#3

6000 0089 (0760)

0.3 - 2.5

&

0.1 - 1.25

REPORT ON THE
INDUCED POLARIZATION
AND RESISTIVITY SURVEY
ON THE
HOTTENTOT PROSPECT
WALKER RIVER AREA,
PAIUTE RESERVATION, NEVADA
FOR
MARTEL MINING COMPANY

Retained Copy

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Hottentot

PROPRIETARY

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McPHAR GEOPHYSICS LIMITED

REPORT ON THE INDUCED POLARIZATION AND RESISTIVITY SURVEY ON THE HOTTENTOT PROSPECT WALKER RIVER AREA, PAIUTE RESERVATION, NEVADA FOR MARTEL MINING COMPANY

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1. INTRODUCTION

At the request of Mr. Robert L. Redmond, an induced polarization and resistivity survey has been carried out on the Hottentot Prospect for Martel Mining Company. The prospect is located in the Walker River Area, Paiute Reservation, Nevada.

Geologic investigations and magnetic surveying have indicated the presence of magnetite mineralization on the prospect. Recently, copper mineralization has been found to be associated with magnetite in nearby areas. The surveying was carried out in the hope that the I.P. results would be of assistance in outlining any copper-bearing sulphides associated with the magnetic mineralization.

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.

	Electrode Separation	
Line N-S	1000 foot	Dwg. I.P. 2144-1
Line N-S	500 foot	Dwg. I.P. 2144-2
Line N-S detail	500 foot	Dwg. I.P. 2144-3
Line 5W	500 foot	Dwg. I.P. 2144-4
Line 10W	500 foot	Dwg. I.P. 2144-5
Line 5E	500 foot	Dwg. I.P. 2144-6
Line E-W	500 foot	Dwg. I.P. 2144-7
Line E-W detail	200 foot	Dwg. I.P. 2144-8
Line 200S	200 foot	Dwg. I.P. 2144-9
Line 200N	200 foot	Dwg. I.P. 2144-10

Enclosed with this report is Dwg. Misc. 3047, a plan map of the prospect at a scale of 1" = 800 feet. The definite and possible induced polarization anomalies are indicated by solid and broken bars respectively on this plan map 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 body 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

The initial surveying on the property was carried out using frequencies of 0.3 and 2.5 cps in order to obtain rapid coverage of the property. However, unusually low resistivities were encountered which are partially due to the highly conductive sediments in an old lake bed. In areas of low resistivity, such as this, the inductive coupling between the current and potential wires can be important and give rise to extraneous voltages. Since these voltages are frequency dependent they cause effects similar to I.P. effects.

In order to confirm the results obtained in the initial surveying the main traverse across the magnetic anomaly, Line N-S, was repeated using frequencies of 0.1 and 1.25 cps to eliminate the effects of coupling.

Line N-S

This line was first surveyed with both 500 and 1000 foot

electrode separations. These results indicated an anomalous zone centered at 20S but there is some distortion in the I.P. effects due to the presence of inductive coupling.

The line was later checked using frequencies of 0.1 and 1.25 cps as shown on Dwg. No. I.P. 2144-3. On this data, the effects of inductive coupling are negligible and moderate magnitude metal factors indicate a source that is centered at 20S. The depth to the top of the source is probably not in excess of 750 feet near 20S. Somewhat weaker metal factor values occur on the larger separations to the north. This suggests that the source extends farther north at depth and may continue as far as the zero point of the line.

The north part of this anomaly may correlate with the magnetite intersection obtained between 720 and 790 feet in D.D.H. #1 and additional drill tests should be made of the shallower portions of the anomaly at 20S.

Line 5W

Theoretical calculations show that the coupling effects could be as high as 4 per cent frequency effect for the n=4 values on the north part of the line. Allowing for these effects, an I.P. response remains between 10S and 15S. This possible anomalous zone appears to be due to a source that is remote from the line; i.e. either at depth or to the side of the line. It is possible that some of the anomalous effects are due to the anomaly on Line N-S which lies 500 feet

to the east.

Line 10W

The resistivities are quite low on this line and consequently the effects of inductive coupling are quite significant. Nevertheless, the results suggest an I.P. source centered near 3S that is remote from the line and is probably located at depth.

Line 5E

A source has been interpreted to be centered near 25S. It also appears to be remote from the line.

Line E-W

Three anomalous zones have been interpreted from the data taken with 500 foot electrode separations.

The strongest appears to extend from 6W to 18W and is indicative of a source that is remote from the line. Detailing with 200 foot electrode separations suggests that these effects could be due to two separate sources; a shallow zone centered at 5W and a much deeper zone located near 12W. The deeper indication corroborates the results obtained in the surveying of Line N-S.

The sources shown to be centered near 5E and 17E on this line are also indicative of metallic zones that are remote from the line. However, additional surveying on parallel or perpendicular lines would be required to assess their importance.

Line 200S

Near 11W the results are indicative of a source that is remote from the line. Small metal factor values for n=3 and n=4 suggest that the zone extends farther both east and west.

Line 200N

The metal factor values on this line are somewhat weaker but they also show a source remote from the line. The anomaly appears to extend from 6W at least as far west as 12W. Additional surveying would be required to determine the western limit of the anomaly.

4. SUMMARY AND RECOMMENDATIONS

Seven lines have been surveyed in the vicinity of a strong magnetic anomaly. The results of this work appear to have outlined a zone of metallic mineralization that trends roughly NW-SE on the southern part of the magnetic feature.

D.D.H. #1 located at the zero point of Line N-S is reported to have intersected metallic magnetite at a depth of 720 to 790 feet. This drill hole lies on the northernmost part of the I.P. effects and the intersected magnetite may be responsible for part of the anomalous response. D.D.H. #2 has been drilled to a depth of 801 feet at 15S on this line. No metallic mineralization has been found in D.D.H. #2, but some limonitic alteration has been reported.

The I.P. results indicate that the shallowest and strongest part of the anomaly is centered near 20S on Line N-S. D.D.H. #3, a

vertical hole, has been spotted at 20S to establish the cause of the best I.P. effects. At this locality there is evidently some depth to the top of the source but this is estimated to be less than 750 feet.

Two weaker responses lie to the east of the main zone on Line E-W. Both of these appear to be due to deeply buried zones and additional surveying would be required to assess their importance.

McPHAR GEOPHYSICS LIMITED

D. B. Sutherland,
Geophysicist.

Dated: March 6, 1964.

6000 0089 (0760)

DWG. NO. 2144-1

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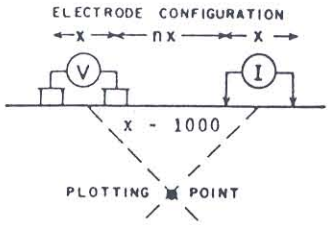
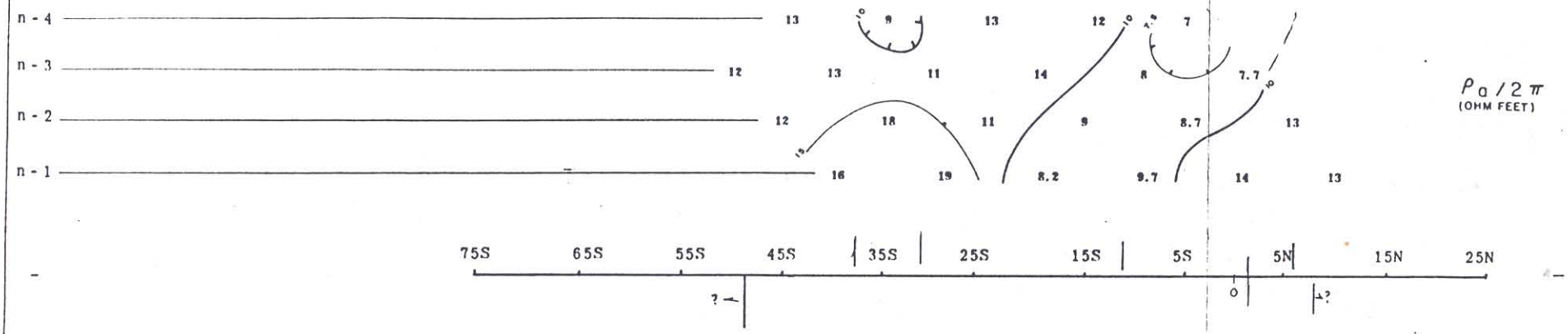
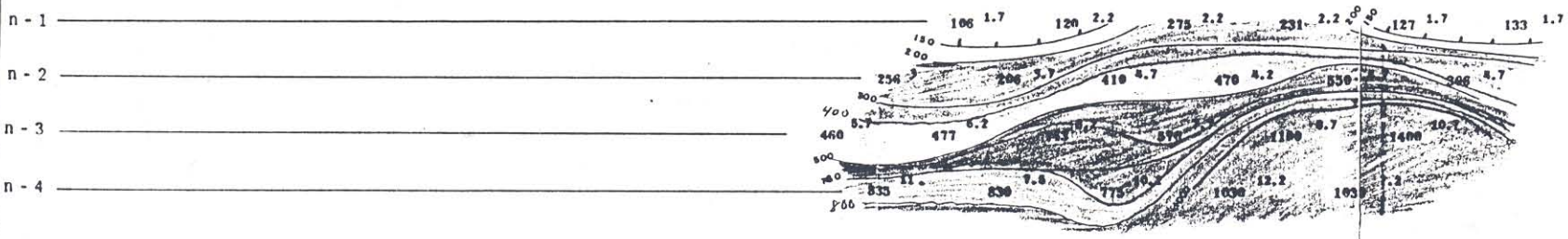
INDUCED POLARIZATION AND RESISTIVITY SURVEY







LINE NO.-N-S

MARTEL MINING COMPANY

HOTTENTOT PROSPECT, WALKER RIVER, PAIUTE RESERVATION, NEVADA.

Scale - One inch = 1000 Feet

ANOMALOUS ZONE

POSSIBLE ANOMALOUS ZONE

NOTE
LOGARITHMIC CONTOUR INTERVAL

FREQUENCY - 0.3-2.5CPS.

DATE SURVEYED - JAN. 64

APPROVED - ABS

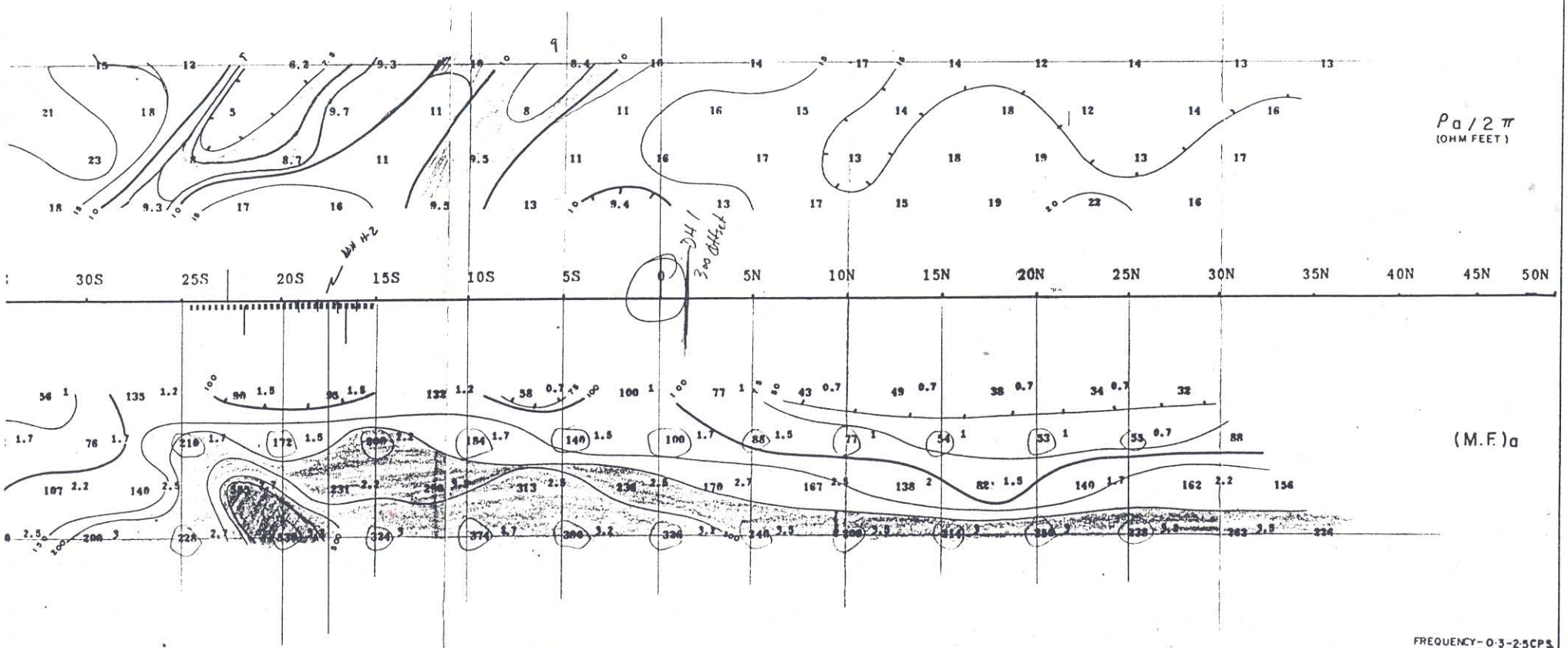
DATE - 6/3/64

6000 0089 (0760)

DWG. NO.-I.P.-2144-2

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



LINE NO.—N.-S.

MARTEL MINING COMPANY

HOTTENTOT PROSPECT, WALKER RIVER, PAIUTE RESERVATION, NEVADA.

Scale-One Inch = 500 Feet

FREQUENCY- 0·3-2·5CPS

DATE SURVEYED- JAN. 64

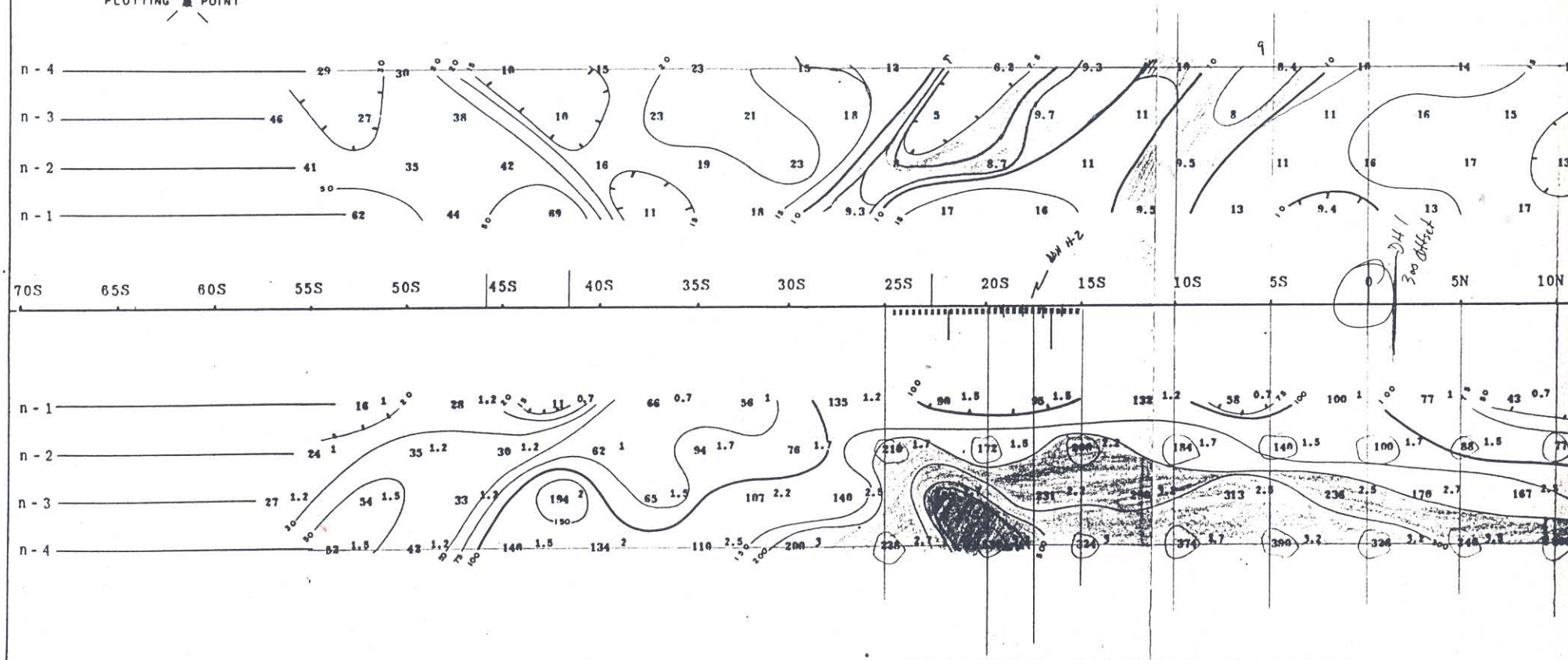
APPROVED dbd

DATE 6/3/64

6000 0089 (0760)

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



MARTEL MINING COMPANY

HOTTENTOT PROSPECT, WALKER RIVER, PAIUTE RESERVATION, NEVADA.

Scale-One Inch = 500 Feet

ANOMALOUS ZONE

POSSIBLE ANOMALOUS ZONE

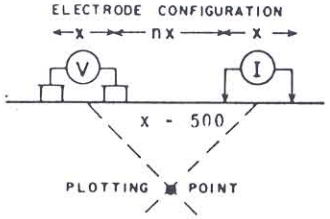
NOTE
LOGARITHMIC CONTOUR INTERVAL

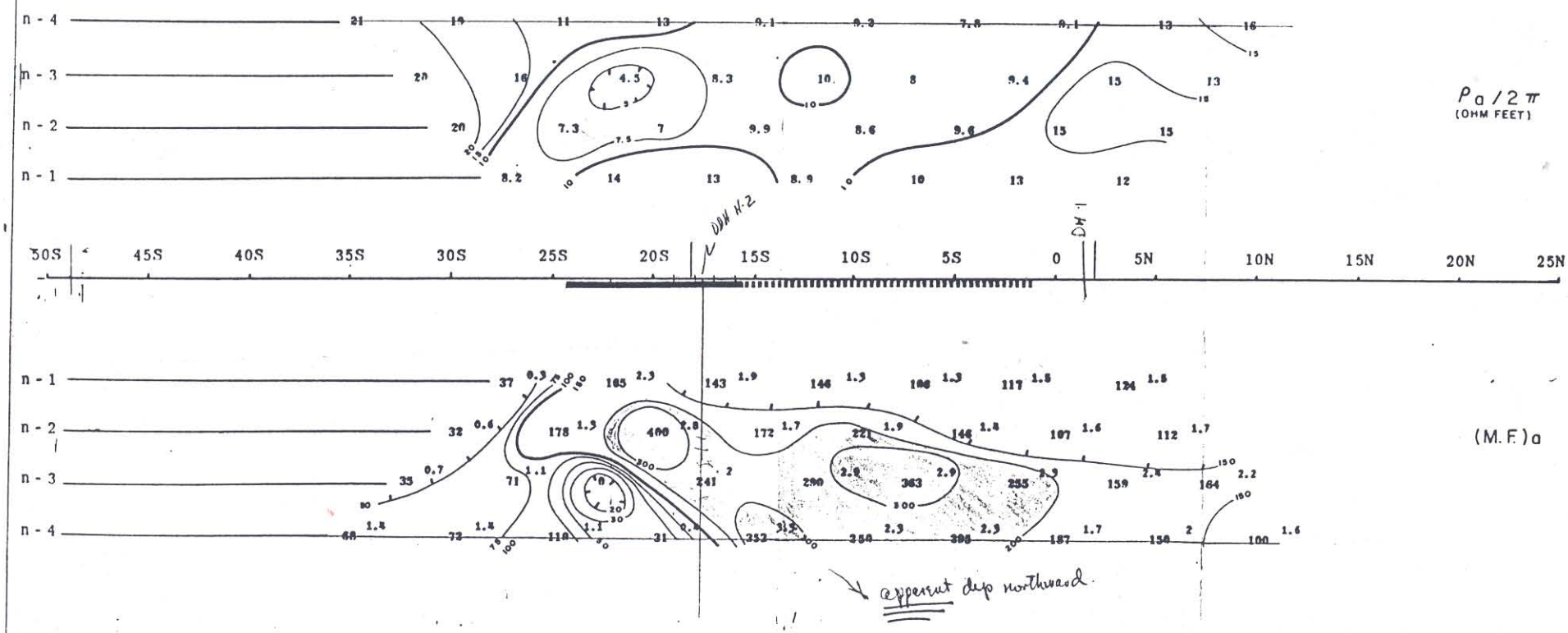
6000 0089 (0760)

DWG. NO.-I.P.-2144-3

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY





LINE NO.-N-S

MARTEL MINING COMPANY

HOTTENTOT PROSPECT, WALKER RIVER, PAIUTE RESERVATION, NEVADA.

Scale - One inch = 500 Feet

ANOMALOUS ZONE

POSSIBLE ANOMALOUS ZONE

NOTE
LOGARITHMIC CONTOUR INTERVAL

FREQUENCY - 0·1-1·25CPS

DATE SURVEYED - JAN. 64

APPROVED 466

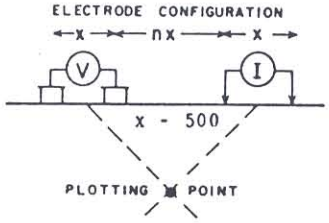
DATE 6/3/64

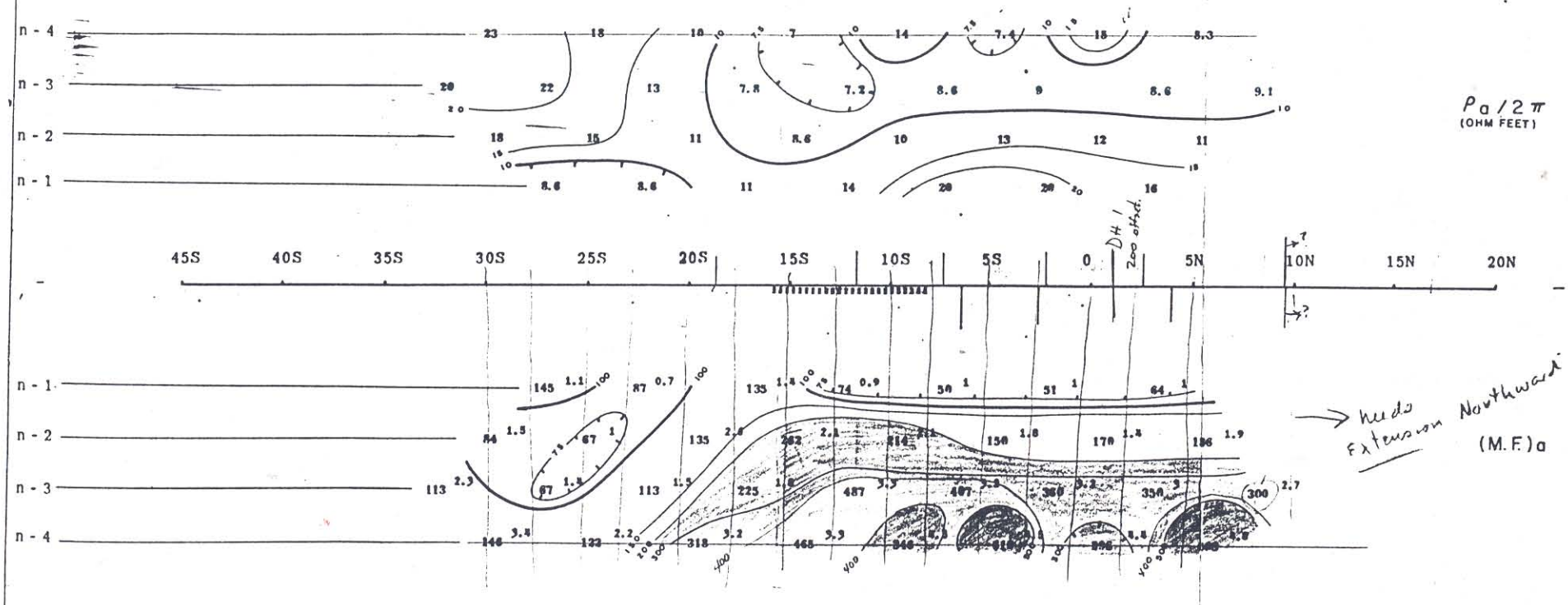
6000 0089 (0760)

DWG. NO.-I.P.-2144-4

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY





LINE NO.-5W.

ANOMALOUS ZONE

POSSIBLE ANOMALOUS ZONE

NOTE
LOGARITHMIC CONTOUR INTERVAL

MARTEL MINING COMPANY

HOTTENTOT PROSPECT, WALKER RIVER, PAIUTE RESERVATION, NEVADA.

Scale - One inch = 500 Feet

FREQUENCY - 0.3-2.5 CPS.

DATE SURVEYED - JAN. 64

APPROVED [illegible]

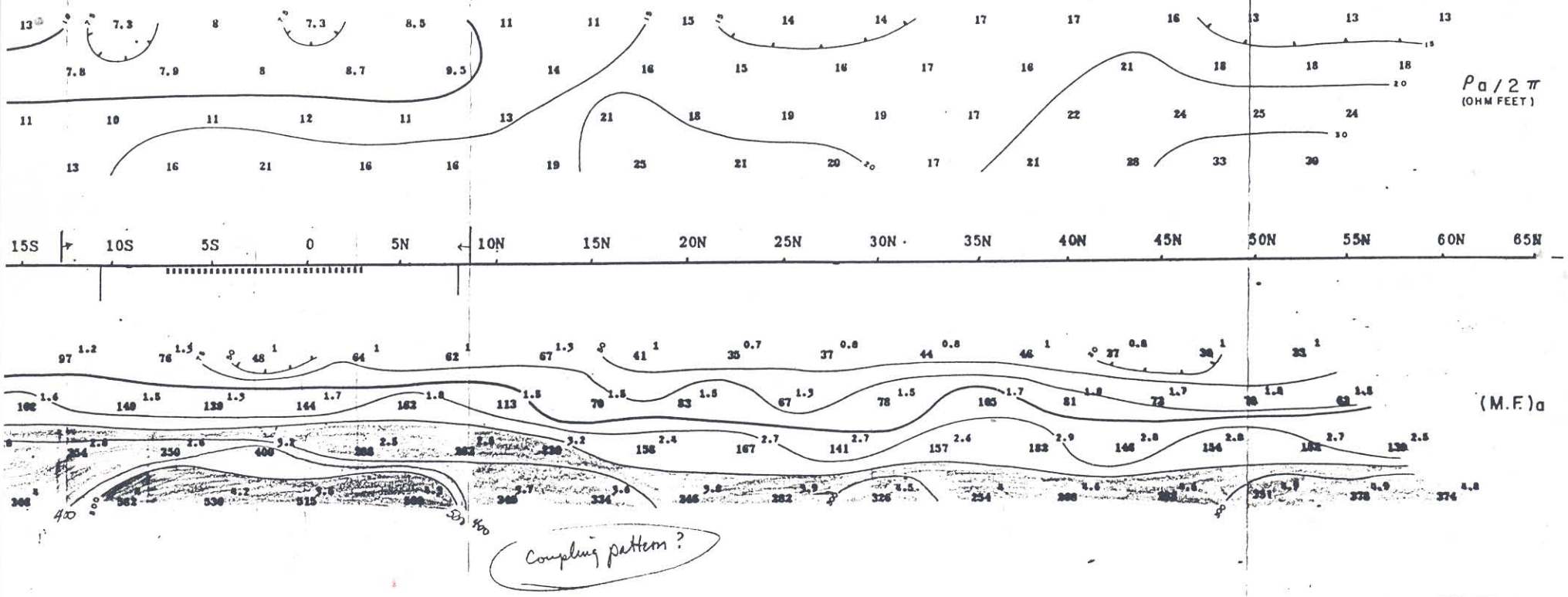
DATE - 6/5/64

6000 0089 (0760)

DWG. NO. -2144-5

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



LINE NO.—10W.

MARTEL MINING COMPANY

HOTTENTOT PROSPECT, WALKER RIVER, PAIUTE RESERVATION, NEVADA.

Scale-One Inch = 500 Feet

FREQUENCY-0.3-2.5CPS.

DATE SURVEYED-JAN. 64

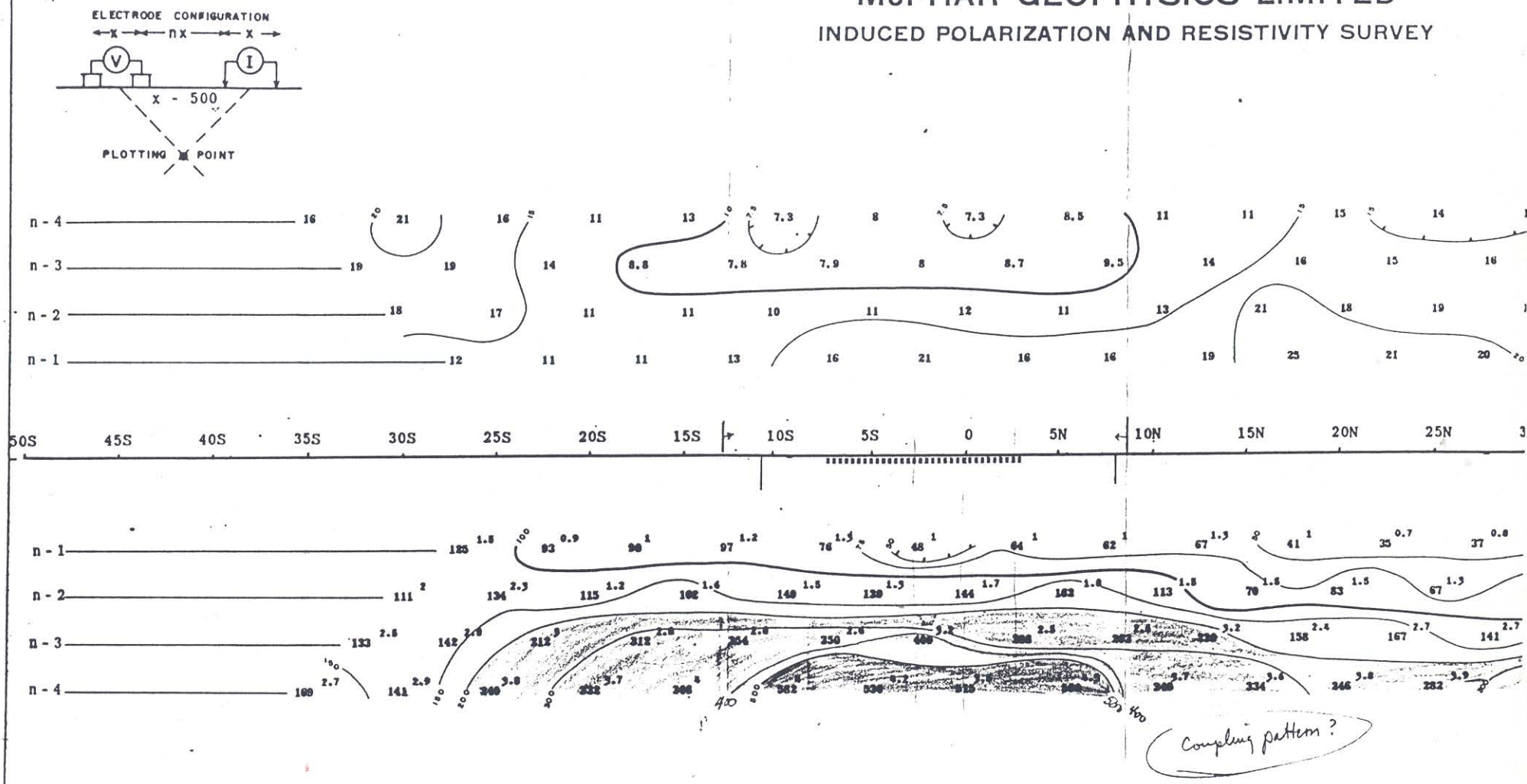
APPROVED

DATE 6/3/64

6000 0089 (0760)

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



ANOMALOUS ZONE ———

POSSIBLE ANOMALOUS ZONE — — —

NOTE
LOGARITHMIC CONTOUR INTERVAL

MARTEL MINING COMPANY

HOTTENTOT PROSPECT, WALKER RIVER, PAIUTE RESERVATION, NEVADA.

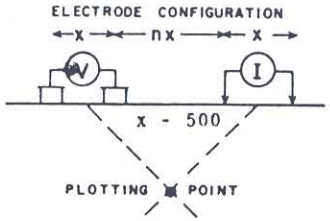
Scale-One Inch = 500 Feet

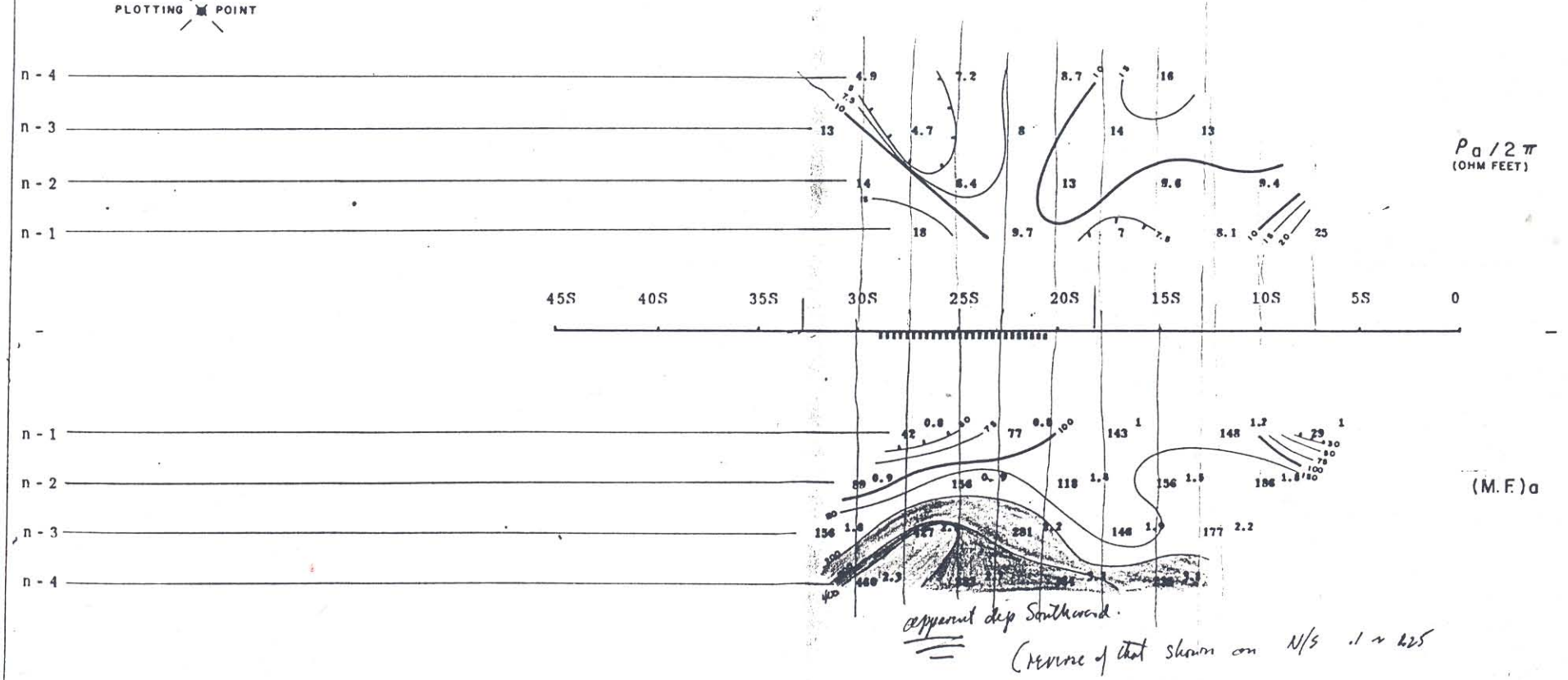
6000 0089 (0760)

DWG. NO.-I.P.-2144-6

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY





LINE NO.-5E.

MARTEL MINING COMPANY

HOTTENTOT PROSPECT, WALKER RIVER, PAIUTE RESERVATION, NEVADA.

Scale - One inch = 500 Feet

ANOMALOUS ZONE

POSSIBLE ANOMALOUS ZONE

NOTE
LOGARITHMIC CONTOUR INTERVAL

FREQUENCY - 0·3-2·5 CPS.

DATE SURVEYED - JAN. 64

APPROVED - BB

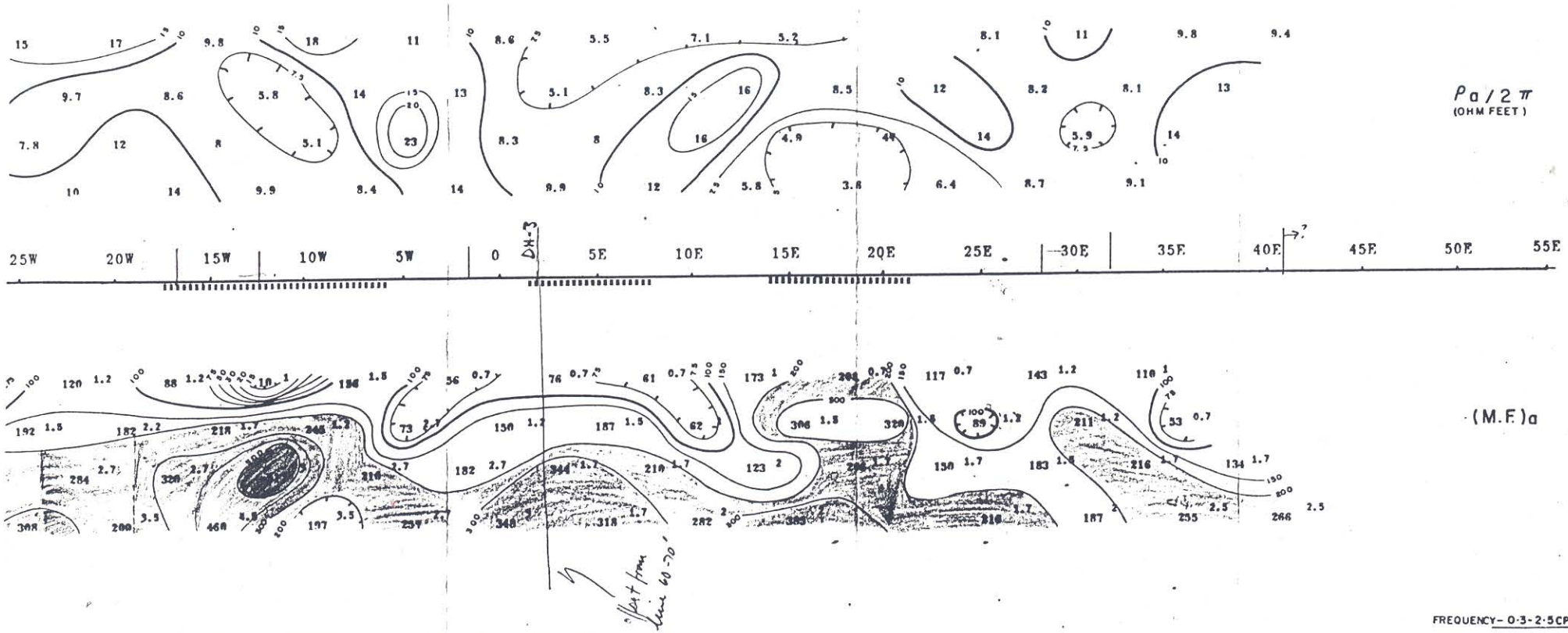
DATE 6/3/64

6000 0089 (0760)

DWG. NO.-I.P.-2144-7

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



LINE NO.— E-W.

MARTEL MINING COMPANY

HOTTENTOT PROSPECT, WALKER RIVER, PAIUTE RESERVATION, NEVADA.

Scale-One Inch = 500 Feet

FREQUENCY- 0·3-2·5CPS.

DATE SURVEYED- JAN. 64

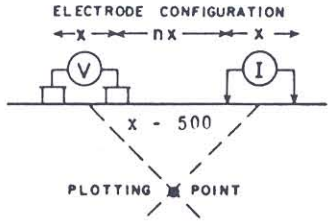
APPROVED dbs

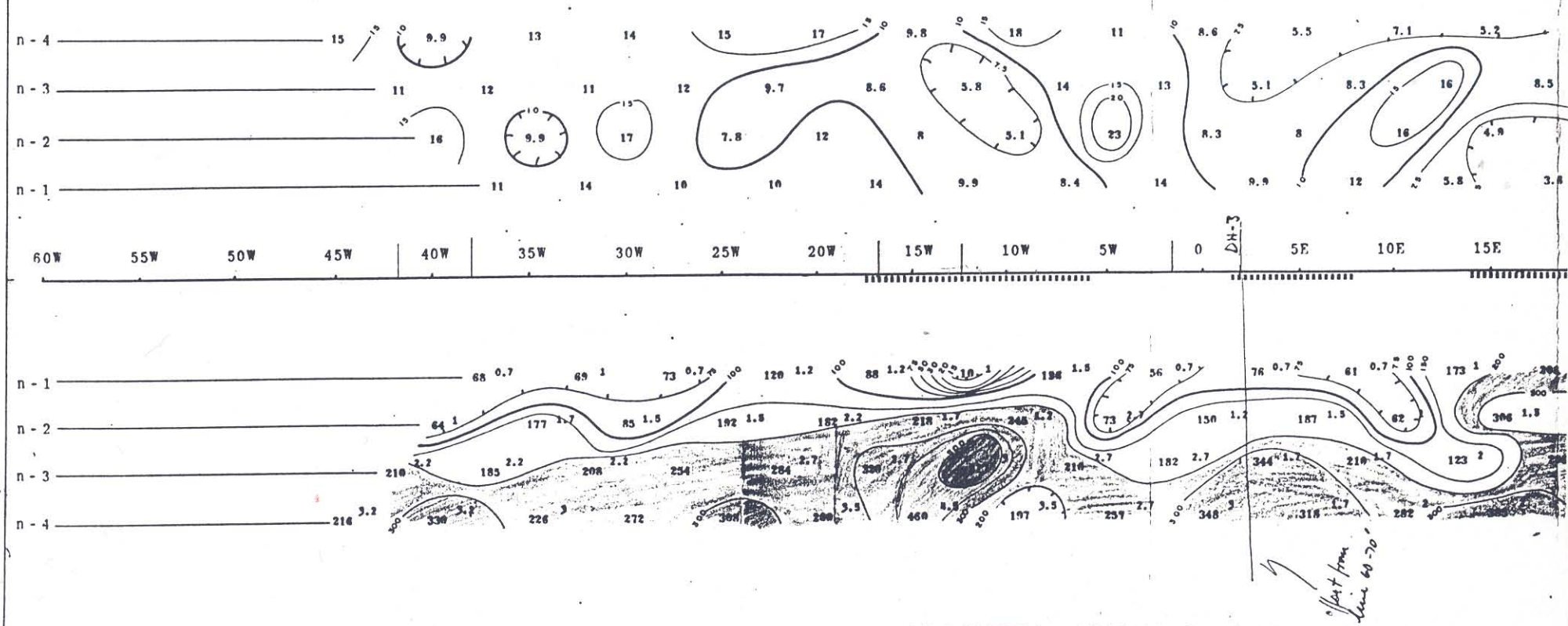
DATE 6/5/64

6000 0089 (0760)

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY





Offset from line 60-70'

ANOMALOUS ZONE
POSSIBLE ANOMALOUS ZONE
NOTE
LOGARITHMIC CONTOUR INTERVAL

MARTEL MINING COMPANY

HOTTENTOT PROSPECT, WALKER RIVER, PAIUTE RESERVATION, NEVADA.

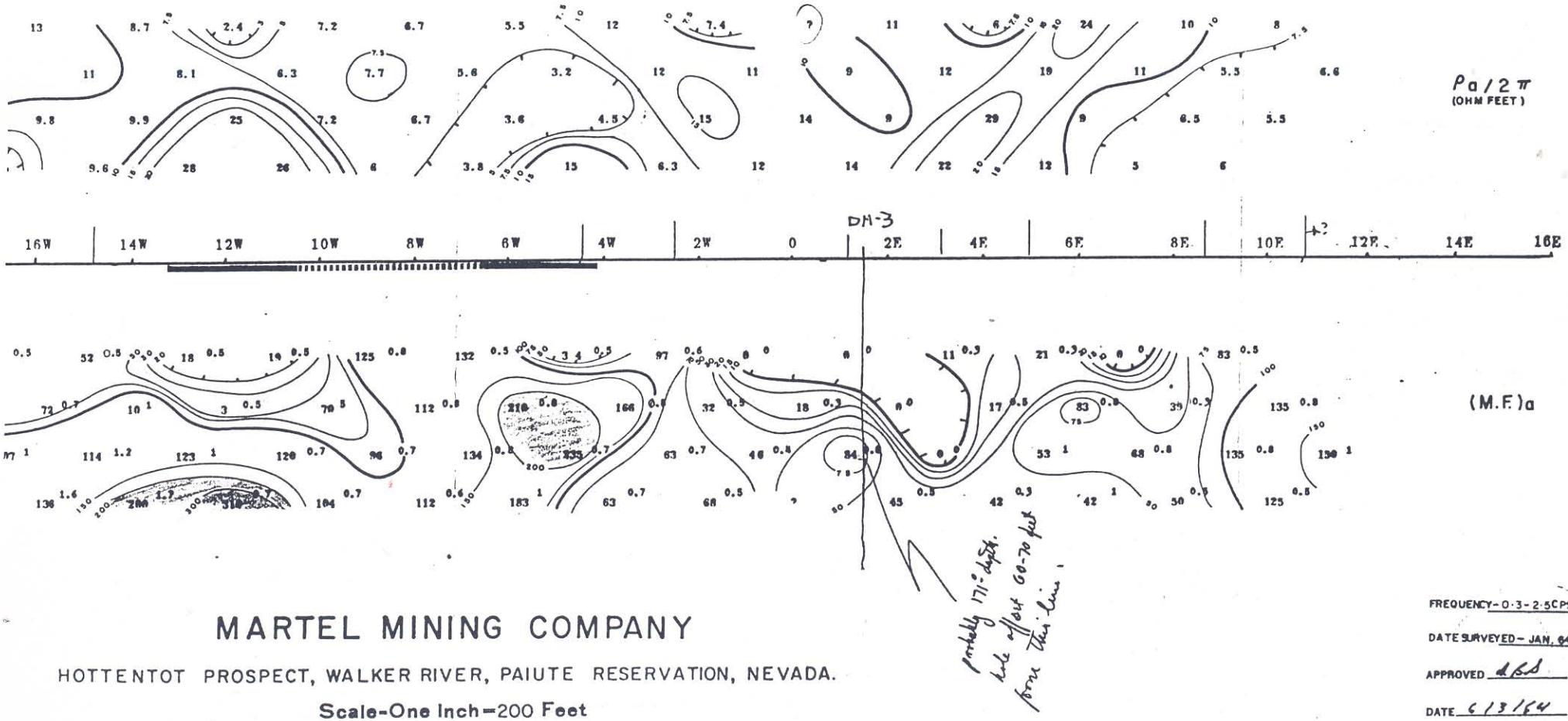
Scale-One inch = 500 Feet

6000 0089 (0760)

DWG. NO.-I.P.-2144-8

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



LINE NO.—E-W

MARTEL MINING COMPANY

HOTTENTOT PROSPECT, WALKER RIVER, PAIUTE RESERVATION, NEVADA.

Scale-One Inch=200 Feet

FREQUENCY-0·3-2·5CPS

DATE SURVEYED-JAN. 64

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DATE 6/3/64

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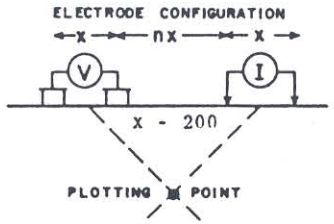
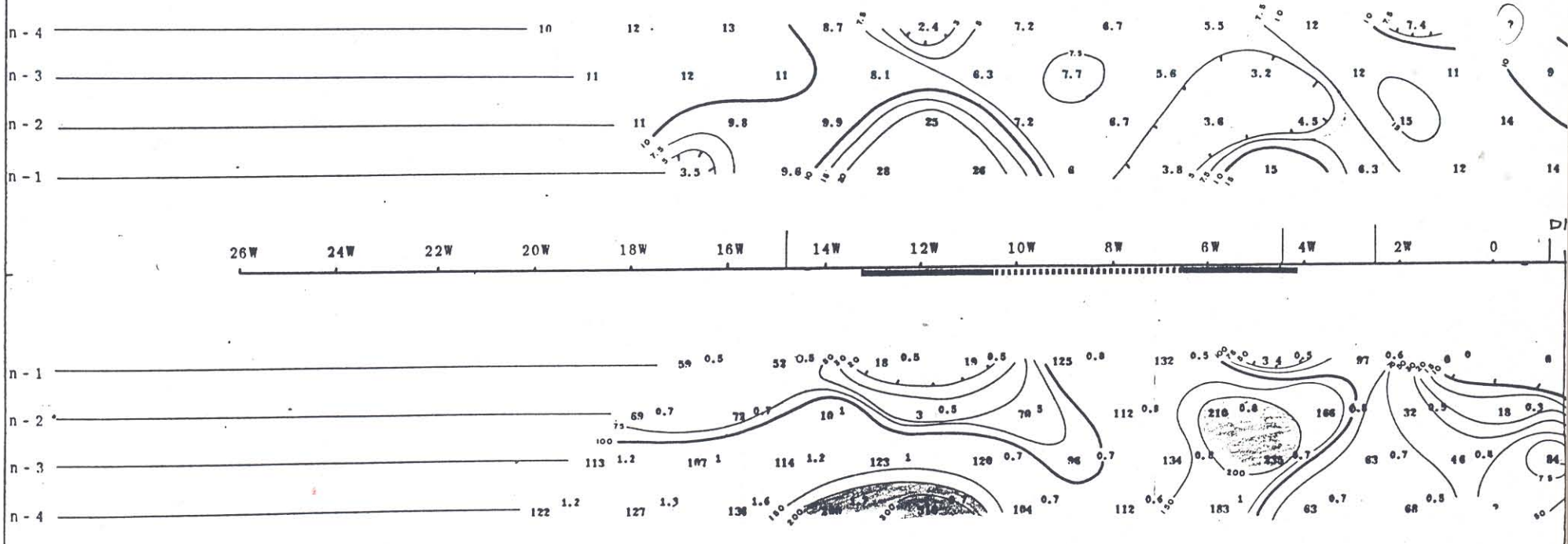
INDUCED POLARIZATION AND RESISTIVITY SURVEY





ANOMALOUS ZONE

POSSIBLE ANOMALOUS ZONE

NOTE
LOGARITHMIC CONTOUR INTERVAL

MARTEL MINING COMPANY

HOTTENTOT PROSPECT, WALKER RIVER, PAIUTE RESERVATION, NEVADA.

Scale-One Inch=200 Feet

6000 0089 (0760)

DWG. NO.-I.P.-2144-9

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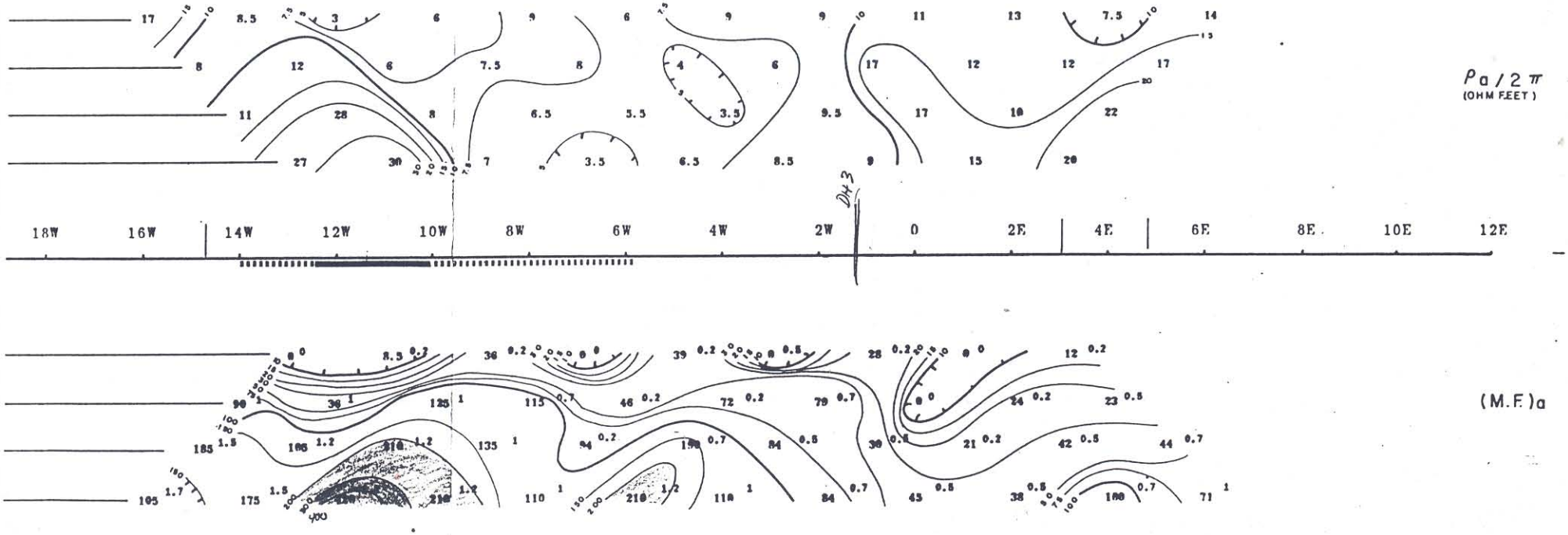
INDUCED POLARIZATION AND RESISTIVITY SURVEY



LINE NO.— 200 S.

MARTEL MINING COMPANY

HOTTENTOT PROSPECT, WALKER RIVER, PAIUTE RESERVATION, NEVADA.

Scale-One inch = 200 Feet

FREQUENCY-0·31-2·5CPS.

DATE SURVEYED- JAN. 64

APPROVED ABS

DATE 6 13 164

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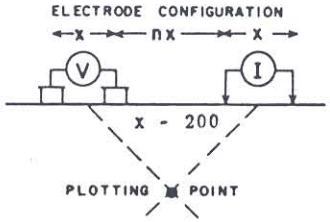
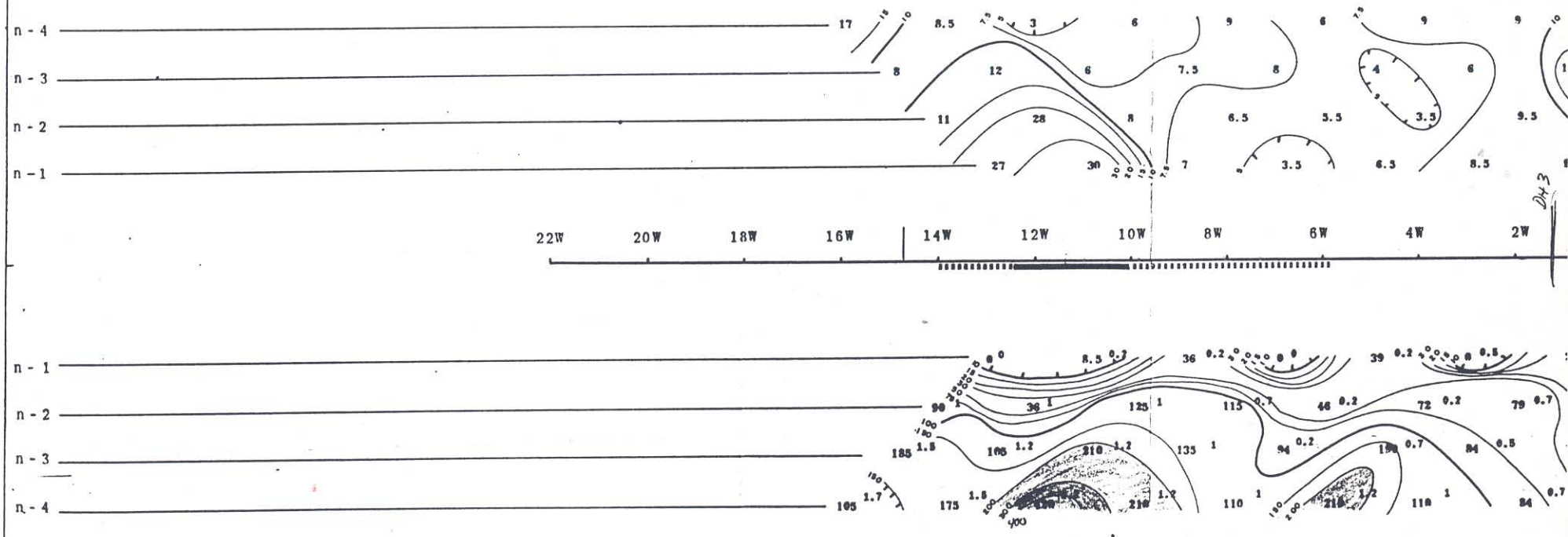
INDUCED POLARIZATION AND RESISTIVITY SURVEY





ANOMALOUS ZONE

POSSIBLE ANOMALOUS ZONE

NOTE
LOGARITHMIC CONTOUR INTERVAL

MARTEL MINING COMPANY

HOTTENTOT PROSPECT, WALKER RIVER, PAIUTE RESERVATION, NEVADA.

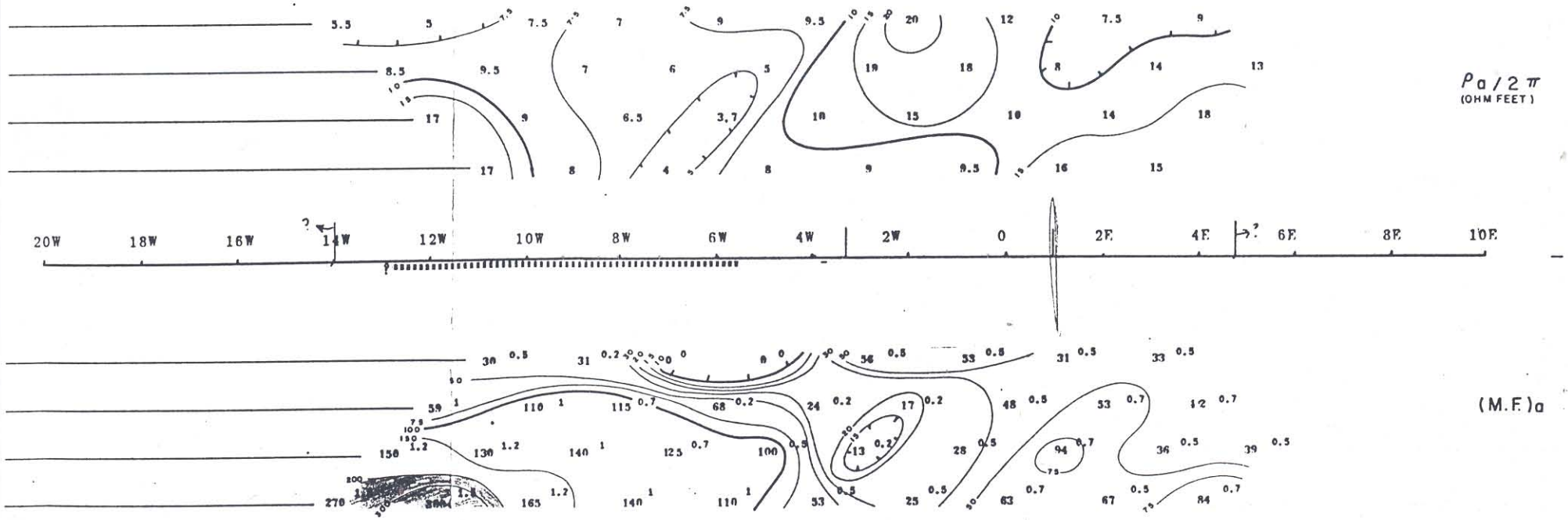
Scale-One inch = 200 Feet

6000 0089 (0760)

DWG. NO.-I.P.-2144-10

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



LINE NO.—200N.

MARTEL MINING COMPANY

HOTTENTOT PROSPECT, WALKER RIVER, PAIUTE RESERVATION, NEVADA.

Scale-One inch = 200 Feet

FREQUENCY-0·3-2·5CPS

DATE SURVEYED- JAN. 64

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DATE 1/3/64

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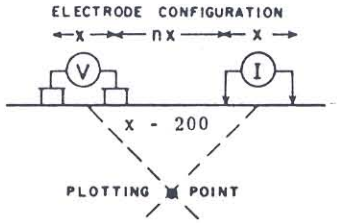
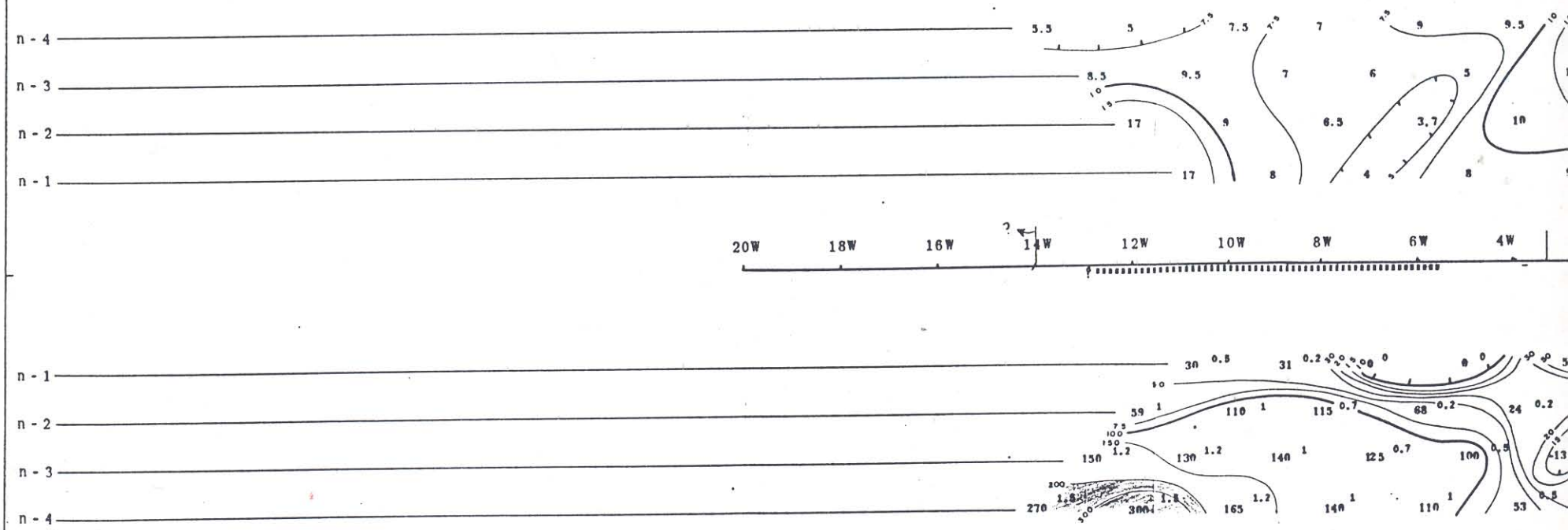
INDUCED POLARIZATION AND RESISTIVITY SURVEY





ANOMALOUS ZONE ———

POSSIBLE ANOMALOUS ZONE — — —

NOTE
LOGARITHMIC CONTOUR INTERVAL

MARTEL MINING COMPANY

HOTTENTOT PROSPECT, WALKER RIVER, PAIUTE RESERVATION, NEVADA.

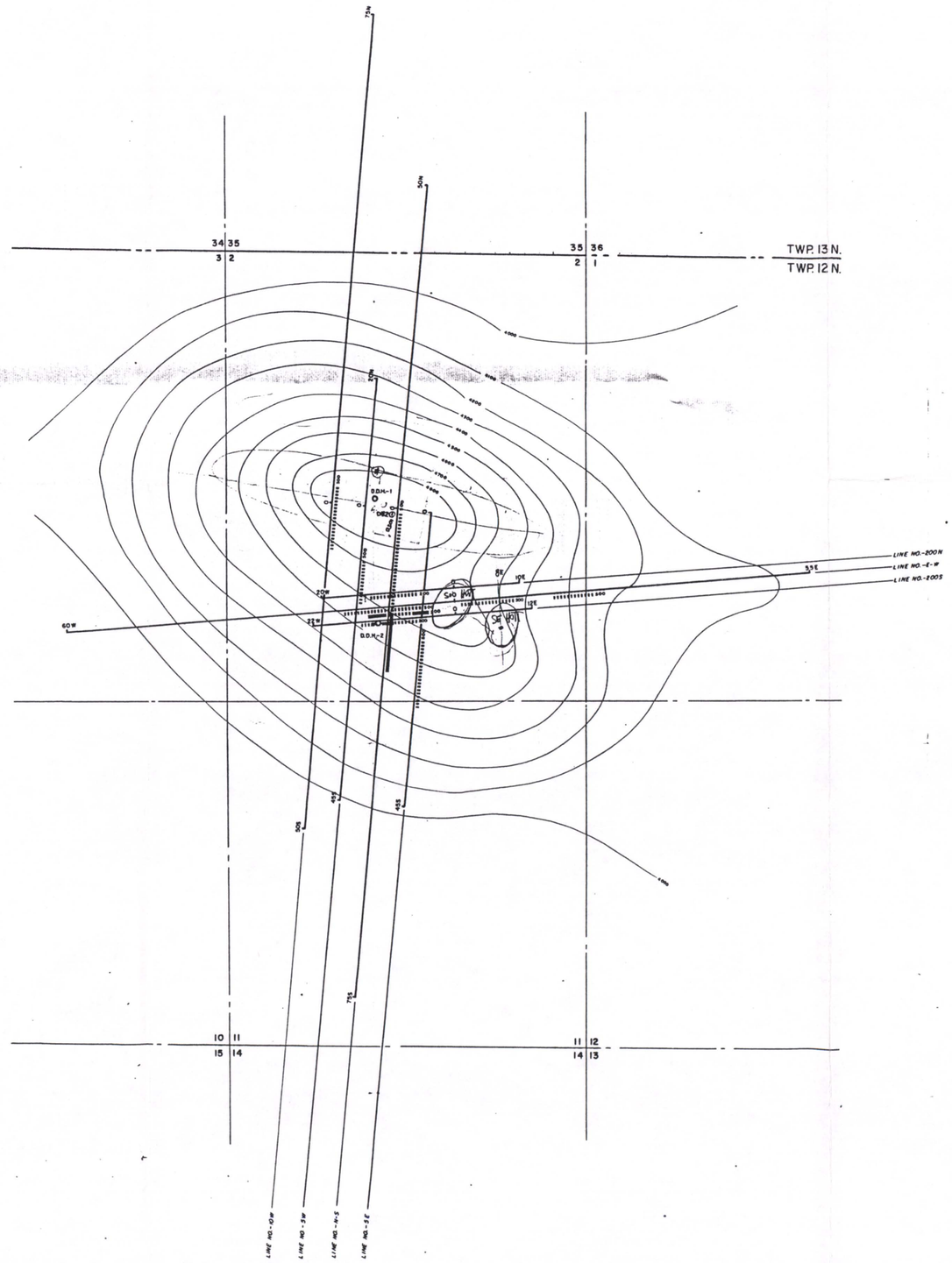
Scale-One inch = 200 Feet

6000 0089 (0760)

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

LOCATION MAP



N

NOTE:
ANOMALOUS ZONE
POSSIBLE ANOMALOUS ZONE
SECTION BOUNDARY
TOWNSHIP BOUNDARY
MAGNETIC CONTOUR 4000
DRILL HOLE
NUMBER AT END OF ANOMALIES INDICATE SPREAD USED

MARTEL MINING COMPANY

HOTTENTOT PROSPECT, WALKER RIVER, PAIUTE RESERVATION, NEVADA

SCALE

One Inch = Eight Hundred Feet

DRAWN D.A.G.
DATE MAY, 1964
APPROVED
DATE 8/5/64

#3

DWG. MISC.- 4079

DWG. MISC-4079.