

0260 0059

Majuba Hill

MAJUBA HILL PROSPECTSUMMARY OF PERTINENT DETAILSDavid LeCount Evans; Apr. 1965Foreword:

Excellent outcrops provide surface details. Tunnel 2 is open for mapping throughout its 2809 feet. Tunnel 3 is caved at 1600 feet and 1941-1942 observations must be accepted until clean-up and retimbering through the Majuba fault zone can be completed.

Concerning the details of crosscut, overlying stopes and Freeport's inclined raise, in the tin-plus zone, again, examining parties must accept the detailed mapping and sampling of 1941-1942 and of 1943. Greenman and Kerr completely 'gutted' the detail worked out by the Freeport Sulphur Company and Myler, with 1944 shipments of tin ore to Metals Reserve.

This analysis is based on the writer's close association with the Majuba Project in 1941-1942 and in 1962. One either agrees with the school of thought that ore-centers are (1) a series of pockets on an otherwise unmineralized structure or (2) areas of better grade along 1200 feet of continuous mineralized structure, complicated at the Tunnel 2 level and in section by reverse faulting. There appears to be no middle approach.

Approach (1) is without attraction. Approach (2) opens the door to the development of commercial tin-silver-copper mineralization, an attractive enough program in 1962, but especially appealing today, in light of the supply and demand picture for tin and silver and 1965 values.

Plans and Sections:

Reference is made to the attached plans and sections, provided to facilitate an understanding of written description. These are listed as follows:

<u>Plat:</u>	<u>Description</u>
Unlettered	Legend Sheet
A	Index Map-Regional
B	Index Map-District and Property Lines
D	200 Scale Plans
Unlettered	100 Scale Plan Maps
Unlettered	100 Scale Crosssections



### Property and Location

With reference to Plats A and B, the Majuba Hill deposit is covered by three patented claims, and nine unpatented claims (one not shown), all in section 2, Township 32 North, Range 31 East, as well as fee section 35, Township 33 North, Range 31 East. The acreage lies in the Antelope Mining District, Pershing County, Nevada.

The above covers about 75% of a northeast-southwest trending rhyolite porphyry intrusive. Workings at the southwest limit of the intrusive area are 20 miles west of Inplay, on the Southern Pacific Railroad, via good gravel road.

### History of Property:

The property has experienced several periods of development and production. Mason Valley Mines (1915-1919) mined copper-silver ores (4000 tons averaging 12% copper and 5 ounces silver) and accidentally found the tin-plus area, while drifting on the Majuba fault, then considered a vein. Freeport Sulphur, diamond drilling in 1941-1942, failed to prove a theory and dropped its option. Greenan and Kerr (1942-1945) mined 22,000 tons of 3.9% copper-1.4 ounces silver from the copper-plus area and 350 tons of 3.4% tin ore from the tin-plus area. Kansas City Exploration Inc. completed 303 feet of critical crosscut in 1962, definitely establishing the continuity of mineralized structure, back of the fault, but ran out of funds and returned the properties to their owners.

### Physical Description:

Tunnels 2 and 3 cover the bulk of exploration and development. Tunnel 1, very short, 200 feet above Tunnel 2, is not shown. Total horizontal development is 5,604 feet, divided into 195, 2,809 and 2,600 feet for Tunnels 1, 2, and 3, respectively.

Inclined and vertical workings approach 1100 feet; approximately 3800 feet of diamond drilling have probed the property.

Tunnel 2, with elevation of 6250 feet, has a maximum back of 450 feet in the area of particular interest. Tunnel 3, with elevation of 5774 feet at portal, lies 476 feet below Tunnel 2 and has 1000 feet of back, in the area of projection.

Tunnel 2 is directly beneath outcrops of mineralized brecciation and has cut the downward extension in values, approaching 3% (average) tin, on the hanging wall side of the Majuba fault system.

Tunnel 3 with face at 2000 feet from portal is close to, but not at, the downward extension of structure, as projected through Tunnel 2 from surface outcrops. An horizontal hole, from the face to the northeast, cuts the downward extension of structure, principally with gangue mineralization, at its easterly extreme.



### Geology:

Tin-silver-copper mineralization is associated with a large area of intrusive rhyolite porphyry in a region where intrusives are, for the most part, granodiorite. The rhyolite porphyry has been heavily tourmalinized. The south half of the rhyolite trend is featured by several areas of iron stained and cemented brecciation, only one of which has been extensively explored.

Mineralization, non-pegmatitic and similar in many respects to Bolivian ores, is associated with a brecciated structure which can be mapped for 1200 feet on strike, with widths of from 12 to 25 feet. It has been partially developed to 500 feet of depth by Tunnel 2 workings, and there are good reasons to believe that mineralization and structure can be extended, at least another 500 feet, to the Tunnel 3 Level.

The trend is 'S' shaped at the surface, seemingly its natural character.

Tin mineralization is limited to tin oxide, cassiterite, chocolate brown in color and of such medium crystallinity that recovery difficulties from excessive fineness are not anticipated. No stannite, the complex tin bi-sulphide, has ever been reported.

The outcrop occurs as a leached mass which, in part, is hard and dense from vitrification through weathering. Cassiterite observed along the outcrop in 1941 provided several 1% tin samples, cut across the full width. Cuts, taken in 1962, at random, carried only low tin values. Surface tin occurrences must, therefore, be considered spotty.

With reference to 100 scale 'Stopes' and 'Tun. No. 2', in the pale-green, interrupted-circular area, (also referred to as the Copper-plus area), copper mineralization consists of malachite, azurite, cuprite and secondary chalcocite; some chalcopyrite has been observed in isolated centers. Tin, in minor amounts, with cassiterite observed in some hand specimens (values from zero thru 0.15% to 0.94%) is associated.

Copper mineralization in the tin-plus area (shown in red, north of the copper-plus area, and at the hanging wall side of the Majuba fault) consists, not only, of malachite and azurite, but also, the copper arsenates, olivenite and chalcophyllite, and is associated with lean to high grade tin, with a more or less 3% tin average.

Gangue minerals consist of pyrite, arsenopyrite, quartz, tourmaline, fluorspar and sericite on the hanging wall side and the same, as well as a very prominent tan, soft mineralization, believed to be an impure calcite on the footwall side of the Majuba fault.

Terbernite, the green uranium mica, has, locally, been observed in the tin structure; above and at Tunnel 2 level in the copper-plus sector and in the gouge of the Majuba fault at Tunnel 3. With reference to the Tunnel 3 plot, note the molybdenite observation, also with low tin values, in the drift following the Majuba fault, along the right rib, at the left margin of the map. Molybdenite was also observed at depth in DDH No. 8, the minus 4.5 degree hole drilled to the north east, just back of the face of Tunnel 2.



Structurally, and with reference to 100 scale plans and cross sections, post mineral movement on the Majuba fault is reverse; on the other hand, movement on subsidiary slips, dipping towards the Majuba structure, is normal. Cross sections with good control provide the interpretations. Up-dip displacement amounts to between 300 and 400 feet, and horizontal offsetting, in a series of steps, approaches 75 feet.

Mineral zoning is a suggestion. A reverse movement of about 350 feet might account for the abrupt change in mineralization and values from the footwall to the hangingwall side of the Majuba fault. It is conceivable that hangingwall, tin-plus characteristics could well represent pre-faulting, more deeply emplaced mineralization. Such a possibility could auger well for Tunnel 3 exploration.

With reference to Tunnel 3 plans in 100 and 200 scale sets, the projection of mineralized structure to the Tunnel 3 horizon is tied to the following reasoning and procedures:

- 1- mineralized structure, precisely mapped by planetable at surface, all on the hanging wall side of the Majuba fault, except for lesser offsetting by subsidiary structure, reflects the true structural pattern;
- 2- this pattern repeats itself, for the footwall side of the Majuba fault, at the Tunnel 2 level, and after the complexities encountered in association with the fault, should proceed with a normal pattern on the hanging wall side, once leaving the fault area;
- 3- with the area of possibility at the Tunnel 3 level, all well within the footwall area, at some distance from the Majuba fault, the pattern should again be true and not disturbed and disrupted by fault movement;
- 4- with reference to Section I-I' (100 scale) diamond drill holes 5, 3, and 6, and with reference to Tunnel 3, diamond drill hole 1, with its band of mineralization, establish a north to slightly northwest trend of mineralized structure, comparable to a similar trend at surface. Accepting these as a common trend, the pattern has been developed on Tunnel 3, by repeating the surface trend from that part of the pattern.

#### Samples:

Plan maps and sections present individual samples, or averages of many samples, as in the case of the tin area.

No detailed list of samples is included. In the event of interest, additional sample detail is at hand for further study.

#### Ore Reserves and Objectives:

Except for a continuation of the copper-plus area to the north and northwest, no reserves are even suggested. For this possible 'block' 30,000 tons of 3% or less copper, 2 ounces silver and 0.18% tin might be expected. Such would not be considered economic.



## Ore Reserves and Objectives (concl)

Concerning the proposed program, both levels provide access for continued exploration and development. It is believed that exploration should be continued on Tunnel 2, from the face of 222 crosscut, before expending an estimated \$11,000 to reopen and equip Tunnel 3.

The proposed program consists of three stages. With reference to Tunnel 2 plan map, Stage A, from the face of 222 crosscut, consists of horizontal drill holes 1 and 4, as well as inclined holes on Section R-B' (45 degrees plus and 45 degrees minus) 2 and 3. These total 1000 feet. In the event Stage A confirms the pattern, then drilling would be followed by proposed drifts 1 and 2, totalling 500 feet. These 500 feet represent Stage B. Included in Stage A would be 1000 feet of drilling requirement, (see Gilmet lease) on the open slopes on Gilmet property, shown on the surface map of the 200 scale set.

With Stages A and B affirmative, Stage C, consisting of opening up Tunnel 3, retimbering the Majuba Fault zone in Tunnel 3, putting in 2000 feet of new track and 2000 feet of air and water lines, and driving 200 feet of crosscut and 600 feet of drift, would be recommended.

Additional drilling on Gilmet ground would be required during the progress of this program. Mineralization and structure on Gilmet ground assures the operator that this work would be for the exploration of reserves, not included in estimates on Myler property; Gilmet ground has good possibilities and one would not be drilling scenery.

## Properties and Leases:

Myler patented ground in red outline on Plat B has been leased for a total asking price of \$175,000. Terms include a \$5000 payment when a final lease is signed, 10% royalty payments on gross recovered values or minimum royalty payments of \$500 in lieu of production. Payments of \$12,000 per year start at the end of 36 months; all of the above applies on the final purchase price of \$175,000.

Gilmet has no asking price since he requests a perpetual royalty on ore mined from his property. Terms include the payment of \$2000 at the start, \$2000 at the end of six months, and annual payments of \$10000, starting at the end of the first year; \$200 monthly payments in lieu of production or 10% royalty payments on the gross production are specified. When all of the above totals \$50,000, the royalty on gross production is to be reduced to 5%, and no other payments are to be made except this royalty.

Concerning D.L. Evans and his associate Mr. Benj. C. Charles (lessors from Myler and Gilmet) a return of their investment in the property as well as some reasonable royalty arrangement is asked. This, of course, is a matter for mutual discussion.

## Reserve Possibilities:

Stages A and B are designed to partially block out a unit with 600 feet of trend, 13 feet of average width and a minimum of 250 feet of vertical extent. With reference to Section O-O', the 250' is based on the vertical interval from the base of the 'trough' to the highest development of values, above Tunnel 2. Dimensions, as listed, represent an objective of 150,000 tons.



Assuming a similar vertical extent of mineralization for the unit on the underside of the fault, and with 600 feet of trend and 13 feet of thickness, the objective for Stage C would be another 150,000 tons, for a total of 300,000 tons for the three stages.

The average values for the tin-plus area, based on abundant samples, carefully weighted, amount to 2.93% tin, 2.72 ounces silver and 1.44 copper.

On the basis of current markets, these average values produce a gross of \$100.60 per ton. Naturally, the continued development of such mineralization would be hoped for. But preliminary rough estimates, assuming \$40 per ton for mining and milling (including the repayment of the capital investment) indicates that with copper and silver values unchanged, a \$10 per ton operating profit, before taxes, might be anticipated with a tin average as low as 1.37%.

The objectives on Gilmet go und areas overal. The ellipse shown on the 200 scale surface plan, an area of crackling, sheeting, brecciation and oxide mineralization covering 33,000 square feet, presents the possibility of developing 250,000 tons per vertical 100 feet. A sample at the face of Tunnel 7, still in leached material, assayed 0.55% copper, 0.03% tin and 4.9 ounces in silver.

#### Estimated Cost of Program:

\$38,400 is estimated for Stage A. This includes \$10,000 for diamond drilling from Tunnel 2 (1000 feet at \$10 per foot) \$10,000 for drilling on Gilmet property, \$2,000 for supervision, sampling and assaying, \$7,000 in initial payments to owners, \$1,400 in monthly payments to owners and \$8,000 to Charles and Evans, if cost of program is repaid immediately; or considerably less is such is spread across the three stages. Eight weeks is the estimated time increment for Stage A.

\$23,050 is estimated for Stage B; this represents 500 feet of drifting at \$40 per foot or \$20,000; \$1,050 in monthly payments to owners and \$2,000 for supervision, sampling and assaying. Seven weeks are estimated for Stage B, based on two shifts drilling and one shift mucking.

\$57,600 is estimated for Stage C. This takes in \$2,800 monthly payments to owners, a \$2,000 cash payment to Gilmet, \$11,000 for the rehabilitation and equipping of Tunnel 3, \$8,000 crosscutting and \$24,000 drifting, as well as \$5,000 drilling on Gilmet go und, and \$3,600 for supervision, sampling and assaying. It is believed that a minimum of 14 weeks will be required.

Estimates of \$10 per foot drilling and \$40 per foot for tunneling are high enough, it is believed, to make the above estimates, Maxima. These allow for improvement and lower totals.



Recapitulation

1. It must be emphasized that this is a matter of exploration and the word 'objective' signifies what can be expected if geological reasoning is correct, projections substantiated and mineralization, sampled to date, continuous.

It appears equally fair to point out that with increases in Mylar dimensions, as well as favorable results from untested properties on Gilmet ground, objectives and reserves can be increased tremendously.

2. There have always been two approaches to the Majuba picture. Government efforts through the USGS and USAM have persistently discredited the property and its possibilities. Private initiative has, each time, provided new detail, always pointing to the property's dormant but ultimate potential.

3. Efforts by the Freeport Sulphur Company, Greenan and Kerr, and Kansas City Exploration Inc. have all served to question, if not disprove the 'pocket on a vein' premise. It is our contention that these three programs, over the years, have, at long last, opened the door to successful exploration and development.

4. Today's prices for copper, tin and silver and the indicated future supply and demand picture for tin and silver improve the outlook.

The opportunity of partially blocking out the reserve suggested, i.e. 300,000 tons @ \$100 per ton, for less than \$100,000 is an attraction.

Recommendations and proposals appear justified.

1700 Royal Drive  
Reno, Nevada

  
David LeCount Evans



**MAJUDA HILL**  
 PERSHING COUNTY  
 NEVADA

**LEGEND**

**100 SCALE  
 STUDIES**

DAVID L. EVANS  
 RENO, NEVADA  
 FEBRUARY 1965

**SYMBOLS  
 AND  
 COLORS**

**DESCRIPTION**



Major Faulting



Subsidiary Faulting



Dominant Copper Values  
 Carbonates, Oxides and  
 Secondary Sulphides.

Minor Tin Values in  
 Traces of Cassiterite,  
 Bi-values in Silver.

Tourmaline, Calcite  
 Fluorite & Quartz  
 Gangue



Outstanding Tin Values  
 in Streaks & Disseminations  
 of Cassiterite.

Persistent but Lesser  
 Copper Values as  
 Carbonates & Arsenates.  
 Bi-values in Silver.



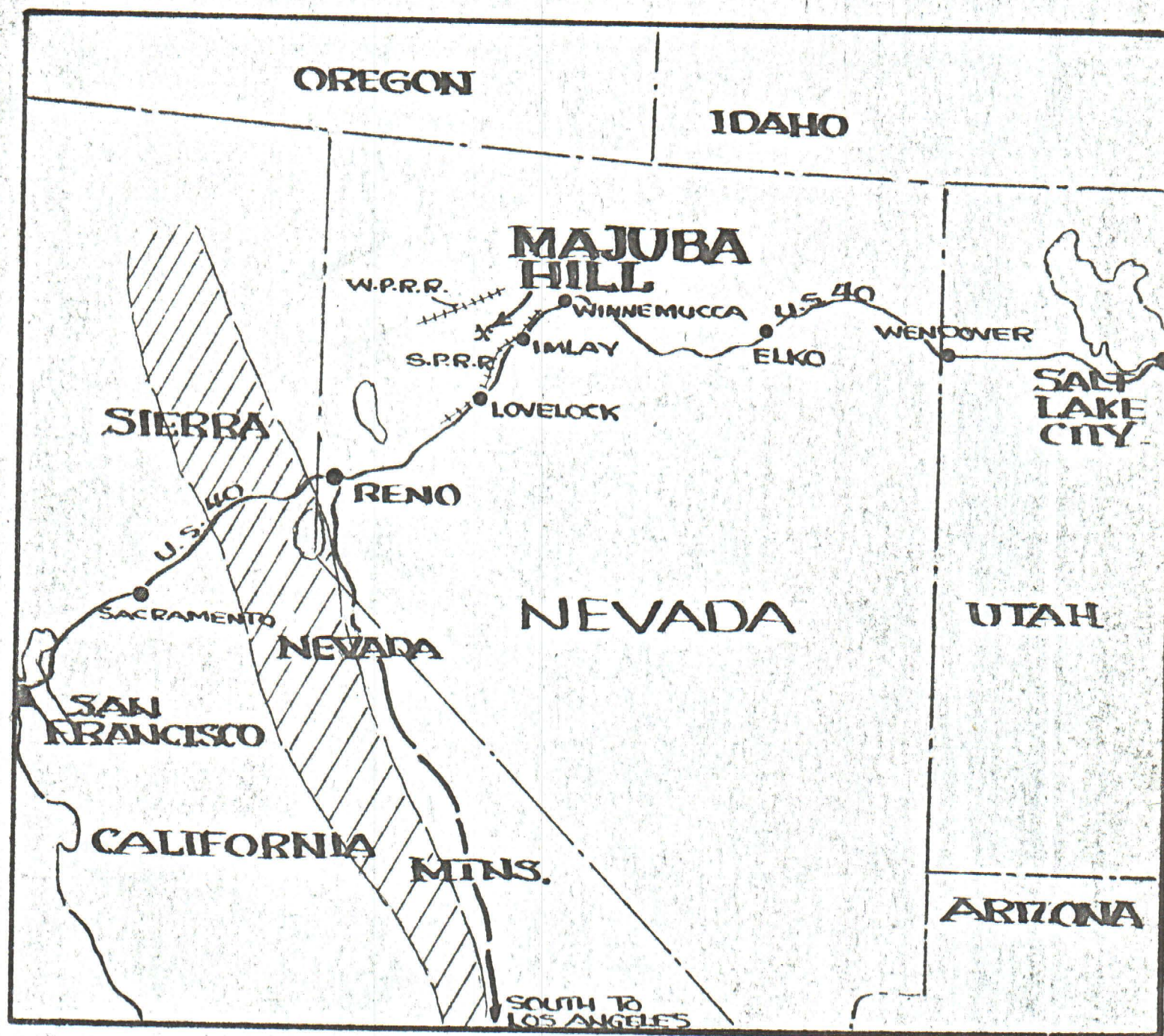
Gangue. Especially Black  
 Tourmaline & Lesser Quartz



Heavy Limonite & Some Tourmaline  
 With Brecciated Material in  
 Vittrified Surface Outcrops.  
 Considered Leached.



A



**MAJUBA HILL  
TIN-COPPER-SILVER  
EXPLORATION**  
PERSHING CO. NEVADA

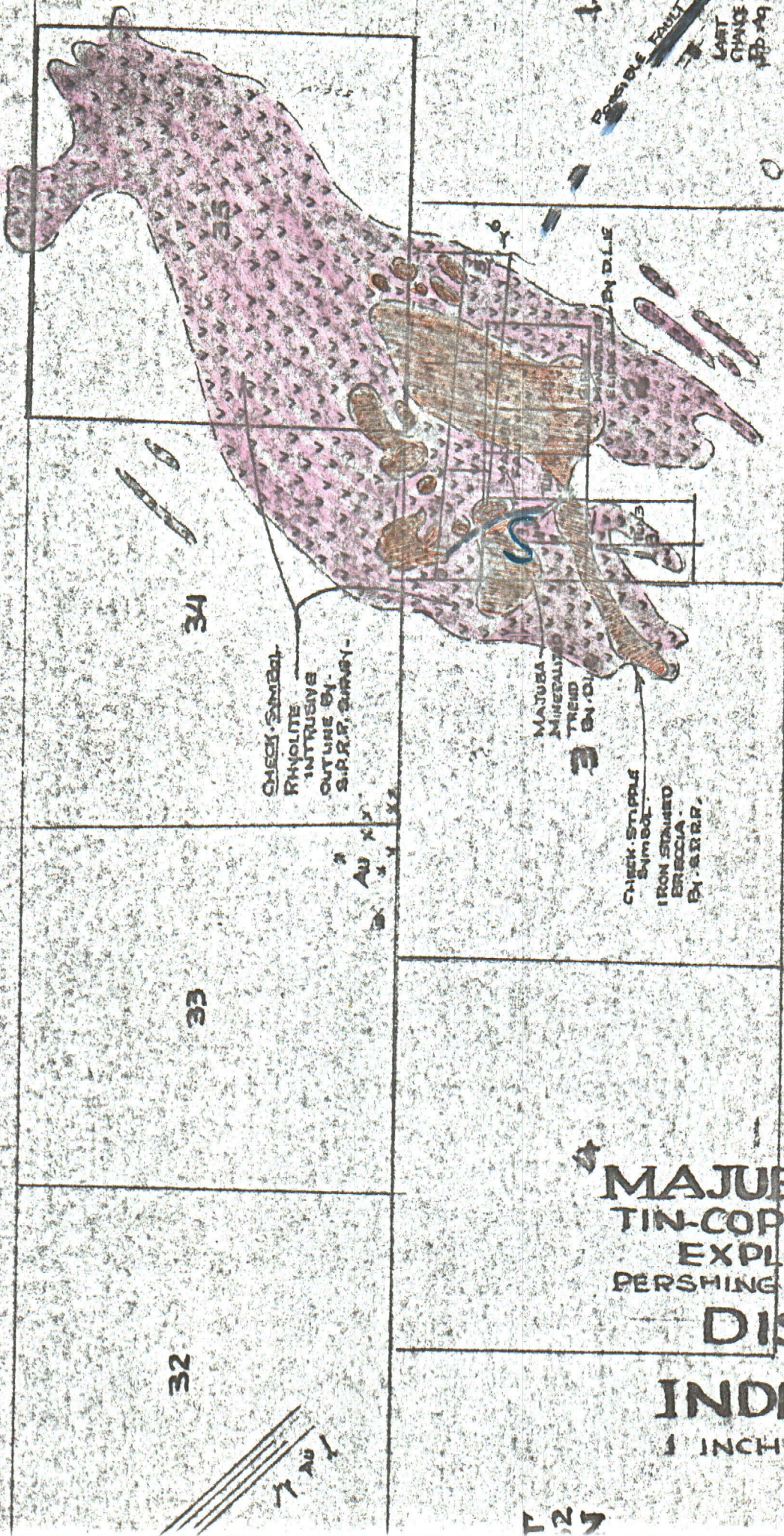
KANSAS CITY EXPLORATION, INC.  
1962

**INDEX MAP**  
1 INCH = 72 MILES



R31E

B



MAJUBA HILL  
TIN-COPPER-SILVER  
EXPLORATION  
PERSHING CO. NEVADA  
DISTRICT  
INDEX MAP

1 INCH = 2000 FT.

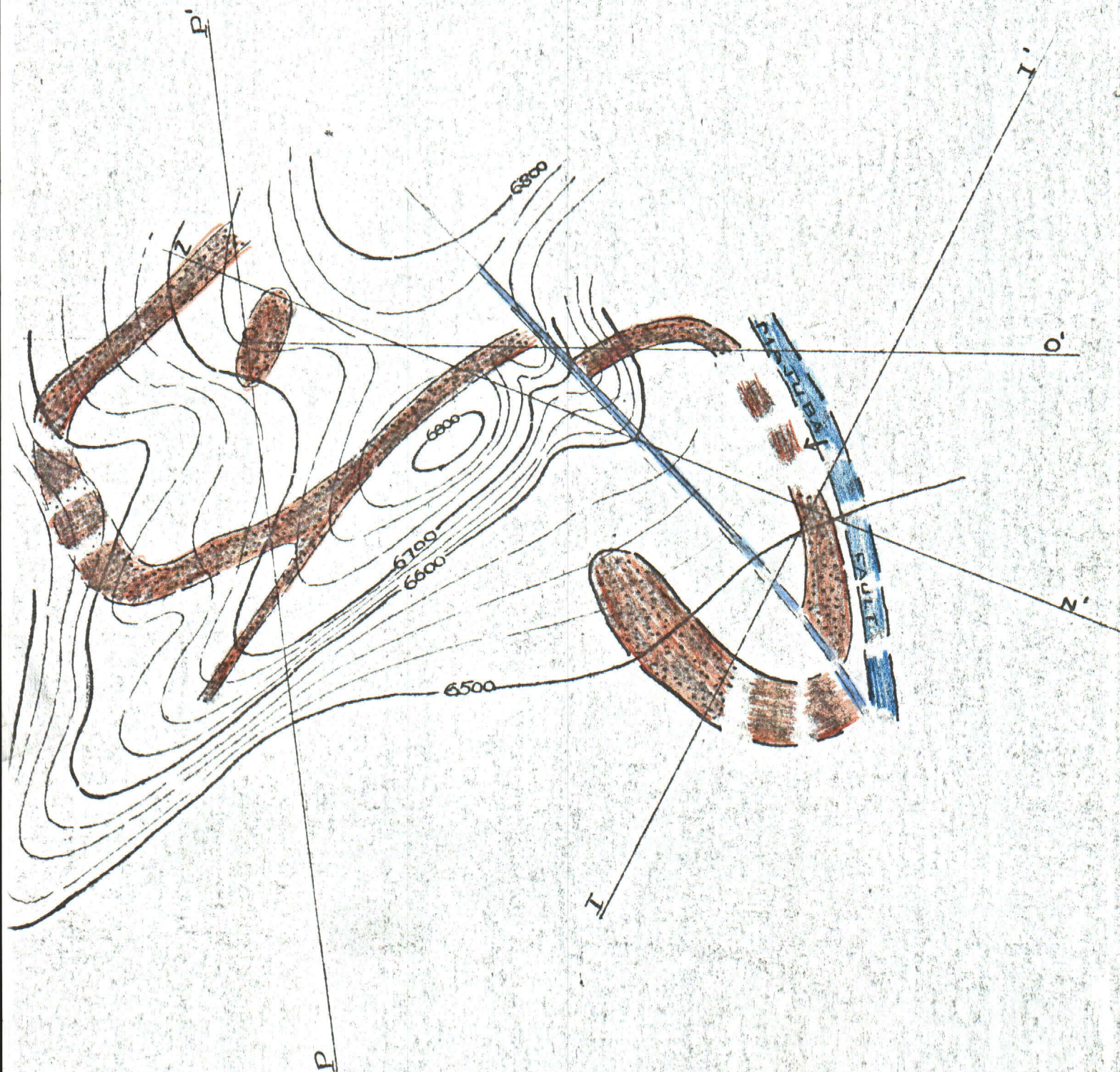
D. LEVANS  
DEC 1964



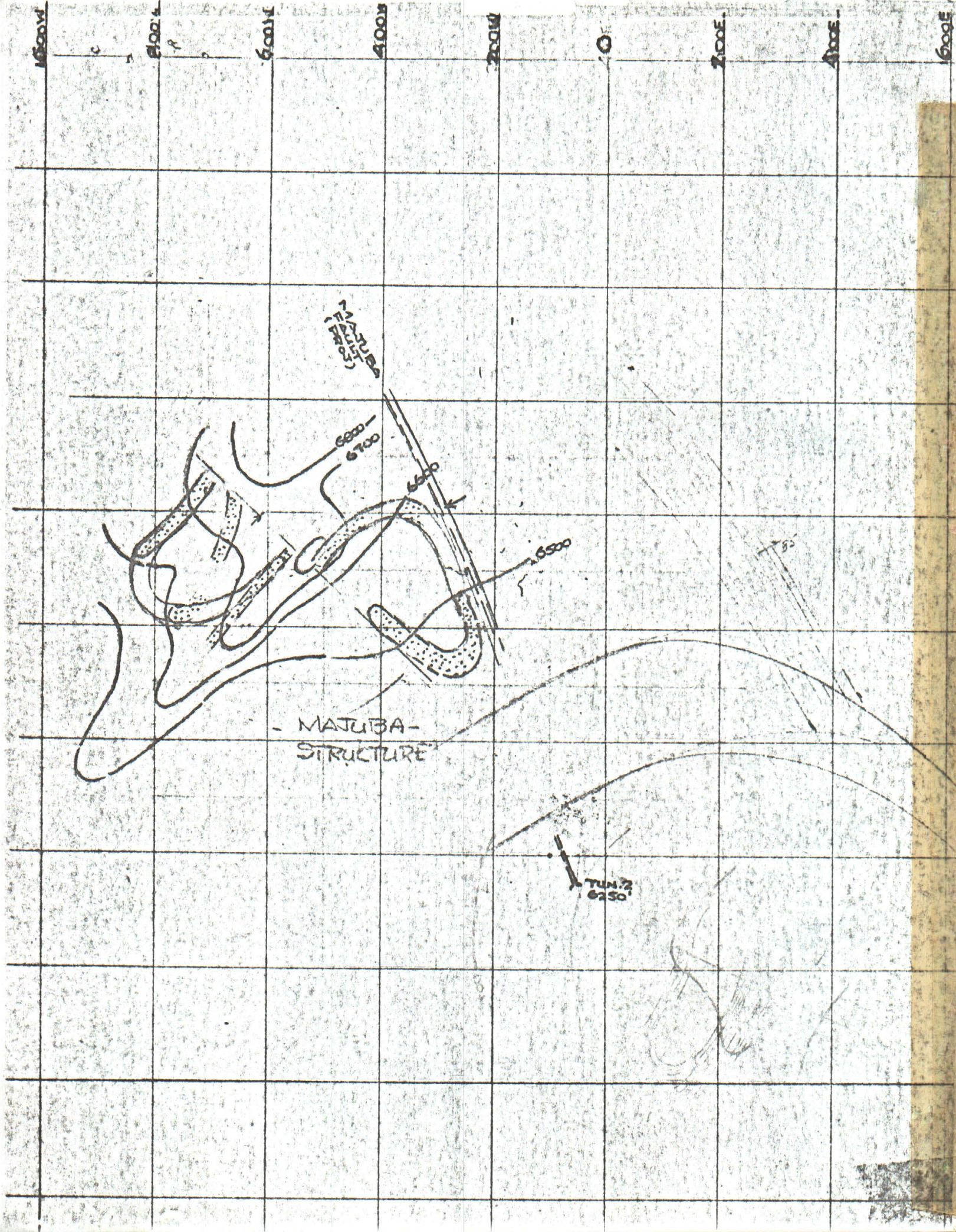
MAJUBA HILL  
PERSHING COUNTY  
NEVADA

SURFACE  
1" = 100'

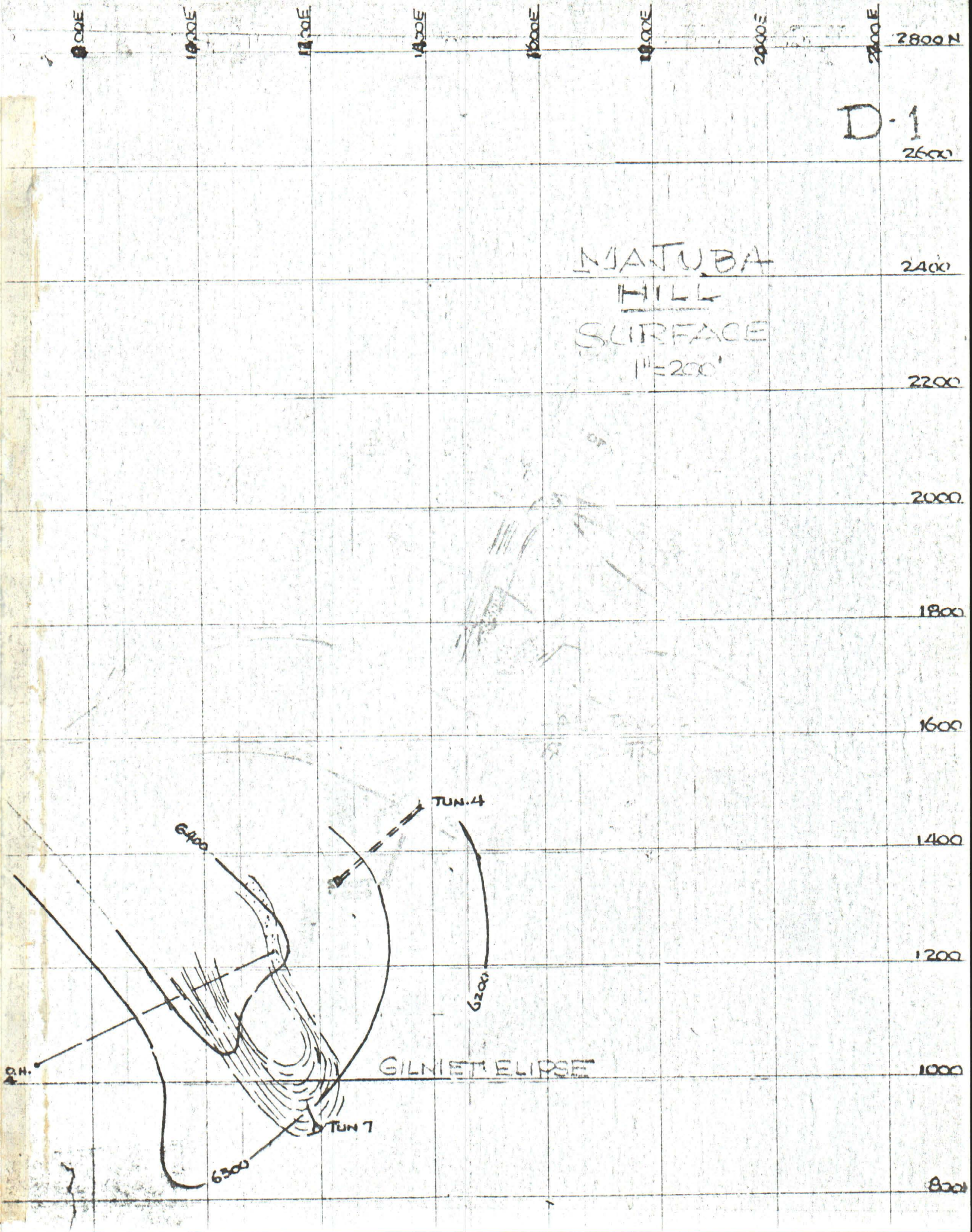
DAVID L. EVANS  
RENO, NEVADA  
FEBRUARY 1965



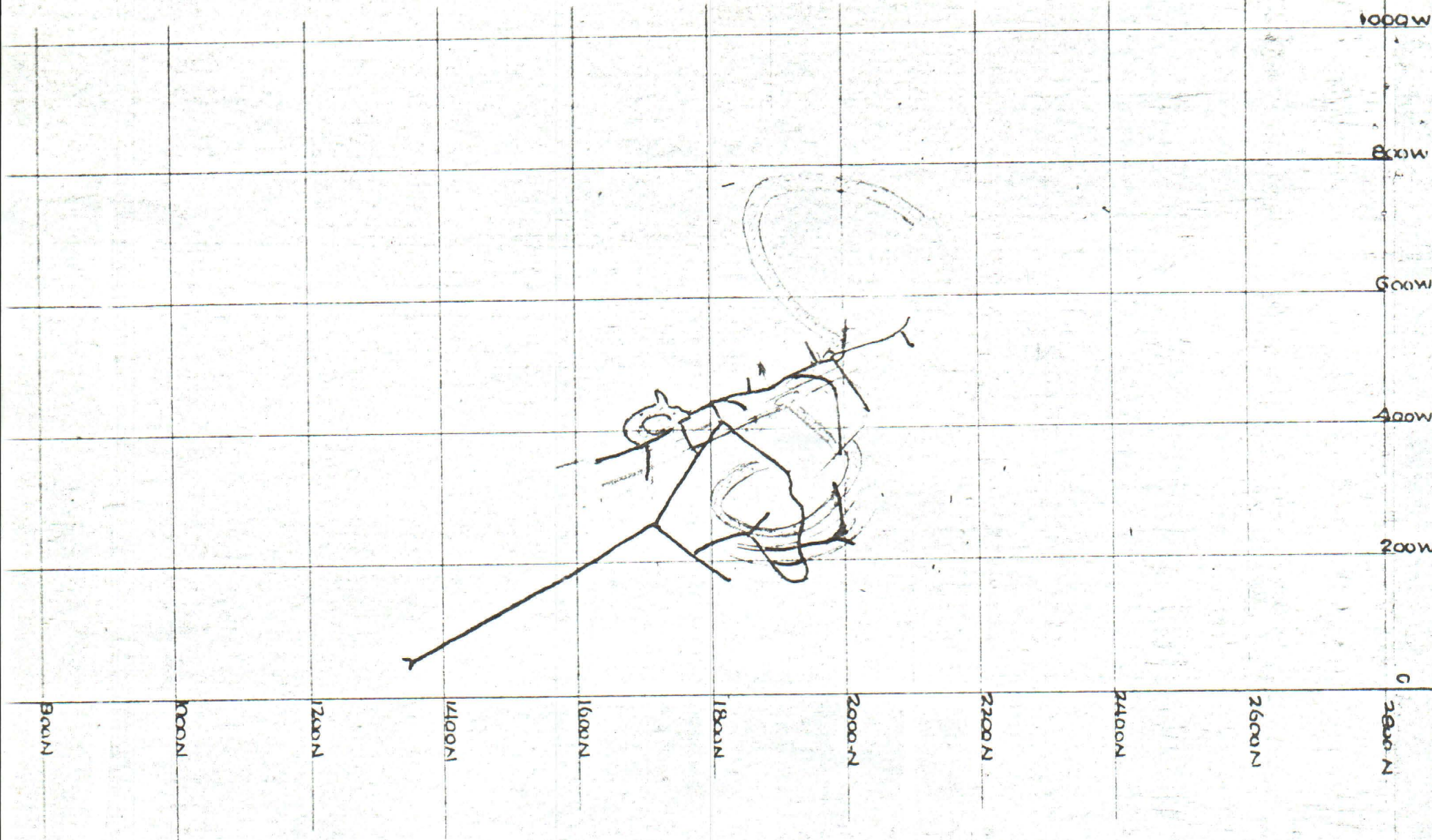








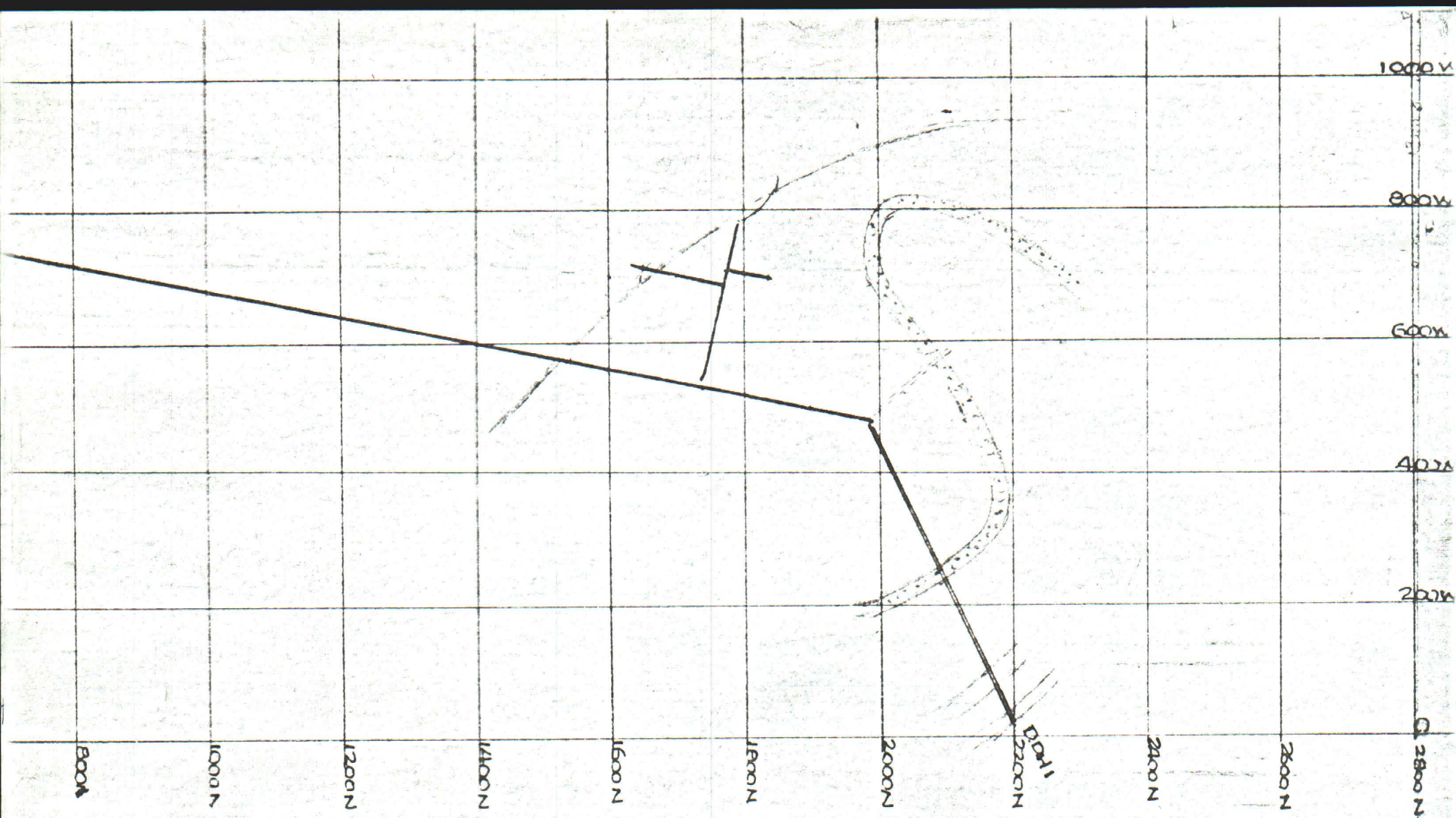




MAJUBA -  
HILL  
TUN 2-LEN  
6250'  
11-200'

D-2



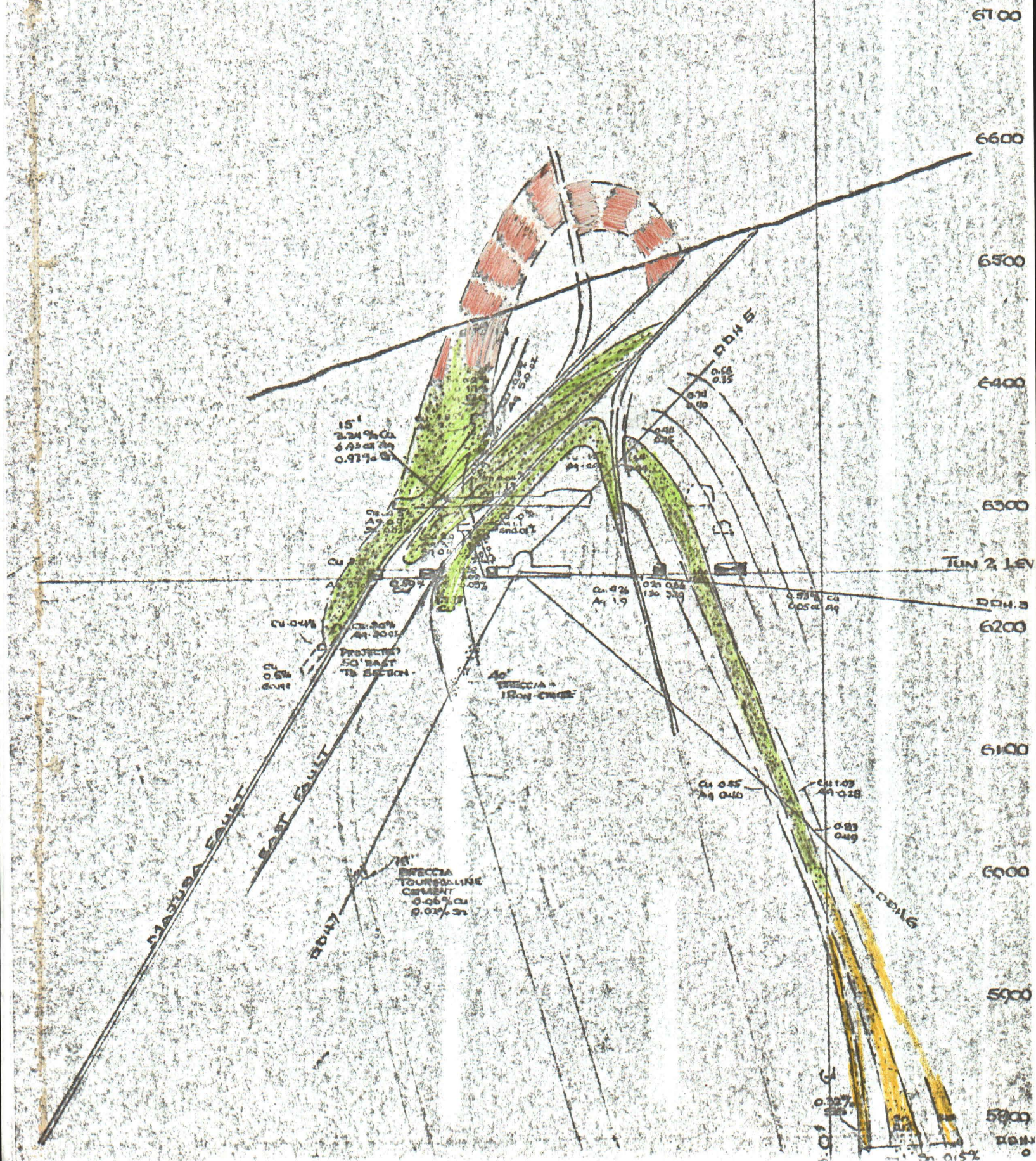


MAJUBA  
HILL  
TUN 3. LEV  
5774'  
11-200'

D-3



DAVID L EVANS  
RENO, NEVADA  
FEBRUARY 1965





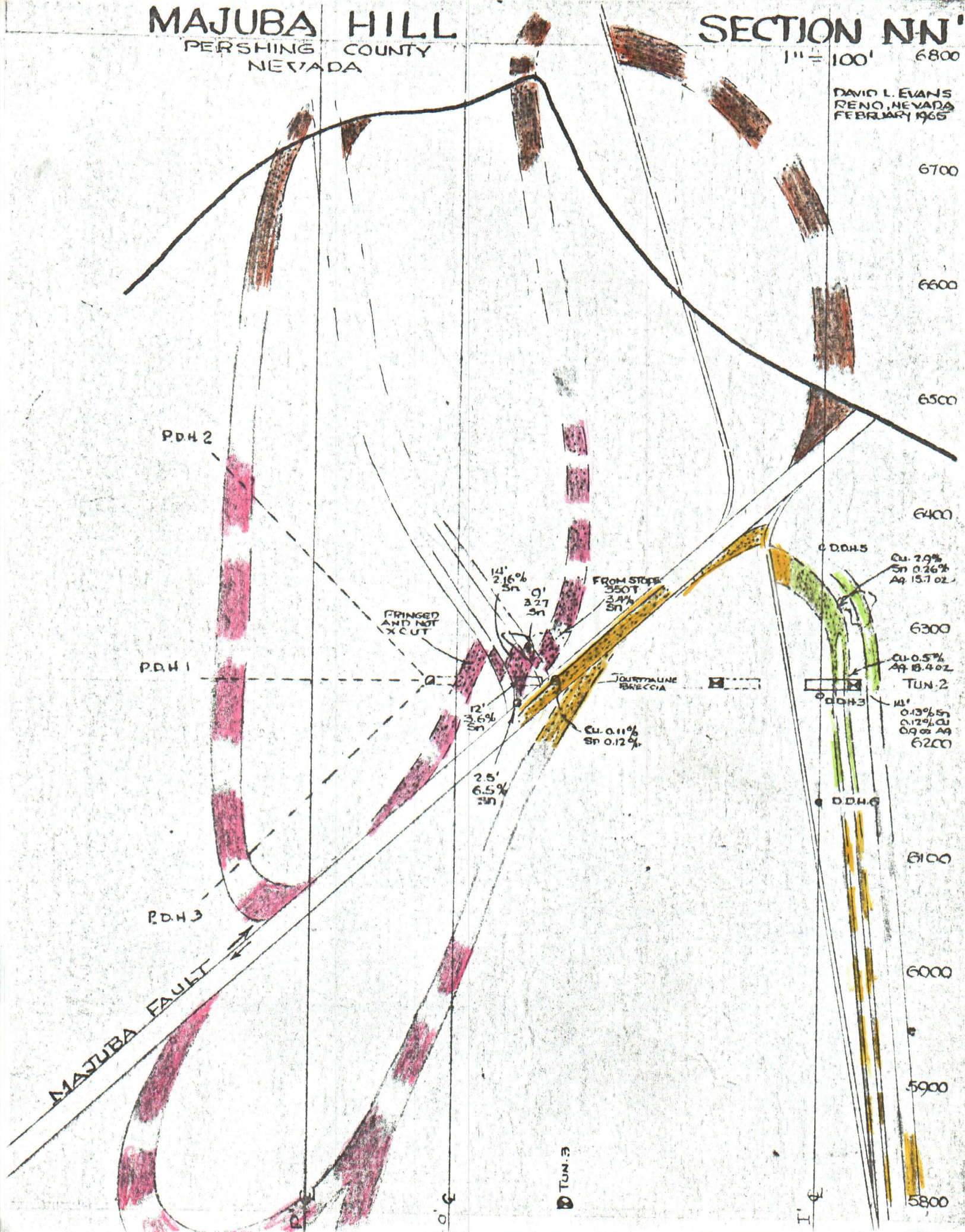
# MAJUBA HILL

PERSHING COUNTY  
NEVADA

## SECTION NN'

1" = 100' 6800

DAVID L. EVANS  
RENO, NEVADA  
FEBRUARY 1965





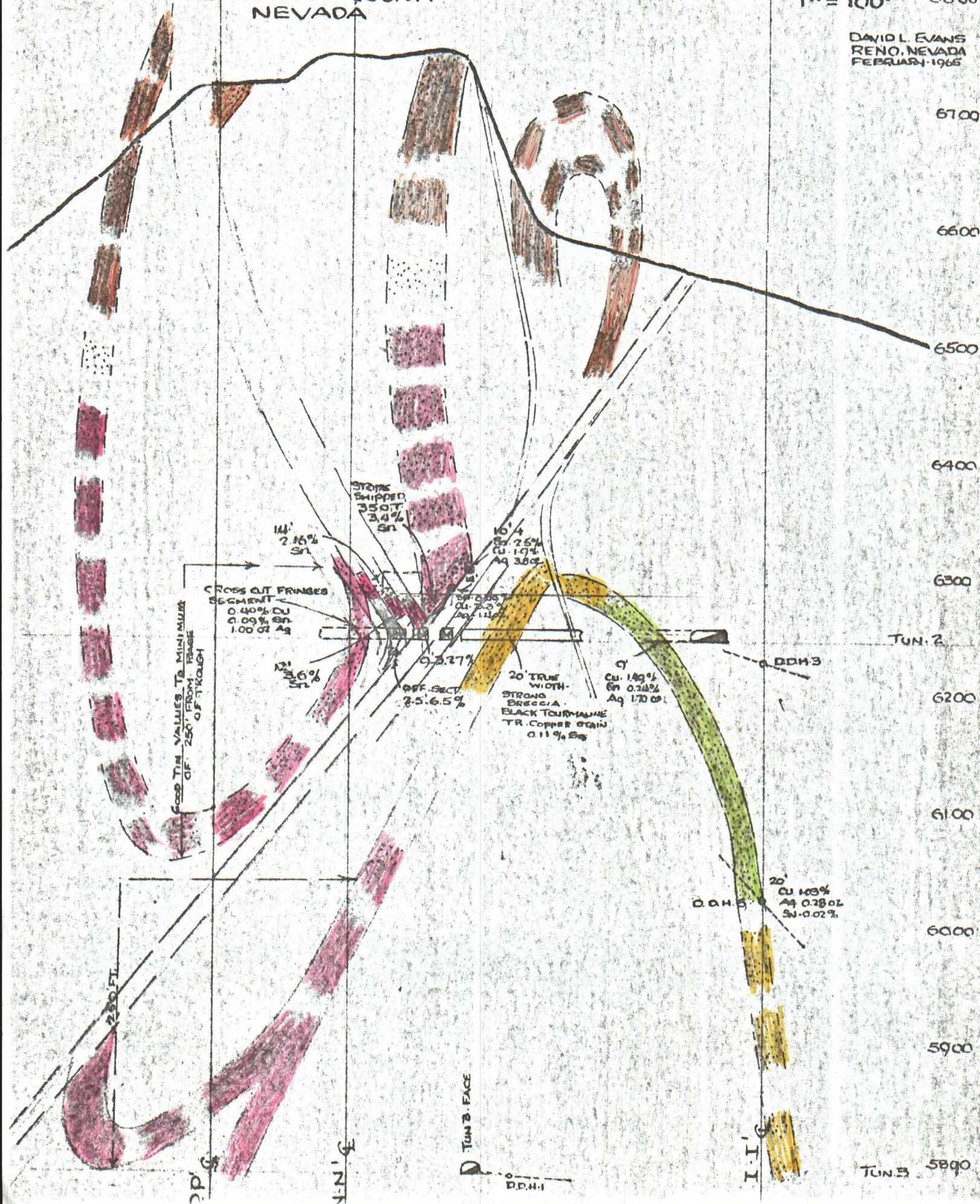
# MAJUBA HILL

PERSHING COUNTY  
NEVADA

## SECTION O-O'

1" = 100' 6800

DAVID L. EVANS  
RENO, NEVADA  
FEBRUARY 1965





# MAJUBA HILL

PERSHING COUNTY  
NEVADA

# STOPES

1" = 100'

ELEVATIONS  
6210 TO 6310'

DAVID L. EVANS  
RENO, NEVADA  
FEBRUARY 1965

