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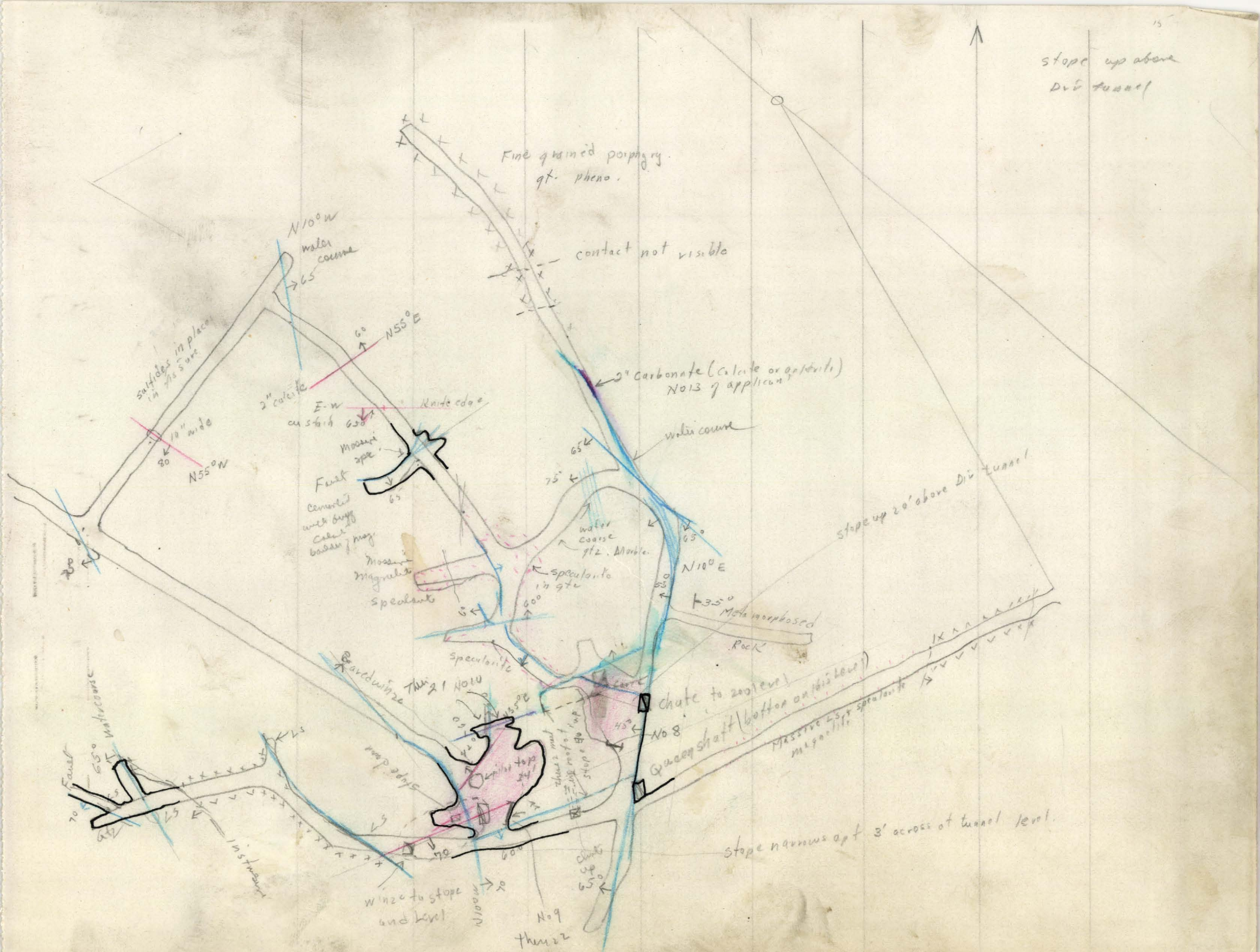
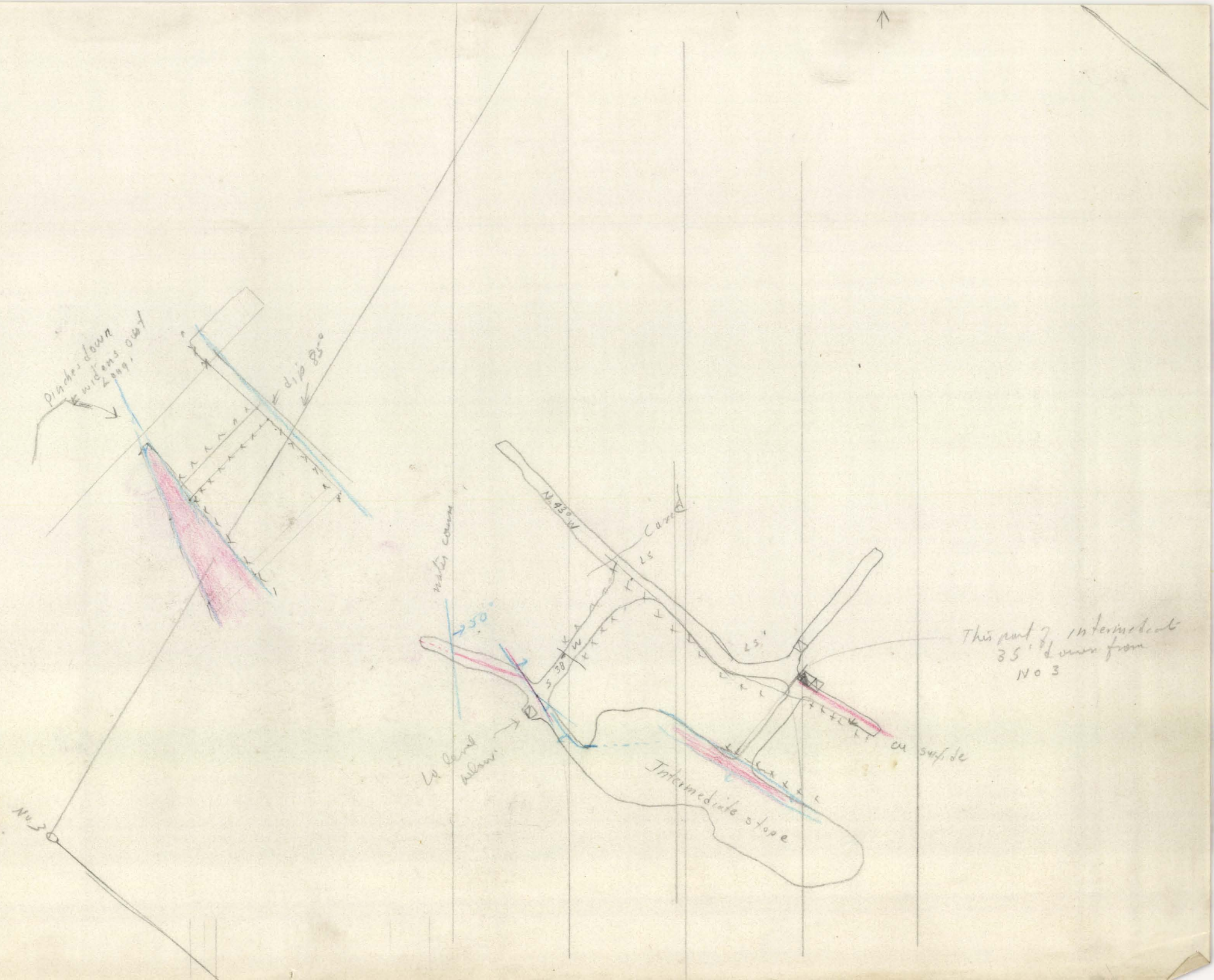
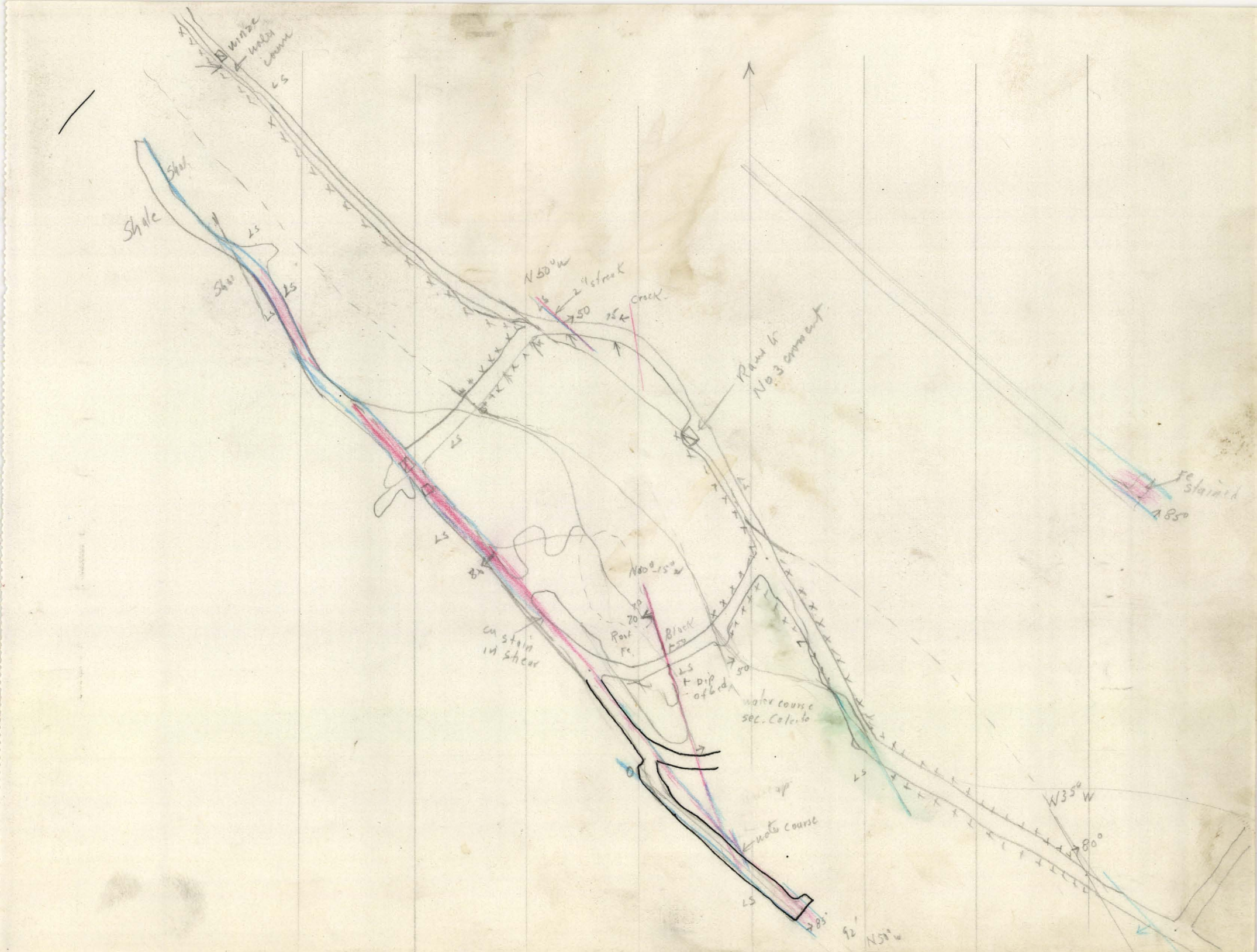


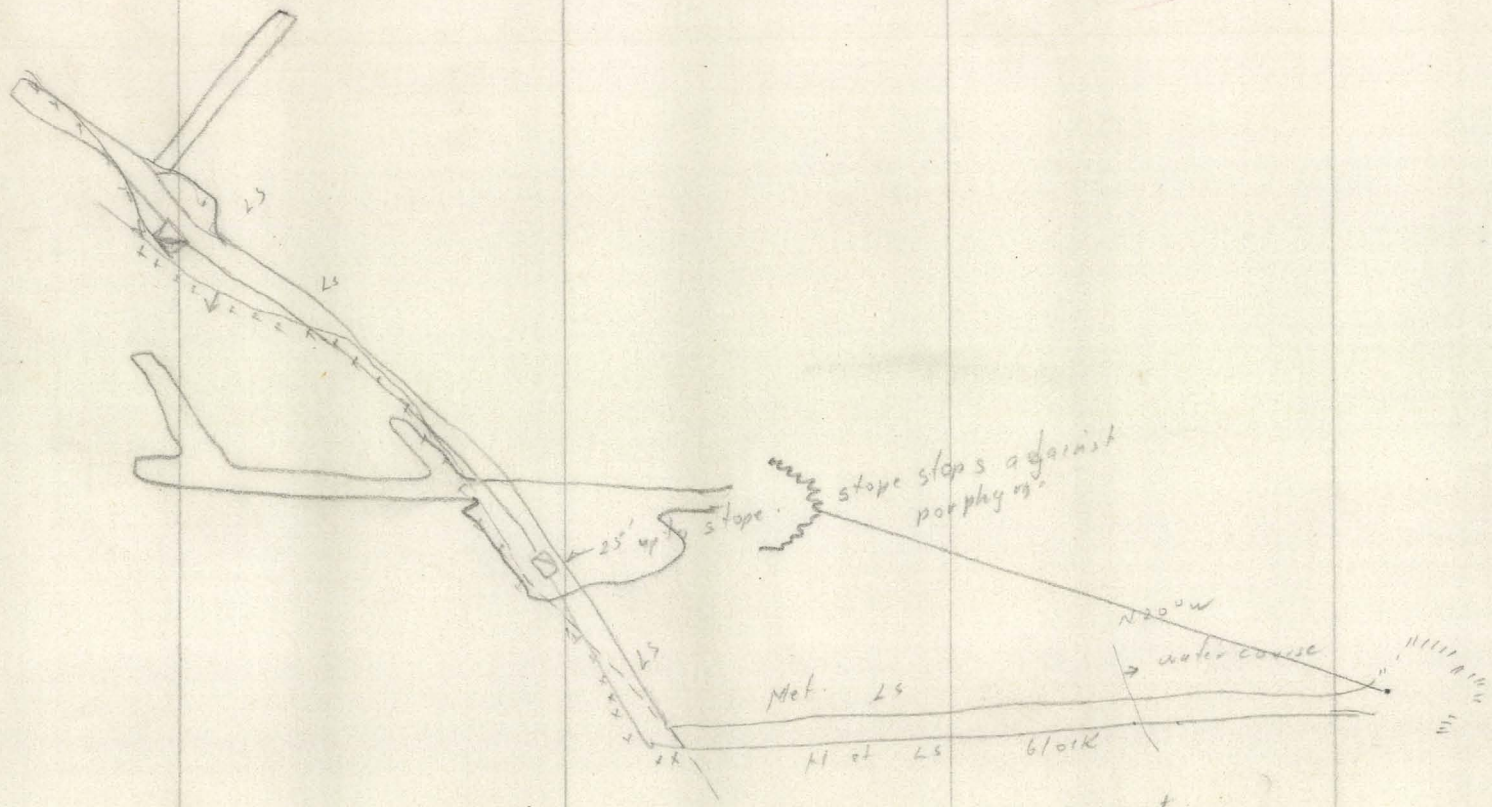
stope up above Dir tunnel
Fine grained porphyry qt. pheno.
contact not visible
N10°W
water course
65
N55°E
60
2" calcite
E-W
Knife edge
Massive spec.
Fault
65
10" wide
80
N55°W
2" carbonate (calcite or ankerite) No13 of applicant
water course
65
75
water course qtz. Marble
65
N10°E
35°
Metamorphosed Rock
stope up 20' above Dir tunnel
Massive magnetite
Speculaite
Speculaite in qtz
60°
Speculaite
Gravedwinze
Thin 21 No10
135°E
chute to 200 level
Queenshaft (bottom on this level)
No 8
45°
Massive LS + speculaite magnetite
Fault
65°
watercourse
LS
Gtz
70
LS
Instrument
Stope down
pilot top
70
60°
winze to stope and Level
No9
thin 22
chute up 65°
stope narrows apt 3' across at tunnel level.



pinches down
widens out
Long.
dip 85°
No 3
water course
50°
N 43° W
Cave
LS
LS'
S 38° W
This part of intermediate
35' down from
No 3
Intermediate stope



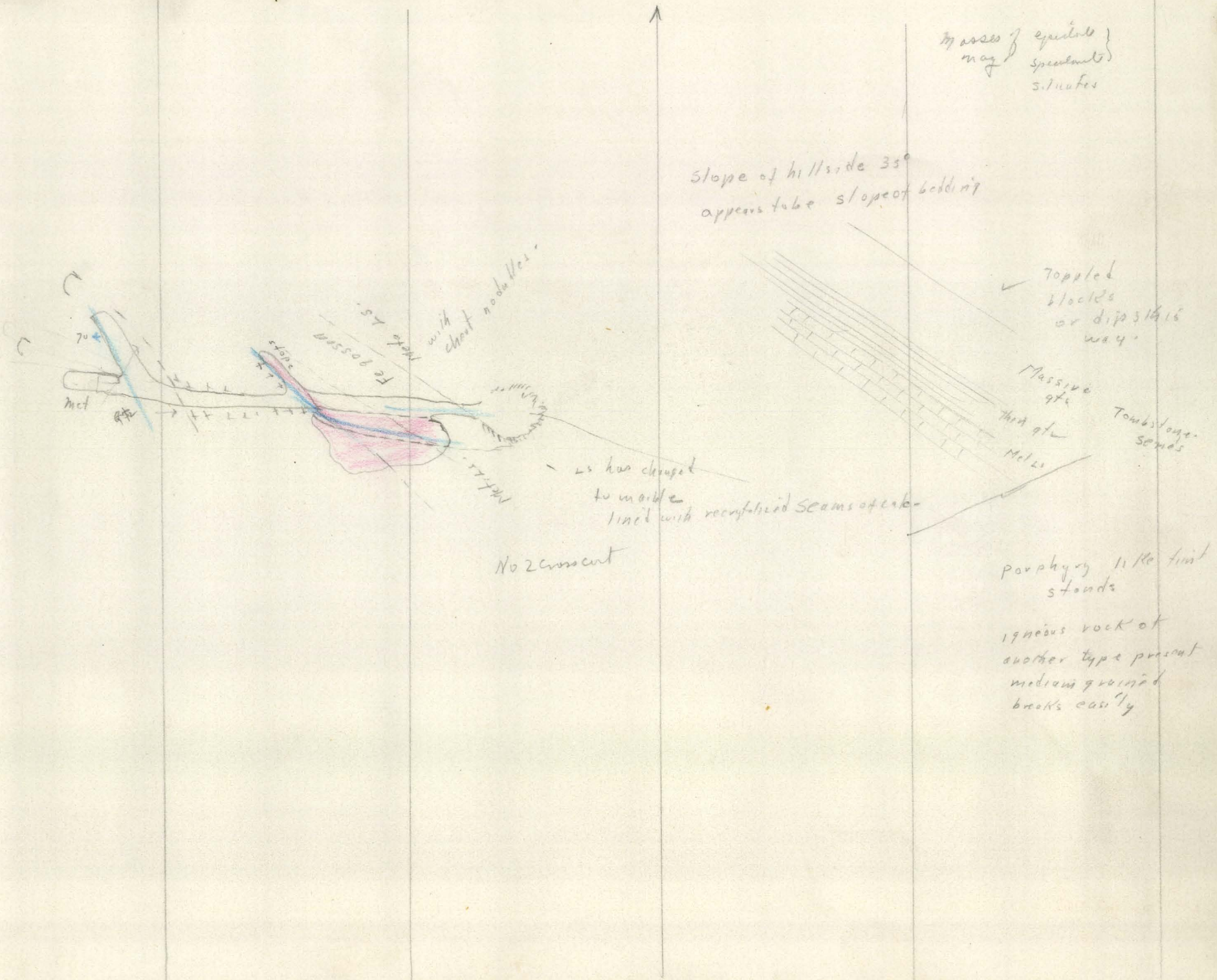
winze
water course
LS
Shale
Shale
LS
Shale
LS
LS
N 50° W
2" streak
50
15
Crack
Raise to No. 3 crosscut
LS
Fe stained
85°
LS
80
N 80°-15° W
70
Roof Fe
Block
50
Cu stain in shear
LS
Dip of bed
50
water course sec. Calcite
LS
W 35° W
80°
water course
LS
85°
92'
N 50° W

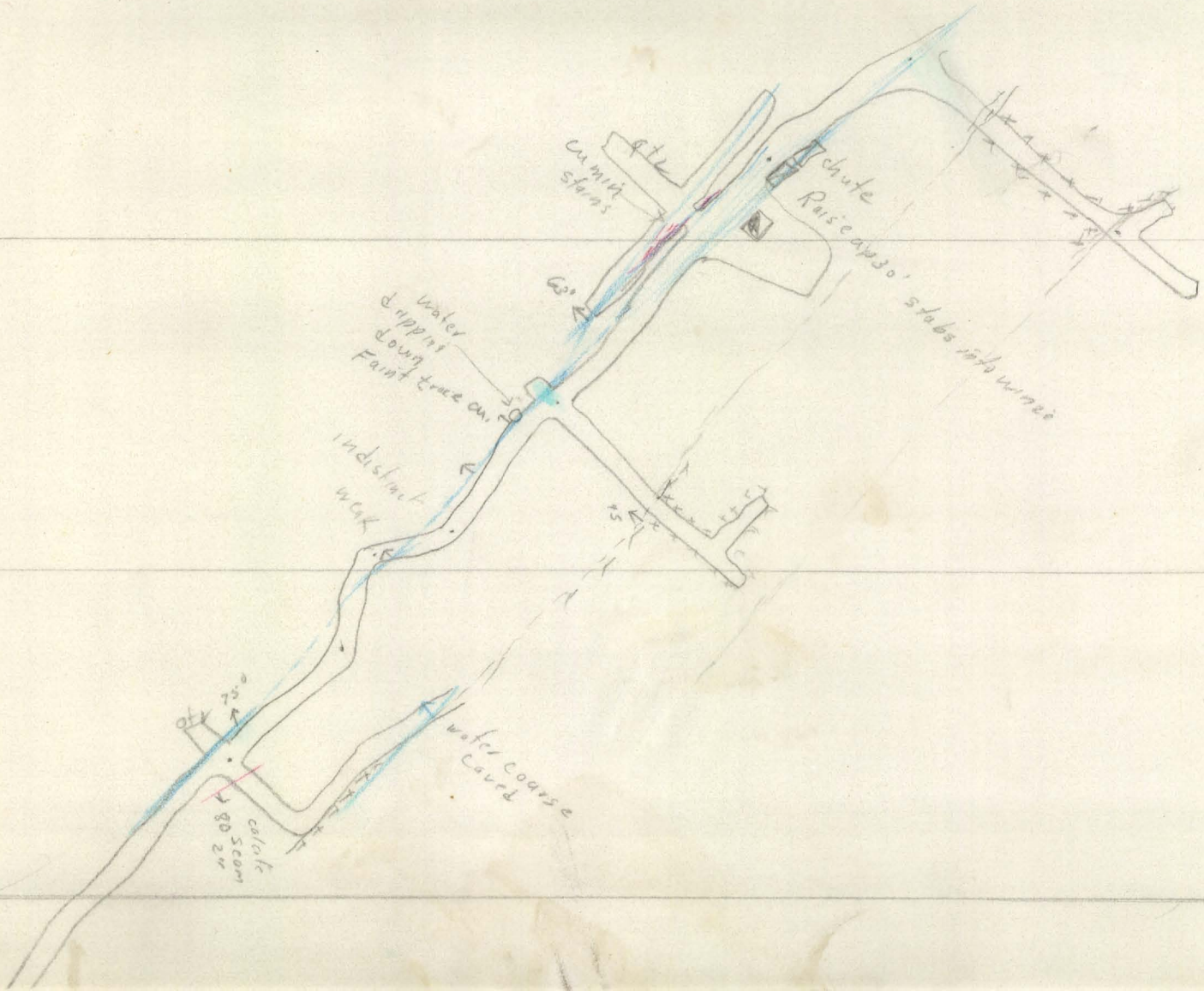


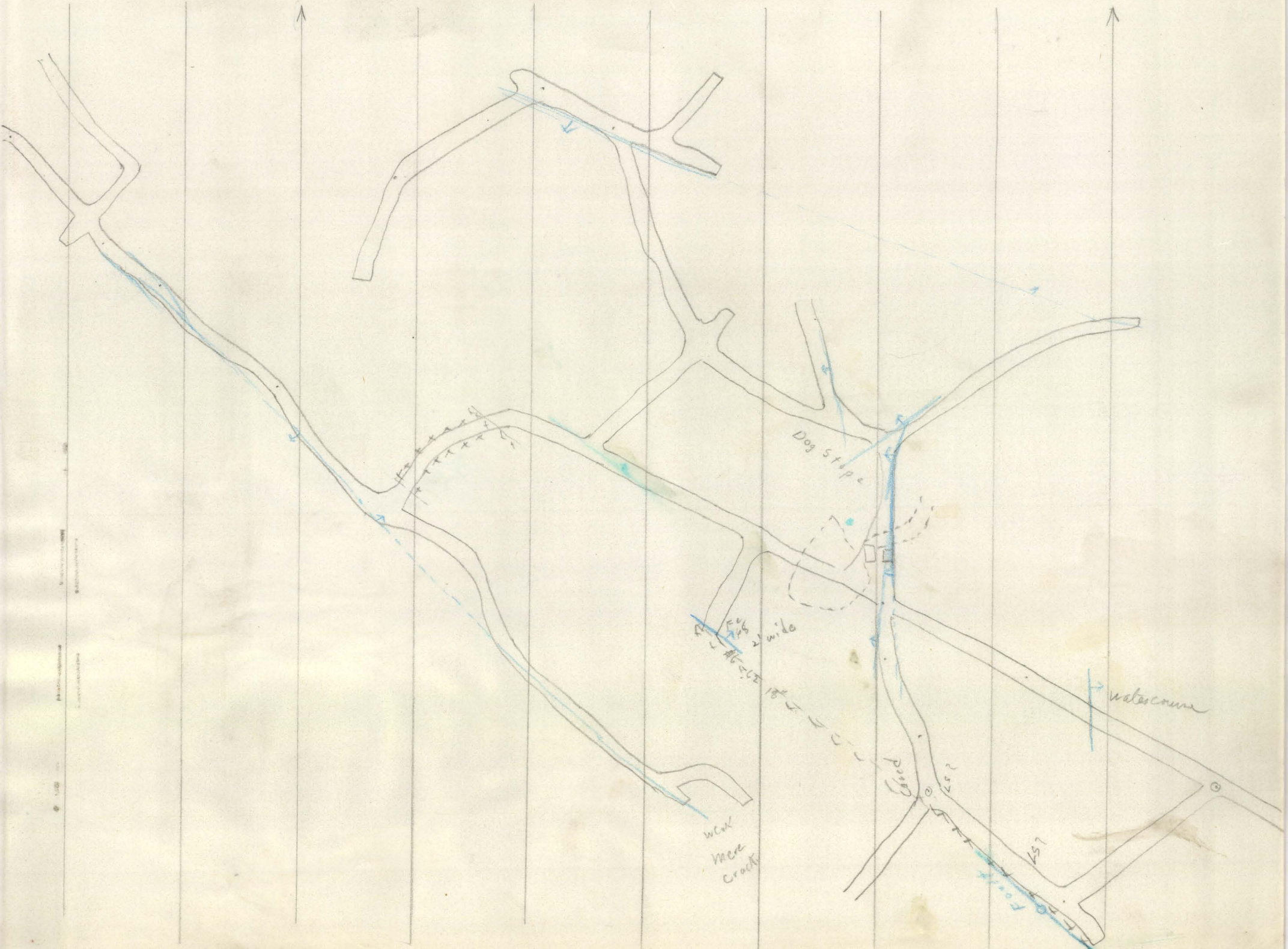
No 3 Crosscut

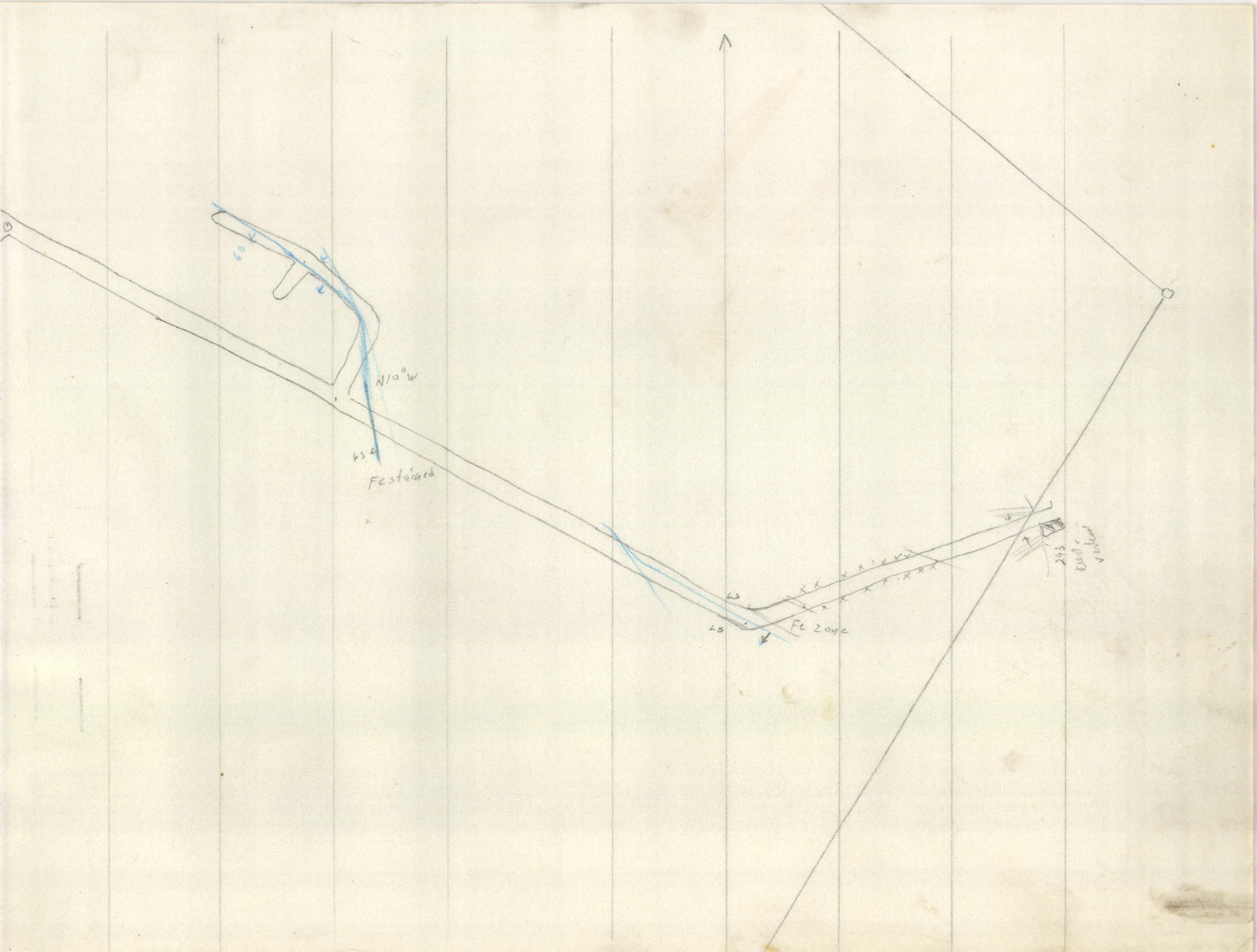
1" = 50'

Porphyry on dump oxidized yellow has pyrite
This porphyry like porphy in new lo. on next out of Tombstone

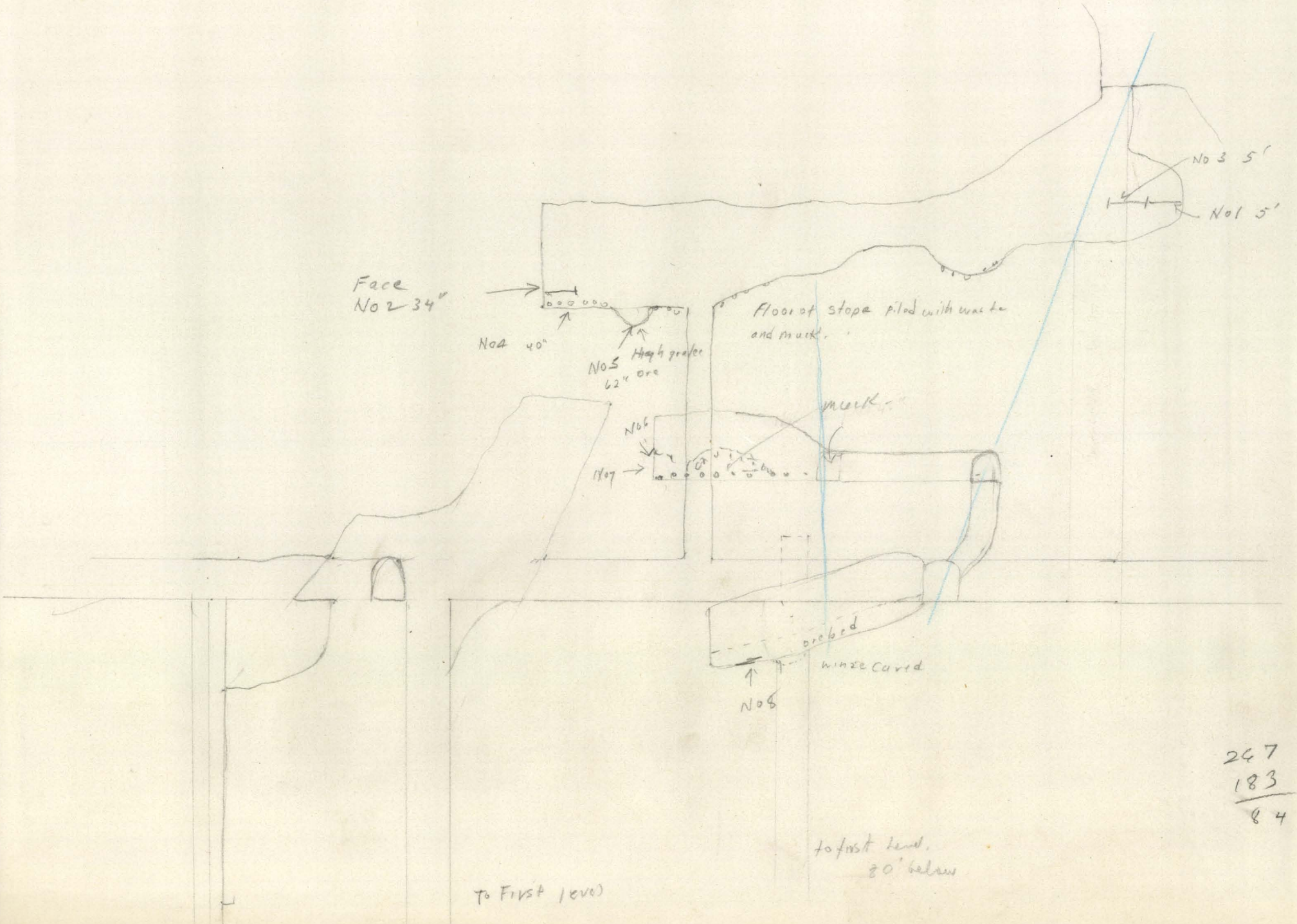

Masses of epidote may specularite
silicates
Slope of hillside 35°
appears to be slope of bedding
Toppled blocks or dip 3 to 16 way.
Massive qtz
thin qtz
Tombstone seams
Met Ls
Fe gossan
Meta Ls
with chert nodules
Met
Ls has changed to marble
lined with recrystallized seams of calc-
No 2 crosscut
porphyry like tint stands
igneous rock of another type present
medium grained
breaks easily


Chute
Raise approx 30' slabs into winze
Cumin stens
Water dripping down Faint trace on
indistinct wall
water course cavered
calcite 80 Scorm 2m

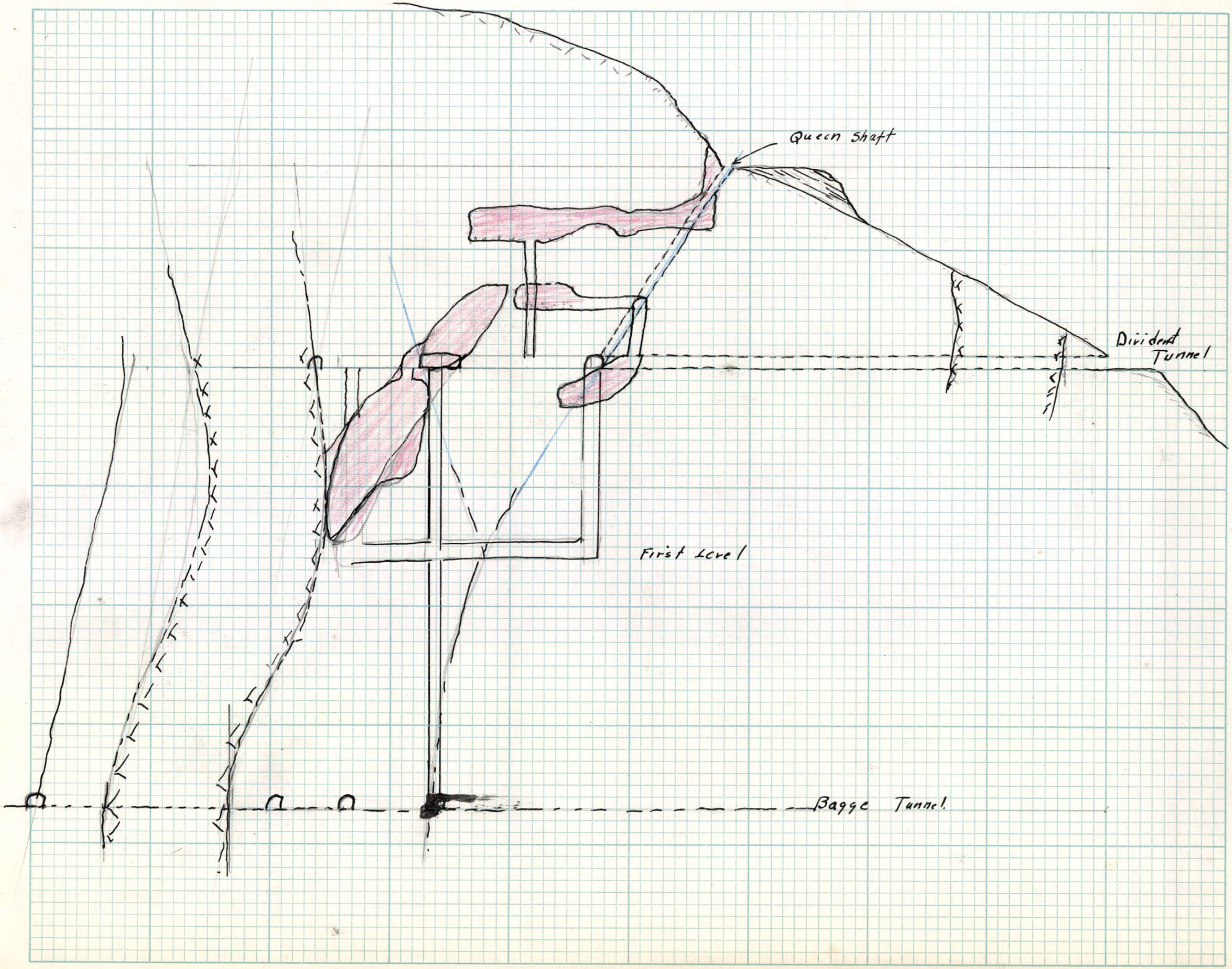

Dog Stope
2' wide
watercourse
Cored
LS?
LS?
weak
mere
crack


60
N10°W
63
Fe stained
LS
LB
Fe zone
293

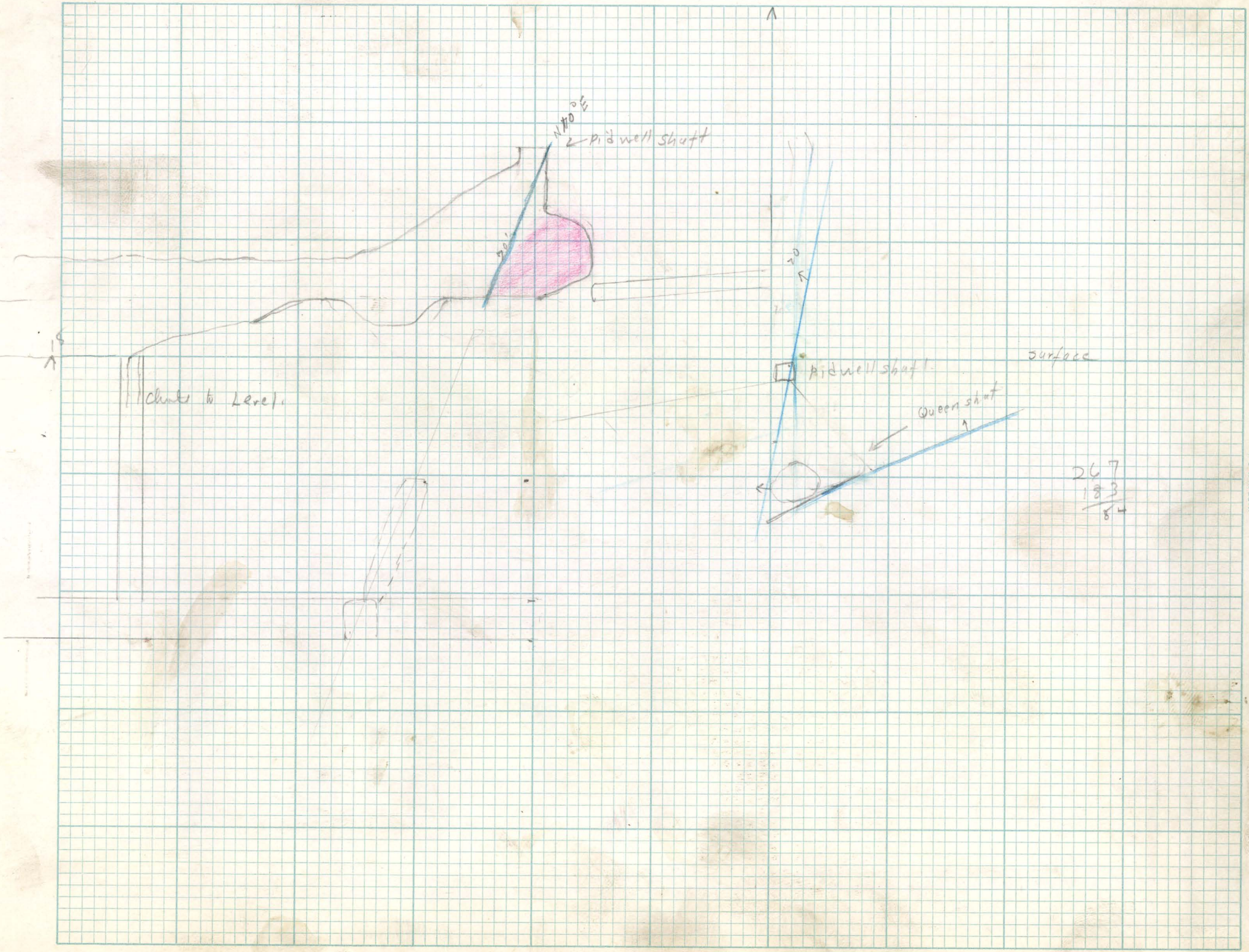
Scale 1" = 20'



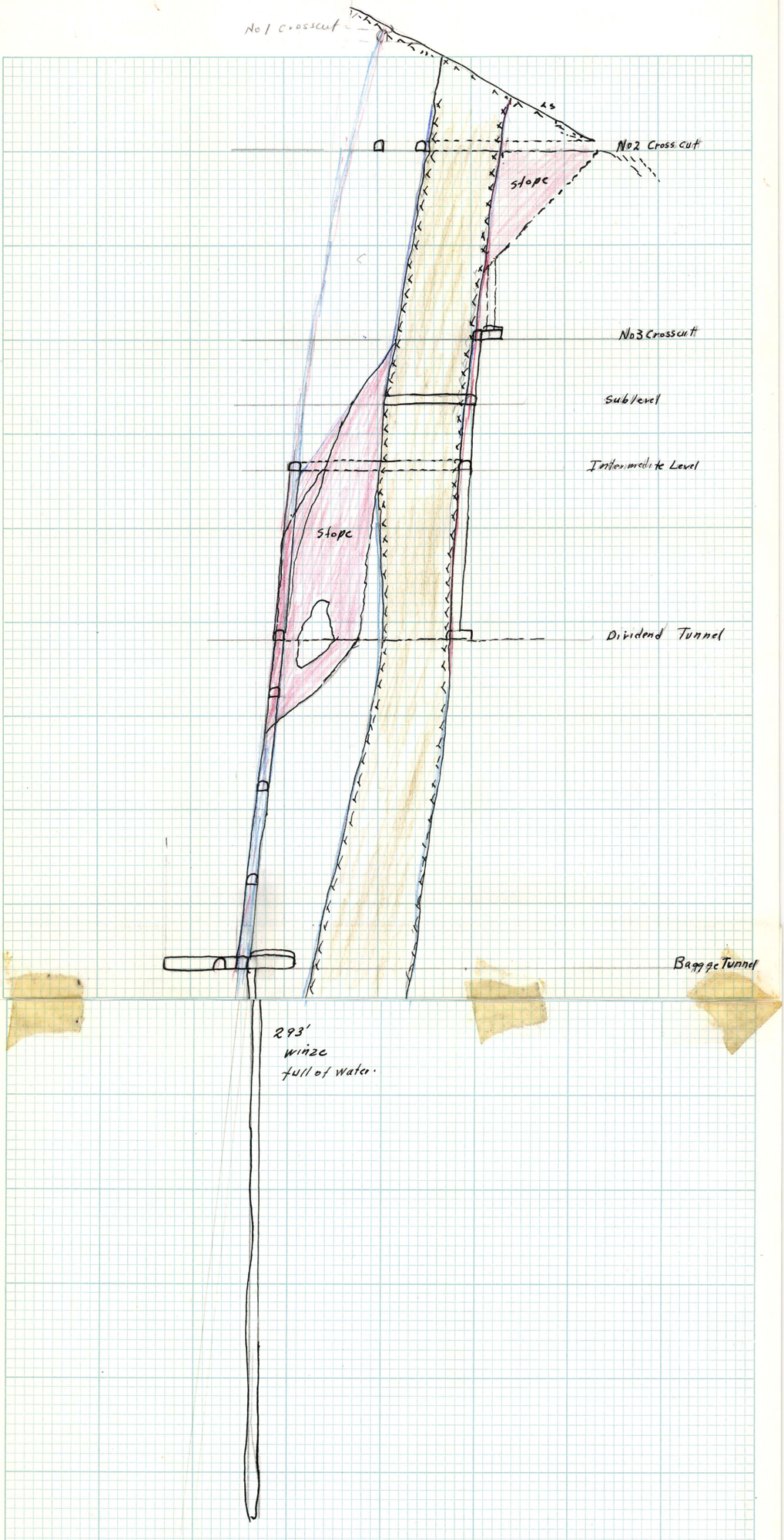
247
183
84



KEUFFEL & ESSER CO., N. Y.
10 × 10 to the inch.
MADE IN U.S.A.

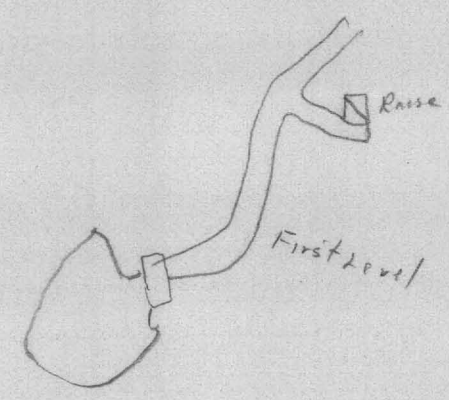


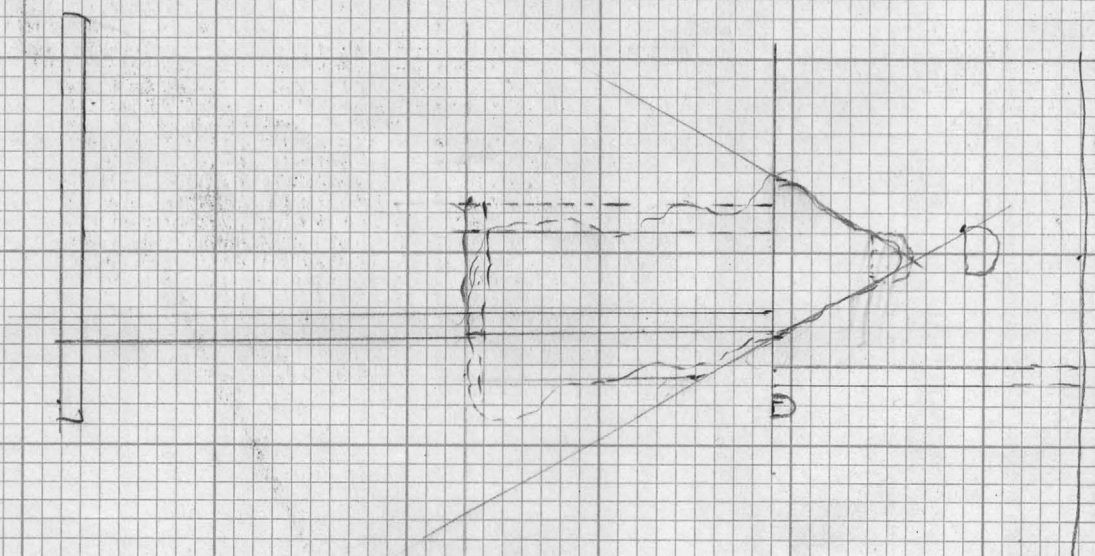
KEUFFEL & ESSER CO., N. Y.
10 X 10 to the inch
MADE IN U.S.A.



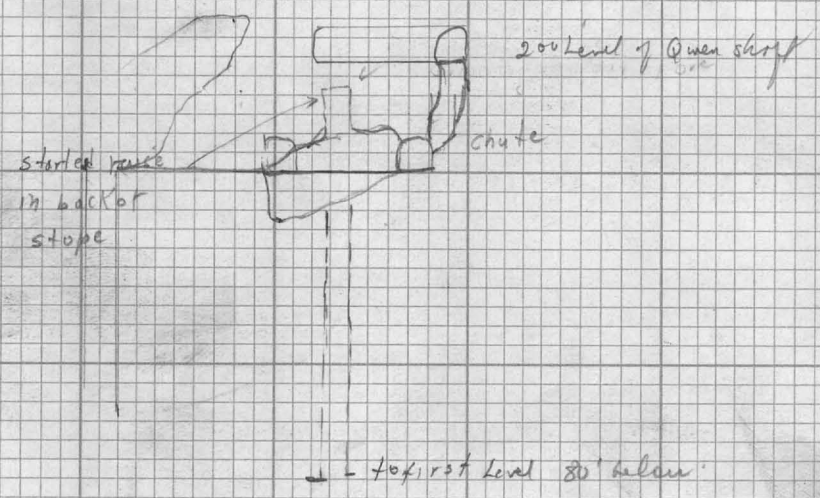
Section A – A'

MADE IN U.S.A.
KEUFFEL & ESSER CO., N.Y.
10 × 10 to the inch


Raise
First level



MADE IN U. S. A.
KEUFFEL & ESSER CO., N. Y.
10 X 10 to the inch



Sample No 1 5' about 5' high
above floor.

Sample No 2 34" breast high
across face of stope
same as Theil #19.

Sample No 3 60" breast high
across side of stope

Sample No 4 40" breast high
south side of stope
next to Theil No 17
wall sample not likely
to be any good 4" beyond
wall

Sample No 5 62" around
bottom of hole 1' up
where they took Theil
No 18

stope from
which these
sample take
show 1¼
drill holes
unblasted
when these holes were
drilled they were trying to find
if any ore beyond limit of
present stope

Sample No 6 46" N-Far heading
bed about 3' thick
Theil #20

Sample No 7 40" S Far heading
Theil #20

Sample No 8 45" south
face of stope

Sample No 9 42" face of
ore magnetite copper
Theil No 22

Sample No 10 60" see map
Theil 21 along
face of wall

KEUFFEL & ESSER CO., N. Y.
MADE IN U. S. A.

R. F. C.
Mining Division
Report of S. E.

Docket No. ND-5263
Date Authorization for Exam Rec'd Feb 1, 1943
Date of Exam. inclusive Feb 13, 14, 15, 1943
Date of Report Feb 1943

1. Name
E. A. Pennington
P. O. Box 54
Avondale, Arizona
Correspondent: Same.

2. Character of Project
To reopen old copper mine for immediate production by repairing underground ore chutes, manways and by finger raises on the borders of the old stopes.

3 Location of Mine
In sections 19-20-28-29-30, T. 18 S., R. 24 E. G and S.R.M., Turquoise mining district, Cochise county, Arizona. Distance from the nearest railroad station, Cochise Arizona is approximately 25 miles.
Mine is located in the Dragoon Mountains approximately 10 miles from Pierce, Arizona and is accessible over a road which has not been used for many years.

4. Applicant

The applicant has not been operating the property and does not therefore have an operating personnel. Applicant expects to pick up a man who has had some experience in mining, but who is now "tending bar".

Applicant is a cotton farmer, although he apparently has had some experience around mines in the past.

5. Loan Requested

$6,000.00

6. Description of Project

A General Features

1. No other mine, mill or other appurtenances which are not confined within applicant's ownership.
2. Proposed project would comply with state compensation or safety-first statues.
3. No legal discrepancies not covered in Engineering Report.
4. Right-of-way facilities for all operations are unimpeded.
5. No surface or subsurface trespass during project.

B. Existing Development

1. Tunnel mine

a. Maps were prepared showing geology stopes, mine workings and samples.

b. Sampling and assay data.

All samples were channel samples taken with a moil and single jack and caught on canvas.

The applicant submitted a number of assays on samples taken at various places on the property. These samples represent the presence of mineral but do not represent ore ready to be mined or the outlining of ore. A close examination of the samples indicate that they are of low value except where taken on the walls of the stopes. It should be observed that the assays on samples taken from the Bagge tunnel barely indicate one percent copper.

After observing the worked out condition of the mine and the impossibility of finding ore on the downward extension, samples were taken at or near those samples taken by the applicant. These samples reflect only the grade of remaining ore frozen to the stope walls. There is plenty of evidence in the form of 2" drill holes in numerous places throughout the stopes to indicate that the "old timers" were not so dumb as to leave any remaining ore very far beyond the present walls. The geology also outlines the extent of the ore and there are numerous drifts and crosscuts to thoroughly prove the lack of much

remaining ore. Thus your engineer to avoid criticism by the applicant took 10 samples of the ore exposures in nearly the same places the applicant had.

Applicant's Sample No 35 showed 8 feet of 4.90% cu.

Two samples were taken along the wall each 5 foot cuts. Results are as follows -

R.F.C No1 5 feet - 5.22% cu

R.F.C No3 5 " - 4.00% cu.

This moved result in a 10 foot cut of 4.61% cu.

Thus the samples check fairly close but there is no evidence of ore that can be mined.

Applicants Sample No 19.

applicant shows 72" across face assaying 2.82% cu.

Two samples were taken near here.

R.F.C No2 was taken breast high across face of stope. width 34 inches - 3.31% copper.

R.F.C No4 was taken to the left of No2 and along the wall of the stope. width 40 inches - 4.00% cu.

although these two are slightly higher in value, still they do not ~~not~~ represent ore ~~to be mined~~ that can be mined at once.

R.F.C No 5 was taken in floor of stope, but from the map showing section B—B' there is only a short distance to the top of the lower stope. width 62" — 3.39 % Copper

Applicant's No 25 represents 48 inches of 8.92 % copper. Two samples were taken ~~there~~ near here.

R.F.C. No 6 — 46 inches — 0.88 % copper
RF.C No 7 40 inches — 8.10 % "

Applicant's No 32 represents 12 feet of 6.10 percent copper. R.F.C No 8 was taken across 48 inches and assayed 9.95 % copper.

Applicant's No 22 represents 36 inches of 5.13 % copper. R.F.C No 9 taken across the same face but six inches under gave 0.30 % copper.
What appeared to be ore was massive specularite and magnetite.

Applicant's No 21 and R.F.C No 10 check closely at a little over one percent copper.
The last two samples cleaning

show that the former mining operations which ceased in 1908 did not leave much ore hanging to the walls.

A composite of the samples was assayed for zinc and iron. The results indicate 2.6 percent zinc and 27.87 percent iron. The iron is represented almost entirely by specularite and magnetite.

(c) condition and accessibility of mine workings

Thirty-five years of dust has accumulated on the walls of the drifts and crosscuts and obscure to some extent the geology. Most of the raises and chutes were caved and it was impossible to examine the largest stope throughout its extent but otherwise the workings were in good condition and easily accessible ~~thru~~ the four crosscut tunnels.

d. Applicant has entered into an option and lease agreement on the Black Diamond mine in the rugged Dragoon Mountains west of Pierce, Arizona with the idea of purchasing the property for $40,000; the money to be paid in the form of royalties of 5 percent of the net smelter returns.

The property was originally owned and operated by a Mr. Pidwell who later sold to a Mr. Bogge. Mr. Bogge formed the Black Diamond Copper Mining Company and did all the development work in the mine. He also built a smelter, a tramway from mine to smelter, and a pumping plant at Pierce, Ariz which pumped water through a four inch pipe line to the smelter.

A large community sprung up as the result of all this activity, but about 1908 activity at the mine and smelter ceased for lack of ore and from then on little work has been done except for small leasing operations by individuals who did not develop

ore. They shipped ore which had been previously mined by the Black Diamond Mining Company.

The smelter has been dismantled and sold for junk; the tramway sold, and all the mine and surface buildings have fallen in.

Underground development consists of four crosscut adit tunnels, connected by winzes and chutes to facilitate handling ore, and two shafts each 293 feet deep sunk at each end of the Bagge tunnel adit. Three stopes were mined and considerable ore was extracted but these stopes did not extend to the Bagge tunnel level. All places where the continuation of the ore might be, were explored by the old company, but each time ore was not found. They thoroughly proved the non-existence of ore below the stopes by numerous raises, crosscuts and drifts.

This ore deposit is a representative of the contact metamorphic type of ore deposit and as characteristic of that type of ore deposit is limited to a limestones formation that has been metallized by extensive iron solutions in the form of specularite, magnetite, epidote and pyroxene. within the core of this iron some copper and some gold was deposited in the form of chalcopyrite, bornite and sphalerite.

Underground workings exposed two stopes about 500 feet apart and it was from these stopes that the copper ore was mined which supplied the smelter. The stope near the portal of the Dividend Tunnel is tabular in shape and appears to have been restricted to a limestone bed. Definite fissures bound this ore body beyond which ore does not occur. There are no downward extensions to this ore body for those possibilities have been explored by the Bagge tunnel. The Dog stope, which is partly the downward continuation of the stopes near the surface dies out or stops at the contact with the Rhyolite

porphyry dike.

The other stope is much larger and seems to be limited between boundaries of an ore fissure and an intrusive rhyolite porphyry dike. Its upward extension pinches out against the rhyolite dike and its downward extension against the fissure. This stope also has been thoroughly prospected from the Boggs tunnel for down and continuation of the ore.

Metamorphism has been so intense that determination of the age of the rocks is impossible. However it is believed that the limestones belong to the upper Paleozoic near the contact between Paleozoic and Mesozoic for quartzites of the Bisbee group have been identified near the mine. Intrusive between the limestones were at least two rhyolite porphyry dikes.

C. Proposed Development

Applicant proposed to run finger raises along side of old stopes in the hope of finding ore.

D. Equipment

Applicant does not own or have any equipment on the property.

7. Employment

Applicant does not employ men on the property.

8 Objections to Project

A source of water appeared lacking for mining operations, except for a trickle of water running out the Bogge tunnel.

12. Comments of S. E.

A loan is not recommended for the following reasons:

1. Geology of the stopes and underground workings show the non-existence of downward continuation of ore either in the fissure or in the stopes.
2. Unfluxed 2 inch drill holes in various places throughout the stopes indicate that the Black Diamond Mining Company was not over looking any ore remaining in the walls of the stopes.
3. Checking of applicants' samples showed some samples higher and others lower than your engineers, but samples represent only small bunches of ore still frozen to stope walls.

4. Applicant does not have one that can be mined readily.

5. Most of money must be needed for equipment, some of which is not listed by applicant.

6. Source of water appears to be that coming from the average 1500 feet in from portal of Bogue Tunnel.

Charles A. Ross
S. E.

Attachments.
Map of Dividend Tunnel.
" " Bogue Tunnel.
Map " Section A-A'
" " Section B-B'
Assay certificate.