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REPORT ON
AEROMAGNETIC SURVEY
WHITEHORSE AREA, YUKON TERRITORY
ON BEHALF OF
DOUBLE "A" SYNDICATE

018878

by

Richard O. Crosby, B.Sc., P.Eng.

March 1, 1968



LOCATION: Approximately 26 miles
southwest of Whitehorse, Y.T.
and 35 miles northwest
of Carcross, Y.T.

DATE: February, 1968

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REPORT ON
AEROMAGNETIC SURVEY
WHITEHORSE AREA, YUKON TERRITORY
ON BEHALF OF
DOUBLE "A" SYNDICATE

INTRODUCTION

During February, 1968, an aeromagnetic survey was flown over an area located about 26 miles southwest of Whitehorse, Yukon Territory on behalf of the Double "A" Syndicate.

The survey area is centered approximately $60^{\circ} 28' N - 135^{\circ} 40' W$. It is approximately 5 miles in length northwest-southeast by 3.5 miles in width. Lines were flown at 1/8 mile intervals, oriented northeast-southwest at a mean terrain clearance of 300 feet.

A Scintrex NPM-1 total intensity nuclear precession magnetometer was employed on the survey. It was towed on a cable approximately 75 feet below the helicopter. A 16 mm single frame camera was employed for positioning purposes and a radar altimeter recorded height above the ground. Flight path recovery was achieved through the use of the camera and topographic maps of the area. Scale of the topographic flight maps was approximately $1'' = \frac{1}{2}$ mile.

The purpose of the aeromagnetic survey was to detail fly an aeromagnetic anomalous area which had been mapped by the Geological Survey of Canada on the Rose Lake aeromagnetic sheet 105 D/5.

PRESENTATION OF DATA

The isomagnetic contours are presented on a transparent overlay (Plate 1) on a scale of 1" = $\frac{1}{4}$ mile (approximate). Claim locations and flight lines are shown on Plate 3. Planimetry on this plate has been traced from a topographic map used for navigational purposes. Magnetic data are shown as total magnetic intensity contours with a contour interval of 100 gammas. Base intensity is arbitrary and no corrections for regional variation have been made.

DISCUSSION OF RESULTS

The value of the earth's total magnetic field in the centre of the survey area is approximately 57,800 gammas. The inclination of the total magnetic field vector is -77° North.

The contour map is dominated by two intense magnetic positive anomalies rising about 4000 and 5000 gammas above the general background level. The broad anomaly in the northeast portion of the area (Anomalous Area A) is flanked on the north and east by a 300 gamma low. A strong negative anomaly was also recorded trending east-west across the southern limit of the survey area. Numerous smaller anomalies trending generally northwest-southeast are also evident. Anomalous area B is a 4000 gamma positive anomaly in the northwest portion of the area extending southeasterly to about flight line 26. An offset of the magnetic pattern at this point suggests the possibility of a crossfault. Recommended ground magnetic traverse 4 is located in the vicinity of the possible fault.

A broad positive anomaly reaching a maximum of 9500 gammas is partially included in the extreme northwest corner of the survey grid.

INTERPRETATION OF RESULTS

The geophysical interpretation of the magnetic data is shown on Plate 2. The intense anomaly in the northeast quarter of the area is interpreted as the magnetic expression of a basic intrusive whose upper surface is located about 150 feet below the surface of the ground. The well developed magnetic minimum on its northern and eastern flanks suggests the presence of a certain amount of remanent magnetization. Reversed polarization is exhibited by the east-west dike interpreted in the southern part of the area.

Anomalous Area B is interpreted as arising from a basic rock mass, the distribution of which may be partially controlled by a north-west striking fault. Depth determinations indicated the upper surface to be about 150 feet below the ground.

Susceptibility contrast determinations suggest the source of the anomaly to be slightly less basic than Anomaly A.

Anomalies C and D are interpreted as arising from sources of limited areal extent which may, or may not, be the same as Anomalies A and B. Depth calculations are of the same order, i.e., about 150 feet subsurface.

CONCLUSIONS AND RECOMMENDATIONS

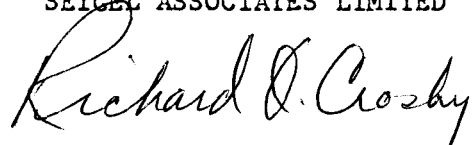
The airborne magnetometer survey has revealed features which warrant further study. It is recommended that these features be tested by diamond drilling. The location of the drill collar, however, must first be confirmed by magnetometer profiling. In each case it will be necessary to run a profile extending far enough to fully delineate the magnetic feature. Recommended ground magnetometer traverses are shown on the interpretation overlay.

Drill collar locations are as follows:

- D. D. H. 1 - Locate collar 200 feet north of magnetic maximum on magnetic traverse #1. Drill south along traverse at -45° for 400 feet.
- D. D. H. 2 - Locate drill collar on maximum of magnetometer traverse #2. Drill vertical for 400 feet.
- D. D. H. 3 - Locate drill collar 300 feet south of magnetic minimum on magnetometer traverse #3. Drill south along traverse at -45° for 400 feet.
- D. D. H. 4 - Locate drill collar on magnetic maximum on magnetometer traverse #4. Drill vertical for 400 feet.
- D. D. H. 5 - Locate drill collar 200 feet north of magnetic maximum on magnetometer traverse #5, drill south along traverse at -45° for 400 feet.

Respectfully submitted,

SEIGEL ASSOCIATES LIMITED



Richard O. Crosby, B.Sc., P.Eng.
Geophysicist

Vancouver, B.C.
March 1, 1968

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March 21, 1968

AFFIDAVIT OF EXPENDITURE

This is to certify that an airborne magnetometer survey was executed by Seigel Associates Limited on claims AA, AF, AB, AC, AE, AI, AH, AAB, AAC, AAG, AAH, AAI, AAK, AAL, AAM, AAN, AAO, AAP, AAQ, AAR, AAT, AAU, AAV, AAW, AAX, AAY and AAZ, Whitehorse area, Yukon Territory on behalf of Double "A" Syndicate during the period February, 1968.

The charge levied for this survey by Seigel Associates Limited is \$8,366.61.

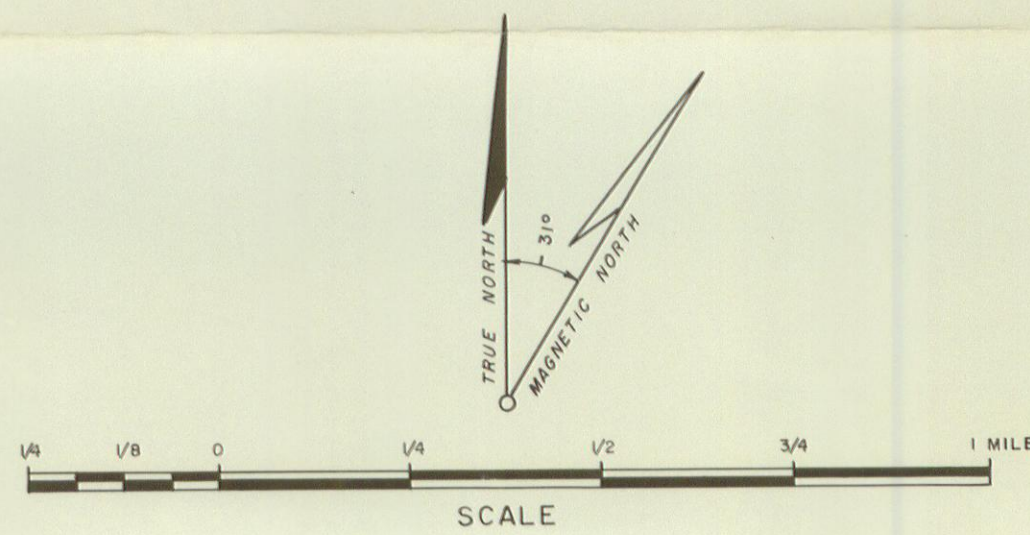
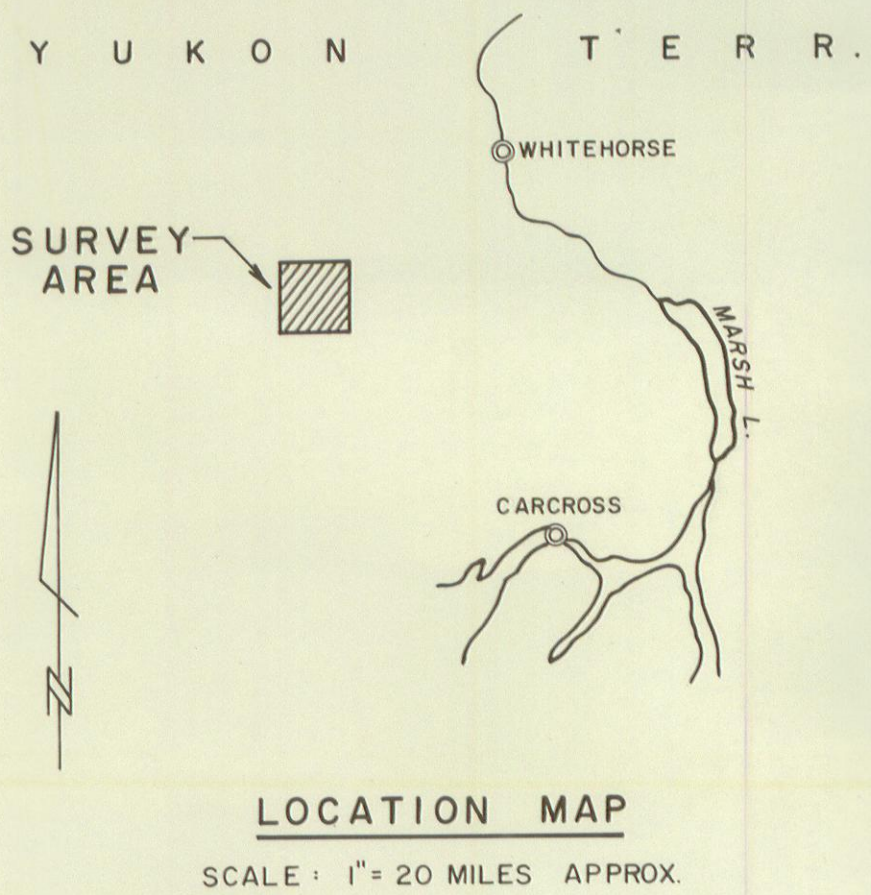
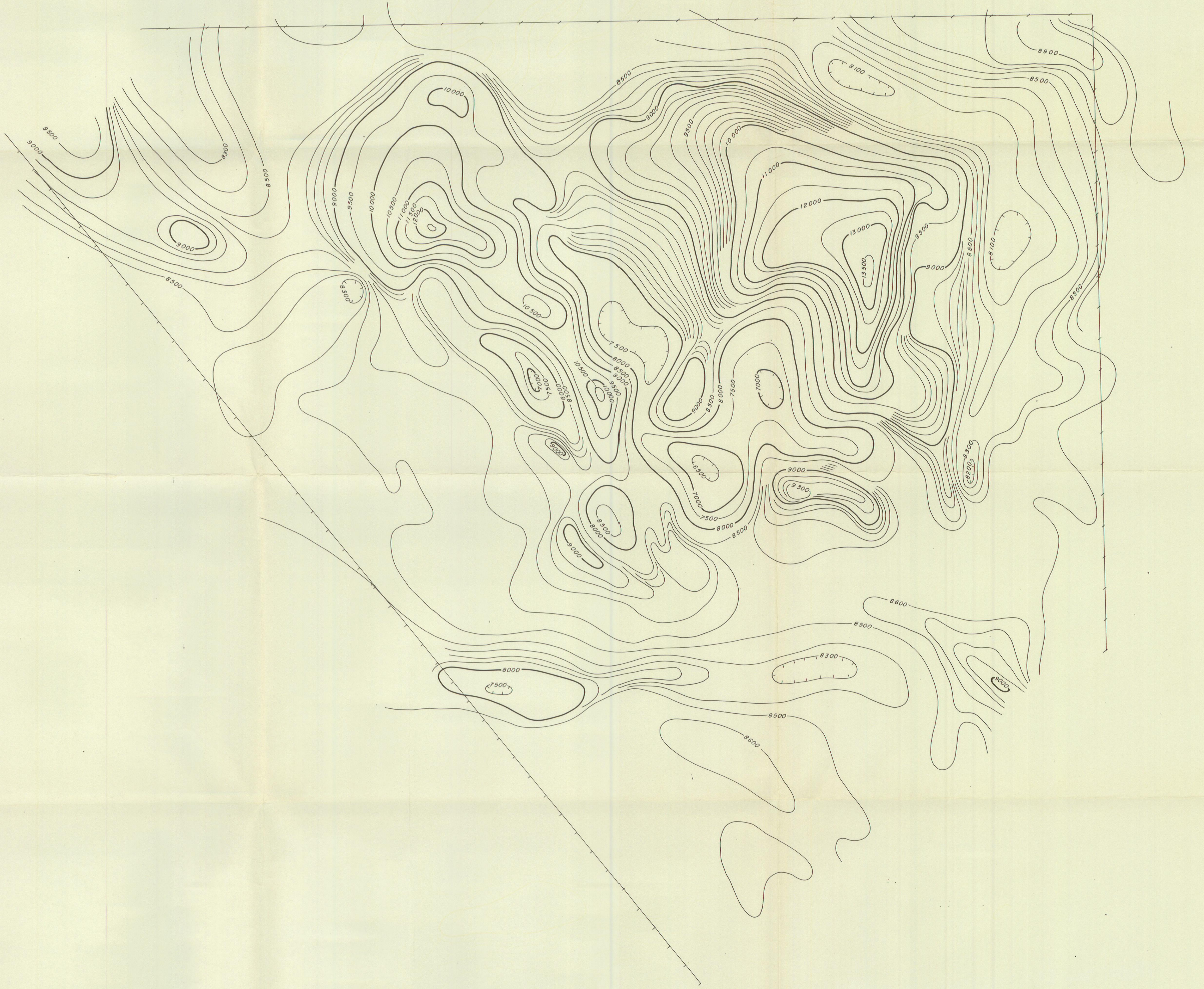
Certified Correct:

SEIGEL ASSOCIATES LIMITED



Per: Richard O. Crosby, B.Sc., P.Eng.
Geophysicist

§



LEGEND

Approximate Magnetic Inclination -77°N
 Approximate Total Magnetic Intensity
 57,800 Gammas in Center Of Area
 Flight Line Interval Approx. 1/8 Mile

PLATE I

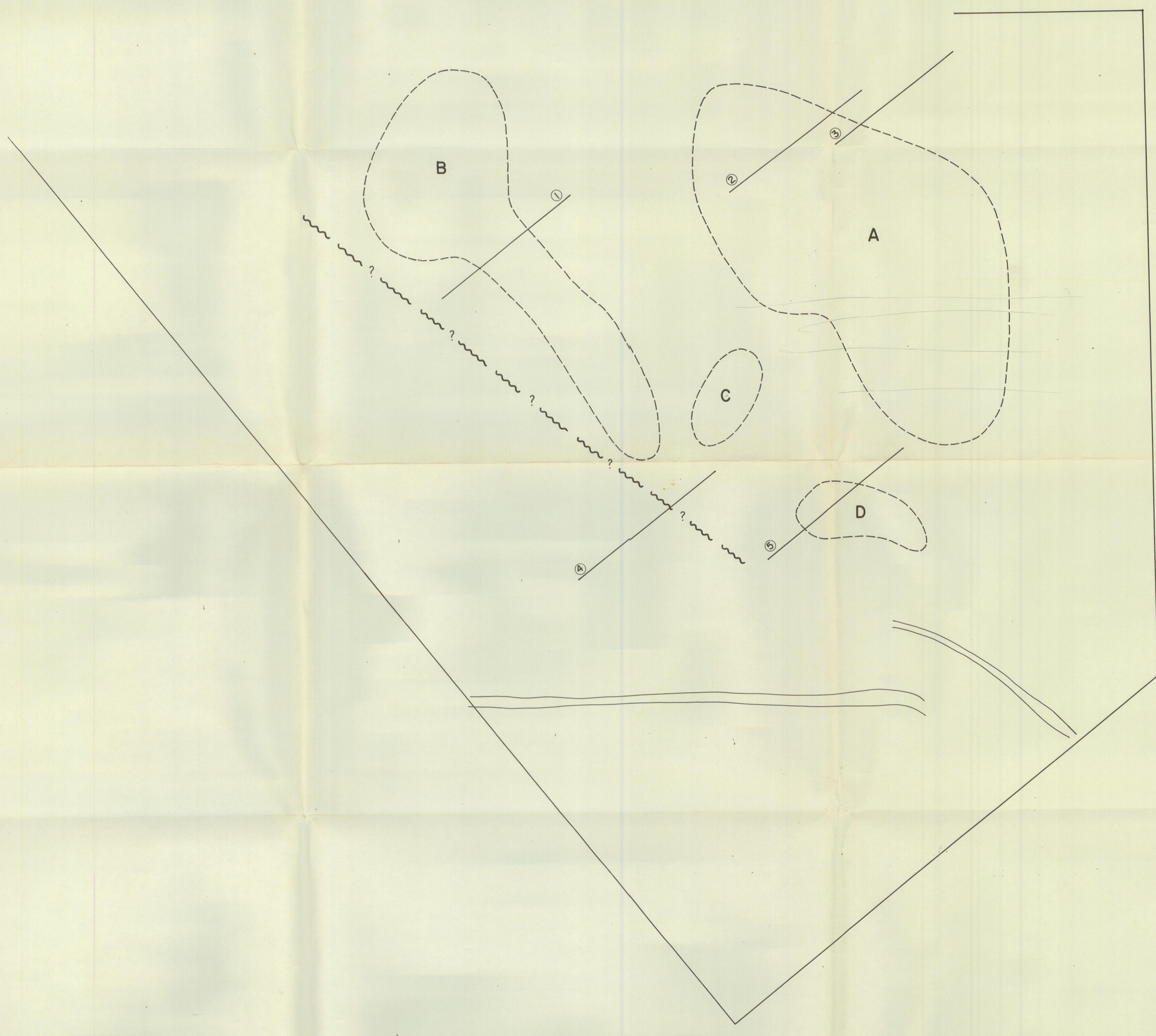
**DOUBLE "A" SYNDICATE
 WHITEHORSE AREA, YUKON TERRITORY
 AIRBORNE MAGNETOMETER SURVEY**

CONTOUR INTERVAL - 100 GAMMAS
 FLOWN AND COMPILED BY

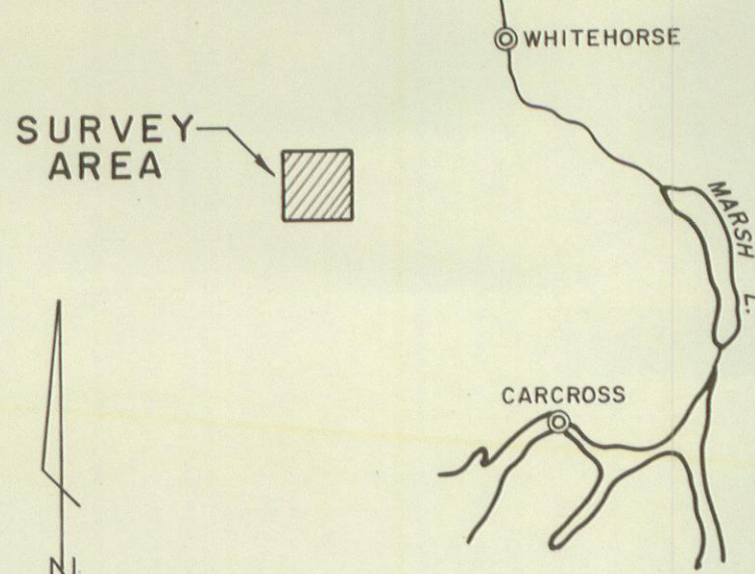
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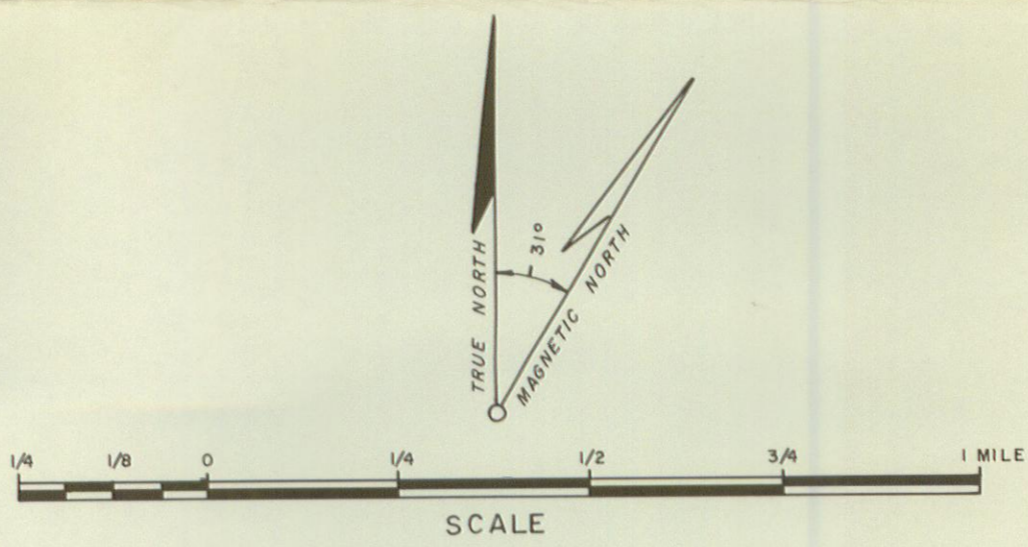


Y U K O N T E R R .



LOCATION MAP

SCALE: 1" = 20 MILES APPROX



LEGEND

- Possible Fault ?~?~?
- Possible Dike ||||
- Anomalous Area A
- Recommended Magnetic Traverse ... ————

PLATE 2

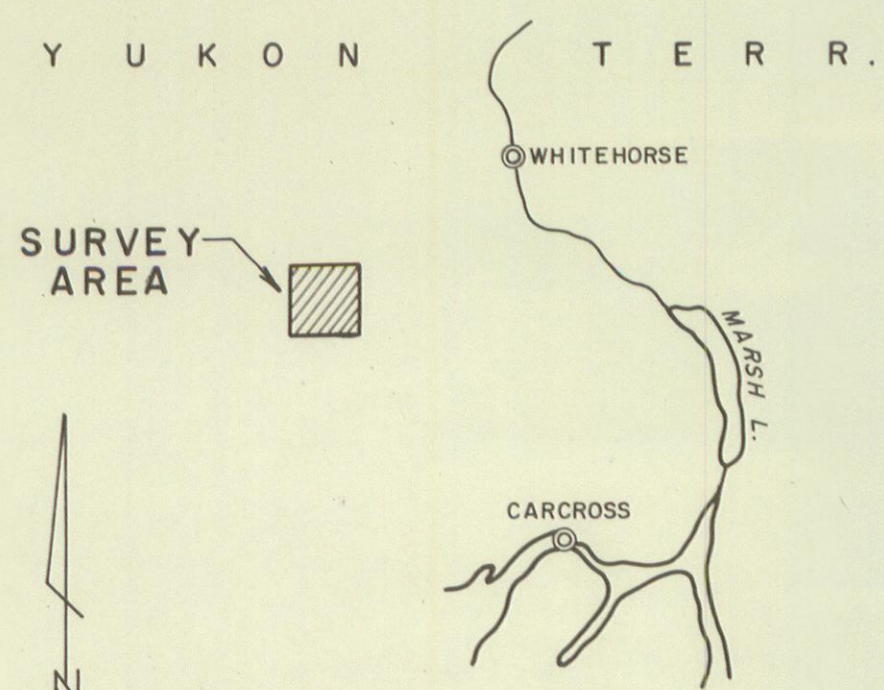
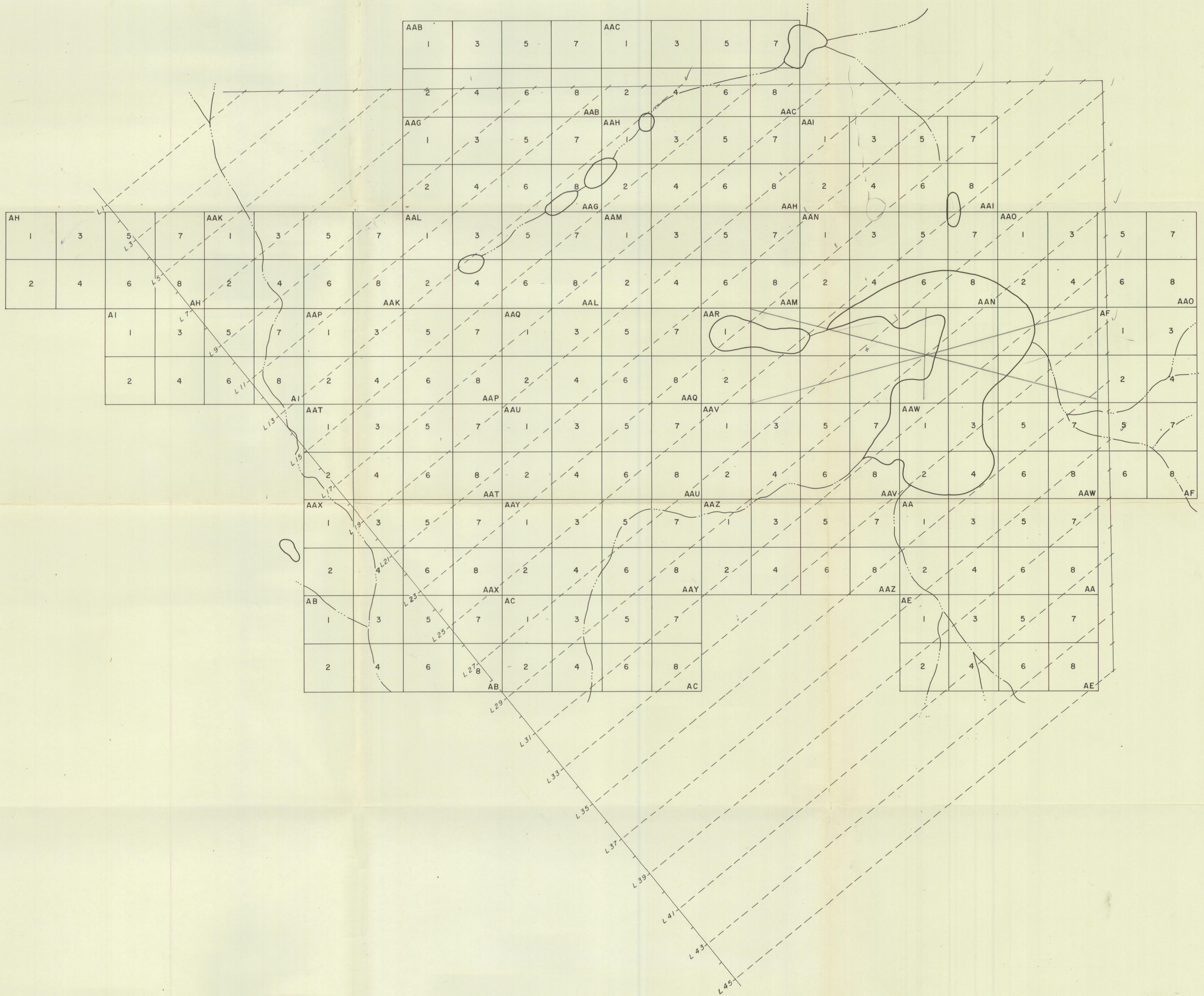
DOUBLE "A" SYNDICATE
 WHITEHORSE AREA, YUKON TERRITORY
 GEOPHYSICAL INTERPRETATION

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LOCATION MAP
SCALE: 1" = 20 MILES APPROX.

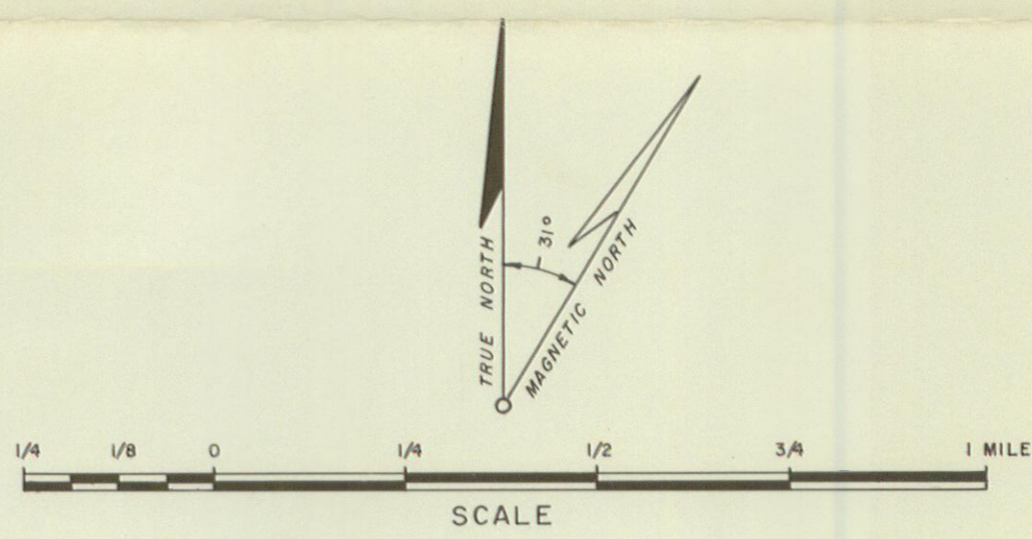


PLATE 3

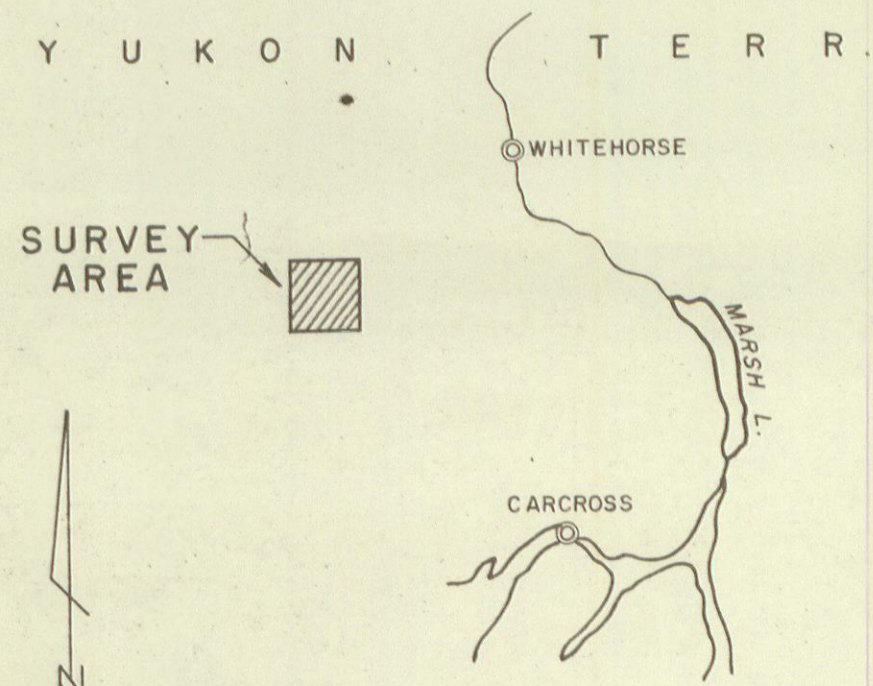
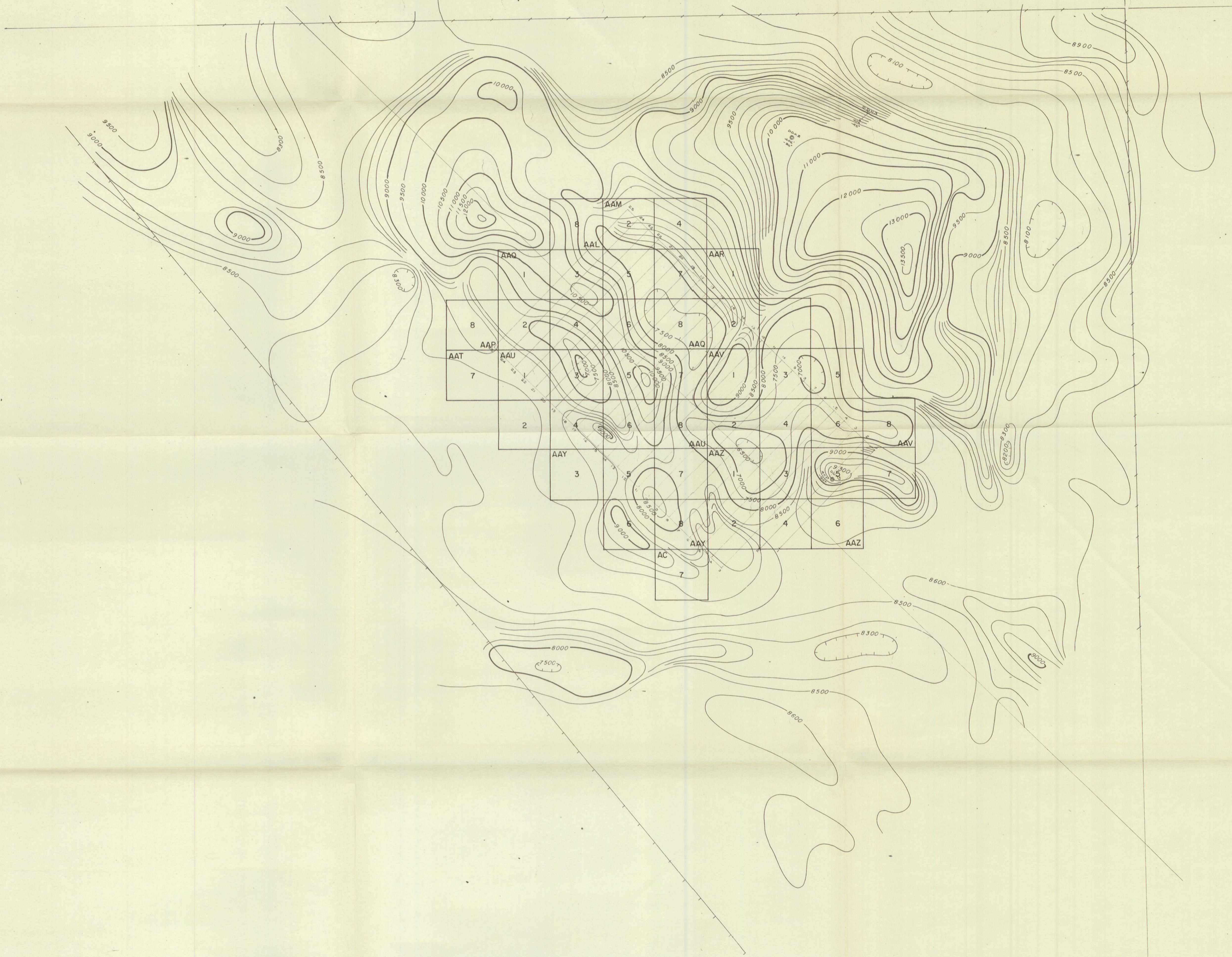
DOUBLE "A" SYNDICATE
WHITEHORSE AREA, YUKON TERRITORY
CLAIM LOCATIONS AND FLIGHT LINES

FLOWN AND COMPILED BY

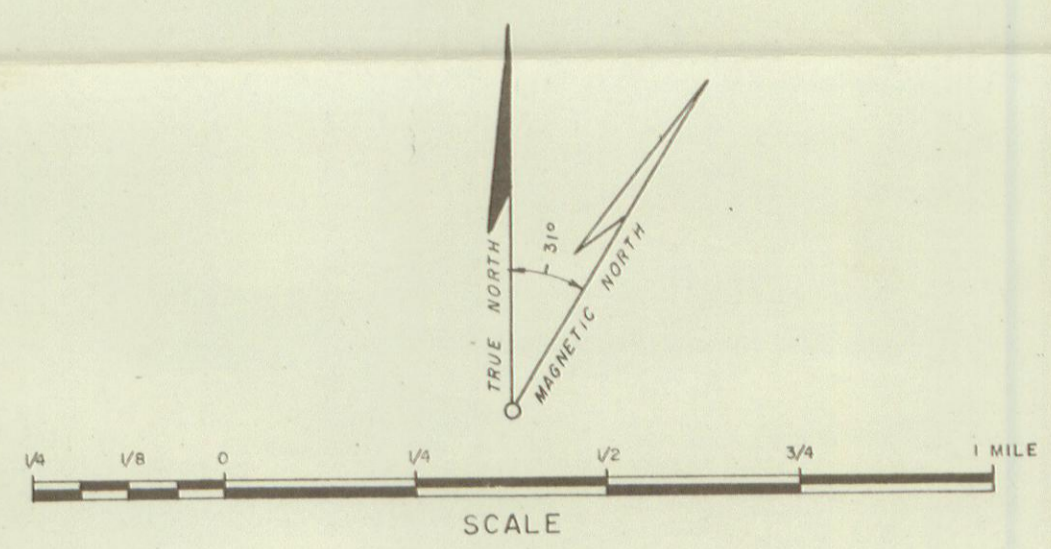
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LOCATION MAP
SCALE: 1" = 20 MILES APPROX.



LEGEND

Approximate Magnetic Inclination -77°N
 Approximate Total Magnetic Intensity
 57,800 Gammas in Center Of Area
 Flight Line Interval Approx. 1/8 Mile

PLATE 4

**DOUBLE "A" SYNDICATE
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 AIRBORNE MAGNETOMETER SURVEY**

CONTOUR INTERVAL - 100 GAMMAS
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