MR 31-6

April 1, 1932

Mr. W. R. Wade, Consulting Engineer,
Engineers' Exploration Syndicate,
120 Broadway,
New York City.

Dear Sir:

Attached is a report covering the examination of the "Sulzer" properties conducted during January and February of this past winter. The journey to and from the properties was made by airplane from Fairbanks, Alaska.

Lack of facilities on the Mikado and the unusual snowfall seriously hampered the work and prevented a complete examination of the surface of the district.

I recommend the development of two of the prospects of the four presented, with the stipulation that a complete examination of the surface and old pits and trenches precede any large expenditure for underground prospecting.

Respectfully,

/s/ E. A. BOADWAY

E. A. BOADWAY,
1363 Ontario Avenue,
Niagara Falls, N. Y.

INDEX

MR 31-6

R E P O R T

-on-

SULZER PROPERTIES

Chandalar, Alaska

*****

SUMMARY AND CONCLUSIONS

1. This examination, necessarily limited by the unusual snowfall, confirmed, in so far as was possible, practically all of the statements made by the sponsors of these properties.

2. Continuity of the veins has not been proven.

3. The lode history of districts to the west, tentatively lithologically classed with the Chandalar, is not favorable.

4. The small erratic "pay shoots" in the placers worked indicate that they were derived from small ore shoots.

5. An ore shoot of good grade is cut by the Little Squaw tunnel.

6. Evidence of step faulting on the ridges confirms the statements of Government geologist that the shear zones are more or less continuous.

7. The statements of the sponsors of these properties and the statements of the U. S. Geological Bulletin concerning the grade of ore in the Mikado group are probably well founded.

8. Several sections of high-grade ore have been exposed in this district, but their extent is unknown.

In my opinion, this district has probably never been

thoroughly examined and prospected in detail by a competent mining engineer under favorable weather conditions. Its northerly latitude and remoteness have greatly retarded its progress. Most of the information gained through the examination during this unfavorable winter season and most of the authentic and semi-authentic data recorded is favorable.

Practically all of the known veins in the district are now held under very favorable options by the Engineers Exploration Syndicate. This is especially true of the Mikado group. A small tonnage of the grade of ore indicated would pay good dividends. I believe these properties warrant further prospecting during the coming warm season.

RECOMMENDATIONS

That $30,000 be expended on the following work in sequence listed and under the direction of a competent engineer. That the results obtained as the work progresses be interpreted by the engineer in charge to properly guide expenditures.

1. Examination of the surface of this area, especially along the Mikado and Little Squaw veins.
2. Cleaning and sampling of trenches reported on Mikado vein.
3. Reopen and progressively sample Mikado shaft.
4. Survey the Mikado cross-cut and shaft and extend cross-cut the distance deemed necessary to cut the vein.

5. Survey Little Squaw tunnels and drive short tunnel on level 100 feet below present tunnel #1.

6. Additional trenching on other outcrops as found desirable after the examination of the surface.

This work will definitely prove or disprove the two best prospects now known in this district, and will enable the engineer to select a millsite.

LOCATION

The Little Squaw area of the Chandalar Mining District is situated on the south flank of the Endicott mountains of Northern Central Alaska. It is approximately eighty miles north of Beaver on the Yukon River and is in latitude 67° 35' North, longitude 148° 15' West.

CLAIMS

Four groups of claims, all of which are patended or in process of being patented, are held under option by the Engineers Exploration Syndicate. They are the Little Squaw group of nine contiguous end-to-end claims; the Bonanza group of six claims, and the Mikado and Star groups of three claims each. In addition, the options include three millsites, a complete Allis-Chalmers four stamp mill, and other supplies and equipment.

TOPOGRAPHY

The immediate district is mountainous, with deep-cut narrow valleys and precipitous knife-like crests on the ridges. Drainage is very rapid and the waters of the upper Chandalar River are practically unnavigable. The valleys of the north fork and of Graves Creek have been broadened by glaciation and are used as a route of travel. The average elevation of the ridge crests is slightly over five thousand feet and the valley floors are from two to three thousand feet lower. The relief decreases rapidly towards the Yukon

River flats to the south.

CLIMATE

The winters are long and severe. The average temperature for the three winter months is -15° F. in the valleys and from ten to fifteen degrees higher on the ridges. The precipitation is light and is from eleven to twelve inches in normal years. Work on the drift placer mines of the district has been carried on throughout the year and the climate presents no serious difficulty to the continuous operation of a lode mine in the coldest weather.

TRANSPORTATION

All traffic to this district now enters it through the village of Beaver on the Yukon River. Summer transportation to Beaver may be over two routes from Seattle, - one via Seward and Fairbanks, Alaska, and the other via Skagway and Dawson. The cheaper rates prevail on the Skagway route. Supplies are shipped by boat from Seattle to Skagway, thence by rail to the Yukon River, where weekly boats operate on the river during the warm period from May 15th to September 15th. The rates on general supplies, machinery and explosives from Seattle to Beaver, including all handling charges, vary from $57.00 to $141.00 a ton. From Beaver to the Little Squaw area travel at present is confined to either dog-teams or airplanes, and the present rate by either method is fifteen cents a pound. The overland distance is one hundred and twenty-five miles, seventy-five miles of which is over a well cut road. Tractor or

wagon travel over this road is possible, except during the summer months. The completion of this road through to the mining district has been proposed and will probably be undertaken by the Government when mining activity within the district warrants. The rate of fifteen cents a pound can be materially reduced under existing road conditions when sufficient supplies are being transported to justify the purchase of tractors.

All-year transportation via Fairbanks is possible, using an aeroplane service maintained by the American Airways, Inc. The fare is $125.00 and the present express rate is thirty-five cents a pound.

TIMBER

The valleys below an elevation of 3,000 feet support a fair growth of timber, principally spruce. Within a distance of a few miles of the millsite on Spring Creek, or the millsite on Tobin Creek, there is an abundant supply of timber suitable for all fuel, building and mining purposes, and in sufficient quantity to last for many years. Wood, in sixteen foot lengths, delivered to the Spring Creek millsite by dog-teams now costs $10.00 a cord. Delivered to the Little Squaw mining claims the cost is now much greater, but under operating conditions, when ore is being transported to the mill, it would not cost over $15.00 a cord. Two cords of this spruce are equivalent to one ton of good coal.

WATER SUPPLY

A warm spring at the Spring Creek millsite has a

winter flow of water at the rate of 140 gallons a minute at a temperature of 40° F. This water, sufficient for a 100-ton mill, could easily be supplemented by a like amount from Little Squaw Creek.

Perennial springs were not observed on or near the mining claims, and unless some were located, water would have to be pumped from the creek nearest the point of operations. Circulating pumps and settling sumps could be used to advantage when the supply is limited or the lift excessive.

An underground all-season flow was observed on Little Squaw Creek and on Big Creek.

LABOR

The local supply of labor is limited and it is both necessary and desirable to import labor from outside of the district. A scale of wages far below that now demanded for intermittent labor could be established. Present scale is $10.00 a day or $6.00 and board.

GEOLOGY

The formations in the Little Squaw area have been referred to the early Paleozoic period, with the slightly older lithologically classed Birch Creek schist underlying them to the south. To the north, the Paleozoic is covered by Silurian crystalline limestone and dolomites.

These early Paleozoic rocks, comprising the major portion of the Chandalar district, consist principally of schists and phyllites. These schists vary from quartzose and arenaceous

to graphitic, and in the vicinity of granitic intrusions bitote schist with garnet is developed. Associated with these schists are bodies of diorite, granitic schist, greenstones and greenstone schists. These Paleozoic intrusives entered at various times throughout the period of regional metamorphism and they are found in all gradations from unaltered to schistoze.

The early Paleozoic rocks are highly deformed, showing intense crenulation and shearing. The structural trend of the formation is from northeast to southwest and the long axis of the granitic dikes and laccolith-like granitic bodies conform to this trend.

A zone of faulting is indicated on the ridges near Crystal Peak and Caribou Gulch. The faulting strikes at an acute angle to the structural trend and to the plane of schistosity. This zone, so far as observed, strikes east and west. Gold-bearing quartz veins up to six feet in width are exposed in many places along this and similar zones. Quartz in fissures following the cleavage planes is also found, but in the valleys and tributary valleys of Lake and Grave Creeks (Little Squaw area) the quartz filling is principally in the fault zones cutting across the plane of schistosity.

There are lithological similarities between the rocks of the gold producing areas of the Seward peninsulas and Tanana regions and those of the Chandalar region, but absolute correlation has not been established.

Sufficiently detailed work to determine the source

of the quartz veins has never been done. The presence of monzonite and rutile in the placer concentrates indicates the possibility of a genetic connection between the gold-bearing quartz vein and an acid granitic rock. The probable source of the gold-bearing solutions was from a granitic rock tentatively classed as a diorite, many boulders of which were found in the bed of Little Squaw Creek well above the line of glaciation.

Several isolated lenses of quartz are known and many stringers having no definite trend are found throughout the area, but the principal gold-bearing quartz outcrops are distributed along four east-west lines. This distribution, coupled with evidence of stepfaulting indicated on the ridges, suggests a zone of shearing along which mineralizing solutions have deposited quartz that is in places gold bearing.

Along the Little Squaw zone of faulting there have been at least three periods of movement and two periods of deposition. The first faulting opened courses and cavities through and into which much barren quartz was deposited. The second movement, indicated as nearly horizontal, reopened the footwall of the Little Squaw vein and a second quartz was deposited. The deposition of gold and sulphides (Pyrite, arsenopyrite) was contemporaneous with this second deposition of quartz. After the close of this period, another movement refractured the quartz and a typical "banded" or "ribbon" appearance was developed. Occasional cavities are found with quartz crystals protruding into them, but these cavities are more often filled with a bluish sulphurous deposit.

Little evidence of replacement of the wall rock was

found in the Little Squaw Tunnel. It is probable that these mineral-bearing solutions emanating from an acidic mass entered and filled cavities along a reopened shear zone late in the period of regional metamorphism. (Considerable replacement of the wall rock was observed in the Mikado tunnel two miles to the South.)

DESCRIPTION OF LITTLE SQUAW

The Little Squaw vein, tipping 75° to the south and striking N. 75° E. has a proven length of nearly two hundred feet and a proven depth of over one hundred and thirty feet. It cuts across the plane of schistosity which strikes N. 5° W. and dips 15° E. Erosion has removed the eastward extension of the vein at the tunnel level and a minor fault cuts it off at the face of the tunnel, two hundred feet to the west. A 75-foot raise to the surface and a 60-foot winze have been driven. The continuation of the vein on the surface beyond the minor fault is reported, the displacement being about fifty feet. Very little gouge is found in this fault, which strikes N. 45° W. and dips 80° E. Imperfect striations indicate the movement of the western block to be to the south at a dip of 12°.

Tunnels driven through the surface debris at levels 70 to 114 feet below the portal of the tunnel described have not encountered the vein. These tunnels were apparently started without allowing for the dip of the vein and appear to be situated too far to the north and well in the foot wall as shown on Sketch #2.

The values in the Little Squaw are contained principally in a one-foot band in the foot-wall portion of the vein. The values accompany sulphides and the foot-wall part of the vein has a banded or "ribbon" appearance. Much coarse wire gold is found in this foot-wall section. Occasional seams of sulphides are found extending from the foot-wall to the center of the vein. Wherever these seams extend out from the high-grade foot-wall streak, the fractured quartz of the vein has been recemented with quartz and is vitreous and massive.

An ore shoot extends from near the portal of the tunnel (where it has been truncated by erosion) west for a distance of 65 feet, where a barren zone is encountered. The vein is strongest where truncated. Occasional foot-wall streaks of "ribbon ore" from one inch to six inches thick are found on the foot-wall section of the vein beyond the end of the ore shoot, but are not of sufficient extent to be minable. The vein at the fault in the face of the tunnel is two feet wide and contains no visible sulphides.

The winze is completely filled with ice and the raise closed at the top by snow and loose debris.

SAMPLING LITTLE SQUAW VEIN

Channel samples were taken across the back of the tunnel over full width of the vein. These samples were cut at five-foot intervals where sulphides were visible and at ten-foot intervals elsewhere. The channels were cut from the foot-wall gouge to the hanging wall rock and one sample was made from each cut. These samples averaged approximately two pounds per running foot of channel. Occasional check samples and blank samples were

cut and all samples were sealed and placed under lock.

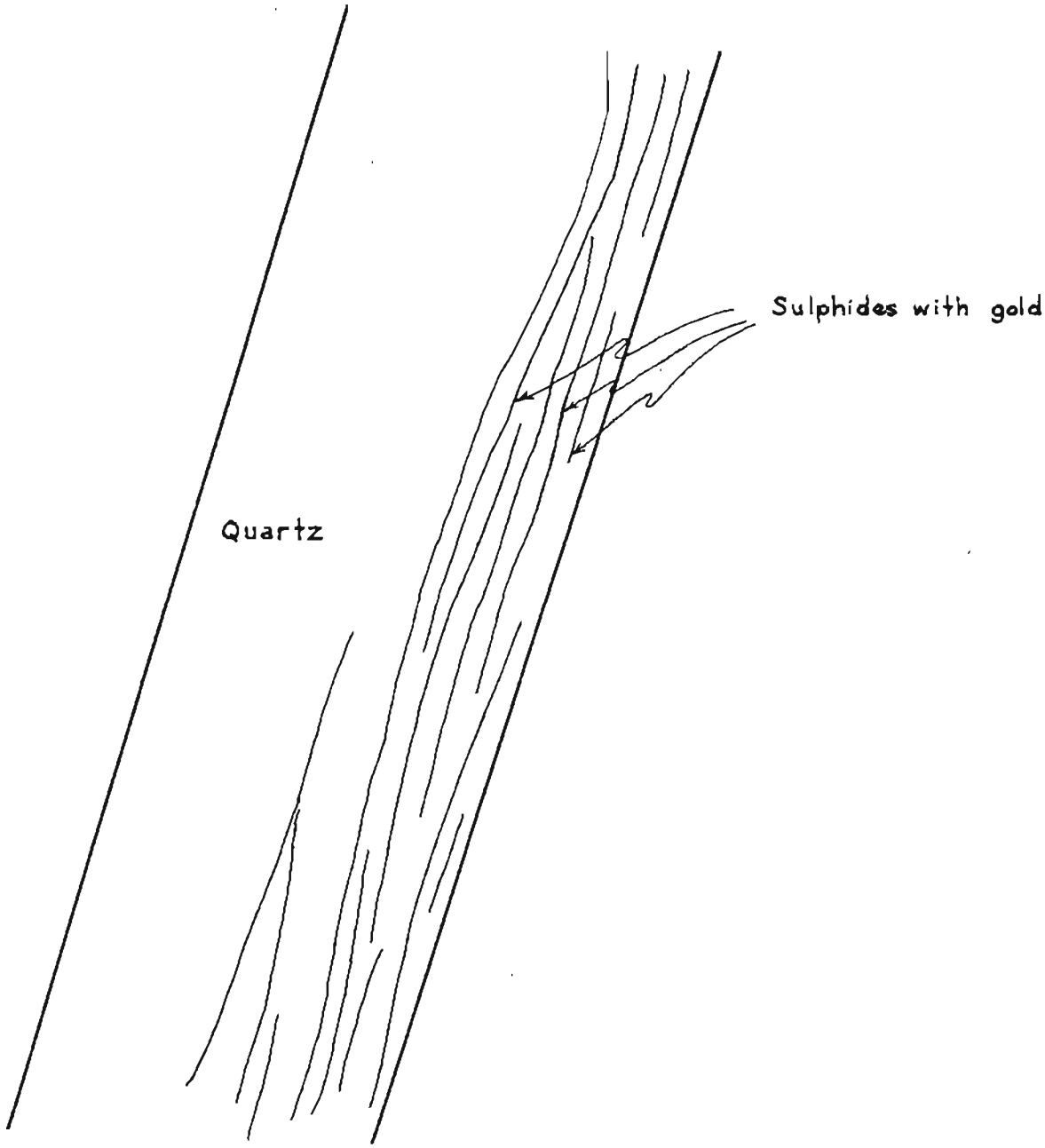
Samples were crushed to minus 1/4 inch and quartered over a large Jones riffle. One portion was kept and assayed by Mr. Paul Hopkins of Fairbanks. The other portion was ground to minus 30 and the pulp rolled and quartered over a Jones riffle. Sets of this pulp were forwarded to Black & Deason of Salt Lake, and Dr. John Banks of New York. The results obtained from the different assayers varied greatly and Dr. Banks reground to minus 100 mesh and assayed the rejects of his pulps and obtained appreciable differences from his original assays. Dr. Banks attributes the differences to the presence of minor amounts of tellurides and much coarse wire gold. It is probable that the original samples should have been ground to minus 100 mesh before the initial quartering.

SAMPLING AND ASSAY SUMMARY

Sample No.	Width Inches	Value $ Gold				Remarks
		Hopkins	B & D	Av. Banks	Average	
1	—	69.96	77.60	—	73.80	Grab sample of 100 sq. ft. of surface of Mikado dump
2	34	0.40	0.80	—	0.60	N.wall 15 ft.from face Mikado X-cut
3	39	4.00	4.80	----	4.40	S.wall 90 ft.from face Mikado X-cut
4	--	6.40	0.80	1.60	2.90	Dump sample Woodchuck
5	48	12.50	22.60	11.60	15.60	End timber L. Squaw tunnel
6	57	7.50	3.60	10.60	7.20	5 ft. West #5
7	65	15.70	22.20	13.60	17.40	" " " #6
8	58	3.10	2.00	3.40	2.80	" " " #7
9	58	92.30	123.40	120.00	112.00	" " " #8
10	60	25.20	32.20	24.80	27.40	" " " #9
11	54	1.30	3.60	10.80	5.20	" " " #10
12	44	18.50	17.20	15.60	17.00	" " " #11
13	46	34.80	52.40	37.20	41.60	" " " #12

Sample No.	Width inches	VALUE $ GOLD Hopkins	B & D	Av. Banks	Average	Remarks
14	35	158.50	237.20	218.00	204.60	5 ft. West #13
15	32	9.50	18.40	16.60	14.80	" " " #14
16	42	29.60	45.40	19.60	31.50	" " " #15
17	41	7.40	13.00	7.40	9.20	" " " #16
18	43	6.00	4.60	3.80	4.80	" " " #17
19	55	0.80	1.00	—	---	10 " " #18
20	—	0.50	0.40	—	—	Blank from schist
21	58	0.80	1.00	—	—	10 ft. West #19
22	60	0.90	0.60	—	---	" " " #21
23	35	9.40	8.20	—	—	" " " #22
24	50	0.50	0.60	—	---	" " " #23
25	43	0.50	0.40	—	—	" " " #24
26	46	3.80	0.20	—	---	5 " " #25
27	37	8.80	1.80	1.60	4.10	" " " #26
28	54	—	15.60	—	15.60	Recut #11
29	43	—	3.00	—	3.00	Recut #18
30	24	0.50	0.40	—	0.40	22 ft. West #27
31	37	—	0.20	—	0.20	Recut #27
32	18	0.50	0.20	—	0.40	11 ft. West #27
33	18	---	0.20	—	0.20	Recut #32
34	48	---	10.40	—	10.40	Recut #5
35	—	---	0.20	—	0.20	Blank schist
36	64	0.30	0.20	—	0.20	Bonanza pit collar. Neither wall reached
37	36	0.30	0.20	—	0.20	H. W. Part #26
38	13	8.60	32.20	20.80	20.50	F. W. " #26. High grade struck
39	43	0.50	1.20	—	0.80	Raise 20 ft. above drift.

The average of all assays is plotted on accompanying sketch. A weighted average shows the truncated ore shoot extending for 65 feet west from the portal, and averaging $33.80 a ton over a width of 4 feet. In computing this weighted average, the high values were included because of the presence of much coarse gold along the exposed ore shoot. Panning shows these values to be concentrated in the foot-wall half of the vein and panning of the surface breccia indicates the extension of the ore shoot to the surface.



SECTION
OF
LITTLE SQUAW VEIN
SHOWING
DISTRIBUTION OF VALUES

SCALE 1" = 2 ft.
Mar. 1932 E.A.B.

MIKADO

This group of three end-to-end contiguous claims is located on Tobin Creek, two miles south of the Little Squaw claims. The vein outcrops on the north flank of Tobin Creek and extends eastward over the divide to the headwaters of St. Mary's Creek.

Several pits and a shaft 106 feet deep have been opened along this vein over a distance of 3,000 feet, but could not be located through the deep snow. The shaft dump was located and an area of approximately 100 sq. ft. cleared of snow. The frozen surface of this dump was sampled, and assayed $74.00 a ton. This value is approximately representative of the last vein material to be removed from the shaft. Other assays of $112 to $144 are reported and are probably nearer representative of the dump, as the frozen material prevented the securing of a proportionate amount of the fines that had settled down through the coarser material.

A cross-cut has been run to cut the vein 200 ft. below the bottom of the shaft and is reported to be within 20 ft. of the projected position of the vein. Estimating the projected position of the vein from pacing the tunnel and surface, I believe the vein to be close to the face of the cross-cut. This cross-cut has been driven 475 feet and intersects three parallel pyritized zones or faults at distances of 15, 50 and 90 feet from the face. These zones show evidence of minor movement previous to mineralization. Three-foot channel samples cut across two of these

zones assayed $0.50 and $4.50 a ton. Quartz in small lenses occurs in these pyritic zones which parallel the strike of the vein. The mica schist wall rock in the last zone is slightly harder than that encountered elsewhere in the cross-cut. As no thin sections were made, it cannot be definitely stated that the increased hardness is due to silicification of the wall rock. An increase in hardness of the rock as the face is approached might indicate that the face is in a zone of silicification adjoining the vein.

The arrangement of these zones, parallel to the main outcrop suggests minor faulting parallel to the main break.

The vein is reported by various men to be strong and of good value; to quote A. G. Maddren in the U. S. Geological Bulletin #532, published in 1913:

> "On the Tobin, Little Mikado, and Mikado claims of the Mikado group, the quartz has been exposed by open cuts in six places over a distance of 3,000 feet, and in all of these the quartz near the surface contains rich values in gold. ********** a shaft has been sunk on the vein to a depth of about 100 feet. The average thickness of this vein is about 4 feet.*** It is reported that the average assays from the quartz removed in sinking this shaft give $112 to the ton."

The Mikado vein is topographically very favorably situated and several hundred-feet of "backs" may be developed with short tunnels driven from Tobin Creek.

The millsite is approximately 1/4 mile down Tobin Creek from the cross-cut and was located on a good flow of water. This flow under winter conditions was not checked but it is probable

that an underground winter flow exists similar to that on Big Creek and on Little Squaw Creek.

From all the evidence obtainable at this season of the year, I believe the Mikado to be one of the best prospects in the Chandalar district.

BONANZA VEIN

The Bonanza vein is 4,000 feet south of the Little Squaw vein, as shown on the accompanying map. No extensive work has been done on this vein, but seven to ten foot widths of quartz are reported exposed by widely separated trenches and pits over a length of 2,000 feet. One pit was found on the east end of the Woodchuck claim and the vein was sampled at the collar. No mineralization was evident, but neither the foot-wall nor the hanging wall was sampled as they were completely covered by frozen overburden. The six feet sampled assayed only $0.30, but the bottom of this pit is reported to be in the footwall of the vein. The dump indicates this to be true as a grab sample of the dump assayed $3.00. Float was traced for 150 feet west along this wind-swept ridge, but deep snows prevented the location and examination of the other pits. High-grade float was found in Robbins Gulch below the Eneveloe claims, and it is reported that rich surface placer was found in the creek below the Juniper claim.

STAR GROUP

This group is described by Irving McReed, a U. S. Minerals Surveyor, as one of the most promising in the district. Deep snow prevented any examination of these claims.

A quartz vein in the valley of Big Creek appears to be a continuation of the Star vein. This vein has been the source of much of the placer gold found in Big Creek, as shown by the fact that little "pay dirt" was recovered above the point where this vein crosses the creek.

SCHULTZ VEIN

This vein although not owned by the Chandalar Mines Co. is obtainable by option under favorable terms. It was completely snow covered but is reported by several men as exposed for over a hundred feet in length and averaging three and one-half feet wide. A 57-foot shaft, a short tunnel and two trenches, all showing free gold, have been opened along this vein. The vein narrows to four inches to the west and has not been found beyond this point. Specimens reported to have been taken from surface trenches carry considerable visible gold. This vein is located on the ridge at the head of Little Squaw Creek.

TONNAGE ESTIMATES

Of the various groups of claims only the Little Squaw group has open workings suitable for making an estimate of probable ore. The reports of several men regarding the grade of ore observed and sampled in the Mkiado shaft indicate a high-

grade of ore in the Mikado vein. Although this has been partially substantiated by sampling the dump, suitable authentic sampling records to even estimate possible ore have never been reported or seen, and even with all the favorable statements concerning these claims they cannot be credited with any appreciable tonnage of "developed ore" at the present time.

The continuation of the Little Squaw ore shoot through from the tunnel to the surface was verified by panning talus and float on the surface directly above the shoot. This block of ore is termed "assured ore".

I believe that there is reasonable assurance that this shoot will extend to a depth of fifty feet below the tunnel level; this is termed "probable ore". As there is no information regarding the depth to which "ore shoots" extend in this district, no estimate is made of the "possible ore". Instead of predicting or limiting the "possible ore", a block called "indicated ore" is shown and it has been limited to a depth of 100 ft. below the tunnel level, and a block to a similar depth below that portion of the vein reported stoped near the portal. The assumption is made that the "probable ore" and the "indicated ore" will be of a grade similar to that exposed.

Assured ore	700	tons
Probable ore	1000	"
Indicated ore	2300	"
Possible ore		No knowledge of extent of ore shoots in this district
	4000	tons at $33.00

The total value of this tonnage @ $33.00 a ton is $132,000.

AMALGAMATION TESTS

The amalgamation tests were run on ore taken from the Little Squaw tunnel. The average extraction in the two tests was 90%.

PLACER PRODUCTION

The recorded production of gold from the limited placer work carried on between 1906 and 1923 was $295,000. Of this amount $155,000 was extracted in the last three years of this period when a small company operated during the winter season on a claim on Little Squaw Creek. The placer gold recovered was confined to relatively small "pay streaks".

EQUIPMENT

A new Allis-Chalmers four-stamp mill complete with engine and boiler is stored in transit at a distance of approximately ten miles from the Spring Creek millsite. A three-stamp mill without amalgamating plates or crusher is now on the millsite. The total equipment is capable of milling 15 tons a day.

Housing facilities to accomodate ten men at the Spring Creek millsite have been erected. There are blacksmith shops and cabins that are, when equipped, suitable for three men each at both the Little Squaw and Mikado tunnels.

An inventory of miscellaneous supplies and equipment is attached.

OPERATING COSTS

It is estimated that under the existing high cost of transportation, the cost of mining and milling on a 50-ton per day basis would be $20 per ton.

CAPITAL NEEDED

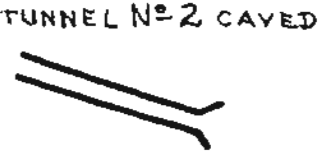
Initial development and prospecting outlined		$30,000.
Erection of 15-ton mill at Spring Creek		12,000.
or		
" " 15-ton mill at Mikado	$20,000.	
Contingencies		5,000.
TOTAL		$47,000.
	or.....	$55,000.

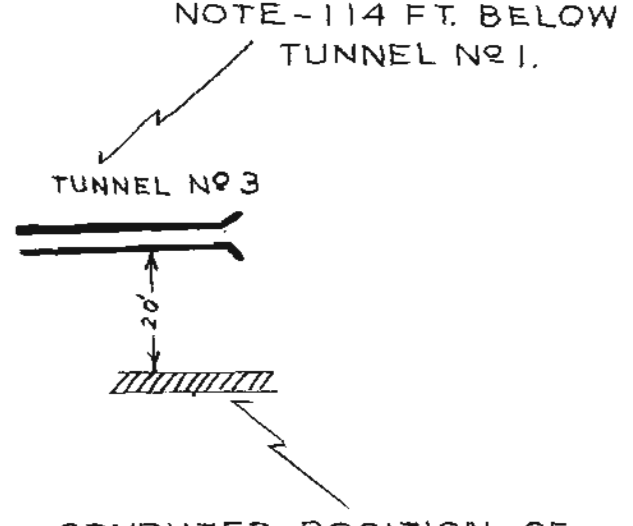
If development warrants a larger mill, additional capital will be necessary.

Cost of 50-ton mill on Mikado or Spring Creek		$ 75,000.
150 H. P. steam electric plant		50,000.
Additional equipment and buildings		25,000.
Contingencies		10,000.
	TOTAL....	$160,000.
TOTAL of all items		$215,000.

/s/ E. A. BOADWAY

TUNNEL Nº 1 DRIVEN 192 FT.
STRIKE OF VEIN N. 75° E.
DIP 75° S.





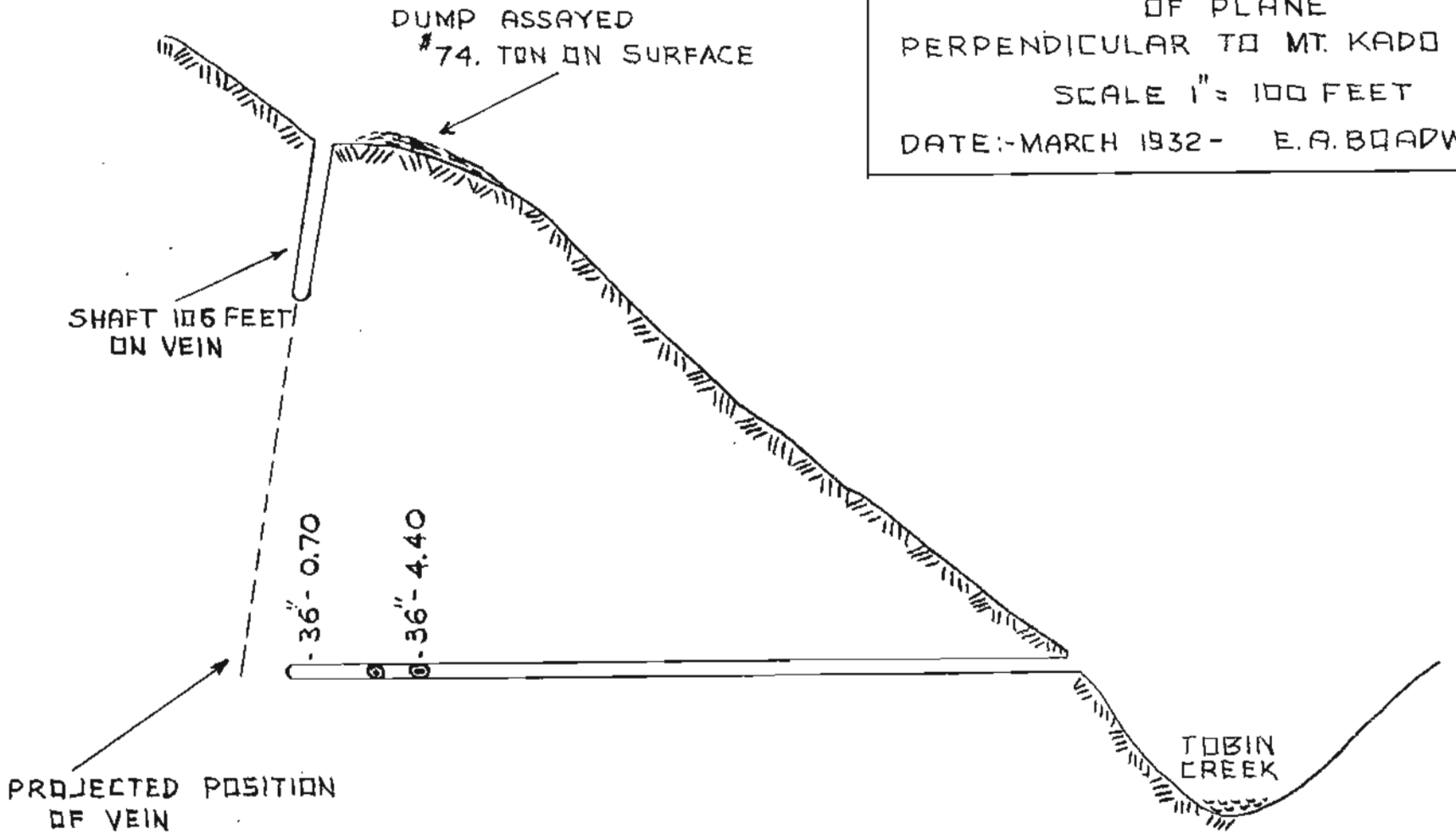
NOTE - POSITION OF TUNNELS WAS TAKEN FROM SKETCH FOUND IN THE FILES OF THE CHANDALAR GOLD MINES AND CHECKED BY COMPASS IN THE FIELD.
Nº 3 TUNNEL 10 FT. IN BEDROCK WITH TWO SMALL 1" STRINGES OF QUARTZ AND TWO SMALL GOUGE FILLED SLIPS IN THE FACE.

PLAN
SHOWING
LOCATION OF LITTLE SQUAW TUNNELS
AND
PROJECTED POSITION OF VEIN
SKETCH Nº 2.

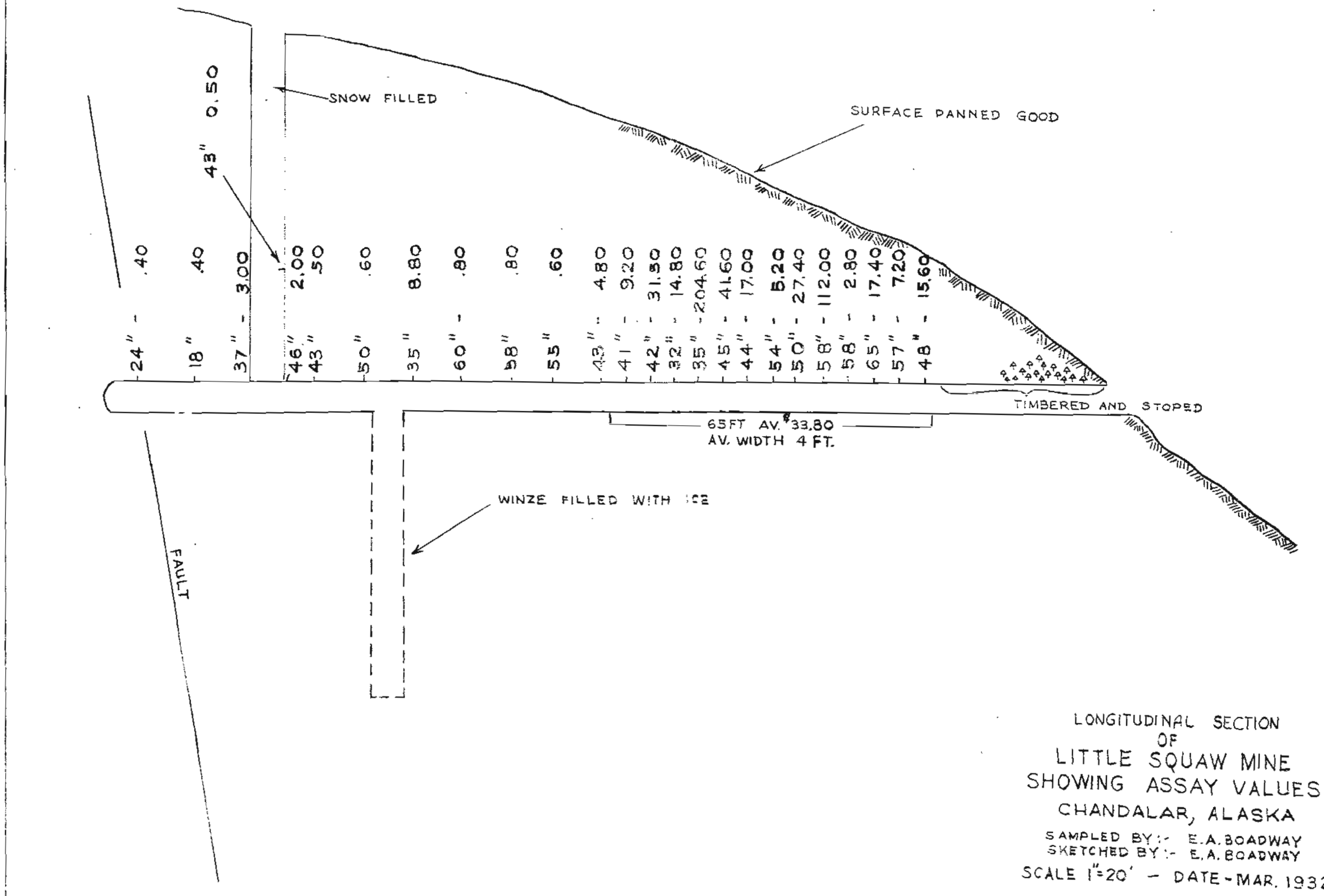
DATE:- MARCH 1932
SCALE 1" = 30 FEET.

E. A. BOADWAY

SKETCHED SECTION
OF PLANE
PERPENDICULAR TO MT. KADO VEIN
SCALE 1" = 100 FEET
DATE:- MARCH 1932 - E.A. BROADWAY



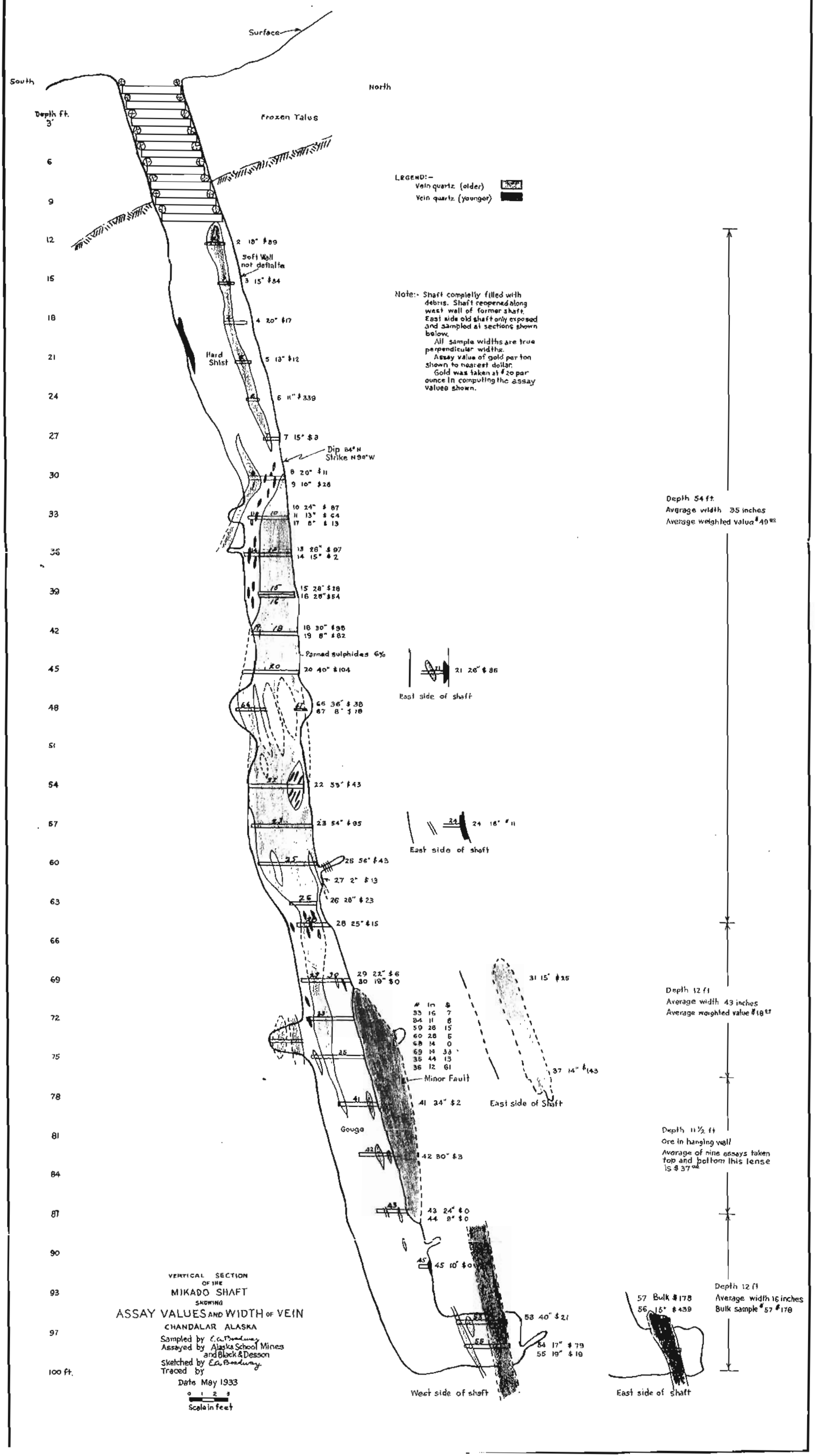
NOTE :- SHAFT CAVED, DRAWN FROM
BEST INFORMATION AVAILABLE.



LONGITUDINAL SECTION
OF
LITTLE SQUAW MINE
SHOWING ASSAY VALUES
CHANDALAR, ALASKA

SAMPLED BY:- E.A. BOADWAY
SKETCHED BY:- E.A. BOADWAY
SCALE 1"=20' — DATE - MAR. 1932

MR 31-6



VERTICAL SECTION
OF THE
MIKADO SHAFT
SHOWING
ASSAY VALUES AND WIDTH OF VEIN
CHANDALAR ALASKA

Sampled by E.A. Bradley
Assayed by Alaska School Mines and Black & Desson
Sketched by E.A. Bradley
Traced by
Date May 1933

0 1 2 3
Scale in feet