Coil Separation 300"

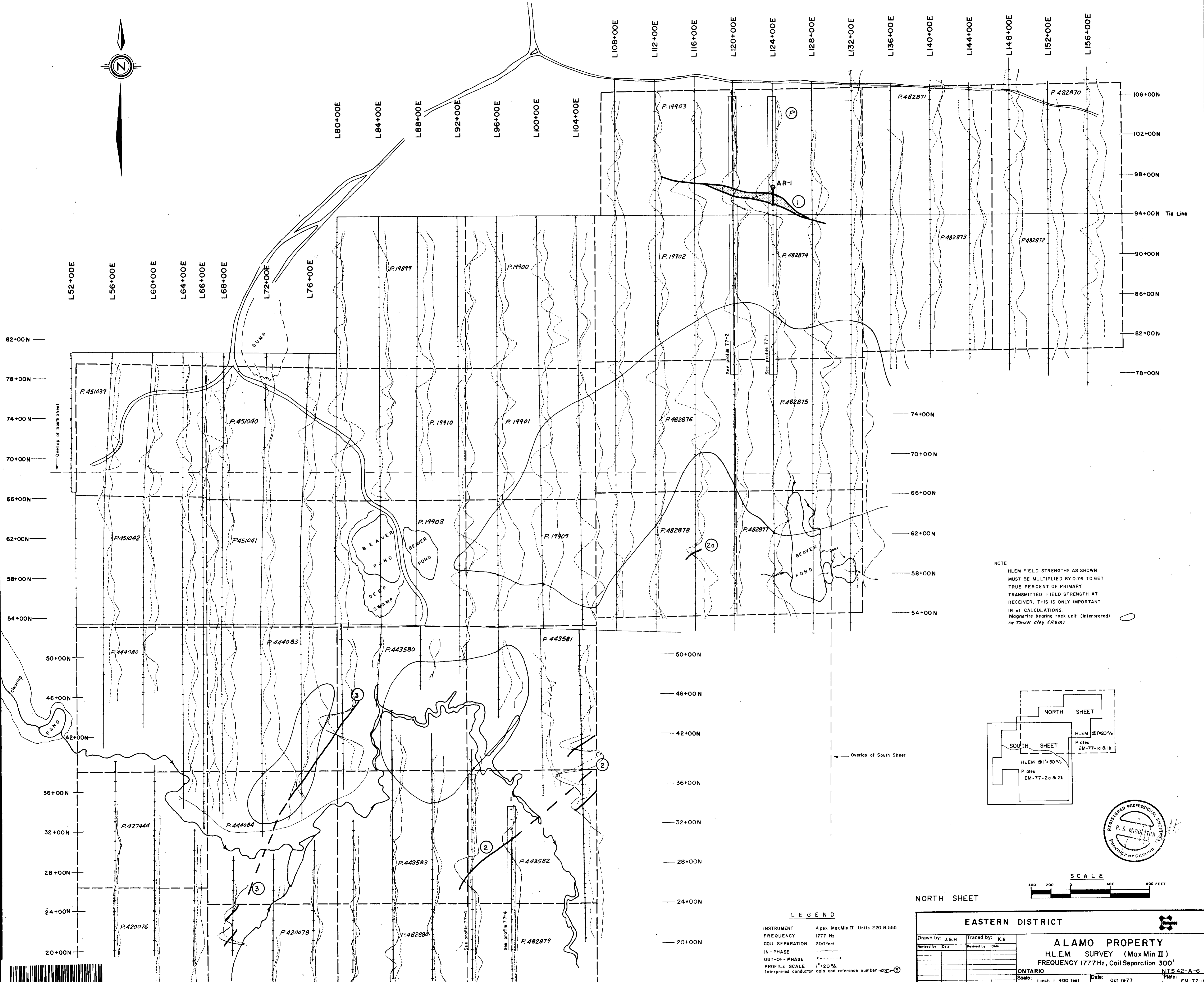
Scale: 1 inch = 400 feet
 Date: Oct 1977
 Title: 92-A-B
 Plot: EM-77-28

LEGEND

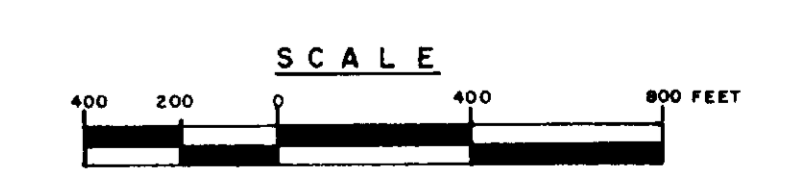
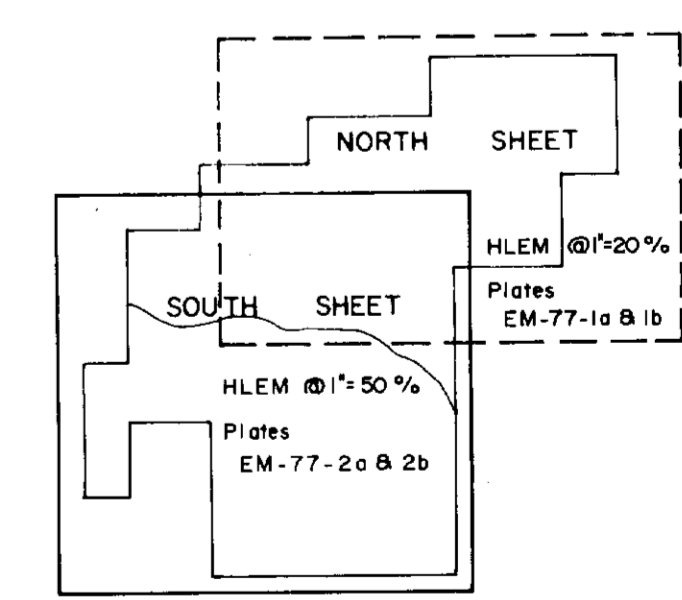
INSTRUMENT: Apex MaxMin II Unit 250 B 535
 FREQUENCY: 444 Hz
 COIL SEPARATION: 300"
 DIST. OF PHASE: 100"
 PROFILE SCALE: 1" = 50"
 0.5 - Secondary field strength, a off scale
 Impressed conductors and reference number

SOUTH SHEET





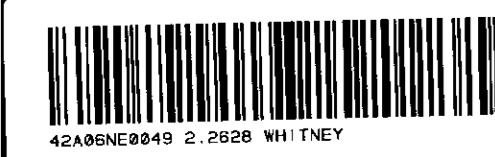
NOTE:
 HLEM FIELD STRENGTHS AS SHOWN
 MUST BE MULTIPLIED BY 0.76 TO GET
 TRUE PERCENT OF PRIMARY
 TRANSMITTED FIELD STRENGTH AT
 RECEIVER. THIS IS ONLY IMPORTANT
 IN #1 CALCULATIONS.
 Magnetite bearing rock unit (interpreted)
 or THICK clay. (RSM).

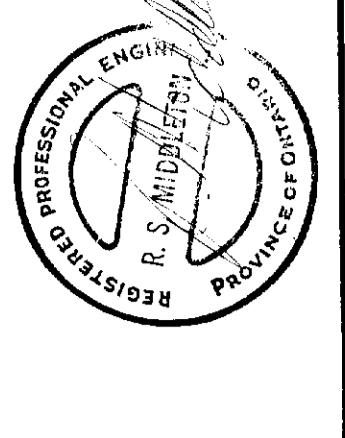
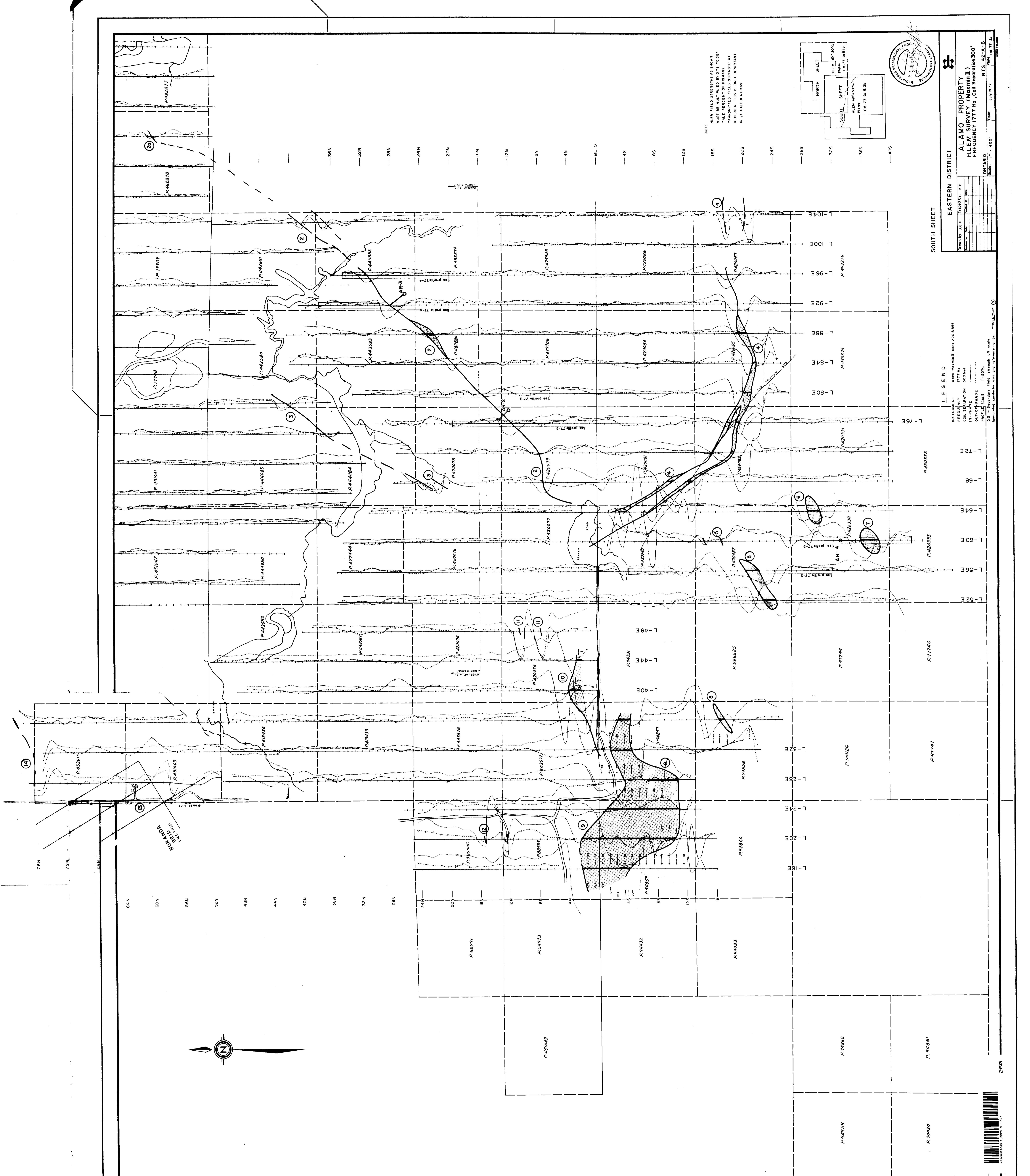


NORTH SHEET

LEGEND
 INSTRUMENT Apex Max Min II Units 220 & 555
 FREQUENCY 1777 Hz
 COIL SEPARATION 300 feet
 IN-PHASE
 OUT-OF-PHASE
 PROFILE SCALE 1"=20%
 Interpreted conductor axis and reference number

EASTERN DISTRICT		ALAMO PROPERTY	
H.L.E.M. SURVEY (Max Min II)		FREQUENCY 1777 Hz, Coil Separation 300'	
Drawn by: J.G.H.	Traced by: K.B.	Scale: 1 inch = 400 feet	Date: Oct 1977
Revised by: _____	Revised by: _____	Date: _____	Date: _____
ONTARIO		FORM 210-0600	



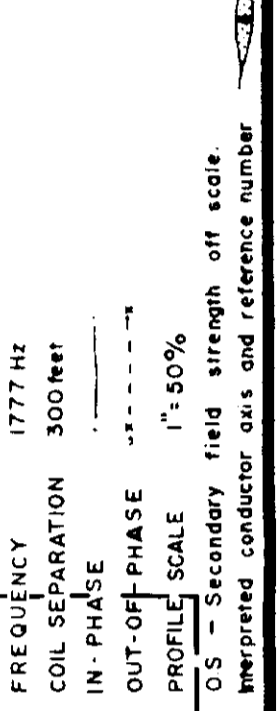


EASTERN DISTRICT
ALAMO PROPERTY
HLEM SURVEY (MORSE II)
 FREQUENCY 1777 Hz, Col Separation 300'

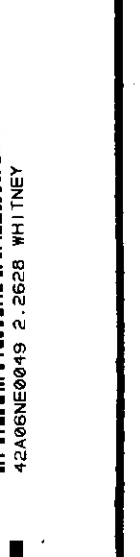
Drawn By: J.S.N.	Traced By: K.B.
Checked By: J.S.N.	Reviewed By: J.S.N.
Date: July 1977	Scale: 1" = 400'

SOUTH SHEET

LEGEND
 WAVELENGTH 8541 Meters (Unit 210.8 55)
 FREQUENCY 1777 Hz
 COL SEPARATION 300 M
 IN PHASE
 OUT-OF-PHASE
 CONTOUR SCALE 1:50%
 REPRODUCED UNDER U.S. AND CANADIAN PATENT LAWS



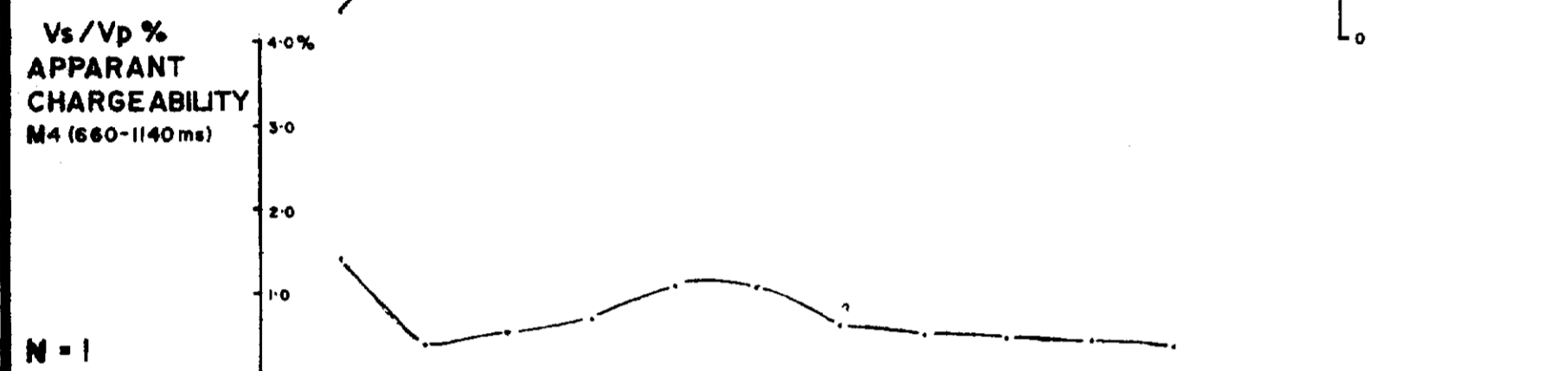
ONTARIO
 REG. NO. 42-A-6
 DATE: JULY 1977



80N 76N 72N 68N 64N 60N 56N



N = 2

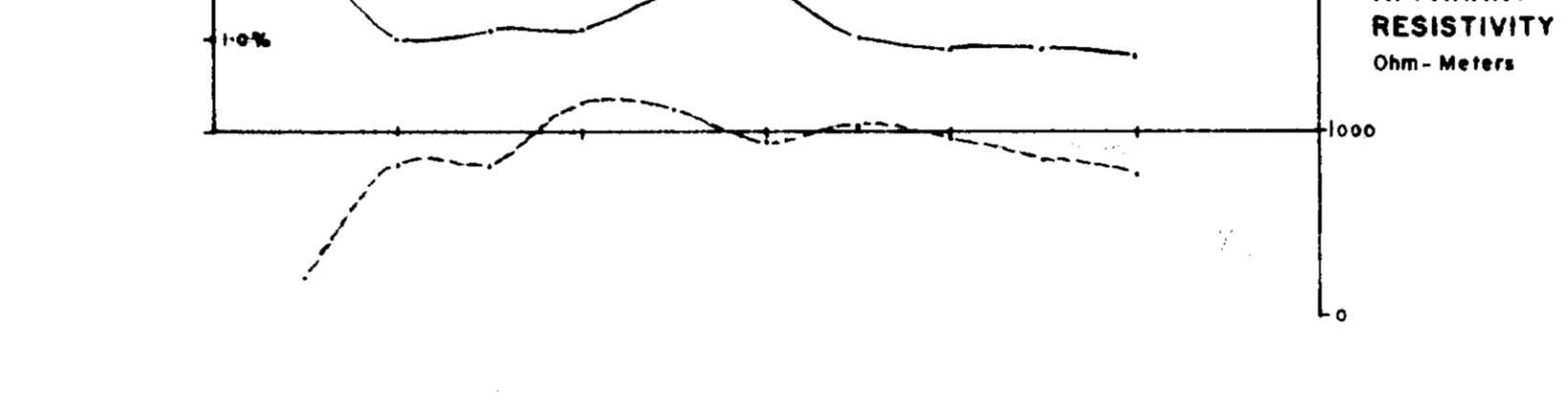


N = 1

80N 76N 72N 68N 64N 60N 56N

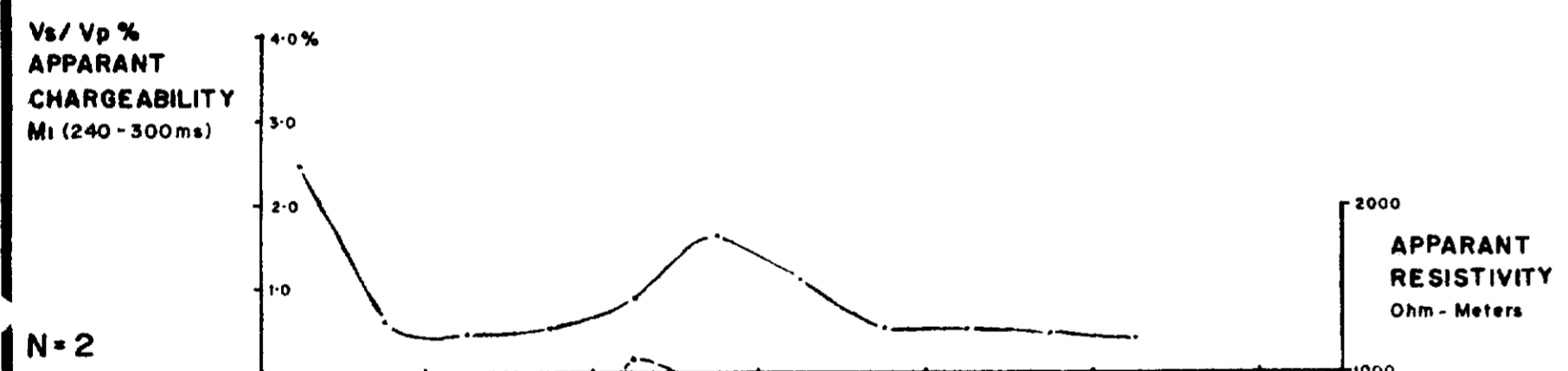
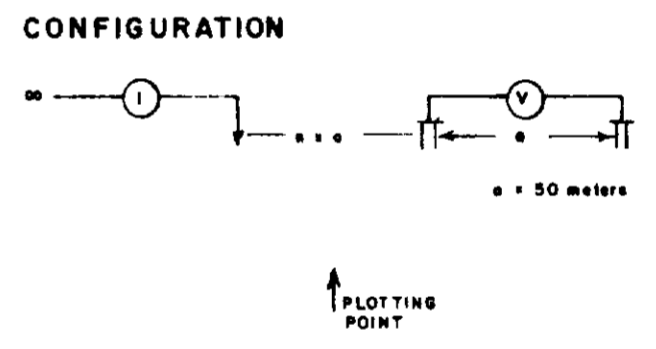


P.F.E
2.0 @ 0.25Hz

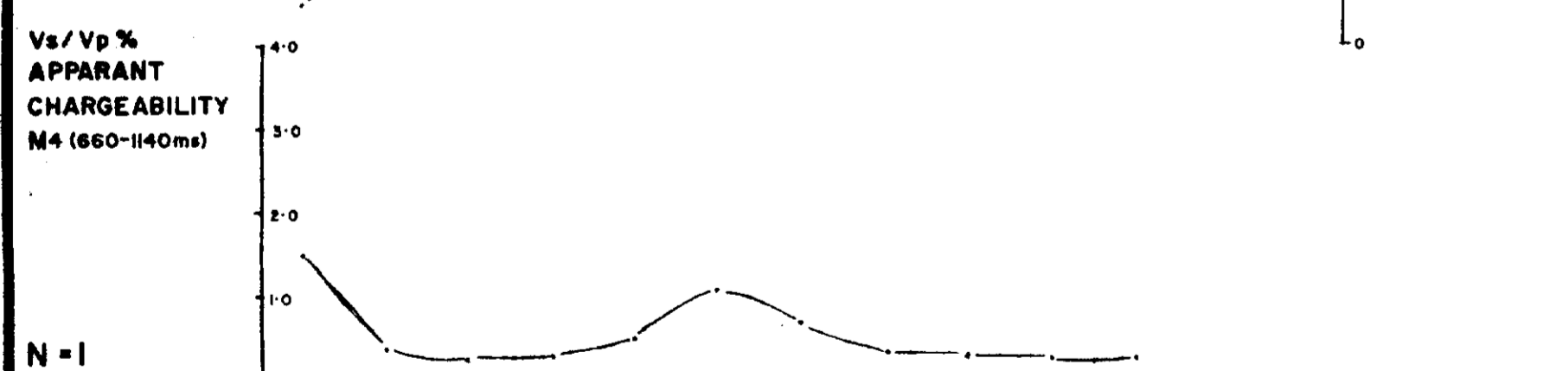


— P.F.E Vs / Vp / Apparant Resistivity % / Ohm - m

EQUIPMENT
 APPARANT CHARGEABILITY M1, M2 Huntec MK III 2s @, 2s off, 2s @, 2s off
 PERCENT FREQUENCY EFFECT P.F.E 2.0 @ 0.25Hz Phoenix IPV-1
 TRANSMITTER SYSTEM Phoenix IPT-1
 Phoenix MG 2000



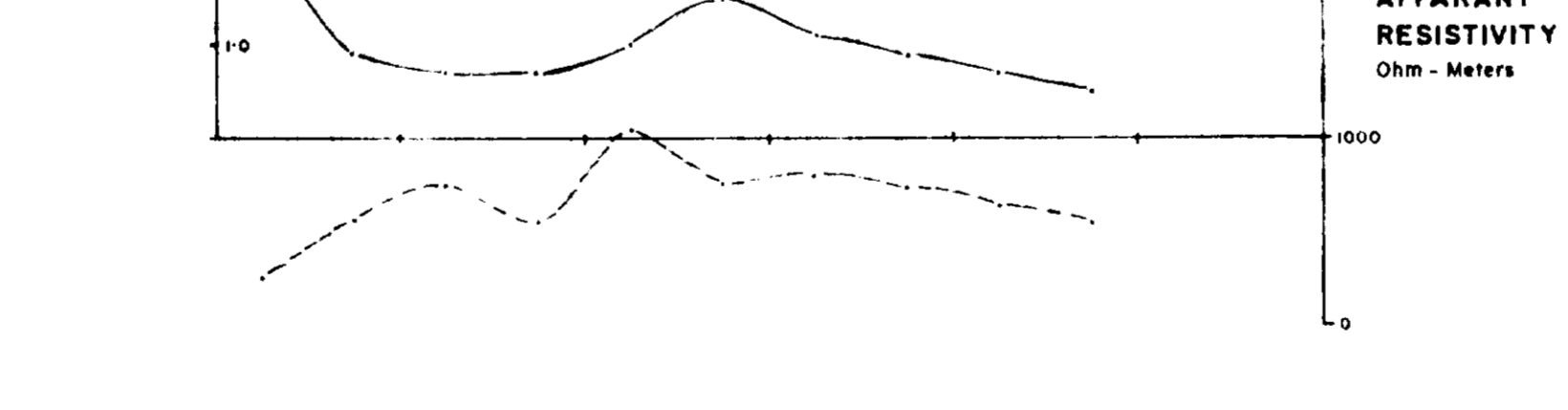
N = 2



N = 1



P.F.E
2.0 @ 0.25Hz



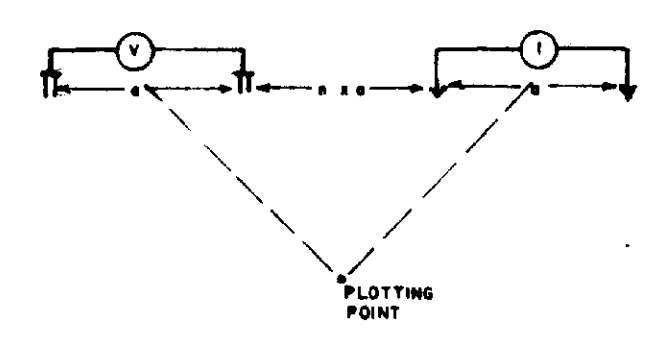
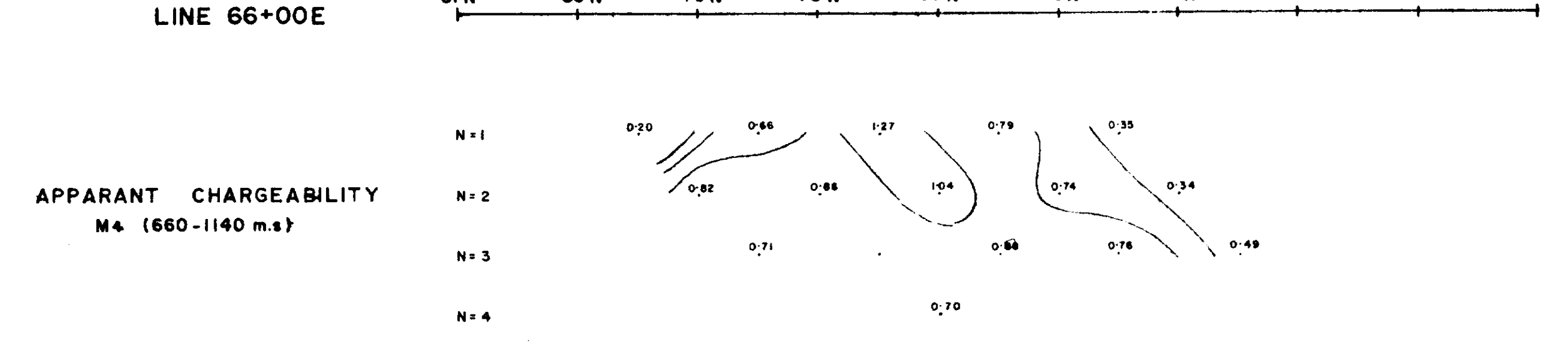
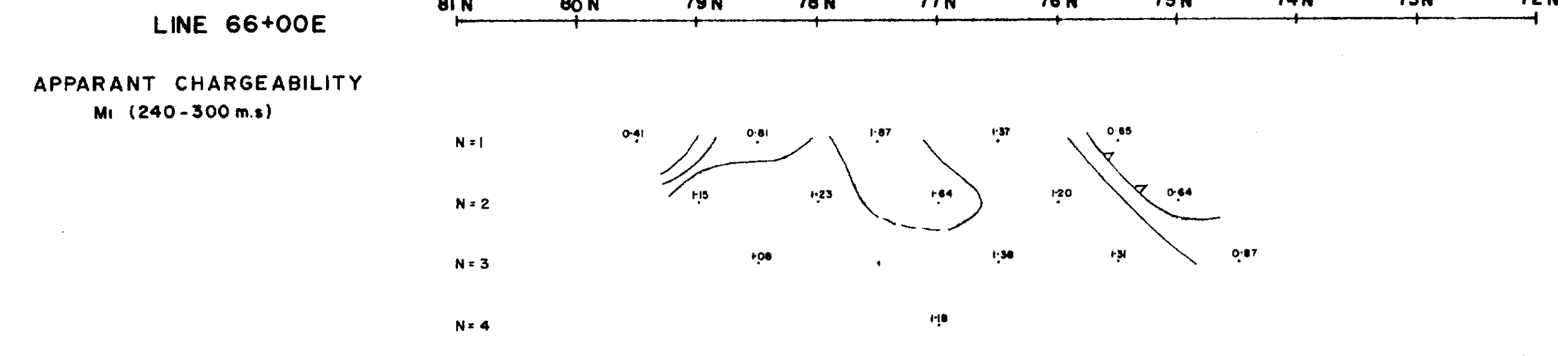
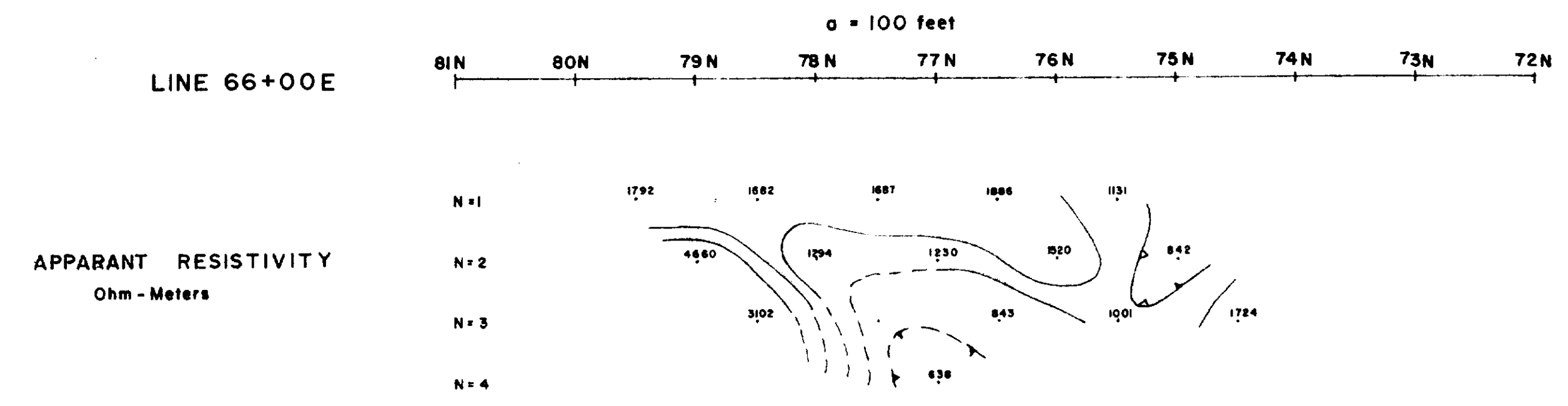
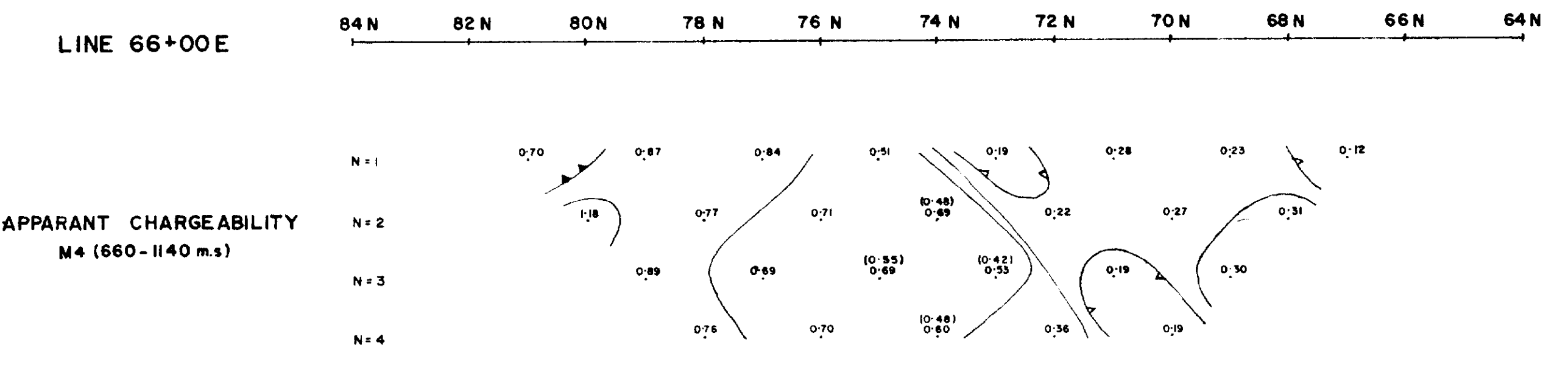
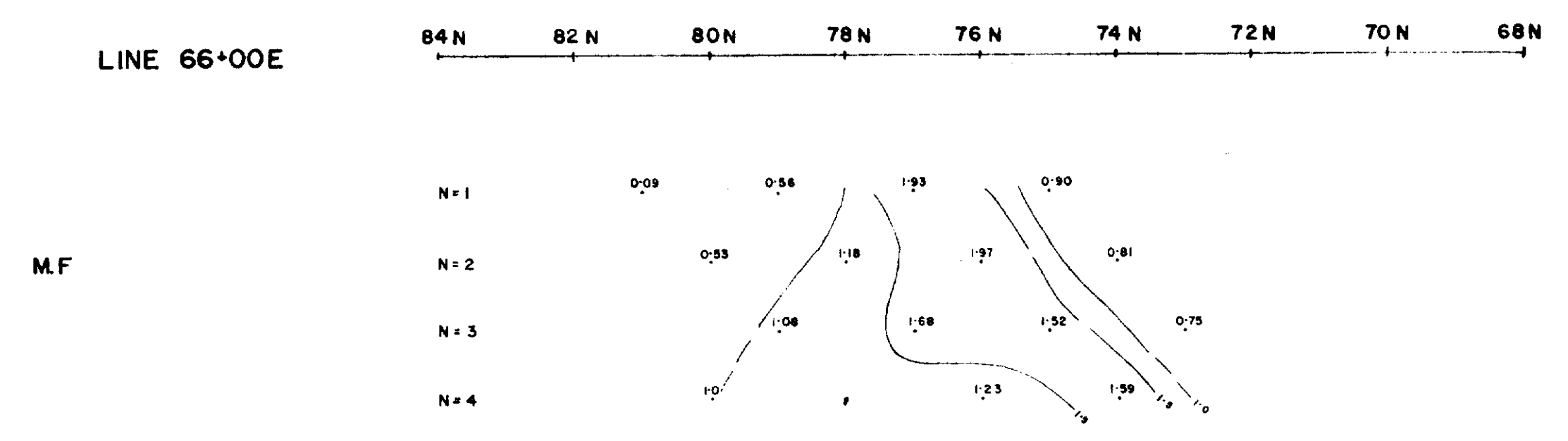
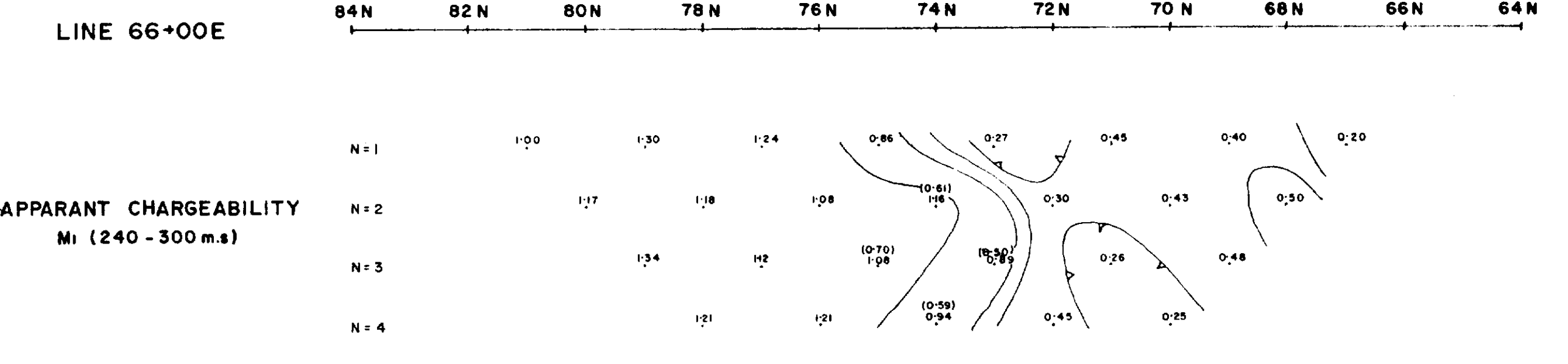
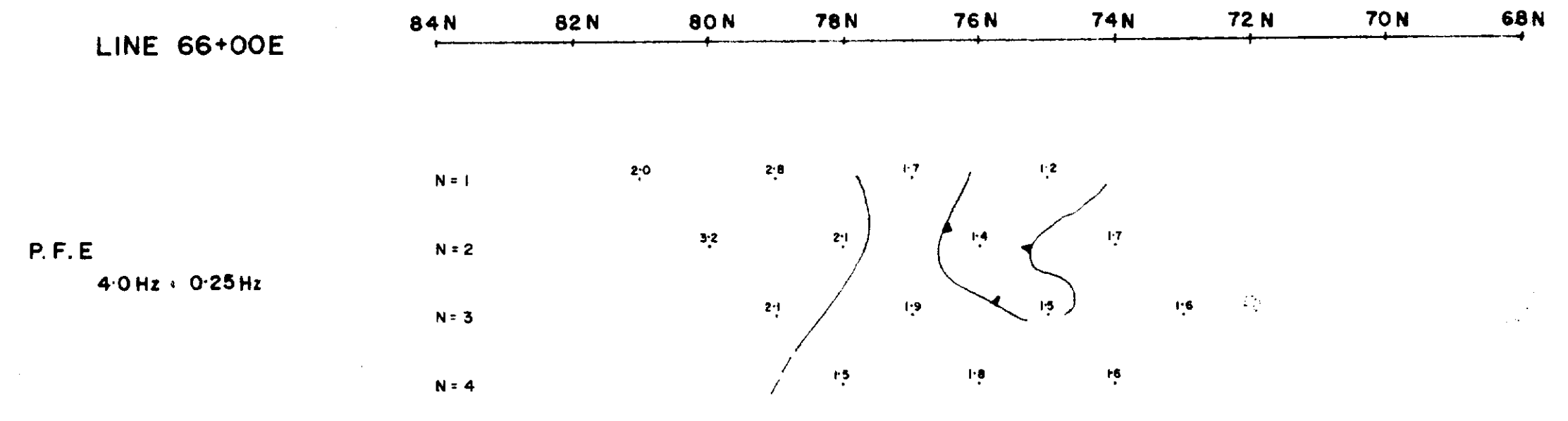
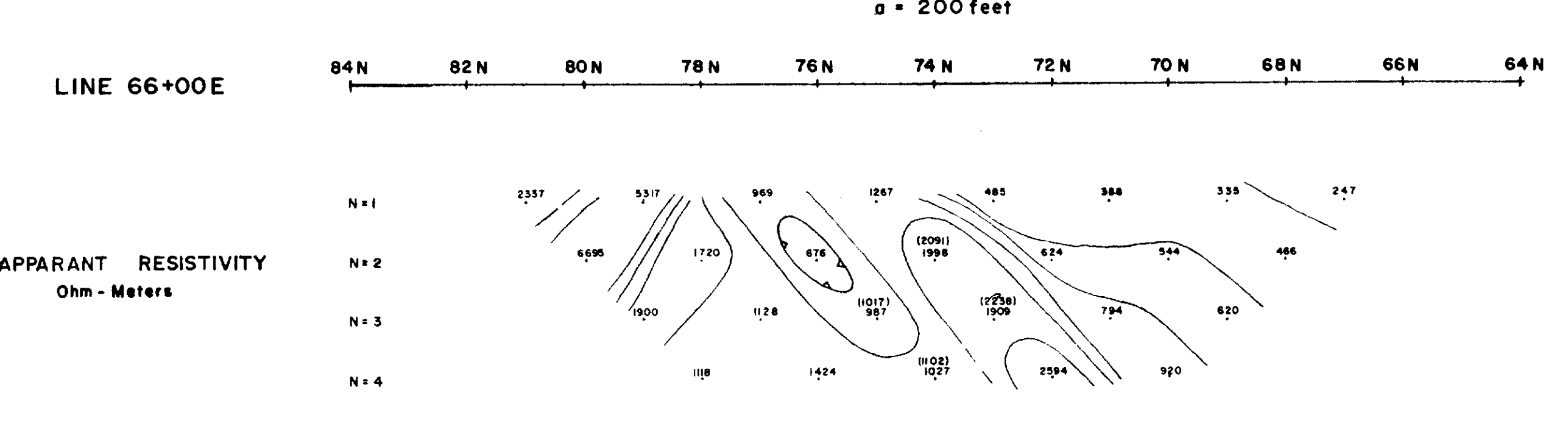
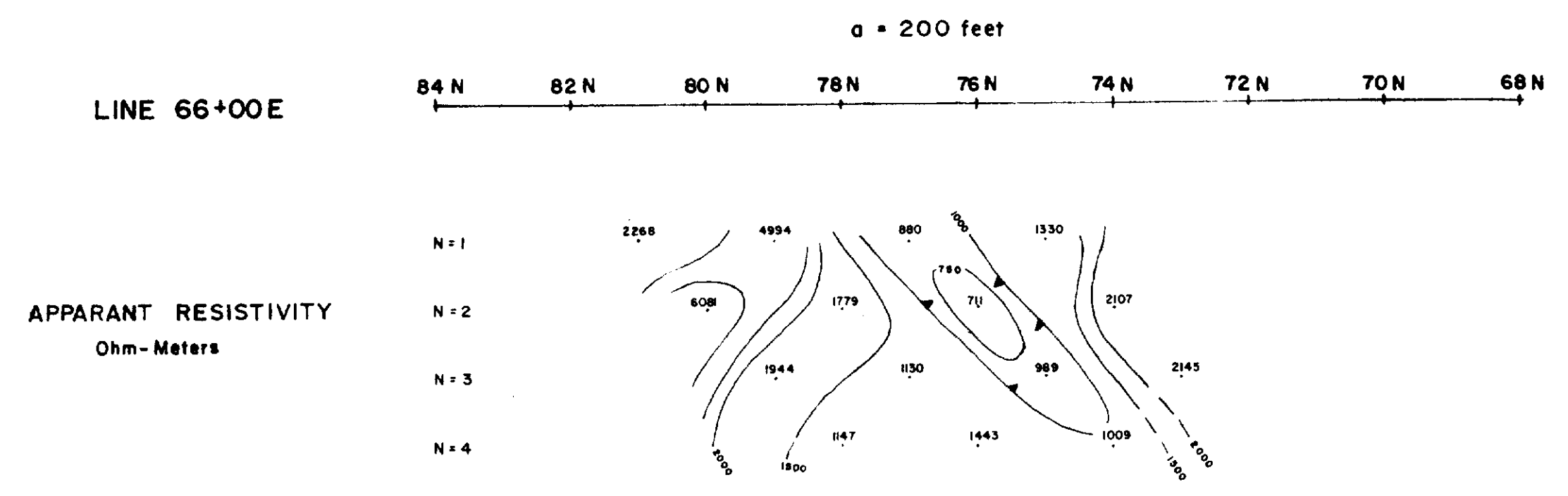
EASTERN DISTRICT

Drawn by:	Traced by: K.B
Revised by: _____	Revised by: _____
Date: _____	Date: _____

INDUCED POLARIZATION TEST SURVEY
 LINE 36+00E
 PORCUPINE AREA, ONTARIO

Scale: 1 inch = 400 feet Date: June 16, 1977
 June 17, 1977 Plate: IP-47-1





EQUIPMENT

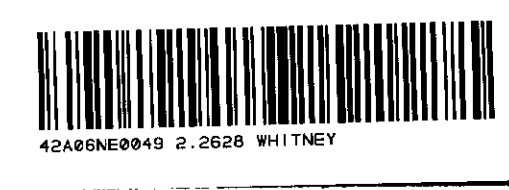
APPARANT CHARGEABILITY M1, M4 Huntex MK III 2s @, 2s off, 2s @, 2s off

PERCENT FREQUENCY EFFECT RFE 4.0 & 0.25Hz Phoenix IPV-1

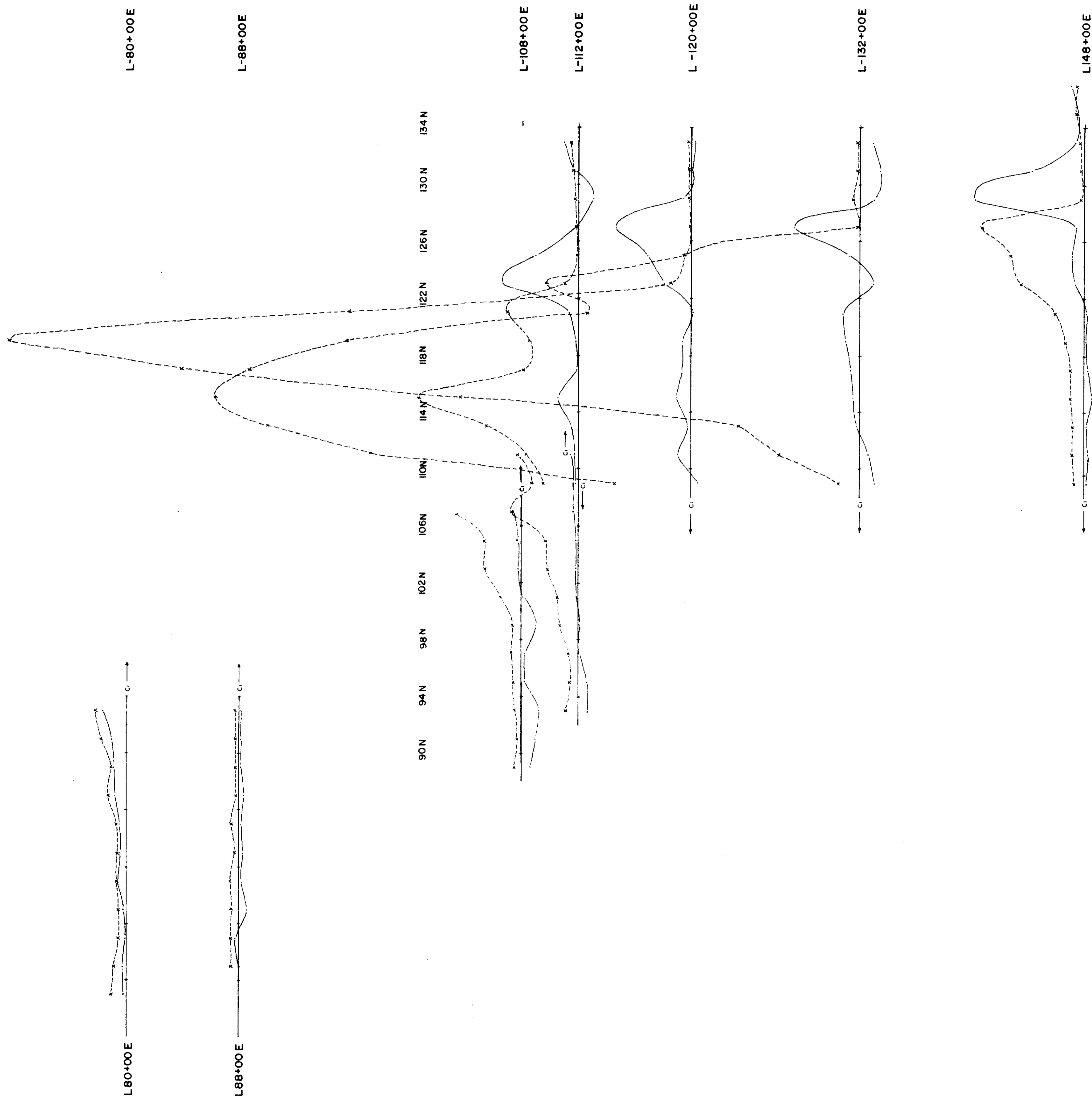
TRANSMITTER SYSTEM Phoenix IPT-1

Phoenix MG 2000

EASTERN DISTRICT		INDUCED POLARIZATION TEST SURVEY	
LINE 66+00E		PORCUPINE AREA, ONTARIO	
Drawn by:	Traced by: K.S.	Scale: AS SHOWN	Date: June 14, 1977
Revised by:	Revised by:		June 15, 1977
			Plate: 27-78-2



ALG...



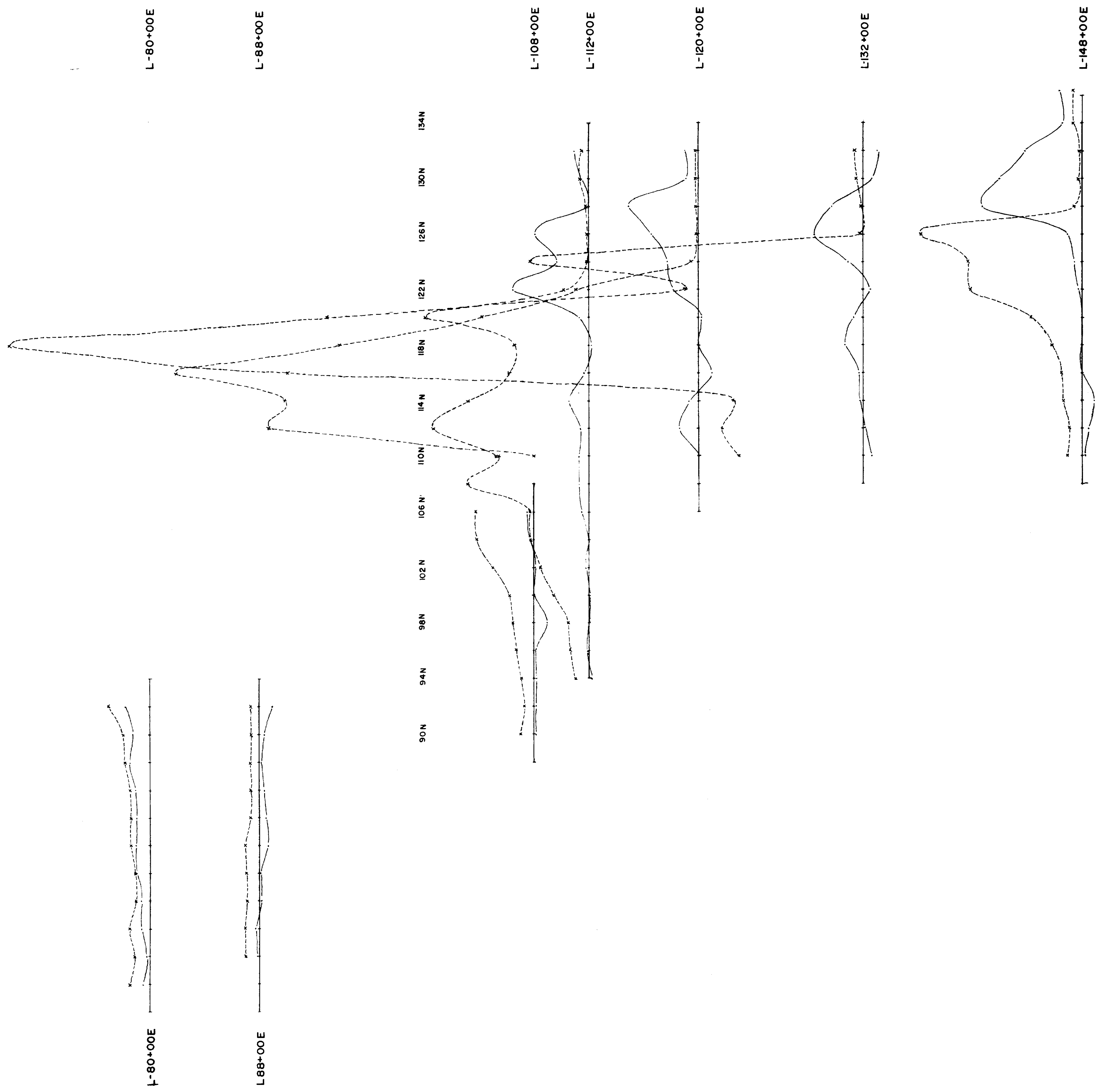
L E G E N D

INSTRUMENT : Receiver - Huntec Mark III
 Transmitter - Phoenix 2.5 Kw 2 sec pulse
 Chargeability : $M = 2\%$
 Resistivity : $1'' = 2000 \text{ ohm-meters}$

2-2628

EASTERN DISTRICT		NTS 42-A-6	
Drawn by: J.G.H.	Traced by: K.B.	ALAMO PROPERTY POLE-DIPOLE IP SURVEY N = 1 ; a = 200 ft	
Revised by: _____	Revised by: _____		
ONTARIO Scale: 1 inch = 400 feet Date: Oct 1977		File: 27-77-3a FORM 110-060	





LEGEND

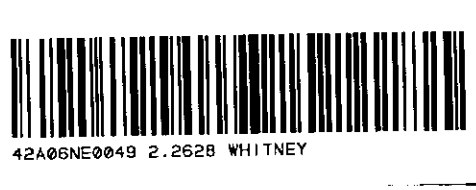
INSTRUMENT - Receiver - Huntec Mark III
 Transmitter - Phoenix 2.5 Kw 2sec pulse
 Chargeability - $M_s = 2\%$
 Resistivity - $1'' = 2000 \text{ ohm-meters}$

2.2628

EASTERN DISTRICT



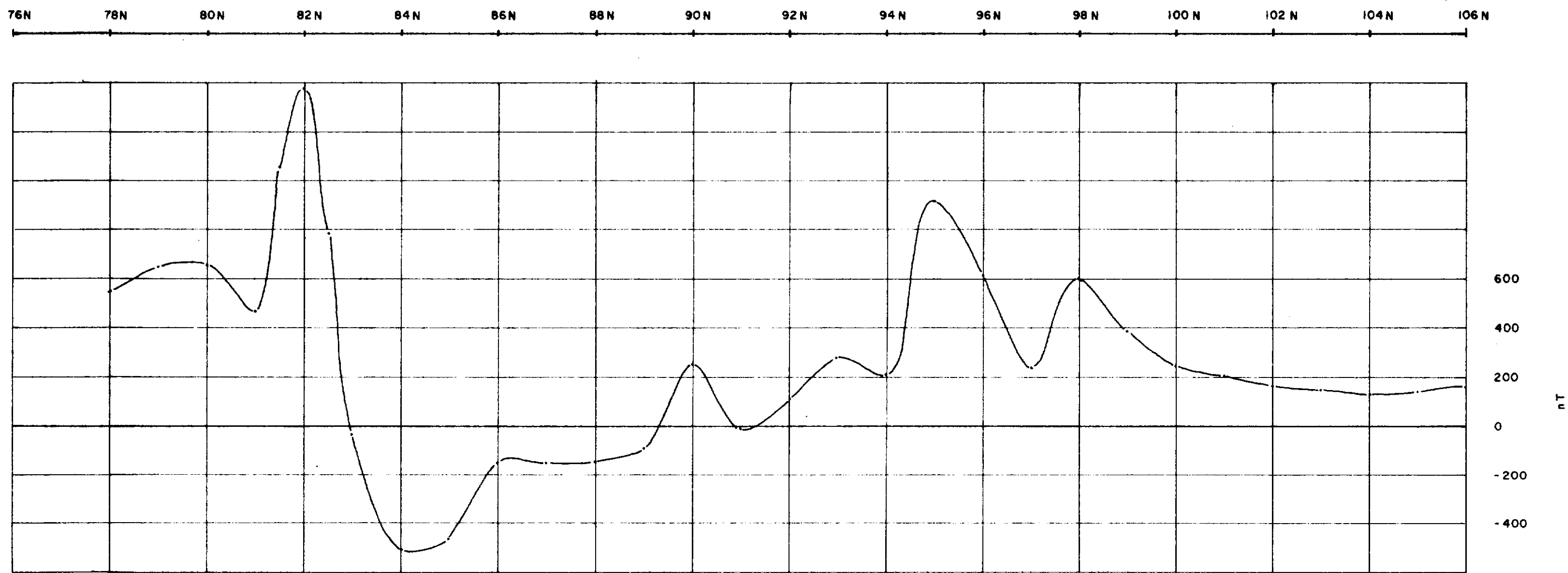
Drawn by: J.G.H.	Traced by: K.B.	ALAMO PROPERTY POLE-DIPOLE IP SURVEY N = 2 ; a = 200 feet	NIS 42-A-6
Revised by: _____	Revised by: _____		
Scale: 1 inch = 400 feet	Date: Oct 1977	Plate: IP-74-26	



LINE 124 E

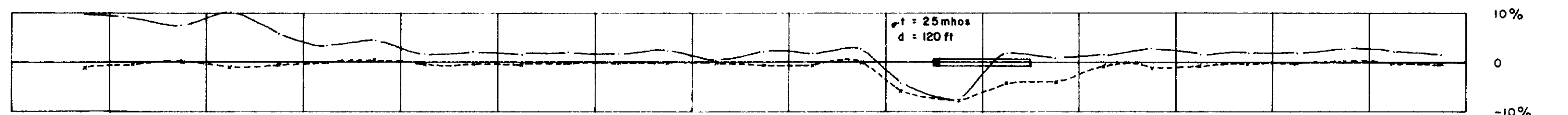
MAGNETICS

M700 Inst.
(Rosario 1976)



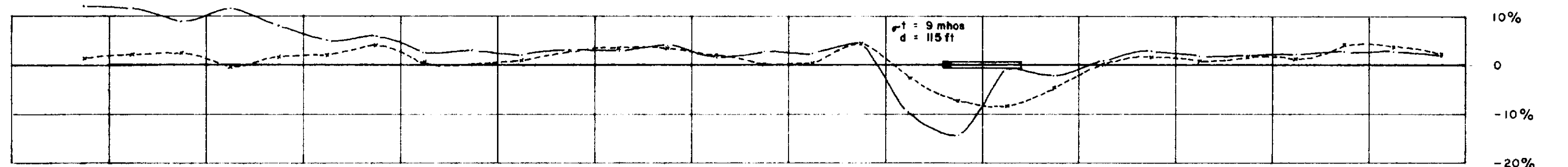
HLEM

Frequency: 444 Hz
Coil Sep: 300'
Cominco 1977
In Phase
Out-of-Phase



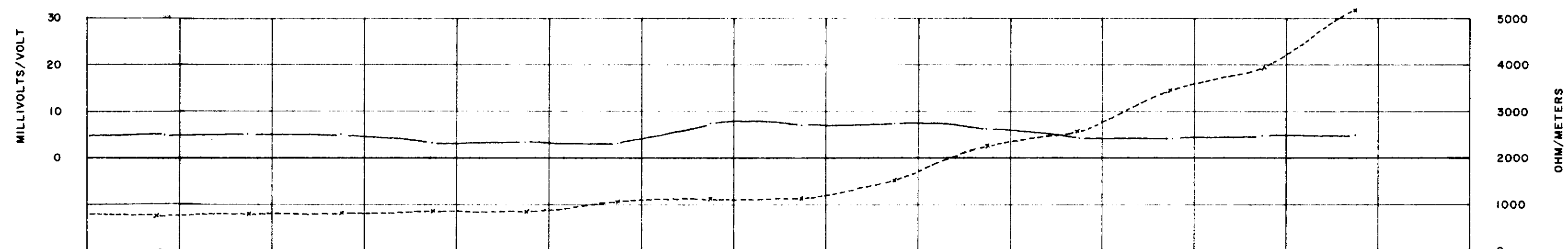
HLEM

Frequency: 1777 Hz
Coil Sep: 300'
Cominco
IN Phase
Out-of-Phase



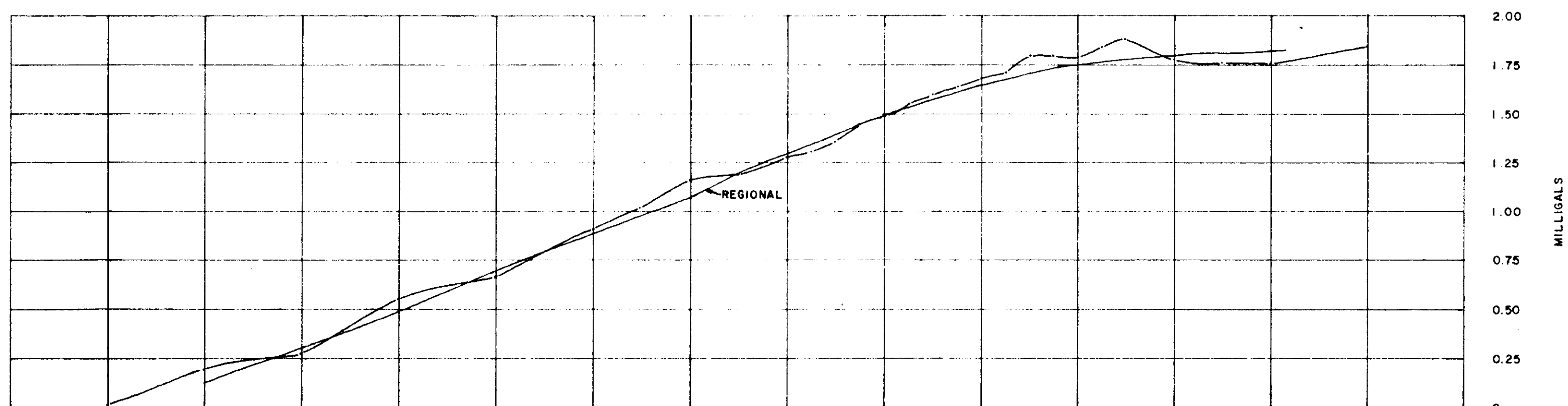
IP

Inst: IPR-8 Rx
IPC-7 Tx
M232 Chargeability
(Rosario 1976)
Chargeability
Resistivity

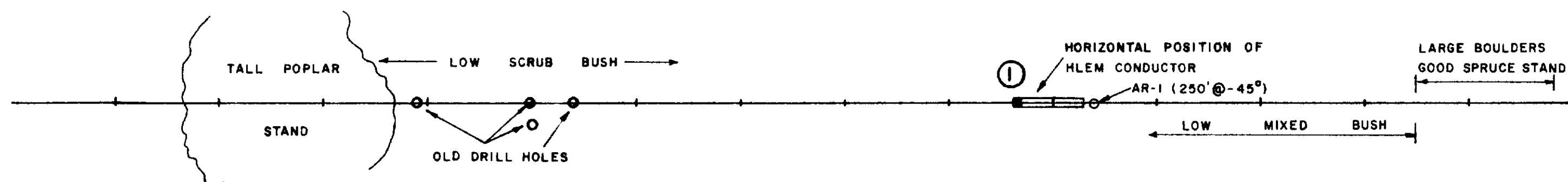


BOUGUER GRAVITY

($\rho = 2.67 \text{ gm/cm}^3$)
(Cominco 1977)

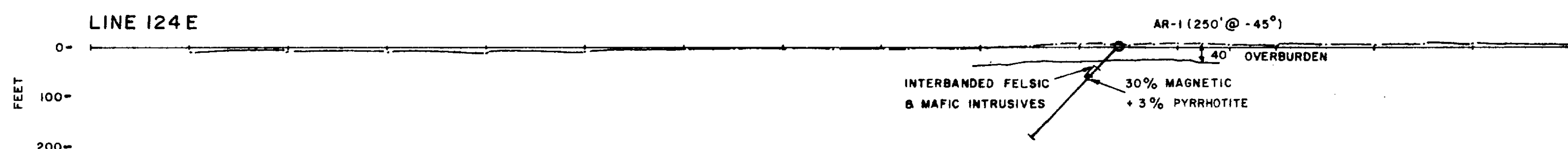


PLAN VIEW



SECTION VIEW

TOPOGRAPHY AND
DRILL RESULTS



AR-1
GEOLOGY: 0-40' OVERBURDEN
40'-53' INTERMEDIATE TUFFS
53'-61.5' FELSIC TUFFS
61.5'-79.4' INTERBANDED FELSIC AND
MAFIC INTRUSIVES
79.4'-250' INTERMEDIATE TUFFS
CONDUCTOR: 86'-93' 30% MAGNETITE, 3% PYRRHOTITE

EASTERN DISTRICT

ALAMO PROPERTY
COMPOSITE GEOPHYSICAL PROFILES
LINE 124 E

ONTARIO
Scale: 1" = 200' Date: OCT. 1977

Drawn by:	Date:	Traced by:	Date:
J.G.H.		K.B.	

NTS
Plate: 77-1

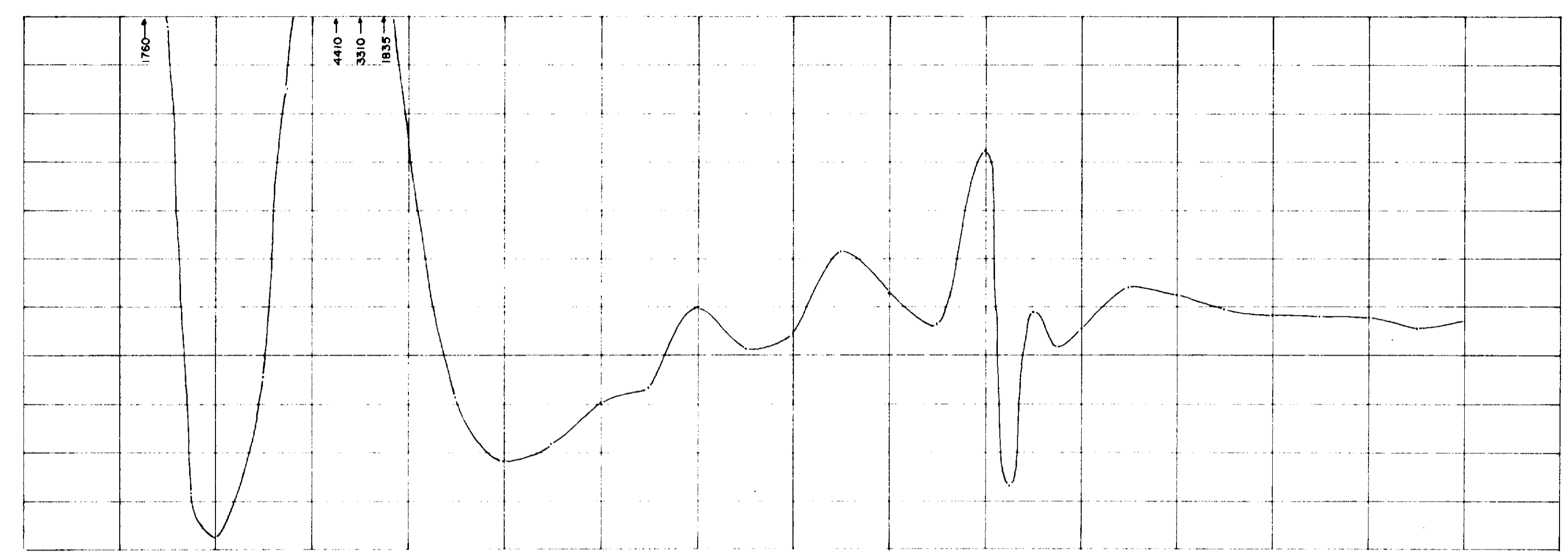


76N 78N 80N 82N 84N 86N 88N 90N 92N 94N 96N 98N 100N 102N 104N 106N 108N

LINE 120E

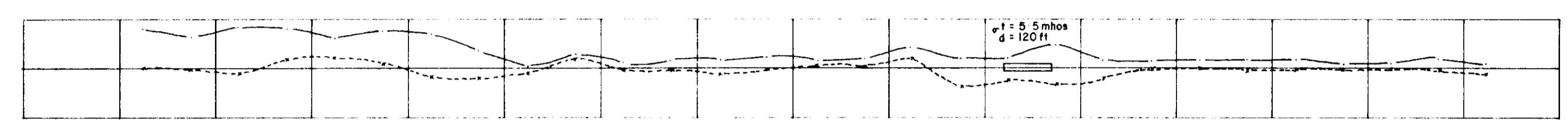
MAGNETICS

M-700 Inst
(Rosario 1976)



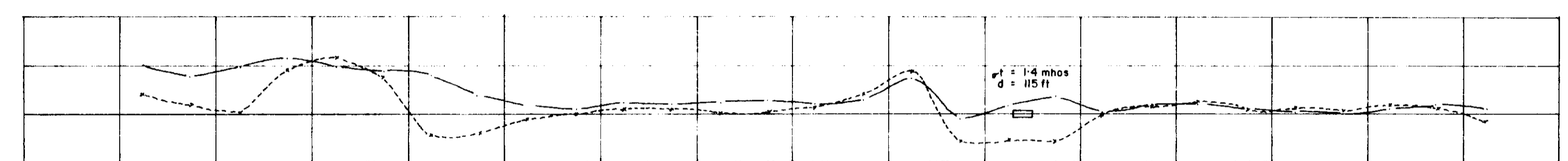
HLEM

Frequency: 444 Hz (Max Min II)
Coil Sep: 300'
Cominco 1977
In Phase
Out-of-Phase



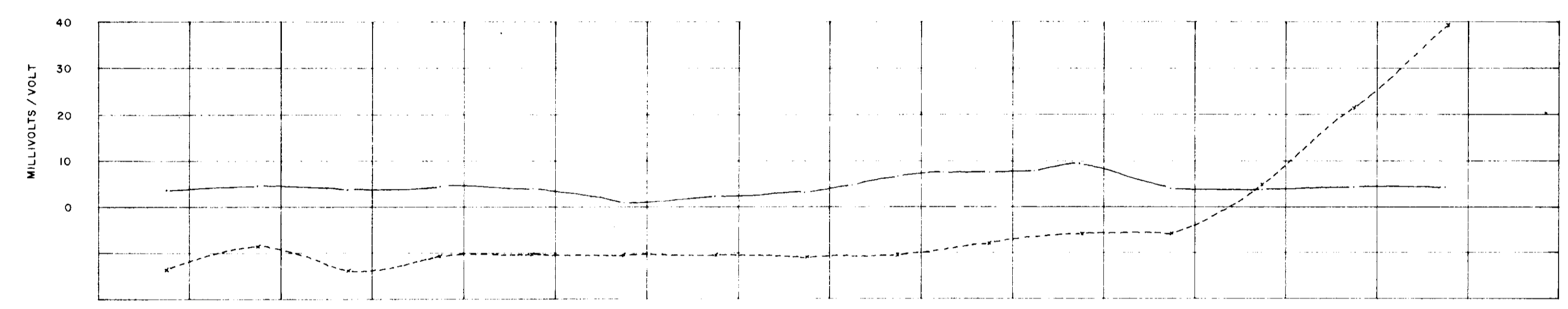
HLEM

Frequency: 1777 Hz (Max Min II)
Coil Sep: 300'
Cominco 1977
In Phase
Out-of-Phase



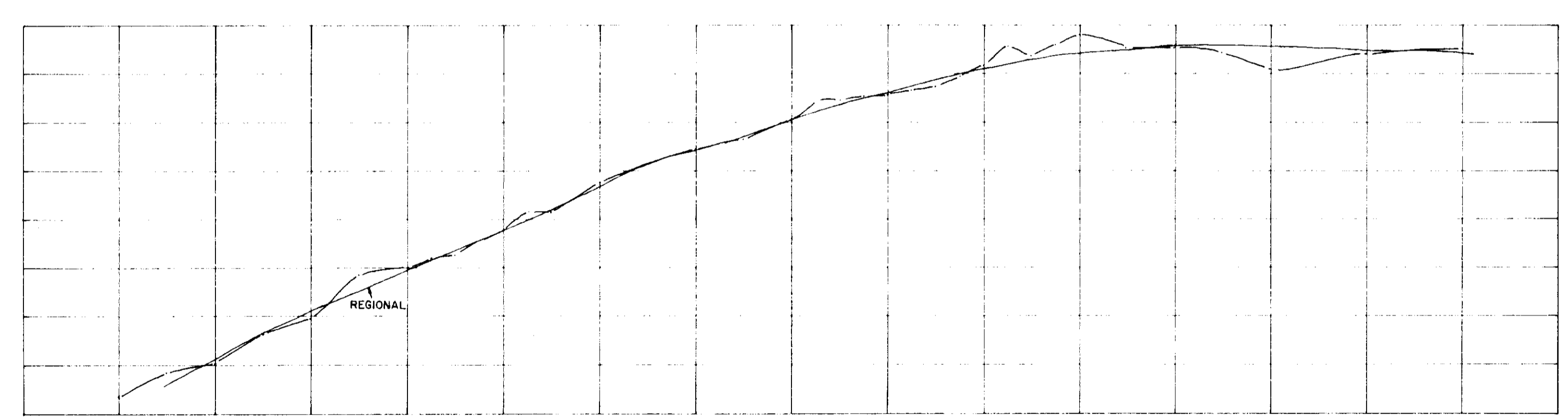
IP

Inst: IPR-8 Rx
IPC-7 Tx
M232 Chargeability
(Rosario 1976)
Chargeability
Resistivity

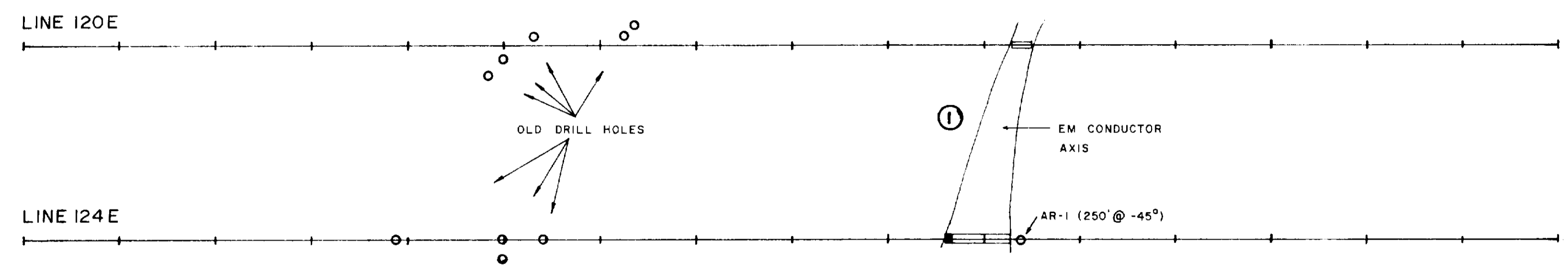


BOUGUER GRAVITY

($\rho = 2.67 \text{ gm/cm}^3$)
(Cominco 1977)

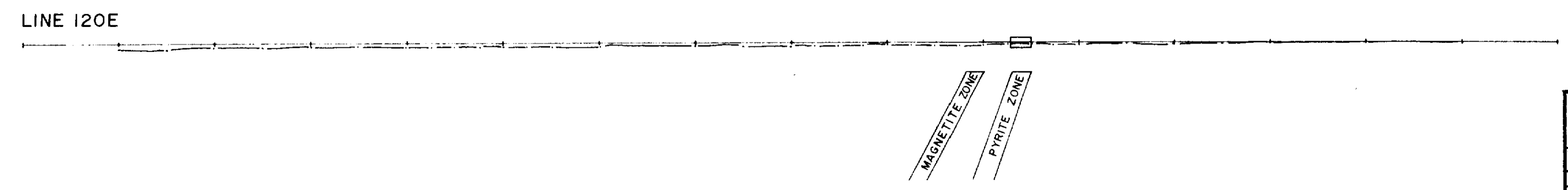


PLAN VIEW



SECTION VIEW

TOPOGRAPHY AND
DRILL RESULTS



EASTERN DISTRICT



Drawn by:	Traced by:
Revised by:	Revised by:
Date:	Date:

ALAMO PROPERTY
COMPOSITE GEOPHYSICAL PROFILES
LINE 120 E
ONTARIO
Scale: 1" = 200'
Date: OCT. 1977
Plate: 77-2
NTS

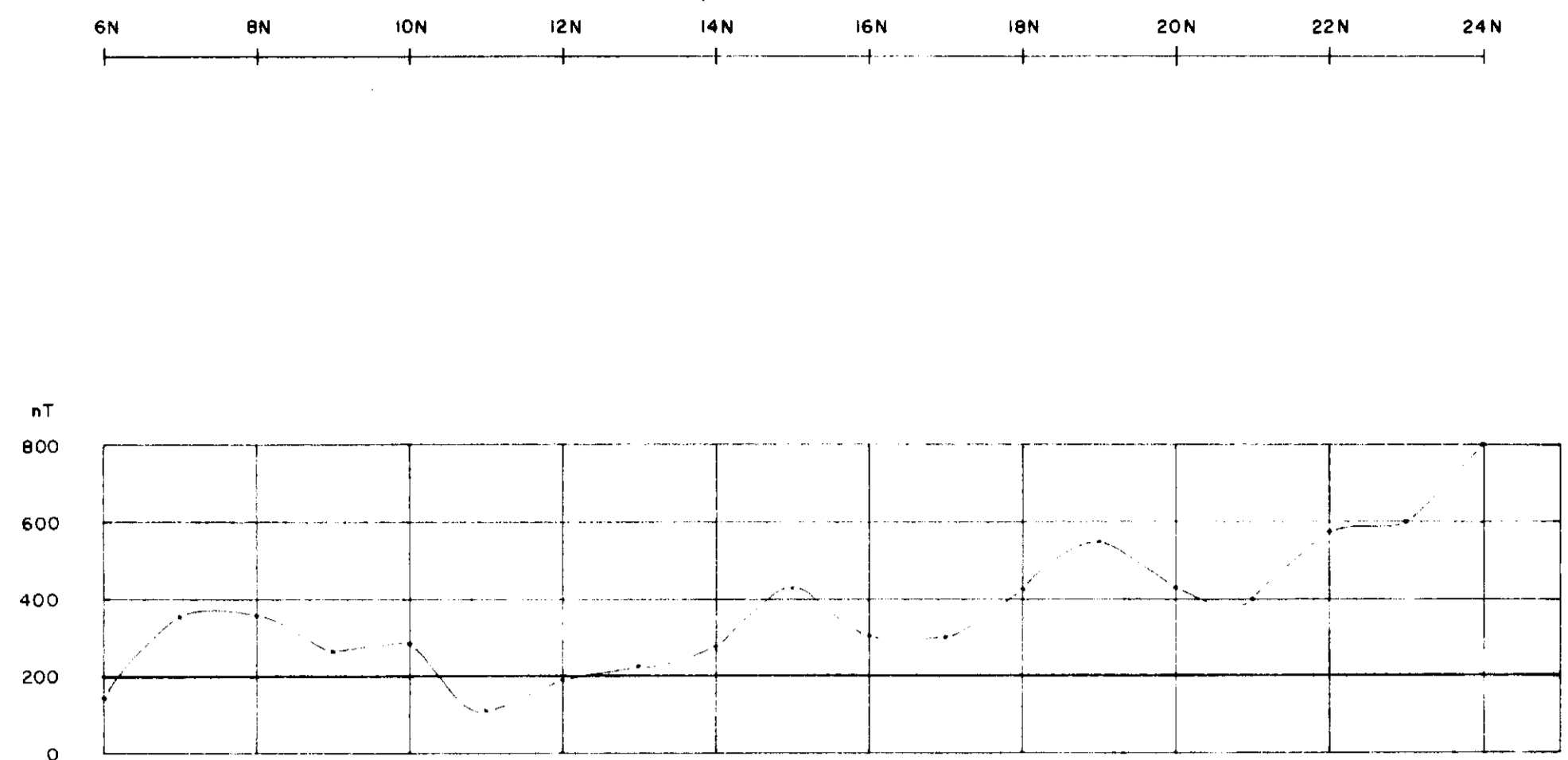


320

LINE 80E

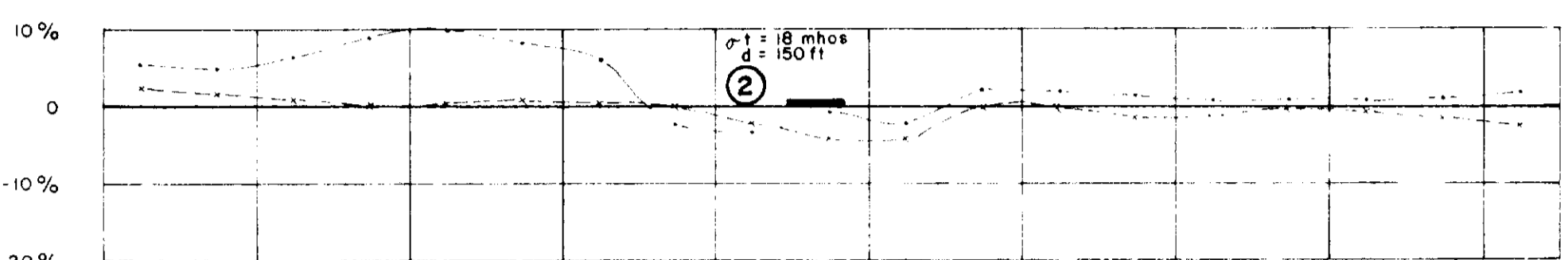
MAGNETICS

M-700 (VERT. FIELD)
ROSARIO 1976



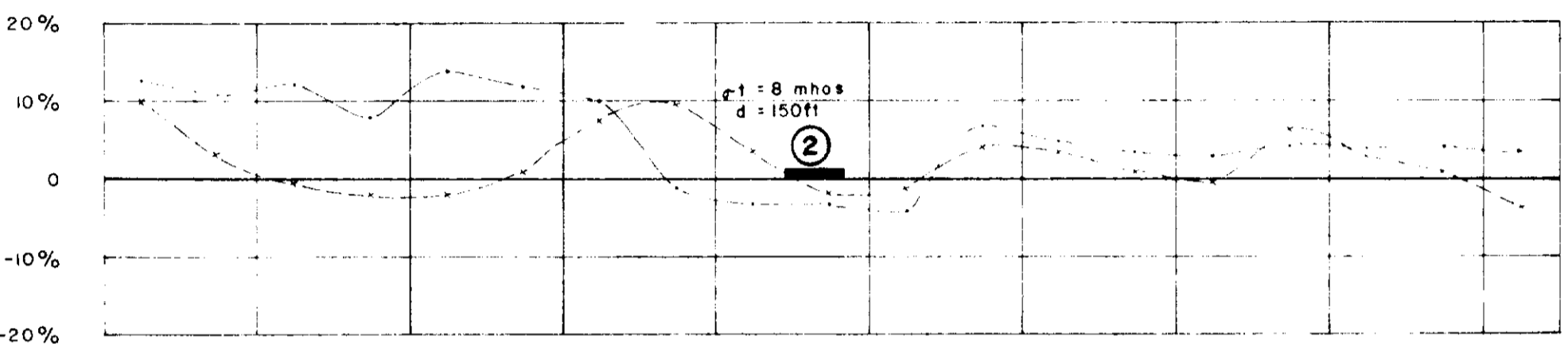
HLEM

444 Hz
300'
COMINCO 1977
IN-PHASE
OUT-OF-PHASE



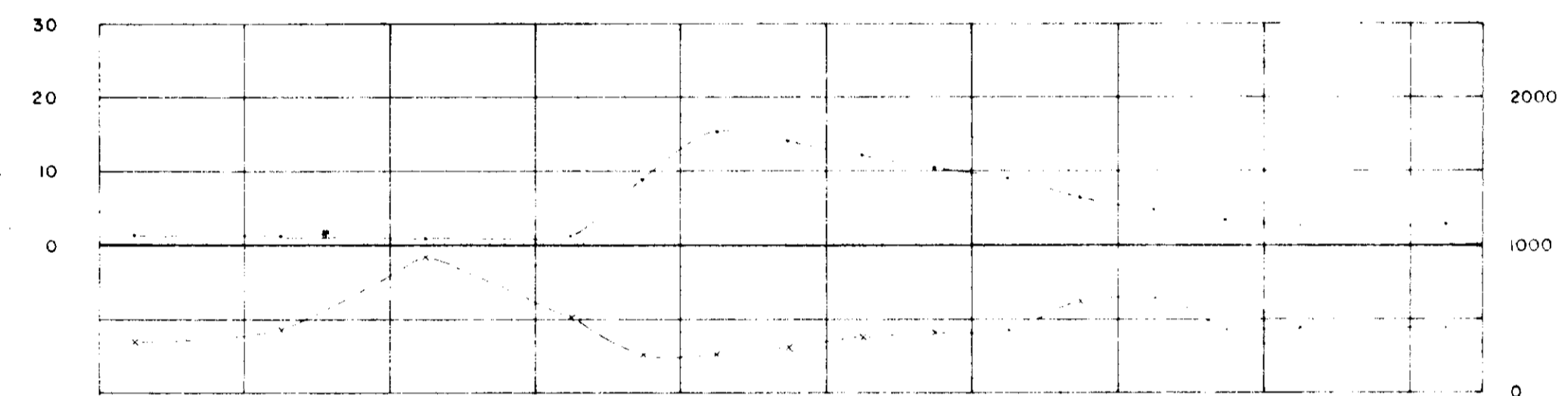
HLEM

1777 Hz
300'
COMINCO 1977
IN-PHASE
OUT-OF-PHASE



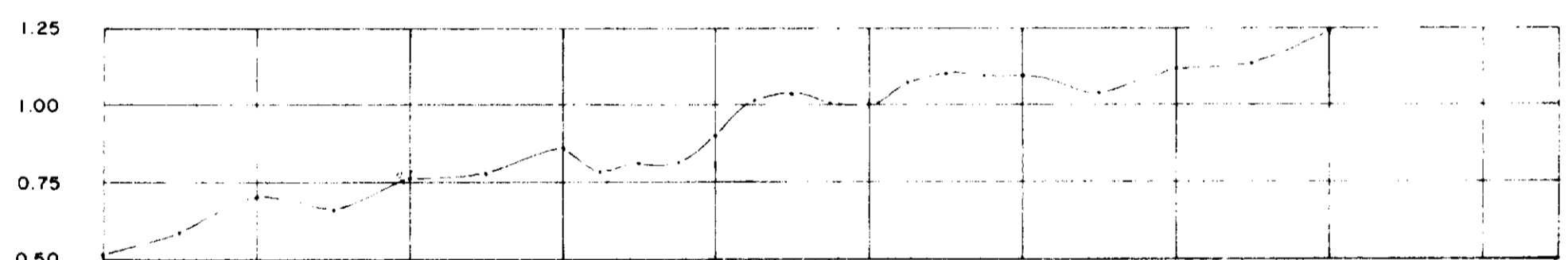
I.P

a = 200'
n = 2
ROSARIO 1976
CHARGEABILITY
RESISTIVITY

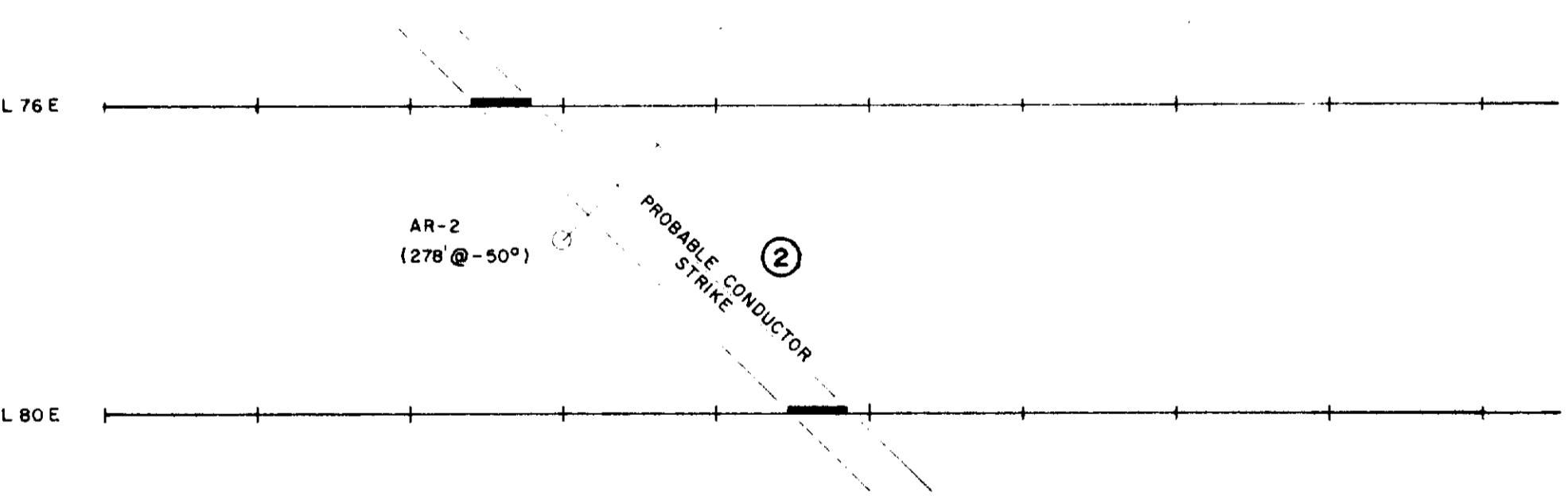


BOUGUER GRAVITY

($\rho = 2.67 \text{ gm/cm}^3$)
COMINCO 1977

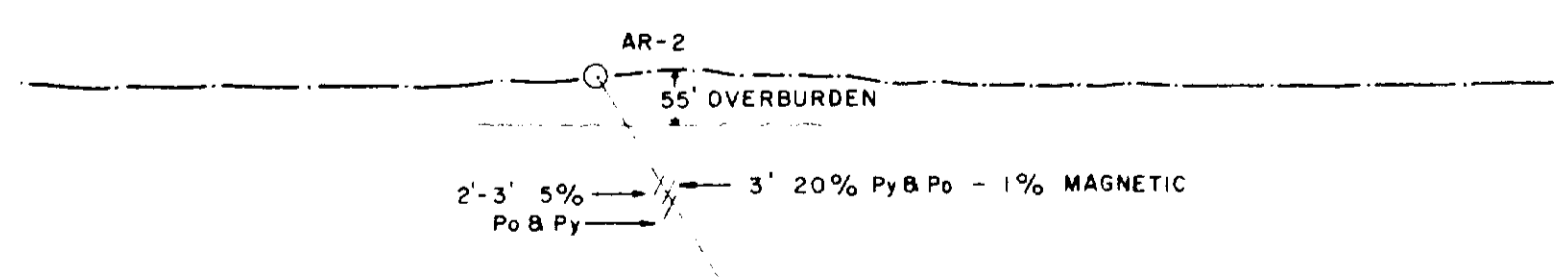


PLAN VIEW



SECTION VIEW

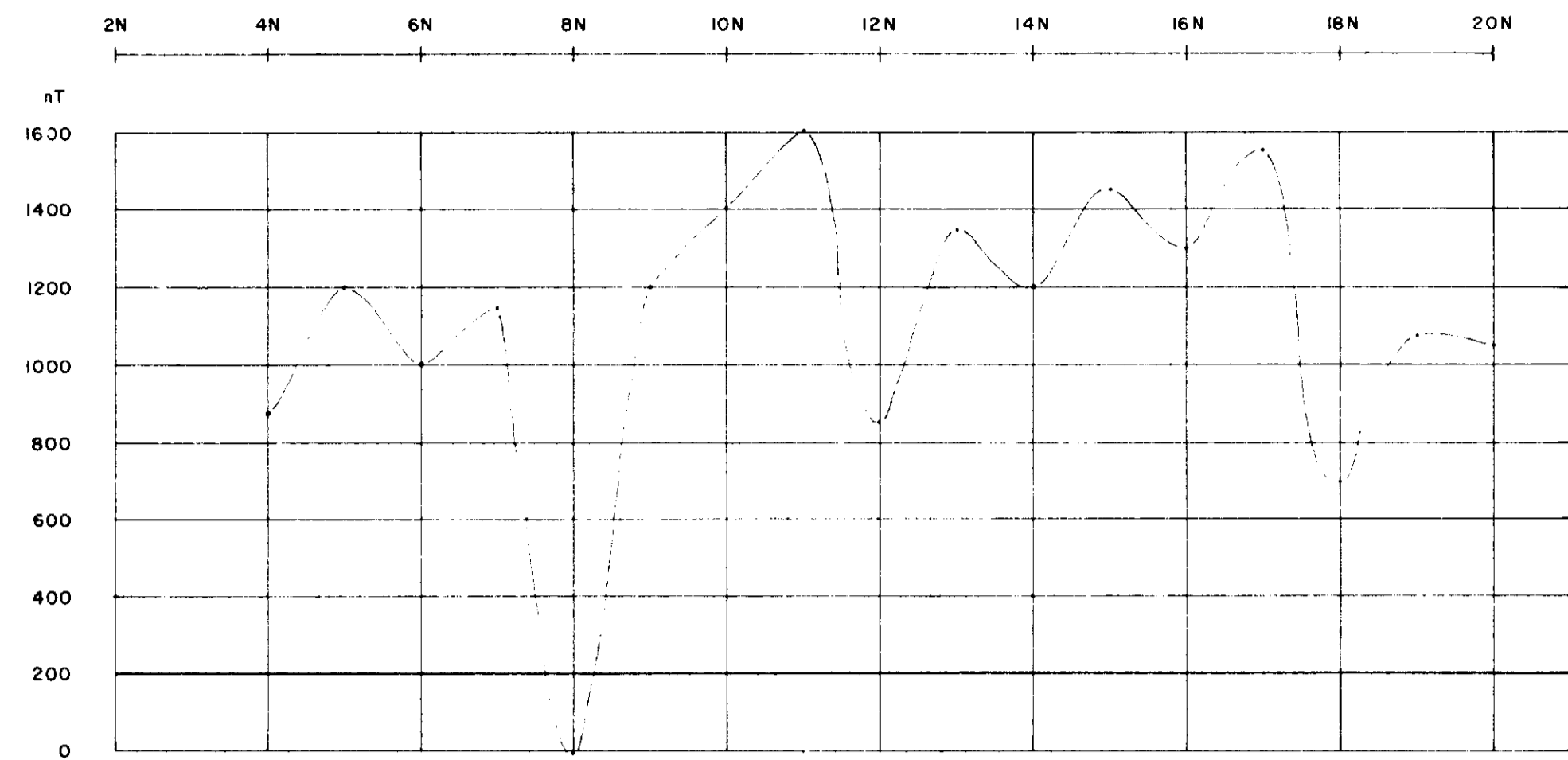
TOPOGRAPHY AND
DRILL RESULTS



LINE 76E

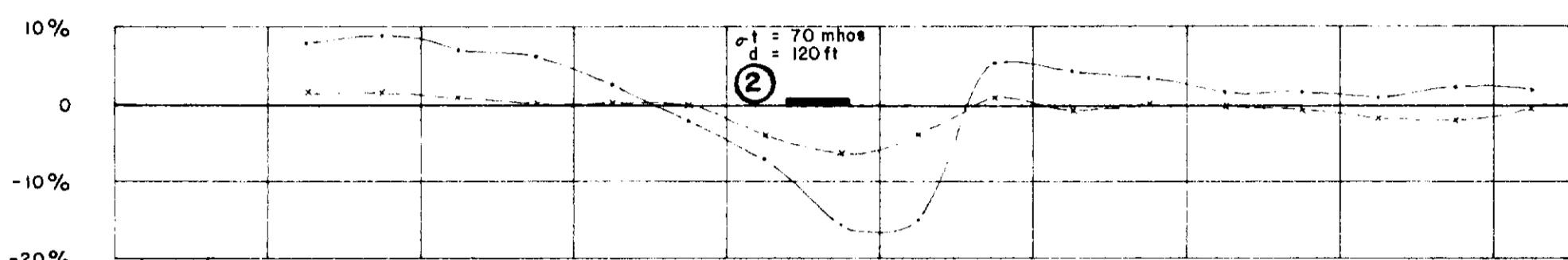
MAGNETICS

M-700 (VERT. FIELD)
ROSARIO 1976



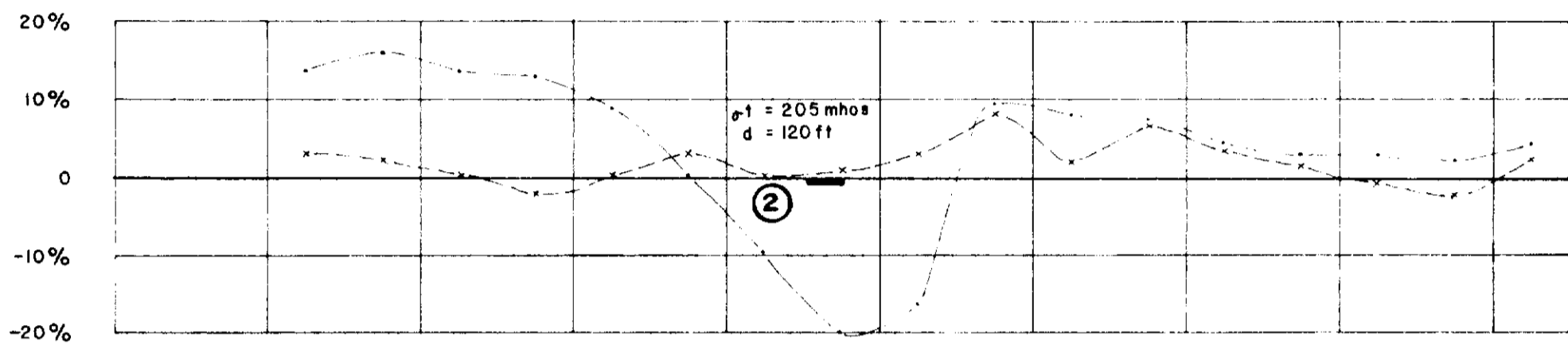
HLEM

444 Hz
300'
COMINCO 1977
IN-PHASE
OUT-OF-PHASE



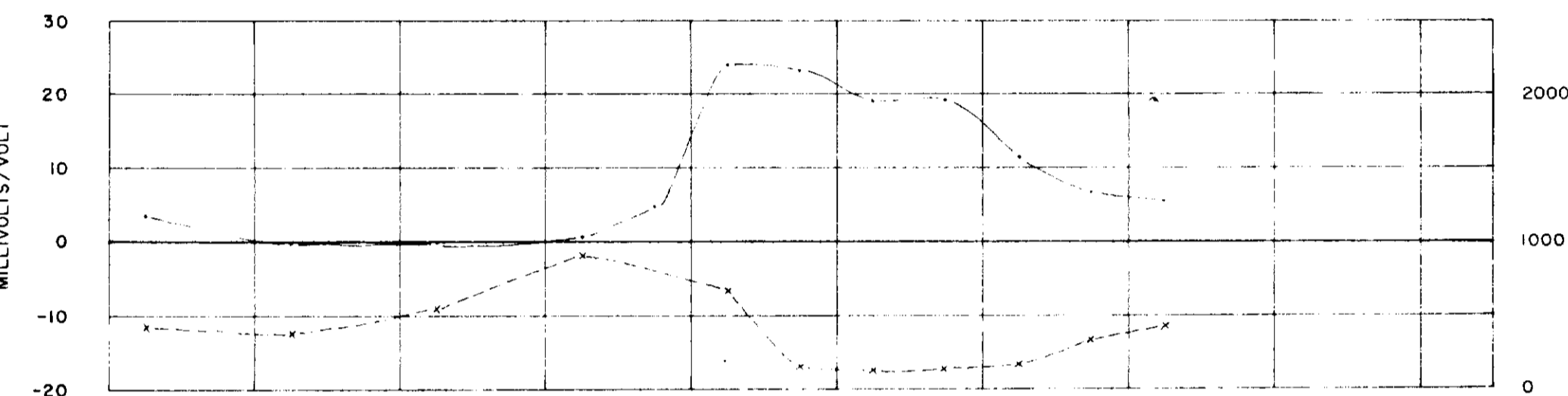
HLEM

1777 Hz
300'
COMINCO 1977
IN-PHASE
OUT-OF-PHASE



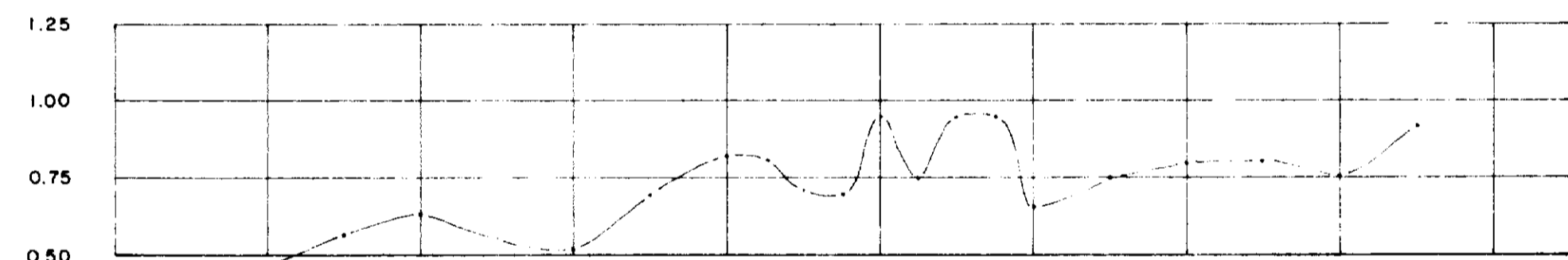
I.P

a = 200'
n = 2
ROSARIO 1976
CHARGEABILITY
RESISTIVITY

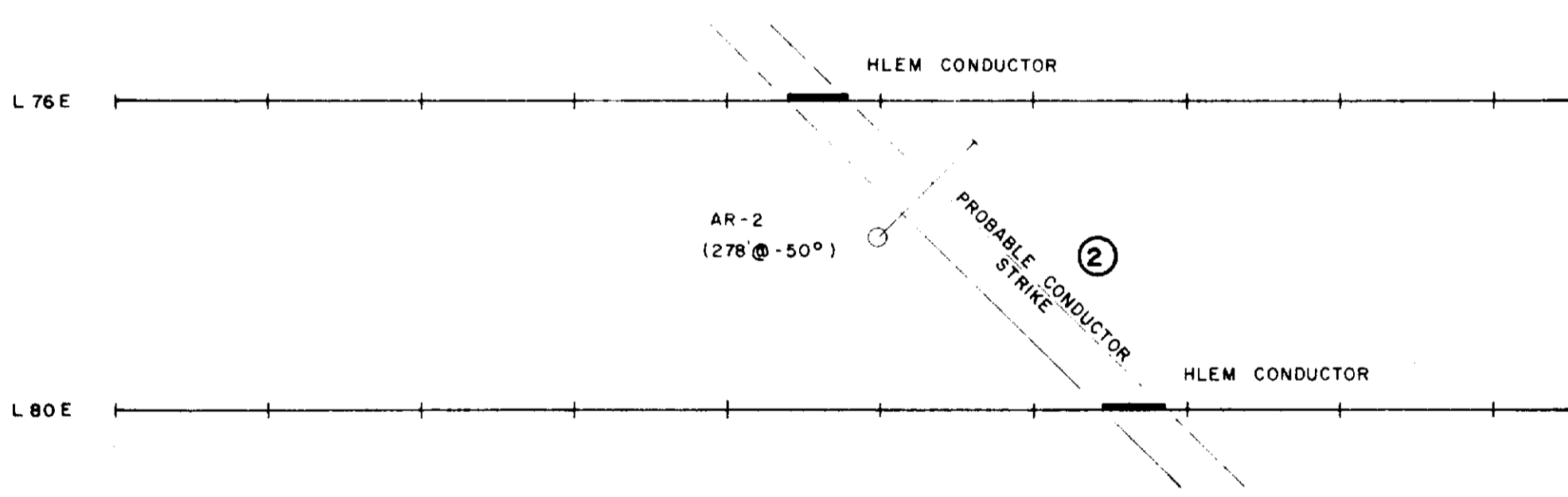


BOUGUER GRAVITY

($\rho = 2.67 \text{ gm/cm}^3$)
COMINCO 1977

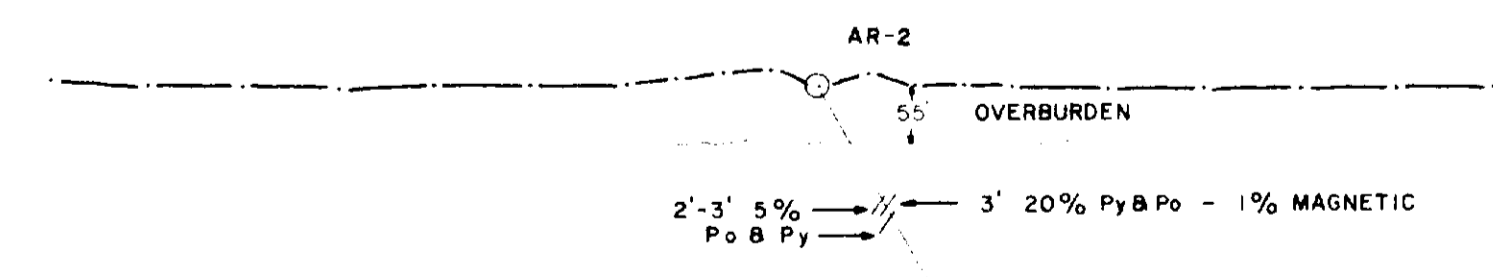


PLAN VIEW



SECTION VIEW

TOPOGRAPHY AND
DRILL RESULTS



AR-2
GEOLOGY: 0-86 OVERBURDEN
86-278 INTERMEDIATE TUFF

CONDUCTOR: 141-143.3 2-5% PYRRHOTITE AND PYRITE
158.3-161.0 20% PYRRHOTITE AND PYRITE, 1% MAGNETITE
164.3-165.8 5% PYRRHOTITE AND PYRITE

EASTERN DISTRICT



Drawn by:	Traced by:
Revised by:	Revised by:
Date:	Date:

ALAMO PROPERTY
COMPOSITE GEOPHYSICAL PROFILES
LINES 76E & 80E

ONTARIO
Scale: 1" = 200' Date: NOV. 1977 Plate: 77-3

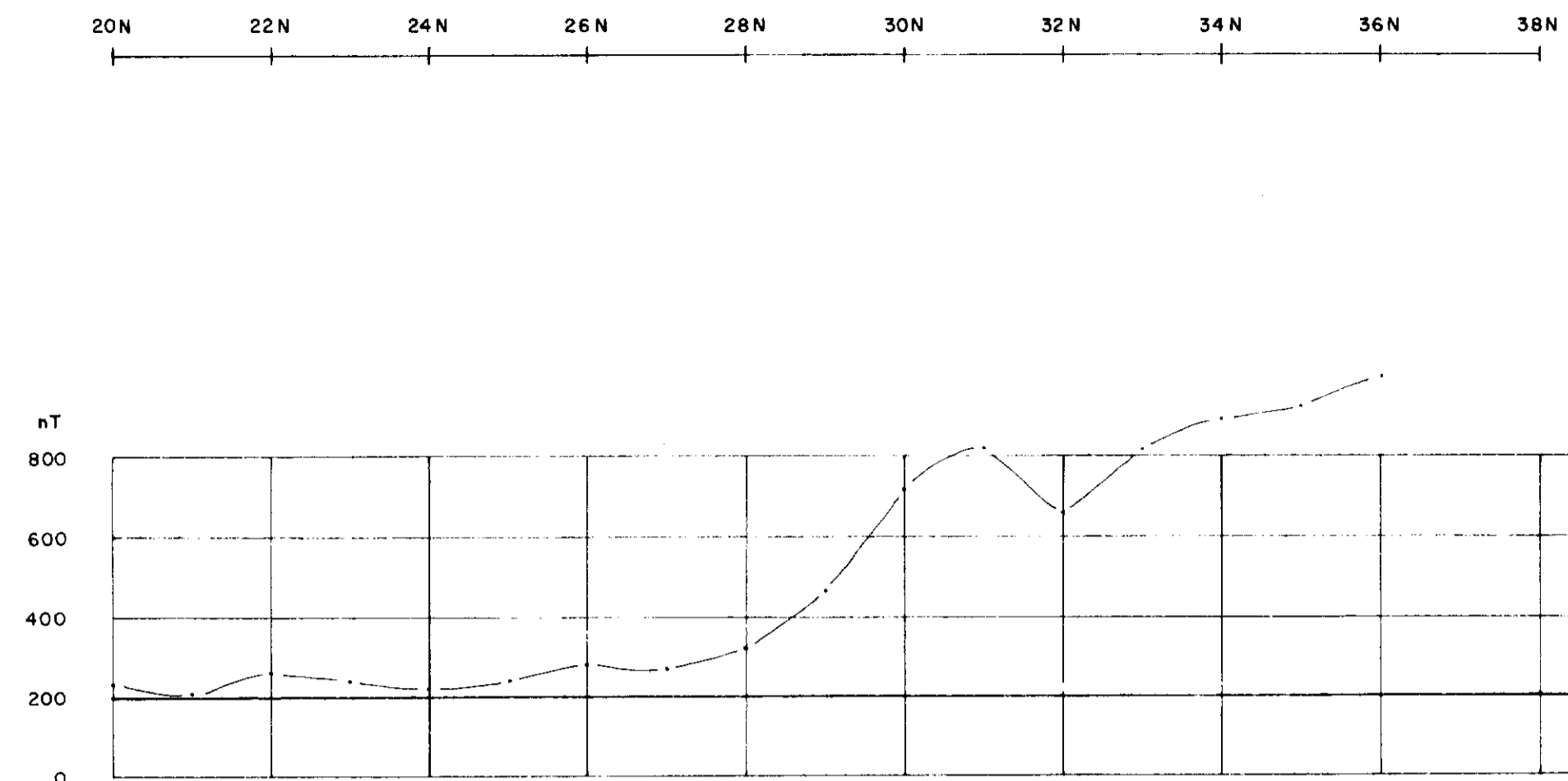
NTS 42-A-6
FORM 210-0860



LINE 96E

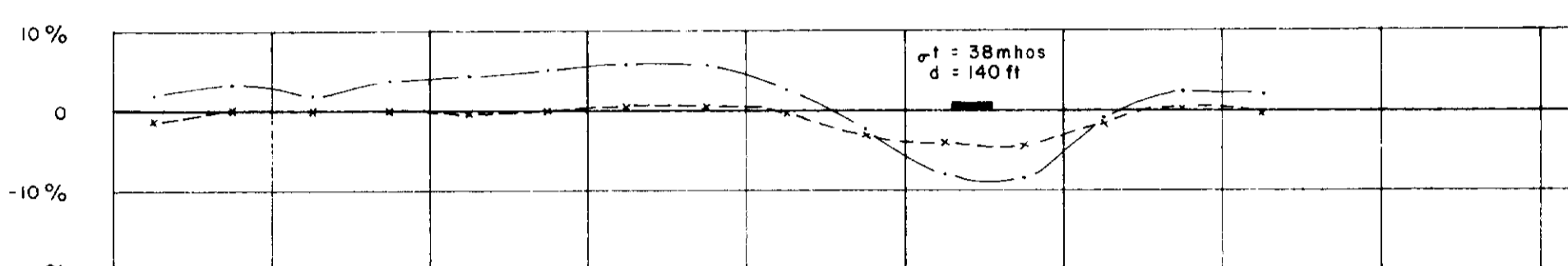
MAGNETICS

M-700 (VERT. FIELD)
ROSARIO 1976



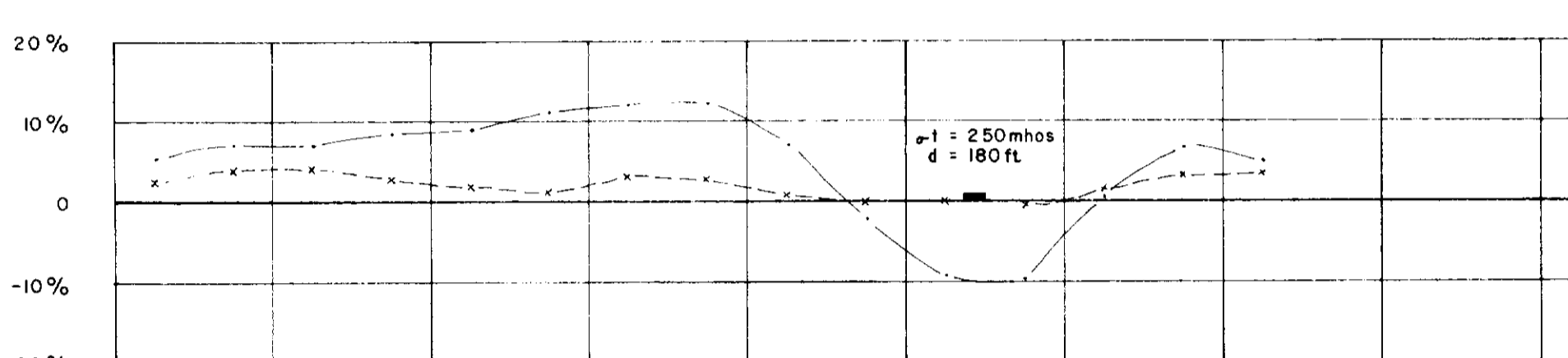
HLEM

444 Hz
300'
COMINCO 1977
IN-PHASE ———
OUT-OF-PHASE - - - - x



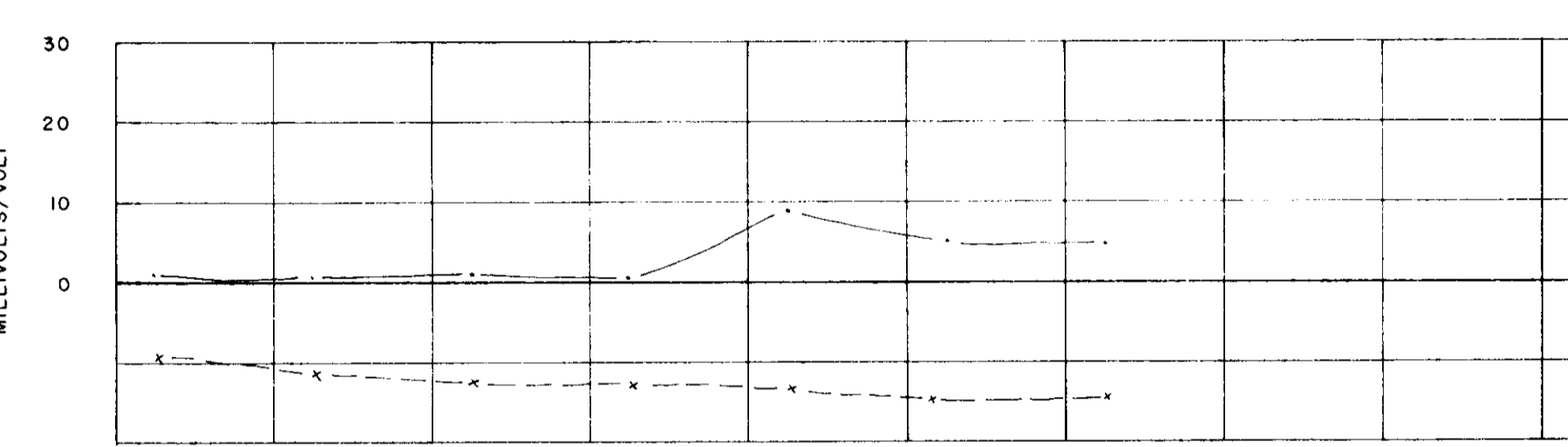
HLEM

1777 Hz
300'
IN-PHASE ———
OUT-OF-PHASE - - - - x



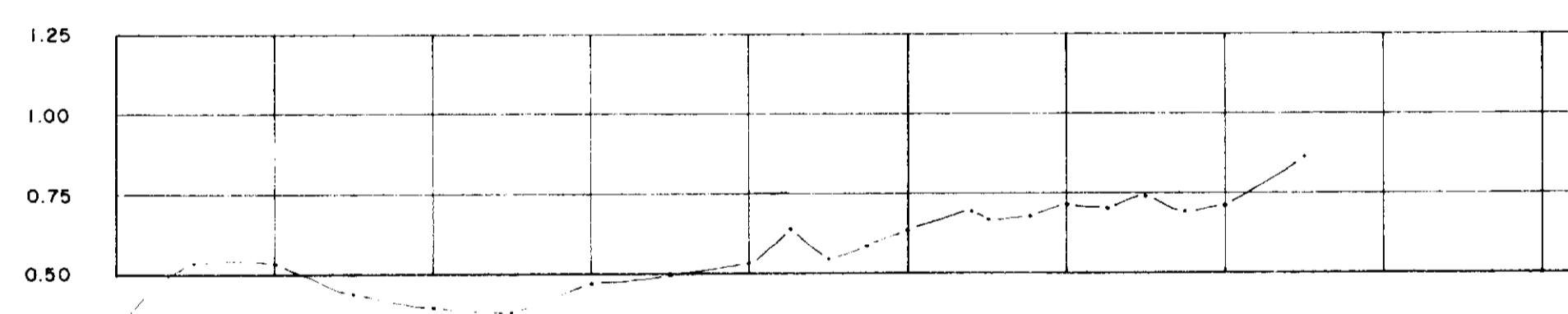
I.P.

PDP
a = 200'
n = 2
ROSARIO 1976
CHARGEABILITY ———
RESISTIVITY - - - - x

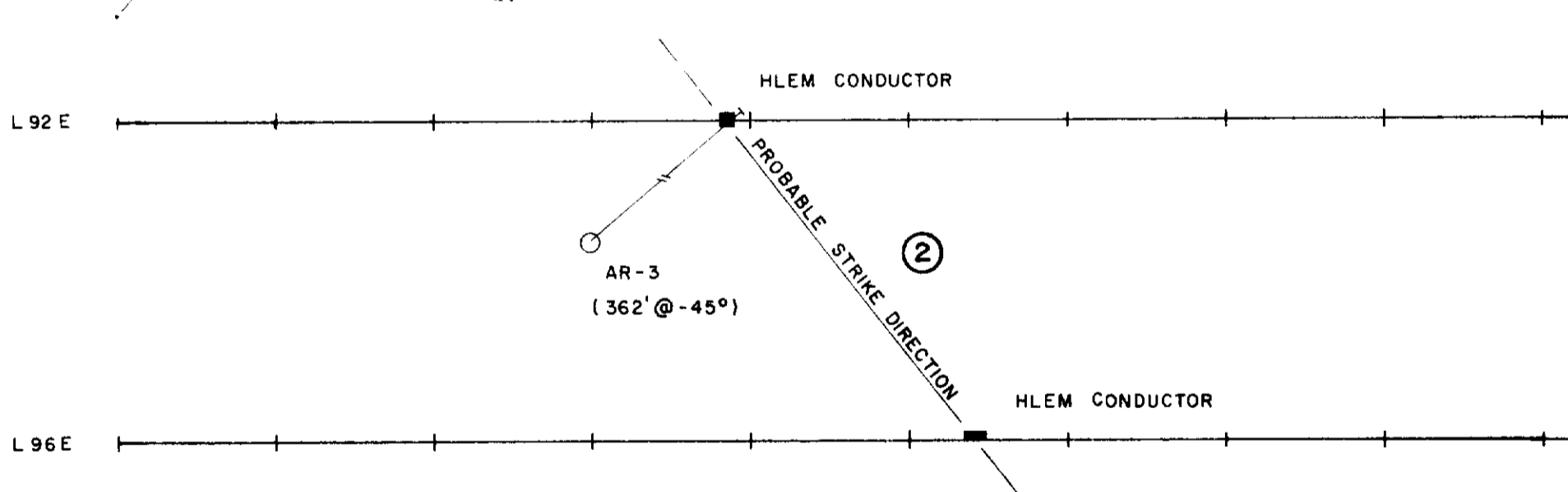


BOUGUER GRAVITY

(rho = 2.67 gm/cm³)
COMINCO 1977

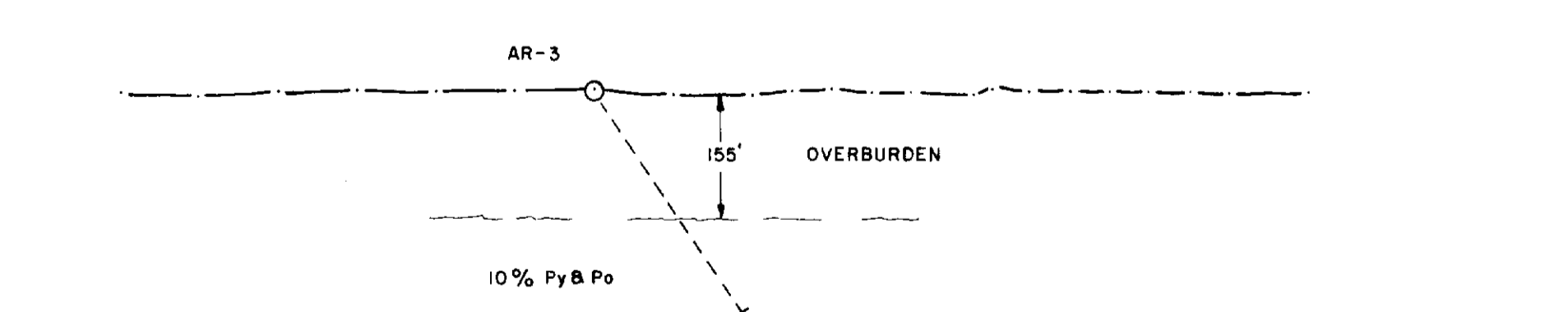


PLAN VIEW



SECTION VIEW

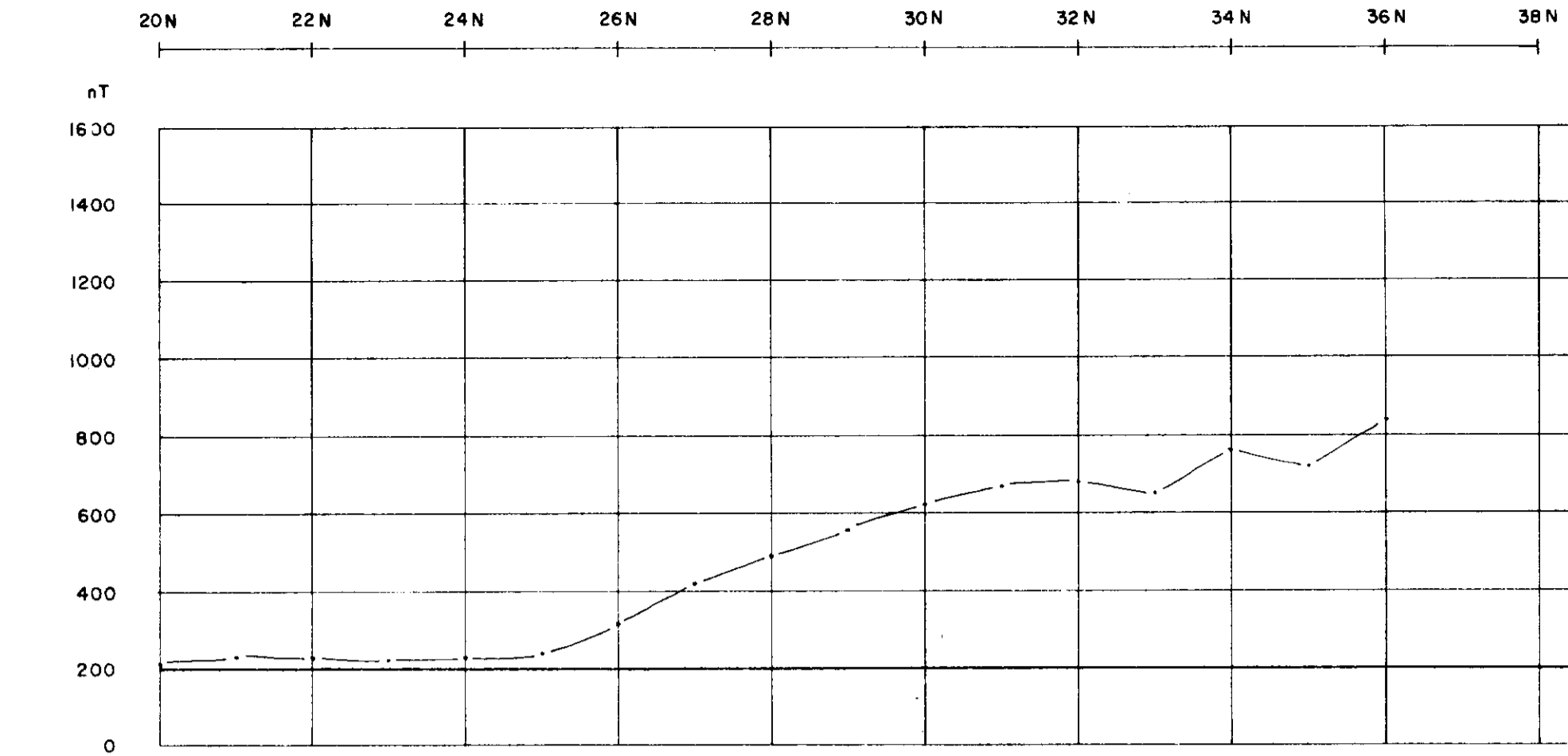
TOPOGRAPHY AND
DRILL RESULTS



LINE 92E

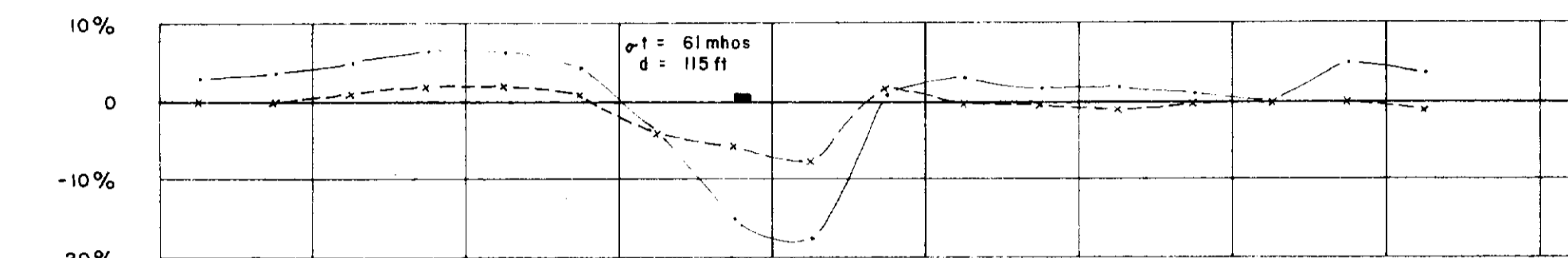
MAGNETICS

M-700 (VERT. FIELD)
ROSARIO 1976



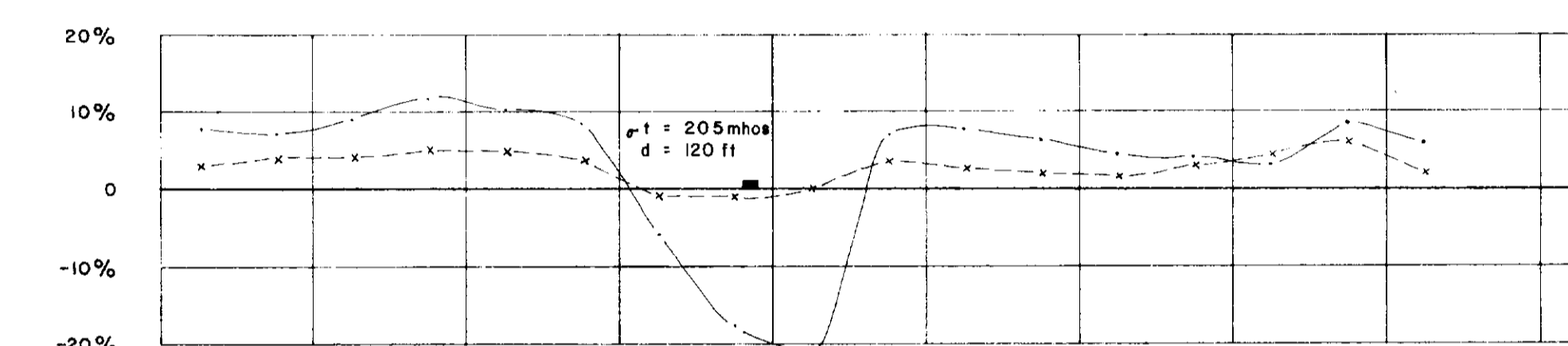
HLEM

444 Hz
300'
COMINCO 1977
IN-PHASE ———
OUT-OF-PHASE - - - - x



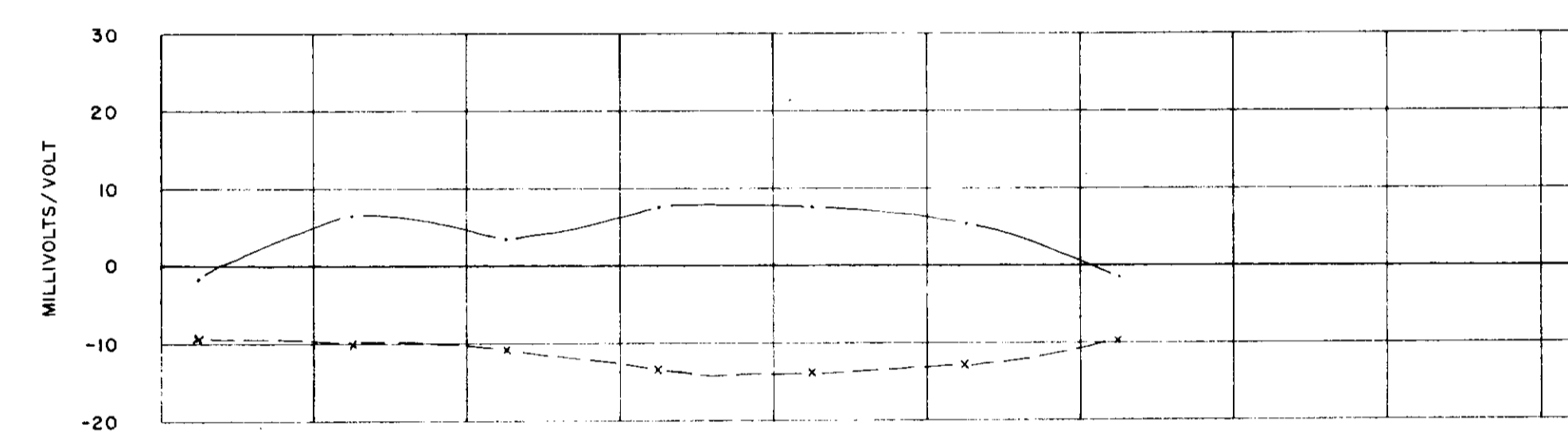
HLEM

1777 Hz
300'
IN-PHASE ———
OUT-OF-PHASE - - - - x



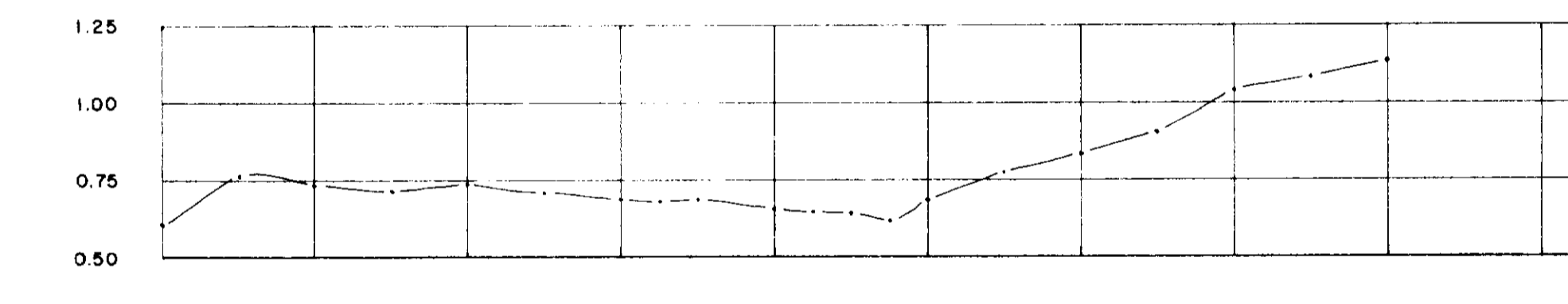
I.P.

PDP
a = 200'
n = 2
ROSARIO 1976
CHARGEABILITY ———
RESISTIVITY - - - - x

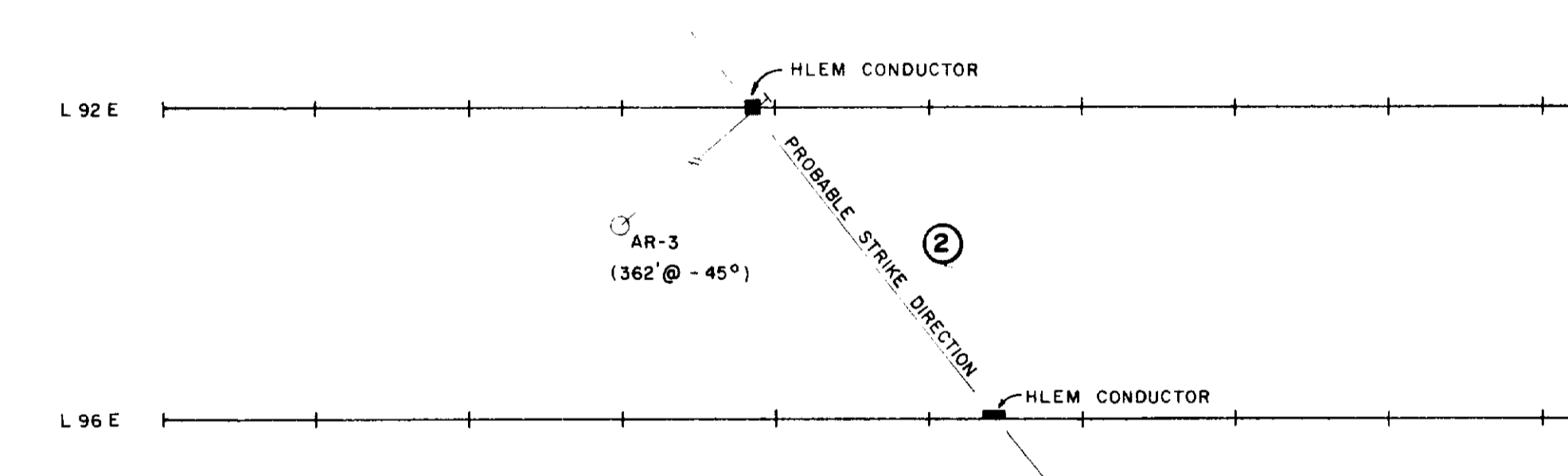


BOUGUER GRAVITY

(rho = 2.67 gm/cm³)
COMINCO 1977

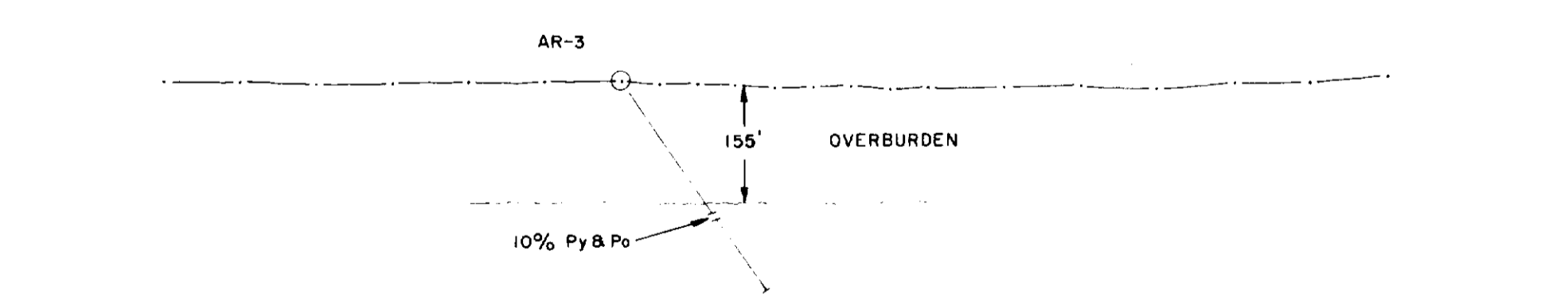


PLAN VIEW



SECTION VIEW

TOPOGRAPHY AND
DRILL RESULTS



AR-3
GEOLOGY: 0-204 OVERBURDEN
204-216 BRECCIATED ZONE
216-234 FELSIC TO INTERMEDIATE TUFFS
234-362 MAFIC TUFFS
CONDUCTOR: 204-216 10% PYRRHOTITE AND PYRITE

EASTERN DISTRICT



Drawn by:	Traced by:
Revised by:	Revised by:
Date:	Date:

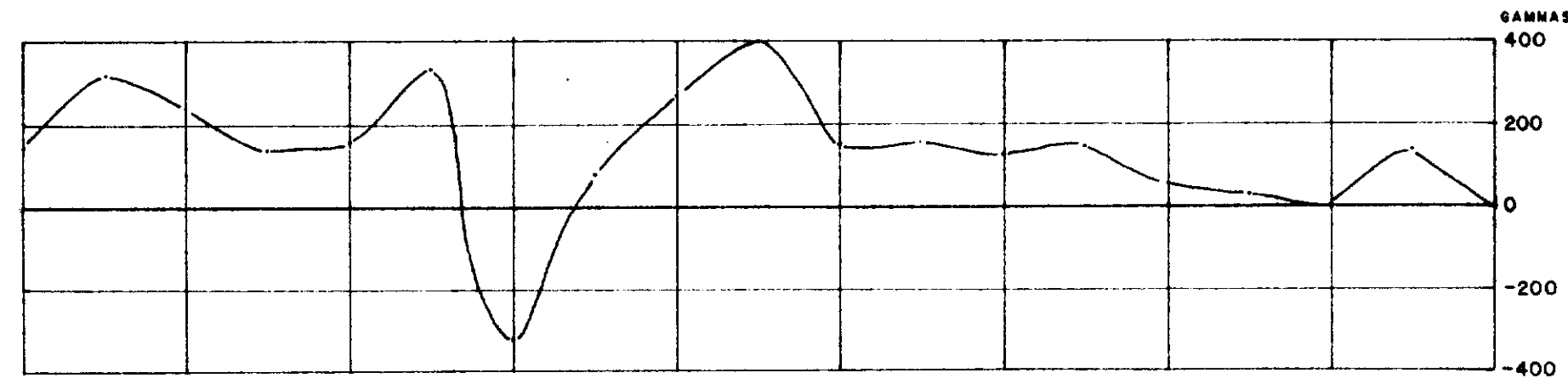
ALAMO PROPERTY
COMPOSITE GEOPHYSICAL PROFILES
LINES 92E & 96E

ONTARIO
Scale: 1" = 200' Date: NOV. 1977 Plate: 77-4
NTS 42-A-6

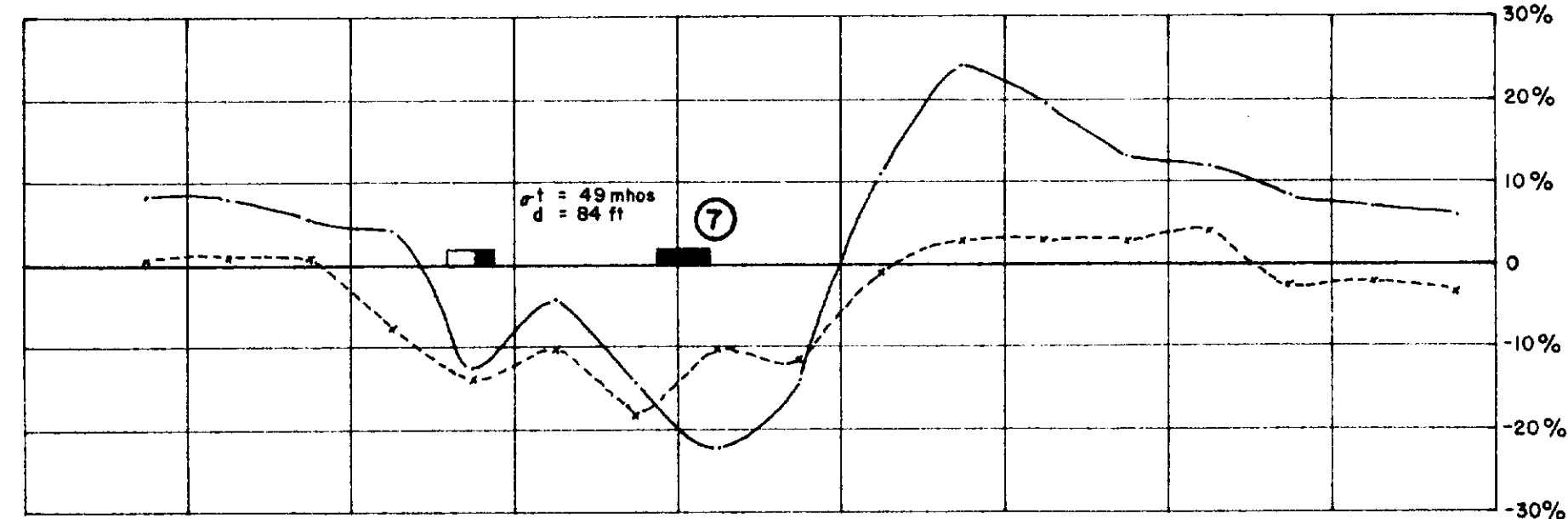


LINE 60+00E 44S 42S 40S 38S 36S 34S 32S 30S 28S 26S

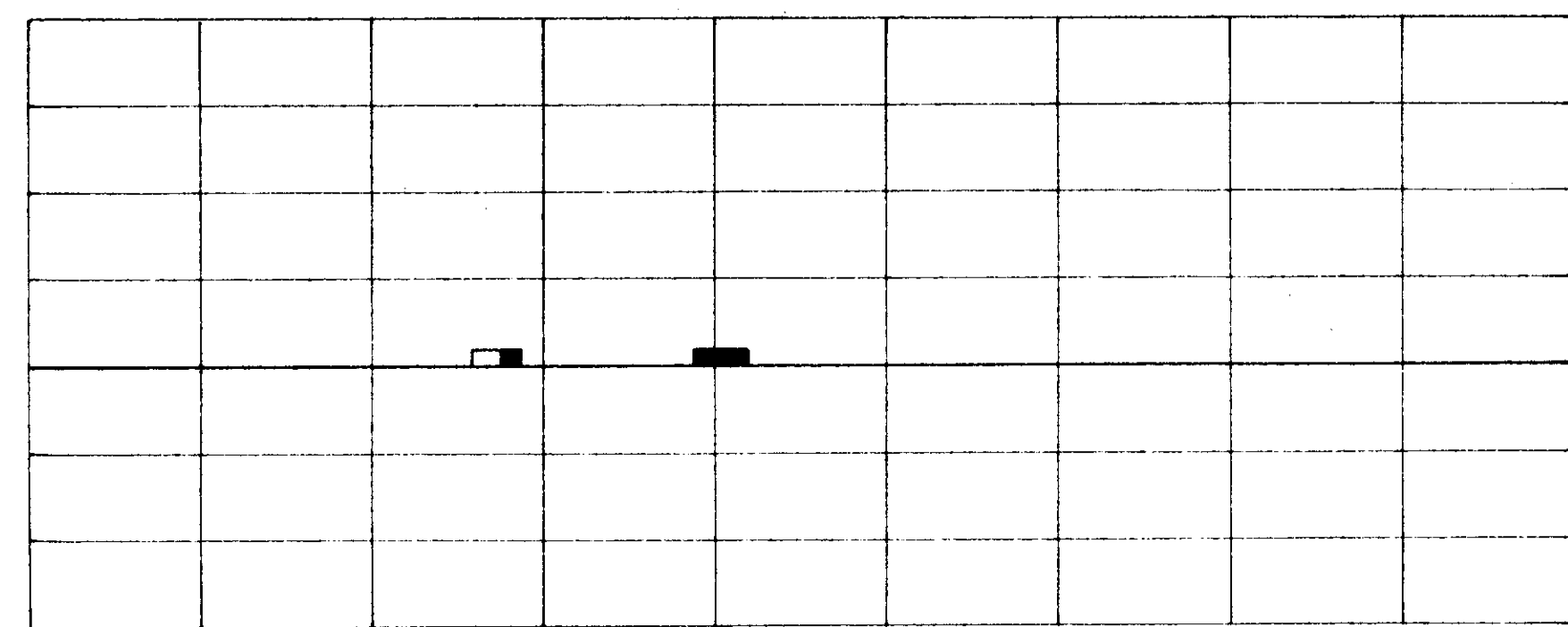
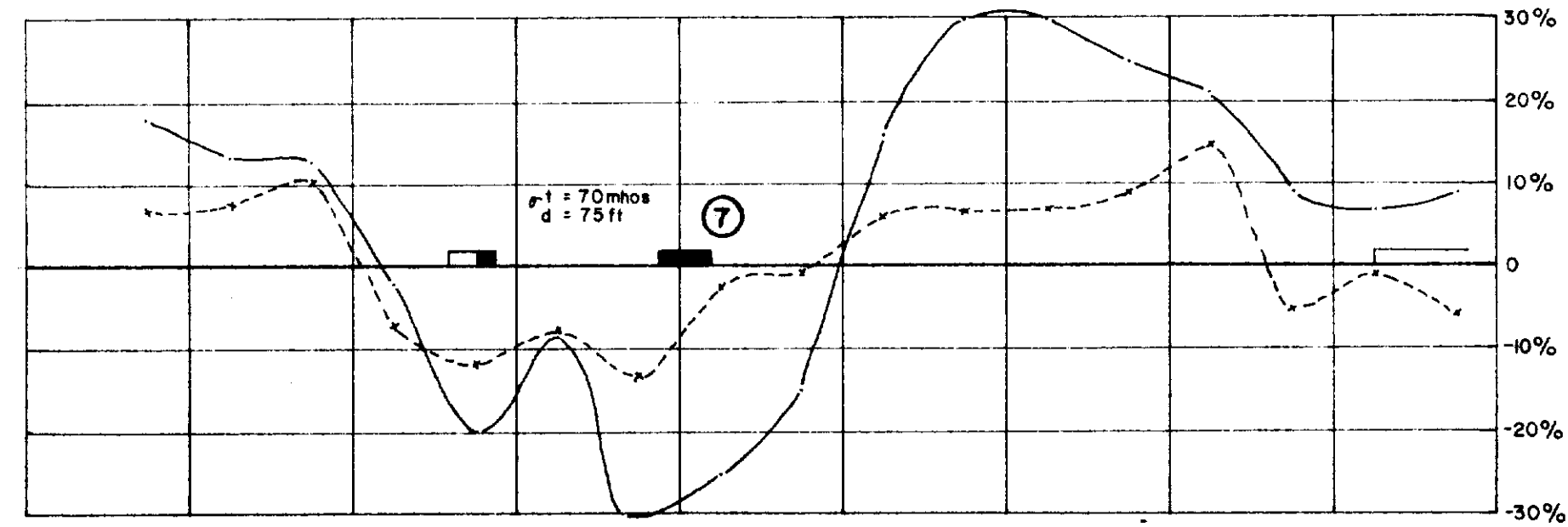
MAGNETICS
Instrument: MPhar M-700 vertical field mag
Rosario 1976



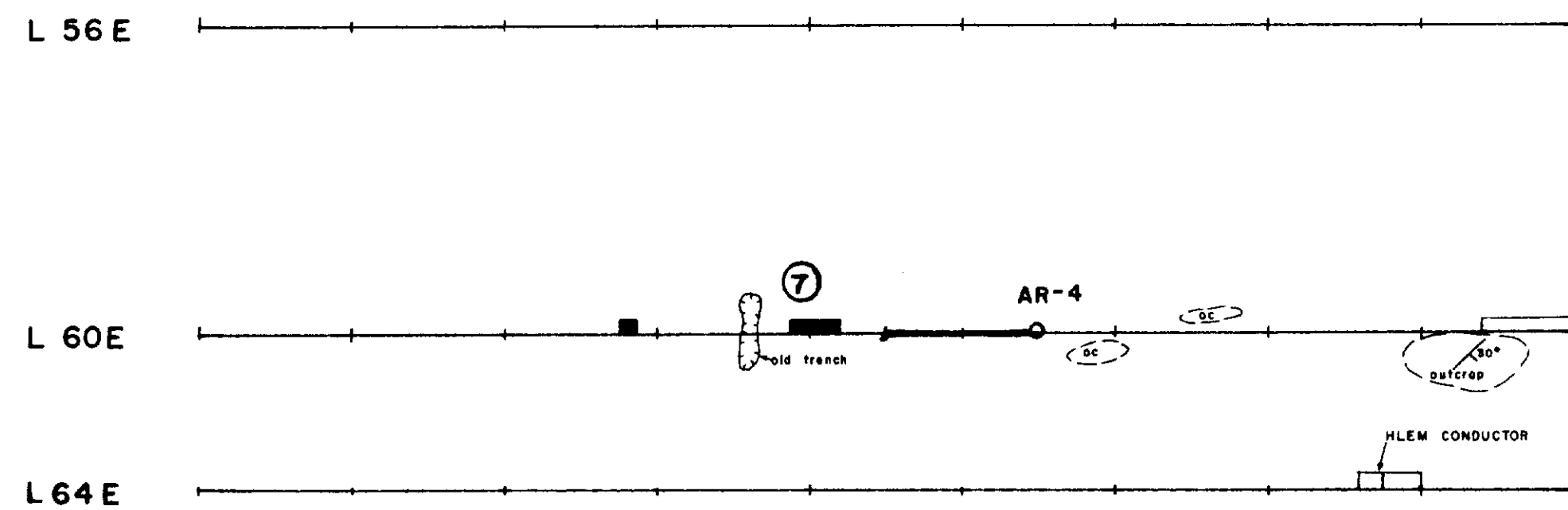
HORIZONTAL LOOP E.M
Frequency: 444 Hz
Coil Sep: 300 ft
Cominco 1977
In-Phase
Out-of-Phase
Instrument: Apex MaxMin II



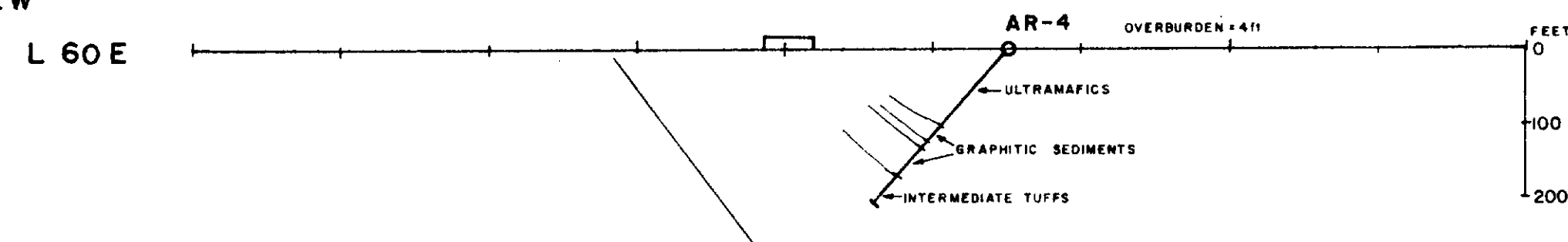
HORIZONTAL LOOP E.M
Frequency: 1777 Hz
Coil Sep: 300 ft
Cominco 1977
In-Phase
Out-of-Phase
Instrument: Apex MaxMin II



PLAN VIEW



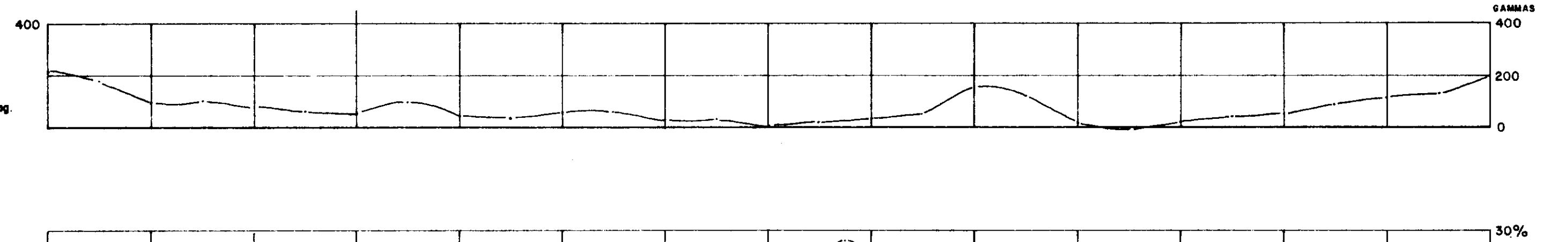
SECTION VIEW



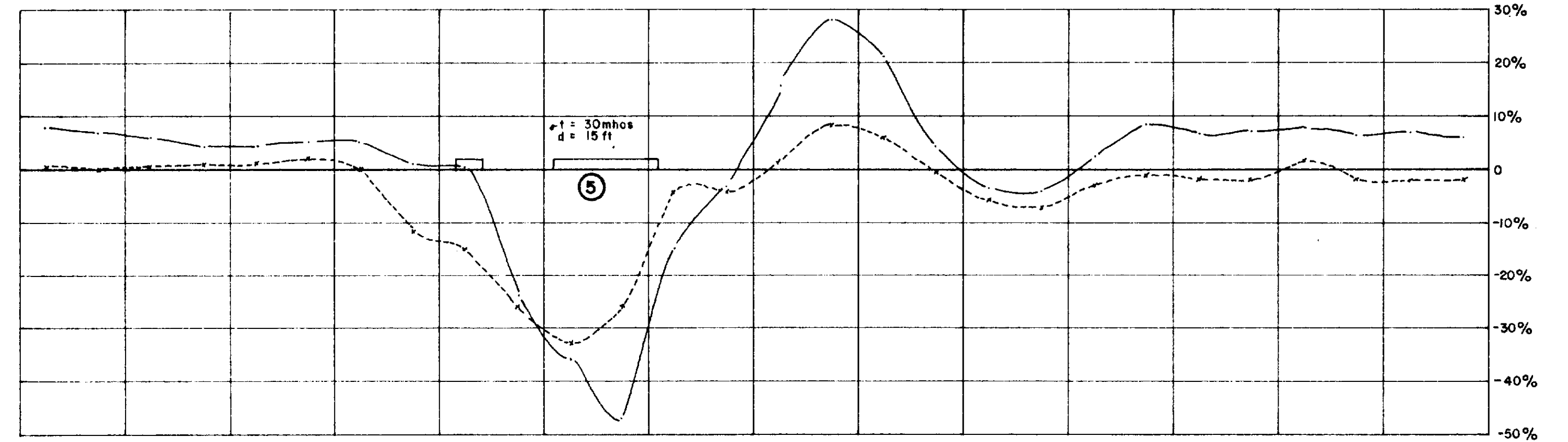
GEOLOGY	0	4	Casing
	4	134	Ultramafics
	134	1675	Graphic Sediments
	1675	177	Intermediate Tuffs
	177	225	Graphic Sediments
	225	275	Intermediate Tuff
CONDUCTOR	177	225	Graphic Sediments with up to 2% pyrrhotite and pyrite.

LINE 56+00E 32S 30S 28S 26S 24S 22S 20S 18S 16S 14S 12S 10S 8S 6S 4S

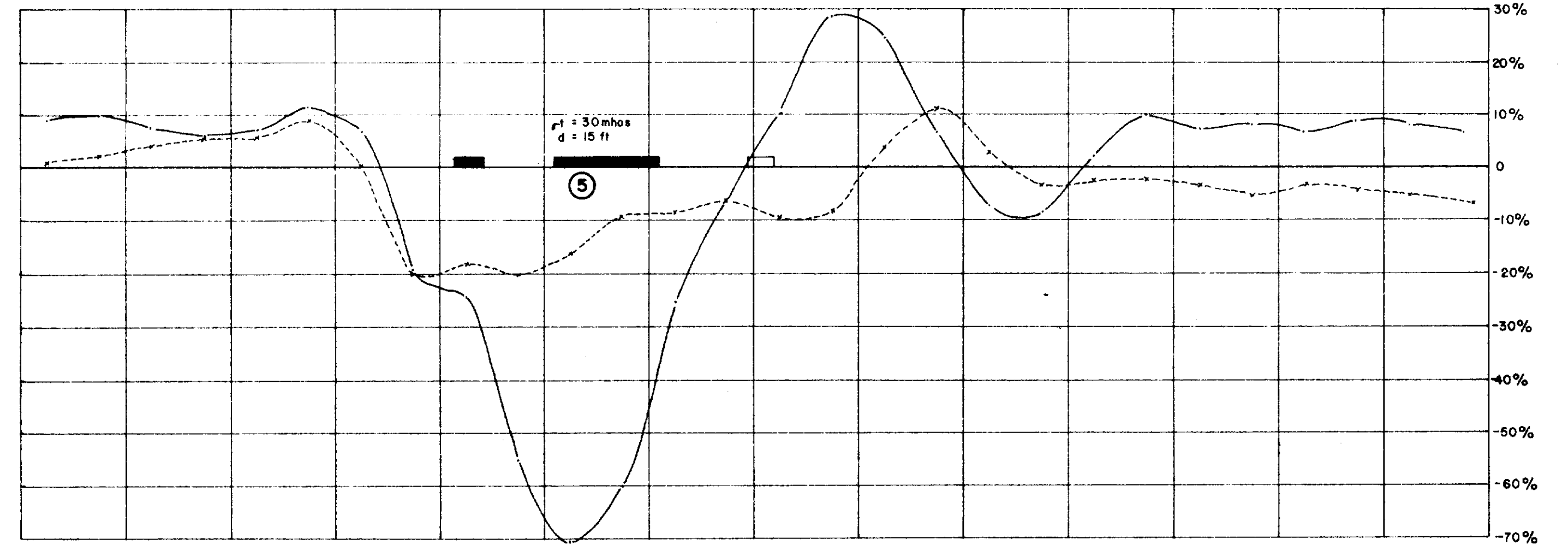
MAGNETICS
Instrument: MPhar M-700 vertical field mag
Rosario 1976



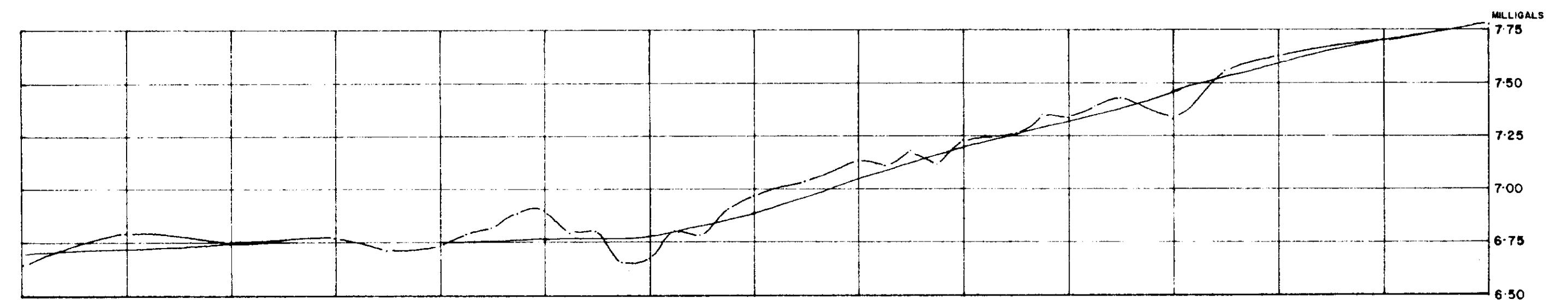
HORIZONTAL LOOP
Cominco 1977
Instrument: Apex MaxMin II
Frequency: 444 Hz
Coil Sep: 300 ft
In-Phase
Out-of-Phase



HORIZONTAL LOOP
Cominco 1977
Instrument: Apex MaxMin II
Frequency: 1777 Hz
Coil Sep: 300 ft
In-Phase
Out-of-Phase



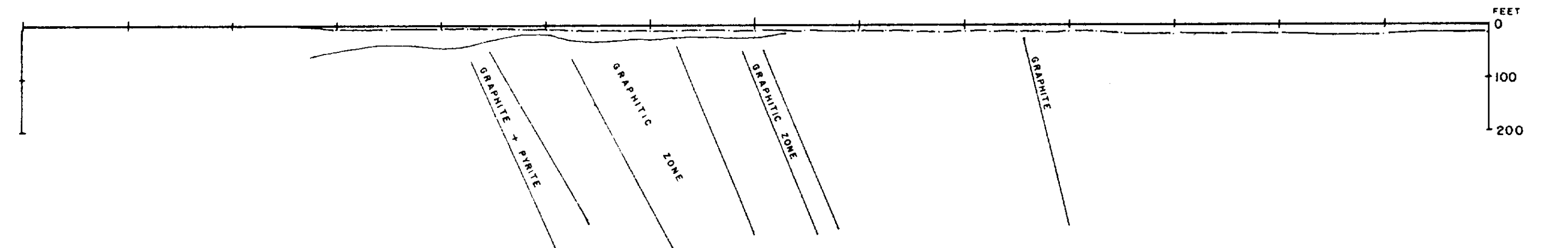
BOUGUER GRAVITY
Cominco 1977
($\rho = 2.67 \text{ gm/cm}^3$)



PLAN VIEW



TOPOGRAPHY and INTERPRETATION



EASTERN DISTRICT

Drawn by: J.G.H	Traced by: K.B
Revised by: _____	Revised by: _____
Date: _____	Date: _____

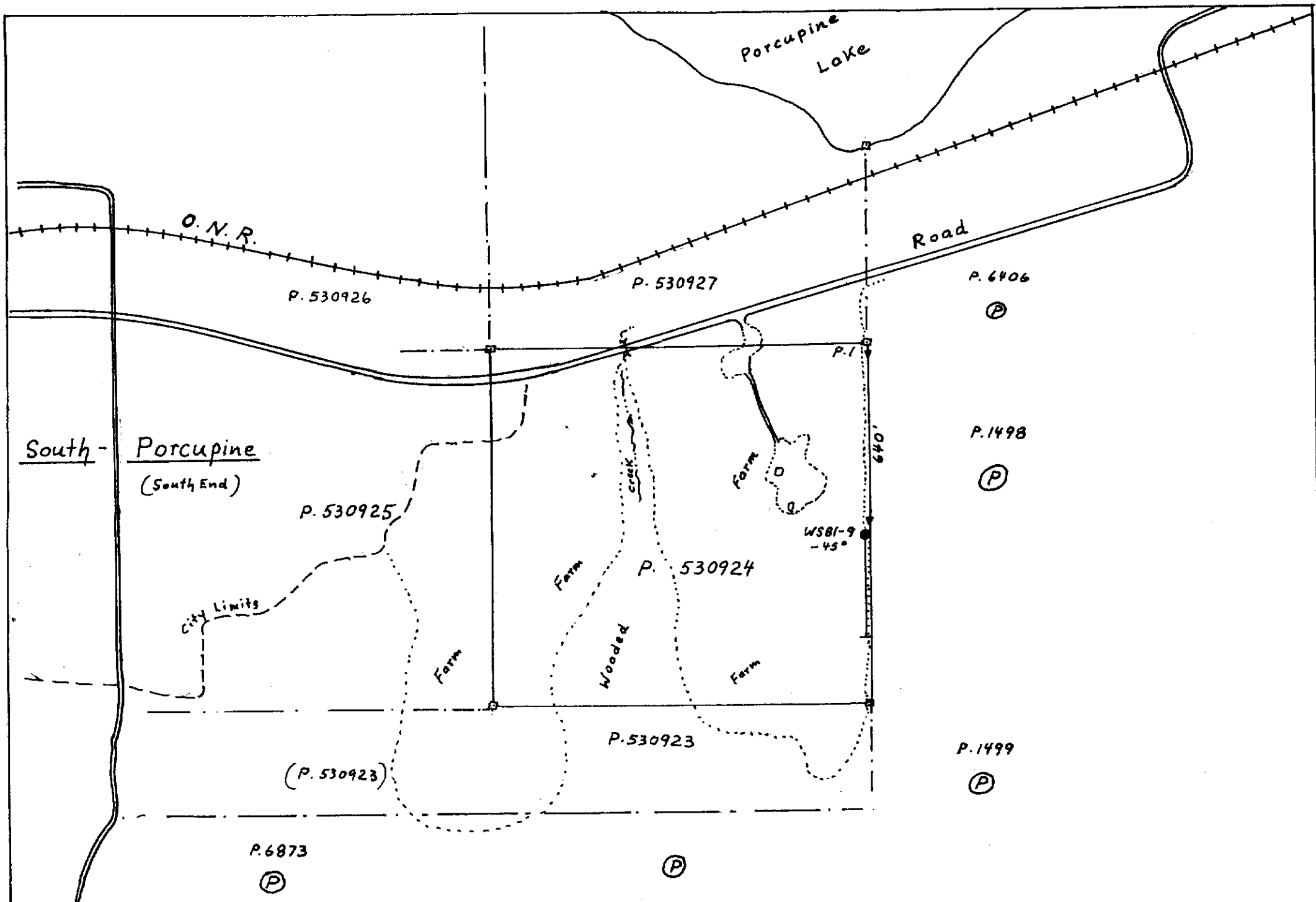
ALAMO PROPERTY
COMPOSITE GEOPHYSICAL PROFILES
LINES 60E & 56E

Scale: 1 inch = 200 ft Date: Nov. 1977 Plate: 77-5

NTS 42-B-6

FORM 210-0880





Whitney Twp.

Rosario - Dupont J. V.

DDH WS81-9, 0+52W, B+70N.
 Az. 180°; Claim P530924
 -45°; Depth: 445 Feet.

Lot 12, Con. II., S 1/2, NE 1/4

Scale: 1" = 400'

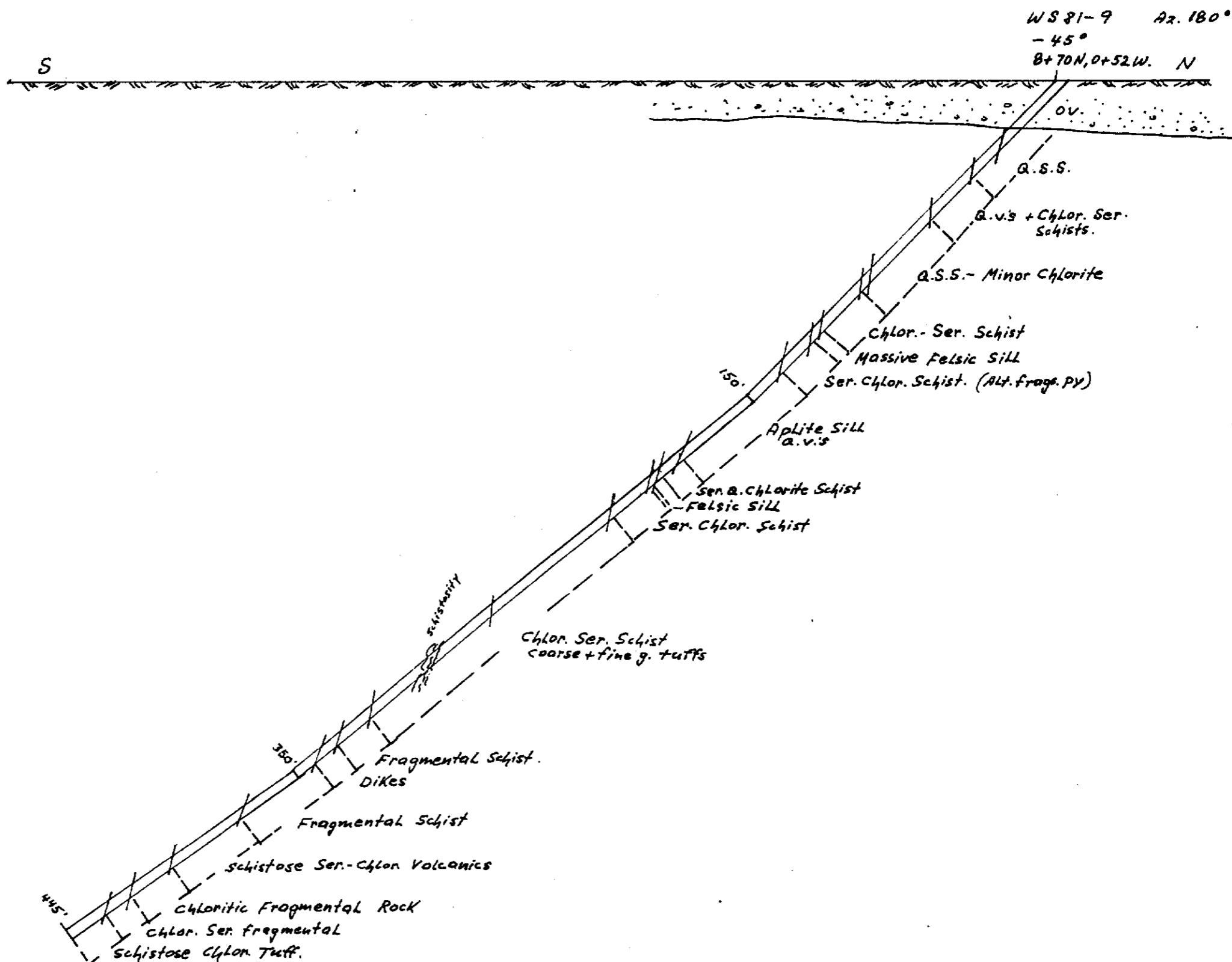
Road to Langmuir Twp.



42A06NE0049 2.2628 WHITNEY

Section — Looking Due West

Scale: 1" = 40'



Rosario — Dupont J.V.

Whitney Twp.

WS 81-9, Claim P. 530924

Lot 12, Con. 11; S½; NE¼

Az. 180°, Depth: 445', - 45°.

Scale: 1" = 40'.

