

810946

A GEOPHYSICAL REPORT

on

A GROUND MAGNETIC AND
INDUCED POLARIZATION SURVEY

Joy and Spark Claim Group
(55°, 126°, S.E.)

Claims surveyed: Spark 16-18
47-50, 53, 55, 57-64,
66-72

Survey Dates: May 14th to
June 1st, 1971

by

Peter E. Walcott, P.Eng.

93M

October 1, 1971

Mr. John K. Campbell,
Sylvie & Campbell,
Barristers & Solicitors,
306 - 540 Burrard Street,
VANCOUVER 1, B.C.

TO		REPLY	
		COMMENT	
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OCT 5 1971			
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Dear Mr. Campbell:

Re: David Minerals, Morrison Lake Prospect

We enclose herewith two copies of a geophysical report on a ground magnetic and induced polarization survey by Peter E. Walcott, P.Eng. on the Joy and Spark claim groups. This describes the geophysical work carried out by Palisade Exploration Corporation early in 1971 on the subject prospect, and completes the technical reports owing to you.

We apologize for the delay in supplying these reports which we have only just received from P. E. Walcott and Assocs. We shall be glad to co-operate in supplying any further information to assist you and Mr. Haveroen in connection with further work on this prospect.

Yours very truly,

CYPRUS EXPLORATION CORPORATION, LTD.

J. B. P. Sawyer
Manager - Canadian Exploration

JBPS/jel

Encl.

c.c. Messrs. H. Haveroen, David Minerals
C. A. Mark, C.M.C., Los Angeles

Enclosed please find for Los Angeles files a copy of the Mag. & I.P. report.

A REPORT

ON

A GROUND MAGNETIC

AND

INDUCED POLARIZATION SURVEY

Morrison Lake, British Columbia

FOR

PALISADE EXPLORATION CORPORATION LIMITED

Vancouver, British Columbia

BY

PETER E. WALCOTT & ASSOCIATES LIMITED

Vancouver, British Columbia

AUGUST 1971

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Scale 1" = 400 feet	

INTRODUCTION

Between May 14th and June 1st, 1971, Peter E. Walcott & Associates Limited carried out ground magnetic and induced polarization (I.P.) surveys over part of a property, located in the Morrison Lake area of British Columbia, optioned by Palisade Exploration Corporation Limited.

The surveys were carried out mostly over handcut picket lines turned off at right angles from a N 5° E baseline, as well as over blazed "compass and chain" lines turned off from the same baseline. In addition some magnetometer work was done over fill-in "pace and compass" lines.

Readings of relative vertical intensity of the earth's field were taken every 100 feet along the lines using a fluxgate magnetometer with additional readings at closer intervals in areas of steep magnetic gradients.

Measurements (first to fourth separation) of apparent resistivity and frequency effect (the I.P. response parameter) were made using the "dipole-dipole" method of surveying with a 200 foot electrode separation and frequencies of 0.3 and 5 c.p.s.

The I.P. data are presented in contour form on individual line profiles contained in this report, while the magnetic measurements are shown in contour form on a plan map of the line grid (Map W-129-1) that accompanies this report.

PROPERTY, LOCATION AND ACCESS

The property, referred to as the David Minerals Option, is located in the Omineca Mining District of British Columbia, and consists of the following mineral claims:

<u>Claim Name</u>	<u>Record Number</u>
Spark 1 - 36 incl.	57745 - 57788 incl.
Spark 37 - 56	59571 - 59590 incl.
Spark 57 - 72	94037 - 94052 incl.
Joy 1	57685
Joy 2	57744
Joy 3 - 60 incl.	57686 - 57743 incl.

The claims are located on the northeast shore of Morrison Lake some 45 miles northeast of Smithers, British Columbia.

Access to the property is obtained by means of float plane from McClure Lake, near Telkwa.

PREVIOUS WORK

Previous work on the property consisted of:

1. Helicopter magnetic and electromagnetic surveys in 1969.
2. Ground magnetic, V.L.F. Radem and induced polarization surveys by Evergreen Explorations Ltd. in 1970.
3. Geochemical survey by Evergreen Exploration Ltd. in 1970.
4. Geological survey by Palisade Exploration Corp. Ltd. in 1970.

The results of this work are well documented in reports by R. W. Woolverton P.Eng. of Evergreen Explorations Ltd. and by G. Jilson of Palisade Exploration Corp. Ltd.

PURPOSE

The purpose of the survey was to (a) check out the I.P. anomalies obtained on the previous reconnaissance I.P. survey and to (b) detail them prior to investigation by borehole technique.

GEOLOGY

The reader is referred to a report by G. Jilson of Palisade Exploration Corporation Ltd.

SURVEY SPECIFICATIONS

The induced polarization (I.P.) survey was carried out using a system manufactured by McPhar Geophysics Limited of Don Mills, Ontario. Measurements with this system are made in the frequency domain.

The system consists basically of three units, a receiver, a transmitter and a motor generator. - The transmitter, which obtains its power from the 2.5 kw 400 cycle generator driven by a gasoline engine, injects current into the ground at two electrodes C₁ and C₂ at two preselected frequencies, while the receiver, a very stable and sensitive potentiometer tuned to the frequency selected, makes measurements of observed voltages across the potential electrodes P₁ and P₂.

The data recorded in the field consists of careful measurements of the current (I) flowing through electrodes C₁ and C₂, the voltage (V) appearing between the potential electrodes P₁ and P₂ on the low frequency, and the "percentage apparent frequency effect" appearing between P₁ and P₂ (the receiver is designed to measure directly

$$\text{the \% age F.E.} = \frac{(P_a \text{ low} - P_a \text{ high})}{P_a \text{ high}} \times 100$$

The apparent resistivity (P_a) in ohm-feet is proportional to the ratio of the measured voltage and current, the proportionality factor depending on the geometry of the array used. In practise P_a is plotted.

A third parameter termed the "metal factor" is also calculated by dividing the apparent frequency effect by P_a and multiplying 1000.

The survey was carried out using the "dipole-dipole" electrode array. This electrode configuration and the methods of presenting the results are illustrated in the appendix. Depth penetration with this array is increased or decreased by increasing or decreasing "a" and/or n.

In practise the equipment is set up at a particular station of the line to be surveyed; three transmitting dipoles are laid out to the rear, measurements are made for all possible combinations of transmitting and receiving dipoles, the latter consisting of two porous pots filled with an electrolyte copper sulphate solution "a" feet apart, up to the fourth separation, i.e. n = 4; the equipment is moved 3 "a" feet along the line to the next set-up.

A 200 foot dipole was used on the survey.

DISCUSSION OF RESULTS

The magnetometer survey showed that part of the property surveyed to be underlain essentially by two magnetic rock units, units M₁ and M₂, believed by the writer to represent gradation differences in the underlying mudstones, conglomerates, tuffs, etc. (Map W-129-1) Strong magnetic features believed by the writer to represent a tuff and lava sequence, Unit M₃, and intrusive sills and hornblende diorite, Unit M₄, were also observed.

One north westerly trending fault, the contact between Units M₁ and M₂, offset by several south westerly faults are interpreted from the data. The locations, movements and/or existences of the latter are somewhat doubtful due to poor control on the line grid.

The I.P. survey, as performed with 200 foot dipoles, indicated the existence of three major anomalous zones on the property as can be seen from Map W-129-1 and the individual line profiles.

These zones strike approximately north-south and lie for the most within the underlying mudstones, conglomerates, tuffs, etc.

The resistivity survey did little except indicate overburden thickness and conductivity and bedrock conductivity.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Between May 14th and June 1st, 1971, Peter E. Walcott & Associates Limited carried out ground magnetic and induced polarization (I.P.) surveys over part of a property optioned by Palisade Exploration Corporation Ltd.

The property, the David Minerals Option, is located on the north south shore of Morrison Lake some 45 miles northeast of the town of Smithers, British Columbia.

The magnetic survey showed that part of the property surveyed to be underlain by two magnetically different rock types believed by the writer to represent changes in composition in the underlying mudstones, conglomerates, tuffs, etc. A tuff and lava sequence and some hornblende diorite sills are also located on the property.

The I.P. survey, performed with 200 foot dipoles, indicated the presence of three major north-south trending zones.

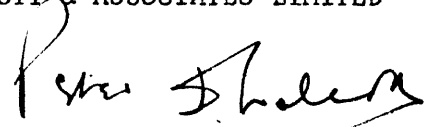
These zones are mostly located in the underlying mudstones, conglomerates, etc.

As a result of these surveys and the unfavourable geology and geochemistry the writer concludes that the anomalies are most probably caused by disseminated pyrite in the sediments.

He therefore suggests that should further investigation be necessary that the causative nature of the anomalies be investigated reasonably inexpensively by three or four portable drill holes (the overburden being quite thin).

Respectfully submitted,

PETER E. WALCOTT & ASSOCIATES LIMITED


Peter E. Walcott, P.Eng.
Geophysicist

Vancouver,
British Columbia

August 1971

A P P E N D I X

(i)

COST OF SURVEY

Peter E. Walcott & Associates Limited undertook the I.P. survey on a daily basis and the magnetometer survey on a mileage basis. Mobilization and draughting costs were extra so that the total cost of services provided was \$9,087.41.

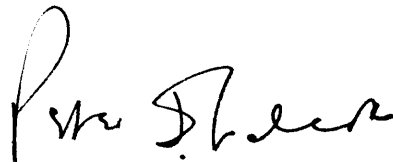
PERSONNEL EMPLOYED ON SURVEY

<u>NAME</u>	<u>OCCUPATION</u>	<u>ADDRESS</u>	<u>DATES</u>
Peter E. Walcott	Geophysicist	Peter E. Walcott & Assoc. 605 Rutland Court, Coquitlam, B.C.	May 14th - June 1st, Aug. 5th- Aug. 8th, 1971 & Aug. 28th, 1971
G. MacMillan	Geophysical Operator	" "	May 14th - June 1st, 1971
S. Scurvey	Helper	" "	"
P. Charlie	"	" "	"
J. Walcott	Typing	" "	Aug. 28th, 1971
K. Jones	Draughting	" "	Aug. 18th - Aug. 30th, 1971

CERTIFICATION

I, Peter E. Walcott, of the Municipality of Coquitlam, British Columbia, hereby certify that:

1. I am a Graduate of the University of Toronto in 1962 with a B.A.Sc. in Engineering Physics, Geophysics Option.
2. I have been practising my profession for the last nine years.
3. I am a member of the Association of Professional Engineers of British Columbia, Ontario and the Yukon Territory.
4. I hold no interests, direct or indirect, in the securities or properties of Palisade Exploration Corporation Ltd. nor do I expect to receive any.

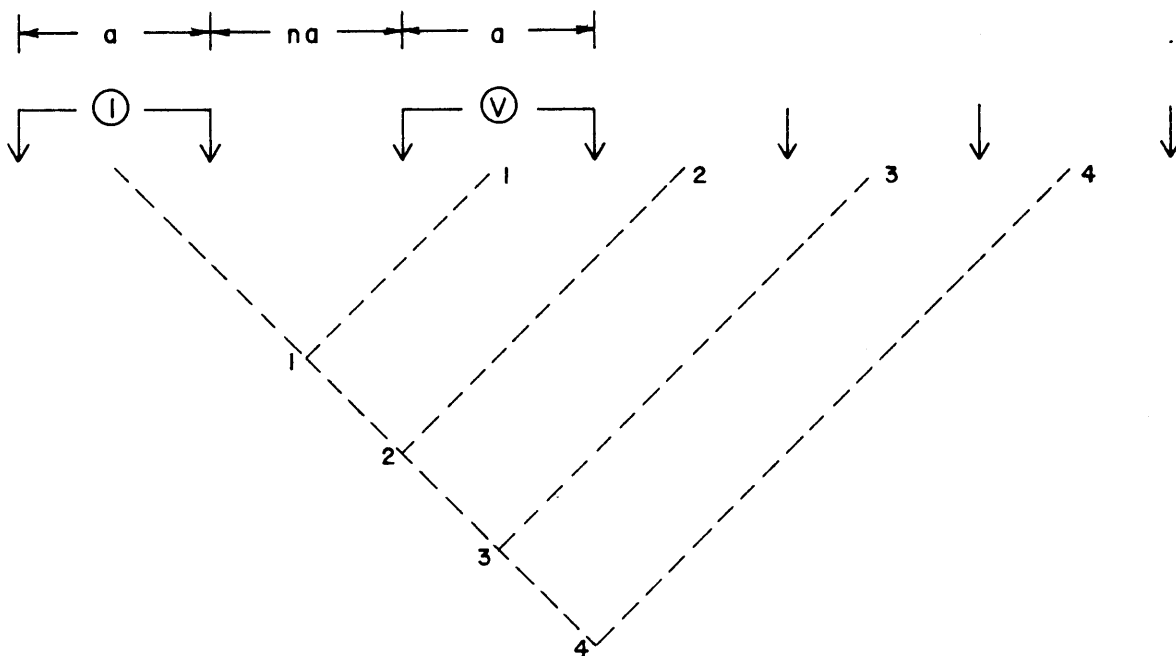


Peter E. Walcott, P.Eng.

Vancouver,
British Columbia

August 1971

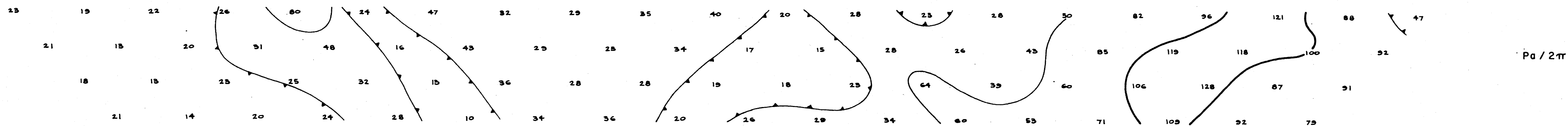
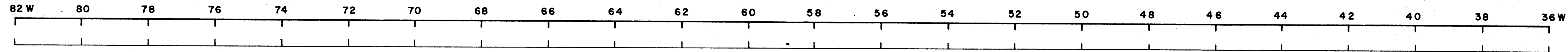
DIPOLE - DIPOLE ARRAY



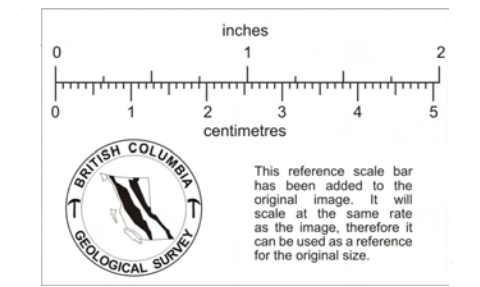
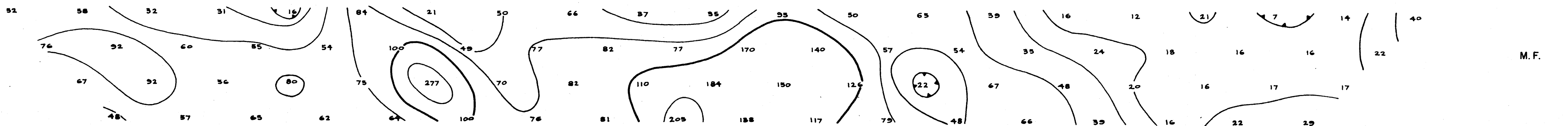
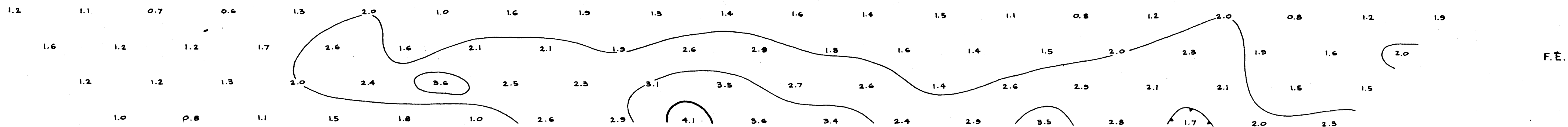
ANOMALOUS ZONE

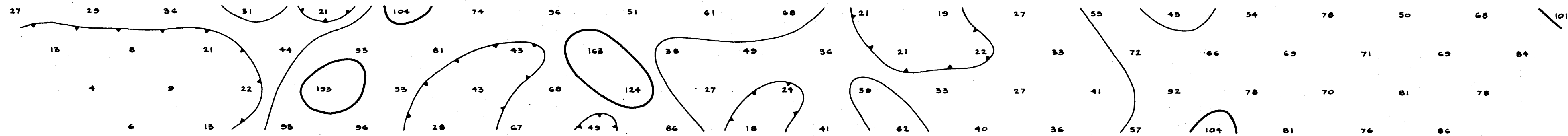
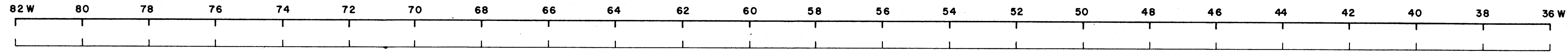


POSSIBLE ANOMALOUS ZONE



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Pa / 2π

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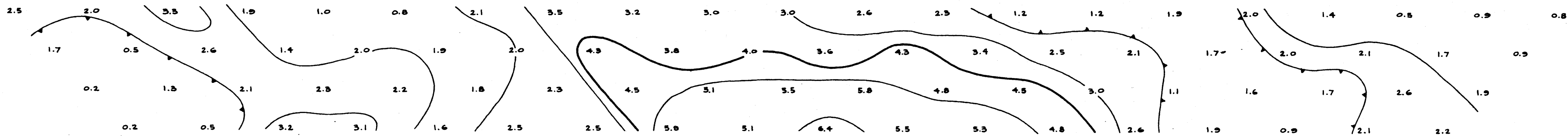
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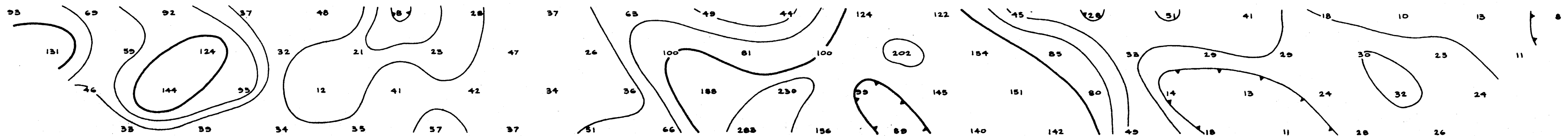
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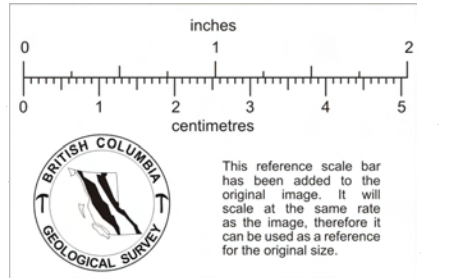
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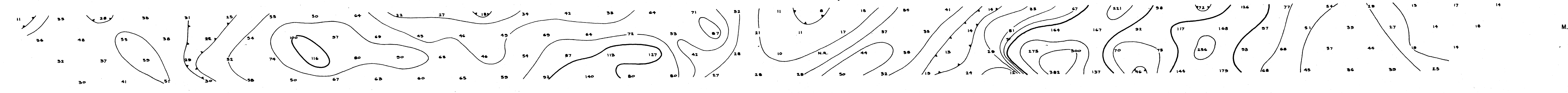
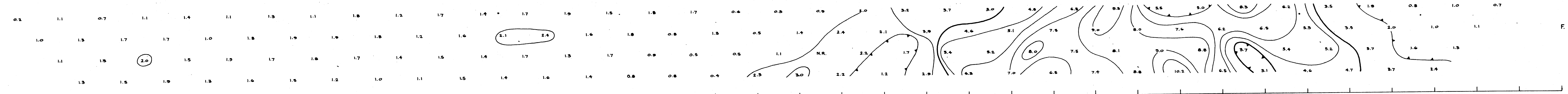
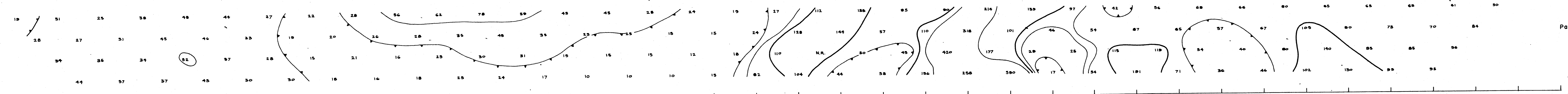
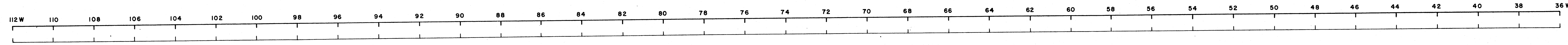


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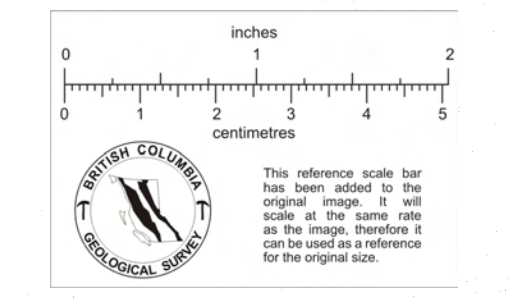


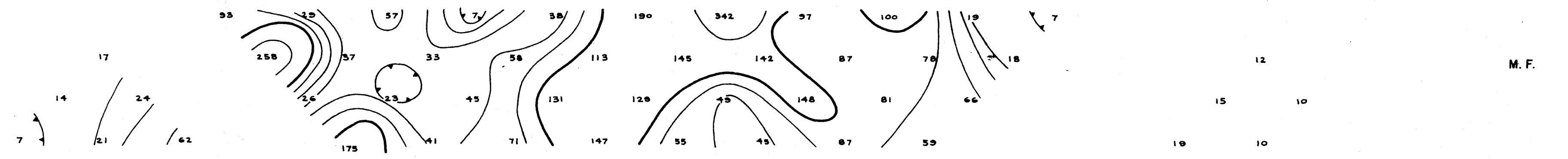
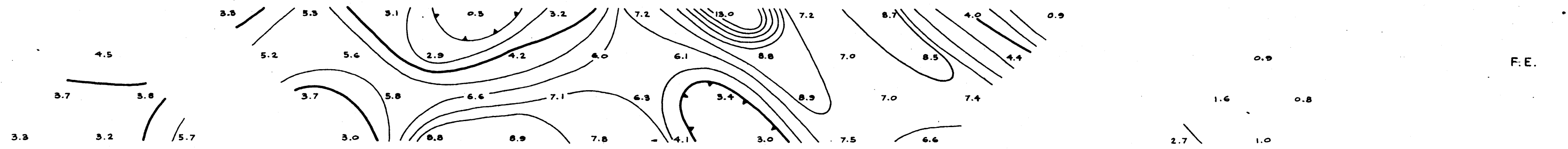
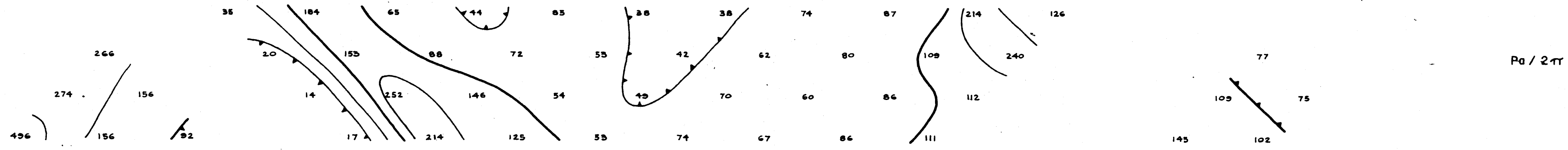
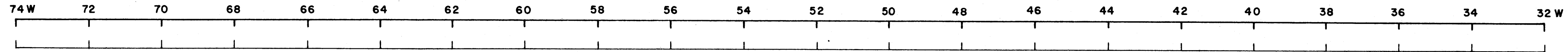
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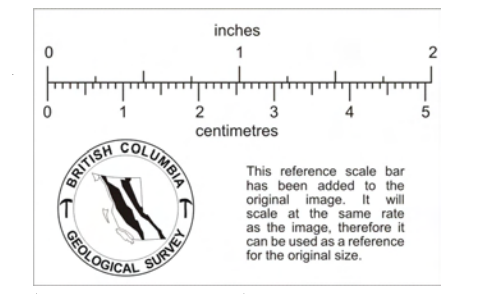


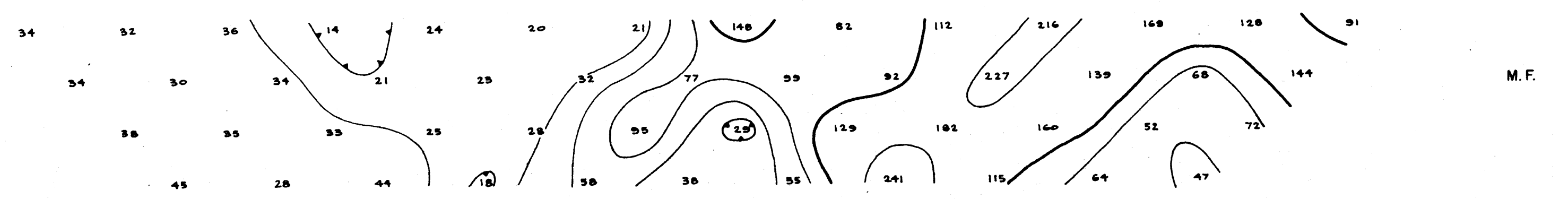
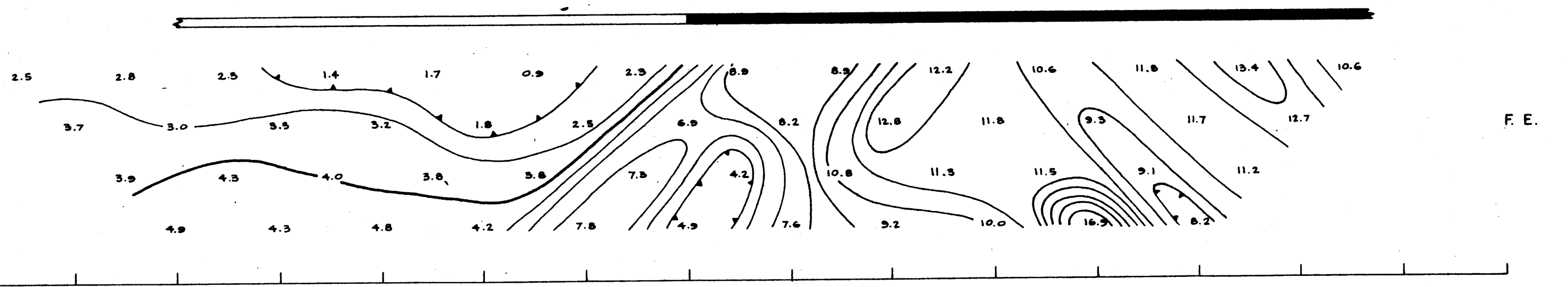
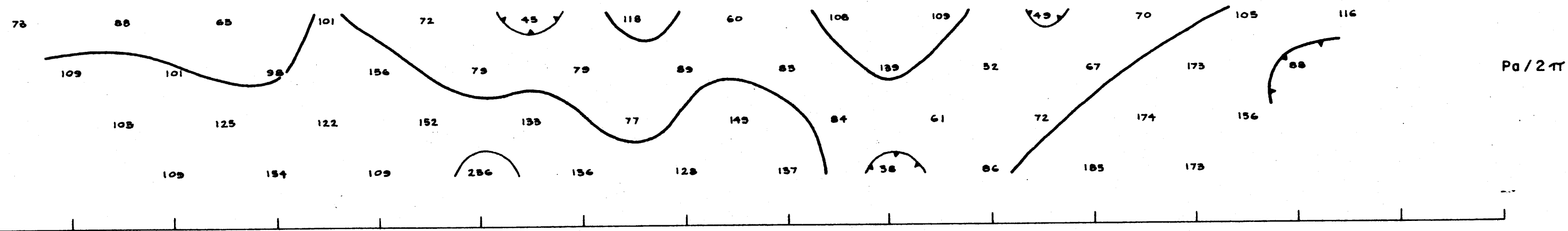
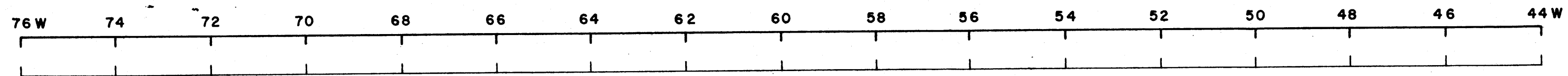
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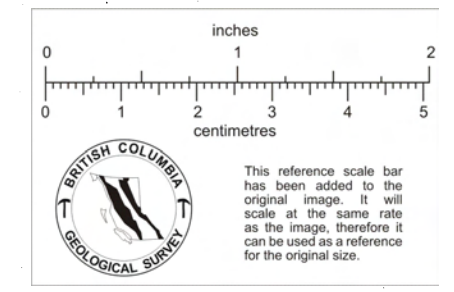


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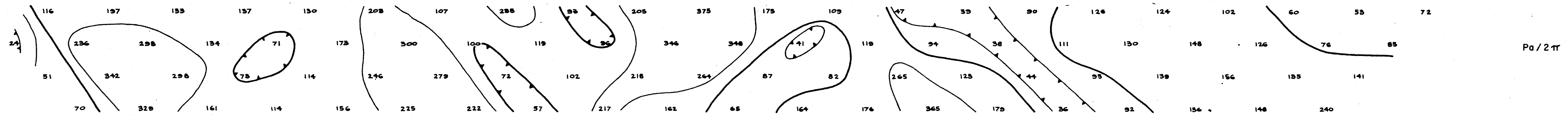




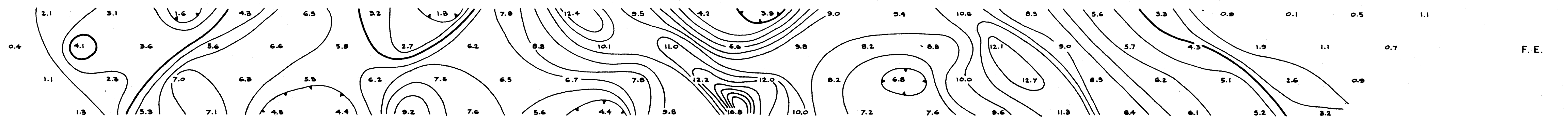
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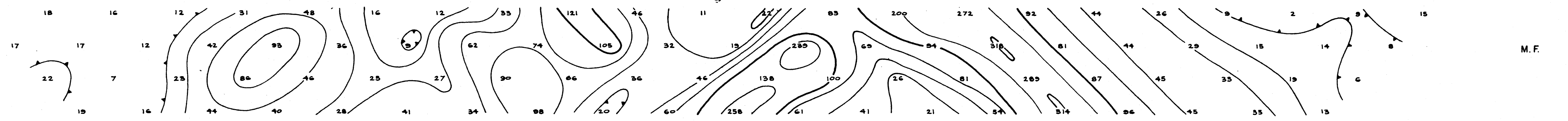
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F.E.

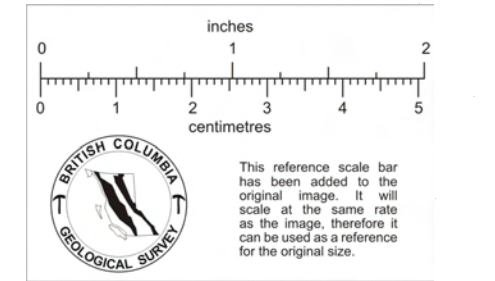


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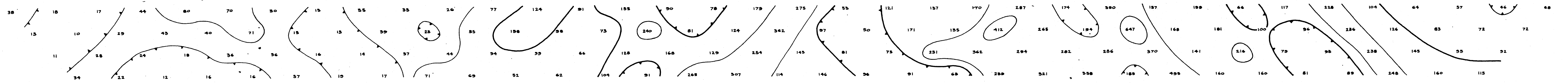
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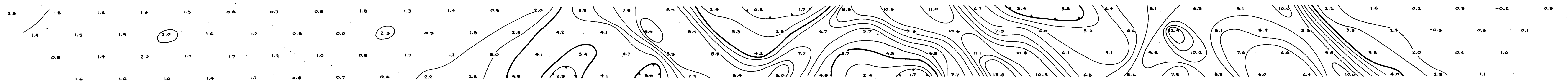
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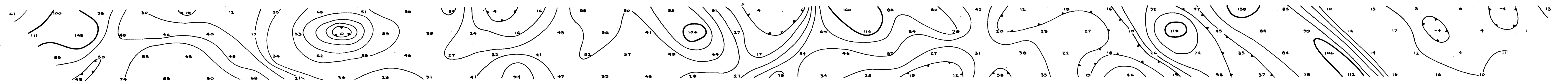
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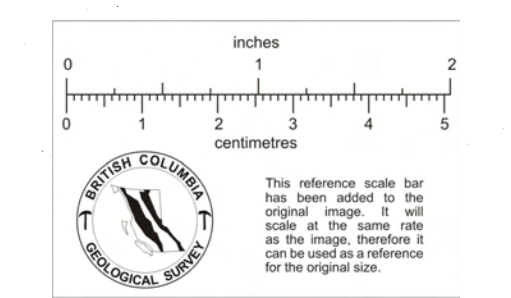


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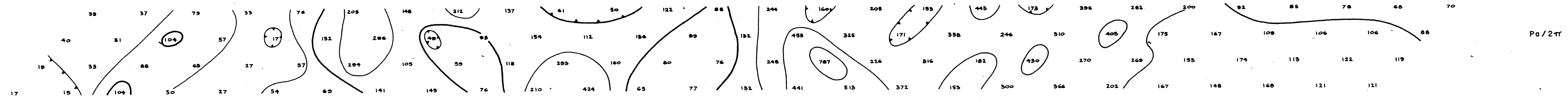


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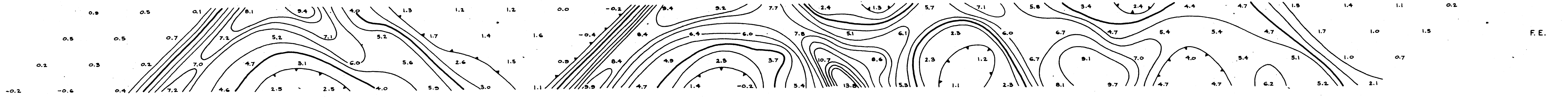
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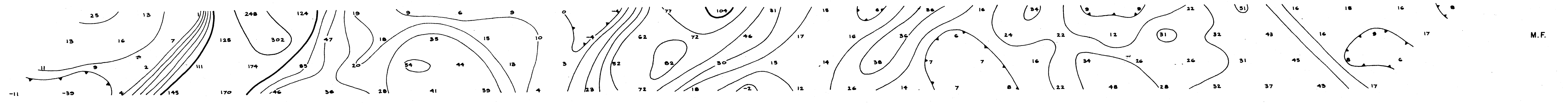
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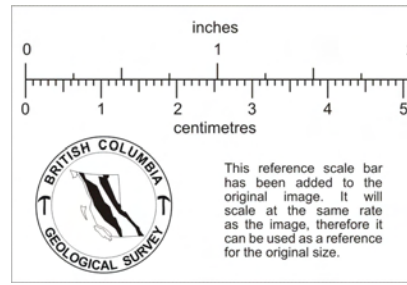


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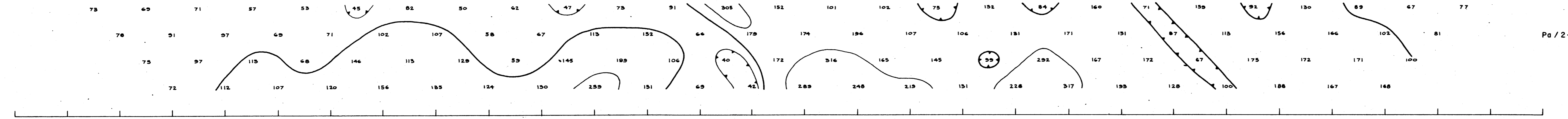


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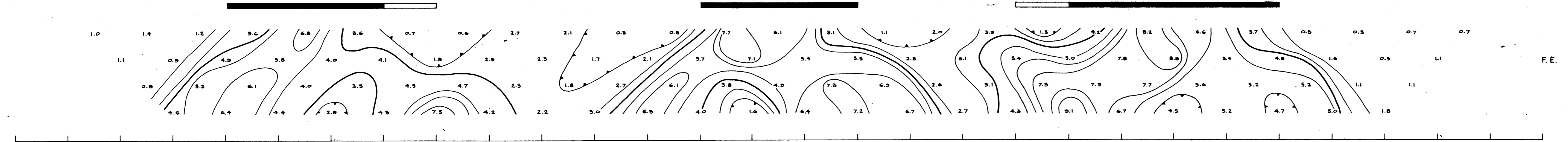


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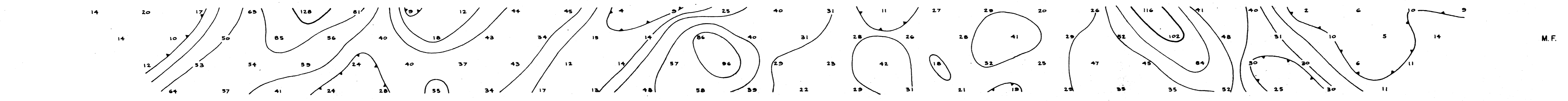


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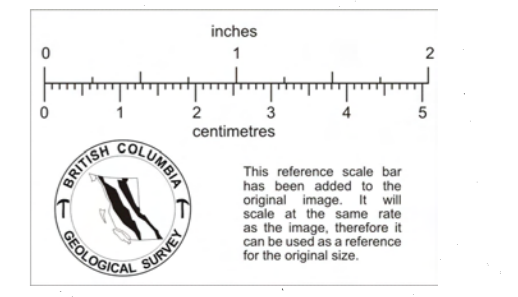
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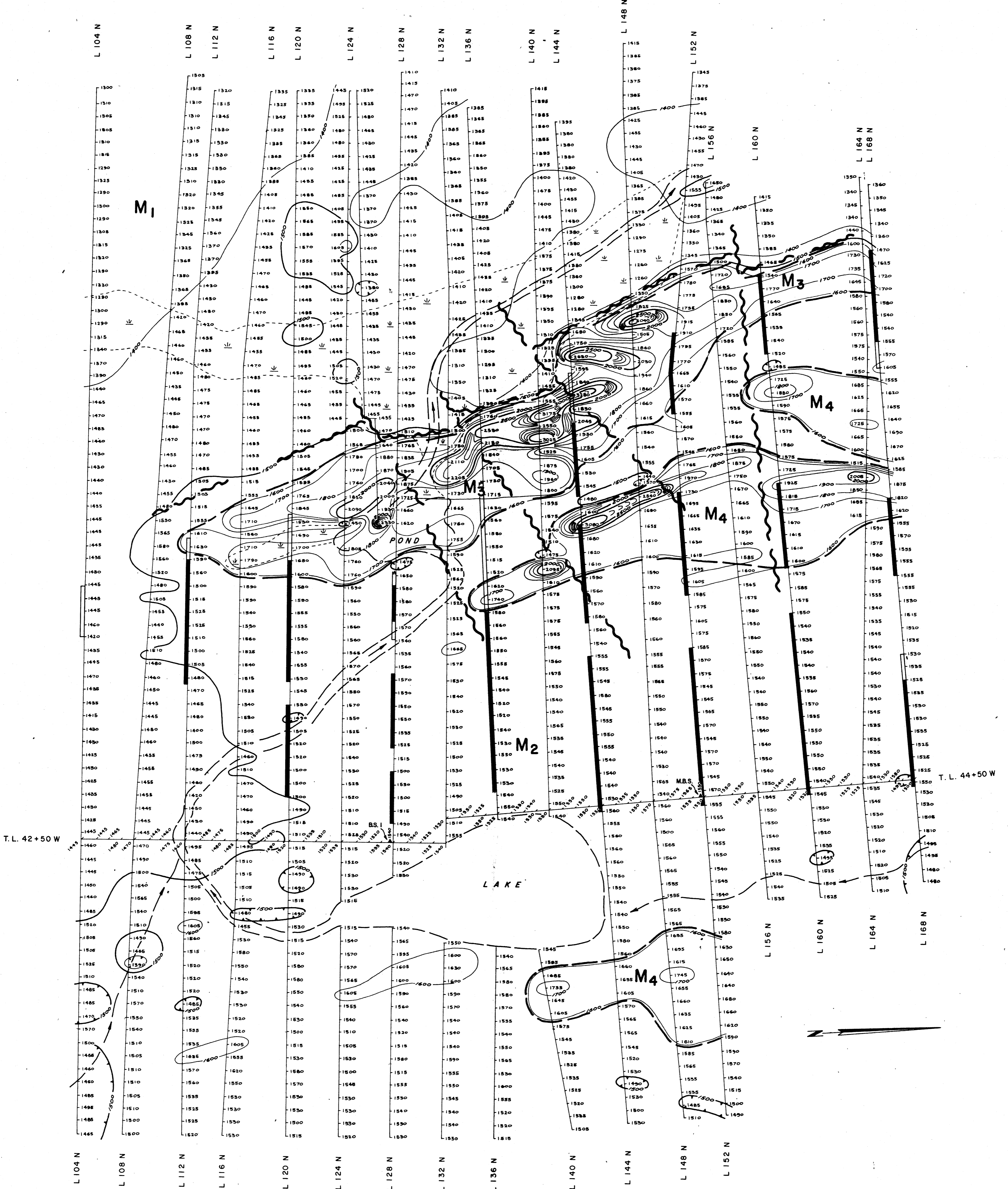


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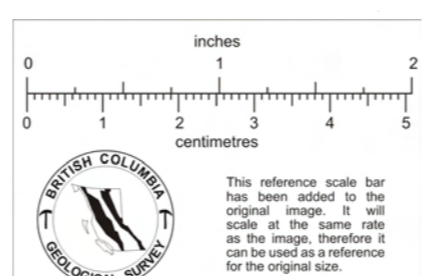


T.L. 42+50 W

T.L. 44+50 W

LEGEND

- 500 GAMMA CONTOUR
- 100 GAMMA CONTOUR
- MAGNETIC DEPRESSION
- MAGNETIC BASE STATION
- SWAMP
- CREEK
- I.P. ANOMALOUS ZONE
- POSSIBLE I.P. ANOMALOUS ZONE
- INTERPRETED FAULT
- MAGNETIC ROCK UNIT



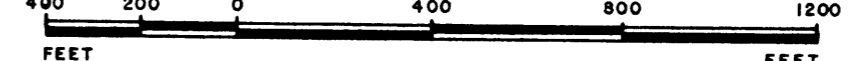
PALISADE EXPLORATION CORP. LTD.

SPARK & JOY CLAIMS, MORRISON LAKE, OMINICA M.D., BRITISH COLUMBIA

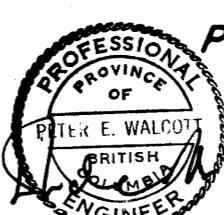
MAGNETOMETER SURVEY

CONTOURS OF RELATIVE VERTICAL INTENSITY
(IN GAMMAS)

SCALE: 1 INCH = 400 FEET



MAP No. W - 129 - 1
TO ACCOMPANY A REPORT BY
PETER E. WALCOTT P. Eng.
DATED - AUGUST, 1971



PETER E. WALCOTT & ASSOC. LTD.

MAY 1971