

81-#815-9466

ASSESSMENT REPORT

GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE

GOTCH CLAIM GROUP (30 UNITS)

OMINECA MINING DIVISION

by

SHEILA A. CRAWFORD

LOCATION: 57°12' to 57°14' N Latitude
126°53' to 126°55' W Longitude
N.T.S. 94E/2W

OWNER/OPERATOR: SEREM LTD.

DATES WORK PERFORMED: July 25, 1980
July 24, 25, 26; August 7, 1981

DATE OF REPORT: September 15, 1981

9466

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INTRODUCTION

The Gotch 1 and 2 claims, consisting of 10 and 20 units respectively, are located between $57^{\circ}12'$ and $57^{\circ}14'$ N latitude and $126^{\circ}53'$ and $126^{\circ}55'$ W longitude in the Toodoggone River map sheet area, N.T.S. 94E/2W, Omineca Mining Division (see Figures 1 and 2). Elevation ranges from about 1475 metres to 2014 metres above sea level. Outcrop is well exposed on cliff sides of the mountains, but is generally sparse elsewhere; valleys are covered by glacial overburden. Most of the property lies above treeline.

Access to the property is by fixed wing from Smithers to Sturdee Airstrip, a distance of 280 kilometres, and from Sturdee Airstrip to the property by helicopter, a distance of 12 kilometres.

The claims are owned and operated by Serem Ltd. They were staked on the basis of anomalous silt samples in streams draining the area.

The southernmost portion of the claims was previously held by Cordilleran Engineering for Quebec Cartier Mining (Riga claims, Assessment Report No. 1802), and later by Minas De Cerro Dorado Ltd. (Assessment Report No. 5854).

Work performed in 1980 and 1981 by Serem Ltd. includes geochemical soil sampling along constant elevation or contour traverses, geological mapping, prospecting and selective geochemical rock sampling. Seventy-five soil samples were analysed for gold, silver, copper, lead and zinc and thirty-nine rocks for gold, silver, and in some cases, copper or lead. The purpose of work was to locate the source of stream anomalies and to evaluate favourable geology.

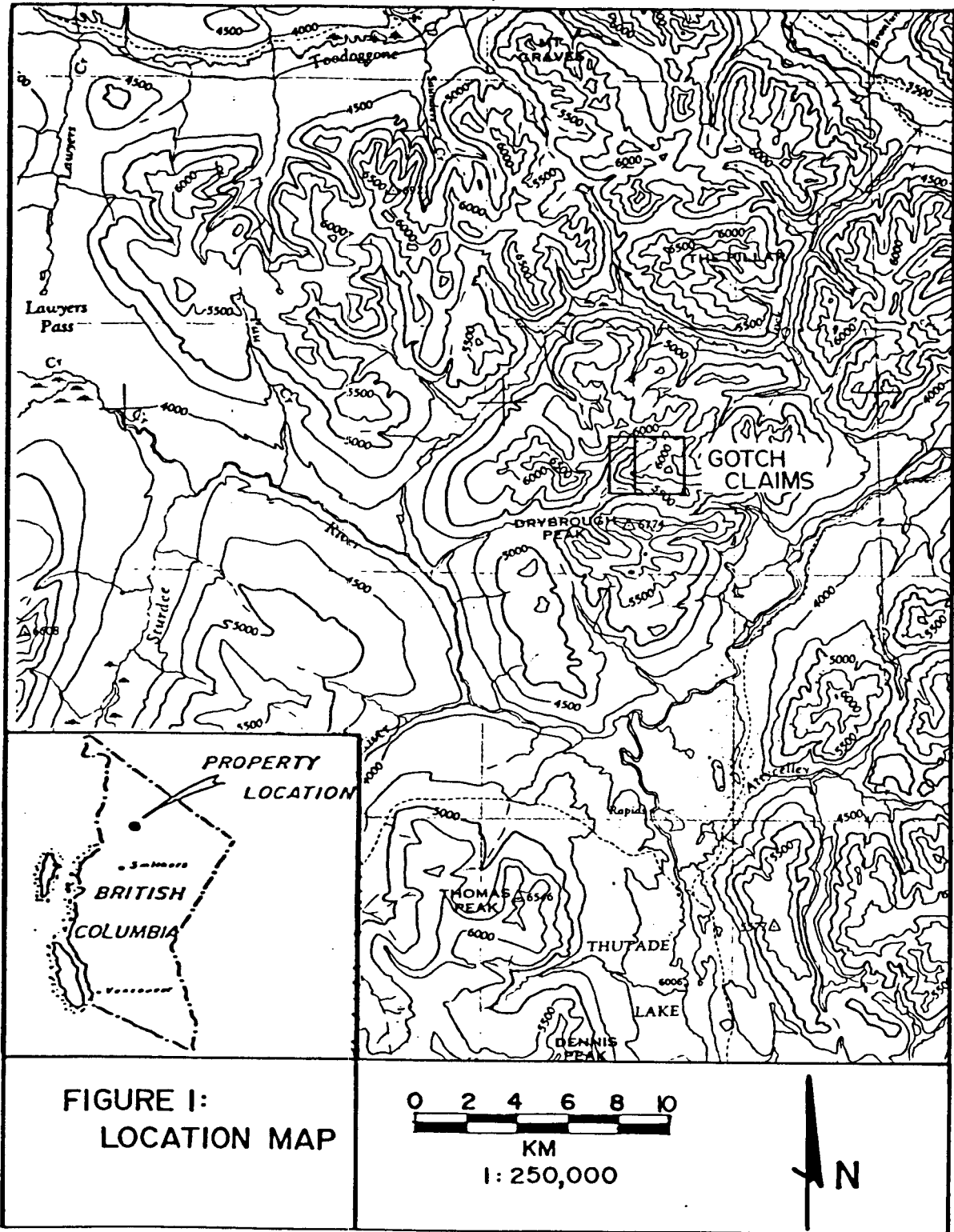


Figure 1. Location Map: Gotch 1 and Gotch 2 Claims

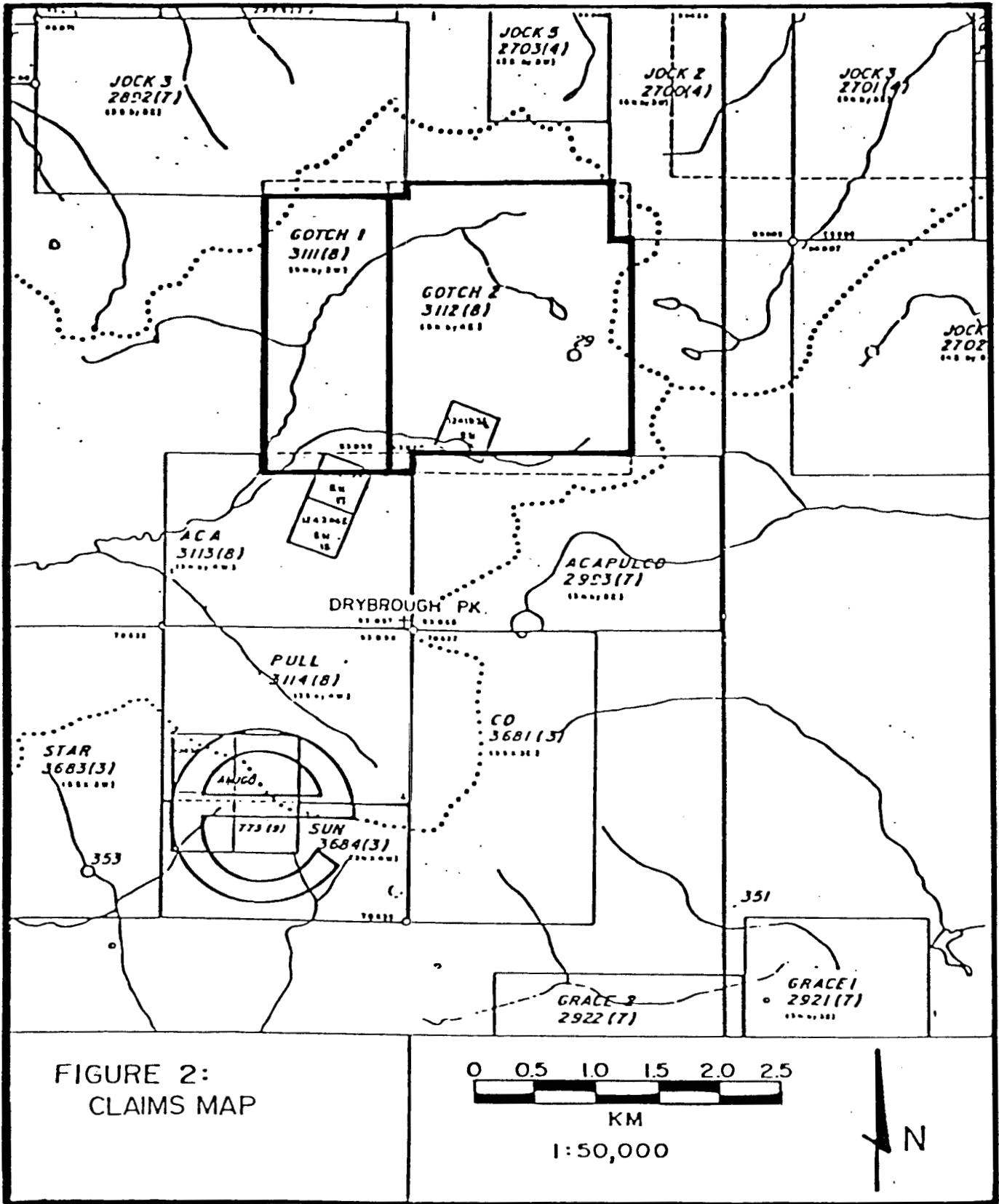


Figure 2. Claims Map: Gotch 1 and Gotch 2 Claims

GEOLOGY, ALTERATION AND MINERALIZATION

The claims are underlain by volcanic rocks and derived sediments, similar to those described by Gabrielse et al (1975) as Upper Triassic Takla and Lower Jurassic Hazelton and Toodoggone Group volcanics (Figure 3).

The Takla-type volcanics consist of subaqueous andesitic tuffs, breccias and derived greywacke and conglomerate, overlain by augite porphyritic andesites. Calcite, chalcedony and zeolite-filled amygdules up to 15 mm in diameter form as much as 30% of the augite porphyry.

Overlying the Takla volcanics are plagioclase-bearing tuff, lahar, pyroclastic breccia, conglomerate and mudstone, possibly of the Lower Jurassic Hazelton Group. They are characterized by intense, pervasive, mottled hematite and chlorite-epidote alteration, which could indicate a transition from subaqueous to subaerial depositional environment. The plagioclase phenocrysts are fine to medium grained, white, lath-shaped crystals.

The thickest and most extensive volcanics on the claims are quartz-feldspar porphyritic andesites of the Toodoggone Group. These vary in texture from crystal and lapilli tuffs to greywacke. Coarse pyroclastics are generally absent.

Dikes and stocks of feldspar hornblende porphyry intrude the volcanics. Staining indicates that over 90% of the feldspar phenocrysts are plagioclase and over 50% of the groundmass is potassic feldspar.

Faulting in the area is complex. Only the more prominent structures are drawn on Figure 3. Fractures which controlled the emplacement of quartz-gypsum-calcite veins are related primarily to 110° and 135° trending faults. Gossans formed by oxidation of pyritized volcanics also occur on these trends. Intense leaching and clay alteration occur on a later north-trending fault. The latest stage of faulting trends 040° and postdates hydrothermal activity in this area. Slickensiding indicates oblique shearing.

The distribution of quartz breccia zones is illustrated in the insert in Figure 3. Gypsum (+ barite ?) and calcite are other common vein constituents. Chalcopyrite, pyrite, galena and specularite are rare. Quartz is clear to milky, colourless, grey or rarely amethystine, and banded to coarsely crystalline. Both sheared and open space textures are present in the veins, the latter being predominant. Chlorite and epidote alteration is ubiquitous in the wall rock adjacent to quartz veins. Argillic alteration is common in wall rock in the Toodoggone volcanics. Potassic feldspar alteration is associated with veins on the southernmost east-west trending ridge.

To date, no economic grade mineralization has been discovered on the property. However, quartz breccia samples run as high as 915 ppb gold and 49.9 ppm silver.

GEOCHEMICAL SOIL AND ROCK SAMPLING

Soil samples were taken at 100 to 150 metre intervals on traverses at approximately constant elevation. Pacing or Topofil was used to control distance and the sample

localities were plotted on a topographic map at a scale of 1 centimetre to 500 metres (1980) or 250 metres (1981). The soil was placed in brown paper envelopes and soil characteristics such as grain size, colour and amount of organic matter were noted. All sample sites were marked with surveyor's flagging. Soil horizons are poorly developed in the area.

Grab rock samples were analysed from outcrops with favourable geology. These results were followed up by selectively sampling the main quartz breccia zones.

GEOCHEMICAL ANALYSIS

Samples were sent to Min-En Laboratories and were analysed for gold, silver, lead, zinc and copper. The analytical procedure for each element is briefly described below:

The samples are dried at 95^o C. Soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed and pulverized by ceramic plated pulverizer.

For gold, a suitable sample, weight 5 or 10 grams, is pretreated with HNO₃ and HClO₄ mixture.

After pretreatment, the samples are digested with Aqua Regia solution, and after digestion the samples are taken up with 25% HCl to suitable volume.

Sample solutions are prepared with Methyl Iso-Butyl Ketone for the extraction of gold.

With a set of suitable standard solutions, gold is analysed by Atomic Absorption instruments. The obtained detection limit is 5 ppb.

For silver, lead, zinc, and copper, samples weighing 1.0 gram are digested for 6 hours with HNO₃ and HClO₄ mixture.

After cooling, the samples are diluted to standard volume. The solutions are analysed by Atomic Absorption Spectrophotometers using the CH₂H₂- Air Flame combination for silver, copper, lead and zinc.

INTERPRETATION

Gold, silver, copper, lead and zinc analyses for soils and rocks are plotted on Figures 4a to 4e respectively. Triangles are completely blackened for anomalous values and partially for threshold values.

Values over most of the claims area are in the background range; threshold values are associated with gossans. One anomalous grab soil from a gossan ran 175 ppb gold and 13.6 ppm silver. The amount of sulphide, in particular pyrite, appears to govern the geochemical signature of the area.

CONCLUSIONS AND RECOMMENDATIONS

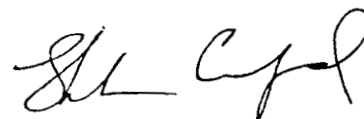
An extensive zone of quartz vein breccia occurs on the claims. Samples obtained to date carry subeconomic amounts of gold and silver. There is little evidence for much higher grades as the vein breccias are quite uniform in character and vein density. With the exception of one sample, no gold-silver anomalies of interest occur in the soils. The area around this sample should be prospected and sampled in detail.

CERTIFICATE OF QUALIFICATIONS

I, SHEILA A. CRAWFORD, of Vancouver, B.C., hereby certify that:

1. I hold an Honours B.Sc. degree in geology from Carleton University, Ottawa, Ontario.
2. I am a geologist, employed by SEREM Ltd. of 300 - 535 Thurlow Street, Vancouver, B.C., V6E 3L2.
3. I have worked in geological field work or mineral exploration since 1976.
4. I personally examined the property, and the field work described in this report was carried out under my supervision.
5. I have no financial interest in the claims covered by this report or in SEREM Ltd.

Dated this 15th day of September, 1981
at Vancouver, B.C.



Sheila A. Crawford,
Geologist.

STATEMENT OF EXPENDITURESAnalyses

Soil samples:

1980:	26	analysed for Au, Ag, Cu, Pb, Zn	@ \$ 8.85	\$ 230.10
1981:	45	" " Au, Ag, Cu, Pb, Zn	@ \$10.55	474.75
	3	" " Au, Ag, Cu, Pb	@ \$ 9.65	28.95
	1	" " Au, Ag, Cu	@ \$ 8.75	8.75

Rock samples:

1981:	26	analysed for Au, Ag, Pb	@ \$10.15	263.90
	10	" " Au, Ag	@ \$ 9.25	92.50
	1	" " Au, Ag, Cu, Pb	@ \$11.05	11.05

Shipping cost from Smithers to Vancouver laboratory

112 samples	@ \$.30	<u>33.60</u>
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\$1,143.60

Field Wages

1980 Field Season

Soil Sampling: July 25, 1980

J. Rushton	1 day @ \$ 50/day	\$ 50.00
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1981 Field Season

Soil and Rock Sampling, Prospecting:

July 24, 25, 26; August 7, 1981

C. Lormand	2 days @ \$ 50/day	100.00
C. Greig	1 day @ \$ 50/day	50.00

Mapping and Evaluation:

S. Crawford	3 days @ \$ 92/day	276.00
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Evaluation:

M. Vulimiri	½ day @ \$106/day	<u>53.00</u>
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\$ 529.00

Board, Lodging and Field Expenses

1980:	1 day @ \$ 47.04	\$ 47.04
1981:	6½ days @ \$ 52.00 (estimated)	<u>338.00</u>

\$ 385.04

Continued .../10

STATEMENT OF EXPENDITURES (Continued)Transportation

Helicopter: 1980	\$310/hour + \$102/hour fuel		
	0:50 minutes	\$	343.33
1981	\$365/hour + \$110/hour fuel		
	2:50		<u>1,345.80</u>
			\$1,689.13

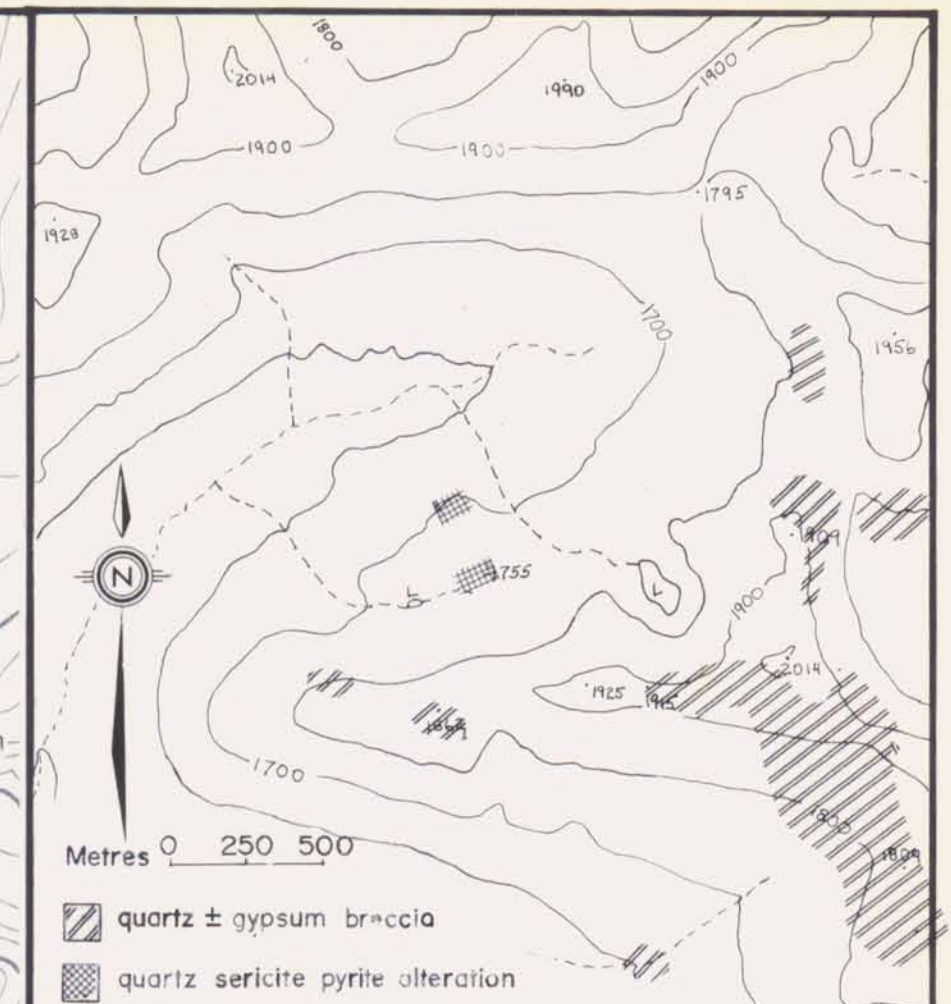
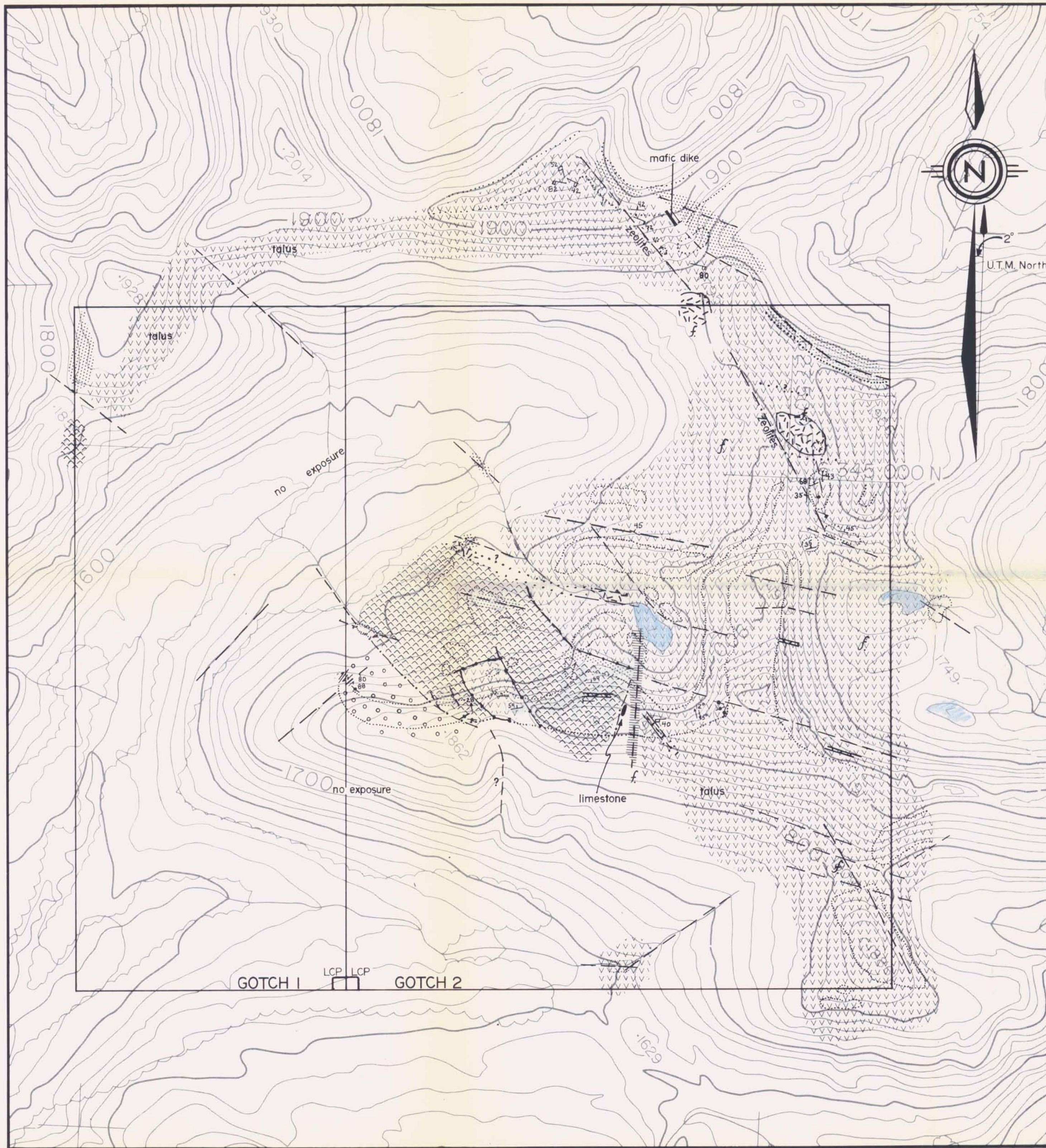
Topographic Map

1:10,000 scale, 20 metre contour interval		\$	360.00
(Prepared by Burnett Resources)			

Report Writing and Map Preparation

S. Crawford	2 days @ \$92	\$	184.00
Drafting	1 day @ \$85		<u>85.00</u>
			\$ <u>269.00</u>
			<u><u>\$4,375.77</u></u>

TOTAL



Metres 0 250 500

- quartz ± gypsum breccia
- quartz sericite pyrite alteration

LEGEND

- Hornblende feldspar porphyritic dikes and stocks.
- Quartz feldspar crystal tuff, lapilli tuff, volcaniclastics and greywacke; locally highly oxidized, hematitic (Toodoggone).
- Plagioclase crystal tuff, lahar, pyroclastic breccia, conglomerate—variable hematite and chlorite-epidote alteration (Hazelton?).
- Augite and plagioclase porphyritic flows, amygdaloidal flows, subaqueous volcaniclastics, derived sediments (Takla).
- fault trace
- geological contact; fault contact
- outcrop, felsenmeer
- gossan
- leached, clay altered
- fracture plane and dip, epidotized fracture quartz vein
- shear plane and dip
- slickensides and plunge
- bedding plane and dip

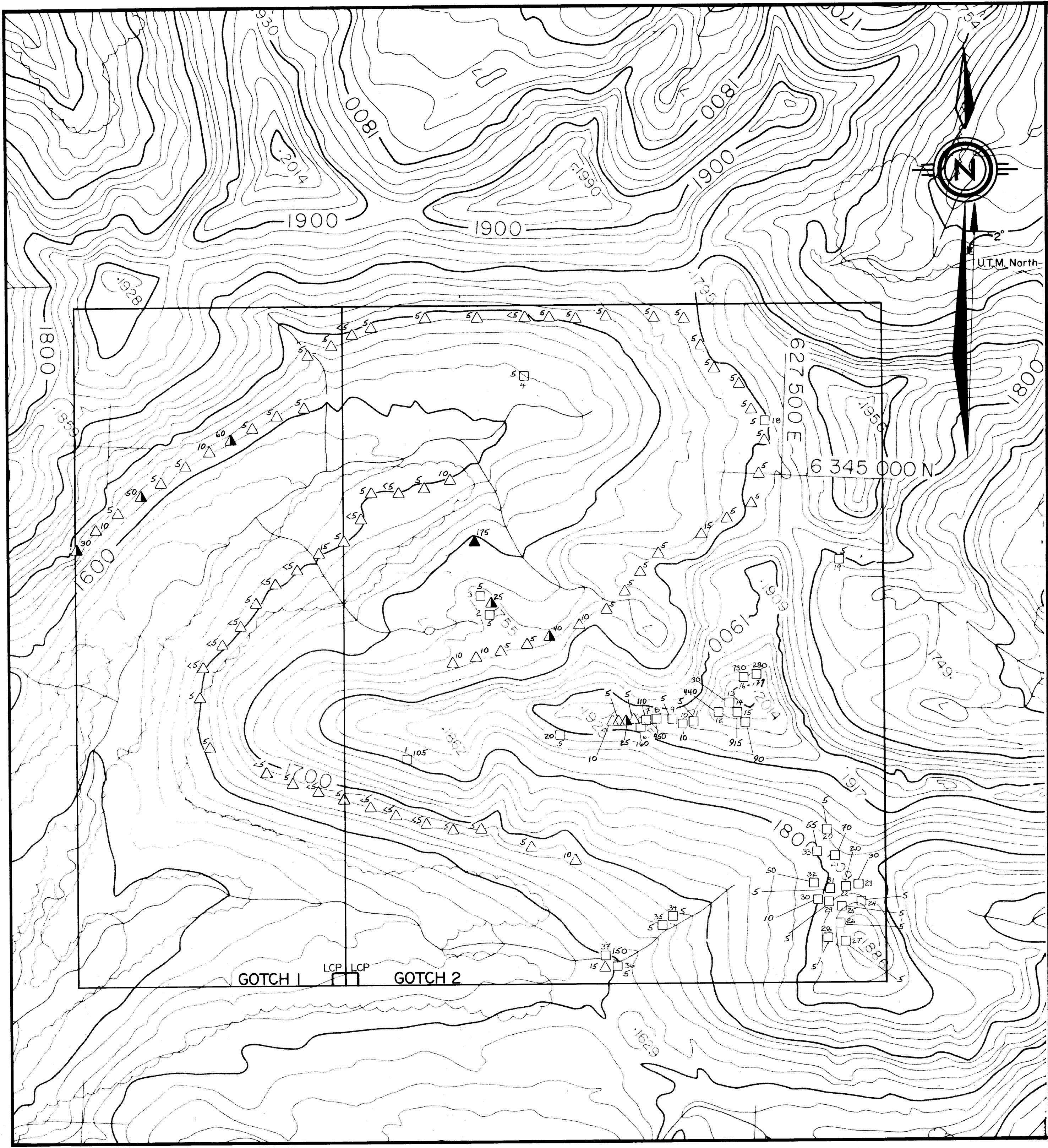
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
9466
NO.

SEREM LTD.

PROJECT: **TOODOGGONE**

TITLE: **GOTCH CLAIMS GEOLOGY**

DATE: SEPT. 1981	DATA: S. CRAWFORD
N.T.S: 94E/7W	DRAWN: C.G.
SCALE: 1:10,000	FIGURE: 3
0 100 200 300 400 500 metres	



LEGEND

- △ Soil sample, ppb Au.
- Rock sample, ppb Au.
- △ <20 ppb
- ▲ 20-39 ppb
- ▲ ≥ 40 ppb

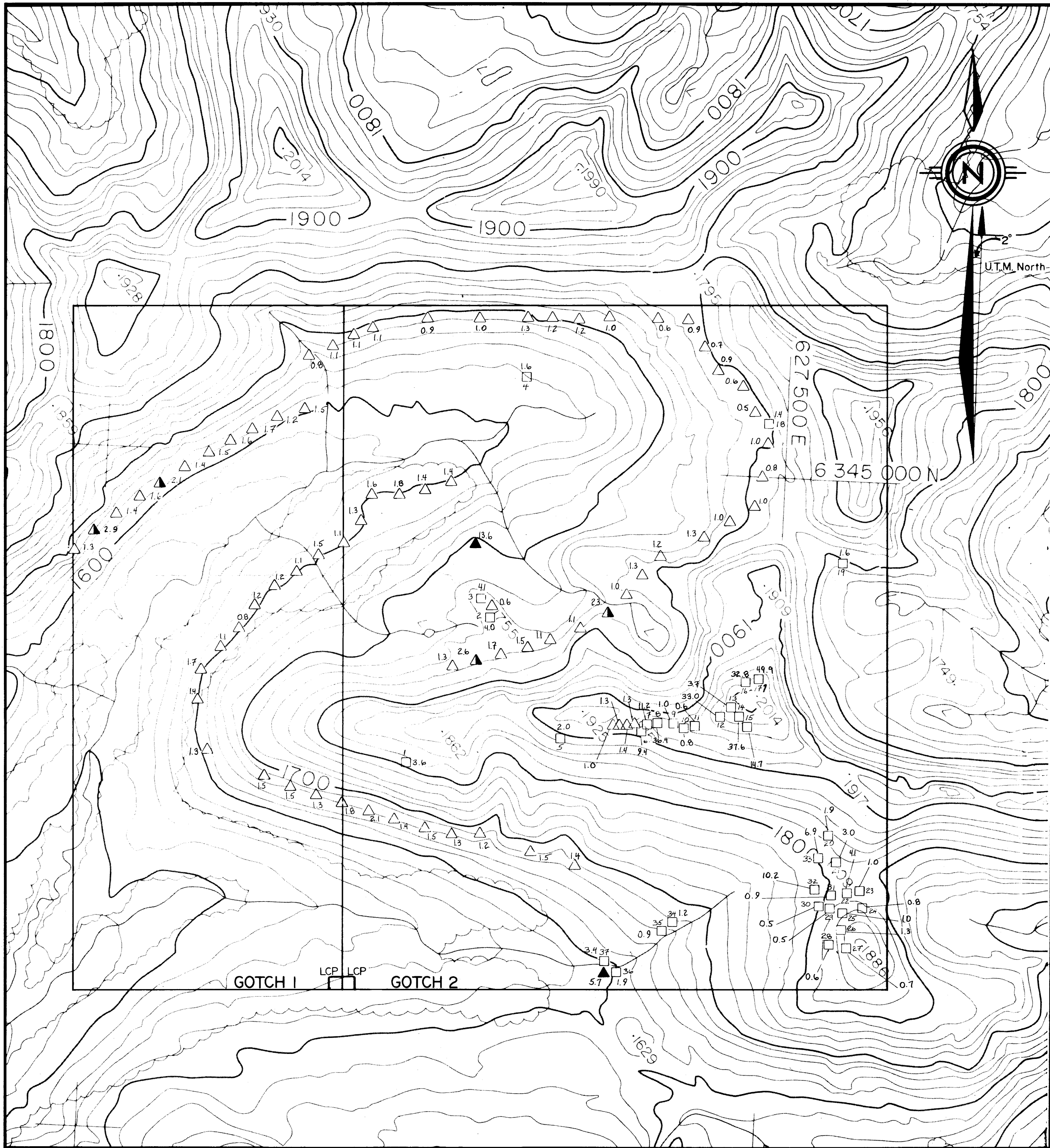
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ASSESSMENT REPORT
9466
NO.

SEREM LTD.

PROJECT: **TOODOGGONE**

TITLE: **GOTCH CLAIMS
GOLD
IN SOIL AND ROCK SAMPLES**

DATE: SEPT. 1981	DATA: S. CRAWFORD
N.T.S.: 94E/7W	DRAWN: C.G.
SCALE: 1:10,000	<i>[Signature]</i>
FIGURE: 4a	



LEGEND

- △ Soil sample, ppm Ag
- Rock sample, ppm Ag

- △ <2.0 ppm
- ▲ 2.0-3.9 ppm
- ▲ ≥4.0 ppm

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9466
NO.

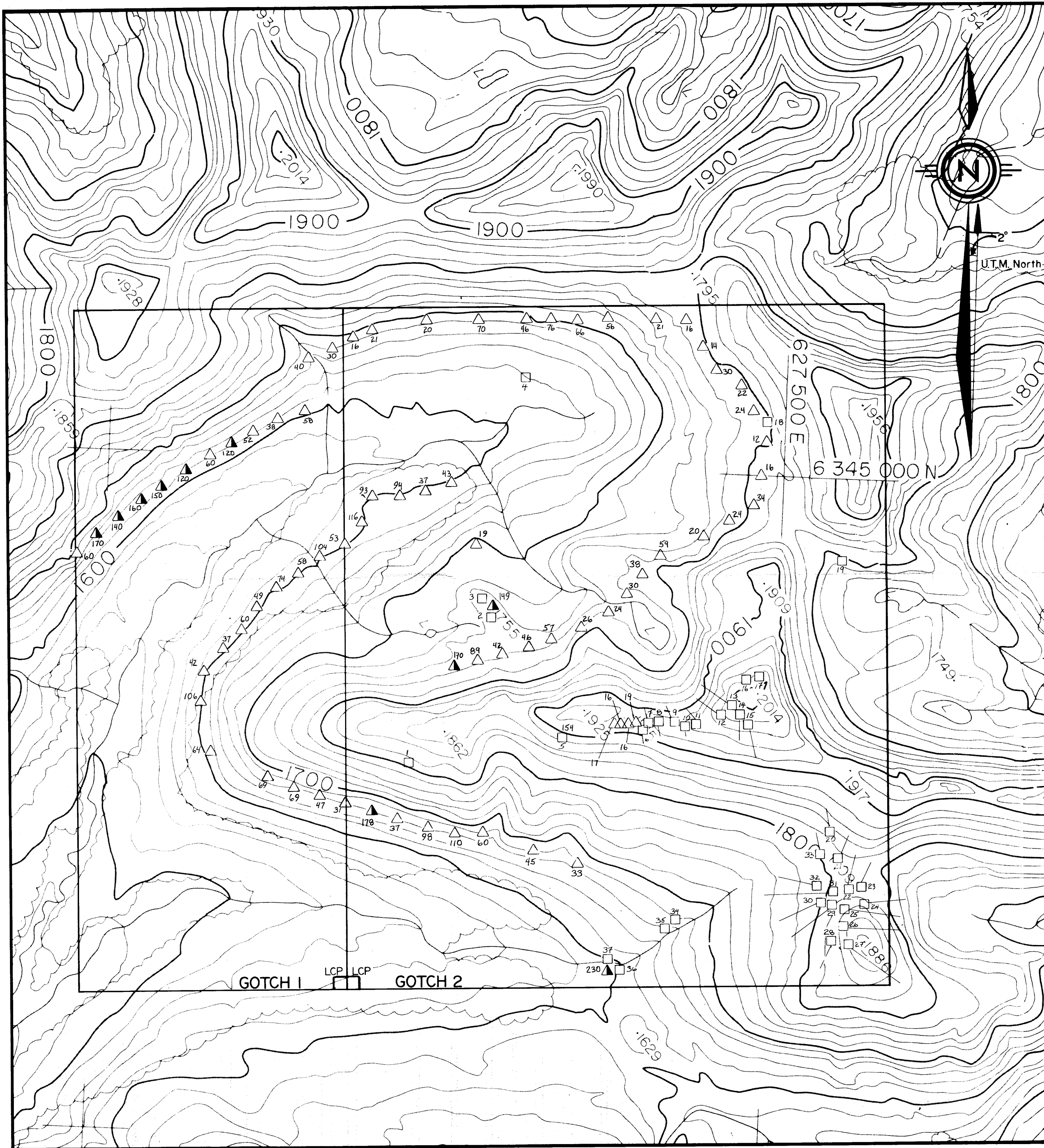
SEREM LTD.

PROJECT: **TOODOGGONE**

TITLE: **GOTCH CLAIMS
SILVER
IN SOIL AND ROCK SAMPLES**

DATE: SEPT. 1981 DATA: S. CRAWFORD
N.T.S.: 94E/7W DRAWN: C.G.

SCALE: 1:10,000 FIGURE: **4b**



LEGEND

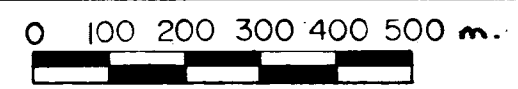
- △ Soil sample, ppm Cu.
- Rock sample, ppm Cu.
- △ < 120 ppm
- ▲ 120-239 ppm
- ▲ ≥ 240 ppm

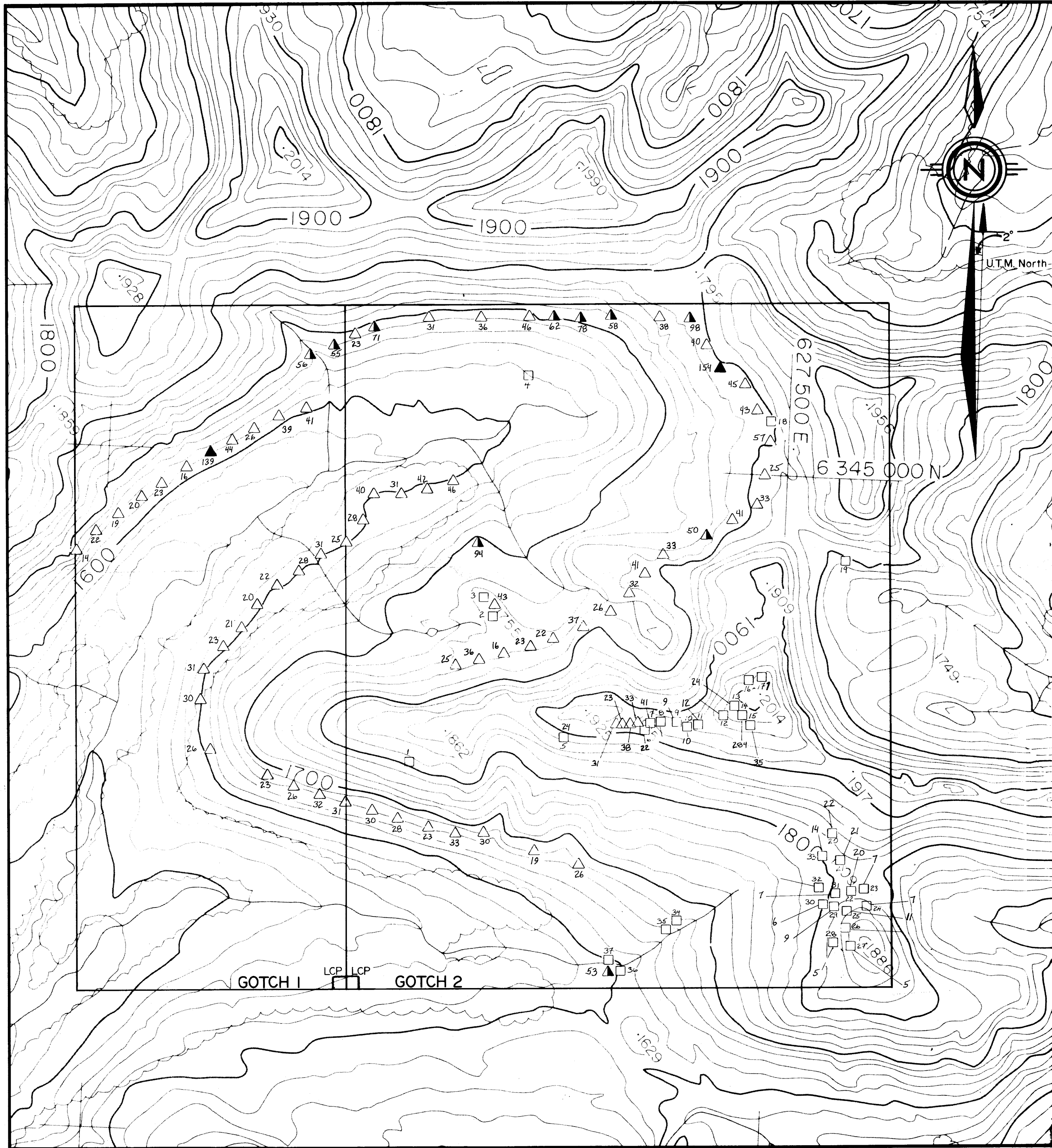
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ASSESSMENT REPORT
9466
NO.

SEREM LTD.

PROJECT: **TOODOGGONE**
TITLE: **GOTCH CLAIMS**
COPPER
IN SOIL AND ROCK SAMPLES

DATE: SEPT. 1981	DATA: S. CRAWFORD
N.T.S.: 94E/7W	DRAWN: C.G.
SCALE: 1:10,000	FIGURE: 4c





LEGEND

- △ Soil sample, ppm Pb.
- Rock sample, ppm Pb.

- △ < 50 ppm
- ▲ 50-99 ppm
- ▲ ≥ 100 ppm

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SEREM LTD.

PROJECT: **TOODOGGONE**

TITLE: **GOTCH CLAIMS
 LEAD
 IN SOIL AND ROCK SAMPLES**

DATE: SEPT. 1981	DATA: S. CRAWFORD
N.T.S.: 94E/7W	DRAWN: C.G.
SCALE: 1:10,000	<i>SC</i>
FIGURE: 4d	

