

**GEOLOGICAL - GEOCHEMICAL - GEOPHYSICAL
ASSESSMENT REPORT**



On a Portion of The

STE CLAIM GROUP

Whitehorse Mining District, Yukon

(Y.C.S. No. 115A3)

By

Ace R. Parker & Associates Limited

Mineral Industry Consultants & Contractors

Whitehorse, Yukon

Work Performed

Between

June 1, 1968

and

September 1, 1968

This report has been examined by
the Geological Evaluation Unit.
Approved as to technical worth by:

P. J. Findley
RESIDENT GEOLOGIST

Approved as to cost in the a. amount
of: \$ *14,000.00*

R. S. DeLoraine
RESIDENT MINING INSPECTOR

Accepted as representation work
under Section 53(4) Yukon Quartz
Mining Act.

James Smith
COMMISSIONER OF YUKON

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INTRODUCTION

This report outlines geochemical, geological, and geophysical work completed to date on the STE CLAIM GROUP situated along the Tatshenini River in the Whitehorse Mining District, Yukon.

All work included herein other than line cutting was conducted by the management and staff of Ace R. Parker & Associates Limited, Mineral Industry Consultants and Contractors, Whitehorse, Yukon, at the request of Jack Pot Copper Mines who "own" the property.

Said work has been compiled in report form and is hereby submitted as Assessment Work in compliance with the Yukon Quarts Mining Act.

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SUMMARY

During the summer months of 1968 geological, geochemical and geophysical exploration was conducted over a 1,100 acre section of the STE CLAIM GROUP.

Although the geochemical and geophysical surveys produced coincident anomalous results in some portions of the property, no deposits of economic importance were found during the course of the work, largely due to the concealing effect of overburden in the area.

Nevertheless, the occurrence of rocks similar to those found near existing copper deposits in the area makes the property a good prospect.

It is recommended that future exploration on the existing grids consist of Turam geophysical surveys, bulldozer trenching and diamond drilling - as previously recommended.

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PROPERTY LOCATION & ACCESS

The STE CLAIM GROUP consists of one hundred sixty-two (162) contiguous mineral claims which are granted to Jack Pot Copper Mines Limited.

These claims are recorded in the office of the Mining Recorder at Whitehorse, Yukon and shown on Yukon Claim Sheet No. 115A-3.

The co-ordinate location of the property is $60^{\circ} 04' N.$ $137^{\circ} 07' W.$ and is situated in the southwestern part of the Yukon Territory along and south of the Tatshenshini River near its confluence with Pirate Creek at a point 8 airmiles southwest of Mile Post 106 on the Haines Road.

A tote road 12 miles long leads from Mile Post 106, crosses the Tatshenshini River at Dalton Post and provides access to the property. Currently, travelers must ford the Tatshenshini River to reach the property.

The Haines Road provides an all-weather access connection with deep sea haulage facilities at Haines, Alaska.

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CONTROL OF THE SURVEYS

A grid cut by hand methods provided control for the surveys discussed herein. Said grid has two baselines totaling 14,800 feet in length connected by a tie line 4,000 feet long. These baselines provide a common connection for 37 crosslines averaging 3,200 feet long spaced at 400 foot intervals and totaling linemiles of grid. Survey stations were located at 100 foot intervals along all lines. These lines and stations were constructed by employees of Jack Pot Copper Mines Ltd.

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THE GEOLOGICAL SURVEYRegional Geology

The Geological Survey of Canada has mapped the area within which the property is situated and have published the results as Memoir 268, Desadeash Map Area, Yukon Territory (115A) by E.D. Kindle, with geological map 1019-A Yukon Territory.

Cretaceous Coast Intrusions of granite and related rocks occupy the greater part of the northeast portion of the map area. The Shakwak Fault separates these rocks from lower Cretaceous, Triassic and Jurassic sedimentary and volcanic rocks of the Desadeash and Mush Lake Groups, which form belts striking essentially in a northwesterly direction.

THE STE GROUP covers an irregular contact zone between a local stock of granodiorite and Mush volcanic rocks near the "big bend" in the Tatshenshini River.

These volcanic rock host replacement-type copper deposits in several localities along their strike.

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THE GEOLOGICAL SURVEYLocal Geology

THE STE GROUP was mapped in a scale of 400 feet to the inch. Picket lines were used as controls for mapping where these lines existed, otherwise mapping was done by pace-and-compass traverser spaced 200 feet apart. This work was done during August 1968.

Table of Formations

- I - Cretaceous - Coast Intrusions
Granodiorite, granite, porphyritic granite, diorite, aplite, diabase and gabbro
- II - Triassic and Jurassic - Mush Lake Group
Andersite, basalt, rhyolite, volcanic breccia, tuff, argillite, shale and limestone

Topographically the area mapped locally has a relief of approximately 300 feet and lies between elevations of 2,100 and 2,400 feet and represents a terrace-like area on the left limit of the Tatshenshini River and situated between its canyon and the north western toe of Mt. Beaton.

Deposits of boulder clay and glacial till cover approximately 60% of the map area. These deposits dominate the northern portion of the grid area and host a thick assemblage of buck and alder bush intermingled by Yukon-white spruce varying in diameter from two to sixteen inches.

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THE GEOLOGICAL SURVEYLocal Geology (Cont'd)

The remaining 40% of the grid area, located near the head of Pirate Creek and along the northwest toe of Mt. Beaton is characterized with elongated and cone-shaped "esker-like" hills composed of both coarse and fine talus of granite rock some exceeding 50 feet in height. These hills are tightly grouped south of grid line 56S and their origin is not certain but they appear to have been caused by a combination of events, essentially the glacial erosion of a highly shattered contact aureole around a granitic pluton that once protruded from the depths of the earth into the bottom of a shallow sea. Geomorphic conditions in this area are extremely difficult to traverse and the landscape is dominated by a secondary growth of buck brush and cottonwood trees.

Very few bedrock exposures are available on the northern portions of the grid although this area is believed to overlay the NW-SE striking contact zone between Coast intrusive rocks and volcanic rocks of the Mush Lake Group.

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THE GEOLOGICAL SURVEYLocal Geology (Cont'd)

A series of allied granitic rocks outcrop in the southern section of the grid area, but precise mapping in this area is nearly impossible due to the geomorphic conditions as previously described.

A medium to fine grained pink granite constituted the most prominent rock type in the southern section of the grid and occurs in the form of a small pluton approximately 3,000 feet in diameter at surface. Various derivations of this primary granitic body occur around its periphery and as inclusions within the intrusive itself.

These granitic derivations include dikes and irregular masses of feldspare prophyry, quartz, basalt and rhyolite all situated within the primary intrusive and associated with larger masses and embayments of diorite. All of these secondary rocks have a definite structural control and trend NW-SE. Most of the intrusive rocks show the effects of contact metamorphism and assimilation.

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ECONOMIC GEOLOGY

Glacial overburden conceals over 60% of the property and this prevents visual evaluation of most bedrock geology from an economic standpoint.

A mineralized contact zone between Mush Lake volcanic rocks and Coast Range intrusive rocks and exposed along the walls of the Tatchenshini River canyon projects beneath a large portion of the north grid. Unfortunately, overburden in this area is quite thick and conductive and renders geological, geochemical and most geophysical explorations inconclusive to date although mineralized float may be found in the area.

Some of the related granitic rocks exposed in the southern portion of the grid area, particularly the diorites, contain minor amounts of disseminated chalcopyrite. The economic importance of these rocks will be better known after some bulldozing has been completed.

THE GEOPHYSICAL SURVEYS

The Magnetic Survey

A magnetic survey was conducted over the grid area employing a Jaylander model W 505 magnetometer, and the results are shown on the attached map.

These results have a relative relief of 2,375 gammas and assist in outlining bedrock geology and possible mineralised areas.

Areas of high and low magnetic relief are considered important.

THE GEOPHYSICAL SURVEYS

The Electromagnetic Survey

The electromagnetic survey is probably the most important survey conducted on the property to date and reveals a series of conductive zones as shown on the attached maps.

Although most of the conductors are relatively weak, they are possibly caused by structurally $\frac{1}{2}$ controlled mineralization and justify additional exploration by bulldozer trenching, taram geophysical surveys and diamond drilling.

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THE GEOCHEMICAL SURVEY

637 samples of A⁰ horizon soil were taken from holes dug to an average depth of 15 inches with a mattock. These samples were placed in paper bags and sent to the Whitehorse assay office where they were analysed for copper by utilizing hot nitric acid extraction and atomic absorption techniques.

The attached map shows the sample locations and their resulting copper values.

Although soil thickness, development and migration renders most results inconclusive, two anomalous areas of relative significance were found within the survey area. These zones have a background of 30 parts per million copper with peak value exceeding 300 ppm copper.

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CONCLUSIONS AND RECOMMENDATIONS

During the past three months preliminary geochemical, geological and geophysical surface exploration has been conducted over an 1,100 acre portion of the JACK POT COPPER MINES STE CLAIM GROUP as shown by the attached maps.

A series of geochemical and geophysical anomalies were found which justify additional exploration by employing primarily Turam geophysical surveys, bulldozer trenching and diamond drilling.

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PERSONNEL EMPLOYED ON THE PROJECT

<u>Name</u>	<u>Occupation</u>	<u>Fixed Address</u>
H.V. Currie	Senior Geophysist	Port Loring, Ont.
G. Davies	Exploration Tech.	Vancouver, B.C.
M. Fox	Geological Tech.	Vancouver, B.C.
C. Gover	Exploration Tech.	Montreal, Quebec
N. Henry	Field Assistant	Whitehorse, Yukon
K. Kania	Exploration Tech.	Winlow, B.C.
P. Nichols	Steno	Whitehorse, Yukon
Ace R. Parker	Consulting Engineer	Whitehorse, Yukon
B. Petersen	Draftsman	Whitehorse, Yukon
R.A. Savidge	Exploration Tech.	Durango, Colorado

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COSTS

The direct costs of the surveys outlined in this report are as follows:

Contracted & Integrated Exploration Services
including:

Geochemical Soil Sampling
Geochemical Soil Assaying
Geological Mapping & Sampling
Geophysical Mag Survey
Geophysical EM Survey
Engineering, Supervision,
Consulting, Correlation of Data, and
Preparing Reports

SubTotal **\$15,000.00**

**Support Facilities per Jack Pot Copper
Mines: (see attached statement**

**Linecutting, Transportation,
Communications and Subsistence**

SubTotal **5,250.00**

FINAL TOTAL **\$20,250.00**

AFFIDAVIT OF COSTS

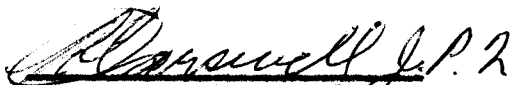
I, ACE R. PARKER, of the City of Whitehorse, Yukon Territory, do certify:

1. THAT I am a Consulting Engineer practicing under the name and style of Ace R. Parker & Associates Limited, Mineral Industry Consultants & Contractors, Whitehorse, Yukon, and have personal knowledge of the matters described herein;
2. THAT to the best of my knowledge and belief, the costs represented in this report are a true statement of direct expenditures for Assessment Work performed on the STE CLAIM GROUP as outlined by this report.

Ace R. Parker & Associates Limited


per: Ace R. Parker, P. Eng.

SWORN BEFORE ME at
Whitehorse in the
Yukon Territory,
this 12th day of
November, A.D. 1968


A Commissioner for
taking Oaths in and
for the Yukon Territory

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C E R T I F I C A T E

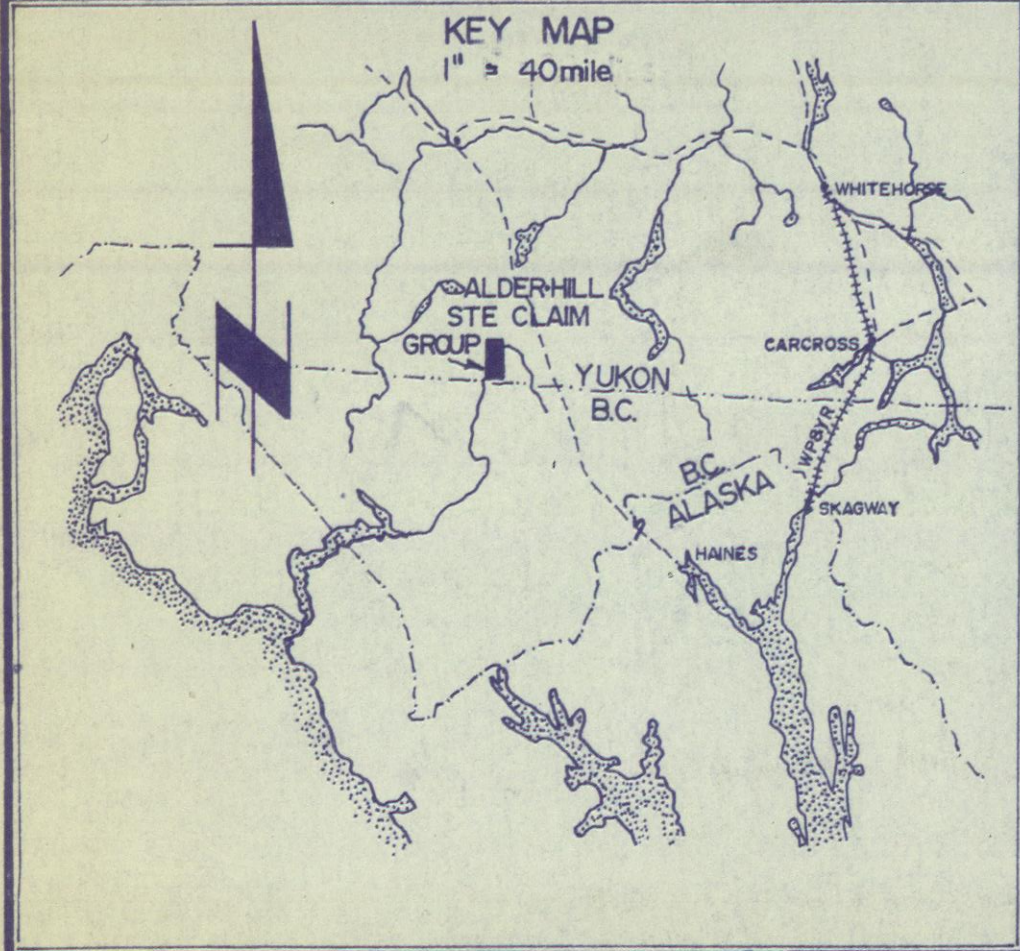
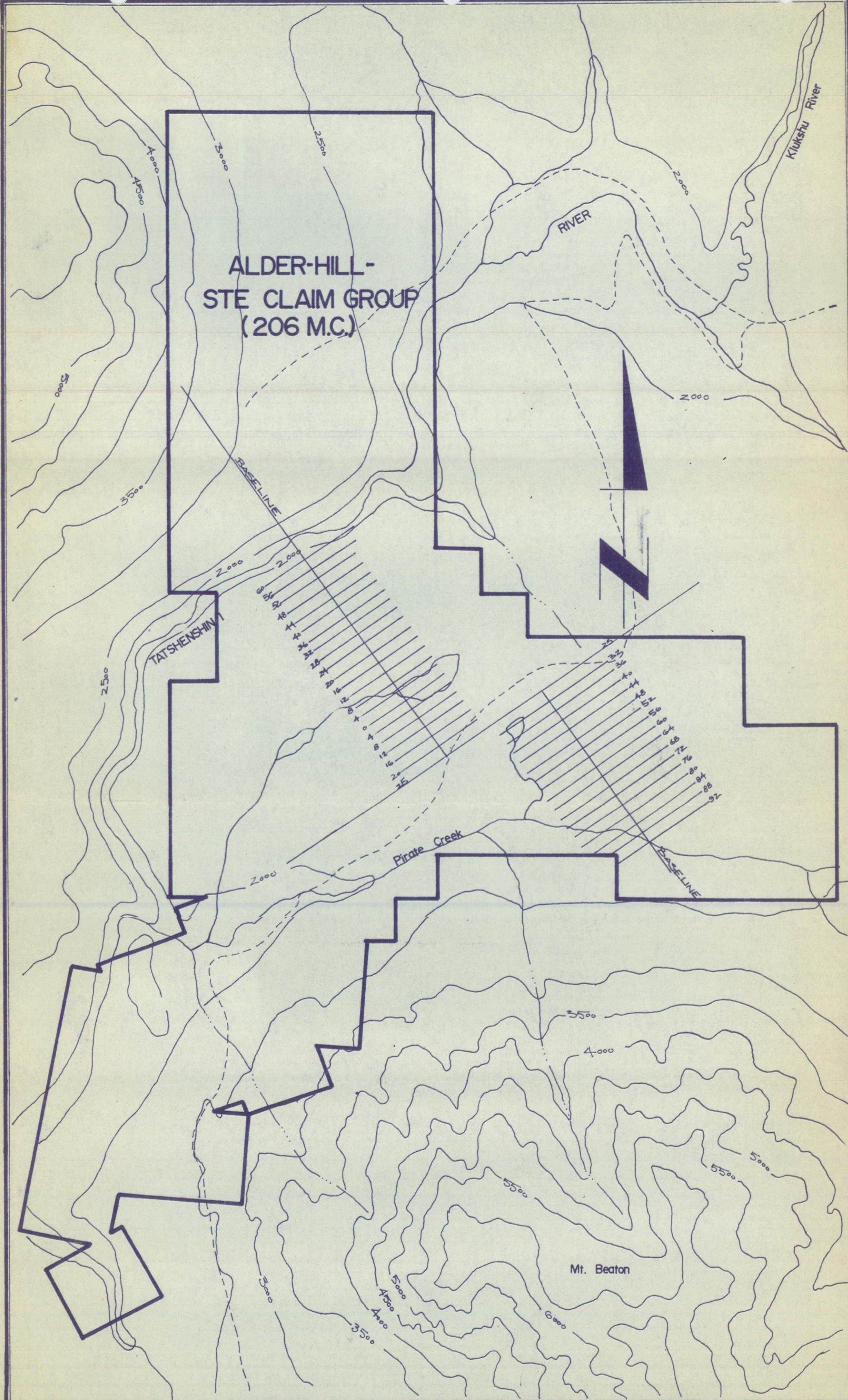
I, ACE R. PARKER, of the City of Whitehorse, Yukon Territory, do certify that:

1. I am a Consulting Engineer practicing under the name and style of ACE R. PARKER & ASSOCIATES LIMITED, with office at 3rd Avenue and Elliott Street, Whitehorse, Y.T.
2. I am a Bachelor of Science in Mining Engineering from the College of Earth Science and Mineral Industry, University of Alaska, College, Alaska - 1962. I held a Diploma in Mineralogy from the Mineral Science Institute, Chicago, Illinois - 1959.
3. I am a member in good standing of the Association of Professional Engineers of Yukon, the Association of Professional Engineers of British Columbia, and the Association of Professional Engineers of Alberta. I have been a member of the American Institute of Mining, Metallurgical, and Petroleum Engineers since 1954.
4. I have formally practiced my profession for the past six years after working in the Mineral Industry since 1953.
5. I have no direct or indirect interest in the STE CLAIM GROUP described in the accompanying report or in any securities relating to the said property.
6. This Certificate is part of the attached Geological, Geophysical and Geochemical Assessment Report on the STE CLAIM GROUP of mineral claims October 15, 1968. The attached property map shows the location of the STE CLAIM GROUP of mineral claims which have been located in compliance with the Yukon Quartz Mining Act.
7. This report is based on a comprehensive personal study of documents, maps, and reports relating to the property described herein, including reports of the Geological Survey of Canada and in conjunction with several personal examinations of the property by myself during 1968. All work outlined in this report was conducted under my direct supervision.



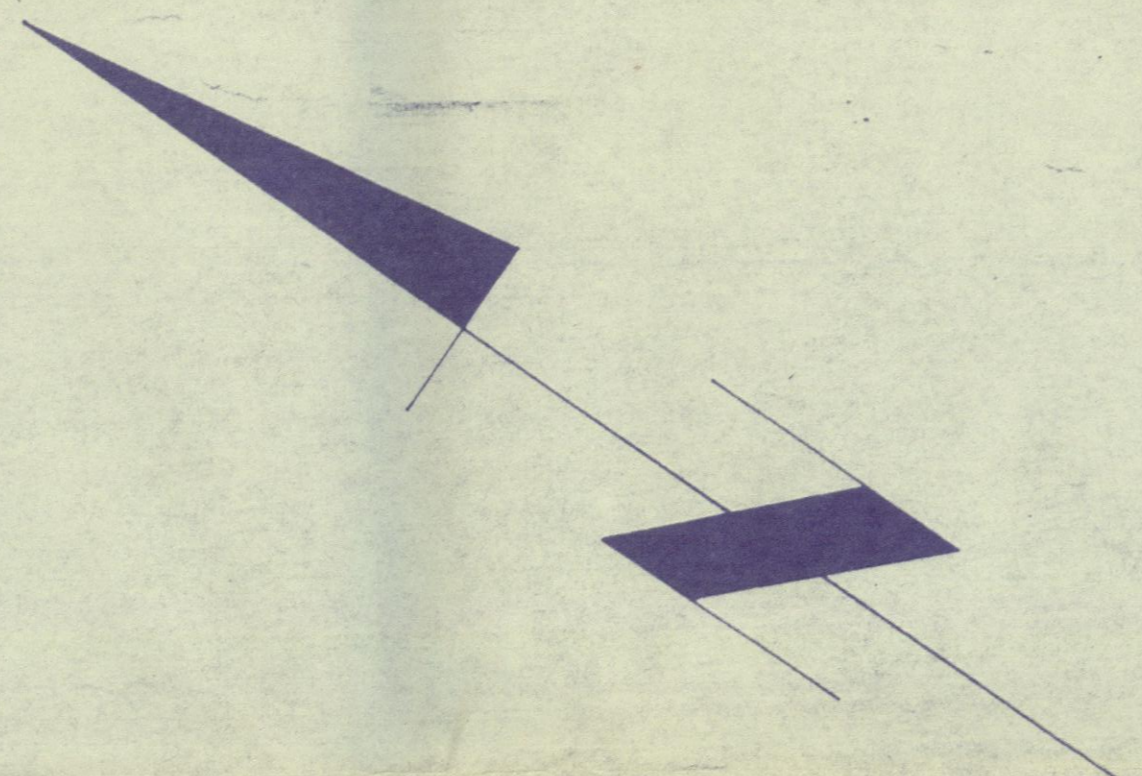
Ace R. Parker, P. Eng.

Whitehorse, Yukon
October 15, 1968

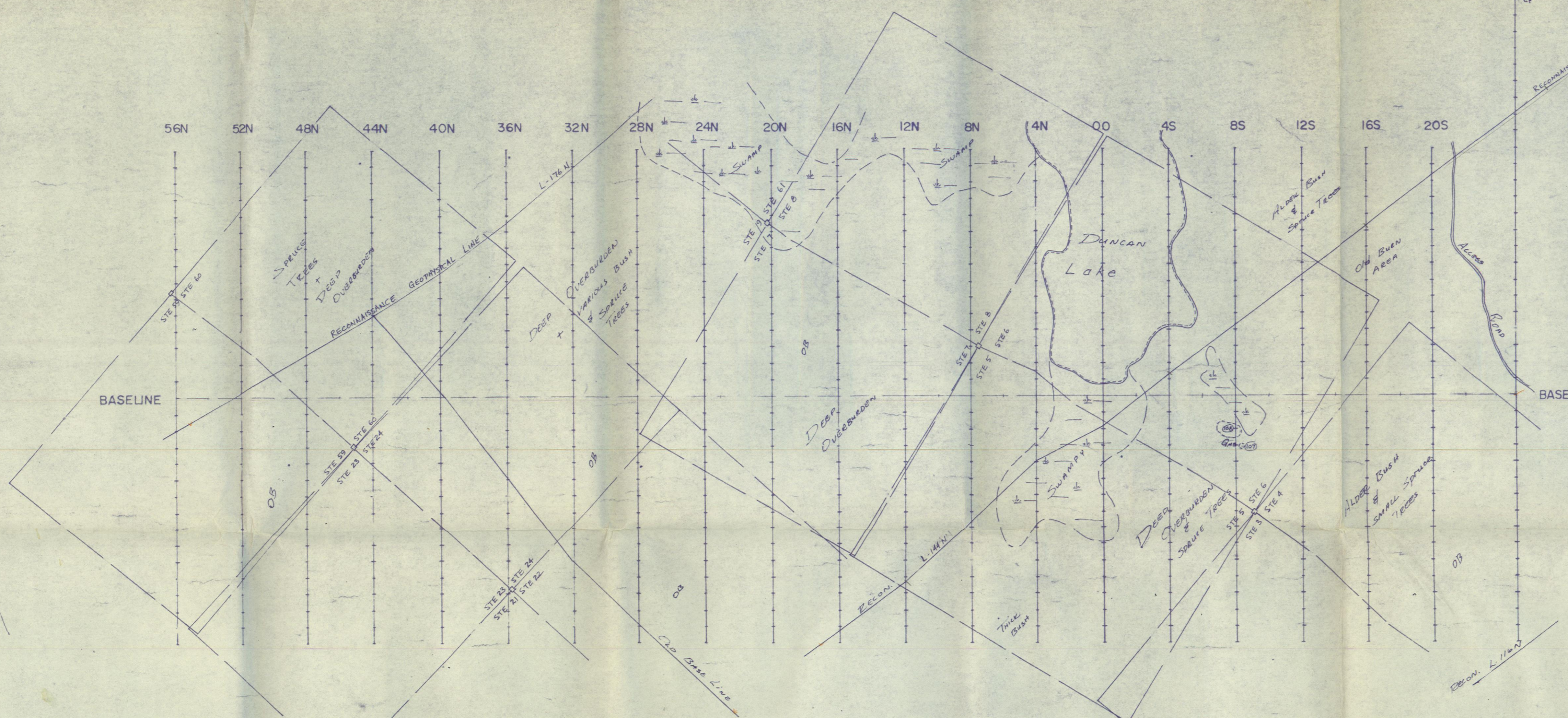
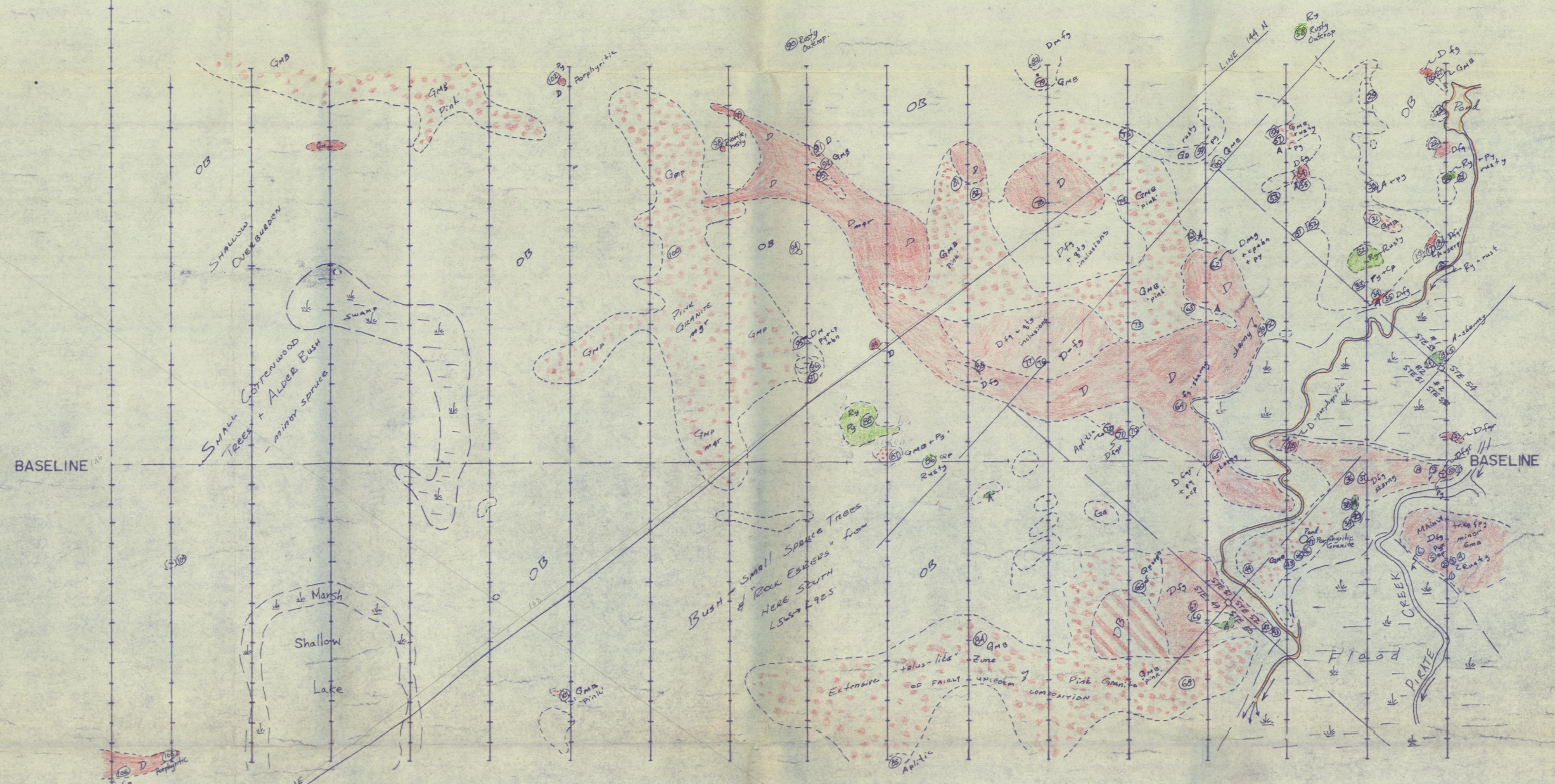


PROPERTY LOCATION MAP
ALDER-HILL - STE CLAIM GROUP
WHITEHORSE MINING DISTRICT
(Showing approximate location of grid)

ACE R. PARKER & ASSOCIATES Mineral Industry Consultants and Contractors		
SCALE	1" = 1/2 mile	SEAL
DATE:	Sept. 27, 1968	
DRAWN BY:	Benny Peterson	
DWG. N ^o .		
CLAIMS LOCATION APPROX.		

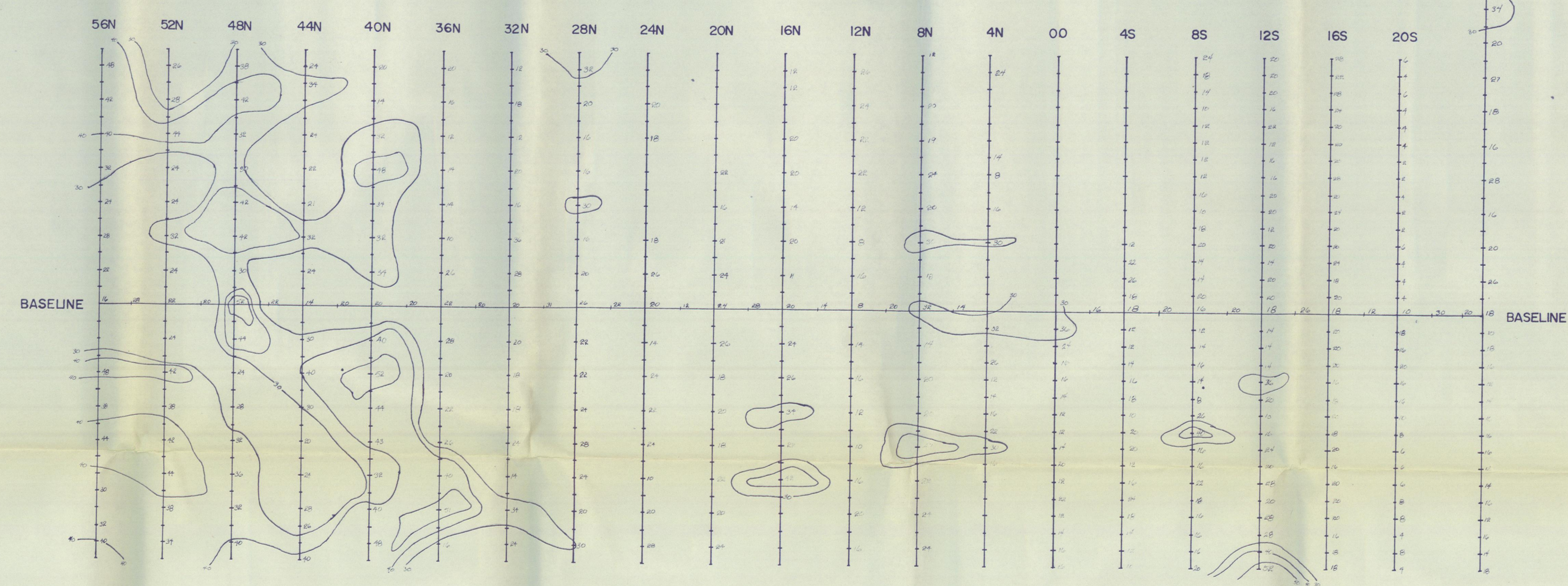
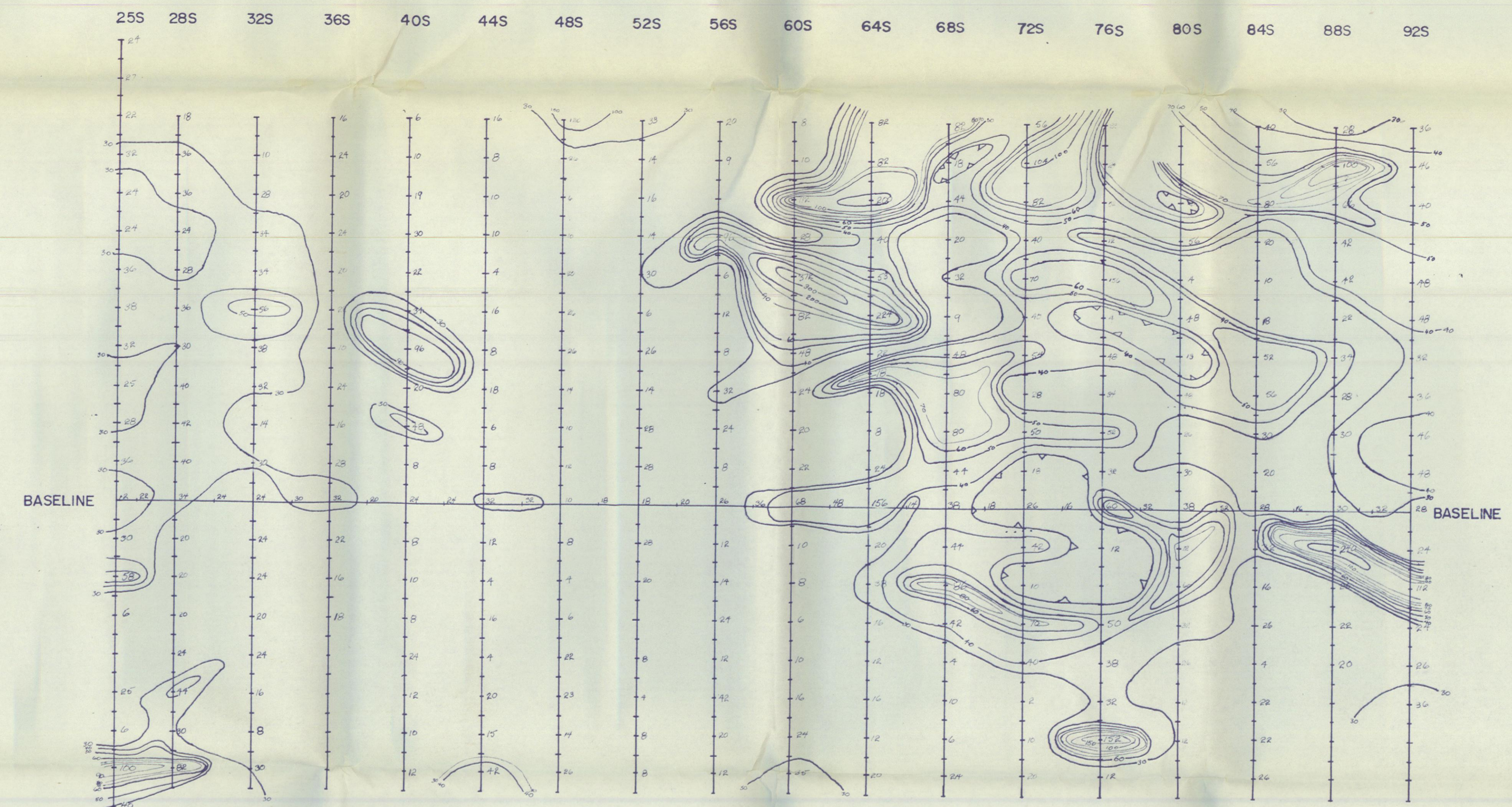
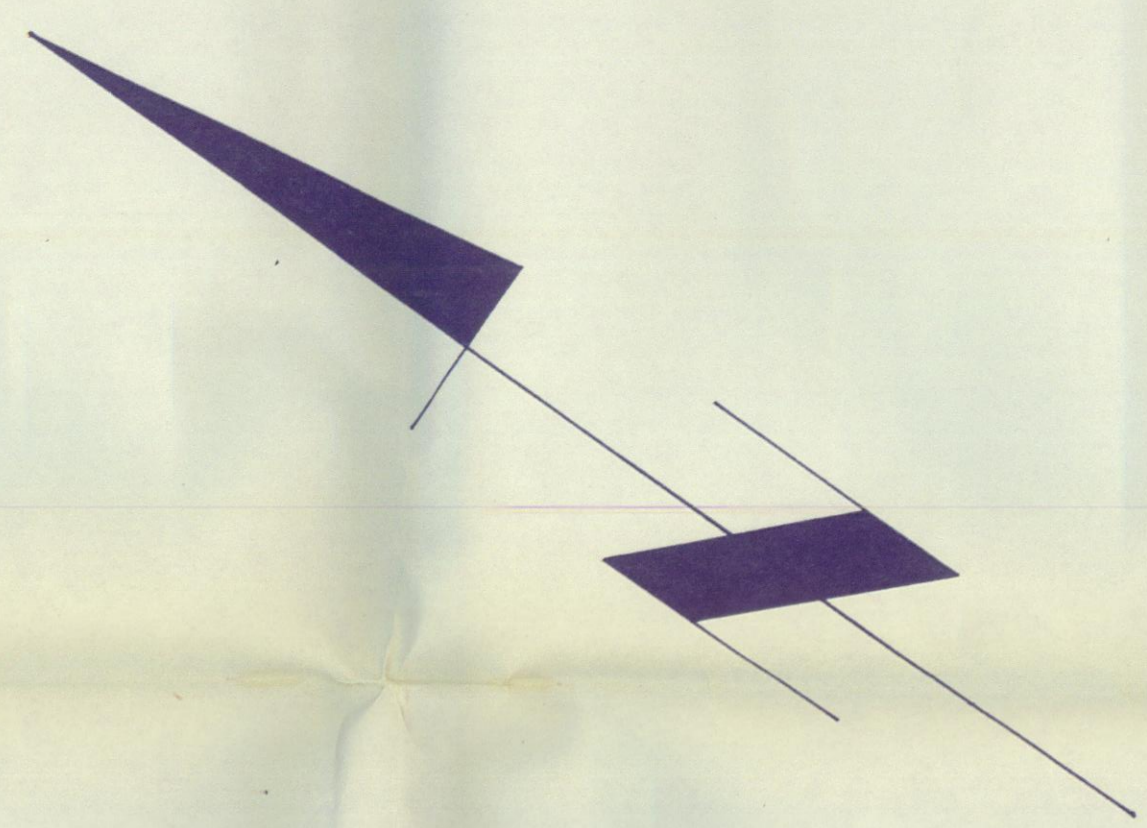


25S 28S 32S 36S 40S 44S 48S 52S 56S 60S 64S 68S 72S 76S 80S 84S 88S 92S

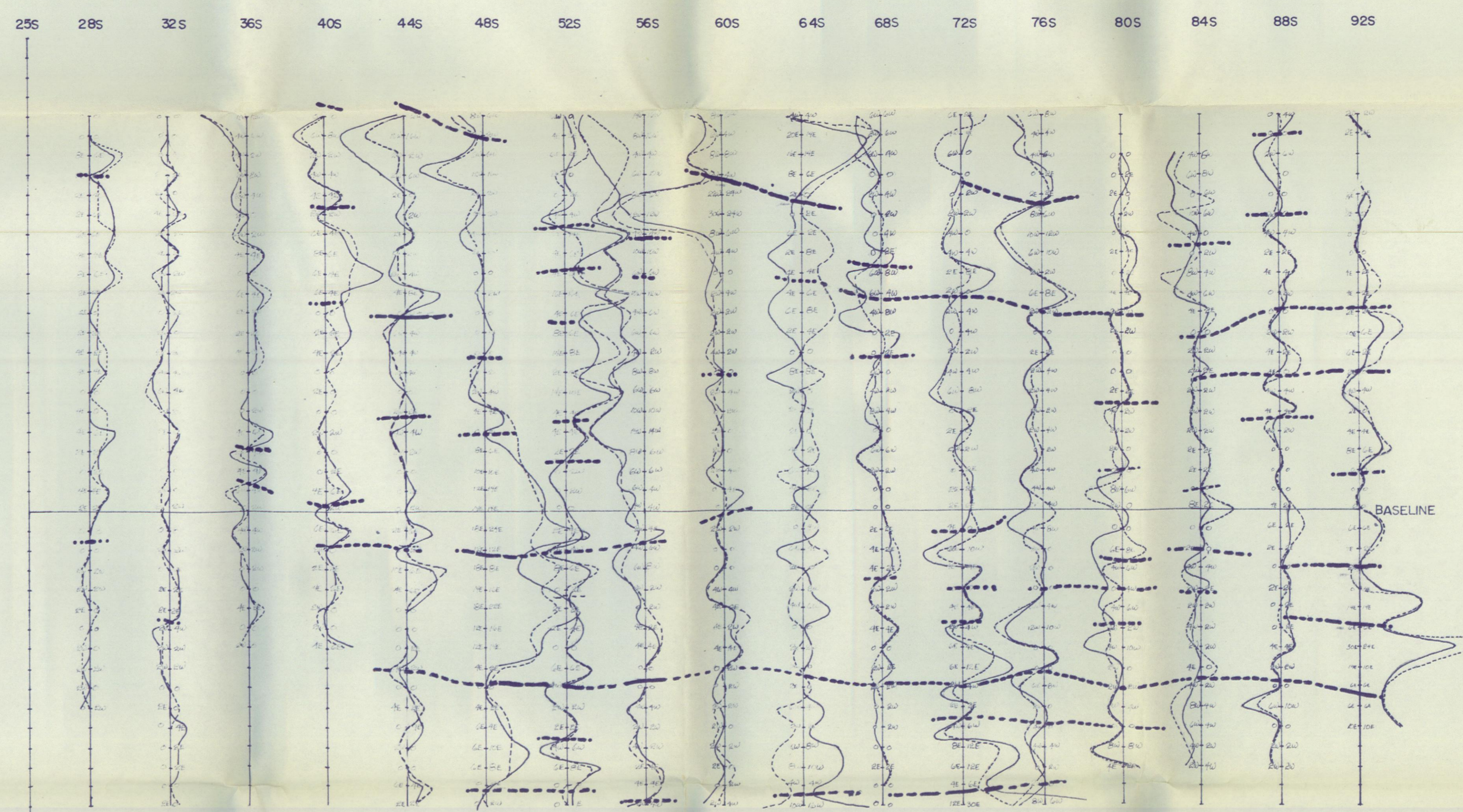
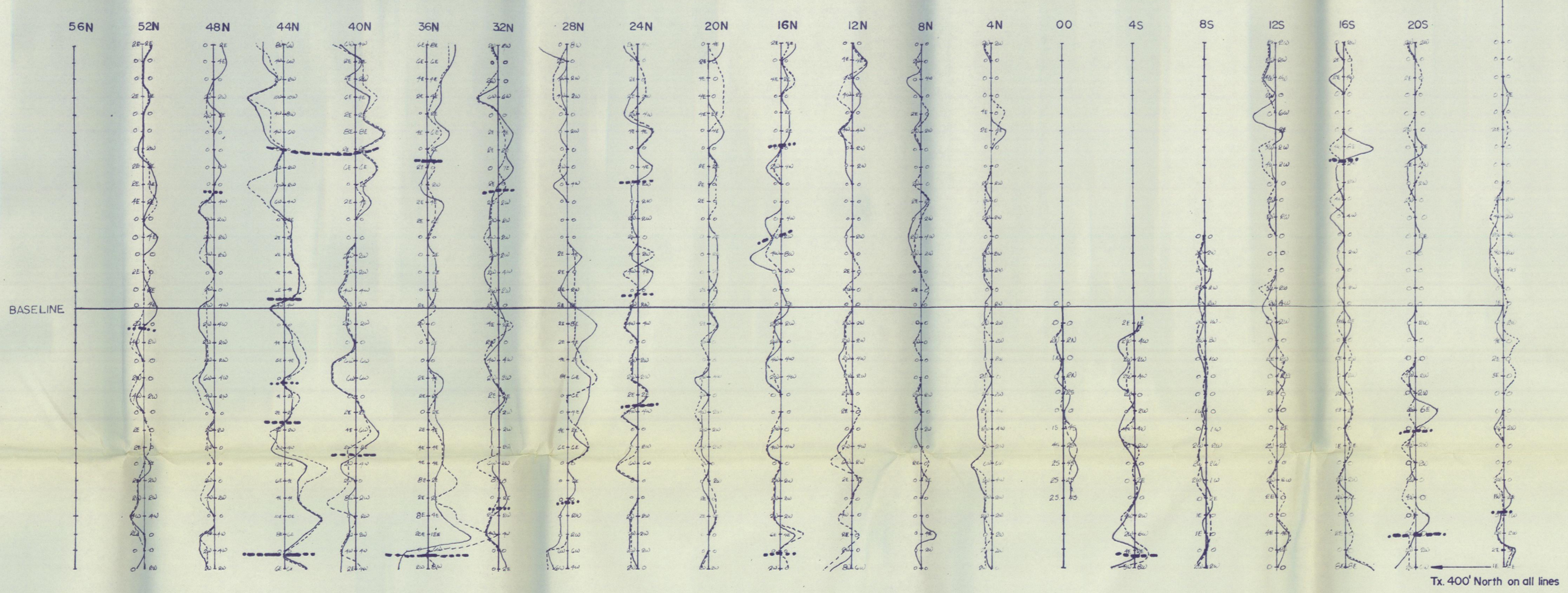
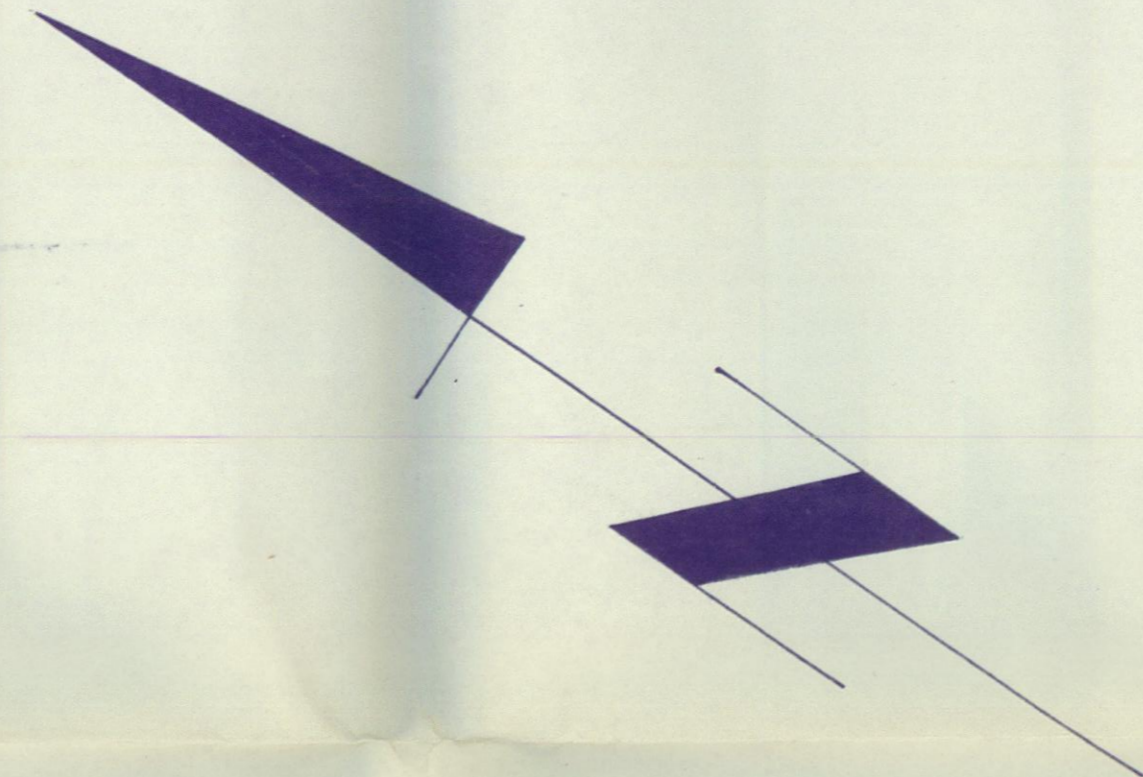


LEGEND		JACKPOT COPPER CO. RECONNAISSANCE GEOLOGICAL SURVEY of the ALDER-HILL-STE GROUP WHITEHORSE MINING DISTRICT ACE R. PARKER & ASSOCIATES Mineral Industry Consultants & Contractors	
	ANDESITE		QUARTZ PORPHYRY
	DIORITE		RHYOLITE
	BIOTITE GRANITE		MINERALIZATION Pyrite, Chalcopyrite Bornite
	GABBRO		GRAIN SIZE Medium grain, fine grain
	OVERBURDEN		SAMPLE LOCATION
	Strike & dip of formation		HILL
	Strike & dip of prominent jointing		CLAIM CORNERS
	OUTCROPS		BUSH ROAD
	CONTACTS		86-GRID LINES
	SWAMP		

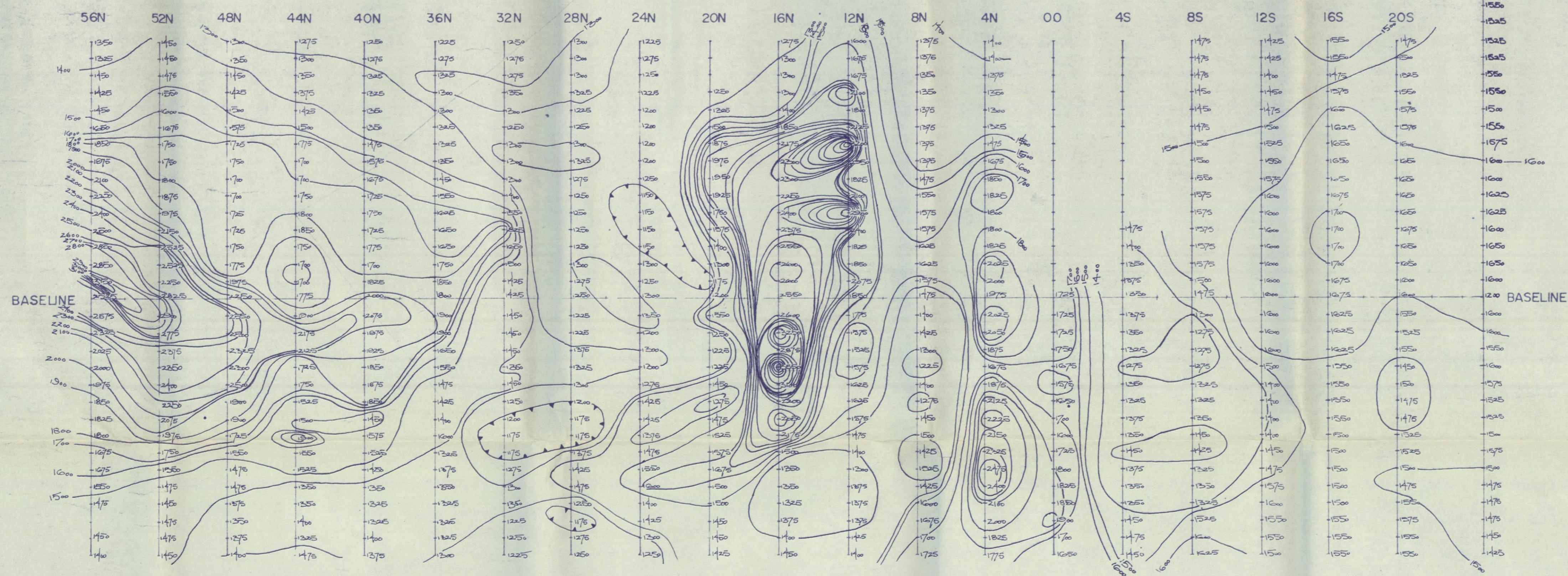
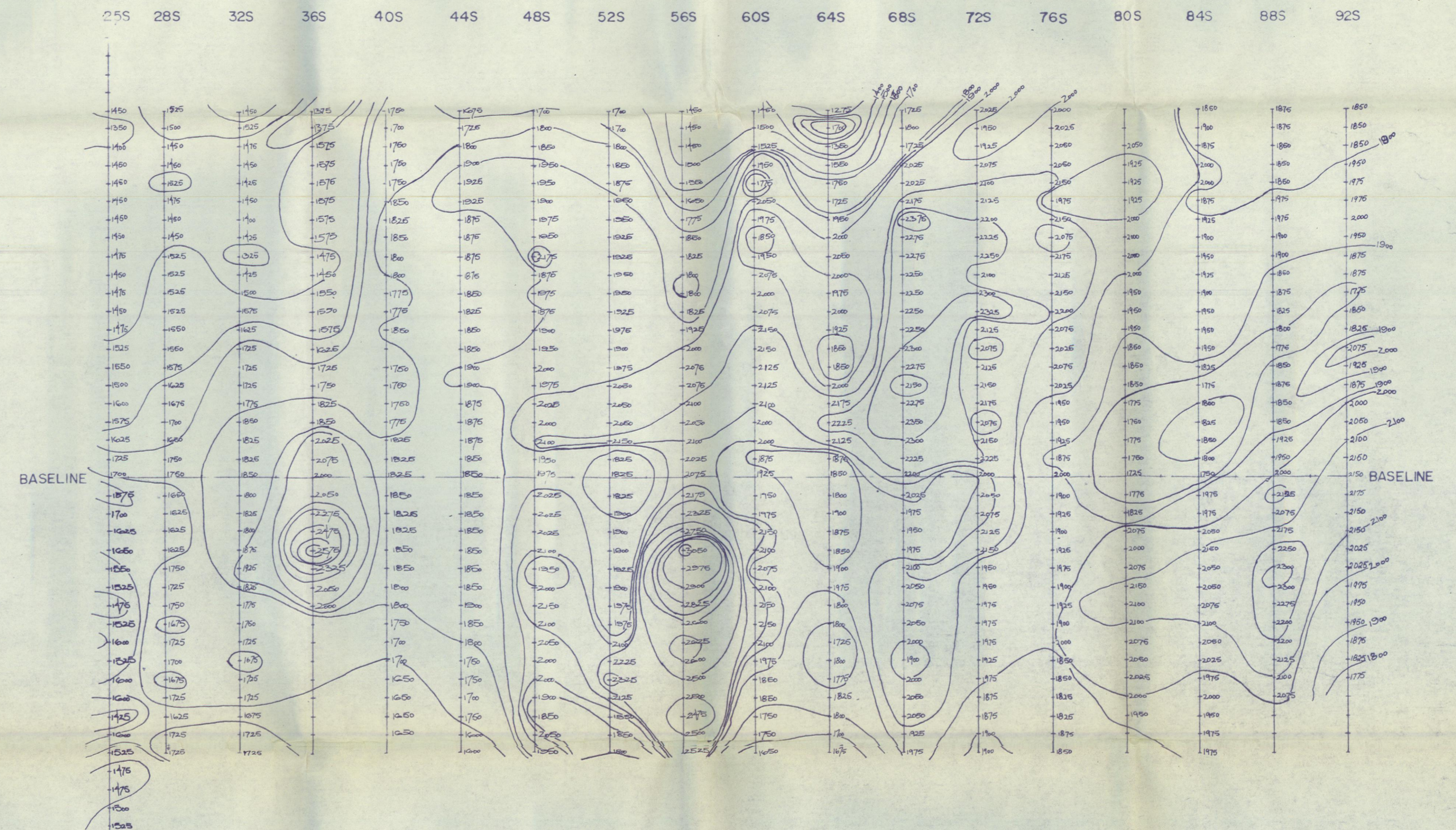
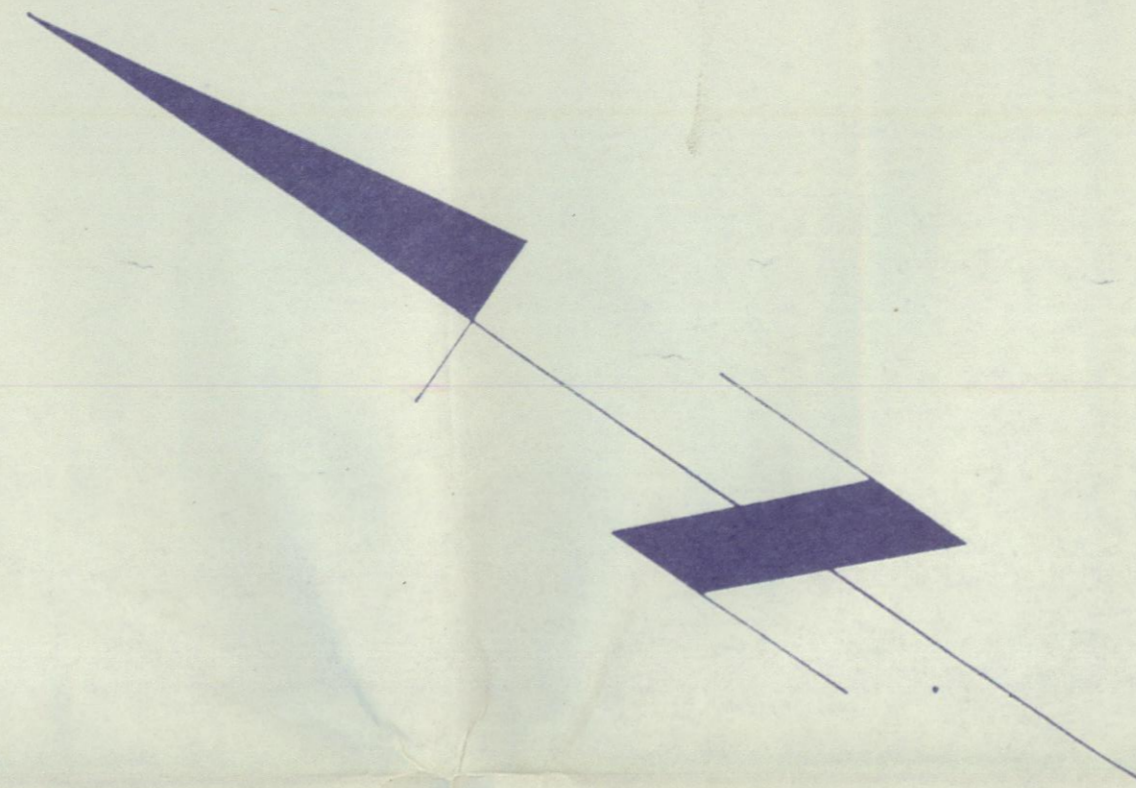
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DRAWN BY:			
DWG NO:			

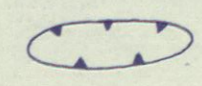
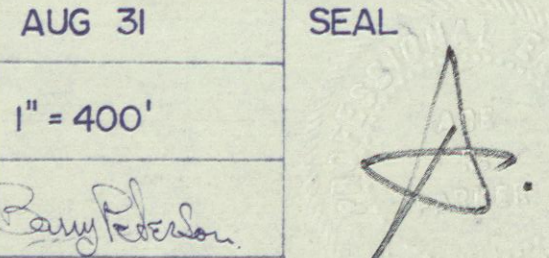


GEOCHEMICAL COMMENTS		
— Geochemical copper anomaly showing contoured copper values in parts per million.		
— Contour interval	10 ppm	
— 10' Average sample depth.	100 ppm	
— Analysis by hot acid extraction and atomic absorption technique.		
JACKPOT COPPER CO. RECONNAISSANCE GEOCHEMICAL SURVEY (COPPER PLOT) ALDER HILL - STE. GROUP WHITEHORSE MINING DISTRICT, Y.T. ACE R. PARKER & ASSOCIATES <i>Mineral Industry Consultants & Contractors</i>		
DATE:	AUG. 31, 1968	SEAL:
SCALE:	1" = 400'	
DRAWN BY:	<i>Barry H. ...</i>	
DWG. NO.:		



GEOPHYSICAL COMMENT		JACKPOT COPPER CO. LTD. PRELIMINARY E.M. GEOPHYSICAL SURVEY ALDER HILL-STE. GROUP	
— INSTRUMENT: Sharpe SE 300 — HIGH FREQUENCY (reading right of line) — — LOW FREQUENCY (reading left of line) - - - - — INFERRED CONDUCTOR AXIS - - - - - — INDICATED CONDUCTOR AXIS ——— — SCALE: 1" = 20' — Location of Tx. in broadside survey as shown.		WHITEHORSE MINING DISTRICT Y.T. ACE R. PARKER & ASSOCIATES <i>Mineral Industry Consultants & Contractors</i>	
DATE:	AUG 31, 1968	SCALE:	1" = 400'
DRAWN BY:	<i>B. Barry</i>	DWG NO.:	
		SEAL:	



GEOPHYSICAL COMMENTS		
- INSTRUMENT: JAYLANDER W-505		
- CONTOUR INTERVAL: 100 Gammas		
- MAG DEPRESSION 		
JACKPOT COPPER CO. RECONNAISSANCE MAG. GEOPHYSICAL SURVEY of the ALDER-HILL-STE GROUP WHITEHORSE MINING DISTRICT ACE R PARKER & ASSOCIATES <i>Mineral Industry Consultants & Contractors</i>		
DATE	AUG 31	SEAL
SCALE	1" = 400'	
DRAWN BY	<i>Samuel Redden</i>	
DWG. NO.		