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James Doyle Sell Mining Collection

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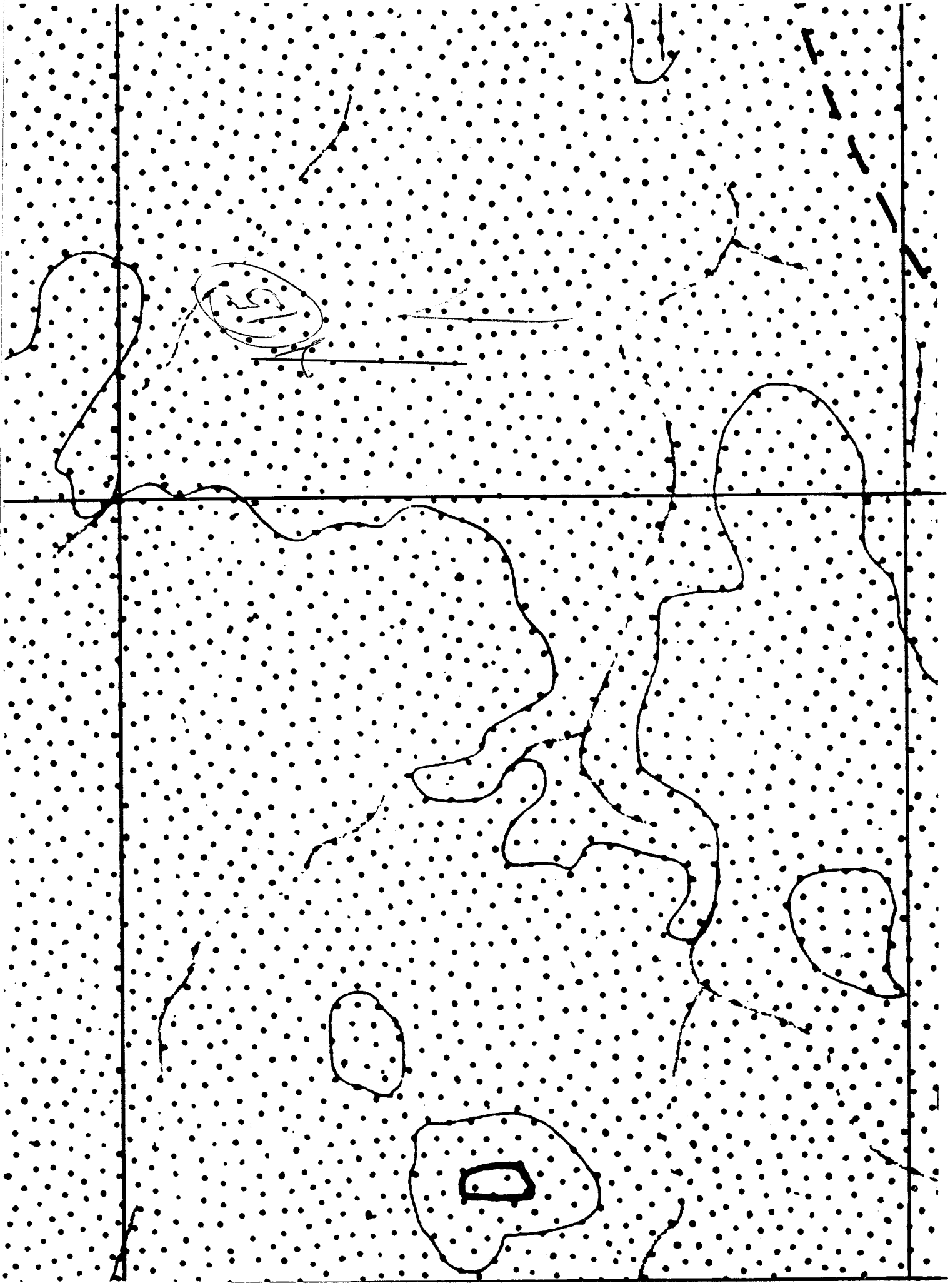
11-5-96

Dear Dave & Adrian,

I now control lands in the vicinity of Superior E of Asarco's with a much greater ore reserve potential than their holdings & without the burdensome expectations of three prior ownerships. Thus, if I'm correct, these lands would provide the basis for a very large scale operation without the Asarco holdings. They could be incorporated into the operation as opportune in the future. My new holdings comprise a porphyry target, which with the two such recently returned by Kennecott comprises 3 porphyry types with centers about 2 miles apart, and a continuation to the SE of the known "ore grade" native Cu in the Tw with a probable improvement in thickness & grade: all my data point to a narrow Tw greater within the Tw basin rather than a "half moon" configuration abutting the Devil's Canyon Fault per Sell, plus probably many sources of cupiferous meteoric solutions in addition to Superior E.

Before getting into the geology I'd like to review the events of the past year. Upon first being informed of your interest in the Asarco ground I immediately so notified Kennecott as I thought they should know of your activity such that they could approach you should they choose to bring Asarco's holdings into their program with my two porphyry targets, Hutton Pl & the Julia claims 2 mile to the S. I was told they already had an arrangement with you involving funding with a "Right of First Refusal". Thus I welcomed your activities in the area from two standpoints, possibly increasing the chances of Kennecott jumping into the area in a big way, and creating a possible buyout situation for my old partnership, Can US. I have to attribute the foundering of our discussions on modifying the terms to:

1. It was not in the interest of my Limited Partners for me to accept a payment of a couple hundred thousand within a year that probably would be made (essentially re-imbursing me for

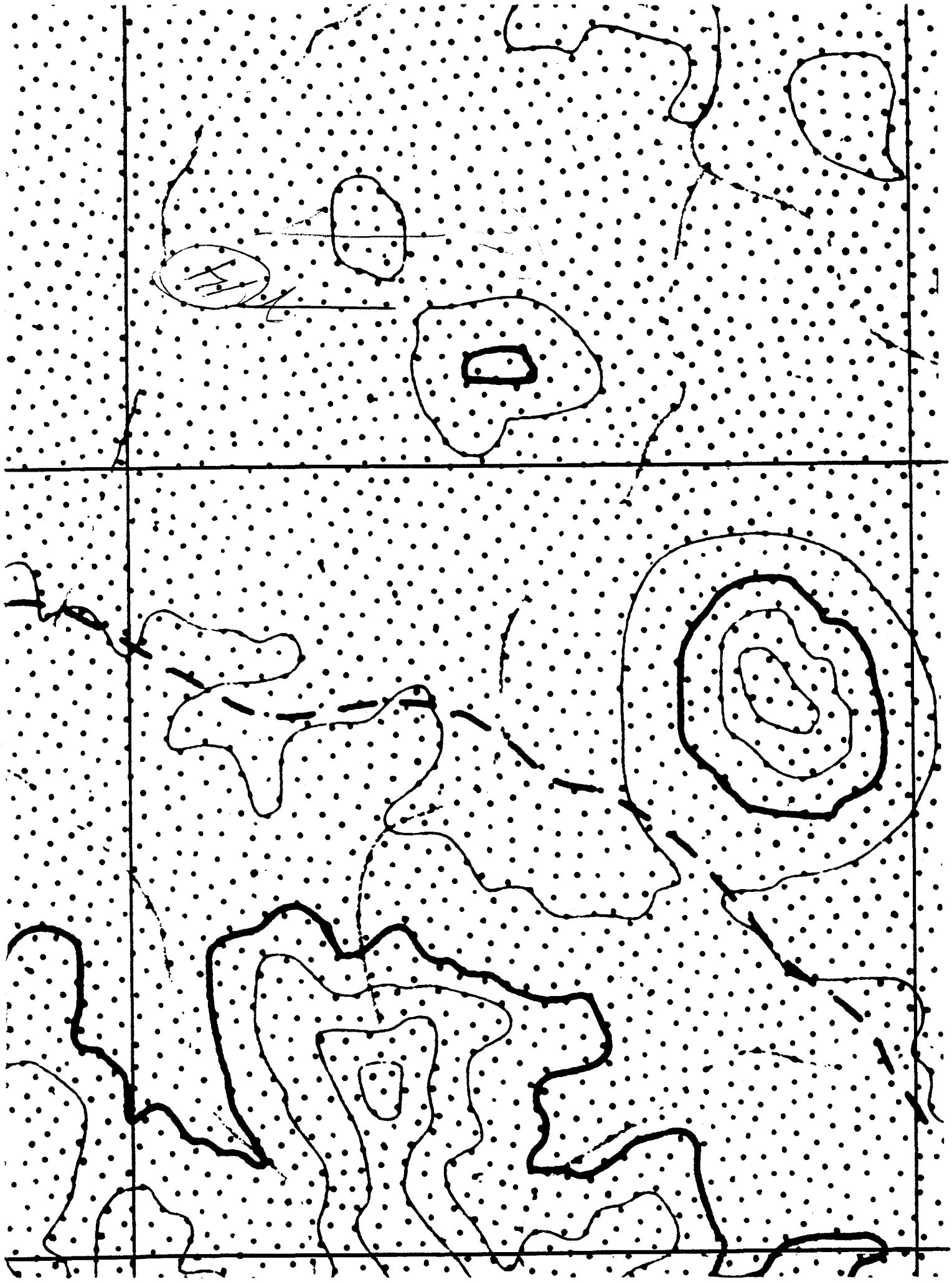


my expenses & time maintaining properties since 1970 when the partnership became inactive) followed by a drastic reduction of the total received for distribution showed the project be successful down the road.

2. The time requirement involved in exploration make it difficult to construct something avoiding the above problem & still acceptable to both parties.

3. I also sort of expected some word of progress in your efforts to reduce the terms of the other parties, particularly Continental with their truly onerous terms, before agreeing to any drastic reduction of Con's relatively small potential return, perhaps an unrealistic expectation.

I decided my course of action should be to try to increase potential reserves in the general area as development of one or body could be useful for the other. Such would operate to the benefit of all parties with any interests or potential interests in the Margaret claims and vicinity. I do have time on my hands up here for study: am taking care of my 103 y.o. mother: she can no longer live alone safely, will accept only family live-in help, and would very shortly expire if removed from her home. My re-studying of old data accumulated through the years was augmented by the data of Sell's recent paper, some aerial photos, Quintana drill data obtained from Art Still in 1985, my I P lines of the past 11 years, and the aggregate led to a porphyry target not previously recognized and the trench concept. Prior to this study with the newer data I had concluded the better grades in the Tw did not extend so far S as MJ-1 as apparently everyone else still believes. With this new concept, the possible, or perhaps probable, tonnages of + .8 Cu in the Tw are staggering. Nearly 40 years ago I did have some experience with syngenetic marine deposits, quite different from this, but providing background permitting firm opinions.

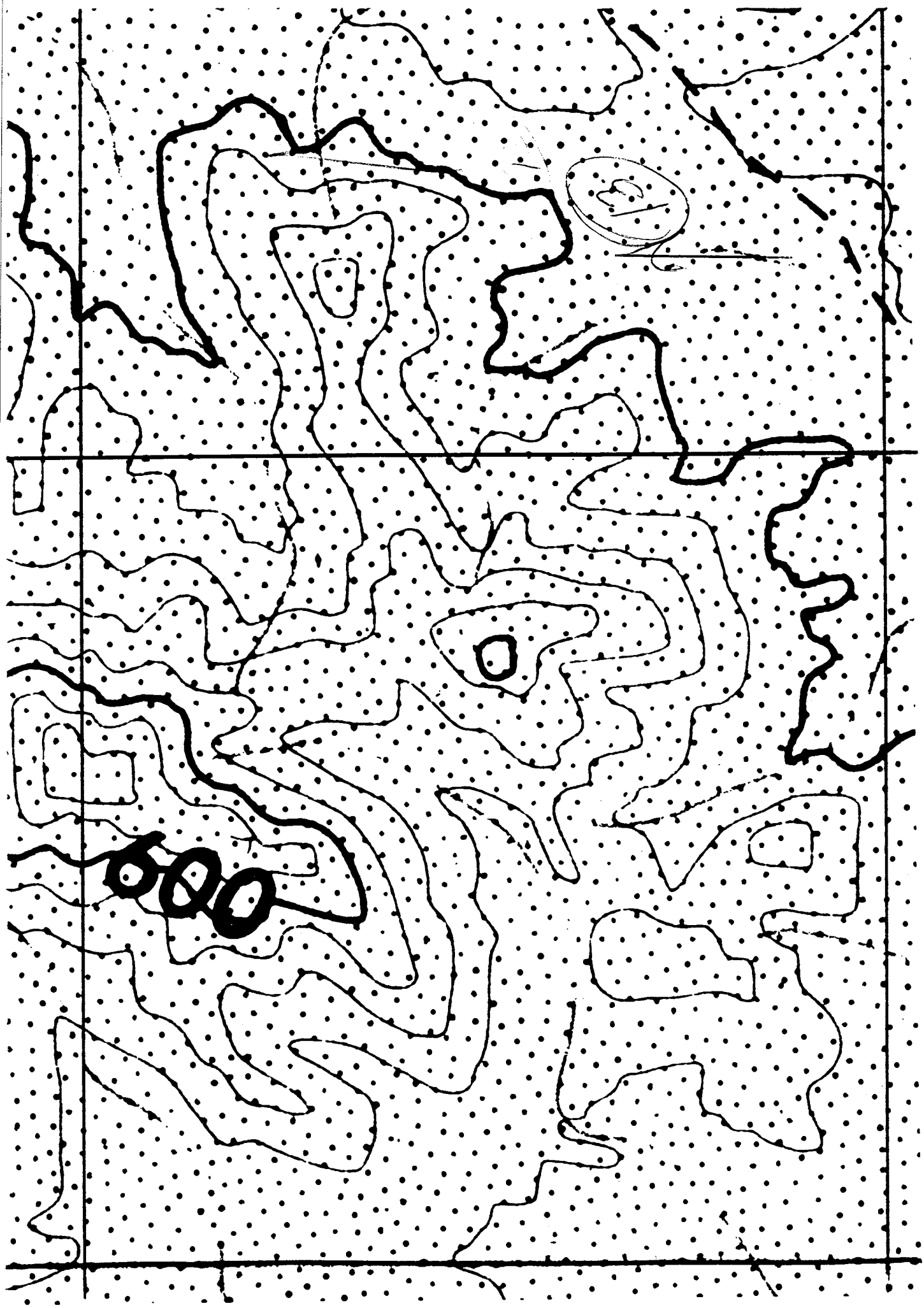


Some miscellaneous comments:

1. As I developed the new porphyry + trench concepts I felt my first allegiance should be to Kennecott + I brought them to Linus Keating's attention. I was doing everything I could to increase their interest in the area and also the Asarco holdings: I spent a great deal of time re-studying Asarco data and composing charts, maps, + sections for Linus's review. To the last I had no hint they were about to abandon the project: Linus seemed interested in the concepts + the new p. target but did infer a probable lack of interest in the trench extension by commenting it would be much too deep for so + so. I went ahead and acquired them (state lands) as I sensed no quick decision from them. Had I known they were about to withdraw I would have discussed acquisition of the trench area with you before acquiring it since your approach to me on the Marzoneto led to the study. I have not brought any of this to the attention of any party other than Kennecott, you are next on my allegiance list. I have to think either Asarco or BHP might become re-interested if made aware of the entire potential + ramifications.

2. A couple years ago the planned bottom of the Ray pit was + 800'; I hear they've found deeper ore, the final bottom probably lower. A couple years ago Magma published an intent to run a decline some 7 miles to recover just the ore near shafts (eventually, with a TBM) at San Manuel. Such from the Ray pit or Magma's Superior mine could have real advantages for the development of these potential ore bodies + for any in situ leaching of deeper Cu ores. Should none of these facilities become available declines could be started from elevations of ± 2700' S of Superior + only a couple hundred feet higher E of the plateau.

3. All of the ore potential of which I'm aware is on lands with mining rights leased by Asarco or by a Margaret Austin



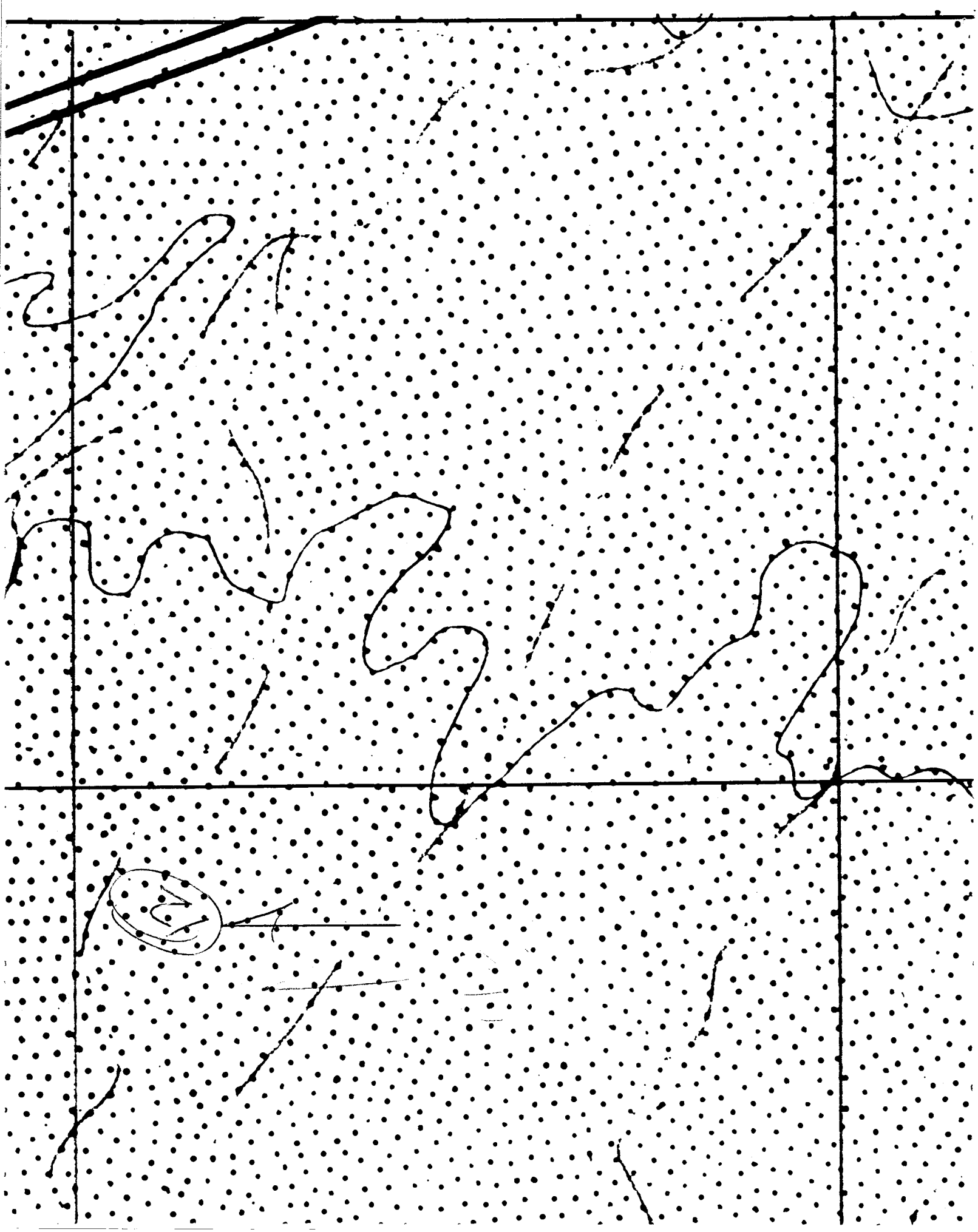
of Scottsdale (the old Hagen Ranch at Cavt. Spr., which includes a large area E of the plateau). She has been trying to sell the ranch for over a year. Owning the ranch could have real advantages down the road in addition to elimination of possible conflicts during exploration (Mrs. Austin has been most cooperative but a new owner may not be). There is no habitation in the area or downstream to Ray, all private lands owned by the ranch the rest vacant federal and state. Portal sites for declines to get under Hutton Pk, Superior E, etc. at around 3000'. All activities out of sight of highways.

Now for description of targets: Native Cu in the Tw Ref.: the 4 Quads, Section A-A', the longitudinal section. Section A-A': Cu gates within the Tw basin is the most plausible construction from the drill data. There is not enough drill data to construct other sections across it, but such as there is suggests it continues N to DCA-1 (longitudinal section). As to its SE extension to the NE striking fault zone at the N end of the Dripping Springs Range there are these suggestions:

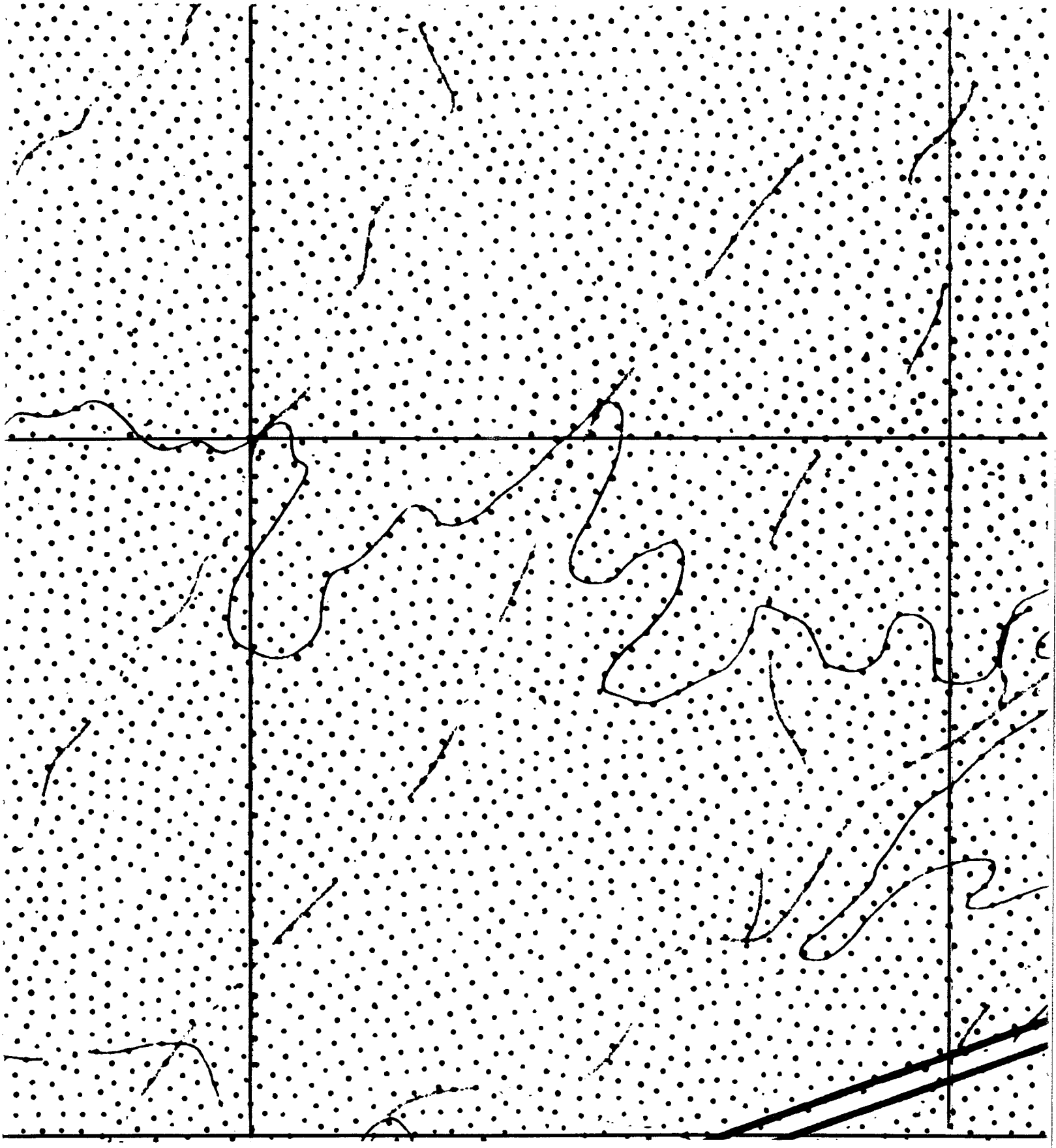
1. There is no fault zone further N on the W side of the plateau with an easterly strike enabling it to terminate the gates. Same for the other side except one could exist without being identified. The vertical displacement of the mentioned zone could be large (Naco abutting schist in its exposure to the SW, some real depth of the trench at its SE termination is permissive.

2. The Quintana DC-4 extension of my MJ-4 was still in Tw at -487', appreciably ~~at~~ below the 1041' above sea level at which MJ-1 hit basement and the +375' of DC-1. The resistivities of my IP line of 1975 should be at least permissive of a thick Tw section at MJ-4, as I would interpret the report.

3. At first glance, which is as much as most have given it, any extension southerly from 4-4 of large scale displacement along the Devil's Canyon Fault would be



expected to continue along or near Devil's Canyon. My interpretation is as shown, but without inference that the boundaries of the graben are precise. But with study its general course curving to the SE becomes more likely than a S. projection along Devils Canyon: this arcuate course is parallel to that of another Tw structure to the E defined by drilling & 3 EP lines. And also roughly parallel to the Tertiary-basement boundaries on both sides the plateau. The W side of the trench-like graben has to be between MB-8 & A-3, and NE of MJ-1 & DC-1. The E side's location is defined at A-4 but quite speculative going S. In searching for clues the only help I see is a deflection of the drainages coming down from the NE, traced in red on the map. In my experience in Td areas the thickness of the Td is a reflection of the topography at time of deposition, but any appreciable pre-Td relief is not totally eliminated. This deflection could have been caused by the Tw graben not having been filled to the brim with Tw at the inception of Td time, and thus enough of a depression existed along the graben to influence post Td drainage, perhaps helped some by compaction of the thicker Tw section. Such could also account for Rawhide Canyon's course for several miles to the SE before breaking straight S to join Devil's Canyon, and for the U shaped bend in Mineral Creek's course where crossing the graben. All highly speculative, but all supporting the limited factual data available. An extension of DC-4 (now at 3997') into mineralization comparable to A4+7 would permit prediction of an enormous potential tonnage, which could be firmed some by an inexpensive gravity survey, or very much by a 3D seismic survey, a recent improvement probably reliably establishing the configuration of the graben for its extent. It might also disclose any soft spots in the basement, possibly porphyry system.



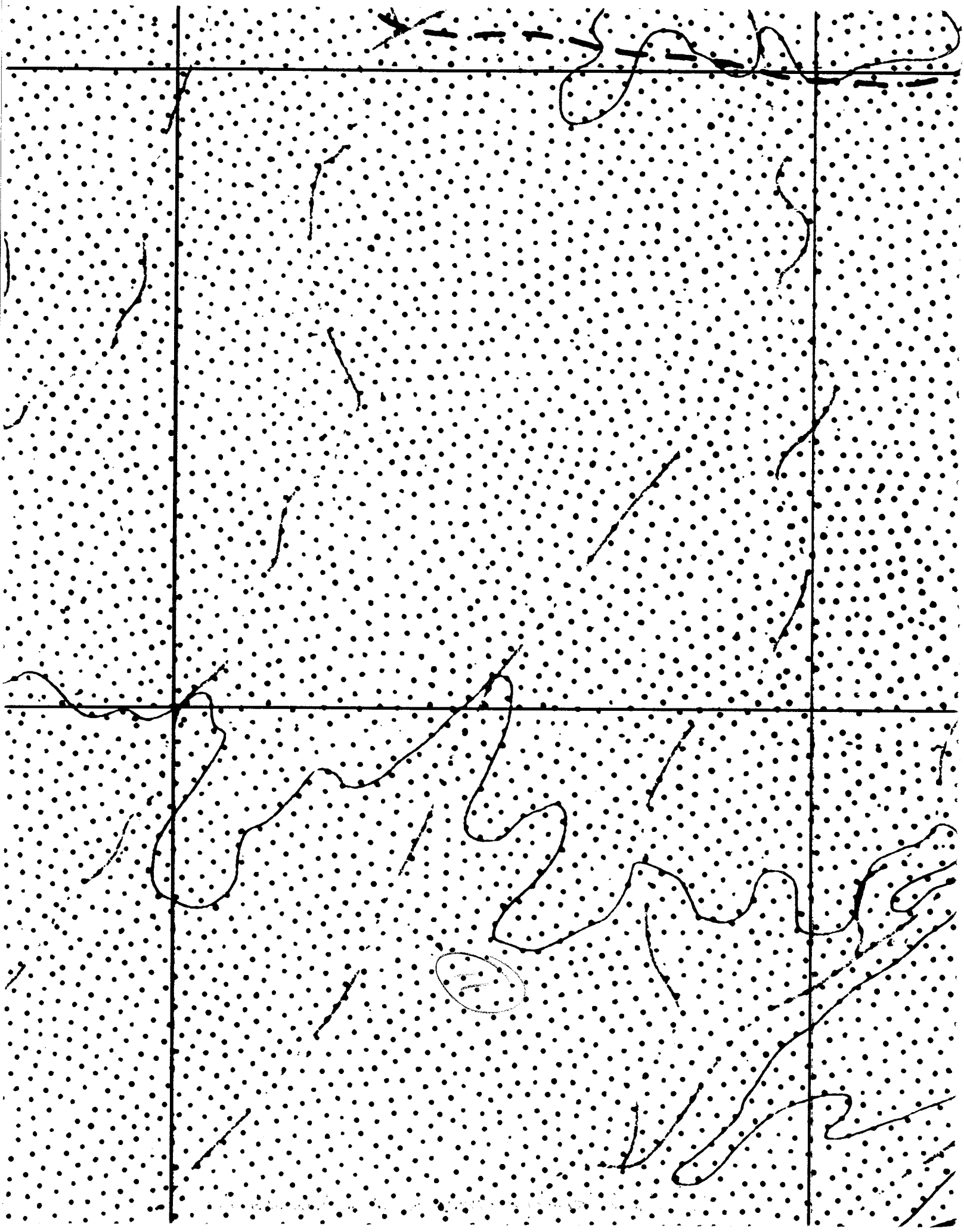
As to the nature of the Tw mineralization:

It is diagenetic, not syngenetic: A conglomerate is about the least likely sediment to host syngenetic chemical precipitates. Also, the native Cu is not concentrated on bedding planes but coats cobbles & slickensided surfaces & is disseminated. The slide blocks totally enclosed by Tw contain it though generally of lesser tenor than the sub & superjacent beds, probably a matter of relative permeability.

The scenario I see: The graben formed in very early Tw time, also one of great aridity with deep leaching of the surrounding terrain. The sediments of the trench were deposited during very infrequent stormy periods. During the extended dry periods the waters migrating into the graben as ground waters and minor stream flows were oxygen poor. The Cu deposited as native Cu from a saturated solution and in the subsurface of the sediments during the extended dry periods. The relative tenor of the vertical intervals would have some real persistence laterally as they are time equivalents, and the grade would depend on the size of the basin being charged and the amount of Cu in the solutions during that time interval.

As to Cu sources besides Superior E: The Hutton Pk area, my Julius a couple miles to the S, and my new target a couple more miles to the S all probably would have contributed near full time and at least the northern 2 targets are truly porphyry systems whether or not now economic. Such also for any other beneath the Td plateau & there could be: for instance, Magma has defined a new replacement body S of their workings, the expression on trend E of Devil's Canyon could be another Superior E. Ray easily could have been a supplier during the life of the lower part of the graben. And I think the Pinto Valley-Inspiration area could have contributed, please read on before you laugh too hard. For these reasons:

1. the 2 instances of massive sliding in the

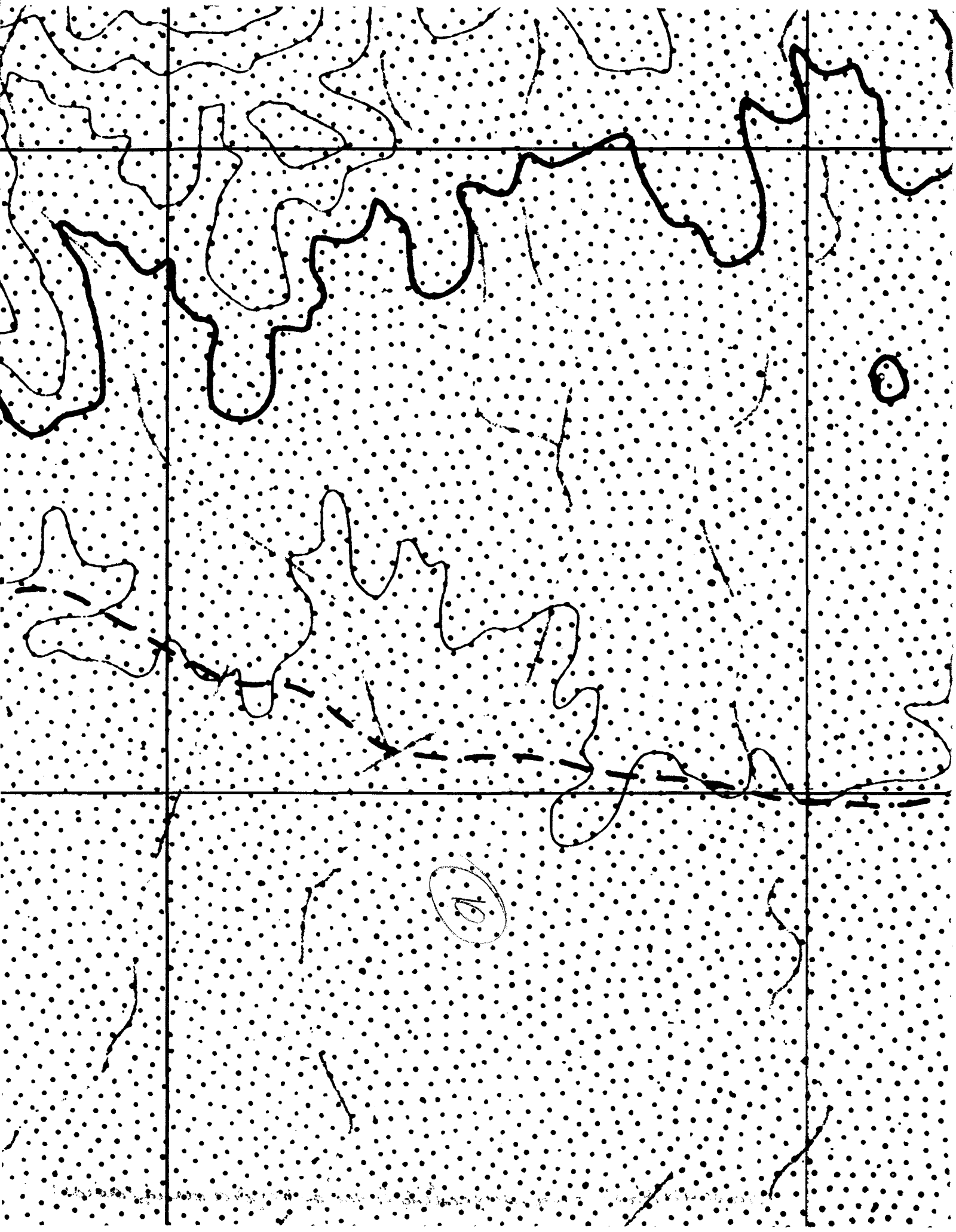


Inspiration area are from the ENE, one hosts the Orchids & the Blue Bell, the other larger slide further N.

2. Low places near Powers Gulch N of the Hy on the E side of the plateau slides are sporadic, more massive further N, but all most reasonably from the E. They are unaltered but with exotic CuOx in exposures for several miles N of the Hy & as known by drilling near the edge of the plateau. The source of the Cu almost surely was from the E or the Hutton Pk. area.

3. The Tw gravels between P.V. & Insp. was formed after the Tertiary deep leaching & enrichment of the ores of the area: holes penetrating the Tw of the gravels are in thoroughly oxidized basement for many hundreds of feet, and Insp. long ago defined an intact chalcocite body at ±5000' W of the Live Oak area. Thus the leaching solutions could have escaped to the W before the gravels formed, they escaped somewhere as the local Tw gravels rarely produces a copper assay as great as 0.02. The present topography & lack of early-mid Tertiary to the N+S would seem to ~~exclude~~ preclude those directions, leaving just the E or W. Our trench to the W could have existed prior to the Inspiration gravels, it represents the local inception of a very regional Tw structural trend.

4. The Hy E from the Hutton Pk area largely follows a buried surface undergoing dissection by N. flowing streams. It could be an old pediment surface or it could be the remains of a broad drainage from the Insp. area. There are two things in addition to the above said supporting this latter possibility. (1) The late Tertiary tilting of blocks in this general area is down on the E side, and (2) The holes within a mile or so of the Hy across the plateau have the greatest thicknesses of Td + Tev, approached only by a few in the Devils Canyon gravels. This, along with the NW slope of the basement S of the Hy as defined by the holes in the Superior East area, suggesting to me a major drainage across



the plateau during much of the Tertiary was generally near the present Hy and that the NW slope of the basement in the Superior E area could be an erosional feature, the stream incising as the Devil's Canyon trench formed.

Obviously a couple big problems with the Tw ore potential are great depth and high rock temperatures. The T gradient may lessen to the S; if not, on the up side it might help in any in situ leaching. I have no background in this matter but can think of a few features suggesting it might work:

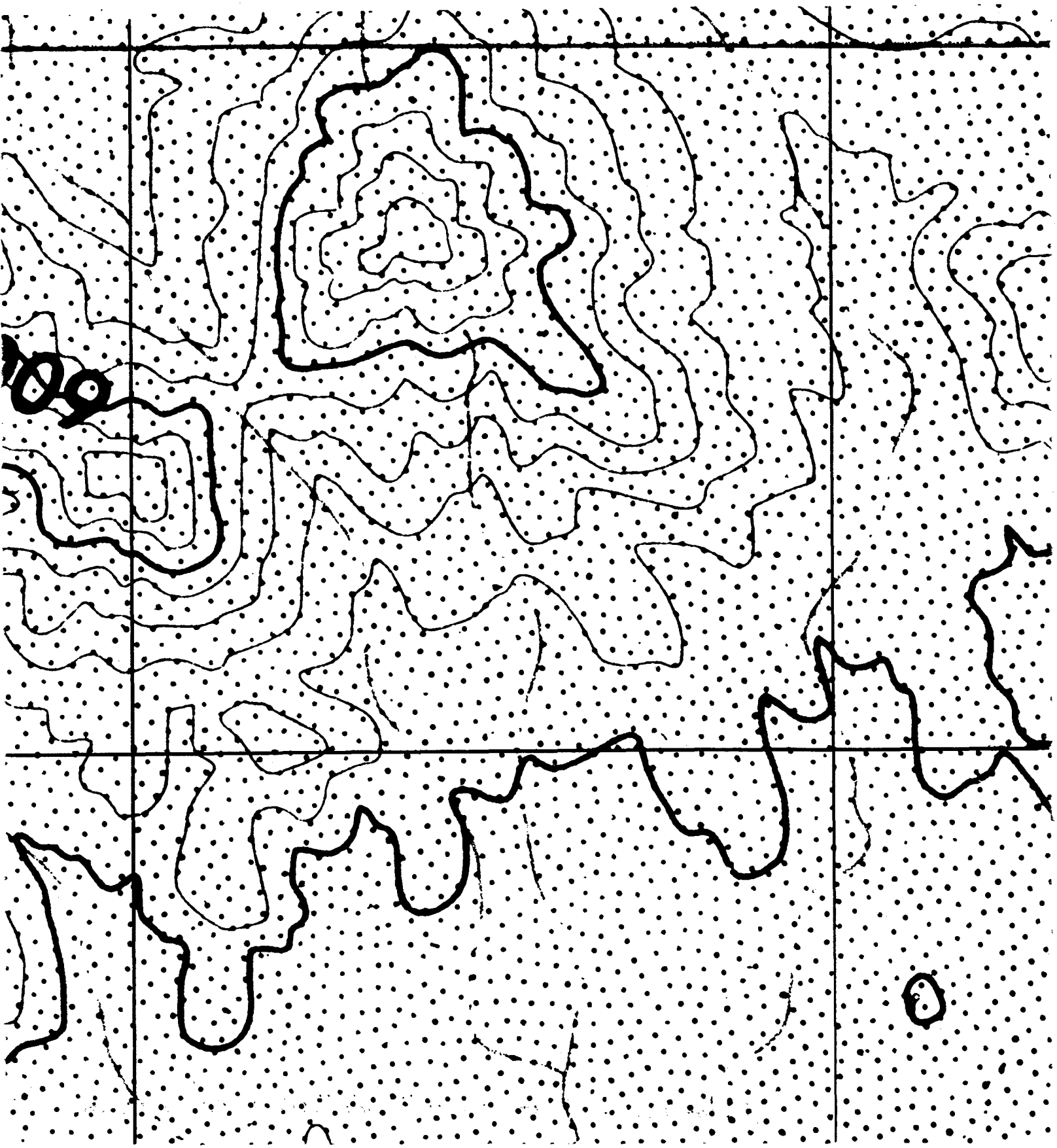
1. The higher grade zone should be rather permeable as a genesis of permeating solutions would seem to require it as would Sell's description of A-3, enclosed. The text describes the matrix as sand and the table shows the % matrix to rather steadily decline to around 10% near the bottom. It would not be expected to increase drastically in the potentially higher grade zone below the bottom. Thus even if the sand became somewhat cemented during diagenesis a conglomerate with only 10% matrix would be suspect of appreciable permeability.

2. The walls of the graben would be expected to be rather impermeable.

3. The development of Superior E would require workings near sea level, that of the other potential porphyry types probably that deep or deeper in time. TBM headings along the trench at those elevations might be advantageous, permitting much shorter holes for the program. And could there be an advantage in maintaining the hydrostatic head from the surface for the injection holes with the recovery wells just pumping to the tunnel levels?

4. It is my understanding there are effective reagents for native Cu. Seems to me the one I heard of some 25 years ago was ferric chloride?

The big appeal to me of the Tw is that a phenomenal



body, say 36,000' x 4000' x 600' of around .8 Cu, is reasonably possible, and just extending a drill hole 1000' or so and some geophysics could change that to reasonably probable, that's some real leverage. It has a great deal more going for it than Olympic Dam at its inception: 2 discovery holes plus location plus plausible concepts of genesis and indications of size. I would think such a potential should not be trashed due to expected extraction problems without in depth study of the whole matter. Come to think of it: those trashing it to date had no idea of the full potential, except for Kennecott's Lance Keating whose conveyance of data to superiors would have been too late, the decision made.

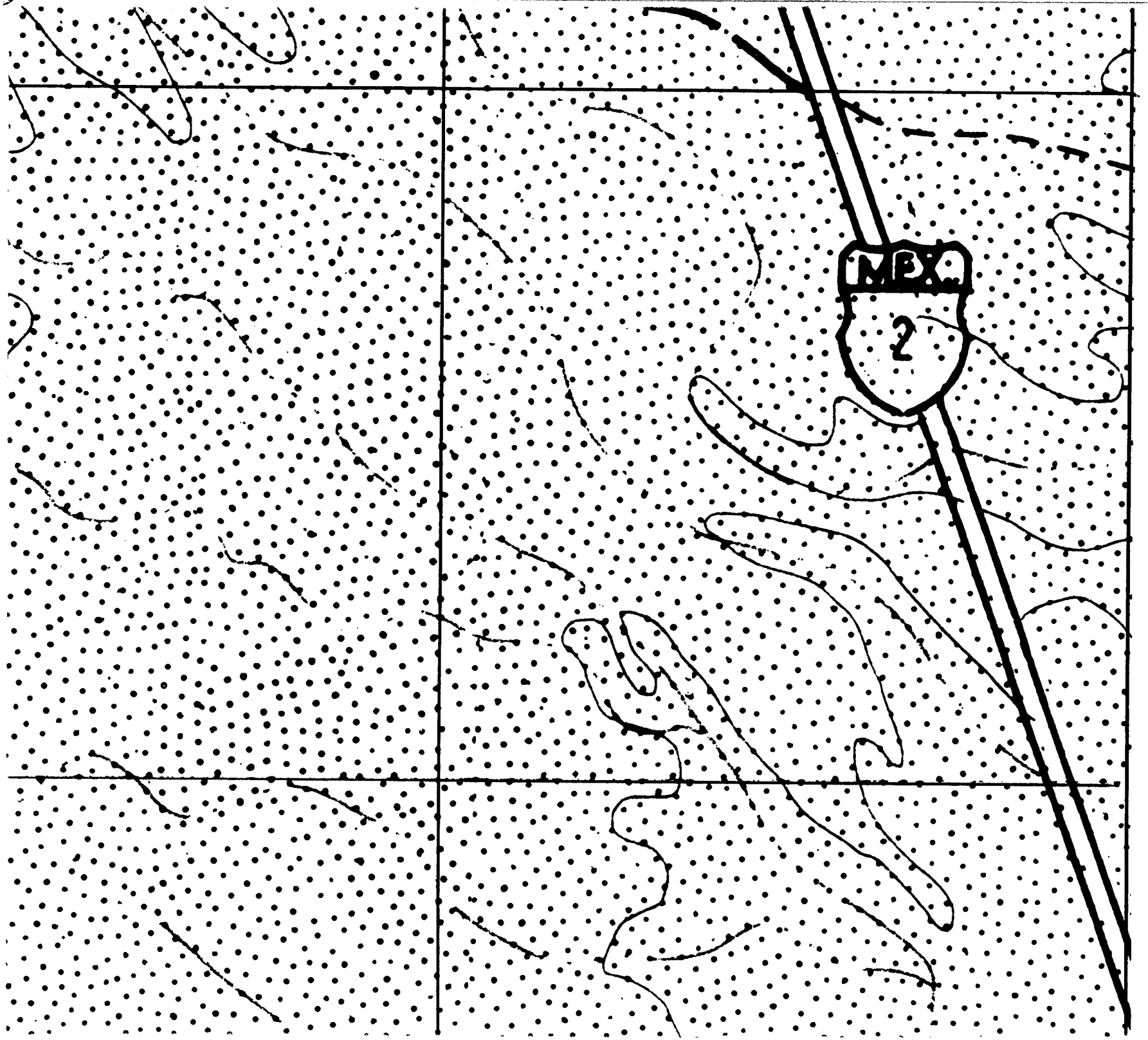
The Porphyry Targets

In the interest of getting something off to you I will be very brief with these, I can come down & visit about them at any time should you consider including them in your program. I had everything about ready to go several weeks ago when my mother during my short absence decided to tidy up her dining room with my maps & papers piled around. A good part of it was placed on a bench on an open porch and has never been found - a nice breezy day.

Enclosed is a map of the SE part of the plateau embracing the targets. The solid black lines S of the Forest boundary are the product of photo interpretation by a nephew geologist who has done much of it for oil companies. All other notations are mine. 2 erox copies of the photos are enclosed, the originals are available if you'd like to see them.

The Hutton Peak Target

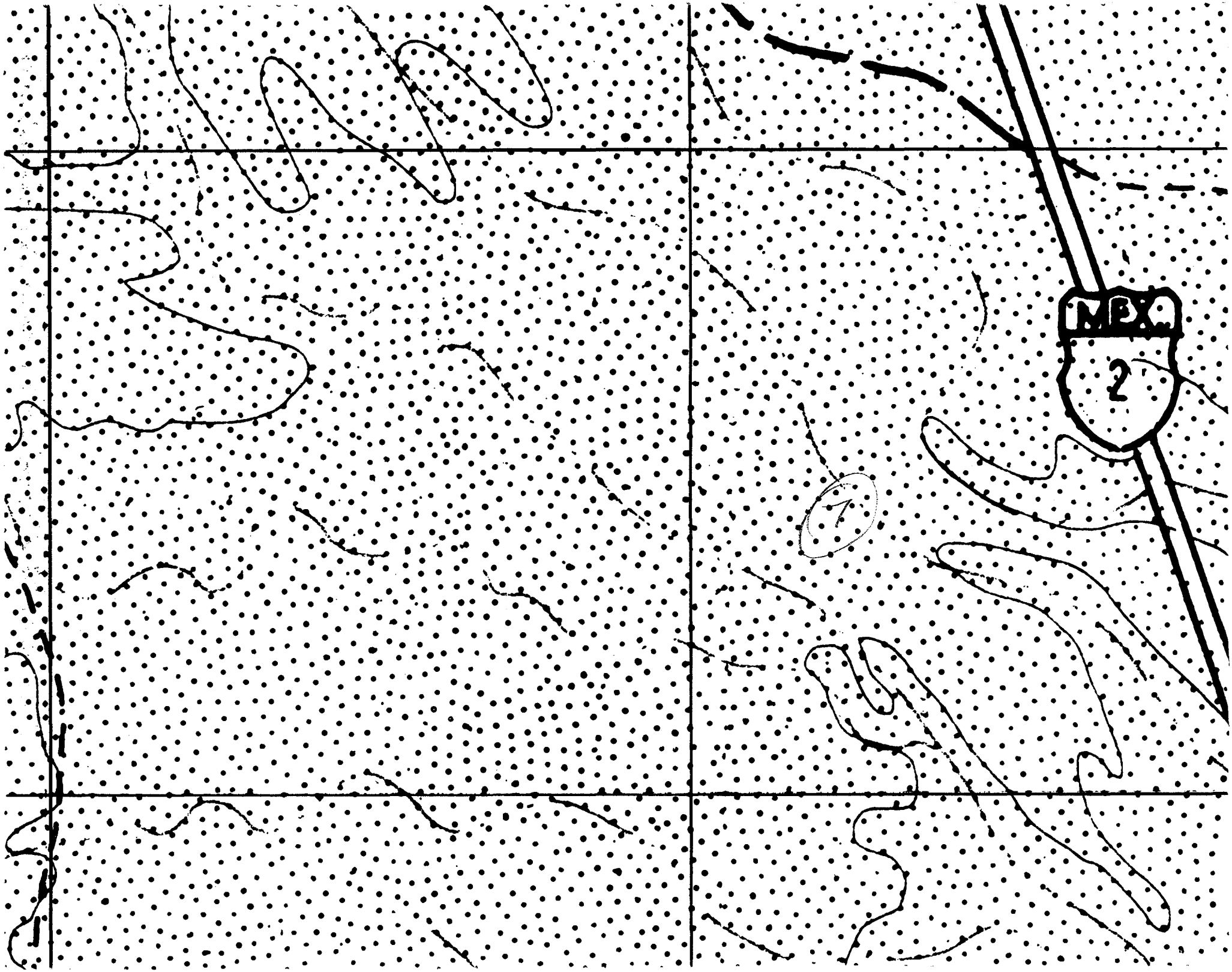
At or near the SW end of the Schultze Gr, with intense alteration and minor mineralization is exposed basement to the N & to the E. A couple of systems of faulting are apparent on the photos as diagrammatically noted on the map, the NE distinct in the Gr, the EW rather obscure in the schist but extending


MPX
2

through the Gibson Mine area to an area probably the roots of a system a couple miles further E. A feature also apparent on the topog map catches my eye, the concentric erosional pattern in marked contrast to the linear pattern generally prevailing in the Td elsewhere, the contrast better seen on the large map. With the large displacements of Tertiary movements in the immediate vicinity I would think such departures from the norm could reflect basement features of a circular sort. The early Tertiary movements might exaggerate the near surface expression of Laramide structural features better enabling the post Td movements to effect an imprint in the Td. I also have reason to believe that before they drilled Onop. ran an anomalous IP line along the wash with holes AOF 2-4, now reaching basement I have to think a deepening of AOF 2 would be very informative.

The Tutin Area

Essentially at the intersection of a vein swarm largely of quartz + specularite + FeOx coming down from the NE (Gibson Mine area) and the projection of a Tgrp dike exposure a mile plus away. Crumpled schist for the mile or so between the dike exposure and the Td is thought to reflect the presence of the dike in the sub-surface. The geochem in the crystalline to the E of the Td shows a great increase as this intersection is approached, + the area of intersection coincides nicely with IP anomalies and an Hg in soils anomaly, supported by more tenuously applicable Redox + bacteria in soils anomalies, which I have been experimenting with in Td terrains. All + geophysicists that have evaluated the IP data predict basement around 1350' (Elliot, Sumner, Zonge, Inman of Kennecott), Kennecott's hole drilled in their first pass at the claims several years ago stopped in the Td at 1270', much to Tom Bolton's chagrin later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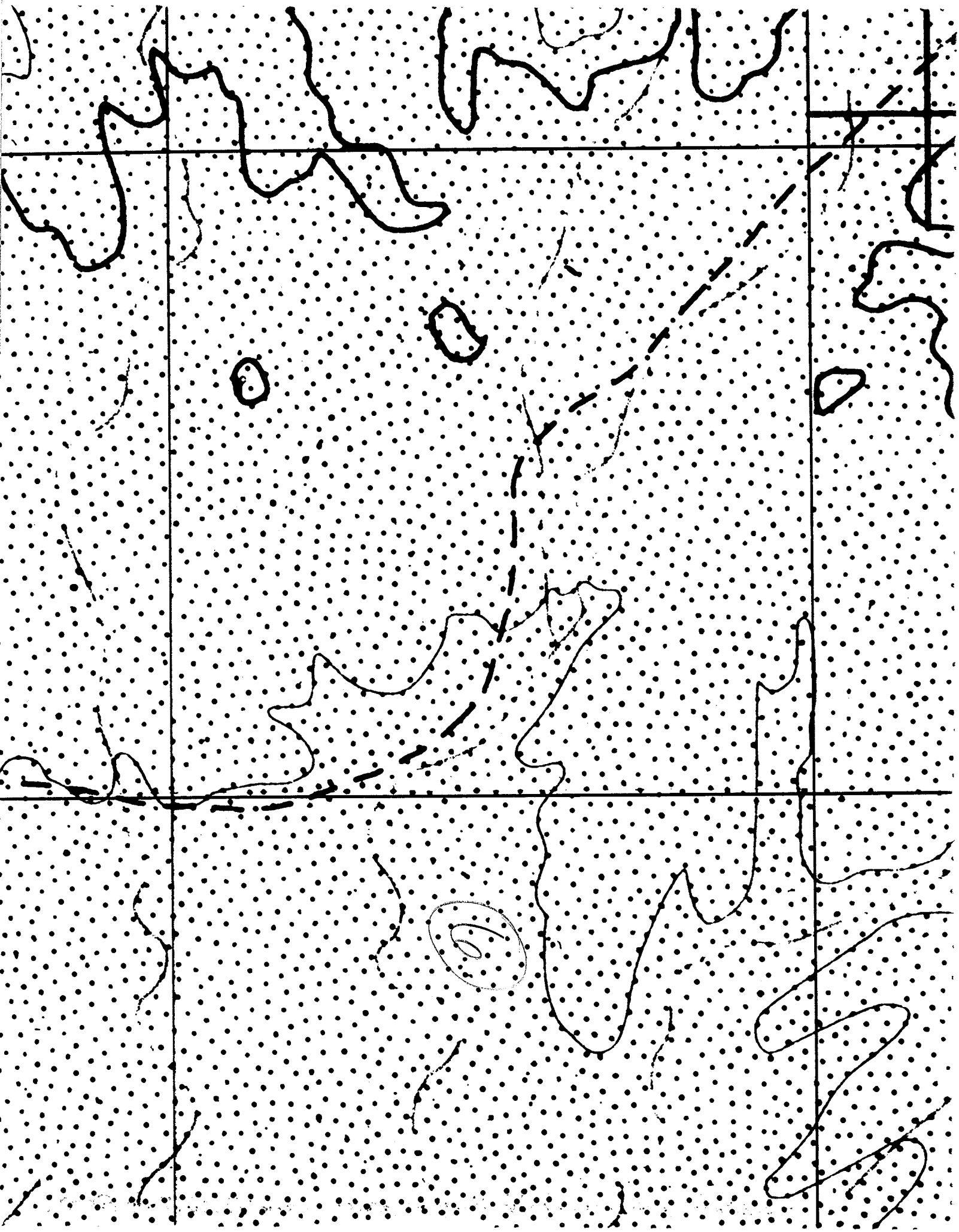
expressed to me. My hole J-1 was at -40° as I had interpreted a shallow response (± twice that of the Td elsewhere) to reflect the shallow oxidized zone of a low S system from the W side of the Creek as the Td there weathered to a mass of boulders, which even is ~~reported~~ reflected on the topog map by a crinkly pattern. The only places I'd seen this sort of erosion was of basal Td. ~~Lab tests~~ Subsequent lab tests of the drill cores revealed the Td to be totally capable of the shallow response & high resistivities of the surveys, & specific gravity tests showed the entire section of Td to be as dense as only the very basal part elsewhere. Deposited in a local closed basin? Hole MS-1 had several veinlets toward the bottom that fit the description of neotocite, they discarded the core before I got the aid for the real test. The photos reveal lineament in the Td on projection of the vein swarms & the Tgp, supporting my contention of reflections of Laramide structure in this area of great local seismic activity. There are features suggesting a tongue of the Schultze extends from Hutton Pk down to this target.

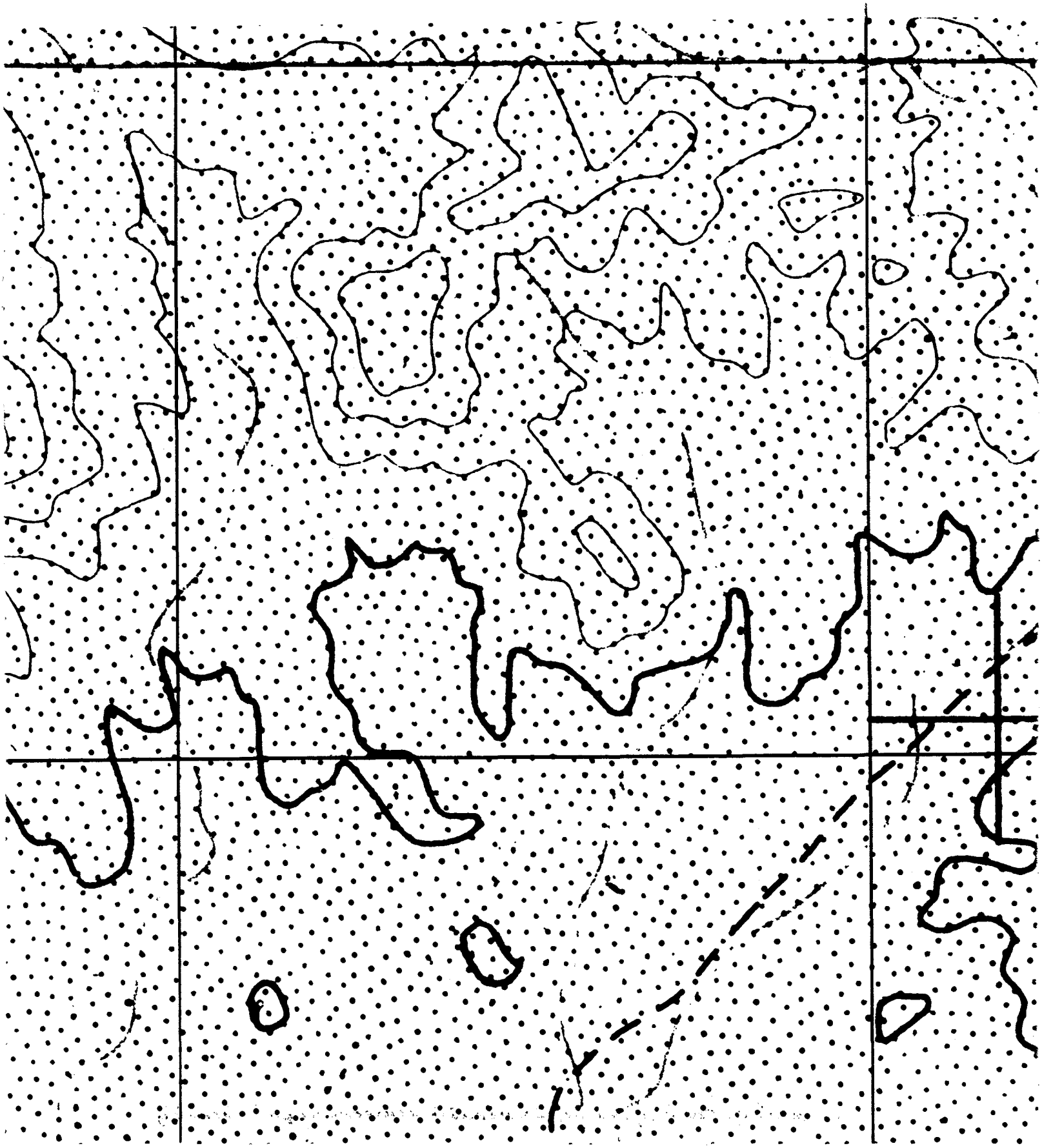
Sixty Six Area

The new area to the S I will name after the nearby ranch house ruins. I'd had all the data from which the target was visualized for nearly 10 years, am chagrined that it took me so long to fit it all together.

The incentive to review this general area was for clues as to additional suppliers of Cu to the trench, its concept requiring enormous amounts for the known northern ones to prevail southward as far as hoped for & suggested by QDC-4. Specifically, the log of QDC-5 drilled by Asarco on some arrangement with Quintana, and given me in 1985 by Art Still, aroused my interest. The +4000' of weakly anomalous Cu required explanation. A system to the E seems unlikely by reason of QDC-1 and basement exposures, to the S by exposures, and to the N by QDC-2.



In the only direction left arcuate features are discernible even on the topo map. By far the strongest one, per oral report of my nephew, I had seen a bit of some 10 years ago, not realizing it had any areal extent such as he sees. I remember puzzling over this an exposure of Td intensely altered to a white clay. I had been attracted back into the area in 1985 & run the IP line because of a N-S strip of bleached Td. I had recalled seeing in the 70's, such bleaching of Td having been observed later in other areas of mineralization causing me to think it could be a function of Redox. I have since concluded that these areas of bleaching are recently exhumed pre-Cila erosion surfaces of some real duration. (I'm forced to admit my return to this general area, with favorable results from my 1985 IP line that eventually led to acquisition of 2 porphyry targets, was totally based on a concept now known to be totally false)! I now have to conclude, without having re-visited this clay exposure seen 10 years ago, that this feature he suspects by photo study of being altered and brecciated is a brecciated area permitting a much more thorough alteration to clays than the other bleached Td also at this old surface. The circle is too small for a porphyry system, but I recall pre-mining photos of Sierra Manuel Tom Mitcham once showed me: two circular areas about this size, each apparently over the high pyrite flank of the system. It also might reflect the highly brecciated center of a low S system. On the map I note 2 long recognized favorable elements, I welcome their projection into the target from exposures to the ENE. I also note photo & physiographic evidence of Texas lineament influence (diagonalitically) There also is the strong N-S structure that the E-W IP line on the Tatius identifies as a major discontinuity. It has parallel elements as seen on the photo & Peterson's map & strikes toward the Ray area and Hutton Pk. This could be an element of some importance previously unrecognized locally



Superior East

In the interest of getting this off to you will leave thoughts on this for later discussion if interested, for now one thought might be of use:

Just heard Magma is going to shut Superior down, the ore body apparently not good enough. In event you intend to explore a possible revised interest of BHP before they mothball the mine wanted to get one thought to you:

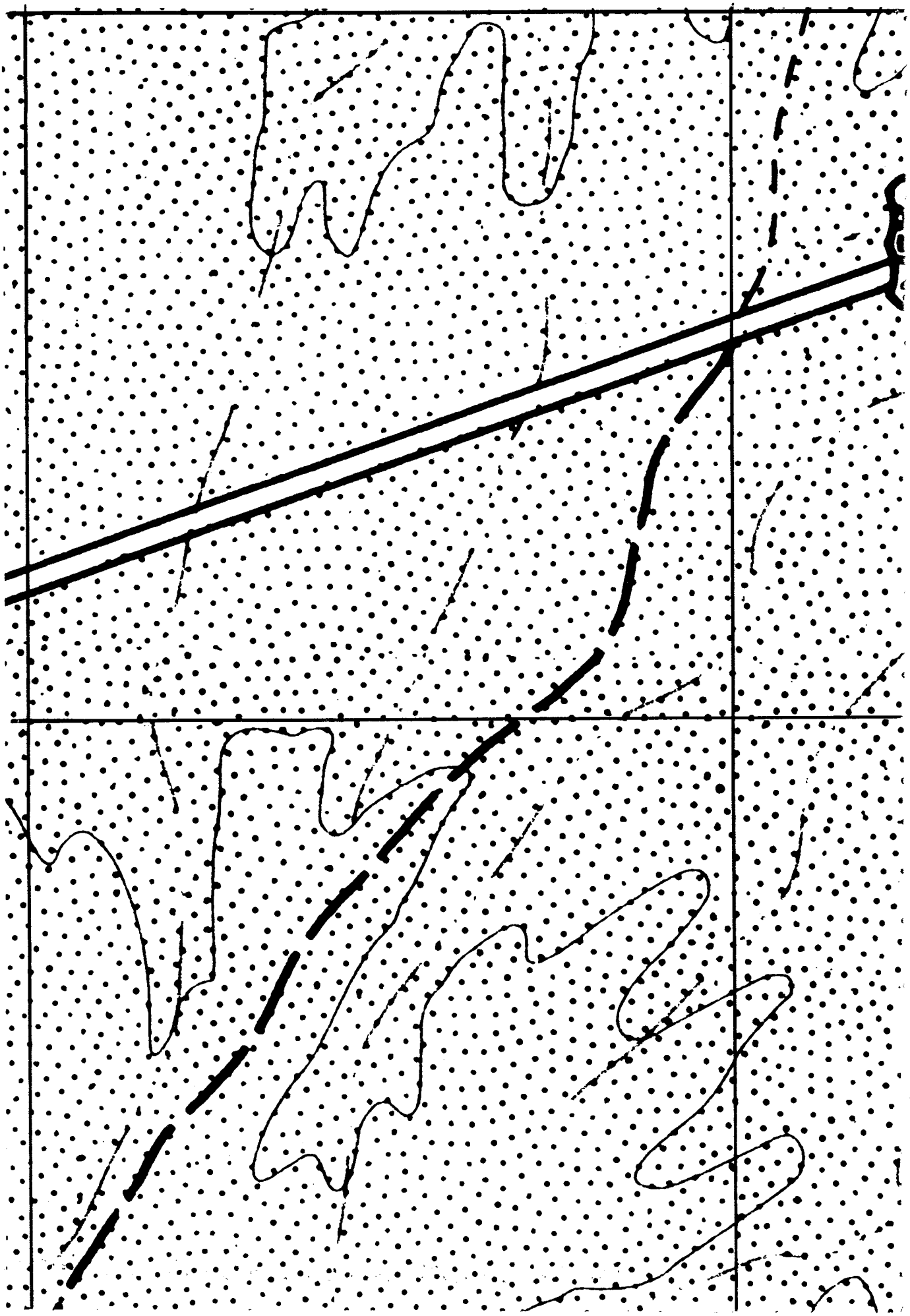
The Margaret Fault seismically defined well may have effected the apparent horizontal displacement of the ore trend rather than the Devil's Canyon Fault. If so, some 4000' lengthy Superior E would be very much closer to their present workings, and they would already own some of it if they kept up all their old claims.

My thinking on it:

1. In my experience in the region: The Tertiary fault with the large vertical displacement often or usually does not have a large horizontal displacement, its another one nearby that does.

2. I came across a notation taken over the phone from one of Continental's staff at the time A-4 was drilled describing the bottom of the hole: "schistose Qzm with qtz veinlets with Cpy & moly assaying 0.02 Cu". Per Sells paper A-4 hit Tqm at 6575 after passing through the Devil's Canyon Fault. This would be at -2475 elevation, 2621' below the bottom of the ore interval of A-8. Could it be that the Mo is suggesting a location within but below the ore trend?

3. The great drop in values in the holes W of the Margaret Fault & along the ore trend suggests a major off-set. Horizontal seems more likely than up on the W considering in erosion of the down to the roots as the pattern in the district is down on the W side & the seismically indicated movement is such. A hole 3000' or so NE of A-4 plus the capability of testing leaching of the Tw from facilities near sea level might cause BHP to change their minds.



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Property Matters

As mentioned I'm precluded from having any interest in lands within 1 mile of the Margaret claims' boundaries. This takes in much of the Hutton Pk. target and parts of the Tin trench. From my standpoint you would be free to acquire these lands in your own name should you incorporate my lands into your efforts in the area, I would ask that otherwise you not acquire them. ~~Re~~ papering of lapsed Kennecott claims is all that would be required in the Hutton Pk area. Unfortunately Kennecott, apparently in the confusion of an "about face" in exploration matters, let some claims in the areas lapse that they should have returned to me as valid claims. They now are re-staking them in my partnership's name. Please treat this as confidential.

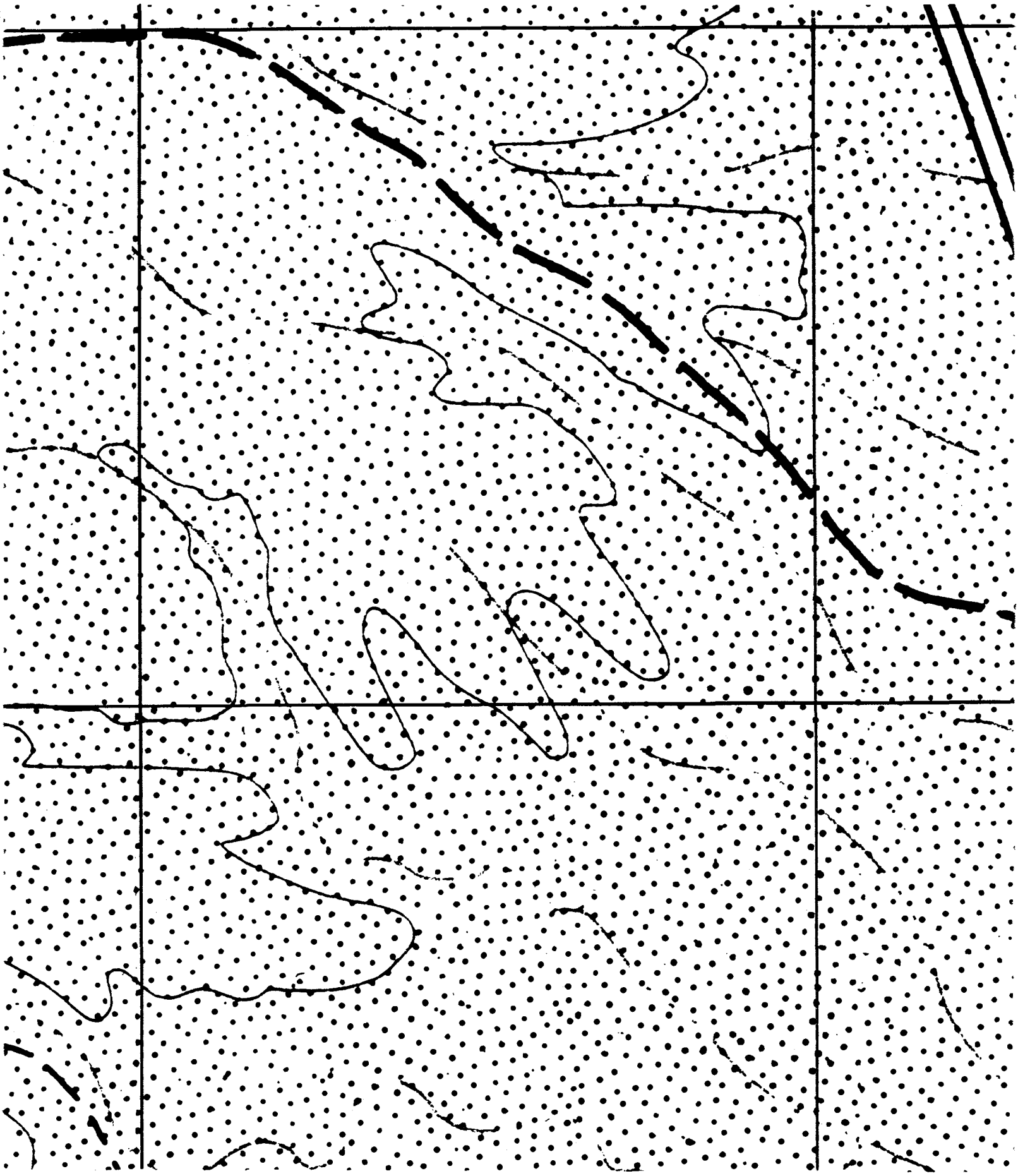
All my partners are family and we get along, there is no sensitivity to possible ~~hurt~~ feelings that I might not be doing right by them as I've had to be concerned about in the past. I would be interested in discussing any sort of arrangement with you ~~should you~~ whether or not you still have ties with Asarco on their ground. The only complication I see is that there should be a separate agreement on the Julia area as our interests have changed since they were acquired, and also I promised a number of local people that helped me (or were friendly) with the Julia claims from 1985 through 1989 (staking help, ranch foreman, ranch owners) some real rewards if we realized some real return from the Julias. I intend to fully honor those promises but there was no intention of including profits from other properties later acquired in the general area.

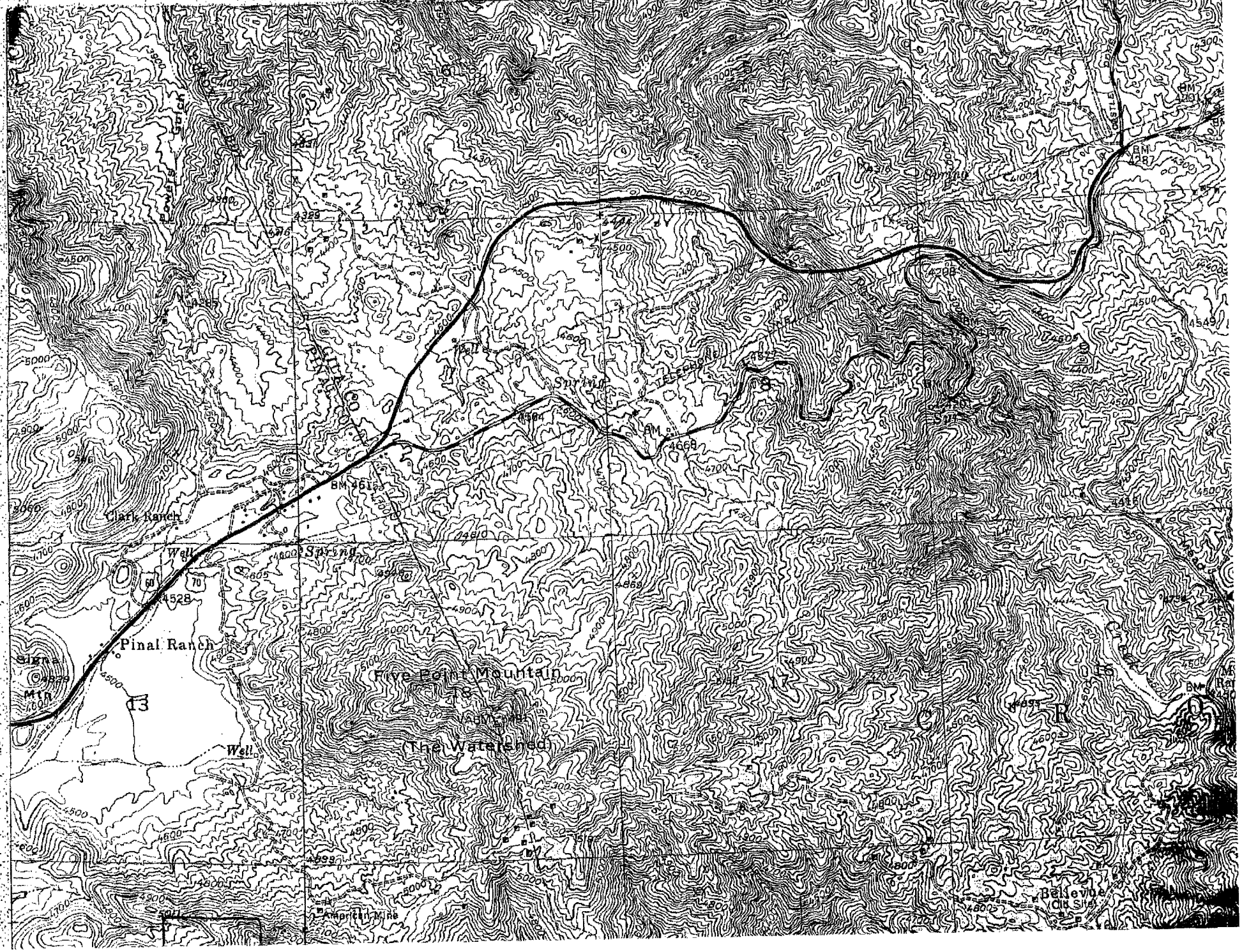
In the interests of time will send this as is. A typed copy you can read will follow.

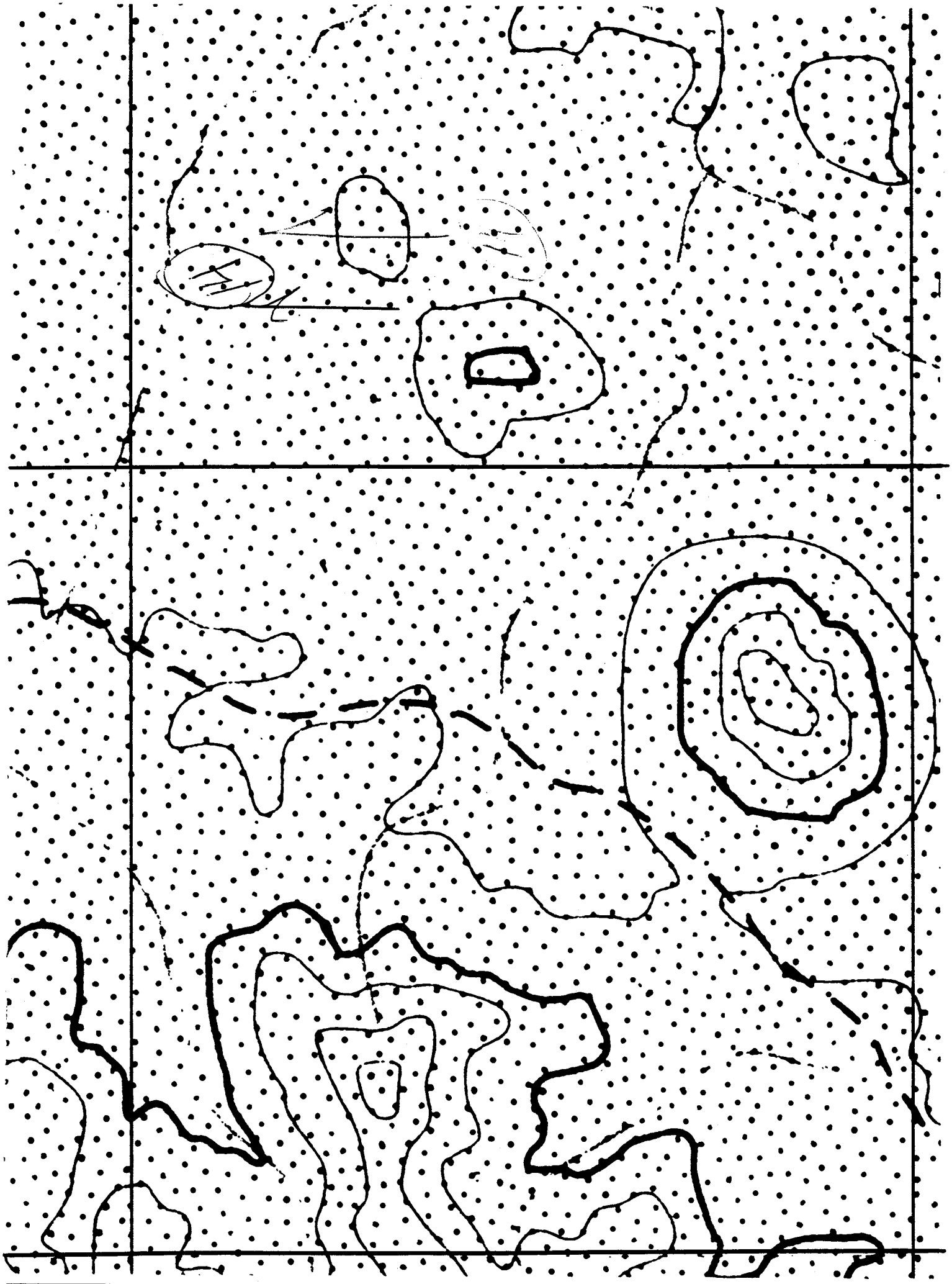
Gosh, on reading this I sound more like a salesman than a geologist. Could I be having trouble believing the enormity of what I see? Too good to be true?

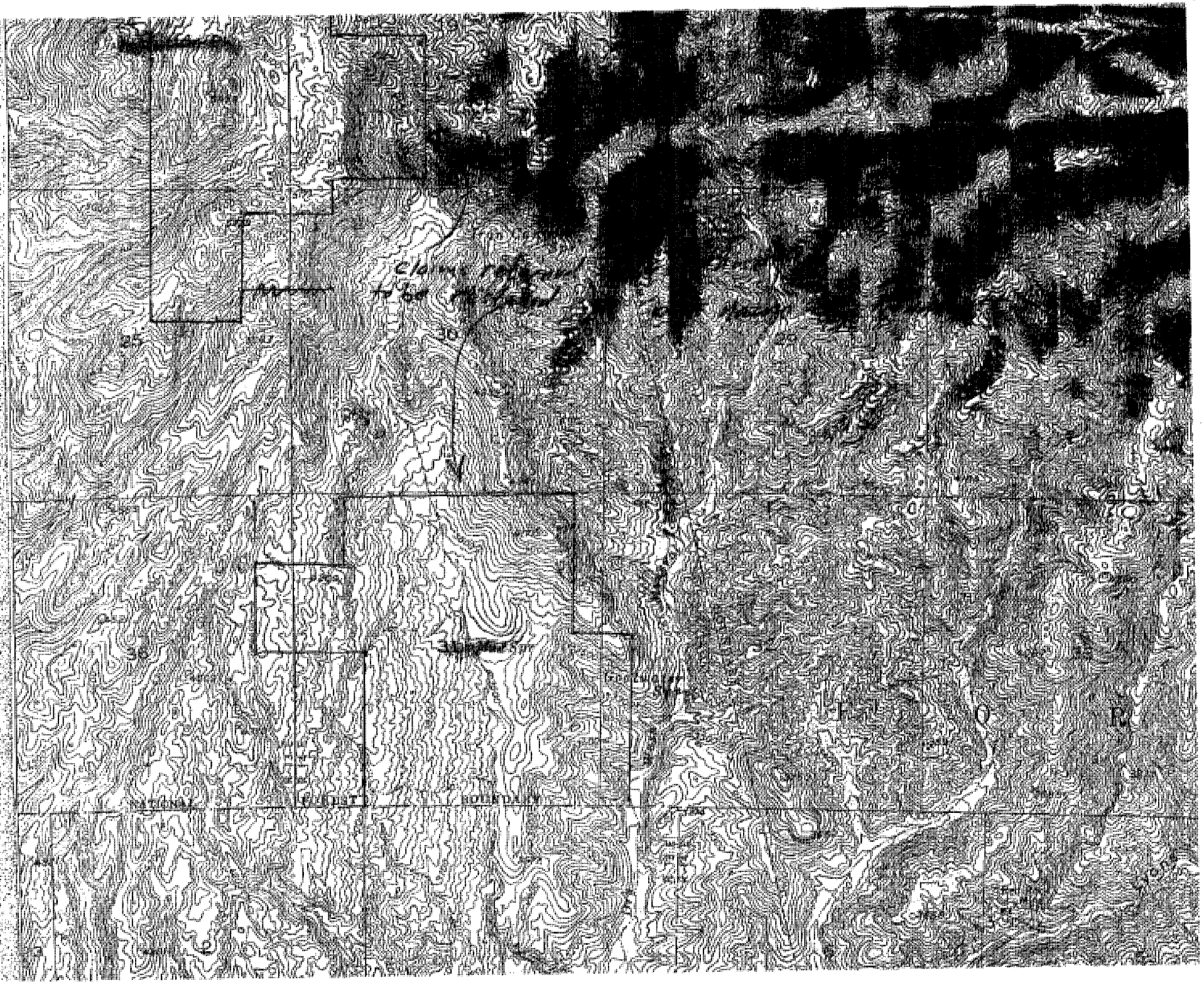
With Best regards, Kirby

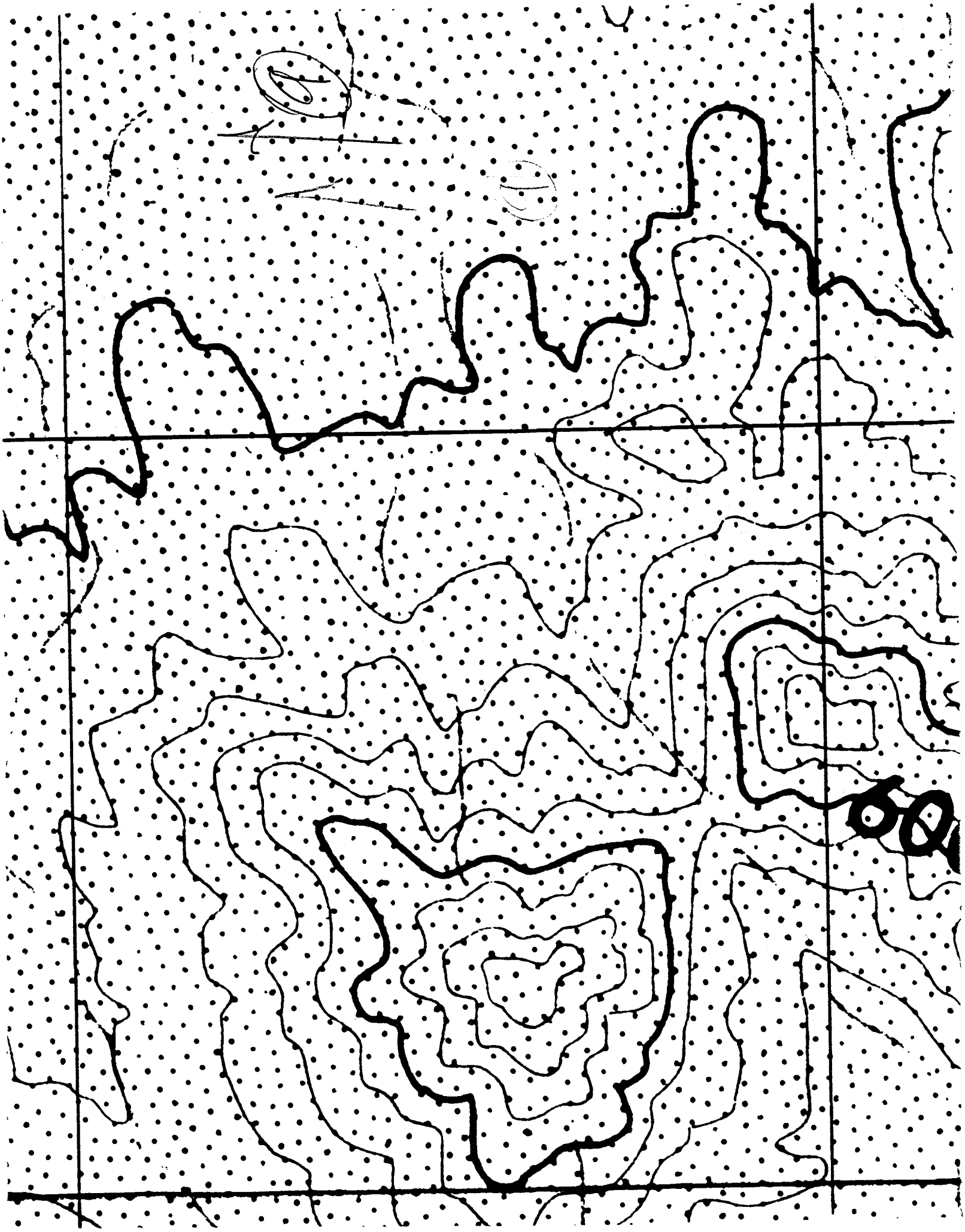
3

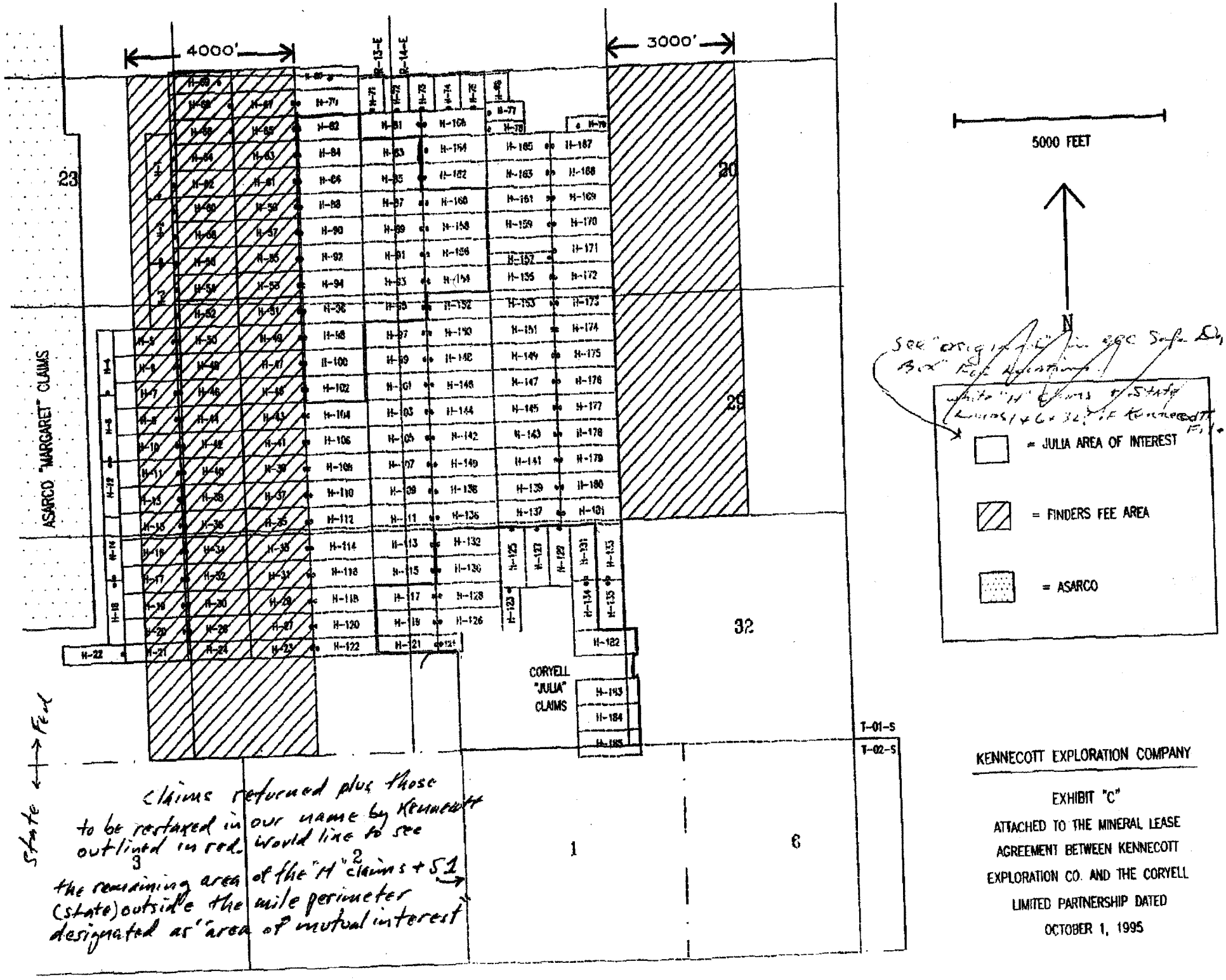



Clark Ranch
Well
Spring
Pinal Ranch
Five Point Mountain
(The Watershed)
Well
Spring
TELEPHONE
Bellevue
Old Site
American Mine
BM 4668
BM 4287
BM 4616
4528
4329
4584
4549
4415
4495
4699
4831
4316
4208
4101
4610
4940
4868
4605
4616
4331




25
30
36
31
NATIONAL
FOREST
BOUNDARY

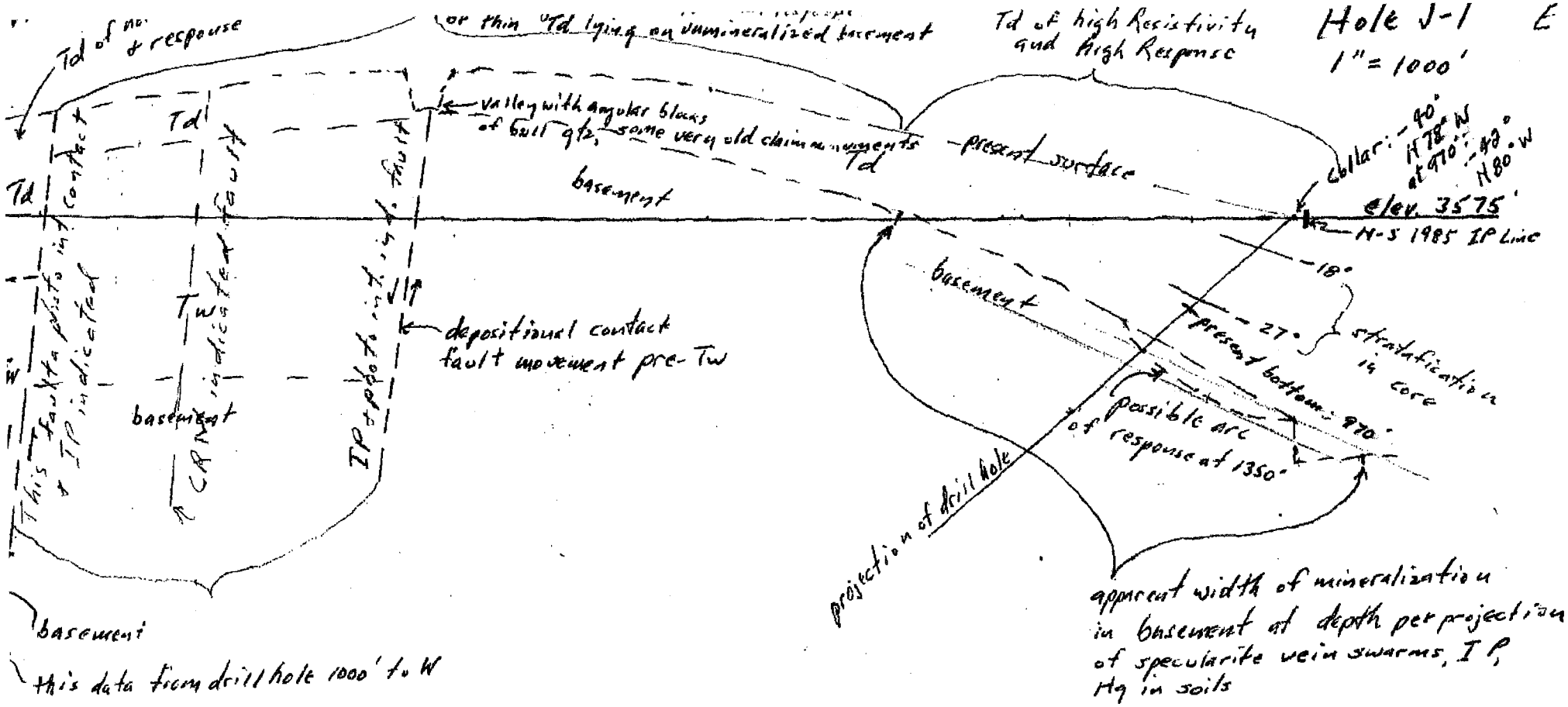




KENNECOTT EXPLORATION COMPANY

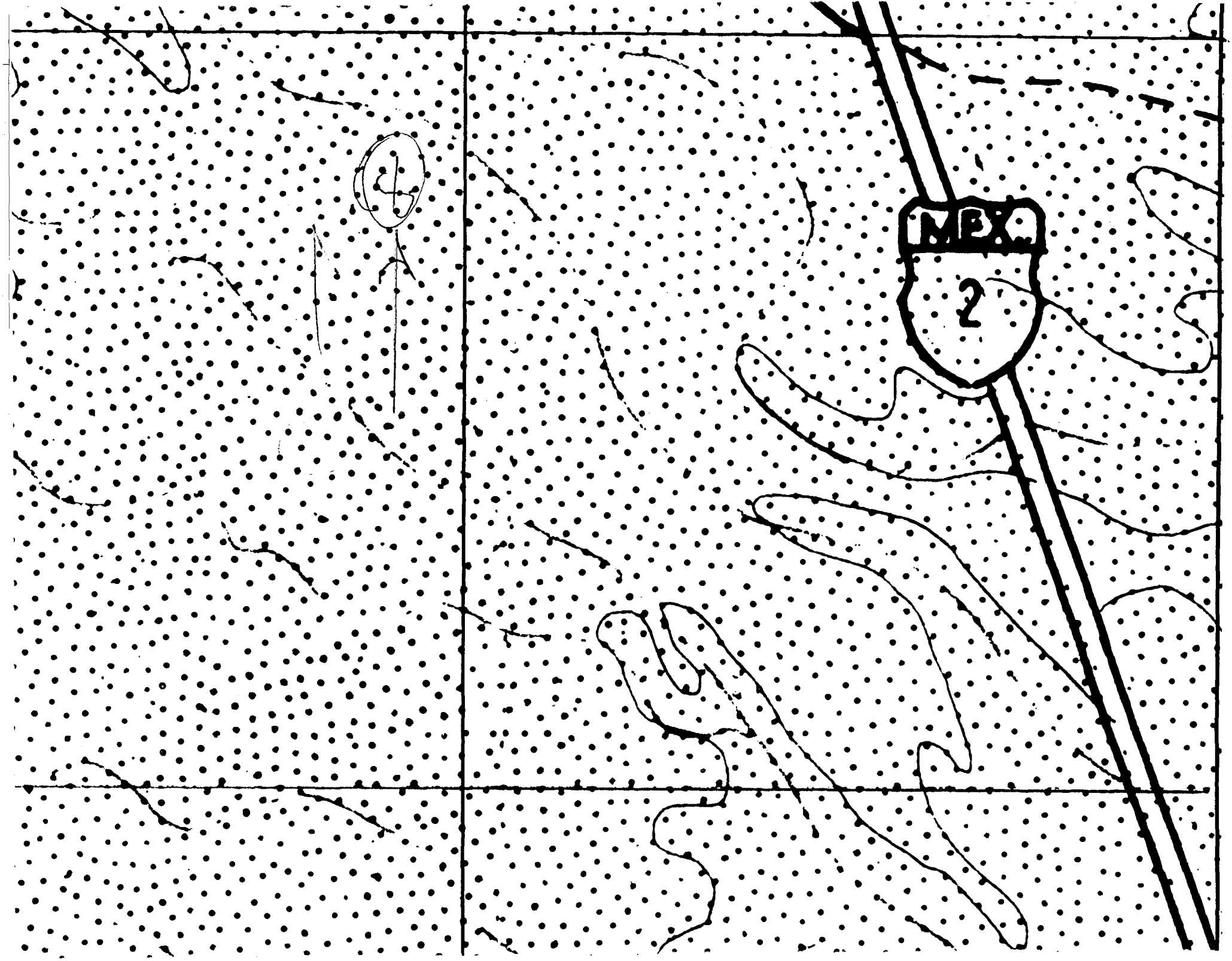
EXHIBIT "C"

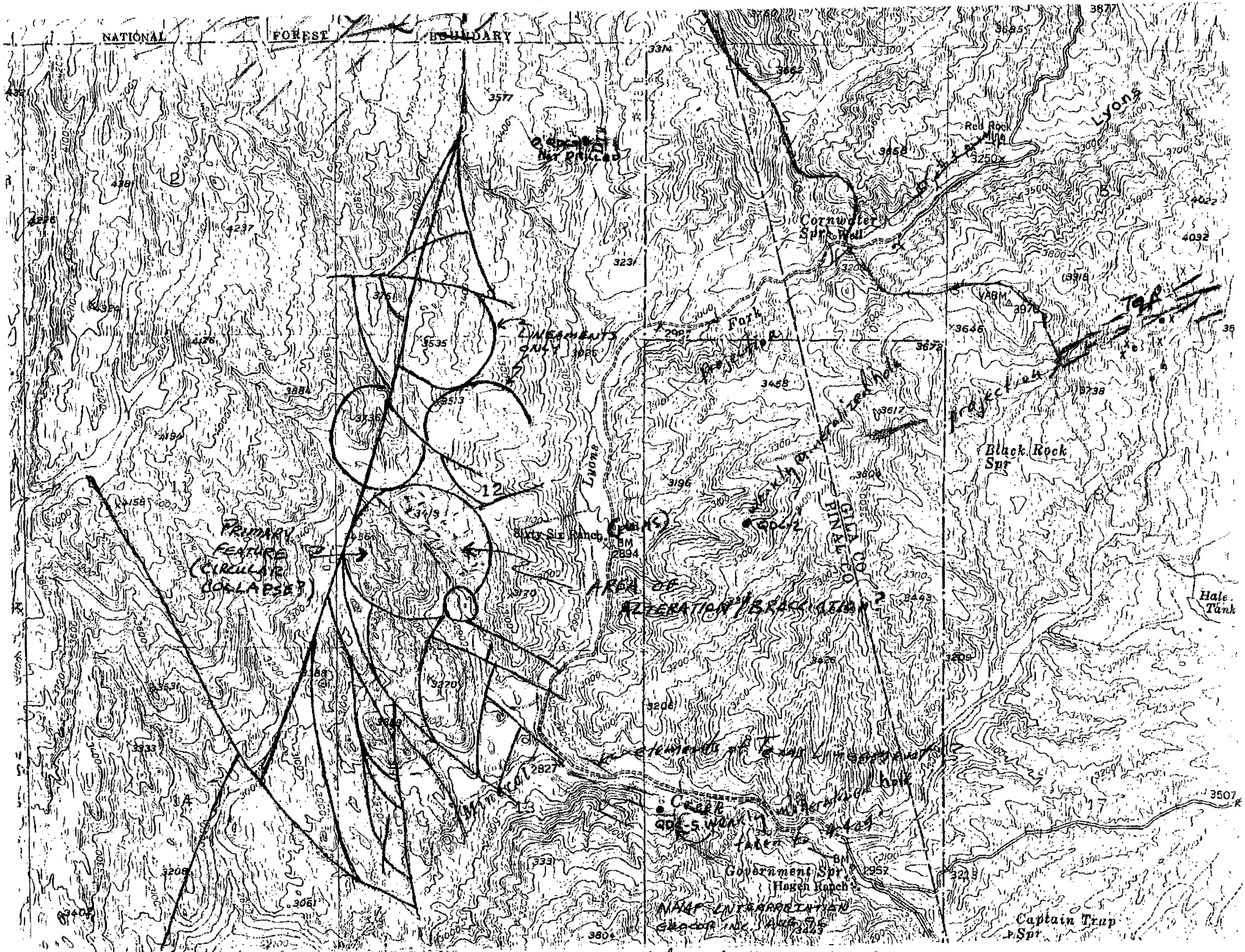
ATTACHED TO THE MINERAL LEASE AGREEMENT BETWEEN KENNECOTT EXPLORATION CO. AND THE CORYELL LIMITED PARTNERSHIP DATED OCTOBER 1, 1995



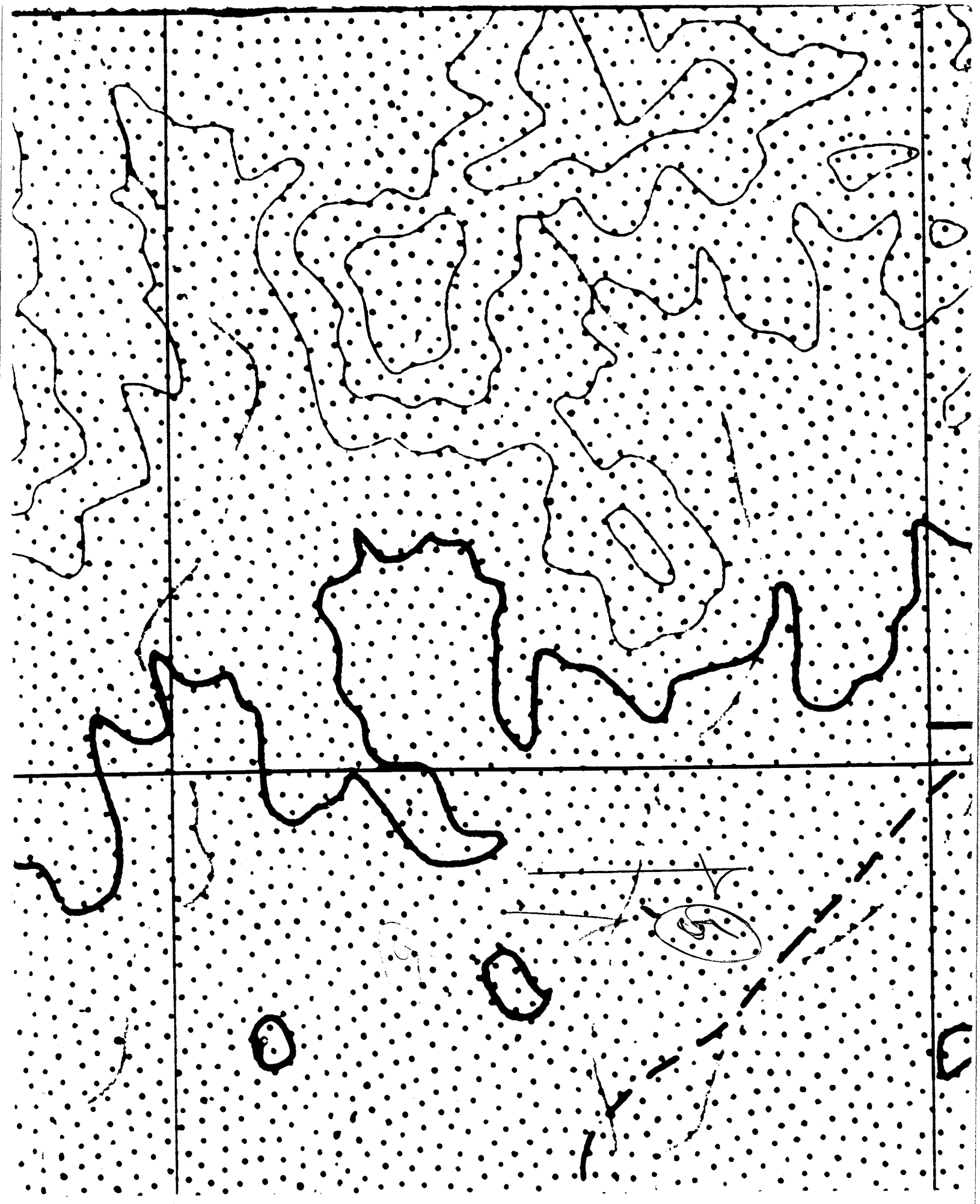
My interpretation of all data as of 6-24-93 KCC

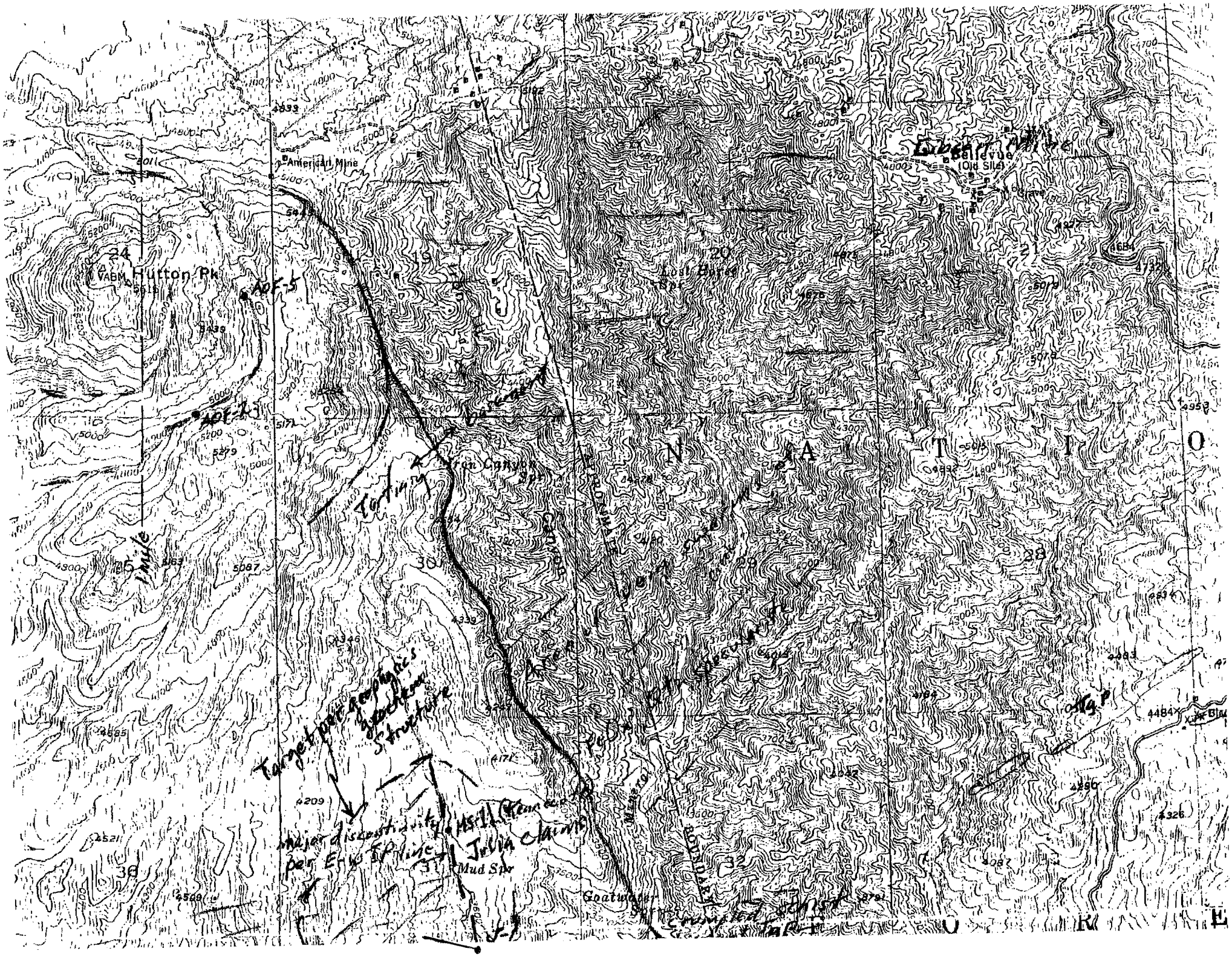
I don't think the stratification of a welded tuff can be any steeper than the slope on which it was deposited. There probably also has been some post-dacite tilting. The strange & unexplained aspect is that the shallow ~~high~~ weak response from the dacite appears to coincide, from data available, with the area of deep much stronger response from the basement. Lab measurements of the dacite core from both holes reveal resistivities & response entirely adequate for the anomalous shallow readings in the field.

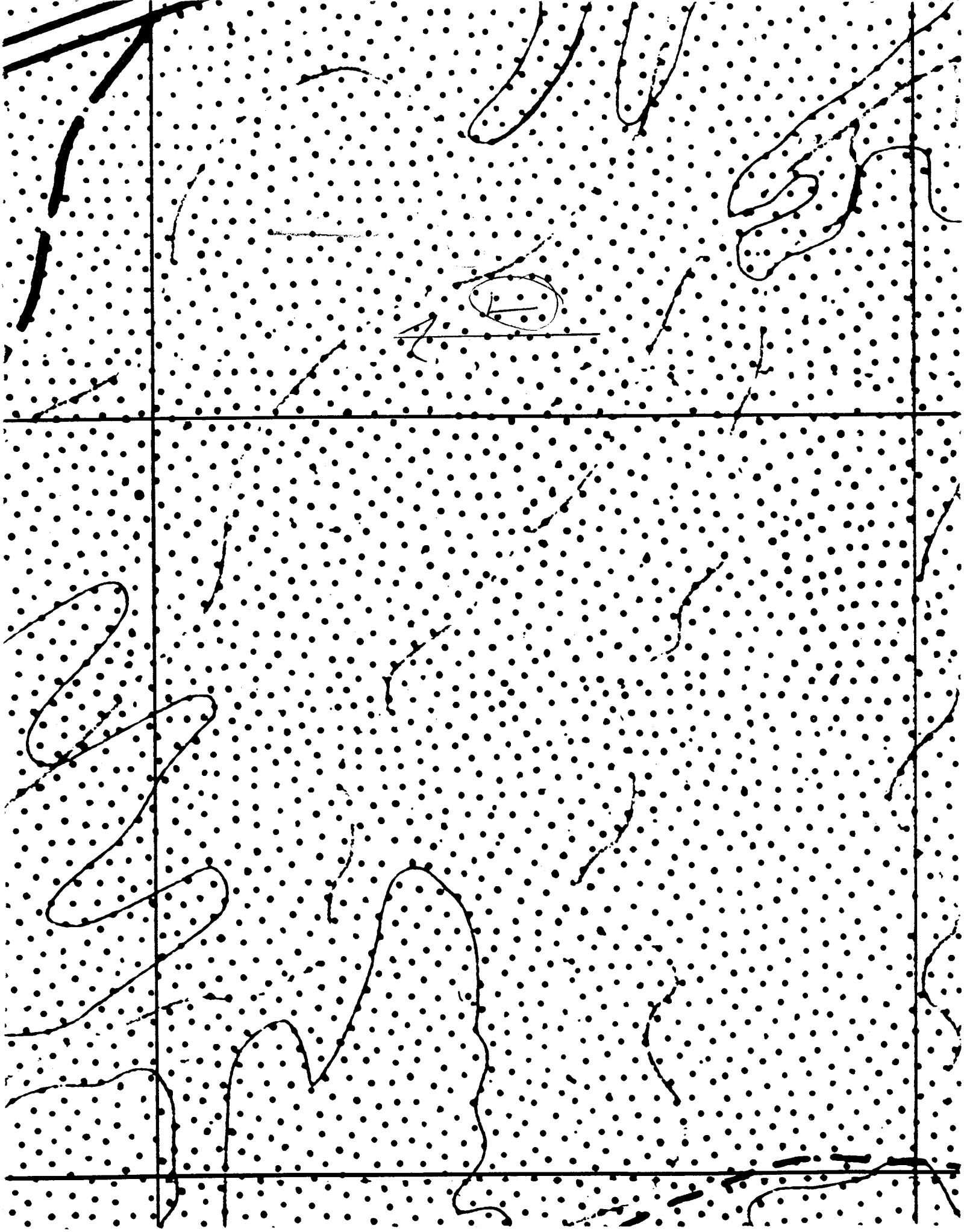

MEX.
2

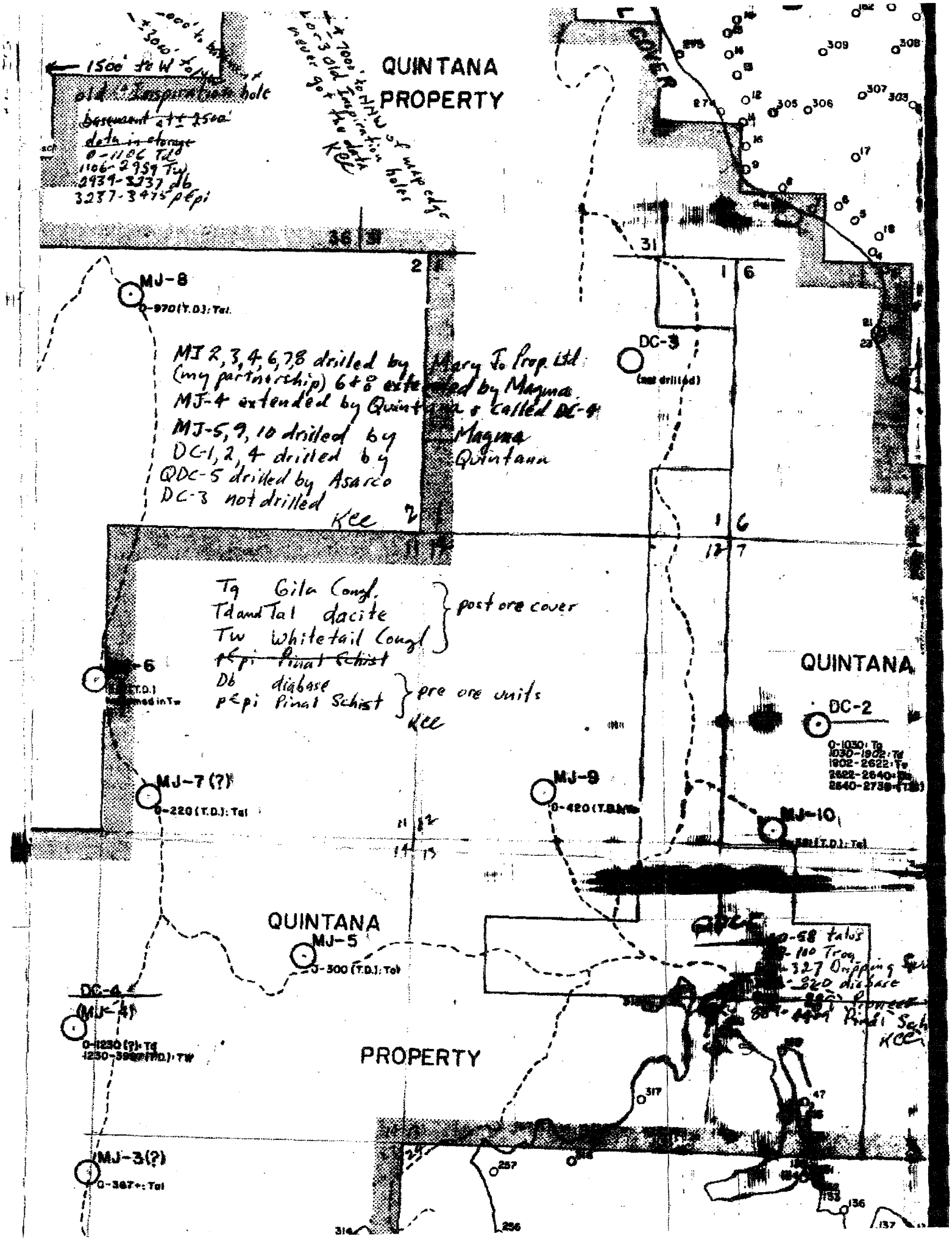


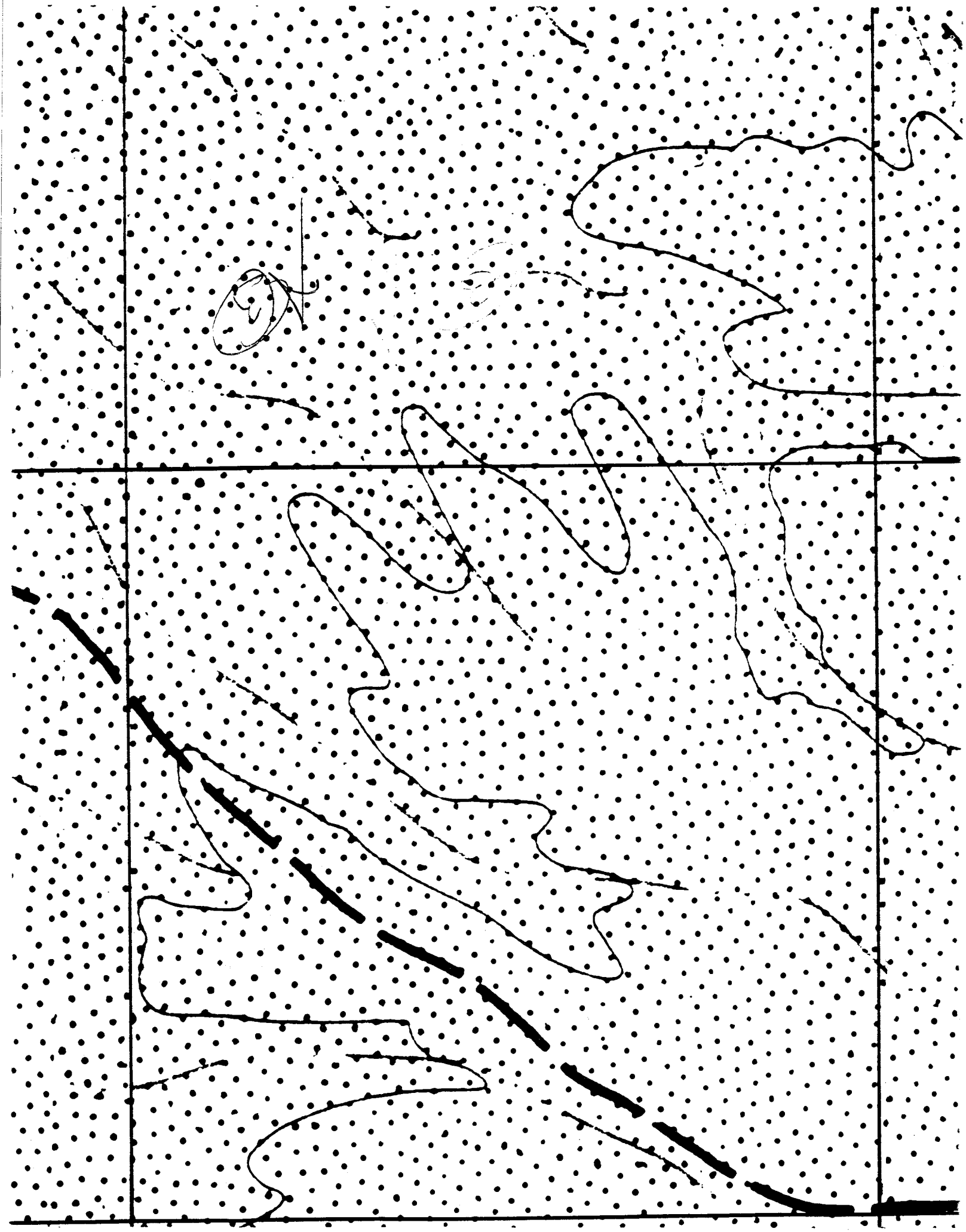
All in black lines & Forest Boundary is GEOCOR; all other notations by KC Corgell 10-5-96

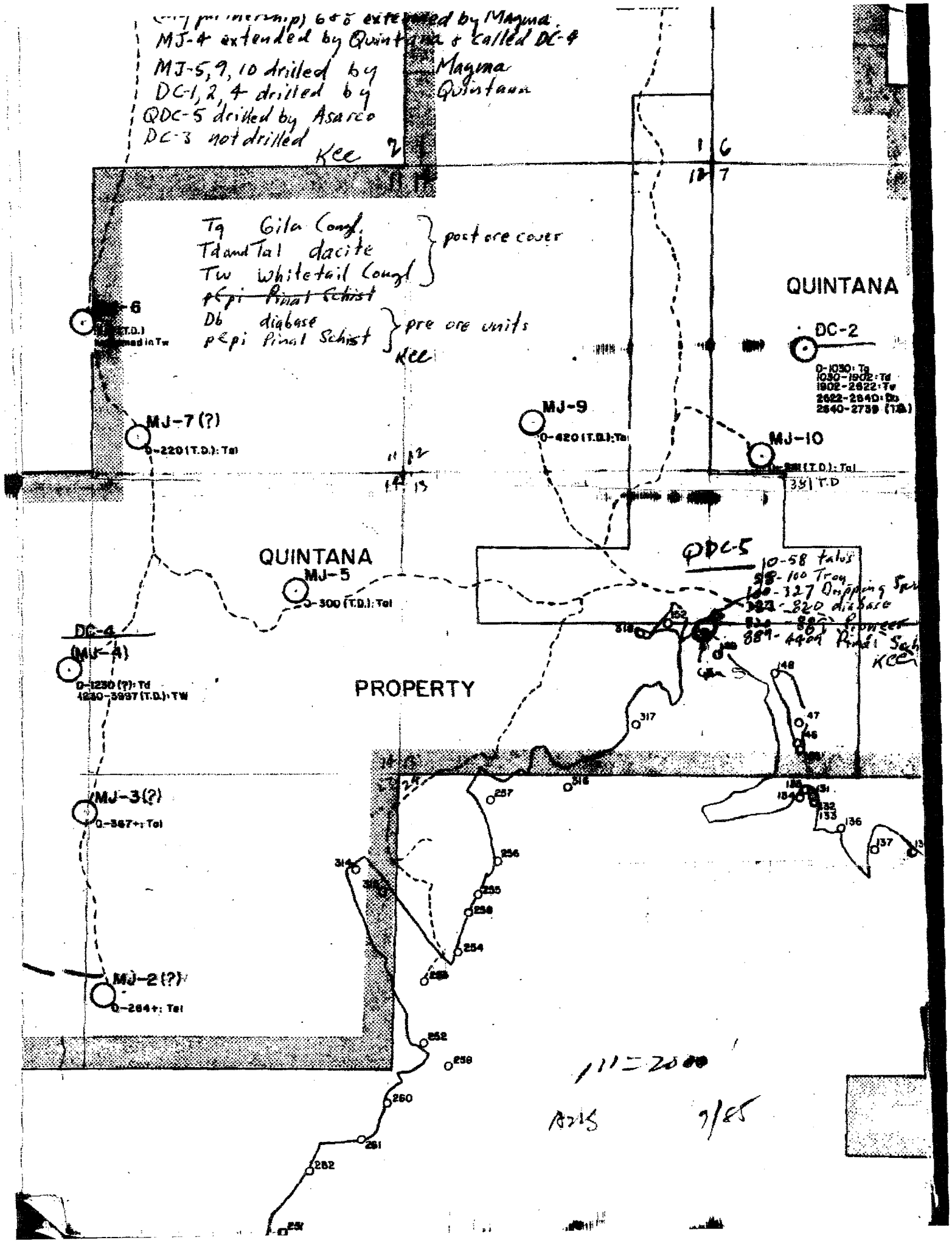


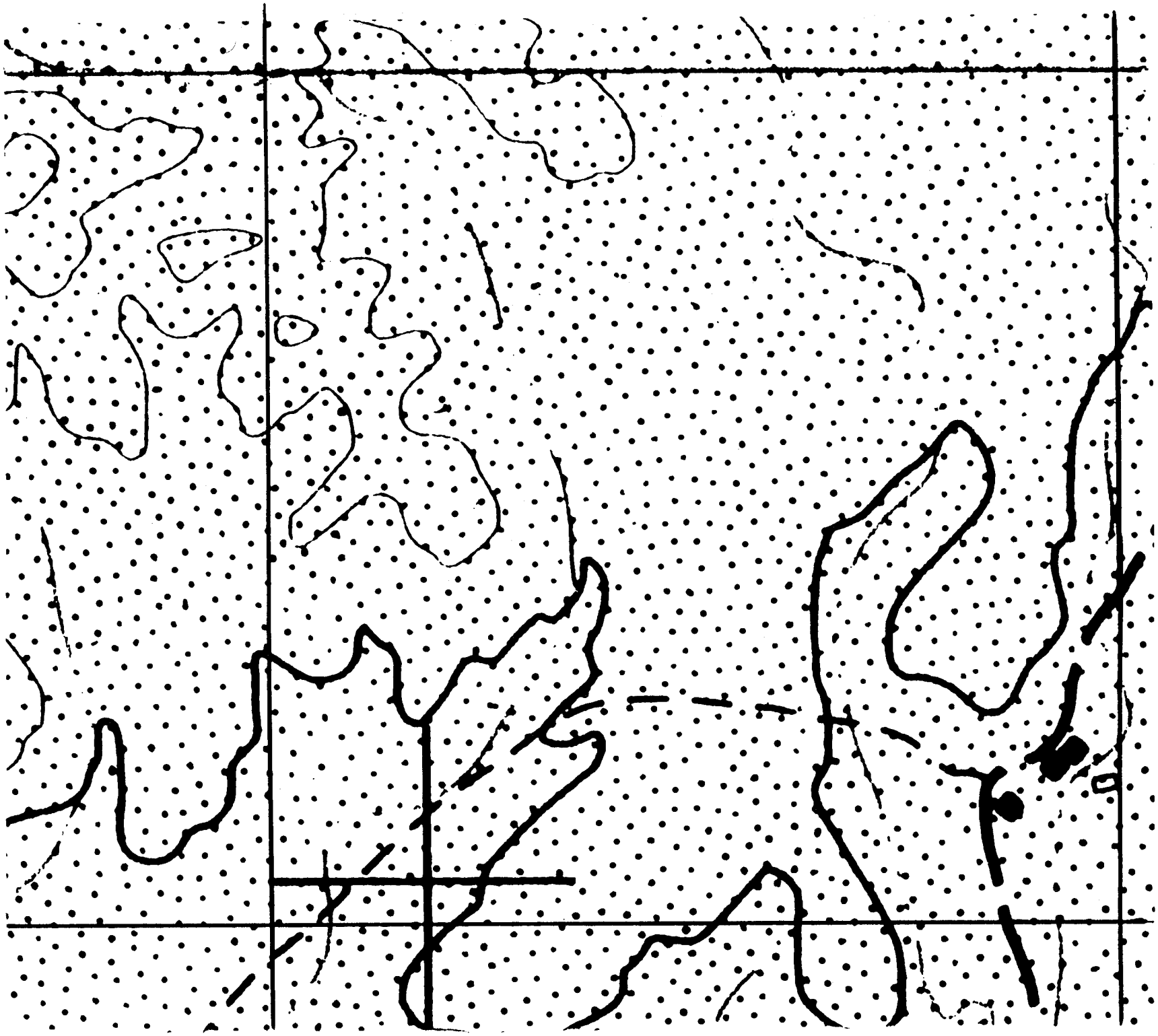

American Mine
Hutton Pk
VABM
Bellevue
(Old Site)
Lost Burro
Iron Canyon
Spr
Mud Spr
Goatwater
Spr
Tertiary
Target per geophysics structure
Major discontinuity
per Exp Fr line
Julia claim
BOUNDARY
Mile
24
19
20
21
25
30
29
28
36
31
32
33
N A T I O
K E




QUINTANA PROPERTY
1500' to W of old exploration hole
basement at ± 2500'
data in storage
0-1106 Td
1106-2939 Tw
2939-3237 db
3237-3475 p€pi
1300' to NW of map edge
1 of 3 old exploration holes never got the data
Kee
COVER
MJ-8
0-970 (T.D.): Tal
MJ 2,3,4,6,7,8 drilled by Mary Jo Prop. Ltd (my partnership) 6 & 8 extended by Magma
MJ-4 extended by Quintana & called DC-4
MJ-5,9,10 drilled by Magma
DC-1,2,4 drilled by Quintana
QDC-5 drilled by Asarco
DC-3 not drilled
Kee
DC-3
(not drilled)
Tq Gila Conglomerate
Td and Tal dacite
Tw Whitetail Conglomerate
post ore cover
~~p€pi Pinal Schist~~
Db diabase
p€pi Pinal Schist
pre ore units
Kee
QUINTANA
DC-2
0-1030: Tq
1030-1902: Td
1902-2622: Tw
2622-2640: Db
2640-2739 (T.D.)
MJ-7 (?)
0-220 (T.D.): Tal
MJ-9
0-420 (T.D.): Tal
MJ-10
(T.D.): Tal
QUINTANA
MJ-5
0-300 (T.D.): Tal
DC-4
(MJ-4)
0-1230 (?): Td
1230-3980 (T.D.): Tw
PROPERTY
(MJ-3(?)
0-387+: Tal
0-58 talus
-180 Troy
-327 Oxidizing
-520 diabase
Pinal Schist
Kee

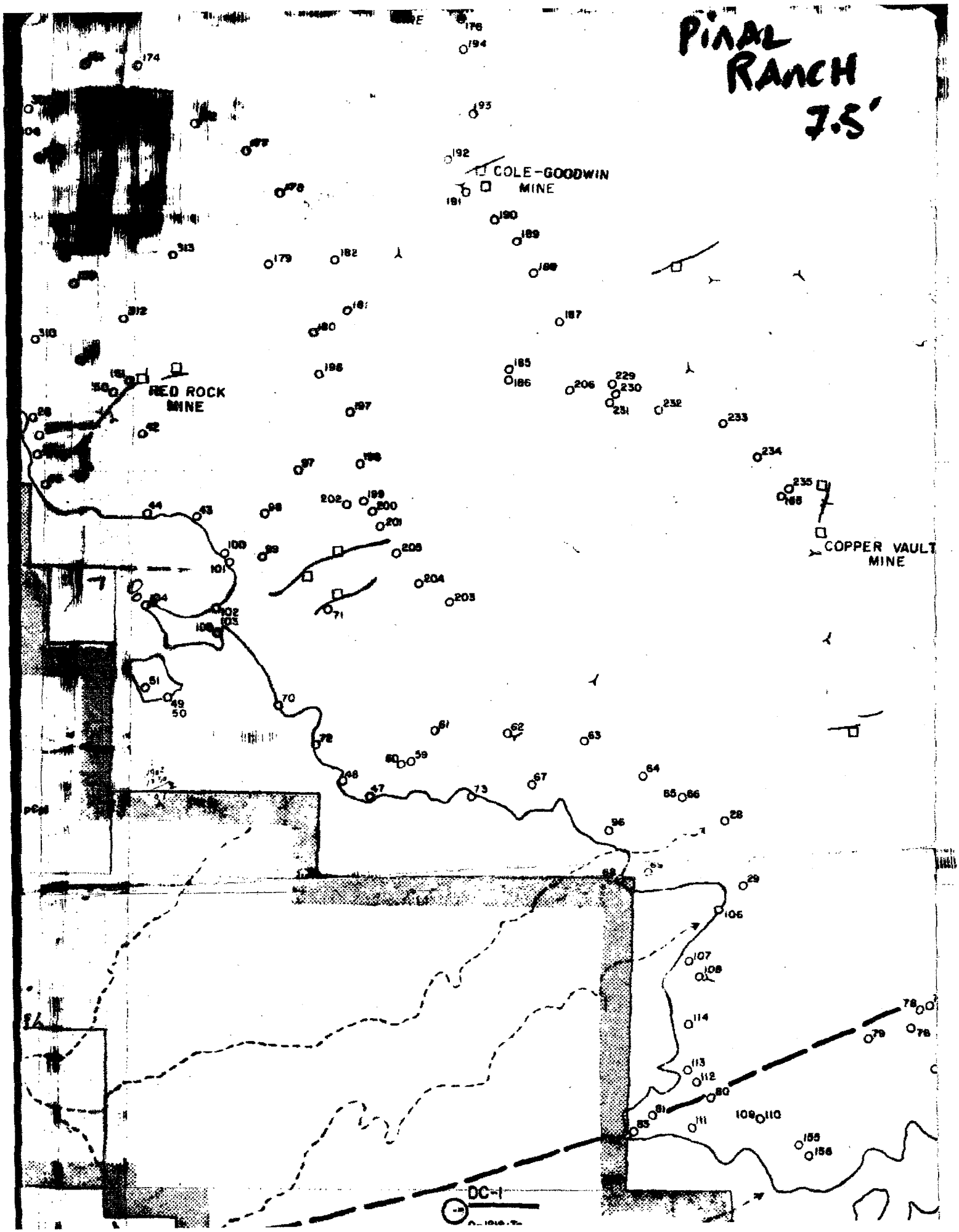



MJ-4 extended by Quintana & called DC-4
MJ-5, 9, 10 drilled by Magma
DC-1, 2, 4 drilled by Quintana
QDC-5 drilled by Asarco
DC-3 not drilled
Kee
Tq Gila Conglomerate
Td and Tal dacite
Tw Whitetail Conglomerate
post ore cover
~~pЄpi Pinal Schist~~
Db diabase
pЄpi Pinal Schist
pre ore units
Kee
QUINTANA
DC-2
0-1030: Tq
1030-1902: Td
1902-2622: Tw
2622-2840: Db
2840-2739 (T.D.)
MJ-7 (?)
0-220 (T.D.): Tal
MJ-9
0-420 (T.D.): Tal
MJ-10
0-381 (T.D.): Tal
381 T.D
QUINTANA
MJ-5
0-300 (T.D.): Tal
QDC-5
0-58 talus
58-100 Troy
100-327 Dropping Spur
327-820 diabase
820-889 Pioneer
889-4404 Pinal Sch
Kee
DC-4
(MJ-4)
0-1230 (?): Td
1230-3997 (T.D.): Tw
PROPERTY
(MJ-3(?)
0-367+: Tal
MJ-2 (?)
0-264+: Tal
1" = 2000'
8/15
7/85

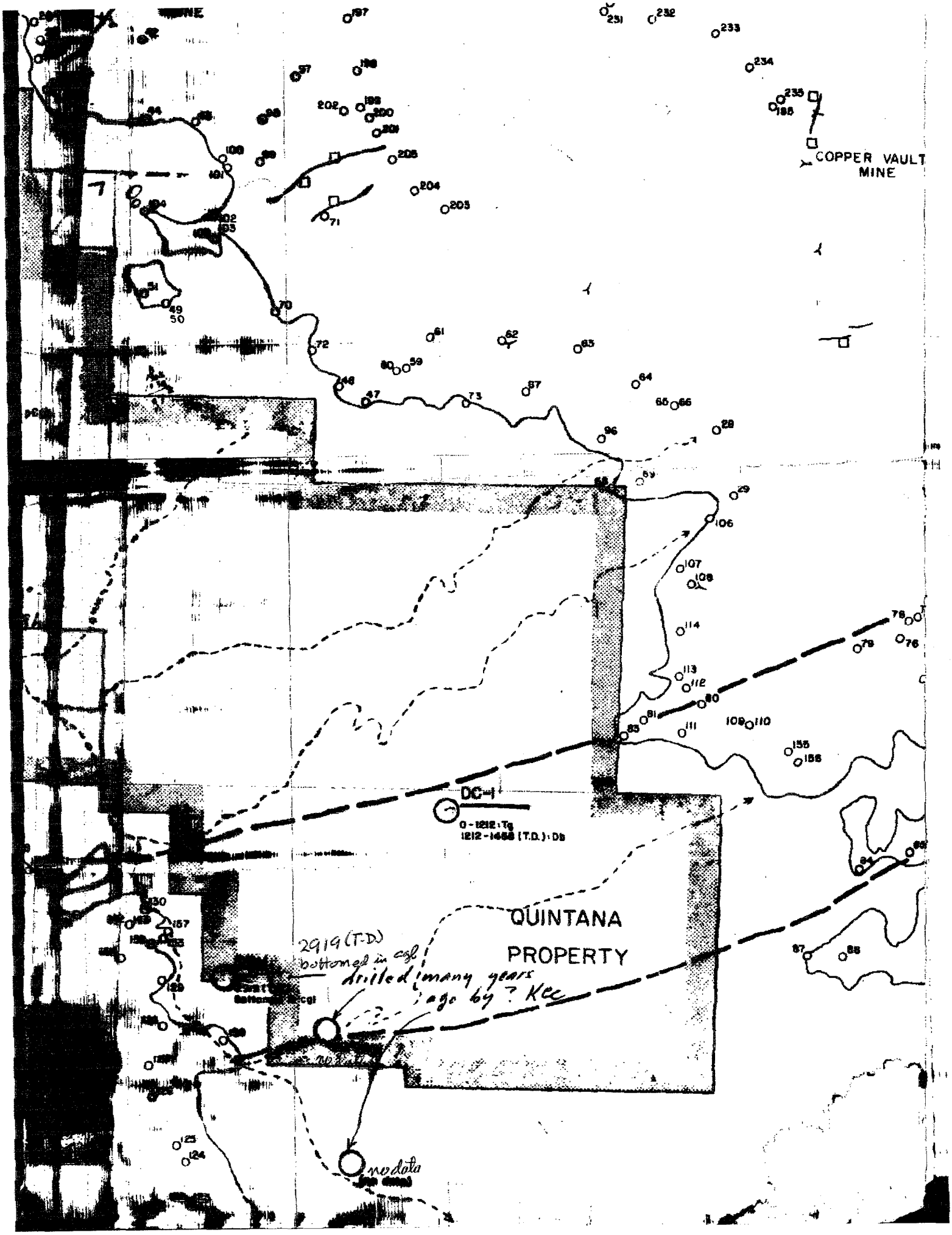


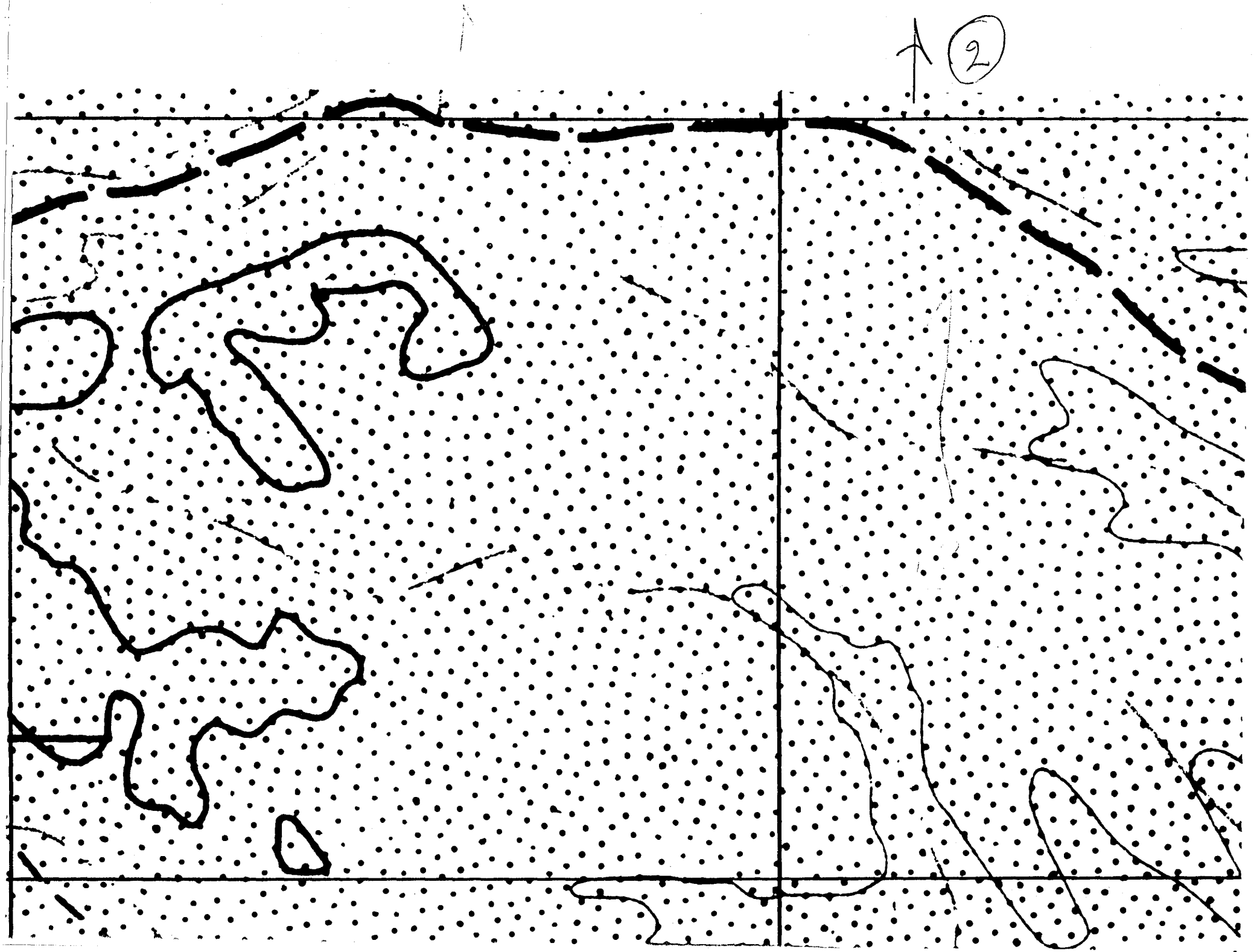
.025 = 1'

(11+21)


PINAL RANCH 7.5'
COLE-GOODWIN MINE
RED ROCK MINE
COPPER VAULT MINE
DC-1

K»7K»7K»7K»7K»7


COPPER VAULT MINE
DC-1
0 - 1212 : Tg
1212 - 1458 (T.D.) : Db
QUINTANA PROPERTY
2919 (T.D.) bottomed in coal
drilled many years ago by ? Kcc
no data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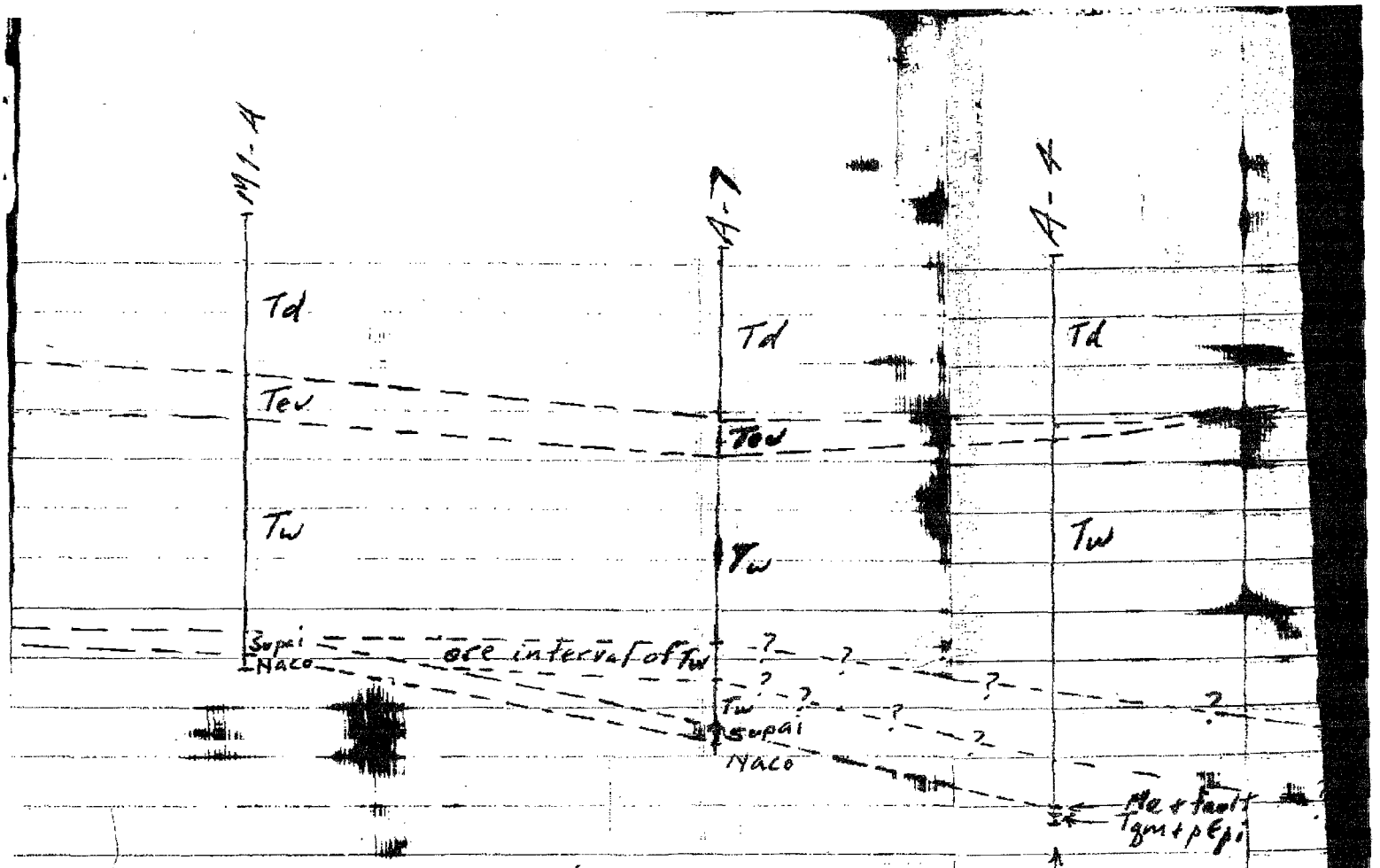


A-7: 3 better zones + intervening low grade all together 425' 0.78

A-4: Sell status: 3 intervals in lower part of Tw total 567' of 0.96

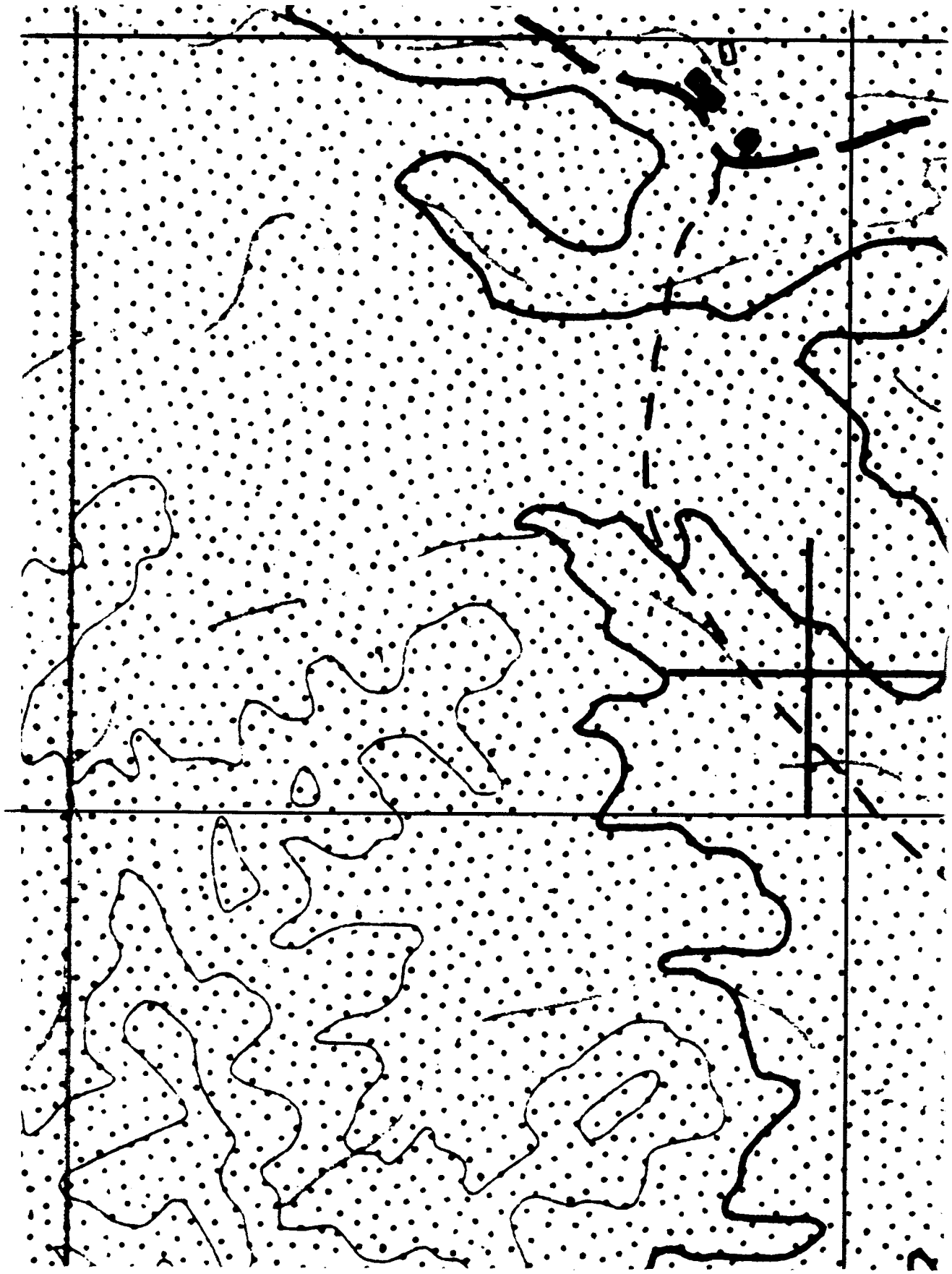
hole into E. side of graben not the bottom after penetrating a few feet of the floor

My conclusions:

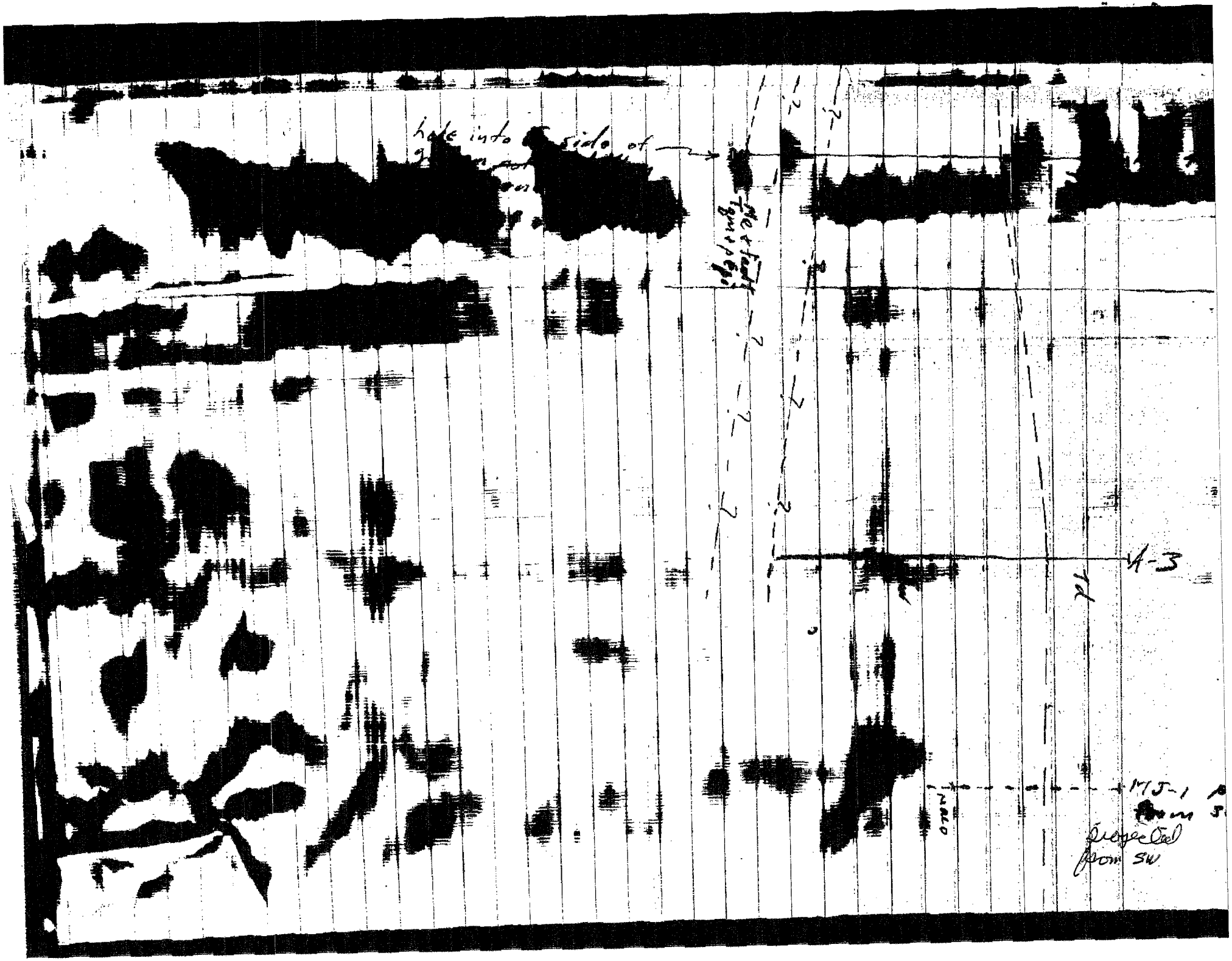
The 3 better zones are continuous between the holes and beneath the bottom of A-3.

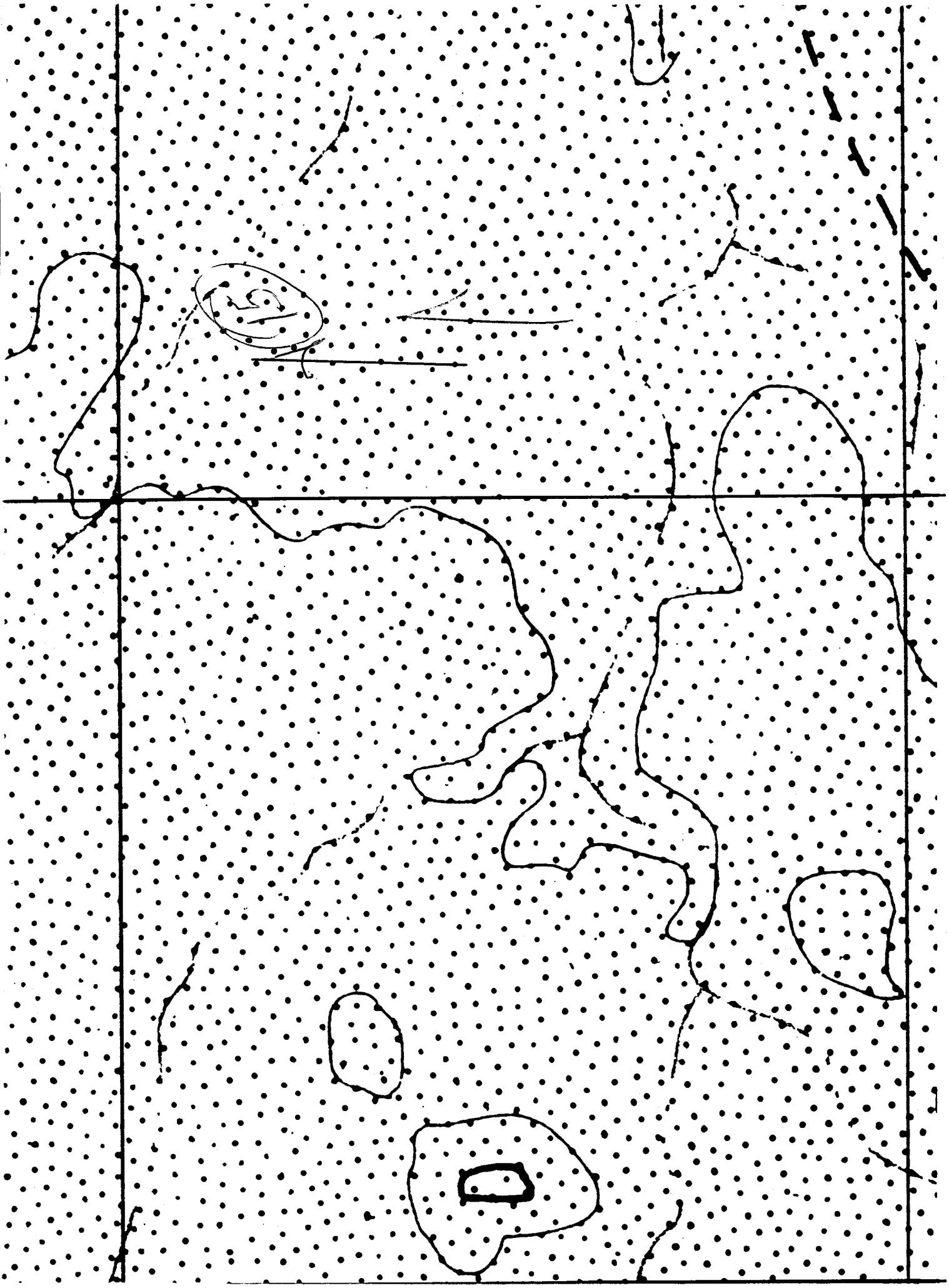
The total intercept of A-4 probably is superior to that of A-7 as would be expected in prograding toward the deeper or more central part of the basin: a similar improvement would be expected under A-3's present bottom.

1

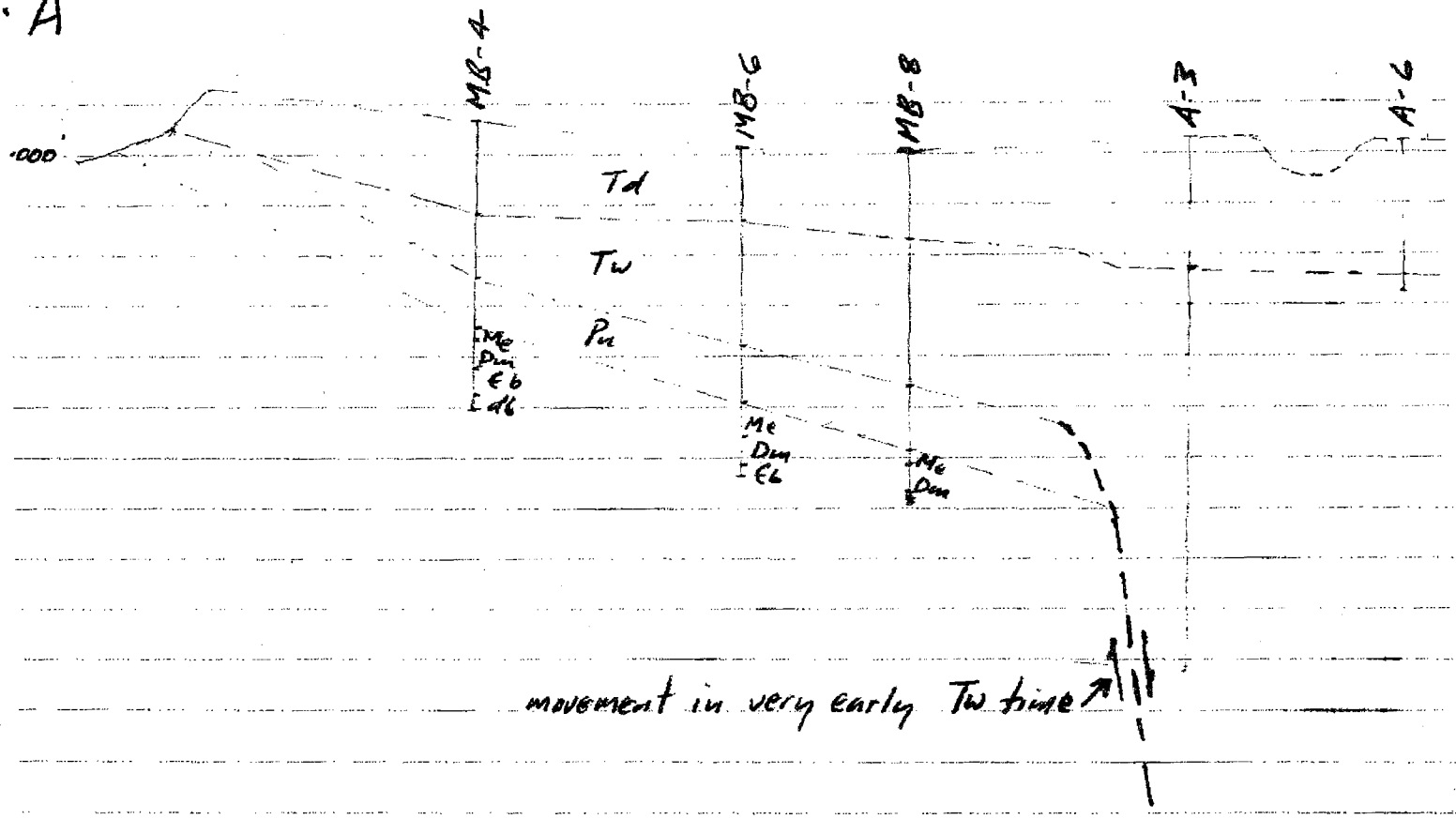


+147

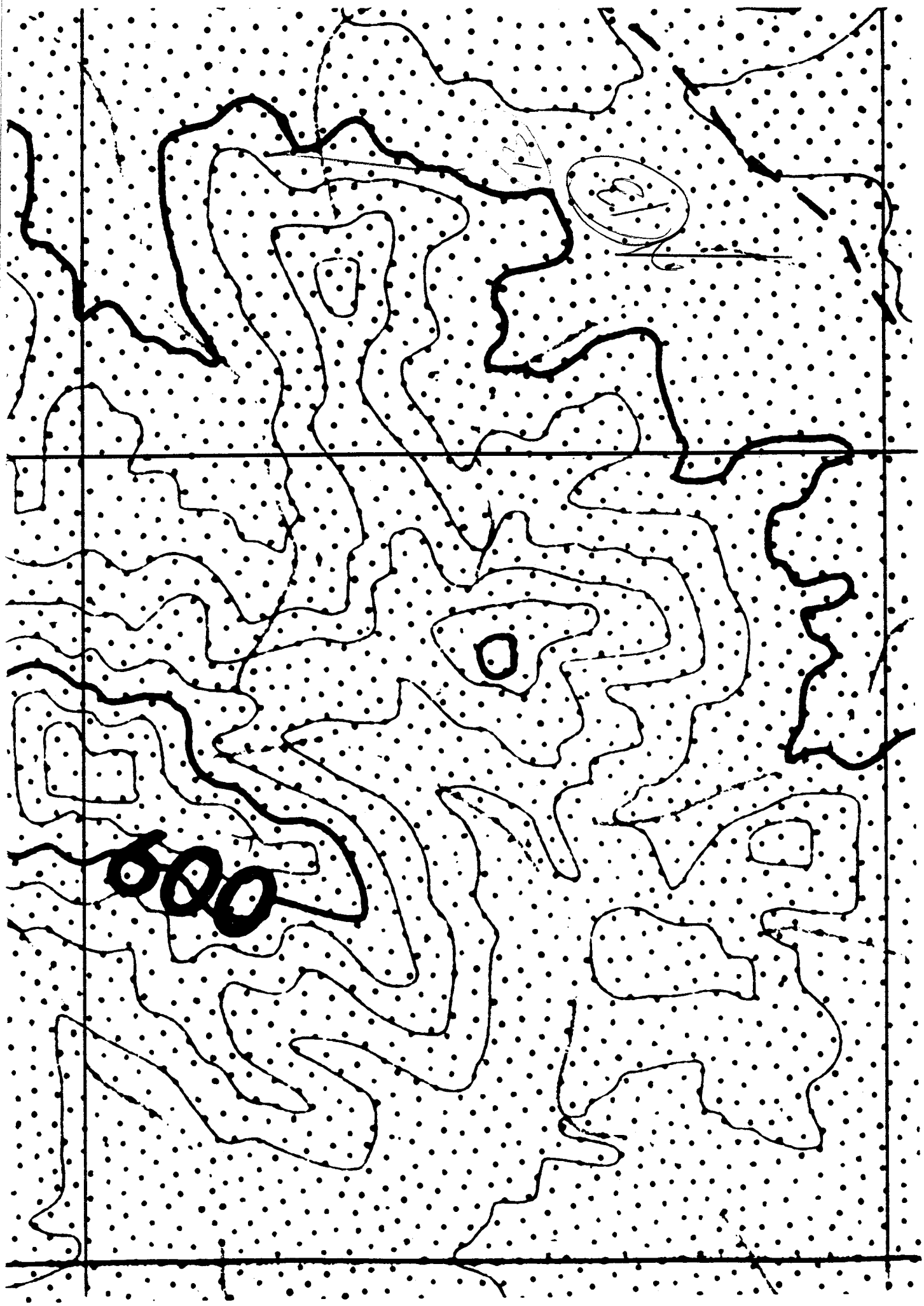

hole into side of
14-3
17J-1
projected
from SW

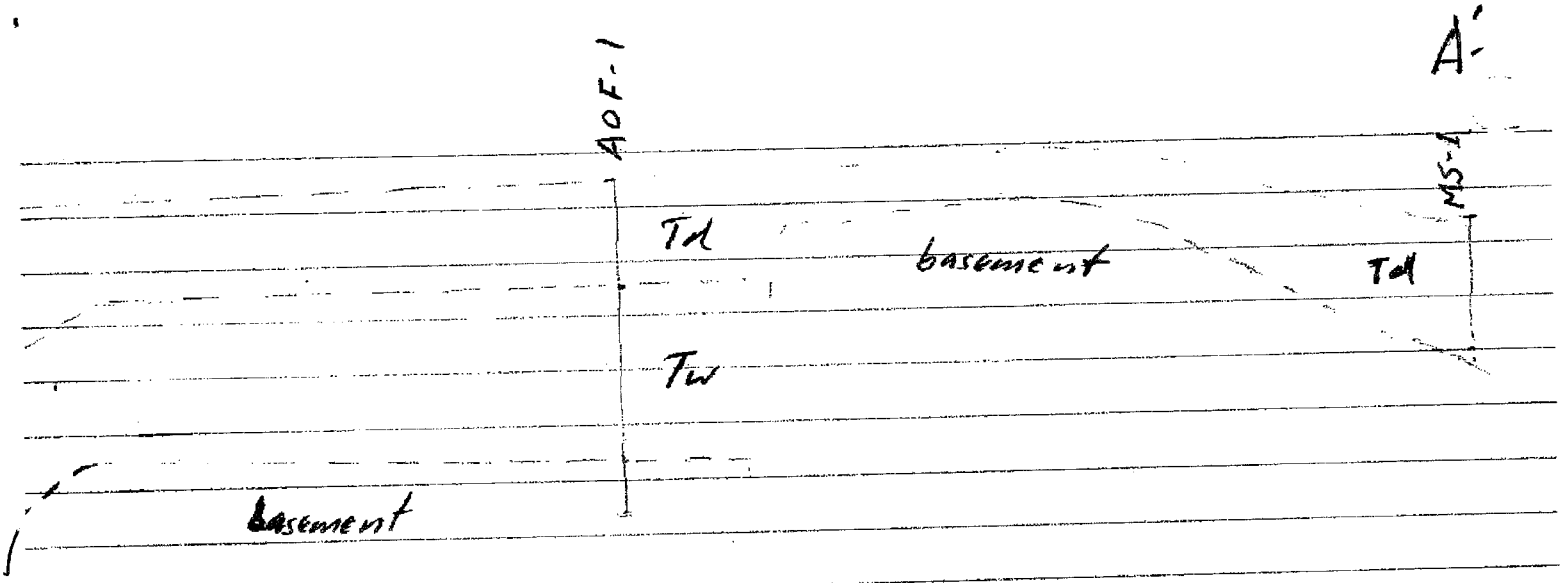


A

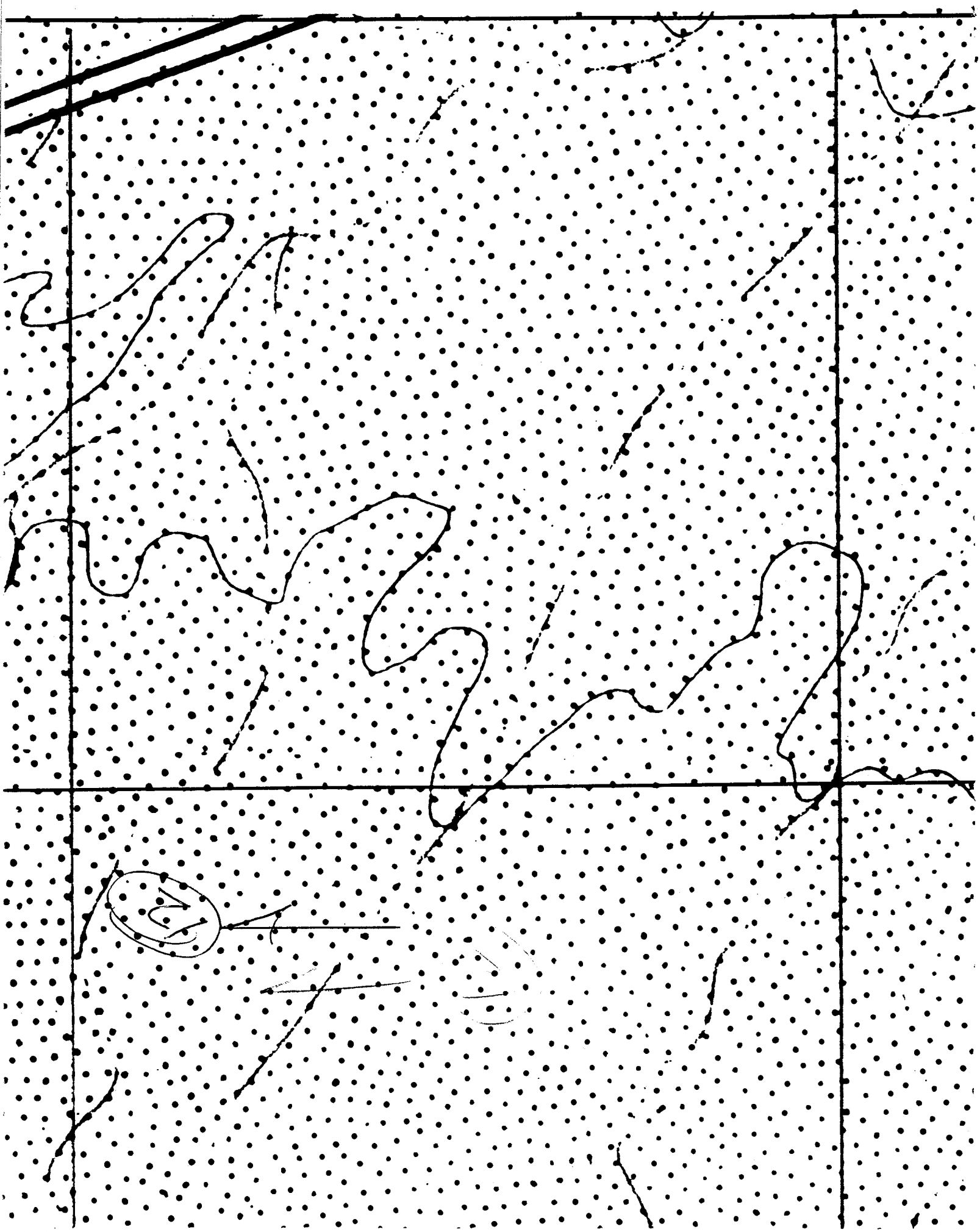


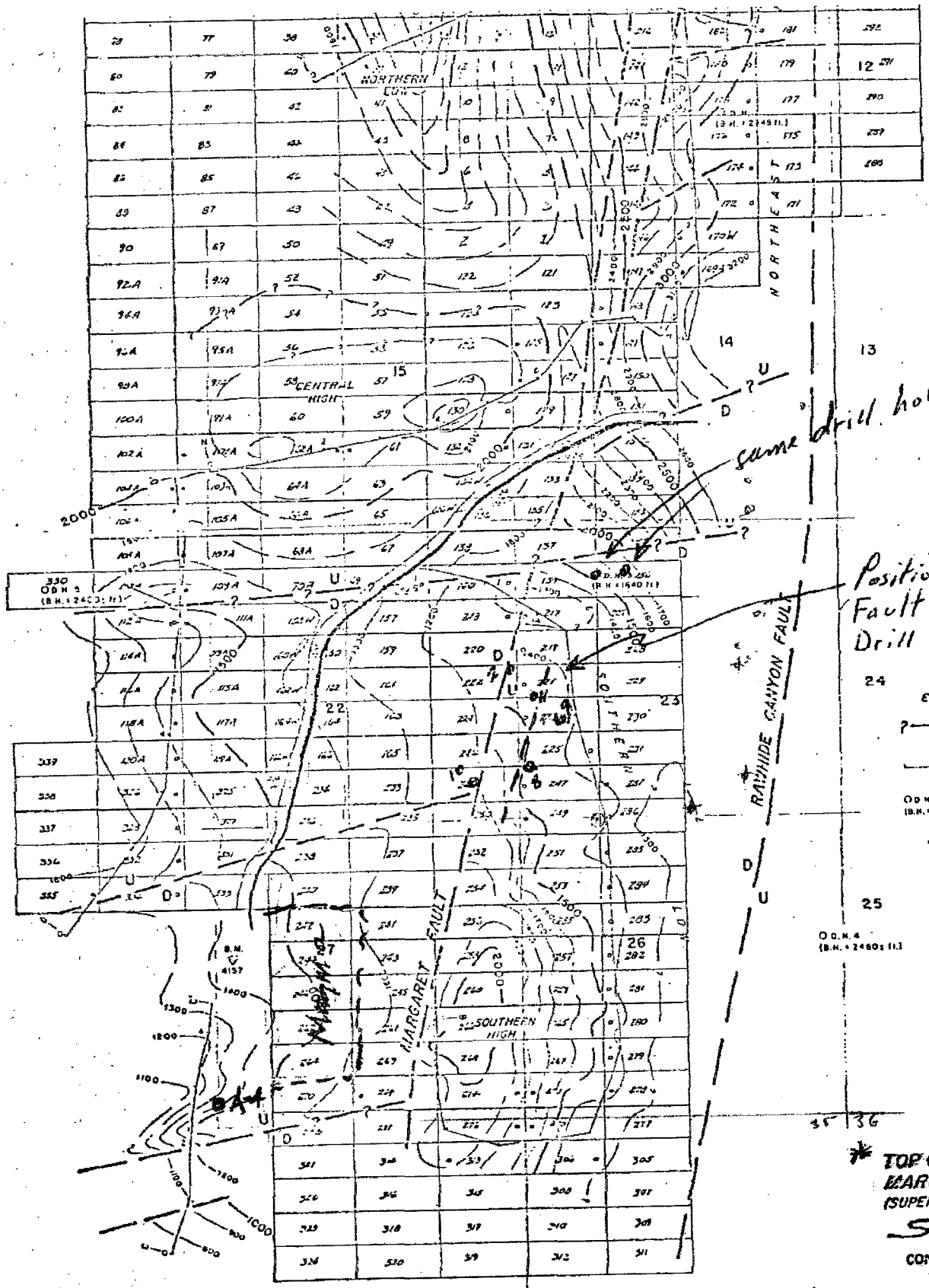
K Cargell 11/5/94





± 5000 movement long before Tw time
similar movement in very early Tw time





CONTOUR MAP

* TOP OF HOST ROCK UNITS

MARGARET CLAIM-GROUP

(SUPERIOR-GLOBE-MIAMI, ARIZONA)

SOUTH GROUP

CONTINENTAL COPPER INC.

TUCSON, ARIZONA

GEOPHYSICAL SURVEY CONDUCTED BY:

J. W. CROWLEY, JR. — JAN. 1970

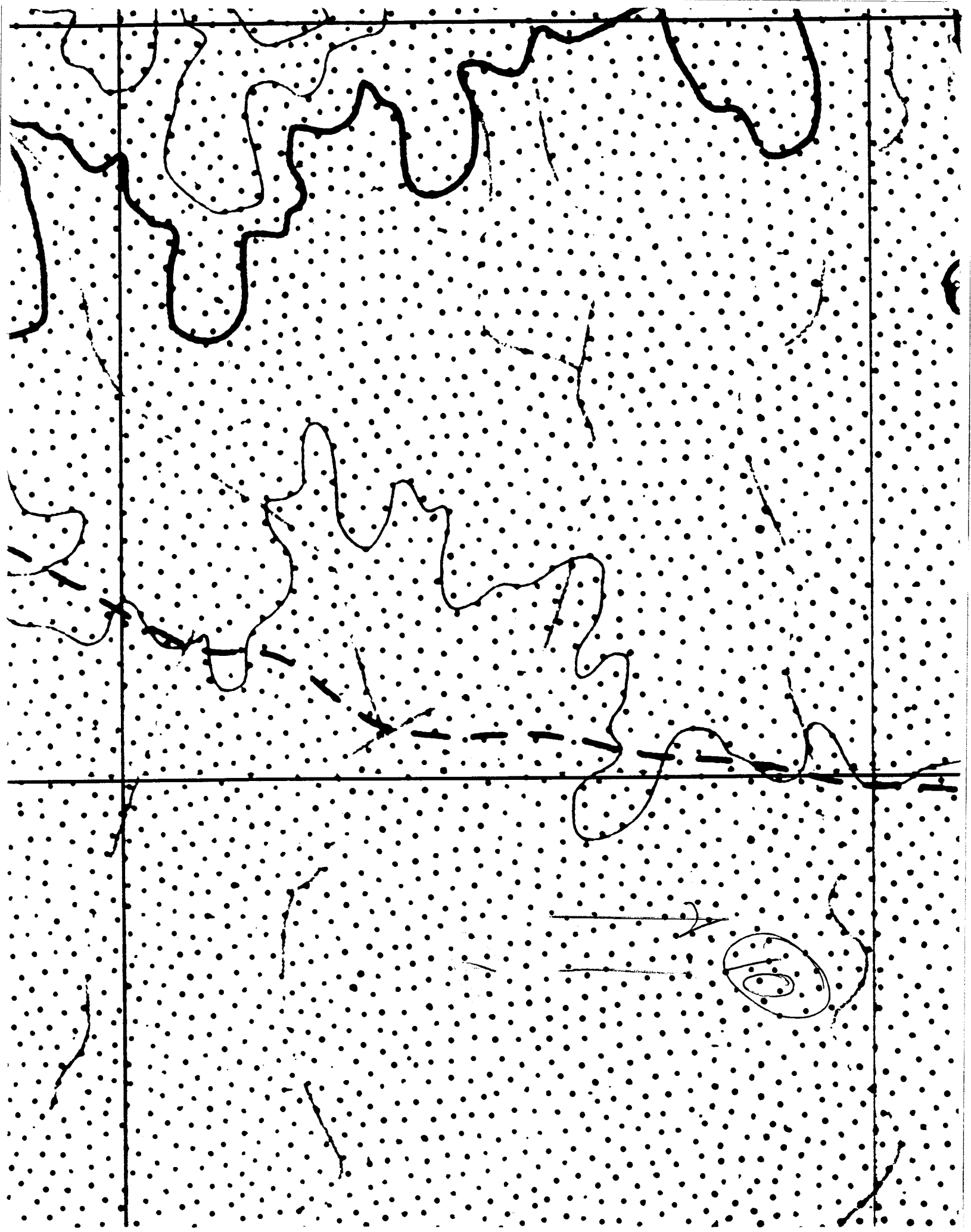
Drafted By: B. J. Gray

EXHIBIT B

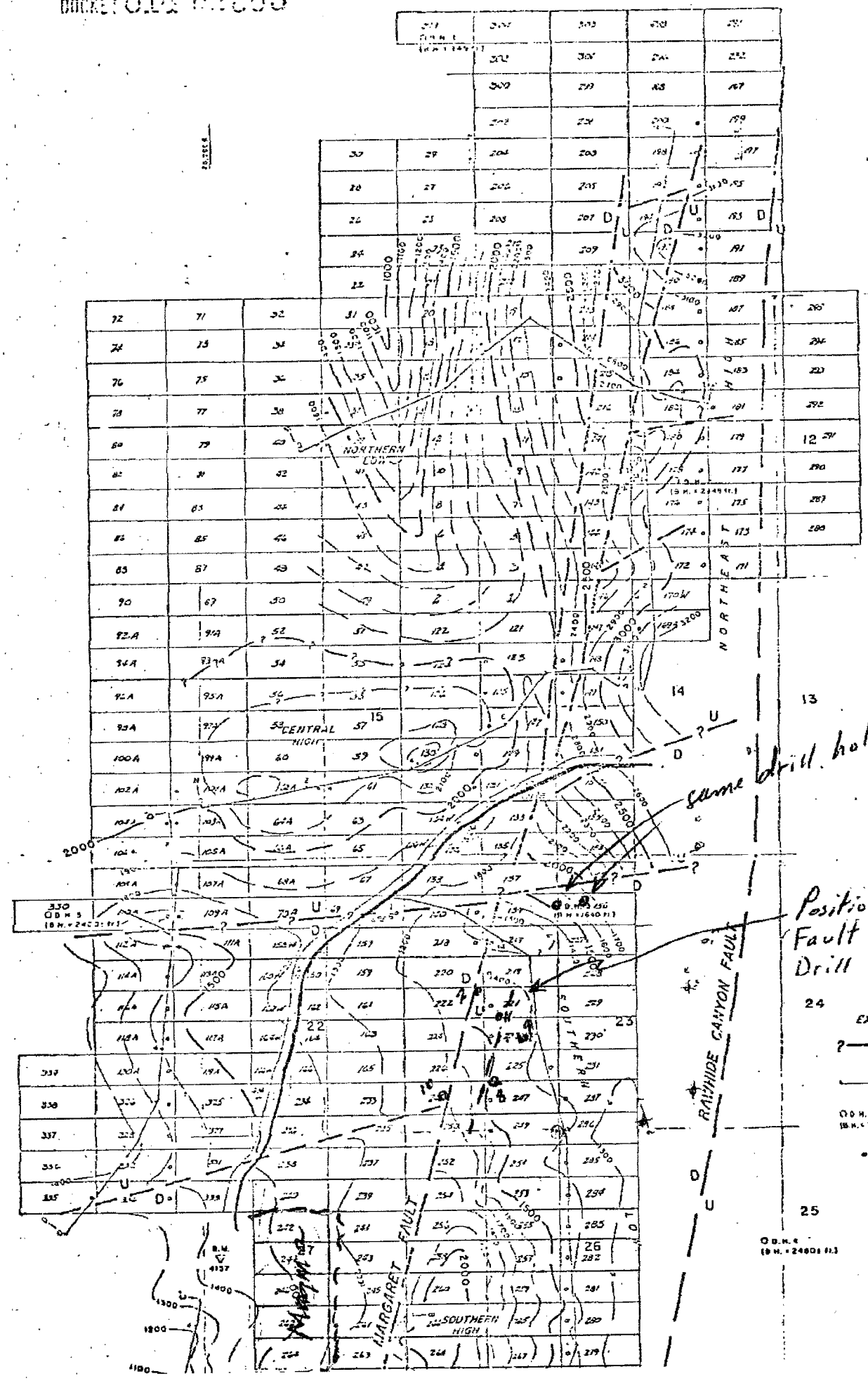
PLATE

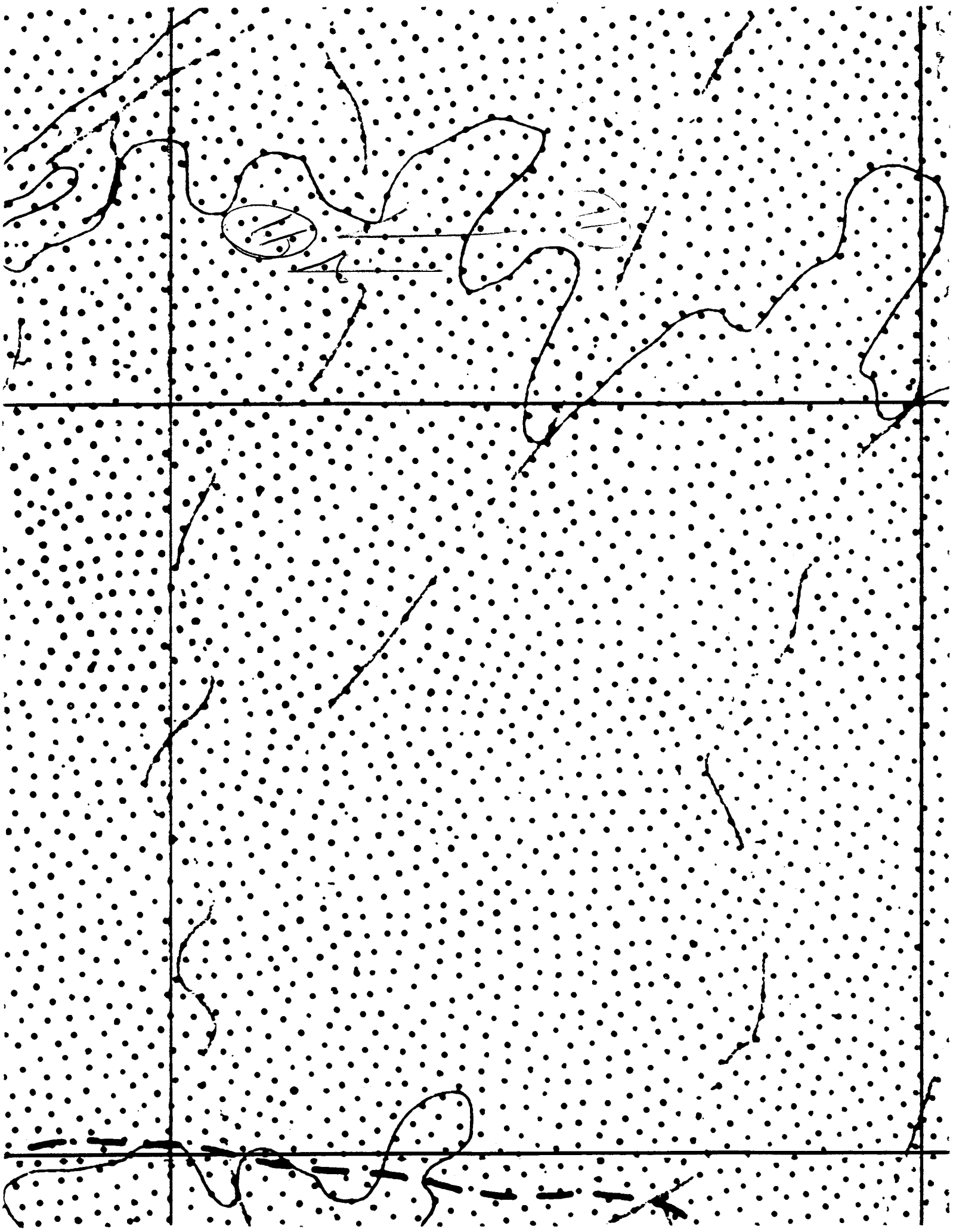
Dave, my comments on this are about 25 years old, probably correct as to sliding, not sure about hole positions

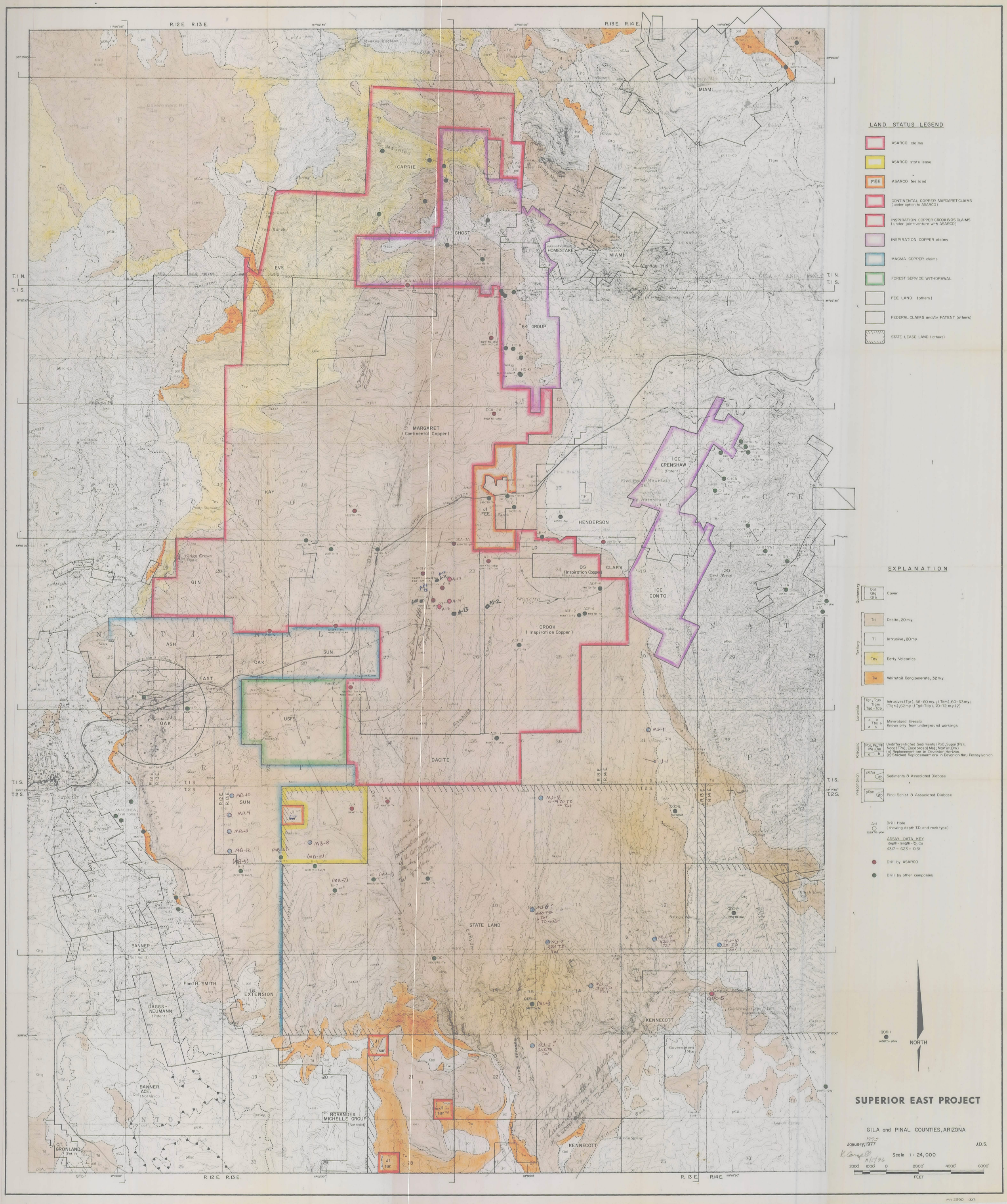
* Subsequent drilling indicates the contouring to be the highest slide block within the basin more often than the top of the basement. RCC

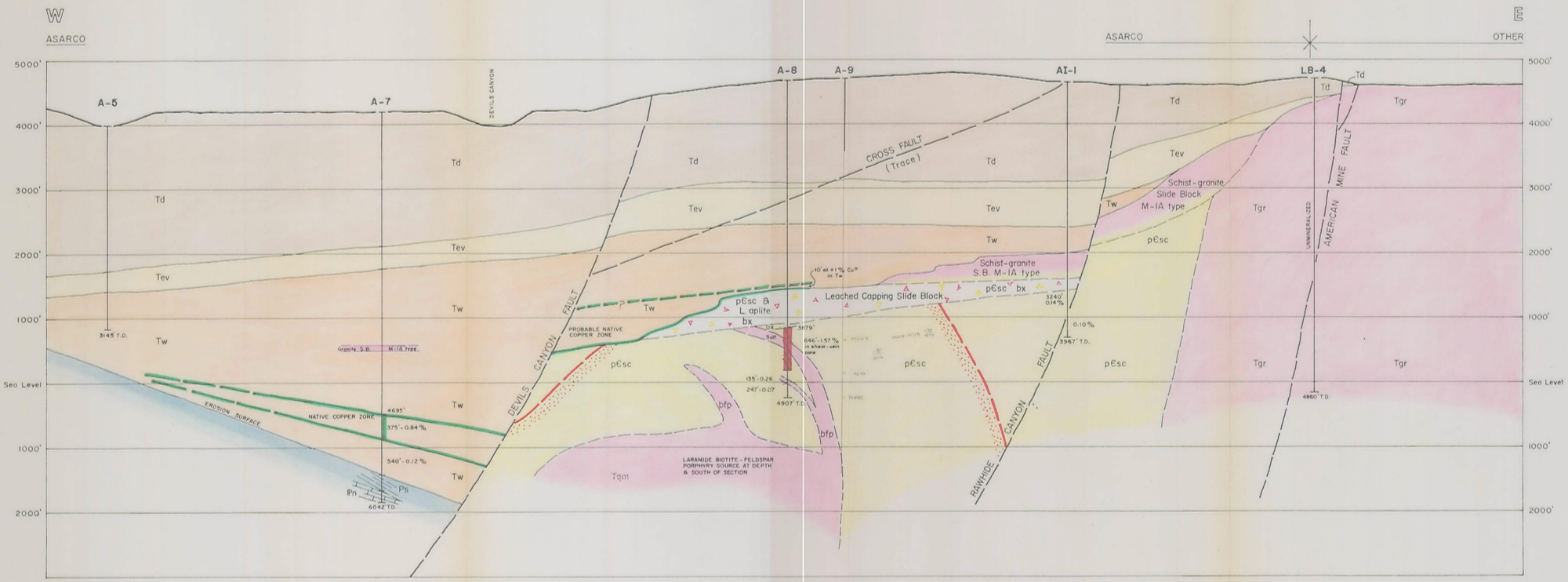


DOCKET 012 PAGE 005






LAND STATUS LEGEND
ASARCO claims
ASARCO state lease
FEE
ASARCO fee land
CONTINENTAL COPPER MARGARET CLAIMS (under option to ASARCO)
INSPIRATION COPPER CROOK & OS CLAIMS (under joint-venture with ASARCO)
INSPIRATION COPPER claims
MAGMA COPPER claims
FOREST SERVICE WITHDRAWAL
FEE LAND (others)
FEDERAL CLAIMS and/or PATENT (others)
STATE LEASE LAND (others)
EXPLANATION
Quaternary
Qal Qtg Qtb
Cover
Td
Dacite, 20 m.y.
Ti
Intrusive, 20 m.y.
Tev
Early Volcanics
Tw
Whitetail Conglomerate, 32 m.y.
Laramide
Tgr, Tqm Tigm Tqd-Tdp
Intrusives (Tgr), 58-60 m.y.; (Tqm), 60-63 m.y.; (Tigm.), 62 m.y.; (Tqd-Tdp), 70-72 m.y.(?)
Tbx
Mineralized Breccia Known only from underground workings
Paleozoic
Pal, Ps, Tpn Me-Dm
Undifferentiated Sediments (Pal), Supai (Ps); Naco (Tpn); Escabrosa (Me); Martin (Dm)
(a) Replacement ore in Devonian Horizon.
(b) Stacked Replacement ore in Devonian thru Pennsylvanian
Precambrian
pCAu
Sediments & Associated Diabase
pCsc
Pinal Schist & Associated Diabase
A-1
Drill Hole (showing depth T.D. and rock type)
ASSAY DATA KEY
depth-length-% Cu
4317'-623'-0.31
Drill by ASARCO
Drill by other companies
NORTH
SUPERIOR EAST PROJECT
GILA and PINAL COUNTIES, ARIZONA
January, 1977
J.D.S.
Scale 1: 24,000
2000' 1000' 0 2000' 4000' 6000'
FEET
R.12 E. R.13 E.
R.13 E. R.14 E.
T.1 N.
T.1 S.
T.2 S.
CARRIE
GHOST
EVE
HOMESTAKE
MIAMI
"64" GROUP
MARGARET (Continental Copper)
KAY
GIN
ICC CRENSHAW (Patent)
HENDERSON
JI FEE
LD
OS (Inspiration Copper)
CLARK
ICC CONTO
CROOK (Inspiration Copper)
ASH
SUN
OAK
EAST
USFS
DACITE
STATE LAND
BANNER ACE (Not Valid)
Fand H. SMITH
EXTENSION
DAGGS-NEUMANN (Patent)
KENNECOTT
NORANDEX MICHELLE GROUP (Not Valid)
QT. GRONLAND (Pat.)



EXPLANATION

See Map Number 2990

JDS
xtra map
WLR

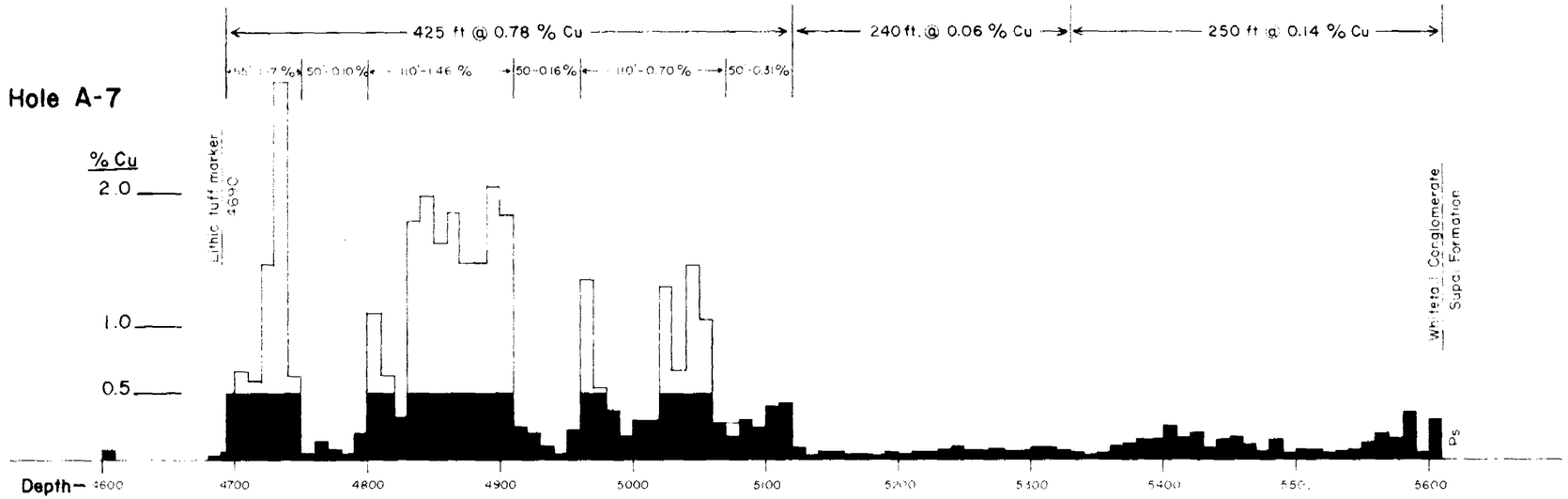
SUPERIOR EAST PROJECT
CROSS SECTION
HOLE A-5 - HOLE LB-4

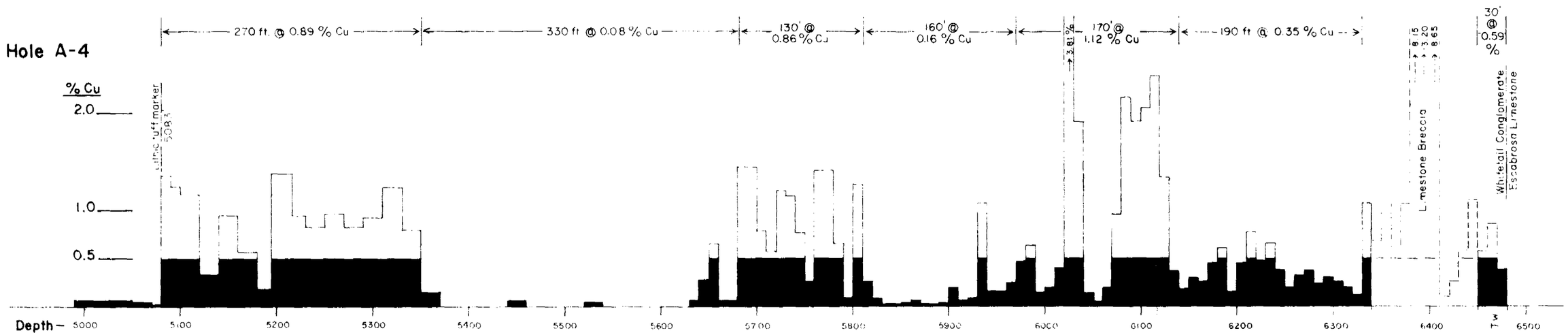
SCALE: 1" = 1000'

1000' 500' 0 1000' 2000'

GILA & PINAL COUNTIES, ARIZONA
JAN. 1977 J.D.S.

ALR 3001





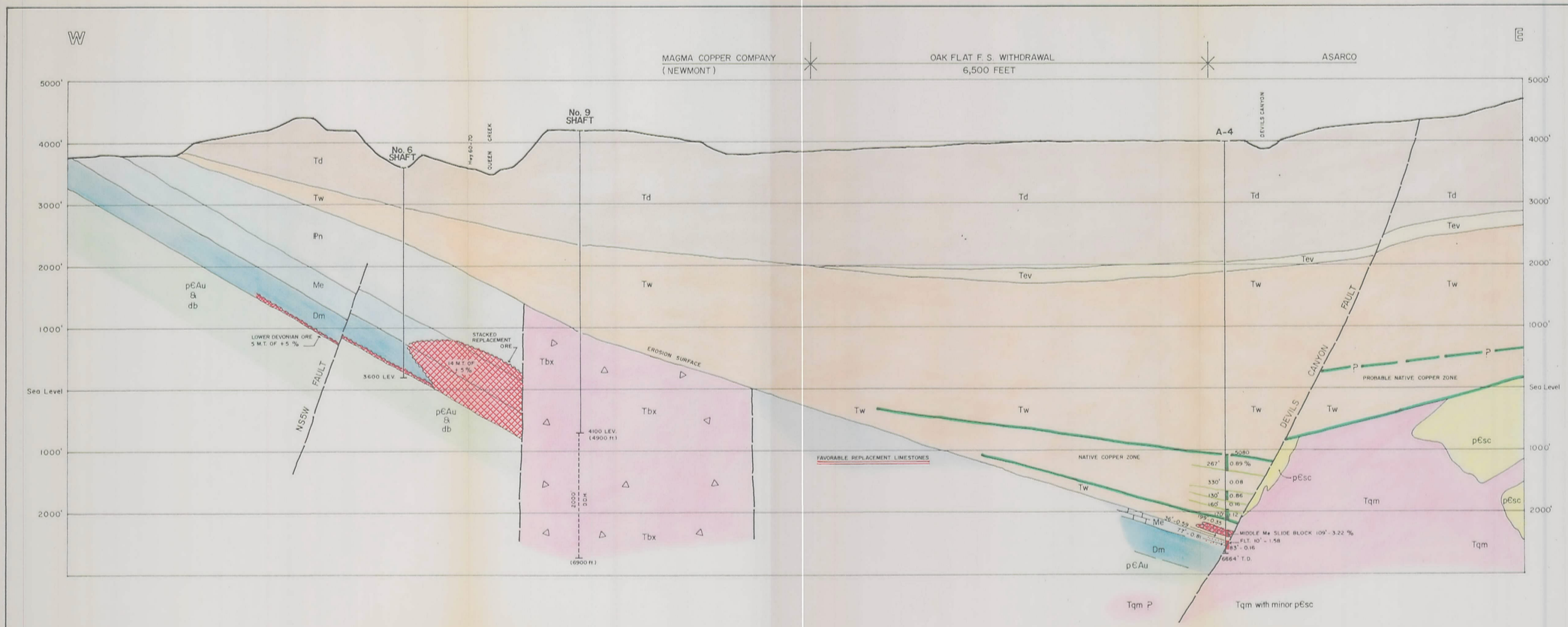
Comparison Of Individual Assays

HOLES A-4 & A-7
IN WHITETAIL CONGLOMERATE

SUPERIOR EAST PROJECT

Gila & Pinal Counties, Arizona

J.D.S. Jan. 1975



EXPLANATION

See Map Number 2990

SUPERIOR EAST PROJECT
CROSS SECTION
NO. 6 SHAFT-HOLE A-4

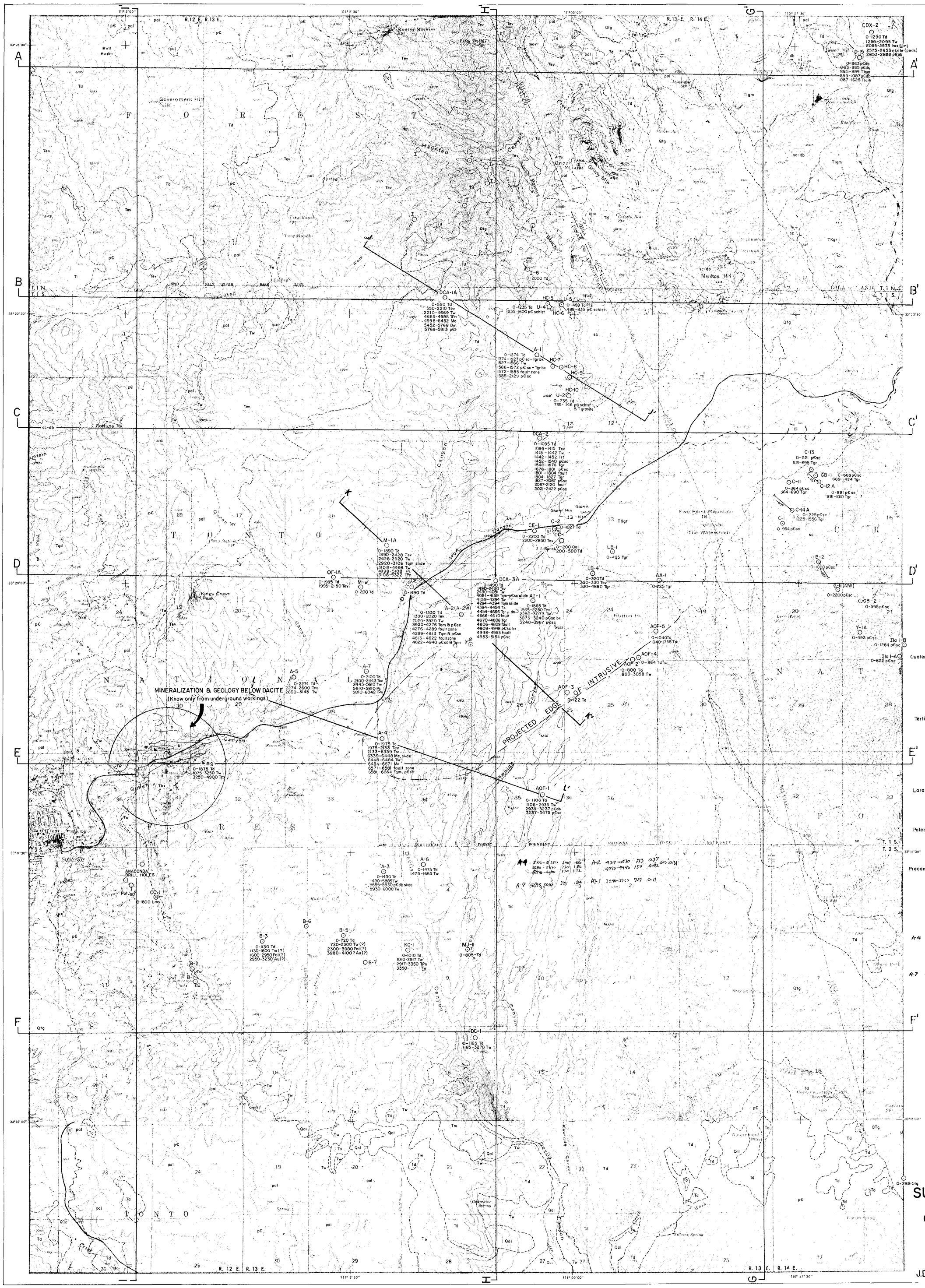
SCALE: 1" = 1000'

1000' 500' 0 1000' 2000'

GILA & PINAL COUNTIES, ARIZONA
JAN. 1977 J.D.S.

ALR 3002

ATTACHMENT A



EXPLANATION

Quaternary	Qal, Qtg, Qtg	Cover
Tertiary	Td	Dacite, 20 m.y.
	Ti	Intrusive, 20 m.y.
	Tev	Early Volcanics
	Tw	Whitetail Conglomerate, 32 m.y.
Laramide	TKgr, Tqm, Tlgm, Tgd-Tdp	Intrusives (Tkgr), 58-60 m.y.; (Tqm), 60-63 m.y.; (Tlgm), 62 m.y.; (Tgd-Tdp), 70-72 m.y.(?)
	Tbx	Mineralized Breccia Known only from underground workings
Paleozoic	Pal, Ps, TPn, Me-Dm	Undifferentiated Sediments (Pal); Supai (Ps); Naco (TPn); Escabrosa (Me); Martin (Dm). (a) Replacement ore in Devonian Horizon (b) Stacked Replacement Ore in Devonian Thru Pennsylvanian.
Precambrian	pC + Au, db	Sediments & Associated Diabase
	sc, db	Pinal Schist & Associated Diabase
	A-1	Drill Hole (showing lowermost unit encountered)

Plan Map and Generalized Geology

SUPERIOR EAST PROJECT

GLOBE–SUPERIOR DISTRICT

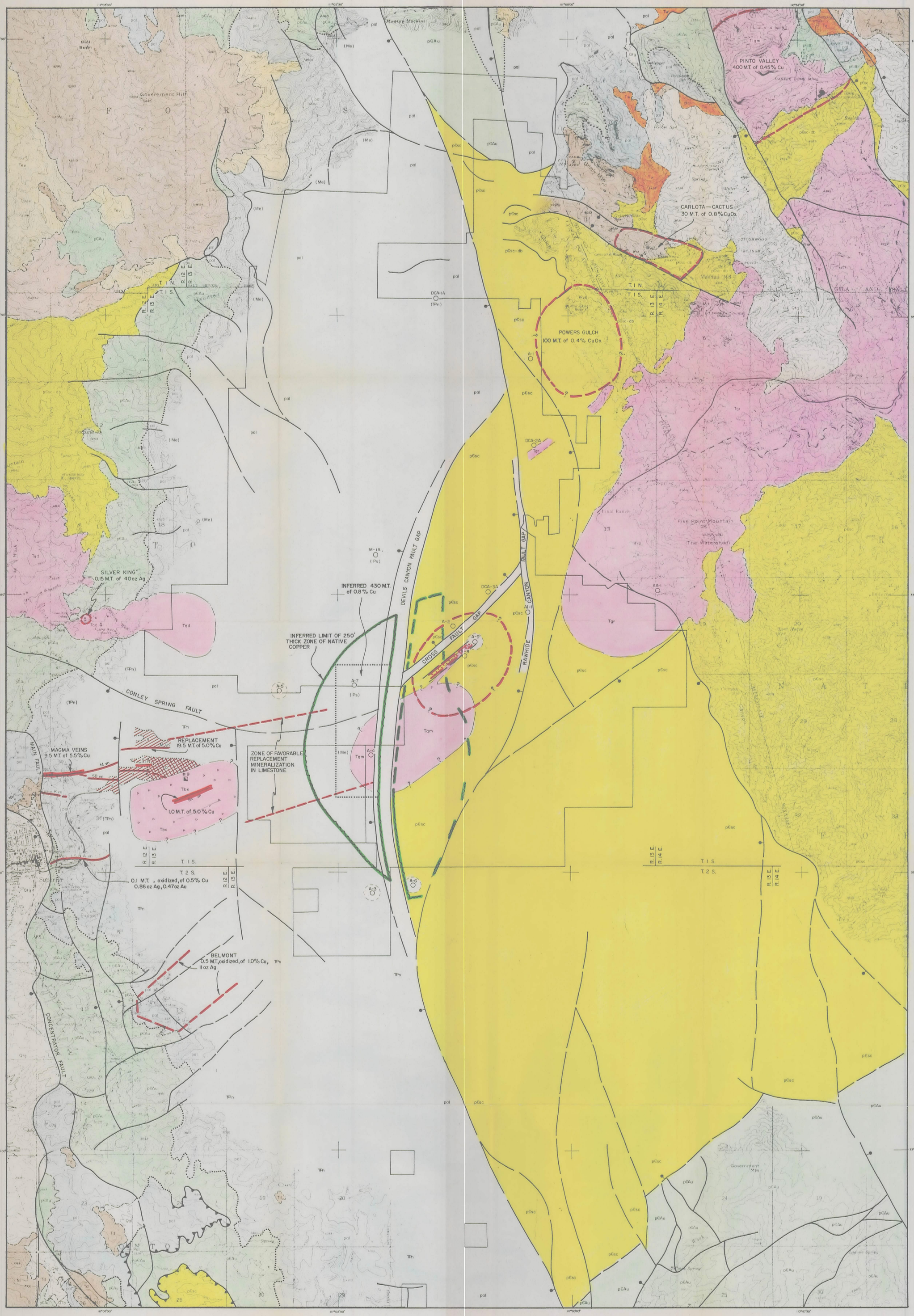
Pinal & Gila Counties, Arizona

SCALE 1:24000

J.D.S. May 1970

Modified 3-5-71
~~Revised 1/5/72~~ ~~Updated 8/27/74~~
~~Revised 3/21/72~~ Updated 1/1/76

2271



EXPLANATION

Quaternary

- Qal, Qtg, Qtb — Cover

Tertiary

- Td — Dacite, 20 m.y.
- Ti — Intrusive, 20 m.y.
- Tev — Early Volcanics
- Tw — Whitetail Conglomerate, 32 m.y.

Laramide

- Tgr, Tqm, Tlgm, Tgd-Tdp — Intrusives (Tgr), 58-60 m.y.; (Tqm), 60-63 m.y.; (Tlgm), 62 m.y.; (Tgd-Tdp), 70-72 m.y. (?)
  - Porphyry
- Tbx — Mineralized Breccia known only from underground workings

Paleozoic

- Pal, Ps, TPn, Me-Dm — Undifferentiated Sediments (Pal), Supai (Ps), Naco (TPn); Escabrosa (Me); Martin (Dm)
  - a — (a) Replacement ore in Devonian Horizon
  - b — (b) Stacked Replacement ore in Devonian thru Pennsylvanian

Precambrian

- pЄAu, (db) — Sediments & Associated Diabase
- pЄsc, (db) — Pinal Schist & Associated Diabase

GEOLOGIC CONTACTS

- Other Units
- Paleozoic Sediments
- Precambrian Sediments
- Normal fault
- Thrust fault

MINERALIZATION

- Vein
- Zone Trend
- Replacement
- Native Copper in Conglomerate

Production Plus Reserves, Ton and Grade
MAGMA VEINS 9.5 M.T. of 5.5% Cu

Drill Hole Collared in Post Laramide Unit

- Terminated in pre-whitetail unit
- Terminated in post-Laramide unit

SUPERIOR EAST PROJECT

GILA and PINAL COUNTIES, ARIZONA

January, 1977 — J.D.S.

Scale 1 : 24,000

200'd 1000' 0 2000' 4000' 6000'
FEET

mn 3008 dam