

Report On The  
Exploration Work In 1971  
On The  
Swift River Property  
Of  
Boswell River Mines Ltd.  
By  
MacDonald Consultants Ltd.  
H. Wober, P. Eng.

February 22, 1972

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## INTRODUCTION

The following is a summary of all work carried out on the Swift River property of Boswell River Mines Ltd. (N.P.L.) during the year of 1971. The work was carried out during two separate periods, the first starting early in January and lasting until break up. Work was resumed at the end of June and lasted to the end of August.

All work was carried out under the guidance and supervision of the writer. Field supervision was under J. P. Henry, also of MacDonald Consultants Ltd.

## WORK PERFORMED IN 1971

### a) Ground Geophysics

#### i) Magnetometer Surveys

following up the results of an extensive airborne magnetometer and EM Survey carried out in the fall of 1970, linecutting and a ground magnetometer survey were carried out on the OMO and Lux group of claims north of Swift River (see accompanying map 294-2B). This work was carried out under extreme winter conditions and comprised 17.5 line miles.

Ground magnetometer work was also carried out during the summer season on OMO 58, 60, 91 & 93 mineral claims south of Swift River. This totalled 5.17 line miles with readings taken at 100' station intervals (see map 294-2D).

A small line grid was surveyed on the OLE 1, 2 and Max 33, 44 mineral claims, consisting of 4,200 feet of line with readings taken every 50' (see map 294-2E).

The magnetometer survey north of Swift River uncovered a distinct magnetic high trend which was followed up by a ground EM survey.

The survey on OMO 58, 60, 91 & 93 claims covered the area of a double peak airborne magnetometer anomaly discovered in the late fall of 1970. This anomaly was confirmed, but the more detailed ground survey discerned several more elongate magnetic highs resembling the anomalies in the Crescent Lake area where zinc-copper-phyrrhotite-magnetite mineralization is found in stratiform skarn zones.

ii) Ground EM Survey

Concurrently with the magnetometer survey on the OMO and Lux Group north of Swift River, Seigel and Associates carried out a Turam electromagnetic survey covering about 15.3 miles of cross-lines. A report by P. J. Fominoff and Jon G. Baird, dated February 15, 1971 covering this survey is attached.

b) Diamond Drilling

The results of the ground geophysical work on the Lux and OMO group were followed up by diamond drilling early in 1971. Three holes were drilled on locations shown on map 294-28.

The drilling was hampered by the extremely cold temperatures at the time and by difficult ground to drill, both being reflected in high costs.

The total footage drilled was 1,630 feet of BQ core.

The Magnetometer and EM anomalies were found to be caused by a formation of graphitic-argillite and graphite schist containing an abundance of magnetite. The formational sequence was recovered well in the core, however, the core was crumbling soft and consisted of a fine grained equigranular black sand. Some sections contained abundant calcareous material.

Diamond drill hole no. 71-3 encountered a small intersection of silver-lead-zinc mineralization. The section, sampled and assayed from 442.0 to 443.5 feet, gave the following assay values:

Silver	3.7 ozs/ton
Lead	1.3%
Zinc	1.2%

The area of the drillholes is underlain by Cambrian rocks consisting of black argillite, graphitic-argillite, graphite schist, dolomite and limestone. These lie between two branches of the Swift River fault system which separate the area from the Cassiar Batholith to the north and Mississippian rocks to the south.

Vein type silver-lead-zinc deposits are known to exist in a similar environment on the eastern margin of the Cassiar Batholith. This is the first time that mineralization of this kind has been encountered in the same formation on the western fringe of the Batholith. The significance of the assay results lies mainly in the favourable silver-lead ratio of 2.85 to 1.

This belt of rocks now covered to a great extent by claims of Boswell River should be given particular attention when work is resumed on the property.

c) Geochemistry

The line grid on OMO 58, 60, 91 & 93 established over a double peak airborne Magnetometer anomaly was also covered by a geochemical survey. 127 samples were taken at 200' station intervals. All samples were assayed for copper, lead and zinc.

(Hot aqua regia digestion of - 80 mesh fraction, Atomic Absorption determinations).

Only weakly anomalous zinc values were encountered (see map 294-3D and 294-3E).

There is little or no outcrop in this area, bedrock is covered by a mantle of glacial till and the vegetation consists of a thick stand of alder, willow and wild cherry. In order to fully evaluate the geochemical response further field work is necessary.

A small geochemical survey was carried out on the extension of 20 + 00 W, 24 + 00 W and 28 + 00 W on the large grid on the OMO and Lux group of claims north of Swift River. This area is in line and stratigraphically further into the footwall of the formations intersected in DDH # 71-3. The survey was carried out in search for the type of silver-lead mineralization encountered in the drill hole and described earlier in this report. As mentioned above a more comprehensive and extensive exploration program should be carried out on this belt of rocks between two branches of the Swift River fault system.

To date only weekly anomalous zinc values were encountered on the three lines surveyed (see map 294-3C).

d) Road Repair, Road Construction and Trenching

During the winter program a fair amount of cat-work and grader work was necessary to keep the access road from the Alaska Highway into camp open.

After break up and with the beginning of the summer program, the road from camp to the Crescent Lake area had to be rehabilitated, washouts had to be filled and sloughing benches had to be cleared.

Apart from this rehabilitation and maintenance work, 3.41 miles

of access road was built from Swift River valley to the area of QMO 58, 60, 91 & 93 claims. The road could only be pushed as far as shown on map 294-2D, when the frame on the company's D8 broke and the cat was stuck in a swamp.

Prior to this work extensive trenching was carried out on a showing of sphalerite mineralization in a stratiform skarn zone at Crescent Lake (see map 294-2G). The trenches exposed a zone 6 feet to 10 feet wide over a strike length of approximately 200 feet in quartzite and phyllite.

Two samples about 150 feet apart across the true width of the zone gave the following assay results:

<u>Sample</u>	<u>Width</u>	<u>Silver</u>	<u>Zinc</u>	<u>Calcium</u>
A	6'	0.32 ozs/ton	4.94%	0.02%
C	10'	0.06 ozs/ton	5.27%	0.02%

Sample 'B' cut across a split in the zone across 13' assayed:

Silver	0.05 ozs/ton
Zinc	0.08%
Calcium	Trace

The zone is open on both ends, where it is covered by talus. Accompanying magnetite mineralization facilitated tracing of the zone by ground magnetometer surveys. The zone has been traced by a magnetometer anomaly over a strike length of about 1,700 feet (see 294-2F).

The above zone was earlier picked up by prospecting and a geochemical survey.

The results enhance the significance of the geochemical and zinc anomaly east of Gossan Lake on the same line grid, starting about one mile east of the above showing and extending for a strike

length of about 4,000 feet. This anomaly was located in 1970 below an extensive Gossan zone caused primarily by oxidizing pyrrhotite mineralization. The latter zone should be trenched next in order to investigate the tenor of the mineralization in place. Both zones should subsequently be drilled for their strike and down dip extension.

#### SUMMARY RECOMMENDATIONS

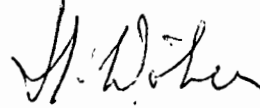
The exploration work carried out in 1971 resulted in defining two major target areas for further work. In order of priority they are:

- 1) The stratiform zinc-copper mineralization east of Gossan Lake and between Gossan Lake and Crescent Lake described above. Follow up work on the zone exposed by trenching and on the large geochemical anomaly in the form of trenching and diamond drilling is recommended.
- 2) The belt of lower and middle Cambrian rocks covered by the northern portion of the OMO claim group, the Neil, Lux and OLE claims north of the Swift River valley.

The rocks consisting of phyllites, black argillites, slates, grey limestones and dolomite are between two branches of the Swift River fault system, separating them from the Cassiar Batholith to the north and Devonian and Mississippian Rocks to the south. Silver-lead mineralization is known to exist in a corresponding environment on the eastern margin of the Cassiar Batholith and indications of such mineralization were found in diamond drill hole 71-3 with a silver-lead ratio of 2.85 to 1. Further work should consist of

careful mapping and prospecting in conjunction with reconnaissance soil sampling and a stream-silt sampling program.

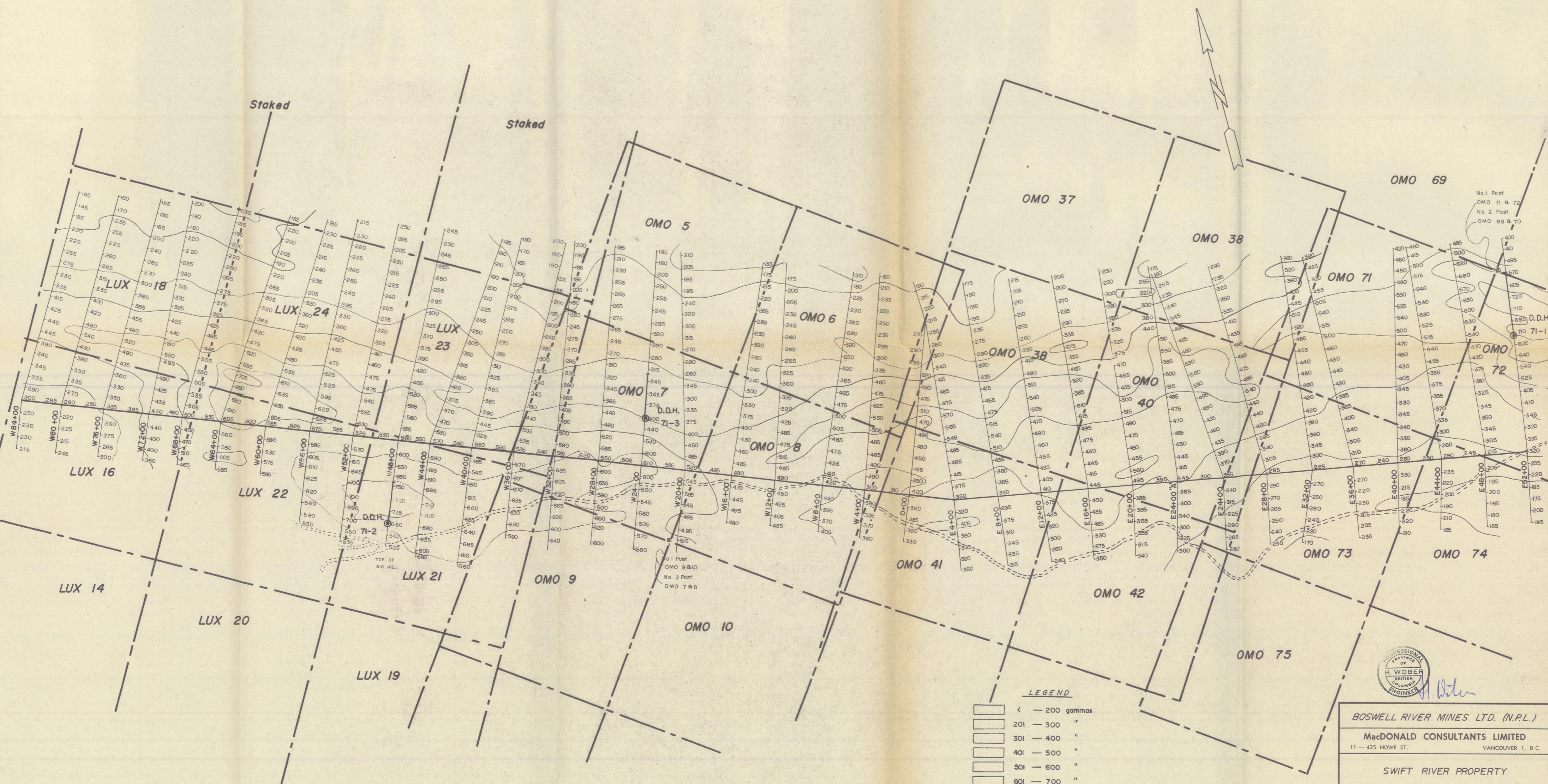
Respectfully submitted,  
MACDONALD CONSULTANTS LTD.



H. Wober, P. Eng.

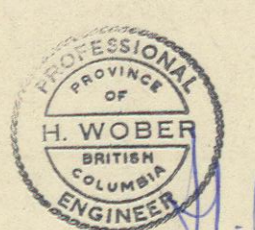


HW/jr



**LEGEND**

[Shaded Box]	< - 200 gammas
[Shaded Box]	201 - 300 "
[Shaded Box]	301 - 400 "
[Shaded Box]	401 - 500 "
[Shaded Box]	501 - 600 "
[Shaded Box]	601 - 700 "
[Shaded Box]	701 - > "



**BOSWELL RIVER MINES LTD. (N.P.L.)**

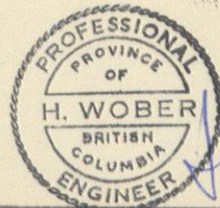
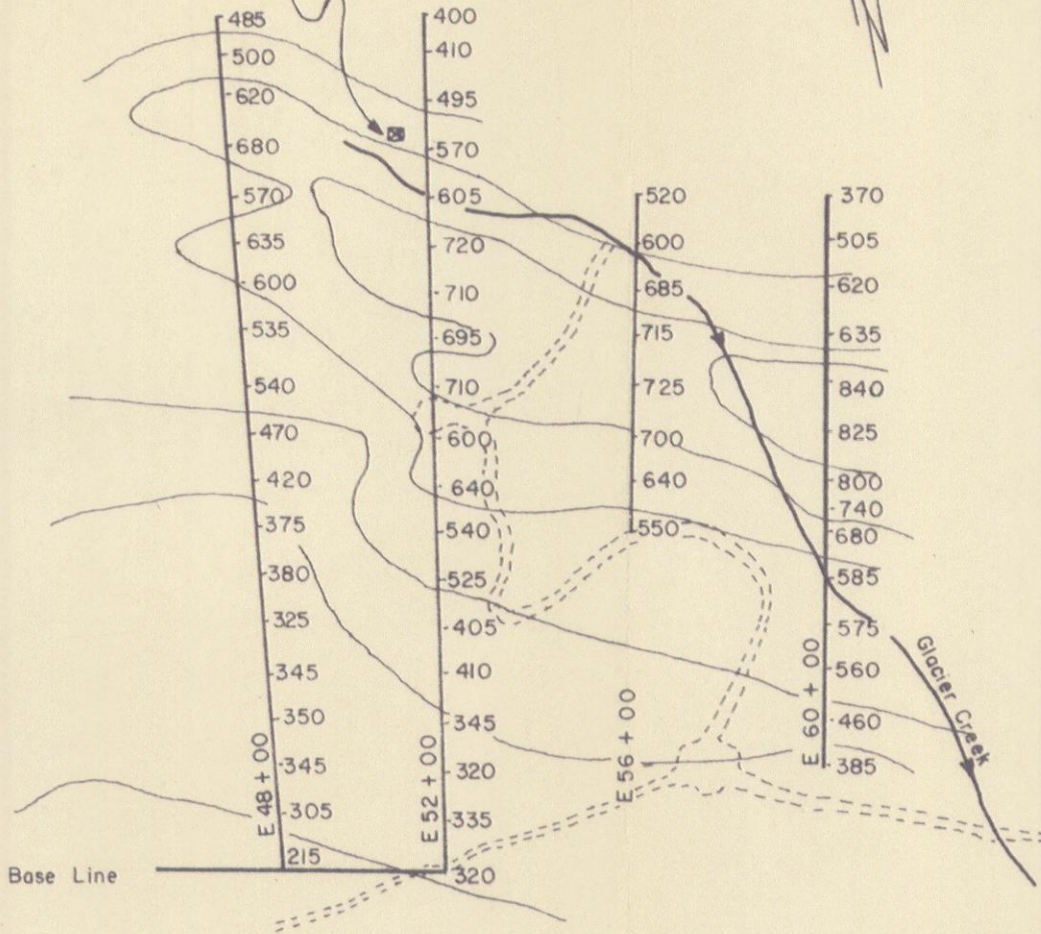
**MacDONALD CONSULTANTS LIMITED**  
11 - 425 HOWE ST. VANCOUVER 1, B.C.

**SWIFT RIVER PROPERTY**

SCALE 1" = 400'	<b>MAGNETOMETER SURVEY</b>
DRAWN J. P. H.	
DATE JANUARY, 1971	
NUMBER 294-2B	

NO.1 Post  
OMO 71 8 72

NO.2 Post  
OMO 69 8 70



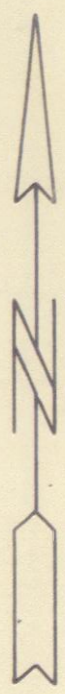
*H. Wober*

**MacDonald Consultants Ltd.**

BOSWELL RIVER MINES LTD.

SCALE	1" = 400'
DRAWN	E.B.
DATE	Jan 1971
NO.	294-2C

EXTENSION  
OF  
Grid Lines  
East

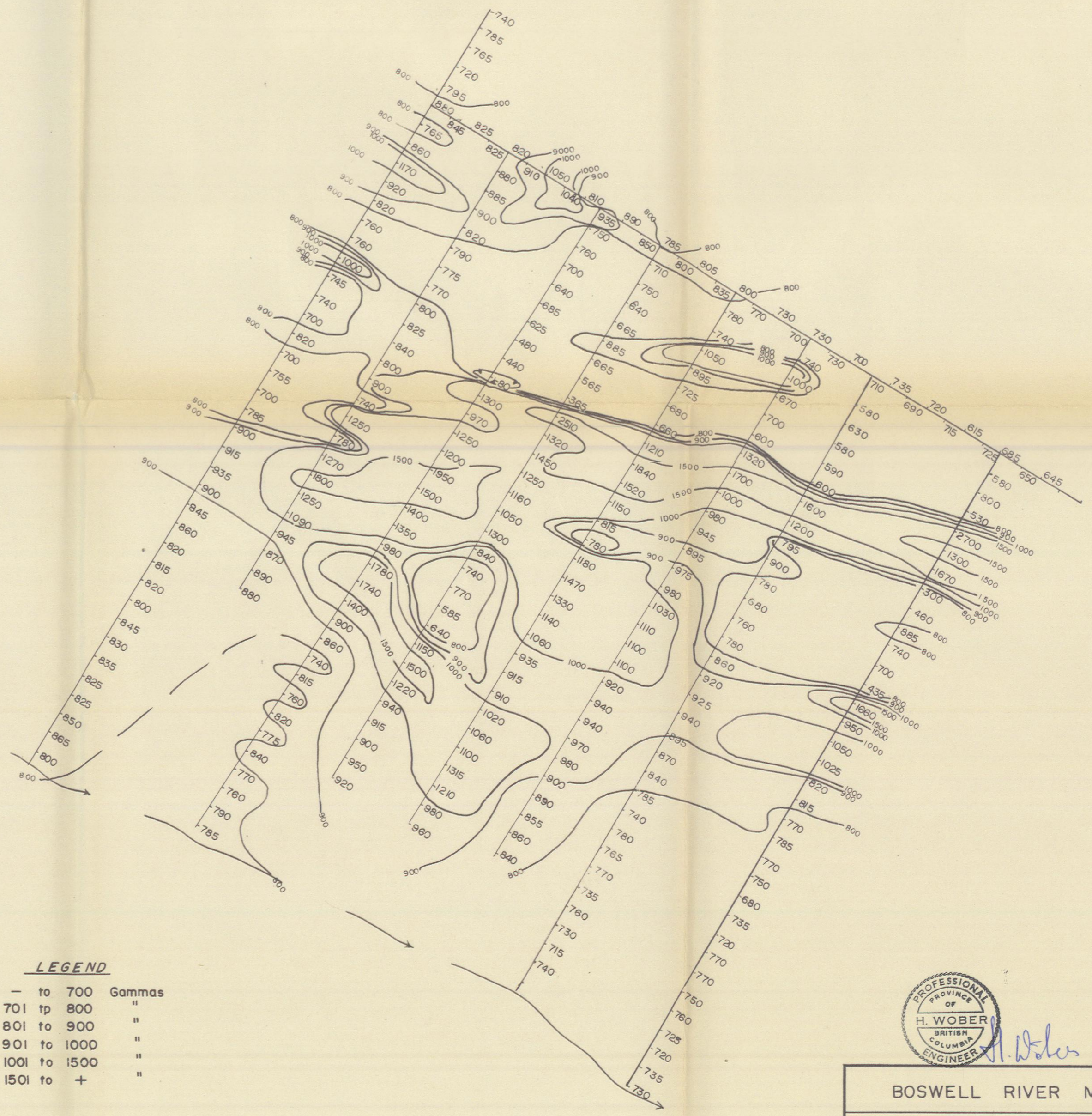


**LEGEND**

- - to 1000 Gammas
- ▨ 1001 to 1500 Gammas
- ▩ 1501 to + Gammas
- ⊠ Surveyed Claim Post

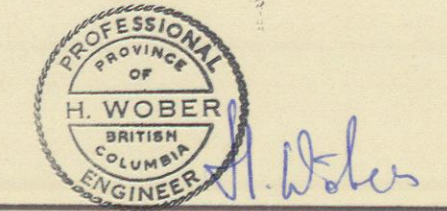
SCALE 1" = 1320'

Average Gamma Background in Area ± 750 Gamma

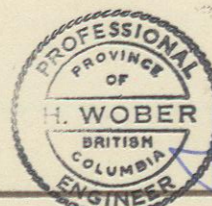
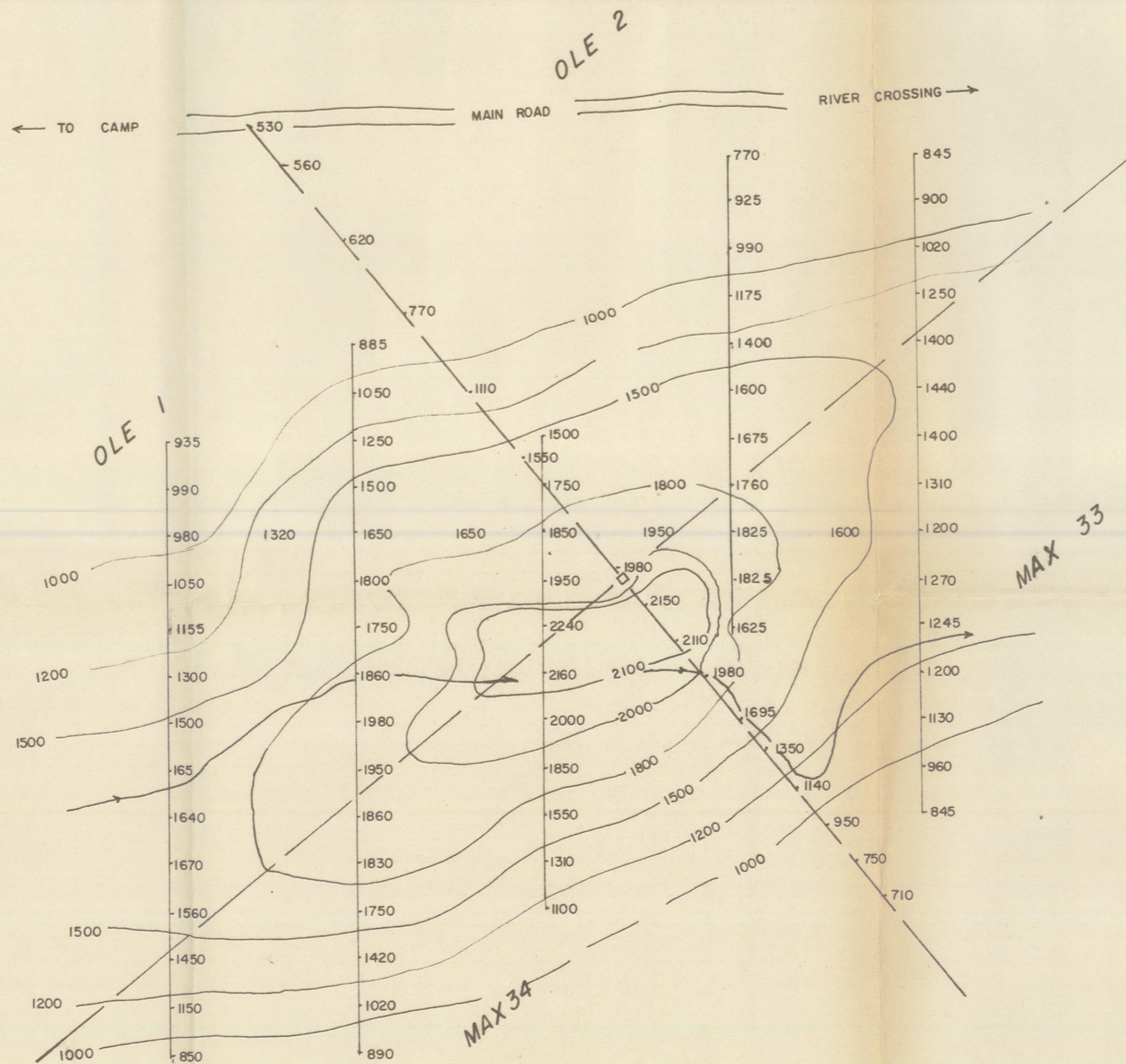
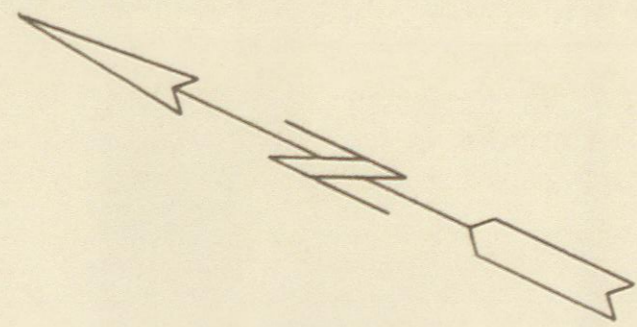


**LEGEND**

- - to 700 Gammas
- ▨ 701 to 800 "
- ▩ 801 to 900 "
- 901 to 1000 "
- 1001 to 1500 "
- ⊠ 1501 to + "

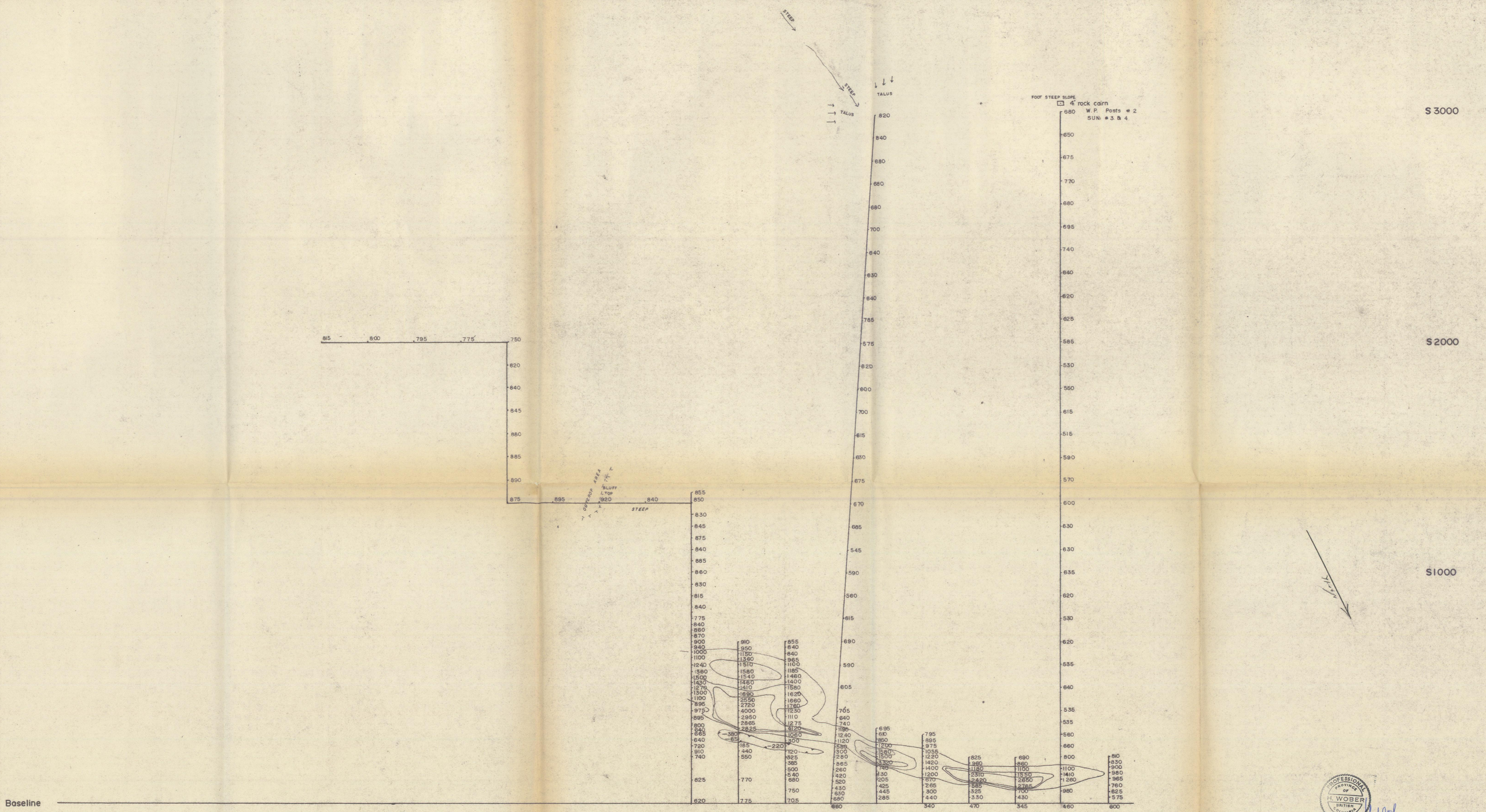


BOSWELL RIVER MINES LTD	
MacDONALD CONSULTANTS LIMITED	
11 - 425 HOWE ST.	VANCOUVER 1, B.C.
SWIFT RIVER PROPERTY	
SCALE 1" = 400'	MAGNETOMETER SURVEY
DRAWN J.P.H.	
DATE AUG. 1971	
NUMBER 294 - 2.D	



*H. Wober*

BOSWELL RIVER MINES LTD. (N.P.L.)	
MacDONALD CONSULTANTS LIMITED	
11 — 425 HOWE ST.	VANCOUVER 1, B.C.
SWIFT RIVER PROPERTY	
SCALE 1" = 100'	MAGNETOMETER SURVEY
DRAWN J. P. H.	
DATE AUG. 1971	
NUMBER 294-2E	



S 3000

S 2000

S 1000

Baseline

W92+00

W96+00

W100+00

W101+00

W102+00

W103+00

W104+00

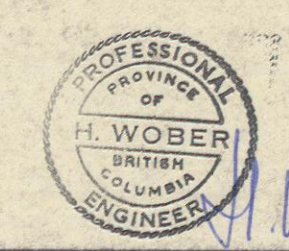
W105+00

W106+00

W107+00

W108+00

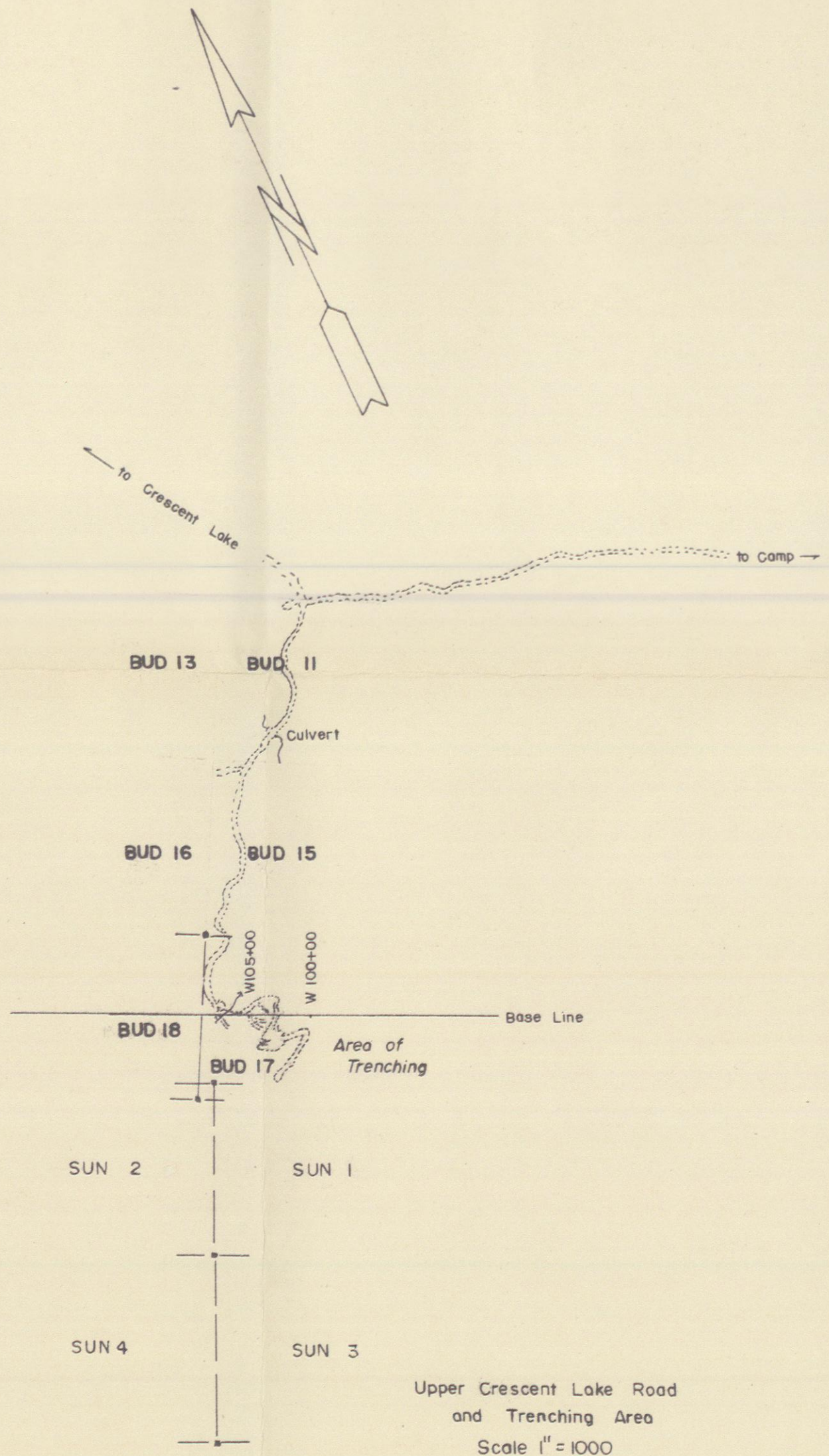
W109+00



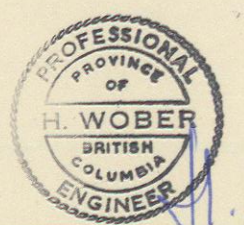
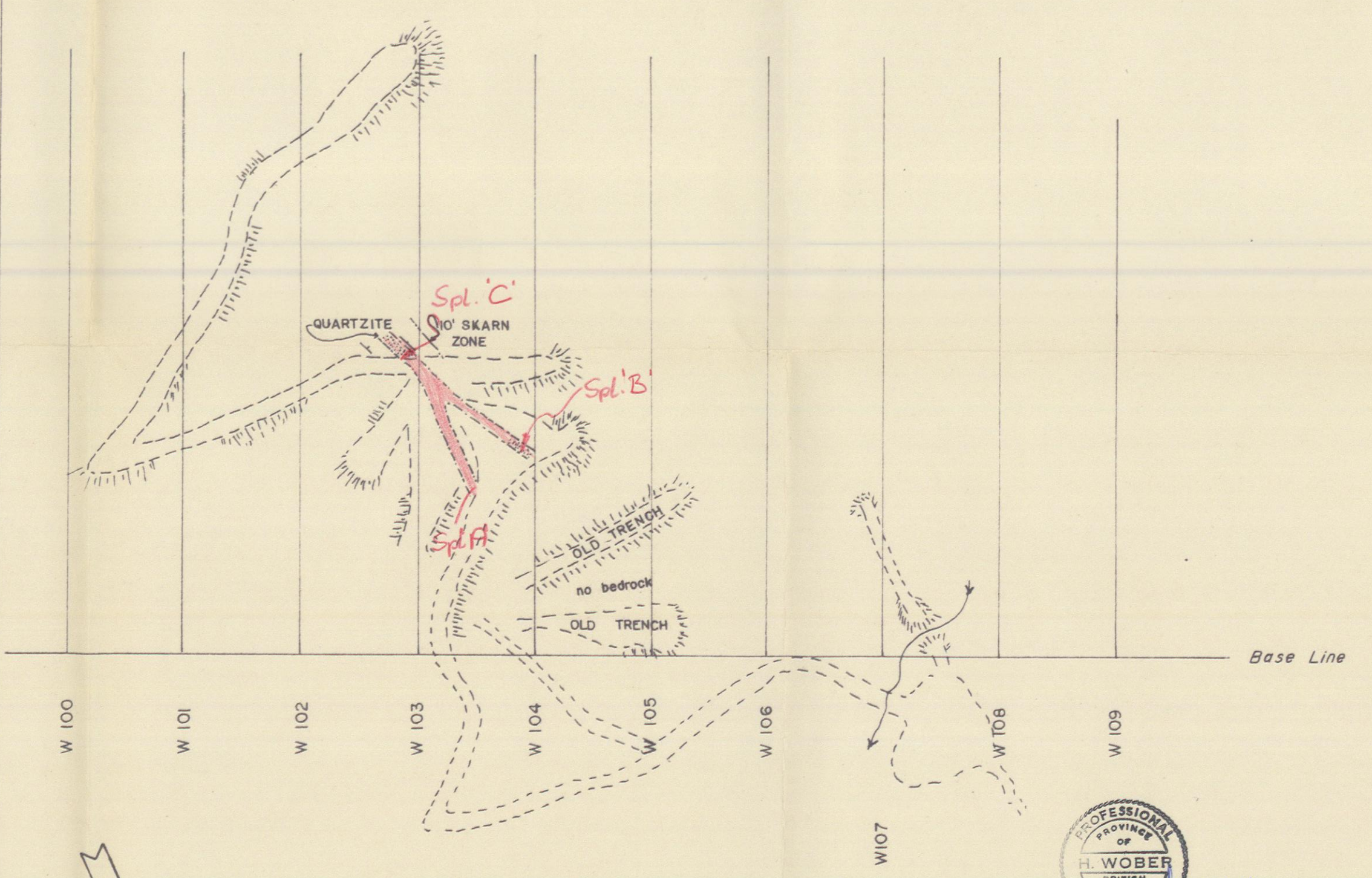
**BOSWELL RIVER MINES LTD.**  
**MacDONALD CONSULTANTS LIMITED**  
 11 - 425 HOWE ST. VANCOUVER 1, B.C.

**SWIFT RIVER PROPERTY**

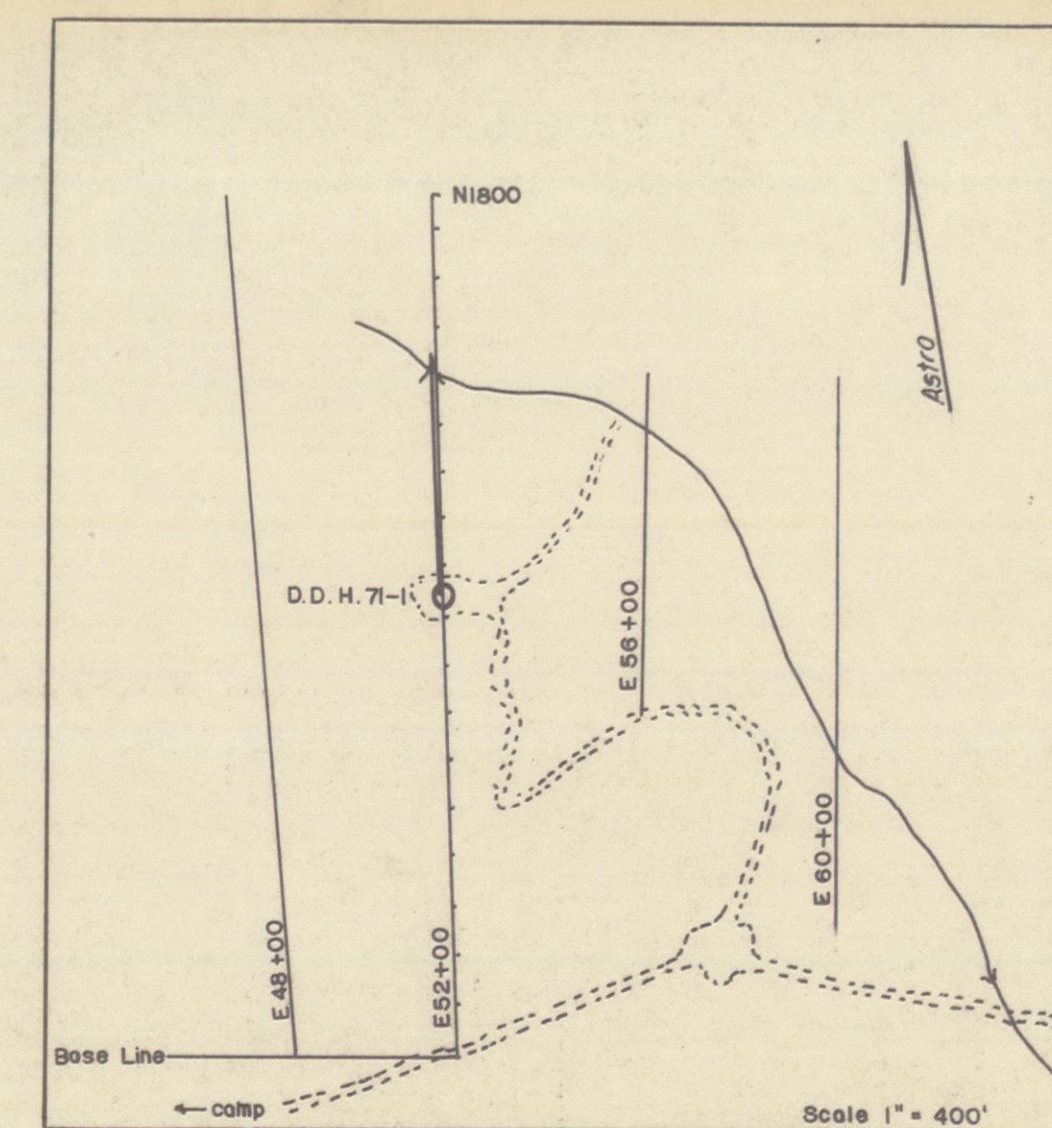
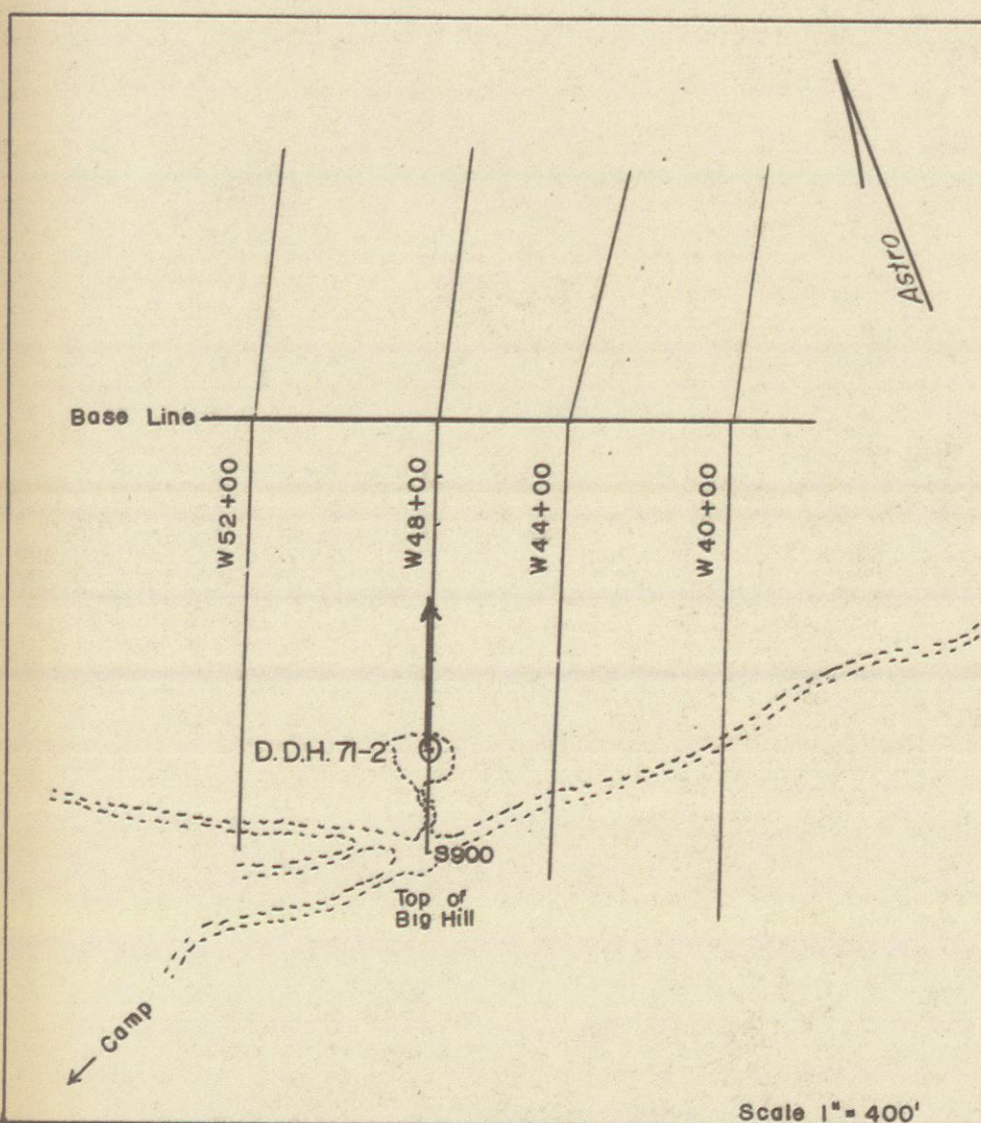
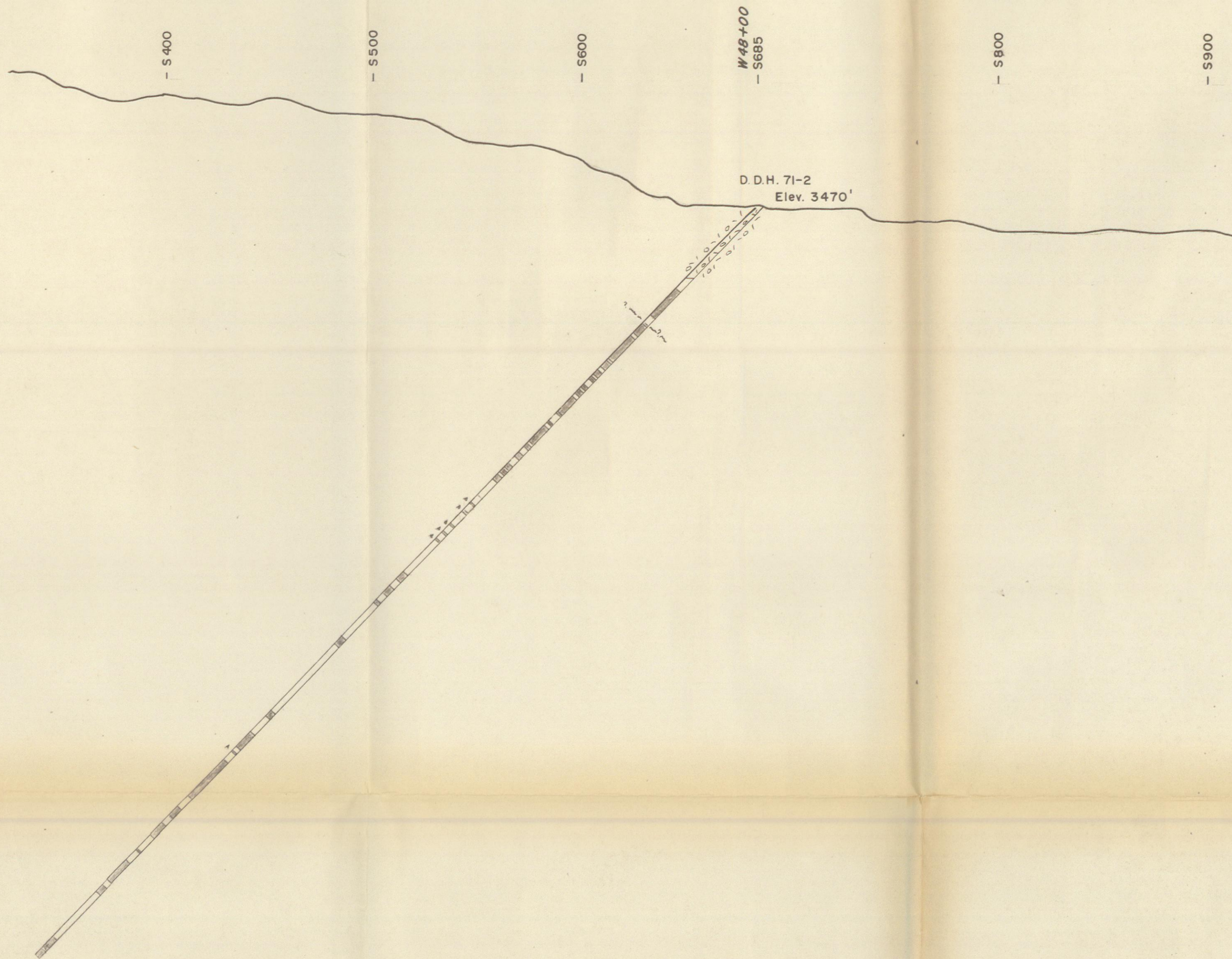
SCALE 1" = 200'	<b>MAGNETOMETER SURVEY</b>
DRAWN J. P. H.	
DATE JULY, 1971	
NUMBER 294 - 2 F	



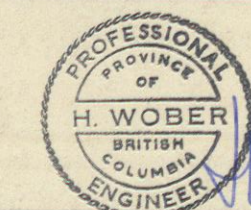
Upper Crescent Lake Road  
and Trenching Area  
Scale 1" = 1000



<b>BOSWELL RIVER MINES LTD.</b>		<b>TRENCHING AREA</b>
<b>MacDONALD CONSULTANTS LIMITED</b>		
11 — 425 HOWE ST.	VANCOUVER 1, B.C.	
SWIFT RIVER AREA Upper Crescent Lake Road		
SCALE	1" = 100'	
DRAWN	J. P. H.	
DATE	AUG. 1971	
NUMBER	294-2G	



- LEGEND**
- OVERBURDEN
  - SAND-B, M, C. B. black, M. magnetic, C. calcareous
  - GRAPHITIC Schist, Slates, Argillites
  - DOLomite
  - BRECCIA



BOSWELL RIVER MINES LTD. (N.P.L.)

MacDONALD CONSULTANTS LIMITED

11 - 425 HOWE ST. VANCOUVER 1, B. C.

SWIFT RIVER PROPERTY

SCALE 1" = 40'

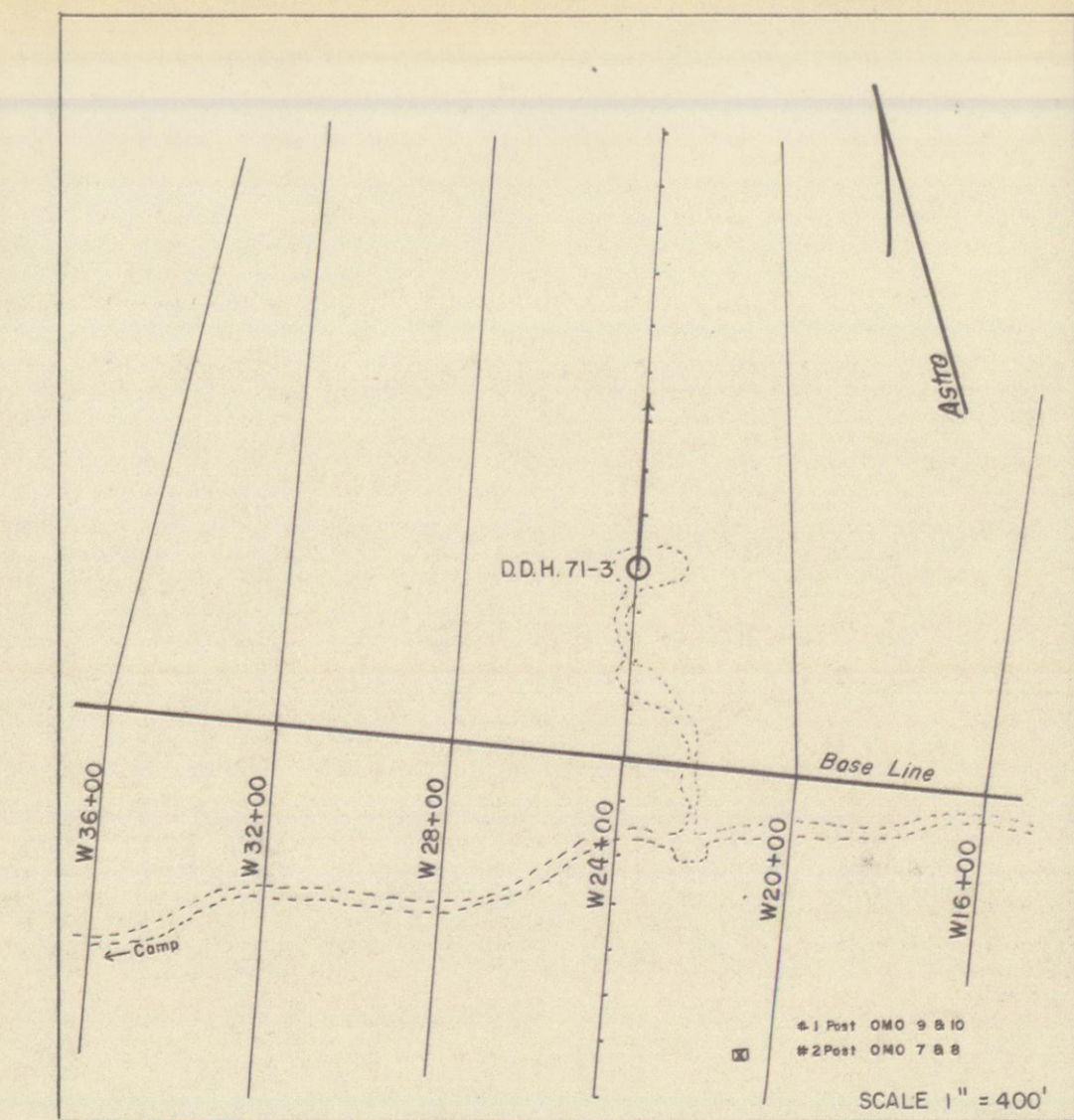
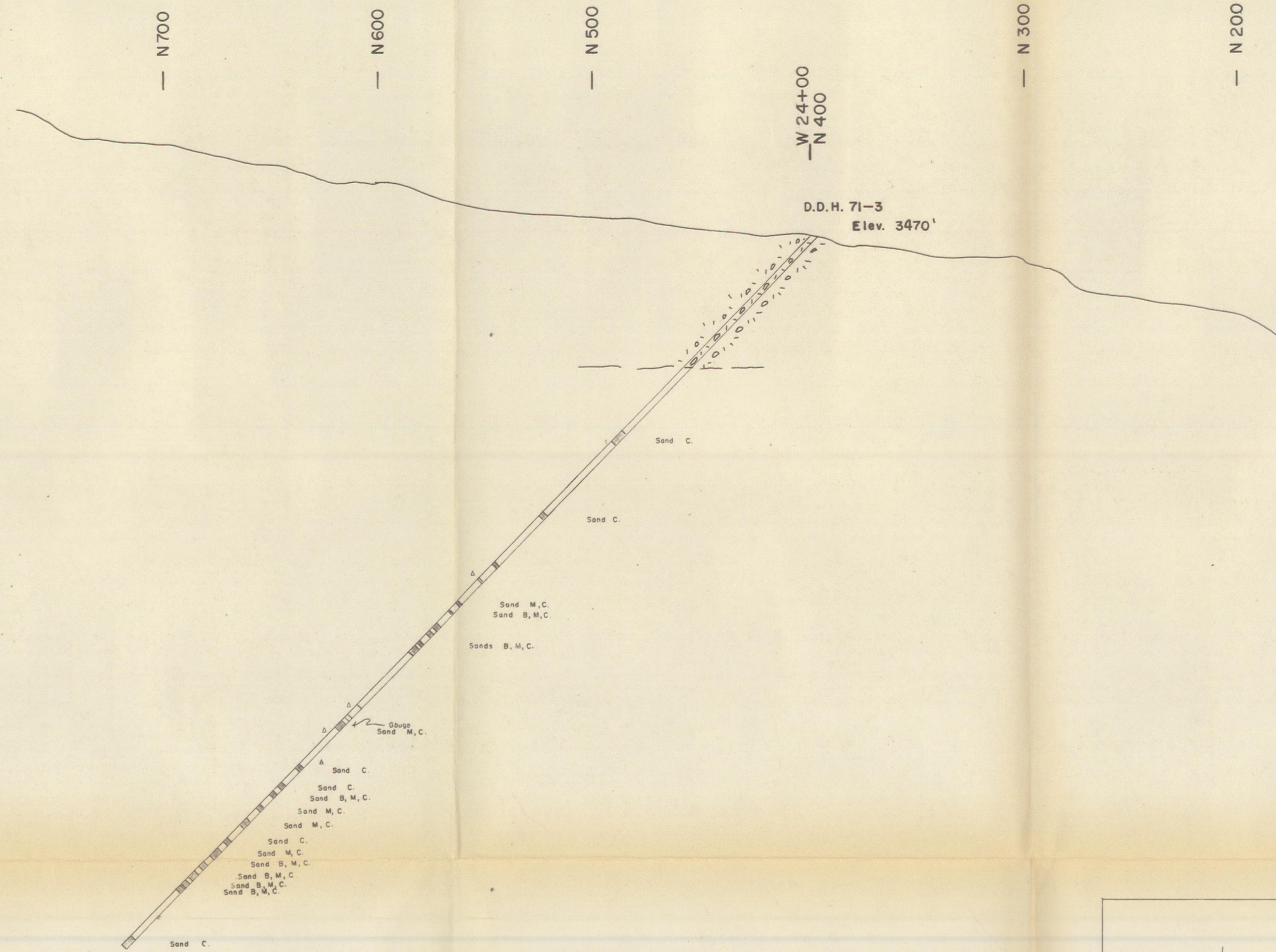
DRAWN J. P. H.

DATE MARCH, 1971

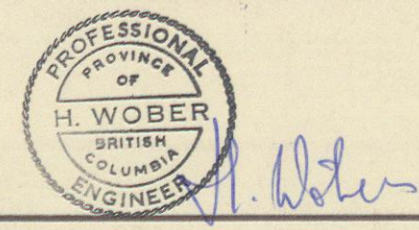
NUMBER 294-3 R

Diamond Drill Holes

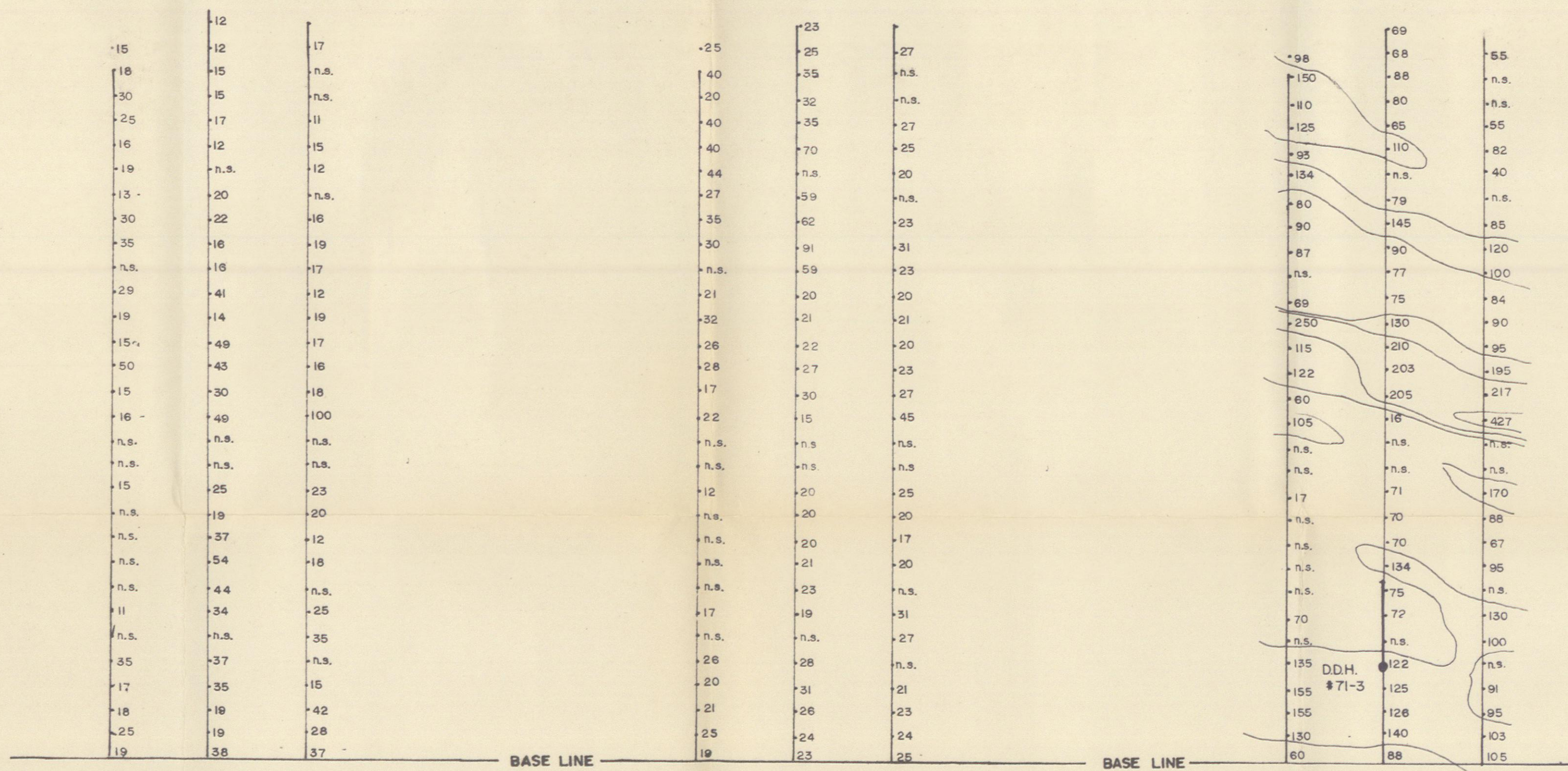
# 71-1 & # 71-2



- LEGEND**
- OVERBURDEN
  - SAND B,M,C. B. black, M. magnetic, C. calcareous
  - GRAPHITIC schist, slates, argillites
  - DOLOMITE
  - BRECCIA



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MacDONALD CONSULTANTS LIMITED	
11 - 425 HOWE ST. VANCOUVER 1, B.C.	
SWIFT RIVER PROPERTY	
SCALE	1" = 40'
DRAWN	j. p.h.
DATE	May, 1971
NUMBER	294-3B
Diamond Drill Hole	
# 71-3 & # 71-	



W28+00

W24+00

W20+00

W28+00

W24+00

W20+00

W28+00

W24+00

W20+00

COPPER

LEAD

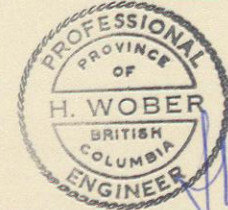
ZINC

LEGEND

0 — 100 P.P.M.

101 — 200 P.P.M.

201 — P.P.M.



*H. Wober*

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MacDONALD CONSULTANTS LIMITED  
 11 — 425 HOWE ST. VANCOUVER 1, B.C.

SWIFT RIVER PROPERTY

SCALE 1" = 400'

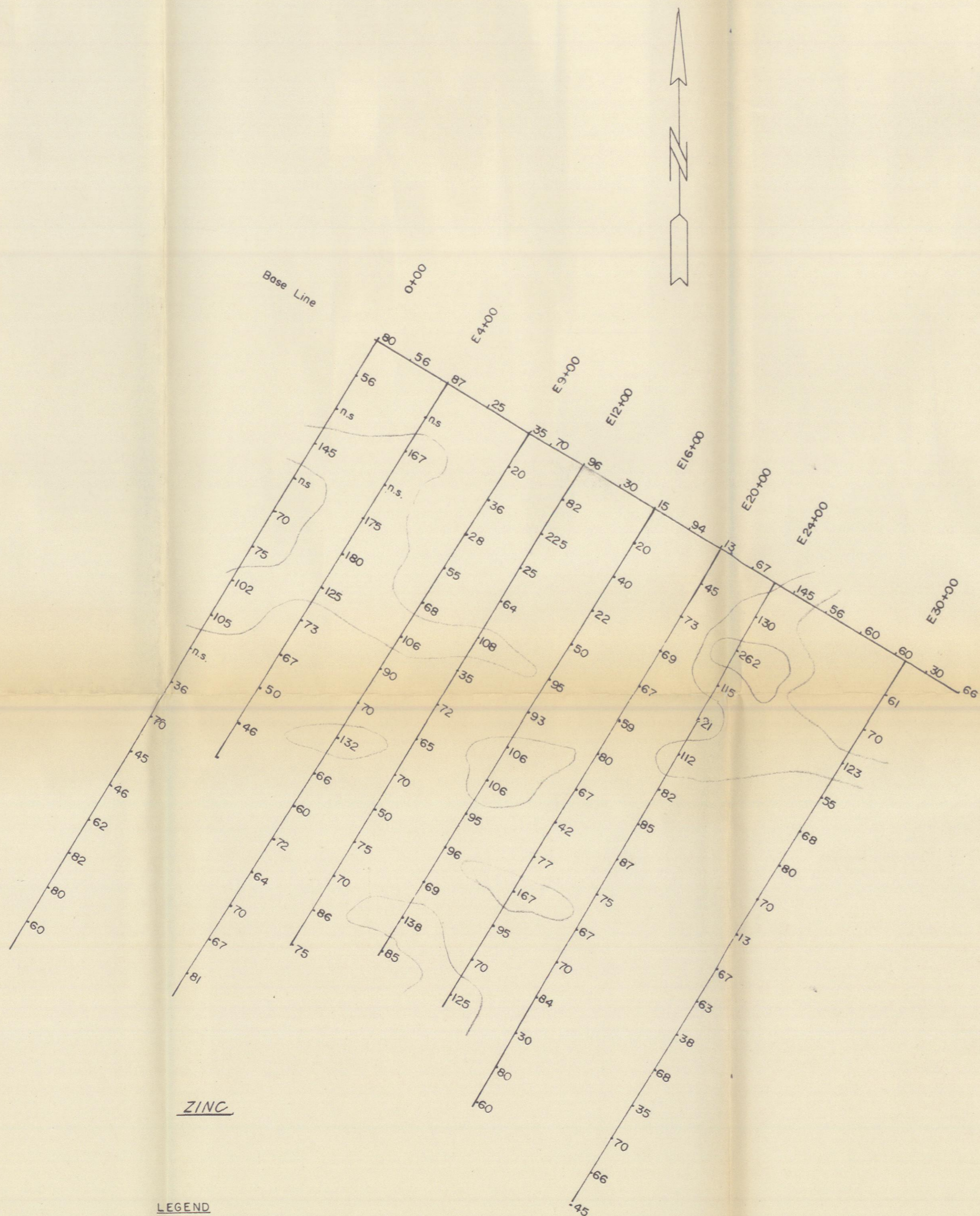
DRAWN J.P.H.

DATE AUG. 1971

NUMBER 294-3C

GEOCHEMICAL SURVEY  
 AREA OF  
 DDH.#71-3

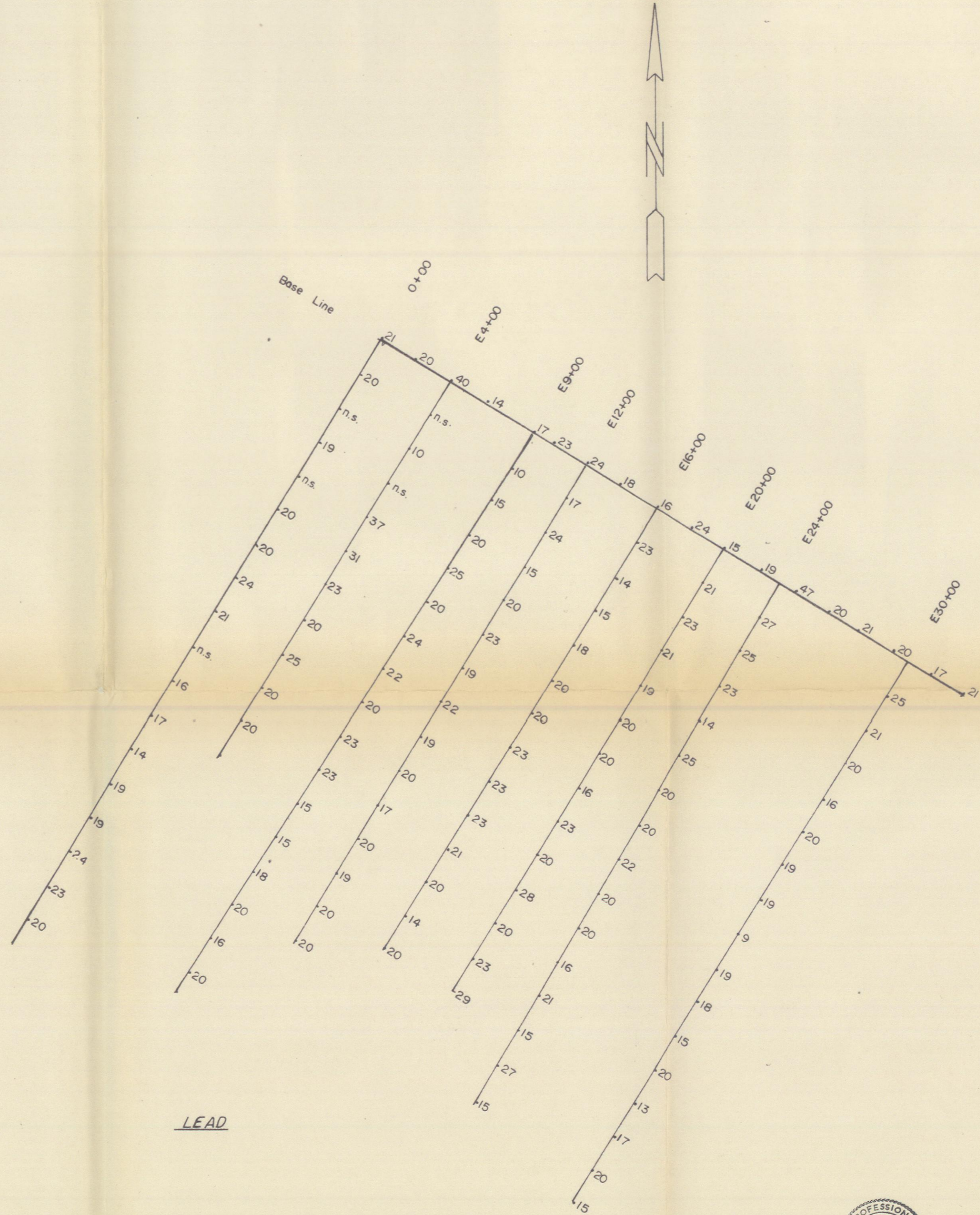




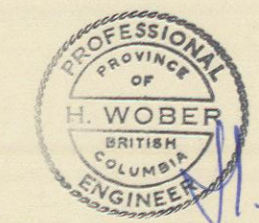
ZINC

LEGEND

0	100 P.P.M.
101	200 P.P.M.
201	P.P.M.



LEAD



BOSWELL RIVER MINES LTD. (N.P.L.)	
MacDONALD CONSULTANTS LIMITED 11 - 425 HOWE ST. VANCOUVER 1, B.C.	
SWIFT RIVER PROPERTY	
SCALE 1" = 400'	GEOCHEMICAL SURVEY ZINC & LEAD SOUTH AREA
DRAWN J. P. H.	
DATE AUG. 1971	
NUMBER 294-3E	

N3000

240  
180  
205  
180  
220  
290  
200  
205  
210  
210  
120  
165  
185  
195  
232

225  
175  
290  
265  
210  
175  
170  
205  
240  
190  
240  
240  
205  
200  
225  
220

232  
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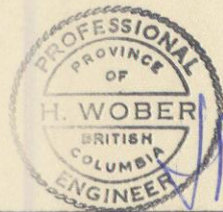
N1500

W28+00

W24+00

W20+00

D.D.H. 71-3



*H. Wober*

**MacDonald Consultants Ltd.**

BOSWELL RIVER MINES (N.P.L.)

SCALE	1"=400'
DRAWN	J.P.H.
DATE	Aug. 71
NO.	294-3F

MAGNETOMETER  
SURVEY  
EXTENSION

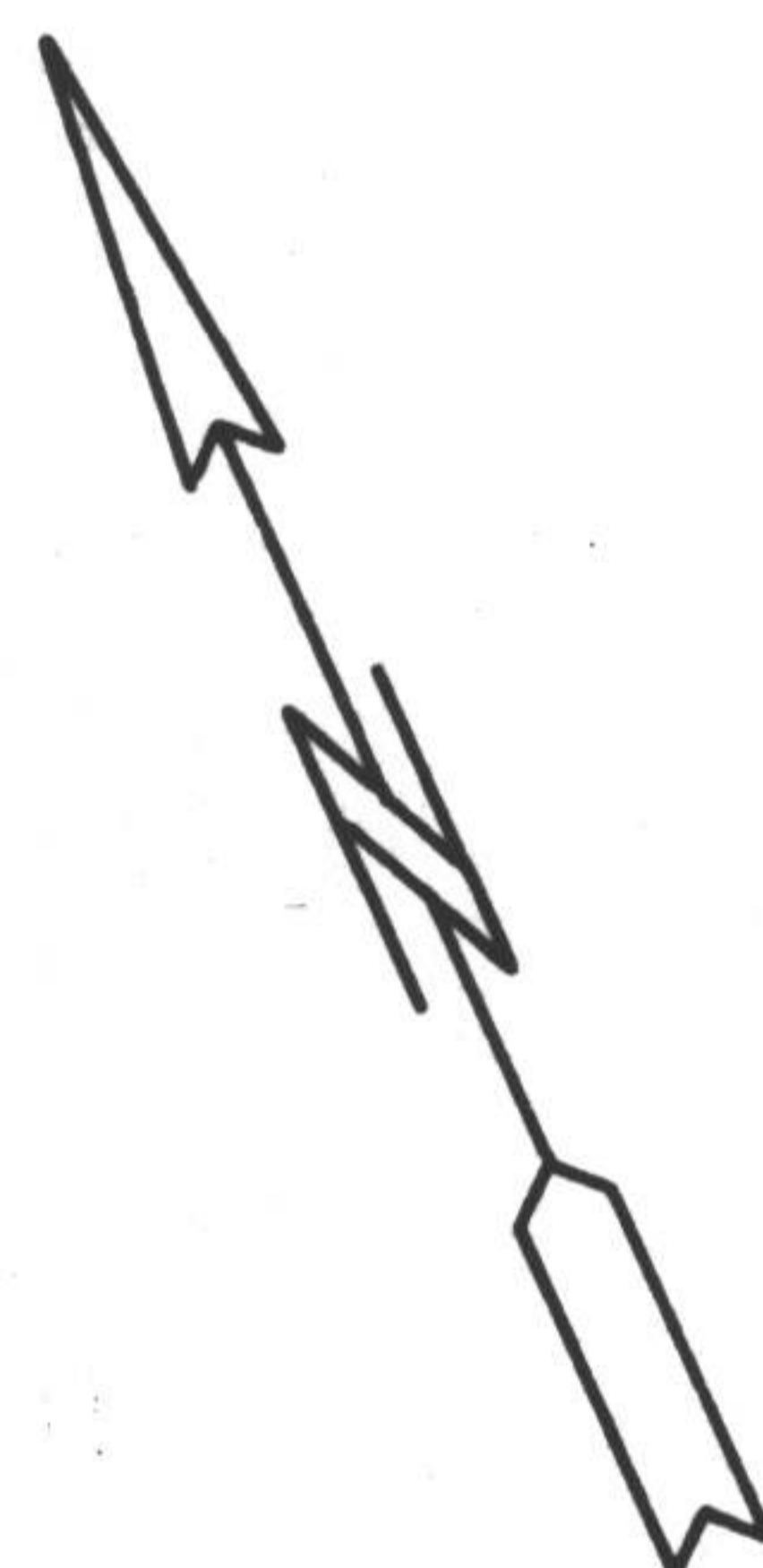
AREA D.D.H. 71-3

4000 N —

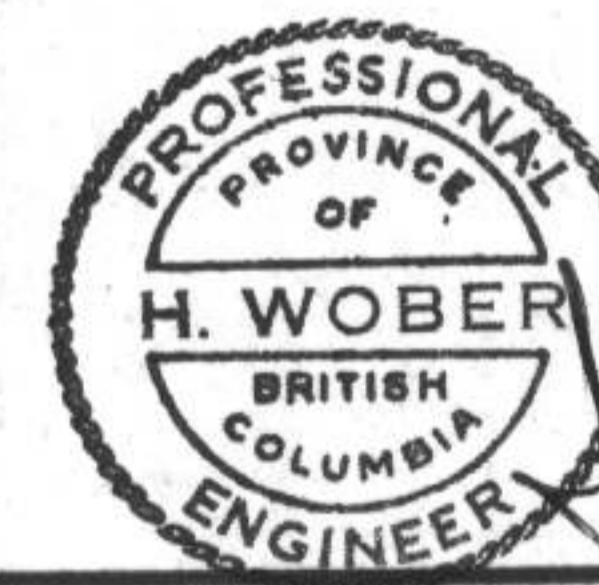
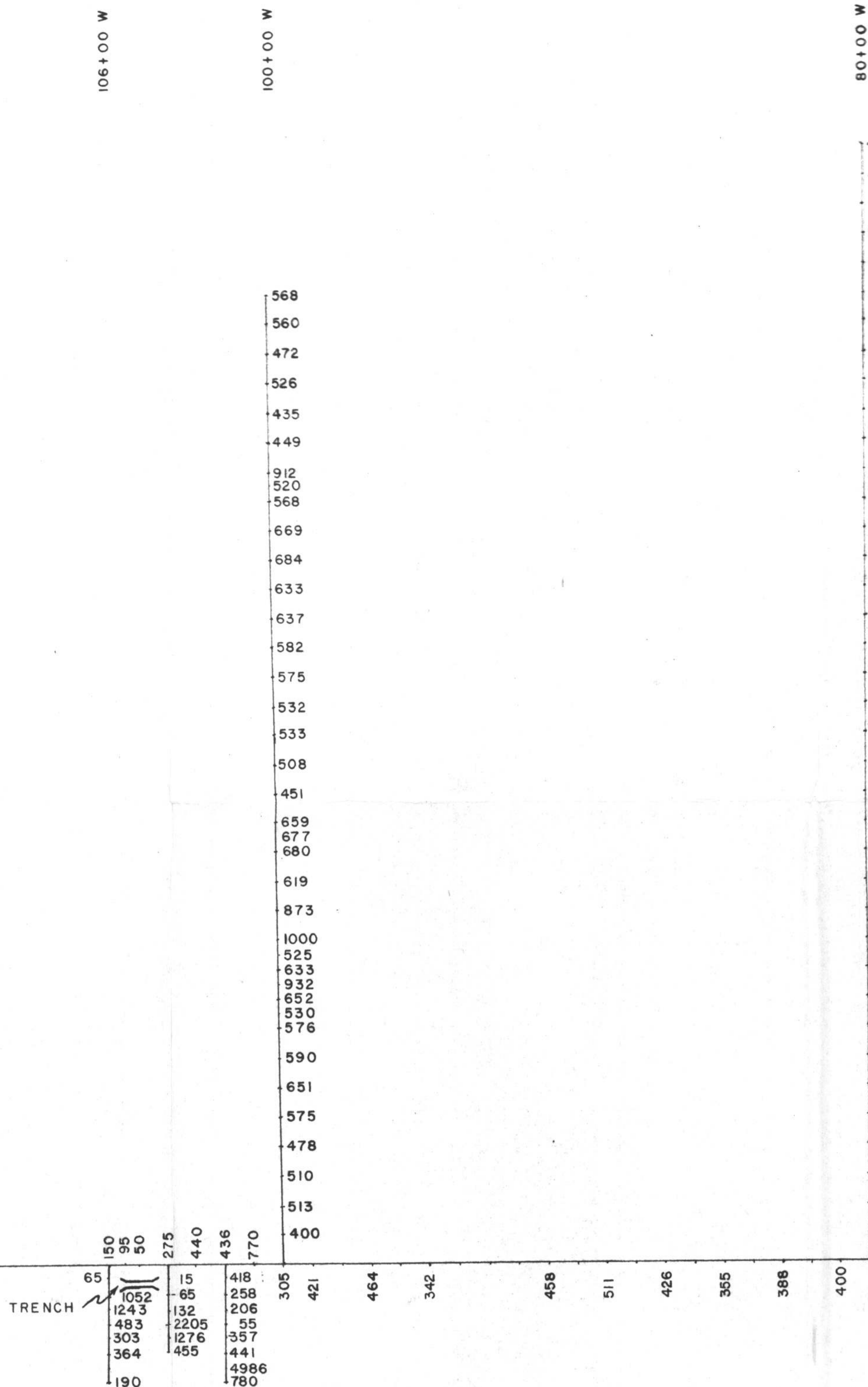
3000 N —

2000 N —

1000 N —



BASE LINE NO. 2



*H. Wober*

BOSWELL RIVER MINES LTD.

MacDONALD CONSULTANTS LIMITED  
11 — 425 HOWE ST. VANCOUVER 1, B.C.

SWIFT RIVER PROPERTY

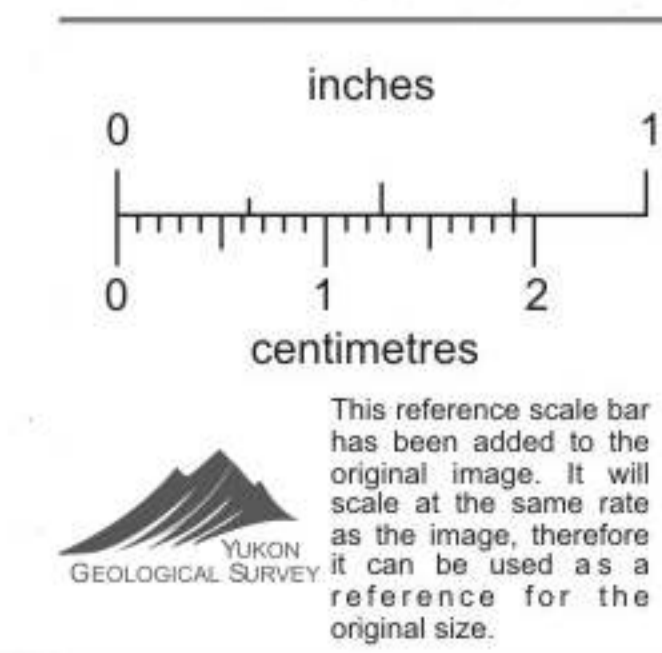
SCALE 1" = 400'

DRAWN E. A. B.

DATE NOV. / 70

NUMBER 292-2A

MAGNETOMETER SURVEY



060873