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REPORT

on

UNDERGROUND EXPLORATION

Canol Metal Mines Limited

Stormy Group, Y.T.

Edmonton, Alberta,
November 10th, 1959

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PURPOSE OF REPORT

The purpose of this report is to describe the work carried out during the summer of 1959 and to detail the results obtained.

No attempt will be made to outline the history of the mineral claims, or to comment on such factors as location, accessibility, topography and climatic conditions. These details may be obtained from previous reports of examining engineers.

SUMMARY AND CONCLUSIONS

An adit was driven into the side of Stormy Mountain at an elevation generally lower than the potential ore zone, and a considerable amount of drifting, crosscutting, and underground diamond drilling was carried out. Molybdenite mineralization was encountered for the most part over a relatively large area near the contact of a granite mass and limestone which overlays it. No orebody was found which would be of sufficient size and grade to be commercial.

The following conclusions were reached:

1. The deposit is of the contact metamorphic type.

2. The granite-limestone contact over most of the area explored is almost horizontal.

3. The widths of the potential ore zone were exaggerated in appearance in the eleven trenches which were previously dug on the slope of Stormy Mountain.

4. Molybdenite occurs mainly in a "dioritic" phase of the granite which is at the top of the granitic mass and adjacent to a garnet-epidote skarn zone.

5. Some molybdenite occurs in the skarn zone which represents the lower altered side of the limestone beds.

6. Molybdenite occurs in small quantities at many scattered locations in the granite itself. The ore grade occurrence in the granite in the initial adit crosscut appeared to be an isolated occurrence.

7. Indicated tonnage of ore grade material for molybdenum is too small to warrant exploitation.

8. Nearly all the molybdenite bearing rock contains tungsten in the form of scheelite or powellite but again no commercial tonnage of ore grade material is indicated.

FREIGHTING

Preparations for the underground exploration of the Stormy claims were commenced in January, 1959. During January and February all major equipment and supplies were purchased in Vancouver and shipped by water and rail to Whitehorse.

During February seven insulated plywood cabooses were built in Whitehorse. These were eventually loaded with freight and hauled intact to the property.

The cabooses and equipment and supplies were transported to the property by MacIsaac Construction of Whitehorse, who used trucks to Johnson's Crossing, tractor drawn sleighs to within a mile of the campsite, and a steel go-devil for the final and most difficult mile. Freighting took from the middle of March to the middle of May, a period of two months, and a total of 128 tons were moved.

CAMP LAYOUT

The seven cabooses were set up on a fairly level area about 400 feet below the showing using one for an office, two for sleepers, one for kitchen, one for dining room, one for washroom, and one for a storeroom. In addition a compressor building, a machine shop, a sample grinding house, a powder magazine, a fuse and cap house, and three tent frames were constructed on the site.

Camp water supply came from a spring which fed a water hole located uphill from camp, and which overflowed to form a small stream running through the camp yard.

Sewage was discharged down the mountain below the camp.

PREPARATORY WORK

Power was supplied by a Victor Coventry Diesel 10 KW lighting plant set on concrete in the compressor building.

Compressed air was supplied by a C.I.R. 315 Gyroflow compressor, later augmented by a C.I.R. 600 Gyroflow compressor, both located at camp.

A 3" aluminum compressed air line was run from camp to the adit site, a distance of 1600 feet angling up the side of Stormy Mountain.

A single drum reversible 5 x 6 air hoist was installed below the adit site and a 465 foot long trestle mounting 20 lb. rail was built up the slope to the site. All servicing was done with a flat car operating on this trestle.

UNDERGROUND WORK

The adit was driven using C.I.R. JR38 Jackdrills, Carset tapered socket jackbits, and corresponding drill steel. Mucking was done with an Eimco 12-B loader and tramming with 26 cu.ft. side dump mine cars hauled by an Eimco 401 air locomotive. Track gauge was 18 inches.

Water supply for drilling came from melting snow higher up the mountain which made water from June to the end of September. Water from this snow was dammed up and led by gravity through plastic pipe to the portal. Air pressurized water tanks were used for actual drilling.

The adit was collared in frozen talus rock on June 13th, and between that date and September 24th a total of 1,050 feet of lateral work was carried out. Contract price for labour was $11.50 per foot and the average advance per 8 hour crew-shift was 7.0 feet. Two shifts per day were operated for most of the period.

All underground work was on the Stormy No. 5 Mineral Claim. The initial adit crosscut went 146.0 feet straight into the mountain. This was followed by 663.7 feet of drifting and crosscutting east of this point, and 240.3 feet of drifting to the west or north-west.

The original intention was to drift on the favourable granite-limestone contact, represented specifically by the contact of the "diorite" with a garnet-epidote rock. This contact was at first believed to dip into the mountain from the trenches and for this reason the adit was collared well below the surface exposure of the contact. It developed later that the contact, in the area of the trenches, lay almost horizontal and only dipped down to the south-west to reach adit elevation to the west of the initial crosscut.

As a result of the attitude of the contact there were only 155 feet of the west drift actually on the contact, and all the drifting and crosscutting to the east was basically for the purpose of establishing diamond drill stations.

DIAMOND DRILLING

Drilling was carried out using a Boyles JVA machine recovering AXT core. Water supply for the drill had to be conserved, and all drill water was collected and re-circulated.

A total of 3,460 feet of drilling was completed in 36 holes. Of this 719 feet were in 4 flat holes probing for the contact, 102 feet were in 2 down holes testing the ore occurrence in the initial adit crosscut, and the remaining 2,639 feet were in 30 up holes to test the contact itself.

SAMPLING

All samples were crushed and pulverized on the property and shipped for assay as pulps.

Muck samples were taken throughout the underground headings and face, wall and back chip samples taken where warranted.

All diamond drill core was split and sampled through the "diorite" and skarn zones and for most of the holes sludge samples were collected for corresponding sections.

All diamond drill samples are considered to be unreliable. The molybdenite is soft and friable and easily ground up, and core samples no doubt tend to be low. For sludge samples a certain proportion of the molybdenite actually floats on the sludge water using rod grease as reagent, and salting of samples also occurs by molybdenite coming from the walls of a hole at sections other than the one being sampled. These conditions make for inaccurate sample results which results might be too high or too low.

ECONOMIC GEOLOGY

Most lateral work was in granite except as previously noted there were 155 feet of the west drift which followed the "diorite"-skarn contact.

The contact as explored was a narrow zone with the "diorite" generally only a few inches in width, and the garnet-epidote skarn varying up to only a few feet in width. The same zone as indicated by the trenches and the diamond drill hole intersections to the north-west of the trenches showed widths up to 35 feet. Best molybdenite mineralization appears to occur where the zone of alteration is the widest. The molybdenite mineralization in the portion of the contact seen in the west drift was spotty and erratic, occurring disseminated in both the "diorite" and the skarn. Individual high grade specimens were found but the muck samples showed no possibility of the presence of ore grade material.

Occasional flecks of molybdenite were seen at scattered locations in the granite, usually associated with a fine grained aplitic granite sometimes appearing to be in the form of dykes.

Ore grade material was encountered in a fracture zone in the granite in the initial adit crosscut. This zone has the shape of a pipe some 25 feet in diameter and located about 15 feet below the contact where it dips down to the south-west. Muck samples from the section of the adit passing through this zone assayed 1.37% Mo (2.27% MoS_2) for 110 tons. The zone probably extends upwards to the contact or to the surface under the contact, but two drill holes put down under it failed to show any downward extension. Even if it extended downward it would not be important with the known small area it has. The occurrence probably contains no more than 1,000 tons and available evidence suggests that it is an isolated occurrence.

Of the 30 diamond drill holes drilled up to the contact one was in a fault and one was entirely in granite. Of the 28 remaining holes which passed through the contact zone or at least passed out of the granite there were only two holes containing intersections which could be regarded as being of ore grade. These were U7 and U8.

The following tabulation shows all diamond drill hole intersections with core sample assays over 0.10% Mo. Core lengths in most cases represent true widths.

Hole No.	%Mo	Core Length	Hole No.	%Mo	Core Length
U3	0.44	12.5	U15	0.75	2.5
U7	2.08	8.6	U21	0.15	5.3
U8	1.15	19.1	U31	0.15	17.5
U9	1.52	0.4	U32	0.25	6.0
U10	0.52	2.0	U35	0.48	7.5
U13	0.40	10.0			

Disregarding U13 and U35 as being isolated from the others at the east end of the area, and calculating with assays from the other 9 holes one can arrive at an average weighted assay of 0.73% Mo, an average width or thickness of 8.2 feet, and a relatively flat area covering 18,000 square feet.

The above figures indicate an available tonnage of 14,760 tons assaying 0.73% Mo. This could not be extracted economically and is not commercial.

The writer's opinion is that the actual grade would be higher than shown by the samples but even an increase of 50% would not change the overall picture.

Tungsten was found to be associated with the molybdenum and either scheelite or powellite are present almost everywhere that molybdenite is visible. Drill hole samples were all assayed for WO_3 and the following tabulation shows all diamond drill hole intersections containing assays of over 0.10% WO_3.

Hole No.	%WO_3	Core Length	Hole No.	%WO_3	Core Length
U3	0.58	8.5	U2	1.00	9.0
U7	2.44	5.2	U6	0.37	2.3
U8	4.46	8.4			
U9	0.24	4.5	U12	1.29	3.3
U21	0.86	14.3	U15	0.67	4.0
U31	0.19	18.5	U20	0.98	4.5
U32	0.21	6.0	U36	0.56	2.0

Calculating with the assays from U2 and U6 one can arrive at an average weighted assay of 0.87% WO_3 and an average thickness of 5.6 feet over an area of 2,000 square feet representing a tonnage of 1,120.

Similarily for holes U3, U7, U8, U9, U21, U31 and U32 the average assay would be 1.12% WO_3, the average thickness 9.3 feet, and the applicable area would be 13,000 square feet or representing 12,090 tons.

For holes U12, U15, U20 and U30 the average assay would be 0.90% WO_3, the average thickness 3.4 feet, and the tonnage figure would be 3,620.

Combining all of the above one could speculate on the presence of 16,830 tons averaging 1.05% WO_3 and contained in a deposit with an average thickness of 7.0 feet.

In view of the small tonnage, the isolated location, and the milling difficulties associated with tungsten there is no doubt that the above material cannot be considered as ore at this time.

The value per ton based on molybdenum values and that based on tungsten values cannot be added directly together for a total value since the core sections containing molybdenum do not coincide exactly with the sections containing tungsten. Also the portions of the contact zone which contain significant molybdenum values do not coincide with the portions which contain tungsten.

CONCLUSIONS AND RECOMMENDATIONS

The work carried out was extensive enough to give the showing a fair test and the twenty four Stormy claims are in good standing until May, 1966.

No orebody of economic significance was discovered by virtue of the underground work carried out this year.

The property has sufficient merit to warrant further study.

It is recommended that:

1. One caboose be left on the campsite for future use.

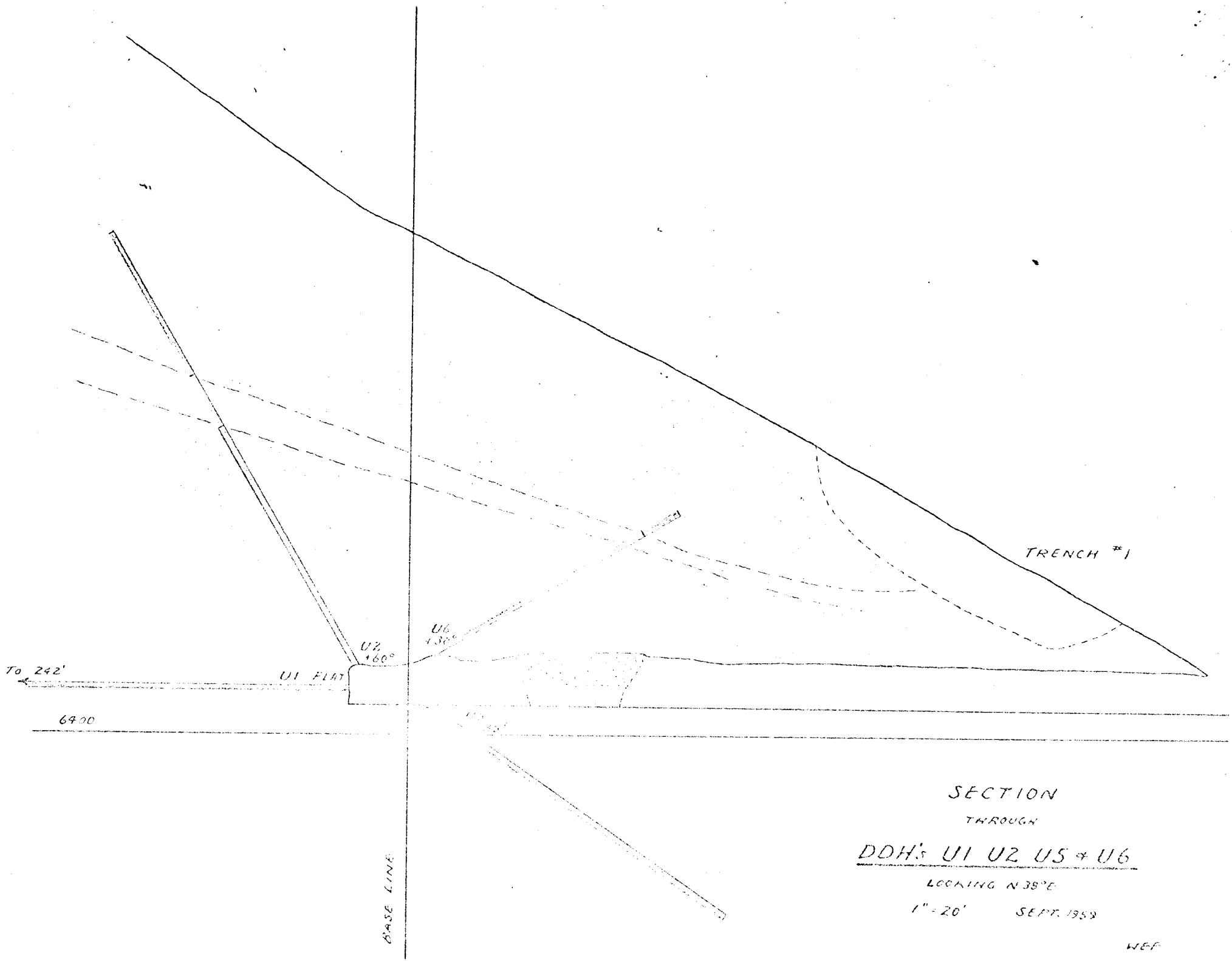
2. A limited amount of prospecting be carried out on the claims, especially on the top and opposite side of the cirque to the north-west of the adit.

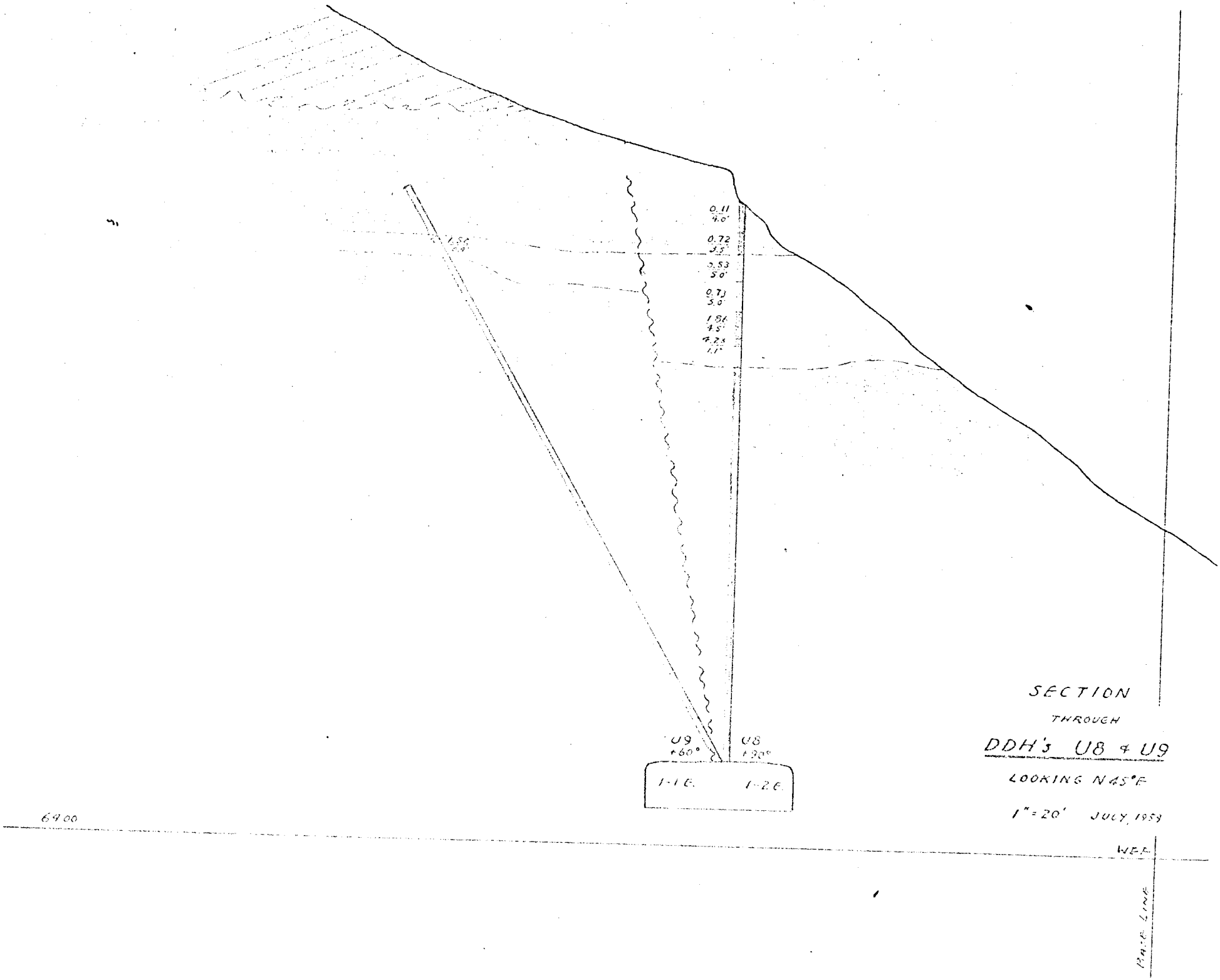
3. Further surface discoveries, if any, be checked by trenching, by bulldozer if possible.

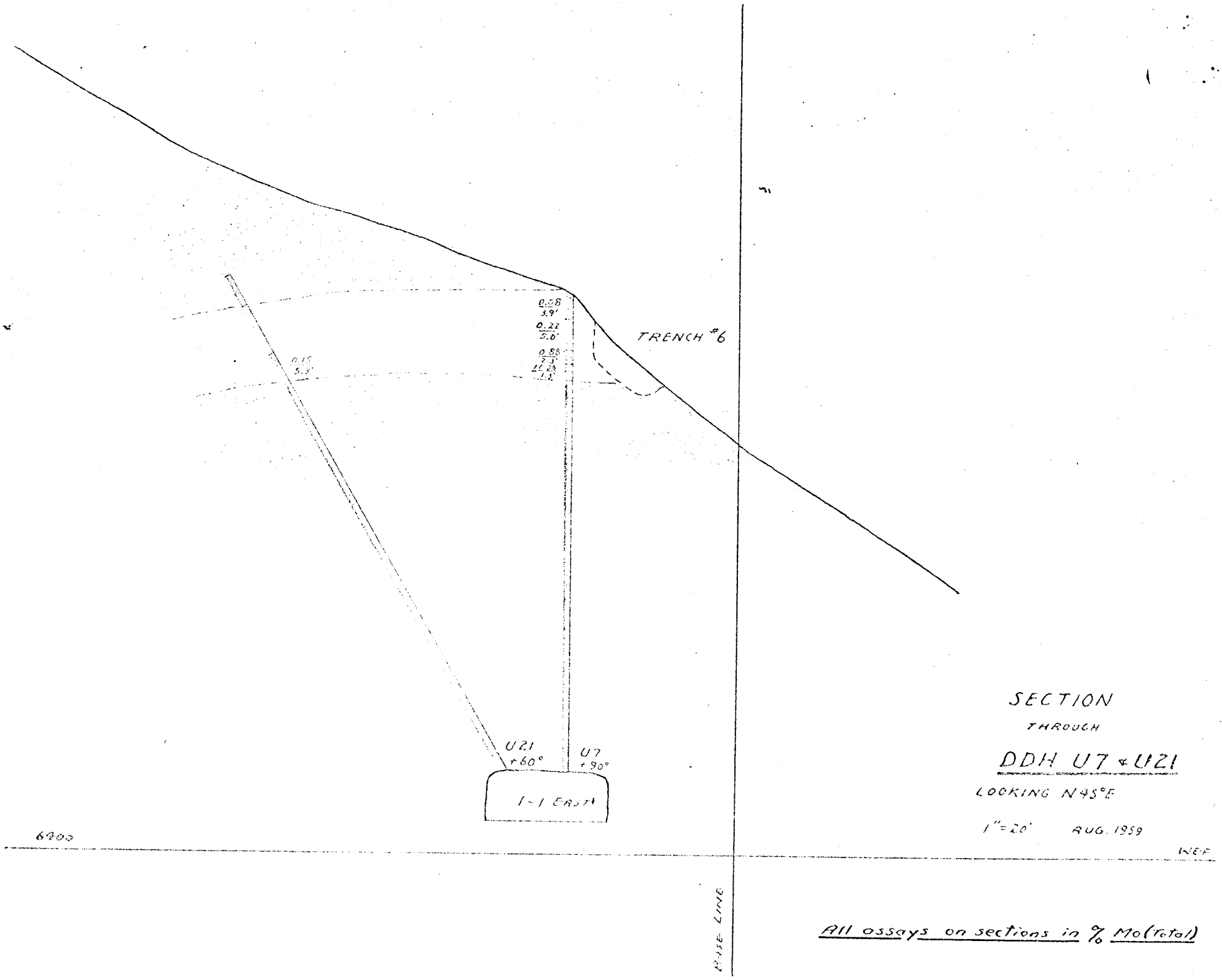
4. No further underground work be undertaken unless new surface discoveries supply sufficient encouragement to warrant it.

Edmonton, Alberta,
November 10th, 1959.

W.E. Field, B.Sc. P.Eng.


TRENCH #1
U6
+30°
U2
+60°
U1 FLAT
TO 242'
6400
BASE LINE
SECTION
THROUGH
DDH's U1 U2 U5 & U6
LOOKING N 38° E
1" = 20'
SEPT. 1959
WEF


0.11
4.0'
0.72
3.5'
0.53
5.0'
0.73
5.0'
1.86
4.5'
4.25
1.1'
U9
+60°
U8
+90°
1-1E.
1-2E.
6900
SECTION
THROUGH
DDH's U8 & U9
LOOKING N45°E
1" = 20'
JULY, 1959
WEF
PAGE LINE



SECTION

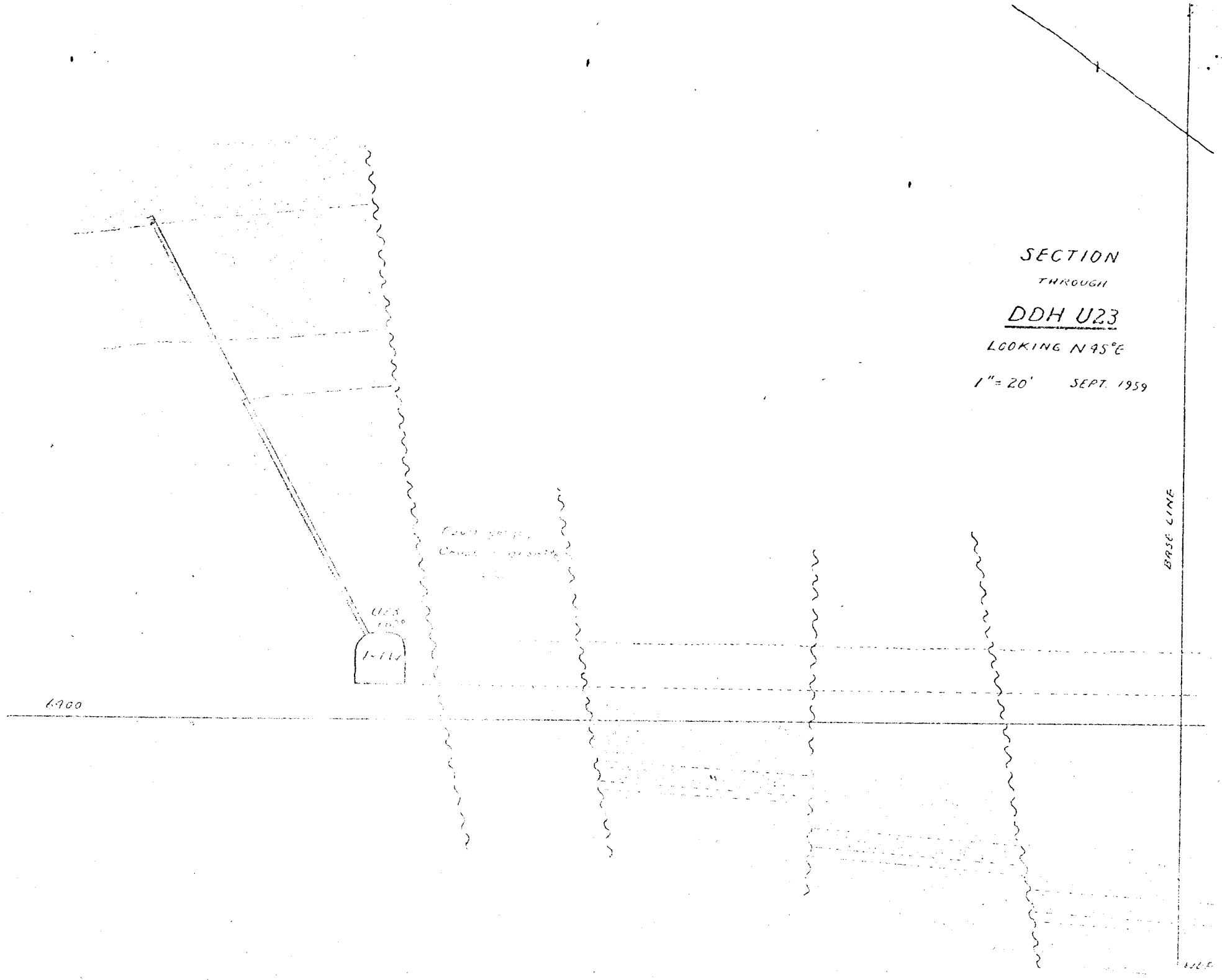
THROUGH

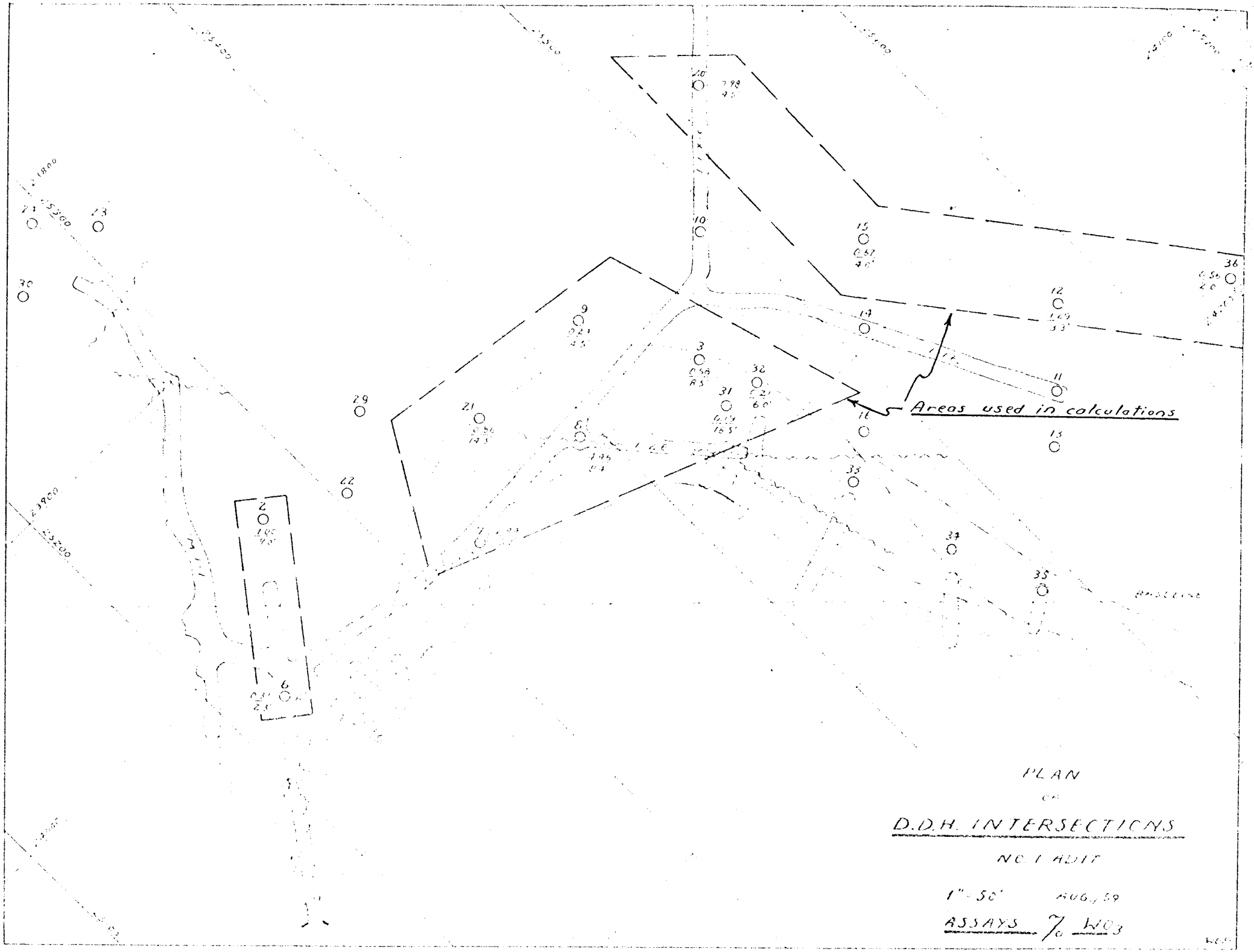
DDH U7 & U21

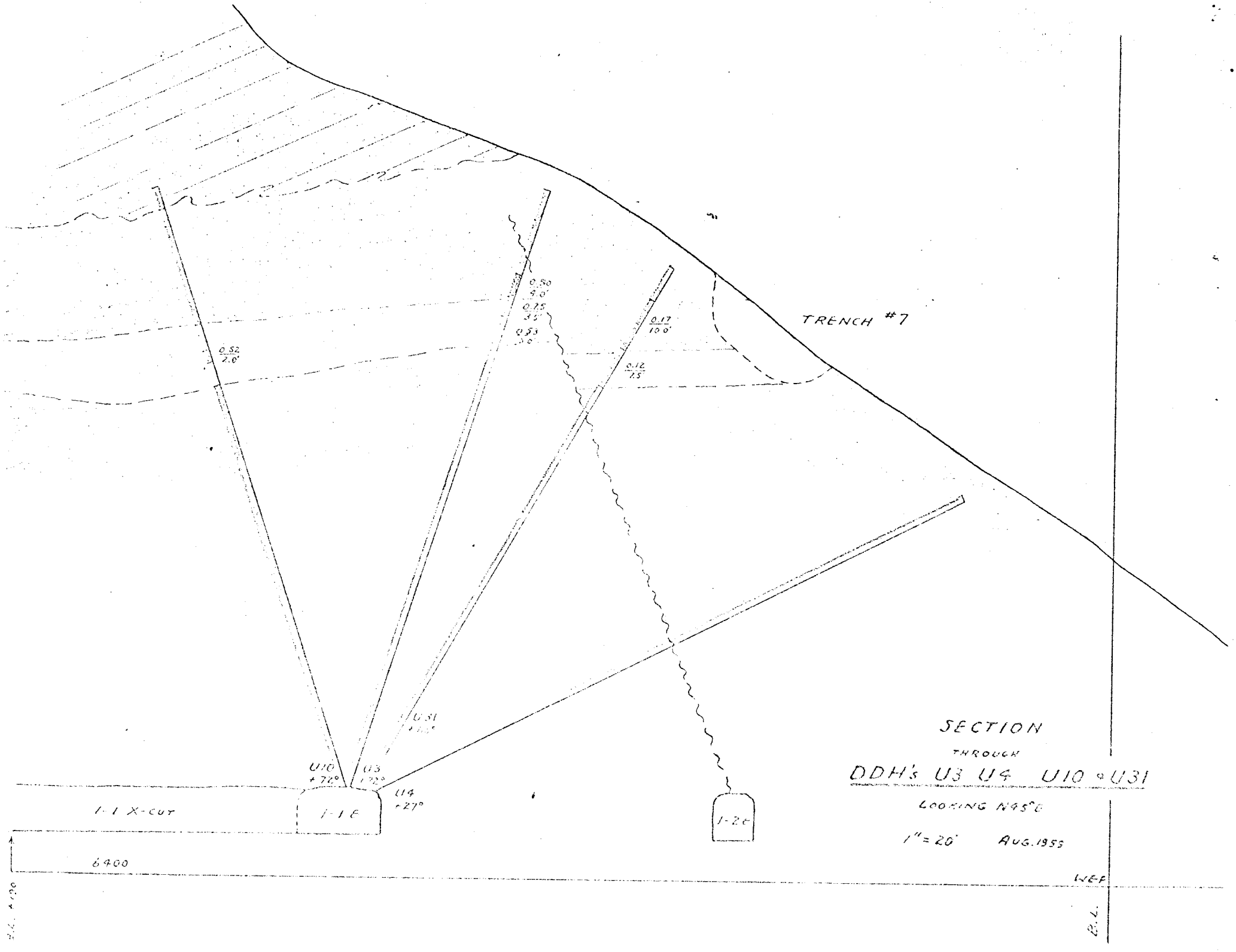
LOOKING N45°E

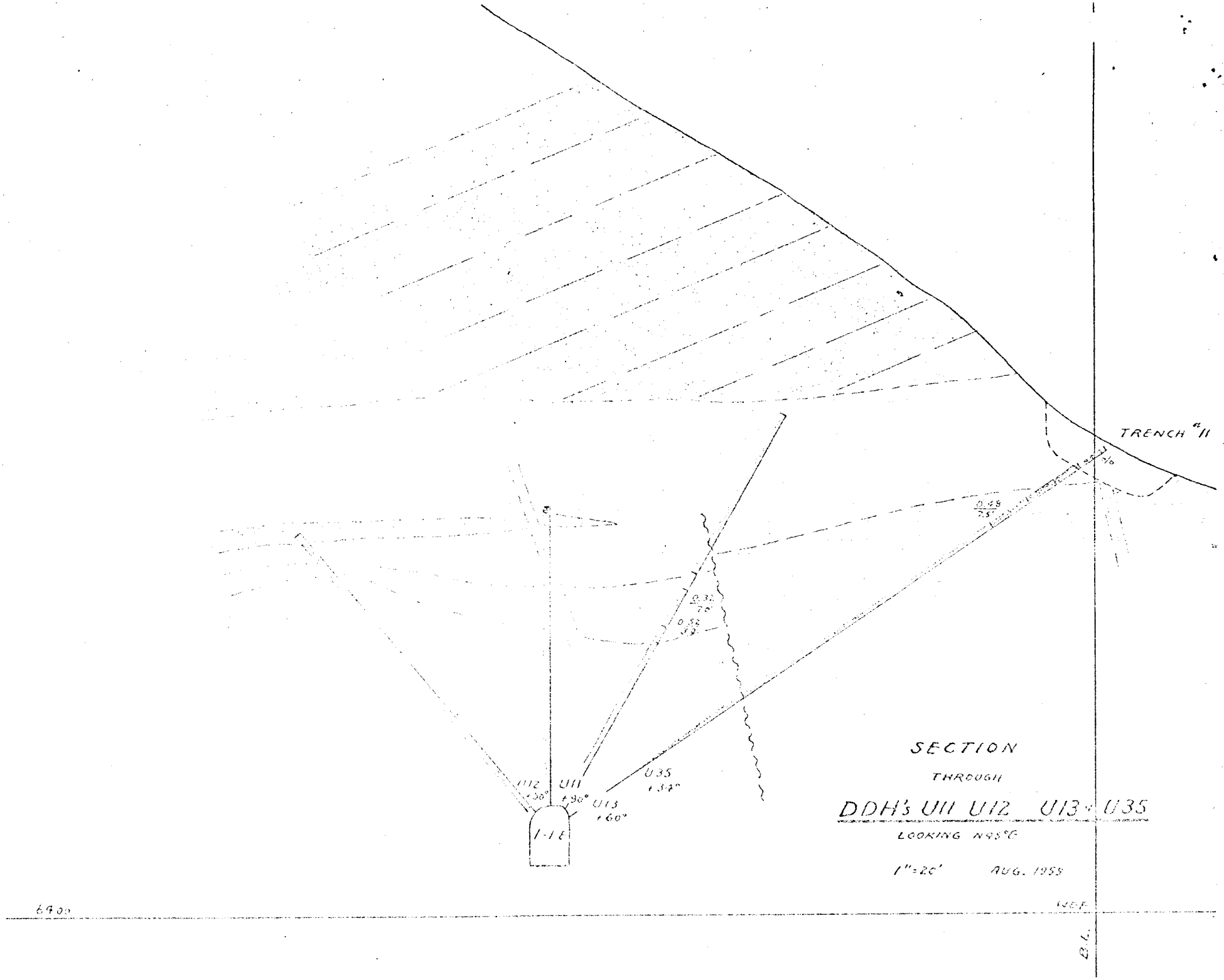
1"=20' AUG. 1959

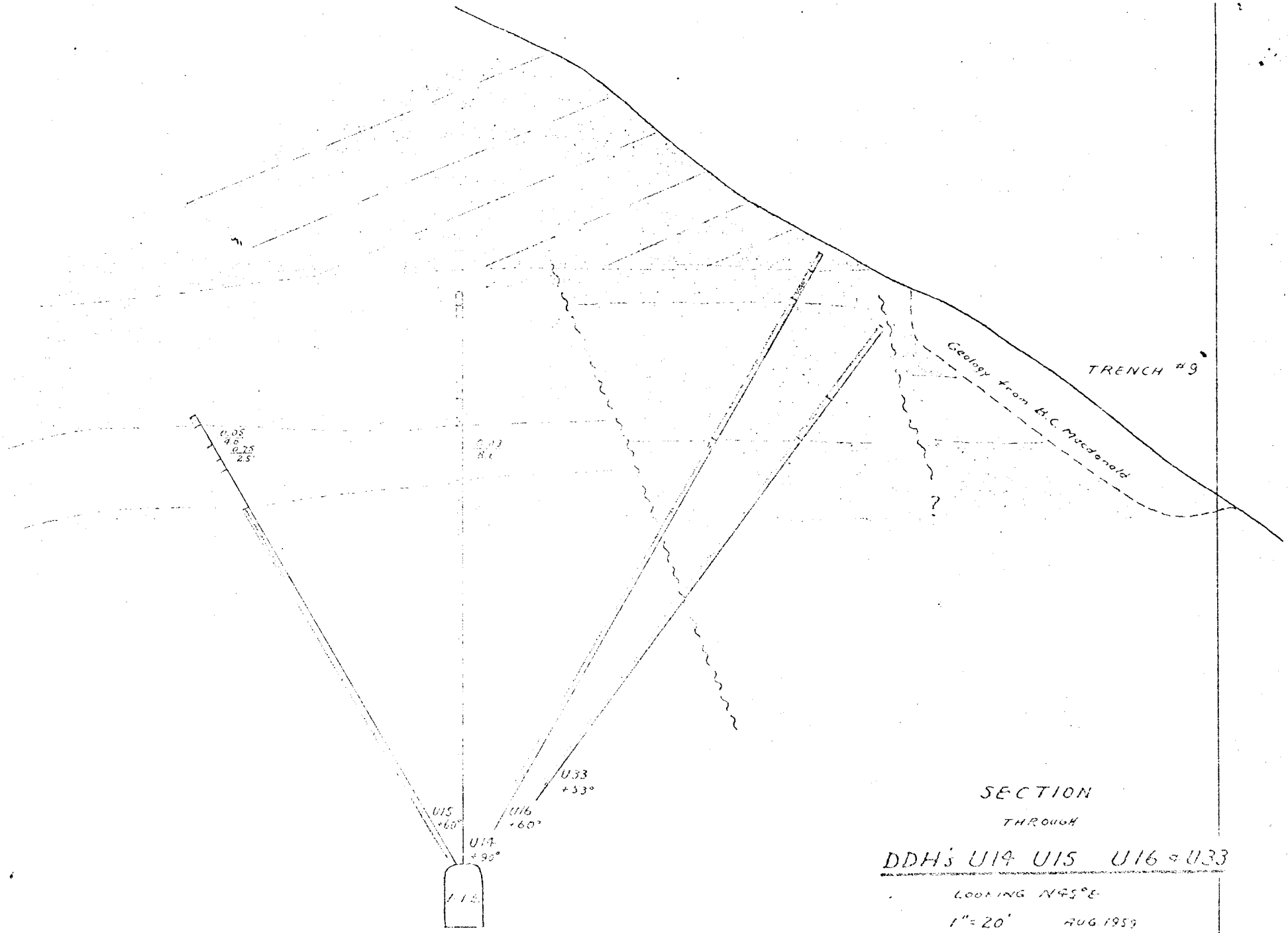
All assays on sections in % Mo (Total)


SECTION
THROUGH
DDH U23
LOOKING N45°E
1" = 20'
SEPT. 1959
BASE LINE
6900


Areas used in calculations
PLAN
OF
D.D.H. INTERSECTIONS
NO. 1 ADIT
1" = 50'
AUG. 59
ASSAYS % WO3


TRENCH #7
0.52
2.0'
0.50
9.0'
0.75
2.5'
0.53
5.0'
0.17
10.0'
0.12
7.5'
U31
U10
+72°
U3
U4
+27°
1-1 X-CUT
1-1 E
1-2 E
6400
WEF
SECTION
THROUGH
DDH's U3 U4 U10 & U31
LOOKING N45°E
1" = 20'
AUG. 1955


TRENCH #11
0.48
7.5°
0.32
7.0°
0.32
7.0°
U35
+34°
U12
+30°
U11
+90°
U13
+60°
I-1E
SECTION
THROUGH
DDH's U11 U12 U13 + U35
LOOKING N45°E
1"=20'
AUG. 1958
6900
N.E.P.
B.L.


TRENCH #9
Geology from B.C. Macdonald
?
0.05
4.0
0.75
25'
0.17
8.1'
U33
+53°
U16
+60°
U15
+60°
U14
+90°
SECTION
THROUGH
DDH's U14 U15 U16 & U33
LOOKING N45°E
1"=20'
AUG 1959
6400

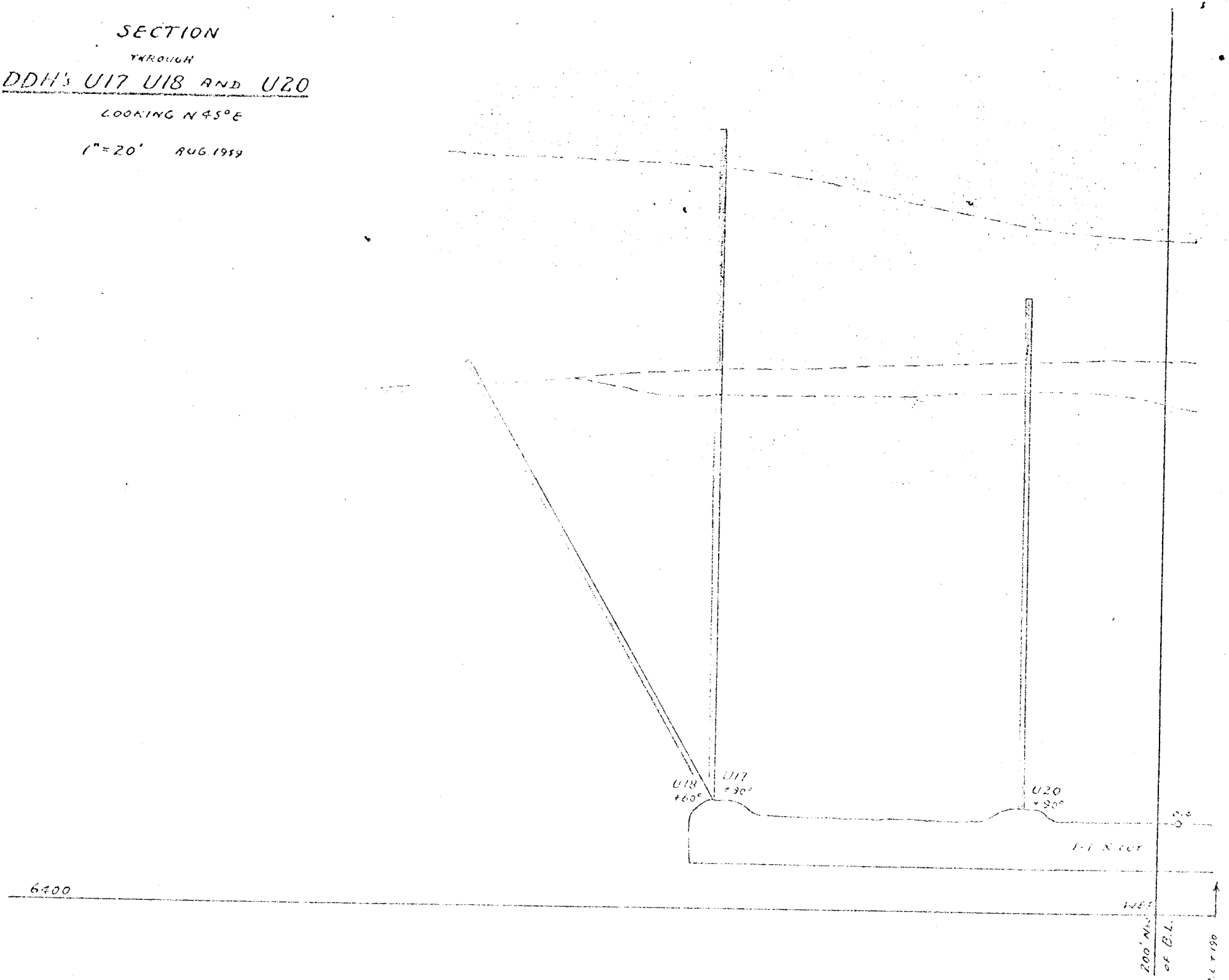
SECTION

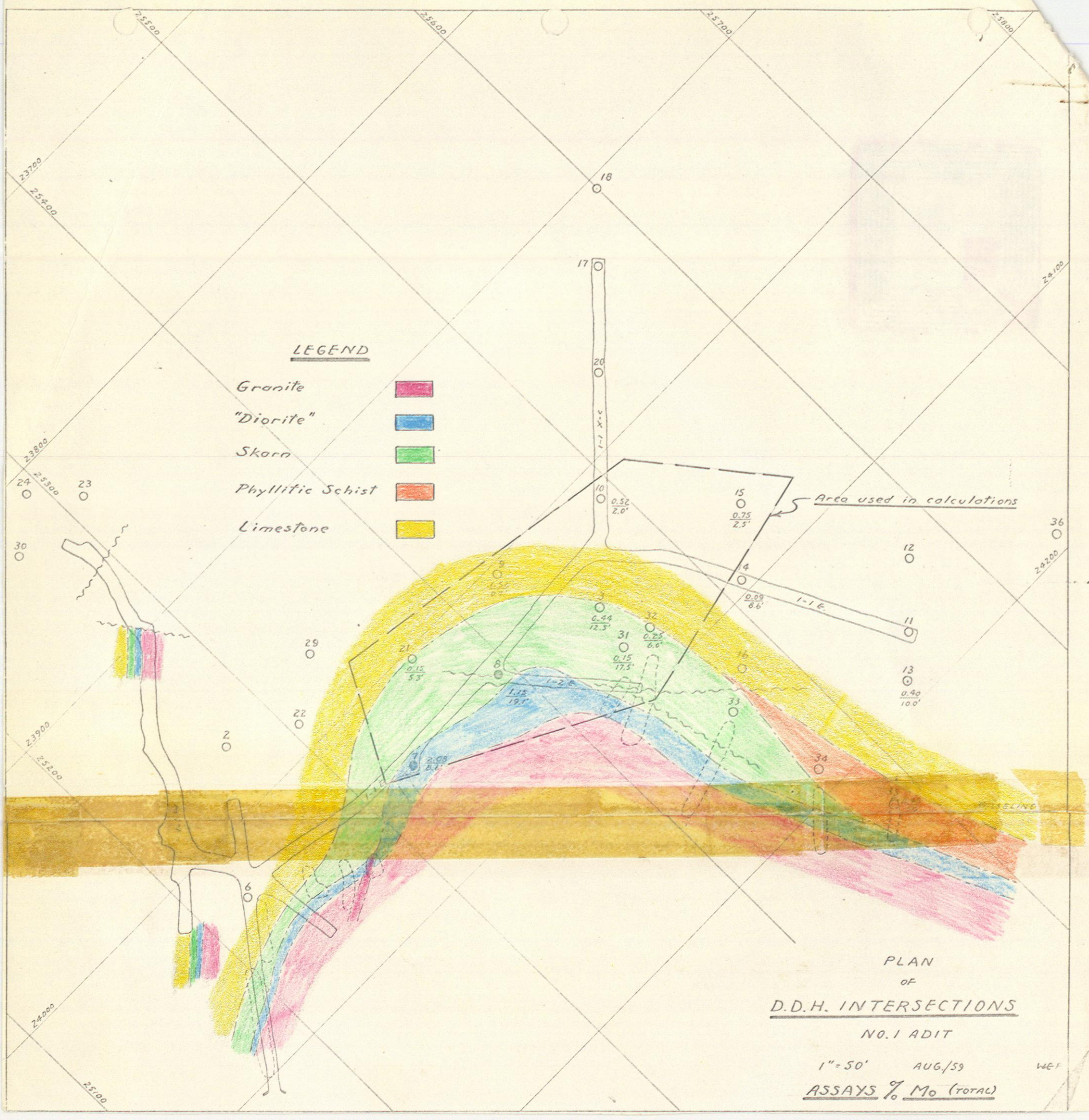
THROUGH

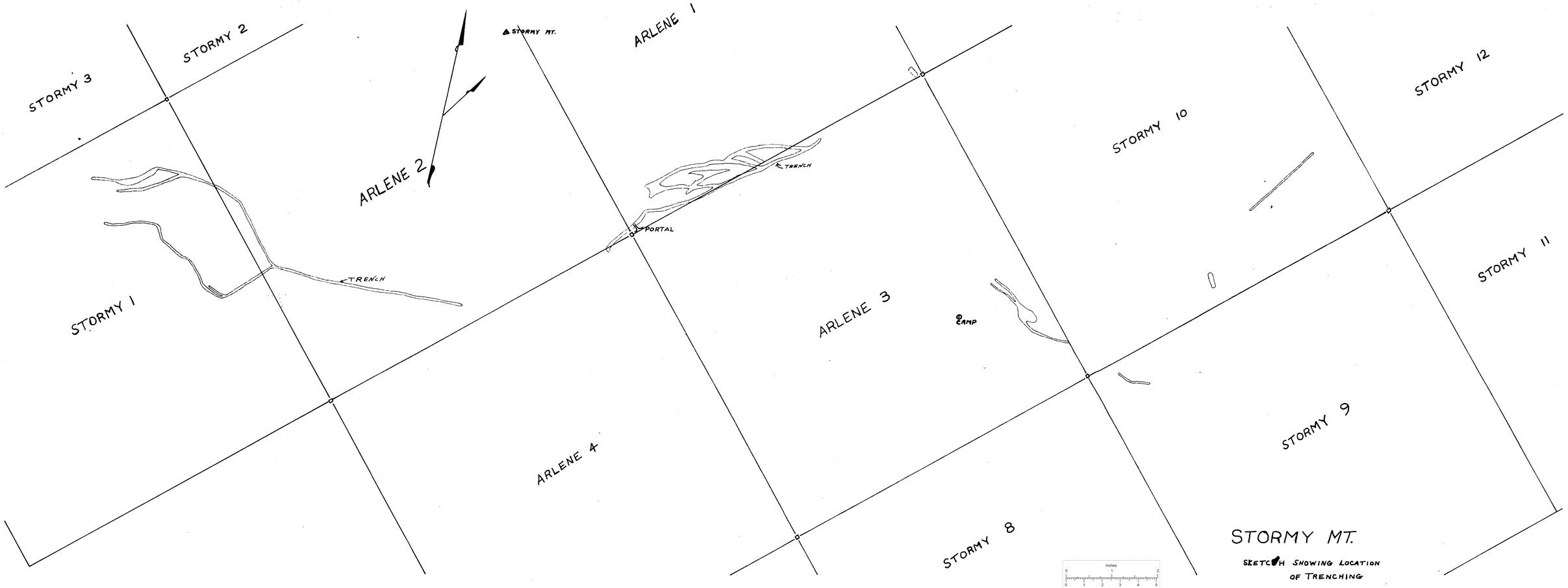
DDH's U17 U18 AND U20

LOOKING N 45° E

1" = 20' AUG. 1959




LEGEND
Granite
"Diorite"
Skarn
Phyllitic Schist
Limestone
Area used in calculations
1-1 E.
1-2 E.
PLAN
OF
D.D.H. INTERSECTIONS
NO. 1 ADIT
1" = 50'
AUG./59
ASSAYS % Mo (TOTAL)



STORMY MT.

SKETCH SHOWING LOCATION OF TRENCHING

SCALE 1" = 200'

inches
0 1 2
0 1 2 3 4 5
centimetres
YUKON GEOLOGICAL SURVEY
This reference scale bar has been added to the original image. It will scale at the same rate as the image, and therefore can be used as a reference for the original size.