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Quinn Canyon Fluorspar District  
Nye County, Nevada.

MAMMOTH, SOUTH HORSESHOE AND SPAR  
DEPOSITS

1st draft; David LeCount Evans  
June 13, 1975

Quinn Canyon Fluorspar District

Nye County, Nevada

A Summary

and

MAMMOTH, SOUTH HORSESHOE

& SPAR DEPOSITS

GEOLOGY & INDICATED RESERVES

David LeCount Evans

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& SPAR DEPOSITS

GEOLOGY & INDICATED RESERVES

Foreword:

Accompanied by Mr. <sup>P. J.</sup> S. M. Cutting, mining engineer and lessee, the area was visited on June 1 through 3, 1975. Three full field days were required for this analysis.

Additional information has been obtained from reports by Mr. E. L. Stephenson ( Reno consulting geophysicist ), dated July 1953, and Mr. H. Victor Burgard ( consulting engineer, Sacramento, California ), dated July 31, 1956. Furthermore, assay data, not included in Mr. Stephenson's report, have been provided by Mr. Stephenson at this later date.

Also consulted has been U. S. Geological Survey Bulletin 1272-C, FLUORITE DEPOSITS OF THE QUINN CANYON RANGE, NEVADA, authored by C. L. Sainsbury and F. J. Kleinhampl. With release date of 1969, their field work was concluded in 1957.

Concerning reports, the Stephenson and Burgard studies appear factual and carefully prepared. As for the USGS study, the bulletin is strictly a geological analysis, with little assay support. Too, the writer is not in agreement with all of

its conclusions. Considering the Mammoth portion, inaccuracies evident in the Survey's base map necessitated a complete re-survey.

Accompanying this text are plan maps and sections for the properties of immediate concern. Reference to this support is urged.

PURPOSE OF STUDY:

With clients' agreement it was concluded that this initial work should involve a study of those properties, so sufficiently developed and well-known, that they would possibly assure immediate and useable ore reserves.

Continued prospect-studies would then be planned as time permitted and as needed throughout the course of future mining operation.

PROCEEDURES::

Pacing-Brunton Compass control has been used in the mapping of each property.

With reference to the Mammoth, initial plans to rely on the Survey's 750 scale plan map were abandoned when 'spot' surveys indicated errors as great as 175 feet in the location of upper benches. Elevations were also in error.

Geological observations have been limited to the delineation of major units and the location of structure. Particular attention has been given the brecciated zones at the Mammoth and South Horseshoe.

Mammoth sample sites were so chosen as to best check varieties of mineral emplacement.

Check samples were not attempted at the South Horseshoe deposit. With a deposit consisting of a mixture of extremely high-grade centers, extensive lower grade brecciation and large blocks of dark limestone suspended in the breccia mass, many samples would have been required to provide a meaningful average. Field inspection indicated a mineralized unit with good values, similar in part to the Mammoth. It was reported that the recent operation has mined and shipped with success until shut down because of disagreement between owner and lessees. A rough grade average based on an estimated percentage per units is listed under "Reserves".

#### CONCLUSIONS:

It is concluded that:

- 1: Mammoth mineralized reserves amount to 642,000 tons of Positive and 958,000 tons of Probable, for a total of 1,600,000 short tons.
- 2: Total South Horseshoe reserves represent 285,500 short tons, with 36,000 Positive and 249,500 Probable.
- 3: Total reserve tonnage, therefore, consists of 678,000 Positive and 1,207,500 Probable, for a total of 1,885,500.
- 4: Continued development on the Mammoth and South Horseshoe, laterally and in depth, will add to reserves. The geological understanding, gained from the two properties, will assure an intelligent development of neighboring properties and increased reserves.

RECOMMENDATIONS:

This analysis recommends the following:

- 1: An initial period for additional check-sampling and the drilling of 500 feet of diamond drill hole, as shown on Sections C-C' and E-E'.
- 2: Re-survey and re-post all claims and denounce additional claims where needed to assure complete protection.
- 3: If grade and ore projections are then confirmed and assuming positive results from current laboratory testing and, a favorable profit and/or loss analysis, proceed with mill construction and plans for an efficient surface-mining operation.
- 4: Continue with neighboring property studies if and when convenient and needed.

LOCATION:

With reference to Plate A, major properties lie in the Quinn Canyon Mining District in Township 3 North, Ranges 55, 56 and 57 East (Nye County) and smaller properties in Township 2 North, Ranges 55 and 56 East (Lincoln County).

The properties are reached from Warm Springs, via State Highway #25 and thence over a desert road, starting east at a point five miles south of an highway-maintenance station. Distance from Warm Springs to the Pine Creek Ranch is 76 miles.

PROPERTIES:

As indicated by Lessor's property map, 48 standard mining claims are under lease and option. Claims are divided into eight groups, namely, Crystal, Mammoth, Spar-Perkins, Horseshoe, Meadow (probably our S.Horseshoe), Sunbeam, Emerald and Shannon Queen.

No claim map is included.

HISTORY OF AREA:

The area has had no mining production. Closest activity is the Freyburg district (lead and silver), discovered in 1865 and organized in 1869, with some ore shipped in the 1919-1920 period. Freyburg lies ten miles to the southwest on the east flank of Worthington mountain. The existence of some base and precious metal locations in the Quinn Canyon district suggests prospecting since 1869. The existence of old diamond drill holes indicates fluor spar interest prior to the flurry of reports starting in 1953.

GENERAL AND LIMITING CONDITIONS:

Access is satisfactory in view of the 36 miles of good desert road to a paved highway. Good local roads provide access to all of the properties of interest. The nearest rail-head is at Caliente, a distance of 144 miles.

Campsites, mill sites and areas for tailings disposal pose no problems.

There is no power in the area and closest possible tie-in has not been investigated. Labor should be available from Tonopah and other Nevada mining districts.



Water, with stream flows perennial, should be available in ample supply, from shallow wells. Topography is rugged with 3000 to 4000 feet of relief for the main range, and an indicated 300 to 600 feet per property.

From May through November the region has the usual dry-arid Nevada climate. However the five winter months with snow-cover to as much as 4 feet will effect operations.

### GEOLOGY:

#### Overall District:

The United States Geological Survey summarizes the district's geology, as follows:

"Fluorite deposits are scattered widely in an area about 15 miles square in the Quinn Canyon Range - - -. The deposits consist of irregular replacement bodies and breccia fillings in limestone of Paleozoic age, and of veins and vein-lets in tabular altered zones in volcanic rocks of Tertiary age. Many of the deposits are associated with rhyolite porphyry dikes that intrude both limestone and volcanic rocks and that trend northeast and east-northeast. Some of the deposits in limestone contain ore averaging as much as 90 %  $\text{CaF}_2$  and are considered to be more promising than the deposits in altered volcanic rocks which generally contain ore of lower grade.

"Deposits of metallic minerals described by previous writers and consisting of argentiferous base metal deposits and gold-quartz veins also exist."

Our Plate A also suggests: (1) an affinity of the better and larger Mammoth, South Horseshoe and High-Grade areas for the Ordovician Pogonip limestone; (2) local alignment between occurrences of about N67E, parallel to the porphyry dikes, and (3) a possible N35E broader, regional alignment, paralleling the distribution of Pogonip areas and into and through the west area of the large intrusive stock.

showing up on Section A. Again silicified limestone is dominant; the zone exhibits less breccia, is cut by persistent northeast-steeply dipping shearing and shows some limestone replaced by, so-called, 'Coon Tail' fluorspar mineralization (dark and white parallel stripes). With a maximum surface width of 50 feet, sections suggest that this lower grade zone may attain as much as 80 feet of thickness.

Note that mineralized units and mineralization have a vertical distribution of 300 feet. Sections suggest that if the surface pattern persists to the 300 level (Sawmill Creek datum), there is good reason to expect breccia and mineralization to continue to greater depth. Reserve estimates have been carried only to the 300 foot datum.

Colored blue and with parallel-line symbol, limestone flanks the mineralized mass on the west and limits the trend on north and south ends. The limestone is relatively fresh, probably fluorized since Welsh samples indicate an average of  $12\frac{1}{2}\%$   $\text{CaF}_2$  for his "black lime" and occurs in thin to medium platy beds. The strike of these beds averages about  $\text{N}20^\circ\text{E}$  and the average dip to the west is about 20 degrees.

Structure:

Mapping has encountered no strong faulting. Greater detail at some future date will probably add to the picture. The higher datum of the mineralized mass on Sections C through G, in contrast to the lower datum indicated by sections I and J is suggestive and a possible reflection of movement (see Section X-X').

Shear zones shown in the Tunnel area, with  $\text{N}50^\circ\text{E}$  strike and vertical dip, provide shattering which is mineralized. Shear zones

along the east flank dip as steeply as 77 degrees east. Sections indicate a steeply dipping east flank, with west contact parallel thereto.

Up-structure flattening of dip to 48 degrees is based on surface observations at Section G. A reversal of structure, with dip to west on Sections E-E' and F-F' illustrates the possibility of considering the structure as a part of a much larger breccia pipe.

Considering the west flank, an initial reaction was to consider a fault contact between mineralization and fresh limestone. Later, with mineralized-breccia seeming to work below the fresh limestone on Sections I-I' and J-J' the categoric approach to a fault contact has been abandoned.

#### Geologic Conclusions:

The brecciated mass, host for later mineralization, has impressive dimensions. Such seems to negate the thought of a simple fault zone, sealed by later mineralization.

Two other choices might be considered, ie: (1) a thick regional overthrust structure, subsequently mineralized, or (2) a mineralized breccia-pipe.

Because of steepness of structure one hesitates to consider the former. A pipe-like deposit might be considered. Breccia pipes occur, in plan, as circular and elliptical areas, or open horseshoes. Development to date has not fulfilled any of these patterns.

To explain a feeling that the mass should continue to greater depth, the detail above has been considered a requirement. Too, the detail would further support the suggestion that the

structure can be further developed, laterally and in plan, beneath the dark limestone unit.

### SPAR

With reference to Plate I, high grade fluorspar mineralization has replaced a limestone bed. The replaced bed, shown in purple, has a thickness of ten feet and has been developed by road and two surface cuts for a strike distance of 170 feet.

The mineralized trend is terminated on east and west ends by rhyolite porphyry intrusive dikes, shown in red and by 'check' symbol. The thinly-lined and stippled unit, south of the main dike, represents a fine-sandstone formation and appears to have no bearing on the mineralization and its distribution.

A straight projection of the replaced limestone bed, across the dike, indicates a lack of continuity.

To the east and down slope others have reported a like-area of mineralization. This reputed occurrence was not examined.

The fact that the trend of mineralization is at an angle to the strikes of both dikes and not paralleling the contact, suggests that continuity, following the contact, does not exist. The reputed other occurrence may be a similar replacement with many feet of waste between the two beds.

Dimensions are such that reserves would be small and, in view of the reserves indicated for Mammoth and Horseshoe, samples were not cut on the Spar. This negative reaction is not to condemn other Spar-area properties to the west.

GEOLOGY:

By Property:

Three properties are considered with some detail. The Mammoth, Spar and South Horseshoe are, herewith, described, each with supporting 100 scale plan maps and cross sections.

MAMMOTH

Reference is made to Plates B, C, D, E, F, G and H.

Units and Mineralization

Three major units are shown on Surface Geology Plate B.

Shown in purple and with breccia symbol this Central Zone is considered the zone of major mineralization. It consists of a breccia with fine angular fragments of silicified limestone with voids and fractures between fragments filled by later fluorite, some chert and possibly occasional calcite. In the area of sample #4 there is some bedding with 48 degree dip to the east. This occurrence, low in fluorite and very high in silica (87.67%) is believed to be a solid silicified lime capping. Values of ore grade would be in order beneath this capping.

The massive fluorspar is dominantly white-amorphous in character with some purplish crystalline material of possibly later date.

The long-axis of the Central Zone, following its reversed-S plan distribution is 1200 feet. The short axis of the unit varies at surface from 190 to 50 feet. True thickness of the mass, as indicated by sections is from 125 to 90 feet.

In lavender and coarse stipple a Border Zone extends on the west side from Section D to Section B, with a chance of also

SOUTH HORSESHOE

Reference is made to Plates J and K.

Units and Mineralization:

Blue denotes blocky, thinly-bedded, dark gray Pogonip limestone. Yellow coloration with course stipple is a capping of intensely silicified limestone. Purple represents brecciation and mineralization. Volcanics, occurring at the top of the map are without color and shown by check symbol.

Whereas a mineralized breccia characterizes both the Mammoth and South Horseshoe deposits, the latter with its mixture of large limestone blocks in a matrix of finer brecciation, a greater abundance of coon-tail fluor spar replacement, and a sharp silicified capping, differs from the former.

The distribution of mineralization appears to be more erratic. Some areas of the open-pit have very large "pockets" of dull white, semi-porous fluor spar close to other shows of mineralized fine breccia, resembling Mammoth occurrences; coontail replacements are abundant, but without orderly arrangement. The South Horseshoe has had continued movement, with limestone replacements brecciated and recemented by a later, crystalline purple fluor spar.

With the pit exposing mineralization thirty feet below the upper contact of the unit, and development, north of the pit, at or about the top of the unit, the latter is characterized by an abundance of course calcite and quartz, as veinlets and cementing brecciated fluorite. Too, the upper section has an increase in coon-tail replacement. Full thickness of the unit remains to be determined.

With reference to the silicified cap unit, silicification has been complete. There exists some indication of original bedding in the main mass, as well as occasional smaller fragments of well-bedded, silicified limestone in the silica matrix.

Concerning the limestone member, it is the same Pogonip, observed and mapped at the Mammoth mine. It is fresh in appearance and the contact with breccia or silicified cap is sharp.

#### Structure:

Except for the brecciated mass, no other pre-mineral structure was mapped.

Post-mineral structure exists throughout the pit and workings. Fault surfaces, with polished appearance (slickensides) are abundant. There is an indication of 80 feet of mineral offsetting in the southwest corner of our map. Shattering of the earlier mineralization and ~~reemanting~~ cementing by later fluorspar indicates continued movement.

#### Geologic Conclusions:

Further development and additional field studies are requirements. Information shown on Plan and Section is too sketchy to support any conclusions.

Suffice it to suggest, however, that the South Horseshoe is a strong "show", inviting rapid and, we believe, successful development. Similar mineralization has been reported, on trend and several hundred feet below, to the west in Badger Gulch. The suggestion on Plate K of brecciation and mineralization continuing up dip, beneath the silicified cap, is within reason.



SAMPLES:

The five samples cut during the course of examination were taken for check purposes on the Mammoth deposit. One is representative of the Border zone, three cover the Central zone, and one, hopefully in the Central zone, reflects silicified 'cap'.

Results are listed as follows in Table #1.

Table #1

| 1975 Sample Returns<br><u>Mammoth</u> |                 |             |  |                        |
|---------------------------------------|-----------------|-------------|--|------------------------|
| <u>Zone</u>                           | <u>Sample #</u> | <u>Feet</u> | <u>Percent</u><br><u>CaF<sub>2</sub></u> | <u>SiO<sub>2</sub></u> |
| Border                                | Evans 1         | 35          | 17.76                                    | 67.81                  |
| Central                               | Evans 2         | 85          | 27.76                                    | 67.33                  |
| dto                                   | Evans 3         | 35          | 44.99                                    | 52.37                  |
| dto                                   | Evans 5         | 8           | 34.95                                    | 62.63                  |
| Cap                                   | Evans 4         | 4           | 7.37                                     | 87.67                  |
| <u>Averages</u>                       |                 |             |  |                        |
| Border                                |                 |             | 17.76                                    | 67.81                  |
| Central                               |                 |             | 35.90                                    | 60.78                  |
| Cap                                   |                 |             | 7.37                                     | 87.67                  |

Comments

Analyses by Metallurgical Laboratories, San Francisco.

Sample #1: Mammoth Tunnel; portal to 35 feet in; chip samples across northeast shearing.

Sample #2: Chip sample, scattered outcrops for 85'; north side of Sawmill Creek; brecciated and sheared.

Sample #3: Grab sample, No.2 Trench of blast material 35' face.

Sample #4: Chip sample above road to Trench #3; 4' of massive silica.

Sample #5: Trench at west limit of Central zone; chips from scattered solid outcrops; mixture of silicified limestone, breccia and coon-tail replacement mineralization.

1142 HOWARD STREET

SAN FRANCISCO, CALIFORNIA 94103

AREA CODE 415 863-8575

**REPORT OF ANALYSIS**

Submitted by Mr. David LeCount Evans  
1700 Royal Drive  
Reno, Nevada 89503

Date June 13, 1975

Sample of Minerals

P. O. No.

Lab. No. 9706

SAMPLE MARK

PERCENTAGES

MammothCalcium FluorideSilica

#1

17.76

67.81

#2

27.76

67.33

#3

44.99

52.57

#4

7.37

87.67

#5

34.95

62.63

METALLURGICAL LABORATORIES, INC.

By

Mammoth sample values, gleaned from other reports, are listed in Table #2, below:

Table #2

Sample Results-Welsh et al

| <u>Samp.#</u> | <u>By</u>        | <u>Date</u> | <u>Width</u> | <u>%<br/>CaF<sub>2</sub></u> | <u>Comments</u>                        |
|---------------|------------------|-------------|--------------|------------------------------|--|
| 332V          | Roberts          | *           | 18'          | 55.27                        |  |
| ----          | Welsh            | **          |              | 43.60                        |  |
| 53b29         | Standard<br>Slag | **          |              | 45.20                        |  |
| 5             | Welsh            | ##          |              | 37.5                         | "Gray dolomite"                        |
| 6             | Welsh            |             |              | 44.6                         | Campground area                        |
| 7             | Welsh            |             |              | 80.1                         | "Highgrade in Canyon"                  |
| 8             | Welsh            |             | 25'          | 56.7                         | "Campground area"                      |
| 9             | Welsh            |             | 10'          | 23.5                         | "Hole area"                            |
| 10            | Welsh            |             |              | 33.2                         | "Blue Quartz"                          |
| 11            | Welsh            |             | 20'          | 35.2                         | "Green Spar"                           |
| 12            | Welsh            |             | 75'          | 23.1                         | "Below Average"                        |
| 13            | Welsh            |             |              | 23.1                         | "Shalespar"                            |
| 14            | Welsh            |             | 50'          | 48.5                         | "Above average"                        |
| 15            | Welsh            |             | 12'          | 22.0                         | "Hard quartz"                          |
| 16            | Welsh            |             | 15'          | 25.0                         | "Below average"                        |
| 34            | Welsh            |             |              | 53.8                         | Coon-tail type                         |
| 39            | Welsh            |             |              | 27.9                         | "Shale-spar"                           |
| 6             | Welsh            | ***         |              | 43.2                         | "spar & lime; south<br>side of saddle" |
| 7             | Welsh            |             |              | 30.6                         | "spar and blue quartzite"              |
| 8             | Welsh            |             |              | 31.8                         | "coon-tail; campground"                |
| 9             | Welsh            |             |              | 36.5                         | "purple; low grade"                    |

\* = 6/27/62; \*\* = 6/5/53; ## = 7/29/53; ## = Oct.' 53; \*\*\* = 5/12/53

| <u>Samp.#</u> | <u>By</u>   | <u>Date</u> | <u>%<br/>CaF<sub>2</sub></u> |
|---------------|-------------|-------------|------------------------------|
| 436           | P.J.Cutting | 9/27/74     | 38.42                        |

Mammoth bulk material;  
mixed with bulk matter  
from Spar & S.Horseshoe  
for composite for lab-  
oratory analysis.

Note: Welsh assays by Nevada Analytical Lab; N.B.M. ✓

Cutting assay from Mineral Assay Office; Mina, Nevada.

An arithmetic average of the 21 samples to the bottom of page 14 (Table #2) with eighteen of the analyses by the Nevada Bureau of Mines Analytical Laboratory amounts to 39.07% CaF<sub>2</sub>. "Comments" indicate that Welsh's samples are a mixture of 'measured' and selected spot-samples.

Believing that the Welsh measured samples represent exposures, considered typical, a weighted approach provides the following in Table # 2-b:

Table 2-b:

Welsh Measured Samples

| <u>Sample #</u> | <u>Width</u> | <u>% CaF<sub>2</sub></u> | <u>Ft. x %</u> |
|-----------------|--------------|--------------------------|----------------|
| 8               | 25'          | 56.7                     | 1417.5         |
| 9               | 10'          | 23.5                     | 230.5          |
| 11              | 20'          | 35.2                     | 704.0          |
| 12              | 75'          | 23.1                     | 1732.5         |
| 14              | 50'          | 48.5                     | 2425.0         |
| 15              | 12'          | 22.0                     | 264.0          |
| 16              | 15'          | 25.0                     | 375.0          |
|                 | 207          | <u>34.53</u>             | 7148.5         |

For the record, Buggard estimated a 30 to 35% average for the Mammoth property, and Stephenson estimated 30%.

Concerning samples for the Spar and the South Horseshoe properties, the following by Mr. P. J. Cutting are dated September 27, 1974:

Table #3:                      Values Other Properties

| <u>Property</u> | <u>Samp.</u> | <u>%CaF<sub>2</sub></u> | <u>Comments</u>    |
|-----------------|--------------|-------------------------|--------------------|
| Spar            | 430          | 38.70                   | Composite; Pit #1  |
| Spar            | 431          | 12.92                   | Ledge; Pit #1      |
| Spar            | 432          | 62.88                   | Front Wall; Pit #2 |
| Spar            | 433          | 56.86                   | Back Wall; Pit #2  |
|                 |              | 42.84                   | Arithmetic average |
| Horseshoe       | 434          | 63.48                   | Slickensides       |
| Horseshoe       | 435          | 70.80                   | Coon tail          |
|                 |              | 67.14                   | Arithmetic average |

Analyses by Mineral Assay  
Office, Inc., Mina, Nevada.

A summary, using values from all sources, is outlined below in Table #4.

| <u>Table #4:</u> | <u>Percent CaF<sub>2</sub></u> |              |                |                   |
|------------------|--------------------------------|--------------|----------------|-------------------|
|                  | <u>DLE</u>                     | <u>Welsh</u> | <u>Cutting</u> | <u>Average</u>    |
| Mammoth          | 35.90                          | 34.53        | 38.42          | 36.28             |
| S.Horseshoe      | 44.60*                         |              | 67.14          | 44.60* (estimate) |

\* South Horseshoe has been estimated by assuming:

10 % black lime blocks at 12% CaF<sub>2</sub>

35% high grade centers at 67% "

55% Mammoth-type breccia @ 36% "

The looseness of the South Horseshoe estimate is evident, but the figure is in conformity with field conclusions that South Horseshoe mineralization is higher grade than Mammoth.

The Horseshoe estimate has a minimal effect on the total reserve picture. Horseshoe tonnage represents only 15% of our reserve total. Meaningful is the fact that for the 85%, represented by the Mammoth, from three different sample sources and three different custom assayers the three averages are very much in "the same ball park".

# INDICATED RESERVES:

This analysis refers to tonnages of mineralized material; the term "ore" cannot be affixed to "reserves", until laboratory tests, now being made, indicate a flow sheet that will provide a process that will assure excellent recoveries and a marketable product; as well as an indicated profit.

Indicated reserves are listed below in Table #5:

Table #5

| <u>Mine:</u>                | <u>Short Tons</u>      |                 |                          |
|-----------------------------|------------------------|-----------------|--------------------------|
|                             | <u>Positive</u>        | <u>Probable</u> | <u>Total</u>             |
| Mammoth                     | 642,000 <sup>(2)</sup> | 958,000         | 1,600,000 <sup>(1)</sup> |
| S. Horseshoe <sup>(3)</sup> | 36,000                 | 249,500         | 285,500                  |
| Total Tons                  | 678,000                | 1,207,500       | 1,885,500                |

- (1) With reference to Sections B-B' through Sections J-J', the square area of the mineralized zone to the zero line has been determined per section; the average square area for adjoining sections multiplied by the distance between sections provides cubic volume, which divided by a factor of 11 cubic feet per ton converts each interval to short tons. Section A-A', isolated, has been given a distance of influence of 80 feet.

- (2) Again, with reference to the same cross sections and Long Section X-X', a line has been established from the ore at surface between Sections F-F' and G-G', northerly and down to the outcrop line in Sawmill Creek. The intercepts between the in-lined line and cross sections, has been added to each section. Tonnage above the line has been considered as 'positive'.
- (3) Using the square area of plan, mined and developed, and an estimated 75 feet of thickness, the factor of 11 cubic feet per ton, has provided an initial total tonnage. This total less a reported total of 36,000 tons mined, provides a remaining reserve of 285,000 tons. With all faces (especially the deeper pit) in good mineralization, it has been assumed that, at least, another 36,000 tons can be mined; this is our 'positive'; the remainder is considered 'probable'.

ANTICIPATED FUTURE DEVELOPMENT  
AND/OR EXPLORATION:

Mammoth:

1. To fully establish estimated reserves, drilling as shown on sections C-C', E-E' and G-G' is proposed.
2. With reference to Sections H-H', I-I' and J-J', their contributions to reserves is minimal. Drilling, such as that shown on Section I-I', for all sections, would add greatly to the total, if successful.
3. Exploration by drilling beyond the west flank, through the limestone, to test the possible continuation of mineralization to the west and under the limestone is recommended.

South Horseshoe:

1. Testing of the mineralized zone to the east, under the silica cap would, not only, add to the deposit on trend, but also, provide the true thickness.



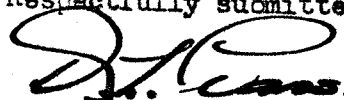
2. Similar probing down slope would extend the deposit to the west. As in the case of working to the east, it is a matter of simple diamond drilling.

High Grade Property:

The U. S. Geological Survey favorably describes the "High Grade " deposit. Reference is made to 28,000 square feet with a value of approximately 65%; and another area of 6,000 square feet which " for bulk samples show 72%  $\text{CaF}_2$ ".

Such dimensions would underwrite 300,000 tons per each 100 feet of vertical development. The High Grade property merits a similar study.

Respectfully submitted,

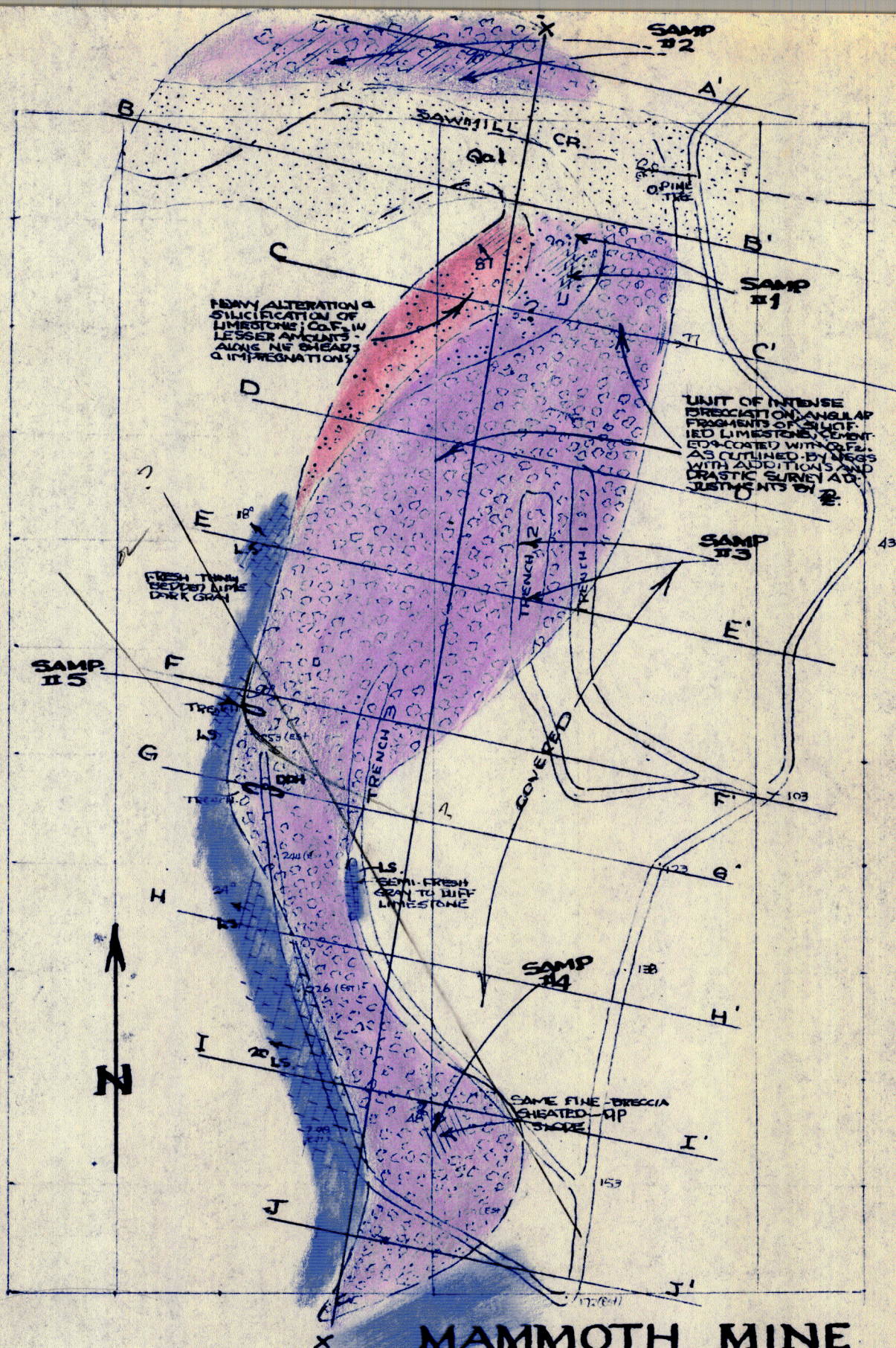


David LeCount Evans  
Consulting Geologist.

Reno, Nevada  
June 13, 1975

DAVID LE COUNT EVANS, CONSULTING GEOLOGIST





# **MAMMOTH MINE**

FLUORITE

QUINN CANYON DISTRICT  
 NYE CO., NEVADA

## **SURFACE GEOLOGY**

1 INCH = 100 FEET

RESURVEYED BY D.L.E.  
 USING PACING & BRUNTON.  
 U.S.G.S. PLATE 2, BULL. 1272 C  
 (1969) IS NOT ACCURATE.

DAVID LEICHT EVANS  
 COND. GEOLOGIST

RENO, NEVADA  
 JUNE 6, 1915



C

300

200

100

0

A-A'

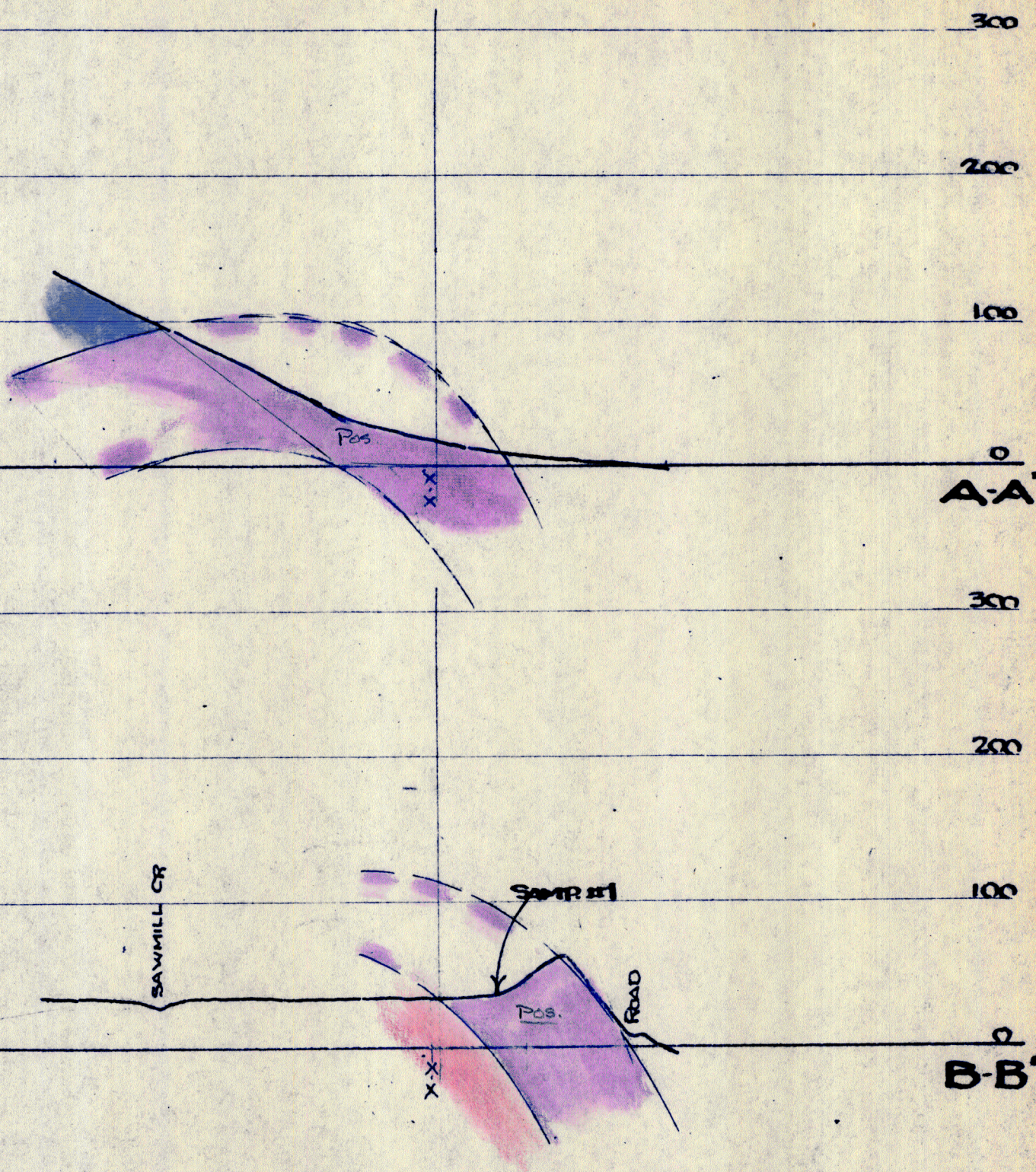
300

200

100

0

B-B'



# MAMMOTH MINE FLUORITE

QUINN CANYON DISTRICT  
NVE CO., NEVADA

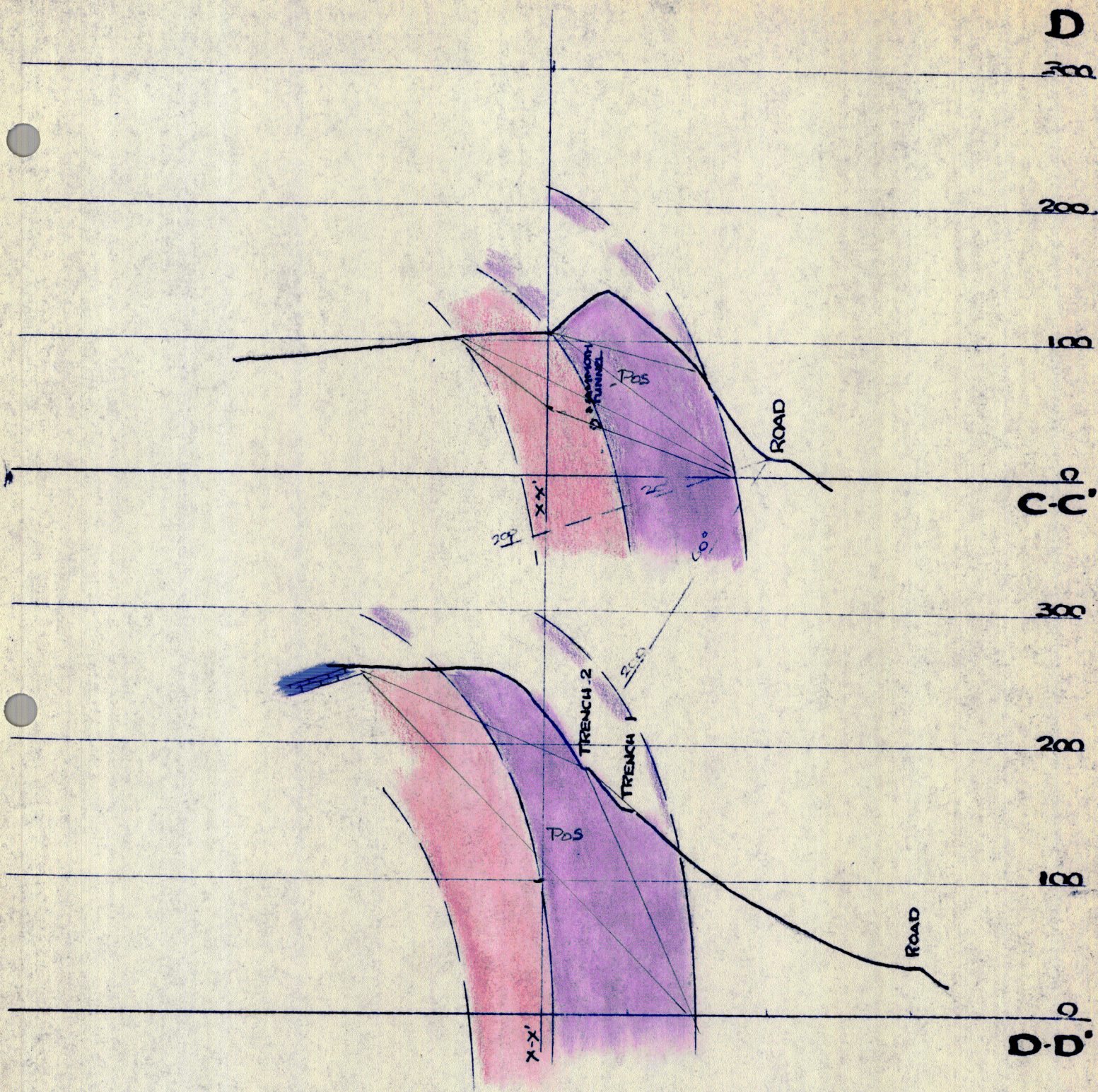
## CROSS SECTIONS

1 INCH = 100 FEET

DAVID LeCOLINT EVANS  
CONS. GEOLOGIST

RENO, NEVADA  
JUNE 6, 1975

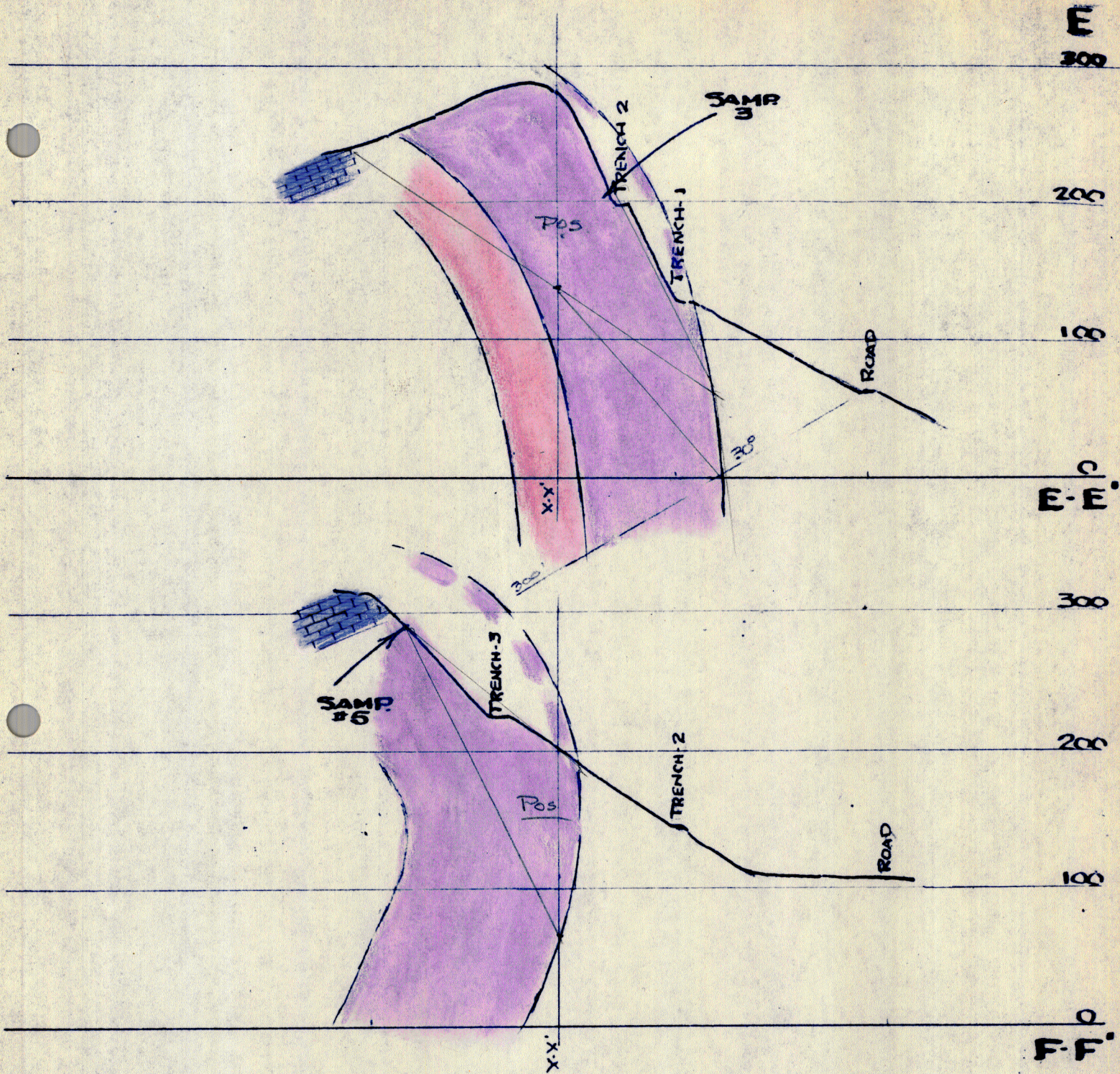




**MAMMOTH MINE**  
 FLUORITE  
 QUINN CANYON DISTRICT  
 NYE CO., NEVADA  
**CROSS SECTIONS**  
 1 INCH = 100 FEET

DAVID Le COUNT EVANS  
 CONS. GEOLOGIST  
 RENO, NEVADA  
 JUNE 6, 1975





# MAMMOTH MINE

FLUORITE

QUINN CANYON DISTRICT  
 NYE CO., NEVADA

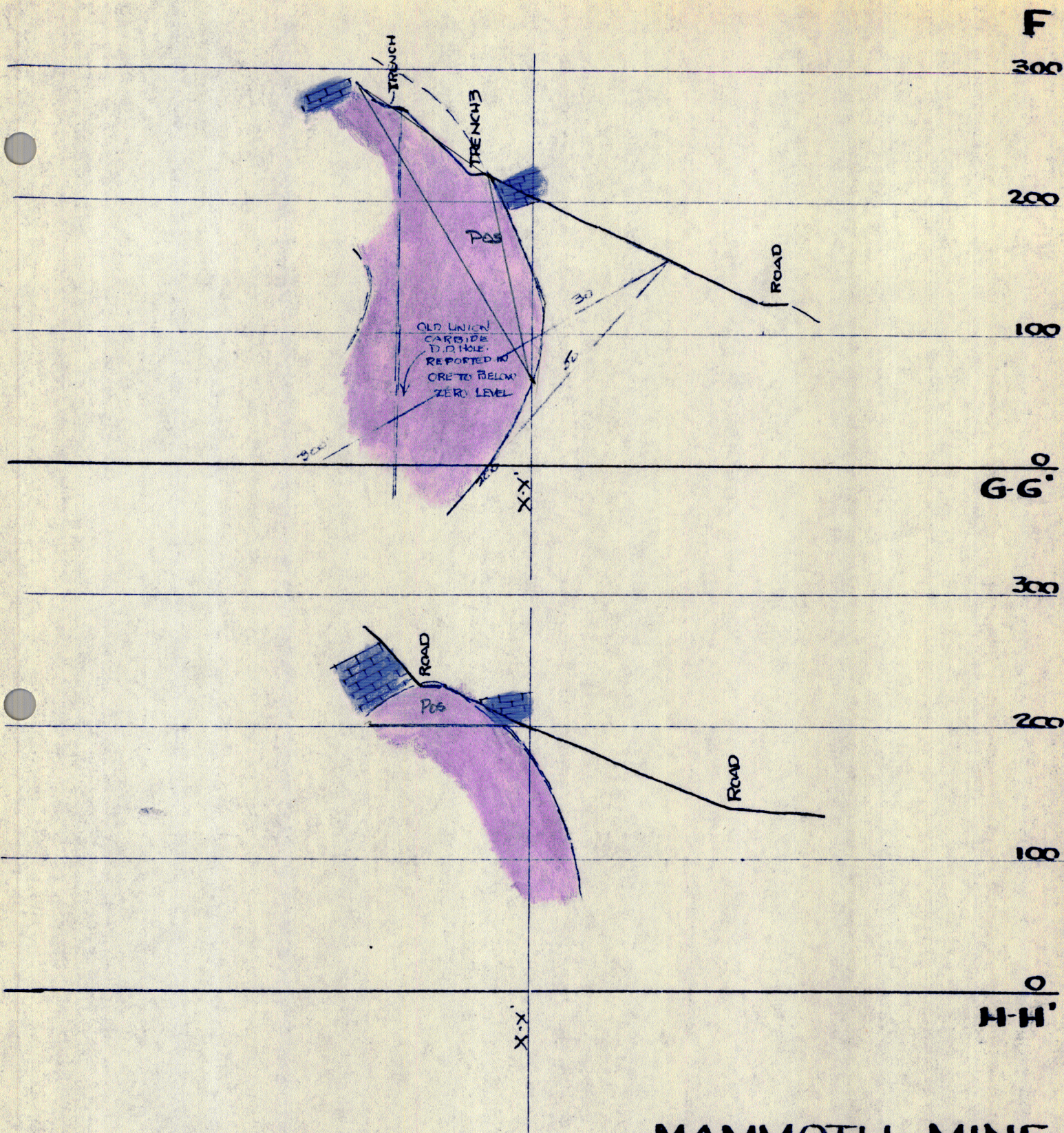
## CROSS SECTIONS

1 INCH = 100 FEET

DAVID LE COUNT EVANS  
 CCWS. GEOLOGIST

RENO, NEVADA  
 JUNE 6, 1975





**MAMMOTH MINE**  
 FLUORITE  
 QUINN CANYON DISTRICT  
 NVE CO., NEVADA  
**CROSS SECTIONS**  
 1 INCH = 100 FEET

DAVID LeCOURT EVANS  
 CONS. GEOLOGIST

RENO, NEVADA  
 JUNE 6, 1975



G

300

200

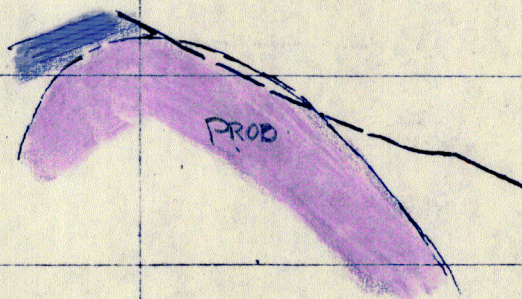
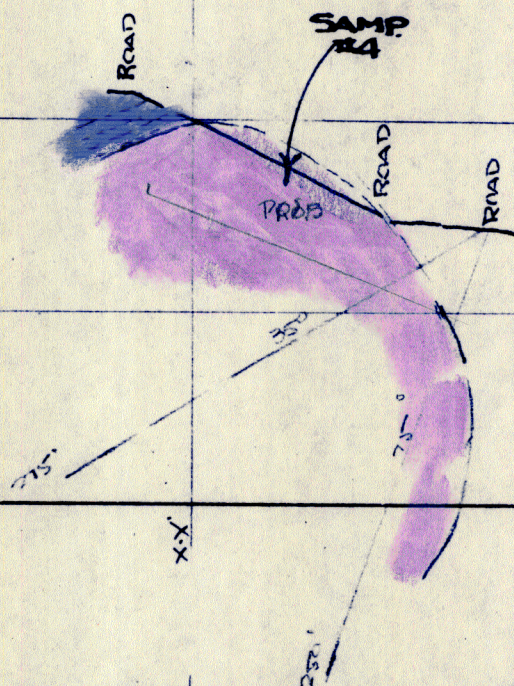
100

0  
I-I'

300

200

100

0  
J-J'

# MAMMOTH MINE

FLUORITE  
QUINN CANYON DISTRICT  
NVE CO., NEVADA

## CROSS SECTIONS

1 INCH = 100 FEET

DAVID LeCOURT EVANS  
CONS. GEOLOGIST

RENO, NEVADA  
JUNE 8, 1975



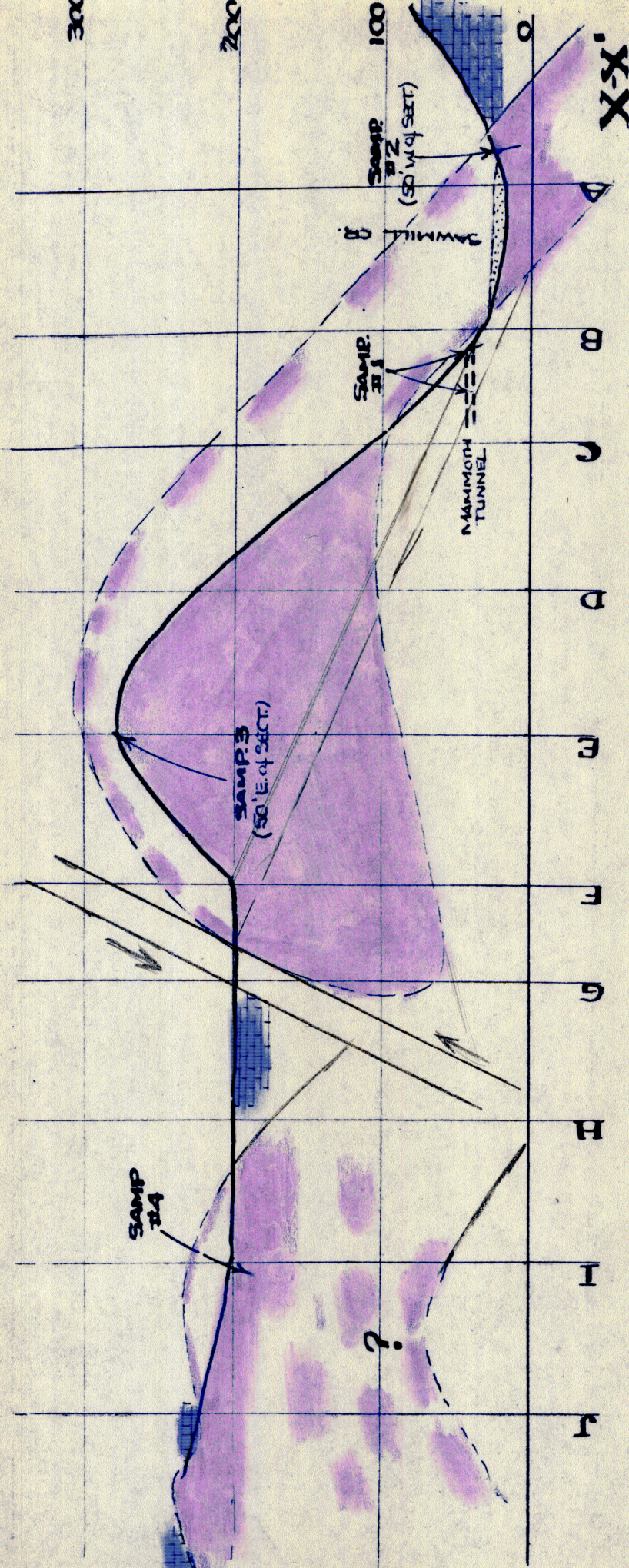
# MAMMOTH MINE

FLUORITE  
QUINN CANYON DISTRICT  
NVE CO., NEVADA

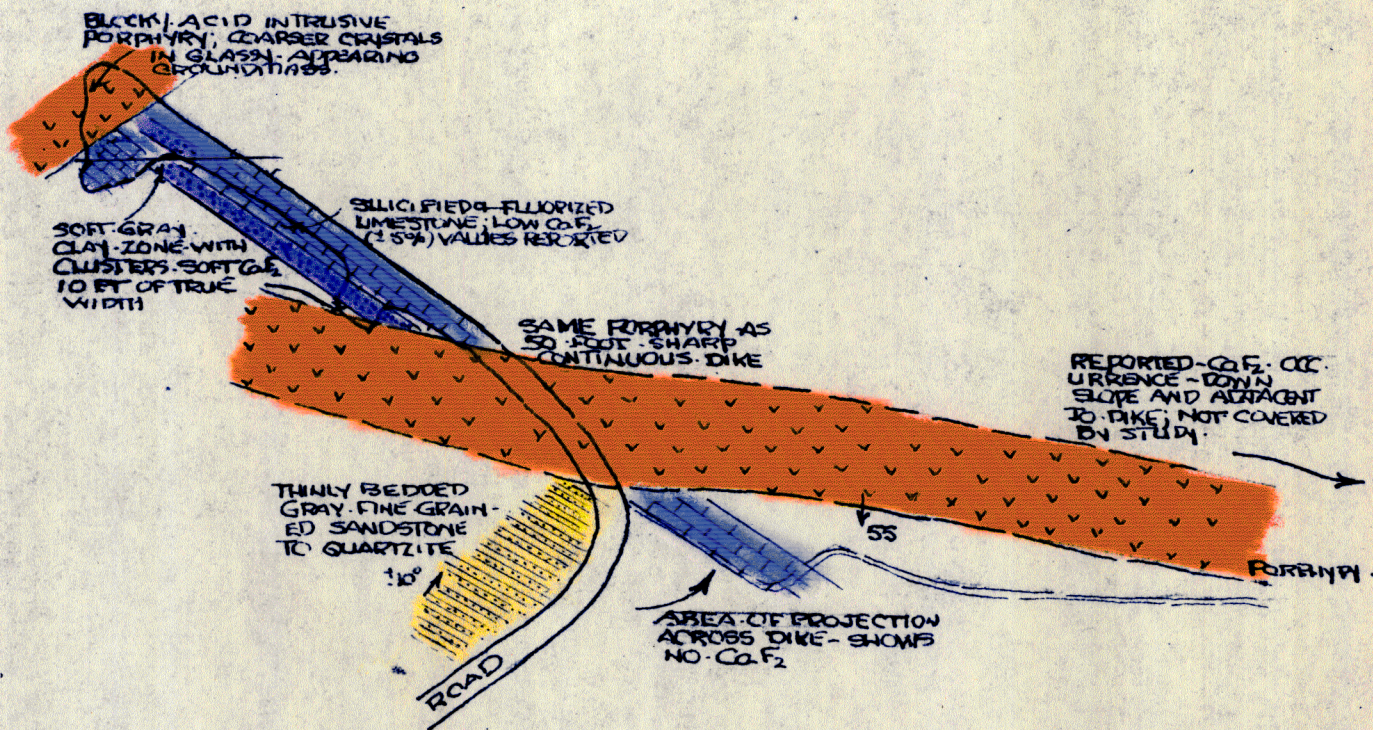
## LONG SECTION

1 INCH = 100 FEET

DAVID LEICHT EVANS RENO, NEVADA  
CONS. GEOLOGIST JUNE 6, 1975



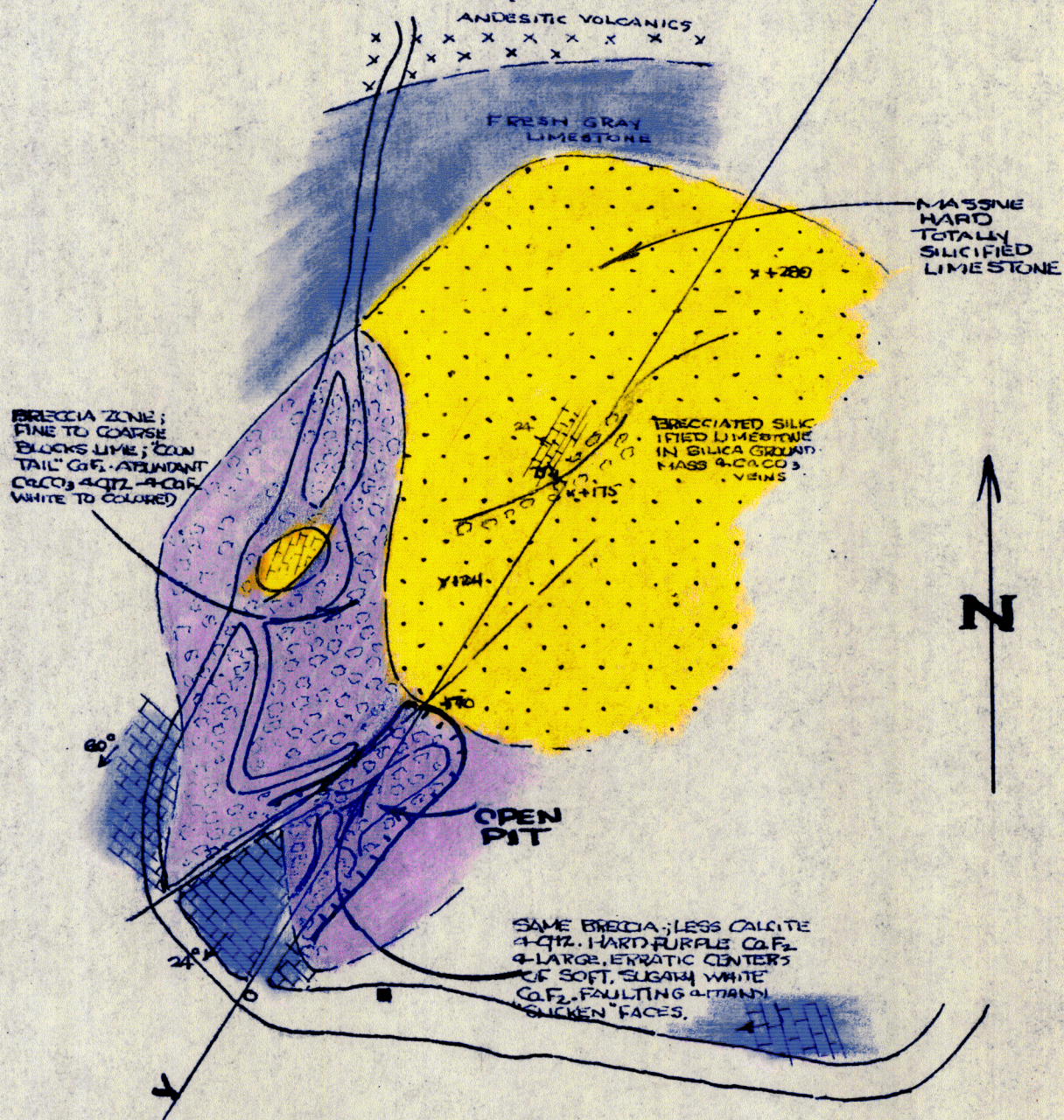




**SPAR PROPERTY**  
 FLUORITE  
 QUINN CANYON DISTRICT  
 Nye CO., NEVADA  
**SURFACE GEOLOGY**  
 1 INCH = 100 FEET

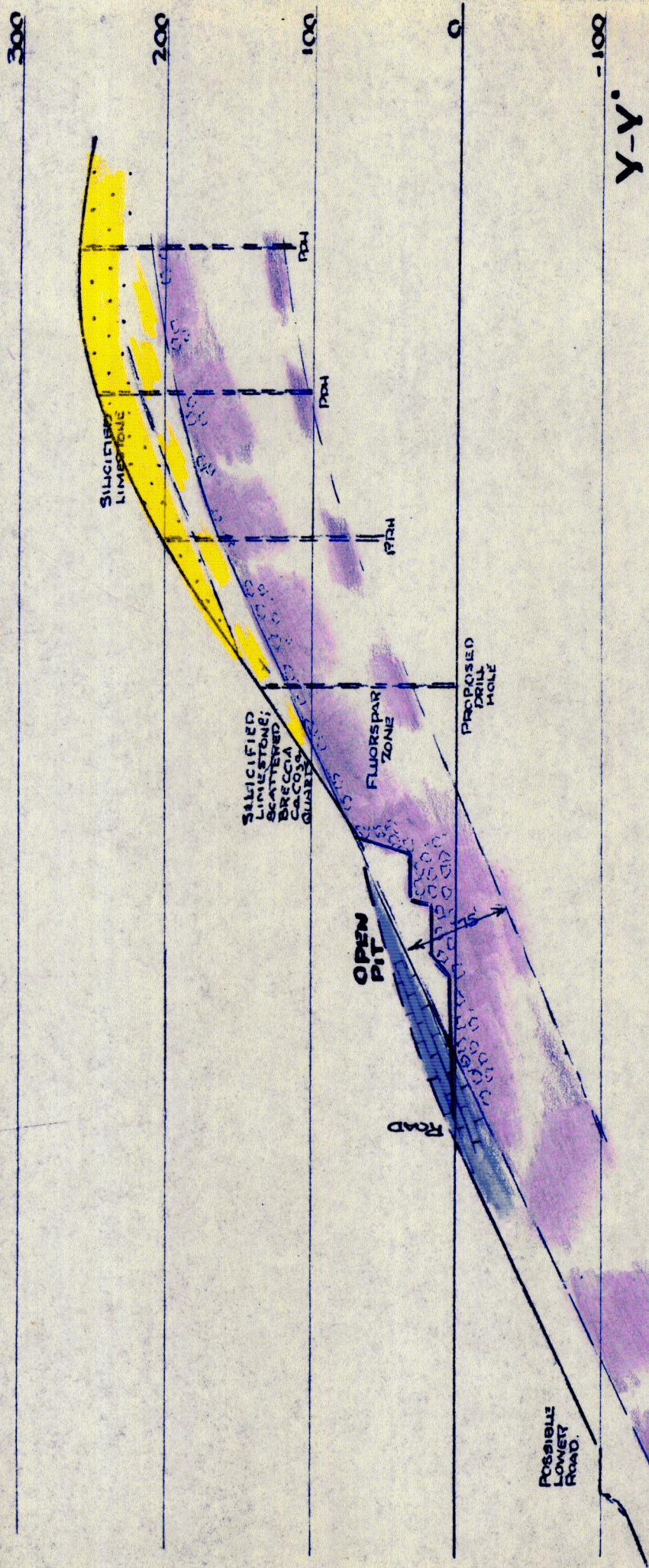
DAVID LeCOURT EVANS RENO, NEVADA  
 CONS. GEOLOGIST. JUNE 6, 1975





### PACING & BRUNTON COMPASS CONTROL





**S. HORSESHOE MINE**  
 FLUORITE  
 QUINN CANYON DISTRICT  
 NYE CO., NEVADA

**SECTION**  
 1 INCH = 100 FEET

DAVID L. COUNT EVANS RENO, NEVADA  
 CONS. GEOLOGIST JUNE 6, 1975



DAVID LE COUNT EVANS  
CONSULTING GEOLOGIST  
1700 ROYAL DRIVE  
TELEPHONE (702) 747-4101  
RENO, NEVADA 89503

June 15, 1975

Mr. Laurence T. Atkinson,  
% C/N Laboratories,  
327 Connecticut Avenue,  
Norwalk,  
Connecticut 06852.

Dear Larry:

Please find enclosed the original of my first draft of an analysis, covering the Quinn Canyon fluorospar district and, especially, the Mammoth, South Horseshoe and Spar properties.

Your reactions to this preliminary attempt will be very much appreciated.

Also enclosed are two extra sets of the plates which support the text. It is my thought that they may be of interest and use to your fusion associates.

A Xerox copy and plates has been prepared for Sandy Cutting's files and will be delivered to him this afternoon.

Be assured of my interest and availability to discuss the report at your convenience. I may be out of town but will be in touch with my wife each evening and she will know how I can be reached.

It is very apparent that I have found these Quinn Canyon deposits of real interest. I thank you for the opportunity of being, I hope, of help.

With best regards, I am,

Yours very truly,

  
David LeCount Evans

cc: Mr. P. J. Cutting





R55E

R56E

R57E

Tvs SILICIFIED VOLCANICS

Ds DEVONIAN DOLOMITES

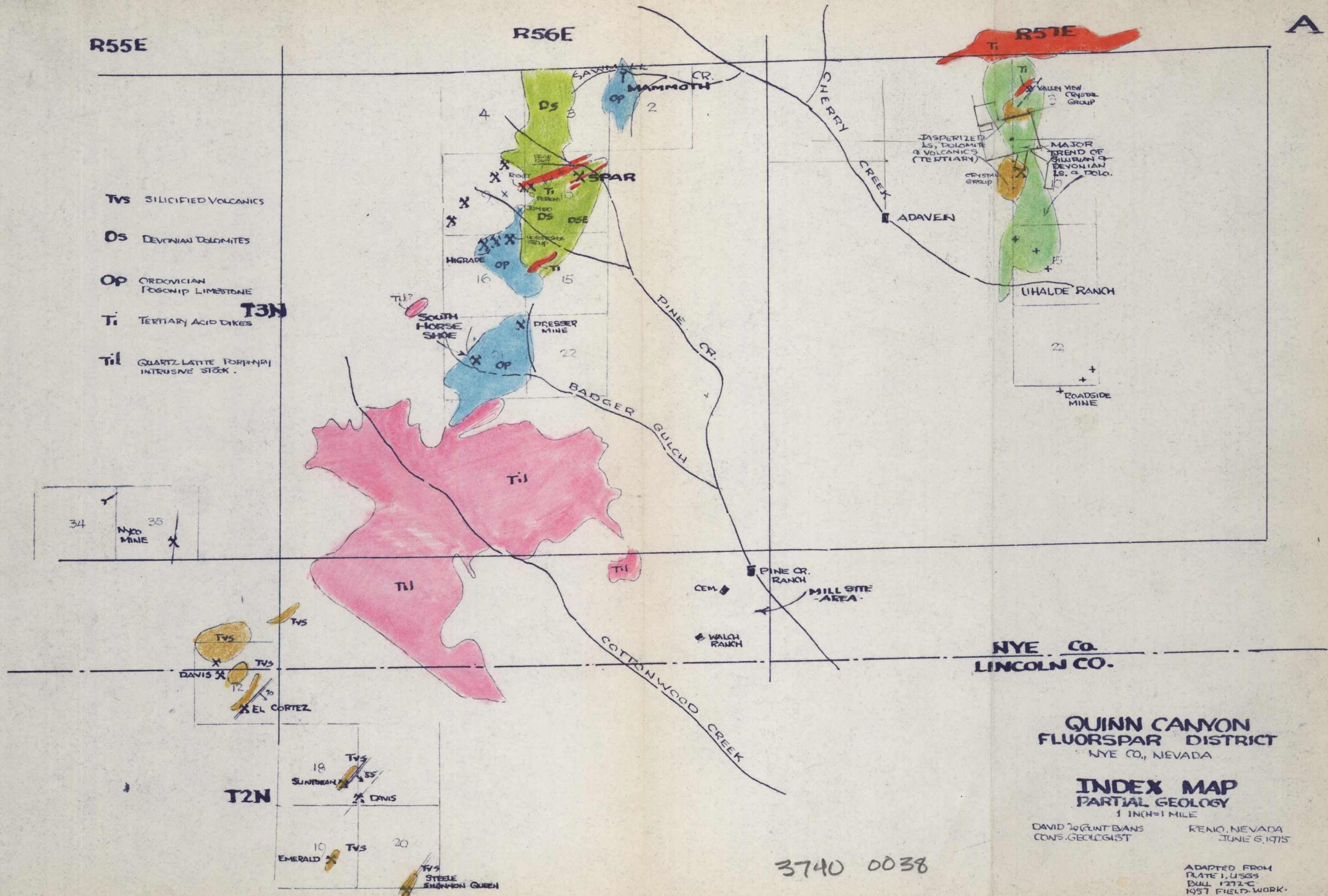
Op ORDOVICIAN  
POCONO LIMESTONE

Ti TERTIARY ACID DIKES

Til QUARTZ LATITE PORPHYRY  
INTRUSIVE STOCK

T3N

T2N



NYE Co.  
LINCOLN CO.

QUINN CANYON  
FLUORSPAR DISTRICT  
NYE CO., NEVADA

INDEX MAP  
PARTIAL GEOLOGY  
1 INCH = 1 MILE

DAVID L. GUNTBANS  
CONS. GEOLOGIST

RENO, NEVADA  
JUNE 6, 1975

3740 0038

ADAPTED FROM  
PLATE 1, USGS  
BULL. 1272-C  
1957 FIELD WORK