

SEYMOUR(KITCHENER) CREEK

MAGNETOMETER SURVEY

Whitehorse Mining District, Yukon Territory
Placer Claims P22607, 17224, 17214-17217, & 22996
Map N.T.S. 115-I-6



by

Gary C. Lee P.Eng.

1982

TABLE OF CONTENTS

	Page
INTRODUCTION	
- General	1
- Placer Claims	1
- Location	1
ECONOMIC GEOLOGY AND TOPOGRAPHY	1
CORRELATION OF MAG. SURVEY WITH TRENCHING	2
FIELD PROCEDURE	3
INTERPRETATION AND CONCLUSIONS	3
RECOMMENDATIONS	5
LOCATION PLAN	6
SEYMOUR MAG. PROFILES AND TRENCHING AREA	7
SEYMOUR(KITCHENER) CREEK MAG. PROFILES	8 - 20
MAGNETIC CONTOUR MAP	Pocket

INTRODUCTION

General

On July 30, Aug. 2, Aug. 4-6, myself and Larry Lebedoff conducted a magnetometer survey on Seymour(Kitchener) Creek. Also, additional work(Mag.) was done on Aug. 28,30, 1982 immediately upstream on Bow Creek by myself. The purpose of the survey was to locate magnetic anomalies which might be related to above background concentrations of magnetically susceptible minerals synonymous with placer gold deposition possibly in old buried channels.

Also, in Dec., 1982 I conducted a magnetometer survey on Seymour Creek in an area where known commercial deposits of placer gold had been discovered in a trenching program a few months previously. Being only one kilometer upstream from the area covered by this report, it is important in regard to supporting the viability of magnetometer surveys as a significant tool in placer prospecting.

Placer Claims

The survey was conducted on Placer Claims #P22607, P17224, P17214-P17217, and P22996 granted or assigned to myself and L. Lebedoff. The correlation of a Mag. Survey with trenching was done on P23029 granted to H. Fromme. The location map on Page 6 shows the location of these claims.

Location

The location map on Page 6 shows the location of the Mag. survey with regard to the above claims. P22607 is on the junction of Bow and Seymour Creeks with P22996 adjoining immediately upstream on Bow Creek. The remainder are adjoining immediately downstream on Seymour(Kitchener) Creek. They are on Mile 45 of the Freegold Road approximately Northwest of Carmacks, Yukon Territory.

ECONOMIC GEOLOGY AND TOPOGRAPHY

The geology map(340A) contained in G.S.C. Memoir 189 and compiled by H.S. Bostock(1956) show the rock types in the surveyed area to be granite, granodiorite, and allied rock types. In the map compiled by Tempelman-Kluit(1974), both granodiorite and Schist Gneiss(banded hornblende gneiss, garnetiferous amphibolite with chlorite quartz schist, minor graphitic schist.) has been noted contacting at right angles to the stream drainage just below the survey area. This occurs as a narrow band of "Schist Gneiss". A dark medium grained basic rock(amphibolite??) was noted outcropping on the west side of the creek on Line 800 which is probably part of the above series, only further upstream. All other rock types

noted throughout the surveyed area were in the granitic series. The most significant comments are made in G.S.C. Memoir 214 "Geology and Mineral Deposits of Freegold Mountain, Carmacks District, Yukon by Johnston(1963)". It is stated that magnetite deposits associated with gold occurrences are at the northwest end(drain into the area covered by this report) and on the east side of Freegold Mountain. It is also stated that "A number of Quartz veins containing sulphides and gold have been discovered on claims situated around the heads of Liberty, Cabin, and Guder Creeks." In any event, the geology seems to support the theory that any economic occurrences of placer gold that may occur should be accompanied by above background concentrations of placer magnetite.

The general direction of the Seymour(kitchener) Creek drainage is to the north and northeast. It contains relatively low level, flat lying spruce and poplar benches ranging from 30 to 350 meters wide. A few higher relatively flat lying benches occur in the area of Bow Creek, and on the left limit (looking downstream) below its mouth. There is considerable evidence of relatively recent channel diversions within the low level benches. The valley is contained by steeply sloped valley walls.

CORRELATION OF MAG. SURVEY WITH TRENCHING

Test pitting and sampling was conducted on Seymour Creek approximately one kilometer upstream from the mouth of Bow Creek on placer claim P23029. A backhoe was used to excavate to bedrock. The location of the pits is shown on the general Location Plan(Page 6) and the magnetic profiles(Page 7). Commercial quantities of gold closely or directly associated with coarse grained magnetite in significant quantities was encountered in all but one pit. In fact, coarse grained placer magnetite "balls" up to 5 cm. in diameter were actually visible immediately above bedrock in one or two pits. The total depth to bedrock was less than or about two meters. Bedrock consisted of a fractured pink feldspar porphyry which seems to have a low magnetic susceptibility. The best concentrations of placer gold and magnetite occurred within one half a meter from bedrock.

Two mag. lines(L930&L980) were established crossing at right angles to the valley so as to intersect the tested area in the best possible manner while at the same time avoiding disturbed ground(spill piles etc.) as much as possible. The magnetic profiles are shown on page 7 along with the approx. test pit location. The profiles show an erratic up and down anomalous pattern ranging between 250 and 350 gammas in the area where commercial quantities of placer gold and magnetite association were encountered. Equally as important the pit located upstream of L980 between 0+40S and 0+50S encountered no significant gold or placer magnetite which correlates with a rather quiet even mag. response in the 250 gamma range. It is interesting to note that there are anomalies immediately to the south of the baseline and at the north end, half way between the toe of the hill and the Freegold road, which have

not as yet been tested. Anyway, it is reasonable to assume the magnetometer is picking up the gold associated placer magnetite, hence making it a useful exploration tool in shallow ground with a similiar geological and depositional environment in the Seymour valley basin.

FIELD PROCEDURE

A baseline coincident with the claim line was established commencing(00+00) on Bow Creek approx. 500 meters upstream from its mouth and thence downstream on to Seymour(Kitchener) Creek ending at 12+00N (meters). The number 2 post of P22996 and 0+00 are coincident and ^{the baseline} was run in at 25 meter spacings. The lines were run in at 50 meter spacing(except for L520N) with the stations being marked at 10 meter spacing. Both lines and baseline were marked with felt pens on flagging and written on blazed spruce trees at reasonable intervals, so as to give some permanency to the grid. The Location Plan(Pg. 6) show the general location of the grid.

A Sharpe's M.F.-1 fluxgate magnetometer was used and readings were taken to the nearest 10 gammas occassionally, at 5 gammas. The instrument reads the vertical component of the earth's magnetic field.

Readings were taken at 5 meter intervals, with a few sections at 2½ meter intervals. Visual estimates were made of topographical changes along the lines with some of these noted on the accompanying profile sheets(pages 8 -20). Outcrops were noted and their location is shown on the magnetite contour map(pocket).

Magnetometer readings were taken along the baseline in short loops and corrected for diurnal. Similarly, each set of two lines was surveyed in a loop checking into the baseline readings for each loop and subsequently corrected.

INTERPRETATION AND CONCLUSIONS

The discussion on the mag. survey begins upstream at zero chainage on the baseline and ends 1200 meters downstream. Mag. profiles(pg. 8 -20) include the complete survey whereas, a plan of magnetic contours(in pocket) begins near the junction of Bow and Seymour(Kitchener) Creeks and thence, downstream.

From zero to 400N the mag. survey covers the right limit Bow Creek drainage except near Seymour Creek where both drainages converge. Some of the profiles(Pg. 8 -10) at the toe and head of 5-10 meter high benches show an abrupt change in magnetism such as that on L250N between 5 and 10 west. This is assumed to be caused by abrupt topographical changes and should be ignored. The area between Bow Creek and the baseline(*) show abrupt changes(100 gammas) in magnetics not unlike that of the

(Lines 200N & 150N)

area trenched. The more subtle 30 - 50 gamma anomalies occurring on the benches could be the same thing only deeper overburden. Without further work, no definite conclusions can be drawn at this time, except the erratic on L150N & L200N near the creek should be trenched.

The plan (in pocket) showing the magnetic contours and the profiles (pg. 11-12) for Lines 450, 500 and 520N show an anomalous linear trend roughly coincident with the road to Carmacks. This appears to be a placer anomaly, however more magnetometer work should be conducted upstream in order to locate better test sites away from the road.

The area between L600N and L750N have numerous erratic magnetic changes which for the most part, are caused by abrupt topographical changes. However, a few such as L600N 1+35W, L650N 0+20E, L700N B.L.&0+25E, L750N 0+60W are unexplained and could be caused by placer deposition.

It is important to note a dark basic rock (amphibolite)?? was noted outcropping on the west side of the creek in the area of L800N. Since, all other outcrops noted on the survey were granitic in nature, it indicates a significant contact occurring. This is borne out by the extreme negative readings occurring on L900N, L950N, and L1000 near and crossing Seymour (Kitchener) Creek which is assumed to be caused by bedrock. This can be seen on the contour map centred around roughly 1+50W.

Of more interest from a placer point of view, the magnetic contour map shows a peaking magnetic flow pattern originating from the side drainage immediately to the east of L900N. Secondary rewashing seems to have occurred by the meanderings of Seymour Creek. These secondary flow peaks occur on L1000 0+50W, L1050 1+25W and L1100N 1+40W with a halo affect carried downstream to L1150N 0+75W to 1+90W. The primary anomaly along L900N 1+00W to 1+00E could be partly influenced by geology, however the "fan-like" side drainage originating from a gulch has dumped a large volume of material originating from the northwest part of Freegold Mountain, known to have gold bearing magnetite veins. Hence, both the primary and secondary highs are considered good trenching targets.

The contour map shows an unexplained anomalous situation east of the baseline centred on L1150N 0+40E and crossing L1100N at 0+50E and L1200N at 10E. This anomaly appears to be independant of anything mentioned thus far and should be treated separately.

It should be noted that the intensity and ^{pattern} of magnetics along L1200N is starting to approximate that of the trenching area where commercial quantities of placer gold were encountered. It is hoped that future mag. surveys downstream will show a more direct correlation with the ground already successfully tested.

RECOMMENDATIONS

The anomaly pattern originating as a result of the material being dumped down the gulch along L900N, east side should be tested in the following locations:

L1000N	0+45W
L1050N	1+25W
L1100N	1+40W
L1150N	1+65W or 0+95W
L 900N	0+45W
L 900N	0+15E

The independant anomaly pattern on the north east part of the grid should be tested in the following places:

L1150N	0+40E
L1200N	0+10E-0+15E

The creek benches on the east side of Bow Creek should be tested in the following locations:

L150N	0+00 and 0+30W
L200N	0+15W and 0+45W

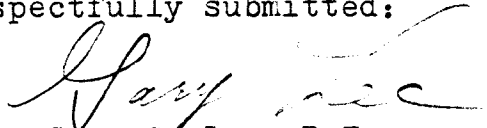
The anomaly centred on L450N, 1+50E should be traced further upstream in order ascertain test sites away from the Freegold Road.

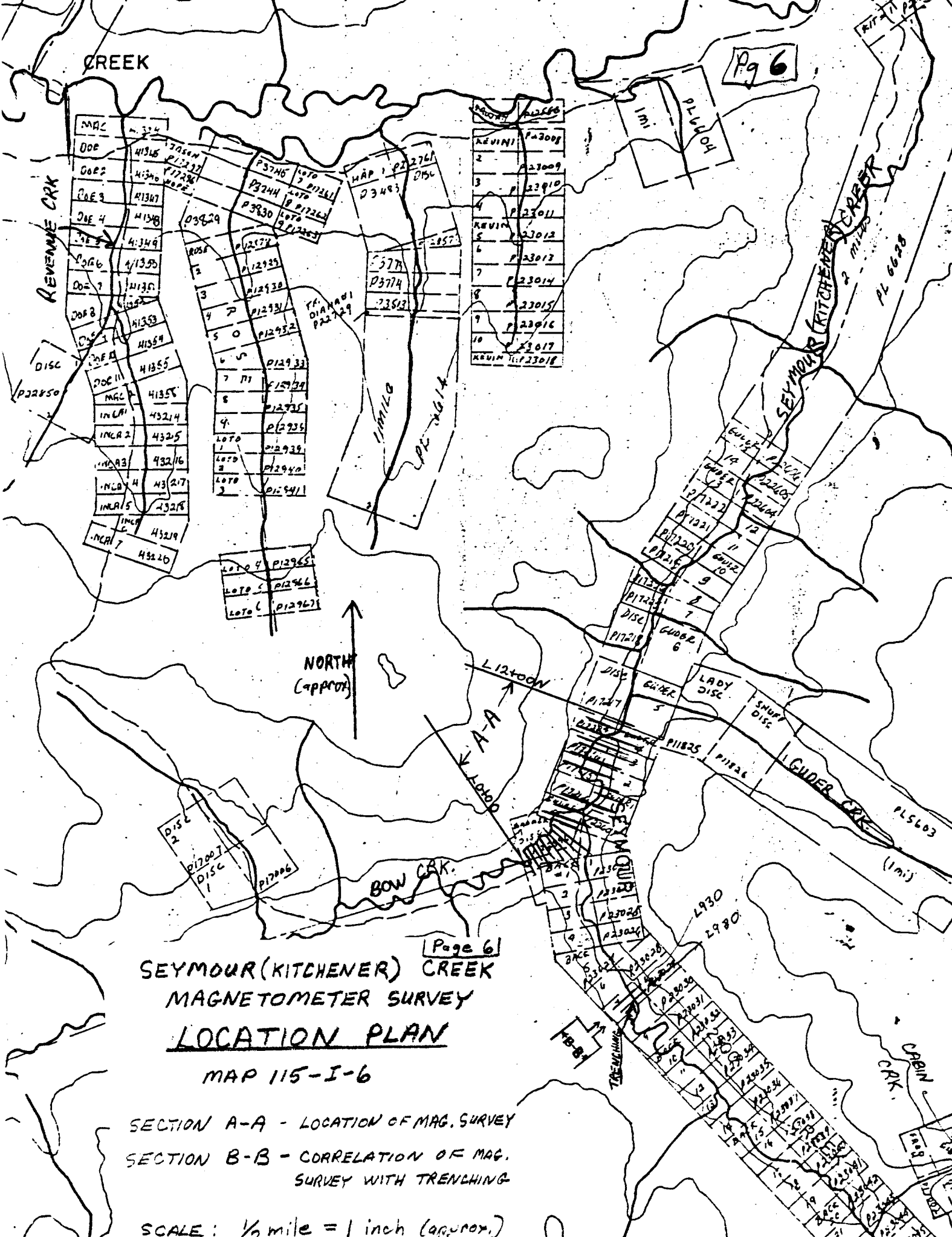
The following anomalies should be re-evaluated in the field, however no definite recommendations are made at this time:

L600N 1+35W, L650N 0+20E, L700N 0+00&0+25E, L750N 0+60W

The Mag. survey should continue downstream from L1200N in an attempt to duplicate mag. results encountered over the area successfully trenched.

Respectfully submitted:


Gary C. Lee, P.Eng.



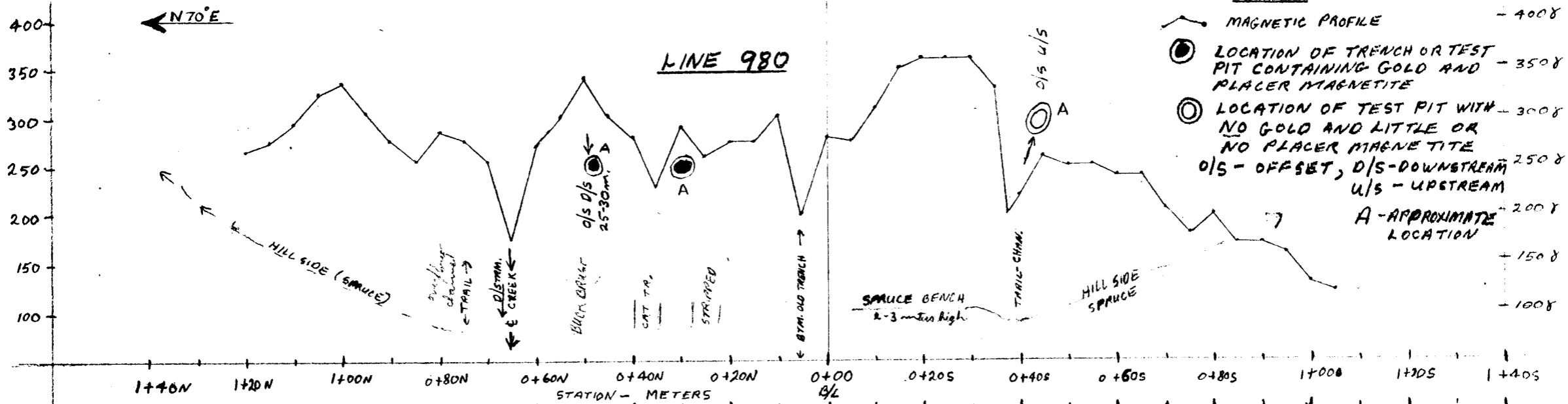
SEYMOUR (KITCHENER) CREEK
 MAGNETOMETER SURVEY
LOCATION PLAN
 MAP 115-I-6

SECTION A-A - LOCATION OF MAG. SURVEY
 SECTION B-B - CORRELATION OF MAG.
 SURVEY WITH TRENCHING

SCALE: 1/2 mile = 1 inch (approx.)

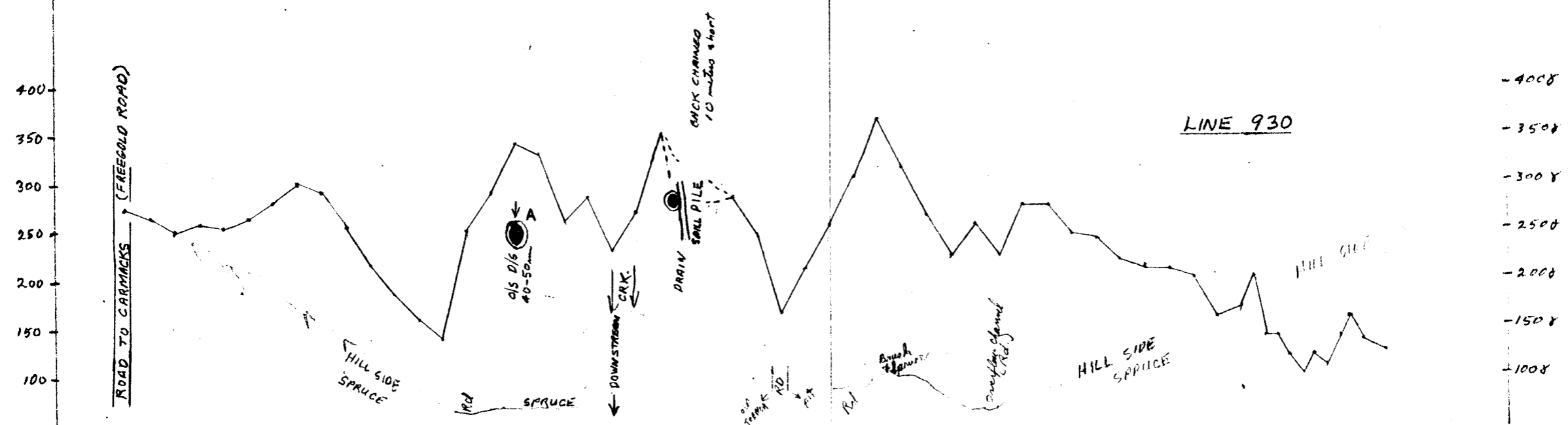
CORRELATION OF MAG. SURVEY WITH TRENCHING
 SEYMOUR CREEK - MAP 11516 P. CLAIM P23029
 MAGNETIC PROFILES
 SCALE: HORIZ - 1CM. = 10 meters / VERTICAL 1CM. = 50γ

Page 7



MAG. RDGS. - GAMMAS

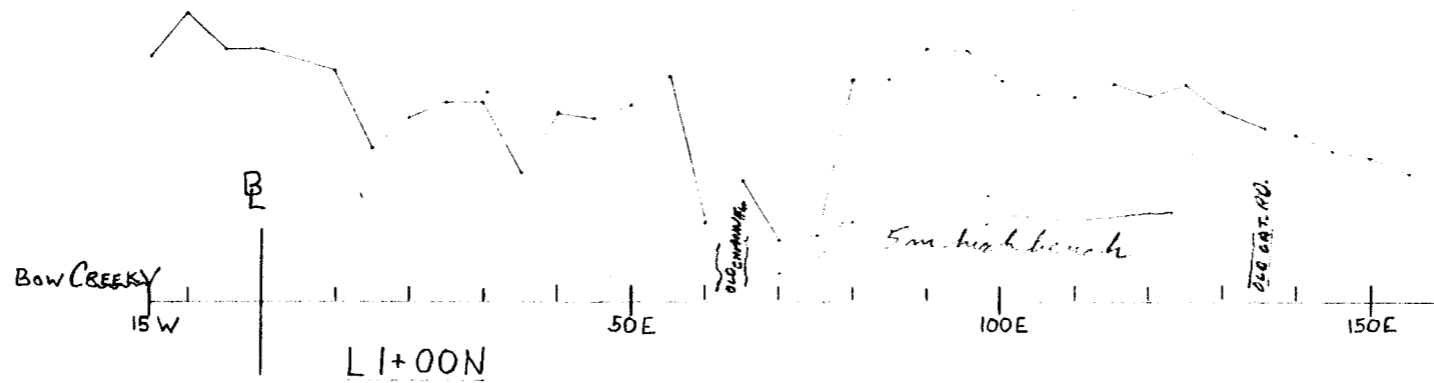
MAG. RDGS. - GAMMAS



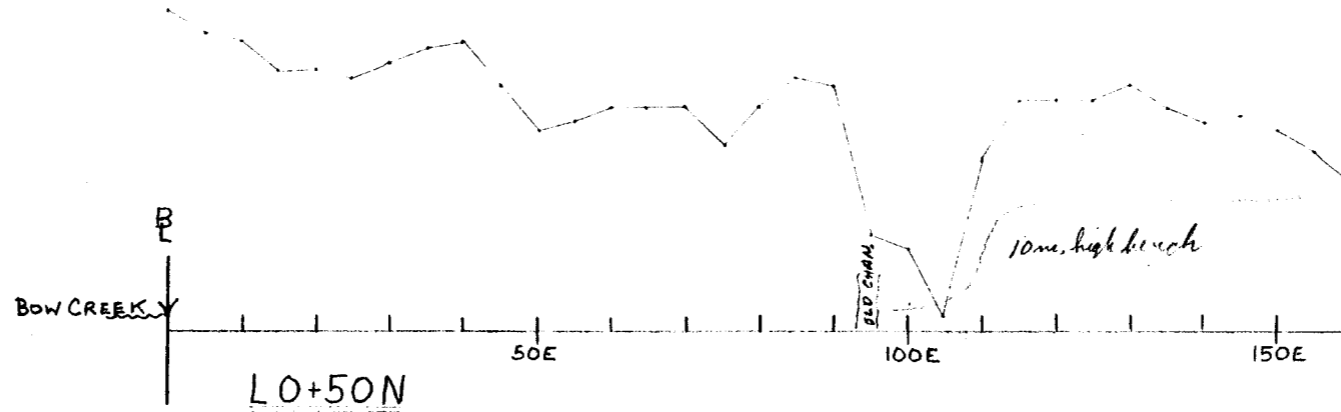
MAG. RDGS. - GAMMAS

MAG. RDGS. - GAMMAS

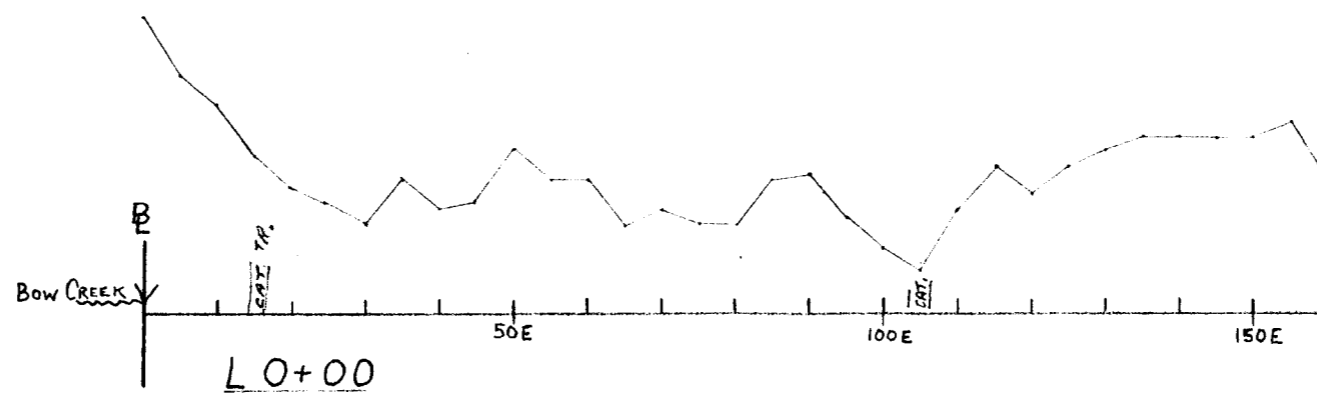
300γ
250γ
200γ
150γ
100γ



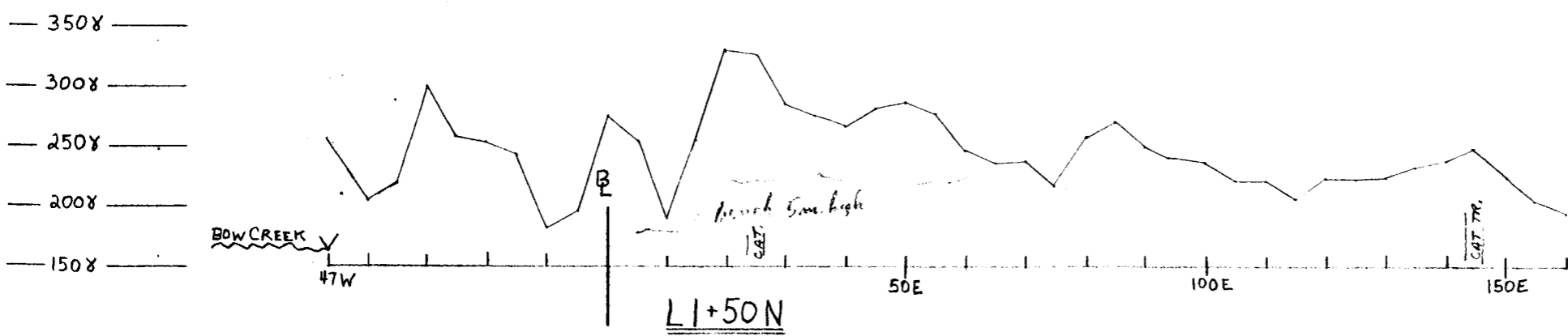
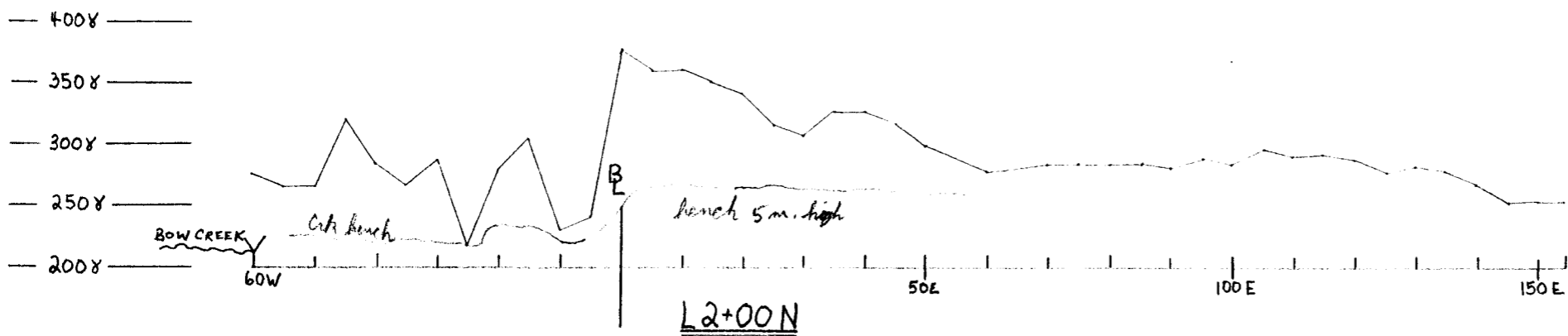
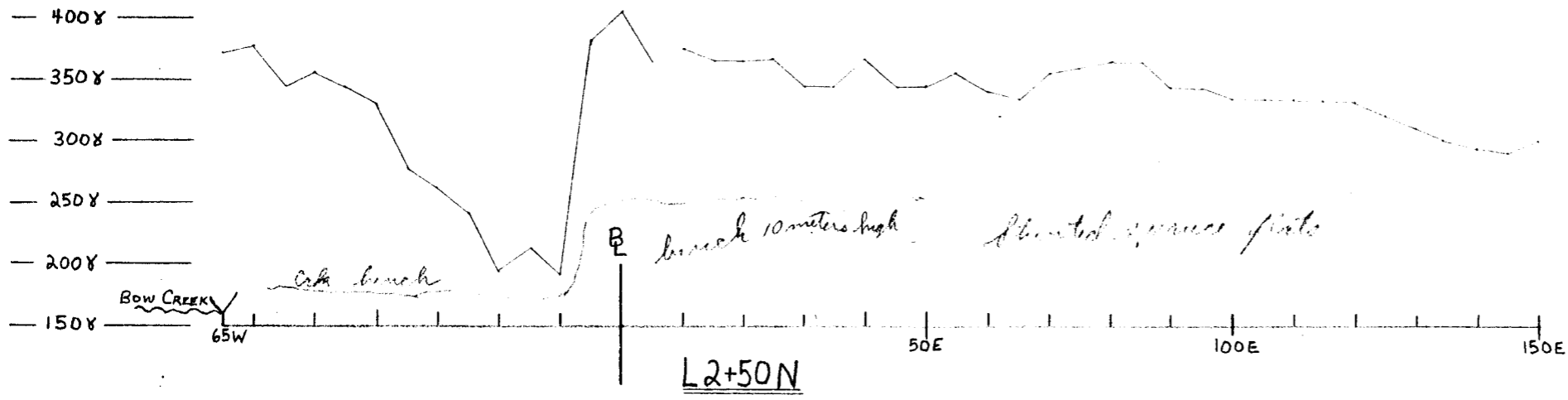
350γ
300γ
250γ
200γ
150γ
100γ



350γ
300γ
250γ
200γ
150γ



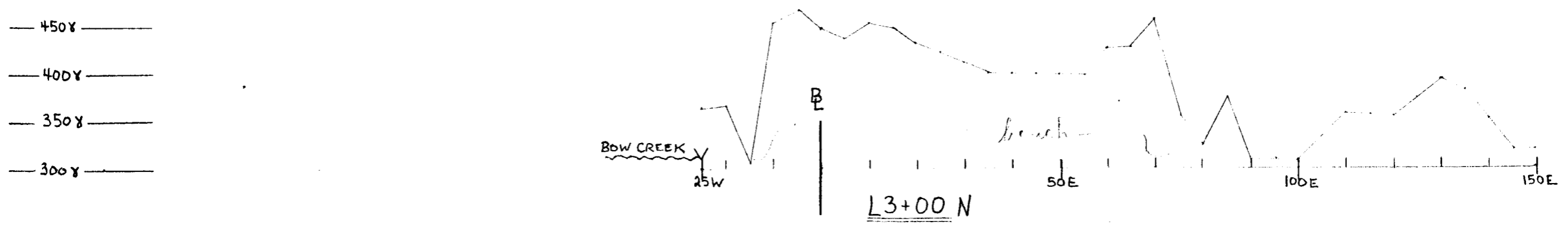
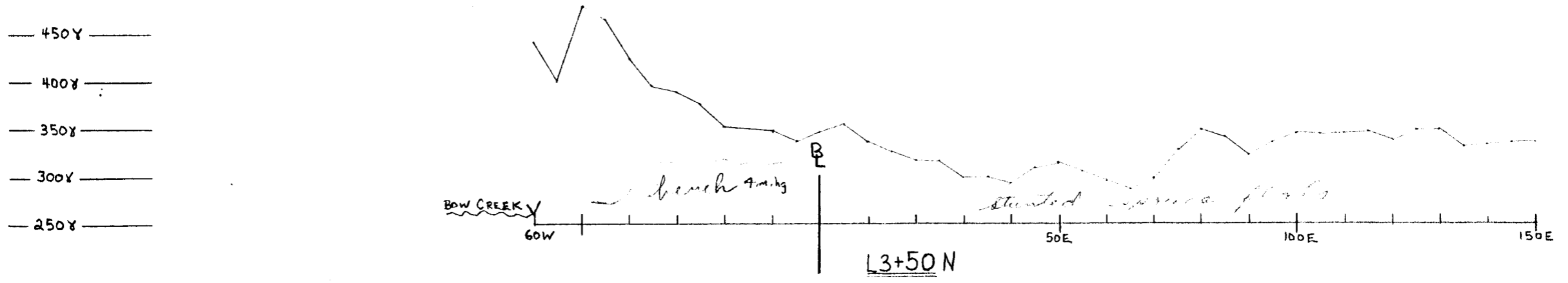
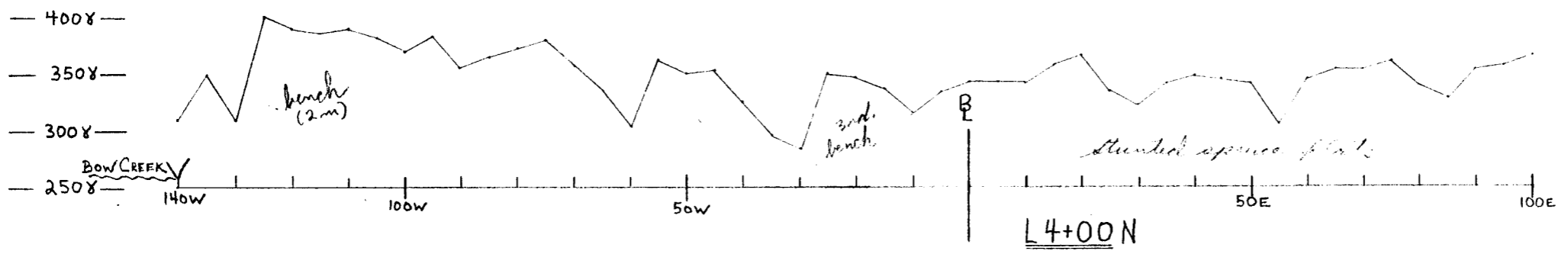
MAGNETIC PROFILES
BOOMER #1 (BOW CREEK)
AUGUST 1982 - NTS 115-1-6
SCALE: VERTICAL 1CM. = 50γ
HORIZONTAL 1CM. = 10 M.
L.S.



MAGNETIC PROFILES
 BOOMER #1 (BOW CREEK)
 AUGUST 1982 - NTS 115-1-6
 SCALE: VERTICAL 1CM. = 50γ
 HORIZONTAL 1CM. = 10M.
 LL

MAGNETIC PROFILES
 BOOMER #1 (BOW CREEK)
 AUGUST 1982 NTS 115-1-6
 SCALE: VERTICAL 1CM. = 50γ
 HORIZONTAL 1CM. = 10M.
LR

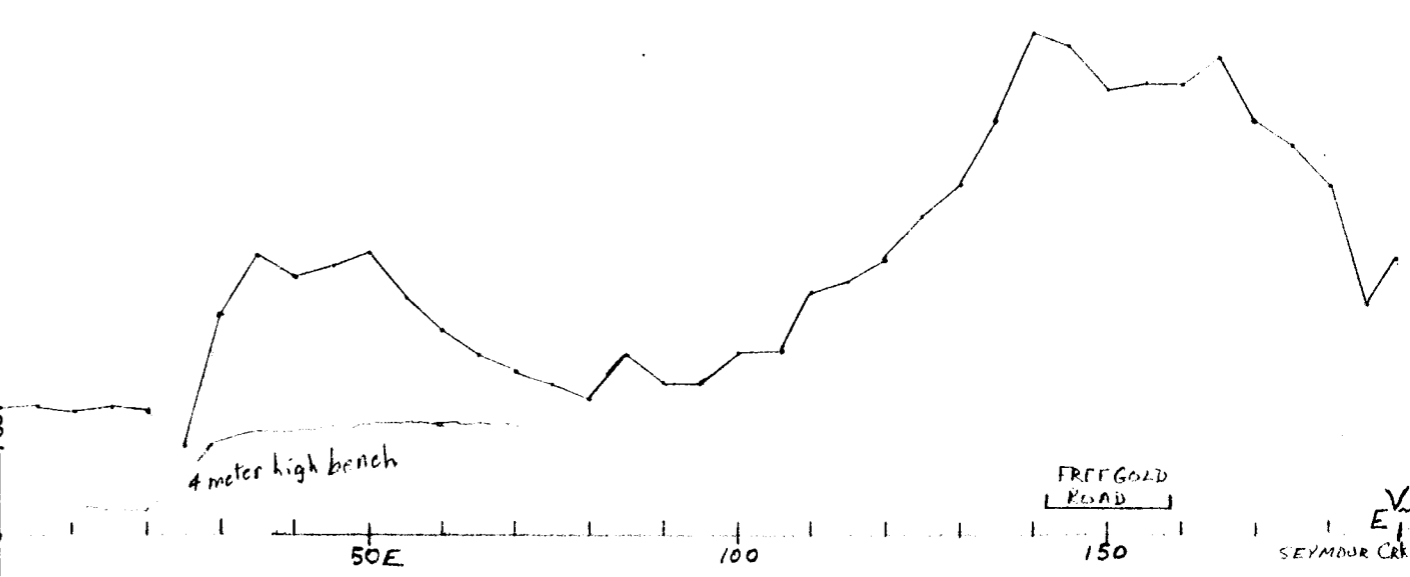
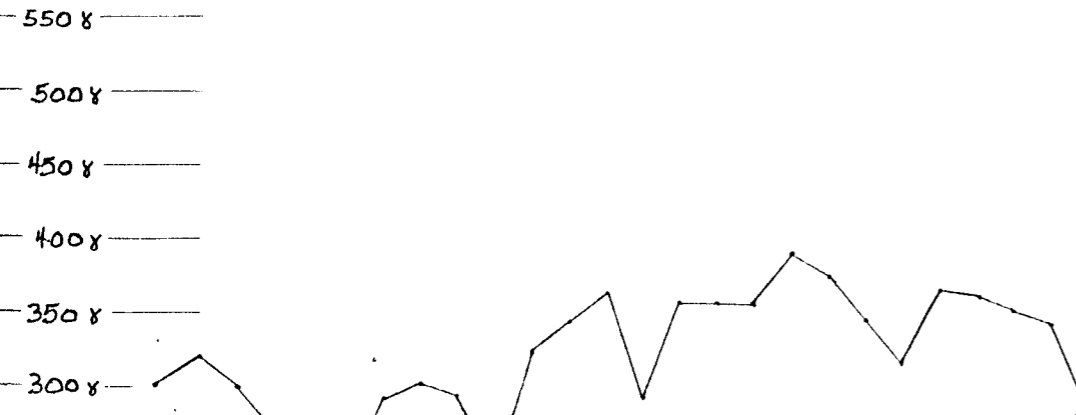
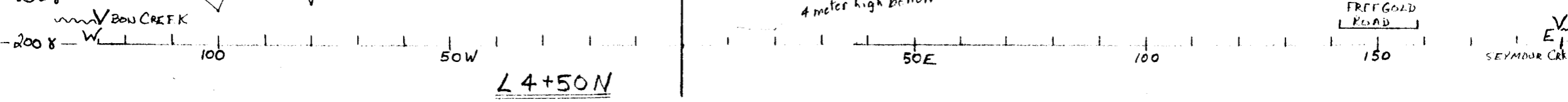
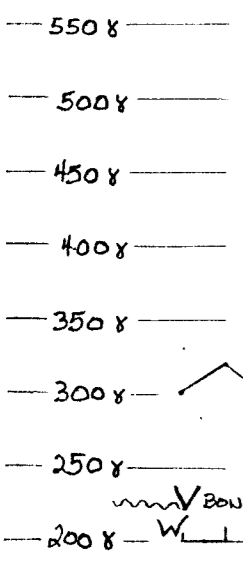
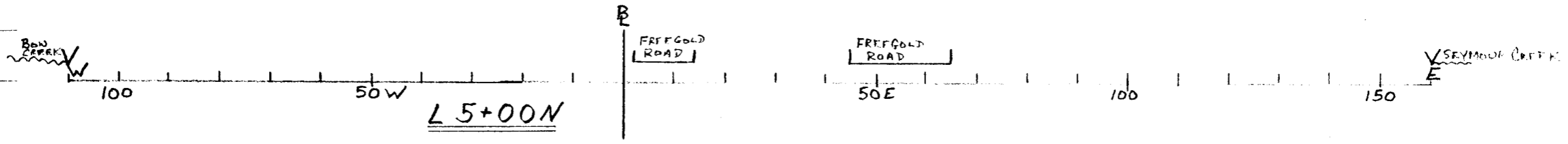
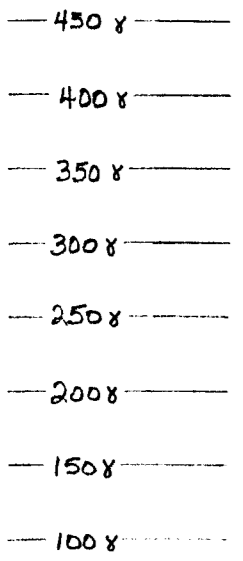
Pg 10

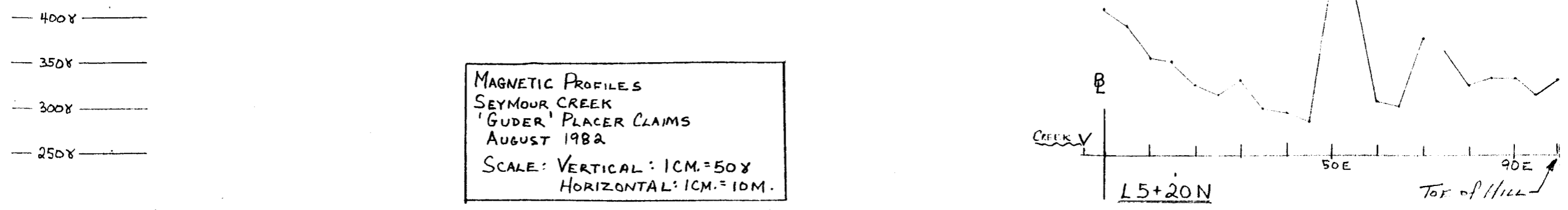
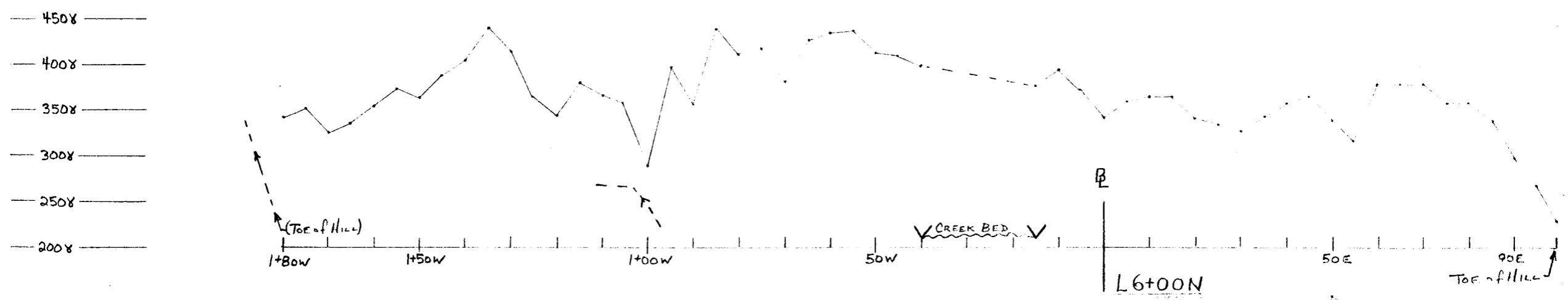
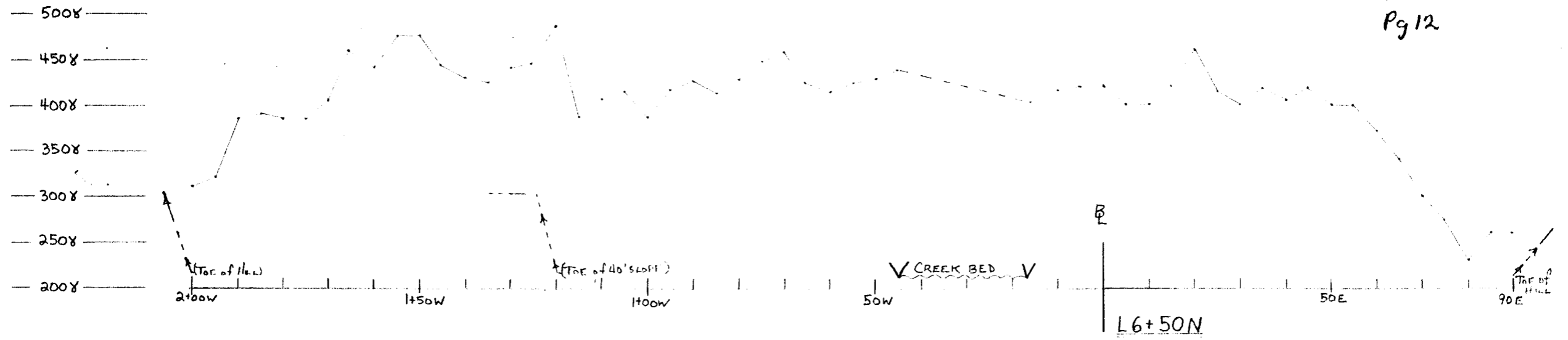


GAMMAS

MAGNETIC PROFILES
SEYMOUR CREEK
'GUDER' PLACER CLAIMS
AUGUST 1982
SCALE: VERTICAL 1CM. = 50γ
HORIZONTAL 1CM. = 10 METERS
LINES 5+00N, 4+50N

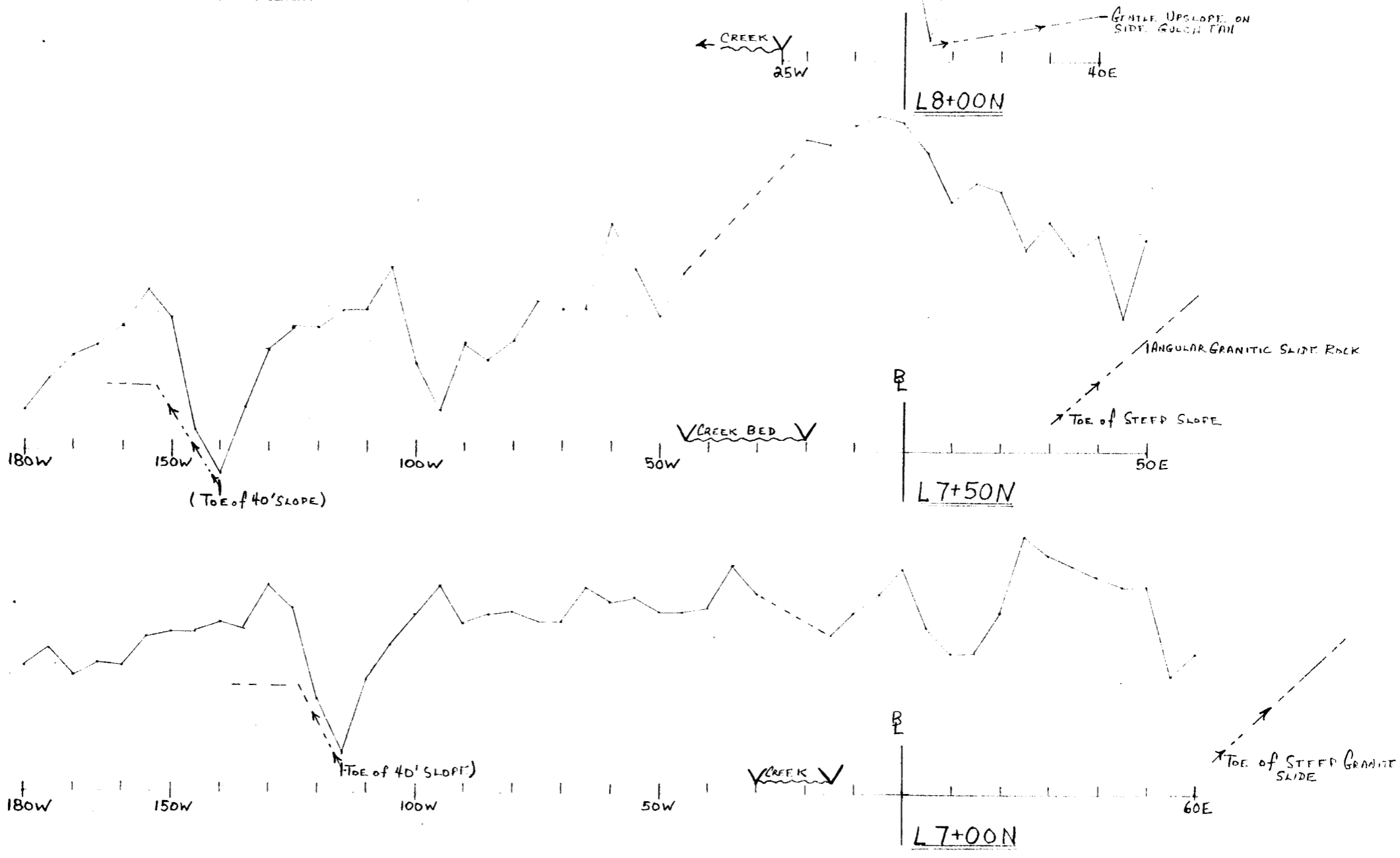
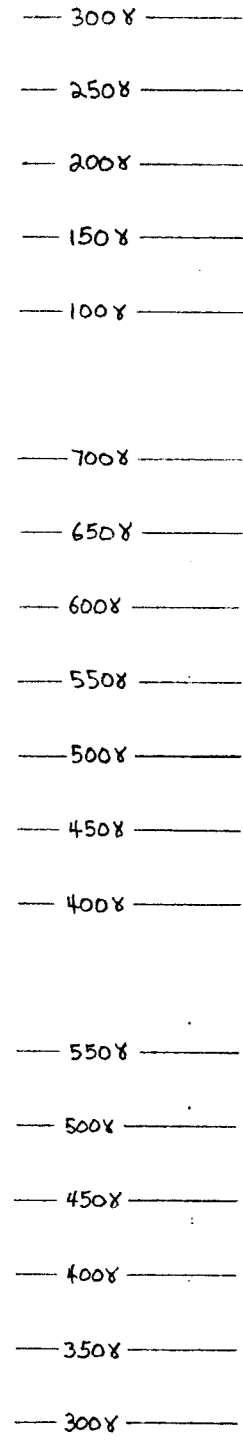
Pg 11

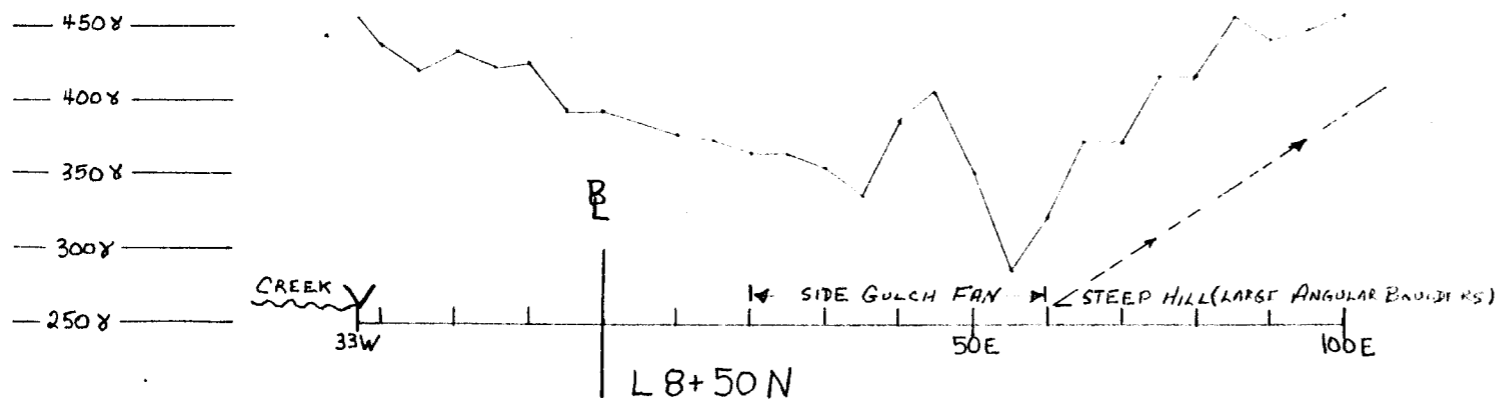




MAGNETIC PROFILES
SEYMOUR CREEK
'GUDER' PLACER CLAIMS
AUGUST 1982
SCALE: VERTICAL: 1CM.=50G
HORIZONTAL: 1CM.=10M.

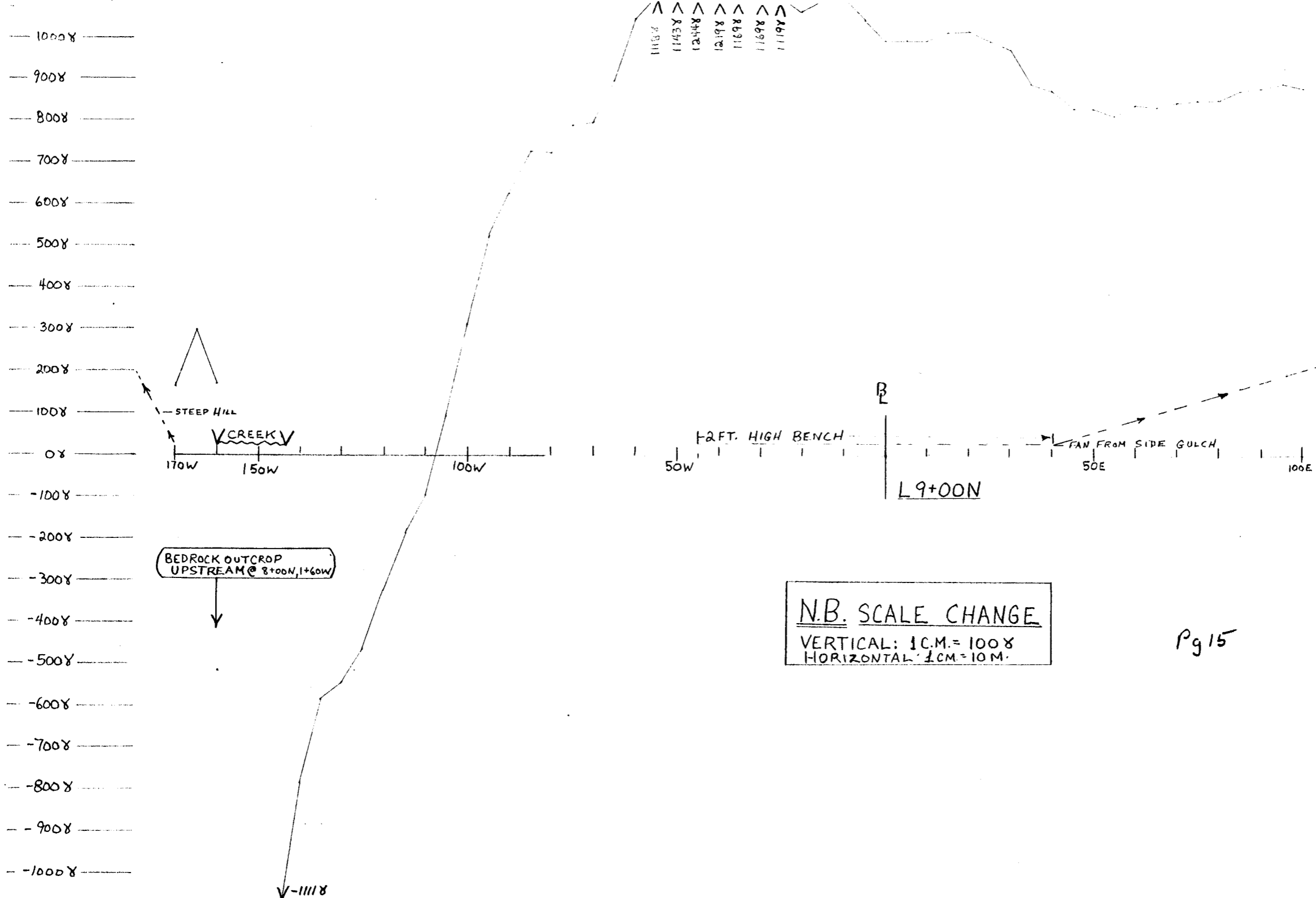
MAGNETIC PROFILES
 SEYMOUR CREEK
 'GUDER' PLACER CLAIMS
 AUGUST 1982
 SCALE: VERTICAL: 1CM. = 50X
 HORIZONTAL: 1CM. = 10M.



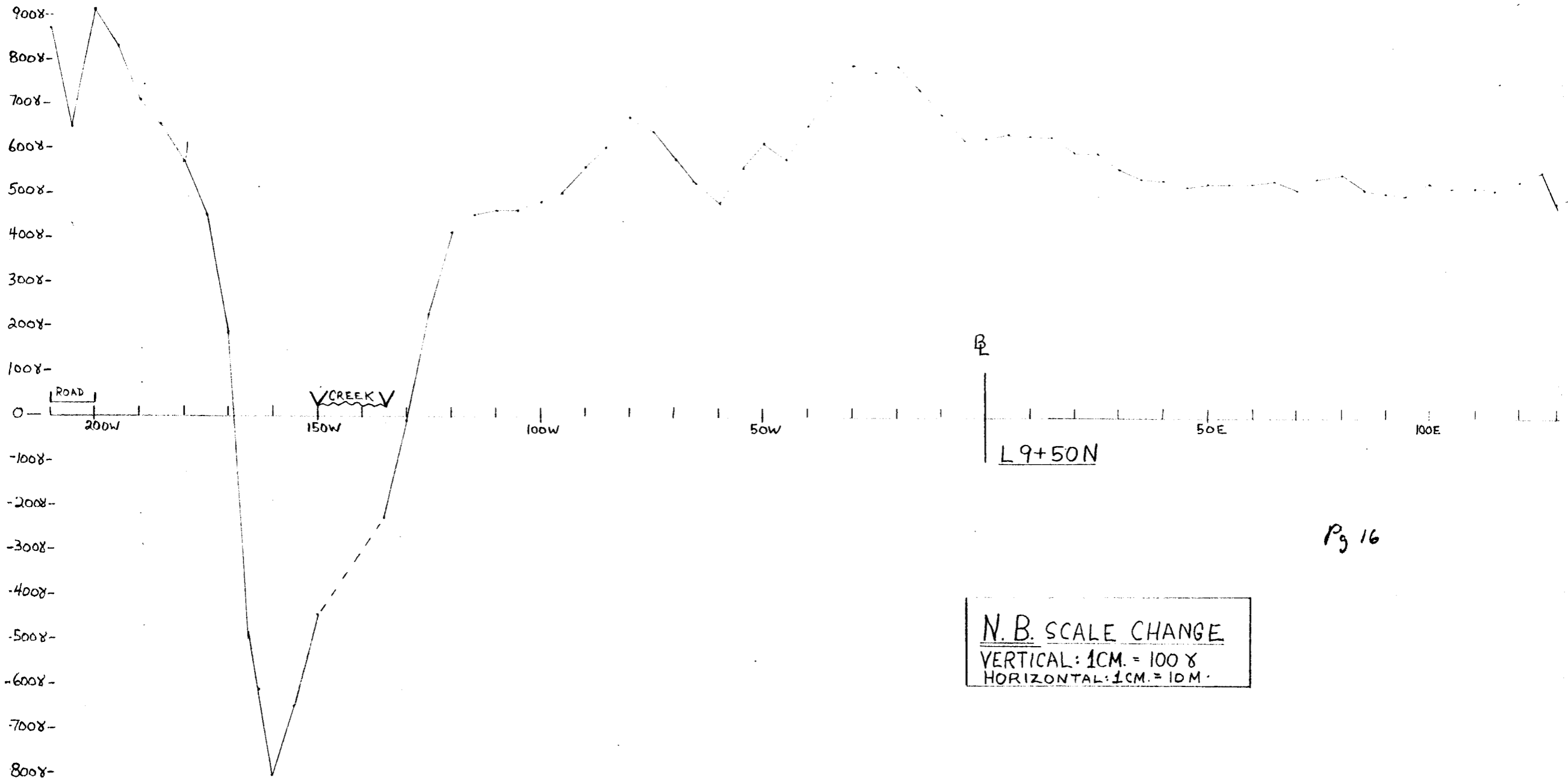


Pg 14

MAGNETIC PROFILES
 SEYMOUR CREEK
 'GUDER' PLACER CLAIMS
 AUGUST 1982
 SCALE: VERTICAL: 1CM. = 50'
 HORIZONTAL: 1CM. = 10M.



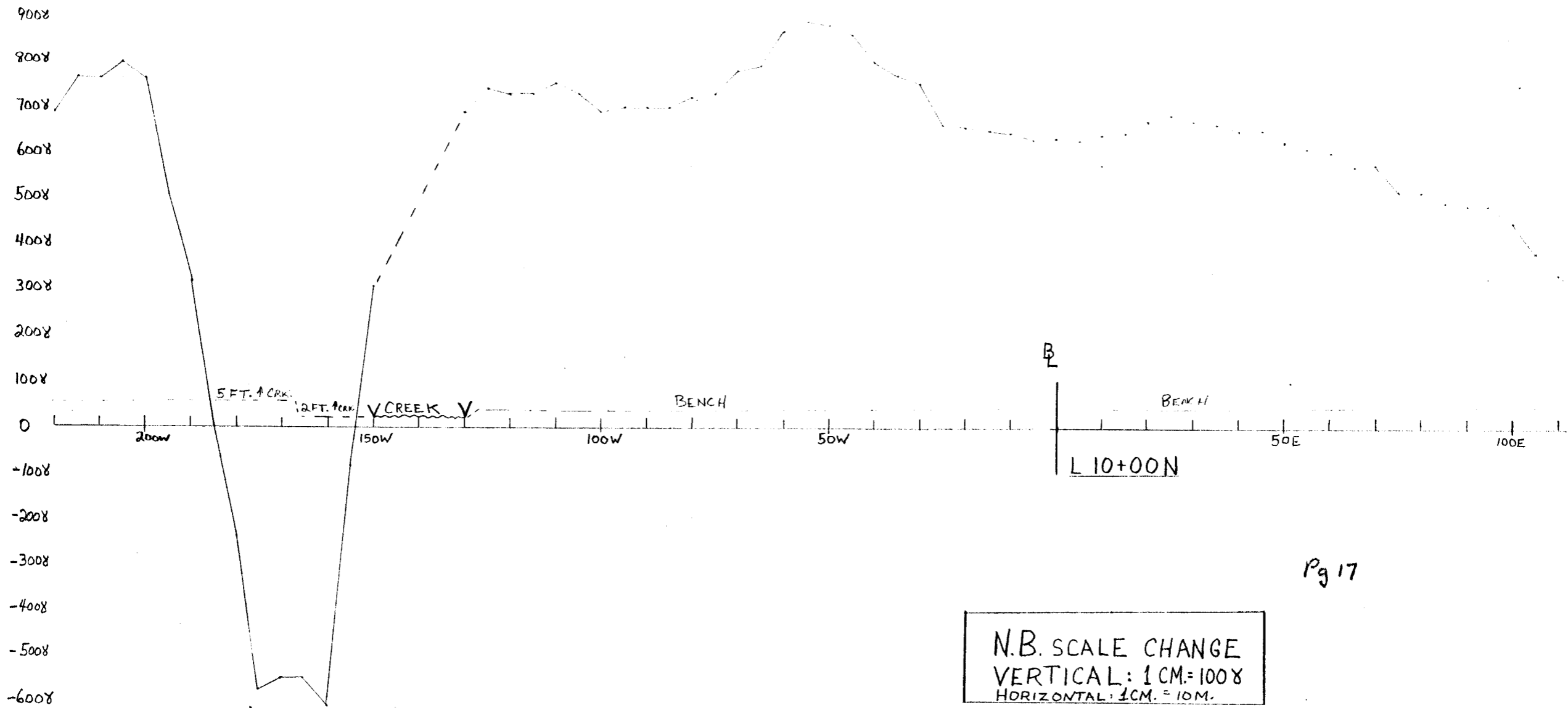
Pg 15



B
 L9+50N

Pg 16

N. B. SCALE CHANGE
 VERTICAL: 1CM. = 100 M.
 HORIZONTAL: 1CM. = 10M.

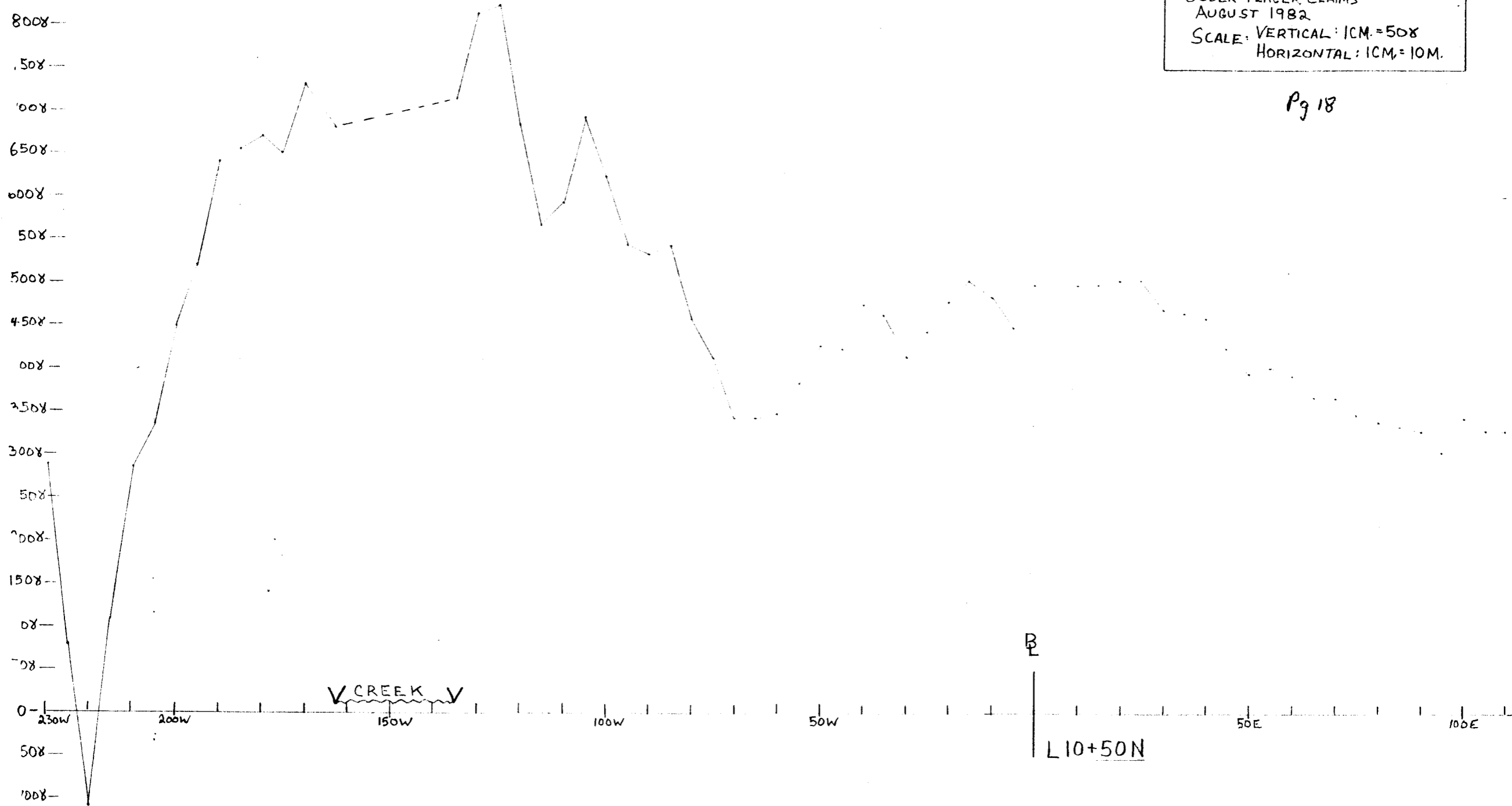


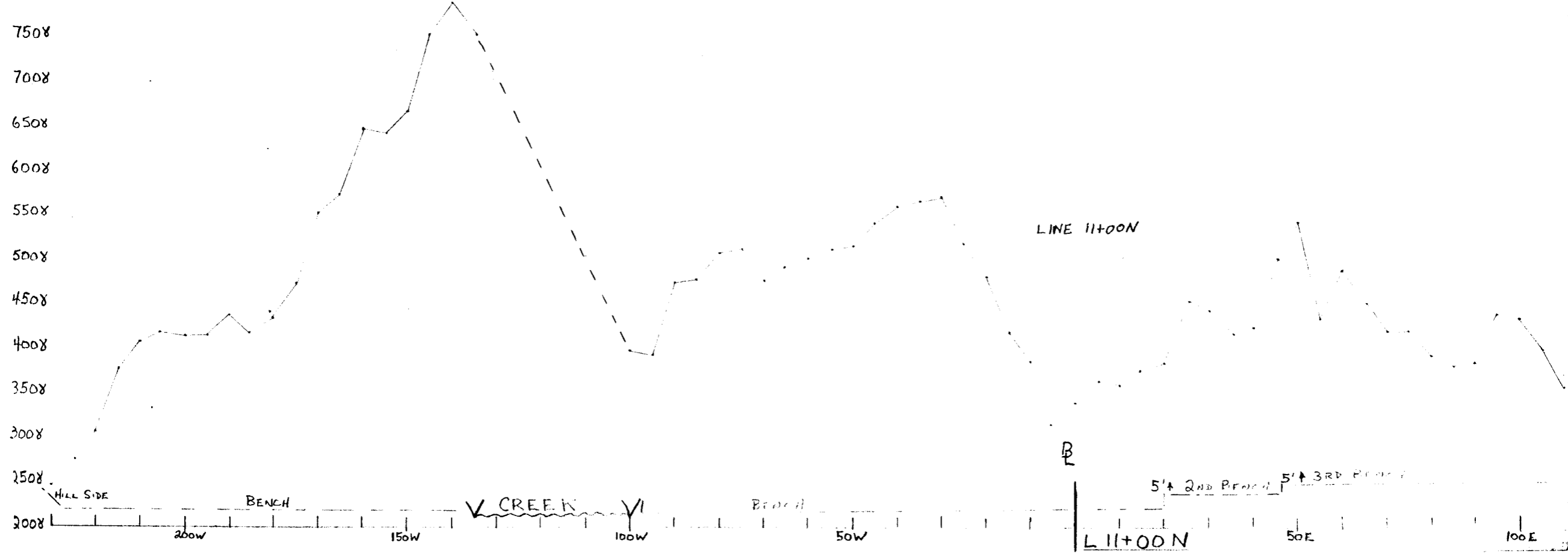
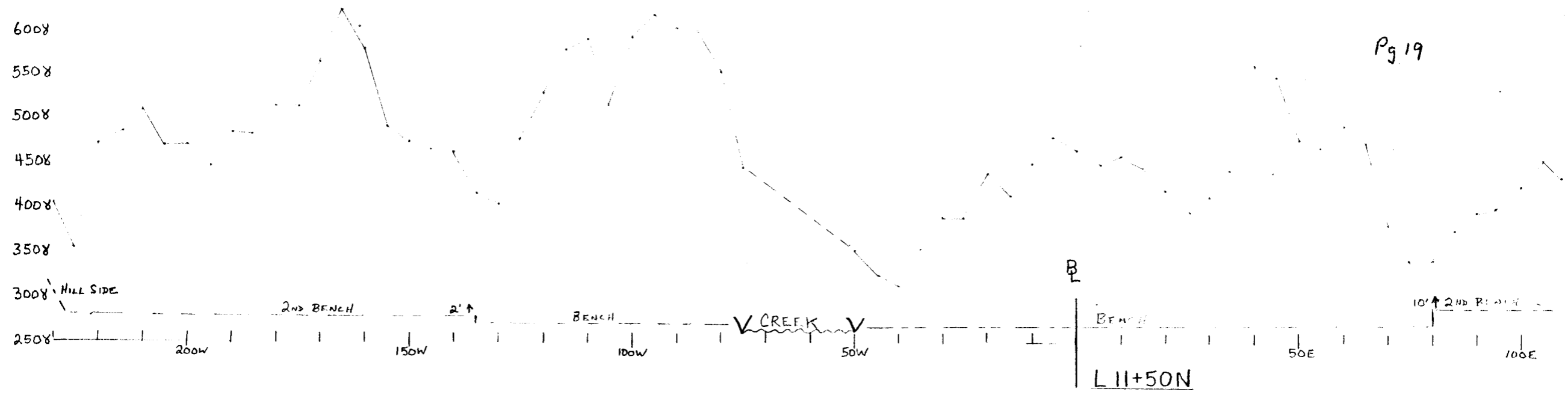
Pg 17

N.B. SCALE CHANGE
 VERTICAL: 1 CM. = 100'
 HORIZONTAL: 1 CM. = 10M.

MAGNETIC PROFILES
 SEYMOUR CREEK
 'GUDER' PLACER CLAIMS
 AUGUST 1982
 SCALE: VERTICAL: 1CM = 50γ
 HORIZONTAL: 1CM = 10M.

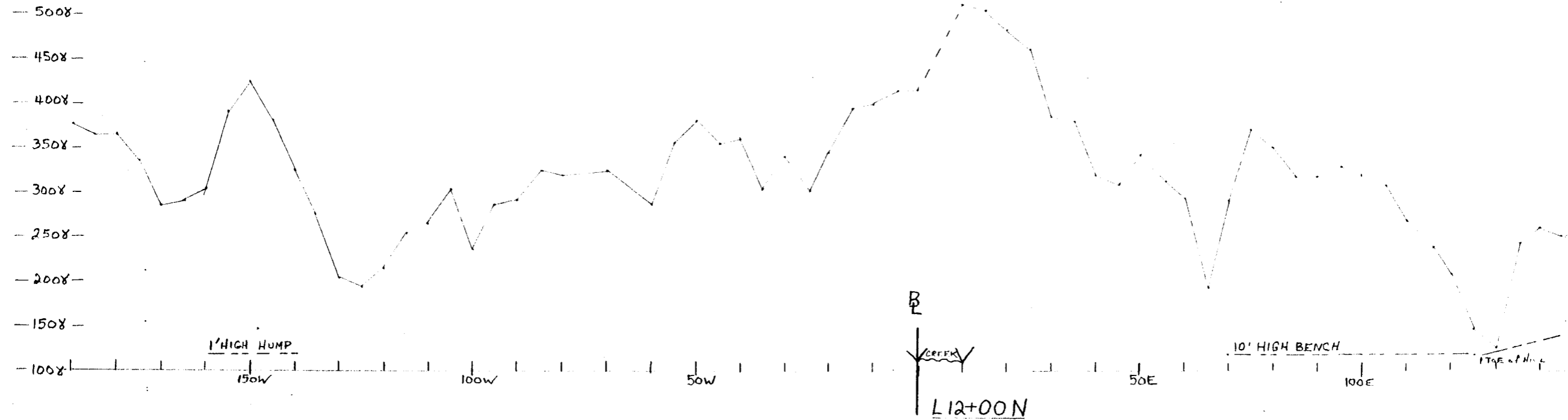
Pg 18





MAGNETIC PROFILES
 SEYMOUR CREEK
 'GUDER' PLACER CLAIMS
 AUGUST 1982
 SCALE: VERTICAL: 1CM.=50γ
 HORIZONTAL: 1CM.=10M.

Pg 20





MAP# 115-I-6 120114 (20)

SEYMOUR (KITCHENER) CREEK		
MAGNETOMETER SURVEY		
MAP: 115-I-6	INSTRUMENT: SHARPE MF-1 FLUXGATE	DATE: July, Aug. 1982
CLAIMS: PLACER P2267, P1224, P1215, P1216, P1217, P1224, P2299 (Probably only)		
CONTOUR INTERVAL - 50 GAMMAS (γ) EXCEPT WHERE HIGH NEGATIVES OR ERRATIC ROCKS OCCUR		
STATIONS - 5 meter intervals		