847

REPORT ON THE INDUCED POLARIZATION AND RESISTIVITY SURVEY ON THE GORDON CLAIM GROUP LIMPOKE CREEK AREA FOR KENNCO EXPLORATIONS (WESTERN) LTD.

104 G / 13 W

BY

PHILIP G. HALLOF, Ph. D.

NAME AND LOCATION OF PROPERTY:

GORDON CLAIM GROUP, LIMPOKE CREEK AREA

LIARD MINING DIVISION, B. C. 57°/131°, N. W.

DATE STARTED: August 16, 1966

DATE COMPLETED: August 23, 1966

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McPHAR GEOPHYSICS LIMITED

REPORT ON THE INDUCED POLARIZATION AND RESISTIVITY SURVEY ON THE GORDON CLAIM GROUP LIMPOKE CREEK AREA FOR KENNCO EXPLORATIONS (WESTERN) LTD.

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1. INTRODUCTION

At the request of Mr. H. W. Fleming, geophysicist for the Company, an induced polarization and resistivity survey has been carried out on the Gordon Claim Group, in the Limpoke Area of British Columbia, for Kennco Explorations (Western) Ltd. The property is in the Liard Mining Division, in the northwest quadrant of the one degree quadrilateral whose southeast corner is at 57°N - 131°W.

Limpoke Creek flows through the center of the property, and a geochemical anomaly for copper has previously been located in the area. Grids have been surveyed on both sides of Limpoke Creek; the induced polarization survey was planned to locate, and outline, any zones of metallic mineralization that might be the source of the geochemical highs.

2. PRESENTATION OF RESULTS

The induced polarization and resistivity results are shown on the following enclosed data plots. The results are plotted in the manner described in the notes preceding this report.

a) North Grid

Line 88+00E	200' electrode intervals	Dwg. IP 2523-1
Line 92+00E	200' electrode intervals	Dwg. IP 2523-2
Line 96+00E	200' electrode intervals	Dwg. IP 2523-3
Line 100+00E	200' electrode intervals	Dwg. IP 2523-4
Line 104+00E	200' electrode intervals	Dwg. IP 2523-5
Line 108+00E	200' electrode intervals	Dwg. IP 2523-6
Line 112+00E	200' electrode intervals	Dwg. IP 2523-7
Line 116+00E	200' electrode intervals	Dwg. IP 2523-8
Line 120+00E	200' electrode intervals	Dwg. IP 2523-9
Line 124+00E	200' electrode intervals	Dwg. IP 2523-10
Line 128+00E	200' electrode intervals	Dwg. IP 2523-11
Line 100+00E	200' electrode intervals	Dwg. IP 2523-12

b) South Grid

Line 100+00N "A"	200' electrode intervals	Dwg. IP 2525-1
Line 88+00 ER "B"	200' electrode intervals	Dwg. IP 2525-2
Line 88+00 EL "C"	200' electrode intervals	Dwg. IP 2525-3
Line 94+00E "D"	200' electrode intervals	Dwg. IP 2525-4
Line 95+30N "E"	200' electrode intervals	Dwg. IP 2525-5
Line 70+00N "F"	200' electrode intervals	Dwg. IP 2525-6

Also enclosed with this report are plan maps at a scale of

1" = 400 feet. The lines used for the IP survey are shown on these maps.

a) North Grid   Dwg. Misc. 2522

b) South Grid   Dwg. Misc. 2524

The definite and possible induced polarization anomalies are indicated by solid and broken bars respectively on these plan maps as well as the data plots. These bars represent the surface projection of the anomalous zones as interpreted from the location of the transmitter and receiver electrodes when the anomalous values were measured.

Since the induced polarization measurement is essentially an averaging process, as are all potential methods, it is frequently difficult to exactly pinpoint the source of an anomaly. Certainly, no anomaly can be located with more accuracy than the spread length; i. e. when using 200' spreads the position of a narrow sulphide zone can only be determined to lie between two stations 200' apart. In order to locate sources at some depth, larger spreads must be used, with a corresponding increase in the uncertainties of location. Therefore, while the center of the indicated anomaly probably corresponds fairly well with source, the length of the indicated anomaly along the line should not be taken to represent the exact edges of the anomalous material.

3. DISCUSSION OF RESULTS

There are no IP anomalies on the Gordon Claim Group that indicate the presence of large volumes of massive metallic mineralization. However, there are several weak anomalies indicated.

These zones appear to contain more disseminated mineralization. These zones of mineralization could be of economic interest, if the proper minerals are present.

a) North Grid

Line 88+00E

The apparent resistivities on this portion of the grid are lower than to the east. The resistivities are moderately high, suggesting a relatively dense, non-porous rock type. The IP effects measured are low in magnitude; the strongest part of the anomaly is at depth, at the northern end of the line. The measurements would have to be extended to the north to complete the pattern.

Line 92+00E

The results on this line are very similar to those on Line 88+00E. The strongest IP effects are located at depth at the northern end of the line.

Line 96+00E

The IP effects are shallow (measured for n=1) on this line. They could be better evaluated using shorter electrode intervals.

Line 100+00E

The most definite IP anomaly is relatively narrow on this line. Since the source is indicated to be shallow, it could be better evaluated using shorter electrode intervals.

Line 104+00E

Two relatively narrow, weak IP anomalies are located on this line. The anomaly to the south correlates with those located on the lines to the west. The northern source is shallow.

Line 108+00E

The two anomalies were located on this line also. The anomalous pattern suggests that the southern source terminates to the west. The northern source is shallow, and could be better evaluated using shorter electrode intervals.

Line 112+00E

Only weakly anomalous effects were measured on this line. The slightly anomalous effects measured at the northern end of the line may correlate with the northern zone on the lines to the west. The results would have to be extended to complete the anomaly.

Line 116+00E

There are no definite anomalies located on this line.

Line 120+00E

Only weakly anomalous effects were measured on this line.

Line 124+00E

There are no anomalies on this line.

Line 128+00E

There are no IP anomalies on this line. This is the easternmost of the lines surveyed, and the apparent resistivities are appreciably higher than at the western end of the grid.

b) South Grid

The lines on the South Grid have been irregularly placed, due to topography. In general, the resistivity level is lower than on the North Grid. Only a few weak IP anomalies are indicated.

The only anomalies that appear to warrant further interest are located on Line 70+00N "F". The anomaly centered at 78E to 80E is shallow, and could be better evaluated using shorter electrode intervals.

4. CONCLUSIONS AND RECOMMENDATIONS

The IP anomalies located on the Gordon Claim Group are low in magnitude; only a few per cent (or less) metallic minerals would be necessary to cause the effects measured. This mineralization would be of economic interest only if the mineral assemblage is very special. The available geochemical and geological information may help to determine the possible economic importance of the mineralization causing the anomalies.

Further investigation can be undertaken if the zones could be of interest. The northern, shallow source on the Northern Grid should be better evaluated using 100 foot electrode intervals. The southern source is at some depth, and cannot be detailed. Drill holes could be spotted on two lines to test the mineralization.

DDH #1 collared at 103N, Line 88+00E; drilled -45° to north for 400 to 450'

DDH #2 collared at 102+50N, Line 104+00N; drilled -45° to north for 350 to 400'

None of the anomalies located on the South Grid would warrant drilling at this time. If the anomalies on Line 70+00N "F" are of interest, they should be detailed with shorter electrode intervals and parallel lines should be surveyed.

McPHAR GEOPHYSICS LIMITED

Philip G. Hallof

Philip G. Hallof,
Geophysicist.

Dated: September 12, 1966

ASSESSMENT DETAILS

PROPERTY: Gordon Claim Group	MINING DIVISION: Liard
SPONSOR: Kennco Explorations (Western) Ltd.	PROVINCE: B. C.
LOCATION: Limpoke Creek Area	
TYPE OF SURVEY: Induced Polarization	
OPERATING MAN DAYS: 38	DATE STARTED: August 16, 1966
EQUIVALENT 8 HR. MAN DAYS: 57	DATE FINISHED: August 23, 1966
CONSULTING MAN DAYS: 2	NUMBER OF STATIONS: 207
DRAUGHTING MAN DAYS: 4	NUMBER OF READINGS: 1016
TOTAL MAN DAYS: 63	MILES OF LINE SURVEYED: 7.15

CONSULTANTS:
Philip G. Hallof, 5 Minorca Place, Don Mills, Ontario.

FIELD TECHNICIANS:
J. Parker, Box 340, Choiceland, Saskatchewan.
T. Howard, 139 Bond Avenue, Don Mills, Ontario.
3 helpers supplied by client.

DRAUGHTSMEN:
K. Bingham, 78 Hubbard Blvd, Toronto 13, Ontario.
F.R. Peer, 38 Torrens Avenue, Toronto, Ontario.
B. Marr, 19 Kenewen Court, Toronto 16, Ontario.

McPHAR GEOPHYSICS LIMITED

Philip G. Hallof

Philip G. Hallof,
Geophysicist

Dated: September 12, 1966

SUMMARY OF COST

Gordon Claim Group

Crew

7-1/2 days	Operating	@ $215.00	$1,612.50
3 days	Travel	@ $ 75.00	225.00
1-1/2 days	Standby	@ $ 75.00	112.50

Total Net Sales $1,950.00

Expenses

Taxi	$ 3.85
Vehicle expense	3.65
Gas	10.65
Meals and Accommodation	43.75
Telephone and Telegraph	3.20

Total Expenses $ 65.10

Total Summary of Cost $2,015.10

McPHAR GEOPHYSICS LIMITED

Philip G. Hallof

Philip G. Hallof,
Geophysicist

Dated: September 12, 1966

CERTIFICATE

I, Philip George Hallof, of the City of Toronto, Province of Ontario, do hereby certify that:

1. I am a geophysicist residing at 5 Minorca Place, Don Mills, (Toronto), Ontario.

2. I am a graduate of the Massachusetts Institute of Technology with a B.S. Degree (1952) in Geology and Geophysics, and a Ph.D. Degree (1957) in Geophysics.

3. I am a member of the Society of Exploration Geophysicists and the European Association of the Exploration Geophysicists.

4. I have been practising my profession for ten years.

5. I have no direct or indirect interest, nor do I expect to receive any interest, direct or indirect, in the property or securities of Kennco Explorations (Western) Limited.

6. The statements made in this report are based on a study of published literature and unpublished private reports and geophysical data.

Dated at Toronto

This 12th day of September 1966.

Philip G. Hallof, Ph. D.

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NOTES ON THE THEORY OF INDUCED POLARIZATION AND THE METHOD OF FIELD OPERATION

Induced Polarization as a geophysical measurement refers to the blocking action or polarization of metallic or electronic conductors in a medium of ionic solution conduction.

This electro-chemical phenomenon occurs wherever electrical current is passed through an area which contains metallic minerals such as base metal sulphides. Normally, when current is passed through the ground, as in resistivity measurements, all of the conduction takes place through ions present in the water content of the rock, or soil, i.e. by ionic conduction. This is because almost all minerals have a much higher specific resistivity than ground water. The group of minerals commonly described as "metallic", however, have specific resistivities much lower than ground waters. The induced polarization effect takes place at those interfaces where the mode of conduction changes from ionic in the solutions filling the interstices of the rock to electronic in the metallic minerals present in the rock.

The blocking action or induced polarization mentioned above, which depends upon the chemical energies necessary to allow the ions to give up or receive electrons from the metallic surface, increases with the time that a d.c. current is allowed to flow through the rock; i. e. as ions pile up against the metallic interface the resistance to current flow increases. Eventually, there is enough polarization in the form of excess ions at the interfaces to effectively stop all current flow through the metallic particle. This polarization takes place at each of the infinite number of solution-metal interfaces in a mineralized rock.

When the d. c. voltage used to create this d. c. current flow is cut off, the Coulomb forces between the charged ions forming the polarization cause them to return to their normal position. This movement of charge creates a small current flow which can be measured on the surface of the ground as a decaying potential difference.

From an alternate viewpoint it can be seen that if the direction of the current through the system is reversed repeatedly before the polarization occurs, the effective resistivity of the system as a whole will change as the frequency of the switching is changed. This is a consequence of the fact that the amount of current flowing through each metallic interface depends upon the length of time that current has been passing through it in one direction.

The values of the "metal factor" or "M. F." are a measure of the amount of polarization present in the rock mass being surveyed. This parameter has been found to be very successful in mapping areas of sulphide mineralization, even those in which all other geophysical methods have been unsuccessful. The induced polarization measurement is more sensitive to sulphide content than other electrical measurements because it is much more dependent upon the sulphide content. As the sulphide content of a rock is increased, the "metal factor" of the rock increases much more rapidly than the resistivity decreases.

Because of this increased sensitivity, it is possible to locate and outline zones of less than 10% sulphides that can't be located by E. M. Methods. The method has been successful in locating the disseminated "porphyry copper" type mineralization in the Southwestern United States.

Measurements and experiments also indicate that it should be possible to locate most massive sulphide bodies at a greater depth with induced polarization than with E. M.

Since there is no I. P. effect from any conductor unless it is metallic, the method is useful in checking E. M. anomalies that are suspected of being due to water filled shear zones or other ionic conductors. There is also no effect from conductive overburden, which frequently confuses E. M. results. It would appear from scale model experiments and calculations that the apparent metal factors measured over a mineralized zone are larger if the material overlying the zone is of low resistivity.

Apropos of this, it should be stated that the induced polarization measurements indicate the total amount of metallic constituents in the rock. Thus all of the metallic minerals in the rock, such as pyrite, as well as the ore minerals chalcopyrite, chalcocite, galena, etc. are responsible for the induced polarization effect. Some oxides such as magnetite, pyrolusite, chromite, and some forms of hematite also conduct by electrons and are metallic. All of the metallic minerals in the rock will contribute to the induced polarization effect measured on the surface.

In the field procedure, measurements on the surface are made in a way that allows the effects of lateral changes in the properties of the ground to be separated from the effects of vertical changes in the properties. Current is applied to the ground at two points a distance (X) apart. The potentials are measured at two other points (X) feet apart, in line with the current electrodes. The distance between the nearest current and potential electrodes is an integer number (N) times the basic distance (X).

The measurements are made along a surveyed line, with a constant distance (NX) between the nearest current and potential electrodes. In most surveys, several traverses are made with various values of (N); i. e. (N) = 1, 2, 3, 4, etc. The kind of survey required (detailed or reconnaissance) decides the number of values of (N) used.

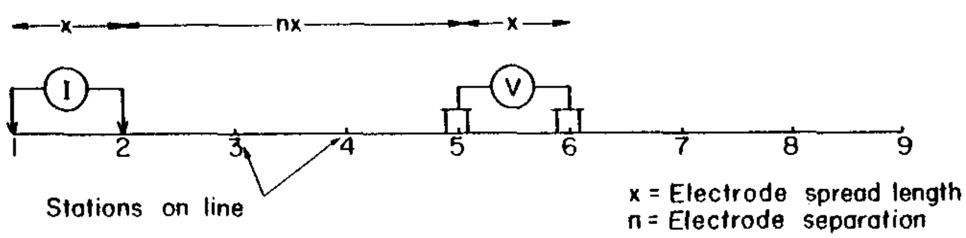
In plotting the results, the values of the apparent resistivity and the apparent metal factor measured for each set of electrode positions are plotted at the intersection of grid lines, one from the center point of the current electrodes and the other from the center point of the potential electrodes. The resistivity values are plotted above the line and the metal factor values below. The lateral displacement of a given value is determined by the location along the survey line of the center point between the current and potential electrodes. The distance of the value from the line is determined by the distance (NX) between the current and potential electrodes when the measurement was made.

The separation between sender and receiver electrodes is only one factor which determines the depth to which the ground is being sampled in any particular measurement. These plots then, when contoured, are not section maps of the electrical properties of the ground under the survey line. The interpretation of the results from any given survey must be carried out using the combined experience gained from field, model and theoretical investigations. The position of the electrodes when anomalous values are measured must be used in the interpretation.

In the field procedure, the interval over which the potential differences are measured is the same as the interval over which the electrodes are moved after a series of potential readings has been made. One of the advantages of the induced polarization method is that the same equipment can be used for both detailed and reconnaissance surveys merely by changing the distance (X) over which the electrodes are moved each time. In the past, intervals have been used ranging from 100 feet to 1000 feet for (X). In each case, the decision as to the distance (X) and the values of (N) is largely determined by the expected size of the mineral deposit being sought, the size of the expected anomaly and the speed with which it is desired to progress.

The diagram in Figure 1 below demonstrates the method used in plotting the results. Each value of the apparent resistivity and the apparent "Metal factor" is plotted and identified by the position of the four electrodes when the measurement was made. It can be seen that the values measured for the larger values of (n) are plotted farther from the line indicating that the thickness of the layer of the earth that is being tested is greater than for the smaller values of (n); i. e. the depth of the measurement is increased.

METHOD USED IN PLOTTING DIPOLE-DIPOLE
INDUCED POLARIZATION AND RESISTIVITY RESULTS



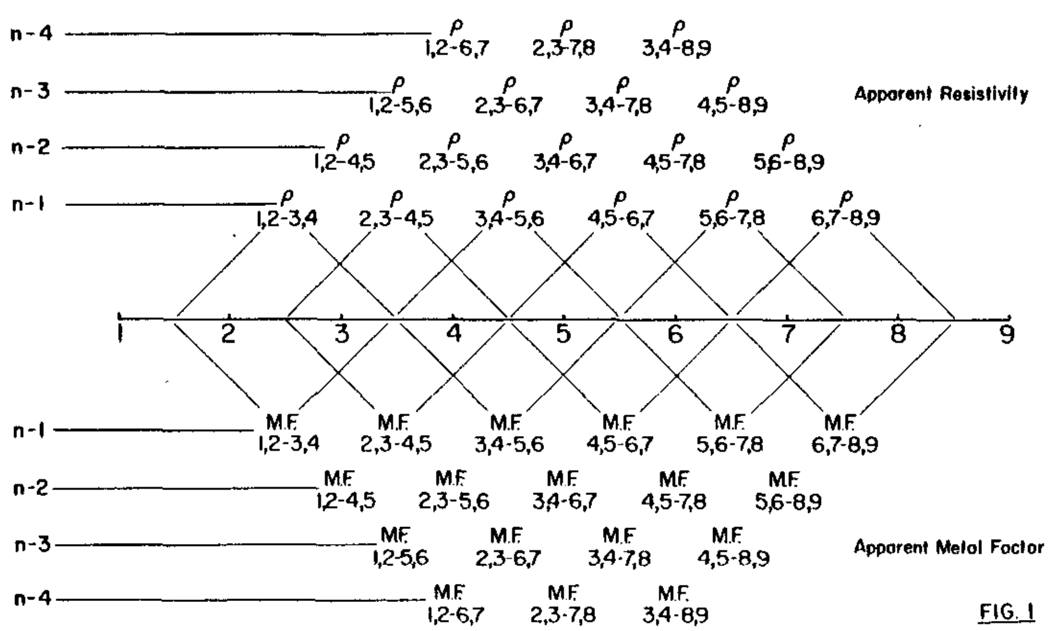


FIG. 1

DWG. NO.-I.P.- 2523-1

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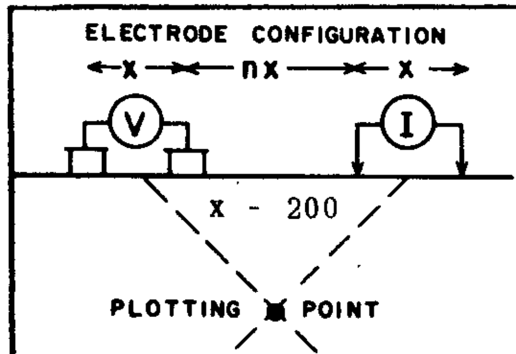
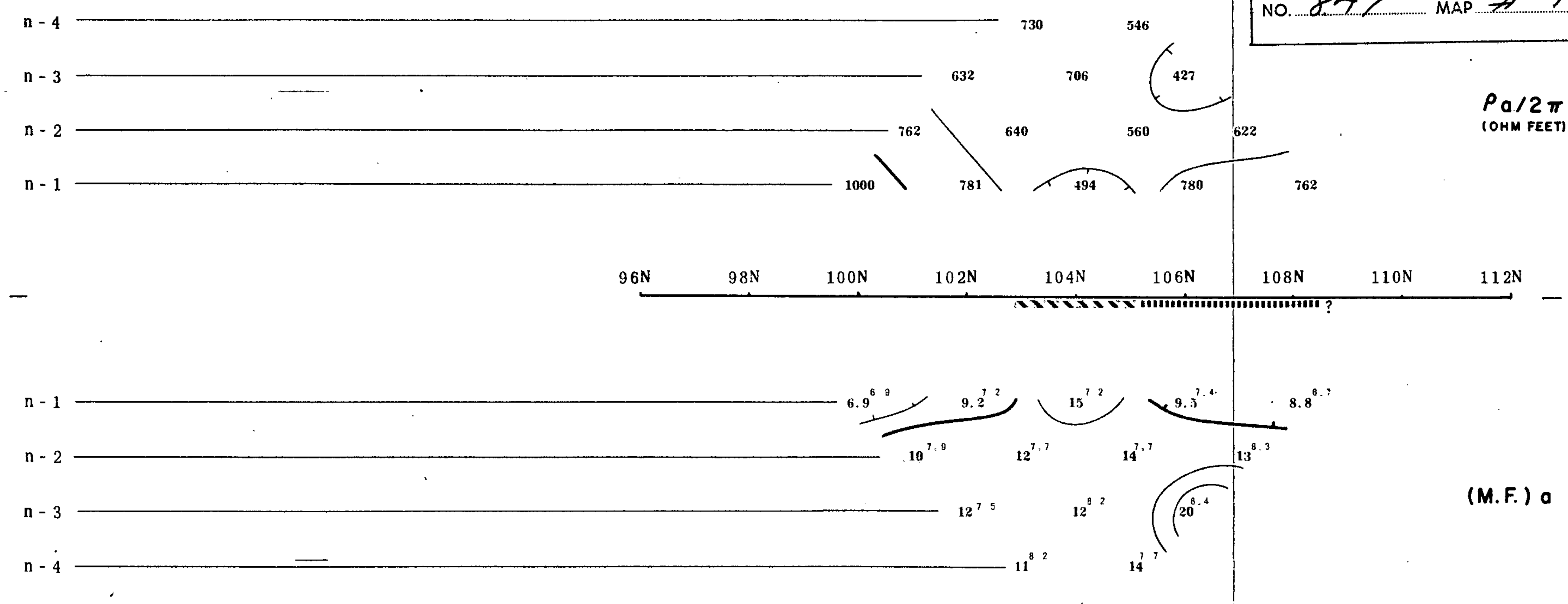
INDUCED POLARIZATION AND RESISTIVITY SURVEY



NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 847 MAP # 4



LINE NO.- 88E

KENNCO EXPLORATIONS (WESTERN) LIMITED

GORDON GROUP, LIMPOKE CREEK, LIARD M.D. - B.C.

NORTH GRID

Scale—One inch = 200 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE

847

FREQUENCY 0.31-5.0 C.P.S.
DATE SURVEYED AUG/1966
APPROVED
DATE 9/9/66

McPHAR GEOPHYSICS LIMITED

DWG. NO.-I.P.- 2523-2

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

ELECTRODE CONFIGURATION

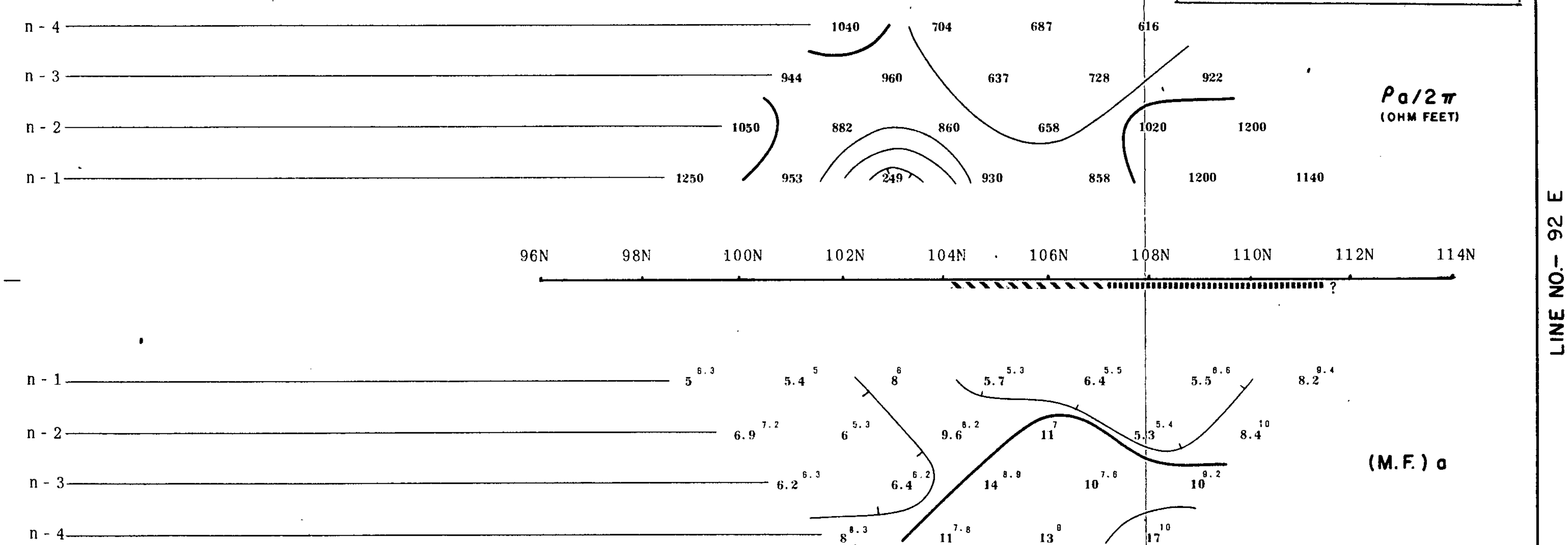
x - nx - x

x - 200

PLOTTING POINT

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 847 MAP #5



KENNCO EXPLORATIONS (WESTERN) LIMITED

GORDON GROUP, LIMPOKE CREEK, LIARD M.D. - B.C.

NORTH GRID

Scale-One inch = 200 Feet

NOTE LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE

PROBABLE

POSSIBLE

847

FREQUENCY 0.31 & 5.0 C.P.S.

DATE SURVEYED AUG/1966

APPROVED P

DATE 9/9/66

McPHAR GEOPHYSICS LIMITED

DWG. NO.-I.P.- 2523-3

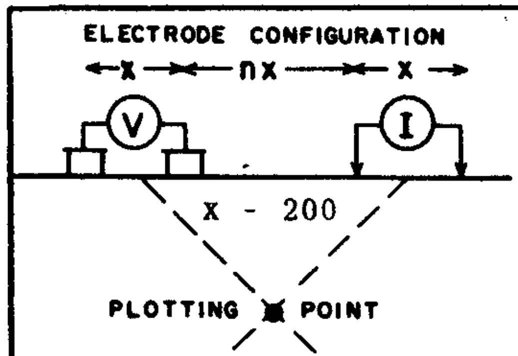
McPHAR GEOPHYSICS LIMITED

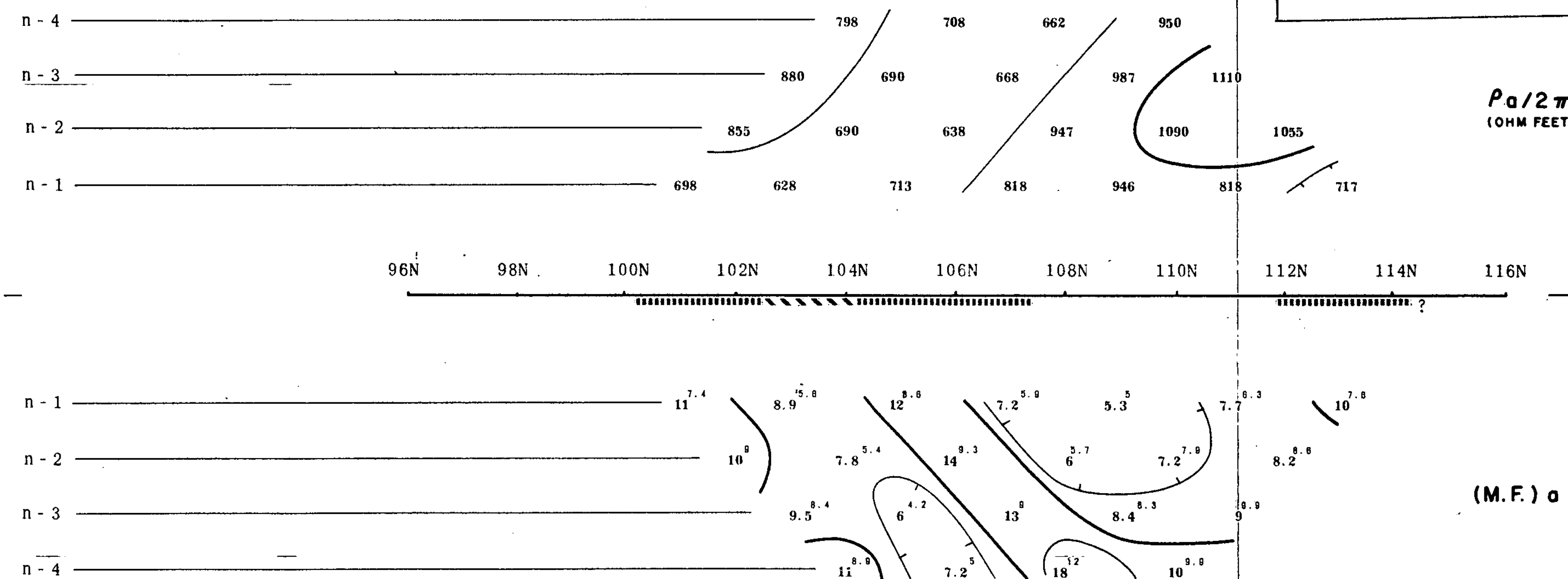
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 845 MAP #6

ELECTRODE CONFIGURATION





$\rho a/2\pi$ (OHM FEET)

(M.F.) a

LINE NO.- 96 E

KENNCO EXPLORATIONS (WESTERN) LIMITED

GORDON GROUP, LIMPOKE CREEK, LIARD M.D. - B.C.

NORTH GRID

Scale- One inch = 200 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

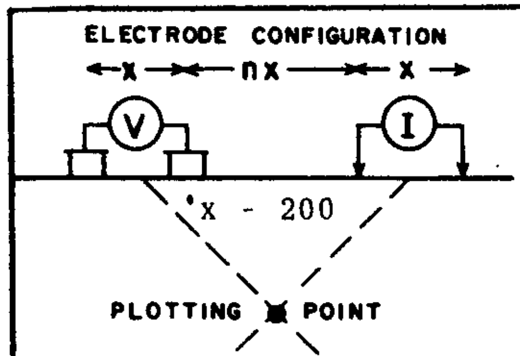
SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE

FREQUENCY 0.31 & 5.0 C.P.S.
DATE SURVEYED AUG. 1966
APPROVED
DATE 9/9/66

847

McPHAR GEOPHYSICS LIMITED

DWG. NO.-I.P.- 2523-4



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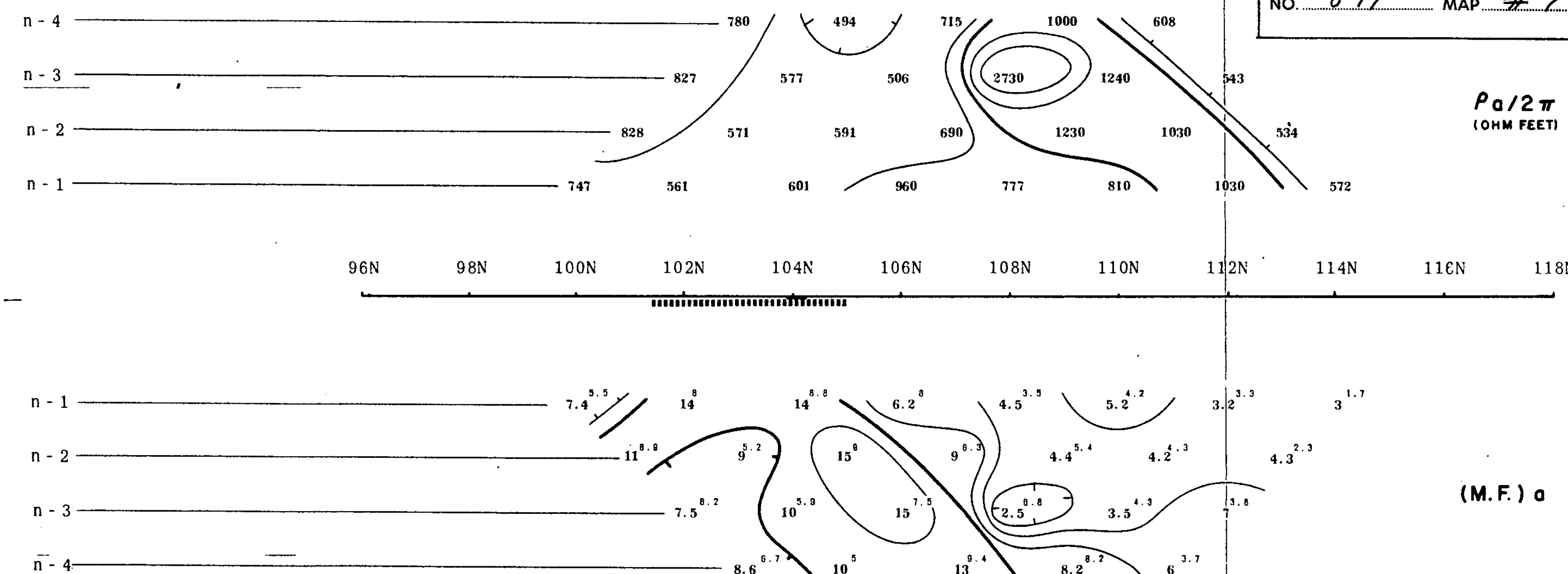
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 847 MAP #7



LINE NO.- 100 E

KENNCO EXPLORATIONS (WESTERN) LIMITED

GORDON GROUP, LIMPOKE CREEK, LIARD M.D. - B.C.

NORTH GRID

Scale- One inch = 200 Feet

NOTE LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

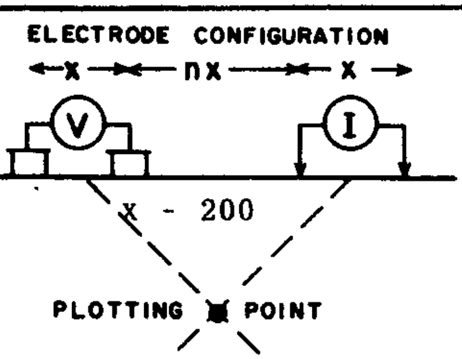
DEFINITE
PROBABLE
POSSIBLE

847

FREQUENCY 0.3 & 5.0 C.P.S.
DATE SURVEYED AUG/1966
APPROVED
DATE 9/9/66

McPHAR GEOPHYSICS LIMITED

DWG. NO.-I.P.- 2523-5



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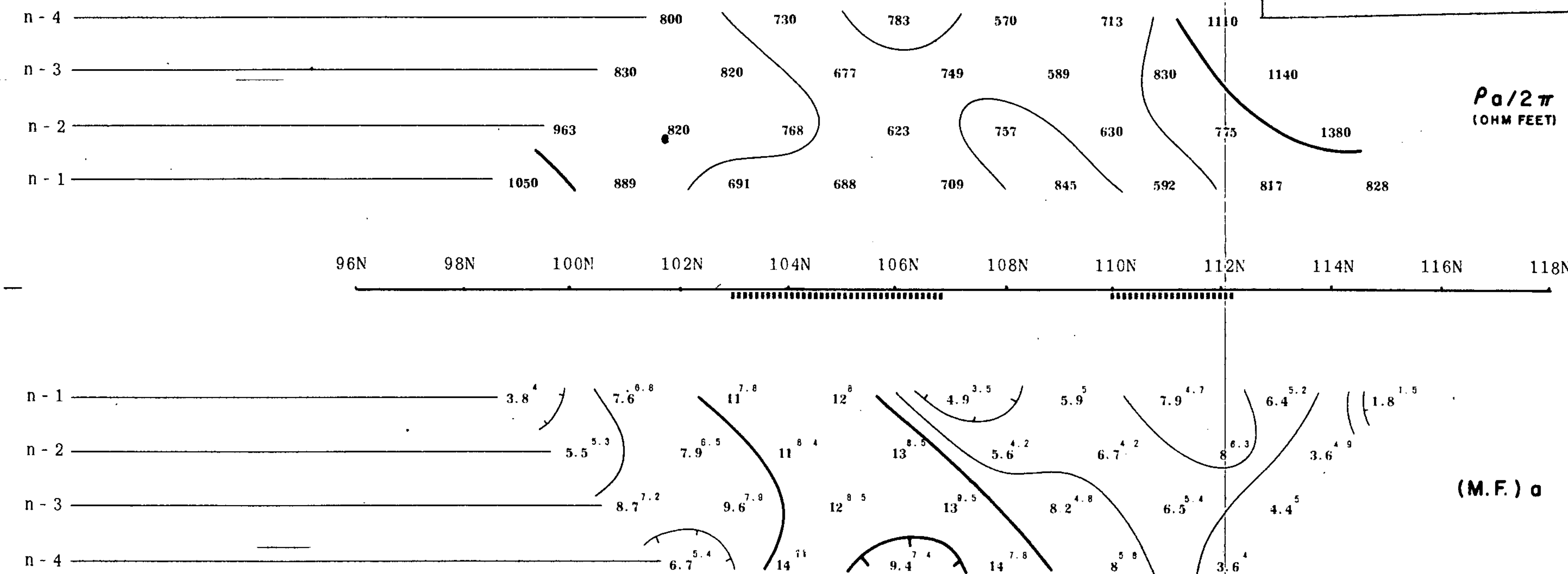
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 847 MAP # 8



LINE NO.- 104 E

KENNCO EXPLORATIONS (WESTERN) LIMITED

GORDON GROUP, LIMPOKE CREEK, LIARD M.D. - B.C.

NORTH GRID

Scale- One inch = 200 Feet

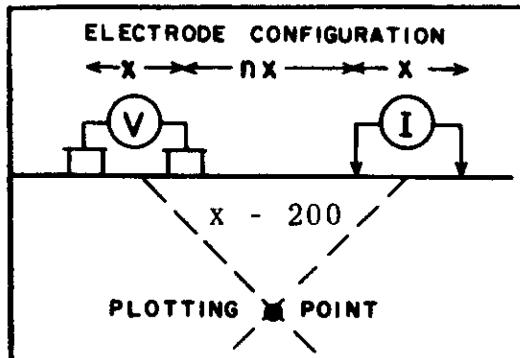
NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE

847

FREQUENCY 0.31 & 5.0 C.P.S.
DATE SURVEYED AUG / 1966
APPROVED
DATE 9/9/66

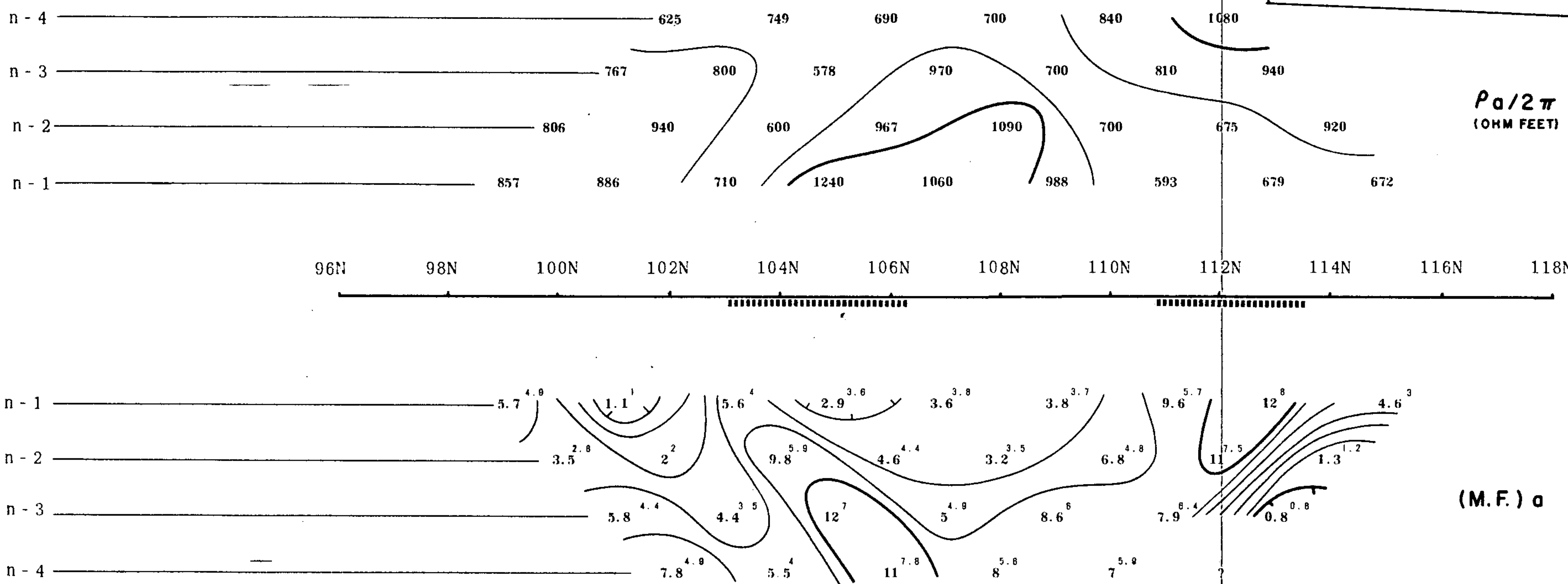
DWG. NO.- I.P.- 2523-6



McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100



LINE NO.- 108 E

KENNCO EXPLORATIONS (WESTERN) LIMITED

GORDON GROUP, LIMPOKE CREEK, LIARD M.D. - B.C.

NORTH GRID

Scale—One inch = 200 Feet

NOTE LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE

PROBABLE

POSSIBLE

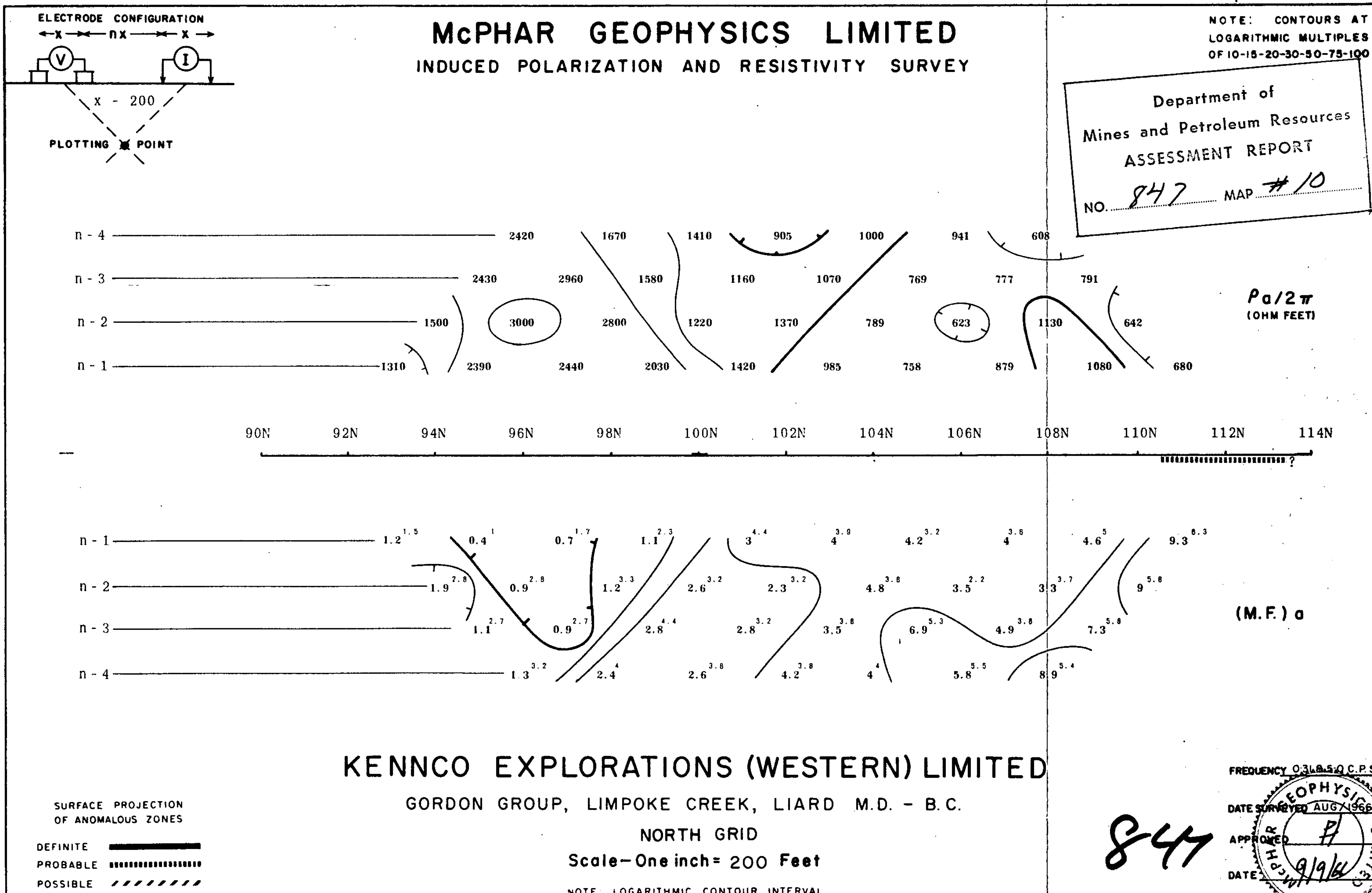
847

FREQUENCY 0.31 & 5.0 C.P.S.

DATE SURVEYED AUG / 1966

APPROVED

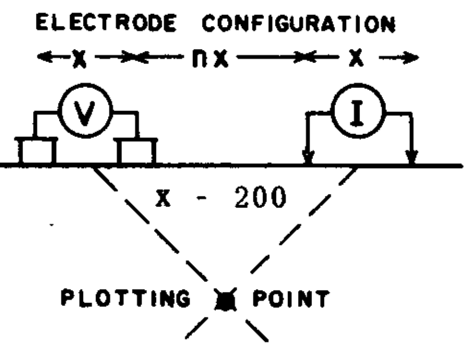
DATE 9/9/66


DWG. NO.-I.P.- 2523-7
McPHAR GEOPHYSICS LIMITED
INDUCED POLARIZATION AND RESISTIVITY SURVEY
ELECTRODE CONFIGURATION
x - 200
PLOTTING POINT
NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100
Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 847 MAP #10
n - 4
n - 3
n - 2
n - 1
90N
92N
94N
96N
98N
100N
102N
104N
106N
108N
110N
112N
114N
Pa/2π (OHM FEET)
(M.F.) a
LINE NO.- 112 E
KENNCO EXPLORATIONS (WESTERN) LIMITED
GORDON GROUP, LIMPOKE CREEK, LIARD M.D. - B.C.
NORTH GRID
Scale- One inch = 200 Feet
NOTE LOGARITHMIC CONTOUR INTERVAL
SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE
FREQUENCY 0.3 & 5.0 C.P.S.
DATE SURVEYED AUG./1966
APPROVED
DATE 9/9/66
McPHAR GEOPHYSICS LIMITED
847

DWG. NO.-I.P.- 2523-8

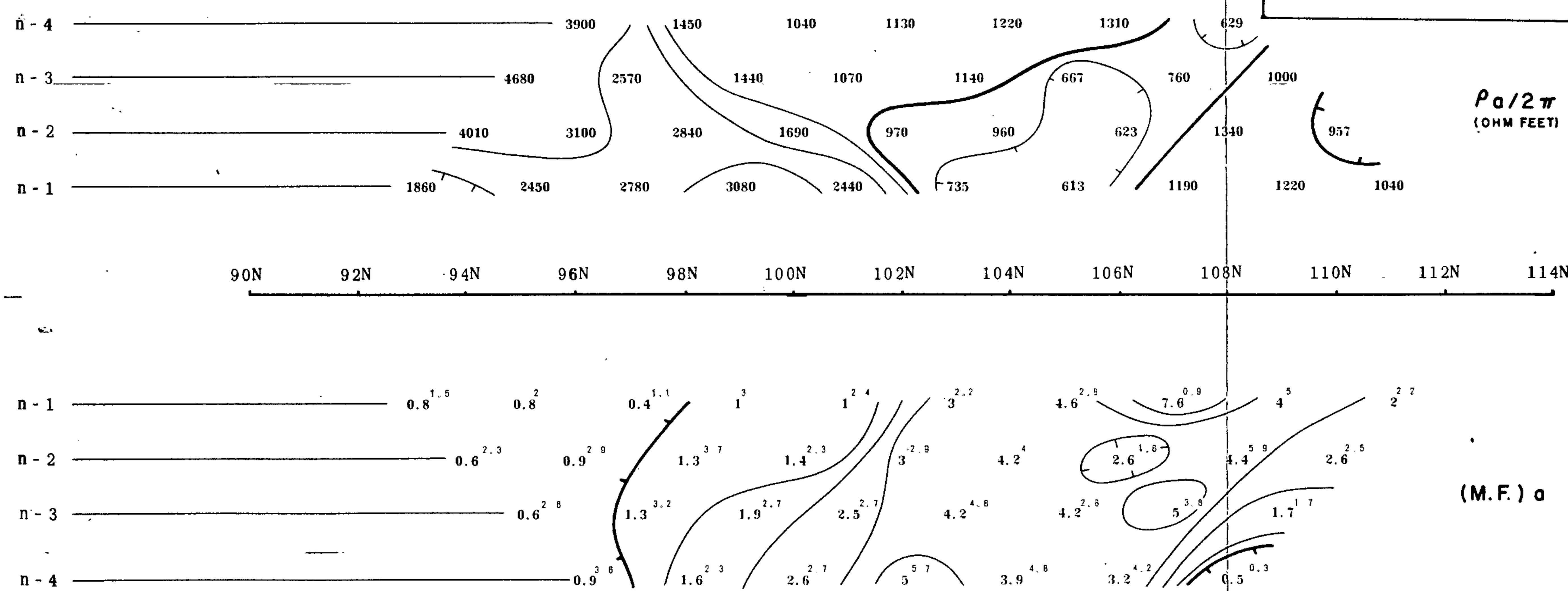
McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 847 MAP # 11



LINE NO.- 116 E

KENNCO EXPLORATIONS (WESTERN) LIMITED

GORDON GROUP, LIMPOKE CREEK, LIARD M.D. - B.C.

NORTH GRID

Scale- One inch = 200 Feet

NOTE LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

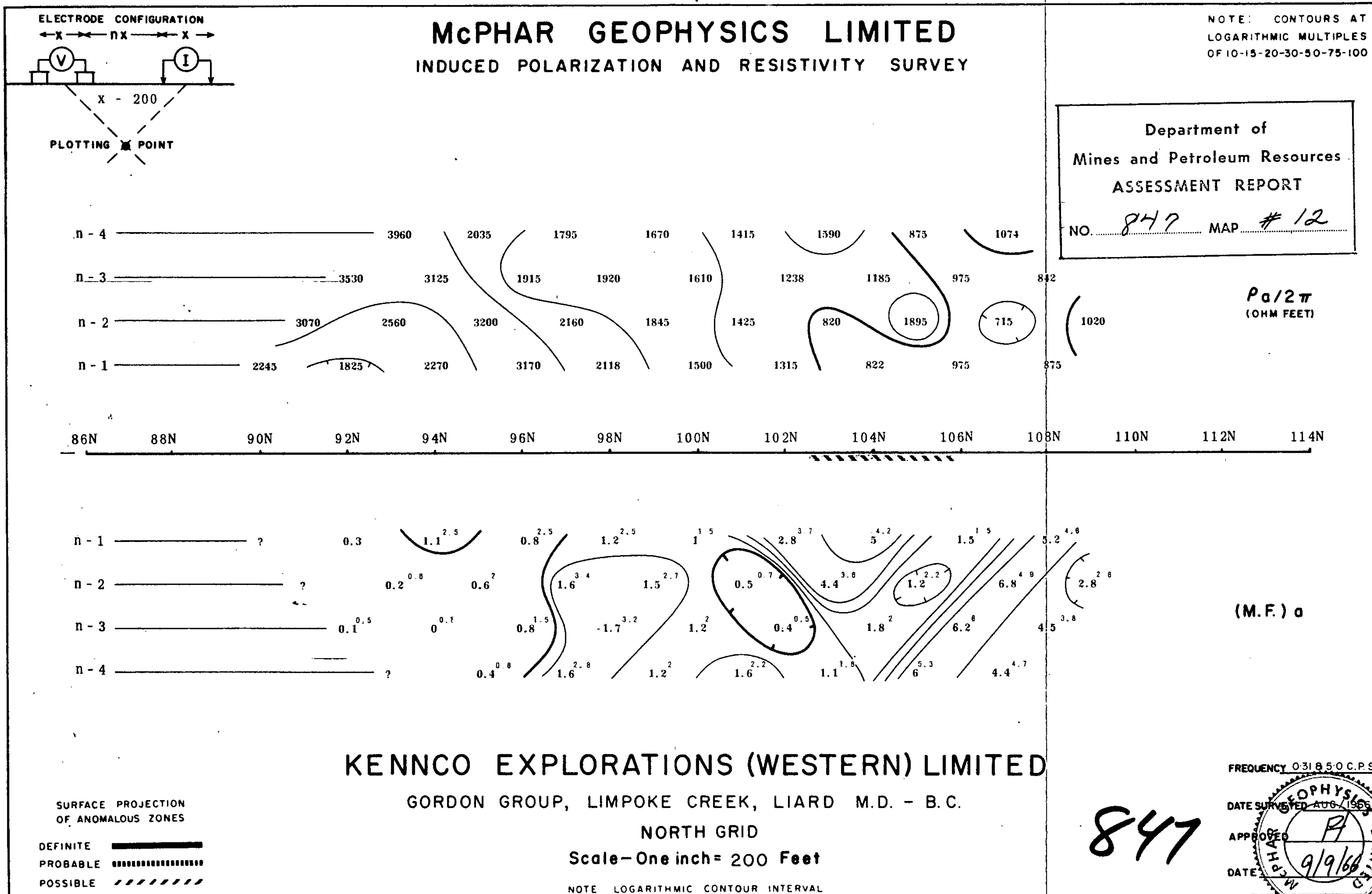
DEFINITE
PROBABLE
POSSIBLE

847

FREQUENCY 0.31 & 5.0 C.P.S.
DATE SURVEYED AUG. 1966
APPROVED [signature]
DATE 9/9/66

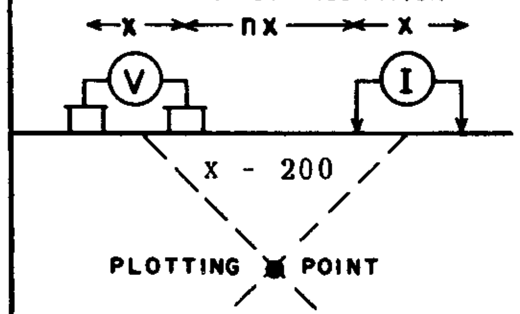
McPHAR GEOPHYSICS LIMITED

DWG. NO.-I.P.- 2523-9



DWG. NO.-I.P.- 2523-10

ELECTRODE CONFIGURATION

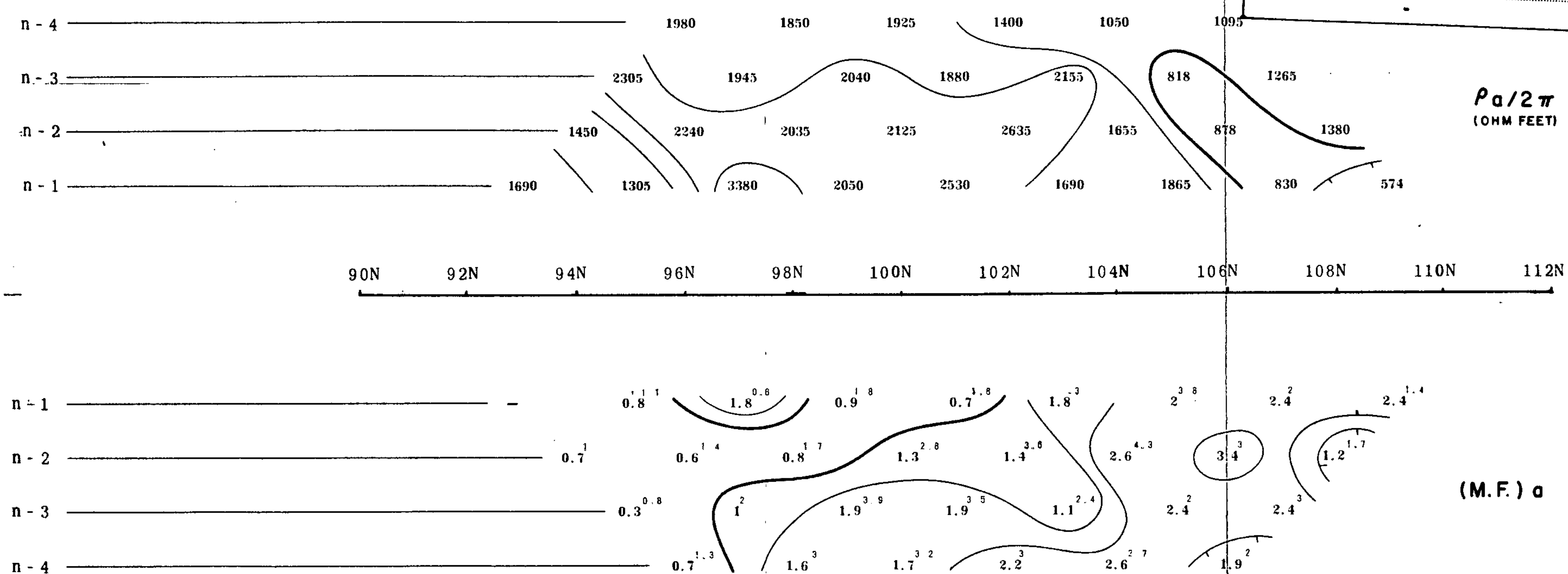


McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 847 MAP # 12



LINE NO.- 124 E

KENNCO EXPLORATIONS (WESTERN) LIMITED

GORDON GROUP, LIMPOKE CREEK, LIARD M.D. - B.C.

NORTH GRID

Scale-One inch = 200 Feet

NOTE LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE

PROBABLE

POSSIBLE

847

FREQUENCY 0.31 & 5.0 C.P.S.

DATE SURVEYED AUG/1966

APPROVED

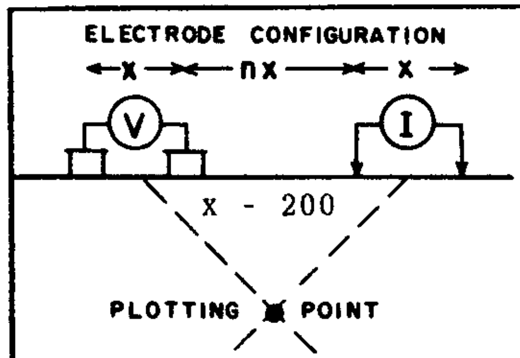
DATE 9/9/66

McPHAR GEOPHYSICS LIMITED

DWG. NO.-I.P.- 2523 -11

McPHAR GEOPHYSICS LIMITED

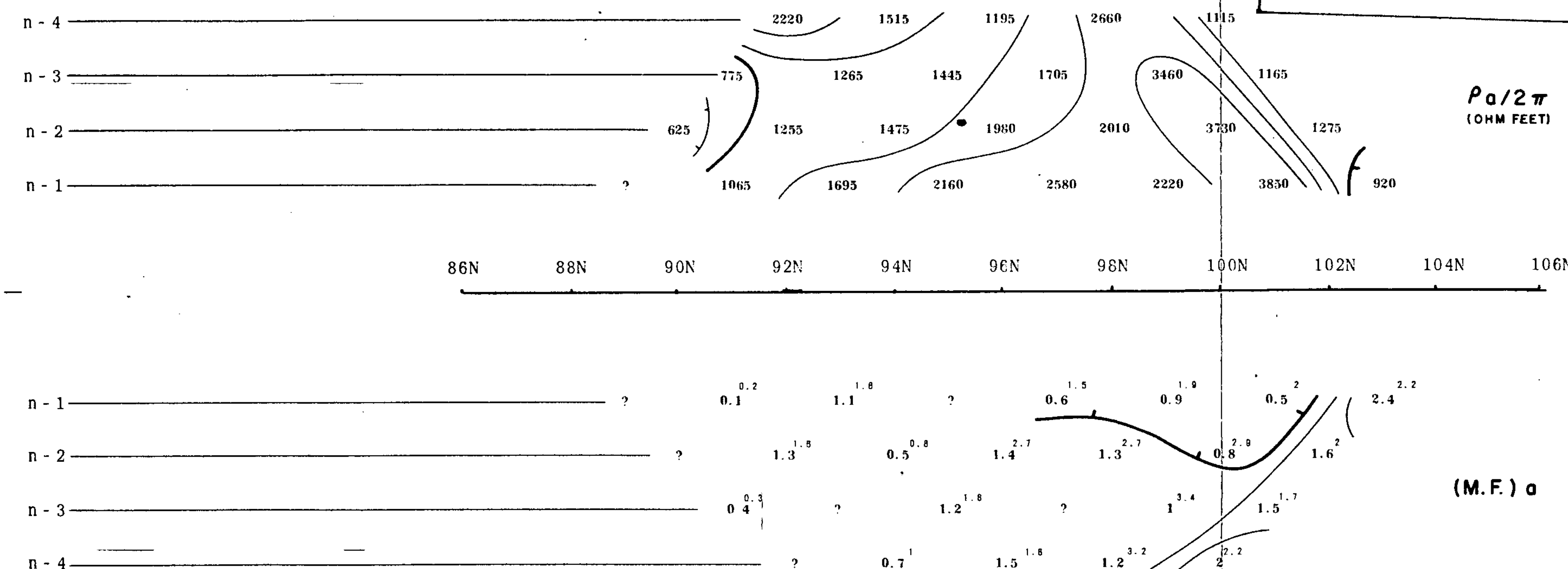
INDUCED POLARIZATION AND RESISTIVITY SURVEY



NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

Department of Mines and Petroleum Resources ASSESSMENT REPORT

NO. 847 MAP # 13



LINE NO.- 128 E

KENNCO EXPLORATIONS (WESTERN) LIMITED

GORDON GROUP, LIMPOKE CREEK, LIARD M.D. - B.C.

NORTH GRID

Scale-One inch= 200 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE

PROBABLE

POSSIBLE

847

FREQUENCY 0.3 & 5.0 C.P.S.

DATE SURVEYED AUG / 1966

APPROVED PH

DATE 9/9/66

McPHAR GEOPHYSICS LIMITED

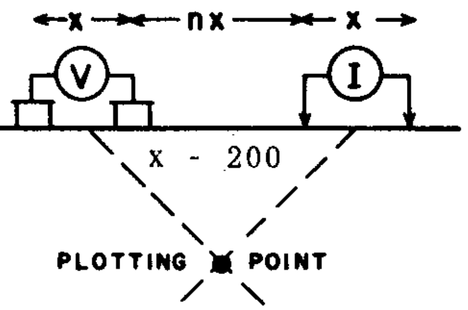
DWG. NO.-I.P.- 2525 - I

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

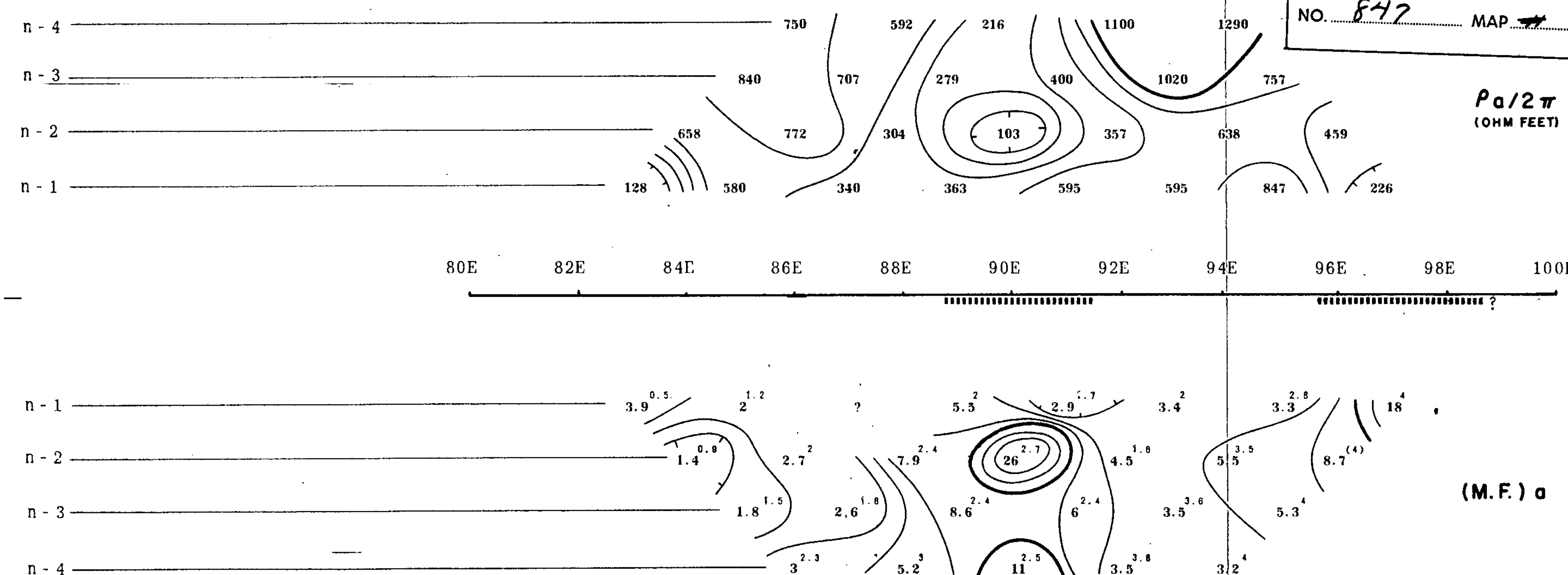
NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

ELECTRODE CONFIGURATION



Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 847 MAP # 13

LINE NO.- 100 N (A)



KENNCO EXPLORATIONS (WESTERN) LIMITED

GORDON GROUP, LIMPOKE CREEK, LIARD M.D. - B.C.

SOUTH GRID

Scale - One inch = 200 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE

PROBABLE

POSSIBLE

847

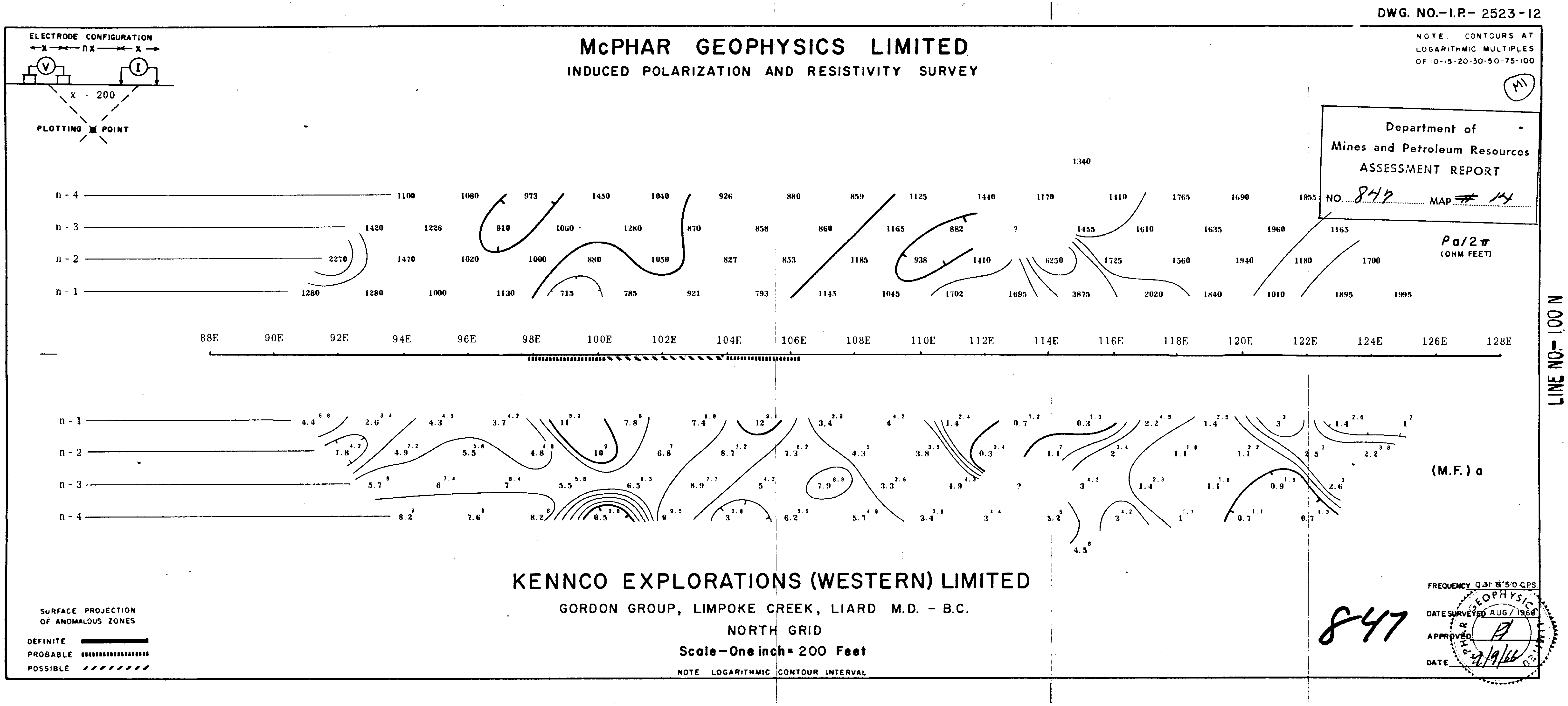
FREQUENCY 0.31 & 5.0 C.P.S.

DATE SURVEYED AUG/1966

APPROVED 9/9/66

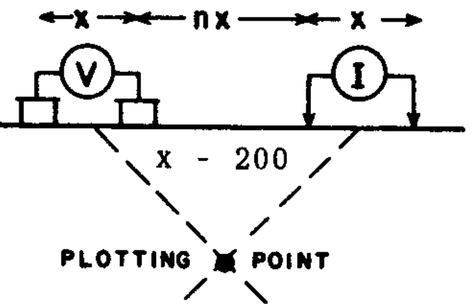
DATE

McPHAR GEOPHYSICS LIMITED


DWG. NO.-I.P.- 2523-12
McPHAR GEOPHYSICS LIMITED
INDUCED POLARIZATION AND RESISTIVITY SURVEY
ELECTRODE CONFIGURATION
x - 200
PLOTTING POINT
NOTE. CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100
Department of Mines and Petroleum Resources ASSESSMENT REPORT
NO. 847 MAP # 14
Pa/2π (OHM FEET)
(M.F.) a
LINE NO.- 100 N
88E 90E 92E 94E 96E 98E 100E 102E 104E 106E 108E 110E 112E 114E 116E 118E 120E 122E 124E 126E 128E
KENNCO EXPLORATIONS (WESTERN) LIMITED
GORDON GROUP, LIMPOKE CREEK, LIARD M.D. - B.C.
NORTH GRID
Scale-One inch= 200 Feet
NOTE LOGARITHMIC CONTOUR INTERVAL
SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE
FREQUENCY 0.3 & 5.0 CPS.
DATE SURVEYED AUG/1966
APPROVED
DATE 2/9/66
847

DWG. NO.- I.P.- 2525-2

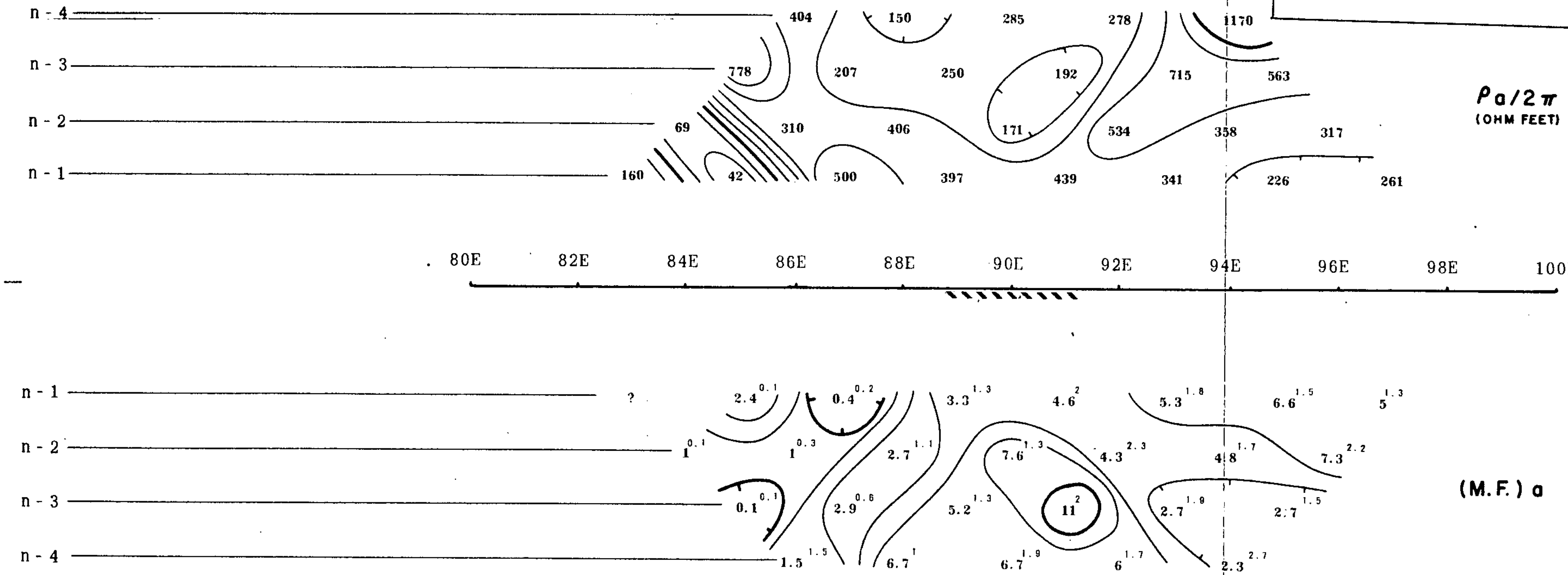
ELECTRODE CONFIGURATION



McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100



LINE NO.- 88 ER (B)

KENNCO EXPLORATIONS (WESTERN) LIMITED

GORDON GROUP, LIMPOKE CREEK, LIARD M.D. - B.C.

SOUTH GRID

Scale - One inch = 200 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

847

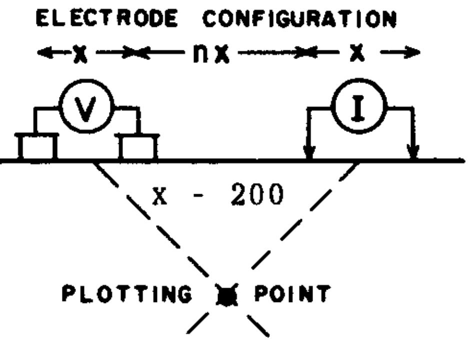
FREQUENCY 0.31 & 5.0 C.P.S.
DATE SURVEYED AUG/1966
APPROVED
DATE 9/9/66

DWG. NO.-I.P.- 2525-3

McPHAR GEOPHYSICS LIMITED

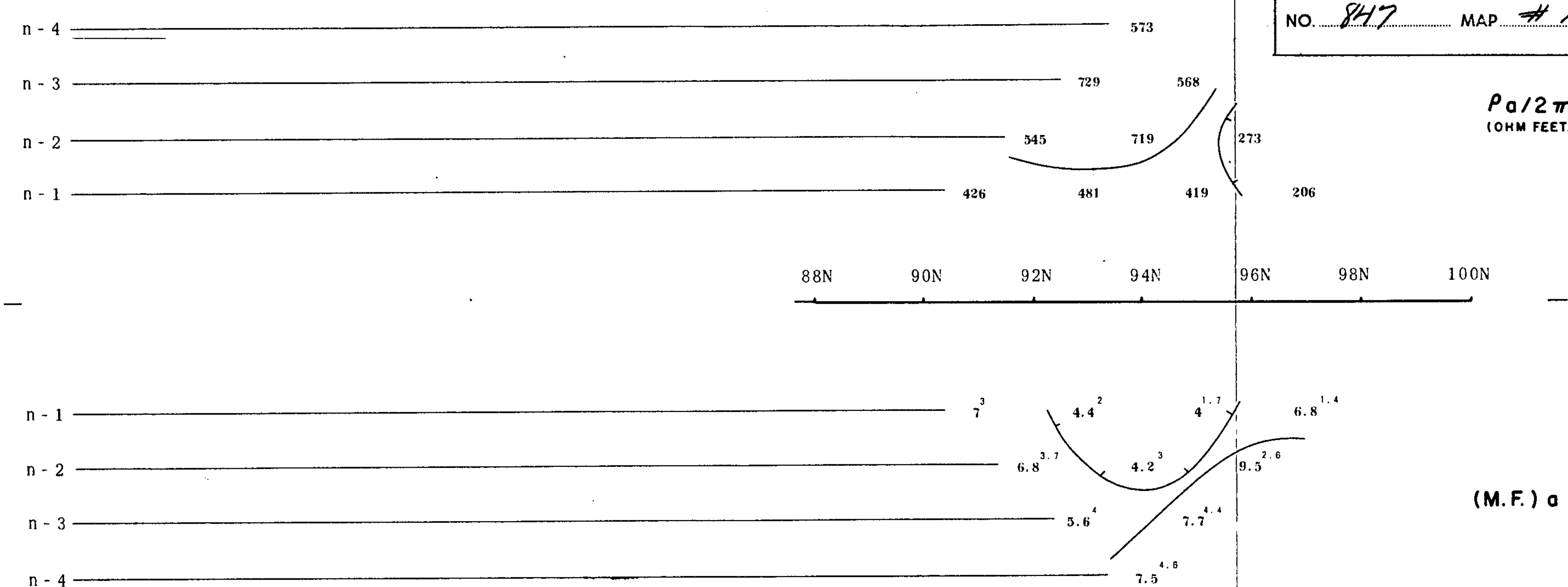
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100



Department of Mines and Petroleum Resources ASSESSMENT REPORT

NO. 847 MAP # 15



LINE NO.- 88 EL (C)

KENNCO EXPLORATIONS (WESTERN) LIMITED

GORDON GROUP, LIMPOKE CREEK, LIARD M.D. - B.C.

SOUTH GRID

Scale- One inch = 200 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE

PROBABLE

POSSIBLE

847

FREQUENCY 0.31 & 5.0 C.P.S.

DATE SURVEYED AUG/1966

APPROVED PH

DATE 9/9/66

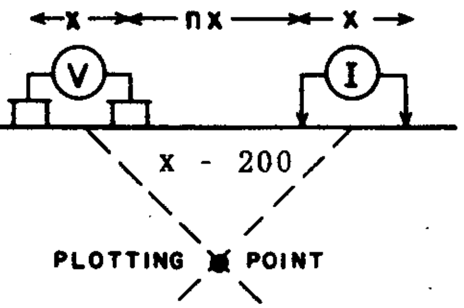
McPHAR GEOPHYSICS LIMITED

DWG. NO.-I.P.- 2525-4

McPHAR GEOPHYSICS LIMITED

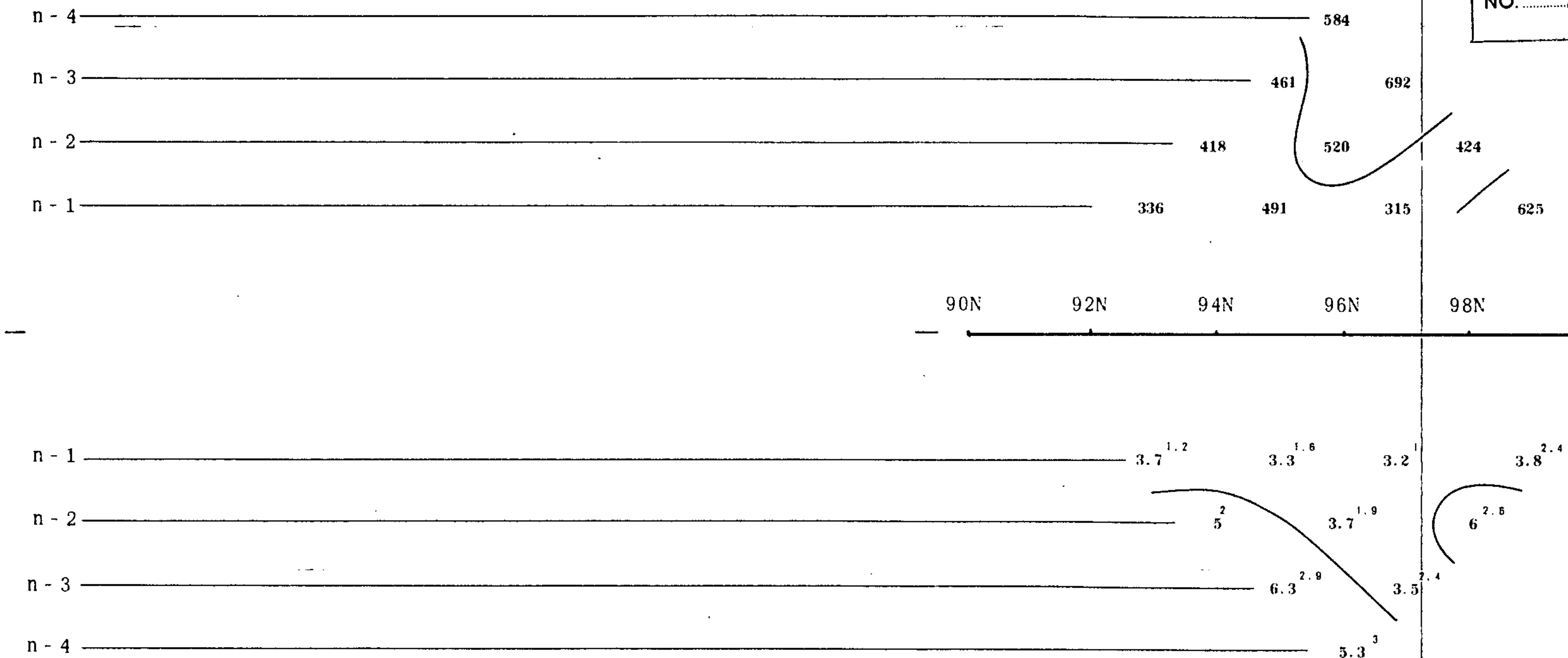
INDUCED POLARIZATION AND RESISTIVITY SURVEY

ELECTRODE CONFIGURATION



NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 847 MAP #16



$\rho a/2\pi$ (OHM FEET)

(M.F.) a

LINE NO.- 94 E (D)

KENNCO EXPLORATIONS (WESTERN) LIMITED

GORDON GROUP, LIMPOKE CREEK, LIARD M.D. - B.C.

SOUTH GRID

Scale-One inch= 200 Feet

NOTE LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

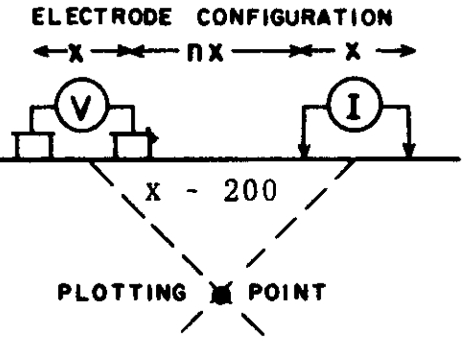
DEFINITE
PROBABLE
POSSIBLE

847

FREQUENCY 0.31-5.0 C.P.S.
DATE SURVEYED AUG. 1966
APPROVED
DATE 9/9/66

McPHAR GEOPHYSICS LIMITED

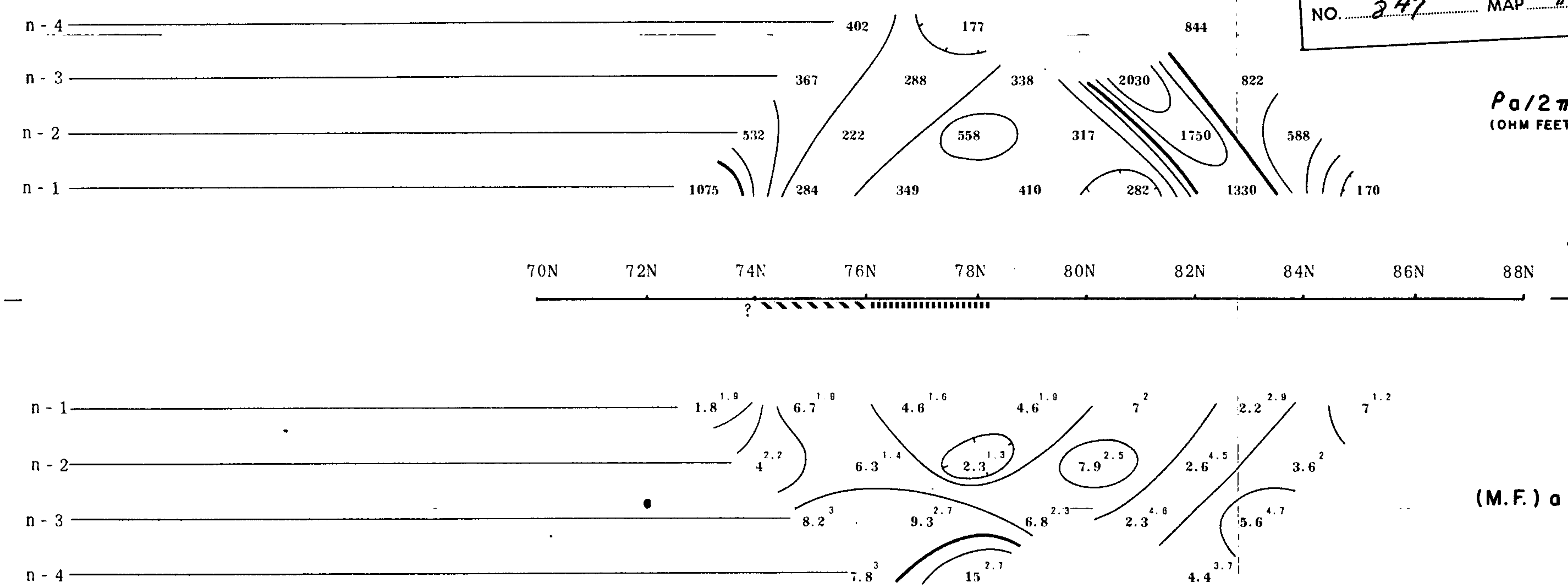
DWG. NO.- I.P.- 2525 - 5



McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100



LINE NO.- 95 + 30 N (E)

KENNCO EXPLORATIONS (WESTERN) LIMITED

GORDON GROUP, LIMPOKE CREEK, LIARD M.D. - B.C.

SOUTH GRID

Scale – One inch = 200 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE

PROBABLE

POSSIBLE

847

FREQUENCY 0.31 & 5.0 C.P.S.

DATE SURVEYED AUG./1966

APPROVED [signature]

DATE 9/9/66

McPHAR GEOPHYSICS LIMITED

DWG. NO.- I.P.- 2525-6

ELECTRODE CONFIGURATION

x nx x

V I

x - 200

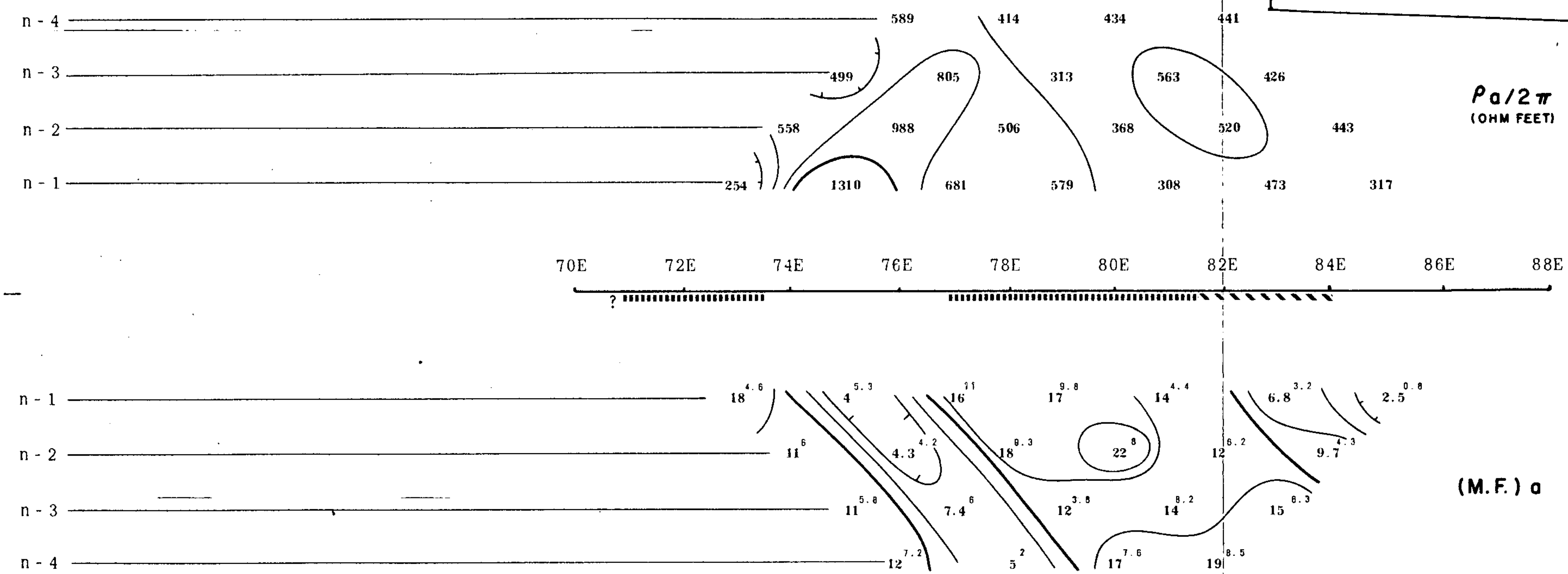
PLOTTING POINT

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 847 MAP # 18



LINE NO.- 70 N (F)

KENNCO EXPLORATIONS (WESTERN) LIMITED

GORDON GROUP, LIMPOKE CREEK, LIARD M.D. - B.C.

SOUTH GRID

Scale – One inch = 200 Feet

NOTE LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE

PROBABLE

POSSIBLE

847

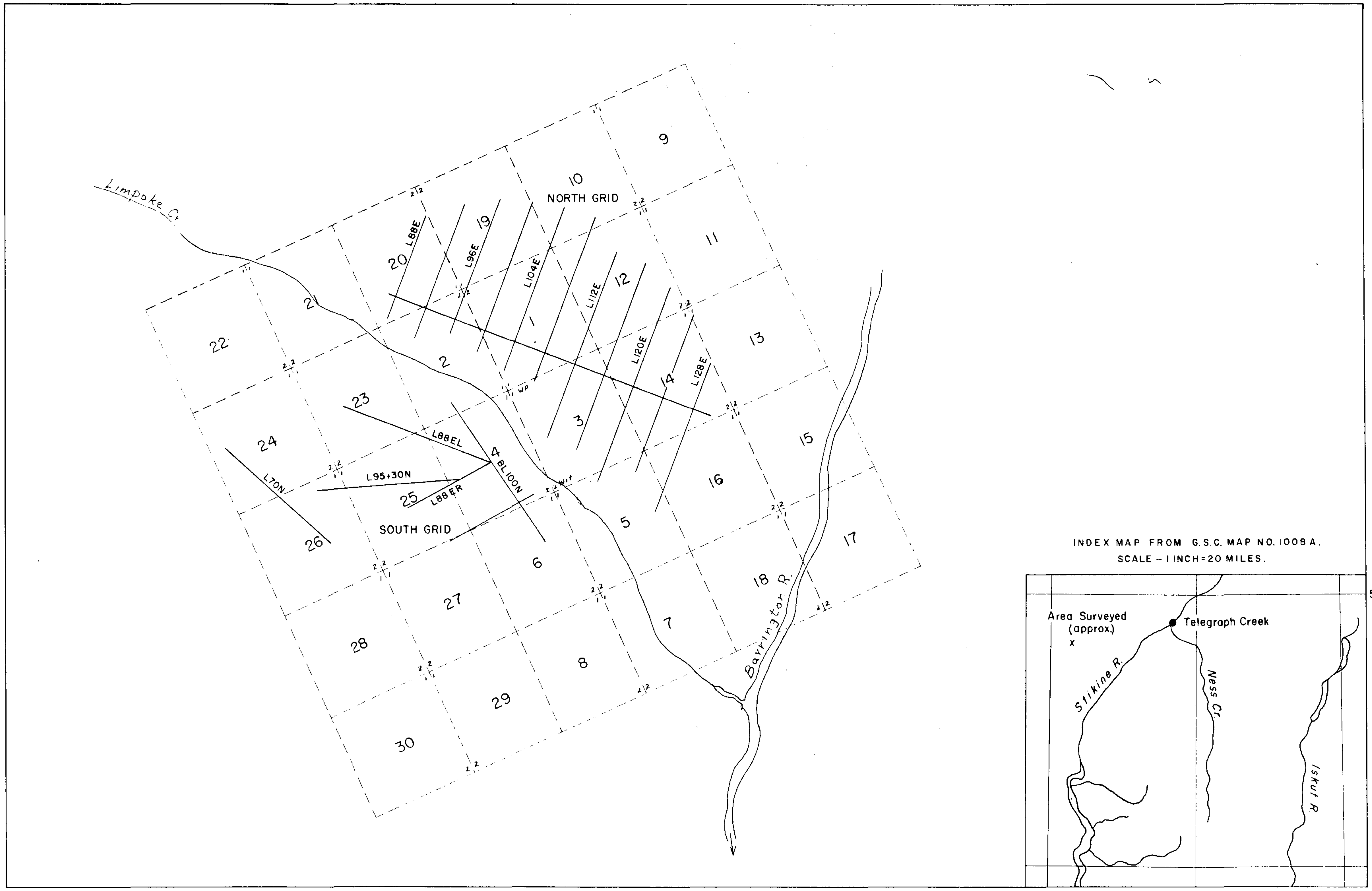
FREQUENCY 0.31 & 5.0 C.P.S.

DATE SURVEYED AUG/1966

APPROVED PH

DATE 9/9/66

McPHAR GEOPHYSICS LIMITED



KENNCO EXPLORATIONS (WESTERN) LIMITED

GORDON GROUP, LIMPOKE CREEK, LIARD M.D. - B.C.

GRID LOCATIONS

SCALE

ONE INCH EQUALS FOUR HUNDRED FEET

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 847 MAP #2

DRAWN BY: G.L.M.
DATE: OCT. 1966

847

M2

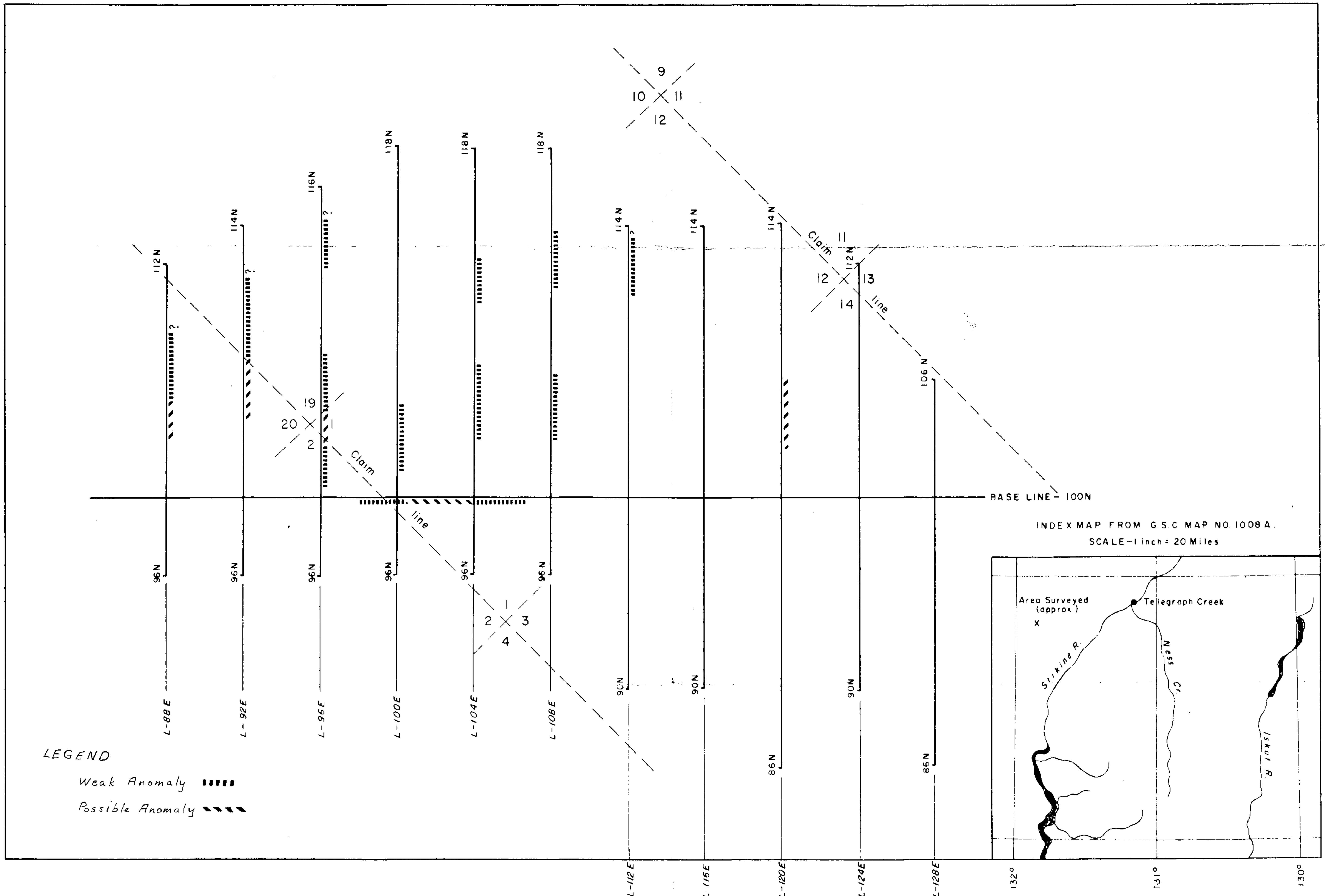
DWG. MISC. 2522

H3

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

PLAN MAP



KENNCO EXPLORATIONS (WESTERN) LIMITED

GORDON GROUP, LIMPOKE CREEK, LIARD M.D. - B.C.

NORTH GRID

SCALE

ONE INCH EQUALS FOUR HUNDRED FEET

847

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 847 MAP #1

DRAWN: F.R.P.
DATE: SEPT 1966

McPHAR GEOPHYSICS LIMITED
DATE: 9/9/66

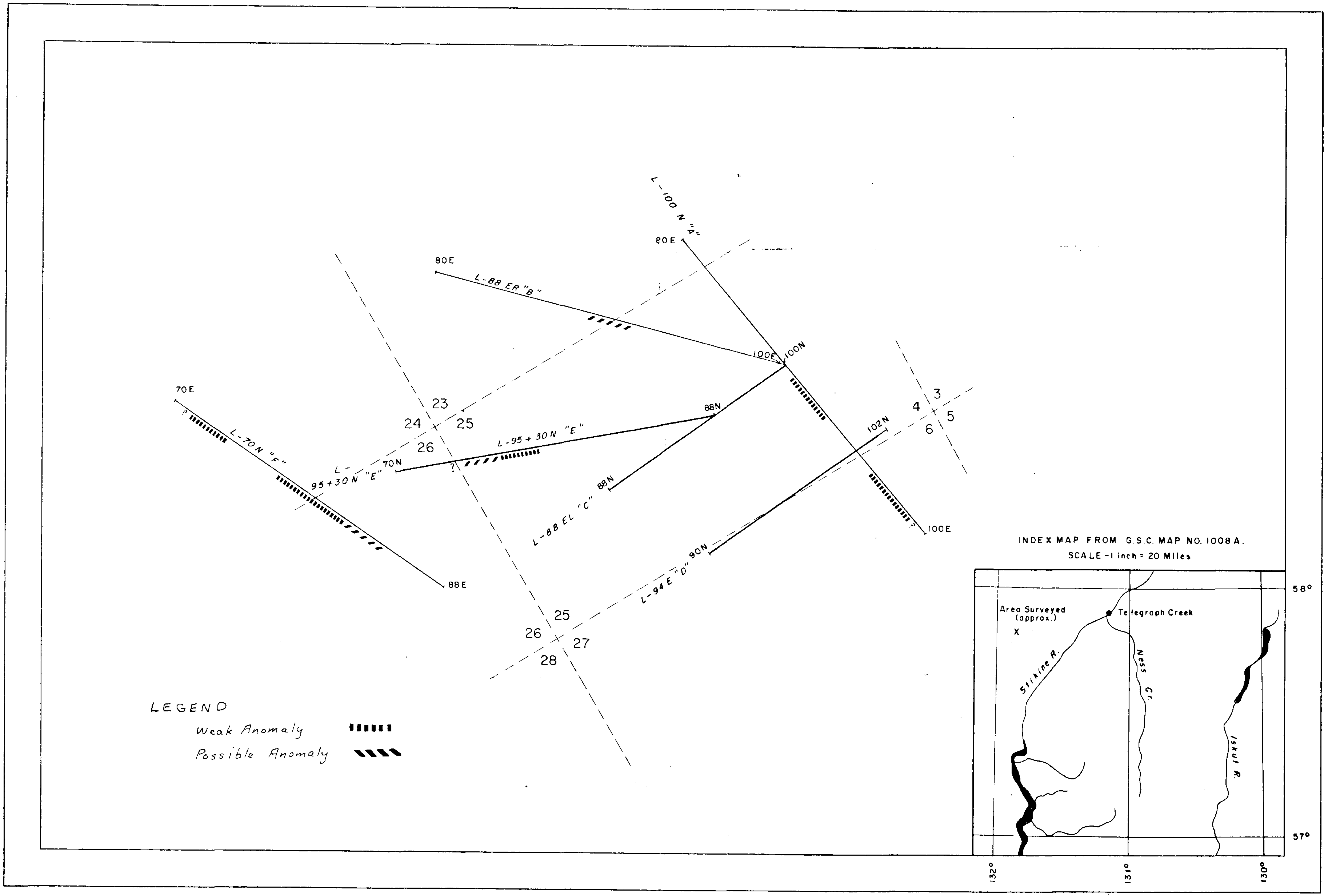
DWG. MISC. 2522

DWG. MISC. 2524

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

PLAN MAP



(M4)

KENNCO EXPLORATIONS (WESTERN) LIMITED

GORDON GROUP, LIMPOKE CREEK, LIARD M.D. - B.C.

SOUTH GRID

SCALE

ONE INCH EQUALS FOUR HUNDRED FEET

N

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 847 MAP #3

847

DRAWN: F.R.P.
DATE: SEPT. 1966

McPHAR GEOPHYSICS LIMITED
APPROVED: [signature]
DATE: 9/9/66

DWG. MISC. 2524