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Råstofftype Malm/metall	Emneord			
Sammendrag				

0V37D

A / S S U L F I D H A L M

EVJE IVELAND PROJECT

REPORT ON AN INDUCED POLA-
RIZATION AND MAGNETIC SURVEY
AT HAALAND GRID, IVELAND.

WINTER - 1971

F. NIXON

rapp 194-71-7

1) SUMMARY OF PREVIOUS WORK

- a) The area was mapped in scale 1: 15,000 by the writer in 1967.
- b) An A.E.M. Survey (see enclosure) was carried out by a Sulfidmalm crew in 1968. At the same time the area was mapped at a scale of 1: 5000 and a small mineralized showing in a meta-peridotite was examined. E.M. work was negative, but mapping indicated the presence of a meta peridotite that outcropped in a N/S direction over a distance of approx. 200 m, the maximum width being 50 m. Mineralization is irregular, and in the form of impregnation and joint and fracture fillings. The best assay from this property runs 0.22 % Ni.

2) WORK CARRIED OUT

The I.P. survey was carried out using a McPhar Variable Frequency unit (Model P.660) with operating frequencies of 0.3 and 5 cps. McPhar supplied the operator, (A.K. Wood), Sulfidmalm being responsible for supplying the rest of the four man crew. The grid lines were chained by local help hired by Sulfidmalm. The project was co-ordinated and supervised by the writer.

Interpretation of the I.P. plots has been undertaken by D.B. Sutherland, Chief Geophysicist, Falconbridge Nickel Mines Ltd.

The following profiles were run:

Line	Dipoles	E/W extension	Total length
300 S	50 m	300 E - 300 W	600 m
200 S	50 m	300 E - 300 W	600 m
100 S	50 m	300 E - 300 W	600 m
0/0	50 m	300 E - 300 W	600 m
100 N	50 m	300 E - 300 W	600 m
200 N	50 m	300 E - 300 W	600 m
Total line distance			3,600 m

The magnetometer survey was carried out by L. Nasvoll of Sulfidmalm, using a McPhar M 700 Fluxgate Magnetometer. A total of 7.2 profile-kms were measured with approximately 550 readings.

3) RESULTS

The I.P. anomalies discovered in the Iveland area have been divided into 3 classes, class 1 anomalies being the strongest and most interesting, class 3 being the weakest. On the Haaland grid only anomalies of class 2 and 3 were encountered.

In the following table the anomalies are numbered and their location and class given.

LIST OF I.P. ANOMALIES HAALAND GRID.

No.	Line	Dipoles	E/W co-ordinates	Class
1	300 S	50 m	150 E - 200 E	3
2	100 S	50 m	10 E - 50 E	3
3	100 S	50 m	150 E - 200 E	3
4	0/0	50 m	50 W - 0	2
5	100 N	50 m	0 - 50 E	2
			0 - 25 W	3
			50 E - 75 E	3

The magnetic data is presented as an isoanomaly map in scale 1: 1000.

4) INTERPRETATION

D.B. Sutherland's verbal and written comments to the writer are incorporated in this section.

The ultrabasic body seems to be reflected in the I.P. results by only 2 lines (line 0/0 and line 100 N) and is reflected mainly by lower resistivities than the background and slightly higher metal factor values. Line 100 N also shows a high

frequency effect zone that corresponds with the position of the ultrabasic body. The remaining lines are different in character and the ultrabasic body does not seem to have any strike extension other than that picked up by surface mapping.

The mag. pattern is rather complicated. A dominant N/S strike is apparent and near the zero point on the base line magnetic low values correlate with mapped ultrabasics, thus following the general pattern for this region. Other areas of surface ultrabasic are however, characterized by fairly high magnetic values. (in the order of + 2000 gamma). A magnetic low zone runs from 0/0 on line 0 in a NW direction to 160W on line 200 N. This zone correlates partly with I.P. anomalies on line 0 and line 100 N.

Short comments are now given on the I.P. anomalies.

Anomaly 1 Weak effects without correlation. The anomaly is situated in a magnetic high (+3000 gamma) and probably represents a local concentration of magnetite.

Anomalies 2 and 3 The interpretation here is very difficult, but it looks like we are dealing with two sources. (The high $N = 4$ value may be due to interaction and addition of effects). Anomaly 2 is situated in the southerly strike extension of the ultrabasic. Magnetite values here are in the range + 500 gamma - + 1000 gamma. Anomaly 3 is partly situated in a magnetic negative area; surface outcrops are of meta gabbroic rocks. Both effects are weak and neither of the two anomalies are considered to be important.

Anomaly 4 Here there is a broad area of higher than background metal factor values that probably reflect the ultrabasic body. The anomaly probably represents a narrow concentration of metallics on the western flank of the ultrabasic. Surface indications support this interpretation, weak impregnation and fracture fillings of sulphides being seen in outcrop.

Anomaly 5 Again a shallow source of low metallic content probably more than 100 m wide (probably the ultrabasic body). Some improvement from 0 - 50 E, that may be significant.

5) RECOMMENDATIONS

No really significant anomalies have been located and further work on this property is given a low priority. However, it is recommended that trenching be carried out over the better

part of anomaly 4 on line 100 N, and that the magnetic survey be extended between this grid and the Klepptjern grid as there may be some chance that the ultrabasic at Haaland has some connection with that at Klepptjern.

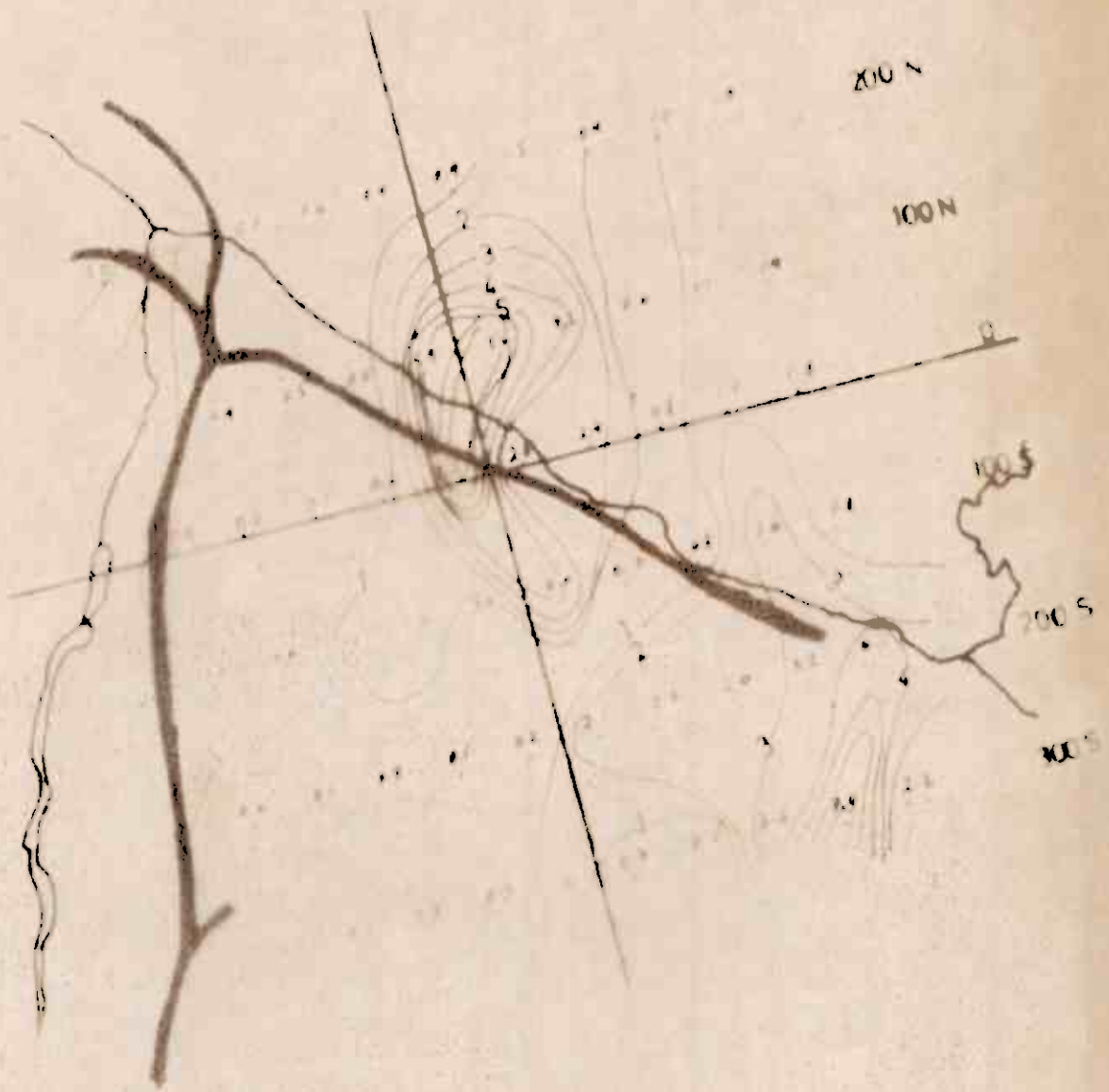
Additional sampling in a roadcut near 50 S where the ultrabasic contains minor amounts of disseminated sulphides should be carried out.

LEGEND

Ultrabasic
Gabbro
Amphibohte
Hornblende gneiss
Dioritic gneiss
Pegmatite
Foliation
□ small working
s sulphides
mt magnetic
class 2 I.P. anomaly
class 3 I.P. anomaly

FN/bj
6/9-71

N



FALCONBRIDGE NICKEL MINES LTD

HAALAND GIRD, IVELAND, NORWAY.
Contours of Metal Factor for
Ni on 50 metre spreads.

SCALE	1: 5,000	DRAWN	IN
DATE	MAY 1971	TRACED	RS

N

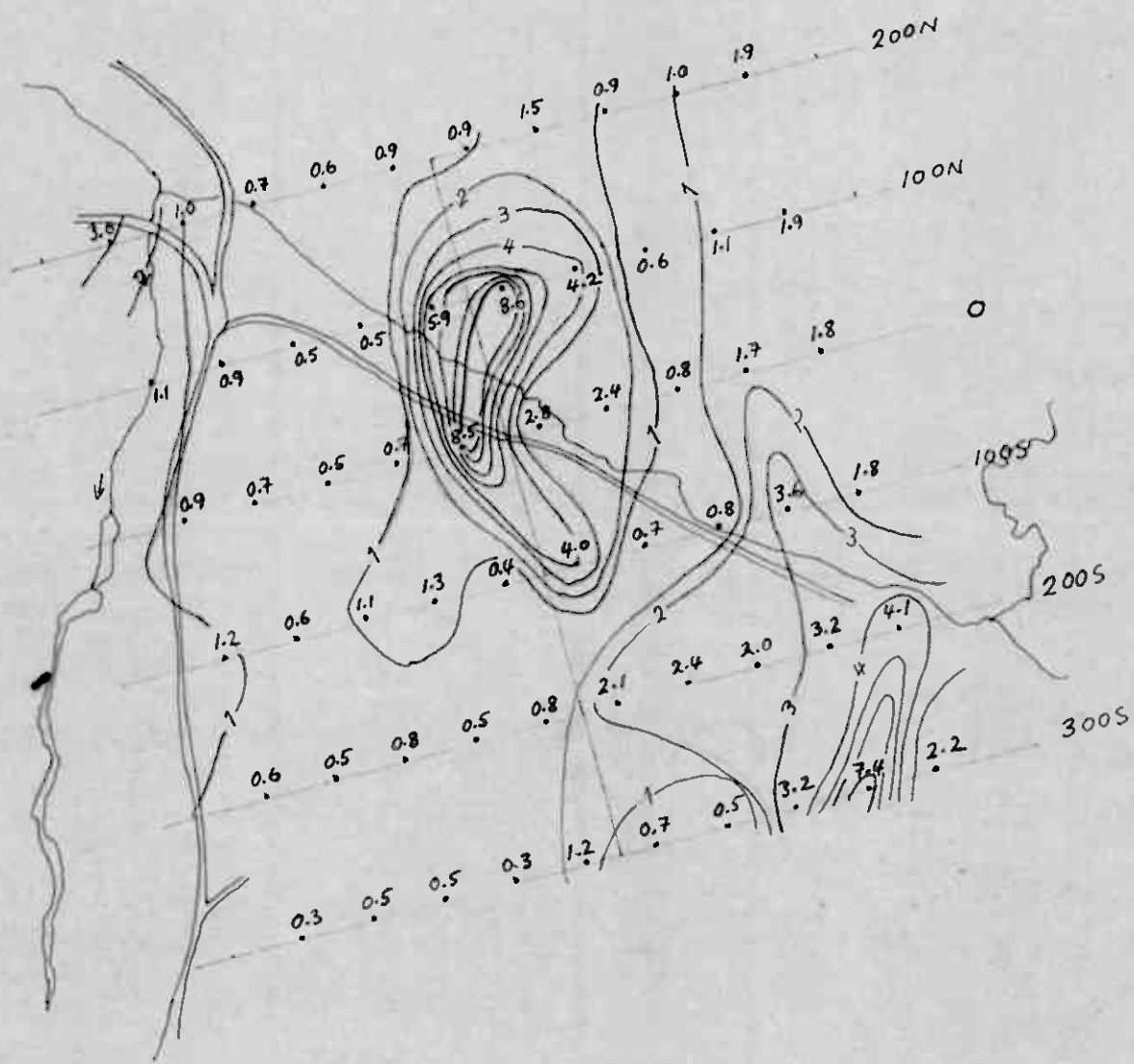


FALLS BRIDGE NICKEL MINES LTD	
JACQUES G. GIVELAND	
Geological Annotations	
Scale 1:5,000	Drawn by JG
Edinburgh May 1951	YACKE 25

N

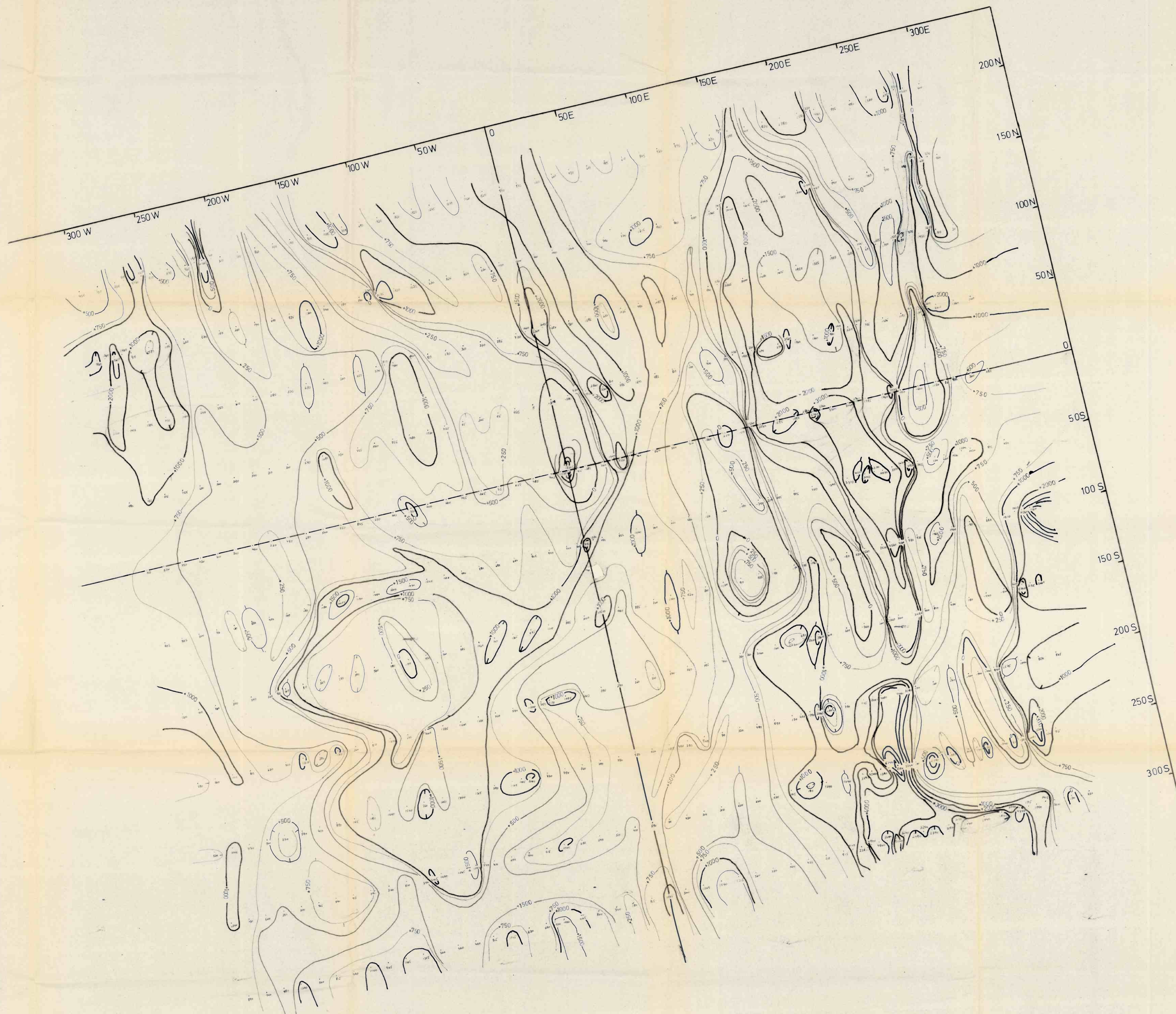
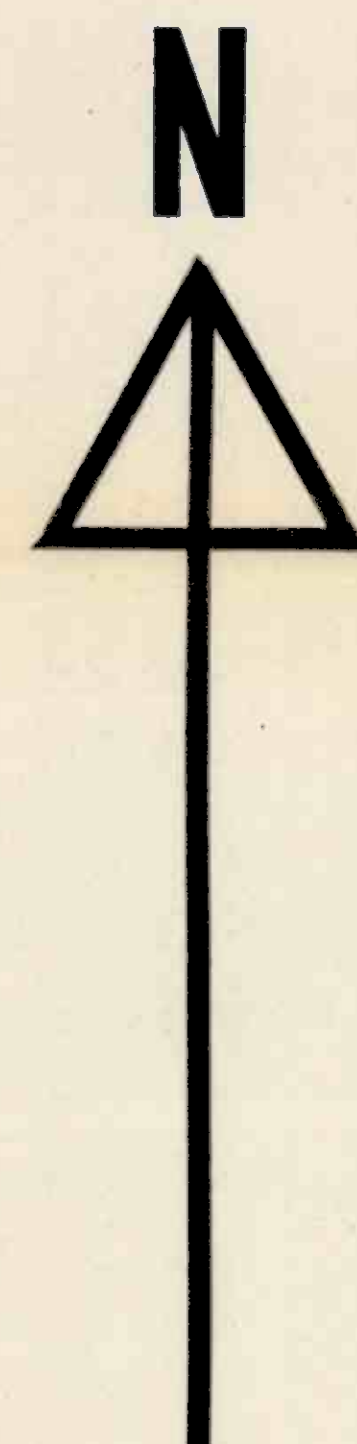


JAY
14



Haaland Grid
 Contoured $n=1$ M.F. values.

Scale 1:5000.



LEGEND

~ Intervals of 1000 γ

~ Intervals of 500 γ

~ Intervals of 250 γ

INSTRUMENT: Mc PHAR, M 700 FLUXGATE MAGNETOMETER

0 50 100 200
METRES

**MAGNETIC ANOMALIES
HAALAND GRID, NORWAY**

A/S SULFIDMALM

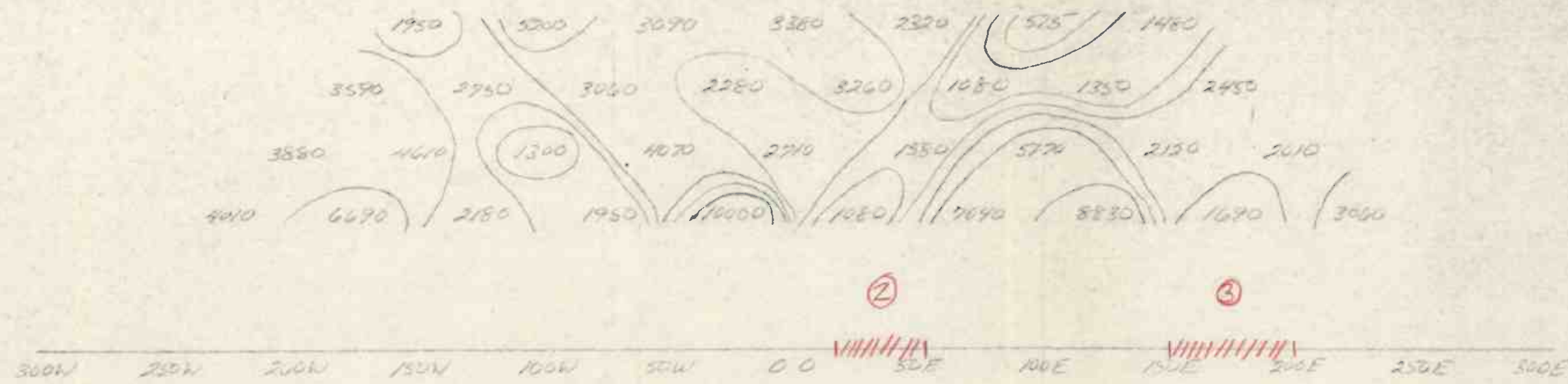
SCALE

1:1000

OBS	LN	3.71
DRAW	RS	4.71
TRAC	RS	4.71
CHC	JG	4.71

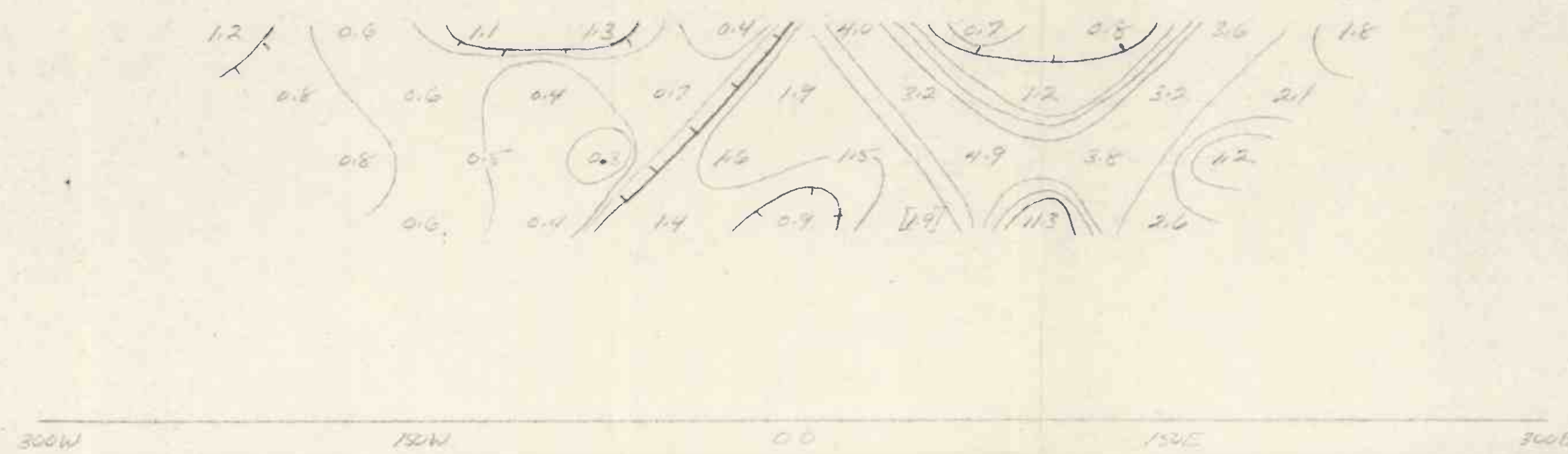
MAP NO

MAP SHEET 1512 III



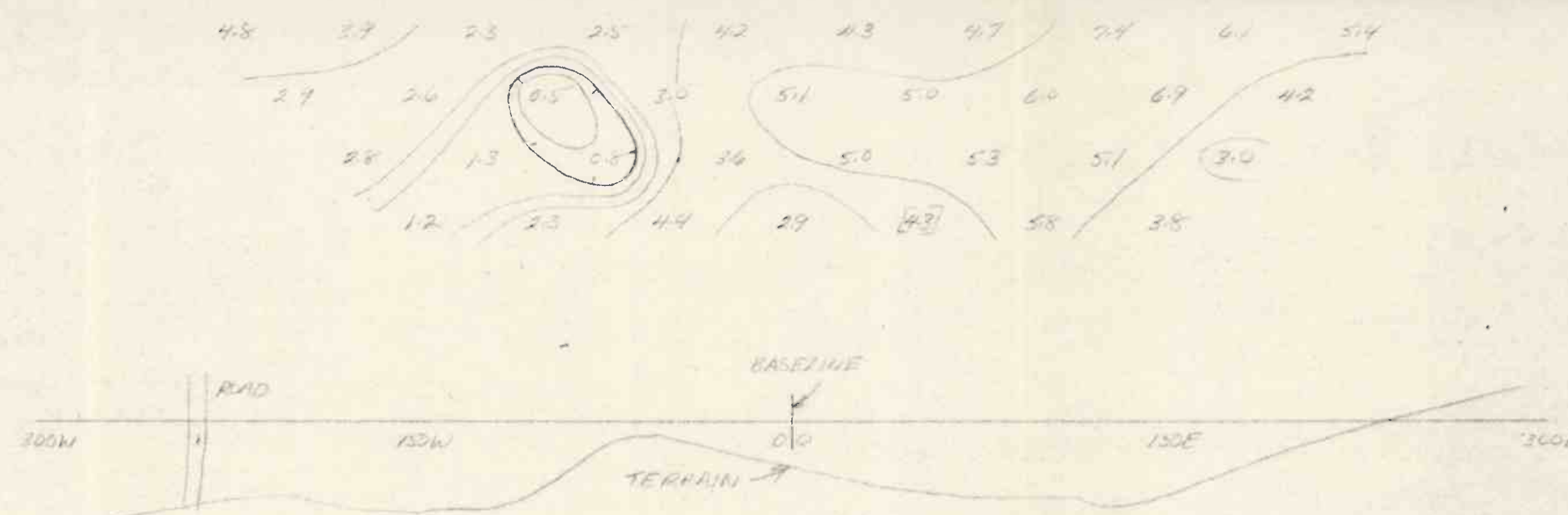
N=4
N=3
N=2
N=1 (CHH-FT)

AS SULFIDIAL
FALCONBRIDGE NIKKELVEAR A/S
HALLAND GRID
IVELAND TOWNSHIP, NORWAY
H.P.T.R.D-D
0.345 CPS
1" = 50 METRES
MARCH 22, 1971
A.K. WOOD - OP

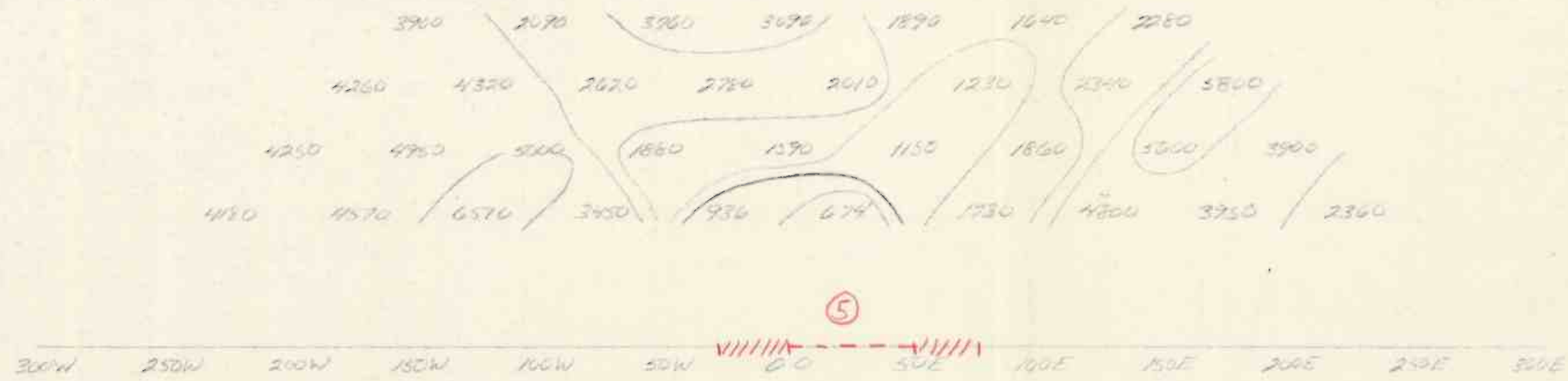


N=1 M.F.
N=2
N=3
N=4

LINE 100S



N=1 F.E.
N=2
N=3
N=4



N-4

N-3

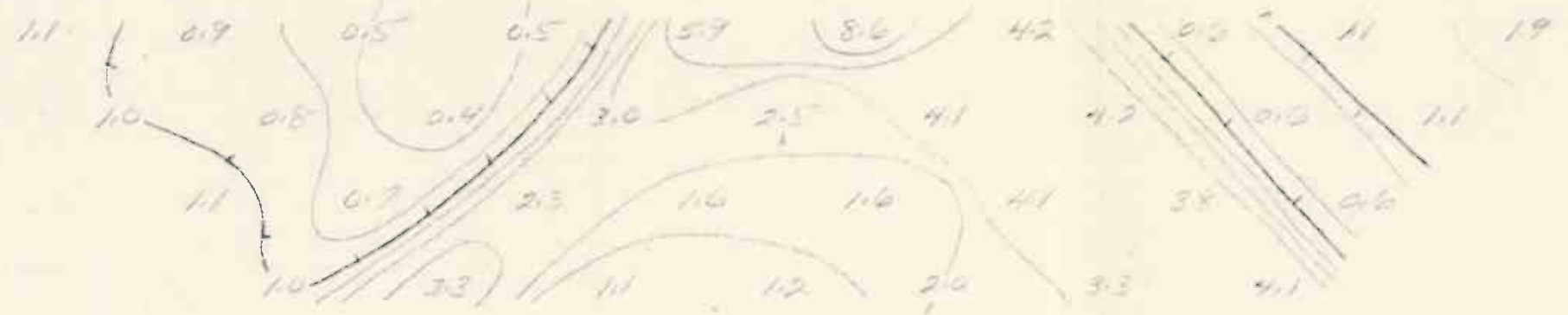
N-2

N-1

R/S

(CHH-F)

AF Sulfidmalm
FALCONBRIDGE NIKKELVERK AS
HAALAND GRID
JUF LAND TOWNSHIP, NORWAY
M.P.I. A-D-D
0.375 CPS
1" = 50 METRES
MARCH 24, 1971
A.H. WOOD - CP



N-1

N-2

N-3

N-4

M.F.

LINE 100 N



N-1

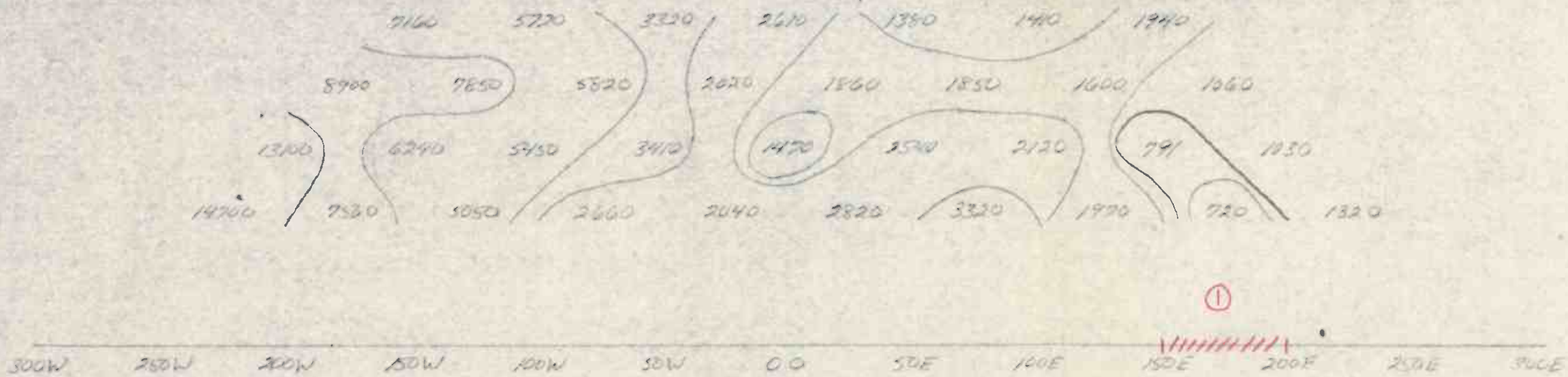
N-2

N-3

N-4

F.E.





N=4

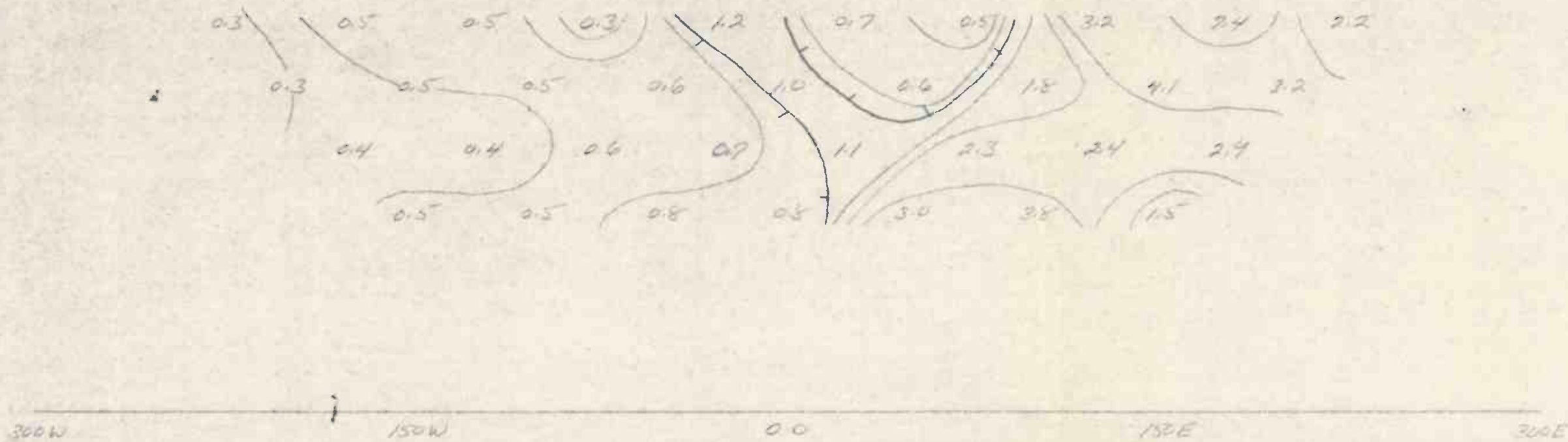
N=3

N=2

N=1

(CHM-ET)

A/S SULFIDMAL
FALCONBRIDGE NIKKELVEPK A/S
HARLAND GRID
JUELAND TOWNSHIP, NORWAY
H.B.P. D-D
0.345 CPS
1" = 50 METRES
MARCH 20, 1991
A.K. WOOD - OP.



N=1

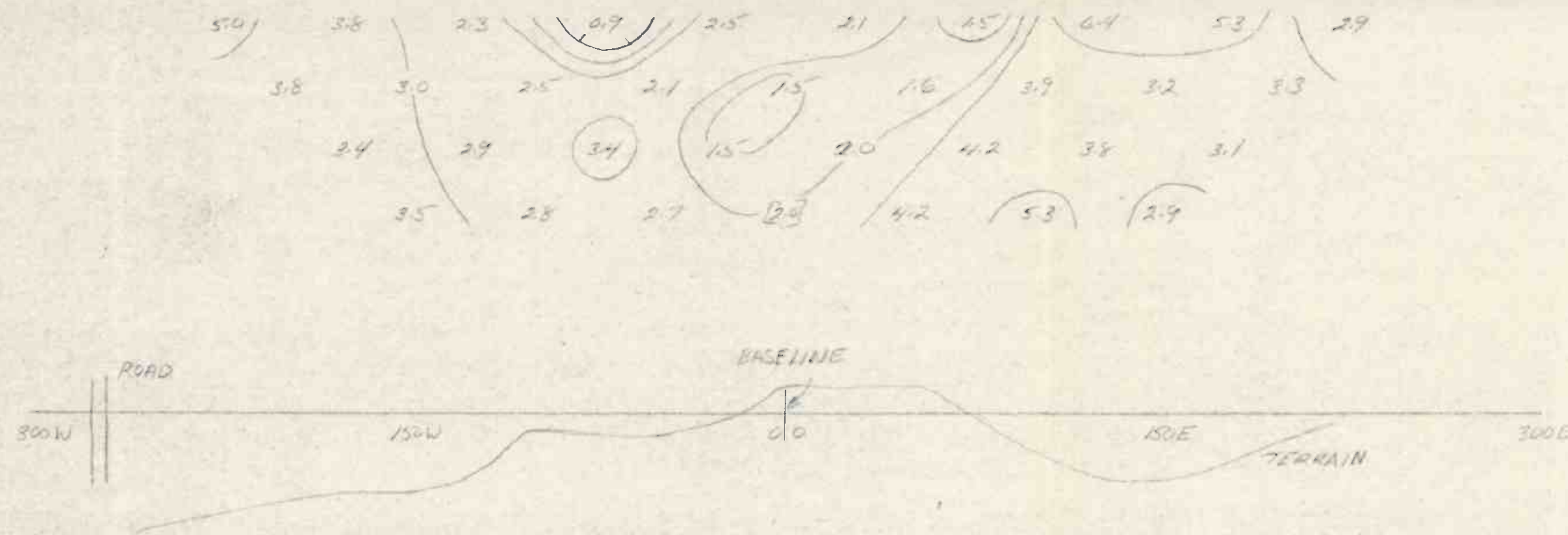
M.F.

LINE 300 S

N=2

N=3

N=4



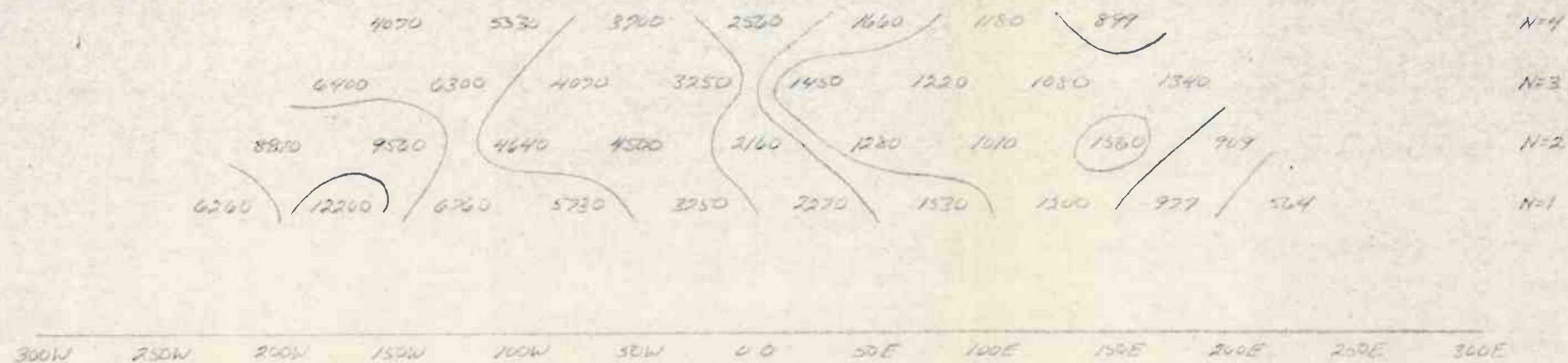
N=1

F.E.

N=2

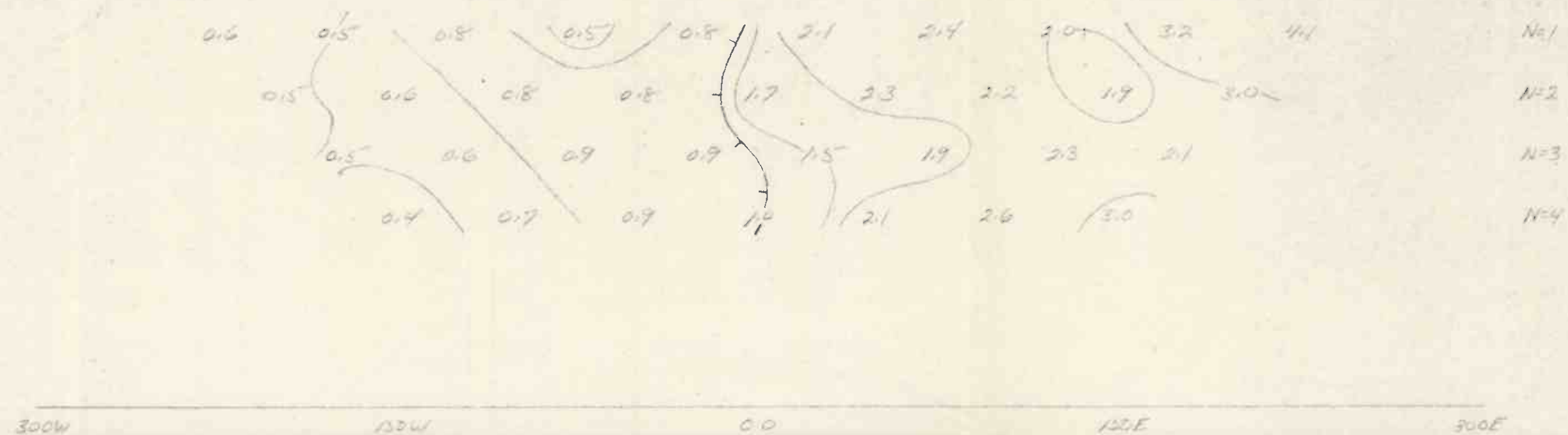
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N=4



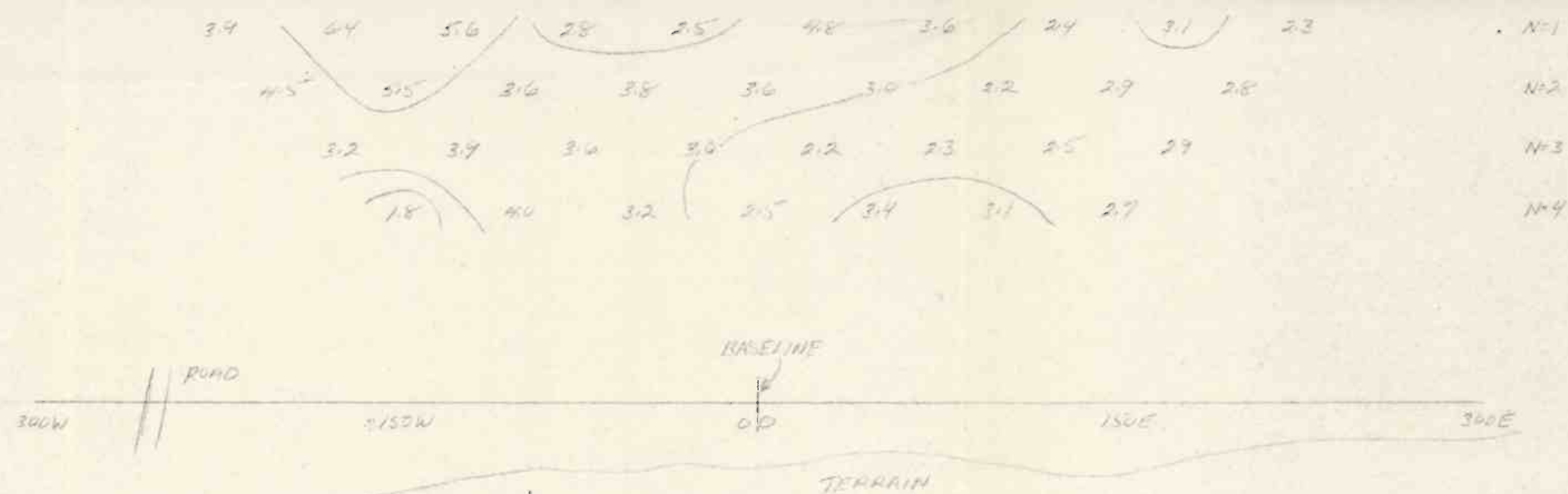
N=4
N=3
N=2
N=1 (GMM-F1)

A/S SULFIDMAL
FALCONBRIDGE NIKKEIVERK A/S
HAALAND GRID
IVELAND TOWNSHIP NORWAY
H.P.I.P.D.-D
0.3 & 5 EPS
1" = 50 METRES
MARCH 22, 1971
A.K. WOOD - 012



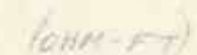
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N=2
N=3
N=4

LINE 200S

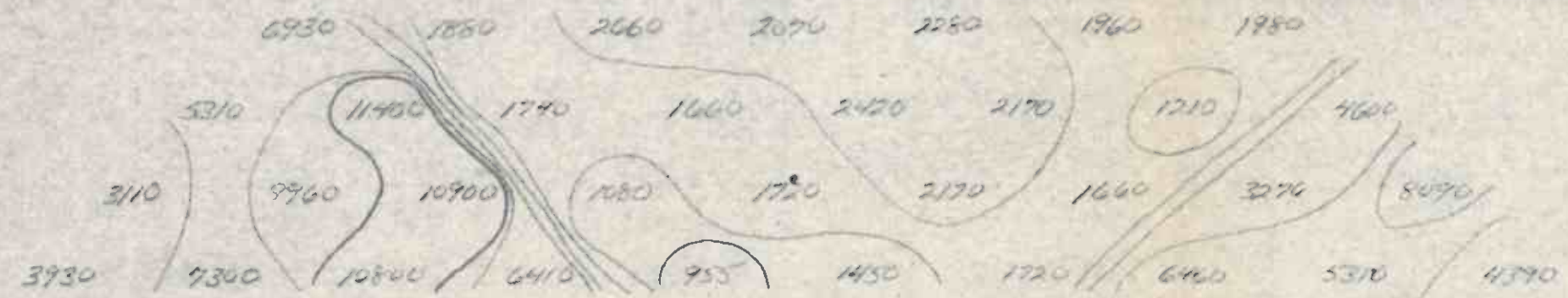


N=1 F.E.
N=2
N=3
N=4



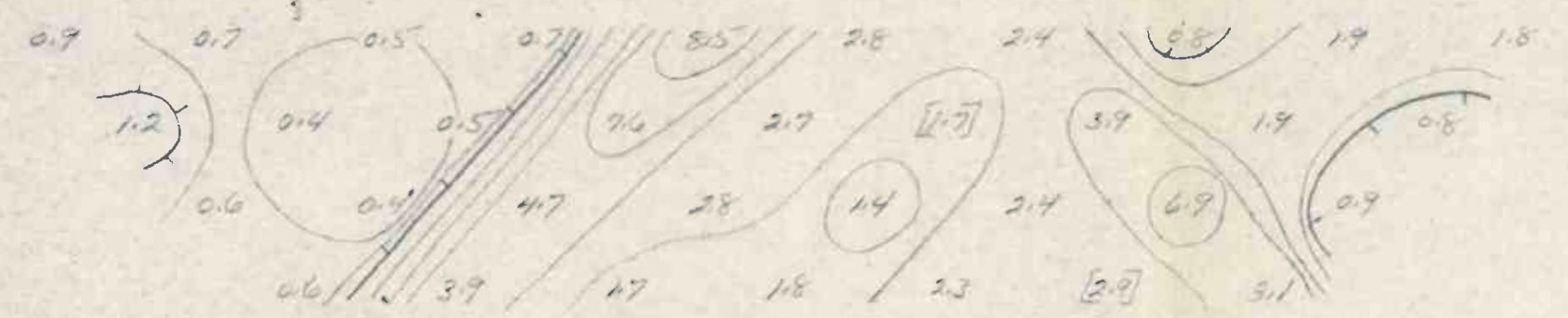


1878



N=1
N=3
N=2
N=1 (DMM-FT)

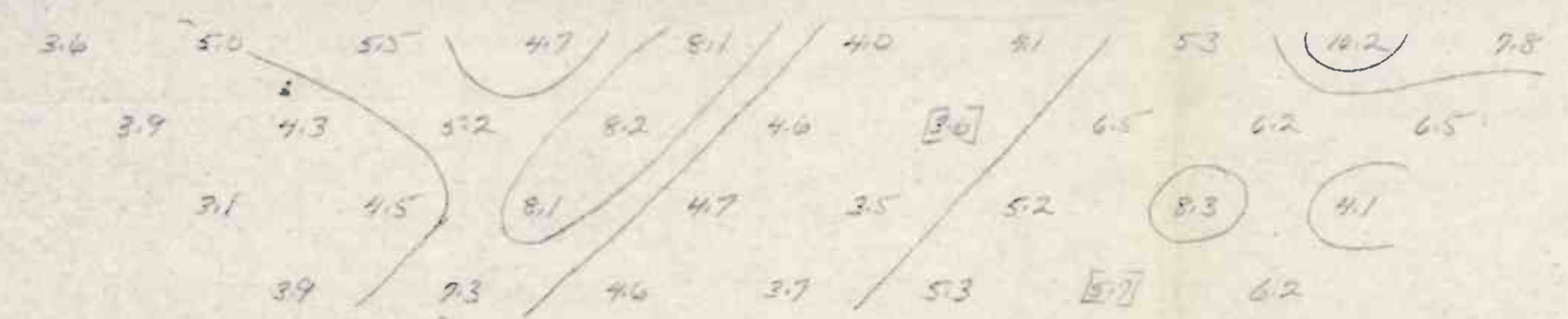
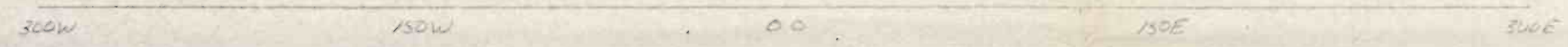
N/S SULFIDMALM.
FALCONBRIDGE NIKKEI VERK A/S
HARLAND GRID
IVELAND TOWNSHIP NORWAY
H.P.T. 2 D-D
0.345 CPS
1" = 50 METRES
MARCH 23, 1971
A.K. WOOD - CP



N=1 M.F.
N=2
N=3
N=4

LINE 0100

NOTE
[] - INDICATES NOISY READING



N=1 F.E.
N=2
N=3
N=4

