2660 0016

(64)
Item 16

GEOLOGY
and
GEOPHYSICAL SURVEY
of
MORNING STAR MINE
and
DOTTY MINE

BOONE SPRINGS
WHITE PINE COUNTY,
NEVADA

By
W. Clifford Dunham
Geologist
April 7, 1955

DOTTY & MORNING STAR MINES

BOONE SPRINGS

NEVADA

LOCATION :

The Dotty group of six claims are in SW ¼ Sec. 19, T26N R67 E, MDPM of White Pine County, Nevada. They are eight miles east of Boone Springs Over a dirt road in the Kinsley Mining District.

The Morning Star group of claims are in NE ¼, Sec 24, T 26 N, R67 E, MDPM of White Pine County, Nevada and are seven miles east of Boone Springs over the same dirt road.

The nearest railroad shipping point is Wendover, Utah a distance of fifty-four miles from the mine and nearest smelter is at McGill, Nevada which is about sixty-eight miles from the mine. Ely, Nevada is the nearest source of mining supplies and is about eighty miles from the mine.

HISTORY :

The only production from the properties was made in the early days when horses and wagons were used to haul the ore. Tonnage and value of the ore is unknown.

At present, tungsten is being mined in the district and some development work is being done.

WORKINGS:

The most extensive workings are at the Morning Star Mine. An incline shaft has been sunk on the ore and the ore stoped from around the shaft. An adit tunnel enters the shaft at about the fifty foot level. Levels were run about every one-hundred feet and the shaft is said to be three-hundred feet deep. The bottom fifty or one-hundred feet has been back filled. Some exploration work has been done with drifts and cross-cuts but no ore shows in the faces.

The Dotty Group has four short tunnels cutting under gossan outcrops with shafts or winzes on the gossan chutes. Some sorted ore was mined with very limited production. Lower down a four-hundred and fifty adit tunnel has been driven to undercut the upper workings. Objective was not reached.

GEOLOGY:

The surface rocks in this area are essentially limestones and thought to be of carboniferous age. No fossils were found to substantiate this assumption but lithologically they appeared to be the Great Blue formation and the Humberg which underlies the Great Blue of the Ophir Canyon and Maxeur series of Utah. Some quartzite was found in breccias and some brownish-red sandstone and golden yellow sandy limestone in a displaced fault blocks N E of the portal of the Dotty Tunnel. The sandstone appeared to be Jurassic age.

The outcrops in the area east and north of the portal of the Dotty tunnel are lying flat and beddings are decernable. They are aerenaceous, dense, thin bedded to massive, blue limestones and in places next to fracture zones they are siliceous. West of these they became shattered and sheared in places, completely destroying bedding and are more siliceous towards a canyon one-hundred and sixty feet west of the upper workings shaft. This area is cut by many N-S faults and a few evident E-W faults. West of this area the movement decreased and the limestone beddings are more evident and beds are regular for about 300 or 400 feet to a diorite porphyry dike. Beyond this to the west for one-hundred feet is a shear zone to another N-S canyon. On the west of this canyon are massive blue limestone beds with thin ½ - 1 inch short beds and some thin bedded layers two feet thick in the lower exposures. These extend to the Morning Star group of claims where geologic conditions are quite different with increasing surface exposures of igneous rock and fault displacements.

These limestones appear to be of the same formation that contained the large rich ore bodies in the Ophir-Dry Canyon areas of Utah and with the evident igneous intrusives and mineralized showings they should produce good ore in this area.

FAULTING:

The Dotty and Morning Star groups of claims are in an intensively faulted area. At least four periods of faulting are found to exist at the present writing. Nodoubt, more cycles of movement will be noted as exploration work progresses.

The oldest observed faults and associated igneous intrusives is found by a geophysical survey. E-W dikes of intrusive rock area accompanied by faults and mineralization. This major primary E-W system was accompanied by sympathetic E-W fractures, fissures veins and possibly some movement along planes of weakness.

Following these are a set of west of north or N-S minor faults and a few major N-S faults which cut and displace the E-W primary system. Simultaneous with these is secondary mineralization giving rise to the present gossan outcrops on the intersections.

A series of NE-SW faults are also cut by the above and some mineralization shows on these faults that appear along porphyry contacts.

On the east of the Dotty group is evidence of a thrust fault. It is seen in the Robertson tunnel on the adjoining north claims. Also, the same breccia porphyry contact was traced to the Dotty. In the Dotty tunnel talc seams show a roll in the back of the tunnel and much brecciation of limestone on the hanging wall of the Monzonite dike.

INTRUSSIVES:

Outcrops over the area are of various types of monzonite, diorite, granite and andesite. What sequence the intrussion follows cannot be stated at this time. Extrussive flows cover much of the Boone Springs area concealing probable mineral fissures carrying copper, silver and uranium. On the west end of the Dotty claim there is a large diorite porphyry (Birds eye porphyry) with a general strike of N-S to N 45 E. It is cut by a N 65 W fault on which there are outcrops of copper ore. On

the east end of the Dotty claim is a fifty to sixty foot monzonite dike sixty feet wide with a strike of N 22 E and displaced by a fault striking N 44 W. It follows a N 45 E mineral fissure down to the Dotty tunnel where the strike is N 30 W dip 75 SW on the hanging wall. In The Robertson Tunnel north of the property twenty-one monzonite has a foot wall strike of N 38 E dip 52 S E and hanging wall strike is N 47 E dip 38 S E indicating thrust action. This is not the same monzonite that shows in the Dotty tunnel

On the east end of a large gossan outcrop, east of the Portal of the Dotty tunnel is a large andesite outcrop, on the east of a N-S cut off fault. The apparent width is 132 feet and strike about E-W.

Granite and grano-diorite outcrops are found on the Morning Star group. The shaft is sunk on the contact of intrusives with the limestone. Ore made out along the bedding and porphyry contact and also on N-S fault intersections. Igneous outcrops cover larger areas on this group of claims than on the Dotty group.

MINERALIZATION :

Gossan showings on the surface are at intersections of N-S and E-W faults, and E-W fissures and N E -SW dike contact fissures. Some of the Monzonite shows pyrite. Geophysical surveys show probable mineral veins striking E-W. Large gossan outcrops over one-hundred feet wide by four-hundred feet long indicate mineral zones which check out with the geophysical survey.

In the upper workings of the Dotty group the gossan appeared on the N-S faults in the fracture and shear zone close to E-W breaks which are over the E-W geophysical anomalies. The copper-silver ore spread out into the limestone filling the spaces between the rock fragments. Temperature and pressure conditions were not high enough to cause replacement of the enclosing rock fragments to make workable ore-bodies. Therefore, little ore was mined and shipped from these workings. A lower or Dotty tunnel was started and driven four-hundred and fifty feet to undercut these upper workings but was never completed.

The Morning Star group has had some production of hi-grade silver-copper ore. No records of production are available but stopes indicate a large tonnage of ore has been mined above the two-hundred level. Mineralization occured mainly along a granodiorite limestone contact at the intersection of EW-fissures in the limestone on the beddings and on slips or fault zones in the porphyry. Only hi-grade ore could be mined and hauled by horse and wagon at the time it was worked; so considerable low grade or $30.00 ore is left in the mine. Conditions were right for some replacement in the limestone indicating that possibly these ore bodies were formed at greater depth than in the Dotty. The N-S ore seams have nearly 90° dips while the bedded ore dips [illegible] north with the limestone bedding. This would indicate the possibility of ore coming in with both granodiorite and monzonite.

CONCLUSIONS:

The ore magma from which these ores originated was a granitic mass from which monzonite, diorite and grano-diorite dikes were expelled.

Faults and fissures formed access channels and vents for the ore solutions to invade the shattered and sheared limestone beds. There was more than two cycles of ore deposition and possibly four if uranium is found. In the Dotty group the fracture zone was too shattered and open for large ore bodies to form but will be found below the fracture zone. Geophysics strongly indicates this probability. The largest ore bodies will be found under the large gossan outcrops.

RECOMMENDATIONS:

The Dotty tunnel should be advanced to cut a series of E-W mineral fissures and #1 anomaly which is one-hundred feet ahead of the heading. The main ore body will be to the east of the tunnel heading and drifting should be done in that direction.

The five anomalies east of the portal of the Dotty tunnel should be drilled at once and the value and extension of the anomalies checked. A minimum total of 115,100 square feet of anomely has been mapped varying from 60 to 120 feet. This can mean one ton of ore for each square foot of anomaly for every twelve feet depth in the ore body. Number 2 anomaly appears to be a true primary fissure vein with a width of 100 feet and indefinite length, probably three-thousand or four-thousand feet. Its extension should be mapped with a geophysical survey and drilled before development plans are formulated.

A vertical shaft should be sunk as soon as sufficient tonnage of ore has been blocked out by a geophysical survey-diamond drilling program.

The spring one and half miles from the property should be developed or a well drilled to furnish operations with plenty of water. There should be a good primary water channel in the vicinity of the granite;

DOTTY MINE

WHITE PINE COUNTY, NEVADA

GEOPHYSICAL SURVEY

This survey was made over the gossan out-crops and the one anomaly below the portal of the Dotty adit tunnel to ascertain the possibility of finding blind ore deposits and locate diamond drilling sites to explore them.

Number 2 anomaly is about one-hundred and forty feet south of the portal of the tunnel with a strike of N 73°E and a width of one-hundred and eight feet. Four cross sections were made and they give a depth of eighty-five feet to the top of the anomaly. The curves indicate the presence of other mineralization nearby and the vein has approximately a 90° dip. A fault cuts off the vein on the east but it extends to the west. Number 3 anomaly is under the large gossan out-crops east of the tunnel portal. The width indicated is one-hundred and twenty and one-hundred and seventy feet and its strike is N 80° - 75° E with a fault zone crossing about the center. The vein is cut off on each end by faults. Depth to the top of the anomaly is sixty-seven feet. The dip is nearly 90° on both walls.

Number 4 anomaly has 18-24 foot width and lies between number 2 and 3 anomalies.

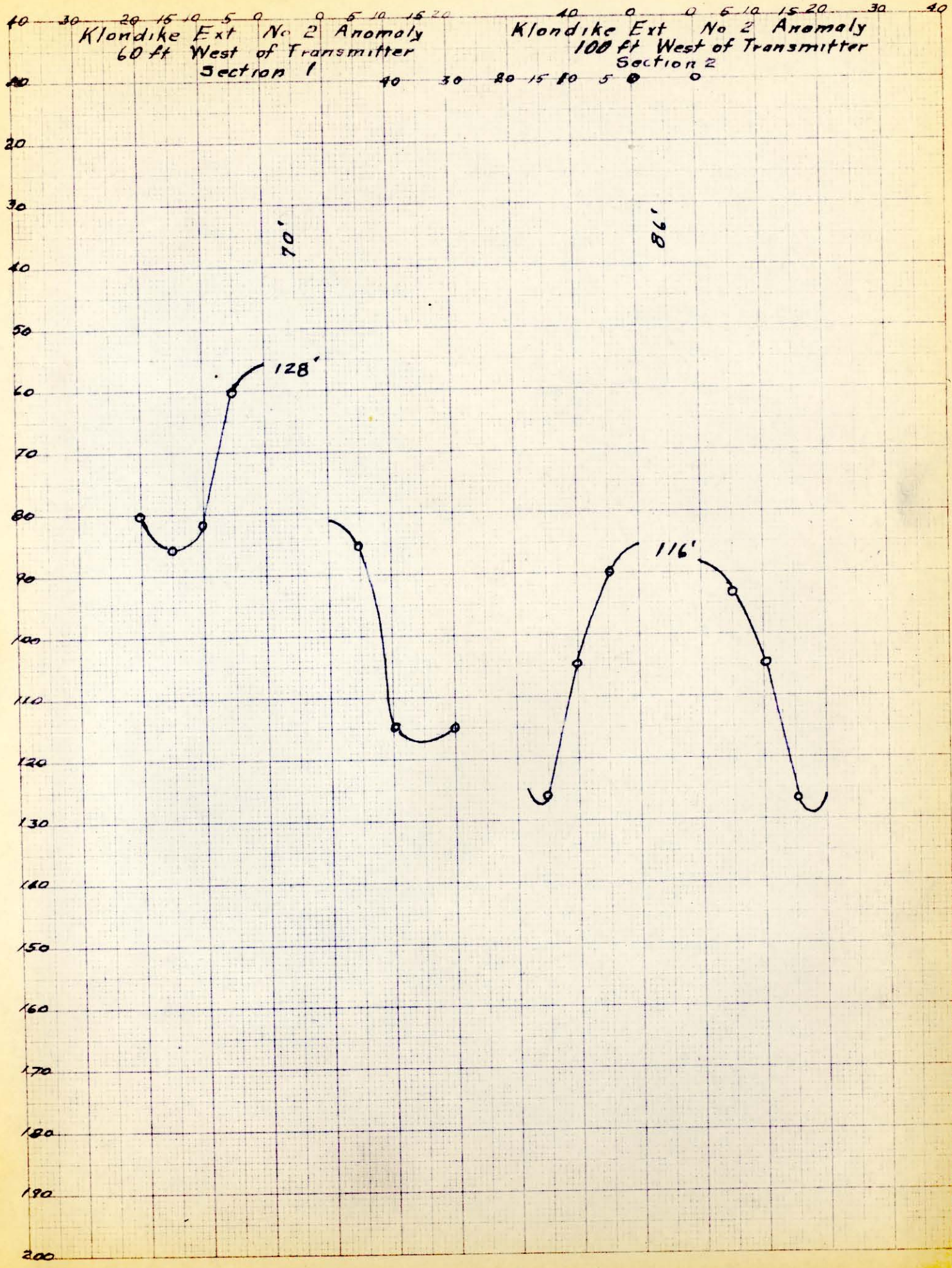
It is a short anomaly with a strike of N 85 E cut off on both ends by N-S faults. Depth to top of anomaly should be 55 feet.

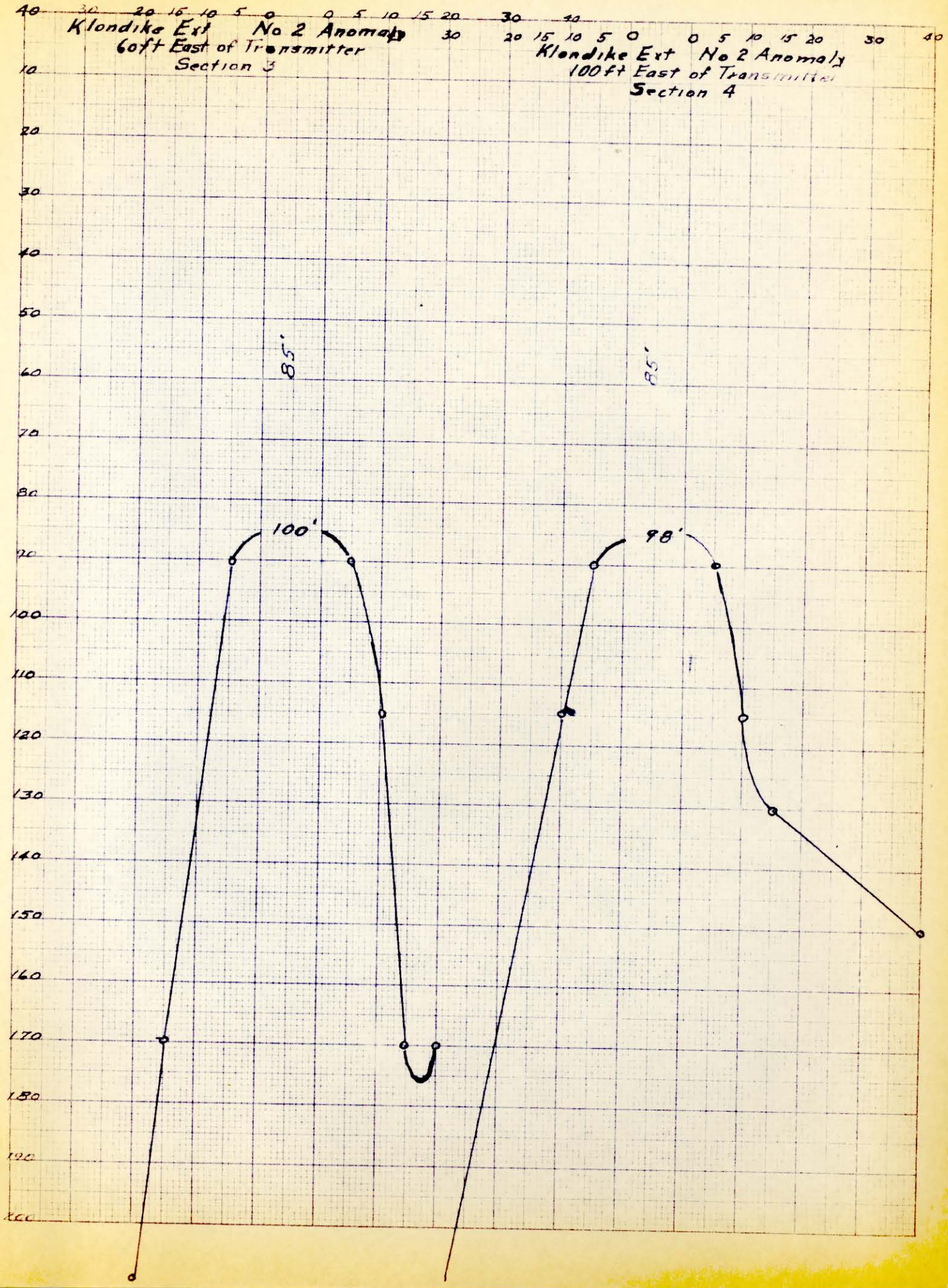
Number 5 anomaly is under the north-south gossan which cuts off the Number 3 E-W gossan outcrop. It has a width of 70-85 feet and strikes N 18 W. Dip appears to be vertical and mineral parallel veins are indicated on each side within one hundred feet. The curves show a depth of fifty-five feet to the top of the anomaly.

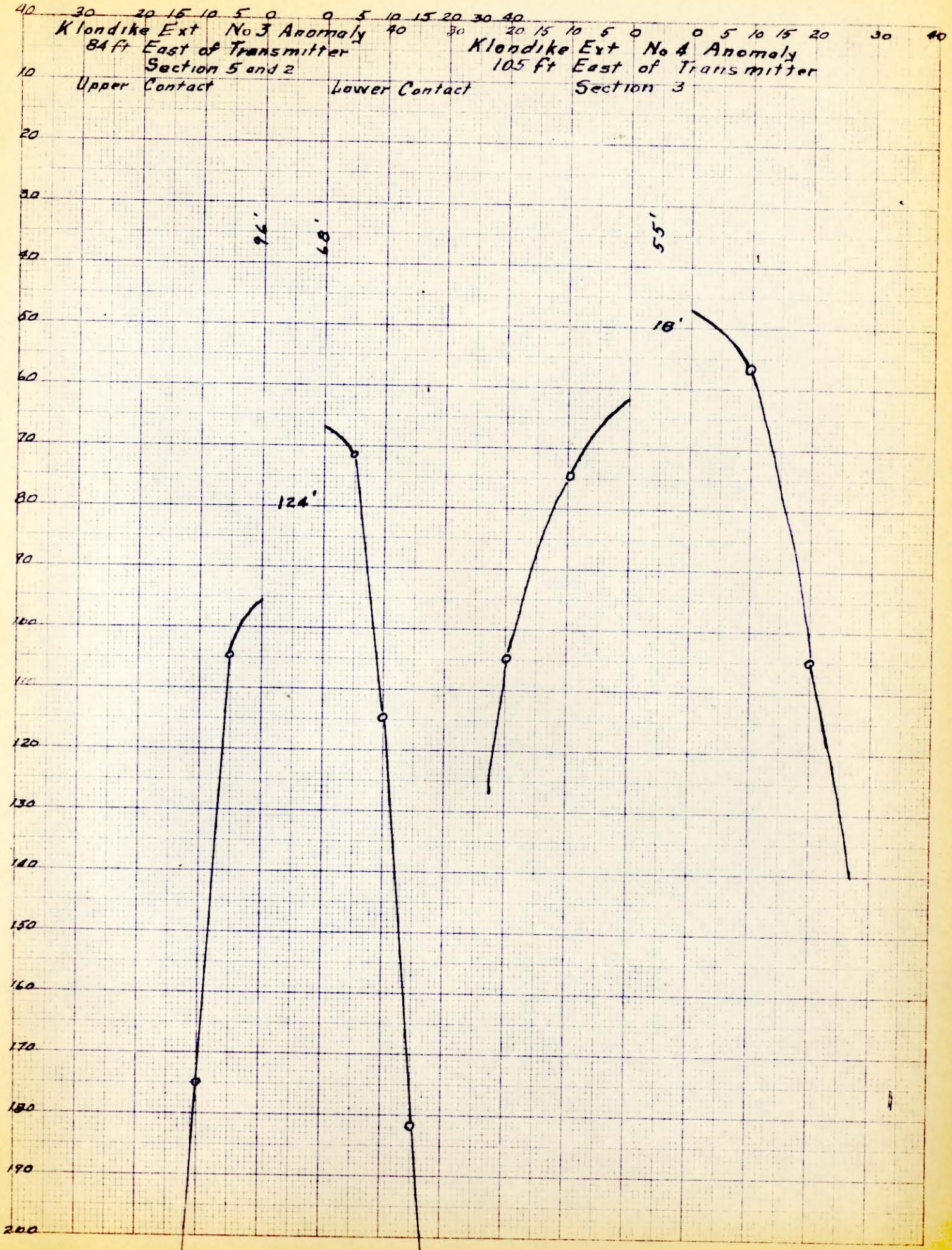
North of Number 3 anomaly is another zone about forty feet away which caused interference with the readings across the north contact of the gossan.

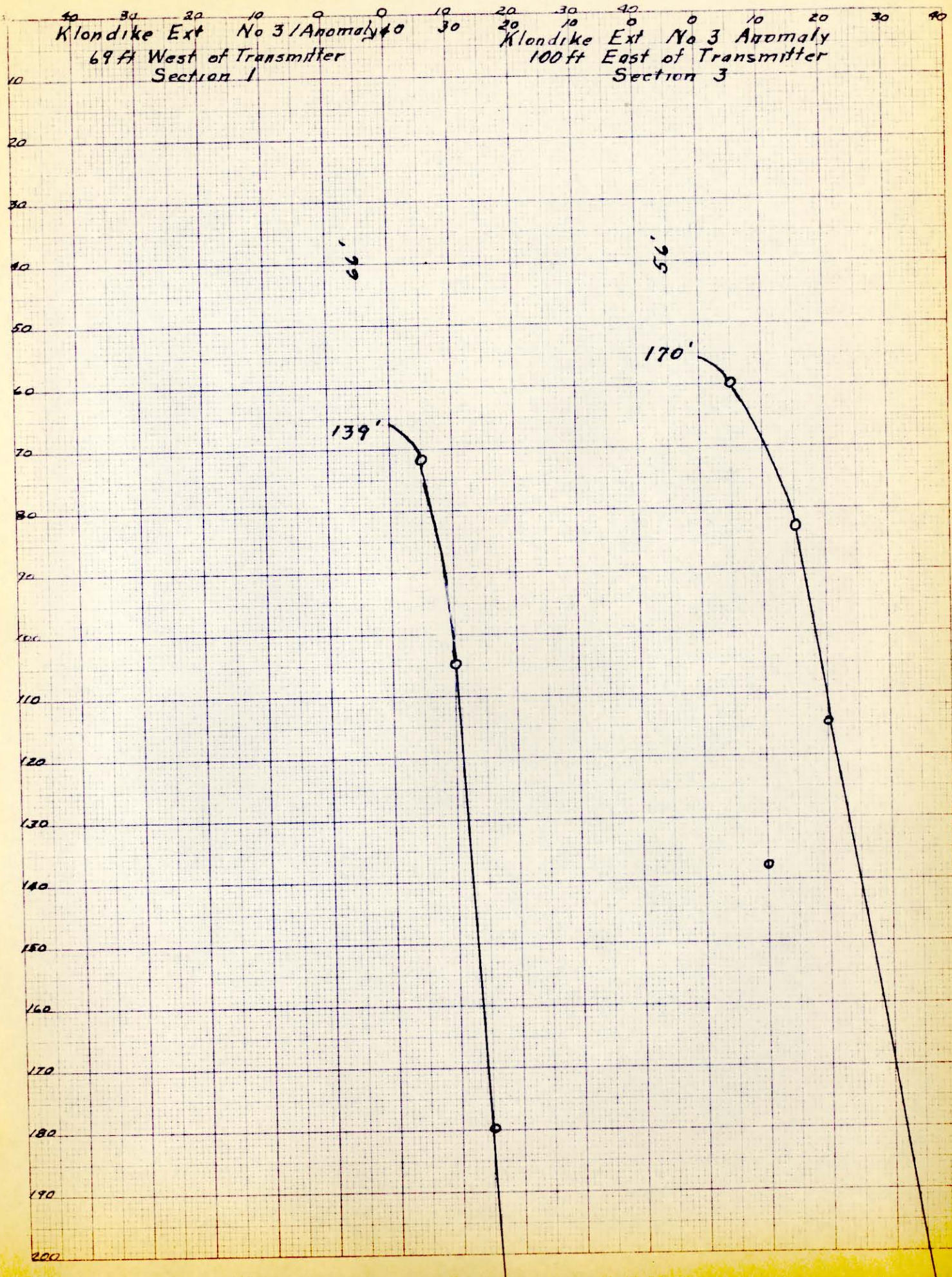
The eastward extension of Number 2 anomaly can be picked up on the east side of the N-S fault which causes major displacements of all formations.

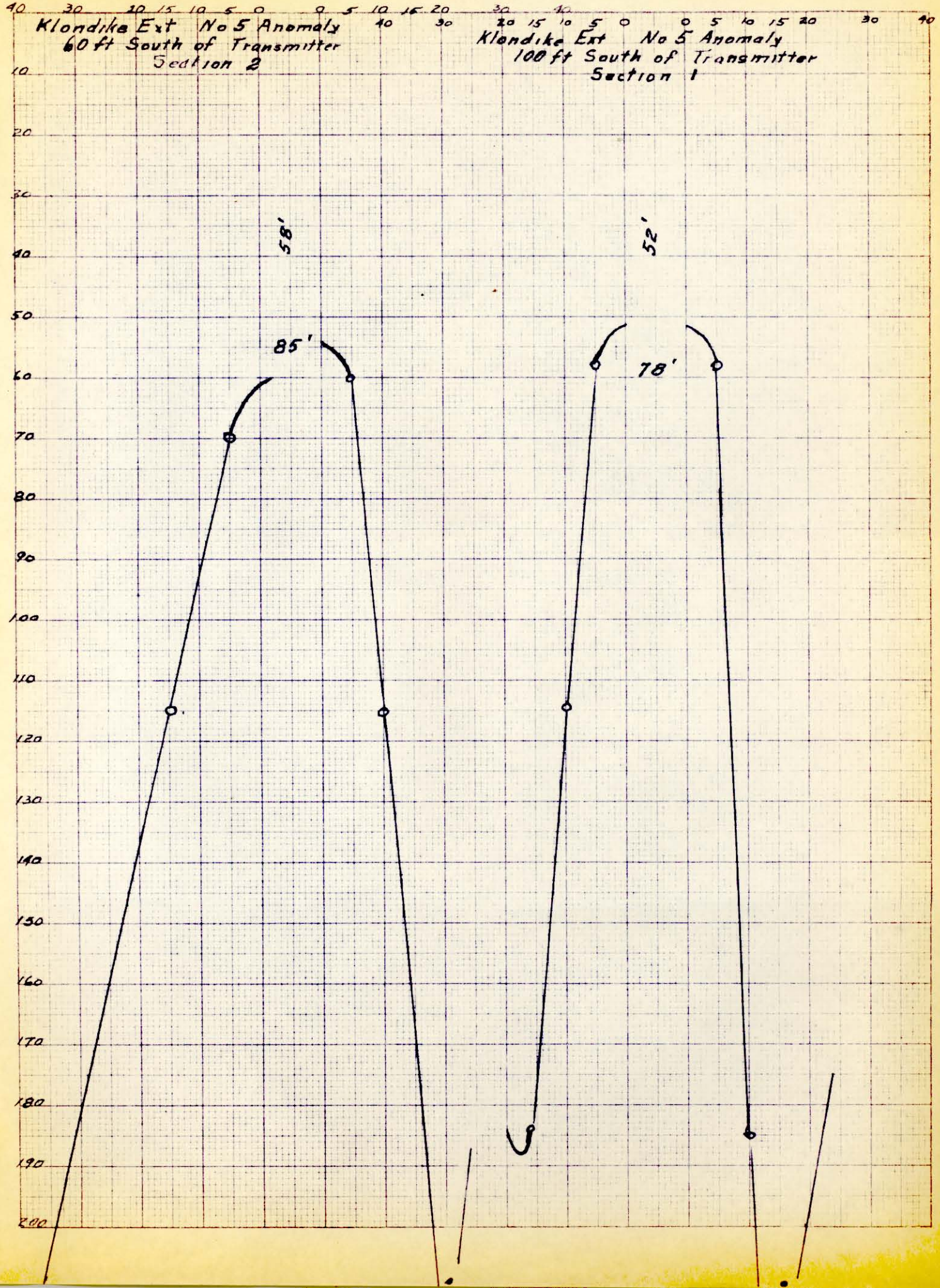
Number 1 anomaly on the west of the N-S fault which cut off Number 3,4 and 6 zones indicates that there are a series of small veins which pinch out to the west and that the ore is making to the east. Whether this block covered by Number 2, 3, 4 and 5 anomalies is the chute indicated in Number 1 anomaly or whether larger bodies are farther east is a question and the answer is covered by alluvial and lava flows.

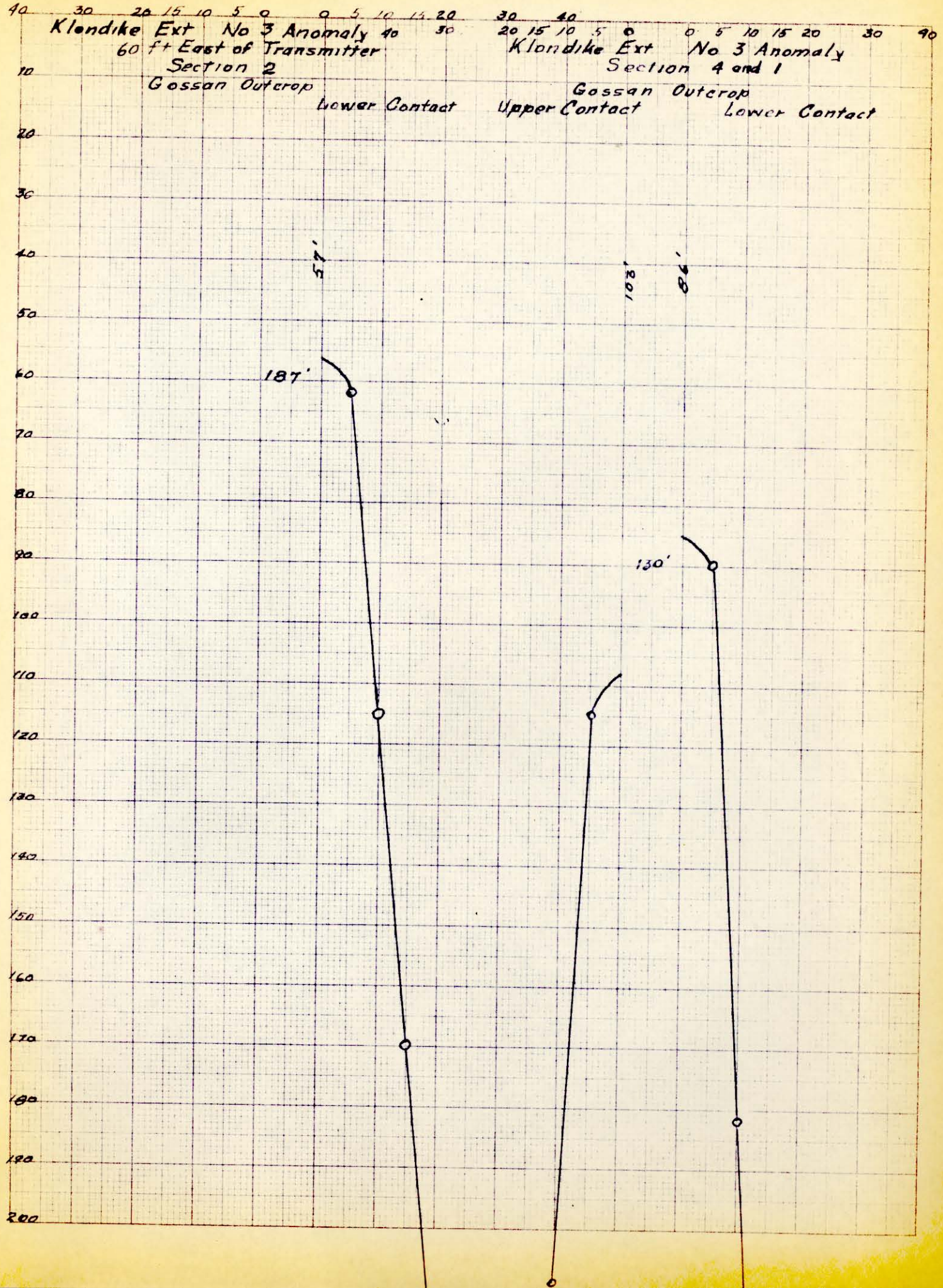

Klondike Ext No 2 Anomaly
60 ft West of Transmitter
Section 1
Klondike Ext No 2 Anomaly
100 ft West of Transmitter
Section 2
70'
128'
98'
116'


Klondike Ext No 2 Anomaly
60 ft East of Transmitter
Section 3
Klondike Ext No 2 Anomaly
100 ft East of Transmitter
Section 4
85'
85'
100'
98'


Klondike Ext No 3 Anomaly
84 ft East of Transmitter
Section 5 and 2
Upper Contact
Lower Contact
Klondike Ext No 4 Anomaly
105 ft East of Transmitter
Section 3
96'
68'
124'
55'
18'

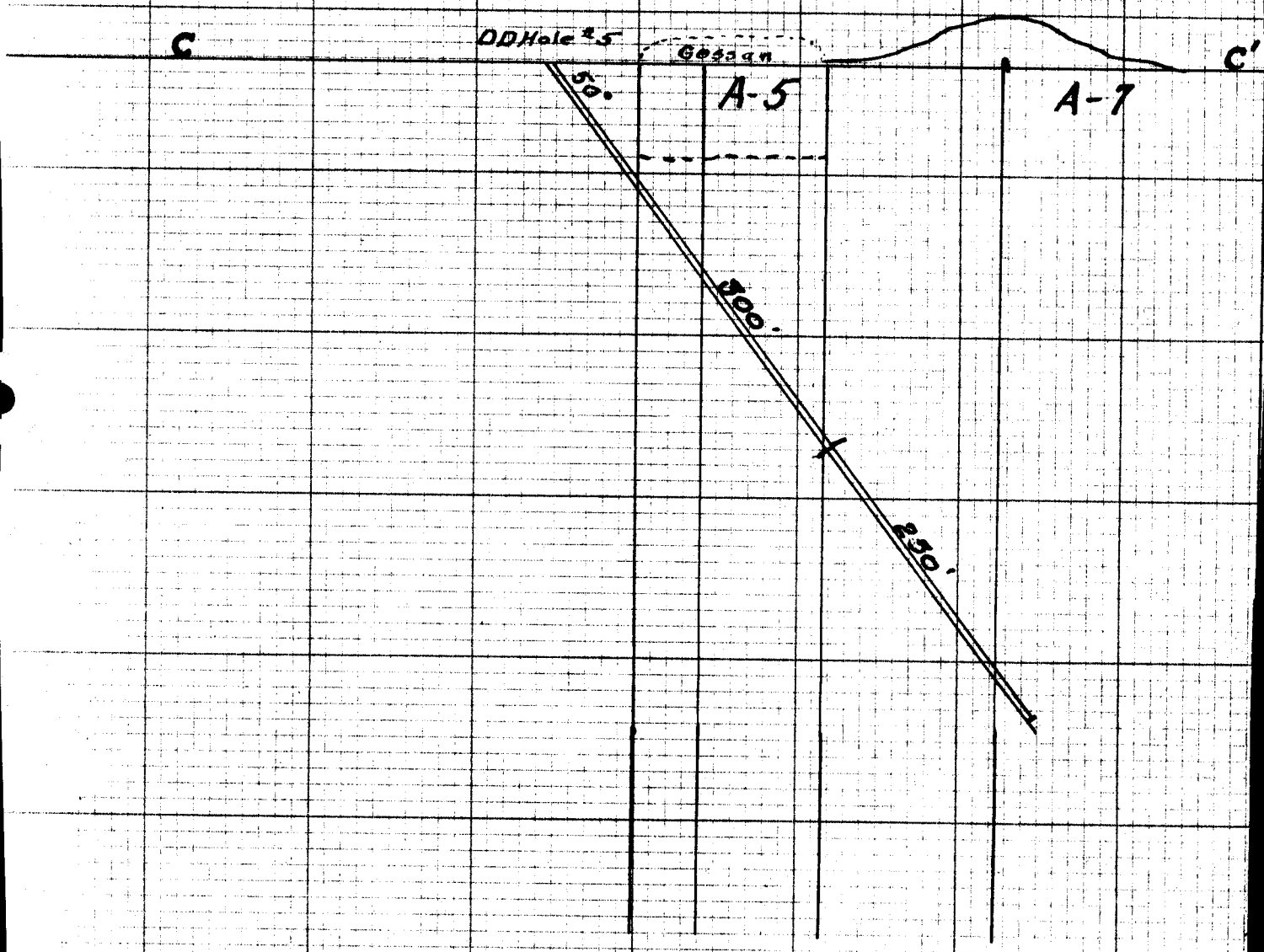

Klondike Ext No 3 Anomaly
69 ft West of Transmitter
Section 1
Klondike Ext No 3 Anomaly
100 ft East of Transmitter
Section 3
99'
139'
56'
170'


Klondike Ext No 5 Anomaly
60 ft South of Transmitter
Section 2
Klondike Ext No 5 Anomaly
100 ft South of Transmitter
Section 1
58'
85'
52'
78'

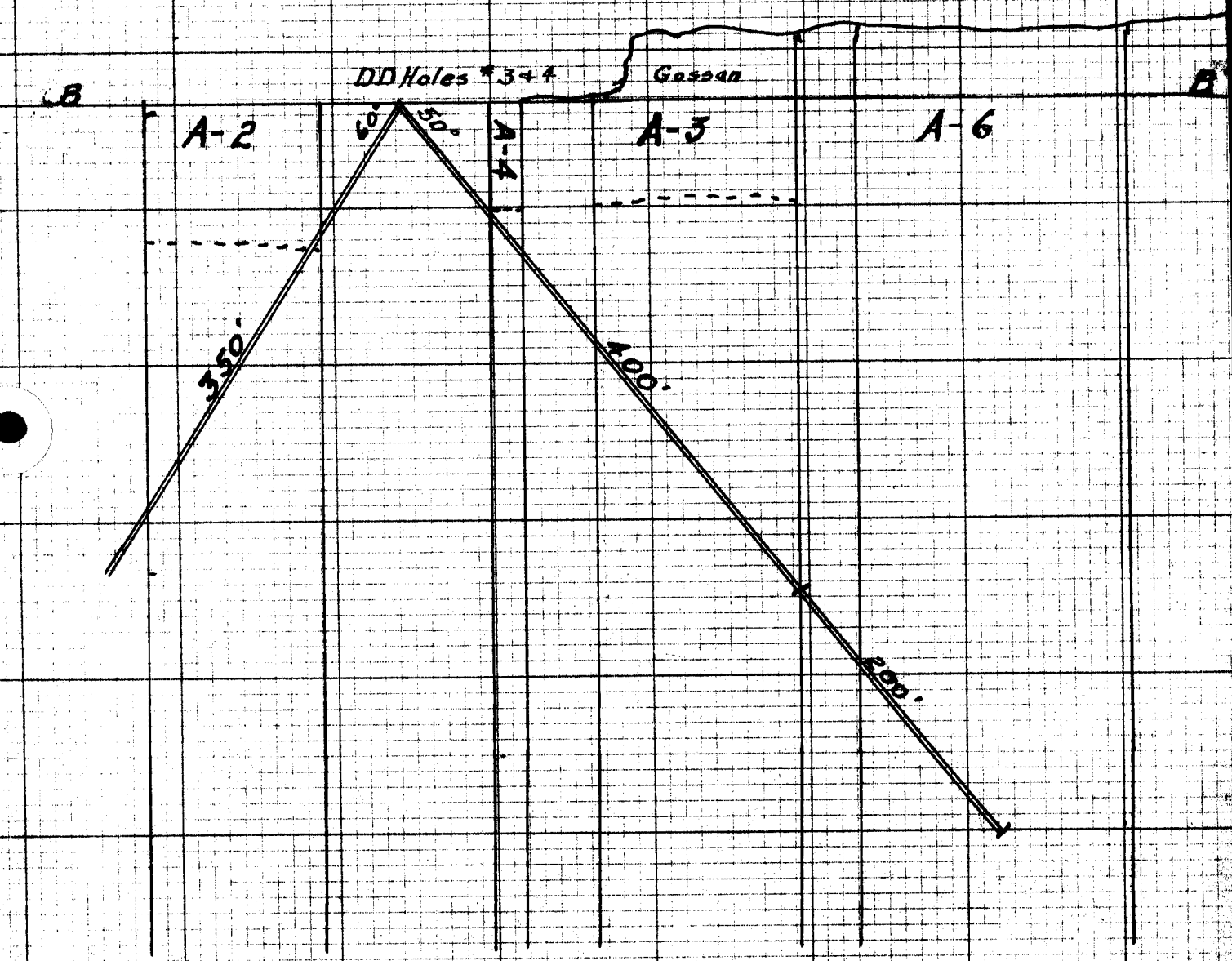

Klondike Ext No 3 Anomaly
60 ft East of Transmitter
Section 2
Gossan Outcrop
Lower Contact
Klondike Ext No 3 Anomaly
Section 4 and 1
Gossan Outcrop
Upper Contact
Lower Contact
57'
187'
103'
86'
130'

Section on C-C'

Scale 1" = 100'

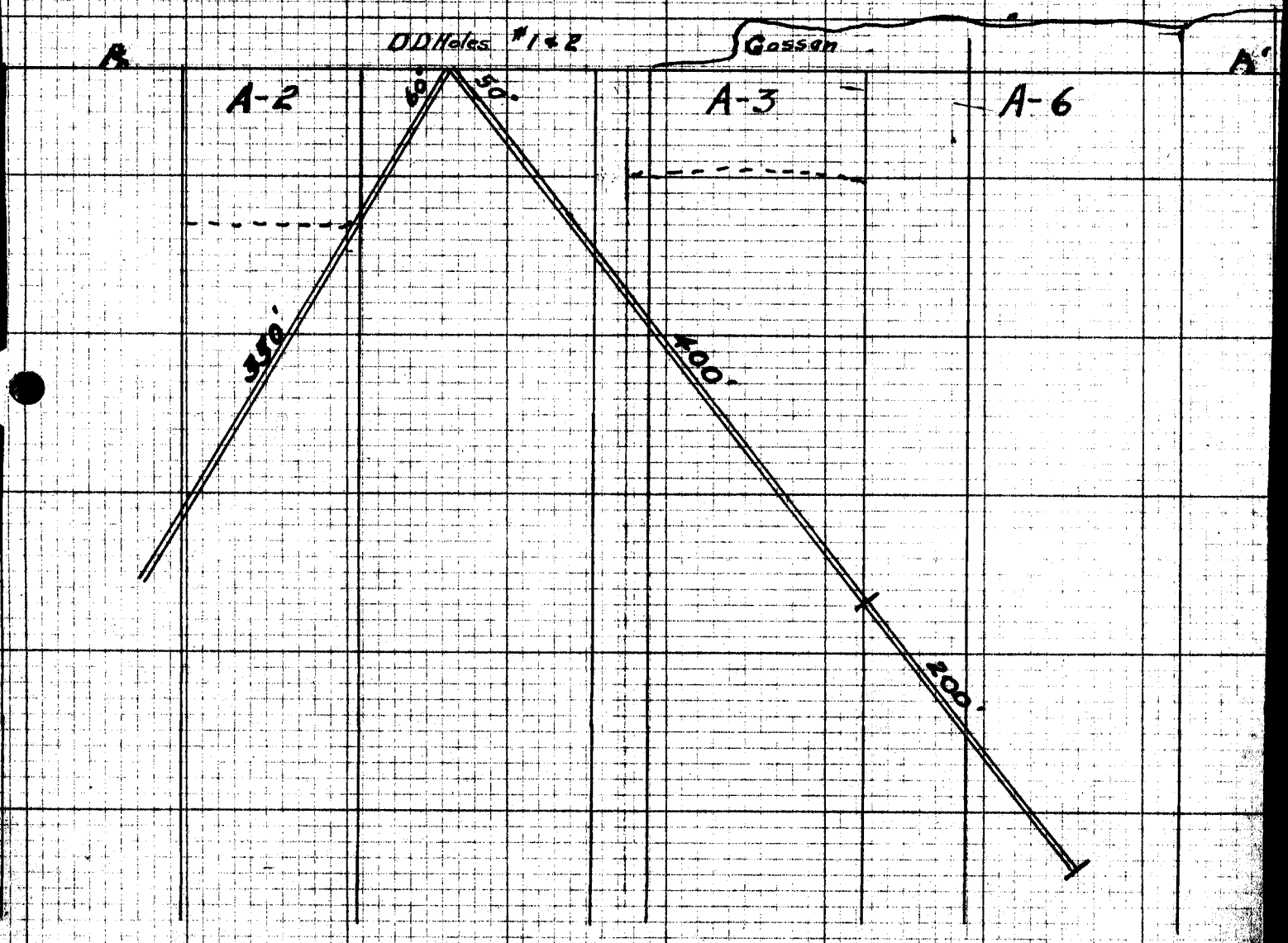


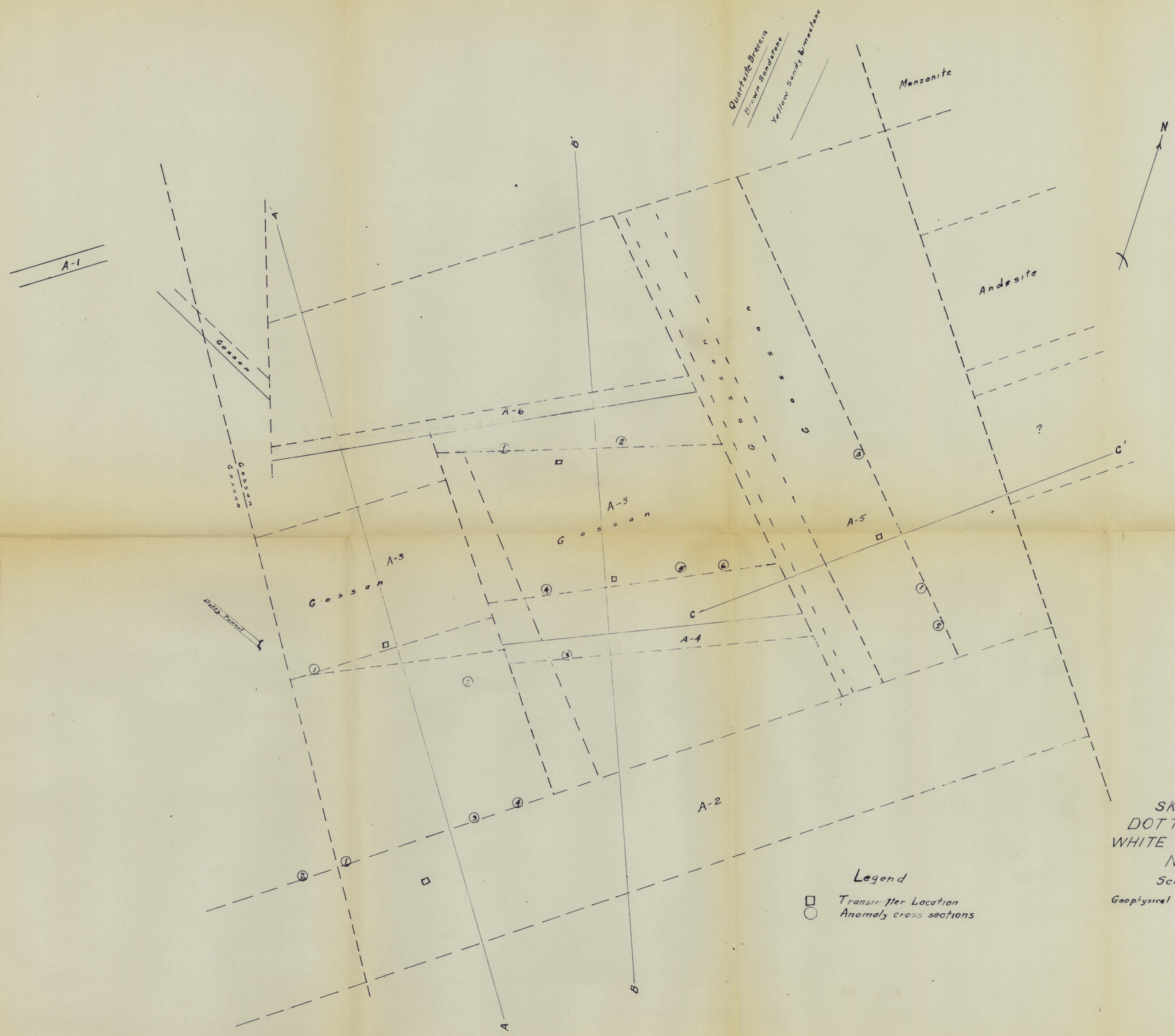
Section on B-B'
Scale 1" = 100'



Section on A-A'

Scale 1" = 100'





SKETCH
DOTTY MINE
WHITE PINE COUNTY
NEVADA
Scale 1" = 50'
Geophysical Survey by W C Dunham

Legend
□ Transmitter Location
○ Anomaly cross sections

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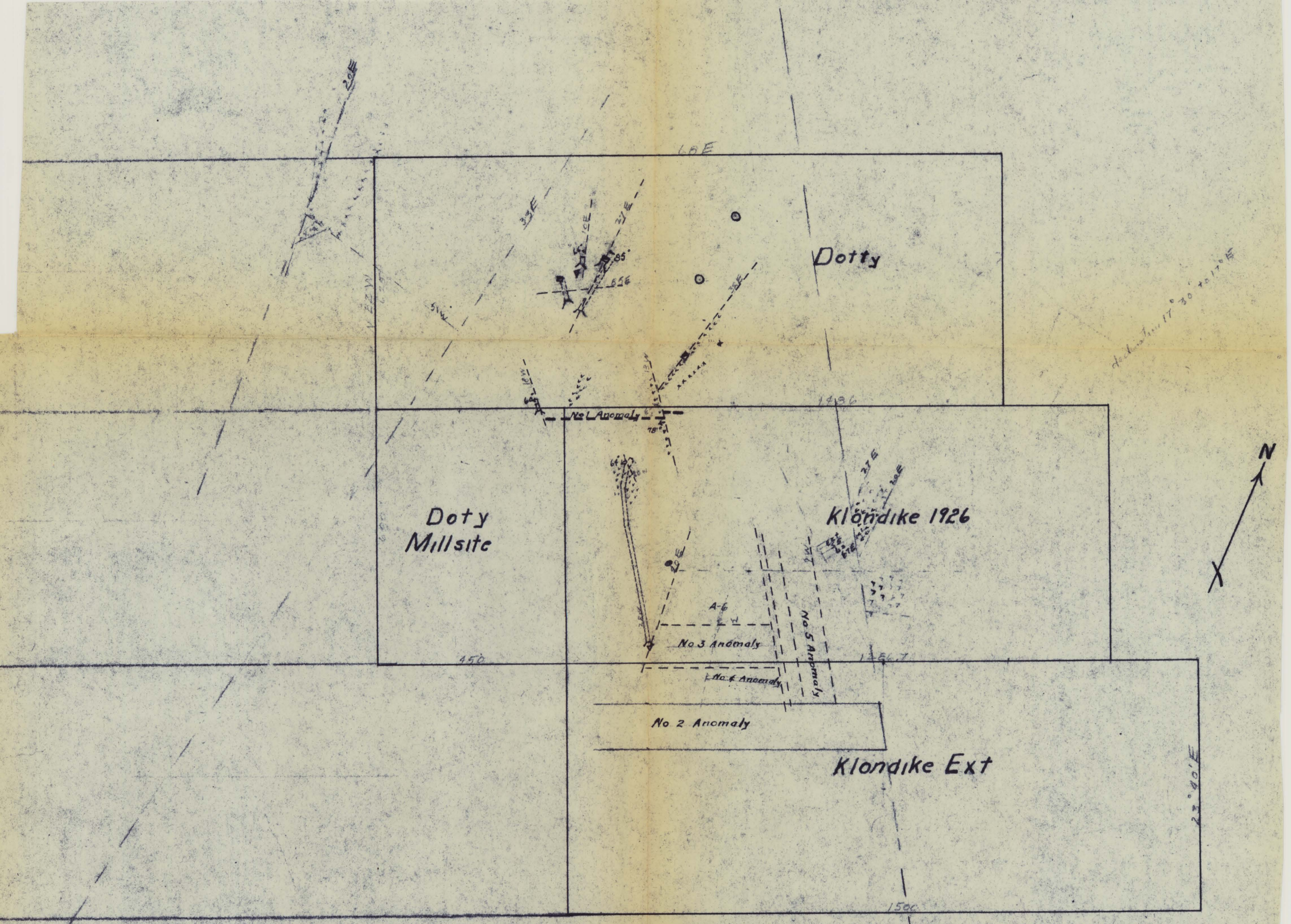
Item
2660 0016 (at end)



Legend
- Andesite
- Monzonite
- Diorite
- Iron Gossan
- Gossan
- Faults
- Shaft

Drawn by
W C Dunham, Geologist
Salt Lake City, Utah

DOTY MINE
White Pine County Nevada
Scale 1" = 200'

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Item 2660 0016 (after 5/15)