017045 b dry
SEA CLAIMS

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TELEPHONE 264 - 6371 AREA CODE: 403

September 6, 1967.

MR. M. O. HAMPTON,
Anvil Mining Corp. Ltd.,
P. O. Box 2470,
WHITEHORSE, Yukon Territory.

Dear Sir:

Have gone far enough with the Sea and Gal groups to have formed the impression that prospects of finding significant tonnage of massive sulphides on either are poor. Preliminary work suggests that a location 800' north of the north base line on line 8E may be better than SRH 3. However, I would expect the main concentrations to come in about 300'. The Bouguer anomaly is distorted by the increasing overburden to the northwest, in that 0.5 mgal of the 1.0 mgal gravity relief between SRH 3 and SRH 5, can be attributed to thickening of overburden. The remaining 0.5 mgal relief is caused by the sulphides in SRH 3. I have not yet figured out why SRH 2 had nothing. As for the Gal group, there is one possibility (deep) in the northeast corner.

Your refraction data and core hole results (Sea group) arrived this afternoon. I haven't studied them thoroughly, yet, but I note that the deepest velocities are equivalent to those found in permafrost. It looks as if the data on line 8E are telling us that we have unfrozen overburden down to 50'-60' permafrost below and no indication of bedrock. Bedrock should be at 150'-160' according to results from SRH 3 and SRH 4. The top of permafrost looks a little deeper on line 16E than on 8E. Does all this jibe with other information you may have?

Faro and Lee maps and profiles are being drafted and final reports are in the hands of the typist.

Yours very truly,

RBGaleski

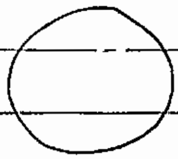
ROBERT B. GALESKI, P. Geoph.

RBG:gp

Even without any permafrost, your spread lengths were too short to pick up anything below 100'.

HORIZONTAL CYL.

$$g\,(mg) = \frac{12.77\,\sigma R^2}{Z} \cdot \frac{1}{\left[1+\left(\frac{x^2}{Z^2}\right)\right]}$$



$$.2 = \frac{12.77 \times 1.2 \times .05^2}{Z} \cdot \frac{1}{\left[1+\frac{0}{Z^2}\right]}$$

$$Z = 12.77 \times 1.2 \times .0025$$

50′ .05 KILO FEET

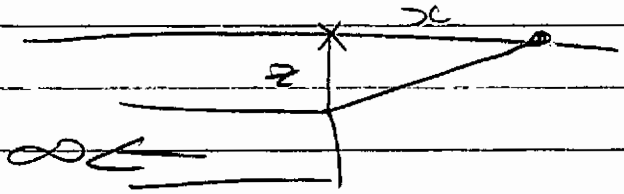
$$\begin{array}{r} .05 \\ .05 \\ \hline .0025 \end{array} \qquad \begin{array}{r} 12.77 \\ 1.2 \\ \hline \end{array} \qquad \begin{array}{r} .0025 \\ 15.3 \\ \hline \end{array}$$

$15.3 \times 25 \times 10^{-3}$

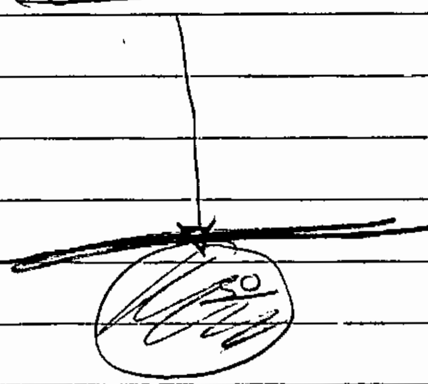
$38.3 = .0383$ $\quad 2\overline{).383}$ $.191$ $=$ 191′ to center

[150′ of overburden] = 141′ to tops

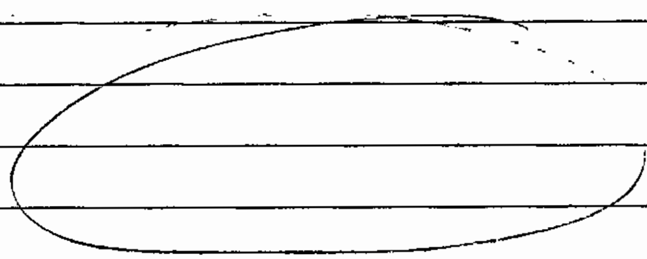
$\tan^{-1} 0$ $\quad \tan^{-1} \frac{x}{Z}$ $\quad 0$ $\quad \tan^{-1} 0 = 0$



$$\frac{dG_Z}{dZ} = 1/2$$



.2



SULPHIDES 5% = .1 σ
10% = ~~.8~~ ~.18
30% = ~.37

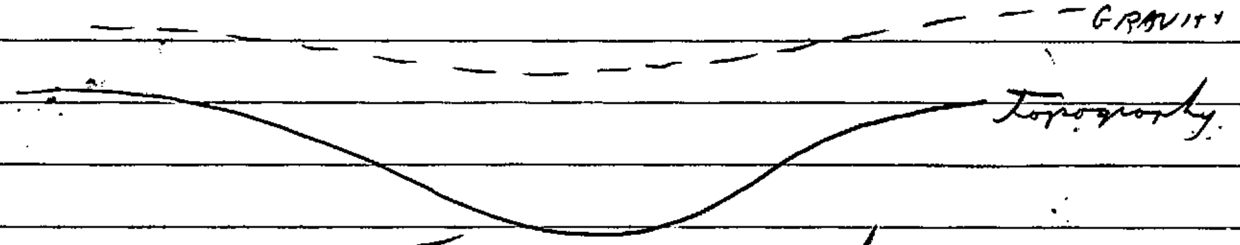
DENSITY PROFILES.

STATION.

100' error in assumed density = .13 mg if assumed

DATUM density error = ± .1

1) traverse run across topo feature such as hill or valley
2) correct observation for latitude & elevation
3)



4) ρ too great = over-correction

ELEVATION CORRECTIONS

- correction of gu to flat reference plane

(i) free air $g >$ as $h <$ @ .9406 gu / FOOT

(ii) Bouguer effect of slab between datum plane and station h above or below datum

if h above datum effect = .1276 ρ gu/ft.

$$(.9406 - .1276\rho)\, h \text{ gu.}$$

if ρ is too large a hill will produce a gravity low.

eg. hilly 30' high composed of gravel of 2.0 cgs density

∴ correction is .07 mg foot

for 30' = 2.1 mg

(1) 30' high composed of schist of 2.8 cgs density

∴ correction is .06 mg/foot

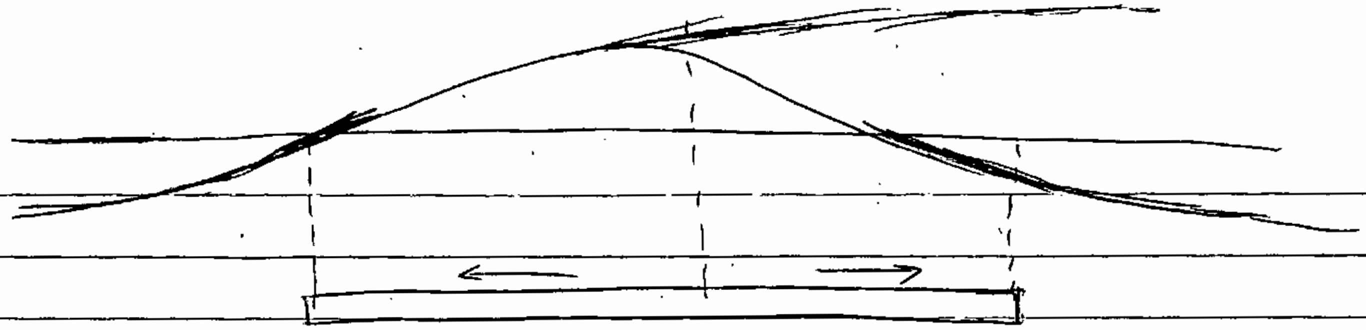
for 30' = 1.8 mg.*

difference in correction will be 2.1
−1.8
.3 mg.

~~in case (1) LINE 72W the~~

note elev correction added for stations above datum plane

case (1) LINE 72 W the density used would be giving a correction .06 mg / FOOT ∴ the hill would be corrected for by adding 1.8 mg when really it should have been 2.1 mg a factor of +.3 mg.



5.1
4.8 = background.
.3 = mgalls.

depth = $0.86 \frac{\Delta g \max}{\Delta g' \max}$

└ if body elongate in one direction .75 - .80

Buried slab of infinite extent

$$g_z = 12.77 \sigma L$$

σ = .9 for massive sulphide (over 30% in schist)

L = 30 feet = .03 KILOFEET

$$g_z = 12.77 \times .9 \times .03$$

$$= .34 \text{ millgals.}$$ →

An anomaly of .34 milligals would be obtained if the massive sulphide encountered in D.D.H #3 were assumed to be a uniform and infinite slab 30' thick and having a density contrast of .9. The gravity effect depends only on the thickness of the slab and not on its depth of burial.

4.95 mg obtained at DDH 3 ∴

4.95 - .34 = 4.61 mg for background or threshold value of anomaly

eg average density of 2.3 used to correct for
topo effect of hills of eg ~~steel~~ schist
any hills composed of gravel 2.0
would appear as gravity lows
due to over correction.

eg study basement of 2.67 (granite)
hills are of schist 2.3
elevation correction would be using 2.3.
hills of gravel 2.0 would give an over-correction.

2.05 ~~wet~~ ~~grav~~ schist. elev corr .068 mg/foot
1.65 gravel. elev corr. .073 mg/foot.

.068
6.8
7.3

CHLORITE SCHIST 2.05
GRAVEL. 2.0 .07 mg/FOOT

$(.9406 - .1276\,\rho)\,h$

.1276
2
.2552

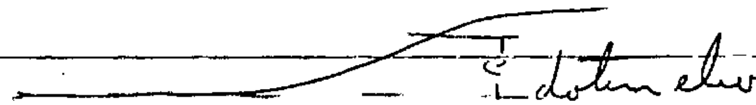
.9406
.2552
.6954

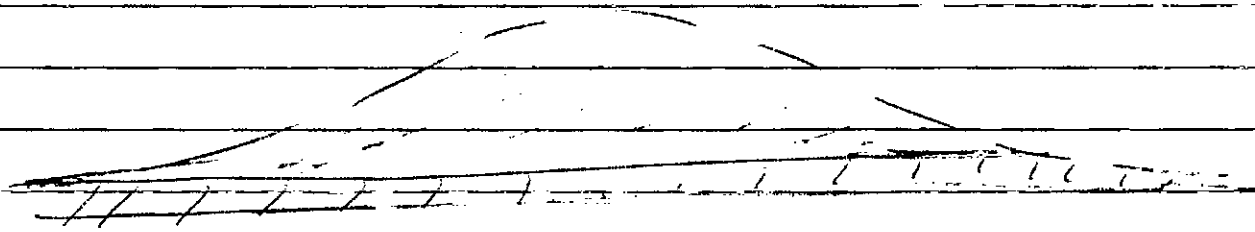
.06954

.07
30
210

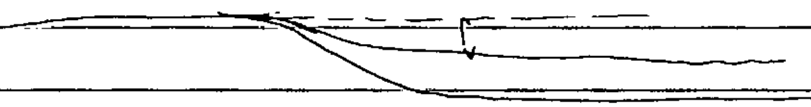
1' = .07 mg

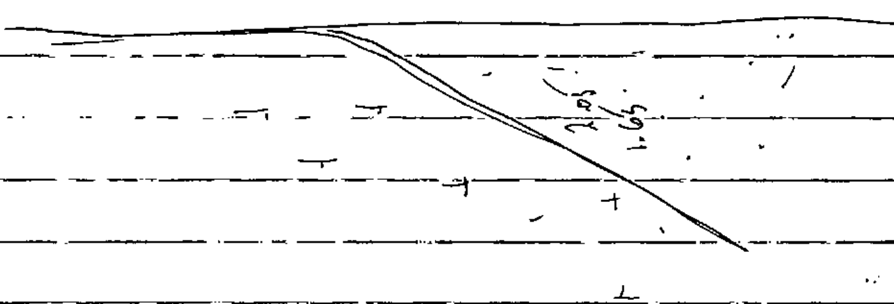
free air .09406 e



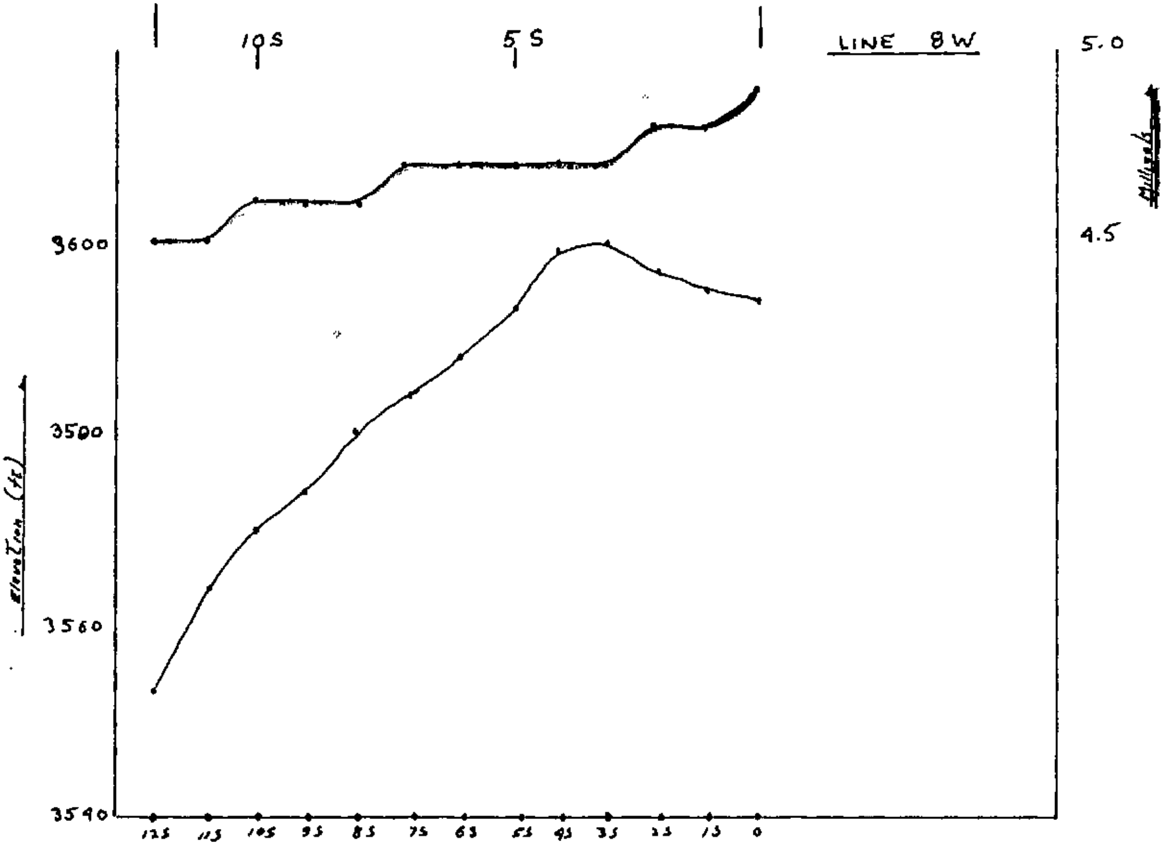


1.65





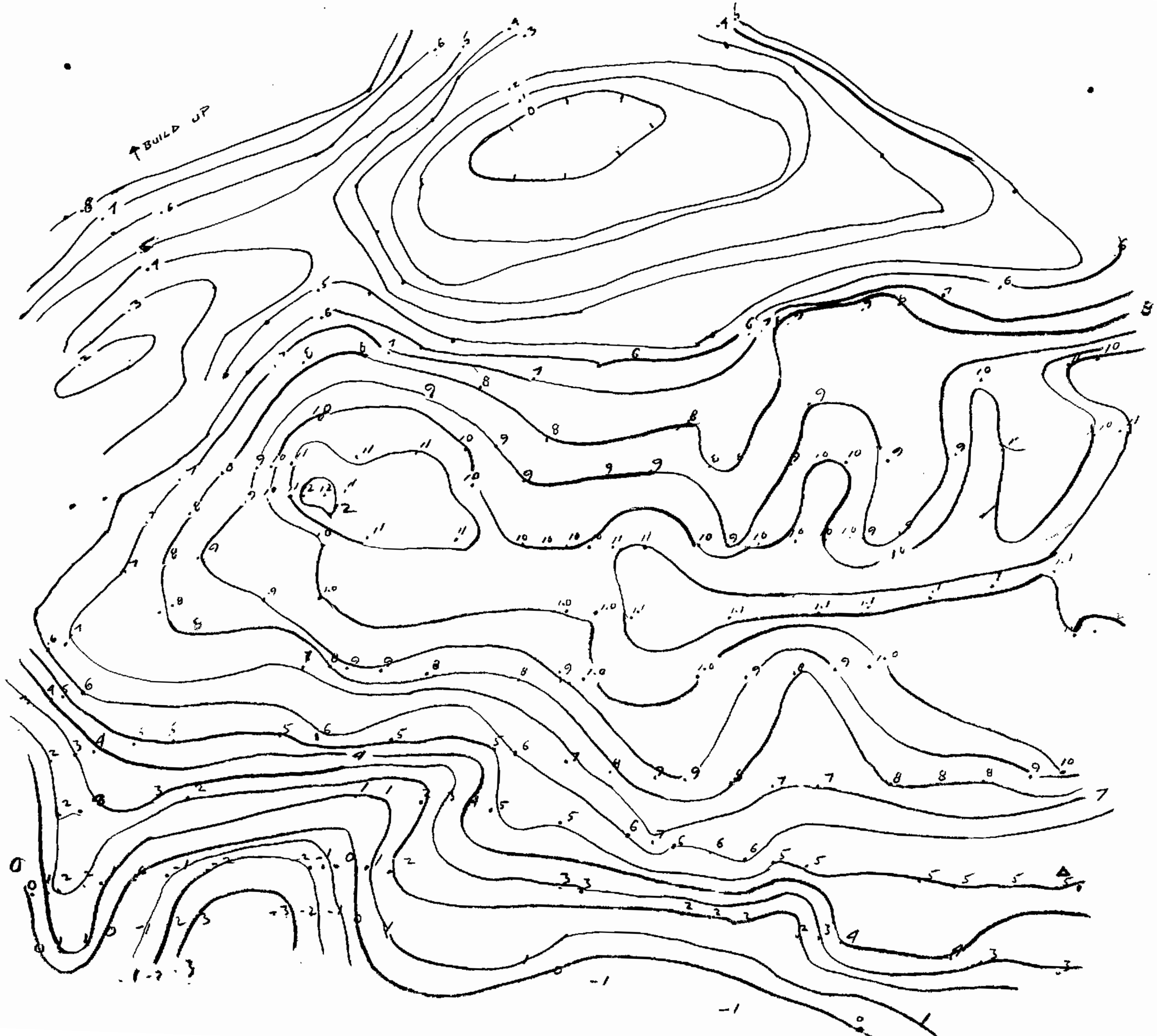
2.04

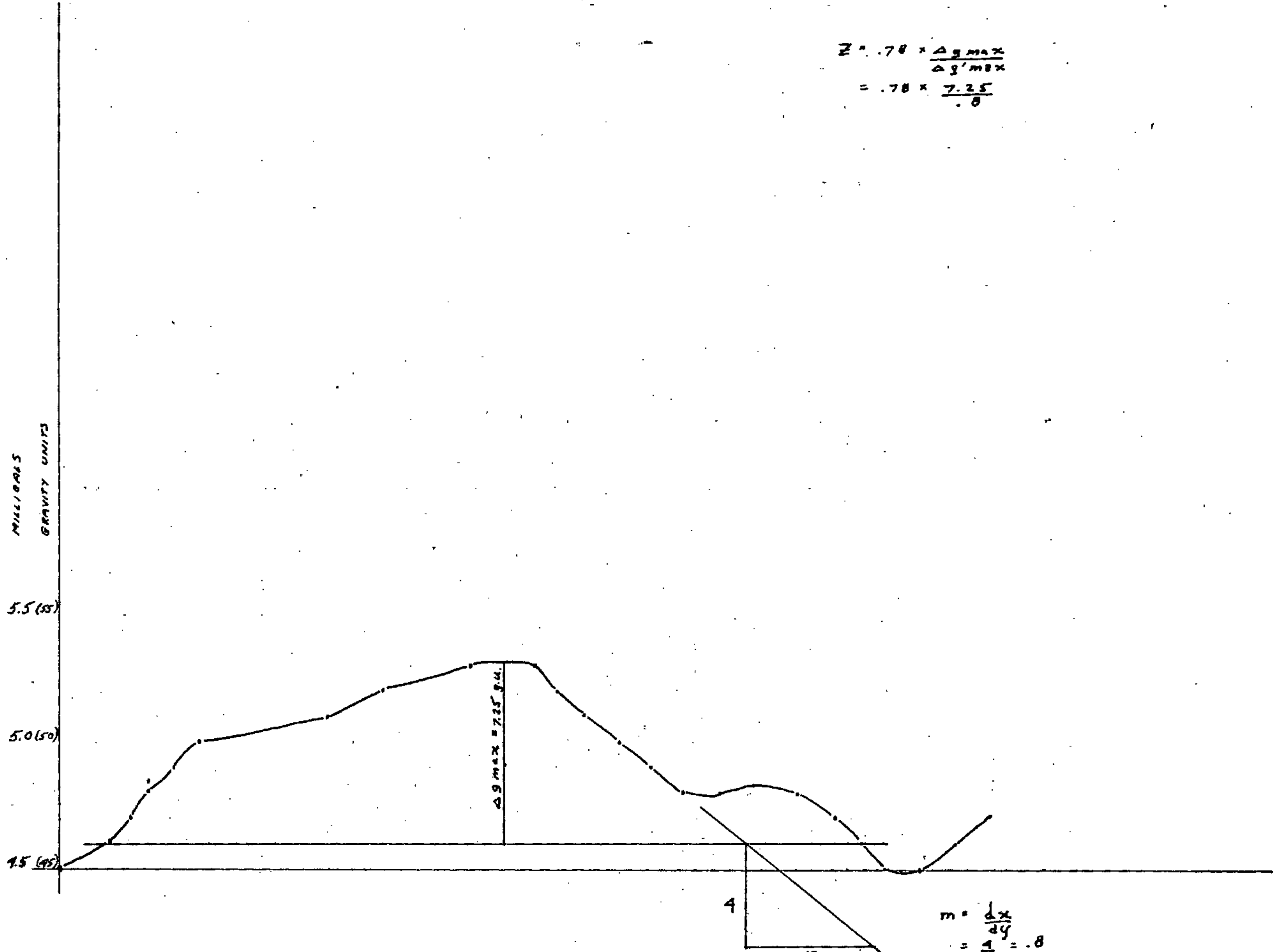


LINE 8W
10S
5S
5.0
4.5
Millygals
3600
3500
3560
3540
Elevation (ft)
12S
11S
10S
9S
8S
7S
6S
5S
4S
3S
2S
1S
0

3.0

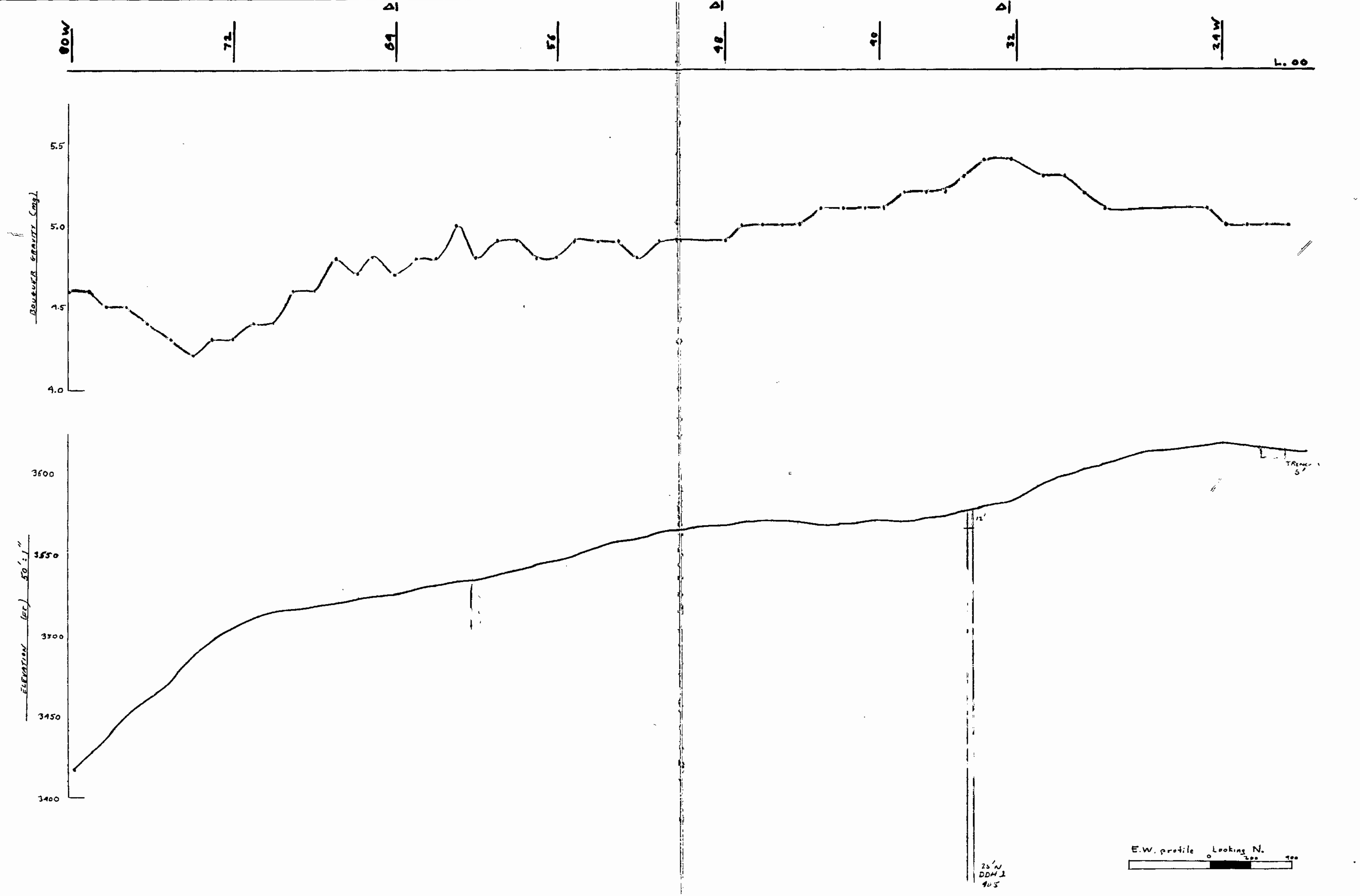
3.5





$Z = .78 \times \frac{\Delta g\, max}{\Delta g'\, max}$
$= .78 \times \frac{7.25}{.8}$
MILLIGALS
GRAVITY UNITS
5.5 (55)
5.0 (50)
4.5 (45)
Δg max = 7.25 g.u.
4
5
$m = \frac{dx}{dy}$
$= \frac{4}{5} = .8$

A-A


80W
72
64
56
48
40
32
24W
L.00
BOUGUER GRAVITY (mg)
5.5
5.0
4.5
4.0
ELEVATION (FT) 50':1"
3600
3550
3500
3450
3400
12'
25'N
DDH 1
40S
TRENCH
5'
E.W. profile Looking N.
0
200
400