Report of Magnetometer Survey with Notes on Geology

AL #2, #3, #4 and #6 Mineral Claims

Mount Billings Area, Southeastern Yukon.

Sheet 105-H-2
61°08'N lat., 128°39'W long.

Yukon Pacific Prospecting Group
September 8-11, 1965

Erik A. Ostensoe

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INTRODUCTION

This report is a summary of data obtained by the writer while examining the AL #2, #3, #4 and #6 claims on behalf of Yukon Pacific Prospecting Group. The examination included a rather rapid geological reconnaisance of the claims and the immediate vicinity and a magnetometer survey of a small portion of the claims. The writer and his assistant, Dale Duncan, were moved by helicopter to the AL claims area on September 8, 1965 and were picked up in the evening of September 11, 1965.

LOCATION

The AL #2, #3, #4 and #6 Mineral Claims are located at elevation 4500' on the east side of the major north-south trending valley that lies southeast of Mount Billings between Klatza and Hyland Rivers in the Southeastern Yukon (figures 1&2). The claims are on a moderately steep west-slope, the lower parts of which are covered by a mixed forest of deciduous and evergreen trees with thick undergrowth of ground birch and moss.

PUBLISHED GEOLOGICAL INFORMATION

No geological maps of the area have been published. Geophysics Paper No. 1357 G, Mount Billings, of The Geological Survey of Canada Aeromagnetic Series indicates anomalously high north-northwesterly trending magnetic intensities in the area just east of the AL claims.

MAGNETOMETER SURVEY

An Askania "Schmidt-type" vertical balance tripod-mounted magnetometer was used in the magnetic survey. This instrument consists of a magnet pivot-mounted near its center of mass. The magnetic field of the earth creates a torque around the pivot that is opposed by the torque of the gravitational pull upon the center of mass. The angle at which equilibrium is reached depends on the strength of the vertical magnetic field at the observation point. This angle is recorded in degrees of inclination. The conversion constant of the instrument used was one degree equals 218.1 gammas.

In mineral exploration variations in the strength of the magnetic field are determined by comparisons of values obtained from a series of observations. This comparison is facilitated by contouring the observed values in degrees or in gammas.

Observations were taken by the writer at fifty-foot spacings on a 400 by 600 foot grid that was established by pace and compass measurements. Observation points were marked by flagging ribbons and pickets and sufficient underbrush was cut out to facilitate walking along the lines and to permit secure positioning of the instrument tripod. The magnetometer grid was plotted on the scale of one inch equals 100 feet and readings were contoured at 0.50 degree intervals (figure 3).

GEOLOGICAL NOTES

The following rock descriptions pertain to outcroppings shown in figure 4.

A body of biotite granite outcrops about 1000 feet east of the east side of claims AL #2 and AL #6. Where examined the granite consists of about 70 per cent white feldspar, 10-15 per cent quartz, less than 10 per cent black euhedral biotite masses and up to 5 per cent fine grained magnetite.

The granite is intrusive into thermally metamorphosed sedimentary rocks. The granite-metasedimentary rock contact zone is irregular in detail but trends almost due south and is marked by very prominent reddish-purple gossan zones.

Except for limestones that have been marblized the original sedimentary rock types cannot be recognized. Metamorphic rock types present near the granite contact include quartzite, phyllite and biotite feldspar schist. Bedding is preserved and beds range from less than one inch to more than one foot in thickness. Except in contorted zones right at the granite contact bedding attitudes consistantly strike north with dips of from 30 to 65 degrees east. The metasedimentary rocks are intruded by conformable and cross-cutting granitic dykes from 1 to 4 feet in width. The dykes are much finer grained than the nearby granites and appear to be more siliceous.

Small amounts of chalcopyrite were found in

pyrrhotite-rich areas near the granite contact (figure 4). The pyrrhotite is medium grained with very fine grained chalcopyrite present as irregular disseminations through it. The pyrrhotite is strongly magnetic.

COMMENTS

The magnetometer survey was carried out in an area where several large sulfide-mineralized float boulders were found in 1964 by Yukon Pacific Prospecting Group employees. Only one outcrop, white marbel exposed in a stream bank, was found in the immediate vicinity and the ground varied from stream gravels to muskeg to moss covered talus. Glaciation has affected the area and may have deposited the mineralized boulders.

Although the float mineralization is weakly magnetic, no significant patterns of magnetic field variation were revealed by the magnetometer survey.

The chalcopyrite noted near the granite contact east of the claims area is of no economic interest at this time.

Geochemical soil samples were collected from points on the magnetometer grid but have not been analyzed. The association of mineralized float and muskeg may be significant as no similar unforested areas were noted in the area. It is possible that anomalously high base metals contents of the underlying rocks has inhibited forest growth. No proof of such an effect can be offered, nor can it be proven that the float boulders were derived from

bedrock in the vicinity of the claims.

The high magnetite content of the granite and the high magnetic susceptibility of the contact-zone pyrrhotite probably account for the "peaks" shown on Geophysical Paper 1357 in the vicinity of the AL claims.

RECOMMENDATIONS

Because the 400 by 600 foot area covered by the magnetometer survey was too small to eliminate the possibilities of anomalously magnetic bodies being present on the claims, the writer recommended a small amount of additional magnetometer work.

A biogeochemical twig-sampling survey might be of value in pinpointing the source of float boulders. Such a survey would not be warranted until better indications of a local derivation of the boulders was found.

STATEMENT OF COSTS * AL CLAIMS EXAMINATION

Geologist - 4 days @ $650/mo. + 15% for medical insurance, workmen's compensation, holiday pay	$100.00
Assistant - 4 days @ $500/mo. + 15%	77.00
Camp expenses - $5/day - 8 man-days	40.00
Rental on magnetometer - 4 days @$100/mo.	13.00
Helicopter expenses - Sept. 8-50 miles @ 70 mph @ $108/hr	77.00
Sept. 11- " " "	77.00
Preparation of reports and sketches - geologist - 1 day @ $650/mo. + 15%	25.00
Total	$409.00

DECLARATION

I, Erik A. Ostensoe, geologist, hereby declare that

1. I am a qualified geologist, presently residing in Kingston, Ontario
2. I am a 1960 graduate in geology of the Honours Bachelor of Science course of the University of British Columbia
3. I practiced geology as my full-time occupation from May 1960 until September 1964 under the supervision of qualified and experienced geologists and engineers.
4. at the time of examination of the property herein reported on, I was employed as a geologist by Yukon Pacific Prospecting Group
5. I have no interest, either directly or indirectly, in the property herein reported on
6. I am at present a candidate for the Master of Science degree at Queen's University, Kingston, Ontario.

Signed at Kingston, Ontario, this 28th day of January, 1966, in the presence of

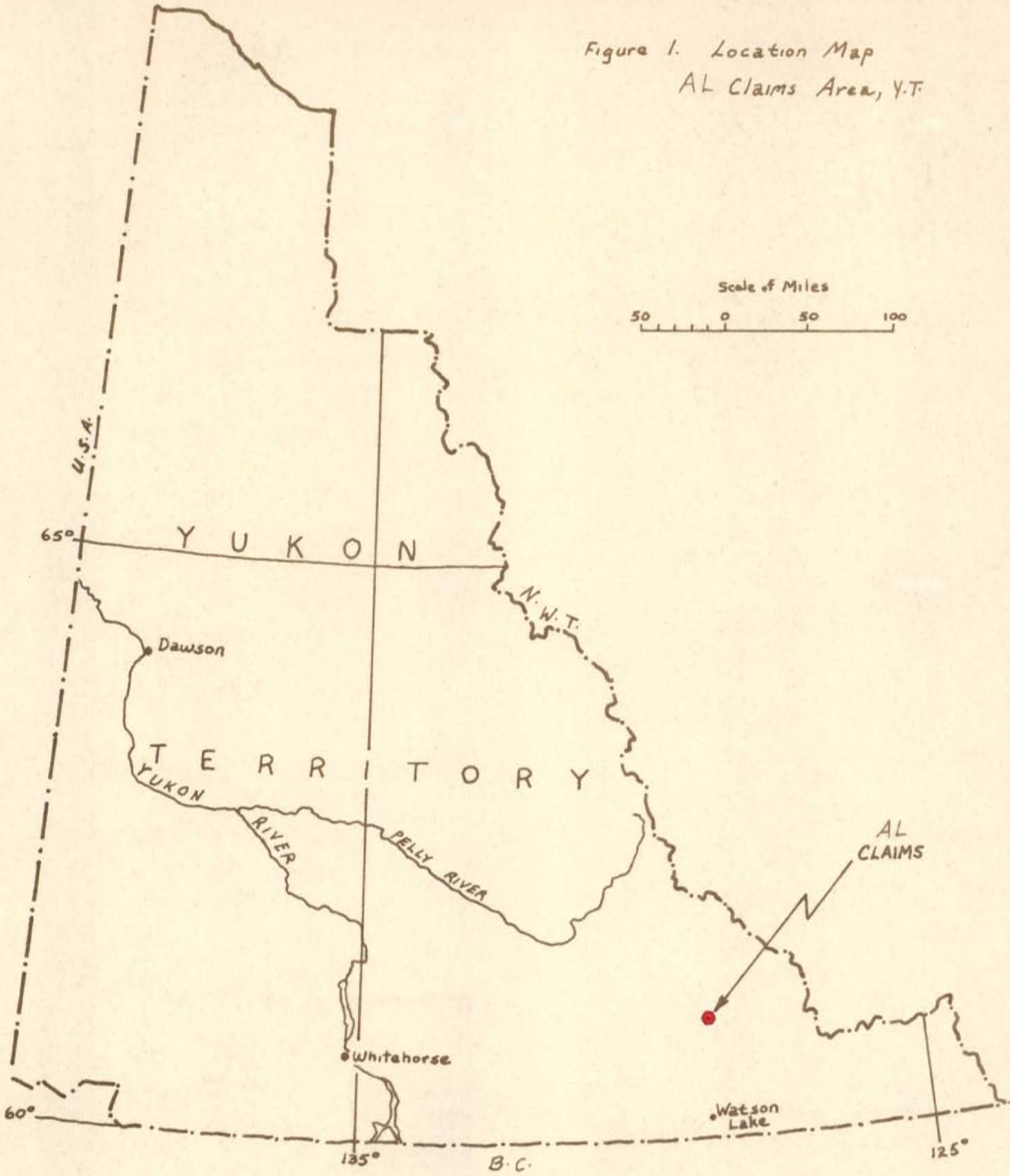
R. A. Riley

Ray A. Riley

Erik A. Ostensoe

Erik A. Ostensoe

Figure 1. Location Map
AL Claims Area, Y.T.



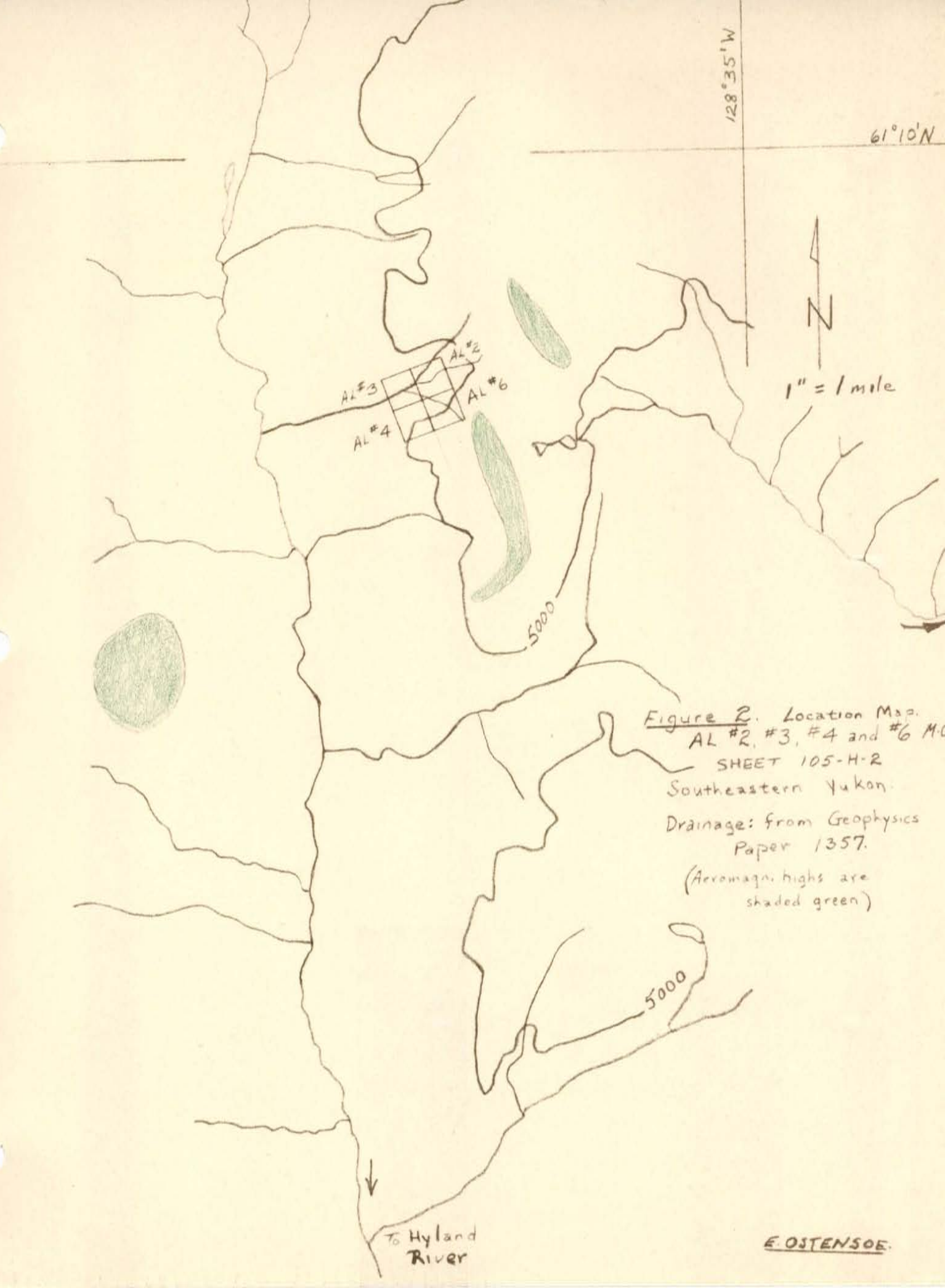


Figure 2. Location Map.
AL #2, #3, #4 and #6 M.C.
SHEET 105-H-2
Southeastern Yukon.
Drainage: from Geophysics Paper 1357.
(Aeromagn. highs are shaded green)

E. OSTENSOE.

Figure 3.

Magnetometer Survey of Part of

AL Claim Group

Southeast of Mt. Billings. Y.T.

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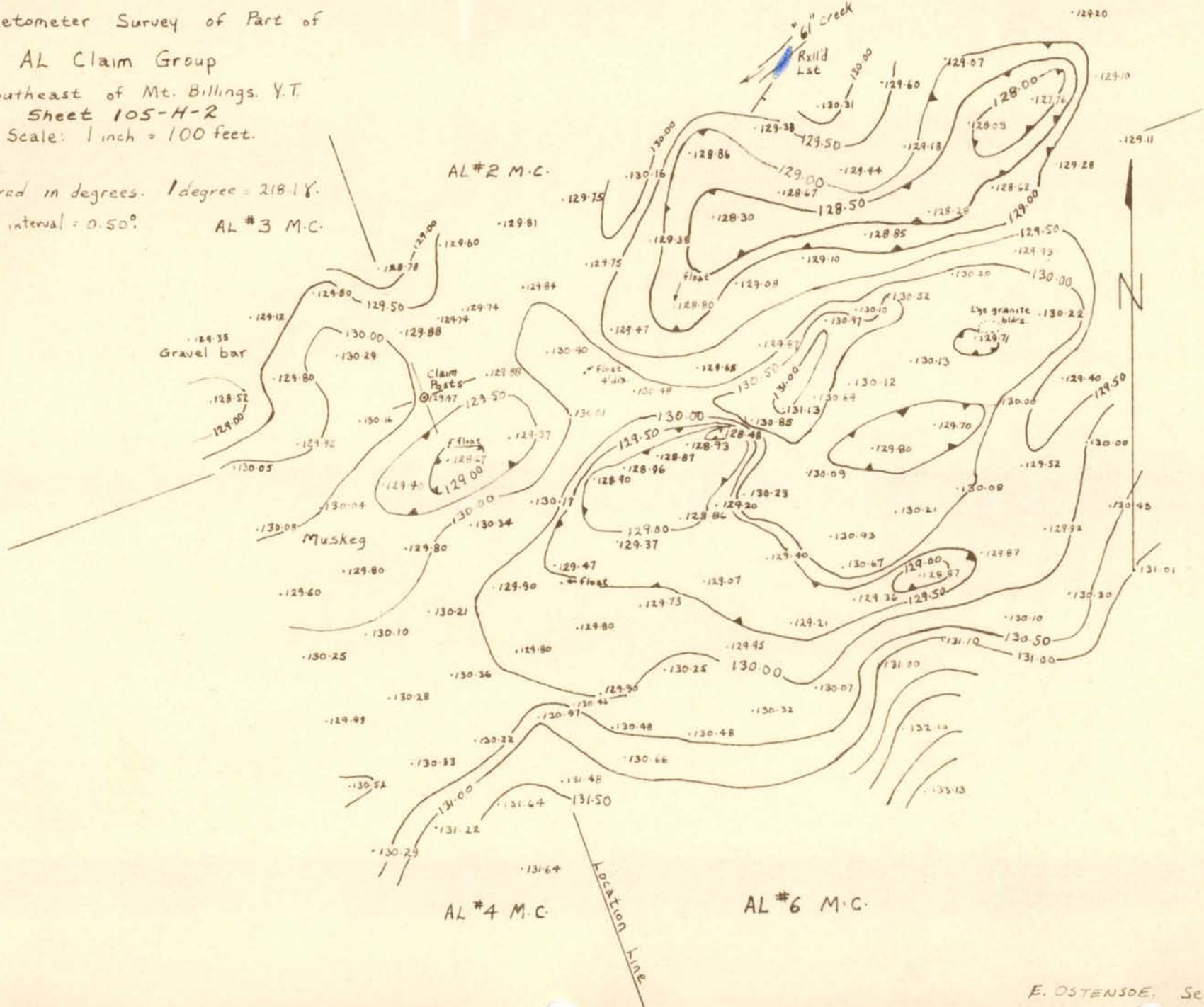
Scale: 1 inch = 100 feet.

Contoured in degrees. 1 degree = 218.1 γ.

Contour interval = 0.50°.



E. OSTENSOE. Sept. 1965.

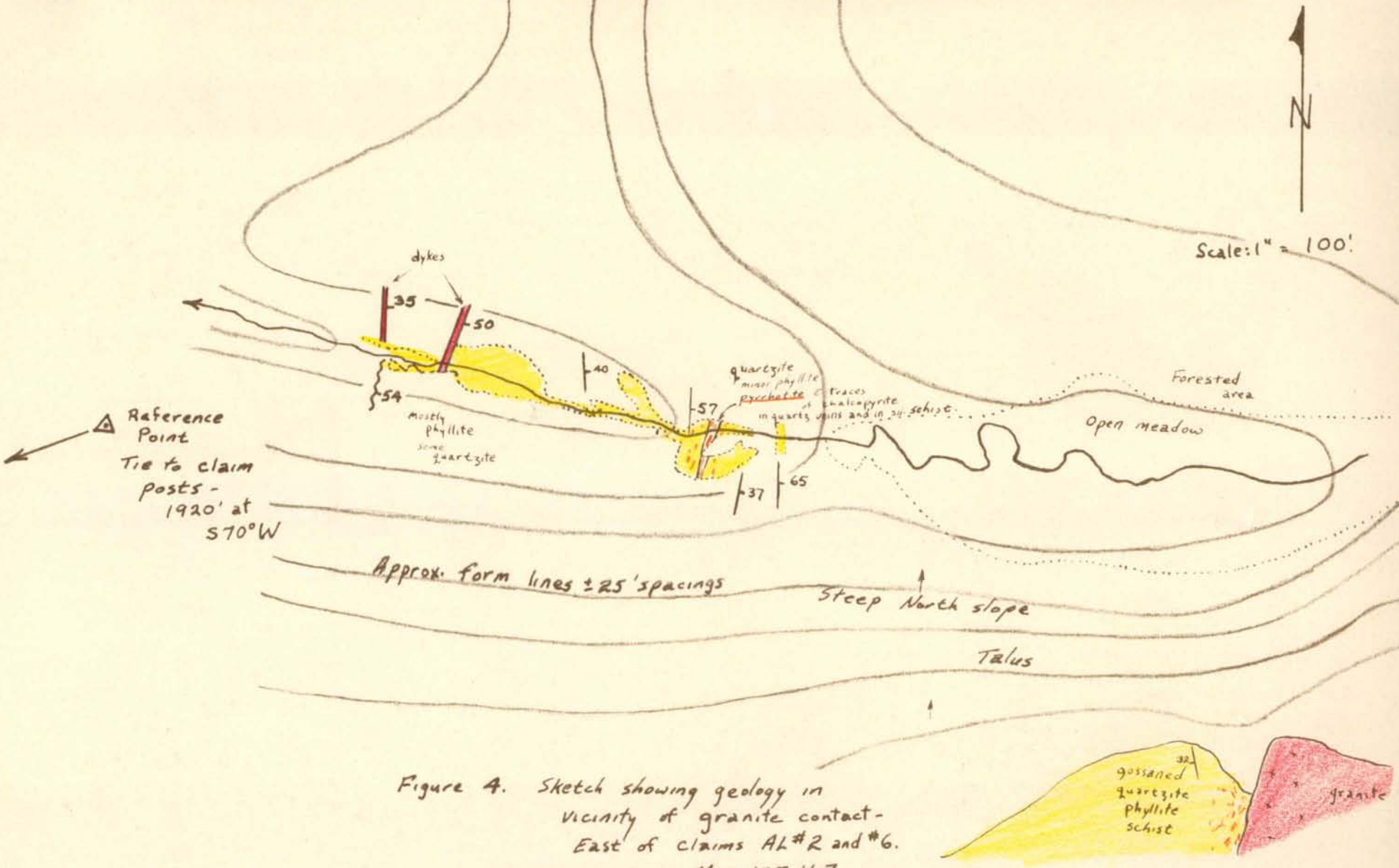


Figure 4. Sketch showing geology in vicinity of granite contact - East of claims AL #2 and #6.

MAP 105-H-7
Southeastern Yukon.

Symbols

/20 - bedding

50 - fault

30 - dyke