

YEIP  
86-032

SPRINGMOUNT OPERATING COMPANY LTD.

1986 EXPLORATION PROJECT NO. 2

Report On The Thunderbird South Exploration Trench

A. General

In June and July 1986 a Transverse Vein was discovered in the North-East Quadrant of The Thunderbird M.C. (see Exploration Report from August 12, 1986). In the latter part of August, a Cross-Trench was started approximately 500 feet South of No. 1 Trench at Section 1200 North and 1050 East Reference Line. The purpose of this Trench was to probe the South extension of the Vein. Work on the Project was accelerated, so it could be completed before the set-in of inclement weather conditions.

B. Cross-Trenching No. 4 Trench

This Trench was started on August 26, 1986 at Elev. 3790 and at 1050 ERL (see Dwg. Ex-3) where it was anticipated that the Vein could be intercepted with a great degree of certainty, after allowances had been made for possible lateral displacement of the Vein by the numerous Bedding Plane Faults which are abundant on this part of Keno Hill. After removal of the overburden, bedrock was encountered at Elev. 3755 in the form of grey fine-grained Quartzite which could not be penetrated by the Ripper and had therefore to be removed by drilling and blasting.

At Elev. 3730 a Schist Band was encountered which proved to be 20 feet thick. In this Schist, a weak "break" appeared, which is indicative of the possible existence of a vein. At Elev. 3720 mineralized particles started to appear in this "break" but it was not possible at that time to determine whether this "break" was a vein or just a minor "seam".

At this point the Trench was back in Quartzites. At Elev. 3710 Greenstone appeared in the Hanging Wall and with it the Vein became more distinct, carrying more Siderite as well as some small pieces of Galena.

2.

The depth of the Trench was now 80 feet, and it was suspected, that another Bank of Schist prevented stronger mineralization.

At Elev. 3690 the Trench could not be deepened any further due to the high walls and it was decided to collar an Adit at this elevation in order to penetrate Ore-bearing Strata. During the excavation of No. 4 Trench, the following quantities of materials were removed:

Overburden	11,318 M <sup>3</sup>
Bedrock	<u>10,270 M<sup>3</sup></u>
Total Material Excavated	21,588 M <sup>3</sup>

Overburden/Bedrock Ratio = 1.10:1

Approximately 70% of the Bedrock had to be broken by drilling and blasting before it could be removed from the Pit. A total of 498 - 6 ft. holes were drilled and blasted.

C. Adit

A 9 ft. by 9 ft. Adit was collared at Elev. 3690 and was driven on strike at a bearing of N. 10° E.

At a distance of 18 ft. from Sta. "U-300" a band of Graphitic Schist appeared in the Footwall of the Drift and on the Hanging Wall of the Vein. This Band of Schist which proved to be 5 feet thick, was butted up against the Vein, indicating vertical movement. Due to this movement, the Vein which at this point opened up to a width of 18 inches, contained only wet crushed Graphitic Schist and some minor amount of Siderite. As soon as the Drift was out of the Schist and into Quartzite, the mineralization of the Vein became stronger and at one point contained minor amounts of Galena. Samples of the Galena were taken and subsequently assayed. This Galena Sample which was highly oxydized, assayed at 577 oz. of Silver per ton. Twenty feet from the end of the last Schist Band, the Drift entered into a second layer of Graphitic Schist, which proved to have a thickness of 10 feet. The Dip of the Vein changed at this point from Northwest (reverse dip) to Southeast (normal dip). The Dip of the Vein is very steep (75 degrees) and is widening out further to 24 inches, containing mostly Siderite Crushed Galena particles,

Schist and broken Quartzite. The Galena was highly oxydized and had the general appearance of material which is usually found in the very top layer of Vein Structure.

After the Drift was advanced a total of 110 feet from Sta. U-300, it became apparent, that the main Ore-Shoot is below Elev. 3690 and the heading was stopped, pending further investigation to the South and at a lower Elevation.

#### D. Engineering

The Geological and Engineering Grids were extended to cover the Site of the Cross Trench and Adit with a precision of 1:10,000. Survey monuments were established around the Pit Site and Underground. The Workings were logged, survey and Cross-sectioned and Comprehensive Plans and Sections were drawn up.

#### E. Supervision

A Supervisor was present at the Pit-Site at all times throughout the Project.

#### F. Equipment Used

- 1 - D8-K Caterpillar with Ripper
- 1 - Gardener Denver Airtrack
- 1 - Gardener Denver 350 Compressor
- 1 - Wagner St-1 Scoop Tram
- 2 - Gardener Denver Jack-Legs
- 1 - Joy 8,000 CFM Air-Driven Fan

#### G. Cost Analysis of 9 ft. x 9 ft. Adit

Cost per 6 ft. advance:

Steel & Bits	\$ 82.50
Explosives	361.20
Compressed Air	315.45
Timber	86.75
Mucking & Trammig	327.40
Labour	<u>960.00</u>
TOTAL	\$2,133.30

Cost per ft. = \$355.55

Cost per cu. ft. = \$4.39

#### H. Expenditures

All equipment used at the Project is wholly owned by Springmount Operating Company Ltd. and all work was carried out

by Company Employees.

The Company is a duly registered Yukon Company and all employees are Yukon residents.

The Company does not use outside suppliers and all purchases are either made locally or in Whitehorse.

The expenses incurred for this Project are as follows:

1. Trenching

D-8-K Caterpillar: 395 hrs @ \$130/hr. =	\$51,350.00
Loader: 208 hrs @ \$60/hr. =	12,480.00
Drilling & Blasting: 2,988 L.F. @ \$3.50/ft. =	10,458.00
Supervision: 42 days @ 250/day =	<u>10,500.00</u>
Sub Total Trenching	\$84,788.00

Total Volume Excavated = 21,588 m<sup>3</sup>

2. 9 ft. x 9 ft. Adit

Steel & Bits	\$1,512.50
Explosives	6,622.00
Compressed Air	5,783.20
Timber	1,590.40
Mucking & Trammig	6,002.30
Labour	<u>17,600.00</u>
Sub Total Adit	\$39,110.40

Length of Adit: 110 L.F.

Cost per foot: \$355.55

3. Technical Services

Survey Crew: 12 days @ \$500/day =	\$6,000.00
Engineering: 10 days @ \$500/day =	<u>5,000.00</u>
Sub Total Technical Services	\$11,000.00

4. Summary

<u>Item</u>	<u>Total Cost</u>	<u>Amount Eligible</u>	<u>25% of Amount Eligible</u>
Trenching	\$84,788.00	\$84,788.00	\$21,197.00
Adit	39,110.40	9,777.60	2,444.40
Technical Services	<u>11,000.00</u>	<u>11,000.00</u>	<u>2,750.00</u>
Total	\$134,898.40	\$105,565.60	\$26,391.40

Start of Project - August 26th 1986

Completion of Project - October 10th 1986

## I. Conclusion and Recommendations

The excavation of No. 4 Trench and subsequent drifting, resulted in the discovery of an Ore Shoot, which may be mined economically at depth. The fact that the Vein changed dip and is now dipping 75 degrees Southeast is highly significant since a small deposit was mined several years ago on a Vein which lies approximately 120 feet to the East and which was dipping approximately 60 degrees Northwest.

It is quite within the realm of the possible that there is a connection between those two structures and, if the presently known dip of both Vein Faults continues, then the Veins could very well join at approximately Elev. 3550 between Sections 1150 N and 1400 N (see Dwg. Ex-4).

In order to explore this possibility it is recommended that Springmount Operating Company Ltd. initiate the following programme for the 1987 Season:

Excavate a Trench (No. 5 Trench) along the Thrust Fault Zone down to Elev. 3570 and between 900 ERL and 1200 ERL. The primary purpose of this Trench is to ascertain the position of the Vein North of the Thrust Fault, as well as its Westerly offset South of the Fault. Secondly, the Trench will also provide the necessary face-up for the Adit which is to be collared at 875 North Section and at 1070 ERL. The elevation of the foot-wall of the Adit to be 3570. The initial Cross-cut is to be driven for approximately 235 feet at an Azimuth of 032°. The Cross-cut is expected to intersect the West Vein after approx. 130 feet at 1000 N. Section and the East Vein at 225 feet at 1100 N. Section. At this point the heading becomes a Drift and is to be driven on strike at a heading of 006° for a distance of 340 feet to Section 1435 N. The South line drive (see Dwg. Ex-4) should then be driven as shown for a distance of 130 feet.

The 100 feet extension of the upper Adit (Elev. 3690) can now be driven and an exploratory Raise is to be driven on Section 1425 No. from the 3570 Drift up to the 3790 Adit pending completion of that heading. An exploratory Raise is also to be driven on Section 1425 N. from the 3570 Drift up to the old decline in order to explore the East Vein.

The West Vein should also be explored by driving a raise on Section 1225 N. up-dip to surface. (See Section 'B'-'B' Dwg. Ex-4).

This programme will yield the necessary information required to evaluate the two Vein systems.

Cost Estimate For The Proposed 1987 Exploration Programme

1. Trenching

Removal of Overburden 18,200 m <sup>3</sup> @ \$2.50 =	\$45,500
Excav. of Bedrock 20,600 m <sup>3</sup> @ \$4.50 =	<u>92,700</u>
Sub Total Trenching	\$138,200

2. Drifting & Cross-Cutting

3690 Drift Ext. 100 LF @ \$350/ft. =	\$35,000
3570 Adit - Cross-cut 235 LF @ \$350/ft. =	82,250
3570 N. Drift 340 LF @ \$350/ft. =	119,000
1215 W. Cross-cut 22 LF @ \$350/ft. =	7,700
3570 South Line Drive 130 LF @ \$350/ft. =	<u>45,500</u>
Sub Total Drifting & Cross-cutting	\$289,450

3. Raising

1425 E. Raise 103 LF @ \$300/ft. =	\$30,900
1425 W. Raise 104 LF @ \$300/ft. =	31,200
1225 W. Raise 108 LF @ \$300/ft. =	32,400
Slashing 1000 cu. ft. @ \$5.50	<u>5,500</u>
Sub Total Raising	\$100,000

4. Engineering & Supervision

Supervision 200 days @ \$250/day	\$50,000
Survey Crew 180 days @ \$300/day	54,000
Consulting Fees 10 days @ \$600/day	<u>6,000</u>
Sub Total Engineering & Supervision	\$110,000

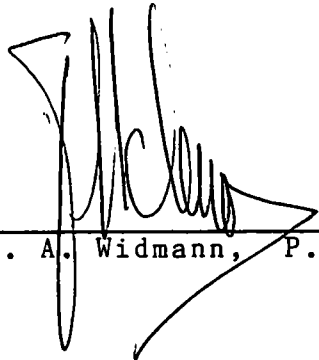
5. Accommodation & Meals

Lodging 1630 man days @ \$20/day =	\$32,600
Food 1630 man days @ \$30/day =	<u>48,900</u>
Sub Total Accommodation & Meals	\$81,500

Cost Summary

1. Trenching	\$138,200
2. Drifting & Cross-cutting	289,450
3. Raising	100,000
4. Engineering & Supervision	110,000
5. Accommodation & Meals	<u>81,500</u>
Sub Total	\$719,150
Administration & Overhead 10%	<u>71,900</u>
Total Cost 1987 Programme	\$791,050

October 10th 1986.



F. A. Widmann, P. Eng.

SPRINGMOUNT OPERATING COMPANY LTD.

BREAKDOWN OF OPERATING COST/HOUR  
FOR D8-K CATERPILLAR TRACTOR

Ownership	\$ 20.80
Labor (Loaded)	25.00
Fuel	25.00
Lube - Filters & Grease	5.00
Welding - Wear Plates & Small repairs	5.00
Consumables - Cutting Edges, Corner Bits, Ripper Tips. Bolts, Nuts & Pins etc.	10.00
1500 hr. Undercarriage - Turn Pins Segments, Labor & Freight	3.50
3000 hr. Undercarriage Complete	15.00
Freight to Whitehorse & Return for Undercarriage Overhaul	1.00
6000 hr. Driveline Overhaul	7.50
12000 hr. Replacement - \$250,000. Less \$50,000. Trade In	16.75
Insurance	3.50
Mobilization & Demobilization	<u>1.00</u>
TOTAL COST PER HOUR	\$139.05

SPRINGMOUNT OPERATING COMPANY LTD.

BREAKDOWN OF OPERATING COST/HOUR  
FOR 966 C CATERPILLAR LOADER

Ownership	\$12.50
Labor (Loaded)	25.00
Fuel	15.00
Lube, Filters & Grease	2.50
Small Repairs	2.50
Tires	3.20
Consumables (Bucket Teeth. Etc.)	2.00
6000 hr. Drive Train, Pins & Bushings	5.00
Replacement 12000 hr.	10.00
Mobilization & Demobilization	1.00
Insurance	<u>2.00</u>
TOTAL COST PER HOUR	\$80.70



ASSAYS Re: Designation # EIP 86-032

No. 1 Sample

This Sample was taken in the Adit at Sta. U-300 + 95 ft. At the East Wall Lifters, and consisted of Vein Gauge, Siderite and Crushed Galena.

No. 2 Sample

This Sample was taken in the Adit at Sta. U-300 + 93 ft. at the East Wall Lifters, and consisted of Galena.

No. 3 Sample

This Sample was taken in the Adit at the Face Sta. U-300 + 110 Ft. West Side, and consisted of Vein Gauge.

No. 4 Sample

This Sample was taken in the Adit at the Center of the Face and consisted of Quartzite.

No. 5 Sample

This Sample was taken in the Adit at the West Side of the Face, and consisted of Vein Gauge.

ASSAY RESULTS

<u>Sample No.</u>	<u>Ag.(oz/ton)</u>	<u>Pb%</u>	<u>Zn%</u>
1	175.54	15.68	0.19
2	282.76	76.10	0.01
3	5.60	0.42	0.01
4	1.80	0.14	0.01
5	5.30	0.54	0.05

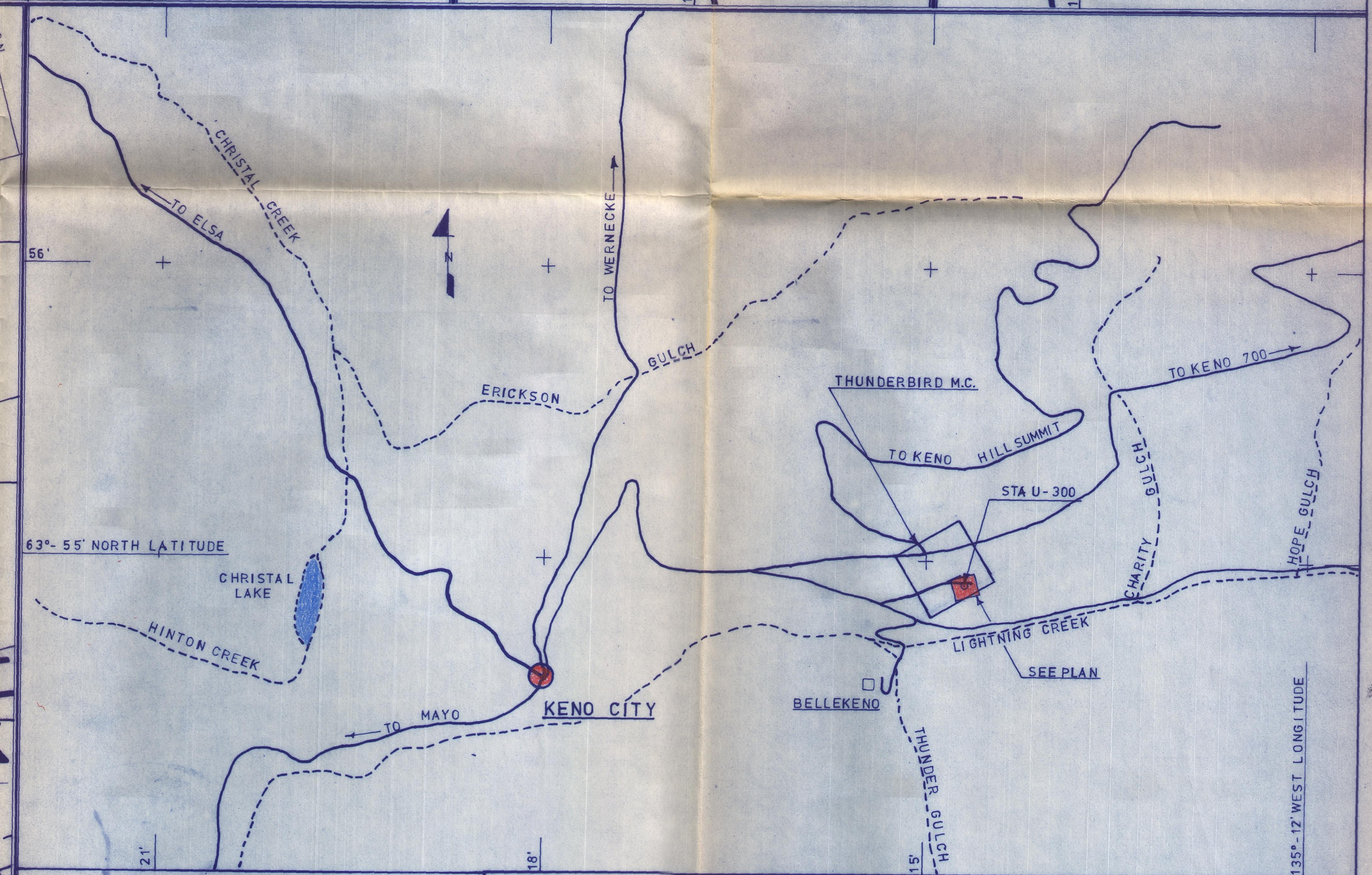
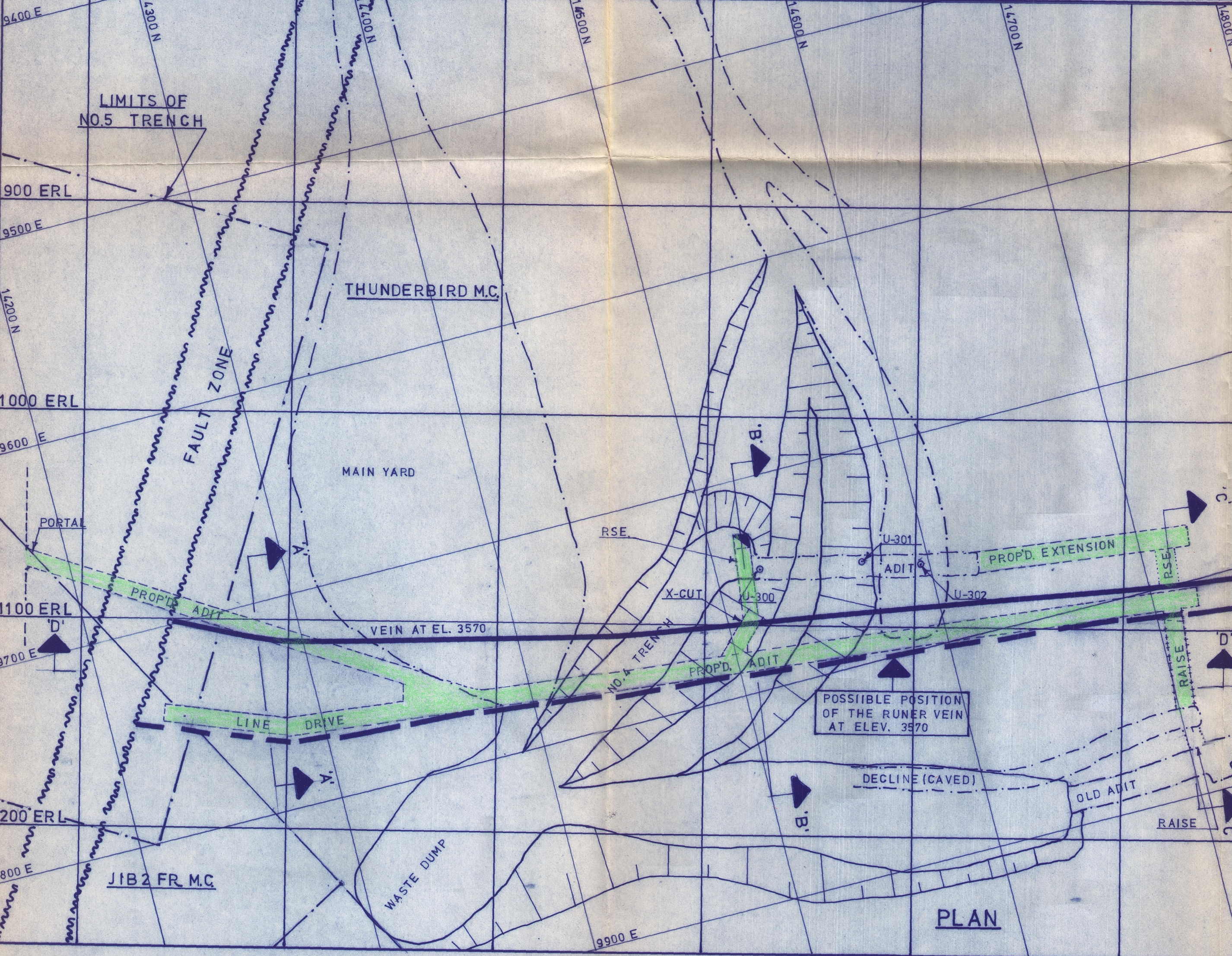
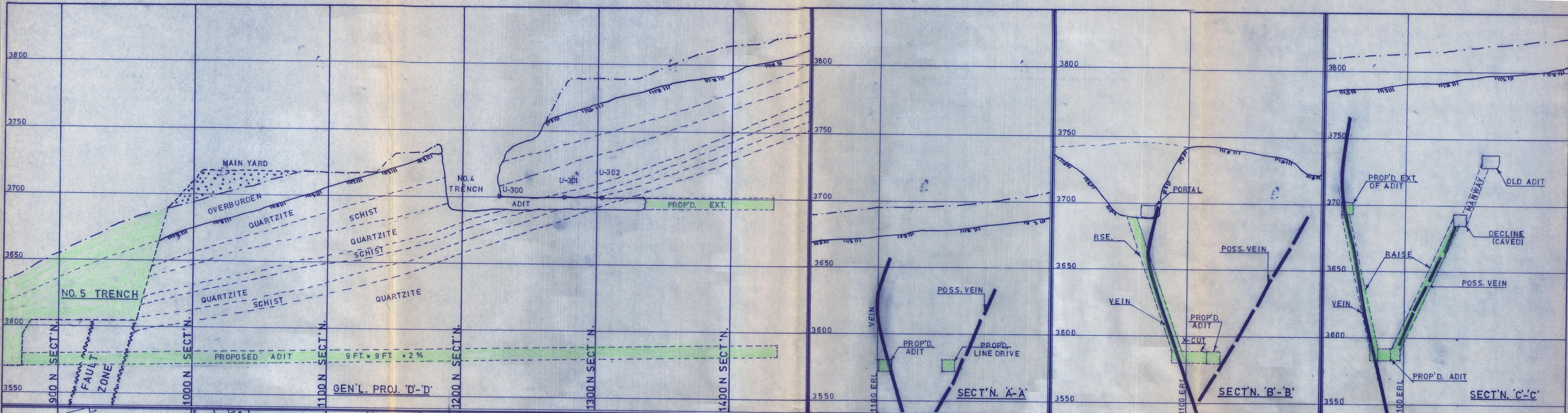
The above Samples were Assayed by United Keno Hill Mines Ltd.

Yukon Energy, Mines & Resources Library

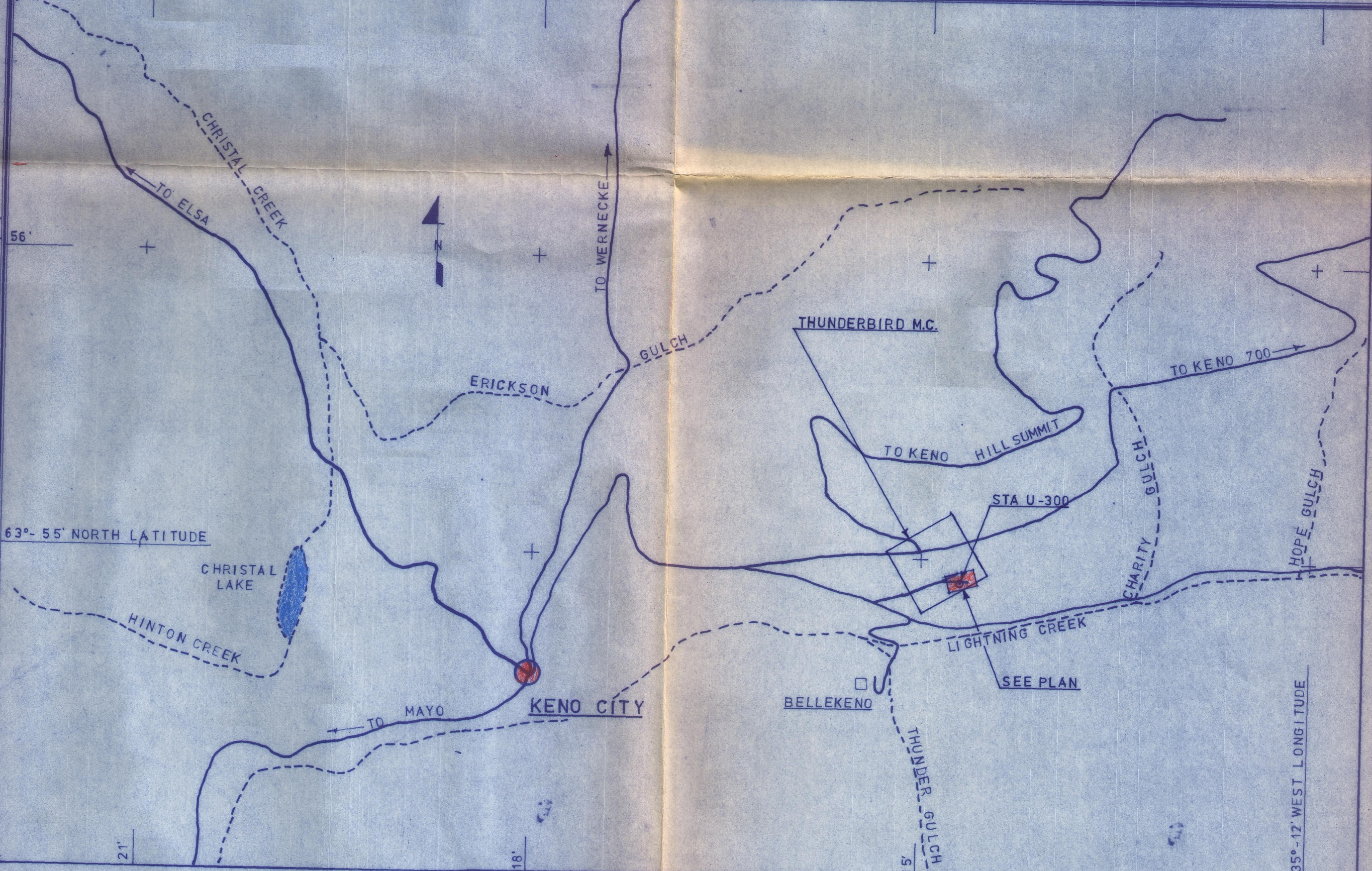
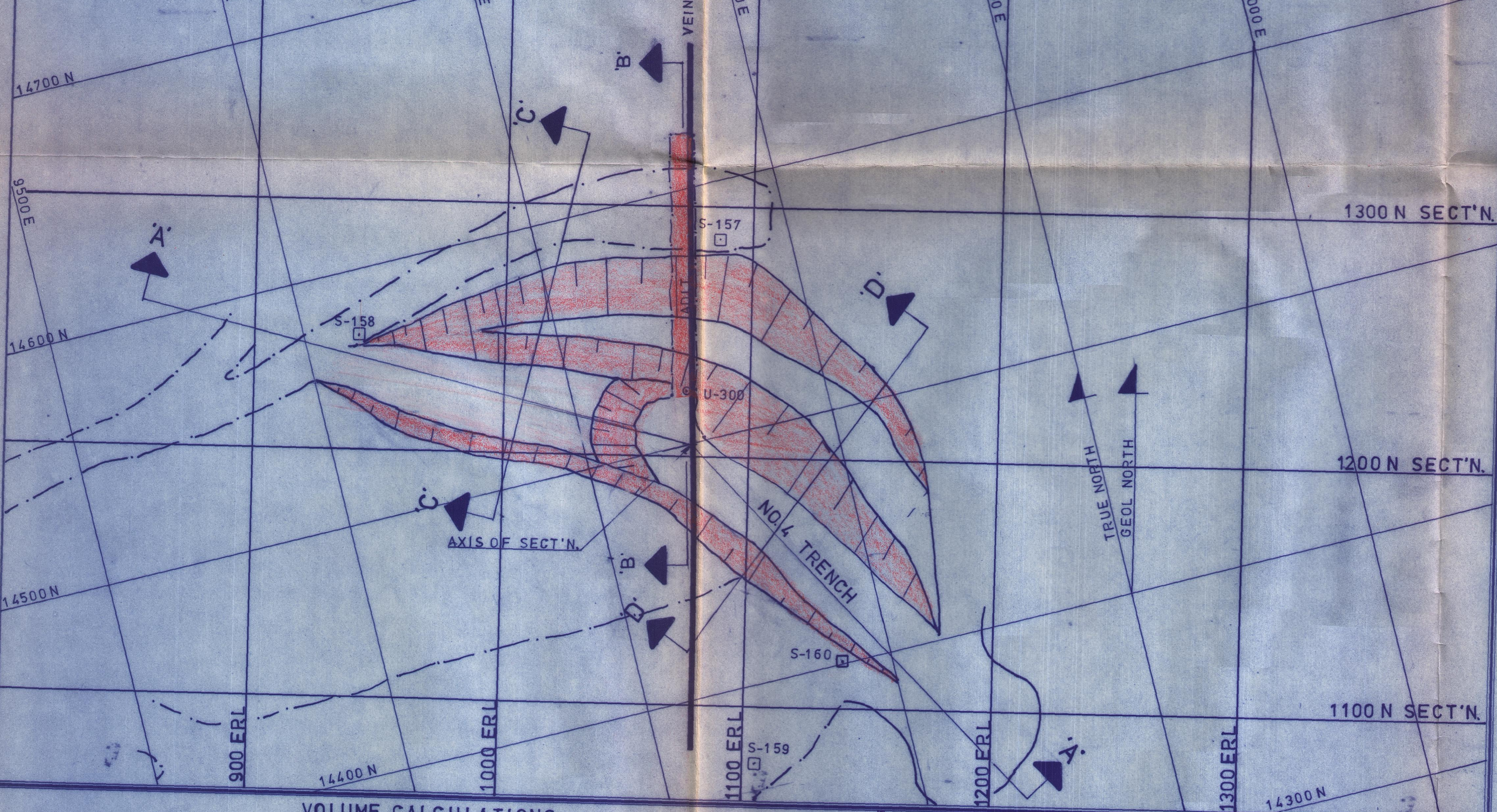
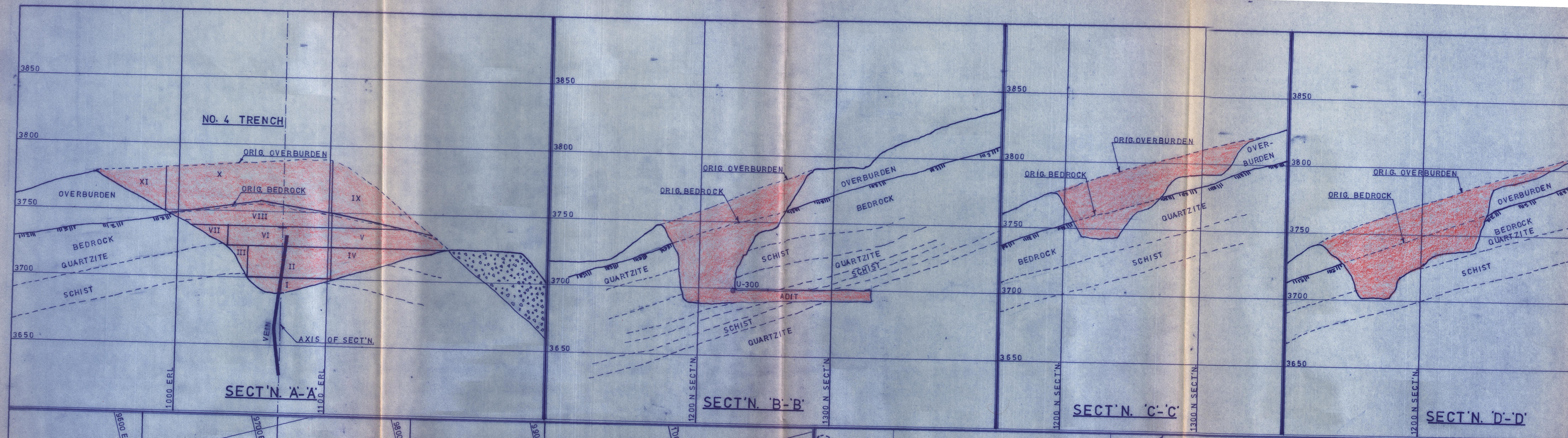


1000711719

**DATE DUE**



<b>LOCATION PLAN</b> SCALE: 1" = 2000' 	
<b>SPRINGMOUNT OPERATING COMPANY LTD.</b> <b>EXPLORATION-THUNDERBIRD M.C.-1987</b> <b>NO. 5 TRENCH &amp; ADIT- PLAN &amp; SECTIONS</b>	
SCALE: 1" = 40' DATE: OCT. 5, 1986 DRAWN: F.A.W.	<b>EX-4</b>



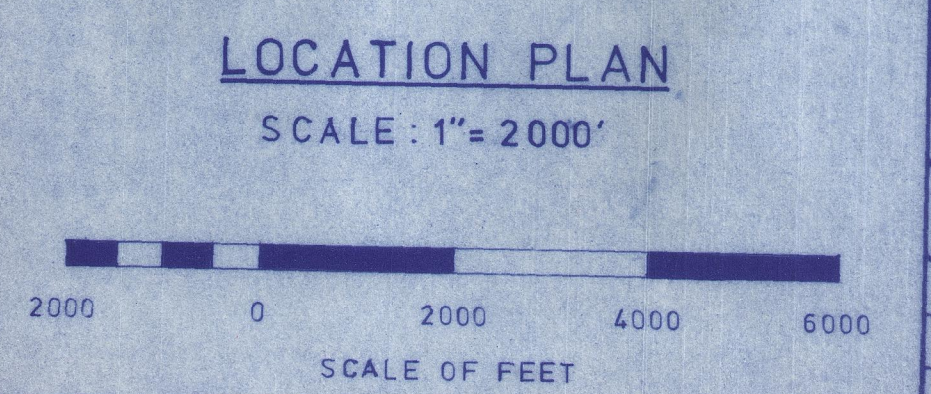
**VOLUME CALCULATIONS**

BLOCK	OVERB.SF	ROCK SF	WIDTH FT.	OVERB. CU.FT.	ROCK CU.FT.	OVERB. CU.YDS.	ROCK CU.YDS.	TOTAL CU.YDS.
I	-	358	40	-	14320	-	530	530
II	-	1440	40	-	57600	-	2133	2133
III	-	184	30	-	5520	-	204	204
IV	38	1080	40	1520	43200	56	1600	1656
V	590	1200	65	38350	78000	1420	2889	4309
VI	-	1125	57	-	64125	-	2375	2375
VII	-	240	35	-	8400	-	311	311
VIII	111	1430	64	7104	91520	263	3390	3653
IX	1400	-	75	105000	-	3889	-	3889
X	3904	-	55	214720	-	7953	-	7953
XI	750	-	44	33000	-	1222	-	1222
<b>TOTAL</b>				<b>399,694</b>	<b>362,685</b>	<b>14,803</b>	<b>13,432</b>	<b>28,235</b>

**METRIC CONVERSION**

1 m<sup>3</sup> = 35.3144 CU.FT.

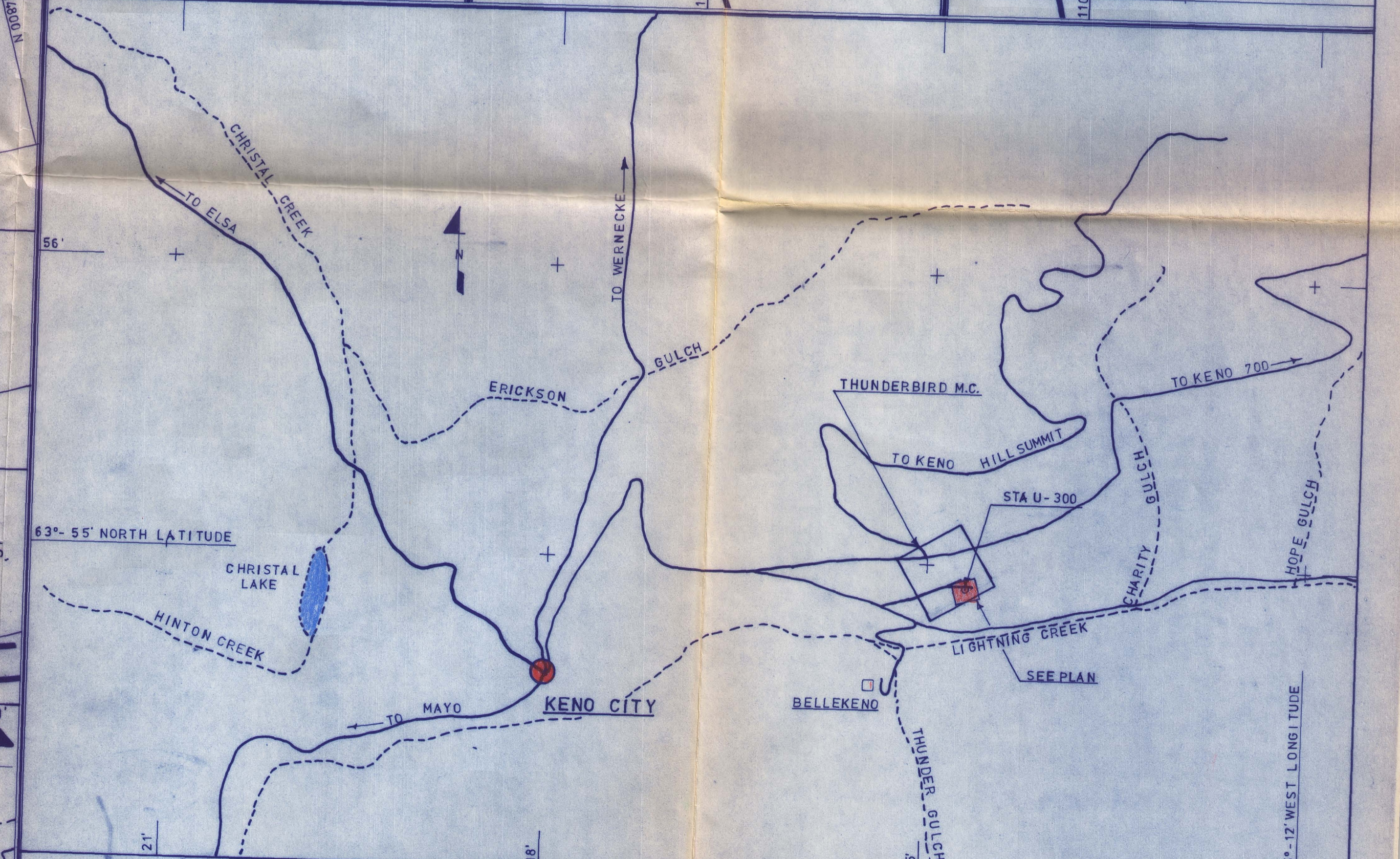
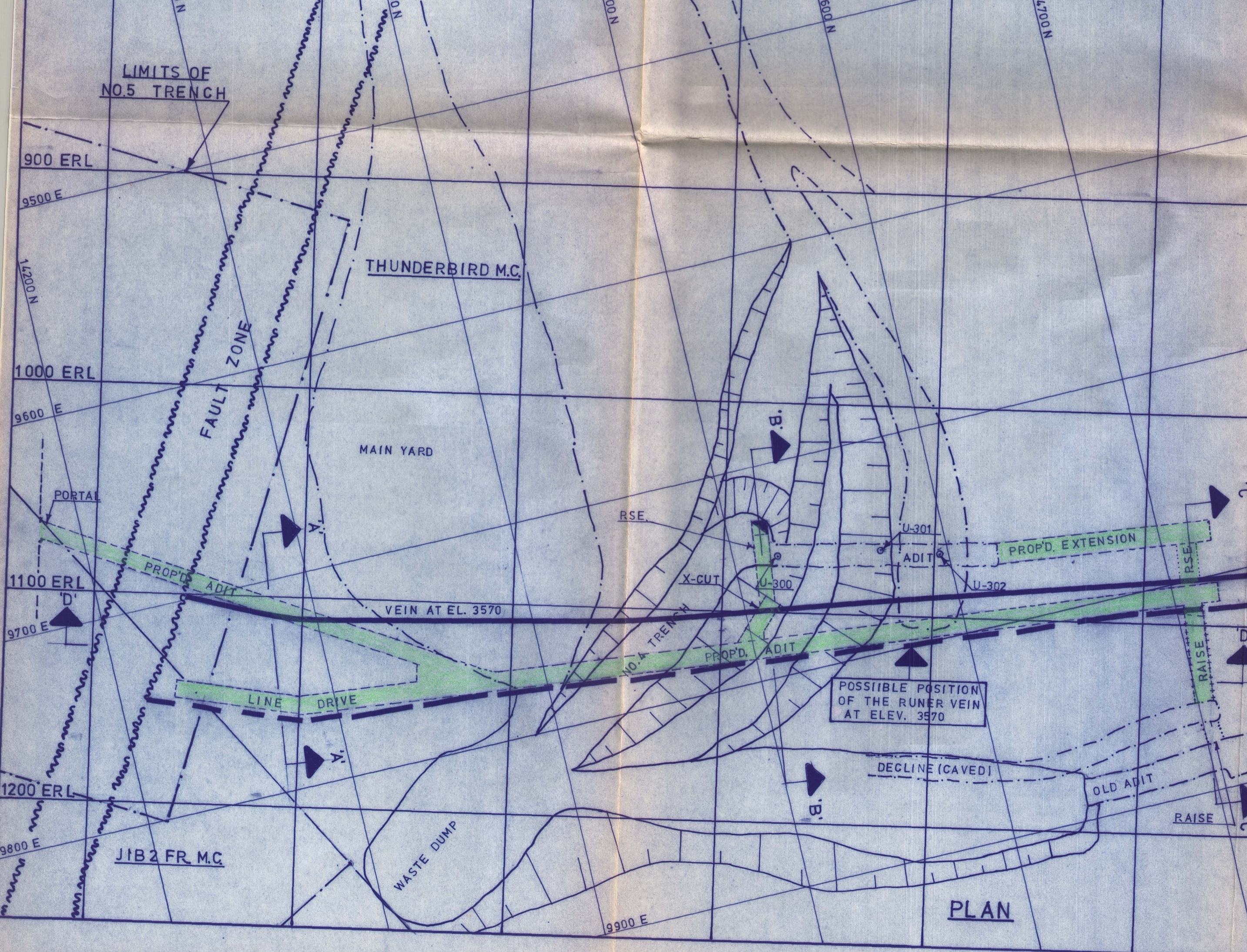
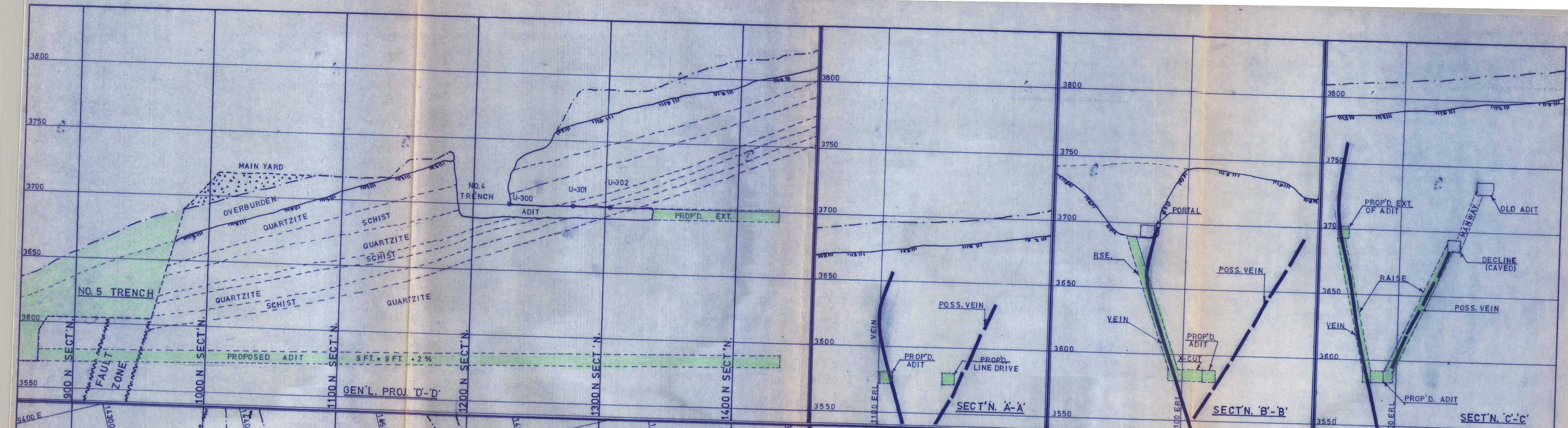
OVERBURDEN:	399,694 CU.FT.	=	11,318 m <sup>3</sup>
ROCK EXCAV:	362,685 CU.FT.	=	10,270 m <sup>3</sup>
<b>TOTAL EXCAV:</b>	<b>762,379 CU.FT.</b>	=	<b>21,588 m<sup>3</sup></b>
<b>ADIT:</b>	<b>104.5 L.F.</b>	=	<b>31.85 m</b>



**SPRINGMOUNT OPERATING COMPANY LTD.**  
**EXPLORATION-THUNDERBIRD M.C.**  
**NO. 4 TRENCH & ADIT-PLAN & SECTIONS**

SCALE: 1" = 40'  
 DATE: OCT. 7, 1986  
 DRAWN: F. A. W.

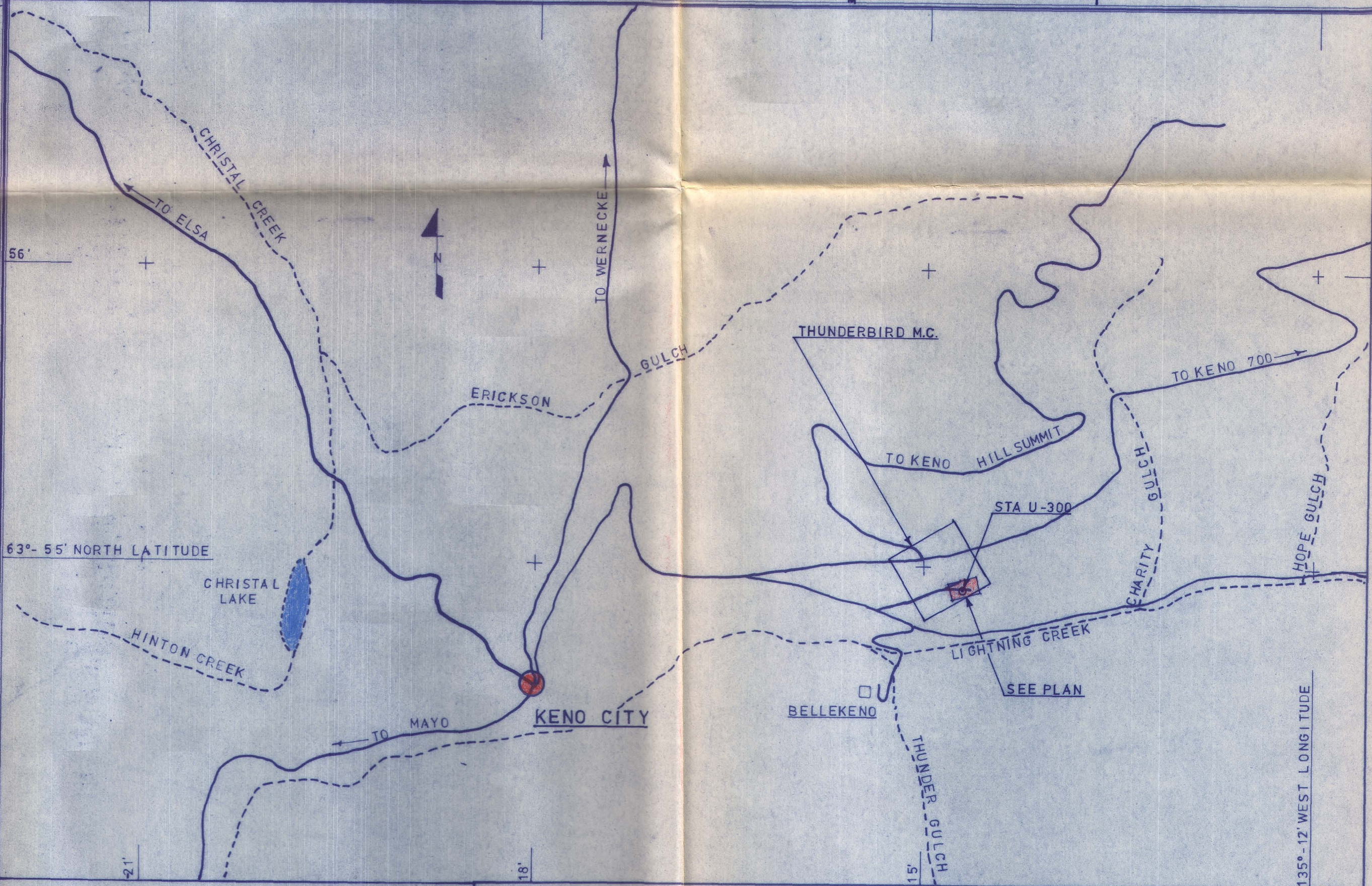
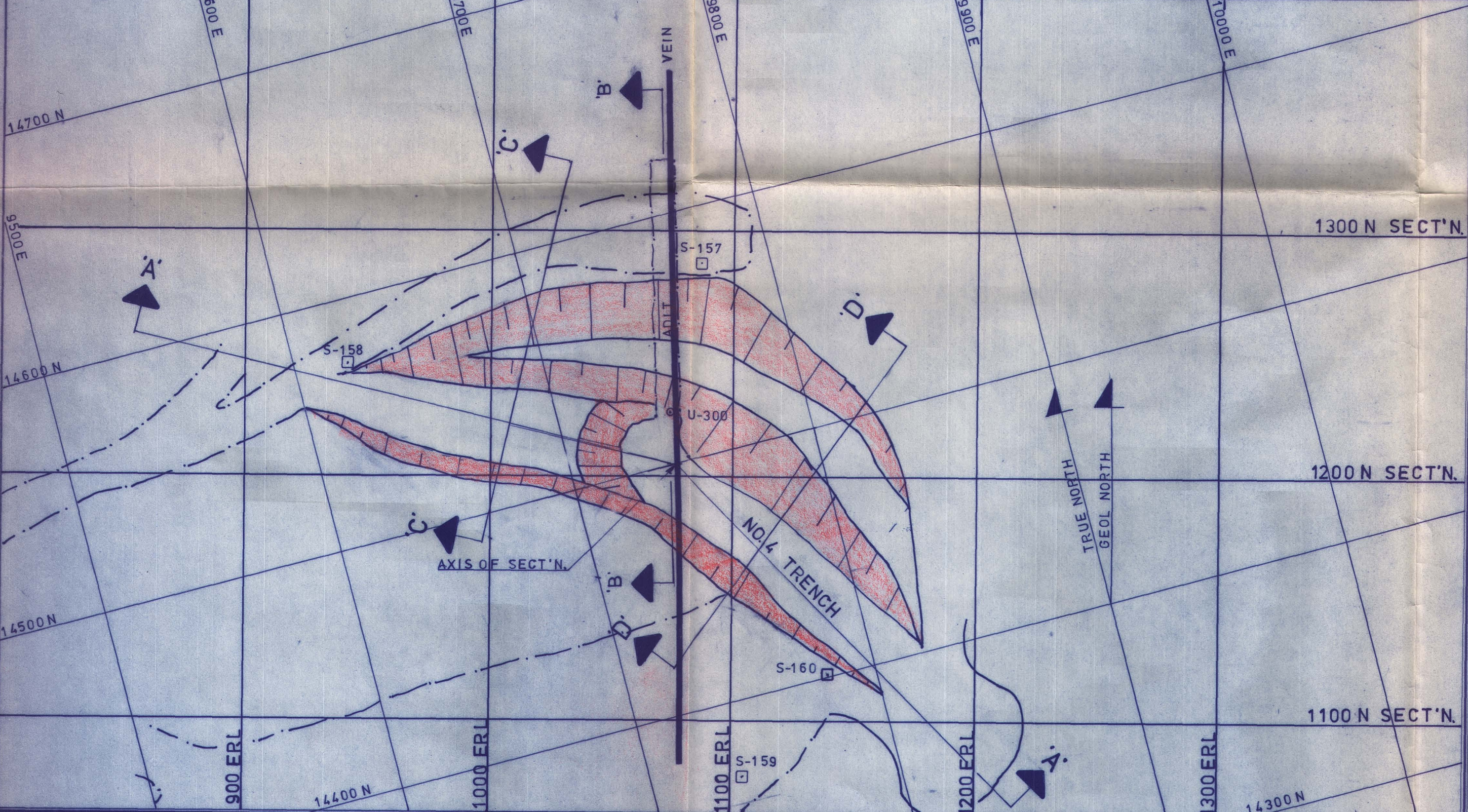
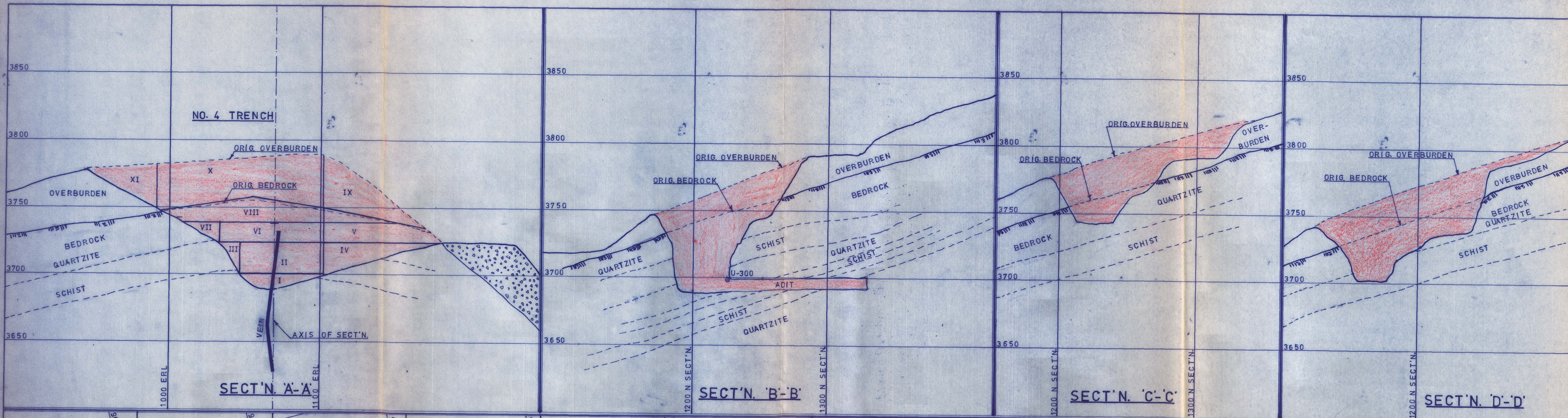




**LOCATION PLAN**  
SCALE: 1" = 2000'

SCALE OF FEET  
0 2000 4000 6000

<b>SPRINGMOUNT OPERATING COMPANY LTD.</b>	
<b>EXPLORATION-THUNDERBIRD M.C. - 1987</b>	
<b>NO. 5 TRENCH &amp; ADIT - PLAN &amp; SECTIONS</b>	
SCALE: 1" = 40'	
DATE: OCT. 5, 1986	
DRAWN: F.A.W.	<b>EX-4</b>



**VOLUME CALCULATIONS**

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**SPRINGMOUNT OPERATING COMPANY LTD.**

**EXPLORATION-THUNDERBIRD M.C.**

**NO. 4 TRENCH & ADIT-PLAN & SECTIONS**

SCALE: 1" = 40'

DATE: OCT. 7, 1985

DRAWN: F. A. W.

**EX-3**

# SHEET 105M-14

LATITUDE 63° 45' TO 64° 00'

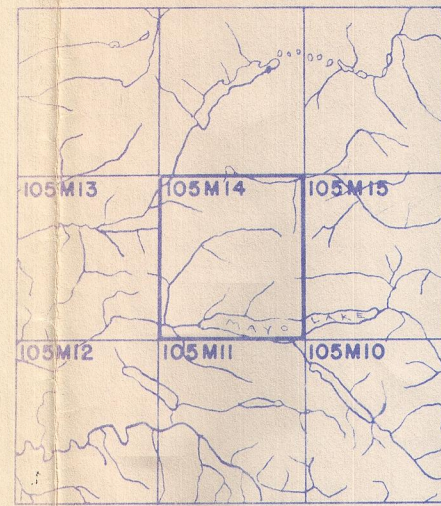
LONGITUDE 135° 00' TO 135° 30'

## KENO HILL CANADA

DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES  
NORTHERN ADMINISTRATION AND LANDS BRANCH  
LANDS DIVISION

SCALE 1/2 MILE TO 1 INCH

ISSUED UNDER THE AUTHORITY OF THE MINISTER  
NORTHERN AFFAIRS AND NATIONAL RESOURCES



### NOTICE

THIS MAP IS ISSUED AS A PRELIMINARY GUIDE FOR WHICH THE DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT WILL ACCEPT NO RESPONSIBILITY FOR ANY ERRORS, INACCURACIES OR OMISSIONS WHATSOEVER.

2 DEC 77

18 MAY 73

19 DEC 68

27 FEB 62

14 MAR 79

31 OCT 72

28 JULY 72

WHITEHORSE

25 April 57

28 JULY 72

NOTE: FOR PLACER CLAIMS SEE SHEET 105M-14 PLACER

